Full wwPDB X-ray Structure Validation Report (i)

Jun 24, 2024 – 06:02 PM EDT

PDB ID	:	5WNT
Title	:	Crystal Structure of 30S ribosomal subunit from Thermus thermophilus
Authors	:	DeMirci, H.
Deposited on	:	2017-08-01
Resolution	:	3.30 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:

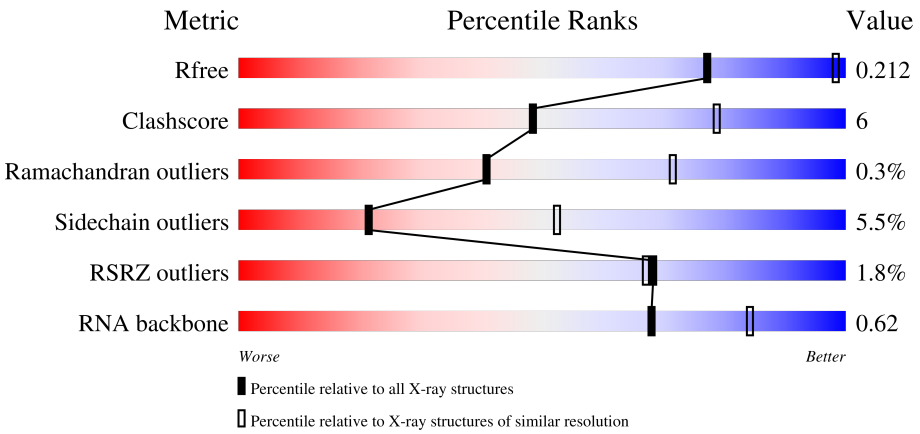
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.37.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & 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 3.30 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	1149 (3.34-3.26)
Clashscore	141614	1205 (3.34-3.26)
Ramachandran outliers	138981	1183 (3.34-3.26)
Sidechain outliers	138945	1182 (3.34-3.26)
RSRZ outliers	127900	1115 (3.34-3.26)
RNA backbone	3102	1117 (3.70-2.90)

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	66% 27% 6% •
2	B	236	5% 81% 18% •
3	C	207	% 81% 17% •
4	D	208	% 81% 19%

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Mol	Chain	Length	Quality of chain
5	E	151	76% 21%
6	F	101	.% 84% 15%
7	G	155	3% 74% 26%
8	H	138	80% 18%
9	I	127	2% 69% 30%
10	J	99	14% 73% 24%
11	K	119	3% 76% 24%
12	L	125	5% 79% 18%
13	M	118	2% 72% 25%
14	N	60	3% 82% 17%
15	O	88	.% 86% 13%
16	P	84	82% 18%
17	Q	99	80% 20%
18	R	73	5% 85% 14%
19	S	81	4% 80% 19%
20	T	99	.% 79% 17%
21	U	25	16% 80% 20%
22	a	5	80% 20%
23	b	15	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	1606	-	-	-	X
24	MG	A	1624	-	-	-	X
24	MG	A	1629	-	-	-	X
24	MG	A	1666	-	-	-	X

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
24	MG	A	1687	-	-	-	X
24	MG	A	1692	-	-	-	X
24	MG	A	1705	-	-	-	X
24	MG	A	1707	-	-	-	X
24	MG	A	1709	-	-	-	X
24	MG	A	1711	-	-	-	X
24	MG	A	1715	-	-	-	X
24	MG	A	1716	-	-	-	X
24	MG	A	1720	-	-	-	X
24	MG	A	1722	-	-	-	X
24	MG	A	1731	-	-	-	X
24	MG	A	1744	-	-	-	X
24	MG	A	1745	-	-	-	X
24	MG	A	1749	-	-	-	X
24	MG	A	1751	-	-	-	X
24	MG	A	1758	-	-	-	X
24	MG	A	1761	-	-	-	X
24	MG	A	1763	-	-	-	X
24	MG	A	1771	-	-	-	X
24	MG	A	1783	-	-	-	X
24	MG	A	1786	-	-	-	X
24	MG	A	1791	-	-	-	X
24	MG	A	1795	-	-	-	X
24	MG	A	1797	-	-	-	X
24	MG	A	1799	-	-	-	X
24	MG	A	1803	-	-	-	X
24	MG	A	1805	-	-	-	X
24	MG	A	1807	-	-	-	X
24	MG	A	1808	-	-	-	X
24	MG	A	1813	-	-	-	X
24	MG	A	1818	-	-	-	X
24	MG	A	1824	-	-	-	X
24	MG	A	1828	-	-	-	X
24	MG	P	101	-	-	-	X
25	K	A	1852	-	-	-	X

2 Entry composition (i)

There are 28 unique types of molecules in this entry. The entry contains 52602 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 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 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 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 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 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 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 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 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 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 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 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 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 RIBOSOMAL PROTEIN S14.

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 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 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 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 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 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 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 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(*(A2M)P*AP*AP*UP*U)-3').

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
22	a	5	104	49	19	32	4	0	0	0

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

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	N	O	P	S			
23	b	15	330	150	51	112	15	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	236	236	236	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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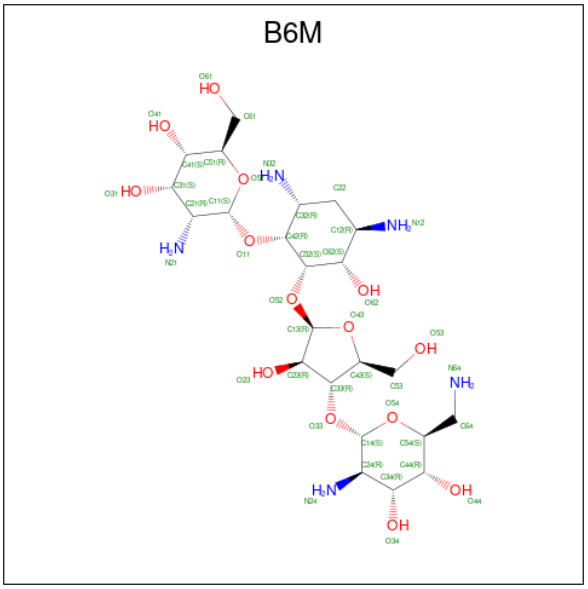
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
24	S	3	Total Mg 3 3	0	0
24	T	1	Total Mg 1 1	0	0

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

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
25	A	22	Total K 22 22	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
27	N	1	Total Zn 1 1	0	0

- Molecule 28 is water.

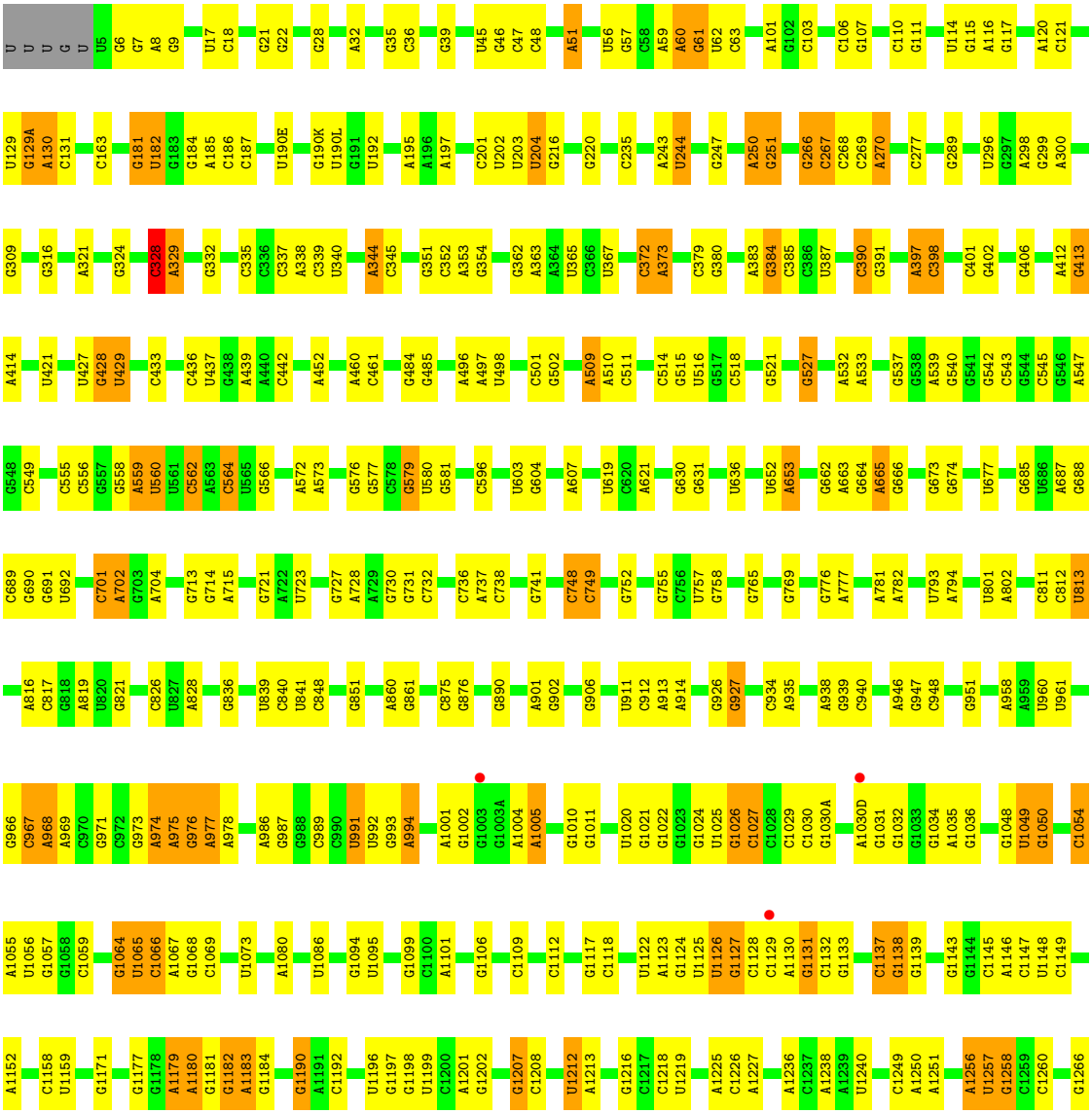
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
28	A	214	Total O 214 214	0	0
28	D	3	Total O 3 3	0	0
28	E	4	Total O 4 4	0	0
28	K	1	Total O 1 1	0	0
28	L	3	Total O 3 3	0	0
28	N	1	Total O 1 1	0	0
28	T	1	Total O 1 1	0	0

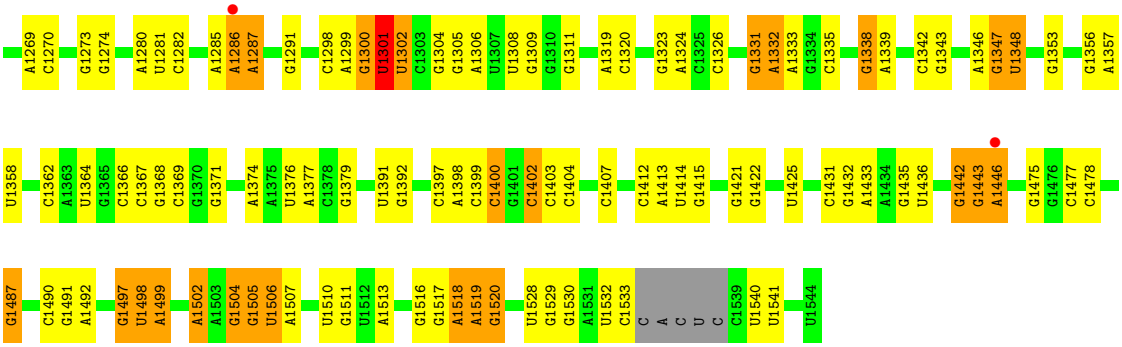
3 Residue-property plots (i)

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

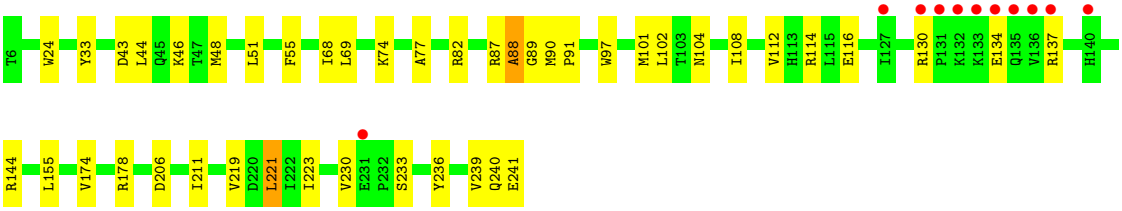
Chain A: 66% 27% 6% •





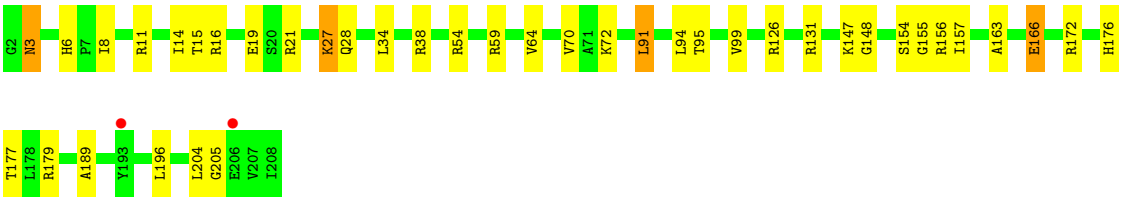
- Molecule 2: RIBOSOMAL PROTEIN S2

Chain B: 5% 81% 18%



- Molecule 3: RIBOSOMAL PROTEIN S3

Chain C: % 81% 17%

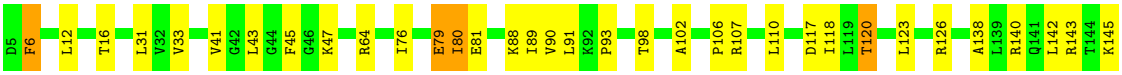


- Molecule 4: RIBOSOMAL PROTEIN S4

Chain D: % 81% 19%

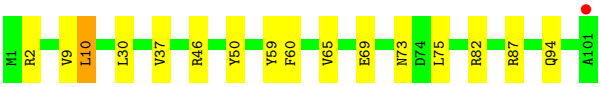
- Molecule 5: RIBOSOMAL PROTEIN S5

Chain E: 76% 21%



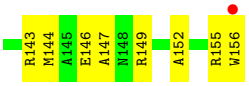
• Molecule 6: RIBOSOMAL PROTEIN S6

Chain F:



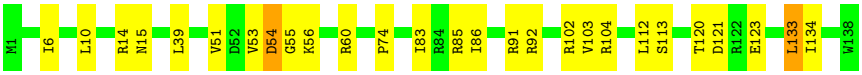
• Molecule 7: RIBOSOMAL PROTEIN S7

Chain G:



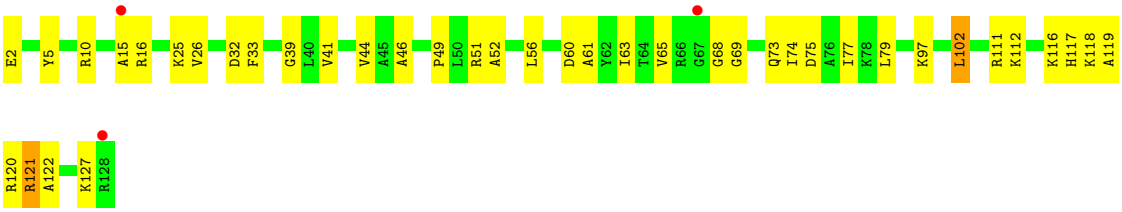
• Molecule 8: RIBOSOMAL PROTEIN S8

Chain H:



