wwPDB X-ray Structure Validation Summary Report (i)

Sep 29, 2021 – 04:19 pm BST

PDB ID	:	7A18
Title	:	50S Deinococcus radiodurans ribosome bounded with mycinamicin IV
Authors	:	Breiner, E.; Eyal, Z.; Matzov, D.; Halfon, Y.; Cimicata, G.; Rozenberg, H.; Zimmerman, E.; Bashan, A.; Yonath, A.
Deposited on	:	2020-08-12
Resolution	:	3.40 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 (i) symbol.

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

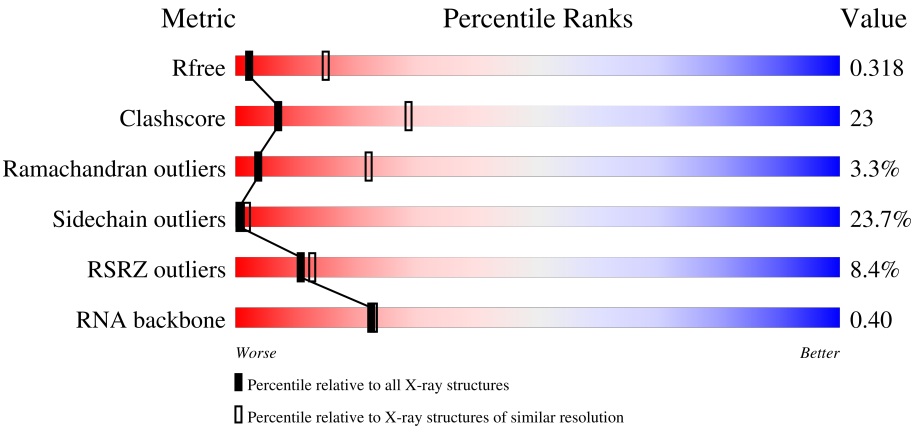
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.23.2
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0267
CCP4	:	7.1.010 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.23.2

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.40 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}	130704	1026 (3.48-3.32)
Clashscore	141614	1055 (3.48-3.32)
Ramachandran outliers	138981	1038 (3.48-3.32)
Sidechain outliers	138945	1038 (3.48-3.32)
RSRZ outliers	127900	2173 (3.50-3.30)
RNA backbone	3102	1006 (3.84-2.96)

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	X	2699	7% 25% 45% 25% 5%
2	Y	122	8% 22% 56% 18% .
3	A	271	14% 51% 41% 7%
4	B	206	4% 48% 37% 14% .

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Mol	Chain	Length	Quality of chain
5	C	195	11% 41% 49% 10%
6	D	176	19% 43% 42% 15%
7	E	171	20% 50% 38% 12%
8	G	142	4% 50% 34% 15%
9	H	134	% 38% 47% 15%
10	I	137	15% 56% 34% 9%
11	J	134	7% 40% 48% 10%
12	K	115	36% 45% 17%
13	L	104	17% 50% 44% 6%
14	M	118	% 39% 47% 13%
15	N	117	4% 52% 38% 9%
16	O	98	6% 49% 35% 16%
17	P	129	36% 52% 10%
18	Q	93	6% 39% 41% 19%
19	R	110	8% 45% 35% 16%
20	S	175	27% 47% 44% 9%
21	T	72	8% 39% 46% 15%
22	U	74	16% 36% 47% 15%
23	V	54	11% 61% 31% 7%
24	W	55	13% 42% 40% 18%
25	Z	57	33% 40% 25%
26	1	49	16% 57% 31% 10%
27	2	46	54% 39% 7%
28	3	63	32% 40% 29%

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

ria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
30	MG	2	101	-	-	-	X
30	MG	X	2925	-	-	-	X
30	MG	X	2950	-	-	-	X
30	MG	X	2969	-	-	-	X
30	MG	X	2976	-	-	-	X
30	MG	X	2979	-	-	-	X
30	MG	X	3002	-	-	-	X
30	MG	X	3045	-	-	-	X
30	MG	X	3050	-	-	-	X
30	MG	X	3052	-	-	-	X
30	MG	X	3057	-	-	-	X
30	MG	X	3060	-	-	-	X
30	MG	X	3071	-	-	-	X
30	MG	X	3074	-	-	-	X
30	MG	X	3086	-	-	-	X
30	MG	X	3090	-	-	-	X
30	MG	X	3096	-	-	-	X
30	MG	X	3097	-	-	-	X
30	MG	X	3102	-	-	-	X
30	MG	X	3104	-	-	-	X
30	MG	X	3105	-	-	-	X
30	MG	X	3109	-	-	-	X
30	MG	X	3115	-	-	-	X
30	MG	X	3122	-	-	-	X
30	MG	X	3131	-	-	-	X
30	MG	X	3141	-	-	-	X
30	MG	X	3144	-	-	-	X
30	MG	X	3146	-	-	-	X
30	MG	X	3149	-	-	-	X
30	MG	X	3151	-	-	-	X
30	MG	X	3154	-	-	-	X
30	MG	X	3159	-	-	-	X
30	MG	X	3163	-	-	-	X
30	MG	Y	202	-	-	-	X
31	SPD	X	3166	-	-	-	X
31	SPD	X	3167	-	-	X	-

2 Entry composition (i)

There are 31 unique types of molecules in this entry. The entry contains 84387 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a RNA chain called RNA (2699-MER).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	X	2699	57957	25853	10701	18704	2699	0	1	0

- Molecule 2 is a RNA chain called RNA (122-MER).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
2	Y	122	2598	1161	476	840	121	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	A	271	2001	1246	390	362	3	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	B	206	1544	968	296	272	8	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	C	195	1467	912	280	273	2	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
6	D	176	1367	870	238	253	6	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
7	E	171	Total	C	N	O	S	0	0	0
			1286	812	237	236	1			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
8	G	142	Total	C	N	O	S	0	0	0
			1107	698	208	198	3			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
9	H	134	Total	C	N	O	S	0	0	0
			993	611	197	180	5			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	I	137	Total	C	N	O	S	0	0	0
			982	603	194	184	1			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
11	J	134	Total	C	N	O	S	0	0	0
			1042	668	188	179	7			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
12	K	115	Total	C	N	O	S	0	0	0
			897	552	183	159	3			

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

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
13	L	104	Total	C	N	O	0	0	0
			751	457	154	140			

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

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
14	M	118	Total 923	C 578	N 178	O 167	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
15	N	117	Total 962	C 599	N 203	O 159	S 1	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
16	O	98	Total 734	C 459	N 135	O 139	S 1	0	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
O	12	ALA	TYR	conflict	UNP Q9RY64

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
17	P	129	Total 1020	C 643	N 199	O 176	S 2	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
18	Q	93	Total 718	C 452	N 134	O 130	S 2	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	R	110	Total 793	C 492	N 149	O 151	S 1	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
20	S	175	Total	C	N	O	S	0	0	1
			1290	811	224	251	4			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
21	T	72	Total	C	N	O	S	0	0	0
			542	343	104	94	1			

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

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
22	U	74	Total	C	N	O	0	0	0
			539	336	107	96			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
23	V	54	Total	C	N	O	S	0	0	0
			438	270	89	78	1			

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

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

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
25	Z	57	Total	C	N	O	S	0	0	0
			448	275	92	76	5			

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

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
26	1	49	Total	C	N	O	0	0	0
			315	199	54	62			

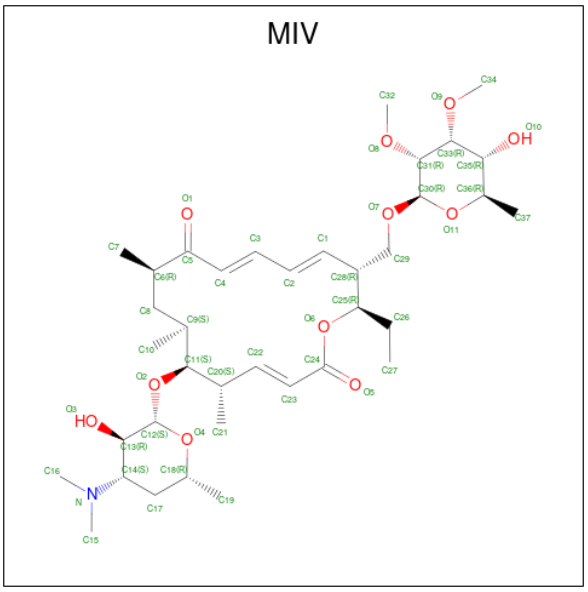
- Molecule 27 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
27	2	46	Total	C	N	O	S	0	0	0
			383	230	91	60	2			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
28	3	63	Total	C	N	O	S	0	0	0
			470	295	97	75	3			

- Molecule 29 is MYCINAMICIN IV (three-letter code: MIV) (formula: $C_{37}H_{61}NO_{11}$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
29	X	1	Total	C	N	O	0	0
			49	37	1	11		

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

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
30	X	264	Total	Mg	0	0
			264	264		
30	Y	4	Total	Mg	0	0
			4	4		
30	A	1	Total	Mg	0	0
			1	1		
30	I	1	Total	Mg	0	0
			1	1		

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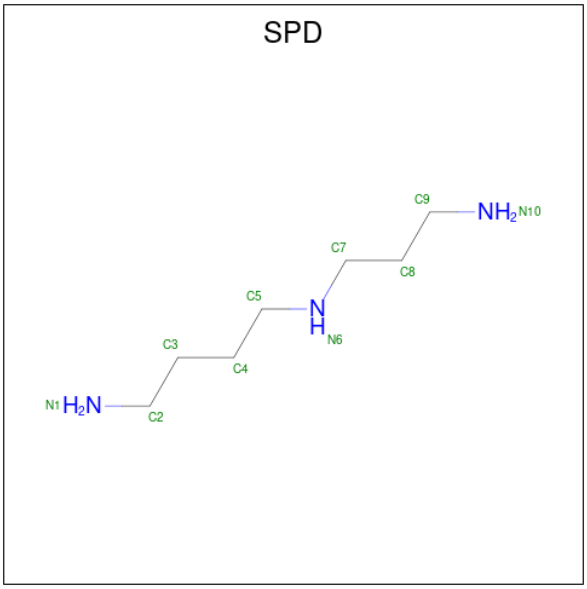
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
30	N	1	Total Mg 1 1	0	0
30	Q	2	Total Mg 2 2	0	0
30	W	1	Total Mg 1 1	0	0
30	2	2	Total Mg 2 2	0	0
30	3	1	Total Mg 1 1	0	0

- Molecule 31 is SPERMIDINE (three-letter code: SPD) (formula: $C_7H_{19}N_3$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
31	X	1	Total C N 10 7 3	0	0
31	X	1	Total C N 10 7 3	0	0
31	X	1	Total C N 10 7 3	0	0
31	X	1	Total C N 10 7 3	0	0
31	X	1	Total C N 10 7 3	0	0
31	X	1	Total C N 10 7 3	0	0

