



wwPDB X-ray Structure Validation Summary Report ⓘ

Mar 6, 2026 – 06:14 AM UTC

PDB ID : 1S72 / pdb_00001s72
Title : REFINED CRYSTAL STRUCTURE OF THE HALOARCUA MARISMORTUI LARGE RIBOSOMAL SUBUNIT AT 2.4 ANGSTROM RESOLUTION
Authors : Klein, D.J.; Schmeing, T.M.; Moore, P.B.; Steitz, T.A.
Deposited on : 2004-01-28
Resolution : 2.40 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

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0
EDS : 3.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

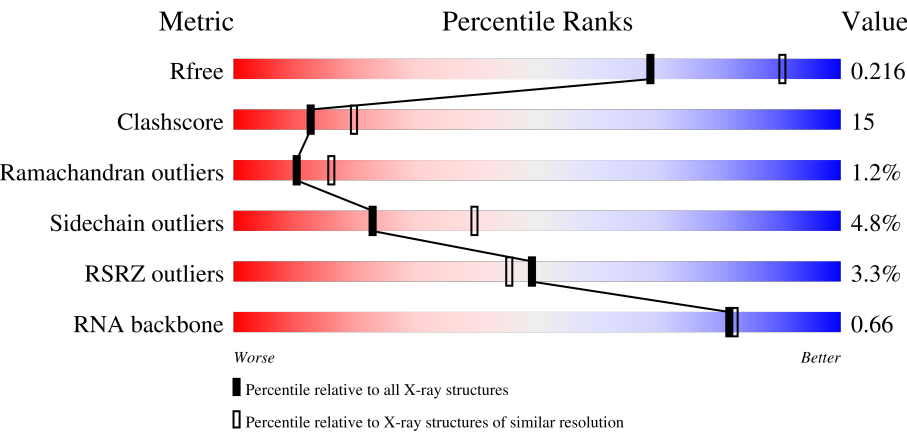
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.40 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R _{free}	180053	4912 (2.40-2.40)
Clashscore	190562	5391 (2.40-2.40)
Ramachandran outliers	187476	5320 (2.40-2.40)
Sidechain outliers	187428	5321 (2.40-2.40)
RSRZ outliers	180081	4916 (2.40-2.40)
RNA backbone	3983	1155 (2.70-2.10)

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 $\leq 5\%$. 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	0	2922	2% 65% 24% 5% 6%
2	9	122	3% 55% 36% 7%
3	A	240	2% 60% 32% 6%
4	B	338	54% 38% 7%

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Mol	Chain	Length	Quality of chain
5	C	246	
6	D	177	
7	E	178	
8	F	120	
9	G	348	
10	H	171	
11	I	162	
12	J	145	
13	K	132	
14	L	165	
15	M	194	
16	N	187	
17	O	116	
18	P	149	
19	Q	96	
20	R	155	
21	S	85	
22	T	120	
23	U	66	
24	V	71	
25	W	154	
26	X	92	
27	Y	241	
28	Z	73	
29	1	57	

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Mol	Chain	Length	Quality of chain
30	2	50	4% 54% 36% 8%
31	3	92	2% 62% 30% 7%

2 Entry composition

There are 37 unique types of molecules in this entry. The entry contains 99039 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 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	0	2754	Total	C	N	O	P	0	0	0
			59021	26350	10878	19048	2745			

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
0	560	C	U	conflict	GB 3377779
0	628	1MA	A	modified residue	GB 3377779
0	2587	OMU	U	modified residue	GB 3377779
0	2588	OMG	G	modified residue	GB 3377779
0	2619	UR3	U	modified residue	GB 3377779
0	2621	PSU	U	modified residue	GB 3377779

- Molecule 2 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	9	122	Total	C	N	O	P	0	0	0
			2600	1160	472	847	121			

- Molecule 3 is a protein called 50S ribosomal protein L2P.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	A	237	Total	C	N	O	S	0	0	0
			1753	1072	352	324	5			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	85	SER	ASP	conflict	UNP P20276
A	160	ALA	GLY	conflict	UNP P20276

- Molecule 4 is a protein called 50S ribosomal protein L3P.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	B	337	Total	C	N	O	S	0	0	0
			2625	1616	493	511	5			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	310	ARG	PRO	conflict	UNP P20279

- Molecule 5 is a protein called 50S ribosomal protein L4E.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	C	246	Total	C	N	O	S	0	0	0
			1859	1131	344	383	1			

- Molecule 6 is a protein called 50S ribosomal protein L5P.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	D	140	Total	C	N	O	S	0	0	0
			1094	685	195	210	4			

- Molecule 7 is a protein called 50S ribosomal protein L6P.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
7	E	172	Total	C	N	O	S	0	0	0
			1357	840	224	289	4			

- Molecule 8 is a protein called 50S ribosomal protein L7Ae.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
8	F	119	Total	C	N	O	S	0	0	0
			890	551	141	197	1			

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
F	103	GLU	ALA	conflict	UNP P12743
F	105	ASP	ALA	conflict	UNP P12743
F	106	ALA	THR	conflict	UNP P12743
F	107	ASP	VAL	conflict	UNP P12743
F	108	VAL	LEU	conflict	UNP P12743
F	110	ASP	GLU	conflict	UNP P12743

- Molecule 9 is a protein called Acidic ribosomal protein P0 homolog.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
9	G	29	Total	C	N	O	S	0	0	0
			240	149	39	51	1			

- Molecule 10 is a protein called 50S ribosomal protein L10e.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	H	160	Total	C	N	O	S	0	0	0
			1266	785	237	238	6			

- Molecule 11 is a protein called 50S ribosomal protein L11P.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
11	I	70	Total	C	N	O	S	0	0	0
			519	323	81	114	1			

- Molecule 12 is a protein called 50S ribosomal protein L13P.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
12	J	142	Total	C	N	O	S	0	0	0
			1120	696	199	222	3			

- Molecule 13 is a protein called 50S ribosomal protein L14P.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
13	K	132	Total	C	N	O	S	0	0	0
			992	609	187	192	4			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
K	44	LEU	HIS	conflict	UNP P22450

- Molecule 14 is a protein called 50S ribosomal protein L15P.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
14	L	145	Total	C	N	O	0	0	0
			1118	670	222	226			

- Molecule 15 is a protein called 50S ribosomal protein L15e.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
15	M	194	Total	C	N	O	S	0	0	0
			1560	943	332	284	1			

- Molecule 16 is a protein called 50S ribosomal protein L18P.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
16	N	186	Total	C	N	O	S	0	0	0
			1445	895	262	286	2			

- Molecule 17 is a protein called 50S ribosomal protein L18e.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
17	O	115	Total	C	N	O		0	0	0
			865	529	161	175				

- Molecule 18 is a protein called 50S ribosomal protein L19E.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
18	P	143	Total	C	N	O		0	0	0
			1136	683	229	224				

- Molecule 19 is a protein called 50S ribosomal protein L21e.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	Q	95	Total	C	N	O		0	0	0
			735	450	141	144				

- Molecule 20 is a protein called 50S ribosomal protein L22P.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
20	R	150	Total	C	N	O	S	0	0	0
			1149	713	209	223	4			

- Molecule 21 is a protein called 50S ribosomal protein L23P.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
21	S	81	Total	C	N	O	S	0	0	0
			641	389	111	138	3			

- Molecule 22 is a protein called 50S ribosomal protein L24P.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
22	T	119	Total	C	N	O	0	0	0
			950	568	180	202			

- Molecule 23 is a protein called 50S ribosomal protein L24E.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
23	U	53	Total	C	N	O	S	0	0	0
			410	244	75	86	5			

- Molecule 24 is a protein called 50S ribosomal protein L29P.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
24	V	65	Total	C	N	O	S	0	0	0
			499	304	94	100	1			

- Molecule 25 is a protein called 50S ribosomal protein L30P.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
25	W	154	Total	C	N	O	S	0	0	0
			1196	737	209	244	6			

- Molecule 26 is a protein called 50S ribosomal protein L31e.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
26	X	82	Total	C	N	O	S	0	0	0
			654	402	129	122	1			

- Molecule 27 is a protein called 50S ribosomal protein L32E.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
27	Y	142	Total	C	N	O	0	0	0
			1130	686	228	216			

- Molecule 28 is a protein called 50S ribosomal protein L37Ae.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
28	Z	73	Total	C	N	O	S	0	0	0
			579	346	116	112	5			

- Molecule 29 is a protein called 50S ribosomal protein L37e.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
29	1	56	Total	C	N	O	S	0	0	0
			431	258	86	83	4			

- Molecule 30 is a protein called 50S ribosomal protein L39e.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
30	2	46	Total	C	N	O	S	0	0	0
			396	239	89	67	1			

- Molecule 31 is a protein called 50S ribosomal protein L44E.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
31	3	92	Total	C	N	O	S	0	0	0
			755	458	153	137	7			

- Molecule 32 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
32	0	109	Total	Mg	0	0
			109	109		
32	9	1	Total	Mg	0	0
			1	1		
32	A	1	Total	Mg	0	0
			1	1		
32	B	1	Total	Mg	0	0
			1	1		
32	K	1	Total	Mg	0	0
			1	1		
32	T	1	Total	Mg	0	0
			1	1		
32	Y	1	Total	Mg	0	0
			1	1		
32	3	1	Total	Mg	0	0
			1	1		

