



wwPDB X-ray Structure Validation Summary Report ⓘ

May 25, 2020 – 06:58 am BST

PDB ID : 4DV5
Title : Crystal structure of the *Thermus thermophilus* 30S ribosomal subunit with a 16S rRNA mutation, A914G, 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 : 3.68 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

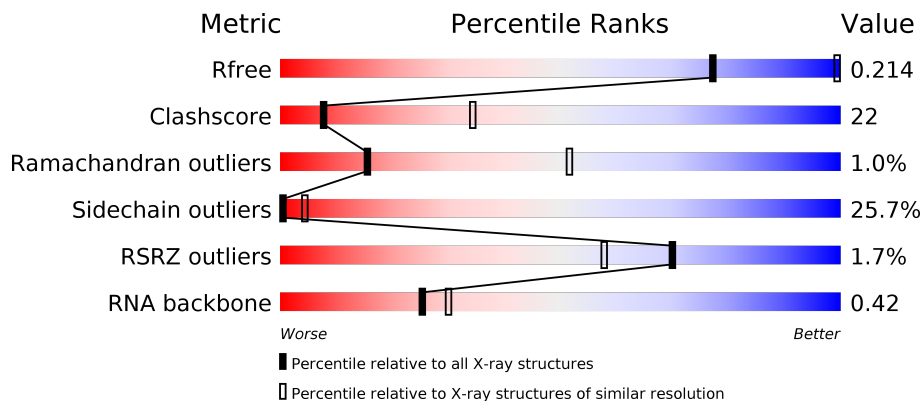
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.68 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.






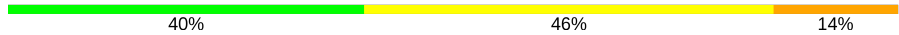
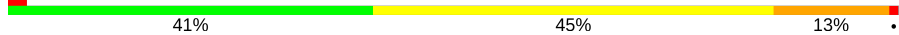
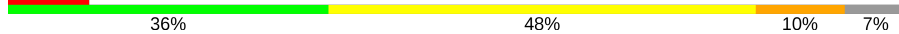
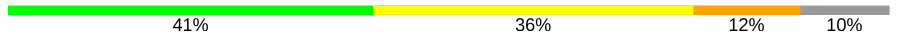
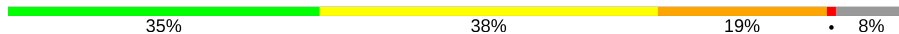
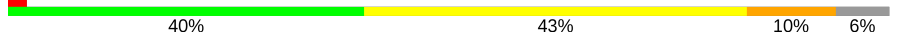
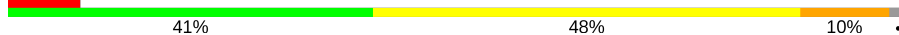
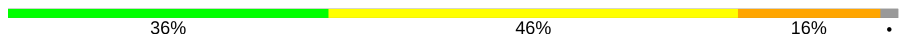
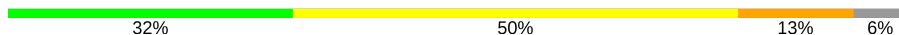
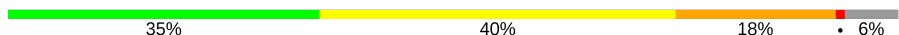
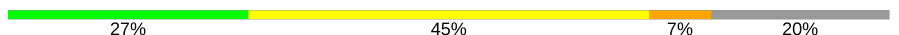
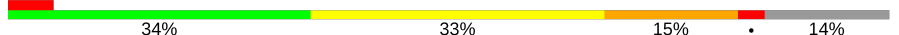


Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1013 (3.84-3.52)
Clashscore	141614	1070 (3.84-3.52)
Ramachandran outliers	138981	1036 (3.84-3.52)
Sidechain outliers	138945	1033 (3.84-3.52)
RSRZ outliers	127900	1471 (3.86-3.50)
RNA backbone	3102	1024 (4.30-3.00)

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	B	256	
3	C	239	
4	D	209	

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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	5MC	A	1404	-	-	X	-
1	PSU	A	1540	-	-	-	X
23	MG	A	1658	-	-	-	X
23	MG	A	1661	-	-	-	X
23	MG	A	1671	-	-	-	X
23	MG	A	1673	-	-	-	X
23	MG	A	1720	-	-	-	X
23	MG	A	1731	-	-	-	X

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
23	MG	A	1739	-	-	-	X
23	MG	A	1767	-	-	-	X
23	MG	A	1793	-	-	-	X
23	MG	A	1794	-	-	-	X
23	MG	A	1797	-	-	-	X
23	MG	A	1799	-	-	-	X
23	MG	A	1837	-	-	-	X
23	MG	H	204	-	-	-	X

2 Entry composition [i](#)

There are 25 unique types of molecules in this entry. The entry contains 52300 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	914	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
5	E	150	Total	C	N	O	S	0	0	0
			1146	724	217	201	4			

- Molecule 6 is a protein called ribosomal protein S6.

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

- Molecule 7 is a protein called ribosomal protein S7.

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

- Molecule 8 is a protein called ribosomal protein S8.

