



Full wwPDB EM Validation Report ⓘ

Sep 8, 2026 – 05:12 PM JST

PDB ID : 9WW5 / pdb_00009ww5
EMDB ID : EMD-66298
Title : human 80S ribosome rotated state
Authors : Fujino, M.; Tanaka, Y.; Iwasaki, W.; Ito, T.; Yokoyama, T.
Deposited on : 2025-09-22
Resolution : 2.69 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.dev133
Mogul : 1.8.5 (274361), CSD as541be (2020)
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) : 2.50

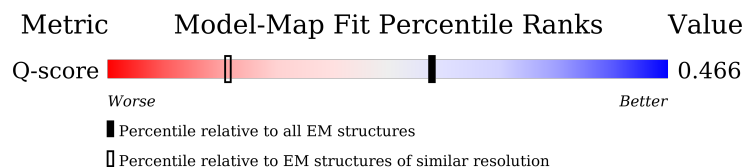
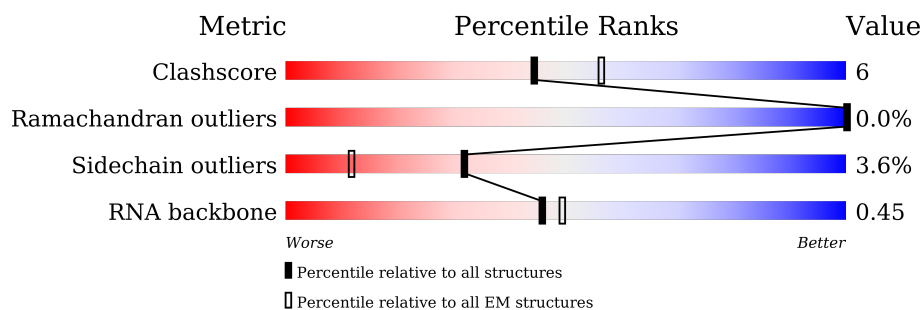
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.69 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.



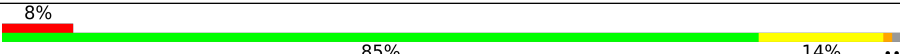
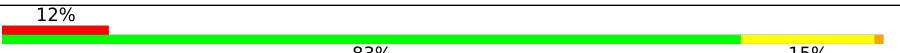
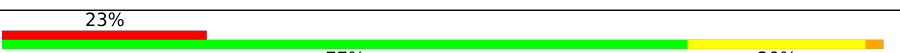
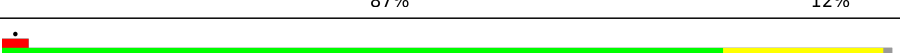
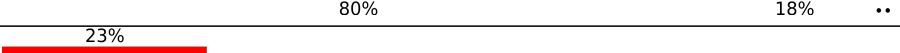
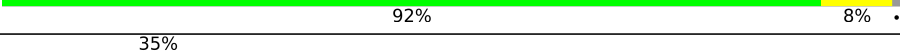
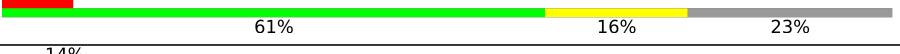
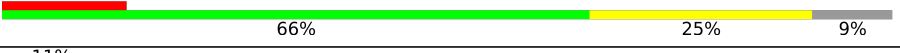
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	9309 (2.19 - 3.19)

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

Mol	Chain	Length	Quality of chain
1	AA	5069	
2	AB	120	
3	AC	157	

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Mol	Chain	Length	Quality of chain
4	AD	257	
5	AE	402	
6	AF	368	
7	AG	293	
8	AH	247	
9	AI	248	
10	AJ	266	
11	AK	192	
12	AL	214	
13	AM	178	
14	AN	211	
15	AO	215	
16	AP	204	
17	AQ	203	
18	AR	184	
19	AS	188	
20	AT	196	
21	AU	176	
22	AV	160	
23	AW	128	
24	AX	140	
25	AY	157	
26	AZ	156	
27	Aa	145	
28	Ab	136	

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Mol	Chain	Length	Quality of chain
29	Ac	148	
30	Ad	159	
31	Ae	115	
32	Af	125	
33	Ag	135	
34	Ah	110	
35	Ai	117	
36	Aj	123	
37	Ak	105	
38	Al	97	
39	Am	70	
40	An	51	
41	Ao	128	
42	Ap	25	
43	Aq	106	
44	Ar	92	
45	As	137	
46	BA	1869	
47	BB	263	
48	BC	295	
49	BD	264	
50	BE	243	
51	BF	204	
52	BG	194	
53	BH	208	

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Mol	Chain	Length	Quality of chain
54	BI	165	
55	BJ	158	
56	BK	145	
57	BL	146	
58	BM	152	
59	BN	145	
60	BO	119	
61	BP	83	
62	BQ	143	
63	BR	115	
64	BS	69	
65	BT	56	
66	BU	317	
67	BV	293	
68	BW	249	
69	BX	194	
70	BY	132	
71	BZ	151	
72	Ba	151	
73	Bb	130	
74	Bc	133	
75	Bd	125	
76	Be	84	
77	Bf	133	
78	Bg	156	

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Mol	Chain	Length	Quality of chain
79	Bh	135	97% 67% 29% ..

2 Entry composition [i](#)

There are 82 unique types of molecules in this entry. The entry contains 215368 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 28S rRNA (3773-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
1	AA	3773	Total	C	N	O	P	0	0
			80204	35721	14588	26123	3772		

- Molecule 2 is a RNA chain called 5S rRNA (120-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
2	AB	120	Total	C	N	O	P	0	0
			2558	1141	456	842	119		

- Molecule 3 is a RNA chain called 5.8S rRNA (156-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
3	AC	156	Total	C	N	O	P	0	0
			3316	1482	585	1094	155		

- Molecule 4 is a protein called 60S ribosomal protein L8.

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

- Molecule 5 is a protein called Large ribosomal subunit protein uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	AE	402	Total	C	N	O	S	0	0
			3239	2061	608	556	14		

- Molecule 6 is a protein called Large ribosomal subunit protein uL4.

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

- Molecule 7 is a protein called Large ribosomal subunit protein uL18.

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

- Molecule 8 is a protein called Large ribosomal subunit protein eL6.

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

- Molecule 9 is a protein called 60S ribosomal protein L7.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	AI	225	Total	C	N	O	S	1	0
			1878	1207	361	301	9		

- Molecule 10 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	AJ	241	Total	C	N	O	S	1	0
			1935	1233	374	324	4		

- Molecule 11 is a protein called 60S ribosomal protein L9.

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

- Molecule 12 is a protein called Ribosomal protein uL16-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	AL	213	Total	C	N	O	S	0	0
			1713	1083	329	285	16		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AL	49	CYS	GLY	conflict	UNP Q96L21

- Molecule 13 is a protein called 60S ribosomal protein L11.

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

- Molecule 14 is a protein called 60S ribosomal protein L13.

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

- Molecule 15 is a protein called 60S ribosomal protein L14.

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

- Molecule 16 is a protein called 60S ribosomal protein L15.

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

- Molecule 17 is a protein called 60S ribosomal protein L13a.

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

- Molecule 18 is a protein called 60S ribosomal protein L17.

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

- Molecule 19 is a protein called 60S ribosomal protein L18.

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

- Molecule 20 is a protein called 60S ribosomal protein L19.

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

- Molecule 21 is a protein called 60S ribosomal protein L18a.

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

- Molecule 22 is a protein called 60S ribosomal protein L21.

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

- Molecule 23 is a protein called 60S ribosomal protein L22.

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

- Molecule 24 is a protein called 60S ribosomal protein L23.

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

- Molecule 25 is a protein called 60S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	AY	107	Total	C	N	O	S	0	0
			863	539	174	146	4		

- Molecule 26 is a protein called 60S ribosomal protein L23a.

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

- Molecule 27 is a protein called 60S ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	Aa	132	Total	C	N	O	S	0	0
			1102	692	223	184	3		

- Molecule 28 is a protein called 60S ribosomal protein L27.

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

- Molecule 29 is a protein called Large ribosomal subunit protein uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	Ac	147	Total	C	N	O	S	0	0
			1163	736	237	187	3		

- Molecule 30 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Ad	99	Total	C	N	O	S	0	0
			808	502	177	125	4		

- Molecule 31 is a protein called 60S ribosomal protein L30.

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

- Molecule 32 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	Af	106	Total	C	N	O	S	0	0
			879	555	170	152	2		

- Molecule 33 is a protein called 60S ribosomal protein L32.

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

- Molecule 34 is a protein called 60S ribosomal protein L35a.

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

- Molecule 35 is a protein called 60S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	Ai	109	Total	C	N	O	S	0	0
			868	544	179	139	6		

- Molecule 36 is a protein called 60S ribosomal protein L35.

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

- Molecule 37 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	Ak	99	Total	C	N	O	S	0	0
			813	509	173	126	5		

- Molecule 38 is a protein called 60S ribosomal protein L37.

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

- Molecule 39 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Am	68	Total	C	N	O	S	0	0
			559	360	101	97	1		

- Molecule 40 is a protein called 60S ribosomal protein L39.

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

- Molecule 41 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Ao	51	Total	C	N	O	S	0	0
			419	260	88	65	6		

- Molecule 42 is a protein called 60S ribosomal protein L41.

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

- Molecule 43 is a protein called 60S ribosomal protein L36a.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	Aq	102	Total	C	N	O	S	1	0
			842	527	174	135	6		

- Molecule 44 is a protein called 60S ribosomal protein L37a.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	Ar	88	Total	C	N	O	S	0	0
			681	430	131	113	7		

- Molecule 45 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	As	123	Total	C	N	O	S	0	0
			987	612	205	166	4		

- Molecule 46 is a RNA chain called 18S rRNA (1740-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
46	BA	1738	Total	C	N	O	P	0	0
			36916	16492	6593	12093	1738		

- Molecule 47 is a protein called 40S ribosomal protein S4, X isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	BB	260	Total	C	N	O	S	0	0
			2060	1315	381	356	8		

- Molecule 48 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	BC	219	Total	C	N	O	S	0	0
			1727	1096	302	320	9		

- Molecule 49 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	BD	215	Total	C	N	O	S	0	0
			1747	1109	312	312	14		

- Molecule 50 is a protein called 40S ribosomal protein S3.

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

- Molecule 51 is a protein called 40S ribosomal protein S5.

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

- Molecule 52 is a protein called 40S ribosomal protein S7.

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

- Molecule 53 is a protein called 40S ribosomal protein S8.

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

- Molecule 54 is a protein called 40S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	BI	97	Total	C	N	O	S	0	0
			816	533	144	133	6		

- Molecule 55 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	BJ	154	Total	C	N	O	S	0	0
			1258	802	235	215	6		

- Molecule 56 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	BK	125	Total	C	N	O	S	0	0
			1027	653	193	174	7		

- Molecule 57 is a protein called 40S ribosomal protein S16.

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

- Molecule 58 is a protein called 40S ribosomal protein S18.

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

- Molecule 59 is a protein called Small ribosomal subunit protein eS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	BN	143	Total	C	N	O	S	0	0
			1113	698	214	198	3		

- Molecule 60 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	BO	103	Total	C	N	O	S	0	0
			817	511	155	147	4		

- Molecule 61 is a protein called 40S ribosomal protein S21.

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

- Molecule 62 is a protein called 40S ribosomal protein S23.

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

- Molecule 63 is a protein called 40S ribosomal protein S26.

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

- Molecule 64 is a protein called 40S ribosomal protein S28.

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

- Molecule 65 is a protein called 40S ribosomal protein S29.

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

- Molecule 66 is a protein called Receptor of activated protein C kinase 1.

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

- Molecule 67 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	BV	221	Total	C	N	O	S	1	0
			1724	1115	298	301	10		

- Molecule 68 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	BW	234	Total	C	N	O	S	0	0
			1903	1188	384	324	7		

- Molecule 69 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	BX	182	Total	C	N	O	S	1	0
			1520	967	306	245	2		

- Molecule 70 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	BY	118	Total	C	N	O	S	0	0
			906	568	158	172	8		

- Molecule 71 is a protein called 40S ribosomal protein S13.

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

- Molecule 72 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	Ba	136	Total	C	N	O	S	0	0
			1016	621	199	190	6		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Ba	138	IAS	ASP	conflict	UNP P62263

- Molecule 73 is a protein called 40S ribosomal protein S15a.

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

- Molecule 74 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	Bc	128	Total	C	N	O	S	1	0
			1048	661	207	175	5		

- Molecule 75 is a protein called 40S ribosomal protein S25.

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

- Molecule 76 is a protein called 40S ribosomal protein S27.

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

- Molecule 77 is a protein called Ubiquitin-like FUBI-ribosomal protein eS30 fusion protein.

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

- Molecule 78 is a protein called Ubiquitin-40S ribosomal protein S27a.

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

- Molecule 79 is a protein called 40S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	Bh	131	Total	C	N	O	S	0	0
			1064	668	198	194	4		

- Molecule 80 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
80	AA	197	Total	Mg	0
			197	197	
80	AB	2	Total	Mg	0
			2	2	
80	AC	4	Total	Mg	0
			4	4	
80	AP	1	Total	Mg	0
			1	1	
80	AR	1	Total	Mg	0
			1	1	
80	AX	1	Total	Mg	0
			1	1	

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Mol	Chain	Residues	Atoms		AltConf
80	BA	62	Total 62	Mg 62	0
80	BL	2	Total 2	Mg 2	0
80	BN	1	Total 1	Mg 1	0

- Molecule 81 is POTASSIUM ION (CCD ID: K) (formula: K).

Mol	Chain	Residues	Atoms		AltConf
81	AA	65	Total 65	K 65	0
81	AB	1	Total 1	K 1	0
81	AD	1	Total 1	K 1	0
81	AL	1	Total 1	K 1	0
81	Ag	1	Total 1	K 1	0
81	Ah	1	Total 1	K 1	0
81	Aq	1	Total 1	K 1	0
81	BA	12	Total 12	K 12	0

- Molecule 82 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
82	Ai	1	Total 1	Zn 1	0
82	Al	1	Total 1	Zn 1	0
82	Ao	1	Total 1	Zn 1	0
82	Aq	1	Total 1	Zn 1	0
82	Ar	1	Total 1	Zn 1	0
82	BR	1	Total 1	Zn 1	0

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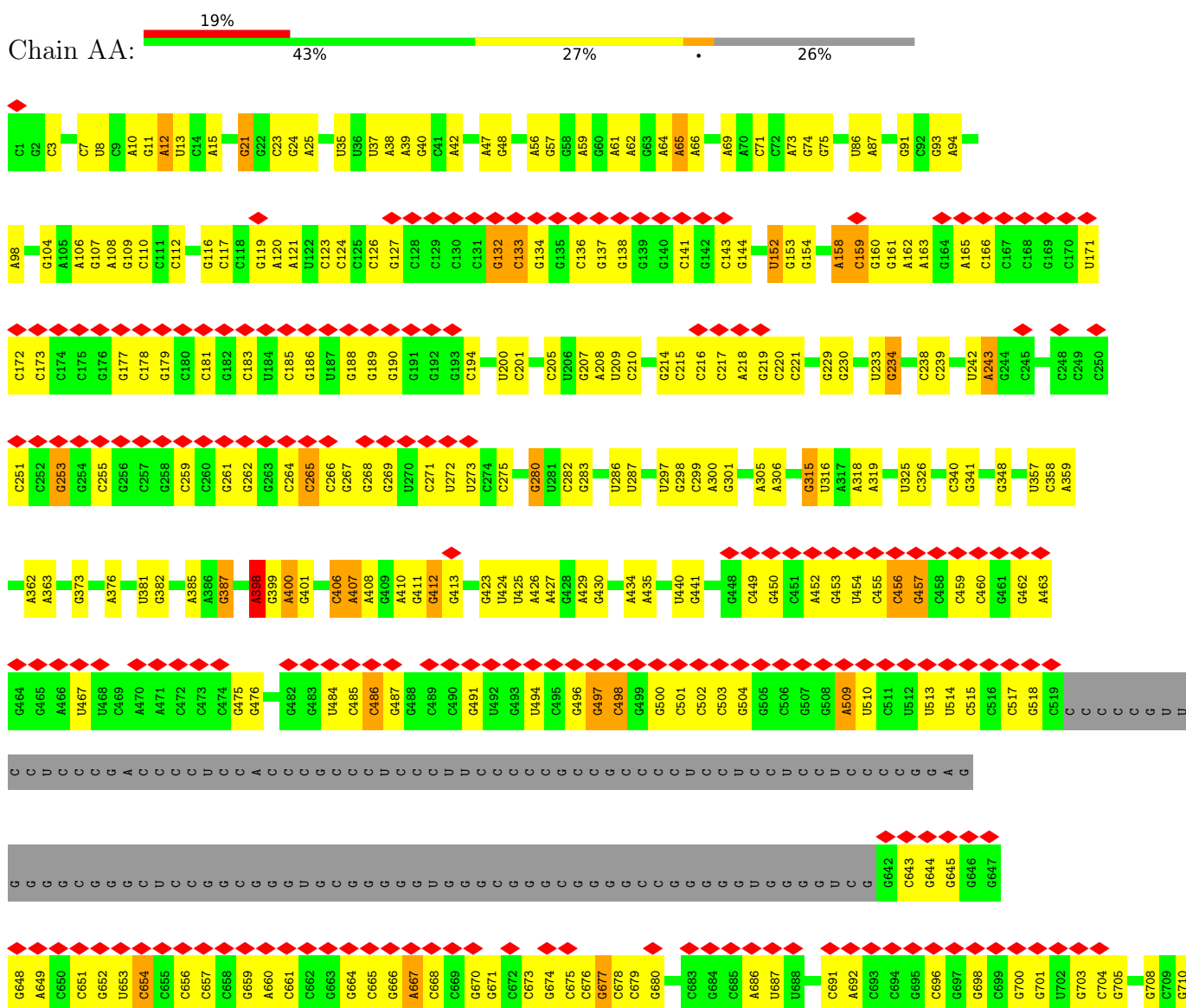
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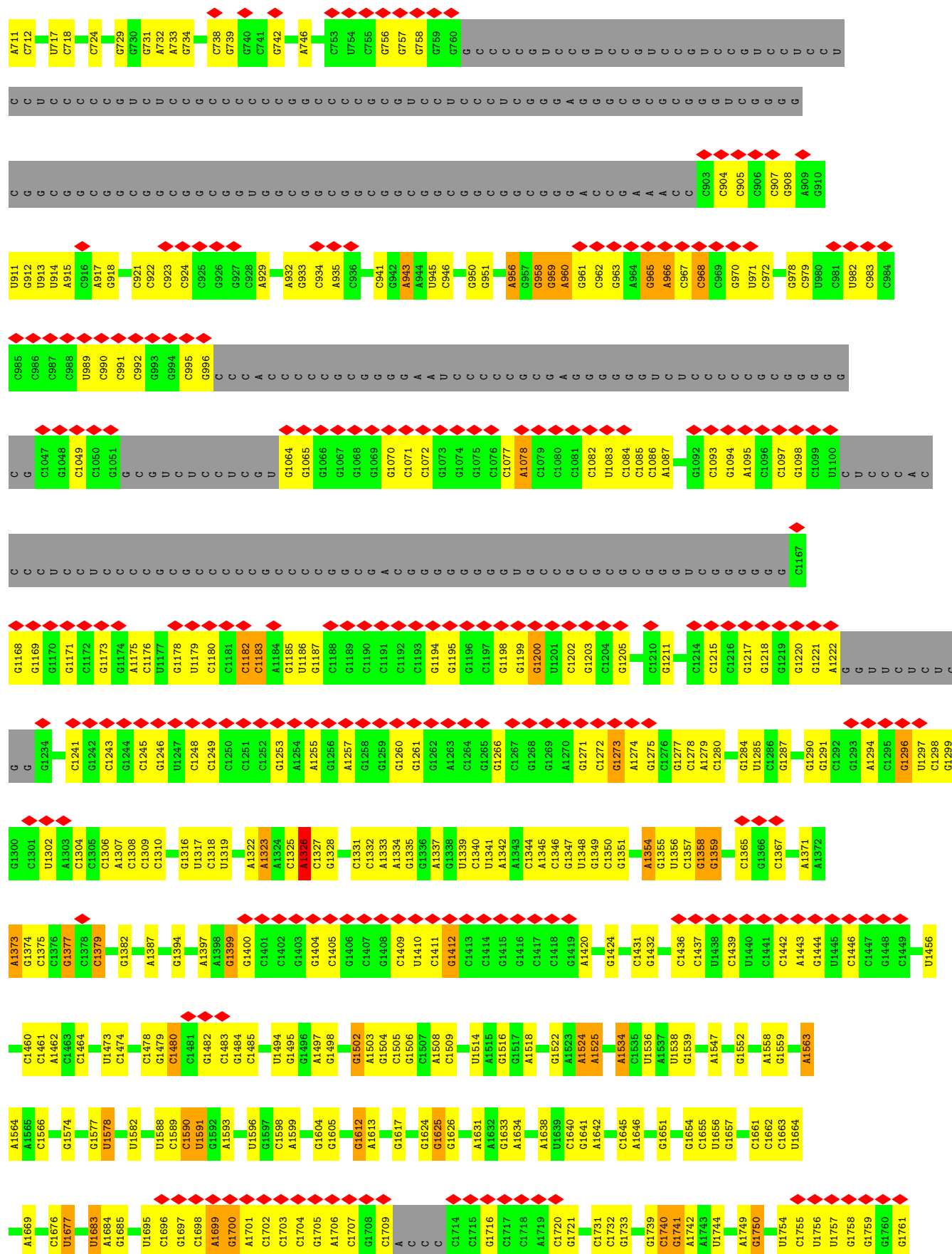
Mol	Chain	Residues	Atoms		AltConf
82	BT	1	Total 1	Zn 1	0
82	Bg	1	Total 1	Zn 1	0

3 Residue-property plots

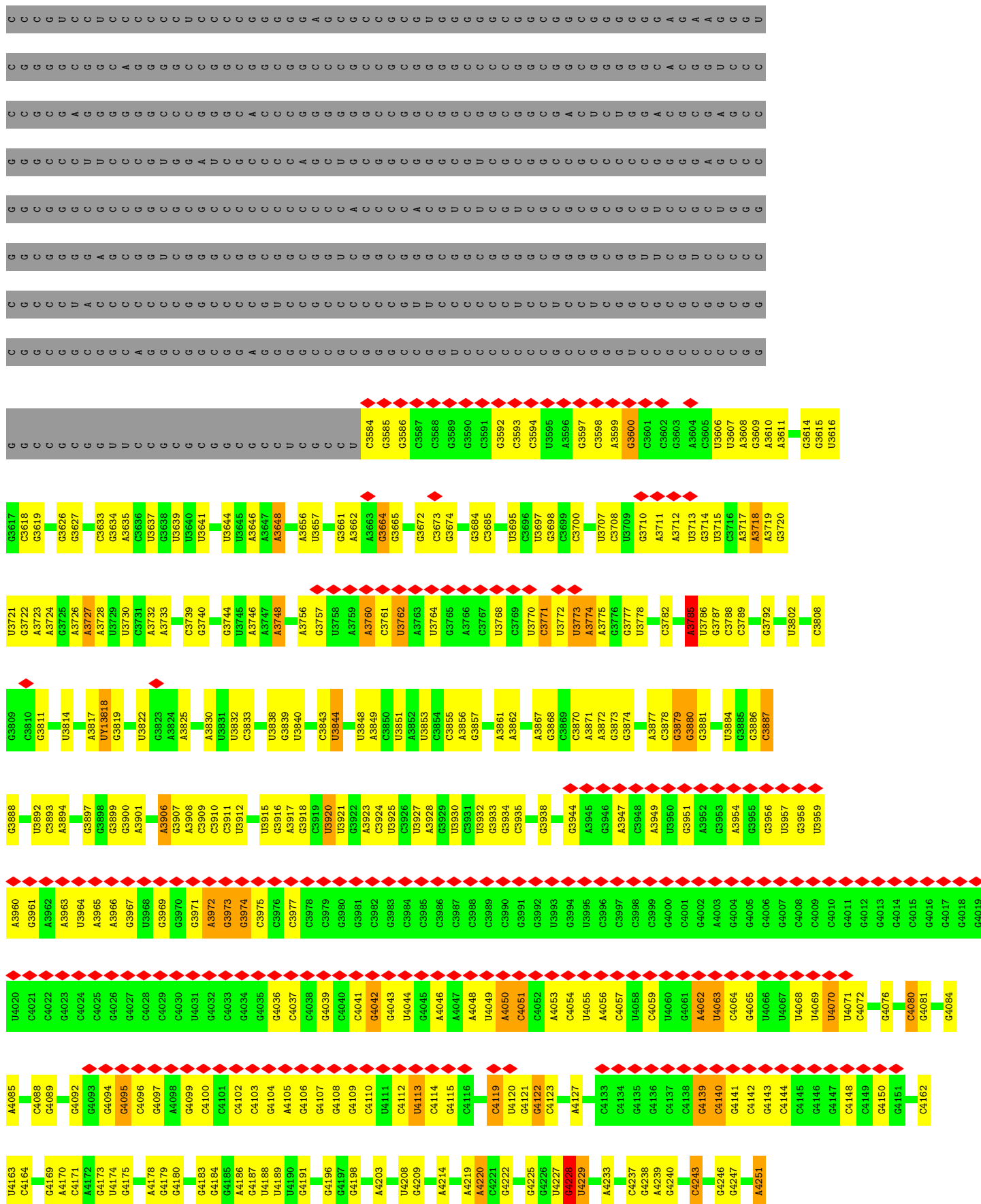
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

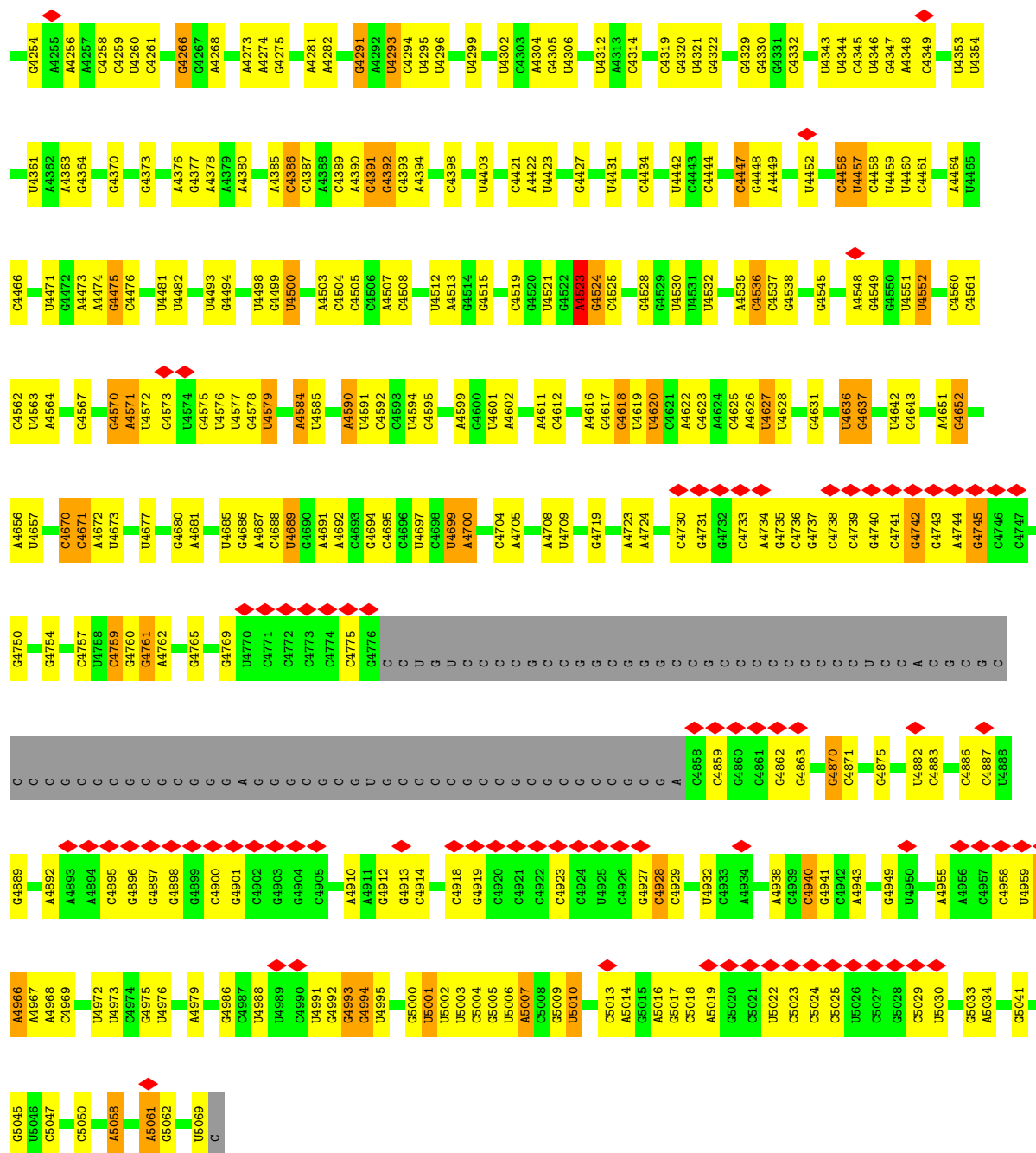
• Molecule 1: 28S rRNA (3773-MER)





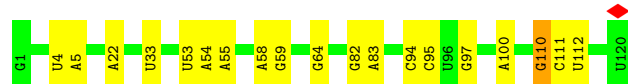






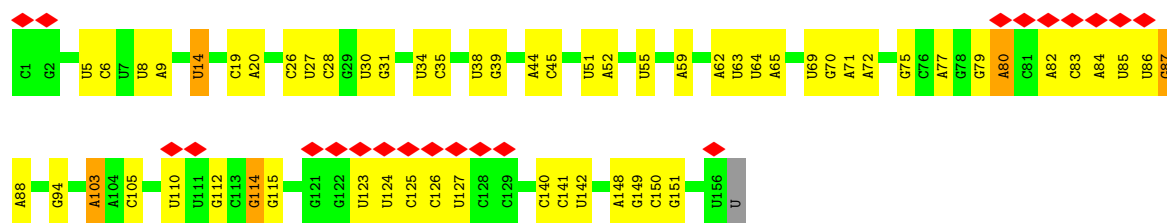
- Molecule 2: 5S rRNA (120-MER)

Chain AB: 84% 15%.



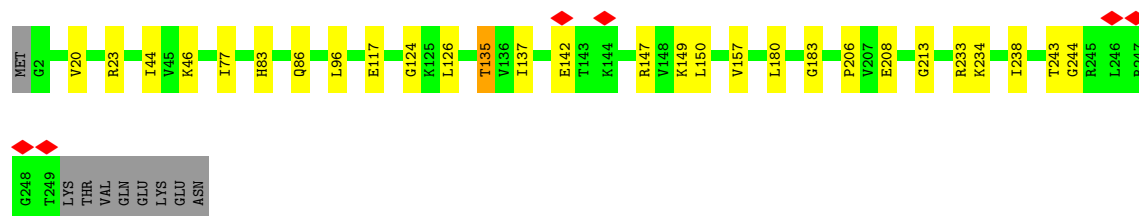
- Molecule 3: 5.8S rRNA (156-MER)

Chain AC: 13% 61% 35%.



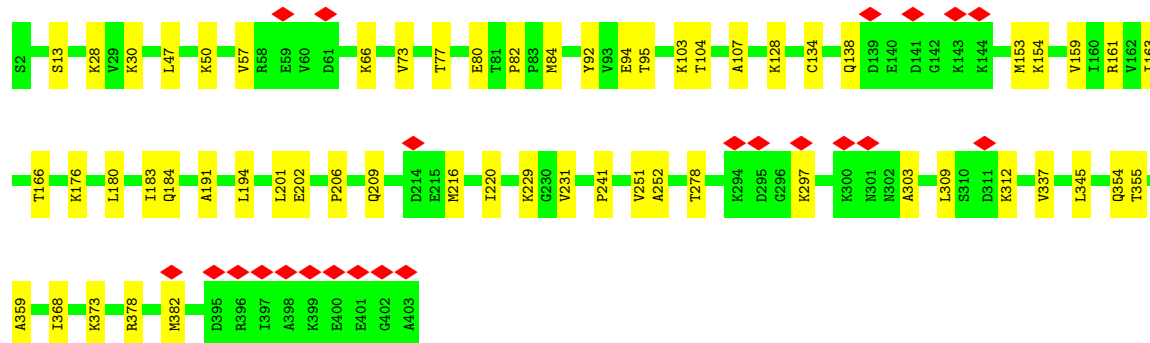
- Molecule 4: 60S ribosomal protein L8

Chain AD: 86% 11%



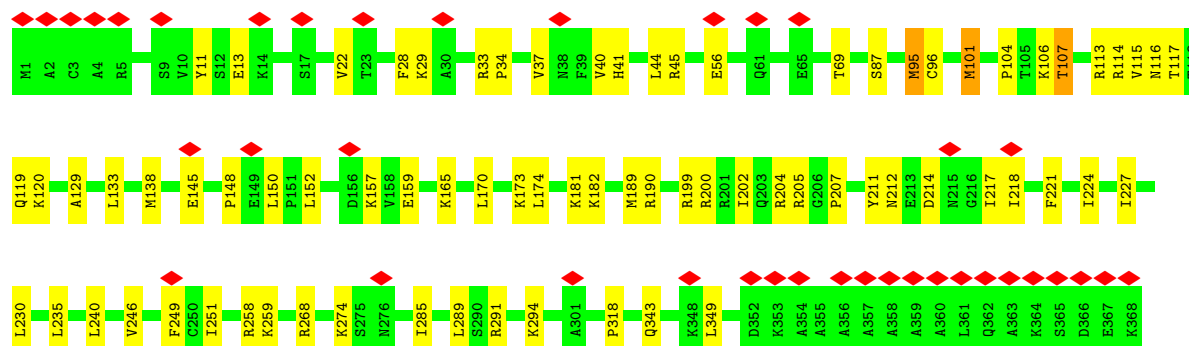
- Molecule 5: Large ribosomal subunit protein uL3

Chain AE: 6% 86% 14%

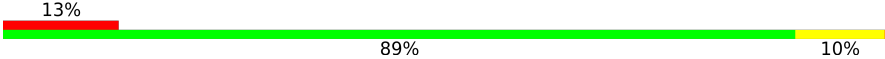


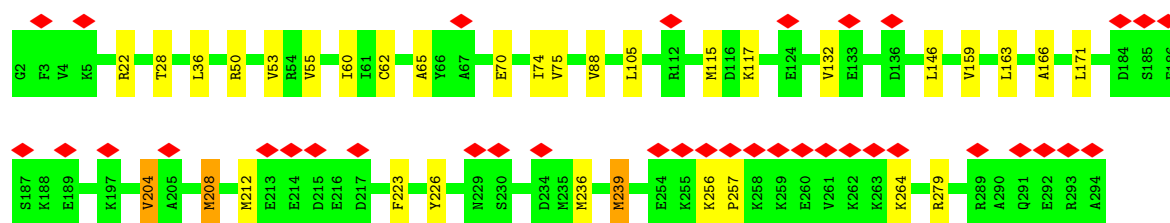
- Molecule 6: Large ribosomal subunit protein uL4

Chain AF: 11% 79% 20%



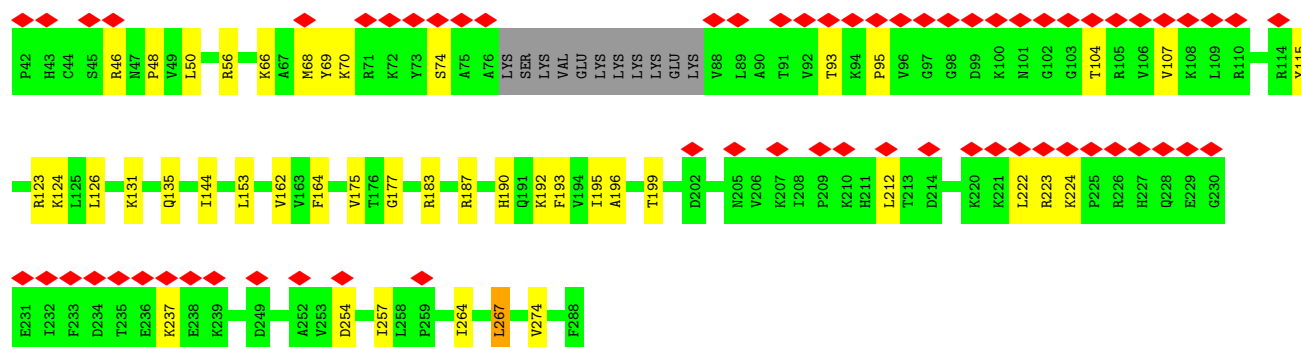
- Molecule 7: Large ribosomal subunit protein uL18

Chain AG: 



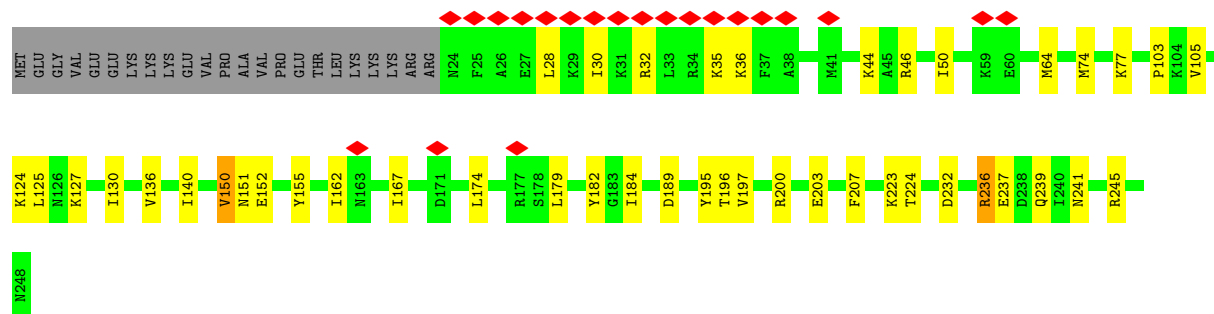
• Molecule 8: Large ribosomal subunit protein eL6

Chain AH: 



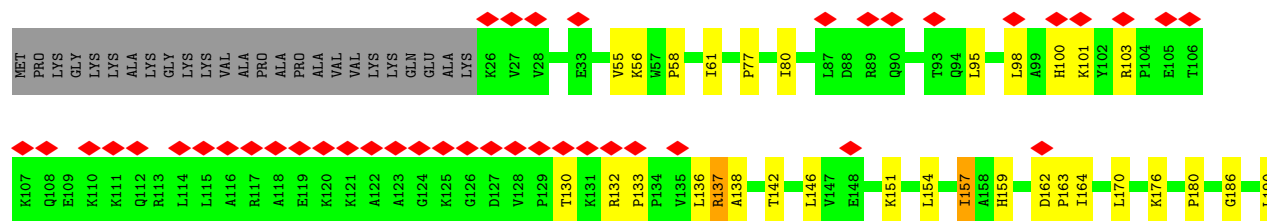
• Molecule 9: 60S ribosomal protein L7

Chain AI: 



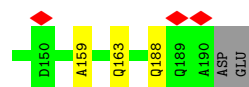
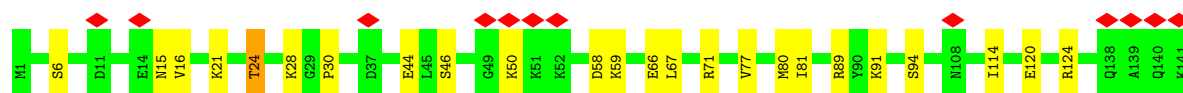
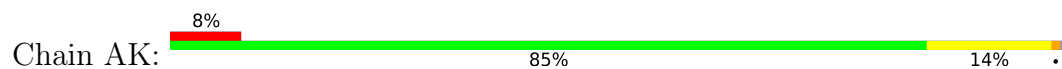
• Molecule 10: 60S ribosomal protein L7a

Chain AJ: 

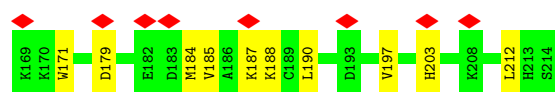
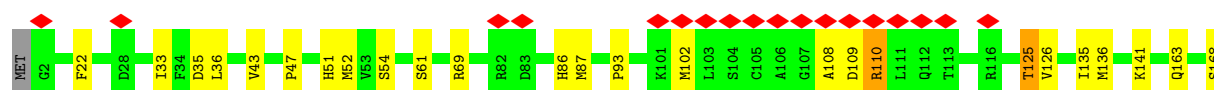
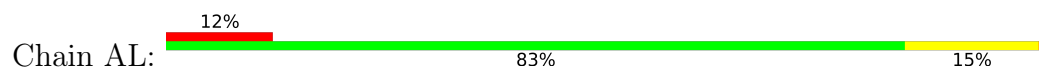




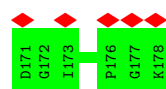
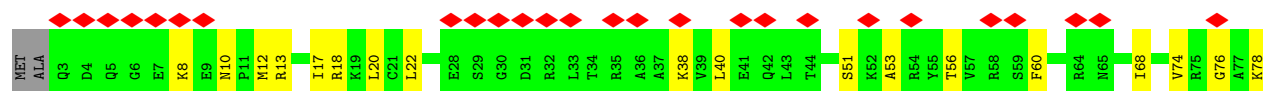
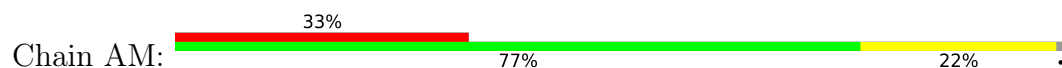
- Molecule 11: 60S ribosomal protein L9



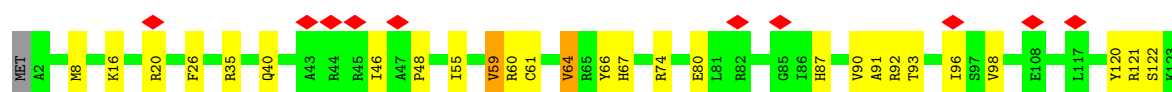
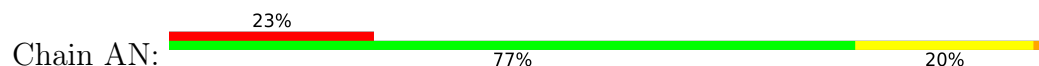
- Molecule 12: Ribosomal protein uL16-like

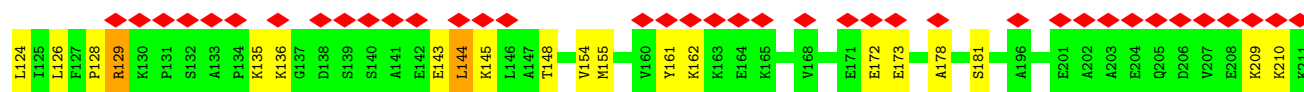


- Molecule 13: 60S ribosomal protein L11

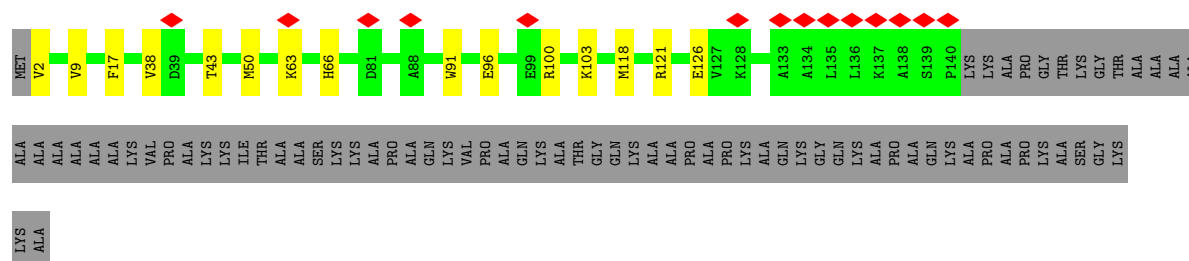


- Molecule 14: 60S ribosomal protein L13

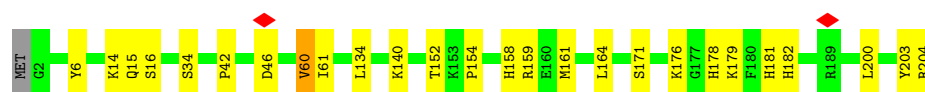




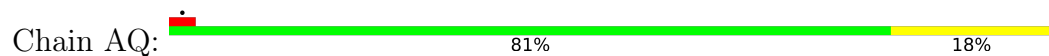
• Molecule 15: 60S ribosomal protein L14



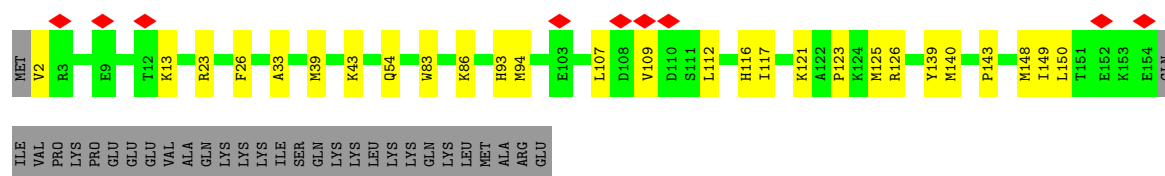
• Molecule 16: 60S ribosomal protein L15



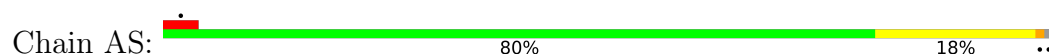
• Molecule 17: 60S ribosomal protein L13a

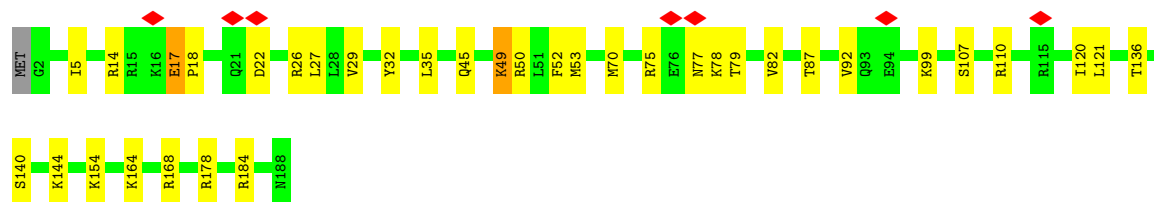


• Molecule 18: 60S ribosomal protein L17

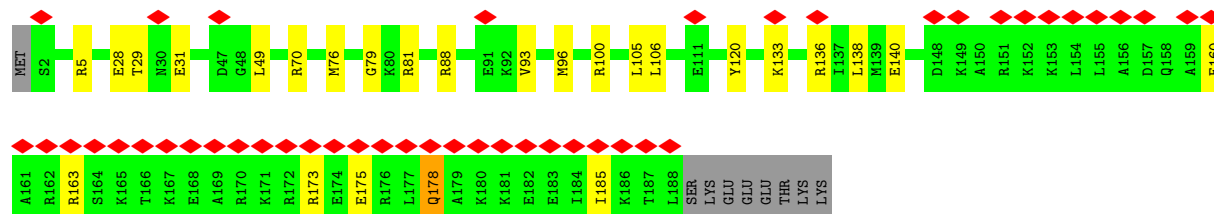
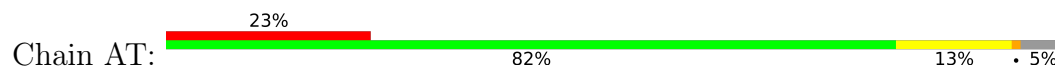


• Molecule 19: 60S ribosomal protein L18

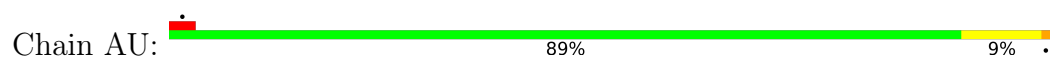




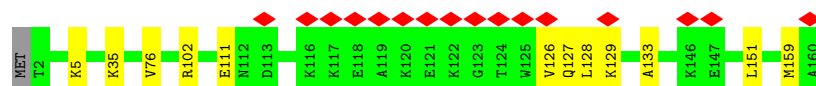
- Molecule 20: 60S ribosomal protein L19



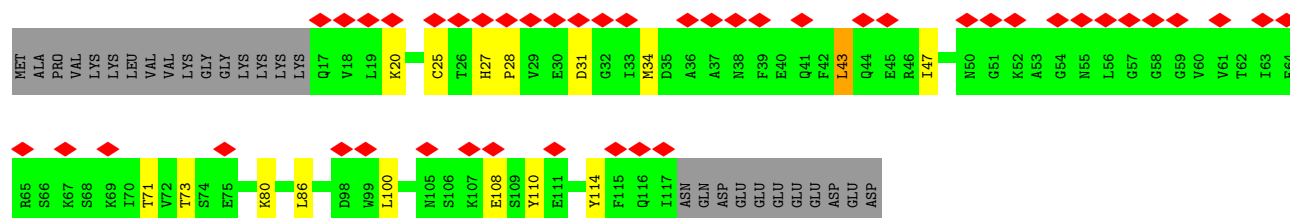
- Molecule 21: 60S ribosomal protein L18a



- Molecule 22: 60S ribosomal protein L21

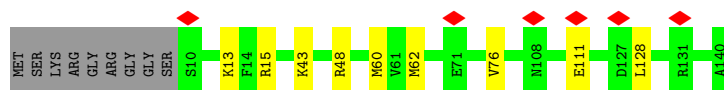


- Molecule 23: 60S ribosomal protein L22

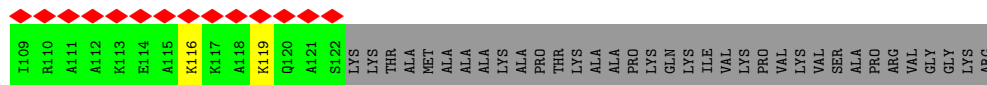
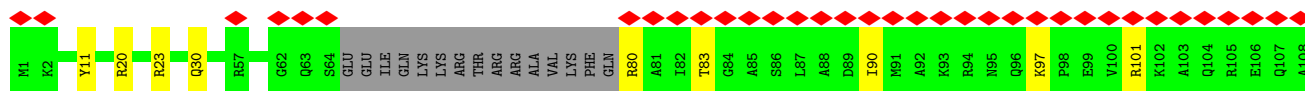


- Molecule 24: 60S ribosomal protein L23

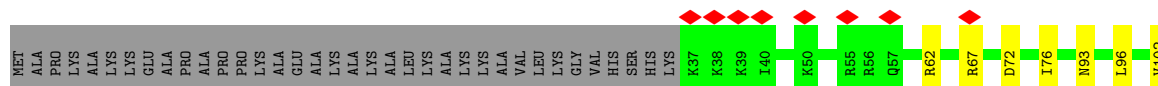




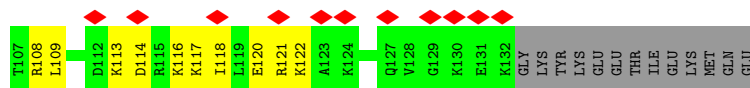
- Molecule 25: 60S ribosomal protein L24



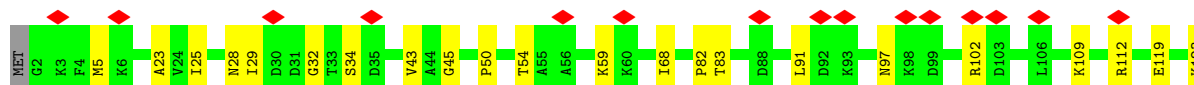
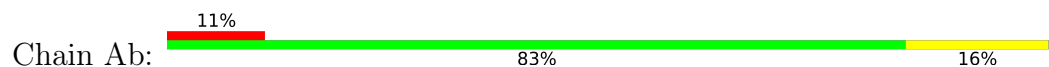
- Molecule 26: 60S ribosomal protein L23a



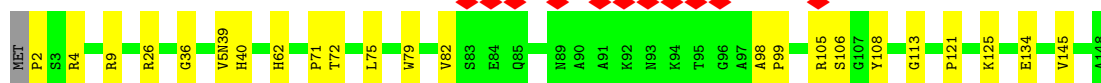
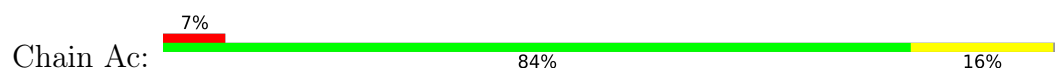
- Molecule 27: 60S ribosomal protein L26



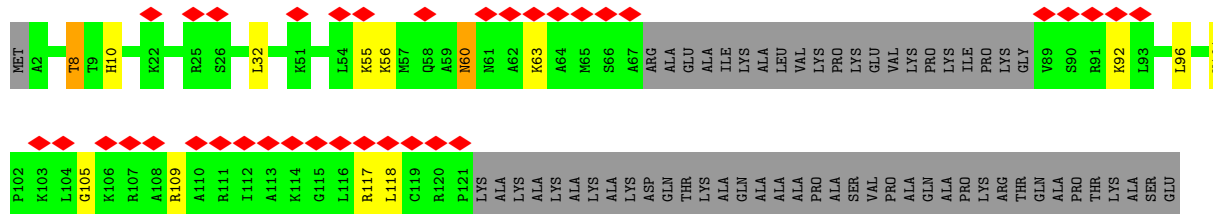
- Molecule 28: 60S ribosomal protein L27



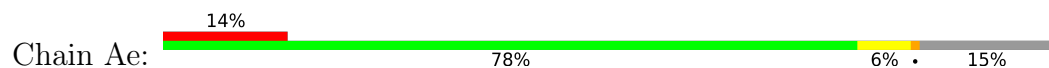
- Molecule 29: Large ribosomal subunit protein uL15



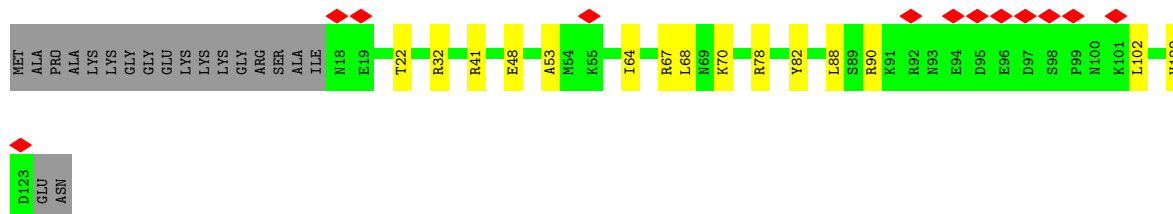
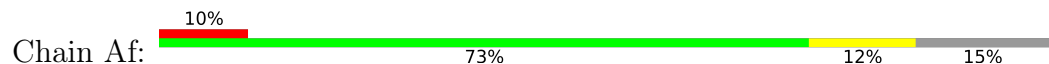
• Molecule 30: 60S ribosomal protein L29



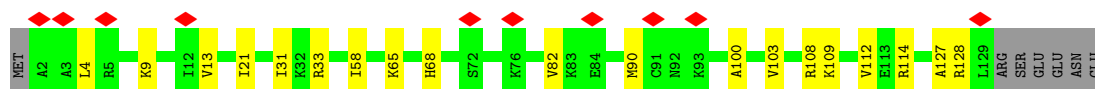
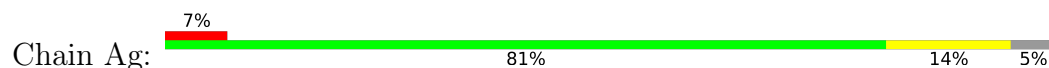
• Molecule 31: 60S ribosomal protein L30



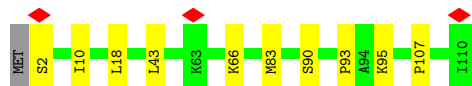
• Molecule 32: 60S ribosomal protein L31



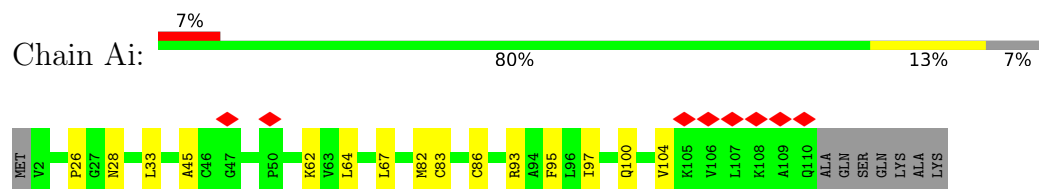
• Molecule 33: 60S ribosomal protein L32



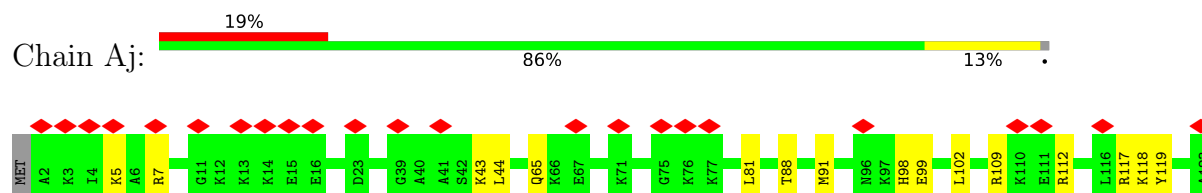
• Molecule 34: 60S ribosomal protein L35a



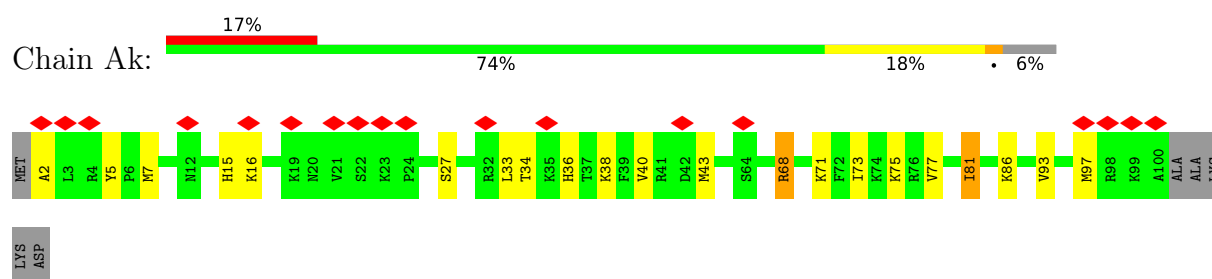
- Molecule 35: 60S ribosomal protein L34



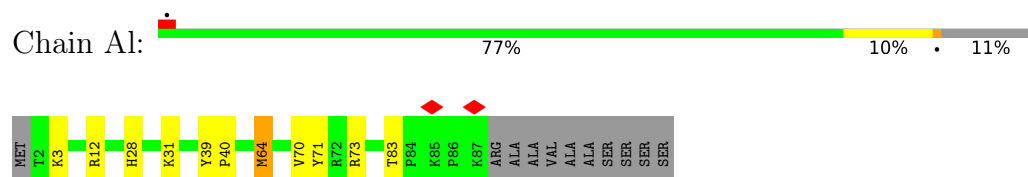
- Molecule 36: 60S ribosomal protein L35



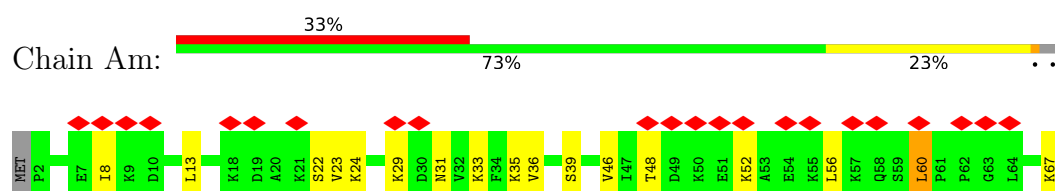
- Molecule 37: 60S ribosomal protein L36



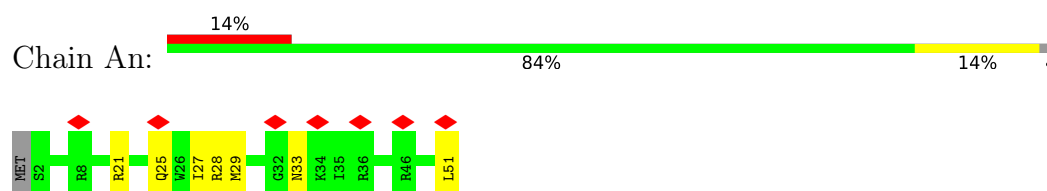
- Molecule 38: 60S ribosomal protein L37



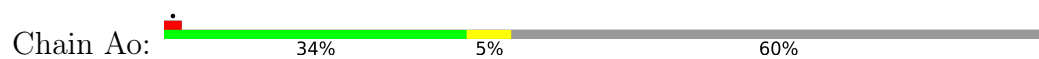
- Molecule 39: 60S ribosomal protein L38



- Molecule 40: 60S ribosomal protein L39



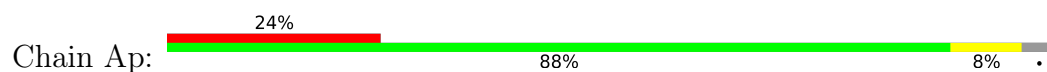
- Molecule 41: Ubiquitin-60S ribosomal protein L40



MET GLN ILE PHE VAL LYS THR LEU THR VAL LEU LYS THR ILE THR LEU VAL VAL GLU VAL PRO SER ASP THR ILE GLN ASN VAL LYS ALA ILE ILE ASP LYS LYS GLU ILE ILE PRO PRO ASP GLN GLN ARG LEU ILE PHE ALA GLY LYS GLN LEU GLU ASP GLY ARG THR LEU SER ASP TYR ASN

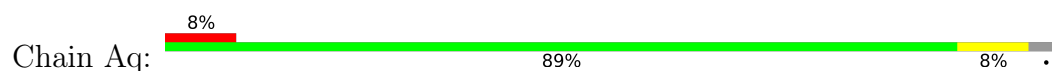
ILE GLN LYS SER THR LEU HIS VAL LEU ARG LEU ARG GLY I77 I78 R83 I95 H104 P105 R106 K125 K126 V127 LYS

- Molecule 42: 60S ribosomal protein L41



M1 K4 M10 R11 R12 K16 R17 R18 R21 S24 LYS

- Molecule 43: 60S ribosomal protein L36a



MET V2 K14 K30 D31 A35 Q36 R39 R69 E74 P75 N76 C77 C78 R81 D96 R99 K100 G101 Q102 V103 ILE GLN PHE

- Molecule 44: 60S ribosomal protein L37a



MET A2 K3 K6 K7 V8 Y18 L22 T63 N72 R85 L86 K87 E88 L89 LYS ASP GLN

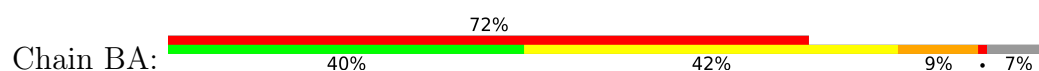
- Molecule 45: 60S ribosomal protein L28



MET S2 A3 H4 L5 Q6 C13 K19 K22 S26 N36 R46 A54 A55 D56 G57 K58 V63 I64 R67 S68 G69 Q70 R71 R79 T80 N83 K84 N85 A86 L90 S91 S92 I93 M96 I97 R103 P104 D105 L106 R107 M108 A109 A110 I111 R112

R113 I117 P123 V124 MET VAL LYS ARG ARG THR ARG PRO THR LYS SER

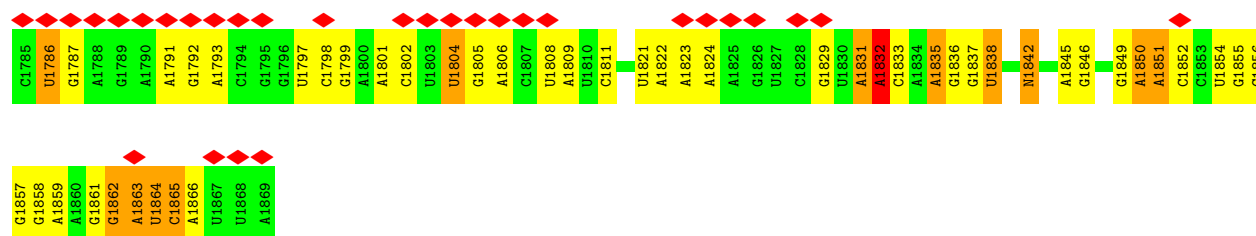
- Molecule 46: 18S rRNA (1740-MER)



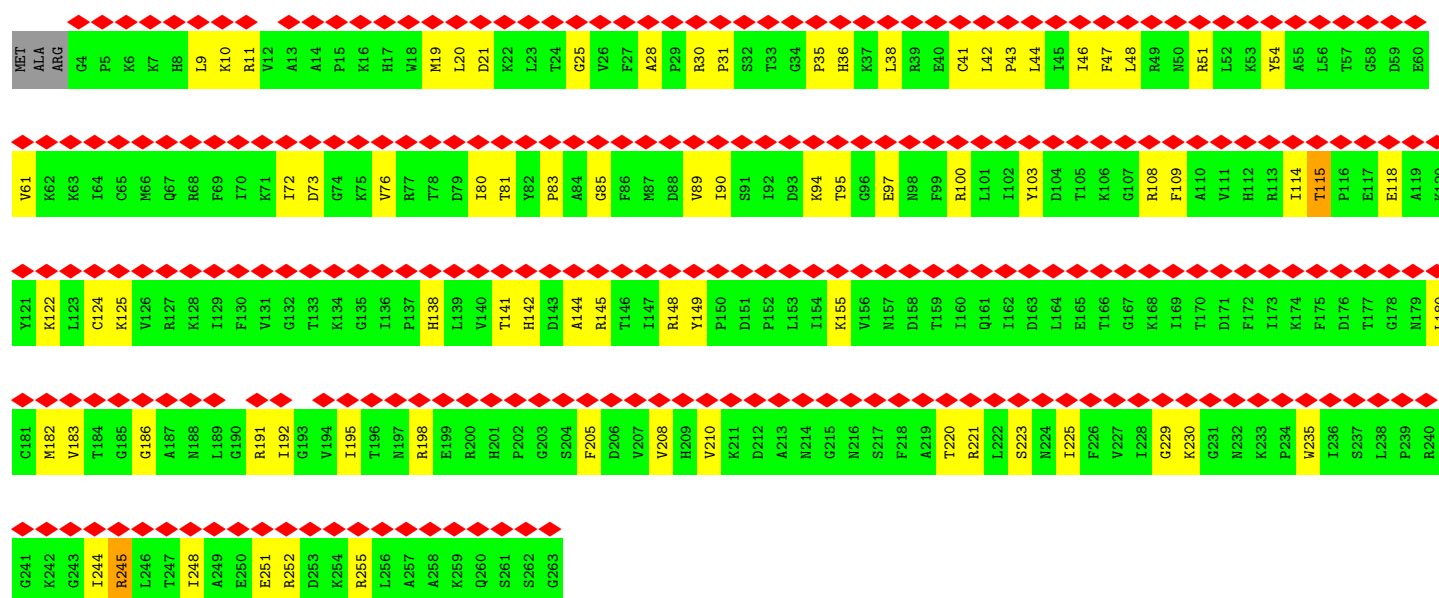
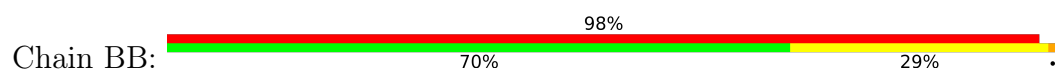
U A C3 C4 U5 G7 U8 U9 U12 C13 C14 U15 G16 C17 C18 G23 C24 A25 U26 A27 U28 C29 C30 U31 U32 G33 U34 C35 U36 C37 A38 A39 A40 G41 A42 U43 U44 A45 A46 G47 C48 C49 A50 U51 G52 C53 A54 U55 G56 U57 C58 U59 A60 A61 G62 U63 A64



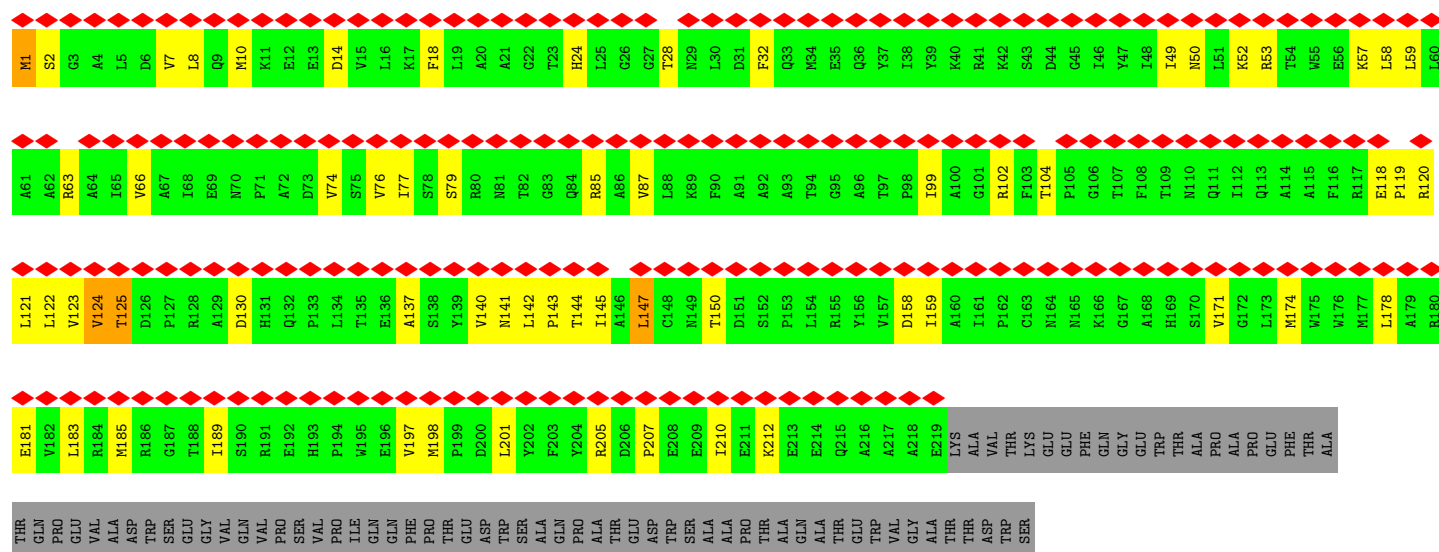
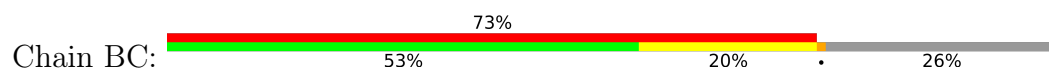
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U1668	U1668	U1608	G1548	C1488	G1428	U1367	A1301	A1241	U1157	A1093	A1008	A944
G1669	G1669	C1609	U1549	A1489	G1429	U1368	G1302	U1242	U1158	C1094	A1009	U945
U1733	G1670	G1610	U1550	G1490	C1430	A1369	C1303	U1243	U1159	G1095	G1010	U946
G1734	G1671	G1611	U1551	G1491	G1431	A1370	U1304	U1244	U1160	G1096	A1011	C947
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G1736	U1673	C1613	C1553	C1493	C1433	U1372	U1306	A1246	U1175	G1098	U1013	G949
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U1677	U1677	G1617	C1557	G1497	C1437	A1376	U1310	A1250	G1102	G1102	U1017	C953
U1741	A1678	C1618	U1558	U1498	A1438	A1377	C1311	A1251	C1103	C1103	U1018	U954
A1679	A1679	A1619	C1559	U1499	A1439	A1378	G1312	A1252	U1186	G1104	C1019	A955
G1680	G1680	U1620	U1560	G1500	C1440	U1379	A1313	A1253	A1195	G1105	A1020	G956
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C1701	C1701	A1640	A1580	C1521	C1460	A1401	G1334	G1274	A1220	C1128	G1059	C979
G1702	G1702	A1641	C1581	A1522	G1461	A1402	G1335	C1275	G1221	G1129	A1060	A980
C1703	C1703	U1642	C1582	C1523	U1462	A1403	C1336	A1276	G1222	G1130	U1061	A981
C1704	C1704	U1643	C1583	G1524	U1463	U1404	N1337	C1277	A1223	G1131	C1062	C982
G1705	G1705	C1644	U1584	G1525	C1464	A1405	G1338	A1278	G1224	C1132	C1063	A983
C1706	C1706	C1645	U1585	G1526	A1465	G1406	U1339	C1279	G1225	G1133	C1064	C984
A1707	A1707	G1646	U1586	G1527	G1466	U1407	U1340	G1280	G1226	C1134	G1065	G985
C1708	C1708	A1647	G1587	C1528	C1467	U1408	C1341	G1281	G1227	C1135	U1066	C986
G1709	G1709	U1648	A1588	G1529	G1468	U1409	U1342	A1282	A1228	U1137	C1074	A987
U1711	U1711	U1649	C1589	C1530	A1469	A1409	U1343	C1283	G1229	C1138	C1075	C988
C1712	C1712	A1650	U1590	A1531	C1470	C1410	U1344	A1284	C1230	C1139	U1081	C989
C1713	C1713	G1651	C1591	C1532	C1471	G1411	A1345	G1285	U1232	G1140	A1082	A996
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C1716	C1716	G1654	A1594	C1535	A1474	A1414	U1348	U1288	C1235	A1145	C1146	C1000
C1717	C1717	C1655	U1595	G1536	G1475	C1415	G1349	U1289	U1232	C1146	A1001	U1002
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C1723	C1723	A1661	U1601	G1481	C1481	C1421	U1355	C1295	U1232	C1146	A1001	U1002
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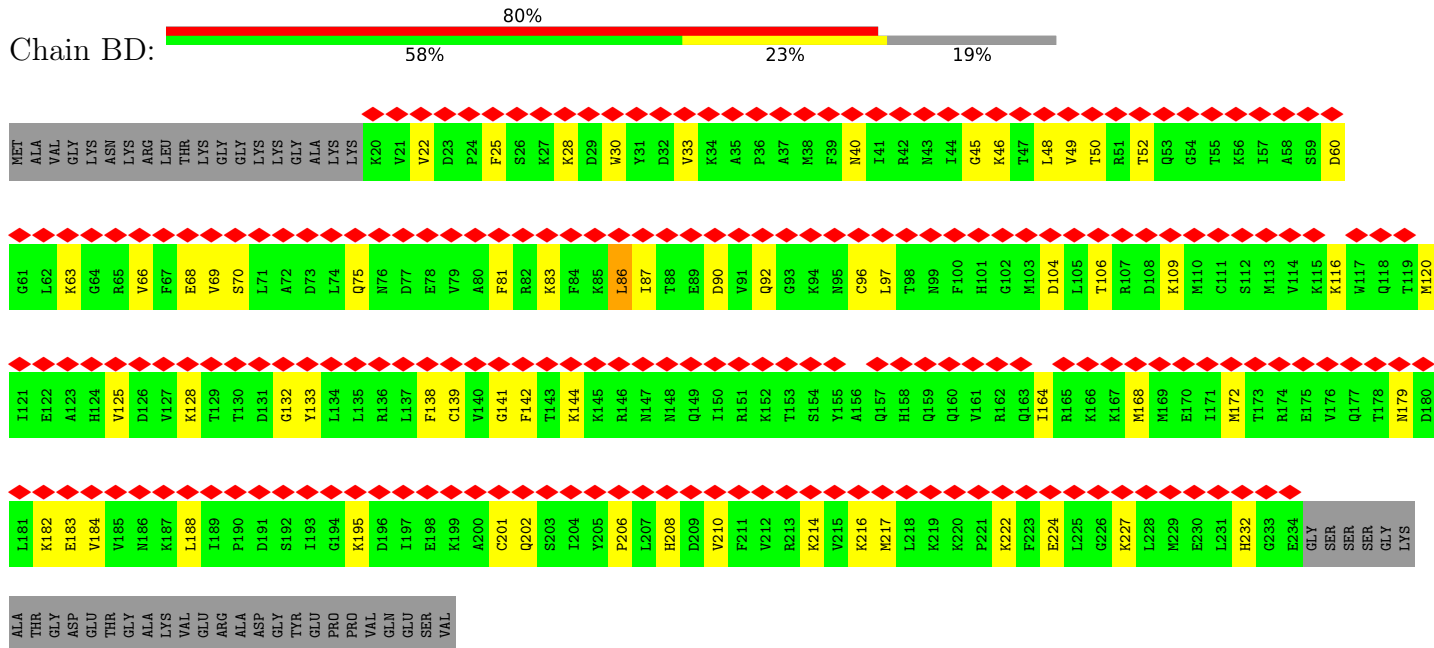
- Molecule 47: 40S ribosomal protein S4, X isoform



