W O R L D W I D E

wwPDB

P R O T E I N   D A T A   B A N K

Full wwPDB X-ray Structure Validation Report (i)

Dec 10, 2022 – 10:21 PM EST

PDB ID	:	4V42
Title	:	Crystal structure of the ribosome at 5.5 A resolution.
Authors	:	Yusupov, M.M.; Yusupova, G.Z.; Baucom, A.; Lieberman, K.; Earnest, T.N.; Cate, J.H.D.; Noller, H.F.
Deposited on	:	2001-03-30
Resolution	:	5.50 Å(reported)

The following versions of software and data (see references (i)) were used in the production of this report:

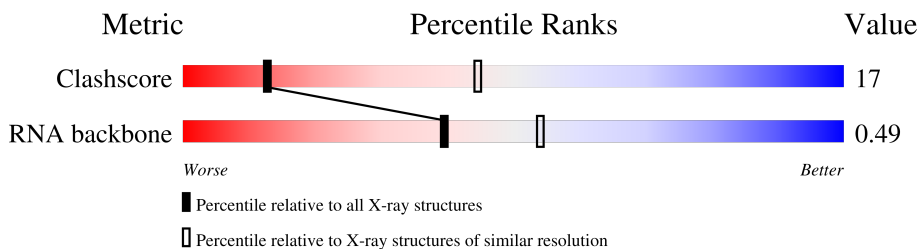|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

1   Overall quality at a glance ⓘ

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

The reported resolution of this entry is 5.50 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	Percentile Ranks	Value
Clashscore		17
RNA backbone		0.49

Worse　　　　　　　　　　　　　　　　　　*Better*

■ Percentile relative to all X-ray structures
▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	141614	1010 (7.10-3.90)
RNA backbone	3102	1074 (7.80-3.00)

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%

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	AA	1522	99%
2	AB	76	36% / 49% / 8% / 8%
2	AC	76	34% / 43% / 14% / 8%
3	AD	74	5% / 30% / 42% / 23%
4	A1	6	17% / 67% / 17%
5	AE	256	91% / 9%
6	AF	239	85% / 14%
7	AG	209	99%
8	AH	162	92% / 7%

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W O R L D W I D E
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PROTEIN DATA BANK

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Mol	Chain	Length	Quality of chain
9	AI	101	100%
10	AJ	156	98%
11	AK	138	100%
12	AL	128	97%
13	AM	105	90% 7%
14	AN	129	92% 8%
15	AO	135	91% 8%
16	AP	126	98%
17	AQ	61	93% 5%
18	AR	89	99%
19	AS	91	91% 9%
20	AT	105	99%
21	AU	88	83% 17%
22	AV	93	86% 14%
23	AW	106	93% 7%
24	AX	26	92% 8%
25	BA	2916	98%
26	BB	123	98%
27	BC	228	96%
28	BD	178	92% 5%
29	BE	338	54% 43%
30	BF	246	72% 23%
31	BG	176	69% 31%
32	BH	177	93% 7%
33	BI	128	98%

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Mol	Chain	Length	Quality of chain
33	BJ	128	100%
34	BK	149	99%
35	BL	141	94% / 6%
36	BM	145	80% / 19%
37	BN	122	100%
38	BO	164	50% / 49%
39	BP	138	99%
40	BQ	186	56% / 5% / 39%
41	BR	66	79% / 21%
42	BS	113	97%
43	BT	84	89% / 10%
44	BU	119	92% / 8%
45	BV	94	95% / 5%
46	BW	70	91% / 9%
47	BX	60	98%

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
2	M2G	AB	26	-	-	X	-
3	5MC	AD	49	-	-	X	-
3	4SU	AD	8	-	-	X	-

2 Entry composition ⓘ

There are 47 unique types of molecules in this entry. The entry contains 14656 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 30S 16S RIBOSOMAL RNA.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
1	AA	1519	Total 1519	P 1519	0	0	1519

- Molecule 2 is a RNA chain called TRNA(PHE).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	AB	76	Total 1652	C 746	N 294	O 536	P 76	0	0	0
2	AC	76	Total 1652	C 746	N 294	O 536	P 76	0	0	0

There are 28 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AB	10	2MG	G	modified residue	GB 176479
AB	16	H2U	U	modified residue	GB 176479
AB	17	H2U	U	modified residue	GB 176479
AB	26	M2G	G	modified residue	GB 176479
AB	32	OMC	C	modified residue	GB 176479
AB	34	OMG	G	modified residue	GB 176479
AB	37	YG	G	modified residue	GB 176479
AB	39	PSU	U	modified residue	GB 176479
AB	40	5MC	C	modified residue	GB 176479
AB	46	7MG	G	modified residue	GB 176479
AB	49	5MC	C	modified residue	GB 176479
AB	54	5MU	U	modified residue	GB 176479
AB	55	PSU	U	modified residue	GB 176479
AB	58	1MA	A	modified residue	GB 176479
AC	10	2MG	G	modified residue	GB 176479
AC	16	H2U	U	modified residue	GB 176479
AC	17	H2U	U	modified residue	GB 176479
AC	26	M2G	G	modified residue	GB 176479

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Chain	Residue	Modelled	Actual	Comment	Reference
AC	32	OMC	C	modified residue	GB 176479
AC	34	OMG	G	modified residue	GB 176479
AC	37	YG	G	modified residue	GB 176479
AC	39	PSU	U	modified residue	GB 176479
AC	40	5MC	C	modified residue	GB 176479
AC	46	7MG	G	modified residue	GB 176479
AC	49	5MC	C	modified residue	GB 176479
AC	54	5MU	U	modified residue	GB 176479
AC	55	PSU	U	modified residue	GB 176479
AC	58	1MA	A	modified residue	GB 176479

- Molecule 3 is a RNA chain called TRNA(PHE).

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	N	O	P	S			
3	AD	74	1570	702	269	524	74	1	0	0	0

- Molecule 4 is a RNA chain called A- AND P-SITE MESSENGER RNA CODONS.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
4	A1	6	120	54	12	48	6	0	0	0

- Molecule 5 is a protein called 30S RIBOSOMAL PROTEIN S2.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
			Total	C			
5	AE	234	234	234	0	0	234

- Molecule 6 is a protein called 30S RIBOSOMAL PROTEIN S3.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
			Total	C			
6	AF	206	206	206	0	0	206

- Molecule 7 is a protein called 30S RIBOSOMAL PROTEIN S4.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
			Total	C			
7	AG	208	208	208	0	0	208

- Molecule 8 is a protein called 30S RIBOSOMAL PROTEIN S5.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
8	AH	150	Total 150	C 150	0	0	150

- Molecule 9 is a protein called 30S RIBOSOMAL PROTEIN S6.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
9	AI	101	Total 101	C 101	0	0	101

- Molecule 10 is a protein called 30S RIBOSOMAL PROTEIN S7.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
10	AJ	155	Total 155	C 155	0	0	155

- Molecule 11 is a protein called 30S RIBOSOMAL PROTEIN S8.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
11	AK	138	Total 138	C 138	0	0	138

- Molecule 12 is a protein called 30S RIBOSOMAL PROTEIN S9.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
12	AL	127	Total 127	C 127	0	0	127

- Molecule 13 is a protein called 30S RIBOSOMAL PROTEIN S10.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
13	AM	98	Total 98	C 98	0	0	98

- Molecule 14 is a protein called 30S RIBOSOMAL PROTEIN S11.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
14	AN	119	Total 119	C 119	0	0	119

- Molecule 15 is a protein called 30S RIBOSOMAL PROTEIN S12.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
15	AO	124	Total 124	C 124	0	0	124

- Molecule 16 is a protein called 30S RIBOSOMAL PROTEIN S13.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
16	AP	125	Total 125	C 125	0	0	125

- Molecule 17 is a protein called 30S RIBOSOMAL PROTEIN S14.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
17	AQ	60	Total 60	C 60	0	0	60

- Molecule 18 is a protein called 30S RIBOSOMAL PROTEIN S15.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
18	AR	88	Total 88	C 88	0	0	88

- Molecule 19 is a protein called 30S RIBOSOMAL PROTEIN S16.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
19	AS	83	Total 83	C 83	0	0	83

- Molecule 20 is a protein called 30S RIBOSOMAL PROTEIN S17.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
20	AT	104	Total 104	C 104	0	0	104

- Molecule 21 is a protein called 30S RIBOSOMAL PROTEIN S18.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
21	AU	73	Total 73	C 73	0	0	73

- Molecule 22 is a protein called 30S RIBOSOMAL PROTEIN S19.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
22	AV	80	Total 80	C 80	0	0	80

- Molecule 23 is a protein called 30S RIBOSOMAL PROTEIN S20.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
23	AW	99	Total 99	C 99	0	0	99

- Molecule 24 is a protein called 30S RIBOSOMAL PROTEIN THX.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
24	AX	24	Total 24	C 24	0	0	24

- Molecule 25 is a RNA chain called 50S 23S RIBOSOMAL RNA.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
25	BA	2889	Total 2889	P 2889	0	0	2889

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BA	493	G	-	insertion	? 48268

- Molecule 26 is a RNA chain called 50S 5S RIBOSOMAL RNA.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
26	BB	123	Total 123	P 123	0	0	123

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BB	-1	A	-	insertion	GB 176261

- Molecule 27 is a protein called 50S RIBOSOMAL PROTEIN L1.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
27	BC	224	Total 224	C 224	0	0	224

- Molecule 28 is a protein called 50S RIBOSOMAL PROTEIN L2.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
28	BD	173	Total 173	C 173	0	0	173

- Molecule 29 is a protein called 50S RIBOSOMAL PROTEIN L3.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
29	BE	191	Total 191	C 191	0	0	191

There are 9 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BE	113	SER	ASP	conflict	UNP P20279
BE	114	ASP	VAL	conflict	UNP P20279
BE	115	ARG	PRO	conflict	UNP P20279
BE	116	LEU	GLU	conflict	UNP P20279
BE	119	ALA	ASP	conflict	UNP P20279
BE	120	LEU	PRO	conflict	UNP P20279
BE	122	ILE	ALA	conflict	UNP P20279
BE	123	VAL	ALA	conflict	UNP P20279
BE	125	ASP	GLU	conflict	UNP P20279

- Molecule 30 is a protein called 50S RIBOSOMAL PROTEIN L4.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
30	BF	189	Total 189	C 189	0	0	189

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BF	2	GLU	GLN	conflict	UNP P12735

- Molecule 31 is a protein called 50S RIBOSOMAL PROTEIN L5.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
31	BG	122	Total 122	C 122	0	0	122

- Molecule 32 is a protein called 50S RIBOSOMAL PROTEIN L6.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
32	BH	164	Total 164	C 164	0	0	164

- Molecule 33 is a protein called 50S RIBOSOMAL PROTEIN L7/L12.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
33	BI	128	Total 128	C 128	0	0	128
33	BJ	128	Total 128	C 128	0	0	128

- Molecule 34 is a protein called 50S RIBOSOMAL PROTEIN L9.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
34	BK	148	Total 148	C 148	0	0	148

- Molecule 35 is a protein called 50S RIBOSOMAL PROTEIN L11.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
35	BL	133	Total 133	C 133	0	0	133

- Molecule 36 is a protein called 50S RIBOSOMAL PROTEIN L13.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
36	BM	117	Total 117	C 117	0	0	117

- Molecule 37 is a protein called 50S RIBOSOMAL PROTEIN L14.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
37	BN	122	Total 122	C 122	0	0	122

- Molecule 38 is a protein called 50S RIBOSOMAL PROTEIN L15.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
38	BO	84	Total 84	C 84	0	0	84

- Molecule 39 is a protein called 50S RIBOSOMAL PROTEIN L16.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
39	BP	138	Total 138	C 138	0	0	138

- Molecule 40 is a protein called 50S RIBOSOMAL PROTEIN L18.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
40	BQ	113	Total 113	C 113	0	0	113

- Molecule 41 is a protein called 50S RIBOSOMAL PROTEIN L19.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
41	BR	52	Total 52	C 52	0	0	52

- Molecule 42 is a protein called 50S RIBOSOMAL PROTEIN L22.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
42	BS	110	Total 110	C 110	0	0	110

- Molecule 43 is a protein called 50S RIBOSOMAL PROTEIN L23.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
43	BT	76	Total 76	C 76	0	0	76

- Molecule 44 is a protein called 50S RIBOSOMAL PROTEIN L24.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
44	BU	110	Total 110	C 110	0	0	110

- Molecule 45 is a protein called 50S RIBOSOMAL PROTEIN L25.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
45	BV	89	Total 89	C 89	0	0	89

- Molecule 46 is a protein called 50S RIBOSOMAL PROTEIN L29.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
46	BW	64	Total 64	C 64	0	0	64

- Molecule 47 is a protein called 50S RIBOSOMAL PROTEIN L30.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
47	BX	60	Total 60	C 60	0	0	60

3 Residue-property plots ⓘ

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

Note EDS was not executed.

