



wwPDB X-ray Structure Validation Summary Report ⓘ

May 15, 2020 – 08:19 pm BST

PDB ID : 4DV7
Title : Crystal structure of the *Thermus thermophilus* 30S ribosomal subunit with a 16S rRNA mutation, A915G, bound with streptomycin
Authors : Demirci, H.; Murphy IV, F.; Murphy, E.; Gregory, S.T.; Dahlberg, A.E.; Jogl, G.
Deposited on : 2012-02-22
Resolution : 3.29 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.11
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.11

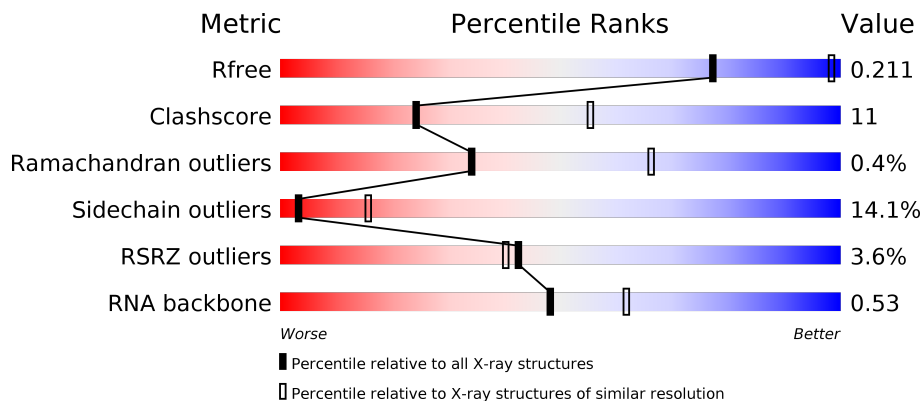
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.29 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1149 (3.34-3.26)
Clashscore	141614	1205 (3.34-3.26)
Ramachandran outliers	138981	1183 (3.34-3.26)
Sidechain outliers	138945	1182 (3.34-3.26)
RSRZ outliers	127900	1115 (3.34-3.26)
RNA backbone	3102	1117 (3.70-2.90)

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

Mol	Chain	Length	Quality of chain
1	A	1522	 2% 56% 30% 12% ..
2	B	256	 2% 58% 30% .. 9%
3	C	239	 8% 47% 35% . 14%
4	D	209	 3% 66% 26% 7%

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Mol	Chain	Length	Quality of chain
5	E	162	
6	F	101	
7	G	156	
8	H	138	
9	I	128	
10	J	105	
11	K	129	
12	L	135	
13	M	126	
14	N	61	
15	O	89	
16	P	88	
17	Q	105	
18	R	88	
19	S	93	
20	T	106	
21	U	27	

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
1	PSU	A	1540	-	-	-	X
1	PSU	A	1541	-	-	-	X
23	MG	A	1625	-	-	-	X
23	MG	A	1641	-	-	-	X
23	MG	A	1673	-	-	-	X
23	MG	A	1694	-	-	-	X
23	MG	A	1696	-	-	-	X
23	MG	A	1715	-	-	-	X

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
23	MG	A	1722	-	-	-	X
23	MG	A	1736	-	-	-	X
23	MG	A	1745	-	-	-	X
23	MG	A	1759	-	-	-	X
23	MG	A	1767	-	-	-	X
23	MG	A	1769	-	-	-	X
23	MG	A	1775	-	-	-	X
23	MG	A	1776	-	-	-	X
23	MG	A	1788	-	-	-	X
23	MG	A	1791	-	-	-	X
23	MG	A	1796	-	-	-	X
23	MG	A	1798	-	-	-	X
23	MG	A	1804	-	-	-	X
23	MG	A	1805	-	-	-	X
23	MG	A	1809	-	-	-	X
23	MG	A	1812	-	-	-	X
23	MG	A	1813	-	-	-	X
23	MG	A	1817	-	-	-	X
23	MG	A	1820	-	-	-	X
23	MG	H	203	-	-	-	X

2 Entry composition [i](#)

There are 25 unique types of molecules in this entry. The entry contains 52337 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 16S rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	A	1512	32508	14477	6011	10508	1512	0	0	0

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	915	G	A	ENGINEERED MUTATION	GB M26923.1
A	1534	C	A	CONFLICT	GB M26923.1
A	1535	A	C	CONFLICT	GB M26923.1

- Molecule 2 is a protein called ribosomal protein S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	234	1900	1213	341	341	5	0	0	0

- Molecule 3 is a protein called ribosomal protein S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	C	206	1612	1016	314	281	1	0	0	0

- Molecule 4 is a protein called ribosomal protein S4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	D	208	1703	1066	339	291	7	0	0	0

- Molecule 5 is a protein called ribosomal protein S5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	E	150	1146	724	217	201	4	0	0	0

- Molecule 6 is a protein called ribosomal protein S6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
6	F	101	843	531	155	154	3	0	0	0

- Molecule 7 is a protein called ribosomal protein S7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
7	G	155	1257	781	252	218	6	0	0	0

- Molecule 8 is a protein called ribosomal protein S8.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
8	H	138	1116	705	215	193	3	0	0	0

- Molecule 9 is a protein called ribosomal protein S9.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace	
			Total	C	N	O				
9	I	127	1010	639	197	174		0	0	0

- Molecule 10 is a protein called ribosomal protein S10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
10	J	98	792	498	156	137	1	0	0	0

- Molecule 11 is a protein called ribosomal protein S11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
11	K	116	864	537	164	160	3	0	0	0

- Molecule 12 is a protein called ribosomal protein S12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
12	L	124	972	612	195	163	2	0	0	0

- Molecule 13 is a protein called ribosomal protein S13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
13	M	118	937	579	193	163	2	0	0	0

- Molecule 14 is a protein called ribosomal protein S14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
14	N	60	492	312	104	72	4	0	0	0

- Molecule 15 is a protein called ribosomal protein S15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
15	O	87	729	457	146	124	2	0	0	0

- Molecule 16 is a protein called ribosomal protein S16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
16	P	83	700	443	139	117	1	0	0	0

- Molecule 17 is a protein called ribosomal protein S17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
17	Q	99	823	528	152	141	2	0	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Q	96	GLN	GLU	CONFLICT	UNP Q5SHP7

- Molecule 18 is a protein called ribosomal protein S18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
18	R	70	574	367	112	95	0	0	0

- Molecule 19 is a protein called ribosomal protein S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
19	S	80	647	414	119	112	2	0	0	0

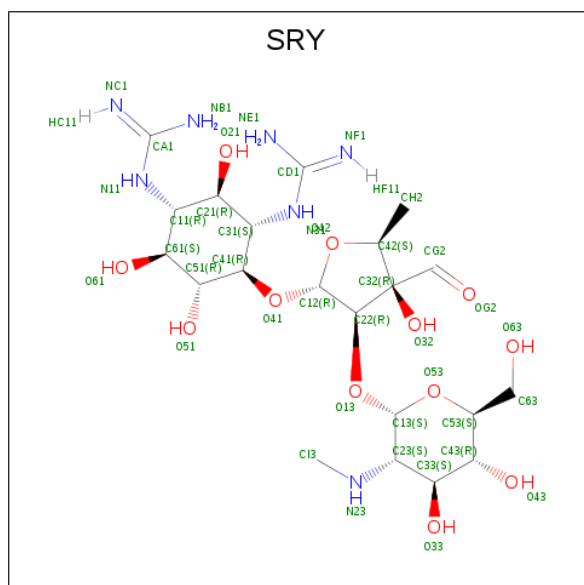
- Molecule 20 is a protein called ribosomal protein S20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
20	T	99	763	470	162	129	2	0	0	0

- Molecule 21 is a protein called ribosomal protein THX.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
21	U	24	208	128	50	30	0	0	0

- Molecule 22 is STREPTOMYCIN (three-letter code: SRY) (formula: C₂₁H₃₉N₇O₁₂).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
22	A	1	40	21	7	12	0	0

- Molecule 23 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
23	P	2	Total Mg 2 2	0	0
23	Q	2	Total Mg 2 2	0	0
23	D	1	Total Mg 1 1	0	0
23	K	1	Total Mg 1 1	0	0
23	E	1	Total Mg 1 1	0	0
23	H	3	Total Mg 3 3	0	0
23	B	2	Total Mg 2 2	0	0
23	A	272	Total Mg 272 272	0	0
23	T	3	Total Mg 3 3	0	0
23	N	2	Total Mg 2 2	0	0
23	S	1	Total Mg 1 1	0	0
23	M	2	Total Mg 2 2	0	0

- Molecule 24 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
24	D	1	Total Zn 1 1	0	0
24	N	1	Total Zn 1 1	0	0

- Molecule 25 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
25	A	392	Total O 392 392	0	0
25	D	1	Total O 1 1	0	0
25	E	7	Total O 7 7	0	0