- Molecule 33 is POTASSIUM ION (CCD ID: K) (formula: K).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
33	0	2	Total	K	0	0
			2	2		

- Molecule 34 is SODIUM ION (CCD ID: NA) (formula: Na).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
34	0	72	Total Na 72 72	0	0
34	9	2	Total Na 2 2	0	0
34	A	1	Total Na 1 1	0	0
34	C	1	Total Na 1 1	0	0
34	H	2	Total Na 2 2	0	0
34	J	1	Total Na 1 1	0	0
34	L	1	Total Na 1 1	0	0
34	M	1	Total Na 1 1	0	0
34	Q	1	Total Na 1 1	0	0
34	R	2	Total Na 2 2	0	0
34	S	1	Total Na 1 1	0	0
34	T	1	Total Na 1 1	0	0

- Molecule 35 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
35	0	10	Total Cl 10 10	0	0
35	A	1	Total Cl 1 1	0	0
35	B	1	Total Cl 1 1	0	0
35	J	3	Total Cl 3 3	0	0
35	L	1	Total Cl 1 1	0	0
35	M	1	Total Cl 1 1	0	0
35	N	1	Total Cl 1 1	0	0
35	O	1	Total Cl 1 1	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
35	R	1	Total 1	Cl 1	0	0
35	Y	1	Total 1	Cl 1	0	0
35	3	1	Total 1	Cl 1	0	0

- Molecule 36 is CADMIUM ION (CCD ID: CD) (formula: Cd).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
36	O	1	Total 1	Cd 1	0	0
36	U	1	Total 1	Cd 1	0	0
36	Z	1	Total 1	Cd 1	0	0
36	1	1	Total 1	Cd 1	0	0
36	3	1	Total 1	Cd 1	0	0

- Molecule 37 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
37	0	5893	Total 5893	O 5893	0	0
37	9	136	Total 136	O 136	0	0
37	A	127	Total 127	O 127	0	0
37	B	153	Total 153	O 153	0	0
37	C	172	Total 172	O 172	0	0
37	D	49	Total 49	O 49	0	0
37	E	44	Total 44	O 44	0	0
37	F	25	Total 25	O 25	0	0
37	G	20	Total 20	O 20	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
37	H	71	Total 71	O 71	0	0
37	I	9	Total 9	O 9	0	0
37	J	55	Total 55	O 55	0	0
37	K	61	Total 61	O 61	0	0
37	L	85	Total 85	O 85	0	0
37	M	121	Total 121	O 121	0	0
37	N	64	Total 64	O 64	0	0
37	O	44	Total 44	O 44	0	0
37	P	65	Total 65	O 65	0	0
37	Q	52	Total 52	O 52	0	0
37	R	83	Total 83	O 83	0	0
37	S	33	Total 33	O 33	0	0
37	T	40	Total 40	O 40	0	0
37	U	25	Total 25	O 25	0	0
37	V	14	Total 14	O 14	0	0
37	W	67	Total 67	O 67	0	0
37	X	28	Total 28	O 28	0	0
37	Y	96	Total 96	O 96	0	0
37	Z	29	Total 29	O 29	0	0
37	1	51	Total 51	O 51	0	0
37	2	40	Total 40	O 40	0	0

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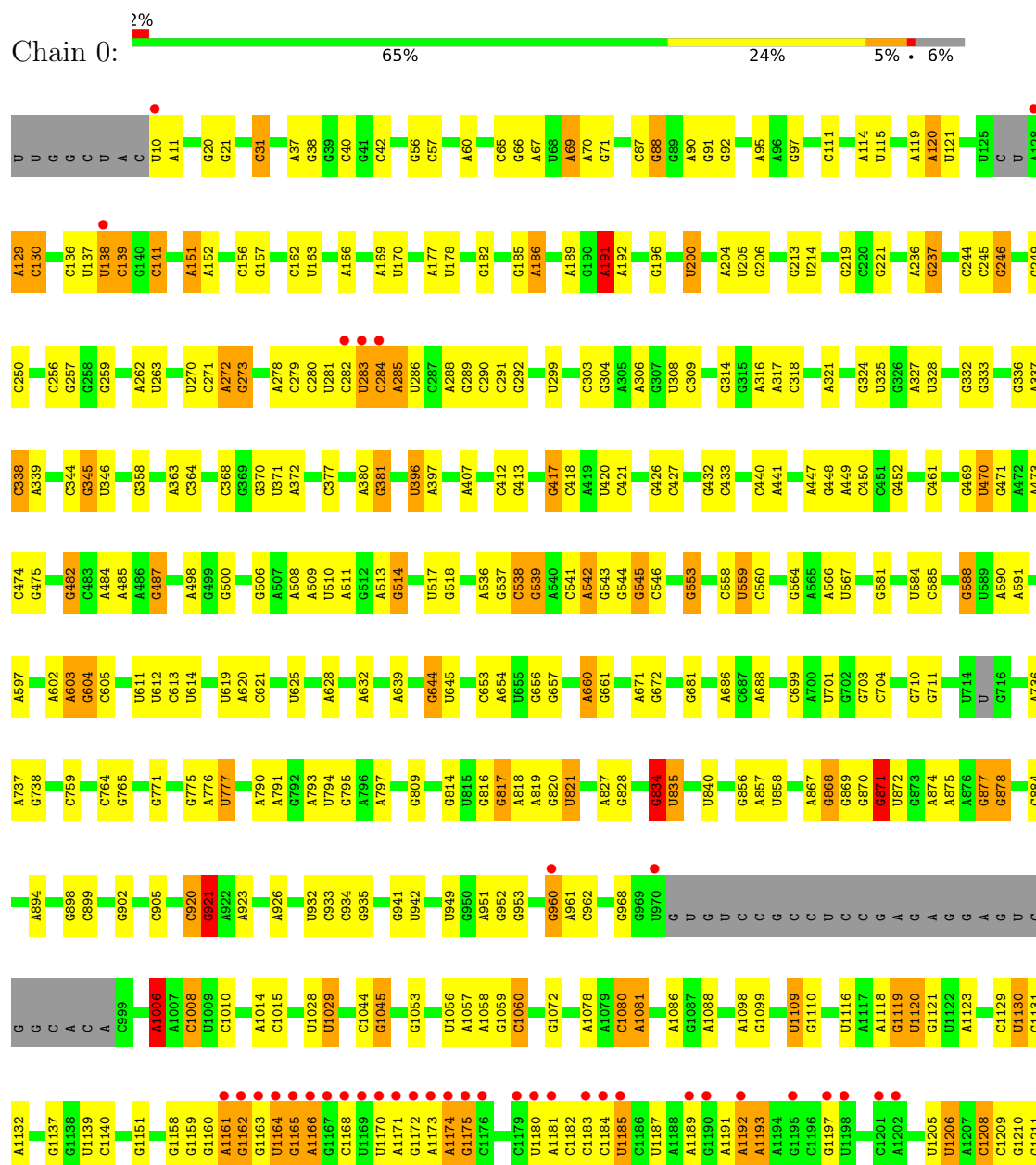
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
37	3	71	Total	O	0	0
			71	71		

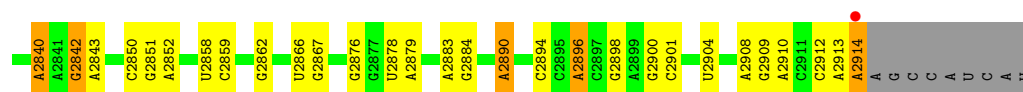
3 Residue-property plots

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.

