Full wwPDB EM Validation Report

Mar 22, 2026 – 08:45 PM UTC

PDB ID	:	9AXV / pdb_00009axv
EMDB ID	:	EMD-43976
Title	:	Translating S. pombe ribosome
Authors	:	Gluc, M.; Gemin, O.; Purdy, M.; Mattei, S.; Jomaa, A.
Deposited on	:	2024-03-06
Resolution	:	2.40 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:

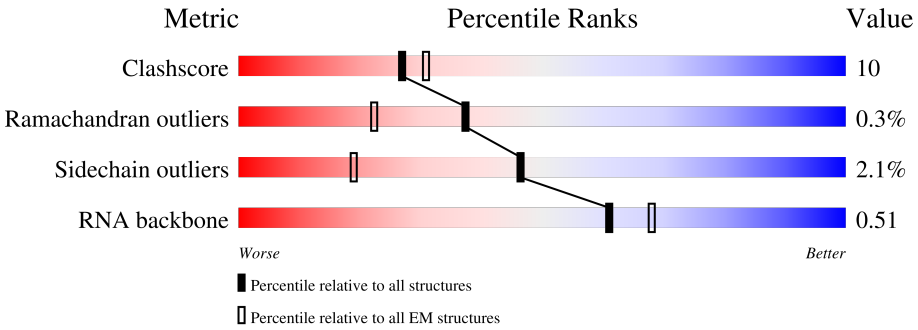
EMDB validation analysis	:	0.0.1.dev132
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh &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

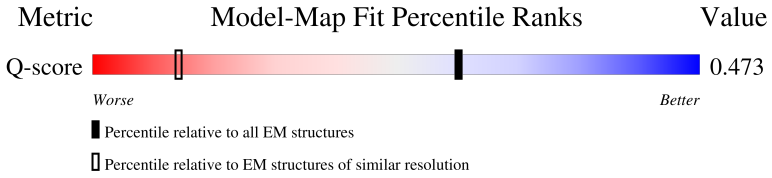
1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.40 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	5628 (1.90 - 2.90)

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 <=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	AA	1842	35% 39% 44% 9% 7%
2	AD	292	20% 48% 22% • 30%
3	AE	252	39% 61% 24% • 14%

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Mol	Chain	Length	Quality of chain
4	AF	253	10% 58% 26% 15%
5	AG	249	59% 63% 24% 13%
6	AH	262	36% 61% 37%
7	AI	203	42% 70% 28%
8	AJ	239	91% 69% 21% 8%
9	AK	195	77% 75% 23%
10	AL	200	54% 68% 26% 6%
11	AM	192	53% 62% 30% 7%
12	AN	147	61% 47% 14% 37%
13	AO	152	31% 65% 25% 6%
14	AP	145	83% 69% 14% 17%
15	AQ	151	23% 75% 24%
16	AR	139	27% 63% 27% 8%
17	AS	154	66% 53% 23% 23%
18	AT	140	44% 59% 39%
19	AU	131	52% 53% 34% 10%
20	AV	152	82% 68% 24% 7%
21	AW	144	41% 68% 29%
22	Aa	118	53% 54% 31% 14%
23	Ab	87	33% 82% 17%
24	Ac	130	78% 19%
25	Ad	143	78% 74% 25%
26	Ae	134	85% 67% 28%
27	Af	89	63% 43% 33% 22%
28	Ag	119	12% 61% 20% 18%

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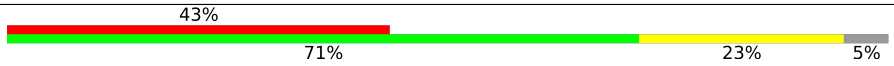
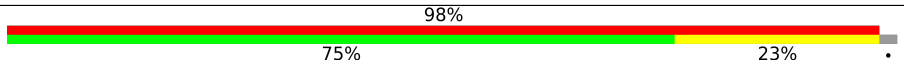
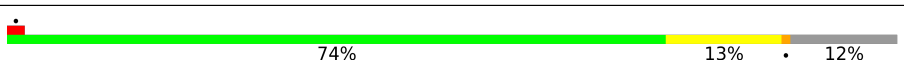
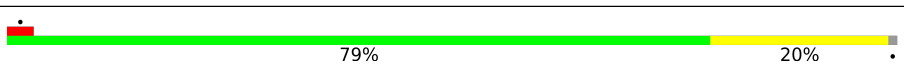
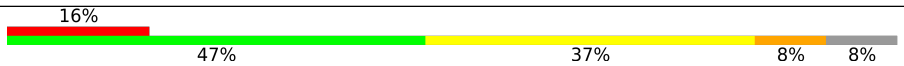
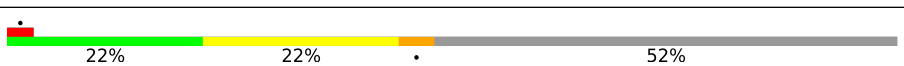
Mol	Chain	Length	Quality of chain
29	Ah	83	
30	Ai	68	
31	Aj	56	
32	Ak	61	
33	B0	106	
34	B1	94	
35	B2	3498	
36	B3	246	
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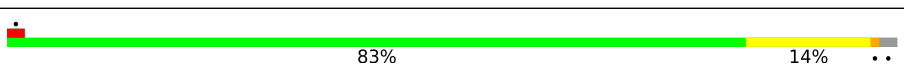
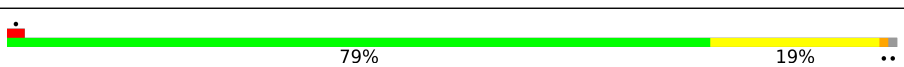
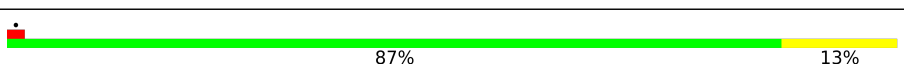
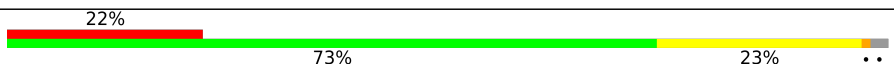
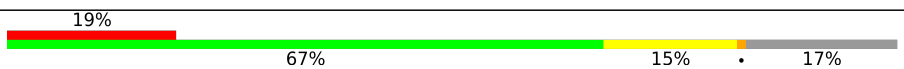
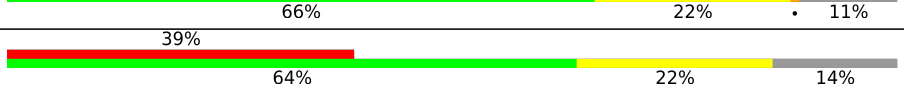
38	BN	253	
39	BO	388	
40	BP	363	
41	BQ	294	
42	BR	195	
43	BS	251	
44	BT	259	
45	BU	189	
46	BV	221	
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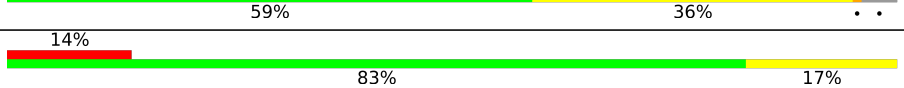
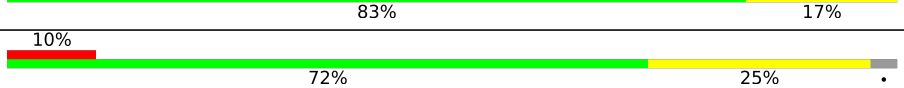
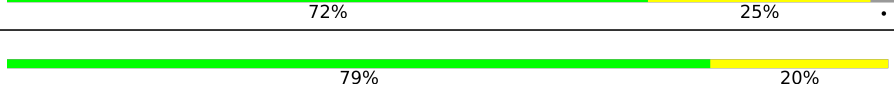
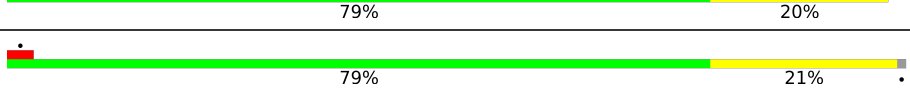
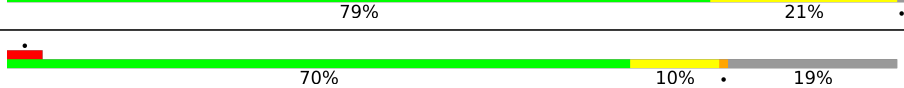
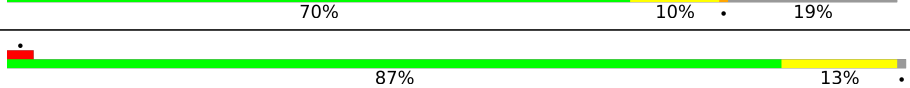
48	BX	208	
49	BY	134	
50	BZ	201	
51	Ba	197	
52	Bb	187	
53	Bc	187	

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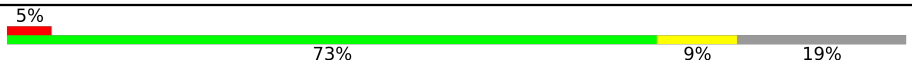
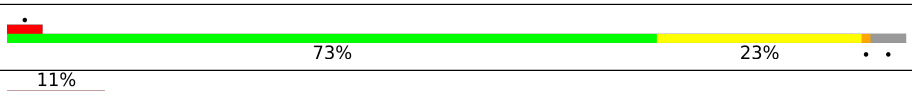
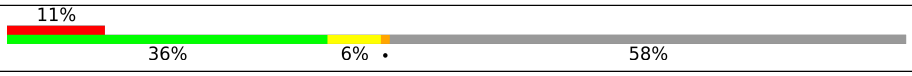
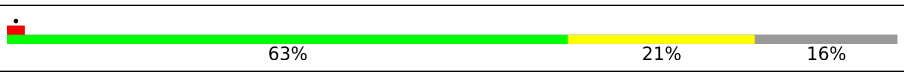
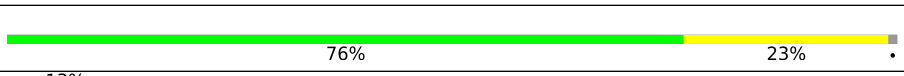
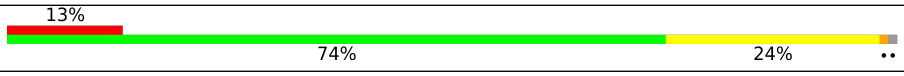
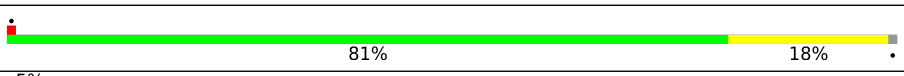
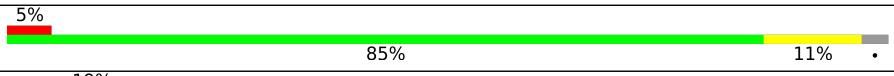
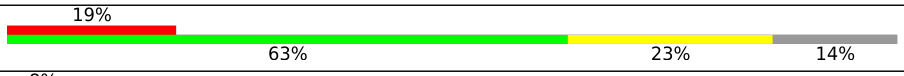
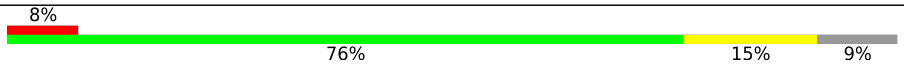
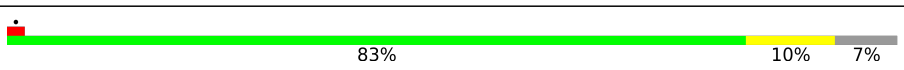
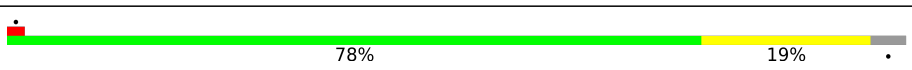
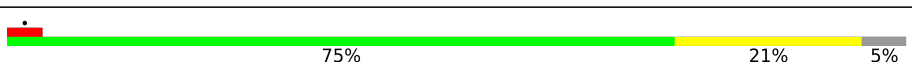
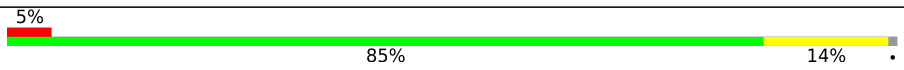
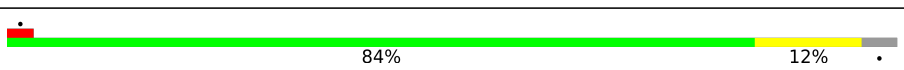
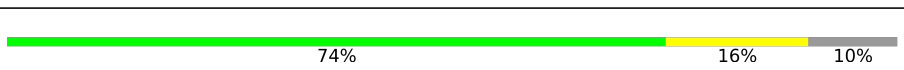
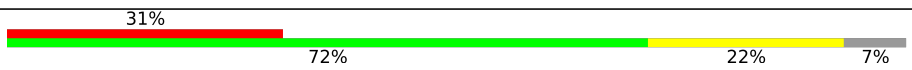
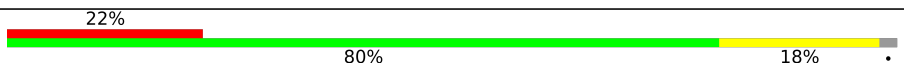
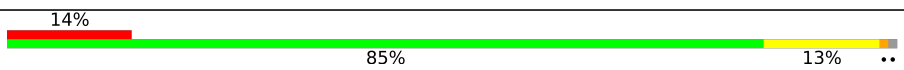
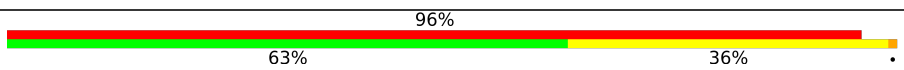
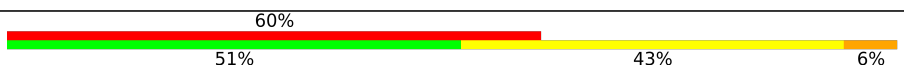
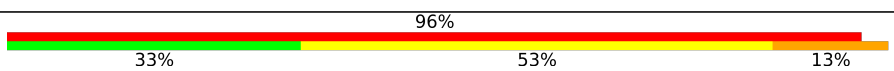
Mol	Chain	Length	Quality of chain
54	Bd	193	
55	Be	176	
56	Bf	160	
57	Bg	117	
58	Bh	139	
59	Bi	149	
60	Bj	141	
61	Bk	126	
62	Bl	136	
63	Bm	148	
64	Bn	61	
65	Bo	109	
66	Bp	113	
67	Bq	127	
68	Br	108	
69	Bs	111	
70	Bt	122	
71	Bu	99	
72	Bv	91	
73	Bw	74	
74	Bx	51	
75	By	134	
76	Am	314	
77	Sm	77	
78	Sn	75	

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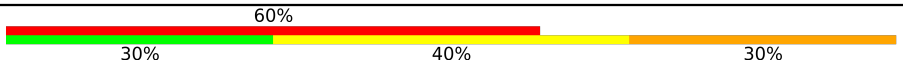
Mol	Chain	Length	Quality of chain
79	S3	10	

2 Entry composition (i)

There are 80 unique types of molecules in this entry. The entry contains 200604 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	AA	1705	36359	16255	6470	11929	1705	0	0

- Molecule 2 is a protein called Small ribosomal subunit protein uS2A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	AD	205	1602	1016	294	287	5	0	0

- Molecule 3 is a protein called Small ribosomal subunit protein eS1B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	AE	216	1733	1093	319	316	5	0	0

- Molecule 4 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	AF	216	1660	1072	289	292	7	0	0

- Molecule 5 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	AG	216	1701	1080	308	305	8	0	0

- Molecule 6 is a protein called Small ribosomal subunit protein eS4C.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	AH	261	2083	1330	391	356	6	0	0

- Molecule 7 is a protein called Small ribosomal subunit protein uS7A.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	AI	203	Total	C	N	O	S	0	0
			1559	972	291	290	6		

- Molecule 8 is a protein called Small ribosomal subunit protein eS6B.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	AJ	221	Total	C	N	O	S	0	0
			1784	1123	352	302	7		

- Molecule 9 is a protein called Small ribosomal subunit protein eS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	AK	193	Total	C	N	O	S	0	0
			1530	967	284	276	3		

- Molecule 10 is a protein called Small ribosomal subunit protein eS8B.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	AL	188	Total	C	N	O	S	0	0
			1506	936	303	264	3		

- Molecule 11 is a protein called Small ribosomal subunit protein uS4B.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	AM	178	Total	C	N	O	S	0	0
			1462	928	291	241	2		

- Molecule 12 is a protein called Small ribosomal subunit protein eS10B.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	AN	92	Total	C	N	O	S	0	0
			748	484	132	130	2		

- Molecule 13 is a protein called Small ribosomal subunit protein uS17A.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	AO	143	Total	C	N	O	S	0	0
			1164	743	222	196	3		

- Molecule 14 is a protein called Small ribosomal subunit protein eS12A.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	AP	121	Total 884	C 549	N 151	O 177	S 7	0	0

- Molecule 15 is a protein called Small ribosomal subunit protein uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	AQ	150	Total 1184	C 754	N 222	O 204	S 4	0	0

- Molecule 16 is a protein called Small ribosomal subunit protein uS11B.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	AR	128	Total 949	C 587	N 184	O 174	S 4	0	0

- Molecule 17 is a protein called Small ribosomal subunit protein uS19B.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	AS	119	Total 954	C 608	N 179	O 163	S 4	0	0

- Molecule 18 is a protein called Small ribosomal subunit protein uS9A.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	AT	140	Total 1082	C 688	N 203	O 186	S 5	0	0

- Molecule 19 is a protein called Small ribosomal subunit protein eS17A.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	AU	118	Total 972	C 606	N 185	O 179	S 2	0	0

- Molecule 20 is a protein called Small ribosomal subunit protein uS13B.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	AV	141	Total 1144	C 714	N 222	O 204	S 4	0	0

- Molecule 21 is a protein called Small ribosomal subunit protein eS19A.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	AW	142	Total	C	N	O	S	0	0
			1119	699	212	205	3		

- Molecule 22 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	Aa	101	Total	C	N	O	S	0	0
			815	511	156	146	2		

- Molecule 23 is a protein called Small ribosomal subunit protein eS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	Ab	87	Total	C	N	O	S	0	0
			672	411	122	135	4		

- Molecule 24 is a protein called Small ribosomal subunit protein uS8A.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Ac	129	Total	C	N	O	S	0	0
			1028	649	196	179	4		

- Molecule 25 is a protein called Small ribosomal subunit protein uS12A.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Ad	142	Total	C	N	O	S	0	0
			1095	692	214	187	2		

- Molecule 26 is a protein called Small ribosomal subunit protein eS24A.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	Ae	133	Total	C	N	O	S	0	0
			1078	672	217	185	4		

- Molecule 27 is a protein called Small ribosomal subunit protein eS25A.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	Af	69	Total	C	N	O	S	0	0
			551	350	103	97	1		

- Molecule 28 is a protein called Small ribosomal subunit protein eS26B.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	Ag	97	Total	C	N	O	S	0	0
			795	491	167	132	5		

- Molecule 29 is a protein called Small ribosomal subunit protein eS27.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	Ah	81	Total	C	N	O	S	0	0
			619	388	114	108	9		

- Molecule 30 is a protein called Small ribosomal subunit protein eS28A.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Ai	63	Total	C	N	O	S	0	0
			498	308	99	90	1		

- Molecule 31 is a protein called Small ribosomal subunit protein uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	Aj	53	Total	C	N	O	S	0	0
			447	282	91	73	1		

- Molecule 32 is a protein called Small ribosomal subunit protein eS30B.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	Ak	60	Total	C	N	O	S	0	0
			475	296	99	78	2		

- Molecule 33 is a protein called Large ribosomal subunit protein eL42.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	B0	93	Total	C	N	O	S	0	0
			758	479	152	122	5		

- Molecule 34 is a protein called Large ribosomal subunit protein eL43A.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	B1	93	Total	C	N	O	S	0	0
			718	442	147	123	6		

- Molecule 35 is a RNA chain called 28S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	B2	3212	Total	C	N	O	P	0	0
			68676	30687	12377	22400	3212		

- Molecule 36 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	B3	119	Total	C	N	O	P	0	0
			2539	1133	454	833	119		

- Molecule 37 is a RNA chain called 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	B4	157	Total	C	N	O	P	0	0
			3332	1491	583	1101	157		

- Molecule 38 is a protein called Large ribosomal subunit protein uL2C.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	BN	248	Total	C	N	O	S	0	0
			1872	1166	377	324	5		

- Molecule 39 is a protein called Large ribosomal subunit protein uL3A.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	BO	384	Total	C	N	O	S	0	0
			3050	1929	576	535	10		

- Molecule 40 is a protein called Large ribosomal subunit protein uL4A.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	BP	362	Total	C	N	O	S	0	0
			2799	1768	538	490	3		

- Molecule 41 is a protein called Large ribosomal subunit protein uL18B.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	BQ	287	Total	C	N	O	S	0	0
			2312	1461	410	437	4		

- Molecule 42 is a protein called Large ribosomal subunit protein eL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	BR	162	Total	C	N	O	S	0	0
			1251	802	231	215	3		

- Molecule 43 is a protein called Large ribosomal subunit protein uL30C.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	BS	233	Total	C	N	O	S	0	0
			1897	1211	349	334	3		

- Molecule 44 is a protein called Large ribosomal subunit protein eL8.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	BT	229	Total	C	N	O	S	0	0
			1772	1135	325	309	3		

- Molecule 45 is a protein called Large ribosomal subunit protein uL6B.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	BU	168	Total	C	N	O	S	0	0
			1319	828	244	242	5		

- Molecule 46 is a protein called Large ribosomal subunit protein uL16A.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	BV	191	Total	C	N	O	S	0	0
			1549	982	291	270	6		

- Molecule 47 is a protein called Large ribosomal subunit protein uL5A.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	BW	167	Total	C	N	O	S	0	0
			1346	854	252	235	5		

- Molecule 48 is a protein called Large ribosomal subunit protein eL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	BX	207	Total	C	N	O	S	0	0
			1654	1034	329	290	1		

- Molecule 49 is a protein called Large ribosomal subunit protein eL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	BY	130	Total	C	N	O	S	0	0
			1038	662	198	174	4		

- Molecule 50 is a protein called Large ribosomal subunit protein eL15B.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	BZ	200	Total	C	N	O	S	0	0
			1676	1050	348	275	3		

- Molecule 51 is a protein called Large ribosomal subunit protein uL13A.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	Ba	196	Total	C	N	O	S	0	0
			1545	991	294	256	4		

- Molecule 52 is a protein called Large ribosomal subunit protein uL22A.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	Bb	152	Total	C	N	O	S	0	0
			1212	770	229	210	3		

- Molecule 53 is a protein called Large ribosomal subunit protein eL18B.

Mol	Chain	Residues	Atoms				AltConf	Trace
53	Bc	186	Total	C	N	O	0	0
			1487	937	300	250		

- Molecule 54 is a protein called Large ribosomal subunit protein eL19B.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	Bd	157	Total	C	N	O	S	0	0
			1301	809	275	212	5		

- Molecule 55 is a protein called Large ribosomal subunit protein eL20A.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	Be	173	Total	C	N	O	S	0	0
			1423	916	268	234	5		

- Molecule 56 is a protein called Large ribosomal subunit protein eL21B.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	Bf	159	Total	C	N	O	S	0	0
			1286	810	247	226	3		

- Molecule 57 is a protein called Large ribosomal subunit protein eL22.

Mol	Chain	Residues	Atoms				AltConf	Trace
57	Bg	99	Total	C	N	O	0	0
			798	518	138	142		

- Molecule 58 is a protein called Large ribosomal subunit protein uL14B.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	Bh	134	Total	C	N	O	S	0	0
			999	630	184	177	8		

- Molecule 59 is a protein called Large ribosomal subunit protein eL24B.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	Bi	63	Total	C	N	O	S	0	0
			523	336	102	82	3		

- Molecule 60 is a protein called Large ribosomal subunit protein uL23A.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	Bj	118	Total	C	N	O	S	0	0
			947	605	175	166	1		

- Molecule 61 is a protein called Large ribosomal subunit protein uL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	Bk	125	Total	C	N	O	S	0	0
			998	622	201	173	2		

- Molecule 62 is a protein called Large ribosomal subunit protein eL27A.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	Bl	135	Total	C	N	O	S	0	0
			1078	698	200	178	2		

- Molecule 63 is a protein called Large ribosomal subunit protein uL15B.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	Bm	147	Total	C	N	O	S	0	0
			1171	740	235	194	2		

- Molecule 64 is a protein called Large ribosomal subunit protein eL29.

Mol	Chain	Residues	Atoms				AltConf	Trace
64	Bn	59	Total	C	N	O	0	0
			495	299	112	84		

- Molecule 65 is a protein called Large ribosomal subunit protein eL30A.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	Bo	94	Total	C	N	O	S	0	0
			705	450	121	130	4		

- Molecule 66 is a protein called Large ribosomal subunit protein eL31.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	Bp	103	Total	C	N	O	S	0	0
			857	538	167	149	3		

- Molecule 67 is a protein called Large ribosomal subunit protein eL32A.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	Bq	118	Total	C	N	O	S	0	0
			944	591	191	157	5		

- Molecule 68 is a protein called Large ribosomal subunit protein eL33A.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	Br	104	Total	C	N	O	S	0	0
			831	531	160	137	3		

- Molecule 69 is a protein called Large ribosomal subunit protein eL34B.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	Bs	106	Total	C	N	O	S	0	0
			858	538	176	142	2		

- Molecule 70 is a protein called Large ribosomal subunit protein uL29.

Mol	Chain	Residues	Atoms				AltConf	Trace
70	Bt	121	Total 999	C 629	N 194	O 176	0	0

- Molecule 71 is a protein called Large ribosomal subunit protein eL36B.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	Bu	95	Total 759	C 472	N 159	O 127	S 1	0	0

- Molecule 72 is a protein called Large ribosomal subunit protein eL37B.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	Bv	82	Total 652	C 399	N 140	O 106	S 7	0	0

- Molecule 73 is a protein called Large ribosomal subunit protein eL38A.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	Bw	69	Total 560	C 355	N 103	O 101	S 1	0	0

- Molecule 74 is a protein called Large ribosomal subunit protein eL39.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	Bx	50	Total 436	C 273	N 98	O 64	S 1	0	0

- Molecule 75 is a protein called Large ribosomal subunit protein eL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	By	133	Total 1031	C 641	N 203	O 186	S 1	0	0

- Molecule 76 is a protein called Small ribosomal subunit protein RACK1.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	Am	314	Total 2458	C 1549	N 422	O 478	S 9	0	0

- Molecule 77 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	Sm	77	Total	C	N	O	P	0	0
			1625	722	292	534	77		

- Molecule 78 is a RNA chain called A/P tRNA.

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

- Molecule 79 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	S3	10	Total	C	N	O	P	0	0
			204	92	27	75	10		

- Molecule 80 is ZINC ION (CCD ID: ZN) (formula: Zn).

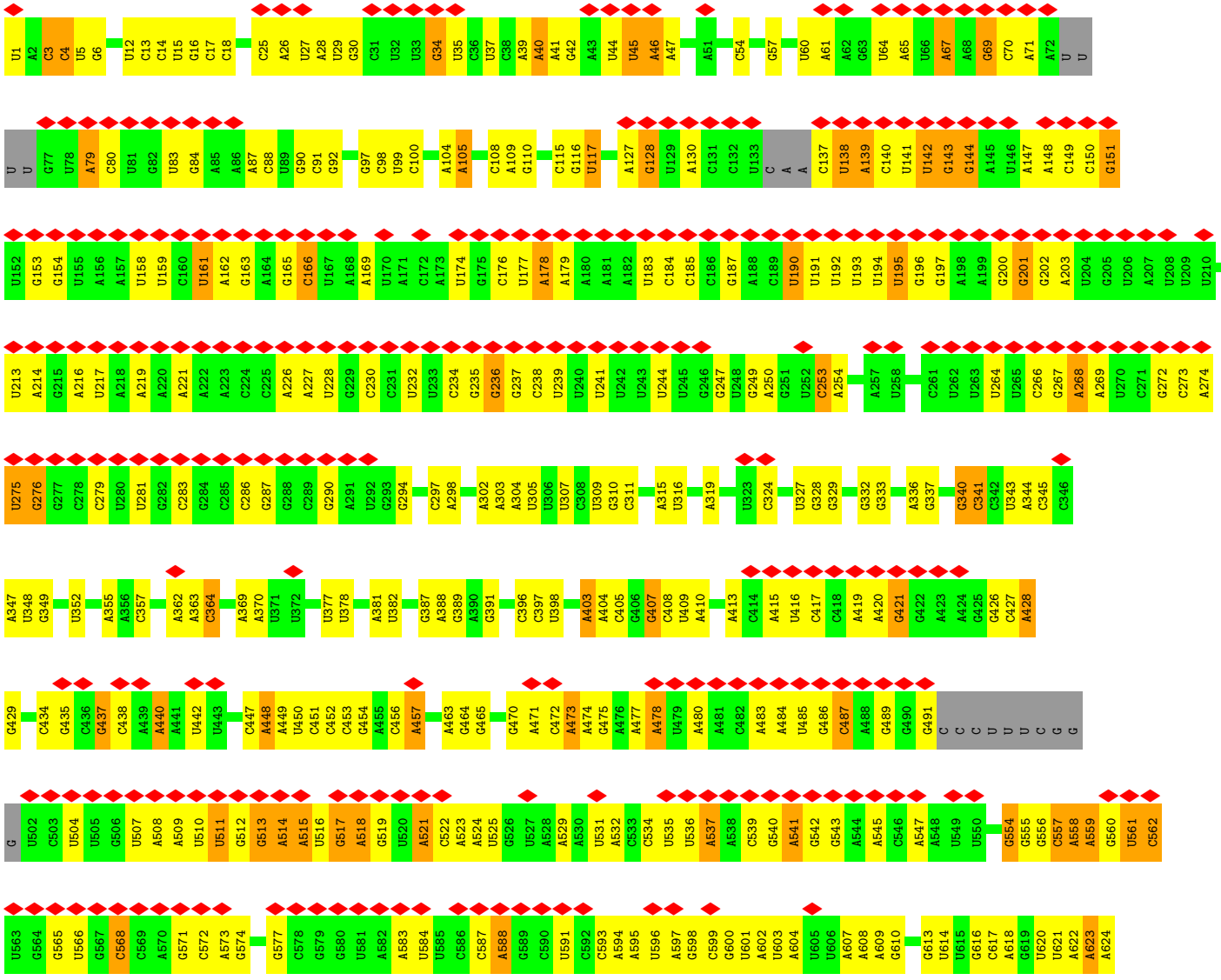
Mol	Chain	Residues	Atoms		AltConf
80	AA	1	Total	Zn	0
			1	1	
80	Ag	1	Total	Zn	0
			1	1	
80	Ah	1	Total	Zn	0
			1	1	
80	B0	1	Total	Zn	0
			1	1	
80	B1	1	Total	Zn	0
			1	1	
80	Bv	1	Total	Zn	0
			1	1	

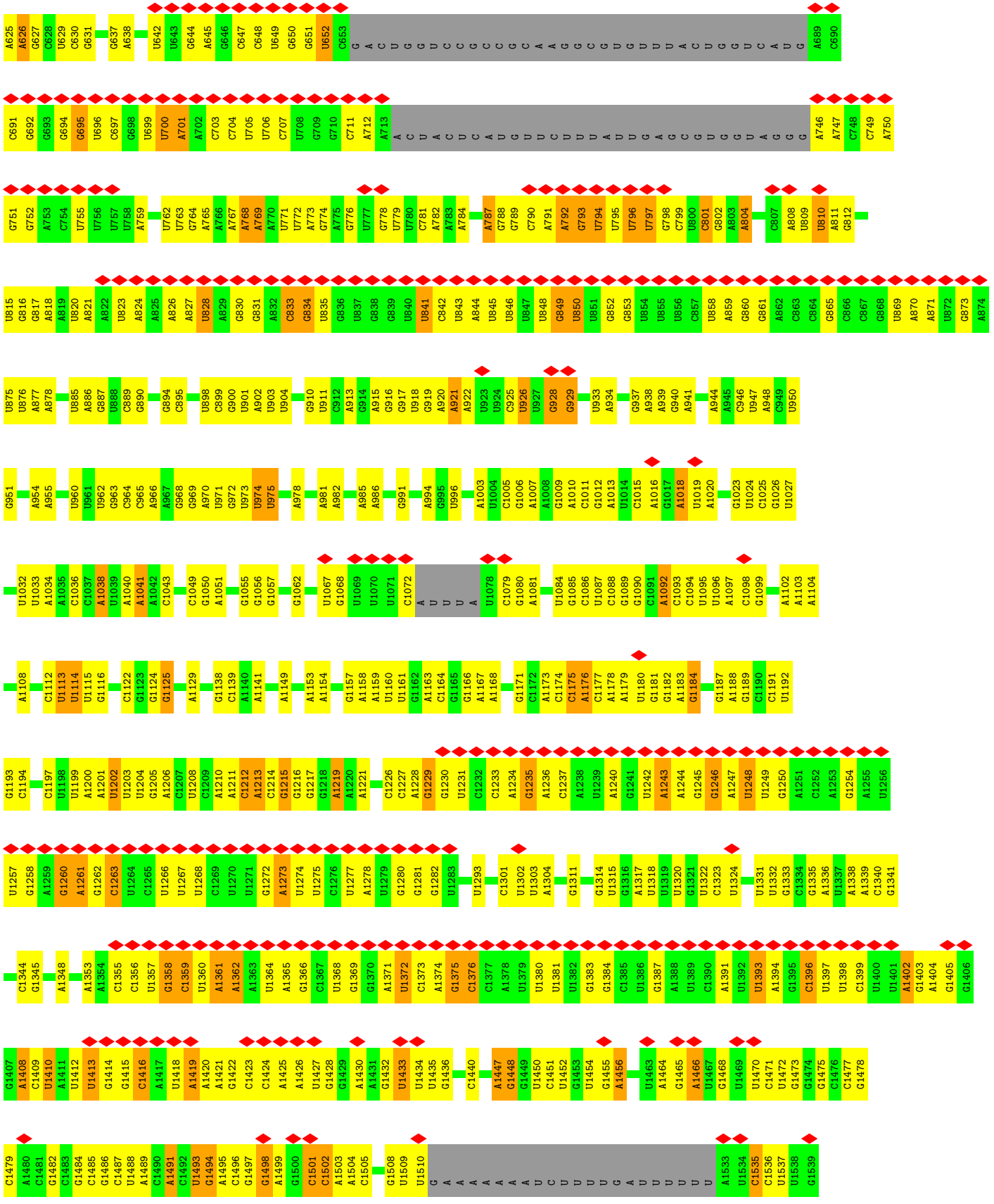
3 Residue-property plots (i)

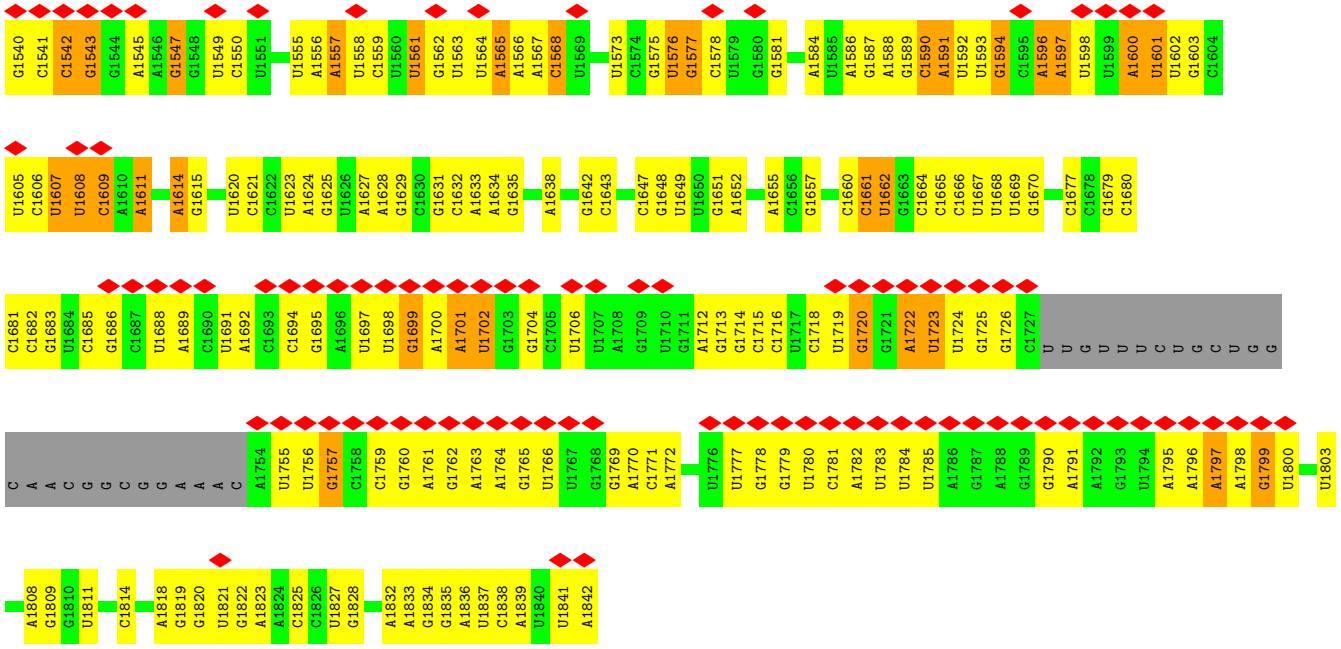
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: 18S ribosomal RNA

Chain AA:

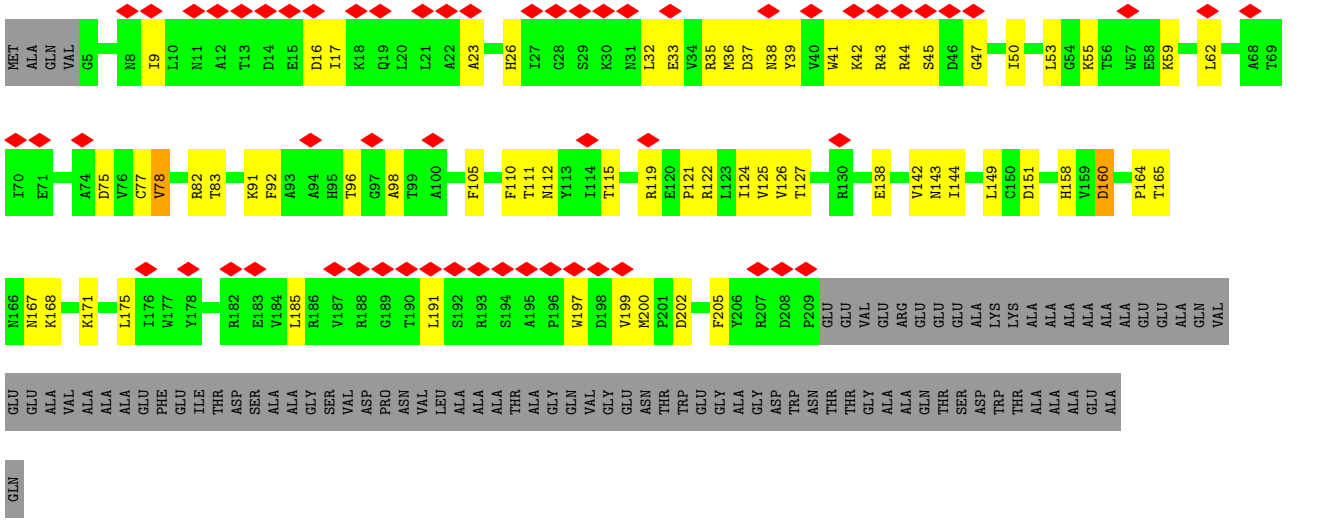






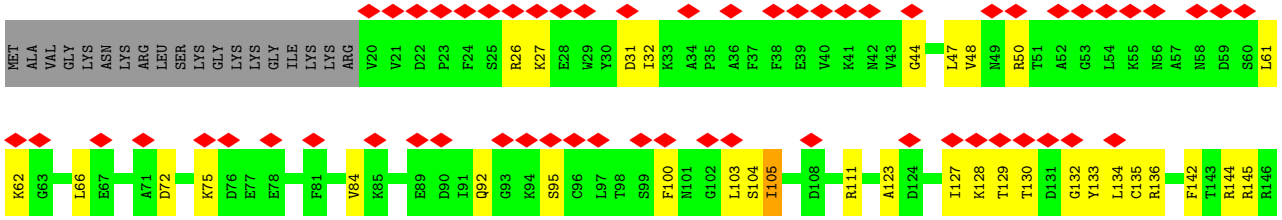
• Molecule 2: Small ribosomal subunit protein uS2A

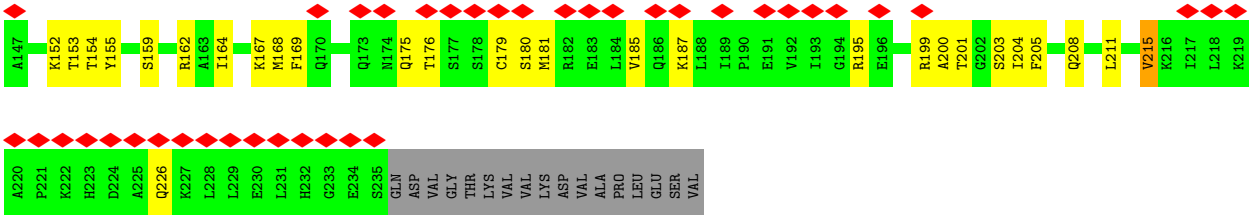
Chain AD:



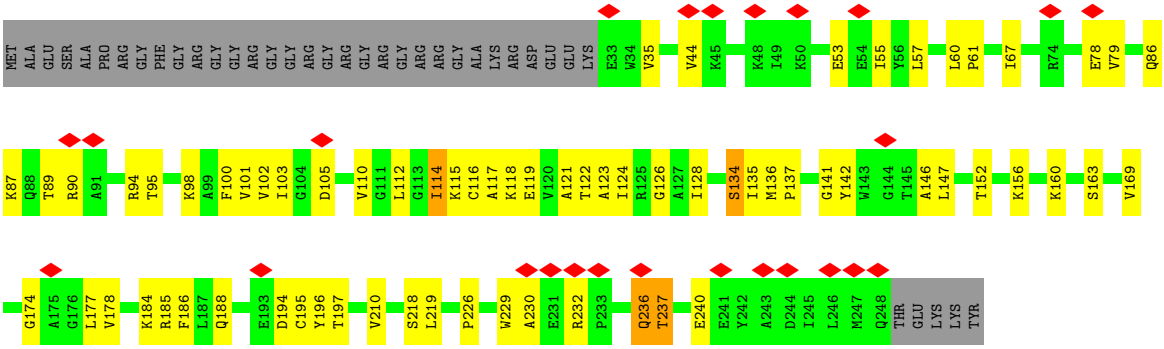
• Molecule 3: Small ribosomal subunit protein eS1B

Chain AE:

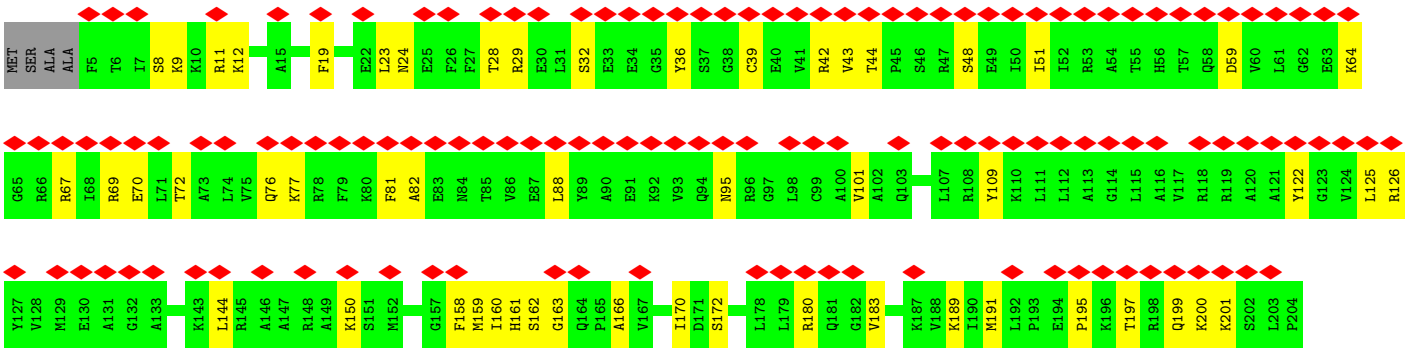




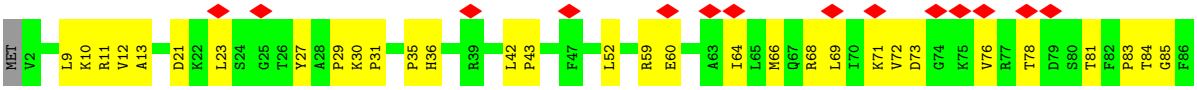
• Molecule 4: Small ribosomal subunit protein uS5

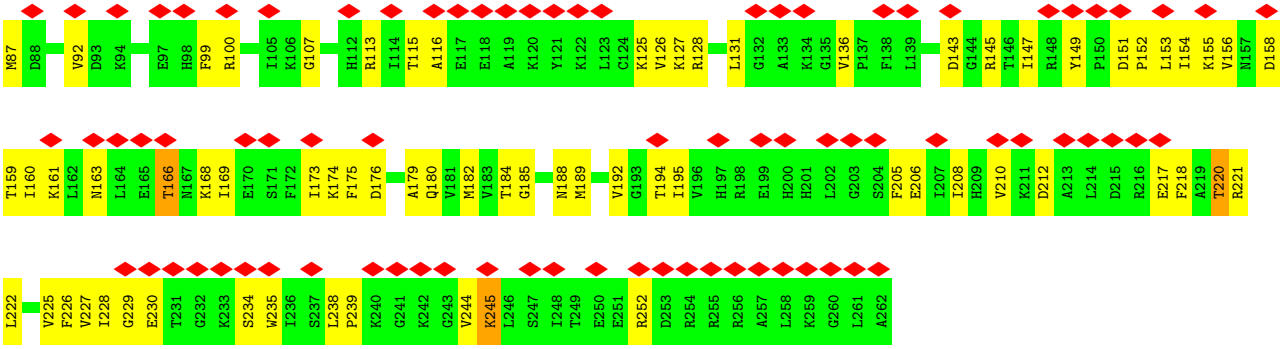


• Molecule 5: Small ribosomal subunit protein uS3

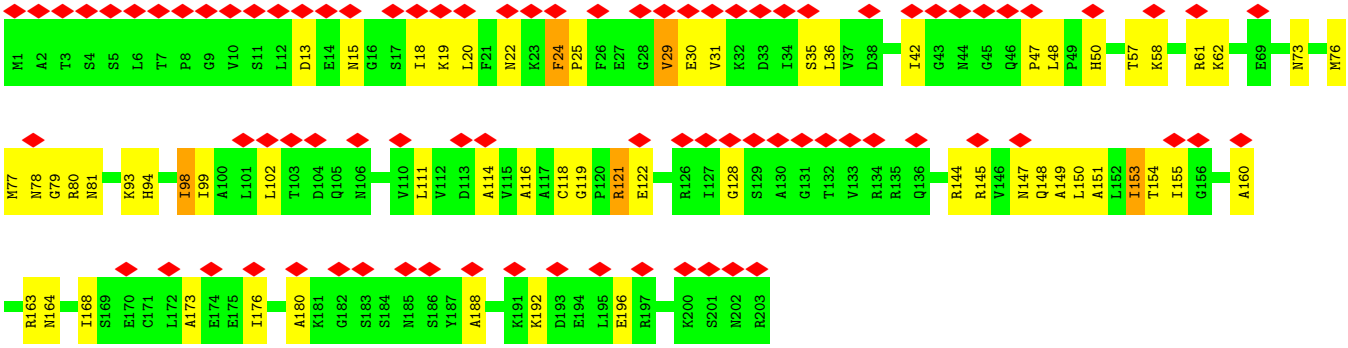


• Molecule 6: Small ribosomal subunit protein eS4C

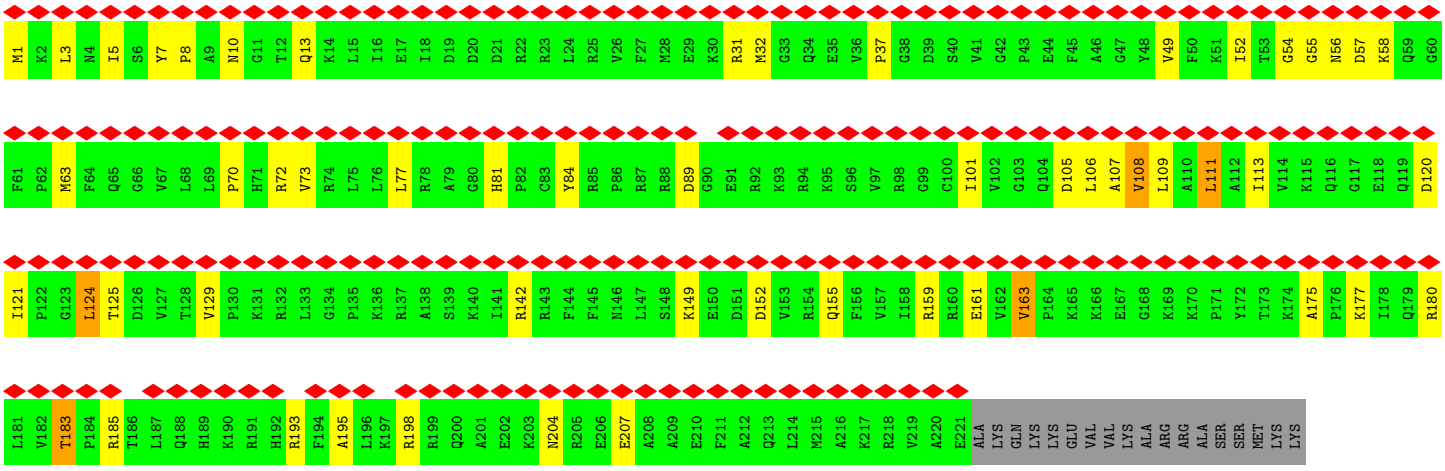




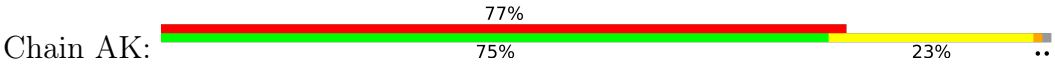
• Molecule 7: Small ribosomal subunit protein uS7A

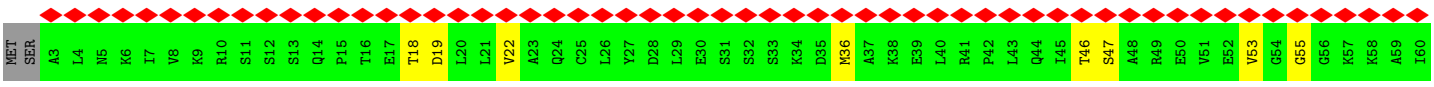


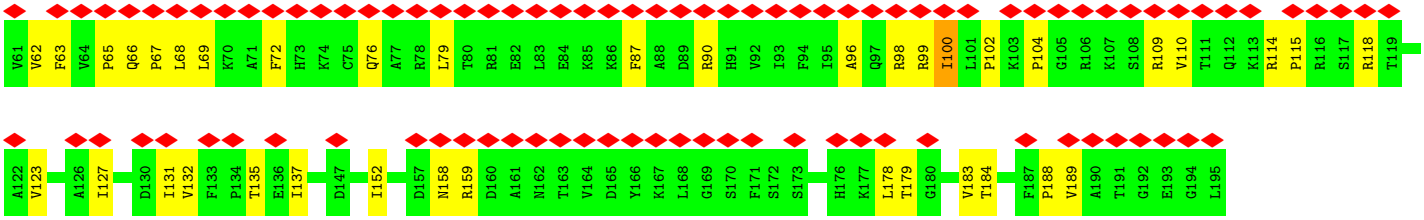
• Molecule 8: Small ribosomal subunit protein eS6B



• Molecule 9: Small ribosomal subunit protein eS7

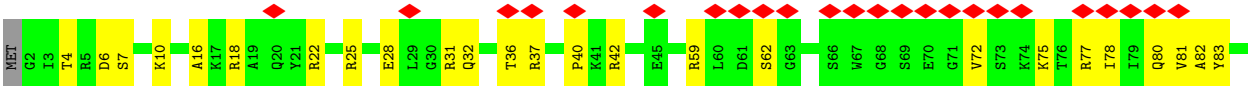


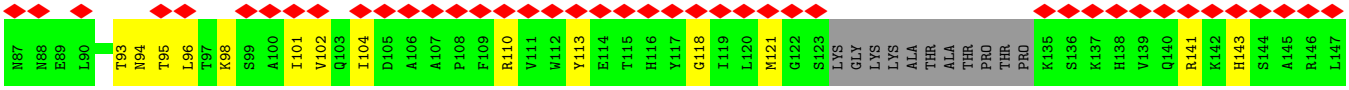


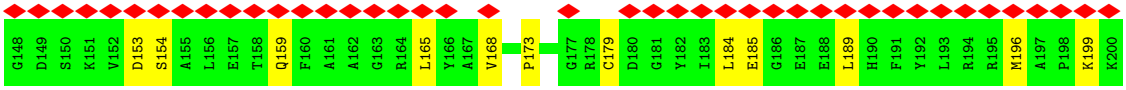


• Molecule 10: Small ribosomal subunit protein eS8B

Chain AL:

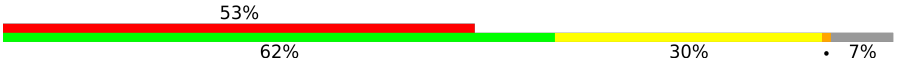


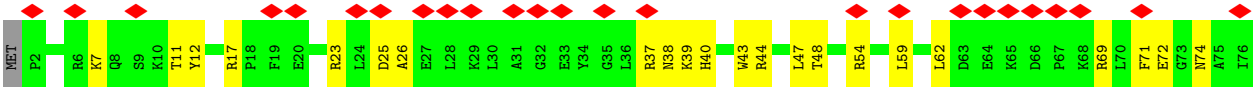


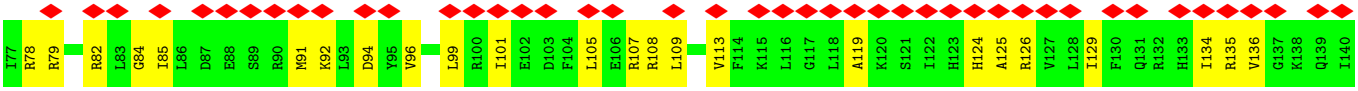


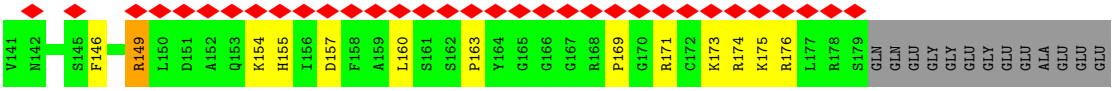
• Molecule 11: Small ribosomal subunit protein uS4B

Chain AM:



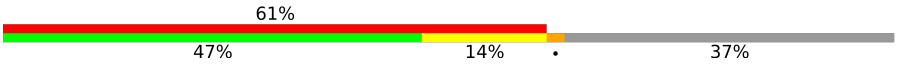


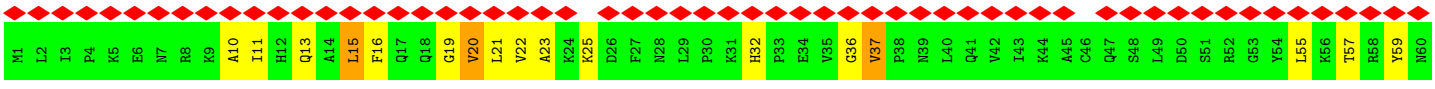


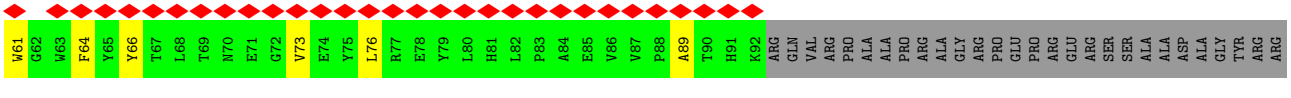


• Molecule 12: Small ribosomal subunit protein eS10B

Chain AN:

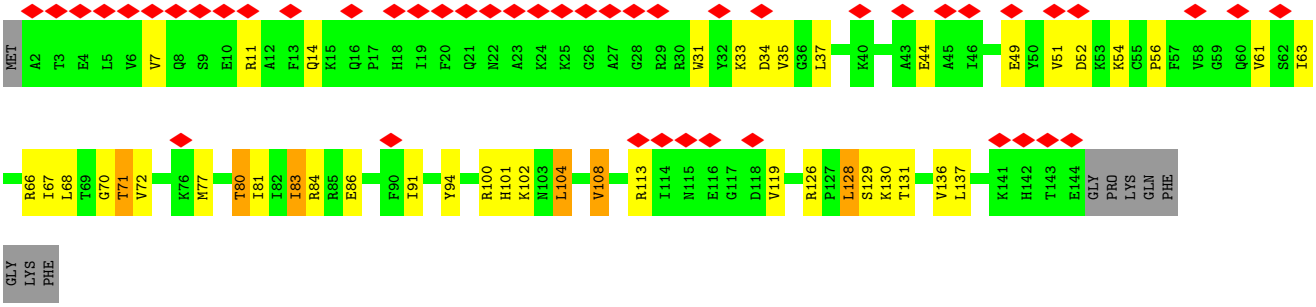






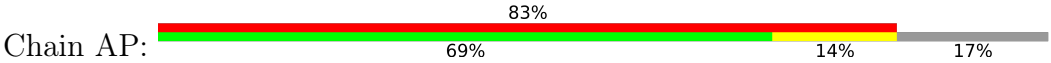
• Molecule 13: Small ribosomal subunit protein uS17A

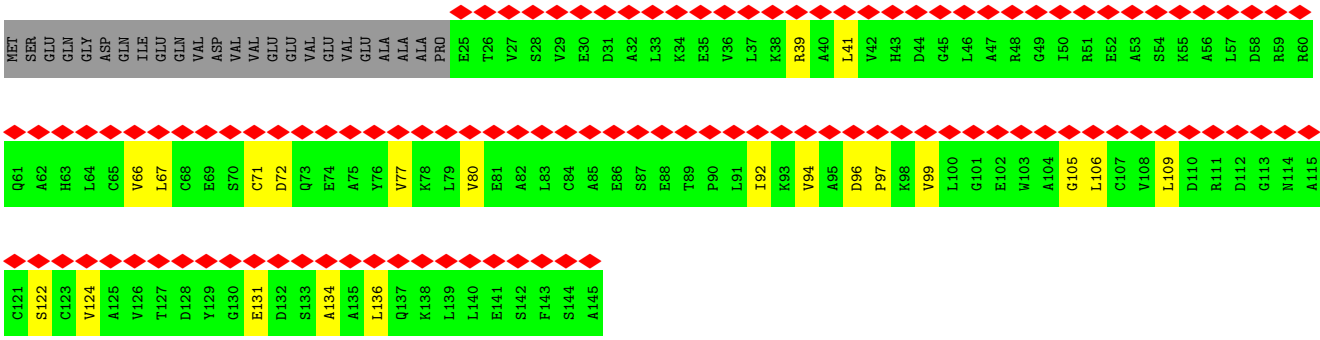
Chain AO:



• Molecule 14: Small ribosomal subunit protein eS12A

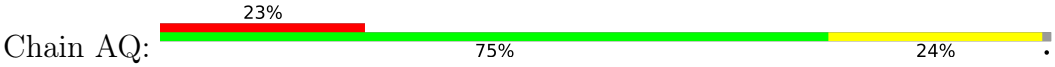
Chain AP:

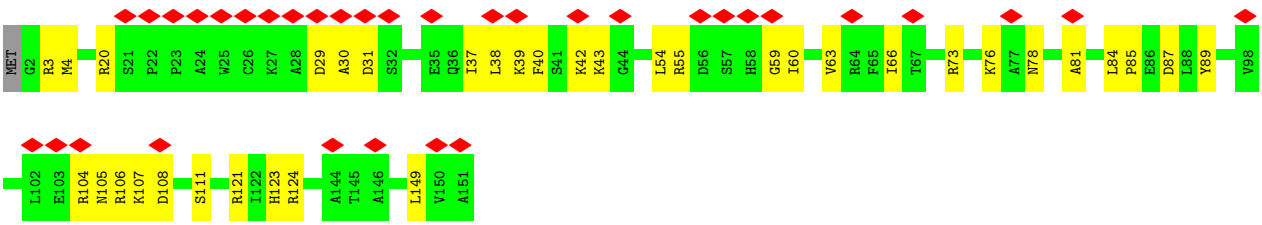




• Molecule 15: Small ribosomal subunit protein uS15

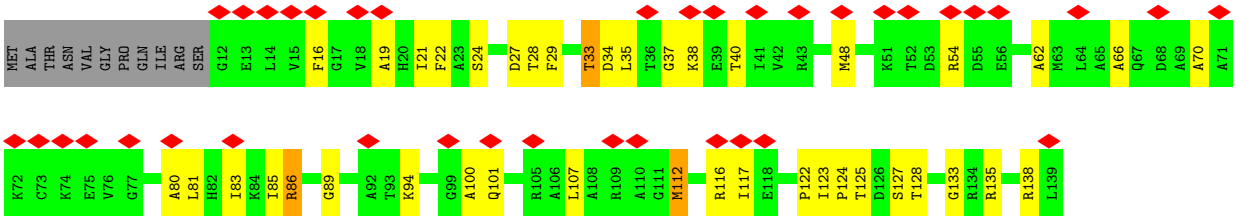
Chain AQ:





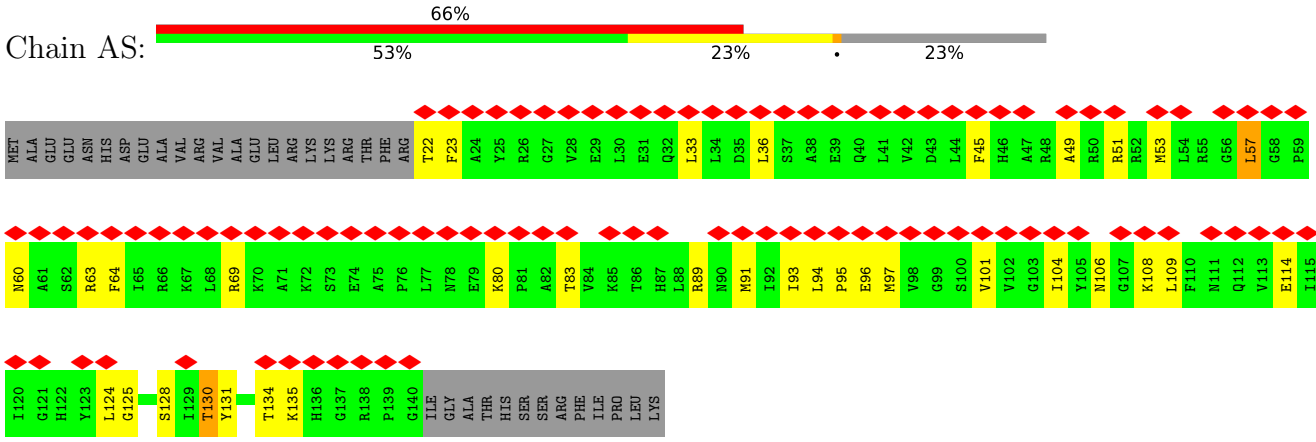
• Molecule 16: Small ribosomal subunit protein uS11B

Chain AR:



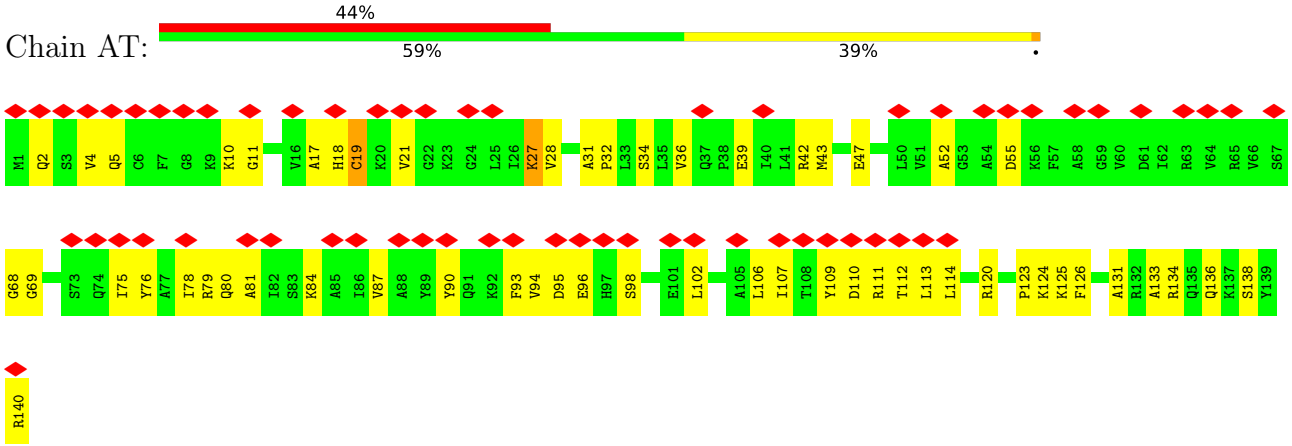
• Molecule 17: Small ribosomal subunit protein uS19B

Chain AS:



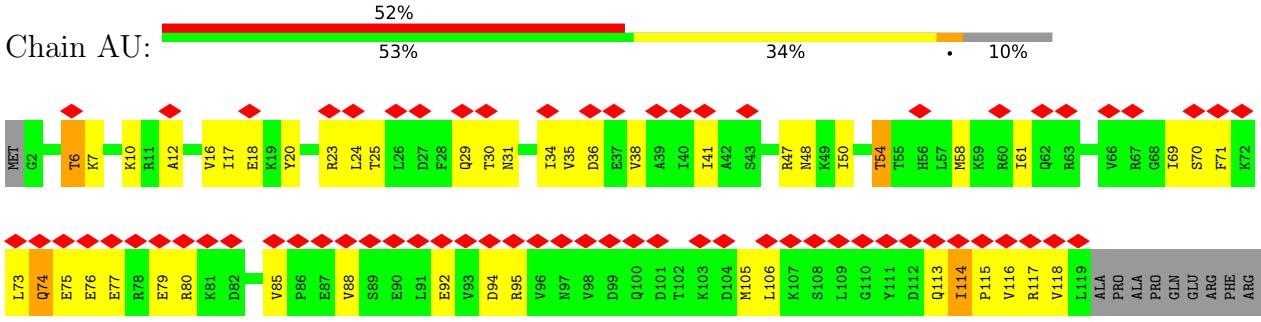
• Molecule 18: Small ribosomal subunit protein uS9A