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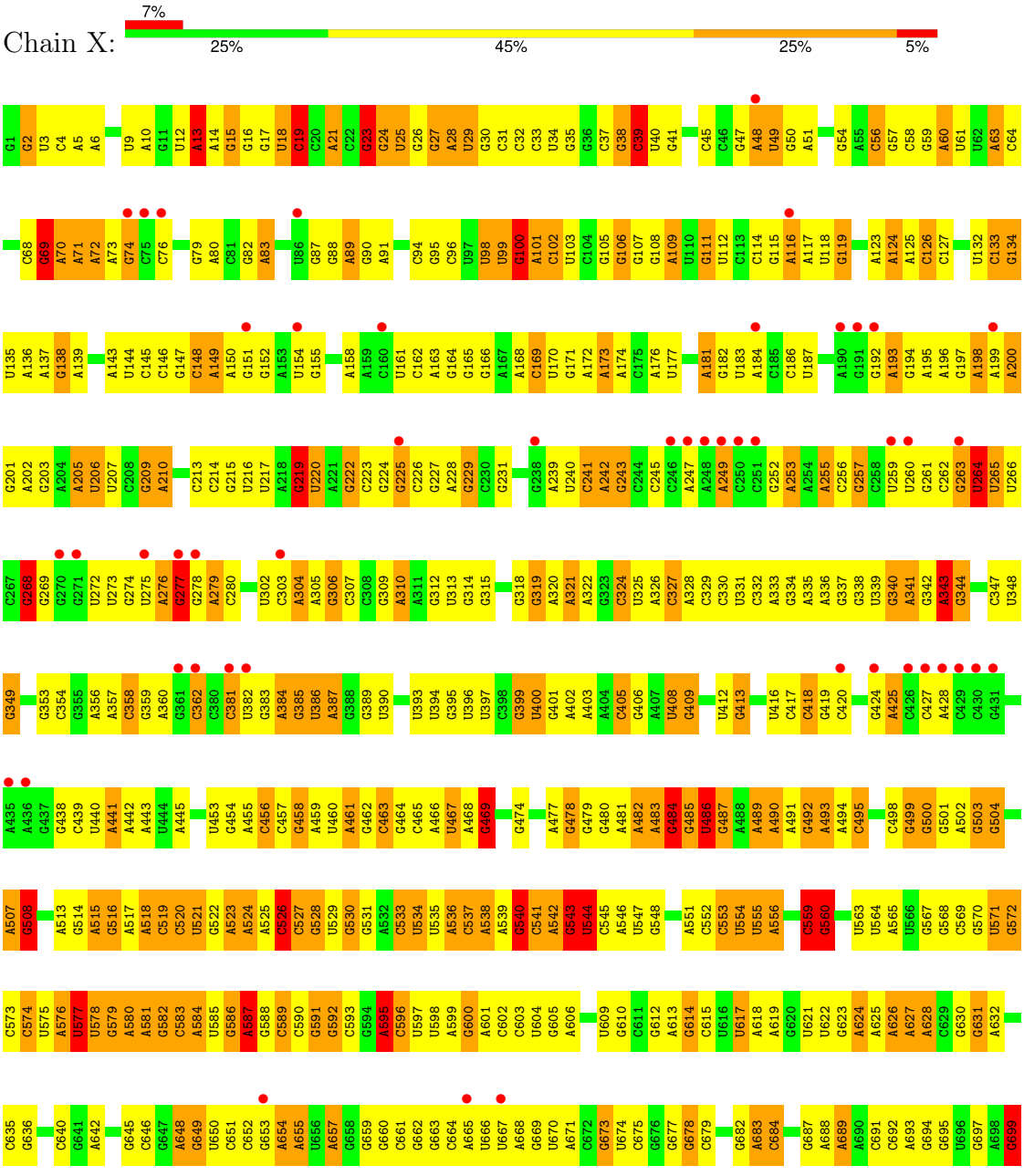
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
31	V	1	Total	C	N	0	0
			10	7	3		

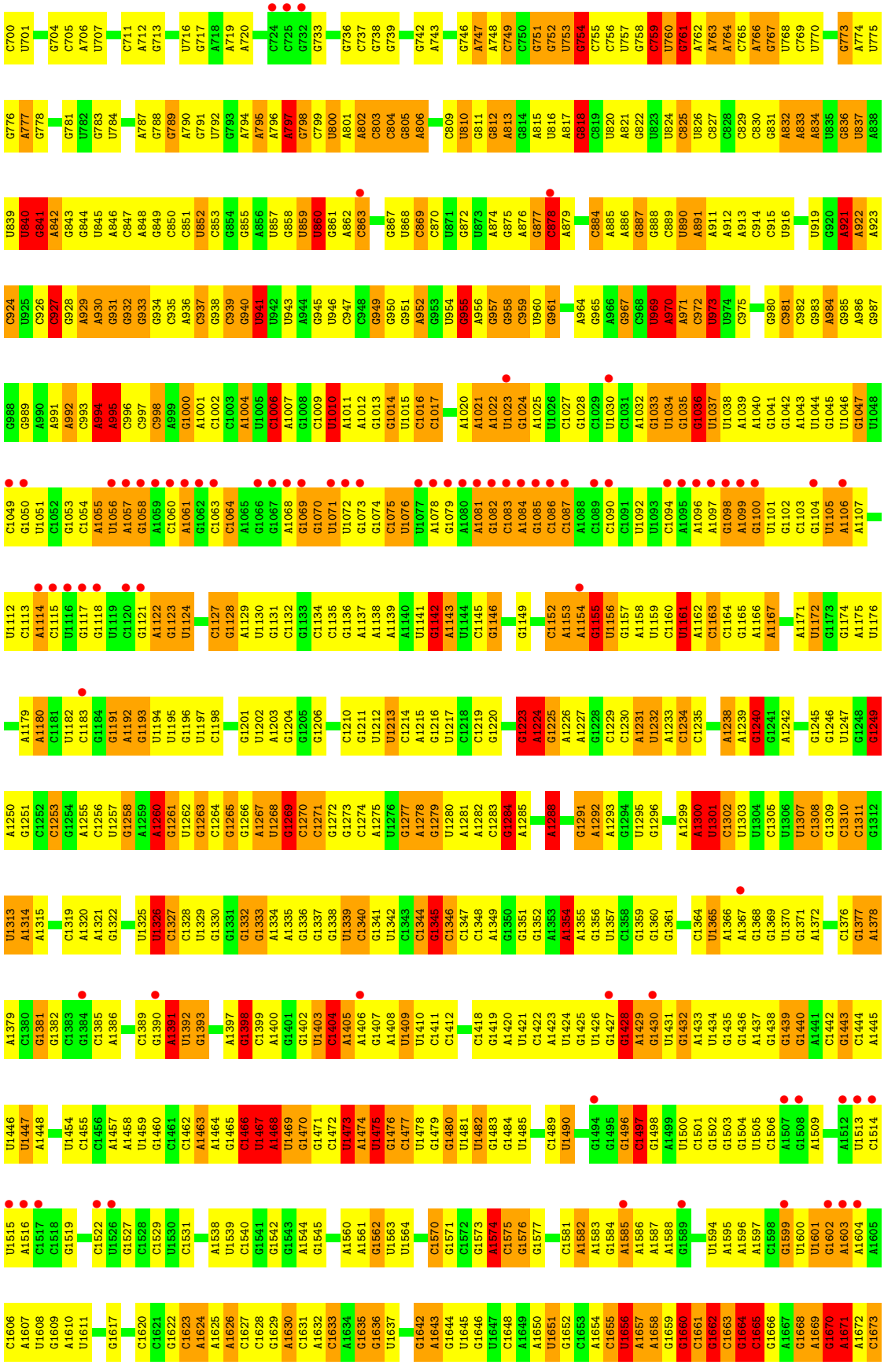
3 Residue-property plots (i)

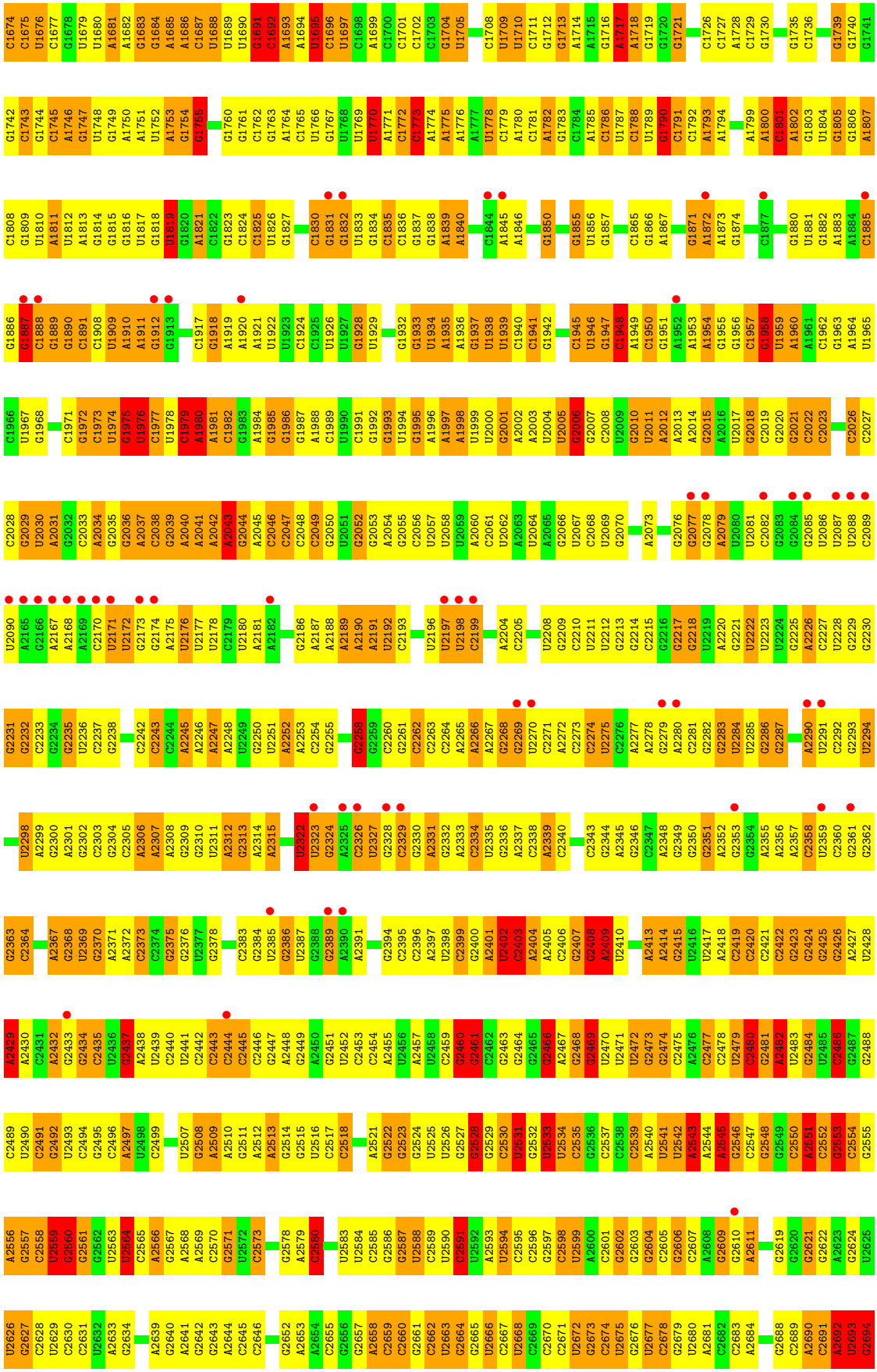
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density.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