• Molecule 1: 30S 16S RIBOSOMAL RNA

Chain AA:

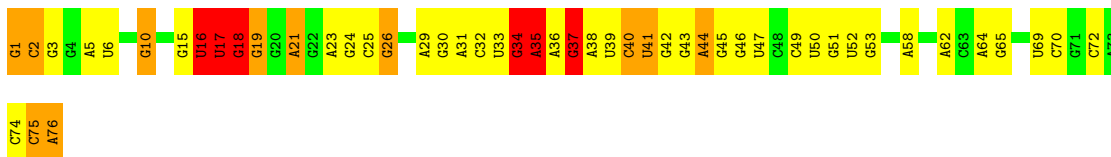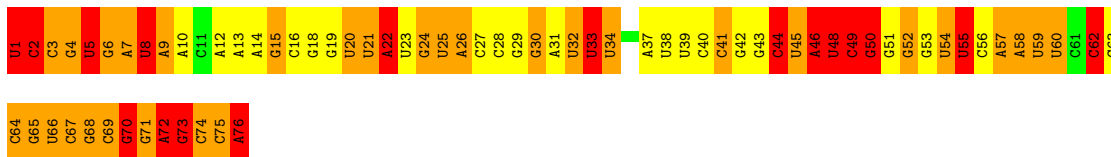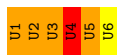• Molecule 2: TRNA(PHE)

Chain AB:
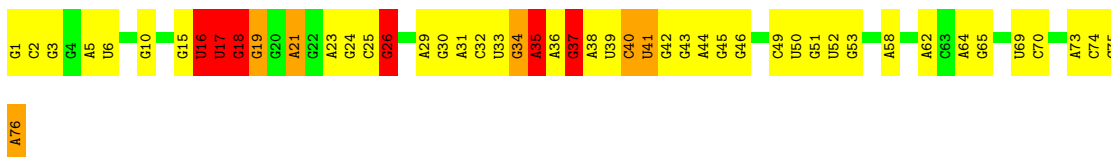
• Molecule 2: TRNA(PHE)

Chain AC:

• Molecule 3: TRNA(PHE)

Chain AD:

• Molecule 4: A- AND P-SITE MESSENGER RNA CODONS

Chain A1: 17% 67% 17%

U1 U2 U3 U4 U5 U6
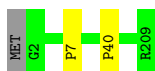
• Molecule 5: 30S RIBOSOMAL PROTEIN S2

Chain AE: 91% 9%

MET PRO VAL GLU ILE THR V7 Q240 GLU ALA GLU ALA THR GLU THR PRO GLU GLY GLU SER GLU VAL GLU ALA
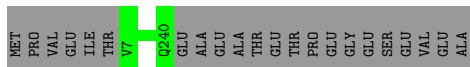
• Molecule 6: 30S RIBOSOMAL PROTEIN S3

Chain AF: 85% 14%

MET G2 P174 G194 V207 ILE GLY GLN LYS PRO LYS ALA ARG PRO GLU LEU PRO LYS ALA GLU GLU ARG PRO ARG ARG ARG ARG PRO ALA VAL ARG VAL LYS LYS GLU GLU
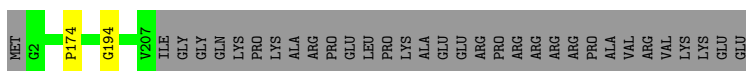
• Molecule 7: 30S RIBOSOMAL PROTEIN S4

Chain AG: 99%

MET G2 P7 P40 R209

• Molecule 8: 30S RIBOSOMAL PROTEIN S5

Chain AH: 92% 7%

MET PRO GLU THR D5 A21 G154 GLU ALA HIS ALA GLN ALA GLN GLY
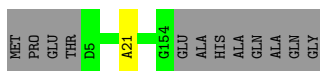
• Molecule 9: 30S RIBOSOMAL PROTEIN S6

Chain AI: 100%

There are no outlier residues recorded for this chain.

• Molecule 10: 30S RIBOSOMAL PROTEIN S7

Chain AJ: 98%

MET A2 S77 N84 W156

• Molecule 11: 30S RIBOSOMAL PROTEIN S8

Chain AK: 100%

There are no outlier residues recorded for this chain.

• Molecule 12: 30S RIBOSOMAL PROTEIN S9

Chain AL:

97%

MET E2 G68 K113 Y114 R128

• Molecule 13: 30S RIBOSOMAL PROTEIN S10

Chain AM:

90%   7%

MET PRO K3 G52 H62 F63 T100 VAL GLY GLY GLY ARG
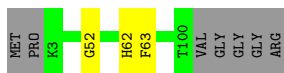
• Molecule 14: 30S RIBOSOMAL PROTEIN S11

Chain AN:

92%   8%

MET ALA LYS LYS PRO SER LYS LYS LYS VAL K11 S129
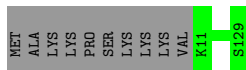
• Molecule 15: 30S RIBOSOMAL PROTEIN S12

Chain AO:

91%   8%

MET VAL ALA LEU P5 E73 A128 ALA LYS THR ALA ALA LYS LYS
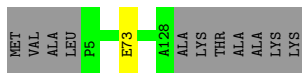
• Molecule 16: 30S RIBOSOMAL PROTEIN S13

Chain AP:

98%

MET A2 T109 T116 K126

• Molecule 17: 30S RIBOSOMAL PROTEIN S14

Chain AQ:

93%   5%

MET A2 R57 K58 A59 S60 W61

• Molecule 18: 30S RIBOSOMAL PROTEIN S15

Chain AR:

99%

MET P2 G89

• Molecule 19: 30S RIBOSOMAL PROTEIN S16

Chain AS:

91%   9%

M1 Y17 PRO HIS TYR R21 E86 ALA ARG GLU GLY ALA

• Molecule 20: 30S RIBOSOMAL PROTEIN S17

Chain AT:

99%

.

MET P2 A105

• Molecule 21: 30S RIBOSOMAL PROTEIN S18

Chain AU:

83%   17%

MET SER THR LYS ASN ALA LYS PRO LYS LYS GLU ALA GLN ARG ARG P16 K88
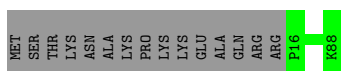
• Molecule 22: 30S RIBOSOMAL PROTEIN S19

Chain AV:

86%   14%

MET P2 R81 GLY HIS GLY LYS GLU ALA LYS ALA THR LYS LYS
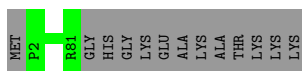
• Molecule 23: 30S RIBOSOMAL PROTEIN S20

Chain AW:

93%   7%

MET ALA GLN LYS LYS PRO LYS R8 A106
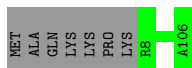
• Molecule 24: 30S RIBOSOMAL PROTEIN THX

Chain AX:

92%   8%

G2 K25 LYS LYS

• Molecule 25: 50S 23S RIBOSOMAL RNA

Chain BA:

98%

..

G1 C39 G270Y G273 U380 C417 G G418 C451 G462 G469 G558 U607 G636 A653 A C G G G C C C G C A C G C C G C C C G G C A A654 C955 C970 A1084 G1107 A1342

G1442 G1630 U1820 G1826 C1837 C1994 U1995 C1996 G1997 A2060 G2093 G2123 G2124 G2125 U2233 U2312 A2393 G2429 G2486 C2680 C2785 C2902 C C U C

• Molecule 26: 50S 5S RIBOSOMAL RNA

Chain BB:

98%

A-1 C49 G50 G51 U120
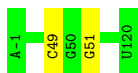
• Molecule 27: 50S RIBOSOMAL PROTEIN L1

Chain BC:

96%

PRO LYS HIS GLY K5 L104 R129 I156 K157 A158 G159 R160 S228

• Molecule 28: 50S RIBOSOMAL PROTEIN L2

Chain BD:

92%   5%

Q60 R76 M113 E114 I115 M116 S117 G158 N196 G197 A216 ARG GLY THR LYS TRP P222 V227 G237

• Molecule 29: 50S RIBOSOMAL PROTEIN L3

Chain BE:

54%   43%

PRO GLN PRO SER ARG PRO ARG LYS GLY SER LEU GLY PHE GLY PRO ARG LYS ARG SER THR SER GLU THR PRO ARG PHE ASN SER TRP PRO SER ASP ASP GLY GLN PRO GLY V38 T49 HIS VAL VAL LEU VAL ASN ASP GLU PRO ASN SER P61 E66 GLU T67 E87 ASP THR

PRO TYR GLY Q93 T97 E98 V99 L112 SER ASP ARG LEU ASP HIS ALA LEU ASP ILE VAL GLU ASP GLN ILE ARG ASP ALA HIS GLU ALA GLY ASP LEU GLY ASP LEU ARG LEU ILE THR HIS VAL THR VAL PRO ASP ALA VAL PRO SER VAL PRO LYS LYS LYS PRO ASP VAL MET GLU

THR ARG VAL GLY GLY GLY SER VAL S171 G184 G185 N190 ASP I192 T205 K221 R222 K223 G224 G274 ASP GLU PRO THR VAL ASP GLY GLY PHE VAL ASN TYR GLY GLU VAL ASP G291 R312 PRO A314 Q320 PRO ARG LEU ASP PRO GLU VAL ARG TYR VAL SER ASN

GLU SER ASN GLN GLY

• Molecule 30: 50S RIBOSOMAL PROTEIN L4

Chain BF:

72%   23%

M1 D7 LEU ASP GLY N11 S48 A52 T56 G66 H69 VAL PRO LYS LEU ASP GLY ARG ALA ARG ARG R79 V80 P81 A89 T94 L100 D101 D104 K105 D120 ALA ASP LEU VAL ALA ASP ARG ARG GLY HIS GLU PHE ASP ARG ASP GLU GLU VAL PRO V138

R168 ALA ASP GLU THR LYS ILE LYS ALA GLY GLN GLY SER ALA ARG GLY ARG LYS TYR ARG ARG PRO ALA SER ILE L193 P225 GLY GLY ALA PRO G230 R246
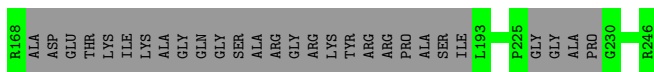
• Molecule 31: 50S RIBOSOMAL PROTEIN L5

Chain BG:

69%   31%

SER SER GLU SER GLU SER GLY GLY ASP F10 H29 GLY GLY ARG ASP ASP LEU A35 A54 G107 VAL GLU GLU HIS THR GLU PHE PRO SER GLN GLU TYR ASP PRO SER ILE GLY ILE TYR GLY L128 R156 LEU ASN PRO ALA ASP ALA VAL ALA PHE ILE GLU SER THR TYR ASP

VAL GLU VAL SER GLU
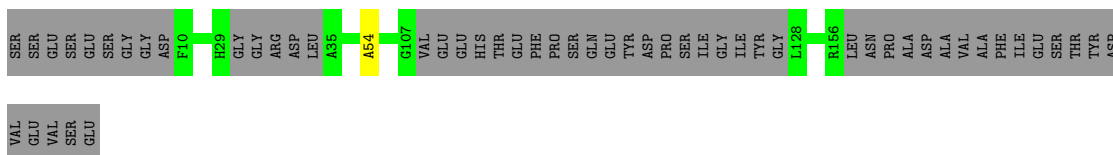
• Molecule 32: 50S RIBOSOMAL PROTEIN L6

Chain BH:

93%　　　　　　7%

SER ARG VAL GLY LYS LYS P7 L170 LYS GLU GLY LYS THR GLY LYS
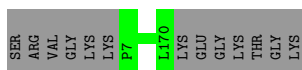
• Molecule 33: 50S RIBOSOMAL PROTEIN L7/L12

Chain BI:

98%　　　　　　•

M1 D27 A34 V37 K128

• Molecule 33: 50S RIBOSOMAL PROTEIN L7/L12

Chain BJ:

100%

There are no outlier residues recorded for this chain.