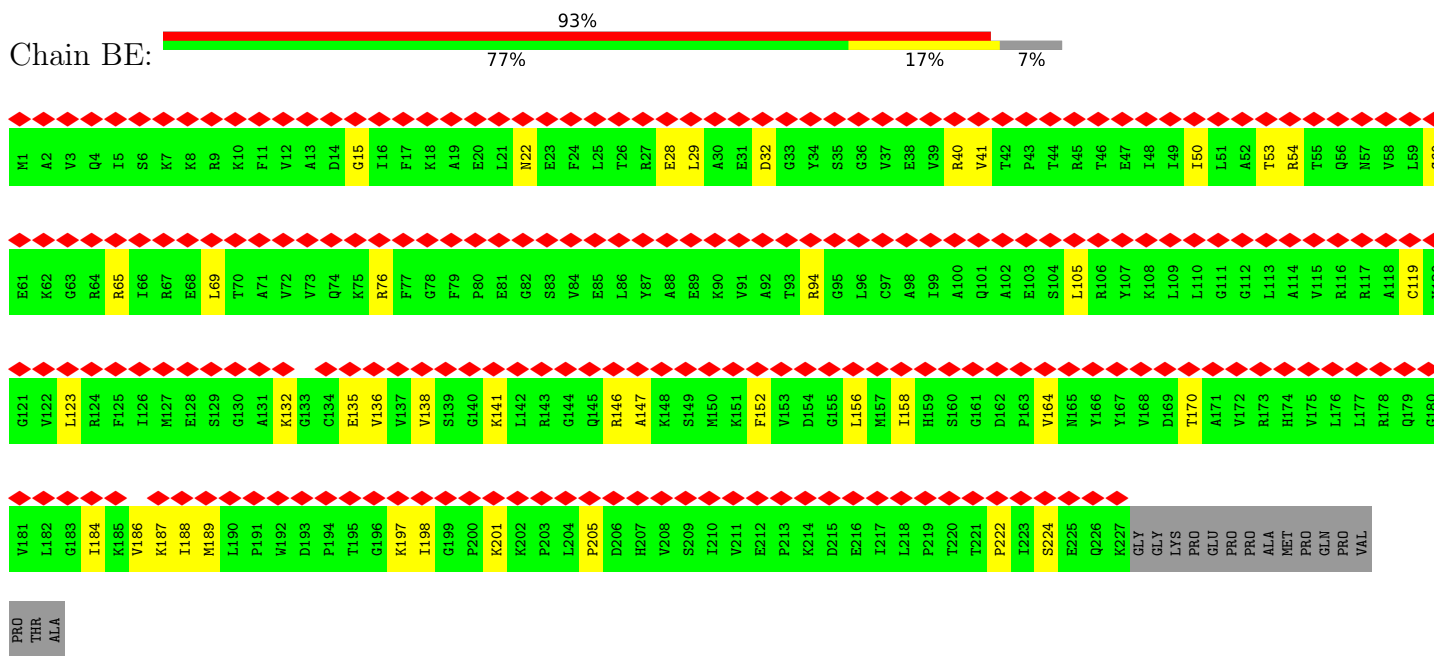
- Molecule 48: Small ribosomal subunit protein uS2



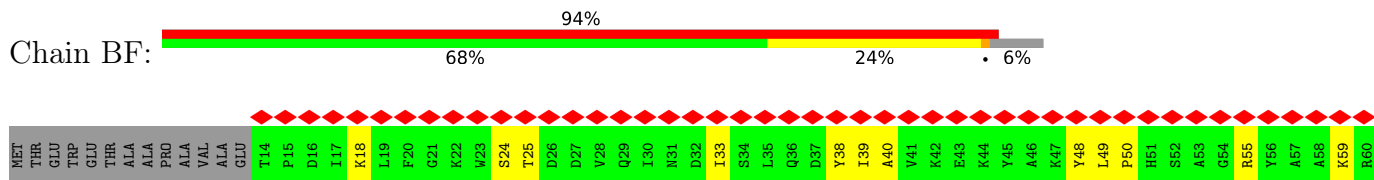
• Molecule 49: 40S ribosomal protein S3a

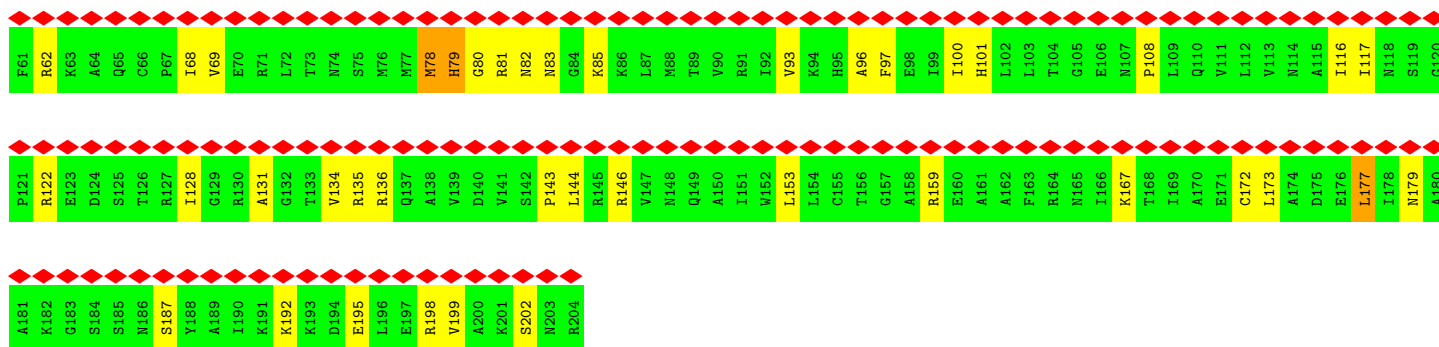


• Molecule 50: 40S ribosomal protein S3

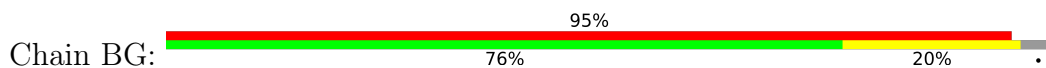


• Molecule 51: 40S ribosomal protein S5

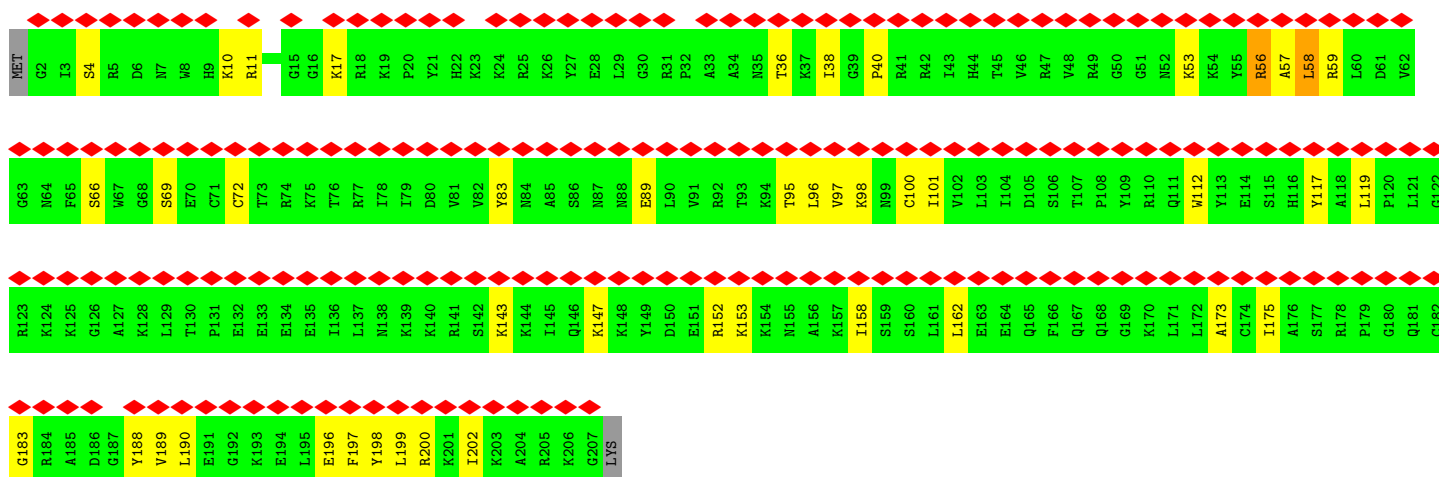
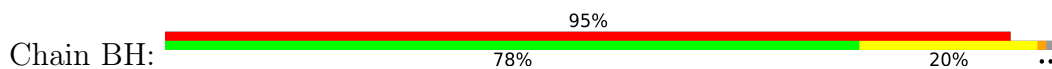




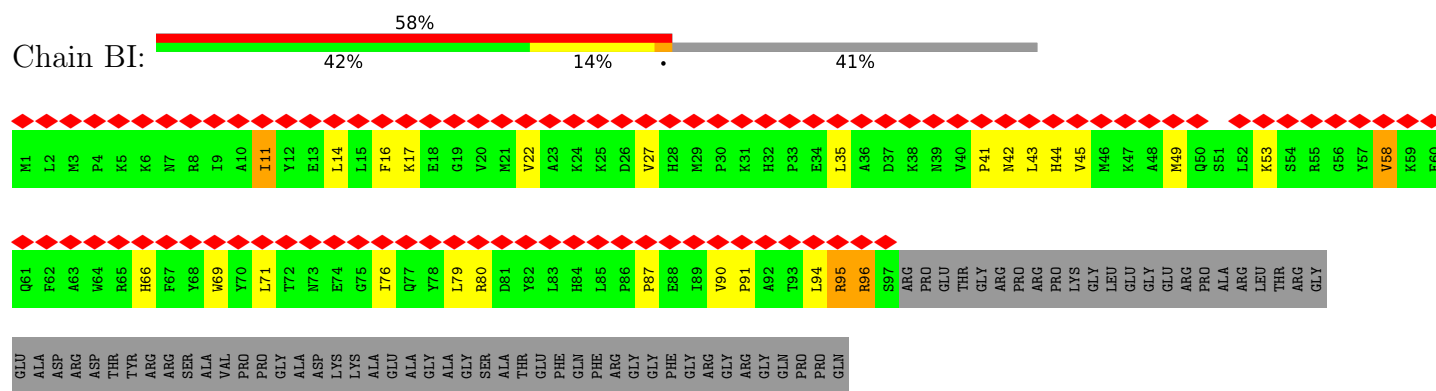
• Molecule 52: 40S ribosomal protein S7



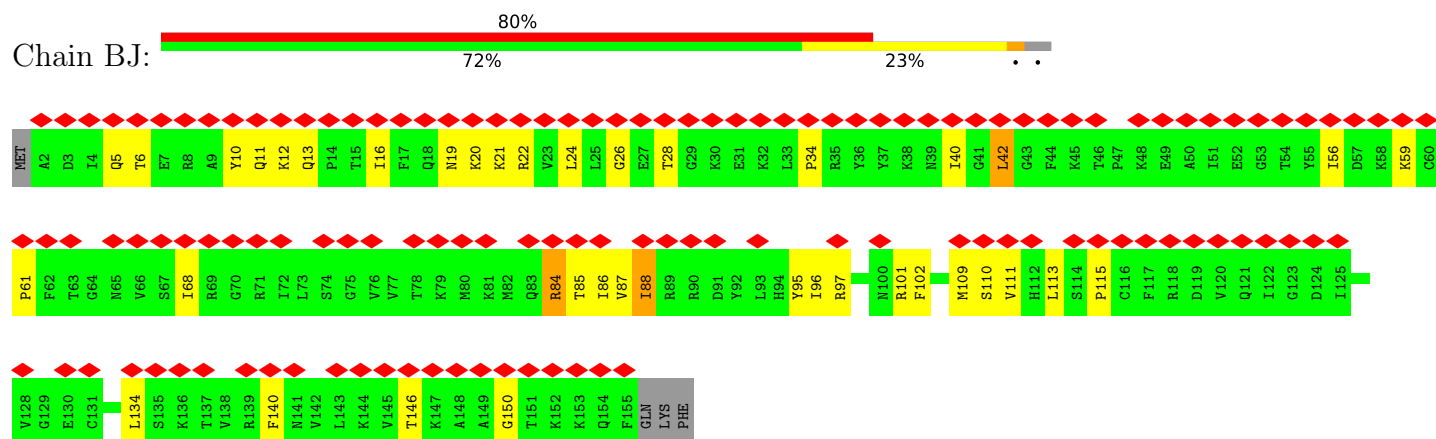
• Molecule 53: 40S ribosomal protein S8



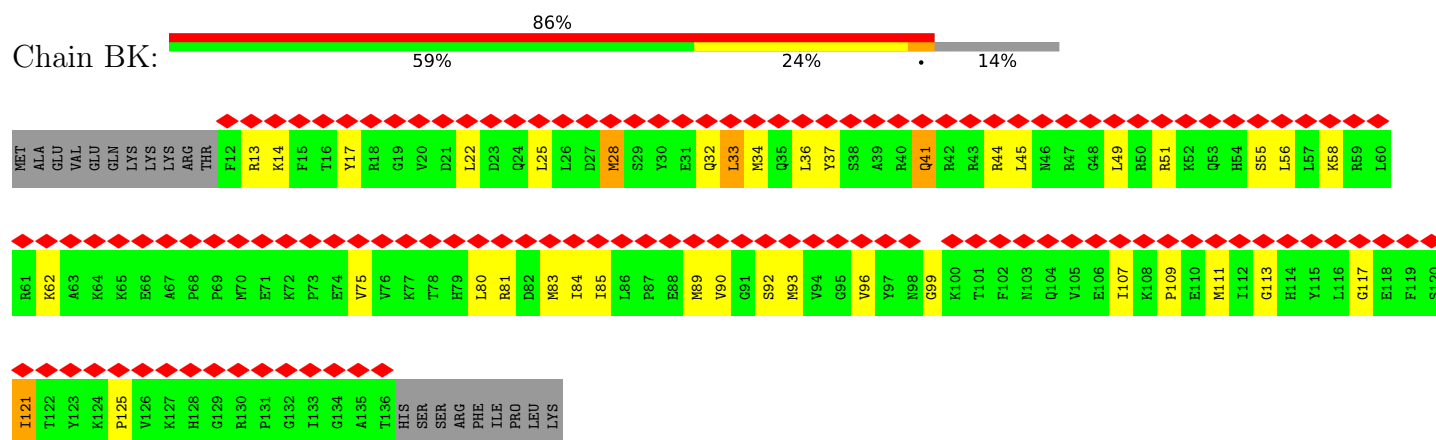
• Molecule 54: 40S ribosomal protein S10



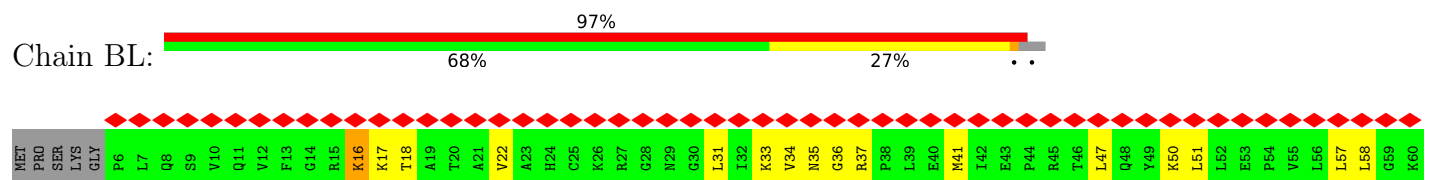
- Molecule 55: 40S ribosomal protein S11

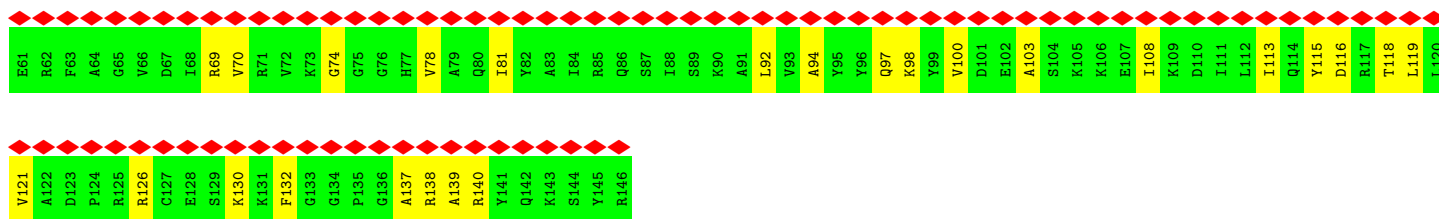


- Molecule 56: 40S ribosomal protein S15

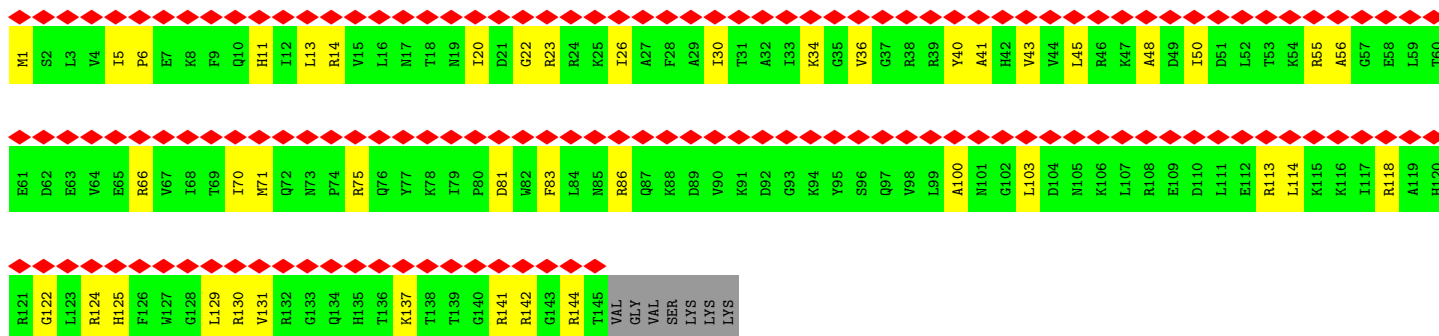


- Molecule 57: 40S ribosomal protein S16

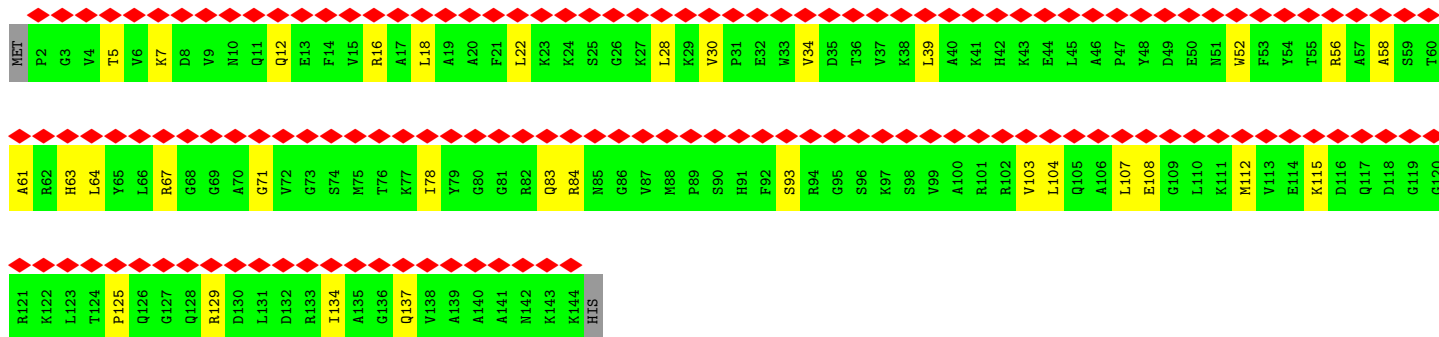
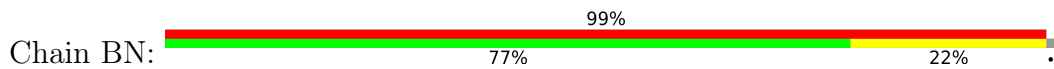




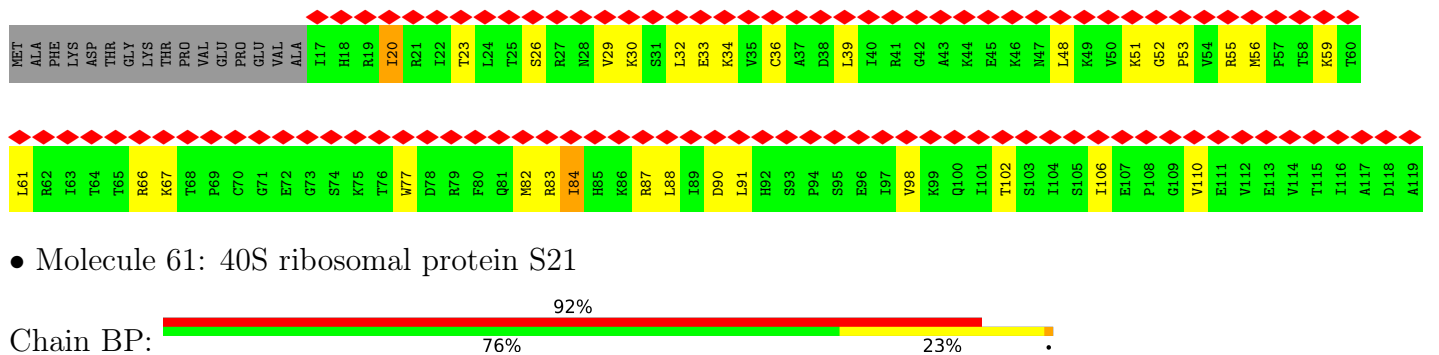
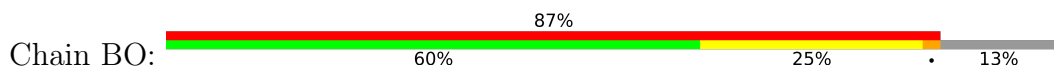
• Molecule 58: 40S ribosomal protein S18



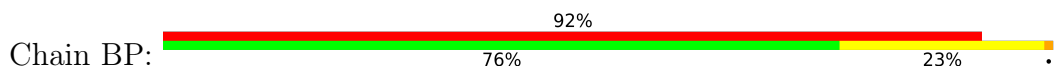
• Molecule 59: Small ribosomal subunit protein eS19

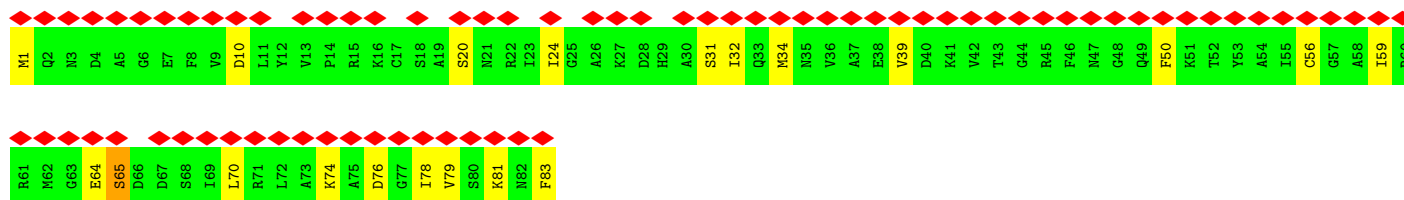


• Molecule 60: 40S ribosomal protein S20

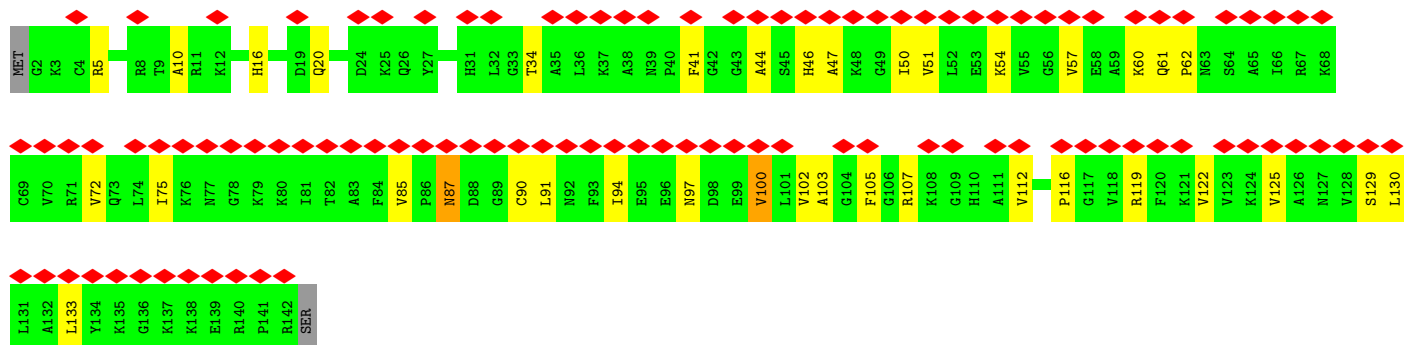
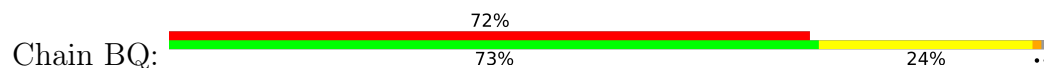


• Molecule 61: 40S ribosomal protein S21

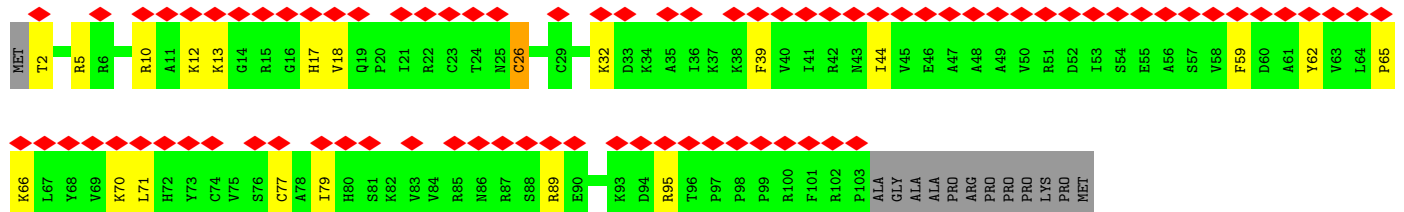
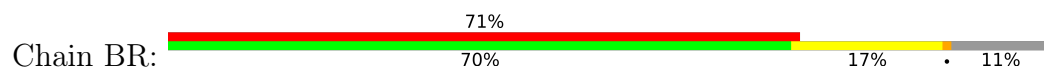




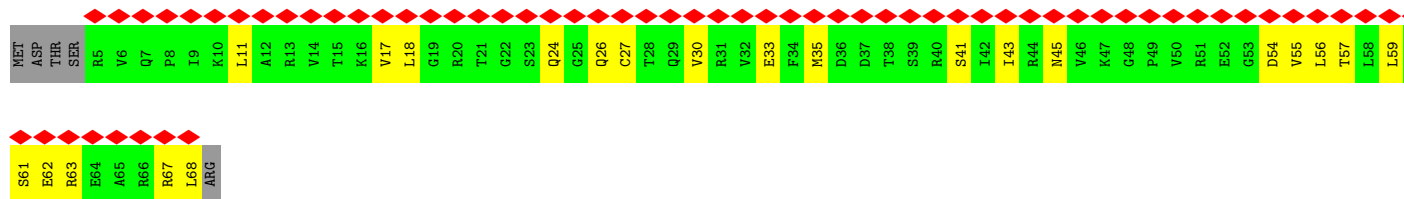
• Molecule 62: 40S ribosomal protein S23



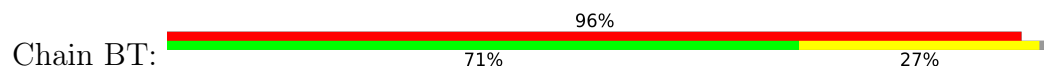
• Molecule 63: 40S ribosomal protein S26



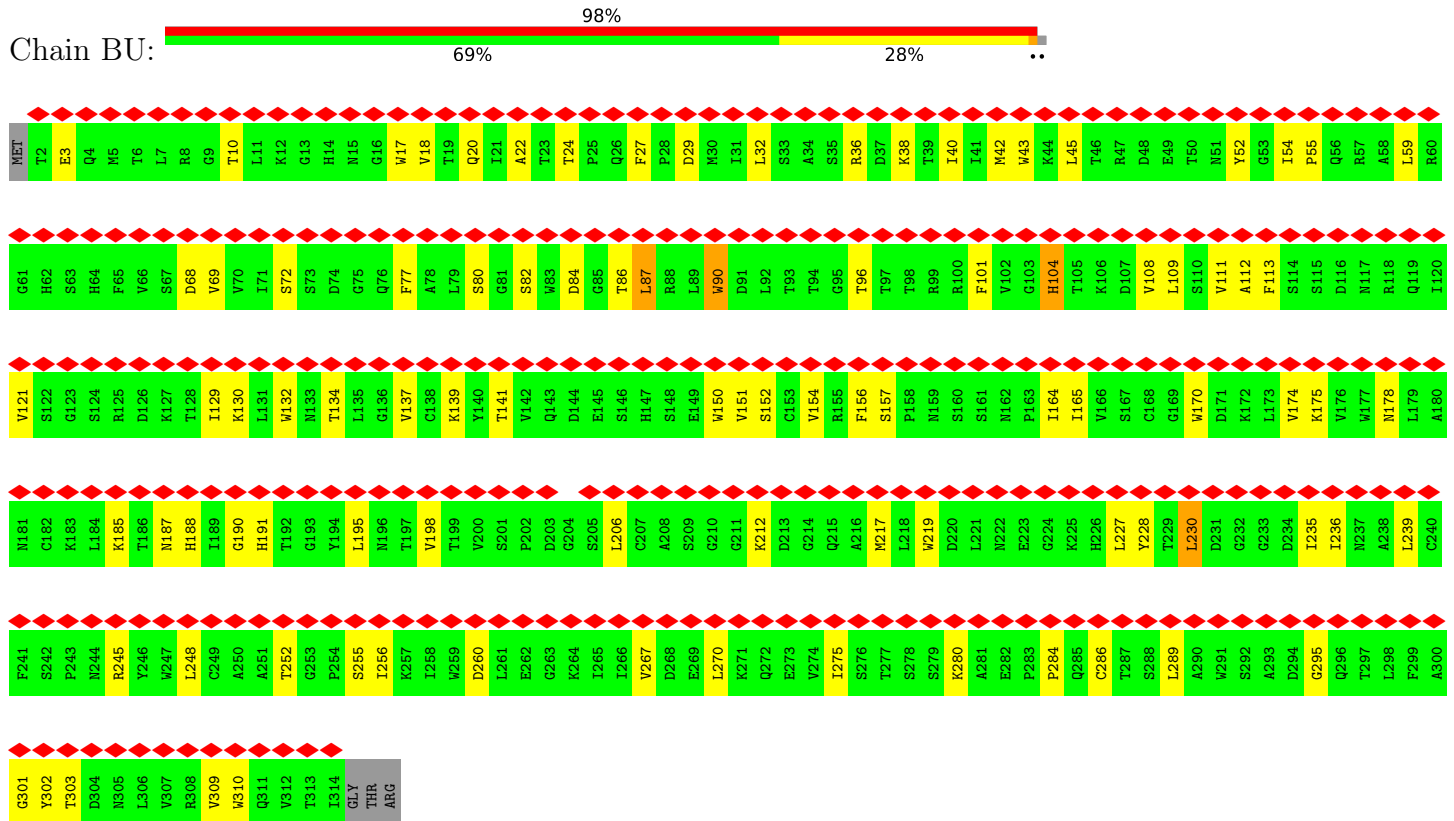
• Molecule 64: 40S ribosomal protein S28



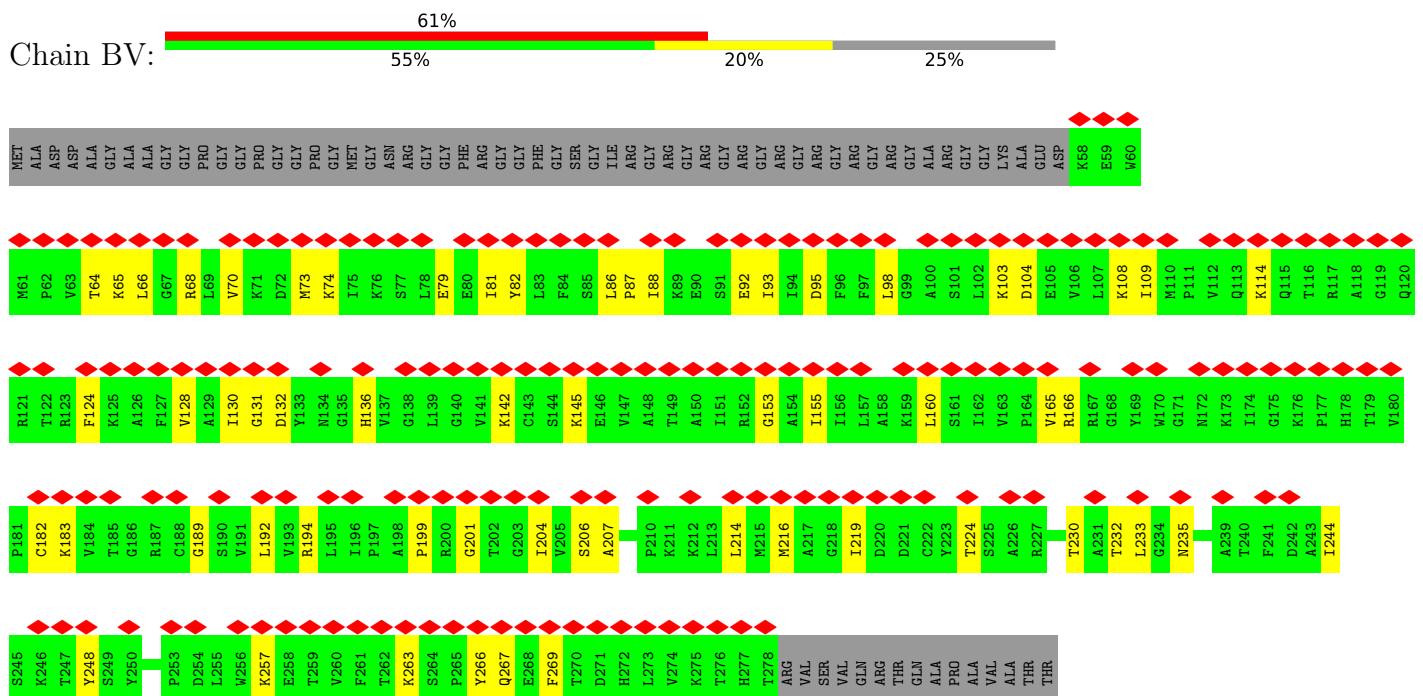
• Molecule 65: 40S ribosomal protein S29



- Molecule 66: Receptor of activated protein C kinase 1



- Molecule 67: 40S ribosomal protein S2

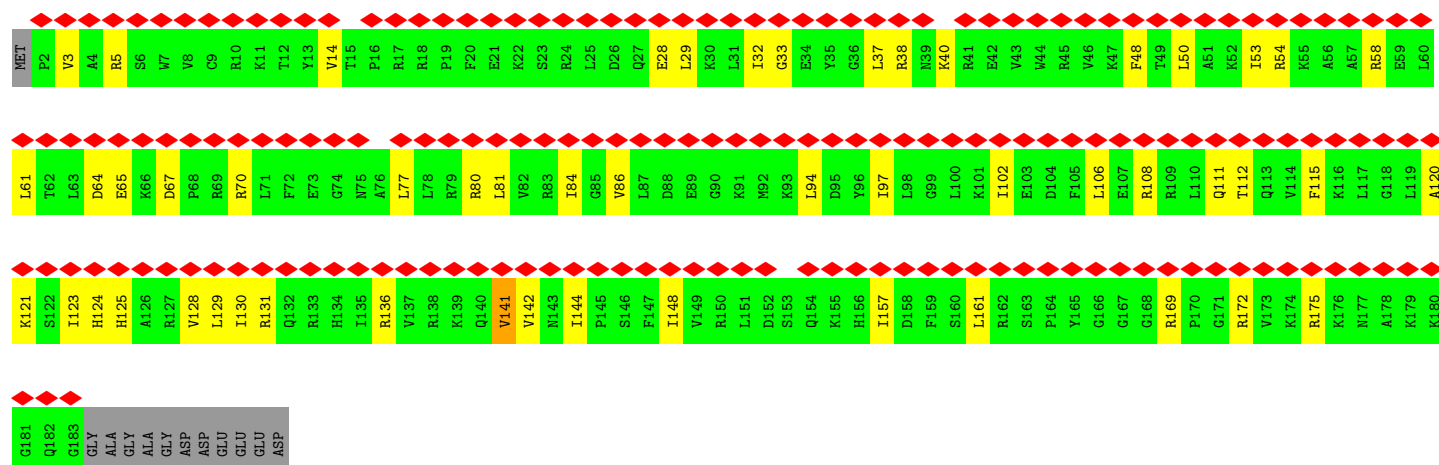


- Molecule 68: 40S ribosomal protein S6

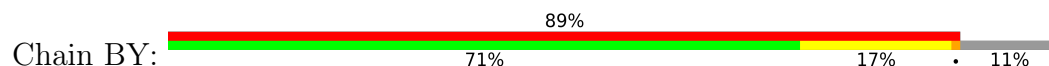




• Molecule 69: 40S ribosomal protein S9



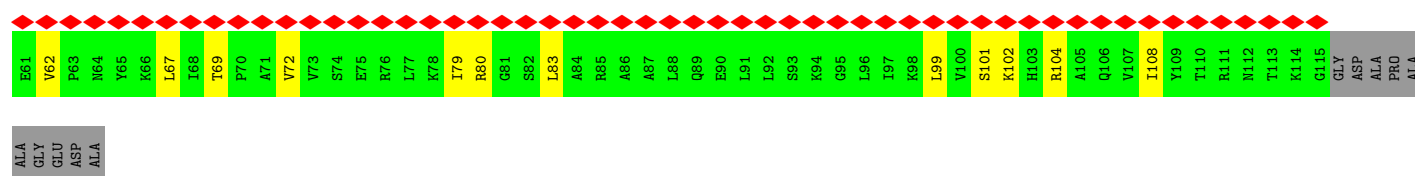
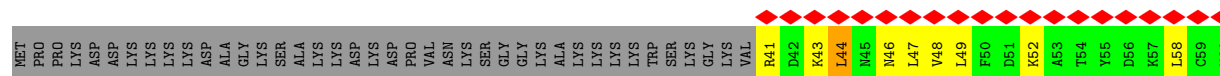
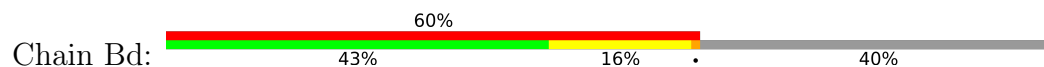
• Molecule 70: 40S ribosomal protein S12



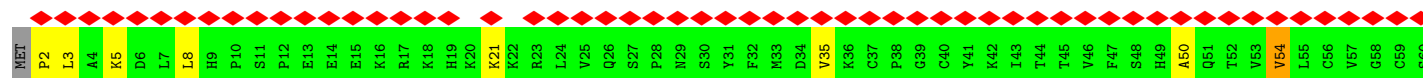
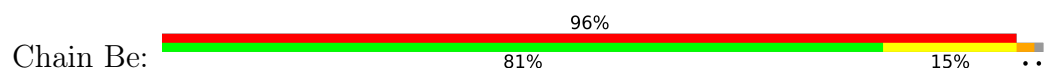
• Molecule 71: 40S ribosomal protein S13



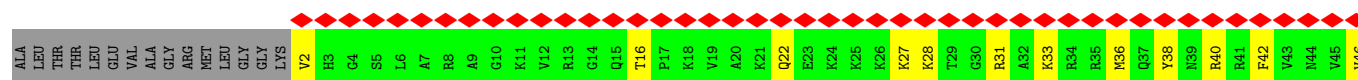
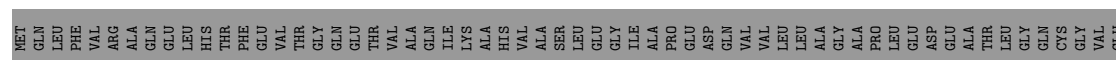
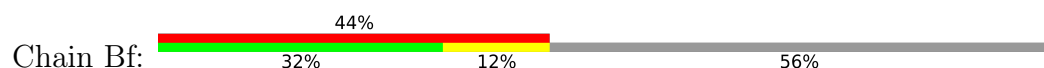
• Molecule 75: 40S ribosomal protein S25



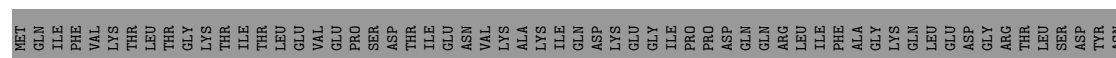
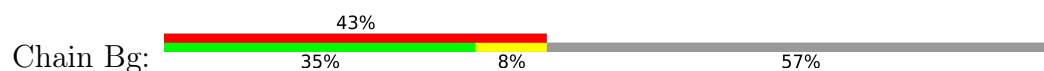
• Molecule 76: 40S ribosomal protein S27



• Molecule 77: Ubiquitin-like FUBI-ribosomal protein eS30 fusion protein



• Molecule 78: Ubiquitin-40S ribosomal protein S27a



ILE	GLN	LYS	GLU	SER	THR	LEU	HIS	LEU	VAL	LEU	ARG	LEU	ARG	ARG	GLY	GLY	ALA	LYS	LYS	ARG	LYS	LYS	LYS	SER	Y85	T86	T87	P88	K89	K90	N91	K92	H93	K94	R95	K96	K97	V98	K99	L100	A101	V102	L103	K104	Y105	Y106	K107	V108	D109	E110	N111	G112	K113	I114	S115	R116	L117	R118	R119	E120
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C121	P122	S123	D124	E125	C126	G127	A128	G129	V130	F131	M132	A133	S134	H135	F136	D137	R138	H139	Y140	C141	G142	K143	C144	C145	L146	T147	Y148	C149	F150	N151	LYS	PRO	GLU	ASP	LYS
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• Molecule 79: 40S ribosomal protein S17



MET	G2	R3	V4	R5	T6	K7	T8	V9	K10	K11	A12	A13	R14	V15	I16	I17	E18	K19	Y20	Y21	T22	R23	L24	G25	M26	D27	F28	H29	T30	N31	K32	R33	V34	C35	E36	E37	I38	A39	I40	I41	P42	S43	K44	K45	L46	R47	M48	K49	I50	A51	G52	V53	V54	T55	H56	L57	M58	K59	R60
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I61	Q62	R63	G64	P65	V66	R67	G68	I69	S70	I71	K72	L73	Q74	E75	E76	E77	R78	E79	R80	R81	D82	R83	Y84	V85	P86	E87	V88	S89	A90	L91	D92	Q93	E94	I95	I96	E97	V98	D99	P100	D101	T102	K103	E104	M105	L106	K107	L108	L109	D110	F111	G112	S113	L114	S115	N116	L117	Q118	V119	T120
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Q121	P122	T123	V124	G125	M126	N127	F128	K129	T130	P131	R132	GLY	PRO	VAL
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4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	64802	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	JEOL CRYO ARM 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.939	Depositor
Minimum map value	-1.142	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.063	Depositor
Recommended contour level	0.29	Depositor
Map size ($\text{\AA}$)	515.83997, 515.83997, 515.83997	wwPDB
Map dimensions	640, 640, 640	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	0.80599993, 0.80599993, 0.80599993	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: OMU, A2M, HIC, K, B8N, MG, 6MZ, IAS, PSU, MA6, NMM, 5MC, OMG, 4AC, G7M, 1MA, UR3, UY1, OMC, V5N, 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	0.21	0/86721	0.30	0/135215
2	AB	0.19	0/2858	0.26	0/4455
3	AC	0.20	0/3609	0.28	0/5623
4	AD	0.20	0/1936	0.33	0/2596
5	AE	0.19	0/3294	0.32	0/4406
6	AF	0.18	0/2981	0.36	0/4002
7	AG	0.16	0/2428	0.32	0/3252
8	AH	0.16	0/1942	0.34	0/2606
9	AI	0.20	0/1916	0.35	0/2553
10	AJ	0.19	0/1971	0.42	0/2651
11	AK	0.17	0/1537	0.29	0/2066
12	AL	0.18	0/1753	0.34	0/2343
13	AM	0.16	0/1433	0.41	0/1915
14	AN	0.18	0/1732	0.40	0/2315
15	AO	0.16	0/1161	0.30	0/1554
16	AP	0.20	0/1746	0.36	0/2338
17	AQ	0.19	0/1682	0.31	0/2250
18	AR	0.19	0/1268	0.33	0/1701
19	AS	0.18	0/1537	0.34	0/2052
20	AT	0.15	0/1582	0.28	0/2091
21	AU	0.20	0/1493	0.32	0/2003
22	AV	0.19	0/1326	0.34	0/1770
23	AW	0.20	0/839	0.52	0/1126
24	AX	0.19	0/993	0.32	0/1332
25	AY	0.15	0/876	0.32	0/1162
26	AZ	0.18	0/1002	0.37	0/1345
27	Aa	0.19	0/1119	0.42	0/1488
28	Ab	0.17	0/1130	0.34	0/1507
29	Ac	0.19	0/1179	0.32	0/1573
30	Ad	0.16	0/821	0.36	0/1084
31	Ae	0.17	0/774	0.36	0/1038

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	Af	0.18	0/894	0.32	0/1204
33	Ag	0.20	0/1071	0.44	0/1429
34	Ah	0.20	0/895	0.30	0/1198
35	Ai	0.23	0/878	0.36	0/1170
36	Aj	0.14	0/1023	0.33	0/1351
37	Ak	0.16	0/824	0.35	0/1090
38	Al	0.19	0/720	0.33	0/952
39	Am	0.21	0/565	0.45	0/750
40	An	0.20	0/454	0.39	0/599
41	Ao	0.16	0/425	0.31	0/564
42	Ap	0.16	0/231	0.41	0/294
43	Aq	0.17	0/858	0.28	0/1131
44	Ar	0.19	0/691	0.36	0/919
45	As	0.20	0/1002	0.39	0/1344
46	BA	0.17	2/39082 (0.0%)	0.32	5/60892 (0.0%)
47	BB	0.13	0/2102	0.38	0/2828
48	BC	0.16	0/1764	0.38	0/2396
49	BD	0.13	0/1774	0.38	0/2373
50	BE	0.14	0/1793	0.36	0/2414
51	BF	0.15	0/1531	0.42	0/2059
52	BG	0.14	0/1519	0.38	0/2033
53	BH	0.13	0/1715	0.34	0/2287
54	BI	0.15	0/840	0.44	0/1133
55	BJ	0.15	0/1280	0.41	0/1712
56	BK	0.18	0/1047	0.52	0/1399
57	BL	0.14	0/1142	0.42	0/1528
58	BM	0.13	0/1216	0.44	0/1628
59	BN	0.12	0/1119	0.34	0/1498
60	BO	0.17	0/827	0.42	0/1110
61	BP	0.14	0/643	0.38	0/860
62	BQ	0.16	0/1116	0.40	0/1490
63	BR	0.12	0/836	0.29	0/1121
64	BS	0.14	0/508	0.42	0/680
65	BT	0.13	0/470	0.34	0/623
66	BU	0.15	0/2493	0.43	0/3394
67	BV	0.15	0/1764	0.41	0/2382
68	BW	0.15	0/1926	0.43	0/2563
69	BX	0.17	0/1548	0.44	0/2066
70	BY	0.11	0/916	0.35	0/1233
71	BZ	0.17	0/1232	0.42	0/1656
72	Ba	0.13	0/1020	0.36	0/1366
73	Bb	0.15	0/1051	0.41	0/1406
74	Bc	0.16	0/1068	0.42	0/1418

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
75	Bd	0.13	0/604	0.37	0/810
76	Be	0.15	0/665	0.41	0/891
77	Bf	0.13	0/465	0.35	0/612
78	Bg	0.11	0/560	0.35	0/745
79	Bh	0.13	0/1078	0.39	0/1447
All	All	0.19	2/225884 (0.0%)	0.33	5/331460 (0.0%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
46	BA	668	A2M	O3'-P	5.18	1.61	1.56
46	BA	590	A2M	O3'-P	5.02	1.61	1.56

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	BA	1639	G7M	O3'-P-O5'	-23.84	58.71	104.00
46	BA	1639	G7M	P-O3'-C3'	18.30	141.66	119.70
46	BA	3	C	C4'-C3'-O3'	8.73	126.10	113.00
46	BA	1639	G7M	OP1-P-O3'	8.42	123.73	105.20
46	BA	3	C	C2'-C3'-O3'	-6.95	103.28	113.70

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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	80204	0	40480	668	0
2	AB	2558	0	1295	8	0
3	AC	3316	0	1687	25	0
4	AD	1898	0	1993	18	0
5	AE	3239	0	3374	35	0
6	AF	2927	0	3104	52	0
7	AG	2382	0	2410	19	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
8	AH	1904	0	2055	27	0
9	AI	1878	0	2009	26	0
10	AJ	1935	0	2087	24	0
11	AK	1518	0	1601	15	0
12	AL	1713	0	1751	18	0
13	AM	1410	0	1441	21	0
14	AN	1701	0	1818	34	0
15	AO	1138	0	1204	8	0
16	AP	1701	0	1749	15	0
17	AQ	1650	0	1794	22	0
18	AR	1242	0	1269	17	0
19	AS	1513	0	1628	20	0
20	AT	1566	0	1729	16	0
21	AU	1453	0	1490	13	0
22	AV	1298	0	1366	7	0
23	AW	825	0	850	7	0
24	AX	979	0	1039	4	0
25	AY	863	0	905	4	0
26	AZ	985	0	1066	12	0
27	Aa	1102	0	1189	23	0
28	Ab	1107	0	1182	11	0
29	Ac	1163	0	1206	17	0
30	Ad	808	0	875	12	0
31	Ae	764	0	804	3	0
32	Af	879	0	924	11	0
33	Ag	1053	0	1147	12	0
34	Ah	876	0	910	6	0
35	Ai	868	0	959	10	0
36	Aj	1015	0	1148	10	0
37	Ak	813	0	894	15	0
38	Al	705	0	737	6	0
39	Am	559	0	624	11	0
40	An	444	0	483	3	0
41	Ao	419	0	452	5	0
42	Ap	230	0	276	2	0
43	Aq	842	0	914	6	0
44	Ar	681	0	731	4	0
45	As	987	0	1050	19	0
46	BA	36916	0	18641	506	0
47	BB	2060	0	2157	57	0
48	BC	1727	0	1729	45	0
49	BD	1747	0	1822	38	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
50	BE	1765	0	1865	26	0
51	BF	1509	0	1563	37	0
52	BG	1497	0	1590	21	0
53	BH	1686	0	1772	36	0
54	BI	816	0	841	17	0
55	BJ	1258	0	1332	23	0
56	BK	1027	0	1073	28	0
57	BL	1124	0	1192	31	0
58	BM	1198	0	1261	33	0
59	BN	1113	0	1145	22	0
60	BO	817	0	880	28	0
61	BP	636	0	637	13	0
62	BQ	1098	0	1167	25	0
63	BR	821	0	870	12	0
64	BS	506	0	536	14	0
65	BT	459	0	448	11	0
66	BU	2436	0	2393	61	0
67	BV	1724	0	1817	42	0
68	BW	1903	0	2068	43	0
69	BX	1520	0	1642	41	0
70	BY	906	0	921	13	0
71	BZ	1208	0	1294	29	0
72	Ba	1016	0	1037	17	0
73	Bb	1034	0	1080	19	0
74	Bc	1048	0	1122	41	0
75	Bd	598	0	656	20	0
76	Be	651	0	672	11	0
77	Bf	459	0	503	14	0
78	Bg	548	0	552	8	0
79	Bh	1064	0	1118	26	0
80	AA	197	0	0	0	0
80	AB	2	0	0	0	0
80	AC	4	0	0	0	0
80	AP	1	0	0	0	0
80	AR	1	0	0	0	0
80	AX	1	0	0	0	0
80	BA	62	0	0	0	0
80	BL	2	0	0	0	0
80	BN	1	0	0	0	0
81	AA	65	0	0	0	0
81	AB	1	0	0	0	0
81	AD	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
81	AL	1	0	0	0	0
81	Ag	1	0	0	0	0
81	Ah	1	0	0	0	0
81	Aq	1	0	0	0	0
81	BA	12	0	0	0	0
82	Ai	1	0	0	0	0
82	Al	1	0	0	0	0
82	Ao	1	0	0	0	0
82	Aq	1	0	0	0	0
82	Ar	1	0	0	0	0
82	BR	1	0	0	0	0
82	BT	1	0	0	0	0
82	Bg	1	0	0	0	0
All	All	215368	0	159095	2401	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 6.

