



# wwPDB X-ray Structure Validation Summary Report ⓘ

Aug 11, 2021 – 11:41 am BST

PDB ID : 7A0R  
Title : 50S Deinococcus radiodurans ribosome bounded with mycinamicin I  
Authors : Breiner, E.; Eyal, Z.; Matzov, D.; Halfon, Y.; Camicata, G.; Rozenberg, H.;  
Zimmerman, E.; Bashan, A.; Yonath, A.  
Deposited on : 2020-08-10  
Resolution : 3.30 Å(reported)

This is a wwPDB X-ray Structure Validation Summary Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto: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 ⓘ symbol.

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The following versions of software and data (see [references ⓘ](#)) 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 : 2.23.1  
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) : 2.23.1

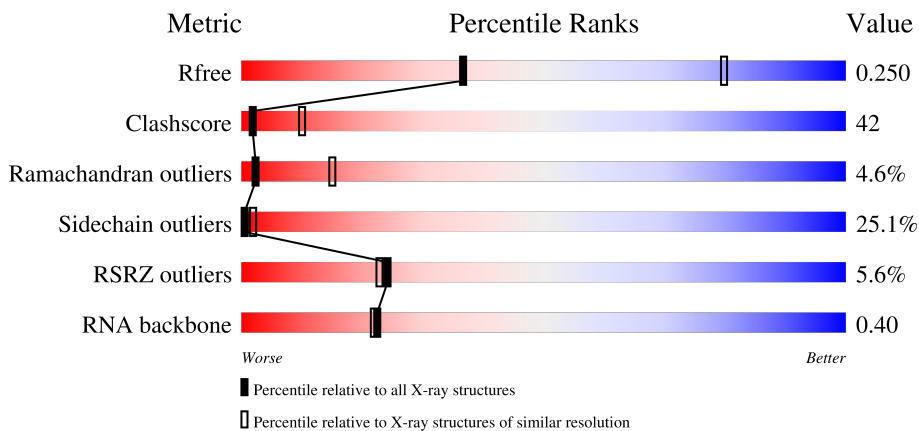
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 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.



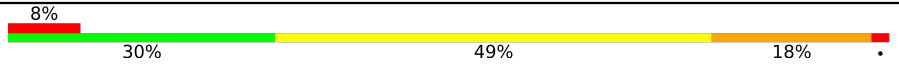

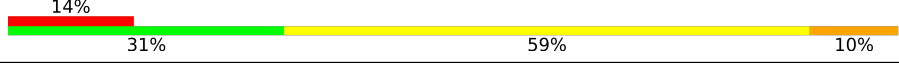
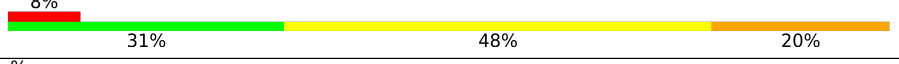
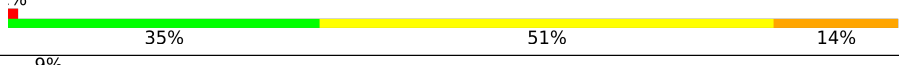
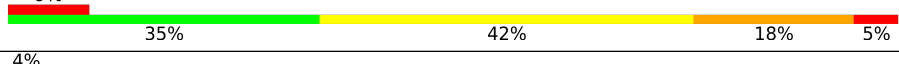
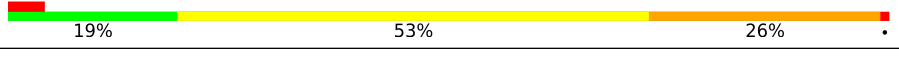
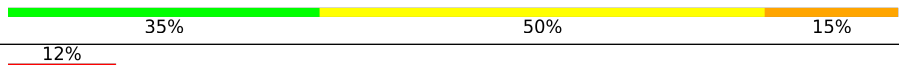
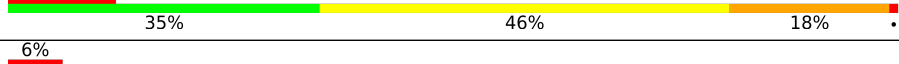
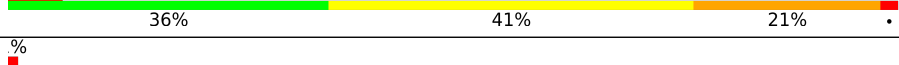
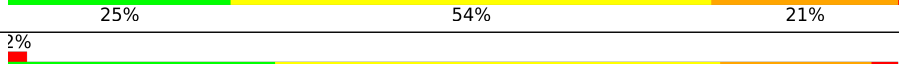
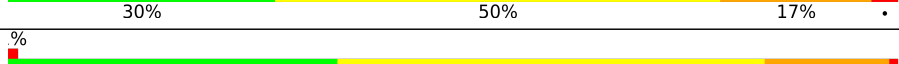
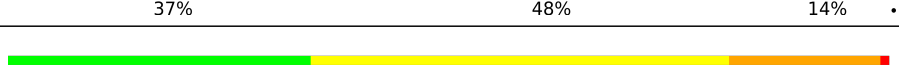
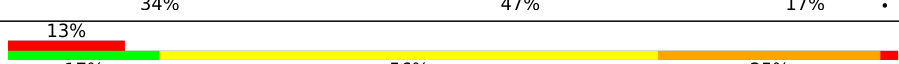
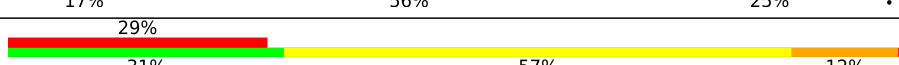
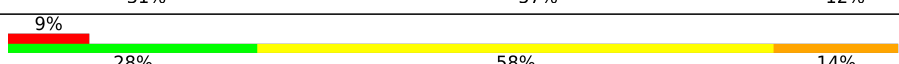
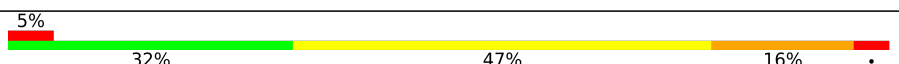
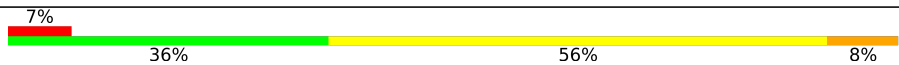
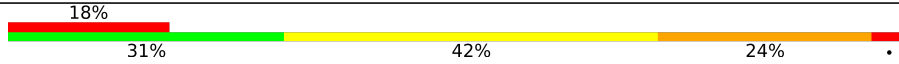





Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	130704	1149 (3.34-3.26)
Clashscore	141614	1205 (3.34-3.26)
Ramachandran outliers	138981	1183 (3.34-3.26)
Sidechain outliers	138945	1182 (3.34-3.26)
RSRZ outliers	127900	1115 (3.34-3.26)
RNA backbone	3102	1117 (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  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	X	2877	
2	Y	120	
3	A	271	
4	B	206	

*Continued on next page...*

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Mol	Chain	Length	Quality of chain
5	C	197	
6	D	177	
7	E	171	
8	G	143	
9	H	134	
10	I	137	
11	J	136	
12	K	116	
13	L	104	
14	M	113	
15	N	117	
16	O	98	
17	P	128	
18	Q	93	
19	R	110	
20	S	175	
21	T	74	
22	U	74	
23	V	61	
24	W	55	
25	Z	58	
26	1	49	
27	2	47	
28	3	63	

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 crite-

ria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
30	MG	X	2999	-	-	-	X
30	MG	X	3022	-	-	-	X
30	MG	X	3059	-	-	-	X
30	MG	X	3071	-	-	-	X
30	MG	X	3081	-	-	-	X
30	MG	X	3089	-	-	-	X
30	MG	X	3104	-	-	-	X
30	MG	X	3111	-	-	-	X
30	MG	X	3135	-	-	-	X
30	MG	X	3137	-	-	-	X
30	MG	X	3175	-	-	-	X
30	MG	X	3177	-	-	-	X
30	MG	X	3187	-	-	-	X
30	MG	X	3197	-	-	-	X
30	MG	X	3208	-	-	-	X
30	MG	X	3209	-	-	-	X
30	MG	X	3212	-	-	-	X
30	MG	Y	208	-	-	-	X
30	MG	Y	216	-	-	-	X

## 2 Entry composition [i](#)

There are 30 unique types of molecules in this entry. The entry contains 84973 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 RNA (2730-MER).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	X	2730	58592	26137	10810	18916	2729	0	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
X	1526	U	C	conflict	GB 1026245073

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
2	Y	120	2561	1143	471	827	120	0	0	0

- Molecule 3 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	A	271	1976	1234	382	358	2	0	0	0

- Molecule 4 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	B	206	1529	959	290	272	8	0	0	0

- Molecule 5 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	C	197	1486	924	282	278	2	0	0	0

- Molecule 6 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
6	D	177	1353	865	234	248	6	0	0	0

- Molecule 7 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
7	E	171	1270	803	234	232	1	0	0	0

- Molecule 8 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
8	G	143	1106	697	205	201	3	0	0	0

- Molecule 9 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
9	H	134	991	611	195	180	5	0	0	0

- Molecule 10 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
10	I	137	970	594	191	184	1	0	0	0

- Molecule 11 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
11	J	136	1064	675	197	185	7	0	0	0

- Molecule 12 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
12	K	116	900	554	183	160	3	0	0	0

- Molecule 13 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
13	L	104	772	470	161	141	0	0	0

- Molecule 14 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
14	M	113	885	554	171	159	1	0	0	0

- Molecule 15 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
15	N	117	972	605	207	159	1	0	0	0

- Molecule 16 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
16	O	98	733	460	134	138	1	0	0	0

- Molecule 17 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
17	P	128	1006	634	195	175	2	0	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
P	6	ALA	GLN	conflict	UNP Q9RXJ7

- Molecule 18 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
18	Q	93	712	451	131	128	2	0	0	0

- Molecule 19 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
19	R	110	813	507	154	151	1	0	0	0

- Molecule 20 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
20	S	175	1309	823	227	253	6	0	0	0

- Molecule 21 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
21	T	74	543	344	102	96	1	0	0	0

- Molecule 22 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
22	U	74	537	338	101	98	0	0	0

- Molecule 23 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
23	V	61	490	301	100	87	2	0	0	0

- Molecule 24 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
24	W	55	424	264	82	76	2	0	0	0

- Molecule 25 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
25	Z	58	457	281	94	77	5	0	0	0

- Molecule 26 is a protein called 50S ribosomal protein L33.