• Molecule 34: 50S RIBOSOMAL PROTEIN L9

Chain BK:

99%　　　　　　••

M1 Y25 G86 GLY R88 K149

• Molecule 35: 50S RIBOSOMAL PROTEIN L11

Chain BL:

94%　　　　　　6%

MET ALA LYS VAL ALA ALA Q8 V140 ASP
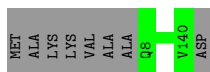
• Molecule 36: 50S RIBOSOMAL PROTEIN L13

Chain BM:

80%　　　•　　　19%

MET SER VAL A4 P88 HIS K90 K91 D110 GLU ASP GLY GLU VAL LEU ASP GLY THR SER LEU ASP ARG LEU SER ASN ILE LYS PHE VAL T131 A141 ASN LYS THR TRP
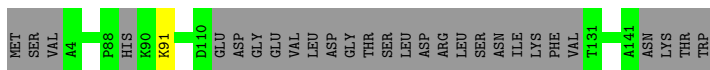
• Molecule 37: 50S RIBOSOMAL PROTEIN L14

Chain BN:

100%

There are no outlier residues recorded for this chain.

• Molecule 38: 50S RIBOSOMAL PROTEIN L15

Chain BO:

50% • 49%

THR SER LYS LYS ARG GLN ARG GLY SER ARG THR HIS GLY GLY SER HIS LYS ASN ARG ARG GLY ALA GLY HIS ARG GLY GLY ARG GLY ASP ALA GLY ARG ASP LYS HIS GLU PHE HIS ASN HIS GLU PRO LEU GLY LYS SER GLY F51 E83 VAL GLU ASP GLY GLY PHE ARG

VAL D92 V96 VAL GLU GLU A100 S126 E127 G128 L145 GLY GLU GLU ARG GLN ALA GLU GLU ALA GLU GLU THR GLU ASP ALA ASP ALA ASP GLU GLU

• Molecule 39: 50S RIBOSOMAL PROTEIN L16

Chain BP:

99% •

S9 I10 T144 A157

• Molecule 40: 50S RIBOSOMAL PROTEIN L18

Chain BQ:

56% 5% 39%

ALA THR GLY PRO ARG TYR LYS VAL P9 T49 LEU GLY P52 N53 G54 A59 S60 A61 E72 ALA P74 T75 G76 ASN MET PRO S80 T110 P111 GLY SER K114 I129 PRO HIS ASN ASP ASP VAL LEU ALA ASP TRP GLN ARG THR ARG GLY ALA HIS ILE ALA GLU TYR ASP

GLU GLN LEU GLU GLU PRO LEU TYR SER GLY ASP PHE ASP ALA ALA ASP LEU PRO GLU HIS PHE ASP GLU LEU ARG GLU THR LEU LEU ASP GLY ASP ILE GLU LEU

• Molecule 41: 50S RIBOSOMAL PROTEIN L19

Chain BR:

79% 21%

PRO ARG THR R4 L42 GLY R44 R56 GLY GLU ALA GLY GLU ALA GLU ASP GLU ALA

• Molecule 42: 50S RIBOSOMAL PROTEIN L22

Chain BS:

97% •

M1 K110 HIS GLY LYS

• Molecule 43: 50S RIBOSOMAL PROTEIN L23

Chain BT:

89% • 10%

S1 F20 GLN N22 T54 D73 ALA Q75 A78 SER ARG ILE GLY VAL PHE

• Molecule 44: 50S RIBOSOMAL PROTEIN L24

Chain BU:

92% 8%

S1 G36 GLN ARG ASN V40 E113 SER GLU ASP ASP SER ALA

• Molecule 45: 50S RIBOSOMAL PROTEIN L25

Chain BV:
95%   5%

M1 R9 LYS GLU Q12 S17 ARG R19 G32 GLY K34 H80 PRO Y82 A94
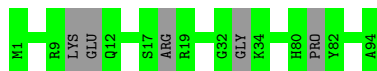
• Molecule 46: 50S RIBOSOMAL PROTEIN L29

Chain BW:
91%   9%

T1 R31 ALA V33 D65 LEU GLN GLU ASN GLU

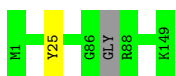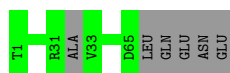• Molecule 47: 50S RIBOSOMAL PROTEIN L30

Chain BX:
98%   .

M1 Y15 E60
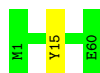
4 Data and refinement statistics (i)

Xtriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source
Space group	I 4 2 2	Depositor
Cell constants a, b, c, α, β, γ	507.20Å 507.20Å 803.66Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	250.00 – 5.50	Depositor
% Data completeness (in resolution range)	95.3 (250.00-5.50)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	0.09	Depositor
Refinement program		Depositor
R, R_{free}	(Not available) , (Not available)	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	14656	wwPDB-VP
Average B, all atoms (Å^2)	0.0	wwPDB-VP

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: 1MA, YG, M2G, OMG, 2MG, 4SU, H2U, OMC, PSU, 5MU, 5MC, 7MG

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	$\#|Z| > 5$
2	AB	1.21	4/1486 (0.3%)	1.43	13/2311 (0.6%)
2	AC	1.44	7/1487 (0.5%)	1.47	22/2315 (1.0%)
3	AD	1.95	17/1616 (1.1%)	2.85	154/2512 (6.1%)
4	A1	2.35	5/131 (3.8%)	2.46	3/200 (1.5%)
All	All	1.60	33/4720 (0.7%)	2.07	192/7338 (2.6%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
2	AB	0	3
2	AC	0	3
All	All	0	6

All (33) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	AD	33	U	O3'-P	31.20	1.98	1.61
2	AC	74	C	O3'-P	-27.00	1.28	1.61
2	AB	75	C	O3'-P	-26.77	1.29	1.61
2	AC	75	C	O3'-P	-25.61	1.30	1.61
3	AD	15	G	O3'-P	24.09	1.90	1.61
3	AD	26	A	O3'-P	-22.70	1.33	1.61
2	AB	34	OMG	O3'-P	19.78	1.84	1.61
3	AD	24	G	O3'-P	18.93	1.83	1.61
3	AD	56	C	O3'-P	17.60	1.82	1.61
3	AD	25	U	O3'-P	16.97	1.81	1.61
2	AC	44	A	O3'-P	-16.93	1.40	1.61
2	AC	72	C	O3'-P	-15.82	1.42	1.61

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W O R L D W I D E

wwPDB

PROTEIN DATA BANK

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	AD	21	H2U	O3'-P	-13.66	1.44	1.61
3	AD	46	A	O3'-P	12.75	1.76	1.61
4	A1	4	U	O3'-P	-12.24	1.46	1.61
4	A1	1	U	O3'-P	-12.22	1.46	1.61
4	A1	5	U	O3'-P	-12.18	1.46	1.61
4	A1	2	U	O3'-P	-12.14	1.46	1.61
3	AD	76	A	C6-N6	-11.63	1.24	1.33
3	AD	22	A	N9-C4	-10.71	1.31	1.37
3	AD	72	A	O3'-P	10.28	1.73	1.61
3	AD	45	U	O3'-P	-10.16	1.49	1.61
3	AD	8	4SU	O3'-P	-9.14	1.50	1.61
4	A1	3	U	O3'-P	-8.92	1.50	1.61
3	AD	75	C	O3'-P	-8.38	1.51	1.61
2	AC	35	A	O3'-P	8.14	1.71	1.61
3	AD	73	G	O3'-P	-7.55	1.52	1.61
2	AC	1	G	OP3-P	-7.29	1.52	1.61
2	AB	1	G	OP3-P	-7.17	1.52	1.61
3	AD	55	PSU	O3'-P	7.13	1.69	1.61
2	AC	76	A	C2'-O2'	6.54	1.50	1.41
2	AB	73	A	O3'-P	6.25	1.68	1.61
3	AD	5	U	C4-O4	5.04	1.27	1.23