All (2401) 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)
46:BA:1451:G:H21	46:BA:1474:A:N6	1.56	1.03
46:BA:1451:G:N2	46:BA:1474:A:H61	1.57	1.01
46:BA:1560:U:H3	46:BA:1575:G:H1	1.06	1.01
46:BA:1656:G:H1	46:BA:1668:U:H3	1.10	0.98
46:BA:1260:A:C2	46:BA:1617:G:N2	2.33	0.97
46:BA:1368:U:C6	46:BA:1368:U:H5''	2.06	0.91
1:AA:3944:G:H1	1:AA:4069:U:H3	1.15	0.90
46:BA:1260:A:H2	46:BA:1617:G:H21	1.14	0.90
46:BA:1260:A:H2	46:BA:1617:G:N2	1.69	0.88
46:BA:1256:G:H1	65:BT:31:ILE:HD11	1.41	0.85
3:AC:72:A:H61	3:AC:79:G:H1	1.19	0.85
46:BA:1451:G:H21	46:BA:1474:A:H61	0.84	0.83
1:AA:173:C:H5''	14:AN:129:ARG:HH22	1.45	0.82
46:BA:1831:A:H2'	46:BA:1832:6MZ:H8	1.62	0.81
46:BA:158:A:N6	46:BA:467:G:N2	2.29	0.80
46:BA:158:A:H61	46:BA:467:G:N2	1.80	0.80
48:BC:76:VAL:HG12	48:BC:87:VAL:HG23	1.63	0.80
70:BY:52:LEU:HB3	70:BY:78:LYS:HZ1	1.43	0.80
46:BA:379:C:H5''	53:BH:56:ARG:HH22	1.47	0.80
1:AA:3717:A:H2'	1:AA:3718:A2M:H8	1.62	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:BG:145:ARG:HG3	73:Bb:51:GLU:HB2	1.62	0.79
48:BC:77:ILE:HG22	48:BC:99:ILE:HB	1.65	0.79
46:BA:1030:A:H2'	46:BA:1031:A2M:H8	1.64	0.78
50:BE:158:ILE:H	50:BE:189:MET:HE1	1.47	0.78
46:BA:1550:G:N2	46:BA:1583:C:C2	2.52	0.78
1:AA:1405:C:H2'	1:AA:1412:G:H1	1.49	0.77
60:BO:53:PRO:HB2	60:BO:55:ARG:HH12	1.49	0.77
66:BU:17:TRP:HE1	66:BU:303:THR:HG22	1.48	0.77
46:BA:851:C:H5''	46:BA:852:G:H5'	1.67	0.76
66:BU:17:TRP:HB2	66:BU:36:ARG:HE	1.51	0.76
1:AA:216:C:H5''	1:AA:219:G:H21	1.52	0.75
74:Bc:21:LYS:HB3	74:Bc:75:ILE:HG23	1.69	0.75
63:BR:26:CYS:HB3	63:BR:77:CYS:SG	2.26	0.74
46:BA:3:C:H4'	67:BV:224:THR:O	1.88	0.74
46:BA:1677:U:H2'	46:BA:1678:A2M:H8	1.69	0.74
1:AA:1460:C:H5''	19:AS:144:LYS:HG2	1.68	0.73
66:BU:42:MET:HE3	66:BU:42:MET:H	1.52	0.73
46:BA:576:A2M:HM'2	46:BA:577:U:H5'	1.71	0.73
62:BQ:51:VAL:HG23	62:BQ:100:VAL:HG11	1.71	0.73
1:AA:4198:G:H1	12:AL:108:ALA:HB2	1.53	0.73
10:AJ:176:LYS:HD3	37:Ak:43:MET:HE1	1.69	0.73
62:BQ:125:VAL:HG13	62:BQ:130:LEU:HD11	1.71	0.73
58:BM:113:ARG:HH21	58:BM:114:LEU:HD12	1.55	0.72
48:BC:158:ASP:HA	61:BP:65:SER:HB3	1.72	0.72
46:BA:467:G:H5'	68:BW:74:ARG:HH12	1.55	0.72
48:BC:74:VAL:HG12	48:BC:121:LEU:HB3	1.72	0.72
46:BA:1545:A:H4'	57:BL:74:GLY:HA2	1.70	0.72
47:BB:220:THR:HG22	47:BB:221:ARG:H	1.55	0.72
3:AC:72:A:N6	3:AC:79:G:H1	1.87	0.71
8:AH:46:ARG:HH21	8:AH:66:LYS:HG2	1.54	0.71
46:BA:943:U:H2'	46:BA:944:A:H8	1.55	0.71
51:BF:18:LYS:HD2	51:BF:24:SER:HA	1.72	0.71
46:BA:1540:G:H22	46:BA:1595:U:H1'	1.55	0.71
46:BA:221:A:H61	46:BA:301:A:H61	1.38	0.71
56:BK:33:LEU:HD12	56:BK:36:LEU:HD11	1.73	0.71
1:AA:2557:G:H1	1:AA:2570:U:H3	1.36	0.71
1:AA:1332:C:H2'	1:AA:1333:A:H8	1.56	0.71
67:BV:204:ILE:HD13	67:BV:214:LEU:HB3	1.73	0.71
46:BA:186:C:H2'	46:BA:187:G:H8	1.54	0.70
46:BA:1382:A:H2'	46:BA:1383:A2M:H8	1.72	0.70
1:AA:2486:G:H1	1:AA:2494:U:H3	1.39	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:BC:1:MET:HA	48:BC:59:LEU:HB3	1.73	0.70
46:BA:373:G:H2'	46:BA:374:G:H8	1.56	0.70
46:BA:921:G:H5'	76:Be:21:LYS:HE3	1.73	0.70
50:BE:29:LEU:HB3	50:BE:32:ASP:HB2	1.74	0.70
50:BE:40:ARG:HH12	60:BO:106:ILE:HD11	1.56	0.70
46:BA:140:C:H42	46:BA:313:A:H61	1.39	0.69
62:BQ:60:LYS:HD3	62:BQ:116:PRO:HG3	1.74	0.69
18:AR:125:MET:HE2	18:AR:143:PRO:HG3	1.73	0.69
46:BA:1864:U:H5'	63:BR:79:ILE:HD11	1.75	0.69
1:AA:1095:A:N1	1:AA:1200:G:O6	2.25	0.69
46:BA:3:C:O2'	67:BV:224:THR:OG1	2.01	0.69
46:BA:512:A2M:HM'2	46:BA:513:G:H8	1.57	0.69
46:BA:1260:A:H61	46:BA:1617:G:H1'	1.57	0.69
46:BA:1737:G:H1	46:BA:1797:U:H3	1.39	0.69
79:Bh:61:ILE:HG12	79:Bh:66:VAL:HG21	1.75	0.69
1:AA:132:G:H2'	1:AA:133:C:H4'	1.75	0.68
1:AA:2611:A:H5'	1:AA:2688:G:H4'	1.75	0.68
56:BK:34:MET:HE1	56:BK:45:LEU:HB3	1.74	0.68
19:AS:99:LYS:HE2	19:AS:121:LEU:HD11	1.75	0.68
11:AK:44:GLU:HB3	11:AK:58:ASP:HB2	1.74	0.68
46:BA:1229:G:H5'	58:BM:142:ARG:HE	1.57	0.68
73:Bb:38:LEU:HA	73:Bb:41:MET:HG3	1.74	0.68
46:BA:291:G:H21	55:BJ:42:LEU:HD21	1.59	0.68
1:AA:4887:C:H42	1:AA:4932:U:H3	1.39	0.68
6:AF:101:MET:HE3	6:AF:104:PRO:HA	1.75	0.68
47:BB:73:ASP:HB3	47:BB:145:ARG:HH12	1.58	0.68
72:Ba:30:VAL:HG22	72:Ba:94:HIS:HB2	1.77	0.67
54:BI:11:ILE:HD11	54:BI:45:VAL:HG13	1.77	0.67
1:AA:1508:A:H5''	6:AF:113:ARG:HD2	1.77	0.67
47:BB:221:ARG:HD3	47:BB:223:SER:H	1.59	0.67
51:BF:55:ARG:HH12	57:BL:118:THR:HG21	1.59	0.67
74:Bc:29:HIS:HE1	74:Bc:34:THR:HA	1.60	0.67
1:AA:268:G:H2'	1:AA:269:G:H8	1.59	0.67
46:BA:1657:G:H1	46:BA:1667:U:H3	1.43	0.67
66:BU:206:LEU:HD21	66:BU:227:LEU:HD22	1.76	0.67
66:BU:22:ALA:HB3	66:BU:32:LEU:HB3	1.77	0.67
76:Be:64:CYS:HB3	76:Be:73:LEU:HD13	1.77	0.66
47:BB:230:LYS:H	47:BB:235:TRP:HE1	1.41	0.66
74:Bc:55:ILE:HG12	74:Bc:75:ILE:HD13	1.76	0.66
67:BV:189:GLY:HA3	67:BV:235:ASN:HD21	1.58	0.66
47:BB:9:LEU:HB3	47:BB:28:ALA:HB3	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
68:BW:57:ASP:HA	68:BW:106:LEU:HA	1.77	0.66
1:AA:1940:G:H22	1:AA:4434:C:H5''	1.61	0.66
38:Al:39:TYR:CD1	38:Al:40:PRO:HA	2.30	0.66
6:AF:34:PRO:HA	6:AF:37:VAL:HG22	1.78	0.66
51:BF:128:ILE:HA	51:BF:135:ARG:HD3	1.76	0.66
67:BV:131:GLY:HA3	67:BV:216:MET:HG3	1.76	0.66
68:BW:2:LYS:HB2	68:BW:108:VAL:HG22	1.78	0.66
53:BH:119:LEU:HD21	53:BH:153:LYS:HG2	1.79	0.65
66:BU:284:PRO:HB2	66:BU:302:TYR:HB3	1.78	0.65
68:BW:67:VAL:HB	68:BW:99:GLY:HA2	1.77	0.65
1:AA:1093:C:H2'	1:AA:1094:G:H8	1.60	0.65
56:BK:56:LEU:HD13	56:BK:80:LEU:HD13	1.77	0.65
56:BK:56:LEU:HD11	56:BK:83:MET:HG3	1.78	0.65
46:BA:1608:U:H3	46:BA:1631:U:H3	1.44	0.65
1:AA:1821:G:H21	1:AA:1822:U:H5'	1.60	0.65
32:Af:64:ILE:HG23	32:Af:68:LEU:HD23	1.79	0.65
46:BA:1271:C:H42	46:BA:1511:U:H3	1.45	0.65
48:BC:77:ILE:HD11	48:BC:124:VAL:HG12	1.78	0.65
11:AK:44:GLU:HG3	15:AO:2:VAL:HG12	1.78	0.65
46:BA:1854:U:H2'	46:BA:1855:G:H8	1.61	0.65
1:AA:2906:G:H1	1:AA:3584:C:H41	1.45	0.65
46:BA:4:C:H4'	67:BV:207:ALA:HB2	1.79	0.65
54:BI:71:LEU:HD11	54:BI:76:ILE:HB	1.79	0.64
1:AA:4302:U:H4'	22:AV:5:LYS:HD2	1.80	0.64
46:BA:1521:C:H5	58:BM:137:LYS:HA	1.63	0.64
46:BA:28:U:H3	46:BA:646:G:H1	1.45	0.64
46:BA:1535:U:H3'	46:BA:1536:G:H8	1.61	0.64
57:BL:51:LEU:HD13	57:BL:81:ILE:HD11	1.80	0.64
67:BV:214:LEU:HD13	67:BV:219:ILE:HD13	1.80	0.64
24:AX:13:LYS:HD2	24:AX:128:LEU:HD11	1.78	0.64
6:AF:116:ASN:HB2	6:AF:119:GLN:HG3	1.79	0.64
46:BA:1368:U:O2'	79:Bh:4:VAL:CG2	2.46	0.64
46:BA:1659:U:O2	46:BA:1664:A:N7	2.30	0.64
72:Ba:45:THR:HG22	72:Ba:52:THR:HA	1.80	0.64
74:Bc:112:ASN:HA	74:Bc:115:LYS:HD2	1.80	0.64
1:AA:4594:U:H2'	1:AA:4595:G:H8	1.63	0.63
1:AA:4611:A:H2	11:AK:120:GLU:HB3	1.63	0.63
1:AA:1870:C:H2'	1:AA:1871:A2M:H8	1.80	0.63
8:AH:131:LYS:HE3	8:AH:135:GLN:HB3	1.81	0.63
55:BJ:150:GLY:HA3	71:BZ:133:ARG:HH21	1.63	0.63
1:AA:4918:C:H2'	1:AA:4919:G:H8	1.63	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:AG:223:PHE:HB3	7:AG:226:TYR:HB2	1.81	0.63
66:BU:87:LEU:HB3	66:BU:101:PHE:HB2	1.80	0.63
1:AA:2544:G:H5''	1:AA:2546:G:H21	1.64	0.63
50:BE:76:ARG:HH21	54:BI:66:HIS:HB2	1.63	0.63
66:BU:32:LEU:HD12	66:BU:42:MET:HB3	1.79	0.63
8:AH:274:VAL:HG21	34:Ah:2:SER:HB3	1.81	0.63
19:AS:50:ARG:HH12	19:AS:140:SER:HB2	1.64	0.63
46:BA:928:G:H2'	46:BA:929:G:C8	2.34	0.63
66:BU:178:ASN:HD22	66:BU:185:LYS:HB2	1.64	0.63
46:BA:844:U:H2'	46:BA:845:G:H8	1.62	0.63
35:Ai:83:CYS:SG	35:Ai:86:CYS:HB2	2.37	0.63
31:Ae:40:GLN:HB3	31:Ae:42:LYS:HG3	1.80	0.63
46:BA:1133:A:H4'	63:BR:13:LYS:HG2	1.81	0.63
1:AA:1306:C:H2'	1:AA:1307:A:H8	1.64	0.62
48:BC:141:ASN:HD21	67:BV:86:LEU:HA	1.63	0.62
46:BA:822:PSU:HN3	46:BA:826:A:H62	1.47	0.62
46:BA:1243:U:N3	46:BA:1265:A:C6	2.67	0.62
62:BQ:50:ILE:HG23	62:BQ:97:ASN:HA	1.81	0.62
1:AA:4184:G:H5'	4:AD:233:ARG:HB2	1.81	0.62
46:BA:1749:G:N2	46:BA:1786:U:O2	2.32	0.62
48:BC:119:PRO:HG2	48:BC:142:LEU:HD11	1.81	0.62
51:BF:59:LYS:HB2	51:BF:62:ARG:HG3	1.81	0.62
52:BG:154:ILE:HB	52:BG:185:VAL:HG22	1.79	0.62
53:BH:199:LEU:HA	53:BH:202:ILE:HG22	1.81	0.62
1:AA:1759:G:H1	1:AA:1773:U:H3	1.46	0.62
1:AA:3717:A:H2'	1:AA:3718:A2M:C8	2.29	0.62
7:AG:62:CYS:HB3	7:AG:105:LEU:HD22	1.80	0.62
35:Ai:45:ALA:HB3	35:Ai:82:MET:HE2	1.80	0.62
46:BA:1214:A:N6	46:BA:1682:C:O2	2.33	0.62
46:BA:1241:A:H2'	46:BA:1242:U:H4'	1.80	0.62
46:BA:1442:OMU:HM22	46:BA:1443:C:H5'	1.81	0.62
50:BE:76:ARG:HB2	54:BI:22:VAL:HG11	1.82	0.62
1:AA:4887:C:N4	1:AA:4932:U:H3	1.97	0.62
1:AA:667:A:H1'	45:As:46:ARG:HE	1.63	0.62
75:Bd:67:LEU:HG	75:Bd:72:VAL:HG21	1.80	0.62
46:BA:1749:G:N1	46:BA:1786:U:N3	2.48	0.62
46:BA:115:U:H2'	46:BA:116:OMU:H6	1.81	0.61
51:BF:39:ILE:HG23	51:BF:68:ILE:HG13	1.81	0.61
66:BU:137:VAL:HG13	66:BU:139:LYS:HD3	1.82	0.61
68:BW:1:MET:HE1	68:BW:109:LEU:HD23	1.80	0.61
21:AU:4:SER:HB3	21:AU:111:ARG:HH22	1.64	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:Ap:1:MET:HE2	46:BA:1706:G:H5''	1.82	0.61
1:AA:1478:C:H2'	1:AA:1479:G:H8	1.65	0.61
28:Ab:29:ILE:HG22	28:Ab:32:GLY:H	1.65	0.61
49:BD:40:ASN:H	49:BD:75:GLN:HG2	1.64	0.61
17:AQ:29:LEU:HB3	34:Ah:10:ILE:HG21	1.80	0.61
46:BA:143:U:H4'	46:BA:144:U:H5'	1.83	0.61
46:BA:1829:G:H1'	46:BA:1850:MA6:H2	1.81	0.61
79:Bh:71:ILE:HB	79:Bh:74:GLN:HG2	1.82	0.61
49:BD:25:PHE:HA	49:BD:28:LYS:HD2	1.83	0.61
53:BH:198:TYR:HE1	55:BJ:10:TYR:HB2	1.65	0.61
69:BX:136:ARG:HA	69:BX:141:VAL:HA	1.82	0.61
1:AA:4918:C:H2'	1:AA:4919:G:C8	2.36	0.61
6:AF:138:MET:HE1	6:AF:145:GLU:HG3	1.83	0.61
20:AT:175:GLU:HA	20:AT:178:GLN:HG2	1.82	0.61
53:BH:101:ILE:HD11	53:BH:198:TYR:HD2	1.66	0.61
1:AA:1942:A:H2'	1:AA:1943:A:C8	2.35	0.61
13:AM:18:ARG:HD3	13:AM:135:GLY:HA3	1.82	0.61
19:AS:32:TYR:HA	19:AS:35:LEU:HB2	1.81	0.61
1:AA:679:C:H2'	1:AA:680:G:H8	1.66	0.61
1:AA:2745:A:H2'	1:AA:2746:A:H8	1.65	0.61
1:AA:966:A:H5''	1:AA:2092:G:H22	1.66	0.61
1:AA:1175:A:H2	1:AA:1185:G:H22	1.48	0.61
1:AA:2411:C:H2'	1:AA:2412:A:H8	1.66	0.61
1:AA:2777:G:H5''	1:AA:2778:G:H5'	1.82	0.61
3:AC:87:G:H5'	36:Aj:5:LYS:HE2	1.83	0.61
23:AW:27:HIS:HB3	23:AW:114:TYR:HE1	1.66	0.61
46:BA:1609:C:H2'	46:BA:1610:G:H8	1.66	0.61
56:BK:22:LEU:HD21	56:BK:90:VAL:HG21	1.82	0.61
56:BK:37:TYR:HE1	56:BK:113:GLY:HA2	1.66	0.61
1:AA:4050:A:H5''	1:AA:4051:C:H5	1.65	0.61
46:BA:486:A:H1'	46:BA:513:G:H22	1.65	0.61
23:AW:28:PRO:HB2	23:AW:34:MET:HB3	1.83	0.60
46:BA:928:G:H1	46:BA:1013:U:H3	1.48	0.60
46:BA:1644:C:H4'	57:BL:140:ARG:HB2	1.82	0.60
47:BB:182:MET:HG3	47:BB:192:ILE:HG13	1.82	0.60
48:BC:58:LEU:HD21	48:BC:178:LEU:HB2	1.83	0.60
52:BG:51:ILE:HD11	52:BG:59:ALA:HB3	1.83	0.60
77:Bf:31:ARG:H	77:Bf:31:ARG:NE	1.99	0.60
6:AF:44:LEU:HD11	6:AF:120:LYS:HE3	1.83	0.60
52:BG:60:ILE:HD11	52:BG:92:VAL:HG22	1.83	0.60
53:BH:173:ALA:HA	53:BH:189:VAL:HA	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:700:G:H2'	1:AA:701:G:H8	1.66	0.60
1:AA:1245:C:H2'	1:AA:1246:G:H8	1.67	0.60
46:BA:223:C:H2'	46:BA:224:A:C4	2.37	0.60
46:BA:1683:C:H2'	46:BA:1684:C:H6	1.65	0.60
47:BB:94:LYS:HG3	74:Bc:16:ARG:HB2	1.83	0.60
66:BU:175:LYS:HG2	66:BU:187:ASN:HA	1.83	0.60
1:AA:1497:A:H1'	19:AS:164:LYS:HG3	1.83	0.60
46:BA:1368:U:O2'	79:Bh:4:VAL:HG23	2.01	0.60
46:BA:1226:G:H2'	46:BA:1639:G7M:HN73	1.84	0.60
1:AA:3965:A:N1	1:AA:4043:G:O6	2.34	0.60
9:AI:124:LYS:HG3	9:AI:197:VAL:HG11	1.83	0.60
46:BA:1550:G:H3'	46:BA:1579:A:H61	1.67	0.60
49:BD:28:LYS:HD3	49:BD:48:LEU:HD13	1.84	0.60
1:AA:1377:G:H5''	1:AA:1379:C:H5''	1.83	0.60
1:AA:3718:A2M:H2	1:AA:3934:G:O4'	2.01	0.60
46:BA:988:C:H5'	49:BD:116:LYS:HG2	1.84	0.60
55:BJ:16:ILE:HD11	55:BJ:34:PRO:HB2	1.83	0.60
60:BO:26:SER:HB2	60:BO:110:VAL:HG13	1.84	0.60
1:AA:2411:C:H2'	1:AA:2412:A:C8	2.37	0.60
1:AA:3774:A:H2'	1:AA:3775:A:C8	2.37	0.60
63:BR:44:ILE:HG13	63:BR:65:PRO:HG2	1.83	0.60
13:AM:113:ILE:HA	13:AM:117:ILE:HB	1.83	0.59
66:BU:170:TRP:HZ3	79:Bh:23:ARG:HB3	1.65	0.59
1:AA:4274:A:H2'	1:AA:4275:G:C8	2.37	0.59
68:BW:22:ARG:HA	68:BW:25:ARG:HE	1.68	0.59
54:BI:14:LEU:HA	54:BI:17:LYS:HB3	1.85	0.59
55:BJ:101:ARG:HB2	62:BQ:10:ALA:HB2	1.83	0.59
1:AA:2745:A:H2'	1:AA:2746:A:C8	2.37	0.59
46:BA:1368:U:H2'	46:BA:1368:U:O2	2.03	0.59
60:BO:59:LYS:HB2	60:BO:84:ILE:HG22	1.83	0.59
1:AA:280:G:H5''	16:AP:14:LYS:HE2	1.84	0.59
46:BA:158:A:C6	46:BA:467:G:N2	2.71	0.59
27:Aa:34:LEU:HD21	27:Aa:47:MET:HB2	1.84	0.59
27:Aa:58:VAL:HG23	27:Aa:59:ARG:HG2	1.85	0.59
46:BA:26:U:H2'	46:BA:27:A2M:H8	1.84	0.59
1:AA:300:A:H2'	1:AA:301:G:H8	1.66	0.59
4:AD:135:THR:HG23	4:AD:149:LYS:HB3	1.83	0.59
14:AN:178:ALA:HB3	29:Ac:134:GLU:HG3	1.84	0.59
46:BA:1649:U:H4'	57:BL:138:ARG:HG3	1.84	0.59
46:BA:1673:U:H5''	57:BL:78:VAL:HG12	1.85	0.59
54:BI:90:VAL:HB	54:BI:94:LEU:HD21	1.82	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:AU:96:GLU:HB3	21:AU:142:VAL:HG21	1.84	0.59
46:BA:1486:A:H2'	46:BA:1487:A:C8	2.38	0.59
57:BL:132:PHE:CG	60:BO:77:TRP:HB2	2.38	0.59
61:BP:1:MET:HB3	61:BP:10:ASP:HB2	1.84	0.59
1:AA:4570:G:H2'	1:AA:4571:A2M:H8	1.83	0.59
25:AY:116:LYS:HE2	25:AY:119:LYS:HG2	1.83	0.59
45:As:63:VAL:HG13	45:As:79:ARG:HG2	1.84	0.59
47:BB:180:LEU:HB3	47:BB:229:GLY:HA3	1.85	0.59
14:AN:154:VAL:HG12	14:AN:155:MET:HE3	1.84	0.58
15:AO:38:VAL:HG21	15:AO:50:MET:HE3	1.85	0.58
29:Ac:125:LYS:HG2	29:Ac:145:VAL:HB	1.84	0.58
46:BA:1560:U:O4	46:BA:1575:G:O6	2.21	0.58
53:BH:69:SER:HB2	55:BJ:21:LYS:HD3	1.85	0.58
1:AA:4691:A:H4'	11:AK:71:ARG:HG2	1.85	0.58
46:BA:582:U:H1'	74:Bc:33:ALA:HB2	1.84	0.58
73:Bb:62:VAL:HG11	76:Be:8:LEU:HG	1.84	0.58
1:AA:2845:A:H61	1:AA:3843:C:H42	1.49	0.58
5:AE:57:VAL:HG22	5:AE:73:VAL:HG22	1.85	0.58
14:AN:48:PRO:HG3	36:Aj:118:LYS:HE3	1.85	0.58
69:BX:108:ARG:HH11	69:BX:108:ARG:HA	1.69	0.58
46:BA:28:U:H2'	46:BA:29:G:H8	1.67	0.58
46:BA:1608:U:H4'	58:BM:130:ARG:HD2	1.85	0.58
1:AA:3697:U:H5''	1:AA:3698:G:H5'	1.84	0.58
6:AF:159:GLU:HA	6:AF:217:ILE:HB	1.84	0.58
46:BA:38:A:H5''	69:BX:5:ARG:HB3	1.85	0.58
1:AA:2520:C:H2'	1:AA:2521:G:H8	1.68	0.58
1:AA:3772:U:H2'	1:AA:3773:U:H2'	1.84	0.58
46:BA:874:G:H2'	46:BA:875:A:H8	1.69	0.58
68:BW:76:LEU:HD23	68:BW:94:ARG:HG2	1.84	0.58
1:AA:121:A:H62	1:AA:152:U:H3	1.51	0.58
53:BH:101:ILE:HD11	53:BH:198:TYR:CD2	2.39	0.58
64:BS:35:MET:HA	64:BS:35:MET:HE3	1.86	0.58
69:BX:121:LYS:H	69:BX:125:HIS:CD2	2.22	0.58
27:Aa:29:ILE:H	27:Aa:29:ILE:HD12	1.68	0.58
46:BA:317:C:H5	68:BW:183:ARG:HH22	1.52	0.58
46:BA:1703:OMC:HM22	46:BA:1704:C:H5'	1.86	0.58
59:BN:83:GLN:HB2	59:BN:93:SER:HB2	1.86	0.58
1:AA:2414:G:H2'	1:AA:2415:OMU:H6	1.86	0.58
1:AA:4537:C:H2'	1:AA:4538:G:H8	1.69	0.58
14:AN:126:LEU:HD11	36:Aj:117:ARG:HG2	1.86	0.58
46:BA:468:A2M:H8	46:BA:468:A2M:O5'	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:BA:996:A:H2'	46:BA:997:A:C8	2.38	0.58
9:AI:127:LYS:HB2	22:AV:133:ALA:HB3	1.85	0.58
66:BU:130:LYS:HD2	66:BU:132:TRP:CD1	2.39	0.58
1:AA:509:A:H5'	29:Ac:105:ARG:HH22	1.68	0.57
46:BA:1866:A:H5'	63:BR:95:ARG:HD2	1.84	0.57
50:BE:197:LYS:HG3	50:BE:198:ILE:HG23	1.85	0.57
66:BU:43:TRP:HD1	66:BU:55:PRO:HA	1.68	0.57
66:BU:164:ILE:HG22	66:BU:178:ASN:HA	1.85	0.57
6:AF:40:VAL:HG13	6:AF:115:VAL:HG11	1.85	0.57
6:AF:190:ARG:HH21	6:AF:199:ARG:HB3	1.68	0.57
7:AG:65:ALA:HB2	7:AG:74:ILE:HD13	1.85	0.57
20:AT:160:GLU:HG2	20:AT:163:ARG:HH21	1.70	0.57
52:BG:158:LEU:HD21	52:BG:187:PHE:HD2	1.70	0.57
72:Ba:33:ILE:HB	72:Ba:97:LEU:HA	1.85	0.57
79:Bh:98:VAL:HG23	79:Bh:102:THR:HB	1.86	0.57
6:AF:37:VAL:HG21	6:AF:246:VAL:HG13	1.86	0.57
16:AP:42:PRO:HD3	16:AP:61:ILE:HG13	1.86	0.57
46:BA:1367:PSU:H2'	46:BA:1368:U:H6	1.68	0.57
48:BC:207:PRO:HA	48:BC:210:ILE:HB	1.85	0.57
68:BW:142:ARG:HH21	68:BW:149:LYS:HB2	1.69	0.57
46:BA:1401:A:H4'	60:BO:52:GLY:HA3	1.84	0.57
49:BD:33:VAL:HA	49:BD:96:CYS:HB2	1.86	0.57
57:BL:130:LYS:HA	57:BL:137:ALA:HA	1.86	0.57
58:BM:86:ARG:HH12	58:BM:103:LEU:HA	1.68	0.57
67:BV:70:VAL:HG21	67:BV:93:ILE:HG23	1.86	0.57
75:Bd:69:THR:HG22	75:Bd:72:VAL:HG22	1.87	0.57
1:AA:4537:C:H2'	1:AA:4538:G:C8	2.40	0.57
20:AT:70:ARG:HB3	20:AT:76:MET:HE2	1.87	0.57
46:BA:532:C:H2'	46:BA:533:A:H8	1.70	0.57
46:BA:878:G:H1	46:BA:908:A:H61	1.53	0.57
46:BA:1224:G:H1	46:BA:1642:U:H3	1.51	0.57
47:BB:125:LYS:H	47:BB:142:HIS:HD2	1.50	0.57
1:AA:2543:A:H2	1:AA:2773:G:H22	1.52	0.57
8:AH:74:SER:HA	30:Ad:118:LEU:HA	1.86	0.57
46:BA:1201:U:H2'	46:BA:1202:U:C6	2.39	0.57
55:BJ:85:THR:HA	55:BJ:113:LEU:H	1.69	0.57
61:BP:24:ILE:HG13	61:BP:56:CYS:HB3	1.87	0.57
11:AK:77:VAL:HA	11:AK:80:MET:HG3	1.85	0.57
46:BA:1414:A:H4'	59:BN:125:PRO:HB3	1.87	0.57
46:BA:1416:C:C4	46:BA:1417:C:N4	2.73	0.57
68:BW:192:ILE:HA	68:BW:195:LYS:HD2	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:BX:129:LEU:HD12	69:BX:130:ILE:HD13	1.85	0.57
1:AA:1095:A:H2	1:AA:1200:G:H1	1.51	0.57
1:AA:2714:G:H2'	1:AA:2715:G:H8	1.69	0.57
1:AA:3868:G:H22	1:AA:3900:G:H1'	1.69	0.57
8:AH:264:ILE:HB	8:AH:267:LEU:HD12	1.86	0.57
9:AI:105:VAL:HG13	9:AI:136:VAL:HG12	1.86	0.57
16:AP:159:ARG:HB2	16:AP:164:LEU:HB2	1.86	0.57
68:BW:30:LYS:HD3	68:BW:36:VAL:HG11	1.85	0.57
1:AA:2744:A:H2'	1:AA:2745:A:C8	2.39	0.57
1:AA:3611:A:H2	1:AA:5016:A:H8	1.51	0.57
5:AE:163:ILE:HG22	5:AE:180:LEU:HD22	1.87	0.57
1:AA:265:C:H1'	36:Aj:112:ARG:HH22	1.69	0.57
1:AA:1332:C:H2'	1:AA:1333:A:C8	2.37	0.57
46:BA:1260:A:N1	46:BA:1617:G:N3	2.52	0.57
52:BG:71:SER:HA	52:BG:74:LYS:HD3	1.86	0.57
40:An:28:ARG:HA	40:An:33:ASN:HD22	1.70	0.56
46:BA:695:C:H41	46:BA:737:G:H1'	1.70	0.56
66:BU:150:TRP:HB2	66:BU:170:TRP:CD1	2.40	0.56
74:Bc:52:PRO:HA	74:Bc:55:ILE:HG13	1.86	0.56
10:AJ:137[A]:ARG:HD2	10:AJ:146:LEU:HD11	1.86	0.56
46:BA:906:U:H2'	46:BA:907:G:H8	1.70	0.56
46:BA:1445:PSU:H2'	46:BA:1446:A:C8	2.40	0.56
47:BB:100:ARG:HB2	47:BB:114:ILE:HD13	1.87	0.56
48:BC:1:MET:N	48:BC:63:ARG:HE	2.02	0.56
1:AA:2337:C:H4'	45:As:19:LYS:HB2	1.86	0.56
1:AA:4041:C:H5'	1:AA:4042:G:H5''	1.87	0.56
1:AA:4523:A2M:H5''	1:AA:4524:G:H5'	1.86	0.56
11:AK:114:ILE:HB	11:AK:124:ARG:HB2	1.86	0.56
17:AQ:81:TRP:HB2	17:AQ:104:VAL:HG21	1.87	0.56
18:AR:39:MET:HE2	18:AR:43:LYS:HE2	1.87	0.56
21:AU:69:GLU:HG2	21:AU:101:THR:HA	1.86	0.56
32:Af:90:ARG:HD2	32:Af:102:LEU:HD13	1.88	0.56
46:BA:159:A2M:H2	46:BA:468:A2M:H1'	1.87	0.56
46:BA:1726:G:N2	46:BA:1808:U:O2	2.35	0.56
56:BK:85:ILE:HG23	56:BK:89:MET:HG3	1.87	0.56
62:BQ:102:VAL:HG12	62:BQ:122:VAL:HA	1.88	0.56
1:AA:4967:A:H2'	1:AA:4968:A:C8	2.40	0.56
48:BC:125:THR:HA	48:BC:147:LEU:HD23	1.87	0.56
79:Bh:97:GLU:HG3	79:Bh:120:THR:HG21	1.87	0.56
39:Am:23:VAL:HG22	39:Am:36:VAL:HG22	1.88	0.56
1:AA:1538:U:H2'	1:AA:1539:G:H8	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1974:U:H5''	1:AA:1975:G:H2'	1.88	0.56
46:BA:29:G:H4'	62:BQ:129:SER:HB2	1.86	0.56
46:BA:1729:U:H3	46:BA:1805:G:H1	1.53	0.56
51:BF:40:ALA:H	51:BF:68:ILE:HD11	1.71	0.56
1:AA:943:A:H62	9:AI:151:ASN:HD21	1.53	0.56
1:AA:4274:A:H2'	1:AA:4275:G:H8	1.70	0.56
46:BA:1367:PSU:H2'	46:BA:1368:U:C6	2.41	0.56
51:BF:122:ARG:HD2	64:BS:59:LEU:HD21	1.87	0.56
60:BO:26:SER:HB3	60:BO:32:LEU:HD22	1.87	0.56
62:BQ:50:ILE:HD13	62:BQ:75:ILE:HD11	1.88	0.56
51:BF:134:VAL:HG12	51:BF:135:ARG:H	1.70	0.56
69:BX:64:ASP:HB2	73:Bb:117:ARG:HH12	1.70	0.56
1:AA:10:A:H2'	1:AA:11:G:C8	2.41	0.56
1:AA:1577:G:O2'	1:AA:1612:G:H4'	2.06	0.56
1:AA:3720:G:H1	1:AA:3733:A:H61	1.54	0.56
1:AA:4699:U:H1'	1:AA:4700:A:H5''	1.86	0.56
15:AO:100:ARG:HA	15:AO:103:LYS:HG2	1.88	0.56
46:BA:571:U:H5''	74:Bc:37:LYS:HG3	1.87	0.56
47:BB:198:ARG:HG2	47:BB:208:VAL:HG13	1.87	0.56
48:BC:120:ARG:HD2	67:BV:266:TYR:HB3	1.88	0.56
66:BU:156:PHE:HA	66:BU:165:ILE:HG22	1.88	0.56
1:AA:3732:A:H2'	1:AA:3733:A:C8	2.40	0.56
17:AQ:196:LEU:HB3	17:AQ:201:LEU:HB2	1.88	0.56
19:AS:27:LEU:HD11	45:As:5:LEU:HA	1.87	0.56
9:AI:236:ARG:HB2	9:AI:239:GLN:HB2	1.88	0.55
11:AK:16:VAL:HG21	11:AK:81:ILE:HG23	1.88	0.55
49:BD:125:VAL:HG11	49:BD:172:MET:HB3	1.88	0.55
9:AI:223:LYS:HA	9:AI:232:ASP:HB2	1.87	0.55
14:AN:181:SER:HB2	37:Ak:7:MET:HE1	1.88	0.55
39:Am:33:LYS:HG2	39:Am:46:VAL:HG22	1.87	0.55
46:BA:1650:A:H5''	57:BL:139:ALA:HB2	1.87	0.55
48:BC:145:ILE:HD13	48:BC:159:ILE:HB	1.87	0.55
56:BK:75:VAL:HA	56:BK:93:MET:HE1	1.87	0.55
69:BX:64:ASP:HB3	69:BX:67:ASP:HB2	1.88	0.55
46:BA:585:C:H3'	46:BA:586:G:H8	1.72	0.55
46:BA:1017:U:H5'	71:BZ:55:ARG:HE	1.70	0.55
78:Bg:100:LEU:HD21	78:Bg:103:LEU:HD13	1.89	0.55
37:Ak:34:THR:HG22	37:Ak:36:HIS:H	1.72	0.55
46:BA:1060:A:H4'	46:BA:1061:U:H5'	1.88	0.55
1:AA:1604:G:H2'	1:AA:1605:G:C8	2.41	0.55
46:BA:1413:G:H2'	46:BA:1414:A:C8	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:BA:1514:G:H2'	46:BA:1515:G:C8	2.42	0.55
57:BL:132:PHE:HB2	60:BO:77:TRP:HD1	1.72	0.55
74:Bc:11:LYS:HB2	74:Bc:24:VAL:HG22	1.88	0.55
1:AA:1837:A:H5'	22:AV:129:LYS:HE2	1.89	0.55
5:AE:28:LYS:HD3	5:AE:30:LYS:HD3	1.88	0.55
9:AI:162:ILE:HB	9:AI:167:ILE:HD12	1.88	0.55
14:AN:161:TYR:HE2	29:Ac:105:ARG:HA	1.72	0.55
49:BD:40:ASN:HB2	49:BD:75:GLN:HA	1.88	0.55
46:BA:12:U:H2'	46:BA:13:C:C6	2.42	0.55
46:BA:841:G:C8	74:Bc:12:PHE:HB3	2.42	0.55
74:Bc:87:PRO:HG2	74:Bc:90:ARG:HG3	1.89	0.55
1:AA:4363:A:H5''	43:Aq:36:GLN:HG2	1.88	0.55
1:AA:4627:U:H4'	5:AE:373:LYS:HD2	1.88	0.55
4:AD:126:LEU:HD13	4:AD:150:LEU:HD21	1.89	0.55
46:BA:373:G:H2'	46:BA:374:G:C8	2.40	0.55
46:BA:1276:A:C5	46:BA:1322:G:H1'	2.41	0.55
46:BA:1856:C:H2'	46:BA:1857:G:C8	2.42	0.55
1:AA:1375:C:H5''	6:AF:274:LYS:HD2	1.89	0.55
46:BA:512:A2M:H8	46:BA:512:A2M:O5'	2.06	0.55
46:BA:1279:C:H2'	46:BA:1280:G:H8	1.72	0.55
46:BA:1280:G:H2'	46:BA:1281:G:H8	1.70	0.55
46:BA:1714:U:H2'	46:BA:1715:A:C8	2.42	0.55
57:BL:47:LEU:HD21	57:BL:81:ILE:HG21	1.89	0.55
63:BR:39:PHE:HD1	63:BR:70:LYS:HB2	1.72	0.55
1:AA:2351:OMC:HM22	1:AA:2352:U:H5'	1.88	0.55
14:AN:92:ARG:HH12	14:AN:98:VAL:H	1.55	0.55
16:AP:158:HIS:HB3	16:AP:161:MET:HG3	1.89	0.55
46:BA:969:U:H4'	46:BA:971:G:H1'	1.89	0.55
47:BB:43:PRO:HD2	47:BB:46:ILE:HD12	1.87	0.55
68:BW:32:MET:HA	68:BW:52:ILE:HB	1.88	0.55
12:AL:43:VAL:HG11	12:AL:197:VAL:HG13	1.88	0.54
58:BM:36:VAL:HG23	58:BM:40:TYR:HB3	1.89	0.54
62:BQ:54:LYS:HE3	62:BQ:94:ILE:HG23	1.88	0.54
1:AA:10:A:H2'	1:AA:11:G:H8	1.73	0.54
1:AA:1593:A:H5''	1:AA:2839:PSU:H5'	1.89	0.54
46:BA:1415:C:C4	46:BA:1416:C:N4	2.75	0.54
47:BB:9:LEU:HD12	47:BB:30:ARG:HA	1.89	0.54
69:BX:169:ARG:HE	69:BX:175:ARG:HH22	1.56	0.54
52:BG:170:VAL:HG13	52:BG:187:PHE:HB2	1.90	0.54
68:BW:195:LYS:HA	68:BW:198:ARG:HD2	1.89	0.54
3:AC:19:C:H2'	3:AC:20:A:C8	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:BA:116:OMU:HN3	46:BA:347:G:H1	1.54	0.54
46:BA:877:C:H2'	46:BA:878:G:C8	2.41	0.54
47:BB:229:GLY:HA2	47:BB:235:TRP:CD1	2.43	0.54
53:BH:83:TYR:HD1	53:BH:202:ILE:HD13	1.73	0.54
18:AR:33:ALA:HB1	18:AR:117:ILE:HG12	1.90	0.54
46:BA:1845:A:H2'	46:BA:1846:G:C8	2.43	0.54
53:BH:198:TYR:CE1	55:BJ:10:TYR:HB2	2.41	0.54
1:AA:3857:G:H5''	18:AR:86:LYS:HB2	1.90	0.54
1:AA:4601:U:H2'	1:AA:4602:A:H8	1.72	0.54
29:Ac:75:LEU:HG	29:Ac:113:GLY:HA2	1.90	0.54
49:BD:138:PHE:HD2	49:BD:214:LYS:HB3	1.73	0.54
1:AA:3910:C:H2'	1:AA:3911:C:C6	2.43	0.54
5:AE:303:ALA:HB3	5:AE:312:LYS:HG3	1.89	0.54
33:Ag:109:LYS:HA	33:Ag:112:VAL:HG12	1.88	0.54
45:As:97:ILE:HD13	45:As:107:ARG:HA	1.89	0.54
53:BH:72:CYS:HG	53:BH:112:TRP:CG	2.25	0.54
60:BO:20:ILE:HG23	60:BO:91:LEU:HB2	1.90	0.54
79:Bh:14:ARG:HD2	79:Bh:69:ILE:HD11	1.89	0.54
18:AR:126:ARG:HH11	18:AR:140:MET:HE1	1.73	0.54
1:AA:4174:U:H2'	1:AA:4175:G:H8	1.73	0.54
27:Aa:106:ILE:HG21	27:Aa:109:LEU:HD23	1.90	0.54
62:BQ:87:ASN:ND2	62:BQ:90:CYS:HB2	2.23	0.54
78:Bg:130:VAL:HG11	78:Bg:143:LYS:HE3	1.90	0.54
8:AH:162:VAL:HG12	8:AH:177:GLY:HA2	1.90	0.54
47:BB:11:ARG:HH21	47:BB:21:ASP:H	1.55	0.54
1:AA:137:G:H2'	1:AA:138:G:H8	1.72	0.53
1:AA:4761:G:H2'	1:AA:4762:A:H8	1.71	0.53
45:As:97:ILE:HG21	45:As:107:ARG:HB3	1.90	0.53
47:BB:252:ARG:HA	47:BB:255:ARG:HE	1.72	0.53
48:BC:197:VAL:HG13	48:BC:201:LEU:HD13	1.90	0.53
70:BY:33:ARG:HG3	70:BY:109:VAL:HG12	1.90	0.53
1:AA:1494:U:H2'	1:AA:1495:G:H8	1.74	0.53
1:AA:3861:A:H2'	1:AA:3862:A:H8	1.72	0.53
1:AA:4986:G:H5''	5:AE:176:LYS:HG3	1.90	0.53
46:BA:1858:G:H2'	46:BA:1859:A:H8	1.74	0.53
53:BH:158:ILE:HG21	53:BH:162:LEU:HD12	1.90	0.53
62:BQ:87:ASN:HD21	62:BQ:90:CYS:H	1.53	0.53
66:BU:239:LEU:HD12	66:BU:248:LEU:HD11	1.90	0.53
67:BV:128:VAL:HG11	67:BV:155:ILE:HA	1.89	0.53
1:AA:2568:C:H2'	1:AA:2569:G:H8	1.73	0.53
1:AA:3748:A:H5''	4:AD:243:THR:HB	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:5006:U:H4'	1:AA:5007:A:H5'	1.90	0.53
4:AD:147:ARG:HG3	4:AD:157:VAL:HG22	1.90	0.53
7:AG:55:VAL:HG13	7:AG:60:ILE:HG12	1.90	0.53
27:Aa:10:ASP:HB3	27:Aa:13:LYS:HB2	1.90	0.53
46:BA:176:U:H2'	46:BA:177:G:C8	2.44	0.53
46:BA:497:C:H2'	46:BA:498:C:C6	2.44	0.53
68:BW:2:LYS:HB3	68:BW:15:LEU:HD22	1.91	0.53
1:AA:1182:C:H5'	1:AA:1183:C:H5''	1.89	0.53
1:AA:4991:U:H2'	1:AA:4992:G:H8	1.74	0.53
14:AN:172:GLU:HG2	37:Ak:2:ALA:HA	1.90	0.53
23:AW:28:PRO:HB3	23:AW:100:LEU:HD21	1.89	0.53
47:BB:35:PRO:HD2	47:BB:83:PRO:HG2	1.91	0.53
51:BF:96:ALA:O	51:BF:100:ILE:HG13	2.09	0.53
66:BU:157:SER:HB2	66:BU:164:ILE:H	1.73	0.53
1:AA:1325:C:C4	1:AA:3879:G:H5''	2.44	0.53
14:AN:124:LEU:HD11	36:Aj:119:TYR:HB2	1.90	0.53
46:BA:110:U:O2	46:BA:351:G:N2	2.41	0.53
46:BA:1845:A:H2'	46:BA:1846:G:H8	1.73	0.53
1:AA:956:A:H1'	1:AA:2076:G:H5''	1.90	0.53
1:AA:2362:U:H2'	1:AA:2363:A2M:H8	1.89	0.53
1:AA:3932:U:H2'	1:AA:3933:G:H8	1.74	0.53
1:AA:4507:A:H2'	1:AA:4508:C:C6	2.44	0.53
1:AA:4578:G:H2'	1:AA:4579:PSU:H6	1.74	0.53
1:AA:4761:G:H2'	1:AA:4762:A:C8	2.44	0.53
1:AA:4967:A:H2'	1:AA:4968:A:H8	1.71	0.53
8:AH:222:LEU:HD13	8:AH:224:LYS:H	1.73	0.53
46:BA:1203:G:H2'	46:BA:1204:A:C8	2.43	0.53
49:BD:90:ASP:HB3	49:BD:97:LEU:HD13	1.90	0.53
62:BQ:61:GLN:NE2	62:BQ:62:PRO:HA	2.23	0.53
68:BW:141:ILE:HG22	68:BW:142:ARG:HD2	1.91	0.53
69:BX:28:GLU:HB3	69:BX:40:LYS:HE2	1.90	0.53
1:AA:1494:U:H2'	1:AA:1495:G:C8	2.44	0.53
1:AA:3610:A:H2'	1:AA:3611:A:H8	1.74	0.53
7:AG:256:LYS:HD3	7:AG:257:PRO:HD2	1.91	0.53
13:AM:87:LEU:HD21	13:AM:166:PHE:HE1	1.74	0.53
29:Ac:71:PRO:HG2	29:Ac:108:TYR:HA	1.91	0.53
1:AA:1306:C:H2'	1:AA:1307:A:C8	2.43	0.53
1:AA:2469:C:H5	1:AA:2471:G:H1	1.55	0.53
1:AA:4294:C:H5''	43:Aq:81:ARG:NH1	2.24	0.53
1:AA:4618:OMG:H5''	24:AX:15:ARG:HB2	1.90	0.53
32:Af:53:ALA:HA	32:Af:88:LEU:HD21	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:BA:1575:G:H2'	46:BA:1576:G:H8	1.73	0.53
1:AA:1308:C:H2'	1:AA:1309:C:C6	2.44	0.53
5:AE:220:ILE:HG12	5:AE:278:THR:HG23	1.91	0.53
9:AI:200:ARG:HD3	9:AI:203:GLU:OE1	2.09	0.53
46:BA:1235:G:H2'	46:BA:1236:G:C8	2.44	0.53
48:BC:1:MET:H3	48:BC:63:ARG:HE	1.54	0.53
69:BX:32:ILE:H	69:BX:32:ILE:HD12	1.75	0.53
1:AA:2079:G:H2'	1:AA:2080:U:C6	2.44	0.52
4:AD:96:LEU:HB3	44:Ar:87:LYS:HB2	1.90	0.52
46:BA:1249:C:H3'	46:BA:1250:A:H8	1.74	0.52
49:BD:30:TRP:CD1	49:BD:48:LEU:HB3	2.45	0.52
68:BW:176:ILE:HG22	68:BW:179:LEU:HB2	1.91	0.52
68:BW:77:LEU:HD13	68:BW:81:HIS:HB2	1.91	0.52
1:AA:4321:U:H2'	1:AA:4322:G:C8	2.44	0.52
2:AB:83:A:H4'	9:AI:224:THR:HB	1.91	0.52
19:AS:110:ARG:HG3	19:AS:120:ILE:HD13	1.91	0.52
46:BA:3:C:O2'	67:BV:224:THR:O	2.28	0.52
46:BA:1262:C:H1'	65:BT:12:ARG:HE	1.75	0.52
46:BA:1277:C:H2'	46:BA:1278:A:H8	1.74	0.52
46:BA:1539:U:H2'	46:BA:1540:G:C4	2.45	0.52
47:BB:89:VAL:H	47:BB:122:LYS:HZ2	1.58	0.52
47:BB:221:ARG:HH11	47:BB:223:SER:H	1.57	0.52
54:BI:41:PRO:HG2	54:BI:44:HIS:CG	2.44	0.52
57:BL:17:LYS:HA	57:BL:126:ARG:HD2	1.91	0.52
68:BW:49:VAL:HB	68:BW:115:LYS:HB3	1.91	0.52
1:AA:93:G:H2'	1:AA:94:A:C8	2.44	0.52
1:AA:2539:C:H2'	1:AA:2540:C:C6	2.44	0.52
1:AA:3917:A:H2'	1:AA:3918:G:H8	1.75	0.52
27:Aa:22:PRO:HD2	27:Aa:25:ILE:HB	1.92	0.52
46:BA:1497:G:H4'	46:BA:1498:A:H5''	1.91	0.52
53:BH:96:LEU:HD12	53:BH:175:ILE:HD11	1.91	0.52
1:AA:1617:G:H1'	1:AA:2513:A:N6	2.24	0.52
1:AA:2300:A:N1	6:AF:181:LYS:HB3	2.24	0.52
1:AA:3718:A2M:HM'2	1:AA:3719:A:H5'	1.91	0.52
6:AF:133:LEU:HD13	45:As:6:GLN:HE21	1.74	0.52
27:Aa:72:GLN:HB3	27:Aa:81:TYR:HB2	1.90	0.52
46:BA:1569:A:H2	46:BA:1613:G:H21	1.56	0.52
56:BK:90:VAL:HG22	56:BK:109:PRO:HA	1.92	0.52
13:AM:78:LYS:O	13:AM:82:ILE:HD12	2.10	0.52
14:AN:144:LEU:HD12	14:AN:145:LYS:HG3	1.91	0.52
46:BA:3:C:O2'	67:BV:206:SER:HA	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:BA:1705:C:H2'	46:BA:1706:G:C8	2.44	0.52
10:AJ:157:ILE:HG12	10:AJ:170:LEU:HD23	1.91	0.52
12:AL:35:ASP:HB3	12:AL:86:HIS:HE2	1.74	0.52
31:Ae:11:LEU:HD13	31:Ae:75:SER:HB2	1.91	0.52
46:BA:1273:C:O2	46:BA:1508:A:N6	2.43	0.52
46:BA:1655:C:H2'	46:BA:1656:G:H8	1.74	0.52
66:BU:18:VAL:HB	66:BU:301:GLY:HA3	1.90	0.52
66:BU:256:ILE:HD12	66:BU:289:LEU:HD21	1.91	0.52
1:AA:318:A:H2'	1:AA:319:A:C8	2.44	0.52
1:AA:677:G:H2'	1:AA:678:C:C6	2.45	0.52
1:AA:698:G:H21	1:AA:968:C:H42	1.57	0.52
1:AA:4742:G:H22	1:AA:4958:C:H42	1.56	0.52
1:AA:5018:C:H2'	1:AA:5019:A:H8	1.74	0.52
43:Aq:69:ARG:HG2	43:Aq:69:ARG:HH11	1.74	0.52
46:BA:479:C:H2'	46:BA:480:G:C8	2.45	0.52
49:BD:120:MET:HE2	49:BD:142:PHE:HE2	1.75	0.52
69:BX:172:ARG:HA	69:BX:175:ARG:HG2	1.92	0.52
1:AA:3861:A:H2'	1:AA:3862:A:C8	2.45	0.52
18:AR:116:HIS:HB3	18:AR:149:ILE:HG13	1.91	0.52
21:AU:9:GLU:HB3	21:AU:67:VAL:HB	1.92	0.52
51:BF:49:LEU:H	57:BL:50:LYS:HE3	1.74	0.52
79:Bh:56:HIS:HA	79:Bh:59:LYS:HE2	1.91	0.52
1:AA:2588:C:H5''	1:AA:2589:C:H5''	1.90	0.52
49:BD:106:THR:HG23	49:BD:109:LYS:H	1.74	0.52
52:BG:50:GLU:HA	52:BG:60:ILE:HG22	1.91	0.52
60:BO:61:LEU:HB2	60:BO:82:MET:HB3	1.90	0.52
1:AA:325:U:H2'	1:AA:326:C:C6	2.45	0.51
1:AA:1741:G:N3	1:AA:1781:PSU:H5''	2.25	0.51
1:AA:3886:G:H5''	17:AQ:82:ARG:HH22	1.76	0.51
1:AA:3972:A:H8	1:AA:4050:A:H62	1.58	0.51
33:Ag:82:VAL:HG13	33:Ag:114:ARG:HG2	1.92	0.51
46:BA:1205:C:H2'	46:BA:1206:G:C8	2.44	0.51
47:BB:11:ARG:HA	47:BB:28:ALA:HB2	1.92	0.51
48:BC:50:ASN:HB3	48:BC:53:ARG:HG2	1.92	0.51
49:BD:46:LYS:HB2	72:Ba:27:VAL:HG23	1.91	0.51
51:BF:18:LYS:HD3	51:BF:25:THR:HG23	1.92	0.51
59:BN:5:THR:HG23	59:BN:7:LYS:H	1.74	0.51
59:BN:22:LEU:HD21	59:BN:28:LEU:HD22	1.92	0.51
68:BW:50:VAL:HG12	68:BW:113:ILE:HG12	1.91	0.51
1:AA:74:G:H5'	14:AN:60:ARG:O	2.10	0.51
1:AA:1812:C:H5''	30:Ad:56:LYS:HE3	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:3910:C:H2'	1:AA:3911:C:H6	1.75	0.51
1:AA:4169:G:H4'	1:AA:4171:C:C2	2.45	0.51
9:AI:28:LEU:HB3	9:AI:32:ARG:HH21	1.74	0.51
12:AL:185:VAL:HG12	12:AL:190:LEU:HB2	1.93	0.51
18:AR:112:LEU:HD12	18:AR:150:LEU:HB3	1.92	0.51
29:Ac:98:ALA:HB2	29:Ac:121:PRO:HB2	1.93	0.51
46:BA:568:C:H2'	46:BA:569:A:H8	1.75	0.51
49:BD:92:GLN:HG3	49:BD:97:LEU:HD11	1.93	0.51
63:BR:89:ARG:NH1	63:BR:89:ARG:HB3	2.24	0.51
74:Bc:30:PRO:HB3	74:Bc:67:GLY:HA2	1.91	0.51
1:AA:1645:C:H2'	1:AA:1646:A:C8	2.45	0.51
1:AA:4742:G:H2'	1:AA:4743:G:C8	2.45	0.51
5:AE:107:ALA:HB2	5:AE:201:LEU:HD22	1.92	0.51
8:AH:66:LYS:HE2	8:AH:68:MET:HE3	1.92	0.51
78:Bg:109:ASP:HB3	78:Bg:113:LYS:HB3	1.93	0.51
1:AA:1245:C:H2'	1:AA:1246:G:C8	2.45	0.51
1:AA:1358:G:N7	1:AA:1377:G:N2	2.58	0.51
1:AA:1972:G:H1	1:AA:1994:C:H42	1.58	0.51
1:AA:2323:C:H2'	1:AA:2324:C:H6	1.75	0.51
50:BE:53:THR:HB	50:BE:94:ARG:HE	1.75	0.51
55:BJ:111:VAL:HG12	55:BJ:140:PHE:HB2	1.91	0.51
64:BS:27:CYS:HB3	64:BS:45:ASN:HB3	1.92	0.51
70:BY:41:ALA:HB1	70:BY:47:ALA:HB2	1.92	0.51
16:AP:178:HIS:HA	16:AP:181:HIS:NE2	2.25	0.51
46:BA:1101:U:H2'	46:BA:1102:G:H8	1.74	0.51
46:BA:1700:C:H4'	46:BA:1701:C:H3'	1.92	0.51
49:BD:164:ILE:HD12	49:BD:201:CYS:HB3	1.91	0.51
69:BX:33:GLY:HA3	77:Bf:38:TYR:HD2	1.76	0.51
1:AA:172:C:H1'	1:AA:173:C:H5	1.75	0.51
46:BA:921:G:C6	73:Bb:28:ARG:HD3	2.46	0.51
46:BA:1287:A:N7	46:BA:1288:OMU:H1'	2.25	0.51
46:BA:1454:A:H5''	79:Bh:3:ARG:HG2	1.92	0.51
46:BA:1609:C:H2'	46:BA:1610:G:C8	2.46	0.51
46:BA:1731:A:H2'	46:BA:1732:G:H8	1.76	0.51
55:BJ:59:LYS:HB3	55:BJ:134:LEU:HD13	1.92	0.51
58:BM:55:ARG:HH21	75:Bd:48:VAL:HG11	1.76	0.51
69:BX:121:LYS:H	69:BX:125:HIS:HD2	1.59	0.51
72:Ba:57:THR:HG23	72:Ba:60:MET:HE3	1.93	0.51
1:AA:475:G:H2'	1:AA:476:G:C8	2.45	0.51
1:AA:654:C:H4'	6:AF:268:ARG:HG2	1.93	0.51
1:AA:2486:G:O6	1:AA:2494:U:O2	2.29	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:3944:G:N2	1:AA:4069:U:O2	2.33	0.51
12:AL:188:LYS:HB3	12:AL:212:LEU:HD11	1.91	0.51
67:BV:232:THR:HG22	67:BV:235:ASN:H	1.75	0.51
73:Bb:75:ILE:HD11	73:Bb:93:LEU:HD21	1.93	0.51
8:AH:69:TYR:HE2	8:AH:70:LYS:HE3	1.75	0.51
10:AJ:100:HIS:CD2	10:AJ:103:ARG:HH21	2.28	0.51
25:AY:97:LYS:HG2	25:AY:101:ARG:HE	1.76	0.51
46:BA:866:PSU:H2'	46:BA:867:OMG:C8	2.45	0.51
46:BA:1304:U:H5''	78:Bg:95:ARG:HH21	1.75	0.51
1:AA:126:C:H2'	1:AA:127:G:H8	1.75	0.51
1:AA:1326:A2M:H5''	1:AA:1326:A2M:H8	1.92	0.51
1:AA:4723:A:H2'	1:AA:4724:A:C8	2.46	0.51
26:AZ:112:ALA:O	26:AZ:116:LEU:HD12	2.10	0.51
46:BA:155:G:H2'	46:BA:156:G:H8	1.76	0.51
1:AA:648:G:H2'	1:AA:649:A:H8	1.75	0.51
1:AA:1914:C:H4'	17:AQ:89:PRO:HD3	1.93	0.51
8:AH:190:HIS:HB3	8:AH:193:PHE:HD2	1.76	0.51
8:AH:192:LYS:HE2	34:Ah:107:PRO:HB3	1.93	0.51
46:BA:1490:OMG:HM22	46:BA:1491:G:H5'	1.92	0.51
51:BF:167:LYS:HG2	51:BF:172:CYS:SG	2.51	0.51
61:BP:74:LYS:HG2	61:BP:79:VAL:HB	1.93	0.51
68:BW:194:LEU:HA	68:BW:197:GLN:HE22	1.76	0.51
76:Be:67:THR:HG22	76:Be:68:GLY:H	1.76	0.51
1:AA:2607:C:H2'	1:AA:2608:G:H8	1.75	0.50
46:BA:639:C:H2'	46:BA:640:A:C8	2.45	0.50
46:BA:925:G:H22	46:BA:1017:U:H3	1.58	0.50
46:BA:975:G:H2'	46:BA:976:G:C8	2.45	0.50
47:BB:195:ILE:HA	47:BB:210:VAL:HG12	1.93	0.50
66:BU:130:LYS:NZ	66:BU:139:LYS:H	2.09	0.50
75:Bd:79:ILE:HD12	75:Bd:83:LEU:HB3	1.92	0.50
1:AA:268:G:H2'	1:AA:269:G:C8	2.43	0.50
1:AA:1985:G:H2'	1:AA:1986:U:O4'	2.12	0.50
1:AA:4594:U:H2'	1:AA:4595:G:C8	2.44	0.50
46:BA:635:G:H2'	46:BA:636:C:C6	2.46	0.50
49:BD:28:LYS:HG2	49:BD:50:THR:HA	1.92	0.50
60:BO:33:GLU:HA	60:BO:36:CYS:HB2	1.93	0.50
62:BQ:16:HIS:CE1	62:BQ:20:GLN:HG3	2.47	0.50
46:BA:63:PSU:H1'	46:BA:170:A:H2	1.76	0.50
46:BA:940:U:H3	46:BA:1002:U:H3	1.59	0.50
47:BB:149:TYR:HD1	68:BW:209:TYR:HE1	1.58	0.50
66:BU:42:MET:HE3	66:BU:42:MET:N	2.23	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:BZ:119:GLU:HA	71:BZ:122:ILE:HD12	1.92	0.50
4:AD:137:ILE:HD11	4:AD:149:LYS:HB2	1.93	0.50
16:AP:60:VAL:HG22	16:AP:134:LEU:HB2	1.94	0.50
46:BA:1514:G:H2'	46:BA:1515:G:H8	1.76	0.50
50:BE:205:PRO:HA	79:Bh:42:PRO:HG2	1.93	0.50
51:BF:173:LEU:O	51:BF:177:LEU:HD23	2.11	0.50
53:BH:117:TYR:HB3	53:BH:119:LEU:HD23	1.93	0.50
66:BU:130:LYS:HD2	66:BU:132:TRP:NE1	2.26	0.50
1:AA:651:C:H2'	1:AA:652:G:H8	1.77	0.50
1:AA:1824:G:H5''	22:AV:35:LYS:HE2	1.94	0.50
1:AA:1824:G:H2'	1:AA:1825:A:C8	2.47	0.50
3:AC:141:C:H5''	16:AP:60:VAL:HG11	1.93	0.50
33:Ag:68:HIS:CE1	45:As:22:LYS:HE3	2.46	0.50
46:BA:560:A:H61	46:BA:588:G:H1	1.58	0.50
47:BB:72:ILE:HG12	47:BB:90:ILE:HG12	1.94	0.50
56:BK:81:ARG:NE	56:BK:117:GLY:HA2	2.26	0.50
71:BZ:23:PRO:HB3	71:BZ:25:TRP:CZ3	2.46	0.50
1:AA:243:A:OP1	27:Aa:4:ASN:HB2	2.11	0.50
1:AA:4095:G:H22	1:AA:4114:C:H4'	1.77	0.50
1:AA:4238:G:H2'	1:AA:4239:A:C8	2.47	0.50
48:BC:137:ALA:HB1	48:BC:142:LEU:HB3	1.94	0.50
72:Ba:35:ALA:HB1	72:Ba:109:GLY:H	1.75	0.50
1:AA:486:C:H2'	1:AA:487:G:C8	2.47	0.50
1:AA:1464:C:H5''	30:Ad:32:LEU:HD12	1.92	0.50
10:AJ:261:LEU:HD13	10:AJ:264:LYS:HD3	1.94	0.50
14:AN:8:MET:HE3	19:AS:168:ARG:HA	1.93	0.50
33:Ag:100:ALA:HB3	33:Ag:103:VAL:HG23	1.92	0.50
46:BA:815:PSU:H2'	46:BA:816:A:H8	1.76	0.50
46:BA:1007:C:H2'	46:BA:1008:A:C8	2.46	0.50
46:BA:1046:PSU:H1'	72:Ba:140:THR:HB	1.94	0.50
46:BA:1832:6MZ:H9C2	46:BA:1833:C:N4	2.27	0.50
1:AA:1933:G:H2'	1:AA:1934:A:C8	2.47	0.50
1:AA:4743:G:H2'	1:AA:4744:A:C8	2.46	0.50
46:BA:107:A:H2'	46:BA:108:G:C8	2.47	0.50
46:BA:517:OMC:HM22	46:BA:518:G:H5'	1.94	0.50
46:BA:841:G:H8	74:Bc:12:PHE:HB3	1.75	0.50
46:BA:1300:U:H2'	56:BK:51:ARG:HH21	1.77	0.50
46:BA:1491:G:H2'	46:BA:1492:U:C6	2.47	0.50
52:BG:51:ILE:HD13	52:BG:53:VAL:HG13	1.93	0.50
56:BK:55:SER:HA	56:BK:58:LYS:HD3	1.93	0.50
66:BU:256:ILE:HB	66:BU:270:LEU:HD12	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:BX:14:VAL:HG23	69:BX:48:PHE:HB2	1.93	0.50
1:AA:57:G:H5''	16:AP:154:PRO:HB2	1.93	0.50
1:AA:3930:U:H3	1:AA:4180:G:H1	1.60	0.50
1:AA:4260:U:H2'	1:AA:4261:C:C6	2.47	0.50
6:AF:152:LEU:HD23	6:AF:251:ILE:HG12	1.94	0.50
14:AN:91:ALA:HB1	14:AN:96:ILE:HB	1.93	0.50
29:Ac:145:VAL:HG13	37:Ak:5:TYR:CZ	2.47	0.50
46:BA:3:C:C2'	67:BV:206:SER:HA	2.42	0.50
46:BA:186:C:H2'	46:BA:187:G:C8	2.43	0.50
46:BA:919:A:H5''	71:BZ:16:LEU:HD12	1.93	0.50
47:BB:95:THR:HG23	47:BB:97:GLU:HB2	1.93	0.50
68:BW:208:GLU:HA	68:BW:211:LYS:HD2	1.94	0.50
1:AA:475:G:H2'	1:AA:476:G:H8	1.77	0.49
1:AA:486:C:H2'	1:AA:487:G:H8	1.77	0.49
1:AA:1613:A:H5'	4:AD:183:GLY:HA2	1.94	0.49
46:BA:5:U:H2'	46:BA:6:G:H8	1.77	0.49
46:BA:1779:G:H2'	46:BA:1780:G:H8	1.77	0.49
58:BM:45:LEU:HB3	58:BM:50:ILE:HB	1.94	0.49
59:BN:56:ARG:HG2	59:BN:103:VAL:HG11	1.94	0.49
1:AA:2623:A:H2'	1:AA:2624:G:H8	1.76	0.49
1:AA:4591:U:H2'	1:AA:4592:C:C6	2.46	0.49
35:Ai:64:LEU:HD23	35:Ai:67:LEU:HD12	1.93	0.49
46:BA:860:G:H2'	46:BA:861:A:C4	2.47	0.49
56:BK:45:LEU:HG	56:BK:49:LEU:HD11	1.93	0.49
1:AA:710:G:H2'	1:AA:711:A:H8	1.76	0.49
1:AA:1317:U:H2'	1:AA:1318:C:C6	2.47	0.49
3:AC:8:U:H2'	3:AC:9:A:H8	1.78	0.49
3:AC:141:C:H2'	3:AC:142:U:C6	2.47	0.49
46:BA:54:A:H3'	46:BA:451:G:H22	1.77	0.49
46:BA:145:G:H2'	46:BA:146:G:C8	2.47	0.49
46:BA:299:A:H2'	46:BA:300:PSU:C6	2.48	0.49
46:BA:1368:U:O2'	79:Bh:4:VAL:HG21	2.12	0.49
46:BA:1856:C:H2'	46:BA:1857:G:H8	1.76	0.49
63:BR:10:ARG:HH11	63:BR:12:LYS:HD3	1.77	0.49
1:AA:4347:G:H2'	1:AA:4348:A:C8	2.47	0.49
8:AH:95:PRO:HA	8:AH:104:THR:HG22	1.94	0.49
45:As:117:ILE:H	45:As:117:ILE:HD12	1.76	0.49
53:BH:66:SER:H	53:BH:188:TYR:HA	1.76	0.49
53:BH:97:VAL:HG22	53:BH:100:CYS:HB3	1.93	0.49
56:BK:121:ILE:HG21	56:BK:125:PRO:HD3	1.93	0.49
75:Bd:48:VAL:HA	75:Bd:83:LEU:HD22	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:2894:A:H2'	1:AA:2895:A:C8	2.48	0.49
1:AA:4612:C:C2	11:AK:120:GLU:HB2	2.47	0.49
3:AC:8:U:H2'	3:AC:9:A:C8	2.48	0.49
3:AC:71:A:H62	3:AC:87:G:H21	1.61	0.49
46:BA:989:C:H3'	49:BD:116:LYS:HE3	1.95	0.49
46:BA:1540:G:H5'	59:BN:39:LEU:HD12	1.92	0.49
46:BA:1649:U:H2'	46:BA:1650:A:C8	2.48	0.49
51:BF:153:LEU:HD21	51:BF:192:LYS:HB2	1.95	0.49
57:BL:116:ASP:O	57:BL:119:LEU:HG	2.13	0.49
1:AA:960:A:H8	8:AH:126:LEU:HD12	1.77	0.49
1:AA:1358:G:C8	1:AA:1377:G:N1	2.66	0.49
1:AA:3873:G:H2'	1:AA:3874:G:C8	2.47	0.49
17:AQ:61:ARG:HA	17:AQ:70:PRO:HD2	1.93	0.49
46:BA:1726:G:H1	46:BA:1808:U:H3	1.60	0.49
49:BD:68:GLU:HB2	49:BD:83:LYS:HD2	1.94	0.49
55:BJ:11:GLN:HB3	55:BJ:56:ILE:HB	1.95	0.49
56:BK:89:MET:HA	56:BK:89:MET:HE2	1.94	0.49
62:BQ:41:PHE:HB3	62:BQ:44:ALA:H	1.78	0.49
1:AA:1563:A:H2'	1:AA:1564:A:C8	2.48	0.49
1:AA:3607:U:H2'	1:AA:3608:A:C8	2.47	0.49
1:AA:4459:U:H2'	1:AA:4460:U:C6	2.48	0.49
10:AJ:77:PRO:HG2	10:AJ:80:ILE:HD12	1.94	0.49
32:Af:32:ARG:HB3	32:Af:48:GLU:HG3	1.94	0.49
46:BA:366:PSU:H4'	53:BH:11:ARG:HH21	1.78	0.49
46:BA:848:U:H2'	46:BA:849:A:H8	1.78	0.49
46:BA:895:G:H2'	46:BA:896:U:H4'	1.95	0.49
49:BD:70:SER:HB3	72:Ba:128:ARG:HD3	1.94	0.49
68:BW:194:LEU:HB3	68:BW:198:ARG:HE	1.77	0.49
74:Bc:20:ARG:HB2	74:Bc:74:MET:HE1	1.93	0.49
74:Bc:80:ASP:HA	74:Bc:83:LYS:HG2	1.93	0.49
1:AA:1696:C:H2'	1:AA:1697:G:O4'	2.12	0.49
1:AA:1707:C:H42	30:Ad:101:HIS:CE1	2.31	0.49
3:AC:83:C:H41	27:Aa:50:ARG:HH22	1.61	0.49
4:AD:20:VAL:HA	4:AD:23:ARG:HG3	1.93	0.49
12:AL:102:MET:HE2	12:AL:102:MET:N	2.28	0.49
29:Ac:79:TRP:HH2	29:Ac:99:PRO:HG2	1.78	0.49
46:BA:532:C:H2'	46:BA:533:A:C8	2.46	0.49
51:BF:122:ARG:HB2	64:BS:59:LEU:HD11	1.94	0.49
52:BG:58:LYS:HB2	52:BG:90:LYS:HD2	1.94	0.49
54:BI:42:ASN:HA	54:BI:45:VAL:HG23	1.94	0.49
56:BK:37:TYR:HB3	56:BK:41:GLN:HB3	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:BU:130:LYS:HZ1	66:BU:139:LYS:H	1.58	0.49
72:Ba:31:CYS:HB2	72:Ba:93:LEU:HD13	1.94	0.49
1:AA:2607:C:H2'	1:AA:2608:G:C8	2.47	0.49
1:AA:3880:G:H2'	1:AA:3881:G:C8	2.47	0.49
46:BA:59:U:H5'	46:BA:503:C:N4	2.27	0.49
60:BO:23:THR:HG22	60:BO:88:LEU:HD22	1.94	0.49
1:AA:691:C:H2'	1:AA:692:A:H8	1.78	0.49
1:AA:3856:A:H5''	18:AR:83:TRP:O	2.13	0.49
1:AA:4870:G:H5''	15:AO:91:TRP:CE2	2.48	0.49
5:AE:378:ARG:HD3	25:AY:11:TYR:HD2	1.77	0.49
12:AL:36:LEU:HD21	12:AL:69:ARG:NH1	2.28	0.49
20:AT:163:ARG:HG3	46:BA:871:U:H3	1.78	0.49
46:BA:479:C:H2'	46:BA:480:G:H8	1.78	0.49
46:BA:1143:A:H2'	46:BA:1144:A:C8	2.48	0.49
46:BA:1230:C:H2'	46:BA:1231:C:C6	2.48	0.49
46:BA:1712:A:H2'	46:BA:1713:C:C6	2.48	0.49
50:BE:136:VAL:HG13	50:BE:186:VAL:HG22	1.95	0.49
58:BM:48:ALA:HB1	58:BM:66:ARG:HD2	1.95	0.49
66:BU:40:ILE:HB	66:BU:59:LEU:HB2	1.94	0.49
66:BU:178:ASN:HB3	66:BU:185:LYS:HD2	1.94	0.49
73:Bb:22:LYS:HE2	73:Bb:22:LYS:N	2.28	0.49
1:AA:651:C:H2'	1:AA:652:G:C8	2.48	0.48
1:AA:2611:A:H2'	1:AA:2612:G:C8	2.47	0.48
1:AA:5003:U:H2'	1:AA:5004:C:C6	2.48	0.48
9:AI:179:LEU:HD21	9:AI:207:PHE:HB2	1.95	0.48
46:BA:526:A:O2'	69:BX:125:HIS:HB2	2.13	0.48
46:BA:1098:C:H2'	46:BA:1099:G:C8	2.47	0.48
60:BO:66:ARG:H	65:BT:40:ARG:HD2	1.77	0.48
61:BP:76:ASP:OD1	61:BP:78:ILE:HG23	2.13	0.48
67:BV:108:LYS:HE3	67:BV:233:LEU:HD22	1.95	0.48
69:BX:58:ARG:HG2	69:BX:58:ARG:HH11	1.77	0.48
1:AA:299:C:H2'	1:AA:300:A:C8	2.48	0.48
1:AA:3610:A:H2'	1:AA:3611:A:C8	2.48	0.48
1:AA:4239:A:H2'	1:AA:4240:G:C8	2.48	0.48
2:AB:55:A:H4'	13:AM:155:HIS:HB2	1.95	0.48
6:AF:211:TYR:HB3	6:AF:217:ILE:HD13	1.95	0.48
38:Al:70:VAL:HG22	38:Al:73:ARG:HH21	1.77	0.48
46:BA:301:A:H2'	46:BA:302:A:C8	2.48	0.48
46:BA:375:U:H2'	46:BA:376:A:C8	2.47	0.48
46:BA:498:C:H2'	46:BA:499:G:C8	2.47	0.48
46:BA:989:C:H1'	63:BR:32:LYS:HZ1	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:BA:1160:U:H2'	46:BA:1161:U:H6	1.79	0.48
46:BA:1229:G:H5'	58:BM:142:ARG:NE	2.26	0.48
49:BD:141:GLY:HA2	49:BD:210:VAL:HG22	1.95	0.48
58:BM:75:ARG:HH22	58:BM:81:ASP:HA	1.77	0.48
66:BU:20:GLN:HG3	66:BU:68:ASP:HB2	1.94	0.48
1:AA:1662:C:H2'	1:AA:1663:C:C6	2.48	0.48
1:AA:1669:A:H4'	1:AA:1685:G:N2	2.28	0.48
1:AA:3933:G:H2'	1:AA:3934:G:H8	1.77	0.48
1:AA:4966:A:H5'	5:AE:128:LYS:HG3	1.95	0.48
6:AF:318:PRO:HG2	9:AI:155:TYR:HB3	1.95	0.48
7:AG:166:ALA:HB1	7:AG:171:LEU:HD12	1.95	0.48
28:Ab:25:ILE:HA	28:Ab:43:VAL:HG12	1.94	0.48
28:Ab:68:ILE:HD12	28:Ab:119:GLU:HG2	1.95	0.48
46:BA:51:U:H2'	46:BA:52:G:H8	1.77	0.48
46:BA:1037:G:H4'	46:BA:1845:A:H4'	1.94	0.48
46:BA:1713:C:H2'	46:BA:1714:U:C6	2.48	0.48
74:Bc:9:THR:HB	74:Bc:23:MET:HE1	1.96	0.48
1:AA:1598:C:H2'	1:AA:1599:A:H8	1.78	0.48
1:AA:1664:U:H5'	33:Ag:58:ILE:HB	1.95	0.48
1:AA:3906:A:H2'	6:AF:69:THR:HG21	1.95	0.48
6:AF:235:LEU:HD22	6:AF:240:LEU:HD11	1.94	0.48
12:AL:109:ASP:O	12:AL:110:ARG:HD2	2.12	0.48
28:Ab:50:PRO:HD3	28:Ab:68:ILE:HG12	1.95	0.48
46:BA:806:U:H2'	46:BA:807:G:C8	2.49	0.48
46:BA:1446:A:H1'	60:BO:55:ARG:HG2	1.96	0.48
46:BA:1486:A:H2'	46:BA:1487:A:H8	1.76	0.48
46:BA:1649:U:H2'	46:BA:1650:A:H8	1.79	0.48
57:BL:51:LEU:HD23	57:BL:51:LEU:H	1.78	0.48
67:BV:79:GLU:HA	67:BV:82:TYR:HB2	1.93	0.48
75:Bd:99:LEU:HD21	75:Bd:102:LYS:HG3	1.96	0.48
1:AA:3664:G:H2'	1:AA:3665:G:H8	1.78	0.48
1:AA:3760:A:H61	46:BA:1824:A:H8	1.62	0.48
2:AB:110:G:H2'	2:AB:111:C:C6	2.49	0.48
46:BA:377:G:H5'	53:BH:98:LYS:HB3	1.94	0.48
46:BA:568:C:H2'	46:BA:569:A:C8	2.49	0.48
57:BL:58:LEU:HD21	57:BL:108:ILE:HG12	1.94	0.48
71:BZ:23:PRO:HB2	71:BZ:26:LEU:HB2	1.94	0.48
71:BZ:34:LYS:HG2	71:BZ:74:ILE:HD12	1.95	0.48
74:Bc:108:LYS:HA	74:Bc:111:LYS:HG2	1.96	0.48
1:AA:1695:U:H2'	1:AA:1696:C:C5	2.48	0.48
46:BA:1560:U:H2'	46:BA:1561:A:H8	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:BD:202:GLN:HG2	49:BD:206:PRO:HA	1.95	0.48
67:BV:183:LYS:HD2	67:BV:194:ARG:HE	1.78	0.48
68:BW:222:GLU:HA	68:BW:225:GLN:HG2	1.95	0.48
69:BX:123:ILE:HG23	69:BX:124:HIS:CD2	2.48	0.48
72:Ba:103:ASN:HB3	72:Ba:142:ARG:HG3	1.94	0.48
74:Bc:102:THR:HG23	74:Bc:107:ARG:HE	1.79	0.48
1:AA:35:U:H4'	1:AA:1525:A:H2	1.77	0.48
1:AA:189:G:H2'	1:AA:190:G:H8	1.78	0.48
1:AA:2520:C:H2'	1:AA:2521:G:C8	2.49	0.48
1:AA:4080:C:H2'	1:AA:4081:G:H8	1.78	0.48
1:AA:4736:C:H2'	1:AA:4737:G:H8	1.79	0.48
6:AF:224:ILE:HB	6:AF:227:ILE:HG13	1.94	0.48
10:AJ:146:LEU:HD23	10:AJ:151:LYS:HE3	1.95	0.48
15:AO:118:MET:HE3	15:AO:121:ARG:HB2	1.96	0.48
45:As:92:SER:O	45:As:96:MET:HG3	2.14	0.48
46:BA:379:C:H5''	53:BH:56:ARG:NH2	2.24	0.48
46:BA:952:G:H2'	46:BA:953:C:C6	2.49	0.48
46:BA:964:A:H2'	46:BA:965:U:H6	1.78	0.48
46:BA:1217:A:H2'	46:BA:1218:C:C6	2.48	0.48
46:BA:1260:A:N1	46:BA:1617:G:C2	2.82	0.48
46:BA:1284:A:C6	70:BY:91:LEU:HG	2.48	0.48
46:BA:1370:A:H2'	46:BA:1372:U:H5'	1.96	0.48
46:BA:1424:G:H2'	46:BA:1425:G:C8	2.49	0.48
46:BA:1731:A:H2'	46:BA:1732:G:C8	2.49	0.48
59:BN:56:ARG:HG2	59:BN:103:VAL:HG21	1.96	0.48
60:BO:30:LYS:HD2	60:BO:30:LYS:HA	1.68	0.48
67:BV:103:LYS:HE2	67:BV:103:LYS:N	2.29	0.48
1:AA:106:A:H2'	1:AA:107:G:O4'	2.14	0.48
1:AA:4475:G:H5''	1:AA:4476:C:H5''	1.95	0.48
1:AA:4578:G:H2'	1:AA:4579:PSU:C6	2.48	0.48
3:AC:30:U:H2'	3:AC:31:G:C8	2.49	0.48
46:BA:1279:C:H2'	46:BA:1280:G:C8	2.48	0.48
46:BA:1472:C:H2'	46:BA:1473:G:C8	2.49	0.48
69:BX:29:LEU:HG	77:Bf:42:PHE:HE2	1.78	0.48
76:Be:2:PRO:HB2	76:Be:5:LYS:HE3	1.95	0.48
1:AA:1097:C:H2'	1:AA:1098:G:C8	2.49	0.48
1:AA:2538:U:H2'	1:AA:2539:C:C6	2.49	0.48
1:AA:4238:G:H2'	1:AA:4239:A:H8	1.76	0.48
1:AA:4456:OMC:HM22	1:AA:4457:PSU:H5''	1.95	0.48
4:AD:117:GLU:HG2	4:AD:124:GLY:H	1.79	0.48
26:AZ:152:LYS:HD3	26:AZ:153:ILE:HD12	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:As:83:ASN:H	45:As:84:LYS:HE3	1.79	0.48
46:BA:693:A:H2	46:BA:738:C:H4'	1.79	0.48
46:BA:900:C:H5'	46:BA:901:G:H5''	1.94	0.48
46:BA:954:U:H2'	46:BA:955:A:C8	2.49	0.48
46:BA:1235:G:H2'	46:BA:1236:G:H8	1.78	0.48
49:BD:184:VAL:O	49:BD:188:LEU:HD23	2.13	0.48
49:BD:216:LYS:HD2	49:BD:216:LYS:HA	1.62	0.48
56:BK:89:MET:HB3	56:BK:107:ILE:HG21	1.95	0.48
71:BZ:57:SER:HB3	76:Be:54:VAL:HG12	1.96	0.48
1:AA:40:G:N2	1:AA:4380:A:H62	2.12	0.48
1:AA:2389:A:H4'	32:Af:70:LYS:HG3	1.96	0.48
1:AA:3684:G:H2'	1:AA:3685:C:C6	2.48	0.48
1:AA:4738:C:H2'	1:AA:4739:C:C6	2.49	0.48
1:AA:4988:U:H2'	1:AA:5061:A:N7	2.29	0.48
3:AC:14:OMU:H5'	18:AR:123:PRO:HG3	1.96	0.48
5:AE:84:MET:HG2	5:AE:166:THR:HA	1.96	0.48
19:AS:79:THR:HB	19:AS:136:THR:HG22	1.96	0.48
46:BA:17:C:H2'	46:BA:18:C:C6	2.48	0.48
48:BC:79:SER:HB2	48:BC:130:ASP:HB3	1.96	0.48
51:BF:50:PRO:HB3	51:BF:69:VAL:HG13	1.95	0.48
1:AA:271:C:H2'	1:AA:272:U:C6	2.49	0.47
1:AA:1176:C:H4'	7:AG:279:ARG:HD2	1.96	0.47
1:AA:1749:A:H2'	1:AA:1750:G:C8	2.48	0.47
1:AA:2784:C:H2'	1:AA:2785:C:H6	1.79	0.47
1:AA:2884:G:H2'	1:AA:2885:A:C8	2.49	0.47
1:AA:3700:C:H2'	1:AA:3746:A:H61	1.79	0.47
1:AA:4208:U:H2'	1:AA:4209:G:H8	1.79	0.47
5:AE:154:LYS:HG3	5:AE:191:ALA:HB2	1.96	0.47
46:BA:1821:U:H2'	46:BA:1822:A:H8	1.79	0.47
61:BP:31:SER:HB3	61:BP:56:CYS:HA	1.96	0.47
68:BW:54:GLY:H	68:BW:110:ASN:HB2	1.79	0.47
77:Bf:28:LYS:HB2	77:Bf:33:LYS:HD3	1.95	0.47
1:AA:2621:A:H2'	1:AA:2622:G:C8	2.49	0.47
1:AA:2903:G:H21	1:AA:3592:G:H1	1.62	0.47
1:AA:4457:PSU:H1'	5:AE:252:ALA:HB3	1.95	0.47
4:AD:234:LYS:HG2	4:AD:238:ILE:HG12	1.96	0.47
6:AF:107:THR:HG23	14:AN:26:PHE:HE2	1.80	0.47
10:AJ:136:LEU:HD11	10:AJ:202:VAL:HB	1.96	0.47
46:BA:945:U:H2'	46:BA:946:U:C6	2.49	0.47
46:BA:1798:C:H2'	46:BA:1799:G:O4'	2.14	0.47
47:BB:125:LYS:H	47:BB:142:HIS:CD2	2.31	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:BF:38:TYR:CE2	51:BF:144:LEU:HB2	2.49	0.47
79:Bh:100:PRO:HG3	79:Bh:122:PRO:HD3	1.95	0.47
1:AA:2502:G:O2'	1:AA:2503:G:H5'	2.14	0.47
1:AA:2884:G:H2'	1:AA:2885:A:H8	1.79	0.47
1:AA:3641:U:H5	1:AA:3646:A:N7	2.12	0.47
1:AA:3973:G:H22	1:AA:4037:C:H41	1.62	0.47
1:AA:4096:C:H41	1:AA:4113:U:H4'	1.79	0.47
46:BA:5:U:H2'	46:BA:6:G:C8	2.50	0.47
46:BA:655:A:H4'	46:BA:656:G:H3'	1.96	0.47
46:BA:975:G:H2'	46:BA:976:G:H8	1.80	0.47
46:BA:1687:C:H2'	46:BA:1688:C:C6	2.49	0.47
79:Bh:6:THR:HG23	79:Bh:8:THR:H	1.79	0.47
1:AA:233:U:O2'	1:AA:234:G:H2'	2.14	0.47
1:AA:4139:G:N2	1:AA:4140:C:H41	2.13	0.47
1:AA:4291:G:H5''	1:AA:4293:PSU:C6	2.50	0.47
1:AA:4642:U:H2'	1:AA:4643:G:H8	1.78	0.47
1:AA:4704:C:H2'	1:AA:4705:A:C8	2.50	0.47
46:BA:669:A:H2'	46:BA:670:A:C4	2.49	0.47
54:BI:27:VAL:HB	54:BI:43:LEU:HD13	1.97	0.47
56:BK:81:ARG:HE	56:BK:117:GLY:HA2	1.78	0.47
58:BM:113:ARG:NH2	58:BM:114:LEU:HA	2.29	0.47
71:BZ:33:VAL:HG21	71:BZ:66:VAL:HG11	1.96	0.47
1:AA:1333:A:H2'	1:AA:1334:A:C8	2.48	0.47
1:AA:1340:OMC:HM21	6:AF:106:LYS:HB2	1.97	0.47
1:AA:4088:C:H2'	1:AA:4089:G:H8	1.79	0.47
1:AA:4344:U:H2'	1:AA:4345:C:C6	2.50	0.47
1:AA:4769:G:H5''	17:AQ:176:ARG:HD3	1.96	0.47
46:BA:461:U:H2'	46:BA:462:OMC:H6	1.78	0.47
46:BA:1862:G:H1'	46:BA:1863:A:H2'	1.97	0.47
47:BB:9:LEU:HD11	47:BB:38:LEU:HD21	1.96	0.47
48:BC:66:VAL:HG21	48:BC:185:MET:HB2	1.95	0.47
51:BF:78:MET:HB3	51:BF:159:ARG:CZ	2.44	0.47
1:AA:2845:A:H61	1:AA:3843:C:N4	2.12	0.47
21:AU:76:LYS:HE2	21:AU:76:LYS:HB2	1.50	0.47
46:BA:1738:C:H2'	46:BA:1739:C:C6	2.50	0.47
66:BU:188:HIS:HB3	66:BU:219:TRP:CE2	2.50	0.47
74:Bc:58:PHE:CE1	74:Bc:72:PHE:HB3	2.48	0.47
79:Bh:57:LEU:O	79:Bh:61:ILE:HG13	2.15	0.47
1:AA:679:C:H2'	1:AA:680:G:C8	2.47	0.47
1:AA:1846:G:H2'	1:AA:1847:C:C6	2.50	0.47
1:AA:2406:G:H1'	1:AA:2791:C:H5''	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:2448:G:H2'	1:AA:2449:A:C8	2.49	0.47
1:AA:2574:G:H1	1:AA:2762:G:H1	1.63	0.47
1:AA:5009:G:H2'	1:AA:5010:PSU:H6	1.80	0.47
8:AH:164:PHE:HA	8:AH:175:VAL:HG23	1.96	0.47
10:AJ:162:ASP:HB3	10:AJ:163:PRO:HD3	1.96	0.47
14:AN:121:ARG:HD2	14:AN:121:ARG:HA	1.63	0.47
36:Aj:88:THR:OG1	36:Aj:91:MET:HG3	2.14	0.47
46:BA:1036:A:H4'	46:BA:1855:G:N2	2.29	0.47
52:BG:10:LYS:HG3	52:BG:24:SER:HB2	1.96	0.47
55:BJ:84:ARG:HH12	55:BJ:115:PRO:HG3	1.80	0.47
55:BJ:95:TYR:HB2	55:BJ:102:PHE:CE2	2.49	0.47
56:BK:44:ARG:HG2	56:BK:84:ILE:HD11	1.96	0.47
63:BR:59:PHE:HB2	63:BR:62:TYR:HB2	1.97	0.47
64:BS:17:VAL:HG22	64:BS:30:VAL:HG12	1.97	0.47
67:BV:257:LYS:HB3	67:BV:257:LYS:HE2	1.74	0.47
68:BW:135:PRO:HD2	68:BW:145:PHE:HE1	1.79	0.47
70:BY:48:HIS:HB2	70:BY:111:VAL:HG23	1.96	0.47
73:Bb:86:LEU:HD12	73:Bb:86:LEU:HA	1.80	0.47
74:Bc:14:THR:HA	74:Bc:21:LYS:HG3	1.96	0.47
74:Bc:56:PHE:HB3	74:Bc:90:ARG:HH21	1.80	0.47
74:Bc:84:LYS:HB3	74:Bc:84:LYS:HE2	1.64	0.47
79:Bh:54:VAL:O	79:Bh:58:MET:HE2	2.14	0.47
1:AA:2705:G:H22	1:AA:2710:C:H5	1.61	0.47
1:AA:2844:A:O2'	1:AA:4631:G:H4'	2.15	0.47
27:Aa:14:ASN:HA	27:Aa:17:ARG:HH12	1.80	0.47
27:Aa:44:VAL:HG13	27:Aa:122:LYS:HD2	1.96	0.47
46:BA:634:A:H2'	46:BA:635:G:C8	2.50	0.47
46:BA:1377:U:H3'	48:BC:102:ARG:HH22	1.80	0.47
60:BO:53:PRO:HG2	60:BO:55:ARG:HH22	1.80	0.47
74:Bc:18:LEU:HB2	74:Bc:20:ARG:HG2	1.95	0.47
1:AA:173:C:H5''	14:AN:129:ARG:NH2	2.22	0.47
1:AA:711:A:H2'	1:AA:712:C:C6	2.50	0.47
1:AA:1346:C:H2'	1:AA:1347:G:H8	1.80	0.47
1:AA:2743:A:H2'	1:AA:2744:A:C8	2.50	0.47
1:AA:3746:A:H5''	4:AD:244:GLY:HA3	1.96	0.47
1:AA:4208:U:H2'	1:AA:4209:G:C8	2.50	0.47
1:AA:4243:C:N4	1:AA:4266:G:H21	2.12	0.47
9:AI:182:TYR:CD1	9:AI:200:ARG:HD2	2.50	0.47
12:AL:184:MET:HA	12:AL:187:LYS:HG3	1.97	0.47
35:AI:100:GLN:O	35:AI:104:VAL:HG23	2.14	0.47
37:Ak:33:LEU:HD11	37:Ak:38:LYS:HB2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:BA:1792:G:H2'	46:BA:1793:A:H8	1.80	0.47
67:BV:201:GLY:HA3	69:BX:54:ARG:HH12	1.80	0.47
68:BW:32:MET:HE3	68:BW:63:MET:HE3	1.97	0.47
71:BZ:88:LEU:HD22	71:BZ:129:TYR:HD1	1.79	0.47
72:Ba:56:VAL:HG11	72:Ba:61:LYS:HE2	1.97	0.47
73:Bb:20:ARG:HB3	73:Bb:22:LYS:HE3	1.96	0.47
74:Bc:54:VAL:HG12	74:Bc:79:LEU:HD13	1.97	0.47
1:AA:3707:U:H2'	1:AA:3708:C:C6	2.50	0.47
1:AA:3870:C:H2'	1:AA:3871:A:H8	1.79	0.47
6:AF:22:VAL:HG22	6:AF:258:ARG:CZ	2.45	0.47
8:AH:254:ASP:HA	8:AH:257:ILE:HB	1.97	0.47
12:AL:93:PRO:HB2	12:AL:125:THR:HB	1.96	0.47
39:Am:8:ILE:HG23	39:Am:56:LEU:HD13	1.96	0.47
46:BA:1367:PSU:O5'	46:BA:1367:PSU:H6	1.97	0.47
67:BV:66:LEU:HD11	67:BV:86:LEU:HD22	1.97	0.47
79:Bh:44:LYS:O	79:Bh:47:ARG:HG2	2.15	0.47
1:AA:2477:A:H2	1:AA:2478:C:H41	1.62	0.46
8:AH:153:LEU:HD11	8:AH:195:ILE:HG13	1.96	0.46
18:AR:94:MET:HG2	18:AR:148:MET:SD	2.55	0.46
19:AS:18:PRO:HB3	19:AS:52:PHE:HA	1.97	0.46
46:BA:1093:A:H2'	46:BA:1094:C:C6	2.50	0.46
46:BA:1331:C:H4'	46:BA:1332:A:H5''	1.95	0.46
50:BE:105:LEU:HB3	50:BE:184:ILE:HD13	1.95	0.46
50:BE:222:PRO:HB3	66:BU:190:GLY:HA3	1.97	0.46
67:BV:88:ILE:HD11	67:BV:160:LEU:HA	1.96	0.46
74:Bc:13:MET:N	74:Bc:13:MET:HE3	2.29	0.46
1:AA:4862:G:H2'	1:AA:4863:G:H8	1.81	0.46
17:AQ:47:PHE:HA	17:AQ:136:ALA:HB2	1.98	0.46
17:AQ:154:ALA:O	17:AQ:158:GLU:HG3	2.15	0.46
46:BA:12:U:H2'	46:BA:13:C:H6	1.79	0.46
46:BA:587:A:O2'	46:BA:590:A2M:H8	2.15	0.46
46:BA:936:G:H2'	46:BA:937:C:C6	2.50	0.46
46:BA:1064:C:H2'	46:BA:1065:G:H8	1.79	0.46
46:BA:1285:G:H5'	70:BY:61:TYR:HE2	1.80	0.46
46:BA:1792:G:H2'	46:BA:1793:A:C8	2.50	0.46
49:BD:139:CYS:HB3	49:BD:168:MET:HE3	1.97	0.46
56:BK:13:ARG:HD3	56:BK:14:LYS:HG3	1.97	0.46
59:BN:39:LEU:HD21	59:BN:52:TRP:CZ3	2.49	0.46
71:BZ:47:PRO:HA	71:BZ:50:ILE:HG22	1.97	0.46
72:Ba:30:VAL:HG23	72:Ba:47:LEU:HA	1.97	0.46
1:AA:1260:G:H2'	1:AA:1261:G:C8	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1876:U:H2'	1:AA:1877:G:C8	2.51	0.46
1:AA:4563:U:H2'	1:AA:4564:A:H8	1.80	0.46
1:AA:4688:C:H2'	1:AA:4689:PSU:C6	2.50	0.46
1:AA:4745:G:H1	1:AA:4955:A:H61	1.63	0.46
5:AE:161:ARG:HG2	5:AE:184:GLN:HA	1.97	0.46
5:AE:297:LYS:HD3	5:AE:297:LYS:HA	1.73	0.46
8:AH:190:HIS:ND1	8:AH:192:LYS:HB2	2.30	0.46
9:AI:184:ILE:HG23	9:AI:189:ASP:HB3	1.97	0.46
19:AS:178:ARG:HA	19:AS:184:ARG:O	2.16	0.46
21:AU:70:LYS:HD2	21:AU:70:LYS:HA	1.78	0.46
26:AZ:129:ARG:HH21	26:AZ:133:GLU:HG3	1.80	0.46
39:Am:29:LYS:HB3	39:Am:29:LYS:HE3	1.57	0.46
46:BA:1624:U:H2'	46:BA:1625:PSU:O4'	2.15	0.46
48:BC:1:MET:H3	48:BC:63:ARG:HG3	1.80	0.46
48:BC:141:ASN:ND2	67:BV:86:LEU:HA	2.29	0.46
48:BC:183:LEU:HB3	48:BC:189:ILE:HG22	1.96	0.46
62:BQ:130:LEU:HA	62:BQ:133:LEU:HB2	1.96	0.46
67:BV:132:ASP:CG	67:BV:136:HIS:HB2	2.41	0.46
74:Bc:16:ARG:H	74:Bc:16:ARG:NE	2.13	0.46
1:AA:1999:A:H2'	1:AA:2000:G:C4	2.50	0.46
1:AA:2683:C:H2'	1:AA:2684:C:C6	2.51	0.46
1:AA:3932:U:H2'	1:AA:3933:G:C8	2.50	0.46
7:AG:22:ARG:HB3	7:AG:28:THR:HG22	1.98	0.46
10:AJ:154:LEU:HB3	10:AJ:204:PHE:HD2	1.80	0.46
46:BA:70:G:H1'	46:BA:79:A:N6	2.31	0.46
46:BA:860:G:H1'	73:Bb:107:SER:HB2	1.97	0.46
46:BA:950:C:H2'	46:BA:951:C:C6	2.50	0.46
46:BA:1628:C:H2'	46:BA:1629:C:H6	1.81	0.46
66:BU:245:ARG:HH12	66:BU:295:GLY:HA3	1.80	0.46
67:BV:74:LYS:HG2	67:BV:269:PHE:CE2	2.49	0.46
69:BX:115:PHE:HA	69:BX:120:ALA:HB3	1.97	0.46
76:Be:35:VAL:HA	76:Be:78:SER:O	2.15	0.46
1:AA:214:G:H2'	1:AA:215:C:C6	2.51	0.46
1:AA:921:C:H2'	1:AA:922:C:C6	2.50	0.46
1:AA:1953:U:H2'	1:AA:1954:U:C6	2.51	0.46
1:AA:2640:G:H2'	1:AA:2641:A:C8	2.50	0.46
1:AA:3916:G:H2'	1:AA:3917:A:C8	2.50	0.46
14:AN:92:ARG:NH2	14:AN:98:VAL:HB	2.30	0.46
32:Af:32:ARG:HD3	32:Af:48:GLU:HB3	1.97	0.46
46:BA:98:C:H4'	46:BA:99:A2M:H8	1.97	0.46
46:BA:806:U:H2'	46:BA:807:G:H8	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:BA:1858:G:H2'	46:BA:1859:A:C8	2.51	0.46
59:BN:18:LEU:HD23	59:BN:58:ALA:HA	1.98	0.46
69:BX:37:LEU:HD21	69:BX:106:LEU:HD23	1.96	0.46
1:AA:399:G:H2'	1:AA:400:A2M:H8	1.97	0.46
1:AA:4535:A:H2'	1:AA:4536:OMC:H6	1.81	0.46
2:AB:111:C:H2'	2:AB:112:U:O4'	2.15	0.46
5:AE:84:MET:HE1	5:AE:183:ILE:HD11	1.97	0.46
28:Ab:119:GLU:O	28:Ab:123:LYS:HG2	2.16	0.46
46:BA:28:U:H2'	46:BA:29:G:C8	2.49	0.46
46:BA:51:U:H2'	46:BA:52:G:C8	2.51	0.46
46:BA:77:A:H2	68:BW:175:LYS:HG2	1.81	0.46
46:BA:421:G:OP1	55:BJ:97:ARG:HG3	2.16	0.46
46:BA:678:U:H2'	46:BA:679:A:H8	1.80	0.46
46:BA:1203:G:H2'	46:BA:1204:A:H8	1.81	0.46
46:BA:1208:A:H2'	46:BA:1209:A:C8	2.51	0.46
46:BA:1616:U:H2'	46:BA:1617:G:C8	2.51	0.46
47:BB:149:TYR:HD1	68:BW:209:TYR:CE1	2.33	0.46
49:BD:179:ASN:HB3	49:BD:183:GLU:HB2	1.98	0.46
54:BI:16:PHE:CZ	54:BI:91:PRO:HD3	2.51	0.46
67:BV:92:GLU:HA	67:BV:95:ASP:HB2	1.98	0.46
71:BZ:91:LEU:HB3	71:BZ:122:ILE:HG13	1.97	0.46
76:Be:50:ALA:HB3	76:Be:71:ALA:HB2	1.97	0.46
1:AA:86:U:H2'	1:AA:87:A:H8	1.81	0.46
1:AA:2000:G:H8	1:AA:2018:C:H1'	1.80	0.46
1:AA:3726:A:H2'	1:AA:3727:A:C8	2.51	0.46
14:AN:120:TYR:HD1	14:AN:155:MET:HE1	1.80	0.46
18:AR:23:ARG:HG2	18:AR:125:MET:HE1	1.98	0.46
19:AS:154:LYS:HA	19:AS:154:LYS:HD2	1.78	0.46
21:AU:9:GLU:HG3	21:AU:33:PHE:CE2	2.51	0.46
46:BA:1199:A:H2'	46:BA:1200:A:C8	2.51	0.46
46:BA:1737:G:H2'	46:BA:1738:C:C6	2.51	0.46
48:BC:10:MET:HA	48:BC:10:MET:HE3	1.98	0.46
66:BU:69:VAL:HG12	66:BU:80:SER:HB2	1.98	0.46
66:BU:130:LYS:HG2	66:BU:141:THR:HB	1.97	0.46
71:BZ:47:PRO:HG3	71:BZ:72:LEU:HD13	1.96	0.46
78:Bg:121:CYS:HB3	78:Bg:127:GLY:HA2	1.98	0.46
78:Bg:141:CYS:HB3	78:Bg:144:CYS:SG	2.55	0.46
1:AA:239:C:H5'	27:Aa:33:PRO:HD3	1.98	0.46
1:AA:1273:G:H8	30:Ad:117:ARG:HD2	1.79	0.46
1:AA:1505:C:H2'	1:AA:1506:G:C8	2.51	0.46
1:AA:1733:G:N3	1:AA:4214:A:H2'	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:2079:G:H2'	1:AA:2080:U:H6	1.80	0.46
1:AA:2391:G:H2'	1:AA:2392:C:C6	2.51	0.46
1:AA:2759:G:H2'	1:AA:2760:G:C8	2.51	0.46
1:AA:3739:C:H2'	1:AA:3740:G:H8	1.80	0.46
46:BA:913:A:N6	52:BG:98:ARG:HB3	2.31	0.46
46:BA:1309:C:H1'	78:Bg:133:ALA:HB2	1.98	0.46
46:BA:1610:G:H2'	46:BA:1611:G:H8	1.80	0.46
47:BB:48:LEU:HD12	47:BB:61:VAL:HG22	1.98	0.46
53:BH:83:TYR:HB3	53:BH:101:ILE:HD12	1.97	0.46
69:BX:38:ARG:HG3	77:Bf:31:ARG:HH11	1.80	0.46
1:AA:299:C:H2'	1:AA:300:A:H8	1.81	0.46
1:AA:724:C:H1'	6:AF:343:GLN:HG2	1.97	0.46
1:AA:1895:G:H2'	1:AA:1896:A:O4'	2.16	0.46
1:AA:2780:C:H2'	1:AA:2781:G:H8	1.80	0.46
1:AA:2894:A:H2'	1:AA:2895:A:H8	1.79	0.46
1:AA:4392:OMG:H2'	1:AA:4447:5MC:HM51	1.98	0.46
11:AK:59:LYS:HE2	11:AK:66:GLU:HB3	1.98	0.46
29:Ac:36:GLY:HA3	29:Ac:40:HIS:CE1	2.51	0.46
43:Aq:35:ALA:O	43:Aq:39:ARG:HG3	2.16	0.46
46:BA:1384:C:C2	46:BA:1385:G:C8	3.04	0.46
46:BA:1626:C:H2'	46:BA:1627:C:H6	1.80	0.46
47:BB:41:CYS:HA	47:BB:85:GLY:HA2	1.98	0.46
65:BT:21:CYS:HB2	65:BT:39:CYS:HB3	1.98	0.46
65:BT:54:LYS:HB2	65:BT:54:LYS:HE3	1.68	0.46
1:AA:497:G:H21	1:AA:498:C:H41	1.62	0.46
1:AA:710:G:H2'	1:AA:711:A:C8	2.51	0.46
1:AA:1509:C:H5''	29:Ac:2:PRO:HD2	1.98	0.46
1:AA:1893:C:H1'	1:AA:1937:C:O2	2.15	0.46
1:AA:3608:A:H2'	1:AA:3609:G:H8	1.81	0.46
4:AD:180:LEU:HD21	44:Ar:22:LEU:HB3	1.97	0.46
8:AH:48:PRO:HG2	8:AH:56:ARG:HD3	1.98	0.46
46:BA:191:A:H61	46:BA:208:G:H2'	1.81	0.46
46:BA:1127:C:H2'	46:BA:1128:C:C6	2.50	0.46
46:BA:1742:C:H3'	46:BA:1743:G:H8	1.81	0.46
47:BB:11:ARG:HG2	47:BB:20:LEU:HD23	1.98	0.46
50:BE:28:GLU:HG2	50:BE:69:LEU:HD21	1.98	0.46
50:BE:119:CYS:HB3	50:BE:152:PHE:CE2	2.51	0.46
52:BG:139:ILE:HG23	52:BG:156:VAL:HG13	1.98	0.46
58:BM:141:ARG:HG3	58:BM:144:ARG:HH12	1.81	0.46
75:Bd:101:SER:HB2	75:Bd:108:ILE:HD12	1.97	0.46
1:AA:2352:U:H1'	6:AF:96:CYS:HA	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:4503:A:H2'	1:AA:4504:C:C6	2.51	0.45
1:AA:4940:C:H5'	8:AH:187:ARG:HE	1.81	0.45
9:AI:125:LEU:HD22	9:AI:130:ILE:HG12	1.98	0.45
10:AJ:100:HIS:HD2	10:AJ:101:LYS:H	1.64	0.45
46:BA:1515:G:H21	56:BK:99:GLY:HA2	1.81	0.45
52:BG:113:LYS:HD3	52:BG:113:LYS:HA	1.71	0.45
70:BY:18:LEU:HD23	70:BY:88:TRP:HZ3	1.82	0.45
1:AA:2568:C:H2'	1:AA:2569:G:C8	2.50	0.45
1:AA:4680:G:H2'	1:AA:4681:A:C8	2.50	0.45
26:AZ:127:LEU:HD11	26:AZ:135:LYS:HE3	1.97	0.45
28:Ab:83:THR:HG22	35:Ai:95:PHE:CZ	2.51	0.45
46:BA:824:C:H1'	69:BX:144:ILE:HD11	1.96	0.45
46:BA:999:G:C8	63:BR:17:HIS:HB3	2.51	0.45
46:BA:1227:G:H2'	46:BA:1228:A:H8	1.80	0.45
46:BA:1255:G:OP1	46:BA:1256:G:H1'	2.16	0.45
46:BA:1549:U:H2'	46:BA:1550:G:C8	2.52	0.45
46:BA:1706:G:H2'	46:BA:1707:U:H6	1.80	0.45
52:BG:53:VAL:HG21	52:BG:172:THR:HA	1.99	0.45
57:BL:103:ALA:HB2	66:BU:54:ILE:HD12	1.98	0.45
79:Bh:81:ARG:NE	79:Bh:81:ARG:HA	2.31	0.45
1:AA:1307:A:H2'	1:AA:1308:C:C6	2.50	0.45
1:AA:2634:C:H2'	1:AA:2635:U:C6	2.52	0.45
5:AE:66:LYS:HE2	5:AE:66:LYS:HB3	1.75	0.45
9:AI:237:GLU:HG3	21:AU:38:VAL:HG22	1.98	0.45
13:AM:40:LEU:HD23	13:AM:40:LEU:HA	1.82	0.45
17:AQ:34:VAL:HG22	17:AQ:103:LYS:HB2	1.99	0.45
26:AZ:109:ILE:O	26:AZ:113:VAL:HG23	2.16	0.45
33:Ag:58:ILE:HD12	33:Ag:58:ILE:HA	1.84	0.45
46:BA:70:G:H1'	46:BA:79:A:H61	1.80	0.45
46:BA:314:U:H2'	46:BA:315:C:C6	2.51	0.45
46:BA:1103:C:H2'	46:BA:1104:G:C8	2.52	0.45
46:BA:1391:OMC:H5'	60:BO:83:ARG:HH12	1.81	0.45
46:BA:1395:C:H2'	46:BA:1396:A:O4'	2.16	0.45
58:BM:34:LYS:HG2	58:BM:103:LEU:HD12	1.98	0.45
69:BX:77:LEU:HD13	69:BX:80:ARG:NH1	2.31	0.45
71:BZ:100:LYS:HE2	71:BZ:100:LYS:HB3	1.74	0.45
1:AA:75:G:H3'	14:AN:74:ARG:HD2	1.99	0.45
1:AA:153:G:H2'	1:AA:154:G:H8	1.82	0.45
1:AA:2607:C:H5''	20:AT:96:MET:SD	2.56	0.45
1:AA:4258:C:H2'	1:AA:4259:C:H6	1.82	0.45
5:AE:107:ALA:HB1	5:AE:202:GLU:HG3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:AF:28:PHE:HA	6:AF:129:ALA:HA	1.99	0.45
10:AJ:216:ALA:HA	10:AJ:219:VAL:HB	1.99	0.45
30:Ad:8:THR:HG23	30:Ad:10:HIS:H	1.81	0.45
46:BA:1030:A:H2'	46:BA:1031:A2M:C8	2.42	0.45
46:BA:1743:G:H1'	46:BA:1791:A:H61	1.82	0.45
50:BE:201:LYS:HB3	50:BE:201:LYS:HE3	1.77	0.45
51:BF:100:ILE:HD12	51:BF:101:HIS:N	2.32	0.45
58:BM:26:ILE:HG23	58:BM:45:LEU:HD13	1.99	0.45
66:BU:129:ILE:HD11	66:BU:151:VAL:HG11	1.97	0.45
69:BX:136:ARG:HH22	69:BX:161:LEU:HD23	1.80	0.45
1:AA:21:G:H1'	3:AC:103:A:N3	2.31	0.45
1:AA:907:C:H2'	1:AA:908:G:H8	1.82	0.45
1:AA:1309:C:H2'	1:AA:1310:C:C6	2.51	0.45
1:AA:1399:G:H2'	1:AA:1400:G:H8	1.82	0.45
1:AA:2705:G:H2'	1:AA:2706:G:C8	2.51	0.45
1:AA:4188:U:H2'	1:AA:4189:U:C6	2.51	0.45
1:AA:5018:C:H2'	1:AA:5019:A:C8	2.51	0.45
8:AH:50:LEU:HD13	8:AH:56:ARG:HG2	1.97	0.45
20:AT:105:LEU:HD23	20:AT:138:LEU:HD23	1.98	0.45
21:AU:48:VAL:HG22	22:AV:151:LEU:HD12	1.99	0.45
35:AI:93:ARG:O	35:AI:97:ILE:HG13	2.17	0.45
46:BA:1316:C:H2'	46:BA:1317:C:C6	2.52	0.45
58:BM:114:LEU:HB3	58:BM:122:GLY:HA2	1.98	0.45
60:BO:48:LEU:HD23	60:BO:91:LEU:HD13	1.98	0.45
1:AA:35:U:H4'	1:AA:1525:A:C2	2.51	0.45
1:AA:429:A:H2'	1:AA:430:G:C8	2.50	0.45
1:AA:1683:PSU:H2'	1:AA:1684:A:C8	2.52	0.45
1:AA:2063:G:H2'	1:AA:2064:G:C8	2.52	0.45
1:AA:2347:A:C4	33:Ag:31:ILE:HD11	2.52	0.45
1:AA:3911:C:H2'	1:AA:3912:U:H6	1.82	0.45
1:AA:4886:C:H2'	1:AA:4887:C:C6	2.52	0.45
9:AI:174:LEU:H	9:AI:174:LEU:HD12	1.81	0.45
27:Aa:73:VAL:HA	27:Aa:80:ILE:HG22	1.99	0.45
37:Ak:68:ARG:HD3	37:Ak:71:LYS:HE2	1.98	0.45
46:BA:543:C:H3'	46:BA:544:G:C8	2.52	0.45
46:BA:1341:C:OP2	46:BA:1687:C:H4'	2.16	0.45
46:BA:1358:U:H5'	67:BV:114:LYS:HD2	1.99	0.45
55:BJ:24:LEU:HD23	55:BJ:24:LEU:H	1.80	0.45
66:BU:260:ASP:HB2	66:BU:267:VAL:HB	1.99	0.45
71:BZ:89:TYR:CZ	71:BZ:93:LYS:HD2	2.51	0.45
1:AA:4994:G:H2'	1:AA:4995:U:C6	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:AU:113:MET:HE3	21:AU:113:MET:HB3	1.76	0.45
46:BA:388:U:H2'	46:BA:389:A:H8	1.82	0.45
46:BA:808:A:H2	46:BA:855:G:H22	1.63	0.45
46:BA:1204:A:H2'	46:BA:1205:C:C6	2.51	0.45
62:BQ:60:LYS:H	62:BQ:60:LYS:HG2	1.64	0.45
66:BU:150:TRP:CD1	66:BU:150:TRP:H	2.35	0.45
69:BX:131:ARG:HD2	69:BX:131:ARG:HA	1.77	0.45
1:AA:1194:G:H2'	1:AA:1195:G:H8	1.82	0.45
1:AA:2749:C:H2'	1:AA:2750:G:H8	1.82	0.45
1:AA:2787:A2M:H8	1:AA:2787:A2M:H2'	1.72	0.45
1:AA:4071:U:H2'	1:AA:4072:C:H6	1.82	0.45
1:AA:4228:OMG:H5''	1:AA:4229:U:O4'	2.17	0.45
3:AC:148:A:H2'	3:AC:149:G:C8	2.52	0.45
11:AK:15:ASN:OD1	11:AK:30:PRO:HD3	2.16	0.45
46:BA:822:PSU:H3'	46:BA:823:U:H5'	1.98	0.45
46:BA:1564:C:H2'	46:BA:1565:C:C6	2.52	0.45
46:BA:1657:G:H2'	46:BA:1658:G:C8	2.52	0.45
59:BN:30:VAL:HG13	59:BN:34:VAL:HG11	1.99	0.45
1:AA:242:U:H4'	27:Aa:2:LYS:HG3	1.99	0.45
1:AA:434:A:H2'	1:AA:435:A:O4'	2.16	0.45
1:AA:2084:C:C4	19:AS:14:ARG:HD2	2.52	0.45
1:AA:4085:A:H5''	10:AJ:56:LYS:HB2	1.99	0.45
1:AA:4258:C:H5'	13:AM:68:ILE:HD11	1.98	0.45
1:AA:4458:C:H2'	1:AA:4459:U:C6	2.52	0.45
3:AC:83:C:N4	27:Aa:50:ARG:HH12	2.14	0.45
46:BA:1232:PSU:H2'	46:BA:1233:G:C8	2.51	0.45
46:BA:1797:U:H2'	46:BA:1798:C:C6	2.52	0.45
47:BB:11:ARG:NH2	47:BB:21:ASP:H	2.14	0.45
49:BD:222:LYS:HD2	49:BD:222:LYS:C	2.42	0.45
61:BP:20:SER:HB3	61:BP:59:ILE:HD11	1.98	0.45
61:BP:64:GLU:HG3	76:Be:3:LEU:HD21	1.99	0.45
66:BU:10:THR:HA	66:BU:309:VAL:HG23	1.98	0.45
66:BU:52:TYR:CE2	66:BU:309:VAL:HG11	2.52	0.45
66:BU:72:SER:HB3	66:BU:77:PHE:HB2	1.99	0.45
70:BY:83:LYS:HE2	70:BY:103:VAL:HG11	1.99	0.45
1:AA:318:A:H2'	1:AA:319:A:H8	1.80	0.45
1:AA:717:U:H2'	1:AA:718:C:C6	2.52	0.45
1:AA:2497:C:H2'	1:AA:2498:C:C6	2.52	0.45
1:AA:4174:U:H2'	1:AA:4175:G:C8	2.51	0.45
1:AA:4897:G:H2'	1:AA:4898:G:H8	1.82	0.45
5:AE:153:MET:HB2	5:AE:194:LEU:HD11	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:AR:54:GLN:HA	18:AR:83:TRP:CD1	2.51	0.45
20:AT:96:MET:HE2	20:AT:96:MET:HB3	1.90	0.45
46:BA:1036:A:H4'	46:BA:1855:G:H21	1.82	0.45
46:BA:1550:G:C2	46:BA:1583:C:O2	2.70	0.45
47:BB:35:PRO:HA	47:BB:144:ALA:HB3	1.98	0.45
48:BC:212:LYS:HA	48:BC:212:LYS:HD2	1.72	0.45
50:BE:132:LYS:HG2	50:BE:156:LEU:HB2	1.99	0.45
55:BJ:61:PRO:HB3	55:BJ:68:ILE:HD11	1.99	0.45
56:BK:17:TYR:HB3	56:BK:25:LEU:HD21	1.98	0.45
1:AA:272:U:H2'	1:AA:273:U:C6	2.52	0.44
1:AA:1084:C:H2'	1:AA:1085:C:H6	1.82	0.44
1:AA:4743:G:H2'	1:AA:4744:A:H8	1.80	0.44
4:AD:180:LEU:HD22	44:Ar:18:TYR:HB3	1.99	0.44
6:AF:214:ASP:OD1	6:AF:218:ILE:HG12	2.16	0.44
10:AJ:132:ARG:HA	10:AJ:133:PRO:HD3	1.86	0.44
13:AM:20:LEU:HD11	13:AM:130:PHE:HD2	1.82	0.44
46:BA:483:C:H5'	62:BQ:47:ALA:HA	1.97	0.44
46:BA:610:G:H2'	46:BA:611:G:H8	1.82	0.44
46:BA:841:G:HO2'	46:BA:842:C:H6	1.63	0.44
46:BA:1496:U:O2'	46:BA:1497:G:H3'	2.17	0.44
48:BC:118:GLU:HB2	67:BV:65:LYS:HE3	1.99	0.44
69:BX:81:LEU:HB3	69:BX:86:VAL:HG12	1.98	0.44
1:AA:1084:C:H2'	1:AA:1085:C:C6	2.52	0.44
1:AA:2784:C:H2'	1:AA:2785:C:C6	2.52	0.44
1:AA:3787:G:H1'	1:AA:3789:C:N4	2.32	0.44
1:AA:3855:C:H2'	1:AA:3856:A:H8	1.82	0.44
1:AA:3923:A:H2'	1:AA:3924:C:C6	2.53	0.44
1:AA:4178:A:H2'	1:AA:4179:G:C8	2.52	0.44
1:AA:4389:C:H2'	1:AA:4390:A:C8	2.52	0.44
1:AA:4481:U:H2'	1:AA:4482:U:H6	1.82	0.44
7:AG:117:LYS:HE2	7:AG:117:LYS:HB2	1.75	0.44
13:AM:164:ARG:O	13:AM:168:GLN:HG3	2.17	0.44
46:BA:638:C:H4'	77:Bf:55:PRO:HB2	1.98	0.44
46:BA:833:C:H2'	46:BA:834:C:C6	2.52	0.44
46:BA:959:G:H2'	46:BA:960:U:C6	2.52	0.44
54:BI:14:LEU:HD21	54:BI:35:LEU:HD21	1.98	0.44
59:BN:39:LEU:HD23	59:BN:39:LEU:HA	1.74	0.44
60:BO:20:ILE:HG21	60:BO:98:VAL:HG11	1.99	0.44
1:AA:1298:C:H2'	1:AA:1299:G:H8	1.81	0.44
1:AA:1350:C:H2'	1:AA:1351:G:C8	2.52	0.44
1:AA:1754:U:H3	1:AA:1776:A:H61	1.66	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:2391:G:H2'	1:AA:2392:C:H6	1.82	0.44
1:AA:2749:C:H2'	1:AA:2750:G:C8	2.52	0.44
1:AA:3771:C:H2'	1:AA:3772:U:C6	2.52	0.44
1:AA:3870:C:H2'	1:AA:3871:A:C8	2.53	0.44
1:AA:3887:OMC:HM22	1:AA:3888:G:H5'	2.00	0.44
1:AA:4088:C:H2'	1:AA:4089:G:C8	2.51	0.44
1:AA:4186:A:H2'	1:AA:4187:G:C8	2.53	0.44
1:AA:4619:U:H2'	1:AA:4620:OMU:H6	2.00	0.44
1:AA:4622:A:H4'	5:AE:13:SER:HB2	2.00	0.44
1:AA:4862:G:H2'	1:AA:4863:G:C8	2.53	0.44
6:AF:11:TYR:CZ	6:AF:148:PRO:HB2	2.53	0.44
19:AS:18:PRO:HG3	19:AS:29:VAL:HG21	1.98	0.44
20:AT:133:LYS:HB2	20:AT:133:LYS:HE2	1.69	0.44
42:Ap:4:LYS:HB2	46:BA:1842:4AC:OP2	2.17	0.44
46:BA:59:U:H5'	46:BA:503:C:H41	1.82	0.44
46:BA:1092:G:H2'	46:BA:1093:A:H8	1.82	0.44
46:BA:1562:C:H5''	59:BN:71:GLY:HA3	1.98	0.44
47:BB:205:PHE:CD1	47:BB:221:ARG:HG3	2.52	0.44
49:BD:66:VAL:HG22	49:BD:87:ILE:HG22	1.99	0.44
49:BD:128:LYS:HE3	49:BD:132:GLY:HA2	2.00	0.44
53:BH:53:LYS:HE2	53:BH:53:LYS:HB3	1.78	0.44
57:BL:35:ASN:N	57:BL:69:ARG:HH12	2.16	0.44
57:BL:132:PHE:HB2	60:BO:77:TRP:CD1	2.53	0.44
69:BX:125:HIS:CE1	69:BX:129:LEU:HD23	2.52	0.44
1:AA:509:A:C8	29:Ac:82:VAL:HA	2.53	0.44
1:AA:1327:C:H2'	1:AA:1328:G:C8	2.53	0.44
1:AA:1866:U:H2'	1:AA:1867:A:O4'	2.17	0.44
1:AA:2323:C:H2'	1:AA:2324:C:C6	2.53	0.44
1:AA:4991:U:H2'	1:AA:4992:G:C8	2.52	0.44
17:AQ:50:ASN:HB3	17:AQ:141:LEU:HD11	1.98	0.44
44:Ar:3:LYS:HE3	44:Ar:6:LYS:HA	1.99	0.44
46:BA:163:U:H5	68:BW:85:ARG:HH22	1.64	0.44
46:BA:166:A2M:HM'2	46:BA:167:G:H5'	1.98	0.44
46:BA:443:U:H3	46:BA:447:A:H62	1.65	0.44
46:BA:1010:G:H2'	46:BA:1011:A:H8	1.82	0.44
46:BA:1308:U:H2'	46:BA:1309:C:C6	2.53	0.44
46:BA:1747:C:H2'	46:BA:1748:G:C8	2.53	0.44
51:BF:33:ILE:HG23	64:BS:55:VAL:HG11	1.99	0.44
53:BH:196:GLU:HA	53:BH:199:LEU:HG	2.00	0.44
64:BS:67:ARG:HA	64:BS:67:ARG:HD2	1.78	0.44
71:BZ:99:ARG:HA	71:BZ:102:LEU:HD12	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:Bd:49:LEU:HD23	75:Bd:49:LEU:HA	1.81	0.44
75:Bd:52:LYS:HA	75:Bd:52:LYS:HD3	1.86	0.44
1:AA:47:A:H5''	14:AN:16:LYS:HD3	1.99	0.44
1:AA:509:A:C4	29:Ac:82:VAL:HG12	2.53	0.44
1:AA:1278:C:H2'	1:AA:1279:A:O4'	2.17	0.44
1:AA:1334:A:H2'	1:AA:1335:G:H8	1.83	0.44
1:AA:1806:G:H2'	1:AA:1807:C:C6	2.53	0.44
11:AK:50:LYS:HD2	11:AK:50:LYS:HA	1.72	0.44
12:AL:54:SER:HB2	12:AL:135:ILE:HD11	1.99	0.44
33:Ag:90:MET:HA	33:Ag:90:MET:HE3	1.98	0.44
37:Ak:86:LYS:HA	37:Ak:86:LYS:HD2	1.82	0.44
46:BA:484:A2M:H8	46:BA:484:A2M:O5'	2.17	0.44
46:BA:1822:A:H2'	46:BA:1823:A:H8	1.83	0.44
48:BC:52:LYS:HA	48:BC:52:LYS:HD2	1.90	0.44
49:BD:69:VAL:HG11	49:BD:86:LEU:HD12	1.99	0.44
57:BL:16:LYS:HA	57:BL:16:LYS:HD3	1.63	0.44
57:BL:33:LYS:HE2	57:BL:33:LYS:HB3	1.76	0.44
74:Bc:10:ARG:HE	74:Bc:11:LYS:HZ2	1.64	0.44
1:AA:1094:G:H2'	1:AA:1095:A:C8	2.53	0.44
1:AA:1354:A:H8	1:AA:1502:G:C5	2.35	0.44
1:AA:1373:A:H5''	6:AF:44:LEU:HD22	1.98	0.44
1:AA:1505:C:H2'	1:AA:1506:G:H8	1.83	0.44
1:AA:2565:A:H3'	1:AA:2566:G:H8	1.82	0.44
1:AA:2696:A:H62	39:Am:35:LYS:NZ	2.15	0.44
1:AA:3607:U:H2'	1:AA:3608:A:H8	1.81	0.44
1:AA:4577:U:H2'	1:AA:4578:G:C8	2.52	0.44
1:AA:4992:G:H2'	1:AA:4993:G:C8	2.52	0.44
3:AC:14:OMU:HM23	3:AC:14:OMU:H1'	1.81	0.44
6:AF:29:LYS:HD3	6:AF:29:LYS:HA	1.69	0.44
6:AF:41:HIS:NE2	6:AF:45:ARG:HD3	2.32	0.44
17:AQ:62:MET:HG2	17:AQ:65:ASN:H	1.82	0.44
46:BA:963:A:H2'	46:BA:964:A:C8	2.53	0.44
49:BD:139:CYS:HB3	49:BD:168:MET:CE	2.47	0.44
53:BH:117:TYR:CE1	53:BH:152:ARG:HB3	2.53	0.44
55:BJ:87:VAL:HA	55:BJ:110:SER:HA	1.99	0.44
57:BL:37:ARG:HB3	57:BL:41:MET:SD	2.58	0.44
58:BM:5:ILE:HB	75:Bd:49:LEU:HB3	1.98	0.44
66:BU:270:LEU:HD11	66:BU:310:TRP:CZ2	2.52	0.44
1:AA:23:C:H2'	1:AA:24:G:O4'	2.17	0.44
1:AA:950:G:H2'	1:AA:951:G:H8	1.83	0.44
1:AA:2264:C:H2'	1:AA:2265:G:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:2558:C:H2'	1:AA:2559:G:H8	1.82	0.44
5:AE:80:GLU:HG2	5:AE:82:PRO:HD3	1.99	0.44
7:AG:53:VAL:HG11	7:AG:159:VAL:HA	1.99	0.44
9:AI:74:MET:HA	9:AI:77:LYS:HB3	1.99	0.44
25:AY:20:ARG:HE	25:AY:30:GLN:HE21	1.66	0.44
46:BA:158:A:N6	46:BA:467:G:C2	2.72	0.44
46:BA:871:U:H5'	71:BZ:76:LYS:HE3	2.00	0.44
46:BA:1120:U:H2'	46:BA:1121:G:H8	1.82	0.44
46:BA:1550:G:C2	46:BA:1583:C:C2	3.05	0.44
48:BC:143:PRO:HB3	61:BP:32:ILE:HD13	1.99	0.44
50:BE:141:LYS:HA	50:BE:147:ALA:HA	2.00	0.44
51:BF:82:ASN:O	51:BF:85:LYS:HG3	2.17	0.44
60:BO:51:LYS:HB3	60:BO:90:ASP:HB2	1.98	0.44
62:BQ:107:ARG:HH21	62:BQ:112:VAL:HA	1.83	0.44
1:AA:1524:A2M:H62	1:AA:1651:G:H22	1.66	0.44
1:AA:1590:C:H5''	1:AA:1591:U:O5'	2.18	0.44
1:AA:1875:C:H2'	1:AA:1876:U:C6	2.53	0.44
1:AA:1967:A:H2'	1:AA:1970:A:H61	1.83	0.44
1:AA:2063:G:H2'	1:AA:2064:G:H8	1.83	0.44
1:AA:3732:A:H2'	1:AA:3733:A:H8	1.83	0.44
6:AF:230:LEU:HD13	6:AF:235:LEU:HD23	2.00	0.44
36:Aj:99:GLU:HA	36:Aj:102:LEU:HD13	1.99	0.44
46:BA:295:C:H2'	46:BA:296:PSU:C6	2.53	0.44
46:BA:917:U:C6	52:BG:118:ARG:HG3	2.52	0.44
46:BA:1272:OMC:HM21	46:BA:1274:G:C4	2.53	0.44
46:BA:1588:A:H2'	46:BA:1589:A:C8	2.53	0.44
46:BA:1599:U:H3'	75:Bd:44:LEU:HB2	2.00	0.44
47:BB:36:HIS:CG	47:BB:85:GLY:HA3	2.53	0.44
51:BF:116:ILE:HD12	51:BF:117:ILE:N	2.32	0.44
51:BF:195:GLU:O	51:BF:199:VAL:HG13	2.16	0.44
66:BU:24:THR:HG23	66:BU:27:PHE:H	1.82	0.44
73:Bb:25:VAL:HG12	73:Bb:65:LEU:HD21	2.00	0.44
1:AA:71:C:H4'	14:AN:64:VAL:HG13	2.00	0.44
1:AA:423:G:H2'	1:AA:424:U:C6	2.52	0.44
1:AA:1186:U:H2'	1:AA:1187:G:N3	2.33	0.44
1:AA:1345:A:H2'	1:AA:1346:C:C6	2.53	0.44
1:AA:1588:U:H2'	1:AA:1589:C:C6	2.53	0.44
1:AA:1720:C:H2'	1:AA:1721:G:O4'	2.18	0.44
1:AA:2521:G:H4'	35:Ai:26:PRO:HD2	1.98	0.44
1:AA:2770:C:H2'	1:AA:2771:G:H8	1.83	0.44
1:AA:4173:G:H2'	1:AA:4174:U:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:4239:A:H2'	1:AA:4240:G:H8	1.83	0.44
1:AA:4897:G:H2'	1:AA:4898:G:C8	2.53	0.44
6:AF:294:LYS:HE3	6:AF:294:LYS:HB2	1.66	0.44
37:Ak:81:ILE:H	37:Ak:81:ILE:HG13	1.58	0.44
38:Al:3:LYS:H	38:Al:3:LYS:HG2	1.63	0.44
46:BA:67:C:C4	68:BW:164:LYS:HG2	2.53	0.44
46:BA:1139:C:H41	46:BA:1149:A:H62	1.66	0.44
46:BA:1205:C:H2'	46:BA:1206:G:H8	1.82	0.44
46:BA:1413:G:H2'	46:BA:1414:A:H8	1.81	0.44
46:BA:1563:G:H5'	59:BN:115:LYS:HE2	2.00	0.44
64:BS:63:ARG:HA	64:BS:63:ARG:HD3	1.79	0.44
67:BV:199:PRO:HG3	69:BX:58:ARG:NH1	2.33	0.44
77:Bf:58:ASN:HD22	77:Bf:58:ASN:HA	1.66	0.44
79:Bh:51:ALA:HA	79:Bh:54:VAL:HB	1.99	0.44
14:AN:162:LYS:HA	14:AN:162:LYS:HD2	1.65	0.43
37:Ak:16:LYS:HD2	37:Ak:16:LYS:HA	1.75	0.43
46:BA:455:A:H2'	46:BA:456:C:C6	2.53	0.43
46:BA:796:G:H2'	46:BA:797:C:O4'	2.18	0.43
46:BA:1228:A:H2'	46:BA:1229:G:C8	2.53	0.43
46:BA:1430:C:H2'	46:BA:1431:G:C8	2.53	0.43
46:BA:1532:C:H3'	46:BA:1637:A:H62	1.83	0.43
48:BC:120:ARG:HH12	67:BV:267:GLN:HB2	1.83	0.43
48:BC:181:GLU:O	48:BC:185:MET:HG2	2.17	0.43
51:BF:179:ASN:HB2	51:BF:187:SER:HB2	2.00	0.43
53:BH:10:LYS:HE3	53:BH:10:LYS:HB3	1.82	0.43
67:BV:104:ASP:HA	67:BV:130:ILE:HG22	1.98	0.43
67:BV:142:LYS:HG2	67:BV:153:GLY:HA3	2.00	0.43
71:BZ:99:ARG:CZ	71:BZ:143:SER:HB2	2.48	0.43
74:Bc:51:THR:HG22	74:Bc:53:ASP:H	1.83	0.43
1:AA:65:A:N6	1:AA:75:G:H1'	2.33	0.43
1:AA:1847:C:H2'	1:AA:1848:C:C6	2.53	0.43
1:AA:2517:A:H5'	35:Ai:62:LYS:HE3	1.99	0.43
1:AA:4062:A:H2'	1:AA:4063:U:C6	2.53	0.43
1:AA:4584:A:H2'	1:AA:4585:U:O4'	2.18	0.43
6:AF:221:PHE:HA	6:AF:224:ILE:HD12	2.00	0.43
14:AN:209:LYS:HG3	14:AN:210:LYS:HG3	2.00	0.43
19:AS:17:GLU:HG2	19:AS:18:PRO:HD2	1.98	0.43
27:Aa:47:MET:HE1	27:Aa:118:ILE:HG22	2.00	0.43
46:BA:511:U:H3'	46:BA:512:A2M:H8	2.00	0.43
46:BA:1712:A:H2'	46:BA:1713:C:H6	1.82	0.43
53:BH:38:ILE:HG13	53:BH:96:LEU:HD21	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:BL:36:GLY:H	57:BL:69:ARG:NH1	2.16	0.43
77:Bf:27:LYS:HE3	77:Bf:33:LYS:HZ1	1.83	0.43
3:AC:26:C:H2'	3:AC:27:U:C6	2.53	0.43
18:AR:126:ARG:NH1	18:AR:126:ARG:HB2	2.34	0.43
46:BA:107:A:H2'	46:BA:108:G:H8	1.83	0.43
46:BA:906:U:H2'	46:BA:907:G:C8	2.51	0.43
46:BA:1208:A:H4'	46:BA:1835:A:C6	2.54	0.43
46:BA:1587:G:H2'	59:BN:78:ILE:HG12	1.99	0.43
47:BB:124:CYS:HB3	47:BB:141:THR:HB	1.99	0.43
48:BC:121:LEU:HD22	48:BC:122:LEU:H	1.83	0.43
51:BF:18:LYS:HD3	51:BF:18:LYS:HA	1.72	0.43
51:BF:38:TYR:HE2	51:BF:144:LEU:HB2	1.83	0.43
54:BI:80:ARG:NH1	54:BI:87:PRO:HA	2.34	0.43
57:BL:94:ALA:HA	57:BL:97:GLN:HG2	1.99	0.43
58:BM:30:ILE:HG12	58:BM:41:ALA:HB2	2.00	0.43
68:BW:72:ARG:HH22	68:BW:74:ARG:NH1	2.15	0.43
68:BW:190:ARG:O	68:BW:194:LEU:HD22	2.18	0.43
70:BY:49:LEU:HD11	70:BY:77:ILE:HG12	2.01	0.43
74:Bc:9:THR:HB	74:Bc:23:MET:SD	2.58	0.43
1:AA:358:C:H2'	1:AA:359:A:C8	2.53	0.43
1:AA:3848:U:H2'	1:AA:3849:A:C8	2.53	0.43
1:AA:4319:C:H2'	1:AA:4320:G:H8	1.84	0.43
4:AD:206:PRO:HG3	4:AD:213:GLY:HA3	1.99	0.43
5:AE:303:ALA:HA	5:AE:368:ILE:HD12	2.00	0.43
12:AL:135:ILE:HG22	12:AL:136:MET:HG3	1.99	0.43
17:AQ:158:GLU:O	17:AQ:162:GLU:HG3	2.18	0.43
20:AT:93:VAL:HA	20:AT:96:MET:HB2	1.99	0.43
23:AW:86:LEU:HD23	23:AW:86:LEU:HA	1.86	0.43
24:AX:62:MET:HE3	24:AX:76:VAL:HG12	2.01	0.43
27:Aa:114:ASP:O	27:Aa:118:ILE:HG13	2.18	0.43
29:Ac:4:ARG:HA	29:Ac:9:ARG:HG3	2.01	0.43
45:As:108:MET:O	45:As:108:MET:HE3	2.17	0.43
46:BA:367:U:H4'	46:BA:371:A:C8	2.53	0.43
46:BA:520:A:H2'	46:BA:521:A:C8	2.53	0.43
46:BA:926:A:H1'	71:BZ:48:SER:OG	2.19	0.43
46:BA:1738:C:H2'	46:BA:1739:C:H6	1.83	0.43
49:BD:195:LYS:HA	49:BD:195:LYS:HD3	1.87	0.43
53:BH:36:THR:O	53:BH:95:THR:HA	2.18	0.43
64:BS:24:GLN:HE21	64:BS:26:GLN:HB3	1.83	0.43
66:BU:109:LEU:HD11	66:BU:152:SER:HA	2.01	0.43
71:BZ:42:LYS:HE3	71:BZ:80:LEU:HD23	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:Bf:31:ARG:H	77:Bf:31:ARG:CZ	2.31	0.43
1:AA:178:C:H2'	1:AA:179:G:C8	2.53	0.43
1:AA:2439:G:H5'	1:AA:2778:G:OP2	2.19	0.43
1:AA:2654:C:H2'	1:AA:2655:C:H6	1.83	0.43
1:AA:3661:G:C4	4:AD:150:LEU:HD13	2.53	0.43
1:AA:4685:U:H2'	1:AA:4686:G:C8	2.53	0.43
1:AA:5004:C:H2'	1:AA:5005:G:O4'	2.19	0.43
6:AF:207:PRO:HB3	6:AF:249:PHE:CE2	2.53	0.43
39:Am:60:LEU:HD12	39:Am:60:LEU:HA	1.87	0.43
45:As:113:ARG:O	45:As:117:ILE:HD12	2.19	0.43
46:BA:110:U:H3	46:BA:351:G:H1	1.66	0.43
46:BA:443:U:O4	46:BA:447:A:N7	2.51	0.43
46:BA:1391:OMC:H4'	65:BT:55:LEU:HD22	2.01	0.43
46:BA:1570:G:H4'	46:BA:1615:U:H4'	2.00	0.43
46:BA:1681:U:H2'	46:BA:1682:C:C6	2.54	0.43
51:BF:198:ARG:HH22	51:BF:202:SER:HB3	1.84	0.43
53:BH:58:LEU:H	53:BH:58:LEU:HG	1.66	0.43
54:BI:49:MET:HG3	54:BI:69:TRP:CE2	2.53	0.43
59:BN:104:LEU:O	59:BN:108:GLU:HG2	2.18	0.43
66:BU:212:LYS:HD3	66:BU:235:ILE:HD11	2.00	0.43
74:Bc:90:ARG:HA	74:Bc:93:ARG:NH1	2.32	0.43
74:Bc:108:LYS:HG3	74:Bc:111:LYS:HD3	2.00	0.43
1:AA:300:A:H2'	1:AA:301:G:C8	2.51	0.43
1:AA:305:A:P	16:AP:15:GLN:HE22	2.41	0.43
1:AA:1942:A:H2'	1:AA:1943:A:H8	1.79	0.43
1:AA:1975:G:H4'	1:AA:1983:A:H8	1.83	0.43
1:AA:2683:C:H2'	1:AA:2684:C:H6	1.83	0.43
5:AE:103:LYS:HB3	5:AE:153:MET:HE2	1.99	0.43
5:AE:231:VAL:HG21	5:AE:251:VAL:HG23	2.00	0.43
6:AF:291:ARG:H	6:AF:291:ARG:HG3	1.65	0.43
10:AJ:159:HIS:CD2	10:AJ:186:GLY:H	2.36	0.43
13:AM:53:ALA:HB2	13:AM:68:ILE:HD13	2.00	0.43
18:AR:140:MET:H	18:AR:140:MET:HG2	1.56	0.43
46:BA:1628:C:H2'	46:BA:1629:C:C6	2.53	0.43
46:BA:1705:C:H2'	46:BA:1706:G:H8	1.82	0.43
46:BA:1821:U:H2'	46:BA:1822:A:C8	2.53	0.43
53:BH:57:ALA:HB2	53:BH:183:GLY:HA2	2.00	0.43
68:BW:2:LYS:HD2	68:BW:15:LEU:HD13	2.01	0.43
1:AA:37:U:H2'	1:AA:38:A:O4'	2.18	0.43
1:AA:162:A:H2'	1:AA:163:A:C8	2.53	0.43
1:AA:171:U:H1'	14:AN:135:LYS:HE2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:424:U:H2'	1:AA:425:U:C6	2.53	0.43
1:AA:1577:G:H5'	1:AA:1578:U:H5''	1.99	0.43
1:AA:1867:A:H2'	1:AA:1868:A:C8	2.53	0.43
1:AA:2690:C:H2'	1:AA:2691:U:O4'	2.19	0.43
1:AA:4219:A:H2'	1:AA:4220:6MZ:C8	2.48	0.43
11:AK:159:ALA:O	11:AK:163:GLN:HG3	2.18	0.43
26:AZ:62:ARG:HG3	36:Aj:81:LEU:HD23	1.99	0.43
26:AZ:115:LYS:HD3	26:AZ:115:LYS:HA	1.64	0.43
46:BA:60:A:H2'	46:BA:61:A:C5	2.52	0.43
46:BA:106:C:H2'	46:BA:107:A:H8	1.84	0.43
46:BA:788:G:H4'	46:BA:789:G:H5'	2.01	0.43
46:BA:1276:A:C6	46:BA:1322:G:H1'	2.54	0.43
46:BA:1529:C:H2'	46:BA:1530:U:C6	2.54	0.43
46:BA:1651:A:H2'	46:BA:1652:G:H8	1.84	0.43
47:BB:80:ILE:HG13	47:BB:81:THR:HG23	2.00	0.43
50:BE:146:ARG:HA	50:BE:146:ARG:HD2	1.84	0.43
51:BF:93:VAL:O	51:BF:97:PHE:HB2	2.18	0.43
55:BJ:22:ARG:HH11	55:BJ:26:GLY:HA3	1.83	0.43
66:BU:280:LYS:HD3	66:BU:280:LYS:HA	1.74	0.43
68:BW:45:TRP:HZ3	68:BW:113:ILE:HD11	1.83	0.43
70:BY:72:HIS:O	70:BY:73:GLN:HG3	2.19	0.43
72:Ba:46:ASP:HB3	72:Ba:51:GLU:OE2	2.18	0.43
1:AA:189:G:N2	1:AA:253:G:H22	2.16	0.43
1:AA:1431:C:H2'	1:AA:1432:G:O4'	2.18	0.43
1:AA:2539:C:H2'	1:AA:2540:C:H6	1.83	0.43
13:AM:38:LYS:HB2	13:AM:38:LYS:HE3	1.76	0.43
26:AZ:120:ASP:HB2	26:AZ:144:TYR:CE1	2.54	0.43
30:Ad:63:LYS:H	30:Ad:63:LYS:HG2	1.58	0.43
39:Am:22:SER:HB2	39:Am:67:LYS:HZ2	1.84	0.43
46:BA:461:U:H2'	46:BA:462:OMC:C6	2.54	0.43
46:BA:486:A:O2'	46:BA:487:U:H5''	2.18	0.43
46:BA:807:G:H2'	46:BA:808:A:C8	2.54	0.43
46:BA:1651:A:H1'	51:BF:83:ASN:HD22	1.84	0.43
46:BA:1754:G:H2'	46:BA:1755:C:C6	2.54	0.43
48:BC:2:SER:HA	48:BC:8:LEU:HB3	2.01	0.43
50:BE:136:VAL:HG22	50:BE:186:VAL:HG13	2.00	0.43
50:BE:138:VAL:HG13	50:BE:184:ILE:HG12	2.01	0.43
55:BJ:12:LYS:HB3	55:BJ:12:LYS:HE3	1.73	0.43
57:BL:78:VAL:HA	57:BL:81:ILE:HG22	2.00	0.43
58:BM:6:PRO:HD2	75:Bd:49:LEU:HD13	2.01	0.43
1:AA:315:G:C8	29:Ac:62:HIS:HB2	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:398:A2M:H8	1:AA:398:A2M:O5'	2.19	0.43
1:AA:1273:G:H5''	30:Ad:117:ARG:HD2	2.01	0.43
1:AA:1656:U:H2'	1:AA:1657:G:H8	1.84	0.43
2:AB:82:G:H2'	2:AB:83:A:C8	2.54	0.43
3:AC:5:U:H2'	3:AC:6:C:H6	1.84	0.43
10:AJ:137[A]:ARG:HG2	10:AJ:142:THR:HG21	2.00	0.43
13:AM:12:MET:HE3	13:AM:137:PRO:HB2	2.00	0.43
46:BA:496:C:H2'	46:BA:497:C:H6	1.83	0.43
46:BA:795:A:H2'	46:BA:796:G:C8	2.54	0.43
46:BA:821:G:H22	69:BX:148:ILE:HG13	1.84	0.43
46:BA:1337:4AC:H4'	60:BO:67:LYS:HG2	2.01	0.43
46:BA:1610:G:H2'	46:BA:1611:G:C8	2.53	0.43
46:BA:1745:A:H1'	68:BW:66:GLY:HA2	2.01	0.43
46:BA:1805:G:H2'	46:BA:1806:A:C8	2.54	0.43
56:BK:62:LYS:HE2	56:BK:62:LYS:HB2	1.85	0.43
59:BN:107:LEU:HD22	59:BN:112:MET:HG3	2.00	0.43
61:BP:81:LYS:HD2	61:BP:81:LYS:HA	1.76	0.43
62:BQ:85:VAL:HG12	62:BQ:122:VAL:HG11	2.01	0.43
68:BW:141:ILE:HG12	68:BW:146:ASN:HB3	2.01	0.43
74:Bc:43:LYS:HA	74:Bc:46:LYS:HE3	2.00	0.43
1:AA:160:G:H2'	1:AA:161:G:C8	2.54	0.43
1:AA:165:A:H2'	1:AA:166:C:C6	2.54	0.43
1:AA:733:A:H2'	1:AA:734:G:O4'	2.19	0.43
1:AA:1248:C:H2'	1:AA:1249:C:H6	1.83	0.43
1:AA:1461:C:H2'	1:AA:1462:A:H8	1.84	0.43
1:AA:1478:C:H2'	1:AA:1479:G:C8	2.49	0.43
1:AA:1916:G:O6	34:Ah:18:LEU:HB2	2.19	0.43
1:AA:4456:OMC:HM21	5:AE:241:PRO:HD3	2.01	0.43
1:AA:4460:U:H2'	1:AA:4461:C:C6	2.54	0.43
1:AA:4892:A:H5''	17:AQ:188:LYS:HD2	1.99	0.43
3:AC:44:A:H2'	3:AC:45:C:C6	2.54	0.43
39:Am:13:LEU:HD23	39:Am:13:LEU:HA	1.83	0.43
45:As:90:LEU:HD13	45:As:111:ILE:HG23	2.00	0.43
46:BA:981:A:H2'	46:BA:982:G:C8	2.53	0.43
47:BB:19:MET:HE2	47:BB:108:ARG:NE	2.34	0.43
49:BD:224:GLU:HG2	49:BD:227:LYS:H	1.84	0.43
50:BE:135:GLU:HG2	50:BE:187:LYS:HE2	2.01	0.43
66:BU:165:ILE:HD12	66:BU:165:ILE:O	2.17	0.43
70:BY:16:THR:HA	70:BY:19:GLN:HG2	2.01	0.43
73:Bb:37:PHE:HD2	73:Bb:126:LEU:HD23	1.84	0.43
1:AA:660:A:H2'	1:AA:661:C:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:2638:G:N1	1:AA:2718:U:H2'	2.33	0.42
1:AA:2648:G:H2'	1:AA:2649:G:H8	1.84	0.42
7:AG:204:VAL:O	7:AG:208:MET:HG2	2.18	0.42
7:AG:236:MET:HA	7:AG:239:MET:HG2	2.01	0.42
12:AL:51:HIS:CD2	12:AL:168:SER:HB3	2.54	0.42
28:Ab:102:ARG:HE	28:Ab:102:ARG:HB2	1.72	0.42
34:Ah:83:MET:HE3	34:Ah:83:MET:HB3	1.96	0.42
46:BA:16:G:H2'	46:BA:17:C:C6	2.54	0.42
46:BA:1469:A:H2'	46:BA:1470:C:H6	1.84	0.42
46:BA:1495:G:O2'	65:BT:24:CYS:HB2	2.18	0.42
48:BC:140:VAL:HG23	48:BC:142:LEU:HB2	2.01	0.42
58:BM:114:LEU:HB3	58:BM:122:GLY:CA	2.49	0.42
60:BO:55:ARG:HD3	60:BO:87:ARG:HD2	2.01	0.42
67:BV:68:ARG:HD3	67:BV:68:ARG:HA	1.84	0.42
67:BV:182:CYS:HA	73:Bb:96:SER:HB3	2.00	0.42
1:AA:1318:C:H2'	1:AA:1319:U:O4'	2.19	0.42
1:AA:2706:G:H2'	1:AA:2708:U:H3	1.84	0.42
9:AI:136:VAL:O	9:AI:140:ILE:HG12	2.19	0.42
15:AO:9:VAL:HG21	15:AO:66:HIS:HB3	2.00	0.42
40:An:28:ARG:HA	40:An:33:ASN:ND2	2.33	0.42
41:Ao:78:ILE:HB	41:Ao:83:ARG:HG3	2.01	0.42
46:BA:1139:C:N4	46:BA:1149:A:H62	2.17	0.42
48:BC:24:HIS:HA	48:BC:49:ILE:HB	2.01	0.42
48:BC:185:MET:HE1	61:BP:39:VAL:HG12	2.00	0.42
49:BD:133:TYR:HB3	49:BD:217:MET:HE1	2.00	0.42
70:BY:37:GLU:HA	70:BY:40:LYS:HB2	2.00	0.42
1:AA:162:A:H2'	1:AA:163:A:H8	1.85	0.42
1:AA:208:A:C2	1:AA:233:U:H5''	2.55	0.42
1:AA:1344:C:H2'	1:AA:1345:A:H8	1.84	0.42
1:AA:2605:G:H2'	1:AA:2606:G:C8	2.54	0.42
1:AA:2634:C:H2'	1:AA:2635:U:H6	1.85	0.42
1:AA:4251:A:H5''	13:AM:108:GLY:HA3	2.01	0.42
1:AA:4724:A:O2'	5:AE:104:THR:HG22	2.18	0.42
3:AC:79:G:H2'	3:AC:80:A:H4'	2.02	0.42
28:Ab:109:LYS:HG3	28:Ab:112:ARG:HH22	1.83	0.42
30:Ad:60:ASN:HD22	30:Ad:60:ASN:HA	1.59	0.42
38:Al:28:HIS:CD2	38:Al:31:LYS:HD3	2.54	0.42
46:BA:188:C:H2'	46:BA:189:U:H6	1.84	0.42
46:BA:612:U:H3	46:BA:629:A:H62	1.66	0.42
46:BA:675:U:H2'	46:BA:676:C:H6	1.83	0.42
46:BA:1239:U:H2'	46:BA:1240:A:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:BG:57:ARG:HE	52:BG:57:ARG:H	1.67	0.42
57:BL:31:LEU:HD13	57:BL:33:LYS:HE3	2.01	0.42
58:BM:14:ARG:HA	58:BM:14:ARG:HD2	1.74	0.42
59:BN:39:LEU:HD13	59:BN:56:ARG:CZ	2.48	0.42
61:BP:50:PHE:CZ	67:BV:263:LYS:HE2	2.54	0.42
61:BP:70:LEU:HD11	61:BP:83:PHE:CE2	2.55	0.42
68:BW:225:GLN:HA	68:BW:228:ILE:HG12	2.00	0.42
1:AA:189:G:H22	1:AA:253:G:H22	1.66	0.42
1:AA:648:G:H2'	1:AA:649:A:C8	2.53	0.42
1:AA:1374:G:OP2	6:AF:120:LYS:HE2	2.19	0.42
1:AA:1473:U:H2'	1:AA:1474:C:C6	2.54	0.42
1:AA:1655:C:C5	29:Ac:26:ARG:HD2	2.54	0.42
1:AA:1794:A:H5''	1:AA:4214:A:H61	1.84	0.42
1:AA:2297:G:H5'	6:AF:205:ARG:HG2	2.01	0.42
1:AA:2611:A:H2'	1:AA:2612:G:H8	1.85	0.42
1:AA:3656:A:H2'	1:AA:3657:U:H6	1.84	0.42
1:AA:4642:U:H2'	1:AA:4643:G:C8	2.53	0.42
5:AE:206:PRO:HG2	5:AE:209:GLN:HG3	2.00	0.42
23:AW:80:LYS:HE2	23:AW:110:TYR:CZ	2.55	0.42
28:Ab:23:ALA:HA	28:Ab:45:GLY:HA2	2.01	0.42
32:Af:41:ARG:HG3	32:Af:78:ARG:HA	2.00	0.42
40:An:29:MET:HA	40:An:29:MET:HE3	2.02	0.42
46:BA:321:C:H2'	46:BA:322:C:C6	2.54	0.42
46:BA:936:G:H2'	46:BA:937:C:H6	1.82	0.42
46:BA:940:U:H2'	46:BA:941:C:C6	2.54	0.42
46:BA:1223:A:H5''	51:BF:80:GLY:HA3	2.01	0.42
46:BA:1253:A:H4'	46:BA:1254:C:H5''	2.01	0.42
46:BA:1415:C:H4'	59:BN:129:ARG:HB3	2.01	0.42
47:BB:31:PRO:HG2	47:BB:38:LEU:HG	2.01	0.42
51:BF:48:TYR:O	51:BF:49:LEU:HD23	2.18	0.42
60:BO:29:VAL:HG23	60:BO:87:ARG:HH21	1.83	0.42
67:BV:165:VAL:HG13	67:BV:244:ILE:HG23	2.00	0.42
73:Bb:7:LEU:HD12	73:Bb:74:VAL:HG23	2.02	0.42
74:Bc:57:VAL:HB	74:Bc:60:PHE:HZ	1.85	0.42
1:AA:411:G:H4'	1:AA:412:G:H5''	2.01	0.42
1:AA:674:G:H2'	1:AA:675:C:C6	2.54	0.42
1:AA:1739:G:H2'	1:AA:1740:C:C6	2.55	0.42
1:AA:2404:A:H1'	38:Al:12:ARG:HH11	1.84	0.42
1:AA:2542:G:H2'	1:AA:2543:A:C8	2.55	0.42
1:AA:2705:G:H1	1:AA:2710:C:H5	1.67	0.42
1:AA:3739:C:H2'	1:AA:3740:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:4524:G:N3	5:AE:252:ALA:HB1	2.34	0.42
1:AA:5002:U:H2'	1:AA:5003:U:C6	2.55	0.42
2:AB:4:U:H2'	2:AB:5:A:H8	1.84	0.42
5:AE:77:THR:HG21	5:AE:337:VAL:HG22	2.02	0.42
7:AG:208:MET:O	7:AG:212:MET:HG3	2.19	0.42
46:BA:71:G:H2'	46:BA:72:C:O4'	2.19	0.42
46:BA:823:U:O2	69:BX:142:VAL:HA	2.20	0.42
46:BA:943:U:H2'	46:BA:944:A:C8	2.45	0.42
46:BA:1097:G:H4'	48:BC:32:PHE:CG	2.55	0.42
46:BA:1103:C:H2'	46:BA:1104:G:H8	1.84	0.42
46:BA:1505:U:H4'	46:BA:1508:A:H1'	2.02	0.42
46:BA:1692:PSU:H2'	46:BA:1693:G:C8	2.54	0.42
47:BB:138:HIS:ND1	47:BB:148:ARG:HG2	2.34	0.42
52:BG:143:ARG:HB2	52:BG:155:LYS:HB2	2.01	0.42
55:BJ:86:ILE:HD13	55:BJ:86:ILE:HA	1.85	0.42
58:BM:70:ILE:HD13	58:BM:70:ILE:HA	1.93	0.42
65:BT:33:LYS:O	65:BT:36:LEU:HD12	2.19	0.42
69:BX:50:LEU:O	69:BX:53:ILE:HG22	2.20	0.42
73:Bb:14:ILE:HG13	73:Bb:27:ILE:HD11	2.00	0.42
74:Bc:10:ARG:HE	74:Bc:11:LYS:NZ	2.16	0.42
79:Bh:18:GLU:HG2	79:Bh:69:ILE:HG23	2.01	0.42
1:AA:298:G:H5'	16:AP:179:LYS:HB3	2.02	0.42
1:AA:325:U:H2'	1:AA:326:C:H6	1.84	0.42
1:AA:455:C:C2'	1:AA:456:C:H5'	2.50	0.42
1:AA:958:G:N2	8:AH:124:LYS:HB3	2.34	0.42
1:AA:1359:G:H5'	6:AF:114:ARG:HD2	2.02	0.42
1:AA:1662:C:H2'	1:AA:1663:C:H6	1.83	0.42
1:AA:1972:G:H1	1:AA:1994:C:N4	2.17	0.42
1:AA:2608:G:H5'	20:AT:100:ARG:HH22	1.85	0.42
1:AA:5045:G:H5''	32:Af:82:TYR:HD1	1.83	0.42
3:AC:64:U:C2	3:AC:65:A:C8	3.08	0.42
6:AF:13:GLU:CD	6:AF:157:LYS:HD3	2.45	0.42
7:AG:208:MET:HE1	7:AG:226:TYR:CD2	2.54	0.42
9:AI:64:MET:HE1	9:AI:196:THR:HG22	2.01	0.42
9:AI:203:GLU:H	9:AI:203:GLU:CD	2.27	0.42
14:AN:64:VAL:HG12	14:AN:67:HIS:CE1	2.55	0.42
14:AN:136:LYS:HD3	14:AN:136:LYS:HA	1.80	0.42
27:Aa:62:TYR:HE2	27:Aa:97:VAL:HG11	1.84	0.42
46:BA:115:U:H2'	46:BA:116:OMU:C6	2.49	0.42
46:BA:195:C:H2'	46:BA:196:C:C6	2.55	0.42
46:BA:442:C:H42	46:BA:449:A:H62	1.66	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:BA:595:U:H2'	46:BA:596:U:C6	2.55	0.42
46:BA:1478:U:H2'	46:BA:1479:G:O4'	2.20	0.42
46:BA:1545:A:H2'	46:BA:1546:G:C8	2.55	0.42
46:BA:1643:PSU:H2'	46:BA:1644:C:H6	1.84	0.42
47:BB:191:ARG:CZ	47:BB:245:ARG:HD2	2.50	0.42
59:BN:115:LYS:HD2	59:BN:115:LYS:HA	1.84	0.42
59:BN:134:ILE:HD12	59:BN:137:GLN:HB2	2.00	0.42
66:BU:59:LEU:HB3	66:BU:90:TRP:CE2	2.54	0.42
66:BU:87:LEU:HD11	66:BU:111:VAL:HG12	2.01	0.42
69:BX:97:ILE:HD12	69:BX:97:ILE:HA	1.88	0.42
1:AA:123:C:H2'	1:AA:124:C:C6	2.55	0.42
1:AA:1290:G:H2'	1:AA:1291:G:C8	2.54	0.42
1:AA:1788:A:H2'	12:AL:22:PHE:CZ	2.54	0.42
1:AA:4345:C:H2'	1:AA:4346:U:C6	2.55	0.42
1:AA:4385:A:H4'	1:AA:4386:C:H5''	2.01	0.42
1:AA:4474:A:H5''	41:Ao:125:LYS:HD2	2.02	0.42
1:AA:4504:C:H2'	1:AA:4505:C:C6	2.54	0.42
8:AH:223:ARG:HD2	8:AH:223:ARG:HA	1.92	0.42
9:AI:46:ARG:O	9:AI:50:ILE:HG23	2.19	0.42
10:AJ:100:HIS:CD2	10:AJ:101:LYS:H	2.38	0.42
30:Ad:92:LYS:O	30:Ad:96:LEU:HG	2.20	0.42
46:BA:434:G:H2'	46:BA:435:A:C8	2.54	0.42
46:BA:1522:A:H5'	58:BM:144:ARG:HH21	1.85	0.42
51:BF:131:ALA:HB2	51:BF:136:ARG:HB3	2.00	0.42
53:BH:143:LYS:HE2	53:BH:143:LYS:HB3	1.94	0.42
54:BI:53:LYS:HE3	54:BI:53:LYS:HB3	1.85	0.42
56:BK:92:SER:HB2	56:BK:107:ILE:HG13	2.00	0.42
57:BL:34:VAL:HA	57:BL:70:VAL:HG23	2.01	0.42
58:BM:23:ARG:HB2	75:Bd:80:ARG:NH2	2.35	0.42
70:BY:85:LEU:HD23	70:BY:85:LEU:HA	1.87	0.42
1:AA:61:A:H2'	1:AA:62:A:O4'	2.19	0.42
1:AA:116:G:H2'	1:AA:117:C:C6	2.55	0.42
1:AA:271:C:H2'	1:AA:272:U:H6	1.84	0.42
1:AA:462:G:H2'	1:AA:463:A:C8	2.54	0.42
1:AA:1334:A:H2'	1:AA:1335:G:C8	2.54	0.42
1:AA:1344:C:H2'	1:AA:1345:A:C8	2.55	0.42
1:AA:1558:A:H2'	1:AA:1559:G:C8	2.54	0.42
1:AA:1558:A:H2'	1:AA:1559:G:H8	1.83	0.42
1:AA:3598:C:H2'	1:AA:3599:A:H8	1.84	0.42
1:AA:3832:U:H2'	1:AA:3833:C:C6	2.55	0.42
1:AA:3832:U:H2'	1:AA:3833:C:H6	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:AC:70:G:H5''	27:Aa:27:ARG:CZ	2.48	0.42
6:AF:189:MET:HE1	6:AF:200:ARG:HH21	1.84	0.42
7:AG:36:LEU:HG	7:AG:50:ARG:HD2	2.01	0.42
11:AK:89:ARG:HD3	11:AK:91:LYS:HE3	2.01	0.42
15:AO:126:GLU:HB3	17:AQ:181:ALA:HB1	2.02	0.42
17:AQ:121:PRO:HA	17:AQ:124:LEU:HD12	2.02	0.42
17:AQ:140:ARG:O	17:AQ:144:GLU:HG3	2.19	0.42
20:AT:136:ARG:O	20:AT:140:GLU:HG2	2.19	0.42
46:BA:388:U:H2'	46:BA:389:A:C8	2.55	0.42
46:BA:1272:OMC:HM21	46:BA:1274:G:C5	2.55	0.42
46:BA:1716:C:H2'	46:BA:1717:C:H6	1.85	0.42
50:BE:32:ASP:HA	50:BE:54:ARG:HH22	1.84	0.42
53:BH:147:LYS:HE3	53:BH:147:LYS:HB3	1.73	0.42
58:BM:22:GLY:HA2	58:BM:56:ALA:HB3	2.02	0.42
58:BM:34:LYS:HZ2	58:BM:100:ALA:HA	1.84	0.42
59:BN:61:ALA:HA	59:BN:64:LEU:HD12	2.02	0.42
62:BQ:91:LEU:HA	62:BQ:94:ILE:HG22	2.02	0.42
66:BU:236:ILE:HD11	66:BU:252:THR:HG22	2.00	0.42
67:BV:166:ARG:HB2	67:BV:248:TYR:CE2	2.55	0.42
71:BZ:71:ILE:H	71:BZ:71:ILE:HG13	1.67	0.42
1:AA:406:C:H2'	1:AA:407:A:C8	2.55	0.42
1:AA:1077:C:H2'	1:AA:1078:A:H5''	2.01	0.42
1:AA:1290:G:H2'	1:AA:1291:G:H8	1.85	0.42
1:AA:1699:A:H2'	1:AA:1700:G:O4'	2.19	0.42
1:AA:1732:C:H2'	1:AA:1733:G:C8	2.55	0.42
5:AE:354:GLN:HB3	5:AE:359:ALA:HB1	2.02	0.42
6:AF:33:ARG:O	6:AF:37:VAL:HG13	2.19	0.42
10:AJ:58:PRO:HD2	10:AJ:61:ILE:HD12	2.02	0.42
17:AQ:191:LYS:HE2	17:AQ:192:TYR:CZ	2.55	0.42
19:AS:49:LYS:HE3	19:AS:49:LYS:HB3	1.93	0.42
26:AZ:96:LEU:HD23	26:AZ:140:LEU:HD11	2.01	0.42
37:Ak:73:ILE:HG21	37:Ak:86:LYS:HB3	2.02	0.42
46:BA:29:G:H2'	46:BA:30:C:C6	2.55	0.42
46:BA:468:A2M:H1'	46:BA:468:A2M:HM'3	1.75	0.42
46:BA:1183:A:H2'	46:BA:1184:G:H8	1.85	0.42
46:BA:1693:G:H2'	46:BA:1694:U:C6	2.55	0.42
46:BA:1727:G:H2'	46:BA:1728:U:C6	2.55	0.42
47:BB:183:VAL:HG22	47:BB:225:ILE:HD13	2.01	0.42
48:BC:198:MET:HG2	48:BC:201:LEU:HD12	2.01	0.42
48:BC:201:LEU:HD21	79:Bh:85:VAL:HG22	2.02	0.42
50:BE:197:LYS:HB2	50:BE:197:LYS:HE2	1.96	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:BS:61:SER:O	64:BS:62:GLU:HG2	2.20	0.42
66:BU:217:MET:HE2	66:BU:217:MET:HB2	1.79	0.42
71:BZ:88:LEU:O	71:BZ:92:ILE:HG13	2.19	0.42
1:AA:137:G:H4'	36:Aj:98:HIS:CG	2.55	0.42
1:AA:459:C:H2'	1:AA:460:C:C6	2.55	0.42
1:AA:734:G:H22	1:AA:929:A:H2	1.67	0.42
1:AA:1848:C:H2'	1:AA:1849:U:O4'	2.19	0.42
1:AA:3871:A:H2'	1:AA:3872:A:C8	2.55	0.42
1:AA:4473:A:H5''	41:Ao:95:ILE:HD12	2.01	0.42
1:AA:4481:U:H2'	1:AA:4482:U:C6	2.55	0.42
2:AB:94:C:H2'	2:AB:95:C:H6	1.85	0.42
6:AF:349:LEU:HD23	6:AF:349:LEU:HA	1.90	0.42
9:AI:150:VAL:HG21	9:AI:195:TYR:HB2	2.00	0.42
12:AL:47:PRO:HB3	12:AL:171:TRP:CZ2	2.55	0.42
24:AX:13:LYS:HB2	24:AX:13:LYS:HE2	1.72	0.42
30:Ad:105:GLY:O	30:Ad:109:ARG:HG2	2.20	0.42
46:BA:83:A:H2'	46:BA:84:A:C8	2.54	0.42
46:BA:494:C:N4	46:BA:509:OMG:HN22	2.18	0.42
46:BA:678:U:H2'	46:BA:679:A:C8	2.55	0.42
46:BA:934:G:H22	46:BA:1008:A:H2	1.67	0.42
46:BA:984:C:O2'	72:Ba:138:IAS:HB3	2.20	0.42
46:BA:1139:C:H3'	46:BA:1140:G:H8	1.85	0.42
46:BA:1368:U:O2	46:BA:1368:U:C2'	2.67	0.42
46:BA:1392:U:H2'	46:BA:1393:G:C8	2.55	0.42
46:BA:1438:A:H2'	46:BA:1439:A:C8	2.55	0.42
47:BB:89:VAL:H	47:BB:122:LYS:NZ	2.17	0.42
58:BM:118:ARG:HA	58:BM:118:ARG:HD3	1.83	0.42
60:BO:34:LYS:HE3	60:BO:34:LYS:HB2	1.96	0.42
64:BS:67:ARG:HH11	64:BS:68:LEU:H	1.66	0.42
68:BW:25:ARG:HB2	68:BW:25:ARG:NH1	2.35	0.42
69:BX:81:LEU:HA	69:BX:84:ILE:HG13	2.02	0.42
71:BZ:46:THR:HG22	71:BZ:49:GLN:HG2	2.02	0.42
74:Bc:37:LYS:HD2	74:Bc:57:VAL:HG23	2.02	0.42
1:AA:1097:C:H2'	1:AA:1098:G:H8	1.83	0.41
1:AA:2045:G:C6	17:AQ:62:MET:HA	2.55	0.41
1:AA:2098:G:H5'	9:AI:35:LYS:HE2	2.01	0.41
1:AA:2671:C:H2'	1:AA:2672:C:C6	2.55	0.41
1:AA:3911:C:H2'	1:AA:3912:U:C6	2.55	0.41
1:AA:4173:G:H2'	1:AA:4174:U:H6	1.84	0.41
1:AA:4571:A2M:HM'2	1:AA:4572:U:O4'	2.20	0.41
5:AE:47:LEU:HB2	5:AE:84:MET:SD	2.60	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:AL:61:SER:HA	12:AL:126:VAL:HG12	2.02	0.41
13:AM:76:GLY:C	13:AM:78:LYS:H	2.27	0.41
13:AM:78:LYS:HB3	13:AM:78:LYS:HE3	1.66	0.41
21:AU:43:ARG:HD2	21:AU:43:ARG:HA	1.66	0.41
27:Aa:113:LYS:HB3	27:Aa:113:LYS:HE2	1.80	0.41
46:BA:420:G:H5'	73:Bb:88:LYS:NZ	2.34	0.41
46:BA:1289:U:H2'	46:BA:1290:G:C8	2.55	0.41
46:BA:1376:A:H2'	46:BA:1377:U:O4'	2.19	0.41
46:BA:1522:A:H5'	58:BM:144:ARG:HE	1.85	0.41
46:BA:1756:C:N4	46:BA:1757:G:H8	2.18	0.41
53:BH:196:GLU:O	53:BH:200:ARG:HG3	2.20	0.41
54:BI:16:PHE:CD1	54:BI:79:LEU:HD22	2.55	0.41
56:BK:80:LEU:H	56:BK:80:LEU:HD12	1.84	0.41
62:BQ:94:ILE:HA	62:BQ:94:ILE:HD12	1.78	0.41
66:BU:82:SER:O	66:BU:108:VAL:HB	2.20	0.41
71:BZ:26:LEU:HD21	71:BZ:60:VAL:HA	2.01	0.41
1:AA:123:C:H2'	1:AA:124:C:H6	1.85	0.41
1:AA:229:G:H2'	1:AA:230:G:H8	1.85	0.41
1:AA:426:A:H2'	1:AA:427:A:C8	2.55	0.41
1:AA:667:A:H1'	45:As:46:ARG:NE	2.33	0.41
1:AA:978:G:H2'	1:AA:979:C:C6	2.55	0.41
1:AA:1217:G:H2'	1:AA:1218:G:C8	2.55	0.41
1:AA:2351:OMC:HM23	6:AF:95:MET:HG3	2.00	0.41
1:AA:3648:A:H1'	1:AA:3785:A2M:N6	2.35	0.41
1:AA:3727:A:H2'	1:AA:3728:A:C8	2.56	0.41
1:AA:3917:A:H2'	1:AA:3918:G:C8	2.55	0.41
1:AA:4344:U:H2'	1:AA:4345:C:H6	1.83	0.41
1:AA:4551:U:H2'	1:AA:4552:PSU:C6	2.55	0.41
1:AA:4959:U:H2'	1:AA:4960:G:H5''	2.02	0.41
1:AA:5016:A:H61	1:AA:5033:G:H1'	1.85	0.41
6:AF:170:LEU:O	6:AF:174:LEU:HD12	2.21	0.41
13:AM:104:ASN:OD1	13:AM:133:VAL:HA	2.20	0.41
19:AS:22:ASP:O	19:AS:26:ARG:HG2	2.20	0.41
26:AZ:72:ASP:O	26:AZ:76:ILE:HG13	2.20	0.41
27:Aa:117:LYS:O	27:Aa:121:ARG:HG3	2.20	0.41
28:Ab:28:ASN:C	28:Ab:29:ILE:HD12	2.45	0.41
32:Af:22:THR:HG22	32:Af:122:VAL:HB	2.01	0.41
34:Ah:93:PRO:HB2	34:Ah:95:LYS:HG2	2.02	0.41
43:Aq:69:ARG:HG2	43:Aq:69:ARG:NH1	2.35	0.41
46:BA:1160:U:H2'	46:BA:1161:U:C6	2.55	0.41
46:BA:1368:U:C6	46:BA:1368:U:C5'	2.90	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:BA:1563:G:H2'	46:BA:1564:C:C6	2.55	0.41
60:BO:39:LEU:HD11	60:BO:102:THR:HA	2.02	0.41
62:BQ:5:ARG:O	73:Bb:77:PRO:HD3	2.19	0.41
67:BV:204:ILE:HD11	67:BV:219:ILE:O	2.21	0.41
77:Bf:53:LYS:HD2	77:Bf:53:LYS:HA	1.76	0.41
1:AA:74:G:H5''	14:AN:59:VAL:HG22	2.01	0.41
1:AA:1064:G:H2'	1:AA:1065:G:C8	2.55	0.41
1:AA:1339:U:H2'	1:AA:1340:OMC:C6	2.55	0.41
1:AA:1456:U:H2'	19:AS:75:ARG:HH21	1.85	0.41
1:AA:3927:U:H2'	1:AA:3928:A:C8	2.54	0.41
2:AB:58:A:H2'	2:AB:59:G:C8	2.55	0.41
6:AF:182:LYS:HG2	6:AF:204:ARG:HD3	2.02	0.41
12:AL:47:PRO:HD2	12:AL:141:LYS:HA	2.02	0.41
21:AU:25:PRO:HA	21:AU:26:PRO:HD3	1.97	0.41
31:Ae:47:ILE:HD12	31:Ae:94:LEU:HD11	2.02	0.41
46:BA:1801:A:H2'	46:BA:1802:C:C6	2.55	0.41
47:BB:11:ARG:HD3	47:BB:25:GLY:C	2.46	0.41
48:BC:85:ARG:HH12	48:BC:205:ARG:HD3	1.86	0.41
69:BX:65:GLU:HA	69:BX:70:ARG:NE	2.35	0.41
1:AA:137:G:H2'	1:AA:138:G:C8	2.53	0.41
1:AA:363:A:N1	1:AA:376:A:H5''	2.36	0.41
1:AA:732:A:H2'	1:AA:733:A:O4'	2.20	0.41
1:AA:1095:A:N1	1:AA:1200:G:C6	2.89	0.41
1:AA:1248:C:H2'	1:AA:1249:C:C6	2.55	0.41
1:AA:1399:G:H2'	1:AA:1400:G:C8	2.55	0.41
1:AA:1825:A:H2'	1:AA:1826:G:C8	2.55	0.41
1:AA:3933:G:H2'	1:AA:3934:G:C8	2.55	0.41
1:AA:4119:C:H41	1:AA:4123:C:N4	2.18	0.41
1:AA:4122:G:N7	35:Ai:97:ILE:HD12	2.35	0.41
5:AE:92:TYR:HB2	5:AE:159:VAL:HB	2.02	0.41
28:Ab:5:MET:HE2	28:Ab:82:PRO:HB3	2.02	0.41
46:BA:375:U:H2'	46:BA:376:A:H8	1.85	0.41
50:BE:15:GLY:HA3	65:BT:50:ILE:HG23	2.03	0.41
66:BU:188:HIS:HB3	66:BU:219:TRP:CZ2	2.56	0.41
68:BW:3:LEU:HD12	68:BW:5:ILE:HD11	2.03	0.41
75:Bd:58:LEU:O	75:Bd:62:VAL:HB	2.20	0.41
76:Be:8:LEU:HD23	76:Be:8:LEU:HA	1.71	0.41
79:Bh:17:ILE:HD11	79:Bh:21:TYR:HD1	1.85	0.41
1:AA:385:A:N3	1:AA:387:G:H5''	2.36	0.41
1:AA:457:G:OP1	8:AH:115:TYR:HB3	2.20	0.41
1:AA:911:U:H2'	1:AA:912:G:O4'	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1346:C:H2'	1:AA:1347:G:C8	2.55	0.41
1:AA:3721:U:H2'	1:AA:3722:G:C8	2.55	0.41
1:AA:4993:G:H1	1:AA:5058:A:H61	1.69	0.41
15:AO:96:GLU:O	15:AO:100:ARG:HG2	2.20	0.41
16:AP:200:LEU:HB3	16:AP:204:ARG:NH1	2.35	0.41
35:AI:33:LEU:HD23	35:AI:33:LEU:HA	1.89	0.41
41:Ao:106:ARG:HE	41:Ao:106:ARG:HB3	1.59	0.41
46:BA:1394:G:H5''	57:BL:126:ARG:CZ	2.50	0.41
46:BA:1617:G:H4'	65:BT:14:PHE:CE2	2.56	0.41
50:BE:141:LYS:HG3	50:BE:141:LYS:O	2.21	0.41
58:BM:43:VAL:HG11	58:BM:83:PHE:HE2	1.85	0.41
58:BM:124:ARG:HA	58:BM:129:LEU:HD13	2.03	0.41
62:BQ:119:ARG:H	62:BQ:119:ARG:HD2	1.84	0.41
66:BU:104:HIS:HE2	66:BU:130:LYS:HB2	1.86	0.41
74:Bc:41:ARG:HH11	74:Bc:57:VAL:HG22	1.85	0.41
1:AA:676:C:H2'	1:AA:677:G:C8	2.55	0.41
1:AA:1086:C:H2'	1:AA:1087:A:H8	1.85	0.41
1:AA:1876:U:O3'	9:AI:103:PRO:HD3	2.21	0.41
1:AA:2276:A:H2'	1:AA:2277:C:O4'	2.21	0.41
1:AA:2528:G:H21	1:AA:2529:A:H5''	1.86	0.41
1:AA:2676:A:H8	1:AA:2676:A:OP2	2.02	0.41
1:AA:4577:U:H2'	1:AA:4578:G:H8	1.84	0.41
6:AF:173:LYS:HD3	6:AF:173:LYS:HA	1.76	0.41
7:AG:146:LEU:HD22	7:AG:163:LEU:HD13	2.01	0.41
7:AG:256:LYS:HD3	7:AG:256:LYS:HA	1.88	0.41
11:AK:21:LYS:HB3	11:AK:24:THR:HG23	2.01	0.41
13:AM:83:LEU:O	13:AM:87:LEU:HB2	2.20	0.41
19:AS:50:ARG:NH1	19:AS:140:SER:HB2	2.31	0.41
20:AT:106:LEU:HB3	20:AT:120:TYR:CE1	2.55	0.41
22:AV:128:LEU:HD23	22:AV:128:LEU:HA	1.92	0.41
45:As:103:ARG:HA	45:As:103:ARG:HD2	1.68	0.41
46:BA:123:G:O3'	47:BB:148:ARG:HD2	2.20	0.41
46:BA:149:A:H3'	46:BA:150:A:H8	1.86	0.41
46:BA:377:G:H5'	53:BH:98:LYS:HD3	2.01	0.41
46:BA:528:A:H2'	46:BA:529:A:H8	1.86	0.41
46:BA:1495:G:C2	65:BT:41:GLN:HB3	2.56	0.41
48:BC:57:LYS:HZ1	48:BC:159:ILE:HG23	1.85	0.41
49:BD:60:ASP:HA	49:BD:63:LYS:HB3	2.01	0.41
56:BK:28:MET:SD	56:BK:32:GLN:HB2	2.61	0.41
56:BK:107:ILE:HG23	56:BK:111:MET:SD	2.60	0.41
58:BM:13:LEU:HG	58:BM:20:ILE:HB	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:BN:63:HIS:CE1	59:BN:78:ILE:HG21	2.55	0.41
66:BU:112:ALA:HB3	66:BU:121:VAL:HG12	2.03	0.41
67:BV:109:ILE:HD12	67:BV:124:PHE:HE2	1.85	0.41
68:BW:154:ARG:HE	68:BW:154:ARG:HB3	1.78	0.41
71:BZ:70:LYS:O	71:BZ:74:ILE:HG23	2.20	0.41
75:Bd:43:LYS:HD3	75:Bd:43:LYS:HA	1.86	0.41
79:Bh:75:GLU:HA	79:Bh:78:ARG:HD2	2.02	0.41
1:AA:440:U:H2'	1:AA:441:G:C8	2.56	0.41
1:AA:1590:C:H3'	1:AA:1591:U:H4'	2.03	0.41
1:AA:1801:A:H4'	22:AV:102:ARG:HD3	2.03	0.41
1:AA:1977:C:N4	1:AA:1990:A:H61	2.19	0.41
1:AA:2326:G:H5''	33:Ag:127:ALA:HB2	2.02	0.41
1:AA:2492:C:H2'	1:AA:2493:G:H8	1.85	0.41
1:AA:3920:PSU:H2'	1:AA:3921:U:C6	2.55	0.41
1:AA:3973:G:H2'	1:AA:3974:G:C8	2.55	0.41
1:AA:4561:C:H2'	1:AA:4562:C:H6	1.86	0.41
1:AA:4704:C:H2'	1:AA:4705:A:H8	1.85	0.41
1:AA:4968:A:H2'	1:AA:4969:C:C6	2.55	0.41
10:AJ:190:LEU:HB3	10:AJ:199:CYS:HB3	2.03	0.41
14:AN:128:PRO:HD3	14:AN:143:GLU:OE2	2.21	0.41
30:Ad:55:LYS:HB2	30:Ad:55:LYS:NZ	2.35	0.41
33:Ag:21:ILE:HA	33:Ag:33:ARG:HD2	2.01	0.41
39:Am:24:LYS:HG2	39:Am:67:LYS:HD3	2.02	0.41
46:BA:15:U:H2'	46:BA:16:G:O4'	2.20	0.41
46:BA:398:A:C8	46:BA:1027:A:H2	2.39	0.41
46:BA:491:C:H3'	74:Bc:104:ARG:HD3	2.02	0.41
46:BA:941:C:H2'	46:BA:942:G:C8	2.56	0.41
46:BA:980:A:H2'	46:BA:981:A:C8	2.56	0.41
46:BA:1182:A:C5	46:BA:1183:A:H1'	2.56	0.41
46:BA:1653:U:H2'	46:BA:1654:G:C8	2.55	0.41
47:BB:10:LYS:HA	47:BB:10:LYS:HD3	1.90	0.41
47:BB:44:LEU:HD11	47:BB:72:ILE:HD11	2.02	0.41
50:BE:189:MET:HB2	50:BE:189:MET:HE3	1.62	0.41
66:BU:174:VAL:O	66:BU:174:VAL:HG12	2.21	0.41
68:BW:5:ILE:HG23	68:BW:111:LEU:HD11	2.02	0.41
79:Bh:16:ILE:HD13	79:Bh:16:ILE:HA	1.89	0.41
1:AA:286:U:H2'	1:AA:287:U:C6	2.56	0.41
1:AA:1479:G:H2'	1:AA:1480:C:C6	2.56	0.41
1:AA:1909:G:H2'	1:AA:1910:G:O4'	2.21	0.41
1:AA:2836:A:H4'	5:AE:229:LYS:HA	2.03	0.41
1:AA:3934:G:H2'	1:AA:3935:C:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:4651:A:H2'	1:AA:4652:G:O4'	2.20	0.41
1:AA:4875:G:H5''	21:AU:170:LYS:HD3	2.03	0.41
8:AH:183:ARG:HD2	8:AH:183:ARG:HA	1.76	0.41
10:AJ:80:ILE:HG23	10:AJ:164:ILE:HG12	2.01	0.41
10:AJ:180:PRO:HD3	10:AJ:223:ARG:HH21	1.85	0.41
20:AT:173:ARG:HD3	20:AT:173:ARG:HA	1.79	0.41
27:Aa:26:ARG:HA	27:Aa:29:ILE:HD13	2.03	0.41
46:BA:3:C:O2	46:BA:3:C:C3'	2.68	0.41
46:BA:287:U:H2'	46:BA:288:G:C8	2.56	0.41
46:BA:287:U:H2'	46:BA:288:G:H8	1.86	0.41
46:BA:1045:PSU:H2'	46:BA:1046:PSU:H6	1.85	0.41
47:BB:51:ARG:HD2	47:BB:51:ARG:HA	1.84	0.41
47:BB:94:LYS:HA	47:BB:94:LYS:HD3	1.80	0.41
49:BD:87:ILE:O	49:BD:87:ILE:HD12	2.20	0.41
50:BE:60:GLY:HA3	50:BE:65:ARG:H	1.86	0.41
51:BF:143:PRO:HA	51:BF:146:ARG:HD3	2.01	0.41
53:BH:40:PRO:O	53:BH:59:ARG:HB3	2.20	0.41
75:Bd:46:ASN:HD22	75:Bd:80:ARG:HG2	1.85	0.41
1:AA:7:C:H2'	1:AA:8:U:C6	2.55	0.41
1:AA:86:U:H2'	1:AA:87:A:C8	2.55	0.41
1:AA:158:A:H5''	1:AA:159:C:H2'	2.01	0.41
1:AA:189:G:H2'	1:AA:190:G:C8	2.55	0.41
1:AA:282:C:H2'	1:AA:283:G:O4'	2.21	0.41
1:AA:1341:U:H2'	1:AA:1342:A:H8	1.86	0.41
1:AA:1589:C:H2'	1:AA:1590:C:C6	2.55	0.41
1:AA:2455:G:H1'	1:AA:2471:G:C5	2.56	0.41
1:AA:2708:U:H4'	1:AA:2709:C:H5''	2.02	0.41
1:AA:4070:U:H2'	1:AA:4071:U:C6	2.55	0.41
1:AA:4237:C:H2'	1:AA:4238:G:C8	2.55	0.41
1:AA:4246:G:H2'	1:AA:4247:G:H8	1.86	0.41
1:AA:4345:C:H2'	1:AA:4346:U:H6	1.86	0.41
1:AA:4563:U:H2'	1:AA:4564:A:C8	2.55	0.41
1:AA:4691:A:H2'	1:AA:4692:A:O4'	2.21	0.41
1:AA:4697:U:H4'	41:Ao:104:HIS:CE1	2.56	0.41
1:AA:4966:A:H2'	1:AA:4967:A:O4'	2.21	0.41
1:AA:5000:G:H2'	1:AA:5001:PSU:O4'	2.21	0.41
5:AE:50:LYS:HB2	5:AE:345:LEU:HD11	2.03	0.41
6:AF:114:ARG:HG3	16:AP:203:TYR:HB3	2.02	0.41
10:AJ:138:ALA:HB1	10:AJ:199:CYS:SG	2.61	0.41
12:AL:52:MET:HE3	12:AL:163:GLN:HG2	2.01	0.41
16:AP:6:TYR:CZ	37:Ak:40:VAL:HG22	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:AZ:67:ARG:H	26:AZ:67:ARG:HG3	1.61	0.41
33:Ag:108:ARG:HB3	33:Ag:108:ARG:HH11	1.86	0.41
37:Ak:93:VAL:O	37:Ak:97:MET:HG3	2.21	0.41
38:Al:64:MET:HE1	38:Al:71:TYR:HE2	1.86	0.41
46:BA:505:G:H2'	46:BA:506:G:O4'	2.21	0.41
46:BA:529:A:H61	46:BA:555:A:N6	2.19	0.41
46:BA:1097:G:H4'	48:BC:32:PHE:CD1	2.56	0.41
46:BA:1383:A2M:HM'2	46:BA:1384:C:H5'	2.02	0.41
46:BA:1516:G:H2'	46:BA:1517:G:C8	2.56	0.41
46:BA:1575:G:H2'	46:BA:1576:G:C8	2.53	0.41
46:BA:1657:G:H2'	46:BA:1658:G:H8	1.85	0.41
47:BB:42:LEU:HD11	47:BB:47:PHE:HB2	2.02	0.41
47:BB:48:LEU:HD22	47:BB:54:TYR:HB2	2.02	0.41
47:BB:148:ARG:HB2	47:BB:149:TYR:CD2	2.55	0.41
47:BB:248:ILE:HA	47:BB:251:GLU:HG3	2.03	0.41
48:BC:10:MET:HE2	48:BC:14:ASP:HB2	2.03	0.41
48:BC:141:ASN:HD21	67:BV:87:PRO:HD3	1.86	0.41
49:BD:86:LEU:HD23	49:BD:86:LEU:HA	1.90	0.41
49:BD:144:LYS:HE3	49:BD:208:HIS:HB3	2.03	0.41
51:BF:116:ILE:H	51:BF:116:ILE:HG13	1.74	0.41
52:BG:68:GLN:H	52:BG:68:GLN:HG2	1.68	0.41
56:BK:14:LYS:HE3	56:BK:14:LYS:HB2	1.98	0.41
57:BL:57:LEU:HD21	57:BL:115:TYR:CD1	2.56	0.41
62:BQ:122:VAL:HG11	62:BQ:130:LEU:HD22	2.02	0.41
64:BS:18:LEU:HD11	64:BS:43:ILE:HD12	2.02	0.41
64:BS:26:GLN:HG2	64:BS:27:CYS:N	2.36	0.41
71:BZ:43:LYS:O	71:BZ:45:LEU:HD23	2.21	0.41
71:BZ:70:LYS:HE2	71:BZ:70:LYS:HB2	1.95	0.41
71:BZ:76:LYS:HE2	71:BZ:76:LYS:HB3	1.89	0.41
72:Ba:30:VAL:HB	72:Ba:46:ASP:O	2.20	0.41
73:Bb:75:ILE:HD13	73:Bb:75:ILE:HA	1.92	0.41
74:Bc:57:VAL:HB	74:Bc:60:PHE:CZ	2.56	0.41
77:Bf:38:TYR:CE1	77:Bf:42:PHE:HB2	2.56	0.41
79:Bh:11:LYS:HB3	79:Bh:11:LYS:HE2	1.85	0.41
1:AA:178:C:H2'	1:AA:179:G:H8	1.86	0.41
1:AA:381:U:H2'	1:AA:382:G:O4'	2.21	0.41
1:AA:959:G:C8	8:AH:123:ARG:HG2	2.56	0.41
1:AA:960:A:C8	8:AH:126:LEU:HD12	2.56	0.41
1:AA:965:G:N2	1:AA:2092:G:H1'	2.36	0.41
1:AA:1296:G:H2'	1:AA:1297:U:H6	1.86	0.41
1:AA:1538:U:H2'	1:AA:1539:G:C8	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:2758:G:H2'	1:AA:2759:G:N7	2.36	0.41
1:AA:3599:A:H2'	1:AA:3600:G:H8	1.86	0.41
1:AA:4343:U:H2'	1:AA:4344:U:C6	2.55	0.41
1:AA:4460:U:H2'	1:AA:4461:C:H6	1.85	0.41
1:AA:4759:C:H2'	1:AA:4760:G:C8	2.56	0.41
4:AD:46:LYS:HE2	4:AD:46:LYS:HB2	1.95	0.41
5:AE:378:ARG:HE	5:AE:378:ARG:HB3	1.78	0.41
6:AF:212:ASN:OD1	6:AF:259:LYS:HD2	2.20	0.41
19:AS:70:MET:HE1	19:AS:78:LYS:HB2	2.03	0.41
20:AT:81:ARG:HG2	20:AT:88:ARG:CZ	2.51	0.41
23:AW:20:LYS:HE3	23:AW:71:THR:HG21	2.03	0.41
27:Aa:116:LYS:O	27:Aa:120:GLU:HG2	2.20	0.41
33:Ag:9:LYS:HA	33:Ag:9:LYS:HD2	1.81	0.41
39:Am:31:ASN:HB3	39:Am:48:THR:HA	2.03	0.41
45:As:2:SER:O	45:As:6:GLN:HB2	2.20	0.41
46:BA:304:C:H5''	46:BA:305:U:H5'	2.03	0.41
46:BA:459:C:H2'	46:BA:460:A:C8	2.56	0.41
46:BA:492:C:H42	46:BA:508:A:H62	1.69	0.41
46:BA:1600:G:H4'	75:Bd:43:LYS:HD2	2.02	0.41
46:BA:1716:C:H2'	46:BA:1717:C:C6	2.56	0.41
51:BF:78:MET:HG3	51:BF:79:HIS:H	1.86	0.41
55:BJ:87:VAL:HG22	55:BJ:110:SER:HB3	2.01	0.41
55:BJ:88:ILE:HD11	55:BJ:109:MET:HE3	2.03	0.41
66:BU:228:TYR:HE2	66:BU:230:LEU:HB3	1.86	0.41
77:Bf:46:VAL:HA	77:Bf:47:PRO:HD3	1.93	0.41
1:AA:1356:U:H2'	1:AA:1357:C:C6	2.56	0.40
1:AA:2064:G:H2'	1:AA:2065:G:O4'	2.21	0.40
1:AA:2648:G:H2'	1:AA:2649:G:C8	2.56	0.40
1:AA:2845:A:N6	1:AA:3843:C:H42	2.17	0.40
1:AA:3619:G:H4'	20:AT:79:GLY:O	2.22	0.40
1:AA:3633:C:H2'	1:AA:3634:G:C8	2.56	0.40
1:AA:4393:G:O4'	1:AA:4447:5MC:HM52	2.21	0.40
1:AA:4928:C:H2'	1:AA:4929:C:C6	2.57	0.40
3:AC:27:U:H2'	3:AC:28:C:C6	2.56	0.40
4:AD:83:HIS:CE1	4:AD:86:GLN:HB2	2.56	0.40
6:AF:285:ILE:HD13	6:AF:285:ILE:HA	1.87	0.40
13:AM:8:LYS:NZ	13:AM:13:ARG:HE	2.19	0.40
13:AM:22:LEU:HD12	13:AM:128:LEU:HD13	2.02	0.40
39:Am:52:LYS:H	39:Am:52:LYS:HG2	1.60	0.40
43:Aq:14:LYS:HB3	43:Aq:14:LYS:HE2	1.81	0.40
46:BA:1018:U:H2'	46:BA:1019:C:C6	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:BD:45:GLY:HA3	72:Ba:47:LEU:HD11	2.02	0.40
51:BF:101:HIS:CE1	51:BF:108:PRO:HD3	2.56	0.40
54:BI:95:ARG:HB3	54:BI:96:ARG:H	1.61	0.40
66:BU:59:LEU:HD22	66:BU:90:TRP:CD1	2.56	0.40
69:BX:61:LEU:HD13	69:BX:61:LEU:HA	1.94	0.40
69:BX:108:ARG:HA	69:BX:108:ARG:NH1	2.34	0.40
1:AA:74:G:H5''	14:AN:59:VAL:HG13	2.03	0.40
1:AA:756:G:H2'	1:AA:757:G:H8	1.86	0.40
1:AA:1198:G:H2'	1:AA:1199:G:C8	2.56	0.40
1:AA:1348:U:H2'	1:AA:1349:G:H8	1.87	0.40
1:AA:1876:U:H2'	1:AA:1877:G:H8	1.84	0.40
1:AA:2730:U:H2'	1:AA:2731:C:C6	2.56	0.40
1:AA:3760:A:N6	46:BA:1709:G:H22	2.19	0.40
1:AA:4742:G:H2'	1:AA:4743:G:H8	1.86	0.40
6:AF:289:LEU:HB3	45:As:4:HIS:CG	2.56	0.40
7:AG:264:LYS:HB2	7:AG:264:LYS:HE2	1.95	0.40
11:AK:6:SER:HB3	11:AK:67:LEU:HD22	2.03	0.40
13:AM:17:ILE:HD12	13:AM:80:GLU:HG3	2.03	0.40
14:AN:87:HIS:HB3	14:AN:90:VAL:HG13	2.03	0.40
17:AQ:8:VAL:HG12	17:AQ:117:ARG:HG3	2.02	0.40
26:AZ:145:ASP:OD1	26:AZ:148:ASP:HB2	2.22	0.40
46:BA:1154:U:H2'	67:BV:192:LEU:HD11	2.03	0.40
46:BA:1202:U:H2'	46:BA:1203:G:H8	1.87	0.40
46:BA:1408:U:H2'	46:BA:1409:A:C8	2.56	0.40
46:BA:1593:C:OP2	75:Bd:104:ARG:HD3	2.22	0.40
46:BA:1634:A:H1'	58:BM:142:ARG:NH2	2.36	0.40
46:BA:1690:U:H2'	46:BA:1691:U:C6	2.56	0.40
47:BB:103:TYR:HB2	47:BB:182:MET:HE2	2.03	0.40
47:BB:115:THR:HG23	47:BB:118:GLU:HB3	2.02	0.40
48:BC:76:VAL:HA	48:BC:123:VAL:CG2	2.51	0.40
53:BH:197:PHE:CE2	55:BJ:5:GLN:HB3	2.56	0.40
60:BO:66:ARG:HG2	60:BO:77:TRP:CH2	2.57	0.40
62:BQ:46:HIS:CD2	62:BQ:103:ALA:HB2	2.56	0.40
75:Bd:47:LEU:HD12	75:Bd:47:LEU:HA	1.82	0.40
79:Bh:49:LYS:HE2	79:Bh:49:LYS:HB3	1.86	0.40
1:AA:11:G:H2'	1:AA:12:A:C8	2.57	0.40
1:AA:509:A:C5	29:Ac:82:VAL:HG12	2.55	0.40
1:AA:1355:G:H2'	1:AA:1356:U:C6	2.55	0.40
1:AA:1461:C:H2'	1:AA:1462:A:C8	2.55	0.40
1:AA:1772:C:H2'	1:AA:1773:U:C6	2.57	0.40
1:AA:2421:G:H1'	18:AR:139:TYR:CE2	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:4071:U:H2'	1:AA:4072:C:C6	2.56	0.40
1:AA:4390:A:H2'	1:AA:4391:G:O4'	2.21	0.40
1:AA:4616:A:H2'	1:AA:4617:G:O4'	2.20	0.40
1:AA:4670:C:O3'	1:AA:4671:C:H3'	2.22	0.40
3:AC:114:G:H2'	3:AC:115:G:H8	1.85	0.40
3:AC:140:C:H2'	3:AC:141:C:C6	2.56	0.40
7:AG:70:GLU:H	7:AG:70:GLU:CD	2.30	0.40
14:AN:61:CYS:HB2	14:AN:66:TYR:O	2.22	0.40
16:AP:140:LYS:HD3	16:AP:140:LYS:HA	1.74	0.40
17:AQ:10:ASP:HB2	17:AQ:117:ARG:HB3	2.03	0.40
45:As:26:SER:HB3	45:As:36:ASN:HB2	2.04	0.40
46:BA:92:A:H61	46:BA:444:G:H1'	1.86	0.40
46:BA:907:G:H2'	46:BA:908:A:C8	2.56	0.40
46:BA:962:A:H5''	72:Ba:66:ARG:HB2	2.02	0.40
46:BA:1296:U:H2'	46:BA:1297:U:O4'	2.22	0.40
46:BA:1594:A:H62	75:Bd:104:ARG:NH1	2.19	0.40
46:BA:1730:U:H2'	46:BA:1731:A:C8	2.57	0.40
52:BG:24:SER:O	52:BG:28:LEU:HG	2.21	0.40
66:BU:29:ASP:HA	66:BU:45:LEU:HB3	2.03	0.40
69:BX:172:ARG:HA	69:BX:175:ARG:HH11	1.86	0.40
71:BZ:123:HIS:O	71:BZ:127:ARG:HG3	2.21	0.40
1:AA:3893:C:H2'	1:AA:3894:A:C8	2.56	0.40
1:AA:4320:G:H2'	1:AA:4321:U:C6	2.56	0.40
8:AH:144:ILE:HG12	8:AH:196:ALA:HB2	2.02	0.40
9:AI:241:ASN:O	9:AI:245:ARG:HG2	2.21	0.40
14:AN:55:ILE:HG22	14:AN:96:ILE:HA	2.04	0.40
14:AN:173:GLU:HA	37:Ak:2:ALA:N	2.37	0.40
16:AP:159:ARG:H	16:AP:159:ARG:HG2	1.67	0.40
17:AQ:183:LYS:HA	17:AQ:183:LYS:HD3	1.93	0.40
18:AR:13:LYS:HA	18:AR:107:LEU:HD21	2.03	0.40
20:AT:28:GLU:HG3	20:AT:49:LEU:HD22	2.04	0.40
23:AW:43:LEU:O	23:AW:47:ILE:HD12	2.22	0.40
32:Af:67:ARG:HE	32:Af:67:ARG:HB2	1.74	0.40
37:Ak:75:LYS:HE3	37:Ak:75:LYS:HB3	1.84	0.40
46:BA:120:U:H2'	46:BA:121:OMU:H6	2.03	0.40
46:BA:155:G:O6	46:BA:163:U:O2	2.40	0.40
46:BA:837:A:H61	74:Bc:9:THR:H	1.68	0.40
46:BA:1280:G:H2'	46:BA:1281:G:C8	2.55	0.40
46:BA:1448:A:H2'	46:BA:1449:G:O4'	2.20	0.40
46:BA:1711:U:H2'	46:BA:1712:A:C8	2.56	0.40
46:BA:1837:G:H5''	46:BA:1838:U:H5''	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:BB:42:LEU:HB2	47:BB:109:PHE:HD2	1.85	0.40
51:BF:78:MET:HB2	51:BF:78:MET:HE2	1.78	0.40
52:BG:31:GLU:H	52:BG:31:GLU:HG2	1.71	0.40
53:BH:11:ARG:NH1	53:BH:17:LYS:HB2	2.35	0.40
54:BI:49:MET:SD	54:BI:58:VAL:HG11	2.61	0.40
57:BL:22:VAL:O	57:BL:70:VAL:HA	2.21	0.40
57:BL:98:LYS:HB2	57:BL:98:LYS:HE2	1.80	0.40
60:BO:56:MET:HE1	60:BO:88:LEU:HG	2.02	0.40
64:BS:33:GLU:HA	64:BS:41:SER:HA	2.03	0.40
66:BU:191:HIS:CD2	66:BU:195:LEU:HD21	2.56	0.40
69:BX:29:LEU:HD12	69:BX:29:LEU:O	2.22	0.40
74:Bc:44:LEU:HD23	74:Bc:44:LEU:HA	1.94	0.40
74:Bc:61:ARG:HA	74:Bc:61:ARG:HD2	1.80	0.40
76:Be:54:VAL:HG23	76:Be:63:LEU:HB2	2.03	0.40
78:Bg:143:LYS:HB2	78:Bg:143:LYS:HE2	1.82	0.40
1:AA:2374:A:H5'	32:Af:64:ILE:O	2.21	0.40
1:AA:2423:A:H2'	1:AA:2424:OMG:C8	2.57	0.40
1:AA:2465:C:H2'	1:AA:2466:G:O4'	2.21	0.40
1:AA:4258:C:H2'	1:AA:4259:C:C6	2.56	0.40
1:AA:4563:U:C2	1:AA:4564:A:C8	3.09	0.40
1:AA:4625:C:O2'	1:AA:4626:A:H5'	2.22	0.40
6:AF:150:LEU:HD23	6:AF:150:LEU:HA	1.88	0.40
10:AJ:194:VAL:HG23	10:AJ:196:ARG:HB2	2.04	0.40
10:AJ:207:VAL:HG21	10:AJ:215:LEU:HD22	2.04	0.40
13:AM:112:HIS:HB3	13:AM:126:TYR:O	2.21	0.40
18:AR:26:PHE:CE2	18:AR:121:LYS:HE2	2.57	0.40
36:Aj:7:ARG:HD3	36:Aj:7:ARG:H	1.87	0.40
46:BA:92:A:N6	46:BA:444:G:H1'	2.36	0.40
46:BA:346:C:H5''	47:BB:38:LEU:HB2	2.04	0.40
46:BA:484:A2M:HM'2	46:BA:484:A2M:H1'	1.77	0.40
46:BA:674:C:H2'	46:BA:675:U:C6	2.56	0.40
46:BA:809:A:O5'	47:BB:186:GLY:HA3	2.21	0.40
46:BA:1134:G:H2'	46:BA:1135:C:H6	1.85	0.40
46:BA:1432:U:H2'	46:BA:1438:A:C8	2.57	0.40
46:BA:1865:C:C6	63:BR:5:ARG:HG2	2.57	0.40
53:BH:17:LYS:HB3	53:BH:17:LYS:HE3	1.78	0.40
58:BM:11:HIS:CE1	58:BM:23:ARG:HH22	2.39	0.40
66:BU:256:ILE:HD11	66:BU:286:CYS:SG	2.62	0.40
68:BW:209:TYR:CD2	68:BW:213:LEU:HD13	2.57	0.40
69:BX:48:PHE:CD1	69:BX:48:PHE:C	2.99	0.40
69:BX:111:GLN:HG3	69:BX:112:THR:N	2.37	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:Bb:75:ILE:HG13	73:Bb:93:LEU:HD11	2.02	0.40
77:Bf:27:LYS:HB3	77:Bf:33:LYS:HZ1	1.85	0.40
77:Bf:36:MET:HB3	77:Bf:40:ARG:HH12	1.87	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	
4	AD	246/257 (96%)	236 (96%)	10 (4%)	0	100	100
5	AE	399/402 (99%)	388 (97%)	11 (3%)	0	100	100
6	AF	366/368 (100%)	352 (96%)	14 (4%)	0	100	100
7	AG	291/293 (99%)	276 (95%)	15 (5%)	0	100	100
8	AH	232/247 (94%)	221 (95%)	11 (5%)	0	100	100
9	AI	224/248 (90%)	219 (98%)	5 (2%)	0	100	100
10	AJ	240/266 (90%)	233 (97%)	7 (3%)	0	100	100
11	AK	188/192 (98%)	183 (97%)	5 (3%)	0	100	100
12	AL	211/214 (99%)	200 (95%)	11 (5%)	0	100	100
13	AM	174/178 (98%)	160 (92%)	14 (8%)	0	100	100
14	AN	208/211 (99%)	196 (94%)	11 (5%)	1 (0%)	24	48
15	AO	137/215 (64%)	132 (96%)	5 (4%)	0	100	100
16	AP	201/204 (98%)	197 (98%)	4 (2%)	0	100	100
17	AQ	199/203 (98%)	196 (98%)	3 (2%)	0	100	100
18	AR	151/184 (82%)	149 (99%)	2 (1%)	0	100	100
19	AS	185/188 (98%)	177 (96%)	8 (4%)	0	100	100
20	AT	185/196 (94%)	185 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
21	AU	173/176 (98%)	167 (96%)	6 (4%)	0	100	100
22	AV	157/160 (98%)	153 (98%)	4 (2%)	0	100	100
23	AW	99/128 (77%)	94 (95%)	5 (5%)	0	100	100
24	AX	129/140 (92%)	127 (98%)	2 (2%)	0	100	100
25	AY	103/157 (66%)	98 (95%)	5 (5%)	0	100	100
26	AZ	118/156 (76%)	114 (97%)	4 (3%)	0	100	100
27	Aa	130/145 (90%)	125 (96%)	5 (4%)	0	100	100
28	Ab	133/136 (98%)	132 (99%)	1 (1%)	0	100	100
29	Ac	144/148 (97%)	138 (96%)	6 (4%)	0	100	100
30	Ad	95/159 (60%)	93 (98%)	2 (2%)	0	100	100
31	Ae	96/115 (84%)	93 (97%)	3 (3%)	0	100	100
32	Af	104/125 (83%)	102 (98%)	2 (2%)	0	100	100
33	Ag	126/135 (93%)	126 (100%)	0	0	100	100
34	Ah	107/110 (97%)	106 (99%)	1 (1%)	0	100	100
35	Ai	107/117 (92%)	107 (100%)	0	0	100	100
36	Aj	120/123 (98%)	118 (98%)	2 (2%)	0	100	100
37	Ak	97/105 (92%)	94 (97%)	3 (3%)	0	100	100
38	Al	84/97 (87%)	83 (99%)	1 (1%)	0	100	100
39	Am	66/70 (94%)	66 (100%)	0	0	100	100
40	An	48/51 (94%)	48 (100%)	0	0	100	100
41	Ao	49/128 (38%)	49 (100%)	0	0	100	100
42	Ap	22/25 (88%)	22 (100%)	0	0	100	100
43	Aq	101/106 (95%)	98 (97%)	3 (3%)	0	100	100
44	Ar	86/92 (94%)	83 (96%)	3 (4%)	0	100	100
45	As	121/137 (88%)	117 (97%)	4 (3%)	0	100	100
47	BB	258/263 (98%)	250 (97%)	8 (3%)	0	100	100
48	BC	217/295 (74%)	210 (97%)	7 (3%)	0	100	100
49	BD	213/264 (81%)	206 (97%)	7 (3%)	0	100	100
50	BE	225/243 (93%)	214 (95%)	11 (5%)	0	100	100
51	BF	189/204 (93%)	176 (93%)	13 (7%)	0	100	100
52	BG	182/194 (94%)	169 (93%)	12 (7%)	1 (0%)	24	48