• Molecule 9: RIBOSOMAL PROTEIN S9

Chain I:

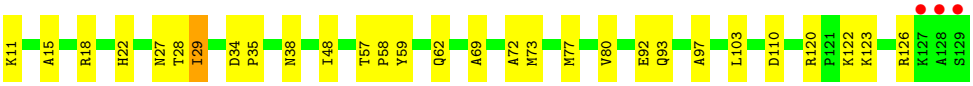


• Molecule 10: RIBOSOMAL PROTEIN S10

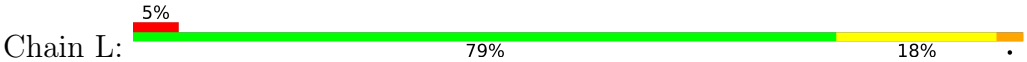
Chain J:

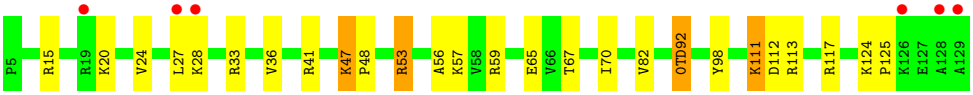
• Molecule 11: RIBOSOMAL PROTEIN S11

Chain K:

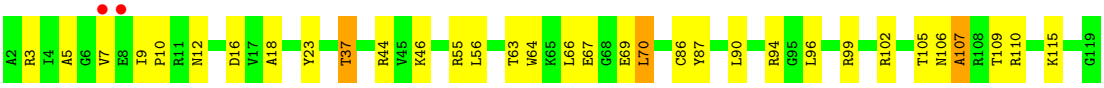


• Molecule 12: RIBOSOMAL PROTEIN S12

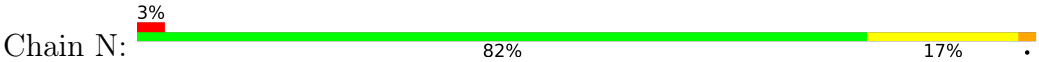


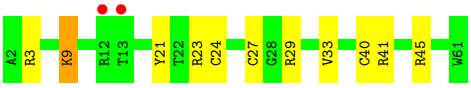


• Molecule 13: RIBOSOMAL PROTEIN S13

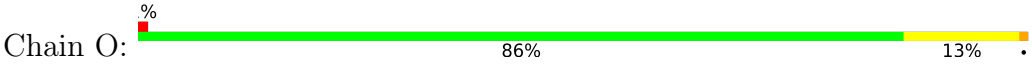


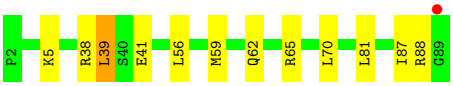
• Molecule 14: RIBOSOMAL PROTEIN S14



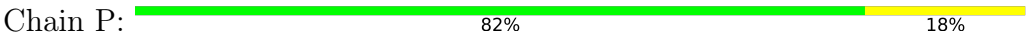


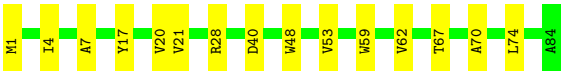
• Molecule 15: RIBOSOMAL PROTEIN S15



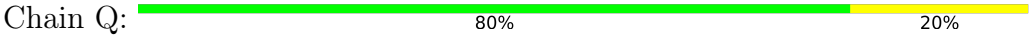


• Molecule 16: RIBOSOMAL PROTEIN S16

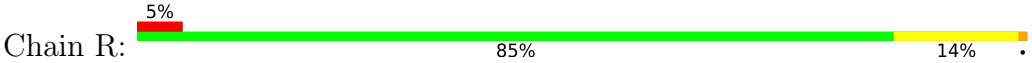


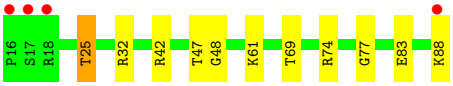


• Molecule 17: RIBOSOMAL PROTEIN S17



• Molecule 18: RIBOSOMAL PROTEIN S18



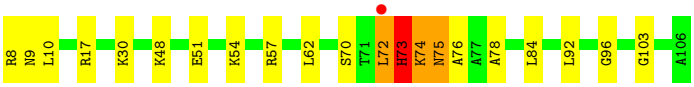


• Molecule 19: RIBOSOMAL PROTEIN S19

Chain S:

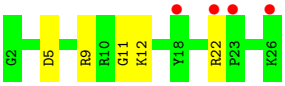
• Molecule 20: RIBOSOMAL PROTEIN S20

Chain T:



• Molecule 21: RIBOSOMAL PROTEIN THX

Chain U:

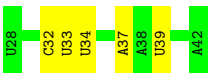


• Molecule 22: RNA (5'-R(*(A2M)P*AP*AP*UP*U)-3')

Chain a:

• Molecule 23: RNA (5'-R(P*UP*AP*GP*AP*CP*UP*(70U)P*UP*UP*(12A)P*AP*(PSU)P*CP*UP*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)	39.78 – 3.30 39.78 – 2.91	Depositor EDS
% Data completeness (in resolution range)	99.3 (39.78-3.30) 81.3 (39.78-2.91)	Depositor EDS
R_{merge}	0.53	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	-0.26 (at 2.90Å)	Xtriage
Refinement program	PHENIX	Depositor
R, R_{free}	0.173 , 0.212 0.173 , 0.212	Depositor DCC
R_{free} test set	2000 reflections (0.69%)	wwPDB-VP
Wilson B-factor (Å^2)	92.5	Xtriage
Anisotropy	0.180	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.28 , 84.8	EDS
L-test for twinning[2]	$< \|L\| > = 0.47$, $< L^2 > = 0.30$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	52602	wwPDB-VP
Average B, all atoms (Å^2)	131.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.49% 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: M2G, 70U, 4OC, 12A, 0TD, PSU, 2MG, B6M, 5MC, UR3, 7MG, MG, MA6, ZN, K, A2M

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	0.18	0/36037	0.78	5/56239 (0.0%)
2	B	0.24	0/1909	0.41	0/2579
3	C	0.24	0/1637	0.44	0/2207
4	D	0.24	0/1733	0.40	0/2318
5	E	0.25	0/1163	0.44	0/1566
6	F	0.23	0/856	0.41	0/1154
7	G	0.24	0/1276	0.39	0/1709
8	H	0.24	0/1136	0.43	0/1527
9	I	0.25	0/1029	0.44	0/1379
10	J	0.24	0/806	0.50	0/1084
11	K	0.24	0/900	0.44	0/1213
12	L	0.24	0/978	0.49	0/1308
13	M	0.27	0/947	0.51	1/1270 (0.1%)
14	N	0.24	0/501	0.41	0/664
15	O	0.24	0/745	0.38	0/992
16	P	0.24	0/717	0.44	0/965
17	Q	0.24	0/836	0.43	0/1117
18	R	0.24	0/604	0.39	0/801
19	S	0.23	0/662	0.46	0/892
20	T	0.30	0/765	0.42	0/1007
21	U	0.21	0/213	0.41	0/279
22	a	0.13	0/94	0.69	0/146
23	b	0.14	0/277	0.71	0/423
All	All	0.21	0/55821	0.69	6/82839 (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
23	b	1	0
All	All	1	1

There are no bond length outliers.

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
13	M	107	ALA	N-CA-C	-8.78	87.29	111.00
1	A	1158	C	N1-C2-O2	5.81	122.39	118.90
1	A	1301	U	P-O3'-C3'	5.51	126.31	119.70
1	A	204	U	C2-N1-C1'	5.50	124.30	117.70
1	A	1158	C	C2-N1-C1'	5.29	124.62	118.80
1	A	328	C	P-O3'-C3'	5.23	125.98	119.70

All (1) chirality outliers are listed below:

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

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	88	ALA	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	16434	267	1
2	B	1874	0	1887	23	0
3	C	1613	0	1677	26	0
4	D	1703	0	1763	25	0
5	E	1147	0	1207	20	0
6	F	843	0	857	11	0
7	G	1257	0	1296	25	0
8	H	1116	0	1177	16	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
9	I	1010	0	1037	29	0
10	J	793	0	835	19	0
11	K	885	0	904	14	0
12	L	973	0	1058	18	0
13	M	937	0	995	20	0
14	N	492	0	529	9	0
15	O	734	0	771	4	0
16	P	701	0	720	6	0
17	Q	823	0	891	14	0
18	R	598	0	670	9	0
19	S	648	0	673	7	0
20	T	763	0	861	22	0
21	U	209	0	221	3	0
22	a	104	0	56	0	0
23	b	330	0	171	0	0
24	A	236	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	3	0	0	0	0
24	T	1	0	0	0	0
25	A	22	0	0	0	0
26	A	42	0	0	1	0
27	D	1	0	0	0	0
27	N	1	0	0	0	0
28	A	214	0	0	3	0
28	D	3	0	0	0	0
28	E	4	0	0	0	0
28	K	1	0	0	1	0
28	L	3	0	0	0	0
28	N	1	0	0	0	0
28	T	1	0	0	0	0
All	All	52602	0	36690	521	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 (521) 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)
1:A:948:C:C5	13:M:106:ASN:ND2	2.01	1.29
20:T:74:LYS:HA	20:T:74:LYS:HZ3	1.41	0.82
1:A:948:C:C4	13:M:106:ASN:ND2	2.48	0.81
1:A:948:C:H5	13:M:106:ASN:HD22	1.28	0.75
20:T:75:ASN:O	20:T:78:ALA:N	2.21	0.74
6:F:10:LEU:HD12	6:F:59:TYR:HB3	1.70	0.73
7:G:143:ARG:O	7:G:147:ALA:HB2	1.88	0.73
20:T:75:ASN:OD1	20:T:75:ASN:N	2.18	0.72
11:K:123:LYS:HA	11:K:126:ARG:HG3	1.72	0.72
12:L:57:LYS:HG2	12:L:67:THR:HG22	1.73	0.71
1:A:975:A:H4'	1:A:976:G:H5"	1.74	0.70
11:K:15:ALA:HA	11:K:77:MET:HA	1.73	0.70
1:A:677:U:H3	1:A:713:G:H22	1.40	0.70
1:A:1422:G:H1	1:A:1478:C:H42	1.40	0.69
1:A:1518:MA6:H93	1:A:1519:MA6:H92	1.75	0.68
10:J:19:SER:HB3	10:J:91:PRO:HG3	1.75	0.68
1:A:948:C:C6	13:M:106:ASN:ND2	2.61	0.68
12:L:41:ARG:HE	12:L:57:LYS:HE2	1.59	0.68
1:A:235:C:N4	28:A:1902:HOH:O	2.27	0.67
1:A:1266:G:N2	1:A:1269:A:OP2	2.25	0.67
12:L:53:ARG:NH1	12:L:92:0TD:OD2	2.27	0.67
1:A:266:G:H5'	1:A:268:C:H41	1.59	0.67
1:A:537:G:OP1	12:L:113:ARG:NH2	2.27	0.67
2:B:134:GLU:HG2	2:B:137:ARG:HH21	1.59	0.67
3:C:189:ALA:HB3	3:C:196:LEU:HB2	1.76	0.67
1:A:1005:A:N6	1:A:1024:G:O2'	2.28	0.66
5:E:102:ALA:O	5:E:107:ARG:NH1	2.28	0.66
7:G:146:GLU:HG2	7:G:149:ARG:HD3	1.78	0.66
4:D:7:PRO:HB2	4:D:10:ARG:HD2	1.77	0.66
5:E:80:ILE:HD12	5:E:138:ALA:HB1	1.77	0.65
11:K:22:HIS:HB3	11:K:29:ILE:HG23	1.78	0.65
1:A:501:C:OP1	12:L:117:ARG:NH2	2.30	0.65
2:B:223:ILE:HD13	2:B:230:VAL:H	1.62	0.65
12:L:47:LYS:HG3	12:L:48:PRO:HD3	1.79	0.64
2:B:174:VAL:O	2:B:178:ARG:HG2	1.96	0.64
1:A:1124:G:N7	1:A:1145:C:O2'	2.29	0.64
1:A:1347:G:O6	9:I:10:ARG:NH2	2.29	0.64
1:A:1505:G:O2'	1:A:1506:U:OP2	2.16	0.64
3:C:14:ILE:HG22	3:C:15:THR:HG23	1.78	0.64
3:C:27:LYS:HD3	3:C:27:LYS:H	1.63	0.64
8:H:10:LEU:HD22	8:H:83:ILE:HD11	1.78	0.64
5:E:140:ARG:O	5:E:143:ARG:NH2	2.31	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:509:A:N3	1:A:543:C:O2'	2.30	0.63
1:A:1319:A:H5'	19:S:5:LEU:HD22	1.80	0.63
19:S:50:ALA:HB1	19:S:57:HIS:HB3	1.79	0.63
3:C:131:ARG:HH11	3:C:166:GLU:HG3	1.64	0.63
6:F:9:VAL:HB	6:F:87:ARG:HB2	1.81	0.63
9:I:51:ARG:HG3	9:I:56:LEU:HD21	1.80	0.63
9:I:112:LYS:HA	9:I:119:ALA:HB2	1.80	0.63
20:T:74:LYS:HA	20:T:74:LYS:NZ	2.13	0.62
8:H:53:VAL:HG12	8:H:54:ASP:H	1.64	0.62
20:T:73:HIS:O	20:T:74:LYS:O	2.16	0.62
1:A:664:G:H22	1:A:741:G:H1	1.48	0.62
20:T:74:LYS:HB3	20:T:74:LYS:HZ2	1.65	0.62
7:G:111:ARG:NH2	7:G:126:ASP:OD2	2.33	0.61
9:I:46:ALA:HB2	9:I:74:ILE:HG23	1.83	0.61
1:A:1326:C:OP1	21:U:12:LYS:NZ	2.34	0.61
11:K:18:ARG:NH1	11:K:35:PRO:O	2.34	0.61
16:P:4:ILE:HG12	16:P:21:VAL:HG22	1.81	0.61
2:B:77:ALA:HB2	2:B:211:ILE:HD13	1.82	0.61
7:G:54:THR:HG22	7:G:56:GLN:H	1.64	0.61
8:H:113:SER:HB2	8:H:134:ILE:HD11	1.83	0.61
3:C:156:ARG:H	3:C:163:ALA:HA	1.66	0.61
7:G:143:ARG:O	7:G:147:ALA:CB	2.47	0.61
1:A:8:A:N6	4:D:205:GLU:O	2.34	0.60
1:A:521:G:N7	12:L:53:ARG:NH2	2.48	0.60
9:I:10:ARG:HG2	9:I:75:ASP:HB2	1.83	0.60
3:C:70:VAL:HG12	3:C:72:LYS:H	1.65	0.60
12:L:59:ARG:NH1	12:L:65:GLU:OE2	2.34	0.60
1:A:372:C:H4'	1:A:373:A:O5'	2.02	0.60
1:A:1035:A:H2'	1:A:1036:G:H8	1.66	0.60
15:O:39:LEU:HD13	15:O:56:LEU:HB2	1.83	0.60
1:A:636:U:H5'	17:Q:2:PRO:HG3	1.84	0.59
14:N:9:LYS:HE2	14:N:23:ARG:HB2	1.82	0.59
11:K:122:LYS:NZ	28:K:201:HOH:O	2.35	0.59
5:E:102:ALA:HB1	5:E:106:PRO:HG2	1.84	0.59
1:A:1073:U:O2	2:B:104:ASN:ND2	2.35	0.59
15:O:56:LEU:HA	15:O:59:MET:HE2	1.85	0.59
1:A:401:C:O2'	1:A:621:A:N3	2.33	0.59
12:L:36:VAL:HG22	12:L:82:VAL:HG22	1.85	0.59
1:A:542:G:OP1	4:D:10:ARG:NH2	2.35	0.58
13:M:23:TYR:HB3	13:M:67:GLU:HG2	1.85	0.58
1:A:298:A:N6	28:A:1904:HOH:O	2.32	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1137:C:H4'	1:A:1138:G:C2	2.39	0.58
1:A:1379:G:OP1	7:G:6:ARG:NH1	2.36	0.58
9:I:15:ALA:HB2	9:I:65:VAL:HG13	1.84	0.58
1:A:427:U:OP1	4:D:13:ARG:NH2	2.36	0.58
10:J:8:LEU:HB2	10:J:70:ARG:HB2	1.86	0.58
5:E:88:LYS:HB3	5:E:123:LEU:HB2	1.85	0.58
9:I:97:LYS:HA	9:I:102:LEU:HD11	1.85	0.58
8:H:112:LEU:HD23	8:H:133:LEU:HA	1.86	0.57
1:A:1122:U:O4	1:A:1123:A:N6	2.38	0.57
1:A:1402:4OC:HM22	1:A:1403:C:H5'	1.86	0.57
1:A:1442:G:O6	1:A:1446:A:N6	2.37	0.57
1:A:1502:A:H2	1:A:1505:G:H1	1.50	0.57
4:D:23:GLY:HA3	4:D:112:VAL:HG22	1.87	0.57
1:A:1504:G:OP1	1:A:1507:A:H4'	2.05	0.57
4:D:11:LEU:HD13	4:D:66:ARG:HD3	1.87	0.57
1:A:1240:U:OP1	7:G:119:ARG:NH1	2.36	0.57
16:P:7:ALA:O	16:P:17:TYR:HA	2.05	0.56
18:R:48:GLY:O	18:R:74:ARG:NH2	2.36	0.56
1:A:250:A:H4'	1:A:251:G:O5'	2.04	0.56
1:A:1031:G:H2'	1:A:1032:G:H8	1.71	0.56
18:R:32:ARG:HA	18:R:69:THR:HG21	1.87	0.56
12:L:111:LYS:HE3	12:L:112:ASP:H	1.71	0.56
8:H:103:VAL:HG12	8:H:104:ARG:HG2	1.88	0.56
1:A:316:G:OP2	1:A:351:G:O2'	2.24	0.56
1:A:300:A:O2'	1:A:564:C:N3	2.36	0.56
1:A:1425:U:H3	1:A:1475:G:H1	1.52	0.56
1:A:1031:G:H2'	1:A:1032:G:C8	2.41	0.56
1:A:1301:U:HO2'	1:A:1302:U:P	2.28	0.56
5:E:81:GLU:HG3	5:E:90:VAL:HG22	1.88	0.56
11:K:57:THR:HG22	11:K:59:TYR:H	1.71	0.56
1:A:1030(A):G:N2	1:A:1030(D):A:OP2	2.34	0.55
1:A:685:G:N2	1:A:704:A:OP2	2.37	0.55
1:A:1399:C:H4'	1:A:1400:5MC:H5"	1.88	0.55
9:I:32:ASP:OD1	9:I:33:PHE:N	2.40	0.55
1:A:1391:U:H2'	1:A:1392:G:C8	2.40	0.55
1:A:45:U:H2'	1:A:46:G:C8	2.41	0.55
1:A:562:C:H1'	12:L:15:ARG:HG3	1.87	0.55
1:A:1035:A:H2'	1:A:1036:G:C8	2.41	0.55
1:A:1049:U:H4'	1:A:1050:G:O5'	2.05	0.55
2:B:48:MET:HA	2:B:51:LEU:HB2	1.89	0.55
1:A:309:G:O2'	1:A:607:A:N1	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1026:G:O6	1:A:1027:C:N4	2.41	0.54
1:A:1392:G:N2	1:A:1502:A:H8	2.06	0.54
5:E:80:ILE:HG13	5:E:91:LEU:HB2	1.88	0.54
1:A:765:G:N2	1:A:813:U:OP2	2.39	0.54
1:A:1152:A:OP1	10:J:68:HIS:ND1	2.40	0.54
1:A:1412:C:H2'	1:A:1413:A:C8	2.41	0.54
1:A:1510:U:H2'	1:A:1511:G:C8	2.42	0.54
4:D:64:LEU:HD23	4:D:198:VAL:HG21	1.89	0.54
1:A:390:C:O3'	16:P:28:ARG:NH2	2.40	0.54
4:D:68:TYR:HB3	4:D:70:ILE:HD13	1.90	0.54
11:K:58:PRO:HB2	11:K:93:GLN:HG3	1.88	0.54
13:M:3:ARG:HE	13:M:7:VAL:HA	1.71	0.54
1:A:1034:G:H2'	1:A:1035:A:C8	2.43	0.54
2:B:87:ARG:HH21	2:B:219:VAL:HB	1.72	0.54
17:Q:67:LYS:HA	17:Q:70:ARG:HH12	1.73	0.54
1:A:413:G:N2	1:A:429:U:OP2	2.41	0.54
1:A:1250:A:H4'	9:I:68:GLY:N	2.22	0.54
2:B:101:MET:HA	2:B:108:ILE:HG13	1.89	0.54
3:C:6:HIS:HD2	3:C:8:ILE:H	1.54	0.54
3:C:59:ARG:HG2	3:C:64:VAL:HG22	1.89	0.54
6:F:37:VAL:HA	6:F:65:VAL:HG12	1.90	0.54
10:J:49:VAL:HG23	14:N:41:ARG:HB2	1.90	0.53
1:A:1056:U:H5'	3:C:163:ALA:HB2	1.91	0.53
1:A:1309:G:N7	13:M:99:ARG:NH2	2.56	0.53
5:E:33:VAL:HG22	5:E:43:LEU:HD23	1.90	0.53
13:M:16:ASP:OD1	13:M:16:ASP:N	2.40	0.53
1:A:1059:C:O3'	14:N:45:ARG:NH2	2.40	0.53
1:A:1414:U:H2'	1:A:1415:G:H8	1.73	0.53
1:A:619:U:N3	4:D:134:ASP:OD1	2.39	0.53
10:J:3:LYS:O	10:J:101:VAL:N	2.41	0.53
20:T:74:LYS:NZ	20:T:74:LYS:CB	2.72	0.53
3:C:11:ARG:NH1	3:C:177:THR:O	2.42	0.53
1:A:769:G:H4'	1:A:1513:A:H4'	1.91	0.53
1:A:974:A:OP2	14:N:29:ARG:NH2	2.42	0.53
1:A:1251:A:N3	1:A:1369:C:O2'	2.38	0.53
2:B:97:TRP:HZ2	2:B:102:LEU:HD13	1.75	0.52
1:A:6:G:H4'	1:A:298:A:H4'	1.91	0.52
1:A:269:C:H2'	1:A:270:A:C8	2.44	0.52
1:A:1435:G:H2'	1:A:1436:U:C6	2.45	0.52
7:G:152:ALA:O	7:G:155:ARG:NH1	2.43	0.52
3:C:64:VAL:HB	3:C:99:VAL:HG21	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:38:ILE:HD12	10:J:71:LEU:HD12	1.92	0.52
1:A:7:G:H5'	1:A:298:A:O4'	2.09	0.52
1:A:28:G:O2'	1:A:296:U:OP1	2.24	0.52
1:A:1498:UR3:O5'	1:A:1498:UR3:H6	2.10	0.52
1:A:579:G:H5'	1:A:728:A:H1'	1.92	0.52
1:A:946:A:H2'	1:A:947:G:C8	2.45	0.52
1:A:21:G:H2'	1:A:22:G:C8	2.45	0.51
7:G:113:GLU:HB2	7:G:119:ARG:HG3	1.93	0.51
9:I:116:LYS:HD2	9:I:122:ALA:HA	1.92	0.51
1:A:673:G:H2'	1:A:674:G:C8	2.45	0.51
1:A:951:G:OP2	13:M:102:ARG:NH2	2.44	0.51
4:D:140:VAL:HG11	4:D:146:ILE:HD11	1.92	0.51
10:J:8:LEU:O	10:J:69:ASN:HA	2.10	0.51
1:A:1443:G:H4'	1:A:1446:A:O5'	2.09	0.51
12:L:27:LEU:O	12:L:33:ARG:NH1	2.43	0.51
13:M:86:CYS:SG	13:M:87:TYR:N	2.83	0.51
1:A:738:C:H5"	6:F:69:GLU:HB3	1.91	0.51
1:A:976:G:OP2	1:A:1358:U:O2'	2.22	0.51
1:A:337:C:H2'	1:A:338:A:C8	2.46	0.51
1:A:1207:2MG:HM23	1:A:1208:C:H1'	1.92	0.51
20:T:74:LYS:N	20:T:74:LYS:HD2	2.26	0.51
1:A:580:U:H2'	1:A:581:G:O4'	2.10	0.50
2:B:55:PHE:HD2	2:B:221:LEU:HG	1.76	0.50
7:G:62:PHE:HA	7:G:124:LEU:HD12	1.93	0.50
18:R:25:THR:HB	18:R:42:ARG:HH22	1.76	0.50
1:A:1065:U:H4'	1:A:1066:C:O5'	2.11	0.50
1:A:1291:G:H4'	9:I:39:GLY:HA3	1.93	0.50
2:B:44:LEU:HD12	2:B:44:LEU:H	1.76	0.50
1:A:60:A:H4'	1:A:61:G:O5'	2.10	0.50
4:D:98:GLU:HG2	4:D:189:PRO:HG3	1.93	0.50
1:A:56:U:H2'	1:A:57:G:C8	2.47	0.50
1:A:181:G:H4'	1:A:182:U:H5'	1.93	0.50
1:A:243:A:H4'	1:A:244:U:H5'	1.94	0.50
1:A:362:G:N2	1:A:365:U:OP2	2.43	0.50
20:T:74:LYS:HZ2	20:T:74:LYS:CB	2.25	0.50
1:A:1080:A:H5"	5:E:16:THR:HG21	1.94	0.49
1:A:186:C:H5'	20:T:78:ALA:HB1	1.93	0.49
1:A:1498:UR3:H1'	1:A:1499:A:OP2	2.12	0.49
7:G:46:ALA:O	7:G:50:ILE:HG12	2.12	0.49
20:T:92:LEU:O	20:T:96:GLY:N	2.33	0.49
1:A:662:G:H2'	1:A:663:A:C8	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1356:G:H2'	1:A:1357:A:C8	2.47	0.49
2:B:33:TYR:HB2	2:B:43:ASP:HA	1.93	0.49
3:C:38:ARG:HB3	3:C:94:LEU:HD21	1.94	0.49
9:I:49:PRO:O	9:I:52:ALA:HB3	2.13	0.49
1:A:235:C:H5'	17:Q:70:ARG:HG2	1.93	0.49
1:A:560:U:H5'	1:A:566:G:N2	2.27	0.49
1:A:652:U:O4	1:A:752:G:O2'	2.23	0.49
1:A:1249:C:O2'	9:I:73:GLN:NE2	2.45	0.49
1:A:1413:A:H2	1:A:1487:G:H22	1.59	0.49
3:C:91:LEU:HD21	3:C:99:VAL:HG22	1.94	0.49
1:A:390:C:H2'	1:A:391:G:C8	2.48	0.49
7:G:75:VAL:HG21	7:G:86:GLN:HB3	1.95	0.49
9:I:26:VAL:HG13	9:I:61:ALA:HB3	1.93	0.49
1:A:266:G:H5"	1:A:267:C:C5	2.48	0.49
1:A:1020:U:H2'	1:A:1021:G:H8	1.77	0.49
13:M:10:PRO:HB2	13:M:18:ALA:HB1	1.95	0.49
1:A:1123:A:H4'	10:J:36:GLY:HA3	1.94	0.48
11:K:72:ALA:HB1	11:K:77:MET:HE2	1.95	0.48
1:A:1124:G:O2'	1:A:1126:U:O4	2.31	0.48
7:G:28:ASN:OD1	7:G:36:LYS:NZ	2.45	0.48
20:T:30:LYS:HE3	20:T:72:LEU:HD23	1.95	0.48
2:B:112:VAL:O	2:B:116:GLU:HG2	2.13	0.48
9:I:44:VAL:O	9:I:51:ARG:NH2	2.46	0.48
1:A:967:5MC:H5"	1:A:968:A:OP2	2.13	0.48
1:A:1499:A:H1'	1:A:1520:G:H5'	1.95	0.48
4:D:24:GLU:HG2	4:D:25:ARG:H	1.78	0.48
12:L:56:ALA:HB2	12:L:70:ILE:HD11	1.95	0.48
13:M:12:ASN:OD1	13:M:46:LYS:NZ	2.37	0.48
1:A:1034:G:H2'	1:A:1035:A:H8	1.78	0.48
10:J:38:ILE:HB	10:J:71:LEU:HB3	1.95	0.48
7:G:15:ASP:OD1	7:G:44:TYR:OH	2.31	0.48
20:T:74:LYS:NZ	20:T:74:LYS:CA	2.76	0.48
2:B:68:ILE:O	2:B:90:MET:HB3	2.14	0.48
4:D:98:GLU:OE2	4:D:107:ARG:NE	2.43	0.48
1:A:344:A:H5'	1:A:345:C:C5	2.49	0.48
1:A:890:G:O2'	1:A:906:G:O6	2.21	0.48
1:A:1518:MA6:H93	1:A:1519:MA6:C9	2.42	0.48
2:B:239:VAL:O	2:B:241:GLU:N	2.47	0.47
1:A:811:C:O2'	1:A:901:A:N1	2.43	0.47
1:A:1132:C:H2'	1:A:1133:G:H8	1.79	0.47
1:A:335:C:O2'	1:A:1433:A:N3	2.36	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:973:G:H3'	1:A:974:A:H5"	1.95	0.47
6:F:46:ARG:HB2	6:F:60:PHE:CE2	2.49	0.47
1:A:663:A:H5"	18:R:61:LYS:HE3	1.96	0.47
11:K:69:ALA:O	11:K:73:MET:HG2	2.15	0.47
1:A:559:A:P	5:E:126:ARG:HH22	2.37	0.47
1:A:776:G:N2	1:A:802:A:OP2	2.46	0.47
1:A:673:G:O3'	6:F:87:ARG:NH2	2.47	0.47
1:A:826:C:O2	8:H:15:ASN:ND2	2.47	0.47
1:A:1106:G:H5"	3:C:172:ARG:HG2	1.96	0.47
1:A:1305:G:N2	1:A:1331:G:H2'	2.29	0.47
5:E:45:PHE:CE2	5:E:47:LYS:HD2	2.50	0.47
7:G:152:ALA:HB1	7:G:155:ARG:HH12	1.80	0.47
9:I:16:ARG:O	9:I:63:ILE:HA	2.15	0.47
12:L:24:VAL:HG13	12:L:98:TYR:CE1	2.49	0.47
13:M:5:ALA:HB1	13:M:66:LEU:HD13	1.96	0.47
15:O:87:ILE:HG22	15:O:88:ARG:H	1.79	0.47
6:F:50:TYR:CE2	18:R:77:GLY:HA2	2.50	0.47
1:A:1010:G:H2'	1:A:1011:G:H8	1.79	0.47
1:A:1532:U:H2'	1:A:1533:C:H3'	1.97	0.47
14:N:24:CYS:HB3	14:N:29:ARG:H	1.80	0.47
1:A:1048:G:H5"	14:N:3:ARG:HG3	1.97	0.47
1:A:59:A:H5"	1:A:387:U:H5"	1.98	0.46
26:A:1858:B6M:O62	26:A:1858:B6M:O23	2.33	0.46
4:D:4:TYR:CG	4:D:4:TYR:O	2.68	0.46
11:K:80:VAL:HG11	11:K:103:LEU:HD13	1.98	0.46
17:Q:83:ASP:OD1	17:Q:83:ASP:N	2.49	0.46
1:A:1392:G:H21	1:A:1502:A:H8	1.61	0.46
3:C:19:GLU:HG2	3:C:54:ARG:HE	1.80	0.46
1:A:1301:U:H1'	1:A:1302:U:OP1	2.15	0.46
1:A:976:G:H5'	1:A:1358:U:O2'	2.16	0.46
7:G:75:VAL:HG11	7:G:144:MET:HB3	1.97	0.46
1:A:558:G:OP2	1:A:559:A:O2'	2.30	0.46
1:A:689:C:H2'	1:A:690:G:O4'	2.16	0.46
8:H:121:ASP:N	8:H:121:ASP:OD1	2.47	0.46
5:E:98:THR:HB	5:E:117:ASP:HB3	1.98	0.46
20:T:74:LYS:HD2	20:T:74:LYS:H	1.79	0.46
1:A:737:A:H1'	6:F:73:ASN:HD21	1.81	0.46
4:D:151:LYS:H	4:D:151:LYS:HD2	1.79	0.46
8:H:53:VAL:O	8:H:55:GLY:N	2.49	0.46
17:Q:68:ARG:H	17:Q:70:ARG:NH1	2.14	0.46
1:A:727:G:N2	1:A:730:G:OP2	2.47	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:25:LYS:N	9:I:60:ASP:OD1	2.46	0.46
14:N:27:CYS:SG	14:N:29:ARG:HB2	2.55	0.46
1:A:1366:C:H2'	1:A:1367:C:C6	2.51	0.46
5:E:6:PHE:HD1	5:E:6:PHE:HA	1.70	0.46
1:A:801:U:H2'	1:A:802:A:C8	2.51	0.46
1:A:947:G:H4'	1:A:1332:A:H2	1.81	0.46
6:F:94:GLN:HB3	18:R:32:ARG:HH11	1.80	0.46
9:I:65:VAL:HG21	9:I:77:ILE:HD11	1.98	0.46
1:A:1127:G:N2	1:A:1146:A:H62	2.14	0.45
1:A:1179:A:O2'	1:A:1180:A:OP1	2.31	0.45
21:U:12:LYS:HB3	21:U:22:ARG:HD2	1.98	0.45
1:A:539:A:H2'	1:A:540:G:C8	2.51	0.45
1:A:836:G:C6	1:A:851:G:C6	3.04	0.45
1:A:1402:4OC:H2'	1:A:1403:C:O4'	2.15	0.45
4:D:26:CYS:HA	4:D:31:CYS:HB2	1.98	0.45
5:E:110:LEU:HD13	5:E:118:ILE:HG21	1.98	0.45
8:H:51:VAL:HG11	8:H:60:ARG:HG3	1.98	0.45
1:A:277:C:H5"	17:Q:68:ARG:NH2	2.31	0.45
1:A:713:G:H2'	1:A:714:G:C8	2.51	0.45
1:A:1057:G:H5"	3:C:154:SER:HB2	1.97	0.45
2:B:91:PRO:HG2	2:B:155:LEU:HG	1.98	0.45
13:M:96:LEU:O	13:M:110:ARG:NH1	2.50	0.45
17:Q:22:LEU:HD11	17:Q:39:SER:HB2	1.98	0.45
1:A:103:C:OP1	20:T:17:ARG:NH1	2.50	0.45
1:A:911:U:H2'	1:A:912:C:C6	2.51	0.45
14:N:9:LYS:HD3	14:N:21:TYR:O	2.16	0.45
1:A:1064:G:H21	1:A:1190:G:H2'	1.81	0.45
1:A:1109:C:OP2	3:C:176:HIS:ND1	2.47	0.45
1:A:1182:G:H4'	1:A:1183:A:O5'	2.17	0.45
1:A:129:U:O3'	1:A:129(A):G:H3'	2.17	0.45
1:A:1431:C:H2'	1:A:1432:G:O4'	2.16	0.45
3:C:157:ILE:HD13	3:C:166:GLU:HB2	1.99	0.45
1:A:875:C:O2'	8:H:14:ARG:NH1	2.49	0.45
1:A:1128:C:H42	1:A:1143:G:H22	1.64	0.45
13:M:37:THR:HG22	13:M:55:ARG:HD2	1.98	0.45
1:A:184:G:H2'	1:A:185:A:H8	1.82	0.45
1:A:1301:U:O2'	1:A:1302:U:O5'	2.27	0.45
1:A:558:G:P	1:A:559:A:HO2'	2.40	0.45
1:A:977:A:H2'	1:A:978:A:H5"	1.99	0.45
1:A:1148:U:H2'	1:A:1149:C:O4'	2.16	0.45
1:A:1177:G:O5'	9:I:97:LYS:NZ	2.48	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1490:C:H2'	1:A:1491:G:H8	1.82	0.45
2:B:130:ARG:HA	2:B:130:ARG:HD3	1.71	0.45
2:B:223:ILE:HD13	2:B:230:VAL:HG23	1.98	0.45
1:A:1218:C:H2'	1:A:1219:U:C6	2.51	0.45
1:A:1305:G:H22	1:A:1331:G:H2'	1.81	0.45
2:B:88:ALA:O	2:B:90:MET:N	2.48	0.45
4:D:105:VAL:HG13	4:D:110:PHE:HB2	1.98	0.45
4:D:111:ALA:HB2	4:D:120:LEU:HD12	1.99	0.45
1:A:384:G:H2'	1:A:385:C:C6	2.52	0.44
1:A:1020:U:H2'	1:A:1021:G:C8	2.52	0.44
1:A:1026:G:H3'	1:A:1027:C:H5"	2.00	0.44
5:E:90:VAL:O	5:E:120:THR:HA	2.17	0.44
13:M:3:ARG:HA	13:M:9:ILE:HG13	1.99	0.44
1:A:994:A:N7	1:A:1216:G:H4'	2.33	0.44
3:C:155:GLY:HA3	3:C:163:ALA:HB1	2.00	0.44
5:E:145:LYS:O	5:E:149:GLU:HG2	2.18	0.44
3:C:3:ASN:OD1	3:C:3:ASN:N	2.49	0.44
10:J:51:ARG:HG2	10:J:61:GLU:HB2	1.98	0.44
21:U:5:ASP:O	21:U:11:GLY:HA3	2.17	0.44
7:G:45:ASP:O	7:G:48:LYS:HG2	2.16	0.44
1:A:501:C:H1'	1:A:549:C:H1'	1.98	0.44
1:A:1256:A:O2'	1:A:1257:U:O5'	2.33	0.44
17:Q:63:ARG:HG2	17:Q:64:PRO:HD2	1.99	0.44
3:C:147:LYS:HE2	3:C:205:GLY:H	1.83	0.44
7:G:111:ARG:HB2	7:G:119:ARG:HG2	1.99	0.44
10:J:26:ALA:O	10:J:84:GLN:NE2	2.49	0.44
1:A:1054:C:H2'	1:A:1055:A:H5"	2.00	0.44
1:A:1347:G:O2'	1:A:1348:U:P	2.76	0.44
5:E:79:GLU:HG3	5:E:93:PRO:HD2	2.00	0.44
5:E:142:LEU:O	5:E:143:ARG:NE	2.48	0.44
8:H:6:ILE:O	8:H:10:LEU:HG	2.18	0.44
1:A:62:U:O2'	1:A:379:C:O2	2.35	0.44
1:A:337:C:H2'	1:A:338:A:H8	1.82	0.44
1:A:501:C:H2'	1:A:502:G:C8	2.52	0.44
1:A:701:C:H4'	1:A:702:A:O5'	2.17	0.44
1:A:1298:C:H4'	1:A:1299:A:C4	2.52	0.44
7:G:44:TYR:HE2	9:I:41:VAL:HG11	1.82	0.44
7:G:65:ALA:O	7:G:69:VAL:HG23	2.18	0.44
1:A:1147:C:HO2'	9:I:5:TYR:HH	1.63	0.44
1:A:1198:G:H2'	1:A:1199:U:C6	2.53	0.44
9:I:44:VAL:HG12	9:I:51:ARG:NH2	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:66:LEU:O	13:M:70:LEU:HB2	2.17	0.44
1:A:946:A:O2'	1:A:1333:A:N3	2.45	0.43
1:A:1029:C:H2'	1:A:1030:C:C6	2.53	0.43
1:A:1502:A:H2	1:A:1505:G:N1	2.16	0.43
20:T:73:HIS:O	20:T:74:LYS:C	2.56	0.43
8:H:86:ILE:HD12	8:H:133:LEU:HD22	2.00	0.43
10:J:48:THR:HA	10:J:62:HIS:HB3	2.00	0.43
17:Q:18:THR:HG23	17:Q:69:LYS:HE3	2.01	0.43
1:A:380:G:N2	1:A:383:A:OP2	2.39	0.43
1:A:757:U:H2'	1:A:758:G:O4'	2.18	0.43
1:A:1286:A:H2'	1:A:1287:A:H4'	1.99	0.43
4:D:110:PHE:HD1	4:D:162:LEU:HD21	1.83	0.43
1:A:1323:G:H2'	1:A:1324:A:C8	2.54	0.43
2:B:178:ARG:NH2	8:H:74:PRO:HB3	2.33	0.43
1:A:186:C:H2'	1:A:187:C:C6	2.53	0.43
1:A:555:C:H2'	1:A:556:C:C6	2.53	0.43
1:A:1497:G:H2'	1:A:1498:UR3:H5'	2.00	0.43
10:J:40:LEU:HB3	10:J:69:ASN:HB2	1.99	0.43
20:T:73:HIS:C	20:T:74:LYS:O	2.56	0.43
1:A:324:G:OP1	20:T:70:SER:OG	2.36	0.43
1:A:558:G:C8	1:A:559:A:H2'	2.54	0.43
1:A:1001:A:H2'	1:A:1002:G:C8	2.53	0.43
1:A:1256:A:H5'	1:A:1258:G:H1'	2.00	0.43
1:A:1306:A:N6	1:A:1331:G:H1'	2.33	0.43
4:D:110:PHE:CD1	4:D:162:LEU:HD21	2.52	0.43
9:I:44:VAL:HG12	9:I:51:ARG:HH22	1.83	0.43
10:J:40:LEU:HD23	10:J:40:LEU:HA	1.90	0.43
1:A:328:C:H4'	1:A:329:A:O5'	2.18	0.43
1:A:1021:G:H2'	1:A:1022:G:C8	2.53	0.43
1:A:1342:C:H2'	1:A:1343:G:C8	2.54	0.43
1:A:269:C:H2'	1:A:270:A:H8	1.82	0.43
14:N:24:CYS:SG	14:N:40:CYS:N	2.89	0.43
1:A:1065:U:H1'	1:A:1066:C:OP2	2.18	0.43
7:G:51:GLN:C	7:G:53:LYS:H	2.23	0.43
17:Q:67:LYS:HA	17:Q:70:ARG:NH1	2.33	0.43
1:A:938:A:N6	28:A:1905:HOH:O	2.39	0.43
3:C:64:VAL:H	3:C:99:VAL:HB	1.84	0.43
7:G:74:GLU:HG2	7:G:91:VAL:HG22	2.01	0.43
8:H:120:THR:H	8:H:123:GLU:HB2	1.83	0.43
10:J:15:THR:HG22	10:J:91:PRO:HB3	2.00	0.43
1:A:190(K):G:H2'	1:A:190(L):U:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:564:C:O2'	8:H:91:ARG:NH2	2.53	0.42
1:A:958:A:N6	19:S:77:THR:O	2.50	0.42
1:A:1348:U:H4'	9:I:120:ARG:HD2	2.00	0.42
10:J:90:LEU:N	10:J:91:PRO:HD2	2.34	0.42
16:P:40:ASP:HB3	16:P:48:TRP:HB2	2.01	0.42
1:A:413:G:H1'	1:A:428:G:N2	2.33	0.42
1:A:714:G:H2'	1:A:715:A:C8	2.54	0.42
1:A:1346:A:N1	1:A:1374:A:H5"	2.35	0.42
1:A:1371:G:O3'	9:I:69:GLY:HA3	2.19	0.42
4:D:64:LEU:HB2	4:D:198:VAL:HG11	2.01	0.42
13:M:90:LEU:O	13:M:94:ARG:HG2	2.19	0.42
15:O:62:GLN:OE1	15:O:65:ARG:NH2	2.52	0.42
1:A:363:A:H62	12:L:28:LYS:HE2	1.84	0.42
3:C:8:ILE:HG23	3:C:16:ARG:HG2	2.01	0.42
4:D:32:ALA:HA	4:D:35:ARG:HG2	2.01	0.42
4:D:57:ARG:HB3	4:D:206:PHE:HB2	2.01	0.42
19:S:33:THR:HG22	19:S:35:SER:H	1.84	0.42
1:A:514:C:H2'	1:A:515:G:C8	2.54	0.42
1:A:737:A:H2'	1:A:738:C:C6	2.54	0.42
1:A:1273:G:H2'	1:A:1274:G:O4'	2.19	0.42
5:E:81:GLU:HG2	5:E:88:LYS:HE2	2.00	0.42
11:K:110:ASP:OD2	18:R:88:LYS:NZ	2.47	0.42
1:A:991:U:O4	1:A:1212:U:O2'	2.25	0.42
2:B:87:ARG:CZ	2:B:233:SER:HB2	2.49	0.42
18:R:47:THR:HA	18:R:83:GLU:HB2	2.01	0.42
1:A:106:C:H2'	1:A:107:G:H8	1.84	0.42
1:A:192:U:H1'	20:T:103:GLY:HA2	2.01	0.42
9:I:117:HIS:HB2	9:I:121:ARG:HB3	2.02	0.42
1:A:1236:A:H4'	1:A:1304:G:H4'	2.02	0.42
1:A:1376:U:H2'	1:A:1377:A:C8	2.55	0.42
3:C:148:GLY:HA3	3:C:172:ARG:O	2.19	0.42
7:G:45:ASP:O	7:G:49:ILE:HG13	2.19	0.42
12:L:24:VAL:HG13	12:L:98:TYR:HE1	1.84	0.42
13:M:115:LYS:HE2	13:M:115:LYS:HB2	1.89	0.42
17:Q:29:HIS:CG	17:Q:30:PRO:HD2	2.55	0.42
1:A:184:G:H2'	1:A:185:A:C8	2.55	0.42
1:A:665:A:N3	1:A:732:C:H2'	2.34	0.42
1:A:130:A:OP2	1:A:190(E):U:O2'	2.26	0.42
1:A:860:A:H2'	1:A:861:G:O4'	2.19	0.42
1:A:975:A:H62	10:J:60:ARG:HH12	1.68	0.42
1:A:1027:C:N4	1:A:1036:G:O6	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1086:U:H3	1:A:1099:G:H22	1.66	0.42
1:A:1131:G:H2'	1:A:1132:C:C6	2.54	0.42
10:J:57:LYS:HE2	10:J:60:ARG:NH2	2.35	0.42
1:A:339:C:H2'	1:A:340:U:C6	2.55	0.42
1:A:1118:C:H1'	1:A:1179:A:C5	2.55	0.41
6:F:30:LEU:HD23	6:F:75:LEU:HD11	2.02	0.41
1:A:1069:C:O2'	1:A:1192:C:H1'	2.20	0.41
9:I:127:LYS:HE3	9:I:127:LYS:HB3	1.84	0.41
13:M:63:THR:HG23	13:M:64:TRP:CD2	2.56	0.41
20:T:74:LYS:HZ3	20:T:74:LYS:CA	2.20	0.41
1:A:51:A:N7	1:A:114:U:O2'	2.51	0.41
19:S:36:ARG:NH2	19:S:75:ALA:O	2.48	0.41
1:A:653:A:C8	8:H:56:LYS:HG2	2.56	0.41
1:A:1308:U:H2'	1:A:1309:G:H8	1.85	0.41
1:A:1311:G:N7	19:S:2:PRO:HA	2.36	0.41
1:A:1399:C:C2	1:A:1502:A:N6	2.88	0.41
2:B:108:ILE:O	2:B:112:VAL:HG23	2.21	0.41
11:K:34:ASP:OD1	11:K:38:ASN:N	2.53	0.41
1:A:501:C:H2'	1:A:502:G:H8	1.83	0.41
1:A:1112:C:O2	3:C:179:ARG:HG2	2.19	0.41
2:B:74:LYS:NZ	2:B:206:ASP:OD1	2.41	0.41
3:C:6:HIS:HD2	3:C:8:ILE:N	2.16	0.41
6:F:2:ARG:NH1	6:F:69:GLU:HG2	2.36	0.41
17:Q:59:ILE:CG2	17:Q:71:PHE:HB3	2.49	0.41
19:S:23:ASN:OD1	19:S:47:HIS:NE2	2.45	0.41
1:A:748:C:H1'	1:A:749:C:OP2	2.21	0.41
1:A:939:G:H2'	1:A:940:C:C6	2.56	0.41
1:A:1065:U:C5	1:A:1190:G:H1'	2.55	0.41
1:A:1338:G:H2'	1:A:1339:A:C8	2.55	0.41
1:A:1477:C:H2'	1:A:1478:C:C6	2.56	0.41
1:A:35:G:H2'	1:A:36:C:C6	2.55	0.41
1:A:603:U:H2'	1:A:604:G:C8	2.56	0.41
1:A:1306:A:H61	1:A:1331:G:H1'	1.86	0.41
1:A:1414:U:H2'	1:A:1415:G:C8	2.54	0.41
11:K:62:GLN:HG3	11:K:97:ALA:HB2	2.02	0.41
1:A:17:U:H2'	1:A:18:C:C6	2.55	0.41
1:A:299:G:H2'	1:A:300:A:C8	2.56	0.41
1:A:436:C:H2'	1:A:437:U:C6	2.56	0.41
1:A:514:C:H2'	1:A:515:G:H8	1.86	0.41
1:A:736:C:H2'	1:A:737:A:C8	2.56	0.41
1:A:986:A:H2'	1:A:987:G:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1225:A:H5"	1:A:1226:C:OP2	2.21	0.41
1:A:1300:G:O2'	1:A:1301:U:P	2.78	0.41
1:A:1368:G:OP2	9:I:112:LYS:HD3	2.21	0.41
12:L:124:LYS:HG3	12:L:125:PRO:O	2.21	0.41
16:P:70:ALA:O	16:P:74:LEU:HG	2.20	0.41
17:Q:5:VAL:HA	17:Q:59:ILE:O	2.20	0.41
1:A:691:G:H2'	1:A:692:U:C6	2.56	0.41
1:A:1148:U:H1'	9:I:16:ARG:HH21	1.85	0.41
1:A:401:C:H2'	1:A:402:G:H8	1.87	0.40
1:A:110:C:H2'	1:A:111:G:O4'	2.21	0.40
4:D:4:TYR:CE2	4:D:11:LEU:HD11	2.56	0.40
10:J:76:ASN:O	10:J:78:ASN:N	2.55	0.40
11:K:27:ASN:OD1	11:K:28:THR:N	2.53	0.40
16:P:59:TRP:HA	16:P:62:VAL:HG22	2.03	0.40
20:T:54:LYS:HE2	20:T:54:LYS:HB3	1.91	0.40
1:A:1010:G:H2'	1:A:1011:G:C8	2.56	0.40
1:A:1250:A:H2'	1:A:1251:A:C8	2.57	0.40
5:E:31:LEU:HD23	5:E:31:LEU:HA	1.93	0.40
17:Q:68:ARG:H	17:Q:70:ARG:HH11	1.70	0.40
1:A:927:G:OP1	1:A:1505:G:N2	2.55	0.40
4:D:70:ILE:HD11	4:D:100:ARG:NE	2.36	0.40
7:G:50:ILE:HB	7:G:58:PRO:HB3	2.04	0.40
18:R:47:THR:HG22	18:R:48:GLY:H	1.86	0.40
1:A:397:A:H5'	1:A:398:C:OP1	2.21	0.40
1:A:1516:G:H2'	1:A:1518:MA6:OP2	2.22	0.40
7:G:69:VAL:HG21	7:G:104:LEU:HD21	2.02	0.40
12:L:53:ARG:HD2	12:L:53:ARG:N	2.37	0.40
20:T:62:LEU:HD23	20:T:62:LEU:HA	1.90	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]	2.17	0.03