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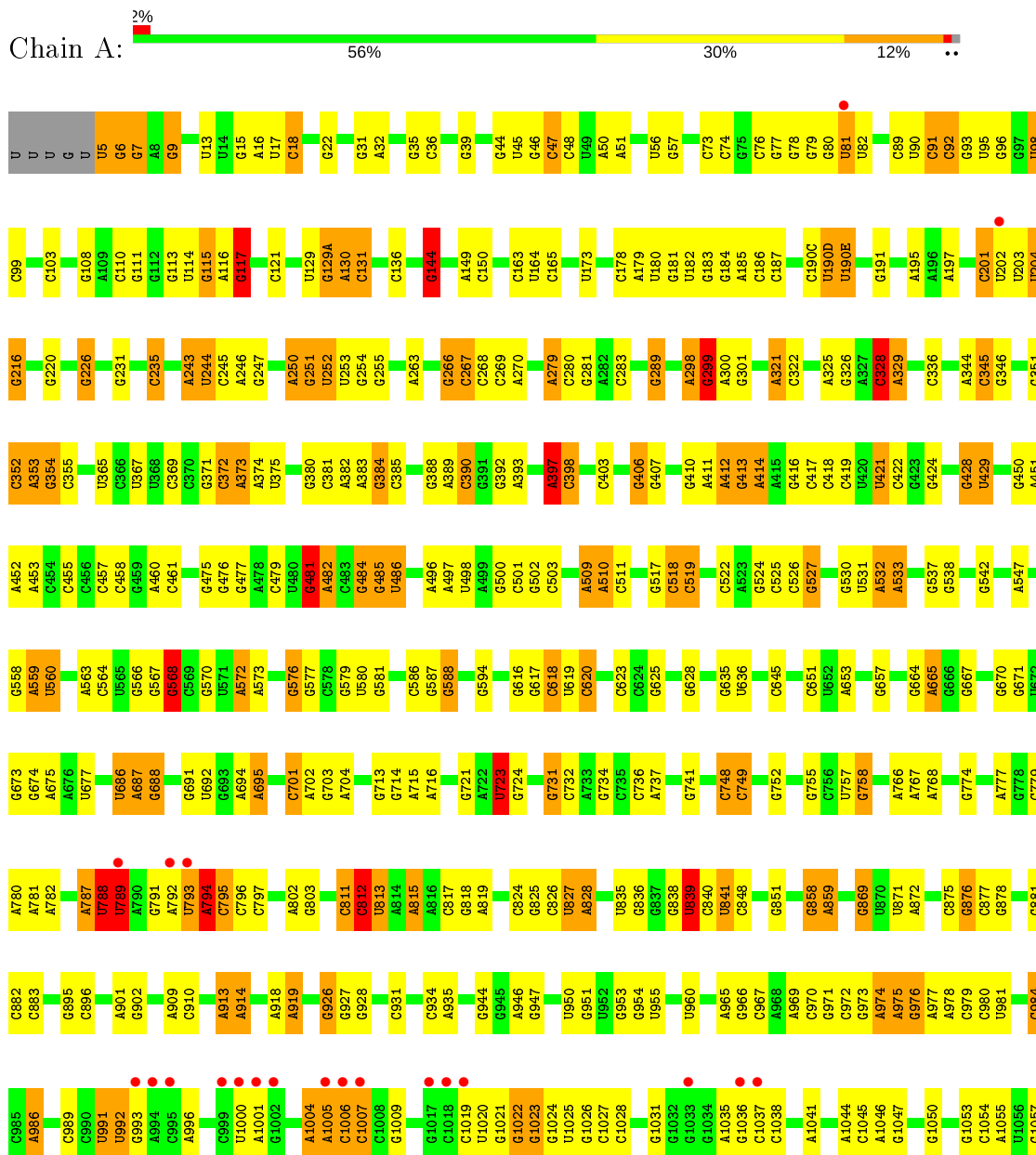
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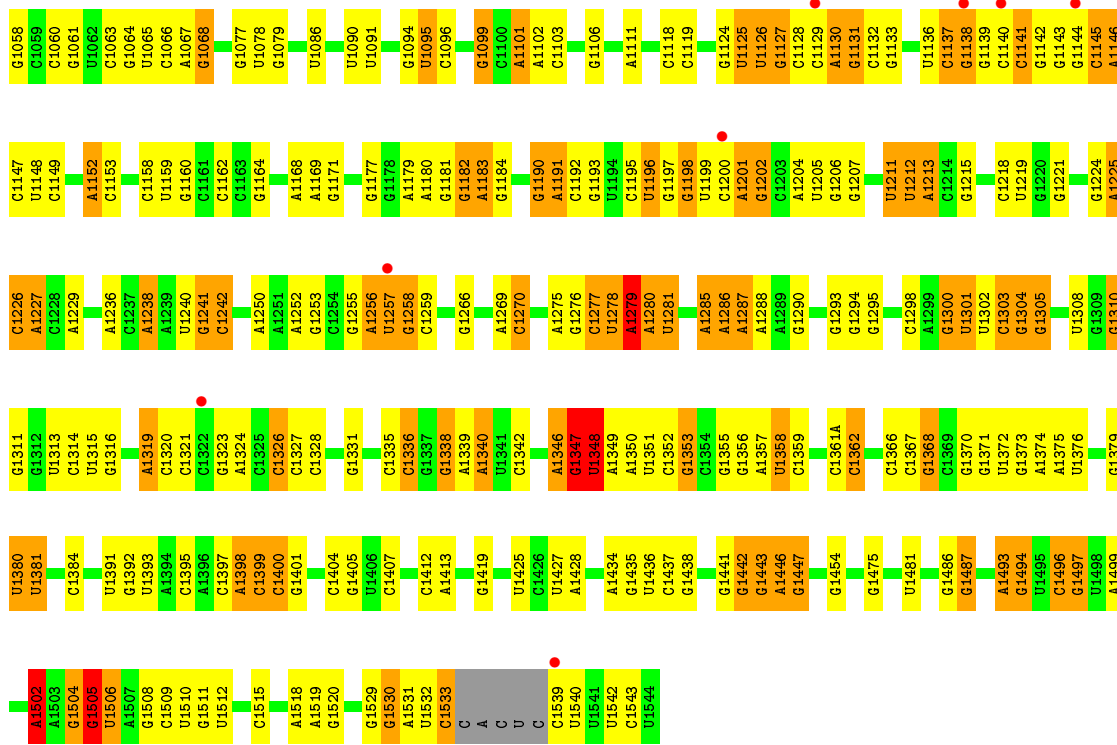
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
25	G	1	Total O 1 1	0	0
25	L	1	Total O 1 1	0	0
25	P	2	Total O 2 2	0	0
25	T	2	Total O 2 2	0	0
25	U	1	Total O 1 1	0	0

3 Residue-property plots

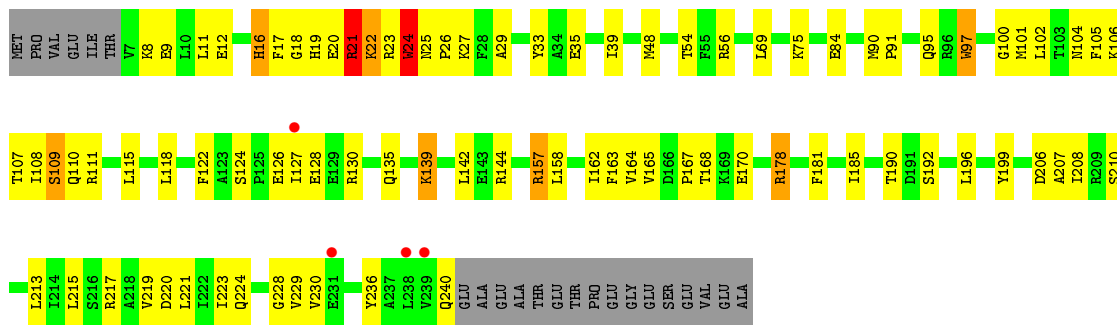
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are 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: 16S rRNA