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

- Molecule 9 is a protein called ribosomal protein S9.

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

- Molecule 10 is a protein called ribosomal protein S10.

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

- Molecule 11 is a protein called ribosomal protein S11.

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

- 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

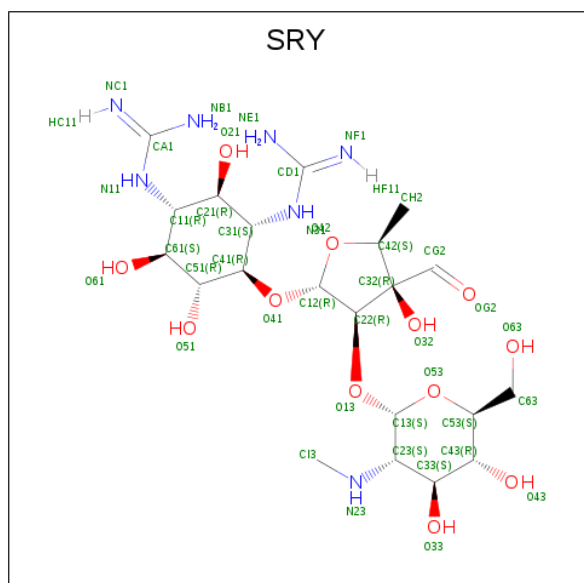
- Molecule 20 is a protein called ribosomal protein S20.

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: $C_{21}H_{39}N_7O_{12}$).



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	3	Total Mg 3 3	0	0
23	J	2	Total Mg 2 2	0	0
23	Q	1	Total Mg 1 1	0	0
23	D	1	Total Mg 1 1	0	0
23	E	1	Total Mg 1 1	0	0
23	H	4	Total Mg 4 4	0	0
23	B	2	Total Mg 2 2	0	0
23	A	253	Total Mg 253 253	0	0
23	T	2	Total Mg 2 2	0	0
23	N	1	Total Mg 1 1	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	374	Total O 374 374	0	0
25	B	1	Total O 1 1	0	0
25	D	1	Total O 1 1	0	0

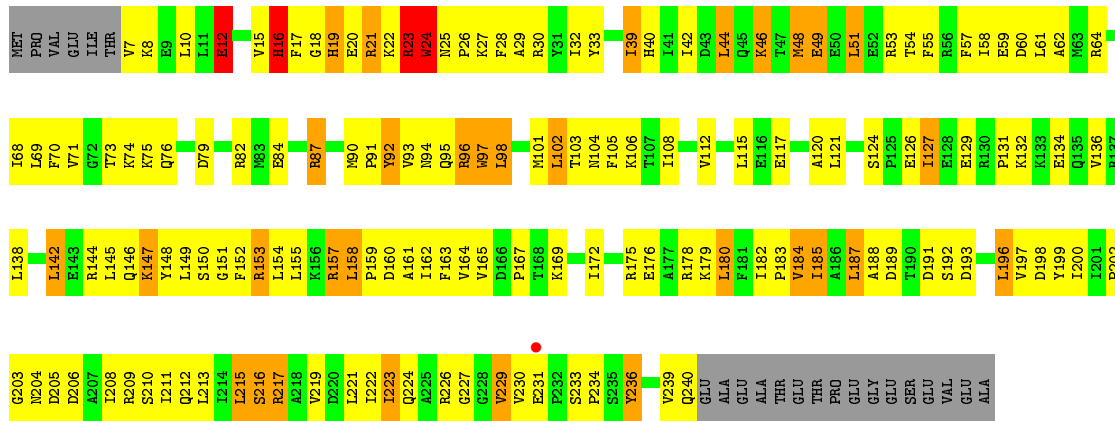
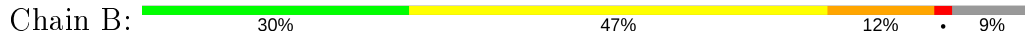
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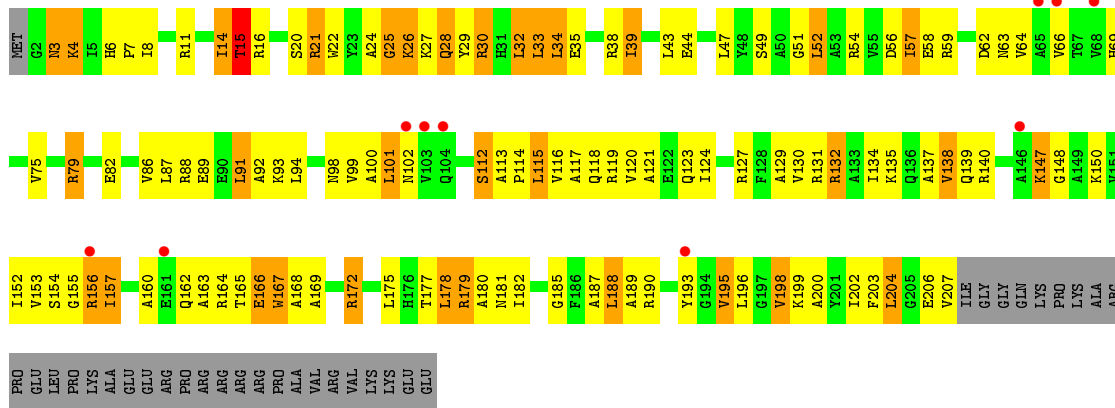
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
25	E	7	Total O 7 7	0	0
25	L	1	Total O 1 1	0	0
25	N	1	Total O 1 1	0	0
25	P	2	Total O 2 2	0	0
25	T	2	Total O 2 2	0	0