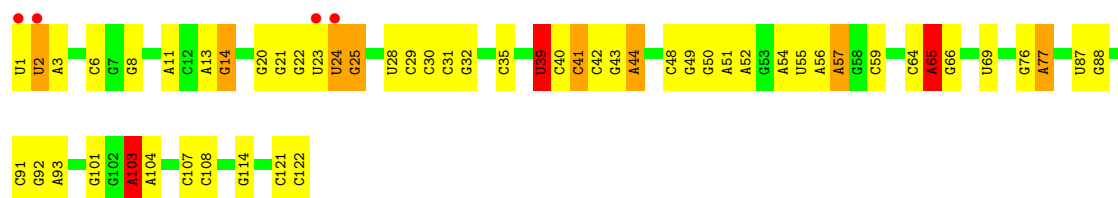
• Molecule 1: 23S ribosomal RNA



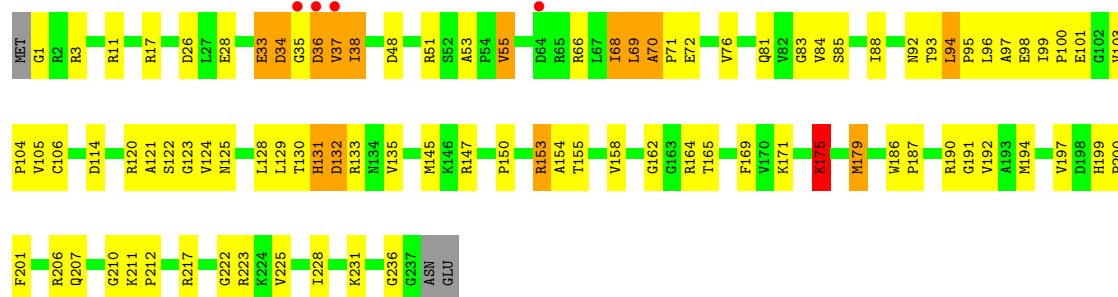




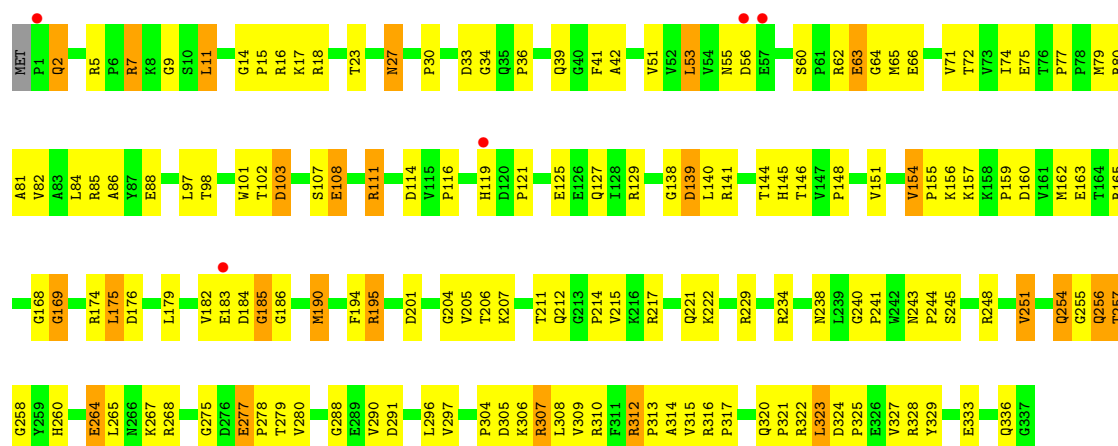
• Molecule 2: 5S ribosomal RNA



• Molecule 3: 50S ribosomal protein L2P

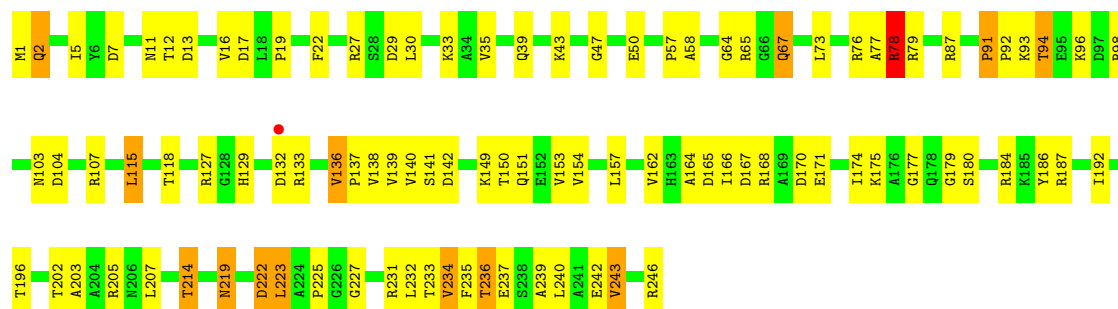


• Molecule 4: 50S ribosomal protein L3P

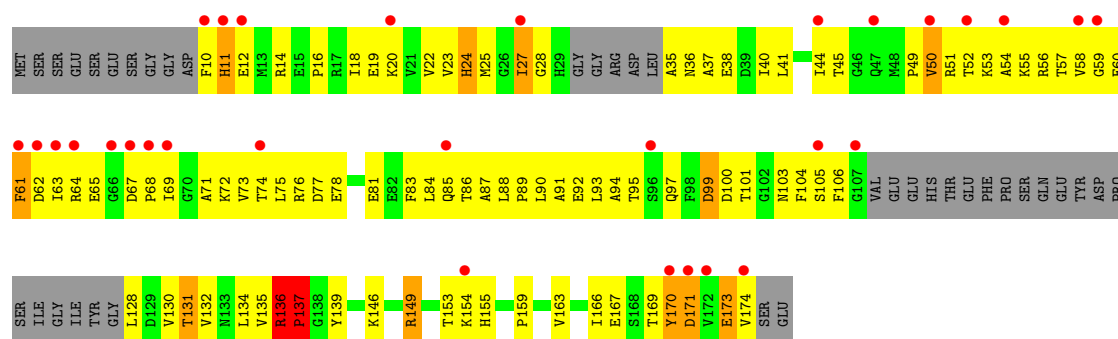


• Molecule 5: 50S ribosomal protein L4E

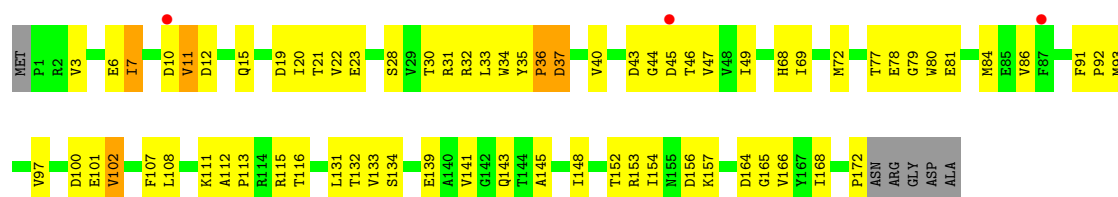




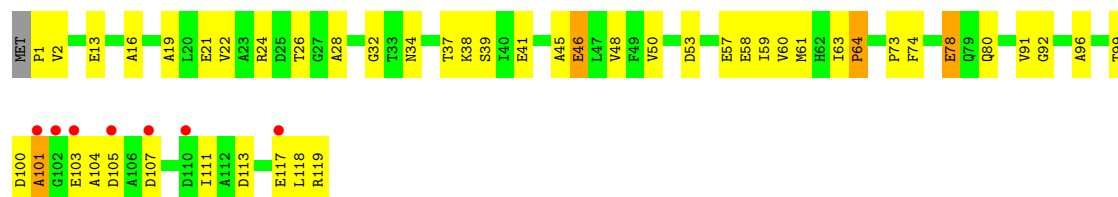
• Molecule 6: 50S ribosomal protein L5P



• Molecule 7: 50S ribosomal protein L6P

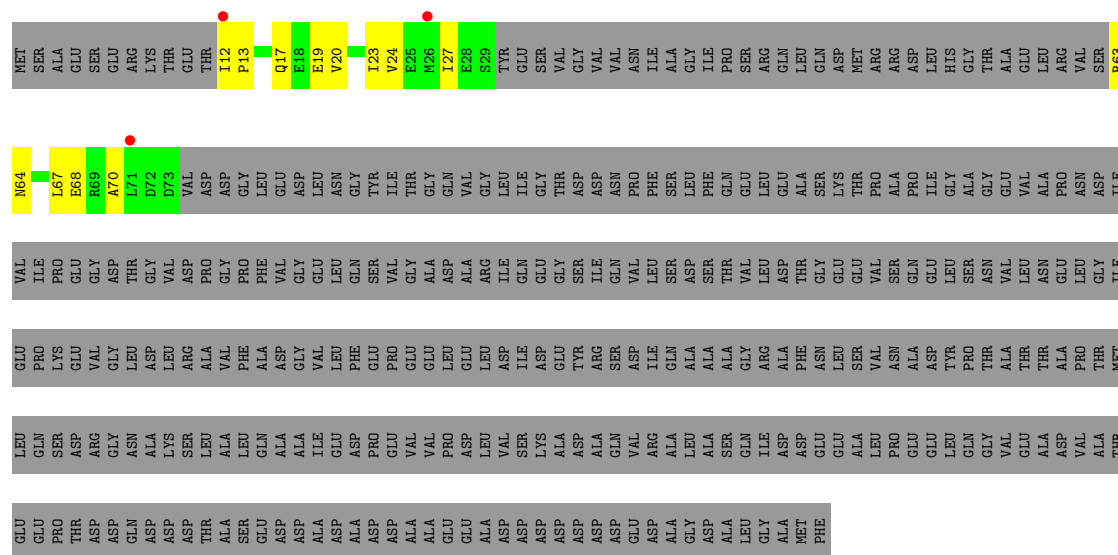


• Molecule 8: 50S ribosomal protein L7Ae



• Molecule 9: Acidic ribosomal protein P0 homolog

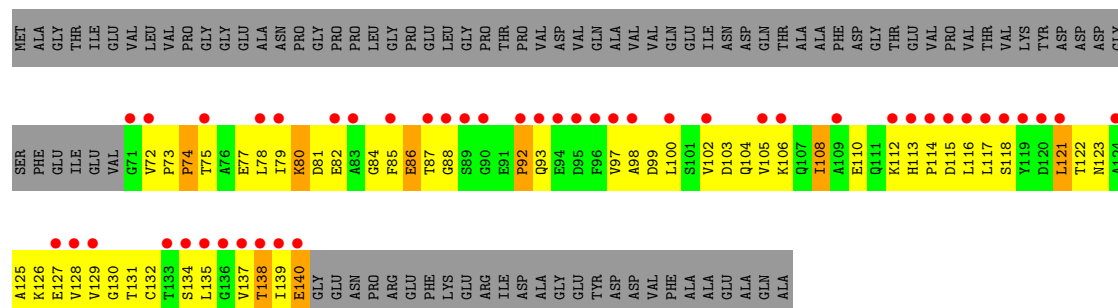
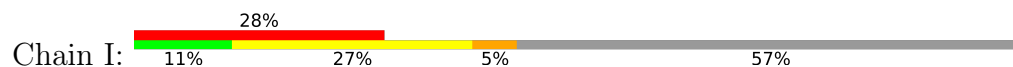




