Full wwPDB X-ray Structure Validation Report (i)

Jun 24, 2024 – 06:36 PM EDT

PDB ID	:	5WNU
Title	:	Crystal Structure of 30S ribosomal subunit from Thermus thermophilus
Authors	:	DeMirci, H.
Deposited on	:	2017-08-01
Resolution	:	3.40 Å(reported)

This is a Full wwPDB X-ray Structure 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/XrayValidationReportHelp
with specific help available everywhere you see the (i) 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 (i)) were used in the production of this report:

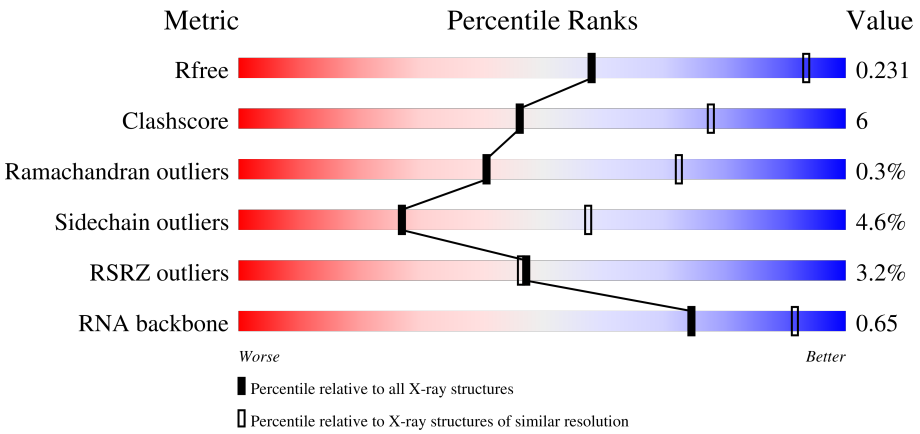
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.37.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 3.40 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1026 (3.48-3.32)
Clashscore	141614	1055 (3.48-3.32)
Ramachandran outliers	138981	1038 (3.48-3.32)
Sidechain outliers	138945	1038 (3.48-3.32)
RSRZ outliers	127900	2173 (3.50-3.30)
RNA backbone	3102	1006 (3.84-2.96)

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

Mol	Chain	Length	Quality of chain
1	A	1522	63% 30% 7% •
2	B	236	5% 78% 21% •
3	C	207	4% 82% 16% •
4	D	208	3% 80% 20%

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Mol	Chain	Length	Quality of chain
5	E	151	74% 25%
6	F	101	2% 86% 13%
7	G	155	% 76% 24%
8	H	138	2% 81% 17%
9	I	127	11% 65% 31%
10	J	99	22% 73% 25%
11	K	119	5% 75% 24%
12	L	125	8% 77% 20%
13	M	118	6% 78% 20%
14	N	60	5% 73% 25%
15	O	88	2% 84% 14%
16	P	84	86% 14%
17	Q	99	85% 15%
18	R	73	4% 84% 14%
19	S	81	11% 80% 17%
20	T	99	3% 77% 21%
21	U	25	32% 76% 24%
22	a	3	33% 33% 67%
23	b	6	33% 67% 33%

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
23	12A	b	37	X	-	-	-
24	MG	A	1620	-	-	-	X
24	MG	A	1621	-	-	-	X
24	MG	A	1629	-	-	-	X
24	MG	A	1653	-	-	-	X

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
24	MG	A	1677	-	-	-	X
24	MG	A	1687	-	-	-	X
24	MG	A	1701	-	-	-	X
24	MG	A	1705	-	-	-	X
24	MG	A	1711	-	-	-	X
24	MG	A	1714	-	-	-	X
24	MG	A	1715	-	-	-	X
24	MG	A	1716	-	-	-	X
24	MG	A	1718	-	-	-	X
24	MG	A	1719	-	-	-	X
24	MG	A	1722	-	-	-	X
24	MG	A	1731	-	-	-	X
24	MG	A	1733	-	-	-	X
24	MG	A	1745	-	-	-	X
24	MG	A	1747	-	-	-	X
24	MG	A	1752	-	-	-	X
24	MG	A	1772	-	-	-	X
24	MG	A	1782	-	-	-	X
24	MG	A	1784	-	-	-	X
24	MG	A	1787	-	-	-	X
24	MG	A	1804	-	-	-	X
24	MG	A	1806	-	-	-	X
24	MG	A	1812	-	-	-	X
24	MG	A	1819	-	-	-	X
24	MG	A	1820	-	-	-	X
24	MG	A	1825	-	-	-	X
24	MG	A	1826	-	-	-	X
24	MG	A	1829	-	-	-	X
24	MG	G	201	-	-	-	X
24	MG	H	202	-	-	-	X
25	K	A	1838	-	-	-	X
25	K	A	1840	-	-	-	X
25	K	A	1851	-	-	-	X
25	K	A	1854	-	-	-	X

2 Entry composition (i)

There are 28 unique types of molecules in this entry. The entry contains 52373 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 16S Ribosomal RNA rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	A	1512	32504	14477	6011	10505	1511	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1534	C	A	conflict	GB 55771382
A	1535	A	C	conflict	GB 55771382

- Molecule 2 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	236	1874	1195	336	338	5	0	0	1

- Molecule 3 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	C	207	1613	1016	315	281	1	0	0	1

- Molecule 4 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	D	208	1703	1066	339	291	7	0	0	0

- Molecule 5 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	E	151	1147	724	218	201	4	0	0	1

- Molecule 6 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
6	F	101	843	531	155	154	3	0	0	0

- Molecule 7 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
7	G	155	1257	781	252	218	6	0	0	0

- Molecule 8 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
8	H	138	1116	705	215	193	3	0	0	0

- Molecule 9 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
9	I	127	1010	639	197	174	0	0	0

- Molecule 10 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
10	J	99	793	498	157	137	1	0	0	1

- Molecule 11 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
11	K	119	885	549	168	165	3	0	0	0

- Molecule 12 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
12	L	125	973	612	196	163	2	0	0	1

- Molecule 13 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
13	M	118	937	579	193	163	2	0	0	0

- Molecule 14 is a protein called 30S ribosomal protein S14 type Z.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
14	N	60	492	312	104	72	4	0	0	0

- Molecule 15 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
15	O	88	734	459	147	126	2	0	0	0

- Molecule 16 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
16	P	84	701	443	140	117	1	0	0	1

- Molecule 17 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
17	Q	99	823	528	151	142	2	0	0	0

- Molecule 18 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
18	R	73	598	381	118	99	0	0	0

- Molecule 19 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
19	S	81	648	414	120	112	2	0	0	1

- Molecule 20 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
20	T	99	763	470	162	129	2	0	0	0

- Molecule 21 is a protein called 30S ribosomal protein Thx.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
21	U	25	209	128	51	30	0	0	1

- Molecule 22 is a RNA chain called RNA (5'-R(*AP*(A2M)P*A)-3').

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
22	a	3	64	31	15	16	2	0	0	0

- Molecule 23 is a RNA chain called RNA (5'-R(P*UP*(70U)P*UP*UP*(12A)P*A)-3').

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	N	O	P	S			
23	b	6	141	65	19	49	6	2	0	0	0

- Molecule 24 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Mg		
24	A	237	237	237	0	0
24	D	1	1	1	0	0
24	E	1	1	1	0	0
24	F	1	1	1	0	0
24	G	1	1	1	0	0
24	H	2	2	2	0	0
24	L	1	1	1	0	0
24	P	3	3	3	0	0
24	Q	2	2	2	0	0

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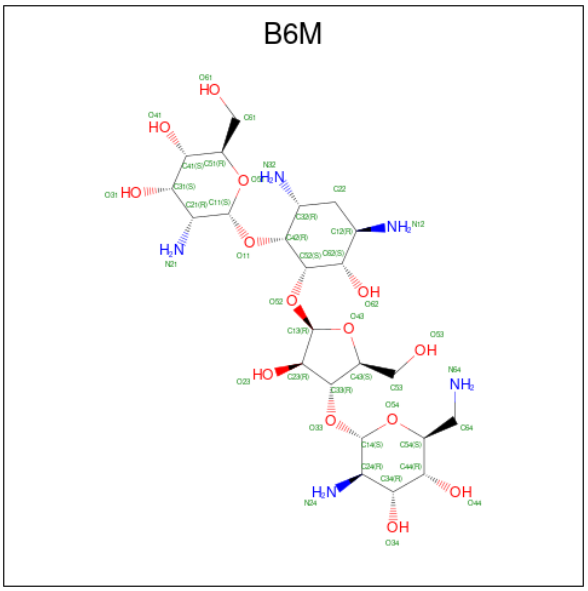
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
24	S	2	Total Mg 2 2	0	0
24	T	1	Total Mg 1 1	0	0

- Molecule 25 is POTASSIUM ION (three-letter code: K) (formula: K).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
25	A	21	Total K 21 21	0	0
25	E	1	Total K 1 1	0	0

- Molecule 26 is (1R,2S,3S,4R,6R)-4,6-diamino-2-{[3-O-(2,6-diamino-2,6-dideoxy-alpha-L-altropyranosyl)-beta-L-arabinofuranosyl]oxy}-3-hydroxycyclohexyl 2-amino-2-deoxy-alpha-D-allopyranoside (three-letter code: B6M) (formula: $C_{23}H_{45}N_5O_{14}$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
26	A	1	Total C N O 42 23 5 14	0	0

- Molecule 27 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
27	D	1	Total Zn 1 1	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Zn		
27	N	1	1	1	0	0

- Molecule 28 is water.

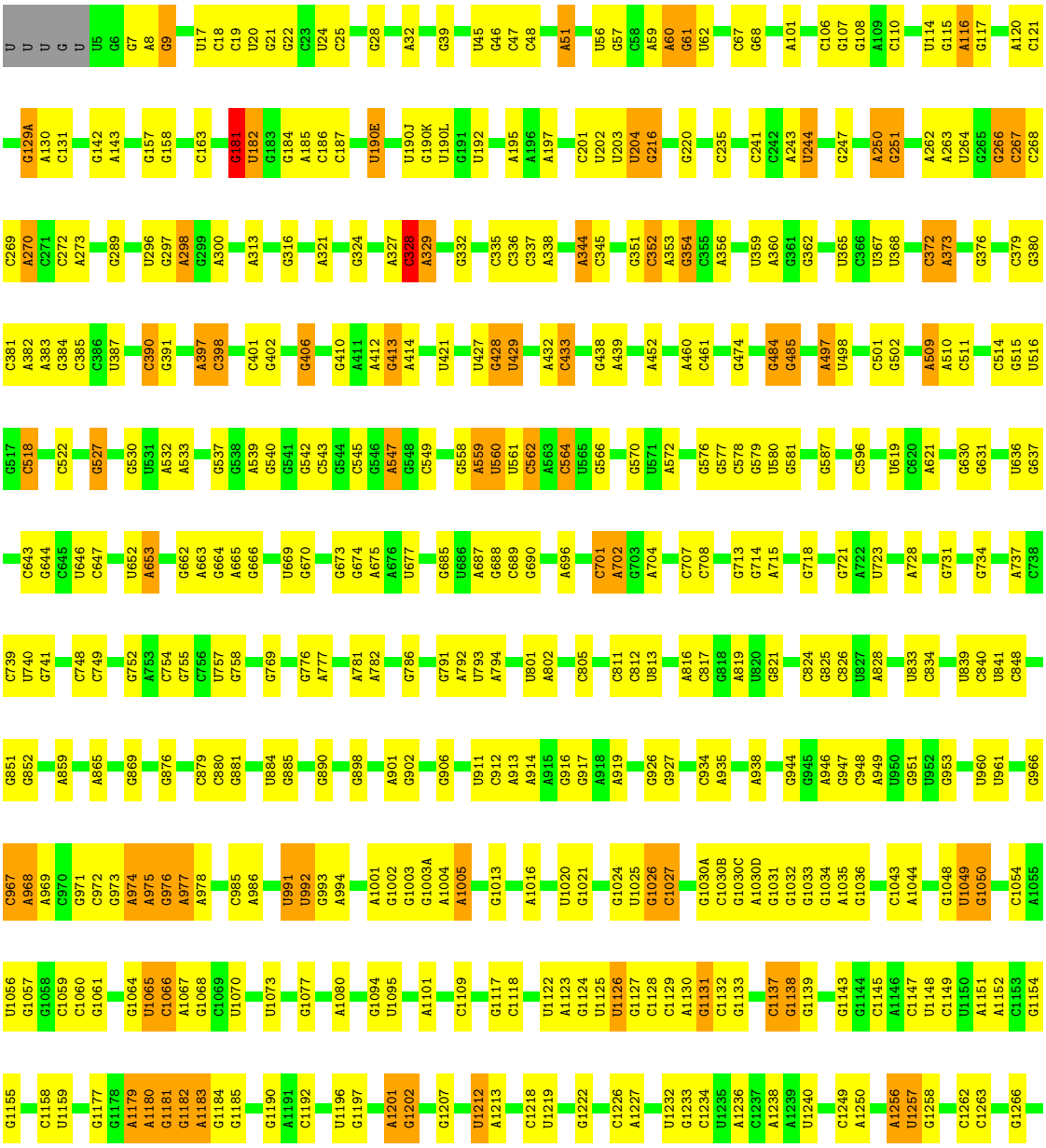
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
28	A	215	215	215	0	0
			Total	O		
28	D	3	3	3	0	0
			Total	O		
28	E	5	5	5	0	0
			Total	O		
28	K	1	1	1	0	0
			Total	O		
28	L	2	2	2	0	0
			Total	O		
28	T	1	1	1	0	0

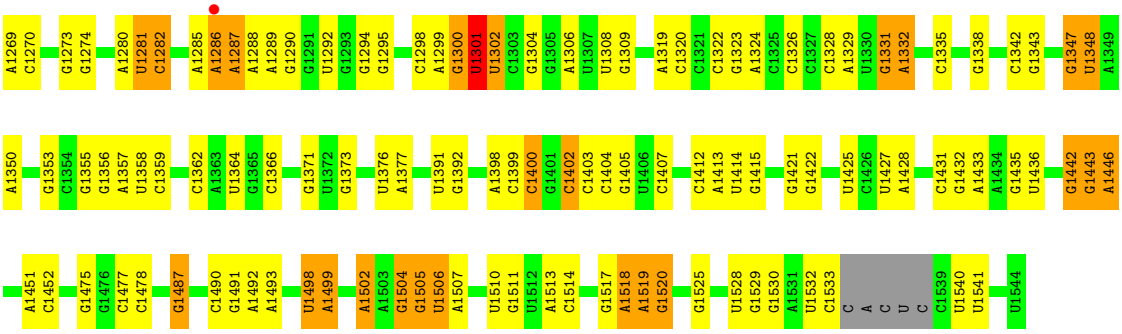
3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron 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 dot above a residue indicates a poor fit to the electron density (RSRZ > 2). 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: 16S Ribosomal RNA rRNA

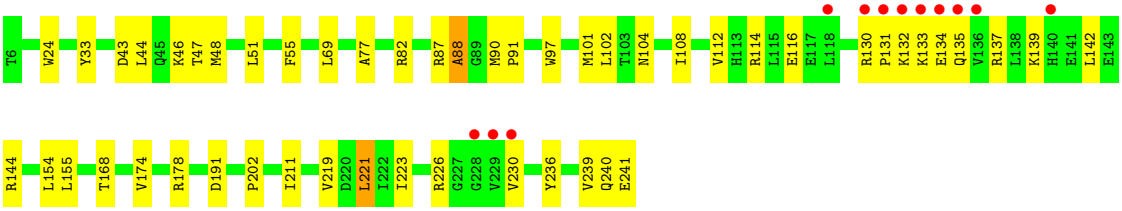
Chain A: 63% 30% 7% •





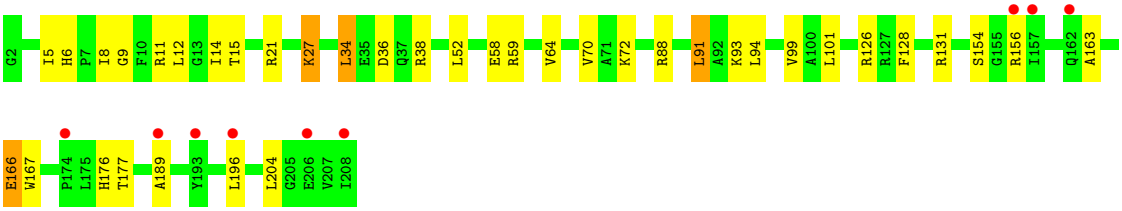
- Molecule 2: 30S ribosomal protein S2

Chain B:



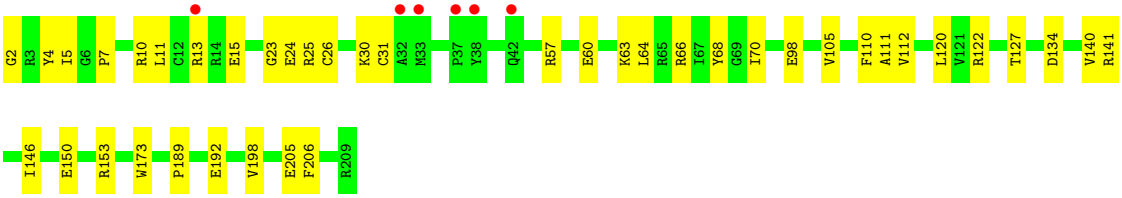
- Molecule 3: 30S ribosomal protein S3

Chain C:



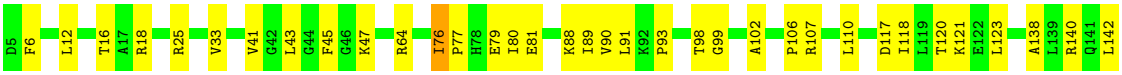
- Molecule 4: 30S ribosomal protein S4

Chain D:



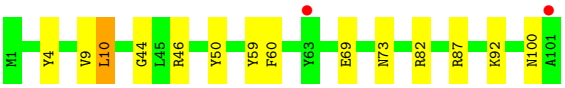
- Molecule 5: 30S ribosomal protein S5

Chain E:



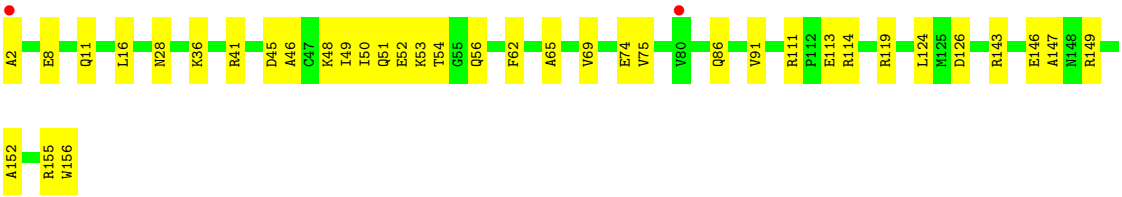
• Molecule 6: 30S ribosomal protein S6

Chain F:



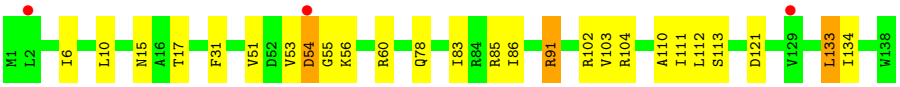
• Molecule 7: 30S ribosomal protein S7

Chain G:



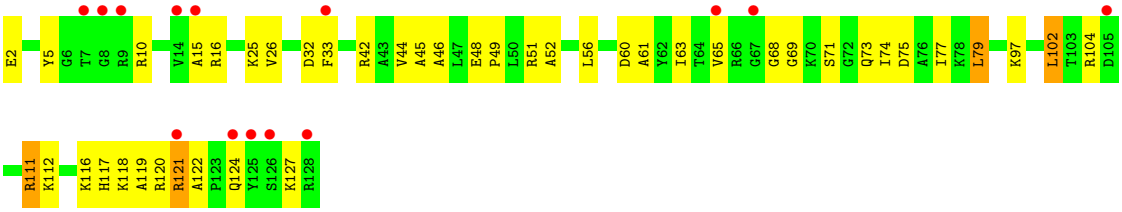
• Molecule 8: 30S ribosomal protein S8

Chain H:



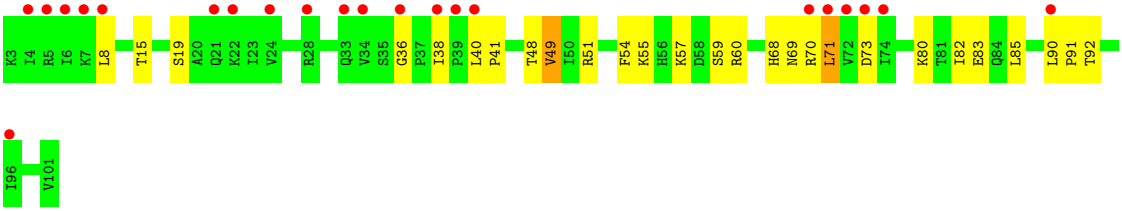
• Molecule 9: 30S ribosomal protein S9

Chain I:



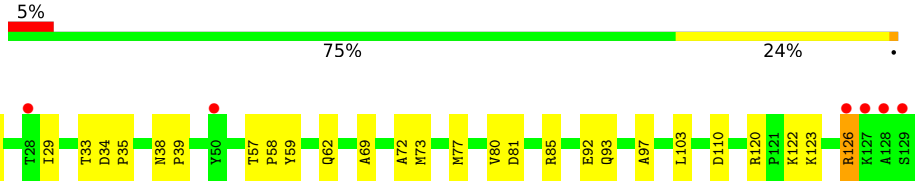
• Molecule 10: 30S ribosomal protein S10

Chain J:



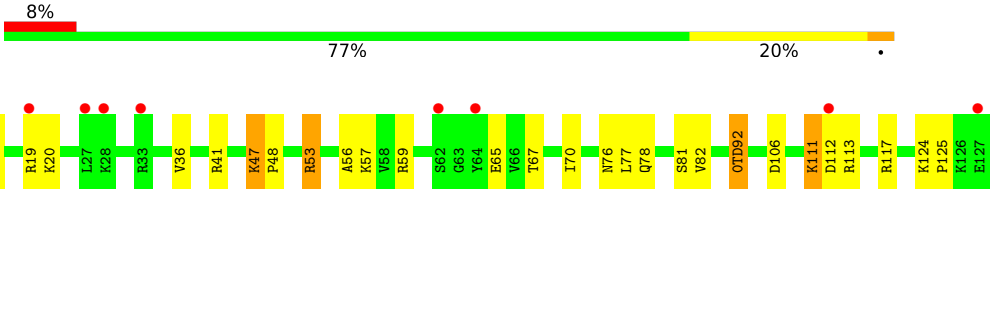
• Molecule 11: 30S ribosomal protein S11

Chain K:



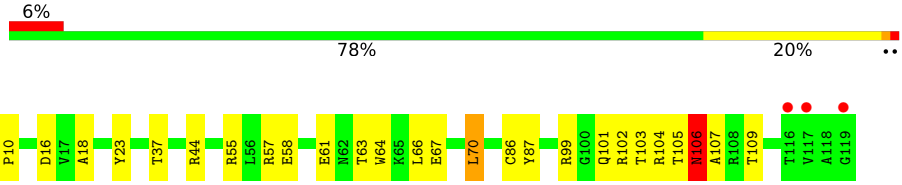
• Molecule 12: 30S ribosomal protein S12

Chain L:



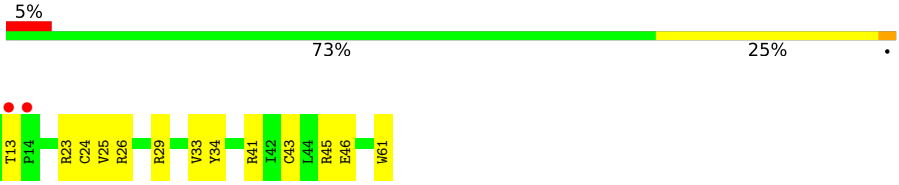
• Molecule 13: 30S ribosomal protein S13

Chain M:



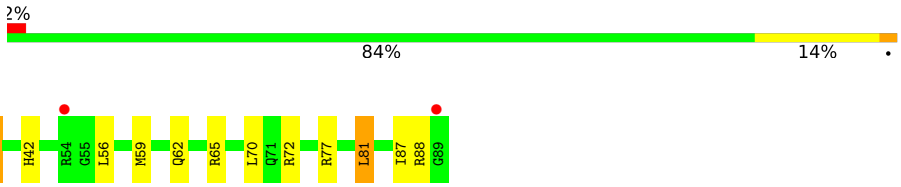
• Molecule 14: 30S ribosomal protein S14 type Z

Chain N:



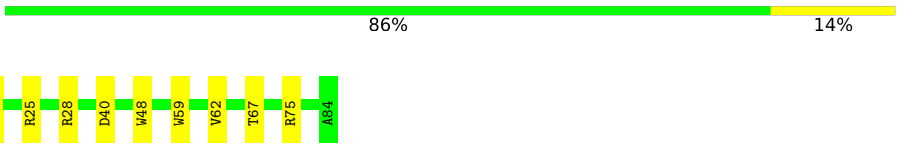
• Molecule 15: 30S ribosomal protein S15

Chain O:



• Molecule 16: 30S ribosomal protein S16

Chain P:

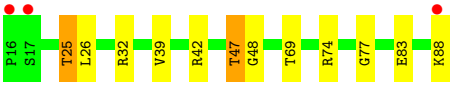


• Molecule 17: 30S ribosomal protein S17

Chain Q:

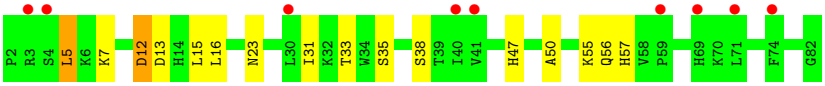
• Molecule 18: 30S ribosomal protein S18

Chain R:



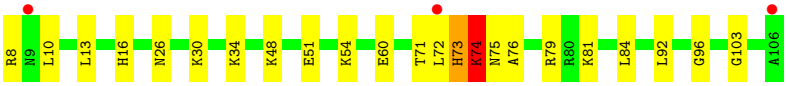
• Molecule 19: 30S ribosomal protein S19

Chain S:



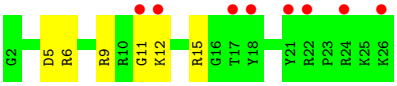
• Molecule 20: 30S ribosomal protein S20

Chain T:



• Molecule 21: 30S ribosomal protein Thx

Chain U:



• Molecule 22: RNA (5'-R(*AP*(A2M)P*A)-3')

Chain a:

• Molecule 23: RNA (5'-R(P*UP*(70U)P*UP*UP*(12A)P*A)-3')

Chain b:

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, α, β, γ	400.00Å 400.00Å 173.00Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	39.80 – 3.40 39.80 – 2.92	Depositor EDS
% Data completeness (in resolution range)	96.8 (39.80-3.40) 68.1 (39.80-2.92)	Depositor EDS
R_{merge}	0.72	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	-0.68 (at 2.90Å)	Xtriage
Refinement program	PHENIX	Depositor
R, R_{free}	0.187 , 0.231 0.187 , 0.231	Depositor DCC
R_{free} test set	2000 reflections (0.68%)	wwPDB-VP
Wilson B-factor (Å^2)	100.6	Xtriage
Anisotropy	0.127	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.25 , 107.2	EDS
L-test for twinning[2]	$< \|L\| > = 0.46$, $< L^2 > = 0.29$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	52373	wwPDB-VP
Average B, all atoms (Å^2)	176.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.32% of the height of the origin peak. No significant pseudotranslation is detected.*

[1]Intensities estimated from amplitudes.

[2]Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: 7MG, MA6, 2MG, A2M, K, 70U, 0TD, UR3, 12A, MG, 5MC, ZN, 4OC, B6M, PSU, M2G

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	A	0.16	0/36037	0.73	5/56239 (0.0%)
2	B	0.24	0/1909	0.40	0/2579
3	C	0.23	0/1637	0.43	0/2207
4	D	0.23	0/1733	0.39	0/2318
5	E	0.24	0/1163	0.43	0/1566
6	F	0.23	0/856	0.40	0/1154
7	G	0.24	0/1276	0.38	0/1709
8	H	0.23	0/1136	0.42	0/1527
9	I	0.24	0/1029	0.43	0/1379
10	J	0.24	0/806	0.47	0/1084
11	K	0.24	0/900	0.42	0/1213
12	L	0.24	0/978	0.47	0/1308
13	M	0.22	0/947	0.40	0/1270
14	N	0.23	0/501	0.40	0/664
15	O	0.23	0/745	0.37	0/992
16	P	0.23	0/717	0.42	0/965
17	Q	0.23	0/836	0.41	0/1117
18	R	0.23	0/604	0.38	0/801
19	S	0.23	0/662	0.45	0/892
20	T	0.23	0/765	0.37	0/1007
21	U	0.22	0/213	0.40	0/279
22	a	0.16	0/46	0.66	0/70
23	b	0.10	0/88	0.66	0/129
All	All	0.19	0/55584	0.64	5/82469 (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	B	0	1
13	M	0	1
20	T	0	1
23	b	1	0
All	All	1	3

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1158	C	N1-C2-O2	5.56	122.24	118.90
1	A	1301	U	P-O3'-C3'	5.46	126.26	119.70
1	A	181	G	OP2-P-O3'	5.29	116.84	105.20
1	A	1158	C	C2-N1-C1'	5.19	124.51	118.80
1	A	328	C	P-O3'-C3'	5.09	125.81	119.70

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
23	b	37	12A	C1'

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	88	ALA	Peptide
13	M	106	ASN	Peptide
20	T	74	LYS	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	32504	0	16433	299	1
2	B	1874	0	1887	26	0
3	C	1613	0	1677	25	0
4	D	1703	0	1763	27	0
5	E	1147	0	1207	20	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	F	843	0	857	8	0
7	G	1257	0	1296	21	0
8	H	1116	0	1177	17	0
9	I	1010	0	1037	35	0
10	J	793	0	835	23	0
11	K	885	0	904	20	0
12	L	973	0	1058	20	0
13	M	937	0	995	14	0
14	N	492	0	529	15	0
15	O	734	0	771	10	0
16	P	701	0	720	7	0
17	Q	823	0	891	8	0
18	R	598	0	670	10	0
19	S	648	0	673	7	0
20	T	763	0	861	9	0
21	U	209	0	221	3	0
22	a	64	0	37	0	0
23	b	141	0	75	0	0
24	A	237	0	0	0	0
24	D	1	0	0	0	0
24	E	1	0	0	0	0
24	F	1	0	0	0	0
24	G	1	0	0	0	0
24	H	2	0	0	0	0
24	L	1	0	0	0	0
24	P	3	0	0	0	0
24	Q	2	0	0	0	0
24	S	2	0	0	0	0
24	T	1	0	0	0	0
25	A	21	0	0	0	0
25	E	1	0	0	0	0
26	A	42	0	0	2	0
27	D	1	0	0	0	0
27	N	1	0	0	0	0
28	A	215	0	0	3	0
28	D	3	0	0	1	0
28	E	5	0	0	0	0
28	K	1	0	0	1	0
28	L	2	0	0	0	0
28	T	1	0	0	0	0
All	All	52373	0	36574	545	1

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including

hydrogen atoms). The all-atom clashscore for this structure is 6.

