wwPDB X-ray Structure Validation Summary Report (i)

Aug 21, 2023 – 04:35 PM EDT

PDB ID	:	2OTL
Title	:	Girodazole bound to the large subunit of Haloarcula marismortui
Authors	:	Blaha, G.; Schroeder, S.J.; Tirado-Rives, J.
Deposited on	:	2007-02-08
Resolution	:	2.70 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 (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

The following versions of software and data (see references (1)) were used in the production of this report:

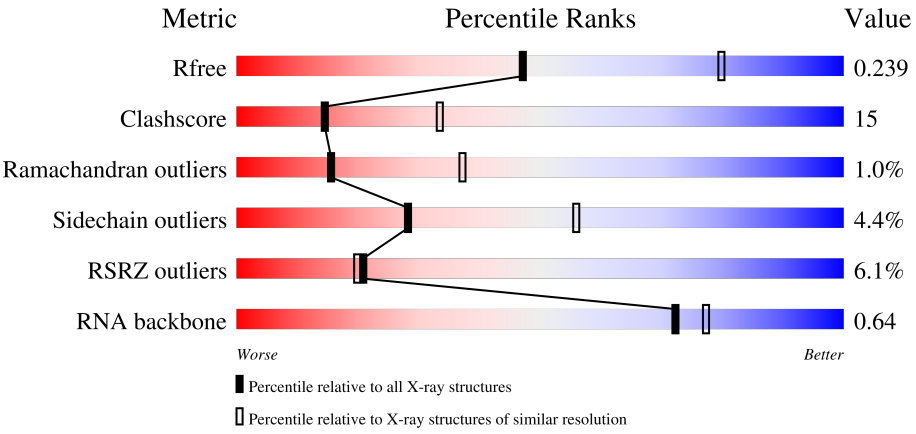
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35

1 Overall quality at a glance (i)

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

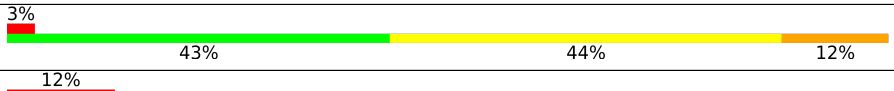
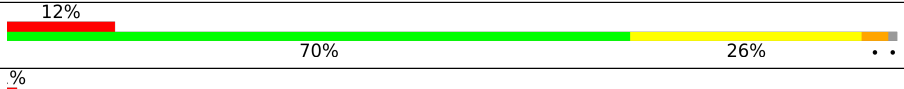
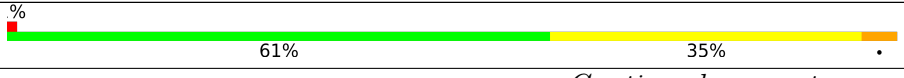
The reported resolution of this entry is 2.70 Å.

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	2808 (2.70-2.70)
Clashscore	141614	3122 (2.70-2.70)
Ramachandran outliers	138981	3069 (2.70-2.70)
Sidechain outliers	138945	3069 (2.70-2.70)
RSRZ outliers	127900	2737 (2.70-2.70)
RNA backbone	3102	1159 (3.00-2.40)

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

Mol	Chain	Length	Quality of chain
1	0	2922	
2	9	122	
3	A	239	
4	B	337	

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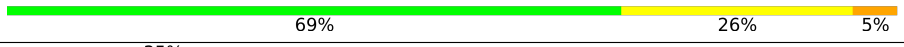
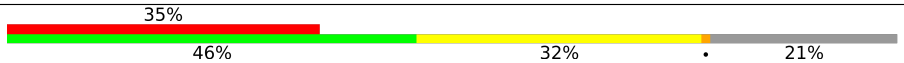
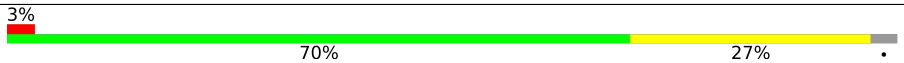
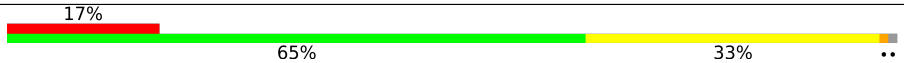
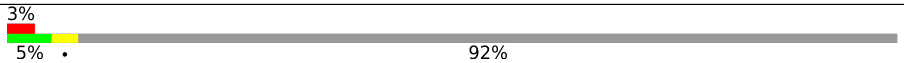
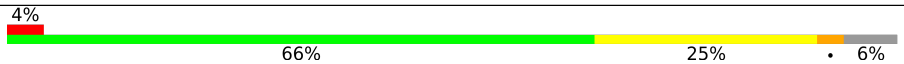
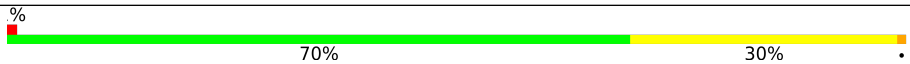
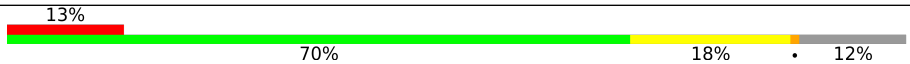
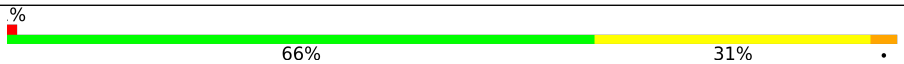
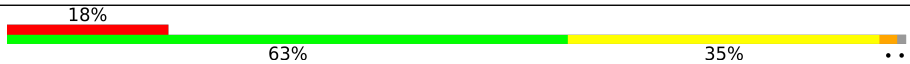
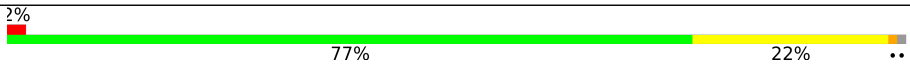
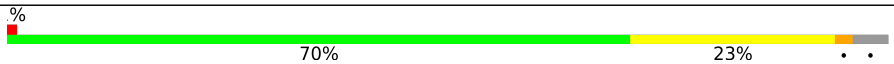
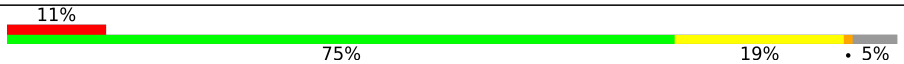
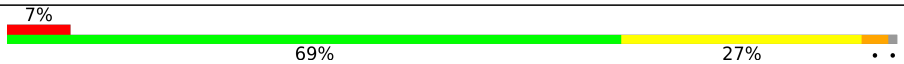
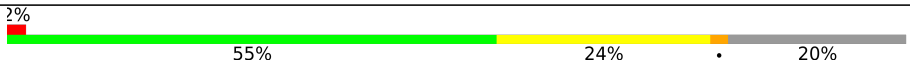
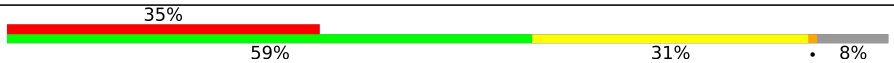
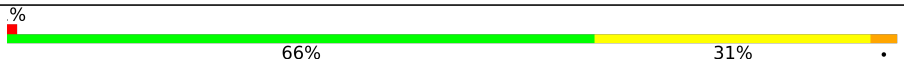
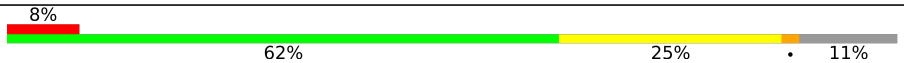
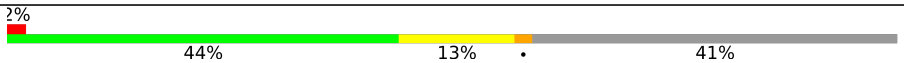
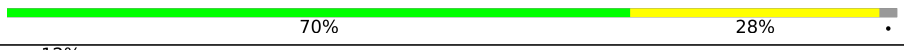
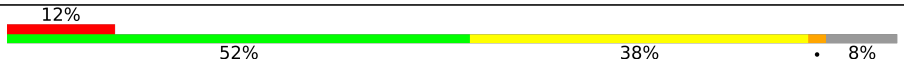
Mol	Chain	Length	Quality of chain
5	C	246	
6	D	177	
7	E	178	
8	F	120	
9	G	348	
10	H	171	
11	J	145	
12	K	132	
13	L	165	
14	M	194	
15	N	187	
16	O	116	
17	P	149	
18	Q	96	
19	R	155	
20	S	85	
21	T	120	
22	U	66	
23	V	71	
24	W	154	
25	X	92	
26	Y	241	
27	Z	73	
28	1	57	
29	2	50	

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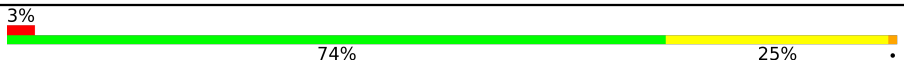
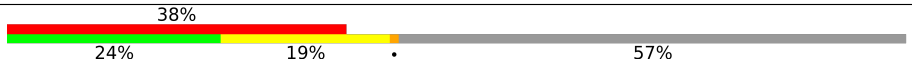
Mol	Chain	Length	Quality of chain
30	3	92	
31	I	162	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
33	MG	0	8090	-	-	-	X
35	NA	0	8529	-	-	-	X
35	NA	0	8571	-	-	-	X
35	NA	R	8586	-	-	-	X
36	CL	0	8713	-	-	X	-
36	CL	J	8701	-	-	X	-
36	CL	M	8718	-	-	X	-

2 Entry composition (i)

There are 38 unique types of molecules in this entry. The entry contains 99016 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
			Total	C	N	O	P			
1	0	2754	59021	26350	10878	19048	2745	0	0	0

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
			Total	C	N	O	P			
2	9	122	2600	1160	472	847	121	0	0	0

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

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

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

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

- Molecule 5 is a protein called 50S ribosomal protein L4P.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	73	LEU	GLN	conflict	UNP P12735

- 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			

- Molecule 9 is a protein called 50S ribosomal protein L10E.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	248	ASP	ALA	conflict	UNP P15825

- 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			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
H	164	ASP	-	insertion	UNP P60617
H	165	SER	-	insertion	UNP P60617
H	166	SER	-	insertion	UNP P60617
H	167	PRO	-	insertion	UNP P60617
H	168	ALA	-	insertion	UNP P60617
H	169	GLY	-	insertion	UNP P60617
H	170	ASN	-	insertion	UNP P60617
H	171	ALA	-	insertion	UNP P60617

- Molecule 11 is a protein called 50S ribosomal protein L13P.

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

- Molecule 12 is a protein called 50S ribosomal protein L14P.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
12	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 13 is a protein called 50S ribosomal protein L15P.

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

- Molecule 14 is a protein called 50S ribosomal protein L15e.

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

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
M	13	GLU	LYS	conflict	UNP P60618
M	194	ALA	-	insertion	UNP P60618

- Molecule 15 is a protein called 50S ribosomal protein L18P.

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

- Molecule 16 is a protein called 50S ribosomal protein L18e.

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

- Molecule 17 is a protein called 50S ribosomal protein L19e.

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

- Molecule 18 is a protein called 50S ribosomal protein L21e.

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

- Molecule 19 is a protein called 50S ribosomal protein L22P.

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

- Molecule 20 is a protein called 50S ribosomal protein L23P.

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

- Molecule 21 is a protein called 50S ribosomal protein L24P.

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

- Molecule 22 is a protein called 50S ribosomal protein L24e.

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

- Molecule 23 is a protein called 50S ribosomal protein L29P.

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

- Molecule 24 is a protein called 50S ribosomal protein L30P.

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

- Molecule 25 is a protein called 50S ribosomal protein L31e.

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

- Molecule 26 is a protein called 50S ribosomal protein L32e.