G1517	G1518	G1519	G1520	G1521	G1522	G1523	G1524	G1525	G1526	G1527	G1528	G1529	G1530	G1531	G1532	G1533	A	U	C	C	C	C	C1539	U1540	U1541	U1542	U1543	U1544																																																																																																																																																																																																																																																																																																																																																																																																																		
G1451	G1452	G1453	G1454	G1455	G1456	G1457	G1458	G1459	G1460	G1461	G1462	G1463	G1464	G1465	G1466	G1467	G1468	G1469	G1470	G1471	G1472	G1473	G1474	G1475	G1476	G1477	G1478	G1479	G1480	G1481	G1482	G1483	G1484	G1485	G1486	G1487	G1488	G1489	G1490	G1491	G1492	G1493	G1494	G1495	G1496	G1497	G1498	G1499	A1500	C1501	A1502	G1503	G1504	G1505	U1506	A1507	G1508	G1509	U1510	G1511	G1512	A1513	C1514	G1515	G1516																																																																																																																																																																																																																																																																																																																																																																													
U1381	C1382	C1383	C1384	G1385	G1386	G1387	C1388	C1389	U1390	U1391	A1392	A1393	G1394	U1395	C1396	C1397	C1398	C1399	C1400	G1401	C1402	C1403	C1404	G1405	U1406	C1407	A1408	A1409	G1410	G1411	C1412	C1413	U1414	G1415	G1416	G1417	A1418	G1419	G1420	G1421	G1422	C1423	C1424	U1425	C1426	U1427	A1428	G1429	G1430	G1431	A1432	A1433	G1434	U1435	U1436	G1437	G1438	G1439	G1440	G1441	G1442	G1443	G1444	G1445	G1446	G1447	G1448	G1449	G1450																																																																																																																																																																																																																																																																																																																																																																									
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G078	G709	G710	G711	A712	G713	G714	A715	A716	G717	G718	C719	G720	G721	A722	U723	G724	G725	G726	G727	A728	A729	G730	G731	A732	A733	G734	C735	G736	C737	U738	U739	C740	C741	C742	C743	C744	C745	A746	C747	C748	G749	G750	U751	G752	A753	C754	G755	C756	U757	G758	A759	G760	G761	C762	G763	G764	G765	A766	C767	A768																																																																																																																																																																																																																																																																																																																																																																																		
G689	G690	C691	G692	G693	G694	G695	G696	G697	G698	G699	C700	G701	G702	G703	G704	G705	G706	G707	G708	G709	G710	G711	G712	G713	G714	G715	G716	G717	G718	G719	G720	G721	G722	G723	G724	G725	G726	G727	G728	G729	G730	G731	G732	G733	G734	G735	G736	G737	G738	G739	U740	G741	G742	G743	G744	G745	A746	C747	G748	G749	G750	G751	G752	A753	C754	G755	C756	U757	G758	A759	G760	G761	C762	G763	G764	G765	A766	C767	A768																																																																																																																																																																																																																																																																																																																																																															
G589	G590	C591	G592	G593	G594	G595	G596	G597	G598	G599	C600	G601	G602	G603	G604	G605	G606	G607	G608	G609	G610	G611	G612	G613	G614	G615	G616	G617	G618	G619	G620	G621	G622	G623	G624	G625	G626	G627	G628	G629	G630	G631	G632	G633	G634	G635	G636	G637	G638	G639	G640	G641	G642	G643	G644	G645	G646	G647	G648	G649	G650	G651	G652	G653	G654	G655	G656	G657	G658	G659	G660	G661	G662	G663	G664	G665	G666	G667	G668	G669	G670	G671	G672	G673	G674	G675	G676	G677	G678	G679	G680	G681	G682	G683	G684	G685	G686	G687	G688	G689	G690	G691	G692	G693	G694	G695	G696	G697	G698	G699	G700	G701	G702	G703	G704	G705	G706	G707	G708	G709	G710	G711	G712	G713	G714	G715	G716	G717	G718	G719	G720	G721	G722	G723	G724	G725	G726	G727	G728	G729	G730	G731	G732	G733	G734	G735	G736	G737	G738	G739	G740	G741	G742	G743	G744	G745	G746	G747	G748	G749	G750	G751	G752	G753	G754	G755	G756	G757	G758	G759	G760	G761	G762	G763	G764	G765	G766	G767	G768	G769	G770	G771	G772	G773	G774	G775	G776	G777	G778	G779	G780	G781	G782	G783	G784	G785	G786	G787	G788	G789	G790	G791	G792	G793	G794	G795	G796	G797	G798	G799	G800	G801	G802	G803	U804	U805	G806	G807	G808	G809	G810	G811	G812	G813	A814	G815	G816	G817	G818	G819	G820	G821	G822	G823	G824	G825	G826	G827	G828	G829	G830	G831	G832	G833	G834	G835	G836	G837	G838	G839	G840	G841	G842	G843	G844	G845	G846	G847	G848	G849	G850	G851	G852	G853	G854	G855	G856	G857	G858	G859	G860	G861	G862	G863	G864	G865	G866	G867	G868	G869	G870	G871	A872	G873	G874	G875	G876	G877	G878	G879	G880	G881	G882	G883	G884	G885	G886	G887	G888	G889	G890	G891	G892	G893	G894	G895	G896	G897	G898	G899	G900	G901	G902	G903	G904	G905	G906	G907	G908	G909	G910	G911	G912	G913	G914	G915	G916	G917	G918	G919	G920	G921	G922	G923	G924	G925	G926	G927	G928	G929	G930	G931	G932	G933	G934	G935	G936	G937	G938	G939	G940	G941	G942	G943	G944	G945	G946	G947	G948	G949	G950	G951	G952	G953	G954	G955	G956	G957	G958	G959	G960	G961	G962	G963	G964	G965	G966	G967	G968	G969	G970	G971	G972	G973	G974	G975	G976	G977	G978	G979	G980	G981	G982	G983	G984	G985	G986	G987	G988	G989	G990	G991	G992	G993	G994	G995	G996	G997	G998	G999	G1000	A1001	G1002	G1003	A1004	G1005	G1006	C1007	C1008	G1009	G1010	A999	G1011	U1012	G1013	A1014	G1015	G1016	G1017	G1018

