



Full wwPDB EM Validation Report ⓘ

Sep 23, 2026 – 02:09 am BST

PDB ID : 29IX / pdb_000029ix
EMDB ID : EMD-57202
Title : Human monosomes with bound toxin NT-2, focus on 60S subunit. NT-2 added to purified ribosomes as control.
Authors : Rabl, J.; Karousis, E.D.
Deposited on : 2026-03-15
Resolution : 2.20 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 : 1.8.4, CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
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

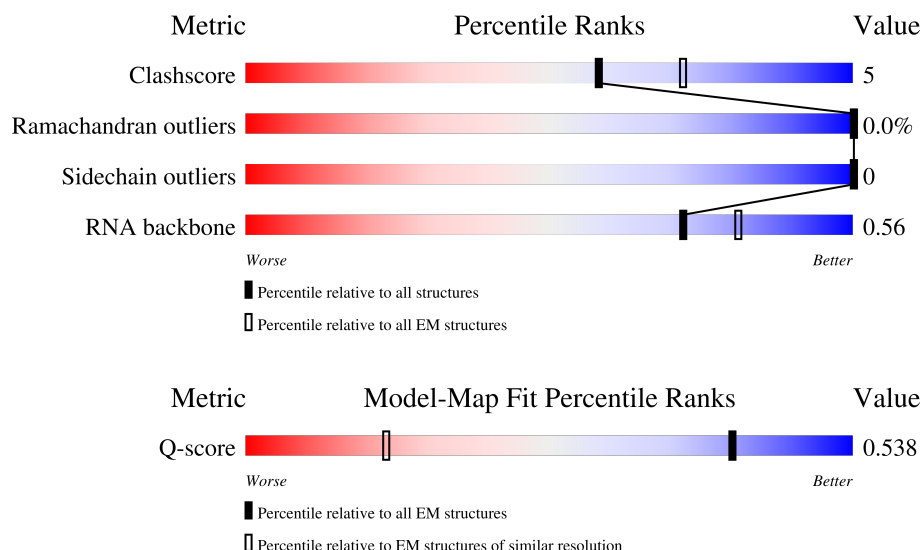
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.20 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.



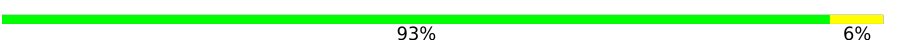
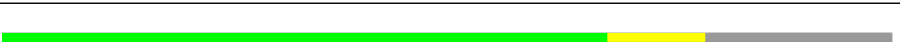
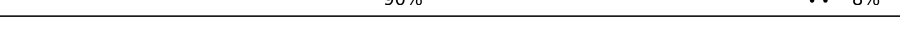
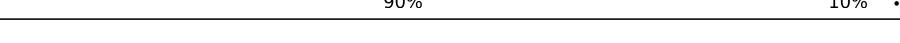
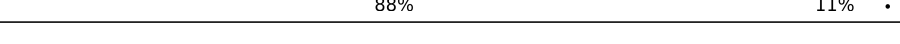
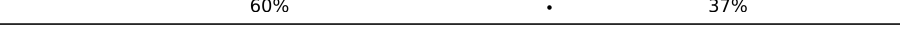
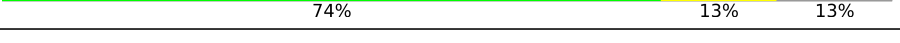
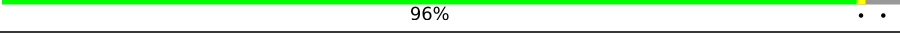
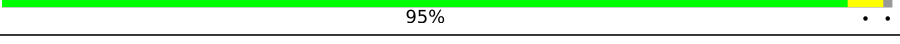
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	3184 (1.71 - 2.70)

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	248	
2	AB	266	
3	AC	192	

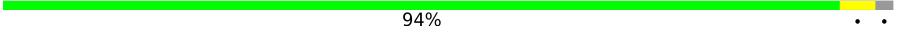
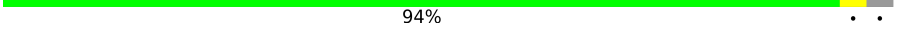
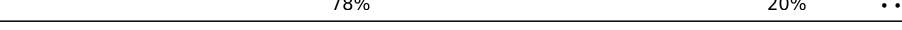
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Mol	Chain	Length	Quality of chain
4	AD	214	
5	AE	178	
6	AF	211	
7	AG	215	
8	AH	204	
9	AI	203	
10	AJ	184	
11	AK	188	
12	AL	196	
13	AM	176	
14	AN	160	
15	AO	128	
16	AP	140	
17	AQ	157	
18	AR	156	
19	AS	145	
20	AT	136	
21	AU	148	
22	AV	159	
23	AW	115	
24	AX	125	
25	AY	135	
26	AZ	110	
27	Aa	117	
28	Ab	123	

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Mol	Chain	Length	Quality of chain
29	Ac	105	 90% 8% .
30	Ad	97	 89% 11%
31	Ae	70	 86% 13% .
32	Af	51	 94% . .
33	Ag	128	 40% . 59%
34	Ah	106	 94% . .
35	Ai	92	 92% 7% .
36	Aj	137	 86% 5% 9%
37	BA	403	 84% 13% .
38	BB	427	 77% 7% 16%
39	BC	297	 87% 12% .
40	BD	288	 66% 9% 25%
41	DA	5069	 44% 21% . 31%
42	DB	120	 78% 20% . .
43	DC	157	 59% 32% 9% .
44	DD	257	 84% 12% .

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
48	PUT	DA	5101	-	-	X	-
48	PUT	DA	5102	-	-	X	-
48	PUT	DA	5103	-	-	X	-
49	SPD	DA	5107	-	-	X	-

2 Entry composition [i](#)

There are 53 unique types of molecules in this entry. The entry contains 237999 atoms, of which 95223 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Large ribosomal subunit protein uL30.

Mol	Chain	Residues	Atoms						AltConf	Trace
1	AA	225	Total	C	H	N	O	S	0	0
			3866	1202	1996	358	301	9		

- Molecule 2 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms						AltConf	Trace
2	AB	216	Total	C	H	N	O	S	0	0
			3640	1121	1884	339	292	4		

- Molecule 3 is a protein called 60S ribosomal protein L9.

Mol	Chain	Residues	Atoms						AltConf	Trace
3	AC	190	Total	C	H	N	O	S	0	0
			3119	956	1601	284	272	6		

- Molecule 4 is a protein called Ribosomal protein uL16-like.

Mol	Chain	Residues	Atoms						AltConf	Trace
4	AD	205	Total	C	H	N	O	S	0	0
			3362	1053	1701	321	274	13		

- Molecule 5 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms						AltConf	Trace
5	AE	171	Total	C	H	N	O	S	0	0
			2783	867	1412	256	242	6		

- Molecule 6 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms						AltConf	Trace
6	AF	207	Total	C	H	N	O	S	0	0
			3452	1046	1779	346	277	4		

- Molecule 7 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms						AltConf	Trace
7	AG	136	Total	C	H	N	O	S	0	0
			2307	719	1187	215	179	7		

- Molecule 8 is a protein called 60S ribosomal protein L15.

Mol	Chain	Residues	Atoms						AltConf	Trace
8	AH	203	Total	C	H	N	O	S	0	0
			3450	1072	1749	359	266	4		

- Molecule 9 is a protein called 60S ribosomal protein L13a.

Mol	Chain	Residues	Atoms						AltConf	Trace
9	AI	201	Total	C	H	N	O	S	0	0
			3444	1063	1794	321	261	5		

- Molecule 10 is a protein called 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms						AltConf	Trace
10	AJ	151	Total	C	H	N	O	S	0	0
			2474	765	1250	238	212	9		

- Molecule 11 is a protein called 60S ribosomal protein L18.

Mol	Chain	Residues	Atoms						AltConf	Trace
11	AK	187	Total	C	H	N	O	S	0	0
			3141	944	1628	314	250	5		

- Molecule 12 is a protein called 60S ribosomal protein L19.

Mol	Chain	Residues	Atoms						AltConf	Trace
12	AL	156	Total	C	H	N	O	S	0	0
			2740	812	1438	279	202	9		

- Molecule 13 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms						AltConf	Trace
13	AM	175	Total	C	H	N	O	S	0	0
			2943	925	1490	283	235	10		

- Molecule 14 is a protein called 60S ribosomal protein L21.

Mol	Chain	Residues	Atoms						AltConf	Trace
14	AN	159	Total	C	H	N	O	S	0	0
			2664	823	1366	252	217	6		

- Molecule 15 is a protein called 60S ribosomal protein L22.

Mol	Chain	Residues	Atoms						AltConf	Trace
15	AO	101	Total	C	H	N	O	S	0	0
			1675	529	850	144	150	2		

- Molecule 16 is a protein called 60S ribosomal protein L23.

Mol	Chain	Residues	Atoms						AltConf	Trace
16	AP	131	Total	C	H	N	O	S	0	0
			2018	618	1039	184	172	5		

- Molecule 17 is a protein called 60S ribosomal protein L24.

Mol	Chain	Residues	Atoms						AltConf	Trace
17	AQ	62	Total	C	H	N	O	S	0	0
			1052	332	533	101	83	3		

- Molecule 18 is a protein called 60S ribosomal protein L23a.

Mol	Chain	Residues	Atoms						AltConf	Trace
18	AR	119	Total	C	H	N	O	S	0	0
			2029	624	1053	183	168	1		

- Molecule 19 is a protein called 60S ribosomal protein L26.

Mol	Chain	Residues	Atoms						AltConf	Trace
19	AS	134	Total	C	H	N	O	S	0	0
			2320	700	1205	226	186	3		

- Molecule 20 is a protein called 60S ribosomal protein L27.

Mol	Chain	Residues	Atoms						AltConf	Trace
20	AT	135	Total	C	H	N	O	S	0	0
			2289	714	1182	208	182	3		

- Molecule 21 is a protein called Large ribosomal subunit protein uL15.

Mol	Chain	Residues	Atoms						AltConf	Trace
21	AU	147	Total	C	H	N	O	S	0	0
			2373	736	1210	237	187	3		

- Molecule 22 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms						AltConf	Trace
22	AV	100	Total	C	H	N	O	S	0	0
			1687	505	876	177	125	4		

- Molecule 23 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms						AltConf	Trace
23	AW	93	Total	C	H	N	O	S	0	0
			1490	462	764	129	129	6		

- Molecule 24 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms						AltConf	Trace
24	AX	109	Total	C	H	N	O	S	0	0
			1848	569	947	173	157	2		

- Molecule 25 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms						AltConf	Trace
25	AY	130	Total	C	H	N	O	S	0	0
			2236	676	1166	221	168	5		

- Molecule 26 is a protein called Large ribosomal subunit protein eL33.

Mol	Chain	Residues	Atoms						AltConf	Trace
26	AZ	109	Total	C	H	N	O	S	0	0
			1788	555	912	174	144	3		

- Molecule 27 is a protein called 60S ribosomal protein L34.

Mol	Chain	Residues	Atoms						AltConf	Trace
27	Aa	106	Total	C	H	N	O	S	0	0
			1778	530	933	174	135	6		

- Molecule 28 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms						AltConf	Trace
28	Ab	122	Total	C	H	N	O	S	0	0
			2163	641	1148	205	168	1		

- Molecule 29 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms						AltConf	Trace
29	Ac	102	Total	C	H	N	O	S	0	0
			1750	521	918	177	129	5		

- Molecule 30 is a protein called Large ribosomal subunit protein eL37.

Mol	Chain	Residues	Atoms						AltConf	Trace
30	Ad	86	Total	C	H	N	O	S	0	0
			1441	434	736	155	111	5		

- Molecule 31 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms						AltConf	Trace
31	Ae	69	Total	C	H	N	O	S	0	0
			1206	366	637	103	99	1		

- Molecule 32 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms						AltConf	Trace
32	Af	50	Total	C	H	N	O	S	0	0
			927	281	483	98	64	1		

- Molecule 33 is a protein called Large ribosomal subunit protein eL40.

Mol	Chain	Residues	Atoms						AltConf	Trace
33	Ag	52	Total	C	H	N	O	S	0	0
			896	267	466	90	67	6		

- Molecule 34 is a protein called 60S ribosomal protein L36a.

Mol	Chain	Residues	Atoms						AltConf	Trace
34	Ah	103	Total	C	H	N	O	S	0	0
			1754	528	912	172	136	6		

- Molecule 35 is a protein called 60S ribosomal protein L37a.

Mol	Chain	Residues	Atoms						AltConf	Trace
35	Ai	91	Total	C	H	N	O	S	0	0
			1464	445	757	136	119	7		

- Molecule 36 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms						AltConf	Trace
36	Aj	125	Total	C	H	N	O	S	0	0
			2071	622	1069	207	168	5		

- Molecule 37 is a protein called Large ribosomal subunit protein uL3.

Mol	Chain	Residues	Atoms						AltConf	Trace
37	BA	396	Total	C	H	N	O	S	0	0
			6537	2037	3339	601	546	14		

- Molecule 38 is a protein called 60S ribosomal protein L4.

Mol	Chain	Residues	Atoms						AltConf	Trace
38	BB	359	Total	C	H	N	O	S	0	0
			5898	1802	3036	572	475	13		

- Molecule 39 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms						AltConf	Trace
39	BC	293	Total	C	H	N	O	S	0	0
			4807	1510	2421	435	427	14		

- Molecule 40 is a protein called Large ribosomal subunit protein eL6.

Mol	Chain	Residues	Atoms						AltConf	Trace
40	BD	216	Total	C	H	N	O	S	0	0
			3625	1119	1888	329	285	4		

- Molecule 41 is a RNA chain called 28S rRNA.

Mol	Chain	Residues	Atoms						AltConf	Trace
41	DA	3483	Total	C	H	N	O	P	0	0
			112180	33315	37450	13662	24271	3482		

- Molecule 42 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms						AltConf	Trace
42	DB	119	Total	C	H	N	O	P	0	0
			3823	1132	1285	454	834	118		

- Molecule 43 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms						AltConf	Trace
43	DC	156	Total	C	H	N	O	P	0	0
			4989	1481	1674	585	1094	155		

- Molecule 44 is a protein called Large ribosomal subunit protein uL2.

Mol	Chain	Residues	Atoms						AltConf	Trace
44	DD	246	Total	C	H	N	O	S	0	0
			3867	1183	1979	387	312	6		

- Molecule 45 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
45	AD	1	Total	Mg	0
			1	1	
45	AJ	1	Total	Mg	0
			1	1	
45	AP	1	Total	Mg	0
			1	1	
45	AY	1	Total	Mg	0
			1	1	
45	AZ	1	Total	Mg	0
			1	1	
45	Ad	1	Total	Mg	0
			1	1	
45	BA	2	Total	Mg	0
			2	2	
45	DA	171	Total	Mg	0
			171	171	
45	DB	2	Total	Mg	0
			2	2	
45	DC	3	Total	Mg	0
			3	3	

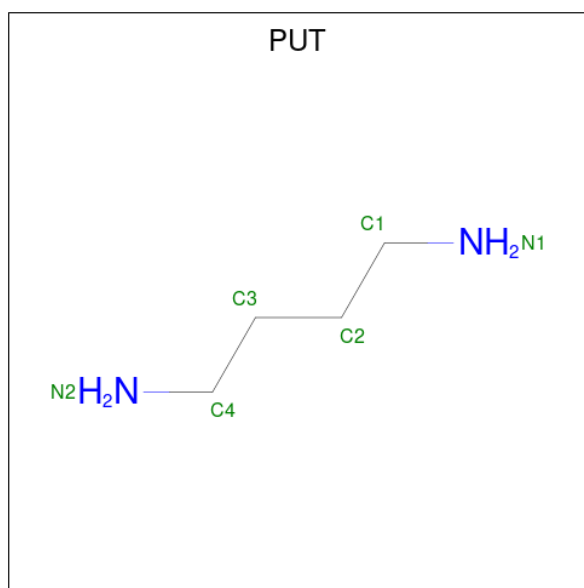
- Molecule 46 is POTASSIUM ION (CCD ID: K) (formula: K).

Mol	Chain	Residues	Atoms	AltConf
46	AM	1	Total K 1 1	0
46	AN	1	Total K 1 1	0
46	AP	1	Total K 1 1	0
46	DA	40	Total K 40 40	0
46	DD	2	Total K 2 2	0

- Molecule 47 is ZINC ION (CCD ID: ZN) (formula: Zn).

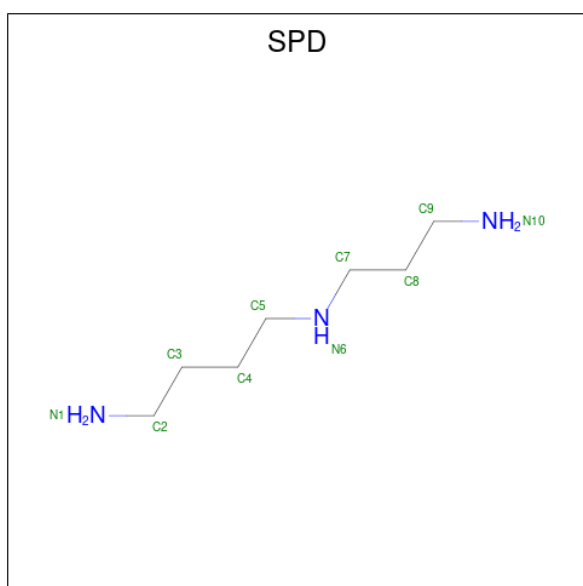
Mol	Chain	Residues	Atoms	AltConf
47	Aa	1	Total Zn 1 1	0
47	Ad	1	Total Zn 1 1	0
47	Ag	1	Total Zn 1 1	0
47	Ah	1	Total Zn 1 1	0
47	Ai	1	Total Zn 1 1	0

- Molecule 48 is 1,4-DIAMINOBTUTANE (CCD ID: PUT) (formula: C₄H₁₂N₂).



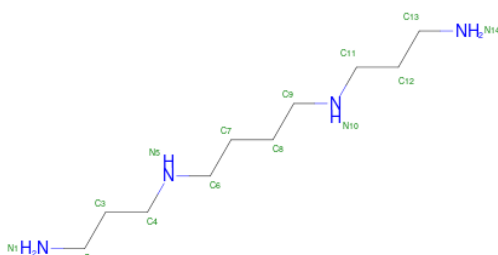
Mol	Chain	Residues	Atoms			AltConf
48	DA	1	Total	C	N	0
			6	4	2	
48	DA	1	Total	C	N	0
			6	4	2	
48	DA	1	Total	C	N	0
			6	4	2	
48	DB	1	Total	C	N	0
			6	4	2	

- Molecule 49 is SPERMIDINE (CCD ID: SPD) (formula: $C_7H_{19}N_3$).

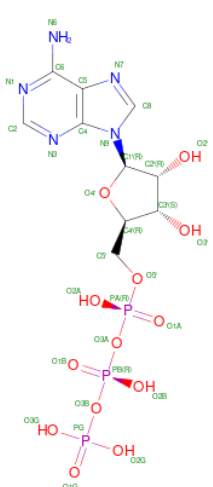


Mol	Chain	Residues	Atoms				AltConf
49	DA	1	Total	C	H	N	0
			12	7	2	3	
49	DA	1	Total	C	H	N	0
			12	7	2	3	
49	DA	1	Total	C	H	N	0
			12	7	2	3	
49	DA	1	Total	C	H	N	0
			12	7	2	3	

- Molecule 50 is SPERMINE (CCD ID: SPM) (formula: $C_{10}H_{26}N_4$).

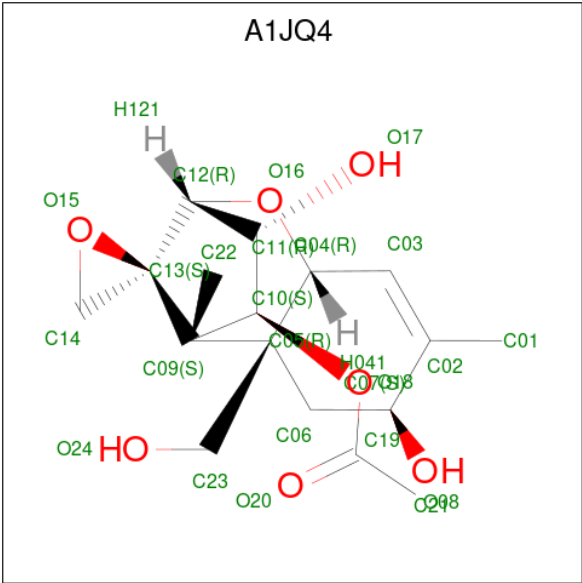


- Molecule 51 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$).



Mol	Chain	Residues	Atoms						AltConf
51	DA	1	Total	C	H	N	O	P	0
			43	10	12	5	13	3	

- Molecule 52 is Toxin NT-2 (CCD ID: A1JQ4) (formula: C₁₇H₂₄O₇) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
52	DA	1	Total	C	H	O		0
			48	17	24	7		

- Molecule 53 is water.

Mol	Chain	Residues	Atoms		AltConf
53	AA	117	Total	O	0
			117	117	
53	AB	133	Total	O	0
			133	133	
53	AC	128	Total	O	0
			128	128	
53	AD	91	Total	O	0
			91	91	
53	AE	141	Total	O	0
			141	141	
53	AF	95	Total	O	0
			95	95	
53	AG	70	Total	O	0
			70	70	

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Mol	Chain	Residues	Atoms		AltConf
53	AH	112	Total 112	O 112	0
53	AI	110	Total 110	O 110	0
53	AJ	47	Total 47	O 47	0
53	AK	93	Total 93	O 93	0
53	AL	51	Total 51	O 51	0
53	AM	115	Total 115	O 115	0
53	AN	85	Total 85	O 85	0
53	AO	73	Total 73	O 73	0
53	AP	67	Total 67	O 67	0
53	AQ	38	Total 38	O 38	0
53	AR	63	Total 63	O 63	0
53	AS	53	Total 53	O 53	0
53	AT	70	Total 70	O 70	0
53	AU	68	Total 68	O 68	0
53	AV	48	Total 48	O 48	0
53	AW	37	Total 37	O 37	0
53	AX	63	Total 63	O 63	0
53	AY	79	Total 79	O 79	0
53	AZ	56	Total 56	O 56	0
53	Aa	56	Total 56	O 56	0
53	Ab	77	Total 77	O 77	0

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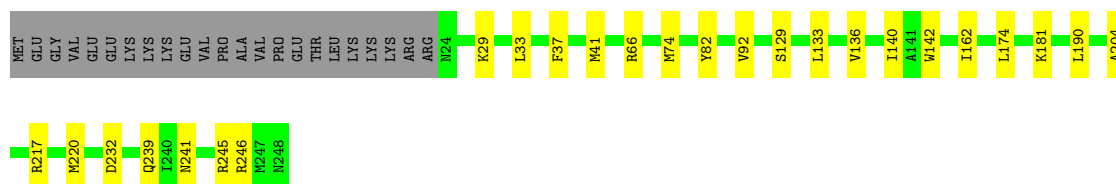
Mol	Chain	Residues	Atoms		AltConf
53	Ac	70	Total 70	O 70	0
53	Ad	54	Total 54	O 54	0
53	Ae	63	Total 63	O 63	0
53	Af	24	Total 24	O 24	0
53	Ag	25	Total 25	O 25	0
53	Ah	53	Total 53	O 53	0
53	Ai	40	Total 40	O 40	0
53	Aj	63	Total 63	O 63	0
53	BA	174	Total 174	O 174	0
53	BB	163	Total 163	O 163	0
53	BC	165	Total 165	O 165	0
53	BD	116	Total 116	O 116	0
53	DA	6364	Total 6364	O 6364	0
53	DB	202	Total 202	O 202	0
53	DC	232	Total 232	O 232	0
53	DD	100	Total 100	O 100	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.

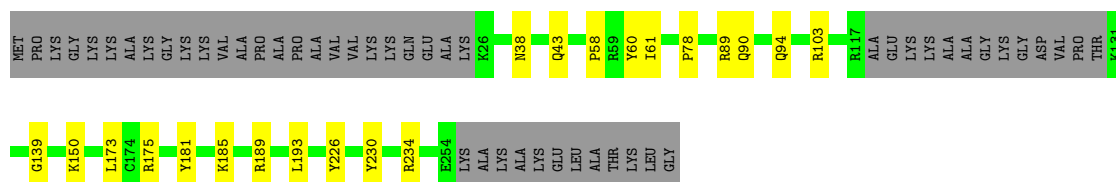
- Molecule 1: Large ribosomal subunit protein uL30

Chain AA: 



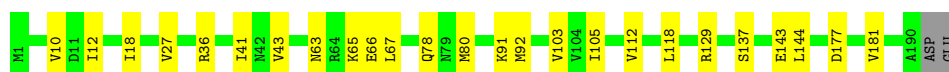
- Molecule 2: 60S ribosomal protein L7a

Chain AB: 



- Molecule 3: 60S ribosomal protein L9

Chain AC: 



- Molecule 4: Ribosomal protein uL16-like

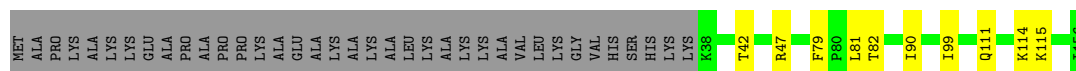
Chain AD: 



- Molecule 5: 60S ribosomal protein L11

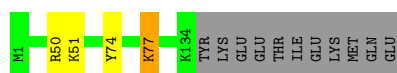
Chain AE: 

Chain AR:  70% 6% 24%



- Molecule 19: 60S ribosomal protein L26

Chain AS:  90% .. 8%



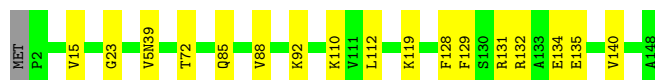
- Molecule 20: 60S ribosomal protein L27

Chain AT:  90% 10% .



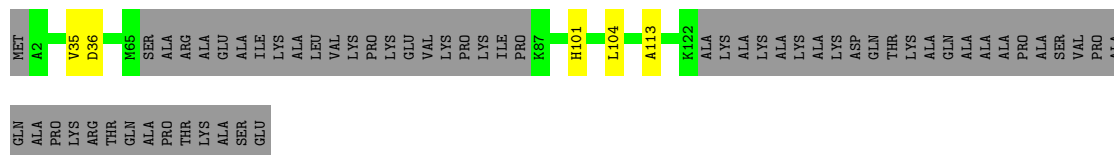
- Molecule 21: Large ribosomal subunit protein uL15

Chain AU:  88% 11% .



- Molecule 22: 60S ribosomal protein L29

Chain AV:  60% . 37%



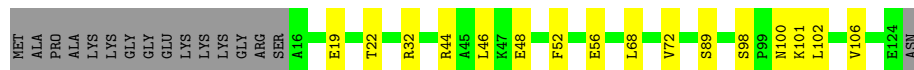
- Molecule 23: 60S ribosomal protein L30

Chain AW:  75% 6% 19%

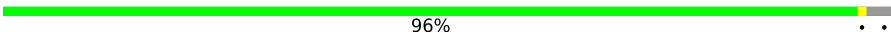


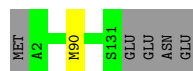
- Molecule 24: 60S ribosomal protein L31

Chain AX:  74% 13% 13%

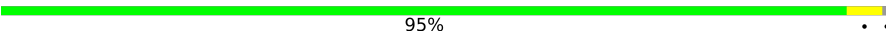


- Molecule 25: 60S ribosomal protein L32

Chain AY:  96% ..



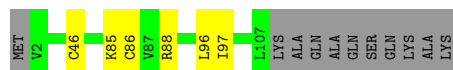
- Molecule 26: Large ribosomal subunit protein eL33

Chain AZ:  95% ..



- Molecule 27: 60S ribosomal protein L34

Chain Aa:  85% 5% 9%



- Molecule 28: 60S ribosomal protein L35

Chain Ab:  90% 8% ..



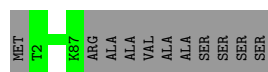
- Molecule 29: 60S ribosomal protein L36

Chain Ac:  90% 8% .



- Molecule 30: Large ribosomal subunit protein eL37

Chain Ad:  89% 11%



- Molecule 31: 60S ribosomal protein L38

Chain Ae:  86% 13% .



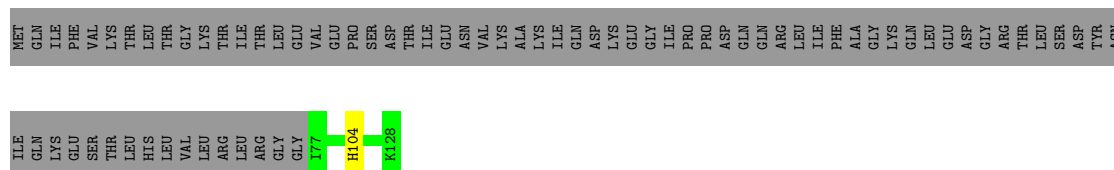
- Molecule 32: 60S ribosomal protein L39

Chain Af:  94% . .

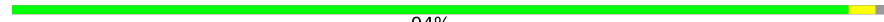


- Molecule 33: Large ribosomal subunit protein eL40

Chain Ag:  40% . 59%



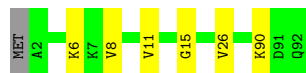
- Molecule 34: 60S ribosomal protein L36a

Chain Ah:  94% . .



- Molecule 35: 60S ribosomal protein L37a

Chain Ai:  92% 7% .



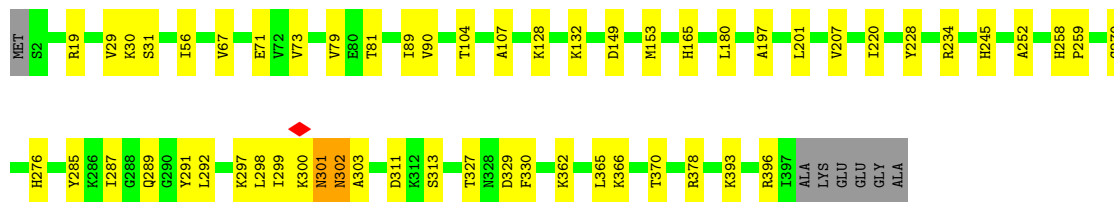
- Molecule 36: 60S ribosomal protein L28

Chain Aj:  86% 5% 9%



- Molecule 37: Large ribosomal subunit protein uL3

Chain BA:  84% 13% .



- Molecule 38: 60S ribosomal protein L4

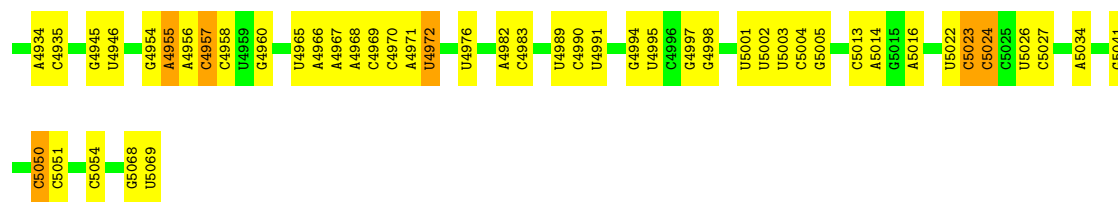
Chain BB:  77% 7% 16%





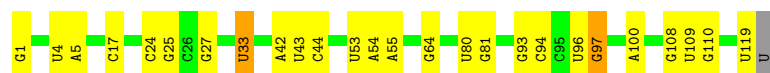


C	C	A4708	U4597	U4497	U4312	A4212	G	U	A3867	U	U3770	A3656	G
G	C	A4709	U4498	U4499	A4313	A4213	G	G	G3868	G	C3771	U3657	C
C	C	U4710	U4499	U4500	A4314	A4213	G	U	C3869	A	C3772	U3657	C
C	C	C4711	U4500	U4501	A4315	A4220	C	A	A3662	C	U3773	A3662	U
C	C	C4712	U4501	U4502	A4316	A4221	G	A	A3663	C	U3774	A3663	C
C	C	C4713	U4502	U4503	A4317	A4222	C	A	A3664	C	U3775	A3664	C
C	C	C4714	U4503	U4504	A4318	A4223	G	A	A3665	C	U3776	A3665	C
C	C	C4715	U4504	U4505	A4319	A4224	C	A					
G	G	C4716	U4505	U4506	A4320	A4225	C	U	A3669	C	C3777	A3669	C
G	C	C4717	U4506	U4507	A4321	A4226	C	A	G3672	C	U3778	A3672	U
G	C	C4718	U4507	U4508	A4322	U4227	C	A	G3673	C	A3779	A3673	C
C	C	C4719	U4508	U4509	A4323	U4228	C	U					
C	C	C4720	U4509	U4510	A4324	U4229	G	U	A3692	C	C3779	A3692	C
C	C	A4721	U4510	U4511	A4325	U4230	G	U	A3693	C	U3780	A3693	C
C	C	A4722	U4511	U4512	A4326	U4231	G	A	U3694	C	C3781	U3694	C
C	C	U4723	U4512	U4513	A4327	U4232	G	A	U3695	C	A3782	U3695	C
C	C	U4724	U4513	U4514	A4328	U4233	G	A			A3783		
C	C	U4725	U4514	U4515	A4329	U4234	C	G	A3784	C	A3784		
C	C	U4726	U4515	U4516	A4330	U4235	C	G	A3785	C	A3785		
C	C	U4727	U4516	U4517	A4331	U4236	C	C	A3786	C	A3786		
C	C	U4728	U4517	U4518	A4332	U4237	C	C	A3787	C	A3787		
C	C	U4729	U4518	U4519	A4333	U4238	C	C	A3788	C	A3788		
C	C	U4730	U4519	U4520	A4334	U4239	C	C	A3789	C	A3789		
C	C	U4731	U4520	U4521	A4335	U4240	C	C	A3790	C	A3790		
C	C	U4732	U4521	U4522	A4336	U4241	C	C	A3791	C	A3791		
C	C	U4733	U4522	U4523	A4337	U4242	C	C	A3792	C	A3792		
C	C	U4734	U4523	U4524	A4338	U4243	C	C	A3793	C	A3793		
C	C	U4735	U4524	U4525	A4339	U4244	C	C	A3794	C	A3794		
C	C	U4736	U4525	U4526	A4340	U4245	C	C	A3795	C	A3795		
C	C	U4737	U4526	U4527	A4341	U4246	C	C	A3796	C	A3796		
C	C	U4738	U4527	U4528	A4342	U4247	C	C	A3797	C	A3797		
C	C	U4739	U4528	U4529	A4343	U4248	C	C	A3798	C	A3798		
C	C	U4740	U4529	U4530	A4344	U4249	C	C	A3799	C	A3799		
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C	C	U4742	U4531	U4532	A4346	U4251	C	C	A3801	C	A3801		
C	C	U4743	U4532	U4533	A4347	U4252	C	C	A3802	C	A3802		
C	C	U4744	U4533	U4534	A4348	U4253	C	C	A3803	C	A3803		
C	C	U4745	U4534	U4535	A4349	U4254	C	C	A3804	C	A3804		
C	C	U4746	U4535	U4536	A4350	U4255	C	C	A3805	C	A3805		
C	C	U4747	U4536	U4537	A4351	U4256	C	C	A3806	C	A3806		
C	C	U4748	U4537	U4538	A4352	U4257	C	C	A3807	C	A3807		
C	C	U4749	U4538	U4539	A4353	U4258	C	C	A3808	C	A3808		
C	C	U4750	U4539	U4540	A4354	U4259	C	C	A3809	C	A3809		
C	C	U4751	U4540	U4541	A4355	U4260	C	C	A3810	C	A3810		
C	C	U4752	U4541	U4542	A4356	U4261	C	C	A3811	C	A3811		
C	C	U4753	U4542	U4543	A4357	U4262	C	C	A3812	C	A3812		
C	C	U4754	U4543	U4544	A4358	U4263	C	C	A3813	C	A3813		
C	C	U4755	U4544	U4545	A4359	U4264	C	C	A3814	C	A3814		
C	C	U4756	U4545	U4546	A4360	U4265	C	C	A3815	C	A3815		
C	C	U4757	U4546	U4547	A4361	U4266	C	C	A3816	C	A3816		
C	C	U4758	U4547	U4548	A4362	U4267	C	C	A3817	C	A3817		
C	C	U4759	U4548	U4549	A4363	U4268	C	C	A3818	C	A3818		
C	C	U4760	U4549	U4550	A4364	U4269	C	C	A3819	C	A3819		
C	C	U4761	U4550	U4551	A4365	U4270	C	C	A3820	C	A3820		
C	C	U4762	U4551	U4552	A4366	U4271	C	C	A3821	C	A3821		
C	C	U4763	U4552	U4553	A4367	U4272	C	C	A3822	C	A3822		
C	C	U4764	U4553	U4554	A4368	U4273	C	C	A3823	C	A3823		
C	C	U4765	U4554	U4555	A4369	U4274	C	C	A3824	C	A3824		
C	C	U4766	U4555	U4556	A4370	U4275	C	C	A3825	C	A3825		
C	C	U4767	U4556	U4557	A4371	U4276	C	C	A3826	C	A3826		
C	C	U4768	U4557	U4558	A4372	U4277	C	C	A3827	C	A3827		
C	C	U4769	U4558	U4559	A4373	U4278	C	C	A3828	C	A3828		
C	C	U4770	U4559	U4560	A4374	U4279	C	C	A3829	C	A3829		
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C	C	U4774	U4563	U4564	A4378	U4283	C	C	A3833	C	A3833		
C	C	U4775	U4564	U4565	A4379	U4284	C	C	A3834	C	A3834		
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C	C	U4782	U4571	U4572	A4386	U4291	C	C	A3841	C	A3841		
C	C	U4783	U4572	U4573	A4387	U4292	C	C	A3842	C	A3842		
C	C	U4784	U4573	U4574	A4388	U4293	C	C	A3843	C	A3843		
C	C	U4785	U4574	U4575	A4389	U4294	C	C	A3844	C	A3844		
C	C	U4786	U4575	U4576	A4390	U4295	C	C	A3845	C	A3845		
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C	C	U4789	U4578	U4579	A4393	U4298	C	C	A3848	C	A3848		
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C	C	U4791	U4580	U4581	A4395	U4300	C	C	A3850	C	A3850		
C	C	U4792	U4581	U4582	A4396	U4301	C	C	A3851	C	A3851		
C	C	U4793	U4582	U4583	A4397	U4302	C	C	A3852	C	A3852		
C	C	U4794	U4583	U4584	A4398	U4303	C	C	A3853	C	A3853		
C	C	U4795	U4584	U4585	A4399	U4304	C	C	A3854	C	A3854		
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C	C	U4797	U4586	U4587	A4401	U4306	C	C	A3856	C	A3856		
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C	C	U4800	U4589	U4590	A4404	U4309	C	C	A3859	C	A3859		
C	C	U4801	U4590	U4591	A4405	U4310	C	C	A3860	C	A3860		
C	C	U4802	U4591	U4592	A4406	U4311	C	C	A3861	C	A3861		
C	C	U4803	U4592	U4593	A4407	U4312	C	C	A3862	C	A3862		
C	C	U4804	U4593	U4594	A4408	U4313	C	C	A3863	C	A3863		
C	C	U4805	U4594	U4595	A4409	U4314	C	C	A3864	C	A3864		
C	C	U4806	U4595	U4596	A4410	U4315	C	C	A3865	C	A3865		
C	C	U4807	U4596	U4597	A4411	U4316	C	C	A3866	C	A3866		
C	C	U4808	U4597	U4598	A4412	U4317	C	C	A3867	C	A3867		
C	C	U4809	U4598	U4599	A4413	U4318	C	C	A3868	C	A3868		
C	C	U4810	U4599	U4600	A4414	U4319	C	C	A3869	C	A3869		
C	C	U4811	U4600	U4601	A4415	U4320	C	C	A3870	C	A3870		
C	C	U4812	U4601	U4602	A4416	U4321	C	C	A3871	C	A3871		
C	C	U4813	U4602	U4603	A4417	U4322	C	C	A3872	C	A3872		
C	C	U4814	U4603	U4604	A4418	U4323	C	C	A3873	C	A3873		
C	C	U4815	U4604	U4605	A4419	U4324	C	C	A3874	C	A3874		
C	C	U4816	U4605	U4606	A4420	U4325	C	C	A3875	C	A3875		
C	C	U4817	U4606	U4607	A4421	U4326	C	C	A3876	C	A3876		
C	C	U4818	U4607	U4608	A4422	U4327	C	C	A3877	C	A3877		
C	C	U4819	U4608	U4609	A4423	U4328	C	C	A3878	C	A3878		
C	C	U4820	U4609	U4610	A4424	U4329	C	C	A3879	C	A3879		
C	C	U4821	U4610	U4611	A4425	U4330	C	C	A3880	C	A3880		
C	C	U4822	U4611	U4612	A4426	U4331	C	C	A3881	C	A3881		
C	C	U4823	U4612	U4613	A4427	U4332	C	C	A3882	C	A3882		
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C	C	U4825	U										



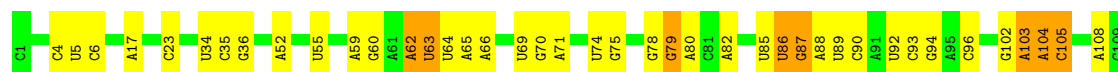
• Molecule 42: 5S rRNA

Chain DB: 78% 20% ..



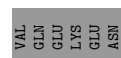
• Molecule 43: 5.8S rRNA

Chain DC: 59% 32% 9% .



• Molecule 44: Large ribosomal subunit protein uL2

Chain DD: 84% 12% .