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%)	212 (91%)	20 (8%)	2 (1%)	17	48
3	C	205/207 (99%)	185 (90%)	20 (10%)	0	100	100
4	D	206/208 (99%)	200 (97%)	6 (3%)	0	100	100
5	E	149/151 (99%)	144 (97%)	5 (3%)	0	100	100
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%)	129 (95%)	6 (4%)	1 (1%)	22	54
9	I	125/127 (98%)	111 (89%)	14 (11%)	0	100	100
10	J	97/99 (98%)	80 (82%)	16 (16%)	1 (1%)	15	46
11	K	117/119 (98%)	106 (91%)	11 (9%)	0	100	100
12	L	122/125 (98%)	114 (93%)	8 (7%)	0	100	100
13	M	116/118 (98%)	108 (93%)	7 (6%)	1 (1%)	17	48
14	N	58/60 (97%)	55 (95%)	3 (5%)	0	100	100
15	O	86/88 (98%)	84 (98%)	2 (2%)	0	100	100
16	P	82/84 (98%)	79 (96%)	3 (4%)	0	100	100
17	Q	97/99 (98%)	91 (94%)	6 (6%)	0	100	100
18	R	71/73 (97%)	66 (93%)	5 (7%)	0	100	100
19	S	79/81 (98%)	72 (91%)	7 (9%)	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%)	2194 (93%)	150 (6%)	8 (0%)	41	71