Chain AT:



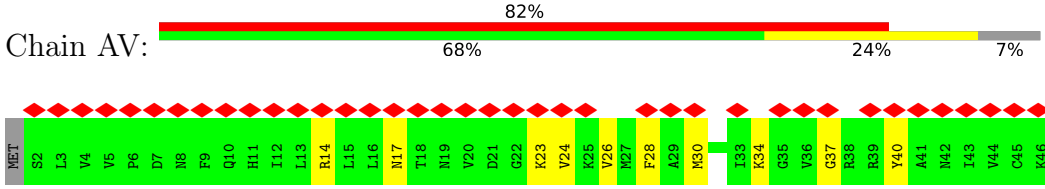
• Molecule 19: Small ribosomal subunit protein eS17A

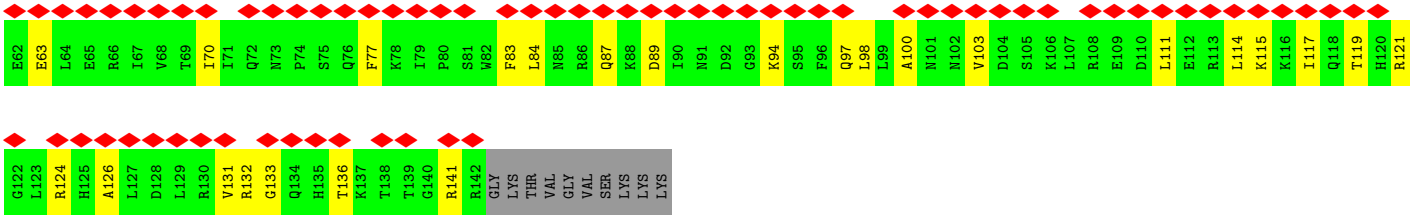
Chain AU:



• Molecule 20: Small ribosomal subunit protein uS13B

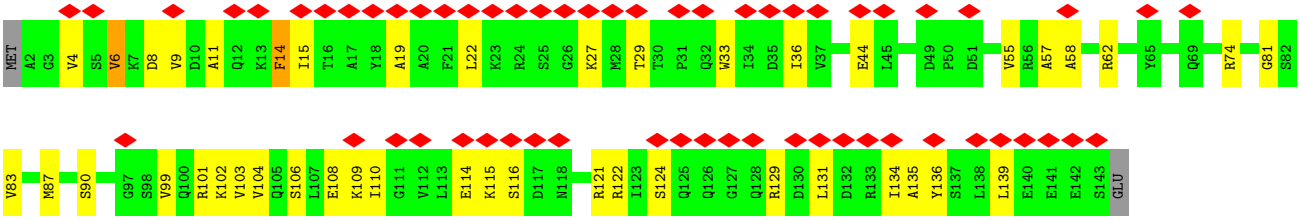
Chain AV:





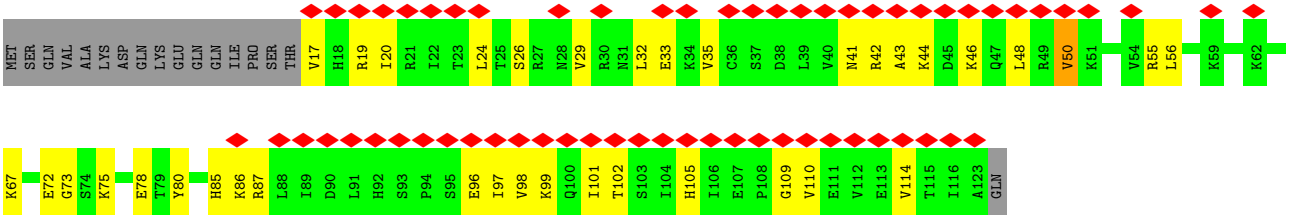
• Molecule 21: Small ribosomal subunit protein eS19A

Chain AW:



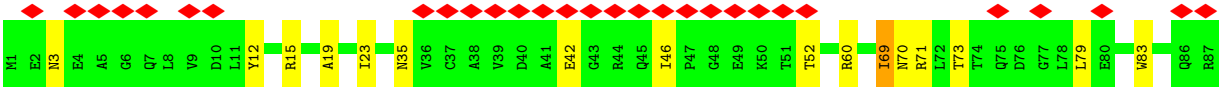
• Molecule 22: Small ribosomal subunit protein uS10

Chain Aa:



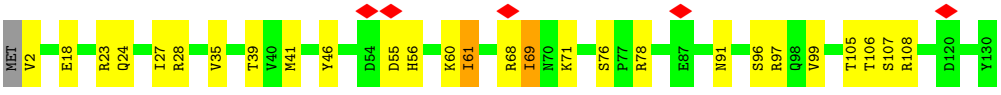
• Molecule 23: Small ribosomal subunit protein eS21

Chain Ab:



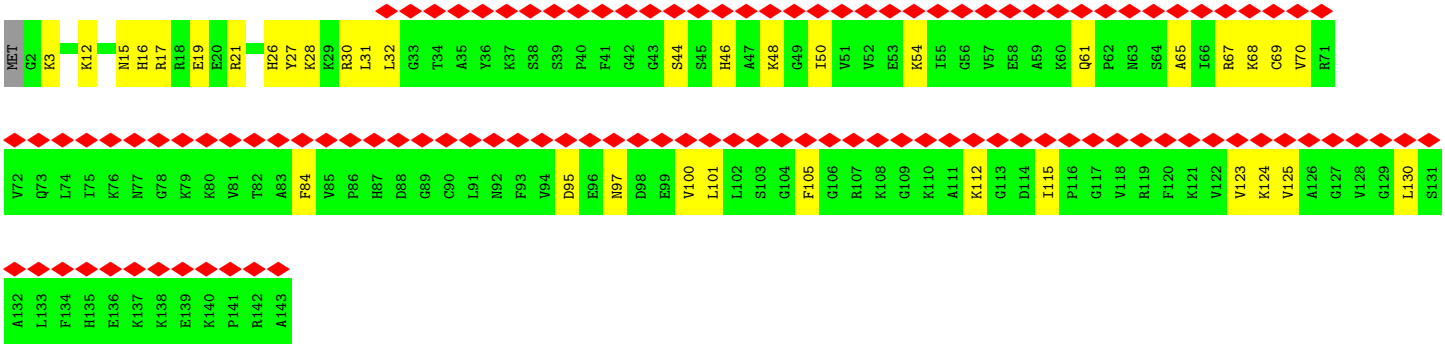
• Molecule 24: Small ribosomal subunit protein uS8A

Chain Ac:

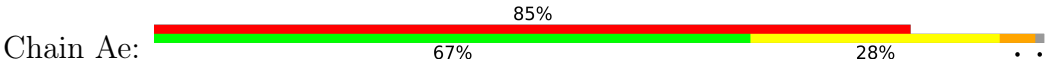


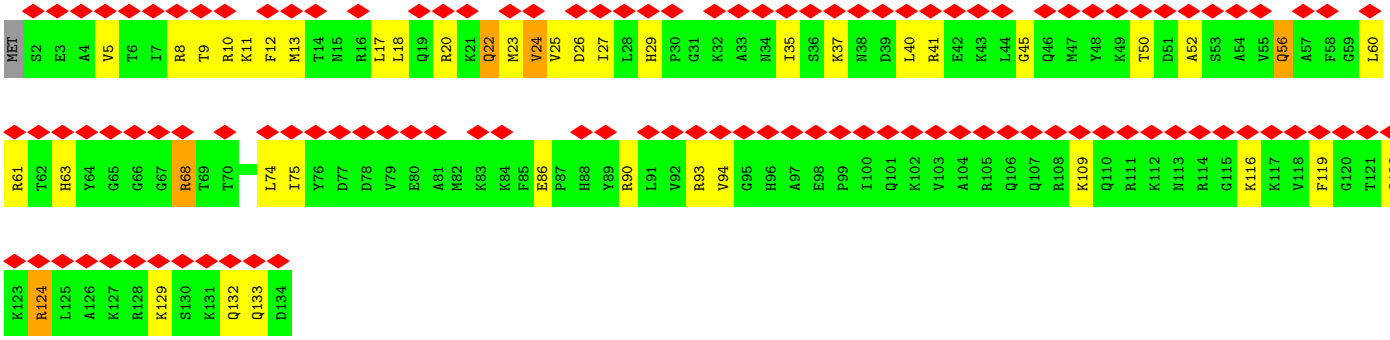
• Molecule 25: Small ribosomal subunit protein uS12A

Chain Ad:

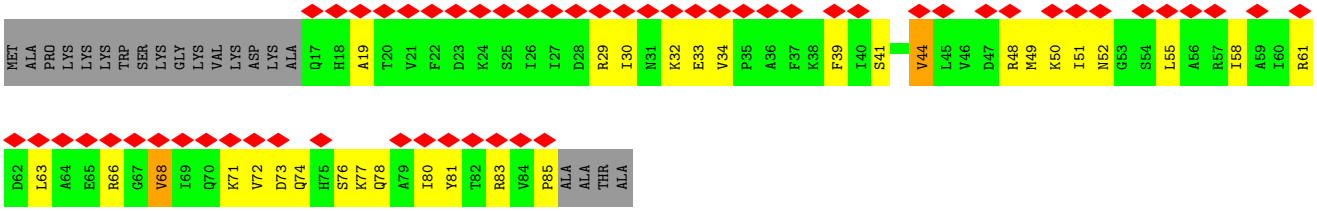


• Molecule 26: Small ribosomal subunit protein eS24A

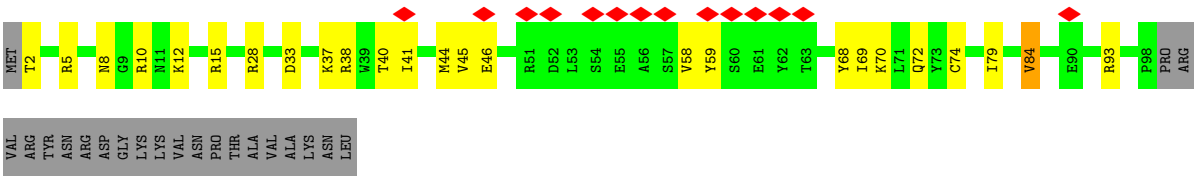




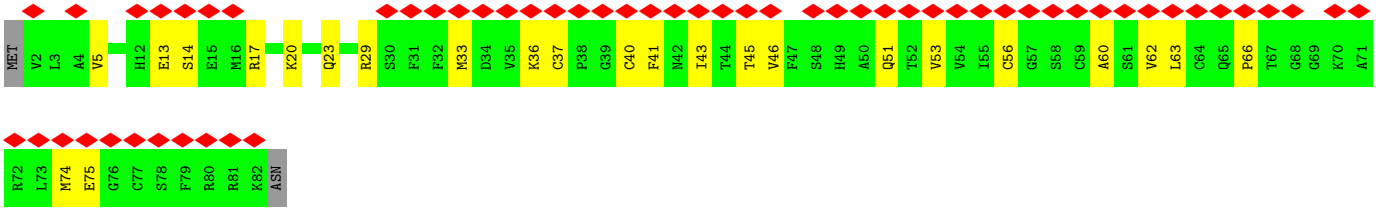
• Molecule 27: Small ribosomal subunit protein eS25A



• Molecule 28: Small ribosomal subunit protein eS26B

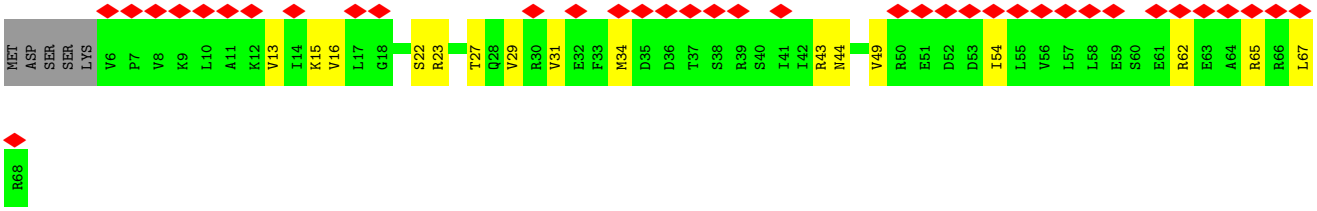


• Molecule 29: Small ribosomal subunit protein eS27



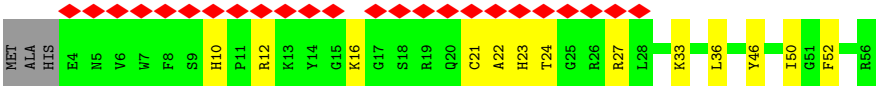
• Molecule 30: Small ribosomal subunit protein eS28A

Chain Ai:



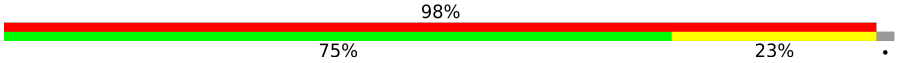
• Molecule 31: Small ribosomal subunit protein uS14

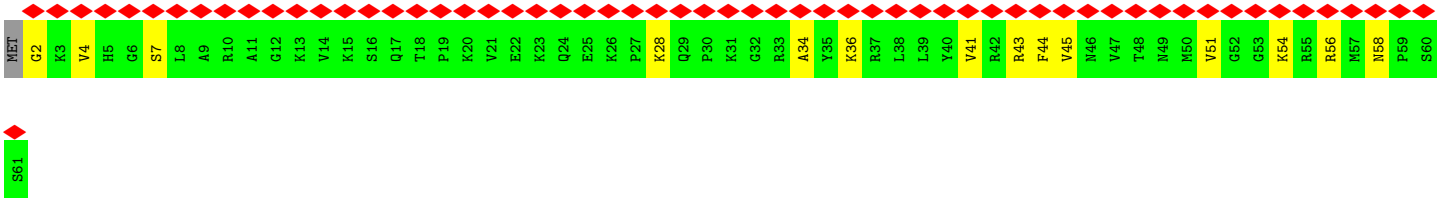
Chain Aj:



• Molecule 32: Small ribosomal subunit protein eS30B

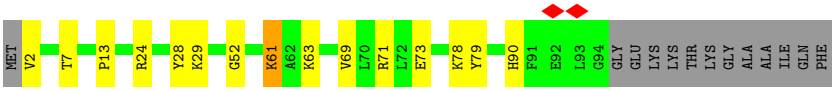
Chain Ak:





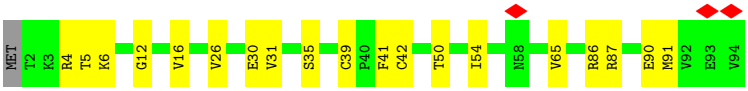
• Molecule 33: Large ribosomal subunit protein eL42

Chain B0:



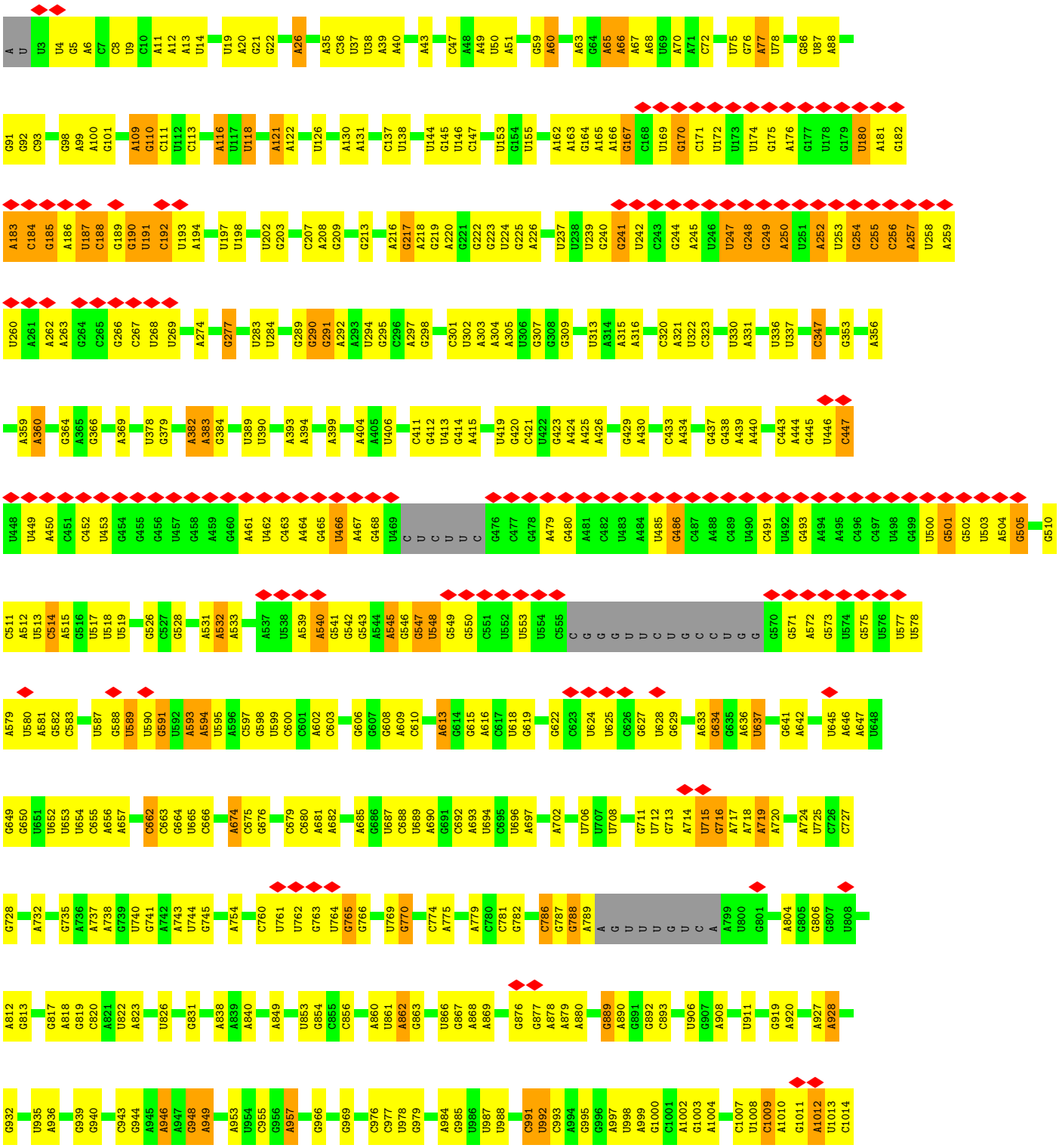
• Molecule 34: Large ribosomal subunit protein eL43A

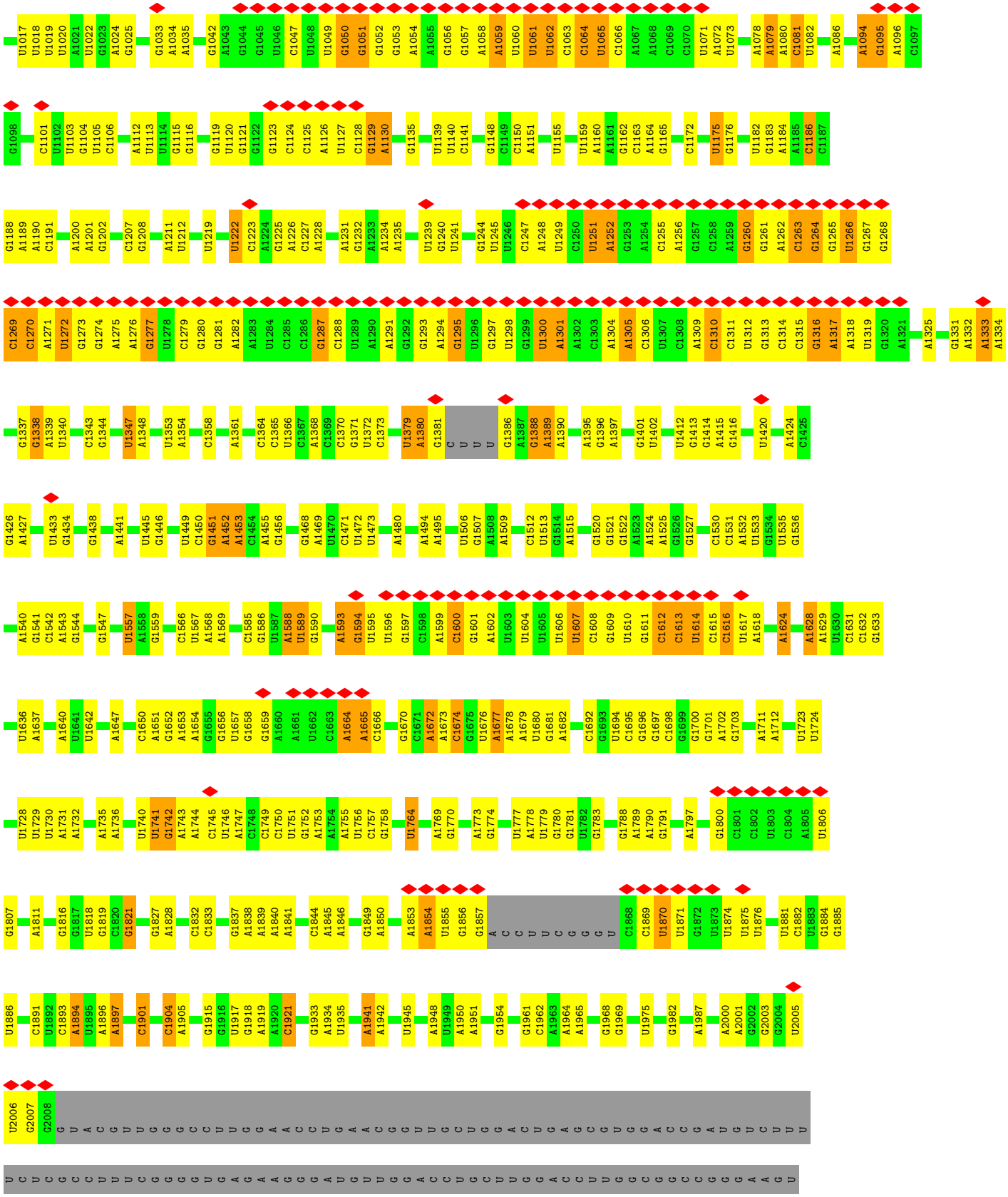
Chain B1:

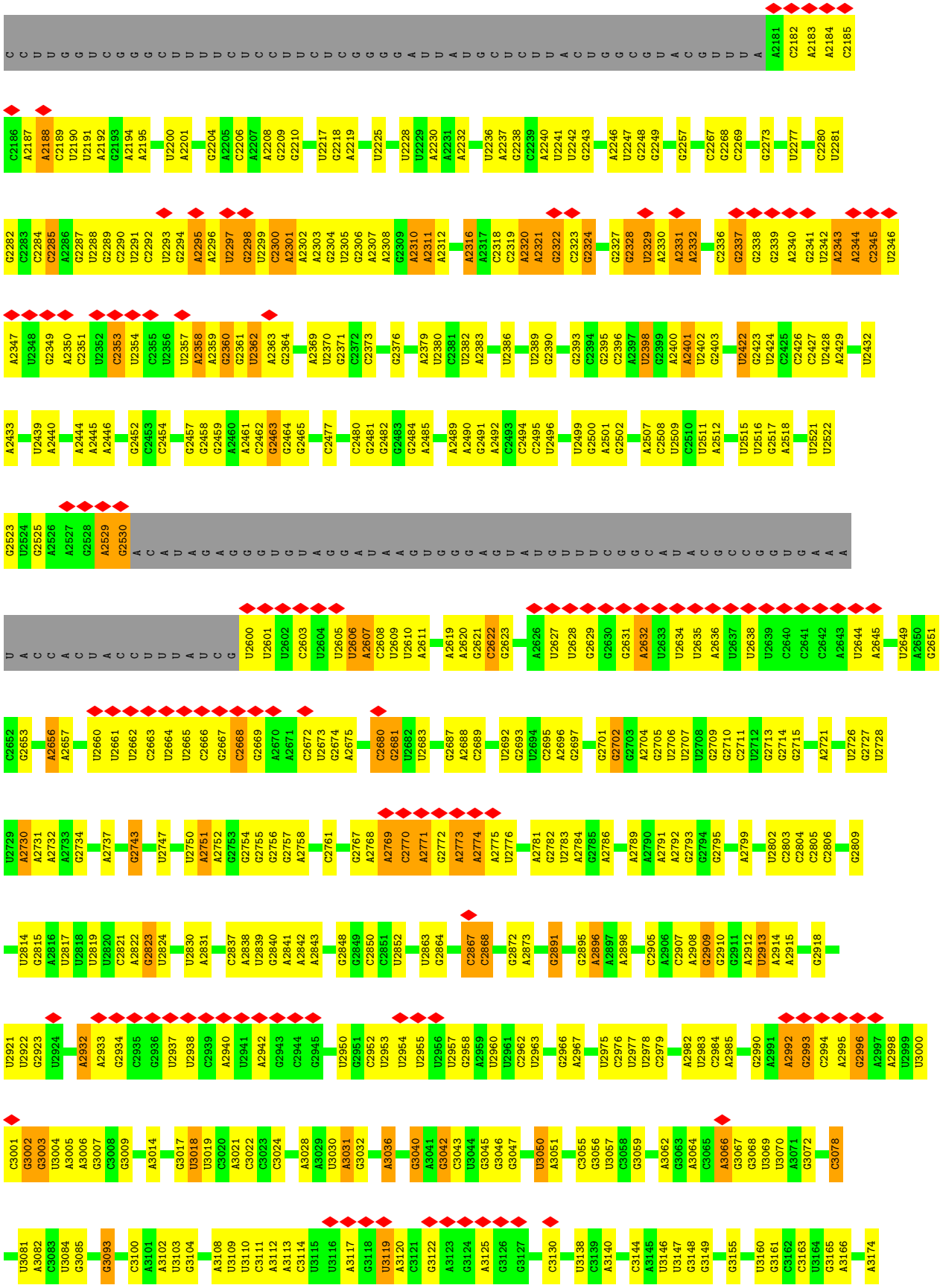


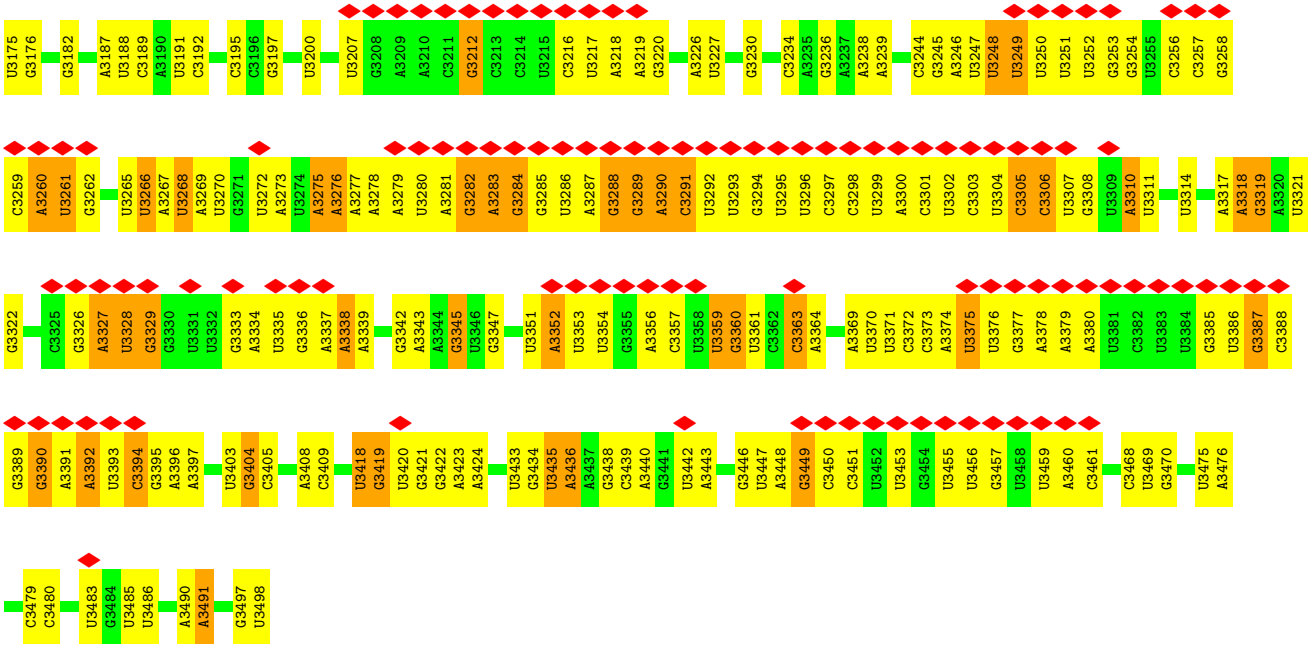
• Molecule 35: 28S ribosomal RNA

Chain B2:



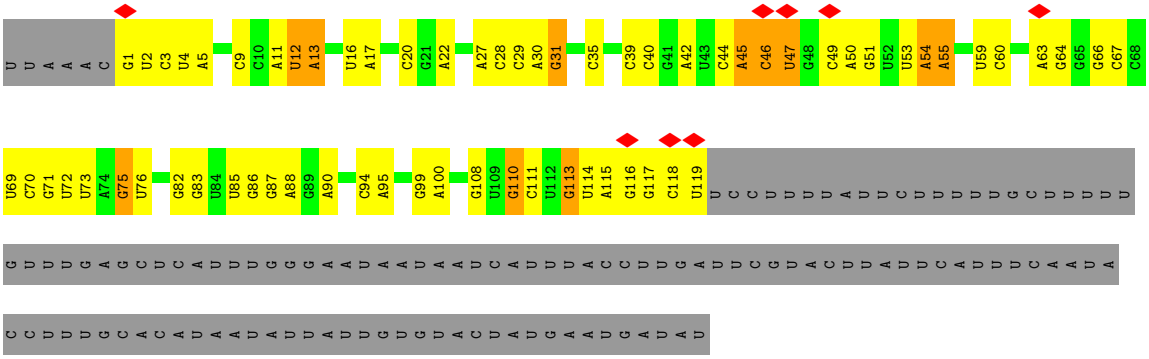






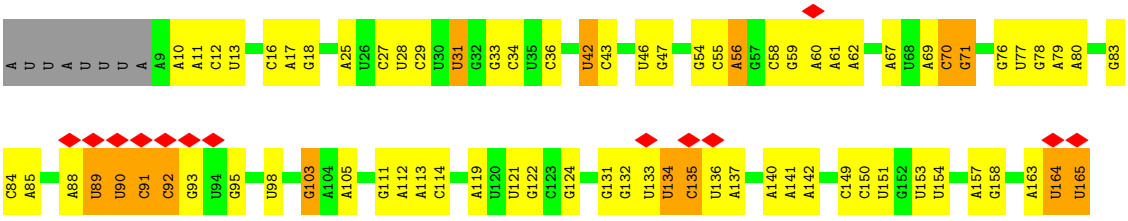
• Molecule 36: 5S ribosomal RNA

Chain B3:



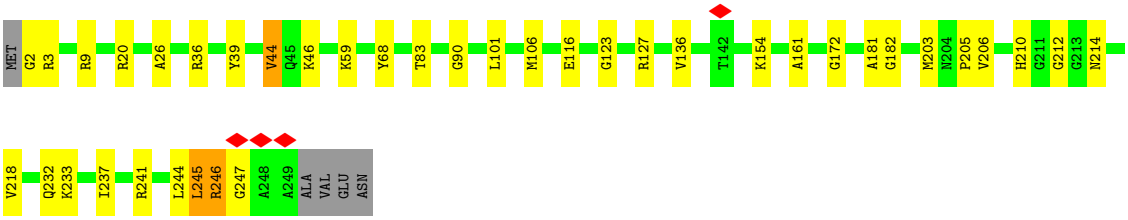
• Molecule 37: 5.8S ribosomal RNA

Chain B4:



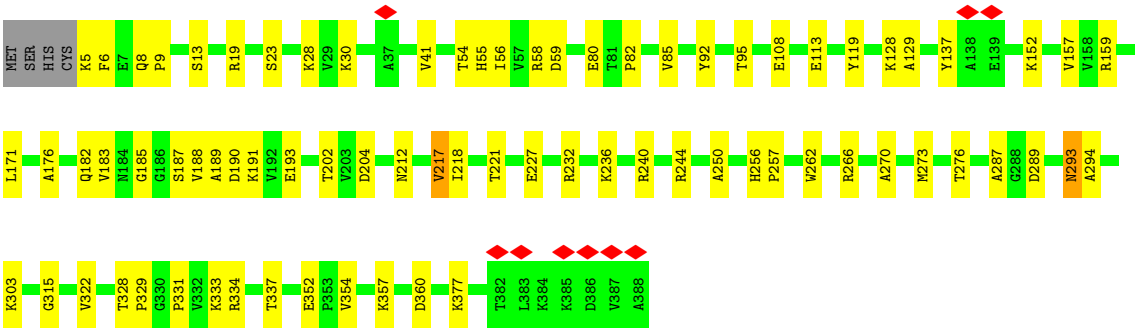
• Molecule 38: Large ribosomal subunit protein uL2C

Chain BN:



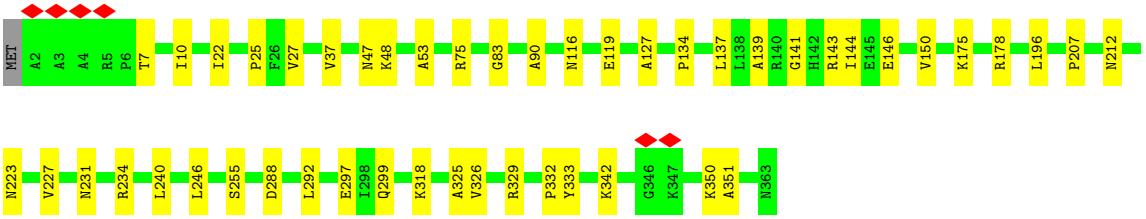
• Molecule 39: Large ribosomal subunit protein uL3A

Chain BO:



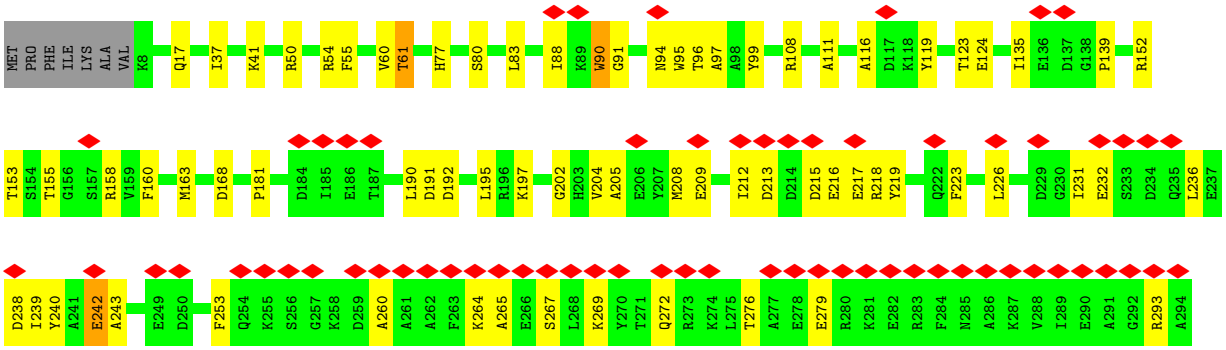
• Molecule 40: Large ribosomal subunit protein uL4A

Chain BP:



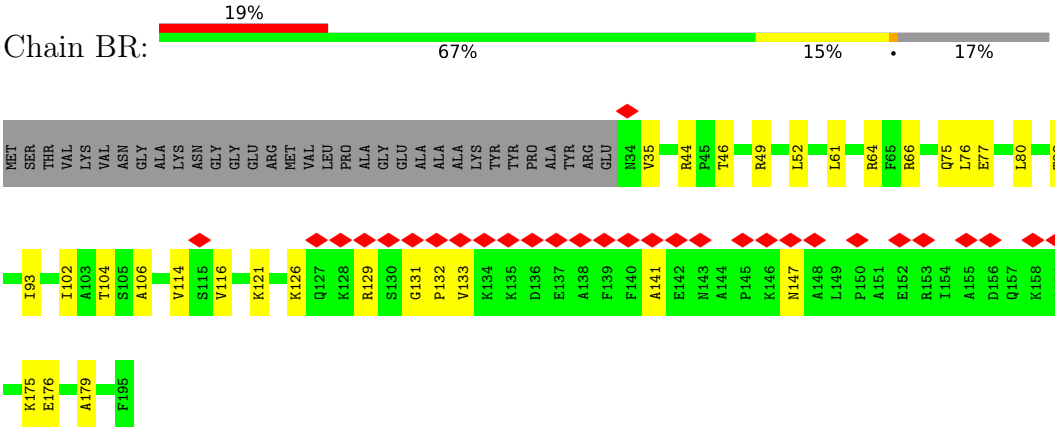
• Molecule 41: Large ribosomal subunit protein uL18B

Chain BQ:



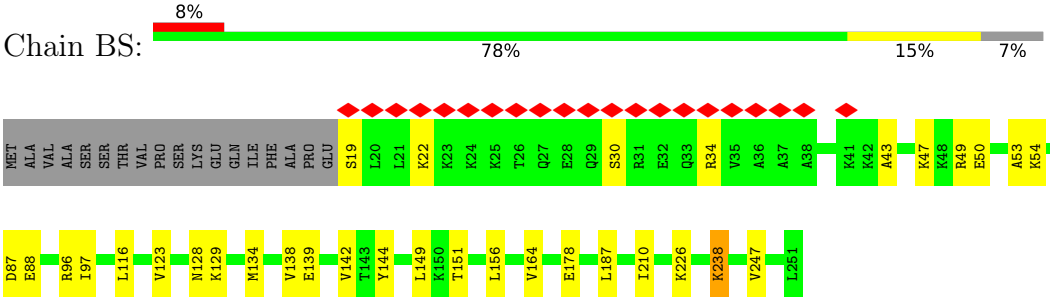
• Molecule 42: Large ribosomal subunit protein eL6

Chain BR:



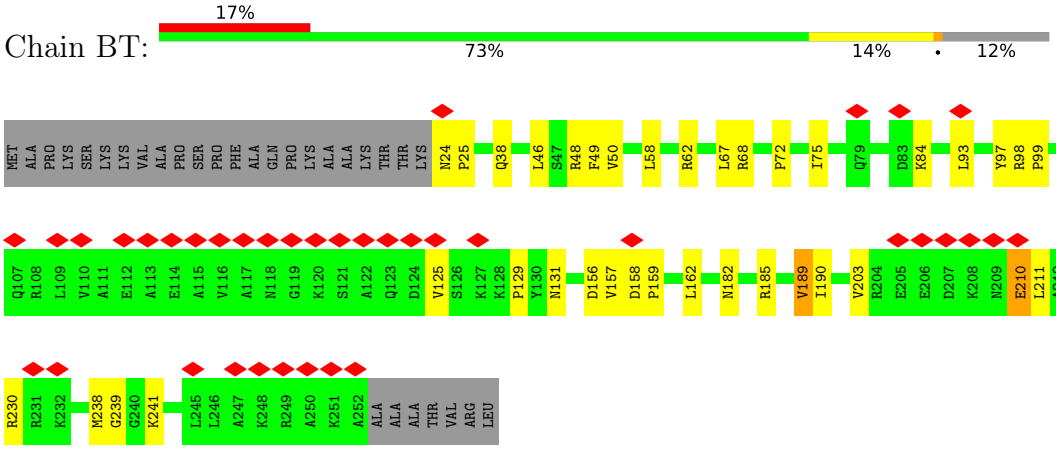
• Molecule 43: Large ribosomal subunit protein uL30C

Chain BS:



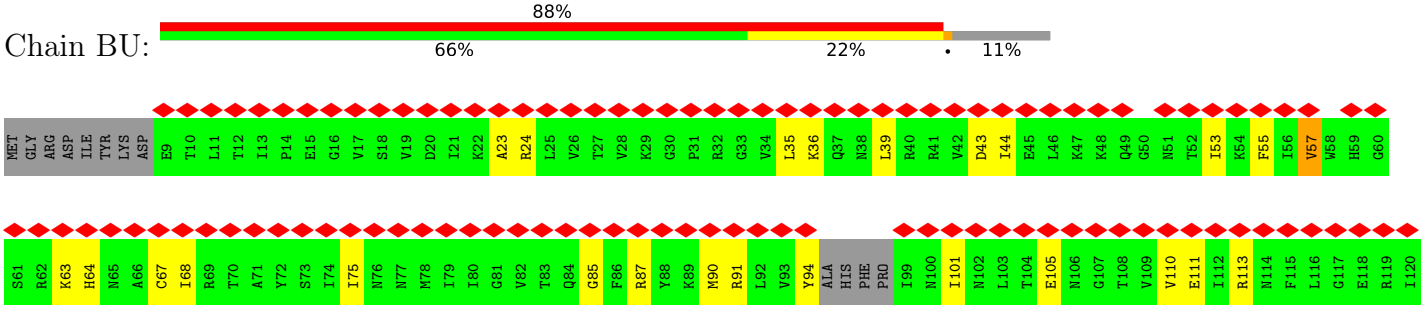
• Molecule 44: Large ribosomal subunit protein eL8

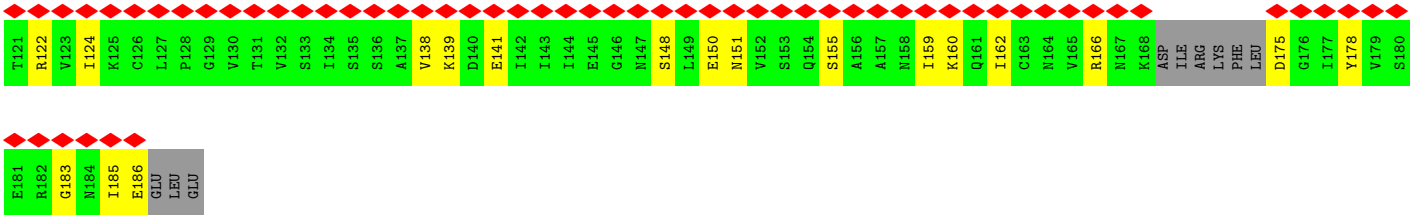
Chain BT:



• Molecule 45: Large ribosomal subunit protein uL6B

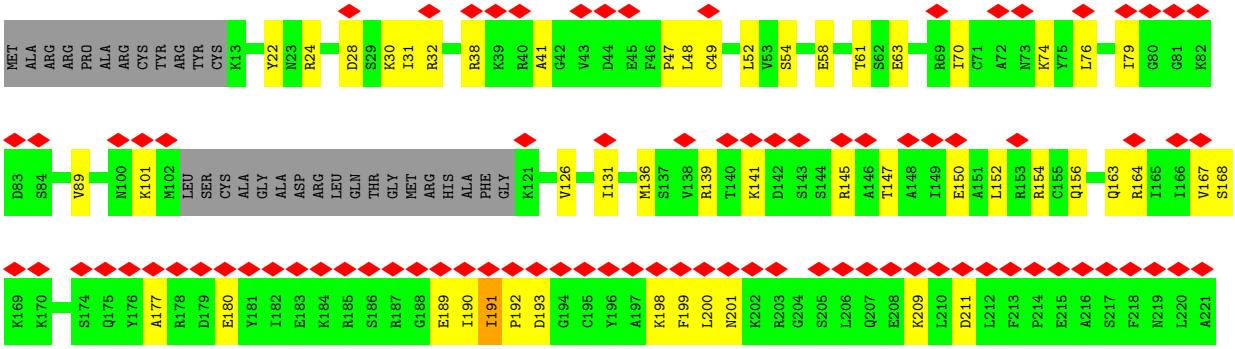
Chain BU:





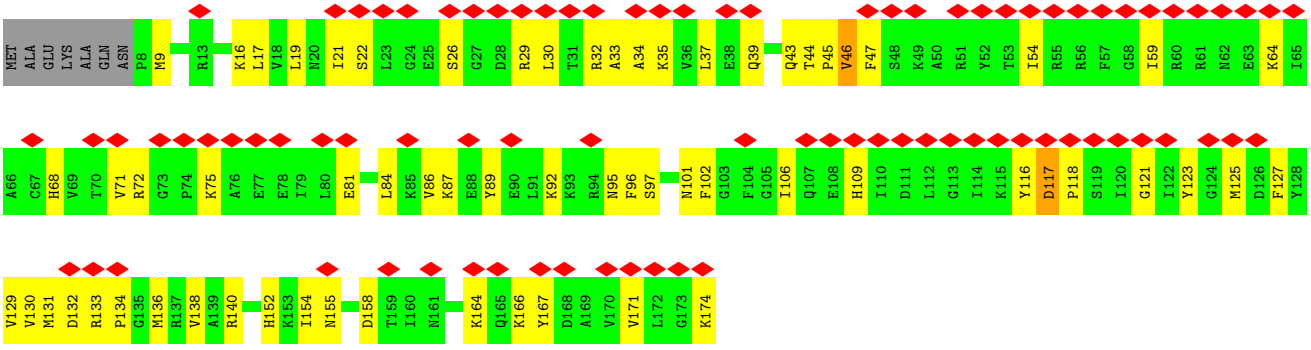
• Molecule 46: Large ribosomal subunit protein uL16A

Chain BV:



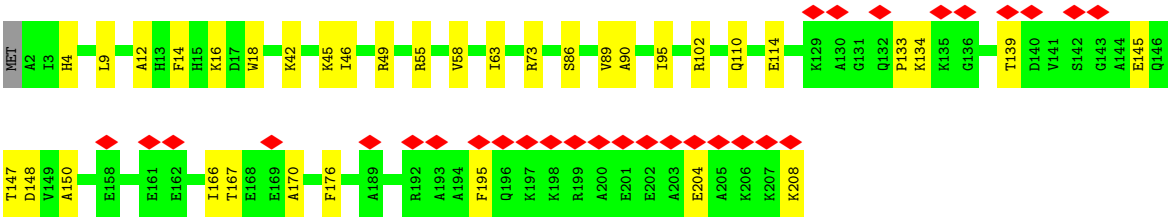
• Molecule 47: Large ribosomal subunit protein uL5A

Chain BW:



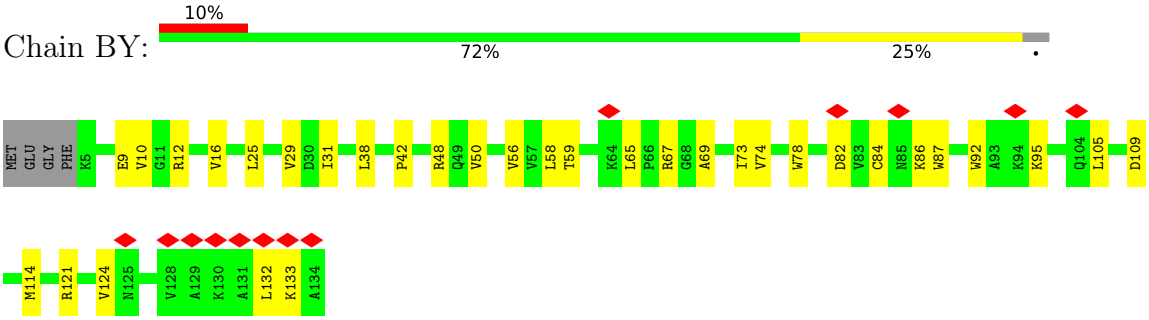
• Molecule 48: Large ribosomal subunit protein eL13

Chain BX:



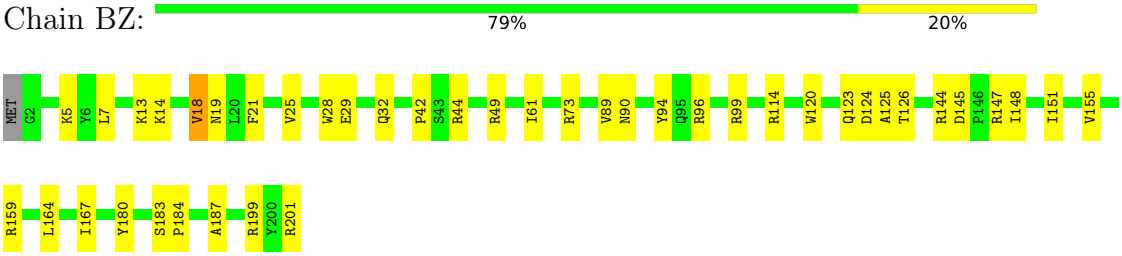
• Molecule 49: Large ribosomal subunit protein eL14

Chain BY:



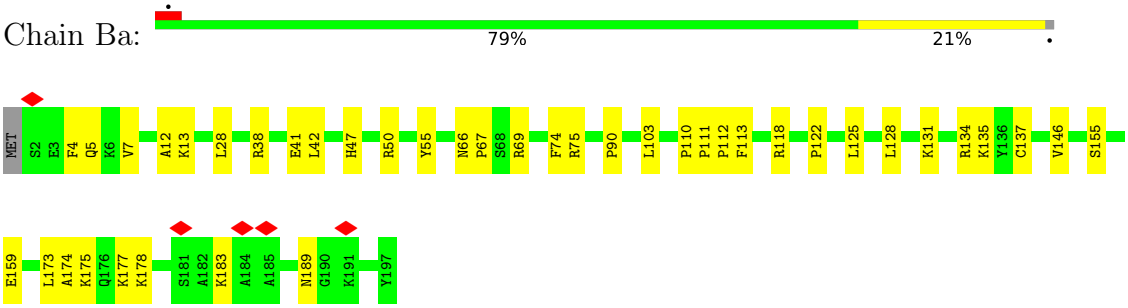
• Molecule 50: Large ribosomal subunit protein eL15B

Chain BZ:



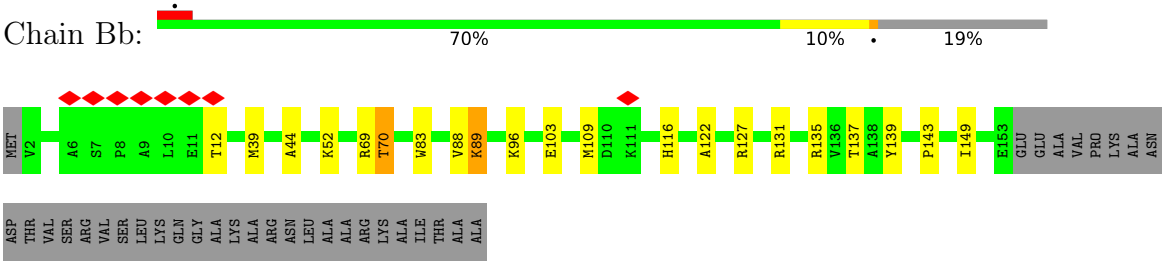
• Molecule 51: Large ribosomal subunit protein uL13A

Chain Ba:



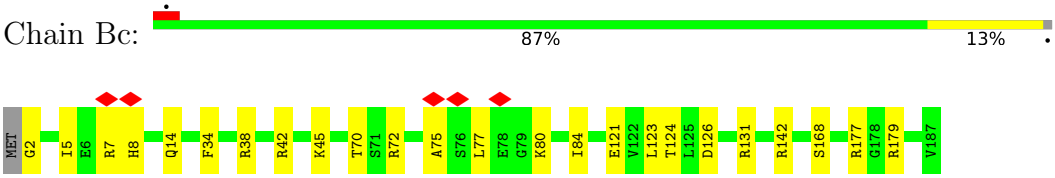
• Molecule 52: Large ribosomal subunit protein uL22A

Chain Bb:



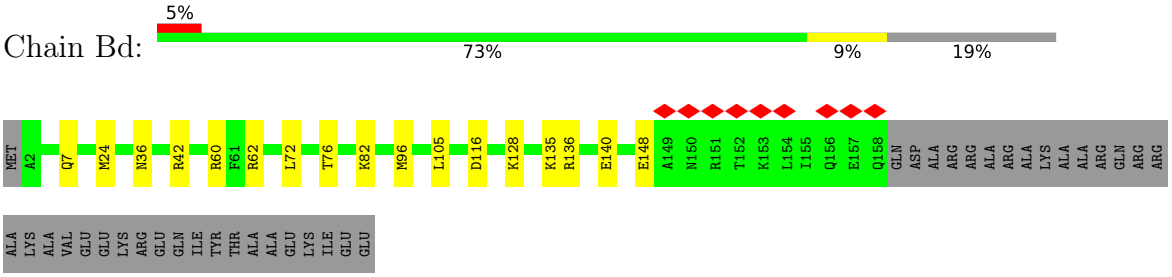
• Molecule 53: Large ribosomal subunit protein eL18B

Chain Bc:



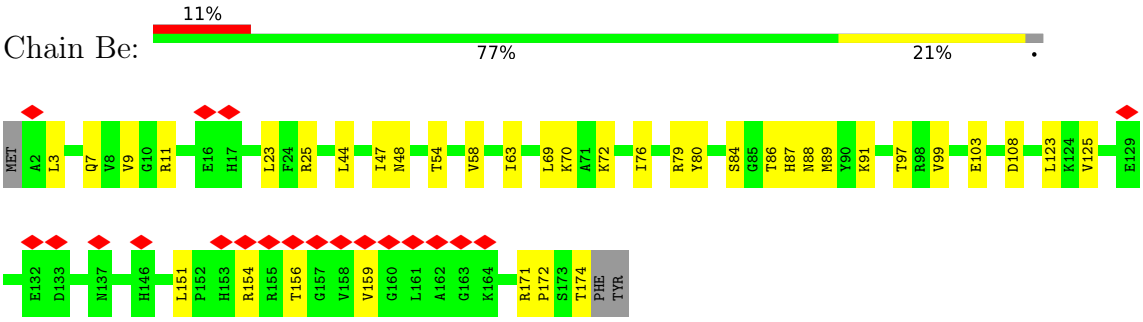
• Molecule 54: Large ribosomal subunit protein eL19B

Chain Bd:



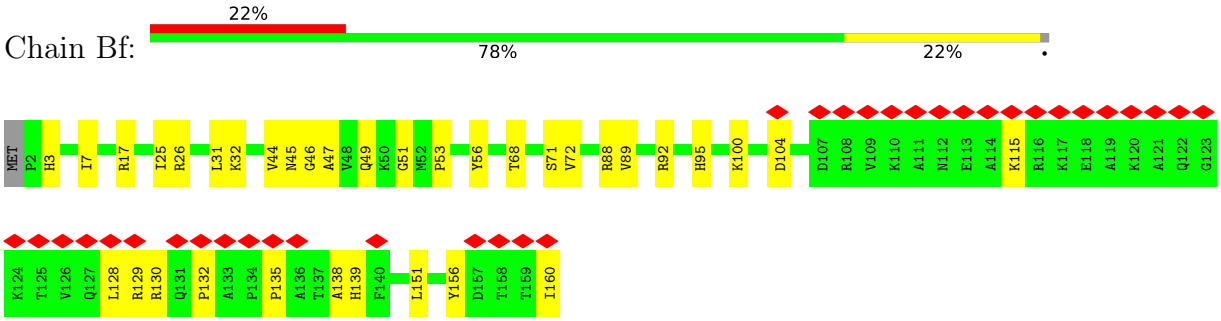
• Molecule 55: Large ribosomal subunit protein eL20A

Chain Be:



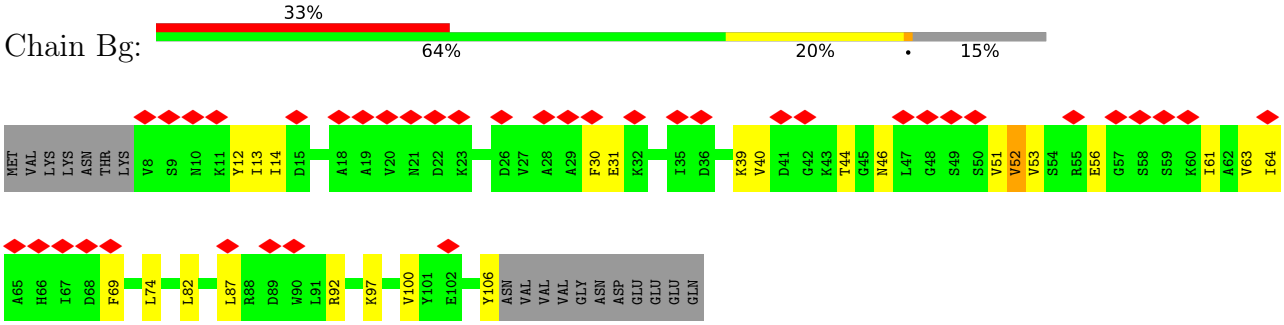
• Molecule 56: Large ribosomal subunit protein eL21B

Chain Bf:



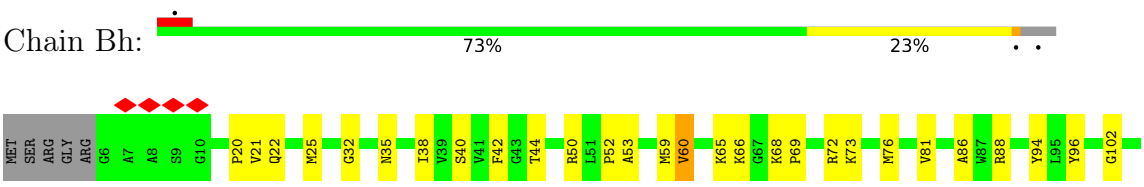
• Molecule 57: Large ribosomal subunit protein eL22

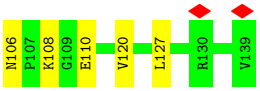
Chain Bg:



• Molecule 58: Large ribosomal subunit protein uL14B

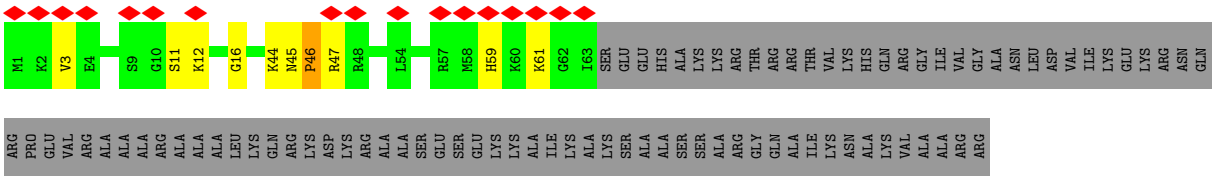
Chain Bh:





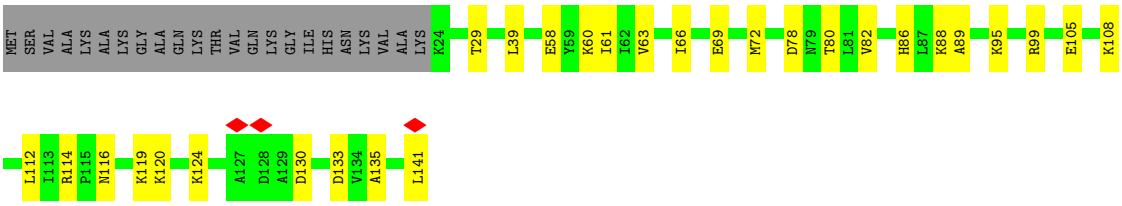
• Molecule 59: Large ribosomal subunit protein eL24B

Chain Bi:



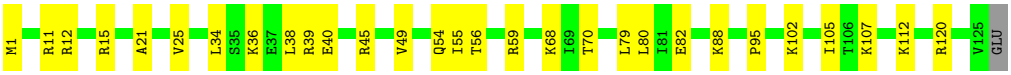
• Molecule 60: Large ribosomal subunit protein uL23A

Chain Bj:



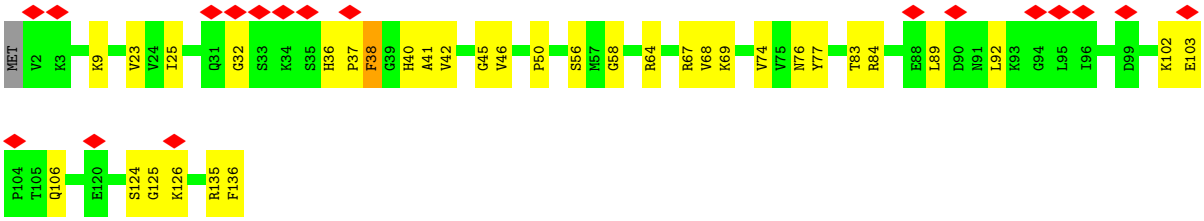
• Molecule 61: Large ribosomal subunit protein uL24

Chain Bk:



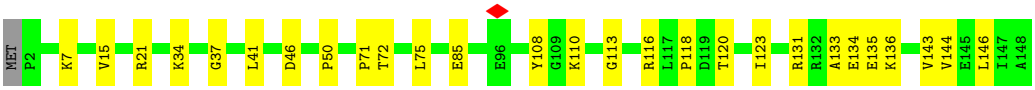
• Molecule 62: Large ribosomal subunit protein eL27A

Chain Bl:



• Molecule 63: Large ribosomal subunit protein uL15B

Chain Bm:

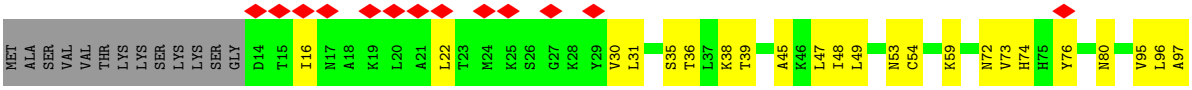


• Molecule 64: Large ribosomal subunit protein eL29

Chain Bn:

• Molecule 65: Large ribosomal subunit protein eL30A

Chain Bo:

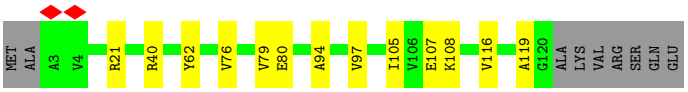


• Molecule 66: Large ribosomal subunit protein eL31

Chain Bp:

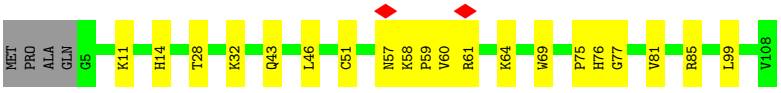
• Molecule 67: Large ribosomal subunit protein eL32A

Chain Bq:



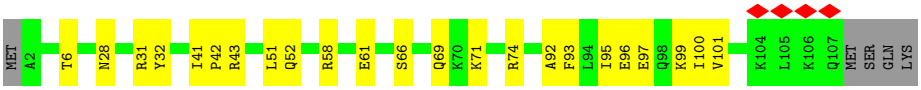
• Molecule 68: Large ribosomal subunit protein eL33A

Chain Br:



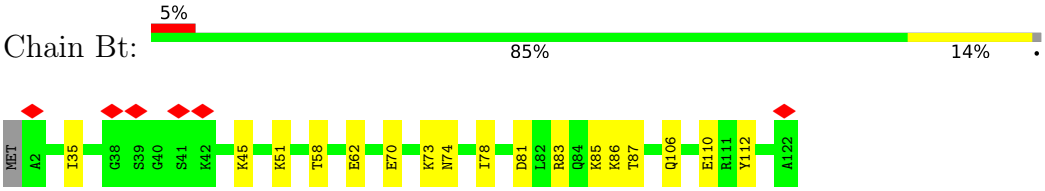
• Molecule 69: Large ribosomal subunit protein eL34B

Chain Bs:



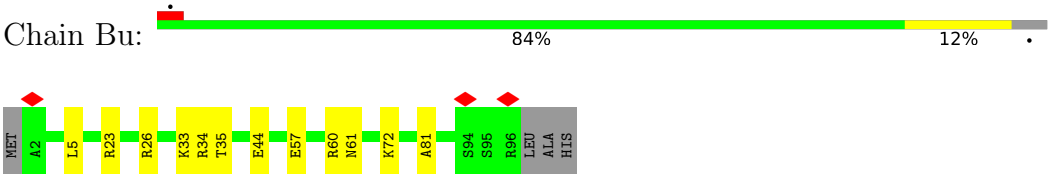
• Molecule 70: Large ribosomal subunit protein uL29

Chain Bt:



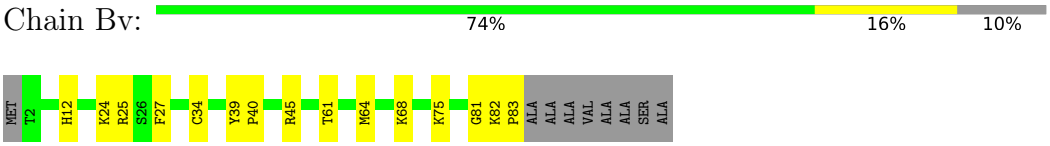
• Molecule 71: Large ribosomal subunit protein eL36B

Chain Bu:



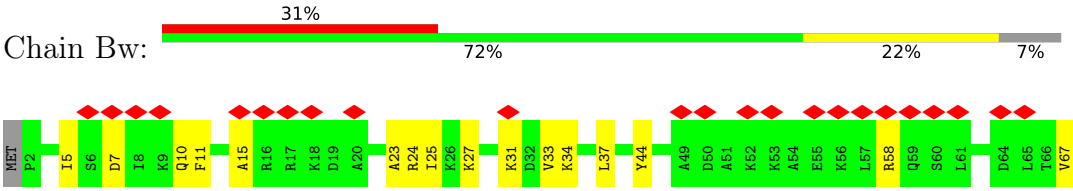
• Molecule 72: Large ribosomal subunit protein eL37B

Chain Bv:



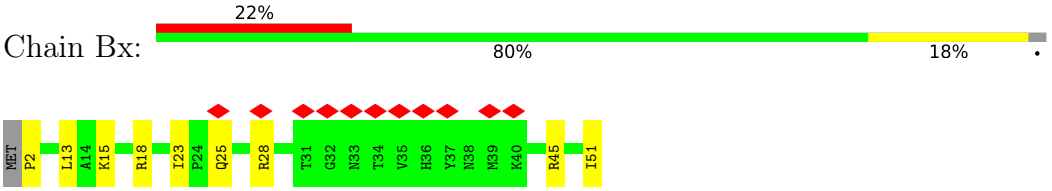
• Molecule 73: Large ribosomal subunit protein eL38A

Chain Bw:



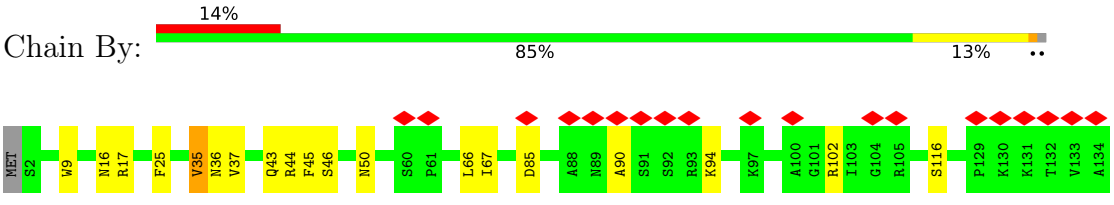
• Molecule 74: Large ribosomal subunit protein eL39

Chain Bx:



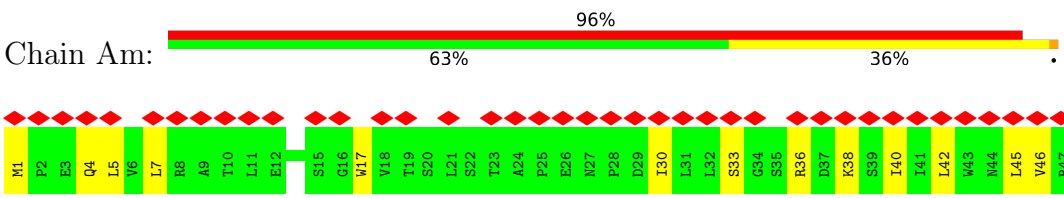
• Molecule 75: Large ribosomal subunit protein eL28

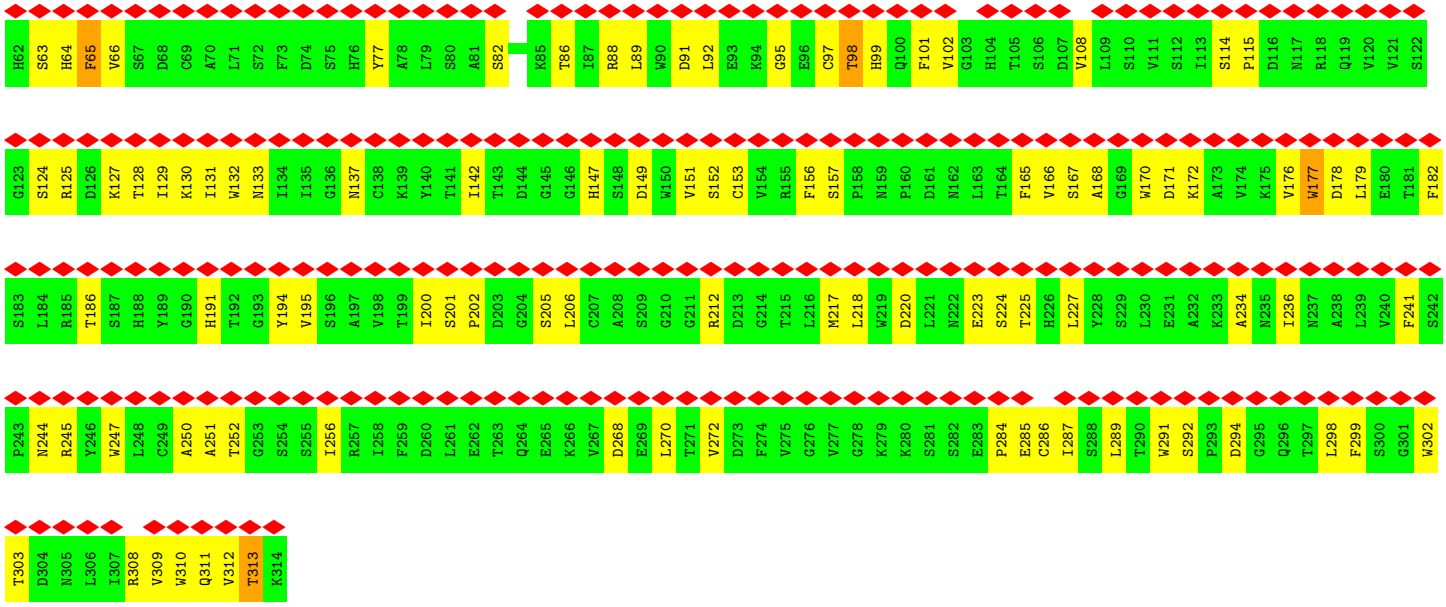
Chain By:



• Molecule 76: Small ribosomal subunit protein RACK1

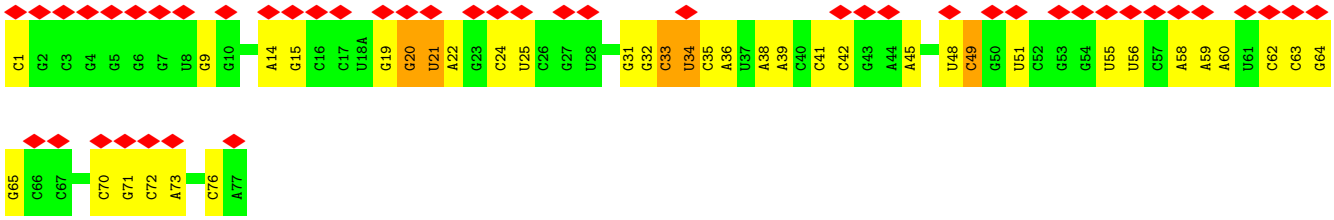
Chain Am:





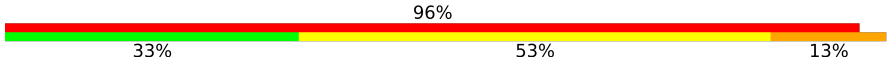
- Molecule 77: tRNA

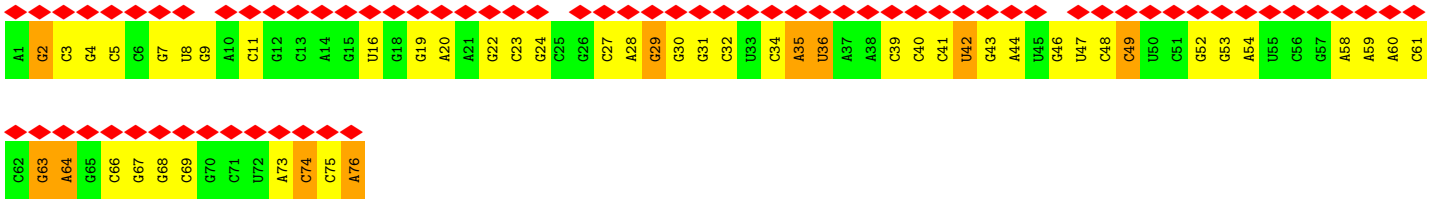
Chain Sm:



- Molecule 78: A/P tRNA

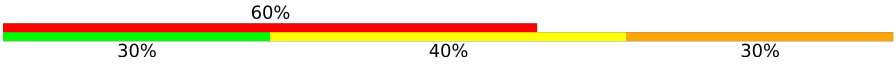
Chain Sn:

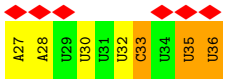




- Molecule 79: mRNA

Chain S3:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	58736	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 ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	1600	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	2.723	Depositor
Minimum map value	-1.267	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.090	Depositor
Recommended contour level	0.27	Depositor
Map size (Å)	424.96, 424.96, 424.96	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.83, 0.83, 0.83	Depositor

5 Model quality

5.1 Standard geometry

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

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	AA	0.08	0/40663	0.22	0/63334
2	AD	0.10	0/1635	0.30	0/2228
3	AE	0.09	0/1756	0.25	0/2358
4	AF	0.09	0/1695	0.31	2/2297 (0.1%)
5	AG	0.09	0/1726	0.28	0/2316
6	AH	0.12	0/2125	0.35	0/2858
7	AI	0.23	1/1577 (0.1%)	0.36	1/2123 (0.0%)
8	AJ	0.20	1/1815 (0.1%)	0.26	0/2428
9	AK	0.09	0/1554	0.23	0/2091
10	AL	0.10	0/1534	0.23	0/2050
11	AM	0.18	0/1487	0.31	0/1990
12	AN	0.11	0/769	0.32	0/1043
13	AO	0.09	0/1190	0.25	0/1602
14	AP	0.07	0/892	0.24	0/1208
15	AQ	0.16	0/1208	0.23	0/1624
16	AR	0.11	0/961	0.25	0/1293
17	AS	0.09	0/973	0.29	0/1307
18	AT	0.09	0/1100	0.26	0/1474
19	AU	0.12	0/983	0.34	0/1318
20	AV	0.15	0/1158	0.26	0/1552
21	AW	0.22	0/1139	0.26	0/1531
22	Aa	0.10	0/825	0.33	0/1111
23	Ab	0.07	0/680	0.22	0/918
24	Ac	0.08	0/1042	0.25	0/1399
25	Ad	0.08	0/1115	0.20	0/1489
26	Ae	0.10	0/1093	0.27	0/1453
27	Af	0.17	0/558	0.32	0/750
28	Ag	0.09	0/808	0.24	0/1083
29	Ah	0.23	0/630	0.27	0/845
30	Ai	0.07	0/500	0.23	0/669
31	Aj	0.09	0/458	0.24	0/610
32	Ak	0.07	0/482	0.22	0/639

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	B0	0.08	0/772	0.21	0/1025
34	B1	0.09	0/727	0.27	0/973
35	B2	0.10	0/76870	0.25	0/119823
36	B3	0.10	0/2838	0.24	1/4422 (0.0%)
37	B4	0.09	0/3723	0.23	0/5796
38	BN	0.09	0/1910	0.25	0/2575
39	BO	0.09	0/3116	0.23	0/4190
40	BP	0.09	0/2852	0.22	0/3850
41	BQ	0.13	0/2361	0.28	0/3173
42	BR	0.08	0/1275	0.24	0/1719
43	BS	0.08	0/1929	0.23	0/2583
44	BT	0.16	1/1801 (0.1%)	0.25	0/2430
45	BU	0.07	0/1330	0.23	0/1789
46	BV	0.08	0/1579	0.21	0/2115
47	BW	0.19	0/1369	0.34	0/1830
48	BX	0.08	0/1686	0.21	0/2267
49	BY	0.07	0/1054	0.19	0/1413
50	BZ	0.09	0/1717	0.22	0/2306
51	Ba	0.08	0/1575	0.23	0/2109
52	Bb	0.08	0/1237	0.23	0/1661
53	Bc	0.08	0/1511	0.22	0/2021
54	Bd	0.07	0/1320	0.19	0/1757
55	Be	0.09	0/1458	0.22	0/1961
56	Bf	0.07	0/1314	0.19	0/1771
57	Bg	0.10	0/812	0.31	0/1090
58	Bh	0.09	0/1015	0.26	0/1369
59	Bi	1.29	4/534 (0.7%)	1.66	8/709 (1.1%)
60	Bj	0.11	0/963	0.24	0/1296
61	Bk	0.06	0/1008	0.20	0/1341
62	Bl	0.09	0/1101	0.22	0/1477
63	Bm	0.08	0/1200	0.21	0/1611
64	Bn	0.07	0/503	0.16	0/664
65	Bo	0.14	0/714	0.21	0/961
66	Bp	0.08	0/872	0.23	0/1172
67	Bq	0.08	0/958	0.22	0/1278
68	Br	0.71	3/853 (0.4%)	0.86	9/1146 (0.8%)
69	Bs	0.09	0/870	0.23	0/1165
70	Bt	0.07	0/1008	0.19	0/1340
71	Bu	0.07	0/766	0.19	0/1017
72	Bv	0.08	0/666	0.24	0/881
73	Bw	0.06	0/566	0.18	0/757
74	Bx	0.08	0/447	0.24	0/597
75	By	0.08	0/1045	0.20	0/1404

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\|>5$	RMSZ	$\#\|Z\|>5$
76	Am	0.11	0/2520	0.28	0/3434
77	Sm	0.10	0/1812	0.26	0/2816
78	Sn	0.10	0/1796	0.25	0/2799
79	S3	0.15	0/225	0.44	0/346
All	All	0.13	10/215709 (0.0%)	0.26	21/317220 (0.0%)

All (10) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
59	Bi	46	PRO	CG-CD	-17.91	0.89	1.50
59	Bi	46	PRO	CB-CG	15.92	2.29	1.49
68	Br	59	PRO	N-CD	13.38	1.66	1.47
68	Br	59	PRO	CG-CD	-12.60	1.07	1.50
59	Bi	45	ASN	C-N	11.01	1.46	1.34
59	Bi	46	PRO	N-CD	10.82	1.62	1.47
68	Br	58	LYS	C-N	7.53	1.42	1.33
8	AJ	163	VAL	CA-CB	-5.79	1.51	1.54
44	BT	72	PRO	CA-C	5.72	1.55	1.51
7	AI	121	ARG	CZ-NH2	-5.29	1.26	1.33

All (21) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
59	Bi	46	PRO	CB-CG-CD	-33.15	0.02	106.10
59	Bi	46	PRO	CA-N-CD	-18.69	85.84	112.00
68	Br	59	PRO	N-CD-CG	-17.31	77.24	103.20
59	Bi	46	PRO	N-CA-CB	-10.61	93.44	103.41
68	Br	59	PRO	CA-N-CD	-10.35	97.51	112.00
68	Br	59	PRO	CA-CB-CG	-8.91	87.57	104.50
59	Bi	45	ASN	C-N-CD	8.81	161.12	125.00
59	Bi	46	PRO	N-CD-CG	-7.91	91.33	103.20
59	Bi	45	ASN	CA-C-N	-7.64	111.92	119.87
59	Bi	45	ASN	C-N-CA	-7.64	111.92	119.87
68	Br	59	PRO	N-CA-CB	-7.38	96.62	103.27
59	Bi	46	PRO	CA-CB-CG	-6.64	91.88	104.50
68	Br	58	LYS	CA-C-N	-6.41	112.91	119.83
68	Br	58	LYS	C-N-CA	-6.41	112.91	119.83
68	Br	59	PRO	CB-CG-CD	-6.17	86.36	106.10
4	AF	236	GLN	CA-C-N	5.42	135.03	121.80
4	AF	236	GLN	C-N-CA	5.42	135.03	121.80
68	Br	58	LYS	C-N-CD	5.41	147.20	125.00
68	Br	59	PRO	N-CA-C	5.37	119.30	111.03

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
36	B3	46	C	C5'-C4'-O4'	-5.19	102.02	109.80
7	AI	121	ARG	NE-CZ-NH2	-5.05	114.66	119.20

There are no chirality outliers.

There are no planarity outliers.

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	AA	36359	0	18306	680	0
2	AD	1602	0	1625	42	0
3	AE	1733	0	1816	44	0
4	AF	1660	0	1736	45	0
5	AG	1701	0	1777	45	0
6	AH	2083	0	2192	79	0
7	AI	1559	0	1624	63	0
8	AJ	1784	0	1879	55	0
9	AK	1530	0	1609	25	0
10	AL	1506	0	1538	45	0
11	AM	1462	0	1562	63	0
12	AN	748	0	735	13	0
13	AO	1164	0	1201	34	0
14	AP	884	0	872	11	0
15	AQ	1184	0	1252	35	0
16	AR	949	0	986	37	0
17	AS	954	0	993	32	0
18	AT	1082	0	1142	48	0
19	AU	972	0	1011	35	0
20	AV	1144	0	1197	30	0
21	AW	1119	0	1130	49	0
22	Aa	815	0	875	26	0
23	Ab	672	0	660	13	0
24	Ac	1028	0	1080	17	0
25	Ad	1095	0	1149	24	0
26	Ae	1078	0	1133	47	0
27	Af	551	0	583	21	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
28	Ag	795	0	832	25	0
29	Ah	619	0	635	25	0
30	Ai	498	0	539	13	0
31	Aj	447	0	443	10	0
32	Ak	475	0	517	9	0
33	B0	758	0	815	9	0
34	B1	718	0	751	14	0
35	B2	68676	0	34524	991	0
36	B3	2539	0	1283	56	0
37	B4	3332	0	1684	50	0
38	BN	1872	0	1917	35	0
39	BO	3050	0	3125	59	0
40	BP	2799	0	2925	38	0
41	BQ	2312	0	2272	63	0
42	BR	1251	0	1337	21	0
43	BS	1897	0	1984	26	0
44	BT	1772	0	1866	30	0
45	BU	1319	0	1389	31	0
46	BV	1549	0	1591	34	0
47	BW	1346	0	1397	56	0
48	BX	1654	0	1705	25	0
49	BY	1038	0	1115	22	0
50	BZ	1676	0	1712	30	0
51	Ba	1545	0	1641	34	0
52	Bb	1212	0	1239	15	0
53	Bc	1487	0	1597	15	0
54	Bd	1301	0	1393	14	0
55	Be	1423	0	1488	29	0
56	Bf	1286	0	1310	25	0
57	Bg	798	0	834	21	0
58	Bh	999	0	1047	20	0
59	Bi	523	0	555	13	0
60	Bj	947	0	1012	26	0
61	Bk	998	0	1090	19	0
62	Bl	1078	0	1154	26	0
63	Bm	1171	0	1215	20	0
64	Bn	495	0	504	6	0
65	Bo	705	0	746	16	0
66	Bp	857	0	891	10	0
67	Bq	944	0	1005	10	0
68	Br	831	0	858	11	0
69	Bs	858	0	925	17	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
70	Bt	999	0	1092	14	0
71	Bu	759	0	840	10	0
72	Bv	652	0	663	10	0
73	Bw	560	0	608	10	0
74	Bx	436	0	463	10	0
75	By	1031	0	1080	20	0
76	Am	2458	0	2370	78	0
77	Sm	1625	0	826	26	0
78	Sn	1606	0	816	36	0
79	S3	204	0	104	5	0
80	AA	1	0	0	0	0
80	Ag	1	0	0	0	0
80	Ah	1	0	0	0	0
80	B0	1	0	0	0	0
80	B1	1	0	0	0	0
80	Bv	1	0	0	0	0
All	All	200604	0	147387	3376	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 (3376) 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)
59:Bi:46:PRO:CG	59:Bi:46:PRO:N	1.87	1.37
11:AM:82:ARG:HH12	11:AM:149:ARG:NH1	1.21	1.34
7:AI:121:ARG:HH22	7:AI:145:ARG:CZ	1.47	1.27
7:AI:121:ARG:HH22	7:AI:145:ARG:NE	1.40	1.19
21:AW:99:VAL:O	21:AW:103:VAL:HG23	1.45	1.17
59:Bi:46:PRO:CD	59:Bi:46:PRO:HG2	1.66	1.17
11:AM:82:ARG:NH1	11:AM:149:ARG:HH11	1.44	1.15
77:Sm:15:G:N2	77:Sm:49:C:H42	1.45	1.14
1:AA:1034:A:H5"	15:AQ:106:ARG:HH22	1.11	1.12
77:Sm:15:G:H22	77:Sm:49:C:N4	1.48	1.12
29:Ah:74:MET:HE1	29:Ah:75:GLU:HG3	1.23	1.11
36:B3:46:C:H5'	41:BQ:158:ARG:NH1	1.63	1.11
76:Am:42:LEU:HD21	76:Am:92:LEU:HD23	1.33	1.09
59:Bi:46:PRO:CG	59:Bi:46:PRO:CB	2.29	1.09
59:Bi:46:PRO:CD	59:Bi:46:PRO:HG3	1.66	1.09
21:AW:29:THR:OG1	21:AW:109:LYS:NZ	1.87	1.08
26:Ae:122:GLY:N	26:Ae:124:ARG:HH21	1.50	1.08