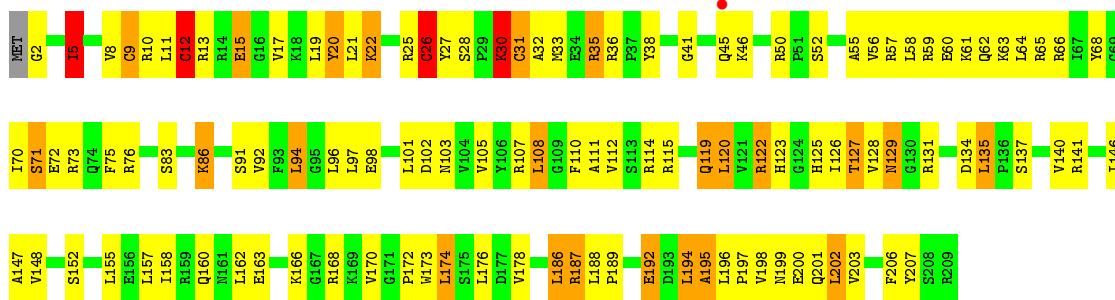
• Molecule 2: ribosomal protein S2



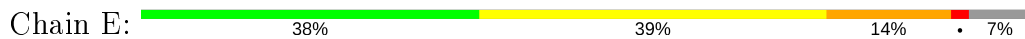
• Molecule 3: ribosomal protein S3

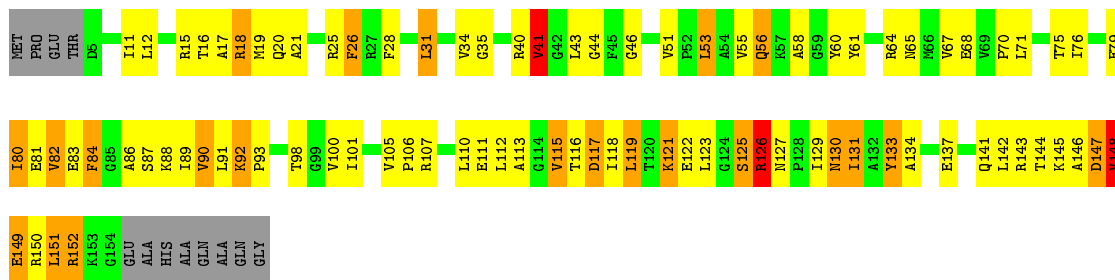


• Molecule 4: ribosomal protein S4

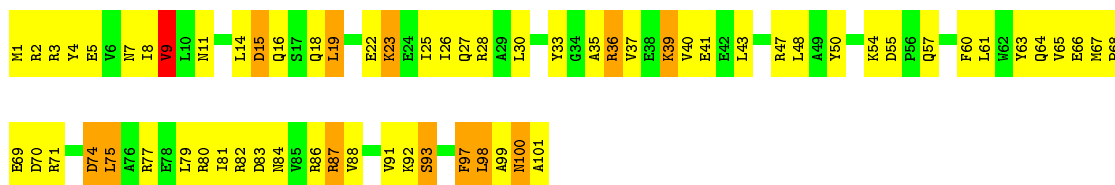
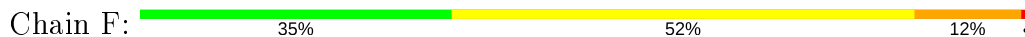