All (192) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	AB	35	A	P-O3'-C3'	41.11	169.03	119.70
3	AD	25	U	P-O3'-C3'	31.41	157.40	119.70
3	AD	75	C	P-O3'-C3'	-29.51	84.29	119.70
4	A1	3	U	P-O3'-C3'	27.61	152.83	119.70
3	AD	8	4SU	O3'-P-O5'	-27.11	52.48	104.00
2	AC	35	A	P-O3'-C3'	27.09	152.21	119.70
3	AD	24	G	P-O3'-C3'	-24.71	90.05	119.70
2	AC	74	C	O3'-P-O5'	24.46	150.48	104.00
3	AD	15	G	P-O3'-C3'	24.38	148.95	119.70
3	AD	31	A	OP2-P-O3'	22.97	155.72	105.20
3	AD	40	C	OP2-P-O3'	21.31	152.09	105.20
3	AD	15	G	O3'-P-O5'	21.08	144.06	104.00
2	AB	34	OMG	O3'-P-O5'	19.74	141.50	104.00
3	AD	31	A	O3'-P-O5'	-19.29	67.36	104.00
3	AD	40	C	O3'-P-O5'	-17.73	70.32	104.00
3	AD	44	C	O3'-P-O5'	17.45	137.16	104.00
3	AD	72	A	P-O3'-C3'	16.50	139.50	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	AD	8	4SU	OP1-P-O3'	15.84	140.04	105.20
3	AD	16	C	P-O3'-C3'	15.77	138.62	119.70
2	AC	35	A	OP1-P-O3'	14.55	137.21	105.20
2	AC	72	C	O3'-P-O5'	13.96	130.53	104.00
3	AD	29	G	OP1-P-O3'	-13.71	75.03	105.20
2	AB	75	C	P-O3'-C3'	13.47	135.87	119.70
4	A1	3	U	O3'-P-O5'	13.43	129.52	104.00
3	AD	32	U	OP1-P-O3'	-13.32	75.90	105.20
3	AD	33	U	P-O3'-C3'	13.07	135.38	119.70
3	AD	8	4SU	P-O3'-C3'	-12.81	104.33	119.70
2	AC	75	C	P-O3'-C3'	12.71	134.96	119.70
2	AC	76	A	O5'-P-OP2	-12.60	94.36	105.70
2	AB	73	A	P-O3'-C3'	-12.54	104.65	119.70
3	AD	1	U	P-O3'-C3'	11.82	133.89	119.70
3	AD	75	C	O3'-P-O5'	11.78	126.38	104.00
2	AB	35	A	OP1-P-O3'	11.50	130.50	105.20
3	AD	5	U	C2-N3-C4	-11.49	120.11	127.00
2	AB	75	C	OP2-P-O3'	11.40	130.27	105.20
2	AC	1	G	P-O3'-C3'	11.12	133.05	119.70
3	AD	44	C	P-O3'-C3'	-11.08	106.41	119.70
3	AD	46	A	OP1-P-O3'	10.98	129.36	105.20
3	AD	31	A	OP1-P-O3'	-10.76	81.54	105.20
3	AD	56	C	P-O3'-C3'	-10.66	106.90	119.70
3	AD	32	U	O4'-C1'-N1	10.49	116.59	108.20
2	AC	74	C	OP2-P-O3'	-10.18	82.80	105.20
2	AB	34	OMG	OP2-P-O3'	-10.14	82.88	105.20
3	AD	33	U	OP1-P-O3'	9.86	126.90	105.20
3	AD	40	C	OP1-P-O3'	-9.75	83.74	105.20
2	AC	35	A	OP2-P-O3'	-9.65	83.97	105.20
2	AC	34	OMG	O3'-P-O5'	9.62	122.28	104.00
3	AD	29	G	O3'-P-O5'	9.56	122.16	104.00
3	AD	21	H2U	P-O3'-C3'	9.55	131.17	119.70
2	AC	44	A	OP2-P-O3'	9.54	126.19	105.20
3	AD	75	C	OP1-P-O3'	-9.44	84.43	105.20
2	AC	34	OMG	OP2-P-O3'	-9.29	84.77	105.20
3	AD	42	G	OP1-P-O3'	-9.29	84.77	105.20
3	AD	5	U	N3-C4-C5	9.02	120.01	114.60
2	AC	72	C	OP1-P-O3'	-8.99	85.42	105.20
3	AD	48	U	C2-N3-C4	-8.90	121.66	127.00
2	AB	35	A	O3'-P-O5'	-8.88	87.12	104.00
3	AD	27	C	OP1-P-O3'	-8.86	85.72	105.20
2	AB	76	A	P-O5'-C5'	-8.79	106.84	120.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	AD	32	U	O3'-P-O5'	8.77	120.67	104.00
3	AD	1	U	C2-N3-C4	-8.76	121.75	127.00
3	AD	59	U	C2-N3-C4	-8.57	121.86	127.00
3	AD	74	C	P-O3'-C3'	-8.55	109.44	119.70
3	AD	1	U	N3-C4-C5	8.46	119.68	114.60
2	AC	18	G	C5'-C4'-O4'	-8.43	98.99	109.10
2	AB	18	G	C5'-C4'-O4'	-8.38	99.04	109.10
3	AD	46	A	OP2-P-O3'	-8.28	86.98	105.20
3	AD	46	A	P-O3'-C3'	-8.24	109.81	119.70
3	AD	48	U	N3-C4-C5	8.22	119.53	114.60
3	AD	28	C	OP1-P-O3'	-8.22	87.12	105.20
3	AD	30	G	O4'-C1'-N9	8.18	114.75	108.20
2	AC	74	C	P-O3'-C3'	-8.14	109.93	119.70
3	AD	59	U	N3-C4-C5	8.11	119.47	114.60
3	AD	5	U	N1-C2-N3	8.05	119.73	114.90
3	AD	66	U	N3-C4-C5	7.95	119.37	114.60
3	AD	15	G	OP1-P-O3'	-7.94	87.74	105.20
3	AD	75	C	P-O5'-C5'	-7.92	108.22	120.90
3	AD	27	C	OP2-P-O3'	7.92	122.62	105.20
3	AD	62	C	O4'-C1'-N1	7.91	114.53	108.20
3	AD	15	G	OP2-P-O3'	-7.90	87.82	105.20
3	AD	60	U	C2-N3-C4	-7.89	122.26	127.00
2	AC	72	C	P-O3'-C3'	-7.86	110.27	119.70
3	AD	29	G	OP2-P-O3'	7.83	122.43	105.20
2	AC	44	A	O3'-P-O5'	-7.83	89.13	104.00
3	AD	44	C	OP1-P-O3'	-7.80	88.04	105.20
3	AD	33	U	OP2-P-O3'	-7.71	88.24	105.20
2	AC	75	C	O3'-P-O5'	7.59	118.42	104.00
3	AD	64	C	O4'-C1'-N1	7.52	114.22	108.20
3	AD	21	H2U	O3'-P-O5'	7.37	118.01	104.00
2	AC	75	C	O5'-P-OP1	-7.31	99.12	105.70
3	AD	60	U	N3-C4-C5	7.30	118.98	114.60
3	AD	57	A	P-O3'-C3'	7.29	128.45	119.70
3	AD	42	G	O4'-C1'-N9	7.25	114.00	108.20
3	AD	41	C	O4'-C1'-N1	7.17	113.94	108.20
3	AD	25	U	OP1-P-O3'	7.15	120.93	105.20
3	AD	62	C	N1-C1'-C2'	-7.13	104.16	112.00
3	AD	40	C	O4'-C1'-N1	6.97	113.78	108.20
3	AD	58	A	N1-C2-N3	-6.96	125.82	129.30
3	AD	5	U	P-O3'-C3'	6.94	128.03	119.70
3	AD	75	C	O4'-C1'-N1	6.94	113.75	108.20
3	AD	22	A	C8-N9-C4	6.85	108.54	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	AD	76	A	N1-C2-N3	-6.84	125.88	129.30
3	AD	30	G	C1'-O4'-C4'	-6.78	104.48	109.90
3	AD	72	A	N1-C2-N3	-6.76	125.92	129.30
3	AD	32	U	N1-C1'-C2'	-6.73	104.60	112.00
3	AD	66	U	C2-N3-C4	-6.65	123.01	127.00
3	AD	60	U	P-O3'-C3'	-6.61	111.76	119.70
3	AD	39	U	OP2-P-O3'	6.58	119.68	105.20
3	AD	41	C	OP2-P-O3'	6.49	119.49	105.20
3	AD	26	A	O3'-P-O5'	6.45	116.26	104.00
3	AD	7	A	O4'-C1'-N9	6.42	113.33	108.20
3	AD	2	C	O4'-C1'-N1	6.33	113.27	108.20
3	AD	42	G	O3'-P-O5'	6.31	115.99	104.00
3	AD	76	A	C5-C6-N1	-6.31	114.55	117.70
3	AD	64	C	P-O3'-C3'	-6.25	112.20	119.70
3	AD	66	U	OP1-P-OP2	-6.22	110.26	119.60
3	AD	75	C	N3-C4-C5	-6.20	119.42	121.90
3	AD	2	C	N3-C4-C5	-6.19	119.42	121.90
3	AD	69	C	O4'-C1'-N1	6.19	113.15	108.20
3	AD	70	G	C5-C6-N1	6.17	114.59	111.50
3	AD	7	A	N1-C2-N3	-6.17	126.22	129.30
3	AD	48	U	OP1-P-OP2	-6.12	110.41	119.60
3	AD	25	U	O3'-P-O5'	-6.12	92.37	104.00
3	AD	57	A	N1-C2-N3	-6.06	126.27	129.30
3	AD	4	G	C5-C6-N1	6.03	114.51	111.50
3	AD	32	U	C5'-C4'-O4'	6.00	116.29	109.10
3	AD	62	C	N3-C4-C5	-5.99	119.50	121.90
2	AB	76	A	O5'-P-OP2	-5.97	100.33	105.70
3	AD	28	C	O3'-P-O5'	5.96	115.33	104.00
3	AD	50	G	C5-C6-N1	5.95	114.48	111.50
2	AB	15	G	N9-C1'-C2'	-5.94	105.47	112.00
3	AD	4	G	O4'-C1'-N9	5.93	112.95	108.20
2	AC	15	G	N9-C1'-C2'	-5.93	105.48	112.00
4	A1	3	U	OP2-P-O3'	-5.92	92.17	105.20
3	AD	62	C	OP1-P-OP2	-5.92	110.73	119.60
3	AD	73	G	O4'-C1'-N9	5.90	112.92	108.20
3	AD	65	G	C5-C6-N1	5.87	114.44	111.50
3	AD	29	G	C5'-C4'-C3'	-5.86	106.62	116.00
3	AD	64	C	N1-C1'-C2'	-5.85	105.56	112.00
3	AD	74	C	N3-C4-C5	-5.85	119.56	121.90
3	AD	63	C	OP1-P-OP2	-5.84	110.83	119.60
3	AD	2	C	OP1-P-OP2	-5.84	110.84	119.60
3	AD	51	G	C5-C6-N1	5.83	114.41	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	AD	5	U	O4'-C1'-N1	5.82	112.86	108.20
3	AD	73	G	C5-C6-N1	5.81	114.41	111.50
3	AD	44	C	N1-C2-O2	5.77	122.36	118.90
3	AD	74	C	O5'-P-OP1	5.75	117.60	110.70
3	AD	60	U	O4'-C1'-N1	5.72	112.77	108.20
3	AD	1	U	N1-C2-N3	5.69	118.31	114.90
3	AD	6	G	C5-C6-N1	5.67	114.33	111.50
2	AC	74	C	N1-C1'-C2'	5.66	121.36	114.00
3	AD	64	C	OP1-P-OP2	-5.62	111.16	119.60
3	AD	3	C	N3-C4-C5	-5.62	119.65	121.90
3	AD	68	G	OP1-P-OP2	-5.60	111.19	119.60
3	AD	57	A	OP1-P-OP2	-5.58	111.24	119.60
3	AD	30	G	N9-C1'-C2'	-5.56	105.88	112.00
3	AD	42	G	C1'-O4'-C4'	-5.54	105.47	109.90
3	AD	6	G	P-O3'-C3'	-5.50	113.10	119.70
3	AD	71	G	C5-C6-N1	5.48	114.24	111.50
3	AD	66	U	C5-C4-O4	-5.45	122.63	125.90
3	AD	32	U	OP2-P-O3'	5.45	117.19	105.20
3	AD	70	G	O4'-C1'-N9	5.45	112.56	108.20
3	AD	57	A	C5-C6-N1	-5.42	114.99	117.70
3	AD	76	A	C6-N1-C2	5.42	121.85	118.60
3	AD	48	U	N1-C2-N3	5.41	118.15	114.90
3	AD	41	C	P-O5'-C5'	5.40	129.54	120.90
3	AD	67	C	N3-C4-C5	-5.40	119.74	121.90
3	AD	59	U	OP1-P-OP2	-5.40	111.51	119.60
3	AD	33	U	O4'-C1'-N1	5.39	112.51	108.20
3	AD	26	A	O4'-C1'-N9	5.37	112.49	108.20
3	AD	1	U	C5-C4-O4	-5.36	122.68	125.90
3	AD	64	C	N3-C4-C5	-5.34	119.76	121.90
3	AD	58	A	C6-N1-C2	5.28	121.77	118.60
3	AD	31	A	O4'-C1'-N9	5.26	112.41	108.20
3	AD	69	C	N3-C4-C5	-5.26	119.80	121.90
3	AD	6	G	OP1-P-OP2	-5.21	111.78	119.60
3	AD	7	A	C6-N1-C2	5.21	121.73	118.60
3	AD	72	A	OP2-P-O3'	-5.19	93.78	105.20
3	AD	21	H2U	OP1-P-O3'	-5.18	93.81	105.20
3	AD	74	C	OP1-P-OP2	-5.11	111.94	119.60
3	AD	57	A	C6-N1-C2	5.10	121.66	118.60
3	AD	59	U	N1-C2-N3	5.10	117.96	114.90
3	AD	63	C	O5'-P-OP2	5.09	116.80	110.70
3	AD	52	G	C5-C6-N1	5.08	114.04	111.50
3	AD	42	G	OP2-P-O3'	5.08	116.37	105.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	AD	60	U	N1-C2-N3	5.08	117.95	114.90
3	AD	70	G	OP1-P-OP2	-5.07	111.99	119.60
2	AC	21	A	C5'-C4'-C3'	5.04	124.06	116.00
2	AB	21	A	C5'-C4'-C3'	5.03	124.05	116.00
3	AD	72	A	OP1-P-OP2	-5.03	112.05	119.60
3	AD	7	A	C5-C6-N1	-5.00	115.20	117.70
3	AD	28	C	O4'-C1'-N1	5.00	112.20	108.20

There are no chirality outliers.