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:Bi:46:PRO:CG	59:Bi:46:PRO:HD3	1.57	1.07
59:Bi:46:PRO:CG	59:Bi:46:PRO:HD2	1.57	1.05
6:AH:161:LYS:HZ3	6:AH:173:ILE:HD11	1.23	1.04
47:BW:33:ALA:O	47:BW:37:LEU:HD12	1.57	1.04
29:Ah:74:MET:CE	29:Ah:75:GLU:HG3	1.88	1.03
11:AM:82:ARG:NH1	11:AM:149:ARG:NH1	2.01	1.02
20:AV:26:VAL:HG12	20:AV:30:MET:HE1	1.43	1.00
20:AV:14:ARG:HH21	20:AV:17:ASN:H	1.09	1.00
34:B1:39:CYS:HB3	34:B1:42:CYS:SG	2.00	1.00
7:AI:121:ARG:NH2	7:AI:145:ARG:CZ	2.24	0.99
39:BO:19:ARG:HD3	39:BO:273:MET:HE1	1.42	0.99
76:Am:42:LEU:HD21	76:Am:92:LEU:CD2	1.92	0.99
35:B2:167:G:H1	35:B2:268:U:H3	1.00	0.98
35:B2:1298:U:H3	35:B2:1306:C:N4	1.60	0.98
1:AA:1540:G:H1	1:AA:1549:U:H3	0.98	0.97
1:AA:1719:U:H3	1:AA:1765:G:H1	1.09	0.96
35:B2:2304:G:H1	35:B2:2316:A:N6	1.64	0.95
8:AJ:55:GLY:H	8:AJ:63:MET:HE1	1.31	0.94
7:AI:121:ARG:NH2	7:AI:145:ARG:NE	2.14	0.94
1:AA:1049:C:HO2'	24:Ac:2:VAL:N	1.65	0.93
8:AJ:55:GLY:H	8:AJ:63:MET:CE	1.81	0.93
36:B3:2:U:H3	36:B3:117:G:H1	0.98	0.92
17:AS:134:THR:HG22	17:AS:135:LYS:H	1.32	0.92
21:AW:27:LYS:O	21:AW:109:LYS:HE3	1.70	0.92
44:BT:58:LEU:HD21	50:BZ:29:GLU:OE2	1.69	0.91
65:Bo:47:LEU:HD23	65:Bo:106:ILE:CG2	2.01	0.91
41:BQ:208:MET:HE2	41:BQ:223:PHE:CE2	2.06	0.90
19:AU:17:ILE:HD12	19:AU:58:MET:HE3	1.52	0.89
7:AI:36:LEU:HD21	7:AI:145:ARG:CZ	2.03	0.89
77:Sm:51:U:H3	77:Sm:65:G:H1	1.19	0.89
8:AJ:1:MET:HG3	8:AJ:107:ALA:O	1.72	0.89
59:Bi:46:PRO:CG	59:Bi:46:PRO:CD	0.89	0.89
26:Ae:122:GLY:H	26:Ae:124:ARG:HH21	1.16	0.89
1:AA:1230:G:H1	1:AA:1470:U:H3	1.16	0.88
35:B2:2304:G:H1	35:B2:2316:A:H61	0.90	0.88
8:AJ:55:GLY:N	8:AJ:63:MET:HE1	1.86	0.88
1:AA:706:U:H3	1:AA:752:G:H1	1.22	0.88
36:B3:46:C:C5'	41:BQ:158:ARG:NH1	2.37	0.88
29:Ah:74:MET:HE1	29:Ah:75:GLU:CG	2.04	0.87
1:AA:631:G:H21	1:AA:986:A:H62	1.22	0.87
11:AM:82:ARG:CZ	11:AM:149:ARG:HH11	1.87	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:AO:77:MET:SD	13:AO:80:THR:OG1	2.32	0.86
1:AA:922:A:HO2'	1:AA:1012:G:HO2'	1.22	0.86
41:BQ:37:ILE:O	41:BQ:37:ILE:HG13	1.74	0.86
11:AM:82:ARG:HH12	11:AM:149:ARG:HH11	0.90	0.85
56:Bf:45:ASN:H	56:Bf:95:HIS:HD2	1.18	0.85
1:AA:457:A:C5	6:AH:66:MET:HE1	2.11	0.85
60:Bj:86:HIS:HB3	60:Bj:88:LYS:HZ2	1.40	0.85
20:AV:26:VAL:O	20:AV:30:MET:SD	2.35	0.84
1:AA:1034:A:H5"	15:AQ:106:ARG:NH2	1.92	0.84
7:AI:121:ARG:HH22	7:AI:145:ARG:NH2	1.75	0.84
47:BW:101:ASN:OD1	47:BW:130:VAL:HG13	1.78	0.83
1:AA:965:C:H1'	15:AQ:104:ARG:NH2	1.93	0.83
35:B2:445:G:H1	35:B2:647:A:H61	1.23	0.83
48:BX:110:GLN:O	48:BX:114:GLU:HG2	1.78	0.83
1:AA:841:U:H3	1:AA:861:G:H1	1.25	0.82
51:Ba:155:SER:O	51:Ba:159:GLU:HG3	1.79	0.82
46:BV:101:LYS:HE2	78:Sn:2:G:H5'	1.61	0.82
21:AW:29:THR:HG21	21:AW:109:LYS:HZ2	1.41	0.81
18:AT:79:ARG:HH22	18:AT:111:ARG:HB2	1.45	0.81
1:AA:153:G:H1	1:AA:161:U:H3	1.28	0.81
29:Ah:29:ARG:HG2	29:Ah:29:ARG:HH11	1.42	0.81
35:B2:2525:G:H1	35:B2:2606:U:H3	1.27	0.81
8:AJ:55:GLY:O	8:AJ:63:MET:HE3	1.81	0.81
26:Ae:122:GLY:H	26:Ae:124:ARG:NH2	1.80	0.81
35:B2:182:G:H22	35:B2:248:G:H1	1.29	0.81
17:AS:134:THR:HG22	17:AS:135:LYS:N	1.96	0.80
8:AJ:54:GLY:HA3	8:AJ:63:MET:HE1	1.63	0.80
26:Ae:122:GLY:N	26:Ae:124:ARG:NH2	2.29	0.80
35:B2:2289:G:H1	35:B2:2328:G:H22	1.27	0.80
29:Ah:74:MET:HE3	29:Ah:75:GLU:N	1.95	0.80
33:B0:24:ARG:NH2	33:B0:73:GLU:HG2	1.97	0.80
6:AH:81:THR:HG22	6:AH:81:THR:O	1.80	0.79
62:Bl:32:GLY:HA3	62:Bl:37:PRO:HA	1.63	0.79
27:Af:83:ARG:HG2	27:Af:85:PRO:HD2	1.64	0.79
35:B2:713:G:H1	40:BP:234:ARG:HH22	1.30	0.79
35:B2:1298:U:H3	35:B2:1306:C:H42	0.83	0.79
17:AS:134:THR:CG2	17:AS:135:LYS:H	1.96	0.79
38:BN:101:LEU:HB2	38:BN:106:MET:HE3	1.65	0.79
56:Bf:45:ASN:H	56:Bf:95:HIS:CD2	2.01	0.78
16:AR:22:PHE:HB3	16:AR:29:PHE:HB2	1.65	0.78
17:AS:119:MET:HA	17:AS:119:MET:HE3	1.66	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1584:A:N6	1:AA:1609:C:O2'	2.17	0.78
11:AM:59:LEU:HD11	11:AM:72:GLU:HG3	1.66	0.78
1:AA:1182:G:H5"	7:AI:77:MET:HE1	1.66	0.77
76:Am:244:ASN:HD22	76:Am:245:ARG:HH11	1.30	0.77
20:AV:26:VAL:HG12	20:AV:30:MET:CE	2.14	0.77
1:AA:41:A:HO2'	1:AA:440:A:HO2'	1.30	0.77
35:B2:4:U:H2'	35:B2:5:G:C8	2.19	0.77
1:AA:1629:G:H1	1:AA:1649:U:H3	1.30	0.77
55:Be:80:TYR:CE2	55:Be:89:MET:HE3	2.20	0.77
35:B2:680:C:H2'	35:B2:681:A:H8	1.51	0.76
21:AW:29:THR:CG2	21:AW:109:LYS:HZ2	1.98	0.76
2:AD:62:LEU:HD22	23:Ab:79:LEU:HD21	1.68	0.76
29:Ah:23:GLN:OE1	29:Ah:29:ARG:NH2	2.17	0.76
77:Sm:15:G:H22	77:Sm:49:C:H42	0.77	0.76
7:AI:22:ASN:HB3	7:AI:93:LYS:NZ	2.01	0.76
1:AA:1593:U:HO2'	1:AA:1638:A:HO2'	1.33	0.76
25:Ad:21:ARG:HD2	25:Ad:27:TYR:CE1	2.21	0.75
1:AA:1102:A:H5'	4:AF:163:SER:HB3	1.69	0.75
1:AA:915:A:H3'	1:AA:916:G:H21	1.50	0.75
6:AH:31:PRO:HA	6:AH:81:THR:CG2	2.16	0.75
8:AJ:55:GLY:N	8:AJ:63:MET:CE	2.48	0.75
52:Bb:39:MET:HE2	52:Bb:44:ALA:HA	1.68	0.75
35:B2:1951:A:H61	35:B2:2427:C:H42	1.35	0.75
41:BQ:208:MET:HE2	41:BQ:223:PHE:CZ	2.21	0.75
1:AA:922:A:O2'	1:AA:1012:G:O2'	2.04	0.75
1:AA:1415:G:N2	1:AA:1423:C:O2	2.18	0.75
6:AH:161:LYS:NZ	6:AH:173:ILE:HD11	2.00	0.75
65:Bo:47:LEU:HD23	65:Bo:106:ILE:HG22	1.68	0.74
1:AA:1158:A:H5"	28:Ag:2:THR:HG23	1.67	0.74
22:Aa:43:ALA:HB1	22:Aa:50:VAL:HG11	1.68	0.74
50:BZ:183:SER:HB2	50:BZ:184:PRO:HD3	1.69	0.74
1:AA:1415:G:N1	1:AA:1423:C:N3	2.33	0.74
6:AH:252:ARG:HE	11:AM:78:ARG:HH22	1.35	0.74
47:BW:109:HIS:ND1	47:BW:109:HIS:O	2.20	0.74
57:Bg:30:PHE:HD2	57:Bg:61:ILE:HD13	1.52	0.74
47:BW:117:ASP:HB3	47:BW:118:PRO:HD3	1.67	0.74
22:Aa:26:SER:HB2	22:Aa:32:LEU:HD22	1.69	0.74
28:Ag:40:THR:HG22	28:Ag:69:ILE:HB	1.70	0.73
55:Be:7:GLN:HB3	55:Be:63:ILE:HD11	1.70	0.73
7:AI:121:ARG:NH2	7:AI:145:ARG:NH2	2.34	0.73
11:AM:91:MET:HE2	11:AM:91:MET:C	2.13	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:AV:115:LYS:HE3	20:AV:126:ALA:HB2	1.70	0.73
1:AA:1719:U:O2	1:AA:1765:G:N2	2.19	0.73
1:AA:624:A:HO2'	1:AA:1122:C:HO2'	1.34	0.73
35:B2:745:G:N2	35:B2:745:G:OP2	2.22	0.73
49:BY:48:ARG:HD3	55:Be:69:LEU:HD13	1.70	0.73
20:AV:14:ARG:NH2	20:AV:17:ASN:H	1.86	0.73
57:Bg:31:GLU:OE1	57:Bg:56:GLU:HB2	1.89	0.73
35:B2:2393:G:N2	35:B2:2393:G:OP2	2.19	0.73
7:AI:119:GLY:HA3	7:AI:145:ARG:HG2	1.70	0.73
78:Sn:53:G:H2'	78:Sn:54:A:H8	1.53	0.72
35:B2:3064:A:N7	38:BN:214:ASN:ND2	2.36	0.72
76:Am:191:HIS:NE2	76:Am:217:MET:HE2	2.03	0.72
36:B3:51:G:H21	47:BW:9:MET:HE1	1.55	0.72
25:Ad:27:TYR:CE2	25:Ad:31:LEU:HG	2.25	0.72
21:AW:116:SER:HB2	21:AW:122:ARG:HB2	1.72	0.72
46:BV:191:ILE:HG23	46:BV:198:LYS:HG3	1.72	0.72
1:AA:809:U:H4'	1:AA:811:A:H62	1.55	0.71
6:AH:11:ARG:O	6:AH:13:ALA:N	2.23	0.71
45:BU:87:ARG:HD2	45:BU:183:GLY:HA3	1.72	0.71
1:AA:787:A:N1	1:AA:801:C:N3	2.37	0.71
7:AI:58:LYS:HB2	7:AI:61:ARG:HG2	1.71	0.71
36:B3:46:C:H5'	41:BQ:158:ARG:HH11	1.55	0.71
51:Ba:66:ASN:HB3	51:Ba:69:ARG:HG2	1.73	0.71
76:Am:36:ARG:HA	76:Am:65:PHE:HB3	1.72	0.71
78:Sn:34:C:N3	78:Sn:35:A:N6	2.39	0.71
61:Bk:59:ARG:HB2	61:Bk:102:LYS:HG3	1.72	0.71
35:B2:1268:G:O6	35:B2:1282:A:N1	2.24	0.71
1:AA:886:A:H2'	1:AA:887:G:C8	2.25	0.71
35:B2:3269:A:H4'	35:B2:3272:U:H3	1.55	0.71
1:AA:1097:A:O2'	1:AA:1099:G:N7	2.24	0.71
35:B2:500:U:H5"	42:BR:132:PRO:HB3	1.72	0.71
35:B2:3130:C:H4'	45:BU:166:ARG:NH2	2.06	0.71
2:AD:32:LEU:HD21	2:AD:37:ASP:HB3	1.73	0.71
55:Be:47:ILE:HD11	56:Bf:151:LEU:HD13	1.71	0.71
56:Bf:51:GLY:HA3	56:Bf:92:ARG:HG3	1.73	0.71
8:AJ:54:GLY:CA	8:AJ:63:MET:HE1	2.21	0.70
35:B2:2281:U:H5"	35:B2:2282:G:H5'	1.71	0.70
35:B2:512:A:H4'	42:BR:46:THR:HG23	1.74	0.70
1:AA:105:A:OP2	1:AA:311:C:N4	2.24	0.70
35:B2:463:C:H1'	35:B2:493:G:H1'	1.73	0.70
35:B2:3055:C:H2'	35:B2:3056:G:H8	1.56	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:3265:U:O2'	35:B2:3266:U:O2	2.08	0.70
20:AV:98:LEU:HB3	20:AV:103:VAL:HB	1.73	0.70
35:B2:1386:G:O3'	75:By:44:ARG:NH2	2.25	0.70
1:AA:437:G:N1	1:AA:440:A:OP2	2.25	0.70
1:AA:1464:A:H4'	1:AA:1465:G:H3'	1.72	0.69
35:B2:1223:C:N4	35:B2:1331:G:OP2	2.25	0.69
66:Bp:57:ASP:OD1	66:Bp:95:TYR:OH	2.10	0.69
46:BV:47:PRO:HD2	46:BV:141:LYS:HA	1.74	0.69
1:AA:232:U:C4	1:AA:235:G:O6	2.45	0.69
6:AH:153:LEU:O	6:AH:174:LYS:NZ	2.26	0.69
35:B2:253:U:H3'	35:B2:254:G:H8	1.57	0.69
41:BQ:215:ASP:HB3	41:BQ:218:ARG:HB2	1.75	0.69
6:AH:147:ILE:HG21	6:AH:169:ILE:HG12	1.74	0.69
35:B2:3314:U:H2'	49:BY:114:MET:HE2	1.74	0.69
76:Am:291:TRP:HH2	76:Am:312:VAL:HG21	1.55	0.69
19:AU:74:GLN:HA	19:AU:77:GLU:HB2	1.75	0.69
1:AA:631:G:N2	1:AA:986:A:H62	1.88	0.69
9:AK:135:THR:HA	9:AK:159:ARG:HH22	1.58	0.69
35:B2:609:A:O2'	68:Br:85:ARG:NH2	2.26	0.69
35:B2:2915:A:HO2'	78:Sn:76:A:HO2'	1.38	0.69
7:AI:13:ASP:O	7:AI:15:ASN:ND2	2.26	0.69
77:Sm:38:A:H3'	77:Sm:39:A:H8	1.58	0.69
1:AA:1706:U:H3	1:AA:1778:G:H1	1.38	0.69
24:Ac:28:ARG:HD3	24:Ac:60:LYS:HE2	1.74	0.69
1:AA:29:U:H2'	1:AA:30:G:H8	1.58	0.68
1:AA:790:C:OP2	1:AA:791:A:N6	2.20	0.68
1:AA:1079:C:H2'	1:AA:1080:G:H8	1.58	0.68
1:AA:1375:G:H1'	21:AW:129:ARG:NH2	2.09	0.68
26:Ae:18:LEU:HG	26:Ae:20:ARG:HH21	1.58	0.68
35:B2:1268:G:N1	35:B2:1282:A:C2	2.62	0.68
35:B2:1291:A:O2'	35:B2:1310:C:O2	2.11	0.68
36:B3:46:C:H5'	41:BQ:158:ARG:HH12	1.56	0.68
2:AD:151:ASP:HB2	2:AD:167:ASN:HB3	1.75	0.68
24:Ac:35:VAL:O	24:Ac:39:THR:HG23	1.93	0.68
35:B2:3394:C:H4'	39:BO:128:LYS:HE2	1.74	0.68
41:BQ:160:PHE:HA	41:BQ:163:MET:HE3	1.76	0.68
1:AA:483:A:N1	1:AA:512:G:N2	2.42	0.68
6:AH:161:LYS:HZ1	6:AH:235:TRP:CG	2.11	0.68
26:Ae:12:PHE:HB3	26:Ae:23:MET:HG3	1.75	0.68
35:B2:445:G:H1	35:B2:647:A:N6	1.90	0.68
36:B3:29:C:H5'	47:BW:133:ARG:HH22	1.57	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:AW:29:THR:CB	21:AW:109:LYS:HZ1	2.06	0.68
35:B2:2344:A:H4'	35:B2:2345:C:H4'	1.76	0.68
1:AA:127:A:H62	1:AA:294:G:H21	1.41	0.68
1:AA:1651:G:OP1	7:AI:50:HIS:NE2	2.26	0.68
35:B2:304:A:N3	35:B2:307:G:O2'	2.27	0.68
6:AH:163:ASN:HB3	6:AH:166:THR:HG23	1.76	0.68
35:B2:463:C:H2'	35:B2:464:A:C8	2.27	0.68
1:AA:701:A:H2	9:AK:102:PRO:HG3	1.58	0.68
1:AA:1314:G:N2	1:AA:1317:A:OP2	2.21	0.68
16:AR:123:ILE:O	16:AR:123:ILE:HD12	1.94	0.68
18:AT:27:LYS:HA	18:AT:32:PRO:HA	1.76	0.68
39:BO:187:SER:O	39:BO:190:ASP:N	2.26	0.68
1:AA:651:G:N2	1:AA:652:U:O4	2.27	0.67
52:Bb:52:LYS:HD2	52:Bb:89:LYS:HE3	1.75	0.67
64:Bn:54:ILE:HG22	64:Bn:58:LYS:HZ2	1.58	0.67
3:AE:204:ILE:HG22	3:AE:205:PHE:H	1.59	0.67
29:Ah:40:CYS:SG	29:Ah:41:PHE:N	2.68	0.67
35:B2:3017:G:C2	35:B2:3047:G:H1'	2.29	0.67
75:By:90:ALA:HB3	75:By:94:LYS:HD3	1.74	0.67
35:B2:533:A:OP1	40:BP:350:LYS:NZ	2.28	0.67
47:BW:132:ASP:OD2	47:BW:140:ARG:NH2	2.27	0.67
55:Be:91:LYS:NZ	55:Be:108:ASP:OD2	2.24	0.67
40:BP:37:VAL:HG21	40:BP:246:LEU:HD21	1.74	0.67
76:Am:133:ASN:HD21	76:Am:137:ASN:HB2	1.59	0.67
1:AA:1369:G:H1	1:AA:1393:U:H3	1.42	0.67
13:AO:71:THR:HB	13:AO:119:VAL:HG12	1.76	0.67
15:AQ:39:LYS:HE3	15:AQ:43:LYS:HD3	1.77	0.67
35:B2:3291:C:H2'	35:B2:3292:U:H2'	1.76	0.67
1:AA:340:G:N2	1:AA:343:U:OP2	2.27	0.67
46:BV:76:LEU:HD23	46:BV:79:ILE:HD11	1.76	0.67
9:AK:66:GLN:HG3	9:AK:67:PRO:HD3	1.76	0.67
19:AU:58:MET:HA	19:AU:58:MET:HE2	1.76	0.67
35:B2:1222:U:OP2	51:Ba:50:ARG:NE	2.28	0.67
60:Bj:72:MET:HE1	60:Bj:141:LEU:HD12	1.76	0.67
74:Bx:25:GLN:HA	74:Bx:28:ARG:HD3	1.77	0.67
76:Am:291:TRP:CH2	76:Am:312:VAL:HG21	2.30	0.67
16:AR:117:ILE:HG22	28:Ag:44:MET:HE2	1.75	0.67
23:Ab:19:ALA:O	24:Ac:23:ARG:NH1	2.28	0.67
1:AA:44:U:OP2	1:AA:440:A:N6	2.22	0.67
21:AW:15:ILE:HG21	21:AW:55:VAL:HA	1.77	0.67
35:B2:2342:U:O2'	35:B2:2349:G:N2	2.21	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:2795:G:H5”	56:Bf:17:ARG:HG2	1.77	0.67
1:AA:1769:G:N2	10:AL:32:GLN:OE1	2.28	0.66
8:AJ:70:PRO:HB3	8:AJ:101:ILE:HD11	1.77	0.66
74:Bx:23:ILE:H	74:Bx:23:ILE:HD12	1.59	0.66
76:Am:115:PRO:HD3	76:Am:156:PHE:CE2	2.30	0.66
1:AA:1547:G:O2’	1:AA:1591:A:O2’	2.13	0.66
35:B2:3278:A:H2’	35:B2:3279:A:C8	2.31	0.66
35:B2:3490:A:H5”	35:B2:3491:A:H5”	1.77	0.66
57:Bg:30:PHE:CD2	57:Bg:61:ILE:HD13	2.31	0.66
66:Bp:25:LEU:HD11	66:Bp:37:ALA:HB2	1.76	0.66
1:AA:480:A:H5’	32:Ak:34:ALA:HB2	1.78	0.66
6:AH:149:TYR:CD2	8:AJ:207:GLU:HG3	2.30	0.66
60:Bj:39:LEU:HD23	60:Bj:39:LEU:H	1.60	0.66
1:AA:1718:C:OP1	10:AL:42:ARG:NH1	2.27	0.66
23:Ab:35:ASN:HD22	23:Ab:52:THR:HG22	1.59	0.66
15:AQ:40:PHE:HA	15:AQ:43:LYS:HE2	1.75	0.66
28:Ag:28:ARG:NH1	28:Ag:74:CYS:SG	2.69	0.66
35:B2:1531:C:H2’	35:B2:1532:A:H8	1.60	0.66
35:B2:2702:G:H5’	38:BN:232:GLN:HB3	1.76	0.66
49:BY:124:VAL:HG21	51:Ba:183:LYS:HG3	1.78	0.66
77:Sm:70:C:H2’	77:Sm:71:G:H8	1.61	0.66
23:Ab:73:THR:OG1	23:Ab:79:LEU:HD22	1.95	0.66
26:Ae:5:VAL:HG13	26:Ae:29:HIS:HB3	1.77	0.66
39:BO:85:VAL:HG22	39:BO:202:THR:HG22	1.78	0.66
1:AA:898:U:H3	1:AA:960:U:H3	1.42	0.66
60:Bj:88:LYS:HD3	60:Bj:88:LYS:H	1.61	0.66
1:AA:475:G:O2’	1:AA:782:A:N3	2.29	0.66
27:Af:73:ASP:HB3	27:Af:80:ILE:HD12	1.78	0.66
35:B2:3043:C:OP1	39:BO:244:ARG:NH2	2.29	0.66
36:B3:28:C:H1’	36:B3:54:A:H61	1.61	0.66
5:AG:122:TYR:O	5:AG:126:ARG:HD3	1.96	0.65
27:Af:55:LEU:HA	27:Af:58:ILE:HG22	1.76	0.65
58:Bh:59:MET:O	58:Bh:59:MET:HG3	1.94	0.65
6:AH:179:ALA:HA	6:AH:230:GLU:HA	1.78	0.65
18:AT:5:GLN:OE1	18:AT:18:HIS:ND1	2.25	0.65
10:AL:96:LEU:HD13	10:AL:179:CYS:SG	2.35	0.65
1:AA:1486:G:O2’	1:AA:1643:C:OP1	2.13	0.65
31:Aj:16:LYS:HB3	31:Aj:27:ARG:HD3	1.77	0.65
50:BZ:180:TYR:O	50:BZ:183:SER:OG	2.13	0.65
77:Sm:15:G:N1	77:Sm:49:C:N3	2.40	0.65
17:AS:80:LYS:HG2	17:AS:101:VAL:HG13	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:AS:101:VAL:HG12	17:AS:114:GLU:HG3	1.78	0.65
35:B2:167:G:N2	35:B2:268:U:O2	2.29	0.65
35:B2:1588:A:H4'	35:B2:1589:U:H5'	1.78	0.65
35:B2:680:C:H2'	35:B2:681:A:C8	2.31	0.65
35:B2:3045:G:N2	35:B2:3045:G:OP2	2.26	0.65
3:AE:66:LEU:HD11	16:AR:35:LEU:HD23	1.79	0.65
35:B2:2304:G:N2	35:B2:2316:A:N1	2.45	0.65
5:AG:9:LYS:H	5:AG:9:LYS:HD3	1.61	0.65
19:AU:18:GLU:HA	19:AU:71:PHE:HD2	1.60	0.65
35:B2:856:C:H5"	38:BN:20:ARG:HD3	1.77	0.65
35:B2:1746:U:H2'	35:B2:1747:A:H8	1.61	0.65
1:AA:1258:G:OP1	1:AA:1258:G:N2	2.18	0.65
39:BO:19:ARG:HA	39:BO:273:MET:HE3	1.77	0.65
8:AJ:77:LEU:HD21	8:AJ:84:TYR:HB2	1.78	0.65
2:AD:77:CYS:SG	2:AD:119:ARG:NH1	2.68	0.64
8:AJ:195:ALA:CB	8:AJ:198:ARG:NH2	2.60	0.64
25:Ad:100:VAL:HG12	25:Ad:125:VAL:HG12	1.78	0.64
47:BW:47:PHE:HB3	47:BW:64:LYS:HB3	1.80	0.64
66:Bp:53:GLU:HG2	66:Bp:93:TYR:HB2	1.77	0.64
21:AW:29:THR:CG2	21:AW:109:LYS:NZ	2.60	0.64
35:B2:1728:U:OP1	69:Bs:28:ASN:ND2	2.30	0.64
36:B3:2:U:O4	36:B3:117:G:O6	2.15	0.64
41:BQ:215:ASP:O	41:BQ:217:GLU:N	2.30	0.64
42:BR:104:THR:HG22	42:BR:106:ALA:H	1.61	0.64
6:AH:182:MET:HB2	6:AH:192:VAL:HG12	1.79	0.64
62:Bl:124:SER:O	62:Bl:126:LYS:HE3	1.97	0.64
1:AA:789:G:OP2	26:Ae:10:ARG:NH1	2.29	0.64
1:AA:1485:C:OP1	18:AT:136:GLN:NE2	2.30	0.64
35:B2:1670:G:N2	35:B2:1673:A:OP2	2.25	0.64
35:B2:164:G:H2'	35:B2:165:A:H8	1.61	0.64
35:B2:1379:U:O2'	35:B2:1380:A:O4'	2.13	0.64
35:B2:3040:G:O2'	35:B2:3043:C:OP2	2.15	0.64
47:BW:125:MET:HA	47:BW:125:MET:HE3	1.80	0.64
7:AI:149:ALA:O	7:AI:153:ILE:HD12	1.97	0.64
21:AW:114:GLU:HG2	21:AW:124:SER:HB3	1.80	0.64
68:Br:76:HIS:HB3	68:Br:81:VAL:HG12	1.80	0.64
4:AF:156:LYS:NZ	24:Ac:91:ASN:O	2.27	0.64
35:B2:2006:U:O2'	35:B2:2184:A:N6	2.27	0.64
5:AG:8:SER:HB2	5:AG:11:ARG:HG3	1.80	0.64
21:AW:106:SER:O	21:AW:110:ILE:HG12	1.98	0.64
35:B2:65:A:H1'	35:B2:77:A:H1'	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:984:A:OP1	64:Bn:18:ARG:NH2	2.31	0.64
35:B2:2305:U:N3	35:B2:2306:G:O6	2.31	0.64
5:AG:76:GLN:HG3	5:AG:81:PHE:HB2	1.81	0.63
11:AM:82:ARG:NH2	11:AM:149:ARG:HH11	1.94	0.63
35:B2:1698:C:H5"	54:Bd:96:MET:HE1	1.80	0.63
76:Am:46:VAL:HG23	76:Am:48:ASP:H	1.62	0.63
77:Sm:51:U:O2	77:Sm:65:G:N2	2.28	0.63
1:AA:1827:U:H2'	1:AA:1828:G:H8	1.63	0.63
35:B2:741:G:HO2'	35:B2:781:C:HO2'	1.46	0.63
35:B2:3305:C:O2	49:BY:92:TRP:CE2	2.51	0.63
1:AA:1233:C:O2	1:AA:1466:A:N6	2.30	0.63
10:AL:196:MET:HA	10:AL:199:LYS:HG3	1.81	0.63
35:B2:1650:C:H2'	35:B2:1651:A:H8	1.63	0.63
35:B2:1696:G:H2'	35:B2:1697:G:C8	2.33	0.63
4:AF:169:VAL:HB	4:AF:196:TYR:HB2	1.81	0.63
35:B2:3360:G:OP2	49:BY:121:ARG:NH2	2.32	0.63
3:AE:129:THR:HB	3:AE:180:SER:HA	1.79	0.63
35:B2:1896:A:H1'	74:Bx:45:ARG:HH22	1.63	0.63
36:B3:47:U:H4'	41:BQ:204:VAL:HG13	1.79	0.63
38:BN:46:LYS:HB2	38:BN:59:LYS:HB2	1.81	0.63
40:BP:351:ALA:HB1	43:BS:79:ALA:HB2	1.81	0.63
1:AA:307:U:O2	13:AO:66:ARG:NH1	2.31	0.63
10:AL:83:TYR:HD1	10:AL:196:MET:HE2	1.64	0.63
35:B2:2480:C:O2'	39:BO:266:ARG:NH2	2.30	0.63
52:Bb:70:THR:HG21	52:Bb:83:TRP:HH2	1.63	0.63
1:AA:1373:C:H2'	1:AA:1374:A:H8	1.62	0.63
1:AA:1565:A:H2'	1:AA:1566:A:C8	2.34	0.63
2:AD:33:GLU:O	2:AD:35:ARG:N	2.31	0.63
33:B0:2:VAL:N	33:B0:90:HIS:O	2.30	0.63
35:B2:1379:U:O2	40:BP:299:GLN:NE2	2.31	0.63
35:B2:2329:U:H5'	38:BN:241:ARG:HH22	1.64	0.63
37:B4:16:C:H2'	37:B4:17:A:H8	1.63	0.63
45:BU:185:ILE:HG22	45:BU:186:GLU:HG3	1.80	0.63
28:Ag:58:VAL:HG12	28:Ag:59:TYR:H	1.64	0.63
1:AA:236:G:H2'	1:AA:237:G:H8	1.62	0.63
35:B2:716:G:OP1	35:B2:716:G:N2	2.31	0.62
76:Am:128:THR:HG22	76:Am:130:LYS:HG3	1.81	0.62
35:B2:1797:A:OP1	57:Bg:92:ARG:NH2	2.30	0.62
53:Bc:72:ARG:HB2	53:Bc:75:ALA:HB2	1.81	0.62
75:By:36:ASN:ND2	75:By:45:PHE:O	2.31	0.62
1:AA:965:C:H1'	15:AQ:104:ARG:HH21	1.62	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:AV:111:LEU:HD13	20:AV:114:LEU:HD11	1.81	0.62
35:B2:2285:C:H42	35:B2:2332:A:H62	1.47	0.62
35:B2:2383:A:N3	35:B2:3024:C:O2'	2.31	0.62
1:AA:1586:A:OP2	20:AV:132:ARG:NH1	2.31	0.62
24:Ac:27:ILE:HB	24:Ac:61:ILE:HG23	1.80	0.62
34:B1:5:THR:OG1	35:B2:869:A:OP1	2.15	0.62
35:B2:997:A:H5"	48:BX:4:HIS:HB3	1.81	0.62
35:B2:1325:A:H5'	55:Be:87:HIS:HE1	1.65	0.62
35:B2:1527:G:OP2	35:B2:1527:G:N2	2.30	0.62
46:BV:28:ASP:OD2	46:BV:32:ARG:NH2	2.32	0.62
1:AA:151:G:N3	8:AJ:13:GLN:NE2	2.46	0.62
1:AA:1837:U:H3'	28:Ag:5:ARG:HH21	1.64	0.62
4:AF:89:THR:HG22	4:AF:90:ARG:H	1.64	0.62
17:AS:22:THR:OG1	17:AS:23:PHE:N	2.29	0.62
21:AW:27:LYS:HB3	21:AW:110:ILE:HD13	1.80	0.62
35:B2:745:G:OP1	63:Bm:116:ARG:NH2	2.26	0.62
76:Am:165:PHE:CE2	76:Am:177:TRP:NE1	2.68	0.62
76:Am:292:SER:OG	76:Am:294:ASP:OD1	2.14	0.62
1:AA:153:G:N2	1:AA:161:U:O2	2.31	0.62
1:AA:973:U:O2'	15:AQ:55:ARG:NH1	2.33	0.62
6:AH:9:LEU:HB2	6:AH:30:LYS:HD3	1.81	0.62
8:AJ:195:ALA:HA	8:AJ:198:ARG:CZ	2.29	0.62
21:AW:8:ASP:O	21:AW:9:VAL:HG23	2.00	0.62
36:B3:4:U:H2'	36:B3:5:A:H8	1.65	0.62
58:Bh:44:THR:HG21	58:Bh:52:PRO:HB3	1.80	0.62
1:AA:478:A:OP2	11:AM:37:ARG:NH2	2.32	0.62
1:AA:1769:G:H2'	1:AA:1770:A:C8	2.34	0.62
7:AI:42:ILE:HD12	7:AI:42:ILE:O	2.00	0.62
35:B2:1386:G:H4'	75:By:44:ARG:CZ	2.29	0.62
1:AA:1115:U:OP1	24:Ac:71:LYS:NZ	2.32	0.62
22:Aa:80:TYR:HB3	31:Aj:52:PHE:HB3	1.80	0.62
35:B2:1647:A:OP1	73:Bw:24:ARG:NH2	2.28	0.62
35:B2:3248:U:OP2	35:B2:3497:G:N1	2.32	0.62
76:Am:168:ALA:HB1	76:Am:195:VAL:HG11	1.82	0.62
76:Am:191:HIS:CE1	76:Am:217:MET:HE2	2.35	0.62
1:AA:1189:G:N3	21:AW:87:MET:HE2	2.15	0.62
12:AN:15:LEU:HD13	12:AN:19:GLY:HA2	1.81	0.62
64:Bn:54:ILE:HG22	64:Bn:58:LYS:NZ	2.14	0.62
72:Bv:25:ARG:HH11	74:Bx:51:ILE:HG13	1.65	0.62
1:AA:631:G:H21	1:AA:986:A:N6	1.94	0.62
3:AE:127:ILE:HD12	3:AE:176:THR:HG21	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:AJ:32:MET:HE1	8:AJ:54:GLY:HA2	1.82	0.62
12:AN:36:GLY:O	12:AN:37:VAL:HG22	2.00	0.62
18:AT:17:ALA:HB2	18:AT:81:ALA:HB1	1.82	0.62
35:B2:3333:G:H1	35:B2:3354:U:H3	1.47	0.62
36:B3:40:C:O2	47:BW:72:ARG:NH1	2.33	0.62
78:Sn:23:C:H2'	78:Sn:24:G:C8	2.35	0.62
35:B2:3059:G:N2	35:B2:3062:A:OP2	2.27	0.61
50:BZ:13:LYS:O	50:BZ:19:ASN:ND2	2.33	0.61
76:Am:234:ALA:HB3	76:Am:252:THR:HB	1.82	0.61
1:AA:1197:C:OP1	78:Sn:41:C:O2'	2.14	0.61
1:AA:1254:G:N1	1:AA:1266:U:O4	2.33	0.61
10:AL:7:SER:O	10:AL:18:ARG:NH1	2.33	0.61
51:Ba:47:HIS:CD2	51:Ba:50:ARG:HG3	2.34	0.61
54:Bd:76:THR:HG22	54:Bd:76:THR:O	1.98	0.61
1:AA:965:C:H2'	1:AA:966:A:C8	2.35	0.61
1:AA:1200:A:C6	17:AS:108:LYS:HB2	2.35	0.61
1:AA:1683:G:O2'	1:AA:1823:A:O2'	2.11	0.61
5:AG:32:SER:O	5:AG:109:TYR:OH	2.17	0.61
14:AP:66:VAL:HB	14:AP:124:VAL:H	1.64	0.61
21:AW:27:LYS:CB	21:AW:110:ILE:HD13	2.30	0.61
21:AW:29:THR:CB	21:AW:109:LYS:NZ	2.63	0.61
35:B2:1659:G:O6	35:B2:1874:U:C2	2.54	0.61
40:BP:116:ASN:HB2	40:BP:119:GLU:HG3	1.83	0.61
60:Bj:63:VAL:HG22	60:Bj:86:HIS:CE1	2.35	0.61
3:AE:195:ARG:HE	3:AE:199:ARG:NH2	1.99	0.61
9:AK:100:ILE:HG22	9:AK:123:VAL:HG21	1.82	0.61
22:Aa:35:VAL:HG11	22:Aa:110:VAL:HG21	1.81	0.61
35:B2:116:A:OP1	71:Bu:34:ARG:NH1	2.17	0.61
35:B2:1659:G:O6	35:B2:1874:U:O2	2.18	0.61
69:Bs:66:SER:HB2	69:Bs:69:GLN:NE2	2.15	0.61
35:B2:1017:U:H2'	35:B2:1018:U:H6	1.64	0.61
35:B2:1310:C:H2'	35:B2:1311:C:C6	2.36	0.61
38:BN:233:LYS:HG2	38:BN:237:ILE:HG12	1.81	0.61
62:Bl:9:LYS:HE2	62:Bl:84:ARG:HA	1.82	0.61
76:Am:244:ASN:HD22	76:Am:245:ARG:NH1	1.98	0.61
1:AA:1491:A:OP1	7:AI:163:ARG:NH1	2.33	0.61
10:AL:83:TYR:HB2	10:AL:196:MET:CE	2.31	0.61
13:AO:130:LYS:HG3	13:AO:131:THR:HG23	1.81	0.61
35:B2:356:A:N3	35:B2:360:A:O2'	2.33	0.61
40:BP:10:ILE:HD11	40:BP:22:ILE:HG13	1.83	0.61
1:AA:332:G:H5"	10:AL:98:LYS:HB3	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1213:A:OP2	1:AA:1484:G:N2	2.30	0.61
1:AA:1575:G:O2'	27:Af:52:ASN:O	2.19	0.61
1:AA:1589:G:N1	1:AA:1605:U:O4	2.32	0.61
35:B2:3247:U:O2'	35:B2:3498:U:O4	2.18	0.61
6:AH:238:LEU:HD13	6:AH:239:PRO:HD2	1.80	0.61
16:AR:117:ILE:HG22	28:Ag:44:MET:CE	2.30	0.61
18:AT:140:ARG:NH1	77:Sm:36:A:OP1	2.34	0.61
35:B2:2240:A:H4'	35:B2:2331:A:C8	2.35	0.61
1:AA:87:A:O2'	1:AA:147:A:O2'	2.18	0.61
1:AA:962:U:H2'	1:AA:963:G:H8	1.66	0.61
1:AA:1566:A:H5"	21:AW:81:GLY:HA2	1.82	0.61
5:AG:76:GLN:NE2	5:AG:82:ALA:O	2.34	0.61
7:AI:22:ASN:HB3	7:AI:93:LYS:HZ2	1.66	0.61
9:AK:87:PHE:HB3	9:AK:90:ARG:HB2	1.83	0.61
67:Bq:80:GLU:OE2	67:Bq:108:LYS:NZ	2.34	0.61
35:B2:437:G:H2'	35:B2:438:G:H8	1.65	0.61
35:B2:1962:C:O2	39:BO:240:ARG:NH2	2.32	0.61
40:BP:318:LYS:HB2	40:BP:326:VAL:HG21	1.83	0.61
46:BV:48:LEU:HD13	46:BV:49:CYS:N	2.15	0.61
1:AA:951:G:OP1	1:AA:1090:G:N2	2.29	0.60
1:AA:1594:G:N2	1:AA:1596:A:O2'	2.34	0.60
27:Af:49:MET:HB2	27:Af:51:ILE:HG13	1.83	0.60
41:BQ:208:MET:CE	41:BQ:223:PHE:CZ	2.84	0.60
26:Ae:27:ILE:HG12	26:Ae:40:LEU:HD11	1.83	0.60
35:B2:224:U:O2	61:Bk:102:LYS:NZ	2.34	0.60
1:AA:472:C:H41	1:AA:599:C:H41	1.48	0.60
1:AA:1079:C:H2'	1:AA:1080:G:C8	2.36	0.60
1:AA:1084:U:H2'	1:AA:1085:G:H8	1.66	0.60
11:AM:135:ARG:HH21	11:AM:160:LEU:H	1.48	0.60
35:B2:100:A:H3'	35:B2:101:G:H21	1.66	0.60
35:B2:588:G:N3	35:B2:589:U:H1'	2.16	0.60
35:B2:618:U:P	35:B2:634:G:H1	2.24	0.60
35:B2:2322:G:H2'	35:B2:2323:C:O4'	2.02	0.60
35:B2:3050:U:OP1	35:B2:3072:G:N2	2.29	0.60
41:BQ:83:LEU:HB3	41:BQ:88:ILE:HB	1.83	0.60
1:AA:169:A:OP1	8:AJ:180:ARG:NH2	2.35	0.60
35:B2:928:A:H5'	38:BN:182:GLY:HA2	1.83	0.60
35:B2:2273:G:O2'	35:B2:2402:U:OP2	2.18	0.60
63:Bm:37:GLY:HA2	63:Bm:41:LEU:HB2	1.84	0.60
76:Am:17:TRP:NE1	76:Am:303:THR:HB	2.17	0.60
1:AA:1086:C:O2'	29:Ah:17:ARG:O	2.19	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:AI:36:LEU:HD21	7:AI:145:ARG:NE	2.16	0.60
15:AQ:59:GLY:HA3	29:Ah:45:THR:CG2	2.31	0.60
35:B2:786:C:H2'	35:B2:787:G:H8	1.67	0.60
47:BW:84:LEU:HD12	47:BW:89:TYR:HA	1.84	0.60
76:Am:89:LEU:HD23	76:Am:99:HIS:HD2	1.65	0.60
35:B2:63:A:N3	35:B2:78:U:O2'	2.31	0.60
35:B2:656:A:H2'	35:B2:657:A:C8	2.37	0.60
45:BU:91:ARG:NH1	45:BU:139:LYS:O	2.34	0.60
57:Bg:82:LEU:HD13	57:Bg:87:LEU:HB2	1.82	0.60
1:AA:889:C:H2'	1:AA:890:G:C8	2.37	0.60
35:B2:1884:G:H5"	35:B2:1885:G:H5'	1.83	0.60
63:Bm:85:GLU:OE2	63:Bm:85:GLU:N	2.34	0.60
78:Sn:66:C:H2'	78:Sn:67:G:H8	1.64	0.60
4:AF:230:ALA:HB3	4:AF:232:ARG:HH12	1.67	0.60
16:AR:27:ASP:OD2	16:AR:28:THR:N	2.34	0.60
35:B2:1234:A:H2'	35:B2:1235:A:C8	2.37	0.60
61:Bk:54:GLN:HB2	61:Bk:107:LYS:HB3	1.82	0.60
37:B4:111:G:OP2	37:B4:113:A:O2'	2.19	0.60
47:BW:109:HIS:CE1	47:BW:123:TYR:H	2.20	0.60
65:Bo:31:LEU:O	65:Bo:35:SER:OG	2.19	0.60
12:AN:55:LEU:HD11	12:AN:66:TYR:HB3	1.83	0.60
30:Ai:13:VAL:HG22	30:Ai:31:VAL:HG12	1.84	0.60
35:B2:1742:G:H1	35:B2:1781:G:H1	1.48	0.60
35:B2:2683:U:OP1	44:BT:241:LYS:NZ	2.32	0.60
35:B2:3160:U:H2'	35:B2:3161:G:H8	1.66	0.60
1:AA:1408:A:H5"	19:AU:48:ASN:HD22	1.67	0.59
1:AA:1454:U:O2'	1:AA:1456:A:OP1	2.20	0.59
7:AI:151:ALA:O	7:AI:155:ILE:HG13	2.02	0.59
35:B2:2512:A:OP1	50:BZ:90:ASN:ND2	2.34	0.59
41:BQ:265:ALA:O	41:BQ:269:LYS:NZ	2.35	0.59
1:AA:978:A:OP1	15:AQ:73:ARG:NH1	2.34	0.59
6:AH:81:THR:O	6:AH:81:THR:CG2	2.50	0.59
10:AL:83:TYR:CD1	10:AL:196:MET:HE2	2.37	0.59
48:BX:55:ARG:NH1	48:BX:73:ARG:O	2.34	0.59
35:B2:77:A:N7	48:BX:73:ARG:NH2	2.48	0.59
35:B2:1746:U:H2'	35:B2:1747:A:C8	2.37	0.59
35:B2:1819:G:O2'	35:B2:1821:G:OP2	2.20	0.59
48:BX:148:ASP:OD1	48:BX:150:ALA:N	2.35	0.59
63:Bm:71:PRO:HG2	63:Bm:108:TYR:HA	1.84	0.59
1:AA:776:G:OP2	11:AM:79:ARG:NH2	2.36	0.59
22:Aa:72:GLU:OE2	22:Aa:72:GLU:C	2.44	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:20:A:H2'	35:B2:21:G:C8	2.38	0.59
35:B2:944:G:OP2	38:BN:9:ARG:NH2	2.34	0.59
41:BQ:41:LYS:NZ	56:Bf:32:LYS:O	2.36	0.59
45:BU:124:ILE:HG12	45:BU:162:ILE:HD13	1.84	0.59
46:BV:30:LYS:HG3	46:BV:63:GLU:OE1	2.02	0.59
57:Bg:13:ILE:HB	57:Bg:100:VAL:HG22	1.83	0.59
1:AA:1249:U:H2'	1:AA:1250:G:C8	2.38	0.59
2:AD:200:MET:HG2	2:AD:202:ASP:H	1.67	0.59
35:B2:415:A:C2	37:B4:25:A:H1'	2.37	0.59
35:B2:1742:G:H22	35:B2:1781:G:H22	1.51	0.59
53:Bc:179:ARG:HE	63:Bm:50:PRO:HG2	1.67	0.59
76:Am:42:LEU:HD21	76:Am:92:LEU:HD21	1.84	0.59
18:AT:102:LEU:HD11	18:AT:106:LEU:HD11	1.84	0.59
45:BU:155:SER:O	45:BU:159:ILE:HG12	2.02	0.59
1:AA:613:G:O2'	1:AA:616:G:O2'	2.19	0.59
6:AH:126:VAL:HG22	6:AH:158:ASP:H	1.68	0.59
6:AH:244:VAL:O	6:AH:245:LYS:HB2	2.02	0.59
15:AQ:38:LEU:HD21	15:AQ:78:ASN:HD22	1.67	0.59
35:B2:1095:G:OP2	35:B2:1095:G:N2	2.34	0.59
35:B2:1665:A:OP2	62:Bl:67:ARG:NH1	2.35	0.59
46:BV:164:ARG:HH22	55:Be:84:SER:HB3	1.67	0.59
62:Bl:50:PRO:HD3	62:Bl:68:VAL:HG22	1.83	0.59
14:AP:97:PRO:HB3	14:AP:122:SER:HB3	1.84	0.59
16:AR:66:ALA:HB1	16:AR:107:LEU:HD13	1.85	0.59
25:Ad:65:ALA:HB3	25:Ad:67:ARG:HH12	1.66	0.59
35:B2:526:G:H5"	40:BP:342:LYS:HD2	1.83	0.59
35:B2:1531:C:H2'	35:B2:1532:A:C8	2.37	0.59
35:B2:2792:A:H2'	35:B2:2793:G:H8	1.68	0.59
47:BW:96:PHE:CD1	47:BW:102:PHE:HB3	2.38	0.59
1:AA:934:A:H1'	16:AR:38:LYS:HG2	1.83	0.59
14:AP:71:CYS:SG	14:AP:72:ASP:N	2.76	0.59
21:AW:129:ARG:HA	21:AW:129:ARG:HH11	1.68	0.59
29:Ah:37:CYS:HB3	29:Ah:40:CYS:HB3	1.85	0.59
35:B2:2336:C:O2'	35:B2:2360:G:N7	2.33	0.59
37:B4:132:G:H1	37:B4:137:A:H61	1.51	0.59
47:BW:117:ASP:HB3	47:BW:118:PRO:CD	2.32	0.59
65:Bo:39:THR:HG22	65:Bo:45:ALA:HB2	1.85	0.59
1:AA:1620:U:H2'	1:AA:1621:C:C6	2.38	0.59
6:AH:64:ILE:HG21	26:Ae:17:LEU:HB3	1.84	0.59
35:B2:110:G:OP2	48:BX:73:ARG:NH1	2.36	0.59
35:B2:2225:U:OP2	35:B2:2230:A:N6	2.32	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:B3:35:C:O2'	41:BQ:155:THR:O	2.19	0.59
36:B3:55:A:H4'	47:BW:152:HIS:HB2	1.85	0.59
37:B4:58:C:OP2	37:B4:59:G:N2	2.36	0.59
39:BO:218:ILE:HB	39:BO:337:THR:HB	1.85	0.59
47:BW:35:LYS:NZ	47:BW:39:GLN:OE1	2.36	0.59
53:Bc:77:LEU:HD22	53:Bc:80:LYS:HD2	1.85	0.59
1:AA:272:G:H3'	8:AJ:185:ARG:HH22	1.67	0.58
1:AA:1318:U:OP1	4:AF:94:ARG:NH2	2.36	0.58
1:AA:1403:G:H2'	1:AA:1404:A:H8	1.66	0.58
2:AD:143:ASN:HD22	4:AF:61:PRO:HD3	1.68	0.58
4:AF:174:GLY:N	4:AF:194:ASP:OD2	2.34	0.58
6:AH:31:PRO:HG3	6:AH:43:PRO:HG3	1.85	0.58
29:Ah:74:MET:HE3	29:Ah:75:GLU:H	1.66	0.58
35:B2:1225:G:H2'	35:B2:1226:A:C8	2.37	0.58
35:B2:2867:C:H5'	35:B2:2868:C:H5'	1.85	0.58
35:B2:3389:G:H5"	35:B2:3390:G:C8	2.37	0.58
1:AA:15:U:O2'	1:AA:623:A:N6	2.36	0.58
1:AA:174:U:H3	1:AA:269:A:H62	1.49	0.58
1:AA:345:C:O2'	13:AO:11:ARG:NH2	2.35	0.58
6:AH:149:TYR:HD2	8:AJ:207:GLU:HG3	1.68	0.58
8:AJ:55:GLY:H	8:AJ:63:MET:HE3	1.65	0.58
10:AL:110:ARG:NH1	10:AL:113:TYR:HB3	2.18	0.58
39:BO:212:ASN:ND2	39:BO:354:VAL:H	2.00	0.58
42:BR:83:THR:HB	42:BR:93:ILE:HA	1.85	0.58
51:Ba:175:LYS:HB2	51:Ba:175:LYS:NZ	2.17	0.58
1:AA:226:A:H2'	1:AA:227:A:C8	2.39	0.58
35:B2:1658:G:H2'	35:B2:1659:G:C8	2.39	0.58
1:AA:161:U:H2'	1:AA:162:A:C8	2.38	0.58
1:AA:1482:G:OP2	20:AV:141:ARG:NH1	2.35	0.58
35:B2:512:A:H4'	42:BR:46:THR:CG2	2.33	0.58
35:B2:2976:C:OP2	39:BO:8:GLN:NE2	2.31	0.58
35:B2:3475:U:OP1	66:Bp:20:HIS:NE2	2.33	0.58
1:AA:556:G:N2	1:AA:574:G:N7	2.48	0.58
3:AE:175:GLN:HG3	3:AE:187:LYS:HZ2	1.67	0.58
4:AF:219:LEU:O	4:AF:219:LEU:HD13	2.03	0.58
35:B2:539:A:HO2'	35:B2:540:A:H8	1.52	0.58
35:B2:2323:C:H2'	35:B2:2324:G:H8	1.68	0.58
39:BO:55:HIS:HB2	39:BO:360:ASP:HB2	1.84	0.58
76:Am:212:ARG:HH11	76:Am:212:ARG:HG3	1.67	0.58
6:AH:42:LEU:O	6:AH:84:THR:OG1	2.22	0.58
7:AI:160:ALA:O	7:AI:164:ASN:ND2	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:2452:G:H22	35:B2:2484:G:H1'	1.69	0.58
35:B2:2653:G:N2	44:BT:38:GLN:O	2.36	0.58
1:AA:1124:G:OP2	1:AA:1124:G:N2	2.23	0.58
1:AA:1542:C:N4	1:AA:1543:G:O6	2.37	0.58
1:AA:1778:G:H2'	1:AA:1779:G:H8	1.68	0.58
1:AA:1832:A:OP1	28:Ag:10:ARG:NH2	2.37	0.58
35:B2:1234:A:N3	35:B2:2950:U:O2'	2.32	0.58
35:B2:1520:G:H21	69:Bs:6:THR:HG22	1.69	0.58
35:B2:1588:A:O4'	35:B2:1593:A:N6	2.37	0.58
35:B2:3055:C:H2'	35:B2:3056:G:C8	2.37	0.58
35:B2:3236:G:OP1	39:BO:23:SER:OG	2.21	0.58
41:BQ:123:THR:HG23	41:BQ:124:GLU:HG3	1.86	0.58
76:Am:245:ARG:HH22	76:Am:312:VAL:HG11	1.68	0.58
1:AA:232:U:O4	1:AA:235:G:O6	2.22	0.58
1:AA:1322:U:H5"	1:AA:1323:C:H5	1.69	0.58
10:AL:184:LEU:HD12	10:AL:185:GLU:N	2.19	0.58
35:B2:681:A:H2'	35:B2:682:A:C8	2.39	0.58
35:B2:1650:C:H2'	35:B2:1651:A:C8	2.38	0.58
61:Bk:49:VAL:HG21	61:Bk:79:LEU:HD21	1.85	0.58
78:Sn:66:C:H2'	78:Sn:67:G:C8	2.39	0.58
1:AA:701:A:C2	9:AK:102:PRO:HG3	2.39	0.58
1:AA:1699:G:H1	1:AA:1785:U:H3	1.52	0.58
4:AF:141:GLY:N	4:AF:152:THR:O	2.36	0.58
16:AR:70:ALA:HA	16:AR:112:MET:HE1	1.85	0.58
27:Af:32:LYS:HG2	27:Af:33:GLU:HG3	1.85	0.58
29:Ah:53:VAL:HG13	29:Ah:62:VAL:HG13	1.85	0.58
35:B2:3403:U:H2'	35:B2:3404:G:C8	2.39	0.58
78:Sn:23:C:H2'	78:Sn:24:G:H8	1.67	0.58
25:Ad:68:LYS:NZ	32:Ak:7:SER:O	2.32	0.58
35:B2:2327:G:H2'	35:B2:2328:G:C8	2.39	0.58
50:BZ:159:ARG:HB2	50:BZ:164:LEU:HB2	1.86	0.58
61:Bk:68:LYS:H	61:Bk:82:GLU:HG2	1.69	0.58
10:AL:22:ARG:HD2	10:AL:25:ARG:HE	1.69	0.57
20:AV:14:ARG:HH21	20:AV:17:ASN:N	1.92	0.57
35:B2:1840:A:H2'	35:B2:1841:A:H8	1.67	0.57
40:BP:141:GLY:O	40:BP:143:ARG:NH1	2.36	0.57
76:Am:142:ILE:HD12	76:Am:177:TRP:CZ2	2.39	0.57
1:AA:202:G:H2'	1:AA:203:A:C8	2.39	0.57
1:AA:591:U:O2	32:Ak:58:ASN:ND2	2.38	0.57
7:AI:76:MET:HG3	7:AI:76:MET:O	2.04	0.57
15:AQ:37:ILE:HD11	15:AQ:63:VAL:HG11	1.84	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:B0:71:ARG:NH1	35:B2:2863:U:O2'	2.37	0.57
35:B2:1599:A:H1'	35:B2:1600:C:H5	1.68	0.57
44:BT:75:ILE:HD11	50:BZ:18:VAL:HG23	1.86	0.57
75:By:90:ALA:CB	75:By:94:LYS:HD3	2.34	0.57
76:Am:201:SER:HG	76:Am:205:SER:H	1.50	0.57
2:AD:78:VAL:HG12	2:AD:125:VAL:HB	1.86	0.57
9:AK:69:LEU:HD21	9:AK:96:ALA:HB2	1.86	0.57
35:B2:183:A:HO2'	35:B2:184:C:H6	1.51	0.57
35:B2:1120:U:H2'	35:B2:1121:G:H8	1.69	0.57
35:B2:1525:A:N7	74:Bx:2:PRO:HB3	2.19	0.57
35:B2:3304:U:OP2	35:B2:3305:C:N4	2.37	0.57
76:Am:152:SER:N	76:Am:168:ALA:O	2.37	0.57
79:S3:35:U:H1'	79:S3:36:U:H5'	1.86	0.57
7:AI:122:GLU:OE2	30:Ai:62:ARG:NH1	2.36	0.57
15:AQ:39:LYS:HA	15:AQ:42:LYS:HE2	1.85	0.57
34:B1:26:VAL:O	34:B1:30:GLU:HG3	2.04	0.57
35:B2:674:A:OP2	35:B2:2963:U:O2'	2.22	0.57
35:B2:715:U:H5'	35:B2:716:G:H5"	1.86	0.57
35:B2:1730:U:O2'	35:B2:1789:A:N1	2.33	0.57
35:B2:2910:G:N2	35:B2:2913:U:O2	2.33	0.57
35:B2:3267:A:H5"	35:B2:3268:U:H5'	1.86	0.57
1:AA:889:C:OP1	3:AE:159:SER:OG	2.21	0.57
1:AA:1032:U:H2'	1:AA:1033:U:H6	1.70	0.57
1:AA:1403:G:O2'	22:Aa:33:GLU:OE2	2.18	0.57
18:AT:34:SER:O	18:AT:42:ARG:NH1	2.37	0.57
35:B2:5:G:H2'	35:B2:6:A:H8	1.70	0.57
35:B2:379:G:O2'	35:B2:404:A:N6	2.35	0.57
35:B2:3144:C:H5	35:B2:3187:A:H62	1.51	0.57
44:BT:68:ARG:NH2	44:BT:238:MET:O	2.36	0.57
47:BW:155:ASN:OD1	47:BW:158:ASP:CG	2.47	0.57
49:BY:12:ARG:NH1	49:BY:59:THR:O	2.38	0.57
7:AI:35:SER:OG	30:Ai:54:ILE:O	2.23	0.57
8:AJ:204:ASN:HA	8:AJ:207:GLU:OE1	2.04	0.57
35:B2:2187:A:H2'	35:B2:2188:A:H5"	1.86	0.57
36:B3:16:U:H2'	36:B3:17:A:C8	2.40	0.57
38:BN:116:GLU:HB2	38:BN:161:ALA:HB1	1.86	0.57
1:AA:1608:U:H4'	20:AV:34:LYS:HE2	1.86	0.57
1:AA:1718:C:H42	1:AA:1766:U:H3	1.51	0.57
13:AO:14:GLN:HB3	13:AO:51:VAL:HG11	1.87	0.57
35:B2:26:A:N3	35:B2:336:U:O2'	2.36	0.57
35:B2:2606:U:O2'	35:B2:2607:A:O5'	2.20	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:BS:97:ILE:HB	43:BS:226:LYS:HE2	1.87	0.57
62:Bl:64:ARG:HG2	62:Bl:67:ARG:HH21	1.68	0.57
1:AA:1410:U:N3	1:AA:1423:C:OP2	2.35	0.57
35:B2:1438:G:N2	35:B2:1441:A:OP2	2.30	0.57
35:B2:1653:A:H2'	35:B2:1654:A:C8	2.39	0.57
35:B2:2600:U:H4'	71:Bu:61:ASN:HD21	1.70	0.57
1:AA:1188:A:H2'	1:AA:1189:G:C8	2.40	0.57
3:AE:133:TYR:CE1	3:AE:181:MET:HE3	2.39	0.57
35:B2:613:A:H1'	35:B2:1368:A:H5"	1.87	0.57
35:B2:1674:C:OP2	69:Bs:74:ARG:NH1	2.36	0.57
35:B2:1951:A:H61	35:B2:2427:C:N4	2.02	0.57
35:B2:2457:G:H2'	35:B2:2458:G:C8	2.40	0.57
35:B2:2792:A:H2'	35:B2:2793:G:C8	2.40	0.57
36:B3:39:C:H4'	47:BW:44:THR:HB	1.86	0.57
1:AA:236:G:H2'	1:AA:237:G:C8	2.39	0.57
1:AA:421:G:O2'	8:AJ:72:ARG:NH1	2.37	0.57
1:AA:477:A:H3'	11:AM:126:ARG:HH22	1.69	0.57
4:AF:98:LYS:NZ	4:AF:116:CYS:SG	2.75	0.57
35:B2:113:C:OP1	50:BZ:147:ARG:NH1	2.38	0.57
42:BR:61:LEU:HD11	42:BR:102:ILE:HG13	1.87	0.57
76:Am:5:LEU:HD23	76:Am:298:LEU:HD22	1.86	0.57
76:Am:202:PRO:HD3	76:Am:241:PHE:HB2	1.87	0.57
8:AJ:183:THR:HG22	8:AJ:185:ARG:H	1.69	0.56
18:AT:126:PHE:O	18:AT:134:ARG:NH2	2.38	0.56
35:B2:3336:G:OP2	35:B2:3336:G:N2	2.36	0.56
39:BO:212:ASN:HD21	39:BO:354:VAL:H	1.50	0.56
43:BS:88:GLU:HG2	56:Bf:135:PRO:HB3	1.87	0.56
45:BU:90:MET:HE2	45:BU:160:LYS:HE3	1.86	0.56
46:BV:52:LEU:HB2	46:BV:152:LEU:HD13	1.85	0.56
46:BV:190:ILE:HD12	46:BV:199:PHE:HD1	1.69	0.56
51:Ba:55:TYR:OH	51:Ba:74:PHE:O	2.23	0.56
78:Sn:35:A:H2'	78:Sn:36:U:C6	2.40	0.56
1:AA:1503:A:H2	1:AA:1648:G:H1'	1.69	0.56
5:AG:218:ILE:HG22	5:AG:220:LYS:H	1.69	0.56
35:B2:366:G:N2	35:B2:369:A:OP2	2.26	0.56
35:B2:1617:U:H2'	35:B2:1618:A:H5"	1.87	0.56
1:AA:593:C:H2'	1:AA:594:A:H8	1.70	0.56
1:AA:650:G:H22	1:AA:692:G:H1	1.52	0.56
1:AA:828:U:O2'	1:AA:830:G:OP1	2.23	0.56
1:AA:991:G:N1	1:AA:1038:A:O2'	2.35	0.56
18:AT:32:PRO:HD2	21:AW:8:ASP:HB3	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:AW:104:VAL:HG11	21:AW:121:ARG:HD3	1.86	0.56
35:B2:642:A:OP1	42:BR:126:LYS:NZ	2.38	0.56
35:B2:2358:A:H2'	35:B2:2359:A:C5	2.39	0.56
35:B2:2362:U:N3	35:B2:2400:A:N7	2.50	0.56
35:B2:2817:U:O2'	56:Bf:88:ARG:O	2.21	0.56
35:B2:3286:U:O4	35:B2:3303:C:O2'	2.22	0.56
37:B4:56:A:O2'	37:B4:59:G:N2	2.37	0.56
58:Bh:106:ASN:OD1	58:Bh:110:GLU:N	2.38	0.56
67:Bq:107:GLU:HA	67:Bq:107:GLU:OE1	2.05	0.56
78:Sn:58:A:O2'	78:Sn:60:A:OP2	2.18	0.56
1:AA:1496:C:H2'	1:AA:1497:G:H8	1.71	0.56
4:AF:57:LEU:O	23:Ab:15:ARG:NH1	2.38	0.56
18:AT:76:TYR:OH	18:AT:111:ARG:O	2.24	0.56
35:B2:240:G:H2'	35:B2:241:G:H8	1.70	0.56
35:B2:1042:G:H22	35:B2:1072:A:H2	1.51	0.56
35:B2:3283:A:N6	35:B2:3288:G:N7	2.48	0.56
38:BN:116:GLU:HG2	38:BN:123:GLY:H	1.70	0.56
65:Bo:30:VAL:HB	65:Bo:97:ALA:HB3	1.88	0.56
21:AW:6:VAL:HG11	21:AW:131:LEU:HB3	1.87	0.56
35:B2:1298:U:O2	35:B2:1306:C:N3	2.39	0.56
35:B2:1388:G:N2	35:B2:1390:A:O2'	2.28	0.56
35:B2:2248:G:H2'	35:B2:2249:G:H8	1.70	0.56
35:B2:2445:A:H2'	35:B2:2446:A:H8	1.71	0.56
36:B3:47:U:P	41:BQ:158:ARG:HH12	2.28	0.56
60:Bj:112:LEU:HB3	60:Bj:120:LYS:HG3	1.86	0.56
65:Bo:36:THR:HG23	65:Bo:97:ALA:HB2	1.85	0.56
1:AA:298:A:H4'	6:AH:128:ARG:HH12	1.71	0.56
1:AA:937:G:H2'	1:AA:938:A:H8	1.70	0.56
1:AA:1561:U:OP1	21:AW:74:ARG:NH1	2.38	0.56
18:AT:80:GLN:OE1	18:AT:113:LEU:O	2.24	0.56
20:AV:83:PHE:HE1	21:AW:36:ILE:HG21	1.70	0.56
35:B2:1223:C:N4	35:B2:1332:A:O2'	2.38	0.56
35:B2:2217:U:H2'	35:B2:2218:G:C8	2.40	0.56
35:B2:2382:U:OP2	58:Bh:73:LYS:NZ	2.38	0.56
35:B2:3277:A:H2'	35:B2:3278:A:C8	2.40	0.56
36:B3:110:G:H2'	36:B3:111:C:C6	2.40	0.56
37:B4:55:C:H1'	37:B4:69:A:H2'	1.87	0.56
53:Bc:121:GLU:OE2	53:Bc:131:ARG:NH1	2.31	0.56
55:Be:80:TYR:HE2	55:Be:89:MET:HE3	1.71	0.56
77:Sm:70:C:H2'	77:Sm:71:G:C8	2.41	0.56
1:AA:128:G:N2	1:AA:178:A:N3	2.53	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:142:U:O2'	1:AA:143:G:OP2	2.20	0.56
1:AA:812:G:O2'	13:AO:66:ARG:NH2	2.38	0.56
1:AA:901:U:O2'	16:AR:123:ILE:O	2.24	0.56
1:AA:1163:A:O2'	1:AA:1677:C:OP2	2.23	0.56
7:AI:22:ASN:HB3	7:AI:93:LYS:HZ1	1.70	0.56
35:B2:1251:U:H4'	35:B2:1252:A:H5"	1.86	0.56
35:B2:2188:A:H2'	35:B2:2189:C:C6	2.41	0.56
1:AA:962:U:H2'	1:AA:963:G:C8	2.41	0.56
4:AF:78:GLU:HG3	4:AF:185:ARG:HE	1.70	0.56
35:B2:250:A:H2'	35:B2:252:A:H5"	1.87	0.56
36:B3:75:G:H1'	36:B3:76:U:H5	1.71	0.56
40:BP:137:LEU:HD12	40:BP:144:ILE:HD13	1.86	0.56
60:Bj:89:ALA:O	60:Bj:119:LYS:NZ	2.38	0.56
68:Br:46:LEU:HD11	68:Br:75:PRO:HD3	1.87	0.56
1:AA:147:A:H3'	1:AA:148:A:H8	1.71	0.56
1:AA:275:U:H4'	1:AA:276:G:O5'	2.05	0.56
4:AF:115:LYS:HG2	4:AF:126:GLY:HA3	1.88	0.56
35:B2:2464:G:H2'	35:B2:2465:G:C8	2.41	0.56
35:B2:3212:G:OP1	35:B2:3212:G:N2	2.39	0.56
35:B2:3377:G:H2'	35:B2:3378:A:H8	1.70	0.56
36:B3:75:G:HO2'	36:B3:99:G:H1	1.53	0.56
45:BU:57:VAL:HG21	45:BU:68:ILE:HD11	1.88	0.56
62:Bl:23:VAL:HG12	62:Bl:45:GLY:HA3	1.87	0.56
10:AL:101:ILE:HG22	10:AL:168:VAL:HG22	1.88	0.56
11:AM:96:VAL:O	11:AM:99:LEU:HD23	2.05	0.56
28:Ag:40:THR:CG2	28:Ag:69:ILE:HB	2.35	0.56
35:B2:547:G:H2'	35:B2:548:U:H4'	1.88	0.56
35:B2:2651:G:O2'	62:Bl:136:PHE:O	2.24	0.56
35:B2:3287:A:H1'	51:Ba:177:LYS:HE3	1.87	0.56
36:B3:82:G:H2'	36:B3:83:G:C8	2.41	0.56
1:AA:3:C:O2	11:AM:17:ARG:NH1	2.40	0.55
1:AA:625:A:H4'	1:AA:626:A:H5"	1.88	0.55
1:AA:1487:C:O2'	21:AW:87:MET:O	2.21	0.55
11:AM:135:ARG:O	11:AM:135:ARG:HG2	2.06	0.55
24:Ac:18:GLU:HG2	24:Ac:69:ILE:HG12	1.86	0.55
26:Ae:20:ARG:HD2	26:Ae:74:LEU:HB3	1.88	0.55
27:Af:71:LYS:HG3	27:Af:74:GLN:HB3	1.87	0.55
35:B2:1700:G:O2'	35:B2:1742:G:N2	2.35	0.55
35:B2:2985:A:O2'	35:B2:3028:A:N3	2.33	0.55
39:BO:188:VAL:HA	39:BO:191:LYS:HD2	1.87	0.55
58:Bh:25:MET:HE3	58:Bh:102:GLY:HA3	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:Bp:21:MET:HE1	66:Bp:40:GLU:HB2	1.88	0.55
1:AA:178:A:H4'	1:AA:179:A:H5'	1.89	0.55
10:AL:81:VAL:HG22	10:AL:102:VAL:HG12	1.88	0.55
25:Ad:54:LYS:HG2	25:Ad:70:VAL:HG12	1.88	0.55
35:B2:216:A:N3	40:BP:223:ASN:ND2	2.52	0.55
35:B2:2284:C:N4	35:B2:2330:A:N7	2.54	0.55
36:B3:12:U:OP2	36:B3:67:C:O2'	2.24	0.55
36:B3:87:G:N2	36:B3:90:A:OP2	2.32	0.55
37:B4:31:U:H5"	61:Bk:12:ARG:HG3	1.88	0.55
43:BS:30:SER:OG	43:BS:34:ARG:NH2	2.39	0.55
45:BU:35:LEU:HD21	45:BU:148:SER:HA	1.87	0.55
76:Am:57:ARG:HD2	76:Am:95:GLY:HA3	1.89	0.55
77:Sm:38:A:H3'	77:Sm:39:A:C8	2.40	0.55
1:AA:1713:G:H2'	1:AA:1714:G:C8	2.41	0.55
31:Aj:36:LEU:H	31:Aj:36:LEU:HD12	1.71	0.55
35:B2:1120:U:H2'	35:B2:1121:G:C8	2.42	0.55
35:B2:1150:C:H2'	35:B2:1151:A:H8	1.72	0.55
35:B2:1207:C:H4'	51:Ba:90:PRO:HD3	1.89	0.55
35:B2:1255:C:H2'	35:B2:1256:A:H8	1.70	0.55
35:B2:1268:G:H1	35:B2:1282:A:H2	1.53	0.55
35:B2:3066:A:H4'	78:Sn:74:C:H5'	1.89	0.55
41:BQ:91:GLY:O	41:BQ:94:ASN:ND2	2.39	0.55
53:Bc:177:ARG:NH2	63:Bm:46:ASP:OD1	2.40	0.55
1:AA:1632:C:H2'	1:AA:1633:A:H8	1.70	0.55
35:B2:187:U:H2'	35:B2:188:C:C5	2.41	0.55
35:B2:1594:G:O6	35:B2:1614:U:N3	2.40	0.55
1:AA:797:U:H4'	26:Ae:12:PHE:CE1	2.41	0.55
35:B2:208:A:H2'	35:B2:209:G:H8	1.72	0.55
36:B3:4:U:H2'	36:B3:5:A:C8	2.40	0.55
37:B4:16:C:H2'	37:B4:17:A:C8	2.41	0.55
7:AI:121:ARG:HB2	7:AI:196:GLU:OE1	2.07	0.55
33:B0:63:LYS:NZ	35:B2:2891:G:N7	2.52	0.55
35:B2:164:G:H2'	35:B2:165:A:C8	2.42	0.55
35:B2:687:U:H2'	35:B2:688:C:C6	2.42	0.55
35:B2:984:A:H4'	35:B2:1000:G:N2	2.21	0.55
42:BR:129:ARG:HB3	42:BR:133:VAL:HG11	1.89	0.55
50:BZ:42:PRO:HG3	50:BZ:61:ILE:HG13	1.88	0.55
51:Ba:131:LYS:HZ1	51:Ba:134:ARG:HH21	1.54	0.55
1:AA:29:U:H2'	1:AA:30:G:C8	2.41	0.55
14:AP:66:VAL:HG13	14:AP:94:VAL:HG11	1.89	0.55
21:AW:4:VAL:HG11	21:AW:136:TYR:HA	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:167:G:O6	35:B2:268:U:O4	2.25	0.55
35:B2:479:A:H2'	35:B2:480:G:H8	1.71	0.55
35:B2:727:C:H2'	35:B2:728:G:H8	1.71	0.55
35:B2:1696:G:H2'	35:B2:1697:G:H8	1.69	0.55
76:Am:256:ILE:HB	76:Am:270:LEU:HB2	1.88	0.55
1:AA:332:G:H2'	1:AA:333:G:H8	1.71	0.55
13:AO:54:LYS:HE3	13:AO:128:LEU:HG	1.89	0.55
35:B2:297:A:H2'	35:B2:298:G:H8	1.71	0.55
35:B2:369:A:O3'	72:Bv:45:ARG:NH2	2.36	0.55
35:B2:413:U:H4'	35:B2:1450:C:H4'	1.88	0.55
35:B2:615:G:N2	35:B2:637:U:OP1	2.36	0.55
35:B2:2339:G:H2'	35:B2:2340:A:H8	1.72	0.55
35:B2:3377:G:H2'	35:B2:3378:A:C8	2.42	0.55
36:B3:16:U:H2'	36:B3:17:A:H8	1.71	0.55
1:AA:483:A:H2'	1:AA:484:A:H8	1.70	0.55
7:AI:35:SER:HB3	7:AI:145:ARG:HH22	1.71	0.55
35:B2:414:G:OP1	35:B2:1449:U:O2'	2.21	0.55
35:B2:1701:G:H2'	35:B2:1702:A:H8	1.72	0.55
46:BV:38:ARG:HH21	46:BV:41:ALA:HA	1.71	0.55
55:Be:76:ILE:HG23	55:Be:125:VAL:HG22	1.88	0.55
73:Bw:5:ILE:HD12	73:Bw:11:PHE:HD1	1.72	0.55
1:AA:1260:G:H2'	17:AS:63:ARG:HH22	1.71	0.55
17:AS:69:ARG:NH2	17:AS:96:GLU:OE1	2.39	0.55
17:AS:106:ASN:HD21	17:AS:130:THR:HA	1.70	0.55
35:B2:217:G:C4	35:B2:237:U:H4'	2.41	0.55
35:B2:219:G:OP2	61:Bk:1:MET:N	2.37	0.55
35:B2:1017:U:H2'	35:B2:1018:U:C6	2.41	0.55
70:Bt:58:THR:O	70:Bt:62:GLU:HG3	2.06	0.55
1:AA:849:G:H2'	1:AA:850:U:H5	1.71	0.54
1:AA:1502:C:O2'	18:AT:69:GLY:O	2.20	0.54
2:AD:110:PHE:HB2	2:AD:138:GLU:HB3	1.87	0.54
3:AE:44:GLY:HA3	16:AR:35:LEU:HD22	1.88	0.54
3:AE:201:THR:O	3:AE:201:THR:HG22	2.07	0.54
5:AG:160:ILE:HG22	5:AG:166:ALA:HB2	1.88	0.54
10:AL:80:GLN:HE21	10:AL:94:ASN:HD21	1.55	0.54
13:AO:51:VAL:HG13	13:AO:52:ASP:H	1.72	0.54
35:B2:290:G:O2'	35:B2:291:G:OP2	2.19	0.54
35:B2:787:G:H1	35:B2:804:A:H61	1.54	0.54
35:B2:1849:G:OP1	62:Bl:135:ARG:NH2	2.40	0.54
36:B3:20:C:O2	41:BQ:272:GLN:NE2	2.39	0.54
39:BO:19:ARG:HA	39:BO:273:MET:CE	2.37	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:BU:87:ARG:HB2	45:BU:185:ILE:HG12	1.89	0.54
1:AA:910:G:H2'	1:AA:911:U:C6	2.42	0.54
1:AA:1178:A:N6	1:AA:1623:U:O4	2.34	0.54
1:AA:1761:A:H2'	1:AA:1762:G:C8	2.41	0.54
35:B2:2459:G:N1	35:B2:2463:G:OP2	2.34	0.54
41:BQ:88:ILE:HD11	41:BQ:243:ALA:HB3	1.89	0.54
60:Bj:114:ARG:HD3	60:Bj:120:LYS:HE3	1.88	0.54
65:Bo:48:ILE:HD11	65:Bo:73:VAL:HG22	1.89	0.54
1:AA:649:U:H2'	1:AA:650:G:C8	2.43	0.54
1:AA:1434:U:O2'	1:AA:1436:G:OP2	2.21	0.54
10:AL:77:ARG:NE	10:AL:78:ILE:O	2.39	0.54
11:AM:17:ARG:O	11:AM:23:ARG:NH2	2.40	0.54
35:B2:863:G:O2'	35:B2:1919:A:N3	2.34	0.54
38:BN:26:ALA:HB3	38:BN:127:ARG:HH22	1.73	0.54
50:BZ:199:ARG:HH22	50:BZ:201:ARG:HH21	1.55	0.54
1:AA:108:C:H2'	1:AA:109:A:H8	1.73	0.54
1:AA:1375:G:H1'	21:AW:129:ARG:HH21	1.72	0.54
1:AA:1607:U:H2'	1:AA:1608:U:C6	2.43	0.54
35:B2:2976:C:H2'	35:B2:2977:U:C6	2.43	0.54
35:B2:2990:G:H1	35:B2:3000:U:H3	1.55	0.54
47:BW:81:GLU:HG3	47:BW:167:TYR:HE1	1.72	0.54
60:Bj:86:HIS:HB3	60:Bj:88:LYS:NZ	2.17	0.54
20:AV:114:LEU:HA	20:AV:117:ILE:HG12	1.90	0.54
35:B2:718:A:OP1	40:BP:48:LYS:NZ	2.31	0.54
35:B2:2432:U:H2'	35:B2:2433:A:C8	2.43	0.54
35:B2:2477:C:O2'	35:B2:3408:A:N1	2.39	0.54
35:B2:2517:G:H2'	35:B2:2518:A:H8	1.73	0.54
35:B2:3259:C:N4	35:B2:3387:G:H1	2.05	0.54
65:Bo:49:LEU:HB2	65:Bo:96:LEU:HB3	1.89	0.54
1:AA:483:A:H2'	1:AA:484:A:C8	2.42	0.54
1:AA:1620:U:H2'	1:AA:1621:C:H6	1.73	0.54
1:AA:1688:U:H2'	1:AA:1689:A:H8	1.73	0.54
5:AG:42:ARG:HA	5:AG:42:ARG:NE	2.23	0.54
26:Ae:41:ARG:HH22	26:Ae:94:VAL:HG13	1.72	0.54
1:AA:183:U:H3	1:AA:203:A:H61	1.56	0.54
18:AT:47:GLU:OE2	18:AT:111:ARG:NH2	2.41	0.54
25:Ad:101:LEU:HD13	25:Ad:124:LYS:HB2	1.90	0.54
34:B1:41:PHE:O	35:B2:1769:A:N6	2.37	0.54
35:B2:378:U:H4'	35:B2:412:G:H5'	1.89	0.54
35:B2:1094:A:N3	56:Bf:130:ARG:NH2	2.56	0.54
44:BT:58:LEU:HD23	44:BT:58:LEU:C	2.33	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:BV:150:GLU:OE1	46:BV:154:ARG:NH1	2.41	0.54
4:AF:89:THR:HG22	4:AF:90:ARG:N	2.21	0.54
26:Ae:8:ARG:HG3	26:Ae:26:ASP:OD2	2.07	0.54
35:B2:681:A:H2'	35:B2:682:A:H8	1.72	0.54
35:B2:3014:A:H61	35:B2:3022:C:H42	1.56	0.54
37:B4:103:G:O2'	72:Bv:81:GLY:O	2.18	0.54
47:BW:26:SER:HB2	47:BW:30:LEU:HA	1.90	0.54
60:Bj:88:LYS:H	60:Bj:88:LYS:CD	2.21	0.54
2:AD:82:ARG:HH22	2:AD:168:LYS:HA	1.72	0.54
5:AG:9:LYS:HA	5:AG:12:LYS:HB2	1.90	0.54
6:AH:220:THR:OG1	6:AH:221:ARG:N	2.41	0.54
8:AJ:121:ILE:O	8:AJ:125:THR:OG1	2.25	0.54
10:AL:110:ARG:HH12	10:AL:113:TYR:HB3	1.73	0.54
19:AU:17:ILE:HD12	19:AU:58:MET:CE	2.32	0.54
35:B2:4:U:H2'	35:B2:5:G:H8	1.66	0.54
35:B2:323:C:OP1	48:BX:102:ARG:NH2	2.41	0.54
35:B2:689:U:H2'	35:B2:690:A:C8	2.43	0.54
35:B2:713:G:H22	40:BP:234:ARG:NH2	2.06	0.54
35:B2:2653:G:OP1	38:BN:68:TYR:OH	2.20	0.54
35:B2:2783:U:N3	41:BQ:17:GLN:O	2.37	0.54
35:B2:3093:G:O6	35:B2:3247:U:O2	2.25	0.54
35:B2:3258:G:N2	35:B2:3389:G:O6	2.40	0.54
37:B4:29:C:H5"	40:BP:196:LEU:HD11	1.90	0.54
46:BV:201:ASN:O	46:BV:209:LYS:NZ	2.41	0.54
70:Bt:106:GLN:HG3	70:Bt:110:GLU:OE1	2.08	0.54
76:Am:38:LYS:NZ	76:Am:63:SER:HA	2.22	0.54
76:Am:220:ASP:O	76:Am:224:SER:N	2.41	0.54
1:AA:1424:C:H2'	1:AA:1425:A:C8	2.43	0.54
1:AA:1627:A:H5"	18:AT:133:ALA:HB2	1.89	0.54
11:AM:91:MET:HE2	11:AM:92:LYS:N	2.23	0.54
19:AU:76:GLU:O	19:AU:79:GLU:HG3	2.08	0.54
35:B2:652:U:H2'	35:B2:653:U:C6	2.43	0.54
35:B2:1651:A:H2'	35:B2:1652:G:H8	1.73	0.54
35:B2:2339:G:H2'	35:B2:2340:A:C8	2.43	0.54
1:AA:971:U:OP1	1:AA:1088:C:O2'	2.26	0.53
2:AD:43:ARG:HH21	2:AD:47:GLY:HA2	1.72	0.53
21:AW:14:PHE:CE1	21:AW:134:ILE:HD13	2.42	0.53
35:B2:978:U:H2'	35:B2:979:G:H8	1.72	0.53
35:B2:1915:G:O2'	54:Bd:60:ARG:NH1	2.41	0.53
35:B2:1975:U:O2'	35:B2:1987:A:N7	2.37	0.53
35:B2:2521:U:H1'	50:BZ:125:ALA:HB2	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:BR:52:LEU:O	42:BR:75:GLN:NE2	2.38	0.53
55:Be:88:ASN:HD21	56:Bf:156:TYR:HB3	1.72	0.53
1:AA:310:G:OP1	13:AO:100:ARG:NH1	2.41	0.53
8:AJ:1:MET:SD	8:AJ:107:ALA:HA	2.48	0.53
10:AL:93:THR:HG23	10:AL:95:THR:HG23	1.90	0.53
14:AP:131:GLU:HB2	14:AP:136:LEU:HD22	1.88	0.53
21:AW:15:ILE:HG12	21:AW:58:ALA:HB3	1.89	0.53
35:B2:1115:G:H2'	35:B2:1116:G:H8	1.73	0.53
35:B2:2321:A:H2'	35:B2:2322:G:C8	2.43	0.53
35:B2:2821:C:H3'	35:B2:2823:G:H21	1.73	0.53
48:BX:170:ALA:HB1	63:Bm:143:VAL:HG21	1.90	0.53
62:Bl:103:GLU:HB2	62:Bl:106:GLN:HB2	1.88	0.53
17:AS:60:ASN:HA	17:AS:63:ARG:HD2	1.89	0.53
21:AW:27:LYS:C	21:AW:110:ILE:HD11	2.33	0.53
34:B1:87:ARG:HG2	34:B1:91:MET:SD	2.49	0.53
35:B2:1140:U:H2'	35:B2:1141:C:C6	2.43	0.53
35:B2:1536:G:N2	35:B2:1547:G:N7	2.52	0.53
35:B2:1631:C:H2'	35:B2:1632:C:C6	2.43	0.53
35:B2:2298:G:H2'	35:B2:2299:U:C6	2.44	0.53
59:Bi:46:PRO:N	59:Bi:46:PRO:HG3	2.00	0.53
7:AI:24:PHE:HB3	7:AI:25:PRO:HD3	1.90	0.53
8:AJ:1:MET:CG	8:AJ:107:ALA:O	2.52	0.53
12:AN:57:THR:OG1	12:AN:66:TYR:CE1	2.59	0.53
17:AS:104:ILE:HD11	17:AS:128:SER:HB3	1.91	0.53
30:Ai:22:SER:HB3	30:Ai:23:ARG:HH11	1.74	0.53
35:B2:165:A:H2'	35:B2:166:A:H8	1.73	0.53
35:B2:2432:U:H2'	35:B2:2433:A:H8	1.72	0.53
35:B2:2494:C:H2'	35:B2:2495:C:C6	2.43	0.53
35:B2:2814:U:H2'	35:B2:2815:G:C8	2.44	0.53
36:B3:3:C:H2'	36:B3:4:U:H6	1.73	0.53
36:B3:46:C:H5"	36:B3:46:C:H6	1.72	0.53
78:Sn:8:U:H5'	78:Sn:49:C:H5'	1.90	0.53
20:AV:60:THR:OG1	20:AV:63:GLU:OE1	2.26	0.53
28:Ag:70:LYS:HD3	28:Ag:72:GLN:HE21	1.73	0.53
35:B2:1509:A:H4'	66:Bp:62:LYS:HG3	1.89	0.53
37:B4:71:G:O2'	70:Bt:51:LYS:NZ	2.41	0.53
1:AA:201:G:H2'	1:AA:202:G:C8	2.44	0.53
3:AE:103:LEU:H	3:AE:215:VAL:HG13	1.74	0.53
8:AJ:195:ALA:HB2	8:AJ:198:ARG:NH2	2.24	0.53
13:AO:129:SER:O	13:AO:131:THR:N	2.42	0.53
21:AW:104:VAL:O	21:AW:108:GLU:HG3	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:Af:41:SER:H	27:Af:44:VAL:HG22	1.73	0.53
29:Ah:29:ARG:HG2	29:Ah:29:ARG:NH1	2.19	0.53
29:Ah:33:MET:HE3	29:Ah:46:VAL:HG23	1.89	0.53
35:B2:2204:G:OP1	35:B2:2206:C:N4	2.42	0.53
35:B2:2330:A:H5'	38:BN:244:LEU:H	1.72	0.53
35:B2:3003:G:H2'	35:B2:3004:U:C6	2.43	0.53
35:B2:3112:A:H2'	35:B2:3113:A:C8	2.43	0.53
35:B2:3252:U:H2'	35:B2:3253:G:C8	2.43	0.53
40:BP:332:PRO:HB2	43:BS:53:ALA:HB2	1.91	0.53
41:BQ:94:ASN:OD1	41:BQ:97:ALA:N	2.40	0.53
45:BU:160:LYS:NZ	45:BU:178:TYR:O	2.40	0.53
47:BW:29:ARG:HG2	47:BW:32:ARG:HB2	1.90	0.53
1:AA:250:A:O2'	13:AO:34:ASP:O	2.25	0.53
1:AA:944:A:OP2	1:AA:946:C:N4	2.41	0.53
1:AA:1567:A:H2'	1:AA:1568:C:H5'	1.91	0.53
1:AA:1685:C:O2'	35:B2:2343:A:N3	2.35	0.53
2:AD:112:ASN:O	2:AD:115:THR:HG22	2.08	0.53
4:AF:55:ILE:HG23	4:AF:60:LEU:HB2	1.91	0.53
8:AJ:31:ARG:HG3	8:AJ:101:ILE:HG22	1.90	0.53
28:Ag:37:LYS:O	28:Ag:38:ARG:NH1	2.39	0.53
35:B2:943:C:H42	38:BN:3:ARG:HD3	1.74	0.53
35:B2:1079:A:N3	35:B2:2728:U:O2'	2.42	0.53
35:B2:1274:G:H2'	35:B2:1275:A:H5"	1.91	0.53
35:B2:1543:A:H2'	35:B2:1544:G:C8	2.43	0.53
41:BQ:213:ASP:OD1	41:BQ:213:ASP:N	2.40	0.53
44:BT:162:LEU:HD23	50:BZ:7:LEU:HD11	1.90	0.53
53:Bc:70:THR:HA	53:Bc:77:LEU:HD12	1.91	0.53
1:AA:1688:U:H2'	1:AA:1689:A:C8	2.44	0.53
26:Ae:26:ASP:OD2	26:Ae:26:ASP:N	2.41	0.53
35:B2:3036:A:N7	39:BO:256:HIS:NE2	2.56	0.53
1:AA:1258:G:H1'	17:AS:64:PHE:CZ	2.44	0.53
1:AA:1427:U:H2'	1:AA:1428:G:H8	1.74	0.53
4:AF:119:GLU:HG3	4:AF:121:ALA:H	1.74	0.53
7:AI:94:HIS:O	7:AI:98:ILE:HG22	2.09	0.53
35:B2:1954:G:O2'	35:B2:2422:U:O4	2.22	0.53
45:BU:53:ILE:H	45:BU:53:ILE:HD12	1.74	0.53
78:Sn:42:U:H2'	78:Sn:43:G:C8	2.44	0.53
1:AA:1497:G:H2'	1:AA:1498:G:C8	2.44	0.53
10:AL:83:TYR:HB2	10:AL:196:MET:HE3	1.91	0.53
11:AM:91:MET:SD	11:AM:91:MET:O	2.67	0.53
32:Ak:54:LYS:HB2	32:Ak:56:ARG:HG2	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:50:U:H2'	35:B2:51:A:H8	1.75	0.53
35:B2:86:G:O2'	35:B2:98:G:O6	2.23	0.53
35:B2:2389:U:H2'	35:B2:2390:G:H8	1.73	0.53
41:BQ:96:THR:HG21	41:BQ:240:TYR:CG	2.44	0.53
76:Am:218:LEU:HB3	76:Am:227:LEU:HB2	1.91	0.53
78:Sn:28:A:H2'	78:Sn:29:G:C8	2.43	0.53
1:AA:787:A:N6	1:AA:801:C:O2	2.35	0.52
1:AA:974:U:OP2	29:Ah:20:LYS:NZ	2.43	0.52
35:B2:2517:G:H2'	35:B2:2518:A:C8	2.45	0.52
35:B2:3275:A:O2'	51:Ba:118:ARG:NH2	2.42	0.52
39:BO:152:LYS:HG2	39:BO:189:ALA:HA	1.90	0.52
78:Sn:9:G:H2'	78:Sn:11:C:H41	1.73	0.52
6:AH:152:PRO:HG2	6:AH:153:LEU:HD22	1.92	0.52
8:AJ:152:ASP:OD2	8:AJ:155:GLN:NE2	2.42	0.52
11:AM:12:TYR:HB2	11:AM:43:TRP:HB2	1.92	0.52
13:AO:91:ILE:HG22	13:AO:94:TYR:H	1.74	0.52
17:AS:114:GLU:HG2	17:AS:116:ARG:HE	1.73	0.52
20:AV:117:ILE:HG13	20:AV:119:THR:HG23	1.89	0.52
29:Ah:13:GLU:OE2	29:Ah:17:ARG:NH1	2.41	0.52
35:B2:244:G:H2'	35:B2:245:A:H8	1.75	0.52
35:B2:609:A:H2'	35:B2:610:C:C6	2.44	0.52
35:B2:1840:A:H2'	35:B2:1841:A:C8	2.44	0.52
35:B2:2852:U:H4'	56:Bf:7:ILE:HB	1.90	0.52
35:B2:3111:C:H2'	35:B2:3112:A:H8	1.74	0.52
39:BO:41:VAL:HA	39:BO:185:GLY:HA3	1.91	0.52
41:BQ:99:TYR:OH	41:BQ:168:ASP:OD2	2.27	0.52
63:Bm:75:LEU:HD11	63:Bm:133:ALA:HA	1.91	0.52
1:AA:247:G:OP1	6:AH:155:LYS:NZ	2.40	0.52
1:AA:561:U:O2'	1:AA:562:C:OP2	2.26	0.52
5:AG:216:GLU:HG3	5:AG:218:ILE:H	1.75	0.52
41:BQ:238:ASP:O	41:BQ:242:GLU:HG2	2.10	0.52
47:BW:86:VAL:HG21	47:BW:109:HIS:HA	1.91	0.52
49:BY:38:LEU:HD12	49:BY:50:VAL:HG22	1.91	0.52
1:AA:12:U:H2'	1:AA:13:C:C6	2.44	0.52
1:AA:45:U:O2'	1:AA:46:A:H2'	2.07	0.52
1:AA:100:C:OP2	1:AA:381:A:O2'	2.19	0.52
1:AA:453:C:N4	1:AA:454:G:O6	2.42	0.52
3:AE:72:ASP:OD1	16:AR:116:ARG:NH2	2.43	0.52
13:AO:37:LEU:HD13	13:AO:67:ILE:HD11	1.92	0.52
35:B2:190:G:H2'	35:B2:191:U:O4'	2.09	0.52
35:B2:1071:U:H2'	35:B2:1072:A:C8	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:1827:G:H2'	35:B2:1828:A:C8	2.43	0.52
41:BQ:231:ILE:HG13	41:BQ:232:GLU:H	1.74	0.52
72:Bv:27:PHE:HA	72:Bv:34:CYS:HA	1.92	0.52
75:By:90:ALA:HB3	75:By:94:LYS:NZ	2.24	0.52
78:Sn:43:G:H2'	78:Sn:44:A:C8	2.44	0.52
1:AA:139:A:H62	1:AA:269:A:H61	1.56	0.52
5:AG:36:TYR:OH	5:AG:39:CYS:SG	2.62	0.52
8:AJ:54:GLY:C	8:AJ:63:MET:HE1	2.32	0.52
8:AJ:195:ALA:HA	8:AJ:198:ARG:NE	2.24	0.52
35:B2:467:A:H2'	35:B2:468:G:C8	2.44	0.52
35:B2:1780:G:N2	35:B2:1781:G:O6	2.42	0.52
47:BW:71:VAL:HB	47:BW:75:LYS:HG3	1.90	0.52
52:Bb:116:HIS:HB3	52:Bb:149:ILE:HB	1.91	0.52
75:By:90:ALA:HB3	75:By:94:LYS:CD	2.40	0.52
76:Am:220:ASP:HB3	76:Am:223:GLU:HB2	1.91	0.52
1:AA:764:G:H2'	1:AA:765:A:C8	2.44	0.52
6:AH:206:GLU:HB3	6:AH:222:LEU:HB2	1.92	0.52
26:Ae:119:PHE:O	26:Ae:124:ARG:NH1	2.42	0.52
35:B2:2770:C:H5"	35:B2:2771:A:C8	2.45	0.52
41:BQ:37:ILE:HD12	56:Bf:31:LEU:HD21	1.92	0.52
49:BY:132:LEU:HD11	51:Ba:178:LYS:HD2	1.91	0.52
73:Bw:25:ILE:HG13	73:Bw:58:ARG:HH21	1.74	0.52
1:AA:937:G:H2'	1:AA:938:A:C8	2.44	0.52
18:AT:79:ARG:HH12	18:AT:111:ARG:HD3	1.74	0.52
19:AU:17:ILE:HG22	19:AU:69:ILE:HG21	1.92	0.52
22:Aa:101:ILE:O	22:Aa:105:HIS:ND1	2.42	0.52
35:B2:66:A:N6	35:B2:76:G:H1'	2.25	0.52
35:B2:2439:U:H2'	35:B2:2440:A:H8	1.75	0.52
35:B2:2501:A:H2'	35:B2:2502:G:H8	1.75	0.52
41:BQ:192:ASP:OD1	41:BQ:192:ASP:N	2.37	0.52
44:BT:99:PRO:HG3	44:BT:190:ILE:HD12	1.92	0.52
76:Am:66:VAL:HA	76:Am:82:SER:HA	1.91	0.52
76:Am:129:ILE:HG12	76:Am:151:VAL:HG21	1.90	0.52
1:AA:968:G:H2'	1:AA:969:G:H8	1.75	0.52
1:AA:1219:A:N6	1:AA:1477:C:OP1	2.43	0.52
6:AH:184:THR:O	6:AH:189:MET:HE3	2.09	0.52
15:AQ:29:ASP:O	15:AQ:31:ASP:N	2.43	0.52
18:AT:124:LYS:HA	18:AT:131:ALA:HA	1.90	0.52
35:B2:735:G:N2	35:B2:738:A:OP2	2.39	0.52
35:B2:1846:A:OP1	69:Bs:71:LYS:HE3	2.10	0.52
35:B2:2743:G:OP1	46:BV:24:ARG:NH2	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:B3:94:C:H2'	36:B3:95:A:H8	1.75	0.52
44:BT:97:TYR:HB3	44:BT:131:ASN:HA	1.92	0.52
44:BT:158:ASP:HB3	44:BT:159:PRO:HD3	1.91	0.52
47:BW:21:ILE:HA	47:BW:125:MET:CE	2.39	0.52
1:AA:5:U:H2'	1:AA:6:G:H8	1.75	0.52
1:AA:309:U:OP1	13:AO:102:LYS:HD2	2.10	0.52
1:AA:694:G:H2'	1:AA:695:G:C8	2.44	0.52
1:AA:876:U:H4'	15:AQ:20:ARG:HH11	1.74	0.52
1:AA:1369:G:N2	1:AA:1393:U:O2	2.38	0.52
35:B2:1311:C:O2'	35:B2:1312:U:O4'	2.26	0.52
35:B2:1455:A:H2'	35:B2:1456:G:H8	1.75	0.52
35:B2:2495:C:H2'	35:B2:2496:U:H6	1.75	0.52
35:B2:2830:U:H2'	35:B2:2831:A:C8	2.44	0.52
39:BO:204:ASP:OD1	39:BO:204:ASP:N	2.40	0.52
41:BQ:197:LYS:HG3	41:BQ:202:GLY:HA3	1.92	0.52
42:BR:52:LEU:HD13	42:BR:80:LEU:HD11	1.91	0.52
1:AA:512:G:H2'	1:AA:513:G:C8	2.45	0.52
3:AE:144:ARG:HB3	3:AE:208:GLN:HB3	1.92	0.52
8:AJ:3:LEU:HD12	8:AJ:109:LEU:HD23	1.91	0.52
21:AW:8:ASP:OD1	21:AW:8:ASP:N	2.43	0.52
24:Ac:55:ASP:OD1	24:Ac:56:HIS:N	2.43	0.52
25:Ad:15:ASN:O	25:Ad:19:GLU:HG3	2.10	0.52
35:B2:654:U:H2'	35:B2:655:C:C6	2.45	0.52
35:B2:1401:G:N2	35:B2:1402:U:O4	2.42	0.52
35:B2:3292:U:O2'	35:B2:3294:G:N2	2.43	0.52
55:Be:11:ARG:HB3	55:Be:23:LEU:HD23	1.92	0.52
1:AA:1827:U:OP1	16:AR:138:ARG:NH2	2.43	0.51
3:AE:123:ALA:HB1	3:AE:169:PHE:HE1	1.75	0.51
6:AH:11:ARG:NH1	6:AH:21:ASP:O	2.43	0.51
7:AI:121:ARG:HH22	7:AI:145:ARG:HE	1.46	0.51
12:AN:16:PHE:HB2	12:AN:76:LEU:HD13	1.92	0.51
17:AS:93:ILE:HG23	17:AS:97:MET:HE3	1.92	0.51
25:Ad:67:ARG:HB3	25:Ad:84:PHE:HE1	1.76	0.51
35:B2:180:U:H2'	35:B2:181:A:C8	2.45	0.51
35:B2:1424:A:N6	35:B2:1452:A:O2'	2.42	0.51
35:B2:2757:G:H2'	35:B2:2758:A:H8	1.75	0.51
47:BW:132:ASP:N	47:BW:132:ASP:OD1	2.40	0.51
1:AA:514:A:N7	1:AA:515:A:N6	2.58	0.51
1:AA:525:U:H5"	26:Ae:37:LYS:HD3	1.93	0.51
1:AA:1243:A:O2'	1:AA:1273:A:N6	2.43	0.51
1:AA:1393:U:H2'	1:AA:1394:A:C8	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1440:C:O2'	5:AG:162:SER:O	2.28	0.51
1:AA:1487:C:H2'	1:AA:1488:U:C6	2.45	0.51
2:AD:26:HIS:HB3	2:AD:53:LEU:HD21	1.92	0.51
4:AF:184:LYS:NZ	4:AF:188:GLN:OE1	2.43	0.51
11:AM:72:GLU:OE2	11:AM:72:GLU:HA	2.11	0.51
15:AQ:87:ASP:N	15:AQ:87:ASP:OD1	2.44	0.51
35:B2:91:G:OP2	35:B2:93:C:N4	2.37	0.51
35:B2:443:C:H2'	35:B2:444:A:C8	2.45	0.51
35:B2:2331:A:H4'	35:B2:2401:A:H2'	1.92	0.51
35:B2:2494:C:H2'	35:B2:2495:C:H6	1.74	0.51
58:Bh:81:VAL:HB	58:Bh:120:VAL:HG23	1.92	0.51
72:Bv:64:MET:HB2	72:Bv:68:LYS:HE2	1.92	0.51
75:By:35:VAL:HG22	75:By:67:ILE:HG21	1.92	0.51
1:AA:691:C:H2'	1:AA:692:G:C8	2.44	0.51
1:AA:1647:C:H2'	1:AA:1648:G:C8	2.45	0.51
17:AS:131:TYR:OH	20:AV:124:ARG:NH2	2.40	0.51
19:AU:12:ALA:O	19:AU:16:VAL:HG13	2.11	0.51
25:Ad:21:ARG:HD2	25:Ad:27:TYR:CD1	2.46	0.51
33:B0:28:TYR:HB3	33:B0:69:VAL:HB	1.90	0.51
35:B2:977:C:H2'	35:B2:978:U:C6	2.45	0.51
35:B2:1263:C:N4	35:B2:1264:G:O6	2.43	0.51
35:B2:2304:G:N1	35:B2:2316:A:N6	2.36	0.51
35:B2:3160:U:H2'	35:B2:3161:G:C8	2.44	0.51
35:B2:3247:U:O2'	35:B2:3497:G:N2	2.44	0.51
35:B2:3336:G:H2'	35:B2:3337:A:C8	2.45	0.51
46:BV:156:GLN:NE2	46:BV:163:GLN:O	2.44	0.51
76:Am:91:ASP:OD1	76:Am:98:THR:OG1	2.28	0.51
1:AA:388:A:H5"	10:AL:22:ARG:HG2	1.92	0.51
1:AA:921:A:H2	1:AA:1013:A:H1'	1.73	0.51
1:AA:1497:G:H2'	1:AA:1498:G:H8	1.75	0.51
3:AE:226:GLN:HB3	35:B2:2632:A:H4'	1.92	0.51
6:AH:205:PHE:HE1	6:AH:221:ARG:CZ	2.24	0.51
18:AT:76:TYR:OH	18:AT:112:THR:OG1	2.27	0.51
35:B2:1594:G:H21	35:B2:1616:C:H6	1.58	0.51
35:B2:2680:C:C4	44:BT:239:GLY:HA3	2.45	0.51
39:BO:113:GLU:HB3	39:BO:176:ALA:HB2	1.91	0.51
1:AA:750:A:H2'	1:AA:751:G:C8	2.45	0.51
1:AA:817:G:H21	24:Ac:107:SER:HB2	1.75	0.51
1:AA:1557:A:H5"	22:Aa:56:LEU:HD23	1.92	0.51
1:AA:1633:A:H2'	1:AA:1634:A:C8	2.46	0.51
1:AA:1714:G:H1	1:AA:1770:A:H2	1.55	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:AL:83:TYR:HB2	10:AL:196:MET:HE2	1.92	0.51
35:B2:786:C:H2'	35:B2:787:G:C8	2.45	0.51
35:B2:1183:G:H1	35:B2:1231:A:H61	1.57	0.51
35:B2:2622:C:OP1	38:BN:36:ARG:NH1	2.44	0.51
43:BS:128:ASN:HB2	56:Bf:132:PRO:HB2	1.92	0.51
43:BS:156:LEU:HD21	43:BS:210:ILE:HD13	1.92	0.51
46:BV:145:ARG:HH11	46:BV:167:VAL:HG11	1.75	0.51
1:AA:37:U:OP1	1:AA:532:A:O2'	2.25	0.51
1:AA:1633:A:H2'	1:AA:1634:A:H8	1.76	0.51
18:AT:10:LYS:HG3	18:AT:76:TYR:CG	2.46	0.51
35:B2:932:G:H1'	35:B2:1624:A:N6	2.26	0.51
35:B2:1568:A:H2'	35:B2:1569:A:C8	2.45	0.51
36:B3:9:C:OP1	56:Bf:26:ARG:HB2	2.11	0.51
36:B3:47:U:H5'	41:BQ:204:VAL:HG22	1.91	0.51
45:BU:122:ARG:H	45:BU:122:ARG:HD2	1.76	0.51
1:AA:297:C:H2'	1:AA:298:A:H8	1.75	0.51
4:AF:232:ARG:HG2	4:AF:232:ARG:HH11	1.75	0.51
9:AK:53:VAL:HG23	9:AK:55:GLY:H	1.76	0.51
16:AR:21:ILE:HB	16:AR:85:ILE:HG23	1.92	0.51
33:B0:61:LYS:O	33:B0:61:LYS:HD3	2.10	0.51
35:B2:532:A:H2'	35:B2:533:A:C8	2.46	0.51
35:B2:774:C:H2'	35:B2:775:A:H8	1.74	0.51
35:B2:3244:C:H2'	35:B2:3245:G:H8	1.76	0.51
35:B2:3369:A:H4'	35:B2:3370:U:H3'	1.91	0.51
47:BW:44:THR:HG22	47:BW:46:VAL:H	1.75	0.51
57:Bg:51:VAL:HG22	57:Bg:52:VAL:H	1.76	0.51
1:AA:327:U:OP1	13:AO:130:LYS:NZ	2.40	0.51
1:AA:1192:U:H2'	1:AA:1193:G:H8	1.76	0.51
1:AA:1799:G:H2'	1:AA:1800:U:C6	2.46	0.51
2:AD:23:ALA:HA	2:AD:171:LYS:HE2	1.92	0.51
6:AH:125:LYS:HB2	6:AH:226:PHE:CE1	2.46	0.51
14:AP:39:ARG:HH11	14:AP:131:GLU:HB3	1.75	0.51
35:B2:518:U:H2'	35:B2:519:U:C6	2.46	0.51
35:B2:2331:A:C8	38:BN:244:LEU:HD21	2.45	0.51
35:B2:3112:A:H2'	35:B2:3113:A:H8	1.76	0.51
35:B2:3480:C:H4'	39:BO:315:GLY:HA2	1.93	0.51
76:Am:166:VAL:HG22	76:Am:176:VAL:HG13	1.92	0.51
76:Am:270:LEU:HD23	76:Am:310:TRP:CE3	2.45	0.51
77:Sm:19:G:N2	77:Sm:59:A:O5'	2.44	0.51
1:AA:352:U:OP1	13:AO:101:HIS:NE2	2.43	0.51
1:AA:1212:C:OP1	22:Aa:75:LYS:NZ	2.32	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:AP:96:ASP:HB3	14:AP:99:VAL:HG23	1.91	0.51
17:AS:119:MET:HE1	20:AV:117:ILE:HD12	1.92	0.51
35:B2:190:G:H4'	61:Bk:120:ARG:HD3	1.93	0.51
35:B2:479:A:H2'	35:B2:480:G:C8	2.45	0.51
35:B2:1612:C:H2'	35:B2:1613:C:O4'	2.11	0.51
35:B2:2310:A:H2'	35:B2:2311:A:C8	2.45	0.51
35:B2:2769:A:O2'	47:BW:22:SER:OG	2.24	0.51
35:B2:3276:A:H2'	35:B2:3277:A:C8	2.46	0.51
35:B2:3433:U:H2'	35:B2:3434:G:O4'	2.11	0.51
62:Bl:41:ALA:HB2	62:Bl:77:TYR:HE1	1.76	0.51
1:AA:34:G:H1	1:AA:477:A:H2	1.58	0.51
1:AA:235:G:O6	1:AA:236:G:N2	2.44	0.51
35:B2:263:A:H1'	70:Bt:112:TYR:CE1	2.46	0.51
35:B2:622:G:H1	35:B2:629:G:H22	1.58	0.51
35:B2:3269:A:H4'	35:B2:3272:U:N3	2.23	0.51
62:Bl:89:LEU:HD22	62:Bl:92:LEU:HB2	1.92	0.51
76:Am:86:THR:HG22	76:Am:102:VAL:HG13	1.92	0.51
7:AI:73:ASN:HA	7:AI:76:MET:HE3	1.93	0.50
13:AO:68:LEU:HD12	13:AO:104:LEU:HD11	1.93	0.50
17:AS:45:PHE:HB3	17:AS:49:ALA:HB3	1.94	0.50
26:Ae:9:THR:HG22	26:Ae:25:VAL:HG12	1.91	0.50
52:Bb:39:MET:HE2	52:Bb:44:ALA:CA	2.38	0.50
1:AA:541:A:OP1	11:AM:175:LYS:NZ	2.36	0.50
1:AA:593:C:H2'	1:AA:594:A:C8	2.46	0.50
5:AG:8:SER:O	5:AG:12:LYS:N	2.42	0.50
35:B2:2953:U:H2'	35:B2:2954:U:C6	2.46	0.50
35:B2:3267:A:N3	35:B2:3269:A:N6	2.59	0.50
39:BO:287:ALA:O	39:BO:293:ASN:ND2	2.44	0.50
39:BO:331:PRO:HD2	39:BO:334:ARG:HD2	1.93	0.50
41:BQ:95:TRP:HE3	41:BQ:158:ARG:HE	1.57	0.50
48:BX:166:ILE:HD11	63:Bm:123:ILE:HG12	1.94	0.50
65:Bo:80:ASN:OD1	65:Bo:80:ASN:N	2.43	0.50
66:Bp:56:VAL:HG13	66:Bp:60:LEU:HD23	1.94	0.50
1:AA:749:C:H2'	1:AA:750:A:H8	1.75	0.50
1:AA:954:A:H2'	1:AA:955:A:C8	2.45	0.50
1:AA:1235:G:O2'	1:AA:1237:C:N4	2.43	0.50
1:AA:1426:A:H2'	1:AA:1427:U:C6	2.45	0.50
15:AQ:40:PHE:CE2	15:AQ:43:LYS:NZ	2.67	0.50
16:AR:133:GLY:O	16:AR:135:ARG:N	2.43	0.50
35:B2:468:G:N2	35:B2:485:U:O2	2.44	0.50
35:B2:1450:C:H2'	35:B2:1451:G:C4	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:2768:A:H5”	47:BW:95:ASN:ND2	2.25	0.50
40:BP:146:GLU:OE1	40:BP:178:ARG:NH1	2.45	0.50
52:Bb:88:VAL:HG12	52:Bb:89:LYS:HE2	1.92	0.50
65:Bo:47:LEU:HD23	65:Bo:106:ILE:HG23	1.87	0.50
76:Am:247:TRP:N	76:Am:247:TRP:CD1	2.78	0.50
1:AA:792:A:N3	1:AA:793:G:N2	2.60	0.50
1:AA:970:A:OP1	15:AQ:3:ARG:NH1	2.40	0.50
1:AA:972:G:N2	29:Ah:51:GLN:OE1	2.44	0.50
1:AA:1033:U:H2’	1:AA:1034:A:H8	1.75	0.50
1:AA:1158:A:H2’	1:AA:1159:A:C8	2.47	0.50
1:AA:1361:A:H2’	1:AA:1362:A:C8	2.45	0.50
1:AA:1416:C:OP2	1:AA:1419:A:N6	2.40	0.50
1:AA:1433:U:O2’	1:AA:1436:G:OP1	2.19	0.50
1:AA:1485:C:H5”	18:AT:136:GLN:HG3	1.92	0.50
8:AJ:57:ASP:HA	8:AJ:106:LEU:HA	1.92	0.50
35:B2:12:A:H2’	35:B2:13:A:C8	2.46	0.50
35:B2:1701:G:H2’	35:B2:1702:A:C8	2.46	0.50
35:B2:2768:A:OP1	47:BW:95:ASN:ND2	2.44	0.50
51:Ba:28:LEU:HD11	51:Ba:103:LEU:HB2	1.93	0.50
62:Bl:125:GLY:C	62:Bl:126:LYS:HE2	2.36	0.50
63:Bm:72:THR:HG22	63:Bm:110:LYS:HB3	1.93	0.50
76:Am:149:ASP:HB2	76:Am:171:ASP:HB3	1.94	0.50
1:AA:98:C:H2’	1:AA:99:U:C6	2.47	0.50
1:AA:565:G:H2’	1:AA:566:U:H6	1.77	0.50
3:AE:26:ARG:O	3:AE:50:ARG:N	2.45	0.50
10:AL:36:THR:HG21	10:AL:173:PRO:HB2	1.93	0.50
14:AP:41:LEU:HD13	14:AP:105:GLY:HA3	1.93	0.50
22:Aa:32:LEU:HD23	22:Aa:85:HIS:HB2	1.94	0.50
29:Ah:56:CYS:HB3	29:Ah:60:ALA:HB3	1.93	0.50
35:B2:2757:G:H2’	35:B2:2758:A:C8	2.46	0.50
35:B2:3246:A:H5’	39:BO:129:ALA:O	2.10	0.50
55:Be:3:LEU:HD12	55:Be:103:GLU:HG2	1.92	0.50
55:Be:80:TYR:CZ	55:Be:89:MET:HE3	2.45	0.50
1:AA:87:A:H2’	1:AA:88:C:C6	2.47	0.50
1:AA:398:U:O2’	8:AJ:89:ASP:OD2	2.27	0.50
1:AA:1176:A:H2’	1:AA:1177:C:C6	2.47	0.50
1:AA:1311:G:H1	1:AA:1320:U:H3	1.58	0.50
1:AA:1491:A:N3	1:AA:1494:G:O2’	2.38	0.50
1:AA:1783:U:H2’	1:AA:1784:U:C6	2.46	0.50
3:AE:142:PHE:O	3:AE:208:GLN:N	2.44	0.50
5:AG:172:SER:HB3	5:AG:189:LYS:HD3	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:AU:31:ASN:O	19:AU:35:VAL:HG23	2.12	0.50
35:B2:425:A:H2'	35:B2:426:A:C8	2.47	0.50
35:B2:712:U:H2'	35:B2:713:G:N2	2.26	0.50
35:B2:1749:C:H2'	35:B2:1750:C:H6	1.77	0.50
44:BT:230:ARG:NH1	71:Bu:44:GLU:O	2.44	0.50
51:Ba:122:PRO:HA	51:Ba:125:LEU:HD12	1.94	0.50
55:Be:70:LYS:O	55:Be:72:LYS:NZ	2.44	0.50
1:AA:886:A:H2'	1:AA:887:G:H8	1.74	0.50
1:AA:938:A:H2'	1:AA:939:A:C8	2.46	0.50
5:AG:144:LEU:HD12	5:AG:150:LYS:HE3	1.94	0.50
7:AI:121:ARG:HH12	7:AI:145:ARG:HE	1.59	0.50
16:AR:19:ALA:HB3	16:AR:83:ILE:HD12	1.94	0.50
26:Ae:132:GLN:HG3	26:Ae:133:GLN:HG3	1.93	0.50
34:B1:50:THR:O	34:B1:54:ILE:HB	2.12	0.50
35:B2:19:U:H2'	35:B2:20:A:C8	2.47	0.50
35:B2:87:U:H2'	35:B2:88:A:C8	2.47	0.50
35:B2:689:U:H2'	35:B2:690:A:H8	1.77	0.50
35:B2:1059:A:H2'	35:B2:1061:U:H5	1.77	0.50
35:B2:2311:A:H2'	35:B2:2312:A:C8	2.47	0.50
35:B2:2692:U:H2'	35:B2:2693:G:H8	1.77	0.50
38:BN:245:LEU:HD22	38:BN:246:ARG:H	1.76	0.50
77:Sm:56:U:N3	77:Sm:59:A:OP2	2.42	0.50
1:AA:109:A:H2'	1:AA:110:G:C8	2.46	0.50
1:AA:1057:G:H22	1:AA:1092:A:H2	1.58	0.50
1:AA:1627:A:H1'	1:AA:1652:A:N6	2.27	0.50
19:AU:58:MET:HE2	19:AU:58:MET:CA	2.41	0.50
19:AU:105:MET:HE3	19:AU:106:LEU:HG	1.94	0.50
28:Ag:10:ARG:NH2	28:Ag:12:LYS:HD2	2.27	0.50
35:B2:1160:A:N3	35:B2:2921:U:O2'	2.44	0.50
35:B2:2353:C:O2'	35:B2:2354:U:O4'	2.28	0.50
36:B3:11:A:N1	36:B3:66:G:O2'	2.40	0.50
36:B3:115:A:O2'	41:BQ:77:HIS:NE2	2.45	0.50
57:Bg:12:TYR:OH	57:Bg:69:PHE:O	2.29	0.50
76:Am:170:TRP:HD1	76:Am:194:TYR:HB3	1.76	0.50
1:AA:603:U:H2'	1:AA:604:A:H8	1.76	0.50
1:AA:873:G:OP2	1:AA:873:G:N2	2.45	0.50
1:AA:1199:U:H2'	1:AA:1200:A:H2'	1.94	0.50
1:AA:1691:U:H2'	1:AA:1692:A:C8	2.46	0.50
1:AA:1701:A:O2'	1:AA:1702:U:O5'	2.28	0.50
6:AH:36:HIS:CG	6:AH:85:GLY:HA3	2.47	0.50
13:AO:61:VAL:HG12	13:AO:126:ARG:HH21	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:Af:71:LYS:NZ	27:Af:81:TYR:OH	2.45	0.50
35:B2:665:U:OP1	63:Bm:21:ARG:NH1	2.39	0.50
35:B2:1172:C:O2'	35:B2:1184:A:N3	2.43	0.50
35:B2:1371:G:H2'	35:B2:1372:U:C6	2.47	0.50
41:BQ:260:ALA:HB1	41:BQ:264:LYS:HB2	1.93	0.50
43:BS:43:ALA:O	43:BS:47:LYS:HG2	2.12	0.50
60:Bj:78:ASP:HB3	60:Bj:80:THR:HG23	1.94	0.50
62:Bl:42:VAL:HG22	62:Bl:74:VAL:HG22	1.94	0.50
1:AA:1:U:O4	11:AM:54:ARG:NE	2.44	0.49
1:AA:200:G:O2'	1:AA:201:G:H8	1.95	0.49
1:AA:1503:A:H2'	1:AA:1504:A:C8	2.47	0.49
1:AA:1573:U:OP2	27:Af:61:ARG:NH2	2.44	0.49
1:AA:1631:G:OP1	21:AW:90:SER:OG	2.30	0.49
2:AD:41:TRP:CD1	2:AD:42:LYS:H	2.30	0.49
4:AF:229:TRP:CE2	24:Ac:68:ARG:HD3	2.47	0.49
11:AM:109:LEU:HD23	11:AM:129:ILE:HD11	1.94	0.49
35:B2:5:G:H2'	35:B2:6:A:C8	2.47	0.49
35:B2:3003:G:H2'	35:B2:3004:U:H6	1.76	0.49
1:AA:457:A:C4	6:AH:66:MET:HE1	2.47	0.49
1:AA:534:C:H2'	1:AA:535:U:O4'	2.12	0.49
1:AA:1149:A:N3	1:AA:1691:U:O2'	2.45	0.49
6:AH:136:VAL:HB	6:AH:149:TYR:HE1	1.78	0.49
17:AS:83:THR:O	17:AS:83:THR:HG23	2.12	0.49
19:AU:58:MET:HE1	19:AU:61:ILE:HD12	1.94	0.49
25:Ad:44:SER:OG	25:Ad:46:HIS:O	2.30	0.49
35:B2:1130:A:H5'	56:Bf:129:ARG:HG2	1.94	0.49
37:B4:71:G:H22	37:B4:105:A:H2	1.59	0.49
56:Bf:115:LYS:HB2	56:Bf:128:LEU:HD21	1.95	0.49
63:Bm:85:GLU:CD	63:Bm:85:GLU:H	2.16	0.49
1:AA:201:G:H2'	1:AA:202:G:H8	1.77	0.49
1:AA:1103:A:H2'	1:AA:1104:A:C8	2.47	0.49
1:AA:1614:A:OP2	7:AI:163:ARG:NH2	2.45	0.49
9:AK:46:THR:HG23	9:AK:65:PRO:HG3	1.94	0.49
15:AQ:59:GLY:HA3	29:Ah:45:THR:HG21	1.94	0.49
16:AR:22:PHE:CE2	16:AR:24:SER:OG	2.65	0.49
27:Af:29:ARG:NH1	27:Af:49:MET:SD	2.85	0.49
35:B2:183:A:O2'	35:B2:184:C:O5'	2.30	0.49
35:B2:277:G:OP2	50:BZ:44:ARG:NH1	2.34	0.49
35:B2:511:C:H2'	35:B2:512:A:H8	1.75	0.49
35:B2:1002:A:H2'	35:B2:1003:G:C8	2.48	0.49
35:B2:1186:C:O2'	35:B2:1228:A:N1	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:1207:C:H2'	35:B2:1208:G:N2	2.26	0.49
35:B2:1472:U:H4'	40:BP:90:ALA:HB3	1.95	0.49
35:B2:3369:A:OP2	42:BR:64:ARG:NH1	2.45	0.49
41:BQ:276:THR:HG22	41:BQ:279:GLU:HG3	1.93	0.49
75:By:46:SER:O	75:By:50:ASN:ND2	2.44	0.49
76:Am:45:LEU:HD22	76:Am:52:TYR:CE2	2.48	0.49
1:AA:860:G:H2'	1:AA:861:G:H8	1.77	0.49
1:AA:1084:U:H2'	1:AA:1085:G:C8	2.47	0.49
1:AA:1588:A:OP2	20:AV:121:ARG:NH1	2.37	0.49
1:AA:1597:A:C2	1:AA:1601:U:H1'	2.47	0.49
5:AG:122:TYR:HB3	5:AG:126:ARG:CZ	2.41	0.49
7:AI:128:GLY:HA3	30:Ai:23:ARG:HH12	1.77	0.49
11:AM:113:VAL:HG23	11:AM:125:ALA:HB1	1.93	0.49
11:AM:119:ALA:HB1	11:AM:124:HIS:HB3	1.95	0.49
35:B2:447:C:H1'	35:B2:505:G:H1'	1.95	0.49
35:B2:1260:G:H2'	35:B2:1261:G:C8	2.47	0.49
35:B2:1353:U:H2'	35:B2:1354:A:H8	1.77	0.49
35:B2:1585:C:H2'	35:B2:1586:G:O4'	2.12	0.49
35:B2:1731:A:H2'	35:B2:1732:A:C8	2.47	0.49
35:B2:2268:G:H2'	35:B2:2269:C:C6	2.48	0.49
35:B2:2340:A:H2'	35:B2:2341:G:C8	2.48	0.49
35:B2:2651:G:N2	62:Bl:135:ARG:O	2.33	0.49
37:B4:17:A:H2'	37:B4:18:G:C8	2.47	0.49
1:AA:558:A:O2'	1:AA:559:A:O4'	2.31	0.49
1:AA:1628:A:H2'	1:AA:1629:G:C8	2.48	0.49
6:AH:159:THR:HB	6:AH:173:ILE:HB	1.94	0.49
11:AM:82:ARG:HH22	11:AM:149:ARG:HH11	1.59	0.49
11:AM:163:PRO:HB3	11:AM:169:PRO:HB3	1.94	0.49
19:AU:17:ILE:HD11	19:AU:54:THR:HG23	1.95	0.49
34:B1:31:VAL:O	34:B1:35:SER:OG	2.29	0.49
35:B2:155:U:P	50:BZ:49:ARG:HH12	2.36	0.49
35:B2:466:U:H3'	35:B2:467:A:H8	1.78	0.49
35:B2:2194:A:H2'	35:B2:2195:A:C8	2.47	0.49
35:B2:2907:C:H2'	35:B2:2908:A:C8	2.47	0.49
38:BN:44:VAL:HG23	38:BN:83:THR:HA	1.95	0.49
43:BS:87:ASP:OD1	56:Bf:138:ALA:N	2.46	0.49
61:Bk:39:ARG:NH2	61:Bk:45:ARG:HG3	2.27	0.49
73:Bw:5:ILE:HD11	73:Bw:44:TYR:HB3	1.94	0.49
4:AF:100:PHE:HD2	4:AF:114:ILE:HD12	1.78	0.49
10:AL:159:GLN:CD	10:AL:165:LEU:HD13	2.38	0.49
17:AS:134:THR:CG2	17:AS:135:LYS:N	2.62	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:AT:28:VAL:N	18:AT:31:ALA:O	2.28	0.49
31:Aj:10:HIS:O	31:Aj:12:ARG:NH1	2.45	0.49
35:B2:744:U:OP1	35:B2:779:A:O2'	2.25	0.49
35:B2:1272:U:N3	35:B2:1275:A:OP2	2.36	0.49
35:B2:1951:A:N6	35:B2:2427:C:H42	2.07	0.49
1:AA:5:U:H2'	1:AA:6:G:C8	2.47	0.49
1:AA:1769:G:H2'	1:AA:1770:A:H8	1.75	0.49
1:AA:1778:G:H2'	1:AA:1779:G:C8	2.48	0.49
4:AF:124:ILE:O	4:AF:128:ILE:HG12	2.12	0.49
4:AF:134:SER:O	4:AF:134:SER:OG	2.29	0.49
5:AG:64:LYS:O	5:AG:69:ARG:NH1	2.46	0.49
18:AT:2:GLN:HB2	18:AT:21:VAL:HB	1.94	0.49
35:B2:419:U:H2'	35:B2:420:G:H8	1.78	0.49
35:B2:693:A:H2'	35:B2:694:U:C6	2.47	0.49
35:B2:1064:C:H2'	35:B2:1065:U:C6	2.48	0.49
35:B2:1305:A:H2'	35:B2:1306:C:C6	2.48	0.49
35:B2:1632:C:H5'	35:B2:1731:A:H1'	1.94	0.49
35:B2:2668:C:OP2	62:Bl:58:GLY:N	2.44	0.49
35:B2:2791:A:H2'	35:B2:2792:A:C8	2.48	0.49
61:Bk:36:LYS:O	61:Bk:40:GLU:HG3	2.12	0.49
61:Bk:55:ILE:HG22	61:Bk:105:ILE:HA	1.94	0.49
1:AA:901:U:C2	1:AA:902:A:C8	3.01	0.49
1:AA:1032:U:H2'	1:AA:1033:U:C6	2.47	0.49
1:AA:1345:G:OP1	5:AG:161:HIS:N	2.33	0.49
1:AA:1647:C:H2'	1:AA:1648:G:H8	1.78	0.49
2:AD:36:MET:HE1	2:AD:164:PRO:HB3	1.94	0.49
7:AI:147:ASN:OD1	7:AI:148:GLN:N	2.46	0.49
17:AS:80:LYS:HB3	17:AS:101:VAL:HG22	1.95	0.49
22:Aa:46:LYS:HD2	22:Aa:97:ILE:HG21	1.94	0.49
26:Ae:23:MET:HE1	26:Ae:75:ILE:HD11	1.95	0.49
35:B2:2337:G:H2'	35:B2:2338:G:C8	2.48	0.49
35:B2:3100:C:OP2	39:BO:28:LYS:NZ	2.41	0.49
36:B3:1:G:H21	41:BQ:267:SER:HB3	1.77	0.49
37:B4:54:G:OP2	74:Bx:18:ARG:NH2	2.45	0.49
37:B4:90:U:O2'	37:B4:91:C:H5"	2.12	0.49
40:BP:212:ASN:HD22	40:BP:255:SER:HB2	1.78	0.49
42:BR:114:VAL:HG23	42:BR:116:VAL:HG13	1.95	0.49
47:BW:155:ASN:OD1	47:BW:155:ASN:N	2.38	0.49
49:BY:58:LEU:HD22	55:Be:151:LEU:HG	1.94	0.49
1:AA:558:A:H4'	1:AA:559:A:OP1	2.13	0.49
1:AA:774:G:H21	1:AA:804:A:H62	1.61	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:968:G:H2'	1:AA:969:G:C8	2.48	0.49
1:AA:1016:A:OP1	77:Sm:39:A:O2'	2.23	0.49
1:AA:1373:C:H2'	1:AA:1374:A:C8	2.44	0.49
3:AE:167:LYS:HD2	3:AE:200:ALA:HB1	1.94	0.49
10:AL:189:LEU:HD12	10:AL:189:LEU:O	2.12	0.49
15:AQ:108:ASP:HB3	15:AQ:111:SER:HB2	1.95	0.49
29:Ah:36:LYS:HE2	29:Ah:43:ILE:HG12	1.95	0.49
35:B2:146:U:H2'	35:B2:147:C:C6	2.47	0.49
35:B2:597:C:H2'	35:B2:598:G:H8	1.78	0.49
35:B2:1013:U:H2'	35:B2:1014:C:H6	1.78	0.49
35:B2:2494:C:O2'	35:B2:2714:G:N2	2.44	0.49
40:BP:329:ARG:O	43:BS:49:ARG:NH1	2.45	0.49
42:BR:141:ALA:O	42:BR:147:ASN:ND2	2.37	0.49
43:BS:54:LYS:HB3	43:BS:54:LYS:HE3	1.60	0.49
44:BT:24:ASN:HB3	44:BT:25:PRO:HD3	1.95	0.49
45:BU:85:GLY:N	45:BU:185:ILE:O	2.46	0.49
50:BZ:145:ASP:HB3	50:BZ:148:ILE:HG22	1.94	0.49
1:AA:143:G:HO2'	1:AA:144:G:H8	1.59	0.49
1:AA:596:U:O4	32:Ak:36:LYS:NZ	2.46	0.49
4:AF:86:GLN:HG2	4:AF:95:THR:HB	1.94	0.49
6:AH:176:ASP:OD1	6:AH:176:ASP:N	2.45	0.49
35:B2:87:U:H2'	35:B2:88:A:H8	1.77	0.49
35:B2:439:A:H2'	35:B2:440:A:C8	2.47	0.49
35:B2:1968:G:N3	35:B2:2208:A:H2'	2.27	0.49
35:B2:2291:U:H2'	35:B2:2292:C:C6	2.48	0.49
48:BX:86:SER:HB3	48:BX:89:VAL:HG23	1.94	0.49
49:BY:48:ARG:NH2	49:BY:69:ALA:O	2.42	0.49
51:Ba:175:LYS:HB2	51:Ba:175:LYS:HZ3	1.76	0.49
53:Bc:84:ILE:CD1	53:Bc:142:ARG:HA	2.43	0.49
57:Bg:52:VAL:HA	57:Bg:64:ILE:O	2.13	0.49
1:AA:450:U:H2'	1:AA:451:C:O4'	2.12	0.48
1:AA:798:G:N7	26:Ae:11:LYS:HA	2.27	0.48
1:AA:877:A:O2'	1:AA:978:A:N1	2.46	0.48
1:AA:1138:G:N2	1:AA:1141:A:OP2	2.35	0.48
1:AA:1790:G:H2'	1:AA:1791:A:C8	2.48	0.48
21:AW:108:GLU:CD	21:AW:115:LYS:HZ3	2.20	0.48
22:Aa:67:LYS:HE2	22:Aa:78:GLU:HG3	1.95	0.48
35:B2:75:U:H5"	48:BX:58:VAL:HB	1.95	0.48
35:B2:1268:G:C6	35:B2:1282:A:N1	2.80	0.48
35:B2:3119:U:H2'	35:B2:3120:A:H8	1.78	0.48
47:BW:133:ARG:HE	47:BW:134:PRO:HB3	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:483:A:C6	1:AA:512:G:N2	2.82	0.48
1:AA:933:U:H2'	1:AA:934:A:H8	1.78	0.48
1:AA:1333:G:OP1	19:AU:7:LYS:HE3	2.13	0.48
5:AG:122:TYR:HB3	5:AG:126:ARG:NE	2.28	0.48
22:Aa:24:LEU:HD12	22:Aa:87:ARG:HB2	1.95	0.48
35:B2:248:G:C2	35:B2:249:G:C8	3.01	0.48
35:B2:255:C:H2'	35:B2:256:C:C5	2.48	0.48
35:B2:1182:U:O4	35:B2:1231:A:N6	2.45	0.48
35:B2:2217:U:H2'	35:B2:2218:G:H8	1.77	0.48
35:B2:2706:U:H2'	35:B2:2707:U:C6	2.48	0.48
35:B2:3002:G:H5'	35:B2:3003:G:OP2	2.14	0.48
36:B3:39:C:O2'	47:BW:43:GLN:HB3	2.13	0.48
36:B3:69:U:H2'	36:B3:70:C:C6	2.47	0.48
37:B4:89:U:OP2	37:B4:90:U:H5'	2.14	0.48
69:Bs:97:GLU:O	69:Bs:101:VAL:HG13	2.12	0.48
73:Bw:7:ASP:HB3	73:Bw:10:GLN:HB2	1.94	0.48
78:Sn:53:G:H2'	78:Sn:54:A:C8	2.42	0.48
1:AA:162:A:H2'	1:AA:163:G:C8	2.49	0.48
1:AA:463:A:H3'	1:AA:464:G:H8	1.78	0.48
1:AA:934:A:H4'	16:AR:37:GLY:HA3	1.95	0.48
1:AA:1202:U:H4'	1:AA:1203:U:H5"	1.95	0.48
4:AF:105:ASP:OD1	4:AF:105:ASP:N	2.43	0.48
8:AJ:124:LEU:HD12	8:AJ:125:THR:HG23	1.95	0.48
9:AK:132:VAL:HG21	9:AK:137:ILE:HD11	1.93	0.48
19:AU:71:PHE:O	19:AU:73:LEU:HB2	2.14	0.48
30:Ai:22:SER:HB3	30:Ai:23:ARG:NH1	2.29	0.48
35:B2:420:G:H2'	35:B2:421:C:C6	2.48	0.48
46:BV:177:ALA:HB3	46:BV:180:GLU:HG2	1.94	0.48
63:Bm:131:ARG:O	63:Bm:135:GLU:HG3	2.13	0.48
76:Am:127:LYS:HG3	76:Am:127:LYS:O	2.13	0.48
1:AA:513:G:H3'	11:AM:176:ARG:HG3	1.95	0.48
1:AA:1664:C:H2'	1:AA:1665:C:H6	1.77	0.48
1:AA:1669:U:H2'	1:AA:1670:G:C8	2.49	0.48
5:AG:197:THR:HB	5:AG:200:LYS:H	1.78	0.48
10:AL:6:ASP:HB3	10:AL:28:GLU:OE1	2.13	0.48
21:AW:108:GLU:OE2	21:AW:121:ARG:NH1	2.47	0.48
27:Af:51:ILE:HG23	27:Af:55:LEU:HB2	1.96	0.48
35:B2:130:A:H2'	35:B2:131:A:C8	2.48	0.48
35:B2:247:U:H1'	35:B2:252:A:N7	2.29	0.48
35:B2:693:A:H2'	35:B2:694:U:H6	1.77	0.48
35:B2:788:G:H4'	35:B2:789:A:O4'	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:B3:3:C:H2'	36:B3:4:U:C6	2.48	0.48
36:B3:85:U:H2'	36:B3:86:G:H8	1.78	0.48
37:B4:17:A:H2'	37:B4:18:G:H8	1.77	0.48
44:BT:49:PHE:O	60:Bj:29:THR:OG1	2.32	0.48
47:BW:96:PHE:HD1	47:BW:102:PHE:HB3	1.76	0.48
49:BY:105:LEU:HB2	49:BY:109:ASP:HB2	1.94	0.48
1:AA:17:C:O2'	1:AA:1153:A:N1	2.40	0.48
1:AA:568:C:O2'	1:AA:1797:A:N6	2.29	0.48
1:AA:975:U:H5'	15:AQ:55:ARG:HD3	1.94	0.48
3:AE:128:LYS:HE3	3:AE:132:GLY:HA2	1.96	0.48
6:AH:210:VAL:HB	6:AH:218:PHE:CE1	2.49	0.48
7:AI:118:CYS:O	7:AI:192:LYS:HD2	2.13	0.48
10:AL:82:ALA:HB3	10:AL:101:ILE:HG13	1.95	0.48
11:AM:84:GLY:C	11:AM:107:ARG:HD2	2.39	0.48
12:AN:25:LYS:HD2	12:AN:59:TYR:HE1	1.78	0.48
25:Ad:50:ILE:HG23	25:Ad:97:ASN:HA	1.96	0.48
35:B2:253:U:H3'	35:B2:254:G:C8	2.41	0.48
35:B2:656:A:H2'	35:B2:657:A:H8	1.77	0.48
35:B2:943:C:N4	38:BN:3:ARG:HD3	2.29	0.48
35:B2:1269:C:H2'	35:B2:1270:C:C6	2.49	0.48
35:B2:1818:U:H2'	35:B2:1819:G:C8	2.48	0.48
35:B2:2358:A:H2'	35:B2:2359:A:C4	2.49	0.48
35:B2:2608:C:H2'	35:B2:2609:U:C6	2.49	0.48
35:B2:2674:G:OP2	35:B2:2675:A:O2'	2.24	0.48
35:B2:3102:A:H2'	35:B2:3103:U:O4'	2.13	0.48
35:B2:3280:U:O2'	55:Be:174:THR:OG1	2.25	0.48
53:Bc:124:THR:OG1	53:Bc:126:ASP:OD1	2.30	0.48
76:Am:5:LEU:HB3	76:Am:270:LEU:HD21	1.95	0.48
1:AA:190:U:O2'	1:AA:191:U:O4'	2.32	0.48
1:AA:450:U:O2'	6:AH:27:TYR:O	2.30	0.48
1:AA:587:C:HO2'	1:AA:588:A:H8	1.61	0.48
1:AA:1493:U:O2	7:AI:81:ASN:ND2	2.47	0.48
1:AA:1540:G:O6	1:AA:1549:U:O4	2.31	0.48
1:AA:1591:A:H2'	1:AA:1592:U:C6	2.49	0.48
3:AE:159:SER:HA	3:AE:162:ARG:HE	1.79	0.48
3:AE:164:ILE:O	3:AE:168:MET:HG3	2.13	0.48
4:AF:53:GLU:HB3	23:Ab:12:TYR:HB3	1.94	0.48
5:AG:195:PRO:HA	5:AG:201:LYS:HA	1.96	0.48
7:AI:48:LEU:HD23	18:AT:43:MET:CB	2.44	0.48
7:AI:150:LEU:O	7:AI:154:THR:HG23	2.13	0.48
8:AJ:159:ARG:HD3	8:AJ:175:ALA:HB2	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:AP:67:LEU:HD13	14:AP:80:VAL:HG11	1.96	0.48
19:AU:36:ASP:HB2	19:AU:47:ARG:HH11	1.77	0.48
35:B2:66:A:H61	35:B2:76:G:H1'	1.78	0.48
35:B2:2341:G:H2'	35:B2:2342:U:O4'	2.13	0.48
35:B2:2863:U:H2'	35:B2:2864:G:H8	1.79	0.48
48:BX:195:PHE:C	48:BX:195:PHE:CD2	2.92	0.48
50:BZ:73:ARG:HB3	50:BZ:89:VAL:HG13	1.95	0.48
76:Am:101:PHE:HB3	76:Am:132:TRP:CE3	2.49	0.48
1:AA:820:U:O2'	24:Ac:78:ARG:NH1	2.47	0.48
1:AA:911:U:OP1	3:AE:26:ARG:NH2	2.47	0.48
1:AA:1403:G:H2'	1:AA:1404:A:C8	2.48	0.48
1:AA:1541:C:OP2	21:AW:101:ARG:NH1	2.45	0.48
26:Ae:10:ARG:HB2	26:Ae:24:VAL:HG13	1.94	0.48
35:B2:1901:C:OP1	35:B2:1904:C:N4	2.39	0.48
35:B2:2267:C:N3	38:BN:172:GLY:HA2	2.28	0.48
35:B2:2360:G:N2	35:B2:2360:G:OP2	2.46	0.48
35:B2:2923:G:H22	35:B2:2958:G:H1'	1.78	0.48
35:B2:2952:C:H2'	35:B2:2953:U:C6	2.48	0.48
35:B2:3257:C:H42	35:B2:3390:G:N2	2.12	0.48
35:B2:3290:A:H2'	35:B2:3291:C:C6	2.49	0.48
36:B3:1:G:C8	41:BQ:264:LYS:HG3	2.48	0.48
48:BX:145:GLU:OE2	48:BX:147:THR:HG22	2.14	0.48
58:Bh:35:ASN:HB3	58:Bh:65:LYS:HB2	1.95	0.48
60:Bj:135:ALA:HB1	60:Bj:141:LEU:HD13	1.95	0.48
77:Sm:71:G:H2'	77:Sm:72:C:C6	2.48	0.48
1:AA:387:G:H2'	1:AA:388:A:C8	2.48	0.48
1:AA:1041:A:N7	1:AA:1814:C:O2'	2.44	0.48
1:AA:1240:A:N6	1:AA:1278:A:N1	2.62	0.48
12:AN:73:VAL:HG21	12:AN:89:ALA:HB2	1.94	0.48
16:AR:66:ALA:HB1	16:AR:107:LEU:CD1	2.44	0.48
35:B2:1893:C:H5"	35:B2:1894:A:H5'	1.96	0.48
35:B2:2301:A:H2'	35:B2:2302:A:H8	1.79	0.48
55:Be:80:TYR:CE2	55:Be:87:HIS:HB2	2.48	0.48
58:Bh:69:PRO:HA	58:Bh:72:ARG:HG3	1.96	0.48
76:Am:172:LYS:HB3	76:Am:191:HIS:HB2	1.94	0.48
77:Sm:71:G:H2'	77:Sm:72:C:H6	1.79	0.48
1:AA:12:U:H2'	1:AA:13:C:H6	1.79	0.48
1:AA:566:U:H3	1:AA:583:A:H62	1.62	0.48
3:AE:204:ILE:HG22	3:AE:205:PHE:N	2.26	0.48
9:AK:22:VAL:HG22	9:AK:87:PHE:HZ	1.79	0.48
10:AL:40:PRO:O	10:AL:59:ARG:HB2	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:712:U:OP2	35:B2:713:G:O2’	2.18	0.48
35:B2:992:U:H4’	35:B2:995:G:C2	2.49	0.48
35:B2:1527:G:H2’	74:Bx:13:LEU:HD22	1.96	0.48
45:BU:24:ARG:HB3	45:BU:39:LEU:HB2	1.95	0.48
71:Bu:57:GLU:OE2	71:Bu:60:ARG:NH1	2.47	0.48
1:AA:773:A:H2’	1:AA:774:G:O4’	2.13	0.48
1:AA:799:C:N4	26:Ae:11:LYS:HB3	2.28	0.48
1:AA:899:C:H5”	3:AE:136:ARG:HH11	1.78	0.48