All (545) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:123:LYS:HA	11:K:126:ARG:HG3	1.67	0.76
1:A:739:C:HO2'	15:O:42:HIS:HD1	1.33	0.73
1:A:664:G:H22	1:A:741:G:H1	1.37	0.72
7:G:143:ARG:O	7:G:147:ALA:HB2	1.89	0.72
8:H:10:LEU:HD22	8:H:83:ILE:HD11	1.72	0.72
1:A:1266:G:N2	1:A:1269:A:OP2	2.23	0.71
2:B:223:ILE:HD13	2:B:230:VAL:H	1.56	0.70
16:P:4:ILE:HG12	16:P:21:VAL:HG22	1.74	0.70
1:A:677:U:H3	1:A:713:G:H22	1.40	0.69
19:S:50:ALA:HB1	19:S:57:HIS:HB3	1.73	0.68
2:B:134:GLU:HG2	2:B:137:ARG:HH21	1.59	0.68
1:A:501:C:OP1	12:L:117:ARG:NH2	2.27	0.67
11:K:15:ALA:HA	11:K:77:MET:HA	1.74	0.67
20:T:74:LYS:O	20:T:76:ALA:N	2.27	0.67
1:A:1505:G:O2'	1:A:1506:U:OP2	2.12	0.67
12:L:57:LYS:HG2	12:L:67:THR:HG22	1.76	0.67
1:A:537:G:OP1	12:L:113:ARG:NH2	2.26	0.67
13:M:23:TYR:HB3	13:M:67:GLU:HG2	1.77	0.67
9:I:51:ARG:HG3	9:I:56:LEU:HD21	1.78	0.66
3:C:14:ILE:HG22	3:C:15:THR:HG23	1.78	0.66
1:A:235:C:N4	28:A:1902:HOH:O	2.28	0.65
12:L:47:LYS:HG3	12:L:48:PRO:HD3	1.78	0.65
10:J:19:SER:HB3	10:J:91:PRO:HG3	1.78	0.65
12:L:53:ARG:NH1	12:L:92:0TD:OD1	2.28	0.65
7:G:113:GLU:HB2	7:G:119:ARG:HG3	1.79	0.65
8:H:103:VAL:HG12	8:H:104:ARG:HG2	1.79	0.65
6:F:9:VAL:HB	6:F:87:ARG:HB2	1.78	0.64
1:A:438:G:H21	1:A:497:A:H62	1.46	0.64
1:A:1073:U:O2	2:B:104:ASN:ND2	2.30	0.64
4:D:7:PRO:HB2	4:D:10:ARG:HD2	1.79	0.64
1:A:1192:C:O2	5:E:25:ARG:NH2	2.23	0.64
9:I:42:ARG:NH2	9:I:71:SER:OG	2.27	0.64
1:A:1422:G:H1	1:A:1478:C:H42	1.45	0.64
9:I:112:LYS:HA	9:I:119:ALA:HB2	1.79	0.64
5:E:140:ARG:O	5:E:143:ARG:NH2	2.31	0.63
1:A:1281:U:H5"	1:A:1282:C:H5	1.63	0.63
5:E:81:GLU:HG3	5:E:90:VAL:HG22	1.81	0.63
11:K:18:ARG:NH1	11:K:35:PRO:O	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:947:G:H4'	1:A:1332:A:H2	1.63	0.63
9:I:10:ARG:HG2	9:I:75:ASP:HB2	1.81	0.63
3:C:156:ARG:H	3:C:163:ALA:HA	1.64	0.63
1:A:1319:A:H5'	19:S:5:LEU:HD22	1.81	0.62
1:A:401:C:O2'	1:A:621:A:N3	2.32	0.62
1:A:975:A:H4'	1:A:976:G:H5"	1.81	0.62
1:A:362:G:N2	1:A:365:U:OP2	2.31	0.62
1:A:976:G:OP2	1:A:1358:U:O2'	2.15	0.62
1:A:811:C:O2'	1:A:901:A:N1	2.32	0.62
1:A:1442:G:O6	1:A:1446:A:N6	2.33	0.62
12:L:41:ARG:HE	12:L:57:LYS:HE2	1.64	0.62
1:A:579:G:H5'	1:A:728:A:H1'	1.83	0.61
7:G:146:GLU:HG2	7:G:149:ARG:HD3	1.81	0.61
11:K:122:LYS:NZ	28:K:201:HOH:O	2.33	0.61
3:C:131:ARG:HH11	3:C:166:GLU:HG3	1.65	0.61
6:F:10:LEU:HD12	6:F:59:TYR:HB3	1.83	0.61
1:A:376:G:H5"	16:P:5:ARG:HB2	1.83	0.61
1:A:1030(A):G:N2	1:A:1030(D):A:OP2	2.31	0.60
1:A:1240:U:OP1	7:G:119:ARG:NH1	2.34	0.60
17:Q:9:VAL:HG22	17:Q:56:VAL:HG22	1.82	0.60
7:G:111:ARG:NH2	7:G:126:ASP:OD2	2.33	0.60
5:E:102:ALA:O	5:E:107:ARG:NH1	2.35	0.60
3:C:6:HIS:HD2	3:C:8:ILE:H	1.49	0.60
18:R:48:GLY:O	18:R:74:ARG:NH2	2.35	0.60
1:A:1065:U:H4'	1:A:1066:C:O5'	2.01	0.60
9:I:46:ALA:HB2	9:I:74:ILE:HG23	1.83	0.59
1:A:1005:A:N6	1:A:1024:G:O2'	2.35	0.59
14:N:9:LYS:HE2	14:N:23:ARG:HB2	1.83	0.59
11:K:110:ASP:OD2	18:R:88:LYS:NZ	2.32	0.59
7:G:143:ARG:O	7:G:147:ALA:CB	2.49	0.59
1:A:951:G:OP2	13:M:102:ARG:NH2	2.36	0.59
1:A:880:C:OP1	12:L:8:ASN:ND2	2.35	0.59
10:J:38:ILE:HB	10:J:71:LEU:HB3	1.84	0.59
3:C:11:ARG:NH1	3:C:177:THR:O	2.36	0.58
8:H:113:SER:HB2	8:H:134:ILE:HD11	1.85	0.58
1:A:413:G:N2	1:A:429:U:OP2	2.36	0.58
1:A:558:G:OP2	1:A:559:A:O2'	2.21	0.58
5:E:33:VAL:HG22	5:E:43:LEU:HD23	1.86	0.58
1:A:1347:G:O6	9:I:10:ARG:NH2	2.32	0.58
2:B:77:ALA:HB2	2:B:211:ILE:HD13	1.84	0.58
3:C:27:LYS:HD3	3:C:27:LYS:H	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1498:UR3:H1'	1:A:1499:A:OP2	2.03	0.58
1:A:297:G:N2	1:A:300:A:OP2	2.36	0.58
15:O:39:LEU:HD13	15:O:56:LEU:HB2	1.86	0.58
1:A:1124:G:N7	1:A:1145:C:O2'	2.33	0.57
1:A:967:5MC:H5"	1:A:968:A:OP2	2.04	0.57
3:C:189:ALA:HB3	3:C:196:LEU:HB2	1.86	0.57
9:I:44:VAL:O	9:I:51:ARG:NH2	2.38	0.57
18:R:26:LEU:HD21	18:R:39:VAL:HG23	1.86	0.57
4:D:26:CYS:HA	4:D:31:CYS:HB2	1.86	0.57
1:A:372:C:H4'	1:A:373:A:O5'	2.04	0.57
4:D:57:ARG:HB3	4:D:206:PHE:HB2	1.87	0.57
17:Q:22:LEU:HD11	17:Q:39:SER:HB2	1.87	0.57
1:A:1413:A:H2	1:A:1487:G:H22	1.53	0.57
1:A:509:A:N3	1:A:543:C:O2'	2.35	0.57
1:A:1405:G:HO2'	1:A:1518:MA6:HO2'	1.51	0.57
1:A:28:G:O2'	1:A:296:U:OP1	2.22	0.56
1:A:316:G:OP2	1:A:351:G:O2'	2.22	0.56
1:A:1326:C:OP1	21:U:12:LYS:NZ	2.38	0.56
4:D:64:LEU:HB2	4:D:198:VAL:HG11	1.87	0.56
8:H:86:ILE:HD12	8:H:133:LEU:HD22	1.87	0.56
10:J:49:VAL:HG23	14:N:41:ARG:HB2	1.87	0.56
1:A:1249:C:O2'	9:I:73:GLN:NE2	2.39	0.56
1:A:181:G:H4'	1:A:182:U:H5'	1.87	0.56
1:A:1122:U:O4	1:A:1123:A:N6	2.39	0.56
1:A:1493:A:OP1	26:A:1858:B6M:O41	2.23	0.56
1:A:59:A:H5"	1:A:387:U:H5"	1.87	0.56
1:A:1412:C:H2'	1:A:1413:A:C8	2.40	0.56
1:A:1179:A:O2'	1:A:1180:A:OP1	2.23	0.55
1:A:1309:G:N7	13:M:99:ARG:NH2	2.53	0.55
5:E:79:GLU:HG3	5:E:93:PRO:HD2	1.87	0.55
1:A:324:G:N1	1:A:327:A:OP2	2.39	0.55
1:A:1226:C:OP2	13:M:103:THR:OG1	2.21	0.55
2:B:174:VAL:O	2:B:178:ARG:HG2	2.06	0.55
9:I:15:ALA:HB2	9:I:65:VAL:HG13	1.87	0.55
1:A:129(A):G:H21	1:A:190(E):U:H3'	1.72	0.55
9:I:26:VAL:HG13	9:I:61:ALA:HB3	1.87	0.55
5:E:80:ILE:HD12	5:E:138:ALA:HB1	1.88	0.55
1:A:352:C:O2'	1:A:354:G:OP1	2.19	0.55
2:B:33:TYR:HB2	2:B:43:ASP:HA	1.89	0.55
9:I:117:HIS:HB2	9:I:121:ARG:HB3	1.89	0.55
1:A:1080:A:H5"	5:E:16:THR:HG21	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:262:A:H5"	20:T:76:ALA:HB2	1.89	0.55
1:A:974:A:OP2	14:N:29:ARG:NH2	2.40	0.55
1:A:1026:G:H3'	1:A:1027:C:H5"	1.89	0.55
11:K:22:HIS:HB3	11:K:29:ILE:HG23	1.89	0.55
1:A:335:C:O2'	1:A:1433:A:N3	2.37	0.55
10:J:8:LEU:HB2	10:J:70:ARG:HB2	1.89	0.54
19:S:55:LYS:HG2	19:S:56:GLN:HG3	1.89	0.54
10:J:8:LEU:O	10:J:69:ASN:HA	2.06	0.54
10:J:38:ILE:HD12	10:J:71:LEU:HD12	1.88	0.54
1:A:1049:U:O2'	14:N:3:ARG:NH1	2.41	0.54
9:I:32:ASP:OD1	9:I:33:PHE:N	2.41	0.54
1:A:1137:C:H4'	1:A:1138:G:C2	2.43	0.54
14:N:26:ARG:NH2	14:N:46:GLU:OE1	2.41	0.54
2:B:87:ARG:HH21	2:B:219:VAL:HB	1.73	0.54
5:E:80:ILE:HD11	5:E:91:LEU:HD12	1.89	0.54
1:A:110:C:O2'	16:P:25:ARG:O	2.21	0.53
1:A:1391:U:H2'	1:A:1392:G:C8	2.44	0.53
1:A:45:U:H2'	1:A:46:G:C8	2.43	0.53
1:A:266:G:H5'	1:A:268:C:H41	1.74	0.53
1:A:938:A:N6	28:A:1904:HOH:O	2.40	0.53
18:R:25:THR:HB	18:R:42:ARG:HH22	1.73	0.53
1:A:953:G:N7	13:M:104:ARG:NH2	2.55	0.53
19:S:12:ASP:HB2	19:S:38:SER:HB3	1.91	0.53
15:O:62:GLN:OE1	15:O:65:ARG:NH2	2.42	0.53
1:A:1510:U:H2'	1:A:1511:G:C8	2.44	0.53
1:A:1049:U:H4'	1:A:1050:G:O5'	2.08	0.53
4:D:68:TYR:HB3	4:D:70:ILE:HD13	1.91	0.53
1:A:1148:U:H1'	9:I:16:ARG:HH21	1.74	0.53
1:A:1151:A:H5'	10:J:41:PRO:HA	1.90	0.53
11:K:57:THR:HG22	11:K:59:TYR:H	1.73	0.53
1:A:991:U:O4	1:A:1212:U:O2'	2.22	0.52
1:A:776:G:N2	1:A:802:A:OP2	2.40	0.52
1:A:243:A:H4'	1:A:244:U:H5'	1.92	0.52
1:A:1490:C:H2'	1:A:1491:G:H8	1.74	0.52
5:E:102:ALA:HB1	5:E:106:PRO:HG2	1.92	0.52
7:G:152:ALA:O	7:G:155:ARG:NH1	2.43	0.52
8:H:17:THR:O	8:H:78:GLN:NE2	2.39	0.52
1:A:514:C:H2'	1:A:515:G:H8	1.74	0.52
1:A:696:A:N3	1:A:786:G:O2'	2.36	0.52
11:K:58:PRO:HB2	11:K:93:GLN:HG3	1.91	0.52
1:A:944:G:N1	1:A:1338:G:OP2	2.32	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:R:47:THR:HA	18:R:83:GLU:HB2	1.92	0.52
10:J:40:LEU:HB3	10:J:69:ASN:HB2	1.91	0.52
2:B:97:TRP:HZ2	2:B:102:LEU:HD13	1.75	0.51
8:H:111:ILE:HG22	8:H:134:ILE:HD12	1.91	0.51
11:K:34:ASP:OD1	11:K:38:ASN:N	2.44	0.51
1:A:1147:C:HO2'	9:I:5:TYR:HH	1.58	0.51
1:A:946:A:H2'	1:A:947:G:C8	2.45	0.51
8:H:51:VAL:HG21	8:H:60:ARG:HG3	1.92	0.51
4:D:141:ARG:NH2	28:D:401:HOH:O	2.43	0.51
1:A:501:C:H2'	1:A:502:G:C8	2.45	0.51
10:J:15:THR:HG22	10:J:91:PRO:HB3	1.92	0.51
12:L:56:ALA:HB2	12:L:70:ILE:HD11	1.92	0.51
1:A:427:U:OP1	4:D:13:ARG:NH2	2.42	0.51
1:A:8:A:N6	4:D:205:GLU:O	2.44	0.51
1:A:560:U:H5'	1:A:566:G:N2	2.26	0.51
3:C:91:LEU:HD21	3:C:99:VAL:HG22	1.92	0.51
4:D:63:LYS:HD2	4:D:198:VAL:HG22	1.93	0.51
9:I:49:PRO:O	9:I:52:ALA:HB3	2.10	0.51
1:A:685:G:N2	1:A:704:A:OP2	2.44	0.50
2:B:91:PRO:HG2	2:B:155:LEU:HG	1.93	0.50
7:G:54:THR:HG22	7:G:56:GLN:H	1.76	0.50
1:A:204:U:H4'	1:A:216:G:C8	2.46	0.50
1:A:708:C:OP1	11:K:85:ARG:NH2	2.43	0.50
1:A:1059:C:O3'	14:N:45:ARG:NH2	2.43	0.50
10:J:82:ILE:HA	10:J:85:LEU:HB2	1.93	0.50
11:K:80:VAL:HG11	11:K:103:LEU:HD13	1.94	0.50
1:A:1152:A:OP1	10:J:68:HIS:ND1	2.44	0.50
4:D:98:GLU:HG2	4:D:189:PRO:HG3	1.94	0.50
6:F:44:GLY:HA2	6:F:59:TYR:CZ	2.46	0.50
12:L:124:LYS:HD3	12:L:125:PRO:HD2	1.94	0.50
13:M:99:ARG:HB2	13:M:101:GLN:HE22	1.77	0.50
1:A:1366:C:O2'	10:J:60:ARG:NH2	2.35	0.50
1:A:1405:G:O2'	1:A:1518:MA6:O2'	2.22	0.50
13:M:10:PRO:HB2	13:M:18:ALA:HB1	1.93	0.50
1:A:1399:C:H4'	1:A:1400:5MC:H5"	1.93	0.50
2:B:55:PHE:HD2	2:B:221:LEU:HG	1.77	0.50
4:D:140:VAL:HG11	4:D:146:ILE:HD11	1.94	0.50
9:I:16:ARG:O	9:I:63:ILE:HA	2.10	0.50
1:A:1077:G:N2	1:A:1080:A:OP2	2.41	0.49
1:A:1183:A:O2'	1:A:1185:G:OP2	2.30	0.49
1:A:1414:U:H2'	1:A:1415:G:H8	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:24:GLU:HG2	4:D:25:ARG:H	1.77	0.49
15:O:26:GLU:HA	15:O:81:LEU:HD11	1.94	0.49
1:A:272:C:H2'	1:A:273:A:H8	1.76	0.49
1:A:1060:C:H2'	1:A:1061:G:H8	1.77	0.49
1:A:1402:4OC:H2'	1:A:1403:C:O4'	2.11	0.49
10:J:57:LYS:HE2	10:J:60:ARG:NH2	2.27	0.49
1:A:250:A:H4'	1:A:251:G:O5'	2.10	0.49
2:B:91:PRO:HG3	2:B:154:LEU:HB2	1.95	0.49
2:B:168:THR:OG1	2:B:191:ASP:O	2.24	0.49
4:D:105:VAL:HG13	4:D:110:PHE:HB2	1.95	0.49
1:A:484:G:H4'	1:A:485:G:O5'	2.13	0.49
1:A:1057:G:H5"	3:C:154:SER:HB2	1.94	0.49
1:A:1250:A:H4'	9:I:68:GLY:N	2.27	0.49
10:J:90:LEU:N	10:J:91:PRO:HD2	2.27	0.49
1:A:1013:G:N2	1:A:1016:A:OP2	2.46	0.49
3:C:36:ASP:OD1	3:C:59:ARG:NH2	2.37	0.49
1:A:1124:G:O2'	1:A:1126:U:O4	2.31	0.49
12:L:36:VAL:HG22	12:L:82:VAL:HG22	1.93	0.49
5:E:142:LEU:O	5:E:143:ARG:NE	2.46	0.49
1:A:406:G:H5"	4:D:5:ILE:HG21	1.94	0.49
1:A:1236:A:H4'	1:A:1304:G:H4'	1.95	0.49
1:A:1451:A:H5"	1:A:1452:C:H5	1.78	0.49
1:A:737:A:H1'	6:F:73:ASN:HD21	1.78	0.49
13:M:86:CYS:SG	13:M:87:TYR:N	2.85	0.49
1:A:811:C:N4	28:A:1905:HOH:O	2.45	0.49
12:L:82:VAL:N	12:L:106:ASP:OD2	2.31	0.49
14:N:11:LYS:HG3	14:N:13:THR:H	1.78	0.49
1:A:514:C:H2'	1:A:515:G:C8	2.48	0.48
1:A:652:U:O4	1:A:752:G:O2'	2.24	0.48
1:A:1128:C:H42	1:A:1143:G:H1	1.60	0.48
1:A:1308:U:H2'	1:A:1309:G:H8	1.78	0.48
7:G:74:GLU:HG2	7:G:91:VAL:HG22	1.95	0.48
8:H:112:LEU:HD23	8:H:133:LEU:HA	1.95	0.48
19:S:33:THR:HG22	19:S:35:SER:H	1.77	0.48
1:A:56:U:H2'	1:A:57:G:C8	2.48	0.48
1:A:192:U:H1'	20:T:103:GLY:HA2	1.95	0.48
1:A:674:G:H2'	1:A:675:A:C8	2.48	0.48
1:A:1027:C:N4	1:A:1036:G:O6	2.45	0.48
1:A:1123:A:H4'	10:J:36:GLY:HA3	1.94	0.48
1:A:1222:G:OP2	1:A:1322:C:N4	2.38	0.48
8:H:121:ASP:N	8:H:121:ASP:OD1	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:18:ARG:HD3	11:K:35:PRO:HA	1.95	0.48
1:A:21:G:H2'	1:A:22:G:C8	2.49	0.48
1:A:328:C:H4'	1:A:329:A:O5'	2.14	0.48
10:J:48:THR:O	14:N:34:TYR:OH	2.31	0.48
1:A:1308:U:H2'	1:A:1309:G:C8	2.48	0.48
1:A:1518:MA6:H93	1:A:1519:MA6:H92	1.95	0.48
10:J:57:LYS:HE2	10:J:60:ARG:HH21	1.79	0.48
1:A:1182:G:H4'	1:A:1183:A:O5'	2.14	0.48
1:A:1031:G:H2'	1:A:1032:G:C8	2.49	0.48
1:A:1323:G:H2'	1:A:1324:A:C8	2.49	0.48
1:A:501:C:H2'	1:A:502:G:H8	1.77	0.47
9:I:97:LYS:HA	9:I:102:LEU:HD11	1.96	0.47
10:J:40:LEU:HD11	10:J:71:LEU:HD23	1.96	0.47
2:B:239:VAL:O	2:B:241:GLU:N	2.47	0.47
3:C:21:ARG:HG3	3:C:58:GLU:HG2	1.96	0.47
1:A:636:U:H5'	17:Q:2:PRO:HG3	1.96	0.47
1:A:1177:G:O5'	9:I:97:LYS:NZ	2.47	0.47
20:T:60:GLU:HG3	20:T:81:LYS:HE3	1.96	0.47
7:G:46:ALA:O	7:G:50:ILE:HG12	2.15	0.47
1:A:337:C:H2'	1:A:338:A:C8	2.49	0.47
1:A:948:C:H2'	1:A:949:A:H8	1.80	0.47
1:A:1350:A:OP1	9:I:121:ARG:NE	2.45	0.47
1:A:60:A:H4'	1:A:61:G:O5'	2.13	0.47
1:A:578:C:O2'	1:A:728:A:N3	2.40	0.47
1:A:1300:G:O2'	1:A:1301:U:O5'	2.31	0.47
5:E:88:LYS:HB3	5:E:123:LEU:HB2	1.97	0.47
12:L:59:ARG:NH1	12:L:65:GLU:OE2	2.48	0.47
14:N:26:ARG:HH21	14:N:43:CYS:HA	1.80	0.47
18:R:47:THR:HG22	18:R:83:GLU:H	1.80	0.47
1:A:701:C:H4'	1:A:702:A:O5'	2.15	0.47
11:K:72:ALA:HB1	11:K:77:MET:HE2	1.95	0.47
17:Q:21:VAL:HG21	17:Q:59:ILE:HD11	1.95	0.47
1:A:1301:U:H1'	1:A:1302:U:OP1	2.15	0.47
3:C:9:GLY:HA2	3:C:12:LEU:HG	1.96	0.47
1:A:269:C:H2'	1:A:270:A:C8	2.51	0.47
10:J:51:ARG:HE	10:J:59:SER:HB2	1.81	0.47
1:A:413:G:H1'	1:A:428:G:N2	2.30	0.46
1:A:674:G:H2'	1:A:675:A:H8	1.81	0.46
20:T:30:LYS:HB3	20:T:34:LYS:HE3	1.97	0.46
1:A:1286:A:H2'	1:A:1287:A:H4'	1.97	0.46
5:E:76:ILE:HG13	5:E:77:PRO:HD2	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1034:G:H2'	1:A:1035:A:C8	2.51	0.46
9:I:26:VAL:HB	9:I:33:PHE:HB2	1.97	0.46
15:O:26:GLU:OE1	15:O:77:ARG:NH1	2.47	0.46
1:A:564:C:O2'	8:H:91:ARG:NH2	2.49	0.46
1:A:570:G:O6	1:A:865:A:N6	2.48	0.46
1:A:1070:U:OP1	5:E:18:ARG:NH1	2.45	0.46
1:A:1132:C:H2'	1:A:1133:G:H8	1.79	0.46
19:S:23:ASN:OD1	19:S:47:HIS:NE2	2.39	0.46
1:A:851:G:H2'	1:A:852:G:C8	2.50	0.46
1:A:919:A:O2'	1:A:1080:A:N1	2.47	0.46
1:A:1020:U:H2'	1:A:1021:G:H8	1.80	0.46
1:A:1064:G:H21	1:A:1190:G:H2'	1.81	0.46
2:B:130:ARG:HA	2:B:130:ARG:HD3	1.75	0.46
3:C:70:VAL:HG12	3:C:72:LYS:H	1.81	0.46
1:A:539:A:H2'	1:A:540:G:C8	2.50	0.46
1:A:1056:U:H5'	3:C:163:ALA:HB2	1.98	0.46
7:G:75:VAL:HG21	7:G:86:GLN:HB3	1.97	0.46
14:N:24:CYS:HB3	14:N:29:ARG:H	1.81	0.46
16:P:40:ASP:HB3	16:P:48:TRP:HB2	1.98	0.46
1:A:559:A:H4'	1:A:560:U:O5'	2.15	0.46
8:H:53:VAL:O	8:H:55:GLY:N	2.49	0.46
15:O:39:LEU:HB3	15:O:56:LEU:HD13	1.98	0.46
1:A:67:C:H2'	1:A:68:G:C8	2.51	0.46
1:A:1109:C:OP2	3:C:176:HIS:ND1	2.49	0.46
1:A:1376:U:H2'	1:A:1377:A:C8	2.51	0.46
2:B:47:THR:HA	2:B:202:PRO:HG2	1.98	0.46
4:D:4:TYR:CG	4:D:4:TYR:O	2.69	0.46
1:A:643:C:H2'	1:A:644:G:H8	1.80	0.45
1:A:662:G:H2'	1:A:663:A:C8	2.50	0.45
1:A:1035:A:H2'	1:A:1036:G:C8	2.50	0.45
1:A:1443:G:H4'	1:A:1446:A:O5'	2.14	0.45
1:A:272:C:H2'	1:A:273:A:C8	2.51	0.45
1:A:757:U:O2'	1:A:879:C:O2	2.34	0.45
1:A:1371:G:O3'	9:I:69:GLY:HA3	2.16	0.45
8:H:6:ILE:O	8:H:10:LEU:HG	2.16	0.45
1:A:372:C:H1'	1:A:373:A:OP2	2.17	0.45
20:T:26:ASN:OD1	20:T:71:THR:OG1	2.23	0.45
2:B:48:MET:HA	2:B:51:LEU:HB2	1.99	0.45
3:C:34:LEU:HD11	14:N:25:VAL:HG21	1.97	0.45
4:D:11:LEU:HD13	4:D:66:ARG:HD3	1.98	0.45
5:E:98:THR:N	5:E:117:ASP:OD2	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:R:32:ARG:HA	18:R:69:THR:HG21	1.97	0.45
1:A:390:C:H2'	1:A:391:G:C8	2.51	0.45
1:A:619:U:N3	4:D:134:ASP:OD1	2.44	0.45
1:A:1435:G:H2'	1:A:1436:U:C6	2.52	0.45
1:A:337:C:H2'	1:A:338:A:H8	1.80	0.45
1:A:1218:C:H2'	1:A:1219:U:C6	2.51	0.45
17:Q:68:ARG:H	17:Q:70:ARG:NH1	2.14	0.45
1:A:718:G:O6	18:R:74:ARG:NH1	2.50	0.45
2:B:101:MET:HA	2:B:108:ILE:HG13	1.99	0.45
3:C:58:GLU:HB3	10:J:92:THR:HG21	1.98	0.45
1:A:992:U:O2	1:A:1044:A:N6	2.50	0.45
1:A:1048:G:H5"	14:N:3:ARG:HG3	1.99	0.45
1:A:1425:U:H3	1:A:1475:G:H1	1.63	0.45
9:I:63:ILE:HG21	9:I:77:ILE:HG12	1.99	0.45
1:A:522:C:H41	12:L:53:ARG:HH22	1.64	0.45
1:A:715:A:OP1	1:A:805:C:O2'	2.31	0.45
1:A:754:C:OP1	15:O:72:ARG:NH1	2.37	0.44
1:A:948:C:OP1	13:M:107:ALA:HA	2.17	0.44
11:K:69:ALA:O	11:K:73:MET:HG2	2.17	0.44
1:A:380:G:N2	1:A:383:A:OP2	2.35	0.44
3:C:5:ILE:H	3:C:5:ILE:HG13	1.62	0.44
6:F:46:ARG:HB2	6:F:60:PHE:CE2	2.53	0.44
7:G:16:LEU:HG	9:I:42:ARG:HA	1.99	0.44
1:A:1292:U:OP1	7:G:41:ARG:NH2	2.49	0.44
1:A:1342:C:H2'	1:A:1343:G:C8	2.53	0.44
4:D:111:ALA:HB2	4:D:120:LEU:HD12	1.99	0.44
1:A:474:G:OP2	16:P:75:ARG:NH1	2.42	0.44
1:A:801:U:H2'	1:A:802:A:C8	2.53	0.44
1:A:1427:U:H2'	1:A:1428:A:H8	1.82	0.44
17:Q:83:ASP:OD1	17:Q:83:ASP:N	2.51	0.44
1:A:1306:A:N6	1:A:1331:G:H1'	2.32	0.44
15:O:56:LEU:HA	15:O:59:MET:HE2	1.98	0.44
1:A:17:U:H2'	1:A:18:C:C6	2.53	0.44
1:A:1347:G:O2'	1:A:1348:U:P	2.76	0.44
6:F:50:TYR:CE2	18:R:77:GLY:HA2	2.53	0.44
1:A:190(J):U:H2'	1:A:190(K):G:C8	2.53	0.44
1:A:401:C:H2'	1:A:402:G:H8	1.82	0.44
1:A:587:G:N2	1:A:754:C:OP2	2.51	0.44
1:A:689:C:H2'	1:A:690:G:O4'	2.17	0.44
1:A:740:U:H2'	1:A:741:G:H8	1.81	0.44
1:A:1298:C:H4'	1:A:1299:A:C4	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1392:G:N2	1:A:1502:A:H8	2.15	0.44
9:I:79:LEU:HD11	9:I:104:ARG:HA	2.00	0.44
1:A:184:G:H2'	1:A:185:A:H8	1.83	0.44
11:K:18:ARG:HG3	11:K:81:ASP:HB2	2.00	0.44
3:C:126:ARG:HH21	3:C:128:PHE:HD1	1.65	0.44
1:A:757:U:H2'	1:A:758:G:O4'	2.18	0.43
1:A:1348:U:H4'	9:I:120:ARG:HD2	2.00	0.43
11:K:62:GLN:HG3	11:K:97:ALA:HB2	2.00	0.43
13:M:66:LEU:O	13:M:70:LEU:HB2	2.17	0.43
1:A:636:U:H2'	1:A:637:G:C8	2.53	0.43
1:A:653:A:O4'	8:H:56:LYS:HE3	2.19	0.43
1:A:669:U:H2'	1:A:670:G:C8	2.53	0.43
1:A:826:C:O2	8:H:15:ASN:ND2	2.50	0.43
1:A:562:C:H1'	12:L:15:ARG:HG3	2.00	0.43
1:A:769:G:H4'	1:A:1513:A:H4'	1.99	0.43
1:A:890:G:O2'	1:A:906:G:O6	2.28	0.43
1:A:898:G:N2	1:A:901:A:OP2	2.50	0.43
1:A:1356:G:H2'	1:A:1357:A:C8	2.53	0.43
4:D:23:GLY:HA3	4:D:112:VAL:HG22	1.99	0.43
4:D:173:TRP:CD2	4:D:189:PRO:HB3	2.52	0.43
20:T:13:LEU:O	20:T:16:HIS:HB3	2.18	0.43
12:L:78:GLN:N	12:L:81:SER:OG	2.49	0.43
1:A:186:C:H2'	1:A:187:C:C6	2.53	0.43
1:A:1233:G:H2'	1:A:1234:C:C6	2.53	0.43
1:A:1355:G:H2'	1:A:1356:G:C8	2.53	0.43
2:B:44:LEU:HD12	2:B:44:LEU:H	1.83	0.43
1:A:106:C:H2'	1:A:107:G:H8	1.83	0.43
1:A:157:G:H2'	1:A:158:G:H8	1.84	0.43
1:A:266:G:H4'	1:A:267:C:O5'	2.18	0.43
1:A:560:U:H4'	1:A:561:U:H5"	1.99	0.43
1:A:707:C:OP1	11:K:85:ARG:NH1	2.51	0.43
9:I:65:VAL:HG11	9:I:73:GLN:HB3	2.00	0.43
1:A:116:A:H61	1:A:313:A:H1'	1.84	0.43
1:A:390:C:O3'	16:P:28:ARG:NH2	2.51	0.43
1:A:714:G:H2'	1:A:715:A:C8	2.54	0.43
1:A:859:A:OP2	1:A:869:G:N1	2.34	0.43
1:A:547:A:OP2	4:D:2:GLY:N	2.51	0.43
1:A:1201:A:H1'	1:A:1202:G:OP2	2.18	0.43
2:B:88:ALA:O	2:B:90:MET:N	2.52	0.43
2:B:223:ILE:HD13	2:B:230:VAL:HG23	2.00	0.43
3:C:64:VAL:HB	3:C:99:VAL:HG21	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:973:G:H3'	1:A:974:A:H5"	2.00	0.43
1:A:1373:G:H5"	7:G:36:LYS:HB2	2.00	0.43
9:I:116:LYS:HD2	9:I:122:ALA:HA	2.01	0.43
13:M:16:ASP:OD1	13:M:16:ASP:N	2.52	0.43
17:Q:9:VAL:HG21	17:Q:84:LEU:HD12	2.01	0.43
1:A:356:A:N3	1:A:368:U:O2'	2.42	0.43
1:A:542:G:OP1	4:D:10:ARG:NH2	2.52	0.43
1:A:1131:G:H2'	1:A:1132:C:C6	2.53	0.43
1:A:1347:G:O2'	1:A:1348:U:O5'	2.36	0.43
1:A:1431:C:H2'	1:A:1432:G:O4'	2.19	0.43
1:A:1525:G:OP1	11:K:120:ARG:NH2	2.52	0.43
14:N:26:ARG:HE	14:N:43:CYS:HB3	1.84	0.43
1:A:1128:C:H42	1:A:1143:G:H22	1.67	0.42
7:G:65:ALA:O	7:G:69:VAL:HG23	2.19	0.42
14:N:9:LYS:HB3	14:N:9:LYS:HE3	1.79	0.42
1:A:518:C:H2'	1:A:530:G:N3	2.34	0.42
1:A:673:G:H2'	1:A:674:G:C8	2.53	0.42
1:A:1043:C:H2'	1:A:1044:A:H8	1.85	0.42
5:E:45:PHE:CE2	5:E:47:LYS:HD2	2.54	0.42
1:A:190(K):G:H2'	1:A:190(L):U:C6	2.54	0.42
1:A:1504:G:OP1	1:A:1507:A:H4'	2.19	0.42
1:A:1513:A:H2'	1:A:1514:C:C6	2.53	0.42
2:B:88:ALA:HB1	2:B:226:ARG:NH2	2.34	0.42
9:I:44:VAL:HG12	9:I:51:ARG:HH22	1.84	0.42
13:M:37:THR:HG22	13:M:55:ARG:HD2	2.01	0.42
1:A:916:G:H2'	1:A:917:G:H8	1.84	0.42
1:A:938:A:N3	1:A:1376:U:O2'	2.42	0.42
2:B:112:VAL:O	2:B:116:GLU:HG2	2.20	0.42
1:A:51:A:N7	1:A:114:U:O2'	2.51	0.42
1:A:263:A:OP1	20:T:79:ARG:NH1	2.52	0.42
1:A:501:C:H1'	1:A:549:C:H1'	2.00	0.42
1:A:976:G:H5'	1:A:1358:U:O2'	2.20	0.42
1:A:1294:G:H2'	1:A:1295:G:H8	1.85	0.42
12:L:111:LYS:HE3	12:L:112:ASP:H	1.85	0.42
1:A:7:G:H5'	1:A:298:A:O4'	2.19	0.42
1:A:739:C:O2'	15:O:42:HIS:ND1	2.38	0.42
1:A:791:G:O6	1:A:792:A:N6	2.52	0.42
1:A:1273:G:H2'	1:A:1274:G:O4'	2.20	0.42
3:C:64:VAL:HG23	3:C:99:VAL:HG11	2.01	0.42
7:G:45:ASP:O	7:G:49:ILE:HG13	2.19	0.42
13:M:57:ARG:O	13:M:61:GLU:HB2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:92:LEU:O	20:T:96:GLY:N	2.38	0.42
1:A:45:U:H2'	1:A:46:G:H8	1.84	0.42
1:A:824:C:H2'	1:A:825:G:H8	1.84	0.42
1:A:1532:U:H2'	1:A:1533:C:H3'	2.02	0.42
26:A:1858:B6M:O62	26:A:1858:B6M:O23	2.38	0.42
4:D:150:GLU:HG3	4:D:153:ARG:HH12	1.84	0.42
1:A:824:C:H2'	1:A:825:G:C8	2.55	0.42
1:A:851:G:H2'	1:A:852:G:H8	1.85	0.42
1:A:972:C:OP2	10:J:57:LYS:NZ	2.50	0.42
1:A:985:C:H2'	1:A:986:A:C8	2.54	0.42
3:C:88:ARG:HE	3:C:101:LEU:HB3	1.84	0.42
5:E:99:GLY:N	5:E:117:ASP:OD2	2.45	0.42
8:H:110:ALA:HB3	8:H:121:ASP:HB3	2.01	0.42
21:U:5:ASP:O	21:U:11:GLY:HA3	2.20	0.42
1:A:1003:G:H2'	1:A:1003(A):G:C8	2.55	0.42
1:A:1031:G:H2'	1:A:1032:G:H8	1.85	0.42
1:A:1148:U:H2'	1:A:1149:C:O4'	2.19	0.42
2:B:131:PRO:O	2:B:133:LYS:N	2.53	0.42
7:G:51:GLN:C	7:G:53:LYS:H	2.23	0.42
1:A:9:G:OP2	5:E:121:LYS:NZ	2.34	0.42
1:A:1181:G:O2'	1:A:1184:G:H5'	2.19	0.42
8:H:53:VAL:HG12	8:H:54:ASP:H	1.85	0.42
1:A:410:G:OP1	4:D:30:LYS:NZ	2.35	0.41
1:A:1477:C:H2'	1:A:1478:C:C6	2.55	0.41
7:G:28:ASN:OD1	7:G:36:LYS:NZ	2.53	0.41
1:A:438:G:N2	1:A:497:A:H62	2.13	0.41
1:A:1232:U:H5"	9:I:124:GLN:O	2.20	0.41
3:C:93:LYS:HD3	3:C:93:LYS:HA	1.95	0.41
1:A:344:A:H5'	1:A:345:C:C5	2.54	0.41
3:C:38:ARG:HB3	3:C:94:LEU:HD21	2.01	0.41
4:D:150:GLU:HG3	4:D:153:ARG:NH1	2.35	0.41
7:G:111:ARG:HB2	7:G:119:ARG:HG2	2.01	0.41
13:M:63:THR:HG23	13:M:64:TRP:CD2	2.54	0.41
16:P:59:TRP:HA	16:P:62:VAL:HG22	2.02	0.41
19:S:13:ASP:HA	19:S:16:LEU:HB3	2.01	0.41
1:A:62:U:O2'	1:A:379:C:O2	2.37	0.41
1:A:881:G:OP2	12:L:12:ARG:NH2	2.53	0.41
1:A:884:U:H4'	1:A:885:G:H5"	2.02	0.41
9:I:10:ARG:NH1	9:I:75:ASP:OD2	2.53	0.41
11:K:33:THR:HA	11:K:39:PRO:HA	2.01	0.41
15:O:87:ILE:HG22	15:O:88:ARG:H	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:R:26:LEU:HD12	18:R:26:LEU:HA	1.88	0.41
1:A:359:U:H2'	1:A:360:A:C8	2.55	0.41
1:A:580:U:H2'	1:A:581:G:O4'	2.19	0.41
1:A:1306:A:H61	1:A:1331:G:H1'	1.86	0.41
1:A:1377:A:HO2'	7:G:2:ALA:N	2.19	0.41
1:A:1391:U:H2'	1:A:1392:G:H8	1.83	0.41
1:A:1499:A:H1'	1:A:1520:G:H5'	2.01	0.41
1:A:142:G:H2'	1:A:143:A:H8	1.85	0.41
1:A:264:U:H4'	17:Q:63:ARG:HD3	2.03	0.41
1:A:335:C:H2'	1:A:336:C:C6	2.54	0.41
1:A:1118:C:H1'	1:A:1179:A:C5	2.56	0.41
1:A:24:U:H2'	1:A:25:C:C6	2.56	0.41
1:A:776:G:H22	1:A:802:A:P	2.44	0.41
1:A:911:U:H2'	1:A:912:C:C6	2.55	0.41
1:A:1288:A:H2'	1:A:1289:A:C8	2.56	0.41
7:G:62:PHE:HA	7:G:124:LEU:HD12	2.02	0.41
8:H:51:VAL:HG11	8:H:60:ARG:HH11	1.86	0.41
1:A:108:G:N2	1:A:108:G:OP2	2.53	0.41
1:A:381:C:H2'	1:A:382:A:O4'	2.20	0.41
1:A:397:A:H5'	1:A:398:C:OP1	2.21	0.41
1:A:833:U:H2'	1:A:834:C:C6	2.55	0.41
1:A:1256:A:HO2'	1:A:1257:U:P	2.43	0.41
1:A:1262:C:H2'	1:A:1263:C:C6	2.56	0.41
4:D:25:ARG:NH1	4:D:30:LYS:O	2.54	0.41
9:I:127:LYS:HB3	9:I:127:LYS:HE3	1.88	0.41
1:A:1030(B):C:H2'	1:A:1030(C):G:O4'	2.21	0.41
1:A:1032:G:H2'	1:A:1033:G:C8	2.56	0.41
2:B:178:ARG:HH11	2:B:178:ARG:HA	1.85	0.41
6:F:4:TYR:CE2	6:F:92:LYS:HG2	2.56	0.41
6:F:82:ARG:HE	6:F:82:ARG:HA	1.85	0.41
9:I:45:ALA:HA	9:I:48:GLU:HG2	2.03	0.41
1:A:1001:A:H2'	1:A:1002:G:C8	2.56	0.40
1:A:384:G:H2'	1:A:385:C:C6	2.56	0.40
1:A:432:A:H3'	1:A:433:C:H5"	2.04	0.40
2:B:88:ALA:HB1	2:B:226:ARG:HH21	1.86	0.40
5:E:145:LYS:O	5:E:149:GLU:HG2	2.21	0.40
9:I:111:ARG:HG3	14:N:61:TRP:NE1	2.36	0.40
10:J:54:PHE:CD2	10:J:55:LYS:HG2	2.56	0.40
10:J:71:LEU:HD13	10:J:73:ASP:HB2	2.02	0.40
21:U:6:ARG:HE	21:U:15:ARG:HH12	1.69	0.40
1:A:19:C:H2'	1:A:20:U:C6	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1498:UR3:H6	1:A:1498:UR3:O5'	2.21	0.40
4:D:60:GLU:HG3	4:D:198:VAL:HG13	2.03	0.40
5:E:110:LEU:HD13	5:E:118:ILE:HG21	2.04	0.40
12:L:76:ASN:OD1	12:L:76:ASN:N	2.53	0.40
1:A:241:C:H4'	12:L:19:ARG:HH22	1.87	0.40
1:A:977:A:H2'	1:A:978:A:H5"	2.04	0.40
1:A:1154:G:H2'	1:A:1155:G:H8	1.87	0.40
1:A:1328:C:H2'	1:A:1329:A:H8	1.86	0.40
2:B:135:GLN:O	2:B:139:LYS:HB2	2.21	0.40
3:C:52:LEU:H	3:C:52:LEU:HD23	1.87	0.40
9:I:25:LYS:N	9:I:60:ASP:OD1	2.53	0.40
11:K:57:THR:HG22	11:K:59:TYR:N	2.35	0.40
1:A:646:U:H2'	1:A:647:C:C6	2.57	0.40
1:A:1281:U:O2'	1:A:1282:C:OP1	2.36	0.40
12:L:70:ILE:HD13	12:L:77:LEU:HD12	2.03	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:203:U:OP2	1:A:1335:C:O2'[3_545]	2.18	0.02