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
26	1	49	303	187	54	62	0	0	0

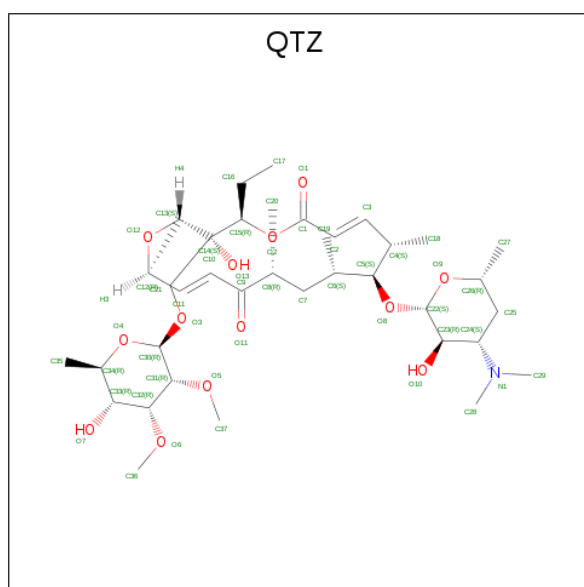
- Molecule 27 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
27	2	47	376	224	88	62	2	0	0	0

- Molecule 28 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
28	3	63	447	278	92	75	2	0	0	0

- Molecule 29 is mycinamicin II (three-letter code: QTZ) (formula: C<sub>37</sub>H<sub>61</sub>NO<sub>13</sub>) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
29	X	1	51	37	1	13	3	0

- Molecule 30 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Mg		
30	X	320	320	320	0	0

*Continued on next page...*

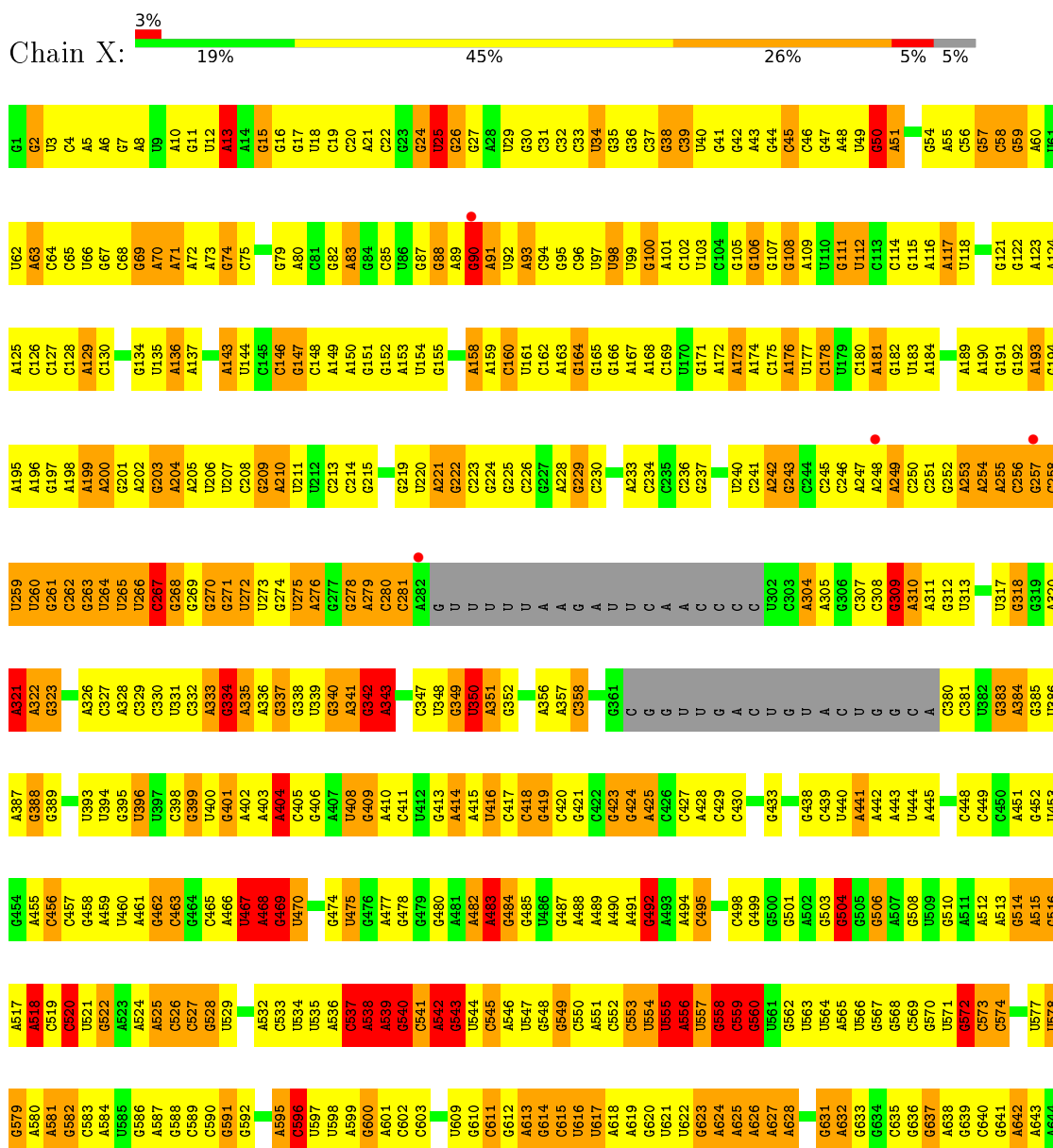
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<b>Mol</b>	<b>Chain</b>	<b>Residues</b>	<b>Atoms</b>		<b>ZeroOcc</b>	<b>AltConf</b>
30	Y	16	Total 16	Mg 16	0	0
30	A	3	Total 3	Mg 3	0	0
30	I	1	Total 1	Mg 1	0	0
30	J	2	Total 2	Mg 2	0	0
30	K	1	Total 1	Mg 1	0	0
30	O	1	Total 1	Mg 1	0	0
30	2	1	Total 1	Mg 1	0	0

### 3 Residue-property plots

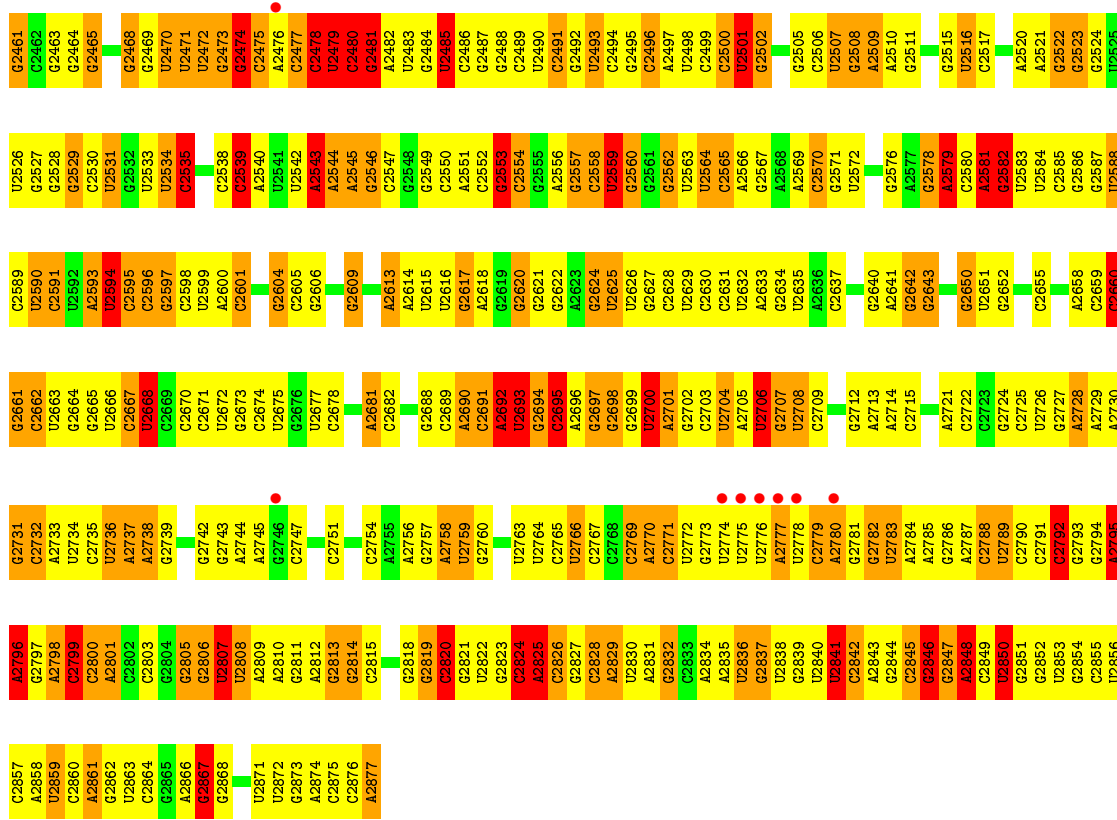
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: RNA (2730-MER)

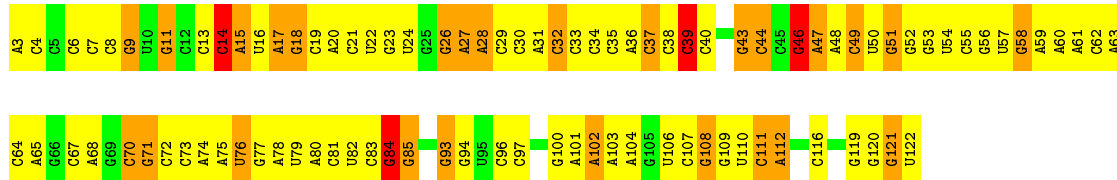




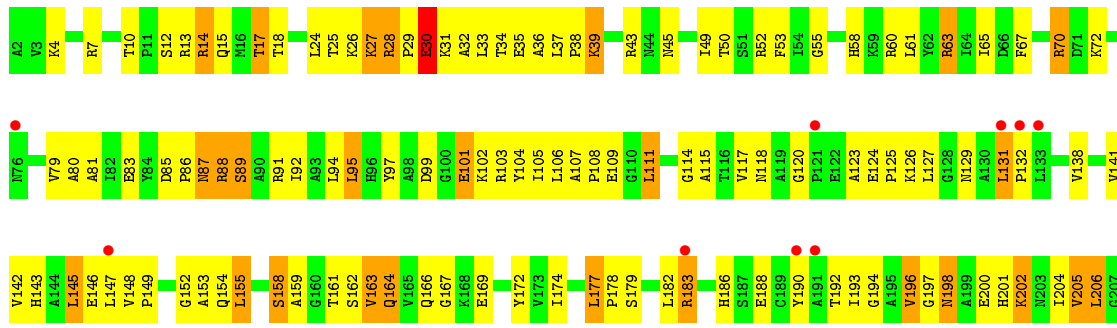




• Molecule 2: RNA (120-MER)