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

- Molecule 27 is a protein called 50S ribosomal protein L37Ae.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Z	10	ARG	-	insertion	UNP P60619

- Molecule 28 is a protein called 50S ribosomal protein L37e.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
28	1	56	Total	C	N	O	S	0	0	0
			430	258	86	82	4			

- Molecule 29 is a protein called 50S ribosomal protein L39e.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
29	2	46	Total	C	N	O	S	0	0	0
			396	239	89	67	1			

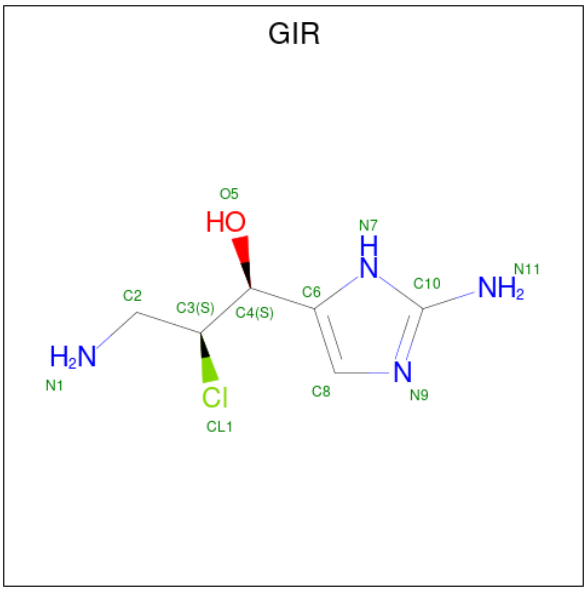
- Molecule 30 is a protein called 50S ribosomal protein L44E.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
30	3	92	Total	C	N	O	S	0	0	0
			755	458	153	137	7			

- Molecule 31 is a protein called 50S ribosomal protein L11P.

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

- Molecule 32 is GIRODAZOLE (three-letter code: GIR) (formula: $C_6H_{11}ClN_4O$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
32	0	1	Total C Cl N O 12 6 1 4 1	0	0

- Molecule 33 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
33	0	107	Total Mg 107 107	0	0
33	9	1	Total Mg 1 1	0	0
33	A	2	Total Mg 2 2	0	0
33	B	2	Total Mg 2 2	0	0
33	K	1	Total Mg 1 1	0	0
33	T	1	Total Mg 1 1	0	0
33	Y	1	Total Mg 1 1	0	0
33	3	1	Total Mg 1 1	0	0

- Molecule 34 is POTASSIUM ION (three-letter code: K) (formula: K).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
34	0	2	Total K 2 2	0	0

- Molecule 35 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
35	0	71	Total Na 71 71	0	0
35	9	2	Total Na 2 2	0	0
35	A	1	Total Na 1 1	0	0
35	C	1	Total Na 1 1	0	0
35	H	2	Total Na 2 2	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
35	J	1	Total Na 1 1	0	0
35	L	1	Total Na 1 1	0	0
35	M	1	Total Na 1 1	0	0
35	Q	1	Total Na 1 1	0	0
35	R	3	Total Na 3 3	0	0
35	S	1	Total Na 1 1	0	0

- Molecule 36 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
36	0	9	Total Cl 9 9	0	0
36	A	1	Total Cl 1 1	0	0
36	B	1	Total Cl 1 1	0	0
36	J	3	Total Cl 3 3	0	0
36	L	1	Total Cl 1 1	0	0
36	M	1	Total Cl 1 1	0	0
36	N	1	Total Cl 1 1	0	0
36	O	1	Total Cl 1 1	0	0
36	Q	1	Total Cl 1 1	0	0
36	R	1	Total Cl 1 1	0	0
36	Y	1	Total Cl 1 1	0	0
36	3	1	Total Cl 1 1	0	0

- Molecule 37 is CADMIUM ION (three-letter code: CD) (formula: Cd).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
37	O	1	Total Cd 1 1	0	0
37	U	1	Total Cd 1 1	0	0
37	Z	1	Total Cd 1 1	0	0
37	1	1	Total Cd 1 1	0	0
37	3	1	Total Cd 1 1	0	0

- Molecule 38 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
38	0	5893	Total O 5893 5893	0	0
38	9	145	Total O 145 145	0	0
38	A	118	Total O 118 118	0	0
38	B	147	Total O 147 147	0	0
38	C	163	Total O 163 163	0	0
38	D	48	Total O 48 48	0	0
38	E	46	Total O 46 46	0	0
38	F	23	Total O 23 23	0	0
38	G	19	Total O 19 19	0	0
38	H	69	Total O 69 69	0	0
38	J	58	Total O 58 58	0	0
38	K	58	Total O 58 58	0	0
38	L	81	Total O 81 81	0	0
38	M	115	Total O 115 115	0	0
38	N	58	Total O 58 58	0	0

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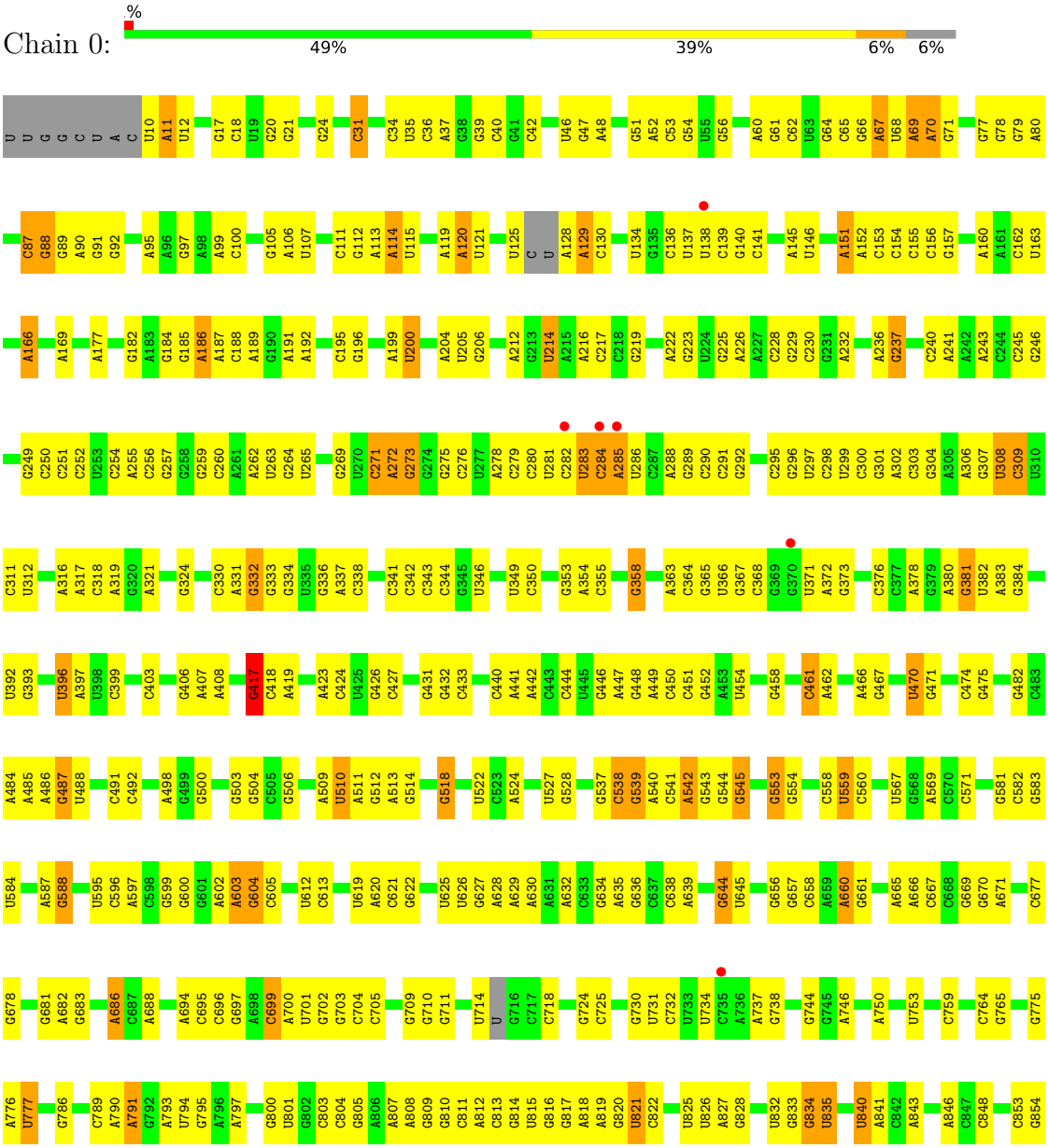
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
38	O	44	Total O 44 44	0	0
38	P	61	Total O 61 61	0	0
38	Q	55	Total O 55 55	0	0
38	R	81	Total O 81 81	0	0
38	S	37	Total O 37 37	0	0
38	T	39	Total O 39 39	0	0
38	U	28	Total O 28 28	0	0
38	V	11	Total O 11 11	0	0
38	W	70	Total O 70 70	0	0
38	X	26	Total O 26 26	0	0
38	Y	99	Total O 99 99	0	0
38	Z	32	Total O 32 32	0	0
38	1	56	Total O 56 56	0	0
38	2	40	Total O 40 40	0	0
38	3	66	Total O 66 66	0	0
38	I	4	Total O 4 4	0	0

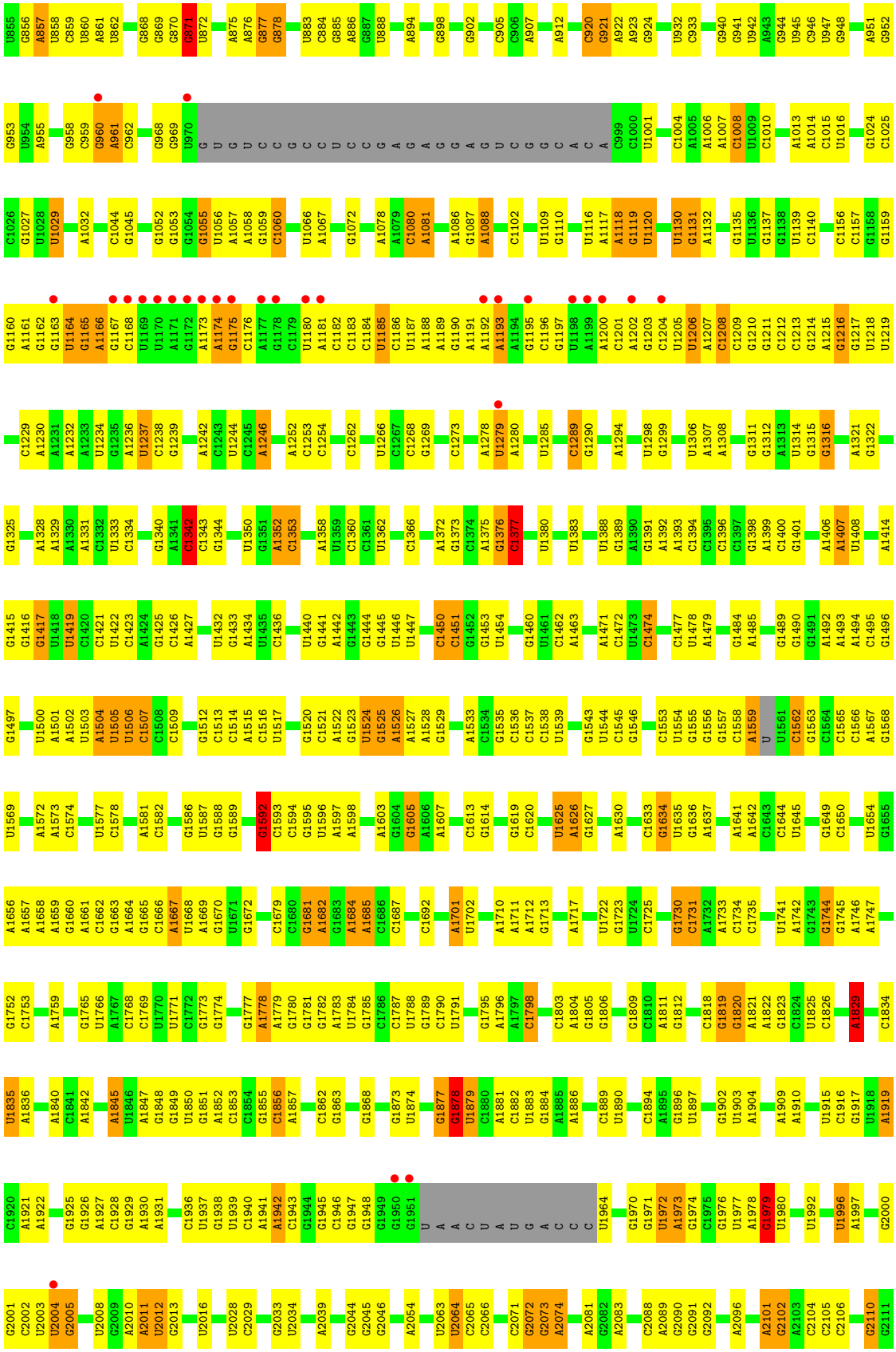
3 Residue-property plots (i)