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	616107	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	60.3	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.134	Depositor
Minimum map value	-0.599	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.029	Depositor
Recommended contour level	0.005	Depositor
Map size (Å)	414.72, 414.72, 414.72	wwPDB
Map dimensions	640, 640, 640	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.648, 0.648, 0.648	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: 5MC, HIC, PUT, UR3, 1MA, B8T, UY1, PSU, ATP, SPD, MLZ, 6MZ, OMU, V5N, OMG, A1JQ4, SPM, K, A2M, MG, ZN, OMC

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	0.24	0/1905	0.44	0/2539
2	AB	0.27	0/1787	0.48	0/2408
3	AC	0.20	0/1537	0.42	0/2066
4	AD	0.19	0/1700	0.39	0/2270
5	AE	0.21	0/1394	0.49	0/1863
6	AF	0.19	0/1704	0.38	0/2282
7	AG	0.20	0/1142	0.42	0/1527
8	AH	0.17	0/1746	0.38	0/2338
9	AI	0.21	0/1682	0.45	0/2250
10	AJ	0.26	0/1250	0.53	0/1678
11	AK	0.28	1/1537 (0.1%)	0.41	1/2052 (0.0%)
12	AL	0.25	0/1318	0.46	0/1745
13	AM	0.23	0/1493	0.43	0/2003
14	AN	0.25	0/1326	0.45	0/1770
15	AO	0.22	0/839	0.48	0/1126
16	AP	0.35	1/993 (0.1%)	0.45	0/1332
17	AQ	0.34	0/532	0.50	0/708
18	AR	0.21	0/993	0.42	0/1334
19	AS	0.37	1/1132 (0.1%)	0.44	1/1504 (0.1%)
20	AT	0.16	0/1130	0.36	0/1507
21	AU	0.21	0/1179	0.40	0/1573
22	AV	0.21	0/824	0.46	0/1086
23	AW	0.20	0/736	0.42	0/988
24	AX	0.21	0/916	0.44	0/1234
25	AY	0.15	0/1088	0.35	0/1451
26	AZ	0.19	0/895	0.39	0/1198
27	Aa	0.16	0/855	0.37	0/1140
28	Ab	0.21	0/1023	0.44	0/1351
29	Ac	0.20	0/843	0.40	0/1115
30	Ad	0.28	0/720	0.41	0/952
31	Ae	0.18	0/575	0.38	0/761

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	Af	0.22	0/454	0.48	0/599
33	Ag	0.16	0/425	0.37	0/561
34	Ah	0.13	0/855	0.30	0/1128
35	Ai	0.16	0/717	0.36	0/953
36	Aj	0.23	0/1017	0.44	0/1364
37	BA	0.23	0/3253	0.50	2/4352 (0.0%)
38	BB	0.19	0/2916	0.40	0/3917
39	BC	0.18	0/2432	0.38	0/3256
40	BD	0.16	0/1771	0.35	0/2377
41	DA	0.16	12/80842 (0.0%)	0.31	0/126109
42	DB	0.12	0/2836	0.27	0/4421
43	DC	0.20	1/3631 (0.0%)	0.32	0/5657
44	DD	0.19	0/1913	0.41	0/2563
All	All	0.19	16/139856 (0.0%)	0.35	4/206408 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
2	AB	0	1
10	AJ	0	1
12	AL	0	1
15	AO	0	1
18	AR	0	1
26	AZ	0	1
28	Ab	0	2
29	Ac	0	1
All	All	0	9

All (16) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AK	59	PRO	CA-C	8.16	1.57	1.52
41	DA	2815	A2M	O3'-P	6.61	1.62	1.56
41	DA	4523	A2M	O3'-P	6.43	1.62	1.56
41	DA	3830	A2M	O3'-P	6.41	1.62	1.56
16	AP	11	GLY	N-CA	6.40	1.52	1.44
41	DA	3718	A2M	O3'-P	6.39	1.62	1.56
41	DA	1524	A2M	O3'-P	6.29	1.62	1.56
41	DA	398	A2M	O3'-P	6.28	1.62	1.56

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
41	DA	3825	A2M	O3'-P	6.27	1.62	1.56
41	DA	1871	A2M	O3'-P	6.23	1.62	1.56
19	AS	77	LYS	C-N	6.21	1.42	1.33
41	DA	400	A2M	O3'-P	6.00	1.62	1.56
41	DA	3785	A2M	O3'-P	5.93	1.62	1.56
41	DA	1326	A2M	O3'-P	5.92	1.62	1.56
41	DA	1534	A2M	O3'-P	5.52	1.61	1.56
43	DC	104	A	P-O5'	-5.01	1.52	1.59

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	AK	59	PRO	O-C-N	8.50	125.14	121.15
37	BA	301	ASN	N-CA-C	-7.72	98.39	110.36
19	AS	77	LYS	CA-C-O	5.98	126.56	119.56
37	BA	302	ASN	N-CA-CB	-5.46	107.94	114.17

There are no chirality outliers.

All (9) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	AB	89	ARG	Sidechain
10	AJ	18	ARG	Sidechain
12	AL	71	ARG	Sidechain
15	AO	113	ARG	Sidechain
18	AR	47	ARG	Sidechain
26	AZ	102	ARG	Sidechain
28	Ab	32	ARG	Sidechain
28	Ab	94	ARG	Sidechain
29	Ac	41	ARG	Sidechain

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	AA	1870	1996	1996	19	0
2	AB	1756	1884	1884	13	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	AC	1518	1601	1601	16	0
4	AD	1661	1701	1701	10	0
5	AE	1371	1412	1412	21	0
6	AF	1673	1779	1779	8	0
7	AG	1120	1187	1187	14	0
8	AH	1701	1749	1749	8	0
9	AI	1650	1794	1794	32	0
10	AJ	1224	1250	1250	8	0
11	AK	1513	1628	1628	7	0
12	AL	1302	1438	1438	4	0
13	AM	1453	1490	1490	10	0
14	AN	1298	1366	1366	9	0
15	AO	825	850	850	11	0
16	AP	979	1039	1039	3	0
17	AQ	519	533	533	7	0
18	AR	976	1053	1053	7	0
19	AS	1115	1205	1205	6	0
20	AT	1107	1182	1182	8	0
21	AU	1163	1210	1206	13	0
22	AV	811	876	876	4	0
23	AW	726	764	764	6	0
24	AX	901	947	946	9	0
25	AY	1070	1166	1165	2	0
26	AZ	876	912	912	3	0
27	Aa	845	933	933	5	0
28	Ab	1015	1148	1148	8	0
29	Ac	832	918	917	6	0
30	Ad	705	736	736	0	0
31	Ae	569	637	637	5	0
32	Af	444	483	483	2	0
33	Ag	430	466	465	1	0
34	Ah	842	912	912	2	0
35	Ai	707	757	756	6	0
36	Aj	1002	1069	1068	6	0
37	BA	3198	3339	3339	47	0
38	BB	2862	3036	3036	22	0
39	BC	2386	2421	2421	25	0
40	BD	1737	1888	1888	18	0
41	DA	74730	37450	37836	654	0
42	DB	2538	1285	1286	12	0
43	DC	3315	1674	1685	44	0
44	DD	1888	1979	1976	22	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
45	AD	1	0	0	0	0
45	AJ	1	0	0	0	0
45	AP	1	0	0	0	0
45	AY	1	0	0	0	0
45	AZ	1	0	0	0	0
45	Ad	1	0	0	0	0
45	BA	2	0	0	0	0
45	DA	171	0	0	0	0
45	DB	2	0	0	0	0
45	DC	3	0	0	0	0
46	AM	1	0	0	0	0
46	AN	1	0	0	0	0
46	AP	1	0	0	0	0
46	DA	40	0	0	0	0
46	DD	2	0	0	0	0
47	Aa	1	0	0	0	0
47	Ad	1	0	0	0	0
47	Ag	1	0	0	0	0
47	Ah	1	0	0	0	0
47	Ai	1	0	0	0	0
48	DA	18	0	36	14	0
48	DB	6	0	0	0	0
49	DA	40	8	76	23	0
50	DA	56	36	104	9	0
51	DA	31	12	12	2	0
52	DA	24	24	0	0	0
53	AA	117	0	0	1	0
53	AB	133	0	0	0	0
53	AC	128	0	0	0	0
53	AD	91	0	0	0	0
53	AE	141	0	0	0	0
53	AF	95	0	0	0	0
53	AG	70	0	0	0	0
53	AH	112	0	0	0	0
53	AI	110	0	0	1	0
53	AJ	47	0	0	0	0
53	AK	93	0	0	0	0
53	AL	51	0	0	0	0
53	AM	115	0	0	0	0
53	AN	85	0	0	0	0
53	AO	73	0	0	0	0
53	AP	67	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
53	AQ	38	0	0	0	0
53	AR	63	0	0	2	0
53	AS	53	0	0	0	0
53	AT	70	0	0	0	0
53	AU	68	0	0	1	0
53	AV	48	0	0	0	0
53	AW	37	0	0	0	0
53	AX	63	0	0	0	0
53	AY	79	0	0	0	0
53	AZ	56	0	0	0	0
53	Aa	56	0	0	0	0
53	Ab	77	0	0	2	0
53	Ac	70	0	0	0	0
53	Ad	54	0	0	0	0
53	Ae	63	0	0	0	0
53	Af	24	0	0	0	0
53	Ag	25	0	0	0	0
53	Ah	53	0	0	0	0
53	Ai	40	0	0	0	0
53	Aj	63	0	0	0	0
53	BA	174	0	0	1	0
53	BB	163	0	0	0	0
53	BC	165	0	0	0	0
53	BD	116	0	0	0	0
53	DA	6364	0	0	7	0
53	DB	202	0	0	0	0
53	DC	232	0	0	0	0
53	DD	100	0	0	0	0
All	All	142776	95223	95756	1071	0