• Molecule 3: 50S ribosomal protein L2





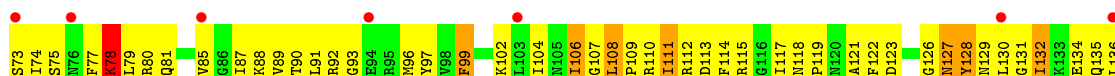
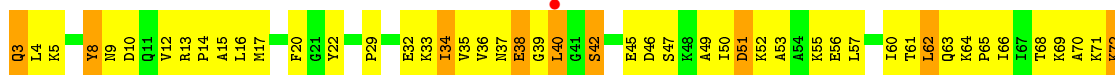
- Molecule 4: 50S ribosomal protein L3



- Molecule 5: 50S ribosomal protein L4

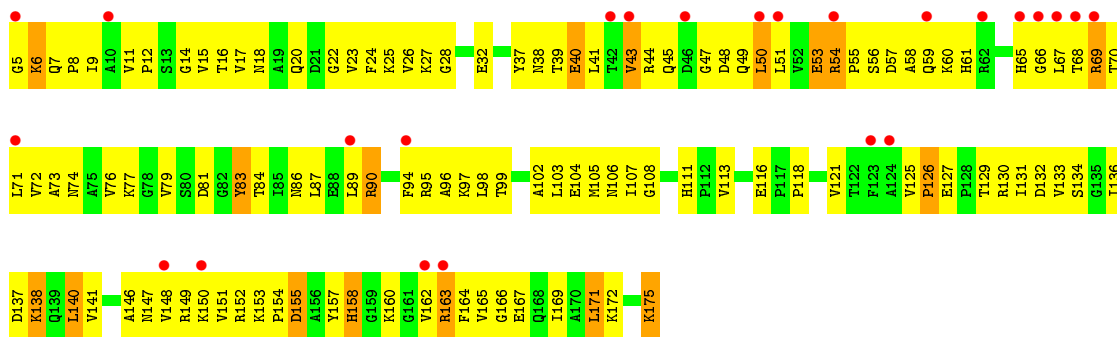


- Molecule 6: 50S ribosomal protein L5

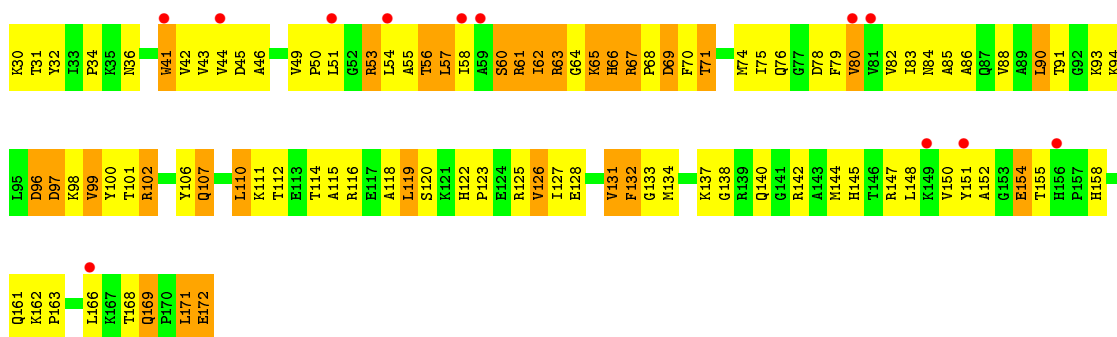


- Molecule 7: 50S ribosomal protein L6

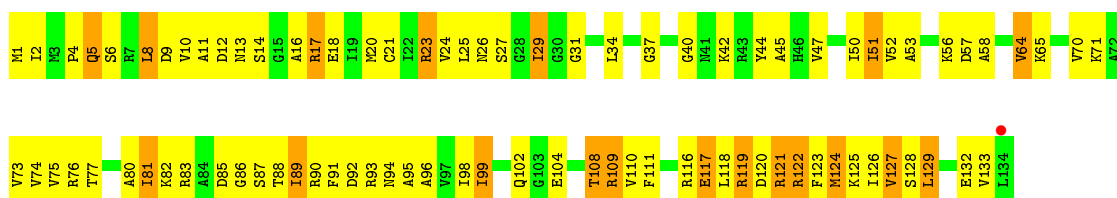




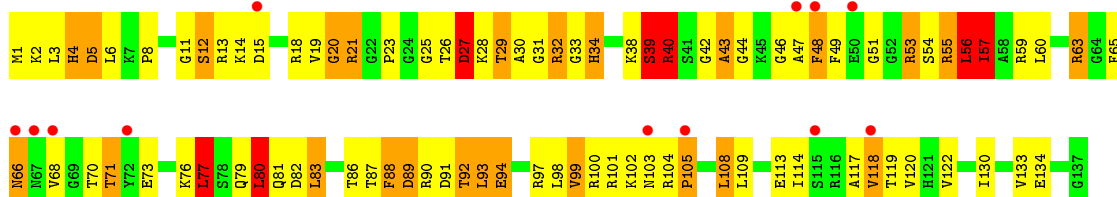
• Molecule 8: 50S ribosomal protein L13



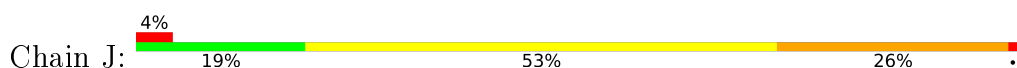
• Molecule 9: 50S ribosomal protein L14



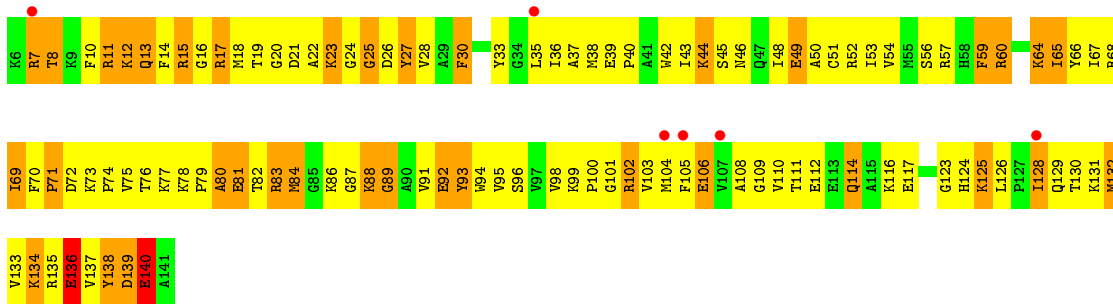
• Molecule 10: 50S ribosomal protein L15



• Molecule 11: 50S ribosomal protein L16

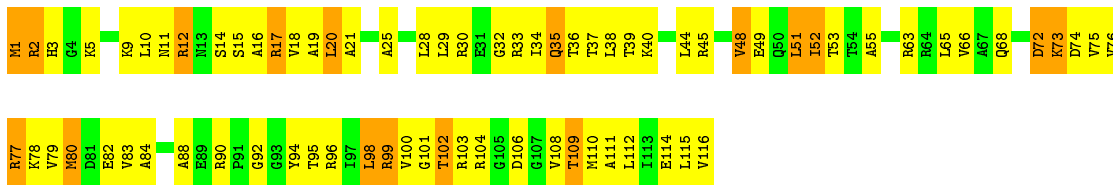






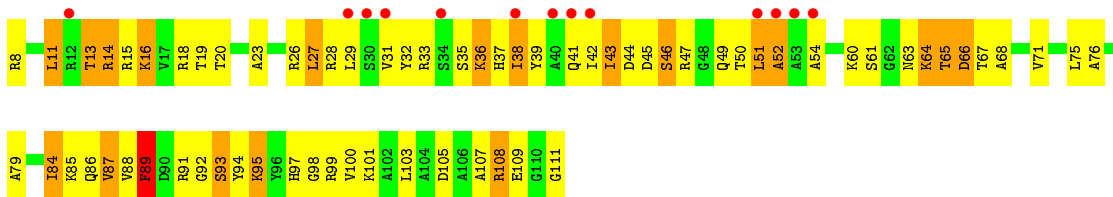
- Molecule 12: 50S ribosomal protein L17

Chain K: 35% 50% 15%



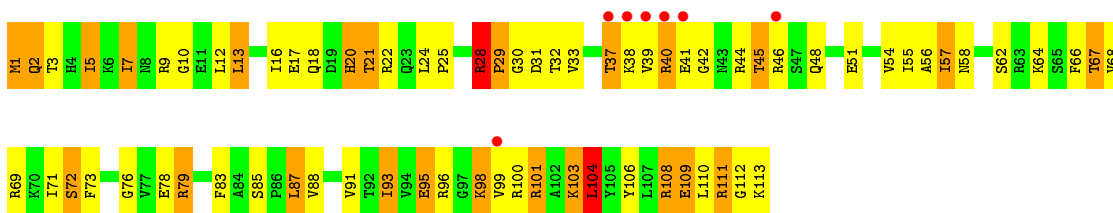
- Molecule 13: 50S ribosomal protein L18

Chain L: 12% 35% 46% 18%



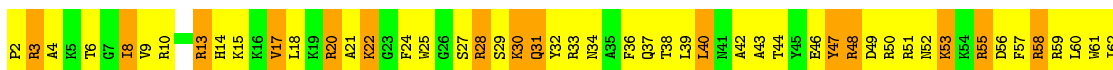
- Molecule 14: 50S ribosomal protein L19