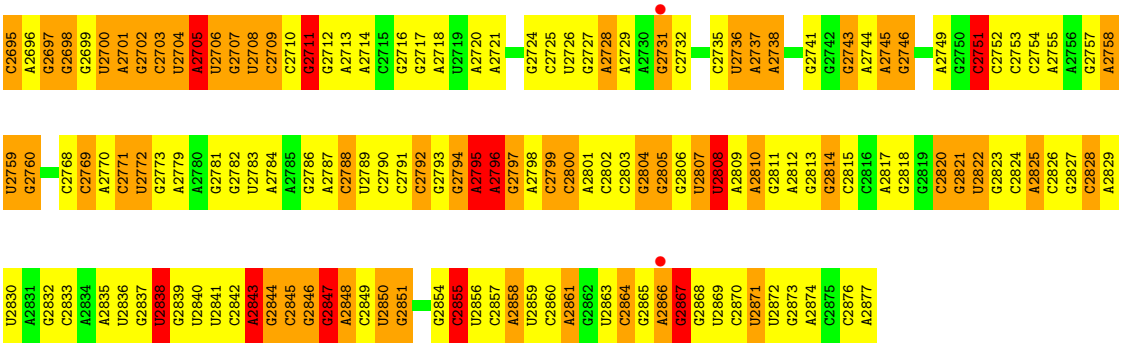
- Molecule 1: RNA (2699-MER)

Chain X:



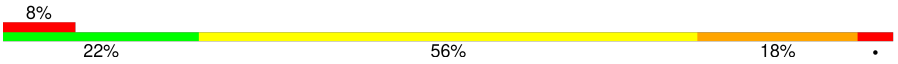


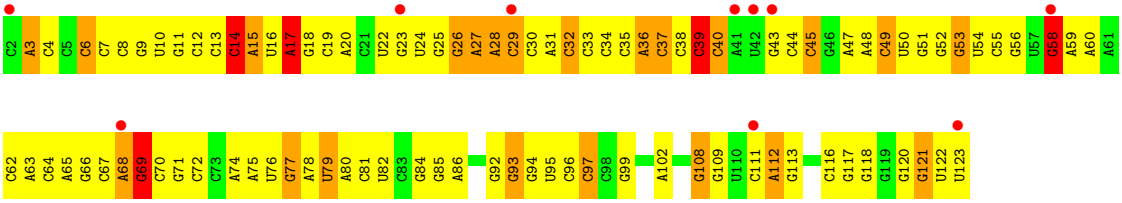




• Molecule 2: RNA (122-MER)

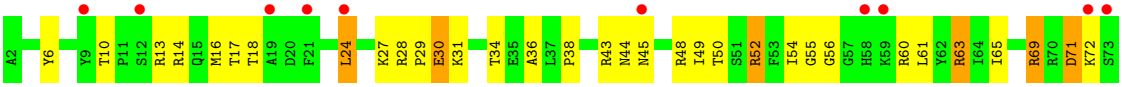
Chain Y:

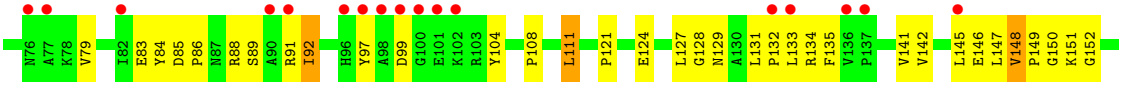


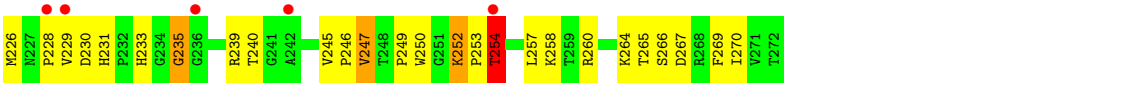


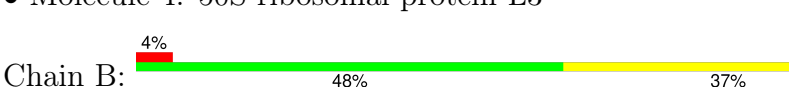
• Molecule 3: 50S ribosomal protein L2

Chain A:



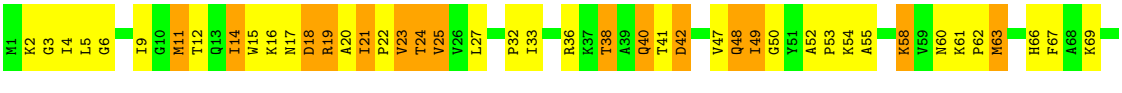


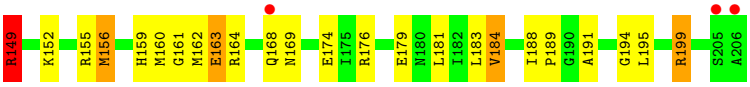




• Molecule 4: 50S ribosomal protein L3

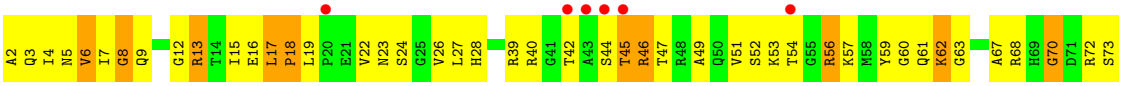
Chain B:

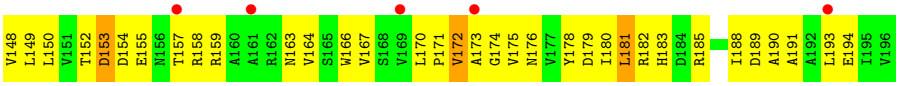




• Molecule 5: 50S ribosomal protein L4

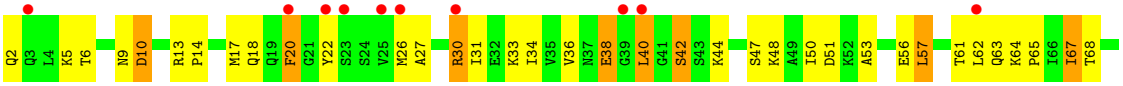
Chain C:

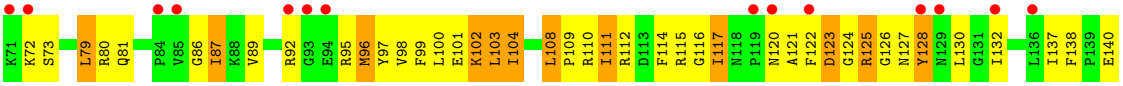


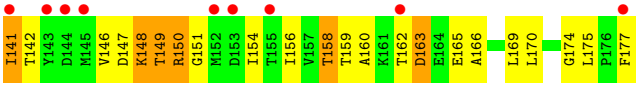


• Molecule 6: 50S ribosomal protein L5

Chain D:

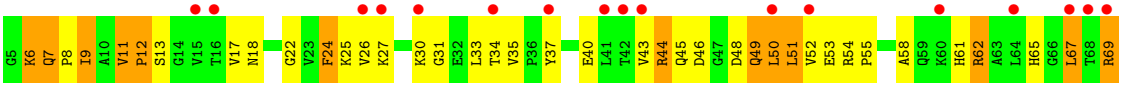


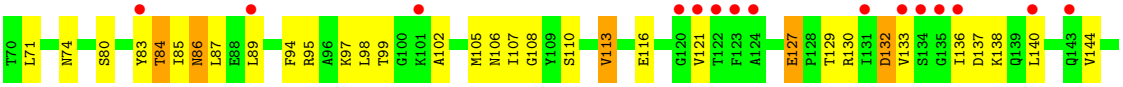


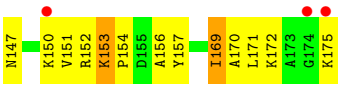


• Molecule 7: 50S ribosomal protein L6

Chain E:

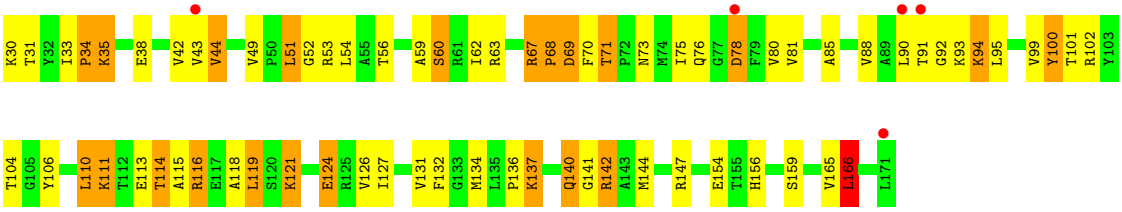


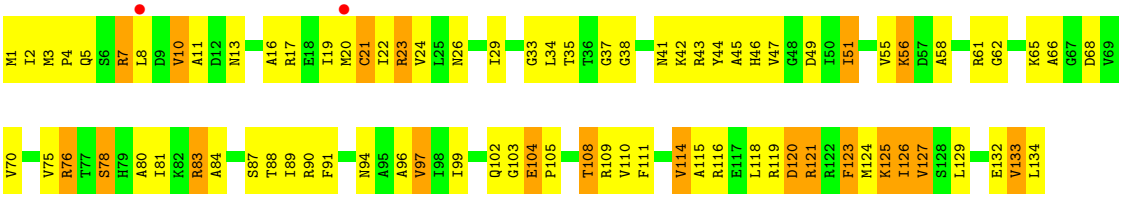




• Molecule 8: 50S ribosomal protein L13

Chain G:



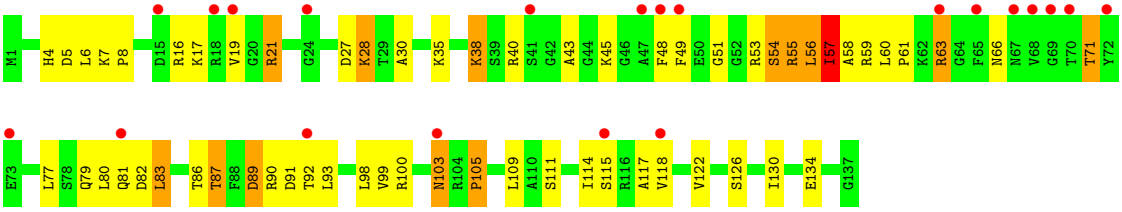


• Molecule 9: 50S ribosomal protein L14

Chain H:

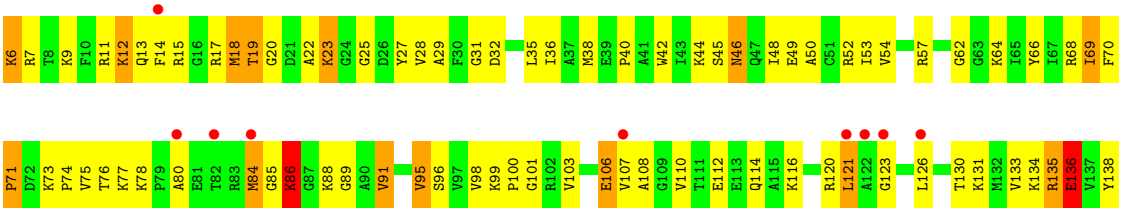
• Molecule 10: 50S ribosomal protein L15

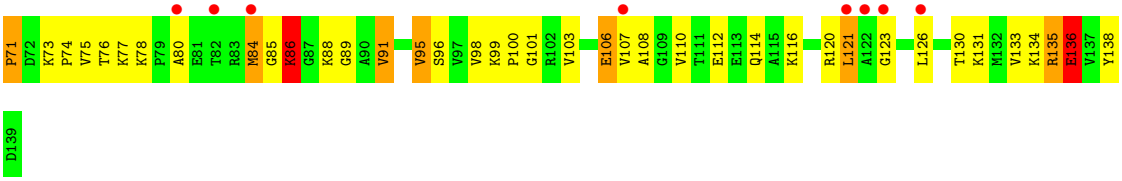
Chain I:



• Molecule 11: 50S ribosomal protein L16

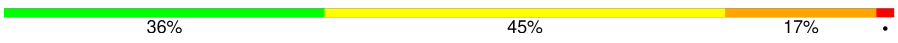
Chain J:





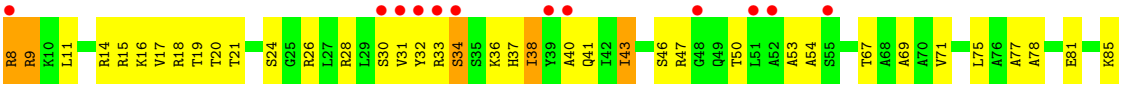
• Molecule 12: 50S ribosomal protein L17

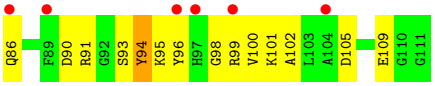
Chain K:



• Molecule 13: 50S ribosomal protein L18

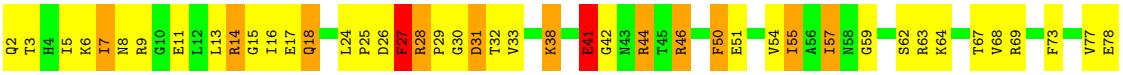
Chain L:





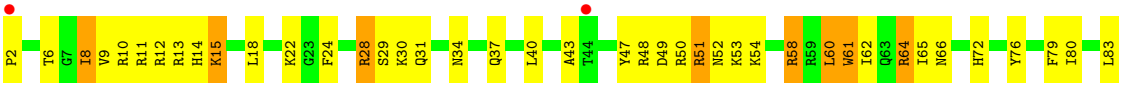
• Molecule 14: 50S ribosomal protein L19

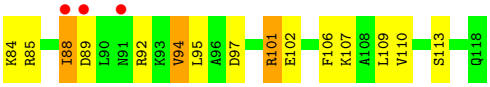
Chain M:



• Molecule 15: 50S ribosomal protein L20

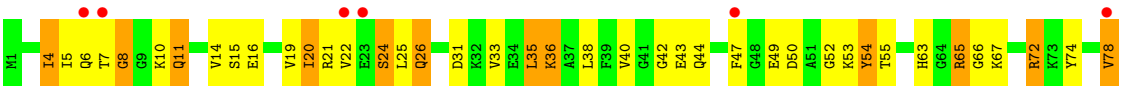
Chain N:

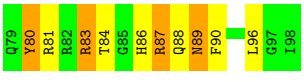




• Molecule 16: 50S ribosomal protein L21

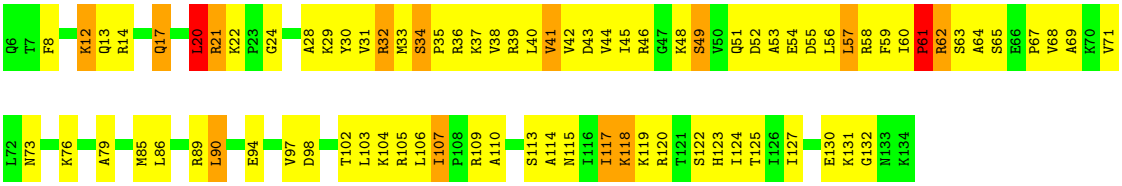
Chain O:





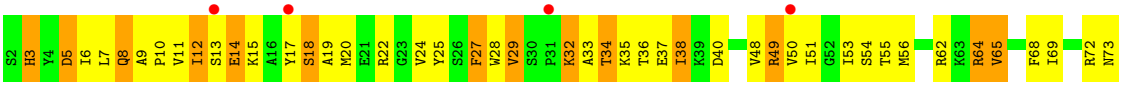
• Molecule 17: 50S ribosomal protein L22

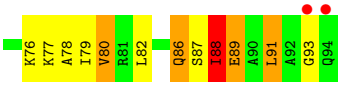
Chain P:



• Molecule 18: 50S ribosomal protein L23

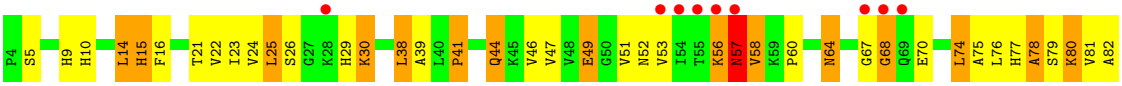
Chain Q:

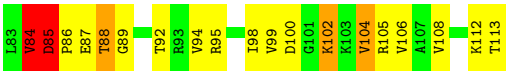




• Molecule 19: 50S ribosomal protein L24

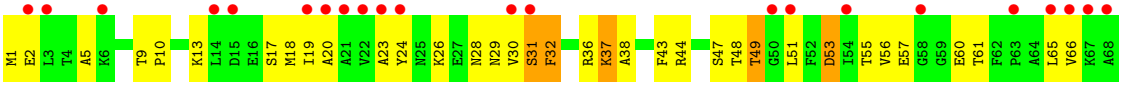
Chain R:

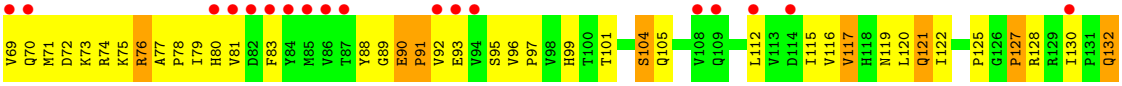


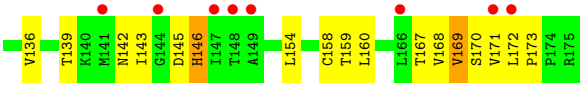


• Molecule 20: 50S ribosomal protein L25

Chain S:





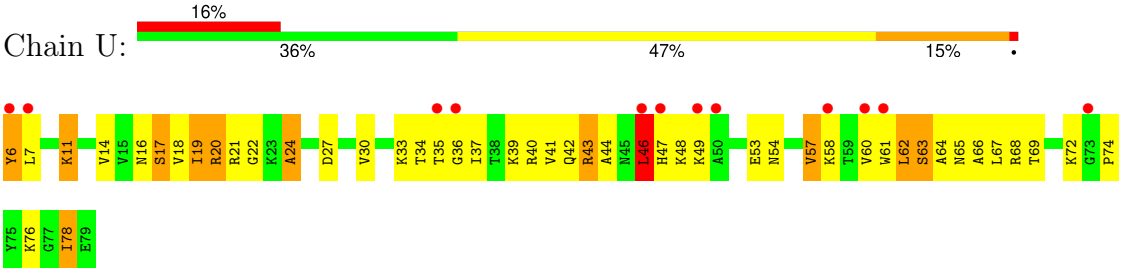


• Molecule 21: 50S ribosomal protein L27

Chain T:

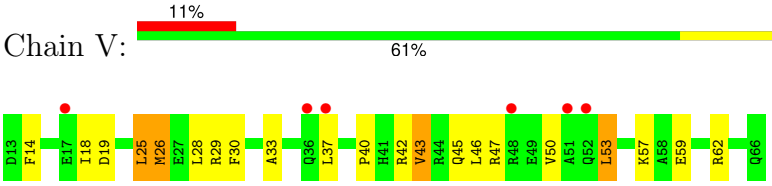
• Molecule 22: 50S ribosomal protein L28

Chain U:



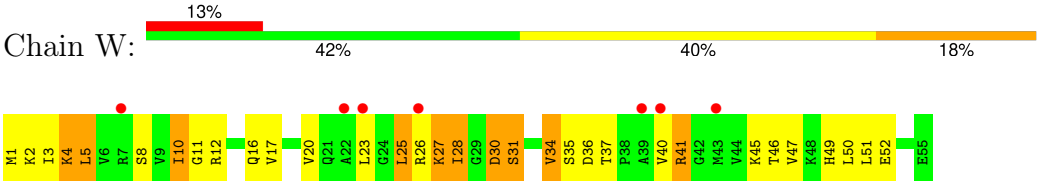
• Molecule 23: 50S ribosomal protein L29

Chain V:



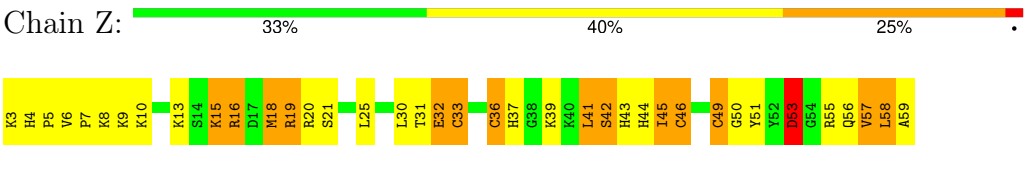
• Molecule 24: 50S ribosomal protein L30

Chain W:



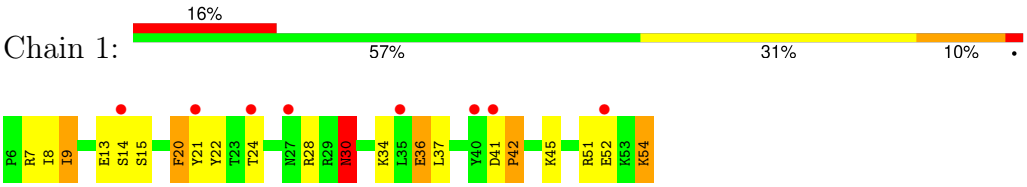
• Molecule 25: 50S ribosomal protein L32

Chain Z:



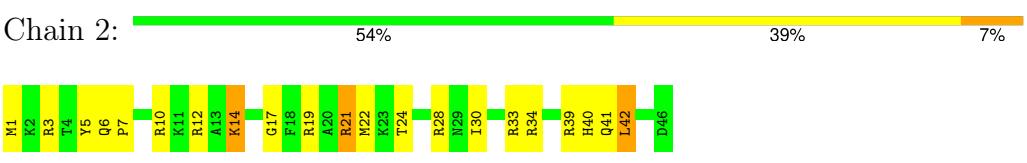
• Molecule 26: 50S ribosomal protein L33

Chain 1:



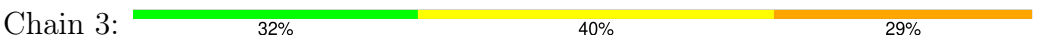
• Molecule 27: 50S ribosomal protein L34

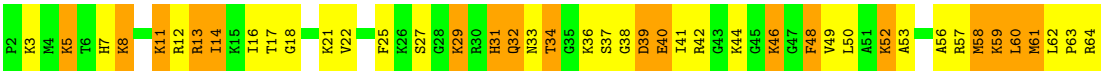
Chain 2:



• Molecule 28: 50S ribosomal protein L35

Chain 3:




P2
K3
M4
K5
T6
H7
K8
K11
R12
R13
I14
K15
I16
T17
G18
K21
V22
P25
K26
S27
G28
K29
R30
H31
Q32
N33
T34
G35
K36
S37
G38
D39
E40
I41
R42
G43
K44
G45
K46
G47
F48
V49
L50
A51
K52
A53
A56
R57
M58
K59
L60
M61
L62
P63
R64