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
2	B	234/236 (99%)	216 (92%)	16 (7%)	2 (1%)	17 49
3	C	205/207 (99%)	190 (93%)	15 (7%)	0	100 100
4	D	206/208 (99%)	201 (98%)	5 (2%)	0	100 100
5	E	149/151 (99%)	146 (98%)	3 (2%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
6	F	99/101 (98%)	99 (100%)	0	0	100	100
7	G	153/155 (99%)	148 (97%)	5 (3%)	0	100	100
8	H	136/138 (99%)	131 (96%)	4 (3%)	1 (1%)	22	55
9	I	125/127 (98%)	112 (90%)	13 (10%)	0	100	100
10	J	97/99 (98%)	79 (81%)	18 (19%)	0	100	100
11	K	117/119 (98%)	111 (95%)	6 (5%)	0	100	100
12	L	122/125 (98%)	115 (94%)	7 (6%)	0	100	100
13	M	116/118 (98%)	108 (93%)	7 (6%)	1 (1%)	17	49
14	N	58/60 (97%)	55 (95%)	3 (5%)	0	100	100
15	O	86/88 (98%)	83 (96%)	3 (4%)	0	100	100
16	P	82/84 (98%)	80 (98%)	2 (2%)	0	100	100
17	Q	97/99 (98%)	93 (96%)	4 (4%)	0	100	100
18	R	71/73 (97%)	67 (94%)	4 (6%)	0	100	100
19	S	79/81 (98%)	74 (94%)	5 (6%)	0	100	100
20	T	97/99 (98%)	89 (92%)	5 (5%)	3 (3%)	4	23
21	U	23/25 (92%)	22 (96%)	1 (4%)	0	100	100
All	All	2352/2393 (98%)	2219 (94%)	126 (5%)	7 (0%)	41	72