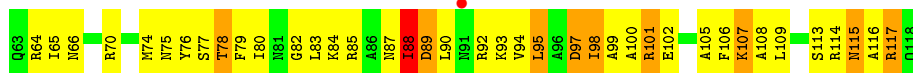
Chain M: 6% 36% 41% 21%



- Molecule 15: 50S ribosomal protein L20

Chain N: 25% 54% 21%

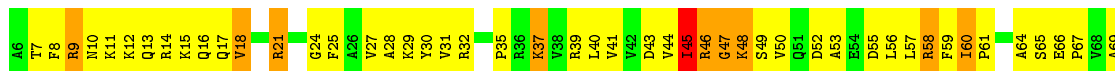




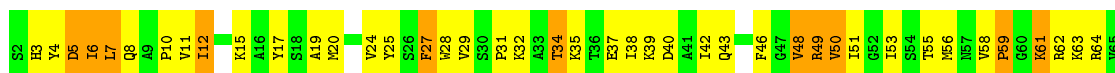
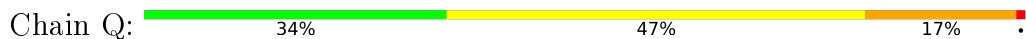
• Molecule 16: 50S ribosomal protein L21



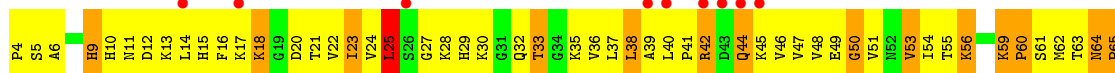
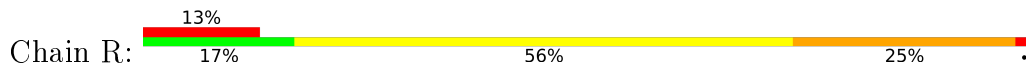
• Molecule 17: 50S ribosomal protein L22



• Molecule 18: 50S ribosomal protein L23

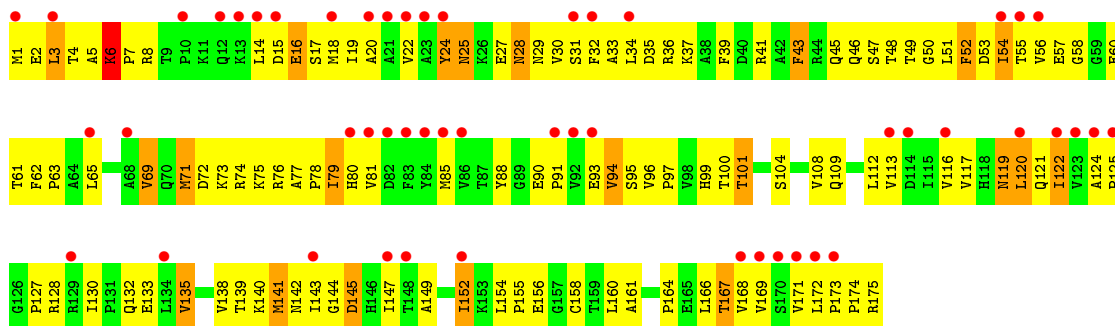


• Molecule 19: 50S ribosomal protein L24

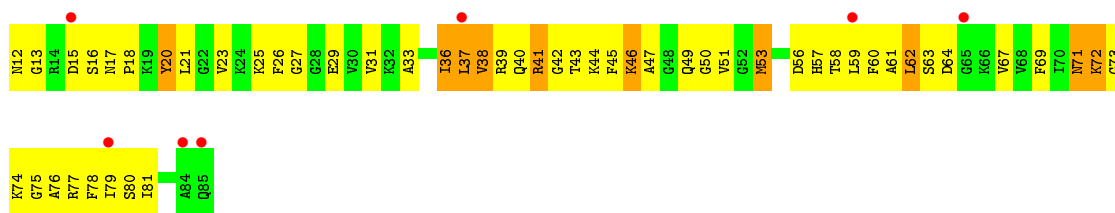


• Molecule 20: 50S ribosomal protein L25

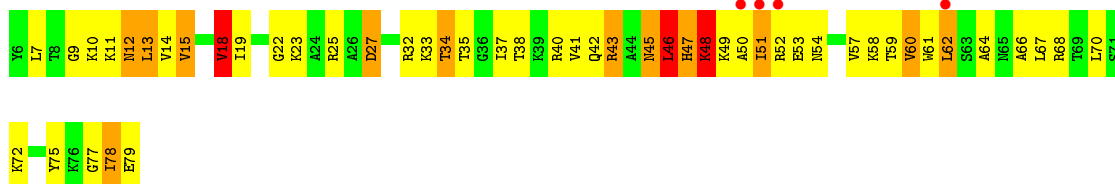




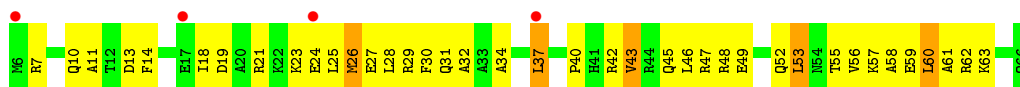
- Molecule 21: 50S ribosomal protein L27



- Molecule 22: 50S ribosomal protein L28



- Molecule 23: 50S ribosomal protein L29



- Molecule 24: 50S ribosomal protein L30

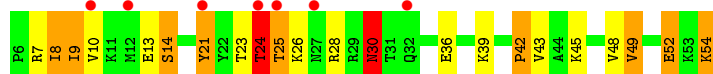


- Molecule 25: 50S ribosomal protein L32





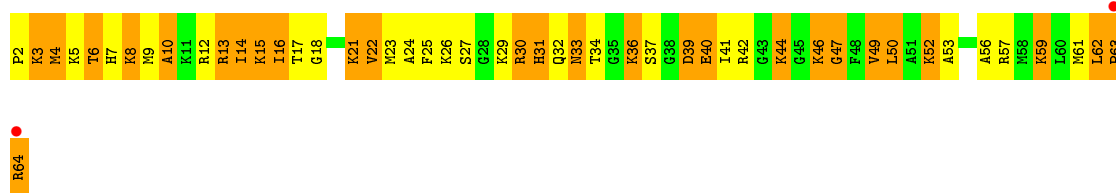
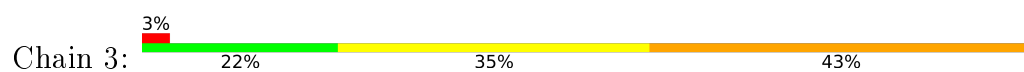
- Molecule 26: 50S ribosomal protein L33



- Molecule 27: 50S ribosomal protein L34



- Molecule 28: 50S ribosomal protein L35



## 4 Data and refinement statistics

Property	Value	Source
Space group	I 2 2 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	170.48Å 408.93Å 697.32Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.55 – 3.30 49.54 – 3.30	Depositor EDS
% Data completeness (in resolution range)	98.3 (49.55-3.30) 98.4 (49.54-3.30)	Depositor EDS
$R_{merge}$	0.18	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.67 (at 3.33Å)	Xtrriage
Refinement program	PHENIX 1.12_2829	Depositor
R, $R_{free}$	0.215 , 0.249 0.215 , 0.250	Depositor DCC
$R_{free}$ test set	17957 reflections (5.03%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	98.1	Xtrriage
Anisotropy	0.547	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.20 , 73.5	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.46$ , $\langle L^2 \rangle = 0.29$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.94	EDS
Total number of atoms	84973	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	125.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.04% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  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: QTZ, MG

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	X	0.84	57/65613 (0.1%)	1.45	988/102349 (1.0%)
2	Y	0.55	1/2863 (0.0%)	1.17	14/4461 (0.3%)
3	A	0.43	0/2016	0.66	2/2735 (0.1%)
4	B	0.60	0/1556	0.77	0/2093
5	C	0.47	0/1509	0.67	0/2046
6	D	0.31	0/1372	0.49	0/1848
7	E	0.35	0/1292	0.53	0/1751
8	G	0.53	0/1130	0.66	0/1532
9	H	0.63	0/1001	0.75	1/1345 (0.1%)
10	I	0.52	0/982	0.80	2/1326 (0.2%)
11	J	0.53	0/1085	0.68	0/1453
12	K	0.70	0/908	0.88	1/1218 (0.1%)
13	L	0.36	0/777	0.61	0/1037
14	M	0.70	0/898	0.87	2/1207 (0.2%)
15	N	0.55	0/988	0.74	1/1316 (0.1%)
16	O	0.46	0/741	0.73	1/994 (0.1%)
17	P	0.68	0/1019	0.81	0/1368
18	Q	0.45	0/723	0.64	0/971
19	R	0.44	0/823	0.65	1/1107 (0.1%)
20	S	0.33	0/1333	0.52	0/1821
21	T	0.52	1/550 (0.2%)	0.69	0/732
22	U	0.40	0/542	0.67	1/729 (0.1%)
23	V	0.37	0/493	0.49	0/656
24	W	0.40	0/426	0.68	1/568 (0.2%)
25	Z	0.61	0/469	0.76	0/629
26	1	0.37	0/305	0.69	0/420
27	2	0.44	0/379	0.69	0/500
28	3	0.50	0/451	0.74	0/596
All	All	0.76	59/92244 (0.1%)	1.31	1015/138808 (0.7%)

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
3	A	0	1
4	B	0	2
5	C	0	2
8	G	0	2
9	H	0	1
10	I	0	5
11	J	0	2
14	M	0	1
17	P	0	1
19	R	0	1
22	U	0	2
28	3	0	1
All	All	0	21

The worst 5 of 59 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	X	542	A	N9-C4	-10.58	1.31	1.37
1	X	1278	A	N3-C4	-8.78	1.29	1.34
1	X	1468	A	N9-C4	8.26	1.42	1.37
1	X	1278	A	N9-C4	-7.85	1.33	1.37
1	X	2045	A	N9-C4	6.97	1.42	1.37

The worst 5 of 1015 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	X	841	G	C6-C5-N7	-18.22	119.47	130.40
1	X	2018	G	C4-C5-N7	17.12	117.65	110.80
1	X	1333	G	N3-C4-N9	-16.84	115.90	126.00
1	X	1468	A	C8-N9-C4	-16.42	99.23	105.80
1	X	1333	G	N3-C4-C5	15.21	136.21	128.60

There are no chirality outliers.