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
53	BH	204/208 (98%)	195 (96%)	9 (4%)	0	100	100
54	BI	95/165 (58%)	88 (93%)	7 (7%)	0	100	100
55	BJ	152/158 (96%)	140 (92%)	12 (8%)	0	100	100
56	BK	123/145 (85%)	116 (94%)	7 (6%)	0	100	100
57	BL	139/146 (95%)	127 (91%)	12 (9%)	0	100	100
58	BM	143/152 (94%)	135 (94%)	8 (6%)	0	100	100
59	BN	140/145 (97%)	135 (96%)	5 (4%)	0	100	100
60	BO	101/119 (85%)	92 (91%)	9 (9%)	0	100	100
61	BP	81/83 (98%)	78 (96%)	3 (4%)	0	100	100
62	BQ	139/143 (97%)	135 (97%)	4 (3%)	0	100	100
63	BR	100/115 (87%)	97 (97%)	3 (3%)	0	100	100
64	BS	62/69 (90%)	57 (92%)	5 (8%)	0	100	100
65	BT	53/56 (95%)	48 (91%)	5 (9%)	0	100	100
66	BU	311/317 (98%)	285 (92%)	26 (8%)	0	100	100
67	BV	220/293 (75%)	214 (97%)	6 (3%)	0	100	100
68	BW	232/249 (93%)	220 (95%)	12 (5%)	0	100	100
69	BX	181/194 (93%)	175 (97%)	6 (3%)	0	100	100
70	BY	116/132 (88%)	113 (97%)	3 (3%)	0	100	100
71	BZ	148/151 (98%)	142 (96%)	6 (4%)	0	100	100
72	Ba	132/151 (87%)	121 (92%)	11 (8%)	0	100	100
73	Bb	127/130 (98%)	120 (94%)	7 (6%)	0	100	100
74	Bc	127/133 (96%)	118 (93%)	9 (7%)	0	100	100
75	Bd	73/125 (58%)	63 (86%)	10 (14%)	0	100	100
76	Be	81/84 (96%)	80 (99%)	1 (1%)	0	100	100
77	Bf	56/133 (42%)	48 (86%)	8 (14%)	0	100	100
78	Bg	65/156 (42%)	59 (91%)	6 (9%)	0	100	100
79	Bh	129/135 (96%)	127 (98%)	2 (2%)	0	100	100
All	All	11266/12657 (89%)	10806 (96%)	458 (4%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
52	BG	15	LYS