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
13	M	107	ALA

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Mol	Chain	Res	Type
20	T	74	LYS
20	T	76	ALA
2	B	240	GLN
20	T	73	HIS
10	J	55	LYS
8	H	54	ASP
2	B	89	GLY

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%)	186 (96%)	8 (4%)	30	61
3	C	160/161 (99%)	150 (94%)	10 (6%)	18	47
4	D	180/180 (100%)	173 (96%)	7 (4%)	32	62
5	E	115/116 (99%)	105 (91%)	10 (9%)	10	34
6	F	90/90 (100%)	88 (98%)	2 (2%)	52	74
7	G	126/126 (100%)	120 (95%)	6 (5%)	25	56
8	H	119/119 (100%)	114 (96%)	5 (4%)	30	60
9	I	98/98 (100%)	92 (94%)	6 (6%)	18	48
10	J	87/89 (98%)	83 (95%)	4 (5%)	27	58
11	K	90/90 (100%)	85 (94%)	5 (6%)	21	52
12	L	103/103 (100%)	99 (96%)	4 (4%)	32	62
13	M	94/94 (100%)	87 (93%)	7 (7%)	13	40
14	N	49/49 (100%)	47 (96%)	2 (4%)	30	61
15	O	79/79 (100%)	73 (92%)	6 (8%)	13	39
16	P	72/72 (100%)	68 (94%)	4 (6%)	21	52
17	Q	94/94 (100%)	90 (96%)	4 (4%)	29	59
18	R	64/64 (100%)	63 (98%)	1 (2%)	62	79
19	S	71/71 (100%)	65 (92%)	6 (8%)	10	35

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
20	T	76/76 (100%)	66 (87%)	10 (13%)	4 17
21	U	19/20 (95%)	18 (95%)	1 (5%)	22 53
All	All	1980/1995 (99%)	1872 (94%)	108 (6%)	21 52

All (108) 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	144	ARG
2	B	221	LEU
2	B	236	TYR
3	C	3	ASN
3	C	21	ARG
3	C	27	LYS
3	C	28	GLN
3	C	34	LEU
3	C	91	LEU
3	C	95	THR
3	C	126	ARG
3	C	166	GLU
3	C	204	LEU
4	D	15	GLU
4	D	64	LEU
4	D	96	LEU
4	D	122	ARG
4	D	127	THR
4	D	170	VAL
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	79	GLU
5	E	80	ILE
5	E	89	ILE
5	E	120	THR

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Mol	Chain	Res	Type
5	E	150	ARG
6	F	10	LEU
6	F	82	ARG
7	G	8	GLU
7	G	11	GLN
7	G	52	GLU
7	G	114	ARG
7	G	122	HIS
7	G	156	TRP
8	H	39	LEU
8	H	85	ARG
8	H	92	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	15	THR
10	J	49	VAL
10	J	71	LEU
10	J	80	LYS
11	K	11	LYS
11	K	29	ILE
11	K	48	ILE
11	K	92	GLU
11	K	120	ARG
12	L	20	LYS
12	L	47	LYS
12	L	53	ARG
12	L	111	LYS
13	M	37	THR
13	M	44	ARG
13	M	56	LEU
13	M	69	GLU
13	M	70	LEU
13	M	105	THR
13	M	109	THR
14	N	9	LYS
14	N	33	VAL

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Mol	Chain	Res	Type
15	O	5	LYS
15	O	38	ARG
15	O	39	LEU
15	O	41	GLU
15	O	70	LEU
15	O	81	LEU
16	P	1	MET
16	P	20	VAL
16	P	53	VAL
16	P	67	THR
17	Q	38	ARG
17	Q	74	LEU
17	Q	91	ARG
17	Q	98	LEU
18	R	25	THR
19	S	5	LEU
19	S	7	LYS
19	S	12	ASP
19	S	15	LEU
19	S	31	ILE
19	S	62	ILE
20	T	8	ARG
20	T	9	ASN
20	T	10	LEU
20	T	48	LYS
20	T	51	GLU
20	T	57	ARG
20	T	72	LEU
20	T	73	HIS
20	T	75	ASN
20	T	84	LEU
21	U	9	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
3	C	6	HIS
4	D	119	GLN
7	G	148	ASN
9	I	73	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1507/1522 (99%)	204 (13%)	36 (2%)
22	a	4/5 (80%)	0	0
23	b	12/15 (80%)	2 (16%)	0
All	All	1523/1542 (98%)	206 (13%)	36 (2%)

All (206) 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	63	C
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	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
1	A	267	C
1	A	270	A
1	A	289	G
1	A	321	A
1	A	328	C

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Mol	Chain	Res	Type
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	384	G
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	442	C
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
1	A	562	C
1	A	564	C
1	A	572	A
1	A	573	A

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Mol	Chain	Res	Type
1	A	576	G
1	A	577	G
1	A	579	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	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
1	A	960	U
1	A	961	U
1	A	968	A

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Mol	Chain	Res	Type
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	989	C
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	1064	G
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	1171	G
1	A	1180	A
1	A	1181	G
1	A	1182	G
1	A	1183	A
1	A	1184	G

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Mol	Chain	Res	Type
1	A	1190	G
1	A	1196	U
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	1260	C
1	A	1270	C
1	A	1280	A
1	A	1282	C
1	A	1286	A
1	A	1287	A
1	A	1300	G
1	A	1301	U
1	A	1302	U
1	A	1320	C
1	A	1332	A
1	A	1338	G
1	A	1348	U
1	A	1353	G
1	A	1362	C
1	A	1364	U
1	A	1397	C
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	1497	G
1	A	1499	A
1	A	1502	A
1	A	1504	G
1	A	1505	G
1	A	1506	U
1	A	1517	G

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Mol	Chain	Res	Type
1	A	1520	G
1	A	1529	G
1	A	1530	G
23	b	32	C
23	b	33	U

All (36) 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	496	A
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

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Mol	Chain	Res	Type
1	A	1443	G
1	A	1505	G
1	A	1528	U

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

19 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	1	22,23	18,22,26	1.16	2 (11%)	18,32,39	1.61	3 (16%)
23	70U	b	34	22,23	22,26,27	3.54	10 (45%)	28,37,40	1.52	5 (17%)
1	5MC	A	1407	1	18,22,23	1.04	2 (11%)	26,32,35	0.99	2 (7%)
1	5MC	A	1400	1	18,22,23	1.05	2 (11%)	26,32,35	0.95	1 (3%)
1	5MC	A	967	1	18,22,23	1.05	2 (11%)	26,32,35	0.94	1 (3%)
1	4OC	A	1402	1	20,23,24	0.98	2 (10%)	26,32,35	0.74	0
1	5MC	A	1404	1	18,22,23	1.04	2 (11%)	26,32,35	0.95	1 (3%)
1	PSU	A	1541	24,1	18,21,22	1.99	6 (33%)	22,30,33	1.43	4 (18%)
23	12A	b	37	23	29,36,37	5.01	14 (48%)	34,52,55	2.58	11 (32%)
1	PSU	A	516	1	18,21,22	2.00	6 (33%)	22,30,33	1.41	3 (13%)
1	MA6	A	1518	1	18,26,27	0.69	0	19,38,41	0.88	1 (5%)
1	UR3	A	1498	1	19,22,23	0.77	1 (5%)	26,32,35	1.08	2 (7%)
1	PSU	A	1540	1	18,21,22	1.99	6 (33%)	22,30,33	1.41	4 (18%)
1	M2G	A	966	1	20,27,28	1.42	4 (20%)	22,40,43	1.34	3 (13%)
1	MA6	A	1519	1	18,26,27	0.66	0	19,38,41	0.84	1 (5%)
1	2MG	A	1207	1	18,26,27	1.29	4 (22%)	16,38,41	1.42	2 (12%)
12	0TD	L	92	12	7,9,10	1.00	0	6,11,13	2.06	2 (33%)
1	7MG	A	527	1	22,26,27	5.06	4 (18%)	29,39,42	2.09	9 (31%)
23	PSU	b	39	23	18,21,22	2.00	7 (38%)	22,30,33	1.50	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	1	22,23	-	3/4/24/28	0/3/3/3
23	70U	b	34	22,23	-	4/13/31/32	0/2/2/2
1	5MC	A	1407	1	-	0/7/25/26	0/2/2/2
1	5MC	A	1400	1	-	2/7/25/26	0/2/2/2
1	5MC	A	967	1	-	1/7/25/26	0/2/2/2
1	4OC	A	1402	1	-	2/9/29/30	0/2/2/2
1	5MC	A	1404	1	-	0/7/25/26	0/2/2/2
1	PSU	A	1541	24,1	-	2/7/25/26	0/2/2/2
23	12A	b	37	23	1/1/9/11	6/21/43/44	0/3/3/3
1	PSU	A	516	1	-	0/7/25/26	0/2/2/2
1	MA6	A	1518	1	-	0/7/29/30	0/3/3/3
1	UR3	A	1498	1	-	0/7/25/26	0/2/2/2
1	PSU	A	1540	1	-	0/7/25/26	0/2/2/2
1	M2G	A	966	1	-	0/7/29/30	0/3/3/3
1	MA6	A	1519	1	-	2/7/29/30	0/3/3/3
1	2MG	A	1207	1	-	0/5/27/28	0/3/3/3
12	0TD	L	92	12	-	3/7/12/14	-
1	7MG	A	527	1	-	2/7/37/38	0/3/3/3
23	PSU	b	39	23	-	0/7/25/26	0/2/2/2