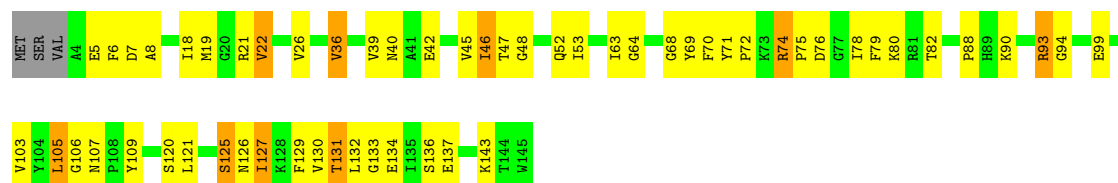
• Molecule 10: 50S ribosomal protein L10e



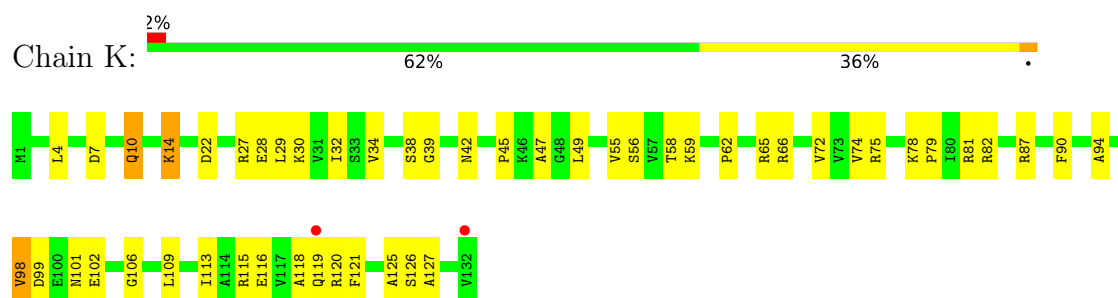
• Molecule 11: 50S ribosomal protein L11P



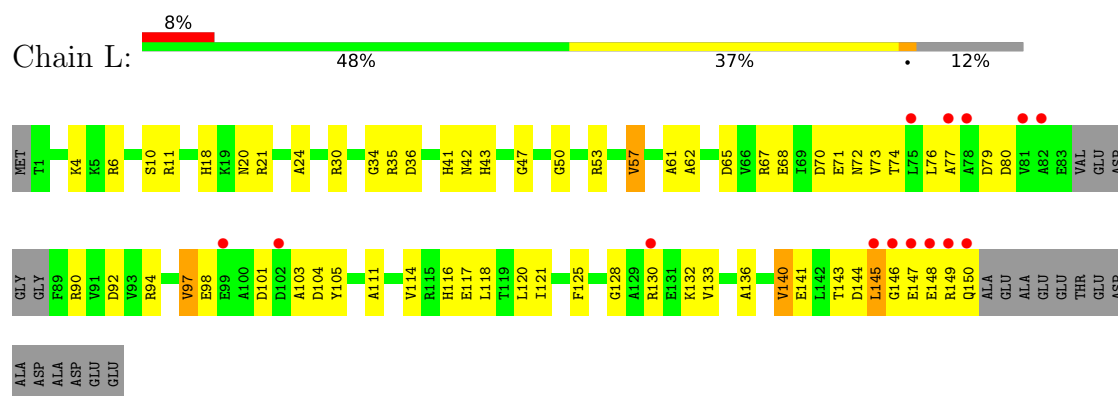
• Molecule 12: 50S ribosomal protein L13P



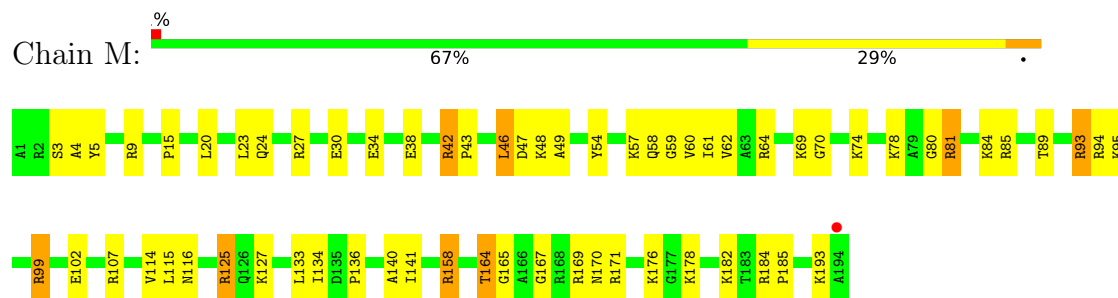
- Molecule 13: 50S ribosomal protein L14P



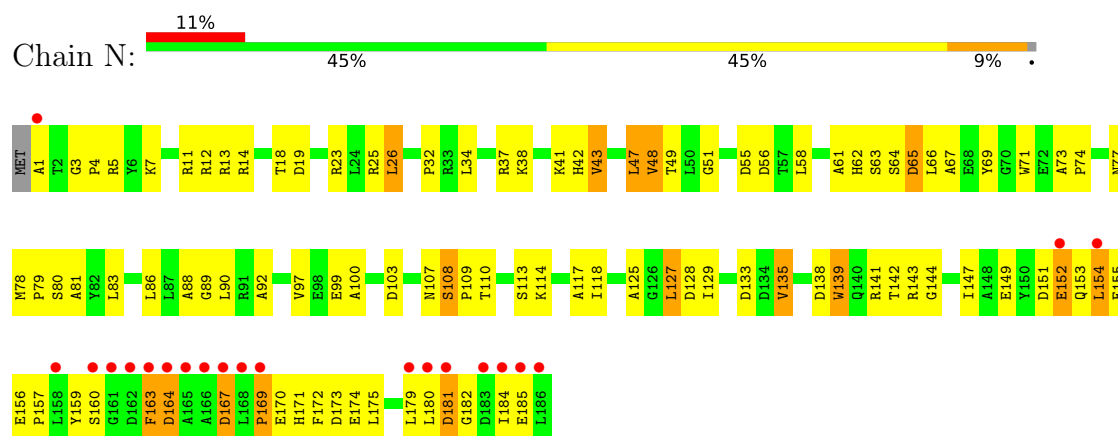
- Molecule 14: 50S ribosomal protein L15P



- Molecule 15: 50S ribosomal protein L15e



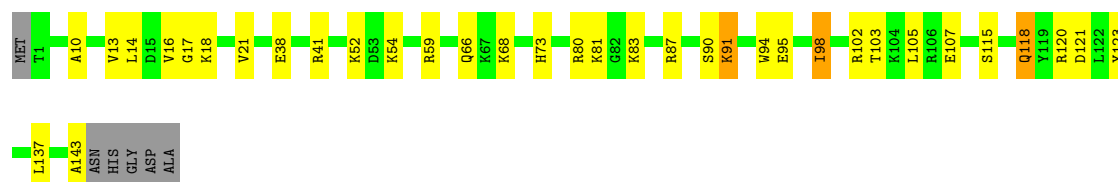
- Molecule 16: 50S ribosomal protein L18P



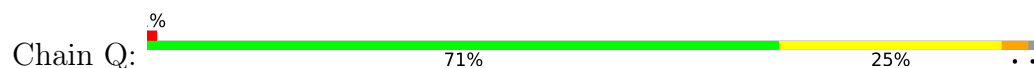
- Molecule 17: 50S ribosomal protein L18e



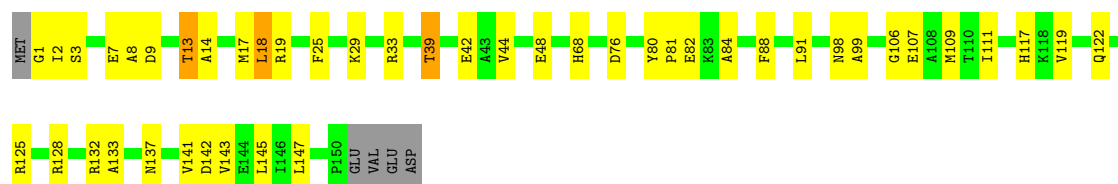
• Molecule 18: 50S ribosomal protein L19E



• Molecule 19: 50S ribosomal protein L21e



• Molecule 20: 50S ribosomal protein L22P

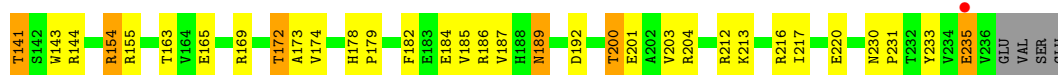


• Molecule 21: 50S ribosomal protein L23P



• Molecule 22: 50S ribosomal protein L24P





- Molecule 28: 50S ribosomal protein L37Ae



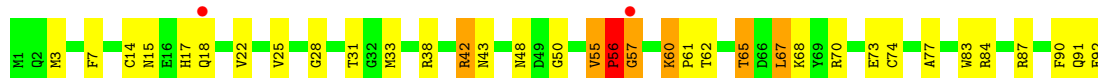
- Molecule 29: 50S ribosomal protein L37e