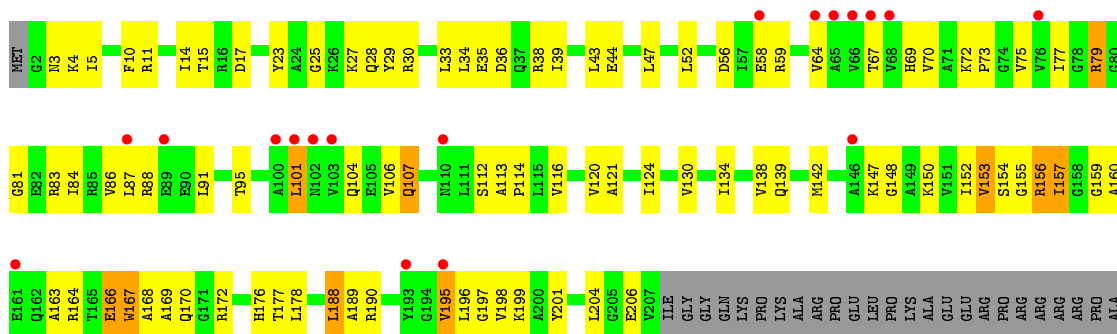




• Molecule 2: ribosomal protein S2

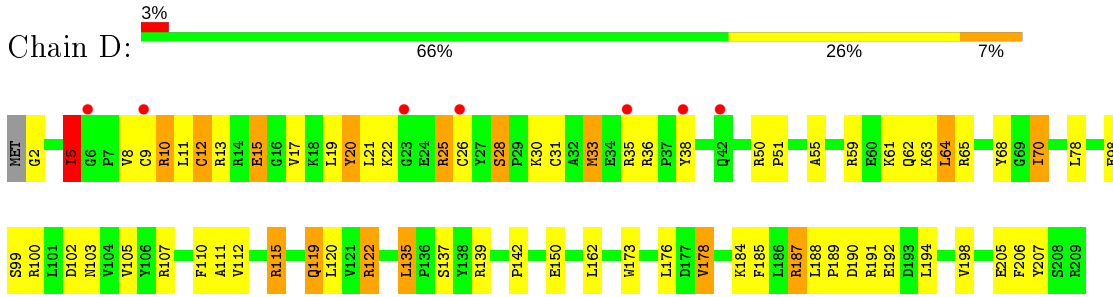


• Molecule 3: ribosomal protein S3

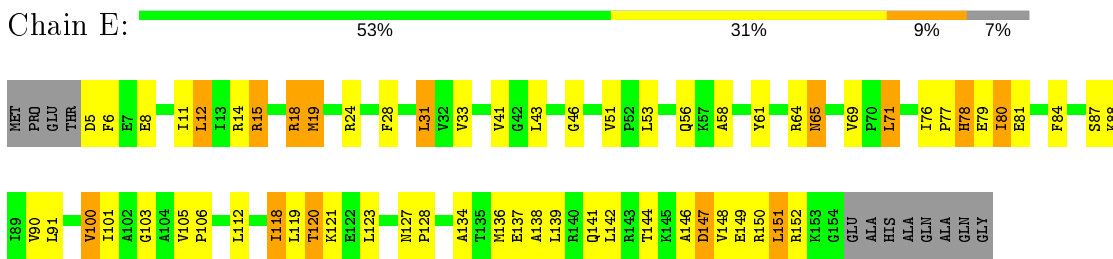


VAL
ANG
VAL
LVS
GLU
GLU

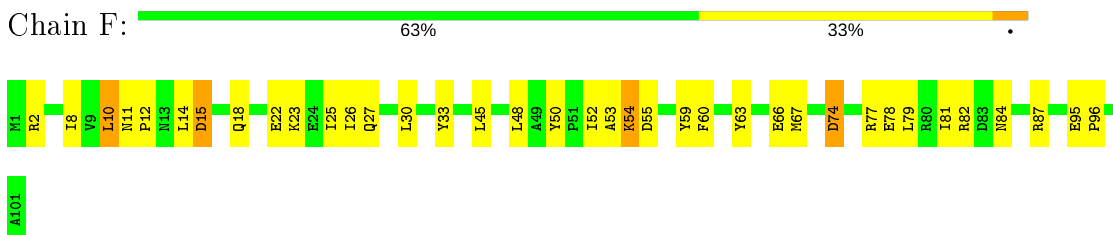
• Molecule 4: ribosomal protein S4



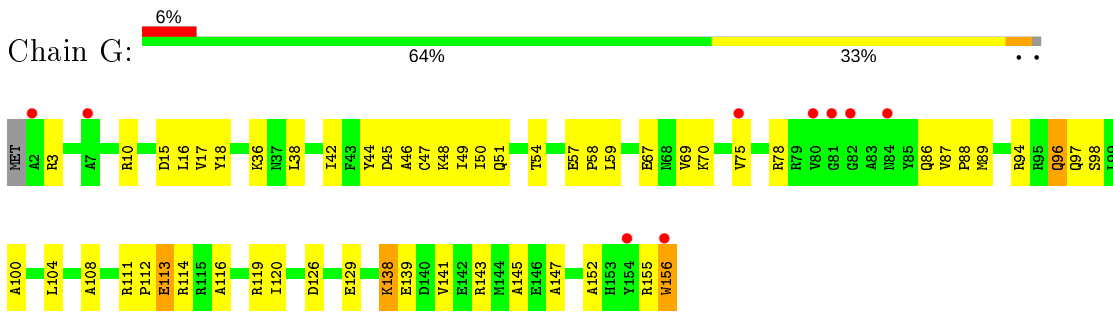
• Molecule 5: ribosomal protein S5



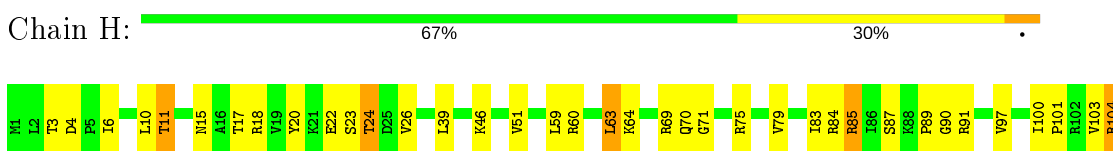
• Molecule 6: ribosomal protein S6



• Molecule 7: ribosomal protein S7



• Molecule 8: ribosomal protein S8



R105
G106
L107
G108
I111
V118
L119
I134
C135
W138

- Molecule 9: ribosomal protein S9

Chain I: 7% 53% 38% 9%

MET E2 R3 Y4 Y5 G6 V7 G8 R9 R10 K11 E12 A13 V14 A15 R16 V17 F18 L19 R20 R21 F22 G22 N23 G24 K25 N29 D32 F33 Q38 R42 A43 V44 E48 P49 L50 V53 D60 T63 T64 R65 R66 G69 K70 S71 I74 L79 G80 I81

L85 V86 M89 Y92 L96 R97 P98 F101 L102 T103 R104 D105 A106 R107 V108 V109 E110 R111 K112 H117 K118 A119 R120 D121 A122 P123 Q124 Y125 K127 R128

- Molecule 10: ribosomal protein S10

Chain J: 16% 55% 33% 5% 7%

MET PRO R3 T4 R5 I6 K7 L8 H13 T15 L16 S19 A20 Q21 R22 I23 V24 E25 A32 Q33 V34 S35 G36 P37 I38 F39 L40 F47 T48 R51 G52 P53 R57 R60 E61 H62 F63 B64 H68 N69 R70 L71 V72 D73 I74 I75 N76 F77 K80

H86 T87 L88 D89 L90 P91 Y94 E95 I98 K99 T100 VAL GLY GLY ARG

- Molecule 11: ribosomal protein S11

Chain K: 62% 24% 10%

MET ALA LYS LYS PRO SER LYS LYS VAL K11 V14 A15 R18 A19 N26 N27 T28 I29 T33 N38 P39 I40 T41 T44 T44 A45 K46 K47 P48 R53 K54 L60 Y64 E65 V66 T67 A68 Y69 I70 L77 Q78 E79 H80 S81 V82 V83 I84 I85 P86 Q104 V105

K106 V109 V114 K124 F125 R126 ALA ALA SER

- Molecule 12: ribosomal protein S12

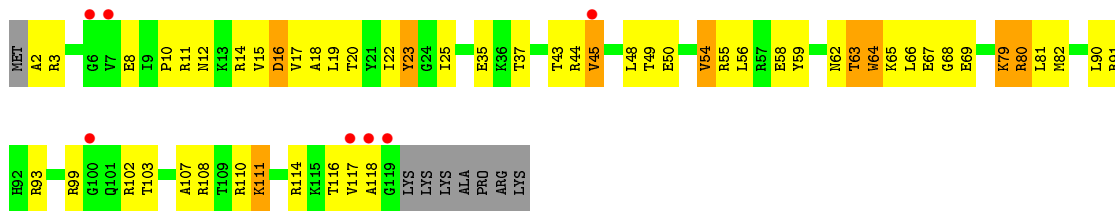
Chain L: 50% 35% 7% 8%

MET VAL ALA LEU T6 P6 R7 I7 N8 Q9 L10 V11 R12 K20 V24 P25 A26 L27 K28 G29 R33 V39 V40 R41 T42 T42 V43 T44 T44 A45 K46 K47 P48 R53 K54 L60 Y64 E65 V66 T67 A68 Y69 I70 L77 Q78 E79 H80 S81 V82 V83 I84 I85 P86 Q87

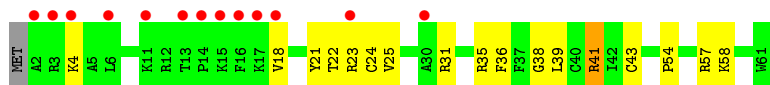
V90 K91 P92 V96 R97 Y98 E99 I100 A107 R113 K114 K115 S116 R117 S118 T122 K123 K126 E127 A128 ALA LYS THR ALA ALA LYS LYS

- Molecule 13: ribosomal protein S13

Chain M: 6% 50% 37% 7% 6%



• Molecule 14: ribosomal protein S14



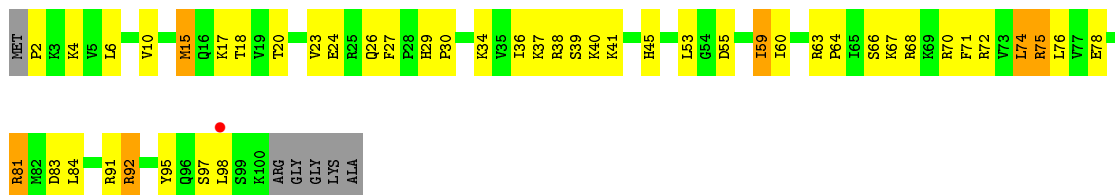
• Molecule 15: ribosomal protein S15



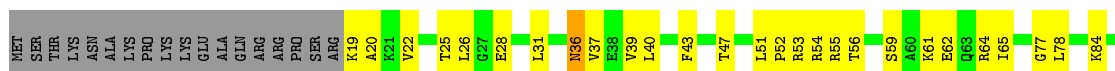
• Molecule 16: ribosomal protein S16



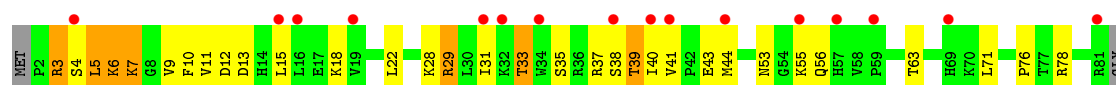
• Molecule 17: ribosomal protein S17



• Molecule 18: ribosomal protein S18



• Molecule 19: ribosomal protein S19



HIS
GLY
LYS
GLU
ALA
LYS
ALA
THR
LYS
LYS
LYS

- Molecule 20: ribosomal protein S20



L99
I100
G101
G102
L104
S105
A106

- Molecule 21: ribosomal protein THX



4 Data and refinement statistics

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, α , β , γ	403.37Å 403.37Å 173.60Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	34.92 – 3.29 34.92 – 3.29	Depositor EDS
% Data completeness (in resolution range)	98.6 (34.92-3.29) 98.4 (34.92-3.29)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.87 (at 3.32Å)	Xtrriage
Refinement program	PHENIX dev_978	Depositor
R, R_{free}	0.168 , 0.210 0.167 , 0.211	Depositor DCC
R_{free} test set	10630 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å ²)	119.3	Xtrriage
Anisotropy	0.362	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.25 , 125.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	52337	wwPDB-VP
Average B, all atoms (Å ²)	161.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.46% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, M2G, MA6, 0TD, MG, 2MG, 5MC, UR3, 4OC, SRY, 7MG, PSU