All (74) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	527	7MG	C8-N9	-22.93	1.33	1.46
23	b	37	12A	C2'-C1'	-15.04	1.30	1.53
23	b	37	12A	O4'-C1'	14.53	1.61	1.41
23	b	37	12A	C6-N6	9.17	1.52	1.36
23	b	34	70U	O4-C4	8.66	1.40	1.23
23	b	34	70U	C2-S2	8.39	1.81	1.67
23	b	37	12A	C2-S2	7.12	1.81	1.75
23	b	34	70U	C6-N1	-5.88	1.28	1.38
23	b	37	12A	O4'-C4'	-5.55	1.32	1.45
23	b	37	12A	CC-N	5.22	1.46	1.35
23	b	34	70U	C4-N3	-5.10	1.29	1.38
23	b	37	12A	O2'-C2'	4.17	1.52	1.43
1	A	527	7MG	C2-N2	3.81	1.43	1.34
23	b	34	70U	C5M-C5	3.69	1.57	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
23	b	39	PSU	C2-N1	-3.66	1.31	1.36
23	b	37	12A	CC-N6	3.66	1.45	1.37
23	b	34	70U	O9-C8	3.62	1.44	1.33
1	A	516	PSU	C2-N1	-3.62	1.31	1.36
1	A	1540	PSU	C2-N1	-3.58	1.31	1.36
23	b	34	70U	C4-C5	-3.57	1.37	1.45
1	A	1541	PSU	C2-N1	-3.57	1.31	1.36
1	A	1540	PSU	C6-C5	3.47	1.39	1.35
1	A	1541	PSU	C6-C5	3.45	1.39	1.35
23	b	39	PSU	C4-N3	-3.44	1.32	1.38
1	A	516	PSU	C4-N3	-3.40	1.32	1.38
1	A	1541	PSU	C4-N3	-3.40	1.32	1.38
1	A	516	PSU	C6-C5	3.38	1.39	1.35
23	b	39	PSU	C6-C5	3.37	1.39	1.35
1	A	1540	PSU	C4-N3	-3.37	1.32	1.38
23	b	34	70U	O9-C9	-3.28	1.37	1.45
1	A	966	M2G	C6-N1	3.28	1.42	1.37
1	A	516	PSU	C2-N3	-3.24	1.32	1.37
23	b	37	12A	OO-CC	-3.20	1.16	1.23
1	A	1541	PSU	C2-N3	-3.20	1.32	1.37
23	b	39	PSU	C2-N3	-3.20	1.32	1.37
1	A	1540	PSU	C2-N3	-3.19	1.32	1.37
23	b	37	12A	O3'-C3'	-3.17	1.35	1.43
22	a	1	A2M	C6-N6	3.11	1.45	1.34
1	A	966	M2G	C2-N3	3.10	1.34	1.30
23	b	34	70U	C6-C5	3.01	1.43	1.34
23	b	37	12A	O-C	2.99	1.31	1.22
23	b	37	12A	O5'-C5'	-2.98	1.37	1.44
1	A	527	7MG	C5-N7	2.90	1.39	1.35
1	A	1207	2MG	C6-N1	2.77	1.42	1.37
1	A	516	PSU	O4-C4	-2.75	1.18	1.23
1	A	966	M2G	C2-N2	2.73	1.40	1.35
1	A	1540	PSU	O4-C4	-2.72	1.18	1.23
22	a	1	A2M	C2-N1	2.72	1.39	1.33
1	A	1207	2MG	C2-N2	2.71	1.39	1.33
23	b	39	PSU	O4-C4	-2.68	1.18	1.23
1	A	1207	2MG	C5-C6	-2.66	1.42	1.47
23	b	34	70U	C2-N3	-2.66	1.31	1.37
1	A	1541	PSU	O4-C4	-2.64	1.18	1.23
23	b	37	12A	CA-N	-2.62	1.40	1.45
1	A	966	M2G	C5-C6	-2.50	1.42	1.47
1	A	1400	5MC	C2-N1	2.49	1.45	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	967	5MC	C2-N1	2.45	1.45	1.40
1	A	1498	UR3	C2-N1	2.41	1.42	1.38
1	A	1407	5MC	C2-N1	2.41	1.45	1.40
1	A	1404	5MC	C2-N1	2.37	1.45	1.40
1	A	1402	4OC	C2-N3	2.35	1.41	1.36
1	A	1207	2MG	C2-N1	2.34	1.40	1.36
1	A	1407	5MC	C2-N3	2.33	1.41	1.36
1	A	1400	5MC	C2-N3	2.33	1.41	1.36
1	A	967	5MC	C2-N3	2.30	1.41	1.36
1	A	1404	5MC	C2-N3	2.30	1.41	1.36
23	b	39	PSU	O2-C2	-2.29	1.18	1.23
1	A	516	PSU	O2-C2	-2.23	1.18	1.23
1	A	1540	PSU	O2-C2	-2.22	1.18	1.23
1	A	1402	4OC	O2-C2	-2.19	1.19	1.23
1	A	1541	PSU	O2-C2	-2.19	1.18	1.23
23	b	39	PSU	C6-N1	-2.10	1.32	1.36
1	A	527	7MG	C4-N3	2.09	1.39	1.34
23	b	37	12A	CA-C	2.07	1.55	1.52

All (59) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
23	b	37	12A	C2M-S2-C2	9.86	109.63	102.27
22	a	1	A2M	N3-C2-N1	-5.24	120.48	128.68
1	A	527	7MG	C5-C6-N1	4.93	119.68	110.99
23	b	37	12A	N6-CC-N	4.67	120.28	113.76
1	A	527	7MG	C2-N3-C4	4.63	120.55	112.30
23	b	34	70U	O9-C8-C5M	4.55	119.69	111.27
23	b	37	12A	C2-N3-C4	4.28	121.22	115.32
1	A	1207	2MG	O6-C6-N1	-4.14	115.76	120.65
23	b	39	PSU	N1-C2-N3	4.08	119.75	115.13
1	A	966	M2G	N1-C2-N2	-3.90	114.71	118.04
23	b	37	12A	O4'-C1'-C2'	-3.86	101.28	106.93
1	A	527	7MG	C5-C4-N3	-3.81	120.86	128.13
1	A	1541	PSU	N1-C2-N3	3.69	119.31	115.13
1	A	1540	PSU	N1-C2-N3	3.68	119.30	115.13
1	A	1498	UR3	C6-N1-C2	-3.64	118.53	121.79
1	A	527	7MG	N9-C4-N3	3.63	130.90	125.47
1	A	516	PSU	N1-C2-N3	3.58	119.19	115.13
1	A	1207	2MG	O6-C6-C5	3.47	131.15	124.37
23	b	37	12A	C3'-C2'-C1'	-3.43	95.81	100.98
1	A	527	7MG	N9-C8-N7	3.38	108.21	103.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
23	b	37	12A	OO-CC-N6	-3.26	118.11	123.62
23	b	34	70U	C5-C4-N3	3.23	119.51	114.97
1	A	966	M2G	O6-C6-C5	3.22	130.67	124.37
12	L	92	0TD	OD1-CG-CB	-3.20	115.74	122.44
12	L	92	0TD	CSB-SB-CB	-3.19	96.68	102.44
1	A	527	7MG	C6-C5-N7	2.95	136.55	131.91
1	A	527	7MG	C2-N1-C6	-2.77	120.04	125.10
1	A	516	PSU	C6-C5-C4	-2.77	116.26	118.20
23	b	39	PSU	C4-N3-C2	-2.75	122.38	126.34
23	b	34	70U	C5-C6-N1	-2.68	119.30	122.91
1	A	1541	PSU	C6-C5-C4	-2.67	116.33	118.20
22	a	1	A2M	CM'-O2'-C2'	2.67	121.53	114.52
1	A	527	7MG	O6-C6-C5	-2.67	121.00	127.54
1	A	527	7MG	C6-C5-C4	-2.66	117.13	122.62
1	A	966	M2G	O6-C6-N1	-2.66	117.51	120.65
23	b	37	12A	N3-C2-N1	-2.65	122.10	126.98
1	A	1541	PSU	C4-N3-C2	-2.57	122.64	126.34
23	b	39	PSU	O2-C2-N1	-2.56	119.97	122.79
1	A	1540	PSU	C4-N3-C2	-2.55	122.67	126.34
23	b	37	12A	CA-N-CC	2.51	126.12	121.94
1	A	516	PSU	C4-N3-C2	-2.49	122.75	126.34
23	b	34	70U	O4-C4-C5	-2.48	121.27	124.96
1	A	1518	MA6	N1-C6-N6	-2.46	114.47	117.06
1	A	1540	PSU	C6-C5-C4	-2.40	116.52	118.20
1	A	1404	5MC	N4-C4-N3	-2.36	114.17	118.48
1	A	967	5MC	N4-C4-N3	-2.35	114.18	118.48
1	A	1407	5MC	N4-C4-N3	-2.35	114.19	118.48
1	A	1400	5MC	N4-C4-N3	-2.31	114.26	118.48
23	b	37	12A	C4-C5-N7	-2.30	107.00	109.40
1	A	1519	MA6	N1-C6-N6	-2.21	114.72	117.06
1	A	1407	5MC	C5-C4-N3	2.17	124.01	121.67
1	A	1541	PSU	O2-C2-N1	-2.16	120.41	122.79
23	b	37	12A	C5'-C4'-C3'	-2.16	107.10	115.18
23	b	34	70U	C5M-C5-C4	2.11	120.90	118.27
23	b	39	PSU	C6-C5-C4	-2.06	116.76	118.20
23	b	37	12A	OXT-C-O	-2.05	119.43	124.09
1	A	1540	PSU	O2-C2-N1	-2.02	120.56	122.79
22	a	1	A2M	C4-C5-N7	-2.02	107.30	109.40
1	A	1498	UR3	C1'-N1-C2	2.02	120.39	116.99

All (1) chirality outliers are listed below:

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

All (27) 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	CA-CB-SB-CSB
22	a	1	A2M	C1'-C2'-O2'-CM'
23	b	34	70U	C5M-C8-O9-C9
23	b	37	12A	N1-C2-S2-C2M
23	b	37	12A	N3-C2-S2-C2M
23	b	34	70U	O8-C8-O9-C9
22	a	1	A2M	O4'-C4'-C5'-O5'
22	a	1	A2M	C3'-C4'-C5'-O5'
1	A	1400	5MC	O4'-C4'-C5'-O5'
23	b	37	12A	O4'-C4'-C5'-O5'
1	A	1400	5MC	C3'-C4'-C5'-O5'
1	A	1402	4OC	O4'-C4'-C5'-O5'
23	b	37	12A	C3'-C4'-C5'-O5'
23	b	34	70U	O4'-C4'-C5'-O5'
12	L	92	0TD	CG-CB-SB-CSB
12	L	92	0TD	SB-CB-CG-OD1
23	b	34	70U	C3'-C4'-C5'-O5'
1	A	1519	MA6	C5-C6-N6-C10
1	A	967	5MC	O4'-C4'-C5'-O5'
1	A	1519	MA6	C4'-C5'-O5'-P
1	A	1541	PSU	O4'-C1'-C5-C4
23	b	37	12A	C4'-C5'-O5'-P
23	b	37	12A	CB-CA-N-CC
1	A	1402	4OC	C3'-C4'-C5'-O5'
1	A	1541	PSU	O4'-C1'-C5-C6

There are no ring outliers.

8 monomers are involved in 12 short contacts:

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

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	1207	2MG	1	0
12	L	92	0TD	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	3.37	14 (31%)	64,67,67	1.50	11 (17%)

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	-	-	8/18/94/94	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	-13.48	1.22	1.52
26	A	1858	B6M	O43-C43	-7.61	1.28	1.45
26	A	1858	B6M	C64-C54	-6.15	1.43	1.52
26	A	1858	B6M	C34-C24	-5.28	1.46	1.53
26	A	1858	B6M	C13-C23	5.01	1.59	1.52
26	A	1858	B6M	O43-C13	4.97	1.50	1.41
26	A	1858	B6M	O54-C54	4.82	1.56	1.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
26	A	1858	B6M	C33-C43	4.77	1.65	1.52
26	A	1858	B6M	O23-C23	4.08	1.52	1.43
26	A	1858	B6M	O51-C11	4.06	1.52	1.41
26	A	1858	B6M	C31-C21	-4.04	1.48	1.53
26	A	1858	B6M	O33-C33	3.86	1.53	1.43
26	A	1858	B6M	O52-C13	-3.64	1.31	1.41
26	A	1858	B6M	C24-N24	2.41	1.50	1.47

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
26	A	1858	B6M	C13-O52-C52	-4.04	107.97	117.96
26	A	1858	B6M	C14-O33-C33	-3.95	108.18	117.96
26	A	1858	B6M	C11-O11-C42	-3.02	110.49	117.96
26	A	1858	B6M	C22-C12-C62	2.74	114.18	110.04
26	A	1858	B6M	C41-C31-C21	2.62	115.58	111.07
26	A	1858	B6M	C31-C41-C51	2.46	114.62	110.24
26	A	1858	B6M	O51-C51-C41	2.30	113.88	109.69
26	A	1858	B6M	C61-C51-C41	-2.29	107.64	113.00
26	A	1858	B6M	C13-C23-C33	2.26	104.82	102.10
26	A	1858	B6M	O52-C13-C23	2.11	112.33	107.96
26	A	1858	B6M	O51-C11-C21	2.07	114.72	110.06

There are no chirality outliers.