5 of 21 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
3	A	247	VAL	Peptide
4	B	129	HIS	Peptide
4	B	131	SER	Peptide

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Mol	Chain	Res	Type	Group
5	C	159	ARG	Peptide
5	C	164	VAL	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	X	58592	0	29522	2975	0
2	Y	2561	0	1306	154	0
3	A	1976	0	1957	261	0
4	B	1529	0	1578	169	0
5	C	1486	0	1488	284	0
6	D	1353	0	1388	221	0
7	E	1270	0	1310	155	0
8	G	1106	0	1108	134	0
9	H	991	0	1035	122	0
10	I	970	0	940	171	0
11	J	1064	0	1078	176	0
12	K	900	0	953	105	0
13	L	772	0	813	118	0
14	M	885	0	898	123	0
15	N	972	0	1009	126	0
16	O	733	0	725	101	0
17	P	1006	0	1073	122	0
18	Q	712	0	730	79	0
19	R	813	0	859	176	0
20	S	1309	0	1293	158	0
21	T	543	0	553	69	0
22	U	537	0	557	107	0
23	V	490	0	509	39	0
24	W	424	0	470	40	0
25	Z	457	0	464	85	0
26	1	303	0	238	37	0
27	2	376	0	396	43	0
28	3	447	0	465	115	0
29	X	51	0	0	2	0
30	2	1	0	0	0	0
30	A	3	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
30	I	1	0	0	0	0
30	J	2	0	0	0	0
30	K	1	0	0	0	0
30	O	1	0	0	0	0
30	X	320	0	0	0	0
30	Y	16	0	0	0	0
All	All	84973	0	54715	5865	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 42.

The worst 5 of 5865 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)
8:G:42:VAL:CG1	8:G:166:LEU:HD13	1.32	1.51
8:G:42:VAL:CG1	8:G:166:LEU:CD1	1.88	1.48
8:G:42:VAL:HG11	8:G:166:LEU:CD1	1.56	1.26
8:G:61:ARG:NH1	8:G:166:LEU:HD21	1.49	1.23
1:X:1277:G:OP1	25:Z:19:ARG:NH2	1.73	1.20

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	
3	A	269/271 (99%)	240 (89%)	21 (8%)	8 (3%)	4	24
4	B	204/206 (99%)	183 (90%)	13 (6%)	8 (4%)	3	18
5	C	195/197 (99%)	157 (80%)	28 (14%)	10 (5%)	2	13
6	D	175/177 (99%)	158 (90%)	12 (7%)	5 (3%)	4	24
7	E	169/171 (99%)	148 (88%)	16 (10%)	5 (3%)	4	24

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
8	G	141/143 (99%)	120 (85%)	18 (13%)	3 (2%)	7	31
9	H	132/134 (98%)	118 (89%)	11 (8%)	3 (2%)	6	29
10	I	135/137 (98%)	100 (74%)	20 (15%)	15 (11%)	0	2
11	J	134/136 (98%)	110 (82%)	14 (10%)	10 (8%)	1	7
12	K	114/116 (98%)	104 (91%)	8 (7%)	2 (2%)	8	35
13	L	102/104 (98%)	84 (82%)	11 (11%)	7 (7%)	1	8
14	M	111/113 (98%)	95 (86%)	12 (11%)	4 (4%)	3	20
15	N	115/117 (98%)	104 (90%)	7 (6%)	4 (4%)	3	21
16	O	96/98 (98%)	76 (79%)	12 (12%)	8 (8%)	1	5
17	P	126/128 (98%)	109 (86%)	13 (10%)	4 (3%)	4	22
18	Q	91/93 (98%)	79 (87%)	8 (9%)	4 (4%)	2	16
19	R	108/110 (98%)	82 (76%)	18 (17%)	8 (7%)	1	7
20	S	173/175 (99%)	154 (89%)	14 (8%)	5 (3%)	4	24
21	T	72/74 (97%)	66 (92%)	4 (6%)	2 (3%)	5	25
22	U	72/74 (97%)	52 (72%)	13 (18%)	7 (10%)	0	3
23	V	59/61 (97%)	57 (97%)	2 (3%)	0	100	100
24	W	53/55 (96%)	50 (94%)	2 (4%)	1 (2%)	8	34
25	Z	56/58 (97%)	48 (86%)	6 (11%)	2 (4%)	3	20
26	1	47/49 (96%)	33 (70%)	10 (21%)	4 (8%)	1	5
27	2	45/47 (96%)	36 (80%)	4 (9%)	5 (11%)	0	2
28	3	61/63 (97%)	49 (80%)	6 (10%)	6 (10%)	0	3
All	All	3055/3107 (98%)	2612 (86%)	303 (10%)	140 (5%)	2	15

5 of 140 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	A	240	THR
3	A	244	ARG
4	B	94	ASP
4	B	136	ARG
5	C	44	SER

### 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	
3	A	191/212 (90%)	146 (76%)	45 (24%)	1	3
4	B	152/155 (98%)	119 (78%)	33 (22%)	1	4
5	C	152/157 (97%)	111 (73%)	41 (27%)	0	1
6	D	141/153 (92%)	120 (85%)	21 (15%)	3	13
7	E	132/136 (97%)	110 (83%)	22 (17%)	2	10
8	G	115/119 (97%)	82 (71%)	33 (29%)	0	1
9	H	102/103 (99%)	83 (81%)	19 (19%)	1	7
10	I	90/105 (86%)	63 (70%)	27 (30%)	0	1
11	J	105/110 (96%)	72 (69%)	33 (31%)	0	1
12	K	92/93 (99%)	71 (77%)	21 (23%)	1	3
13	L	73/74 (99%)	53 (73%)	20 (27%)	0	1
14	M	93/98 (95%)	64 (69%)	29 (31%)	0	1
15	N	95/96 (99%)	67 (70%)	28 (30%)	0	1
16	O	70/78 (90%)	49 (70%)	21 (30%)	0	1
17	P	107/109 (98%)	84 (78%)	23 (22%)	1	4
18	Q	72/75 (96%)	55 (76%)	17 (24%)	1	3
19	R	89/91 (98%)	61 (68%)	28 (32%)	0	1
20	S	141/149 (95%)	114 (81%)	27 (19%)	1	6
21	T	52/55 (94%)	38 (73%)	14 (27%)	0	1
22	U	52/59 (88%)	42 (81%)	10 (19%)	1	6
23	V	48/49 (98%)	38 (79%)	10 (21%)	1	4
24	W	48/48 (100%)	30 (62%)	18 (38%)	0	0
25	Z	51/51 (100%)	39 (76%)	12 (24%)	1	3
26	1	21/44 (48%)	9 (43%)	12 (57%)	0	0
27	2	37/40 (92%)	31 (84%)	6 (16%)	2	10
28	3	40/50 (80%)	17 (42%)	23 (58%)	0	0

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	2361/2509 (94%)	1768 (75%)	593 (25%)	<b>0</b> <b>2</b>

5 of 593 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
20	S	8	ARG
28	3	8	LYS
20	S	101	THR
20	S	6	LYS
23	V	57	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 22 such sidechains are listed below:

Mol	Chain	Res	Type
17	P	13	GLN
19	R	9	HIS
17	P	115	ASN
19	R	10	HIS
7	E	65	HIS

### 5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	X	2725/2877 (94%)	801 (29%)	104 (3%)
2	Y	119/120 (99%)	29 (24%)	1 (0%)
All	All	2844/2997 (94%)	830 (29%)	105 (3%)

5 of 830 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	X	2	G
1	X	13	A
1	X	15	G
1	X	25	U
1	X	34	U

5 of 105 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	X	1474	A

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Mol	Chain	Res	Type
1	X	1799	A
1	X	2807	U
1	X	1524	C
1	X	1634	A

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

There are no non-standard protein/DNA/RNA residues in this entry.

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 346 ligands modelled in this entry, 345 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$
29	QTZ	X	2901	-	52,54,54	0.32	0	68,79,79	1.06	4 (5%)

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
29	QTZ	X	2901	-	-	15/57/103/103	0/3/4/4

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed( $^{\circ}$ )	Ideal( $^{\circ}$ )
29	X	2901	QTZ	O12-C12-C11	3.23	123.38	115.37
29	X	2901	QTZ	C5-C4-C3	2.90	118.89	109.52
29	X	2901	QTZ	C13-C12-C11	-2.29	115.58	122.47
29	X	2901	QTZ	C25-C24-N1	-2.22	109.40	115.67

There are no chirality outliers.

5 of 15 torsion outliers are listed below:

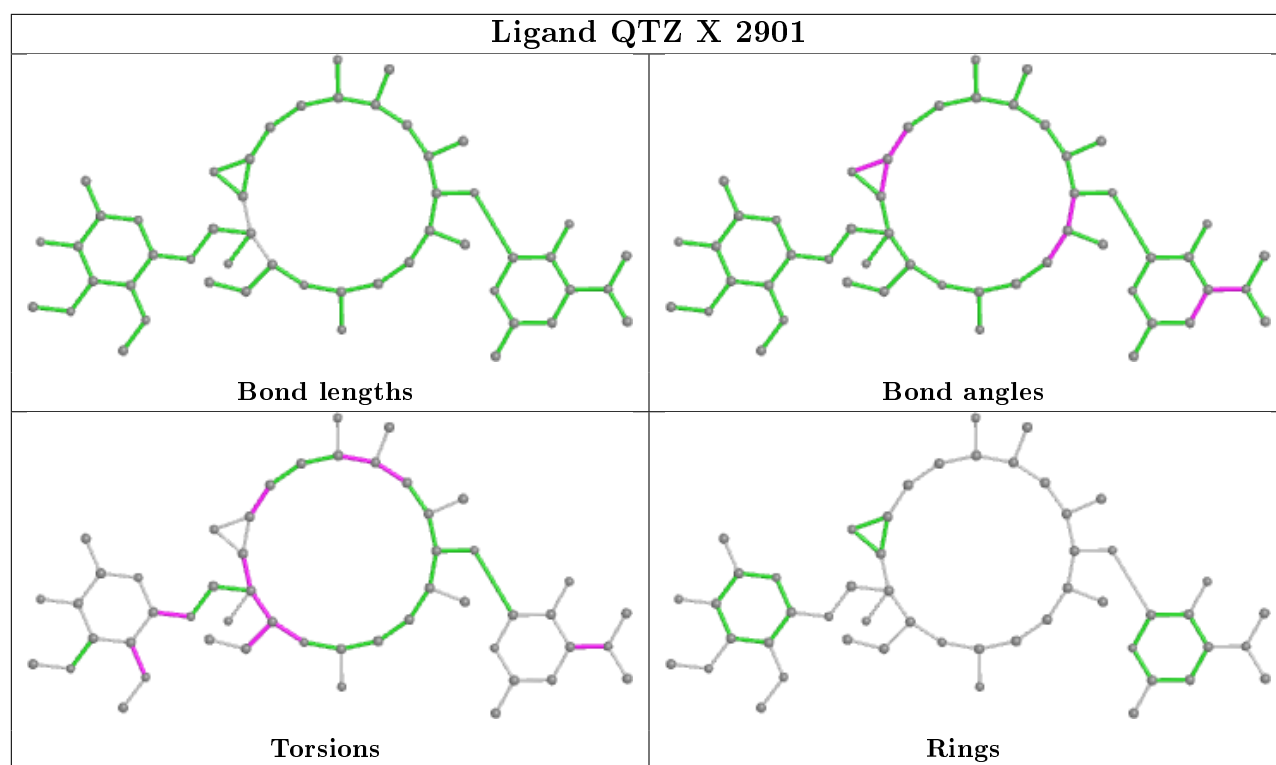
Mol	Chain	Res	Type	Atoms
29	X	2901	QTZ	C10-C11-C12-C13
29	X	2901	QTZ	C10-C11-C12-O12
29	X	2901	QTZ	C12-C13-C14-C21
29	X	2901	QTZ	C23-C24-N1-C29
29	X	2901	QTZ	C31-C30-O3-C21