3:AE:195:ARG:HE	3:AE:199:ARG:HH22	1.62	0.48
35:B2:542:G:H2’	35:B2:543:G:C8	2.49	0.48
35:B2:1175:U:OP2	67:Bq:40:ARG:NH2	2.39	0.48
35:B2:1651:A:H2’	35:B2:1652:G:C8	2.49	0.48
35:B2:2319:C:H2’	35:B2:2320:A:C8	2.48	0.48
35:B2:2977:U:H2’	35:B2:2978:U:C6	2.49	0.48
35:B2:3000:U:H2’	35:B2:3002:G:H1’	1.96	0.48
35:B2:3390:G:O2’	35:B2:3391:A:O4’	2.28	0.48
37:B4:77:U:H2’	37:B4:78:G:O4’	2.14	0.48
72:Bv:75:LYS:HE2	72:Bv:75:LYS:HA	1.96	0.48
1:AA:357:C:H5”	10:AL:16:ALA:HB2	1.96	0.47
1:AA:1426:A:OP2	7:AI:58:LYS:NZ	2.47	0.47
1:AA:1496:C:H2’	1:AA:1497:G:C8	2.48	0.47
1:AA:1591:A:H3’	17:AS:51:ARG:NH2	2.29	0.47
6:AH:185:GLY:HA2	6:AH:189:MET:HG2	1.95	0.47
7:AI:47:PRO:C	7:AI:48:LEU:HD22	2.39	0.47
12:AN:11:ILE:HD11	12:AN:21:LEU:HD11	1.95	0.47
21:AW:4:VAL:HG22	21:AW:139:LEU:HD23	1.96	0.47
24:Ac:105:THR:HG23	24:Ac:105:THR:O	2.13	0.47
35:B2:255:C:H6	35:B2:256:C:H5	1.62	0.47
35:B2:946:A:C2	38:BN:203:MET:HG2	2.49	0.47
35:B2:1832:C:H2’	35:B2:1833:C:C6	2.49	0.47
37:B4:131:G:H2’	37:B4:132:G:C8	2.49	0.47
53:Bc:5:ILE:HG23	53:Bc:7:ARG:HE	1.79	0.47
58:Bh:21:VAL:HG12	58:Bh:22:GLN:HG2	1.96	0.47
74:Bx:23:ILE:HD12	74:Bx:23:ILE:N	2.29	0.47
1:AA:67:A:O5’	1:AA:84:G:N2	2.47	0.47
1:AA:97:G:OP1	6:AH:10:LYS:NZ	2.47	0.47
1:AA:187:G:N1	1:AA:200:G:O6	2.47	0.47
1:AA:1231:U:H5”	1:AA:1263:C:H1’	1.96	0.47
1:AA:1403:G:O4’	22:Aa:55:ARG:NH1	2.47	0.47
1:AA:1494:G:H2’	1:AA:1495:A:C8	2.49	0.47
1:AA:1496:C:H5”	21:AW:44:GLU:HG3	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1565:A:H2'	1:AA:1566:A:H8	1.77	0.47
2:AD:16:ASP:OD1	2:AD:17:ILE:N	2.47	0.47
4:AF:232:ARG:HG2	4:AF:232:ARG:NH1	2.27	0.47
17:AS:94:LEU:HG	17:AS:95:PRO:HD2	1.95	0.47
18:AT:34:SER:HA	18:AT:42:ARG:HD3	1.96	0.47
29:Ah:29:ARG:HH11	29:Ah:29:ARG:CG	2.20	0.47
35:B2:118:U:O2'	35:B2:121:A:OP1	2.26	0.47
35:B2:321:A:H2'	35:B2:322:U:C6	2.49	0.47
35:B2:3449:G:N1	35:B2:3459:U:C2	2.82	0.47
37:B4:55:C:O2'	37:B4:70:C:OP2	2.32	0.47
39:BO:92:TYR:HB2	39:BO:157:VAL:HB	1.96	0.47
41:BQ:153:THR:HB	41:BQ:160:PHE:HZ	1.79	0.47
51:Ba:111:PRO:N	51:Ba:112:PRO:HD2	2.29	0.47
67:Bq:116:VAL:HB	67:Bq:119:ALA:HB2	1.95	0.47
76:Am:1:MET:SD	76:Am:4:GLN:NE2	2.87	0.47
76:Am:38:LYS:HZ1	76:Am:63:SER:HA	1.79	0.47
1:AA:28:A:H2'	1:AA:29:U:C6	2.49	0.47
1:AA:336:A:OP1	10:AL:31:ARG:NH2	2.47	0.47
1:AA:438:C:H5"	25:Ad:48:LYS:HE3	1.96	0.47
1:AA:601:U:H2'	1:AA:602:A:H8	1.78	0.47
1:AA:706:U:H2'	1:AA:707:C:C6	2.50	0.47
1:AA:849:G:H2'	1:AA:850:U:C5	2.49	0.47
1:AA:1484:G:O2'	18:AT:138:SER:OG	2.21	0.47
1:AA:1655:A:OP2	7:AI:62:LYS:NZ	2.42	0.47
1:AA:1777:U:H2'	1:AA:1778:G:C8	2.50	0.47
1:AA:1782:A:H2'	1:AA:1783:U:C6	2.48	0.47
2:AD:44:ARG:HG2	2:AD:45:SER:N	2.30	0.47
6:AH:31:PRO:HA	6:AH:81:THR:HG22	1.91	0.47
8:AJ:10:ASN:OD1	8:AJ:10:ASN:N	2.47	0.47
35:B2:322:U:H2'	35:B2:323:C:C6	2.49	0.47
35:B2:539:A:O2'	35:B2:540:A:H8	1.96	0.47
35:B2:1386:G:H4'	75:By:44:ARG:NH1	2.29	0.47
35:B2:2515:U:H3	35:B2:2697:G:H1	1.61	0.47
55:Be:7:GLN:O	55:Be:7:GLN:HG3	2.13	0.47
57:Bg:40:VAL:O	57:Bg:46:ASN:ND2	2.47	0.47
78:Sn:27:C:H2'	78:Sn:28:A:H8	1.79	0.47
1:AA:150:C:H2'	1:AA:151:G:C8	2.49	0.47
1:AA:341:C:OP2	10:AL:10:LYS:NZ	2.40	0.47
1:AA:464:G:H2'	1:AA:465:G:H8	1.80	0.47
1:AA:1501:C:O2'	1:AA:1502:C:O5'	2.22	0.47
1:AA:1818:A:H2'	1:AA:1819:G:C8	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:AF:79:VAL:HG22	4:AF:101:VAL:HG22	1.96	0.47
5:AG:126:ARG:HD3	5:AG:126:ARG:H	1.79	0.47
6:AH:252:ARG:HD3	11:AM:71:PHE:HE1	1.79	0.47
19:AU:34:ILE:O	19:AU:38:VAL:HG12	2.14	0.47
19:AU:94:ASP:OD1	19:AU:94:ASP:N	2.47	0.47
20:AV:70:ILE:HD13	20:AV:77:PHE:HD2	1.79	0.47
28:Ag:40:THR:CG2	28:Ag:40:THR:O	2.61	0.47
35:B2:182:G:N2	35:B2:248:G:H22	2.13	0.47
35:B2:353:G:O2'	37:B4:33:G:N3	2.46	0.47
35:B2:1116:G:N2	64:Bn:43:GLN:OE1	2.47	0.47
35:B2:1453:A:OP1	37:B4:28:U:O2'	2.32	0.47
35:B2:1891:C:O2'	35:B2:1897:A:N1	2.36	0.47
35:B2:2440:A:H5"	52:Bb:83:TRP:O	2.14	0.47
35:B2:3066:A:O2'	78:Sn:74:C:OP2	2.31	0.47
35:B2:3306:C:N4	49:BY:95:LYS:HE2	2.28	0.47
37:B4:27:C:H2'	37:B4:28:U:C6	2.50	0.47
37:B4:76:G:H2'	37:B4:77:U:H6	1.79	0.47
46:BV:89:VAL:HG22	46:BV:136:MET:CE	2.43	0.47
76:Am:108:VAL:HA	76:Am:124:SER:HB2	1.95	0.47
77:Sm:55:U:O2	77:Sm:59:A:N7	2.47	0.47
1:AA:54:C:H4'	26:Ae:109:LYS:HD3	1.96	0.47
1:AA:792:A:N6	26:Ae:8:ARG:HH11	2.13	0.47
1:AA:1691:U:H2'	1:AA:1692:A:H8	1.79	0.47
2:AD:160:ASP:N	2:AD:160:ASP:OD1	2.47	0.47
2:AD:185:LEU:HB3	2:AD:191:LEU:HG	1.97	0.47
10:AL:110:ARG:HH11	10:AL:110:ARG:HA	1.79	0.47
25:Ad:28:LYS:HE2	25:Ad:32:LEU:HD11	1.97	0.47
26:Ae:27:ILE:HD11	26:Ae:40:LEU:HD21	1.96	0.47
35:B2:183:A:O2'	35:B2:184:C:H6	1.97	0.47
35:B2:1050:G:N2	35:B2:1051:G:N7	2.60	0.47
35:B2:1559:G:H5'	35:B2:1885:G:OP2	2.15	0.47
35:B2:1839:A:H2'	35:B2:1840:A:C8	2.48	0.47
35:B2:2003:G:H22	35:B2:2187:A:H2	1.62	0.47
35:B2:3109:U:H2'	35:B2:3110:U:C6	2.49	0.47
39:BO:256:HIS:HA	39:BO:257:PRO:C	2.39	0.47
41:BQ:88:ILE:HG23	41:BQ:240:TYR:HE1	1.79	0.47
41:BQ:152:ARG:HE	41:BQ:152:ARG:HB2	1.53	0.47
55:Be:86:THR:C	55:Be:87:HIS:HD2	2.23	0.47
58:Bh:20:PRO:HA	58:Bh:53:ALA:HA	1.96	0.47
60:Bj:58:GLU:OE2	60:Bj:58:GLU:N	2.36	0.47
1:AA:1015:C:H5	1:AA:1018:A:H5"	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1056:G:H2'	1:AA:1057:G:C8	2.49	0.47
1:AA:1192:U:H2'	1:AA:1193:G:C8	2.50	0.47
2:AD:110:PHE:HB3	2:AD:142:VAL:HG11	1.96	0.47
7:AI:119:GLY:HA3	7:AI:145:ARG:CG	2.44	0.47
8:AJ:120:ASP:OD1	8:AJ:120:ASP:N	2.46	0.47
31:Aj:33:LYS:O	31:Aj:36:LEU:HD12	2.14	0.47
34:B1:12:GLY:HA3	35:B2:868:A:H4'	1.97	0.47
35:B2:425:A:H2'	35:B2:426:A:H8	1.80	0.47
35:B2:463:C:H2'	35:B2:464:A:H8	1.79	0.47
35:B2:1287:G:H2'	35:B2:1288:C:C6	2.50	0.47
35:B2:2621:G:OP2	38:BN:36:ARG:NH2	2.48	0.47
35:B2:2761:C:OP2	35:B2:2782:G:N1	2.43	0.47
35:B2:3257:C:H2'	35:B2:3258:G:C8	2.50	0.47
37:B4:164:U:H2'	37:B4:165:U:O4'	2.14	0.47
51:Ba:13:LYS:HA	51:Ba:41:GLU:HB2	1.97	0.47
54:Bd:7:GLN:HE21	54:Bd:36:ASN:H	1.62	0.47
77:Sm:20:G:H4'	77:Sm:21:U:OP2	2.14	0.47
1:AA:768:A:H2'	1:AA:769:A:C8	2.50	0.47
1:AA:781:C:H5'	11:AM:146:PHE:CE2	2.50	0.47
1:AA:852:G:H2'	1:AA:853:G:H8	1.80	0.47
1:AA:1566:A:H1'	1:AA:1631:G:H4'	1.96	0.47
1:AA:1602:U:H2'	1:AA:1603:G:C8	2.50	0.47
1:AA:1628:A:H2'	1:AA:1629:G:H8	1.79	0.47
1:AA:1832:A:H2'	1:AA:1833:A:C8	2.50	0.47
1:AA:1833:A:H5"	28:Ag:8:ASN:HB3	1.97	0.47
7:AI:118:CYS:SG	7:AI:188:ALA:HB1	2.55	0.47
8:AJ:105:ASP:OD1	8:AJ:105:ASP:N	2.44	0.47
13:AO:84:ARG:NH1	13:AO:86:GLU:OE2	2.48	0.47
26:Ae:23:MET:HE1	26:Ae:75:ILE:CD1	2.45	0.47
35:B2:36:C:H4'	35:B2:840:A:C2	2.50	0.47
35:B2:208:A:H2'	35:B2:209:G:C8	2.50	0.47
35:B2:641:G:H2'	35:B2:642:A:C8	2.50	0.47
35:B2:1035:A:N1	35:B2:1081:C:O2'	2.42	0.47
35:B2:1163:C:H2'	35:B2:1164:A:H8	1.79	0.47
35:B2:1395:A:H2'	35:B2:1396:G:C8	2.50	0.47
35:B2:1597:G:OP2	35:B2:1597:G:N2	2.34	0.47
35:B2:1632:C:H2'	35:B2:1633:G:C8	2.50	0.47
35:B2:2362:U:H5	35:B2:2364:G:C8	2.33	0.47
35:B2:2605:U:O2'	35:B2:2606:U:O5'	2.32	0.47
35:B2:2710:G:H2'	35:B2:2711:C:H6	1.80	0.47
35:B2:2726:U:H2'	35:B2:2727:G:H8	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:2907:C:H2'	35:B2:2908:A:H8	1.80	0.47
35:B2:2909:G:OP1	40:BP:75:ARG:NH1	2.41	0.47
37:B4:163:A:OP1	44:BT:84:LYS:HE2	2.15	0.47
41:BQ:231:ILE:HG13	41:BQ:232:GLU:N	2.30	0.47
43:BS:151:THR:HG23	43:BS:247:VAL:HG11	1.97	0.47
45:BU:105:GLU:HG2	45:BU:110:VAL:HA	1.95	0.47
50:BZ:28:TRP:O	50:BZ:32:GLN:HG2	2.14	0.47
70:Bt:45:LYS:HE3	70:Bt:45:LYS:HB2	1.73	0.47
76:Am:191:HIS:NE2	76:Am:217:MET:CE	2.75	0.47
1:AA:328:G:O6	1:AA:347:A:N6	2.48	0.47
11:AM:40:HIS:C	11:AM:40:HIS:CD2	2.92	0.47
11:AM:62:LEU:O	11:AM:69:ARG:NH1	2.48	0.47
26:Ae:90:ARG:O	26:Ae:94:VAL:HG23	2.15	0.47
35:B2:991:C:H41	35:B2:2896:A:H5"	1.79	0.47
35:B2:3304:U:H2'	35:B2:3305:C:C5	2.50	0.47
39:BO:377:LYS:HB3	39:BO:377:LYS:HE2	1.54	0.47
51:Ba:110:PRO:HG2	51:Ba:113:PHE:HD2	1.80	0.47
52:Bb:131:ARG:HB2	52:Bb:135:ARG:HB2	1.96	0.47
1:AA:15:U:H2'	1:AA:16:G:O4'	2.14	0.47
1:AA:298:A:O3'	6:AH:128:ARG:NH2	2.45	0.47
1:AA:464:G:H2'	1:AA:465:G:C8	2.50	0.47
1:AA:521:A:H2	1:AA:537:A:H62	1.62	0.47
1:AA:903:U:O2	1:AA:1003:A:O2'	2.32	0.47
35:B2:8:C:H2'	35:B2:9:U:C6	2.49	0.47
35:B2:831:G:O2'	48:BX:18:TRP:NE1	2.44	0.47
35:B2:2240:A:H2'	35:B2:2241:U:H6	1.80	0.47
40:BP:134:PRO:HG3	40:BP:150:VAL:HB	1.97	0.47
47:BW:54:ILE:H	47:BW:59:ILE:HG12	1.80	0.47
50:BZ:99:ARG:HB3	50:BZ:167:ILE:HG12	1.95	0.47
69:Bs:95:ILE:HG22	69:Bs:99:LYS:HE3	1.96	0.47
1:AA:486:G:H2'	1:AA:487:C:C6	2.50	0.47
3:AE:201:THR:HG22	3:AE:205:PHE:O	2.14	0.47
6:AH:128:ARG:HA	6:AH:156:VAL:HG12	1.97	0.47
11:AM:82:ARG:HH22	11:AM:149:ARG:NH1	2.12	0.47
35:B2:718:A:N1	37:B4:36:C:O2'	2.42	0.47
35:B2:1316:G:O2'	35:B2:1317:A:N7	2.43	0.47
35:B2:2495:C:H2'	35:B2:2496:U:C6	2.50	0.47
35:B2:3163:C:H3'	54:Bd:62:ARG:HH22	1.80	0.47
35:B2:3351:U:H2'	35:B2:3352:A:C8	2.50	0.47
36:B3:113:G:H2'	36:B3:114:U:C6	2.50	0.47
43:BS:178:GLU:HG3	43:BS:187:LEU:HD22	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:BV:70:ILE:O	46:BV:74:LYS:HE2	2.15	0.47
1:AA:409:U:H2'	1:AA:410:A:H8	1.80	0.46
1:AA:518:A:C2	1:AA:519:G:H1'	2.50	0.46
1:AA:1188:A:H2'	1:AA:1189:G:H8	1.76	0.46
1:AA:1194:C:O3'	1:AA:1206:A:N6	2.44	0.46
1:AA:1493:U:O2'	1:AA:1494:G:H5'	2.14	0.46
5:AG:29:ARG:O	5:AG:32:SER:OG	2.33	0.46
16:AR:101:GLN:HG3	28:Ag:46:GLU:HG3	1.97	0.46
35:B2:170:G:H2'	35:B2:171:C:C6	2.51	0.46
35:B2:379:G:N1	35:B2:382:A:OP2	2.44	0.46
35:B2:588:G:C2	35:B2:589:U:H1'	2.50	0.46
35:B2:1086:A:H5"	35:B2:2732:A:H61	1.80	0.46
35:B2:1535:U:H2'	35:B2:1536:G:C8	2.50	0.46
35:B2:1969:G:O2'	54:Bd:82:LYS:O	2.27	0.46
35:B2:3352:A:H2'	35:B2:3353:U:C6	2.50	0.46
39:BO:171:LEU:HD21	39:BO:333:LYS:HB2	1.97	0.46
47:BW:21:ILE:HA	47:BW:125:MET:HE3	1.97	0.46
1:AA:17:C:H4'	1:AA:1125:G:C8	2.50	0.46
1:AA:110:G:H1'	1:AA:810:U:O4	2.16	0.46
1:AA:415:A:H2'	1:AA:416:U:C6	2.50	0.46
1:AA:486:G:H22	1:AA:507:U:H3	1.62	0.46
1:AA:833:C:H3'	1:AA:834:G:C8	2.51	0.46
1:AA:1102:A:OP2	4:AF:160:LYS:NZ	2.44	0.46
1:AA:1280:G:H2'	1:AA:1281:G:O4'	2.16	0.46
1:AA:1409:C:O2	1:AA:1409:C:H2'	2.15	0.46
1:AA:1682:C:H2'	1:AA:1683:G:C8	2.50	0.46
4:AF:112:LEU:HD21	4:AF:210:VAL:HG23	1.97	0.46
7:AI:29:VAL:HG22	7:AI:30:GLU:H	1.79	0.46
11:AM:25:ASP:OD1	11:AM:26:ALA:N	2.48	0.46
15:AQ:38:LEU:O	15:AQ:42:LYS:HG3	2.15	0.46
21:AW:14:PHE:CD1	21:AW:134:ILE:HG21	2.50	0.46
35:B2:2529:A:O2'	35:B2:2530:G:O4'	2.30	0.46
35:B2:2863:U:H2'	35:B2:2864:G:C8	2.51	0.46
35:B2:3252:U:H2'	35:B2:3253:G:H8	1.80	0.46
35:B2:3328:U:H4'	35:B2:3329:G:O5'	2.15	0.46
35:B2:3379:A:H2'	35:B2:3380:A:H8	1.80	0.46
45:BU:111:GLU:OE1	45:BU:113:ARG:NH1	2.49	0.46
58:Bh:86:ALA:HA	58:Bh:96:TYR:HB3	1.97	0.46
65:Bo:38:LYS:HB2	65:Bo:38:LYS:HE3	1.67	0.46
1:AA:297:C:H2'	1:AA:298:A:C8	2.50	0.46
1:AA:947:U:OP2	3:AE:155:TYR:OH	2.25	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1095:U:OP2	28:Ag:93:ARG:NH2	2.49	0.46
1:AA:1501:C:H4'	1:AA:1502:C:OP1	2.15	0.46
5:AG:42:ARG:NH2	22:Aa:109:GLY:H	2.13	0.46
6:AH:212:ASP:OD1	6:AH:212:ASP:N	2.49	0.46
20:AV:100:ALA:O	20:AV:103:VAL:HG12	2.16	0.46
29:Ah:74:MET:CE	29:Ah:75:GLU:CG	2.74	0.46
35:B2:165:A:H2'	35:B2:166:A:C8	2.49	0.46
35:B2:256:C:H2'	35:B2:257:A:O4'	2.15	0.46
35:B2:2515:U:H2'	35:B2:2516:U:C6	2.50	0.46
37:B4:153:U:H2'	37:B4:154:U:C6	2.49	0.46
40:BP:175:LYS:HB3	40:BP:178:ARG:HH12	1.80	0.46
40:BP:333:TYR:CE1	43:BS:57:GLU:HG3	2.51	0.46
44:BT:25:PRO:HG2	62:Bl:124:SER:HA	1.96	0.46
63:Bm:146:LEU:HB2	71:Bu:5:LEU:HD22	1.97	0.46
64:Bn:52:GLU:OE1	64:Bn:55:ARG:NH1	2.45	0.46
68:Br:43:GLN:HA	68:Br:46:LEU:HG	1.98	0.46
1:AA:80:C:OP1	8:AJ:159:ARG:NH1	2.48	0.46
1:AA:994:A:H4'	1:AA:1828:G:N2	2.30	0.46
4:AF:237:THR:HG23	4:AF:240:GLU:H	1.81	0.46
6:AH:161:LYS:NZ	6:AH:235:TRP:CG	2.82	0.46
7:AI:78:ASN:O	7:AI:80:ARG:N	2.48	0.46
11:AM:157:ASP:N	11:AM:157:ASP:OD1	2.49	0.46
17:AS:53:MET:HE3	17:AS:57:LEU:HD21	1.96	0.46
28:Ag:40:THR:O	28:Ag:40:THR:HG23	2.14	0.46
35:B2:121:A:C6	44:BT:129:PRO:HG3	2.51	0.46
35:B2:511:C:H2'	35:B2:512:A:C8	2.50	0.46
35:B2:528:G:H5"	43:BS:71:ILE:HG21	1.98	0.46
35:B2:692:C:H2'	35:B2:693:A:H8	1.80	0.46
35:B2:826:U:OP1	63:Bm:7:LYS:N	2.47	0.46
35:B2:1078:A:H2'	35:B2:1081:C:C5	2.50	0.46
35:B2:1694:U:H2'	35:B2:1695:C:C6	2.50	0.46
35:B2:2329:U:H5"	38:BN:244:LEU:O	2.15	0.46
35:B2:2371:G:H1'	35:B2:2373:C:H41	1.80	0.46
35:B2:2444:A:N6	35:B2:3078:C:O2	2.48	0.46
35:B2:2445:A:H2'	35:B2:2446:A:C8	2.49	0.46
35:B2:2622:C:H2'	35:B2:2623:G:H8	1.81	0.46
35:B2:3165:G:C2	35:B2:3166:A:C8	3.04	0.46
35:B2:3287:A:H4'	51:Ba:177:LYS:HD2	1.98	0.46
35:B2:3335:U:H3'	35:B2:3336:G:H21	1.80	0.46
52:Bb:103:GLU:OE1	52:Bb:109:MET:HE2	2.16	0.46
56:Bf:25:ILE:HD11	56:Bf:47:ALA:HB3	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:387:G:H2'	1:AA:388:A:H8	1.80	0.46
1:AA:388:A:H2'	1:AA:389:G:C8	2.51	0.46
1:AA:750:A:H2'	1:AA:751:G:H8	1.80	0.46
1:AA:1009:G:H2'	1:AA:1010:A:H8	1.81	0.46
1:AA:1033:U:H2'	1:AA:1034:A:C8	2.50	0.46
1:AA:1375:G:O2'	1:AA:1376:C:O4'	2.32	0.46
1:AA:1555:U:H5"	1:AA:1556:A:O4'	2.15	0.46
8:AJ:5:ILE:HD11	8:AJ:113:ILE:HG12	1.97	0.46
15:AQ:84:LEU:HD13	15:AQ:85:PRO:HD2	1.98	0.46
18:AT:94:VAL:HG12	18:AT:95:ASP:H	1.81	0.46
18:AT:107:ILE:HD11	18:AT:114:LEU:HD21	1.97	0.46
26:Ae:50:THR:HG23	26:Ae:52:ALA:H	1.80	0.46
35:B2:68:A:OP2	35:B2:309:G:N2	2.36	0.46
35:B2:138:U:H5	70:Bt:70:GLU:HG2	1.80	0.46
35:B2:711:G:H2'	35:B2:712:U:C6	2.50	0.46
35:B2:1315:C:H3'	35:B2:1316:G:C8	2.50	0.46
35:B2:1764:U:OP1	54:Bd:128:LYS:NZ	2.32	0.46
35:B2:1918:G:N1	35:B2:1921:C:OP2	2.30	0.46
35:B2:3468:C:H5"	35:B2:3469:U:H2'	1.97	0.46
36:B3:72:U:H2'	36:B3:73:U:O4'	2.16	0.46
46:BV:191:ILE:HD12	46:BV:192:PRO:HD2	1.97	0.46
47:BW:35:LYS:CE	47:BW:39:GLN:OE1	2.63	0.46
51:Ba:13:LYS:O	55:Be:171:ARG:NH1	2.39	0.46
55:Be:97:THR:HG22	55:Be:99:VAL:H	1.80	0.46
73:Bw:15:ALA:HA	73:Bw:37:LEU:HD21	1.96	0.46
76:Am:311:GLN:OE1	76:Am:313:THR:OG1	2.32	0.46
1:AA:130:A:N6	1:AA:268:A:OP1	2.40	0.46
1:AA:343:U:H2'	1:AA:344:A:C8	2.50	0.46
1:AA:473:A:H2'	1:AA:474:A:C8	2.51	0.46
1:AA:965:C:H1'	15:AQ:104:ARG:HH22	1.75	0.46
1:AA:1096:U:H2'	1:AA:1097:A:C8	2.51	0.46
3:AE:130:THR:HG1	3:AE:180:SER:HG	1.60	0.46
4:AF:236:GLN:O	4:AF:237:THR:HG22	2.15	0.46
35:B2:464:A:C4	35:B2:465:G:C8	3.04	0.46
35:B2:676:G:O2'	35:B2:1469:A:OP1	2.32	0.46
35:B2:853:U:H2'	35:B2:854:G:H8	1.81	0.46
35:B2:2695:C:H2'	35:B2:2696:A:H8	1.80	0.46
35:B2:3409:C:N3	52:Bb:69:ARG:NH2	2.56	0.46
36:B3:54:A:O2'	36:B3:55:A:H8	1.99	0.46
40:BP:207:PRO:HG2	40:BP:227:VAL:HG22	1.96	0.46
64:Bn:26:LYS:HD2	64:Bn:26:LYS:HA	1.82	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:Bs:92:ALA:O	69:Bs:96:GLU:HG2	2.16	0.46
1:AA:1798:A:O2'	79:S3:33:C:O2	2.26	0.46
3:AE:62:LYS:HE3	3:AE:62:LYS:HB3	1.73	0.46
4:AF:177:LEU:HD23	4:AF:195:CYS:HB3	1.98	0.46
6:AH:71:LYS:HE3	6:AH:76:VAL:HG23	1.98	0.46
6:AH:99:PHE:HE1	6:AH:113:ARG:HE	1.62	0.46
7:AI:102:LEU:HD23	7:AI:102:LEU:HA	1.83	0.46
18:AT:96:GLU:HG3	76:Am:58:ARG:H	1.79	0.46
19:AU:95:ARG:NE	19:AU:115:PRO:HG3	2.30	0.46
35:B2:191:U:O2'	35:B2:192:C:OP1	2.28	0.46
35:B2:1381:G:H2'	35:B2:1381:G:N3	2.30	0.46
35:B2:1412:U:H2'	35:B2:1413:G:H8	1.79	0.46
35:B2:1697:G:H22	35:B2:1828:A:H2	1.63	0.46
35:B2:2000:A:H2'	35:B2:2001:A:C8	2.51	0.46
35:B2:2656:A:O2'	35:B2:2657:A:H8	1.98	0.46
36:B3:1:G:H2'	36:B3:2:U:C6	2.50	0.46
37:B4:141:A:H2'	37:B4:142:A:C8	2.51	0.46
39:BO:58:ARG:NH2	39:BO:352:GLU:OE2	2.49	0.46
57:Bg:12:TYR:O	57:Bg:13:ILE:HD13	2.15	0.46
62:Bl:40:HIS:HA	62:Bl:76:ASN:HA	1.98	0.46
66:Bp:20:HIS:HB3	66:Bp:23:LYS:HE2	1.97	0.46
71:Bu:23:ARG:HB2	71:Bu:26:ARG:HG3	1.97	0.46
1:AA:409:U:H2'	1:AA:410:A:C8	2.51	0.46
1:AA:902:A:H5"	16:AR:122:PRO:HB2	1.98	0.46
1:AA:1163:A:H2'	1:AA:1164:C:C6	2.51	0.46
1:AA:1246:G:N2	1:AA:1272:G:O2'	2.48	0.46
1:AA:1576:U:O2'	1:AA:1577:G:H5"	2.16	0.46
3:AE:211:LEU:C	3:AE:211:LEU:HD12	2.41	0.46
5:AG:77:LYS:NZ	12:AN:20:VAL:O	2.33	0.46
6:AH:221:ARG:O	6:AH:225:VAL:HG13	2.16	0.46
13:AO:7:VAL:HG11	13:AO:49:GLU:O	2.15	0.46
16:AR:22:PHE:HD1	16:AR:86:ARG:HD3	1.81	0.46
25:Ad:26:HIS:O	25:Ad:30:ARG:HG3	2.15	0.46
28:Ag:58:VAL:HG12	28:Ag:59:TYR:N	2.28	0.46
30:Ai:44:ASN:ND2	30:Ai:67:LEU:HD23	2.31	0.46
35:B2:130:A:H2'	35:B2:131:A:H8	1.80	0.46
35:B2:593:A:H3'	35:B2:594:A:H8	1.81	0.46
35:B2:1280:G:H2'	35:B2:1281:G:H8	1.81	0.46
35:B2:1338:G:O2'	35:B2:1339:A:N7	2.46	0.46
35:B2:2194:A:H2'	35:B2:2195:A:H8	1.80	0.46
35:B2:3396:A:H2'	35:B2:3397:A:C8	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:BU:64:HIS:HA	45:BU:67:CYS:HB2	1.97	0.46
57:Bg:53:VAL:HG22	57:Bg:64:ILE:HB	1.97	0.46
60:Bj:99:ARG:HH11	60:Bj:99:ARG:HG3	1.81	0.46
74:Bx:15:LYS:HD2	74:Bx:18:ARG:NH2	2.31	0.46
1:AA:1236:A:H62	1:AA:1281:G:H21	1.62	0.46
1:AA:1403:G:C4	1:AA:1404:A:C8	3.04	0.46
1:AA:1556:A:H5"	5:AG:9:LYS:NZ	2.31	0.46
2:AD:9:ILE:HG12	23:Ab:42:GLU:HA	1.98	0.46
3:AE:145:ARG:HH12	3:AE:152:LYS:HA	1.81	0.46
10:AL:159:GLN:CG	10:AL:165:LEU:HD13	2.45	0.46
35:B2:438:G:H2'	35:B2:439:A:H8	1.80	0.46
35:B2:588:G:C4	35:B2:589:U:H1'	2.51	0.46
35:B2:1019:U:H2'	35:B2:1020:U:C6	2.51	0.46
35:B2:1749:C:H2'	35:B2:1750:C:C6	2.50	0.46
35:B2:2426:C:OP1	39:BO:236:LYS:NZ	2.40	0.46
35:B2:3267:A:H4'	35:B2:3268:U:OP2	2.15	0.46
35:B2:3338:A:H2'	35:B2:3339:A:C8	2.51	0.46
1:AA:524:A:O2'	26:Ae:35:ILE:O	2.26	0.46
1:AA:920:A:H5"	16:AR:54:ARG:HG3	1.97	0.46
1:AA:1034:A:OP1	15:AQ:106:ARG:NH2	2.49	0.46
1:AA:1320:U:O2'	1:AA:1339:A:OP2	2.26	0.46
18:AT:109:TYR:OH	18:AT:111:ARG:NH2	2.46	0.46
22:Aa:96:GLU:O	22:Aa:99:LYS:HG3	2.16	0.46
34:B1:16:VAL:HG12	35:B2:1982:G:C8	2.51	0.46
35:B2:737:A:H2'	35:B2:738:A:C8	2.50	0.46
35:B2:1095:G:N2	35:B2:1129:G:O2'	2.49	0.46
35:B2:2445:A:H5'	52:Bb:137:THR:HG23	1.98	0.46
35:B2:2771:A:O5'	35:B2:2773:A:N6	2.49	0.46
35:B2:3130:C:H4'	45:BU:166:ARG:HH22	1.76	0.46
35:B2:3230:G:OP1	51:Ba:75:ARG:NH1	2.42	0.46
35:B2:3259:C:H42	35:B2:3387:G:H1	1.64	0.46
44:BT:203:VAL:HG21	44:BT:211:LEU:HD13	1.98	0.46
46:BV:48:LEU:HD13	46:BV:48:LEU:C	2.40	0.46
50:BZ:21:PHE:O	50:BZ:25:VAL:HG13	2.15	0.46
51:Ba:5:GLN:NE2	51:Ba:7:VAL:O	2.35	0.46
52:Bb:122:ALA:HB3	52:Bb:143:PRO:HG2	1.98	0.46
1:AA:213:U:H2'	1:AA:214:A:H8	1.81	0.45
1:AA:483:A:C6	1:AA:484:A:N6	2.84	0.45
1:AA:940:G:H2'	1:AA:941:A:H8	1.80	0.45
1:AA:1403:G:H1'	22:Aa:55:ARG:NH2	2.31	0.45
1:AA:1472:U:H2'	1:AA:1473:G:C8	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:AI:76:MET:O	7:AI:76:MET:CG	2.63	0.45
11:AM:44:ARG:O	11:AM:48:THR:HG22	2.17	0.45
27:Af:19:ALA:N	27:Af:50:LYS:O	2.41	0.45
35:B2:1012:A:H2'	35:B2:1013:U:O4'	2.16	0.45
35:B2:2370:U:OP1	35:B2:3068:G:O2'	2.26	0.45
35:B2:2495:C:H5"	35:B2:2715:G:O2'	2.16	0.45
35:B2:3284:G:H2'	35:B2:3284:G:N3	2.31	0.45
55:Be:154:ARG:HD2	55:Be:156:THR:H	1.80	0.45
55:Be:154:ARG:HD2	55:Be:156:THR:N	2.31	0.45
57:Bg:39:LYS:HA	57:Bg:44:THR:HA	1.98	0.45
67:Bq:76:VAL:HG13	67:Bq:108:LYS:HG2	1.97	0.45
76:Am:176:VAL:HB	76:Am:186:THR:HG22	1.98	0.45
1:AA:484:A:C5	1:AA:485:U:C4	3.04	0.45
2:AD:96:THR:HG23	2:AD:98:ALA:H	1.81	0.45
5:AG:23:LEU:HD12	5:AG:24:ASN:N	2.31	0.45
35:B2:599:U:H2'	35:B2:600:C:C6	2.51	0.45
35:B2:3289:G:H2'	35:B2:3289:G:N3	2.31	0.45
35:B2:3356:A:H2'	35:B2:3357:C:C6	2.50	0.45
39:BO:193:GLU:HA	39:BO:193:GLU:OE1	2.17	0.45
48:BX:133:PRO:HG2	48:BX:139:THR:HG22	1.98	0.45
58:Bh:38:ILE:HG12	58:Bh:60:VAL:HG21	1.99	0.45
76:Am:40:ILE:HG12	76:Am:59:LEU:HB2	1.98	0.45
76:Am:77:TYR:HB3	76:Am:89:LEU:HD11	1.98	0.45
1:AA:711:C:H42	1:AA:747:A:H61	1.64	0.45
1:AA:1344:C:H5"	5:AG:159:MET:O	2.16	0.45
1:AA:1423:C:H2'	1:AA:1424:C:C6	2.52	0.45
1:AA:1471:C:OP1	31:Aj:12:ARG:NH2	2.49	0.45
1:AA:1486:G:H2'	1:AA:1487:C:C6	2.52	0.45
1:AA:1818:A:H2'	1:AA:1819:G:H8	1.81	0.45
9:AK:115:PRO:HG2	9:AK:118:ARG:HD3	1.97	0.45
10:AL:121:MET:HE3	10:AL:121:MET:HB3	1.72	0.45
15:AQ:89:TYR:C	15:AQ:89:TYR:CD2	2.93	0.45
18:AT:2:GLN:HA	18:AT:93:PHE:CZ	2.52	0.45
35:B2:277:G:H5"	50:BZ:14:LYS:HE2	1.98	0.45
35:B2:674:A:H2'	35:B2:675:C:C6	2.51	0.45
35:B2:1025:G:N3	35:B2:2732:A:H2'	2.31	0.45
35:B2:1844:C:H2'	35:B2:1845:A:H8	1.82	0.45
35:B2:2681:G:OP2	44:BT:48:ARG:NH2	2.49	0.45
35:B2:3004:U:H2'	35:B2:3005:A:O4'	2.16	0.45
35:B2:3113:A:H2'	35:B2:3114:C:C6	2.52	0.45
35:B2:3435:U:H4'	35:B2:3436:A:H5'	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:BU:91:ARG:HH11	45:BU:141:GLU:HB2	1.81	0.45
51:Ba:174:ALA:O	51:Ba:178:LYS:HG3	2.17	0.45
53:Bc:42:ARG:HA	53:Bc:45:LYS:HE2	1.98	0.45
76:Am:251:ALA:HB1	76:Am:286:CYS:HB3	1.98	0.45
1:AA:391:G:O6	1:AA:413:A:N6	2.50	0.45
1:AA:647:C:H2'	1:AA:648:C:C6	2.52	0.45
1:AA:1191:C:H42	1:AA:1485:C:H42	1.63	0.45
7:AI:99:ILE:HG13	7:AI:173:ALA:HB1	1.99	0.45
16:AR:22:PHE:CD1	16:AR:86:ARG:NE	2.85	0.45
21:AW:19:ALA:HA	21:AW:22:LEU:HD12	1.97	0.45
35:B2:294:U:H2'	35:B2:295:G:C8	2.52	0.45
35:B2:543:G:H1	35:B2:583:C:H41	1.65	0.45
35:B2:655:C:H2'	35:B2:656:A:C8	2.50	0.45
35:B2:2238:G:O2'	35:B2:2277:U:OP1	2.29	0.45
35:B2:2371:G:H1'	35:B2:2373:C:N4	2.31	0.45
35:B2:3103:U:H2'	35:B2:3104:G:H8	1.82	0.45
35:B2:3421:G:H2'	35:B2:3422:G:H8	1.80	0.45
39:BO:80:GLU:HG2	39:BO:82:PRO:HD3	1.98	0.45
1:AA:510:U:H2'	1:AA:511:U:C6	2.51	0.45
1:AA:1756:U:H2'	1:AA:1757:G:C8	2.52	0.45
3:AE:153:THR:OG1	3:AE:154:THR:N	2.49	0.45
7:AI:48:LEU:HD23	18:AT:43:MET:HB3	1.98	0.45
11:AM:101:ILE:O	11:AM:105:LEU:HD23	2.17	0.45
26:Ae:20:ARG:HH11	26:Ae:74:LEU:HD12	1.81	0.45
35:B2:539:A:O2'	35:B2:540:A:O5'	2.34	0.45
35:B2:1013:U:H2'	35:B2:1014:C:C6	2.52	0.45
35:B2:1628:A:H2'	35:B2:1629:A:C8	2.51	0.45
35:B2:1711:A:H2'	35:B2:1712:A:H8	1.82	0.45
35:B2:2704:A:H2'	35:B2:2705:G:C8	2.52	0.45
40:BP:139:ALA:HB1	75:By:16:ASN:HB2	1.99	0.45
45:BU:36:LYS:HE3	45:BU:36:LYS:HB2	1.77	0.45
48:BX:90:ALA:HB1	48:BX:95:ILE:HB	1.99	0.45
49:BY:9:GLU:HA	49:BY:31:ILE:HD11	1.98	0.45
65:Bo:72:ASN:ND2	65:Bo:74:HIS:HE1	2.14	0.45
78:Sn:63:G:O2'	78:Sn:64:A:OP1	2.32	0.45
1:AA:65:A:O2'	1:AA:67:A:OP2	2.24	0.45
1:AA:1493:U:H5	7:AI:168:ILE:HG12	1.82	0.45
2:AD:38:ASN:OD1	2:AD:38:ASN:N	2.48	0.45
4:AF:178:VAL:HG23	4:AF:178:VAL:O	2.17	0.45
6:AH:115:THR:OG1	6:AH:116:ALA:N	2.49	0.45
10:AL:78:ILE:HA	10:AL:104:ILE:HD12	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Ac:41:MET:HG2	24:Ac:46:TYR:HB2	1.98	0.45
35:B2:347:C:OP1	35:B2:1414:G:O2'	2.32	0.45
35:B2:1846:A:OP1	69:Bs:71:LYS:NZ	2.49	0.45
39:BO:119:TYR:HE2	39:BO:129:ALA:HB2	1.81	0.45
39:BO:218:ILE:HG23	39:BO:276:THR:HG22	1.98	0.45
47:BW:34:ALA:HB1	47:BW:45:PRO:HG3	1.97	0.45
53:Bc:34:PHE:CE1	53:Bc:38:ARG:HG3	2.51	0.45
62:Bl:69:LYS:HB2	62:Bl:69:LYS:HE3	1.72	0.45
78:Sn:29:G:H2'	78:Sn:30:G:C8	2.52	0.45
2:AD:62:LEU:HD13	23:Ab:79:LEU:HD11	1.97	0.45
35:B2:87:U:OP1	53:Bc:168:SER:OG	2.32	0.45
35:B2:145:G:H2'	35:B2:146:U:C6	2.52	0.45
35:B2:765:G:H2'	35:B2:765:G:N3	2.32	0.45
35:B2:1201:A:H2'	35:B2:1202:G:O4'	2.17	0.45
35:B2:1506:U:H2'	35:B2:1507:G:H8	1.82	0.45
35:B2:1525:A:N6	74:Bx:2:PRO:HA	2.32	0.45
35:B2:1607:U:OP1	37:B4:135:C:N4	2.50	0.45
35:B2:3460:A:H2'	35:B2:3461:C:H6	1.81	0.45
47:BW:21:ILE:HD12	47:BW:125:MET:HE1	1.99	0.45
55:Be:79:ARG:HB3	55:Be:123:LEU:HD21	1.99	0.45
60:Bj:58:GLU:H	60:Bj:58:GLU:CD	2.21	0.45
71:Bu:33:LYS:HD3	71:Bu:33:LYS:HA	1.68	0.45
76:Am:206:LEU:HD22	76:Am:218:LEU:HD21	1.98	0.45
77:Sm:63:C:H2'	77:Sm:64:G:C8	2.52	0.45
78:Sn:3:C:H2'	78:Sn:4:G:H8	1.80	0.45
1:AA:875:U:H2'	1:AA:876:U:C6	2.52	0.45
1:AA:1205:G:O2'	1:AA:1450:U:OP1	2.30	0.45
1:AA:1412:U:H2'	1:AA:1413:U:C6	2.51	0.45
2:AD:75:ASP:HB3	2:AD:122:ARG:HB2	1.98	0.45
4:AF:118:LYS:H	4:AF:118:LYS:HG2	1.50	0.45
6:AH:35:PRO:HD2	6:AH:83:PRO:HG2	1.99	0.45
10:AL:184:LEU:HD12	10:AL:185:GLU:H	1.79	0.45
25:Ad:27:TYR:CZ	25:Ad:31:LEU:HG	2.52	0.45
26:Ae:68:ARG:NH1	26:Ae:68:ARG:HB2	2.32	0.45
30:Ai:16:VAL:HG23	30:Ai:29:VAL:HG12	1.99	0.45
35:B2:889:G:H5'	35:B2:1696:G:O2'	2.17	0.45
35:B2:1773:A:H2'	35:B2:1774:G:H8	1.82	0.45
35:B2:1777:U:O2	69:Bs:52:GLN:NE2	2.49	0.45
35:B2:1845:A:H2'	35:B2:1846:A:H8	1.81	0.45
35:B2:3333:G:H2'	35:B2:3334:A:C8	2.52	0.45
36:B3:12:U:H4'	36:B3:13:A:OP2	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:BQ:96:THR:HG21	41:BQ:240:TYR:CD1	2.52	0.45
45:BU:148:SER:HB3	45:BU:151:ASN:HB2	1.99	0.45
47:BW:106:ILE:HD11	47:BW:125:MET:H	1.82	0.45
51:Ba:128:LEU:HD11	55:Be:172:PRO:HG3	1.99	0.45
76:Am:285:GLU:O	76:Am:303:THR:HG23	2.16	0.45
78:Sn:41:C:H2'	78:Sn:42:U:O4'	2.17	0.45
78:Sn:52:G:H2'	78:Sn:53:G:H8	1.81	0.45
1:AA:610:G:H5'	1:AA:616:G:N2	2.32	0.45
1:AA:919:G:C6	79:S3:27:A:H1'	2.52	0.45
1:AA:939:A:H2'	1:AA:940:G:C8	2.51	0.45
1:AA:1576:U:O2'	1:AA:1577:G:N3	2.49	0.45
8:AJ:161:GLU:HG2	8:AJ:163:VAL:HG23	1.98	0.45
12:AN:23:ALA:HB1	12:AN:64:PHE:HB2	1.99	0.45
27:Af:39:PHE:HZ	27:Af:78:GLN:HE21	1.65	0.45
35:B2:679:C:H2'	35:B2:680:C:C6	2.52	0.45
35:B2:1788:G:OP2	73:Bw:34:LYS:NZ	2.43	0.45
35:B2:3256:C:H2'	35:B2:3257:C:C5	2.52	0.45
35:B2:3257:C:H42	35:B2:3390:G:H22	1.64	0.45
35:B2:3305:C:O2	49:BY:92:TRP:CZ2	2.70	0.45
45:BU:44:ILE:HG21	45:BU:55:PHE:HB3	1.98	0.45
50:BZ:184:PRO:HB2	50:BZ:187:ALA:HB3	1.98	0.45
58:Bh:35:ASN:HB2	58:Bh:66:LYS:HB2	1.98	0.45
59:Bi:3:VAL:HG11	59:Bi:12:LYS:HE3	1.98	0.45
1:AA:98:C:H2'	1:AA:99:U:H6	1.82	0.45
1:AA:268:A:OP2	8:AJ:193:ARG:NH2	2.50	0.45
1:AA:820:U:O4	1:AA:821:A:N6	2.42	0.45
1:AA:860:G:H2'	1:AA:861:G:C8	2.51	0.45
8:AJ:1:MET:HG3	8:AJ:107:ALA:C	2.40	0.45
15:AQ:54:LEU:HD22	15:AQ:60:ILE:HD11	1.99	0.45
26:Ae:20:ARG:NH1	26:Ae:22:GLN:OE1	2.50	0.45
35:B2:517:U:H2'	35:B2:518:U:O4'	2.17	0.45
35:B2:653:U:H2'	35:B2:654:U:C6	2.51	0.45
35:B2:1022:U:H4'	56:Bf:100:LYS:HB2	1.99	0.45
35:B2:1268:G:N1	35:B2:1282:A:H2	2.11	0.45
35:B2:1386:G:O2'	75:By:44:ARG:NE	2.50	0.45
35:B2:1540:A:OP2	52:Bb:127:ARG:NH1	2.46	0.45
35:B2:2819:U:OP2	35:B2:2821:C:N4	2.50	0.45
36:B3:59:U:H2'	36:B3:60:C:C6	2.52	0.45
39:BO:294:ALA:HB3	39:BO:303:LYS:HG3	1.99	0.45
46:BV:89:VAL:HG22	46:BV:136:MET:HE3	1.98	0.45
57:Bg:52:VAL:HG23	57:Bg:63:VAL:HG13	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
76:Am:114:SER:HB2	76:Am:115:PRO:HD2	1.99	0.45
1:AA:900:G:H2'	1:AA:901:U:C6	2.52	0.44
2:AD:39:TYR:HA	2:AD:55:LYS:HD2	1.99	0.44
2:AD:171:LYS:HD2	2:AD:205:PHE:CE2	2.52	0.44
3:AE:27:LYS:HB3	3:AE:47:LEU:HD11	1.99	0.44
3:AE:134:LEU:HD12	3:AE:134:LEU:HA	1.77	0.44
4:AF:177:LEU:CD1	4:AF:188:GLN:HG3	2.47	0.44
6:AH:107:GLY:HA3	6:AH:189:MET:HB3	1.99	0.44
11:AM:135:ARG:NH2	11:AM:160:LEU:HG	2.32	0.44
34:B1:6:LYS:H	35:B2:1982:G:P	2.40	0.44
35:B2:774:C:H2'	35:B2:775:A:C8	2.52	0.44
35:B2:866:U:H2'	35:B2:867:G:O4'	2.16	0.44
35:B2:1165:G:O2'	35:B2:2737:A:N3	2.37	0.44
35:B2:1681:G:H1'	35:B2:1850:A:H61	1.80	0.44
35:B2:1846:A:OP1	69:Bs:71:LYS:CE	2.65	0.44
35:B2:3318:A:H5"	35:B2:3319:G:C5	2.51	0.44
47:BW:16:LYS:HG2	47:BW:130:VAL:HB	1.98	0.44
47:BW:164:LYS:HZ1	47:BW:171:VAL:HG12	1.82	0.44
65:Bo:22:LEU:HD11	65:Bo:104:SER:HB2	1.98	0.44
77:Sm:63:C:H2'	77:Sm:64:G:H8	1.81	0.44
1:AA:14:C:H2'	1:AA:15:U:C6	2.52	0.44
1:AA:596:U:O5'	11:AM:38:ASN:ND2	2.50	0.44
1:AA:1396:C:H2'	1:AA:1397:U:C6	2.52	0.44
6:AH:92:VAL:HG23	6:AH:92:VAL:O	2.17	0.44
21:AW:14:PHE:HE2	21:AW:58:ALA:HB1	1.82	0.44
29:Ah:51:GLN:HA	29:Ah:66:PRO:HB3	1.98	0.44
35:B2:241:G:H2'	35:B2:241:G:N3	2.32	0.44
35:B2:619:G:H1	35:B2:634:G:H5"	1.82	0.44
35:B2:978:U:H2'	35:B2:979:G:C8	2.52	0.44
35:B2:1190:A:H2'	35:B2:1190:A:N3	2.32	0.44
35:B2:1941:A:H2'	35:B2:1942:A:H8	1.81	0.44
35:B2:3359:U:H5"	35:B2:3361:U:H5	1.82	0.44
48:BX:42:LYS:HA	48:BX:45:LYS:HG2	1.99	0.44
68:Br:51:CYS:HB3	68:Br:69:TRP:CE3	2.52	0.44
68:Br:60:VAL:HG12	68:Br:61:ARG:HG3	1.99	0.44
70:Bt:81:ASP:OD1	70:Bt:81:ASP:N	2.48	0.44
76:Am:17:TRP:CE2	76:Am:303:THR:HB	2.52	0.44
1:AA:165:G:H2'	1:AA:166:C:O4'	2.17	0.44
1:AA:531:U:H2'	1:AA:532:A:O4'	2.17	0.44
1:AA:711:C:N4	1:AA:747:A:H61	2.14	0.44
1:AA:764:G:H2'	1:AA:765:A:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1167:A:H2'	1:AA:1168:A:H8	1.82	0.44
1:AA:1771:C:H2'	1:AA:1772:A:O4'	2.17	0.44
3:AE:48:VAL:HG21	3:AE:61:LEU:HD22	1.98	0.44
35:B2:513:U:H4'	42:BR:44:ARG:HB2	1.99	0.44
35:B2:688:C:H2'	35:B2:689:U:C6	2.53	0.44
35:B2:743:A:OP1	63:Bm:136:LYS:NZ	2.48	0.44
35:B2:1150:C:H2'	35:B2:1151:A:C8	2.51	0.44
36:B3:1:G:C4	41:BQ:264:LYS:HA	2.52	0.44
37:B4:140:A:H2'	37:B4:141:A:H8	1.80	0.44
50:BZ:124:ASP:OD1	50:BZ:126:THR:N	2.51	0.44
57:Bg:97:LYS:HB2	57:Bg:100:VAL:HB	2.00	0.44
62:Bl:36:HIS:HB3	62:Bl:40:HIS:CE1	2.53	0.44
63:Bm:118:PRO:HB2	63:Bm:120:THR:HG22	1.98	0.44
1:AA:79:A:H5"	8:AJ:159:ARG:NH2	2.32	0.44
1:AA:700:U:H1'	1:AA:701:A:N7	2.33	0.44
1:AA:1080:G:H2'	1:AA:1081:A:H8	1.81	0.44
1:AA:1248:U:H2'	1:AA:1249:U:C6	2.52	0.44
2:AD:92:PHE:C	2:AD:92:PHE:CD2	2.95	0.44
6:AH:161:LYS:NZ	6:AH:235:TRP:CB	2.81	0.44
7:AI:144:ARG:HA	7:AI:147:ASN:ND2	2.32	0.44
28:Ag:41:ILE:HD12	28:Ag:68:TYR:CD2	2.52	0.44
35:B2:998:U:H2'	35:B2:999:A:C8	2.52	0.44
35:B2:2280:C:O2'	35:B2:2400:A:N1	2.49	0.44
35:B2:2842:A:H2'	35:B2:2843:A:C8	2.52	0.44
35:B2:2922:U:O2'	35:B2:2954:U:O4	2.20	0.44
35:B2:3119:U:H2'	35:B2:3120:A:C8	2.52	0.44
35:B2:3269:A:H2'	35:B2:3270:U:C6	2.53	0.44
36:B3:27:A:H2'	36:B3:28:C:C6	2.53	0.44
44:BT:189:VAL:HG23	44:BT:190:ILE:HD13	1.98	0.44
61:Bk:34:LEU:HD22	61:Bk:38:LEU:HD23	1.99	0.44
1:AA:4:C:O2'	11:AM:17:ARG:NH2	2.51	0.44
1:AA:554:G:H2'	1:AA:555:G:C8	2.51	0.44
1:AA:699:U:H5"	1:AA:700:U:OP2	2.18	0.44
1:AA:1540:G:OP1	21:AW:121:ARG:NH2	2.50	0.44
1:AA:1634:A:H2'	1:AA:1635:G:H8	1.82	0.44
1:AA:1712:A:N6	1:AA:1772:A:O2'	2.50	0.44
5:AG:197:THR:C	5:AG:199:GLN:H	2.24	0.44
6:AH:180:GLN:HB2	6:AH:228:ILE:O	2.17	0.44
22:Aa:42:ARG:HD3	22:Aa:42:ARG:HA	1.76	0.44
25:Ad:12:LYS:HE3	25:Ad:16:HIS:NE2	2.32	0.44
26:Ae:23:MET:HB2	26:Ae:23:MET:HE2	1.74	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:Af:76:SER:OG	27:Af:77:LYS:N	2.48	0.44
35:B2:316:A:H1'	35:B2:2310:A:N3	2.32	0.44
35:B2:383:A:H5"	61:Bk:88:LYS:HG2	1.98	0.44
35:B2:420:G:H2'	35:B2:421:C:H6	1.83	0.44
35:B2:867:G:H1'	35:B2:890:A:N6	2.32	0.44
35:B2:3084:U:O2'	39:BO:232:ARG:NH1	2.50	0.44
35:B2:3460:A:H2'	35:B2:3461:C:C6	2.53	0.44
37:B4:150:C:H2'	37:B4:151:U:C6	2.53	0.44
41:BQ:55:PHE:HD1	41:BQ:60:VAL:HG22	1.83	0.44
46:BV:101:LYS:HG2	78:Sn:2:G:H4'	1.99	0.44
57:Bg:74:LEU:HD12	57:Bg:74:LEU:HA	1.88	0.44
73:Bw:31:LYS:HE2	73:Bw:31:LYS:HB2	1.78	0.44
75:By:66:LEU:HB3	75:By:85:ASP:HB2	2.00	0.44
76:Am:178:ASP:OD1	76:Am:179:LEU:N	2.50	0.44
79:S3:35:U:H1'	79:S3:36:U:C5'	2.48	0.44
1:AA:254:A:O2'	6:AH:131:LEU:O	2.36	0.44
1:AA:348:U:H1'	1:AA:349:G:C8	2.53	0.44
1:AA:887:G:N2	1:AA:1062:G:H4'	2.33	0.44
5:AG:162:SER:O	5:AG:166:ALA:HB3	2.17	0.44
8:AJ:142:ARG:HH21	8:AJ:149:LYS:HA	1.82	0.44
9:AK:18:THR:OG1	9:AK:19:ASP:N	2.50	0.44
18:AT:87:VAL:HG22	18:AT:102:LEU:CD2	2.48	0.44
35:B2:322:U:H2'	35:B2:323:C:H6	1.83	0.44
35:B2:510:G:H2'	35:B2:511:C:C6	2.52	0.44
35:B2:531:A:OP2	43:BS:78:ARG:NH1	2.51	0.44
35:B2:862:A:H2'	35:B2:863:G:O4'	2.18	0.44
35:B2:1159:U:O2	35:B2:2922:U:H4'	2.18	0.44
35:B2:1631:C:H2'	35:B2:1632:C:H6	1.81	0.44
35:B2:2710:G:H2'	35:B2:2711:C:C6	2.53	0.44
35:B2:3122:G:N2	35:B2:3125:A:OP2	2.47	0.44
47:BW:131:MET:HE2	47:BW:131:MET:HB2	1.83	0.44
49:BY:133:LYS:HD3	49:BY:133:LYS:HA	1.84	0.44
59:Bi:44:LYS:HE3	59:Bi:44:LYS:HB3	1.68	0.44
76:Am:157:SER:HA	76:Am:200:ILE:HG21	1.98	0.44
76:Am:166:VAL:HG13	76:Am:176:VAL:HG22	1.99	0.44
77:Sm:1:C:H42	77:Sm:73:A:H61	1.66	0.44
1:AA:64:U:H2'	1:AA:65:A:H5"	2.00	0.44
1:AA:451:C:H5"	6:AH:29:PRO:HA	2.00	0.44
1:AA:917:G:H1'	1:AA:922:A:H61	1.81	0.44
1:AA:940:G:H2'	1:AA:941:A:C8	2.53	0.44
1:AA:1318:U:H5'	4:AF:87:LYS:HD2	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1720:G:H1'	1:AA:1764:A:H61	1.82	0.44
6:AH:174:LYS:HG3	6:AH:175:PHE:H	1.82	0.44
7:AI:18:ILE:HD12	7:AI:18:ILE:HA	1.86	0.44
8:AJ:1:MET:CG	8:AJ:107:ALA:HA	2.47	0.44
9:AK:109:ARG:NH2	9:AK:110:VAL:O	2.51	0.44
12:AN:61:TRP:HA	31:Aj:23:HIS:HB2	1.99	0.44
15:AQ:123:HIS:CD2	35:B2:878:A:H4'	2.53	0.44
21:AW:9:VAL:HG21	21:AW:135:ALA:HB1	1.99	0.44
22:Aa:20:ILE:HD11	22:Aa:114:VAL:HG13	1.99	0.44
25:Ad:95:ASP:OD1	25:Ad:95:ASP:N	2.51	0.44
35:B2:320:C:H2'	35:B2:321:A:H8	1.82	0.44
35:B2:1664:A:H8	62:Bl:67:ARG:HH12	1.66	0.44
35:B2:2357:U:H2'	35:B2:2359:A:OP2	2.16	0.44
35:B2:2622:C:H2'	35:B2:2623:G:C8	2.53	0.44
35:B2:3191:U:H2'	35:B2:3192:C:H6	1.82	0.44
35:B2:3249:U:O4	35:B2:3253:G:N2	2.45	0.44
35:B2:3335:U:H3'	35:B2:3336:G:N2	2.33	0.44
49:BY:10:VAL:HG11	49:BY:67:ARG:HA	1.99	0.44
56:Bf:44:VAL:HG22	56:Bf:53:PRO:HG2	1.99	0.44
61:Bk:21:ALA:HB1	61:Bk:25:VAL:HB	1.98	0.44
70:Bt:78:ILE:O	70:Bt:83:ARG:NH2	2.32	0.44
1:AA:982:A:OP2	15:AQ:124:ARG:NH2	2.47	0.44
1:AA:1667:U:H2'	1:AA:1668:U:C6	2.53	0.44
6:AH:11:ARG:NH1	6:AH:23:LEU:O	2.50	0.44
11:AM:105:LEU:HD13	11:AM:108:ARG:HD2	2.00	0.44
19:AU:20:TYR:CZ	19:AU:38:VAL:HG21	2.53	0.44
21:AW:57:ALA:HA	21:AW:103:VAL:HG12	2.00	0.44
35:B2:185:G:H2'	35:B2:186:A:C8	2.53	0.44
41:BQ:37:ILE:CG2	41:BQ:50:ARG:HD3	2.48	0.44
46:BV:79:ILE:HD12	46:BV:147:THR:OG1	2.18	0.44
47:BW:155:ASN:OD1	47:BW:158:ASP:OD2	2.34	0.44
51:Ba:4:PHE:HZ	68:Br:32:LYS:HG3	1.83	0.44
53:Bc:75:ALA:HB1	53:Bc:77:LEU:HG	2.00	0.44
57:Bg:14:ILE:HB	57:Bg:61:ILE:HG22	1.99	0.44
71:Bu:34:ARG:HE	71:Bu:34:ARG:HB2	1.62	0.44
73:Bw:27:LYS:HD3	73:Bw:33:VAL:HG13	1.98	0.44
1:AA:1226:C:N3	1:AA:1475:G:N2	2.66	0.44
1:AA:1420:A:H2'	1:AA:1421:A:C8	2.53	0.44
2:AD:197:TRP:CE2	2:AD:199:VAL:HB	2.53	0.44
5:AG:213:LYS:NZ	5:AG:214:GLU:O	2.51	0.44
6:AH:69:LEU:HD13	26:Ae:17:LEU:HG	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:AH:229:GLY:HA3	6:AH:234:SER:HA	2.00	0.44
7:AI:35:SER:HB3	7:AI:145:ARG:NH2	2.32	0.44
7:AI:57:THR:HG23	7:AI:58:LYS:HG3	2.00	0.44
10:AL:42:ARG:HH12	10:AL:59:ARG:HH21	1.65	0.44
10:AL:62:SER:HB3	10:AL:75:LYS:HD3	1.98	0.44
11:AM:91:MET:C	11:AM:91:MET:CE	2.88	0.44
17:AS:93:ILE:H	17:AS:93:ILE:HD12	1.82	0.44
18:AT:55:ASP:OD1	18:AT:55:ASP:N	2.51	0.44
23:Ab:69:ILE:O	23:Ab:73:THR:HG23	2.18	0.44
34:B1:87:ARG:O	34:B1:91:MET:SD	2.76	0.44
35:B2:665:U:H2'	35:B2:666:C:C6	2.52	0.44
35:B2:1723:U:H2'	35:B2:1724:U:C6	2.52	0.44
35:B2:1757:C:H2'	35:B2:1758:G:C8	2.52	0.44
35:B2:2516:U:H2'	35:B2:2517:G:H8	1.82	0.44
36:B3:45:A:OP1	41:BQ:152:ARG:HB3	2.18	0.44
45:BU:105:GLU:HG2	45:BU:111:GLU:H	1.82	0.44
67:Bq:94:ALA:HB3	67:Bq:97:VAL:HG23	1.99	0.44
76:Am:7:LEU:HD21	76:Am:308:ARG:HB3	2.00	0.44
78:Sn:31:G:C2	78:Sn:32:C:C5	3.06	0.44
1:AA:364:C:N4	1:AA:382:U:OP1	2.48	0.43
1:AA:377:U:H2'	1:AA:378:U:H6	1.82	0.43
1:AA:901:U:H2'	1:AA:902:A:H8	1.83	0.43
1:AA:1113:U:H4'	1:AA:1114:U:O5'	2.17	0.43
4:AF:102:VAL:HG21	4:AF:186:PHE:HD1	1.83	0.43
9:AK:36:MET:H	9:AK:36:MET:HG3	1.64	0.43
19:AU:23:ARG:HD2	19:AU:23:ARG:HA	1.69	0.43
21:AW:11:ALA:HB3	21:AW:62:ARG:HD2	2.00	0.43
26:Ae:61:ARG:HD2	26:Ae:61:ARG:HA	1.81	0.43
31:Aj:46:TYR:O	31:Aj:50:ILE:HD12	2.17	0.43
35:B2:144:U:H2'	35:B2:145:G:H8	1.81	0.43
35:B2:283:U:H2'	35:B2:284:U:C6	2.53	0.43
35:B2:438:G:H2'	35:B2:439:A:C8	2.53	0.43
35:B2:439:A:H2'	35:B2:440:A:H8	1.83	0.43
35:B2:1234:A:H2'	35:B2:1235:A:H8	1.82	0.43
35:B2:1532:A:H2'	35:B2:1533:U:C6	2.53	0.43
35:B2:2287:G:H2'	35:B2:2288:U:C6	2.53	0.43
35:B2:2501:A:H2'	35:B2:2502:G:C8	2.53	0.43
35:B2:3031:A:H2'	35:B2:3032:G:C8	2.53	0.43
35:B2:3042:G:N3	39:BO:250:ALA:HB1	2.33	0.43
35:B2:3081:U:H2'	35:B2:3082:A:H8	1.83	0.43
35:B2:3261:U:H2'	35:B2:3262:G:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:BW:106:ILE:HD13	47:BW:109:HIS:HB3	2.00	0.43
51:Ba:47:HIS:HB3	51:Ba:135:LYS:HE3	2.00	0.43
58:Bh:42:PHE:CD1	58:Bh:59:MET:HG3	2.53	0.43
69:Bs:66:SER:HB2	69:Bs:69:GLN:HE21	1.80	0.43
78:Sn:3:C:H2'	78:Sn:4:G:C8	2.52	0.43
1:AA:237:G:H2'	1:AA:238:C:O4'	2.18	0.43
5:AG:218:ILE:HG22	5:AG:220:LYS:N	2.33	0.43
7:AI:111:LEU:HD13	7:AI:176:ILE:HD13	1.99	0.43
13:AO:63:ILE:HG13	13:AO:137:LEU:HD11	2.00	0.43
35:B2:393:A:H2'	35:B2:394:A:C8	2.53	0.43
35:B2:998:U:H2'	35:B2:999:A:H8	1.82	0.43
35:B2:1370:C:H2'	35:B2:1371:G:C8	2.53	0.43
35:B2:1427:A:N6	35:B2:1451:G:H1'	2.33	0.43
35:B2:2301:A:H2'	35:B2:2302:A:C8	2.53	0.43
35:B2:3006:A:H4'	35:B2:3007:G:C8	2.53	0.43
37:B4:79:A:H4'	37:B4:80:A:O5'	2.18	0.43
38:BN:136:VAL:HG21	38:BN:154:LYS:HE3	2.00	0.43
56:Bf:46:GLY:O	56:Bf:49:GLN:NE2	2.51	0.43
1:AA:572:C:H2'	1:AA:573:A:O4'	2.18	0.43
1:AA:1228:A:H2'	1:AA:1229:G:O4'	2.18	0.43
2:AD:91:LYS:HD3	2:AD:91:LYS:HA	1.85	0.43
6:AH:179:ALA:O	6:AH:195:ILE:HG22	2.18	0.43
7:AI:116:ALA:HA	7:AI:145:ARG:HH11	1.83	0.43
8:AJ:37:PRO:HA	8:AJ:49:VAL:HA	1.99	0.43
20:AV:84:LEU:HD22	20:AV:97:GLN:HB2	2.00	0.43
33:B0:52:GLY:HA3	35:B2:2509:U:O2'	2.19	0.43
35:B2:453:U:H3	35:B2:501:G:H22	1.65	0.43
35:B2:724:A:H2'	35:B2:725:U:C6	2.53	0.43
35:B2:1008:U:H2'	35:B2:1009:C:O4'	2.18	0.43
35:B2:1248:A:H2'	35:B2:1249:U:C5	2.53	0.43
35:B2:1610:U:H2'	35:B2:1611:G:H8	1.82	0.43
35:B2:2242:U:H2'	35:B2:2243:G:H8	1.83	0.43
35:B2:2993:G:H2'	35:B2:2993:G:N3	2.34	0.43
35:B2:3245:G:H2'	35:B2:3246:A:C8	2.53	0.43
39:BO:59:ASP:HB2	39:BO:357:LYS:HD2	2.01	0.43
51:Ba:110:PRO:HB2	51:Ba:112:PRO:HD2	1.99	0.43
60:Bj:69:GLU:H	60:Bj:69:GLU:CD	2.26	0.43
72:Bv:39:TYR:CD1	72:Bv:40:PRO:HA	2.53	0.43
76:Am:88:ARG:NE	76:Am:97:CYS:SG	2.90	0.43
76:Am:284:PRO:HB2	76:Am:302:TRP:HE3	1.82	0.43
1:AA:938:A:H2'	1:AA:939:A:H8	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1348:A:H61	5:AG:163:GLY:H	1.65	0.43
3:AE:100:PHE:CE1	3:AE:185:VAL:HG22	2.52	0.43
3:AE:154:THR:HG22	3:AE:154:THR:O	2.19	0.43
5:AG:125:LEU:CD1	5:AG:126:ARG:HD2	2.48	0.43
9:AK:47:SER:HB2	9:AK:63:PHE:HD2	1.83	0.43
12:AN:22:VAL:HB	12:AN:32:HIS:HE1	1.84	0.43
14:AP:67:LEU:HD21	14:AP:77:VAL:HG13	2.00	0.43
19:AU:30:THR:O	19:AU:34:ILE:HG23	2.18	0.43
19:AU:113:GLN:HG3	19:AU:114:ILE:HG13	2.01	0.43
20:AV:50:ILE:HD13	20:AV:63:GLU:HG2	1.99	0.43
23:Ab:3:ASN:OD1	23:Ab:3:ASN:N	2.47	0.43
35:B2:1062:U:H2'	35:B2:1063:C:C6	2.53	0.43
35:B2:1115:G:H2'	35:B2:1116:G:C8	2.51	0.43
35:B2:1304:A:H2'	35:B2:1304:A:N3	2.32	0.43
35:B2:1343:C:H2'	35:B2:1344:G:O4'	2.19	0.43
35:B2:1381:G:H3'	75:By:44:ARG:HG3	1.99	0.43
35:B2:1632:C:OP1	69:Bs:31:ARG:HD2	2.18	0.43
35:B2:2357:U:H2'	35:B2:2358:A:H3'	2.01	0.43
35:B2:2754:G:H2'	35:B2:2755:G:H8	1.84	0.43
36:B3:30:A:N6	36:B3:31:G:O6	2.51	0.43
44:BT:98:ARG:HH21	44:BT:189:VAL:HA	1.83	0.43
49:BY:42:PRO:HG3	49:BY:78:TRP:CG	2.53	0.43
62:Bl:9:LYS:O	62:Bl:25:ILE:HG12	2.18	0.43
66:Bp:29:SER:O	66:Bp:33:ARG:HG3	2.19	0.43
78:Sn:22:G:H2'	78:Sn:23:C:C6	2.54	0.43
1:AA:13:C:H4'	1:AA:1315:U:H3	1.83	0.43
1:AA:39:A:H2'	1:AA:40:A:C8	2.54	0.43
1:AA:595:A:P	11:AM:39:LYS:NZ	2.92	0.43
2:AD:121:PRO:HG2	2:AD:144:ILE:HD13	2.00	0.43
29:Ah:63:LEU:HD12	29:Ah:63:LEU:HA	1.88	0.43
35:B2:37:U:OP1	35:B2:966:G:N2	2.47	0.43
35:B2:144:U:H2'	35:B2:145:G:C8	2.53	0.43
35:B2:433:C:H2'	35:B2:434:A:H8	1.84	0.43
35:B2:908:A:H5"	35:B2:1945:U:H5"	2.01	0.43
35:B2:1636:U:P	54:Bd:42:ARG:HH22	2.42	0.43
35:B2:2353:C:H2'	35:B2:2354:U:C6	2.53	0.43
35:B2:3234:C:OP2	39:BO:30:LYS:HG3	2.18	0.43
35:B2:3282:G:H5'	45:BU:23:ALA:H	1.83	0.43
35:B2:3287:A:C4'	51:Ba:177:LYS:HD2	2.48	0.43
35:B2:3470:G:N3	35:B2:3470:G:H2'	2.34	0.43
38:BN:39:TYR:HA	38:BN:90:GLY:HA3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:BN:245:LEU:HD22	38:BN:246:ARG:N	2.32	0.43
42:BR:88:VAL:HG23	42:BR:179:ALA:HB2	2.00	0.43
47:BW:92:LYS:HD2	47:BW:174:LYS:HD2	2.00	0.43
48:BX:12:ALA:HB1	48:BX:14:PHE:HD2	1.83	0.43
57:Bg:14:ILE:HB	57:Bg:61:ILE:CG2	2.48	0.43
62:Bl:9:LYS:CE	62:Bl:83:THR:O	2.66	0.43
69:Bs:58:ARG:HB2	69:Bs:61:GLU:HG3	2.00	0.43
1:AA:195:U:O2'	1:AA:228:U:OP2	2.30	0.43
1:AA:595:A:P	11:AM:39:LYS:HZ3	2.41	0.43
6:AH:195:ILE:HD12	6:AH:208:ILE:HG23	1.99	0.43
12:AN:10:ALA:O	12:AN:13:GLN:HG3	2.18	0.43
13:AO:113:ARG:H	13:AO:113:ARG:HG2	1.69	0.43
19:AU:31:ASN:O	19:AU:34:ILE:HG13	2.19	0.43
26:Ae:68:ARG:HB2	26:Ae:68:ARG:CZ	2.48	0.43
27:Af:34:VAL:HG21	27:Af:63:LEU:HD13	2.00	0.43
35:B2:67:A:O2'	35:B2:323:C:O2	2.32	0.43
35:B2:1234:A:H5"	36:B3:88:A:C5	2.54	0.43
35:B2:1337:G:O6	35:B2:2454:C:O2'	2.33	0.43
35:B2:1347:U:H5"	35:B2:1348:A:H5"	2.01	0.43
35:B2:1541:G:H1'	52:Bb:139:TYR:CE2	2.53	0.43
35:B2:2516:U:H2'	35:B2:2517:G:C8	2.53	0.43
35:B2:2978:U:H2'	35:B2:2979:C:C6	2.54	0.43
36:B3:11:A:O2'	36:B3:13:A:OP2	2.36	0.43
37:B4:83:G:H2'	37:B4:84:C:C6	2.53	0.43
43:BS:139:GLU:OE2	43:BS:238:LYS:NZ	2.51	0.43
44:BT:58:LEU:HD21	44:BT:62:ARG:HH21	1.83	0.43
50:BZ:120:TRP:HE1	50:BZ:123:GLN:HB3	1.84	0.43
61:Bk:80:LEU:HG	61:Bk:95:PRO:HB2	2.01	0.43
63:Bm:75:LEU:HG	63:Bm:113:GLY:HA2	2.00	0.43
76:Am:286:CYS:HA	76:Am:302:TRP:HA	2.01	0.43
78:Sn:27:C:H2'	78:Sn:28:A:C8	2.53	0.43
1:AA:253:C:H2'	1:AA:254:A:C8	2.54	0.43
1:AA:630:C:H2'	1:AA:631:G:O4'	2.18	0.43
1:AA:915:A:H3'	1:AA:916:G:N2	2.25	0.43
1:AA:1478:G:H2'	1:AA:1478:G:N3	2.34	0.43
2:AD:158:HIS:HB3	23:Ab:60:ARG:HH21	1.83	0.43
4:AF:44:VAL:HG21	4:AF:67:ILE:HG23	2.01	0.43
10:AL:4:THR:OG1	10:AL:28:GLU:OE2	2.36	0.43
35:B2:633:A:H5'	40:BP:325:ALA:HB3	2.00	0.43
35:B2:818:A:H4'	35:B2:819:G:H5'	2.01	0.43
35:B2:1247:C:H2'	35:B2:1248:A:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:2992:A:H61	35:B2:2998:A:H61	1.66	0.43
35:B2:3021:A:H2'	35:B2:3022:C:C6	2.53	0.43
35:B2:3276:A:C6	35:B2:3277:A:C6	3.07	0.43
37:B4:34:C:O2'	40:BP:53:ALA:O	2.29	0.43
43:BS:19:SER:HA	43:BS:22:LYS:HD2	2.01	0.43
45:BU:175:ASP:OD1	45:BU:175:ASP:N	2.50	0.43
49:BY:16:VAL:HA	49:BY:56:VAL:HG12	1.99	0.43
1:AA:29:U:H3	1:AA:600:G:H1	1.67	0.43
1:AA:565:G:H2'	1:AA:566:U:C6	2.53	0.43
1:AA:894:G:O2'	15:AQ:105:ASN:ND2	2.52	0.43
1:AA:1783:U:H2'	1:AA:1784:U:H6	1.83	0.43
1:AA:1799:G:N2	35:B2:2343:A:O2'	2.52	0.43
3:AE:31:ASP:OD1	3:AE:32:ILE:N	2.52	0.43
6:AH:68:ARG:HA	6:AH:76:VAL:HG11	2.01	0.43
16:AR:28:THR:HG21	16:AR:62:ALA:HB2	2.00	0.43
19:AU:29:GLN:HG3	76:Am:36:ARG:HH21	1.83	0.43
24:Ac:96:SER:OG	24:Ac:97:ARG:N	2.52	0.43
24:Ac:106:THR:HG22	24:Ac:108:ARG:H	1.84	0.43
27:Af:72:VAL:HB	27:Af:80:ILE:HG22	2.01	0.43
35:B2:892:G:O2'	35:B2:927:A:H4'	2.19	0.43
35:B2:1268:G:H2'	35:B2:1268:G:N3	2.33	0.43
35:B2:1531:C:O2'	35:B2:1637:A:N3	2.51	0.43
35:B2:1854:A:H62	35:B2:1870:U:H2'	1.83	0.43
35:B2:2500:G:H2'	35:B2:2501:A:C8	2.54	0.43
35:B2:3245:G:O2'	39:BO:129:ALA:O	2.26	0.43
35:B2:3310:A:H2'	35:B2:3311:U:H6	1.84	0.43
41:BQ:181:PRO:HD2	41:BQ:195:LEU:HD13	2.01	0.43
66:Bp:30:PHE:HD1	66:Bp:33:ARG:HD2	1.84	0.43
76:Am:147:HIS:NE2	76:Am:167:SER:HB3	2.33	0.43
1:AA:594:A:H2'	1:AA:595:A:C8	2.54	0.43
1:AA:1200:A:N1	17:AS:108:LYS:HB2	2.33	0.43
1:AA:1227:C:H2'	1:AA:1228:A:H8	1.84	0.43
8:AJ:56:ASN:HB2	8:AJ:108:VAL:HG13	2.01	0.43
9:AK:152:ILE:HB	9:AK:183:VAL:HG23	1.99	0.43
25:Ad:123:VAL:HG13	25:Ad:124:LYS:HG3	2.00	0.43
30:Ai:43:ARG:HH22	30:Ai:62:ARG:HB2	1.83	0.43
32:Ak:28:LYS:HE3	32:Ak:28:LYS:HB2	1.82	0.43
35:B2:266:G:H2'	35:B2:267:C:C6	2.54	0.43
35:B2:485:U:H2'	35:B2:486:G:C8	2.53	0.43
35:B2:781:C:H2'	35:B2:782:G:H8	1.84	0.43
35:B2:1003:G:H2'	35:B2:1004:A:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:1053:G:H2'	35:B2:1054:A:C8	2.54	0.43
35:B2:1396:G:H2'	35:B2:1397:A:C8	2.54	0.43
35:B2:1778:A:H2'	35:B2:1779:U:C6	2.54	0.43
35:B2:2236:U:H2'	35:B2:2237:A:C8	2.54	0.43
35:B2:2830:U:H2'	35:B2:2831:A:H8	1.82	0.43
35:B2:3207:U:O2'	45:BU:150:GLU:HG2	2.19	0.43
35:B2:3439:C:H2'	35:B2:3440:A:C8	2.54	0.43
38:BN:205:PRO:HG3	38:BN:212:GLY:HA3	2.01	0.43
39:BO:159:ARG:HG2	39:BO:182:GLN:HA	2.01	0.43
40:BP:288:ASP:O	40:BP:292:LEU:HG	2.19	0.43
41:BQ:119:TYR:CZ	41:BQ:135:ILE:HG13	2.54	0.43
44:BT:93:LEU:HD22	44:BT:214:ILE:HD12	2.01	0.43
46:BV:189:GLU:HB3	46:BV:200:LEU:HB2	2.01	0.43
48:BX:9:LEU:HB3	63:Bm:34:LYS:HD3	2.01	0.43
77:Sm:33:C:O2'	77:Sm:34:U:H5'	2.19	0.43
1:AA:315:A:H4'	1:AA:316:U:H3'	2.01	0.43
1:AA:1358:G:H5'	1:AA:1359:C:H5"	2.00	0.43
1:AA:1368:U:H2'	1:AA:1369:G:C8	2.54	0.43
1:AA:1402:A:H1'	1:AA:1403:G:C8	2.53	0.43
1:AA:1503:A:H4'	18:AT:68:GLY:HA2	2.01	0.43
1:AA:1587:G:H2'	1:AA:1588:A:H8	1.84	0.43
1:AA:1795:A:H2'	1:AA:1796:A:C8	2.54	0.43
2:AD:165:THR:HG23	2:AD:167:ASN:N	2.34	0.43
5:AG:67:ARG:O	5:AG:70:GLU:HG2	2.19	0.43
17:AS:93:ILE:CG2	17:AS:97:MET:HE3	2.49	0.43
18:AT:36:VAL:HG22	18:AT:42:ARG:HG3	2.01	0.43
18:AT:75:ILE:HA	18:AT:78:ILE:HG12	2.01	0.43
26:Ae:45:GLY:HA3	26:Ae:52:ALA:HA	2.01	0.43
35:B2:419:U:H2'	35:B2:420:G:C8	2.54	0.43
35:B2:1105:U:H2'	35:B2:1106:C:C6	2.54	0.43
35:B2:1265:G:O5'	35:B2:1266:U:H5"	2.19	0.43
35:B2:1358:C:O2'	68:Br:77:GLY:HA2	2.19	0.43
35:B2:1445:U:H2'	35:B2:1446:G:H8	1.84	0.43
35:B2:2730:A:H2	35:B2:2737:A:H62	1.67	0.43
39:BO:217:VAL:HG21	39:BO:328:THR:HB	2.00	0.43
40:BP:127:ALA:HB1	40:BP:240:LEU:HB3	2.01	0.43
43:BS:47:LYS:HA	43:BS:50:GLU:HG2	2.01	0.43
48:BX:176:PHE:N	63:Bm:134:GLU:OE1	2.49	0.43
49:BY:65:LEU:HD11	49:BY:74:VAL:HG22	2.00	0.43
57:Bg:12:TYR:HE2	57:Bg:69:PHE:HB3	1.84	0.43
1:AA:629:U:H2'	1:AA:630:C:H6	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AM:174:ARG:HD3	11:AM:174:ARG:HA	1.89	0.42
20:AV:87:GLN:OE1	20:AV:87:GLN:N	2.52	0.42
35:B2:216:A:H4'	35:B2:218:A:N7	2.34	0.42
35:B2:591:G:O2'	35:B2:593:A:OP2	2.26	0.42
35:B2:948:G:H5'	35:B2:949:A:OP1	2.19	0.42
43:BS:134:MET:O	43:BS:138:VAL:HG22	2.19	0.42
45:BU:159:ILE:HD13	45:BU:159:ILE:N	2.33	0.42
47:BW:17:LEU:HD21	47:BW:19:LEU:HD11	2.01	0.42
60:Bj:60:LYS:O	60:Bj:86:HIS:CD2	2.72	0.42
76:Am:131:ILE:HD11	76:Am:182:PHE:HE1	1.83	0.42
77:Sm:56:U:H3	77:Sm:58:A:H3'	1.84	0.42
78:Sn:4:G:H2'	78:Sn:5:C:H6	1.84	0.42
1:AA:286:C:H2'	1:AA:287:G:C8	2.54	0.42
1:AA:517:G:O2'	1:AA:518:A:H8	2.02	0.42
1:AA:561:U:OP1	32:Ak:56:ARG:NH2	2.45	0.42
1:AA:617:C:OP2	25:Ad:3:LYS:NZ	2.36	0.42
1:AA:620:U:H2'	1:AA:621:U:C6	2.54	0.42
1:AA:1679:G:H2'	1:AA:1680:C:O4'	2.19	0.42
3:AE:179:CYS:O	3:AE:180:SER:HB2	2.18	0.42
14:AP:106:LEU:HD23	14:AP:106:LEU:HA	1.94	0.42
15:AQ:76:LYS:HA	15:AQ:81:ALA:HB2	2.00	0.42
18:AT:52:ALA:HB2	18:AT:102:LEU:HD12	2.00	0.42
19:AU:20:TYR:O	19:AU:24:LEU:HG	2.19	0.42
23:Ab:71:ARG:HG3	23:Ab:83:TRP:CZ2	2.54	0.42
25:Ad:54:LYS:HA	25:Ad:70:VAL:HA	2.01	0.42
35:B2:754:A:N6	35:B2:770:G:O2'	2.51	0.42
35:B2:1183:G:N2	35:B2:1231:A:N1	2.55	0.42
35:B2:3146:U:O2'	59:Bi:16:GLY:O	2.28	0.42
35:B2:3333:G:H2'	35:B2:3334:A:H8	1.84	0.42
41:BQ:54:ARG:HB2	41:BQ:61:THR:HG23	2.01	0.42
60:Bj:95:LYS:HE3	60:Bj:99:ARG:HH22	1.83	0.42
1:AA:477:A:H3'	11:AM:126:ARG:NH2	2.32	0.42
1:AA:529:A:OP1	26:Ae:93:ARG:NH2	2.52	0.42
1:AA:1508:G:O2'	1:AA:1535:C:O2	2.37	0.42
1:AA:1779:G:H2'	1:AA:1780:U:H6	1.83	0.42
1:AA:1839:A:C6	28:Ag:84:VAL:HG22	2.54	0.42
4:AF:142:TYR:CD2	4:AF:146:ALA:HA	2.55	0.42
4:AF:237:THR:HG22	4:AF:240:GLU:HB3	2.02	0.42
8:AJ:58:LYS:HB2	8:AJ:58:LYS:HE3	1.84	0.42
13:AO:91:ILE:HG21	13:AO:94:TYR:HD2	1.84	0.42
18:AT:4:VAL:HG13	18:AT:19:CYS:SG	2.59	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:AW:14:PHE:CE2	21:AW:58:ALA:HB1	2.54	0.42
24:Ac:24:GLN:CD	29:Ah:5:VAL:H	2.27	0.42
26:Ae:13:MET:CG	26:Ae:22:GLN:HE21	2.32	0.42
33:B0:78:LYS:HD3	33:B0:78:LYS:HA	1.80	0.42
35:B2:662:C:H4'	67:Bq:21:ARG:HH12	1.84	0.42
35:B2:957:A:N6	38:BN:2:GLY:O	2.35	0.42
35:B2:1078:A:O2'	35:B2:1080:A:OP2	2.25	0.42
35:B2:1309:A:H5"	35:B2:1310:C:H5	1.83	0.42
35:B2:2511:U:H2'	35:B2:2512:A:C8	2.54	0.42
35:B2:2713:G:C8	35:B2:2960:U:H5"	2.54	0.42
35:B2:2804:C:H2'	35:B2:2805:C:C6	2.54	0.42
35:B2:3310:A:H2'	35:B2:3311:U:C6	2.54	0.42
35:B2:3338:A:H2'	35:B2:3339:A:H8	1.85	0.42
35:B2:3342:G:N2	35:B2:3345:G:H5"	2.34	0.42
35:B2:3363:C:H2'	35:B2:3364:A:H8	1.83	0.42
35:B2:3439:C:H2'	35:B2:3440:A:H8	1.84	0.42
37:B4:140:A:H2'	37:B4:141:A:C8	2.54	0.42
47:BW:166:LYS:HG2	47:BW:167:TYR:CD2	2.54	0.42
51:Ba:12:ALA:HB1	51:Ba:42:LEU:HG	2.01	0.42
51:Ba:135:LYS:HE3	51:Ba:135:LYS:HB2	1.75	0.42
58:Bh:32:GLY:HA3	58:Bh:68:LYS:HE2	2.01	0.42
1:AA:17:C:H2'	1:AA:18:C:C6	2.55	0.42
1:AA:87:A:H2'	1:AA:88:C:H6	1.84	0.42
1:AA:1188:A:O2'	1:AA:1611:A:N3	2.50	0.42
1:AA:1504:A:H2'	1:AA:1505:C:C6	2.54	0.42
6:AH:160:ILE:HB	6:AH:169:ILE:HD12	2.01	0.42
10:AL:81:VAL:HG21	10:AL:96:LEU:HD23	2.00	0.42
11:AM:85:ILE:HG22	11:AM:99:LEU:HD12	2.01	0.42
31:Aj:21:CYS:SG	31:Aj:24:THR:HG22	2.59	0.42
34:B1:86:ARG:HE	34:B1:90:GLU:CD	2.27	0.42
35:B2:35:A:H2'	35:B2:36:C:H6	1.85	0.42
35:B2:266:G:C2	35:B2:267:C:C4	3.08	0.42
35:B2:1702:A:H2'	35:B2:1703:G:C8	2.54	0.42
35:B2:2318:C:H2'	35:B2:2319:C:C6	2.55	0.42
35:B2:2756:G:H2'	35:B2:2757:G:H8	1.85	0.42
35:B2:3056:G:H2'	35:B2:3057:U:C6	2.54	0.42
35:B2:3069:U:H2'	35:B2:3070:U:C6	2.54	0.42
36:B3:85:U:H2'	36:B3:86:G:C8	2.54	0.42
39:BO:108:GLU:HG2	39:BO:137:TYR:HB3	2.01	0.42
39:BO:262:TRP:CD1	39:BO:262:TRP:H	2.38	0.42
40:BP:47:ASN:HB3	50:BZ:201:ARG:CD	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:BQ:219:TYR:C	41:BQ:219:TYR:CD2	2.97	0.42
43:BS:144:TYR:CZ	43:BS:238:LYS:HG2	2.55	0.42
56:Bf:45:ASN:N	56:Bf:95:HIS:HD2	2.01	0.42
69:Bs:42:PRO:HB2	69:Bs:51:LEU:HD12	2.01	0.42
76:Am:124:SER:OG	76:Am:125:ARG:N	2.52	0.42
1:AA:137:C:H3'	1:AA:138:U:H5'	2.00	0.42
1:AA:454:G:N1	1:AA:456:C:O2	2.53	0.42
1:AA:918:U:O2'	1:AA:920:A:N7	2.45	0.42
1:AA:1227:C:H2'	1:AA:1228:A:C8	2.55	0.42
1:AA:1361:A:H4'	1:AA:1362:A:OP1	2.18	0.42
9:AK:127:ILE:O	9:AK:131:ILE:HG13	2.19	0.42
10:AL:118:GLY:HA3	10:AL:143:HIS:NE2	2.35	0.42
11:AM:82:ARG:NH2	11:AM:149:ARG:NH1	2.65	0.42
13:AO:108:VAL:HG13	13:AO:136:VAL:HG21	2.00	0.42
18:AT:39:GLU:HG3	18:AT:42:ARG:NH2	2.34	0.42
18:AT:110:ASP:HB2	18:AT:113:LEU:HD13	2.01	0.42
28:Ag:10:ARG:NH1	28:Ag:33:ASP:OD1	2.52	0.42
28:Ag:12:LYS:NZ	28:Ag:15:ARG:O	2.46	0.42
35:B2:379:G:H4'	35:B2:404:A:N1	2.34	0.42
35:B2:1434:G:C6	35:B2:1446:G:C5	3.07	0.42
35:B2:3418:U:H1'	35:B2:3419:G:OP2	2.19	0.42
37:B4:132:G:H1	37:B4:137:A:N6	2.14	0.42
41:BQ:111:ALA:HA	41:BQ:116:ALA:HB2	2.01	0.42
43:BS:238:LYS:H	43:BS:238:LYS:HG3	1.62	0.42
47:BW:19:LEU:O	47:BW:68:HIS:HA	2.19	0.42
60:Bj:99:ARG:NH1	60:Bj:105:GLU:OE1	2.53	0.42
1:AA:286:C:H2'	1:AA:287:G:H8	1.85	0.42
1:AA:336:A:H2'	1:AA:337:G:C8	2.54	0.42
1:AA:772:U:H2'	1:AA:773:A:H8	1.85	0.42
1:AA:1586:A:H5"	20:AV:131:VAL:HG22	2.01	0.42
1:AA:1600:A:OP2	20:AV:133:GLY:HA3	2.19	0.42
4:AF:117:ALA:HB3	4:AF:123:ALA:HB2	2.01	0.42
10:AL:37:ARG:O	10:AL:59:ARG:HA	2.19	0.42
13:AO:35:VAL:HG11	13:AO:56:PRO:HB2	2.01	0.42
15:AQ:149:LEU:HD23	15:AQ:149:LEU:HA	1.94	0.42
18:AT:84:LYS:HA	18:AT:84:LYS:HD3	1.84	0.42
18:AT:106:LEU:O	18:AT:110:ASP:HB3	2.19	0.42
19:AU:41:ILE:HD13	19:AU:50:ILE:HD12	2.02	0.42
19:AU:70:SER:HB3	19:AU:75:GLU:HG3	2.02	0.42
35:B2:202:U:H2'	35:B2:203:G:O4'	2.18	0.42
35:B2:262:A:H2'	35:B2:263:A:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:1371:G:H2'	35:B2:1372:U:H6	1.82	0.42
35:B2:1566:C:H2'	35:B2:1567:U:C6	2.54	0.42
35:B2:1672:A:H1'	35:B2:1749:C:O2'	2.20	0.42
35:B2:1676:U:O2'	35:B2:1677:A:H3'	2.19	0.42
39:BO:28:LYS:HE3	39:BO:28:LYS:HB2	1.83	0.42
47:BW:132:ASP:OD2	47:BW:136:MET:HG2	2.19	0.42
51:Ba:173:LEU:HD23	51:Ba:173:LEU:HA	1.85	0.42
62:Bl:37:PRO:HD2	62:Bl:38:PHE:CZ	2.55	0.42
1:AA:434:C:H2'	1:AA:435:G:C8	2.55	0.42
1:AA:566:U:O4	1:AA:583:A:N7	2.52	0.42
1:AA:871:A:N6	9:AK:118:ARG:HG3	2.34	0.42
1:AA:916:G:N2	1:AA:916:G:OP2	2.53	0.42
1:AA:975:U:OP2	15:AQ:55:ARG:NH1	2.52	0.42
1:AA:1236:A:N6	1:AA:1282:G:H1'	2.34	0.42
1:AA:1372:U:H2'	1:AA:1373:C:C5	2.54	0.42
13:AO:70:GLY:HA3	13:AO:83:ILE:HG23	2.01	0.42
13:AO:81:ILE:HG23	13:AO:108:VAL:HG21	2.01	0.42
16:AR:101:GLN:HE21	28:Ag:45:VAL:HG22	1.84	0.42
17:AS:89:ARG:HB3	17:AS:125:GLY:HA3	2.02	0.42
26:Ae:63:HIS:CG	26:Ae:68:ARG:HB3	2.54	0.42
27:Af:30:ILE:O	27:Af:34:VAL:HB	2.20	0.42
32:Ak:43:ARG:HD3	32:Ak:44:PHE:HB3	2.02	0.42
35:B2:1219:U:OP1	35:B2:1241:U:O2'	2.22	0.42
35:B2:1265:G:C8	35:B2:1266:U:H2'	2.55	0.42
35:B2:1270:C:H2'	35:B2:1271:A:O4'	2.20	0.42
35:B2:1332:A:H4'	35:B2:1333:A:H5'	2.01	0.42
35:B2:3423:A:H2'	35:B2:3424:A:C8	2.54	0.42
46:BV:61:THR:HG22	46:BV:126:VAL:HG12	2.00	0.42
55:Be:47:ILE:HG13	55:Be:48:ASN:ND2	2.34	0.42
62:Bl:102:LYS:HD2	62:Bl:102:LYS:HA	1.73	0.42
71:Bu:72:LYS:HA	71:Bu:81:ALA:HB2	2.01	0.42
1:AA:1005:C:H2'	1:AA:1006:G:O4'	2.20	0.42
1:AA:1025:C:H2'	1:AA:1026:G:O4'	2.20	0.42
1:AA:1414:G:O6	1:AA:1425:A:N6	2.53	0.42
1:AA:1472:U:H2'	1:AA:1473:G:H8	1.84	0.42
6:AH:205:PHE:CE1	6:AH:221:ARG:CZ	3.02	0.42
7:AI:77:MET:HE3	7:AI:77:MET:HB3	1.65	0.42
9:AK:68:LEU:HD23	9:AK:72:PHE:HE1	1.84	0.42
11:AM:11:THR:HG23	11:AM:44:ARG:HB2	2.00	0.42
16:AR:48:MET:HB3	16:AR:48:MET:HE2	1.82	0.42
20:AV:37:GLY:H	20:AV:40:TYR:HB3	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:AV:89:ASP:OD1	20:AV:94:LYS:N	2.45	0.42
27:Af:48:ARG:HB2	27:Af:49:MET:HE2	2.01	0.42
34:B1:4:ARG:O	34:B1:5:THR:HG23	2.20	0.42
35:B2:59:G:H4'	35:B2:60:A:H4'	2.02	0.42
35:B2:99:A:H1'	35:B2:289:G:N7	2.34	0.42
35:B2:126:U:OP1	50:BZ:144:ARG:NH1	2.45	0.42
35:B2:290:G:HO2'	35:B2:291:G:P	2.38	0.42
35:B2:304:A:H2'	35:B2:305:A:N3	2.34	0.42
35:B2:1480:A:N1	35:B2:2444:A:H5"	2.34	0.42
40:BP:25:PRO:HB2	40:BP:27:VAL:HG12	2.01	0.42
41:BQ:88:ILE:HD12	41:BQ:240:TYR:HD1	1.85	0.42
43:BS:85:VAL:HG22	55:Be:58:VAL:HA	2.01	0.42
50:BZ:114:ARG:NH1	50:BZ:151:ILE:O	2.53	0.42
53:Bc:8:HIS:N	53:Bc:8:HIS:ND1	2.67	0.42
1:AA:83:U:H2'	1:AA:84:G:O4'	2.20	0.42
1:AA:815:U:H2'	1:AA:816:G:H8	1.84	0.42
1:AA:1535:C:H2'	1:AA:1536:C:C6	2.55	0.42
1:AA:1632:C:H2'	1:AA:1633:A:C8	2.53	0.42
4:AF:226:PRO:HA	4:AF:229:TRP:CE2	2.55	0.42
5:AG:42:ARG:CZ	22:Aa:109:GLY:H	2.33	0.42
6:AH:151:ASP:O	6:AH:154:ILE:HG22	2.19	0.42
10:AL:141:ARG:HA	10:AL:141:ARG:HD3	1.86	0.42
31:Aj:21:CYS:SG	31:Aj:22:ALA:N	2.93	0.42
35:B2:1494:A:H2'	35:B2:1495:A:H8	1.85	0.42
35:B2:1735:A:H2'	35:B2:1736:A:C8	2.54	0.42
35:B2:1917:U:H2'	35:B2:1918:G:O4'	2.20	0.42
35:B2:1964:A:H2'	35:B2:1965:A:C8	2.54	0.42
35:B2:2370:U:O2	35:B2:2398:U:H4'	2.20	0.42
35:B2:2379:A:H2'	35:B2:2380:U:C6	2.55	0.42
35:B2:3042:G:C2	39:BO:250:ALA:HB1	2.55	0.42
35:B2:3438:G:H2'	35:B2:3439:C:C6	2.55	0.42
36:B3:12:U:H1'	36:B3:108:G:H21	1.84	0.42
38:BN:3:ARG:HB2	38:BN:206:VAL:HG22	2.01	0.42
42:BR:76:LEU:HD23	42:BR:76:LEU:HA	1.93	0.42
58:Bh:88:ARG:HB3	58:Bh:94:TYR:CE2	2.55	0.42
68:Br:57:ASN:O	68:Br:64:LYS:NZ	2.50	0.42
1:AA:183:U:H3	1:AA:203:A:N6	2.18	0.42
1:AA:996:U:H1'	1:AA:1139:C:H42	1.84	0.42
1:AA:1212:C:H42	18:AT:140:ARG:C	2.28	0.42
1:AA:1503:A:C2	1:AA:1648:G:H1'	2.53	0.42
1:AA:1588:A:N6	1:AA:1606:C:H42	2.17	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:AG:72:THR:HB	5:AG:88:LEU:HG	2.02	0.42
7:AI:144:ARG:O	7:AI:148:GLN:HB2	2.20	0.42
16:AR:89:GLY:HA3	16:AR:122:PRO:HG2	2.02	0.42
22:Aa:41:ASN:HA	22:Aa:44:LYS:HE2	2.02	0.42
35:B2:21:G:H3'	35:B2:22:G:H8	1.85	0.42
35:B2:545:A:N1	35:B2:582:G:N2	2.68	0.42
35:B2:633:A:OP1	40:BP:318:LYS:NZ	2.53	0.42
35:B2:1711:A:H2'	35:B2:1712:A:C8	2.54	0.42
35:B2:1844:C:H2'	35:B2:1845:A:C8	2.55	0.42
35:B2:1950:A:O2'	35:B2:3149:G:H4'	2.20	0.42
35:B2:2240:A:H2'	35:B2:2241:U:C6	2.55	0.42
41:BQ:108:ARG:HH22	41:BQ:253:PHE:HD1	1.68	0.42
41:BQ:293:ARG:NH1	46:BV:211:ASP:OD1	2.53	0.42
46:BV:131:ILE:HD13	46:BV:131:ILE:HA	1.88	0.42
48:BX:204:GLU:O	48:BX:208:LYS:HG2	2.20	0.42
51:Ba:183:LYS:O	51:Ba:189:ASN:ND2	2.51	0.42
59:Bi:47:ARG:HE	59:Bi:47:ARG:HB2	1.44	0.42
65:Bo:16:ILE:HG21	65:Bo:76:TYR:HE2	1.84	0.42
65:Bo:54:CYS:SG	65:Bo:59:LYS:HB2	2.59	0.42
1:AA:329:G:OP1	13:AO:54:LYS:NZ	2.49	0.41
1:AA:559:A:N3	1:AA:593:C:H1'	2.34	0.41
1:AA:644:G:H2'	1:AA:645:A:H8	1.85	0.41
1:AA:1009:G:H2'	1:AA:1010:A:C8	2.55	0.41
1:AA:1157:G:H2'	1:AA:1158:A:C8	2.55	0.41
1:AA:1160:U:H2'	1:AA:1161:U:C6	2.55	0.41
1:AA:1261:A:N3	1:AA:1261:A:H2'	2.35	0.41
1:AA:1340:C:H2'	1:AA:1341:G:C8	2.55	0.41
1:AA:1375:G:O2'	1:AA:1376:C:O5'	2.37	0.41
6:AH:127:LYS:HB2	6:AH:127:LYS:HE2	1.93	0.41
7:AI:19:LYS:HA	7:AI:19:LYS:HD2	1.83	0.41
9:AK:104:PRO:HD3	9:AK:114:ARG:HH11	1.85	0.41
9:AK:158:ASN:ND2	9:AK:188:PRO:O	2.38	0.41
16:AR:94:LYS:HE3	16:AR:124:PRO:HD2	2.02	0.41
35:B2:879:A:H2'	35:B2:880:A:C8	2.55	0.41
35:B2:1007:C:H2'	35:B2:1008:U:H6	1.85	0.41
35:B2:1364:C:OP1	53:Bc:2:GLY:N	2.53	0.41
35:B2:1472:U:H2'	35:B2:1473:U:C6	2.55	0.41
35:B2:1881:U:H2'	35:B2:1882:C:C6	2.55	0.41
35:B2:2687:G:H4'	35:B2:2689:C:C2	2.55	0.41
35:B2:2932:A:H5"	46:BV:154:ARG:HE	1.85	0.41
35:B2:2975:U:H1'	39:BO:250:ALA:HB3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:3392:A:O2'	35:B2:3394:C:N4	2.53	0.41
37:B4:149:C:H2'	37:B4:150:C:H6	1.85	0.41
45:BU:63:LYS:HE3	45:BU:63:LYS:HB3	1.83	0.41
48:BX:46:ILE:O	48:BX:49:ARG:HB2	2.20	0.41
49:BY:78:TRP:CD1	49:BY:84:CYS:HG	2.37	0.41
59:Bi:59:HIS:HB3	59:Bi:61:LYS:HE2	2.02	0.41
68:Br:14:HIS:HB2	68:Br:99:LEU:HD11	2.01	0.41
75:By:9:TRP:CD2	75:By:43:GLN:HB2	2.55	0.41
75:By:102:ARG:CZ	75:By:102:ARG:HB2	2.50	0.41
1:AA:396:C:H2'	1:AA:397:C:C6	2.55	0.41
1:AA:823:U:H2'	1:AA:824:A:N7	2.36	0.41
1:AA:876:U:H2'	1:AA:877:A:O4'	2.20	0.41
1:AA:963:G:H2'	1:AA:964:C:H6	1.85	0.41
1:AA:1266:U:H2'	1:AA:1267:U:O4'	2.20	0.41
1:AA:1542:C:H2'	1:AA:1543:G:C8	2.56	0.41
1:AA:1680:C:H2'	1:AA:1681:C:O4'	2.19	0.41
1:AA:1697:U:C5	1:AA:1699:G:H5"	2.55	0.41
5:AG:158:PHE:O	5:AG:191:MET:HG3	2.21	0.41
6:AH:60:GLU:O	6:AH:64:ILE:HG12	2.20	0.41
7:AI:29:VAL:HG13	7:AI:30:GLU:N	2.34	0.41
9:AK:76:GLN:HA	9:AK:79:LEU:HG	2.00	0.41
18:AT:11:GLY:HA2	18:AT:120:ARG:NH2	2.34	0.41
18:AT:95:ASP:OD1	18:AT:98:SER:N	2.38	0.41
22:Aa:102:THR:HA	22:Aa:105:HIS:CE1	2.55	0.41
30:Ai:15:LYS:HE3	30:Ai:15:LYS:HB2	1.84	0.41
35:B2:70:A:H2	35:B2:72:C:H42	1.69	0.41
35:B2:545:A:N7	35:B2:577:U:O4	2.53	0.41
35:B2:1365:C:H2'	35:B2:1366:U:C6	2.56	0.41
35:B2:2730:A:N6	35:B2:2737:A:OP2	2.53	0.41
35:B2:3326:G:C6	35:B2:3327:A:C2	3.08	0.41
47:BW:116:TYR:HA	47:BW:121:GLY:HA2	2.02	0.41
48:BX:45:LYS:HG3	48:BX:46:ILE:HG23	2.02	0.41
67:Bq:79:VAL:HG21	67:Bq:105:ILE:HG23	2.01	0.41
76:Am:236:ILE:HG12	76:Am:252:THR:HG22	2.03	0.41
1:AA:153:G:H2'	1:AA:154:G:C8	2.55	0.41
1:AA:613:G:H21	25:Ad:17:ARG:NH2	2.18	0.41
1:AA:794:U:C4	1:AA:796:U:H5	2.38	0.41
1:AA:1027:U:H5"	38:BN:247:GLY:HA3	2.01	0.41
1:AA:1088:C:H2'	1:AA:1089:G:H8	1.85	0.41
1:AA:1204:U:H3	1:AA:1215:G:H1	1.66	0.41
2:AD:41:TRP:CD1	19:AU:105:MET:HB2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:AE:75:LYS:HB3	3:AE:75:LYS:HE3	1.67	0.41
3:AE:127:ILE:HG12	3:AE:135:CYS:O	2.20	0.41
5:AG:122:TYR:O	5:AG:125:LEU:HG	2.21	0.41
8:AJ:7:TYR:HD1	8:AJ:8:PRO:HD2	1.86	0.41
8:AJ:195:ALA:HB1	8:AJ:198:ARG:NH2	2.35	0.41
11:AM:74:ASN:O	11:AM:78:ARG:HD3	2.21	0.41
16:AR:19:ALA:HB2	16:AR:81:LEU:HD23	2.02	0.41
17:AS:91:MET:HG2	17:AS:124:LEU:HD22	2.02	0.41
21:AW:33:TRP:HZ2	21:AW:102:LYS:HG3	1.85	0.41
32:Ak:2:GLY:O	32:Ak:4:VAL:N	2.52	0.41
35:B2:514:C:H2'	35:B2:515:A:H8	1.85	0.41
35:B2:719:A:OP1	50:BZ:201:ARG:NH2	2.52	0.41
35:B2:860:A:H2'	35:B2:861:U:C6	2.55	0.41
35:B2:987:U:H2'	35:B2:988:U:C6	2.56	0.41
35:B2:1415:A:H2'	35:B2:1416:G:H8	1.84	0.41
35:B2:1524:A:O2'	72:Bv:12:HIS:O	2.31	0.41
35:B2:1845:A:H2'	35:B2:1846:A:C8	2.55	0.41
35:B2:2000:A:H2'	35:B2:2001:A:H8	1.86	0.41
35:B2:3261:U:H2'	35:B2:3262:G:H8	1.85	0.41
35:B2:3389:G:H5"	35:B2:3390:G:N7	2.35	0.41
39:BO:232:ARG:HG3	39:BO:270:ALA:HB2	2.01	0.41
40:BP:141:GLY:HA2	75:By:17:ARG:HD2	2.03	0.41
49:BY:25:LEU:HD11	49:BY:87:TRP:CD1	2.54	0.41
58:Bh:76:MET:HE2	58:Bh:76:MET:HB3	1.98	0.41
78:Sn:67:G:H2'	78:Sn:68:G:C8	2.56	0.41
1:AA:694:G:H2'	1:AA:695:G:H8	1.84	0.41
1:AA:858:U:H2'	1:AA:859:A:C8	2.56	0.41
1:AA:925:C:HO2'	1:AA:926:U:H6	1.68	0.41
1:AA:944:A:N7	16:AR:125:THR:HG23	2.34	0.41
1:AA:1023:G:H2'	1:AA:1024:U:C6	2.56	0.41
1:AA:1050:G:C2	1:AA:1051:A:N7	2.88	0.41
1:AA:1820:G:H2'	1:AA:1821:U:C6	2.55	0.41
3:AE:104:SER:OG	3:AE:105:ILE:N	2.54	0.41
13:AO:31:TRP:CZ2	13:AO:33:LYS:HB3	2.56	0.41
15:AQ:54:LEU:HB3	15:AQ:60:ILE:HD11	2.01	0.41
19:AU:6:THR:O	19:AU:10:LYS:HG2	2.20	0.41
19:AU:25:THR:OG1	19:AU:30:THR:OG1	2.36	0.41
26:Ae:37:LYS:HE2	26:Ae:37:LYS:HB2	1.90	0.41
30:Ai:34:MET:HE3	30:Ai:34:MET:HB3	1.89	0.41
35:B2:696:U:H2'	35:B2:697:A:H8	1.86	0.41
35:B2:819:G:H2'	35:B2:820:C:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:1188:G:H2'	35:B2:1189:A:O4'	2.21	0.41
35:B2:1372:U:H2'	35:B2:1373:C:C6	2.56	0.41
35:B2:2734:G:H4'	56:Bf:56:TYR:HD1	1.84	0.41
35:B2:2806:C:O2'	35:B2:2839:U:OP1	2.39	0.41
35:B2:3421:G:H2'	35:B2:3422:G:C8	2.54	0.41
36:B3:55:A:H4'	47:BW:152:HIS:CB	2.51	0.41
37:B4:42:U:H4'	70:Bt:87:THR:HG21	2.02	0.41
40:BP:231:ASN:HB3	40:BP:234:ARG:HG2	2.01	0.41
44:BT:156:ASP:OD1	44:BT:156:ASP:N	2.52	0.41
54:Bd:148:GLU:OE1	54:Bd:148:GLU:HA	2.21	0.41
78:Sn:52:G:H2'	78:Sn:53:G:C8	2.55	0.41
1:AA:67:A:O2'	1:AA:69:G:OP1	2.33	0.41
1:AA:184:C:H2'	1:AA:185:C:C6	2.55	0.41
1:AA:266:C:H2'	1:AA:267:G:C8	2.56	0.41
1:AA:343:U:H2'	1:AA:344:A:H8	1.85	0.41
1:AA:595:A:OP1	11:AM:39:LYS:NZ	2.51	0.41
1:AA:712:A:O2'	1:AA:746:A:N6	2.53	0.41
1:AA:1202:U:O2'	1:AA:1478:G:N7	2.53	0.41
1:AA:1549:U:H2'	1:AA:1550:C:C6	2.56	0.41
1:AA:1584:A:H5'	21:AW:87:MET:SD	2.61	0.41
2:AD:127:THR:HA	2:AD:149:LEU:HB2	2.03	0.41
3:AE:111:ARG:HB3	28:Ag:68:TYR:HB2	2.02	0.41
16:AR:123:ILE:HD12	16:AR:123:ILE:C	2.46	0.41
35:B2:512:A:H2'	35:B2:513:U:C6	2.55	0.41
35:B2:1512:C:H2'	35:B2:1513:U:C6	2.55	0.41
35:B2:2295:A:H2'	35:B2:2296:A:H4'	2.03	0.41
35:B2:2695:C:H2'	35:B2:2696:A:C8	2.56	0.41
42:BR:77:GLU:OE1	42:BR:121:LYS:HD2	2.21	0.41
47:BW:127:PHE:N	47:BW:127:PHE:CD1	2.88	0.41
60:Bj:86:HIS:CB	60:Bj:88:LYS:NZ	2.82	0.41
61:Bk:70:THR:OG1	61:Bk:80:LEU:O	2.34	0.41
73:Bw:23:ALA:HB3	73:Bw:67:VAL:HG22	2.01	0.41
76:Am:212:ARG:HG3	76:Am:212:ARG:NH1	2.32	0.41
1:AA:91:C:H2'	1:AA:92:G:C8	2.55	0.41
1:AA:525:U:O3'	26:Ae:60:LEU:HB2	2.20	0.41
1:AA:871:A:N6	9:AK:98:ARG:HB3	2.36	0.41
1:AA:1588:A:P	20:AV:121:ARG:HH12	2.43	0.41
15:AQ:107:LYS:HA	15:AQ:107:LYS:HD3	1.79	0.41
22:Aa:48:LEU:C	22:Aa:50:VAL:H	2.28	0.41
30:Ai:65:ARG:HA	30:Ai:65:ARG:HD2	1.96	0.41
35:B2:138:U:H1'	70:Bt:73:LYS:HD3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:876:G:H2'	35:B2:877:G:O4'	2.20	0.41
35:B2:1024:A:O2'	35:B2:1025:G:H5'	2.20	0.41
35:B2:1112:A:H5'	41:BQ:139:PRO:HB3	2.03	0.41
35:B2:1769:A:N6	65:Bo:53:ASN:O	2.54	0.41
35:B2:2299:U:H2'	35:B2:2300:C:C5	2.56	0.41
35:B2:2680:C:N3	44:BT:67:LEU:HD23	2.35	0.41
37:B4:157:A:H2'	37:B4:158:G:C8	2.55	0.41
48:BX:134:LYS:HD2	48:BX:134:LYS:HA	1.92	0.41
52:Bb:96:LYS:HD3	52:Bb:96:LYS:HA	1.90	0.41
54:Bd:136:ARG:O	54:Bd:140:GLU:HG2	2.20	0.41
55:Be:69:LEU:HD23	55:Be:69:LEU:HA	1.83	0.41
60:Bj:66:ILE:HD12	60:Bj:82:VAL:HG12	2.02	0.41
77:Sm:72:C:H2'	77:Sm:73:A:C8	2.55	0.41
1:AA:17:C:H2'	1:AA:18:C:H6	1.85	0.41
1:AA:397:C:H42	1:AA:404:A:H62	1.67	0.41
1:AA:1365:A:H2'	1:AA:1366:G:C8	2.55	0.41
1:AA:1447:A:O2'	1:AA:1448:G:OP1	2.39	0.41
1:AA:1566:A:H2'	1:AA:1567:A:C8	2.55	0.41
1:AA:1722:A:H2'	1:AA:1723:U:H5'	2.03	0.41
2:AD:41:TRP:CG	2:AD:42:LYS:H	2.39	0.41
4:AF:136:MET:SD	4:AF:137:PRO:HD2	2.60	0.41
6:AH:149:TYR:CE2	8:AJ:207:GLU:HG3	2.55	0.41
6:AH:229:GLY:HA2	6:AH:235:TRP:CE3	2.56	0.41
10:AL:153:ASP:OD1	10:AL:154:SER:N	2.54	0.41
18:AT:110:ASP:HB2	18:AT:113:LEU:HB2	2.02	0.41
20:AV:23:LYS:HD3	20:AV:23:LYS:HA	1.90	0.41
22:Aa:72:GLU:OE2	22:Aa:73:GLY:N	2.54	0.41
33:B0:13:PRO:HG2	33:B0:79:TYR:CE1	2.56	0.41
35:B2:38:U:H2'	35:B2:39:A:O4'	2.20	0.41
35:B2:109:A:N1	35:B2:330:U:O2'	2.51	0.41
35:B2:240:G:H2'	35:B2:241:G:C8	2.53	0.41
35:B2:1007:C:H2'	35:B2:1008:U:C6	2.55	0.41
35:B2:1019:U:H2'	35:B2:1020:U:H6	1.86	0.41
35:B2:1742:G:H2'	35:B2:1743:A:C8	2.56	0.41
35:B2:1881:U:H2'	35:B2:1882:C:H6	1.84	0.41
35:B2:2914:A:C2	35:B2:2915:A:C8	3.09	0.41
35:B2:3009:G:H5'	39:BO:9:PRO:HG3	2.03	0.41
36:B3:39:C:C6	47:BW:46:VAL:HG11	2.56	0.41
37:B4:90:U:C2	37:B4:91:C:H5	2.38	0.41
37:B4:141:A:H2'	37:B4:142:A:H8	1.86	0.41
38:BN:210:HIS:CD2	38:BN:218:VAL:HG13	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:BW:87:LYS:NZ	47:BW:106:ILE:HG22	2.36	0.41
55:Be:9:VAL:HG22	55:Be:25:ARG:HG3	2.02	0.41
1:AA:90:G:N2	1:AA:454:G:O3'	2.54	0.41
1:AA:1175:C:H41	1:AA:1302:U:H2'	1.86	0.41
1:AA:1183:A:H2'	1:AA:1184:G:O4'	2.20	0.41
1:AA:1714:G:O6	1:AA:1770:A:N1	2.54	0.41
5:AG:159:MET:HE1	5:AG:189:LYS:HG2	2.03	0.41
6:AH:68:ARG:HE	6:AH:76:VAL:HB	1.84	0.41
16:AR:85:ILE:HG21	16:AR:100:ALA:HB1	2.02	0.41
35:B2:616:A:H5'	42:BR:35:VAL:O	2.20	0.41
35:B2:649:G:C2	35:B2:650:G:C8	3.09	0.41
35:B2:2767:G:N7	35:B2:2774:A:N6	2.69	0.41
35:B2:3219:A:H2'	35:B2:3220:G:O4'	2.20	0.41
37:B4:92:C:O4'	61:Bk:112:LYS:HD2	2.20	0.41
39:BO:54:THR:OG1	39:BO:55:HIS:N	2.54	0.41
54:Bd:116:ASP:OD1	54:Bd:116:ASP:N	2.50	0.41
60:Bj:61:ILE:HA	60:Bj:86:HIS:HD2	1.86	0.41
67:Bq:62:TYR:HB3	75:By:25:PHE:HD1	1.85	0.41
1:AA:108:C:H2'	1:AA:109:A:C8	2.54	0.41
1:AA:407:G:H2'	1:AA:408:C:C6	2.56	0.41
1:AA:540:G:O6	11:AM:171:ARG:NE	2.48	0.41
1:AA:595:A:OP2	11:AM:39:LYS:NZ	2.53	0.41
1:AA:650:G:N2	1:AA:692:G:H22	2.18	0.41
1:AA:759:A:H62	1:AA:818:A:H2	1.69	0.41
1:AA:842:C:H2'	1:AA:843:U:H6	1.85	0.41
1:AA:894:G:H2'	1:AA:895:C:C6	2.55	0.41
1:AA:928:G:H5'	1:AA:929:G:C8	2.56	0.41
1:AA:1087:U:H2'	1:AA:1088:C:C6	2.55	0.41
1:AA:1093:C:H2'	1:AA:1094:C:H6	1.86	0.41
1:AA:1157:G:H2'	1:AA:1158:A:H8	1.86	0.41
1:AA:1408:A:H5"	19:AU:48:ASN:ND2	2.35	0.41
1:AA:1415:G:O6	1:AA:1423:C:N4	2.34	0.41
1:AA:1503:A:H2'	1:AA:1504:A:H8	1.85	0.41
1:AA:1781:C:H2'	1:AA:1782:A:C8	2.56	0.41
5:AG:19:PHE:CE1	5:AG:23:LEU:HD23	2.56	0.41
6:AH:143:ASP:OD2	6:AH:145:ARG:NH1	2.44	0.41
6:AH:205:PHE:HE1	6:AH:221:ARG:NH2	2.19	0.41
7:AI:42:ILE:O	7:AI:42:ILE:CD1	2.68	0.41
7:AI:114:ALA:HA	7:AI:180:ALA:HA	2.02	0.41
8:AJ:52:ILE:HD13	8:AJ:111:LEU:HD11	2.03	0.41
11:AM:154:LYS:HE2	11:AM:155:HIS:CE1	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:AO:71:THR:HA	13:AO:119:VAL:HA	2.02	0.41
16:AR:127:SER:OG	16:AR:128:THR:N	2.54	0.41
17:AS:114:GLU:OE2	17:AS:116:ARG:NH2	2.42	0.41
25:Ad:61:GLN:NE2	79:S3:35:U:OP1	2.54	0.41
27:Af:55:LEU:O	27:Af:58:ILE:HG22	2.21	0.41
35:B2:8:C:H2'	35:B2:9:U:H6	1.86	0.41
35:B2:47:C:H5"	48:BX:16:LYS:HG2	2.01	0.41
35:B2:121:A:O2'	44:BT:105:LYS:HE2	2.20	0.41
35:B2:274:A:OP1	50:BZ:5:LYS:NZ	2.43	0.41
35:B2:423:G:H2'	35:B2:424:A:H8	1.85	0.41
35:B2:437:G:H2'	35:B2:438:G:C8	2.51	0.41
35:B2:444:A:H2'	35:B2:445:G:C8	2.56	0.41
35:B2:597:C:H2'	35:B2:598:G:C8	2.56	0.41
35:B2:663:C:H2'	35:B2:664:G:C8	2.56	0.41
35:B2:692:C:H2'	35:B2:693:A:C8	2.56	0.41
35:B2:919:G:H2'	35:B2:920:A:C8	2.56	0.41
35:B2:1886:U:O2'	37:B4:122:G:OP1	2.27	0.41
35:B2:2191:U:H2'	35:B2:2192:A:C8	2.56	0.41
35:B2:2242:U:H2'	35:B2:2243:G:C8	2.56	0.41
35:B2:2290:C:H2'	35:B2:2291:U:C6	2.55	0.41
35:B2:2292:C:N4	35:B2:2323:C:OP2	2.53	0.41
35:B2:2296:A:H3'	35:B2:2297:U:O4'	2.21	0.41
35:B2:2331:A:N7	38:BN:244:LEU:HD21	2.36	0.41
35:B2:2379:A:H2'	35:B2:2380:U:H6	1.85	0.41
35:B2:2428:U:H2'	35:B2:2429:A:H8	1.86	0.41
35:B2:2672:C:H2'	35:B2:2673:U:O4'	2.21	0.41
35:B2:2750:U:H4'	35:B2:2751:A:O4'	2.21	0.41
35:B2:2837:C:H2'	35:B2:2838:A:H8	1.85	0.41
35:B2:2837:C:H2'	35:B2:2838:A:C8	2.56	0.41
35:B2:3103:U:H2'	35:B2:3104:G:C8	2.55	0.41
35:B2:3113:A:H2'	35:B2:3114:C:H6	1.86	0.41
35:B2:3147:U:C2	35:B2:3148:G:C8	3.09	0.41
37:B4:76:G:H2'	37:B4:77:U:C6	2.55	0.41
37:B4:134:U:H2'	37:B4:137:A:N6	2.36	0.41
39:BO:55:HIS:HB2	39:BO:360:ASP:CB	2.51	0.41
41:BQ:41:LYS:HB2	56:Bf:68:THR:O	2.21	0.41
41:BQ:60:VAL:HB	41:BQ:80:SER:HB3	2.02	0.41
41:BQ:208:MET:O	41:BQ:212:ILE:HG12	2.21	0.41
42:BR:175:LYS:NZ	42:BR:176:GLU:OE2	2.54	0.41
43:BS:96:ARG:HA	43:BS:142:VAL:HG12	2.02	0.41
44:BT:46:LEU:O	44:BT:50:VAL:HG23	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:BZ:94:TYR:CE2	50:BZ:96:ARG:HB2	2.55	0.41
70:Bt:74:ASN:O	70:Bt:74:ASN:ND2	2.54	0.41
76:Am:30:ILE:HD12	76:Am:30:ILE:O	2.21	0.41
76:Am:299:PHE:HD1	76:Am:309:VAL:HG22	1.85	0.41
77:Sm:14:A:H2'	77:Sm:15:G:O4'	2.20	0.41
1:AA:61:A:C2	1:AA:272:G:H1'	2.56	0.41
1:AA:80:C:O2	8:AJ:177:LYS:NZ	2.53	0.41
1:AA:391:G:O3'	1:AA:428:A:N6	2.54	0.41
1:AA:416:U:H2'	1:AA:417:C:C5	2.56	0.41
1:AA:557:C:H1'	1:AA:558:A:N7	2.35	0.41
1:AA:607:A:H2'	1:AA:608:A:O4'	2.21	0.41
1:AA:771:U:OP1	11:AM:7:LYS:HD2	2.21	0.41
1:AA:903:U:H2'	1:AA:904:U:C6	2.56	0.41
1:AA:1175:C:H4'	1:AA:1621:C:OP1	2.20	0.41
1:AA:1193:G:C6	1:AA:1484:G:C6	3.09	0.41
1:AA:1322:U:H5"	1:AA:1323:C:C5	2.53	0.41
1:AA:1666:C:H2'	1:AA:1667:U:C6	2.56	0.41
1:AA:1694:C:H2'	1:AA:1695:G:O4'	2.21	0.41
1:AA:1781:C:H2'	1:AA:1782:A:H8	1.85	0.41
1:AA:1837:U:H5'	28:Ag:79:ILE:HD11	2.03	0.41
6:AH:151:ASP:OD1	6:AH:153:LEU:HD23	2.20	0.41
7:AI:121:ARG:NH1	7:AI:145:ARG:HE	2.19	0.41
11:AM:92:LYS:HG3	11:AM:94:ASP:HB2	2.02	0.41
13:AO:44:GLU:H	13:AO:44:GLU:HG3	1.68	0.41
15:AQ:4:MET:HE2	15:AQ:121:ARG:HG3	2.03	0.41
19:AU:70:SER:CB	19:AU:75:GLU:HG3	2.51	0.41
35:B2:315:A:H2'	35:B2:316:A:C8	2.55	0.41
35:B2:548:U:O2'	35:B2:550:G:N7	2.52	0.41
35:B2:1188:G:O2'	35:B2:1200:A:N3	2.43	0.41
35:B2:1353:U:H2'	35:B2:1354:A:C8	2.55	0.41
35:B2:1741:U:O2'	35:B2:1742:G:H8	2.03	0.41
35:B2:2289:G:H1	35:B2:2328:G:N2	2.07	0.41
35:B2:2311:A:OP2	35:B2:2311:A:H8	2.03	0.41
35:B2:2814:U:H2'	35:B2:2815:G:H8	1.86	0.41
35:B2:3036:A:H8	35:B2:3036:A:OP2	2.04	0.41
35:B2:3278:A:OP1	51:Ba:38:ARG:NH1	2.52	0.41
35:B2:3447:U:H2'	35:B2:3448:A:C8	2.56	0.41
39:BO:221:THR:HG22	39:BO:329:PRO:HB3	2.02	0.41
46:BV:41:ALA:HB3	46:BV:139:ARG:NH2	2.36	0.41
46:BV:54:SER:HB2	46:BV:58:GLU:OE2	2.21	0.41
46:BV:168:SER:OG	56:Bf:160:ILE:O	2.38	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:Bg:46:ASN:O	57:Bg:51:VAL:HG11	2.21	0.41
58:Bh:108:LYS:HE3	58:Bh:108:LYS:HB3	1.95	0.41
69:Bs:41:ILE:O	69:Bs:43:ARG:NH1	2.54	0.41
78:Sn:7:G:O2'	78:Sn:49:C:O4'	2.39	0.41
1:AA:448:A:H2'	1:AA:449:A:H8	1.86	0.40
1:AA:451:C:H2'	1:AA:452:C:H6	1.86	0.40
1:AA:587:C:O2'	1:AA:588:A:H8	2.03	0.40
1:AA:772:U:H2'	1:AA:773:A:C8	2.56	0.40
1:AA:871:A:H8	9:AK:99:ARG:HE	1.67	0.40
2:AD:44:ARG:HB2	2:AD:50:ILE:HD11	2.03	0.40
2:AD:105:PHE:HE2	2:AD:138:GLU:HG3	1.86	0.40
5:AG:44:THR:O	5:AG:48:SER:HB3	2.21	0.40
19:AU:77:GLU:OE1	19:AU:80:ARG:NE	2.42	0.40
26:Ae:41:ARG:HD3	26:Ae:56:GLN:HA	2.03	0.40
26:Ae:86:GLU:HG3	26:Ae:90:ARG:HB3	2.02	0.40
26:Ae:129:LYS:HA	26:Ae:132:GLN:HG2	2.02	0.40
35:B2:137:C:H5	70:Bt:86:LYS:HZ1	1.69	0.40
35:B2:634:G:OP2	40:BP:318:LYS:NZ	2.34	0.40
35:B2:740:U:H2'	35:B2:741:G:O4'	2.21	0.40
35:B2:1081:C:H2'	35:B2:1082:U:C6	2.56	0.40
35:B2:1557:U:OP1	35:B2:1642:U:N3	2.55	0.40
35:B2:1751:U:C4	35:B2:1752:G:C6	3.09	0.40
35:B2:2236:U:O2'	38:BN:181:ALA:HB2	2.21	0.40
35:B2:2726:U:OP1	35:B2:2852:U:O2'	2.32	0.40
35:B2:3270:U:H5"	68:Br:11:LYS:NZ	2.37	0.40
35:B2:3279:A:N1	35:B2:3284:G:H4'	2.36	0.40
37:B4:10:A:C4	37:B4:11:A:C8	3.09	0.40
37:B4:61:A:C4	37:B4:62:A:C8	3.08	0.40
44:BT:93:LEU:HD21	44:BT:210:GLU:HB2	2.02	0.40
45:BU:94:TYR:HE2	45:BU:101:ILE:HD13	1.86	0.40
47:BW:101:ASN:OD1	47:BW:130:VAL:HG22	2.21	0.40
58:Bh:127:LEU:HD23	58:Bh:127:LEU:HA	1.94	0.40
60:Bj:108:LYS:HG2	60:Bj:124:LYS:HE2	2.02	0.40
60:Bj:114:ARG:HB2	60:Bj:116:ASN:OD1	2.21	0.40
70:Bt:85:LYS:HD2	70:Bt:85:LYS:HA	1.84	0.40
72:Bv:24:LYS:HB3	72:Bv:24:LYS:HE2	1.88	0.40
78:Sn:22:G:H2'	78:Sn:23:C:H6	1.86	0.40
1:AA:39:A:H2'	1:AA:40:A:H8	1.86	0.40
1:AA:303:A:H2'	1:AA:304:A:C8	2.57	0.40
1:AA:407:G:H2'	1:AA:408:C:H6	1.86	0.40
1:AA:618:A:O2'	1:AA:624:A:N1	2.48	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:917:G:H1'	1:AA:922:A:N6	2.36	0.40
1:AA:1591:A:C2	1:AA:1603:G:C2	3.09	0.40
2:AD:44:ARG:HG2	2:AD:45:SER:H	1.86	0.40
3:AE:92:GLN:O	3:AE:95:SER:OG	2.30	0.40
4:AF:103:ILE:HG23	4:AF:135:ILE:HD11	2.04	0.40
5:AG:59:ASP:O	5:AG:67:ARG:HD3	2.21	0.40
6:AH:87:MET:HG2	6:AH:100:ARG:NH2	2.37	0.40
8:AJ:121:ILE:HD12	8:AJ:124:LEU:HD11	2.03	0.40
10:AL:110:ARG:NH2	10:AL:121:MET:H	2.19	0.40
16:AR:34:ASP:N	16:AR:34:ASP:OD1	2.54	0.40
17:AS:36:LEU:HD23	17:AS:36:LEU:HA	1.87	0.40
30:Ai:23:ARG:HH11	30:Ai:23:ARG:HG2	1.87	0.40
35:B2:153:U:C4	44:BT:157:VAL:HG13	2.56	0.40
35:B2:928:A:H5'	38:BN:182:GLY:CA	2.51	0.40
35:B2:1277:G:H1'	35:B2:1295:G:C5	2.56	0.40
35:B2:1632:C:H2'	35:B2:1633:G:H8	1.86	0.40
35:B2:1942:A:H4'	39:BO:227:GLU:HA	2.03	0.40
35:B2:2511:U:H2'	35:B2:2512:A:H8	1.86	0.40
35:B2:2781:A:H2'	35:B2:2782:G:O4'	2.21	0.40
35:B2:3021:A:H2'	35:B2:3022:C:H6	1.87	0.40
35:B2:3138:U:OP1	58:Bh:50:ARG:NH1	2.52	0.40
35:B2:3256:C:H2'	35:B2:3257:C:C6	2.56	0.40
35:B2:3342:G:H5'	35:B2:3345:G:H8	1.87	0.40
39:BO:262:TRP:CD1	51:Ba:67:PRO:HD3	2.56	0.40
41:BQ:90:TRP:CD2	41:BQ:226:LEU:HD13	2.56	0.40
43:BS:96:ARG:HB2	43:BS:116:LEU:HB3	2.03	0.40
54:Bd:105:LEU:HD13	54:Bd:135:LYS:HG3	2.03	0.40
70:Bt:35:ILE:HD13	70:Bt:35:ILE:HA	1.87	0.40
1:AA:27:U:H2'	1:AA:28:A:C8	2.56	0.40
1:AA:117:U:O2	1:AA:336:A:H2	2.04	0.40
1:AA:369:A:H2'	1:AA:370:A:H8	1.85	0.40
1:AA:554:G:H2'	1:AA:555:G:H8	1.85	0.40
1:AA:603:U:H2'	1:AA:604:A:C8	2.56	0.40
1:AA:762:U:H2'	1:AA:763:U:C6	2.57	0.40
11:AM:135:ARG:NH2	11:AM:160:LEU:H	2.18	0.40
18:AT:123:PRO:O	18:AT:125:LYS:HE3	2.21	0.40
21:AW:15:ILE:HD13	21:AW:55:VAL:HA	2.03	0.40
22:Aa:56:LEU:HD22	22:Aa:86:LYS:HD3	2.03	0.40
22:Aa:98:VAL:HA	22:Aa:101:ILE:HG22	2.04	0.40
35:B2:11:A:H2'	35:B2:12:A:C8	2.56	0.40
35:B2:822:U:H2'	35:B2:823:A:H8	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:B2:1080:A:H2'	46:BV:22:TYR:CZ	2.57	0.40
35:B2:1380:A:N7	35:B2:1389:A:N6	2.54	0.40
35:B2:1600:C:H2'	35:B2:1601:G:C8	2.56	0.40
35:B2:1753:A:O2'	35:B2:1770:G:N2	2.55	0.40
35:B2:2521:U:OP2	35:B2:2522:U:O2'	2.29	0.40
35:B2:3018:U:H2'	35:B2:3019:U:C6	2.56	0.40
36:B3:28:C:H2'	36:B3:29:C:O4'	2.21	0.40
39:BO:5:LYS:HB3	39:BO:6:PHE:H	1.55	0.40
42:BR:131:GLY:HA3	42:BR:132:PRO:HD3	1.90	0.40
71:Bu:34:ARG:HG3	71:Bu:35:THR:N	2.36	0.40
72:Bv:82:LYS:HD3	72:Bv:83:PRO:HD2	2.02	0.40
76:Am:236:ILE:HG23	76:Am:250:ALA:HB1	2.03	0.40
1:AA:70:C:H2'	1:AA:71:A:C8	2.56	0.40
1:AA:249:G:C2	13:AO:37:LEU:HG	2.56	0.40
1:AA:1590:C:H2'	1:AA:1591:A:C8	2.57	0.40
1:AA:1715:C:H2'	1:AA:1716:C:C6	2.57	0.40
2:AD:39:TYR:OH	23:Ab:70:ASN:ND2	2.47	0.40
2:AD:124:ILE:HD13	2:AD:124:ILE:HA	1.86	0.40
11:AM:109:LEU:HD21	11:AM:136:VAL:HG21	2.03	0.40
11:AM:129:ILE:HG13	11:AM:134:ILE:HG21	2.02	0.40
13:AO:104:LEU:HD23	13:AO:104:LEU:HA	1.88	0.40
18:AT:90:TYR:HA	18:AT:94:VAL:HG23	2.04	0.40
25:Ad:112:LYS:O	25:Ad:115:ILE:HD12	2.22	0.40
34:B1:54:ILE:HG23	34:B1:65:VAL:HG13	2.04	0.40
35:B2:305:A:C8	35:B2:307:G:H1'	2.57	0.40
35:B2:364:G:O2'	40:BP:83:GLY:O	2.34	0.40
35:B2:608:G:H2'	35:B2:609:A:H8	1.87	0.40
35:B2:1300:U:H2'	35:B2:1301:A:H3'	2.04	0.40
35:B2:2507:A:H2'	35:B2:2508:C:C6	2.56	0.40
35:B2:2802:U:H2'	35:B2:2803:C:C6	2.57	0.40
35:B2:2841:A:N6	41:BQ:153:THR:HG21	2.36	0.40
35:B2:2908:A:H2'	35:B2:2909:G:O4'	2.21	0.40
35:B2:3140:A:H4'	39:BO:13:SER:HB2	2.03	0.40
35:B2:3259:C:H3'	35:B2:3260:A:C5'	2.50	0.40
35:B2:3375:U:H3	42:BR:66:ARG:NE	2.19	0.40
35:B2:3485:U:H2'	35:B2:3486:U:C6	2.57	0.40
39:BO:183:VAL:O	39:BO:191:LYS:NZ	2.54	0.40
41:BQ:190:LEU:HD22	41:BQ:191:ASP:H	1.86	0.40
41:BQ:205:ALA:O	41:BQ:209:GLU:HG2	2.22	0.40
43:BS:116:LEU:HD21	43:BS:123:VAL:HG22	2.04	0.40
47:BW:131:MET:O	47:BW:154:ILE:HD13	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:By:37:VAL:HG21	75:By:116:SER:HA	2.02	0.40
76:Am:245:ARG:HD2	76:Am:247:TRP:CE2	2.56	0.40
77:Sm:24:C:H2'	77:Sm:25:U:C6	2.56	0.40
1:AA:403:A:OP1	10:AL:25:ARG:NH1	2.51	0.40
1:AA:514:A:OP2	11:AM:173:LYS:HA	2.21	0.40
1:AA:885:U:H2'	1:AA:886:A:C8	2.56	0.40
1:AA:1661:C:O2'	1:AA:1662:U:OP1	2.37	0.40
5:AG:170:ILE:HB	5:AG:189:LYS:HD2	2.04	0.40
6:AH:72:VAL:HG22	6:AH:73:ASP:OD1	2.21	0.40
6:AH:161:LYS:NZ	6:AH:235:TRP:HB2	2.37	0.40
11:AM:126:ARG:O	11:AM:129:ILE:HG22	2.21	0.40
16:AR:16:PHE:HA	16:AR:80:ALA:O	2.21	0.40
16:AR:33:THR:HB	16:AR:40:THR:HG22	2.03	0.40
26:Ae:116:LYS:HA	26:Ae:116:LYS:HD3	1.92	0.40
27:Af:66:ARG:HB2	27:Af:68:VAL:HG23	2.04	0.40
35:B2:184:C:C2	35:B2:185:G:N7	2.89	0.40
35:B2:222:G:H5"	61:Bk:11:ARG:HG3	2.03	0.40
35:B2:223:G:OP1	61:Bk:15:ARG:NH1	2.48	0.40
35:B2:301:C:H2'	35:B2:302:U:O4'	2.22	0.40
35:B2:389:U:H2'	35:B2:390:U:C6	2.56	0.40
35:B2:545:A:H62	35:B2:577:U:H3	1.70	0.40
35:B2:935:U:H2'	35:B2:936:A:H8	1.86	0.40
35:B2:2303:A:C6	35:B2:2304:G:C6	3.09	0.40
35:B2:2754:G:H2'	35:B2:2755:G:C8	2.56	0.40
35:B2:2995:A:H3'	35:B2:2996:G:H8	1.87	0.40
37:B4:12:C:H2'	37:B4:13:U:C6	2.56	0.40
40:BP:47:ASN:HB3	50:BZ:201:ARG:HD2	2.03	0.40
44:BT:182:ASN:O	44:BT:185:ARG:N	2.55	0.40
45:BU:35:LEU:HD11	45:BU:148:SER:HB2	2.03	0.40
46:BV:193:ASP:HB2	46:BV:198:LYS:HZ2	1.86	0.40
49:BY:82:ASP:OD2	49:BY:86:LYS:HG3	2.22	0.40
54:Bd:7:GLN:HB3	54:Bd:24:MET:HE1	2.03	0.40
54:Bd:72:LEU:HD23	54:Bd:72:LEU:HA	1.90	0.40
57:Bg:12:TYR:CE2	57:Bg:69:PHE:HB3	2.57	0.40
60:Bj:130:ASP:HB2	60:Bj:133:ASP:OD2	2.21	0.40
62:Bl:83:THR:HG22	69:Bs:93:PHE:CZ	2.57	0.40
67:Bq:62:TYR:CG	75:By:25:PHE:HA	2.56	0.40
78:Sn:4:G:H2'	78:Sn:5:C:C6	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
2	AD	203/292 (70%)	180 (89%)	23 (11%)	0	100 100
3	AE	214/252 (85%)	200 (94%)	14 (6%)	0	100 100
4	AF	214/253 (85%)	207 (97%)	6 (3%)	1 (0%)	24 37
5	AG	214/249 (86%)	195 (91%)	18 (8%)	1 (0%)	24 37
6	AH	259/262 (99%)	231 (89%)	23 (9%)	5 (2%)	6 8
7	AI	201/203 (99%)	176 (88%)	21 (10%)	4 (2%)	6 7
8	AJ	219/239 (92%)	212 (97%)	7 (3%)	0	100 100
9	AK	191/195 (98%)	173 (91%)	18 (9%)	0	100 100
10	AL	184/200 (92%)	175 (95%)	9 (5%)	0	100 100
11	AM	176/192 (92%)	163 (93%)	13 (7%)	0	100 100
12	AN	90/147 (61%)	79 (88%)	10 (11%)	1 (1%)	11 18
13	AO	141/152 (93%)	131 (93%)	10 (7%)	0	100 100
14	AP	119/145 (82%)	106 (89%)	12 (10%)	1 (1%)	16 25
15	AQ	148/151 (98%)	142 (96%)	5 (3%)	1 (1%)	18 28
16	AR	126/139 (91%)	114 (90%)	12 (10%)	0	100 100
17	AS	117/154 (76%)	110 (94%)	7 (6%)	0	100 100
18	AT	138/140 (99%)	133 (96%)	5 (4%)	0	100 100
19	AU	116/131 (88%)	99 (85%)	11 (10%)	6 (5%)	1 1
20	AV	139/152 (91%)	130 (94%)	9 (6%)	0	100 100
21	AW	140/144 (97%)	133 (95%)	7 (5%)	0	100 100
22	Aa	98/118 (83%)	90 (92%)	6 (6%)	2 (2%)	6 7
23	Ab	85/87 (98%)	83 (98%)	2 (2%)	0	100 100
24	Ac	127/130 (98%)	122 (96%)	5 (4%)	0	100 100
25	Ad	140/143 (98%)	136 (97%)	4 (3%)	0	100 100
26	Ae	131/134 (98%)	124 (95%)	6 (5%)	1 (1%)	16 25