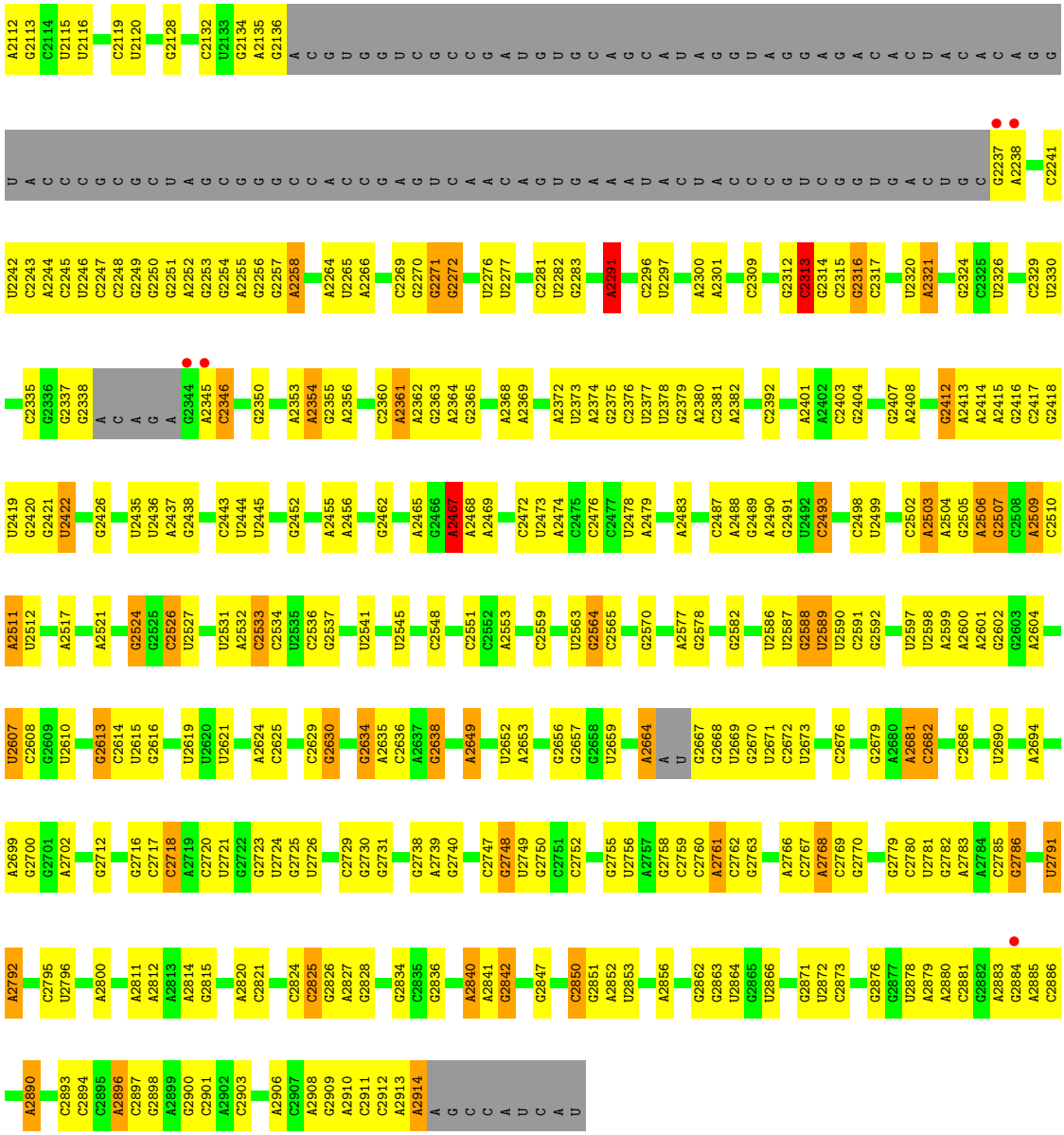
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: 23S ribosomal RNA

Chain 0:

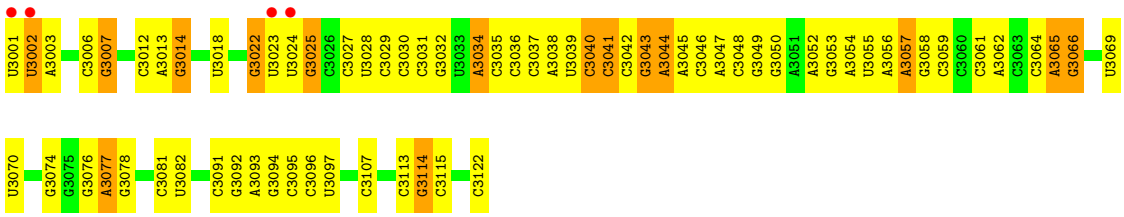






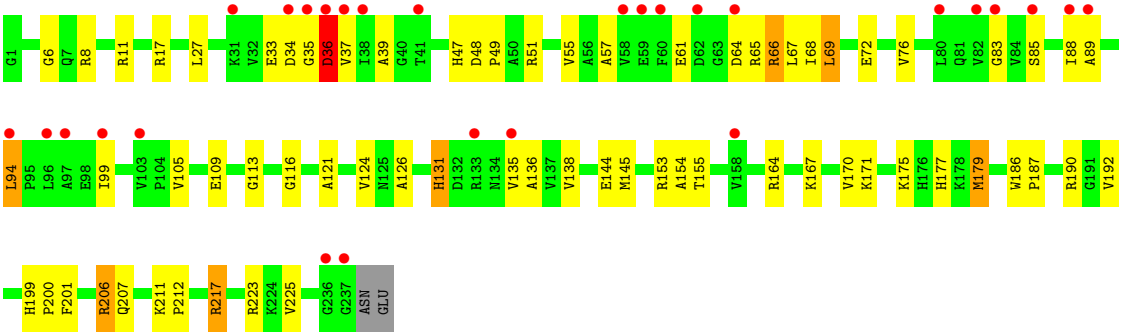
• Molecule 2: 5S ribosomal RNA

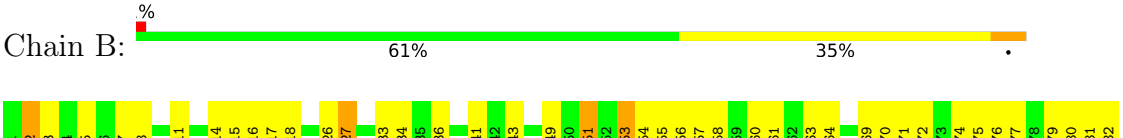
Chain 9:



• Molecule 3: 50S ribosomal protein L2P

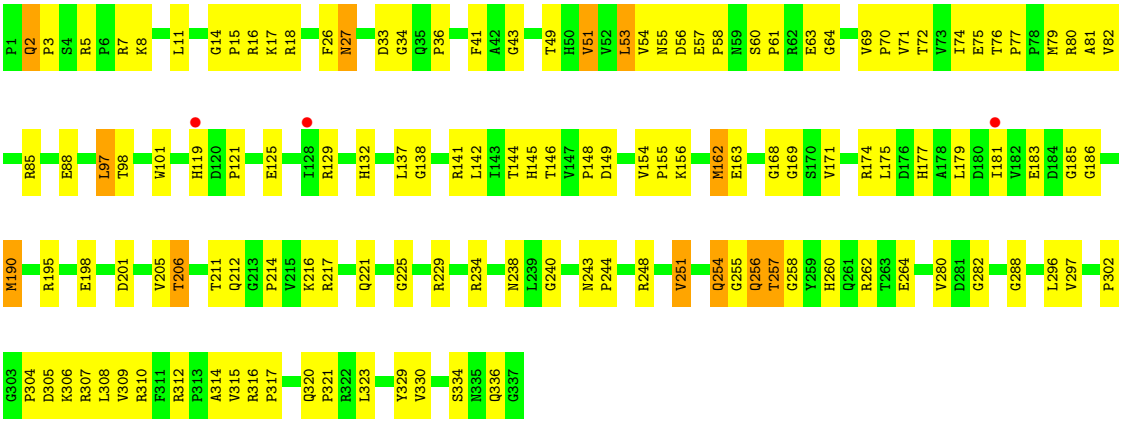
Chain A:





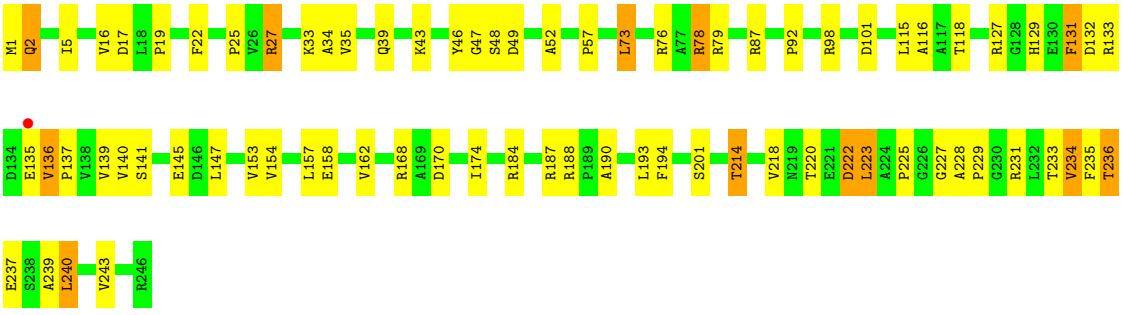
• Molecule 4: 50S ribosomal protein L3P

Chain B:



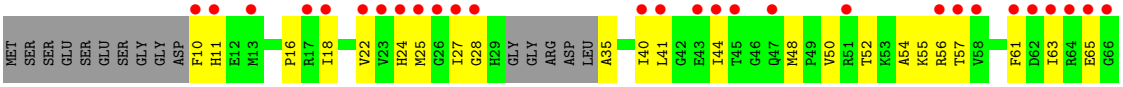
• Molecule 5: 50S ribosomal protein L4P

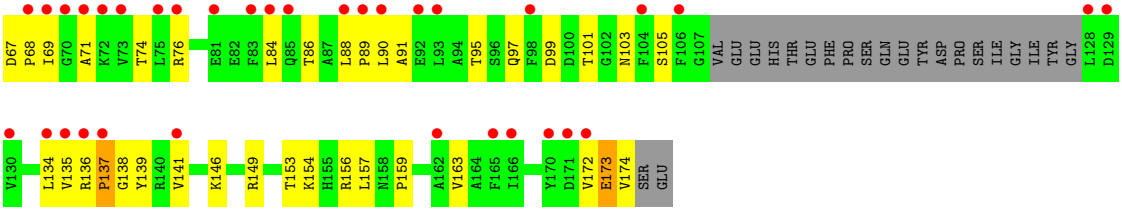
Chain C:



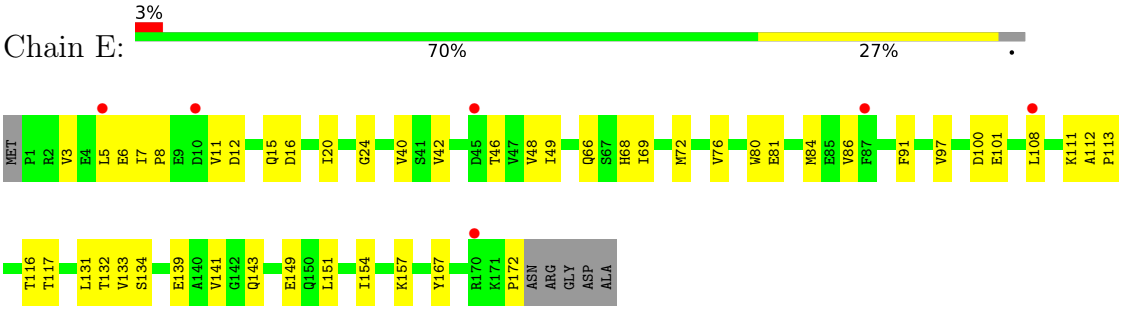
• Molecule 6: 50S ribosomal protein L5P

Chain D:

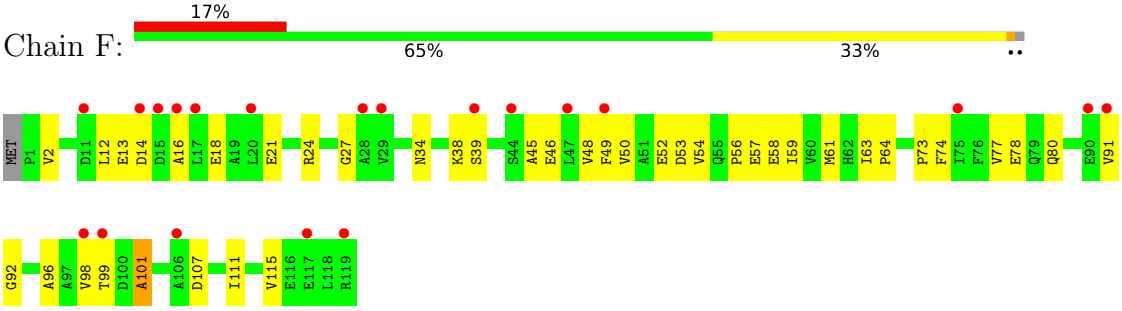




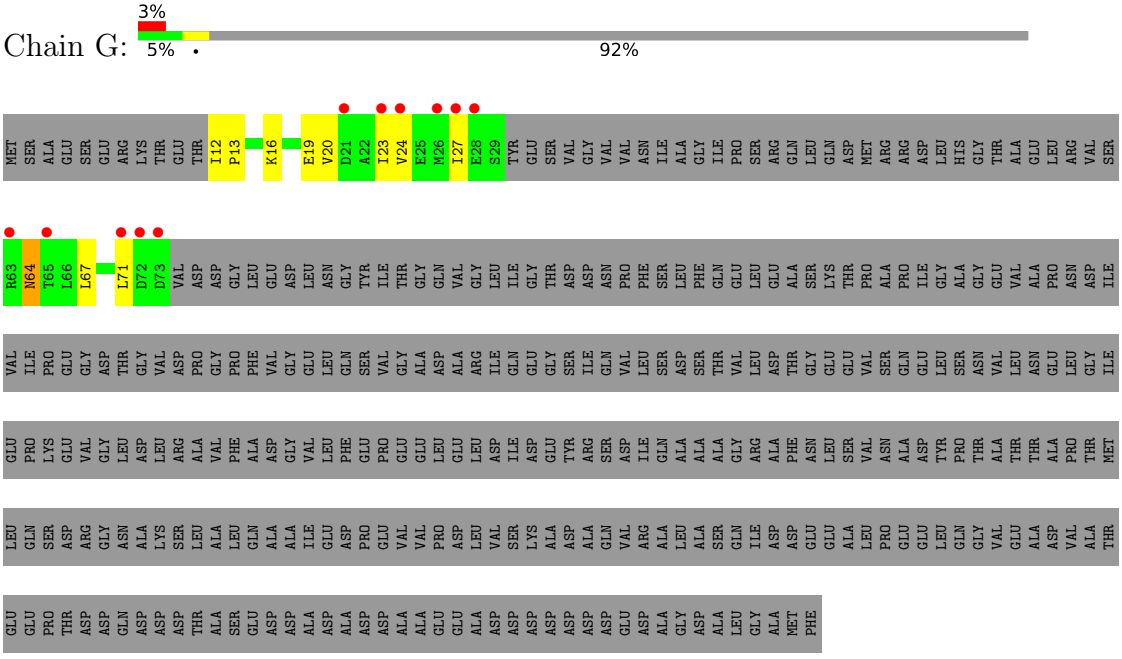
• Molecule 7: 50S ribosomal protein L6P



• Molecule 8: 50S ribosomal protein L7Ae

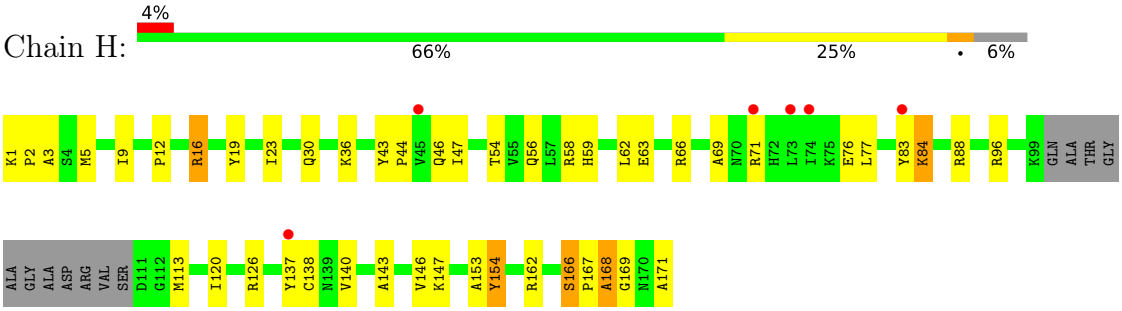


• Molecule 9: 50S ribosomal protein L10E



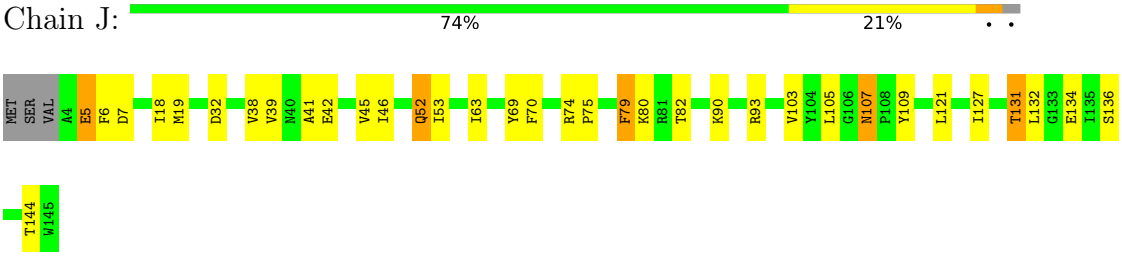
• Molecule 10: 50S ribosomal protein L10e

Chain H:



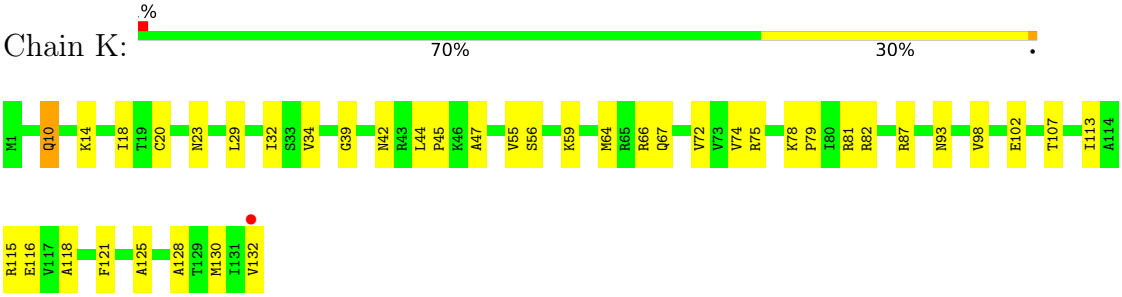
• Molecule 11: 50S ribosomal protein L13P

Chain J:



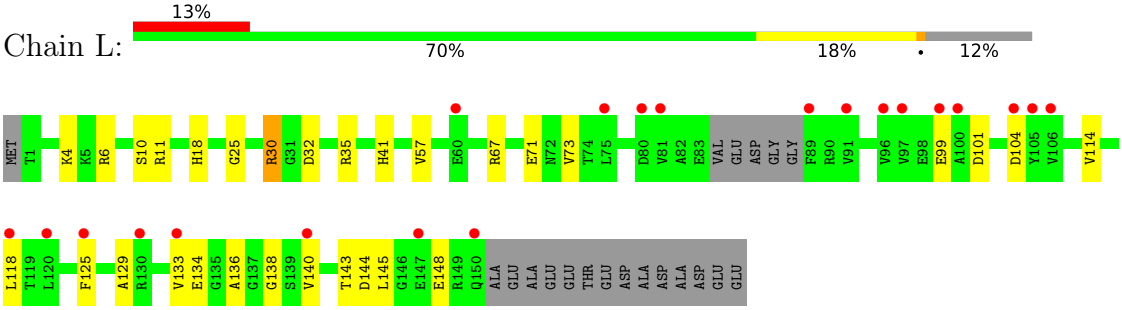
• Molecule 12: 50S ribosomal protein L14P

Chain K:



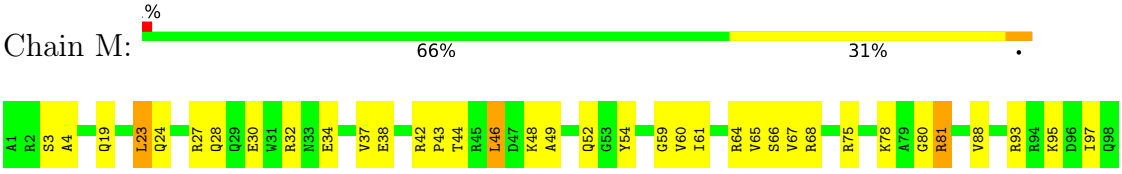
• Molecule 13: 50S ribosomal protein L15P

Chain L:

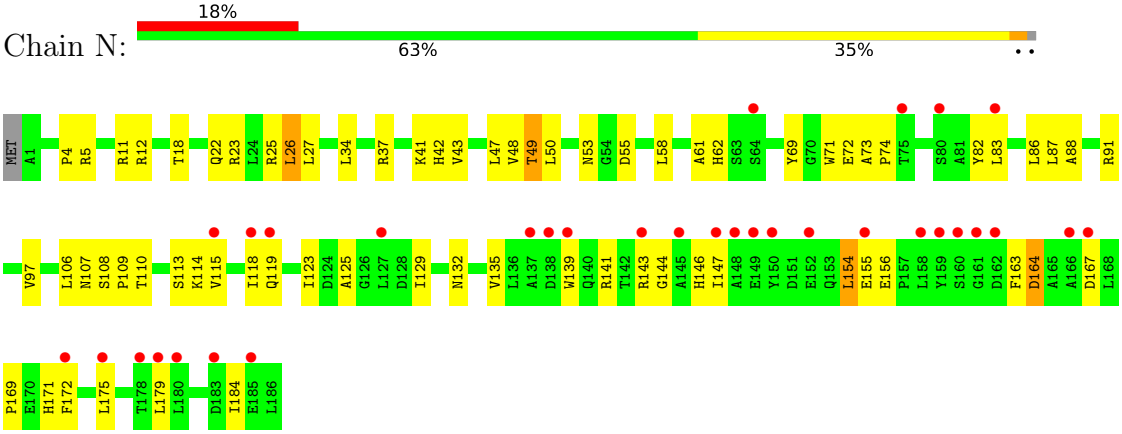


• Molecule 14: 50S ribosomal protein L15e

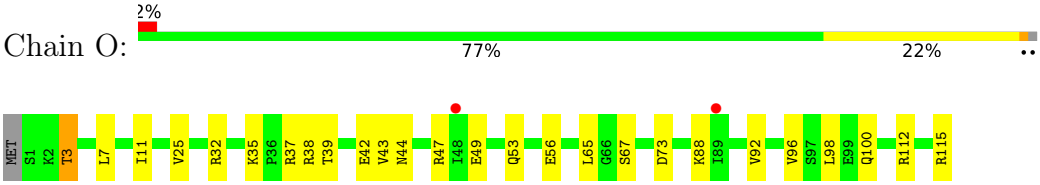
Chain M:



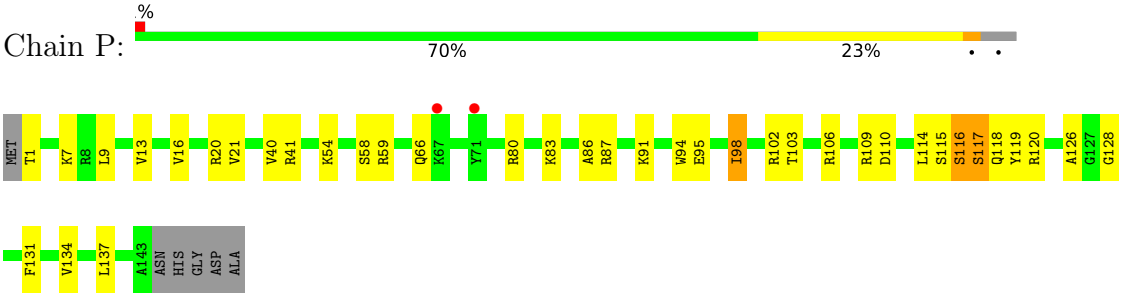
• Molecule 15: 50S ribosomal protein L18P



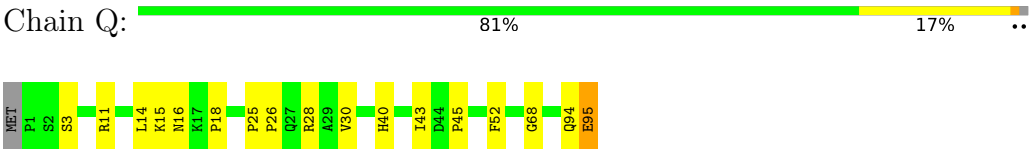
• Molecule 16: 50S ribosomal protein L18e



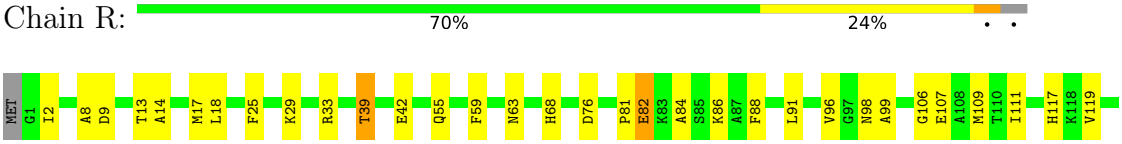
• Molecule 17: 50S ribosomal protein L19e



• Molecule 18: 50S ribosomal protein L21e

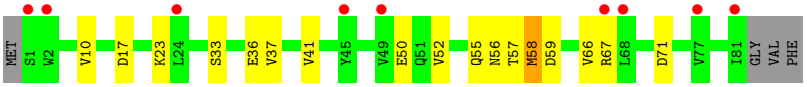


• Molecule 19: 50S ribosomal protein L22P



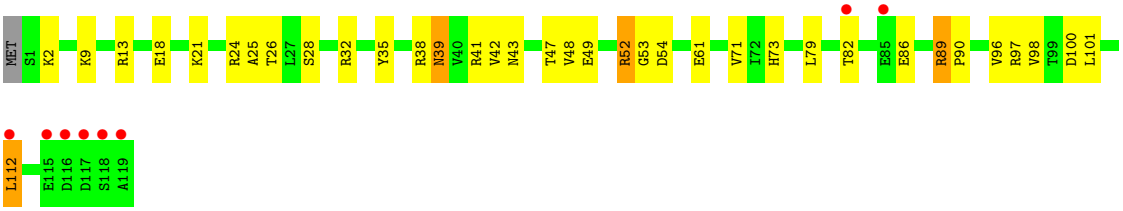
• Molecule 20: 50S ribosomal protein L23P

Chain S:



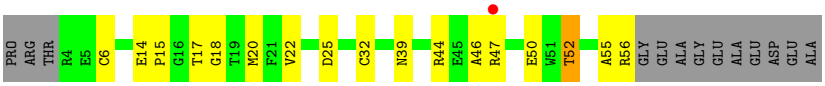
• Molecule 21: 50S ribosomal protein L24P

Chain T:



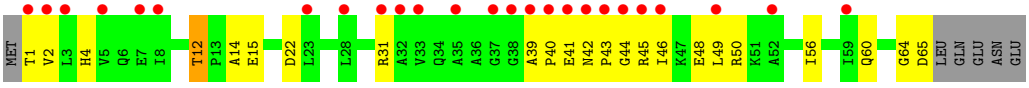
• Molecule 22: 50S ribosomal protein L24e

Chain U:



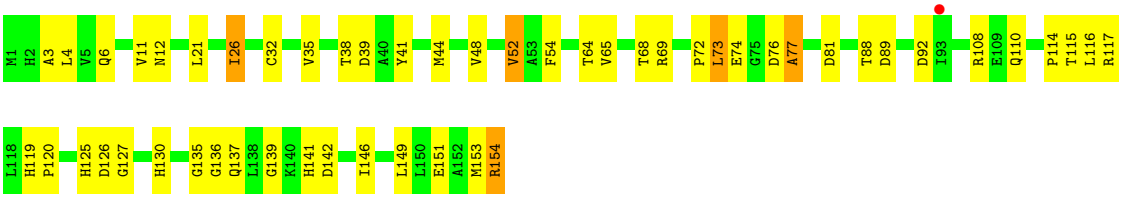
• Molecule 23: 50S ribosomal protein L29P

Chain V:



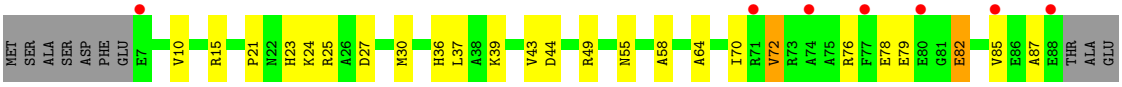
• Molecule 24: 50S ribosomal protein L30P

Chain W:



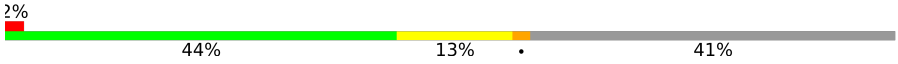
• Molecule 25: 50S ribosomal protein L31e

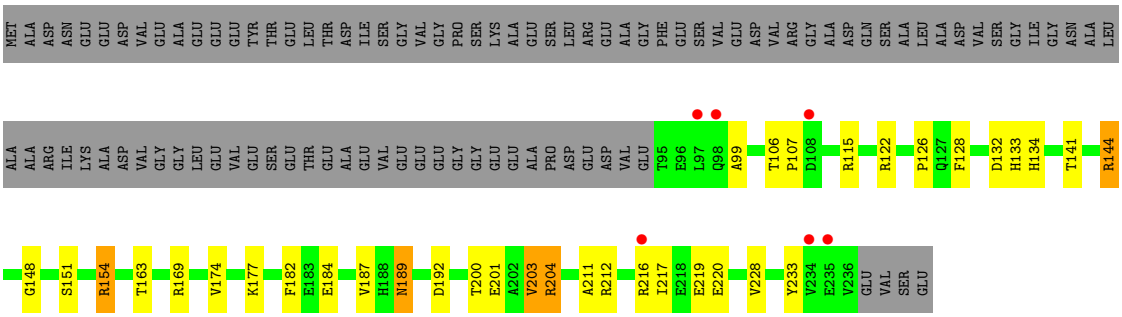
Chain X:



• Molecule 26: 50S ribosomal protein L32e

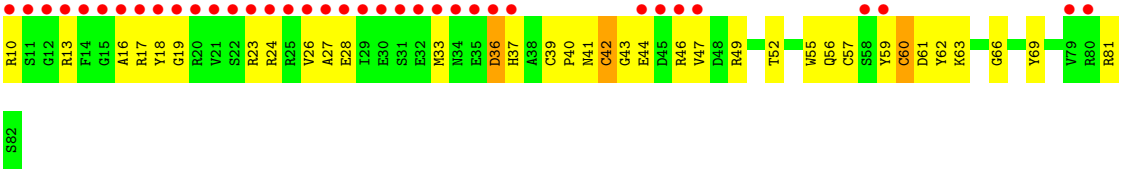
Chain Y:





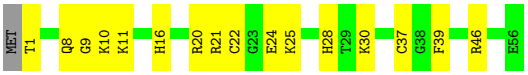
• Molecule 27: 50S ribosomal protein L37Ae

Chain Z:



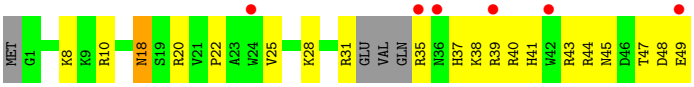
• Molecule 28: 50S ribosomal protein L37e

Chain 1:



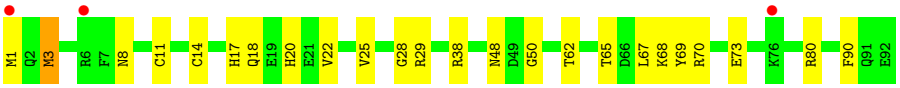
• Molecule 29: 50S ribosomal protein L39e

Chain 2:



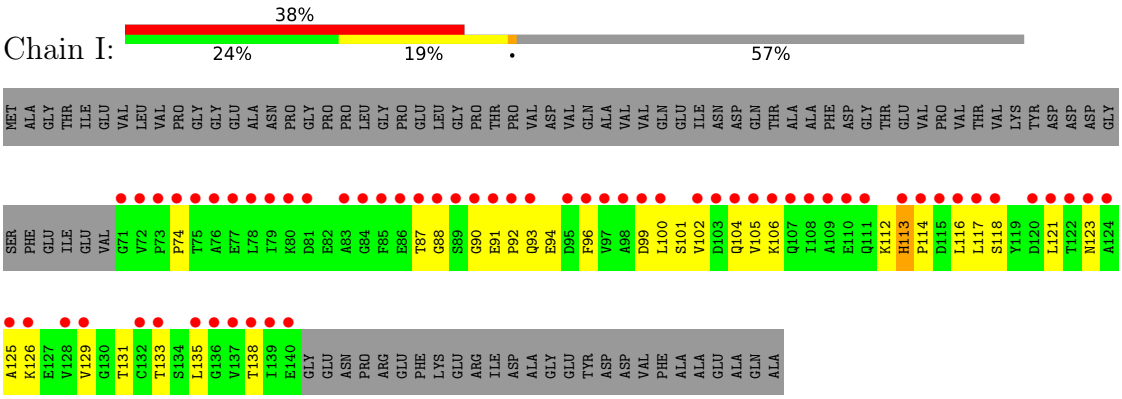
• Molecule 30: 50S ribosomal protein L44E

Chain 3:



• Molecule 31: 50S ribosomal protein L11P

Chain I:


38%
24%
19%
57%
MET ALA GLY THR ILE GLU VAL LEU VAL PRO GLY GLY GLU ALA ASN PRO GLY PRO PRO LEU GLY PRO GLU LEU GLY PRO THR PRO VAL ASP VAL GLN GLN ALA VAL VAL GLN GLU ILE ASN ASP GLN THR ALA ALA PHE ASP GLY THR GLU VAL PRO VAL THR VAL LYS TYR ASP ASP GLY
SER PHE GLU ILE GLU VAL G71 V72 P73 P74 T75 A76 E77 L78 T79 K80 D81 E82 A83 G84 F85 E86 T87 G88 S89 G90 E91 P92 Q93 E94 D95 F96 V97 A98 D99 L100 S101 V102 D103 Q104 V105 K106 Q107 I108 A109 E110 Q111 K112 H113 P114 D115 L116 L117 S118 Y119 D120 L121 T122 N123 A124
A125 K126 E127 V128 V129 G130 T131 C132 T133 S134 L135 G136 V137 T138 T139 E140 GLY GLU ASN PRO ARG GLU PHE LYS GLU ARG ILE ASP ALA GLY GLU TYR ASP ASP VAL PHE ALA ALA GLU ALA GLN ALA

4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α, β, γ	213.08Å 300.60Å 575.05Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.36 – 2.70 85.94 – 2.41	Depositor EDS
% Data completeness (in resolution range)	99.4 (49.36-2.70) 90.7 (85.94-2.41)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	0.00 (at 2.40Å)	Xtriage
Refinement program	CNS	Depositor
R, R_{free}	0.204 , 0.248 0.195 , 0.239	Depositor DCC
R_{free} test set	6547 reflections (0.98%)	wwPDB-VP
Wilson B-factor (Å^2)	47.9	Xtriage
Anisotropy	0.260	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 55.6	EDS
L-test for twinning[2]	$< \|L\| > = 0.47$, $< L^2 > = 0.30$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	99016	wwPDB-VP
Average B, all atoms (Å^2)	56.0	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.*

[1] Intensities estimated from amplitudes.