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Mol	Chain	Res	Type
14	AN	64	VAL

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	AD	190/199 (96%)	185 (97%)	5 (3%)	40	70
5	AE	347/347 (100%)	339 (98%)	8 (2%)	44	73
6	AF	306/306 (100%)	298 (97%)	8 (3%)	40	70
7	AG	246/247 (100%)	239 (97%)	7 (3%)	38	68
8	AH	209/220 (95%)	203 (97%)	6 (3%)	37	67
9	AI	195/215 (91%)	189 (97%)	6 (3%)	35	65
10	AJ	204/223 (92%)	195 (96%)	9 (4%)	25	53
11	AK	169/171 (99%)	164 (97%)	5 (3%)	36	66
12	AL	181/182 (100%)	175 (97%)	6 (3%)	33	63
13	AM	148/149 (99%)	141 (95%)	7 (5%)	23	51
14	AN	176/177 (99%)	165 (94%)	11 (6%)	16	39
15	AO	118/161 (73%)	115 (98%)	3 (2%)	42	71
16	AP	171/172 (99%)	163 (95%)	8 (5%)	23	51
17	AQ	173/174 (99%)	170 (98%)	3 (2%)	53	79
18	AR	134/163 (82%)	131 (98%)	3 (2%)	45	74
19	AS	164/165 (99%)	154 (94%)	10 (6%)	17	40
20	AT	166/175 (95%)	161 (97%)	5 (3%)	36	66
21	AU	156/157 (99%)	154 (99%)	2 (1%)	61	83
22	AV	139/140 (99%)	134 (96%)	5 (4%)	31	60
23	AW	91/115 (79%)	86 (94%)	5 (6%)	19	45
24	AX	101/107 (94%)	97 (96%)	4 (4%)	28	56
25	AY	87/126 (69%)	83 (95%)	4 (5%)	24	51
26	AZ	108/133 (81%)	104 (96%)	4 (4%)	30	59

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
27	Aa	123/135 (91%)	121 (98%)	2 (2%)	55	80
28	Ab	117/118 (99%)	112 (96%)	5 (4%)	26	54
29	Ac	119/120 (99%)	117 (98%)	2 (2%)	53	79
30	Ad	83/126 (66%)	81 (98%)	2 (2%)	43	72
31	Ae	83/97 (86%)	80 (96%)	3 (4%)	31	60
32	Af	97/110 (88%)	97 (100%)	0	100	100
33	Ag	114/121 (94%)	110 (96%)	4 (4%)	32	61
34	Ah	88/89 (99%)	85 (97%)	3 (3%)	32	62
35	Ai	94/100 (94%)	93 (99%)	1 (1%)	65	85
36	Aj	109/110 (99%)	105 (96%)	4 (4%)	30	59
37	Ak	85/89 (96%)	80 (94%)	5 (6%)	18	42
38	Al	73/80 (91%)	71 (97%)	2 (3%)	39	69
39	Am	63/65 (97%)	61 (97%)	2 (3%)	34	64
40	An	47/48 (98%)	43 (92%)	4 (8%)	10	25
41	Ao	47/116 (40%)	46 (98%)	1 (2%)	47	75
42	Ap	23/24 (96%)	23 (100%)	0	100	100
43	Aq	91/94 (97%)	89 (98%)	2 (2%)	45	74
44	Ar	71/75 (95%)	68 (96%)	3 (4%)	26	55
45	As	107/121 (88%)	100 (94%)	7 (6%)	15	37
47	BB	223/225 (99%)	218 (98%)	5 (2%)	45	74
48	BC	182/243 (75%)	170 (93%)	12 (7%)	15	36
49	BD	196/231 (85%)	188 (96%)	8 (4%)	27	56
50	BE	190/202 (94%)	182 (96%)	8 (4%)	26	55
51	BF	161/170 (95%)	157 (98%)	4 (2%)	42	71
52	BG	166/174 (95%)	159 (96%)	7 (4%)	26	55
53	BH	178/180 (99%)	173 (97%)	5 (3%)	38	68
54	BI	88/136 (65%)	84 (96%)	4 (4%)	24	52
55	BJ	138/142 (97%)	127 (92%)	11 (8%)	11	28
56	BK	111/130 (85%)	106 (96%)	5 (4%)	24	52
57	BL	117/121 (97%)	111 (95%)	6 (5%)	21	48
58	BM	126/132 (96%)	122 (97%)	4 (3%)	34	64

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
59	BN	112/114 (98%)	109 (97%)	3 (3%)	39	69
60	BO	94/107 (88%)	92 (98%)	2 (2%)	47	75
61	BP	67/67 (100%)	65 (97%)	2 (3%)	36	66
62	BQ	113/115 (98%)	107 (95%)	6 (5%)	20	46
63	BR	89/98 (91%)	84 (94%)	5 (6%)	19	44
64	BS	57/62 (92%)	53 (93%)	4 (7%)	14	34
65	BT	48/49 (98%)	46 (96%)	2 (4%)	26	55
66	BU	272/275 (99%)	257 (94%)	15 (6%)	19	45
67	BV	188/225 (84%)	182 (97%)	6 (3%)	34	64
68	BW	204/218 (94%)	191 (94%)	13 (6%)	16	38
69	BX	162/168 (96%)	156 (96%)	6 (4%)	30	59
70	BY	98/108 (91%)	96 (98%)	2 (2%)	48	76
71	BZ	130/131 (99%)	127 (98%)	3 (2%)	44	73
72	Ba	105/118 (89%)	104 (99%)	1 (1%)	68	86
73	Bb	112/113 (99%)	106 (95%)	6 (5%)	20	45
74	Bc	111/115 (96%)	108 (97%)	3 (3%)	39	69
75	Bd	66/103 (64%)	64 (97%)	2 (3%)	36	66
76	Be	75/76 (99%)	73 (97%)	2 (3%)	39	69
77	Bf	47/104 (45%)	44 (94%)	3 (6%)	16	38
78	Bg	60/140 (43%)	59 (98%)	1 (2%)	53	79
79	Bh	119/122 (98%)	112 (94%)	7 (6%)	18	42
All	All	9818/10776 (91%)	9459 (96%)	359 (4%)	32	59

All (359) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	AD	44	ILE
4	AD	77	ILE
4	AD	135	THR
4	AD	142	GLU
4	AD	208	GLU
5	AE	94	GLU
5	AE	95	THR
5	AE	134	CYS
5	AE	138	GLN

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Mol	Chain	Res	Type
5	AE	216	MET
5	AE	309	LEU
5	AE	355	THR
5	AE	382	MET
6	AF	56	GLU
6	AF	87	SER
6	AF	95	MET
6	AF	101	MET
6	AF	107	THR
6	AF	117	THR
6	AF	165	LYS
6	AF	202	ILE
7	AG	75	VAL
7	AG	88	VAL
7	AG	115	MET
7	AG	132	VAL
7	AG	204	VAL
7	AG	208	MET
7	AG	239	MET
8	AH	93	THR
8	AH	107	VAL
8	AH	199	THR
8	AH	212	LEU
8	AH	237	LYS
8	AH	267	LEU
9	AI	30	ILE
9	AI	36	LYS
9	AI	44	LYS
9	AI	150	VAL
9	AI	152	GLU
9	AI	236	ARG
10	AJ	55	VAL
10	AJ	95	LEU
10	AJ	98	LEU
10	AJ	130	THR
10	AJ	137[A]	ARG
10	AJ	137[B]	ARG
10	AJ	157	ILE
10	AJ	201	THR
10	AJ	235	ARG
11	AK	24	THR
11	AK	28	LYS

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Mol	Chain	Res	Type
11	AK	46	SER
11	AK	94	SER
11	AK	188	GLN
12	AL	33	ILE
12	AL	87	MET
12	AL	110	ARG
12	AL	125	THR
12	AL	179	ASP
12	AL	203	HIS
13	AM	10	ASN
13	AM	51	SER
13	AM	56	THR
13	AM	60	PHE
13	AM	74	VAL
13	AM	125	ILE
13	AM	148	THR
14	AN	20	ARG
14	AN	35	ARG
14	AN	40	GLN
14	AN	46	ILE
14	AN	59	VAL
14	AN	80	GLU
14	AN	93	THR
14	AN	122	SER
14	AN	129	ARG
14	AN	144	LEU
14	AN	148	THR
15	AO	17	PHE
15	AO	43	THR
15	AO	63	LYS
16	AP	16	SER
16	AP	34	SER
16	AP	46	ASP
16	AP	60	VAL
16	AP	152	THR
16	AP	171	SER
16	AP	176	LYS
16	AP	182	HIS
17	AQ	6	VAL
17	AQ	152	VAL
17	AQ	194	GLU
18	AR	2	VAL

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Mol	Chain	Res	Type
18	AR	93	HIS
18	AR	109	VAL
19	AS	5	ILE
19	AS	17	GLU
19	AS	45	GLN
19	AS	49	LYS
19	AS	53	MET
19	AS	77	ASN
19	AS	82	VAL
19	AS	87	THR
19	AS	92	VAL
19	AS	107	SER
20	AT	5	ARG
20	AT	29	THR
20	AT	31	GLU
20	AT	178	GLN
20	AT	185	ILE
21	AU	48	VAL
21	AU	170	LYS
22	AV	76	VAL
22	AV	111	GLU
22	AV	126	VAL
22	AV	127	GLN
22	AV	159	MET
23	AW	25	CYS
23	AW	31	ASP
23	AW	43	LEU
23	AW	73	THR
23	AW	108	GLU
24	AX	43	LYS
24	AX	48	ARG
24	AX	60	MET
24	AX	111	GLU
25	AY	23	ARG
25	AY	80	ARG
25	AY	83	THR
25	AY	90	ILE
26	AZ	93	ASN
26	AZ	102	VAL
26	AZ	124	VAL
26	AZ	143	ASP
27	Aa	104	VAL

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Mol	Chain	Res	Type
27	Aa	108	ARG
28	Ab	34	SER
28	Ab	54	THR
28	Ab	59	LYS
28	Ab	91	LEU
28	Ab	97	ASN
29	Ac	72	THR
29	Ac	106	SER
30	Ad	8	THR
30	Ad	60	ASN
31	Ae	18	LEU
31	Ae	69	THR
31	Ae	94	LEU
33	Ag	4	LEU
33	Ag	13	VAL
33	Ag	65	LYS
33	Ag	128	ARG
34	Ah	43	LEU
34	Ah	66	LYS
34	Ah	90	SER
35	Ai	28	ASN
36	Aj	43	LYS
36	Aj	44	LEU
36	Aj	65	GLN
36	Aj	109	ARG
37	Ak	15	HIS
37	Ak	27	SER
37	Ak	68	ARG
37	Ak	77	VAL
37	Ak	81	ILE
38	Al	64	MET
38	Al	83	THR
39	Am	39	SER
39	Am	60	LEU
40	An	21	ARG
40	An	25	GLN
40	An	27	ILE
40	An	51	LEU
41	Ao	127	VAL
43	Aq	2	VAL
43	Aq	31	ASP
44	Ar	8	VAL

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Mol	Chain	Res	Type
44	Ar	63	THR
44	Ar	72	ASN
45	As	13	CYS
45	As	58	LYS
45	As	63	VAL
45	As	64	ILE
45	As	80	THR
45	As	93	ILE
45	As	105	ASP
47	BB	76	VAL
47	BB	115	THR
47	BB	155	LYS
47	BB	244	ILE
47	BB	245	ARG
48	BC	1	MET
48	BC	7	VAL
48	BC	18	PHE
48	BC	28	THR
48	BC	104	THR
48	BC	124	VAL
48	BC	125	THR
48	BC	144	THR
48	BC	147	LEU
48	BC	150	THR
48	BC	171	VAL
48	BC	174	MET
49	BD	22	VAL
49	BD	49	VAL
49	BD	52	THR
49	BD	81	PHE
49	BD	86	LEU
49	BD	104	ASP
49	BD	182	LYS
49	BD	232	HIS
50	BE	22	ASN
50	BE	41	VAL
50	BE	50	ILE
50	BE	123	LEU
50	BE	164	VAL
50	BE	170	THR
50	BE	188	ILE
50	BE	224	SER

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Mol	Chain	Res	Type
51	BF	78	MET
51	BF	79	HIS
51	BF	81	ARG
51	BF	177	LEU
52	BG	40	LEU
52	BG	62	ILE
52	BG	77	VAL
52	BG	79	LEU
52	BG	82	GLU
52	BG	121	THR
52	BG	160	LYS
53	BH	4	SER
53	BH	56	ARG
53	BH	58	LEU
53	BH	89	GLU
53	BH	190	LEU
54	BI	11	ILE
54	BI	58	VAL
54	BI	95	ARG
54	BI	96	ARG
55	BJ	6	THR
55	BJ	13	GLN
55	BJ	19	ASN
55	BJ	20	LYS
55	BJ	28	THR
55	BJ	40	ILE
55	BJ	42	LEU
55	BJ	84	ARG
55	BJ	88	ILE
55	BJ	96	ILE
55	BJ	146	THR
56	BK	28	MET
56	BK	33	LEU
56	BK	41	GLN
56	BK	96	VAL
56	BK	121	ILE
57	BL	16	LYS
57	BL	18	THR
57	BL	92	LEU
57	BL	100	VAL
57	BL	113	ILE
57	BL	121	VAL

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Mol	Chain	Res	Type
58	BM	1	MET
58	BM	71	MET
58	BM	125	HIS
58	BM	131	VAL
59	BN	12	GLN
59	BN	16	ARG
59	BN	84	ARG
60	BO	20	ILE
60	BO	84	ILE
61	BP	34	MET
61	BP	65	SER
62	BQ	34	THR
62	BQ	57	VAL
62	BQ	72	VAL
62	BQ	87	ASN
62	BQ	100	VAL
62	BQ	105	PHE
63	BR	2	THR
63	BR	18	VAL
63	BR	26	CYS
63	BR	66	LYS
63	BR	71	LEU
64	BS	11	LEU
64	BS	54	ASP
64	BS	56	LEU
64	BS	57	THR
65	BT	20	SER
65	BT	53	ILE
66	BU	3	GLU
66	BU	38	LYS
66	BU	84	ASP
66	BU	86	THR
66	BU	87	LEU
66	BU	90	TRP
66	BU	96	THR
66	BU	104	HIS
66	BU	113	PHE
66	BU	134	THR
66	BU	154	VAL
66	BU	198	VAL
66	BU	230	LEU
66	BU	255	SER

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Mol	Chain	Res	Type
66	BU	275	ILE
67	BV	64	THR
67	BV	73	MET
67	BV	81	ILE
67	BV	98	LEU
67	BV	145	LYS
67	BV	230	THR
68	BW	1	MET
68	BW	3	LEU
68	BW	16	ILE
68	BW	24	LEU
68	BW	111	LEU
68	BW	129	VAL
68	BW	139	SER
68	BW	157	VAL
68	BW	158	VAL
68	BW	171	THR
68	BW	199	THR
68	BW	203	LYS
68	BW	209	TYR
69	BX	3	VAL
69	BX	94	LEU
69	BX	102	ILE
69	BX	128	VAL
69	BX	141	VAL
69	BX	157	ILE
70	BY	33	ARG
70	BY	104	VAL
71	BZ	60	VAL
71	BZ	90	HIS
71	BZ	134	VAL
72	Ba	105	THR
73	Bb	43	LYS
73	Bb	61	ILE
73	Bb	81	VAL
73	Bb	111	MET
73	Bb	112	ASP
73	Bb	121	THR
74	Bc	16	ARG
74	Bc	60	PHE
74	Bc	120	THR
75	Bd	41	ARG

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Mol	Chain	Res	Type
75	Bd	44	LEU
76	Be	54	VAL
76	Be	63	LEU
77	Bf	2	VAL
77	Bf	16	THR
77	Bf	22	GLN
78	Bg	139	HIS
79	Bh	54	VAL
79	Bh	55	THR
79	Bh	79	GLU
79	Bh	98	VAL
79	Bh	105	MET
79	Bh	106	LEU
79	Bh	114	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (95) such sidechains are listed below:

Mol	Chain	Res	Type
4	AD	83	HIS
5	AE	204	GLN
5	AE	302	ASN
6	AF	38	ASN
6	AF	89	GLN
6	AF	119	GLN
7	AG	122	GLN
7	AG	229	ASN
8	AH	245	GLN
8	AH	266	GLN
8	AH	284	HIS
9	AI	24	ASN
9	AI	80	ASN
9	AI	151	ASN
10	AJ	82	GLN
10	AJ	100	HIS
10	AJ	149	ASN
10	AJ	153	GLN
10	AJ	195	HIS
11	AK	140	GLN
12	AL	51	HIS
12	AL	92	HIS
13	AM	46	GLN
13	AM	98	ASN

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Mol	Chain	Res	Type
15	AO	69	HIS
16	AP	8	GLN
16	AP	145	ASN
17	AQ	50	ASN
18	AR	97	ASN
18	AR	133	HIS
19	AS	162	HIS
22	AV	144	ASN
23	AW	50	ASN
25	AY	63	GLN
26	AZ	94	ASN
30	Ad	60	ASN
32	Af	116	ASN
33	Ag	34	ASN
33	Ag	107	ASN
34	Ah	21	GLN
36	Aj	65	GLN
37	Ak	26	HIS
38	Al	48	ASN
43	Aq	19	GLN
45	As	23	GLN
47	BB	98	ASN
47	BB	157	ASN
47	BB	188	ASN
48	BC	141	ASN
49	BD	95	ASN
49	BD	118	GLN
49	BD	147	ASN
50	BE	207	HIS
51	BF	149	GLN
52	BG	162	GLN
52	BG	186	ASN
53	BH	9	HIS
53	BH	64	ASN
53	BH	116	HIS
54	BI	50	GLN
54	BI	77	GLN
55	BJ	13	GLN
55	BJ	100	ASN
56	BK	79	HIS
58	BM	19	ASN
58	BM	101	ASN

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Mol	Chain	Res	Type
58	BM	135	HIS
59	BN	85	ASN
59	BN	105	GLN
59	BN	137	GLN
59	BN	142	ASN
60	BO	47	ASN
60	BO	92	HIS
62	BQ	61	GLN
63	BR	19	GLN
65	BT	26	ASN
66	BU	162	ASN
66	BU	178	ASN
66	BU	305	ASN
67	BV	235	ASN
68	BW	65	GLN
68	BW	177	GLN
68	BW	225	GLN
69	BX	39	ASN
69	BX	124	HIS
69	BX	125	HIS
69	BX	156	HIS
70	BY	28	HIS
73	Bb	90	GLN
73	Bb	113	HIS
74	Bc	29	HIS
75	Bd	46	ASN
76	Be	51	GLN
79	Bh	74	GLN
79	Bh	83	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	AA	3705/5069 (73%)	831 (22%)	12 (0%)
2	AB	119/120 (99%)	8 (6%)	0
3	AC	155/157 (98%)	30 (19%)	0
46	BA	1713/1869 (91%)	479 (27%)	4 (0%)
All	All	5692/7215 (78%)	1348 (23%)	16 (0%)

All (1348) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	AA	3	C
1	AA	12	A
1	AA	13	U
1	AA	15	A
1	AA	21	G
1	AA	25	A
1	AA	39	A
1	AA	42	A
1	AA	48	G
1	AA	56	A
1	AA	59	A
1	AA	64	A
1	AA	65	A
1	AA	66	A
1	AA	69	A
1	AA	73	A
1	AA	91	G
1	AA	98	A
1	AA	104	G
1	AA	108	A
1	AA	109	G
1	AA	110	C
1	AA	112	C
1	AA	119	G
1	AA	120	A
1	AA	132	G
1	AA	133	C
1	AA	134	G
1	AA	136	C
1	AA	141	C
1	AA	143	C
1	AA	144	G
1	AA	152	U
1	AA	158	A
1	AA	159	C
1	AA	177	G
1	AA	181	C
1	AA	183	C
1	AA	185	C
1	AA	186	G
1	AA	188	G
1	AA	194	C
1	AA	200	U

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Mol	Chain	Res	Type
1	AA	201	C
1	AA	205	C
1	AA	207	G
1	AA	209	U
1	AA	210	C
1	AA	217	C
1	AA	218	A
1	AA	220	C
1	AA	221	C
1	AA	234	G
1	AA	238	C
1	AA	243	A
1	AA	251	C
1	AA	253	G
1	AA	255	C
1	AA	259	C
1	AA	261	G
1	AA	262	G
1	AA	264	C
1	AA	265	C
1	AA	266	C
1	AA	267	G
1	AA	275	C
1	AA	280	G
1	AA	297	U
1	AA	306	A
1	AA	315	G
1	AA	316	U
1	AA	340	C
1	AA	341	G
1	AA	348	G
1	AA	357	U
1	AA	362	A
1	AA	373	G
1	AA	387	G
1	AA	398	A2M
1	AA	401	G
1	AA	406	C
1	AA	407	A
1	AA	408	A
1	AA	410	A
1	AA	412	G

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Mol	Chain	Res	Type
1	AA	413	G
1	AA	449	C
1	AA	450	G
1	AA	452	A
1	AA	453	G
1	AA	454	U
1	AA	456	C
1	AA	457	G
1	AA	467	U
1	AA	484	U
1	AA	485	C
1	AA	486	C
1	AA	491	G
1	AA	494	U
1	AA	496	G
1	AA	497	G
1	AA	498	C
1	AA	500	G
1	AA	501	C
1	AA	502	C
1	AA	503	C
1	AA	504	G
1	AA	509	A
1	AA	510	U
1	AA	513	U
1	AA	514	U
1	AA	515	C
1	AA	517	C
1	AA	518	G
1	AA	643	C
1	AA	644	G
1	AA	645	G
1	AA	653	U
1	AA	654	C
1	AA	656	C
1	AA	657	C
1	AA	659	G
1	AA	664	G
1	AA	665	C
1	AA	666	G
1	AA	667	A
1	AA	668	C

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Mol	Chain	Res	Type
1	AA	670	G
1	AA	671	G
1	AA	673	C
1	AA	677	G
1	AA	686	A
1	AA	687	U
1	AA	696	C
1	AA	703	G
1	AA	704	C
1	AA	705	G
1	AA	708	G
1	AA	729	G
1	AA	731	G
1	AA	738	C
1	AA	739	G
1	AA	742	G
1	AA	746	A
1	AA	758	G
1	AA	904	C
1	AA	905	C
1	AA	913	U
1	AA	914	U
1	AA	915	A
1	AA	917	A
1	AA	918	G
1	AA	923	C
1	AA	924	C
1	AA	932	A
1	AA	933	G
1	AA	934	C
1	AA	935	A
1	AA	941	C
1	AA	943	A
1	AA	945	U
1	AA	946	C
1	AA	956	A
1	AA	958	G
1	AA	959	G
1	AA	960	A
1	AA	961	G
1	AA	962	C
1	AA	963	G

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Mol	Chain	Res	Type
1	AA	965	G
1	AA	966	A
1	AA	967	C
1	AA	968	C
1	AA	970	G
1	AA	971	U
1	AA	972	C
1	AA	982	U
1	AA	983	C
1	AA	989	U
1	AA	990	C
1	AA	991	C
1	AA	992	C
1	AA	995	C
1	AA	996	G
1	AA	1049	C
1	AA	1070	G
1	AA	1071	C
1	AA	1072	C
1	AA	1078	A
1	AA	1082	C
1	AA	1083	U
1	AA	1168	G
1	AA	1169	G
1	AA	1171	G
1	AA	1173	G
1	AA	1178	G
1	AA	1179	U
1	AA	1180	C
1	AA	1182	C
1	AA	1183	C
1	AA	1200	G
1	AA	1202	C
1	AA	1203	G
1	AA	1205	G
1	AA	1211	G
1	AA	1215	C
1	AA	1220	G
1	AA	1221	G
1	AA	1222	A
1	AA	1241	C
1	AA	1243	C

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Mol	Chain	Res	Type
1	AA	1253	G
1	AA	1255	A
1	AA	1257	A
1	AA	1266	G
1	AA	1271	G
1	AA	1272	C
1	AA	1273	G
1	AA	1274	A
1	AA	1275	G
1	AA	1277	G
1	AA	1280	C
1	AA	1284	G
1	AA	1285	U
1	AA	1287	G
1	AA	1294	A
1	AA	1296	G
1	AA	1302	U
1	AA	1304	C
1	AA	1323	A2M
1	AA	1326	A2M
1	AA	1331	C
1	AA	1337	A
1	AA	1354	A
1	AA	1358	G
1	AA	1359	G
1	AA	1365	C
1	AA	1367	C
1	AA	1371	A
1	AA	1373	A
1	AA	1377	G
1	AA	1379	C
1	AA	1382	G
1	AA	1387	A
1	AA	1394	G
1	AA	1397	A
1	AA	1399	G
1	AA	1404	G
1	AA	1409	C
1	AA	1410	U
1	AA	1411	C
1	AA	1412	G
1	AA	1420	A

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Mol	Chain	Res	Type
1	AA	1424	G
1	AA	1436	C
1	AA	1437	C
1	AA	1439	C
1	AA	1442	C
1	AA	1443	A
1	AA	1444	G
1	AA	1446	C
1	AA	1480	C
1	AA	1482	G
1	AA	1483	C
1	AA	1484	G
1	AA	1485	C
1	AA	1498	G
1	AA	1502	G
1	AA	1504	G
1	AA	1514	U
1	AA	1516	G
1	AA	1518	A
1	AA	1525	A
1	AA	1534	A2M
1	AA	1547	A
1	AA	1552	G
1	AA	1563	A
1	AA	1566	C
1	AA	1574	G
1	AA	1578	U
1	AA	1591	U
1	AA	1596	U
1	AA	1612	G
1	AA	1624	G
1	AA	1625	OMG
1	AA	1626	G
1	AA	1631	A
1	AA	1633	G
1	AA	1634	A
1	AA	1638	A
1	AA	1640	C
1	AA	1641	G
1	AA	1642	A
1	AA	1654	G
1	AA	1661	C

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Mol	Chain	Res	Type
1	AA	1676	C
1	AA	1677	PSU
1	AA	1698	C
1	AA	1699	A
1	AA	1700	G
1	AA	1701	A
1	AA	1702	C
1	AA	1703	C
1	AA	1704	C
1	AA	1705	G
1	AA	1706	A
1	AA	1709	C
1	AA	1716	G
1	AA	1731	C
1	AA	1740	C
1	AA	1741	G
1	AA	1742	A
1	AA	1750	G
1	AA	1755	C
1	AA	1756	U
1	AA	1757	U
1	AA	1758	G
1	AA	1761	G
1	AA	1762	C
1	AA	1763	C
1	AA	1764	G
1	AA	1765	A
1	AA	1766	A
1	AA	1768	C
1	AA	1770	A
1	AA	1771	U
1	AA	1772	C
1	AA	1780	A
1	AA	1787	A
1	AA	1797	G
1	AA	1804	A
1	AA	1806	G
1	AA	1810	G
1	AA	1815	G
1	AA	1821	G
1	AA	1822	U
1	AA	1834	U

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Mol	Chain	Res	Type
1	AA	1836	G
1	AA	1837	A
1	AA	1842	G
1	AA	1855	G
1	AA	1869	G
1	AA	1882	U
1	AA	1891	A
1	AA	1897	A
1	AA	1917	A
1	AA	1918	U
1	AA	1919	G
1	AA	1921	C
1	AA	1922	G
1	AA	1925	G
1	AA	1931	C
1	AA	1932	A
1	AA	1935	C
1	AA	1940	G
1	AA	1946	G
1	AA	1948	G
1	AA	1959	U
1	AA	1960	A
1	AA	1961	G
1	AA	1967	A
1	AA	1969	G
1	AA	1972	G
1	AA	1973	G
1	AA	1974	U
1	AA	1975	G
1	AA	1978	C
1	AA	1979	A
1	AA	1981	G
1	AA	1982	G
1	AA	1983	A
1	AA	1984	A
1	AA	1985	G
1	AA	1986	U
1	AA	1987	C
1	AA	1988	G
1	AA	1991	A
1	AA	1992	U
1	AA	1993	C

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Mol	Chain	Res	Type
1	AA	1994	C
1	AA	1995	G
1	AA	1996	C
1	AA	1997	U
1	AA	1998	A
1	AA	2000	G
1	AA	2001	G
1	AA	2002	A
1	AA	2003	G
1	AA	2004	U
1	AA	2007	G
1	AA	2009	A
1	AA	2010	A
1	AA	2011	C
1	AA	2012	A
1	AA	2013	A
1	AA	2014	C
1	AA	2015	U
1	AA	2016	C
1	AA	2018	C
1	AA	2019	C
1	AA	2020	U
1	AA	2022	C
1	AA	2024	G
1	AA	2025	A
1	AA	2026	A
1	AA	2046	G
1	AA	2048	U
1	AA	2055	G
1	AA	2056	G
1	AA	2069	A
1	AA	2084	C
1	AA	2090	U
1	AA	2092	G
1	AA	2093	A
1	AA	2094	G
1	AA	2095	A
1	AA	2096	G
1	AA	2097	U
1	AA	2098	G
1	AA	2100	A
1	AA	2101	C

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Mol	Chain	Res	Type
1	AA	2102	G
1	AA	2104	G
1	AA	2105	A
1	AA	2106	G
1	AA	2107	C
1	AA	2108	G
1	AA	2110	C
1	AA	2111	G
1	AA	2112	G
1	AA	2250	C
1	AA	2252	G
1	AA	2253	A
1	AA	2256	C
1	AA	2258	C
1	AA	2269	C
1	AA	2289	C
1	AA	2300	A
1	AA	2301	G
1	AA	2306	G
1	AA	2314	G
1	AA	2316	G
1	AA	2322	G
1	AA	2331	G
1	AA	2332	A
1	AA	2333	G
1	AA	2348	G
1	AA	2351	OMC
1	AA	2392	C
1	AA	2395	A
1	AA	2396	A
1	AA	2397	G
1	AA	2417	A
1	AA	2421	G
1	AA	2422	OMC
1	AA	2425	U
1	AA	2441	C
1	AA	2460	A
1	AA	2469	C
1	AA	2470	C
1	AA	2471	G
1	AA	2475	G
1	AA	2479	G

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Mol	Chain	Res	Type
1	AA	2485	U
1	AA	2486	G
1	AA	2487	G
1	AA	2488	C
1	AA	2489	C
1	AA	2490	U
1	AA	2491	C
1	AA	2492	C
1	AA	2493	G
1	AA	2494	U
1	AA	2501	C
1	AA	2502	G
1	AA	2503	G
1	AA	2504	C
1	AA	2505	C
1	AA	2506	G
1	AA	2513	A
1	AA	2514	G
1	AA	2518	G
1	AA	2519	U
1	AA	2520	C
1	AA	2529	A
1	AA	2546	G
1	AA	2547	G
1	AA	2553	A
1	AA	2560	C
1	AA	2565	A
1	AA	2583	C
1	AA	2586	G
1	AA	2587	A
1	AA	2589	C
1	AA	2618	G
1	AA	2627	C
1	AA	2632	PSU
1	AA	2652	G
1	AA	2653	C
1	AA	2662	G
1	AA	2669	C
1	AA	2676	A
1	AA	2687	U
1	AA	2688	G
1	AA	2694	G

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Mol	Chain	Res	Type
1	AA	2695	A
1	AA	2696	A
1	AA	2703	G
1	AA	2708	U
1	AA	2711	G
1	AA	2712	G
1	AA	2721	G
1	AA	2726	G
1	AA	2738	C
1	AA	2739	C
1	AA	2743	A
1	AA	2754	G
1	AA	2761	U
1	AA	2763	U
1	AA	2764	A
1	AA	2769	U
1	AA	2770	C
1	AA	2787	A2M
1	AA	2788	U
1	AA	2790	U
1	AA	2791	C
1	AA	2806	A
1	AA	2814	C
1	AA	2815	A2M
1	AA	2826	U
1	AA	2827	G
1	AA	2842	G
1	AA	2846	G
1	AA	2855	G
1	AA	2892	C
1	AA	2902	G
1	AA	2903	G
1	AA	2904	U
1	AA	2906	G
1	AA	2908	U
1	AA	2910	G
1	AA	3585	G
1	AA	3586	G
1	AA	3593	C
1	AA	3594	C
1	AA	3597	G
1	AA	3600	G

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Mol	Chain	Res	Type
1	AA	3606	U
1	AA	3615	G
1	AA	3616	U
1	AA	3618	C
1	AA	3626	G
1	AA	3635	A
1	AA	3644	U
1	AA	3648	A
1	AA	3662	A
1	AA	3664	G
1	AA	3672	G
1	AA	3673	C
1	AA	3674	G
1	AA	3710	G
1	AA	3711	A
1	AA	3712	A
1	AA	3713	U
1	AA	3714	G
1	AA	3723	A
1	AA	3727	A
1	AA	3748	A
1	AA	3756	A
1	AA	3757	G
1	AA	3760	A
1	AA	3761	C
1	AA	3762	PSU
1	AA	3771	C
1	AA	3773	U
1	AA	3774	A
1	AA	3777	G
1	AA	3778	U
1	AA	3785	A2M
1	AA	3786	U
1	AA	3788	C
1	AA	3802	U
1	AA	3811	G
1	AA	3814	U
1	AA	3817	A
1	AA	3818	UY1
1	AA	3819	G
1	AA	3838	U
1	AA	3839	G

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Mol	Chain	Res	Type
1	AA	3840	U
1	AA	3844	PSU
1	AA	3877	A
1	AA	3878	C
1	AA	3879	G
1	AA	3880	G
1	AA	3892	U
1	AA	3897	G
1	AA	3901	A
1	AA	3906	A
1	AA	3907	G
1	AA	3908	A
1	AA	3909	C
1	AA	3915	U
1	AA	3938	G
1	AA	3947	A
1	AA	3949	A
1	AA	3951	G
1	AA	3954	A
1	AA	3956	G
1	AA	3957	U
1	AA	3958	G
1	AA	3959	U
1	AA	3960	A
1	AA	3961	G
1	AA	3963	A
1	AA	3964	U
1	AA	3966	A
1	AA	3967	G
1	AA	3969	G
1	AA	3971	G
1	AA	3972	A
1	AA	3973	G
1	AA	3974	G
1	AA	3975	C
1	AA	3977	C
1	AA	4036	G
1	AA	4039	G
1	AA	4042	G
1	AA	4044	U
1	AA	4046	A
1	AA	4048	A

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Mol	Chain	Res	Type
1	AA	4049	U
1	AA	4050	A
1	AA	4051	C
1	AA	4053	A
1	AA	4054	C
1	AA	4055	U
1	AA	4056	A
1	AA	4057	C
1	AA	4059	C
1	AA	4062	A
1	AA	4063	U
1	AA	4064	C
1	AA	4065	G
1	AA	4068	U
1	AA	4070	U
1	AA	4076	G
1	AA	4080	C
1	AA	4084	G
1	AA	4092	G
1	AA	4094	G
1	AA	4095	G
1	AA	4097	G
1	AA	4099	G
1	AA	4100	C
1	AA	4102	C
1	AA	4103	C
1	AA	4104	G
1	AA	4105	A
1	AA	4106	G
1	AA	4107	G
1	AA	4108	G
1	AA	4109	G
1	AA	4110	C
1	AA	4112	C
1	AA	4113	U
1	AA	4115	G
1	AA	4119	C
1	AA	4120	U
1	AA	4121	G
1	AA	4122	G
1	AA	4127	A
1	AA	4139	G

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Mol	Chain	Res	Type
1	AA	4140	C
1	AA	4141	G
1	AA	4142	C
1	AA	4143	G
1	AA	4144	C
1	AA	4148	C
1	AA	4150	G
1	AA	4162	C
1	AA	4163	U
1	AA	4164	C
1	AA	4170	A
1	AA	4183	G
1	AA	4191	G
1	AA	4203	A
1	AA	4222	G
1	AA	4225	G
1	AA	4228	OMG
1	AA	4229	U
1	AA	4233	A
1	AA	4243	C
1	AA	4251	A
1	AA	4254	G
1	AA	4256	A
1	AA	4266	G
1	AA	4268	A
1	AA	4273	A
1	AA	4281	A
1	AA	4282	A
1	AA	4291	G
1	AA	4295	U
1	AA	4304	A
1	AA	4305	G
1	AA	4314	C
1	AA	4329	G
1	AA	4330	G
1	AA	4332	C
1	AA	4349	C
1	AA	4354	U
1	AA	4364	G
1	AA	4373	G
1	AA	4376	A
1	AA	4377	G

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Mol	Chain	Res	Type
1	AA	4378	A
1	AA	4386	C
1	AA	4387	C
1	AA	4391	G
1	AA	4394	A
1	AA	4398	C
1	AA	4421	C
1	AA	4422	A
1	AA	4427	G
1	AA	4444	C
1	AA	4448	G
1	AA	4449	A
1	AA	4452	U
1	AA	4464	A
1	AA	4466	C
1	AA	4475	G
1	AA	4500	PSU
1	AA	4512	U
1	AA	4513	A
1	AA	4515	G
1	AA	4519	C
1	AA	4523	A2M
1	AA	4524	G
1	AA	4525	C
1	AA	4528	G
1	AA	4545	G
1	AA	4548	A
1	AA	4549	G
1	AA	4560	C
1	AA	4567	G
1	AA	4570	G
1	AA	4573	G
1	AA	4575	G
1	AA	4584	A
1	AA	4590	A2M
1	AA	4599	A
1	AA	4627	U
1	AA	4636	PSU
1	AA	4637	OMG
1	AA	4652	G
1	AA	4656	A
1	AA	4657	U

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Mol	Chain	Res	Type
1	AA	4670	C
1	AA	4671	C
1	AA	4672	A
1	AA	4677	U
1	AA	4687	A
1	AA	4694	G
1	AA	4695	C
1	AA	4700	A
1	AA	4708	A
1	AA	4709	U
1	AA	4719	G
1	AA	4730	C
1	AA	4731	G
1	AA	4733	C
1	AA	4734	A
1	AA	4735	G
1	AA	4740	G
1	AA	4741	C
1	AA	4742	G
1	AA	4745	G
1	AA	4750	G
1	AA	4754	G
1	AA	4757	C
1	AA	4759	C
1	AA	4761	G
1	AA	4765	G
1	AA	4775	C
1	AA	4859	C
1	AA	4870	G
1	AA	4871	C
1	AA	4882	U
1	AA	4883	C
1	AA	4889	G
1	AA	4895	C
1	AA	4896	G
1	AA	4900	C
1	AA	4901	G
1	AA	4910	A
1	AA	4912	G
1	AA	4914	C
1	AA	4923	C
1	AA	4927	G

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Mol	Chain	Res	Type
1	AA	4928	C
1	AA	4938	A
1	AA	4940	C
1	AA	4941	G
1	AA	4943	A
1	AA	4949	G
1	AA	4960	G
1	AA	4963	G
1	AA	4966	A
1	AA	4975	G
1	AA	4976	U
1	AA	4979	A
1	AA	4993	G
1	AA	4994	G
1	AA	5007	A
1	AA	5013	C
1	AA	5014	A
1	AA	5017	G
1	AA	5022	U
1	AA	5023	C
1	AA	5024	C
1	AA	5025	C
1	AA	5029	C
1	AA	5030	U
1	AA	5034	A
1	AA	5041	G
1	AA	5047	C
1	AA	5050	C
1	AA	5058	A
1	AA	5061	A
1	AA	5062	G
1	AA	5069	U
2	AB	22	A
2	AB	33	U
2	AB	53	U
2	AB	54	A
2	AB	64	G
2	AB	97	G
2	AB	100	A
2	AB	110	G
3	AC	34	U
3	AC	35	C

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Mol	Chain	Res	Type
3	AC	38	U
3	AC	39	G
3	AC	51	U
3	AC	52	A
3	AC	59	A
3	AC	62	A
3	AC	63	U
3	AC	77	A
3	AC	80	A
3	AC	82	A
3	AC	84	A
3	AC	85	U
3	AC	86	U
3	AC	87	G
3	AC	88	A
3	AC	94	G
3	AC	103	A
3	AC	105	C
3	AC	110	U
3	AC	112	G
3	AC	114	G
3	AC	123	U
3	AC	124	U
3	AC	125	C
3	AC	126	C
3	AC	127	U
3	AC	150	C
3	AC	151	G
46	BA	26	U
46	BA	33	G
46	BA	41	G
46	BA	42	A
46	BA	46	A
46	BA	56	G
46	BA	59	U
46	BA	62	G
46	BA	64	A
46	BA	67	C
46	BA	68	A
46	BA	71	G
46	BA	72	C
46	BA	73	C

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Mol	Chain	Res	Type
46	BA	74	G
46	BA	75	G
46	BA	76	U
46	BA	80	G
46	BA	92	A
46	BA	93	PSU
46	BA	103	A
46	BA	113	G
46	BA	114	G
46	BA	115	U
46	BA	122	G
46	BA	126	G
46	BA	127	C
46	BA	130	G
46	BA	140	C
46	BA	142	C
46	BA	143	U
46	BA	145	G
46	BA	149	A
46	BA	151	C
46	BA	155	G
46	BA	158	A
46	BA	161	U
46	BA	162	C
46	BA	166	A2M
46	BA	168	C
46	BA	170	A
46	BA	173	A
46	BA	180	G
46	BA	182	C
46	BA	197	U
46	BA	198	U
46	BA	200	G
46	BA	201	C
46	BA	202	G
46	BA	203	G
46	BA	204	G
46	BA	206	G
46	BA	207	G
46	BA	208	G
46	BA	220	U
46	BA	225	G

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Mol	Chain	Res	Type
46	BA	291	G
46	BA	295	C
46	BA	296	PSU
46	BA	301	A
46	BA	305	U
46	BA	306	C
46	BA	307	G
46	BA	308	G
46	BA	309	G
46	BA	312	G
46	BA	318	A
46	BA	319	C
46	BA	321	C
46	BA	324	C
46	BA	325	C
46	BA	326	C
46	BA	327	G
46	BA	328	U
46	BA	335	G
46	BA	336	A
46	BA	347	G
46	BA	356	C
46	BA	360	A
46	BA	362	C
46	BA	364	A
46	BA	368	U
46	BA	370	G
46	BA	377	G
46	BA	385	G
46	BA	386	C
46	BA	399	C
46	BA	407	G
46	BA	408	A
46	BA	409	C
46	BA	428	OMU
46	BA	438	G
46	BA	448	A
46	BA	449	A
46	BA	450	C
46	BA	452	G
46	BA	462	OMC
46	BA	464	A