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	A	0.65	5/36041 (0.0%)	1.06	115/56245 (0.2%)
2	B	0.44	0/1935	0.66	0/2609
3	C	0.34	0/1636	0.57	0/2205
4	D	0.45	1/1733 (0.1%)	0.61	0/2318
5	E	0.57	0/1162	0.73	0/1564
6	F	0.37	0/856	0.57	0/1154
7	G	0.36	0/1276	0.52	0/1709
8	H	0.59	1/1136 (0.1%)	0.73	0/1527
9	I	0.37	0/1029	0.60	0/1379
10	J	0.36	0/805	0.59	0/1082
11	K	0.42	0/879	0.62	0/1187
12	L	0.48	0/977	0.74	1/1306 (0.1%)
13	M	0.36	0/947	0.63	0/1270
14	N	0.34	0/501	0.57	0/664
15	O	0.42	0/740	0.60	0/987
16	P	0.47	0/716	0.68	0/963
17	Q	0.56	0/836	0.80	0/1117
18	R	0.38	0/579	0.60	0/768
19	S	0.30	0/661	0.58	0/890
20	T	0.43	0/765	0.67	1/1007 (0.1%)
21	U	0.33	0/212	0.54	0/277
All	All	0.58	7/55422 (0.0%)	0.95	117/82228 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
2	B	0	1
3	C	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
8	H	0	1
12	L	0	1
20	T	0	1
All	All	0	5

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

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	279	A	N9-C4	-7.58	1.33	1.37
1	A	279	A	N3-C4	-6.22	1.31	1.34
1	A	279	A	C5-C6	-5.96	1.35	1.41
4	D	12	CYS	CB-SG	5.25	1.91	1.82
1	A	298	A	N3-C4	-5.16	1.31	1.34

The worst 5 of 117 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	279	A	C2-N3-C4	-11.10	105.05	110.60
1	A	117	G	N1-C6-O6	10.52	126.21	119.90
1	A	117	G	C6-C5-N7	-9.13	124.92	130.40
1	A	328	C	N1-C2-O2	9.01	124.31	118.90
1	A	328	C	N3-C2-O2	-8.98	115.62	121.90

There are no chirality outliers.

All (5) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	16	HIS	Peptide
3	C	166	GLU	Peptide
8	H	90	GLY	Peptide
12	L	27	LEU	Peptide
20	T	93	GLU	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	32508	0	16433	455	1
2	B	1900	0	1951	46	0
3	C	1612	0	1677	57	0
4	D	1703	0	1763	45	0
5	E	1146	0	1207	41	0
6	F	843	0	857	25	0
7	G	1257	0	1296	30	0
8	H	1116	0	1177	29	0
9	I	1010	0	1037	46	0
10	J	792	0	835	25	0
11	K	864	0	881	22	0
12	L	972	0	1058	45	0
13	M	937	0	995	38	0
14	N	492	0	529	15	0
15	O	729	0	768	17	0
16	P	700	0	720	17	0
17	Q	823	0	893	29	0
18	R	574	0	644	17	0
19	S	647	0	673	23	0
20	T	763	0	861	29	0
21	U	208	0	221	10	0
22	A	40	0	36	4	0
23	A	272	0	0	0	0
23	B	2	0	0	0	0
23	D	1	0	0	0	0
23	E	1	0	0	0	0
23	H	3	0	0	0	0
23	K	1	0	0	0	0
23	M	2	0	0	0	0
23	N	2	0	0	0	0
23	P	2	0	0	0	0
23	Q	2	0	0	0	0
23	S	1	0	0	0	0
23	T	3	0	0	0	0
24	D	1	0	0	0	0
24	N	1	0	0	0	0
25	A	392	0	0	10	0
25	D	1	0	0	0	0
25	E	7	0	0	0	0
25	G	1	0	0	0	0
25	L	1	0	0	0	0
25	P	2	0	0	0	0
25	T	2	0	0	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
25	U	1	0	0	0	0
All	All	52337	0	36512	952	1

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 11.

The worst 5 of 952 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)
1:A:1147:C:HO2'	9:I:5:TYR:HH	1.14	0.93
2:B:21:ARG:HD3	2:B:22:LYS:H	1.40	0.86
1:A:664:G:H22	1:A:741:G:H1	1.20	0.86
8:H:10:LEU:HD22	8:H:83:ILE:HD11	1.58	0.85
1:A:1126:U:O4	1:A:1148:U:N3	2.11	0.84

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:81:U:O4	1:A:1384:C:O2'[3_545]	2.17	0.03

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	
2	B	232/256 (91%)	210 (90%)	18 (8%)	4 (2%)	9	35
3	C	204/239 (85%)	176 (86%)	28 (14%)	0	100	100
4	D	206/209 (99%)	196 (95%)	9 (4%)	1 (0%)	29	61
5	E	148/162 (91%)	141 (95%)	7 (5%)	0	100	100
6	F	99/101 (98%)	94 (95%)	5 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
7	G	153/156 (98%)	146 (95%)	7 (5%)	0	100	100
8	H	136/138 (99%)	134 (98%)	2 (2%)	0	100	100
9	I	125/128 (98%)	114 (91%)	11 (9%)	0	100	100
10	J	96/105 (91%)	78 (81%)	15 (16%)	3 (3%)	4	23
11	K	114/129 (88%)	104 (91%)	10 (9%)	0	100	100
12	L	121/135 (90%)	113 (93%)	8 (7%)	0	100	100
13	M	116/126 (92%)	105 (90%)	10 (9%)	1 (1%)	17	48
14	N	58/61 (95%)	53 (91%)	5 (9%)	0	100	100
15	O	85/89 (96%)	84 (99%)	1 (1%)	0	100	100
16	P	81/88 (92%)	78 (96%)	3 (4%)	0	100	100
17	Q	97/105 (92%)	92 (95%)	5 (5%)	0	100	100
18	R	68/88 (77%)	61 (90%)	7 (10%)	0	100	100
19	S	78/93 (84%)	68 (87%)	9 (12%)	1 (1%)	12	40
20	T	97/106 (92%)	82 (84%)	15 (16%)	0	100	100
21	U	22/27 (82%)	21 (96%)	1 (4%)	0	100	100
All	All	2336/2541 (92%)	2150 (92%)	176 (8%)	10 (0%)	34	66

5 of 10 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
19	S	31	ILE
2	B	21	ARG
2	B	24	TRP
10	J	86	MET
2	B	95	GLN

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	
2	B	202/220 (92%)	169 (84%)	33 (16%)	2	10

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	C	160/188 (85%)	137 (86%)	23 (14%)	3	15
4	D	180/181 (99%)	153 (85%)	27 (15%)	3	13
5	E	115/123 (94%)	91 (79%)	24 (21%)	1	4
6	F	90/90 (100%)	82 (91%)	8 (9%)	9	32
7	G	126/127 (99%)	111 (88%)	15 (12%)	5	21
8	H	119/119 (100%)	107 (90%)	12 (10%)	7	27
9	I	98/99 (99%)	80 (82%)	18 (18%)	1	7
10	J	87/92 (95%)	79 (91%)	8 (9%)	9	31
11	K	88/99 (89%)	78 (89%)	10 (11%)	5	22
12	L	103/110 (94%)	84 (82%)	19 (18%)	1	7
13	M	94/101 (93%)	77 (82%)	17 (18%)	1	7
14	N	49/50 (98%)	44 (90%)	5 (10%)	7	27
15	O	79/80 (99%)	73 (92%)	6 (8%)	13	39
16	P	72/74 (97%)	63 (88%)	9 (12%)	4	19
17	Q	94/97 (97%)	79 (84%)	15 (16%)	2	11
18	R	61/77 (79%)	53 (87%)	8 (13%)	4	17
19	S	71/80 (89%)	58 (82%)	13 (18%)	1	7
20	T	76/82 (93%)	68 (90%)	8 (10%)	7	25
21	U	19/22 (86%)	18 (95%)	1 (5%)	22	53
All	All	1983/2111 (94%)	1704 (86%)	279 (14%)	3	16

5 of 279 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
7	G	129	GLU
9	I	118	LYS
19	S	3	ARG
7	G	156	TRP
8	H	105	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
4	D	119	GLN

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Mol	Chain	Res	Type
6	F	11	ASN
11	K	26	ASN
18	R	36	ASN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1508/1522 (99%)	290 (19%)	45 (2%)

5 of 290 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	6	G
1	A	7	G
1	A	9	G
1	A	22	G
1	A	31	G

5 of 45 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	701	C
1	A	975	A
1	A	1346	A
1	A	793	U
1	A	992	U