All (8) 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	C41-C51-C61-O61
26	A	1858	B6M	O51-C51-C61-O61
26	A	1858	B6M	O51-C11-O11-C42
26	A	1858	B6M	O54-C14-O33-C33

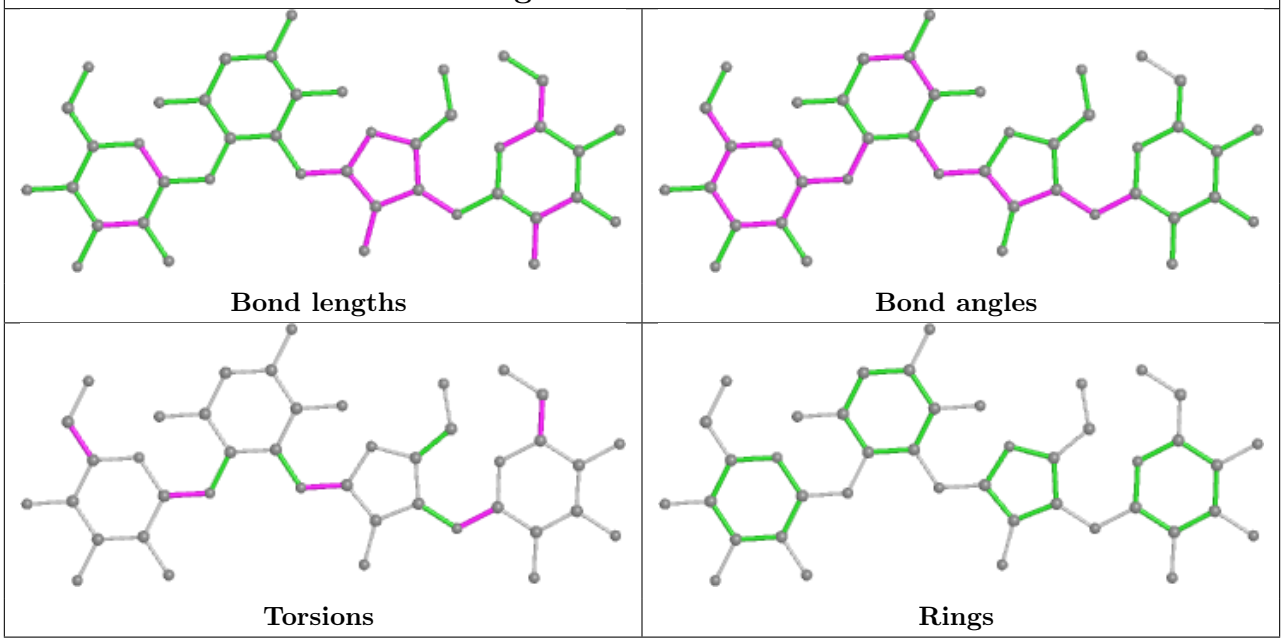
There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
26	A	1858	B6M	1	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%)	-0.53	5 (0%)	94	94	81, 114, 197, 306	0
2	B	236/236 (100%)	-0.09	11 (4%)	31	29	106, 156, 232, 300	0
3	C	207/207 (100%)	-0.29	2 (0%)	82	82	82, 157, 207, 249	0
4	D	208/208 (100%)	-0.20	3 (1%)	75	75	91, 132, 190, 261	0
5	E	151/151 (100%)	-0.36	0	100	100	77, 114, 154, 219	0
6	F	101/101 (100%)	-0.26	1 (0%)	82	82	108, 148, 183, 215	0
7	G	155/155 (100%)	-0.38	4 (2%)	56	53	104, 136, 198, 237	0
8	H	138/138 (100%)	-0.38	0	100	100	79, 107, 151, 223	0
9	I	127/127 (100%)	0.05	3 (2%)	59	56	109, 159, 205, 292	0
10	J	99/99 (100%)	0.66	14 (14%)	2	2	110, 184, 266, 286	0
11	K	119/119 (100%)	-0.06	3 (2%)	57	54	88, 117, 163, 245	0
12	L	124/125 (99%)	-0.01	6 (4%)	30	28	85, 118, 181, 259	0
13	M	118/118 (100%)	-0.12	2 (1%)	70	68	102, 137, 182, 283	0
14	N	60/60 (100%)	0.03	2 (3%)	46	44	114, 142, 181, 269	0
15	O	88/88 (100%)	-0.13	1 (1%)	80	81	96, 126, 178, 229	0
16	P	84/84 (100%)	-0.26	0	100	100	77, 116, 153, 236	0
17	Q	99/99 (100%)	-0.28	0	100	100	83, 113, 165, 173	0
18	R	73/73 (100%)	-0.10	4 (5%)	25	23	92, 129, 227, 288	0
19	S	81/81 (100%)	0.06	3 (3%)	41	38	104, 158, 223, 276	0
20	T	99/99 (100%)	-0.15	1 (1%)	82	82	87, 117, 168, 208	0
21	U	25/25 (100%)	0.89	4 (16%)	1	2	101, 139, 192, 243	0
22	a	4/5 (80%)	0.15	0	100	100	143, 144, 165, 211	0
23	b	12/15 (80%)	0.74	0	100	100	142, 232, 256, 264	0
All	All	3906/3935 (99%)	-0.28	69 (1%)	68	67	77, 127, 206, 306	0

All (69) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
11	K	128	ALA	8.8
12	L	129	ALA	7.6
10	J	34	VAL	6.3
15	O	89	GLY	5.7
11	K	129	SER	5.5
2	B	131	PRO	5.2
14	N	12	ARG	5.0
2	B	133	LYS	4.6
2	B	134	GLU	4.4
2	B	130	ARG	4.3
7	G	2	ALA	4.2
10	J	33	GLN	4.2
2	B	132	LYS	4.2
10	J	72	VAL	4.1
6	F	101	ALA	4.1
12	L	19	ARG	4.0
2	B	135	GLN	3.9
14	N	13	THR	3.9
10	J	22	LYS	3.8
13	M	7	VAL	3.7
9	I	128	ARG	3.6
10	J	36	GLY	3.5
10	J	71	LEU	3.5
10	J	5	ARG	3.4
21	U	18	TYR	3.3
3	C	206	GLU	3.3
12	L	128	ALA	3.2
4	D	2	GLY	3.2
19	S	4	SER	3.1
10	J	70	ARG	3.0
11	K	127	LYS	3.0
18	R	16	PRO	3.0
12	L	28	LYS	2.9
18	R	17	SER	2.8
1	A	1129	C	2.8
9	I	67	GLY	2.7
10	J	74	ILE	2.7
1	A	1030(D)	A	2.6
10	J	75	ILE	2.6
21	U	22	ARG	2.6
9	I	15	ALA	2.6
10	J	73	ASP	2.5