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Mol	Chain	Res	Type
46	BA	466	G
46	BA	468	A2M
46	BA	469	A
46	BA	471	G
46	BA	472	C
46	BA	473	A
46	BA	474	G
46	BA	482	G
46	BA	485	A
46	BA	487	U
46	BA	488	U
46	BA	492	C
46	BA	493	A
46	BA	496	C
46	BA	498	C
46	BA	500	A
46	BA	501	C
46	BA	506	G
46	BA	507	G
46	BA	508	A
46	BA	512	A2M
46	BA	513	G
46	BA	516	A
46	BA	532	C
46	BA	533	A
46	BA	536	A
46	BA	537	C
46	BA	538	U
46	BA	539	C
46	BA	543	C
46	BA	545	A
46	BA	546	G
46	BA	547	G
46	BA	554	A
46	BA	557	U
46	BA	558	G
46	BA	559	G
46	BA	563	G
46	BA	564	A
46	BA	583	A
46	BA	588	G
46	BA	589	G

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Mol	Chain	Res	Type
46	BA	590	A2M
46	BA	591	U
46	BA	593	C
46	BA	594	A
46	BA	603	C
46	BA	604	A
46	BA	605	A
46	BA	606	G
46	BA	607	U
46	BA	614	C
46	BA	615	C
46	BA	617	G
46	BA	627	U
46	BA	628	A
46	BA	629	A
46	BA	631	U
46	BA	643	A
46	BA	655	A
46	BA	656	G
46	BA	659	G
46	BA	660	C
46	BA	668	A2M
46	BA	669	A
46	BA	670	A
46	BA	671	A
46	BA	672	A
46	BA	673	G
46	BA	684	G
46	BA	689	U
46	BA	692	G
46	BA	696	G
46	BA	697	G
46	BA	698	G
46	BA	731	G
46	BA	732	U
46	BA	733	C
46	BA	736	C
46	BA	738	C
46	BA	747	U
46	BA	748	C
46	BA	749	U
46	BA	750	C

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Mol	Chain	Res	Type
46	BA	751	G
46	BA	752	G
46	BA	753	C
46	BA	787	G
46	BA	788	G
46	BA	791	C
46	BA	792	C
46	BA	796	G
46	BA	798	G
46	BA	799	U
46	BA	801	PSU
46	BA	811	A
46	BA	821	G
46	BA	822	PSU
46	BA	823	U
46	BA	827	A
46	BA	830	A
46	BA	836	G
46	BA	837	A
46	BA	838	G
46	BA	839	C
46	BA	842	C
46	BA	847	A
46	BA	861	A
46	BA	862	A
46	BA	867	OMG
46	BA	869	A
46	BA	870	A
46	BA	872	A
46	BA	873	G
46	BA	883	U
46	BA	884	C
46	BA	887	U
46	BA	888	U
46	BA	891	G
46	BA	892	U
46	BA	893	U
46	BA	894	G
46	BA	895	G
46	BA	896	U
46	BA	897	U
46	BA	898	U

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Mol	Chain	Res	Type
46	BA	899	U
46	BA	900	C
46	BA	901	G
46	BA	909	G
46	BA	913	A
46	BA	919	A
46	BA	920	A
46	BA	922	A
46	BA	933	G
46	BA	954	U
46	BA	955	A
46	BA	968	U
46	BA	970	G
46	BA	971	G
46	BA	975	G
46	BA	988	C
46	BA	990	A
46	BA	1005	G
46	BA	1017	U
46	BA	1023	A
46	BA	1027	A
46	BA	1039	C
46	BA	1045	PSU
46	BA	1061	U
46	BA	1062	A
46	BA	1064	C
46	BA	1081	U
46	BA	1083	A
46	BA	1085	C
46	BA	1086	G
46	BA	1089	G
46	BA	1109	C
46	BA	1114	U
46	BA	1115	U
46	BA	1116	C
46	BA	1117	C
46	BA	1121	G
46	BA	1127	C
46	BA	1133	A
46	BA	1138	C
46	BA	1139	C
46	BA	1149	A

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Mol	Chain	Res	Type
46	BA	1153	C
46	BA	1154	U
46	BA	1155	U
46	BA	1170	A
46	BA	1195	A
46	BA	1206	G
46	BA	1207	G
46	BA	1208	A
46	BA	1212	G
46	BA	1213	C
46	BA	1215	C
46	BA	1216	C
46	BA	1217	A
46	BA	1227	G
46	BA	1228	A
46	BA	1232	PSU
46	BA	1236	G
46	BA	1240	A
46	BA	1243	U
46	BA	1244	PSU
46	BA	1247	C
46	BA	1248	B8N
46	BA	1249	C
46	BA	1251	A
46	BA	1252	C
46	BA	1253	A
46	BA	1256	G
46	BA	1257	G
46	BA	1258	A
46	BA	1259	A
46	BA	1263	U
46	BA	1264	C
46	BA	1266	C
46	BA	1268	C
46	BA	1269	G
46	BA	1270	G
46	BA	1273	C
46	BA	1274	G
46	BA	1275	G
46	BA	1276	A
46	BA	1282	A
46	BA	1284	A

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Mol	Chain	Res	Type
46	BA	1285	G
46	BA	1286	G
46	BA	1287	A
46	BA	1295	A
46	BA	1298	G
46	BA	1301	A
46	BA	1302	G
46	BA	1303	C
46	BA	1308	U
46	BA	1315	U
46	BA	1327	G
46	BA	1333	U
46	BA	1342	U
46	BA	1343	U
46	BA	1345	G
46	BA	1348	G
46	BA	1368	U
46	BA	1369	A
46	BA	1371	U
46	BA	1372	U
46	BA	1375	G
46	BA	1378	A
46	BA	1394	G
46	BA	1396	A
46	BA	1397	U
46	BA	1398	G
46	BA	1404	U
46	BA	1418	C
46	BA	1419	C
46	BA	1420	G
46	BA	1421	A
46	BA	1422	G
46	BA	1424	G
46	BA	1427	C
46	BA	1429	G
46	BA	1434	C
46	BA	1435	C
46	BA	1436	C
46	BA	1438	A
46	BA	1445	PSU
46	BA	1446	A
46	BA	1452	A

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Mol	Chain	Res	Type
46	BA	1453	C
46	BA	1454	A
46	BA	1455	A
46	BA	1456	G
46	BA	1461	G
46	BA	1462	U
46	BA	1463	U
46	BA	1466	G
46	BA	1471	C
46	BA	1473	G
46	BA	1486	A
46	BA	1489	A
46	BA	1490	OMG
46	BA	1494	U
46	BA	1495	G
46	BA	1497	G
46	BA	1498	A
46	BA	1500	G
46	BA	1506	A
46	BA	1508	A
46	BA	1509	U
46	BA	1516	G
46	BA	1519	U
46	BA	1520	G
46	BA	1521	C
46	BA	1522	A
46	BA	1528	G
46	BA	1531	A
46	BA	1533	A
46	BA	1536	G
46	BA	1539	U
46	BA	1540	G
46	BA	1541	G
46	BA	1543	U
46	BA	1546	G
46	BA	1547	C
46	BA	1551	U
46	BA	1552	G
46	BA	1553	C
46	BA	1554	C
46	BA	1556	A
46	BA	1557	C

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Mol	Chain	Res	Type
46	BA	1559	C
46	BA	1560	U
46	BA	1564	C
46	BA	1568	C
46	BA	1569	A
46	BA	1570	G
46	BA	1571	G
46	BA	1573	G
46	BA	1574	C
46	BA	1579	A
46	BA	1580	A
46	BA	1585	U
46	BA	1588	A
46	BA	1591	C
46	BA	1594	A
46	BA	1599	U
46	BA	1601	A
46	BA	1606	G
46	BA	1614	A
46	BA	1616	U
46	BA	1620	A
46	BA	1621	U
46	BA	1623	A
46	BA	1636	G
46	BA	1637	A
46	BA	1639	G7M
46	BA	1640	A
46	BA	1641	A
46	BA	1646	C
46	BA	1648	G
46	BA	1654	G
46	BA	1663	A
46	BA	1664	A
46	BA	1665	G
46	BA	1684	C
46	BA	1685	U
46	BA	1693	G
46	BA	1694	U
46	BA	1695	A
46	BA	1696	C
46	BA	1698	C
46	BA	1701	C

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Mol	Chain	Res	Type
46	BA	1715	A
46	BA	1721	U
46	BA	1722	G
46	BA	1724	A
46	BA	1725	U
46	BA	1730	U
46	BA	1738	C
46	BA	1740	C
46	BA	1741	U
46	BA	1742	C
46	BA	1744	G
46	BA	1745	A
46	BA	1750	C
46	BA	1752	C
46	BA	1753	C
46	BA	1754	G
46	BA	1755	C
46	BA	1757	G
46	BA	1758	G
46	BA	1759	G
46	BA	1761	U
46	BA	1773	C
46	BA	1774	C
46	BA	1776	G
46	BA	1777	G
46	BA	1782	G
46	BA	1784	G
46	BA	1786	U
46	BA	1787	G
46	BA	1804	OMU
46	BA	1809	A
46	BA	1811	C
46	BA	1831	A
46	BA	1832	6MZ
46	BA	1835	A
46	BA	1836	G
46	BA	1838	U
46	BA	1849	G
46	BA	1851	MA6
46	BA	1852	C
46	BA	1861	G
46	BA	1862	G

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Mol	Chain	Res	Type
46	BA	1863	A
46	BA	1864	U
46	BA	1865	C

All (16) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	AA	406	C
1	AA	914	U
1	AA	1503	A
1	AA	1590	C
1	AA	1633	G
1	AA	2391	G
1	AA	2416	G
1	AA	2675	G
1	AA	3614	G
1	AA	3673	C
1	AA	4699	U
1	AA	4913	G
46	BA	369	C
46	BA	688	U
46	BA	866	PSU
46	BA	1368	U

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

224 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	OMU	AA	2837	1	19,22,23	1.26	3 (15%)	26,31,34	1.78	4 (15%)
1	A2M	AA	2787	1	22,25,26	1.42	4 (18%)	31,36,39	2.27	8 (25%)
3	OMG	AC	75	3	23,26,27	1.21	3 (13%)	33,38,41	1.92	6 (18%)
46	OMU	BA	116	46	19,22,23	1.22	4 (21%)	26,31,34	1.68	5 (19%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
46	A2M	BA	1383	46	22,25,26	1.47	4 (18%)	31,36,39	2.14	9 (29%)
1	PSU	AA	3851	1	18,21,22	1.41	3 (16%)	22,30,33	1.89	3 (13%)
1	PSU	AA	1683	81,1	18,21,22	1.42	3 (16%)	22,30,33	1.90	3 (13%)
1	OMG	AA	2424	1	23,26,27	1.20	3 (13%)	33,38,41	1.90	6 (18%)
46	A2M	BA	166	46	22,25,26	1.45	4 (18%)	31,36,39	2.26	10 (32%)
3	PSU	AC	55	3	18,21,22	1.40	3 (16%)	22,30,33	1.84	3 (13%)
46	PSU	BA	801	46	18,21,22	1.37	2 (11%)	22,30,33	1.88	3 (13%)
1	OMC	AA	2422	80,1	19,22,23	0.81	0	26,31,34	0.76	0
1	A2M	AA	3718	1	22,25,26	1.48	4 (18%)	31,36,39	1.91	6 (19%)
1	PSU	AA	3764	1	18,21,22	1.39	2 (11%)	22,30,33	1.83	3 (13%)
1	PSU	AA	4471	1	18,21,22	1.42	3 (16%)	22,30,33	1.83	3 (13%)
46	OMU	BA	172	46	19,22,23	1.22	3 (15%)	26,31,34	1.75	5 (19%)
46	G7M	BA	1639	46	23,26,27	5.05	20 (86%)	35,39,42	1.71	7 (20%)
46	A2M	BA	468	46	22,25,26	1.48	4 (18%)	31,36,39	2.01	9 (29%)
46	PSU	BA	1643	46	18,21,22	1.34	2 (11%)	22,30,33	1.96	5 (22%)
1	A2M	AA	3830	1	22,25,26	1.46	4 (18%)	31,36,39	2.07	10 (32%)
1	PSU	AA	4457	1	18,21,22	1.39	3 (16%)	22,30,33	1.95	5 (22%)
46	OMC	BA	1391	46	19,22,23	0.85	0	26,31,34	1.11	2 (7%)
1	PSU	AA	4689	1	18,21,22	1.42	4 (22%)	22,30,33	1.81	3 (13%)
1	A2M	AA	3825	1	22,25,26	1.45	4 (18%)	31,36,39	2.04	8 (25%)
1	PSU	AA	4973	1	18,21,22	1.37	2 (11%)	22,30,33	1.92	3 (13%)
46	OMC	BA	1703	46	19,22,23	0.81	0	26,31,34	0.79	0
1	PSU	AA	3844	1	18,21,22	1.39	3 (16%)	22,30,33	1.88	3 (13%)
46	OMG	BA	1447	46	23,26,27	1.18	3 (13%)	33,38,41	1.92	6 (18%)
1	PSU	AA	4299	1	18,21,22	1.39	3 (16%)	22,30,33	1.81	3 (13%)
1	OMG	AA	1625	81,1	23,26,27	1.22	3 (13%)	33,38,41	1.91	6 (18%)
46	OMG	BA	1490	46,80	23,26,27	1.23	3 (13%)	33,38,41	1.94	6 (18%)
46	PSU	BA	1445	46	18,21,22	1.39	2 (11%)	22,30,33	1.81	3 (13%)
46	PSU	BA	1232	46	18,21,22	1.38	2 (11%)	22,30,33	1.85	3 (13%)
1	A2M	AA	3724	1	22,25,26	1.44	4 (18%)	31,36,39	2.09	10 (32%)
1	OMU	AA	4227	1	19,22,23	1.28	4 (21%)	26,31,34	1.73	4 (15%)
1	OMC	AA	3841	1	19,22,23	0.80	0	26,31,34	0.72	0
1	PSU	AA	3762	1	18,21,22	1.37	2 (11%)	22,30,33	1.84	3 (13%)
1	OMU	AA	4620	1	19,22,23	1.29	3 (15%)	26,31,34	1.69	4 (15%)
1	PSU	AA	1744	1	18,21,22	1.39	3 (16%)	22,30,33	1.92	3 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
46	PSU	BA	1177	46	18,21,22	1.36	2 (11%)	22,30,33	1.89	3 (13%)
1	A2M	AA	1323	1	22,25,26	1.46	4 (18%)	31,36,39	2.10	8 (25%)
46	A2M	BA	484	46	22,25,26	1.47	4 (18%)	31,36,39	2.27	9 (29%)
1	PSU	AA	4673	81,1	18,21,22	1.41	3 (16%)	22,30,33	1.81	3 (13%)
46	OMG	BA	867	46	23,26,27	1.20	3 (13%)	33,38,41	1.92	6 (18%)
1	PSU	AA	1862	1	18,21,22	1.37	3 (16%)	22,30,33	1.92	3 (13%)
1	OMU	AA	2415	1	19,22,23	1.24	4 (21%)	26,31,34	1.75	5 (19%)
1	5MC	AA	3782	80,1	18,22,23	0.94	2 (11%)	26,32,35	1.23	4 (15%)
1	OMG	AA	4494	1	23,26,27	1.21	3 (13%)	33,38,41	1.92	6 (18%)
1	PSU	AA	3768	1	18,21,22	1.35	2 (11%)	22,30,33	1.86	3 (13%)
46	PSU	BA	1692	46	18,21,22	1.36	2 (11%)	22,30,33	1.87	3 (13%)
1	A2M	AA	4590	1	22,25,26	1.43	4 (18%)	31,36,39	2.07	9 (29%)
46	PSU	BA	1056	46	18,21,22	1.33	2 (11%)	22,30,33	1.85	3 (13%)
46	OMC	BA	1272	46	19,22,23	0.83	0	26,31,34	0.87	1 (3%)
3	OMU	AC	14	1,3	19,22,23	1.25	3 (15%)	26,31,34	1.81	6 (23%)
72	IAS	Ba	138	72	6,7,8	1.08	0	6,8,10	1.45	0
46	OMG	BA	436	46	23,26,27	1.19	3 (13%)	33,38,41	1.95	6 (18%)
1	PSU	AA	3770	1	18,21,22	1.39	2 (11%)	22,30,33	1.82	3 (13%)
1	OMC	AA	3869	1	19,22,23	0.82	0	26,31,34	0.78	0
1	OMC	AA	3701	81,1	19,22,23	0.79	0	26,31,34	0.77	0
1	PSU	AA	1582	1	18,21,22	1.41	3 (16%)	22,30,33	1.84	3 (13%)
1	OMG	AA	2876	1	23,26,27	1.21	3 (13%)	33,38,41	1.98	6 (18%)
1	OMC	AA	3808	1	19,22,23	0.85	0	26,31,34	0.91	1 (3%)
1	PSU	AA	3730	1	18,21,22	1.33	2 (11%)	22,30,33	1.86	3 (13%)
1	6MZ	AA	4220	1	22,25,26	1.40	4 (18%)	30,36,39	2.17	9 (30%)
46	OMU	BA	354	46	19,22,23	1.23	3 (15%)	26,31,34	1.72	4 (15%)
1	UY1	AA	3818	81,1	19,22,23	4.26	8 (42%)	22,31,34	1.98	6 (27%)
46	PSU	BA	822	46	18,21,22	1.41	2 (11%)	22,30,33	1.89	3 (13%)
1	PSU	AA	4636	1	18,21,22	1.39	3 (16%)	22,30,33	2.00	5 (22%)
1	PSU	AA	4353	1	18,21,22	1.38	2 (11%)	22,30,33	1.91	3 (13%)
46	PSU	BA	649	46	18,21,22	1.38	2 (11%)	22,30,33	1.87	3 (13%)
3	PSU	AC	69	3	18,21,22	1.35	2 (11%)	22,30,33	1.90	4 (18%)
1	PSU	AA	4361	1	18,21,22	1.41	3 (16%)	22,30,33	1.90	3 (13%)
46	OMC	BA	462	46	19,22,23	0.83	0	26,31,34	0.92	1 (3%)
1	OMC	AA	3887	1	19,22,23	0.83	0	26,31,34	0.91	1 (3%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
46	OMC	BA	174	46	19,22,23	0.84	0	26,31,34	0.93	1 (3%)
1	A2M	AA	2401	1	22,25,26	1.44	5 (22%)	31,36,39	2.08	9 (29%)
1	OMU	AA	4498	80,1	19,22,23	1.22	3 (15%)	26,31,34	1.70	5 (19%)
46	PSU	BA	1046	46	18,21,22	1.36	2 (11%)	22,30,33	1.86	3 (13%)
1	A2M	AA	2815	81,1	22,25,26	1.45	4 (18%)	31,36,39	2.19	7 (22%)
46	PSU	BA	119	46,80	18,21,22	1.36	2 (11%)	22,30,33	1.84	3 (13%)
46	PSU	BA	63	46	18,21,22	1.33	2 (11%)	22,30,33	1.88	3 (13%)
46	OMU	BA	1442	46	19,22,23	1.19	2 (10%)	26,31,34	1.69	4 (15%)
46	PSU	BA	1625	46	18,21,22	1.37	2 (11%)	22,30,33	1.87	3 (13%)
1	PSU	AA	4576	1	18,21,22	1.38	2 (11%)	22,30,33	1.85	4 (18%)
1	PSU	AA	3884	1	18,21,22	1.41	3 (16%)	22,30,33	1.86	3 (13%)
46	PSU	BA	1244	46	18,21,22	1.36	2 (11%)	22,30,33	1.92	3 (13%)
46	PSU	BA	1347	46	18,21,22	1.33	2 (11%)	22,30,33	1.87	3 (13%)
46	PSU	BA	109	46	18,21,22	1.34	2 (11%)	22,30,33	1.86	3 (13%)
46	PSU	BA	1003	46	18,21,22	1.36	2 (11%)	22,30,33	1.87	3 (13%)
46	PSU	BA	651	46	18,21,22	1.36	2 (11%)	22,30,33	1.89	3 (13%)
1	PSU	AA	1860	1	18,21,22	1.43	4 (22%)	22,30,33	1.87	3 (13%)
1	PSU	AA	2508	1	18,21,22	1.37	3 (16%)	22,30,33	1.86	3 (13%)
1	PSU	AA	4493	81,1	18,21,22	1.41	3 (16%)	22,30,33	1.91	3 (13%)
1	OMG	AA	1522	1	23,26,27	1.20	4 (17%)	33,38,41	1.93	5 (15%)
1	A2M	AA	1534	80,1	22,25,26	1.45	4 (18%)	31,36,39	2.07	8 (25%)
1	OMG	AA	1316	1	23,26,27	1.22	3 (13%)	33,38,41	1.93	6 (18%)
1	PSU	AA	1792	1	18,21,22	1.39	3 (16%)	22,30,33	1.82	4 (18%)
1	OMC	AA	1881	80,1	19,22,23	0.84	0	26,31,34	0.90	0
1	PSU	AA	4972	1	18,21,22	1.36	3 (16%)	22,30,33	1.89	3 (13%)
46	PSU	BA	918	46	18,21,22	1.33	2 (11%)	22,30,33	1.85	3 (13%)
1	OMG	AA	2364	1	23,26,27	1.20	3 (13%)	33,38,41	1.92	6 (18%)
1	OMU	AA	3925	1	19,22,23	1.26	3 (15%)	26,31,34	1.76	5 (19%)
46	UY1	BA	1326	46	19,22,23	4.41	7 (36%)	22,31,34	1.81	5 (22%)
46	OMU	BA	121	46	19,22,23	1.23	3 (15%)	26,31,34	1.68	4 (15%)
1	PSU	AA	2632	1	18,21,22	1.38	2 (11%)	22,30,33	1.85	3 (13%)
46	PSU	BA	572	46	18,21,22	1.39	3 (16%)	22,30,33	1.94	4 (18%)
46	PSU	BA	866	46	18,21,22	1.34	2 (11%)	22,30,33	1.99	5 (22%)
1	OMG	AA	4499	1	23,26,27	1.21	3 (13%)	33,38,41	1.94	6 (18%)
1	1MA	AA	1322	80,1	21,25,26	1.36	4 (19%)	31,37,40	1.63	6 (19%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
46	PSU	BA	1174	46	18,21,22	1.36	2 (11%)	22,30,33	1.91	3 (13%)
1	OMC	AA	2351	80,1	19,22,23	0.82	0	26,31,34	0.90	1 (3%)
1	PSU	AA	5010	1	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)
46	PSU	BA	406	46	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
1	PSU	AA	5001	1	18,21,22	1.39	2 (11%)	22,30,33	1.91	3 (13%)
1	PSU	AA	3920	80,1	18,21,22	1.41	3 (16%)	22,30,33	1.91	4 (18%)
1	A2M	AA	400	1	22,25,26	1.43	4 (18%)	31,36,39	2.07	9 (29%)
1	PSU	AA	4442	1	18,21,22	1.39	3 (16%)	22,30,33	1.92	4 (18%)
1	OMC	AA	4456	1	19,22,23	0.84	0	26,31,34	0.91	1 (3%)
1	PSU	AA	3637	81,1	18,21,22	1.44	3 (16%)	22,30,33	1.97	5 (22%)
1	PSU	AA	4312	1	18,21,22	1.39	3 (16%)	22,30,33	1.88	3 (13%)
46	PSU	BA	34	46	18,21,22	1.37	2 (11%)	22,30,33	1.85	3 (13%)
1	PSU	AA	2839	1	18,21,22	1.42	4 (22%)	22,30,33	1.82	3 (13%)
1	OMG	AA	4370	1	23,26,27	1.19	3 (13%)	33,38,41	1.91	6 (18%)
46	A2M	BA	512	46	22,25,26	1.50	4 (18%)	31,36,39	2.02	6 (19%)
1	OMC	AA	2365	80,1	19,22,23	0.81	0	26,31,34	0.75	0
46	OMG	BA	601	46	23,26,27	1.21	3 (13%)	33,38,41	1.93	6 (18%)
46	4AC	BA	1337	46	21,24,25	1.09	1 (4%)	29,34,37	1.59	6 (20%)
1	PSU	AA	1779	1	18,21,22	1.39	3 (16%)	22,30,33	1.86	3 (13%)
46	PSU	BA	1360	46,80,81	18,21,22	1.34	2 (11%)	22,30,33	1.90	4 (18%)
1	PSU	AA	3853	80,1	18,21,22	1.40	3 (16%)	22,30,33	1.90	3 (13%)
46	A2M	BA	668	46,80	22,25,26	1.46	4 (18%)	31,36,39	2.08	10 (32%)
1	PSU	AA	4552	1	18,21,22	1.37	3 (16%)	22,30,33	1.97	3 (13%)
46	PSU	BA	1136	46	18,21,22	1.33	2 (11%)	22,30,33	1.90	3 (13%)
1	PSU	AA	4628	1	18,21,22	1.40	3 (16%)	22,30,33	2.01	3 (13%)
1	PSU	AA	4532	1	18,21,22	1.40	2 (11%)	22,30,33	1.88	3 (13%)
1	OMG	AA	4623	1	23,26,27	1.21	4 (17%)	33,38,41	1.96	6 (18%)
1	PSU	AA	4423	1	18,21,22	1.37	2 (11%)	22,30,33	1.89	3 (13%)
46	PSU	BA	1596	46	18,21,22	1.37	2 (11%)	22,30,33	1.87	3 (13%)
46	PSU	BA	863	46	18,21,22	1.36	2 (11%)	22,30,33	1.82	3 (13%)
1	PSU	AA	4403	1	18,21,22	1.39	3 (16%)	22,30,33	1.91	4 (18%)
1	OMG	AA	3627	1	23,26,27	1.20	3 (13%)	33,38,41	1.95	6 (18%)
46	PSU	BA	1045	46	18,21,22	1.36	2 (11%)	22,30,33	1.86	3 (13%)
1	PSU	AA	3695	1	18,21,22	1.37	3 (16%)	22,30,33	1.94	4 (18%)
46	MA6	BA	1851	46	23,26,27	1.45	4 (17%)	34,38,41	2.41	13 (38%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
46	PSU	BA	1367	46	18,21,22	1.65	4 (22%)	22,30,33	2.35	7 (31%)
1	A2M	AA	3867	1	22,25,26	1.46	4 (18%)	31,36,39	2.09	7 (22%)
1	OMG	AA	4196	80,1	23,26,27	1.23	3 (13%)	33,38,41	1.94	6 (18%)
46	OMG	BA	644	46	23,26,27	1.21	3 (13%)	33,38,41	1.93	6 (18%)
46	OMU	BA	428	46	19,22,23	1.21	3 (15%)	26,31,34	1.72	4 (15%)
46	A2M	BA	576	46	22,25,26	1.47	4 (18%)	31,36,39	2.17	9 (29%)
59	NMM	BN	67	59	9,11,12	1.71	1 (11%)	6,12,14	1.06	0
46	OMC	BA	517	46	19,22,23	0.82	0	26,31,34	0.85	1 (3%)
46	PSU	BA	1004	46	18,21,22	1.37	2 (11%)	22,30,33	1.84	3 (13%)
1	PSU	AA	2843	1	18,21,22	1.39	3 (16%)	22,30,33	1.91	4 (18%)
1	PSU	AA	3715	1	18,21,22	1.39	2 (11%)	22,30,33	1.82	3 (13%)
1	OMU	AA	4306	1	19,22,23	1.25	3 (15%)	26,31,34	1.60	4 (15%)
46	PSU	BA	93	46	18,21,22	1.38	2 (11%)	22,30,33	1.82	3 (13%)
46	A2M	BA	99	46,80	22,25,26	1.46	4 (18%)	31,36,39	2.13	9 (29%)
46	PSU	BA	300	46	18,21,22	1.34	2 (11%)	22,30,33	1.84	3 (13%)
1	OMG	AA	4392	1	23,26,27	1.22	3 (13%)	33,38,41	1.91	5 (15%)
1	PSU	AA	1781	1	18,21,22	1.37	3 (16%)	22,30,33	1.87	3 (13%)
1	OMC	AA	2824	1	19,22,23	0.80	0	26,31,34	0.80	0
1	A2M	AA	398	1	22,25,26	1.43	4 (18%)	31,36,39	2.14	10 (32%)
1	PSU	AA	4579	1	18,21,22	1.38	4 (22%)	22,30,33	1.91	3 (13%)
1	OMG	AA	4618	1	23,26,27	1.20	4 (17%)	33,38,41	1.94	6 (18%)
46	PSU	BA	100	46,80	18,21,22	1.37	2 (11%)	22,30,33	1.84	3 (13%)
46	PSU	BA	966	46	18,21,22	1.36	2 (11%)	22,30,33	1.80	3 (13%)
46	6MZ	BA	1832	46,81	22,25,26	1.49	4 (18%)	30,36,39	2.13	8 (26%)
46	PSU	BA	686	46	18,21,22	1.37	2 (11%)	22,30,33	1.88	3 (13%)
46	PSU	BA	667	46	18,21,22	1.43	4 (22%)	22,30,33	1.88	4 (18%)
1	OMG	AA	3744	1	23,26,27	1.22	3 (13%)	33,38,41	1.91	6 (18%)
1	OMG	AA	4637	81,1	23,26,27	1.22	3 (13%)	33,38,41	1.96	6 (18%)
1	OMG	AA	3899	80,1	23,26,27	1.21	4 (17%)	33,38,41	1.89	6 (18%)
1	OMC	AA	4536	1	19,22,23	0.84	0	26,31,34	0.91	1 (3%)
1	OMG	AA	4228	1	23,26,27	1.20	4 (17%)	33,38,41	1.94	6 (18%)
1	PSU	AA	3639	1	18,21,22	1.42	3 (16%)	22,30,33	1.87	3 (13%)
1	A2M	AA	4571	1	22,25,26	1.46	4 (18%)	31,36,39	2.05	7 (22%)
46	PSU	BA	609	46	18,21,22	1.35	2 (11%)	22,30,33	1.85	3 (13%)
46	A2M	BA	27	46,80	22,25,26	1.47	4 (18%)	31,36,39	2.08	9 (29%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
46	PSU	BA	105	46	18,21,22	1.35	2 (11%)	22,30,33	1.86	3 (13%)
1	PSU	AA	1536	1	18,21,22	1.40	2 (11%)	22,30,33	1.91	3 (13%)
1	A2M	AA	1871	80,1	22,25,26	1.43	5 (22%)	31,36,39	2.20	10 (32%)
46	OMG	BA	509	46,80	23,26,27	1.20	3 (13%)	33,38,41	1.93	6 (18%)
1	PSU	AA	4296	1	18,21,22	1.37	2 (11%)	22,30,33	1.92	3 (13%)
46	PSU	BA	366	46	18,21,22	1.33	2 (11%)	22,30,33	1.91	4 (18%)
1	PSU	AA	3822	1	18,21,22	1.37	2 (11%)	22,30,33	1.92	3 (13%)
1	A2M	AA	4523	80,1	22,25,26	1.41	4 (18%)	31,36,39	2.18	10 (32%)
1	A2M	AA	2363	80,1	22,25,26	1.46	4 (18%)	31,36,39	2.04	8 (25%)
1	UR3	AA	4530	1	19,22,23	0.97	0	26,32,35	1.41	1 (3%)
46	A2M	BA	1678	46	22,25,26	1.45	4 (18%)	31,36,39	2.28	10 (32%)
46	PSU	BA	815	46	18,21,22	1.34	2 (11%)	22,30,33	1.90	3 (13%)
46	PSU	BA	814	46	18,21,22	1.36	2 (11%)	22,30,33	1.82	3 (13%)
46	PSU	BA	681	46	18,21,22	1.36	2 (11%)	22,30,33	1.81	3 (13%)
1	OMC	AA	2804	1	19,22,23	0.82	0	26,31,34	0.76	0
46	OMU	BA	1288	46	19,22,23	1.23	3 (15%)	26,31,34	1.66	4 (15%)
46	A2M	BA	590	46	22,25,26	1.50	4 (18%)	31,36,39	2.12	6 (19%)
46	PSU	BA	1186	46	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
1	OMG	AA	3792	1	23,26,27	1.22	3 (13%)	33,38,41	1.95	6 (18%)
1	PSU	AA	1782	1	18,21,22	1.36	2 (11%)	22,30,33	1.88	3 (13%)
46	OMG	BA	683	46	23,26,27	1.18	3 (13%)	33,38,41	1.97	6 (18%)
46	4AC	BA	1842	46	21,24,25	1.09	1 (4%)	29,34,37	1.34	3 (10%)
46	PSU	BA	296	46	18,21,22	1.35	2 (11%)	22,30,33	1.88	3 (13%)
46	PSU	BA	218	46	18,21,22	1.35	2 (11%)	22,30,33	1.84	3 (13%)
1	A2M	AA	1326	1	22,25,26	1.46	4 (18%)	31,36,39	2.05	7 (22%)
1	A2M	AA	3785	80,1	22,25,26	1.40	4 (18%)	31,36,39	2.38	11 (35%)
46	OMU	BA	1804	46	19,22,23	1.23	4 (21%)	26,31,34	1.72	5 (19%)
1	OMC	AA	1340	1	19,22,23	0.81	0	26,31,34	0.79	0
46	B8N	BA	1248	46	24,29,30	0.84	1 (4%)	29,42,45	1.31	2 (6%)
1	PSU	AA	4500	1	18,21,22	1.37	2 (11%)	22,30,33	1.95	3 (13%)
1	PSU	AA	4521	80,81,1	18,21,22	1.39	3 (16%)	22,30,33	1.93	4 (18%)
1	5MC	AA	4447	81,1	18,22,23	1.00	2 (11%)	26,32,35	1.35	3 (11%)
5	HIC	AE	245	5	10,11,12	0.54	0	8,14,16	0.58	0
46	MA6	BA	1850	46	23,26,27	1.44	4 (17%)	34,38,41	2.43	14 (41%)
1	PSU	AA	1677	1	18,21,22	1.41	2 (11%)	22,30,33	1.92	4 (18%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
29	V5N	Ac	39	29	9,11,12	0.82	0	9,14,16	1.75	2 (22%)
46	OMG	BA	1328	46	23,26,27	1.20	3 (13%)	33,38,41	1.95	6 (18%)
1	PSU	AA	4293	1	18,21,22	1.39	4 (22%)	22,30,33	1.90	3 (13%)
46	PSU	BA	1238	46	18,21,22	1.32	2 (11%)	22,30,33	1.86	4 (18%)
46	PSU	BA	36	46	18,21,22	1.33	2 (11%)	22,30,33	1.91	3 (13%)
1	PSU	AA	4431	1	18,21,22	1.40	2 (11%)	22,30,33	1.86	3 (13%)
1	OMC	AA	2861	1	19,22,23	0.83	0	26,31,34	0.93	2 (7%)
1	A2M	AA	1524	1	22,25,26	1.44	4 (18%)	31,36,39	2.19	10 (32%)
46	A2M	BA	1031	46	22,25,26	1.46	4 (18%)	31,36,39	2.05	8 (25%)
46	A2M	BA	159	46	22,25,26	1.47	4 (18%)	31,36,39	2.22	10 (32%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	OMU	AA	2837	1	-	1/9/27/28	0/2/2/2
1	A2M	AA	2787	1	-	3/9/27/28	0/3/3/3
3	OMG	AC	75	3	-	1/9/27/28	0/3/3/3
46	OMU	BA	116	46	-	1/9/27/28	0/2/2/2
46	A2M	BA	1383	46	-	0/9/27/28	0/3/3/3
1	PSU	AA	3851	1	-	1/7/25/26	0/2/2/2
1	PSU	AA	1683	81,1	-	0/7/25/26	0/2/2/2
1	OMG	AA	2424	1	-	0/9/27/28	0/3/3/3
46	A2M	BA	166	46	-	2/9/27/28	0/3/3/3
3	PSU	AC	55	3	-	0/7/25/26	0/2/2/2
46	PSU	BA	801	46	-	1/7/25/26	0/2/2/2
1	OMC	AA	2422	80,1	-	1/9/27/28	0/2/2/2
1	A2M	AA	3718	1	-	2/9/27/28	0/3/3/3
1	PSU	AA	3764	1	-	2/7/25/26	0/2/2/2
1	PSU	AA	4471	1	-	0/7/25/26	0/2/2/2
46	OMU	BA	172	46	-	0/9/27/28	0/2/2/2
46	G7M	BA	1639	46	-	2/7/25/26	0/3/3/3
46	A2M	BA	468	46	-	3/9/27/28	0/3/3/3
46	PSU	BA	1643	46	-	0/7/25/26	0/2/2/2
1	A2M	AA	3830	1	-	0/9/27/28	0/3/3/3
1	PSU	AA	4457	1	-	0/7/25/26	0/2/2/2
46	OMC	BA	1391	46	-	1/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	PSU	AA	4689	1	-	0/7/25/26	0/2/2/2
1	A2M	AA	3825	1	-	0/9/27/28	0/3/3/3
1	PSU	AA	4973	1	-	0/7/25/26	0/2/2/2
46	OMC	BA	1703	46	-	1/9/27/28	0/2/2/2
1	PSU	AA	3844	1	-	3/7/25/26	0/2/2/2
46	OMG	BA	1447	46	-	0/9/27/28	0/3/3/3
1	PSU	AA	4299	1	-	0/7/25/26	0/2/2/2
1	OMG	AA	1625	81,1	-	2/9/27/28	0/3/3/3
46	OMG	BA	1490	46,80	-	4/9/27/28	0/3/3/3
46	PSU	BA	1445	46	-	1/7/25/26	0/2/2/2
46	PSU	BA	1232	46	-	4/7/25/26	0/2/2/2
1	A2M	AA	3724	1	-	0/9/27/28	0/3/3/3
1	OMU	AA	4227	1	-	0/9/27/28	0/2/2/2
1	OMC	AA	3841	1	-	0/9/27/28	0/2/2/2
1	PSU	AA	3762	1	-	2/7/25/26	0/2/2/2
1	OMU	AA	4620	1	-	0/9/27/28	0/2/2/2
1	PSU	AA	1744	1	-	0/7/25/26	0/2/2/2
46	PSU	BA	1177	46	-	0/7/25/26	0/2/2/2
1	A2M	AA	1323	1	-	4/9/27/28	0/3/3/3
46	A2M	BA	484	46	-	1/9/27/28	0/3/3/3
1	PSU	AA	4673	81,1	-	0/7/25/26	0/2/2/2
46	OMG	BA	867	46	-	0/9/27/28	0/3/3/3
1	PSU	AA	1862	1	-	0/7/25/26	0/2/2/2
1	OMU	AA	2415	1	-	0/9/27/28	0/2/2/2
1	5MC	AA	3782	80,1	-	0/7/25/26	0/2/2/2
1	OMG	AA	4494	1	-	0/9/27/28	0/3/3/3
1	PSU	AA	3768	1	-	0/7/25/26	0/2/2/2
46	PSU	BA	1692	46	-	0/7/25/26	0/2/2/2
1	A2M	AA	4590	1	-	1/9/27/28	0/3/3/3
46	PSU	BA	1056	46	-	0/7/25/26	0/2/2/2
46	OMC	BA	1272	46	-	0/9/27/28	0/2/2/2
3	OMU	AC	14	1,3	-	0/9/27/28	0/2/2/2
72	IAS	Ba	138	72	-	1/7/7/8	-
46	OMG	BA	436	46	-	0/9/27/28	0/3/3/3
1	PSU	AA	3770	1	-	0/7/25/26	0/2/2/2
1	OMC	AA	3869	1	-	0/9/27/28	0/2/2/2
1	OMC	AA	3701	81,1	-	4/9/27/28	0/2/2/2
1	PSU	AA	1582	1	-	3/7/25/26	0/2/2/2
1	OMG	AA	2876	1	-	0/9/27/28	0/3/3/3
1	OMC	AA	3808	1	-	0/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	PSU	AA	3730	1	-	0/7/25/26	0/2/2/2
1	6MZ	AA	4220	1	-	0/9/27/28	0/3/3/3
46	OMU	BA	354	46	-	0/9/27/28	0/2/2/2
1	UY1	AA	3818	81,1	-	4/9/27/28	0/2/2/2
46	PSU	BA	822	46	-	1/7/25/26	0/2/2/2
1	PSU	AA	4636	1	-	3/7/25/26	0/2/2/2
1	PSU	AA	4353	1	-	0/7/25/26	0/2/2/2
46	PSU	BA	649	46	-	0/7/25/26	0/2/2/2
3	PSU	AC	69	3	-	0/7/25/26	0/2/2/2
1	PSU	AA	4361	1	-	0/7/25/26	0/2/2/2
46	OMC	BA	462	46	-	0/9/27/28	0/2/2/2
1	OMC	AA	3887	1	-	1/9/27/28	0/2/2/2
46	OMC	BA	174	46	-	0/9/27/28	0/2/2/2
1	A2M	AA	2401	1	-	0/9/27/28	0/3/3/3
1	OMU	AA	4498	80,1	-	0/9/27/28	0/2/2/2
46	PSU	BA	1046	46	-	0/7/25/26	0/2/2/2
1	A2M	AA	2815	81,1	-	0/9/27/28	0/3/3/3
46	PSU	BA	119	46,80	-	0/7/25/26	0/2/2/2
46	PSU	BA	63	46	-	0/7/25/26	0/2/2/2
46	OMU	BA	1442	46	-	0/9/27/28	0/2/2/2
46	PSU	BA	1625	46	-	0/7/25/26	0/2/2/2
1	PSU	AA	4576	1	-	0/7/25/26	0/2/2/2
1	PSU	AA	3884	1	-	0/7/25/26	0/2/2/2
46	PSU	BA	1244	46	-	2/7/25/26	0/2/2/2
46	PSU	BA	1347	46	-	0/7/25/26	0/2/2/2
46	PSU	BA	109	46	-	0/7/25/26	0/2/2/2
46	PSU	BA	1003	46	-	0/7/25/26	0/2/2/2
46	PSU	BA	651	46	-	0/7/25/26	0/2/2/2
1	PSU	AA	1860	1	-	0/7/25/26	0/2/2/2
1	PSU	AA	2508	1	-	0/7/25/26	0/2/2/2
1	PSU	AA	4493	81,1	-	0/7/25/26	0/2/2/2
1	OMG	AA	1522	1	-	0/9/27/28	0/3/3/3
1	A2M	AA	1534	80,1	-	2/9/27/28	0/3/3/3
1	OMG	AA	1316	1	-	0/9/27/28	0/3/3/3
1	PSU	AA	1792	1	-	0/7/25/26	0/2/2/2
1	OMC	AA	1881	80,1	-	0/9/27/28	0/2/2/2
1	PSU	AA	4972	1	-	0/7/25/26	0/2/2/2
46	PSU	BA	918	46	-	2/7/25/26	0/2/2/2
1	OMG	AA	2364	1	-	2/9/27/28	0/3/3/3
1	OMU	AA	3925	1	-	0/9/27/28	0/2/2/2
46	UY1	BA	1326	46	-	4/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
46	OMU	BA	121	46	-	0/9/27/28	0/2/2/2
1	PSU	AA	2632	1	-	0/7/25/26	0/2/2/2
46	PSU	BA	572	46	-	0/7/25/26	0/2/2/2
46	PSU	BA	866	46	-	0/7/25/26	0/2/2/2
1	OMG	AA	4499	1	-	0/9/27/28	0/3/3/3
1	1MA	AA	1322	80,1	-	1/7/25/26	0/3/3/3
46	PSU	BA	1174	46	-	0/7/25/26	0/2/2/2
1	OMC	AA	2351	80,1	-	1/9/27/28	0/2/2/2
1	PSU	AA	5010	1	-	0/7/25/26	0/2/2/2
46	PSU	BA	406	46	-	0/7/25/26	0/2/2/2
1	PSU	AA	5001	1	-	0/7/25/26	0/2/2/2
1	PSU	AA	3920	80,1	-	0/7/25/26	0/2/2/2
1	A2M	AA	400	1	-	0/9/27/28	0/3/3/3
1	PSU	AA	4442	1	-	0/7/25/26	0/2/2/2
1	OMC	AA	4456	1	-	0/9/27/28	0/2/2/2
1	PSU	AA	3637	81,1	-	0/7/25/26	0/2/2/2
1	PSU	AA	4312	1	-	0/7/25/26	0/2/2/2
46	PSU	BA	34	46	-	0/7/25/26	0/2/2/2
1	PSU	AA	2839	1	-	0/7/25/26	0/2/2/2
1	OMG	AA	4370	1	-	0/9/27/28	0/3/3/3
46	A2M	BA	512	46	-	2/9/27/28	0/3/3/3
1	OMC	AA	2365	80,1	-	0/9/27/28	0/2/2/2
46	OMG	BA	601	46	-	0/9/27/28	0/3/3/3
46	4AC	BA	1337	46	-	1/11/29/30	0/2/2/2
1	PSU	AA	1779	1	-	0/7/25/26	0/2/2/2
46	PSU	BA	1360	46,80,81	-	0/7/25/26	0/2/2/2
1	PSU	AA	3853	80,1	-	0/7/25/26	0/2/2/2
46	A2M	BA	668	46,80	-	2/9/27/28	0/3/3/3
1	PSU	AA	4552	1	-	0/7/25/26	0/2/2/2
46	PSU	BA	1136	46	-	0/7/25/26	0/2/2/2
1	PSU	AA	4628	1	-	0/7/25/26	0/2/2/2
1	PSU	AA	4532	1	-	0/7/25/26	0/2/2/2
1	OMG	AA	4623	1	-	0/9/27/28	0/3/3/3
1	PSU	AA	4423	1	-	0/7/25/26	0/2/2/2
46	PSU	BA	1596	46	-	0/7/25/26	0/2/2/2
46	PSU	BA	863	46	-	0/7/25/26	0/2/2/2
1	PSU	AA	4403	1	-	0/7/25/26	0/2/2/2
1	OMG	AA	3627	1	-	0/9/27/28	0/3/3/3
46	PSU	BA	1045	46	-	2/7/25/26	0/2/2/2
1	PSU	AA	3695	1	-	0/7/25/26	0/2/2/2
46	MA6	BA	1851	46	-	5/11/29/30	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
46	PSU	BA	1367	46	-	1/7/25/26	0/2/2/2
1	A2M	AA	3867	1	-	1/9/27/28	0/3/3/3
1	OMG	AA	4196	80,1	-	0/9/27/28	0/3/3/3
46	OMG	BA	644	46	-	0/9/27/28	0/3/3/3
46	OMU	BA	428	46	-	6/9/27/28	0/2/2/2
46	A2M	BA	576	46	-	1/9/27/28	0/3/3/3
59	NMM	BN	67	59	-	2/9/11/13	-
46	OMC	BA	517	46	-	0/9/27/28	0/2/2/2
46	PSU	BA	1004	46	-	0/7/25/26	0/2/2/2
1	PSU	AA	2843	1	-	0/7/25/26	0/2/2/2
1	PSU	AA	3715	1	-	0/7/25/26	0/2/2/2
1	OMU	AA	4306	1	-	0/9/27/28	0/2/2/2
46	PSU	BA	93	46	-	0/7/25/26	0/2/2/2
46	A2M	BA	99	46,80	-	2/9/27/28	0/3/3/3
46	PSU	BA	300	46	-	0/7/25/26	0/2/2/2
1	OMG	AA	4392	1	-	0/9/27/28	0/3/3/3
1	PSU	AA	1781	1	-	1/7/25/26	0/2/2/2
1	OMC	AA	2824	1	-	0/9/27/28	0/2/2/2
1	A2M	AA	398	1	-	2/9/27/28	0/3/3/3
1	PSU	AA	4579	1	-	0/7/25/26	0/2/2/2
1	OMG	AA	4618	1	-	0/9/27/28	0/3/3/3
46	PSU	BA	100	46,80	-	2/7/25/26	0/2/2/2
46	PSU	BA	966	46	-	1/7/25/26	0/2/2/2
46	6MZ	BA	1832	46,81	-	4/9/27/28	0/3/3/3
46	PSU	BA	686	46	-	0/7/25/26	0/2/2/2
46	PSU	BA	667	46	-	4/7/25/26	0/2/2/2
1	OMG	AA	3744	1	-	0/9/27/28	0/3/3/3
1	OMG	AA	4637	81,1	-	2/9/27/28	0/3/3/3
1	OMG	AA	3899	80,1	-	0/9/27/28	0/3/3/3
1	OMC	AA	4536	1	-	0/9/27/28	0/2/2/2
1	OMG	AA	4228	1	-	0/9/27/28	0/3/3/3
1	PSU	AA	3639	1	-	0/7/25/26	0/2/2/2
1	A2M	AA	4571	1	-	0/9/27/28	0/3/3/3
46	PSU	BA	609	46	-	0/7/25/26	0/2/2/2
46	A2M	BA	27	46,80	-	0/9/27/28	0/3/3/3
46	PSU	BA	105	46	-	0/7/25/26	0/2/2/2
1	PSU	AA	1536	1	-	0/7/25/26	0/2/2/2
1	A2M	AA	1871	80,1	-	0/9/27/28	0/3/3/3
46	OMG	BA	509	46,80	-	1/9/27/28	0/3/3/3
1	PSU	AA	4296	1	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
46	PSU	BA	366	46	-	0/7/25/26	0/2/2/2
1	PSU	AA	3822	1	-	0/7/25/26	0/2/2/2
1	A2M	AA	4523	80,1	-	0/9/27/28	0/3/3/3
1	A2M	AA	2363	80,1	-	0/9/27/28	0/3/3/3
1	UR3	AA	4530	1	-	0/7/25/26	0/2/2/2
46	A2M	BA	1678	46	-	0/9/27/28	0/3/3/3
46	PSU	BA	815	46	-	0/7/25/26	0/2/2/2
46	PSU	BA	814	46	-	0/7/25/26	0/2/2/2
46	PSU	BA	681	46	-	0/7/25/26	0/2/2/2
1	OMC	AA	2804	1	-	0/9/27/28	0/2/2/2
46	OMU	BA	1288	46	-	2/9/27/28	0/2/2/2
46	A2M	BA	590	46	-	5/9/27/28	0/3/3/3
46	PSU	BA	1186	46	-	0/7/25/26	0/2/2/2
1	OMG	AA	3792	1	-	0/9/27/28	0/3/3/3
1	PSU	AA	1782	1	-	0/7/25/26	0/2/2/2
46	OMG	BA	683	46	-	0/9/27/28	0/3/3/3
46	4AC	BA	1842	46	-	0/11/29/30	0/2/2/2
46	PSU	BA	296	46	-	2/7/25/26	0/2/2/2
46	PSU	BA	218	46	-	0/7/25/26	0/2/2/2
1	A2M	AA	1326	1	-	2/9/27/28	0/3/3/3
1	A2M	AA	3785	80,1	-	2/9/27/28	0/3/3/3
46	OMU	BA	1804	46	-	3/9/27/28	0/2/2/2
1	OMC	AA	1340	1	-	0/9/27/28	0/2/2/2
46	B8N	BA	1248	46	-	3/16/34/35	0/2/2/2
1	PSU	AA	4500	1	-	3/7/25/26	0/2/2/2
1	PSU	AA	4521	80,81,1	-	0/7/25/26	0/2/2/2
1	5MC	AA	4447	81,1	-	4/7/25/26	0/2/2/2
5	HIC	AE	245	5	-	0/5/6/8	0/1/1/1
46	MA6	BA	1850	46	-	2/11/29/30	0/3/3/3
1	PSU	AA	1677	1	-	1/7/25/26	0/2/2/2
29	V5N	Ac	39	29	-	0/9/10/12	0/1/1/1
46	OMG	BA	1328	46	-	0/9/27/28	0/3/3/3
1	PSU	AA	4293	1	-	0/7/25/26	0/2/2/2
46	PSU	BA	1238	46	-	1/7/25/26	0/2/2/2
46	PSU	BA	36	46	-	0/7/25/26	0/2/2/2
1	PSU	AA	4431	1	-	0/7/25/26	0/2/2/2
1	OMC	AA	2861	1	-	0/9/27/28	0/2/2/2
1	A2M	AA	1524	1	-	2/9/27/28	0/3/3/3
46	A2M	BA	1031	46	-	0/9/27/28	0/3/3/3
46	A2M	BA	159	46	-	1/9/27/28	0/3/3/3

All (601) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
46	BA	1326	UY1	C6-C5	11.93	1.49	1.35
1	AA	3818	UY1	C6-C5	11.36	1.48	1.35
46	BA	1639	G7M	C8-N7	10.68	1.52	1.33
46	BA	1639	G7M	C2'-C3'	-10.42	1.24	1.53
46	BA	1326	UY1	C2-N1	9.67	1.49	1.36
1	AA	3818	UY1	C2-N1	9.41	1.49	1.36
46	BA	1326	UY1	C2-N3	7.68	1.50	1.37
1	AA	3818	UY1	C2-N3	7.56	1.50	1.37
46	BA	1639	G7M	O4'-C4'	-6.52	1.30	1.45
46	BA	1639	G7M	C2-N3	6.51	1.48	1.33
46	BA	1639	G7M	C4-N3	6.00	1.48	1.34
46	BA	1326	UY1	C6-N1	5.64	1.45	1.36
46	BA	1639	G7M	C2-N2	5.63	1.47	1.34
46	BA	1639	G7M	C3'-C4'	5.42	1.66	1.53
46	BA	1639	G7M	C8-N9	5.39	1.50	1.35
46	BA	1639	G7M	C1'-N9	-5.31	1.32	1.47
46	BA	1639	G7M	C5-N7	5.27	1.45	1.39
1	AA	3818	UY1	C6-N1	5.24	1.44	1.36
46	BA	512	A2M	C5-C4	4.72	1.47	1.39
46	BA	590	A2M	C5-C4	4.71	1.47	1.39
46	BA	1832	6MZ	C5-C4	4.65	1.47	1.39
46	BA	468	A2M	C5-C4	4.61	1.47	1.39
46	BA	1383	A2M	C5-C4	4.57	1.47	1.39
46	BA	576	A2M	C5-C4	4.56	1.47	1.39
46	BA	159	A2M	C5-C4	4.55	1.47	1.39
46	BA	484	A2M	C5-C4	4.53	1.47	1.39
46	BA	166	A2M	C5-C4	4.51	1.47	1.39
46	BA	1851	MA6	C5-C4	4.49	1.47	1.39
1	AA	3718	A2M	C5-C4	4.48	1.47	1.39
46	BA	1850	MA6	C5-C4	4.47	1.47	1.39
46	BA	27	A2M	C5-C4	4.46	1.47	1.39
59	BN	67	NMM	CZ-NH2	4.45	1.45	1.34
46	BA	668	A2M	C5-C4	4.44	1.47	1.39
1	AA	3867	A2M	C5-C4	4.44	1.47	1.39
46	BA	1678	A2M	C5-C4	4.44	1.47	1.39
1	AA	2815	A2M	C5-C4	4.43	1.47	1.39
46	BA	1031	A2M	C5-C4	4.41	1.47	1.39
46	BA	99	A2M	C5-C4	4.39	1.47	1.39
1	AA	2363	A2M	C5-C4	4.39	1.47	1.39
1	AA	4571	A2M	C5-C4	4.37	1.47	1.39
1	AA	3830	A2M	C5-C4	4.33	1.47	1.39
1	AA	1323	A2M	C5-C4	4.32	1.47	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	AA	1326	A2M	C5-C4	4.31	1.47	1.39
1	AA	4220	6MZ	C5-C4	4.30	1.47	1.39
1	AA	398	A2M	C5-C4	4.28	1.47	1.39
1	AA	2401	A2M	C5-C4	4.27	1.47	1.39
1	AA	1524	A2M	C5-C4	4.26	1.47	1.39
1	AA	3724	A2M	C5-C4	4.25	1.47	1.39
1	AA	4590	A2M	C5-C4	4.25	1.46	1.39
1	AA	1534	A2M	C5-C4	4.24	1.46	1.39
1	AA	3825	A2M	C5-C4	4.24	1.46	1.39
1	AA	400	A2M	C5-C4	4.21	1.46	1.39
1	AA	2787	A2M	C5-C4	4.20	1.46	1.39
1	AA	1871	A2M	C5-C4	4.19	1.46	1.39
46	BA	1639	G7M	O4'-C1'	4.18	1.51	1.42
1	AA	3785	A2M	C5-C4	4.12	1.46	1.39
1	AA	4523	A2M	C5-C4	4.10	1.46	1.39
46	BA	1326	UY1	C4-N3	3.96	1.46	1.38
46	BA	1842	4AC	C5-C4	3.90	1.49	1.40
46	BA	1367	PSU	C2'-C1'	-3.87	1.48	1.53
1	AA	3818	UY1	C4-N3	3.80	1.45	1.38
46	BA	1639	G7M	C5-C6	3.75	1.53	1.43
46	BA	1639	G7M	C2-N1	3.73	1.46	1.37
46	BA	1337	4AC	C5-C4	3.72	1.48	1.40
46	BA	1639	G7M	C6-N1	3.55	1.45	1.38
46	BA	649	PSU	C6-C5	3.33	1.39	1.35
46	BA	822	PSU	C6-C5	3.32	1.39	1.35
46	BA	1232	PSU	C6-C5	3.31	1.39	1.35
46	BA	1244	PSU	C6-C5	3.30	1.39	1.35
1	AA	1677	PSU	C6-C5	3.28	1.39	1.35
1	AA	3770	PSU	C6-C5	3.28	1.39	1.35
46	BA	1596	PSU	C6-C5	3.28	1.39	1.35
46	BA	866	PSU	C6-C5	3.25	1.39	1.35
46	BA	93	PSU	C6-C5	3.25	1.39	1.35
46	BA	609	PSU	C6-C5	3.24	1.39	1.35
46	BA	119	PSU	C6-C5	3.24	1.39	1.35
46	BA	686	PSU	C6-C5	3.24	1.39	1.35
1	AA	3762	PSU	C6-C5	3.24	1.39	1.35
46	BA	63	PSU	C6-C5	3.23	1.39	1.35
46	BA	801	PSU	C6-C5	3.23	1.39	1.35
46	BA	218	PSU	C6-C5	3.21	1.39	1.35
46	BA	1490	OMG	C5-C4	3.18	1.47	1.38
46	BA	1625	PSU	C6-C5	3.18	1.39	1.35
46	BA	36	PSU	C6-C5	3.17	1.39	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
46	BA	1003	PSU	C6-C5	3.17	1.39	1.35
46	BA	34	PSU	C6-C5	3.17	1.39	1.35
46	BA	100	PSU	C6-C5	3.17	1.39	1.35
1	AA	3764	PSU	C6-C5	3.16	1.39	1.35
46	BA	1046	PSU	C6-C5	3.15	1.39	1.35
46	BA	1004	PSU	C6-C5	3.14	1.39	1.35
46	BA	509	OMG	C5-C4	3.14	1.47	1.38
46	BA	1639	G7M	O2'-C2'	3.13	1.50	1.43
46	BA	1692	PSU	C6-C5	3.13	1.39	1.35
46	BA	300	PSU	C6-C5	3.13	1.39	1.35
46	BA	1367	PSU	C2-N1	-3.13	1.32	1.36
1	AA	3637	PSU	C4-N3	-3.12	1.33	1.38
46	BA	105	PSU	C6-C5	3.12	1.39	1.35
46	BA	644	OMG	C5-C4	3.12	1.47	1.38
1	AA	1860	PSU	C6-C5	3.11	1.39	1.35
46	BA	918	PSU	C6-C5	3.11	1.38	1.35
1	AA	3715	PSU	C6-C5	3.10	1.38	1.35
46	BA	651	PSU	C6-C5	3.10	1.38	1.35
46	BA	109	PSU	C6-C5	3.10	1.38	1.35
46	BA	815	PSU	C6-C5	3.10	1.38	1.35
46	BA	1360	PSU	C6-C5	3.10	1.38	1.35
46	BA	667	PSU	C6-C5	3.10	1.38	1.35
46	BA	814	PSU	C6-C5	3.09	1.38	1.35
46	BA	867	OMG	C5-C4	3.09	1.47	1.38
46	BA	1328	OMG	C5-C4	3.08	1.47	1.38
46	BA	1056	PSU	C6-C5	3.08	1.38	1.35
3	AC	55	PSU	C6-C5	3.08	1.38	1.35
46	BA	601	OMG	C5-C4	3.08	1.47	1.38
46	BA	1238	PSU	C6-C5	3.07	1.38	1.35
46	BA	1447	OMG	C5-C4	3.06	1.47	1.38
46	BA	966	PSU	C6-C5	3.05	1.38	1.35
46	BA	1347	PSU	C6-C5	3.05	1.38	1.35
46	BA	1643	PSU	C6-C5	3.05	1.38	1.35
46	BA	1177	PSU	C6-C5	3.05	1.38	1.35
46	BA	572	PSU	C6-C5	3.04	1.38	1.35
46	BA	436	OMG	C5-C4	3.03	1.47	1.38
1	AA	4493	PSU	C6-C5	3.03	1.38	1.35
46	BA	863	PSU	C6-C5	3.02	1.38	1.35
1	AA	1322	1MA	C6-N6	3.02	1.35	1.28
1	AA	4431	PSU	C6-C5	3.02	1.38	1.35
46	BA	1136	PSU	C6-C5	3.02	1.38	1.35
1	AA	4500	PSU	C6-C5	3.01	1.38	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	AA	3768	PSU	C6-C5	3.01	1.38	1.35
46	BA	296	PSU	C6-C5	3.01	1.38	1.35
1	AA	1683	PSU	C6-C5	3.01	1.38	1.35
1	AA	2424	OMG	C5-C4	3.00	1.47	1.38
1	AA	3920	PSU	C4-N3	-3.00	1.33	1.38
1	AA	3792	OMG	C5-C4	3.00	1.47	1.38
1	AA	4196	OMG	C5-C4	3.00	1.47	1.38
1	AA	4576	PSU	C6-C5	2.99	1.38	1.35
3	AC	75	OMG	C5-C4	2.99	1.47	1.38
1	AA	1779	PSU	C6-C5	2.99	1.38	1.35
1	AA	1536	PSU	C6-C5	2.99	1.38	1.35
1	AA	5001	PSU	C6-C5	2.99	1.38	1.35
46	BA	1045	PSU	C6-C5	2.98	1.38	1.35
1	AA	4403	PSU	C4-N3	-2.98	1.33	1.38
46	BA	683	OMG	C5-C4	2.98	1.47	1.38
1	AA	1792	PSU	C6-C5	2.98	1.38	1.35
46	BA	1326	UY1	O4-C4	-2.97	1.17	1.23
1	AA	3822	PSU	C6-C5	2.97	1.38	1.35
1	AA	4521	PSU	C4-N3	-2.96	1.33	1.38
1	AA	4361	PSU	C6-C5	2.96	1.38	1.35
1	AA	4312	PSU	C6-C5	2.96	1.38	1.35
1	AA	1625	OMG	C5-C4	2.96	1.47	1.38
1	AA	4293	PSU	C6-C5	2.96	1.38	1.35
1	AA	2843	PSU	C4-N3	-2.95	1.33	1.38
1	AA	3744	OMG	C5-C4	2.95	1.47	1.38
1	AA	4296	PSU	C6-C5	2.95	1.38	1.35
1	AA	2843	PSU	C6-C5	2.94	1.38	1.35
1	AA	2839	PSU	C4-N3	-2.94	1.33	1.38
1	AA	4471	PSU	C6-C5	2.94	1.38	1.35
46	BA	1174	PSU	C6-C5	2.94	1.38	1.35
1	AA	1683	PSU	C4-N3	-2.93	1.33	1.38
1	AA	4361	PSU	C4-N3	-2.93	1.33	1.38
1	AA	4494	OMG	C5-C4	2.93	1.46	1.38
1	AA	4673	PSU	C6-C5	2.93	1.38	1.35
1	AA	4689	PSU	C6-C5	2.93	1.38	1.35
1	AA	3884	PSU	C6-C5	2.93	1.38	1.35
1	AA	3639	PSU	C4-N3	-2.93	1.33	1.38
1	AA	4972	PSU	C6-C5	2.92	1.38	1.35
1	AA	4471	PSU	C4-N3	-2.92	1.33	1.38
1	AA	1860	PSU	C4-N3	-2.92	1.33	1.38
3	AC	69	PSU	C6-C5	2.92	1.38	1.35
1	AA	4423	PSU	C6-C5	2.91	1.38	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	AA	4532	PSU	C6-C5	2.91	1.38	1.35
1	AA	4312	PSU	C4-N3	-2.91	1.33	1.38
46	BA	406	PSU	C6-C5	2.91	1.38	1.35
1	AA	4499	OMG	C5-C4	2.91	1.46	1.38
1	AA	3844	PSU	C4-N3	-2.91	1.33	1.38
1	AA	2632	PSU	C6-C5	2.91	1.38	1.35
1	AA	4673	PSU	C4-N3	-2.91	1.33	1.38
46	BA	1326	UY1	C1'-C5	2.91	1.56	1.50
1	AA	4636	PSU	C4-N3	-2.91	1.33	1.38
1	AA	1744	PSU	C6-C5	2.91	1.38	1.35
1	AA	4628	PSU	C6-C5	2.90	1.38	1.35
1	AA	1781	PSU	C6-C5	2.90	1.38	1.35
1	AA	2876	OMG	C5-C4	2.90	1.46	1.38
1	AA	1322	1MA	C5-C4	2.90	1.46	1.38
1	AA	3851	PSU	C6-C5	2.90	1.38	1.35
1	AA	3695	PSU	C6-C5	2.90	1.38	1.35
46	BA	1445	PSU	C6-C5	2.90	1.38	1.35
1	AA	4689	PSU	C4-N3	-2.90	1.33	1.38
1	AA	4620	OMU	C4-N3	-2.90	1.33	1.38
1	AA	3884	PSU	C4-N3	-2.90	1.33	1.38
1	AA	4973	PSU	C4-N3	-2.89	1.33	1.38
1	AA	3851	PSU	C4-N3	-2.89	1.33	1.38
1	AA	1779	PSU	C4-N3	-2.89	1.33	1.38
1	AA	1782	PSU	C6-C5	2.89	1.38	1.35
1	AA	4457	PSU	C4-N3	-2.89	1.33	1.38
1	AA	4353	PSU	C6-C5	2.89	1.38	1.35
1	AA	4628	PSU	C4-N3	-2.88	1.33	1.38
1	AA	1862	PSU	C4-N3	-2.88	1.33	1.38
1	AA	2364	OMG	C5-C4	2.88	1.46	1.38
1	AA	4431	PSU	C4-N3	-2.88	1.33	1.38
1	AA	4552	PSU	C4-N3	-2.88	1.33	1.38
1	AA	4637	OMG	C5-C4	2.87	1.46	1.38
1	AA	3844	PSU	C6-C5	2.87	1.38	1.35
1	AA	4618	OMG	C5-C4	2.87	1.46	1.38
46	BA	1186	PSU	C6-C5	2.86	1.38	1.35
1	AA	4392	OMG	C5-C4	2.86	1.46	1.38
46	BA	681	PSU	C6-C5	2.86	1.38	1.35
1	AA	4442	PSU	C4-N3	-2.86	1.33	1.38
1	AA	1744	PSU	C4-N3	-2.86	1.33	1.38
1	AA	4972	PSU	C4-N3	-2.86	1.33	1.38
1	AA	3730	PSU	C6-C5	2.86	1.38	1.35
3	AC	55	PSU	C4-N3	-2.85	1.33	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	AA	3627	OMG	C5-C4	2.85	1.46	1.38
1	AA	1782	PSU	C4-N3	-2.85	1.33	1.38
1	AA	4493	PSU	C4-N3	-2.85	1.33	1.38
1	AA	3853	PSU	C6-C5	2.85	1.38	1.35
1	AA	3853	PSU	C4-N3	-2.85	1.33	1.38
1	AA	1781	PSU	C4-N3	-2.85	1.33	1.38
1	AA	3639	PSU	C6-C5	2.85	1.38	1.35
1	AA	1582	PSU	C4-N3	-2.84	1.33	1.38
1	AA	3695	PSU	C4-N3	-2.84	1.33	1.38
1	AA	1522	OMG	C5-C4	2.84	1.46	1.38
1	AA	4299	PSU	C4-N3	-2.84	1.33	1.38
1	AA	4521	PSU	C6-C5	2.84	1.38	1.35
1	AA	4370	OMG	C5-C4	2.83	1.46	1.38
1	AA	2508	PSU	C6-C5	2.83	1.38	1.35
1	AA	4973	PSU	C6-C5	2.83	1.38	1.35
1	AA	3925	OMU	C4-N3	-2.83	1.33	1.38
1	AA	2508	PSU	C4-N3	-2.83	1.33	1.38
1	AA	4296	PSU	C4-N3	-2.83	1.33	1.38
1	AA	4623	OMG	C5-C4	2.82	1.46	1.38
1	AA	3822	PSU	C4-N3	-2.82	1.33	1.38
1	AA	5001	PSU	C4-N3	-2.82	1.33	1.38
1	AA	4392	OMG	C6-N1	-2.82	1.33	1.38
1	AA	3637	PSU	C6-C5	2.82	1.38	1.35
1	AA	4442	PSU	C6-C5	2.82	1.38	1.35
1	AA	3899	OMG	C5-C4	2.81	1.46	1.38
1	AA	4353	PSU	C4-N3	-2.81	1.33	1.38
1	AA	1862	PSU	C6-C5	2.81	1.38	1.35
1	AA	2632	PSU	C4-N3	-2.81	1.33	1.38
1	AA	4293	PSU	C4-N3	-2.80	1.33	1.38
46	BA	1186	PSU	C4-N3	-2.80	1.33	1.38
1	AA	1316	OMG	C5-C4	2.80	1.46	1.38
1	AA	1677	PSU	C4-N3	-2.79	1.33	1.38
1	AA	2839	PSU	C6-C5	2.79	1.38	1.35
46	BA	1177	PSU	C4-N3	-2.79	1.33	1.38
46	BA	1639	G7M	C4-N9	2.79	1.45	1.38
1	AA	4579	PSU	C4-N3	-2.79	1.33	1.38
46	BA	1174	PSU	C4-N3	-2.78	1.33	1.38
1	AA	4306	OMU	C4-N3	-2.78	1.33	1.38
46	BA	1445	PSU	C4-N3	-2.78	1.33	1.38
1	AA	4636	PSU	C6-C5	2.78	1.38	1.35
1	AA	5010	PSU	C6-C5	2.78	1.38	1.35
1	AA	4457	PSU	C6-C5	2.77	1.38	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	AA	4196	OMG	C6-N1	-2.77	1.33	1.38
1	AA	4447	5MC	C6-C5	2.77	1.39	1.34
46	BA	1004	PSU	C4-N3	-2.77	1.33	1.38
1	AA	3920	PSU	C6-C5	2.77	1.38	1.35
1	AA	4299	PSU	C6-C5	2.77	1.38	1.35
46	BA	109	PSU	C4-N3	-2.77	1.33	1.38
1	AA	4552	PSU	C6-C5	2.76	1.38	1.35
1	AA	1792	PSU	C4-N3	-2.76	1.33	1.38
1	AA	1582	PSU	C6-C5	2.75	1.38	1.35
46	BA	866	PSU	C4-N3	-2.75	1.33	1.38
1	AA	2837	OMU	C4-N3	-2.75	1.33	1.38
1	AA	4423	PSU	C4-N3	-2.74	1.33	1.38
1	AA	4576	PSU	C4-N3	-2.74	1.33	1.38
46	BA	366	PSU	C4-N3	-2.74	1.33	1.38
1	AA	3768	PSU	C4-N3	-2.74	1.33	1.38
46	BA	1232	PSU	C4-N3	-2.73	1.33	1.38
46	BA	576	A2M	C5-C6	2.73	1.48	1.41
1	AA	4228	OMG	C5-C4	2.73	1.46	1.38
1	AA	4500	PSU	C4-N3	-2.73	1.33	1.38
46	BA	1692	PSU	C4-N3	-2.72	1.33	1.38
1	AA	1536	PSU	C4-N3	-2.72	1.33	1.38
1	AA	4532	PSU	C4-N3	-2.72	1.33	1.38
1	AA	4227	OMU	C4-N3	-2.72	1.33	1.38
1	AA	4494	OMG	C6-N1	-2.72	1.33	1.38
1	AA	3818	UY1	O4-C4	-2.72	1.18	1.23
46	BA	159	A2M	C5-C6	2.71	1.48	1.41
46	BA	406	PSU	C4-N3	-2.71	1.33	1.38
3	AC	14	OMU	C4-N3	-2.71	1.33	1.38
1	AA	3715	PSU	C4-N3	-2.71	1.33	1.38
46	BA	590	A2M	C5-C6	2.71	1.48	1.41
46	BA	572	PSU	C4-N3	-2.71	1.33	1.38
46	BA	609	PSU	C4-N3	-2.71	1.33	1.38
46	BA	1490	OMG	C6-N1	-2.70	1.33	1.38
1	AA	3744	OMG	C6-N1	-2.70	1.33	1.38
46	BA	966	PSU	C4-N3	-2.70	1.33	1.38
3	AC	69	PSU	C4-N3	-2.70	1.33	1.38
46	BA	649	PSU	C4-N3	-2.70	1.33	1.38
46	BA	105	PSU	C4-N3	-2.69	1.33	1.38
46	BA	686	PSU	C4-N3	-2.69	1.33	1.38
1	AA	5010	PSU	C4-N3	-2.69	1.33	1.38
46	BA	93	PSU	C4-N3	-2.69	1.33	1.38
46	BA	1347	PSU	C4-N3	-2.69	1.33	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
46	BA	814	PSU	C4-N3	-2.68	1.33	1.38
46	BA	1383	A2M	C5-C6	2.68	1.48	1.41
46	BA	651	PSU	C4-N3	-2.68	1.33	1.38
1	AA	3770	PSU	C4-N3	-2.67	1.33	1.38
46	BA	815	PSU	C4-N3	-2.67	1.33	1.38
1	AA	3764	PSU	C4-N3	-2.67	1.33	1.38
1	AA	3792	OMG	C6-N1	-2.66	1.33	1.38
1	AA	3730	PSU	C4-N3	-2.66	1.33	1.38
46	BA	1678	A2M	C5-C6	2.66	1.48	1.41
1	AA	1316	OMG	C6-N1	-2.65	1.33	1.38
1	AA	2876	OMG	C6-N1	-2.65	1.33	1.38
1	AA	2415	OMU	C4-N3	-2.65	1.33	1.38
1	AA	3818	UY1	C1'-C5	2.65	1.56	1.50
46	BA	801	PSU	C4-N3	-2.65	1.33	1.38
46	BA	1045	PSU	C4-N3	-2.65	1.33	1.38
46	BA	34	PSU	C4-N3	-2.65	1.33	1.38
46	BA	1360	PSU	C4-N3	-2.64	1.33	1.38
46	BA	484	A2M	C5-C6	2.64	1.48	1.41
46	BA	681	PSU	C4-N3	-2.64	1.33	1.38
46	BA	1625	PSU	C4-N3	-2.64	1.33	1.38
46	BA	296	PSU	C4-N3	-2.64	1.33	1.38
46	BA	822	PSU	C4-N3	-2.64	1.33	1.38
1	AA	4579	PSU	C6-C5	2.64	1.38	1.35
1	AA	4637	OMG	C6-N1	-2.64	1.33	1.38
46	BA	644	OMG	C6-N1	-2.63	1.33	1.38
46	BA	1003	PSU	C4-N3	-2.63	1.33	1.38
1	AA	3899	OMG	C6-N1	-2.63	1.34	1.38
1	AA	4623	OMG	C6-N1	-2.63	1.34	1.38
1	AA	1625	OMG	C6-N1	-2.63	1.34	1.38
46	BA	1832	6MZ	C5-C6	2.63	1.48	1.41
46	BA	1851	MA6	C5-C6	2.63	1.48	1.41
46	BA	1244	PSU	C4-N3	-2.63	1.34	1.38
46	BA	668	A2M	C5-C6	2.62	1.48	1.41
1	AA	2787	A2M	C5-N7	-2.62	1.34	1.39
46	BA	366	PSU	C6-C5	2.62	1.38	1.35
1	AA	3762	PSU	C4-N3	-2.62	1.34	1.38
46	BA	218	PSU	C4-N3	-2.62	1.34	1.38
46	BA	1056	PSU	C4-N3	-2.61	1.34	1.38
46	BA	1643	PSU	C4-N3	-2.61	1.34	1.38
46	BA	667	PSU	C4-N3	-2.61	1.34	1.38
46	BA	27	A2M	C5-C6	2.61	1.48	1.41
46	BA	121	OMU	C4-N3	-2.61	1.33	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
46	BA	63	PSU	C4-N3	-2.61	1.34	1.38
46	BA	1596	PSU	C4-N3	-2.61	1.34	1.38
1	AA	3627	OMG	C6-N1	-2.61	1.34	1.38
46	BA	300	PSU	C4-N3	-2.61	1.34	1.38
1	AA	4498	OMU	C4-N3	-2.60	1.33	1.38
46	BA	1136	PSU	C4-N3	-2.60	1.34	1.38
1	AA	4499	OMG	C6-N1	-2.60	1.34	1.38
1	AA	2815	A2M	C5-C6	2.60	1.48	1.41
1	AA	4403	PSU	C6-C5	2.59	1.38	1.35
46	BA	1046	PSU	C4-N3	-2.59	1.34	1.38
46	BA	1238	PSU	C4-N3	-2.59	1.34	1.38
46	BA	100	PSU	C4-N3	-2.59	1.34	1.38
46	BA	863	PSU	C4-N3	-2.59	1.34	1.38
1	AA	1326	A2M	C5-N7	-2.59	1.34	1.39
1	AA	4618	OMG	C6-N1	-2.59	1.34	1.38
46	BA	119	PSU	C4-N3	-2.58	1.34	1.38
1	AA	3825	A2M	C5-C6	2.58	1.48	1.41
3	AC	75	OMG	C6-N1	-2.58	1.34	1.38
46	BA	166	A2M	C5-C6	2.58	1.48	1.41
46	BA	512	A2M	C5-C6	2.58	1.48	1.41
46	BA	468	A2M	C5-C6	2.58	1.48	1.41
46	BA	918	PSU	C4-N3	-2.58	1.34	1.38
1	AA	1534	A2M	C5-C6	2.57	1.48	1.41
46	BA	1367	PSU	C4-N3	-2.57	1.34	1.38
1	AA	4370	OMG	C6-N1	-2.56	1.34	1.38
46	BA	428	OMU	C4-N3	-2.56	1.34	1.38
1	AA	3724	A2M	C5-C6	2.56	1.48	1.41
46	BA	1850	MA6	C5-C6	2.56	1.48	1.41
1	AA	1522	OMG	C6-N1	-2.56	1.34	1.38
46	BA	99	A2M	C5-C6	2.55	1.48	1.41
1	AA	4228	OMG	C6-N1	-2.55	1.34	1.38
46	BA	436	OMG	C6-N1	-2.55	1.34	1.38
46	BA	1328	OMG	C6-N1	-2.55	1.34	1.38
1	AA	4220	6MZ	C5-N7	-2.55	1.34	1.39
1	AA	3718	A2M	C5-N7	-2.55	1.34	1.39
1	AA	4571	A2M	C5-C6	2.54	1.48	1.41
46	BA	172	OMU	C4-N3	-2.54	1.34	1.38
46	BA	354	OMU	C4-N3	-2.54	1.34	1.38
46	BA	601	OMG	C6-N1	-2.53	1.34	1.38
1	AA	2364	OMG	C6-N1	-2.53	1.34	1.38
46	BA	1031	A2M	C5-C6	2.53	1.48	1.41
1	AA	2424	OMG	C6-N1	-2.52	1.34	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	AA	1524	A2M	C5-C6	2.52	1.48	1.41
46	BA	509	OMG	C6-N1	-2.52	1.34	1.38
46	BA	36	PSU	C4-N3	-2.52	1.34	1.38
1	AA	3867	A2M	C5-C6	2.50	1.48	1.41
1	AA	4590	A2M	C5-C6	2.50	1.48	1.41
1	AA	2363	A2M	C5-C6	2.50	1.48	1.41
1	AA	398	A2M	C5-C6	2.49	1.48	1.41
1	AA	1323	A2M	C5-C6	2.49	1.48	1.41
1	AA	3830	A2M	C5-C6	2.49	1.48	1.41
46	BA	1442	OMU	C4-N3	-2.49	1.34	1.38
1	AA	400	A2M	C5-C6	2.48	1.48	1.41
1	AA	1524	A2M	C5-N7	-2.47	1.34	1.39
1	AA	2401	A2M	C5-N7	-2.47	1.34	1.39
1	AA	3782	5MC	C6-C5	2.47	1.38	1.34
46	BA	1804	OMU	C4-N3	-2.46	1.34	1.38
46	BA	867	OMG	C6-N1	-2.45	1.34	1.38
1	AA	3925	OMU	C2-N3	-2.45	1.33	1.38
1	AA	3718	A2M	C5-C6	2.45	1.47	1.41
1	AA	4620	OMU	C2-N3	-2.44	1.33	1.38
46	BA	512	A2M	C5-N7	-2.44	1.34	1.39
46	BA	99	A2M	C8-N7	2.44	1.36	1.31
46	BA	1248	B8N	C4-N3	-2.44	1.35	1.40
1	AA	1625	OMG	C5-N7	-2.44	1.34	1.39
46	BA	683	OMG	C6-N1	-2.43	1.34	1.38
1	AA	2363	A2M	C5-N7	-2.43	1.34	1.39
46	BA	1447	OMG	C6-N1	-2.43	1.34	1.38
1	AA	2876	OMG	C5-N7	-2.42	1.34	1.39
1	AA	3785	A2M	C5-N7	-2.41	1.34	1.39
1	AA	3637	PSU	C2-N3	-2.41	1.33	1.37
46	BA	1288	OMU	C4-N3	-2.41	1.34	1.38
1	AA	4447	5MC	C6-N1	-2.41	1.33	1.38
1	AA	4227	OMU	C2-N3	-2.40	1.33	1.38
1	AA	4306	OMU	C2-N3	-2.40	1.33	1.38
1	AA	4571	A2M	C5-N7	-2.40	1.34	1.39
1	AA	2424	OMG	C5-N7	-2.40	1.34	1.39
1	AA	4523	A2M	C5-N7	-2.39	1.34	1.39
46	BA	116	OMU	C4-N3	-2.39	1.34	1.38
46	BA	1031	A2M	C5-N7	-2.39	1.34	1.39
46	BA	668	A2M	C8-N7	2.39	1.36	1.31
1	AA	2401	A2M	C5-C6	2.39	1.47	1.41
1	AA	1323	A2M	C5-N7	-2.39	1.34	1.39
1	AA	4228	OMG	C4-N9	-2.38	1.31	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	AA	4523	A2M	C5-C6	2.38	1.47	1.41
1	AA	3785	A2M	C5-C6	2.38	1.47	1.41
1	AA	4196	OMG	C5-N7	-2.38	1.34	1.39
1	AA	1326	A2M	C5-C6	2.38	1.47	1.41
1	AA	1871	A2M	C5-C6	2.37	1.47	1.41
1	AA	1316	OMG	C5-N7	-2.37	1.34	1.39
46	BA	484	A2M	C5-N7	-2.37	1.34	1.39
1	AA	3782	5MC	C6-N1	-2.36	1.34	1.38
46	BA	590	A2M	C5-N7	-2.36	1.34	1.39
1	AA	2815	A2M	C5-N7	-2.36	1.34	1.39
1	AA	2787	A2M	C5-C6	2.35	1.47	1.41
46	BA	1851	MA6	C8-N7	2.35	1.36	1.31
1	AA	3792	OMG	C5-N7	-2.34	1.34	1.39
1	AA	3825	A2M	C5-N7	-2.34	1.34	1.39
1	AA	3724	A2M	C8-N7	2.33	1.36	1.31
46	BA	1288	OMU	C2-N1	2.33	1.42	1.38
1	AA	1871	A2M	C5-N7	-2.33	1.34	1.39
1	AA	4392	OMG	C5-N7	-2.33	1.34	1.39
46	BA	572	PSU	O4'-C1'	-2.33	1.40	1.43
46	BA	1832	6MZ	C5-N7	-2.33	1.34	1.39
1	AA	3867	A2M	C5-N7	-2.33	1.34	1.39
1	AA	3830	A2M	C5-N7	-2.33	1.34	1.39
46	BA	468	A2M	C5-N7	-2.32	1.34	1.39
1	AA	4637	OMG	C5-N7	-2.32	1.34	1.39
46	BA	159	A2M	C8-N7	2.32	1.36	1.31
1	AA	2837	OMU	C2-N3	-2.32	1.33	1.38
1	AA	2364	OMG	C5-N7	-2.31	1.34	1.39
1	AA	4494	OMG	C5-N7	-2.31	1.34	1.39
1	AA	1534	A2M	C5-N7	-2.31	1.34	1.39
46	BA	27	A2M	C8-N7	2.31	1.36	1.31
1	AA	4498	OMU	C2-N3	-2.31	1.33	1.38
46	BA	166	A2M	C8-N7	2.30	1.36	1.31
1	AA	400	A2M	C5-N7	-2.30	1.34	1.39
46	BA	509	OMG	C5-N7	-2.30	1.34	1.39
46	BA	1383	A2M	C8-N7	2.30	1.35	1.31
46	BA	99	A2M	C5-N7	-2.30	1.34	1.39
46	BA	1851	MA6	C5-N7	-2.30	1.34	1.39
3	AC	14	OMU	C2-N3	-2.30	1.33	1.38
46	BA	1678	A2M	C8-N7	2.29	1.35	1.31
46	BA	576	A2M	C8-N7	2.29	1.35	1.31
1	AA	4499	OMG	C5-N7	-2.29	1.34	1.39
46	BA	576	A2M	C5-N7	-2.29	1.34	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
46	BA	1490	OMG	C5-N7	-2.29	1.34	1.39
1	AA	3830	A2M	C8-N7	2.28	1.35	1.31
46	BA	484	A2M	C8-N7	2.28	1.35	1.31
46	BA	159	A2M	C5-N7	-2.27	1.34	1.39
46	BA	1850	MA6	C8-N7	2.27	1.35	1.31
1	AA	1534	A2M	C8-N7	2.27	1.35	1.31
1	AA	4220	6MZ	C5-C6	2.27	1.47	1.41
1	AA	4590	A2M	C5-N7	-2.26	1.34	1.39
3	AC	75	OMG	C5-N7	-2.26	1.34	1.39
46	BA	116	OMU	C2-N1	2.26	1.42	1.38
46	BA	644	OMG	C5-N7	-2.26	1.34	1.39
46	BA	27	A2M	C5-N7	-2.25	1.34	1.39
1	AA	4618	OMG	C5-N7	-2.25	1.34	1.39
1	AA	4590	A2M	C8-N7	2.25	1.35	1.31
46	BA	1678	A2M	C5-N7	-2.25	1.34	1.39
1	AA	398	A2M	C8-N7	2.25	1.35	1.31
1	AA	3744	OMG	C5-N7	-2.25	1.34	1.39
46	BA	1639	G7M	O6-C6	-2.25	1.19	1.23
1	AA	1322	1MA	C5-N7	-2.24	1.34	1.39
46	BA	1383	A2M	C5-N7	-2.24	1.34	1.39
46	BA	1804	OMU	C2-N1	2.24	1.42	1.38
1	AA	398	A2M	C5-N7	-2.23	1.34	1.39
1	AA	3844	PSU	C2-N3	-2.23	1.33	1.37
1	AA	2363	A2M	C8-N7	2.23	1.35	1.31
1	AA	1323	A2M	C8-N7	2.23	1.35	1.31
1	AA	3724	A2M	C5-N7	-2.23	1.34	1.39
46	BA	166	A2M	C5-N7	-2.23	1.34	1.39
46	BA	668	A2M	C5-N7	-2.23	1.34	1.39
1	AA	3627	OMG	C5-N7	-2.23	1.34	1.39
46	BA	590	A2M	C8-N7	2.23	1.35	1.31
46	BA	1367	PSU	C3'-C2'	-2.22	1.47	1.53
1	AA	2401	A2M	C8-N7	2.22	1.35	1.31
46	BA	354	OMU	C2-N3	-2.22	1.34	1.38
1	AA	3785	A2M	C8-N7	2.22	1.35	1.31
46	BA	1031	A2M	C8-N7	2.22	1.35	1.31
1	AA	4306	OMU	C5-C4	-2.21	1.38	1.43
46	BA	468	A2M	C8-N7	2.21	1.35	1.31
1	AA	3825	A2M	C8-N7	2.21	1.35	1.31
46	BA	172	OMU	C2-N1	2.21	1.42	1.38
46	BA	601	OMG	C5-N7	-2.21	1.34	1.39
3	AC	14	OMU	C5-C4	-2.20	1.38	1.43
1	AA	4623	OMG	C5-N7	-2.20	1.34	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
46	BA	121	OMU	C2-N3	-2.20	1.34	1.38
1	AA	4370	OMG	C5-N7	-2.19	1.34	1.39
1	AA	3899	OMG	C5-N7	-2.18	1.34	1.39
46	BA	1804	OMU	C2-N3	-2.18	1.34	1.38
1	AA	3639	PSU	C2-N3	-2.18	1.33	1.37
46	BA	1832	6MZ	C8-N7	2.18	1.35	1.31
46	BA	1639	G7M	O3'-C3'	2.17	1.48	1.43
46	BA	1328	OMG	C5-N7	-2.17	1.34	1.39
1	AA	3818	UY1	O4'-C1'	-2.17	1.40	1.43
1	AA	3867	A2M	C8-N7	2.17	1.35	1.31
46	BA	512	A2M	C8-N7	2.17	1.35	1.31
1	AA	4689	PSU	C2-N3	-2.17	1.33	1.37
1	AA	4361	PSU	C2-N3	-2.17	1.33	1.37
46	BA	867	OMG	C5-N7	-2.16	1.34	1.39
1	AA	1871	A2M	C8-N7	2.16	1.35	1.31
1	AA	4471	PSU	C2-N3	-2.16	1.33	1.37
1	AA	2815	A2M	C8-N7	2.15	1.35	1.31
1	AA	4228	OMG	C5-N7	-2.15	1.34	1.39
1	AA	2843	PSU	C2-N3	-2.15	1.33	1.37
1	AA	400	A2M	C8-N7	2.15	1.35	1.31
1	AA	1522	OMG	C5-N7	-2.14	1.34	1.39
1	AA	3920	PSU	C2-N3	-2.14	1.33	1.37
1	AA	4620	OMU	C5-C4	-2.14	1.38	1.43
1	AA	2839	PSU	C2-N1	-2.14	1.33	1.36
1	AA	4523	A2M	C8-N7	2.13	1.35	1.31
46	BA	121	OMU	C2-N1	2.13	1.41	1.38
1	AA	2415	OMU	C5-C4	-2.13	1.38	1.43
1	AA	1683	PSU	C2-N3	-2.13	1.33	1.37
46	BA	1447	OMG	C5-N7	-2.12	1.35	1.39
46	BA	428	OMU	C2-N3	-2.12	1.34	1.38
46	BA	667	PSU	C4-C5	2.12	1.50	1.44
1	AA	4673	PSU	C2-N3	-2.12	1.33	1.37
46	BA	1850	MA6	C5-N7	-2.12	1.35	1.39
46	BA	436	OMG	C5-N7	-2.12	1.35	1.39
1	AA	4571	A2M	C8-N7	2.11	1.35	1.31
1	AA	2415	OMU	C2-N3	-2.11	1.34	1.38
1	AA	1524	A2M	C8-N7	2.11	1.35	1.31
1	AA	3851	PSU	C2-N3	-2.11	1.33	1.37
46	BA	683	OMG	C5-N7	-2.10	1.35	1.39
1	AA	2837	OMU	C5-C4	-2.10	1.39	1.43
46	BA	1639	G7M	C5-C4	2.10	1.43	1.38
1	AA	4498	OMU	C5-C4	-2.10	1.39	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	AA	4299	PSU	C2-N3	-2.10	1.33	1.37
1	AA	3899	OMG	C4-N9	-2.10	1.32	1.38
46	BA	1442	OMU	C2-N3	-2.10	1.34	1.38
1	AA	1871	A2M	C4-N9	-2.09	1.33	1.37
1	AA	3884	PSU	C2-N3	-2.09	1.33	1.37
1	AA	1781	PSU	C2-N3	-2.09	1.33	1.37
1	AA	1860	PSU	C2-N3	-2.09	1.33	1.37
46	BA	172	OMU	C2-N3	-2.09	1.34	1.38
1	AA	4403	PSU	C2-N3	-2.09	1.33	1.37
1	AA	1582	PSU	C2-N3	-2.09	1.33	1.37
1	AA	1326	A2M	C8-N7	2.09	1.35	1.31
1	AA	3925	OMU	C5-C4	-2.08	1.39	1.43
46	BA	116	OMU	C2-N3	-2.08	1.34	1.38
1	AA	1860	PSU	C2-N1	-2.08	1.33	1.36
1	AA	1862	PSU	C2-N3	-2.08	1.33	1.37
1	AA	1322	1MA	C4-N9	-2.08	1.32	1.38
46	BA	1288	OMU	C2-N3	-2.07	1.34	1.38
1	AA	2839	PSU	C2-N3	-2.07	1.34	1.37
1	AA	2508	PSU	C2-N3	-2.07	1.34	1.37
46	BA	116	OMU	C5-C4	-2.06	1.39	1.43
46	BA	1804	OMU	C5-C4	-2.06	1.39	1.43
1	AA	3853	PSU	C2-N3	-2.06	1.34	1.37
1	AA	4442	PSU	C2-N3	-2.06	1.34	1.37
46	BA	428	OMU	C5-C4	-2.06	1.39	1.43
1	AA	3695	PSU	C2-N3	-2.05	1.34	1.37
1	AA	4493	PSU	C2-N3	-2.05	1.34	1.37
1	AA	4457	PSU	C2-N3	-2.04	1.34	1.37
1	AA	2415	OMU	C2-N1	2.04	1.41	1.38
1	AA	4623	OMG	C4-N9	-2.04	1.32	1.38
46	BA	1639	G7M	C2'-C1'	2.04	1.60	1.53
1	AA	4227	OMU	C2-N1	2.04	1.41	1.38
1	AA	4220	6MZ	C8-N7	2.04	1.35	1.31
1	AA	4579	PSU	C2-N1	-2.04	1.34	1.36
1	AA	4312	PSU	C2-N3	-2.04	1.34	1.37
1	AA	4636	PSU	C2-N3	-2.04	1.34	1.37
46	BA	667	PSU	C2-N1	-2.03	1.34	1.36
1	AA	2401	A2M	C4-N9	-2.03	1.33	1.37
1	AA	4521	PSU	C2-N3	-2.03	1.34	1.37
1	AA	1522	OMG	C4-N9	-2.03	1.32	1.38
3	AC	55	PSU	C2-N3	-2.03	1.34	1.37
46	BA	354	OMU	C2-N1	2.03	1.41	1.38
1	AA	3718	A2M	C8-N7	2.03	1.35	1.31