All (6) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	AB	18	G	Sidechain
2	AB	19	G	Sidechain
2	AB	62	A	Sidechain
2	AC	18	G	Sidechain
2	AC	19	G	Sidechain
2	AC	62	A	Sidechain

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	AA	1519	0	0	16	0
2	AB	1652	0	862	56	0
2	AC	1652	0	862	53	0
3	AD	1570	0	801	105	0
4	A1	120	0	61	5	0
5	AE	234	0	0	0	0
6	AF	206	0	0	2	0
7	AG	208	0	0	2	0
8	AH	150	0	0	1	0
9	AI	101	0	0	0	0
10	AJ	155	0	0	4	0
11	AK	138	0	0	0	0
12	AL	127	0	0	3	0
13	AM	98	0	0	5	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
14	AN	119	0	0	0	0
15	AO	124	0	0	1	0
16	AP	125	0	0	2	0
17	AQ	60	0	0	4	0
18	AR	88	0	0	0	0
19	AS	83	0	0	0	0
20	AT	104	0	0	0	0
21	AU	73	0	0	0	0
22	AV	80	0	0	0	0
23	AW	99	0	0	0	0
24	AX	24	0	0	0	0
25	BA	2889	0	0	33	0
26	BB	123	0	0	2	0
27	BC	224	0	0	4	0
28	BD	173	0	0	6	0
29	BE	191	0	0	7	0
30	BF	189	0	0	9	0
31	BG	122	0	0	1	0
32	BH	164	0	0	0	0
33	BI	128	0	0	3	0
33	BJ	128	0	0	0	0
34	BK	148	0	0	1	0
35	BL	133	0	0	0	0
36	BM	117	0	0	1	0
37	BN	122	0	0	0	0
38	BO	84	0	0	2	0
39	BP	138	0	0	2	0
40	BQ	113	0	0	6	0
41	BR	52	0	0	0	0
42	BS	110	0	0	0	0
43	BT	76	0	0	1	0
44	BU	110	0	0	0	0
45	BV	89	0	0	0	0
46	BW	64	0	0	0	0
47	BX	60	0	0	1	0
All	All	14656	0	2586	285	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 17.