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

All (1071) 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)
41:DA:1534:A2M:O4'	41:DA:1534:A2M:C1'	1.64	1.23
41:DA:3718:A2M:O4'	41:DA:3718:A2M:C1'	1.63	1.22
41:DA:370:U:O4	48:DA:5103:PUT:H41	1.86	0.76
41:DA:2050:G:H21	49:DA:5107:SPD:H72	1.51	0.76
9:AI:86:GLY:O	49:DA:5107:SPD:H92	1.86	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:DA:463:A:H61	41:DA:692:A:H61	1.33	0.75
41:DA:3636:C:H4'	41:DA:3825:A2M:H2	1.68	0.75
37:BA:301:ASN:O	37:BA:302:ASN:HB3	1.88	0.73
38:BB:304:ALA:HB1	41:DA:2096:G:H21	1.54	0.72
32:Af:9:ILE:HD12	32:Af:51:LEU:HD21	1.71	0.72
41:DA:3717:A:H2'	41:DA:3718:A2M:H8	1.72	0.72
3:AC:103:VAL:HG11	3:AC:144:LEU:HD21	1.71	0.71
15:AO:72:VAL:HG12	15:AO:72:VAL:O	1.90	0.71
41:DA:4341:C:H42	51:DA:5112:ATP:H8	1.35	0.70
41:DA:1270:A:H8	41:DA:2106:G:H21	1.40	0.70
24:AX:68:LEU:HD11	24:AX:106:VAL:HG12	1.72	0.69
41:DA:3718:A2M:H2	41:DA:3934:G:O4'	1.92	0.69
31:Ae:56:LEU:HD23	31:Ae:60:LEU:HD21	1.74	0.68
41:DA:4744:A:H61	41:DA:4956:A:H62	1.42	0.68
9:AI:149:TYR:HE1	53:BA:629:HOH:O	1.78	0.67
11:AK:39:THR:HG22	11:AK:41:SER:H	1.61	0.66
29:Ac:2:ALA:N	29:Ac:5:TYR:HH	1.94	0.66
49:DA:5107:SPD:H81	49:DA:5107:SPD:H42	1.78	0.66
16:AP:91:LYS:HD2	37:BA:67:VAL:HG11	1.79	0.65
37:BA:287:ILE:HG23	37:BA:287:ILE:O	1.97	0.64
49:DA:5107:SPD:H42	49:DA:5107:SPD:C8	2.27	0.64
44:DD:137:ILE:HD11	44:DD:149:LYS:HB2	1.79	0.64
41:DA:455:C:H1'	41:DA:456:C:O2	1.98	0.64
26:AZ:2:SER:N	41:DA:4946:U:HO2'	1.95	0.63
17:AQ:1:MET:HE1	37:BA:73:VAL:HG23	1.81	0.63
41:DA:2050:G:C2'	49:DA:5107:SPD:H91	2.29	0.63
18:AR:81:LEU:HD11	18:AR:99:ILE:HD11	1.80	0.63
41:DA:2050:G:O2'	49:DA:5107:SPD:H91	1.97	0.63
37:BA:370:THR:HG22	37:BA:370:THR:O	1.98	0.62
41:DA:3917:A:C5	48:DA:5101:PUT:H31	2.34	0.61
17:AQ:1:MET:SD	17:AQ:15:PRO:HB3	2.40	0.61
1:AA:29:LYS:O	1:AA:33:LEU:HD23	2.00	0.61
39:BC:126:THR:HG23	39:BC:128:ASP:H	1.66	0.61
41:DA:178:C:HO2'	41:DA:179:G:H8	1.49	0.61
41:DA:2545:U:H3'	41:DA:2546:G:O4'	2.01	0.61
41:DA:4498:OMU:HM22	41:DA:4499:OMG:C8	2.36	0.61
41:DA:1681:G:P	48:DA:5102:PUT:H41	2.41	0.60
37:BA:301:ASN:O	37:BA:302:ASN:CB	2.49	0.60
39:BC:122:GLN:HE22	39:BC:126:THR:HG22	1.66	0.60
5:AE:113:ILE:HD13	5:AE:119:TYR:HB2	1.83	0.60
7:AG:24:LEU:HD11	7:AG:86:TRP:CG	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:BB:211:TYR:OH	38:BB:218:ILE:HD11	2.02	0.59
41:DA:1339:U:H2'	41:DA:1340:OMC:C6	2.37	0.59
44:DD:113:VAL:HG21	44:DD:116:LEU:HD21	1.85	0.59
41:DA:1172:C:H42	41:DA:1188:C:H42	1.49	0.59
40:BD:201:ILE:HG23	40:BD:203:ILE:HG23	1.84	0.59
41:DA:4378:A:O2'	41:DA:4379:A:H2'	2.03	0.59
13:AM:16:CYS:SG	13:AM:54:MET:HE2	2.43	0.58
41:DA:2351:OMC:HM22	41:DA:2352:U:H5'	1.83	0.58
41:DA:3636:C:C4'	41:DA:3825:A2M:H2	2.34	0.58
40:BD:180:VAL:HG21	40:BD:258:LEU:HD11	1.84	0.58
41:DA:1326:A2M:H2'	41:DA:1327:C:C6	2.38	0.58
1:AA:74:MET:HE2	41:DA:1208:G:H21	1.68	0.58
37:BA:291:TYR:CE2	37:BA:327:THR:HG22	2.38	0.58
6:AF:178:ALA:HB3	21:AU:134:GLU:OE2	2.04	0.58
41:DA:3869:OMC:O5'	41:DA:3869:OMC:H6	1.87	0.58
10:AJ:94:MET:HE1	10:AJ:146:ILE:C	2.29	0.57
9:AI:86:GLY:HA2	49:DA:5107:SPD:H22	1.85	0.57
43:DC:155:C:H2'	43:DC:156:U:O4'	2.05	0.57
37:BA:107:ALA:HB2	37:BA:201:LEU:HD22	1.86	0.57
7:AG:92:ALA:O	7:AG:96:GLU:OE1	2.22	0.57
5:AE:57:VAL:O	5:AE:58:ARG:HG2	2.05	0.56
18:AR:79:PHE:CD1	28:Ab:36:VAL:HG11	2.41	0.56
41:DA:1308:C:H2'	41:DA:1309:C:C6	2.39	0.56
13:AM:28:TYR:HE2	13:AM:54:MET:HE1	1.70	0.56
41:DA:2050:G:N2	49:DA:5107:SPD:H72	2.19	0.56
41:DA:2448:G:H2'	41:DA:2449:A:C8	2.40	0.56
24:AX:46:LEU:HD22	24:AX:72:VAL:HG11	1.88	0.56
41:DA:2554:U:O2	41:DA:2764:A:N7	2.39	0.56
13:AM:155:PRO:HB2	41:DA:4764:A:N7	2.21	0.56
43:DC:120:G:C6	43:DC:131:G:C6	2.93	0.56
41:DA:25:A:C8	41:DA:341:G:C8	2.94	0.56
41:DA:1577:G:O2'	41:DA:1612:G:H4'	2.06	0.56
40:BD:104:THR:HG22	40:BD:104:THR:O	2.06	0.56
5:AE:174:ILE:HG22	5:AE:174:ILE:O	2.05	0.56
41:DA:953:C:N3	41:DA:954:C:C5	2.74	0.56
41:DA:2424:OMG:HM22	41:DA:2426:U:C6	2.41	0.56
5:AE:35:ARG:HD2	5:AE:123:ILE:HA	1.88	0.56
41:DA:4970:C:C2	41:DA:4971:A:C8	2.94	0.56
9:AI:90:HIS:ND1	49:DA:5107:SPD:H21	2.21	0.55
9:AI:90:HIS:CE1	49:DA:5107:SPD:H21	2.41	0.55
41:DA:711:A:H2'	41:DA:712:C:C6	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:DA:1278:C:H2'	41:DA:1279:A:O4'	2.05	0.55
1:AA:204:ALA:HB3	53:AA:387:HOH:O	2.07	0.55
41:DA:4740:G:H2'	41:DA:4742:G:H5''	1.89	0.55
41:DA:4860:G:H1'	41:DA:4861:G:H5'	1.88	0.55
41:DA:3917:A:N6	48:DA:5101:PUT:H11	2.22	0.55
41:DA:4611:A:C8	41:DA:4612:C:C6	2.95	0.55
16:AP:85:ARG:HD2	16:AP:100:ASP:HA	1.88	0.55
18:AR:82:THR:HG22	18:AR:82:THR:O	2.07	0.55
41:DA:4257:A:O2'	41:DA:4258:C:C6	2.56	0.55
21:AU:85:GLN:HA	21:AU:88:VAL:HG22	1.88	0.55
41:DA:954:C:O2'	41:DA:955:G:H5'	2.07	0.55
41:DA:1681:G:OP1	48:DA:5102:PUT:H22	2.07	0.55
41:DA:1207:C:C2	41:DA:1208:G:C8	2.94	0.54
4:AD:152:LEU:HB3	4:AD:165:ILE:HD12	1.89	0.54
40:BD:47:ASN:HB2	40:BD:62:MET:CE	2.38	0.54
41:DA:1338:G:H4'	41:DA:1339:U:H6	1.71	0.54
41:DA:4700:A:C2	41:DA:4701:A:C8	2.96	0.54
41:DA:1719:A:H2'	41:DA:1720:C:O4'	2.07	0.54
15:AO:72:VAL:HG11	15:AO:83:LEU:HD21	1.89	0.54
37:BA:29:VAL:HG12	37:BA:31:SER:H	1.72	0.54
41:DA:4258:C:C2	41:DA:4259:C:C5	2.95	0.54
41:DA:2414:G:H2'	41:DA:2415:OMU:H6	1.90	0.54
41:DA:4774:C:HO2'	41:DA:4775:C:H6	1.52	0.54
38:BB:230:LEU:HD21	38:BB:239:LYS:HD2	1.89	0.54
41:DA:2815:A2M:H2'	41:DA:2816:G:C8	2.43	0.54
17:AQ:32:LEU:HD21	37:BA:378:ARG:HE	1.72	0.54
41:DA:1205:G:H2'	41:DA:1206:C:H6	1.72	0.54
41:DA:4484:A:C2	41:DA:4485:C:C5	2.96	0.54
41:DA:5004:C:H2'	41:DA:5005:G:O4'	2.08	0.54
15:AO:85:TYR:CD1	41:DA:2632:PSU:C2	2.96	0.54
41:DA:4563:U:C2	41:DA:4564:A:C8	2.96	0.54
41:DA:485:C:H2'	41:DA:485:C:O2	2.08	0.53
41:DA:1697:G:H2'	41:DA:1698:C:O4'	2.08	0.53
41:DA:4260:U:H2'	41:DA:4261:C:C6	2.43	0.53
5:AE:89:VAL:HG13	5:AE:114:ASP:OD2	2.07	0.53
43:DC:122:G:H2'	43:DC:123:U:O4'	2.09	0.53
4:AD:193:ASP:OD1	4:AD:193:ASP:O	2.26	0.53
41:DA:4260:U:H2'	41:DA:4261:C:H6	1.74	0.53
4:AD:208:LYS:O	4:AD:211:VAL:HG22	2.08	0.53
23:AW:31:TYR:CZ	23:AW:35:LEU:HD11	2.43	0.53
38:BB:318:PRO:O	38:BB:319:LEU:HB2	2.07	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:DA:510:U:O2'	41:DA:511:C:P	2.67	0.53
41:DA:1447:C:H2'	41:DA:1447:C:O2	2.09	0.53
6:AF:128:PRO:HB2	6:AF:133:ALA:HB3	1.90	0.53
41:DA:4741:C:H4'	41:DA:4742:G:H5'	1.91	0.53
43:DC:121:G:C4	43:DC:122:G:C8	2.97	0.53
41:DA:3775:A:H2'	41:DA:3776:G:O4'	2.08	0.52
41:DA:4314:C:C2	41:DA:4315:A:C8	2.97	0.52
5:AE:113:ILE:CD1	5:AE:119:TYR:HB2	2.39	0.52
41:DA:4714:C:C2	41:DA:4715:C:C6	2.97	0.52
40:BD:47:ASN:HB2	40:BD:62:MET:HE1	1.90	0.52
41:DA:1450:C:H2'	41:DA:1451:G:O4'	2.09	0.52
41:DA:4653:C:C2	41:DA:4654:C:C5	2.98	0.52
41:DA:2817:C:C2	41:DA:2818:C:C5	2.97	0.52
7:AG:40:GLY:HA3	7:AG:45:VAL:HB	1.92	0.52
35:AI:26:VAL:HG12	44:DD:178:PRO:HD2	1.92	0.52
38:BB:276:ASN:OD1	38:BB:276:ASN:O	2.28	0.52
41:DA:953:C:C2	41:DA:954:C:C6	2.98	0.52
41:DA:3635:A:C8	41:DA:3692:A:C8	2.97	0.52
41:DA:3702:A:C2	41:DA:3703:G:C8	2.98	0.52
41:DA:4535:A:H2'	41:DA:4536:OMC:H6	1.74	0.52
37:BA:370:THR:O	37:BA:370:THR:CG2	2.58	0.52
39:BC:62:CYS:HB3	39:BC:105:LEU:HD22	1.92	0.52
41:DA:286:U:H2'	41:DA:287:U:C6	2.45	0.52
41:DA:4862:G:H2'	41:DA:4863:G:C8	2.44	0.52
10:AJ:109:VAL:HA	10:AJ:112:LEU:HD13	1.91	0.52
27:Aa:46:CYS:CB	27:Aa:86:CYS:SG	2.97	0.52
37:BA:302:ASN:OD1	37:BA:330:PHE:HE1	1.92	0.52
3:AC:118:LEU:HD21	3:AC:177:ASP:HB2	1.92	0.52
37:BA:165:HIS:HB3	37:BA:180:LEU:HD23	1.92	0.52
41:DA:3739:C:C2	41:DA:3740:G:C8	2.98	0.52
2:AB:185:LYS:O	2:AB:189:ARG:HD3	2.10	0.52
13:AM:28:TYR:CE2	13:AM:54:MET:HE1	2.45	0.52
37:BA:89:ILE:HD12	37:BA:197:ALA:HB3	1.90	0.52
41:DA:499:G:H21	41:DA:504:G:H1	1.56	0.52
41:DA:1414:C:C4	41:DA:1415:G:C8	2.97	0.52
41:DA:3648:A:H1'	41:DA:3785:A2M:N6	2.24	0.52
39:BC:93:THR:HG22	39:BC:93:THR:O	2.08	0.52
41:DA:2034:G:H2'	41:DA:2035:C:C6	2.44	0.52
41:DA:1206:C:C2	41:DA:1207:C:C5	2.97	0.51
41:DA:4578:G:H2'	41:DA:4579:PSU:C6	2.46	0.51
6:AF:182:LEU:HD13	53:AU:257:HOH:O	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:DD:116:LEU:HD23	44:DD:164:ALA:HB2	1.91	0.51
9:AI:88:LEU:O	49:DA:5107:SPD:H32	2.10	0.51
41:DA:1857:C:H2'	41:DA:1858:A:H8	1.74	0.51
41:DA:1859:B8T:C4	41:DA:1860:PSU:C2	2.94	0.51
41:DA:911:U:H2'	41:DA:912:G:O4'	2.11	0.51
41:DA:1513:U:N3	41:DA:1514:U:C5	2.79	0.51
41:DA:1633:G:H5'	41:DA:1634:A:OP1	2.10	0.51
1:AA:66:ARG:CZ	41:DA:1210:C:H41	2.23	0.51
41:DA:672:C:C2	41:DA:673:C:C5	2.99	0.51
41:DA:2818:C:C2	41:DA:2819:U:C6	2.99	0.51
23:AW:34:THR:HG23	23:AW:95:ALA:HB2	1.92	0.51
41:DA:463:A:H61	41:DA:692:A:N6	2.05	0.51
41:DA:2281:U:C2	41:DA:2282:A:C8	2.99	0.51
41:DA:2417:A:C4	41:DA:2418:A:C8	2.99	0.51
41:DA:4405:G:C4	41:DA:4406:U:C6	2.98	0.51
41:DA:1308:C:C2	41:DA:1309:C:C5	2.99	0.51
41:DA:1853:G:H22	48:DA:5102:PUT:H32	1.76	0.51
41:DA:3692:A:C5	41:DA:3693:U:C5	2.99	0.51
41:DA:4266:G:H2'	41:DA:4266:G:N3	2.25	0.51
14:AN:159:MET:O	14:AN:160:ALA:HB2	2.10	0.51
42:DB:24:C:H2'	42:DB:25:G:O4'	2.11	0.51
41:DA:982:U:H2'	41:DA:983:C:C6	2.45	0.51
41:DA:4652:G:H2'	41:DA:4653:C:H6	1.76	0.51
41:DA:1853:G:N2	48:DA:5102:PUT:H32	2.26	0.50
41:DA:4567:G:H1'	53:DA:7982:HOH:O	2.10	0.50
5:AE:91:GLU:CD	5:AE:91:GLU:O	2.54	0.50
37:BA:297:LYS:HG3	37:BA:299:ILE:HG13	1.93	0.50
39:BC:146:LEU:HD22	39:BC:163:LEU:HD12	1.93	0.50
41:DA:683:C:H2'	41:DA:684:G:O4'	2.11	0.50
41:DA:3873:G:H2'	41:DA:3874:G:C8	2.47	0.50
41:DA:672:C:N3	41:DA:673:C:C5	2.79	0.50
41:DA:4956:A:O2'	41:DA:4957:C:H6	1.94	0.50
43:DC:89:U:H2'	43:DC:90:C:C6	2.47	0.50
5:AE:26:VAL:O	5:AE:68:ILE:O	2.29	0.50
41:DA:2544:G:H22	43:DC:124:U:H4'	1.76	0.50
41:DA:4393:G:O4'	41:DA:4447:5MC:HM52	2.11	0.50
41:DA:4900:C:C5	41:DA:4901:G:C8	2.99	0.50
9:AI:55:LEU:HD13	53:DA:8555:HOH:O	2.12	0.50
41:DA:50:C:C2	41:DA:51:A:C8	3.00	0.50
41:DA:1306:C:H2'	41:DA:1307:A:H8	1.77	0.50
41:DA:1443:A:N7	41:DA:1444:G:N7	2.60	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:DA:4469:U:C6	41:DA:4708:A:N7	2.79	0.50
43:DC:104:A:O5'	43:DC:105:C:C5	2.65	0.50
9:AI:34:VAL:HG12	9:AI:103:LYS:HB2	1.92	0.50
9:AI:181:ALA:O	9:AI:185:VAL:HG22	2.12	0.50
41:DA:952:G:H2'	41:DA:953:C:H6	1.76	0.50
41:DA:1817:U:O2'	41:DA:1818:G:H5'	2.11	0.50
41:DA:4392:OMG:H2'	41:DA:4447:5MC:HM51	1.93	0.50
5:AE:78:LYS:O	5:AE:82:ILE:HG12	2.11	0.50
12:AL:98:ARG:NH2	12:AL:130:ASN:OD1	2.45	0.50
14:AN:119:ALA:HB1	14:AN:124:THR:O	2.12	0.50
14:AN:159:MET:O	14:AN:159:MET:SD	2.69	0.50
41:DA:371:A:N1	48:DA:5103:PUT:H21	2.27	0.50
41:DA:1720:C:H3'	41:DA:1721:G:C8	2.47	0.49
41:DA:3868:G:H22	41:DA:3900:G:H1'	1.76	0.49
27:Aa:85:LYS:O	27:Aa:88:ARG:HG2	2.12	0.49
41:DA:4610:A:C5	41:DA:4611:A:C2	3.00	0.49
7:AG:16:SER:HG	7:AG:17:PHE:HD2	1.55	0.49
37:BA:90:VAL:HG23	37:BA:104:THR:HG22	1.95	0.49
39:BC:52:ILE:HA	39:BC:147:ASP:HB3	1.93	0.49
41:DA:254:G:H2'	41:DA:255:C:H6	1.76	0.49
41:DA:269:G:H2'	41:DA:270:U:O2	2.12	0.49
41:DA:675:C:H2'	41:DA:676:C:O4'	2.12	0.49
41:DA:1590:C:H4'	41:DA:1591:U:OP2	2.12	0.49
41:DA:120:A:C2	41:DA:152:U:C2	2.99	0.49
41:DA:1206:C:H2'	41:DA:1207:C:H6	1.77	0.49
41:DA:1241:C:O2	41:DA:1241:C:O4'	2.30	0.49
41:DA:2065:G:C5	41:DA:2066:C:C5	3.01	0.49
41:DA:3774:A:H2'	41:DA:3775:A:N3	2.26	0.49
41:DA:4340:U:C2	41:DA:4341:C:C6	3.00	0.49
23:AW:31:TYR:CE1	23:AW:35:LEU:HD11	2.48	0.49
41:DA:496:G:H2'	41:DA:498:C:H5''	1.93	0.49
41:DA:1307:A:H2'	41:DA:1308:C:C6	2.48	0.49
8:AH:28:TRP:O	8:AH:32:GLN:HG2	2.13	0.49
21:AU:119:LYS:HA	21:AU:140:VAL:HG23	1.95	0.49
41:DA:1307:A:H2'	41:DA:1308:C:H6	1.76	0.49
41:DA:2818:C:N3	41:DA:2819:U:C5	2.80	0.49
41:DA:3909:C:C2	41:DA:3910:C:C6	3.01	0.49
37:BA:149:ASP:O	37:BA:153:MET:HG3	2.12	0.49
39:BC:287:PHE:CE2	39:BC:291:GLN:NE2	2.81	0.49
41:DA:511:C:O2'	41:DA:512:U:C6	2.66	0.49
41:DA:1310:C:C2	41:DA:1311:G:C8	2.99	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:DA:4406:U:C2	41:DA:4407:G:C8	3.00	0.49
44:DD:142:GLU:O	44:DD:143:THR:OG1	2.25	0.49
31:Ae:23:VAL:HG22	31:Ae:36:VAL:HG22	1.94	0.49
37:BA:299:ILE:HG23	37:BA:313:SER:HB3	1.95	0.49
39:BC:122:GLN:NE2	39:BC:126:THR:HG22	2.28	0.49
41:DA:2465:C:H2'	41:DA:2466:G:O4'	2.13	0.49
41:DA:2836:A:H2'	41:DA:2837:OMU:H6	1.94	0.49
6:AF:91:ALA:HB1	6:AF:96:ILE:HB	1.95	0.49
32:Af:9:ILE:HG23	32:Af:51:LEU:HD11	1.94	0.49
37:BA:291:TYR:HB3	37:BA:297:LYS:HD2	1.95	0.49
41:DA:1940:G:H22	41:DA:4434:C:H5''	1.77	0.49
41:DA:4699:U:H4'	41:DA:4700:A:OP1	2.13	0.49
1:AA:217:ARG:HG2	1:AA:246:ARG:HB2	1.95	0.49
2:AB:58:PRO:HG2	2:AB:61:ILE:HD12	1.94	0.49
5:AE:111:GLU:HB3	5:AE:113:ILE:HG22	1.94	0.49
9:AI:193:THR:O	9:AI:197:LYS:HG2	2.13	0.49
28:Ab:7:ARG:NH2	43:DC:86:U:H2'	2.28	0.49
41:DA:1206:C:N3	41:DA:1207:C:C5	2.80	0.49
41:DA:2072:C:C2	41:DA:2073:C:C5	3.01	0.49
9:AI:108:ILE:HD12	9:AI:160:ARG:CZ	2.43	0.48
41:DA:2473:A:H2'	41:DA:2504:C:O2	2.13	0.48
41:DA:3909:C:O2	41:DA:4396:A:N1	2.46	0.48
41:DA:659:G:C2	41:DA:660:A:C4	3.01	0.48
41:DA:734:G:C2	41:DA:735:G:C8	3.01	0.48
1:AA:181:LYS:NZ	41:DA:1718:C:O2'	2.46	0.48
8:AH:45:PRO:O	8:AH:49:ARG:HG3	2.13	0.48
37:BA:128:LYS:HG3	37:BA:128:LYS:O	2.13	0.48
41:DA:3782:5MC:HN41	41:DA:3809:G:H2'	1.78	0.48
41:DA:4714:C:C4	41:DA:4715:C:C5	3.01	0.48
3:AC:137:SER:OG	3:AC:143:GLU:HB3	2.13	0.48
7:AG:79:LYS:O	7:AG:80:ALA:HB3	2.14	0.48
29:Ac:63:VAL:HG12	29:Ac:63:VAL:O	2.12	0.48
41:DA:3664:G:H2'	41:DA:3665:G:H8	1.78	0.48
9:AI:51:LYS:HA	9:AI:141:LEU:HD11	1.96	0.48
13:AM:2:LYS:N	41:DA:2062:C:OP1	2.46	0.48
41:DA:178:C:H2'	41:DA:178:C:O2	2.12	0.48
41:DA:3886:G:P	49:DA:5107:SPD:HN12	2.36	0.48
1:AA:74:MET:HE2	41:DA:1208:G:N2	2.28	0.48
7:AG:27:ILE:HA	7:AG:38:VAL:HG12	1.96	0.48
9:AI:170:LYS:O	9:AI:174:LEU:HD23	2.13	0.48
15:AO:48:LYS:HG2	15:AO:53:ALA:HB2	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:AU:131:ARG:NH1	21:AU:135:GLU:OE2	2.47	0.48
25:AY:90:MET:CE	36:Aj:113:ARG:HA	2.44	0.48
26:AZ:15:LYS:HE3	41:DA:2068:C:OP1	2.13	0.48
39:BC:223:PHE:HB3	39:BC:226:TYR:HB2	1.96	0.48
41:DA:753:C:C5	41:DA:754:U:C5	3.02	0.48
41:DA:4629:U:C2	41:DA:4630:G:C8	3.02	0.48
1:AA:162:ILE:HD13	1:AA:174:LEU:HD12	1.95	0.48
5:AE:17:ILE:HD12	5:AE:80:GLU:HG3	1.95	0.48
7:AG:56:GLN:HG2	41:DA:4870:G:C6	2.48	0.48
15:AO:24:ASP:OD1	15:AO:26:THR:HG23	2.14	0.48
24:AX:44:ARG:HD2	24:AX:44:ARG:O	2.14	0.48
37:BA:228:TYR:CE1	37:BA:270:GLY:HA2	2.49	0.48
41:DA:456:C:O2	41:DA:456:C:O4'	2.31	0.48
41:DA:1583:A:OP2	50:DA:5111:SPM:H21	2.14	0.48
41:DA:1669:A:H4'	41:DA:1685:G:N2	2.28	0.48
37:BA:56:ILE:HD12	37:BA:365:LEU:HD22	1.95	0.47
39:BC:83:LEU:N	39:BC:84:PRO:HD2	2.29	0.47
41:DA:4440:G:C4	41:DA:4441:A:C8	3.02	0.47
2:AB:175:ARG:CD	2:AB:230:TYR:CD2	2.97	0.47
8:AH:128:LYS:HB3	8:AH:130:PHE:CE2	2.49	0.47
41:DA:4713:G:C5	41:DA:4714:C:C5	3.02	0.47
43:DC:70:G:N2	43:DC:87:G:H1'	2.29	0.47
43:DC:120:G:C6	43:DC:121:G:N7	2.81	0.47
44:DD:122:ASP:OD1	44:DD:122:ASP:O	2.33	0.47
21:AU:112:LEU:HD13	41:DA:1387:A:C6	2.50	0.47
39:BC:15:ARG:HD2	41:DA:1743:A:O4'	2.14	0.47
41:DA:453:G:N3	41:DA:453:G:C2'	2.77	0.47
41:DA:2817:C:N3	41:DA:2818:C:C5	2.82	0.47
41:DA:3621:A:C8	41:DA:4642:U:H1'	2.49	0.47
41:DA:5023:C:H3'	41:DA:5024:C:C5'	2.45	0.47
44:DD:101:VAL:C	44:DD:102:LEU:HD12	2.39	0.47
19:AS:74:TYR:HD1	43:DC:74:U:C4	2.32	0.47
38:BB:138:MET:HE1	38:BB:145:GLU:HA	1.97	0.47
40:BD:147:GLY:HA3	40:BD:201:ILE:O	2.15	0.47
41:DA:259:C:H2'	41:DA:260:C:O2	2.14	0.47
41:DA:479:G:O2'	41:DA:480:C:H5'	2.13	0.47
41:DA:1513:U:C2	41:DA:1514:U:C6	3.02	0.47
37:BA:300:LYS:HG2	37:BA:311:ASP:HA	1.96	0.47
40:BD:43:HIS:CD2	40:BD:44:CYS:H	2.33	0.47
41:DA:332:C:OP2	49:DA:5105:SPD:H91	2.14	0.47
41:DA:415:G:C5	41:DA:416:U:C5	3.03	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:DA:1582:U:C2	41:DA:1583:A:C8	3.01	0.47
41:DA:2846:G:H2'	41:DA:2847:G:H8	1.79	0.47
41:DA:3909:C:O2	41:DA:3909:C:H2'	2.14	0.47
41:DA:4495:G:C2	41:DA:4496:A:N7	2.82	0.47
41:DA:4652:G:H2'	41:DA:4653:C:C6	2.50	0.47
5:AE:113:ILE:HG23	5:AE:114:ASP:N	2.30	0.47
10:AJ:41:ILE:HD13	10:AJ:150:LEU:HD13	1.96	0.47
23:AW:31:TYR:HE1	23:AW:59:GLU:OE2	1.98	0.47
23:AW:59:GLU:HB3	27:Aa:96:LEU:HD11	1.96	0.47
41:DA:281:U:C2	41:DA:282:C:C6	3.02	0.47
41:DA:731:G:C6	41:DA:932:A:C4	3.02	0.47
41:DA:750:U:C2	41:DA:751:G:C8	3.03	0.47
41:DA:1512:G:H2'	41:DA:1513:U:H6	1.79	0.47
41:DA:1688:G:O6	49:DA:5106:SPD:H81	2.15	0.47
41:DA:2567:G:H2'	41:DA:2568:C:H6	1.80	0.47
41:DA:2819:U:O2	41:DA:2820:C:C6	2.68	0.47
41:DA:4611:A:N7	41:DA:4612:C:C5	2.83	0.47
19:AS:74:TYR:HE2	19:AS:77:LYS:HG3	1.79	0.47
20:AT:39:SER:HB3	20:AT:77:TYR:CD2	2.49	0.47
37:BA:299:ILE:CG2	37:BA:313:SER:HB3	2.44	0.47
41:DA:7:C:H2'	41:DA:8:U:C6	2.50	0.47
41:DA:1189:G:H2'	41:DA:1190:C:C6	2.50	0.47
41:DA:2897:G:C4	41:DA:3603:G:N2	2.83	0.47
41:DA:3740:G:C5	41:DA:3741:C:C5	3.02	0.47
41:DA:4638:U:H2'	41:DA:4639:G:N3	2.30	0.47
41:DA:1332:C:H2'	41:DA:1333:A:H8	1.80	0.47
41:DA:2402:G:C2	41:DA:2403:A:C8	3.03	0.47
41:DA:2638:G:N2	41:DA:2718:U:H2'	2.30	0.47
44:DD:205:ASN:O	44:DD:208:GLU:HG2	2.15	0.47
8:AH:19:MET:HA	8:AH:19:MET:HE3	1.96	0.47
41:DA:255:C:C2	41:DA:256:G:C8	3.03	0.47
41:DA:371:A:H61	48:DA:5103:PUT:H21	1.80	0.47
41:DA:1460:C:C2	41:DA:1461:C:C5	3.03	0.47
41:DA:1479:G:C6	41:DA:1487:G:C6	3.03	0.47
41:DA:1504:G:H2'	41:DA:1505:C:C6	2.50	0.47
1:AA:82:TYR:CD1	14:AN:140:PHE:HE1	2.33	0.47
37:BA:89:ILE:HD12	37:BA:197:ALA:CB	2.46	0.47
41:DA:418:A:C2	43:DC:17:A:H1'	2.50	0.47
41:DA:1681:G:P	48:DA:5102:PUT:H22	2.55	0.47
41:DA:4489:G:C6	41:DA:4708:A:C5	3.03	0.47
4:AD:189:CYS:O	4:AD:190:LEU:HD23	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:DA:2805:C:N4	41:DA:2806:A:N6	2.63	0.46
41:DA:2819:U:O2	41:DA:2819:U:H2'	2.14	0.46
41:DA:4956:A:C8	41:DA:4957:C:C5	3.02	0.46
38:BB:66:SER:O	38:BB:67:TRP:HB2	2.14	0.46
39:BC:292:GLU:O	39:BC:292:GLU:HG3	2.16	0.46
41:DA:1427:A:H2'	41:DA:1428:U:H5'	1.96	0.46
41:DA:1460:C:H2'	41:DA:1461:C:H6	1.80	0.46
41:DA:1870:C:H2'	41:DA:1871:A2M:H8	1.97	0.46
41:DA:1893:C:H1'	41:DA:1937:C:O2	2.15	0.46
41:DA:2520:C:H2'	41:DA:2521:G:H8	1.79	0.46
41:DA:4749:C:H2'	41:DA:4750:G:O4'	2.14	0.46
3:AC:129:ARG:HH21	41:DA:4704:C:H4'	1.79	0.46
40:BD:92:VAL:HG22	40:BD:93:THR:N	2.31	0.46
41:DA:453:G:N3	41:DA:453:G:H2'	2.30	0.46
41:DA:1775:A:H3'	41:DA:1776:A:C8	2.50	0.46
41:DA:2264:C:H2'	41:DA:2265:G:O4'	2.16	0.46
41:DA:44:A:H5''	50:DA:5108:SPM:H81	1.98	0.46
41:DA:1524:A2M:HM'3	41:DA:3916:G:O2'	2.16	0.46
41:DA:2496:G:H2'	41:DA:2497:C:H6	1.81	0.46
41:DA:3653:A:C2	41:DA:3692:A:O4'	2.68	0.46
41:DA:4485:C:C2	41:DA:4486:C:C5	3.04	0.46
41:DA:4535:A:C2	41:DA:4536:OMC:C5	3.03	0.46
7:AG:104:MET:HE2	9:AI:199:HIS:HB3	1.97	0.46
21:AU:129:PHE:HB3	21:AU:134:GLU:HG3	1.97	0.46
41:DA:1688:G:OP2	49:DA:5106:SPD:H42	2.16	0.46
41:DA:3615:G:O6	41:DA:5005:G:H3'	2.16	0.46
41:DA:4537:C:H2'	41:DA:4538:G:C8	2.50	0.46
1:AA:37:PHE:HZ	22:AV:113:ALA:HB1	1.80	0.46
2:AB:139:GLY:HA3	41:DA:151:G:O6	2.16	0.46
41:DA:3783:A:C8	41:DA:3792:OMG:C8	3.04	0.46
43:DC:140:C:H2'	43:DC:141:C:H6	1.81	0.46
9:AI:81:TRP:CZ2	9:AI:99:LEU:HD21	2.51	0.46
38:BB:140:LYS:HD2	38:BB:246:VAL:O	2.15	0.46
38:BB:168:VAL:O	38:BB:172:LYS:HG3	2.15	0.46
41:DA:131:C:H2'	41:DA:132:G:O4'	2.16	0.46
41:DA:495:C:C2	41:DA:659:G:C2	3.04	0.46
41:DA:732:A:H2'	41:DA:733:A:O4'	2.16	0.46
41:DA:2815:A2M:HM'3	41:DA:2815:A2M:H1'	1.78	0.46
41:DA:3672:G:H3'	41:DA:3673:C:H5''	1.96	0.46
41:DA:4242:U:H4'	41:DA:4243:C:OP1	2.16	0.46
50:DA:5111:SPM:H41	53:DA:9374:HOH:O	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:AI:110:PRO:N	9:AI:111:PRO:CD	2.79	0.46
25:AY:90:MET:HE1	36:Aj:113:ARG:HA	1.98	0.46
39:BC:125:VAL:HG11	39:BC:200:MET:HE2	1.98	0.46
41:DA:495:C:N3	41:DA:659:G:C6	2.84	0.46
41:DA:922:C:H2'	41:DA:923:C:O4'	2.16	0.46
41:DA:1475:G:N2	41:DA:1490:G:C5	2.84	0.46
41:DA:3718:A2M:O4'	41:DA:3718:A2M:C8	2.64	0.46
9:AI:88:LEU:O	49:DA:5107:SPD:C4	2.63	0.46
11:AK:178:ARG:HA	11:AK:184:ARG:O	2.16	0.46
41:DA:222:C:H2'	41:DA:223:G:O4'	2.16	0.46
41:DA:385:A:H4'	41:DA:386:A:OP1	2.16	0.46
41:DA:952:G:H2'	41:DA:953:C:C6	2.51	0.46
41:DA:2539:C:H2'	41:DA:2540:C:C6	2.51	0.46
41:DA:3867:A2M:H2'	41:DA:3868:G:C8	2.51	0.46
9:AI:84:VAL:HG11	9:AI:102:LEU:HD22	1.99	0.45
10:AJ:2:VAL:HG23	10:AJ:2:VAL:O	2.15	0.45
15:AO:84:LYS:HB2	15:AO:110:TYR:CZ	2.51	0.45
20:AT:39:SER:HB3	20:AT:77:TYR:CE2	2.52	0.45
37:BA:132:LYS:HB3	41:DA:4727:A:OP1	2.16	0.45
41:DA:1189:G:H2'	41:DA:1190:C:H6	1.80	0.45
41:DA:1584:G:N7	50:DA:5111:SPM:H22	2.31	0.45
41:DA:1882:U:C4	41:DA:2279:A:C2	3.04	0.45
41:DA:3893:C:H2'	41:DA:3894:A:H8	1.81	0.45
41:DA:4727:A:H2'	41:DA:4728:U:O5'	2.16	0.45
43:DC:5:U:C2	43:DC:6:C:C5	3.04	0.45
43:DC:121:G:C2'	43:DC:122:G:H5'	2.46	0.45
6:AF:130:LYS:HB3	6:AF:133:ALA:HB2	1.97	0.45
35:AI:90:LYS:HD2	44:DD:108:PRO:HD3	1.97	0.45
40:BD:201:ILE:HD13	40:BD:264:ILE:HD13	1.98	0.45
41:DA:752:G:H2'	41:DA:753:C:O2	2.16	0.45
41:DA:1719:A:H4'	41:DA:1719:A:OP2	2.15	0.45
41:DA:2529:A:H4'	41:DA:2531:C:C5	2.52	0.45
43:DC:64:U:C2	43:DC:65:A:C8	3.04	0.45
43:DC:142:U:H2'	43:DC:143:G:O4'	2.15	0.45
24:AX:19:GLU:OE1	24:AX:102:LEU:HD11	2.16	0.45
31:Ae:12:LEU:O	31:Ae:16:ARG:HG3	2.17	0.45
41:DA:2817:C:H2'	41:DA:2818:C:H6	1.81	0.45
41:DA:3717:A:H2'	41:DA:3718:A2M:C8	2.42	0.45
41:DA:3896:C:H2'	41:DA:3897:G:C4	2.51	0.45
41:DA:4232:U:H4'	41:DA:4233:A:O4'	2.17	0.45
2:AB:150:LYS:O	2:AB:150:LYS:HG2	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:AT:87:VAL:HG11	20:AT:89:ILE:HD12	1.99	0.45
21:AU:140:VAL:HG22	21:AU:140:VAL:O	2.17	0.45
37:BA:302:ASN:OD1	37:BA:330:PHE:CE1	2.70	0.45
41:DA:1948:G:H5''	53:DA:8676:HOH:O	2.17	0.45
41:DA:3744:OMG:HM23	41:DA:3744:OMG:H1'	1.84	0.45
41:DA:4171:C:C2	41:DA:4172:A:C8	3.04	0.45
41:DA:4619:U:H2'	41:DA:4620:OMU:H6	1.97	0.45
50:DA:5111:SPM:H72	50:DA:5111:SPM:H42	1.59	0.45
43:DC:4:C:H2'	43:DC:5:U:H6	1.81	0.45
43:DC:121:G:C6	43:DC:122:G:C5	3.05	0.45
3:AC:27:VAL:HG23	3:AC:80:MET:SD	2.56	0.45
14:AN:140:PHE:CE2	41:DA:1089:G:H4'	2.52	0.45
38:BB:214:ASP:OD2	38:BB:218:ILE:HD12	2.16	0.45
41:DA:1206:C:C2	41:DA:1207:C:C6	3.04	0.45
41:DA:4239:A:H2'	41:DA:4240:G:C8	2.51	0.45
41:DA:4584:A:H2'	41:DA:4585:U:O4'	2.17	0.45
49:DA:5107:SPD:H81	49:DA:5107:SPD:C4	2.46	0.45
7:AG:36:ALA:HB2	7:AG:52:PHE:CZ	2.52	0.45
37:BA:29:VAL:O	37:BA:30:LYS:HB2	2.16	0.45
39:BC:37:VAL:HG12	39:BC:50:ARG:NH1	2.32	0.45
41:DA:21:G:H1'	43:DC:103:A:N3	2.31	0.45
41:DA:643:C:H3'	41:DA:644:G:C8	2.52	0.45
41:DA:2071:A:C4	41:DA:2072:C:C5	3.04	0.45
41:DA:3692:A:C4	41:DA:3693:U:C6	3.05	0.45
41:DA:3918:G:N7	48:DA:5101:PUT:H32	2.31	0.45
41:DA:4637:OMG:H2'	41:DA:4638:U:C6	2.51	0.45
2:AB:78:PRO:HG2	2:AB:234:ARG:O	2.17	0.45
18:AR:115:LYS:HE2	53:AR:253:HOH:O	2.17	0.45
39:BC:146:LEU:HD23	41:DA:4323:A:C2	2.51	0.45
41:DA:1207:C:N3	41:DA:1208:G:N7	2.65	0.45
41:DA:1338:G:H4'	41:DA:1339:U:C6	2.51	0.45
41:DA:2566:G:H2'	41:DA:2567:G:C8	2.52	0.45
41:DA:3636:C:O2	41:DA:3636:C:H2'	2.17	0.45
41:DA:3641:U:C6	41:DA:3645:U:C4	3.05	0.45
41:DA:3693:U:N3	41:DA:3694:U:C5	2.84	0.45
41:DA:4261:C:C2	41:DA:4262:C:C5	3.05	0.45
41:DA:4965:U:H4'	41:DA:4966:A:H5'	1.98	0.45
44:DD:207:VAL:HG13	44:DD:208:GLU:HB3	1.99	0.45
19:AS:74:TYR:CE2	19:AS:77:LYS:HE2	2.52	0.45
37:BA:207:VAL:HG13	37:BA:287:ILE:HD11	1.98	0.45
41:DA:910:G:C6	41:DA:911:U:C4	3.05	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:DA:1201:U:C2	41:DA:1202:C:C2	3.04	0.45
41:DA:2335:C:H2'	41:DA:2336:G:H8	1.81	0.45
41:DA:4347:G:O2'	41:DA:4348:A:H5'	2.16	0.45
43:DC:128:C:H2'	43:DC:129:C:C6	2.51	0.45
2:AB:175:ARG:HD3	2:AB:230:TYR:CD2	2.52	0.45
5:AE:74:VAL:HG11	5:AE:78:LYS:HG3	1.99	0.45
8:AH:146:PRO:HB2	28:Ab:104:THR:HG23	1.99	0.45
35:AI:26:VAL:HG11	44:DD:180:LEU:HD11	1.99	0.45
37:BA:252:ALA:HB1	41:DA:4524:G:C2	2.51	0.45
41:DA:260:C:O2	41:DA:260:C:O4'	2.34	0.45
41:DA:1322:1MA:C6	41:DA:1326:A2M:C8	3.00	0.45
1:AA:92:VAL:HA	1:AA:142:TRP:HB3	1.99	0.45
3:AC:63:ASN:OD1	3:AC:66:GLU:HG2	2.17	0.45
13:AM:73:LEU:HD12	41:DA:734:G:H4'	1.98	0.45
13:AM:158:VAL:HG21	41:DA:2055:G:C8	2.52	0.45
41:DA:106:A:H2'	41:DA:107:G:O4'	2.17	0.45
41:DA:353:A:C4	41:DA:379:G:N7	2.85	0.45
41:DA:964:A:H2'	41:DA:965:G:H4'	1.98	0.45
41:DA:1565:A:C5	41:DA:1566:C:H1'	2.53	0.45
42:DB:27:G:H21	42:DB:55:A:N6	2.15	0.45
8:AH:121:VAL:HG12	8:AH:129:PHE:O	2.16	0.44
41:DA:287:U:H2'	41:DA:288:G:C8	2.52	0.44
41:DA:662:C:N4	41:DA:663:G:O6	2.50	0.44
41:DA:2638:G:O2'	41:DA:2639:U:H5'	2.17	0.44
41:DA:4919:G:C6	41:DA:4920:C:C5	3.04	0.44
43:DC:120:G:C4	43:DC:121:G:C8	3.05	0.44
2:AB:103:ARG:HE	2:AB:193:LEU:HD23	1.83	0.44
14:AN:118:GLU:O	14:AN:121:GLU:HG2	2.17	0.44
18:AR:90:ILE:HD11	53:AR:222:HOH:O	2.17	0.44
37:BA:79:VAL:O	37:BA:330:PHE:HB2	2.17	0.44
41:DA:158:A:H5''	41:DA:159:C:H2'	1.99	0.44
41:DA:172:C:O2	41:DA:172:C:O4'	2.35	0.44
41:DA:493:G:O6	41:DA:660:A:N1	2.50	0.44
41:DA:1703:C:H3'	41:DA:1704:C:H5''	2.00	0.44
41:DA:2659:A:C2	41:DA:2676:A:C8	3.05	0.44
41:DA:3806:G:C4	41:DA:3807:A:C8	3.05	0.44
41:DA:4537:C:H2'	41:DA:4538:G:H8	1.82	0.44
44:DD:101:VAL:HA	44:DD:164:ALA:O	2.17	0.44
7:AG:104:MET:HE1	9:AI:201:LEU:HD21	1.99	0.44
39:BC:265:ARG:HE	42:DB:1:G:H4'	1.83	0.44
41:DA:4313:A:C6	41:DA:4314:C:C5	3.05	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:DA:4498:OMU:HM23	41:DA:4500:PSU:O4	2.17	0.44
1:AA:190:LEU:CD1	1:AA:204:ALA:HB1	2.47	0.44
2:AB:173:LEU:HA	29:Ac:43:MET:HE2	2.00	0.44
3:AC:65:LYS:HD2	41:DA:4700:A:O2'	2.18	0.44
21:AU:88:VAL:O	21:AU:92:LYS:HG2	2.16	0.44
38:BB:255:SER:O	38:BB:259:LYS:HG2	2.18	0.44
41:DA:282:C:C2	41:DA:283:G:C8	3.05	0.44
41:DA:285:G:H2'	41:DA:286:U:C6	2.52	0.44
41:DA:341:G:C6	41:DA:342:G:N7	2.86	0.44
41:DA:2544:G:C2	41:DA:2545:U:H1'	2.52	0.44
41:DA:3896:C:O2	41:DA:4564:A:N1	2.50	0.44
41:DA:4861:G:H2'	41:DA:4862:G:O4'	2.17	0.44
43:DC:120:G:C6	43:DC:121:G:C5	3.05	0.44
17:AQ:53:VAL:O	17:AQ:57:ARG:HG2	2.18	0.44
29:Ac:81:ILE:HG23	29:Ac:82:ARG:N	2.33	0.44
41:DA:424:U:H2'	41:DA:425:U:C6	2.52	0.44
41:DA:1907:A:H2'	41:DA:1908:A:C8	2.53	0.44
41:DA:2505:C:C6	41:DA:2506:G:O6	2.71	0.44
41:DA:2634:C:C2	41:DA:2635:U:C5	3.05	0.44
41:DA:2844:A:O2'	41:DA:4631:G:H4'	2.18	0.44
41:DA:2858:A:H2'	41:DA:2859:G:O4'	2.18	0.44
41:DA:3855:C:H2'	41:DA:3856:A:H8	1.83	0.44
41:DA:4258:C:N3	41:DA:4259:C:C5	2.85	0.44
41:DA:4535:A:H2'	41:DA:4536:OMC:C6	2.53	0.44
41:DA:4759:C:H2'	41:DA:4760:G:C8	2.52	0.44
41:DA:4956:A:O2'	41:DA:4957:C:C5'	2.65	0.44
9:AI:61:ARG:HA	9:AI:70:PRO:HD2	1.99	0.44
41:DA:257:C:H2'	41:DA:258:G:O4'	2.17	0.44
41:DA:1804:A:O4'	41:DA:1806:G:C8	2.70	0.44
41:DA:2816:G:C5	41:DA:2817:C:C5	3.05	0.44
41:DA:3693:U:C2	41:DA:3694:U:C6	3.06	0.44
41:DA:4084:G:O6	44:DD:68:ARG:HD2	2.17	0.44
41:DA:4424:A:N7	41:DA:4475:G:C6	2.86	0.44
41:DA:4966:A:H2'	41:DA:4967:A:O4'	2.17	0.44
41:DA:4967:A:H2'	41:DA:4968:A:H8	1.83	0.44
41:DA:4982:A:C5	41:DA:4983:C:C5	3.06	0.44
43:DC:78:G:H2'	43:DC:79:G:O4'	2.17	0.44
13:AM:9:GLU:HB2	13:AM:33:PHE:CE1	2.53	0.44
17:AQ:60:LYS:HG3	17:AQ:60:LYS:O	2.18	0.44
20:AT:50:PRO:HD3	20:AT:68:ILE:HG12	2.00	0.44
41:DA:100:C:C2	41:DA:101:A:C8	3.06	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:DA:1345:A:H2'	41:DA:1346:C:C6	2.53	0.44
41:DA:4901:G:C2	41:DA:4902:C:C5	3.05	0.44
3:AC:10:VAL:HG21	3:AC:78:GLN:HG3	1.99	0.44
3:AC:43:VAL:O	41:DA:4764:A:O2'	2.32	0.44
15:AO:72:VAL:O	15:AO:72:VAL:CG1	2.61	0.44
21:AU:110:LYS:HG3	21:AU:128:PHE:HB2	2.00	0.44
39:BC:33:ARG:O	39:BC:37:VAL:HG22	2.18	0.44
41:DA:511:C:O2'	41:DA:512:U:H6	2.00	0.44
41:DA:661:C:H2'	41:DA:662:C:C6	2.52	0.44
41:DA:1662:C:H2'	41:DA:1663:C:C6	2.53	0.44
41:DA:4238:G:H2'	41:DA:4239:A:H8	1.82	0.44
41:DA:4893:A:C4'	41:DA:4894:A:OP1	2.65	0.44
2:AB:60:TYR:CZ	2:AB:61:ILE:HG13	2.52	0.44
6:AF:163:LYS:HD2	6:AF:164:GLU:N	2.33	0.44
7:AG:104:MET:SD	7:AG:109:ARG:HG2	2.57	0.44
14:AN:140:PHE:CD2	41:DA:1089:G:H4'	2.52	0.44
20:AT:57:MET:HE1	20:AT:65:ARG:HD3	1.99	0.44
37:BA:79:VAL:O	37:BA:81:THR:HG23	2.18	0.44
39:BC:191:ASN:O	39:BC:192:ALA:HB3	2.18	0.44
41:DA:1413:C:O2	41:DA:1413:C:H2'	2.18	0.44
41:DA:1693:U:H2'	41:DA:1694:C:O4'	2.18	0.44
41:DA:1720:C:H3'	41:DA:1721:G:H8	1.81	0.44
41:DA:1822:U:C2	41:DA:1823:G:C8	3.05	0.44
41:DA:1906:U:H2'	41:DA:1907:A:H8	1.82	0.44
41:DA:2832:A:C4	41:DA:2833:A:C8	3.06	0.44
41:DA:3719:A:C4	41:DA:3720:G:C8	3.06	0.44
41:DA:4254:G:H2'	41:DA:4254:G:N3	2.33	0.44
41:DA:4887:C:H2'	41:DA:4888:U:O4'	2.18	0.44
43:DC:5:U:N3	43:DC:6:C:C5	2.86	0.44
4:AD:184:MET:HA	4:AD:187:LYS:HG2	2.00	0.43
7:AG:17:PHE:HB3	41:DA:1921:C:C4	2.53	0.43
9:AI:4:VAL:HG23	9:AI:5:GLN:N	2.33	0.43
37:BA:19:ARG:HB2	37:BA:234:ARG:NH2	2.32	0.43
41:DA:10:A:H2'	41:DA:11:G:C8	2.53	0.43
41:DA:270:U:H2'	41:DA:271:C:O2	2.17	0.43
41:DA:326:C:O2'	41:DA:327:U:H5'	2.18	0.43
41:DA:2268:A:H4'	41:DA:2270:G:C8	2.53	0.43
41:DA:2519:U:C2	41:DA:2520:C:C5	3.05	0.43
41:DA:4484:A:C2	41:DA:4485:C:C6	3.06	0.43
43:DC:71:A:C2	43:DC:88:A:C1'	3.01	0.43
4:AD:36:LEU:HD21	4:AD:69:ARG:NH1	2.32	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:DA:917:A:H2'	41:DA:918:G:O4'	2.18	0.43
41:DA:1340:OMC:C2	41:DA:1341:U:C5	3.06	0.43
41:DA:1414:C:C4	41:DA:1415:G:N7	2.86	0.43
41:DA:1572:U:H2'	41:DA:1573:G:C8	2.54	0.43
41:DA:3664:G:C2	41:DA:3665:G:N7	2.86	0.43
41:DA:4355:G:C2	41:DA:4356:G:C8	3.07	0.43
41:DA:4699:U:C4	41:DA:4702:G:O6	2.71	0.43
43:DC:62:A:H4'	43:DC:63:U:O5'	2.18	0.43
43:DC:120:G:N1	43:DC:131:G:C6	2.86	0.43
7:AG:104:MET:CE	9:AI:199:HIS:HB3	2.48	0.43
9:AI:185:VAL:O	9:AI:189:ILE:HG12	2.19	0.43
15:AO:84:LYS:HB2	15:AO:110:TYR:CE2	2.53	0.43
41:DA:469:C:O2	41:DA:469:C:H2'	2.17	0.43
41:DA:733:A:H2'	41:DA:734:G:O4'	2.19	0.43
41:DA:1326:A2M:N3	41:DA:1327:C:C5	2.86	0.43
41:DA:1327:C:C2	41:DA:1328:G:N7	2.87	0.43
41:DA:1858:A:C6	41:DA:1859:B8T:C41	3.02	0.43
41:DA:1929:A:H5'	41:DA:1930:U:OP1	2.19	0.43
41:DA:2503:G:O2'	41:DA:2504:C:H2'	2.18	0.43
41:DA:3880:G:H2'	41:DA:3881:G:C8	2.53	0.43
41:DA:4405:G:C5	41:DA:4406:U:C5	3.06	0.43
41:DA:4504:C:H2'	41:DA:4505:C:C6	2.52	0.43
43:DC:108:A:C2	43:DC:112:G:C6	3.07	0.43
5:AE:24:ILE:HD12	5:AE:40:LEU:HG	1.99	0.43
18:AR:111:GLN:HA	18:AR:114:LYS:HZ3	1.83	0.43
41:DA:2685:C:H2'	41:DA:2686:G:O4'	2.17	0.43
41:DA:2744:A:H2'	41:DA:2745:A:C8	2.54	0.43
41:DA:4524:G:H2'	41:DA:4525:C:H6	1.84	0.43
1:AA:136:VAL:O	1:AA:140:ILE:HG12	2.18	0.43
3:AC:63:ASN:O	3:AC:67:LEU:HG	2.18	0.43
21:AU:129:PHE:HB2	21:AU:134:GLU:OE2	2.18	0.43
38:BB:134:PRO:O	38:BB:138:MET:HG2	2.18	0.43
41:DA:510:U:HO2'	41:DA:511:C:P	2.41	0.43
41:DA:965:G:H1'	41:DA:2093:A:H61	1.83	0.43
41:DA:3711:A:H2'	41:DA:3712:A:O4'	2.19	0.43
41:DA:4212:A:H4'	41:DA:4213:A:N3	2.33	0.43
41:DA:4704:C:H2'	41:DA:4705:A:C8	2.54	0.43
41:DA:4736:C:H4'	41:DA:5068:G:C4	2.53	0.43
3:AC:36:ARG:HB2	3:AC:80:MET:HE1	2.01	0.43
17:AQ:44:ARG:HD2	17:AQ:49:ILE:HD11	2.01	0.43
28:Ab:7:ARG:HA	28:Ab:10:ARG:HG3	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:BA:29:VAL:HA	37:BA:220:ILE:HD13	2.00	0.43
37:BA:245:HIC:HD2	53:DA:6925:HOH:O	2.18	0.43
41:DA:271:C:H2'	41:DA:272:U:O2	2.18	0.43
41:DA:760:G:H21	41:DA:904:C:H1'	1.84	0.43
41:DA:1466:G:C2	41:DA:1467:C:C6	3.07	0.43
41:DA:2071:A:N3	41:DA:2072:C:C6	2.87	0.43
41:DA:2560:C:O2'	41:DA:2561:C:P	2.77	0.43
41:DA:4455:G:H2'	41:DA:4456:OMC:H6	1.83	0.43
9:AI:140:ARG:O	9:AI:144:GLU:HG3	2.18	0.43
41:DA:23:C:H2'	41:DA:24:G:O4'	2.19	0.43
41:DA:496:G:C6	41:DA:498:C:C5	3.06	0.43
41:DA:2659:A:C2	41:DA:2676:A:N9	2.87	0.43
41:DA:3825:A2M:HM'3	41:DA:3825:A2M:H1'	1.79	0.43
4:AD:169:LYS:HG3	4:AD:169:LYS:O	2.18	0.43
10:AJ:116:HIS:HB3	10:AJ:149:ILE:HB	1.99	0.43
29:Ac:15:HIS:CB	41:DA:72:C:C6	3.02	0.43
34:Ah:5:PRO:HD3	41:DA:4232:U:C2	2.53	0.43
38:BB:122:TYR:CD1	38:BB:280:PRO:CG	3.02	0.43
40:BD:99:ASP:O	40:BD:100:LYS:HB2	2.19	0.43
41:DA:1314:C:C2	41:DA:1315:C:C5	3.06	0.43
41:DA:1551:C:C2'	41:DA:1552:G:H5'	2.49	0.43
41:DA:1590:C:H5''	41:DA:1591:U:O5'	2.18	0.43
41:DA:4238:G:H2'	41:DA:4239:A:C8	2.54	0.43
41:DA:64:A:C4	41:DA:109:G:N7	2.87	0.43
41:DA:1609:U:H2'	41:DA:1610:C:O4'	2.19	0.43
41:DA:1688:G:P	49:DA:5106:SPD:H22	2.59	0.43
41:DA:2050:G:O2'	49:DA:5107:SPD:C9	2.66	0.43
41:DA:3907:G:N3	41:DA:3909:C:C5	2.86	0.43
41:DA:4341:C:C2	41:DA:4342:C:C6	3.06	0.43
41:DA:4459:U:H2'	41:DA:4460:U:O4'	2.18	0.43
41:DA:4596:C:C4	41:DA:4597:U:C4	3.07	0.43
41:DA:4699:U:H1'	41:DA:4700:A:H5''	2.01	0.43
41:DA:4710:C:H2'	41:DA:4711:C:C6	2.53	0.43
50:DA:5111:SPM:H71	53:DA:8584:HOH:O	2.17	0.43
43:DC:92:U:H2'	43:DC:93:C:O4'	2.19	0.43
44:DD:137:ILE:CD1	44:DD:155:LYS:HD2	2.49	0.43
5:AE:76:GLY:O	5:AE:80:GLU:OE1	2.37	0.43
7:AG:36:ALA:HB2	7:AG:52:PHE:CE1	2.54	0.43
9:AI:5:GLN:HE22	9:AI:31:ARG:HE	1.66	0.43
9:AI:46:ASN:OD1	9:AI:49:ARG:HG2	2.19	0.43
41:DA:2418:A:C5	41:DA:2419:C:C5	3.07	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:DA:3648:A:H1'	41:DA:3785:A2M:H61	1.83	0.43
41:DA:3885:G:O5'	49:DA:5107:SPD:H82	2.19	0.43
41:DA:4350:C:C2	41:DA:4351:U:C5	3.07	0.43
41:DA:4689:PSU:H2'	41:DA:4690:G:H5'	2.01	0.43
41:DA:4709:U:C2	41:DA:4710:C:C6	3.07	0.43
41:DA:4712:C:C2	41:DA:4713:G:C8	3.07	0.43
21:AU:23:GLY:HA3	48:DA:5102:PUT:H12	2.01	0.42
29:Ac:15:HIS:HB3	41:DA:72:C:C6	2.54	0.42
39:BC:254:GLU:O	39:BC:254:GLU:HG2	2.18	0.42
41:DA:500:G:H2'	41:DA:505:G:H8	1.84	0.42
41:DA:664:G:H2'	41:DA:665:C:C6	2.54	0.42
41:DA:965:G:C5	41:DA:2256:C:C5	3.07	0.42
41:DA:1098:G:C6	41:DA:1198:G:C6	3.07	0.42
41:DA:1172:C:O2'	41:DA:1173:G:H8	2.02	0.42
41:DA:1431:C:H2'	41:DA:1432:G:O4'	2.19	0.42
41:DA:2397:G:C8	41:DA:2399:G:C8	3.07	0.42
41:DA:4477:A:C4	41:DA:4478:G:C8	3.07	0.42
10:AJ:6:LEU:HD12	10:AJ:116:HIS:ND1	2.34	0.42
11:AK:154:LYS:HE3	11:AK:154:LYS:HB3	1.92	0.42
40:BD:153:LEU:HD11	40:BD:195:ILE:HG13	2.01	0.42
41:DA:112:C:C2	41:DA:113:A:C8	3.07	0.42
41:DA:241:G:C5	41:DA:242:U:C5	3.07	0.42
41:DA:272:U:O2	41:DA:272:U:O4'	2.37	0.42
41:DA:643:C:H3'	41:DA:644:G:H8	1.83	0.42
41:DA:1089:G:C6	41:DA:1208:G:C6	3.07	0.42
41:DA:1866:U:H2'	41:DA:1867:A:O4'	2.19	0.42
41:DA:2276:A:H2'	41:DA:2277:C:O4'	2.19	0.42
41:DA:2476:G:C6	41:DA:2502:G:N1	2.87	0.42
41:DA:4261:C:H2'	41:DA:4262:C:H6	1.82	0.42
41:DA:4400:G:C6	41:DA:4401:G:N7	2.86	0.42
42:DB:43:U:C2	42:DB:44:C:C6	3.06	0.42
2:AB:38:ASN:OD1	2:AB:43:GLN:OE1	2.37	0.42
3:AC:12:ILE:HG12	3:AC:18:ILE:HD12	2.01	0.42
5:AE:164:ARG:O	5:AE:168:GLN:HG2	2.18	0.42
9:AI:141:LEU:O	9:AI:145:VAL:HG22	2.20	0.42
11:AK:63:LEU:HD12	11:AK:66:MET:HE2	2.00	0.42
19:AS:74:TYR:CE1	43:DC:74:U:C5	3.07	0.42
31:Ae:14:THR:HA	31:Ae:17:ARG:HD3	2.02	0.42
37:BA:71:GLU:OE2	37:BA:366:LYS:HE2	2.19	0.42
40:BD:61:ALA:O	40:BD:65:ARG:HG2	2.19	0.42
41:DA:962:C:O4'	41:DA:963:G:C6	2.72	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:DA:3619:G:H22	41:DA:3624:A:H1'	1.83	0.42
41:DA:3918:G:O6	48:DA:5101:PUT:H12	2.20	0.42
41:DA:4070:U:O2	41:DA:4070:U:O4'	2.36	0.42
41:DA:4486:C:H2'	41:DA:4487:A:O4'	2.20	0.42
41:DA:4498:OMU:O5'	41:DA:4498:OMU:H6	2.19	0.42
41:DA:4954:G:H2'	41:DA:4955:A:C8	2.54	0.42
41:DA:5002:U:H2'	41:DA:5003:U:C6	2.54	0.42
43:DC:141:C:C2	43:DC:142:U:C5	3.08	0.42
18:AR:42:THR:O	18:AR:42:THR:HG22	2.18	0.42
19:AS:50:ARG:HG2	19:AS:51:LYS:N	2.34	0.42
36:Aj:125:MET:O	36:Aj:126:VAL:C	2.62	0.42
37:BA:292:LEU:HD11	37:BA:298:LEU:HD12	2.01	0.42
40:BD:244:GLU:O	40:BD:248:ILE:HG12	2.19	0.42
41:DA:162:A:H2'	41:DA:163:A:N3	2.35	0.42
41:DA:2544:G:H2'	41:DA:2545:U:O4'	2.19	0.42
41:DA:3880:G:O2'	41:DA:3881:G:H5'	2.19	0.42
41:DA:4994:G:H2'	41:DA:4995:U:C6	2.54	0.42
1:AA:41:MET:HE2	22:AV:113:ALA:HB2	2.02	0.42
9:AI:152:VAL:O	9:AI:153:THR:C	2.61	0.42
24:AX:100:ASN:O	24:AX:101:LYS:HB2	2.20	0.42
41:DA:153:G:H2'	41:DA:154:G:H8	1.84	0.42
41:DA:325:U:H2'	41:DA:326:C:C6	2.54	0.42
41:DA:484:U:H4'	41:DA:485:C:H5'	2.01	0.42
41:DA:712:C:N3	41:DA:713:C:C5	2.88	0.42
41:DA:753:C:O2	41:DA:753:C:O4'	2.37	0.42
41:DA:1202:C:O4'	41:DA:1202:C:O2	2.35	0.42
41:DA:1326:A2M:H2'	41:DA:1327:C:H6	1.81	0.42
41:DA:2745:A:H2'	41:DA:2746:A:C8	2.54	0.42
41:DA:2894:A:H2'	41:DA:2895:A:H8	1.84	0.42
41:DA:4551:U:H2'	41:DA:4552:PSU:C6	2.55	0.42
41:DA:4610:A:C4	41:DA:4611:A:C2	3.08	0.42
1:AA:140:ILE:HD12	1:AA:142:TRP:CD1	2.54	0.42
20:AT:64:LYS:O	20:AT:67:LYS:HE2	2.19	0.42
21:AU:72:THR:HG22	21:AU:110:LYS:HB3	2.01	0.42
37:BA:30:LYS:HE3	37:BA:276:HIS:CE1	2.54	0.42
37:BA:393:LYS:HA	37:BA:396:ARG:HE	1.85	0.42
41:DA:511:C:H1'	41:DA:512:U:OP1	2.20	0.42
41:DA:672:C:C2	41:DA:673:C:C6	3.08	0.42
41:DA:2521:G:H5'	41:DA:2640:G:H1'	2.02	0.42
41:DA:3630:A:H2'	41:DA:3631:U:H6	1.84	0.42
44:DD:179:ILE:O	44:DD:180:LEU:HB2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:129:SER:O	1:AA:133:LEU:HG	2.19	0.42
4:AD:146:GLU:HG2	4:AD:147:HIS:N	2.35	0.42
10:AJ:14:SER:OG	10:AJ:151:THR:HG22	2.20	0.42
13:AM:93:MET:HE1	13:AM:117:HIS:NE2	2.35	0.42
19:AS:74:TYR:CD1	43:DC:74:U:C4	3.07	0.42
53:Ab:213:HOH:O	43:DC:36:G:P	2.77	0.42
37:BA:287:ILE:O	37:BA:287:ILE:CG2	2.67	0.42
41:DA:455:C:O2	41:DA:455:C:C2'	2.67	0.42
41:DA:751:G:C4	41:DA:752:G:C8	3.07	0.42
41:DA:2555:G:C4	41:DA:2573:A:N1	2.88	0.42
41:DA:2676:A:C4	41:DA:2677:G:C8	3.08	0.42
41:DA:4591:U:H2'	41:DA:4592:C:C6	2.55	0.42
41:DA:4928:C:C2	41:DA:4929:C:C5	3.07	0.42
41:DA:4957:C:H2'	41:DA:4958:C:O4'	2.19	0.42
41:DA:4967:A:C2	41:DA:4968:A:C5	3.08	0.42
43:DC:140:C:H2'	43:DC:141:C:C6	2.54	0.42
44:DD:114:CYS:O	44:DD:127:ALA:HB3	2.19	0.42
14:AN:68:THR:HG22	14:AN:71:ALA:O	2.19	0.42
28:Ab:5:LYS:O	28:Ab:8:ASP:OD1	2.38	0.42
36:Aj:87:ARG:NH1	40:BD:111:LYS:HB3	2.35	0.42
40:BD:92:VAL:HG22	40:BD:93:THR:H	1.85	0.42
41:DA:445:U:H2'	41:DA:446:C:O4'	2.20	0.42
41:DA:751:G:H2'	41:DA:752:G:O4'	2.20	0.42
41:DA:923:C:H2'	41:DA:924:C:C2	2.54	0.42
41:DA:3717:A:OP2	41:DA:3735:G:N2	2.53	0.42
41:DA:3823:G:H2'	41:DA:3824:A:C8	2.55	0.42
41:DA:4253:A:H5'	41:DA:4254:G:C8	2.55	0.42
41:DA:4410:G:C2	41:DA:4411:G:C8	3.08	0.42
41:DA:4906:C:C2	41:DA:4907:G:C8	3.08	0.42
42:DB:93:G:C5	42:DB:94:C:C5	3.08	0.42
43:DC:119:C:C2	43:DC:120:G:C8	3.08	0.42
9:AI:203:VAL:HG23	41:DA:4872:G:C2	2.54	0.42
11:AK:159:PRO:HD2	41:DA:4306:OMU:OP2	2.20	0.42
17:AQ:50:ASN:HA	17:AQ:55:TYR:CD2	2.54	0.42
22:AV:101:HIS:CE1	22:AV:104:LEU:HD13	2.55	0.42
28:Ab:88:THR:O	28:Ab:92:ARG:HG3	2.20	0.42
38:BB:122:TYR:HE1	38:BB:280:PRO:CB	2.33	0.42
41:DA:983:C:H2'	41:DA:984:C:O4'	2.19	0.42
41:DA:3771:C:H2'	41:DA:3772:U:C6	2.54	0.42
41:DA:3893:C:H2'	41:DA:3894:A:C8	2.54	0.42
3:AC:92:MET:HG2	3:AC:181:VAL:HA	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:AX:32:ARG:HB3	24:AX:48:GLU:HG2	2.01	0.42
24:AX:52:PHE:O	24:AX:56:GLU:HG2	2.20	0.42
41:DA:282:C:C4	41:DA:283:G:C5	3.07	0.42
41:DA:1504:G:H2'	41:DA:1505:C:H6	1.83	0.42
41:DA:1953:U:O2'	41:DA:1954:U:H5'	2.20	0.42
41:DA:2065:G:C4	41:DA:2066:C:C6	3.07	0.42
41:DA:2071:A:C2	41:DA:2072:C:C5	3.07	0.42
41:DA:3734:U:H2'	41:DA:3735:G:O4'	2.20	0.42
41:DA:3736:A:H2'	41:DA:3737:A:C8	2.54	0.42
41:DA:3924:C:H2'	41:DA:3925:OMU:H6	2.02	0.42
41:DA:4971:A:C6	41:DA:4972:PSU:C2	3.08	0.42
43:DC:130:C:H2'	43:DC:131:G:H8	1.84	0.42
4:AD:166:HIS:NE2	4:AD:168:SER:HA	2.35	0.41
8:AH:184:ILE:HD12	41:DA:99:A:H5''	2.02	0.41
41:DA:93:G:O5'	49:DA:5104:SPD:H22	2.20	0.41
41:DA:1608:G:O6	50:DA:5111:SPM:H61	2.20	0.41
41:DA:1705:G:H2'	41:DA:1706:A:O4'	2.19	0.41
41:DA:1847:C:H2'	41:DA:1848:C:C6	2.55	0.41
41:DA:1933:G:H2'	41:DA:1934:A:C8	2.55	0.41
41:DA:2030:A:H2'	41:DA:2031:C:O4'	2.20	0.41
41:DA:2072:C:N3	41:DA:2073:C:C5	2.88	0.41
41:DA:2745:A:H2'	41:DA:2746:A:H8	1.85	0.41
41:DA:3656:A:H2'	41:DA:3657:U:H6	1.84	0.41
41:DA:4565:C:N3	41:DA:4566:U:C5	2.88	0.41
41:DA:4691:A:H4'	41:DA:4691:A:OP1	2.20	0.41
41:DA:4968:A:H2'	41:DA:4969:C:H6	1.85	0.41
43:DC:141:C:H2'	43:DC:142:U:C6	2.55	0.41
21:AU:132:ARG:NH2	41:DA:1468:C:OP1	2.52	0.41
38:BB:171:LEU:HD11	38:BB:227:ILE:HD11	2.03	0.41
38:BB:322:LEU:O	38:BB:326:LEU:HG	2.21	0.41
41:DA:1246:G:H2'	41:DA:1247:U:C6	2.55	0.41
41:DA:1846:G:H2'	41:DA:1847:C:C6	2.55	0.41
41:DA:1908:A:H2'	41:DA:1909:G:O4'	2.20	0.41
41:DA:2094:G:H2'	41:DA:2094:G:N3	2.35	0.41
41:DA:2290:C:C2	41:DA:2291:G:C8	3.07	0.41
41:DA:2498:C:N3	41:DA:2499:C:C5	2.88	0.41
41:DA:2690:C:H2'	41:DA:2691:U:O4'	2.20	0.41
41:DA:4188:U:H2'	41:DA:4189:U:C6	2.55	0.41
41:DA:4564:A:C5	41:DA:4565:C:C5	3.08	0.41
41:DA:4762:A:O2'	41:DA:4763:U:H5'	2.21	0.41
3:AC:105:ILE:HD13	3:AC:112:VAL:HG13	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:AI:29:LEU:HD11	26:AZ:29:LYS:HE3	2.02	0.41
38:BB:291:ARG:HH12	41:DA:667:A:H62	1.66	0.41
41:DA:691:C:H2'	41:DA:692:A:C8	2.56	0.41
41:DA:1247:U:H3	41:DA:1263:A:H62	1.68	0.41
41:DA:1505:C:C2	41:DA:1506:G:C8	3.08	0.41
41:DA:1706:A:O2'	41:DA:1707:C:O4'	2.35	0.41
41:DA:2640:G:H2'	41:DA:2641:A:C8	2.56	0.41
41:DA:3775:A:O2'	41:DA:3776:G:H5'	2.20	0.41
41:DA:3853:U:C2	41:DA:3854:C:C5	3.09	0.41
41:DA:4274:A:H2'	41:DA:4275:G:C8	2.55	0.41
41:DA:4713:G:C4	41:DA:4714:C:C6	3.08	0.41
41:DA:4956:A:C8	41:DA:4957:C:C6	3.07	0.41
42:DB:4:U:H2'	42:DB:5:A:H8	1.85	0.41
3:AC:91:LYS:HD3	3:AC:143:GLU:OE2	2.20	0.41
22:AV:35:VAL:HG12	22:AV:36:ASP:N	2.34	0.41
27:Aa:97:ILE:HG21	41:DA:4122:G:O6	2.20	0.41
39:BC:65:ALA:HB2	39:BC:74:ILE:HD13	2.02	0.41
39:BC:115:MET:HE1	39:BC:140:GLY:O	2.20	0.41
39:BC:273:LEU:HD11	39:BC:277:LYS:HE2	2.02	0.41
41:DA:433:A:H2'	41:DA:434:A:O4'	2.20	0.41
41:DA:1295:C:H4'	41:DA:1296:G:C8	2.55	0.41
41:DA:1327:C:H5''	41:DA:4449:A:OP1	2.21	0.41
41:DA:3805:U:H2'	41:DA:3806:G:H8	1.86	0.41
43:DC:102:G:OP2	43:DC:104:A:O2'	2.31	0.41
43:DC:128:C:N3	43:DC:129:C:N4	2.68	0.41
44:DD:33:ASP:OD1	44:DD:36:GLU:HG2	2.20	0.41
44:DD:101:VAL:HG22	44:DD:165:VAL:HG22	2.01	0.41
5:AE:57:VAL:O	5:AE:58:ARG:CG	2.67	0.41
5:AE:114:ASP:OD1	5:AE:114:ASP:O	2.39	0.41
35:Ai:15:GLY:HA2	41:DA:2876:OMG:CM2	2.50	0.41
38:BB:66:SER:HA	38:BB:77:PRO:HA	2.03	0.41
41:DA:287:U:H2'	41:DA:288:G:H8	1.85	0.41
41:DA:482:G:C2	41:DA:485:C:C4	3.08	0.41
41:DA:671:G:H2'	41:DA:672:C:H6	1.86	0.41
41:DA:1086:C:H2'	41:DA:1087:A:H8	1.85	0.41
41:DA:1585:C:N4	50:DA:5111:SPM:H32	2.36	0.41
41:DA:1697:G:H21	41:DA:2084:C:P	2.42	0.41
41:DA:2067:C:O2'	41:DA:2068:C:H5'	2.21	0.41
41:DA:2458:C:H4'	41:DA:3672:G:O4'	2.21	0.41
41:DA:2552:G:N2	41:DA:2767:U:C4	2.89	0.41
41:DA:2784:C:C2	41:DA:2785:C:C5	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:DA:3630:A:C2	41:DA:3631:U:C5	3.09	0.41
41:DA:4263:C:H2'	41:DA:4264:G:O4'	2.21	0.41
41:DA:4440:G:C5	41:DA:4441:A:N7	2.88	0.41
41:DA:4499:OMG:C2	41:DA:4529:G:H1'	2.55	0.41
41:DA:4635:A:H3'	41:DA:4636:U:H4'	2.03	0.41
41:DA:4715:C:O2	41:DA:4715:C:H2'	2.20	0.41
44:DD:93:LYS:O	44:DD:93:LYS:HG2	2.19	0.41
2:AB:90:GLN:O	2:AB:94:GLN:HG3	2.21	0.41
12:AL:15:LEU:O	12:AL:16:ARG:HG2	2.20	0.41
16:AP:62:MET:HE3	16:AP:76:VAL:HG12	2.02	0.41
20:AT:57:MET:HE3	20:AT:61:LYS:HE2	2.02	0.41
27:Aa:97:ILE:CG2	41:DA:4122:G:O6	2.68	0.41
36:Aj:67:ARG:NE	41:DA:480:C:OP1	2.53	0.41
37:BA:56:ILE:HD11	37:BA:285:TYR:CD2	2.55	0.41
37:BA:258:HIS:HA	37:BA:259:PRO:C	2.44	0.41
38:BB:239:LYS:HE3	41:DA:1370:G:O6	2.20	0.41
38:BB:304:ALA:HB1	41:DA:2096:G:N2	2.31	0.41
39:BC:261:VAL:HG11	42:DB:119:U:C2	2.55	0.41
41:DA:1506:G:H2'	41:DA:1507:C:H6	1.85	0.41
41:DA:1750:G:C2	41:DA:1751:A:C8	3.08	0.41
41:DA:1858:A:C2	41:DA:1859:B8T:C5	3.03	0.41
41:DA:2589:C:C2	41:DA:2590:G:C8	3.08	0.41
41:DA:2845:A:C5	41:DA:4671:C:C5	3.08	0.41
41:DA:3702:A:C8	41:DA:3774:A:C1'	3.03	0.41
41:DA:3807:A:H2'	41:DA:3808:OMC:H6	1.86	0.41
41:DA:4222:G:C5	41:DA:4223:C:C5	3.08	0.41
41:DA:4415:A:C2	41:DA:4428:A:C4	3.08	0.41
41:DA:4934:A:O2'	41:DA:4935:C:O4'	2.37	0.41
43:DC:65:A:C4	43:DC:66:A:C8	3.09	0.41
43:DC:70:G:H22	43:DC:87:G:H1'	1.86	0.41
1:AA:220:MET:SD	1:AA:232:ASP:OD2	2.79	0.41
10:AJ:140:MET:HB2	41:DA:3860:A:OP1	2.20	0.41
14:AN:28:ALA:O	14:AN:32:ARG:HG2	2.20	0.41
40:BD:150:LEU:HD23	40:BD:196:ALA:HA	2.01	0.41
41:DA:2:G:H2'	41:DA:3:C:C6	2.56	0.41
41:DA:4:G:H2'	41:DA:5:A:H8	1.84	0.41
41:DA:258:G:H2'	53:DA:5419:HOH:O	2.20	0.41
41:DA:1688:G:C8	49:DA:5106:SPD:H51	2.56	0.41
41:DA:2520:C:H2'	41:DA:2521:G:C8	2.55	0.41
41:DA:2568:C:C2	41:DA:2569:G:C8	3.09	0.41
41:DA:3630:A:C4	41:DA:3631:U:C5	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:DA:3693:U:C2	41:DA:3694:U:C5	3.09	0.41
41:DA:4173:G:H2'	41:DA:4174:U:C6	2.56	0.41
41:DA:5023:C:H3'	41:DA:5024:C:H5''	2.02	0.41
43:DC:60:G:O6	43:DC:96:C:O2'	2.34	0.41
4:AD:51:HIS:ND1	4:AD:137:SER:HB2	2.35	0.41
5:AE:77:ALA:HA	5:AE:80:GLU:OE1	2.21	0.41
24:AX:98:SER:O	24:AX:101:LYS:HE3	2.21	0.41
28:Ab:91:MET:HG2	28:Ab:94:ARG:NH2	2.35	0.41
34:Ah:103:VAL:O	34:Ah:104:ILE:C	2.64	0.41
41:DA:1323:A2M:HM'3	41:DA:1323:A2M:H1'	1.86	0.41
41:DA:1505:C:H2'	41:DA:1506:G:H8	1.85	0.41
41:DA:1696:C:H2'	41:DA:1697:G:O4'	2.21	0.41
41:DA:2758:G:O2'	41:DA:2765:A:N3	2.49	0.41
41:DA:2890:C:H2'	41:DA:2891:U:C6	2.56	0.41
41:DA:4390:A:H2'	41:DA:4391:G:O4'	2.21	0.41
41:DA:4459:U:H2'	41:DA:4460:U:C6	2.55	0.41
41:DA:4647:G:C2	41:DA:4648:A:C8	3.09	0.41
44:DD:107:MET:HE1	44:DD:164:ALA:HB3	2.02	0.41
1:AA:241:ASN:O	1:AA:245:ARG:HG2	2.21	0.41
3:AC:41:ILE:HG22	3:AC:43:VAL:HG13	2.02	0.41
12:AL:105:LEU:HD22	12:AL:135:LYS:HG3	2.01	0.41
15:AO:46:ARG:HB2	15:AO:86:LEU:HD21	2.02	0.41
15:AO:80:LYS:HG2	15:AO:110:TYR:CE2	2.56	0.41
23:AW:18:LEU:O	23:AW:22:MET:HG2	2.21	0.41
31:Ae:57:LYS:O	31:Ae:60:LEU:HG	2.20	0.41
35:Ai:6:LYS:HE2	41:DA:2875:C:O2'	2.20	0.41
37:BA:56:ILE:HD11	37:BA:285:TYR:CE2	2.55	0.41
37:BA:289:GLN:HA	37:BA:329:ASP:OD1	2.21	0.41
37:BA:299:ILE:HG22	37:BA:299:ILE:O	2.21	0.41
37:BA:362:LYS:HE2	37:BA:362:LYS:HA	2.03	0.41
41:DA:281:U:O2	41:DA:282:C:C6	2.74	0.41
41:DA:494:U:O2	41:DA:660:A:C2	2.74	0.41
41:DA:922:C:C4	41:DA:923:C:C5	3.09	0.41
41:DA:1309:C:H2'	41:DA:1310:C:C6	2.56	0.41
41:DA:1317:U:H2'	41:DA:1318:C:C6	2.55	0.41
41:DA:1402:C:O5'	41:DA:1402:C:H6	2.04	0.41
41:DA:1637:A:H2'	48:DA:5103:PUT:H42	2.03	0.41
41:DA:1749:A:H2'	41:DA:1750:G:O4'	2.21	0.41
41:DA:1875:C:H2'	41:DA:1876:U:C6	2.55	0.41
41:DA:3662:A:O4'	41:DA:3664:G:C8	2.74	0.41
41:DA:4196:OMG:HM23	41:DA:4196:OMG:H1'	1.92	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:DA:4673:PSU:C4	41:DA:4674:C:C5	3.08	0.41
41:DA:5050:C:C2	41:DA:5051:C:C5	3.09	0.41
9:AI:8:VAL:HG12	9:AI:117:ARG:HG3	2.02	0.41
12:AL:108:ARG:HH22	41:DA:2899:C:P	2.44	0.41
13:AM:109:CYS:O	13:AM:113:MET:HG2	2.20	0.41
33:Ag:104:HIS:H	33:Ag:104:HIS:CD2	2.38	0.41
36:Aj:82:ILE:HG23	36:Aj:84:LYS:NZ	2.36	0.41
38:BB:224:ILE:HB	38:BB:227:ILE:HD12	2.03	0.41
39:BC:207:TYR:CD1	42:DB:33:U:C2	3.10	0.41
40:BD:43:HIS:CD2	40:BD:44:CYS:N	2.89	0.41
40:BD:158:ARG:HD2	41:DA:4945:G:N3	2.36	0.41
41:DA:717:U:H2'	41:DA:718:C:C6	2.56	0.41
41:DA:1505:C:H2'	41:DA:1506:G:C8	2.56	0.41
41:DA:1684:A:C4	41:DA:1685:G:C8	3.09	0.41
41:DA:2473:A:C2'	41:DA:2504:C:O2	2.68	0.41
41:DA:2633:U:H2'	41:DA:2634:C:H6	1.86	0.41
41:DA:2845:A:C2	41:DA:2846:G:C5	3.08	0.41
41:DA:2891:U:O4'	41:DA:5016:A:C2	2.74	0.41
41:DA:3669:OMG:HM23	41:DA:3669:OMG:H4'	2.02	0.41
41:DA:3867:A2M:HM'3	41:DA:3867:A2M:H1'	1.78	0.41
41:DA:4182:G:H4'	44:DD:226:ARG:NH2	2.36	0.41
41:DA:4417:C:H2'	41:DA:4418:G:O4'	2.21	0.41
42:DB:80:U:C2	42:DB:81:G:C8	3.09	0.41
42:DB:108:G:O2'	42:DB:109:U:H5'	2.21	0.41
5:AE:44:THR:HG21	5:AE:72:CYS:SG	2.61	0.40
28:Ab:36:VAL:HG13	53:Ab:238:HOH:O	2.20	0.40
41:DA:262:G:H2'	41:DA:263:G:O4'	2.21	0.40
41:DA:945:U:C2	41:DA:946:C:C5	3.09	0.40
41:DA:1306:C:H2'	41:DA:1307:A:C8	2.54	0.40
41:DA:2498:C:O2	41:DA:2498:C:H2'	2.20	0.40
41:DA:3720:G:H22	41:DA:3733:A:H2	1.68	0.40
41:DA:4536:OMC:HM22	41:DA:4537:C:O4'	2.20	0.40
41:DA:4687:A:C2	41:DA:4688:C:C6	3.09	0.40
43:DC:120:G:C5	43:DC:121:G:N7	2.89	0.40
5:AE:42:GLN:NE2	5:AE:117:ILE:HG23	2.37	0.40
9:AI:82:ARG:HD2	53:AI:347:HOH:O	2.20	0.40
11:AK:42:THR:OG1	41:DA:1428:U:H5''	2.21	0.40
35:Ai:8:VAL:O	35:Ai:11:VAL:HG22	2.21	0.40
39:BC:83:LEU:HB3	39:BC:88:VAL:HB	2.03	0.40
41:DA:1377:G:H4'	41:DA:1378:C:H3'	2.03	0.40
41:DA:1775:A:H2'	41:DA:1776:A:C8	2.55	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:DA:4625:C:O2'	41:DA:4626:A:H5'	2.21	0.40
41:DA:4903:G:H2'	41:DA:4904:G:O4'	2.22	0.40
41:DA:4997:G:H2'	41:DA:4998:G:H8	1.87	0.40
15:AO:26:THR:O	15:AO:30:GLU:HG2	2.22	0.40
20:AT:36:ARG:HG2	20:AT:38:TYR:CZ	2.56	0.40
41:DA:1078:A:C5	41:DA:1079:C:C6	3.09	0.40
41:DA:1202:C:O2	41:DA:1202:C:H5''	2.21	0.40
41:DA:1205:G:H2'	41:DA:1206:C:C6	2.52	0.40
41:DA:1609:U:O4	50:DA:5111:SPM:H72	2.21	0.40
41:DA:2781:G:O2'	41:DA:2782:U:H5'	2.22	0.40
41:DA:4355:G:C2	41:DA:4356:G:N7	2.90	0.40
41:DA:4499:OMG:N3	41:DA:4529:G:H1'	2.36	0.40
44:DD:46:LYS:HB2	44:DD:60:LYS:HG3	2.03	0.40
8:AH:3:ALA:O	8:AH:7:ILE:HG13	2.22	0.40
37:BA:292:LEU:C	37:BA:292:LEU:HD12	2.46	0.40
41:DA:37:U:H2'	41:DA:38:A:O4'	2.21	0.40
41:DA:508:G:C2	41:DA:510:U:C4	3.10	0.40
41:DA:1333:A:H2'	41:DA:1334:A:C8	2.57	0.40
41:DA:1663:C:C2	41:DA:1664:U:C5	3.09	0.40
41:DA:1816:C:C4	41:DA:1817:U:C4	3.09	0.40
41:DA:2076:G:C5	41:DA:2077:C:C5	3.09	0.40
41:DA:2726:G:H2'	41:DA:2727:C:C6	2.56	0.40
41:DA:3663:A:H4'	41:DA:3664:G:OP2	2.21	0.40
41:DA:4244:A:H2'	41:DA:4245:G:O4'	2.21	0.40
1:AA:239:GLN:HA	1:AA:239:GLN:OE1	2.22	0.40
2:AB:181:TYR:CE1	2:AB:226:TYR:HB3	2.56	0.40
6:AF:102:ARG:HA	41:DA:75:G:C5	2.57	0.40
6:AF:172:GLU:O	6:AF:175:ASN:OD1	2.38	0.40
11:AK:34:PHE:CD2	38:BB:293:LEU:HD22	2.56	0.40
24:AX:22:THR:HG23	24:AX:89:SER:OG	2.22	0.40
41:DA:235:A:C2	41:DA:238:C:C5	3.09	0.40
41:DA:347:A:H2'	41:DA:348:G:C8	2.56	0.40
41:DA:438:G:O2'	41:DA:439:G:H5'	2.21	0.40
41:DA:673:C:C2	41:DA:674:G:N7	2.89	0.40
41:DA:1479:G:O2'	41:DA:1480:C:H5'	2.20	0.40
41:DA:2050:G:N3	49:DA:5107:SPD:H71	2.37	0.40
41:DA:2627:C:O2	41:DA:2627:C:H2'	2.20	0.40
41:DA:4717:A:O2'	41:DA:4718:G:H5'	2.22	0.40
51:DA:5112:ATP:N3	51:DA:5112:ATP:O4'	2.53	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	AA	223/248 (90%)	220 (99%)	3 (1%)	0	100	100
2	AB	212/266 (80%)	205 (97%)	7 (3%)	0	100	100
3	AC	188/192 (98%)	183 (97%)	5 (3%)	0	100	100
4	AD	201/214 (94%)	198 (98%)	3 (2%)	0	100	100
5	AE	169/178 (95%)	166 (98%)	3 (2%)	0	100	100
6	AF	205/211 (97%)	197 (96%)	8 (4%)	0	100	100
7	AG	134/215 (62%)	132 (98%)	2 (2%)	0	100	100
8	AH	201/204 (98%)	194 (96%)	7 (4%)	0	100	100
9	AI	199/203 (98%)	198 (100%)	1 (0%)	0	100	100
10	AJ	149/184 (81%)	145 (97%)	4 (3%)	0	100	100
11	AK	185/188 (98%)	181 (98%)	4 (2%)	0	100	100
12	AL	154/196 (79%)	153 (99%)	1 (1%)	0	100	100
13	AM	173/176 (98%)	170 (98%)	3 (2%)	0	100	100
14	AN	157/160 (98%)	153 (98%)	4 (2%)	0	100	100
15	AO	99/128 (77%)	93 (94%)	6 (6%)	0	100	100
16	AP	129/140 (92%)	129 (100%)	0	0	100	100
17	AQ	60/157 (38%)	59 (98%)	1 (2%)	0	100	100
18	AR	117/156 (75%)	116 (99%)	1 (1%)	0	100	100
19	AS	132/145 (91%)	131 (99%)	1 (1%)	0	100	100
20	AT	133/136 (98%)	129 (97%)	4 (3%)	0	100	100
21	AU	144/148 (97%)	140 (97%)	3 (2%)	1 (1%)	18	19
22	AV	96/159 (60%)	93 (97%)	3 (3%)	0	100	100
23	AW	91/115 (79%)	88 (97%)	3 (3%)	0	100	100
24	AX	107/125 (86%)	105 (98%)	2 (2%)	0	100	100
25	AY	128/135 (95%)	127 (99%)	1 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
26	AZ	107/110 (97%)	107 (100%)	0	0	100	100
27	Aa	104/117 (89%)	103 (99%)	1 (1%)	0	100	100
28	Ab	120/123 (98%)	117 (98%)	3 (2%)	0	100	100
29	Ac	100/105 (95%)	96 (96%)	4 (4%)	0	100	100
30	Ad	84/97 (87%)	84 (100%)	0	0	100	100
31	Ae	67/70 (96%)	67 (100%)	0	0	100	100
32	Af	48/51 (94%)	45 (94%)	3 (6%)	0	100	100
33	Ag	49/128 (38%)	47 (96%)	2 (4%)	0	100	100
34	Ah	101/106 (95%)	99 (98%)	2 (2%)	0	100	100
35	Ai	89/92 (97%)	87 (98%)	2 (2%)	0	100	100
36	Aj	123/137 (90%)	120 (98%)	3 (2%)	0	100	100
37	BA	393/403 (98%)	380 (97%)	12 (3%)	1 (0%)	36	42
38	BB	357/427 (84%)	349 (98%)	8 (2%)	0	100	100
39	BC	291/297 (98%)	287 (99%)	4 (1%)	0	100	100
40	BD	210/288 (73%)	204 (97%)	6 (3%)	0	100	100
44	DD	243/257 (95%)	233 (96%)	10 (4%)	0	100	100
All	All	6272/7187 (87%)	6130 (98%)	140 (2%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
37	BA	303	ALA
21	AU	15	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	
1	AA	194/215 (90%)	194 (100%)	0	100	100
2	AB	189/223 (85%)	189 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	AC	169/171 (99%)	169 (100%)	0	100	100
4	AD	175/181 (97%)	175 (100%)	0	100	100
5	AE	144/149 (97%)	144 (100%)	0	100	100
6	AF	173/177 (98%)	173 (100%)	0	100	100
7	AG	116/161 (72%)	116 (100%)	0	100	100
8	AH	171/172 (99%)	171 (100%)	0	100	100
9	AI	173/174 (99%)	173 (100%)	0	100	100
10	AJ	132/163 (81%)	132 (100%)	0	100	100
11	AK	164/165 (99%)	164 (100%)	0	100	100
12	AL	139/175 (79%)	139 (100%)	0	100	100
13	AM	156/157 (99%)	156 (100%)	0	100	100
14	AN	139/140 (99%)	139 (100%)	0	100	100
15	AO	91/115 (79%)	91 (100%)	0	100	100
16	AP	101/107 (94%)	101 (100%)	0	100	100
17	AQ	54/126 (43%)	54 (100%)	0	100	100
18	AR	107/133 (80%)	107 (100%)	0	100	100
19	AS	124/135 (92%)	124 (100%)	0	100	100
20	AT	117/118 (99%)	117 (100%)	0	100	100
21	AU	119/120 (99%)	119 (100%)	0	100	100
22	AV	82/126 (65%)	82 (100%)	0	100	100
23	AW	78/97 (80%)	78 (100%)	0	100	100
24	AX	99/110 (90%)	99 (100%)	0	100	100
25	AY	116/121 (96%)	116 (100%)	0	100	100
26	AZ	88/89 (99%)	88 (100%)	0	100	100
27	Aa	92/100 (92%)	92 (100%)	0	100	100
28	Ab	109/110 (99%)	109 (100%)	0	100	100
29	Ac	86/89 (97%)	86 (100%)	0	100	100
30	Ad	73/80 (91%)	73 (100%)	0	100	100
31	Ae	64/65 (98%)	64 (100%)	0	100	100
32	Af	47/48 (98%)	47 (100%)	0	100	100
33	Ag	47/115 (41%)	47 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
34	Ah	91/94 (97%)	91 (100%)	0	100	100
35	Ai	74/75 (99%)	74 (100%)	0	100	100
36	Aj	109/121 (90%)	109 (100%)	0	100	100
37	BA	344/348 (99%)	344 (100%)	0	100	100
38	BB	299/348 (86%)	299 (100%)	0	100	100
39	BC	247/250 (99%)	247 (100%)	0	100	100
40	BD	192/252 (76%)	192 (100%)	0	100	100
44	DD	188/198 (95%)	188 (100%)	0	100	100
All	All	5472/6113 (90%)	5472 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (49) such sidechains are listed below:

Mol	Chain	Res	Type
1	AA	119	ASN
2	AB	43	GLN
3	AC	98	HIS
3	AC	116	ASN
4	AD	59	GLN
4	AD	130	HIS
4	AD	144	ASN
4	AD	147	HIS
5	AE	46	GLN
5	AE	155	HIS
7	AG	34	ASN
7	AG	131	GLN
8	AH	8	GLN
8	AH	145	ASN
10	AJ	10	ASN
10	AJ	21	ASN
10	AJ	28	ASN
10	AJ	93	HIS
10	AJ	133	HIS
11	AK	21	GLN
11	AK	162	HIS
15	AO	41	GLN
16	AP	135	ASN
18	AR	57	GLN

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Mol	Chain	Res	Type
18	AR	69	ASN
18	AR	73	HIS
21	AU	62	HIS
25	AY	34	ASN
32	Af	17	GLN
32	Af	19	GLN
33	Ag	104	HIS
34	Ah	102	GLN
36	Aj	100	ASN
37	BA	145	GLN
37	BA	203	GLN
37	BA	301	ASN
37	BA	354	GLN
37	BA	376	HIS
38	BB	41	HIS
38	BB	43	ASN
38	BB	329	ASN
39	BC	45	ASN
39	BC	122	GLN
40	BD	101	ASN
40	BD	135	GLN
40	BD	136	HIS
40	BD	211	HIS
40	BD	279	ASN
44	DD	139	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
41	DA	3467/5069 (68%)	529 (15%)	11 (0%)
42	DB	118/120 (98%)	9 (7%)	0
43	DC	155/157 (98%)	28 (18%)	0
All	All	3740/5346 (69%)	566 (15%)	11 (0%)

All (566) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
41	DA	39	A
41	DA	42	A
41	DA	48	G
41	DA	58	G

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Mol	Chain	Res	Type
41	DA	59	A
41	DA	64	A
41	DA	65	A
41	DA	66	A
41	DA	91	G
41	DA	110	C
41	DA	119	G
41	DA	120	A
41	DA	131	C
41	DA	132	G
41	DA	135	G
41	DA	136	C
41	DA	138	G
41	DA	143	C
41	DA	144	G
41	DA	159	C
41	DA	171	U
41	DA	172	C
41	DA	178	C
41	DA	183	C
41	DA	184	U
41	DA	185	C
41	DA	186	G
41	DA	188	G
41	DA	189	G
41	DA	200	U
41	DA	209	U
41	DA	210	C
41	DA	216	C
41	DA	218	A
41	DA	220	C
41	DA	233	U
41	DA	234	G
41	DA	253	G
41	DA	263	G
41	DA	264	C
41	DA	266	C
41	DA	267	G
41	DA	280	G
41	DA	297	U
41	DA	316	U
41	DA	340	C

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Mol	Chain	Res	Type
41	DA	387	G
41	DA	409	G
41	DA	410	A
41	DA	412	G
41	DA	432	U
41	DA	446	C
41	DA	449	C
41	DA	450	G
41	DA	453	G
41	DA	459	C
41	DA	463	A
41	DA	467	U
41	DA	468	U
41	DA	469	C
41	DA	483	G
41	DA	484	U
41	DA	485	C
41	DA	486	C
41	DA	489	C
41	DA	491	G
41	DA	492	U
41	DA	493	G
41	DA	497	G
41	DA	498	C
41	DA	500	G
41	DA	501	C
41	DA	502	C
41	DA	503	C
41	DA	504	G
41	DA	505	G
41	DA	509	A
41	DA	510	U
41	DA	511	C
41	DA	512	U
41	DA	513	U
41	DA	514	U
41	DA	515	C
41	DA	516	C
41	DA	518	G
41	DA	519	C
41	DA	643	C
41	DA	644	G

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Mol	Chain	Res	Type
41	DA	646	G
41	DA	654	C
41	DA	655	C
41	DA	657	C
41	DA	659	G
41	DA	665	C
41	DA	666	G
41	DA	668	C
41	DA	670	G
41	DA	677	G
41	DA	678	C
41	DA	686	A
41	DA	687	U
41	DA	688	U
41	DA	692	A
41	DA	701	G
41	DA	703	G
41	DA	704	C
41	DA	730	G
41	DA	731	G
41	DA	739	G
41	DA	742	G
41	DA	743	G
41	DA	759	G
41	DA	760	G
41	DA	904	C
41	DA	905	C
41	DA	913	U
41	DA	915	A
41	DA	916	C
41	DA	917	A
41	DA	923	C
41	DA	924	C
41	DA	926	G
41	DA	932	A
41	DA	933	G
41	DA	944	A
41	DA	945	U
41	DA	946	C
41	DA	956	A
41	DA	959	G
41	DA	960	A

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Mol	Chain	Res	Type
41	DA	962	C
41	DA	965	G
41	DA	966	A
41	DA	967	C
41	DA	969	C
41	DA	970	G
41	DA	982	U
41	DA	984	C
41	DA	989	U
41	DA	990	C
41	DA	991	C
41	DA	992	C
41	DA	993	G
41	DA	995	C
41	DA	1072	C
41	DA	1078	A
41	DA	1083	U
41	DA	1100	U
41	DA	1168	G
41	DA	1173	G
41	DA	1178	G
41	DA	1179	U
41	DA	1180	C
41	DA	1181	C
41	DA	1182	C
41	DA	1183	C
41	DA	1184	A
41	DA	1185	G
41	DA	1186	U
41	DA	1189	G
41	DA	1198	G
41	DA	1199	G
41	DA	1200	G
41	DA	1201	U
41	DA	1202	C
41	DA	1211	G
41	DA	1214	C
41	DA	1216	C
41	DA	1222	A
41	DA	1241	C
41	DA	1249	C
41	DA	1252	C

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Mol	Chain	Res	Type
41	DA	1253	G
41	DA	1255	A
41	DA	1256	G
41	DA	1259	G
41	DA	1261	G
41	DA	1262	G
41	DA	1266	G
41	DA	1270	A
41	DA	1271	G
41	DA	1272	C
41	DA	1273	G
41	DA	1276	C
41	DA	1279	A
41	DA	1280	C
41	DA	1284	G
41	DA	1285	U
41	DA	1287	G
41	DA	1294	A
41	DA	1301	C
41	DA	1302	U
41	DA	1303	A
41	DA	1304	C
41	DA	1313	C
41	DA	1326	A2M
41	DA	1337	A
41	DA	1354	A
41	DA	1359	G
41	DA	1365	C
41	DA	1366	G
41	DA	1387	A
41	DA	1394	G
41	DA	1397	A
41	DA	1406	G
41	DA	1408	G
41	DA	1409	C
41	DA	1410	U
41	DA	1411	C
41	DA	1413	C
41	DA	1415	G
41	DA	1416	G
41	DA	1420	A
41	DA	1438	U

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Mol	Chain	Res	Type
41	DA	1439	C
41	DA	1443	A
41	DA	1444	G
41	DA	1457	G
41	DA	1498	G
41	DA	1502	G
41	DA	1504	G
41	DA	1525	A
41	DA	1534	A2M
41	DA	1547	A
41	DA	1561	G
41	DA	1562	G
41	DA	1563	A
41	DA	1564	A
41	DA	1565	A
41	DA	1566	C
41	DA	1578	U
41	DA	1591	U
41	DA	1596	U
41	DA	1624	G
41	DA	1625	OMG
41	DA	1631	A
41	DA	1633	G
41	DA	1634	A
41	DA	1640	C
41	DA	1641	G
41	DA	1642	A
41	DA	1654	G
41	DA	1661	C
41	DA	1676	C
41	DA	1677	PSU
41	DA	1694	C
41	DA	1698	C
41	DA	1699	A
41	DA	1704	C
41	DA	1705	G
41	DA	1706	A
41	DA	1707	C
41	DA	1708	G
41	DA	1715	C
41	DA	1719	A
41	DA	1721	G

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Mol	Chain	Res	Type
41	DA	1722	C
41	DA	1734	G
41	DA	1741	G
41	DA	1742	A
41	DA	1750	G
41	DA	1755	C
41	DA	1756	U
41	DA	1757	U
41	DA	1758	G
41	DA	1775	A
41	DA	1787	A
41	DA	1804	A
41	DA	1822	U
41	DA	1836	G
41	DA	1837	A
41	DA	1842	G
41	DA	1855	G
41	DA	1869	G
41	DA	1897	A
41	DA	1918	U
41	DA	1919	G
41	DA	1921	C
41	DA	1922	G
41	DA	1930	U
41	DA	1931	C
41	DA	1932	A
41	DA	1940	G
41	DA	1948	G
41	DA	2042	A
41	DA	2046	G
41	DA	2048	U
41	DA	2055	G
41	DA	2056	G
41	DA	2069	A
41	DA	2084	C
41	DA	2085	G
41	DA	2092	G
41	DA	2093	A
41	DA	2094	G
41	DA	2095	A
41	DA	2096	G
41	DA	2097	U

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Mol	Chain	Res	Type
41	DA	2098	G
41	DA	2102	G
41	DA	2106	G
41	DA	2108	G
41	DA	2111	G
41	DA	2250	C
41	DA	2252	G
41	DA	2253	A
41	DA	2255	C
41	DA	2256	C
41	DA	2259	G
41	DA	2289	C
41	DA	2300	A
41	DA	2301	G
41	DA	2313	A
41	DA	2314	G
41	DA	2333	G
41	DA	2348	G
41	DA	2351	OMC
41	DA	2395	A
41	DA	2421	G
41	DA	2450	G
41	DA	2453	A
41	DA	2504	C
41	DA	2505	C
41	DA	2513	A
41	DA	2544	G
41	DA	2545	U
41	DA	2546	G
41	DA	2547	G
41	DA	2548	C
41	DA	2549	G
41	DA	2554	U
41	DA	2555	G
41	DA	2561	C
41	DA	2562	G
41	DA	2563	C
41	DA	2566	G
41	DA	2583	C
41	DA	2587	A
41	DA	2589	C
41	DA	2601	A

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Mol	Chain	Res	Type
41	DA	2627	C
41	DA	2653	C
41	DA	2669	C
41	DA	2681	G
41	DA	2687	U
41	DA	2695	A
41	DA	2696	A
41	DA	2710	C
41	DA	2711	G
41	DA	2726	G
41	DA	2739	C
41	DA	2743	A
41	DA	2759	G
41	DA	2763	U
41	DA	2788	U
41	DA	2790	U
41	DA	2814	C
41	DA	2826	U
41	DA	2827	G
41	DA	2829	U
41	DA	2855	G
41	DA	2900	U
41	DA	3606	U
41	DA	3615	G
41	DA	3618	C
41	DA	3626	G
41	DA	3635	A
41	DA	3644	U
41	DA	3653	A
41	DA	3662	A
41	DA	3673	C
41	DA	3709	U
41	DA	3710	G
41	DA	3713	U
41	DA	3733	A
41	DA	3748	A
41	DA	3753	G
41	DA	3773	U
41	DA	3774	A
41	DA	3777	G
41	DA	3783	A
41	DA	3784	A

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Mol	Chain	Res	Type
41	DA	3785	A2M
41	DA	3792	OMG
41	DA	3809	G
41	DA	3811	G
41	DA	3812	C
41	DA	3814	U
41	DA	3817	A
41	DA	3819	G
41	DA	3823	G
41	DA	3838	U
41	DA	3840	U
41	DA	3867	A2M
41	DA	3877	A
41	DA	3878	C
41	DA	3879	G
41	DA	3897	G
41	DA	3901	A
41	DA	3906	A
41	DA	3907	G
41	DA	3908	A
41	DA	3915	U
41	DA	4076	G
41	DA	4084	G
41	DA	4119	C
41	DA	4122	G
41	DA	4141	G
41	DA	4143	G
41	DA	4144	C
41	DA	4145	C
41	DA	4146	G
41	DA	4152	G
41	DA	4162	C
41	DA	4163	U
41	DA	4170	A
41	DA	4183	G
41	DA	4184	G
41	DA	4191	G
41	DA	4203	A
41	DA	4225	G
41	DA	4229	U
41	DA	4233	A
41	DA	4254	G

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Mol	Chain	Res	Type
41	DA	4256	A
41	DA	4266	G
41	DA	4268	A
41	DA	4273	A
41	DA	4281	A
41	DA	4291	G
41	DA	4305	G
41	DA	4329	G
41	DA	4330	G
41	DA	4332	C
41	DA	4339	A
41	DA	4349	C
41	DA	4373	G
41	DA	4376	A
41	DA	4377	G
41	DA	4378	A
41	DA	4380	A
41	DA	4387	C
41	DA	4391	G
41	DA	4394	A
41	DA	4395	U
41	DA	4421	C
41	DA	4422	A
41	DA	4444	C
41	DA	4448	G
41	DA	4455	G
41	DA	4464	A
41	DA	4466	C
41	DA	4512	U
41	DA	4513	A
41	DA	4519	C
41	DA	4524	G
41	DA	4548	A
41	DA	4549	G
41	DA	4560	C
41	DA	4567	G
41	DA	4572	U
41	DA	4573	G
41	DA	4584	A
41	DA	4590	A
41	DA	4606	G
41	DA	4608	G

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Mol	Chain	Res	Type
41	DA	4610	A
41	DA	4627	U
41	DA	4636	U
41	DA	4637	OMG
41	DA	4670	C
41	DA	4672	A
41	DA	4694	G
41	DA	4700	A
41	DA	4708	A
41	DA	4709	U
41	DA	4719	G
41	DA	4720	C
41	DA	4731	G
41	DA	4732	G
41	DA	4734	A
41	DA	4735	G
41	DA	4740	G
41	DA	4741	C
41	DA	4742	G
41	DA	4754	G
41	DA	4757	C
41	DA	4759	C
41	DA	4761	G
41	DA	4765	G
41	DA	4771	C
41	DA	4774	C
41	DA	4775	C
41	DA	4861	G
41	DA	4870	G
41	DA	4871	C
41	DA	4875	G
41	DA	4882	U
41	DA	4883	C
41	DA	4889	G
41	DA	4894	A
41	DA	4895	C
41	DA	4900	C
41	DA	4910	G
41	DA	4912	G
41	DA	4914	C
41	DA	4919	G
41	DA	4924	C

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Mol	Chain	Res	Type
41	DA	4925	U
41	DA	4926	C
41	DA	4955	A
41	DA	4957	C
41	DA	4960	G
41	DA	4976	U
41	DA	4989	U
41	DA	4990	C
41	DA	4991	U
41	DA	5013	C
41	DA	5014	A
41	DA	5022	U
41	DA	5023	C
41	DA	5024	C
41	DA	5026	U
41	DA	5027	C
41	DA	5034	A
41	DA	5041	G
41	DA	5050	C
41	DA	5054	C
41	DA	5069	U
42	DB	17	C
42	DB	33	U
42	DB	42	A
42	DB	53	U
42	DB	54	A
42	DB	64	G
42	DB	97	G
42	DB	100	A
42	DB	110	G
43	DC	23	C
43	DC	34	U
43	DC	35	C
43	DC	52	A
43	DC	59	A
43	DC	62	A
43	DC	63	U
43	DC	79	G
43	DC	80	A
43	DC	82	A
43	DC	85	U
43	DC	86	U

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Mol	Chain	Res	Type
43	DC	87	G
43	DC	94	G
43	DC	103	A
43	DC	105	C
43	DC	110	U
43	DC	111	U
43	DC	114	G
43	DC	121	G
43	DC	122	G
43	DC	123	U
43	DC	124	U
43	DC	125	C
43	DC	126	C
43	DC	127	U
43	DC	128	C
43	DC	155	C

All (11) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
41	DA	510	U
41	DA	511	C
41	DA	1201	U
41	DA	1252	C
41	DA	1590	C
41	DA	1633	G
41	DA	1677	PSU
41	DA	2252	G
41	DA	2562	G
41	DA	4142	C
41	DA	4893	A

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

122 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
41	PSU	DA	4403	41	18,21,22	1.17	2 (11%)	22,30,33	1.37	3 (13%)
41	OMU	DA	4498	41,45	19,22,23	0.71	0	26,31,34	1.22	4 (15%)
41	PSU	DA	4552	41	18,21,22	1.16	2 (11%)	22,30,33	1.37	3 (13%)
41	PSU	DA	3695	41	18,21,22	1.18	3 (16%)	22,30,33	1.15	2 (9%)
41	5MC	DA	3782	41,45	18,22,23	3.57	7 (38%)	26,32,35	1.04	2 (7%)
41	OMC	DA	2351	41,45	19,22,23	3.10	8 (42%)	26,31,34	0.94	2 (7%)
41	OMG	DA	4623	41	23,26,27	2.51	7 (30%)	33,38,41	1.87	10 (30%)
41	PSU	DA	4673	41,45	18,21,22	1.18	2 (11%)	22,30,33	1.32	3 (13%)
41	PSU	DA	4471	41	18,21,22	1.22	3 (16%)	22,30,33	1.34	3 (13%)
41	A2M	DA	398	41	22,25,26	3.37	9 (40%)	31,36,39	2.87	14 (45%)
41	PSU	DA	1792	41	18,21,22	1.17	2 (11%)	22,30,33	1.37	3 (13%)
41	PSU	DA	4353	41	18,21,22	1.15	1 (5%)	22,30,33	1.44	3 (13%)
33	MLZ	Ag	98	33	8,9,10	0.78	0	4,9,11	0.83	0
41	PSU	DA	1536	41	18,21,22	1.16	2 (11%)	22,30,33	1.40	3 (13%)
41	PSU	DA	3844	41	18,21,22	1.21	2 (11%)	22,30,33	1.28	3 (13%)
41	OMG	DA	2364	41,45	23,26,27	2.50	7 (30%)	33,38,41	1.92	9 (27%)
21	V5N	AU	39	21	9,11,12	1.46	1 (11%)	9,14,16	2.14	3 (33%)
41	PSU	DA	4532	41	18,21,22	1.17	2 (11%)	22,30,33	1.36	3 (13%)
41	OMG	DA	4637	41	23,26,27	2.48	6 (26%)	33,38,41	1.85	10 (30%)
41	OMU	DA	4620	41	19,22,23	0.63	0	26,31,34	1.20	4 (15%)
41	B8T	DA	1859	41	19,22,23	0.99	1 (5%)	26,31,34	0.74	1 (3%)
41	PSU	DA	4628	41	18,21,22	1.20	2 (11%)	22,30,33	1.29	3 (13%)
41	A2M	DA	4571	41	22,25,26	3.28	9 (40%)	31,36,39	2.79	18 (58%)
41	UR3	DA	4530	41	19,22,23	3.07	8 (42%)	26,32,35	1.46	3 (11%)
41	PSU	DA	4312	41	18,21,22	1.16	2 (11%)	22,30,33	1.42	3 (13%)
41	OMG	DA	3744	41	23,26,27	2.49	7 (30%)	33,38,41	1.87	10 (30%)
41	PSU	DA	3920	41,45	18,21,22	1.19	2 (11%)	22,30,33	1.26	3 (13%)
41	PSU	DA	3884	41	18,21,22	1.17	2 (11%)	22,30,33	1.40	3 (13%)
41	PSU	DA	3637	46,41	18,21,22	1.06	1 (5%)	22,30,33	1.44	4 (18%)
41	OMC	DA	2804	41	19,22,23	3.12	8 (42%)	26,31,34	0.70	0
41	PSU	DA	1862	41	18,21,22	1.13	2 (11%)	22,30,33	1.44	3 (13%)
41	OMG	DA	1316	41	23,26,27	2.50	7 (30%)	33,38,41	1.87	9 (27%)
41	6MZ	DA	4220	41	22,25,26	3.81	9 (40%)	30,36,39	2.38	10 (33%)
41	PSU	DA	4420	41	18,21,22	1.15	2 (11%)	22,30,33	1.17	2 (9%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
44	V5N	DD	216	44	9,11,12	1.45	1 (11%)	9,14,16	1.89	3 (33%)
41	A2M	DA	3785	41	22,25,26	3.43	10 (45%)	31,36,39	2.67	12 (38%)
41	PSU	DA	4442	41	18,21,22	1.19	3 (16%)	22,30,33	1.13	2 (9%)
41	A2M	DA	2787	41	22,25,26	3.44	9 (40%)	31,36,39	2.49	9 (29%)
41	OMG	DA	4370	41	23,26,27	2.52	7 (30%)	33,38,41	1.90	9 (27%)
41	PSU	DA	4457	41	18,21,22	1.19	2 (11%)	22,30,33	1.21	3 (13%)
41	PSU	DA	4576	41	18,21,22	1.20	2 (11%)	22,30,33	1.19	3 (13%)
41	OMG	DA	3627	41	23,26,27	2.52	7 (30%)	33,38,41	1.92	10 (30%)
41	PSU	DA	4423	41	18,21,22	1.16	1 (5%)	22,30,33	1.42	3 (13%)
41	OMC	DA	3808	41	19,22,23	3.15	8 (42%)	26,31,34	0.75	0
41	A2M	DA	4523	41,45	22,25,26	3.41	9 (40%)	31,36,39	2.85	12 (38%)
43	OMG	DC	75	43	23,26,27	2.52	7 (30%)	33,38,41	1.91	9 (27%)
41	A2M	DA	1534	41,45	22,25,26	3.55	9 (40%)	31,36,39	2.63	10 (32%)
41	OMG	DA	4618	41	23,26,27	2.51	7 (30%)	33,38,41	1.95	10 (30%)
41	PSU	DA	4579	41	18,21,22	1.10	2 (11%)	22,30,33	1.20	3 (13%)
41	PSU	DA	2632	41	18,21,22	1.23	3 (16%)	22,30,33	1.26	3 (13%)
41	OMC	DA	3887	41	19,22,23	3.13	8 (42%)	26,31,34	0.76	0
41	PSU	DA	1744	41	18,21,22	1.18	2 (11%)	22,30,33	1.42	3 (13%)
41	OMG	DA	2424	41	23,26,27	2.52	7 (30%)	33,38,41	1.87	10 (30%)
41	OMU	DA	4306	41	19,22,23	0.81	1 (5%)	26,31,34	1.14	3 (11%)
41	OMC	DA	2824	41	19,22,23	3.17	8 (42%)	26,31,34	0.71	0
41	PSU	DA	1683	46,41	18,21,22	1.13	2 (11%)	22,30,33	1.40	3 (13%)
41	OMC	DA	2365	41	19,22,23	3.13	8 (42%)	26,31,34	0.70	0
41	OMG	DA	1625	41	23,26,27	2.52	7 (30%)	33,38,41	1.88	9 (27%)
43	PSU	DC	69	43	18,21,22	1.17	3 (16%)	22,30,33	1.13	2 (9%)
41	PSU	DA	4361	41	18,21,22	1.14	2 (11%)	22,30,33	1.42	3 (13%)
41	PSU	DA	4296	41	18,21,22	1.22	2 (11%)	22,30,33	1.33	3 (13%)
41	A2M	DA	1871	41,45	22,25,26	3.44	9 (40%)	31,36,39	2.72	12 (38%)
41	OMC	DA	2422	41,45	19,22,23	3.18	8 (42%)	26,31,34	0.71	0
41	PSU	DA	3639	41	18,21,22	1.28	3 (16%)	22,30,33	1.31	3 (13%)
41	PSU	DA	4689	41	18,21,22	1.15	1 (5%)	22,30,33	1.33	3 (13%)
41	OMG	DA	1522	41	23,26,27	2.51	7 (30%)	33,38,41	1.92	10 (30%)
41	PSU	DA	3851	41	18,21,22	1.22	3 (16%)	22,30,33	1.31	3 (13%)
41	OMC	DA	3841	41	19,22,23	3.13	8 (42%)	26,31,34	0.64	0
41	PSU	DA	2839	41	18,21,22	1.15	1 (5%)	22,30,33	1.33	3 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
41	OMG	DA	4196	41	23,26,27	2.53	6 (26%)	33,38,41	1.90	7 (21%)
41	PSU	DA	5001	41	18,21,22	1.21	2 (11%)	22,30,33	1.23	3 (13%)
41	OMU	DA	4227	41	19,22,23	0.71	0	26,31,34	1.21	4 (15%)
41	A2M	DA	3830	41	22,25,26	3.39	9 (40%)	31,36,39	2.69	13 (41%)
41	PSU	DA	1779	41	18,21,22	1.19	2 (11%)	22,30,33	1.35	3 (13%)
41	PSU	DA	3822	41	18,21,22	1.24	2 (11%)	22,30,33	1.15	3 (13%)
41	PSU	DA	4299	41	18,21,22	1.13	1 (5%)	22,30,33	1.39	3 (13%)
41	A2M	DA	2815	41	22,25,26	3.36	9 (40%)	31,36,39	2.72	15 (48%)
41	PSU	DA	4972	41	18,21,22	1.18	2 (11%)	22,30,33	1.30	3 (13%)
41	5MC	DA	4447	46,41	18,22,23	3.51	7 (38%)	26,32,35	1.16	2 (7%)
41	PSU	DA	1781	41	18,21,22	1.17	2 (11%)	22,30,33	1.40	3 (13%)
41	A2M	DA	2401	41	22,25,26	3.41	9 (40%)	31,36,39	2.69	13 (41%)
41	PSU	DA	2508	41	18,21,22	1.15	1 (5%)	22,30,33	1.43	3 (13%)
43	PSU	DC	55	43	18,21,22	1.17	1 (5%)	22,30,33	1.43	3 (13%)
37	HIC	BA	245	37	10,11,12	0.51	0	8,14,16	0.51	0
41	A2M	DA	400	41	22,25,26	3.40	9 (40%)	31,36,39	2.81	12 (38%)
41	PSU	DA	4493	46,41	18,21,22	1.17	2 (11%)	22,30,33	1.40	3 (13%)
41	OMC	DA	3701	46,41	19,22,23	3.09	8 (42%)	26,31,34	0.74	0
41	OMC	DA	3869	41	19,22,23	3.13	8 (42%)	26,31,34	0.76	0
41	OMC	DA	1881	41,45	19,22,23	3.15	8 (42%)	26,31,34	0.80	0
41	OMG	DA	4499	41	23,26,27	2.53	6 (26%)	33,38,41	1.98	8 (24%)
41	A2M	DA	1323	41	22,25,26	3.39	9 (40%)	31,36,39	2.74	13 (41%)
41	OMU	DA	3925	41	19,22,23	0.72	0	26,31,34	1.23	4 (15%)
41	OMG	DA	3899	41,45	23,26,27	2.51	7 (30%)	33,38,41	1.89	10 (30%)
41	1MA	DA	1322	41,45	21,25,26	2.91	5 (23%)	31,37,40	2.13	8 (25%)
41	PSU	DA	4431	41	18,21,22	1.18	1 (5%)	22,30,33	1.41	3 (13%)
41	UY1	DA	3818	46,41	19,22,23	4.30	6 (31%)	22,31,34	2.03	6 (27%)
41	A2M	DA	1326	41	22,25,26	3.43	9 (40%)	31,36,39	2.75	13 (41%)
41	OMG	DA	4392	41	23,26,27	2.50	7 (30%)	33,38,41	1.90	10 (30%)
41	OMC	DA	2861	41	19,22,23	3.18	8 (42%)	26,31,34	0.67	0
41	PSU	DA	1782	41	18,21,22	1.17	2 (11%)	22,30,33	1.40	3 (13%)
41	PSU	DA	1860	41	18,21,22	1.21	1 (5%)	22,30,33	1.57	3 (13%)
41	OMG	DA	3792	41	23,26,27	2.52	7 (30%)	33,38,41	1.92	9 (27%)
41	OMG	DA	4494	41	23,26,27	2.51	7 (30%)	33,38,41	1.89	9 (27%)
41	A2M	DA	3825	41	22,25,26	3.42	9 (40%)	31,36,39	2.77	13 (41%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
41	OMG	DA	3669	41	23,26,27	2.53	7 (30%)	33,38,41	1.96	11 (33%)
41	PSU	DA	4293	41	18,21,22	1.16	2 (11%)	22,30,33	1.41	3 (13%)
41	OMG	DA	4228	41	23,26,27	2.48	8 (34%)	33,38,41	1.99	10 (30%)
41	OMC	DA	4456	41	19,22,23	3.14	8 (42%)	26,31,34	0.74	0
41	A2M	DA	1524	41	22,25,26	3.37	8 (36%)	31,36,39	2.89	12 (38%)
41	OMU	DA	2415	41	19,22,23	0.79	1 (5%)	26,31,34	1.13	3 (11%)
41	A2M	DA	2363	41,45	22,25,26	3.36	9 (40%)	31,36,39	2.69	13 (41%)
41	PSU	DA	4521	41,45	18,21,22	1.20	2 (11%)	22,30,33	1.34	3 (13%)
41	OMC	DA	1340	41	19,22,23	3.12	8 (42%)	26,31,34	0.69	0
41	PSU	DA	3715	41	18,21,22	1.31	3 (16%)	22,30,33	1.25	3 (13%)
41	PSU	DA	4500	41	18,21,22	1.15	3 (16%)	22,30,33	1.34	3 (13%)
41	A2M	DA	3718	41	22,25,26	3.40	9 (40%)	31,36,39	2.75	13 (41%)
41	OMU	DA	2837	41	19,22,23	0.74	0	26,31,34	1.26	3 (11%)
41	PSU	DA	224	41	18,21,22	1.20	2 (11%)	22,30,33	1.29	3 (13%)
41	PSU	DA	1677	41	18,21,22	1.29	4 (22%)	22,30,33	1.38	3 (13%)
41	OMC	DA	4536	41	19,22,23	3.14	8 (42%)	26,31,34	0.78	0
41	A2M	DA	3867	41	22,25,26	3.41	9 (40%)	31,36,39	2.78	14 (45%)
41	OMG	DA	2876	41	23,26,27	2.55	7 (30%)	33,38,41	1.97	9 (27%)