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
27	Af	67/89 (75%)	61 (91%)	6 (9%)	0	100	100
28	Ag	95/119 (80%)	89 (94%)	6 (6%)	0	100	100
29	Ah	79/83 (95%)	75 (95%)	4 (5%)	0	100	100
30	Ai	61/68 (90%)	57 (93%)	4 (7%)	0	100	100
31	Aj	51/56 (91%)	49 (96%)	2 (4%)	0	100	100
32	Ak	58/61 (95%)	53 (91%)	4 (7%)	1 (2%)	7	10
33	B0	91/106 (86%)	88 (97%)	3 (3%)	0	100	100
34	B1	91/94 (97%)	85 (93%)	6 (7%)	0	100	100
38	BN	246/253 (97%)	228 (93%)	18 (7%)	0	100	100
39	BO	382/388 (98%)	357 (94%)	25 (6%)	0	100	100
40	BP	360/363 (99%)	349 (97%)	11 (3%)	0	100	100
41	BQ	285/294 (97%)	257 (90%)	26 (9%)	2 (1%)	18	28
42	BR	160/195 (82%)	138 (86%)	22 (14%)	0	100	100
43	BS	231/251 (92%)	224 (97%)	7 (3%)	0	100	100
44	BT	227/259 (88%)	211 (93%)	16 (7%)	0	100	100
45	BU	162/189 (86%)	155 (96%)	7 (4%)	0	100	100
46	BV	187/221 (85%)	181 (97%)	6 (3%)	0	100	100
47	BW	165/174 (95%)	147 (89%)	16 (10%)	2 (1%)	10	16
48	BX	205/208 (99%)	201 (98%)	4 (2%)	0	100	100
49	BY	128/134 (96%)	125 (98%)	3 (2%)	0	100	100
50	BZ	198/201 (98%)	189 (96%)	9 (4%)	0	100	100
51	Ba	194/197 (98%)	191 (98%)	3 (2%)	0	100	100
52	Bb	150/187 (80%)	146 (97%)	4 (3%)	0	100	100
53	Bc	184/187 (98%)	178 (97%)	6 (3%)	0	100	100
54	Bd	155/193 (80%)	153 (99%)	2 (1%)	0	100	100
55	Be	171/176 (97%)	164 (96%)	6 (4%)	1 (1%)	21	32
56	Bf	157/160 (98%)	152 (97%)	5 (3%)	0	100	100
57	Bg	97/117 (83%)	86 (89%)	11 (11%)	0	100	100
58	Bh	132/139 (95%)	125 (95%)	7 (5%)	0	100	100
59	Bi	61/149 (41%)	61 (100%)	0	0	100	100
60	Bj	116/141 (82%)	114 (98%)	2 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
61	Bk	123/126 (98%)	122 (99%)	1 (1%)	0	100	100
62	Bl	133/136 (98%)	128 (96%)	5 (4%)	0	100	100
63	Bm	145/148 (98%)	137 (94%)	8 (6%)	0	100	100
64	Bn	57/61 (93%)	54 (95%)	3 (5%)	0	100	100
65	Bo	92/109 (84%)	92 (100%)	0	0	100	100
66	Bp	101/113 (89%)	98 (97%)	3 (3%)	0	100	100
67	Bq	116/127 (91%)	113 (97%)	3 (3%)	0	100	100
68	Br	102/108 (94%)	100 (98%)	2 (2%)	0	100	100
69	Bs	104/111 (94%)	102 (98%)	2 (2%)	0	100	100
70	Bt	119/122 (98%)	115 (97%)	4 (3%)	0	100	100
71	Bu	93/99 (94%)	90 (97%)	3 (3%)	0	100	100
72	Bv	80/91 (88%)	75 (94%)	5 (6%)	0	100	100
73	Bw	67/74 (90%)	67 (100%)	0	0	100	100
74	Bx	48/51 (94%)	44 (92%)	4 (8%)	0	100	100
75	By	131/134 (98%)	128 (98%)	3 (2%)	0	100	100
76	Am	312/314 (99%)	296 (95%)	16 (5%)	0	100	100
All	All	10699/11780 (91%)	10094 (94%)	576 (5%)	29 (0%)	37	50