All (285) 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)
30:BF:100:LEU:CA	30:BF:101:ASP:CA	1.80	1.54
2:AC:1:G:N2	2:AC:2:C:H41	1.22	1.34
1:AA:430:A:P	7:AG:7:PRO:CA	2.16	1.32
28:BD:196:ASN:CA	28:BD:197:GLY:CA	2.06	1.31
3:AD:75:C:C2'	3:AD:76:A:H5'	1.59	1.30
2:AC:1:G:N2	2:AC:2:C:N4	1.77	1.29
40:BQ:59:ALA:CA	40:BQ:60:SER:CA	2.12	1.27
3:AD:75:C:H2'	3:AD:76:A:C5'	1.62	1.27
1:AA:923:A:P	8:AH:21:ALA:CA	2.26	1.23
25:BA:955:C:P	39:BP:10:ILE:CA	2.26	1.23
3:AD:33:U:O3'	3:AD:34:U:P	1.98	1.21
3:AD:48:U:O3'	3:AD:49:5MC:P	1.99	1.20
25:BA:636:G:P	38:BO:126:SER:CA	2.32	1.18
2:AB:33:U:C2	2:AB:35:A:H5'	1.77	1.17
13:AM:63:PHE:CA	17:AQ:58:LYS:CA	2.24	1.14
2:AB:25:C:C2'	2:AB:26:M2G:H5'	1.72	1.12
2:AC:25:C:O3'	2:AC:26:M2G:P	2.12	1.08
25:BA:2060:A:P	30:BF:66:GLY:CA	2.45	1.05
25:BA:451:C:P	30:BF:48:SER:CA	2.45	1.04
3:AD:73:G:O2'	3:AD:74:C:H5'	1.58	1.04
28:BD:113:MET:CA	28:BD:114:GLU:CA	2.35	1.03
2:AB:25:C:C2'	2:AB:26:M2G:C5'	2.34	1.02
3:AD:8:4SU:C4'	3:AD:49:5MC:H5'	1.91	0.99
2:AB:25:C:H2'	2:AB:26:M2G:C5'	1.91	0.98
2:AB:33:U:O2	2:AB:35:A:H5'	1.64	0.98
13:AM:62:HIS:CA	17:AQ:59:ALA:CA	2.41	0.97
26:BB:51:G:P	40:BQ:72:GLU:CA	2.53	0.96
1:AA:948:C:P	16:AP:109:THR:CA	2.55	0.95
3:AD:8:4SU:C5'	3:AD:49:5MC:H5'	1.98	0.94
25:BA:452:G:P	30:BF:52:ALA:CA	0.84	0.93
29:BE:184:GLY:CA	29:BE:185:GLY:CA	2.46	0.93
25:BA:2093:G:P	34:BK:25:TYR:CA	2.56	0.93
25:BA:380:U:P	25:BA:2233:U:P	2.66	0.93
2:AC:41:U:H5'	2:AC:41:U:H6	1.34	0.93
3:AD:37:A:O3'	3:AD:38:U:P	2.28	0.92
3:AD:33:U:H5'	10:AJ:77:SER:CA	2.00	0.92
25:BA:607:U:P	30:BF:105:LYS:CA	2.58	0.91
3:AD:8:4SU:O2'	3:AD:46:A:H1'	1.71	0.91
2:AB:41:U:H5'	2:AB:41:U:H6	1.35	0.90
2:AC:33:U:C2	2:AC:35:A:H5'	2.06	0.90
2:AB:25:C:H2'	2:AB:26:M2G:O4'	1.71	0.90
2:AC:1:G:H22	2:AC:2:C:N4	1.65	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:AD:8:4SU:H5"	3:AD:49:5MC:H5'	1.55	0.88
3:AD:66:U:H2'	3:AD:67:C:C6	2.08	0.88
25:BA:1820:U:P	28:BD:158:GLY:CA	2.61	0.87
25:BA:2785:C:P	29:BE:99:VAL:CA	2.63	0.87
25:BA:1997:G:P	29:BE:221:LYS:CA	2.62	0.86
3:AD:19:G:H4'	3:AD:20:H2U:OP1	1.73	0.86
25:BA:1994:C:P	29:BE:224:GLY:CA	2.63	0.86
25:BA:469:G:P	30:BF:56:THR:CA	2.64	0.86
3:AD:73:G:C2'	3:AD:74:C:H5'	2.05	0.86
2:AC:10:2MG:C5	2:AC:26:M2G:HM12	2.12	0.84
3:AD:14:A:H2'	3:AD:15:G:C8	2.12	0.84
3:AD:69:C:H2'	3:AD:70:G:C8	2.11	0.84
3:AD:1:U:H2'	3:AD:2:C:H6	1.42	0.83
3:AD:8:4SU:H4'	3:AD:49:5MC:H5'	1.60	0.83
2:AB:25:C:H2'	2:AB:26:M2G:C4'	2.09	0.83
2:AC:33:U:O2	2:AC:35:A:H3'	1.80	0.82
3:AD:52:G:H1	3:AD:62:C:H42	1.24	0.82
2:AC:25:C:H2'	2:AC:26:M2G:O4'	1.80	0.81
25:BA:1826:G:P	28:BD:227:VAL:CA	2.70	0.80
25:BA:2123:G:P	27:BC:129:ARG:CA	2.70	0.80
1:AA:521:G:P	15:AO:73:GLU:CA	2.69	0.80
3:AD:69:C:H2'	3:AD:70:G:H8	1.44	0.80
3:AD:3:C:O2'	3:AD:4:G:H5'	1.83	0.79
3:AD:1:U:H2'	3:AD:2:C:C6	2.17	0.78
3:AD:66:U:H2'	3:AD:67:C:H6	1.44	0.78
3:AD:24:G:C6	3:AD:25:U:C4	2.73	0.77
2:AB:33:U:C2	2:AB:35:A:C5'	2.65	0.77
2:AC:1:G:H21	2:AC:2:C:N4	1.80	0.77
3:AD:8:4SU:H5"	3:AD:49:5MC:C5'	2.17	0.74
2:AB:25:C:O2'	2:AB:26:M2G:H5'	1.85	0.74
2:AC:34:OMG:H8	2:AC:34:OMG:OP1	1.71	0.74
2:AB:34:OMG:OP1	2:AB:34:OMG:H8	1.71	0.73
2:AC:10:2MG:C4	2:AC:26:M2G:HM12	2.22	0.73
2:AB:37:YG:C1'	2:AB:37:YG:H31	2.19	0.73
2:AC:10:2MG:C5	2:AC:26:M2G:CM1	2.71	0.73
1:AA:1060:C:P	13:AM:52:GLY:CA	2.77	0.73
3:AD:68:G:O2'	3:AD:69:C:H5'	1.88	0.73
2:AB:37:YG:H31	2:AB:37:YG:C2'	2.20	0.72
2:AC:37:YG:C1'	2:AC:37:YG:H31	2.19	0.72
2:AC:37:YG:H31	2:AC:37:YG:C2'	2.20	0.72
3:AD:67:C:H2'	3:AD:68:G:H8	1.54	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:BB:49:C:P	40:BQ:110:THR:CA	2.77	0.72
25:BA:558:G:P	36:BM:91:LYS:CA	2.77	0.72
3:AD:22:A:H5'	3:AD:22:A:H8	1.54	0.72
2:AB:44:A:O3'	2:AB:45:G:P	2.49	0.71
25:BA:1995:U:P	29:BE:223:LYS:CA	2.79	0.71
2:AC:37:YG:N20	2:AC:37:YG:H101	2.06	0.70
2:AB:37:YG:N20	2:AB:37:YG:H101	2.06	0.70
3:AD:24:G:C5	3:AD:25:U:C5	2.80	0.70
2:AB:37:YG:H31	2:AB:37:YG:H1'	1.74	0.69
3:AD:25:U:H2'	3:AD:26:A:C8	2.27	0.69
3:AD:37:A:C3'	3:AD:38:U:P	2.81	0.69
2:AC:37:YG:H31	2:AC:37:YG:H1'	1.74	0.68
2:AC:1:G:N2	2:AC:2:C:C4	2.61	0.68
2:AC:34:OMG:HN1	4:A1:3:U:H3	1.40	0.68
3:AD:22:A:H2'	3:AD:23:U:H5'	1.74	0.68
3:AD:37:A:H3'	3:AD:38:U:P	2.35	0.67
25:BA:1084:A:P	33:BI:37:VAL:CA	2.82	0.67
2:AC:1:G:H22	2:AC:2:C:H41	1.25	0.66
2:AC:44:A:C2'	2:AC:45:G:H5'	2.25	0.66
3:AD:54:5MU:C2'	3:AD:55:PSU:H5"	2.26	0.66
40:BQ:53:ASN:CA	40:BQ:54:GLY:CA	2.74	0.66
29:BE:97:THR:CA	29:BE:98:GLU:CA	2.74	0.66
2:AB:26:M2G:HM22	2:AB:44:A:C2	2.32	0.65
40:BQ:60:SER:CA	40:BQ:61:ALA:CA	2.75	0.64
2:AC:26:M2G:HM22	2:AC:44:A:C2	2.32	0.64
3:AD:52:G:H1	3:AD:62:C:N4	1.93	0.64
3:AD:73:G:N2	3:AD:74:C:H1'	2.13	0.64
30:BF:81:PRO:CA	30:BF:89:ALA:CA	2.76	0.63
3:AD:37:A:H61	10:AJ:84:ASN:CA	2.12	0.63
3:AD:67:C:H2'	3:AD:68:G:C8	2.35	0.62
2:AC:37:YG:H101	2:AC:37:YG:C21	2.30	0.62
13:AM:62:HIS:CA	17:AQ:58:LYS:CA	2.78	0.62
3:AD:73:G:H2'	3:AD:74:C:H5'	1.82	0.61
2:AB:40:5MC:H2'	2:AB:41:U:H5'	1.82	0.61
2:AB:37:YG:H101	2:AB:37:YG:C21	2.30	0.61
25:BA:636:G:P	38:BO:128:GLY:CA	2.88	0.61
2:AC:44:A:O2'	2:AC:45:G:H5'	1.99	0.61
2:AB:44:A:H3'	2:AB:45:G:P	2.41	0.61
2:AC:40:5MC:H2'	2:AC:41:U:H5'	1.82	0.61
3:AD:33:U:C5'	10:AJ:77:SER:CA	2.78	0.61
25:BA:2680:C:P	29:BE:205:THR:CA	2.89	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:AB:41:U:H5'	2:AB:41:U:C6	2.27	0.60
3:AD:73:G:N2	3:AD:74:C:C1'	2.64	0.60
3:AD:22:A:C2'	3:AD:23:U:H5'	2.31	0.60
3:AD:1:U:O2'	3:AD:2:C:H5'	2.01	0.60
2:AC:41:U:H2'	2:AC:42:G:O4'	2.03	0.59
3:AD:8:4SU:HO2'	3:AD:46:A:H1'	1.65	0.59
3:AD:55:PSU:H2'	3:AD:57:A:OP2	2.02	0.59
25:BA:2125:G:P	27:BC:104:LEU:CA	2.91	0.59
25:BA:270(Y):G:P	25:BA:273:G:P	3.01	0.59
3:AD:73:G:C2'	3:AD:74:C:C5'	2.80	0.58
2:AC:41:U:H6	2:AC:41:U:C5'	2.13	0.58
2:AB:41:U:H2'	2:AB:42:G:O4'	2.03	0.58
3:AD:25:U:O4	3:AD:26:A:N6	2.37	0.57
2:AB:64:A:H2'	2:AB:65:G:O4'	2.04	0.57
25:BA:1084:A:P	33:BI:34:ALA:CA	2.92	0.57
2:AB:41:U:H6	2:AB:41:U:C5'	2.13	0.57
2:AC:64:A:H2'	2:AC:65:G:O4'	2.04	0.57
2:AC:41:U:H5'	2:AC:41:U:C6	2.27	0.57
2:AC:44:A:H2'	2:AC:45:G:O4'	2.04	0.57
3:AD:10:A:C6	3:AD:26:A:C2	2.93	0.57
3:AD:62:C:H2'	3:AD:62:C:O2	2.03	0.57
1:AA:427:U:P	7:AG:40:PRO:CA	2.93	0.56
2:AB:16:H2U:O2'	2:AB:17:H2U:OP2	2.21	0.56
1:AA:1109:C:P	1:AA:1191:A:P	3.03	0.56
3:AD:14:A:N6	3:AD:46:A:C2	2.74	0.56
25:BA:970:C:P	47:BX:15:TYR:CA	2.93	0.56
2:AB:29:A:O2'	2:AB:30:G:H5'	2.06	0.56
2:AB:25:C:C4	2:AB:26:M2G:C8	2.94	0.55
3:AD:70:G:H2'	3:AD:71:G:H8	1.70	0.55
2:AB:44:A:C3'	2:AB:45:G:P	2.95	0.55
3:AD:22:A:H2'	3:AD:23:U:C5'	2.36	0.55
1:AA:1367:C:P	12:AL:114:TYR:CA	2.95	0.55
27:BC:156:ILE:CA	27:BC:157:LYS:CA	2.85	0.55
1:AA:1236:A:P	1:AA:1305:G:P	3.04	0.55
2:AC:29:A:O2'	2:AC:30:G:H5'	2.06	0.55
3:AD:19:G:C4'	3:AD:20:H2U:OP1	2.40	0.55
3:AD:53:G:H2'	3:AD:53:G:N3	2.22	0.55
2:AB:25:C:C5	2:AB:26:M2G:C8	2.95	0.54
3:AD:8:4SU:O2'	3:AD:46:A:C1'	2.49	0.54
2:AB:33:U:O2	2:AB:35:A:H3'	2.07	0.54
3:AD:69:C:C2	3:AD:70:G:N7	2.75	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:607:U:P	30:BF:104:ASP:CA	2.95	0.54
2:AB:16:H2U:H1'	2:AB:17:H2U:OP2	2.08	0.54
25:BA:2312:U:P	31:BG:54:ALA:CA	2.96	0.54
3:AD:75:C:C2	3:AD:76:A:H4'	2.42	0.54
3:AD:50:G:O6	3:AD:65:G:C6	2.61	0.54
3:AD:25:U:H2'	3:AD:26:A:H8	1.71	0.54
3:AD:65:G:O2'	3:AD:66:U:H5'	2.08	0.54
2:AC:16:H2U:H1'	2:AC:17:H2U:OP2	2.08	0.53
3:AD:25:U:N3	3:AD:26:A:C5	2.78	0.52
3:AD:75:C:H2'	3:AD:76:A:H5'	0.70	0.52
3:AD:22:A:H5'	3:AD:22:A:C8	2.41	0.52
2:AC:16:H2U:O2'	2:AC:17:H2U:OP2	2.21	0.52
25:BA:1107:G:P	33:BI:27:ASP:CA	2.98	0.52
3:AD:69:C:N3	3:AD:70:G:N7	2.57	0.52
2:AB:40:5MC:H2'	2:AB:41:U:C5'	2.40	0.51
3:AD:25:U:C2	3:AD:26:A:C8	2.98	0.51
2:AB:33:U:O2'	2:AB:35:A:N7	2.36	0.51
2:AC:40:5MC:H2'	2:AC:41:U:C5'	2.40	0.51
3:AD:7:A:C8	3:AD:49:5MC:HM52	2.45	0.51
2:AC:69:U:H2'	2:AC:70:C:C6	2.46	0.51
3:AD:53:G:C2	3:AD:62:C:C2	2.99	0.51
2:AB:16:H2U:H52	2:AC:47:U:O4	2.11	0.50
2:AB:30:G:O2'	2:AB:31:A:H5'	2.12	0.50
2:AB:69:U:H2'	2:AB:70:C:C6	2.46	0.50
1:AA:785:G:P	25:BA:1837:C:P	3.10	0.50
2:AB:25:C:N4	2:AB:26:M2G:C5	2.80	0.50
2:AC:23:A:O2'	2:AC:24:G:H5'	2.12	0.50
2:AB:23:A:O2'	2:AB:24:G:H5'	2.12	0.49
2:AC:30:G:O2'	2:AC:31:A:H5'	2.12	0.49
3:AD:50:G:C6	3:AD:65:G:N1	2.80	0.49
2:AB:25:C:C5	2:AB:26:M2G:N7	2.80	0.49
3:AD:69:C:C2	3:AD:70:G:C8	3.00	0.49
25:BA:1342:A:P	43:BT:54:THR:CA	3.00	0.49
3:AD:73:G:H2'	3:AD:74:C:C5'	2.42	0.49
28:BD:116:MET:CA	28:BD:117:SER:CA	2.90	0.49
2:AB:25:C:H2'	2:AB:26:M2G:H5'	1.58	0.49
13:AM:63:PHE:CA	17:AQ:57:ARG:CA	2.91	0.49
3:AD:59:U:C5	3:AD:60:U:C4	3.01	0.49
3:AD:71:G:H2'	3:AD:72:A:H8	1.78	0.49
3:AD:73:G:H2'	3:AD:73:G:N3	2.28	0.48
3:AD:50:G:C6	3:AD:65:G:C6	3.01	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1250:A:P	12:AL:68:GLY:CA	3.02	0.48
28:BD:76:ARG:CA	28:BD:113:MET:CA	2.91	0.47
3:AD:24:G:C6	3:AD:25:U:C5	3.03	0.47
3:AD:73:G:O2'	3:AD:74:C:C5'	2.48	0.47
1:AA:1108:G:P	6:AF:174:PRO:CA	3.03	0.47
1:AA:1229:A:P	16:AP:116:THR:CA	3.02	0.47
2:AB:25:C:C4	2:AB:26:M2G:N7	2.83	0.47
2:AB:33:U:O2'	2:AB:35:A:C8	2.63	0.47
2:AC:37:YG:H31	2:AC:37:YG:O2'	2.15	0.47
3:AD:4:G:C2'	3:AD:5:U:O5'	2.64	0.46
3:AD:12:A:O2'	3:AD:13:A:H5'	2.16	0.46
1:AA:1206:G:P	6:AF:194:GLY:CA	3.04	0.46
3:AD:7:A:N7	3:AD:49:5MC:HM52	2.31	0.46
2:AC:33:U:O2	2:AC:35:A:H5'	2.13	0.45
2:AB:37:YG:H31	2:AB:37:YG:O2'	2.15	0.45
3:AD:1:U:O2'	3:AD:2:C:C5'	2.63	0.45
25:BA:2486:G:P	39:BP:144:THR:CA	3.05	0.45
40:BQ:111:PRO:CA	40:BQ:114:LYS:CA	2.95	0.45
3:AD:70:G:H2'	3:AD:71:G:C8	2.50	0.45
3:AD:22:A:H2'	3:AD:23:U:O4'	2.17	0.45
3:AD:54:5MU:H2'	3:AD:55:PSU:H5"	1.98	0.45
2:AB:43:G:H2'	2:AB:44:A:C8	2.52	0.45
2:AB:50:U:O2'	2:AB:51:G:H5'	2.17	0.45
2:AC:16:H2U:C2'	2:AC:17:H2U:OP2	2.65	0.45
3:AD:43:G:H2'	3:AD:44:C:O4'	2.16	0.45
2:AC:50:U:O2'	2:AC:51:G:H5'	2.17	0.44
3:AD:50:G:C6	3:AD:65:G:C2	3.05	0.44
2:AC:23:A:H2'	2:AC:24:G:C8	2.52	0.44
2:AC:43:G:H2'	2:AC:44:A:C8	2.53	0.44
3:AD:46:A:H2'	3:AD:48:U:C4'	2.47	0.44
4:A1:2:U:H2'	4:A1:3:U:C6	2.52	0.44
2:AB:50:U:C2'	2:AB:51:G:H5'	2.48	0.44
4:A1:1:U:H2'	4:A1:2:U:C6	2.52	0.44
2:AB:23:A:H2'	2:AB:24:G:C8	2.52	0.44
3:AD:24:G:C4	3:AD:25:U:C5	3.06	0.44
1:AA:783:C:P	1:AA:1516:G:P	3.16	0.44
2:AB:16:H2U:C2'	2:AB:17:H2U:OP2	2.65	0.44
2:AC:34:OMG:H3'	2:AC:35:A:H5"	2.00	0.44
4:A1:4:U:H2'	4:A1:5:U:C6	2.52	0.44
4:A1:5:U:H2'	4:A1:6:U:C6	2.52	0.43
2:AB:32:OMC:O5'	2:AB:32:OMC:H6	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:AD:73:G:N2	3:AD:74:C:O4'	2.52	0.43
2:AC:44:A:C2'	2:AC:45:G:C5'	2.96	0.43
3:AD:9:A:N6	3:AD:46:A:C2	2.86	0.43
2:AC:50:U:C2'	2:AC:51:G:H5'	2.48	0.43
3:AD:33:U:O2'	10:AJ:84:ASN:CA	2.67	0.43
3:AD:24:G:C4	3:AD:25:U:C6	3.07	0.43
2:AC:32:OMC:H6	2:AC:32:OMC:O5'	2.01	0.43
27:BC:159:GLY:CA	27:BC:160:ARG:CA	2.97	0.43
25:BA:39:C:P	30:BF:94:THR:CA	3.08	0.42
3:AD:65:G:H2'	3:AD:66:U:C6	2.54	0.42
3:AD:66:U:C4	3:AD:67:C:N4	2.88	0.42
3:AD:74:C:H2'	3:AD:75:C:O4'	2.19	0.42
2:AB:37:YG:H32	2:AB:38:A:O4'	2.20	0.42
3:AD:4:G:H2'	3:AD:5:U:O5'	2.21	0.41
3:AD:50:G:C5	3:AD:65:G:C2	3.09	0.41
25:BA:1442:G:P	25:BA:1630:G:P	3.18	0.41
2:AB:25:C:C4	2:AB:26:M2G:C5	3.09	0.41
3:AD:69:C:C4	3:AD:70:G:N7	2.88	0.41
2:AC:37:YG:H32	2:AC:38:A:O4'	2.20	0.41
3:AD:8:4SU:H6	3:AD:8:4SU:O5'	2.19	0.41
2:AC:39:PSU:N1	2:AC:40:5MC:HM52	2.36	0.41
1:AA:1368:G:P	12:AL:113:LYS:CA	3.08	0.41
2:AC:52:U:O2'	2:AC:53:G:H5'	2.20	0.41
3:AD:25:U:C4	3:AD:26:A:C5	3.09	0.41
2:AB:5:A:H2'	2:AB:6:U:O4'	2.21	0.41
2:AC:5:A:H2'	2:AC:6:U:O4'	2.21	0.41
3:AD:25:U:O4	3:AD:26:A:C6	2.74	0.41
3:AD:46:A:H2'	3:AD:48:U:O5'	2.21	0.41
3:AD:57:A:H2'	3:AD:58:A:H5'	2.03	0.41
3:AD:75:C:C2	3:AD:76:A:H5'	2.56	0.41
25:BA:2393:A:P	25:BA:2429:G:P	3.18	0.41
2:AB:39:PSU:N1	2:AB:40:5MC:HM52	2.36	0.40
2:AB:52:U:O2'	2:AB:53:G:H5'	2.20	0.40
2:AB:16:H2U:C1'	2:AB:17:H2U:OP2	2.69	0.40
2:AC:16:H2U:C1'	2:AC:17:H2U:OP2	2.69	0.40
2:AB:34:OMG:OP1	2:AB:34:OMG:C8	2.64	0.40
3:AD:62:C:O2	3:AD:62:C:C2'	2.62	0.40
3:AD:75:C:C2'	3:AD:76:A:C5'	2.41	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