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	AA	4552	PSU	C2-N3	-2.02	1.34	1.37
1	AA	4579	PSU	C2-N3	-2.02	1.34	1.37
1	AA	4628	PSU	C2-N3	-2.02	1.34	1.37
1	AA	4618	OMG	C4-N9	-2.02	1.32	1.38
1	AA	1779	PSU	C2-N3	-2.02	1.34	1.37
1	AA	1744	PSU	C2-N3	-2.01	1.34	1.37
1	AA	4972	PSU	C2-N3	-2.01	1.34	1.37
1	AA	2787	A2M	C8-N7	2.01	1.35	1.31
1	AA	1792	PSU	C2-N3	-2.01	1.34	1.37
1	AA	4293	PSU	C2-N1	-2.01	1.34	1.36
1	AA	4293	PSU	C2-N3	-2.00	1.34	1.37
1	AA	4689	PSU	C2-N1	-2.00	1.34	1.36
1	AA	4227	OMU	C5-C4	-2.00	1.39	1.43

All (982) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	2815	A2M	C5-C4-N3	-6.86	117.80	126.75
46	BA	590	A2M	C5-C4-N3	-6.80	117.88	126.75
46	BA	576	A2M	C5-C4-N3	-6.59	118.15	126.75
1	AA	3637	PSU	N1-C2-N3	6.51	122.50	115.13
1	AA	3867	A2M	C5-C4-N3	-6.50	118.27	126.75
46	BA	159	A2M	C5-C4-N3	-6.49	118.28	126.75
46	BA	512	A2M	C5-C4-N3	-6.48	118.30	126.75
1	AA	2363	A2M	C5-C4-N3	-6.45	118.33	126.75
1	AA	1323	A2M	C5-C4-N3	-6.45	118.34	126.75
1	AA	4628	PSU	N1-C2-N3	6.43	122.42	115.13
46	BA	1832	6MZ	C5-C4-N3	-6.40	118.40	126.75
46	BA	1490	OMG	C5-C4-N3	-6.38	118.11	128.46
1	AA	3718	A2M	C5-C4-N3	-6.38	118.42	126.75
46	BA	484	A2M	C5-C4-N3	-6.38	118.42	126.75
46	BA	166	A2M	C5-C4-N3	-6.37	118.44	126.75
46	BA	1383	A2M	C5-C4-N3	-6.36	118.45	126.75
1	AA	2876	OMG	C5-C4-N3	-6.35	118.15	128.46
1	AA	2787	A2M	C5-C4-N3	-6.35	118.47	126.75
1	AA	4196	OMG	C5-C4-N3	-6.33	118.19	128.46
1	AA	1326	A2M	C5-C4-N3	-6.30	118.54	126.75
46	BA	509	OMG	C5-C4-N3	-6.29	118.26	128.46
46	BA	1678	A2M	C5-C4-N3	-6.28	118.56	126.75
1	AA	4571	A2M	C5-C4-N3	-6.27	118.58	126.75
46	BA	1328	OMG	C5-C4-N3	-6.26	118.30	128.46
1	AA	3792	OMG	C5-C4-N3	-6.25	118.31	128.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	BA	27	A2M	C5-C4-N3	-6.24	118.61	126.75
1	AA	4636	PSU	N1-C2-N3	6.22	122.18	115.13
46	BA	601	OMG	C5-C4-N3	-6.20	118.40	128.46
1	AA	3825	A2M	C5-C4-N3	-6.20	118.66	126.75
1	AA	1744	PSU	N1-C2-N3	6.19	122.14	115.13
46	BA	644	OMG	C5-C4-N3	-6.18	118.44	128.46
46	BA	1643	PSU	N1-C2-N3	6.17	122.12	115.13
1	AA	3785	A2M	C5-C4-N3	-6.16	118.71	126.75
1	AA	4500	PSU	N1-C2-N3	6.15	122.10	115.13
46	BA	1031	A2M	C5-C4-N3	-6.15	118.73	126.75
46	BA	99	A2M	C5-C4-N3	-6.14	118.74	126.75
1	AA	1534	A2M	C5-C4-N3	-6.14	118.75	126.75
1	AA	1625	OMG	C5-C4-N3	-6.13	118.51	128.46
1	AA	3920	PSU	N1-C2-N3	6.11	122.06	115.13
1	AA	400	A2M	C5-C4-N3	-6.11	118.78	126.75
1	AA	4220	6MZ	C5-C4-N3	-6.11	118.78	126.75
1	AA	4579	PSU	N1-C2-N3	6.11	122.05	115.13
1	AA	4637	OMG	C5-C4-N3	-6.11	118.55	128.46
1	AA	4521	PSU	N1-C2-N3	6.10	122.04	115.13
1	AA	3822	PSU	N1-C2-N3	6.10	122.04	115.13
1	AA	4353	PSU	N1-C2-N3	6.10	122.04	115.13
1	AA	2424	OMG	C5-C4-N3	-6.09	118.57	128.46
1	AA	398	A2M	C5-C4-N3	-6.09	118.80	126.75
1	AA	3724	A2M	C5-C4-N3	-6.09	118.80	126.75
1	AA	3853	PSU	N1-C2-N3	6.09	122.03	115.13
1	AA	4493	PSU	N1-C2-N3	6.09	122.03	115.13
1	AA	4590	A2M	C5-C4-N3	-6.08	118.82	126.75
46	BA	1447	OMG	C5-C4-N3	-6.08	118.60	128.46
1	AA	5001	PSU	N1-C2-N3	6.08	122.02	115.13
1	AA	4457	PSU	N1-C2-N3	6.07	122.01	115.13
1	AA	1524	A2M	C5-C4-N3	-6.06	118.84	126.75
1	AA	1862	PSU	N1-C2-N3	6.06	122.00	115.13
1	AA	4296	PSU	N1-C2-N3	6.06	122.00	115.13
1	AA	4494	OMG	C5-C4-N3	-6.06	118.63	128.46
1	AA	4442	PSU	N1-C2-N3	6.06	121.99	115.13
1	AA	4552	PSU	N1-C2-N3	6.06	121.99	115.13
1	AA	4499	OMG	C5-C4-N3	-6.05	118.64	128.46
1	AA	3695	PSU	N1-C2-N3	6.05	121.99	115.13
46	BA	1244	PSU	N1-C2-N3	6.05	121.99	115.13
1	AA	3851	PSU	N1-C2-N3	6.05	121.99	115.13
1	AA	4403	PSU	N1-C2-N3	6.05	121.98	115.13
1	AA	4361	PSU	N1-C2-N3	6.05	121.98	115.13

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	1677	PSU	N1-C2-N3	6.04	121.97	115.13
1	AA	4973	PSU	N1-C2-N3	6.03	121.96	115.13
46	BA	1174	PSU	N1-C2-N3	6.03	121.96	115.13
1	AA	3639	PSU	N1-C2-N3	6.02	121.95	115.13
1	AA	3844	PSU	N1-C2-N3	6.02	121.95	115.13
3	AC	75	OMG	C5-C4-N3	-6.01	118.70	128.46
46	BA	801	PSU	N1-C2-N3	6.01	121.94	115.13
1	AA	3830	A2M	C5-C4-N3	-6.01	118.91	126.75
1	AA	4312	PSU	N1-C2-N3	6.01	121.94	115.13
1	AA	2632	PSU	N1-C2-N3	6.01	121.94	115.13
1	AA	1683	PSU	N1-C2-N3	6.00	121.93	115.13
46	BA	822	PSU	N1-C2-N3	6.00	121.93	115.13
46	BA	572	PSU	N1-C2-N3	6.00	121.92	115.13
46	BA	815	PSU	N1-C2-N3	6.00	121.92	115.13
46	BA	1851	MA6	C5-C4-N3	-6.00	118.93	126.75
46	BA	668	A2M	C5-C4-N3	-5.99	118.93	126.75
1	AA	2843	PSU	N1-C2-N3	5.99	121.92	115.13
46	BA	651	PSU	N1-C2-N3	5.99	121.92	115.13
1	AA	1860	PSU	N1-C2-N3	5.99	121.91	115.13
1	AA	4523	A2M	C5-C4-N3	-5.99	118.94	126.75
1	AA	4423	PSU	N1-C2-N3	5.98	121.91	115.13
1	AA	3884	PSU	N1-C2-N3	5.98	121.91	115.13
46	BA	649	PSU	N1-C2-N3	5.98	121.91	115.13
46	BA	436	OMG	C5-C4-N3	-5.98	118.76	128.46
3	AC	69	PSU	N1-C2-N3	5.98	121.90	115.13
1	AA	3762	PSU	N1-C2-N3	5.98	121.90	115.13
1	AA	1536	PSU	N1-C2-N3	5.97	121.90	115.13
1	AA	2401	A2M	C5-C4-N3	-5.97	118.96	126.75
46	BA	1625	PSU	N1-C2-N3	5.97	121.89	115.13
1	AA	4532	PSU	N1-C2-N3	5.97	121.89	115.13
46	BA	1360	PSU	N1-C2-N3	5.96	121.89	115.13
1	AA	1781	PSU	N1-C2-N3	5.96	121.88	115.13
46	BA	1596	PSU	N1-C2-N3	5.96	121.88	115.13
46	BA	867	OMG	C5-C4-N3	-5.96	118.80	128.46
1	AA	1779	PSU	N1-C2-N3	5.95	121.87	115.13
46	BA	34	PSU	N1-C2-N3	5.95	121.87	115.13
46	BA	63	PSU	N1-C2-N3	5.95	121.87	115.13
46	BA	1445	PSU	N1-C2-N3	5.95	121.87	115.13
46	BA	36	PSU	N1-C2-N3	5.94	121.86	115.13
1	AA	4972	PSU	N1-C2-N3	5.94	121.86	115.13
46	BA	366	PSU	N1-C2-N3	5.94	121.86	115.13
46	BA	918	PSU	N1-C2-N3	5.93	121.85	115.13

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	BA	1003	PSU	N1-C2-N3	5.93	121.85	115.13
46	BA	1046	PSU	N1-C2-N3	5.93	121.84	115.13
46	BA	683	OMG	C5-C4-N3	-5.93	118.85	128.46
46	BA	109	PSU	N1-C2-N3	5.92	121.84	115.13
1	AA	3744	OMG	C5-C4-N3	-5.92	118.85	128.46
1	AA	4576	PSU	N1-C2-N3	5.92	121.84	115.13
46	BA	1004	PSU	N1-C2-N3	5.92	121.84	115.13
1	AA	1782	PSU	N1-C2-N3	5.92	121.83	115.13
46	BA	406	PSU	N1-C2-N3	5.92	121.83	115.13
1	AA	5010	PSU	N1-C2-N3	5.92	121.83	115.13
1	AA	3768	PSU	N1-C2-N3	5.91	121.83	115.13
46	BA	100	PSU	N1-C2-N3	5.91	121.83	115.13
3	AC	55	PSU	N1-C2-N3	5.91	121.83	115.13
46	BA	296	PSU	N1-C2-N3	5.91	121.82	115.13
1	AA	4431	PSU	N1-C2-N3	5.91	121.82	115.13
46	BA	686	PSU	N1-C2-N3	5.91	121.82	115.13
1	AA	4392	OMG	C5-C4-N3	-5.90	118.88	128.46
46	BA	1177	PSU	N1-C2-N3	5.90	121.82	115.13
46	BA	119	PSU	N1-C2-N3	5.90	121.81	115.13
46	BA	866	PSU	N1-C2-N3	5.90	121.81	115.13
1	AA	2508	PSU	N1-C2-N3	5.90	121.81	115.13
1	AA	3770	PSU	N1-C2-N3	5.88	121.79	115.13
46	BA	1136	PSU	N1-C2-N3	5.88	121.79	115.13
1	AA	4471	PSU	N1-C2-N3	5.87	121.78	115.13
46	BA	1347	PSU	N1-C2-N3	5.87	121.78	115.13
1	AA	2364	OMG	C5-C4-N3	-5.87	118.94	128.46
46	BA	1045	PSU	N1-C2-N3	5.86	121.77	115.13
46	BA	105	PSU	N1-C2-N3	5.86	121.77	115.13
1	AA	4673	PSU	N1-C2-N3	5.86	121.77	115.13
1	AA	2839	PSU	N1-C2-N3	5.85	121.76	115.13
1	AA	1582	PSU	N1-C2-N3	5.85	121.76	115.13
46	BA	1850	MA6	C5-C4-N3	-5.85	119.11	126.75
1	AA	3764	PSU	N1-C2-N3	5.85	121.76	115.13
46	BA	609	PSU	N1-C2-N3	5.85	121.76	115.13
46	BA	93	PSU	N1-C2-N3	5.85	121.76	115.13
46	BA	468	A2M	C5-C4-N3	-5.85	119.12	126.75
46	BA	1056	PSU	N1-C2-N3	5.84	121.75	115.13
1	AA	3715	PSU	N1-C2-N3	5.84	121.75	115.13
46	BA	814	PSU	N1-C2-N3	5.83	121.74	115.13
1	AA	4689	PSU	N1-C2-N3	5.83	121.74	115.13
1	AA	3730	PSU	N1-C2-N3	5.83	121.73	115.13
46	BA	681	PSU	N1-C2-N3	5.83	121.73	115.13

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	BA	1232	PSU	N1-C2-N3	5.83	121.73	115.13
46	BA	1238	PSU	N1-C2-N3	5.83	121.73	115.13
46	BA	1692	PSU	N1-C2-N3	5.82	121.72	115.13
46	BA	300	PSU	N1-C2-N3	5.81	121.71	115.13
46	BA	1186	PSU	N1-C2-N3	5.81	121.71	115.13
1	AA	3627	OMG	C5-C4-N3	-5.81	119.03	128.46
1	AA	4293	PSU	N1-C2-N3	5.81	121.71	115.13
1	AA	4530	UR3	C4-N3-C2	-5.79	119.11	124.56
1	AA	4299	PSU	N1-C2-N3	5.79	121.69	115.13
46	BA	1367	PSU	N1-C2-N3	5.79	121.69	115.13
1	AA	4618	OMG	C5-C4-N3	-5.78	119.09	128.46
46	BA	218	PSU	N1-C2-N3	5.77	121.67	115.13
46	BA	966	PSU	N1-C2-N3	5.75	121.64	115.13
1	AA	1871	A2M	C5-C4-N3	-5.74	119.26	126.75
1	AA	1316	OMG	C5-C4-N3	-5.71	119.19	128.46
46	BA	667	PSU	N1-C2-N3	5.71	121.60	115.13
1	AA	4623	OMG	C5-C4-N3	-5.69	119.24	128.46
46	BA	863	PSU	N1-C2-N3	5.68	121.57	115.13
1	AA	1792	PSU	N1-C2-N3	5.67	121.55	115.13
1	AA	4370	OMG	C5-C4-N3	-5.64	119.31	128.46
1	AA	1522	OMG	C5-C4-N3	-5.62	119.34	128.46
1	AA	3899	OMG	C5-C4-N3	-5.59	119.38	128.46
1	AA	2815	A2M	N3-C4-N9	5.33	135.87	127.08
46	BA	590	A2M	N3-C4-N9	5.32	135.85	127.08
1	AA	2876	OMG	C2-N3-C4	5.25	121.66	112.30
46	BA	576	A2M	N3-C4-N9	5.23	135.70	127.08
1	AA	4228	OMG	C5-C4-N3	-5.20	120.02	128.46
1	AA	3867	A2M	N3-C4-N9	5.15	135.57	127.08
46	BA	166	A2M	N3-C4-N9	5.08	135.46	127.08
1	AA	2787	A2M	N3-C4-N9	5.06	135.42	127.08
46	BA	159	A2M	N3-C4-N9	5.06	135.41	127.08
46	BA	1383	A2M	N3-C4-N9	5.05	135.40	127.08
46	BA	1367	PSU	O2-C2-N1	-5.01	117.27	122.79
46	BA	1490	OMG	N9-C4-N3	5.00	135.97	125.94
1	AA	1323	A2M	N3-C4-N9	4.99	135.31	127.08
1	AA	3785	A2M	N3-C4-N9	4.98	135.29	127.08
1	AA	4571	A2M	N3-C4-N9	4.98	135.28	127.08
46	BA	601	OMG	C2-N3-C4	4.97	121.16	112.30
46	BA	1678	A2M	N3-C4-N9	4.97	135.27	127.08
1	AA	2363	A2M	N3-C4-N9	4.96	135.26	127.08
46	BA	484	A2M	N3-C4-N9	4.96	135.26	127.08
46	BA	683	OMG	C2-N3-C4	4.96	121.14	112.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	3792	OMG	C2-N3-C4	4.95	121.12	112.30
1	AA	4499	OMG	C2-N3-C4	4.95	121.12	112.30
46	BA	1328	OMG	C2-N3-C4	4.93	121.08	112.30
1	AA	1326	A2M	N3-C4-N9	4.92	135.19	127.08
46	BA	436	OMG	C2-N3-C4	4.91	121.05	112.30
1	AA	400	A2M	N3-C4-N9	4.90	135.16	127.08
1	AA	1322	1MA	C5-C4-N3	-4.89	119.96	127.26
3	AC	75	OMG	C2-N3-C4	4.89	121.02	112.30
46	BA	1031	A2M	N3-C4-N9	4.89	135.13	127.08
1	AA	4196	OMG	N9-C4-N3	4.89	135.75	125.94
1	AA	4618	OMG	C2-N3-C4	4.88	121.00	112.30
46	BA	1832	6MZ	N3-C4-N9	4.87	135.11	127.08
1	AA	4637	OMG	C2-N3-C4	4.87	120.97	112.30
46	BA	509	OMG	C2-N3-C4	4.86	120.96	112.30
46	BA	1447	OMG	C2-N3-C4	4.86	120.96	112.30
1	AA	3627	OMG	C2-N3-C4	4.86	120.96	112.30
1	AA	4447	5MC	C5-C6-N1	-4.86	118.34	123.34
1	AA	4196	OMG	C2-N3-C4	4.86	120.95	112.30
46	BA	27	A2M	N3-C4-N9	4.85	135.08	127.08
46	BA	512	A2M	N3-C4-N9	4.85	135.07	127.08
1	AA	2424	OMG	C2-N3-C4	4.85	120.94	112.30
46	BA	509	OMG	N9-C4-N3	4.84	135.67	125.94
1	AA	3792	OMG	N9-C4-N3	4.83	135.64	125.94
1	AA	2364	OMG	C2-N3-C4	4.83	120.91	112.30
1	AA	1625	OMG	C2-N3-C4	4.83	120.90	112.30
1	AA	4523	A2M	N3-C4-N9	4.82	135.02	127.08
1	AA	4494	OMG	C2-N3-C4	4.81	120.87	112.30
1	AA	3818	UY1	C4-N3-C2	-4.80	119.42	126.34
46	BA	867	OMG	C2-N3-C4	4.80	120.86	112.30
46	BA	1326	UY1	C4-N3-C2	-4.80	119.42	126.34
1	AA	4220	6MZ	N3-C4-N9	4.80	134.99	127.08
1	AA	4392	OMG	C2-N3-C4	4.79	120.84	112.30
1	AA	1316	OMG	C2-N3-C4	4.78	120.83	112.30
46	BA	1490	OMG	C2-N3-C4	4.78	120.81	112.30
1	AA	3744	OMG	C2-N3-C4	4.78	120.81	112.30
1	AA	1871	A2M	C2'-C1'-N9	-4.78	105.49	113.53
1	AA	3825	A2M	N3-C4-N9	4.78	134.95	127.08
1	AA	4370	OMG	C2-N3-C4	4.77	120.80	112.30
46	BA	99	A2M	N3-C4-N9	4.77	134.94	127.08
1	AA	3718	A2M	N3-C4-N9	4.76	134.92	127.08
1	AA	2401	A2M	N3-C4-N9	4.75	134.91	127.08
1	AA	4590	A2M	N3-C4-N9	4.75	134.91	127.08

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	BA	644	OMG	N9-C4-N3	4.75	135.48	125.94
1	AA	1522	OMG	C2-N3-C4	4.75	120.76	112.30
1	AA	4623	OMG	C2-N3-C4	4.73	120.72	112.30
46	BA	644	OMG	C2-N3-C4	4.72	120.72	112.30
1	AA	1524	A2M	N3-C4-N9	4.72	134.86	127.08
46	BA	1850	MA6	N3-C4-N9	4.71	134.85	127.08
1	AA	3899	OMG	C2-N3-C4	4.71	120.69	112.30
1	AA	1625	OMG	N9-C4-N3	4.71	135.40	125.94
1	AA	398	A2M	N3-C4-N9	4.69	134.81	127.08
46	BA	1328	OMG	N9-C4-N3	4.69	135.36	125.94
1	AA	3724	A2M	N3-C4-N9	4.69	134.81	127.08
1	AA	3830	A2M	N3-C4-N9	4.69	134.81	127.08
1	AA	2876	OMG	N9-C4-N3	4.68	135.34	125.94
1	AA	4228	OMG	C2-N3-C4	4.67	120.62	112.30
1	AA	3925	OMU	C4-N3-C2	-4.65	120.44	126.58
46	BA	601	OMG	N9-C4-N3	4.63	135.23	125.94
46	BA	668	A2M	N3-C4-N9	4.62	134.69	127.08
1	AA	1534	A2M	N3-C4-N9	4.62	134.69	127.08
1	AA	2424	OMG	N9-C4-N3	4.60	135.17	125.94
1	AA	1871	A2M	N3-C4-N9	4.57	134.62	127.08
46	BA	468	A2M	N3-C4-N9	4.57	134.61	127.08
1	AA	4494	OMG	N9-C4-N3	4.56	135.10	125.94
1	AA	2837	OMU	C4-N3-C2	-4.56	120.57	126.58
46	BA	1851	MA6	N3-C4-N9	4.56	134.59	127.08
46	BA	1447	OMG	N9-C4-N3	4.55	135.08	125.94
46	BA	1678	A2M	C2'-C1'-N9	-4.55	105.87	113.53
1	AA	4227	OMU	C4-N3-C2	-4.53	120.61	126.58
1	AA	4499	OMG	N9-C4-N3	4.51	135.00	125.94
46	BA	436	OMG	N9-C4-N3	4.50	134.98	125.94
1	AA	1322	1MA	C2-N3-C4	4.49	121.24	112.41
1	AA	4498	OMU	C4-N3-C2	-4.48	120.67	126.58
46	BA	1337	4AC	O7-C7-N4	4.48	129.06	121.82
46	BA	428	OMU	C4-N3-C2	-4.48	120.68	126.58
1	AA	4637	OMG	N9-C4-N3	4.47	134.91	125.94
46	BA	1442	OMU	C4-N3-C2	-4.44	120.72	126.58
3	AC	14	OMU	N3-C2-N1	4.43	120.76	114.89
46	BA	1850	MA6	N1-C6-N6	4.42	121.92	117.08
46	BA	1804	OMU	C4-N3-C2	-4.42	120.75	126.58
46	BA	354	OMU	C4-N3-C2	-4.41	120.76	126.58
1	AA	3744	OMG	N9-C4-N3	4.41	134.79	125.94
46	BA	1288	OMU	C4-N3-C2	-4.39	120.79	126.58
1	AA	3785	A2M	C2'-C1'-N9	-4.38	106.15	113.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	3925	OMU	N3-C2-N1	4.36	120.68	114.89
3	AC	75	OMG	N9-C4-N3	4.35	134.67	125.94
1	AA	2787	A2M	C2'-C1'-N9	-4.35	106.21	113.53
3	AC	14	OMU	C4-N3-C2	-4.35	120.85	126.58
46	BA	683	OMG	N9-C4-N3	4.34	134.65	125.94
46	BA	1851	MA6	C9-N6-C6	-4.33	109.17	120.40
46	BA	867	OMG	N9-C4-N3	4.33	134.63	125.94
46	BA	1850	MA6	C2-N1-C6	4.32	121.95	111.75
46	BA	1639	G7M	C2-N3-C4	4.31	119.98	112.30
1	AA	2415	OMU	C4-N3-C2	-4.31	120.89	126.58
46	BA	1842	4AC	O7-C7-N4	4.31	128.79	121.82
46	BA	1851	MA6	C10-N6-C6	-4.31	109.24	120.40
46	BA	121	OMU	C4-N3-C2	-4.30	120.91	126.58
1	AA	1316	OMG	N9-C4-N3	4.29	134.56	125.94
1	AA	4220	6MZ	C9-N6-C6	-4.29	119.17	122.87
46	BA	1851	MA6	C2-N1-C6	4.29	121.88	111.75
1	AA	4392	OMG	N9-C4-N3	4.26	134.48	125.94
1	AA	4636	PSU	C4-N3-C2	-4.25	120.22	126.34
1	AA	2837	OMU	N3-C2-N1	4.24	120.52	114.89
1	AA	3818	UY1	N1-C2-N3	4.23	119.92	115.13
46	BA	172	OMU	C4-N3-C2	-4.21	121.02	126.58
1	AA	3785	A2M	O4'-C1'-N9	4.21	116.35	108.06
1	AA	2415	OMU	N3-C2-N1	4.21	120.47	114.89
46	BA	1442	OMU	N3-C2-N1	4.19	120.46	114.89
1	AA	4498	OMU	N3-C2-N1	4.18	120.44	114.89
1	AA	4227	OMU	N3-C2-N1	4.18	120.44	114.89
46	BA	1850	MA6	C10-N6-C6	-4.17	109.58	120.40
1	AA	4620	OMU	C4-N3-C2	-4.17	121.08	126.58
46	BA	1326	UY1	N1-C2-N3	4.17	119.85	115.13
1	AA	2364	OMG	N9-C4-N3	4.16	134.29	125.94
1	AA	4370	OMG	N9-C4-N3	4.13	134.23	125.94
1	AA	4628	PSU	C4-N3-C2	-4.13	120.39	126.34
1	AA	3627	OMG	N9-C4-N3	4.13	134.23	125.94
1	AA	4523	A2M	C2'-C1'-N9	-4.12	106.60	113.53
1	AA	4552	PSU	C4-N3-C2	-4.11	120.42	126.34
1	AA	4620	OMU	N3-C2-N1	4.10	120.34	114.89
1	AA	3637	PSU	C4-N3-C2	-4.10	120.43	126.34
1	AA	4457	PSU	C4-N3-C2	-4.09	120.44	126.34
46	BA	1367	PSU	C6-N1-C2	-4.09	118.50	122.68
1	AA	4973	PSU	C4-N3-C2	-4.08	120.46	126.34
1	AA	2843	PSU	C4-N3-C2	-4.08	120.46	126.34
1	AA	2815	A2M	C2-N3-C4	4.07	121.37	111.75

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	4521	PSU	C4-N3-C2	-4.07	120.47	126.34
46	BA	121	OMU	N3-C2-N1	4.07	120.29	114.89
46	BA	1248	B8N	C4-N3-C2	-4.07	120.32	125.46
46	BA	590	A2M	C2-N3-C4	4.06	121.34	111.75
46	BA	1643	PSU	C4-N3-C2	-4.06	120.49	126.34
1	AA	4623	OMG	N9-C4-N3	4.06	134.08	125.94
1	AA	4293	PSU	C4-N3-C2	-4.05	120.50	126.34
46	BA	172	OMU	N3-C2-N1	4.05	120.27	114.89
1	AA	4618	OMG	N9-C4-N3	4.04	134.04	125.94
1	AA	3695	PSU	C4-N3-C2	-4.03	120.53	126.34
1	AA	1522	OMG	N9-C4-N3	4.03	134.03	125.94
46	BA	576	A2M	C2-N3-C4	4.03	121.26	111.75
1	AA	3818	UY1	C6-C5-C4	4.03	121.01	118.20
46	BA	815	PSU	C4-N3-C2	-4.03	120.54	126.34
1	AA	1862	PSU	C4-N3-C2	-4.02	120.55	126.34
46	BA	428	OMU	N3-C2-N1	4.02	120.22	114.89
46	BA	354	OMU	N3-C2-N1	4.01	120.22	114.89
1	AA	3899	OMG	N9-C4-N3	4.01	134.00	125.94
1	AA	1782	PSU	C4-N3-C2	-4.01	120.56	126.34
46	BA	1850	MA6	C9-N6-C6	-4.01	110.00	120.40
46	BA	116	OMU	C4-N3-C2	-4.01	121.29	126.58
1	AA	4296	PSU	C4-N3-C2	-4.01	120.57	126.34
46	BA	366	PSU	C4-N3-C2	-4.01	120.57	126.34
46	BA	1186	PSU	C4-N3-C2	-4.00	120.57	126.34
1	AA	4228	OMG	C6-C5-N7	3.99	137.68	130.25
46	BA	651	PSU	C4-N3-C2	-3.99	120.59	126.34
46	BA	1639	G7M	C5-C4-N3	-3.99	120.51	128.15
46	BA	1244	PSU	C4-N3-C2	-3.98	120.60	126.34
46	BA	1288	OMU	N3-C2-N1	3.98	120.18	114.89
1	AA	1323	A2M	C2-N3-C4	3.98	121.15	111.75
1	AA	4972	PSU	C4-N3-C2	-3.98	120.61	126.34
1	AA	5001	PSU	C4-N3-C2	-3.97	120.62	126.34
1	AA	4500	PSU	C4-N3-C2	-3.97	120.62	126.34
1	AA	1536	PSU	C4-N3-C2	-3.97	120.62	126.34
1	AA	3822	PSU	C4-N3-C2	-3.96	120.63	126.34
1	AA	4442	PSU	C4-N3-C2	-3.96	120.63	126.34
3	AC	69	PSU	C4-N3-C2	-3.96	120.63	126.34
46	BA	1177	PSU	C4-N3-C2	-3.96	120.63	126.34
46	BA	866	PSU	C4-N3-C2	-3.96	120.64	126.34
46	BA	166	A2M	C2'-C1'-N9	-3.96	106.87	113.53
46	BA	572	PSU	C4-N3-C2	-3.95	120.64	126.34
46	BA	63	PSU	C4-N3-C2	-3.95	120.65	126.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	BA	1360	PSU	C4-N3-C2	-3.94	120.67	126.34
46	BA	686	PSU	C4-N3-C2	-3.93	120.67	126.34
46	BA	1174	PSU	C4-N3-C2	-3.93	120.67	126.34
46	BA	1367	PSU	C6-C5-C4	-3.92	115.45	118.20
1	AA	3853	PSU	C4-N3-C2	-3.92	120.69	126.34
46	BA	918	PSU	C4-N3-C2	-3.92	120.69	126.34
46	BA	99	A2M	C2-N3-C4	3.92	121.00	111.75
46	BA	1136	PSU	C4-N3-C2	-3.92	120.69	126.34
1	AA	2363	A2M	C2-N3-C4	3.92	121.00	111.75
46	BA	166	A2M	C2-N3-C4	3.92	121.00	111.75
1	AA	4493	PSU	C4-N3-C2	-3.91	120.70	126.34
1	AA	3920	PSU	C4-N3-C2	-3.91	120.70	126.34
1	AA	4361	PSU	C4-N3-C2	-3.91	120.70	126.34
46	BA	1347	PSU	C4-N3-C2	-3.91	120.71	126.34
1	AA	4306	OMU	C4-N3-C2	-3.91	121.43	126.58
1	AA	3851	PSU	C4-N3-C2	-3.91	120.71	126.34
46	BA	36	PSU	C4-N3-C2	-3.91	120.71	126.34
46	BA	1692	PSU	C4-N3-C2	-3.90	120.71	126.34
46	BA	484	A2M	C2-N3-C4	3.90	120.97	111.75
1	AA	1744	PSU	C4-N3-C2	-3.90	120.72	126.34
46	BA	1678	A2M	C2-N3-C4	3.90	120.96	111.75
1	AA	1677	PSU	C4-N3-C2	-3.90	120.72	126.34
46	BA	1337	4AC	N4-C4-N3	3.89	120.39	113.85
1	AA	3785	A2M	C2-N3-C4	3.89	120.95	111.75
46	BA	159	A2M	C2-N3-C4	3.89	120.94	111.75
46	BA	1383	A2M	C2-N3-C4	3.89	120.94	111.75
46	BA	406	PSU	C4-N3-C2	-3.88	120.74	126.34
1	AA	4353	PSU	C4-N3-C2	-3.88	120.75	126.34
46	BA	27	A2M	C2-N3-C4	3.88	120.91	111.75
46	BA	1045	PSU	C4-N3-C2	-3.88	120.75	126.34
1	AA	1326	A2M	C2-N3-C4	3.87	120.90	111.75
1	AA	3724	A2M	C2-N3-C4	3.87	120.90	111.75
46	BA	296	PSU	C4-N3-C2	-3.87	120.76	126.34
1	AA	4590	A2M	C2-N3-C4	3.87	120.89	111.75
1	AA	1524	A2M	C2'-C1'-N9	-3.86	107.03	113.53
1	AA	3730	PSU	C4-N3-C2	-3.85	120.79	126.34
1	AA	4579	PSU	C4-N3-C2	-3.85	120.79	126.34
1	AA	4403	PSU	C4-N3-C2	-3.85	120.79	126.34
1	AA	1534	A2M	C2-N3-C4	3.85	120.84	111.75
46	BA	109	PSU	C4-N3-C2	-3.85	120.79	126.34
1	AA	3844	PSU	C4-N3-C2	-3.85	120.80	126.34
1	AA	1781	PSU	C4-N3-C2	-3.84	120.81	126.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	400	A2M	C2-N3-C4	3.84	120.82	111.75
1	AA	4431	PSU	C4-N3-C2	-3.84	120.81	126.34
1	AA	4306	OMU	N3-C2-N1	3.84	119.98	114.89
46	BA	1003	PSU	C4-N3-C2	-3.83	120.81	126.34
1	AA	1683	PSU	C4-N3-C2	-3.83	120.81	126.34
46	BA	105	PSU	C4-N3-C2	-3.83	120.81	126.34
1	AA	398	A2M	C2-N3-C4	3.83	120.81	111.75
1	AA	4523	A2M	C2-N3-C4	3.83	120.81	111.75
1	AA	3768	PSU	C4-N3-C2	-3.83	120.82	126.34
46	BA	1832	6MZ	C2-N3-C4	3.83	120.79	111.75
1	AA	4423	PSU	C4-N3-C2	-3.82	120.84	126.34
46	BA	1639	G7M	C5-C6-N1	3.82	119.76	111.79
1	AA	2787	A2M	C2-N3-C4	3.81	120.76	111.75
46	BA	1625	PSU	C4-N3-C2	-3.81	120.84	126.34
46	BA	218	PSU	C4-N3-C2	-3.81	120.85	126.34
1	AA	4312	PSU	C4-N3-C2	-3.81	120.85	126.34
1	AA	4532	PSU	C4-N3-C2	-3.81	120.86	126.34
46	BA	649	PSU	C4-N3-C2	-3.81	120.86	126.34
46	BA	36	PSU	O2-C2-N1	-3.81	118.60	122.79
1	AA	2508	PSU	C4-N3-C2	-3.80	120.86	126.34
1	AA	3867	A2M	C2-N3-C4	3.80	120.73	111.75
1	AA	5010	PSU	C4-N3-C2	-3.79	120.88	126.34
1	AA	2401	A2M	C2-N3-C4	3.79	120.70	111.75
46	BA	1804	OMU	C5-C4-N3	3.79	120.51	114.84
1	AA	4220	6MZ	C2-N3-C4	3.79	120.70	111.75
46	BA	1031	A2M	C2-N3-C4	3.79	120.70	111.75
46	BA	1851	MA6	N1-C6-N6	3.79	121.22	117.08
46	BA	1596	PSU	C4-N3-C2	-3.78	120.89	126.34
1	AA	4532	PSU	O2-C2-N1	-3.78	118.63	122.79
46	BA	1056	PSU	C4-N3-C2	-3.77	120.91	126.34
1	AA	4571	A2M	C2-N3-C4	3.76	120.64	111.75
46	BA	801	PSU	C4-N3-C2	-3.76	120.92	126.34
46	BA	116	OMU	N3-C2-N1	3.76	119.88	114.89
46	BA	1804	OMU	N3-C2-N1	3.76	119.88	114.89
1	AA	3825	A2M	C2-N3-C4	3.75	120.62	111.75
1	AA	3830	A2M	C2-N3-C4	3.75	120.61	111.75
46	BA	1238	PSU	C4-N3-C2	-3.75	120.94	126.34
1	AA	1871	A2M	C2-N3-C4	3.74	120.59	111.75
1	AA	4628	PSU	O2-C2-N1	-3.74	118.67	122.79
1	AA	1779	PSU	C4-N3-C2	-3.74	120.95	126.34
46	BA	1851	MA6	C2-N3-C4	3.74	120.58	111.75
1	AA	4500	PSU	O2-C2-N1	-3.74	118.68	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	BA	34	PSU	C4-N3-C2	-3.73	120.96	126.34
46	BA	1046	PSU	C4-N3-C2	-3.72	120.98	126.34
46	BA	428	OMU	C5-C4-N3	3.71	120.39	114.84
1	AA	3639	PSU	C4-N3-C2	-3.70	121.00	126.34
1	AA	4576	PSU	C4-N3-C2	-3.70	121.00	126.34
46	BA	609	PSU	C4-N3-C2	-3.70	121.00	126.34
46	BA	1004	PSU	C4-N3-C2	-3.70	121.00	126.34
1	AA	1524	A2M	C2-N3-C4	3.70	120.49	111.75
1	AA	4552	PSU	O2-C2-N1	-3.70	118.72	122.79
1	AA	3925	OMU	C5-C4-N3	3.70	120.37	114.84
46	BA	93	PSU	C4-N3-C2	-3.70	121.01	126.34
46	BA	100	PSU	C4-N3-C2	-3.70	121.01	126.34
1	AA	4471	PSU	C4-N3-C2	-3.68	121.03	126.34
46	BA	1850	MA6	C2-N3-C4	3.68	120.45	111.75
46	BA	814	PSU	C4-N3-C2	-3.67	121.05	126.34
1	AA	2837	OMU	C5-C4-N3	3.67	120.33	114.84
1	AA	3884	PSU	C4-N3-C2	-3.67	121.05	126.34
46	BA	1445	PSU	C4-N3-C2	-3.67	121.05	126.34
3	AC	55	PSU	C4-N3-C2	-3.67	121.06	126.34
1	AA	1582	PSU	C4-N3-C2	-3.66	121.06	126.34
46	BA	668	A2M	C2-N3-C4	3.66	120.40	111.75
46	BA	119	PSU	C4-N3-C2	-3.66	121.06	126.34
1	AA	3715	PSU	C4-N3-C2	-3.66	121.07	126.34
1	AA	4299	PSU	C4-N3-C2	-3.64	121.09	126.34
46	BA	822	PSU	C4-N3-C2	-3.64	121.09	126.34
1	AA	4423	PSU	O2-C2-N1	-3.64	118.78	122.79
46	BA	822	PSU	O2-C2-N1	-3.64	118.78	122.79
46	BA	484	A2M	C2'-C1'-N9	-3.64	107.41	113.53
1	AA	1536	PSU	O2-C2-N1	-3.64	118.79	122.79
46	BA	468	A2M	C2-N3-C4	3.64	120.34	111.75
1	AA	3762	PSU	C4-N3-C2	-3.63	121.11	126.34
46	BA	354	OMU	C5-C4-N3	3.63	120.27	114.84
46	BA	300	PSU	O2-C2-N1	-3.63	118.79	122.79
1	AA	2632	PSU	C4-N3-C2	-3.63	121.11	126.34
1	AA	4579	PSU	O2-C2-N1	-3.62	118.80	122.79
46	BA	300	PSU	C4-N3-C2	-3.62	121.12	126.34
1	AA	1522	OMG	C6-C5-N7	3.62	136.98	130.25
46	BA	1643	PSU	O2-C2-N1	-3.61	118.82	122.79
1	AA	1677	PSU	O2-C2-N1	-3.60	118.83	122.79
1	AA	4227	OMU	C5-C4-N3	3.60	120.23	114.84
1	AA	1792	PSU	C4-N3-C2	-3.60	121.16	126.34
46	BA	1232	PSU	C4-N3-C2	-3.60	121.16	126.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	4623	OMG	C6-C5-N7	3.60	136.93	130.25
46	BA	512	A2M	C2-N3-C4	3.59	120.24	111.75
1	AA	3764	PSU	C4-N3-C2	-3.59	121.17	126.34
1	AA	4498	OMU	C5-C4-N3	3.59	120.21	114.84
1	AA	5010	PSU	O2-C2-N1	-3.59	118.84	122.79
1	AA	1860	PSU	C4-N3-C2	-3.58	121.18	126.34
1	AA	4457	PSU	O2-C2-N1	-3.58	118.85	122.79
46	BA	1244	PSU	O2-C2-N1	-3.57	118.86	122.79
46	BA	681	PSU	C4-N3-C2	-3.57	121.19	126.34
46	BA	966	PSU	C4-N3-C2	-3.57	121.20	126.34
1	AA	4636	PSU	O2-C2-N1	-3.56	118.87	122.79
46	BA	366	PSU	O2-C2-N1	-3.56	118.87	122.79
46	BA	863	PSU	C4-N3-C2	-3.56	121.21	126.34
1	AA	4673	PSU	C4-N3-C2	-3.55	121.23	126.34
46	BA	801	PSU	O2-C2-N1	-3.54	118.89	122.79
46	BA	1046	PSU	O2-C2-N1	-3.54	118.89	122.79
46	BA	1232	PSU	O2-C2-N1	-3.54	118.89	122.79
1	AA	3770	PSU	C4-N3-C2	-3.53	121.25	126.34
46	BA	1442	OMU	C5-C4-N3	3.53	120.12	114.84
1	AA	4353	PSU	O2-C2-N1	-3.52	118.91	122.79
46	BA	121	OMU	C5-C4-N3	3.52	120.11	114.84
1	AA	1860	PSU	O2-C2-N1	-3.52	118.91	122.79
46	BA	1136	PSU	O2-C2-N1	-3.52	118.92	122.79
1	AA	4228	OMG	N9-C4-N3	3.51	132.99	125.94
46	BA	1832	6MZ	C4-C5-N7	-3.51	106.34	110.62
1	AA	4618	OMG	C6-C5-N7	3.50	136.76	130.25
29	Ac	39	V5N	O2-CB-CA	3.48	114.63	107.28
46	BA	1288	OMU	C5-C4-N3	3.48	120.05	114.84
1	AA	2839	PSU	C4-N3-C2	-3.48	121.32	126.34
1	AA	1683	PSU	O2-C2-N1	-3.48	118.96	122.79
46	BA	1174	PSU	O2-C2-N1	-3.48	118.96	122.79
1	AA	1871	A2M	N3-C2-N1	-3.48	123.17	128.60
1	AA	3627	OMG	C6-C5-N7	3.48	136.71	130.25
1	AA	3695	PSU	O2-C2-N1	-3.47	118.97	122.79
46	BA	116	OMU	C5-C4-N3	3.47	120.03	114.84
1	AA	4620	OMU	C5-C4-N3	3.47	120.03	114.84
3	AC	14	OMU	C5-C4-N3	3.47	120.03	114.84
1	AA	4296	PSU	O2-C2-N1	-3.46	118.98	122.79
1	AA	3853	PSU	O2-C2-N1	-3.46	118.98	122.79
1	AA	4493	PSU	O2-C2-N1	-3.46	118.98	122.79
46	BA	1003	PSU	O2-C2-N1	-3.46	118.98	122.79
1	AA	3718	A2M	C2-N3-C4	3.46	119.92	111.75

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	4370	OMG	C6-C5-N7	3.45	136.67	130.25
1	AA	3899	OMG	C6-C5-N7	3.45	136.67	130.25
46	BA	34	PSU	O2-C2-N1	-3.45	118.99	122.79
1	AA	4403	PSU	O2-C2-N1	-3.45	119.00	122.79
46	BA	1056	PSU	O2-C2-N1	-3.44	119.00	122.79
1	AA	2632	PSU	O2-C2-N1	-3.44	119.00	122.79
1	AA	2364	OMG	C6-C5-N7	3.44	136.64	130.25
46	BA	667	PSU	O2-C2-N1	-3.44	119.01	122.79
46	BA	159	A2M	C4-C5-N7	-3.43	106.44	110.62
46	BA	1360	PSU	O2-C2-N1	-3.43	119.01	122.79
46	BA	1596	PSU	O2-C2-N1	-3.43	119.02	122.79
46	BA	172	OMU	C5-C4-N3	3.42	119.96	114.84
1	AA	1316	OMG	C6-C5-N7	3.42	136.62	130.25
1	AA	3822	PSU	O2-C2-N1	-3.42	119.02	122.79
46	BA	1625	PSU	O2-C2-N1	-3.42	119.02	122.79
1	AA	4392	OMG	C6-C5-N7	3.42	136.61	130.25
46	BA	683	OMG	C6-C5-N7	3.42	136.60	130.25
46	BA	863	PSU	O2-C2-N1	-3.42	119.03	122.79
1	AA	1744	PSU	O2-C2-N1	-3.41	119.03	122.79
46	BA	918	PSU	O2-C2-N1	-3.41	119.03	122.79
1	AA	4442	PSU	O2-C2-N1	-3.41	119.04	122.79
1	AA	4306	OMU	C5-C4-N3	3.41	119.94	114.84
1	AA	1862	PSU	O2-C2-N1	-3.40	119.04	122.79
1	AA	2839	PSU	O2-C2-N1	-3.40	119.04	122.79
1	AA	4293	PSU	O2-C2-N1	-3.40	119.05	122.79
46	BA	296	PSU	O2-C2-N1	-3.40	119.05	122.79
1	AA	2415	OMU	C5-C4-N3	3.40	119.92	114.84
46	BA	1842	4AC	N4-C4-N3	3.39	119.55	113.85
1	AA	3884	PSU	O2-C2-N1	-3.39	119.06	122.79
46	BA	105	PSU	O2-C2-N1	-3.39	119.06	122.79
46	BA	686	PSU	O2-C2-N1	-3.39	119.06	122.79
46	BA	1045	PSU	O2-C2-N1	-3.39	119.06	122.79
46	BA	1238	PSU	O2-C2-N1	-3.39	119.06	122.79
46	BA	668	A2M	C4-C5-N7	-3.38	106.50	110.62
1	AA	5001	PSU	O2-C2-N1	-3.38	119.07	122.79
1	AA	3730	PSU	O2-C2-N1	-3.38	119.07	122.79
46	BA	815	PSU	O2-C2-N1	-3.38	119.07	122.79
46	BA	1678	A2M	C4-C5-N7	-3.37	106.51	110.62
1	AA	1534	A2M	C4-C5-N7	-3.37	106.52	110.62
46	BA	1177	PSU	O2-C2-N1	-3.35	119.10	122.79
46	BA	484	A2M	C4-C5-N7	-3.35	106.54	110.62
1	AA	3764	PSU	O2-C2-N1	-3.34	119.11	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	BA	100	PSU	O2-C2-N1	-3.34	119.11	122.79
1	AA	398	A2M	C4-C5-N7	-3.34	106.55	110.62
3	AC	69	PSU	O2-C2-N1	-3.34	119.11	122.79
46	BA	406	PSU	O2-C2-N1	-3.33	119.12	122.79
1	AA	3724	A2M	C4-C5-N7	-3.33	106.56	110.62
1	AA	2508	PSU	O2-C2-N1	-3.33	119.13	122.79
1	AA	3851	PSU	O2-C2-N1	-3.33	119.13	122.79
1	AA	1779	PSU	O2-C2-N1	-3.32	119.13	122.79
46	BA	649	PSU	O2-C2-N1	-3.32	119.13	122.79
1	AA	3762	PSU	O2-C2-N1	-3.32	119.13	122.79
1	AA	4590	A2M	N3-C2-N1	-3.32	123.41	128.60
46	BA	63	PSU	O2-C2-N1	-3.32	119.14	122.79
1	AA	3825	A2M	C4-C5-N7	-3.32	106.58	110.62
46	BA	1692	PSU	O2-C2-N1	-3.32	119.14	122.79
46	BA	159	A2M	C2'-C1'-N9	-3.32	107.95	113.53
46	BA	1851	MA6	C4-C5-N7	-3.31	106.59	110.62
1	AA	3768	PSU	O2-C2-N1	-3.31	119.15	122.79
1	AA	4576	PSU	O2-C2-N1	-3.30	119.16	122.79
46	BA	681	PSU	O2-C2-N1	-3.30	119.16	122.79
1	AA	2401	A2M	N3-C2-N1	-3.29	123.45	128.60
1	AA	3770	PSU	O2-C2-N1	-3.29	119.17	122.79
1	AA	4973	PSU	O2-C2-N1	-3.29	119.17	122.79
46	BA	119	PSU	O2-C2-N1	-3.29	119.17	122.79
3	AC	75	OMG	C6-C5-N7	3.29	136.37	130.25
1	AA	1524	A2M	C4-C5-N7	-3.29	106.61	110.62
46	BA	667	PSU	C4-N3-C2	-3.29	121.60	126.34
1	AA	2815	A2M	C4-C5-N7	-3.29	106.61	110.62
46	BA	609	PSU	O2-C2-N1	-3.29	119.17	122.79
1	AA	4972	PSU	O2-C2-N1	-3.28	119.17	122.79
1	AA	4521	PSU	O2-C2-N1	-3.27	119.19	122.79
1	AA	4689	PSU	C4-N3-C2	-3.27	121.62	126.34
46	BA	1445	PSU	O2-C2-N1	-3.27	119.19	122.79
1	AA	1781	PSU	O2-C2-N1	-3.27	119.19	122.79
46	BA	436	OMG	C6-C5-N7	3.27	136.33	130.25
46	BA	166	A2M	C4-C5-N7	-3.27	106.64	110.62
46	BA	1832	6MZ	C6-C5-N7	3.27	135.93	132.39
1	AA	3639	PSU	O2-C2-N1	-3.27	119.19	122.79
46	BA	27	A2M	C4-C5-N7	-3.27	106.64	110.62
46	BA	99	A2M	N3-C2-N1	-3.26	123.50	128.60
1	AA	4523	A2M	N3-C2-N1	-3.26	123.50	128.60
1	AA	1792	PSU	O2-C2-N1	-3.26	119.20	122.79
46	BA	814	PSU	O2-C2-N1	-3.26	119.20	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	1582	PSU	O2-C2-N1	-3.26	119.21	122.79
1	AA	4431	PSU	O2-C2-N1	-3.26	119.21	122.79
1	AA	4312	PSU	O2-C2-N1	-3.25	119.21	122.79
1	AA	3715	PSU	O2-C2-N1	-3.25	119.21	122.79
1	AA	1782	PSU	O2-C2-N1	-3.24	119.22	122.79
46	BA	1347	PSU	O2-C2-N1	-3.24	119.22	122.79
1	AA	3785	A2M	N3-C2-N1	-3.24	123.53	128.60
46	BA	867	OMG	C6-C5-N7	3.24	136.27	130.25
46	BA	1383	A2M	C4-C5-N7	-3.24	106.68	110.62
1	AA	4361	PSU	O2-C2-N1	-3.23	119.23	122.79
1	AA	4220	6MZ	N1-C2-N3	-3.23	123.55	128.60
1	AA	398	A2M	N3-C2-N1	-3.22	123.56	128.60
3	AC	55	PSU	O2-C2-N1	-3.22	119.24	122.79
46	BA	109	PSU	O2-C2-N1	-3.22	119.24	122.79
1	AA	4499	OMG	C6-C5-N7	3.22	136.24	130.25
1	AA	4637	OMG	C6-C5-N7	3.22	136.23	130.25
46	BA	651	PSU	O2-C2-N1	-3.22	119.25	122.79
46	BA	116	OMU	O4-C4-C5	-3.22	119.50	125.16
46	BA	572	PSU	O2-C2-N1	-3.21	119.25	122.79
46	BA	576	A2M	C4-C5-N7	-3.21	106.70	110.62
1	AA	1326	A2M	N3-C2-N1	-3.21	123.58	128.60
1	AA	4299	PSU	O2-C2-N1	-3.21	119.25	122.79
1	AA	3920	PSU	O2-C2-N1	-3.21	119.26	122.79
1	AA	2363	A2M	C4-C5-N7	-3.21	106.71	110.62
1	AA	400	A2M	N3-C2-N1	-3.20	123.60	128.60
46	BA	1004	PSU	O2-C2-N1	-3.20	119.27	122.79
46	BA	1804	OMU	O4-C4-C5	-3.20	119.53	125.16
1	AA	3744	OMG	C6-C5-N7	3.20	136.19	130.25
46	BA	866	PSU	O2-C2-N1	-3.19	119.28	122.79
46	BA	27	A2M	N3-C2-N1	-3.19	123.61	128.60
1	AA	4590	A2M	C4-C5-N7	-3.19	106.74	110.62
1	AA	398	A2M	C2'-C1'-N9	-3.19	108.17	113.53
46	BA	166	A2M	N3-C2-N1	-3.18	123.62	128.60
1	AA	4673	PSU	O2-C2-N1	-3.18	119.28	122.79
1	AA	2843	PSU	O2-C2-N1	-3.18	119.29	122.79
1	AA	1323	A2M	N3-C2-N1	-3.18	123.63	128.60
46	BA	1678	A2M	N3-C2-N1	-3.18	123.63	128.60
1	AA	1323	A2M	C4-C5-N7	-3.18	106.75	110.62
29	Ac	39	V5N	O2-CB-CG	-3.18	105.00	110.73
46	BA	667	PSU	C6-C5-C4	-3.18	115.98	118.20
1	AA	3830	A2M	C4-C5-N7	-3.17	106.75	110.62
46	BA	1031	A2M	N3-C2-N1	-3.17	123.64	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	400	A2M	C4-C5-N7	-3.17	106.76	110.62
1	AA	4689	PSU	O2-C2-N1	-3.17	119.30	122.79
1	AA	3724	A2M	N3-C2-N1	-3.17	123.65	128.60
46	BA	1186	PSU	O2-C2-N1	-3.17	119.31	122.79
46	BA	93	PSU	O2-C2-N1	-3.16	119.31	122.79
1	AA	4571	A2M	C4-C5-N7	-3.16	106.77	110.62
1	AA	4471	PSU	O2-C2-N1	-3.16	119.31	122.79
46	BA	1639	G7M	O6-C6-C5	-3.16	120.94	128.06
46	BA	218	PSU	O2-C2-N1	-3.15	119.32	122.79
46	BA	966	PSU	O2-C2-N1	-3.15	119.32	122.79
46	BA	99	A2M	C4-C5-N7	-3.15	106.78	110.62
46	BA	512	A2M	C4-C5-N7	-3.15	106.78	110.62
46	BA	1850	MA6	C4-C5-N7	-3.15	106.79	110.62
46	BA	428	OMU	O4-C4-C5	-3.14	119.63	125.16
1	AA	2876	OMG	C6-C5-N7	3.14	136.09	130.25
46	BA	1383	A2M	N3-C2-N1	-3.14	123.69	128.60
46	BA	1447	OMG	C6-C5-N7	3.13	136.07	130.25
1	AA	3718	A2M	C4-C5-N7	-3.13	106.81	110.62
1	AA	3867	A2M	C4-C5-N7	-3.13	106.81	110.62
1	AA	3830	A2M	N3-C2-N1	-3.13	123.71	128.60
46	BA	576	A2M	N3-C2-N1	-3.13	123.71	128.60
1	AA	1326	A2M	C4-C5-N7	-3.12	106.81	110.62
46	BA	1391	OMC	O2-C2-N3	-3.12	117.25	122.33
46	BA	468	A2M	C4-C5-N7	-3.12	106.82	110.62
46	BA	484	A2M	N3-C2-N1	-3.12	123.72	128.60
3	AC	14	OMU	C1'-N1-C2	3.11	123.21	117.57
1	AA	2401	A2M	C2'-C1'-N9	-3.11	108.29	113.53
1	AA	1322	1MA	N9-C4-N3	3.10	134.17	126.94
1	AA	1534	A2M	N3-C2-N1	-3.10	123.75	128.60
46	BA	468	A2M	N3-C2-N1	-3.10	123.75	128.60
1	AA	2787	A2M	N3-C2-N1	-3.10	123.76	128.60
46	BA	1850	MA6	N1-C2-N3	-3.10	123.76	128.60
1	AA	3844	PSU	O2-C2-N1	-3.10	119.38	122.79
46	BA	590	A2M	N3-C2-N1	-3.09	123.77	128.60
1	AA	4494	OMG	C6-C5-N7	3.08	135.98	130.25
46	BA	601	OMG	C6-C5-N7	3.07	135.96	130.25
3	AC	14	OMU	O4-C4-C5	-3.07	119.76	125.16
1	AA	2815	A2M	N3-C2-N1	-3.06	123.81	128.60
1	AA	3782	5MC	C5-C6-N1	-3.06	120.19	123.34
46	BA	1031	A2M	C4-C5-N7	-3.05	106.90	110.62
46	BA	1328	OMG	C6-C5-N7	3.05	135.92	130.25
46	BA	99	A2M	C2'-C1'-N9	-3.04	108.41	113.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	2363	A2M	N3-C2-N1	-3.04	123.85	128.60
46	BA	590	A2M	C4-C5-N7	-3.03	106.93	110.62
46	BA	159	A2M	N3-C2-N1	-3.03	123.86	128.60
1	AA	2415	OMU	O4-C4-C5	-3.02	119.84	125.16
1	AA	2837	OMU	O4-C4-C5	-3.02	119.85	125.16
46	BA	354	OMU	O4-C4-C5	-3.02	119.86	125.16
46	BA	1851	MA6	N1-C2-N3	-3.01	123.90	128.60
1	AA	3637	PSU	O2-C2-N1	-3.01	119.48	122.79
1	AA	2401	A2M	C4-C5-N7	-3.01	106.95	110.62
1	AA	4498	OMU	O4-C4-C5	-3.00	119.89	125.16
1	AA	2787	A2M	C4-C5-N7	-2.99	106.97	110.62
1	AA	4523	A2M	C4-C5-N7	-2.99	106.98	110.62
1	AA	1524	A2M	N3-C2-N1	-2.98	123.94	128.60
46	BA	159	A2M	C5-N7-C8	2.97	107.73	103.51
46	BA	1678	A2M	C5-N7-C8	2.97	107.73	103.51
1	AA	4220	6MZ	C6-C5-N7	2.96	135.60	132.39
1	AA	4571	A2M	N3-C2-N1	-2.96	123.97	128.60
1	AA	1871	A2M	C4-C5-N7	-2.96	107.01	110.62
46	BA	1288	OMU	O4-C4-C5	-2.95	119.97	125.16
1	AA	4220	6MZ	C4-C5-N7	-2.95	107.03	110.62
46	BA	644	OMG	C6-C5-N7	2.95	135.73	130.25
1	AA	3785	A2M	C4-C5-N7	-2.94	107.03	110.62
1	AA	4227	OMU	O4-C4-C5	-2.94	119.98	125.16
46	BA	1832	6MZ	N1-C2-N3	-2.94	124.00	128.60
1	AA	1625	OMG	C6-C5-N7	2.93	135.70	130.25
1	AA	2424	OMG	C6-C5-N7	2.93	135.70	130.25
1	AA	3925	OMU	O4-C4-C5	-2.92	120.03	125.16
46	BA	172	OMU	O4-C4-C5	-2.90	120.06	125.16
1	AA	4306	OMU	O4-C4-C5	-2.90	120.06	125.16
1	AA	3792	OMG	C6-C5-N7	2.90	135.63	130.25
46	BA	121	OMU	O4-C4-C5	-2.89	120.08	125.16
46	BA	116	OMU	C1'-N1-C2	2.89	122.80	117.57
1	AA	4228	OMG	C4-C5-N7	-2.88	106.16	110.72
1	AA	4196	OMG	C6-C5-N7	2.88	135.60	130.25
46	BA	166	A2M	C5-N7-C8	2.88	107.60	103.51
46	BA	1248	B8N	N3-C2-N1	2.88	120.82	116.76
46	BA	1850	MA6	C4-N9-C8	2.88	108.85	105.73
46	BA	484	A2M	C5-N7-C8	2.87	107.59	103.51
46	BA	1326	UY1	C6-C5-C4	2.87	120.20	118.20
46	BA	1442	OMU	O4-C4-C5	-2.85	120.14	125.16
1	AA	3825	A2M	N3-C2-N1	-2.85	124.14	128.60
46	BA	668	A2M	N3-C2-N1	-2.84	124.16	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	3724	A2M	C5-N7-C8	2.83	107.52	103.51
1	AA	400	A2M	C4-N9-C8	2.82	108.79	105.73
46	BA	172	OMU	C1'-N1-C2	2.82	122.68	117.57
46	BA	1367	PSU	C4-N3-C2	-2.82	122.28	126.34
46	BA	576	A2M	C5-N7-C8	2.81	107.50	103.51
46	BA	668	A2M	C5-N7-C8	2.81	107.50	103.51
1	AA	2415	OMU	C1'-N1-C2	2.80	122.65	117.57
1	AA	3867	A2M	N3-C2-N1	-2.80	124.22	128.60
1	AA	398	A2M	C5-N7-C8	2.80	107.49	103.51
46	BA	1383	A2M	C5-N7-C8	2.80	107.49	103.51
1	AA	3785	A2M	C4-N9-C8	2.80	108.76	105.73
1	AA	4623	OMG	C4-C5-N7	-2.79	106.31	110.72
1	AA	2364	OMG	C4-C5-N7	-2.78	106.32	110.72
1	AA	1522	OMG	C4-C5-N7	-2.78	106.32	110.72
1	AA	4620	OMU	O4-C4-C5	-2.78	120.28	125.16
1	AA	2815	A2M	C5-N7-C8	2.77	107.45	103.51
46	BA	509	OMG	C6-C5-N7	2.76	135.38	130.25
1	AA	4618	OMG	C4-C5-N7	-2.76	106.35	110.72
46	BA	1678	A2M	C4-N9-C8	2.75	108.71	105.73
46	BA	1832	6MZ	C5-N7-C8	2.75	107.41	103.51
1	AA	4523	A2M	C4-N9-C8	2.74	108.70	105.73
1	AA	1524	A2M	C5-N7-C8	2.72	107.37	103.51
1	AA	3627	OMG	C4-C5-N7	-2.72	106.42	110.72
46	BA	683	OMG	C4-C5-N7	-2.72	106.42	110.72
1	AA	1534	A2M	C5-N7-C8	2.71	107.37	103.51
46	BA	27	A2M	C5-N7-C8	2.71	107.36	103.51
46	BA	1851	MA6	C5-N7-C8	2.71	107.36	103.51
1	AA	4637	OMG	C4-C5-N7	-2.71	106.43	110.72
46	BA	1850	MA6	C5-C6-N6	-2.70	120.59	125.30
46	BA	166	A2M	C4-N9-C8	2.69	108.64	105.73
3	AC	75	OMG	C4-C5-N7	-2.69	106.46	110.72
1	AA	3825	A2M	C5-N7-C8	2.69	107.33	103.51
46	BA	576	A2M	C2'-C1'-N9	-2.69	109.01	113.53
1	AA	400	A2M	C5-N7-C8	2.69	107.32	103.51
46	BA	1490	OMG	C6-C5-N7	2.68	135.24	130.25
1	AA	4590	A2M	C5-N7-C8	2.68	107.31	103.51
1	AA	3830	A2M	C2'-C1'-N9	-2.67	109.03	113.53
46	BA	1850	MA6	C5-N7-C8	2.67	107.30	103.51
46	BA	1639	G7M	C2-N1-C6	-2.67	120.23	125.10
46	BA	1383	A2M	C2'-C1'-N9	-2.67	109.04	113.53
1	AA	1871	A2M	C4-N9-C8	2.67	108.62	105.73
46	BA	1326	UY1	C6-N1-C2	-2.67	119.96	122.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	BA	99	A2M	C5-N7-C8	2.66	107.29	103.51
46	BA	1337	4AC	C1'-N1-C2	2.66	124.36	118.42
1	AA	3724	A2M	C4-N9-C8	2.66	108.61	105.73
46	BA	668	A2M	C4-N9-C8	2.66	108.61	105.73
46	BA	1367	PSU	C2'-C3'-C4'	-2.65	97.48	102.64
1	AA	1524	A2M	O4'-C1'-N9	2.65	113.28	108.06
46	BA	867	OMG	C4-C5-N7	-2.65	106.53	110.72
1	AA	3867	A2M	C5-N7-C8	2.64	107.27	103.51
1	AA	3899	OMG	C4-C5-N7	-2.64	106.54	110.72
1	AA	4370	OMG	C4-C5-N7	-2.64	106.54	110.72
1	AA	1316	OMG	C4-C5-N7	-2.63	106.55	110.72
1	AA	3782	5MC	O2-C2-N3	-2.63	118.05	122.33
1	AA	2401	A2M	C4-N9-C8	2.63	108.58	105.73
1	AA	3830	A2M	C5-N7-C8	2.63	107.24	103.51
1	AA	4571	A2M	C5-N7-C8	2.63	107.24	103.51
1	AA	4392	OMG	C4-C5-N7	-2.63	106.56	110.72
1	AA	4447	5MC	C5-C4-N3	-2.63	118.84	121.67
1	AA	2363	A2M	C5-N7-C8	2.62	107.22	103.51
1	AA	1326	A2M	C5-N7-C8	2.61	107.21	103.51
1	AA	4499	OMG	C4-C5-N7	-2.60	106.60	110.72
46	BA	1447	OMG	C4-C5-N7	-2.60	106.61	110.72
1	AA	1323	A2M	C5-N7-C8	2.60	107.20	103.51
1	AA	3830	A2M	C4-N9-C8	2.60	108.54	105.73
1	AA	4523	A2M	C5-N7-C8	2.59	107.19	103.51
1	AA	3785	A2M	C5-N7-C8	2.59	107.19	103.51
1	AA	4590	A2M	C4-N9-C8	2.59	108.53	105.73
46	BA	1328	OMG	C4-C5-N7	-2.59	106.63	110.72
1	AA	2876	OMG	C4-C5-N7	-2.58	106.63	110.72
1	AA	398	A2M	C4-N9-C8	2.58	108.52	105.73
46	BA	1367	PSU	O4'-C1'-C2'	-2.57	101.52	105.14
1	AA	2787	A2M	C5-N7-C8	2.57	107.16	103.51
46	BA	1851	MA6	C10-N6-C9	-2.56	107.88	116.12
1	AA	2401	A2M	C5-N7-C8	2.54	107.11	103.51
1	AA	3744	OMG	C4-C5-N7	-2.54	106.71	110.72
46	BA	1337	4AC	CM7-C7-N4	-2.53	110.91	115.29
1	AA	3825	A2M	C4-N9-C8	2.53	108.47	105.73
1	AA	1524	A2M	C4-N9-C8	2.53	108.47	105.73
1	AA	4571	A2M	C4-N9-C8	2.53	108.47	105.73
46	BA	436	OMG	C4-C5-N7	-2.52	106.73	110.72
46	BA	601	OMG	C4-C5-N7	-2.52	106.73	110.72
1	AA	3782	5MC	C5-C4-N3	-2.51	118.96	121.67
46	BA	1031	A2M	C5-N7-C8	2.51	107.07	103.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	3818	UY1	C6-N1-C2	-2.51	120.12	122.68
46	BA	1383	A2M	C4-N9-C8	2.49	108.43	105.73
46	BA	644	OMG	C4-C5-N7	-2.49	106.78	110.72
46	BA	159	A2M	C4-N9-C8	2.49	108.42	105.73
1	AA	4494	OMG	C4-C5-N7	-2.49	106.78	110.72
1	AA	1625	OMG	C4-C5-N7	-2.47	106.82	110.72
46	BA	27	A2M	C4-N9-C8	2.46	108.40	105.73
46	BA	99	A2M	C4-N9-C8	2.46	108.40	105.73
46	BA	1804	OMU	C1'-N1-C2	2.46	122.02	117.57
1	AA	4196	OMG	C4-C5-N7	-2.44	106.86	110.72
46	BA	468	A2M	C5-N7-C8	2.44	106.97	103.51
1	AA	1871	A2M	C5-N7-C8	2.43	106.96	103.51
46	BA	572	PSU	O4'-C1'-C2'	2.43	108.57	105.14
1	AA	3867	A2M	C4-N9-C8	2.42	108.35	105.73
1	AA	3818	UY1	O2-C2-N1	-2.41	120.14	122.79
1	AA	4220	6MZ	C5-N7-C8	2.40	106.92	103.51
1	AA	1534	A2M	C4-N9-C8	2.40	108.32	105.73
46	BA	576	A2M	C4-N9-C8	2.39	108.32	105.73
46	BA	1031	A2M	C4-N9-C8	2.39	108.32	105.73
1	AA	2787	A2M	C4-N9-C8	2.39	108.32	105.73
46	BA	1842	4AC	CM7-C7-N4	-2.38	111.18	115.29
1	AA	2424	OMG	C4-C5-N7	-2.37	106.97	110.72
46	BA	462	OMC	O2-C2-N3	-2.37	118.47	122.33
46	BA	484	A2M	C4-N9-C8	2.37	108.30	105.73
46	BA	590	A2M	C5-N7-C8	2.37	106.87	103.51
1	AA	3724	A2M	C6-C5-N7	2.36	136.41	132.02
1	AA	4636	PSU	C5-C6-N1	-2.35	118.58	122.11
1	AA	3792	OMG	C4-C5-N7	-2.35	107.00	110.72
46	BA	174	OMC	O2-C2-N3	-2.35	118.51	122.33
46	BA	509	OMG	C4-C5-N7	-2.35	107.01	110.72
46	BA	1391	OMC	C1'-N1-C2	2.34	123.65	118.42
46	BA	1490	OMG	C4-C5-N7	-2.34	107.02	110.72
1	AA	4456	OMC	O2-C2-N3	-2.33	118.54	122.33
46	BA	1639	G7M	N9-C8-N7	-2.33	106.45	112.21
1	AA	1322	1MA	C4-C5-N7	-2.33	107.04	110.72
1	AA	1323	A2M	C4-N9-C8	2.33	108.25	105.73
1	AA	2861	OMC	O2-C2-N3	-2.32	118.56	122.33
46	BA	1851	MA6	C4-N9-C8	2.30	108.22	105.73
46	BA	1851	MA6	C5-C6-N6	-2.29	121.31	125.30
46	BA	512	A2M	N3-C2-N1	-2.29	125.02	128.60
1	AA	4403	PSU	O4'-C1'-C2'	2.29	108.37	105.14
1	AA	1534	A2M	C6-C5-N7	2.29	136.28	132.02