- Molecule 30: 50S ribosomal protein L39e



- Molecule 31: 50S ribosomal protein L44E



4 Data and refinement statistics

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α , β , γ	211.66Å 299.67Å 573.77Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	15.00 – 2.40 15.00 – 2.40	Depositor EDS
% Data completeness (in resolution range)	90.2 (15.00-2.40) 90.2 (15.00-2.40)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.37 (at 2.40Å)	Xtriage
Refinement program	CNS	Depositor
R, R_{free}	0.188 , 0.222 0.183 , 0.216	Depositor DCC
R_{free} test set	6547 reflections (0.98%)	wwPDB-VP
Wilson B-factor (Å ²)	38.9	Xtriage
Anisotropy	0.263	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.37 , 52.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	99039	wwPDB-VP
Average B, all atoms (Å ²)	44.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.50% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical 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: CD, UR3, CL, OMG, OMU, MG, PSU, 1MA, NA, K

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	0	0.38	0/65959	0.62	34/102870 (0.0%)
2	9	0.38	0/2905	0.65	5/4528 (0.1%)
3	A	0.44	0/1786	1.00	7/2408 (0.3%)
4	B	0.43	0/2690	1.00	12/3652 (0.3%)
5	C	0.48	0/1884	0.99	9/2551 (0.4%)
6	D	0.36	0/1111	0.94	5/1498 (0.3%)
7	E	0.38	0/1382	0.87	2/1880 (0.1%)
8	F	0.43	0/901	0.89	1/1224 (0.1%)
9	G	0.36	0/241	0.77	0/324
10	H	0.38	0/1287	0.99	7/1725 (0.4%)
11	I	0.43	0/526	0.93	1/716 (0.1%)
12	J	0.41	0/1136	0.93	4/1530 (0.3%)
13	K	0.42	0/1001	0.99	3/1347 (0.2%)
14	L	0.40	0/1130	1.02	7/1509 (0.5%)
15	M	0.44	0/1584	0.93	6/2119 (0.3%)
16	N	0.46	0/1474	1.12	17/1999 (0.9%)
17	O	0.42	0/874	0.93	3/1181 (0.3%)
18	P	0.41	0/1147	0.84	2/1528 (0.1%)
19	Q	0.44	0/749	1.06	5/1005 (0.5%)
20	R	0.45	0/1172	0.98	5/1578 (0.3%)
21	S	0.39	0/648	0.90	3/875 (0.3%)
22	T	0.39	0/958	0.96	5/1289 (0.4%)
23	U	0.37	0/417	0.86	0/562
24	V	0.39	0/502	0.98	3/675 (0.4%)
25	W	0.47	0/1219	1.00	5/1655 (0.3%)
26	X	0.43	0/664	0.99	1/895 (0.1%)
27	Y	0.43	0/1146	0.96	3/1536 (0.2%)
28	Z	0.39	0/590	0.96	1/787 (0.1%)
29	1	0.49	0/438	0.98	3/578 (0.5%)
30	2	0.44	0/401	0.75	0/529
31	3	0.42	0/771	0.96	5/1024 (0.5%)
All	All	0.40	0/98693	0.73	164/147577 (0.1%)

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
1	0	1	60
2	9	0	2
All	All	1	62

There are no bond length outliers.

The worst 5 of 164 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	0	1563	G	C2'-C3'-O3'	14.02	130.53	109.50
1	0	1979	G	C2'-C3'-O3'	11.54	126.82	109.50
1	0	1942	A	C5'-C4'-C3'	10.04	131.06	116.00
6	D	11	HIS	N-CA-C	9.18	120.98	110.97
31	3	55	VAL	CA-C-N	9.17	131.31	119.84

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	0	1563	G	C3'

5 of 62 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	0	191	A	Sidechain
1	0	196	G	Sidechain
1	0	221	G	Sidechain
1	0	246	G	Sidechain
1	0	270	U	Sidechain

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	59021	0	29813	713	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	9	2600	0	1326	54	0
3	A	1753	0	1766	106	0
4	B	2625	0	2533	171	0
5	C	1859	0	1816	111	0
6	D	1094	0	1085	123	0
7	E	1357	0	1266	80	0
8	F	890	0	843	58	0
9	G	240	0	231	17	0
10	H	1266	0	1268	81	0
11	I	519	0	500	74	0
12	J	1120	0	1098	69	0
13	K	992	0	1031	58	0
14	L	1118	0	1076	57	0
15	M	1560	0	1568	60	0
16	N	1445	0	1401	118	0
17	O	865	0	873	30	0
18	P	1136	0	1123	35	0
19	Q	735	0	728	18	0
20	R	1149	0	1122	46	0
21	S	641	0	605	20	0
22	T	950	0	923	49	0
23	U	410	0	364	31	0
24	V	499	0	511	31	0
25	W	1196	0	1137	102	0
26	X	654	0	653	40	0
27	Y	1130	0	1133	54	0
28	Z	579	0	539	27	0
29	1	431	0	426	21	0
30	2	396	0	413	28	0
31	3	755	0	728	30	0
32	0	109	0	0	0	0
32	3	1	0	0	0	0
32	9	1	0	0	0	0
32	A	1	0	0	0	0
32	B	1	0	0	0	0
32	K	1	0	0	0	0
32	T	1	0	0	0	0
32	Y	1	0	0	0	0
33	0	2	0	0	0	0
34	0	72	0	0	0	0
34	9	2	0	0	0	0
34	A	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
34	C	1	0	0	0	0
34	H	2	0	0	0	0
34	J	1	0	0	0	0
34	L	1	0	0	0	0
34	M	1	0	0	0	0
34	Q	1	0	0	0	0
34	R	2	0	0	0	0
34	S	1	0	0	0	0
34	T	1	0	0	0	0
35	0	10	0	0	0	0
35	3	1	0	0	0	0
35	A	1	0	0	0	0
35	B	1	0	0	0	0
35	J	3	0	0	1	0
35	L	1	0	0	0	0
35	M	1	0	0	0	0
35	N	1	0	0	0	0
35	O	1	0	0	0	0
35	R	1	0	0	0	0
35	Y	1	0	0	0	0
36	1	1	0	0	0	0
36	3	1	0	0	0	0
36	O	1	0	0	0	0
36	U	1	0	0	0	0
36	Z	1	0	0	0	0
37	0	5893	0	0	146	0
37	1	51	0	0	1	0
37	2	40	0	0	5	0
37	3	71	0	0	9	0
37	9	136	0	0	8	0
37	A	127	0	0	19	0
37	B	153	0	0	28	0
37	C	172	0	0	28	0
37	D	49	0	0	20	0
37	E	44	0	0	11	0
37	F	25	0	0	7	0
37	G	20	0	0	3	0
37	H	71	0	0	16	0
37	I	9	0	0	10	0
37	J	55	0	0	5	0
37	K	61	0	0	12	0
37	L	85	0	0	17	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
37	M	121	0	0	10	0
37	N	64	0	0	13	0
37	O	44	0	0	6	0
37	P	65	0	0	3	0
37	Q	52	0	0	2	0
37	R	83	0	0	8	0
37	S	33	0	0	5	0
37	T	40	0	0	5	0
37	U	25	0	0	4	0
37	V	14	0	0	4	0
37	W	67	0	0	10	0
37	X	28	0	0	3	0
37	Y	96	0	0	15	0
37	Z	29	0	0	5	0
All	All	99039	0	59899	2298	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 15.

The worst 5 of 2298 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)
5:C:236:THR:HG22	5:C:239:ALA:H	1.04	1.11
20:R:99:ALA:HB1	20:R:109:MET:HE1	1.29	1.10
1:O:1160:G:H5'	1:O:1161:A:H5'	1.26	1.09
26:X:37:LEU:HD13	26:X:85:VAL:HG21	1.31	1.09
1:O:960:G:H4'	37:O:6920:HOH:O	1.51	1.08

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	235/240 (98%)	217 (92%)	15 (6%)	3 (1%)	9	14
4	B	335/338 (99%)	314 (94%)	14 (4%)	7 (2%)	5	7
5	C	244/246 (99%)	224 (92%)	20 (8%)	0	100	100
6	D	134/177 (76%)	104 (78%)	23 (17%)	7 (5%)	1	1
7	E	170/178 (96%)	159 (94%)	10 (6%)	1 (1%)	21	32
8	F	117/120 (98%)	105 (90%)	10 (8%)	2 (2%)	7	10
9	G	25/348 (7%)	24 (96%)	1 (4%)	0	100	100
10	H	156/171 (91%)	145 (93%)	9 (6%)	2 (1%)	9	14
11	I	68/162 (42%)	53 (78%)	12 (18%)	3 (4%)	2	1
12	J	140/145 (97%)	132 (94%)	5 (4%)	3 (2%)	5	7
13	K	130/132 (98%)	120 (92%)	8 (6%)	2 (2%)	8	12
14	L	141/165 (86%)	120 (85%)	20 (14%)	1 (1%)	18	28
15	M	192/194 (99%)	186 (97%)	6 (3%)	0	100	100
16	N	184/187 (98%)	171 (93%)	8 (4%)	5 (3%)	4	4
17	O	113/116 (97%)	108 (96%)	5 (4%)	0	100	100
18	P	141/149 (95%)	138 (98%)	3 (2%)	0	100	100
19	Q	93/96 (97%)	89 (96%)	4 (4%)	0	100	100
20	R	148/155 (96%)	143 (97%)	4 (3%)	1 (1%)	18	28
21	S	79/85 (93%)	75 (95%)	4 (5%)	0	100	100
22	T	117/120 (98%)	111 (95%)	6 (5%)	0	100	100
23	U	51/66 (77%)	47 (92%)	4 (8%)	0	100	100
24	V	63/71 (89%)	58 (92%)	3 (5%)	2 (3%)	3	3
25	W	152/154 (99%)	147 (97%)	4 (3%)	1 (1%)	18	28
26	X	80/92 (87%)	71 (89%)	7 (9%)	2 (2%)	4	5
27	Y	140/241 (58%)	140 (100%)	0	0	100	100
28	Z	71/73 (97%)	61 (86%)	9 (13%)	1 (1%)	9	13
29	1	54/57 (95%)	52 (96%)	2 (4%)	0	100	100
30	2	42/50 (84%)	42 (100%)	0	0	100	100
31	3	90/92 (98%)	86 (96%)	2 (2%)	2 (2%)	5	6
All	All	3705/4420 (84%)	3442 (93%)	218 (6%)	45 (1%)	10	16