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
20	T	75	ASN
2	B	132	LYS
8	H	54	ASP
20	T	74	LYS
2	B	240	GLN
13	M	106	ASN
20	T	73	HIS

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	B	194/204 (95%)	185 (95%)	9 (5%)	27	57
3	C	160/161 (99%)	154 (96%)	6 (4%)	33	61
4	D	180/180 (100%)	176 (98%)	4 (2%)	52	75
5	E	115/116 (99%)	107 (93%)	8 (7%)	15	44
6	F	90/90 (100%)	87 (97%)	3 (3%)	38	66
7	G	126/126 (100%)	120 (95%)	6 (5%)	25	56
8	H	119/119 (100%)	114 (96%)	5 (4%)	30	59
9	I	98/98 (100%)	92 (94%)	6 (6%)	18	48
10	J	87/89 (98%)	83 (95%)	4 (5%)	27	57
11	K	90/90 (100%)	87 (97%)	3 (3%)	38	66
12	L	103/103 (100%)	99 (96%)	4 (4%)	32	61
13	M	94/94 (100%)	88 (94%)	6 (6%)	17	47
14	N	49/49 (100%)	47 (96%)	2 (4%)	30	59
15	O	79/79 (100%)	75 (95%)	4 (5%)	24	54
16	P	72/72 (100%)	70 (97%)	2 (3%)	43	70
17	Q	94/94 (100%)	91 (97%)	3 (3%)	39	67
18	R	64/64 (100%)	62 (97%)	2 (3%)	40	68
19	S	71/71 (100%)	66 (93%)	5 (7%)	15	44
20	T	76/76 (100%)	67 (88%)	9 (12%)	5	19
21	U	19/20 (95%)	18 (95%)	1 (5%)	22	52
All	All	1980/1995 (99%)	1888 (95%)	92 (5%)	27	57

All (92) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	24	TRP
2	B	46	LYS
2	B	69	LEU
2	B	82	ARG
2	B	114	ARG
2	B	142	LEU
2	B	144	ARG
2	B	221	LEU
2	B	236	TYR
3	C	27	LYS
3	C	34	LEU

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Mol	Chain	Res	Type
3	C	91	LEU
3	C	166	GLU
3	C	167	TRP
3	C	204	LEU
4	D	15	GLU
4	D	122	ARG
4	D	127	THR
4	D	192	GLU
5	E	6	PHE
5	E	12	LEU
5	E	41	VAL
5	E	64	ARG
5	E	76	ILE
5	E	89	ILE
5	E	120	THR
5	E	150	ARG
6	F	10	LEU
6	F	69	GLU
6	F	100	ASN
7	G	8	GLU
7	G	11	GLN
7	G	48	LYS
7	G	52	GLU
7	G	114	ARG
7	G	156	TRP
8	H	31	PHE
8	H	85	ARG
8	H	91	ARG
8	H	102	ARG
8	H	133	LEU
9	I	2	GLU
9	I	79	LEU
9	I	102	LEU
9	I	111	ARG
9	I	118	LYS
9	I	121	ARG
10	J	49	VAL
10	J	71	LEU
10	J	80	LYS
10	J	83	GLU
11	K	11	LYS
11	K	92	GLU

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Mol	Chain	Res	Type
11	K	126	ARG
12	L	20	LYS
12	L	47	LYS
12	L	53	ARG
12	L	111	LYS
13	M	44	ARG
13	M	58	GLU
13	M	70	LEU
13	M	105	THR
13	M	106	ASN
13	M	109	THR
14	N	9	LYS
14	N	33	VAL
15	O	5	LYS
15	O	39	LEU
15	O	70	LEU
15	O	81	LEU
16	P	20	VAL
16	P	67	THR
17	Q	38	ARG
17	Q	74	LEU
17	Q	98	LEU
18	R	25	THR
18	R	47	THR
19	S	5	LEU
19	S	7	LYS
19	S	12	ASP
19	S	15	LEU
19	S	31	ILE
20	T	8	ARG
20	T	10	LEU
20	T	48	LYS
20	T	51	GLU
20	T	54	LYS
20	T	72	LEU
20	T	73	HIS
20	T	74	LYS
20	T	84	LEU
21	U	9	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
3	C	6	HIS
4	D	119	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1507/1522 (99%)	196 (13%)	35 (2%)
22	a	2/3 (66%)	1 (50%)	0
23	b	3/6 (50%)	0	0
All	All	1512/1531 (98%)	197 (13%)	35 (2%)

All (197) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	9	G
1	A	32	A
1	A	39	G
1	A	47	C
1	A	48	C
1	A	51	A
1	A	61	G
1	A	101	A
1	A	116	A
1	A	117	G
1	A	120	A
1	A	121	C
1	A	129(A)	G
1	A	130	A
1	A	131	C
1	A	163	C
1	A	182	U
1	A	190(E)	U
1	A	195	A
1	A	197	A
1	A	201	C
1	A	202	U
1	A	204	U
1	A	216	G
1	A	220	G
1	A	244	U
1	A	247	G
1	A	251	G

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Mol	Chain	Res	Type
1	A	267	C
1	A	270	A
1	A	289	G
1	A	298	A
1	A	321	A
1	A	328	C
1	A	329	A
1	A	332	G
1	A	344	A
1	A	352	C
1	A	353	A
1	A	354	G
1	A	367	U
1	A	373	A
1	A	390	C
1	A	397	A
1	A	398	C
1	A	406	G
1	A	412	A
1	A	413	G
1	A	414	A
1	A	421	U
1	A	429	U
1	A	433	C
1	A	439	A
1	A	452	A
1	A	460	A
1	A	461	C
1	A	485	G
1	A	497	A
1	A	498	U
1	A	509	A
1	A	510	A
1	A	511	C
1	A	518	C
1	A	527	7MG
1	A	532	A
1	A	533	A
1	A	545	C
1	A	547	A
1	A	559	A
1	A	560	U

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Mol	Chain	Res	Type
1	A	562	C
1	A	564	C
1	A	572	A
1	A	576	G
1	A	577	G
1	A	596	C
1	A	630	G
1	A	631	G
1	A	653	A
1	A	665	A
1	A	666	G
1	A	687	A
1	A	688	G
1	A	702	A
1	A	721	G
1	A	723	U
1	A	731	G
1	A	734	G
1	A	749	C
1	A	755	G
1	A	777	A
1	A	781	A
1	A	782	A
1	A	793	U
1	A	794	A
1	A	813	U
1	A	816	A
1	A	817	C
1	A	819	A
1	A	821	G
1	A	828	A
1	A	839	U
1	A	840	C
1	A	841	U
1	A	848	C
1	A	876	G
1	A	902	G
1	A	914	A
1	A	926	G
1	A	927	G
1	A	934	C
1	A	935	A

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Mol	Chain	Res	Type
1	A	960	U
1	A	961	U
1	A	968	A
1	A	969	A
1	A	971	G
1	A	974	A
1	A	975	A
1	A	976	G
1	A	977	A
1	A	991	U
1	A	992	U
1	A	993	G
1	A	994	A
1	A	1004	A
1	A	1005	A
1	A	1025	U
1	A	1026	G
1	A	1027	C
1	A	1050	G
1	A	1054	C
1	A	1065	U
1	A	1066	C
1	A	1068	G
1	A	1094	G
1	A	1095	U
1	A	1101	A
1	A	1117	G
1	A	1125	U
1	A	1126	U
1	A	1127	G
1	A	1129	C
1	A	1130	A
1	A	1131	G
1	A	1137	C
1	A	1138	G
1	A	1139	G
1	A	1159	U
1	A	1180	A
1	A	1181	G
1	A	1182	G
1	A	1183	A
1	A	1196	U

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Mol	Chain	Res	Type
1	A	1197	G
1	A	1201	A
1	A	1202	G
1	A	1212	U
1	A	1213	A
1	A	1227	A
1	A	1238	A
1	A	1257	U
1	A	1258	G
1	A	1270	C
1	A	1280	A
1	A	1281	U
1	A	1282	C
1	A	1286	A
1	A	1287	A
1	A	1290	G
1	A	1300	G
1	A	1301	U
1	A	1302	U
1	A	1320	C
1	A	1332	A
1	A	1348	U
1	A	1353	G
1	A	1359	C
1	A	1362	C
1	A	1364	U
1	A	1398	A
1	A	1421	G
1	A	1442	G
1	A	1443	G
1	A	1446	A
1	A	1487	G
1	A	1492	A
1	A	1499	A
1	A	1502	A
1	A	1504	G
1	A	1505	G
1	A	1506	U
1	A	1517	G
1	A	1520	G
1	A	1529	G
1	A	1530	G