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Mol	Chain	Res	Type	RSRZ
2	B	140	HIS	2.5
10	J	90	LEU	2.5
18	R	88	LYS	2.5
1	A	1286	A	2.5
7	G	80	VAL	2.5
19	S	3	ARG	2.4
12	L	27	LEU	2.4
2	B	137	ARG	2.3
2	B	136	VAL	2.3
7	G	156	TRP	2.3
3	C	193	TYR	2.2
2	B	127	ILE	2.2
13	M	8	GLU	2.2
21	U	23	PRO	2.2
10	J	39	PRO	2.2
7	G	81	GLY	2.1
1	A	1446	A	2.1
4	D	32	ALA	2.1
2	B	231	GLU	2.1
21	U	26	LYS	2.1
18	R	18	ARG	2.0
4	D	37	PRO	2.0
19	S	2	PRO	2.0
12	L	126	LYS	2.0
20	T	72	LEU	2.0
10	J	96	ILE	2.0
1	A	1003	G	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
1	PSU	A	1540	20/21	0.86	0.22	172,211,264,268	0
23	PSU	b	39	20/21	0.87	0.25	172,224,242,250	0
1	PSU	A	1541	20/21	0.88	0.20	153,186,208,212	0
23	12A	b	37	34/35	0.93	0.27	134,187,202,205	0
22	A2M	a	1	20/24	0.93	0.21	165,193,216,224	0
23	70U	b	34	25/26	0.94	0.20	130,153,185,189	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
1	7MG	A	527	24/25	0.94	0.17	78,99,114,150	0
1	PSU	A	516	20/21	0.94	0.10	98,122,152,152	0
1	UR3	A	1498	21/22	0.95	0.21	85,89,111,135	0
12	0TD	L	92	10/11	0.95	0.41	100,168,264,271	0
1	5MC	A	967	21/22	0.96	0.12	87,113,138,148	0
1	5MC	A	1400	21/22	0.96	0.16	76,100,129,136	0
1	5MC	A	1404	21/22	0.96	0.19	83,87,106,112	0
1	5MC	A	1407	21/22	0.96	0.15	89,98,111,133	0
1	M2G	A	966	25/26	0.97	0.15	83,122,147,168	0
1	4OC	A	1402	22/23	0.97	0.18	91,98,124,134	0
1	2MG	A	1207	24/25	0.97	0.14	113,139,160,163	0
1	MA6	A	1519	24/25	0.98	0.22	82,90,101,116	0
1	MA6	A	1518	24/25	0.98	0.16	83,92,107,125	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	1763	1/1	0.17	0.74	113,113,113,113	0
24	MG	A	1805	1/1	0.17	0.82	141,141,141,141	0
25	K	A	1848	1/1	0.20	0.35	200,200,200,200	0
24	MG	A	1731	1/1	0.21	1.05	138,138,138,138	0
24	MG	L	201	1/1	0.26	0.20	123,123,123,123	0
24	MG	A	1783	1/1	0.26	0.84	125,125,125,125	0
24	MG	A	1803	1/1	0.28	1.29	129,129,129,129	0
24	MG	A	1770	1/1	0.31	0.27	112,112,112,112	0
24	MG	A	1678	1/1	0.33	0.20	135,135,135,135	0
24	MG	A	1709	1/1	0.35	0.60	134,134,134,134	0
24	MG	A	1808	1/1	0.36	0.82	123,123,123,123	0
24	MG	A	1722	1/1	0.41	1.25	133,133,133,133	0
24	MG	A	1601	1/1	0.46	0.38	149,149,149,149	0
24	MG	A	1720	1/1	0.47	0.62	120,120,120,120	0
24	MG	A	1666	1/1	0.48	0.65	108,108,108,108	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	A	1820	1/1	0.49	0.26	146,146,146,146	0
24	MG	A	1831	1/1	0.50	0.32	121,121,121,121	0
24	MG	A	1828	1/1	0.51	0.59	129,129,129,129	0
24	MG	A	1705	1/1	0.54	0.92	109,109,109,109	0
24	MG	A	1702	1/1	0.58	0.35	118,118,118,118	0
24	MG	A	1807	1/1	0.58	0.49	91,91,91,91	0
24	MG	A	1687	1/1	0.59	1.07	118,118,118,118	0
24	MG	A	1711	1/1	0.60	1.16	124,124,124,124	0
24	MG	A	1856	1/1	0.60	0.10	125,125,125,125	0
24	MG	A	1794	1/1	0.62	0.32	97,97,97,97	0
24	MG	A	1792	1/1	0.64	0.39	144,144,144,144	0
24	MG	A	1677	1/1	0.64	0.32	104,104,104,104	0
24	MG	A	1758	1/1	0.65	0.57	139,139,139,139	0
24	MG	A	1744	1/1	0.65	1.51	115,115,115,115	0
24	MG	A	1659	1/1	0.66	0.39	89,89,89,89	0
24	MG	A	1779	1/1	0.66	0.15	175,175,175,175	0
24	MG	A	1692	1/1	0.66	0.51	115,115,115,115	0
24	MG	H	202	1/1	0.67	0.25	126,126,126,126	0
24	MG	A	1754	1/1	0.67	0.21	118,118,118,118	0
24	MG	A	1799	1/1	0.67	0.50	111,111,111,111	0
24	MG	A	1829	1/1	0.68	0.32	107,107,107,107	0
24	MG	A	1715	1/1	0.68	0.40	122,122,122,122	0
24	MG	A	1819	1/1	0.68	0.36	110,110,110,110	0
25	K	A	1855	1/1	0.68	0.27	159,159,159,159	0
24	MG	A	1824	1/1	0.69	0.67	112,112,112,112	0
24	MG	A	1771	1/1	0.69	0.45	98,98,98,98	0
24	MG	A	1630	1/1	0.69	0.28	127,127,127,127	0
24	MG	A	1718	1/1	0.71	0.37	103,103,103,103	0
24	MG	A	1751	1/1	0.73	0.57	110,110,110,110	0
24	MG	P	101	1/1	0.73	0.69	90,90,90,90	0
24	MG	A	1745	1/1	0.74	0.45	93,93,93,93	0
24	MG	A	1787	1/1	0.74	0.24	90,90,90,90	0
24	MG	A	1668	1/1	0.74	0.26	111,111,111,111	0
24	MG	A	1818	1/1	0.74	0.41	121,121,121,121	0
24	MG	A	1786	1/1	0.75	0.41	101,101,101,101	0
24	MG	A	1749	1/1	0.75	0.45	120,120,120,120	0
24	MG	A	1795	1/1	0.75	1.48	123,123,123,123	0
24	MG	A	1784	1/1	0.76	0.35	129,129,129,129	0
24	MG	Q	202	1/1	0.76	0.39	121,121,121,121	0
24	MG	A	1815	1/1	0.76	0.14	141,141,141,141	0
25	K	A	1852	1/1	0.76	0.69	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	1761	1/1	0.76	0.48	104,104,104,104	0
24	MG	A	1797	1/1	0.77	0.57	108,108,108,108	0
25	K	A	1845	1/1	0.77	0.32	195,195,195,195	0
24	MG	A	1629	1/1	0.77	0.81	91,91,91,91	0
24	MG	A	1624	1/1	0.77	0.68	101,101,101,101	0
25	K	A	1854	1/1	0.77	0.36	195,195,195,195	0
24	MG	P	103	1/1	0.77	0.27	115,115,115,115	0
24	MG	A	1823	1/1	0.78	0.16	124,124,124,124	0
24	MG	A	1607	1/1	0.78	0.09	123,123,123,123	0
24	MG	A	1780	1/1	0.78	0.10	172,172,172,172	0
24	MG	A	1791	1/1	0.78	1.03	148,148,148,148	0
24	MG	P	102	1/1	0.78	0.11	101,101,101,101	0
24	MG	A	1813	1/1	0.78	0.49	106,106,106,106	0
24	MG	A	1690	1/1	0.79	0.40	126,126,126,126	0
24	MG	A	1620	1/1	0.79	0.34	114,114,114,114	0
24	MG	A	1721	1/1	0.79	0.37	113,113,113,113	0
24	MG	A	1816	1/1	0.79	0.30	108,108,108,108	0
24	MG	A	1707	1/1	0.79	0.47	82,82,82,82	0
24	MG	A	1717	1/1	0.79	0.38	105,105,105,105	0
24	MG	A	1716	1/1	0.80	1.01	134,134,134,134	0
25	K	A	1853	1/1	0.80	0.24	180,180,180,180	0
24	MG	A	1606	1/1	0.80	0.52	102,102,102,102	0
24	MG	Q	201	1/1	0.80	0.06	123,123,123,123	0
24	MG	A	1793	1/1	0.81	0.42	115,115,115,115	0
25	K	A	1835	1/1	0.81	0.75	176,176,176,176	0
24	MG	A	1631	1/1	0.81	0.29	111,111,111,111	0
24	MG	A	1825	1/1	0.81	0.44	104,104,104,104	0
24	MG	A	1826	1/1	0.81	0.24	142,142,142,142	0
24	MG	A	1768	1/1	0.81	0.62	191,191,191,191	0
24	MG	A	1657	1/1	0.81	0.17	91,91,91,91	0
24	MG	A	1609	1/1	0.81	0.44	136,136,136,136	0
25	K	A	1840	1/1	0.82	1.16	175,175,175,175	0
25	K	A	1844	1/1	0.82	0.31	154,154,154,154	0
24	MG	A	1769	1/1	0.82	0.19	138,138,138,138	0
24	MG	A	1821	1/1	0.82	0.16	101,101,101,101	0
24	MG	A	1712	1/1	0.82	0.25	131,131,131,131	0
24	MG	A	1675	1/1	0.82	0.18	149,149,149,149	0
24	MG	A	1796	1/1	0.82	0.48	110,110,110,110	0
24	MG	A	1777	1/1	0.82	0.23	87,87,87,87	0
24	MG	A	1766	1/1	0.83	0.09	157,157,157,157	0
25	K	A	1847	1/1	0.83	0.49	225,225,225,225	0
24	MG	A	1727	1/1	0.83	0.09	107,107,107,107	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	A	1683	1/1	0.83	0.60	99,99,99,99	0
25	K	A	1839	1/1	0.83	1.11	192,192,192,192	0
24	MG	A	1790	1/1	0.83	0.63	154,154,154,154	0
24	MG	A	1811	1/1	0.83	0.48	124,124,124,124	0
27	ZN	D	301	1/1	0.83	0.42	201,201,201,201	0
25	K	A	1842	1/1	0.84	0.32	169,169,169,169	0
24	MG	A	1700	1/1	0.84	0.43	159,159,159,159	0
24	MG	A	1809	1/1	0.84	0.74	130,130,130,130	0
24	MG	A	1681	1/1	0.84	0.54	94,94,94,94	0
24	MG	A	1747	1/1	0.84	0.23	108,108,108,108	0
24	MG	A	1670	1/1	0.85	0.41	141,141,141,141	0
24	MG	A	1806	1/1	0.85	0.32	90,90,90,90	0
25	K	A	1846	1/1	0.85	0.42	192,192,192,192	0
24	MG	A	1708	1/1	0.85	0.51	110,110,110,110	0
24	MG	A	1742	1/1	0.85	0.62	109,109,109,109	0
24	MG	A	1774	1/1	0.85	0.29	108,108,108,108	0
24	MG	A	1603	1/1	0.85	0.31	136,136,136,136	0
24	MG	A	1752	1/1	0.85	0.77	180,180,180,180	0
25	K	A	1841	1/1	0.85	0.45	175,175,175,175	0
24	MG	A	1753	1/1	0.85	0.17	103,103,103,103	0
24	MG	A	1767	1/1	0.86	0.15	139,139,139,139	0
24	MG	A	1710	1/1	0.86	0.33	132,132,132,132	0
24	MG	A	1782	1/1	0.86	0.23	118,118,118,118	0
24	MG	A	1757	1/1	0.86	0.29	90,90,90,90	0
24	MG	A	1694	1/1	0.86	0.28	106,106,106,106	0
24	MG	A	1622	1/1	0.86	0.26	122,122,122,122	0
24	MG	A	1814	1/1	0.86	0.11	113,113,113,113	0
24	MG	A	1688	1/1	0.86	0.09	149,149,149,149	0
25	K	A	1834	1/1	0.86	0.76	190,190,190,190	0
24	MG	A	1775	1/1	0.86	0.29	116,116,116,116	0
24	MG	A	1830	1/1	0.86	0.32	94,94,94,94	0
24	MG	A	1703	1/1	0.86	0.58	97,97,97,97	0
24	MG	A	1734	1/1	0.87	0.31	112,112,112,112	0
24	MG	A	1800	1/1	0.87	0.19	114,114,114,114	0
24	MG	A	1762	1/1	0.87	0.57	81,81,81,81	0
24	MG	A	1781	1/1	0.87	0.35	108,108,108,108	0
24	MG	A	1788	1/1	0.87	0.24	115,115,115,115	0
24	MG	A	1634	1/1	0.87	0.10	106,106,106,106	0
24	MG	A	1732	1/1	0.87	0.51	92,92,92,92	0
24	MG	A	1671	1/1	0.88	0.61	121,121,121,121	0
24	MG	A	1726	1/1	0.88	0.26	117,117,117,117	0
24	MG	A	1616	1/1	0.88	0.53	109,109,109,109	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	G	201	1/1	0.88	0.43	109,109,109,109	0
24	MG	H	201	1/1	0.88	0.52	102,102,102,102	0
24	MG	A	1822	1/1	0.88	0.53	98,98,98,98	0
24	MG	A	1667	1/1	0.88	0.26	184,184,184,184	0
24	MG	A	1611	1/1	0.89	0.07	119,119,119,119	0
24	MG	A	1798	1/1	0.89	0.36	138,138,138,138	0
24	MG	A	1697	1/1	0.89	0.42	114,114,114,114	0
24	MG	A	1627	1/1	0.89	1.49	158,158,158,158	0
24	MG	A	1802	1/1	0.89	0.64	88,88,88,88	0
24	MG	A	1623	1/1	0.89	0.71	79,79,79,79	0
24	MG	A	1750	1/1	0.89	0.56	76,76,76,76	0
24	MG	A	1738	1/1	0.89	0.37	108,108,108,108	0
24	MG	A	1636	1/1	0.89	0.12	109,109,109,109	0
24	MG	A	1785	1/1	0.89	0.94	129,129,129,129	0
24	MG	A	1765	1/1	0.89	0.22	131,131,131,131	0
24	MG	A	1827	1/1	0.90	0.13	108,108,108,108	0
24	MG	A	1713	1/1	0.90	0.11	76,76,76,76	0
24	MG	A	1759	1/1	0.90	0.10	87,87,87,87	0
24	MG	A	1701	1/1	0.90	0.80	136,136,136,136	0
24	MG	A	1810	1/1	0.90	0.11	91,91,91,91	0
24	MG	S	103	1/1	0.90	0.09	109,109,109,109	0
24	MG	A	1739	1/1	0.90	0.91	93,93,93,93	0
24	MG	A	1619	1/1	0.90	0.17	102,102,102,102	0
24	MG	A	1660	1/1	0.90	1.09	94,94,94,94	0
24	MG	A	1610	1/1	0.90	0.19	85,85,85,85	0
24	MG	A	1691	1/1	0.90	0.14	123,123,123,123	0
24	MG	A	1748	1/1	0.91	0.31	104,104,104,104	0
24	MG	A	1737	1/1	0.91	0.24	79,79,79,79	0
24	MG	A	1804	1/1	0.91	0.10	86,86,86,86	0
25	K	A	1843	1/1	0.91	0.34	180,180,180,180	0
24	MG	A	1833	1/1	0.91	0.24	111,111,111,111	0
24	MG	A	1740	1/1	0.91	0.33	99,99,99,99	0
24	MG	A	1640	1/1	0.91	0.27	95,95,95,95	0
24	MG	A	1746	1/1	0.92	0.37	179,179,179,179	0
24	MG	A	1663	1/1	0.92	0.33	113,113,113,113	0
24	MG	A	1679	1/1	0.92	0.49	123,123,123,123	0
24	MG	A	1760	1/1	0.92	0.21	106,106,106,106	0
24	MG	A	1656	1/1	0.92	0.09	130,130,130,130	0
24	MG	A	1682	1/1	0.92	0.36	210,210,210,210	0
24	MG	A	1832	1/1	0.92	0.36	110,110,110,110	0
24	MG	S	101	1/1	0.92	0.10	87,87,87,87	0
25	K	A	1849	1/1	0.92	0.09	169,169,169,169	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	A	1673	1/1	0.92	0.56	107,107,107,107	0
24	MG	A	1613	1/1	0.92	0.20	99,99,99,99	0
24	MG	A	1857	1/1	0.92	0.11	129,129,129,129	0
24	MG	A	1661	1/1	0.92	0.16	110,110,110,110	0
24	MG	A	1733	1/1	0.92	0.22	89,89,89,89	0
24	MG	A	1612	1/1	0.93	0.12	118,118,118,118	0
24	MG	A	1696	1/1	0.93	0.19	103,103,103,103	0
24	MG	A	1621	1/1	0.93	0.44	64,64,64,64	0
24	MG	A	1647	1/1	0.93	0.28	89,89,89,89	0
24	MG	A	1674	1/1	0.93	0.06	135,135,135,135	0
24	MG	A	1648	1/1	0.93	0.34	92,92,92,92	0
24	MG	E	201	1/1	0.93	0.15	121,121,121,121	0
24	MG	A	1801	1/1	0.93	0.50	96,96,96,96	0
24	MG	A	1743	1/1	0.93	0.12	111,111,111,111	0
24	MG	A	1653	1/1	0.93	0.58	122,122,122,122	0
24	MG	A	1626	1/1	0.93	0.52	88,88,88,88	0
24	MG	A	1614	1/1	0.93	0.25	86,86,86,86	0
25	K	A	1837	1/1	0.94	0.71	190,190,190,190	0
24	MG	D	302	1/1	0.94	0.16	119,119,119,119	0
24	MG	A	1655	1/1	0.94	0.14	116,116,116,116	0
24	MG	A	1644	1/1	0.94	0.48	108,108,108,108	0
24	MG	A	1646	1/1	0.94	0.50	124,124,124,124	0
24	MG	A	1658	1/1	0.94	0.16	82,82,82,82	0
24	MG	A	1625	1/1	0.94	0.07	132,132,132,132	0
24	MG	A	1764	1/1	0.94	0.12	96,96,96,96	0
24	MG	A	1638	1/1	0.94	0.07	103,103,103,103	0
24	MG	A	1635	1/1	0.94	0.14	138,138,138,138	0
24	MG	A	1654	1/1	0.94	0.25	106,106,106,106	0
24	MG	A	1664	1/1	0.94	0.08	115,115,115,115	0
24	MG	A	1693	1/1	0.94	0.14	142,142,142,142	0
24	MG	S	102	1/1	0.94	0.14	95,95,95,95	0
24	MG	A	1756	1/1	0.94	0.13	107,107,107,107	0
24	MG	A	1725	1/1	0.94	0.11	102,102,102,102	0
24	MG	A	1665	1/1	0.94	0.26	100,100,100,100	0
24	MG	A	1695	1/1	0.95	0.43	148,148,148,148	0
24	MG	A	1714	1/1	0.95	0.26	126,126,126,126	0
25	K	A	1838	1/1	0.95	0.64	190,190,190,190	0
24	MG	A	1706	1/1	0.95	0.37	122,122,122,122	0
24	MG	F	201	1/1	0.95	0.04	100,100,100,100	0
24	MG	A	1773	1/1	0.95	0.23	138,138,138,138	0
24	MG	A	1633	1/1	0.95	0.30	132,132,132,132	0
24	MG	A	1662	1/1	0.95	0.11	115,115,115,115	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	A	1776	1/1	0.95	0.56	88,88,88,88	0
24	MG	A	1605	1/1	0.95	0.14	106,106,106,106	0
24	MG	A	1642	1/1	0.95	0.37	113,113,113,113	0
24	MG	A	1736	1/1	0.95	0.29	98,98,98,98	0
24	MG	A	1686	1/1	0.95	0.55	111,111,111,111	0
24	MG	A	1643	1/1	0.95	0.26	142,142,142,142	0
25	K	A	1850	1/1	0.95	0.40	174,174,174,174	0
24	MG	A	1723	1/1	0.95	0.44	98,98,98,98	0
24	MG	A	1724	1/1	0.95	0.12	81,81,81,81	0
24	MG	A	1817	1/1	0.95	0.13	89,89,89,89	0
24	MG	T	201	1/1	0.95	0.28	86,86,86,86	0
24	MG	A	1741	1/1	0.95	0.22	77,77,77,77	0
24	MG	A	1698	1/1	0.96	0.29	89,89,89,89	0
24	MG	A	1699	1/1	0.96	0.09	143,143,143,143	0
24	MG	A	1676	1/1	0.96	0.18	97,97,97,97	0
24	MG	A	1617	1/1	0.96	0.23	92,92,92,92	0
25	K	A	1836	1/1	0.96	0.54	145,145,145,145	0
24	MG	A	1735	1/1	0.96	0.20	103,103,103,103	0
24	MG	A	1778	1/1	0.96	0.30	92,92,92,92	0
25	K	A	1851	1/1	0.96	0.34	184,184,184,184	0
24	MG	A	1789	1/1	0.96	0.28	88,88,88,88	0
24	MG	A	1637	1/1	0.96	0.29	99,99,99,99	0
24	MG	A	1685	1/1	0.96	0.26	77,77,77,77	0
24	MG	A	1672	1/1	0.96	0.74	93,93,93,93	0
26	B6M	A	1858	42/42	0.96	0.14	70,99,121,163	0
24	MG	A	1772	1/1	0.96	0.32	107,107,107,107	0
24	MG	A	1645	1/1	0.97	0.28	116,116,116,116	0
24	MG	A	1728	1/1	0.97	0.34	101,101,101,101	0
24	MG	A	1729	1/1	0.97	0.22	85,85,85,85	0
24	MG	A	1755	1/1	0.97	0.56	92,92,92,92	0
24	MG	A	1859	1/1	0.97	0.23	101,101,101,101	0
24	MG	A	1618	1/1	0.97	0.33	87,87,87,87	0
24	MG	A	1669	1/1	0.97	0.11	121,121,121,121	0
24	MG	A	1602	1/1	0.97	0.41	101,101,101,101	0
24	MG	A	1689	1/1	0.97	0.24	111,111,111,111	0
24	MG	A	1812	1/1	0.97	0.19	111,111,111,111	0
24	MG	A	1641	1/1	0.97	0.05	69,69,69,69	0
24	MG	A	1649	1/1	0.97	0.15	114,114,114,114	0
24	MG	A	1650	1/1	0.97	0.12	50,50,50,50	0
24	MG	A	1651	1/1	0.97	0.20	118,118,118,118	0
24	MG	A	1684	1/1	0.97	0.23	126,126,126,126	0
24	MG	A	1628	1/1	0.98	0.08	109,109,109,109	0

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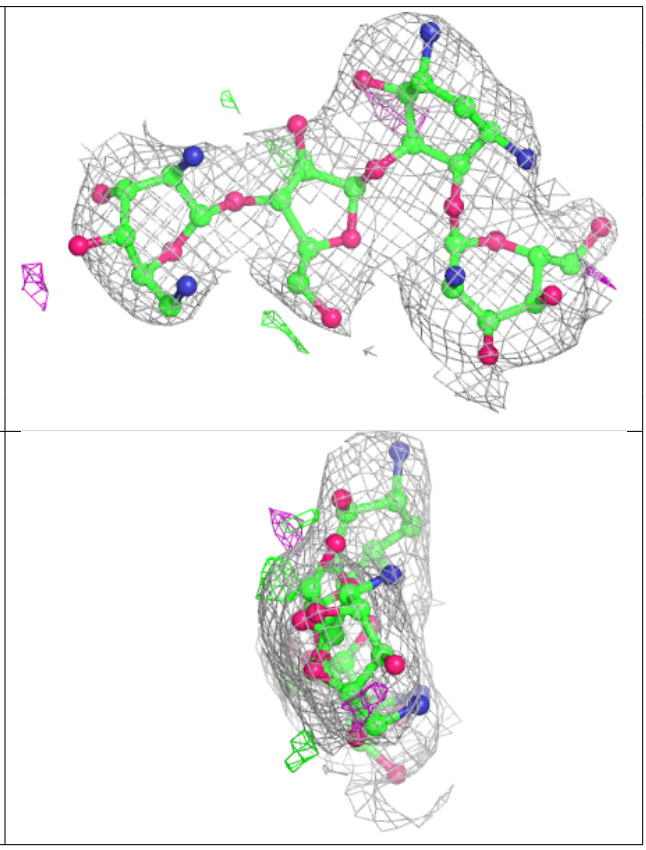
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	A	1632	1/1	0.98	0.17	82,82,82,82	0
24	MG	A	1704	1/1	0.98	0.17	88,88,88,88	0
24	MG	A	1719	1/1	0.98	0.06	94,94,94,94	0
24	MG	A	1680	1/1	0.98	0.18	121,121,121,121	0
24	MG	A	1604	1/1	0.98	0.20	126,126,126,126	0
24	MG	A	1730	1/1	0.98	0.12	111,111,111,111	0
24	MG	A	1615	1/1	0.98	0.33	113,113,113,113	0
24	MG	A	1652	1/1	0.98	0.21	125,125,125,125	0
27	ZN	N	101	1/1	0.98	0.24	142,142,142,142	0
24	MG	A	1608	1/1	0.99	0.21	86,86,86,86	0
24	MG	A	1639	1/1	0.99	0.15	81,81,81,81	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.