All (29) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
6	AH	245	LYS
19	AU	88	VAL
22	Aa	50	VAL
41	BQ	216	GLU
47	BW	46	VAL
47	BW	117	ASP
4	AF	237	THR
6	AH	12	VAL
6	AH	59	ARG
7	AI	31	VAL
7	AI	79	GLY
15	AQ	30	ALA
19	AU	92	GLU
19	AU	117	ARG
7	AI	24	PHE

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Mol	Chain	Res	Type
7	AI	29	VAL
41	BQ	90	TRP
14	AP	134	ALA
26	Ae	56	GLN
32	Ak	51	VAL
19	AU	74	GLN
19	AU	118	VAL
22	Aa	19	ARG
5	AG	95	ASN
6	AH	168	LYS
6	AH	217	GLU
55	Be	159	VAL
19	AU	114	ILE
12	AN	37	VAL

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	AD	170/228 (75%)	163 (96%)	7 (4%)	27	46
3	AE	193/223 (86%)	189 (98%)	4 (2%)	47	69
4	AF	175/199 (88%)	167 (95%)	8 (5%)	24	41
5	AG	181/203 (89%)	174 (96%)	7 (4%)	28	48
6	AH	226/227 (100%)	219 (97%)	7 (3%)	35	57
7	AI	169/169 (100%)	166 (98%)	3 (2%)	51	73
8	AJ	188/204 (92%)	181 (96%)	7 (4%)	30	51
9	AK	169/171 (99%)	163 (96%)	6 (4%)	31	52
10	AL	157/166 (95%)	156 (99%)	1 (1%)	78	89
11	AM	155/165 (94%)	153 (99%)	2 (1%)	61	80
12	AN	77/116 (66%)	75 (97%)	2 (3%)	40	63
13	AO	124/131 (95%)	117 (94%)	7 (6%)	19	33
14	AP	92/118 (78%)	90 (98%)	2 (2%)	45	67

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
15	AQ	127/128 (99%)	126 (99%)	1 (1%)	73	86
16	AR	95/104 (91%)	92 (97%)	3 (3%)	34	56
17	AS	101/131 (77%)	97 (96%)	4 (4%)	28	47
18	AT	111/111 (100%)	109 (98%)	2 (2%)	51	73
19	AU	107/120 (89%)	103 (96%)	4 (4%)	30	51
20	AV	127/136 (93%)	124 (98%)	3 (2%)	43	65
21	AW	117/119 (98%)	114 (97%)	3 (3%)	40	63
22	Aa	95/111 (86%)	93 (98%)	2 (2%)	47	69
23	Ab	73/73 (100%)	70 (96%)	3 (4%)	27	46
24	Ac	114/115 (99%)	110 (96%)	4 (4%)	32	53
25	Ad	112/113 (99%)	109 (97%)	3 (3%)	39	62
26	Ae	112/113 (99%)	108 (96%)	4 (4%)	31	52
27	Af	61/75 (81%)	59 (97%)	2 (3%)	33	55
28	Ag	87/106 (82%)	86 (99%)	1 (1%)	65	82
29	Ah	71/73 (97%)	70 (99%)	1 (1%)	59	79
30	Ai	56/61 (92%)	54 (96%)	2 (4%)	31	52
31	Aj	45/47 (96%)	45 (100%)	0	100	100
32	Ak	51/52 (98%)	49 (96%)	2 (4%)	28	48
33	B0	84/93 (90%)	81 (96%)	3 (4%)	31	52
34	B1	74/75 (99%)	74 (100%)	0	100	100
38	BN	188/192 (98%)	185 (98%)	3 (2%)	55	76
39	BO	318/326 (98%)	312 (98%)	6 (2%)	50	71
40	BP	293/294 (100%)	291 (99%)	2 (1%)	76	88
41	BQ	235/241 (98%)	231 (98%)	4 (2%)	53	74
42	BR	132/155 (85%)	130 (98%)	2 (2%)	57	77
43	BS	198/213 (93%)	194 (98%)	4 (2%)	48	70
44	BT	182/212 (86%)	179 (98%)	3 (2%)	55	76
45	BU	149/168 (89%)	145 (97%)	4 (3%)	39	62
46	BV	165/187 (88%)	163 (99%)	2 (1%)	63	81
47	BW	141/146 (97%)	138 (98%)	3 (2%)	47	69
48	BX	166/167 (99%)	164 (99%)	2 (1%)	63	81

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
49	BY	110/113 (97%)	108 (98%)	2 (2%)	51	73
50	BZ	175/176 (99%)	173 (99%)	2 (1%)	65	82
51	Ba	159/160 (99%)	157 (99%)	2 (1%)	61	80
52	Bb	124/149 (83%)	121 (98%)	3 (2%)	43	65
53	Bc	157/158 (99%)	155 (99%)	2 (1%)	61	80
54	Bd	136/163 (83%)	136 (100%)	0	100	100
55	Be	151/154 (98%)	149 (99%)	2 (1%)	61	80
56	Bf	138/139 (99%)	132 (96%)	6 (4%)	26	44
57	Bg	86/103 (84%)	84 (98%)	2 (2%)	44	66
58	Bh	103/107 (96%)	101 (98%)	2 (2%)	50	71
59	Bi	57/121 (47%)	56 (98%)	1 (2%)	51	73
60	Bj	105/122 (86%)	105 (100%)	0	100	100
61	Bk	110/111 (99%)	109 (99%)	1 (1%)	70	85
62	Bl	114/115 (99%)	111 (97%)	3 (3%)	40	63
63	Bm	122/123 (99%)	120 (98%)	2 (2%)	55	76
64	Bn	50/51 (98%)	50 (100%)	0	100	100
65	Bo	75/87 (86%)	74 (99%)	1 (1%)	61	80
66	Bp	94/102 (92%)	93 (99%)	1 (1%)	65	82
67	Bq	100/107 (94%)	100 (100%)	0	100	100
68	Br	91/94 (97%)	90 (99%)	1 (1%)	65	82
69	Bs	91/96 (95%)	89 (98%)	2 (2%)	45	67
70	Bt	106/107 (99%)	106 (100%)	0	100	100
71	Bu	81/84 (96%)	81 (100%)	0	100	100
72	Bv	68/71 (96%)	67 (98%)	1 (2%)	57	77
73	Bw	63/66 (96%)	63 (100%)	0	100	100
74	Bx	46/47 (98%)	46 (100%)	0	100	100
75	By	112/113 (99%)	111 (99%)	1 (1%)	70	85
76	Am	276/276 (100%)	263 (95%)	13 (5%)	23	41
All	All	9163/9892 (93%)	8968 (98%)	195 (2%)	46	69

All (195) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	AD	59	LYS
2	AD	78	VAL
2	AD	83	THR
2	AD	111	THR
2	AD	126	VAL
2	AD	160	ASP
2	AD	175	LEU
3	AE	84	VAL
3	AE	105	ILE
3	AE	203	SER
3	AE	215	VAL
4	AF	35	VAL
4	AF	110	VAL
4	AF	114	ILE
4	AF	122	THR
4	AF	134	SER
4	AF	147	LEU
4	AF	197	THR
4	AF	218	SER
5	AG	28	THR
5	AG	43	VAL
5	AG	51	ILE
5	AG	101	VAL
5	AG	180	ARG
5	AG	183	VAL
5	AG	207	VAL
6	AH	52	LEU
6	AH	78	THR
6	AH	166	THR
6	AH	188	ASN
6	AH	194	THR
6	AH	220	THR
6	AH	227	VAL
7	AI	20	LEU
7	AI	98	ILE
7	AI	153	ILE
8	AJ	73	VAL
8	AJ	81	HIS
8	AJ	108	VAL
8	AJ	111	LEU
8	AJ	124	LEU
8	AJ	129	VAL
8	AJ	183	THR

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Mol	Chain	Res	Type
9	AK	62	VAL
9	AK	100	ILE
9	AK	178	LEU
9	AK	179	THR
9	AK	184	THR
9	AK	189	VAL
10	AL	72	VAL
11	AM	47	LEU
11	AM	149	ARG
12	AN	15	LEU
12	AN	20	VAL
13	AO	71	THR
13	AO	72	VAL
13	AO	80	THR
13	AO	83	ILE
13	AO	104	LEU
13	AO	108	VAL
13	AO	128	LEU
14	AP	92	ILE
14	AP	109	LEU
15	AQ	66	ILE
16	AR	33	THR
16	AR	86	ARG
16	AR	112	MET
17	AS	33	LEU
17	AS	57	LEU
17	AS	109	LEU
17	AS	130	THR
18	AT	19	CYS
18	AT	27	LYS
19	AU	6	THR
19	AU	54	THR
19	AU	85	VAL
19	AU	116	VAL
20	AV	24	VAL
20	AV	28	PHE
20	AV	136	THR
21	AW	6	VAL
21	AW	14	PHE
21	AW	83	VAL
22	Aa	17	VAL
22	Aa	29	VAL

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Mol	Chain	Res	Type
23	Ab	23	ILE
23	Ab	46	ILE
23	Ab	69	ILE
24	Ac	61	ILE
24	Ac	69	ILE
24	Ac	76	SER
24	Ac	99	VAL
25	Ad	69	CYS
25	Ad	105	PHE
25	Ad	130	LEU
26	Ae	22	GLN
26	Ae	24	VAL
26	Ae	68	ARG
26	Ae	124	ARG
27	Af	44	VAL
27	Af	68	VAL
28	Ag	84	VAL
29	Ah	14	SER
30	Ai	27	THR
30	Ai	49	VAL
32	Ak	41	VAL
32	Ak	45	VAL
33	B0	7	THR
33	B0	29	LYS
33	B0	61	LYS
38	BN	44	VAL
38	BN	245	LEU
38	BN	246	ARG
39	BO	56	ILE
39	BO	95	THR
39	BO	217	VAL
39	BO	289	ASP
39	BO	293	ASN
39	BO	322	VAL
40	BP	7	THR
40	BP	297	GLU
41	BQ	61	THR
41	BQ	236	LEU
41	BQ	239	ILE
41	BQ	242	GLU
42	BR	49	ARG
42	BR	88	VAL

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Mol	Chain	Res	Type
43	BS	129	LYS
43	BS	149	LEU
43	BS	164	VAL
43	BS	238	LYS
44	BT	125	VAL
44	BT	189	VAL
44	BT	210	GLU
45	BU	43	ASP
45	BU	57	VAL
45	BU	75	ILE
45	BU	138	VAL
46	BV	31	ILE
46	BV	191	ILE
47	BW	97	SER
47	BW	129	VAL
47	BW	138	VAL
48	BX	63	ILE
48	BX	167	THR
49	BY	29	VAL
49	BY	73	ILE
50	BZ	18	VAL
50	BZ	155	VAL
51	Ba	137	CYS
51	Ba	146	VAL
52	Bb	12	THR
52	Bb	70	THR
52	Bb	89	LYS
53	Bc	14	GLN
53	Bc	123	LEU
55	Be	44	LEU
55	Be	54	THR
56	Bf	3	HIS
56	Bf	71	SER
56	Bf	72	VAL
56	Bf	89	VAL
56	Bf	104	ASP
56	Bf	139	HIS
57	Bg	52	VAL
57	Bg	106	TYR
58	Bh	40	SER
58	Bh	60	VAL
59	Bi	11	SER

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Mol	Chain	Res	Type
61	Bk	56	THR
62	Bl	38	PHE
62	Bl	46	VAL
62	Bl	56	SER
63	Bm	15	VAL
63	Bm	144	VAL
65	Bo	95	VAL
66	Bp	111	VAL
68	Br	28	THR
69	Bs	32	TYR
69	Bs	100	ILE
72	Bv	61	THR
75	By	35	VAL
76	Am	33	SER
76	Am	60	THR
76	Am	64	HIS
76	Am	65	PHE
76	Am	98	THR
76	Am	153	CYS
76	Am	177	TRP
76	Am	225	THR
76	Am	268	ASP
76	Am	272	VAL
76	Am	287	ILE
76	Am	289	LEU
76	Am	313	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (122) such sidechains are listed below:

Mol	Chain	Res	Type
2	AD	19	GLN
2	AD	31	ASN
2	AD	143	ASN
3	AE	49	ASN
3	AE	125	GLN
3	AE	160	GLN
3	AE	173	GLN
4	AF	88	GLN
4	AF	236	GLN
5	AG	58	GLN
5	AG	94	GLN
6	AH	36	HIS

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Mol	Chain	Res	Type
6	AH	98	HIS
6	AH	163	ASN
6	AH	224	ASN
7	AI	15	ASN
7	AI	136	GLN
7	AI	148	GLN
7	AI	178	ASN
9	AK	162	ASN
10	AL	80	GLN
11	AM	124	HIS
12	AN	39	ASN
12	AN	47	GLN
12	AN	70	ASN
12	AN	91	HIS
13	AO	115	ASN
13	AO	135	ASN
14	AP	63	HIS
15	AQ	36	GLN
15	AQ	49	GLN
15	AQ	78	ASN
15	AQ	90	ASN
17	AS	90	ASN
17	AS	106	ASN
19	AU	83	GLN
20	AV	101	ASN
21	AW	84	ASN
22	Aa	28	ASN
23	Ab	35	ASN
24	Ac	64	GLN
24	Ac	91	ASN
25	Ad	92	ASN
25	Ad	97	ASN
26	Ae	110	GLN
26	Ae	113	ASN
28	Ag	8	ASN
28	Ag	11	ASN
28	Ag	72	GLN
28	Ag	80	HIS
29	Ah	9	ASN
29	Ah	26	GLN
31	Aj	10	HIS
33	B0	3	ASN

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Mol	Chain	Res	Type
33	B0	82	GLN
38	BN	85	GLN
38	BN	92	ASN
38	BN	210	HIS
38	BN	220	HIS
39	BO	121	ASN
39	BO	182	GLN
39	BO	211	GLN
39	BO	212	ASN
39	BO	243	HIS
39	BO	378	GLN
40	BP	41	HIS
40	BP	89	GLN
41	BQ	63	GLN
43	BS	29	GLN
43	BS	46	GLN
43	BS	214	GLN
44	BT	77	GLN
44	BT	79	GLN
45	BU	100	ASN
45	BU	114	ASN
45	BU	158	ASN
46	BV	14	ASN
46	BV	162	GLN
48	BX	11	ASN
48	BX	172	ASN
49	BY	123	GLN
50	BZ	32	GLN
50	BZ	156	HIS
51	Ba	27	GLN
51	Ba	43	ASN
51	Ba	47	HIS
51	Ba	97	GLN
51	Ba	104	GLN
51	Ba	176	GLN
52	Bb	54	HIS
54	Bd	141	HIS
55	Be	48	ASN
55	Be	87	HIS
55	Be	137	ASN
56	Bf	69	GLN
56	Bf	95	HIS

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Mol	Chain	Res	Type
58	Bh	134	ASN
60	Bj	64	ASN
60	Bj	86	HIS
62	Bl	78	ASN
62	Bl	91	ASN
62	Bl	106	GLN
64	Bn	10	HIS
64	Bn	56	GLN
65	Bo	74	HIS
66	Bp	48	HIS
66	Bp	50	GLN
66	Bp	71	ASN
69	Bs	69	GLN
69	Bs	103	GLN
70	Bt	33	GLN
70	Bt	74	ASN
71	Bu	61	ASN
72	Bv	30	GLN
73	Bw	30	ASN
75	By	74	ASN
75	By	76	GLN
76	Am	4	GLN
76	Am	99	HIS
76	Am	222	ASN
76	Am	235	ASN
76	Am	244	ASN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	AA	1695/1842 (92%)	401 (23%)	15 (0%)
35	B2	3203/3498 (91%)	663 (20%)	26 (0%)
36	B3	118/246 (47%)	23 (19%)	1 (0%)
37	B4	156/165 (94%)	30 (19%)	1 (0%)
77	Sm	73/77 (94%)	17 (23%)	0
78	Sn	74/75 (98%)	23 (31%)	0
79	S3	9/10 (90%)	6 (66%)	1 (11%)
All	All	5328/5913 (90%)	1163 (21%)	44 (0%)

All (1163) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	AA	3	C
1	AA	4	C
1	AA	25	C
1	AA	26	A
1	AA	34	G
1	AA	35	U
1	AA	40	A
1	AA	42	G
1	AA	45	U
1	AA	46	A
1	AA	47	A
1	AA	57	G
1	AA	60	U
1	AA	67	A
1	AA	69	G
1	AA	79	A
1	AA	105	A
1	AA	115	C
1	AA	116	G
1	AA	117	U
1	AA	128	G
1	AA	138	U
1	AA	139	A
1	AA	141	U
1	AA	142	U
1	AA	143	G
1	AA	144	G
1	AA	149	C
1	AA	151	G
1	AA	158	U
1	AA	159	U
1	AA	161	U
1	AA	166	C
1	AA	176	C
1	AA	177	U
1	AA	178	A
1	AA	190	U
1	AA	192	U
1	AA	193	U
1	AA	194	U
1	AA	195	U
1	AA	196	G
1	AA	197	G

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Mol	Chain	Res	Type
1	AA	201	G
1	AA	216	A
1	AA	217	U
1	AA	219	A
1	AA	221	A
1	AA	230	C
1	AA	234	C
1	AA	236	G
1	AA	239	U
1	AA	241	U
1	AA	244	U
1	AA	253	C
1	AA	264	U
1	AA	268	A
1	AA	273	C
1	AA	274	A
1	AA	275	U
1	AA	276	G
1	AA	279	C
1	AA	281	U
1	AA	283	C
1	AA	290	G
1	AA	302	A
1	AA	305	U
1	AA	319	A
1	AA	324	C
1	AA	340	G
1	AA	341	C
1	AA	355	A
1	AA	362	A
1	AA	363	A
1	AA	364	C
1	AA	403	A
1	AA	405	C
1	AA	407	G
1	AA	419	A
1	AA	420	A
1	AA	421	G
1	AA	426	G
1	AA	427	C
1	AA	428	A
1	AA	429	G

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Mol	Chain	Res	Type
1	AA	437	G
1	AA	440	A
1	AA	442	U
1	AA	447	C
1	AA	448	A
1	AA	457	A
1	AA	470	G
1	AA	471	A
1	AA	473	A
1	AA	478	A
1	AA	487	C
1	AA	489	G
1	AA	491	G
1	AA	504	U
1	AA	508	A
1	AA	509	A
1	AA	511	U
1	AA	513	G
1	AA	514	A
1	AA	515	A
1	AA	516	U
1	AA	517	G
1	AA	518	A
1	AA	521	A
1	AA	522	C
1	AA	523	A
1	AA	536	U
1	AA	537	A
1	AA	539	C
1	AA	541	A
1	AA	542	G
1	AA	543	G
1	AA	545	A
1	AA	547	A
1	AA	554	G
1	AA	557	C
1	AA	558	A
1	AA	559	A
1	AA	560	G
1	AA	561	U
1	AA	562	C
1	AA	568	C

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Mol	Chain	Res	Type
1	AA	571	G
1	AA	577	G
1	AA	584	U
1	AA	588	A
1	AA	597	A
1	AA	598	G
1	AA	609	A
1	AA	614	U
1	AA	622	A
1	AA	623	A
1	AA	626	A
1	AA	627	G
1	AA	637	G
1	AA	638	A
1	AA	642	U
1	AA	652	U
1	AA	695	G
1	AA	696	U
1	AA	697	C
1	AA	700	U
1	AA	701	A
1	AA	703	C
1	AA	705	U
1	AA	755	U
1	AA	767	A
1	AA	768	A
1	AA	769	A
1	AA	778	G
1	AA	779	U
1	AA	784	A
1	AA	787	A
1	AA	788	G
1	AA	792	A
1	AA	793	G
1	AA	794	U
1	AA	795	U
1	AA	796	U
1	AA	797	U
1	AA	801	C
1	AA	802	G
1	AA	804	A
1	AA	808	A

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Mol	Chain	Res	Type
1	AA	810	U
1	AA	826	A
1	AA	827	A
1	AA	828	U
1	AA	831	G
1	AA	833	C
1	AA	834	G
1	AA	835	U
1	AA	841	U
1	AA	844	A
1	AA	845	U
1	AA	846	U
1	AA	848	U
1	AA	849	G
1	AA	850	U
1	AA	865	G
1	AA	869	U
1	AA	870	A
1	AA	878	A
1	AA	913	A
1	AA	921	A
1	AA	926	U
1	AA	928	G
1	AA	929	G
1	AA	948	A
1	AA	950	U
1	AA	974	U
1	AA	975	U
1	AA	981	A
1	AA	985	A
1	AA	1007	A
1	AA	1011	C
1	AA	1018	A
1	AA	1019	U
1	AA	1020	A
1	AA	1036	C
1	AA	1038	A
1	AA	1040	A
1	AA	1041	A
1	AA	1043	C
1	AA	1055	G
1	AA	1067	U

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Mol	Chain	Res	Type
1	AA	1068	G
1	AA	1072	C
1	AA	1092	A
1	AA	1098	C
1	AA	1108	A
1	AA	1112	C
1	AA	1113	U
1	AA	1114	U
1	AA	1116	G
1	AA	1125	G
1	AA	1129	A
1	AA	1154	A
1	AA	1166	G
1	AA	1171	G
1	AA	1173	A
1	AA	1174	C
1	AA	1175	C
1	AA	1176	A
1	AA	1179	A
1	AA	1180	U
1	AA	1181	G
1	AA	1184	G
1	AA	1187	G
1	AA	1201	A
1	AA	1202	U
1	AA	1208	U
1	AA	1210	A
1	AA	1211	A
1	AA	1212	C
1	AA	1213	A
1	AA	1214	C
1	AA	1215	G
1	AA	1216	G
1	AA	1217	G
1	AA	1219	A
1	AA	1221	A
1	AA	1229	G
1	AA	1234	A
1	AA	1235	G
1	AA	1242	U
1	AA	1243	A
1	AA	1244	A

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Mol	Chain	Res	Type
1	AA	1245	G
1	AA	1246	G
1	AA	1247	A
1	AA	1248	U
1	AA	1257	U
1	AA	1260	G
1	AA	1261	A
1	AA	1262	G
1	AA	1263	C
1	AA	1268	U
1	AA	1273	A
1	AA	1274	U
1	AA	1275	U
1	AA	1277	U
1	AA	1293	U
1	AA	1301	C
1	AA	1303	U
1	AA	1304	A
1	AA	1324	U
1	AA	1331	U
1	AA	1332	U
1	AA	1335	G
1	AA	1336	A
1	AA	1338	A
1	AA	1353	A
1	AA	1355	C
1	AA	1356	C
1	AA	1357	U
1	AA	1358	G
1	AA	1359	C
1	AA	1360	U
1	AA	1362	A
1	AA	1364	U
1	AA	1371	A
1	AA	1372	U
1	AA	1376	C
1	AA	1380	U
1	AA	1381	U
1	AA	1383	G
1	AA	1384	G
1	AA	1387	G
1	AA	1391	A