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
29	X	2901	QTZ	2	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 6 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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	X	2730/2877 (94%)	-0.14	96 (3%) 44 42	60, 111, 218, 326	0
2	Y	120/120 (100%)	-0.35	0 100 100	119, 176, 204, 212	0
3	A	271/271 (100%)	0.17	11 (4%) 37 35	97, 129, 158, 168	0
4	B	206/206 (100%)	-0.15	1 (0%) 91 91	71, 83, 105, 129	0
5	C	197/197 (100%)	0.23	15 (7%) 13 13	91, 137, 162, 205	0
6	D	177/177 (100%)	0.39	23 (12%) 3 3	190, 209, 236, 255	0
7	E	171/171 (100%)	0.57	24 (14%) 2 2	116, 158, 215, 221	0
8	G	143/143 (100%)	0.26	12 (8%) 11 10	82, 109, 128, 147	0
9	H	134/134 (100%)	-0.29	1 (0%) 87 88	73, 83, 97, 108	0
10	I	137/137 (100%)	0.29	12 (8%) 10 10	94, 146, 163, 170	0
11	J	136/136 (100%)	0.26	6 (4%) 34 33	123, 142, 160, 166	0
12	K	116/116 (100%)	-0.25	0 100 100	60, 70, 80, 87	0
13	L	104/104 (100%)	0.59	13 (12%) 3 3	156, 174, 193, 206	0
14	M	113/113 (100%)	-0.03	7 (6%) 20 20	71, 84, 129, 151	0
15	N	117/117 (100%)	-0.11	1 (0%) 84 84	81, 107, 134, 147	0
16	O	98/98 (100%)	-0.15	2 (2%) 65 64	95, 138, 176, 178	0
17	P	128/128 (100%)	-0.09	1 (0%) 86 86	68, 81, 126, 158	0
18	Q	93/93 (100%)	0.03	0 100 100	100, 123, 166, 170	0
19	R	110/110 (100%)	0.54	14 (12%) 3 3	105, 133, 180, 296	0
20	S	175/175 (100%)	1.29	51 (29%) 0 0	137, 177, 196, 209	0
21	T	74/74 (100%)	0.49	7 (9%) 8 8	126, 132, 152, 181	0
22	U	74/74 (100%)	0.10	4 (5%) 25 24	119, 143, 170, 178	0
23	V	61/61 (100%)	0.39	4 (6%) 18 18	130, 152, 208, 209	0
24	W	55/55 (100%)	1.16	10 (18%) 1 1	115, 132, 152, 155	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
25	Z	58/58 (100%)	-0.32	1 (1%) 70 68	71, 82, 130, 133	0
26	1	49/49 (100%)	0.44	7 (14%) 2 2	145, 153, 184, 185	0
27	2	47/47 (100%)	0.89	6 (12%) 3 3	91, 98, 114, 116	0
28	3	63/63 (100%)	0.07	2 (3%) 47 46	114, 131, 156, 158	0
All	All	5957/6104 (97%)	0.05	331 (5%) 24 23	60, 123, 207, 326	0

The worst 5 of 331 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	X	1090	C	11.0
10	I	67	ASN	10.0
1	X	1524	C	8.9
20	S	22	VAL	8.0
6	D	146	VAL	7.6

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

There are no non-standard protein/DNA/RNA residues in this entry.