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

15 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	2MG	A	1207	1	19,26,27	2.51	4 (21%)	21,38,41	2.09	4 (19%)
1	5MC	A	1404	1	15,22,23	0.98	1 (6%)	19,32,35	0.86	0
1	5MC	A	967	1	15,22,23	0.90	0	19,32,35	1.01	1 (5%)
1	5MC	A	1400	1	15,22,23	0.80	0	19,32,35	1.20	3 (15%)
1	7MG	A	527	1	22,26,27	2.10	5 (22%)	28,39,42	1.65	5 (17%)
1	MA6	A	1519	1	19,26,27	1.56	5 (26%)	18,38,41	0.63	0
1	M2G	A	966	1	20,27,28	1.80	4 (20%)	22,40,43	2.29	2 (9%)
1	UR3	A	1498	1	14,22,23	0.63	0	15,32,35	1.15	1 (6%)
1	PSU	A	516	1,23	17,21,22	1.10	3 (17%)	20,30,33	3.15	6 (30%)
1	PSU	A	1540	1,23	17,21,22	1.06	1 (5%)	20,30,33	3.41	7 (35%)
1	MA6	A	1518	1	19,26,27	1.25	3 (15%)	18,38,41	0.86	0
1	4OC	A	1402	1	16,23,24	0.94	0	17,32,35	0.87	1 (5%)
12	0TD	L	92	12	4,9,10	1.11	0	3,11,13	3.63	1 (33%)
1	PSU	A	1541	1	17,21,22	1.01	1 (5%)	20,30,33	3.27	7 (35%)
1	5MC	A	1407	1	15,22,23	0.86	0	19,32,35	1.16	2 (10%)

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	2MG	A	1207	1	-	2/5/27/28	0/3/3/3
1	5MC	A	1404	1	-	0/5/25/26	0/2/2/2
1	5MC	A	967	1	-	0/5/25/26	0/2/2/2
1	5MC	A	1400	1	-	2/5/25/26	0/2/2/2
1	7MG	A	527	1	-	2/7/37/38	0/3/3/3
1	MA6	A	1519	1	-	6/7/29/30	0/3/3/3
1	M2G	A	966	1	-	4/7/29/30	0/3/3/3
1	UR3	A	1498	1	-	1/5/25/26	0/2/2/2
1	PSU	A	516	1,23	-	0/7/25/26	0/2/2/2
1	PSU	A	1540	1,23	-	2/7/25/26	0/2/2/2
1	MA6	A	1518	1	-	4/7/29/30	0/3/3/3
1	4OC	A	1402	1	-	5/9/29/30	0/2/2/2
12	0TD	L	92	12	-	1/3/12/14	-
1	PSU	A	1541	1	-	1/7/25/26	0/2/2/2
1	5MC	A	1407	1	-	0/5/25/26	0/2/2/2

The worst 5 of 27 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1207	2MG	C2-N2	7.97	1.40	1.34
1	A	1207	2MG	C6-N1	6.01	1.43	1.33
1	A	966	M2G	C6-N1	5.93	1.43	1.33
1	A	527	7MG	C2-N2	5.48	1.44	1.33
1	A	527	7MG	C8-N9	-4.84	1.34	1.45

The worst 5 of 40 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1540	PSU	N1-C2-N3	-11.34	119.41	128.43
1	A	516	PSU	N1-C2-N3	-10.78	119.86	128.43
1	A	1541	PSU	N1-C2-N3	-10.65	119.96	128.43
1	A	966	M2G	C5-C6-N1	-8.08	112.38	123.43
1	A	1207	2MG	C5-C6-N1	-7.62	113.01	123.43

There are no chirality outliers.

5 of 30 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	1207	2MG	O4'-C4'-C5'-O5'
1	A	1207	2MG	C3'-C4'-C5'-O5'
1	A	527	7MG	O4'-C4'-C5'-O5'
1	A	527	7MG	C3'-C4'-C5'-O5'
1	A	1519	MA6	C5-C6-N6-C9

There are no ring outliers.

9 monomers are involved in 10 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	1404	5MC	1	0
1	A	967	5MC	3	0
1	A	1400	5MC	1	0
1	A	527	7MG	1	0
1	A	1519	MA6	1	0
1	A	966	M2G	2	0
1	A	1518	MA6	1	0
12	L	92	0TD	2	0
1	A	1407	5MC	1	0

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

Of 295 ligands modelled in this entry, 294 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
22	SRY	A	1601	-	40,42,42	2.32	11 (27%)	49,63,63	1.88	9 (18%)

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
22	SRY	A	1601	-	-	3/20/87/87	0/3/3/3

The worst 5 of 11 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
22	A	1601	SRY	CD1-N31	8.94	1.48	1.33
22	A	1601	SRY	CA1-N11	6.66	1.44	1.33
22	A	1601	SRY	O53-C53	-3.44	1.36	1.44
22	A	1601	SRY	O51-C51	-2.75	1.36	1.43
22	A	1601	SRY	C23-N23	-2.66	1.43	1.47

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

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
22	A	1601	SRY	O41-C12-O42	-5.83	105.12	111.43
22	A	1601	SRY	C12-O42-C42	-4.78	100.86	108.38
22	A	1601	SRY	CI3-N23-C23	-4.15	108.33	114.38
22	A	1601	SRY	C13-O13-C22	-3.89	109.50	116.25

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
22	A	1601	SRY	C43-C33-C23	-3.59	105.09	110.34

There are no chirality outliers.

All (3) torsion outliers are listed below:

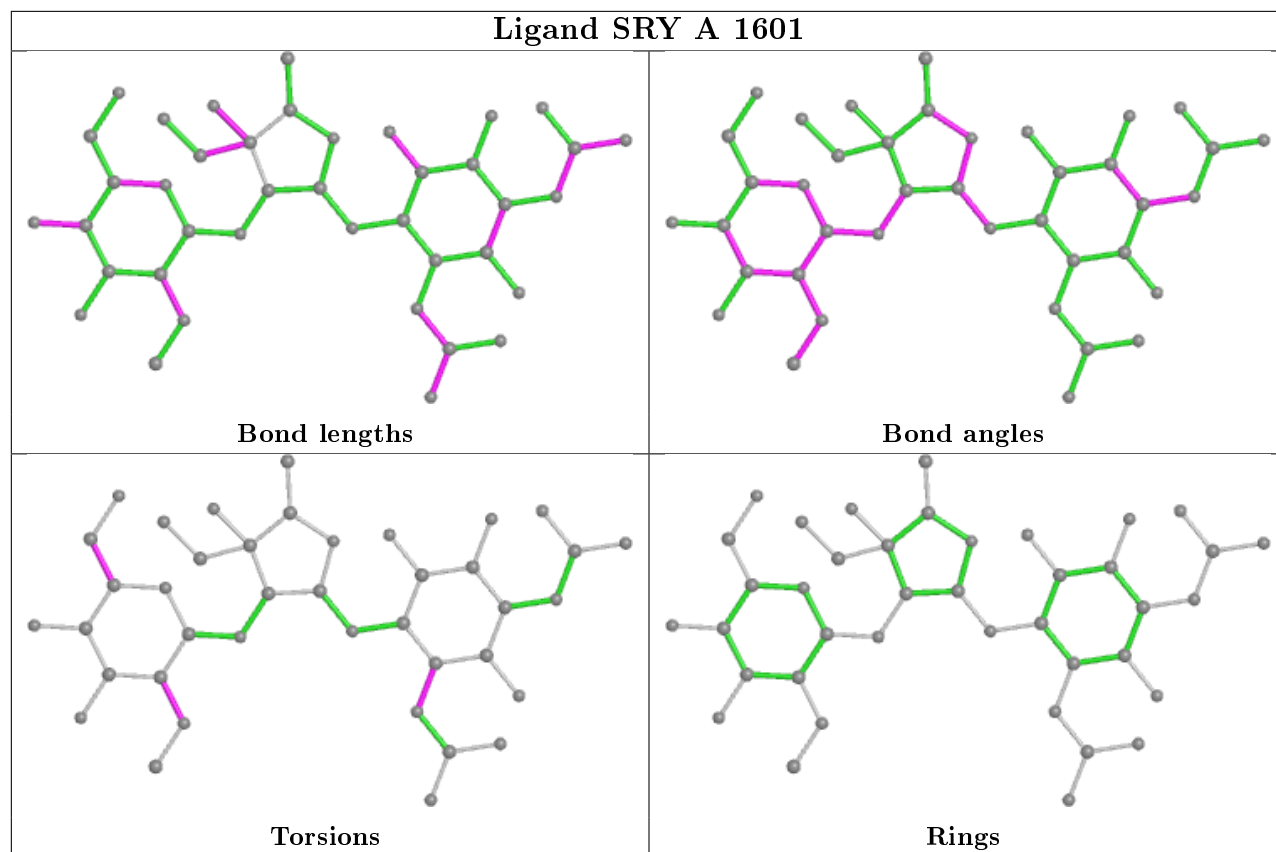
Mol	Chain	Res	Type	Atoms
22	A	1601	SRY	C13-C23-N23-CI3
22	A	1601	SRY	C43-C53-C63-O63
22	A	1601	SRY	C21-C31-N31-CD1

There are no ring outliers.