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Mol	Chain	Res	Type
22	a	3	A

All (35) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	60	A
1	A	115	G
1	A	129(A)	G
1	A	181	G
1	A	250	A
1	A	266	G
1	A	328	C
1	A	372	C
1	A	428	G
1	A	484	G
1	A	509	A
1	A	559	A
1	A	687	A
1	A	701	C
1	A	748	C
1	A	812	C
1	A	913	A
1	A	960	U
1	A	1049	U
1	A	1065	U
1	A	1067	A
1	A	1129	C
1	A	1179	A
1	A	1182	G
1	A	1201	A
1	A	1256	A
1	A	1281	U
1	A	1285	A
1	A	1300	G
1	A	1301	U
1	A	1331	G
1	A	1347	G
1	A	1443	G
1	A	1505	G
1	A	1528	U

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

18 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	$\#\|Z\| > 2$
22	A2M	a	2	22,23	18,25,26	0.93	1 (5%)	18,36,39	1.61	3 (16%)
1	PSU	A	516	1	18,21,22	2.01	7 (38%)	22,30,33	1.45	4 (18%)
1	MA6	A	1518	1	18,26,27	0.67	0	19,38,41	0.83	1 (5%)
1	PSU	A	1540	1	18,21,22	1.99	6 (33%)	22,30,33	1.44	4 (18%)
23	12A	b	37	23	29,36,37	5.07	14 (48%)	34,52,55	2.53	10 (29%)
1	M2G	A	966	1	20,27,28	1.43	4 (20%)	22,40,43	1.34	3 (13%)
1	4OC	A	1402	1	20,23,24	0.98	2 (10%)	26,32,35	0.71	1 (3%)
1	5MC	A	967	1	18,22,23	1.03	2 (11%)	26,32,35	0.94	2 (7%)
1	UR3	A	1498	1	19,22,23	0.70	1 (5%)	26,32,35	0.92	1 (3%)
12	0TD	L	92	12	7,9,10	1.08	0	6,11,13	1.96	2 (33%)
1	7MG	A	527	1	22,26,27	5.06	4 (18%)	29,39,42	2.09	9 (31%)
1	5MC	A	1407	1	18,22,23	1.04	2 (11%)	26,32,35	0.97	2 (7%)
1	MA6	A	1519	1	18,26,27	0.65	0	19,38,41	0.90	1 (5%)
1	5MC	A	1400	1	18,22,23	1.05	2 (11%)	26,32,35	0.95	1 (3%)
1	5MC	A	1404	1	18,22,23	1.05	2 (11%)	26,32,35	0.94	2 (7%)
23	70U	b	34	22,23	22,26,27	3.55	10 (45%)	28,37,40	1.51	5 (17%)
1	2MG	A	1207	1	18,26,27	1.30	4 (22%)	16,38,41	1.45	2 (12%)
1	PSU	A	1541	24,1	18,21,22	2.00	7 (38%)	22,30,33	1.45	4 (18%)

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
22	A2M	a	2	22,23	-	2/5/27/28	0/3/3/3
1	PSU	A	516	1	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	MA6	A	1518	1	-	2/7/29/30	0/3/3/3
1	PSU	A	1540	1	-	0/7/25/26	0/2/2/2
23	12A	b	37	23	1/1/9/11	9/21/43/44	0/3/3/3
1	M2G	A	966	1	-	0/7/29/30	0/3/3/3
1	4OC	A	1402	1	-	2/9/29/30	0/2/2/2
1	5MC	A	967	1	-	1/7/25/26	0/2/2/2
1	UR3	A	1498	1	-	0/7/25/26	0/2/2/2
12	0TD	L	92	12	-	5/7/12/14	-
1	7MG	A	527	1	-	2/7/37/38	0/3/3/3
1	5MC	A	1407	1	-	0/7/25/26	0/2/2/2
1	MA6	A	1519	1	-	2/7/29/30	0/3/3/3
1	5MC	A	1400	1	-	2/7/25/26	0/2/2/2
1	5MC	A	1404	1	-	0/7/25/26	0/2/2/2
23	70U	b	34	22,23	-	4/13/31/32	0/2/2/2
1	2MG	A	1207	1	-	0/5/27/28	0/3/3/3
1	PSU	A	1541	24,1	-	1/7/25/26	0/2/2/2

All (68) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	527	7MG	C8-N9	-22.92	1.33	1.46
23	b	37	12A	O4'-C1'	14.94	1.61	1.41
23	b	37	12A	C2'-C1'	-14.93	1.31	1.53
23	b	37	12A	C6-N6	9.25	1.52	1.36
23	b	34	70U	O4-C4	8.70	1.40	1.23
23	b	34	70U	C2-S2	8.51	1.81	1.67
23	b	37	12A	C2-S2	7.19	1.81	1.75
23	b	37	12A	O4'-C4'	-6.04	1.31	1.45
23	b	34	70U	C6-N1	-5.81	1.28	1.38
23	b	37	12A	CC-N	5.20	1.46	1.35
23	b	34	70U	C4-N3	-5.11	1.29	1.38
23	b	37	12A	O2'-C2'	4.13	1.52	1.43
1	A	527	7MG	C2-N2	3.81	1.43	1.34
23	b	37	12A	CC-N6	3.69	1.45	1.37
1	A	516	PSU	C2-N1	-3.66	1.31	1.36
1	A	1540	PSU	C2-N1	-3.65	1.31	1.36
23	b	34	70U	C5M-C5	3.63	1.57	1.50
1	A	1541	PSU	C2-N1	-3.60	1.31	1.36
23	b	34	70U	O9-C8	3.60	1.44	1.33
23	b	34	70U	C4-C5	-3.59	1.37	1.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1541	PSU	C6-C5	3.50	1.39	1.35
1	A	516	PSU	C6-C5	3.48	1.39	1.35
1	A	1540	PSU	C6-C5	3.44	1.39	1.35
1	A	1540	PSU	C4-N3	-3.40	1.32	1.38
1	A	516	PSU	C4-N3	-3.36	1.32	1.38
1	A	1541	PSU	C4-N3	-3.35	1.32	1.38
23	b	34	70U	O9-C9	-3.30	1.37	1.45
23	b	37	12A	O3'-C3'	-3.28	1.35	1.43
1	A	966	M2G	C6-N1	3.21	1.42	1.37
1	A	516	PSU	C2-N3	-3.20	1.32	1.37
23	b	37	12A	OO-CC	-3.19	1.16	1.23
23	b	37	12A	O5'-C5'	-3.19	1.37	1.44
1	A	966	M2G	C2-N3	3.18	1.34	1.30
1	A	1540	PSU	C2-N3	-3.17	1.32	1.37
1	A	1541	PSU	C2-N3	-3.16	1.32	1.37
23	b	34	70U	C6-C5	3.03	1.43	1.34
23	b	37	12A	O-C	2.96	1.31	1.22
1	A	966	M2G	C2-N2	2.79	1.40	1.35
1	A	1207	2MG	C6-N1	2.77	1.42	1.37
1	A	527	7MG	C5-N7	2.75	1.38	1.35
1	A	1207	2MG	C2-N2	2.73	1.39	1.33
1	A	1540	PSU	O4-C4	-2.72	1.18	1.23
1	A	516	PSU	O4-C4	-2.72	1.18	1.23
22	a	2	A2M	C6-N6	2.70	1.43	1.34
1	A	1541	PSU	O4-C4	-2.66	1.18	1.23
23	b	34	70U	C2-N3	-2.62	1.31	1.37
1	A	1207	2MG	C5-C6	-2.62	1.42	1.47
1	A	966	M2G	C5-C6	-2.55	1.42	1.47
23	b	37	12A	CA-N	-2.54	1.40	1.45
1	A	1400	5MC	C2-N1	2.47	1.45	1.40
1	A	1407	5MC	C2-N1	2.42	1.45	1.40
1	A	1404	5MC	C2-N1	2.42	1.45	1.40
1	A	967	5MC	C2-N1	2.41	1.45	1.40
1	A	1402	4OC	C2-N3	2.39	1.41	1.36
1	A	1207	2MG	C2-N1	2.37	1.40	1.36
1	A	967	5MC	C2-N3	2.33	1.41	1.36
1	A	1404	5MC	C2-N3	2.32	1.41	1.36
1	A	1400	5MC	C2-N3	2.31	1.41	1.36
1	A	1407	5MC	C2-N3	2.28	1.41	1.36
1	A	516	PSU	O2-C2	-2.24	1.18	1.23
1	A	1541	PSU	O2-C2	-2.21	1.18	1.23
1	A	1540	PSU	O2-C2	-2.19	1.18	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	527	7MG	C4-N3	2.16	1.39	1.34
23	b	37	12A	CA-C	2.13	1.55	1.52
1	A	1498	UR3	C2-N1	2.11	1.41	1.38
1	A	1402	4OC	O2-C2	-2.08	1.19	1.23
1	A	1541	PSU	C6-N1	-2.05	1.32	1.36
1	A	516	PSU	C6-N1	-2.02	1.32	1.36

All (57) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
23	b	37	12A	C2M-S2-C2	9.80	109.59	102.27
23	b	37	12A	N6-CC-N	5.15	120.95	113.76
1	A	527	7MG	C5-C6-N1	4.94	119.69	110.99
1	A	527	7MG	C2-N3-C4	4.59	120.48	112.30
22	a	2	A2M	N3-C2-N1	-4.56	121.55	128.68
23	b	37	12A	C2-N3-C4	4.51	121.54	115.32
23	b	34	70U	O9-C8-C5M	4.47	119.55	111.27
1	A	1207	2MG	O6-C6-N1	-4.26	115.62	120.65
1	A	966	M2G	N1-C2-N2	-4.06	114.58	118.04
1	A	527	7MG	N9-C4-N3	3.99	131.44	125.47
1	A	527	7MG	C5-C4-N3	-3.91	120.69	128.13
1	A	1540	PSU	N1-C2-N3	3.81	119.45	115.13
1	A	516	PSU	N1-C2-N3	3.80	119.44	115.13
1	A	1541	PSU	N1-C2-N3	3.78	119.41	115.13
1	A	1207	2MG	O6-C6-C5	3.51	131.23	124.37
23	b	37	12A	OO-CC-N6	-3.47	117.76	123.62
1	A	527	7MG	N9-C8-N7	3.41	108.25	103.38
23	b	37	12A	O4'-C1'-C2'	-3.27	102.14	106.93
12	L	92	0TD	CSB-SB-CB	-3.18	96.69	102.44
1	A	966	M2G	O6-C6-C5	3.15	130.53	124.37
23	b	34	70U	C5-C4-N3	3.14	119.39	114.97
1	A	1498	UR3	C6-N1-C2	-2.93	119.16	121.79
12	L	92	0TD	OD1-CG-CB	-2.84	116.49	122.44
23	b	34	70U	C5-C6-N1	-2.78	119.17	122.91
1	A	527	7MG	C2-N1-C6	-2.78	120.03	125.10
1	A	527	7MG	O6-C6-C5	-2.74	120.82	127.54
22	a	2	A2M	O3'-C3'-C2'	2.69	118.81	111.17
1	A	516	PSU	C6-C5-C4	-2.68	116.32	118.20
1	A	1541	PSU	C6-C5-C4	-2.67	116.33	118.20
1	A	527	7MG	C6-C5-N7	2.63	136.05	131.91
1	A	1540	PSU	C4-N3-C2	-2.62	122.56	126.34
1	A	1541	PSU	C4-N3-C2	-2.62	122.56	126.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
23	b	37	12A	N3-C2-N1	-2.61	122.17	126.98
1	A	966	M2G	O6-C6-N1	-2.59	117.59	120.65
23	b	34	70U	O4-C4-C5	-2.56	121.15	124.96
1	A	527	7MG	C6-C5-C4	-2.56	117.34	122.62
1	A	516	PSU	C4-N3-C2	-2.56	122.65	126.34
1	A	1519	MA6	N1-C6-N6	-2.48	114.44	117.06
1	A	1540	PSU	C6-C5-C4	-2.44	116.49	118.20
1	A	1518	MA6	N1-C6-N6	-2.37	114.56	117.06
1	A	1407	5MC	N4-C4-N3	-2.36	114.16	118.48
22	a	2	A2M	C4-C5-N7	-2.35	106.95	109.40
1	A	1404	5MC	N4-C4-N3	-2.33	114.22	118.48
1	A	967	5MC	N4-C4-N3	-2.32	114.24	118.48
23	b	37	12A	C4-C5-N7	-2.32	106.99	109.40
1	A	1400	5MC	N4-C4-N3	-2.30	114.28	118.48
23	b	37	12A	CA-N-CC	2.26	125.71	121.94
23	b	37	12A	C1'-N9-C4	2.24	130.57	126.64
1	A	516	PSU	O2-C2-N1	-2.20	120.37	122.79
1	A	1540	PSU	O2-C2-N1	-2.19	120.38	122.79
1	A	1541	PSU	O2-C2-N1	-2.15	120.42	122.79
1	A	1402	4OC	C5-C4-N4	-2.10	118.33	122.61
1	A	1407	5MC	C5-C4-N3	2.08	123.91	121.67
23	b	37	12A	OXT-C-O	-2.04	119.46	124.09
23	b	34	70U	S2-C2-N3	-2.02	116.07	119.96
1	A	1404	5MC	C5-C4-N3	2.01	123.84	121.67
1	A	967	5MC	C5-C4-N3	2.00	123.83	121.67

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
23	b	37	12A	C1'

All (32) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	527	7MG	O4'-C4'-C5'-O5'
1	A	527	7MG	C3'-C4'-C5'-O5'
12	L	92	0TD	O-C-CA-CB
12	L	92	0TD	CG-CB-SB-CSB
23	b	37	12A	N1-C2-S2-C2M
23	b	37	12A	N3-C2-S2-C2M
23	b	34	70U	O8-C8-O9-C9
1	A	1402	4OC	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
23	b	34	70U	C5M-C8-O9-C9
1	A	1400	5MC	O4'-C4'-C5'-O5'
1	A	1400	5MC	C3'-C4'-C5'-O5'
1	A	1402	4OC	C3'-C4'-C5'-O5'
1	A	1518	MA6	O4'-C4'-C5'-O5'
1	A	1518	MA6	C3'-C4'-C5'-O5'
1	A	1519	MA6	C3'-C4'-C5'-O5'
1	A	1519	MA6	O4'-C4'-C5'-O5'
22	a	2	A2M	O4'-C4'-C5'-O5'
22	a	2	A2M	C3'-C4'-C5'-O5'
23	b	37	12A	C-CA-CB-OG1
23	b	37	12A	C-CA-CB-CG2
23	b	37	12A	C4'-C5'-O5'-P
23	b	34	70U	O4'-C4'-C5'-O5'
23	b	34	70U	C3'-C4'-C5'-O5'
1	A	1541	PSU	O4'-C1'-C5-C4
12	L	92	0TD	CA-CB-SB-CSB
12	L	92	0TD	SB-CB-CG-OD2
23	b	37	12A	O-C-CA-N
23	b	37	12A	OXT-C-CA-N
23	b	37	12A	CB-CA-N-CC
12	L	92	0TD	SB-CB-CG-OD1
23	b	37	12A	N-CA-CB-CG2
1	A	967	5MC	O4'-C4'-C5'-O5'

There are no ring outliers.

7 monomers are involved in 9 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	1518	MA6	3	0
1	A	1402	4OC	1	0
1	A	967	5MC	1	0
1	A	1498	UR3	2	0
12	L	92	0TD	1	0
1	A	1519	MA6	1	0
1	A	1400	5MC	1	0

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 277 ligands modelled in this entry, 276 are monoatomic - leaving 1 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	$\#\|Z\| > 2$
26	B6M	A	1858	-	45,45,45	3.38	14 (31%)	64,67,67	1.28	6 (9%)

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
26	B6M	A	1858	-	-	6/18/94/94	0/4/4/4

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
26	A	1858	B6M	C23-C33	-13.46	1.22	1.52
26	A	1858	B6M	O43-C43	-7.60	1.28	1.45
26	A	1858	B6M	C64-C54	-6.23	1.43	1.52
26	A	1858	B6M	C34-C24	-5.27	1.46	1.53
26	A	1858	B6M	C13-C23	5.10	1.59	1.52
26	A	1858	B6M	O43-C13	4.91	1.50	1.41
26	A	1858	B6M	O54-C54	4.89	1.56	1.44
26	A	1858	B6M	C33-C43	4.76	1.65	1.52
26	A	1858	B6M	O51-C11	4.08	1.52	1.41
26	A	1858	B6M	O23-C23	4.05	1.52	1.43
26	A	1858	B6M	C31-C21	-4.04	1.48	1.53
26	A	1858	B6M	O33-C33	3.94	1.54	1.43
26	A	1858	B6M	O52-C13	-3.78	1.31	1.41
26	A	1858	B6M	C24-N24	2.50	1.51	1.47

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
26	A	1858	B6M	C13-O52-C52	-3.70	108.80	117.96
26	A	1858	B6M	C14-O33-C33	-3.44	109.46	117.96
26	A	1858	B6M	C11-O11-C42	-2.95	110.67	117.96
26	A	1858	B6M	C13-C23-C33	2.93	105.62	102.10
26	A	1858	B6M	O51-C51-C41	2.08	113.47	109.69
26	A	1858	B6M	C22-C12-C62	2.01	113.08	110.04

There are no chirality outliers.