## 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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
30	MG	Y	216	1/1	0.47	0.56	145,145,145,145	0
30	MG	X	3187	1/1	0.51	0.82	98,98,98,98	0
30	MG	X	3104	1/1	0.55	0.57	95,95,95,95	0
30	MG	X	3081	1/1	0.59	0.62	85,85,85,85	0
30	MG	X	3209	1/1	0.60	0.54	98,98,98,98	0
30	MG	X	3111	1/1	0.61	0.58	77,77,77,77	0
30	MG	Y	208	1/1	0.62	0.41	158,158,158,158	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
30	MG	X	3080	1/1	0.67	0.21	91,91,91,91	0
30	MG	X	3106	1/1	0.68	0.27	100,100,100,100	0
30	MG	X	3162	1/1	0.68	0.31	166,166,166,166	0
30	MG	X	3208	1/1	0.69	0.82	103,103,103,103	0
30	MG	X	3177	1/1	0.69	1.70	156,156,156,156	0
30	MG	X	3112	1/1	0.69	0.33	84,84,84,84	0
30	MG	X	3191	1/1	0.69	0.31	136,136,136,136	0
30	MG	X	3022	1/1	0.73	0.65	98,98,98,98	0
30	MG	X	3064	1/1	0.73	0.33	79,79,79,79	0
30	MG	X	3078	1/1	0.73	0.38	85,85,85,85	0
30	MG	X	3135	1/1	0.73	0.85	85,85,85,85	0
30	MG	X	3089	1/1	0.75	0.50	65,65,65,65	0
30	MG	X	3212	1/1	0.75	0.53	69,69,69,69	0
30	MG	X	3128	1/1	0.77	0.31	67,67,67,67	0
30	MG	X	3169	1/1	0.78	0.37	64,64,64,64	0
30	MG	X	3175	1/1	0.78	0.80	105,105,105,105	0
30	MG	X	3197	1/1	0.78	0.52	73,73,73,73	0
30	MG	X	3137	1/1	0.78	0.45	72,72,72,72	0
30	MG	X	3071	1/1	0.79	0.87	97,97,97,97	0
30	MG	X	2995	1/1	0.79	0.34	74,74,74,74	0
30	MG	K	201	1/1	0.79	0.35	71,71,71,71	0
30	MG	X	3216	1/1	0.80	0.13	75,75,75,75	0
30	MG	X	2999	1/1	0.80	0.84	102,102,102,102	0
30	MG	X	3059	1/1	0.80	0.43	57,57,57,57	0
30	MG	X	3166	1/1	0.80	0.26	49,49,49,49	0
30	MG	X	3113	1/1	0.81	0.67	99,99,99,99	0
30	MG	X	3041	1/1	0.82	0.40	91,91,91,91	0
30	MG	X	3051	1/1	0.82	0.53	92,92,92,92	0
30	MG	Y	210	1/1	0.82	0.21	125,125,125,125	0
30	MG	X	3108	1/1	0.82	2.20	104,104,104,104	0
30	MG	X	3079	1/1	0.82	0.40	69,69,69,69	0
30	MG	Y	206	1/1	0.83	0.72	120,120,120,120	0
30	MG	X	3067	1/1	0.83	0.72	59,59,59,59	0
30	MG	Y	209	1/1	0.83	0.53	103,103,103,103	0
30	MG	X	3034	1/1	0.83	0.60	63,63,63,63	0
30	MG	X	3088	1/1	0.83	0.22	48,48,48,48	0
30	MG	X	3201	1/1	0.83	0.42	81,81,81,81	0
30	MG	X	2994	1/1	0.84	0.77	79,79,79,79	0
30	MG	X	3127	1/1	0.84	0.41	60,60,60,60	0
30	MG	X	2954	1/1	0.84	0.28	86,86,86,86	0
30	MG	X	3172	1/1	0.84	0.49	63,63,63,63	0
30	MG	X	3098	1/1	0.84	0.59	97,97,97,97	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
30	MG	X	3176	1/1	0.84	0.29	129,129,129,129	0
30	MG	X	2962	1/1	0.84	0.39	71,71,71,71	0
30	MG	X	3154	1/1	0.85	0.38	123,123,123,123	0
30	MG	X	2989	1/1	0.85	0.22	68,68,68,68	0
30	MG	X	3204	1/1	0.85	1.13	76,76,76,76	0
30	MG	X	2960	1/1	0.85	0.91	73,73,73,73	0
30	MG	X	3054	1/1	0.85	0.72	83,83,83,83	0
30	MG	Y	215	1/1	0.85	0.21	123,123,123,123	0
30	MG	X	3147	1/1	0.85	0.84	85,85,85,85	0
30	MG	X	3215	1/1	0.85	0.20	91,91,91,91	0
30	MG	X	3168	1/1	0.86	0.21	60,60,60,60	0
30	MG	X	2951	1/1	0.86	1.11	100,100,100,100	0
30	MG	Y	207	1/1	0.86	0.52	96,96,96,96	0
30	MG	X	3170	1/1	0.86	0.31	69,69,69,69	0
30	MG	X	3146	1/1	0.86	0.30	73,73,73,73	0
30	MG	X	3039	1/1	0.86	0.25	64,64,64,64	0
30	MG	X	2924	1/1	0.86	0.30	75,75,75,75	0
30	MG	X	3017	1/1	0.86	0.57	57,57,57,57	0
30	MG	X	2927	1/1	0.86	0.48	100,100,100,100	0
30	MG	X	3056	1/1	0.87	0.71	102,102,102,102	0
30	MG	X	2985	1/1	0.87	0.88	77,77,77,77	0
30	MG	X	3047	1/1	0.87	0.72	84,84,84,84	0
30	MG	X	3210	1/1	0.87	0.70	107,107,107,107	0
30	MG	X	3120	1/1	0.87	0.24	83,83,83,83	0
30	MG	X	3038	1/1	0.87	0.57	110,110,110,110	0
30	MG	X	3010	1/1	0.87	0.74	70,70,70,70	0
30	MG	J	202	1/1	0.87	0.20	111,111,111,111	0
30	MG	Y	201	1/1	0.87	0.40	101,101,101,101	0
30	MG	2	101	1/1	0.87	0.38	77,77,77,77	0
30	MG	X	3035	1/1	0.88	0.56	68,68,68,68	0
30	MG	X	3107	1/1	0.88	0.85	82,82,82,82	0
30	MG	X	3173	1/1	0.88	0.24	80,80,80,80	0
30	MG	X	3015	1/1	0.88	0.40	64,64,64,64	0
30	MG	X	3194	1/1	0.88	0.24	75,75,75,75	0
30	MG	X	3050	1/1	0.89	0.30	70,70,70,70	0
30	MG	X	2970	1/1	0.89	0.54	123,123,123,123	0
30	MG	X	3040	1/1	0.89	0.11	60,60,60,60	0
30	MG	Y	213	1/1	0.89	1.37	107,107,107,107	0
30	MG	X	3000	1/1	0.89	0.50	83,83,83,83	0
30	MG	X	3031	1/1	0.89	0.21	95,95,95,95	0
30	MG	Y	202	1/1	0.89	0.36	95,95,95,95	0
30	MG	X	3063	1/1	0.89	0.39	61,61,61,61	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
30	MG	X	3188	1/1	0.89	0.30	79,79,79,79	0
30	MG	X	3152	1/1	0.90	0.42	82,82,82,82	0
30	MG	X	3217	1/1	0.90	0.52	60,60,60,60	0
30	MG	X	3087	1/1	0.90	0.24	65,65,65,65	0
30	MG	X	3016	1/1	0.90	0.33	65,65,65,65	0
30	MG	X	3114	1/1	0.90	0.56	75,75,75,75	0
30	MG	X	3167	1/1	0.90	0.26	49,49,49,49	0
30	MG	X	2982	1/1	0.90	0.58	93,93,93,93	0
30	MG	X	3002	1/1	0.90	0.64	79,79,79,79	0
30	MG	X	3053	1/1	0.90	0.54	68,68,68,68	0
30	MG	X	2963	1/1	0.90	0.49	48,48,48,48	0
30	MG	X	2950	1/1	0.90	0.43	52,52,52,52	0
30	MG	X	3174	1/1	0.90	0.19	88,88,88,88	0
30	MG	A	302	1/1	0.90	0.90	79,79,79,79	0
30	MG	X	3042	1/1	0.90	0.48	59,59,59,59	0
30	MG	X	3214	1/1	0.90	0.47	88,88,88,88	0
30	MG	X	3061	1/1	0.90	0.54	82,82,82,82	0
30	MG	X	3202	1/1	0.91	0.56	58,58,58,58	0
30	MG	X	3066	1/1	0.91	0.41	61,61,61,61	0
30	MG	X	3044	1/1	0.91	0.23	68,68,68,68	0
30	MG	X	3092	1/1	0.91	0.59	75,75,75,75	0
30	MG	X	3045	1/1	0.91	0.99	77,77,77,77	0
30	MG	X	3183	1/1	0.91	0.67	75,75,75,75	0
30	MG	X	3057	1/1	0.91	0.57	120,120,120,120	0
30	MG	X	2948	1/1	0.91	0.49	90,90,90,90	0
30	MG	X	2964	1/1	0.91	0.59	73,73,73,73	0
30	MG	X	3007	1/1	0.91	0.42	88,88,88,88	0
30	MG	X	3110	1/1	0.91	0.52	81,81,81,81	0
30	MG	X	2939	1/1	0.91	0.38	59,59,59,59	0
30	MG	X	2942	1/1	0.92	0.69	76,76,76,76	0
30	MG	X	2946	1/1	0.92	0.86	76,76,76,76	0
30	MG	X	2991	1/1	0.92	0.44	62,62,62,62	0
30	MG	X	3158	1/1	0.92	0.44	109,109,109,109	0
30	MG	X	3049	1/1	0.92	0.20	48,48,48,48	0
30	MG	X	2969	1/1	0.92	0.56	63,63,63,63	0
30	MG	X	3196	1/1	0.92	0.44	56,56,56,56	0
30	MG	X	3115	1/1	0.92	0.24	78,78,78,78	0
30	MG	X	3198	1/1	0.92	0.54	72,72,72,72	0
30	MG	X	2915	1/1	0.92	0.43	58,58,58,58	0
30	MG	Y	212	1/1	0.92	0.41	164,164,164,164	0
30	MG	X	3126	1/1	0.92	0.57	45,45,45,45	0
30	MG	X	3101	1/1	0.92	0.29	68,68,68,68	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
30	MG	X	2981	1/1	0.92	0.51	57,57,57,57	0
30	MG	X	3133	1/1	0.92	0.10	68,68,68,68	0
30	MG	A	303	1/1	0.92	0.72	88,88,88,88	0
30	MG	X	2911	1/1	0.92	0.50	33,33,33,33	0
30	MG	X	3027	1/1	0.92	0.26	60,60,60,60	0
30	MG	O	101	1/1	0.92	0.74	51,51,51,51	0
30	MG	X	3043	1/1	0.92	0.29	102,102,102,102	0
30	MG	X	2976	1/1	0.93	0.34	58,58,58,58	0
30	MG	X	3023	1/1	0.93	0.22	85,85,85,85	0
30	MG	X	2993	1/1	0.93	0.35	46,46,46,46	0
30	MG	X	2943	1/1	0.93	0.38	71,71,71,71	0
30	MG	X	3132	1/1	0.93	0.23	62,62,62,62	0
30	MG	X	3103	1/1	0.93	0.12	62,62,62,62	0
30	MG	X	3072	1/1	0.93	0.60	106,106,106,106	0
30	MG	X	3073	1/1	0.93	0.54	75,75,75,75	0
30	MG	X	3142	1/1	0.93	1.02	124,124,124,124	0
30	MG	Y	205	1/1	0.93	1.19	92,92,92,92	0
30	MG	X	3075	1/1	0.93	0.32	81,81,81,81	0
30	MG	X	3184	1/1	0.93	0.27	84,84,84,84	0
30	MG	X	3185	1/1	0.93	0.41	100,100,100,100	0
30	MG	X	3077	1/1	0.93	0.66	59,59,59,59	0
30	MG	X	3150	1/1	0.93	0.37	114,114,114,114	0
30	MG	X	2910	1/1	0.93	0.67	46,46,46,46	0
30	MG	X	2922	1/1	0.93	0.46	65,65,65,65	0
30	MG	X	3155	1/1	0.93	0.17	119,119,119,119	0
30	MG	X	3156	1/1	0.93	0.30	112,112,112,112	0
30	MG	X	3036	1/1	0.93	0.66	58,58,58,58	0
30	MG	X	3160	1/1	0.93	0.33	87,87,87,87	0
30	MG	X	3046	1/1	0.93	0.50	83,83,83,83	0
30	MG	X	3203	1/1	0.93	0.21	63,63,63,63	0
30	MG	X	2913	1/1	0.93	0.63	59,59,59,59	0
30	MG	X	3048	1/1	0.93	0.19	66,66,66,66	0
30	MG	X	2971	1/1	0.94	0.97	85,85,85,85	0
30	MG	X	3004	1/1	0.94	0.56	76,76,76,76	0
30	MG	X	2988	1/1	0.94	0.43	67,67,67,67	0
30	MG	X	3163	1/1	0.94	0.25	68,68,68,68	0
30	MG	X	3009	1/1	0.94	0.51	62,62,62,62	0
30	MG	X	3055	1/1	0.94	0.52	119,119,119,119	0
30	MG	X	2973	1/1	0.94	0.65	61,61,61,61	0