There are no protein backbone outliers to report in this entry.

5.3.2 Protein sidechains ⓘ

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

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	AA	0/1522	-	-
2	AB	74/76 (97%)	13 (17%)	3 (4%)
2	AC	75/76 (98%)	13 (17%)	3 (4%)
25	BA	0/2916	-	-
26	BB	0/123	-	-
3	AD	73/74 (98%)	26 (35%)	2 (2%)
4	A1	5/6 (83%)	1 (20%)	0
All	All	227/4793 (4%)	53 (23%)	8 (3%)

All (53) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	AB	2	C
2	AB	3	G
2	AB	17	H2U
2	AB	18	G
2	AB	19	G
2	AB	21	A
2	AB	26	M2G
2	AB	35	A
2	AB	36	A
2	AB	37	YG
2	AB	41	U
2	AB	74	C
2	AB	76	A
2	AC	2	C
2	AC	3	G
2	AC	17	H2U
2	AC	18	G
2	AC	19	G

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Mol	Chain	Res	Type
2	AC	21	A
2	AC	34	OMG
2	AC	35	A
2	AC	36	A
2	AC	37	YG
2	AC	41	U
2	AC	75	C
2	AC	76	A
3	AD	2	C
3	AD	5	U
3	AD	6	G
3	AD	8	4SU
3	AD	9	A
3	AD	18	G
3	AD	20	H2U
3	AD	21	H2U
3	AD	22	A
3	AD	30	G
3	AD	32	U
3	AD	34	U
3	AD	41	C
3	AD	44	C
3	AD	45	U
3	AD	46	A
3	AD	48	U
3	AD	49	5MC
3	AD	50	G
3	AD	55	PSU
3	AD	62	C
3	AD	64	C
3	AD	70	G
3	AD	72	A
3	AD	73	G
3	AD	76	A
4	A1	4	U

All (8) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	AB	16	H2U
2	AB	18	G
2	AB	35	A

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Mol	Chain	Res	Type
2	AC	16	H2U
2	AC	18	G
2	AC	35	A
3	AD	1	U
3	AD	33	U

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

34 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 Counts	Bond lengths RMSZ	Bond lengths #$|Z|$ > 2	Bond angles Counts	Bond angles RMSZ	Bond angles #$|Z|$ > 2
2	OMG	AB	34	4,2	18,26,27	1.05	2 (11%)	19,38,41	0.87	1 (5%)
2	2MG	AC	10	2	18,26,27	1.10	1 (5%)	16,38,41	0.75	0
2	1MA	AB	58	2	16,25,26	2.83	4 (25%)	18,37,40	2.21	5 (27%)
2	OMC	AC	32	2	19,22,23	0.47	0	26,31,34	0.57	0
2	YG	AB	37	2	31,42,43	0.93	1 (3%)	33,62,65	2.59	10 (30%)
2	H2U	AB	17	2	18,21,22	0.65	0	21,30,33	0.98	1 (4%)
2	5MU	AC	54	2	19,22,23	0.51	0	28,32,35	0.65	0
3	5MU	AD	54	3	19,22,23	0.75	0	28,32,35	1.29	2 (7%)
2	5MC	AB	40	2	18,22,23	0.45	0	26,32,35	0.70	1 (3%)
2	H2U	AC	17	2	18,21,22	0.68	1 (5%)	21,30,33	0.99	2 (9%)
2	5MC	AB	49	2	18,22,23	0.75	0	26,32,35	0.73	1 (3%)
2	OMC	AB	32	2	19,22,23	0.47	0	26,31,34	0.57	0
3	4SU	AD	8	3	18,21,22	0.36	0	26,30,33	0.33	0
2	5MU	AB	54	2	19,22,23	0.53	0	28,32,35	0.65	0
2	2MG	AB	10	2	18,26,27	1.08	2 (11%)	16,38,41	0.74	0
2	PSU	AC	55	2	18,21,22	0.72	0	22,30,33	0.85	0
2	H2U	AC	16	2	18,21,22	0.74	1 (5%)	21,30,33	1.14	2 (9%)
2	YG	AC	37	2	31,42,43	0.92	1 (3%)	33,62,65	2.60	10 (30%)
3	PSU	AD	55	3	18,21,22	0.62	0	22,30,33	0.83	1 (4%)
2	OMG	AC	34	4,2	18,26,27	1.04	2 (11%)	19,38,41	0.86	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
2	M2G	AC	26	2	20,27,28	1.21	2 (10%)	22,40,43	0.78	0
2	7MG	AC	46	2	22,26,27	1.07	2 (9%)	29,39,42	1.20	3 (10%)
3	5MC	AD	49	3	18,22,23	0.58	0	26,32,35	0.94	2 (7%)
2	PSU	AB	39	2	18,21,22	0.70	0	22,30,33	0.68	0
2	H2U	AB	16	2	18,21,22	0.74	1 (5%)	21,30,33	1.14	2 (9%)
3	H2U	AD	20	3	18,21,22	0.31	0	21,30,33	0.69	0
3	H2U	AD	21	3	18,21,22	0.44	0	21,30,33	0.65	0
2	PSU	AC	39	2	18,21,22	0.70	0	22,30,33	0.68	0
2	5MC	AC	40	2	18,22,23	0.45	0	26,32,35	0.70	1 (3%)
2	M2G	AB	26	2	20,27,28	1.20	2 (10%)	22,40,43	0.78	0
2	1MA	AC	58	2	16,25,26	2.84	4 (25%)	18,37,40	2.21	5 (27%)
2	PSU	AB	55	2	18,21,22	0.73	0	22,30,33	0.85	0
2	7MG	AB	46	2	22,26,27	1.10	2 (9%)	29,39,42	1.21	3 (10%)
2	5MC	AC	49	2	18,22,23	0.75	0	26,32,35	0.72	1 (3%)

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
2	OMG	AB	34	4,2	-	1/5/27/28	0/3/3/3
2	2MG	AC	10	2	-	0/5/27/28	0/3/3/3
2	1MA	AB	58	2	-	0/3/25/26	0/3/3/3
2	OMC	AC	32	2	-	0/9/27/28	0/2/2/2
2	YG	AB	37	2	-	8/20/42/43	0/3/4/4
2	H2U	AB	17	2	-	1/7/38/39	0/2/2/2
2	5MU	AC	54	2	-	0/7/25/26	0/2/2/2
3	5MU	AD	54	3	-	2/7/25/26	0/2/2/2
2	5MC	AB	40	2	-	1/7/25/26	0/2/2/2
2	H2U	AC	17	2	-	0/7/38/39	0/2/2/2
2	5MC	AB	49	2	-	0/7/25/26	0/2/2/2
2	OMC	AB	32	2	-	0/9/27/28	0/2/2/2
3	4SU	AD	8	3	-	0/7/25/26	0/2/2/2
2	5MU	AB	54	2	-	0/7/25/26	0/2/2/2
2	2MG	AB	10	2	-	0/5/27/28	0/3/3/3
2	PSU	AC	55	2	-	0/7/25/26	0/2/2/2
2	H2U	AC	16	2	-	4/7/38/39	0/2/2/2
2	YG	AC	37	2	-	7/20/42/43	0/3/4/4

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	PSU	AD	55	3	-	4/7/25/26	0/2/2/2
2	OMG	AC	34	4,2	-	1/5/27/28	0/3/3/3
2	M2G	AC	26	2	-	0/7/29/30	0/3/3/3
2	7MG	AC	46	2	-	2/7/37/38	0/3/3/3
3	5MC	AD	49	3	-	2/7/25/26	0/2/2/2
2	PSU	AB	39	2	-	0/7/25/26	0/2/2/2
2	H2U	AB	16	2	-	4/7/38/39	0/2/2/2
3	H2U	AD	20	3	-	2/7/38/39	0/2/2/2
3	H2U	AD	21	3	-	2/7/38/39	0/2/2/2
2	PSU	AC	39	2	-	0/7/25/26	0/2/2/2
2	5MC	AC	40	2	-	1/7/25/26	0/2/2/2
2	M2G	AB	26	2	-	0/7/29/30	0/3/3/3
2	1MA	AC	58	2	-	0/3/25/26	0/3/3/3
2	PSU	AB	55	2	-	0/7/25/26	0/2/2/2
2	7MG	AB	46	2	-	2/7/37/38	0/3/3/3
2	5MC	AC	49	2	-	0/7/25/26	0/2/2/2