4 Data and refinement statistics (i)

Property	Value	Source
Space group	I 2 2 2	Depositor
Cell constants a, b, c, α, β, γ	169.59Å 410.13Å 690.48Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	50.00 – 3.40 50.07 – 3.30	Depositor EDS
% Data completeness (in resolution range)	93.9 (50.00-3.40) 91.9 (50.07-3.30)	Depositor EDS
R_{merge}	0.29	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.76 (at 3.33Å)	Xtriage
Refinement program	PHENIX 1.15.2_3472	Depositor
R, R_{free}	0.284 , 0.318 0.284 , 0.318	Depositor DCC
R_{free} test set	16405 reflections (4.98%)	wwPDB-VP
Wilson B-factor (Å^2)	79.6	Xtriage
Anisotropy	0.724	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	(Not available) , (Not available)	EDS
L-test for twinning[2]	$< \|L\| > = 0.45$, $< L^2 > = 0.28$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.85	EDS
Total number of atoms	84387	wwPDB-VP
Average B, all atoms (Å^2)	109.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.31% 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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: MIV, SPD, MG

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|>5$	RMSZ	#$\|Z\|>5$
1	X	0.81	33/64897 (0.1%)	1.48	1063/101217 (1.1%)
2	Y	0.56	0/2904	1.27	26/4525 (0.6%)
3	A	0.37	0/2041	0.59	0/2765
4	B	0.59	0/1572	0.78	0/2112
5	C	0.44	0/1490	0.67	1/2021 (0.0%)
6	D	0.34	0/1385	0.58	0/1863
7	E	0.34	0/1308	0.59	0/1771
8	G	0.46	0/1131	0.68	1/1531 (0.1%)
9	H	0.71	1/1003 (0.1%)	0.85	0/1348
10	I	0.46	0/994	0.74	0/1338
11	J	0.50	0/1064	0.70	0/1425
12	K	0.71	0/905	0.92	1/1212 (0.1%)
13	L	0.31	0/755	0.65	0/1011
14	M	0.68	0/936	0.86	0/1257
15	N	0.53	0/978	0.75	1/1305 (0.1%)
16	O	0.43	0/741	0.66	0/992
17	P	0.62	0/1033	0.79	1/1383 (0.1%)
18	Q	0.38	0/729	0.60	0/980
19	R	0.44	0/803	0.66	0/1087
20	S	0.36	0/1312	0.59	0/1791
21	T	0.43	0/549	0.65	0/728
22	U	0.32	0/544	0.61	0/732
23	V	0.38	0/441	0.48	0/586
24	W	0.43	0/426	0.68	0/568
25	Z	0.69	0/460	0.87	2/618 (0.3%)
26	1	0.41	0/319	0.66	0/438
27	2	0.41	0/387	0.64	0/509
28	3	0.44	0/475	0.70	1/623 (0.2%)
All	All	0.73	34/91582 (0.0%)	1.33	1097/137736 (0.8%)

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
4	B	0	5
5	C	0	1
8	G	0	1
10	I	0	2
11	J	0	2
12	K	0	1
14	M	0	2
16	O	0	1
19	R	0	2
20	S	0	1
25	Z	0	2
All	All	0	20

The worst 5 of 34 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	X	1278	A	N3-C4	-8.26	1.29	1.34
1	X	1981	A	N3-C4	-7.72	1.30	1.34
9	H	21	CYS	CB-SG	-7.46	1.69	1.82
1	X	1278	A	N9-C4	-7.20	1.33	1.37
1	X	2823	G	N7-C5	-6.66	1.35	1.39

The worst 5 of 1097 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	X	2489	C	C6-N1-C2	-19.63	112.45	120.30
1	X	1675	C	O5'-P-OP1	-17.57	89.61	110.70
1	X	2532	G	O5'-P-OP2	-13.57	93.48	105.70
1	X	2489	C	N3-C4-C5	-13.52	116.49	121.90
1	X	1973	C	C6-N1-C2	-12.59	115.27	120.30

There are no chirality outliers.

5 of 20 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
4	B	130	GLY	Peptide
4	B	131	SER	Peptide
4	B	135	HIS	Peptide
4	B	146	THR	Peptide

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Mol	Chain	Res	Type	Group
4	B	149	ARG	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	X	57957	0	29205	1932	0
2	Y	2598	0	1328	88	0
3	A	2001	0	1994	121	0
4	B	1544	0	1605	107	0
5	C	1467	0	1472	100	0
6	D	1367	0	1423	81	0
7	E	1286	0	1336	61	0
8	G	1107	0	1124	66	0
9	H	993	0	1035	84	0
10	I	982	0	973	49	0
11	J	1042	0	1059	64	0
12	K	897	0	955	68	0
13	L	751	0	770	40	0
14	M	923	0	942	76	0
15	N	962	0	987	65	0
16	O	734	0	736	35	0
17	P	1020	0	1096	72	0
18	Q	718	0	731	48	0
19	R	793	0	804	68	0
20	S	1290	0	1268	56	0
21	T	542	0	566	39	0
22	U	539	0	556	37	0
23	V	438	0	456	18	0
24	W	424	0	470	18	0
25	Z	448	0	446	41	0
26	1	315	0	252	16	0
27	2	383	0	414	19	0
28	3	470	0	512	48	0
29	X	49	0	61	8	0
30	2	2	0	0	0	0
30	3	1	0	0	0	0
30	A	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
30	I	1	0	0	0	0
30	N	1	0	0	0	0
30	Q	2	0	0	0	0
30	W	1	0	0	0	0
30	X	264	0	0	0	0
30	Y	4	0	0	0	0
31	V	10	0	19	0	0
31	X	60	0	104	15	0
All	All	84387	0	54699	3132	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 23.

The worst 5 of 3132 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)
13:L:30:SER:O	13:L:40:ALA:HA	1.55	1.03
15:N:66:ASN:HB3	15:N:76:TYR:HB2	1.40	1.03
1:X:1673:C:H5"	4:B:136:ARG:HB3	1.39	1.02
8:G:119:LEU:HD12	8:G:126:VAL:HG23	1.41	1.01
1:X:2796:A:H2'	1:X:2797:G:H8	1.24	1.01

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
3	A	269/271 (99%)	234 (87%)	26 (10%)	9 (3%)	4 22
4	B	204/206 (99%)	176 (86%)	22 (11%)	6 (3%)	4 24
5	C	193/195 (99%)	168 (87%)	14 (7%)	11 (6%)	1 12

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
6	D	174/176 (99%)	147 (84%)	21 (12%)	6 (3%)	3 21
7	E	169/171 (99%)	156 (92%)	11 (6%)	2 (1%)	13 41
8	G	140/142 (99%)	121 (86%)	14 (10%)	5 (4%)	3 21
9	H	132/134 (98%)	122 (92%)	8 (6%)	2 (2%)	10 36
10	I	135/137 (98%)	103 (76%)	22 (16%)	10 (7%)	1 7
11	J	132/134 (98%)	105 (80%)	22 (17%)	5 (4%)	3 19
12	K	113/115 (98%)	103 (91%)	7 (6%)	3 (3%)	5 26
13	L	102/104 (98%)	83 (81%)	17 (17%)	2 (2%)	7 30
14	M	116/118 (98%)	102 (88%)	10 (9%)	4 (3%)	3 21
15	N	115/117 (98%)	110 (96%)	5 (4%)	0	100 100
16	O	96/98 (98%)	79 (82%)	13 (14%)	4 (4%)	3 18
17	P	127/129 (98%)	118 (93%)	7 (6%)	2 (2%)	9 34
18	Q	91/93 (98%)	79 (87%)	9 (10%)	3 (3%)	4 22
19	R	108/110 (98%)	92 (85%)	11 (10%)	5 (5%)	2 15
20	S	172/175 (98%)	147 (86%)	19 (11%)	6 (4%)	3 21
21	T	70/72 (97%)	64 (91%)	5 (7%)	1 (1%)	11 37
22	U	72/74 (97%)	55 (76%)	13 (18%)	4 (6%)	2 12
23	V	52/54 (96%)	49 (94%)	2 (4%)	1 (2%)	8 31
24	W	53/55 (96%)	51 (96%)	2 (4%)	0	100 100
25	Z	55/57 (96%)	50 (91%)	4 (7%)	1 (2%)	8 32
26	1	47/49 (96%)	35 (74%)	7 (15%)	5 (11%)	0 3
27	2	44/46 (96%)	41 (93%)	3 (7%)	0	100 100
28	3	61/63 (97%)	46 (75%)	13 (21%)	2 (3%)	4 22
All	All	3042/3095 (98%)	2636 (87%)	307 (10%)	99 (3%)	4 22

5 of 99 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	A	30	GLU
3	A	247	VAL
3	A	254	THR
4	B	131	SER
4	B	147	PRO

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	196/212 (92%)	168 (86%)	28 (14%)	3 13
4	B	155/155 (100%)	120 (77%)	35 (23%)	1 2
5	C	150/155 (97%)	127 (85%)	23 (15%)	2 11
6	D	147/152 (97%)	111 (76%)	36 (24%)	0 2
7	E	136/136 (100%)	109 (80%)	27 (20%)	1 4
8	G	116/118 (98%)	89 (77%)	27 (23%)	1 2
9	H	102/103 (99%)	79 (78%)	23 (22%)	1 2
10	I	93/105 (89%)	72 (77%)	21 (23%)	1 2
11	J	103/109 (94%)	76 (74%)	27 (26%)	0 1
12	K	92/92 (100%)	63 (68%)	29 (32%)	0 1
13	L	68/74 (92%)	55 (81%)	13 (19%)	1 4
14	M	97/101 (96%)	72 (74%)	25 (26%)	0 2
15	N	93/96 (97%)	75 (81%)	18 (19%)	1 4
16	O	71/77 (92%)	51 (72%)	20 (28%)	0 1
17	P	109/111 (98%)	82 (75%)	27 (25%)	0 2
18	Q	73/75 (97%)	49 (67%)	24 (33%)	0 1
19	R	84/91 (92%)	57 (68%)	27 (32%)	0 1
20	S	137/149 (92%)	111 (81%)	26 (19%)	1 4
21	T	54/54 (100%)	41 (76%)	13 (24%)	0 2
22	U	52/59 (88%)	35 (67%)	17 (33%)	0 1
23	V	43/43 (100%)	36 (84%)	7 (16%)	2 9
24	W	48/48 (100%)	30 (62%)	18 (38%)	0 0
25	Z	50/51 (98%)	33 (66%)	17 (34%)	0 1
26	1	23/44 (52%)	15 (65%)	8 (35%)	0 1
27	2	39/39 (100%)	33 (85%)	6 (15%)	2 11
28	3	45/50 (90%)	24 (53%)	21 (47%)	0 0

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	2376/2499 (95%)	1813 (76%)	563 (24%)	1 2

5 of 563 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
21	T	59	LEU
22	U	43	ARG
21	T	57	HIS
25	Z	41	LEU
9	H	121	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 14 such sidechains are listed below:

Mol	Chain	Res	Type
9	H	102	GLN
14	M	2	GLN
28	3	32	GLN
21	T	71	ASN
22	U	47	HIS

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	X	2685/2699 (99%)	770 (28%)	65 (2%)
2	Y	121/122 (99%)	28 (23%)	4 (3%)
All	All	2806/2821 (99%)	798 (28%)	69 (2%)

5 of 798 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	X	2	G
1	X	13	A
1	X	19	C
1	X	23	G
1	X	25	U

5 of 69 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	X	2414	A

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Mol	Chain	Res	Type
1	X	2460	G
2	Y	14	C
1	X	843	G
1	X	813	A

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 285 ligands modelled in this entry, 277 are monoatomic - leaving 8 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
29	MIV	X	2901	-	51,51,51	0.72	2 (3%)	62,71,71	1.42	7 (11%)
31	SPD	X	3166	-	9,9,9	0.38	0	8,8,8	0.64	0
31	SPD	X	3167	1	9,9,9	0.32	0	8,8,8	1.00	0
31	SPD	X	3168	1	9,9,9	0.42	0	8,8,8	0.96	0
31	SPD	X	3170	1	9,9,9	0.47	0	8,8,8	1.19	1 (12%)
31	SPD	X	3171	-	9,9,9	0.28	0	8,8,8	0.66	0
31	SPD	V	101	-	9,9,9	0.29	0	8,8,8	0.85	0
31	SPD	X	3169	1	9,9,9	0.37	0	8,8,8	1.08	1 (12%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
29	MIV	X	2901	-	-	25/55/91/91	0/2/3/3
31	SPD	X	3166	-	-	3/7/7/7	-
31	SPD	X	3167	1	-	2/7/7/7	-
31	SPD	X	3168	1	-	3/7/7/7	-
31	SPD	X	3170	1	-	4/7/7/7	-
31	SPD	X	3171	-	-	3/7/7/7	-
31	SPD	V	101	-	-	5/7/7/7	-
31	SPD	X	3169	1	-	3/7/7/7	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	X	2901	MIV	O6-C24	2.84	1.40	1.34
29	X	2901	MIV	C31-C33	2.81	1.58	1.52

The worst 5 of 9 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
29	X	2901	MIV	O6-C25-C26	-5.97	97.39	106.92
29	X	2901	MIV	O6-C25-C28	4.22	116.68	107.42
29	X	2901	MIV	C32-O8-C31	3.85	124.64	114.52
29	X	2901	MIV	O11-C30-C31	3.55	116.55	109.51
31	X	3170	SPD	C8-C7-N6	2.87	119.88	112.14

There are no chirality outliers.