30	MG	X	3121	1/1	0.94	0.52	56,56,56,56	0
30	MG	X	3085	1/1	0.94	0.27	58,58,58,58	0
30	MG	X	2990	1/1	0.94	0.11	63,63,63,63	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
30	MG	X	3058	1/1	0.94	0.19	115,115,115,115	0
30	MG	X	2974	1/1	0.94	0.69	55,55,55,55	0
30	MG	X	2975	1/1	0.94	0.23	61,61,61,61	0
30	MG	X	3020	1/1	0.94	0.58	93,93,93,93	0
30	MG	Y	203	1/1	0.94	0.44	73,73,73,73	0
30	MG	X	3099	1/1	0.94	1.18	72,72,72,72	0
30	MG	X	3178	1/1	0.94	0.29	63,63,63,63	0
30	MG	X	3182	1/1	0.94	0.25	60,60,60,60	0
30	MG	X	3141	1/1	0.94	0.73	116,116,116,116	0
30	MG	X	2965	1/1	0.94	0.56	69,69,69,69	0
30	MG	X	3143	1/1	0.94	0.47	63,63,63,63	0
30	MG	X	2979	1/1	0.94	0.20	65,65,65,65	0
29	QTZ	X	2901	51/51	0.94	0.20	55,57,60,60	20
30	MG	X	3105	1/1	0.94	1.14	61,61,61,61	0
30	MG	X	3193	1/1	0.94	0.20	75,75,75,75	0
30	MG	X	3068	1/1	0.94	0.30	101,101,101,101	0
30	MG	X	3195	1/1	0.94	0.41	80,80,80,80	0
30	MG	X	3029	1/1	0.94	0.81	42,42,42,42	0
30	MG	X	2923	1/1	0.94	0.94	57,57,57,57	0
30	MG	X	3032	1/1	0.94	0.42	73,73,73,73	0
30	MG	X	3199	1/1	0.94	0.46	76,76,76,76	0
30	MG	X	3037	1/1	0.95	0.43	51,51,51,51	0
30	MG	X	3189	1/1	0.95	0.43	132,132,132,132	0
30	MG	X	3190	1/1	0.95	0.25	129,129,129,129	0
30	MG	X	3218	1/1	0.95	0.52	44,44,44,44	0
30	MG	X	3221	1/1	0.95	0.39	61,61,61,61	0
30	MG	X	3003	1/1	0.95	0.40	90,90,90,90	0
30	MG	X	3144	1/1	0.95	0.31	83,83,83,83	0
30	MG	X	3100	1/1	0.95	0.21	124,124,124,124	0
30	MG	Y	204	1/1	0.95	0.80	115,115,115,115	0
30	MG	X	2998	1/1	0.95	0.53	77,77,77,77	0
30	MG	X	2938	1/1	0.95	0.84	62,62,62,62	0
30	MG	X	3069	1/1	0.95	0.57	78,78,78,78	0
30	MG	X	3082	1/1	0.95	0.45	82,82,82,82	0
30	MG	X	3008	1/1	0.95	0.31	73,73,73,73	0
30	MG	X	3200	1/1	0.95	0.74	69,69,69,69	0
30	MG	X	3131	1/1	0.95	0.18	75,75,75,75	0
30	MG	X	2902	1/1	0.95	0.85	80,80,80,80	0
30	MG	X	3179	1/1	0.95	0.72	41,41,41,41	0
30	MG	X	3181	1/1	0.95	0.38	68,68,68,68	0
30	MG	X	2996	1/1	0.95	0.48	59,59,59,59	0
30	MG	X	3026	1/1	0.95	0.15	78,78,78,78	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
30	MG	X	3076	1/1	0.95	0.32	90,90,90,90	0
30	MG	X	3211	1/1	0.95	0.45	52,52,52,52	0
30	MG	X	3164	1/1	0.95	0.90	85,85,85,85	0
30	MG	X	3096	1/1	0.95	0.43	75,75,75,75	0
30	MG	X	2961	1/1	0.96	0.69	60,60,60,60	0
30	MG	X	3136	1/1	0.96	0.47	85,85,85,85	0
30	MG	X	2992	1/1	0.96	0.23	51,51,51,51	0
30	MG	X	3139	1/1	0.96	0.28	61,61,61,61	0
30	MG	X	2930	1/1	0.96	0.26	67,67,67,67	0
30	MG	X	3012	1/1	0.96	0.22	72,72,72,72	0
30	MG	X	3013	1/1	0.96	0.31	45,45,45,45	0
30	MG	X	2934	1/1	0.96	0.51	51,51,51,51	0
30	MG	X	3109	1/1	0.96	0.57	60,60,60,60	0
30	MG	X	2977	1/1	0.96	0.69	66,66,66,66	0
30	MG	X	3148	1/1	0.96	0.55	75,75,75,75	0
30	MG	X	3186	1/1	0.96	0.21	134,134,134,134	0
30	MG	X	3149	1/1	0.96	0.46	41,41,41,41	0
30	MG	X	2918	1/1	0.96	0.86	63,63,63,63	0
30	MG	X	2920	1/1	0.96	0.08	66,66,66,66	0
30	MG	X	3021	1/1	0.96	0.60	63,63,63,63	0
30	MG	X	2968	1/1	0.96	0.24	62,62,62,62	0
30	MG	X	2984	1/1	0.96	0.60	76,76,76,76	0
30	MG	X	3118	1/1	0.96	0.17	70,70,70,70	0
30	MG	X	3090	1/1	0.96	0.29	69,69,69,69	0
30	MG	X	3024	1/1	0.96	0.33	83,83,83,83	0
30	MG	X	3122	1/1	0.96	0.17	68,68,68,68	0
30	MG	Y	214	1/1	0.96	0.66	94,94,94,94	0
30	MG	X	3094	1/1	0.96	0.90	104,104,104,104	0
30	MG	X	2926	1/1	0.96	0.38	48,48,48,48	0
30	MG	A	301	1/1	0.96	0.43	84,84,84,84	0
30	MG	X	2956	1/1	0.96	0.19	51,51,51,51	0
30	MG	X	3129	1/1	0.96	0.26	55,55,55,55	0
30	MG	X	3130	1/1	0.96	0.14	55,55,55,55	0
30	MG	X	3028	1/1	0.96	0.76	58,58,58,58	0
30	MG	X	2957	1/1	0.96	0.51	53,53,53,53	0
30	MG	X	2903	1/1	0.96	0.51	66,66,66,66	0
30	MG	X	3161	1/1	0.97	0.61	74,74,74,74	0
30	MG	X	2928	1/1	0.97	0.29	54,54,54,54	0
30	MG	X	3124	1/1	0.97	0.40	58,58,58,58	0
30	MG	X	3125	1/1	0.97	0.62	51,51,51,51	0
30	MG	X	3205	1/1	0.97	0.61	61,61,61,61	0
30	MG	X	3165	1/1	0.97	0.52	72,72,72,72	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
30	MG	X	3062	1/1	0.97	0.59	61,61,61,61	0
30	MG	X	3091	1/1	0.97	0.31	62,62,62,62	0
30	MG	X	2908	1/1	0.97	0.57	21,21,21,21	0
30	MG	X	3093	1/1	0.97	0.17	64,64,64,64	0
30	MG	X	3213	1/1	0.97	0.22	85,85,85,85	0
30	MG	X	2931	1/1	0.97	0.17	69,69,69,69	0
30	MG	X	3019	1/1	0.97	0.50	64,64,64,64	0
30	MG	X	2978	1/1	0.97	0.26	68,68,68,68	0
30	MG	X	2944	1/1	0.97	0.17	50,50,50,50	0
30	MG	X	3134	1/1	0.97	0.25	71,71,71,71	0
30	MG	X	3220	1/1	0.97	0.42	56,56,56,56	0
30	MG	X	2980	1/1	0.97	0.30	78,78,78,78	0
30	MG	X	2945	1/1	0.97	0.40	61,61,61,61	0
30	MG	X	3102	1/1	0.97	0.56	78,78,78,78	0
30	MG	X	2932	1/1	0.97	0.35	57,57,57,57	0
30	MG	X	3140	1/1	0.97	0.23	77,77,77,77	0
30	MG	X	2904	1/1	0.97	0.49	38,38,38,38	0
30	MG	X	2949	1/1	0.97	0.69	87,87,87,87	0
30	MG	X	2987	1/1	0.97	0.72	61,61,61,61	0
30	MG	X	2935	1/1	0.97	0.21	61,61,61,61	0
30	MG	X	3030	1/1	0.97	0.49	32,32,32,32	0
30	MG	X	2936	1/1	0.97	0.23	53,53,53,53	0
30	MG	X	2953	1/1	0.97	0.98	55,55,55,55	0
30	MG	X	3033	1/1	0.97	0.34	56,56,56,56	0
30	MG	X	3011	1/1	0.97	0.38	46,46,46,46	0
30	MG	X	3151	1/1	0.97	0.36	80,80,80,80	0
30	MG	X	3083	1/1	0.97	0.12	105,105,105,105	0
30	MG	X	3153	1/1	0.97	0.30	86,86,86,86	0
30	MG	X	3084	1/1	0.97	0.23	99,99,99,99	0
30	MG	X	2937	1/1	0.97	0.35	68,68,68,68	0
30	MG	X	3086	1/1	0.97	0.41	59,59,59,59	0
30	MG	X	2905	1/1	0.97	0.59	57,57,57,57	0
30	MG	X	3159	1/1	0.97	0.25	102,102,102,102	0
30	MG	X	3014	1/1	0.97	0.27	95,95,95,95	0
30	MG	X	2952	1/1	0.98	0.15	88,88,88,88	0
30	MG	X	2921	1/1	0.98	0.62	68,68,68,68	0
30	MG	X	3074	1/1	0.98	0.30	73,73,73,73	0
30	MG	X	3052	1/1	0.98	0.15	87,87,87,87	0
30	MG	X	2914	1/1	0.98	0.62	54,54,54,54	0
30	MG	X	3157	1/1	0.98	0.05	97,97,97,97	0
30	MG	X	3219	1/1	0.98	0.44	51,51,51,51	0
30	MG	X	2997	1/1	0.98	0.15	81,81,81,81	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
30	MG	X	2983	1/1	0.98	0.29	60,60,60,60	0
30	MG	X	2929	1/1	0.98	0.52	60,60,60,60	0
30	MG	X	2907	1/1	0.98	0.39	50,50,50,50	0
30	MG	X	3192	1/1	0.98	0.20	160,160,160,160	0
30	MG	X	3001	1/1	0.98	0.20	55,55,55,55	0
30	MG	X	2986	1/1	0.98	0.54	80,80,80,80	0
30	MG	X	3060	1/1	0.98	0.18	58,58,58,58	0
30	MG	X	2958	1/1	0.98	0.34	50,50,50,50	0
30	MG	X	3138	1/1	0.98	0.12	69,69,69,69	0
30	MG	X	2959	1/1	0.98	0.33	43,43,43,43	0
30	MG	X	3005	1/1	0.98	0.16	77,77,77,77	0
30	MG	Y	211	1/1	0.98	0.24	149,149,149,149	0
30	MG	X	3006	1/1	0.98	0.46	83,83,83,83	0
30	MG	X	3065	1/1	0.98	0.15	65,65,65,65	0
30	MG	X	2947	1/1	0.98	0.34	64,64,64,64	0
30	MG	X	2906	1/1	0.98	0.43	68,68,68,68	0
30	MG	X	3145	1/1	0.98	0.08	81,81,81,81	0
30	MG	X	3116	1/1	0.98	0.11	74,74,74,74	0
30	MG	X	3206	1/1	0.98	0.62	57,57,57,57	0
30	MG	X	2909	1/1	0.98	0.19	41,41,41,41	0
30	MG	I	201	1/1	0.98	0.13	60,60,60,60	0
30	MG	J	201	1/1	0.98	0.12	66,66,66,66	0
30	MG	X	2940	1/1	0.98	0.19	48,48,48,48	0
30	MG	X	3070	1/1	0.98	0.58	109,109,109,109	0
30	MG	X	2933	1/1	0.98	0.48	67,67,67,67	0
30	MG	X	3095	1/1	0.98	0.63	44,44,44,44	0
30	MG	X	3180	1/1	0.99	0.38	58,58,58,58	0
30	MG	X	3119	1/1	0.99	0.16	72,72,72,72	0
30	MG	X	2955	1/1	0.99	0.35	47,47,47,47	0
30	MG	X	3018	1/1	0.99	0.12	60,60,60,60	0
30	MG	X	2912	1/1	0.99	0.59	55,55,55,55	0
30	MG	X	3123	1/1	0.99	0.66	50,50,50,50	0
30	MG	X	3097	1/1	0.99	0.24	63,63,63,63	0
30	MG	X	2919	1/1	0.99	0.60	42,42,42,42	0
30	MG	X	2916	1/1	0.99	0.34	55,55,55,55	0
30	MG	X	2966	1/1	0.99	0.24	73,73,73,73	0
30	MG	X	2967	1/1	0.99	0.53	84,84,84,84	0
30	MG	X	3207	1/1	0.99	0.25	84,84,84,84	0
30	MG	X	2925	1/1	0.99	0.28	76,76,76,76	0
30	MG	X	3025	1/1	0.99	0.28	83,83,83,83	0
30	MG	X	2941	1/1	0.99	0.36	63,63,63,63	0
30	MG	X	3117	1/1	0.99	0.81	66,66,66,66	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
30	MG	X	2917	1/1	0.99	0.21	69,69,69,69	0
30	MG	X	3171	1/1	1.00	0.11	53,53,53,53	0
30	MG	X	2972	1/1	1.00	0.29	83,83,83,83	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.