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
41	PSU	DA	4403	41	-	0/7/25/26	0/2/2/2
41	OMU	DA	4498	41,45	-	1/9/27/28	0/2/2/2
41	PSU	DA	4552	41	-	0/7/25/26	0/2/2/2
41	PSU	DA	3695	41	-	0/7/25/26	0/2/2/2
41	5MC	DA	3782	41,45	-	0/7/25/26	0/2/2/2
41	OMC	DA	2351	41,45	-	4/9/27/28	0/2/2/2
41	OMG	DA	4623	41	-	0/9/27/28	0/3/3/3
41	PSU	DA	4673	41,45	-	0/7/25/26	0/2/2/2
41	PSU	DA	4471	41	-	0/7/25/26	0/2/2/2
41	A2M	DA	398	41	-	2/9/27/28	0/3/3/3
41	PSU	DA	1792	41	-	0/7/25/26	0/2/2/2
41	PSU	DA	4353	41	-	0/7/25/26	0/2/2/2
33	MLZ	Ag	98	33	-	2/7/8/10	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
41	PSU	DA	1536	41	-	0/7/25/26	0/2/2/2
41	PSU	DA	3844	41	-	1/7/25/26	0/2/2/2
41	OMG	DA	2364	41,45	-	0/9/27/28	0/3/3/3
21	V5N	AU	39	21	-	2/9/10/12	0/1/1/1
41	PSU	DA	4532	41	-	0/7/25/26	0/2/2/2
41	OMG	DA	4637	41	-	1/9/27/28	0/3/3/3
41	OMU	DA	4620	41	-	0/9/27/28	0/2/2/2
41	B8T	DA	1859	41	-	1/7/27/28	0/2/2/2
41	PSU	DA	4628	41	-	0/7/25/26	0/2/2/2
41	A2M	DA	4571	41	-	1/9/27/28	0/3/3/3
41	UR3	DA	4530	41	-	2/7/25/26	0/2/2/2
41	PSU	DA	4312	41	-	0/7/25/26	0/2/2/2
41	OMG	DA	3744	41	-	1/9/27/28	0/3/3/3
41	PSU	DA	3920	41,45	-	0/7/25/26	0/2/2/2
41	PSU	DA	3884	41	-	0/7/25/26	0/2/2/2
41	PSU	DA	3637	46,41	-	0/7/25/26	0/2/2/2
41	OMC	DA	2804	41	-	0/9/27/28	0/2/2/2
41	PSU	DA	1862	41	-	0/7/25/26	0/2/2/2
41	OMG	DA	1316	41	-	0/9/27/28	0/3/3/3
41	6MZ	DA	4220	41	-	0/9/27/28	0/3/3/3
41	PSU	DA	4420	41	-	3/7/25/26	0/2/2/2
44	V5N	DD	216	44	-	1/9/10/12	0/1/1/1
41	A2M	DA	3785	41	-	3/9/27/28	0/3/3/3
41	PSU	DA	4442	41	-	0/7/25/26	0/2/2/2
41	A2M	DA	2787	41	-	3/9/27/28	0/3/3/3
41	OMG	DA	4370	41	-	1/9/27/28	0/3/3/3
41	PSU	DA	4457	41	-	0/7/25/26	0/2/2/2
41	PSU	DA	4576	41	-	0/7/25/26	0/2/2/2
41	OMG	DA	3627	41	-	0/9/27/28	0/3/3/3
41	PSU	DA	4423	41	-	0/7/25/26	0/2/2/2
41	OMC	DA	3808	41	-	0/9/27/28	0/2/2/2
41	A2M	DA	4523	41,45	-	1/9/27/28	0/3/3/3
43	OMG	DC	75	43	-	0/9/27/28	0/3/3/3
41	A2M	DA	1534	41,45	-	3/9/27/28	0/3/3/3
41	OMG	DA	4618	41	-	0/9/27/28	0/3/3/3
41	PSU	DA	4579	41	-	0/7/25/26	0/2/2/2
41	PSU	DA	2632	41	-	0/7/25/26	0/2/2/2
41	OMC	DA	3887	41	-	0/9/27/28	0/2/2/2
41	PSU	DA	1744	41	-	0/7/25/26	0/2/2/2
41	OMG	DA	2424	41	-	0/9/27/28	0/3/3/3
41	OMU	DA	4306	41	-	0/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
41	OMC	DA	2824	41	-	0/9/27/28	0/2/2/2
41	PSU	DA	1683	46,41	-	0/7/25/26	0/2/2/2
41	OMC	DA	2365	41	-	0/9/27/28	0/2/2/2
41	OMG	DA	1625	41	-	0/9/27/28	0/3/3/3
43	PSU	DC	69	43	-	0/7/25/26	0/2/2/2
41	PSU	DA	4361	41	-	0/7/25/26	0/2/2/2
41	PSU	DA	4296	41	-	0/7/25/26	0/2/2/2
41	A2M	DA	1871	41,45	-	0/9/27/28	0/3/3/3
41	OMC	DA	2422	41,45	-	2/9/27/28	0/2/2/2
41	PSU	DA	3639	41	-	0/7/25/26	0/2/2/2
41	PSU	DA	4689	41	-	0/7/25/26	0/2/2/2
41	OMG	DA	1522	41	-	0/9/27/28	0/3/3/3
41	PSU	DA	3851	41	-	0/7/25/26	0/2/2/2
41	OMC	DA	3841	41	-	0/9/27/28	0/2/2/2
41	PSU	DA	2839	41	-	0/7/25/26	0/2/2/2
41	OMG	DA	4196	41	-	0/9/27/28	0/3/3/3
41	PSU	DA	5001	41	-	0/7/25/26	0/2/2/2
41	OMU	DA	4227	41	-	0/9/27/28	0/2/2/2
41	A2M	DA	3830	41	-	1/9/27/28	0/3/3/3
41	PSU	DA	1779	41	-	0/7/25/26	0/2/2/2
41	PSU	DA	3822	41	-	0/7/25/26	0/2/2/2
41	PSU	DA	4299	41	-	0/7/25/26	0/2/2/2
41	A2M	DA	2815	41	-	1/9/27/28	0/3/3/3
41	PSU	DA	4972	41	-	0/7/25/26	0/2/2/2
41	5MC	DA	4447	46,41	-	4/7/25/26	0/2/2/2
41	PSU	DA	1781	41	-	1/7/25/26	0/2/2/2
41	A2M	DA	2401	41	-	2/9/27/28	0/3/3/3
41	PSU	DA	2508	41	-	0/7/25/26	0/2/2/2
43	PSU	DC	55	43	-	0/7/25/26	0/2/2/2
37	HIC	BA	245	37	-	1/5/6/8	0/1/1/1
41	A2M	DA	400	41	-	1/9/27/28	0/3/3/3
41	PSU	DA	4493	46,41	-	0/7/25/26	0/2/2/2
41	OMC	DA	3701	46,41	-	4/9/27/28	0/2/2/2
41	OMC	DA	3869	41	-	0/9/27/28	0/2/2/2
41	OMC	DA	1881	41,45	-	0/9/27/28	0/2/2/2
41	OMG	DA	4499	41	-	0/9/27/28	0/3/3/3
41	A2M	DA	1323	41	-	3/9/27/28	0/3/3/3
41	OMU	DA	3925	41	-	0/9/27/28	0/2/2/2
41	OMG	DA	3899	41,45	-	0/9/27/28	0/3/3/3
41	1MA	DA	1322	41,45	-	1/7/25/26	0/3/3/3
41	PSU	DA	4431	41	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
41	UY1	DA	3818	46,41	-	1/9/27/28	0/2/2/2
41	A2M	DA	1326	41	-	1/9/27/28	0/3/3/3
41	OMG	DA	4392	41	-	0/9/27/28	0/3/3/3
41	OMC	DA	2861	41	-	0/9/27/28	0/2/2/2
41	PSU	DA	1782	41	-	0/7/25/26	0/2/2/2
41	PSU	DA	1860	41	-	0/7/25/26	0/2/2/2
41	OMG	DA	3792	41	-	2/9/27/28	0/3/3/3
41	OMG	DA	4494	41	-	1/9/27/28	0/3/3/3
41	A2M	DA	3825	41	-	1/9/27/28	0/3/3/3
41	OMG	DA	3669	41	-	2/9/27/28	0/3/3/3
41	PSU	DA	4293	41	-	0/7/25/26	0/2/2/2
41	OMG	DA	4228	41	-	0/9/27/28	0/3/3/3
41	OMC	DA	4456	41	-	0/9/27/28	0/2/2/2
41	A2M	DA	1524	41	-	1/9/27/28	0/3/3/3
41	OMU	DA	2415	41	-	0/9/27/28	0/2/2/2
41	A2M	DA	2363	41,45	-	0/9/27/28	0/3/3/3
41	PSU	DA	4521	41,45	-	1/7/25/26	0/2/2/2
41	OMC	DA	1340	41	-	0/9/27/28	0/2/2/2
41	PSU	DA	3715	41	-	0/7/25/26	0/2/2/2
41	PSU	DA	4500	41	-	3/7/25/26	0/2/2/2
41	A2M	DA	3718	41	-	1/9/27/28	0/3/3/3
41	OMU	DA	2837	41	-	0/9/27/28	0/2/2/2
41	PSU	DA	224	41	-	3/7/25/26	0/2/2/2
41	PSU	DA	1677	41	-	0/7/25/26	0/2/2/2
41	OMC	DA	4536	41	-	0/9/27/28	0/2/2/2
41	A2M	DA	3867	41	-	3/9/27/28	0/3/3/3
41	OMG	DA	2876	41	-	1/9/27/28	0/3/3/3

All (575) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
41	DA	4220	6MZ	C6-N6	12.13	1.47	1.34
41	DA	3818	UY1	C6-C5	12.11	1.49	1.35
41	DA	3818	UY1	C2-N1	9.77	1.49	1.36
41	DA	1534	A2M	O4'-C1'	9.40	1.64	1.42
41	DA	3782	5MC	C6-C5	9.31	1.49	1.34
41	DA	4447	5MC	C6-C5	9.11	1.49	1.34
41	DA	3718	A2M	O4'-C1'	9.11	1.63	1.42
41	DA	1871	A2M	O4'-C1'	9.03	1.63	1.42
41	DA	3830	A2M	O4'-C1'	8.97	1.63	1.42
41	DA	400	A2M	O4'-C1'	8.95	1.63	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
41	DA	3825	A2M	O4'-C1'	8.94	1.63	1.42
41	DA	4523	A2M	O4'-C1'	8.90	1.63	1.42
41	DA	1323	A2M	O4'-C1'	8.90	1.63	1.42
41	DA	398	A2M	O4'-C1'	8.85	1.63	1.42
41	DA	2815	A2M	O4'-C1'	8.80	1.62	1.42
41	DA	1326	A2M	O4'-C1'	8.80	1.62	1.42
41	DA	2401	A2M	O4'-C1'	8.79	1.62	1.42
41	DA	2363	A2M	O4'-C1'	8.78	1.62	1.42
41	DA	4571	A2M	O4'-C1'	8.74	1.62	1.42
41	DA	2787	A2M	O4'-C1'	8.74	1.62	1.42
41	DA	3785	A2M	O4'-C1'	8.72	1.62	1.42
41	DA	3867	A2M	O4'-C1'	8.69	1.62	1.42
41	DA	1322	1MA	C2-N3	8.68	1.46	1.30
41	DA	1524	A2M	O4'-C1'	8.61	1.62	1.42
41	DA	1871	A2M	C2'-C1'	-8.44	1.31	1.53
41	DA	2787	A2M	C2'-C1'	-8.44	1.31	1.53
41	DA	1524	A2M	C2'-C1'	-8.42	1.31	1.53
41	DA	1534	A2M	C2'-C1'	-8.37	1.31	1.53
41	DA	3785	A2M	C2'-C1'	-8.32	1.31	1.53
41	DA	4523	A2M	C2'-C1'	-8.21	1.32	1.53
41	DA	1326	A2M	C2'-C1'	-8.12	1.32	1.53
41	DA	3825	A2M	C2'-C1'	-8.12	1.32	1.53
41	DA	2401	A2M	C2'-C1'	-8.09	1.32	1.53
41	DA	3867	A2M	C2'-C1'	-8.06	1.32	1.53
41	DA	3818	UY1	C2-N3	8.06	1.51	1.37
41	DA	400	A2M	C2'-C1'	-8.03	1.32	1.53
41	DA	1323	A2M	C2'-C1'	-7.96	1.32	1.53
41	DA	4220	6MZ	O4'-C1'	7.94	1.60	1.42
41	DA	3830	A2M	C2'-C1'	-7.93	1.32	1.53
41	DA	2363	A2M	C2'-C1'	-7.87	1.32	1.53
41	DA	398	A2M	C2'-C1'	-7.86	1.32	1.53
41	DA	3718	A2M	C2'-C1'	-7.80	1.33	1.53
41	DA	2815	A2M	C2'-C1'	-7.78	1.33	1.53
41	DA	4530	UR3	C2-N1	7.53	1.49	1.38
41	DA	4571	A2M	C2'-C1'	-7.32	1.34	1.53
41	DA	2876	OMG	C4-N3	7.28	1.51	1.34
41	DA	4196	OMG	C4-N3	7.13	1.51	1.34
41	DA	1522	OMG	C4-N3	7.12	1.51	1.34
41	DA	1625	OMG	C4-N3	7.11	1.51	1.34
41	DA	2424	OMG	C4-N3	7.11	1.51	1.34
41	DA	4370	OMG	C4-N3	7.10	1.51	1.34
41	DA	4494	OMG	C4-N3	7.10	1.51	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
41	DA	3627	OMG	C4-N3	7.09	1.51	1.34
41	DA	4392	OMG	C4-N3	7.09	1.51	1.34
41	DA	3792	OMG	C4-N3	7.09	1.51	1.34
41	DA	3669	OMG	C4-N3	7.08	1.51	1.34
41	DA	2364	OMG	C4-N3	7.07	1.51	1.34
43	DC	75	OMG	C4-N3	7.06	1.51	1.34
41	DA	3899	OMG	C4-N3	7.04	1.51	1.34
41	DA	1316	OMG	C4-N3	7.03	1.51	1.34
41	DA	4623	OMG	C4-N3	7.00	1.50	1.34
41	DA	3744	OMG	C4-N3	7.00	1.50	1.34
41	DA	4618	OMG	C4-N3	6.99	1.50	1.34
41	DA	4499	OMG	C4-N3	6.98	1.50	1.34
41	DA	4228	OMG	C4-N3	6.97	1.50	1.34
41	DA	4637	OMG	C4-N3	6.96	1.50	1.34
41	DA	1322	1MA	C4-N3	6.80	1.49	1.35
41	DA	4530	UR3	C6-C5	6.66	1.50	1.35
41	DA	3867	A2M	O4'-C4'	-6.64	1.30	1.45
41	DA	1326	A2M	O4'-C4'	-6.63	1.30	1.45
41	DA	3785	A2M	O4'-C4'	-6.50	1.30	1.45
41	DA	1534	A2M	O4'-C4'	-6.49	1.30	1.45
41	DA	1881	OMC	C6-C5	6.46	1.50	1.35
41	DA	2804	OMC	C6-C5	6.44	1.50	1.35
41	DA	2861	OMC	C6-C5	6.43	1.50	1.35
41	DA	2861	OMC	C2-N3	6.42	1.49	1.36
41	DA	2401	A2M	O4'-C4'	-6.41	1.30	1.45
41	DA	1323	A2M	O4'-C4'	-6.41	1.30	1.45
41	DA	1340	OMC	C6-C5	6.40	1.49	1.35
41	DA	3841	OMC	C6-C5	6.40	1.49	1.35
41	DA	3782	5MC	C4-N3	6.39	1.44	1.34
41	DA	2815	A2M	O4'-C4'	-6.39	1.30	1.45
41	DA	4536	OMC	C2-N3	6.39	1.49	1.36
41	DA	2422	OMC	C2-N3	6.38	1.49	1.36
41	DA	2422	OMC	C6-C5	6.36	1.49	1.35
41	DA	3808	OMC	C2-N3	6.36	1.49	1.36
41	DA	4456	OMC	C6-C5	6.36	1.49	1.35
41	DA	3701	OMC	C6-C5	6.36	1.49	1.35
41	DA	2824	OMC	C6-C5	6.35	1.49	1.35
41	DA	2787	A2M	O4'-C4'	-6.33	1.30	1.45
41	DA	4456	OMC	C2-N3	6.32	1.49	1.36
41	DA	2365	OMC	C6-C5	6.32	1.49	1.35
41	DA	2824	OMC	C2-N3	6.31	1.49	1.36
41	DA	2363	A2M	O4'-C4'	-6.30	1.30	1.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
41	DA	4536	OMC	C6-C5	6.30	1.49	1.35
41	DA	3887	OMC	C6-C5	6.27	1.49	1.35
41	DA	2351	OMC	C6-C5	6.27	1.49	1.35
41	DA	3841	OMC	C2-N3	6.27	1.49	1.36
41	DA	3808	OMC	C6-C5	6.27	1.49	1.35
41	DA	3869	OMC	C2-N3	6.27	1.49	1.36
41	DA	2365	OMC	C2-N3	6.26	1.49	1.36
41	DA	1340	OMC	C2-N3	6.25	1.49	1.36
41	DA	4571	A2M	O4'-C4'	-6.23	1.31	1.45
41	DA	3869	OMC	C6-C5	6.22	1.49	1.35
41	DA	2804	OMC	C2-N3	6.21	1.49	1.36
41	DA	398	A2M	O4'-C4'	-6.20	1.31	1.45
41	DA	2351	OMC	C2-N3	6.19	1.48	1.36
41	DA	400	A2M	O4'-C4'	-6.18	1.31	1.45
41	DA	3887	OMC	C2-N3	6.17	1.48	1.36
41	DA	1881	OMC	C2-N3	6.15	1.48	1.36
41	DA	4447	5MC	C4-N3	6.15	1.44	1.34
41	DA	3825	A2M	O4'-C4'	-6.12	1.31	1.45
41	DA	3830	A2M	O4'-C4'	-6.09	1.31	1.45
41	DA	1524	A2M	O4'-C4'	-6.09	1.31	1.45
41	DA	3718	A2M	O4'-C4'	-6.07	1.31	1.45
41	DA	4523	A2M	O4'-C4'	-6.05	1.31	1.45
41	DA	3701	OMC	C2-N3	6.03	1.48	1.36
41	DA	3782	5MC	C2-N3	6.01	1.48	1.36
41	DA	1871	A2M	O4'-C4'	-5.99	1.31	1.45
41	DA	4220	6MZ	O4'-C4'	-5.96	1.31	1.45
41	DA	4499	OMG	C2-N3	5.85	1.47	1.33
41	DA	4447	5MC	C2-N3	5.85	1.48	1.36
41	DA	2876	OMG	C2-N3	5.82	1.47	1.33
41	DA	4196	OMG	C2-N3	5.79	1.47	1.33
41	DA	4530	UR3	C2-N3	5.74	1.50	1.39
41	DA	1625	OMG	C2-N3	5.71	1.46	1.33
41	DA	3669	OMG	C2-N3	5.70	1.46	1.33
41	DA	4494	OMG	C2-N3	5.68	1.46	1.33
41	DA	2424	OMG	C2-N3	5.66	1.46	1.33
41	DA	4370	OMG	C2-N3	5.66	1.46	1.33
41	DA	3627	OMG	C2-N3	5.65	1.46	1.33
43	DC	75	OMG	C2-N3	5.65	1.46	1.33
41	DA	2364	OMG	C2-N3	5.63	1.46	1.33
41	DA	1881	OMC	C2-N1	5.63	1.52	1.40
41	DA	2422	OMC	C2-N1	5.63	1.52	1.40
41	DA	4392	OMG	C2-N3	5.63	1.46	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
41	DA	3808	OMC	C2-N1	5.62	1.52	1.40
41	DA	3792	OMG	C2-N3	5.60	1.46	1.33
41	DA	3887	OMC	C2-N1	5.60	1.52	1.40
41	DA	1522	OMG	C2-N3	5.60	1.46	1.33
41	DA	3899	OMG	C2-N3	5.59	1.46	1.33
41	DA	1316	OMG	C2-N3	5.58	1.46	1.33
41	DA	4637	OMG	C2-N3	5.58	1.46	1.33
41	DA	4623	OMG	C2-N3	5.58	1.46	1.33
41	DA	2351	OMC	C2-N1	5.54	1.52	1.40
41	DA	3744	OMG	C2-N3	5.54	1.46	1.33
41	DA	4536	OMC	C2-N1	5.52	1.52	1.40
41	DA	2824	OMC	C2-N1	5.52	1.52	1.40
41	DA	4618	OMG	C2-N3	5.50	1.46	1.33
41	DA	3869	OMC	C2-N1	5.49	1.51	1.40
41	DA	4456	OMC	C2-N1	5.49	1.51	1.40
41	DA	3869	OMC	C4-N3	5.45	1.45	1.34
41	DA	2861	OMC	C4-N3	5.45	1.45	1.34
41	DA	2365	OMC	C2-N1	5.44	1.51	1.40
41	DA	2824	OMC	C4-N3	5.43	1.45	1.34
41	DA	2861	OMC	C2-N1	5.43	1.51	1.40
41	DA	3808	OMC	C4-N3	5.41	1.45	1.34
41	DA	2422	OMC	C4-N3	5.41	1.45	1.34
41	DA	3701	OMC	C2-N1	5.40	1.51	1.40
41	DA	4228	OMG	C2-N3	5.37	1.46	1.33
41	DA	4536	OMC	C4-N3	5.33	1.45	1.34
41	DA	2365	OMC	C4-N3	5.31	1.45	1.34
41	DA	1881	OMC	C4-N3	5.29	1.45	1.34
41	DA	3887	OMC	C4-N3	5.29	1.45	1.34
41	DA	1340	OMC	C2-N1	5.29	1.51	1.40
41	DA	3841	OMC	C4-N3	5.28	1.45	1.34
41	DA	3701	OMC	C4-N3	5.27	1.45	1.34
41	DA	4456	OMC	C4-N3	5.27	1.45	1.34
41	DA	1340	OMC	C4-N3	5.26	1.45	1.34
41	DA	4220	6MZ	C2'-C1'	-5.22	1.36	1.53
41	DA	2804	OMC	C2-N1	5.21	1.51	1.40
41	DA	2804	OMC	C4-N3	5.20	1.45	1.34
41	DA	2351	OMC	C4-N3	5.16	1.44	1.34
41	DA	2422	OMC	C4-N4	5.12	1.46	1.33
41	DA	3841	OMC	C2-N1	5.11	1.51	1.40
41	DA	2824	OMC	C4-N4	5.11	1.46	1.33
41	DA	2804	OMC	C4-N4	5.10	1.45	1.33
41	DA	2861	OMC	C4-N4	5.10	1.45	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
41	DA	1340	OMC	C4-N4	5.09	1.45	1.33
41	DA	4456	OMC	C4-N4	5.07	1.45	1.33
41	DA	3841	OMC	C4-N4	5.07	1.45	1.33
41	DA	2365	OMC	C4-N4	5.04	1.45	1.33
41	DA	4536	OMC	C4-N4	5.03	1.45	1.33
41	DA	3808	OMC	C4-N4	5.03	1.45	1.33
41	DA	1881	OMC	C4-N4	5.02	1.45	1.33
41	DA	3869	OMC	C4-N4	4.98	1.45	1.33
41	DA	3887	OMC	C4-N4	4.97	1.45	1.33
41	DA	2351	OMC	C4-N4	4.93	1.45	1.33
41	DA	1322	1MA	C2-N1	4.90	1.45	1.35
41	DA	4571	A2M	C6-N6	4.87	1.46	1.34
41	DA	3701	OMC	C4-N4	4.86	1.45	1.33
41	DA	398	A2M	C6-N6	4.79	1.46	1.34
41	DA	2363	A2M	C6-N6	4.77	1.46	1.34
41	DA	400	A2M	C6-N6	4.74	1.46	1.34
41	DA	2401	A2M	C6-N6	4.74	1.46	1.34
41	DA	4523	A2M	C6-N6	4.73	1.46	1.34
41	DA	3718	A2M	C6-N6	4.72	1.46	1.34
41	DA	3867	A2M	C6-N6	4.71	1.46	1.34
41	DA	2815	A2M	C6-N6	4.70	1.45	1.34
41	DA	1323	A2M	C6-N6	4.69	1.45	1.34
41	DA	1326	A2M	C6-N6	4.69	1.45	1.34
41	DA	1871	A2M	C6-N6	4.69	1.45	1.34
41	DA	1534	A2M	C6-N6	4.67	1.45	1.34
41	DA	3830	A2M	C6-N6	4.66	1.45	1.34
41	DA	2787	A2M	C6-N6	4.66	1.45	1.34
41	DA	3818	UY1	C6-N1	4.64	1.43	1.36
41	DA	3825	A2M	C6-N6	4.62	1.45	1.34
41	DA	1524	A2M	C6-N6	4.56	1.45	1.34
41	DA	4447	5MC	C6-N1	4.46	1.45	1.38
41	DA	3785	A2M	C6-N6	4.46	1.45	1.34
41	DA	3782	5MC	C6-N1	4.44	1.45	1.38
41	DA	3782	5MC	C4-N4	4.32	1.45	1.34
41	DA	4447	5MC	C4-N4	4.26	1.45	1.34
41	DA	4447	5MC	C2-N1	4.22	1.49	1.40
41	DA	3782	5MC	C2-N1	4.15	1.49	1.40
41	DA	4499	OMG	C2-N2	4.12	1.44	1.34
41	DA	4618	OMG	C2-N2	4.07	1.43	1.34
41	DA	3669	OMG	C2-N2	4.06	1.43	1.34
41	DA	4196	OMG	C2-N2	4.04	1.43	1.34
41	DA	3744	OMG	C2-N2	4.04	1.43	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
41	DA	4494	OMG	C2-N2	4.04	1.43	1.34
41	DA	2876	OMG	C2-N2	4.04	1.43	1.34
43	DC	75	OMG	C2-N2	4.03	1.43	1.34
41	DA	3627	OMG	C2-N2	4.03	1.43	1.34
41	DA	4370	OMG	C2-N2	4.03	1.43	1.34
41	DA	1625	OMG	C2-N2	4.02	1.43	1.34
41	DA	3792	OMG	C2-N2	4.01	1.43	1.34
41	DA	2424	OMG	C2-N2	4.01	1.43	1.34
41	DA	4623	OMG	C2-N2	4.00	1.43	1.34
41	DA	2364	OMG	C2-N2	4.00	1.43	1.34
41	DA	3899	OMG	C2-N2	4.00	1.43	1.34
41	DA	4228	OMG	C2-N2	3.99	1.43	1.34
41	DA	1522	OMG	C2-N2	3.99	1.43	1.34
41	DA	1322	1MA	C5-C6	3.99	1.54	1.43
41	DA	1316	OMG	C2-N2	3.96	1.43	1.34
41	DA	4392	OMG	C2-N2	3.94	1.43	1.34
41	DA	4530	UR3	C6-N1	3.92	1.47	1.38
41	DA	4637	OMG	C2-N2	3.89	1.43	1.34
41	DA	1534	A2M	O3'-C3'	-3.73	1.34	1.43
41	DA	4499	OMG	C5-N7	-3.66	1.32	1.39
41	DA	3792	OMG	C5-N7	-3.65	1.32	1.39
41	DA	4196	OMG	C5-N7	-3.64	1.32	1.39
41	DA	4618	OMG	C2-N1	3.63	1.46	1.37
41	DA	2876	OMG	C5-N7	-3.62	1.32	1.39
41	DA	4370	OMG	C5-N7	-3.62	1.32	1.39
41	DA	1625	OMG	C5-N7	-3.62	1.32	1.39
41	DA	4494	OMG	C5-N7	-3.61	1.32	1.39
41	DA	3669	OMG	C2-N1	3.59	1.46	1.37
41	DA	4623	OMG	C2-N1	3.59	1.46	1.37
41	DA	3899	OMG	C2-N1	3.57	1.46	1.37
41	DA	4637	OMG	C5-N7	-3.56	1.32	1.39
41	DA	1316	OMG	C5-N7	-3.56	1.32	1.39
41	DA	4196	OMG	C2-N1	3.56	1.46	1.37
41	DA	2424	OMG	C2-N1	3.55	1.46	1.37
41	DA	3627	OMG	C5-N7	-3.55	1.32	1.39
41	DA	1625	OMG	C2-N1	3.54	1.46	1.37
41	DA	1522	OMG	C2-N1	3.54	1.46	1.37
43	DC	75	OMG	C2-N1	3.54	1.46	1.37
41	DA	4228	OMG	C2-N1	3.54	1.46	1.37
41	DA	3792	OMG	C2-N1	3.53	1.46	1.37
41	DA	2364	OMG	C2-N1	3.53	1.46	1.37
41	DA	3627	OMG	C2-N1	3.53	1.46	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
41	DA	2424	OMG	C5-N7	-3.53	1.32	1.39
41	DA	4370	OMG	C2-N1	3.53	1.46	1.37
41	DA	3744	OMG	C2-N1	3.52	1.46	1.37
41	DA	1522	OMG	C5-N7	-3.51	1.32	1.39
43	DC	75	OMG	C5-N7	-3.50	1.32	1.39
41	DA	3899	OMG	C5-N7	-3.50	1.32	1.39
41	DA	4392	OMG	C2-N1	3.49	1.46	1.37
41	DA	4494	OMG	C2-N1	3.49	1.46	1.37
41	DA	3818	UY1	C4-N3	3.49	1.45	1.38
41	DA	3669	OMG	C5-N7	-3.49	1.32	1.39
41	DA	4499	OMG	C2-N1	3.48	1.46	1.37
41	DA	4637	OMG	C2-N1	3.48	1.46	1.37
41	DA	4623	OMG	C5-N7	-3.47	1.32	1.39
41	DA	1316	OMG	C2-N1	3.46	1.46	1.37
41	DA	4392	OMG	C5-N7	-3.45	1.32	1.39
41	DA	2364	OMG	C5-N7	-3.44	1.32	1.39
41	DA	4618	OMG	C5-N7	-3.44	1.32	1.39
41	DA	1871	A2M	O3'-C3'	-3.43	1.34	1.43
41	DA	3744	OMG	C5-N7	-3.42	1.32	1.39
41	DA	2876	OMG	C2-N1	3.39	1.46	1.37
41	DA	2787	A2M	O3'-C3'	-3.39	1.35	1.43
41	DA	1860	PSU	C2-N1	3.39	1.41	1.36
41	DA	3825	A2M	O3'-C3'	-3.35	1.35	1.43
41	DA	2401	A2M	O3'-C3'	-3.31	1.35	1.43
41	DA	3715	PSU	C2-N1	3.29	1.41	1.36
41	DA	4618	OMG	C5-C6	3.28	1.56	1.44
41	DA	3669	OMG	C5-C6	3.28	1.56	1.44
41	DA	400	A2M	O3'-C3'	-3.27	1.35	1.43
41	DA	4392	OMG	C5-C6	3.27	1.56	1.44
41	DA	4623	OMG	C5-C6	3.27	1.56	1.44
41	DA	3899	OMG	C5-C6	3.27	1.56	1.44
41	DA	2364	OMG	C5-C6	3.27	1.56	1.44
41	DA	4228	OMG	C5-N7	-3.25	1.32	1.39
43	DC	75	OMG	C5-C6	3.24	1.56	1.44
41	DA	3627	OMG	C5-C6	3.23	1.56	1.44
41	DA	2424	OMG	C5-C6	3.23	1.56	1.44
41	DA	4637	OMG	C5-C6	3.22	1.56	1.44
41	DA	3830	A2M	O3'-C3'	-3.22	1.35	1.43
41	DA	3841	OMC	C5-C4	3.22	1.50	1.42
41	DA	3792	OMG	C5-C6	3.21	1.56	1.44
41	DA	3851	PSU	C2-N1	3.21	1.41	1.36
41	DA	1534	A2M	O2'-C2'	3.21	1.50	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
41	DA	3718	A2M	O3'-C3'	-3.21	1.35	1.43
41	DA	4499	OMG	C5-C6	3.20	1.56	1.44
41	DA	4196	OMG	C5-C6	3.20	1.56	1.44
41	DA	3785	A2M	O3'-C3'	-3.20	1.35	1.43
41	DA	1326	A2M	O3'-C3'	-3.20	1.35	1.43
41	DA	2815	A2M	O3'-C3'	-3.20	1.35	1.43
41	DA	4228	OMG	C5-C6	3.19	1.56	1.44
41	DA	4353	PSU	C2-N1	3.19	1.41	1.36
41	DA	4523	A2M	O3'-C3'	-3.19	1.35	1.43
41	DA	4471	PSU	C2-N1	3.18	1.41	1.36
41	DA	1522	OMG	C5-C6	3.17	1.56	1.44
41	DA	2632	PSU	C2-N1	3.16	1.41	1.36
41	DA	4494	OMG	C5-C6	3.16	1.56	1.44
41	DA	4370	OMG	C5-C6	3.16	1.56	1.44
41	DA	3744	OMG	C5-C6	3.16	1.56	1.44
41	DA	1881	OMC	C5-C4	3.15	1.50	1.42
41	DA	4296	PSU	C2-N1	3.15	1.41	1.36
41	DA	2876	OMG	C5-C6	3.15	1.56	1.44
41	DA	3785	A2M	O2'-C2'	3.15	1.50	1.42
41	DA	1316	OMG	C5-C6	3.14	1.56	1.44
41	DA	2508	PSU	C2-N1	3.14	1.41	1.36
41	DA	398	A2M	O2'-C2'	3.13	1.50	1.42
41	DA	4530	UR3	C4-N3	3.13	1.47	1.40
41	DA	1625	OMG	C5-C6	3.13	1.56	1.44
41	DA	4431	PSU	C2-N1	3.13	1.41	1.36
41	DA	4493	PSU	C2-N1	3.12	1.40	1.36
41	DA	3867	A2M	O2'-C2'	3.12	1.50	1.42
41	DA	4552	PSU	C2-N1	3.11	1.40	1.36
41	DA	1323	A2M	O2'-C2'	3.11	1.50	1.42
41	DA	2422	OMC	C5-C4	3.10	1.50	1.42
41	DA	2861	OMC	C5-C4	3.10	1.50	1.42
41	DA	3830	A2M	O2'-C2'	3.09	1.50	1.42
41	DA	4972	PSU	C2-N1	3.09	1.40	1.36
41	DA	4571	A2M	O2'-C2'	3.08	1.50	1.42
41	DA	3701	OMC	C5-C4	3.08	1.50	1.42
41	DA	1792	PSU	C2-N1	3.08	1.40	1.36
41	DA	1323	A2M	O3'-C3'	-3.07	1.35	1.43
41	DA	3887	OMC	C5-C4	3.07	1.49	1.42
41	DA	2363	A2M	O3'-C3'	-3.07	1.35	1.43
41	DA	2824	OMC	C5-C4	3.06	1.49	1.42
41	DA	3884	PSU	C2-N1	3.05	1.40	1.36
41	DA	4456	OMC	C5-C4	3.05	1.49	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
41	DA	3718	A2M	O2'-C2'	3.05	1.50	1.42
43	DC	55	PSU	C2-N1	3.05	1.40	1.36
41	DA	3825	A2M	O2'-C2'	3.04	1.50	1.42
41	DA	4521	PSU	C2-N1	3.04	1.40	1.36
41	DA	1779	PSU	C2-N1	3.04	1.40	1.36
41	DA	4423	PSU	C2-N1	3.03	1.40	1.36
41	DA	2365	OMC	C5-C4	3.03	1.49	1.42
41	DA	2804	OMC	C5-C4	3.02	1.49	1.42
41	DA	3867	A2M	O3'-C3'	-3.02	1.35	1.43
41	DA	4457	PSU	C2-N1	3.02	1.40	1.36
41	DA	4523	A2M	O2'-C2'	3.02	1.50	1.42
41	DA	2815	A2M	O2'-C2'	3.01	1.50	1.42
41	DA	4403	PSU	C2-N1	3.01	1.40	1.36
41	DA	4312	PSU	C2-N1	3.01	1.40	1.36
41	DA	1536	PSU	C2-N1	3.01	1.40	1.36
41	DA	2363	A2M	O2'-C2'	3.00	1.50	1.42
41	DA	3808	OMC	C5-C4	3.00	1.49	1.42
41	DA	1782	PSU	C2-N1	2.99	1.40	1.36
41	DA	400	A2M	O2'-C2'	2.99	1.50	1.42
41	DA	1677	PSU	C2-N1	2.99	1.40	1.36
41	DA	1862	PSU	C2-N1	2.98	1.40	1.36
41	DA	4673	PSU	C2-N1	2.98	1.40	1.36
41	DA	3822	PSU	C2-N1	2.98	1.40	1.36
41	DA	3920	PSU	C2-N1	2.98	1.40	1.36
41	DA	4536	OMC	C5-C4	2.97	1.49	1.42
41	DA	4299	PSU	C2-N1	2.97	1.40	1.36
41	DA	224	PSU	C2-N1	2.97	1.40	1.36
41	DA	1340	OMC	C5-C4	2.96	1.49	1.42
41	DA	3869	OMC	C5-C4	2.96	1.49	1.42
41	DA	3639	PSU	C2-N1	2.96	1.40	1.36
41	DA	2401	A2M	O2'-C2'	2.96	1.50	1.42
41	DA	2839	PSU	C2-N1	2.95	1.40	1.36
41	DA	4689	PSU	C2-N1	2.94	1.40	1.36
41	DA	398	A2M	O3'-C3'	-2.94	1.36	1.43
41	DA	1744	PSU	C2-N1	2.93	1.40	1.36
41	DA	4576	PSU	C2-N1	2.93	1.40	1.36
41	DA	4220	6MZ	O3'-C3'	-2.93	1.36	1.43
41	DA	2351	OMC	C5-C4	2.92	1.49	1.42
41	DA	4293	PSU	C2-N1	2.92	1.40	1.36
41	DA	4442	PSU	C2-N1	2.92	1.40	1.36
41	DA	3637	PSU	C2-N1	2.92	1.40	1.36
41	DA	2787	A2M	C5-N7	-2.91	1.33	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
41	DA	1781	PSU	C2-N1	2.91	1.40	1.36
41	DA	4361	PSU	C2-N1	2.91	1.40	1.36
41	DA	1524	A2M	O2'-C2'	2.89	1.50	1.42
41	DA	4571	A2M	O3'-C3'	-2.89	1.36	1.43
41	DA	3844	PSU	C2-N1	2.89	1.40	1.36
41	DA	1524	A2M	O3'-C3'	-2.88	1.36	1.43
41	DA	4628	PSU	C2-N1	2.88	1.40	1.36
41	DA	4532	PSU	C2-N1	2.87	1.40	1.36
41	DA	1326	A2M	O2'-C2'	2.86	1.49	1.42
41	DA	1871	A2M	O2'-C2'	2.84	1.49	1.42
41	DA	1683	PSU	C2-N1	2.83	1.40	1.36
21	AU	39	V5N	CE1-ND1	2.83	1.39	1.35
43	DC	69	PSU	C2-N1	2.83	1.40	1.36
41	DA	5001	PSU	C2-N1	2.82	1.40	1.36
41	DA	3701	OMC	C6-N1	2.82	1.44	1.38
41	DA	4500	PSU	C2-N1	2.81	1.40	1.36
41	DA	2861	OMC	C6-N1	2.78	1.44	1.38
41	DA	2824	OMC	C6-N1	2.77	1.44	1.38
41	DA	2804	OMC	C6-N1	2.76	1.44	1.38
41	DA	3887	OMC	C6-N1	2.75	1.44	1.38
41	DA	1322	1MA	C5-N7	-2.75	1.33	1.39
41	DA	1881	OMC	C6-N1	2.74	1.44	1.38
41	DA	3695	PSU	C2-N1	2.74	1.40	1.36
41	DA	4420	PSU	C2-N1	2.74	1.40	1.36
41	DA	2351	OMC	C6-N1	2.73	1.44	1.38
41	DA	3782	5MC	O2-C2	-2.72	1.18	1.23
41	DA	2365	OMC	C6-N1	2.72	1.44	1.38
41	DA	3869	OMC	C6-N1	2.72	1.44	1.38
41	DA	3841	OMC	C6-N1	2.72	1.44	1.38
41	DA	2422	OMC	C6-N1	2.71	1.44	1.38
41	DA	3808	OMC	C6-N1	2.70	1.44	1.38
41	DA	4447	5MC	O2-C2	-2.70	1.18	1.23
41	DA	1524	A2M	C5-C4	-2.70	1.34	1.39
41	DA	2787	A2M	O2'-C2'	2.69	1.49	1.42
44	DD	216	V5N	CE1-ND1	2.69	1.39	1.35
41	DA	1340	OMC	C6-N1	2.68	1.44	1.38
41	DA	4530	UR3	O4-C4	-2.65	1.17	1.23
41	DA	4530	UR3	O2-C2	-2.64	1.17	1.22
41	DA	4456	OMC	C6-N1	2.60	1.44	1.38
41	DA	4220	6MZ	C5-N7	-2.59	1.34	1.39
41	DA	4536	OMC	C6-N1	2.59	1.44	1.38
41	DA	3841	OMC	O2-C2	-2.59	1.18	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
41	DA	3718	A2M	C8-N9	-2.58	1.32	1.37
41	DA	3785	A2M	C5-N7	-2.57	1.34	1.39
41	DA	3718	A2M	C5-N7	-2.57	1.34	1.39
41	DA	3825	A2M	C8-N9	-2.55	1.32	1.37
41	DA	3639	PSU	C4-N3	2.55	1.43	1.38
41	DA	2804	OMC	O2-C2	-2.54	1.19	1.23
41	DA	3785	A2M	C5-C4	-2.52	1.34	1.39
41	DA	1534	A2M	C5-C4	-2.49	1.34	1.39
41	DA	3825	A2M	C5-N7	-2.49	1.34	1.39
41	DA	1677	PSU	O4'-C1'	-2.48	1.40	1.43
41	DA	1534	A2M	C5-N7	-2.48	1.34	1.39
41	DA	2401	A2M	C5-N7	-2.46	1.34	1.39
41	DA	4523	A2M	C8-N9	-2.46	1.33	1.37
41	DA	3867	A2M	C5-N7	-2.46	1.34	1.39
41	DA	1326	A2M	C5-N7	-2.46	1.34	1.39
41	DA	2351	OMC	O2-C2	-2.44	1.19	1.23
41	DA	4523	A2M	C5-N7	-2.44	1.34	1.39
41	DA	1340	OMC	O2-C2	-2.43	1.19	1.23
41	DA	2422	OMC	O2-C2	-2.42	1.19	1.23
41	DA	4456	OMC	O2-C2	-2.42	1.19	1.23
41	DA	3701	OMC	O2-C2	-2.42	1.19	1.23
41	DA	3830	A2M	C5-C4	-2.40	1.34	1.39
41	DA	2815	A2M	C5-C4	-2.40	1.34	1.39
41	DA	3887	OMC	O2-C2	-2.40	1.19	1.23
41	DA	3715	PSU	C4-N3	2.40	1.43	1.38
41	DA	1326	A2M	C5-C4	-2.40	1.34	1.39
41	DA	2824	OMC	O2-C2	-2.40	1.19	1.23
41	DA	4579	PSU	C2-N1	2.39	1.40	1.36
41	DA	2363	A2M	C5-N7	-2.39	1.34	1.39
41	DA	4306	OMU	C4-N3	2.39	1.42	1.38
41	DA	3869	OMC	O2-C2	-2.39	1.19	1.23
41	DA	2365	OMC	O2-C2	-2.38	1.19	1.23
41	DA	2861	OMC	O2-C2	-2.38	1.19	1.23
41	DA	4618	OMG	C6-N1	2.38	1.43	1.38
41	DA	1871	A2M	C5-N7	-2.37	1.34	1.39
41	DA	400	A2M	C5-C4	-2.37	1.34	1.39
41	DA	5001	PSU	C4-N3	2.36	1.43	1.38
41	DA	3822	PSU	C4-N3	2.35	1.43	1.38
41	DA	4536	OMC	O2-C2	-2.35	1.19	1.23
41	DA	1326	A2M	C8-N9	-2.34	1.33	1.37
41	DA	400	A2M	C8-N9	-2.34	1.33	1.37
41	DA	398	A2M	C8-N9	-2.34	1.33	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
41	DA	3695	PSU	C4-N3	2.33	1.43	1.38
41	DA	3825	A2M	C5-C4	-2.32	1.34	1.39
41	DA	1323	A2M	C5-C4	-2.32	1.34	1.39
41	DA	398	A2M	C5-N7	-2.30	1.34	1.39
41	DA	3808	OMC	O2-C2	-2.30	1.19	1.23
41	DA	1881	OMC	O2-C2	-2.30	1.19	1.23
41	DA	400	A2M	C5-N7	-2.30	1.34	1.39
41	DA	2787	A2M	C5-C4	-2.29	1.34	1.39
41	DA	4220	6MZ	O2'-C2'	2.29	1.48	1.43
41	DA	4628	PSU	C4-N3	2.29	1.43	1.38
41	DA	1871	A2M	C8-N9	-2.29	1.33	1.37
41	DA	4228	OMG	C6-N1	2.29	1.43	1.38
41	DA	224	PSU	C4-N3	2.28	1.43	1.38
41	DA	4571	A2M	C8-N9	-2.28	1.33	1.37
41	DA	3867	A2M	C5-C4	-2.28	1.34	1.39
41	DA	1323	A2M	C5-N7	-2.28	1.34	1.39
41	DA	1524	A2M	C5-N7	-2.27	1.34	1.39
41	DA	4579	PSU	C4-N3	2.26	1.43	1.38
41	DA	3669	OMG	C6-N1	2.26	1.43	1.38
41	DA	3920	PSU	C4-N3	2.26	1.43	1.38
41	DA	1677	PSU	C6-N1	2.26	1.40	1.36
41	DA	3830	A2M	C8-N9	-2.26	1.33	1.37
41	DA	3830	A2M	C5-N7	-2.26	1.34	1.39
41	DA	4521	PSU	C4-N3	2.25	1.43	1.38
41	DA	1871	A2M	C5-C4	-2.24	1.34	1.39
41	DA	4220	6MZ	C5-C4	-2.23	1.34	1.39
41	DA	4571	A2M	C5-N7	-2.23	1.34	1.39
41	DA	398	A2M	C5-C4	-2.23	1.34	1.39
41	DA	4576	PSU	C4-N3	2.22	1.43	1.38
41	DA	3785	A2M	C8-N9	-2.22	1.33	1.37
41	DA	4420	PSU	C4-N3	2.21	1.42	1.38
41	DA	1534	A2M	C8-N9	-2.20	1.33	1.37
41	DA	4296	PSU	C4-N3	2.20	1.42	1.38
41	DA	2815	A2M	C5-N7	-2.20	1.34	1.39
41	DA	3792	OMG	C6-N1	2.19	1.42	1.38
41	DA	2364	OMG	C6-N1	2.19	1.42	1.38
43	DC	75	OMG	C6-N1	2.18	1.42	1.38
41	DA	2415	OMU	C4-N3	2.18	1.42	1.38
41	DA	2632	PSU	C4-N3	2.18	1.42	1.38
41	DA	1859	B8T	C4-N4	2.17	1.40	1.35
41	DA	2363	A2M	C8-N9	-2.17	1.33	1.37
41	DA	3718	A2M	C5-C4	-2.17	1.35	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
41	DA	3844	PSU	C4-N3	2.17	1.42	1.38
41	DA	4442	PSU	C4-N3	2.16	1.42	1.38
41	DA	4673	PSU	C4-N3	2.16	1.42	1.38
41	DA	3715	PSU	C6-N1	2.15	1.39	1.36
41	DA	1781	PSU	C4-N3	2.15	1.42	1.38
41	DA	1779	PSU	C4-N3	2.15	1.42	1.38
41	DA	3867	A2M	C8-N9	-2.15	1.33	1.37
41	DA	4571	A2M	C5-C4	-2.14	1.35	1.39
41	DA	3785	A2M	O5'-C5'	-2.14	1.39	1.44
41	DA	3744	OMG	C6-N1	2.14	1.42	1.38
41	DA	1744	PSU	C4-N3	2.13	1.42	1.38
41	DA	4471	PSU	C4-N3	2.13	1.42	1.38
41	DA	4530	UR3	C5-C4	2.13	1.49	1.43
41	DA	2815	A2M	C8-N9	-2.13	1.33	1.37
41	DA	4523	A2M	C5-C4	-2.13	1.35	1.39
41	DA	2401	A2M	C5-C4	-2.12	1.35	1.39
41	DA	3627	OMG	C6-N1	2.12	1.42	1.38
41	DA	2787	A2M	C8-N9	-2.12	1.33	1.37
43	DC	69	PSU	C4-N3	2.12	1.42	1.38
41	DA	4623	OMG	C6-N1	2.11	1.42	1.38
41	DA	4500	PSU	C4-N3	2.11	1.42	1.38
41	DA	2401	A2M	C8-N9	-2.11	1.33	1.37
41	DA	4392	OMG	C6-N1	2.11	1.42	1.38
41	DA	2424	OMG	C6-N1	2.11	1.42	1.38
41	DA	3899	OMG	C6-N1	2.10	1.42	1.38
41	DA	4972	PSU	C4-N3	2.10	1.42	1.38
41	DA	4532	PSU	C4-N3	2.10	1.42	1.38
41	DA	4312	PSU	C4-N3	2.10	1.42	1.38
41	DA	4552	PSU	C4-N3	2.09	1.42	1.38
41	DA	4403	PSU	C4-N3	2.09	1.42	1.38
41	DA	3695	PSU	C6-N1	2.08	1.39	1.36
41	DA	1522	OMG	C6-N1	2.08	1.42	1.38
41	DA	1683	PSU	C4-N3	2.07	1.42	1.38
41	DA	1316	OMG	C6-N1	2.07	1.42	1.38
41	DA	1323	A2M	C8-N9	-2.07	1.33	1.37
41	DA	1792	PSU	C4-N3	2.06	1.42	1.38
41	DA	3851	PSU	C4-N3	2.06	1.42	1.38
41	DA	1677	PSU	C4-N3	2.06	1.42	1.38
41	DA	4228	OMG	C4-N9	-2.06	1.32	1.38
41	DA	4471	PSU	C6-N1	2.06	1.39	1.36
41	DA	3851	PSU	C6-N1	2.06	1.39	1.36
41	DA	1625	OMG	C6-N1	2.05	1.42	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
41	DA	4370	OMG	C6-N1	2.05	1.42	1.38
41	DA	3818	UY1	O4'-C1'	-2.05	1.41	1.43
41	DA	1536	PSU	C4-N3	2.05	1.42	1.38
41	DA	2632	PSU	C6-N1	2.04	1.39	1.36
41	DA	3639	PSU	C2-N3	2.04	1.41	1.37
41	DA	2363	A2M	C5-C4	-2.04	1.35	1.39
41	DA	2876	OMG	C6-N1	2.03	1.42	1.38
41	DA	4361	PSU	C4-N3	2.03	1.42	1.38
41	DA	4494	OMG	C6-N1	2.03	1.42	1.38
41	DA	4500	PSU	C6-N1	2.03	1.39	1.36
41	DA	4457	PSU	C4-N3	2.03	1.42	1.38
41	DA	3884	PSU	C4-N3	2.02	1.42	1.38
41	DA	4293	PSU	C4-N3	2.02	1.42	1.38
43	DC	69	PSU	C6-N1	2.01	1.39	1.36
41	DA	4220	6MZ	C8-N9	-2.01	1.33	1.37
41	DA	1782	PSU	C4-N3	2.01	1.42	1.38
41	DA	1862	PSU	C4-N3	2.00	1.42	1.38
41	DA	4442	PSU	C6-N1	2.00	1.39	1.36
41	DA	4493	PSU	C4-N3	2.00	1.42	1.38