5 of 48 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
29	X	2901	MIV	C17-C14-N-C15
29	X	2901	MIV	C13-C14-N-C15
29	X	2901	MIV	C5-C6-C8-C9
29	X	2901	MIV	O1-C5-C6-C7
29	X	2901	MIV	C4-C5-C6-C7

There are no ring outliers.

6 monomers are involved in 23 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
29	X	2901	MIV	8	0
31	X	3167	SPD	6	0

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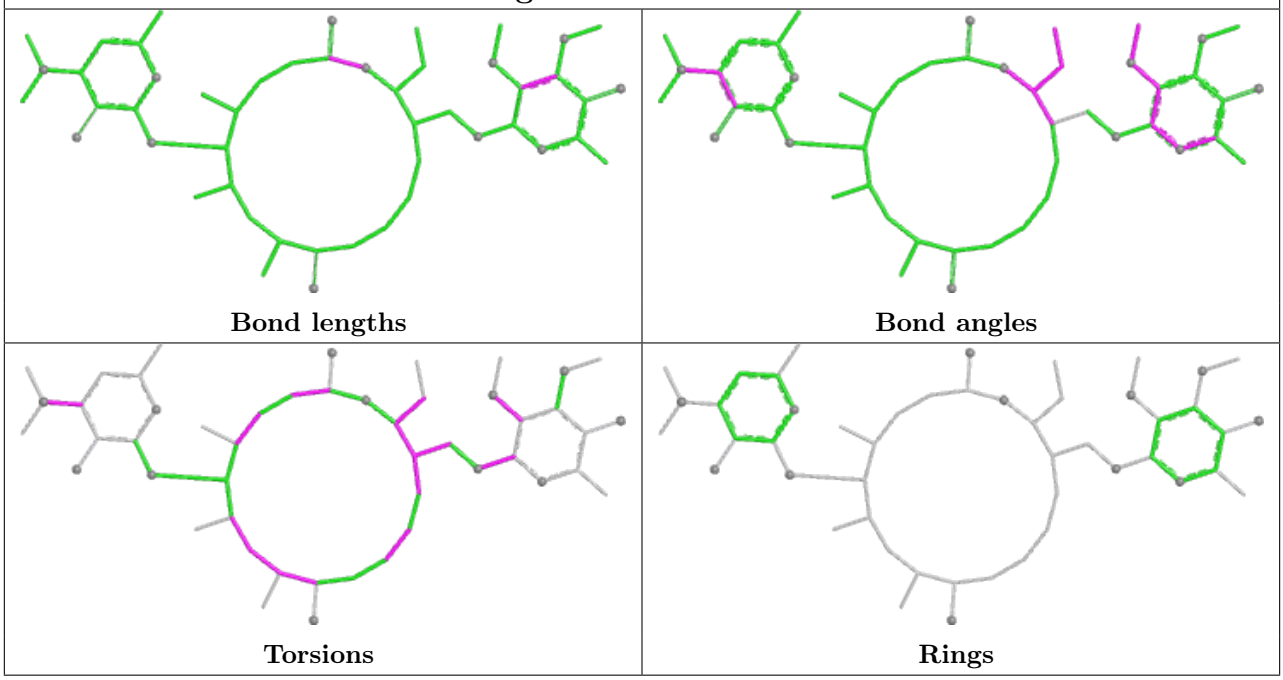
Mol	Chain	Res	Type	Clashes	Symm-Clashes
31	X	3168	SPD	3	0
31	X	3170	SPD	3	0
31	X	3171	SPD	2	0
31	X	3169	SPD	1	0

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

Ligand MIV X 2901



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	X	12

The worst 5 of 12 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	X	282:A	O3'	302:U	P	65.10
1	X	362:C	O3'	380:C	P	54.16
1	X	2090:U	O3'	2165:A	P	19.14
1	X	1184:G	O3'	1191:G	P	18.52
1	X	2773:G	O3'	2779:A	P	17.92

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	X	2699/2699 (100%)	0.43	183 (6%) 17 19	37, 96, 191, 312	0
2	Y	122/122 (100%)	0.51	10 (8%) 11 13	95, 183, 226, 251	0
3	A	271/271 (100%)	0.76	39 (14%) 2 3	79, 131, 162, 170	0
4	B	206/206 (100%)	0.16	8 (3%) 39 38	40, 64, 80, 85	0
5	C	195/195 (100%)	0.47	22 (11%) 5 6	60, 122, 150, 159	0
6	D	176/176 (100%)	0.80	33 (18%) 1 1	168, 207, 227, 235	0
7	E	171/171 (100%)	0.76	35 (20%) 1 1	98, 144, 186, 190	0
8	G	142/142 (100%)	0.22	5 (3%) 44 43	60, 95, 107, 115	0
9	H	134/134 (100%)	0.04	2 (1%) 73 72	46, 57, 64, 69	0
10	I	137/137 (100%)	0.78	21 (15%) 2 2	67, 141, 180, 192	0
11	J	134/134 (100%)	0.43	9 (6%) 17 19	71, 103, 126, 132	0
12	K	115/115 (100%)	-0.01	0 100 100	40, 47, 54, 58	0
13	L	104/104 (100%)	0.72	18 (17%) 1 1	159, 198, 226, 237	0
14	M	118/118 (100%)	-0.14	1 (0%) 86 85	46, 56, 69, 74	0
15	N	117/117 (100%)	0.42	5 (4%) 35 35	59, 94, 121, 127	0
16	O	98/98 (100%)	0.32	6 (6%) 21 22	66, 114, 134, 138	0
17	P	129/129 (100%)	-0.13	0 100 100	49, 59, 82, 97	0
18	Q	93/93 (100%)	0.34	6 (6%) 18 20	85, 109, 125, 126	0
19	R	110/110 (100%)	0.35	9 (8%) 11 13	86, 103, 146, 156	0
20	S	175/175 (100%)	1.15	48 (27%) 0 0	113, 157, 176, 182	0
21	T	72/72 (100%)	0.54	6 (8%) 11 13	87, 133, 147, 153	0
22	U	74/74 (100%)	0.88	12 (16%) 1 2	106, 144, 175, 178	0
23	V	54/54 (100%)	0.48	6 (11%) 5 6	116, 127, 154, 162	0
24	W	55/55 (100%)	0.83	7 (12%) 3 4	88, 108, 128, 133	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
25	Z	57/57 (100%)	0.02	0 100 100	47, 56, 70, 74	0
26	1	49/49 (100%)	0.69	8 (16%) 1 2	132, 148, 166, 168	0
27	2	46/46 (100%)	0.11	0 100 100	63, 86, 94, 96	0
28	3	63/63 (100%)	0.44	0 100 100	105, 115, 128, 134	0
All	All	5916/5916 (100%)	0.45	499 (8%) 11 13	37, 105, 203, 312	0

The worst 5 of 499 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
20	S	82	ASP	9.5
1	X	248	A	8.9
7	E	123	PHE	8.6
6	D	153	ASP	8.6
1	X	1095	A	8.1