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

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: OMG, CL, UR3, PSU, OMU, GIR, K, CD, 1MA, NA, 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	0	0.40	0/65959	0.69	14/102870 (0.0%)
2	9	0.34	0/2905	0.68	0/4528
3	A	0.36	0/1786	0.66	0/2408
4	B	0.33	0/2690	0.65	0/3652
5	C	0.39	0/1884	0.69	1/2551 (0.0%)
6	D	0.33	0/1111	0.55	0/1498
7	E	0.33	0/1382	0.57	0/1880
8	F	0.38	0/901	0.58	0/1224
9	G	0.30	0/241	0.47	0/324
10	H	0.35	0/1287	0.66	0/1725
11	J	0.36	0/1136	0.61	0/1530
12	K	0.36	0/1001	0.68	0/1347
13	L	0.38	0/1130	0.67	0/1509
14	M	0.38	0/1584	0.64	0/2119
15	N	0.33	0/1474	0.64	0/1999
16	O	0.35	0/874	0.59	0/1181
17	P	0.36	0/1147	0.55	0/1528
18	Q	0.36	0/749	0.70	0/1005
19	R	0.38	0/1172	0.65	0/1578
20	S	0.34	0/648	0.59	0/875
21	T	0.35	0/958	0.64	1/1289 (0.1%)
22	U	0.37	0/417	0.55	0/562
23	V	0.35	0/502	0.57	0/675
24	W	0.38	0/1219	0.64	0/1655
25	X	0.35	0/664	0.60	0/895
26	Y	0.38	0/1146	0.65	0/1536
27	Z	0.54	0/590	0.66	0/787
28	1	0.39	0/437	0.63	0/578
29	2	0.39	0/401	0.54	0/529
30	3	0.39	0/771	0.59	0/1024
31	I	0.33	0/526	0.55	0/716
All	All	0.39	0/98692	0.67	16/147577 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	0	0	52

There are no bond length outliers.

The worst 5 of 16 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	0	1878	G	N9-C1'-C2'	-6.83	104.49	112.00
1	0	1979	G	C2'-C3'-O3'	6.63	124.31	113.70
1	0	1504	A	C1'-O4'-C4'	-6.20	104.94	109.90
1	0	1559	A	C2'-C3'-O3'	5.63	122.71	113.70
1	0	2313	C	C5'-C4'-O4'	5.55	115.76	109.10

There are no chirality outliers.

5 of 52 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	0	214	U	Sidechain
1	0	332	G	Sidechain
1	0	396	U	Sidechain
1	0	417	G	Sidechain
1	0	48	A	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	29810	1361	0
2	9	2600	0	1326	97	0
3	A	1753	0	1766	74	0
4	B	2625	0	2533	110	0
5	C	1859	0	1816	70	0
6	D	1094	0	1085	45	0
7	E	1357	0	1266	33	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
8	F	890	0	843	36	0
9	G	240	0	231	10	0
10	H	1266	0	1268	41	0
11	J	1120	0	1098	41	0
12	K	992	0	1031	38	0
13	L	1118	0	1076	24	0
14	M	1560	0	1568	55	0
15	N	1445	0	1401	64	0
16	O	865	0	873	21	0
17	P	1136	0	1123	35	0
18	Q	735	0	729	13	0
19	R	1149	0	1122	40	0
20	S	641	0	605	12	0
21	T	950	0	923	38	0
22	U	410	0	364	17	0
23	V	499	0	511	20	0
24	W	1196	0	1137	54	0
25	X	654	0	653	23	0
26	Y	1130	0	1133	37	0
27	Z	579	0	540	46	0
28	1	430	0	426	20	0
29	2	396	0	413	25	0
30	3	755	0	729	27	0
31	I	519	0	500	27	0
32	0	12	0	10	0	0
33	0	107	0	0	0	0
33	3	1	0	0	0	0
33	9	1	0	0	0	0
33	A	2	0	0	0	0
33	B	2	0	0	0	0
33	K	1	0	0	0	0
33	T	1	0	0	0	0
33	Y	1	0	0	0	0
34	0	2	0	0	0	0
35	0	71	0	0	0	0
35	9	2	0	0	0	0
35	A	1	0	0	0	0
35	C	1	0	0	0	0
35	H	2	0	0	0	0
35	J	1	0	0	0	0
35	L	1	0	0	0	0
35	M	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
35	Q	1	0	0	0	0
35	R	3	0	0	0	0
35	S	1	0	0	0	0
36	0	9	0	0	4	0
36	3	1	0	0	0	0
36	A	1	0	0	0	0
36	B	1	0	0	0	0
36	J	3	0	0	4	0
36	L	1	0	0	0	0
36	M	1	0	0	2	0
36	N	1	0	0	1	0
36	O	1	0	0	0	0
36	Q	1	0	0	0	0
36	R	1	0	0	0	0
36	Y	1	0	0	0	0
37	1	1	0	0	0	0
37	3	1	0	0	0	0
37	O	1	0	0	0	0
37	U	1	0	0	0	0
37	Z	1	0	0	0	0
38	0	5893	0	0	185	0
38	1	56	0	0	1	0
38	2	40	0	0	3	0
38	3	66	0	0	5	0
38	9	145	0	0	9	0
38	A	118	0	0	10	0
38	B	147	0	0	15	0
38	C	163	0	0	14	0
38	D	48	0	0	8	0
38	E	46	0	0	4	0
38	F	23	0	0	3	0
38	G	19	0	0	0	0
38	H	69	0	0	6	0
38	I	4	0	0	1	0
38	J	58	0	0	4	0
38	K	58	0	0	4	0
38	L	81	0	0	8	0
38	M	115	0	0	5	0
38	N	58	0	0	5	0
38	O	44	0	0	6	0
38	P	61	0	0	1	0
38	Q	55	0	0	4	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	R	81	0	0	4	0
38	S	37	0	0	0	0
38	T	39	0	0	3	0
38	U	28	0	0	2	0
38	V	11	0	0	3	0
38	W	70	0	0	5	0
38	X	26	0	0	2	0
38	Y	99	0	0	10	0
38	Z	32	0	0	5	0
All	All	99016	0	59909	2306	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 2306 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)
10:H:46:GLN:HB3	10:H:167:PRO:HD2	1.29	1.15
1:0:871:G:H5'	1:0:871:G:H8	1.06	1.12
1:0:656:G:H5'	16:O:3:THR:HG22	1.16	1.12
2:9:3056:A:H2'	2:9:3057:A:H5"	1.31	1.10
1:0:1559:A:H1'	38:0:5862:HOH:O	1.50	1.09

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	235/239 (98%)	209 (89%)	23 (10%)	3 (1%)	12 30
4	B	335/337 (99%)	305 (91%)	24 (7%)	6 (2%)	8 21

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
5	C	244/246 (99%)	228 (93%)	15 (6%)	1 (0%)	34 60
6	D	134/177 (76%)	107 (80%)	23 (17%)	4 (3%)	4 10
7	E	170/178 (96%)	163 (96%)	7 (4%)	0	100 100
8	F	117/120 (98%)	106 (91%)	10 (8%)	1 (1%)	17 40
9	G	25/348 (7%)	25 (100%)	0	0	100 100
10	H	156/171 (91%)	143 (92%)	9 (6%)	4 (3%)	5 13
11	J	140/145 (97%)	128 (91%)	11 (8%)	1 (1%)	22 46
12	K	130/132 (98%)	122 (94%)	8 (6%)	0	100 100
13	L	141/165 (86%)	127 (90%)	14 (10%)	0	100 100
14	M	192/194 (99%)	178 (93%)	13 (7%)	1 (0%)	29 54
15	N	184/187 (98%)	168 (91%)	13 (7%)	3 (2%)	9 24
16	O	113/116 (97%)	109 (96%)	4 (4%)	0	100 100
17	P	141/149 (95%)	136 (96%)	3 (2%)	2 (1%)	11 28
18	Q	93/96 (97%)	87 (94%)	5 (5%)	1 (1%)	14 34
19	R	148/155 (96%)	138 (93%)	9 (6%)	1 (1%)	22 46
20	S	79/85 (93%)	76 (96%)	2 (2%)	1 (1%)	12 30
21	T	117/120 (98%)	109 (93%)	8 (7%)	0	100 100
22	U	51/66 (77%)	49 (96%)	2 (4%)	0	100 100
23	V	63/71 (89%)	59 (94%)	3 (5%)	1 (2%)	9 24
24	W	152/154 (99%)	146 (96%)	4 (3%)	2 (1%)	12 30
25	X	80/92 (87%)	74 (92%)	4 (5%)	2 (2%)	5 14
26	Y	140/241 (58%)	140 (100%)	0	0	100 100
27	Z	71/73 (97%)	58 (82%)	9 (13%)	4 (6%)	2 3
28	1	54/57 (95%)	51 (94%)	3 (6%)	0	100 100
29	2	42/50 (84%)	42 (100%)	0	0	100 100
30	3	90/92 (98%)	87 (97%)	3 (3%)	0	100 100
31	I	68/162 (42%)	65 (96%)	3 (4%)	0	100 100
All	All	3705/4418 (84%)	3435 (93%)	232 (6%)	38 (1%)	15 37

5 of 38 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
6	D	137	PRO

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Mol	Chain	Res	Type
6	D	173	GLU
8	F	101	ALA
10	H	166	SER
10	H	168	ALA

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	179/181 (99%)	169 (94%)	10 (6%)	21	45
4	B	282/282 (100%)	264 (94%)	18 (6%)	17	39
5	C	193/193 (100%)	177 (92%)	16 (8%)	11	25
6	D	117/148 (79%)	113 (97%)	4 (3%)	37	66
7	E	152/156 (97%)	149 (98%)	3 (2%)	55	81
8	F	93/94 (99%)	92 (99%)	1 (1%)	73	90
9	G	27/283 (10%)	26 (96%)	1 (4%)	34	63
10	H	132/138 (96%)	125 (95%)	7 (5%)	22	48
11	J	118/121 (98%)	110 (93%)	8 (7%)	16	36
12	K	106/106 (100%)	105 (99%)	1 (1%)	78	92
13	L	113/127 (89%)	107 (95%)	6 (5%)	22	48
14	M	158/158 (100%)	150 (95%)	8 (5%)	24	50
15	N	149/150 (99%)	145 (97%)	4 (3%)	44	74
16	O	93/94 (99%)	89 (96%)	4 (4%)	29	57
17	P	113/117 (97%)	108 (96%)	5 (4%)	28	56
18	Q	79/80 (99%)	77 (98%)	2 (2%)	47	76
19	R	117/122 (96%)	112 (96%)	5 (4%)	29	57
20	S	71/74 (96%)	69 (97%)	2 (3%)	43	73
21	T	105/106 (99%)	100 (95%)	5 (5%)	25	53
22	U	44/52 (85%)	43 (98%)	1 (2%)	50	78

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
23	V	51/57 (90%)	49 (96%)	2 (4%)	32 61
24	W	130/130 (100%)	124 (95%)	6 (5%)	27 54
25	X	66/74 (89%)	62 (94%)	4 (6%)	18 41
26	Y	120/196 (61%)	114 (95%)	6 (5%)	24 51
27	Z	60/60 (100%)	58 (97%)	2 (3%)	38 67
28	1	46/47 (98%)	46 (100%)	0	100 100
29	2	42/46 (91%)	40 (95%)	2 (5%)	25 53
30	3	79/79 (100%)	77 (98%)	2 (2%)	47 76
31	I	58/130 (45%)	57 (98%)	1 (2%)	60 84
All	All	3093/3601 (86%)	2957 (96%)	136 (4%)	28 56

5 of 136 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
24	W	73	LEU
25	X	27	ASP
27	Z	60	CYS
7	E	7	ILE
6	D	149	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 78 such sidechains are listed below:

Mol	Chain	Res	Type
24	W	28	HIS
29	2	37	HIS
24	W	119	HIS
26	Y	134	HIS
30	3	15	ASN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	0	2746/2922 (93%)	235 (8%)	35 (1%)
2	9	121/122 (99%)	18 (14%)	1 (0%)
All	All	2867/3044 (94%)	253 (8%)	36 (1%)

5 of 253 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	2467	A
2	9	3065	A
1	0	2536	C
1	0	2761	A
1	0	1120	U

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	OMU	0	2587	1	19,22,23	0.32	0	26,31,34	0.43	0
1	OMG	0	2588	1	18,26,27	1.04	2 (11%)	19,38,41	0.72	1 (5%)
1	UR3	0	2619	1	19,22,23	0.44	0	26,32,35	0.64	1 (3%)
1	PSU	0	2621	1	18,21,22	1.49	2 (11%)	22,30,33	1.29	3 (13%)
1	1MA	0	628	1,35	16,25,26	1.35	2 (12%)	18,37,40	1.06	2 (11%)

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	OMU	0	2587	1	-	0/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	OMG	0	2588	1	-	0/5/27/28	0/3/3/3
1	UR3	0	2619	1	-	0/7/25/26	0/2/2/2
1	PSU	0	2621	1	-	0/7/25/26	0/2/2/2
1	1MA	0	628	1,35	-	0/3/25/26	0/3/3/3

The worst 5 of 6 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	0	2621	PSU	C2-N1	5.08	1.43	1.36
1	0	628	1MA	C2-N3	3.42	1.33	1.29
1	0	2588	OMG	C5-C6	-2.73	1.41	1.47
1	0	628	1MA	C6-N6	2.52	1.33	1.27
1	0	2588	OMG	C8-N7	-2.43	1.30	1.35

The worst 5 of 7 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	0	2621	PSU	C6-C5-C4	3.61	120.72	118.20
1	0	628	1MA	N1-C2-N3	2.85	129.34	126.02
1	0	2621	PSU	O2-C2-N1	2.80	125.88	122.79
1	0	2621	PSU	C6-N1-C2	-2.74	119.88	122.68
1	0	628	1MA	C5-C6-N1	2.48	117.60	113.90

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

2 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	0	2587	OMU	2	0
1	0	2588	OMG	1	0

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 231 ligands modelled in this entry, 230 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	$\#\|Z\| > 2$
32	GIR	0	9000	-	7,12,12	0.75	0	4,16,16	0.76	0

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
32	GIR	0	9000	-	-	0/4/10/10	0/1/1/1

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 (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

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, 95^{th} 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%)	-0.34	39 (1%) 75 77	24, 49, 93, 153	0
2	9	122/122 (100%)	-0.33	4 (3%) 46 46	38, 64, 91, 149	0
3	A	237/239 (99%)	0.62	28 (11%) 4 3	30, 58, 99, 119	0
4	B	337/337 (100%)	0.15	3 (0%) 84 85	28, 56, 84, 95	0
5	C	246/246 (100%)	0.22	1 (0%) 92 93	25, 49, 74, 80	0
6	D	140/177 (79%)	2.12	62 (44%) 0 0	61, 105, 127, 136	0
7	E	172/178 (96%)	0.45	6 (3%) 44 44	46, 68, 87, 93	0
8	F	119/120 (99%)	0.95	20 (16%) 1 1	53, 78, 99, 117	0
9	G	29/348 (8%)	1.99	11 (37%) 0 0	77, 94, 105, 107	0
10	H	160/171 (93%)	0.41	6 (3%) 40 39	40, 58, 92, 100	0
11	J	142/145 (97%)	-0.02	0 100 100	35, 50, 74, 90	0
12	K	132/132 (100%)	0.09	1 (0%) 86 87	36, 54, 77, 87	0
13	L	145/165 (87%)	0.87	21 (14%) 2 1	29, 71, 118, 130	0
14	M	194/194 (100%)	0.01	1 (0%) 91 92	35, 47, 63, 73	0
15	N	186/187 (99%)	0.97	33 (17%) 1 1	41, 68, 115, 120	0
16	O	115/116 (99%)	0.26	2 (1%) 70 72	41, 57, 75, 80	0
17	P	143/149 (95%)	0.26	2 (1%) 75 77	43, 59, 78, 83	0
18	Q	95/96 (98%)	0.00	0 100 100	37, 48, 62, 78	0
19	R	150/155 (96%)	-0.03	0 100 100	33, 47, 66, 74	0
20	S	81/85 (95%)	0.84	9 (11%) 5 4	47, 67, 87, 94	0
21	T	119/120 (99%)	0.54	8 (6%) 17 16	41, 61, 88, 108	0
22	U	53/66 (80%)	0.41	1 (1%) 66 69	44, 61, 77, 83	0
23	V	65/71 (91%)	1.96	25 (38%) 0 0	60, 84, 118, 121	0
24	W	154/154 (100%)	0.05	1 (0%) 89 91	34, 49, 66, 76	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
25	X	82/92 (89%)	0.42	7 (8%) 10 9	45, 61, 87, 102	0
26	Y	142/241 (58%)	0.17	6 (4%) 36 35	28, 47, 71, 92	0
27	Z	73/73 (100%)	2.91	36 (49%) 0 0	61, 98, 111, 115	0
28	1	56/57 (98%)	-0.00	0 100 100	29, 37, 43, 50	0
29	2	46/50 (92%)	0.61	6 (13%) 3 2	39, 68, 101, 114	0
30	3	92/92 (100%)	0.48	3 (3%) 46 46	40, 62, 75, 83	0
31	I	70/162 (43%)	3.94	61 (87%) 0 0	105, 124, 141, 141	0
All	All	6646/7462 (89%)	0.18	403 (6%) 21 20	24, 55, 105, 153	0

The worst 5 of 403 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
27	Z	26	VAL	12.9
23	V	1	THR	12.9
27	Z	20	ARG	11.0
27	Z	11	SER	9.9
27	Z	34	ASN	9.3

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	0.13	34,36,37,39	0
1	OMG	0	2588	24/25	0.98	0.15	33,36,38,39	0
1	UR3	0	2619	21/22	0.98	0.16	36,39,42,48	0
1	1MA	0	628	23/24	0.99	0.18	28,32,33,35	0
1	PSU	0	2621	20/21	0.99	0.14	28,30,33,34	0