All (641) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	DA	1524	A2M	N6-C6-N1	-6.75	103.56	118.35
41	DA	3867	A2M	C5-C4-N3	-6.33	118.49	126.75
41	DA	1524	A2M	C5-C4-N3	-6.26	118.58	126.75
41	DA	1534	A2M	C5-C4-N3	-6.20	118.66	126.75
41	DA	1326	A2M	C5-C4-N3	-6.19	118.68	126.75
41	DA	3718	A2M	C5-C4-N3	-6.15	118.72	126.75
41	DA	2401	A2M	C5-C4-N3	-6.05	118.85	126.75
41	DA	3785	A2M	N6-C6-N1	-6.04	105.11	118.35
41	DA	4499	OMG	C5-C4-N3	-6.03	118.68	128.46
41	DA	1323	A2M	C5-C4-N3	-6.02	118.90	126.75
41	DA	2787	A2M	C5-C4-N3	-5.99	118.93	126.75
41	DA	2363	A2M	C5-C4-N3	-5.96	118.97	126.75
41	DA	3785	A2M	C5-C4-N3	-5.92	119.03	126.75
41	DA	1871	A2M	N3-C2-N1	-5.91	119.36	128.60
41	DA	2876	OMG	C5-C4-N3	-5.89	118.90	128.46
41	DA	3830	A2M	N3-C2-N1	-5.88	119.40	128.60
41	DA	3825	A2M	C5-C4-N3	-5.88	119.08	126.75
41	DA	4196	OMG	C5-C4-N3	-5.87	118.94	128.46
41	DA	4523	A2M	C5-C4-N3	-5.80	119.19	126.75

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	DA	2815	A2M	C5-C4-N3	-5.80	119.19	126.75
41	DA	2815	A2M	N3-C2-N1	-5.76	119.59	128.60
41	DA	1524	A2M	C5-C6-N6	5.76	135.97	123.43
41	DA	398	A2M	N3-C2-N1	-5.75	119.61	128.60
41	DA	400	A2M	N3-C2-N1	-5.73	119.64	128.60
41	DA	1326	A2M	N3-C2-N1	-5.73	119.64	128.60
41	DA	1524	A2M	N3-C2-N1	-5.73	119.64	128.60
41	DA	2815	A2M	N6-C6-N1	-5.72	105.82	118.35
41	DA	398	A2M	C5-C4-N3	-5.68	119.34	126.75
41	DA	3792	OMG	C5-C4-N3	-5.67	119.27	128.46
41	DA	4571	A2M	C5-C4-N3	-5.66	119.36	126.75
41	DA	2401	A2M	N3-C2-N1	-5.64	119.79	128.60
41	DA	1534	A2M	N6-C6-N1	-5.63	106.02	118.35
41	DA	1871	A2M	N6-C6-N1	-5.63	106.03	118.35
41	DA	4494	OMG	C5-C4-N3	-5.62	119.34	128.46
41	DA	4571	A2M	N6-C6-N1	-5.61	106.06	118.35
41	DA	400	A2M	C5-C4-N3	-5.60	119.44	126.75
41	DA	4523	A2M	C2'-C1'-N9	-5.58	104.14	113.53
41	DA	2364	OMG	C5-C4-N3	-5.55	119.46	128.46
41	DA	3785	A2M	N3-C2-N1	-5.55	119.92	128.60
41	DA	1323	A2M	N3-C2-N1	-5.54	119.94	128.60
41	DA	398	A2M	N6-C6-N1	-5.53	106.23	118.35
41	DA	2424	OMG	C5-C4-N3	-5.52	119.50	128.46
41	DA	3669	OMG	C5-C4-N3	-5.51	119.52	128.46
41	DA	1625	OMG	C5-C4-N3	-5.51	119.53	128.46
41	DA	2363	A2M	N3-C2-N1	-5.50	120.00	128.60
41	DA	4523	A2M	N3-C2-N1	-5.50	120.00	128.60
41	DA	2363	A2M	N6-C6-N1	-5.50	106.31	118.35
41	DA	4571	A2M	N3-C2-N1	-5.49	120.01	128.60
41	DA	3627	OMG	C5-C4-N3	-5.49	119.55	128.46
41	DA	400	A2M	N6-C6-N1	-5.49	106.34	118.35
41	DA	2787	A2M	N3-C2-N1	-5.45	120.07	128.60
41	DA	3718	A2M	N6-C6-N1	-5.44	106.43	118.35
41	DA	3830	A2M	N6-C6-N1	-5.42	106.49	118.35
41	DA	4637	OMG	C5-C4-N3	-5.40	119.70	128.46
41	DA	3867	A2M	N3-C2-N1	-5.39	120.17	128.60
41	DA	4370	OMG	C5-C4-N3	-5.39	119.72	128.46
41	DA	1326	A2M	N6-C6-N1	-5.39	106.55	118.35
41	DA	1323	A2M	N6-C6-N1	-5.39	106.55	118.35
41	DA	4220	6MZ	C5-C4-N3	-5.38	119.73	126.75
43	DC	75	OMG	C5-C4-N3	-5.38	119.73	128.46
41	DA	4618	OMG	C5-C4-N3	-5.32	119.83	128.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	DA	3830	A2M	C5-C4-N3	-5.32	119.81	126.75
41	DA	4392	OMG	C5-C4-N3	-5.31	119.85	128.46
41	DA	3718	A2M	N3-C2-N1	-5.30	120.31	128.60
41	DA	1534	A2M	N3-C2-N1	-5.27	120.35	128.60
41	DA	1871	A2M	C5-C4-N3	-5.27	119.87	126.75
41	DA	1871	A2M	C5-C6-N6	5.26	134.89	123.43
41	DA	398	A2M	C2'-C1'-N9	-5.25	104.70	113.53
41	DA	4220	6MZ	C4-C5-C6	5.25	120.87	116.81
41	DA	3825	A2M	N6-C6-N1	-5.24	106.88	118.35
41	DA	2787	A2M	N6-C6-N1	-5.24	106.89	118.35
41	DA	4571	A2M	C5-C6-N6	5.23	134.82	123.43
41	DA	2401	A2M	N6-C6-N1	-5.22	106.92	118.35
41	DA	1522	OMG	C5-C4-N3	-5.21	120.00	128.46
41	DA	4523	A2M	N6-C6-N1	-5.21	106.94	118.35
41	DA	4220	6MZ	N1-C2-N3	-5.17	120.51	128.60
41	DA	1316	OMG	C5-C4-N3	-5.16	120.09	128.46
41	DA	4623	OMG	C5-C4-N3	-5.15	120.10	128.46
41	DA	3899	OMG	C5-C4-N3	-5.14	120.12	128.46
41	DA	2363	A2M	C5-C6-N6	5.13	134.60	123.43
41	DA	398	A2M	C5-C6-N6	5.11	134.54	123.43
41	DA	400	A2M	C5-C6-N6	5.09	134.52	123.43
41	DA	2815	A2M	C5-C6-N6	5.07	134.46	123.43
41	DA	3785	A2M	C5-C6-N6	5.04	134.41	123.43
41	DA	3744	OMG	C5-C4-N3	-5.04	120.28	128.46
41	DA	1322	1MA	C1'-N9-C4	-5.03	111.56	126.50
41	DA	3867	A2M	N6-C6-N1	-5.01	107.38	118.35
41	DA	3818	UY1	C4-N3-C2	-5.00	119.14	126.34
41	DA	3830	A2M	C5-C6-N6	4.97	134.24	123.43
41	DA	1534	A2M	C5-C6-N6	4.93	134.15	123.43
41	DA	1322	1MA	N1-C2-N3	-4.92	120.15	126.00
41	DA	2401	A2M	C5-C6-N6	4.92	134.13	123.43
41	DA	3718	A2M	C5-C6-N6	4.92	134.13	123.43
41	DA	1860	PSU	C6-C5-C4	4.89	121.62	118.20
41	DA	3825	A2M	N3-C2-N1	-4.89	120.96	128.60
41	DA	1323	A2M	C5-C6-N6	4.87	134.03	123.43
41	DA	4523	A2M	C5-C6-N6	4.83	133.94	123.43
41	DA	3867	A2M	N3-C4-N9	4.82	135.02	127.08
41	DA	3825	A2M	C5-C6-N6	4.81	133.91	123.43
41	DA	1326	A2M	C5-C6-N6	4.78	133.82	123.43
41	DA	4530	UR3	C4-N3-C2	-4.73	120.11	124.56
41	DA	1322	1MA	C5-C4-N3	-4.72	120.22	127.26
41	DA	2787	A2M	C5-C6-N6	4.65	133.56	123.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	DA	4618	OMG	C2-N3-C4	4.63	120.56	112.30
41	DA	1871	A2M	C2'-C1'-N9	-4.61	105.78	113.53
41	DA	4228	OMG	C5-C4-N3	-4.60	120.99	128.46
41	DA	2876	OMG	C2-N3-C4	4.58	120.45	112.30
41	DA	2364	OMG	C2-N3-C4	4.56	120.43	112.30
41	DA	3818	UY1	N1-C2-N3	4.52	120.25	115.13
41	DA	3792	OMG	C2-N3-C4	4.51	120.33	112.30
41	DA	3867	A2M	C5-C6-N6	4.44	133.10	123.43
41	DA	1524	A2M	N9-C8-N7	-4.43	107.85	113.91
41	DA	3830	A2M	N9-C8-N7	-4.43	107.86	113.91
41	DA	4499	OMG	C2-N3-C4	4.41	120.16	112.30
41	DA	400	A2M	C2'-C1'-N9	-4.39	106.14	113.53
41	DA	3825	A2M	N3-C4-N9	4.36	134.27	127.08
43	DC	75	OMG	C2-N3-C4	4.34	120.03	112.30
41	DA	4392	OMG	C2-N3-C4	4.34	120.03	112.30
41	DA	4196	OMG	C2-N3-C4	4.33	120.01	112.30
41	DA	3669	OMG	C2-N3-C4	4.31	119.98	112.30
41	DA	4494	OMG	C2-N3-C4	4.31	119.98	112.30
41	DA	3627	OMG	C2-N3-C4	4.29	119.95	112.30
41	DA	1322	1MA	C1'-N9-C8	4.27	138.84	126.70
41	DA	1625	OMG	C2-N3-C4	4.26	119.89	112.30
41	DA	400	A2M	N9-C8-N7	-4.26	108.09	113.91
41	DA	2401	A2M	N3-C4-N9	4.25	134.08	127.08
41	DA	3825	A2M	N9-C8-N7	-4.22	108.14	113.91
41	DA	4228	OMG	C1'-N9-C4	-4.20	114.01	126.50
41	DA	4523	A2M	N3-C4-N9	4.20	134.00	127.08
41	DA	1522	OMG	C2-N3-C4	4.19	119.77	112.30
41	DA	1524	A2M	C2-N3-C4	4.19	121.64	111.75
21	AU	39	V5N	O2-CB-CG	-4.18	103.19	110.73
41	DA	1316	OMG	C2-N3-C4	4.18	119.74	112.30
41	DA	2424	OMG	C2-N3-C4	4.17	119.73	112.30
41	DA	4370	OMG	C2-N3-C4	4.17	119.73	112.30
41	DA	4228	OMG	C2-N3-C4	4.16	119.70	112.30
41	DA	3718	A2M	N3-C4-N9	4.15	133.92	127.08
41	DA	1744	PSU	C6-C5-C4	4.14	121.09	118.20
41	DA	4523	A2M	N9-C8-N7	-4.14	108.25	113.91
41	DA	3899	OMG	C2-N3-C4	4.14	119.67	112.30
41	DA	3744	OMG	C2-N3-C4	4.13	119.66	112.30
41	DA	398	A2M	N9-C8-N7	-4.13	108.27	113.91
41	DA	3818	UY1	C6-C5-C4	4.12	121.08	118.20
41	DA	1326	A2M	N3-C4-N9	4.12	133.88	127.08
41	DA	2508	PSU	C6-C5-C4	4.11	121.07	118.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	DA	4623	OMG	C2-N3-C4	4.11	119.63	112.30
41	DA	4353	PSU	C6-C5-C4	4.10	121.07	118.20
41	DA	1323	A2M	N3-C4-N9	4.09	133.82	127.08
41	DA	1871	A2M	N9-C8-N7	-4.08	108.33	113.91
41	DA	4637	OMG	C2-N3-C4	4.08	119.57	112.30
41	DA	1862	PSU	C6-C5-C4	4.07	121.04	118.20
41	DA	1323	A2M	N9-C8-N7	-4.05	108.38	113.91
41	DA	3884	PSU	C6-C5-C4	4.04	121.03	118.20
41	DA	4361	PSU	C6-C5-C4	4.02	121.01	118.20
41	DA	2815	A2M	N9-C8-N7	-4.01	108.43	113.91
41	DA	4431	PSU	C6-C5-C4	4.01	121.00	118.20
43	DC	55	PSU	C6-C5-C4	4.01	121.00	118.20
41	DA	4423	PSU	C6-C5-C4	4.01	121.00	118.20
41	DA	3825	A2M	C2'-C1'-N9	-4.00	106.79	113.53
41	DA	4293	PSU	C6-C5-C4	4.00	121.00	118.20
41	DA	1322	1MA	C2-N3-C4	3.99	120.26	112.41
41	DA	3867	A2M	N9-C8-N7	-3.99	108.45	113.91
41	DA	3785	A2M	N9-C8-N7	-3.95	108.51	113.91
41	DA	4312	PSU	C6-C5-C4	3.93	120.95	118.20
41	DA	400	A2M	N3-C4-N9	3.93	133.56	127.08
41	DA	4493	PSU	C6-C5-C4	3.92	120.94	118.20
41	DA	3718	A2M	C2'-C1'-N9	-3.92	106.94	113.53
41	DA	1536	PSU	C6-C5-C4	3.91	120.93	118.20
41	DA	1782	PSU	C6-C5-C4	3.91	120.93	118.20
41	DA	1683	PSU	C6-C5-C4	3.91	120.93	118.20
41	DA	4299	PSU	C6-C5-C4	3.89	120.92	118.20
41	DA	3637	PSU	C6-C5-C4	3.89	120.92	118.20
41	DA	2787	A2M	N3-C4-N9	3.86	133.45	127.08
41	DA	398	A2M	N3-C4-N9	3.85	133.43	127.08
41	DA	1326	A2M	N9-C8-N7	-3.85	108.65	113.91
41	DA	4228	OMG	C1'-N9-C8	3.85	137.65	126.70
41	DA	3785	A2M	C2-N3-C4	3.85	120.84	111.75
41	DA	2363	A2M	N3-C4-N9	3.84	133.41	127.08
41	DA	1534	A2M	N3-C4-N9	3.84	133.41	127.08
41	DA	3867	A2M	C1'-N9-C8	-3.80	118.55	127.14
41	DA	4499	OMG	N9-C4-N3	3.79	133.54	125.94
41	DA	1326	A2M	C2-N3-C4	3.78	120.68	111.75
41	DA	4552	PSU	C6-C5-C4	3.78	120.84	118.20
41	DA	1534	A2M	C2-N3-C4	3.78	120.67	111.75
41	DA	2787	A2M	C2-N3-C4	3.78	120.67	111.75
41	DA	3782	5MC	C5-C6-N1	-3.77	119.46	123.34
41	DA	4196	OMG	N9-C4-N3	3.77	133.50	125.94

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	DA	4571	A2M	N9-C8-N7	-3.75	108.78	113.91
41	DA	2815	A2M	C2-N3-C4	3.75	120.61	111.75
41	DA	4571	A2M	N3-C4-N9	3.75	133.26	127.08
41	DA	1534	A2M	N9-C8-N7	-3.74	108.80	113.91
41	DA	3785	A2M	N3-C4-N9	3.74	133.24	127.08
41	DA	2876	OMG	N9-C4-N3	3.73	133.44	125.94
41	DA	2401	A2M	N9-C8-N7	-3.70	108.85	113.91
41	DA	1781	PSU	C6-C5-C4	3.69	120.78	118.20
41	DA	1779	PSU	C6-C5-C4	3.68	120.77	118.20
41	DA	2363	A2M	C2-N3-C4	3.67	120.41	111.75
41	DA	3830	A2M	C2'-C1'-N9	-3.66	107.37	113.53
41	DA	2363	A2M	N9-C8-N7	-3.64	108.94	113.91
41	DA	4403	PSU	C6-C5-C4	3.64	120.74	118.20
41	DA	4532	PSU	C6-C5-C4	3.63	120.74	118.20
41	DA	1323	A2M	C2-N3-C4	3.62	120.31	111.75
41	DA	3867	A2M	C2-N3-C4	3.61	120.29	111.75
41	DA	1792	PSU	C6-C5-C4	3.61	120.72	118.20
41	DA	1524	A2M	C5-N7-C8	3.59	108.61	103.51
41	DA	398	A2M	C2-N3-C4	3.59	120.24	111.75
41	DA	3718	A2M	C2-N3-C4	3.58	120.21	111.75
41	DA	4447	5MC	C5-C6-N1	-3.57	119.66	123.34
41	DA	4494	OMG	N9-C4-N3	3.57	133.11	125.94
41	DA	1871	A2M	N3-C4-N9	3.57	132.97	127.08
41	DA	2401	A2M	C2-N3-C4	3.57	120.19	111.75
41	DA	4471	PSU	C6-C5-C4	3.57	120.69	118.20
41	DA	4571	A2M	C2-N3-C4	3.56	120.17	111.75
41	DA	2815	A2M	N3-C4-N9	3.56	132.95	127.08
41	DA	2839	PSU	C6-C5-C4	3.56	120.69	118.20
41	DA	3830	A2M	C2-N3-C4	3.56	120.16	111.75
41	DA	4523	A2M	C2-N3-C4	3.56	120.16	111.75
21	AU	39	V5N	O2-CB-CA	3.55	114.77	107.28
41	DA	400	A2M	C2-N3-C4	3.54	120.11	111.75
41	DA	1871	A2M	C2-N3-C4	3.53	120.08	111.75
41	DA	2787	A2M	N9-C8-N7	-3.52	109.10	113.91
41	DA	4220	6MZ	N9-C8-N7	-3.52	109.10	113.91
41	DA	3830	A2M	N3-C4-N9	3.51	132.87	127.08
41	DA	3639	PSU	C6-C5-C4	3.51	120.65	118.20
41	DA	4296	PSU	C6-C5-C4	3.51	120.65	118.20
41	DA	1625	OMG	N9-C4-N3	3.50	132.96	125.94
41	DA	224	PSU	C6-C5-C4	3.49	120.64	118.20
41	DA	4220	6MZ	N3-C4-N9	3.49	132.83	127.08
41	DA	3825	A2M	C1'-N9-C8	-3.46	119.32	127.14

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	DA	3792	OMG	N9-C4-N3	3.45	132.87	125.94
41	DA	4571	A2M	O2'-C2'-C1'	3.45	115.80	109.08
41	DA	2401	A2M	C1'-N9-C8	-3.44	119.36	127.14
41	DA	4673	PSU	C6-C5-C4	3.44	120.61	118.20
44	DD	216	V5N	O2-CB-CA	3.44	114.53	107.28
41	DA	4500	PSU	C6-C5-C4	3.42	120.59	118.20
41	DA	1677	PSU	C6-C5-C4	3.42	120.59	118.20
41	DA	4499	OMG	C2-N1-C6	-3.40	118.90	125.10
44	DD	216	V5N	O2-CB-CG	-3.39	104.61	110.73
41	DA	1524	A2M	N3-C4-N9	3.38	132.65	127.08
41	DA	2364	OMG	N9-C4-N3	3.38	132.72	125.94
41	DA	2424	OMG	N9-C4-N3	3.37	132.70	125.94
41	DA	3627	OMG	N9-C4-N3	3.36	132.69	125.94
41	DA	1326	A2M	C1'-N9-C8	-3.35	119.56	127.14
41	DA	3669	OMG	N9-C4-N3	3.35	132.67	125.94
41	DA	4370	OMG	N9-C4-N3	3.35	132.66	125.94
41	DA	4689	PSU	C6-C5-C4	3.34	120.54	118.20
41	DA	1322	1MA	N9-C8-N7	-3.33	107.13	113.39
41	DA	4220	6MZ	C2-N3-C4	3.32	119.60	111.75
41	DA	4530	UR3	C1'-N1-C2	3.31	122.58	116.99
41	DA	4521	PSU	C6-C5-C4	3.29	120.50	118.20
41	DA	3825	A2M	C2-N3-C4	3.28	119.51	111.75
41	DA	4196	OMG	C2-N1-C6	-3.24	119.19	125.10
41	DA	3844	PSU	C6-C5-C4	3.23	120.46	118.20
41	DA	1522	OMG	N9-C4-N3	3.23	132.43	125.94
41	DA	2876	OMG	C2-N1-C6	-3.23	119.21	125.10
41	DA	4628	PSU	C6-C5-C4	3.22	120.45	118.20
41	DA	1534	A2M	C5-N7-C8	3.22	108.08	103.51
41	DA	2364	OMG	C2-N1-C6	-3.21	119.25	125.10
41	DA	4972	PSU	C6-C5-C4	3.20	120.43	118.20
41	DA	3718	A2M	N9-C8-N7	-3.18	109.56	113.91
41	DA	2363	A2M	C1'-N9-C8	-3.18	119.95	127.14
41	DA	4392	OMG	N9-C4-N3	3.18	132.33	125.94
41	DA	4637	OMG	N9-C4-N3	3.18	132.32	125.94
41	DA	3669	OMG	C2-N1-C6	-3.18	119.31	125.10
41	DA	3792	OMG	C2-N1-C6	-3.17	119.31	125.10
21	AU	39	V5N	O-C-CA	-3.17	116.48	124.78
41	DA	3785	A2M	C5-N7-C8	3.16	108.00	103.51
41	DA	2424	OMG	C2-N1-C6	-3.16	119.34	125.10
41	DA	3867	A2M	C6-C5-C4	3.13	121.40	117.18
41	DA	1316	OMG	N9-C4-N3	3.13	132.22	125.94
41	DA	4618	OMG	C2-N1-C6	-3.13	119.39	125.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	DA	3627	OMG	C2-N1-C6	-3.11	119.42	125.10
41	DA	1323	A2M	C1'-N9-C8	-3.11	120.11	127.14
41	DA	1860	PSU	C4-N3-C2	-3.10	121.87	126.34
41	DA	4392	OMG	C2-N1-C6	-3.10	119.45	125.10
43	DC	75	OMG	N9-C4-N3	3.09	132.14	125.94
43	DC	75	OMG	C2-N1-C6	-3.09	119.47	125.10
41	DA	4370	OMG	C2-N1-C6	-3.08	119.48	125.10
41	DA	4523	A2M	C5-N7-C8	3.07	107.88	103.51
41	DA	4494	OMG	C2-N1-C6	-3.07	119.50	125.10
41	DA	4523	A2M	C1'-N9-C8	-3.07	120.20	127.14
41	DA	3851	PSU	C6-C5-C4	3.07	120.34	118.20
41	DA	4228	OMG	N9-C8-N7	-3.06	107.62	113.39
41	DA	3718	A2M	C1'-N9-C8	-3.06	120.23	127.14
41	DA	400	A2M	C5-N7-C8	3.06	107.85	103.51
41	DA	3637	PSU	C4-N3-C2	-3.05	121.94	126.34
41	DA	3825	A2M	C4-N9-C8	3.05	109.04	105.73
41	DA	1625	OMG	C2-N1-C6	-3.04	119.55	125.10
41	DA	3825	A2M	C6-C5-C4	3.04	121.27	117.18
41	DA	4618	OMG	N9-C4-N3	3.03	132.03	125.94
41	DA	3899	OMG	C1'-N9-C4	-3.03	117.50	126.50
41	DA	3744	OMG	C1'-N9-C4	-3.03	117.51	126.50
41	DA	4571	A2M	C5-N7-C8	3.02	107.81	103.51
41	DA	3830	A2M	C5-N7-C8	3.02	107.80	103.51
41	DA	2401	A2M	C6-C5-C4	3.02	121.24	117.18
41	DA	4623	OMG	N9-C4-N3	3.02	132.00	125.94
41	DA	3899	OMG	N9-C4-N3	3.02	132.00	125.94
41	DA	4521	PSU	C4-N3-C2	-3.01	122.00	126.34
41	DA	1522	OMG	C1'-N9-C4	-3.01	117.56	126.50
41	DA	3744	OMG	N9-C4-N3	3.01	131.98	125.94
41	DA	1862	PSU	C4-N3-C2	-3.00	122.01	126.34
41	DA	4552	PSU	C4-N3-C2	-3.00	122.01	126.34
41	DA	398	A2M	C5-N7-C8	3.00	107.77	103.51
41	DA	224	PSU	C4-N3-C2	-3.00	122.01	126.34
41	DA	1781	PSU	C4-N3-C2	-3.00	122.02	126.34
41	DA	3718	A2M	C6-C5-C4	3.00	121.21	117.18
41	DA	4312	PSU	C4-N3-C2	-2.99	122.03	126.34
41	DA	3715	PSU	C6-C5-C4	2.99	120.29	118.20
41	DA	4293	PSU	C4-N3-C2	-2.98	122.04	126.34
41	DA	3825	A2M	C5-N7-C8	2.98	107.74	103.51
41	DA	4296	PSU	C4-N3-C2	-2.98	122.05	126.34
41	DA	1536	PSU	C4-N3-C2	-2.98	122.05	126.34
41	DA	4353	PSU	C4-N3-C2	-2.98	122.05	126.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	DA	4403	PSU	C4-N3-C2	-2.97	122.06	126.34
41	DA	4637	OMG	C2-N1-C6	-2.96	119.69	125.10
41	DA	4361	PSU	C4-N3-C2	-2.96	122.07	126.34
41	DA	3851	PSU	C4-N3-C2	-2.96	122.07	126.34
41	DA	1323	A2M	C5-N7-C8	2.96	107.71	103.51
41	DA	3830	A2M	C4-N9-C8	2.96	108.93	105.73
41	DA	3899	OMG	C2-N1-C6	-2.94	119.74	125.10
43	DC	55	PSU	C4-N3-C2	-2.94	122.11	126.34
41	DA	1683	PSU	C4-N3-C2	-2.94	122.11	126.34
41	DA	4623	OMG	C1'-N9-C4	-2.94	117.78	126.50
41	DA	1792	PSU	C4-N3-C2	-2.93	122.11	126.34
41	DA	2508	PSU	C4-N3-C2	-2.93	122.12	126.34
41	DA	4493	PSU	C4-N3-C2	-2.93	122.12	126.34
41	DA	4431	PSU	C4-N3-C2	-2.93	122.12	126.34
41	DA	4457	PSU	C4-N3-C2	-2.92	122.13	126.34
41	DA	1779	PSU	C4-N3-C2	-2.92	122.13	126.34
41	DA	400	A2M	C1'-N9-C8	-2.92	120.54	127.14
41	DA	1744	PSU	C4-N3-C2	-2.92	122.13	126.34
41	DA	2815	A2M	C5-N7-C8	2.92	107.65	103.51
41	DA	4423	PSU	C4-N3-C2	-2.92	122.14	126.34
41	DA	4532	PSU	C4-N3-C2	-2.92	122.14	126.34
43	DC	75	OMG	C1'-N9-C4	-2.91	117.85	126.50
41	DA	3884	PSU	C4-N3-C2	-2.91	122.15	126.34
41	DA	3639	PSU	C4-N3-C2	-2.91	122.15	126.34
41	DA	4673	PSU	C4-N3-C2	-2.90	122.16	126.34
41	DA	1316	OMG	C2-N1-C6	-2.90	119.81	125.10
41	DA	3744	OMG	C2-N1-C6	-2.90	119.81	125.10
41	DA	4628	PSU	C4-N3-C2	-2.90	122.16	126.34
41	DA	4299	PSU	C4-N3-C2	-2.90	122.16	126.34
41	DA	1782	PSU	C4-N3-C2	-2.89	122.17	126.34
41	DA	4306	OMU	C4-N3-C2	-2.89	122.77	126.58
41	DA	4972	PSU	C4-N3-C2	-2.89	122.17	126.34
41	DA	1326	A2M	C5-N7-C8	2.89	107.61	103.51
41	DA	2363	A2M	C5-N7-C8	2.88	107.61	103.51
41	DA	4579	PSU	C6-C5-C4	2.88	120.21	118.20
41	DA	3715	PSU	C4-N3-C2	-2.88	122.19	126.34
41	DA	2787	A2M	C5-N7-C8	2.87	107.59	103.51
41	DA	4220	6MZ	C2'-C1'-N9	-2.87	106.03	113.30
41	DA	1316	OMG	C1'-N9-C4	-2.87	117.98	126.50
41	DA	4623	OMG	C2-N1-C6	-2.86	119.88	125.10
41	DA	3920	PSU	C6-C5-C4	2.86	120.20	118.20
44	DD	216	V5N	O-C-CA	-2.85	117.31	124.78