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Mol	Chain	Res	Type
1	AA	1393	U
1	AA	1396	C
1	AA	1398	U
1	AA	1399	C
1	AA	1402	A
1	AA	1405	G
1	AA	1408	A
1	AA	1410	U
1	AA	1413	U
1	AA	1416	C
1	AA	1418	U
1	AA	1419	A
1	AA	1422	G
1	AA	1430	A
1	AA	1432	G
1	AA	1433	U
1	AA	1435	U
1	AA	1447	A
1	AA	1448	G
1	AA	1451	C
1	AA	1452	U
1	AA	1455	G
1	AA	1456	A
1	AA	1466	A
1	AA	1468	G
1	AA	1479	C
1	AA	1489	A
1	AA	1491	A
1	AA	1493	U
1	AA	1494	G
1	AA	1498	G
1	AA	1499	A
1	AA	1502	C
1	AA	1509	U
1	AA	1510	U
1	AA	1535	C
1	AA	1537	U
1	AA	1542	C
1	AA	1543	G
1	AA	1545	A
1	AA	1547	G
1	AA	1557	A

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Mol	Chain	Res	Type
1	AA	1558	U
1	AA	1559	C
1	AA	1561	U
1	AA	1562	G
1	AA	1563	U
1	AA	1564	U
1	AA	1565	A
1	AA	1568	C
1	AA	1576	U
1	AA	1577	G
1	AA	1578	C
1	AA	1581	G
1	AA	1590	C
1	AA	1591	A
1	AA	1594	G
1	AA	1596	A
1	AA	1597	A
1	AA	1598	U
1	AA	1600	A
1	AA	1601	U
1	AA	1607	U
1	AA	1608	U
1	AA	1609	C
1	AA	1611	A
1	AA	1614	A
1	AA	1615	G
1	AA	1624	A
1	AA	1625	G
1	AA	1642	G
1	AA	1657	G
1	AA	1660	C
1	AA	1662	U
1	AA	1686	G
1	AA	1698	U
1	AA	1699	G
1	AA	1700	A
1	AA	1701	A
1	AA	1702	U
1	AA	1704	G
1	AA	1720	G
1	AA	1722	A
1	AA	1723	U

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Mol	Chain	Res	Type
1	AA	1724	U
1	AA	1725	G
1	AA	1726	G
1	AA	1755	U
1	AA	1757	G
1	AA	1759	C
1	AA	1760	G
1	AA	1763	A
1	AA	1797	A
1	AA	1799	G
1	AA	1803	U
1	AA	1808	A
1	AA	1809	G
1	AA	1811	U
1	AA	1822	G
1	AA	1825	C
1	AA	1834	G
1	AA	1835	G
1	AA	1836	A
1	AA	1838	C
1	AA	1841	U
1	AA	1842	A
35	B2	14	U
35	B2	26	A
35	B2	40	A
35	B2	43	A
35	B2	49	A
35	B2	60	A
35	B2	65	A
35	B2	66	A
35	B2	77	A
35	B2	92	G
35	B2	109	A
35	B2	110	G
35	B2	111	C
35	B2	116	A
35	B2	118	U
35	B2	121	A
35	B2	122	A
35	B2	162	A
35	B2	163	A
35	B2	167	G

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Mol	Chain	Res	Type
35	B2	169	U
35	B2	170	G
35	B2	172	U
35	B2	174	U
35	B2	175	G
35	B2	176	A
35	B2	180	U
35	B2	183	A
35	B2	184	C
35	B2	185	G
35	B2	187	U
35	B2	188	C
35	B2	189	G
35	B2	190	G
35	B2	191	U
35	B2	192	C
35	B2	193	U
35	B2	194	A
35	B2	197	U
35	B2	198	U
35	B2	207	C
35	B2	213	G
35	B2	217	G
35	B2	220	A
35	B2	225	G
35	B2	226	A
35	B2	239	U
35	B2	241	G
35	B2	242	U
35	B2	247	U
35	B2	248	G
35	B2	249	G
35	B2	250	A
35	B2	252	A
35	B2	254	G
35	B2	255	C
35	B2	256	C
35	B2	257	A
35	B2	258	U
35	B2	259	A
35	B2	260	U
35	B2	269	U

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Mol	Chain	Res	Type
35	B2	277	G
35	B2	291	G
35	B2	292	A
35	B2	303	A
35	B2	313	U
35	B2	331	A
35	B2	337	U
35	B2	347	C
35	B2	359	A
35	B2	360	A
35	B2	383	A
35	B2	384	G
35	B2	399	A
35	B2	406	U
35	B2	411	C
35	B2	429	G
35	B2	430	A
35	B2	446	U
35	B2	447	C
35	B2	449	U
35	B2	450	A
35	B2	452	C
35	B2	461	A
35	B2	462	U
35	B2	466	U
35	B2	486	G
35	B2	491	C
35	B2	501	G
35	B2	502	G
35	B2	503	U
35	B2	504	A
35	B2	505	G
35	B2	514	C
35	B2	532	A
35	B2	540	A
35	B2	541	G
35	B2	545	A
35	B2	546	G
35	B2	547	G
35	B2	548	U
35	B2	549	G
35	B2	553	U

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Mol	Chain	Res	Type
35	B2	571	G
35	B2	572	A
35	B2	573	G
35	B2	575	G
35	B2	578	U
35	B2	579	A
35	B2	580	U
35	B2	581	A
35	B2	587	U
35	B2	589	U
35	B2	590	U
35	B2	591	G
35	B2	593	A
35	B2	594	A
35	B2	595	U
35	B2	602	A
35	B2	603	C
35	B2	606	G
35	B2	613	A
35	B2	624	U
35	B2	625	U
35	B2	627	G
35	B2	628	U
35	B2	634	G
35	B2	636	A
35	B2	637	U
35	B2	645	U
35	B2	646	A
35	B2	662	C
35	B2	674	A
35	B2	685	A
35	B2	702	A
35	B2	706	U
35	B2	708	U
35	B2	714	A
35	B2	715	U
35	B2	716	G
35	B2	717	A
35	B2	719	A
35	B2	720	A
35	B2	732	A
35	B2	760	C

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Mol	Chain	Res	Type
35	B2	761	U
35	B2	762	U
35	B2	763	G
35	B2	764	U
35	B2	765	G
35	B2	766	G
35	B2	769	U
35	B2	770	G
35	B2	786	C
35	B2	788	G
35	B2	806	G
35	B2	812	A
35	B2	813	G
35	B2	817	G
35	B2	838	A
35	B2	849	A
35	B2	862	A
35	B2	889	G
35	B2	893	C
35	B2	906	U
35	B2	911	U
35	B2	928	A
35	B2	939	G
35	B2	940	G
35	B2	946	A
35	B2	948	G
35	B2	949	A
35	B2	953	A
35	B2	955	C
35	B2	957	A
35	B2	969	G
35	B2	976	C
35	B2	985	G
35	B2	991	C
35	B2	992	U
35	B2	993	C
35	B2	1009	C
35	B2	1010	A
35	B2	1011	G
35	B2	1012	A
35	B2	1033	G
35	B2	1034	A

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Mol	Chain	Res	Type
35	B2	1047	C
35	B2	1049	U
35	B2	1050	G
35	B2	1051	G
35	B2	1052	G
35	B2	1056	G
35	B2	1057	G
35	B2	1058	A
35	B2	1059	A
35	B2	1060	U
35	B2	1061	U
35	B2	1062	U
35	B2	1064	C
35	B2	1065	U
35	B2	1066	C
35	B2	1073	U
35	B2	1079	A
35	B2	1081	C
35	B2	1095	G
35	B2	1096	A
35	B2	1101	C
35	B2	1104	G
35	B2	1113	U
35	B2	1119	G
35	B2	1123	G
35	B2	1124	C
35	B2	1125	C
35	B2	1126	A
35	B2	1127	U
35	B2	1128	C
35	B2	1129	G
35	B2	1130	A
35	B2	1135	G
35	B2	1139	U
35	B2	1148	G
35	B2	1155	U
35	B2	1162	G
35	B2	1175	U
35	B2	1176	G
35	B2	1186	C
35	B2	1191	C
35	B2	1211	A

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Mol	Chain	Res	Type
35	B2	1212	U
35	B2	1222	U
35	B2	1227	C
35	B2	1232	G
35	B2	1239	U
35	B2	1240	G
35	B2	1245	U
35	B2	1251	U
35	B2	1252	A
35	B2	1260	G
35	B2	1262	A
35	B2	1263	C
35	B2	1264	G
35	B2	1266	U
35	B2	1267	G
35	B2	1270	C
35	B2	1272	U
35	B2	1273	G
35	B2	1276	A
35	B2	1277	G
35	B2	1279	C
35	B2	1287	G
35	B2	1293	G
35	B2	1294	A
35	B2	1295	G
35	B2	1297	G
35	B2	1300	U
35	B2	1301	A
35	B2	1305	A
35	B2	1310	C
35	B2	1313	G
35	B2	1314	C
35	B2	1316	G
35	B2	1317	A
35	B2	1318	A
35	B2	1319	U
35	B2	1333	A
35	B2	1334	A
35	B2	1338	G
35	B2	1340	U
35	B2	1347	U
35	B2	1361	A

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Mol	Chain	Res	Type
35	B2	1379	U
35	B2	1380	A
35	B2	1388	G
35	B2	1389	A
35	B2	1420	U
35	B2	1426	G
35	B2	1433	U
35	B2	1451	G
35	B2	1452	A
35	B2	1453	A
35	B2	1468	G
35	B2	1471	C
35	B2	1515	A
35	B2	1521	G
35	B2	1522	G
35	B2	1530	C
35	B2	1542	C
35	B2	1557	U
35	B2	1588	A
35	B2	1589	U
35	B2	1590	G
35	B2	1593	A
35	B2	1594	G
35	B2	1595	U
35	B2	1596	U
35	B2	1600	C
35	B2	1602	A
35	B2	1604	U
35	B2	1606	U
35	B2	1607	U
35	B2	1608	C
35	B2	1609	G
35	B2	1612	C
35	B2	1613	C
35	B2	1614	U
35	B2	1615	C
35	B2	1616	C
35	B2	1624	A
35	B2	1628	A
35	B2	1640	A
35	B2	1656	G
35	B2	1657	U

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Mol	Chain	Res	Type
35	B2	1664	A
35	B2	1665	A
35	B2	1666	C
35	B2	1672	A
35	B2	1674	C
35	B2	1677	A
35	B2	1678	A
35	B2	1679	A
35	B2	1680	U
35	B2	1682	A
35	B2	1692	C
35	B2	1729	U
35	B2	1740	U
35	B2	1741	U
35	B2	1742	G
35	B2	1744	A
35	B2	1745	C
35	B2	1755	A
35	B2	1756	U
35	B2	1764	U
35	B2	1783	G
35	B2	1790	A
35	B2	1791	G
35	B2	1800	G
35	B2	1806	U
35	B2	1807	G
35	B2	1811	A
35	B2	1816	G
35	B2	1821	G
35	B2	1837	G
35	B2	1838	A
35	B2	1853	A
35	B2	1854	A
35	B2	1855	U
35	B2	1856	G
35	B2	1857	G
35	B2	1869	C
35	B2	1870	U
35	B2	1871	U
35	B2	1875	U
35	B2	1876	U
35	B2	1894	A

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Mol	Chain	Res	Type
35	B2	1897	A
35	B2	1901	C
35	B2	1904	C
35	B2	1905	A
35	B2	1921	C
35	B2	1933	G
35	B2	1934	A
35	B2	1935	U
35	B2	1941	A
35	B2	1948	A
35	B2	1961	G
35	B2	2005	U
35	B2	2007	G
35	B2	2182	C
35	B2	2183	A
35	B2	2185	C
35	B2	2188	A
35	B2	2190	U
35	B2	2200	U
35	B2	2201	A
35	B2	2209	G
35	B2	2210	G
35	B2	2219	A
35	B2	2228	U
35	B2	2232	A
35	B2	2246	A
35	B2	2247	U
35	B2	2257	G
35	B2	2285	C
35	B2	2293	U
35	B2	2294	G
35	B2	2295	A
35	B2	2297	U
35	B2	2298	G
35	B2	2300	C
35	B2	2301	A
35	B2	2307	A
35	B2	2308	A
35	B2	2310	A
35	B2	2311	A
35	B2	2316	A
35	B2	2320	A

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Mol	Chain	Res	Type
35	B2	2321	A
35	B2	2322	G
35	B2	2324	G
35	B2	2328	G
35	B2	2329	U
35	B2	2331	A
35	B2	2332	A
35	B2	2337	G
35	B2	2343	A
35	B2	2344	A
35	B2	2345	C
35	B2	2346	U
35	B2	2347	A
35	B2	2350	A
35	B2	2351	C
35	B2	2353	C
35	B2	2358	A
35	B2	2360	G
35	B2	2361	G
35	B2	2362	U
35	B2	2363	A
35	B2	2369	A
35	B2	2376	G
35	B2	2386	U
35	B2	2395	G
35	B2	2396	C
35	B2	2398	U
35	B2	2401	A
35	B2	2403	G
35	B2	2422	U
35	B2	2423	G
35	B2	2424	U
35	B2	2461	A
35	B2	2462	C
35	B2	2463	G
35	B2	2481	G
35	B2	2482	G
35	B2	2485	A
35	B2	2489	A
35	B2	2490	A
35	B2	2491	G
35	B2	2492	A

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Mol	Chain	Res	Type
35	B2	2499	U
35	B2	2523	G
35	B2	2529	A
35	B2	2530	G
35	B2	2601	U
35	B2	2603	C
35	B2	2606	U
35	B2	2607	A
35	B2	2610	U
35	B2	2611	A
35	B2	2619	A
35	B2	2620	A
35	B2	2622	C
35	B2	2627	U
35	B2	2628	U
35	B2	2629	G
35	B2	2631	G
35	B2	2632	A
35	B2	2634	U
35	B2	2635	U
35	B2	2636	A
35	B2	2638	U
35	B2	2644	U
35	B2	2645	A
35	B2	2649	U
35	B2	2656	A
35	B2	2660	U
35	B2	2661	U
35	B2	2662	U
35	B2	2663	C
35	B2	2664	U
35	B2	2665	U
35	B2	2666	C
35	B2	2667	G
35	B2	2668	C
35	B2	2669	G
35	B2	2680	C
35	B2	2681	G
35	B2	2688	A
35	B2	2701	G
35	B2	2702	G
35	B2	2709	G

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Mol	Chain	Res	Type
35	B2	2721	A
35	B2	2730	A
35	B2	2731	A
35	B2	2743	G
35	B2	2747	U
35	B2	2751	A
35	B2	2752	A
35	B2	2769	A
35	B2	2770	C
35	B2	2771	A
35	B2	2772	G
35	B2	2773	A
35	B2	2774	A
35	B2	2775	A
35	B2	2776	U
35	B2	2784	A
35	B2	2786	A
35	B2	2789	A
35	B2	2799	A
35	B2	2809	G
35	B2	2822	A
35	B2	2823	G
35	B2	2824	U
35	B2	2840	G
35	B2	2848	G
35	B2	2850	C
35	B2	2868	C
35	B2	2872	G
35	B2	2873	A
35	B2	2891	G
35	B2	2895	G
35	B2	2896	A
35	B2	2898	A
35	B2	2905	C
35	B2	2909	G
35	B2	2912	A
35	B2	2913	U
35	B2	2918	G
35	B2	2932	A
35	B2	2933	A
35	B2	2934	G
35	B2	2937	U

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Mol	Chain	Res	Type
35	B2	2938	U
35	B2	2940	A
35	B2	2942	A
35	B2	2955	U
35	B2	2957	U
35	B2	2962	C
35	B2	2966	G
35	B2	2967	A
35	B2	2982	A
35	B2	2983	U
35	B2	2984	C
35	B2	2992	A
35	B2	2993	G
35	B2	2994	C
35	B2	2996	G
35	B2	3001	C
35	B2	3002	G
35	B2	3003	G
35	B2	3018	U
35	B2	3030	U
35	B2	3031	A
35	B2	3036	A
35	B2	3040	G
35	B2	3042	G
35	B2	3046	G
35	B2	3050	U
35	B2	3051	A
35	B2	3066	A
35	B2	3067	G
35	B2	3078	C
35	B2	3085	G
35	B2	3093	G
35	B2	3108	A
35	B2	3117	A
35	B2	3119	U
35	B2	3155	G
35	B2	3174	A
35	B2	3175	U
35	B2	3176	G
35	B2	3182	G
35	B2	3188	U
35	B2	3189	C

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Mol	Chain	Res	Type
35	B2	3195	C
35	B2	3197	G
35	B2	3200	U
35	B2	3212	G
35	B2	3216	C
35	B2	3218	A
35	B2	3226	A
35	B2	3227	U
35	B2	3238	A
35	B2	3239	A
35	B2	3248	U
35	B2	3249	U
35	B2	3250	U
35	B2	3251	U
35	B2	3254	G
35	B2	3260	A
35	B2	3261	U
35	B2	3266	U
35	B2	3268	U
35	B2	3273	A
35	B2	3275	A
35	B2	3276	A
35	B2	3281	A
35	B2	3282	G
35	B2	3283	A
35	B2	3284	G
35	B2	3285	G
35	B2	3288	G
35	B2	3289	G
35	B2	3290	A
35	B2	3291	C
35	B2	3293	U
35	B2	3295	U
35	B2	3296	U
35	B2	3297	C
35	B2	3298	C
35	B2	3299	U
35	B2	3300	A
35	B2	3301	C
35	B2	3302	U
35	B2	3305	C
35	B2	3306	C

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Mol	Chain	Res	Type
35	B2	3307	U
35	B2	3308	G
35	B2	3310	A
35	B2	3317	A
35	B2	3318	A
35	B2	3319	G
35	B2	3321	U
35	B2	3322	G
35	B2	3327	A
35	B2	3328	U
35	B2	3329	G
35	B2	3338	A
35	B2	3343	A
35	B2	3345	G
35	B2	3347	G
35	B2	3352	A
35	B2	3359	U
35	B2	3360	G
35	B2	3363	C
35	B2	3371	U
35	B2	3372	C
35	B2	3373	C
35	B2	3374	A
35	B2	3375	U
35	B2	3376	U
35	B2	3385	G
35	B2	3386	U
35	B2	3387	G
35	B2	3388	C
35	B2	3390	G
35	B2	3392	A
35	B2	3393	U
35	B2	3394	C
35	B2	3395	G
35	B2	3404	G
35	B2	3405	C
35	B2	3418	U
35	B2	3419	G
35	B2	3420	U
35	B2	3435	U
35	B2	3436	A
35	B2	3442	U

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Mol	Chain	Res	Type
35	B2	3443	A
35	B2	3446	G
35	B2	3449	G
35	B2	3450	C
35	B2	3451	C
35	B2	3453	U
35	B2	3455	U
35	B2	3456	U
35	B2	3457	G
35	B2	3476	A
35	B2	3479	C
35	B2	3483	U
35	B2	3491	A
36	B3	12	U
36	B3	13	A
36	B3	22	A
36	B3	31	G
36	B3	42	A
36	B3	44	C
36	B3	45	A
36	B3	47	U
36	B3	49	C
36	B3	50	A
36	B3	53	U
36	B3	54	A
36	B3	55	A
36	B3	63	A
36	B3	64	G
36	B3	71	G
36	B3	75	G
36	B3	100	A
36	B3	110	G
36	B3	113	G
36	B3	116	G
36	B3	118	C
36	B3	119	U
37	B4	31	U
37	B4	42	U
37	B4	43	C
37	B4	46	U
37	B4	47	G
37	B4	56	A

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Mol	Chain	Res	Type
37	B4	60	A
37	B4	67	A
37	B4	70	C
37	B4	71	G
37	B4	85	A
37	B4	89	U
37	B4	90	U
37	B4	91	C
37	B4	92	C
37	B4	93	G
37	B4	95	G
37	B4	98	U
37	B4	103	G
37	B4	112	A
37	B4	114	C
37	B4	119	A
37	B4	121	U
37	B4	124	G
37	B4	133	U
37	B4	134	U
37	B4	135	C
37	B4	136	U
37	B4	164	U
37	B4	165	U
77	Sm	9	G
77	Sm	20	G
77	Sm	21	U
77	Sm	22	A
77	Sm	31	G
77	Sm	32	G
77	Sm	33	C
77	Sm	34	U
77	Sm	35	C
77	Sm	41	C
77	Sm	42	C
77	Sm	45	A
77	Sm	48	U
77	Sm	49	C
77	Sm	60	A
77	Sm	62	C
77	Sm	76	C
78	Sn	2	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
78	Sn	16	U
78	Sn	19	G
78	Sn	20	A
78	Sn	29	G
78	Sn	35	A
78	Sn	36	U
78	Sn	39	C
78	Sn	40	C
78	Sn	42	U
78	Sn	46	G
78	Sn	47	U
78	Sn	48	C
78	Sn	49	C
78	Sn	59	A
78	Sn	61	C
78	Sn	63	G
78	Sn	64	A
78	Sn	69	C
78	Sn	73	A
78	Sn	74	C
78	Sn	75	C
78	Sn	76	A
79	S3	28	A
79	S3	30	U
79	S3	32	U
79	S3	33	C
79	S3	35	U
79	S3	36	U

All (44) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	AA	104	A
1	AA	140	C
1	AA	142	U
1	AA	275	U
1	AA	558	A
1	AA	561	U
1	AA	704	C
1	AA	768	A
1	AA	1113	U
1	AA	1361	A

Continued on next page...

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Mol	Chain	Res	Type
1	AA	1375	G
1	AA	1383	G
1	AA	1501	C
1	AA	1661	C
1	AA	1699	G
35	B2	188	C
35	B2	290	G
35	B2	382	A
35	B2	572	A
35	B2	719	A
35	B2	948	G
35	B2	1094	A
35	B2	1103	U
35	B2	1244	G
35	B2	1269	C
35	B2	1272	U
35	B2	1608	C
35	B2	1612	C
35	B2	1665	A
35	B2	1854	A
35	B2	2200	U
35	B2	2661	U
35	B2	2867	C
35	B2	2993	G
35	B2	3001	C
35	B2	3217	U
35	B2	3260	A
35	B2	3298	C
35	B2	3328	U
35	B2	3373	C
35	B2	3418	U
36	B3	12	U
37	B4	88	A
79	S3	35	U

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 6 ligands modelled in this entry, 6 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	AA	7
77	Sm	2
35	B2	1
22	Aa	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	B2	2363:A	O3'	2364:G	P	6.70
1	Sm	17:C	O3'	18(A):U	P	4.09
1	Sm	18(A):U	O3'	19:G	P	4.09
1	AA	1419:A	O3'	1420:A	P	3.63
1	AA	1498:G	O3'	1499:A	P	3.41
1	AA	546:C	O3'	547:A	P	3.40
1	AA	1574:C	O3'	1575:G	P	3.31
1	Aa	116:ILE	C	123:ALA	N	3.26
1	AA	1605:U	O3'	1606:C	P	3.24

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	AA	1359:C	O3'	1360:U	P	3.23
1	AA	1483:C	O3'	1484:G	P	3.16

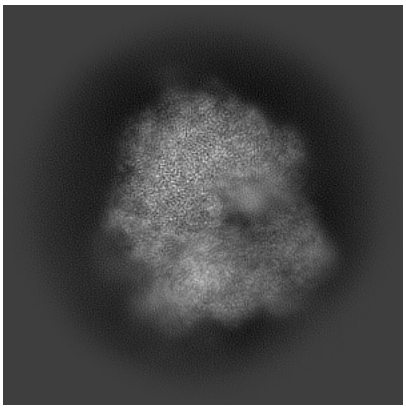
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-43976. These allow visual inspection of the internal detail of the map and identification of artifacts.

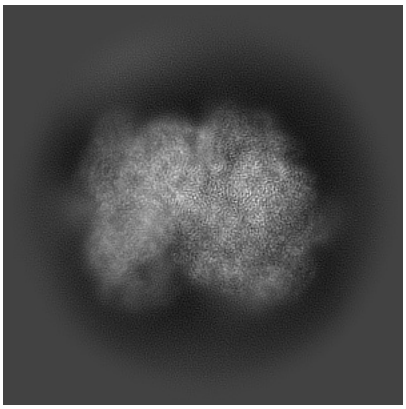
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

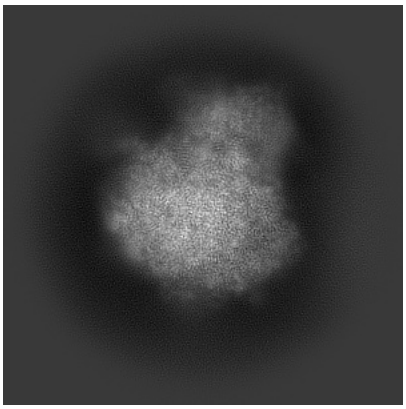
6.1.1 Primary map



X

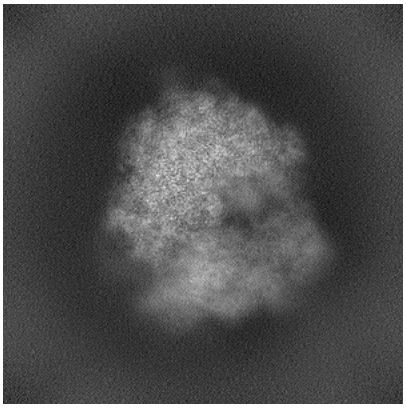


Y

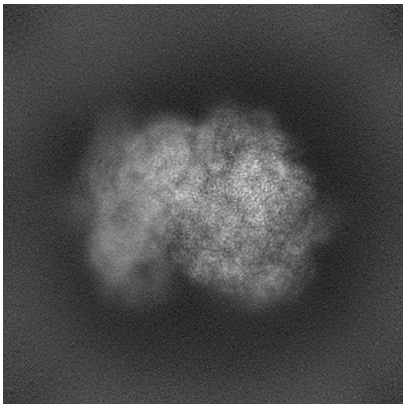


Z

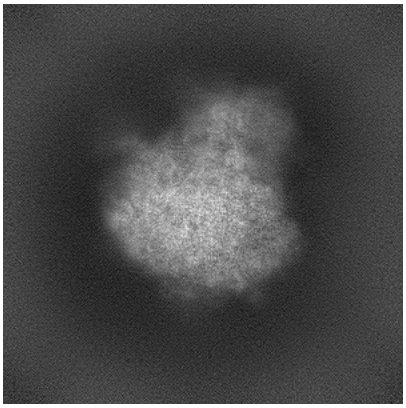
6.1.2 Raw map



X



Y

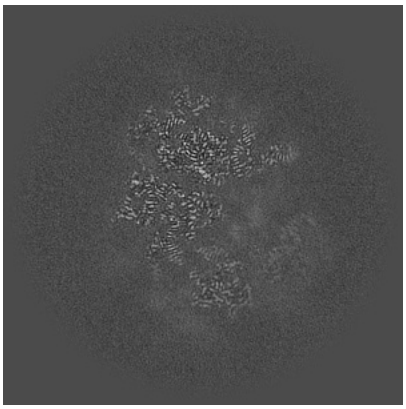


Z

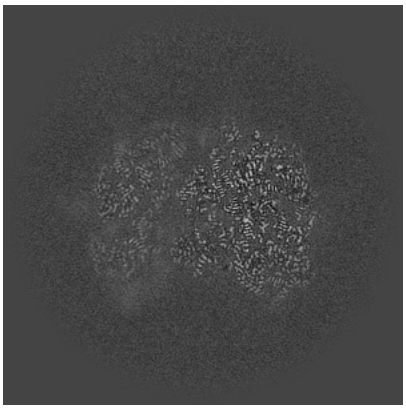
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

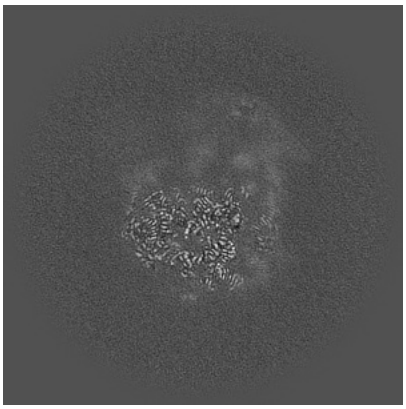
6.2.1 Primary map



X Index: 256

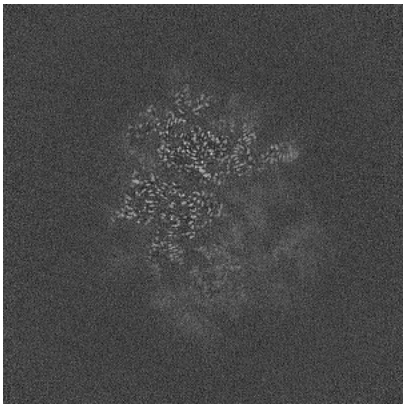


Y Index: 256

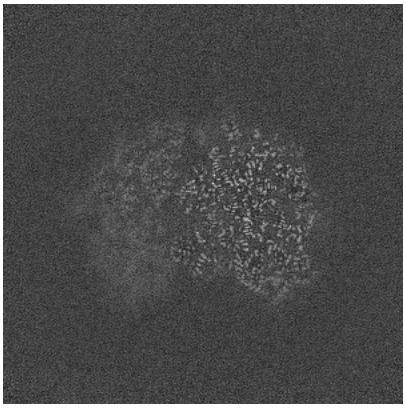


Z Index: 256

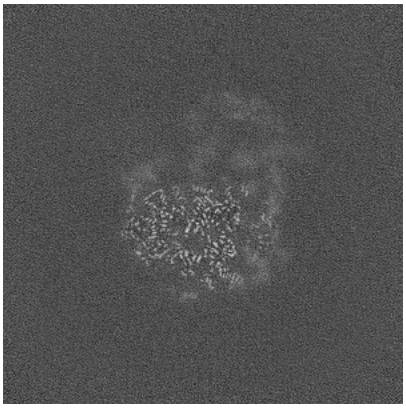
6.2.2 Raw map



X Index: 256



Y Index: 256

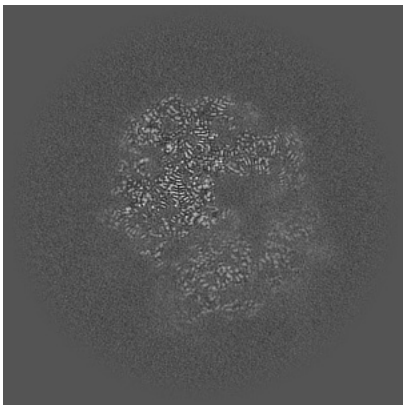


Z Index: 256

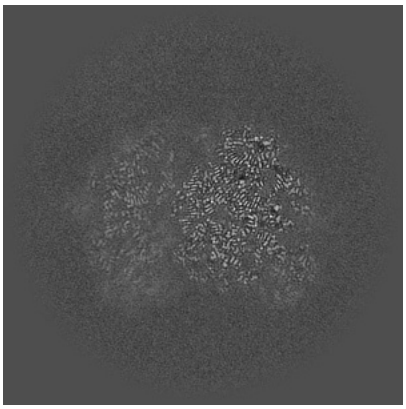
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

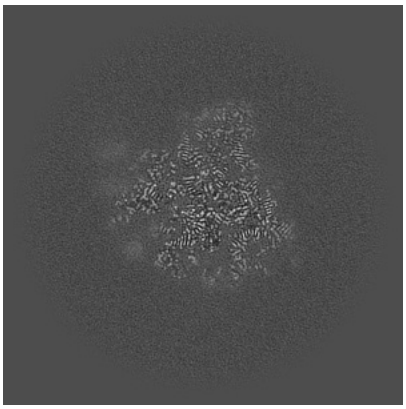
6.3.1 Primary map



X Index: 276

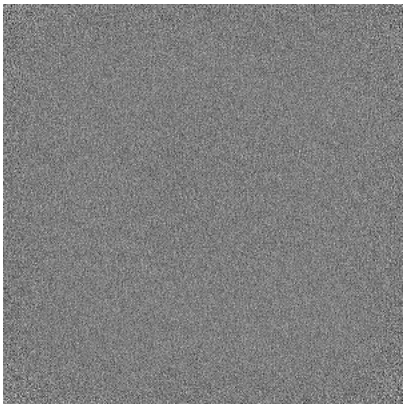


Y Index: 246

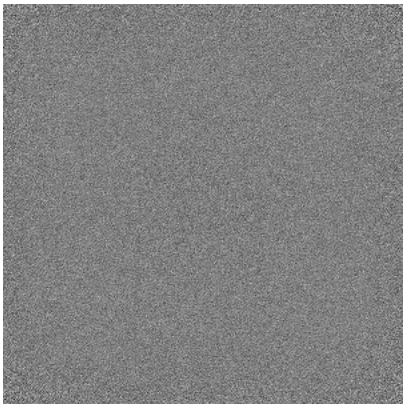


Z Index: 323

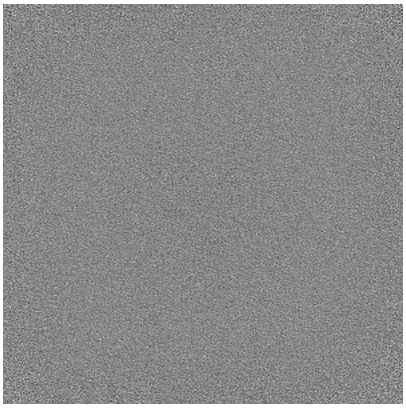
6.3.2 Raw map



X Index: 0



Y Index: 0

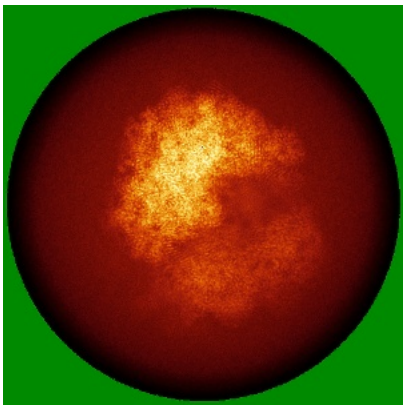


Z Index: 0

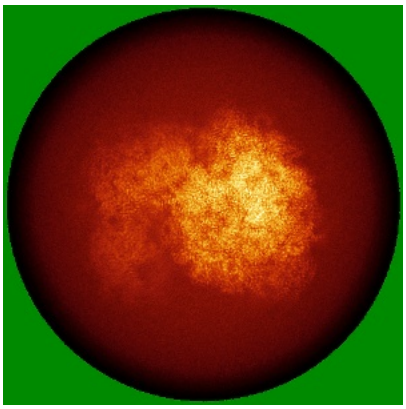
The images above show the largest variance slices of the map in three orthogonal directions.

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

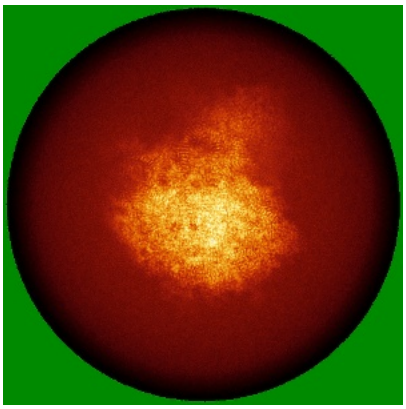
6.4.1 Primary map



X

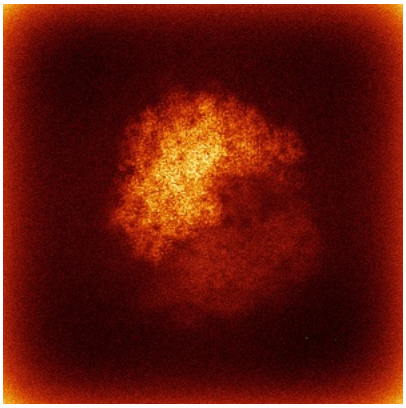


Y

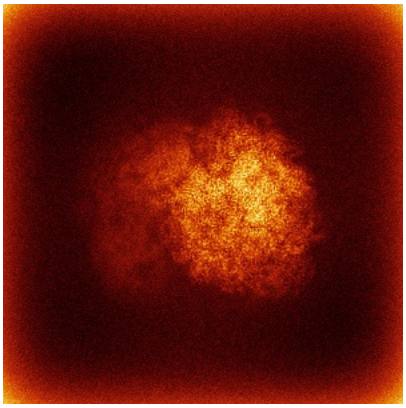


Z

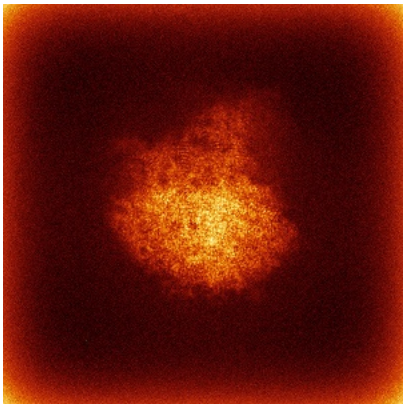
6.4.2 Raw map



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.

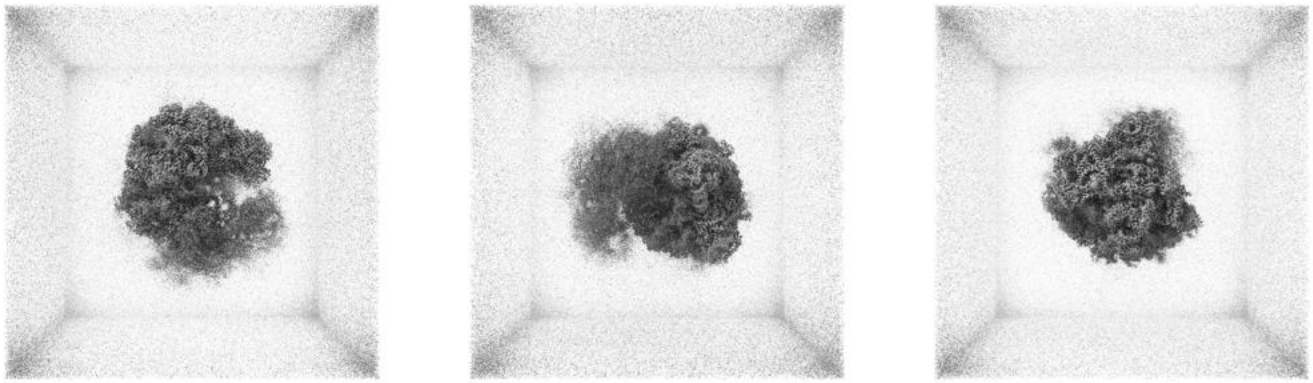
6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.27. 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



X Y Z

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.

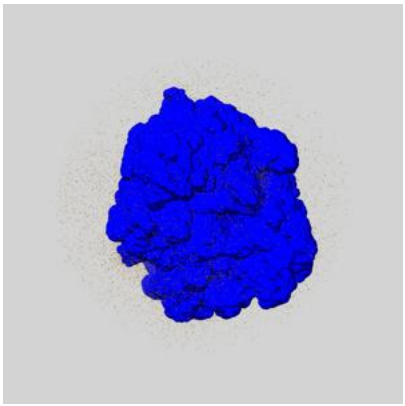
6.6 Mask visualisation

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

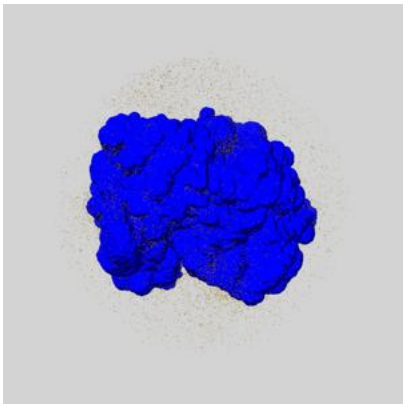
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

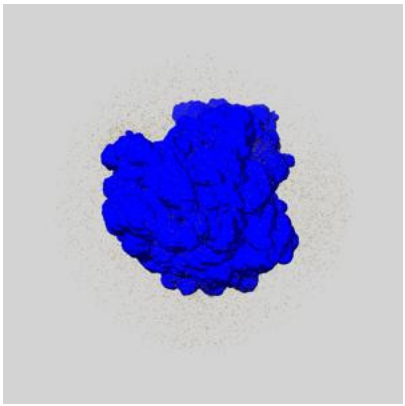
6.6.1 emd_43976_msk_1.map



X



Y

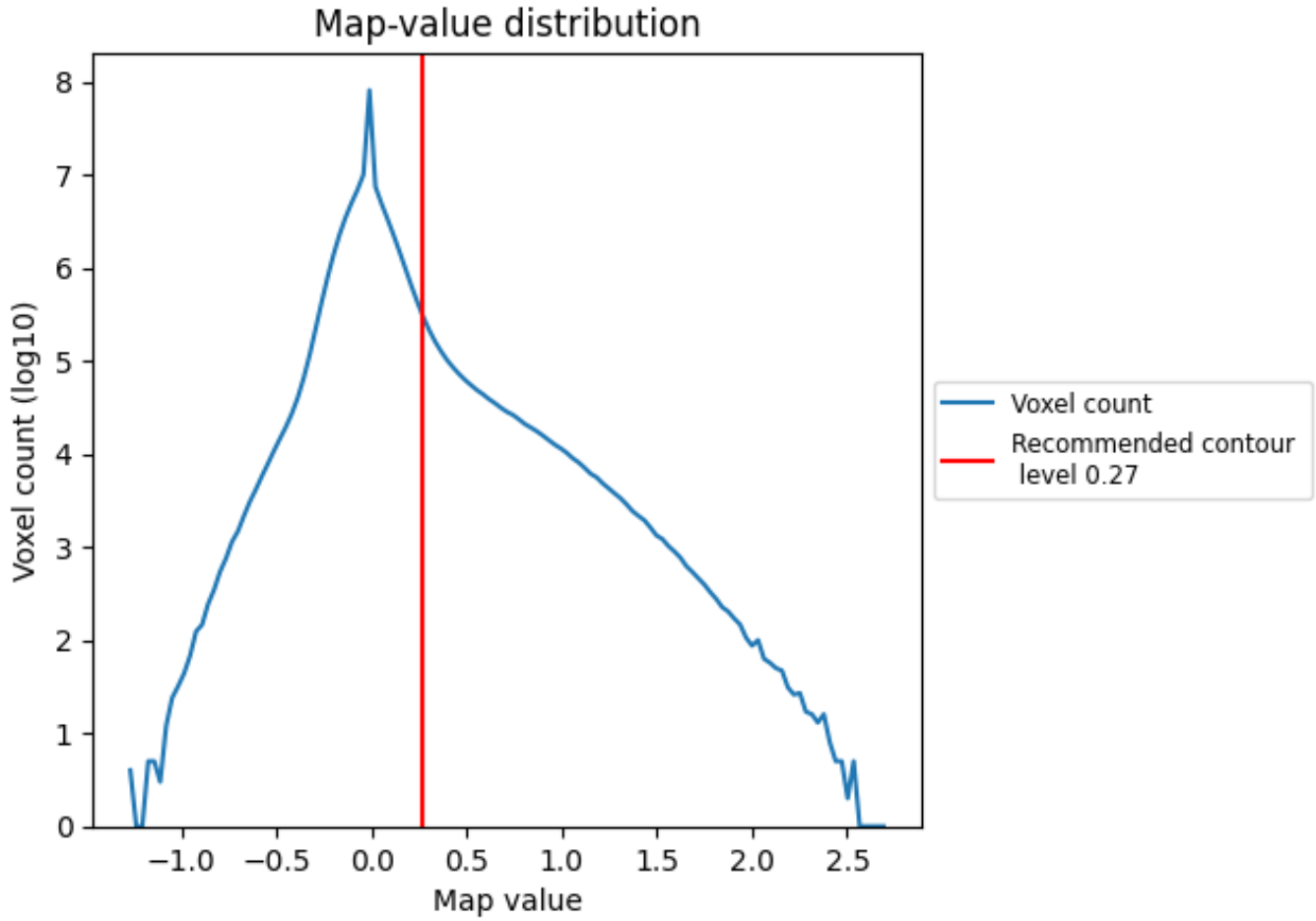


Z

7 Map analysis

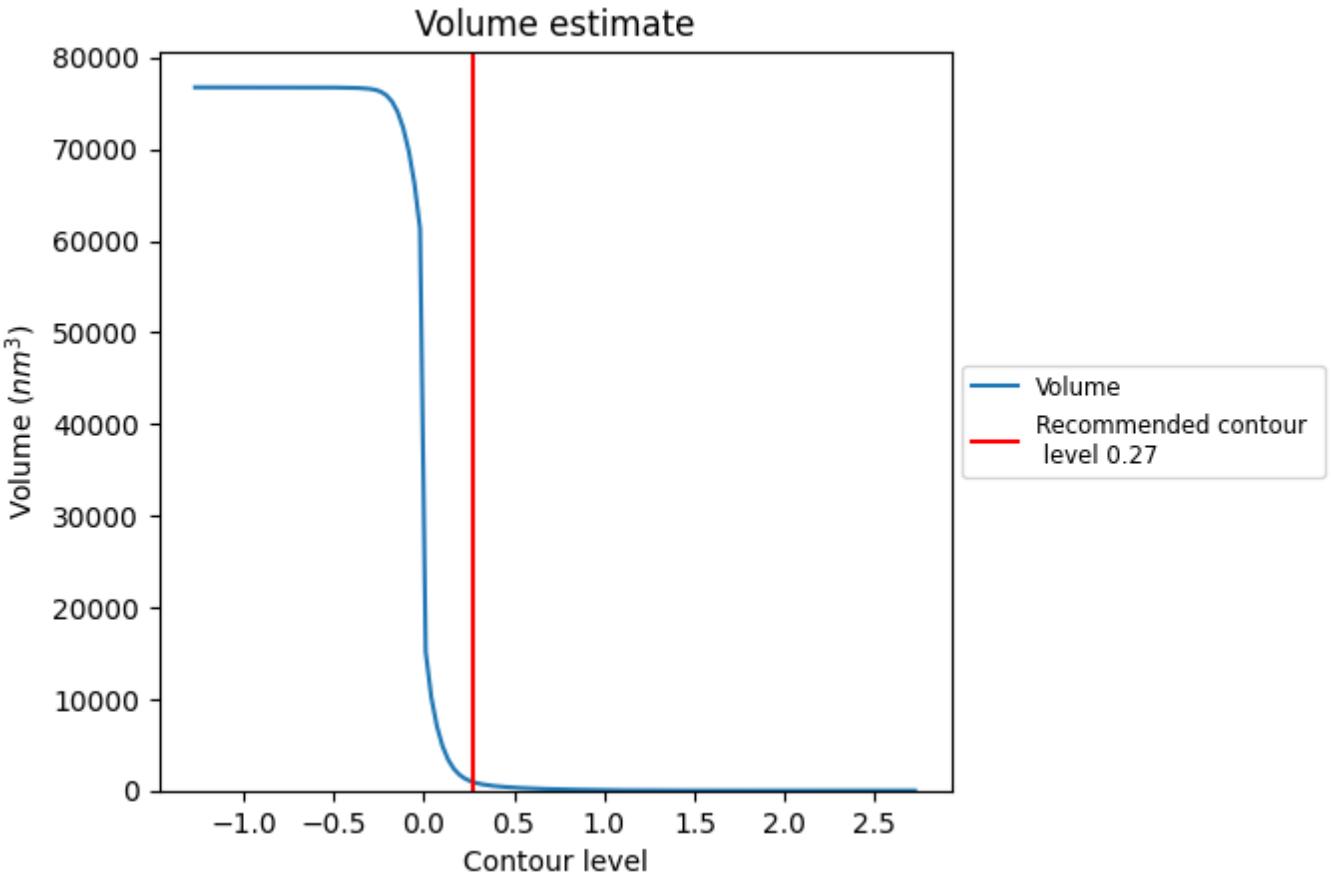
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

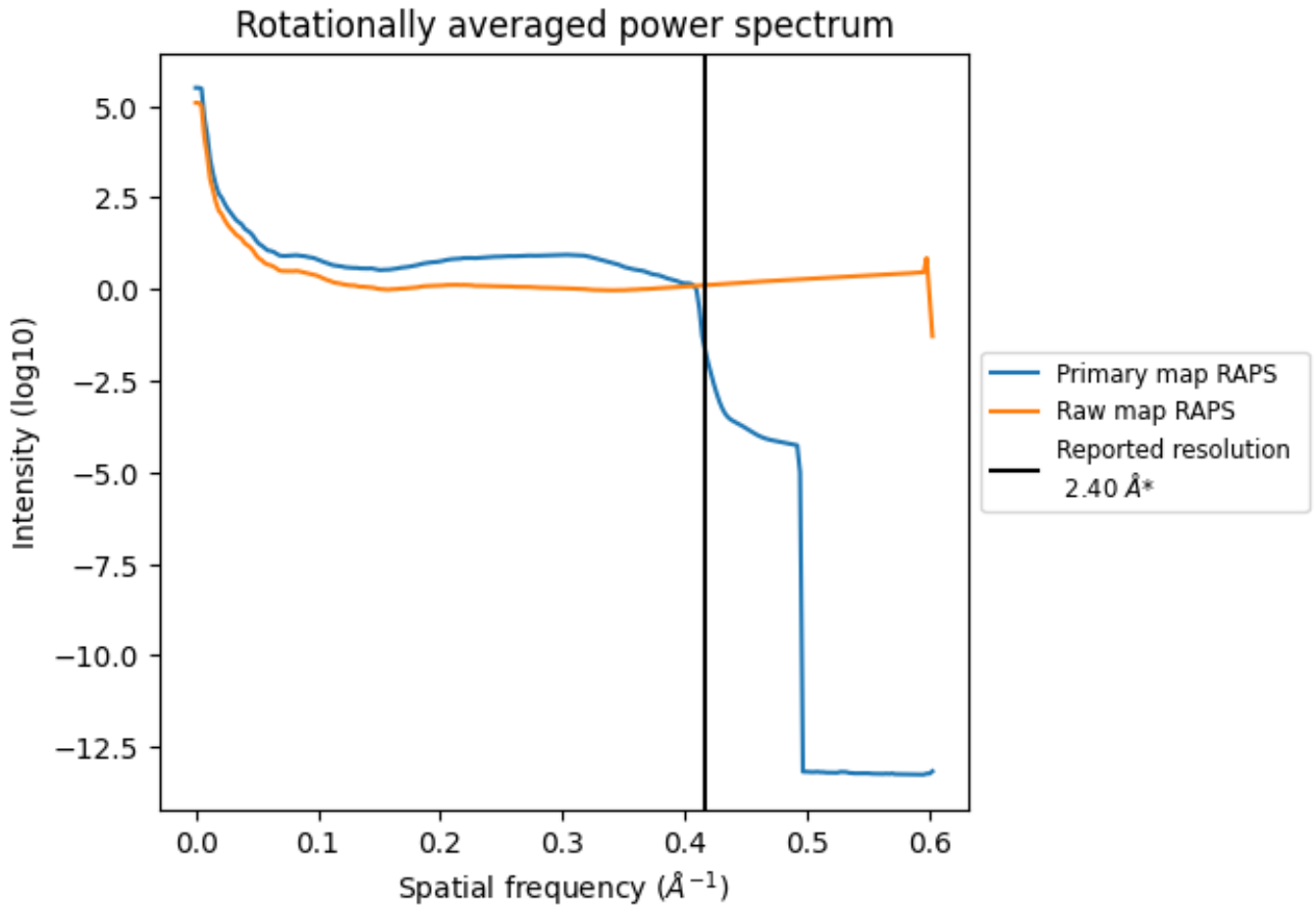
7.2 Volume estimate



The volume at the recommended contour level is 958 nm^3; this corresponds to an approximate mass of 866 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum (i)

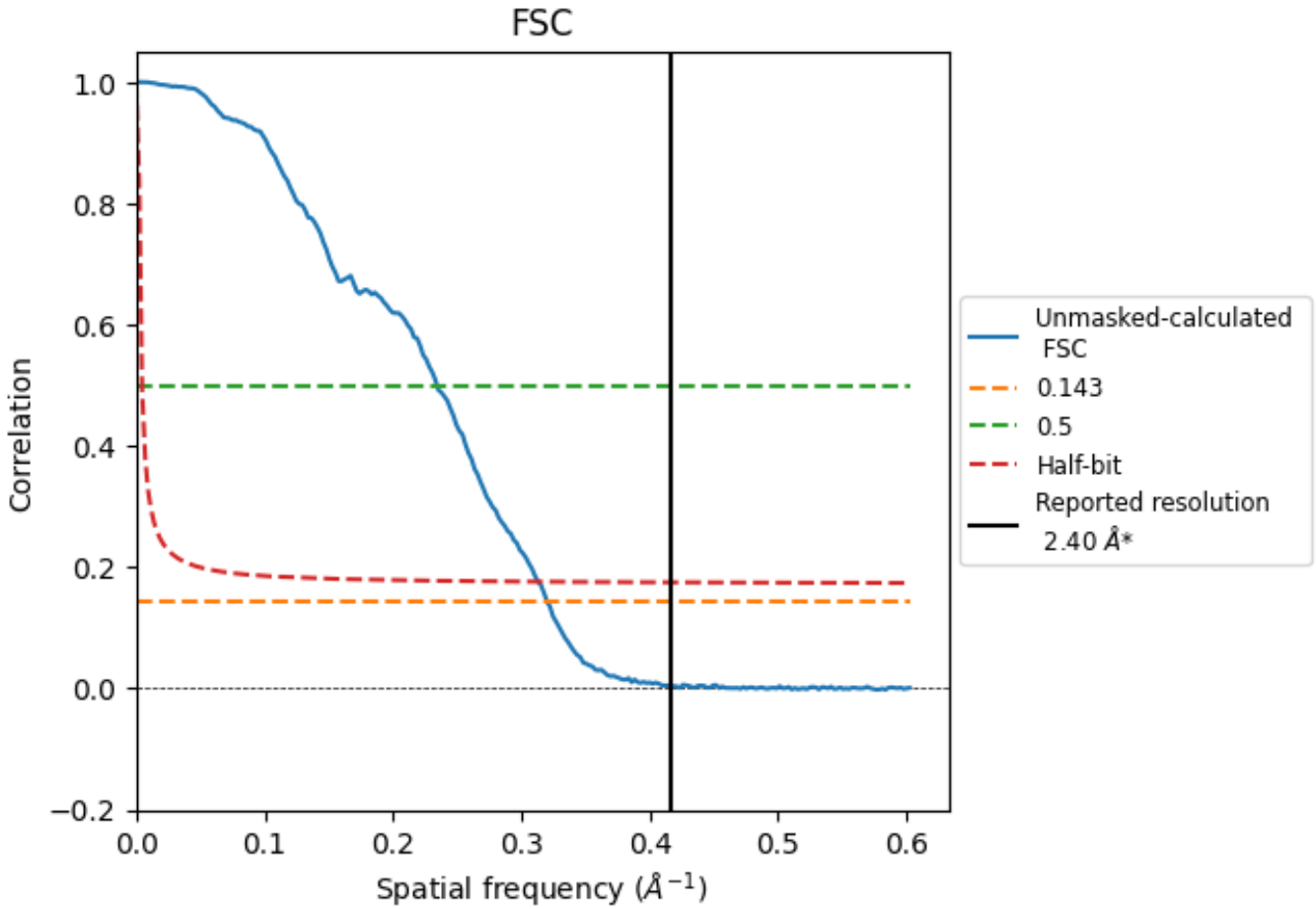


*Reported resolution corresponds to spatial frequency of 0.417 $Å^{-1}$

8 Fourier-Shell correlation

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



*Reported resolution corresponds to spatial frequency of 0.417 $Å^{-1}$

8.2 Resolution estimates (i)

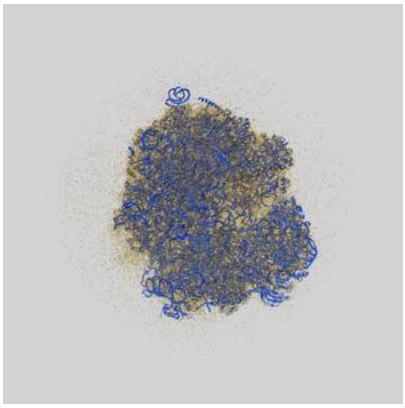
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.40	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.12	4.27	3.20

*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 3.12 differs from the reported value 2.4 by more than 10 %

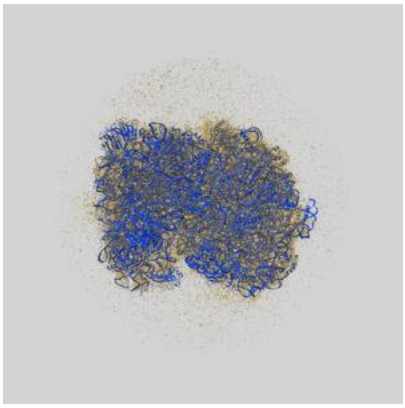
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-43976 and PDB model 9AXV. Per-residue inclusion information can be found in section 3 on page 19.

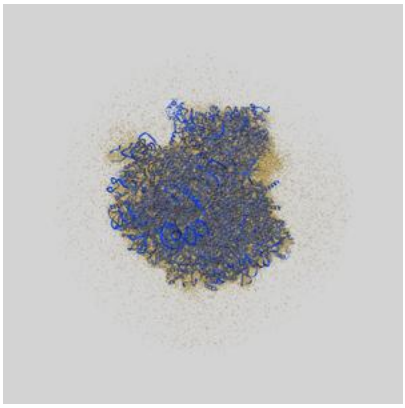
9.1 Map-model overlay



X



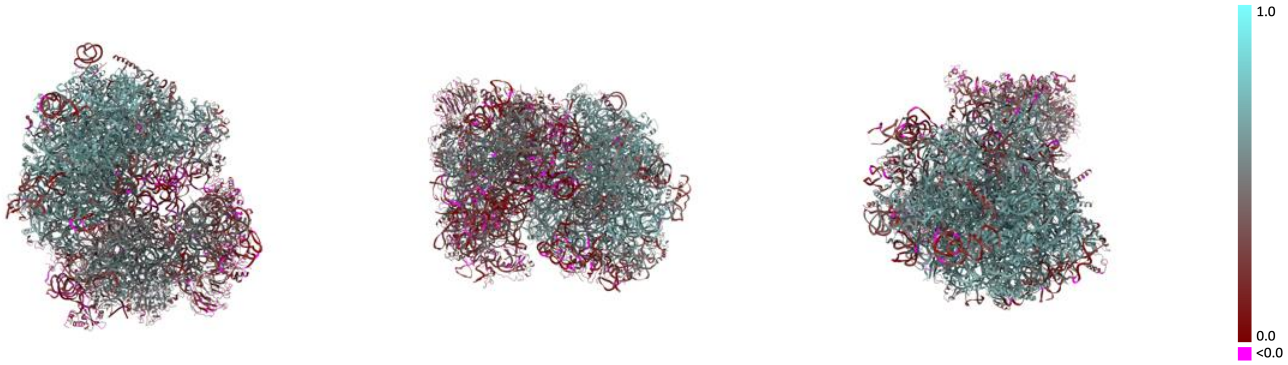
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.27 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.

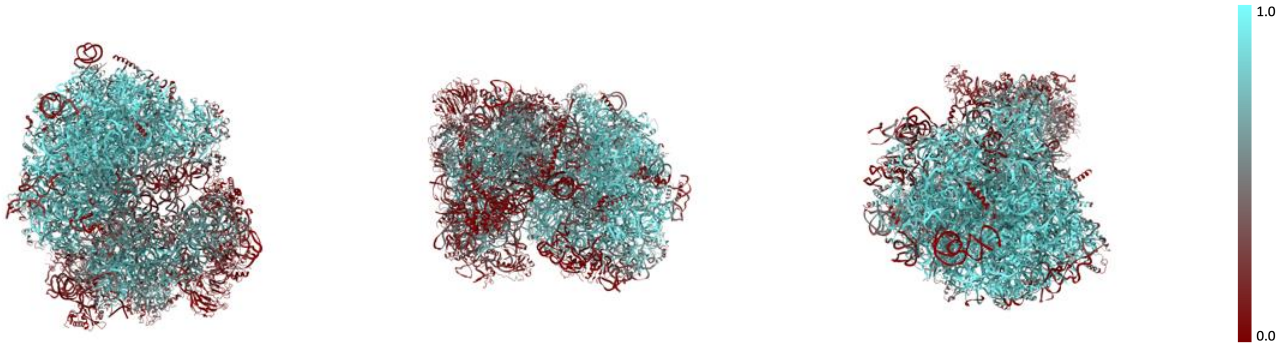
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

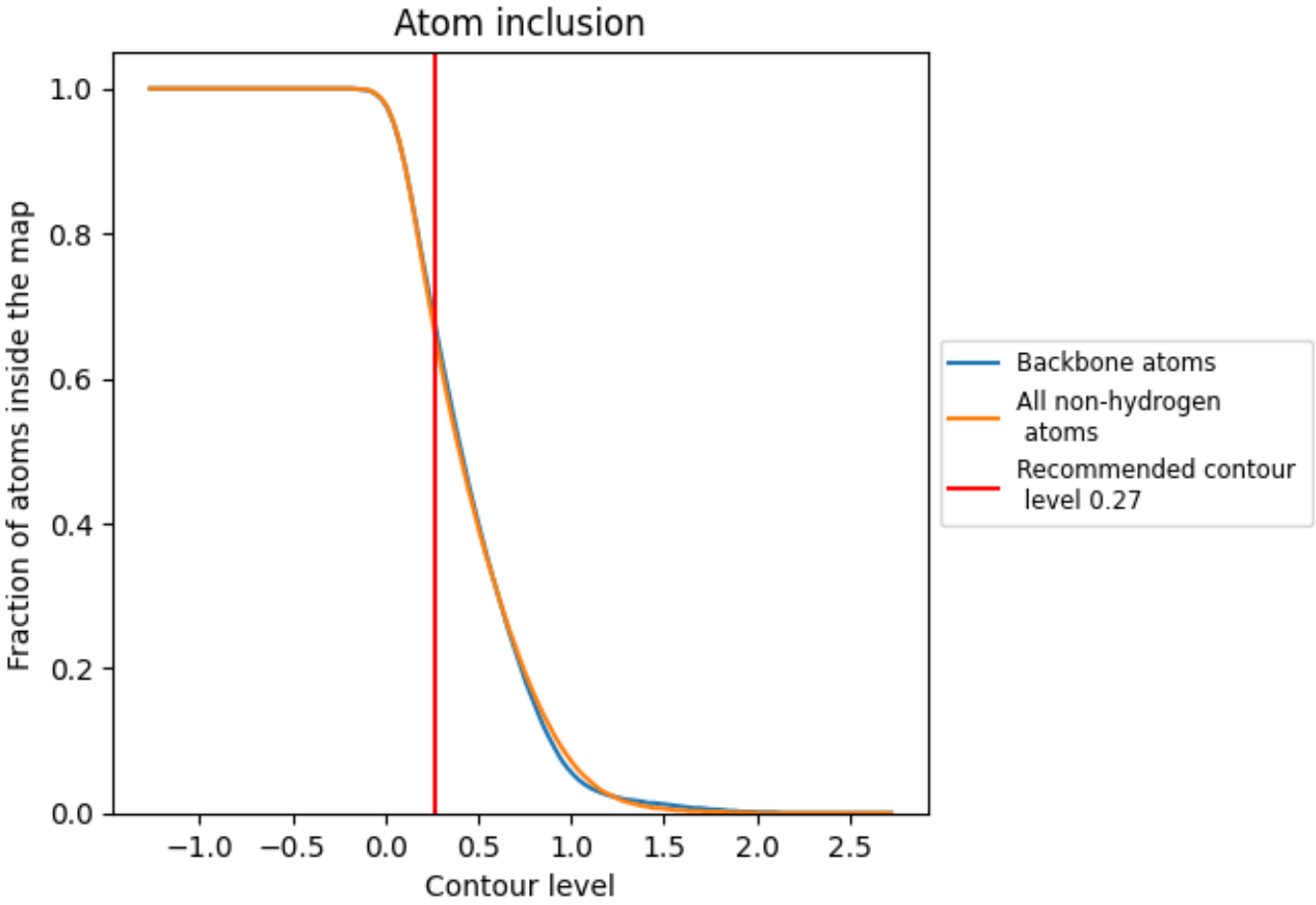
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (0.27).

9.4 Atom inclusion (i)



At the recommended contour level, 67% of all backbone atoms, 66% 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 (0.27) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6560	0.4730
AA	0.5230	0.3480
AD	0.5350	0.4730
AE	0.4340	0.4290
AF	0.6760	0.5340
AG	0.2910	0.3540
AH	0.4900	0.4410
AI	0.4620	0.4050
AJ	0.0630	0.1850
AK	0.1960	0.2750
AL	0.3600	0.3340
AM	0.3600	0.3370
AN	0.0850	0.1680
AO	0.5520	0.4440
AP	0.0020	0.1390
AQ	0.5880	0.4850
AR	0.5370	0.4580
AS	0.2010	0.2310
AT	0.4620	0.3620
AU	0.3630	0.3510
AV	0.1510	0.2150
AW	0.4610	0.3840
Aa	0.3570	0.3620
Ab	0.5380	0.4800
Ac	0.7930	0.5670
Ad	0.2370	0.3260
Ae	0.2100	0.3000
Af	0.2230	0.3030
Ag	0.6880	0.5230
Ah	0.3150	0.3760
Ai	0.3370	0.2930
Aj	0.4460	0.3810
Ak	0.0220	0.1540
Am	0.1060	0.2800
B0	0.8550	0.6190

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Chain	Atom inclusion	Q-score
B1	0.8480	0.6040
B2	0.7900	0.5310
B3	0.8000	0.5050
B4	0.8730	0.5780
BN	0.9410	0.6560
BO	0.9040	0.6390
BP	0.9230	0.6530
BQ	0.6850	0.5290
BR	0.6610	0.5010
BS	0.8470	0.6180
BT	0.7280	0.5570
BU	0.0540	0.2100
BV	0.4470	0.4290
BW	0.4130	0.3620
BX	0.8090	0.6050
BY	0.7600	0.5640
BZ	0.9740	0.6720
Ba	0.9030	0.6380
Bb	0.9100	0.6510
Bc	0.9340	0.6550
Bd	0.8670	0.6190
Be	0.8310	0.6060
Bf	0.7570	0.5670
Bg	0.5120	0.4480
Bh	0.8640	0.6230
Bi	0.6170	0.5400
Bj	0.8700	0.6220
Bk	0.8740	0.6350
Bl	0.7340	0.5340
Bm	0.9440	0.6670
Bn	0.8890	0.6290
Bo	0.6960	0.5020
Bp	0.8610	0.6230
Bq	0.9340	0.6610
Br	0.9360	0.6540
Bs	0.8980	0.6460
Bt	0.8380	0.6200
Bu	0.8520	0.6140
Bv	0.9710	0.6740
Bw	0.5790	0.4740
Bx	0.7370	0.5270
By	0.7680	0.5840

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Chain	Atom inclusion	Q-score
S3	0.4410	0.2470
Sm	0.3770	0.1570
Sn	0.1330	0.0590