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} 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
35	NA	R	8586	1/1	0.48	0.80	95,95,95,95	0
35	NA	0	8529	1/1	0.55	0.45	77,77,77,77	0
33	MG	0	8090	1/1	0.68	0.75	69,69,69,69	0
35	NA	0	8568	1/1	0.69	0.18	71,71,71,71	0
35	NA	9	8551	1/1	0.71	0.19	50,50,50,50	0
33	MG	0	8049	1/1	0.75	0.19	92,92,92,92	0
35	NA	0	8571	1/1	0.78	0.42	65,65,65,65	0
35	NA	0	8582	1/1	0.78	0.21	79,79,79,79	0
35	NA	0	8552	1/1	0.78	0.21	62,62,62,62	0
35	NA	0	8540	1/1	0.78	0.21	58,58,58,58	0
35	NA	0	8577	1/1	0.80	0.38	71,71,71,71	0
33	MG	0	8092	1/1	0.80	0.13	89,89,89,89	0
35	NA	0	8574	1/1	0.82	0.54	66,66,66,66	0
35	NA	H	8522	1/1	0.83	0.34	67,67,67,67	0
35	NA	C	8504	1/1	0.84	0.27	49,49,49,49	0
33	MG	T	8073	1/1	0.85	0.12	71,71,71,71	0
33	MG	0	8114	1/1	0.85	0.66	67,67,67,67	0
35	NA	0	8563	1/1	0.85	0.46	57,57,57,57	0
35	NA	R	8538	1/1	0.85	0.08	60,60,60,60	0
35	NA	0	8533	1/1	0.85	0.14	39,39,39,39	0
35	NA	0	8585	1/1	0.86	0.26	51,51,51,51	0
35	NA	9	8583	1/1	0.86	0.43	65,65,65,65	0
33	MG	0	8096	1/1	0.87	0.11	52,52,52,52	0
35	NA	0	8566	1/1	0.87	0.30	66,66,66,66	0
35	NA	S	8512	1/1	0.87	0.09	43,43,43,43	0
36	CL	0	8722	1/1	0.87	0.36	81,81,81,81	0
33	MG	0	8087	1/1	0.88	0.12	66,66,66,66	0
33	MG	0	8116	1/1	0.88	0.07	58,58,58,58	0
35	NA	0	8584	1/1	0.88	0.14	62,62,62,62	0
33	MG	0	8082	1/1	0.88	0.14	63,63,63,63	0
35	NA	0	8526	1/1	0.89	0.64	58,58,58,58	0
35	NA	R	8537	1/1	0.89	0.25	48,48,48,48	0
36	CL	0	8705	1/1	0.89	0.20	67,67,67,67	0
35	NA	0	8567	1/1	0.89	0.29	59,59,59,59	0
35	NA	0	8513	1/1	0.90	0.09	62,62,62,62	0
33	MG	9	8095	1/1	0.90	0.12	76,76,76,76	0
33	MG	A	8066	1/1	0.90	0.04	72,72,72,72	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
35	NA	0	8569	1/1	0.90	0.37	74,74,74,74	0
35	NA	0	8532	1/1	0.90	0.30	49,49,49,49	0
33	MG	0	8050	1/1	0.90	0.08	59,59,59,59	0
35	NA	0	8503	1/1	0.90	0.36	47,47,47,47	0
35	NA	0	8542	1/1	0.90	0.39	47,47,47,47	0
35	NA	0	8506	1/1	0.90	0.37	48,48,48,48	0
35	NA	0	8511	1/1	0.90	0.15	50,50,50,50	0
32	GIR	0	9000	12/12	0.91	0.21	23,40,50,53	0
33	MG	0	8100	1/1	0.91	0.18	66,66,66,66	0
33	MG	0	8102	1/1	0.91	0.29	73,73,73,73	0
33	MG	0	8104	1/1	0.91	0.23	65,65,65,65	0
33	MG	0	8113	1/1	0.91	0.12	53,53,53,53	0
33	MG	0	8041	1/1	0.91	0.20	56,56,56,56	0
36	CL	0	8717	1/1	0.91	0.11	65,65,65,65	0
33	MG	0	8044	1/1	0.91	0.10	46,46,46,46	0
36	CL	O	8708	1/1	0.91	0.21	73,73,73,73	0
35	NA	0	8556	1/1	0.92	0.20	49,49,49,49	0
35	NA	0	8557	1/1	0.92	0.12	61,61,61,61	0
35	NA	0	8561	1/1	0.92	0.24	56,56,56,56	0
35	NA	0	8562	1/1	0.92	0.20	60,60,60,60	0
35	NA	0	8508	1/1	0.92	0.15	56,56,56,56	0
35	NA	0	8516	1/1	0.92	0.25	54,54,54,54	0
35	NA	0	8510	1/1	0.92	0.12	36,36,36,36	0
35	NA	0	8527	1/1	0.92	0.17	44,44,44,44	0
33	MG	0	8046	1/1	0.92	0.09	53,53,53,53	0
35	NA	J	8546	1/1	0.93	0.13	53,53,53,53	0
35	NA	0	8565	1/1	0.93	0.38	40,40,40,40	0
33	MG	0	8103	1/1	0.93	0.18	82,82,82,82	0
33	MG	0	8101	1/1	0.93	0.19	69,69,69,69	0
33	MG	0	8047	1/1	0.93	0.13	74,74,74,74	0
35	NA	0	8550	1/1	0.93	0.26	45,45,45,45	0
36	CL	0	8713	1/1	0.93	0.08	65,65,65,65	0
36	CL	0	8715	1/1	0.93	0.25	86,86,86,86	0
35	NA	0	8517	1/1	0.93	0.06	51,51,51,51	0
35	NA	0	8573	1/1	0.93	0.29	69,69,69,69	0
36	CL	A	8709	1/1	0.93	0.24	77,77,77,77	0
35	NA	0	8564	1/1	0.93	0.29	53,53,53,53	0
36	CL	3	8704	1/1	0.93	0.16	71,71,71,71	0
33	MG	0	8039	1/1	0.94	0.11	52,52,52,52	0
33	MG	B	8055	1/1	0.94	0.05	48,48,48,48	0
33	MG	0	8053	1/1	0.94	0.16	45,45,45,45	0
33	MG	0	8097	1/1	0.94	0.10	34,34,34,34	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
35	NA	0	8559	1/1	0.94	0.24	49,49,49,49	0
33	MG	0	8081	1/1	0.94	0.10	49,49,49,49	0
35	NA	0	8507	1/1	0.94	0.32	59,59,59,59	0
35	NA	0	8541	1/1	0.94	0.10	50,50,50,50	0
36	CL	J	8701	1/1	0.94	0.22	66,66,66,66	0
35	NA	0	8521	1/1	0.94	0.28	61,61,61,61	0
35	NA	0	8581	1/1	0.94	0.07	48,48,48,48	0
35	NA	H	8509	1/1	0.95	0.10	39,39,39,39	0
33	MG	0	8084	1/1	0.95	0.05	47,47,47,47	0
35	NA	0	8505	1/1	0.95	0.18	33,33,33,33	0
35	NA	M	8547	1/1	0.95	0.18	34,34,34,34	0
35	NA	Q	8548	1/1	0.95	0.06	42,42,42,42	0
35	NA	0	8570	1/1	0.95	0.35	69,69,69,69	0
33	MG	0	8085	1/1	0.95	0.12	54,54,54,54	0
35	NA	0	8572	1/1	0.95	0.28	54,54,54,54	0
35	NA	0	8558	1/1	0.95	0.35	82,82,82,82	0
33	MG	0	8086	1/1	0.95	0.07	52,52,52,52	0
35	NA	0	8560	1/1	0.95	0.30	51,51,51,51	0
35	NA	0	8534	1/1	0.95	0.07	45,45,45,45	0
35	NA	0	8535	1/1	0.95	0.22	56,56,56,56	0
35	NA	0	8536	1/1	0.95	0.10	55,55,55,55	0
33	MG	0	8075	1/1	0.95	0.06	44,44,44,44	0
35	NA	0	8523	1/1	0.95	0.17	43,43,43,43	0
36	CL	L	8710	1/1	0.95	0.19	60,60,60,60	0
36	CL	N	8707	1/1	0.95	0.11	66,66,66,66	0
35	NA	0	8524	1/1	0.95	0.19	62,62,62,62	0
35	NA	0	8501	1/1	0.95	0.21	32,32,32,32	0
33	MG	0	8043	1/1	0.96	0.08	48,48,48,48	0
33	MG	0	8091	1/1	0.96	0.07	51,51,51,51	0
34	K	0	8401	1/1	0.96	0.18	85,85,85,85	0
35	NA	0	8514	1/1	0.96	0.27	38,38,38,38	0
35	NA	0	8575	1/1	0.96	0.27	61,61,61,61	0
35	NA	0	8515	1/1	0.96	0.20	42,42,42,42	0
33	MG	0	8014	1/1	0.96	0.16	32,32,32,32	0
33	MG	0	8031	1/1	0.96	0.12	34,34,34,34	0
36	CL	0	8714	1/1	0.96	0.14	54,54,54,54	0
35	NA	0	8539	1/1	0.96	0.15	30,30,30,30	0
36	CL	0	8716	1/1	0.96	0.09	56,56,56,56	0
33	MG	0	8068	1/1	0.96	0.04	61,61,61,61	0
33	MG	0	8099	1/1	0.96	0.16	45,45,45,45	0
33	MG	0	8071	1/1	0.96	0.04	69,69,69,69	0
35	NA	A	8545	1/1	0.96	0.16	62,62,62,62	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
35	NA	0	8543	1/1	0.96	0.19	39,39,39,39	0
35	NA	0	8549	1/1	0.96	0.18	51,51,51,51	0
35	NA	0	8525	1/1	0.96	0.15	56,56,56,56	0
36	CL	R	8706	1/1	0.96	0.15	46,46,46,46	0
33	MG	0	8042	1/1	0.96	0.10	38,38,38,38	0
37	CD	O	8605	1/1	0.96	0.08	93,93,93,93	0
33	MG	0	8064	1/1	0.97	0.07	30,30,30,30	0
33	MG	0	8067	1/1	0.97	0.12	52,52,52,52	0
33	MG	0	8110	1/1	0.97	0.11	27,27,27,27	0
35	NA	0	8530	1/1	0.97	0.15	50,50,50,50	0
35	NA	0	8531	1/1	0.97	0.15	50,50,50,50	0
35	NA	0	8578	1/1	0.97	0.28	51,51,51,51	0
35	NA	0	8579	1/1	0.97	0.19	64,64,64,64	0
33	MG	0	8035	1/1	0.97	0.05	46,46,46,46	0
33	MG	0	8070	1/1	0.97	0.16	50,50,50,50	0
33	MG	0	8013	1/1	0.97	0.12	38,38,38,38	0
33	MG	0	8072	1/1	0.97	0.07	63,63,63,63	0
33	MG	0	8040	1/1	0.97	0.13	60,60,60,60	0
33	MG	0	8080	1/1	0.97	0.19	45,45,45,45	0
33	MG	K	8069	1/1	0.97	0.05	58,58,58,58	0
33	MG	0	8008	1/1	0.97	0.14	37,37,37,37	0
33	MG	0	8015	1/1	0.97	0.14	35,35,35,35	0
33	MG	0	8023	1/1	0.97	0.26	41,41,41,41	0
35	NA	0	8544	1/1	0.97	0.10	28,28,28,28	0
35	NA	L	8580	1/1	0.97	0.28	57,57,57,57	0
35	NA	0	8502	1/1	0.97	0.21	51,51,51,51	0
33	MG	0	8025	1/1	0.97	0.09	37,37,37,37	0
33	MG	0	8027	1/1	0.97	0.04	44,44,44,44	0
35	NA	0	8553	1/1	0.97	0.11	30,30,30,30	0
35	NA	0	8555	1/1	0.97	0.34	57,57,57,57	0
33	MG	0	8028	1/1	0.97	0.05	38,38,38,38	0
36	CL	0	8703	1/1	0.97	0.08	58,58,58,58	0
33	MG	0	8088	1/1	0.97	0.14	38,38,38,38	0
33	MG	0	8089	1/1	0.97	0.14	74,74,74,74	0
33	MG	0	8012	1/1	0.97	0.10	39,39,39,39	0
33	MG	0	8032	1/1	0.97	0.06	28,28,28,28	0
33	MG	0	8051	1/1	0.97	0.05	59,59,59,59	0
33	MG	0	8093	1/1	0.97	0.09	56,56,56,56	0
33	MG	0	8094	1/1	0.97	0.07	77,77,77,77	0
33	MG	0	8033	1/1	0.97	0.09	31,31,31,31	0
33	MG	0	8054	1/1	0.97	0.17	37,37,37,37	0
36	CL	J	8702	1/1	0.97	0.10	57,57,57,57	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
35	NA	0	8518	1/1	0.97	0.19	42,42,42,42	0
35	NA	0	8520	1/1	0.97	0.14	34,34,34,34	0
33	MG	0	8057	1/1	0.97	0.18	45,45,45,45	0
33	MG	0	8058	1/1	0.97	0.06	39,39,39,39	0
33	MG	0	8061	1/1	0.97	0.17	41,41,41,41	0
33	MG	0	8063	1/1	0.97	0.21	60,60,60,60	0
37	CD	Z	8603	1/1	0.97	0.09	98,98,98,98	0
33	MG	0	8019	1/1	0.98	0.06	35,35,35,35	0
33	MG	0	8036	1/1	0.98	0.06	33,33,33,33	0
33	MG	0	8037	1/1	0.98	0.09	43,43,43,43	0
33	MG	0	8062	1/1	0.98	0.09	54,54,54,54	0
33	MG	0	8020	1/1	0.98	0.09	33,33,33,33	0
33	MG	0	8021	1/1	0.98	0.12	30,30,30,30	0
33	MG	0	8022	1/1	0.98	0.10	38,38,38,38	0
33	MG	0	8004	1/1	0.98	0.09	29,29,29,29	0
35	NA	0	8554	1/1	0.98	0.16	40,40,40,40	0
33	MG	0	8098	1/1	0.98	0.08	40,40,40,40	0
33	MG	0	8024	1/1	0.98	0.13	21,21,21,21	0
33	MG	0	8007	1/1	0.98	0.13	22,22,22,22	0
33	MG	0	8045	1/1	0.98	0.07	53,53,53,53	0
33	MG	0	8074	1/1	0.98	0.05	36,36,36,36	0
33	MG	0	8026	1/1	0.98	0.17	26,26,26,26	0
33	MG	0	8076	1/1	0.98	0.12	55,55,55,55	0
33	MG	0	8106	1/1	0.98	0.09	65,65,65,65	0
33	MG	0	8107	1/1	0.98	0.08	36,36,36,36	0
33	MG	0	8077	1/1	0.98	0.14	33,33,33,33	0
36	CL	0	8712	1/1	0.98	0.08	49,49,49,49	0
33	MG	0	8111	1/1	0.98	0.09	42,42,42,42	0
33	MG	0	8079	1/1	0.98	0.17	37,37,37,37	0
33	MG	0	8002	1/1	0.98	0.09	34,34,34,34	0
33	MG	0	8115	1/1	0.98	0.08	52,52,52,52	0
35	NA	0	8528	1/1	0.98	0.32	42,42,42,42	0
33	MG	0	8048	1/1	0.98	0.12	54,54,54,54	0
33	MG	0	8117	1/1	0.98	0.06	32,32,32,32	0
36	CL	B	8719	1/1	0.98	0.12	51,51,51,51	0
33	MG	0	8011	1/1	0.98	0.18	27,27,27,27	0
33	MG	0	8029	1/1	0.98	0.07	35,35,35,35	0
36	CL	J	8721	1/1	0.98	0.10	58,58,58,58	0
33	MG	0	8016	1/1	0.98	0.09	40,40,40,40	0
33	MG	B	8056	1/1	0.98	0.05	55,55,55,55	0
35	NA	0	8576	1/1	0.98	0.24	46,46,46,46	0
36	CL	Q	8711	1/1	0.98	0.09	55,55,55,55	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
33	MG	0	8052	1/1	0.98	0.07	54,54,54,54	0
36	CL	Y	8720	1/1	0.98	0.13	46,46,46,46	0
33	MG	0	8017	1/1	0.98	0.13	26,26,26,26	0
33	MG	3	8078	1/1	0.98	0.06	43,43,43,43	0
33	MG	0	8018	1/1	0.98	0.14	50,50,50,50	0
33	MG	Y	8109	1/1	0.99	0.09	37,37,37,37	0
33	MG	0	8059	1/1	0.99	0.06	43,43,43,43	0
33	MG	0	8112	1/1	0.99	0.12	42,42,42,42	0
34	K	0	8402	1/1	0.99	0.14	57,57,57,57	0
33	MG	0	8060	1/1	0.99	0.27	40,40,40,40	0
33	MG	0	8006	1/1	0.99	0.06	33,33,33,33	0
33	MG	0	8034	1/1	0.99	0.09	33,33,33,33	0
33	MG	0	8003	1/1	0.99	0.09	35,35,35,35	0
36	CL	M	8718	1/1	0.99	0.13	47,47,47,47	0
33	MG	0	8001	1/1	0.99	0.14	36,36,36,36	0
33	MG	0	8030	1/1	0.99	0.10	25,25,25,25	0
33	MG	A	8065	1/1	0.99	0.06	41,41,41,41	0
33	MG	0	8038	1/1	0.99	0.13	34,34,34,34	0
33	MG	0	8009	1/1	0.99	0.17	35,35,35,35	0
33	MG	0	8083	1/1	0.99	0.12	43,43,43,43	0
33	MG	0	8108	1/1	0.99	0.09	70,70,70,70	0
33	MG	0	8005	1/1	0.99	0.16	33,33,33,33	0
37	CD	1	8602	1/1	0.99	0.10	63,63,63,63	0
37	CD	3	8604	1/1	0.99	0.08	68,68,68,68	0
37	CD	U	8601	1/1	1.00	0.09	62,62,62,62	0
33	MG	0	8010	1/1	1.00	0.17	33,33,33,33	0

6.5 Other polymers (i)

There are no such residues in this entry.