1 monomer is involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
22	A	1601	SRY	4	0

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



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	1498/1522 (98%)	-0.15	29 (1%) 66 65	84, 140, 292, 377	0
2	B	234/256 (91%)	-0.24	4 (1%) 70 68	104, 155, 237, 275	0
3	C	206/239 (86%)	0.37	18 (8%) 10 10	154, 222, 279, 297	0
4	D	208/209 (99%)	-0.09	7 (3%) 45 43	95, 146, 196, 234	0
5	E	150/162 (92%)	-0.29	0 100 100	87, 116, 150, 189	0
6	F	101/101 (100%)	-0.33	0 100 100	128, 171, 203, 245	0
7	G	155/156 (99%)	0.11	9 (5%) 23 22	134, 194, 249, 267	0
8	H	138/138 (100%)	-0.37	0 100 100	82, 104, 147, 176	0
9	I	127/128 (99%)	0.23	9 (7%) 16 16	139, 225, 270, 296	0
10	J	98/105 (93%)	0.86	17 (17%) 1 1	169, 249, 317, 359	0
11	K	116/129 (89%)	-0.23	0 100 100	114, 140, 200, 247	0
12	L	123/135 (91%)	-0.20	0 100 100	81, 136, 177, 242	0
13	M	118/126 (93%)	-0.01	7 (5%) 22 22	132, 174, 213, 263	0
14	N	60/61 (98%)	1.06	13 (21%) 0 1	170, 213, 261, 270	0
15	O	87/89 (97%)	-0.19	1 (1%) 80 81	87, 129, 171, 196	0
16	P	83/88 (94%)	-0.16	1 (1%) 79 78	107, 135, 170, 216	0
17	Q	99/105 (94%)	-0.32	1 (1%) 82 82	82, 115, 153, 171	0
18	R	70/88 (79%)	-0.19	0 100 100	102, 145, 197, 210	0
19	S	80/93 (86%)	0.96	16 (20%) 1 1	187, 240, 280, 318	0
20	T	99/106 (93%)	-0.18	1 (1%) 82 82	103, 143, 194, 220	0
21	U	24/27 (88%)	1.68	8 (33%) 0 0	151, 181, 217, 225	0
All	All	3874/4063 (95%)	-0.05	141 (3%) 42 40	81, 153, 264, 377	0

The worst 5 of 141 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	C	103	VAL	7.5
10	J	34	VAL	7.1
10	J	37	PRO	6.9
1	A	793	U	6.8
14	N	4	LYS	6.7

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	PSU	A	1541	20/21	0.48	0.73	259,271,323,325	0
1	PSU	A	1540	20/21	0.69	0.57	215,251,324,324	0
1	2MG	A	1207	24/25	0.85	0.28	204,240,247,253	0
1	5MC	A	1400	21/22	0.91	0.20	106,137,150,154	0
1	5MC	A	1407	21/22	0.93	0.17	141,152,168,173	0
1	PSU	A	516	20/21	0.94	0.14	129,146,157,158	0
1	5MC	A	967	21/22	0.95	0.16	137,145,156,160	0
1	M2G	A	966	25/26	0.95	0.20	133,146,154,159	0
1	MA6	A	1518	24/25	0.96	0.12	120,140,152,155	0
1	5MC	A	1404	21/22	0.96	0.17	119,127,141,150	0
1	UR3	A	1498	21/22	0.96	0.18	115,129,150,155	0
1	MA6	A	1519	24/25	0.97	0.16	111,125,136,142	0
12	0TD	L	92	10/11	0.97	0.33	107,131,154,325	0
1	4OC	A	1402	22/23	0.98	0.19	116,120,139,144	0
1	7MG	A	527	24/25	0.98	0.14	105,116,135,140	0