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

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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
30	MG	X	2976	1/1	0.39	0.78	125,125,125,125	0
30	MG	X	3060	1/1	0.40	0.85	54,54,54,54	0
30	MG	X	3097	1/1	0.44	0.64	102,102,102,102	0
30	MG	X	3154	1/1	0.46	1.29	74,74,74,74	0
30	MG	X	3050	1/1	0.54	0.63	108,108,108,108	0
31	SPD	X	3166	10/10	0.56	0.69	92,95,99,99	0
30	MG	X	3104	1/1	0.58	1.46	119,119,119,119	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
30	MG	X	3002	1/1	0.59	0.48	138,138,138,138	0
30	MG	X	3096	1/1	0.61	0.44	71,71,71,71	0
30	MG	X	3146	1/1	0.61	0.82	178,178,178,178	0
30	MG	Y	202	1/1	0.62	0.58	98,98,98,98	0
30	MG	X	3074	1/1	0.63	0.46	59,59,59,59	0
30	MG	X	3121	1/1	0.63	0.38	79,79,79,79	0
30	MG	X	3090	1/1	0.64	0.55	81,81,81,81	0
31	SPD	V	101	10/10	0.67	0.28	126,128,135,136	0
30	MG	X	3109	1/1	0.68	0.54	63,63,63,63	0
30	MG	X	3122	1/1	0.68	0.52	65,65,65,65	0
30	MG	X	3141	1/1	0.68	0.44	145,145,145,145	0
30	MG	X	3115	1/1	0.68	0.73	54,54,54,54	0
30	MG	X	3144	1/1	0.69	1.39	105,105,105,105	0
30	MG	X	3151	1/1	0.69	0.89	53,53,53,53	0
30	MG	X	3163	1/1	0.70	0.52	60,60,60,60	0
30	MG	X	3113	1/1	0.70	0.39	55,55,55,55	0
30	MG	X	2969	1/1	0.73	0.81	55,55,55,55	0
30	MG	X	3102	1/1	0.73	0.76	112,112,112,112	0
30	MG	X	3130	1/1	0.73	0.39	60,60,60,60	0
30	MG	X	2950	1/1	0.73	0.45	88,88,88,88	0
30	MG	X	3052	1/1	0.74	0.74	105,105,105,105	0
30	MG	X	3057	1/1	0.74	0.51	80,80,80,80	0
30	MG	X	2984	1/1	0.74	0.36	62,62,62,62	0
30	MG	X	3071	1/1	0.75	0.54	95,95,95,95	0
30	MG	X	3131	1/1	0.76	0.59	98,98,98,98	0
30	MG	X	3149	1/1	0.76	0.56	83,83,83,83	0
30	MG	X	3086	1/1	0.76	0.72	78,78,78,78	0
30	MG	X	3045	1/1	0.76	0.55	92,92,92,92	0
30	MG	X	2979	1/1	0.77	0.71	83,83,83,83	0
30	MG	X	3116	1/1	0.77	0.26	60,60,60,60	0
30	MG	X	3105	1/1	0.78	0.54	69,69,69,69	0
30	MG	X	3017	1/1	0.79	0.34	114,114,114,114	0
30	MG	X	3159	1/1	0.79	0.49	93,93,93,93	0
30	MG	X	3018	1/1	0.79	0.30	76,76,76,76	0
30	MG	X	2988	1/1	0.79	0.35	87,87,87,87	0
30	MG	2	101	1/1	0.79	1.45	80,80,80,80	0
30	MG	X	3048	1/1	0.79	0.30	124,124,124,124	0
30	MG	X	2925	1/1	0.79	0.71	50,50,50,50	0
30	MG	X	3046	1/1	0.80	0.47	78,78,78,78	0
30	MG	X	3145	1/1	0.80	0.37	77,77,77,77	0
30	MG	X	3123	1/1	0.81	0.34	85,85,85,85	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
30	MG	X	3110	1/1	0.81	0.71	41,41,41,41	0
30	MG	X	3032	1/1	0.81	0.74	112,112,112,112	0
30	MG	X	3051	1/1	0.81	0.37	118,118,118,118	0
30	MG	X	2958	1/1	0.81	0.46	77,77,77,77	0
30	MG	X	3120	1/1	0.81	0.37	78,78,78,78	0
30	MG	X	3026	1/1	0.81	0.43	81,81,81,81	0
30	MG	X	3030	1/1	0.81	0.40	48,48,48,48	0
30	MG	X	2944	1/1	0.82	1.21	102,102,102,102	0
30	MG	X	3091	1/1	0.82	0.90	53,53,53,53	0
30	MG	X	3139	1/1	0.82	0.41	182,182,182,182	0
30	MG	X	3095	1/1	0.82	0.40	65,65,65,65	0
30	MG	X	3164	1/1	0.82	0.42	39,39,39,39	0
30	MG	X	3082	1/1	0.82	0.86	112,112,112,112	0
30	MG	X	3003	1/1	0.82	0.25	77,77,77,77	0
30	MG	X	3098	1/1	0.82	0.36	120,120,120,120	0
30	MG	X	3124	1/1	0.82	0.81	67,67,67,67	0
30	MG	X	3021	1/1	0.83	0.63	73,73,73,73	0
30	MG	3	101	1/1	0.83	1.69	126,126,126,126	0
30	MG	X	2989	1/1	0.83	0.39	103,103,103,103	0
31	SPD	X	3170	10/10	0.83	0.29	62,63,64,64	0
30	MG	X	3044	1/1	0.83	0.55	73,73,73,73	0
30	MG	X	2923	1/1	0.84	0.34	75,75,75,75	0
30	MG	Y	203	1/1	0.84	0.45	132,132,132,132	0
30	MG	N	201	1/1	0.84	1.01	75,75,75,75	0
30	MG	Q	101	1/1	0.84	0.56	104,104,104,104	0
30	MG	X	3153	1/1	0.84	0.57	47,47,47,47	0
30	MG	X	2914	1/1	0.84	0.31	65,65,65,65	0
30	MG	X	2920	1/1	0.84	0.55	74,74,74,74	0
30	MG	X	3077	1/1	0.84	1.50	56,56,56,56	0
30	MG	X	3093	1/1	0.84	0.23	117,117,117,117	0
30	MG	X	3117	1/1	0.85	0.26	48,48,48,48	0
30	MG	X	3152	1/1	0.85	0.65	49,49,49,49	0
30	MG	X	2903	1/1	0.85	0.54	60,60,60,60	0
30	MG	X	3055	1/1	0.85	0.39	66,66,66,66	0
30	MG	X	2939	1/1	0.85	0.26	50,50,50,50	0
30	MG	X	2990	1/1	0.85	0.15	62,62,62,62	0
30	MG	X	3040	1/1	0.85	0.60	103,103,103,103	0
30	MG	X	2971	1/1	0.85	0.49	59,59,59,59	0
30	MG	X	3010	1/1	0.86	0.52	111,111,111,111	0
30	MG	X	3034	1/1	0.86	0.16	66,66,66,66	0
30	MG	X	3036	1/1	0.86	0.28	75,75,75,75	0
30	MG	X	2924	1/1	0.86	0.26	80,80,80,80	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
30	MG	X	2959	1/1	0.86	0.49	78,78,78,78	0
30	MG	W	101	1/1	0.86	0.32	111,111,111,111	0
30	MG	X	2999	1/1	0.86	0.61	81,81,81,81	0
30	MG	X	3111	1/1	0.86	0.30	53,53,53,53	0
30	MG	X	3065	1/1	0.86	0.46	99,99,99,99	0
30	MG	X	2986	1/1	0.86	0.47	57,57,57,57	0
30	MG	X	2961	1/1	0.86	0.39	78,78,78,78	0
30	MG	X	3004	1/1	0.87	0.52	61,61,61,61	0
30	MG	X	3158	1/1	0.87	0.25	64,64,64,64	0
30	MG	X	3009	1/1	0.87	0.31	54,54,54,54	0
30	MG	X	2981	1/1	0.87	0.30	79,79,79,79	0
30	MG	X	3140	1/1	0.87	0.20	159,159,159,159	0
30	MG	Y	201	1/1	0.87	0.33	114,114,114,114	0
30	MG	X	2934	1/1	0.87	0.18	58,58,58,58	0
30	MG	X	2964	1/1	0.87	0.34	67,67,67,67	0
30	MG	X	2982	1/1	0.88	0.15	101,101,101,101	0
30	MG	X	3023	1/1	0.88	0.75	70,70,70,70	0
30	MG	X	3056	1/1	0.88	0.32	47,47,47,47	0
30	MG	X	2937	1/1	0.88	0.42	83,83,83,83	0
30	MG	X	3035	1/1	0.88	0.39	104,104,104,104	0
30	MG	Q	102	1/1	0.88	0.44	75,75,75,75	0
30	MG	X	2917	1/1	0.89	0.40	71,71,71,71	0
30	MG	X	2985	1/1	0.89	0.23	63,63,63,63	0
30	MG	X	3062	1/1	0.89	0.30	109,109,109,109	0
30	MG	X	3022	1/1	0.89	0.12	64,64,64,64	0
30	MG	X	3119	1/1	0.89	0.30	69,69,69,69	0
30	MG	X	2977	1/1	0.89	0.23	66,66,66,66	0
30	MG	X	2957	1/1	0.89	0.70	73,73,73,73	0
30	MG	X	3008	1/1	0.89	0.32	49,49,49,49	0
29	MIV	X	2901	49/49	0.89	0.26	52,53,57,58	0
30	MG	X	2936	1/1	0.89	0.25	69,69,69,69	0
30	MG	X	3127	1/1	0.89	0.16	49,49,49,49	0
30	MG	X	3016	1/1	0.89	0.73	72,72,72,72	0
30	MG	X	2993	1/1	0.89	0.26	128,128,128,128	0
30	MG	X	3160	1/1	0.89	0.50	40,40,40,40	0
30	MG	X	3069	1/1	0.90	0.27	90,90,90,90	0
30	MG	Y	204	1/1	0.90	0.28	151,151,151,151	0
30	MG	A	301	1/1	0.90	0.69	94,94,94,94	0
30	MG	X	3112	1/1	0.90	0.60	54,54,54,54	0
30	MG	X	2962	1/1	0.90	0.70	97,97,97,97	0
30	MG	X	2911	1/1	0.90	0.36	39,39,39,39	0
30	MG	X	3143	1/1	0.90	0.72	133,133,133,133	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
30	MG	X	3007	1/1	0.90	0.19	71,71,71,71	0
30	MG	X	3125	1/1	0.90	0.62	71,71,71,71	0
30	MG	X	3126	1/1	0.90	0.51	76,76,76,76	0
31	SPD	X	3167	10/10	0.90	0.32	56,56,57,57	0
30	MG	X	2912	1/1	0.90	0.80	64,64,64,64	0
30	MG	X	3068	1/1	0.90	0.27	97,97,97,97	0
30	MG	X	3033	1/1	0.91	0.24	45,45,45,45	0
30	MG	X	3132	1/1	0.91	0.28	88,88,88,88	0
30	MG	X	2908	1/1	0.91	0.47	39,39,39,39	0
30	MG	X	2910	1/1	0.91	0.37	41,41,41,41	0
30	MG	X	2978	1/1	0.91	0.85	85,85,85,85	0
30	MG	X	3094	1/1	0.91	1.22	69,69,69,69	0
30	MG	X	2913	1/1	0.91	0.36	59,59,59,59	0
30	MG	X	2927	1/1	0.91	0.60	69,69,69,69	0
30	MG	X	3067	1/1	0.91	0.21	94,94,94,94	0
30	MG	X	3000	1/1	0.91	0.26	67,67,67,67	0
30	MG	X	2928	1/1	0.91	0.20	68,68,68,68	0
30	MG	X	2983	1/1	0.91	0.56	89,89,89,89	0
30	MG	2	102	1/1	0.91	0.57	62,62,62,62	0
30	MG	X	2956	1/1	0.91	0.35	69,69,69,69	0
30	MG	X	2970	1/1	0.91	0.34	61,61,61,61	0
30	MG	X	2921	1/1	0.91	0.46	66,66,66,66	0
30	MG	X	3129	1/1	0.91	0.15	86,86,86,86	0
31	SPD	X	3171	10/10	0.91	0.26	45,47,50,50	0
30	MG	X	3084	1/1	0.91	0.79	82,82,82,82	0
30	MG	X	3059	1/1	0.92	0.36	55,55,55,55	0
30	MG	X	3006	1/1	0.92	0.32	44,44,44,44	0
30	MG	X	3061	1/1	0.92	0.18	95,95,95,95	0
30	MG	X	2922	1/1	0.92	0.76	51,51,51,51	0
30	MG	X	3092	1/1	0.92	0.20	77,77,77,77	0
30	MG	X	2902	1/1	0.92	0.64	82,82,82,82	0
30	MG	X	2951	1/1	0.92	0.39	54,54,54,54	0
30	MG	X	2942	1/1	0.92	0.28	49,49,49,49	0
30	MG	X	3012	1/1	0.92	0.31	47,47,47,47	0
30	MG	X	3118	1/1	0.92	0.54	45,45,45,45	0
30	MG	X	3053	1/1	0.92	0.22	53,53,53,53	0
30	MG	X	3039	1/1	0.92	0.29	67,67,67,67	0
31	SPD	X	3169	10/10	0.92	0.21	77,79,80,81	0
30	MG	X	3165	1/1	0.92	0.29	39,39,39,39	0
30	MG	X	3015	1/1	0.92	0.66	105,105,105,105	0
30	MG	X	3028	1/1	0.92	0.76	69,69,69,69	0
30	MG	X	2987	1/1	0.93	0.26	54,54,54,54	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
30	MG	X	3064	1/1	0.93	0.30	113,113,113,113	0
30	MG	X	3088	1/1	0.93	0.17	78,78,78,78	0
30	MG	X	3108	1/1	0.93	0.31	61,61,61,61	0
30	MG	X	2906	1/1	0.93	0.33	75,75,75,75	0
30	MG	X	2941	1/1	0.93	0.23	73,73,73,73	0
30	MG	X	2918	1/1	0.93	0.91	71,71,71,71	0
30	MG	X	3147	1/1	0.93	1.02	95,95,95,95	0
30	MG	X	2963	1/1	0.93	0.48	96,96,96,96	0
30	MG	X	3058	1/1	0.93	0.36	63,63,63,63	0
30	MG	X	3128	1/1	0.93	0.45	95,95,95,95	0
30	MG	X	3073	1/1	0.93	0.20	118,118,118,118	0
30	MG	X	2995	1/1	0.93	0.23	54,54,54,54	0
30	MG	X	3156	1/1	0.93	0.44	71,71,71,71	0
30	MG	X	2930	1/1	0.93	0.52	50,50,50,50	0
30	MG	X	2948	1/1	0.93	0.40	83,83,83,83	0
31	SPD	X	3168	10/10	0.93	0.43	44,45,46,46	0
30	MG	X	3134	1/1	0.93	0.40	39,39,39,39	0
30	MG	X	3161	1/1	0.93	0.47	38,38,38,38	0
30	MG	X	3162	1/1	0.93	0.43	69,69,69,69	0
30	MG	X	3136	1/1	0.93	0.27	79,79,79,79	0
30	MG	X	3080	1/1	0.94	0.28	51,51,51,51	0
30	MG	X	3107	1/1	0.94	0.17	83,83,83,83	0
30	MG	X	2947	1/1	0.94	0.15	87,87,87,87	0
30	MG	X	3150	1/1	0.94	0.18	70,70,70,70	0
30	MG	I	201	1/1	0.94	0.27	81,81,81,81	0
30	MG	X	3014	1/1	0.94	0.49	75,75,75,75	0
30	MG	X	2974	1/1	0.94	0.20	61,61,61,61	0
30	MG	X	3031	1/1	0.94	0.55	38,38,38,38	0
30	MG	X	3049	1/1	0.94	0.56	124,124,124,124	0
30	MG	X	2953	1/1	0.94	0.28	57,57,57,57	0
30	MG	X	2968	1/1	0.94	0.47	75,75,75,75	0
30	MG	X	2915	1/1	0.94	0.47	57,57,57,57	0
30	MG	X	2996	1/1	0.94	0.27	76,76,76,76	0
30	MG	X	2935	1/1	0.94	0.33	90,90,90,90	0
30	MG	X	3072	1/1	0.94	0.15	115,115,115,115	0
30	MG	X	2980	1/1	0.94	0.50	88,88,88,88	0
30	MG	X	3024	1/1	0.94	0.31	41,41,41,41	0
30	MG	X	3076	1/1	0.94	0.43	65,65,65,65	0
30	MG	X	3042	1/1	0.94	0.20	58,58,58,58	0
30	MG	X	2972	1/1	0.95	0.40	81,81,81,81	0
30	MG	X	2946	1/1	0.95	0.21	51,51,51,51	0
30	MG	X	3078	1/1	0.95	0.22	59,59,59,59	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
30	MG	X	3037	1/1	0.95	0.36	104,104,104,104	0
30	MG	X	3038	1/1	0.95	0.30	67,67,67,67	0
30	MG	X	2975	1/1	0.95	0.32	84,84,84,84	0
30	MG	X	3029	1/1	0.95	0.39	66,66,66,66	0
30	MG	X	3001	1/1	0.95	0.08	91,91,91,91	0
30	MG	X	3089	1/1	0.95	0.29	61,61,61,61	0
30	MG	X	3019	1/1	0.95	0.45	91,91,91,91	0
30	MG	X	2992	1/1	0.95	0.55	73,73,73,73	0
30	MG	X	2904	1/1	0.95	0.32	49,49,49,49	0
30	MG	X	2931	1/1	0.95	0.42	68,68,68,68	0
30	MG	X	3135	1/1	0.96	0.18	148,148,148,148	0
30	MG	X	2938	1/1	0.96	0.17	52,52,52,52	0
30	MG	X	3137	1/1	0.96	0.12	83,83,83,83	0
30	MG	X	3066	1/1	0.96	0.37	81,81,81,81	0
30	MG	X	2998	1/1	0.96	0.47	78,78,78,78	0
30	MG	X	2960	1/1	0.96	0.37	62,62,62,62	0
30	MG	X	3011	1/1	0.96	0.48	53,53,53,53	0
30	MG	X	3070	1/1	0.96	0.14	136,136,136,136	0
30	MG	X	3025	1/1	0.96	0.64	38,38,38,38	0
30	MG	X	3054	1/1	0.96	0.26	101,101,101,101	0
30	MG	X	2926	1/1	0.96	0.28	55,55,55,55	0
30	MG	X	2954	1/1	0.96	0.42	56,56,56,56	0
30	MG	X	3101	1/1	0.96	0.26	95,95,95,95	0
30	MG	X	3041	1/1	0.96	0.17	114,114,114,114	0
30	MG	X	2940	1/1	0.96	0.38	60,60,60,60	0
30	MG	X	2905	1/1	0.96	0.48	62,62,62,62	0
30	MG	X	2966	1/1	0.96	0.49	101,101,101,101	0
30	MG	X	2994	1/1	0.96	0.29	88,88,88,88	0
30	MG	X	3047	1/1	0.96	0.38	92,92,92,92	0
30	MG	X	3063	1/1	0.96	0.16	112,112,112,112	0
30	MG	X	3087	1/1	0.96	0.68	116,116,116,116	0
30	MG	X	3133	1/1	0.96	0.13	50,50,50,50	0
30	MG	X	2919	1/1	0.96	0.54	44,44,44,44	0
30	MG	X	3100	1/1	0.97	0.11	77,77,77,77	0
30	MG	X	2929	1/1	0.97	0.20	71,71,71,71	0
30	MG	X	2952	1/1	0.97	0.51	52,52,52,52	0
30	MG	X	2945	1/1	0.97	1.19	104,104,104,104	0
30	MG	X	2916	1/1	0.97	0.96	62,62,62,62	0
30	MG	X	2965	1/1	0.97	0.51	117,117,117,117	0
30	MG	X	2973	1/1	0.97	0.41	69,69,69,69	0
30	MG	X	3083	1/1	0.97	0.63	79,79,79,79	0
30	MG	X	2955	1/1	0.97	0.23	68,68,68,68	0