All (6) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
26	A	1858	B6M	C23-C13-O52-C52
26	A	1858	B6M	O43-C13-O52-C52
26	A	1858	B6M	C24-C14-O33-C33
26	A	1858	B6M	C44-C54-C64-N64
26	A	1858	B6M	O54-C14-O33-C33
26	A	1858	B6M	O51-C11-O11-C42

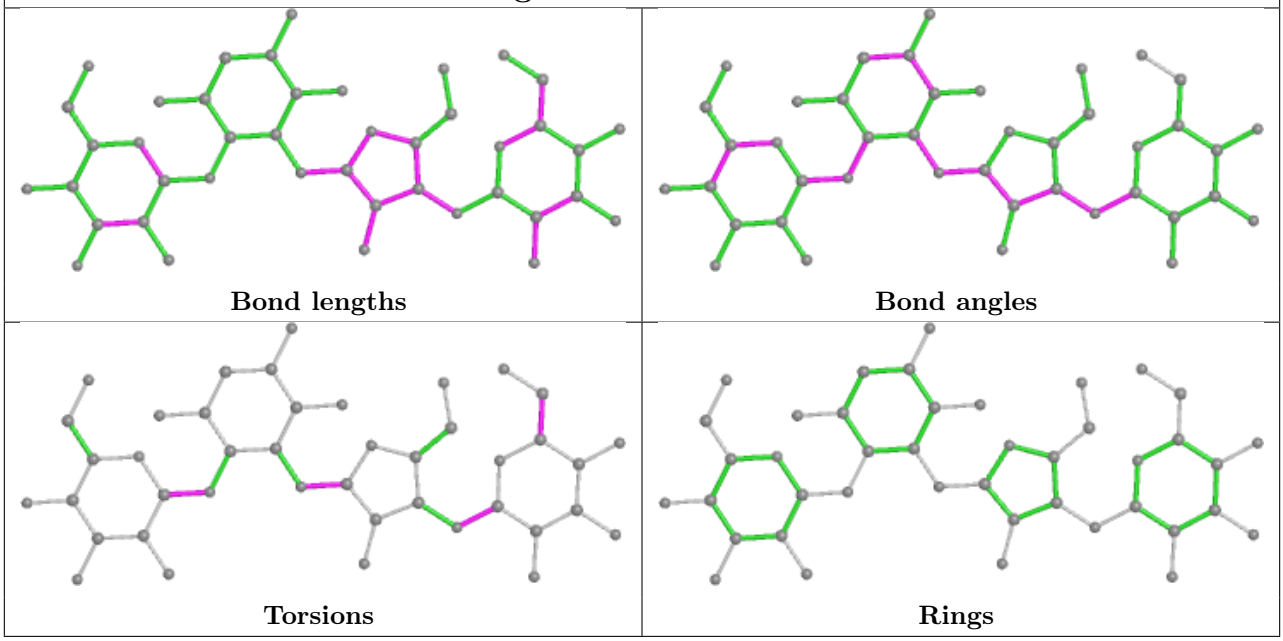
There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
26	A	1858	B6M	2	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 then 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.

Ligand B6M A 1858



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 Fit of model and data (i)

6.1 Protein, DNA and RNA chains (i)

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	1498/1522 (98%)	-0.69	1 (0%)	95	96	117, 161, 244, 361	0
2	B	236/236 (100%)	-0.03	12 (5%)	28	28	137, 191, 274, 320	0
3	C	207/207 (100%)	-0.11	9 (4%)	35	35	142, 209, 258, 298	0
4	D	208/208 (100%)	-0.01	6 (2%)	51	50	131, 176, 235, 304	0
5	E	151/151 (100%)	-0.24	0	100	100	116, 157, 198, 253	0
6	F	101/101 (100%)	-0.26	2 (1%)	65	64	136, 184, 216, 246	0
7	G	155/155 (100%)	-0.36	2 (1%)	77	76	132, 182, 238, 290	0
8	H	138/138 (100%)	-0.21	3 (2%)	62	60	111, 148, 190, 232	0
9	I	127/127 (100%)	0.43	14 (11%)	5	6	153, 207, 249, 310	0
10	J	99/99 (100%)	1.08	22 (22%)	0	1	158, 241, 330, 351	0
11	K	119/119 (100%)	0.02	6 (5%)	28	29	124, 155, 205, 303	0
12	L	124/125 (99%)	0.37	10 (8%)	12	13	107, 172, 225, 275	0
13	M	118/118 (100%)	0.16	7 (5%)	22	23	144, 182, 233, 329	0
14	N	60/60 (100%)	0.44	3 (5%)	28	29	157, 189, 244, 335	0
15	O	88/88 (100%)	0.01	2 (2%)	60	59	119, 166, 221, 301	0
16	P	84/84 (100%)	-0.07	0	100	100	118, 164, 193, 236	0
17	Q	99/99 (100%)	-0.16	0	100	100	120, 148, 195, 211	0
18	R	73/73 (100%)	-0.02	3 (4%)	37	36	128, 166, 241, 297	0
19	S	81/81 (100%)	0.38	9 (11%)	5	6	138, 202, 271, 317	0
20	T	99/99 (100%)	0.04	3 (3%)	50	49	114, 158, 208, 260	0
21	U	25/25 (100%)	1.65	8 (32%)	0	0	156, 183, 244, 308	0
22	a	2/3 (66%)	2.25	1 (50%)	0	0	326, 326, 326, 361	0
23	b	4/6 (66%)	3.01	2 (50%)	0	0	379, 385, 430, 432	0
All	All	3896/3924 (99%)	-0.23	125 (3%)	47	46	107, 172, 249, 432	0

All (125) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
12	L	129	ALA	9.4
14	N	12	ARG	9.0
9	I	8	GLY	8.5
15	O	89	GLY	8.1
10	J	34	VAL	7.9
21	U	18	TYR	7.8
2	B	131	PRO	7.3
23	b	33	U	7.1
2	B	132	LYS	7.0
11	K	128	ALA	6.4
10	J	73	ASP	6.3
2	B	134	GLU	5.7
14	N	13	THR	5.7
10	J	74	ILE	5.2
9	I	15	ALA	5.2
2	B	130	ARG	5.1
10	J	72	VAL	5.0
11	K	127	LYS	4.7
21	U	17	THR	4.6
12	L	28	LYS	4.6
9	I	128	ARG	4.6
19	S	4	SER	4.4
10	J	22	LYS	4.4
13	M	7	VAL	4.4
2	B	133	LYS	4.4
9	I	67	GLY	4.4
10	J	33	GLN	4.3
21	U	22	ARG	4.3
10	J	70	ARG	4.2
12	L	112	ASP	4.2
2	B	136	VAL	4.2
4	D	37	PRO	4.2
10	J	71	LEU	4.1
11	K	129	SER	4.1
18	R	88	LYS	4.0
8	H	54	ASP	3.8
13	M	116	THR	3.8
12	L	128	ALA	3.7
3	C	193	TYR	3.7
12	L	19	ARG	3.7
10	J	90	LEU	3.7
1	A	1286	A	3.6

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Mol	Chain	Res	Type	RSRZ
12	L	64	TYR	3.6
4	D	32	ALA	3.5
2	B	230	VAL	3.3
2	B	140	HIS	3.2
3	C	206	GLU	3.2
9	I	65	VAL	3.2
12	L	62	SER	3.2
10	J	5	ARG	3.2
4	D	42	GLN	3.2
19	S	69	HIS	3.2
20	T	106	ALA	3.1
2	B	135	GLN	3.1
22	a	3	A	3.1
10	J	39	PRO	3.1
9	I	7	THR	3.1
9	I	33	PHE	3.0
19	S	40	ILE	3.0
12	L	33	ARG	3.0
10	J	36	GLY	3.0
3	C	174	PRO	2.9
11	K	126	ARG	2.9
10	J	6	ILE	2.8
2	B	118	LEU	2.8
19	S	74	PHE	2.8
13	M	2	ALA	2.8
13	M	119	GLY	2.8
3	C	162	GLN	2.7
6	F	63	TYR	2.7
10	J	8	LEU	2.7
3	C	157	ILE	2.7
21	U	12	LYS	2.7
19	S	30	LEU	2.7
9	I	9	ARG	2.7
9	I	14	VAL	2.7
4	D	13	ARG	2.6
13	M	8	GLU	2.6
18	R	17	SER	2.6
21	U	26	LYS	2.6
9	I	125	TYR	2.6
7	G	2	ALA	2.5
3	C	196	LEU	2.5
10	J	4	ILE	2.5

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Mol	Chain	Res	Type	RSRZ
10	J	96	ILE	2.5
19	S	3	ARG	2.5
23	b	38	A	2.5
18	R	16	PRO	2.4
4	D	38	TYR	2.4
19	S	71	LEU	2.3
21	U	24	ARG	2.3
6	F	101	ALA	2.3
21	U	21	TYR	2.3
13	M	117	VAL	2.3
12	L	27	LEU	2.3
10	J	40	LEU	2.3
9	I	124	GLN	2.3
20	T	9	ASN	2.3
9	I	105	ASP	2.3
10	J	38	ILE	2.2
19	S	59	PRO	2.2
8	H	2	LEU	2.2
20	T	72	LEU	2.2
8	H	129	VAL	2.2
12	L	127	GLU	2.2
10	J	24	VAL	2.1
2	B	229	VAL	2.1
9	I	121	ARG	2.1
10	J	21	GLN	2.1
15	O	54	ARG	2.1
19	S	41	VAL	2.1
14	N	14	PRO	2.1
10	J	7	LYS	2.1
3	C	156	ARG	2.1
3	C	189	ALA	2.1
7	G	80	VAL	2.1
2	B	228	GLY	2.1
4	D	33	MET	2.1
3	C	208	ILE	2.1
10	J	28	ARG	2.0
13	M	5	ALA	2.0
11	K	50	TYR	2.0
21	U	11	GLY	2.0
11	K	28	THR	2.0
9	I	126	SER	2.0

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

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
22	A2M	a	2	23/24	0.74	0.37	304,330,379,383	0
23	12A	b	37	34/35	0.84	0.50	382,416,453,457	0
1	PSU	A	1540	20/21	0.89	0.19	223,269,307,315	0
23	70U	b	34	25/26	0.90	0.30	365,382,396,402	0
1	PSU	A	516	20/21	0.91	0.09	144,192,212,226	0
1	PSU	A	1541	20/21	0.92	0.15	208,233,270,272	0
1	MA6	A	1518	24/25	0.95	0.16	123,136,170,179	0
1	7MG	A	527	24/25	0.95	0.16	129,146,173,179	0
1	2MG	A	1207	24/25	0.95	0.12	145,183,222,232	0
1	5MC	A	1407	21/22	0.96	0.12	132,145,177,192	0
12	0TD	L	92	10/11	0.96	0.52	143,238,350,351	0
1	UR3	A	1498	21/22	0.96	0.17	123,131,179,204	0
1	5MC	A	1400	21/22	0.96	0.15	121,151,175,184	0
1	5MC	A	1404	21/22	0.96	0.16	121,127,140,143	0
1	M2G	A	966	25/26	0.97	0.15	129,169,196,204	0
1	MA6	A	1519	24/25	0.97	0.20	119,133,161,199	0
1	5MC	A	967	21/22	0.97	0.11	139,164,183,192	0
1	4OC	A	1402	22/23	0.97	0.15	127,133,143,164	0