6.3 Carbohydrates [i](#)

There are no carbohydrates 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(\AA^2)	Q<0.9
23	MG	A	1711	1/1	0.31	0.39	145,145,145,145	0
23	MG	A	1805	1/1	0.32	0.75	132,132,132,132	0
23	MG	A	1734	1/1	0.39	0.39	127,127,127,127	0
23	MG	A	1776	1/1	0.47	0.62	126,126,126,126	0
23	MG	A	1794	1/1	0.49	0.40	128,128,128,128	0
23	MG	A	1745	1/1	0.52	0.64	114,114,114,114	0
23	MG	A	1788	1/1	0.56	0.50	121,121,121,121	0
23	MG	A	1775	1/1	0.57	0.54	128,128,128,128	0
23	MG	A	1641	1/1	0.57	0.62	105,105,105,105	0
23	MG	H	203	1/1	0.57	0.76	132,132,132,132	0
23	MG	A	1722	1/1	0.61	0.51	126,126,126,126	0
23	MG	S	101	1/1	0.62	0.27	132,132,132,132	0
23	MG	A	1804	1/1	0.63	1.49	126,126,126,126	0
23	MG	P	102	1/1	0.64	0.30	135,135,135,135	0
23	MG	A	1817	1/1	0.66	0.50	119,119,119,119	0
23	MG	Q	201	1/1	0.66	0.13	119,119,119,119	0
23	MG	N	103	1/1	0.66	0.33	140,140,140,140	0
23	MG	H	201	1/1	0.67	0.17	106,106,106,106	0
23	MG	A	1715	1/1	0.68	0.77	129,129,129,129	0
23	MG	T	202	1/1	0.68	0.19	135,135,135,135	0
23	MG	A	1743	1/1	0.69	0.40	146,146,146,146	0
23	MG	A	1791	1/1	0.69	0.42	127,127,127,127	0
23	MG	A	1769	1/1	0.70	0.45	130,130,130,130	0
23	MG	A	1768	1/1	0.71	0.20	111,111,111,111	0
23	MG	A	1759	1/1	0.73	0.65	145,145,145,145	0
23	MG	A	1798	1/1	0.73	0.67	139,139,139,139	0
23	MG	Q	202	1/1	0.74	0.32	104,104,104,104	0
23	MG	A	1820	1/1	0.75	0.59	113,113,113,113	0
23	MG	A	1696	1/1	0.75	0.47	140,140,140,140	0
23	MG	A	1736	1/1	0.76	0.52	126,126,126,126	0
23	MG	A	1824	1/1	0.76	0.37	123,123,123,123	0
23	MG	A	1849	1/1	0.76	0.36	126,126,126,126	0
23	MG	A	1812	1/1	0.76	0.63	160,160,160,160	0
23	MG	A	1783	1/1	0.76	0.14	284,284,284,284	0
23	MG	A	1854	1/1	0.76	0.17	194,194,194,194	0
23	MG	A	1808	1/1	0.77	0.35	118,118,118,118	0
23	MG	A	1625	1/1	0.77	0.78	152,152,152,152	0
23	MG	A	1767	1/1	0.77	0.44	121,121,121,121	0
23	MG	A	1683	1/1	0.78	0.11	301,301,301,301	0
23	MG	B	302	1/1	0.78	0.11	111,111,111,111	0
23	MG	A	1809	1/1	0.78	0.44	141,141,141,141	0
23	MG	A	1694	1/1	0.78	0.44	137,137,137,137	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
23	MG	A	1796	1/1	0.78	0.96	134,134,134,134	0
23	MG	A	1673	1/1	0.78	1.46	143,143,143,143	0
23	MG	A	1755	1/1	0.79	0.31	132,132,132,132	0
23	MG	A	1616	1/1	0.80	0.38	115,115,115,115	0
23	MG	A	1813	1/1	0.80	0.81	135,135,135,135	0
23	MG	A	1816	1/1	0.80	0.35	136,136,136,136	0
23	MG	P	101	1/1	0.80	0.39	98,98,98,98	0
23	MG	A	1859	1/1	0.81	0.10	144,144,144,144	0
23	MG	A	1814	1/1	0.81	1.04	129,129,129,129	0
23	MG	A	1757	1/1	0.82	0.15	147,147,147,147	0
23	MG	A	1773	1/1	0.82	0.31	150,150,150,150	0
23	MG	A	1738	1/1	0.82	0.49	150,150,150,150	0
23	MG	A	1748	1/1	0.82	0.15	129,129,129,129	0
23	MG	A	1778	1/1	0.82	0.27	124,124,124,124	0
23	MG	A	1850	1/1	0.82	0.24	122,122,122,122	0
23	MG	A	1790	1/1	0.82	0.26	140,140,140,140	0
23	MG	A	1832	1/1	0.82	0.44	290,290,290,290	0
23	MG	A	1795	1/1	0.83	0.38	108,108,108,108	0
23	MG	A	1780	1/1	0.83	0.06	90,90,90,90	0
23	MG	A	1653	1/1	0.83	0.63	114,114,114,114	0
23	MG	M	201	1/1	0.83	0.61	160,160,160,160	0
23	MG	A	1662	1/1	0.83	0.29	124,124,124,124	0
23	MG	A	1624	1/1	0.83	0.23	162,162,162,162	0
23	MG	A	1728	1/1	0.84	0.36	134,134,134,134	0
23	MG	A	1675	1/1	0.84	0.91	103,103,103,103	0
23	MG	A	1698	1/1	0.85	0.29	155,155,155,155	0
23	MG	A	1822	1/1	0.85	0.12	101,101,101,101	0
23	MG	A	1793	1/1	0.85	0.33	107,107,107,107	0
23	MG	A	1818	1/1	0.86	0.38	121,121,121,121	0
23	MG	A	1701	1/1	0.86	0.44	111,111,111,111	0
23	MG	A	1836	1/1	0.86	0.25	236,236,236,236	0
23	MG	A	1838	1/1	0.86	0.27	386,386,386,386	0
23	MG	A	1723	1/1	0.86	0.30	155,155,155,155	0
23	MG	A	1800	1/1	0.86	0.29	159,159,159,159	0
23	MG	A	1628	1/1	0.87	0.38	112,112,112,112	0
23	MG	A	1742	1/1	0.87	0.34	107,107,107,107	0
23	MG	A	1802	1/1	0.87	0.28	140,140,140,140	0
23	MG	A	1799	1/1	0.87	0.49	152,152,152,152	0
23	MG	A	1679	1/1	0.87	0.56	132,132,132,132	0
23	MG	A	1855	1/1	0.88	0.55	138,138,138,138	0
23	MG	A	1766	1/1	0.88	0.73	130,130,130,130	0
23	MG	A	1735	1/1	0.88	0.77	129,129,129,129	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
23	MG	H	202	1/1	0.88	0.53	125,125,125,125	0
23	MG	A	1754	1/1	0.88	0.36	126,126,126,126	0
23	MG	K	201	1/1	0.88	0.26	168,168,168,168	0
23	MG	A	1752	1/1	0.88	0.42	124,124,124,124	0
23	MG	A	1604	1/1	0.88	0.23	133,133,133,133	0
23	MG	A	1669	1/1	0.88	0.18	122,122,122,122	0
23	MG	A	1649	1/1	0.88	0.41	127,127,127,127	0
23	MG	A	1847	1/1	0.89	0.28	380,380,380,380	0
23	MG	A	1655	1/1	0.89	0.20	131,131,131,131	0
23	MG	A	1869	1/1	0.89	0.17	278,278,278,278	0
23	MG	A	1720	1/1	0.89	0.30	116,116,116,116	0
23	MG	A	1697	1/1	0.89	0.20	147,147,147,147	0
23	MG	A	1851	1/1	0.89	0.31	151,151,151,151	0
23	MG	A	1792	1/1	0.89	0.23	93,93,93,93	0
23	MG	T	203	1/1	0.89	0.33	350,350,350,350	0
23	MG	A	1712	1/1	0.89	1.14	106,106,106,106	0
23	MG	A	1779	1/1	0.90	0.25	131,131,131,131	0
23	MG	A	1811	1/1	0.90	0.31	138,138,138,138	0
23	MG	A	1731	1/1	0.90	0.38	117,117,117,117	0
23	MG	A	1620	1/1	0.90	0.35	139,139,139,139	0
23	MG	T	201	1/1	0.90	0.41	87,87,87,87	0
23	MG	A	1676	1/1	0.90	0.39	124,124,124,124	0
23	MG	A	1610	1/1	0.90	0.28	141,141,141,141	0
23	MG	A	1835	1/1	0.90	0.13	172,172,172,172	0
23	MG	A	1639	1/1	0.90	0.31	119,119,119,119	0
23	MG	A	1857	1/1	0.90	0.42	121,121,121,121	0
23	MG	A	1725	1/1	0.90	0.69	142,142,142,142	0
23	MG	A	1700	1/1	0.90	0.20	246,246,246,246	0
23	MG	A	1603	1/1	0.90	0.23	133,133,133,133	0
23	MG	A	1843	1/1	0.90	0.24	309,309,309,309	0
23	MG	A	1705	1/1	0.90	0.43	112,112,112,112	0
23	MG	A	1737	1/1	0.90	0.12	126,126,126,126	0
23	MG	A	1771	1/1	0.90	0.24	119,119,119,119	0
23	MG	A	1861	1/1	0.91	0.27	339,339,339,339	0
23	MG	A	1828	1/1	0.91	0.12	114,114,114,114	0
23	MG	A	1823	1/1	0.91	0.15	90,90,90,90	0
23	MG	A	1678	1/1	0.91	0.28	114,114,114,114	0
23	MG	A	1744	1/1	0.91	0.25	128,128,128,128	0
23	MG	A	1627	1/1	0.91	0.18	126,126,126,126	0
23	MG	A	1772	1/1	0.91	0.17	131,131,131,131	0
23	MG	A	1751	1/1	0.91	0.12	123,123,123,123	0
23	MG	A	1762	1/1	0.91	0.10	157,157,157,157	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
23	MG	D	302	1/1	0.92	0.14	111,111,111,111	0
23	MG	B	301	1/1	0.92	0.77	141,141,141,141	0
23	MG	A	1821	1/1	0.92	0.12	156,156,156,156	0
23	MG	A	1665	1/1	0.92	0.20	126,126,126,126	0
23	MG	A	1807	1/1	0.92	0.30	145,145,145,145	0
23	MG	A	1635	1/1	0.92	0.56	98,98,98,98	0
23	MG	A	1806	1/1	0.92	0.45	145,145,145,145	0
23	MG	A	1707	1/1	0.92	0.26	129,129,129,129	0
23	MG	A	1684	1/1	0.92	0.09	191,191,191,191	0
23	MG	A	1619	1/1	0.92	0.27	140,140,140,140	0
23	MG	A	1724	1/1	0.92	0.30	171,171,171,171	0
23	MG	A	1756	1/1	0.92	0.37	152,152,152,152	0
23	MG	A	1730	1/1	0.92	0.31	147,147,147,147	0
23	MG	A	1677	1/1	0.92	0.25	111,111,111,111	0
23	MG	A	1840	1/1	0.92	0.17	222,222,222,222	0
23	MG	A	1856	1/1	0.92	0.08	161,161,161,161	0
23	MG	A	1702	1/1	0.92	0.32	119,119,119,119	0
23	MG	A	1761	1/1	0.92	0.18	134,134,134,134	0
23	MG	A	1703	1/1	0.92	0.12	137,137,137,137	0
23	MG	A	1872	1/1	0.93	0.14	209,209,209,209	0
23	MG	A	1810	1/1	0.93	0.35	149,149,149,149	0
23	MG	A	1647	1/1	0.93	0.15	159,159,159,159	0
23	MG	A	1666	1/1	0.93	0.26	161,161,161,161	0
23	MG	A	1615	1/1	0.93	0.28	114,114,114,114	0
23	MG	A	1777	1/1	0.93	0.48	155,155,155,155	0
23	MG	A	1741	1/1	0.93	0.21	111,111,111,111	0
23	MG	A	1682	1/1	0.93	0.81	128,128,128,128	0
23	MG	A	1841	1/1	0.93	0.11	161,161,161,161	0
23	MG	A	1714	1/1	0.93	0.63	116,116,116,116	0
23	MG	A	1797	1/1	0.93	0.08	157,157,157,157	0
23	MG	A	1607	1/1	0.93	0.10	140,140,140,140	0
23	MG	A	1758	1/1	0.93	0.15	99,99,99,99	0
23	MG	A	1786	1/1	0.93	0.11	495,495,495,495	0
23	MG	A	1740	1/1	0.93	0.59	119,119,119,119	0
23	MG	A	1801	1/1	0.93	0.10	100,100,100,100	0
23	MG	A	1661	1/1	0.94	0.14	192,192,192,192	0
23	MG	A	1718	1/1	0.94	0.14	142,142,142,142	0
23	MG	A	1746	1/1	0.94	0.23	146,146,146,146	0
23	MG	A	1819	1/1	0.94	0.29	150,150,150,150	0
23	MG	A	1633	1/1	0.94	0.18	125,125,125,125	0
23	MG	A	1708	1/1	0.94	0.31	117,117,117,117	0
23	MG	A	1845	1/1	0.94	0.43	267,267,267,267	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
23	MG	A	1609	1/1	0.94	0.20	76,76,76,76	0
23	MG	A	1709	1/1	0.94	0.16	109,109,109,109	0
23	MG	A	1657	1/1	0.94	0.24	147,147,147,147	0
23	MG	A	1652	1/1	0.94	0.42	131,131,131,131	0
23	MG	A	1686	1/1	0.94	0.24	375,375,375,375	0
23	MG	A	1690	1/1	0.94	0.14	111,111,111,111	0
23	MG	A	1727	1/1	0.94	0.22	94,94,94,94	0
23	MG	A	1704	1/1	0.94	0.08	121,121,121,121	0
23	MG	A	1842	1/1	0.94	0.21	233,233,233,233	0
23	MG	A	1670	1/1	0.94	0.49	197,197,197,197	0
23	MG	A	1672	1/1	0.94	0.44	122,122,122,122	0
23	MG	A	1706	1/1	0.94	0.27	115,115,115,115	0
23	MG	A	1833	1/1	0.94	0.22	320,320,320,320	0
23	MG	A	1763	1/1	0.95	0.06	183,183,183,183	0
23	MG	A	1664	1/1	0.95	0.14	137,137,137,137	0
23	MG	A	1695	1/1	0.95	0.10	139,139,139,139	0
23	MG	A	1803	1/1	0.95	0.58	142,142,142,142	0
23	MG	A	1716	1/1	0.95	0.52	123,123,123,123	0
23	MG	A	1750	1/1	0.95	0.38	122,122,122,122	0
23	MG	A	1852	1/1	0.95	0.13	126,126,126,126	0
23	MG	A	1614	1/1	0.95	0.18	79,79,79,79	0
23	MG	A	1789	1/1	0.95	0.12	124,124,124,124	0
23	MG	A	1739	1/1	0.95	0.16	131,131,131,131	0
23	MG	A	1650	1/1	0.95	0.10	222,222,222,222	0
23	MG	A	1692	1/1	0.95	0.58	158,158,158,158	0
23	MG	A	1660	1/1	0.95	0.26	127,127,127,127	0
23	MG	A	1602	1/1	0.95	0.22	158,158,158,158	0
23	MG	A	1631	1/1	0.95	0.17	130,130,130,130	0
23	MG	A	1719	1/1	0.95	0.42	155,155,155,155	0
23	MG	A	1815	1/1	0.95	0.11	146,146,146,146	0
23	MG	A	1687	1/1	0.95	0.09	118,118,118,118	0
23	MG	A	1867	1/1	0.95	0.13	212,212,212,212	0
23	MG	A	1693	1/1	0.95	0.15	166,166,166,166	0
23	MG	A	1831	1/1	0.95	0.17	346,346,346,346	0
23	MG	A	1826	1/1	0.95	0.37	113,113,113,113	0
23	MG	A	1827	1/1	0.95	0.17	153,153,153,153	0
23	MG	A	1732	1/1	0.95	0.36	111,111,111,111	0
23	MG	A	1642	1/1	0.95	0.20	104,104,104,104	0
23	MG	A	1626	1/1	0.95	0.08	208,208,208,208	0
23	MG	A	1726	1/1	0.95	0.19	133,133,133,133	0
23	MG	A	1733	1/1	0.95	0.19	119,119,119,119	0
22	SRY	A	1601	40/40	0.95	0.20	97,126,151,158	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
23	MG	A	1853	1/1	0.95	0.34	143,143,143,143	0
23	MG	A	1717	1/1	0.95	0.22	132,132,132,132	0
23	MG	A	1868	1/1	0.95	0.16	262,262,262,262	0
23	MG	A	1781	1/1	0.95	0.59	151,151,151,151	0
23	MG	A	1873	1/1	0.95	0.21	423,423,423,423	0
23	MG	A	1654	1/1	0.96	0.09	129,129,129,129	0
23	MG	A	1623	1/1	0.96	0.19	114,114,114,114	0
23	MG	A	1864	1/1	0.96	0.12	333,333,333,333	0
23	MG	A	1749	1/1	0.96	0.21	113,113,113,113	0
23	MG	A	1685	1/1	0.96	0.19	138,138,138,138	0
23	MG	A	1646	1/1	0.96	0.20	177,177,177,177	0
23	MG	A	1830	1/1	0.96	0.20	199,199,199,199	0
23	MG	A	1659	1/1	0.96	0.23	142,142,142,142	0
23	MG	A	1787	1/1	0.96	0.22	130,130,130,130	0
23	MG	A	1774	1/1	0.96	0.54	190,190,190,190	0
23	MG	A	1871	1/1	0.96	0.08	211,211,211,211	0
23	MG	A	1680	1/1	0.96	0.19	141,141,141,141	0
23	MG	A	1644	1/1	0.96	0.17	80,80,80,80	0
24	ZN	N	101	1/1	0.96	0.16	201,201,201,201	0
23	MG	A	1710	1/1	0.96	0.58	128,128,128,128	0
23	MG	A	1765	1/1	0.96	0.12	120,120,120,120	0
23	MG	A	1618	1/1	0.96	0.20	115,115,115,115	0
23	MG	A	1844	1/1	0.96	0.24	239,239,239,239	0
23	MG	A	1747	1/1	0.96	0.11	131,131,131,131	0
23	MG	A	1622	1/1	0.96	0.20	163,163,163,163	0
23	MG	A	1699	1/1	0.96	0.10	201,201,201,201	0
23	MG	A	1671	1/1	0.96	0.38	110,110,110,110	0
23	MG	A	1870	1/1	0.96	0.25	245,245,245,245	0
23	MG	A	1689	1/1	0.97	0.12	90,90,90,90	0
23	MG	A	1866	1/1	0.97	0.53	396,396,396,396	0
23	MG	A	1613	1/1	0.97	0.15	101,101,101,101	0
23	MG	A	1663	1/1	0.97	0.28	148,148,148,148	0
23	MG	A	1860	1/1	0.97	0.39	362,362,362,362	0
23	MG	E	201	1/1	0.97	0.04	177,177,177,177	0
23	MG	A	1634	1/1	0.97	0.19	85,85,85,85	0
23	MG	A	1651	1/1	0.97	0.11	111,111,111,111	0
23	MG	A	1658	1/1	0.97	0.16	175,175,175,175	0
23	MG	A	1606	1/1	0.97	0.33	130,130,130,130	0
23	MG	A	1612	1/1	0.97	0.20	94,94,94,94	0
23	MG	A	1617	1/1	0.97	0.10	86,86,86,86	0
23	MG	A	1638	1/1	0.97	0.50	131,131,131,131	0
23	MG	A	1621	1/1	0.97	0.21	96,96,96,96	0