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	BA	1850	MA6	C10-N6-C9	-2.28	108.77	116.12
1	AA	3887	OMC	O2-C2-N3	-2.28	118.63	122.33
46	BA	468	A2M	C4-N9-C8	2.27	108.19	105.73
46	BA	509	OMG	O6-C6-C5	-2.27	120.57	126.60
46	BA	668	A2M	C6-C5-N7	2.27	136.25	132.02
1	AA	2424	OMG	O6-C6-C5	-2.26	120.62	126.60
46	BA	1337	4AC	C5-C4-N4	-2.25	119.01	122.92
1	AA	1326	A2M	C4-N9-C8	2.24	108.16	105.73
46	BA	512	A2M	C5-N7-C8	2.24	106.69	103.51
46	BA	644	OMG	O6-C6-C5	-2.24	120.66	126.60
1	AA	3792	OMG	O6-C6-C5	-2.23	120.68	126.60
1	AA	3818	UY1	O4'-C1'-C2'	2.23	108.62	104.48
1	AA	398	A2M	C6-C5-N7	2.23	136.17	132.02
46	BA	1678	A2M	N9-C8-N7	-2.22	110.88	113.91
1	AA	4498	OMU	O2-C2-N1	-2.22	119.84	122.79
46	BA	99	A2M	C6-C5-N7	2.21	136.15	132.02
1	AA	3637	PSU	C5-C6-N1	-2.21	118.79	122.11
1	AA	4590	A2M	C6-C5-N7	2.21	136.14	132.02
46	BA	436	OMG	O6-C6-C5	-2.21	120.75	126.60
1	AA	4536	OMC	O2-C2-N3	-2.20	118.75	122.33
46	BA	517	OMC	O2-C2-N3	-2.20	118.75	122.33
1	AA	2351	OMC	O2-C2-N3	-2.20	118.75	122.33
1	AA	1871	A2M	C2-N1-C6	2.19	122.53	118.77
1	AA	3724	A2M	N9-C8-N7	-2.19	110.92	113.91
46	BA	1678	A2M	C6-C5-N7	2.19	136.09	132.02
1	AA	1792	PSU	C6-C5-C4	-2.18	116.67	118.20
46	BA	668	A2M	C2'-C1'-N9	-2.18	109.86	113.53
1	AA	3808	OMC	O2-C2-N3	-2.18	118.78	122.33
1	AA	4220	6MZ	C4-N9-C8	2.18	108.09	105.73
1	AA	3718	A2M	N3-C2-N1	-2.18	125.20	128.60
46	BA	1490	OMG	O6-C6-C5	-2.17	120.83	126.60
1	AA	1322	1MA	N1-C2-N3	-2.17	123.42	126.00
1	AA	4494	OMG	O6-C6-C5	-2.17	120.85	126.60
46	BA	1639	G7M	C4'-O4'-C1'	-2.16	104.71	109.47
1	AA	2363	A2M	C4-N9-C8	2.15	108.06	105.73
1	AA	1677	PSU	O4'-C1'-C2'	2.15	108.18	105.14
46	BA	1328	OMG	O6-C6-C5	-2.15	120.89	126.60
46	BA	1238	PSU	O4'-C1'-C2'	2.15	108.18	105.14
46	BA	683	OMG	O6-C6-C5	-2.15	120.89	126.60
1	AA	1625	OMG	O6-C6-C5	-2.15	120.90	126.60
46	BA	1031	A2M	C2'-C1'-N9	-2.15	109.91	113.53
46	BA	1360	PSU	O4'-C1'-C2'	2.14	108.16	105.14

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	4636	PSU	O4'-C1'-C2'	2.14	108.16	105.14
1	AA	1322	1MA	C6-C5-N7	2.14	136.09	132.20
46	BA	1832	6MZ	C4-N9-C8	2.14	108.04	105.73
1	AA	3782	5MC	C1'-N1-C6	-2.13	117.57	121.12
1	AA	4442	PSU	O4'-C1'-C2'	2.13	108.15	105.14
1	AA	3830	A2M	C6-C5-N7	2.13	135.99	132.02
46	BA	1337	4AC	O2-C2-N3	-2.13	118.87	122.33
1	AA	2364	OMG	O6-C6-C5	-2.13	120.96	126.60
1	AA	2815	A2M	C4-N9-C8	2.13	108.03	105.73
1	AA	3785	A2M	N9-C8-N7	-2.13	111.01	113.91
46	BA	166	A2M	N9-C8-N7	-2.12	111.01	113.91
46	BA	27	A2M	C6-C5-N7	2.12	135.98	132.02
1	AA	1871	A2M	C6-C5-N7	2.12	135.97	132.02
46	BA	1643	PSU	C5-C6-N1	-2.12	118.93	122.11
1	AA	3825	A2M	C6-C5-N7	2.12	135.96	132.02
46	BA	668	A2M	N9-C8-N7	-2.11	111.03	113.91
1	AA	400	A2M	C6-C5-N7	2.11	135.95	132.02
46	BA	1850	MA6	N9-C8-N7	-2.11	111.03	113.91
1	AA	1316	OMG	O6-C6-C5	-2.11	121.01	126.60
1	AA	1524	A2M	C6-C5-N7	2.10	135.94	132.02
46	BA	867	OMG	O6-C6-C5	-2.10	121.02	126.60
1	AA	4637	OMG	O6-C6-C5	-2.10	121.03	126.60
3	AC	69	PSU	O4'-C1'-C2'	2.10	108.10	105.14
1	AA	2876	OMG	O6-C6-C5	-2.10	121.04	126.60
46	BA	1447	OMG	O6-C6-C5	-2.09	121.04	126.60
46	BA	366	PSU	O4'-C1'-C2'	2.09	108.10	105.14
1	AA	4521	PSU	C5-C6-N1	-2.09	118.97	122.11
1	AA	398	A2M	N9-C8-N7	-2.09	111.05	113.91
46	BA	159	A2M	C6-C5-N7	2.09	135.92	132.02
1	AA	3744	OMG	O6-C6-C5	-2.09	121.06	126.60
1	AA	3718	A2M	C5-N7-C8	2.09	106.48	103.51
46	BA	484	A2M	C6-C5-N7	2.09	135.91	132.02
46	BA	468	A2M	C6-C5-N7	2.09	135.91	132.02
1	AA	4499	OMG	O6-C6-C5	-2.08	121.08	126.60
1	AA	400	A2M	N9-C8-N7	-2.08	111.07	113.91
1	AA	4623	OMG	O6-C6-C5	-2.08	121.08	126.60
1	AA	4196	OMG	O6-C6-C5	-2.08	121.09	126.60
46	BA	27	A2M	C2'-C1'-N9	-2.08	110.03	113.53
46	BA	866	PSU	O3'-C3'-C2'	2.08	118.54	111.82
1	AA	4523	A2M	C6-C5-N7	2.07	135.88	132.02
1	AA	3627	OMG	O6-C6-C5	-2.07	121.10	126.60
1	AA	1323	A2M	C6-C5-N7	2.07	135.88	132.02

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	4576	PSU	O4'-C1'-C2'	2.07	108.06	105.14
1	AA	4370	OMG	O6-C6-C5	-2.07	121.11	126.60
46	BA	601	OMG	O6-C6-C5	-2.07	121.12	126.60
1	AA	4523	A2M	N9-C8-N7	-2.07	111.09	113.91
1	AA	4457	PSU	O4'-C1'-C2'	2.06	108.06	105.14
1	AA	2843	PSU	C5-C6-N1	-2.06	119.01	122.11
46	BA	166	A2M	C6-C5-N7	2.06	135.85	132.02
1	AA	3785	A2M	C6-C5-N7	2.05	135.85	132.02
46	BA	159	A2M	N9-C8-N7	-2.05	111.10	113.91
1	AA	4618	OMG	O6-C6-C5	-2.05	121.16	126.60
1	AA	3695	PSU	O4'-C1'-C2'	2.05	108.03	105.14
46	BA	1272	OMC	O2-C2-N3	-2.05	119.00	122.33
46	BA	576	A2M	C6-C5-N7	2.04	135.82	132.02
1	AA	3724	A2M	C2'-C1'-N9	-2.03	110.11	113.53
1	AA	3920	PSU	O4'-C1'-C2'	2.03	108.01	105.14
1	AA	4228	OMG	O6-C6-C5	-2.03	121.21	126.60
1	AA	3925	OMU	O2-C2-N1	-2.03	120.09	122.79
3	AC	14	OMU	C6-N1-C2	-2.03	118.40	120.99
1	AA	4590	A2M	N9-C8-N7	-2.02	111.15	113.91
46	BA	1643	PSU	O4'-C1'-C2'	2.02	108.00	105.14
1	AA	3899	OMG	O6-C6-C5	-2.02	121.24	126.60
1	AA	2401	A2M	C6-C5-N7	2.02	135.78	132.02
1	AA	4447	5MC	O2-C2-N3	-2.01	119.06	122.33
3	AC	75	OMG	O6-C6-C5	-2.01	121.26	126.60
1	AA	3637	PSU	O2-C2-N3	-2.01	118.02	121.82
1	AA	2363	A2M	C6-C5-N7	2.01	135.77	132.02
1	AA	4457	PSU	C5-C6-N1	-2.01	119.09	122.11
46	BA	468	A2M	C2-N1-C6	2.01	122.21	118.77
46	BA	1383	A2M	C6-C5-N7	2.00	135.75	132.02
46	BA	1326	UY1	O2-C2-N1	-2.00	120.59	122.79
1	AA	3830	A2M	N9-C8-N7	-2.00	111.18	113.91
46	BA	866	PSU	C5-C6-N1	-2.00	119.11	122.11
1	AA	2861	OMC	C1'-N1-C2	2.00	122.89	118.42

There are no chirality outliers.

All (150) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
59	BN	67	NMM	O-C-CA-CB
1	AA	1323	A2M	O4'-C4'-C5'-O5'
1	AA	1582	PSU	C2'-C1'-C5-C4
1	AA	1582	PSU	O4'-C1'-C5-C4

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Mol	Chain	Res	Type	Atoms
1	AA	1582	PSU	O4'-C1'-C5-C6
1	AA	1625	OMG	O4'-C4'-C5'-O5'
1	AA	1625	OMG	C3'-C4'-C5'-O5'
1	AA	3701	OMC	C2'-C1'-N1-C2
1	AA	3701	OMC	C2'-C1'-N1-C6
1	AA	3785	A2M	C3'-C4'-C5'-O5'
1	AA	4500	PSU	C3'-C4'-C5'-O5'
1	AA	4500	PSU	O4'-C4'-C5'-O5'
1	AA	4636	PSU	C3'-C4'-C5'-O5'
1	AA	4637	OMG	O4'-C4'-C5'-O5'
46	BA	296	PSU	O4'-C4'-C5'-O5'
46	BA	428	OMU	C2'-C1'-N1-C2
46	BA	428	OMU	C2'-C1'-N1-C6
46	BA	468	A2M	C1'-C2'-O2'-CM'
46	BA	484	A2M	C1'-C2'-O2'-CM'
46	BA	512	A2M	O4'-C4'-C5'-O5'
46	BA	667	PSU	C2'-C1'-C5-C4
46	BA	667	PSU	C2'-C1'-C5-C6
46	BA	668	A2M	O4'-C4'-C5'-O5'
46	BA	668	A2M	C3'-C4'-C5'-O5'
46	BA	1232	PSU	C2'-C1'-C5-C6
46	BA	1248	B8N	O4'-C4'-C5'-O5'
46	BA	1248	B8N	C3'-C4'-C5'-O5'
46	BA	1248	B8N	N3-C31-C32-C33
46	BA	1326	UY1	C2'-C1'-C5-C4
46	BA	1326	UY1	C2'-C1'-C5-C6
46	BA	1804	OMU	C3'-C4'-C5'-O5'
46	BA	1832	6MZ	C5-C6-N6-C9
46	BA	1832	6MZ	N1-C6-N6-C9
46	BA	1851	MA6	O4'-C4'-C5'-O5'
46	BA	1851	MA6	C3'-C4'-C5'-O5'
46	BA	1851	MA6	C5-C6-N6-C9
72	Ba	138	IAS	CA-CB-CG-OD1
1	AA	4590	A2M	C4'-C5'-O5'-P
1	AA	398	A2M	O4'-C4'-C5'-O5'
1	AA	3762	PSU	O4'-C4'-C5'-O5'
1	AA	3785	A2M	O4'-C4'-C5'-O5'
1	AA	3844	PSU	O4'-C4'-C5'-O5'
1	AA	4636	PSU	O4'-C4'-C5'-O5'
1	AA	4637	OMG	C3'-C4'-C5'-O5'
46	BA	296	PSU	C3'-C4'-C5'-O5'
46	BA	468	A2M	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
46	BA	512	A2M	C3'-C4'-C5'-O5'
46	BA	590	A2M	C3'-C4'-C5'-O5'
46	BA	1490	OMG	C3'-C4'-C5'-O5'
1	AA	398	A2M	C3'-C4'-C5'-O5'
1	AA	1323	A2M	C3'-C4'-C5'-O5'
1	AA	2364	OMG	O4'-C4'-C5'-O5'
1	AA	3762	PSU	C3'-C4'-C5'-O5'
1	AA	3844	PSU	C3'-C4'-C5'-O5'
46	BA	99	A2M	O4'-C4'-C5'-O5'
46	BA	428	OMU	C3'-C4'-C5'-O5'
46	BA	428	OMU	O4'-C4'-C5'-O5'
46	BA	468	A2M	C3'-C4'-C5'-O5'
46	BA	1045	PSU	C3'-C4'-C5'-O5'
46	BA	1490	OMG	O4'-C4'-C5'-O5'
46	BA	1851	MA6	N1-C6-N6-C9
1	AA	3764	PSU	C3'-C4'-C5'-O5'
46	BA	100	PSU	C3'-C4'-C5'-O5'
46	BA	1045	PSU	O4'-C4'-C5'-O5'
46	BA	1232	PSU	C3'-C4'-C5'-O5'
1	AA	3764	PSU	O4'-C4'-C5'-O5'
46	BA	590	A2M	O4'-C4'-C5'-O5'
46	BA	1232	PSU	O4'-C4'-C5'-O5'
46	BA	1804	OMU	O4'-C4'-C5'-O5'
46	BA	1850	MA6	C5-C6-N6-C9
1	AA	2787	A2M	C2'-C1'-N9-C8
1	AA	3818	UY1	C4'-C5'-O5'-P
1	AA	3867	A2M	C3'-C4'-C5'-O5'
46	BA	100	PSU	O4'-C4'-C5'-O5'
46	BA	1639	G7M	O4'-C4'-C5'-O5'
1	AA	4447	5MC	C2'-C1'-N1-C6
46	BA	1445	PSU	C4'-C5'-O5'-P
46	BA	1832	6MZ	O4'-C4'-C5'-O5'
1	AA	1323	A2M	C1'-C2'-O2'-CM'
46	BA	428	OMU	O4'-C1'-N1-C6
1	AA	3844	PSU	C4'-C5'-O5'-P
1	AA	4500	PSU	C4'-C5'-O5'-P
46	BA	1244	PSU	C4'-C5'-O5'-P
46	BA	1288	OMU	C4'-C5'-O5'-P
46	BA	1851	MA6	C4'-C5'-O5'-P
1	AA	1323	A2M	C3'-C2'-O2'-CM'
1	AA	4447	5MC	O4'-C1'-N1-C6
46	BA	1490	OMG	C4'-C5'-O5'-P

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Mol	Chain	Res	Type	Atoms
46	BA	1832	6MZ	C3'-C4'-C5'-O5'
1	AA	1524	A2M	O4'-C1'-N9-C4
1	AA	1326	A2M	C4'-C5'-O5'-P
46	BA	428	OMU	O4'-C1'-N1-C2
46	BA	801	PSU	C4'-C5'-O5'-P
1	AA	1326	A2M	C3'-C4'-C5'-O5'
46	BA	166	A2M	C3'-C4'-C5'-O5'
46	BA	1850	MA6	N1-C6-N6-C9
1	AA	3887	OMC	C4'-C5'-O5'-P
46	BA	166	A2M	C4'-C5'-O5'-P
1	AA	1781	PSU	C3'-C4'-C5'-O5'
46	BA	1490	OMG	C3'-C2'-O2'-CM2
1	AA	1524	A2M	O4'-C1'-N9-C8
46	BA	1232	PSU	C4'-C5'-O5'-P
1	AA	2364	OMG	C3'-C4'-C5'-O5'
1	AA	3818	UY1	O4'-C4'-C5'-O5'
1	AA	3851	PSU	C3'-C4'-C5'-O5'
1	AA	2787	A2M	C2'-C1'-N9-C4
1	AA	3701	OMC	O4'-C1'-N1-C6
1	AA	4447	5MC	O4'-C1'-N1-C2
1	AA	3818	UY1	O4'-C1'-C5-C4
46	BA	667	PSU	O4'-C1'-C5-C4
46	BA	918	PSU	O4'-C1'-C5-C4
46	BA	1238	PSU	O4'-C1'-C5-C4
46	BA	1244	PSU	O4'-C1'-C5-C4
46	BA	1326	UY1	O4'-C1'-C5-C4
1	AA	2837	OMU	C3'-C2'-O2'-CM2
46	BA	509	OMG	C3'-C2'-O2'-CM2
46	BA	1288	OMU	C3'-C2'-O2'-CM2
46	BA	1804	OMU	C3'-C2'-O2'-CM2
1	AA	2787	A2M	O4'-C1'-N9-C8
1	AA	4447	5MC	C2'-C1'-N1-C2
1	AA	1534	A2M	O4'-C4'-C5'-O5'
46	BA	116	OMU	O4'-C4'-C5'-O5'
46	BA	576	A2M	C3'-C4'-C5'-O5'
46	BA	966	PSU	O4'-C4'-C5'-O5'
1	AA	3718	A2M	O4'-C4'-C5'-O5'
46	BA	99	A2M	C3'-C4'-C5'-O5'
59	BN	67	NMM	CA-CB-CG-CD
1	AA	3718	A2M	C3'-C2'-O2'-CM'
46	BA	590	A2M	O4'-C1'-N9-C8
1	AA	1534	A2M	C4'-C5'-O5'-P

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Mol	Chain	Res	Type	Atoms
1	AA	2351	OMC	O4'-C4'-C5'-O5'
46	BA	1367	PSU	C3'-C4'-C5'-O5'
1	AA	1322	1MA	C2'-C1'-N9-C8
1	AA	1677	PSU	O4'-C1'-C5-C6
1	AA	3818	UY1	O4'-C1'-C5-C6
1	AA	4636	PSU	O4'-C1'-C5-C6
46	BA	667	PSU	O4'-C1'-C5-C6
46	BA	918	PSU	O4'-C1'-C5-C6
46	BA	1326	UY1	O4'-C1'-C5-C6
46	BA	1391	OMC	C2'-C1'-N1-C2
1	AA	3701	OMC	O4'-C1'-N1-C2
1	AA	2422	OMC	O4'-C4'-C5'-O5'
46	BA	159	A2M	C3'-C4'-C5'-O5'
46	BA	590	A2M	C2'-C1'-N9-C8
46	BA	1337	4AC	C2'-C1'-N1-C2
46	BA	1703	OMC	C3'-C2'-O2'-CM2
46	BA	822	PSU	O4'-C4'-C5'-O5'
46	BA	1639	G7M	C3'-C4'-C5'-O5'
3	AC	75	OMG	C4'-C5'-O5'-P
46	BA	590	A2M	C2'-C1'-N9-C4

There are no ring outliers.

81 monomers are involved in 104 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	AA	2787	A2M	1	0
46	BA	116	OMU	3	0
46	BA	1383	A2M	2	0
1	AA	1683	PSU	1	0
1	AA	2424	OMG	1	0
46	BA	166	A2M	1	0
1	AA	3718	A2M	4	0
46	BA	1639	G7M	1	0
46	BA	468	A2M	3	0
46	BA	1643	PSU	1	0
1	AA	4457	PSU	2	0
46	BA	1391	OMC	2	0
1	AA	4689	PSU	1	0
46	BA	1703	OMC	1	0
46	BA	1490	OMG	1	0
46	BA	1445	PSU	1	0
46	BA	1232	PSU	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	AA	4620	OMU	1	0
46	BA	484	A2M	2	0
46	BA	867	OMG	1	0
1	AA	2415	OMU	1	0
46	BA	1692	PSU	1	0
46	BA	1272	OMC	2	0
3	AC	14	OMU	2	0
72	Ba	138	IAS	1	0
1	AA	4220	6MZ	1	0
46	BA	822	PSU	2	0
46	BA	462	OMC	2	0
1	AA	3887	OMC	1	0
46	BA	1046	PSU	2	0
46	BA	63	PSU	1	0
46	BA	1442	OMU	1	0
46	BA	1625	PSU	1	0
46	BA	121	OMU	1	0
46	BA	866	PSU	1	0
1	AA	2351	OMC	2	0
1	AA	5010	PSU	1	0
1	AA	5001	PSU	1	0
1	AA	3920	PSU	1	0
1	AA	400	A2M	1	0
1	AA	4456	OMC	2	0
1	AA	2839	PSU	1	0
46	BA	512	A2M	3	0
46	BA	1337	4AC	1	0
1	AA	4552	PSU	1	0
46	BA	1045	PSU	1	0
46	BA	1367	PSU	3	0
46	BA	576	A2M	1	0
46	BA	517	OMC	1	0
46	BA	99	A2M	1	0
46	BA	300	PSU	1	0
1	AA	4392	OMG	1	0
1	AA	1781	PSU	1	0
1	AA	398	A2M	1	0
1	AA	4579	PSU	2	0
1	AA	4618	OMG	1	0
46	BA	1832	6MZ	2	0
1	AA	4536	OMC	1	0
1	AA	4228	OMG	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	AA	4571	A2M	2	0
46	BA	27	A2M	1	0
1	AA	1871	A2M	1	0
46	BA	509	OMG	1	0
46	BA	366	PSU	1	0
1	AA	4523	A2M	1	0
1	AA	2363	A2M	1	0
46	BA	1678	A2M	1	0
46	BA	815	PSU	1	0
46	BA	1288	OMU	1	0
46	BA	590	A2M	1	0
46	BA	1842	4AC	1	0
46	BA	296	PSU	1	0
1	AA	1326	A2M	1	0
1	AA	3785	A2M	1	0
1	AA	1340	OMC	2	0
1	AA	4447	5MC	2	0
46	BA	1850	MA6	1	0
1	AA	4293	PSU	1	0
1	AA	1524	A2M	1	0
46	BA	1031	A2M	2	0
46	BA	159	A2M	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 362 ligands modelled in this entry, 362 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](#)

There are no chain breaks in this entry.

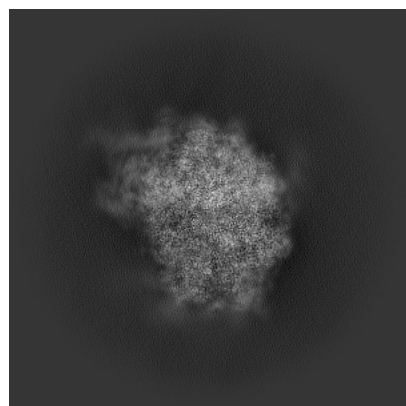
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-66298. These allow visual inspection of the internal detail of the map and identification of artifacts.

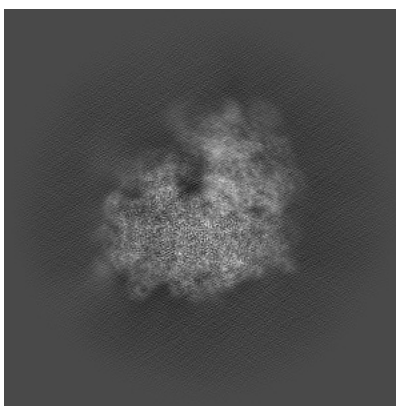
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

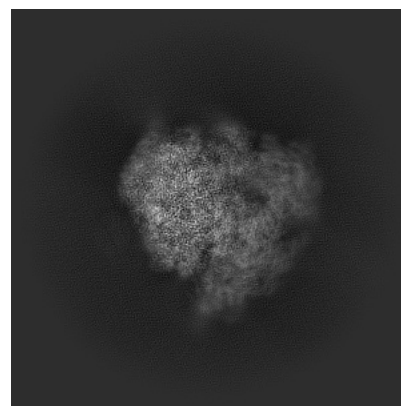
6.1.1 Primary map



X

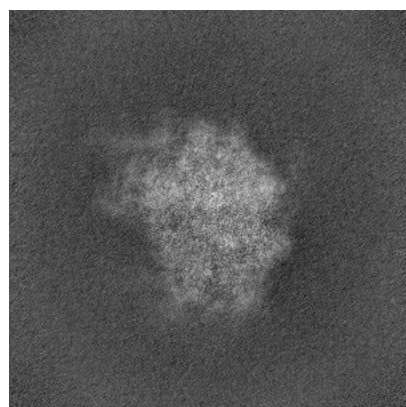


Y

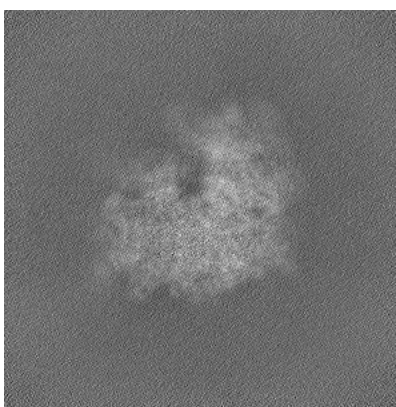


Z

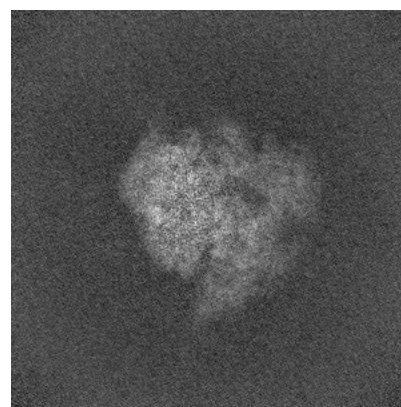
6.1.2 Raw map



X



Y

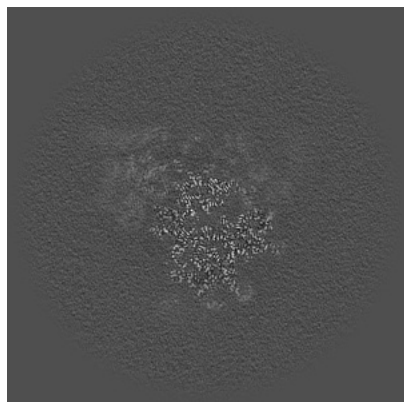


Z

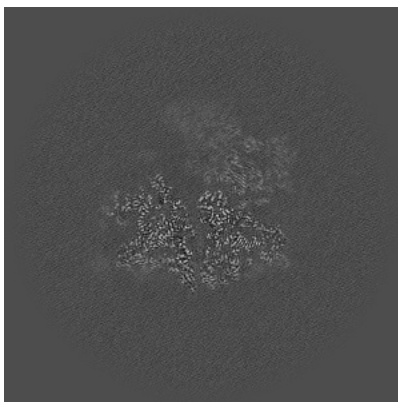
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

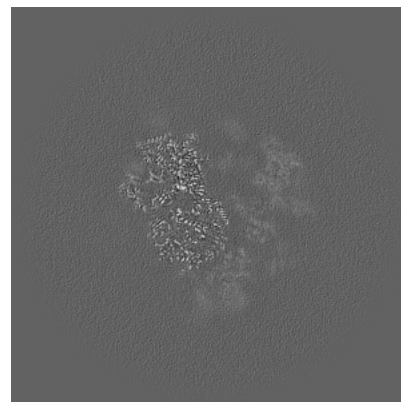
6.2.1 Primary map



X Index: 320

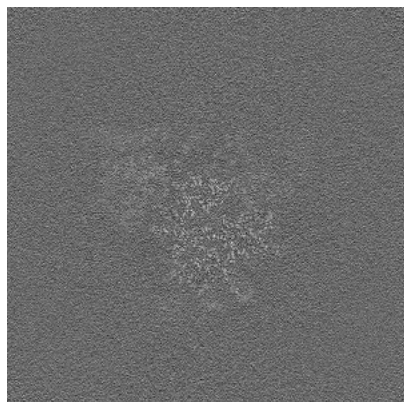


Y Index: 320

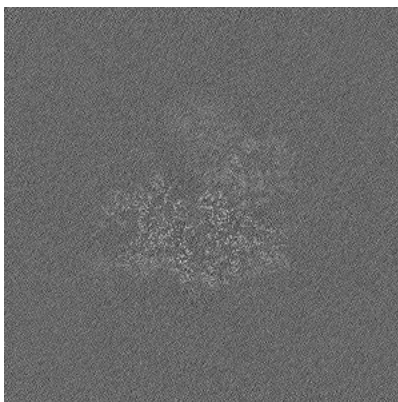


Z Index: 320

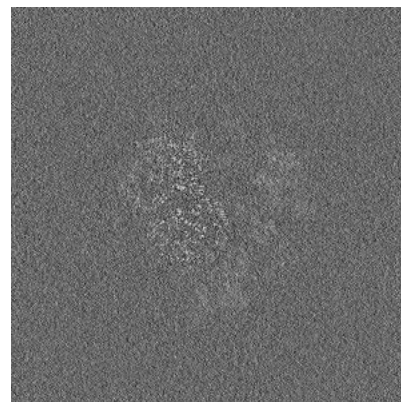
6.2.2 Raw map



X Index: 320



Y Index: 320

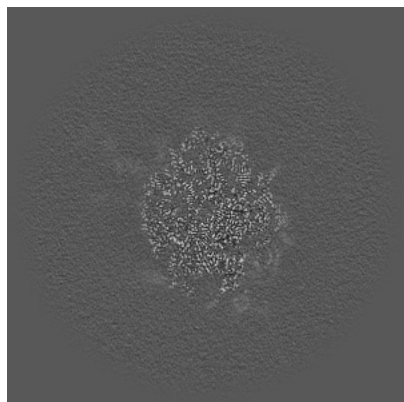


Z Index: 320

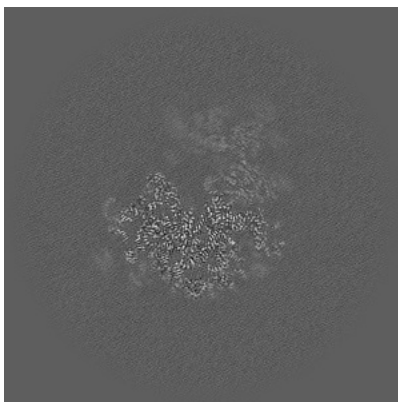
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

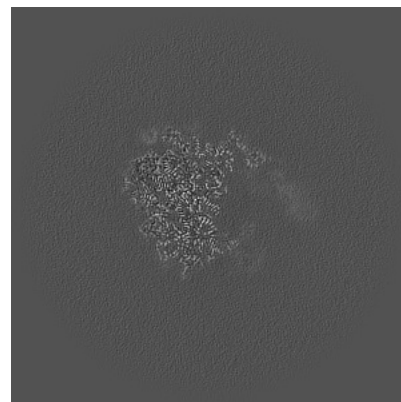
6.3.1 Primary map



X Index: 288

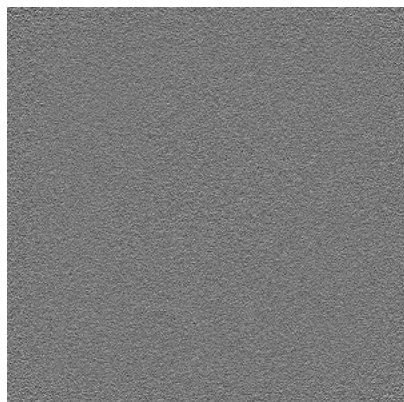


Y Index: 337

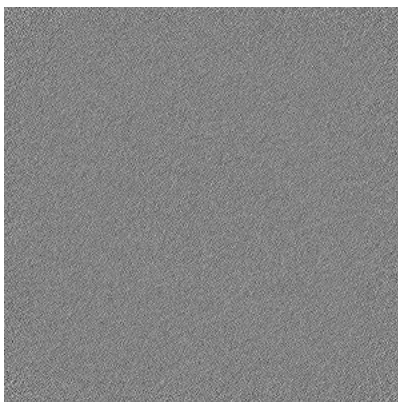


Z Index: 279

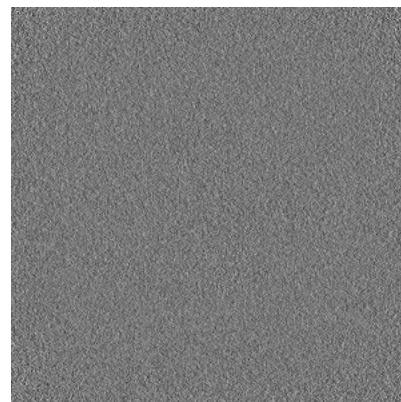
6.3.2 Raw map



X Index: 0



Y Index: 0

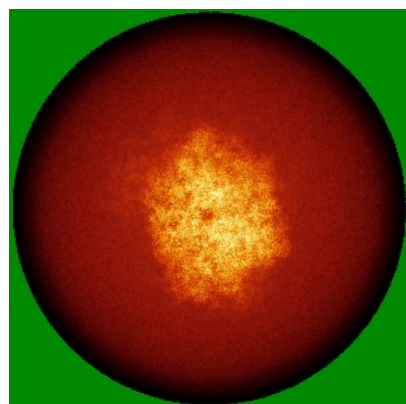


Z Index: 0

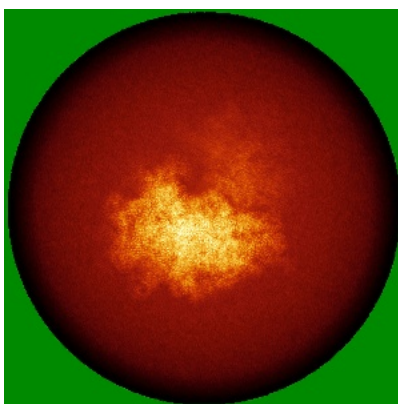
The images above show the largest variance slices of the map in three orthogonal directions.

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

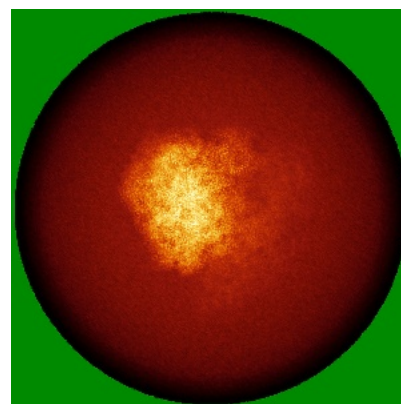
6.4.1 Primary map



X

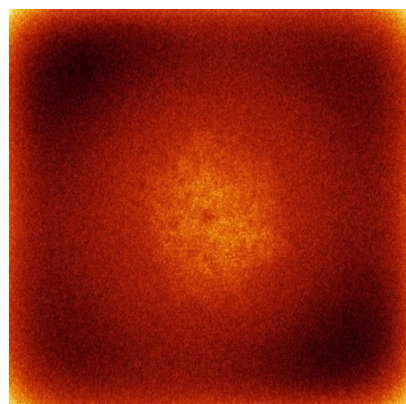


Y

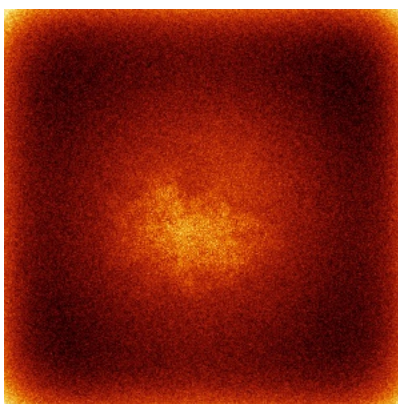


Z

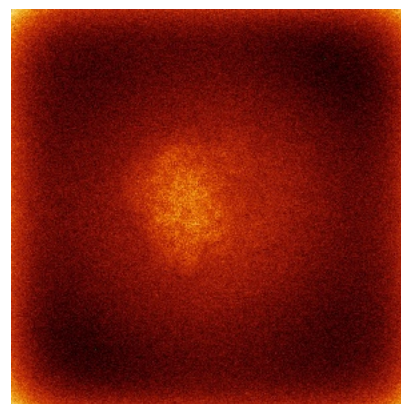
6.4.2 Raw map



X



Y

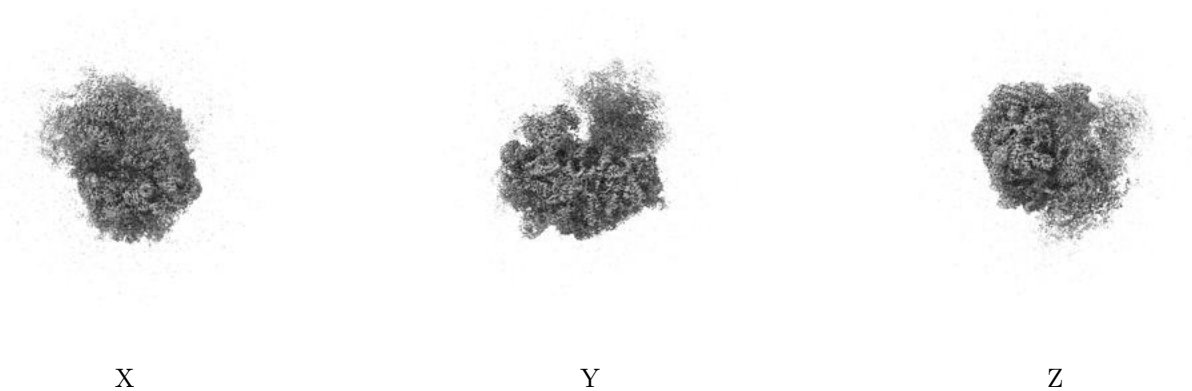


Z

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.

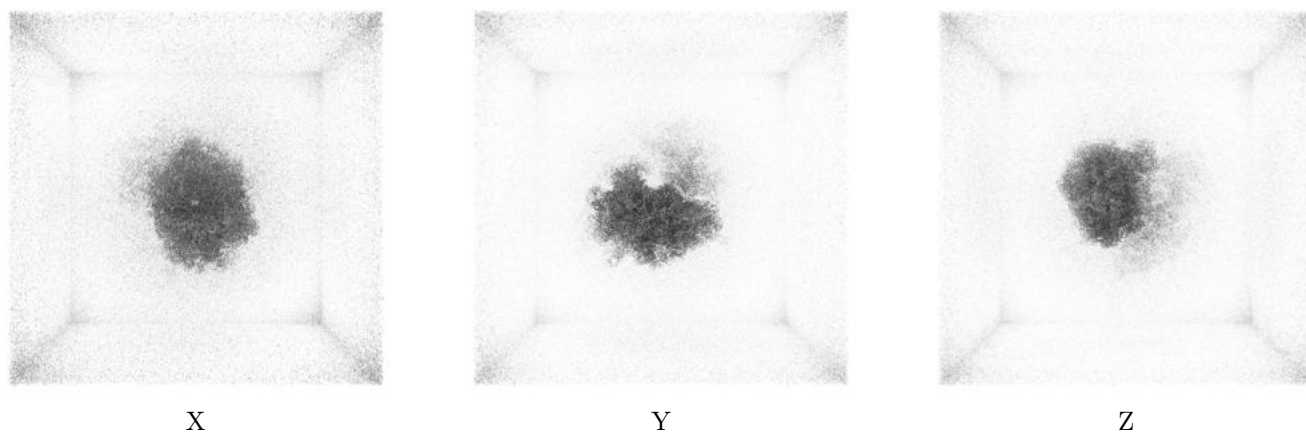
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.29. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

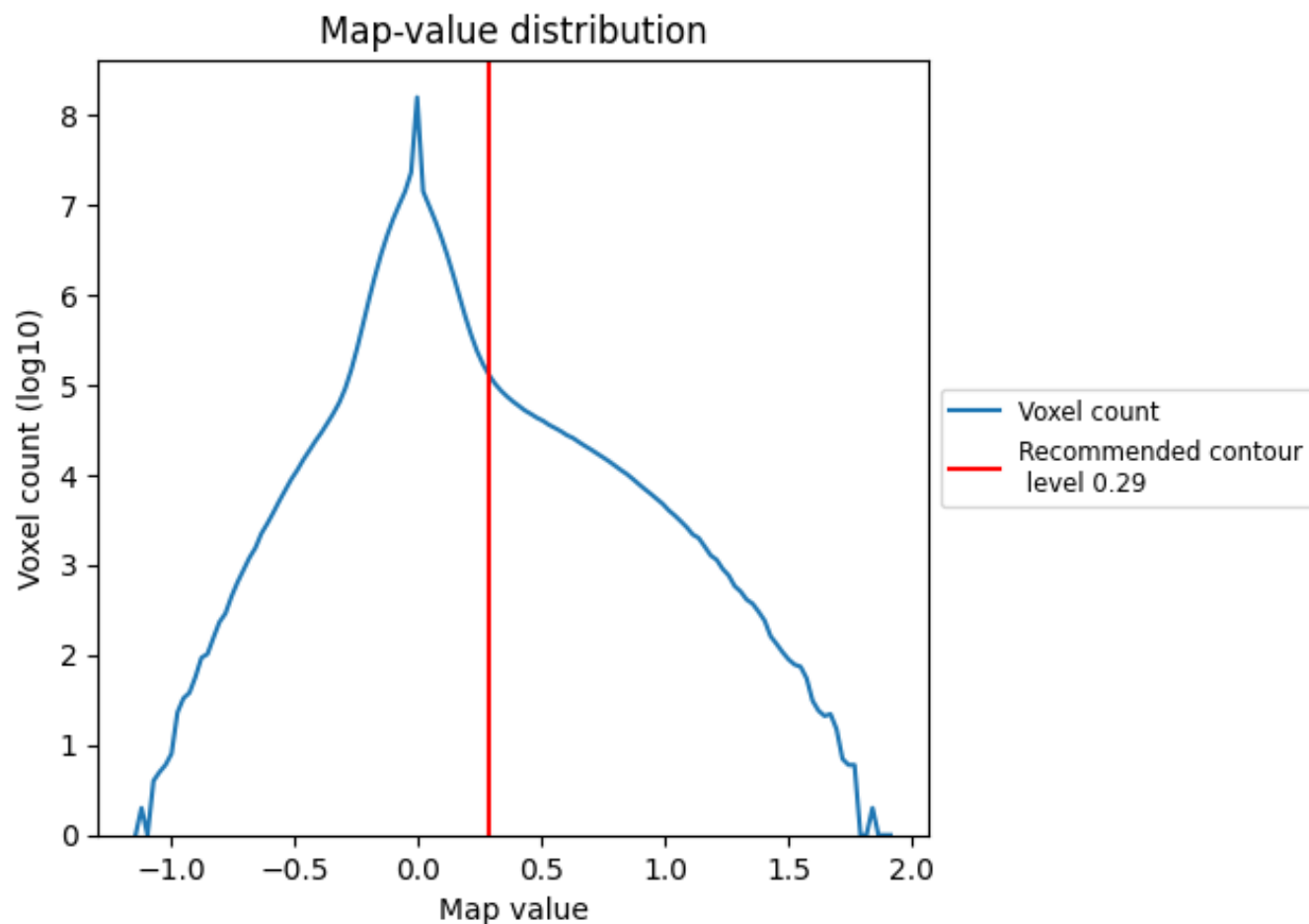
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

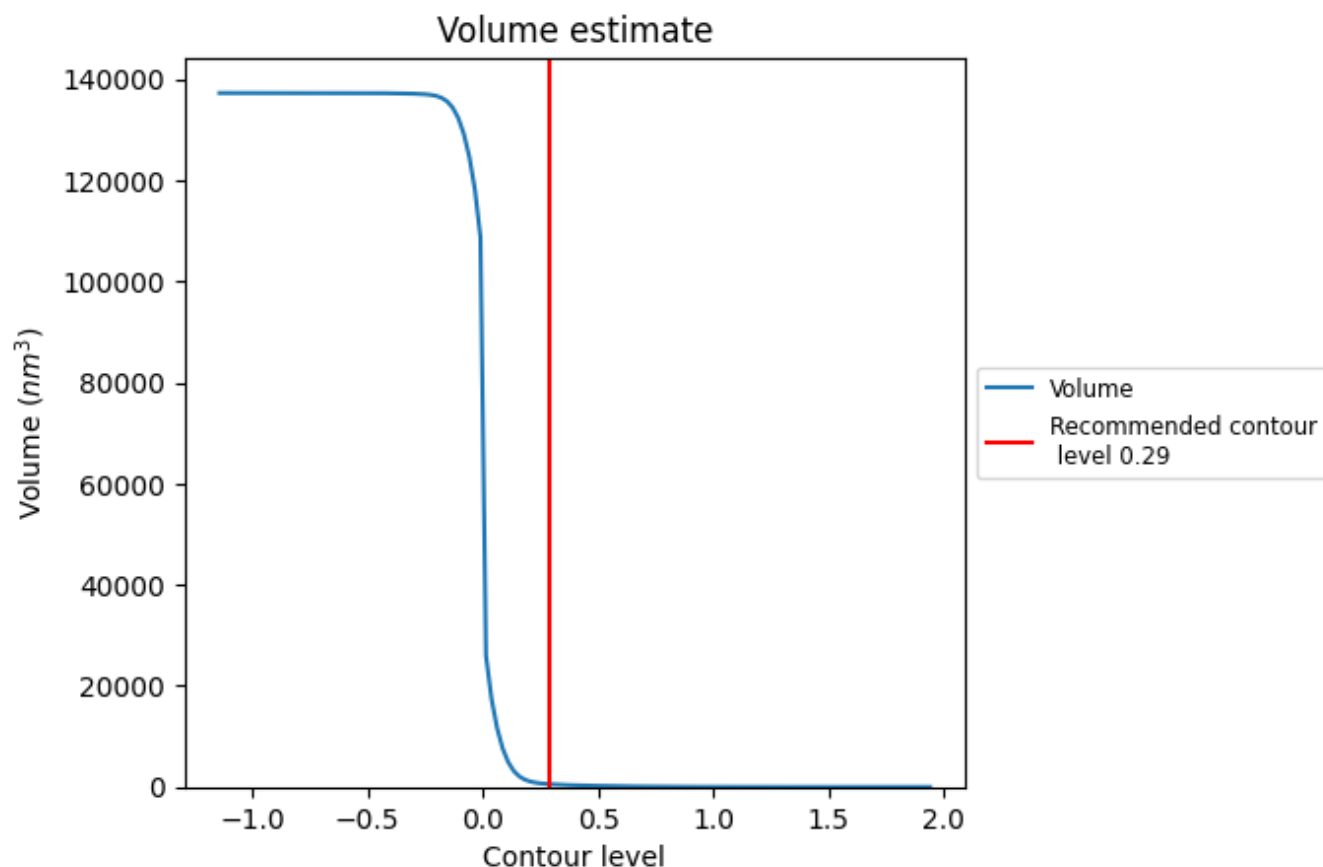
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

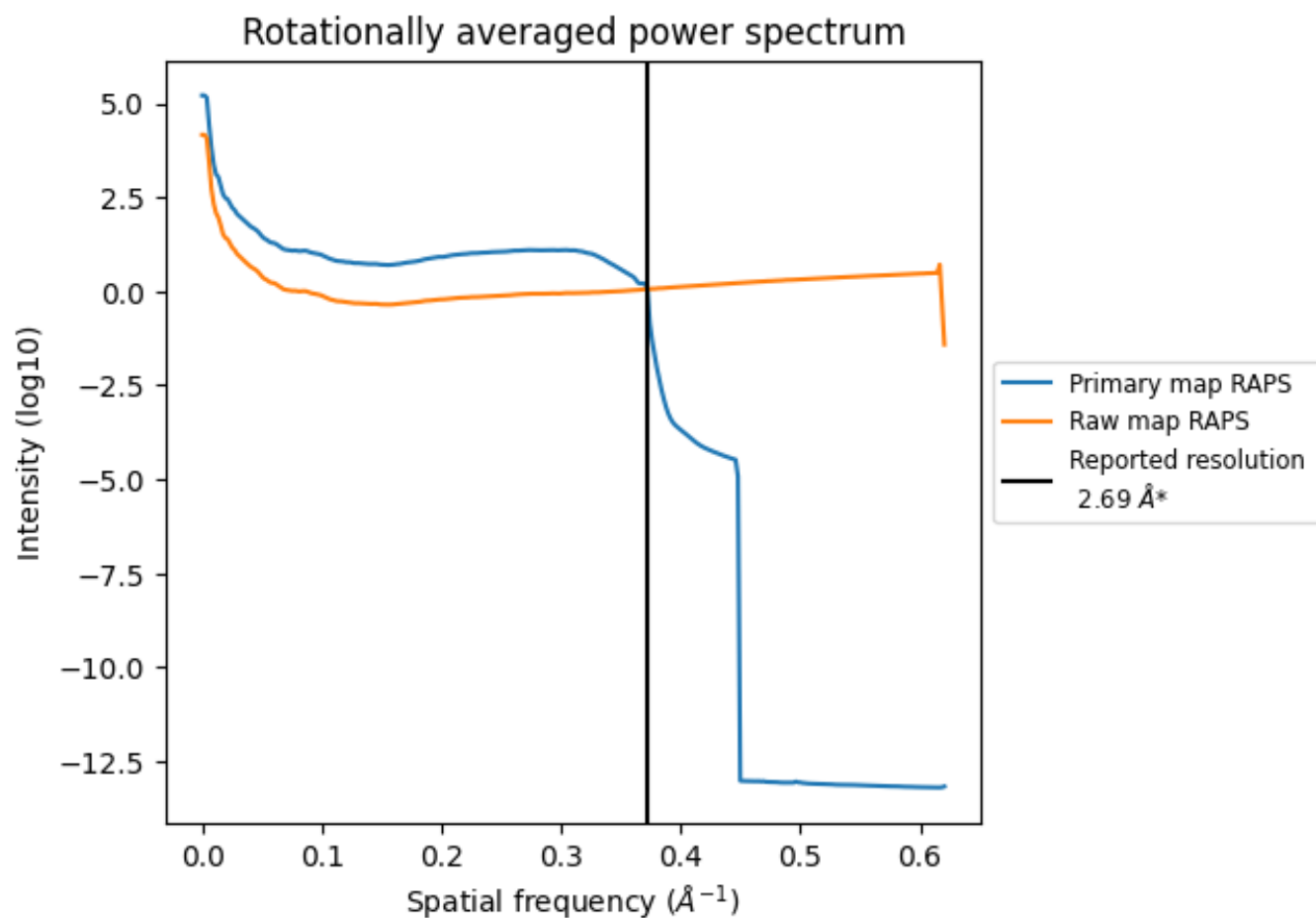
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 555 nm^3 ; this corresponds to an approximate mass of 501 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

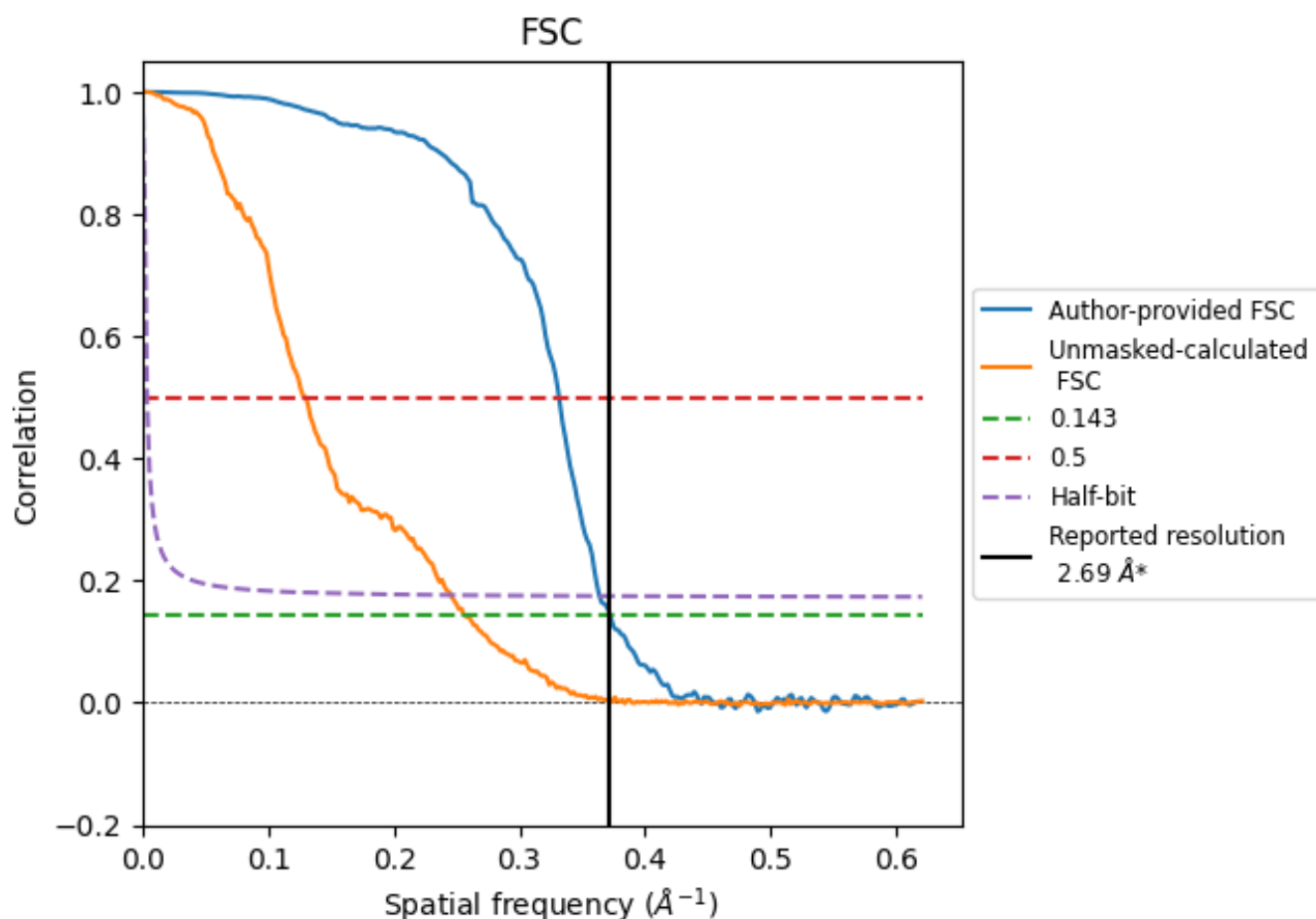


*Reported resolution corresponds to spatial frequency of 0.372 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.372 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

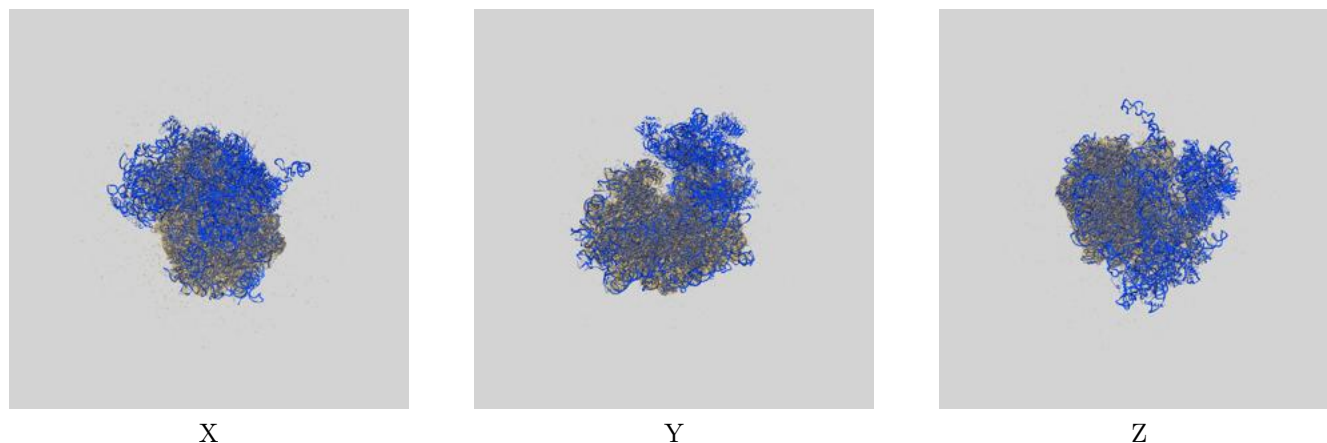
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.69	-	-
Author-provided FSC curve	2.69	3.02	2.75
Unmasked-calculated*	3.90	7.69	4.07

*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 3.90 differs from the reported value 2.69 by more than 10 %

9 Map-model fit [i](#)

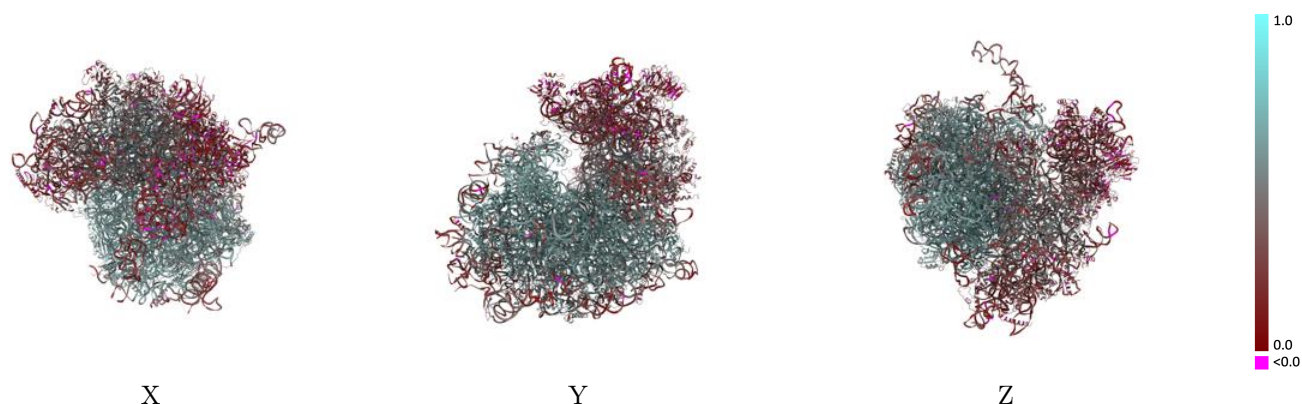
This section contains information regarding the fit between EMDB map EMD-66298 and PDB model 9WW5. Per-residue inclusion information can be found in section 3 on page 21.

9.1 Map-model overlay [i](#)



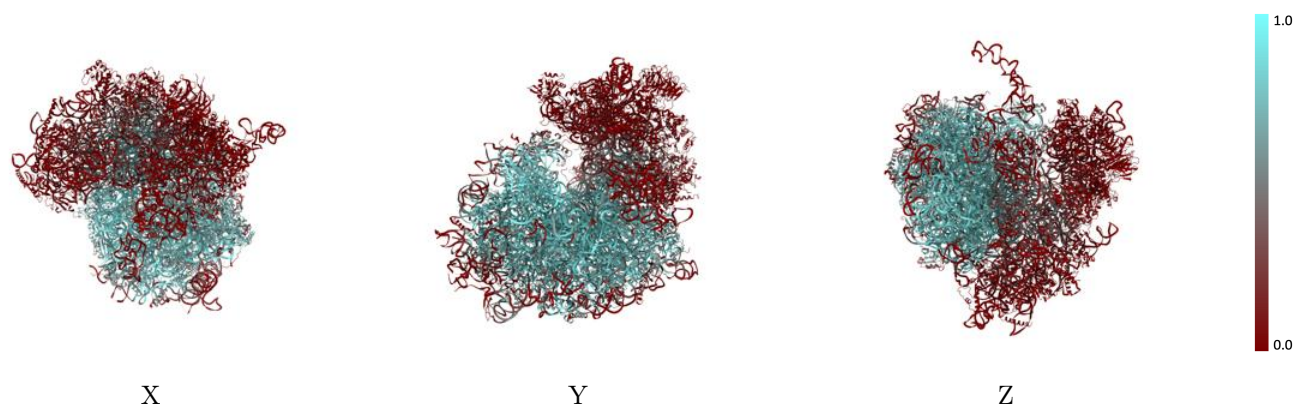
The images above show the 3D surface view of the map at the recommended contour level 0.29 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



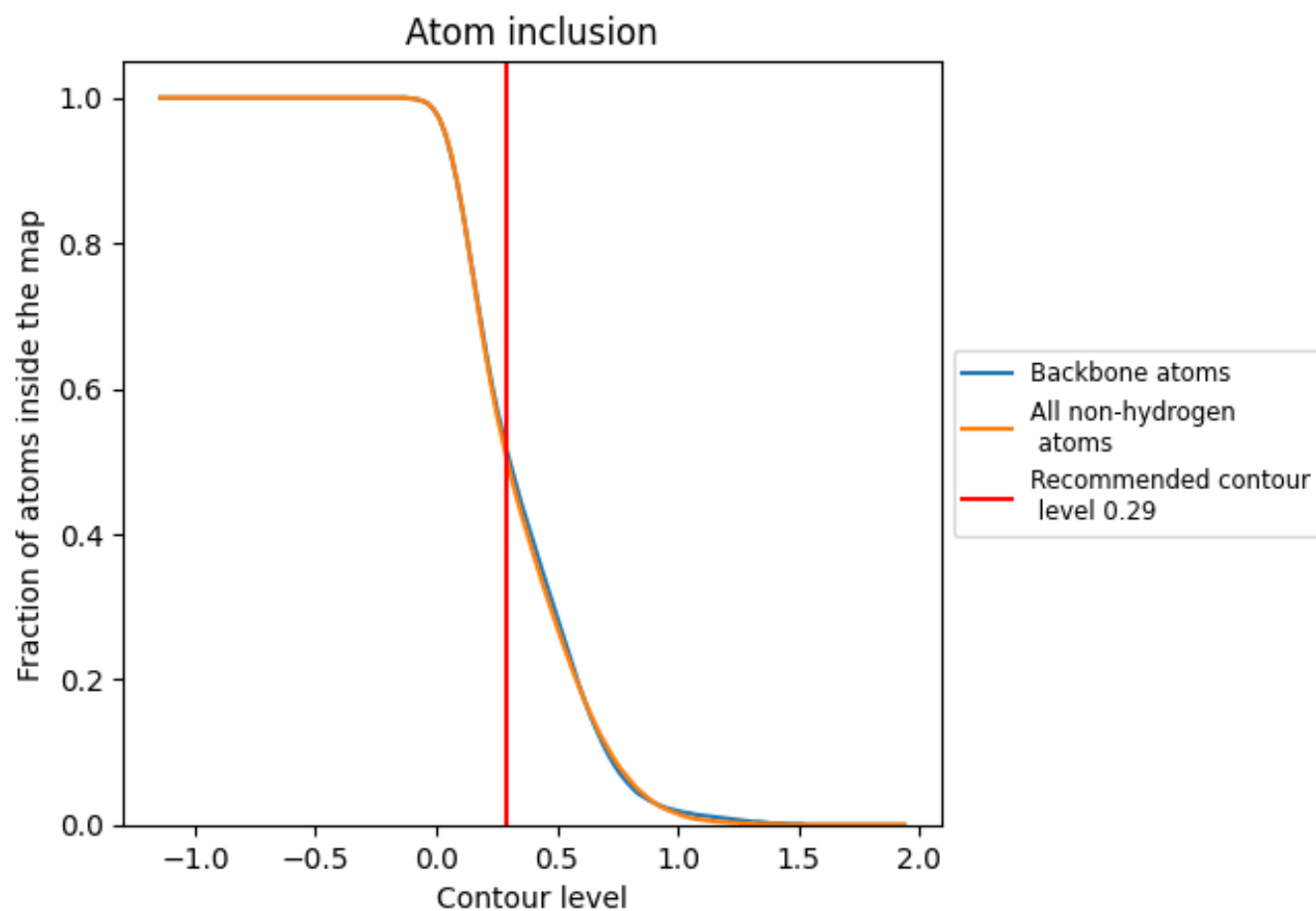
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.29).

9.4 Atom inclusion [i](#)



At the recommended contour level, 52% of all backbone atoms, 51% 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 (0.29) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5060	 0.4660
AA	 0.6880	 0.5240
AB	 0.8640	 0.6100
AC	 0.7420	 0.5350
AD	 0.8500	 0.6450
AE	 0.7840	 0.6230
AF	 0.7020	 0.5470
AG	 0.6770	 0.5790
AH	 0.5380	 0.5190
AI	 0.7720	 0.6030
AJ	 0.5720	 0.5280
AK	 0.7120	 0.6040
AL	 0.7330	 0.6010
AM	 0.5070	 0.5360
AN	 0.6210	 0.5270
AO	 0.7280	 0.6000
AP	 0.8430	 0.6110
AQ	 0.8150	 0.6250
AR	 0.7970	 0.6130
AS	 0.7860	 0.5880
AT	 0.6180	 0.5460
AU	 0.8390	 0.6320
AV	 0.7380	 0.6090
AW	 0.4610	 0.5210
AX	 0.7900	 0.6250
AY	 0.4640	 0.4400
AZ	 0.6810	 0.5680
Aa	 0.6300	 0.5270
Ab	 0.6880	 0.5890
Ac	 0.7590	 0.5880
Ad	 0.5480	 0.5370
Ae	 0.6470	 0.5570
Af	 0.7450	 0.6030
Ag	 0.7400	 0.5830
Ah	 0.8430	 0.6270



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Chain	Atom inclusion	Q-score
Ai	 0.7780	 0.6140
Aj	 0.6270	 0.5440
Ak	 0.6390	 0.5650
Al	 0.8080	 0.6000
Am	 0.5720	 0.5580
An	 0.7350	 0.5900
Ao	 0.7930	 0.6120
Ap	 0.5020	 0.5720
Aq	 0.7690	 0.6250
Ar	 0.7780	 0.6380
As	 0.6610	 0.5440
BA	 0.2300	 0.3310
BB	 0.0590	 0.3460
BC	 0.0890	 0.3580
BD	 0.0720	 0.3430
BE	 0.0310	 0.2750
BF	 0.0110	 0.1920
BG	 0.0530	 0.3090
BH	 0.0810	 0.3520
BI	 0.0090	 0.1740
BJ	 0.1980	 0.4160
BK	 0.0190	 0.2720
BL	 0.0120	 0.2490
BM	 0.0110	 0.2470
BN	 0.0170	 0.2170
BO	 0.0110	 0.2150
BP	 0.1560	 0.3900
BQ	 0.2750	 0.4430
BR	 0.2080	 0.4230
BS	 0.0040	 0.1820
BT	 0.0430	 0.2730
BU	 0.0040	 0.1900
BV	 0.2050	 0.4100
BW	 0.0280	 0.2710
BX	 0.0870	 0.3380
BY	 0.0000	 0.1580
BZ	 0.1380	 0.4370
Ba	 0.1080	 0.3410
Bb	 0.2960	 0.4720
Bc	 0.0170	 0.2550
Bd	 0.0100	 0.1940
Be	 0.0770	 0.2910

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Chain	Atom inclusion	Q-score
Bf	 0.0450	 0.2590
Bg	 0.0000	 0.1530
Bh	 0.0210	 0.3000