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	DA	1522	OMG	C2-N1-C6	-2.85	119.91	125.10
41	DA	3822	PSU	O4-C4-N3	-2.85	114.66	120.12
41	DA	400	A2M	C4-N9-C8	2.84	108.81	105.73
41	DA	4523	A2M	C4-N9-C8	2.84	108.81	105.73
41	DA	3920	PSU	C4-N3-C2	-2.84	122.24	126.34
43	DC	75	OMG	C1'-N9-C8	2.84	134.79	126.70
41	DA	4576	PSU	C4-N3-C2	-2.84	122.24	126.34
41	DA	5001	PSU	C4-N3-C2	-2.84	122.24	126.34
41	DA	4471	PSU	C4-N3-C2	-2.84	122.24	126.34
41	DA	3822	PSU	C4-N3-C2	-2.84	122.24	126.34
41	DA	2632	PSU	C6-C5-C4	2.83	120.18	118.20
41	DA	3867	A2M	C5-N7-C8	2.83	107.53	103.51
43	DC	69	PSU	C4-N3-C2	-2.83	122.26	126.34
43	DC	69	PSU	O4-C4-N3	-2.83	114.70	120.12
41	DA	4442	PSU	C4-N3-C2	-2.83	122.27	126.34
41	DA	1534	A2M	C6-C5-C4	2.82	120.98	117.18
41	DA	4392	OMG	C1'-N9-C4	-2.82	118.12	126.50
41	DA	3695	PSU	C4-N3-C2	-2.82	122.28	126.34
41	DA	2839	PSU	C4-N3-C2	-2.81	122.29	126.34
41	DA	4420	PSU	C4-N3-C2	-2.81	122.29	126.34
41	DA	1326	A2M	C6-C5-C4	2.80	120.95	117.18
41	DA	1323	A2M	C6-C5-C4	2.80	120.95	117.18
41	DA	4370	OMG	C1'-N9-C4	-2.80	118.18	126.50
41	DA	3899	OMG	C1'-N9-C8	2.79	134.64	126.70
41	DA	1871	A2M	C5-N7-C8	2.79	107.47	103.51
41	DA	3844	PSU	C4-N3-C2	-2.78	122.33	126.34
41	DA	1524	A2M	C4-C5-N7	-2.78	107.23	110.62
41	DA	4618	OMG	C1'-N9-C4	-2.78	118.24	126.50
41	DA	2632	PSU	C4-N3-C2	-2.78	122.34	126.34
41	DA	4500	PSU	C4-N3-C2	-2.78	122.34	126.34
41	DA	4523	A2M	C6-C5-C4	2.77	120.91	117.18
41	DA	4228	OMG	C2-N1-C6	-2.77	120.04	125.10
41	DA	2415	OMU	C4-N3-C2	-2.77	122.93	126.58
41	DA	3899	OMG	N9-C8-N7	-2.76	108.19	113.39
41	DA	1871	A2M	C4-N9-C8	2.75	108.71	105.73
41	DA	3744	OMG	N9-C8-N7	-2.75	108.21	113.39
41	DA	1522	OMG	N9-C8-N7	-2.75	108.21	113.39
41	DA	1677	PSU	C4-N3-C2	-2.75	122.38	126.34
41	DA	2363	A2M	C6-C5-C4	2.74	120.87	117.18
41	DA	3744	OMG	C1'-N9-C8	2.74	134.50	126.70
41	DA	2876	OMG	C5-C6-N1	2.74	120.14	113.19
41	DA	4618	OMG	C1'-N9-C8	2.73	134.47	126.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	DA	4442	PSU	O4-C4-N3	-2.73	114.88	120.12
41	DA	2401	A2M	C5-N7-C8	2.72	107.38	103.51
41	DA	2837	OMU	C4-N3-C2	-2.71	123.00	126.58
41	DA	4623	OMG	C1'-N9-C8	2.71	134.41	126.70
41	DA	4623	OMG	N9-C8-N7	-2.71	108.29	113.39
41	DA	4420	PSU	O4-C4-N3	-2.71	114.92	120.12
41	DA	3627	OMG	C1'-N9-C4	-2.71	118.47	126.50
41	DA	1522	OMG	C1'-N9-C8	2.71	134.40	126.70
41	DA	4447	5MC	CM5-C5-C6	-2.71	119.23	122.85
41	DA	4498	OMU	O4-C4-N3	-2.70	115.34	119.31
41	DA	3851	PSU	O4-C4-N3	-2.69	114.97	120.12
41	DA	2364	OMG	C5-C6-N1	2.67	119.98	113.19
41	DA	4392	OMG	N9-C8-N7	-2.67	108.36	113.39
41	DA	3669	OMG	CM2-O2'-C2'	2.67	121.52	114.52
41	DA	3867	A2M	C4-N9-C8	2.67	108.62	105.73
41	DA	398	A2M	C4-N9-C8	2.66	108.61	105.73
41	DA	5001	PSU	O4-C4-N3	-2.66	115.02	120.12
41	DA	4689	PSU	C4-N3-C2	-2.66	122.51	126.34
41	DA	4618	OMG	C5-C6-N1	2.66	119.94	113.19
41	DA	3925	OMU	C4-N3-C2	-2.66	123.08	126.58
41	DA	398	A2M	C1'-N9-C8	-2.65	121.15	127.14
41	DA	4227	OMU	C4-N3-C2	-2.65	123.09	126.58
41	DA	4392	OMG	C5-C6-N1	2.64	119.90	113.19
41	DA	3627	OMG	N9-C8-N7	-2.64	108.42	113.39
41	DA	4500	PSU	O4-C4-N3	-2.64	115.06	120.12
41	DA	1316	OMG	C1'-N9-C8	2.64	134.20	126.70
41	DA	4576	PSU	O4-C4-N3	-2.63	115.07	120.12
41	DA	3818	UY1	C6-N1-C2	-2.62	120.00	122.68
41	DA	3925	OMU	O4-C4-N3	-2.62	115.46	119.31
41	DA	4392	OMG	C1'-N9-C8	2.62	134.15	126.70
41	DA	3867	A2M	C4-N9-C1'	2.62	132.83	126.59
41	DA	3695	PSU	O4-C4-N3	-2.61	115.11	120.12
41	DA	4370	OMG	C1'-N9-C8	2.61	134.13	126.70
41	DA	4571	A2M	C6-C5-C4	2.61	120.69	117.18
41	DA	1322	1MA	N9-C4-N3	2.61	133.02	126.94
41	DA	4579	PSU	C4-N3-C2	-2.61	122.58	126.34
41	DA	4498	OMU	C4-N3-C2	-2.61	123.14	126.58
41	DA	1316	OMG	N9-C8-N7	-2.61	108.48	113.39
41	DA	4457	PSU	O4-C4-N3	-2.60	115.13	120.12
41	DA	2787	A2M	C6-C5-C4	2.60	120.68	117.18
41	DA	4227	OMU	O4-C4-N3	-2.60	115.49	119.31
41	DA	4571	A2M	C1'-N9-C8	-2.60	121.27	127.14

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	DA	400	A2M	C6-C5-C4	2.60	120.67	117.18
41	DA	3920	PSU	O4-C4-N3	-2.59	115.15	120.12
41	DA	3792	OMG	C5-C6-N1	2.59	119.76	113.19
41	DA	4637	OMG	C1'-N9-C4	-2.59	118.82	126.50
41	DA	2632	PSU	O4-C4-N3	-2.58	115.17	120.12
41	DA	3669	OMG	N9-C8-N7	-2.58	108.53	113.39
41	DA	1677	PSU	O4-C4-N3	-2.57	115.19	120.12
41	DA	4499	OMG	C5-C6-N1	2.57	119.72	113.19
41	DA	4637	OMG	N9-C8-N7	-2.57	108.55	113.39
41	DA	1524	A2M	C5-C4-N9	2.57	108.77	105.78
41	DA	3818	UY1	O2-C2-N1	-2.56	119.97	122.79
43	DC	75	OMG	C5-C6-N1	2.56	119.69	113.19
41	DA	4370	OMG	N9-C8-N7	-2.56	108.57	113.39
41	DA	398	A2M	C6-C5-C4	2.56	120.62	117.18
41	DA	2364	OMG	N9-C8-N7	-2.55	108.58	113.39
41	DA	2876	OMG	O6-C6-C5	-2.55	119.83	126.60
41	DA	4620	OMU	O4-C4-N3	-2.55	115.56	119.31
41	DA	1625	OMG	N9-C8-N7	-2.55	108.59	113.39
41	DA	2363	A2M	O4'-C1'-N9	-2.55	103.04	108.06
43	DC	75	OMG	N9-C8-N7	-2.55	108.59	113.39
41	DA	1524	A2M	C3'-C2'-C1'	2.55	107.68	102.89
41	DA	4532	PSU	O4-C4-N3	-2.55	115.23	120.12
41	DA	2839	PSU	O4-C4-N3	-2.54	115.25	120.12
41	DA	3844	PSU	O4-C4-N3	-2.54	115.25	120.12
41	DA	4196	OMG	C5-C6-N1	2.54	119.63	113.19
41	DA	4521	PSU	O4-C4-N3	-2.54	115.25	120.12
41	DA	4972	PSU	O4-C4-N3	-2.54	115.25	120.12
41	DA	398	A2M	O2'-C2'-C1'	2.53	114.02	109.08
41	DA	1625	OMG	O6-C6-C5	-2.53	119.89	126.60
41	DA	2424	OMG	N9-C8-N7	-2.53	108.63	113.39
41	DA	4689	PSU	O4-C4-N3	-2.53	115.27	120.12
41	DA	3627	OMG	C5-C6-N1	2.53	119.61	113.19
41	DA	1625	OMG	C5-C6-N1	2.52	119.60	113.19
41	DA	3669	OMG	C5-C6-N1	2.52	119.60	113.19
41	DA	4353	PSU	O4-C4-N3	-2.52	115.28	120.12
41	DA	4370	OMG	C5-C6-N1	2.52	119.59	113.19
41	DA	1781	PSU	O4-C4-N3	-2.52	115.29	120.12
41	DA	3627	OMG	C1'-N9-C8	2.52	133.87	126.70
41	DA	4571	A2M	CM'-O2'-C2'	2.52	121.13	114.52
41	DA	4494	OMG	C5-C6-N1	2.52	119.58	113.19
41	DA	4618	OMG	O6-C6-C5	-2.52	119.92	126.60
41	DA	5001	PSU	C6-C5-C4	2.51	119.96	118.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	DA	4620	OMU	C4-N3-C2	-2.51	123.27	126.58
41	DA	4228	OMG	C5-C6-N1	2.51	119.56	113.19
41	DA	1792	PSU	O4-C4-N3	-2.50	115.31	120.12
43	DC	55	PSU	O4-C4-N3	-2.50	115.32	120.12
41	DA	4471	PSU	O4-C4-N3	-2.50	115.32	120.12
41	DA	2815	A2M	C2'-C1'-N9	-2.50	109.32	113.53
41	DA	1316	OMG	C5-C6-N1	2.50	119.53	113.19
41	DA	4493	PSU	O4-C4-N3	-2.50	115.33	120.12
41	DA	4312	PSU	O4-C4-N3	-2.49	115.33	120.12
41	DA	4628	PSU	O4-C4-N3	-2.49	115.33	120.12
41	DA	2401	A2M	C4-N9-C1'	2.49	132.54	126.59
41	DA	2876	OMG	N9-C8-N7	-2.49	108.69	113.39
41	DA	1326	A2M	O4'-C1'-N9	-2.49	103.16	108.06
41	DA	224	PSU	O4-C4-N3	-2.49	115.35	120.12
41	DA	3669	OMG	C1'-N9-C4	-2.49	119.12	126.50
41	DA	4370	OMG	O6-C6-C5	-2.49	120.01	126.60
41	DA	4673	PSU	O4-C4-N3	-2.48	115.36	120.12
41	DA	3718	A2M	C5-N7-C8	2.48	107.04	103.51
41	DA	4220	6MZ	C5-N7-C8	2.48	107.04	103.51
41	DA	1524	A2M	C2'-C1'-N9	-2.48	109.36	113.53
41	DA	3744	OMG	C5-C6-N1	2.48	119.48	113.19
41	DA	4579	PSU	O4-C4-N3	-2.48	115.37	120.12
41	DA	2424	OMG	C5-C6-N1	2.48	119.48	113.19
41	DA	4423	PSU	O4-C4-N3	-2.48	115.37	120.12
41	DA	4196	OMG	O6-C6-C5	-2.48	120.03	126.60
41	DA	3792	OMG	O6-C6-C5	-2.48	120.03	126.60
41	DA	4494	OMG	N9-C8-N7	-2.48	108.73	113.39
41	DA	1522	OMG	C5-C6-N1	2.47	119.47	113.19
41	DA	4296	PSU	O4-C4-N3	-2.47	115.38	120.12
41	DA	1536	PSU	O4-C4-N3	-2.47	115.38	120.12
41	DA	3792	OMG	N9-C8-N7	-2.47	108.75	113.39
41	DA	1779	PSU	O4-C4-N3	-2.47	115.39	120.12
41	DA	2364	OMG	O6-C6-C5	-2.46	120.06	126.60
41	DA	1871	A2M	C1'-N9-C8	-2.46	121.57	127.14
41	DA	4403	PSU	O4-C4-N3	-2.46	115.39	120.12
41	DA	4499	OMG	N9-C8-N7	-2.46	108.76	113.39
41	DA	4494	OMG	O6-C6-C5	-2.46	120.08	126.60
41	DA	1862	PSU	O4-C4-N3	-2.45	115.42	120.12
41	DA	1782	PSU	O4-C4-N3	-2.44	115.43	120.12
41	DA	4618	OMG	N9-C8-N7	-2.44	108.79	113.39
41	DA	3899	OMG	C5-C6-N1	2.44	119.39	113.19
41	DA	2424	OMG	C1'-N9-C4	-2.44	119.25	126.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	DA	1323	A2M	C4-N9-C8	2.44	108.37	105.73
41	DA	4228	OMG	N9-C4-N3	2.44	130.83	125.94
41	DA	4299	PSU	O4-C4-N3	-2.43	115.46	120.12
41	DA	4637	OMG	C1'-N9-C8	2.42	133.59	126.70
41	DA	1683	PSU	O4-C4-N3	-2.42	115.48	120.12
41	DA	3627	OMG	O6-C6-C5	-2.41	120.20	126.60
41	DA	4361	PSU	O4-C4-N3	-2.41	115.49	120.12
41	DA	2876	OMG	C1'-N9-C4	-2.40	119.37	126.50
41	DA	4293	PSU	O4-C4-N3	-2.40	115.51	120.12
41	DA	2351	OMC	C1'-N1-C2	2.40	123.78	118.42
41	DA	1326	A2M	C4-N9-C1'	2.40	132.31	126.59
41	DA	4431	PSU	O4-C4-N3	-2.39	115.53	120.12
41	DA	4499	OMG	O6-C6-C5	-2.39	120.26	126.60
41	DA	2815	A2M	C6-C5-C4	2.39	120.39	117.18
41	DA	1316	OMG	O6-C6-C5	-2.39	120.27	126.60
41	DA	2364	OMG	C1'-N9-C4	-2.38	119.43	126.50
41	DA	2837	OMU	O4-C4-N3	-2.38	115.81	119.31
41	DA	4571	A2M	O4'-C1'-N9	-2.37	103.38	108.06
41	DA	4530	UR3	C6-N1-C2	-2.37	119.67	121.79
41	DA	3744	OMG	O6-C6-C5	-2.37	120.31	126.60
41	DA	3884	PSU	O4-C4-N3	-2.37	115.58	120.12
41	DA	2363	A2M	C4-N9-C1'	2.37	132.23	126.59
41	DA	3715	PSU	O4-C4-N3	-2.36	115.58	120.12
41	DA	2508	PSU	O4-C4-N3	-2.36	115.59	120.12
41	DA	4228	OMG	O6-C6-C5	-2.36	120.34	126.60
41	DA	3792	OMG	C1'-N9-C4	-2.36	119.49	126.50
41	DA	4196	OMG	N9-C8-N7	-2.36	108.95	113.39
41	DA	2415	OMU	O4-C4-N3	-2.36	115.84	119.31
41	DA	4623	OMG	C5-C6-N1	2.36	119.17	113.19
41	DA	1522	OMG	O6-C6-C5	-2.35	120.36	126.60
41	DA	4637	OMG	C5-C6-N1	2.35	119.15	113.19
41	DA	3669	OMG	O6-C6-C5	-2.34	120.38	126.60
43	DC	75	OMG	O6-C6-C5	-2.34	120.39	126.60
41	DA	4220	6MZ	C3'-C2'-C1'	2.34	105.87	101.43
41	DA	1860	PSU	O4-C4-N3	-2.33	115.65	120.12
41	DA	4571	A2M	C3'-C2'-C1'	2.33	107.27	102.89
41	DA	3830	A2M	C1'-N9-C8	-2.33	121.88	127.14
41	DA	3669	OMG	C1'-N9-C8	2.32	133.31	126.70
41	DA	2815	A2M	C1'-N9-C8	-2.32	121.89	127.14
41	DA	1744	PSU	O4-C4-N3	-2.32	115.67	120.12
41	DA	3637	PSU	O4-C4-N3	-2.32	115.67	120.12
41	DA	3718	A2M	C4-N9-C1'	2.32	132.11	126.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	DA	4576	PSU	C6-C5-C4	2.31	119.81	118.20
41	DA	4552	PSU	O4-C4-N3	-2.30	115.70	120.12
41	DA	3785	A2M	O2'-C2'-C1'	2.30	113.57	109.08
41	DA	2424	OMG	O6-C6-C5	-2.30	120.50	126.60
41	DA	2424	OMG	C1'-N9-C8	2.30	133.24	126.70
41	DA	1859	B8T	C4-N3-C2	-2.30	116.99	120.12
41	DA	2876	OMG	C1'-N9-C8	2.29	133.22	126.70
41	DA	1625	OMG	C1'-N9-C4	-2.29	119.71	126.50
41	DA	4392	OMG	O6-C6-C5	-2.28	120.56	126.60
41	DA	3792	OMG	C1'-N9-C8	2.28	133.18	126.70
41	DA	4220	6MZ	C1'-N9-C8	-2.27	122.00	127.14
41	DA	1534	A2M	C4-C5-N7	-2.27	107.85	110.62
41	DA	2815	A2M	O2'-C2'-C1'	2.27	113.50	109.08
41	DA	3639	PSU	O4-C4-N3	-2.26	115.78	120.12
41	DA	3830	A2M	C6-C5-C4	2.26	120.22	117.18
41	DA	1322	1MA	C8-N7-C5	2.26	108.32	104.24
41	DA	4494	OMG	C1'-N9-C4	-2.25	119.82	126.50
41	DA	1871	A2M	C6-C5-C4	2.24	120.19	117.18
41	DA	4618	OMG	N2-C2-N1	2.23	121.46	116.71
41	DA	2364	OMG	C1'-N9-C8	2.22	133.02	126.70
41	DA	4306	OMU	C6-C5-C4	2.22	122.55	119.52
41	DA	2815	A2M	C4-N9-C8	2.22	108.13	105.73
41	DA	3899	OMG	O6-C6-C5	-2.21	120.73	126.60
41	DA	2815	A2M	C4-C5-N7	-2.21	107.92	110.62
41	DA	4457	PSU	C6-C5-C4	2.20	119.74	118.20
41	DA	3867	A2M	CM'-O2'-C2'	2.20	120.30	114.52
41	DA	2401	A2M	C4-N9-C8	2.20	108.11	105.73
41	DA	2415	OMU	C6-C5-C4	2.18	122.50	119.52
41	DA	4637	OMG	O6-C6-C5	-2.17	120.84	126.60
41	DA	4623	OMG	O6-C6-C5	-2.17	120.85	126.60
41	DA	4498	OMU	C6-C5-C4	2.16	122.47	119.52
41	DA	3718	A2M	O2'-C2'-C1'	2.16	113.29	109.08
41	DA	4623	OMG	C8-N7-C5	2.16	108.14	104.24
41	DA	2837	OMU	C6-C5-C4	2.16	122.46	119.52
41	DA	4227	OMU	C6-C5-C4	2.15	122.45	119.52
41	DA	4571	A2M	C2'-C3'-C4'	2.15	106.67	101.99
41	DA	1326	A2M	C4-N9-C8	2.15	108.06	105.73
41	DA	4571	A2M	C5'-C4'-C3'	-2.15	107.13	115.18
41	DA	3785	A2M	C6-C5-C4	2.14	120.06	117.18
41	DA	3899	OMG	C8-N7-C5	2.14	108.11	104.24
41	DA	3785	A2M	C4-C5-N7	-2.13	108.02	110.62
41	DA	4228	OMG	C8-N7-C5	2.13	108.09	104.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	DA	4498	OMU	O4-C4-C5	2.13	128.90	125.16
41	DA	3925	OMU	C6-C5-C4	2.13	122.42	119.52
41	DA	3818	UY1	O4'-C1'-C2'	2.13	108.43	104.48
41	DA	3825	A2M	C4-N9-C1'	2.12	131.64	126.59
41	DA	2363	A2M	C4-C5-N7	-2.12	108.04	110.62
41	DA	1323	A2M	O4'-C1'-N9	-2.11	103.91	108.06
41	DA	1522	OMG	C8-N7-C5	2.10	108.05	104.24
41	DA	4499	OMG	C8-N7-C5	2.10	108.04	104.24
41	DA	4571	A2M	C4-C5-N7	-2.10	108.06	110.62
41	DA	4494	OMG	C1'-N9-C8	2.10	132.66	126.70
41	DA	4227	OMU	O4-C4-C5	2.09	128.84	125.16
41	DA	1625	OMG	C1'-N9-C8	2.09	132.65	126.70
41	DA	3627	OMG	C8-N7-C5	2.08	108.01	104.24
41	DA	3637	PSU	O4'-C1'-C2'	2.08	108.08	105.14
41	DA	2815	A2M	C3'-C2'-C1'	2.08	106.80	102.89
41	DA	2401	A2M	O4'-C1'-N9	-2.08	103.97	108.06
41	DA	3830	A2M	C4-C5-N7	-2.07	108.09	110.62
41	DA	4392	OMG	C8-N7-C5	2.07	107.99	104.24
41	DA	3669	OMG	C8-N7-C5	2.07	107.99	104.24
41	DA	1323	A2M	C4-N9-C1'	2.07	131.52	126.59
41	DA	4620	OMU	O4-C4-C5	2.06	128.79	125.16
41	DA	4571	A2M	C4-N9-C8	2.06	107.96	105.73
41	DA	398	A2M	C4-C5-N7	-2.06	108.11	110.62
41	DA	4637	OMG	C8-N7-C5	2.05	107.96	104.24
41	DA	3782	5MC	CM5-C5-C6	-2.05	120.11	122.85
41	DA	3822	PSU	O4'-C1'-C2'	2.05	108.04	105.14
41	DA	4306	OMU	O4-C4-N3	-2.05	116.30	119.31
41	DA	3785	A2M	O4'-C1'-N9	2.04	112.08	108.06
41	DA	2424	OMG	C8-N7-C5	2.03	107.91	104.24
41	DA	4620	OMU	C6-C5-C4	2.02	122.28	119.52
41	DA	3867	A2M	O4'-C1'-N9	-2.02	104.08	108.06
41	DA	3925	OMU	O4-C4-C5	2.02	128.71	125.16
41	DA	3744	OMG	C8-N7-C5	2.00	107.86	104.24
41	DA	2351	OMC	O2-C2-N3	-2.00	119.08	122.33

There are no chirality outliers.

All (75) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
33	Ag	98	MLZ	O-C-CA-CB
37	BA	245	HIC	O-C-CA-CB
44	DD	216	V5N	O-C-CA-CB

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Mol	Chain	Res	Type	Atoms
41	DA	224	PSU	C2'-C1'-C5-C4
41	DA	398	A2M	C1'-C2'-O2'-CM'
41	DA	400	A2M	C1'-C2'-O2'-CM'
41	DA	1323	A2M	C1'-C2'-O2'-CM'
41	DA	2815	A2M	C1'-C2'-O2'-CM'
41	DA	3669	OMG	C1'-C2'-O2'-CM2
41	DA	3701	OMC	C2'-C1'-N1-C2
41	DA	3701	OMC	C2'-C1'-N1-C6
41	DA	3718	A2M	C1'-C2'-O2'-CM'
41	DA	3792	OMG	O4'-C4'-C5'-O5'
41	DA	3825	A2M	C1'-C2'-O2'-CM'
41	DA	3830	A2M	C1'-C2'-O2'-CM'
41	DA	3867	A2M	C1'-C2'-O2'-CM'
41	DA	4420	PSU	C2'-C1'-C5-C4
41	DA	4420	PSU	O4'-C1'-C5-C4
41	DA	4420	PSU	O4'-C1'-C5-C6
41	DA	4500	PSU	O4'-C1'-C5-C4
41	DA	4500	PSU	O4'-C1'-C5-C6
41	DA	4523	A2M	C1'-C2'-O2'-CM'
41	DA	4530	UR3	O4'-C1'-N1-C6
41	DA	4530	UR3	O4'-C1'-N1-C2
41	DA	4571	A2M	C1'-C2'-O2'-CM'
41	DA	4637	OMG	C1'-C2'-O2'-CM2
41	DA	3785	A2M	O4'-C4'-C5'-O5'
41	DA	3785	A2M	C3'-C4'-C5'-O5'
41	DA	3792	OMG	C3'-C4'-C5'-O5'
41	DA	1323	A2M	O4'-C4'-C5'-O5'
41	DA	3669	OMG	C3'-C2'-O2'-CM2
41	DA	3867	A2M	C3'-C4'-C5'-O5'
41	DA	3818	UY1	C4'-C5'-O5'-P
41	DA	2422	OMC	O4'-C4'-C5'-O5'
41	DA	3867	A2M	O4'-C4'-C5'-O5'
41	DA	2401	A2M	C3'-C4'-C5'-O5'
41	DA	2787	A2M	C2'-C1'-N9-C8
41	DA	2422	OMC	C3'-C4'-C5'-O5'
41	DA	2401	A2M	O4'-C4'-C5'-O5'
41	DA	4447	5MC	C2'-C1'-N1-C6
41	DA	1534	A2M	C4'-C5'-O5'-P
41	DA	4500	PSU	C4'-C5'-O5'-P
41	DA	1534	A2M	C3'-C2'-O2'-CM'
41	DA	4370	OMG	C3'-C2'-O2'-CM2
41	DA	4498	OMU	C3'-C2'-O2'-CM2

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Mol	Chain	Res	Type	Atoms
41	DA	4447	5MC	O4'-C1'-N1-C6
41	DA	1326	A2M	C4'-C5'-O5'-P
41	DA	398	A2M	O4'-C4'-C5'-O5'
41	DA	2787	A2M	C2'-C1'-N9-C4
41	DA	3844	PSU	C4'-C5'-O5'-P
41	DA	3701	OMC	O4'-C1'-N1-C6
21	AU	39	V5N	O2-CB-CG-CD2
41	DA	2876	OMG	C3'-C2'-O2'-CM2
41	DA	2351	OMC	C2'-C1'-N1-C2
21	AU	39	V5N	O2-CB-CG-ND1
41	DA	2351	OMC	C2'-C1'-N1-C6
41	DA	3701	OMC	O4'-C1'-N1-C2
41	DA	4447	5MC	O4'-C1'-N1-C2
41	DA	4521	PSU	O4'-C1'-C5-C4
41	DA	4494	OMG	C3'-C2'-O2'-CM2
41	DA	2787	A2M	O4'-C1'-N9-C8
33	Ag	98	MLZ	CD-CE-NZ-CM
41	DA	1524	A2M	O4'-C1'-N9-C8
41	DA	1323	A2M	C3'-C4'-C5'-O5'
41	DA	3744	OMG	C1'-C2'-O2'-CM2
41	DA	1534	A2M	O4'-C4'-C5'-O5'
41	DA	1781	PSU	C3'-C4'-C5'-O5'
41	DA	2351	OMC	O4'-C4'-C5'-O5'
41	DA	1322	1MA	C2'-C1'-N9-C8
41	DA	224	PSU	O4'-C1'-C5-C6
41	DA	4447	5MC	C2'-C1'-N1-C2
41	DA	224	PSU	C4'-C5'-O5'-P
41	DA	1859	B8T	C2'-C1'-N1-C2
41	DA	2351	OMC	C3'-C2'-O2'-CM2
41	DA	3785	A2M	C2'-C1'-N9-C8

There are no ring outliers.

44 monomers are involved in 62 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
41	DA	4498	OMU	3	0
41	DA	4552	PSU	1	0
41	DA	3782	5MC	1	0
41	DA	2351	OMC	1	0
41	DA	4673	PSU	1	0
41	DA	4637	OMG	1	0
41	DA	4620	OMU	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
41	DA	1859	B8T	3	0
41	DA	3744	OMG	1	0
41	DA	3785	A2M	2	0
41	DA	3808	OMC	1	0
41	DA	1534	A2M	1	0
41	DA	4579	PSU	1	0
41	DA	2632	PSU	1	0
41	DA	2424	OMG	1	0
41	DA	4306	OMU	1	0
41	DA	1871	A2M	1	0
41	DA	4689	PSU	1	0
41	DA	4196	OMG	1	0
41	DA	2815	A2M	2	0
41	DA	4972	PSU	1	0
41	DA	4447	5MC	2	0
37	BA	245	HIC	1	0
41	DA	3869	OMC	1	0
41	DA	4499	OMG	3	0
41	DA	1323	A2M	1	0
41	DA	3925	OMU	1	0
41	DA	1322	1MA	1	0
41	DA	1326	A2M	4	0
41	DA	4392	OMG	1	0
41	DA	1860	PSU	1	0
41	DA	3792	OMG	1	0
41	DA	3825	A2M	3	0
41	DA	3669	OMG	1	0
41	DA	4456	OMC	1	0
41	DA	1524	A2M	1	0
41	DA	2415	OMU	1	0
41	DA	1340	OMC	2	0
41	DA	4500	PSU	1	0
41	DA	3718	A2M	5	0
41	DA	2837	OMU	1	0
41	DA	4536	OMC	4	0
41	DA	3867	A2M	2	0
41	DA	2876	OMG	1	0

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 248 ligands modelled in this entry, 234 are monoatomic - leaving 14 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
49	SPD	DA	5105	-	9,9,9	0.66	0	8,8,8	1.42	1 (12%)
50	SPM	DA	5111	-	13,13,13	0.55	0	12,12,12	0.93	0
48	PUT	DA	5101	-	5,5,5	0.19	0	4,4,4	0.43	0
51	ATP	DA	5112	-	29,33,33	0.32	0	44,52,52	0.87	3 (6%)
52	A1JQ4	DA	5324	46	27,27,27	2.83	9 (33%)	37,46,46	3.28	16 (43%)
49	SPD	DA	5104	-	9,9,9	0.84	0	8,8,8	1.37	1 (12%)
48	PUT	DB	10000	-	5,5,5	0.28	0	4,4,4	0.34	0
48	PUT	DA	5103	-	5,5,5	0.21	0	4,4,4	0.37	0
49	SPD	DA	5106	-	9,9,9	0.47	0	8,8,8	1.52	1 (12%)
50	SPM	DA	5109	-	13,13,13	0.61	0	12,12,12	0.89	0
50	SPM	DA	5108	-	13,13,13	0.61	0	12,12,12	0.86	0
50	SPM	DA	5110	-	13,13,13	0.54	0	12,12,12	0.97	0
48	PUT	DA	5102	-	5,5,5	0.26	0	4,4,4	0.29	0
49	SPD	DA	5107	-	9,9,9	0.42	0	8,8,8	1.35	1 (12%)

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
49	SPD	DA	5105	-	-	3/7/7/7	-
50	SPM	DA	5111	-	-	8/11/11/11	-
48	PUT	DA	5101	-	-	0/3/3/3	-
51	ATP	DA	5112	-	-	10/22/38/38	0/3/3/3
52	A1JQ4	DA	5324	46	-	6/7/72/72	0/5/4/4
49	SPD	DA	5104	-	-	3/7/7/7	-
48	PUT	DB	10000	-	-	1/3/3/3	-
48	PUT	DA	5103	-	-	1/3/3/3	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
49	SPD	DA	5106	-	-	6/7/7/7	-
50	SPM	DA	5109	-	-	1/11/11/11	-
50	SPM	DA	5108	-	-	1/11/11/11	-
50	SPM	DA	5110	-	-	2/11/11/11	-
48	PUT	DA	5102	-	-	1/3/3/3	-
49	SPD	DA	5107	-	-	6/7/7/7	-

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
52	DA	5324	A1JQ4	C09-C10	11.19	1.70	1.55
52	DA	5324	A1JQ4	C07-C02	4.11	1.54	1.51
52	DA	5324	A1JQ4	O16-C04	3.67	1.50	1.45
52	DA	5324	A1JQ4	O18-C19	3.30	1.42	1.35
52	DA	5324	A1JQ4	C23-C05	3.14	1.58	1.54
52	DA	5324	A1JQ4	C06-C07	2.75	1.57	1.52
52	DA	5324	A1JQ4	C03-C02	2.56	1.36	1.33
52	DA	5324	A1JQ4	C04-C03	-2.25	1.46	1.49
52	DA	5324	A1JQ4	C05-C09	-2.16	1.56	1.59

All (23) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
52	DA	5324	A1JQ4	O15-C13-C09	11.13	132.96	118.00
52	DA	5324	A1JQ4	O15-C13-C12	-7.79	100.79	115.59
52	DA	5324	A1JQ4	C13-C09-C05	5.66	110.28	106.90
52	DA	5324	A1JQ4	C14-C13-C09	5.30	137.16	127.57
52	DA	5324	A1JQ4	C01-C02-C07	4.73	119.22	115.93
52	DA	5324	A1JQ4	C23-C05-C09	-4.66	108.46	112.63
52	DA	5324	A1JQ4	C05-C04-C03	4.19	117.20	113.33
49	DA	5106	SPD	C4-C5-N6	3.71	122.14	112.14
52	DA	5324	A1JQ4	C10-O18-C19	3.38	122.75	117.81
49	DA	5105	SPD	C4-C5-N6	3.29	121.01	112.14
49	DA	5104	SPD	C4-C5-N6	3.18	120.72	112.14
49	DA	5107	SPD	C4-C5-N6	3.14	120.60	112.14
52	DA	5324	A1JQ4	O16-C04-C05	3.10	116.48	112.54
52	DA	5324	A1JQ4	C01-C02-C03	-2.92	117.31	123.56
52	DA	5324	A1JQ4	C23-C05-C04	2.89	112.59	105.80
52	DA	5324	A1JQ4	C09-C05-C04	-2.80	107.03	109.28
52	DA	5324	A1JQ4	O18-C19-C21	2.69	116.03	111.09
51	DA	5112	ATP	O2'-C2'-C1'	-2.45	101.81	110.02

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
52	DA	5324	A1JQ4	O15-C13-C14	-2.35	57.68	59.74
52	DA	5324	A1JQ4	O18-C19-O20	-2.28	118.44	122.96
51	DA	5112	ATP	O3'-C3'-C4'	-2.19	104.71	111.05
52	DA	5324	A1JQ4	C22-C09-C10	-2.14	108.63	112.12
51	DA	5112	ATP	PB-O3B-PG	2.13	140.13	132.83

There are no chirality outliers.

All (49) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
49	DA	5105	SPD	C8-C7-N6-C5
49	DA	5106	SPD	C4-C5-N6-C7
49	DA	5107	SPD	C4-C5-N6-C7
51	DA	5112	ATP	C5'-O5'-PA-O2A
51	DA	5112	ATP	O4'-C1'-N9-C8
51	DA	5112	ATP	O4'-C1'-N9-C4
52	DA	5324	A1JQ4	C04-C05-C23-O24
52	DA	5324	A1JQ4	C06-C05-C23-O24
52	DA	5324	A1JQ4	C09-C05-C23-O24
49	DA	5106	SPD	N6-C7-C8-C9
50	DA	5110	SPM	C2-C3-C4-N5
50	DA	5111	SPM	N10-C11-C12-C13
49	DA	5107	SPD	C3-C4-C5-N6
49	DA	5106	SPD	C3-C4-C5-N6
51	DA	5112	ATP	O4'-C4'-C5'-O5'
51	DA	5112	ATP	C3'-C4'-C5'-O5'
50	DA	5111	SPM	C2-C3-C4-N5
50	DA	5111	SPM	C12-C11-N10-C9
52	DA	5324	A1JQ4	C21-C19-O18-C10
49	DA	5105	SPD	C3-C4-C5-N6
49	DA	5104	SPD	N6-C7-C8-C9
49	DA	5107	SPD	N6-C7-C8-C9
49	DA	5106	SPD	C8-C7-N6-C5
49	DA	5107	SPD	C7-C8-C9-N10
49	DA	5104	SPD	C3-C4-C5-N6
48	DB	10000	PUT	C1-C2-C3-C4
49	DA	5106	SPD	C2-C3-C4-C5
50	DA	5111	SPM	C7-C6-N5-C4
52	DA	5324	A1JQ4	O20-C19-O18-C10
52	DA	5324	A1JQ4	C09-C10-O18-C19
50	DA	5111	SPM	N1-C2-C3-C4
50	DA	5111	SPM	C11-C12-C13-N14

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Mol	Chain	Res	Type	Atoms
51	DA	5112	ATP	C5'-O5'-PA-O3A
49	DA	5104	SPD	C8-C7-N6-C5
48	DA	5103	PUT	C1-C2-C3-C4
51	DA	5112	ATP	C5'-O5'-PA-O1A
48	DA	5102	PUT	C1-C2-C3-C4
51	DA	5112	ATP	PA-O3A-PB-O1B
50	DA	5109	SPM	N5-C6-C7-C8
50	DA	5111	SPM	C8-C9-N10-C11
49	DA	5105	SPD	N6-C7-C8-C9
49	DA	5107	SPD	C8-C7-N6-C5
50	DA	5110	SPM	N5-C6-C7-C8
49	DA	5107	SPD	C2-C3-C4-C5
49	DA	5106	SPD	C7-C8-C9-N10
50	DA	5108	SPM	C3-C4-N5-C6
50	DA	5111	SPM	C3-C4-N5-C6
51	DA	5112	ATP	PA-O3A-PB-O2B
51	DA	5112	ATP	PB-O3A-PA-O2A

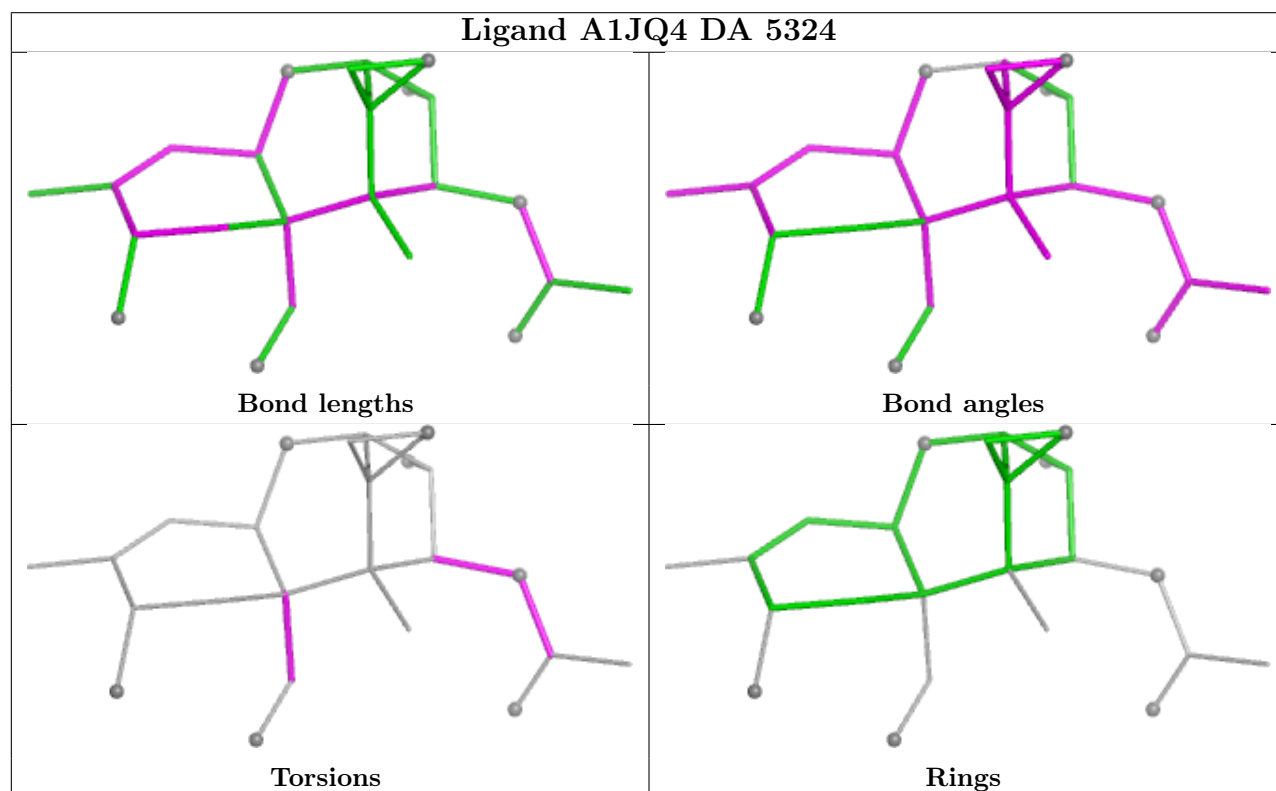
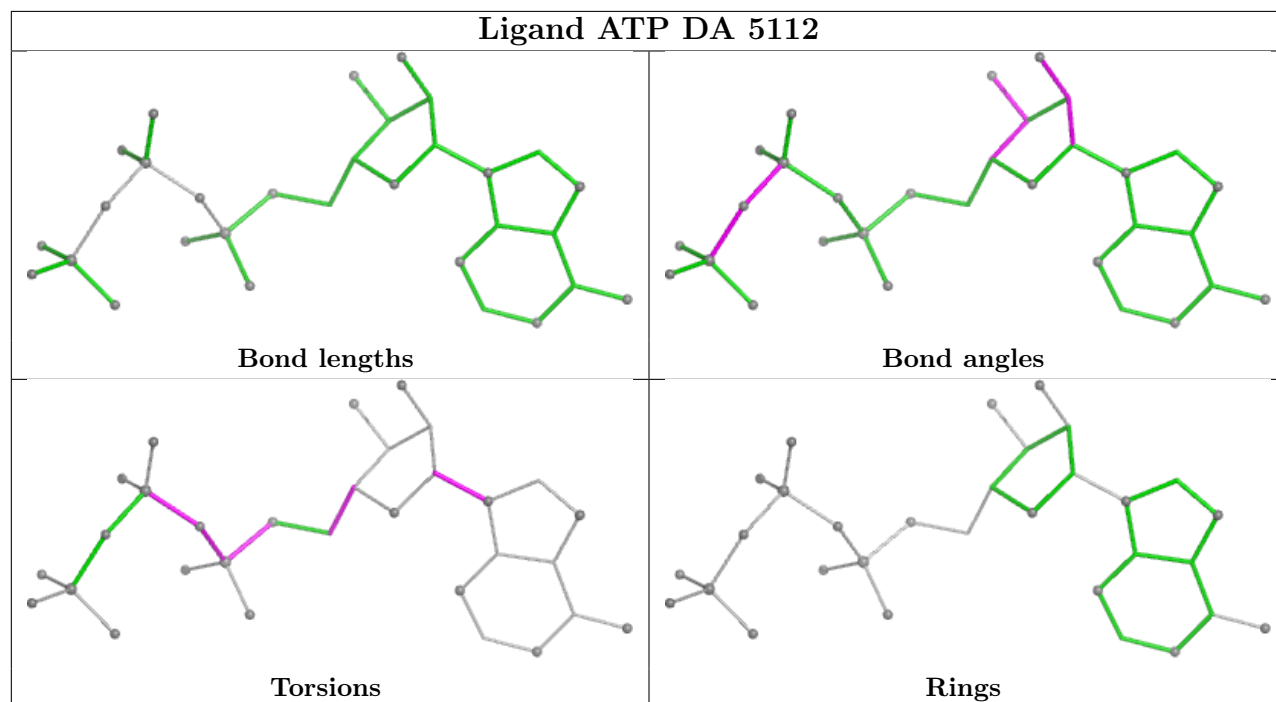
There are no ring outliers.