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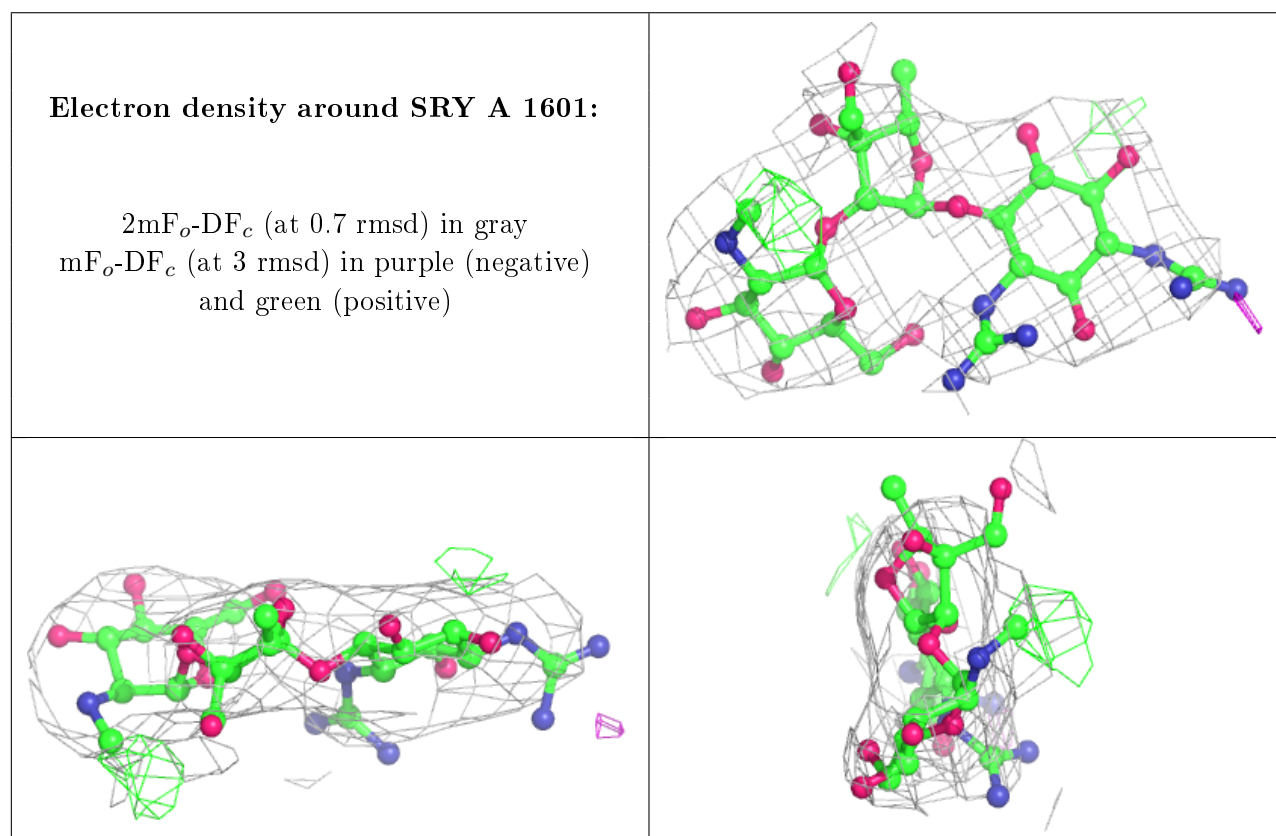
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
23	MG	A	1782	1/1	0.97	0.16	214,214,214,214	0
23	MG	A	1770	1/1	0.97	0.17	147,147,147,147	0
23	MG	A	1825	1/1	0.97	0.19	147,147,147,147	0
23	MG	A	1858	1/1	0.97	0.20	167,167,167,167	0
23	MG	A	1839	1/1	0.97	0.05	137,137,137,137	0
23	MG	A	1837	1/1	0.98	0.09	306,306,306,306	0
23	MG	A	1753	1/1	0.98	0.18	119,119,119,119	0
23	MG	A	1637	1/1	0.98	0.28	170,170,170,170	0
23	MG	M	202	1/1	0.98	0.52	139,139,139,139	0
23	MG	A	1668	1/1	0.98	0.11	163,163,163,163	0
23	MG	A	1629	1/1	0.98	0.16	124,124,124,124	0
24	ZN	D	301	1/1	0.98	0.34	114,114,114,114	0
23	MG	A	1688	1/1	0.98	0.16	204,204,204,204	0
23	MG	A	1667	1/1	0.98	0.07	176,176,176,176	0
23	MG	A	1681	1/1	0.98	0.09	127,127,127,127	0
23	MG	A	1691	1/1	0.98	0.34	309,309,309,309	0
23	MG	A	1846	1/1	0.98	0.20	98,98,98,98	0
23	MG	A	1863	1/1	0.98	0.18	99,99,99,99	0
23	MG	A	1764	1/1	0.98	0.08	181,181,181,181	0
23	MG	A	1636	1/1	0.98	0.06	80,80,80,80	0
23	MG	N	102	1/1	0.98	0.17	182,182,182,182	0
23	MG	A	1630	1/1	0.98	0.31	128,128,128,128	0
23	MG	A	1713	1/1	0.98	0.22	94,94,94,94	0
23	MG	A	1729	1/1	0.98	0.28	91,91,91,91	0
23	MG	A	1648	1/1	0.98	0.16	115,115,115,115	0
23	MG	A	1784	1/1	0.98	0.12	198,198,198,198	0
23	MG	A	1643	1/1	0.98	0.08	130,130,130,130	0
23	MG	A	1645	1/1	0.99	0.23	139,139,139,139	0
23	MG	A	1611	1/1	0.99	0.12	139,139,139,139	0
23	MG	A	1785	1/1	0.99	0.17	214,214,214,214	0
23	MG	A	1640	1/1	0.99	0.34	129,129,129,129	0
23	MG	A	1605	1/1	0.99	0.09	114,114,114,114	0
23	MG	A	1865	1/1	0.99	0.31	173,173,173,173	0
23	MG	A	1608	1/1	0.99	0.23	96,96,96,96	0
23	MG	A	1834	1/1	0.99	0.24	282,282,282,282	0
23	MG	A	1674	1/1	0.99	0.14	154,154,154,154	0
23	MG	A	1721	1/1	0.99	0.14	98,98,98,98	0
23	MG	A	1760	1/1	0.99	0.14	171,171,171,171	0
23	MG	A	1656	1/1	0.99	0.13	135,135,135,135	0
23	MG	A	1632	1/1	0.99	0.16	100,100,100,100	0
23	MG	A	1829	1/1	0.99	0.08	170,170,170,170	0
23	MG	A	1862	1/1	0.99	0.23	69,69,69,69	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
23	MG	A	1848	1/1	1.00	0.15	168,168,168,168	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.



6.5 Other polymers [i](#)

There are no such residues in this entry.