• Molecule 5: ribosomal protein S5

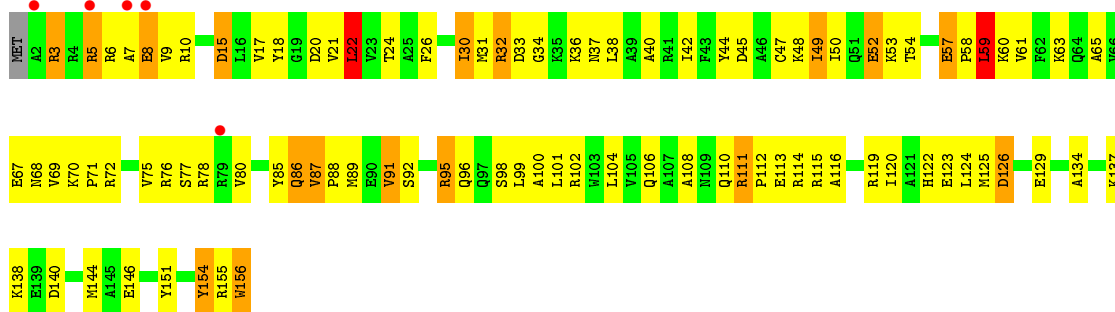




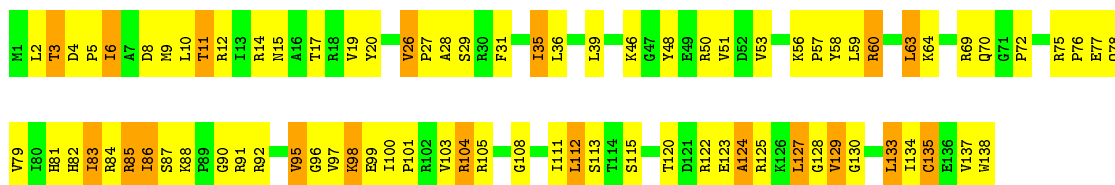
• Molecule 6: ribosomal protein S6



• Molecule 7: ribosomal protein S7

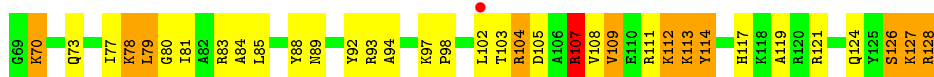


• Molecule 8: ribosomal protein S8

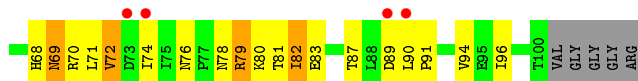
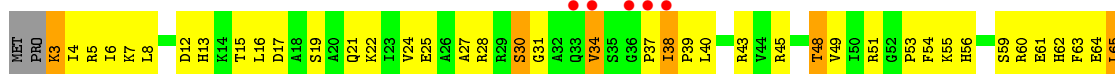


• Molecule 9: ribosomal protein S9





- Molecule 10: ribosomal protein S10



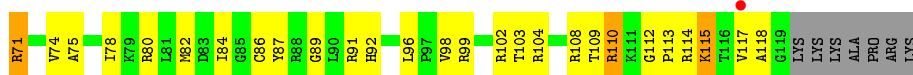
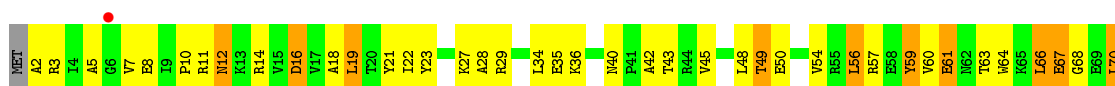
- Molecule 11: ribosomal protein S11



- Molecule 12: ribosomal protein S12

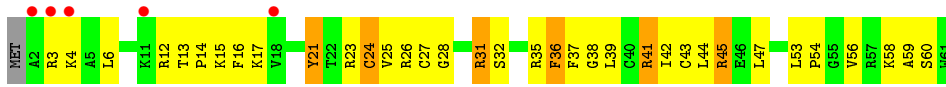


- Molecule 13: ribosomal protein S13



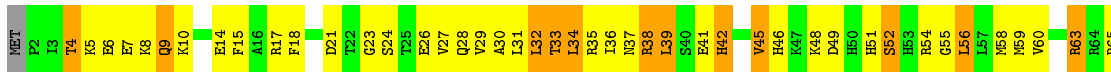
- Molecule 14: ribosomal protein S14





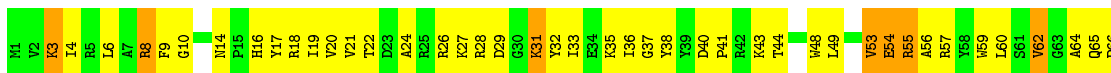
- Molecule 15: ribosomal protein S15

Chain O: 36% 46% 16%



- Molecule 16: ribosomal protein S16

Chain P: 32% 50% 13% 6%



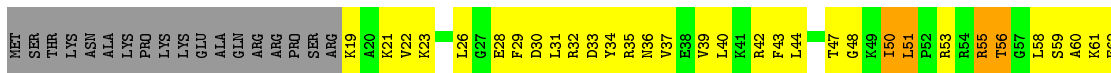
- Molecule 17: ribosomal protein S17

Chain Q: 35% 40% 18% 6%



- Molecule 18: ribosomal protein S18

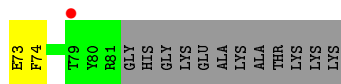
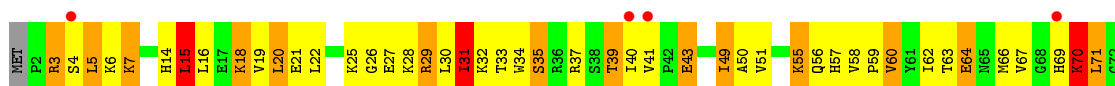
Chain R: 27% 45% 7% 20%