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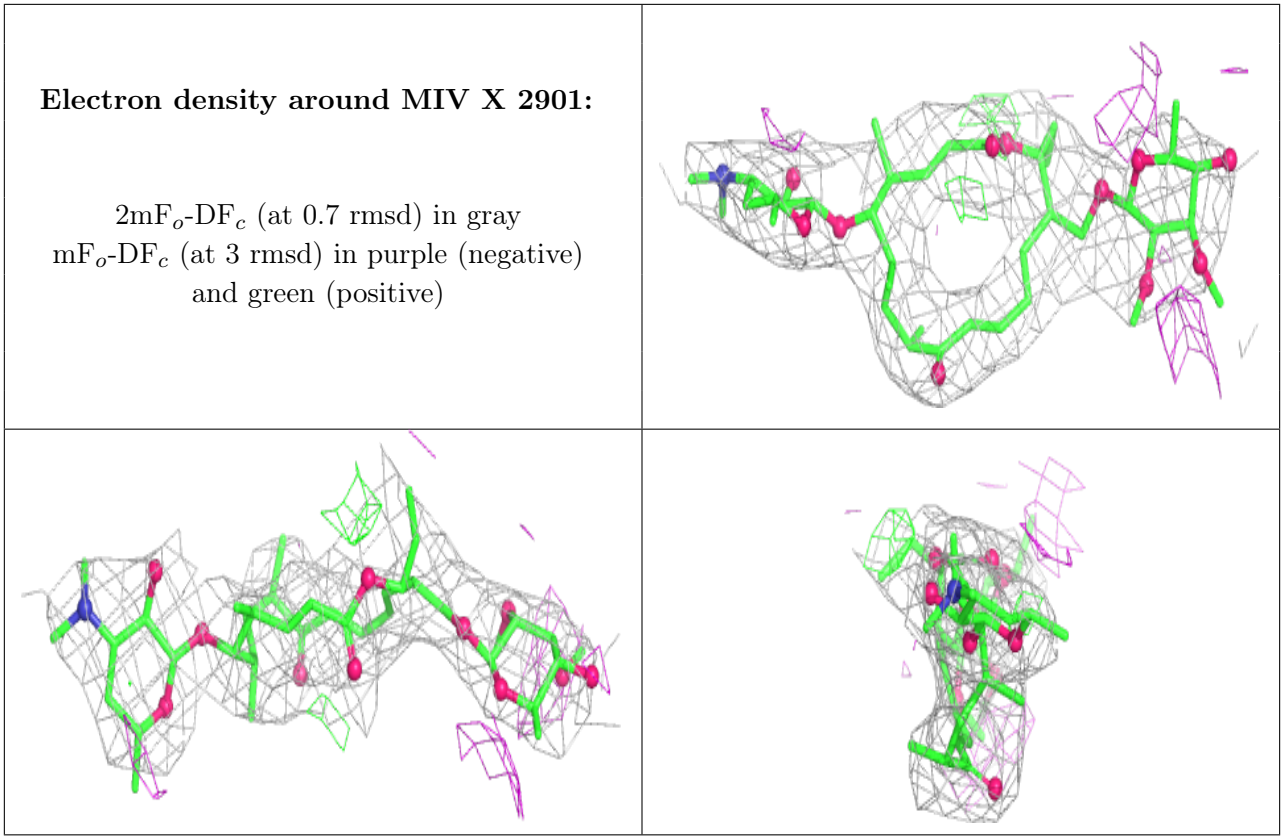
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
30	MG	X	3085	1/1	0.97	0.53	75,75,75,75	0
30	MG	X	3005	1/1	0.97	0.17	101,101,101,101	0
30	MG	X	2997	1/1	0.97	0.18	99,99,99,99	0
30	MG	X	3099	1/1	0.97	0.21	69,69,69,69	0
30	MG	X	3027	1/1	0.98	0.10	50,50,50,50	0
30	MG	X	3020	1/1	0.98	0.20	88,88,88,88	0
30	MG	X	3114	1/1	0.98	0.38	48,48,48,48	0
30	MG	X	3103	1/1	0.98	0.12	61,61,61,61	0
30	MG	X	3138	1/1	0.98	0.10	39,39,39,39	0
30	MG	X	2907	1/1	0.98	0.45	46,46,46,46	0
30	MG	X	2949	1/1	0.98	0.65	56,56,56,56	0
30	MG	X	2991	1/1	0.98	0.09	80,80,80,80	0
30	MG	X	2943	1/1	0.98	0.35	67,67,67,67	0
30	MG	X	2967	1/1	0.98	0.24	86,86,86,86	0
30	MG	X	2909	1/1	0.98	0.18	44,44,44,44	0
30	MG	X	3043	1/1	0.98	0.09	47,47,47,47	0
30	MG	X	3013	1/1	0.99	0.24	62,62,62,62	0
30	MG	X	2933	1/1	0.99	0.25	61,61,61,61	0
30	MG	X	3155	1/1	0.99	0.15	54,54,54,54	0
30	MG	X	3079	1/1	0.99	0.07	55,55,55,55	0
30	MG	X	3157	1/1	0.99	0.10	45,45,45,45	0
30	MG	X	3075	1/1	0.99	0.21	72,72,72,72	0
30	MG	X	3148	1/1	0.99	0.13	72,72,72,72	0
30	MG	X	3081	1/1	0.99	0.14	76,76,76,76	0
30	MG	X	3106	1/1	0.99	0.21	64,64,64,64	0
30	MG	X	3142	1/1	0.99	0.10	83,83,83,83	0
30	MG	X	2932	1/1	0.99	0.31	49,49,49,49	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around MIV X 2901:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



6.5 Other polymers

There are no such residues in this entry.