10 monomers are involved in 48 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
49	DA	5105	SPD	1	0
50	DA	5111	SPM	8	0
48	DA	5101	PUT	4	0
51	DA	5112	ATP	2	0
49	DA	5104	SPD	1	0
48	DA	5103	PUT	4	0
49	DA	5106	SPD	4	0
50	DA	5108	SPM	1	0
48	DA	5102	PUT	6	0
49	DA	5107	SPD	17	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and

any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



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.

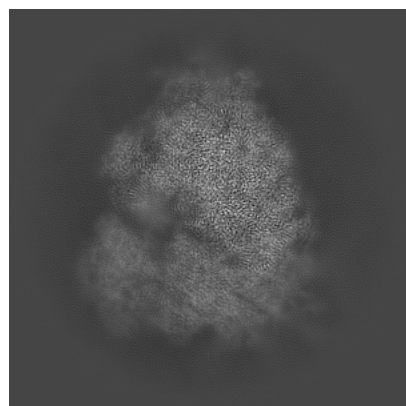
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-57202. These allow visual inspection of the internal detail of the map and identification of artifacts.

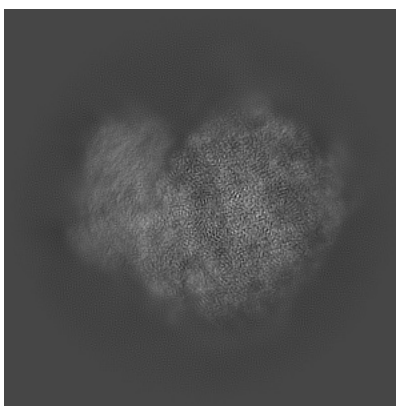
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

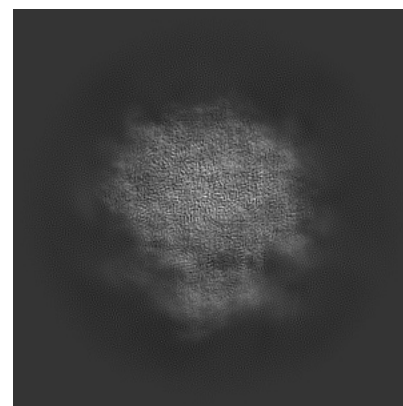
6.1.1 Primary map



X

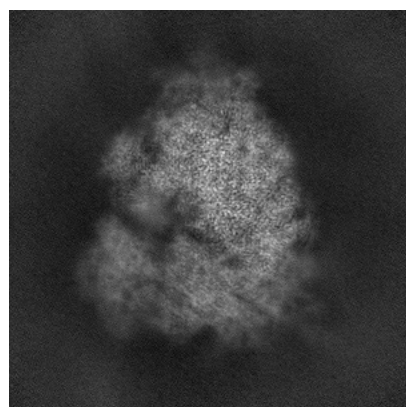


Y

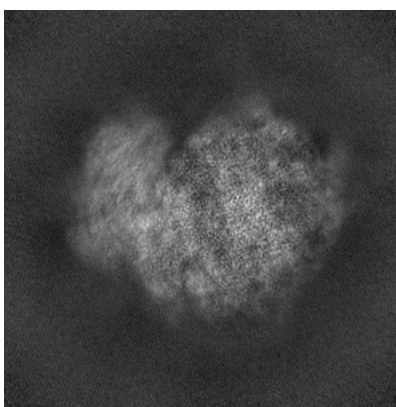


Z

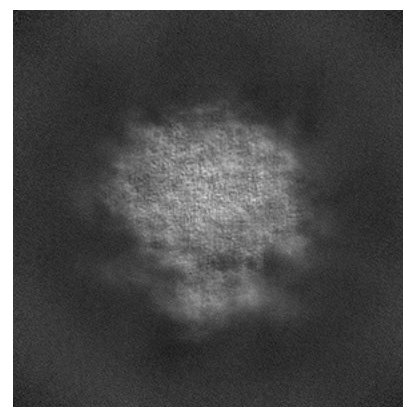
6.1.2 Raw map



X



Y

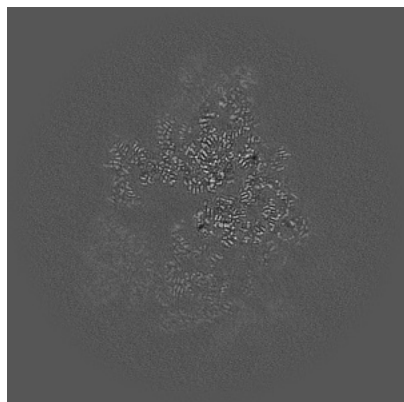


Z

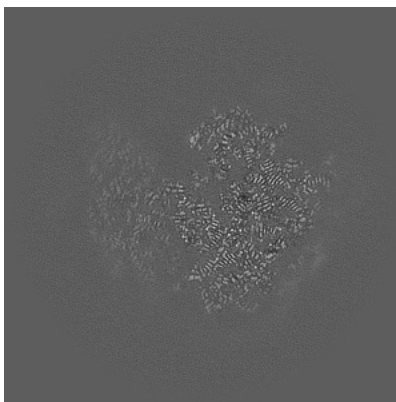
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

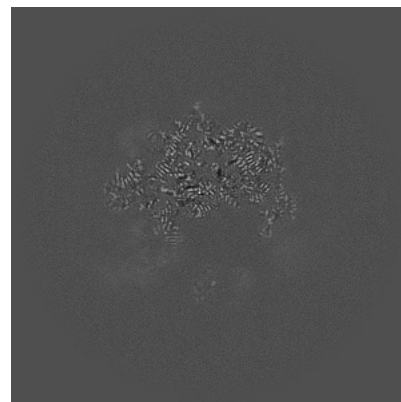
6.2.1 Primary map



X Index: 320

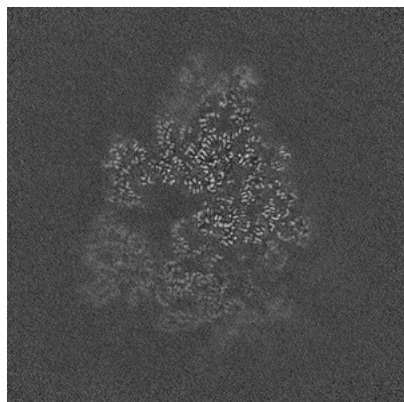


Y Index: 320

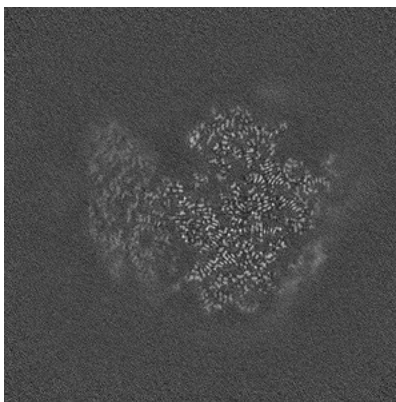


Z Index: 320

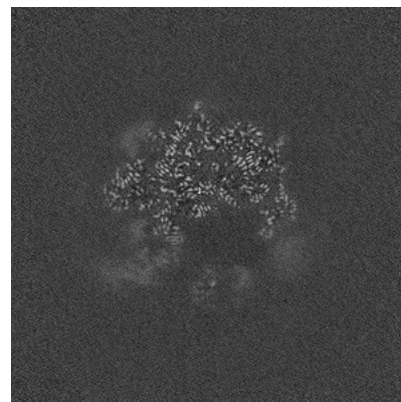
6.2.2 Raw map



X Index: 320



Y Index: 320

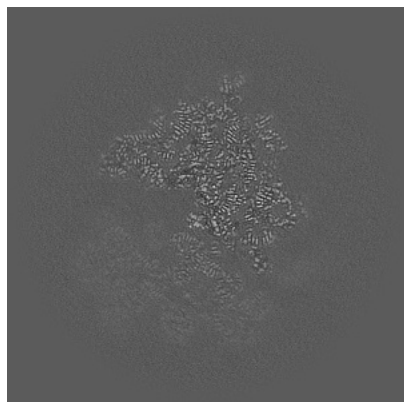


Z Index: 320

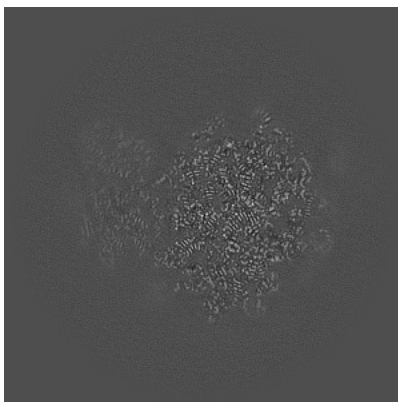
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

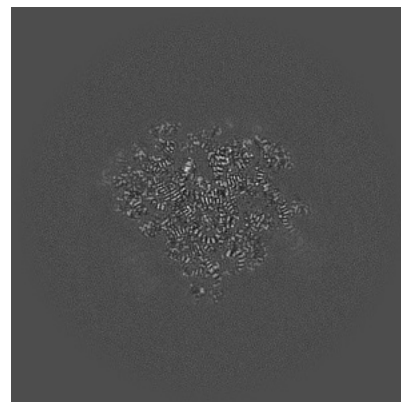
6.3.1 Primary map



X Index: 286

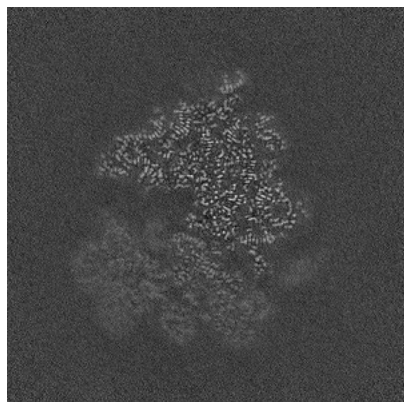


Y Index: 339

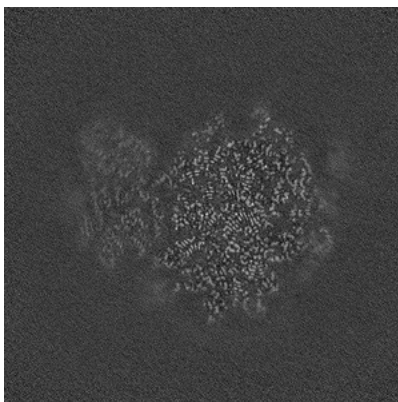


Z Index: 365

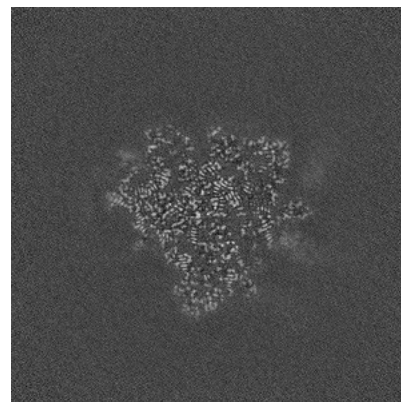
6.3.2 Raw map



X Index: 285



Y Index: 339

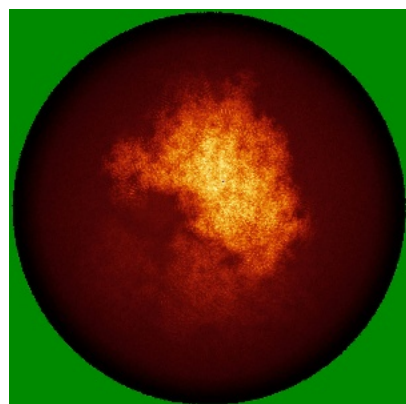


Z Index: 386

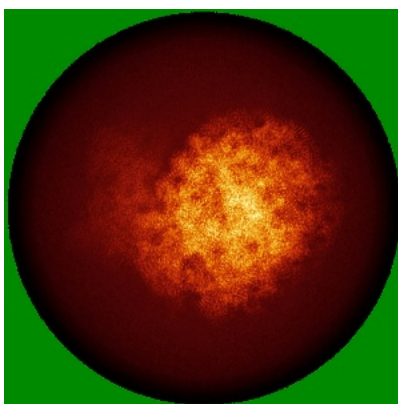
The images above show the largest variance slices of the map in three orthogonal directions.

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

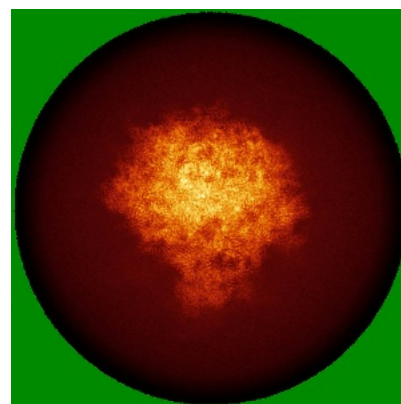
6.4.1 Primary map



X

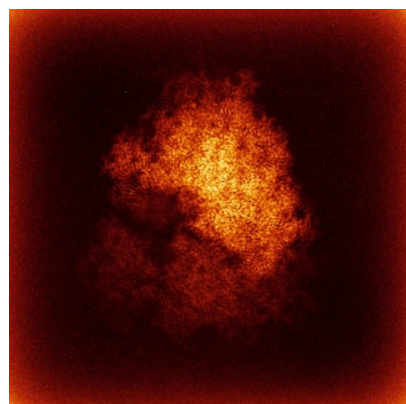


Y

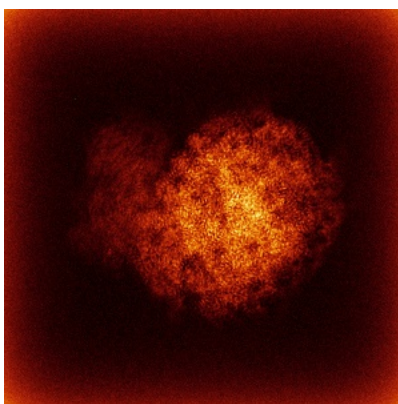


Z

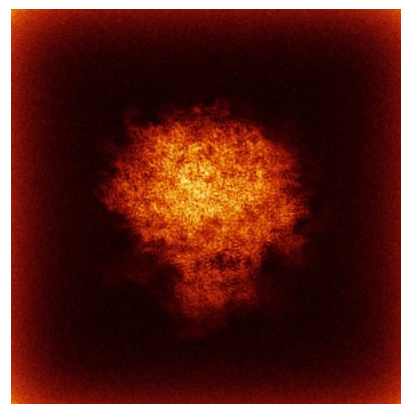
6.4.2 Raw map



X



Y



Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



X



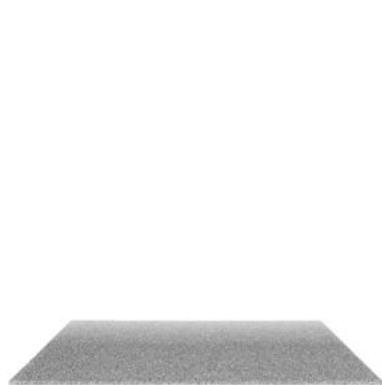
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.005. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X



Y



Z

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

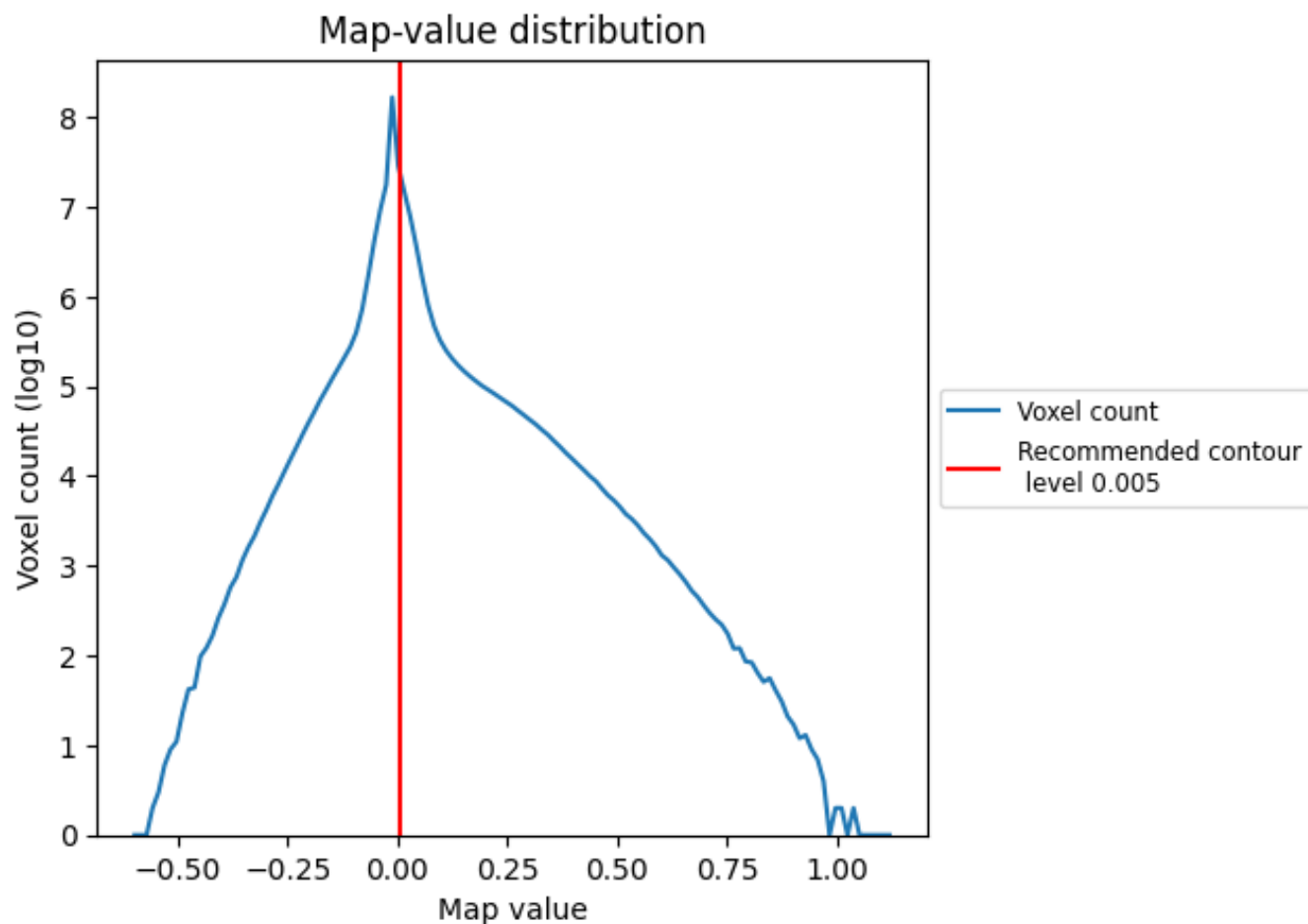
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

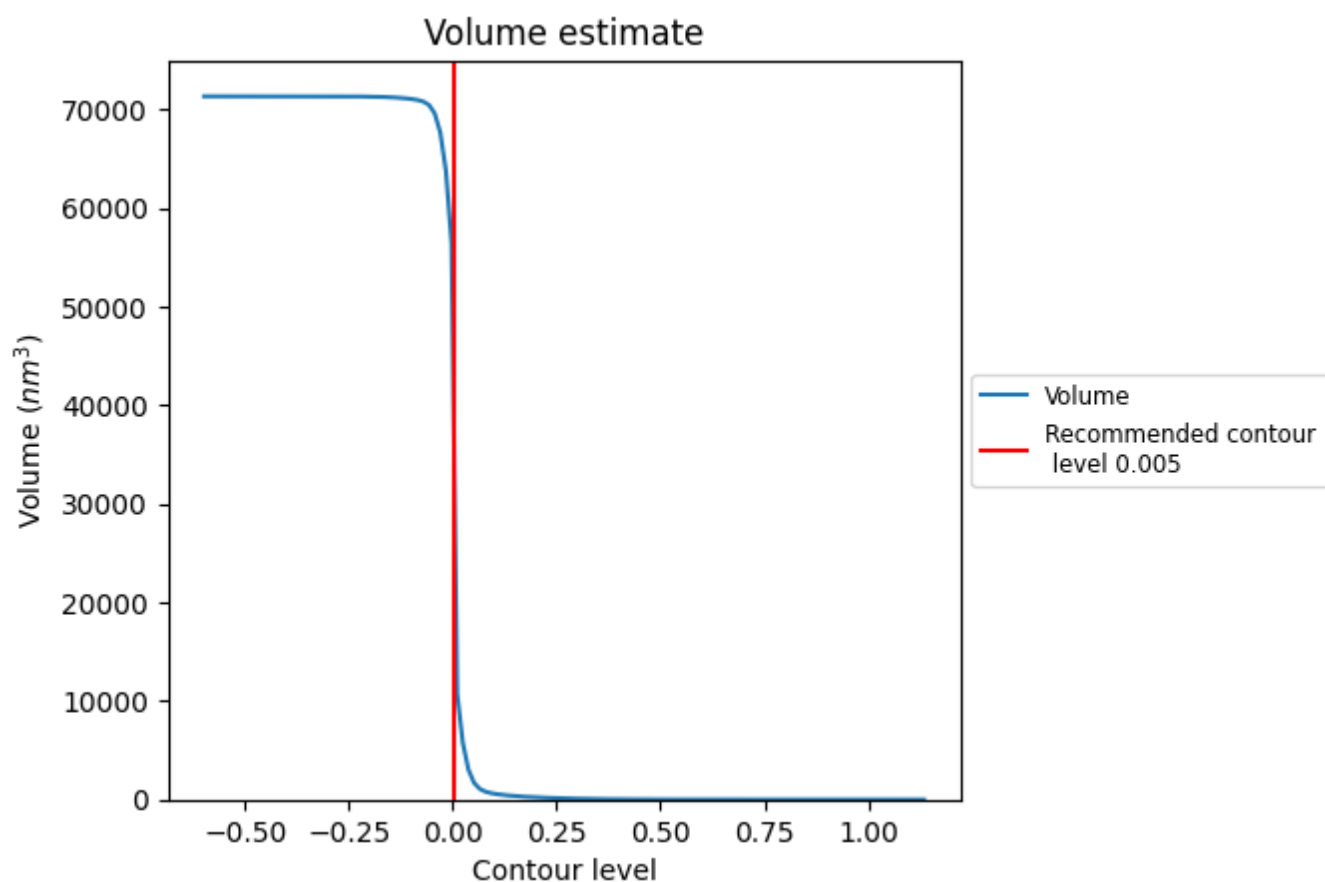
This section contains the results of statistical analysis of the map.

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.

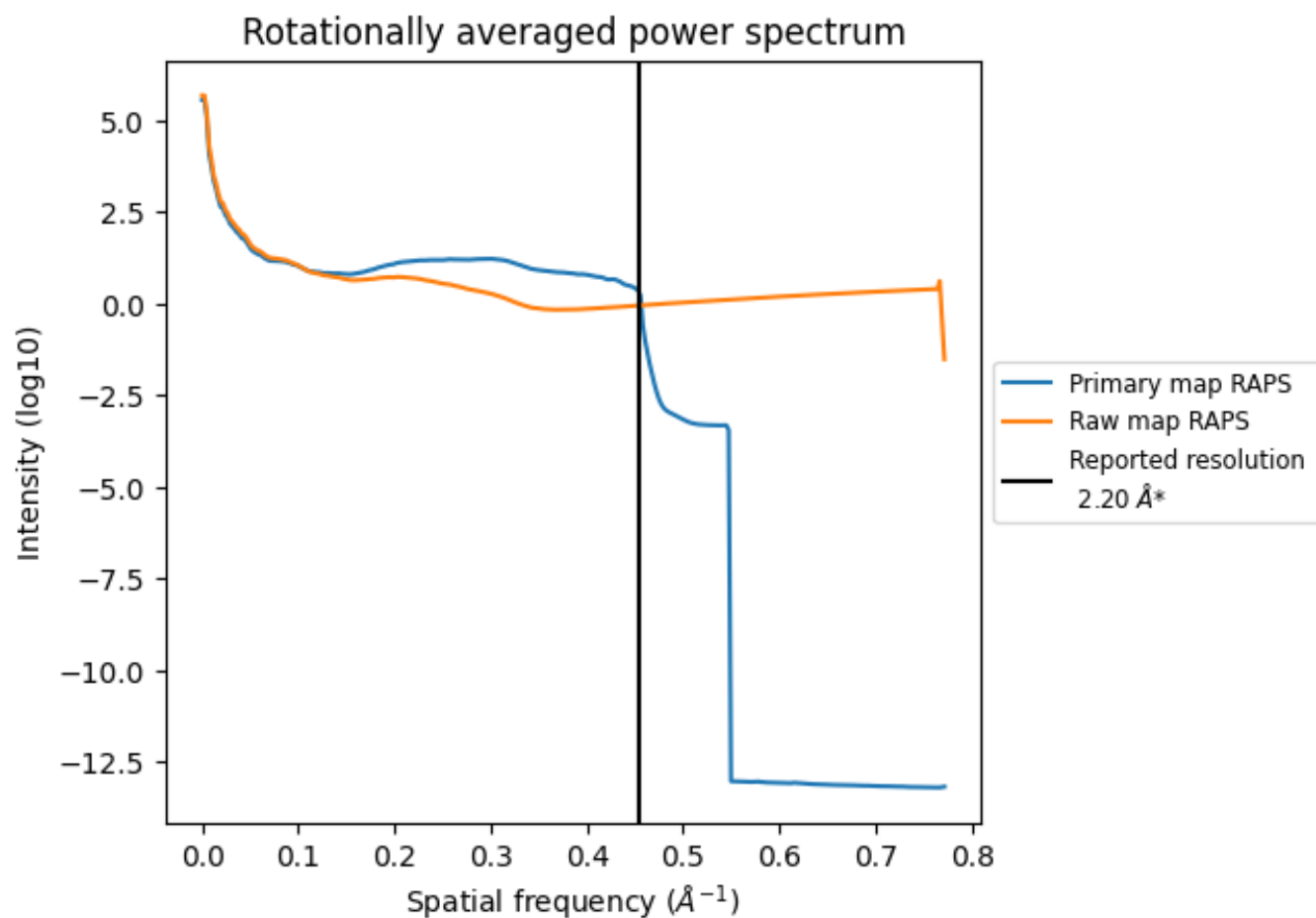
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 29576 nm³; this corresponds to an approximate mass of 26717 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 ⓘ

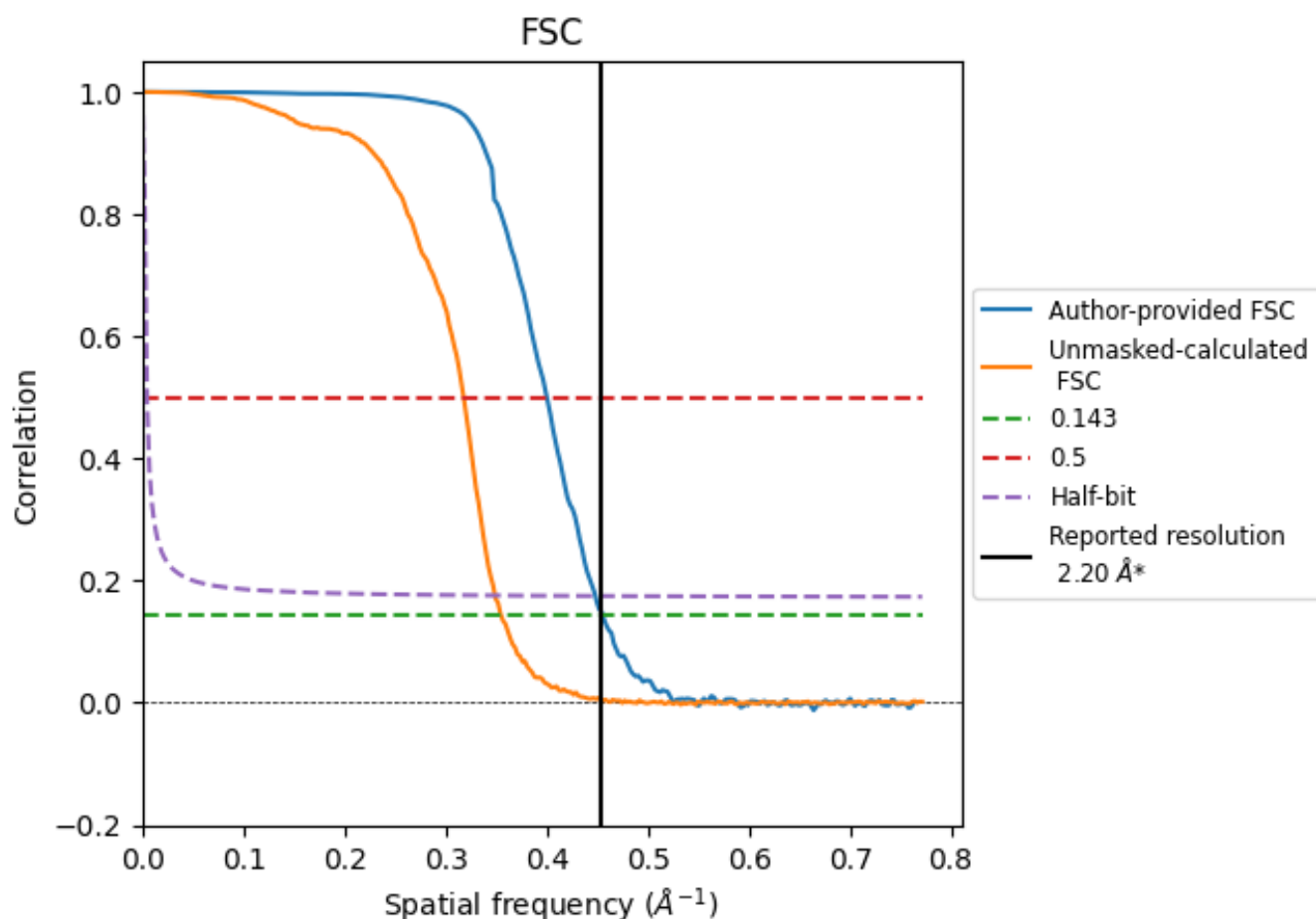


*Reported resolution corresponds to spatial frequency of 0.455 Å⁻¹

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 0.455 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

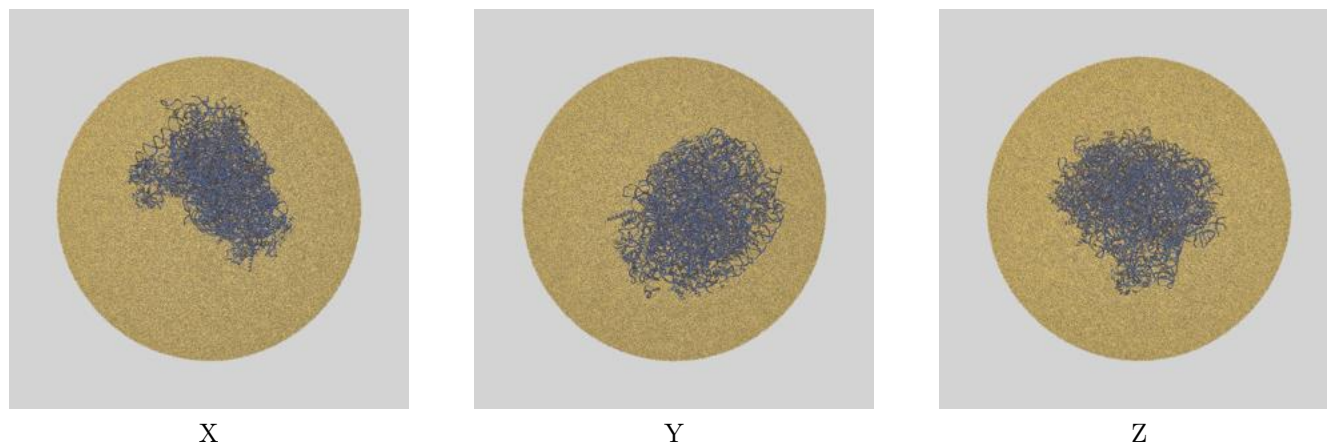
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.20	-	-
Author-provided FSC curve	2.19	2.50	2.23
Unmasked-calculated*	2.82	3.14	2.87

*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 2.82 differs from the reported value 2.2 by more than 10 %

9 Map-model fit [i](#)

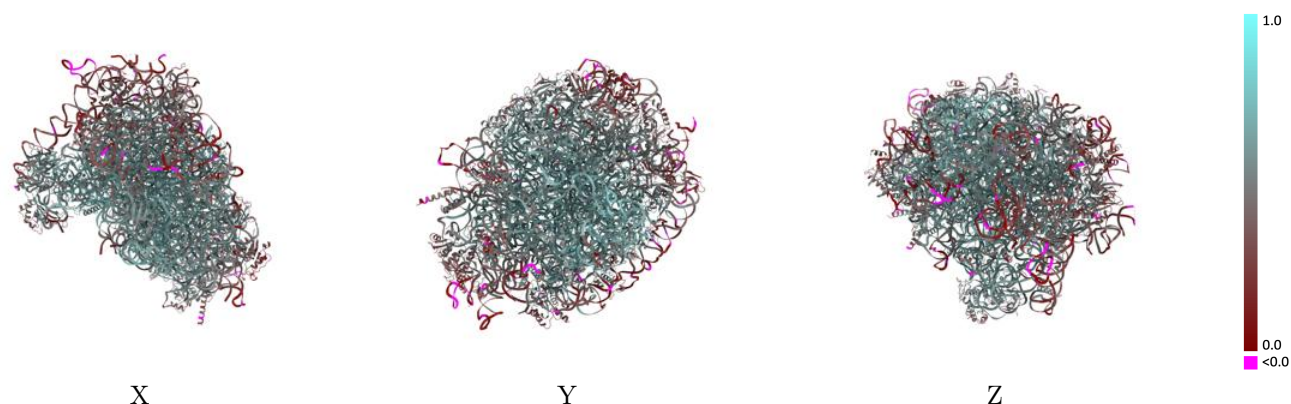
This section contains information regarding the fit between EMDB map EMD-57202 and PDB model 29IX. Per-residue inclusion information can be found in section 3 on page 18.

9.1 Map-model overlay [i](#)



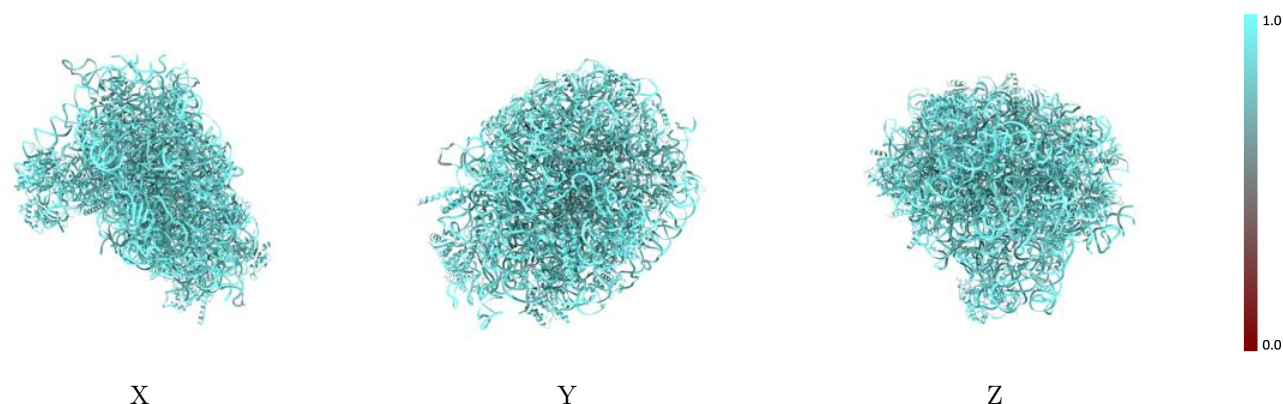
The images above show the 3D surface view of the map at the recommended contour level 0.005 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



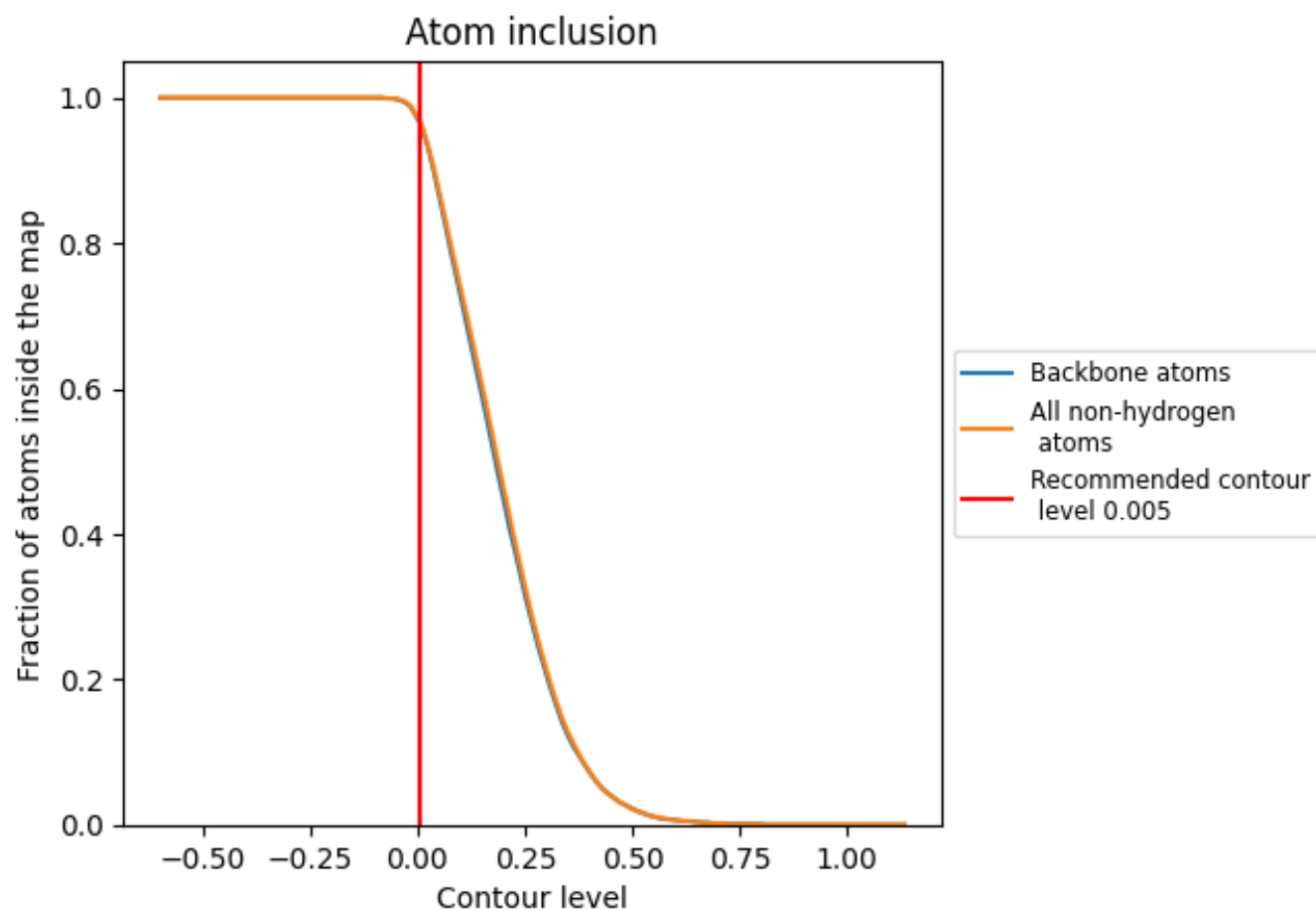
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.005).

9.4 Atom inclusion ⓘ



At the recommended contour level, 97% of all backbone atoms, 97% 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 (0.005) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9690	 0.5380
AA	 0.9700	 0.5560
AB	 0.9410	 0.4140
AC	 0.9440	 0.4550
AD	 0.9750	 0.6050
AE	 0.9460	 0.4440
AF	 0.9720	 0.5480
AG	 0.9340	 0.3770
AH	 0.9900	 0.6260
AI	 0.9610	 0.5270
AJ	 0.9840	 0.6240
AK	 0.9900	 0.6240
AL	 0.9560	 0.4940
AM	 0.9790	 0.5480
AN	 0.9640	 0.5610
AO	 0.8700	 0.2790
AP	 0.9790	 0.5830
AQ	 0.9720	 0.5080
AR	 0.9610	 0.5130
AS	 0.9830	 0.6190
AT	 0.8900	 0.3360
AU	 0.9910	 0.6220
AV	 0.9610	 0.4720
AW	 0.9270	 0.3720
AX	 0.9700	 0.5130
AY	 0.9860	 0.6330
AZ	 0.9870	 0.5780
Aa	 0.9630	 0.4880
Ab	 0.9650	 0.5500
Ac	 0.9740	 0.4790
Ad	 0.9940	 0.6620
Ae	 0.8800	 0.3210
Af	 0.9810	 0.6120
Ag	 0.9740	 0.5270
Ah	 0.9850	 0.6300



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Chain	Atom inclusion	Q-score
Ai	 0.9650	 0.5510
Aj	 0.9780	 0.5800
BA	 0.9590	 0.5230
BB	 0.9830	 0.6080
BC	 0.9640	 0.5010
BD	 0.9430	 0.4060
DA	 0.9710	 0.5400
DB	 0.9950	 0.6070
DC	 0.9740	 0.5610
DD	 0.9830	 0.6140