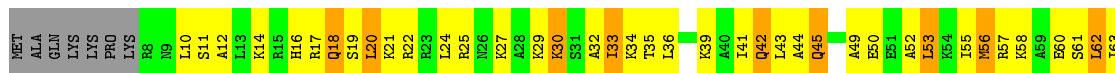
- Molecule 19: ribosomal protein S19

Chain S: 5% 34% 33% 15% 14%

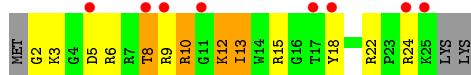




- Molecule 20: ribosomal protein S20



- 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	402.13Å 402.13Å 172.61Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	34.55 – 3.68 34.55 – 3.68	Depositor EDS
% Data completeness (in resolution range)	98.1 (34.55-3.68) 97.9 (34.55-3.68)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.92 (at 3.66Å)	Xtrriage
Refinement program	PHENIX dev_978	Depositor
R, R_{free}	0.156 , 0.211 0.157 , 0.214	Depositor DCC
R_{free} test set	7392 reflections (4.96%)	wwPDB-VP
Wilson B-factor (Å ²)	122.3	Xtrriage
Anisotropy	0.371	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.23 , 118.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.29$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	52300	wwPDB-VP
Average B, all atoms (Å ²)	148.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.44% 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	1.41	334/36041 (0.9%)	2.16	2692/56245 (4.8%)
2	B	0.91	1/1935 (0.1%)	1.06	7/2609 (0.3%)
3	C	0.70	0/1636	0.94	4/2205 (0.2%)
4	D	0.92	3/1733 (0.2%)	1.12	7/2318 (0.3%)
5	E	1.15	5/1162 (0.4%)	1.21	4/1564 (0.3%)
6	F	0.79	0/856	0.97	1/1154 (0.1%)
7	G	0.75	1/1276 (0.1%)	0.92	2/1709 (0.1%)
8	H	1.19	2/1136 (0.2%)	1.21	4/1527 (0.3%)
9	I	0.74	0/1029	0.98	1/1379 (0.1%)
10	J	0.70	0/805	0.95	0/1082
11	K	0.84	1/879 (0.1%)	1.05	1/1187 (0.1%)
12	L	0.97	1/977 (0.1%)	1.18	3/1306 (0.2%)
13	M	0.77	1/947 (0.1%)	0.95	0/1270
14	N	0.68	0/501	0.92	0/664
15	O	0.86	0/740	1.06	2/987 (0.2%)
16	P	0.95	1/716 (0.1%)	1.10	2/963 (0.2%)
17	Q	1.16	1/836 (0.1%)	1.32	9/1117 (0.8%)
18	R	0.81	0/579	0.97	0/768
19	S	0.67	0/661	0.90	1/890 (0.1%)
20	T	0.86	0/765	1.10	1/1007 (0.1%)
21	U	0.59	0/212	0.84	0/277
All	All	1.25	351/55422 (0.6%)	1.88	2741/82228 (3.3%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
3	C	0	2
4	D	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
7	G	0	1
8	H	0	1
9	I	0	1
10	J	0	2
12	L	0	1
17	Q	0	1
20	T	0	1
All	All	0	11

The worst 5 of 351 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	279	A	N9-C4	-14.20	1.29	1.37
1	A	1502	A	N9-C4	-12.65	1.30	1.37
1	A	917	G	N9-C4	-10.97	1.29	1.38
8	H	135	CYS	CB-SG	-10.53	1.64	1.82
1	A	1513	A	N9-C4	-10.06	1.31	1.37

The worst 5 of 2741 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	117	G	N1-C6-O6	20.89	132.43	119.90
1	A	279	A	C5-N7-C8	-17.64	95.08	103.90
1	A	1505	G	C8-N9-C4	-17.36	99.45	106.40
1	A	117	G	C5-C6-N1	-16.75	103.12	111.50
1	A	117	G	C2-N3-C4	-16.57	103.61	111.90

There are no chirality outliers.