5 of 45 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	B	139	ASP
6	D	137	PRO
6	D	173	GLU
10	H	166	SER
10	H	168	ALA

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	179/182 (98%)	167 (93%)	12 (7%)	15	26
4	B	282/283 (100%)	262 (93%)	20 (7%)	13	23
5	C	193/193 (100%)	179 (93%)	14 (7%)	13	22
6	D	117/148 (79%)	110 (94%)	7 (6%)	17	31
7	E	152/156 (97%)	148 (97%)	4 (3%)	40	63
8	F	93/94 (99%)	91 (98%)	2 (2%)	45	67
9	G	27/283 (10%)	27 (100%)	0	100	100
10	H	132/138 (96%)	124 (94%)	8 (6%)	17	30
11	I	58/130 (45%)	53 (91%)	5 (9%)	10	16
12	J	118/121 (98%)	111 (94%)	7 (6%)	18	31
13	K	106/106 (100%)	103 (97%)	3 (3%)	38	60
14	L	113/127 (89%)	110 (97%)	3 (3%)	39	62
15	M	158/158 (100%)	152 (96%)	6 (4%)	29	49
16	N	149/150 (99%)	141 (95%)	8 (5%)	20	35
17	O	93/94 (99%)	88 (95%)	5 (5%)	20	35
18	P	113/117 (97%)	110 (97%)	3 (3%)	39	62
19	Q	79/80 (99%)	74 (94%)	5 (6%)	16	29
20	R	117/122 (96%)	114 (97%)	3 (3%)	40	63
21	S	71/74 (96%)	70 (99%)	1 (1%)	59	79
22	T	105/106 (99%)	100 (95%)	5 (5%)	23	40

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
23	U	44/52 (85%)	44 (100%)	0	100	100
24	V	51/57 (90%)	50 (98%)	1 (2%)	48	70
25	W	130/130 (100%)	122 (94%)	8 (6%)	16	29
26	X	66/74 (89%)	63 (96%)	3 (4%)	24	42
27	Y	120/196 (61%)	110 (92%)	10 (8%)	10	17
28	Z	60/60 (100%)	60 (100%)	0	100	100
29	1	46/47 (98%)	46 (100%)	0	100	100
30	2	42/46 (91%)	41 (98%)	1 (2%)	43	65
31	3	79/79 (100%)	75 (95%)	4 (5%)	21	37
All	All	3093/3603 (86%)	2945 (95%)	148 (5%)	23	40

5 of 148 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
21	S	10	VAL
30	2	18	ASN
22	T	48	VAL
26	X	15	ARG
6	D	99	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 108 such sidechains are listed below:

Mol	Chain	Res	Type
16	N	22	GLN
20	R	117	HIS
30	2	16	ASN
16	N	140	GLN
18	P	118	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	0	2746/2922 (93%)	251 (9%)	34 (1%)
2	9	121/122 (99%)	18 (14%)	2 (1%)
All	All	2867/3044 (94%)	269 (9%)	36 (1%)

5 of 269 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	0	11	A
1	0	31	C
1	0	60	A
1	0	67	A
1	0	69	A

5 of 36 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	0	2536	C
2	9	103	A
1	0	2649	A
1	0	2761	A
1	0	1080	C

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

5 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
1	1MA	0	628	1	21,25,26	0.72	1 (4%)	30,37,40	0.75	1 (3%)
1	OMG	0	2588	1	23,26,27	0.30	0	32,38,41	0.37	0
1	OMU	0	2587	1	19,22,23	0.21	0	25,31,34	0.41	0
1	PSU	0	2621	1	18,21,22	1.48	2 (11%)	21,30,33	1.30	3 (14%)
1	UR3	0	2619	1	19,22,23	0.49	0	26,32,35	0.73	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
1	1MA	0	628	1	-	2/7/25/26	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	OMG	0	2588	1	-	0/9/27/28	0/3/3/3
1	OMU	0	2587	1	-	0/9/27/28	0/2/2/2
1	PSU	0	2621	1	-	0/7/25/26	0/2/2/2
1	UR3	0	2619	1	-	0/7/25/26	0/2/2/2

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	0	2621	PSU	C2-N1	5.02	1.43	1.36
1	0	2621	PSU	C6-C5	2.96	1.38	1.35
1	0	628	1MA	C6-N6	2.48	1.34	1.28

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	0	2621	PSU	C6-N1-C2	-3.22	119.70	122.69
1	0	2621	PSU	C6-C5-C4	3.07	120.25	118.17
1	0	2621	PSU	O2-C2-N1	2.73	125.60	122.79
1	0	628	1MA	N1-C2-N3	2.73	129.24	126.00
1	0	2619	UR3	C4-N3-C2	2.69	126.75	124.58

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	0	628	1MA	C2'-C1'-N9-C8
1	0	628	1MA	C2'-C1'-N9-C4

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	0	2587	OMU	1	0

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 231 ligands modelled in this entry, 231 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	0	2749/2922 (94%)	-0.77	49 (1%) 67 63	18, 37, 80, 136	0
2	9	122/122 (100%)	-0.20	4 (3%) 49 45	32, 54, 75, 144	0
3	A	237/240 (98%)	-0.28	4 (1%) 69 65	20, 39, 73, 93	0
4	B	337/338 (99%)	-0.13	5 (1%) 72 68	21, 46, 72, 83	0
5	C	246/246 (100%)	-0.32	1 (0%) 88 86	15, 36, 58, 70	0
6	D	140/177 (79%)	1.32	30 (21%) 2 2	44, 89, 112, 117	0
7	E	172/178 (96%)	0.27	3 (1%) 69 65	38, 59, 78, 83	0
8	F	119/120 (99%)	0.52	7 (5%) 28 24	38, 58, 83, 90	0
9	G	29/348 (8%)	1.14	3 (10%) 12 9	65, 81, 89, 93	0
10	H	160/171 (93%)	-0.05	3 (1%) 66 62	32, 47, 77, 88	0
11	I	70/162 (43%)	2.67	46 (65%) 0 0	88, 102, 119, 122	0
12	J	142/145 (97%)	-0.18	0 100 100	30, 43, 63, 85	0
13	K	132/132 (100%)	-0.17	2 (1%) 72 68	28, 43, 62, 71	0
14	L	145/165 (87%)	0.20	14 (9%) 13 10	20, 55, 93, 106	0
15	M	194/194 (100%)	-0.62	1 (0%) 87 85	19, 32, 46, 54	0
16	N	186/187 (99%)	0.37	21 (11%) 10 7	32, 51, 94, 109	0
17	O	115/116 (99%)	-0.00	3 (2%) 57 53	28, 44, 61, 69	0
18	P	143/149 (95%)	-0.14	0 100 100	31, 45, 57, 64	0
19	Q	95/96 (98%)	-0.40	1 (1%) 78 74	27, 35, 52, 59	0
20	R	150/155 (96%)	-0.57	0 100 100	23, 36, 54, 63	0
21	S	81/85 (95%)	-0.10	0 100 100	32, 47, 68, 72	0
22	T	119/120 (99%)	0.00	2 (1%) 69 65	29, 46, 67, 82	0
23	U	53/66 (80%)	0.06	0 100 100	34, 47, 64, 73	0
24	V	65/71 (91%)	0.54	5 (7%) 19 16	40, 59, 99, 103	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
25	W	154/154 (100%)	-0.25	0 100 100	28, 42, 58, 67	0
26	X	82/92 (89%)	0.26	6 (7%) 21 17	36, 49, 74, 91	0
27	Y	142/241 (58%)	-0.35	1 (0%) 84 81	22, 36, 60, 75	0
28	Z	73/73 (100%)	0.19	3 (4%) 41 37	37, 49, 68, 85	0
29	1	56/57 (98%)	-0.85	0 100 100	18, 25, 33, 37	0
30	2	46/50 (92%)	0.19	2 (4%) 40 36	29, 50, 75, 86	0
31	3	92/92 (100%)	-0.08	2 (2%) 62 58	24, 45, 59, 73	0
All	All	6646/7464 (89%)	-0.32	218 (3%) 49 45	15, 42, 85, 144	0

The worst 5 of 218 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
11	I	133	THR	9.9
24	V	1	THR	7.5
11	I	96	PHE	6.5
26	X	88	GLU	6.4
3	A	37	VAL	6.3