All (28) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	AC	58	1MA	C6-N6	8.07	1.48	1.27
2	AB	58	1MA	C6-N6	8.02	1.48	1.27
2	AC	58	1MA	C2-N3	6.91	1.37	1.29
2	AB	58	1MA	C2-N3	6.90	1.37	1.29
2	AC	26	M2G	C5-C6	-3.12	1.41	1.47
2	AC	10	2MG	C5-C6	-3.08	1.41	1.47
2	AB	26	M2G	C5-C6	-3.07	1.41	1.47
2	AB	46	7MG	C4-N9	3.07	1.41	1.37
2	AB	10	2MG	C5-C6	-3.00	1.41	1.47
2	AC	46	7MG	C4-N9	2.95	1.41	1.37
2	AB	46	7MG	C5-N7	2.82	1.38	1.35
2	AC	46	7MG	C5-N7	2.67	1.38	1.35
2	AC	16	H2U	C2-N1	2.59	1.39	1.35
2	AB	26	M2G	C8-N7	-2.59	1.30	1.35
2	AC	26	M2G	C8-N7	-2.59	1.30	1.35
2	AB	16	H2U	C2-N1	2.58	1.39	1.35
2	AB	58	1MA	C8-N7	-2.36	1.31	1.35
2	AC	58	1MA	C8-N7	-2.30	1.31	1.35
2	AC	34	OMG	C8-N7	-2.29	1.31	1.35
2	AB	34	OMG	C8-N7	-2.28	1.31	1.35
2	AB	58	1MA	C5-C4	-2.23	1.37	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	AC	58	1MA	C5-C4	-2.18	1.37	1.43
2	AC	37	YG	C8-N7	-2.16	1.31	1.35
2	AB	37	YG	C8-N7	-2.15	1.31	1.35
2	AB	10	2MG	C8-N7	-2.06	1.31	1.35
2	AC	17	H2U	C2-N1	2.03	1.38	1.35
2	AB	34	OMG	C5-C6	-2.03	1.43	1.47
2	AC	34	OMG	C5-C6	-2.00	1.43	1.47

All (54) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	AC	37	YG	C11-C12-N1	8.57	111.36	106.53
2	AB	37	YG	C11-C12-N1	8.54	111.35	106.53
2	AC	37	YG	C24-O23-C21	6.29	123.08	115.66
2	AB	37	YG	C24-O23-C21	6.26	123.05	115.66
2	AC	58	1MA	CM1-N1-C6	-5.20	112.39	120.27
2	AB	58	1MA	CM1-N1-C6	-5.20	112.40	120.27
2	AC	37	YG	C3-N3-C4	5.00	125.58	116.71
2	AB	37	YG	C3-N3-C4	4.98	125.55	116.71
2	AC	58	1MA	CM1-N1-C2	4.56	130.15	120.55
2	AB	58	1MA	CM1-N1-C2	4.55	130.13	120.55
2	AC	37	YG	O23-C21-N20	4.40	118.53	110.80
2	AB	37	YG	O23-C21-N20	4.39	118.51	110.80
2	AB	58	1MA	N1-C2-N3	4.29	131.03	126.02
2	AC	58	1MA	N1-C2-N3	4.28	131.02	126.02
2	AB	46	7MG	C4-C5-N7	4.02	111.11	105.53
2	AC	46	7MG	C4-C5-N7	4.01	111.10	105.53
3	AD	54	5MU	C5-C4-N3	3.49	118.29	115.31
2	AC	37	YG	C4-N3-C2	-3.40	111.85	122.15
2	AB	37	YG	C4-N3-C2	-3.38	111.89	122.15
2	AC	37	YG	O23-C21-O22	-3.35	119.65	124.58
2	AB	37	YG	O23-C21-O22	-3.33	119.69	124.58
3	AD	54	5MU	C4-N3-C2	-2.97	123.50	127.35
2	AC	37	YG	C19-O18-C16	2.90	122.49	115.94
2	AB	37	YG	C19-O18-C16	2.89	122.47	115.94
2	AB	16	H2U	C4-N3-C2	2.86	128.16	125.79
2	AC	16	H2U	C4-N3-C2	2.84	128.15	125.79
2	AB	46	7MG	N9-C8-N7	2.80	107.38	103.38
2	AC	46	7MG	N9-C8-N7	2.75	107.31	103.38
2	AB	46	7MG	CM7-N7-C5	2.75	133.49	126.40
2	AC	46	7MG	CM7-N7-C5	2.75	133.49	126.40
2	AC	58	1MA	N1-C6-N6	2.67	126.55	119.77

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	AB	58	1MA	N1-C6-N6	2.65	126.51	119.77
2	AC	37	YG	C3-N3-C2	2.60	122.57	120.13
2	AB	37	YG	C3-N3-C2	2.60	122.56	120.13
2	AB	49	5MC	C5-C6-N1	-2.57	120.69	123.34
2	AC	49	5MC	C5-C6-N1	-2.57	120.70	123.34
2	AB	40	5MC	C5-C6-N1	-2.55	120.71	123.34
2	AC	40	5MC	C5-C6-N1	-2.52	120.75	123.34
2	AC	37	YG	O6-C6-C5	2.47	128.55	124.17
2	AB	37	YG	O6-C6-C5	2.44	128.50	124.17
2	AC	17	H2U	C4-N3-C2	2.41	127.79	125.79
2	AB	16	H2U	O3'-C3'-C2'	2.39	119.56	111.82
2	AC	16	H2U	O3'-C3'-C2'	2.38	119.51	111.82
2	AC	37	YG	O18-C16-C15	2.37	117.57	111.52
2	AB	37	YG	O18-C16-C15	2.36	117.56	111.52
3	AD	55	PSU	O4'-C1'-C2'	2.32	108.42	105.14
2	AB	17	H2U	C4-N3-C2	2.31	127.71	125.79
2	AB	34	OMG	O6-C6-C5	2.26	128.79	124.37
2	AC	34	OMG	O6-C6-C5	2.23	128.72	124.37
3	AD	49	5MC	C5-C4-N3	-2.21	119.29	121.67
2	AB	58	1MA	O4'-C1'-C2'	-2.20	103.71	106.93
2	AC	58	1MA	O4'-C1'-C2'	-2.18	103.74	106.93
2	AC	17	H2U	C5-C4-N3	-2.03	114.37	116.65
3	AD	49	5MC	C2'-C1'-N1	-2.01	107.52	113.22

There are no chirality outliers.

All (44) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	AB	16	H2U	O4'-C1'-N1-C2
2	AB	16	H2U	O4'-C1'-N1-C6
2	AB	16	H2U	C2'-C1'-N1-C6
2	AB	37	YG	C12-C13-C14-C15
2	AB	37	YG	C15-C16-O18-C19
2	AB	46	7MG	C2'-C1'-N9-C8
2	AC	16	H2U	O4'-C1'-N1-C2
2	AC	16	H2U	O4'-C1'-N1-C6
2	AC	16	H2U	C2'-C1'-N1-C6
2	AC	37	YG	C12-C13-C14-C15
2	AC	37	YG	C15-C16-O18-C19
2	AC	46	7MG	C2'-C1'-N9-C8
2	AB	37	YG	O17-C16-O18-C19
2	AC	37	YG	O17-C16-O18-C19

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Mol	Chain	Res	Type	Atoms
3	AD	21	H2U	O4'-C4'-C5'-O5'
3	AD	49	5MC	O4'-C4'-C5'-O5'
3	AD	49	5MC	C3'-C4'-C5'-O5'
3	AD	55	PSU	C3'-C4'-C5'-O5'
3	AD	55	PSU	O4'-C4'-C5'-O5'
2	AB	16	H2U	C2'-C1'-N1-C2
2	AC	16	H2U	C2'-C1'-N1-C2
2	AB	37	YG	C13-C14-C15-C16
2	AC	37	YG	C13-C14-C15-C16
3	AD	21	H2U	C4'-C5'-O5'-P
2	AB	34	OMG	C4'-C5'-O5'-P
2	AC	34	OMG	C4'-C5'-O5'-P
3	AD	55	PSU	O4'-C1'-C5-C4
2	AB	46	7MG	C2'-C1'-N9-C4
2	AC	46	7MG	C2'-C1'-N9-C4
2	AB	37	YG	C3'-C4'-C5'-O5'
2	AB	40	5MC	O4'-C4'-C5'-O5'
2	AC	40	5MC	O4'-C4'-C5'-O5'
3	AD	20	H2U	C2'-C1'-N1-C6
2	AB	37	YG	C14-C15-C16-O18
2	AC	37	YG	C14-C15-C16-O18
2	AB	37	YG	C13-C14-C15-N20
2	AC	37	YG	C13-C14-C15-N20
3	AD	54	5MU	C3'-C4'-C5'-O5'
3	AD	54	5MU	O4'-C4'-C5'-O5'
3	AD	55	PSU	O4'-C1'-C5-C6
3	AD	20	H2U	O4'-C4'-C5'-O5'
2	AB	37	YG	C14-C15-C16-O17
2	AC	37	YG	C14-C15-C16-O17
2	AB	17	H2U	C2'-C1'-N1-C6

There are no ring outliers.

22 monomers are involved in 73 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	AB	34	OMG	2	0
2	AC	10	2MG	3	0
2	AC	32	OMC	1	0
2	AB	37	YG	7	0
2	AB	17	H2U	4	0
3	AD	54	5MU	2	0
2	AB	40	5MC	3	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	AC	17	H2U	4	0
2	AB	32	OMC	1	0
3	AD	8	4SU	9	0
2	AC	16	H2U	4	0
2	AC	37	YG	7	0
3	AD	55	PSU	3	0
2	AC	34	OMG	3	0
2	AC	26	M2G	6	0
3	AD	49	5MC	8	0
2	AB	39	PSU	1	0
2	AB	16	H2U	5	0
3	AD	20	H2U	2	0
2	AC	39	PSU	1	0
2	AC	40	5MC	3	0
2	AB	26	M2G	14	0

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

The following chains have linkage breaks:

Mol	Chain	Number of breaks
3	AD	10
2	AB	4
2	AC	4

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	AB	44:A	O3'	45:G	P	2.49
1	AD	37:A	O3'	38:U	P	2.28
1	AC	25:C	O3'	26:M2G	P	2.12
1	AD	48:U	O3'	49:5MC	P	1.99
1	AD	33:U	O3'	34:U	P	1.98
1	AD	7:A	O3'	8:4SU	P	1.92
1	AD	15:G	O3'	16:C	P	1.90
1	AB	34:OMG	O3'	35:A	P	1.84
1	AD	24:G	O3'	25:U	P	1.83
1	AD	56:C	O3'	57:A	P	1.82
1	AD	25:U	O3'	26:A	P	1.81
1	AD	46:A	O3'	48:U	P	1.76
1	AD	26:A	O3'	27:C	P	1.33
1	AB	33:U	O3'	34:OMG	P	1.32
1	AC	75:C	O3'	76:A	P	1.30
1	AB	75:C	O3'	76:A	P	1.29
1	AC	74:C	O3'	75:C	P	1.28
1	AC	36:A	O3'	37:YG	P	1.18

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates ⓘ

EDS was not executed - this section is therefore empty.

6.4 Ligands ⓘ

EDS was not executed - this section is therefore empty.

6.5 Other polymers ⓘ

EDS was not executed - this section is therefore empty.