5 of 11 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
3	C	166	GLU	Peptide
3	C	24	ALA	Peptide
4	D	195	ALA	Peptide
7	G	154	TYR	Peptide
8	H	90	GLY	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	A	32508	0	16426	863	0
2	B	1900	0	1951	117	0
3	C	1612	0	1677	93	0
4	D	1703	0	1763	100	0
5	E	1146	0	1207	73	0
6	F	843	0	857	55	0
7	G	1257	0	1296	76	0
8	H	1116	0	1177	70	0
9	I	1010	0	1037	76	0
10	J	792	0	835	50	0
11	K	864	0	881	51	0
12	L	972	0	1058	67	0
13	M	937	0	995	55	0
14	N	492	0	529	49	0
15	O	729	0	768	47	0
16	P	700	0	720	48	0
17	Q	823	0	893	52	0
18	R	574	0	644	47	0
19	S	647	0	673	37	0
20	T	763	0	861	49	0
21	U	208	0	221	20	0
22	A	40	0	37	7	0
23	A	253	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	4	0	0	0	0
23	J	2	0	0	0	0
23	M	2	0	0	0	0
23	N	1	0	0	0	0
23	P	3	0	0	0	0
23	Q	1	0	0	0	0
23	S	1	0	0	0	0
23	T	2	0	0	0	0
24	D	1	0	0	0	0
24	N	1	0	0	0	0
25	A	374	0	0	14	0
25	B	1	0	0	0	0
25	D	1	0	0	0	0
25	E	7	0	0	0	0
25	L	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
25	N	1	0	0	0	0
25	P	2	0	0	0	0
25	T	2	0	0	1	0
All	All	52300	0	36506	1903	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 22.

The worst 5 of 1903 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)
18:R:26:LEU:HD11	18:R:42:ARG:HD3	1.46	0.98
1:A:792:A:H1'	1:A:793:U:H2'	1.47	0.96
11:K:48:ILE:HD12	11:K:63:LEU:HB2	1.45	0.96
1:A:1326:C:OP2	21:U:6:ARG:NH2	2.00	0.93
12:L:87:GLY:HA2	12:L:98:TYR:HA	1.51	0.92

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	
2	B	232/256 (91%)	199 (86%)	30 (13%)	3 (1%)	12	47
3	C	204/239 (85%)	172 (84%)	30 (15%)	2 (1%)	15	51
4	D	206/209 (99%)	186 (90%)	17 (8%)	3 (2%)	10	44
5	E	148/162 (91%)	137 (93%)	9 (6%)	2 (1%)	11	45
6	F	99/101 (98%)	96 (97%)	3 (3%)	0	100	100
7	G	153/156 (98%)	137 (90%)	15 (10%)	1 (1%)	22	59
8	H	136/138 (99%)	129 (95%)	7 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
9	I	125/128 (98%)	112 (90%)	12 (10%)	1 (1%)	19	56
10	J	96/105 (91%)	74 (77%)	20 (21%)	2 (2%)	7	38
11	K	114/129 (88%)	98 (86%)	16 (14%)	0	100	100
12	L	121/135 (90%)	105 (87%)	14 (12%)	2 (2%)	9	42
13	M	116/126 (92%)	103 (89%)	10 (9%)	3 (3%)	5	33
14	N	58/61 (95%)	48 (83%)	10 (17%)	0	100	100
15	O	85/89 (96%)	75 (88%)	10 (12%)	0	100	100
16	P	81/88 (92%)	74 (91%)	6 (7%)	1 (1%)	13	49
17	Q	97/105 (92%)	90 (93%)	7 (7%)	0	100	100
18	R	68/88 (77%)	60 (88%)	8 (12%)	0	100	100
19	S	78/93 (84%)	70 (90%)	5 (6%)	3 (4%)	3	27
20	T	97/106 (92%)	81 (84%)	16 (16%)	0	100	100
21	U	22/27 (82%)	20 (91%)	2 (9%)	0	100	100
All	All	2336/2541 (92%)	2066 (88%)	247 (11%)	23 (1%)	15	51

5 of 23 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
19	S	31	ILE
19	S	70	LYS
2	B	21	ARG
2	B	24	TRP
3	C	15	THR

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%)	146 (72%)	56 (28%)	0	3
3	C	160/188 (85%)	107 (67%)	53 (33%)	0	1
4	D	180/181 (99%)	141 (78%)	39 (22%)	1	7

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	E	115/123 (94%)	78 (68%)	37 (32%)	0	1
6	F	90/90 (100%)	66 (73%)	24 (27%)	0	3
7	G	126/127 (99%)	92 (73%)	34 (27%)	0	3
8	H	119/119 (100%)	89 (75%)	30 (25%)	0	4
9	I	98/99 (99%)	77 (79%)	21 (21%)	1	7
10	J	87/92 (95%)	71 (82%)	16 (18%)	1	10
11	K	88/99 (89%)	66 (75%)	22 (25%)	0	4
12	L	103/110 (94%)	73 (71%)	30 (29%)	0	2
13	M	94/101 (93%)	71 (76%)	23 (24%)	0	5
14	N	49/50 (98%)	41 (84%)	8 (16%)	2	15
15	O	79/80 (99%)	61 (77%)	18 (23%)	1	6
16	P	72/74 (97%)	60 (83%)	12 (17%)	2	14
17	Q	94/97 (97%)	71 (76%)	23 (24%)	0	5
18	R	61/77 (79%)	45 (74%)	16 (26%)	0	4
19	S	71/80 (89%)	50 (70%)	21 (30%)	0	2
20	T	76/82 (93%)	54 (71%)	22 (29%)	0	2
21	U	19/22 (86%)	15 (79%)	4 (21%)	1	7
All	All	1983/2111 (94%)	1474 (74%)	509 (26%)	0	4