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

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
1	OMU	0	2587	21/22	0.98	0.05	24,26,28,30	0
1	OMG	0	2588	24/25	0.98	0.05	22,25,27,30	0
1	UR3	0	2619	21/22	0.98	0.05	23,27,31,37	0
1	1MA	0	628	23/24	0.99	0.04	21,24,25,27	0
1	PSU	0	2621	20/21	0.99	0.04	20,25,28,28	0

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands ⓘ

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
32	MG	0	8087	1/1	0.62	0.24	71,71,71,71	0
32	MG	0	8102	1/1	0.70	0.10	54,54,54,54	0
32	MG	9	8095	1/1	0.73	0.24	67,67,67,67	0
34	NA	R	8386	1/1	0.75	0.25	75,75,75,75	0
32	MG	0	8050	1/1	0.76	0.08	62,62,62,62	0
34	NA	0	8370	1/1	0.81	0.24	60,60,60,60	0
32	MG	0	8070	1/1	0.81	0.06	41,41,41,41	0
34	NA	9	8351	1/1	0.83	0.18	43,43,43,43	0
34	NA	9	8383	1/1	0.84	0.18	44,44,44,44	0
34	NA	0	8340	1/1	0.85	0.13	46,46,46,46	0
32	MG	0	8090	1/1	0.85	0.10	55,55,55,55	0
34	NA	0	8376	1/1	0.85	0.10	40,40,40,40	0
32	MG	0	8103	1/1	0.86	0.09	57,57,57,57	0
34	NA	0	8307	1/1	0.86	0.07	42,42,42,42	0
34	NA	0	8329	1/1	0.86	0.08	50,50,50,50	0
32	MG	0	8105	1/1	0.87	0.06	43,43,43,43	0
32	MG	0	8101	1/1	0.87	0.11	48,48,48,48	0
34	NA	0	8324	1/1	0.88	0.18	51,51,51,51	0
34	NA	0	8366	1/1	0.88	0.10	57,57,57,57	0
34	NA	0	8384	1/1	0.88	0.10	54,54,54,54	0
32	MG	0	8082	1/1	0.89	0.15	59,59,59,59	0
34	NA	0	8311	1/1	0.90	0.09	48,48,48,48	0
34	NA	0	8350	1/1	0.90	0.08	36,36,36,36	0
34	NA	0	8364	1/1	0.90	0.11	38,38,38,38	0
32	MG	0	8076	1/1	0.90	0.04	43,43,43,43	0
32	MG	0	8094	1/1	0.90	0.13	62,62,62,62	0
32	MG	0	8047	1/1	0.91	0.11	55,55,55,55	0
34	NA	0	8369	1/1	0.91	0.11	41,41,41,41	0
32	MG	0	8043	1/1	0.91	0.06	34,34,34,34	0
34	NA	H	8322	1/1	0.91	0.14	53,53,53,53	0
34	NA	R	8337	1/1	0.91	0.05	34,34,34,34	0
32	MG	0	8066	1/1	0.91	0.15	76,76,76,76	0
34	NA	0	8371	1/1	0.92	0.14	52,52,52,52	0
34	NA	0	8357	1/1	0.92	0.06	40,40,40,40	0
34	NA	0	8358	1/1	0.92	0.39	67,67,67,67	0
34	NA	0	8341	1/1	0.92	0.08	38,38,38,38	0
34	NA	0	8373	1/1	0.93	0.06	44,44,44,44	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
34	NA	0	8363	1/1	0.93	0.12	52,52,52,52	0
34	NA	0	8314	1/1	0.93	0.08	39,39,39,39	0
32	MG	0	8113	1/1	0.93	0.04	36,36,36,36	0
34	NA	0	8327	1/1	0.93	0.11	38,38,38,38	0
32	MG	0	8049	1/1	0.93	0.08	55,55,55,55	0
34	NA	0	8330	1/1	0.93	0.08	38,38,38,38	0
34	NA	0	8372	1/1	0.93	0.12	55,55,55,55	0
32	MG	0	8093	1/1	0.94	0.05	37,37,37,37	0
32	MG	0	8104	1/1	0.94	0.04	47,47,47,47	0
32	MG	0	8046	1/1	0.94	0.05	38,38,38,38	0
34	NA	0	8379	1/1	0.94	0.15	49,49,49,49	0
32	MG	0	8112	1/1	0.94	0.06	38,38,38,38	0
32	MG	0	8099	1/1	0.94	0.05	43,43,43,43	0
32	MG	0	8072	1/1	0.94	0.06	51,51,51,51	0
34	NA	0	8336	1/1	0.94	0.04	37,37,37,37	0
32	MG	0	8092	1/1	0.94	0.10	68,68,68,68	0
34	NA	0	8310	1/1	0.94	0.08	28,28,28,28	0
32	MG	0	8114	1/1	0.95	0.04	37,37,37,37	0
34	NA	0	8334	1/1	0.95	0.08	35,35,35,35	0
34	NA	0	8374	1/1	0.95	0.09	44,44,44,44	0
34	NA	0	8360	1/1	0.95	0.07	43,43,43,43	0
34	NA	0	8362	1/1	0.95	0.09	51,51,51,51	0
34	NA	0	8381	1/1	0.95	0.06	42,42,42,42	0
34	NA	0	8382	1/1	0.95	0.07	66,66,66,66	0
32	MG	0	8116	1/1	0.95	0.08	38,38,38,38	0
34	NA	0	8385	1/1	0.95	0.16	48,48,48,48	0
32	MG	0	8091	1/1	0.95	0.04	42,42,42,42	0
32	MG	0	8062	1/1	0.95	0.07	42,42,42,42	0
34	NA	0	8349	1/1	0.95	0.07	36,36,36,36	0
34	NA	Q	8348	1/1	0.95	0.04	32,32,32,32	0
32	MG	0	8053	1/1	0.95	0.14	29,29,29,29	0
34	NA	0	8352	1/1	0.95	0.05	40,40,40,40	0
34	NA	S	8312	1/1	0.95	0.05	28,28,28,28	0
34	NA	0	8365	1/1	0.96	0.21	30,30,30,30	0
32	MG	0	8100	1/1	0.96	0.07	62,62,62,62	0
34	NA	0	8367	1/1	0.96	0.05	45,45,45,45	0
34	NA	0	8368	1/1	0.96	0.11	50,50,50,50	0
32	MG	0	8067	1/1	0.96	0.07	35,35,35,35	0
32	MG	0	8012	1/1	0.96	0.07	34,34,34,34	0
33	K	0	8201	1/1	0.96	0.12	64,64,64,64	0
34	NA	0	8335	1/1	0.96	0.06	32,32,32,32	0
34	NA	0	8302	1/1	0.96	0.10	45,45,45,45	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
32	MG	0	8071	1/1	0.96	0.05	61,61,61,61	0
32	MG	0	8048	1/1	0.96	0.04	40,40,40,40	0
34	NA	0	8377	1/1	0.96	0.08	51,51,51,51	0
34	NA	0	8378	1/1	0.96	0.12	42,42,42,42	0
34	NA	0	8342	1/1	0.96	0.05	33,33,33,33	0
32	MG	0	8064	1/1	0.96	0.04	26,26,26,26	0
34	NA	0	8313	1/1	0.96	0.05	48,48,48,48	0
32	MG	0	8051	1/1	0.96	0.07	56,56,56,56	0
34	NA	0	8356	1/1	0.96	0.10	37,37,37,37	0
34	NA	0	8316	1/1	0.96	0.07	37,37,37,37	0
34	NA	0	8318	1/1	0.96	0.11	51,51,51,51	0
34	NA	C	8304	1/1	0.96	0.04	32,32,32,32	0
34	NA	0	8319	1/1	0.96	0.03	29,29,29,29	0
34	NA	J	8346	1/1	0.96	0.04	36,36,36,36	0
34	NA	0	8361	1/1	0.96	0.06	38,38,38,38	0
32	MG	0	8085	1/1	0.96	0.06	35,35,35,35	0
34	NA	0	8325	1/1	0.96	0.08	49,49,49,49	0
34	NA	0	8326	1/1	0.96	0.06	38,38,38,38	0
35	CL	J	8502	1/1	0.96	0.04	53,53,53,53	0
35	CL	J	8521	1/1	0.96	0.06	48,48,48,48	0
32	MG	0	8096	1/1	0.97	0.04	38,38,38,38	0
34	NA	0	8375	1/1	0.97	0.18	43,43,43,43	0
32	MG	0	8024	1/1	0.97	0.03	23,23,23,23	0
32	MG	0	8052	1/1	0.97	0.04	47,47,47,47	0
34	NA	0	8321	1/1	0.97	0.12	40,40,40,40	0
32	MG	0	8089	1/1	0.97	0.05	52,52,52,52	0
34	NA	0	8359	1/1	0.97	0.08	40,40,40,40	0
32	MG	K	8069	1/1	0.97	0.04	47,47,47,47	0
32	MG	Y	8108	1/1	0.97	0.05	27,27,27,27	0
32	MG	3	8078	1/1	0.97	0.06	40,40,40,40	0
32	MG	0	8037	1/1	0.97	0.03	34,34,34,34	0
34	NA	0	8301	1/1	0.97	0.06	35,35,35,35	0
34	NA	0	8333	1/1	0.97	0.04	25,25,25,25	0