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	A	1621	1/1	-0.23	5.52	396,396,396,396	0
24	MG	A	1784	1/1	0.08	0.69	156,156,156,156	0
24	MG	A	1820	1/1	0.12	0.70	162,162,162,162	0
24	MG	A	1804	1/1	0.16	1.63	166,166,166,166	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	A	1764	1/1	0.28	0.40	146,146,146,146	0
25	K	A	1849	1/1	0.28	0.31	193,193,193,193	0
24	MG	A	1752	1/1	0.44	0.62	137,137,137,137	0
25	K	A	1843	1/1	0.46	0.37	229,229,229,229	0
24	MG	A	1678	1/1	0.47	0.18	158,158,158,158	0
24	MG	A	1677	1/1	0.47	0.40	140,140,140,140	0
24	MG	A	1829	1/1	0.48	0.84	162,162,162,162	0
24	MG	Q	202	1/1	0.48	0.33	133,133,133,133	0
24	MG	A	1659	1/1	0.49	0.35	125,125,125,125	0
24	MG	A	1816	1/1	0.52	0.12	165,165,165,165	0
24	MG	A	1671	1/1	0.53	0.28	143,143,143,143	0
24	MG	A	1781	1/1	0.54	0.18	226,226,226,226	0
24	MG	A	1819	1/1	0.55	0.49	152,152,152,152	0
24	MG	A	1771	1/1	0.55	0.28	136,136,136,136	0
25	K	A	1851	1/1	0.58	0.47	202,202,202,202	0
24	MG	A	1772	1/1	0.60	0.75	126,126,126,126	0
24	MG	A	1701	1/1	0.60	1.04	172,172,172,172	0
24	MG	A	1828	1/1	0.61	0.24	130,130,130,130	0
24	MG	A	1722	1/1	0.61	0.74	148,148,148,148	0
24	MG	A	1830	1/1	0.61	0.15	143,143,143,143	0
24	MG	H	202	1/1	0.61	0.51	141,141,141,141	0
24	MG	A	1711	1/1	0.62	1.44	138,138,138,138	0
24	MG	A	1727	1/1	0.62	0.18	161,161,161,161	0
24	MG	A	1782	1/1	0.63	0.41	130,130,130,130	0
24	MG	A	1693	1/1	0.63	0.19	183,183,183,183	0
25	K	A	1854	1/1	0.63	0.52	224,224,224,224	0
25	K	A	1840	1/1	0.64	1.23	195,195,195,195	0
24	MG	A	1715	1/1	0.65	0.44	150,150,150,150	0
24	MG	A	1716	1/1	0.66	1.30	136,136,136,136	0
24	MG	A	1718	1/1	0.67	0.47	144,144,144,144	0
24	MG	A	1826	1/1	0.67	0.44	142,142,142,142	0
24	MG	A	1653	1/1	0.68	0.85	163,163,163,163	0
24	MG	A	1712	1/1	0.68	0.28	168,168,168,168	0
24	MG	A	1787	1/1	0.68	0.41	142,142,142,142	0
24	MG	G	201	1/1	0.69	0.54	128,128,128,128	0
24	MG	S	101	1/1	0.69	0.09	138,138,138,138	0
24	MG	A	1832	1/1	0.69	0.35	160,160,160,160	0
25	K	A	1842	1/1	0.69	0.33	224,224,224,224	0
24	MG	A	1800	1/1	0.70	0.21	107,107,107,107	0
24	MG	A	1654	1/1	0.71	0.20	127,127,127,127	0
24	MG	L	201	1/1	0.71	0.12	149,149,149,149	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	A	1780	1/1	0.71	0.16	236,236,236,236	0
24	MG	A	1812	1/1	0.71	0.70	174,174,174,174	0
24	MG	A	1761	1/1	0.71	0.21	139,139,139,139	0
24	MG	A	1620	1/1	0.72	0.88	122,122,122,122	0
24	MG	A	1755	1/1	0.73	0.37	160,160,160,160	0
24	MG	A	1747	1/1	0.73	0.52	148,148,148,148	0
24	MG	A	1731	1/1	0.74	0.49	162,162,162,162	0
24	MG	A	1809	1/1	0.74	0.32	167,167,167,167	0
24	MG	A	1670	1/1	0.75	0.31	170,170,170,170	0
24	MG	A	1825	1/1	0.75	0.65	156,156,156,156	0
24	MG	A	1719	1/1	0.76	0.75	185,185,185,185	0
24	MG	P	103	1/1	0.76	0.16	144,144,144,144	0
25	K	A	1846	1/1	0.76	0.31	208,208,208,208	0
24	MG	A	1629	1/1	0.76	1.28	132,132,132,132	0
24	MG	A	1745	1/1	0.76	0.43	120,120,120,120	0
24	MG	A	1758	1/1	0.76	0.18	131,131,131,131	0
24	MG	A	1630	1/1	0.77	0.21	164,164,164,164	0
24	MG	A	1856	1/1	0.77	0.05	166,166,166,166	0
24	MG	A	1806	1/1	0.77	0.49	134,134,134,134	0
24	MG	A	1789	1/1	0.77	0.18	131,131,131,131	0
24	MG	A	1668	1/1	0.77	0.22	148,148,148,148	0
25	K	A	1836	1/1	0.78	0.39	192,192,192,192	0
25	K	A	1838	1/1	0.78	0.60	198,198,198,198	0
24	MG	D	302	1/1	0.78	0.11	123,123,123,123	0
24	MG	A	1705	1/1	0.78	0.59	143,143,143,143	0
24	MG	A	1733	1/1	0.78	0.41	116,116,116,116	0
24	MG	A	1636	1/1	0.78	0.09	148,148,148,148	0
24	MG	A	1702	1/1	0.78	0.36	132,132,132,132	0
24	MG	A	1750	1/1	0.78	0.38	129,129,129,129	0
24	MG	A	1783	1/1	0.78	0.17	123,123,123,123	0
24	MG	A	1714	1/1	0.79	0.50	133,133,133,133	0
24	MG	A	1661	1/1	0.79	0.28	166,166,166,166	0
24	MG	A	1687	1/1	0.79	0.91	121,121,121,121	0
24	MG	A	1797	1/1	0.80	0.34	125,125,125,125	0
24	MG	A	1709	1/1	0.81	0.45	156,156,156,156	0
24	MG	A	1807	1/1	0.81	0.56	116,116,116,116	0
24	MG	A	1786	1/1	0.81	1.04	150,150,150,150	0
24	MG	A	1601	1/1	0.81	0.35	214,214,214,214	0
24	MG	A	1788	1/1	0.81	0.30	132,132,132,132	0
24	MG	A	1721	1/1	0.82	0.34	107,107,107,107	0
24	MG	A	1808	1/1	0.82	0.55	119,119,119,119	0
24	MG	A	1609	1/1	0.82	0.49	145,145,145,145	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	A	1708	1/1	0.83	0.31	127,127,127,127	0
24	MG	A	1679	1/1	0.83	0.63	167,167,167,167	0
24	MG	A	1738	1/1	0.83	0.48	162,162,162,162	0
24	MG	A	1692	1/1	0.83	0.36	124,124,124,124	0
25	K	A	1855	1/1	0.83	0.28	222,222,222,222	0
25	K	E	202	1/1	0.83	0.78	176,176,176,176	0
24	MG	A	1803	1/1	0.84	0.72	141,141,141,141	0
25	K	A	1850	1/1	0.84	0.08	190,190,190,190	0
24	MG	A	1857	1/1	0.84	0.12	204,204,204,204	0
24	MG	A	1762	1/1	0.84	0.45	139,139,139,139	0
24	MG	A	1699	1/1	0.84	0.09	205,205,205,205	0
24	MG	A	1634	1/1	0.84	0.16	113,113,113,113	0
24	MG	A	1744	1/1	0.85	1.64	145,145,145,145	0
24	MG	A	1817	1/1	0.85	0.66	119,119,119,119	0
24	MG	A	1707	1/1	0.85	0.46	111,111,111,111	0
24	MG	A	1627	1/1	0.85	1.15	187,187,187,187	0
24	MG	A	1703	1/1	0.85	0.52	112,112,112,112	0
24	MG	A	1616	1/1	0.85	0.62	143,143,143,143	0
25	K	A	1845	1/1	0.85	0.24	193,193,193,193	0
24	MG	A	1622	1/1	0.86	0.25	150,150,150,150	0
24	MG	A	1821	1/1	0.86	0.20	157,157,157,157	0
24	MG	A	1833	1/1	0.86	0.32	208,208,208,208	0
24	MG	A	1824	1/1	0.86	0.12	156,156,156,156	0
24	MG	A	1660	1/1	0.86	0.29	113,113,113,113	0
24	MG	A	1794	1/1	0.86	0.55	136,136,136,136	0
24	MG	A	1631	1/1	0.86	0.17	132,132,132,132	0
25	K	A	1841	1/1	0.86	0.80	230,230,230,230	0
24	MG	A	1624	1/1	0.86	0.40	146,146,146,146	0
24	MG	A	1763	1/1	0.87	0.58	116,116,116,116	0
24	MG	A	1655	1/1	0.87	0.25	164,164,164,164	0
24	MG	A	1690	1/1	0.87	0.42	156,156,156,156	0
24	MG	A	1754	1/1	0.87	0.23	126,126,126,126	0
24	MG	P	101	1/1	0.87	0.34	104,104,104,104	0
24	MG	A	1776	1/1	0.87	0.21	123,123,123,123	0
24	MG	A	1778	1/1	0.87	0.10	113,113,113,113	0
24	MG	A	1739	1/1	0.87	0.70	120,120,120,120	0
24	MG	A	1700	1/1	0.87	0.21	201,201,201,201	0
24	MG	A	1717	1/1	0.87	0.85	163,163,163,163	0
24	MG	A	1683	1/1	0.87	0.47	123,123,123,123	0
24	MG	A	1673	1/1	0.88	0.50	146,146,146,146	0
24	MG	Q	201	1/1	0.88	0.10	185,185,185,185	0
24	MG	A	1663	1/1	0.88	0.20	140,140,140,140	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
25	K	A	1848	1/1	0.88	0.58	239,239,239,239	0
24	MG	A	1619	1/1	0.88	0.15	124,124,124,124	0
24	MG	A	1827	1/1	0.88	0.16	155,155,155,155	0
24	MG	A	1637	1/1	0.88	0.25	145,145,145,145	0
24	MG	A	1706	1/1	0.88	0.23	162,162,162,162	0
24	MG	A	1681	1/1	0.88	0.80	125,125,125,125	0
24	MG	A	1641	1/1	0.88	0.06	103,103,103,103	0
24	MG	A	1773	1/1	0.89	0.31	147,147,147,147	0
24	MG	A	1602	1/1	0.89	0.67	168,168,168,168	0
24	MG	A	1635	1/1	0.89	0.17	187,187,187,187	0
24	MG	F	201	1/1	0.89	0.04	127,127,127,127	0
24	MG	A	1662	1/1	0.89	0.14	168,168,168,168	0
24	MG	A	1610	1/1	0.89	0.14	93,93,93,93	0
24	MG	A	1801	1/1	0.89	0.26	163,163,163,163	0
24	MG	A	1823	1/1	0.89	0.29	138,138,138,138	0
24	MG	A	1810	1/1	0.89	0.83	148,148,148,148	0
24	MG	P	102	1/1	0.90	0.11	141,141,141,141	0
24	MG	A	1813	1/1	0.90	0.12	140,140,140,140	0
24	MG	A	1742	1/1	0.90	0.29	122,122,122,122	0
24	MG	A	1743	1/1	0.90	0.29	149,149,149,149	0
25	K	A	1847	1/1	0.90	0.35	214,214,214,214	0
24	MG	A	1640	1/1	0.90	0.31	121,121,121,121	0
24	MG	S	102	1/1	0.90	0.06	133,133,133,133	0
24	MG	A	1798	1/1	0.90	0.26	150,150,150,150	0
24	MG	A	1657	1/1	0.90	0.30	125,125,125,125	0
25	K	A	1839	1/1	0.90	0.62	207,207,207,207	0
24	MG	A	1770	1/1	0.90	0.08	183,183,183,183	0
24	MG	A	1645	1/1	0.90	0.28	141,141,141,141	0
24	MG	A	1792	1/1	0.91	1.25	150,150,150,150	0
24	MG	A	1740	1/1	0.91	0.31	122,122,122,122	0
24	MG	A	1795	1/1	0.91	0.17	111,111,111,111	0
24	MG	A	1796	1/1	0.91	1.60	144,144,144,144	0
24	MG	A	1765	1/1	0.91	0.08	129,129,129,129	0
24	MG	A	1769	1/1	0.91	0.58	231,231,231,231	0
24	MG	A	1726	1/1	0.91	0.40	131,131,131,131	0
24	MG	A	1607	1/1	0.91	0.06	170,170,170,170	0
24	MG	A	1834	1/1	0.91	0.18	155,155,155,155	0
24	MG	A	1612	1/1	0.91	0.16	159,159,159,159	0
25	K	A	1835	1/1	0.91	0.27	208,208,208,208	0
24	MG	A	1720	1/1	0.91	0.19	129,129,129,129	0
24	MG	A	1665	1/1	0.91	0.47	161,161,161,161	0
24	MG	A	1684	1/1	0.91	0.30	155,155,155,155	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	A	1618	1/1	0.92	0.33	183,183,183,183	0
24	MG	A	1614	1/1	0.92	0.30	121,121,121,121	0
24	MG	A	1691	1/1	0.92	0.11	175,175,175,175	0
24	MG	A	1638	1/1	0.92	0.08	125,125,125,125	0
24	MG	A	1831	1/1	0.92	0.54	136,136,136,136	0
24	MG	A	1603	1/1	0.92	0.32	161,161,161,161	0
24	MG	A	1694	1/1	0.92	0.20	130,130,130,130	0
24	MG	A	1698	1/1	0.92	0.28	109,109,109,109	0
24	MG	A	1775	1/1	0.92	0.45	134,134,134,134	0
24	MG	A	1666	1/1	0.92	0.19	128,128,128,128	0
24	MG	A	1626	1/1	0.93	0.28	103,103,103,103	0
24	MG	A	1802	1/1	0.93	0.19	120,120,120,120	0
24	MG	A	1768	1/1	0.93	0.27	212,212,212,212	0
24	MG	E	201	1/1	0.93	0.12	150,150,150,150	0
24	MG	A	1732	1/1	0.93	0.47	121,121,121,121	0
24	MG	A	1613	1/1	0.93	0.25	134,134,134,134	0
24	MG	A	1791	1/1	0.93	0.38	140,140,140,140	0
25	K	A	1844	1/1	0.93	0.10	179,179,179,179	0
24	MG	A	1751	1/1	0.93	0.39	95,95,95,95	0
24	MG	A	1799	1/1	0.94	0.19	166,166,166,166	0
24	MG	A	1779	1/1	0.94	0.33	134,134,134,134	0
24	MG	A	1759	1/1	0.94	0.20	147,147,147,147	0
24	MG	A	1606	1/1	0.94	0.24	142,142,142,142	0
24	MG	A	1741	1/1	0.94	0.11	113,113,113,113	0
24	MG	A	1623	1/1	0.94	0.89	99,99,99,99	0
25	K	A	1837	1/1	0.94	0.32	152,152,152,152	0
24	MG	A	1805	1/1	0.94	0.18	118,118,118,118	0
24	MG	A	1656	1/1	0.94	0.14	187,187,187,187	0
24	MG	A	1785	1/1	0.94	0.26	156,156,156,156	0
24	MG	A	1674	1/1	0.94	0.05	178,178,178,178	0
24	MG	A	1688	1/1	0.94	0.05	197,197,197,197	0
24	MG	A	1728	1/1	0.94	0.31	127,127,127,127	0
24	MG	A	1729	1/1	0.94	0.31	126,126,126,126	0
24	MG	A	1689	1/1	0.94	0.15	144,144,144,144	0
24	MG	A	1814	1/1	0.94	0.58	143,143,143,143	0
24	MG	A	1676	1/1	0.94	0.15	138,138,138,138	0
24	MG	A	1633	1/1	0.94	0.26	159,159,159,159	0
24	MG	H	201	1/1	0.94	0.56	119,119,119,119	0
24	MG	A	1646	1/1	0.94	0.21	167,167,167,167	0
24	MG	A	1757	1/1	0.94	0.07	131,131,131,131	0
25	K	A	1853	1/1	0.94	0.07	195,195,195,195	0
24	MG	A	1777	1/1	0.94	0.61	105,105,105,105	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	A	1822	1/1	0.94	0.17	132,132,132,132	0
24	MG	A	1617	1/1	0.94	0.24	129,129,129,129	0
24	MG	A	1725	1/1	0.95	0.15	130,130,130,130	0
24	MG	A	1650	1/1	0.95	0.20	111,111,111,111	0
24	MG	A	1685	1/1	0.95	0.24	105,105,105,105	0
24	MG	A	1760	1/1	0.95	0.10	102,102,102,102	0
24	MG	A	1672	1/1	0.95	0.65	108,108,108,108	0
24	MG	A	1652	1/1	0.95	0.22	155,155,155,155	0
24	MG	A	1680	1/1	0.95	0.12	154,154,154,154	0
24	MG	A	1625	1/1	0.95	0.07	188,188,188,188	0
24	MG	A	1682	1/1	0.95	0.30	253,253,253,253	0
24	MG	A	1766	1/1	0.95	0.34	177,177,177,177	0
24	MG	A	1734	1/1	0.95	0.16	120,120,120,120	0
24	MG	A	1736	1/1	0.95	0.15	114,114,114,114	0
24	MG	T	201	1/1	0.95	0.22	112,112,112,112	0
24	MG	A	1611	1/1	0.95	0.04	163,163,163,163	0
24	MG	A	1859	1/1	0.95	0.11	135,135,135,135	0
24	MG	A	1724	1/1	0.95	0.24	150,150,150,150	0
24	MG	A	1756	1/1	0.95	0.30	94,94,94,94	0
26	B6M	A	1858	42/42	0.95	0.15	115,154,185,236	0
27	ZN	N	101	1/1	0.95	0.18	191,191,191,191	0
24	MG	A	1669	1/1	0.96	0.39	160,160,160,160	0
24	MG	A	1737	1/1	0.96	0.08	102,102,102,102	0
24	MG	A	1818	1/1	0.96	0.41	122,122,122,122	0
24	MG	A	1608	1/1	0.96	0.16	122,122,122,122	0
24	MG	A	1615	1/1	0.96	0.19	125,125,125,125	0
24	MG	A	1647	1/1	0.96	0.18	125,125,125,125	0
24	MG	A	1686	1/1	0.96	0.16	114,114,114,114	0
24	MG	A	1648	1/1	0.96	0.42	125,125,125,125	0
24	MG	A	1628	1/1	0.96	0.06	153,153,153,153	0
24	MG	A	1675	1/1	0.96	0.23	191,191,191,191	0
24	MG	A	1651	1/1	0.96	0.18	160,160,160,160	0
24	MG	A	1632	1/1	0.96	0.17	113,113,113,113	0
24	MG	A	1664	1/1	0.96	0.09	145,145,145,145	0
24	MG	A	1642	1/1	0.96	0.28	120,120,120,120	0
25	K	A	1852	1/1	0.96	0.23	187,187,187,187	0
24	MG	A	1713	1/1	0.96	0.20	111,111,111,111	0
24	MG	A	1790	1/1	0.96	0.10	101,101,101,101	0
24	MG	A	1643	1/1	0.96	0.30	199,199,199,199	0
24	MG	A	1696	1/1	0.96	0.14	136,136,136,136	0
24	MG	A	1793	1/1	0.96	0.12	149,149,149,149	0
27	ZN	D	301	1/1	0.96	0.31	175,175,175,175	0

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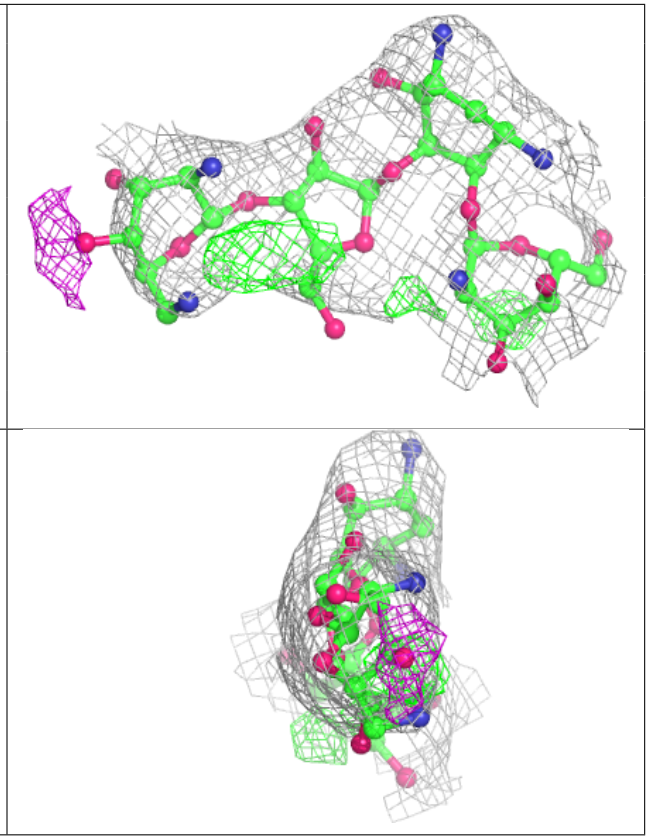
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	A	1644	1/1	0.96	0.59	144,144,144,144	0
24	MG	A	1697	1/1	0.97	0.27	178,178,178,178	0
24	MG	A	1815	1/1	0.97	0.20	145,145,145,145	0
24	MG	A	1604	1/1	0.97	0.18	193,193,193,193	0
24	MG	A	1649	1/1	0.97	0.09	149,149,149,149	0
24	MG	A	1639	1/1	0.97	0.16	108,108,108,108	0
24	MG	A	1767	1/1	0.97	0.07	187,187,187,187	0
24	MG	A	1746	1/1	0.97	0.17	186,186,186,186	0
24	MG	A	1667	1/1	0.97	0.10	245,245,245,245	0
24	MG	A	1749	1/1	0.98	0.32	123,123,123,123	0
24	MG	A	1710	1/1	0.98	0.07	145,145,145,145	0
24	MG	A	1723	1/1	0.98	0.23	82,82,82,82	0
24	MG	A	1695	1/1	0.98	0.39	227,227,227,227	0
24	MG	A	1753	1/1	0.98	0.25	215,215,215,215	0
24	MG	A	1811	1/1	0.98	0.26	110,110,110,110	0
24	MG	A	1735	1/1	0.98	0.19	130,130,130,130	0
24	MG	A	1748	1/1	0.98	0.06	101,101,101,101	0
24	MG	A	1658	1/1	0.99	0.17	118,118,118,118	0
24	MG	A	1774	1/1	0.99	0.17	154,154,154,154	0
24	MG	A	1730	1/1	0.99	0.14	124,124,124,124	0
24	MG	A	1605	1/1	0.99	0.18	195,195,195,195	0
24	MG	A	1704	1/1	0.99	0.14	102,102,102,102	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around B6M A 1858:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



6.5 Other polymers (i)

There are no such residues in this entry.