34	NA	H	8309	1/1	0.97	0.03	28,28,28,28	0
32	MG	0	8040	1/1	0.97	0.04	38,38,38,38	0
32	MG	0	8075	1/1	0.97	0.05	30,30,30,30	0
34	NA	L	8380	1/1	0.97	0.28	42,42,42,42	0
34	NA	M	8347	1/1	0.97	0.04	20,20,20,20	0
34	NA	0	8308	1/1	0.97	0.05	43,43,43,43	0
32	MG	0	8014	1/1	0.97	0.09	25,25,25,25	0
32	MG	0	8107	1/1	0.97	0.09	65,65,65,65	0
32	MG	0	8111	1/1	0.97	0.06	25,25,25,25	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
34	NA	T	8343	1/1	0.97	0.04	31,31,31,31	0
35	CL	0	8515	1/1	0.97	0.10	50,50,50,50	0
35	CL	0	8517	1/1	0.97	0.05	50,50,50,50	0
35	CL	A	8509	1/1	0.97	0.04	49,49,49,49	0
34	NA	0	8344	1/1	0.97	0.07	25,25,25,25	0
32	MG	0	8045	1/1	0.97	0.05	51,51,51,51	0
35	CL	L	8510	1/1	0.97	0.08	38,38,38,38	0
34	NA	0	8315	1/1	0.98	0.06	32,32,32,32	0
32	MG	0	8115	1/1	0.98	0.03	44,44,44,44	0
32	MG	0	8097	1/1	0.98	0.04	32,32,32,32	0
34	NA	0	8354	1/1	0.98	0.05	26,26,26,26	0
34	NA	0	8355	1/1	0.98	0.12	48,48,48,48	0
32	MG	0	8098	1/1	0.98	0.06	27,27,27,27	0
34	NA	0	8320	1/1	0.98	0.08	38,38,38,38	0
32	MG	B	8055	1/1	0.98	0.03	43,43,43,43	0
32	MG	0	8041	1/1	0.98	0.10	34,34,34,34	0
32	MG	T	8073	1/1	0.98	0.04	39,39,39,39	0
32	MG	0	8025	1/1	0.98	0.03	37,37,37,37	0
32	MG	0	8086	1/1	0.98	0.04	33,33,33,33	0
32	MG	0	8044	1/1	0.98	0.03	33,33,33,33	0
32	MG	0	8088	1/1	0.98	0.07	21,21,21,21	0
34	NA	0	8331	1/1	0.98	0.05	40,40,40,40	0
34	NA	0	8332	1/1	0.98	0.05	33,33,33,33	0
32	MG	0	8034	1/1	0.98	0.04	32,32,32,32	0
34	NA	0	8306	1/1	0.98	0.13	31,31,31,31	0
32	MG	0	8007	1/1	0.98	0.03	22,22,22,22	0
32	MG	0	8074	1/1	0.98	0.03	35,35,35,35	0
35	CL	0	8503	1/1	0.98	0.03	42,42,42,42	0
35	CL	0	8505	1/1	0.98	0.04	42,42,42,42	0
35	CL	0	8511	1/1	0.98	0.03	38,38,38,38	0
35	CL	0	8513	1/1	0.98	0.04	45,45,45,45	0
35	CL	0	8514	1/1	0.98	0.04	38,38,38,38	0
34	NA	0	8338	1/1	0.98	0.03	38,38,38,38	0
35	CL	0	8516	1/1	0.98	0.06	42,42,42,42	0
34	NA	0	8339	1/1	0.98	0.03	21,21,21,21	0
35	CL	0	8522	1/1	0.98	0.20	46,46,46,46	0
32	MG	0	8039	1/1	0.98	0.03	34,34,34,34	0
35	CL	B	8519	1/1	0.98	0.04	34,34,34,34	0
35	CL	J	8501	1/1	0.98	0.04	46,46,46,46	0
32	MG	0	8003	1/1	0.98	0.02	22,22,22,22	0
32	MG	0	8080	1/1	0.98	0.05	42,42,42,42	0
32	MG	0	8081	1/1	0.98	0.04	39,39,39,39	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
35	CL	M	8518	1/1	0.98	0.03	35,35,35,35	0
35	CL	R	8506	1/1	0.98	0.04	40,40,40,40	0
35	CL	Y	8520	1/1	0.98	0.06	39,39,39,39	0
36	CD	O	8405	1/1	0.98	0.04	73,73,73,73	0
32	MG	0	8068	1/1	0.99	0.03	45,45,45,45	0
32	MG	0	8106	1/1	0.99	0.02	31,31,31,31	0
32	MG	0	8035	1/1	0.99	0.02	37,37,37,37	0
34	NA	0	8328	1/1	0.99	0.09	30,30,30,30	0
32	MG	0	8109	1/1	0.99	0.02	26,26,26,26	0
32	MG	0	8110	1/1	0.99	0.05	32,32,32,32	0
32	MG	0	8036	1/1	0.99	0.03	36,36,36,36	0
32	MG	0	8011	1/1	0.99	0.02	24,24,24,24	0
32	MG	0	8038	1/1	0.99	0.02	23,23,23,23	0
32	MG	0	8006	1/1	0.99	0.05	27,27,27,27	0
32	MG	0	8013	1/1	0.99	0.03	22,22,22,22	0
32	MG	0	8077	1/1	0.99	0.02	24,24,24,24	0
34	NA	A	8345	1/1	0.99	0.03	47,47,47,47	0
32	MG	0	8079	1/1	0.99	0.02	20,20,20,20	0
32	MG	A	8065	1/1	0.99	0.05	24,24,24,24	0
32	MG	0	8002	1/1	0.99	0.04	28,28,28,28	0
32	MG	0	8042	1/1	0.99	0.06	29,29,29,29	0
32	MG	0	8015	1/1	0.99	0.02	27,27,27,27	0
32	MG	0	8016	1/1	0.99	0.04	32,32,32,32	0
32	MG	0	8017	1/1	0.99	0.03	13,13,13,13	0
32	MG	0	8018	1/1	0.99	0.03	29,29,29,29	0
33	K	0	8202	1/1	0.99	0.14	38,38,38,38	0
34	NA	0	8353	1/1	0.99	0.05	20,20,20,20	0
32	MG	0	8022	1/1	0.99	0.03	31,31,31,31	0
32	MG	0	8023	1/1	0.99	0.02	31,31,31,31	0
34	NA	0	8303	1/1	0.99	0.08	34,34,34,34	0
34	NA	0	8305	1/1	0.99	0.03	33,33,33,33	0
35	CL	0	8512	1/1	0.99	0.03	35,35,35,35	0
32	MG	0	8008	1/1	0.99	0.03	24,24,24,24	0
32	MG	0	8009	1/1	0.99	0.03	25,25,25,25	0
32	MG	0	8027	1/1	0.99	0.02	36,36,36,36	0
32	MG	0	8028	1/1	0.99	0.02	26,26,26,26	0
32	MG	0	8029	1/1	0.99	0.03	36,36,36,36	0
32	MG	0	8056	1/1	0.99	0.04	31,31,31,31	0
32	MG	0	8057	1/1	0.99	0.04	36,36,36,36	0
32	MG	0	8059	1/1	0.99	0.05	26,26,26,26	0
32	MG	0	8060	1/1	0.99	0.04	32,32,32,32	0
34	NA	0	8317	1/1	0.99	0.02	27,27,27,27	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
32	MG	0	8031	1/1	0.99	0.02	24,24,24,24	0
32	MG	0	8063	1/1	0.99	0.05	62,62,62,62	0
32	MG	0	8032	1/1	0.99	0.04	24,24,24,24	0
35	CL	N	8507	1/1	0.99	0.05	46,46,46,46	0
35	CL	O	8508	1/1	0.99	0.03	53,53,53,53	0
32	MG	0	8033	1/1	0.99	0.01	20,20,20,20	0
34	NA	0	8323	1/1	0.99	0.10	32,32,32,32	0
35	CL	3	8504	1/1	0.99	0.03	45,45,45,45	0
32	MG	0	8010	1/1	0.99	0.02	25,25,25,25	0
36	CD	U	8401	1/1	0.99	0.02	52,52,52,52	0
36	CD	Z	8403	1/1	0.99	0.04	48,48,48,48	0
36	CD	3	8404	1/1	0.99	0.01	49,49,49,49	0
32	MG	0	8004	1/1	1.00	0.02	22,22,22,22	0
32	MG	0	8054	1/1	1.00	0.02	18,18,18,18	0
32	MG	0	8030	1/1	1.00	0.03	22,22,22,22	0
32	MG	0	8083	1/1	1.00	0.02	30,30,30,30	0
32	MG	0	8084	1/1	1.00	0.04	39,39,39,39	0
32	MG	0	8005	1/1	1.00	0.02	24,24,24,24	0
32	MG	0	8058	1/1	1.00	0.03	28,28,28,28	0
32	MG	0	8001	1/1	1.00	0.02	25,25,25,25	0
32	MG	0	8019	1/1	1.00	0.01	25,25,25,25	0
32	MG	0	8061	1/1	1.00	0.01	34,34,34,34	0
32	MG	0	8026	1/1	1.00	0.01	27,27,27,27	0
32	MG	0	8020	1/1	1.00	0.02	25,25,25,25	0
36	CD	1	8402	1/1	1.00	0.06	44,44,44,44	0
32	MG	0	8021	1/1	1.00	0.02	24,24,24,24	0

6.5 Other polymers [i](#)

There are no such residues in this entry.