5 of 509 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
7	G	89	MET
9	I	102	LEU
19	S	33	THR
7	G	115	ARG
8	H	85	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 11 such sidechains are listed below:

Mol	Chain	Res	Type
8	H	82	HIS
9	I	124	GLN
17	Q	16	GLN
6	F	84	ASN

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Mol	Chain	Res	Type
10	J	62	HIS

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1508/1522 (99%)	422 (27%)	62 (4%)

5 of 422 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	6	G
1	A	7	G
1	A	8	A
1	A	9	G
1	A	21	G

5 of 62 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	687	A
1	A	913	A
1	A	1380	U
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	5MC	A	1400	1	15,22,23	0.79	0	19,32,35	1.46	3 (15%)
1	UR3	A	1498	1,23	14,22,23	1.36	3 (21%)	15,32,35	1.14	2 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	7MG	A	527	1	22,26,27	2.23	6 (27%)	28,39,42	1.53	5 (17%)
1	PSU	A	1540	1	17,21,22	1.16	1 (5%)	20,30,33	3.72	5 (25%)
1	M2G	A	966	1	20,27,28	1.03	1 (5%)	22,40,43	2.41	5 (22%)
1	4OC	A	1402	1	16,23,24	1.55	3 (18%)	17,32,35	0.95	1 (5%)
12	0TD	L	92	12	4,9,10	1.29	1 (25%)	3,11,13	4.84	2 (66%)
1	MA6	A	1519	1	19,26,27	1.82	5 (26%)	18,38,41	0.78	1 (5%)
1	5MC	A	1407	1	15,22,23	0.78	0	19,32,35	1.22	3 (15%)
1	2MG	A	1207	1	19,26,27	2.94	3 (15%)	21,38,41	2.30	3 (14%)
1	MA6	A	1518	1	19,26,27	1.07	1 (5%)	18,38,41	1.15	2 (11%)
1	5MC	A	1404	1	15,22,23	1.00	2 (13%)	19,32,35	0.90	1 (5%)
1	PSU	A	516	1,23	17,21,22	1.51	2 (11%)	20,30,33	3.93	5 (25%)
1	PSU	A	1541	1	17,21,22	1.76	2 (11%)	20,30,33	5.00	9 (45%)
1	5MC	A	967	1	15,22,23	0.91	1 (6%)	19,32,35	1.05	3 (15%)

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

The worst 5 of 31 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1207	2MG	C2-N2	10.11	1.42	1.34
1	A	1207	2MG	C6-N1	6.27	1.44	1.33
1	A	527	7MG	C2-N2	5.15	1.44	1.33
1	A	527	7MG	C8-N9	-4.92	1.34	1.45
1	A	1541	PSU	C5-C1'	4.90	1.56	1.52

The worst 5 of 50 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1541	PSU	N1-C2-N3	-16.33	115.44	128.43
1	A	516	PSU	N1-C2-N3	-13.95	117.34	128.43
1	A	1540	PSU	N1-C2-N3	-11.42	119.35	128.43
1	A	1541	PSU	C4-N3-C2	10.17	123.73	115.14
1	A	1207	2MG	C5-C6-N1	-8.70	111.53	123.43

There are no chirality outliers.

5 of 25 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	1402	4OC	O4'-C4'-C5'-O5'
1	A	1402	4OC	N3-C4-N4-CM4
1	A	1402	4OC	C5-C4-N4-CM4
12	L	92	0TD	CG-CB-SB-CSB
1	A	1519	MA6	C5-C6-N6-C9

There are no ring outliers.

13 monomers are involved in 24 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	1400	5MC	1	0
1	A	1498	UR3	2	0
1	A	527	7MG	2	0
1	A	1540	PSU	2	0
1	A	966	M2G	1	0
1	A	1402	4OC	1	0
12	L	92	0TD	2	0
1	A	1519	MA6	3	0
1	A	1407	5MC	1	0
1	A	1518	MA6	3	0
1	A	1404	5MC	7	0
1	A	1541	PSU	2	0
1	A	967	5MC	1	0

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

Of 276 ligands modelled in this entry, 275 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	2.39	10 (25%)	49,63,63	2.57	22 (44%)

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	-	-	2/20/87/87	0/3/3/3

The worst 5 of 10 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
22	A	1601	SRY	CD1-N31	9.72	1.50	1.33
22	A	1601	SRY	CA1-N11	5.94	1.43	1.33
22	A	1601	SRY	O53-C53	-4.21	1.34	1.44
22	A	1601	SRY	C11-N11	-3.26	1.40	1.45
22	A	1601	SRY	CA1-NB1	2.88	1.46	1.34

The worst 5 of 22 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
22	A	1601	SRY	O13-C13-C23	6.61	119.64	108.24
22	A	1601	SRY	C13-O13-C22	-6.39	105.15	116.25
22	A	1601	SRY	C12-O42-C42	-5.68	99.45	108.38
22	A	1601	SRY	CI3-N23-C23	-4.65	107.62	114.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
22	A	1601	SRY	C41-C31-N31	4.50	118.39	110.91

There are no chirality outliers.

All (2) torsion outliers are listed below:

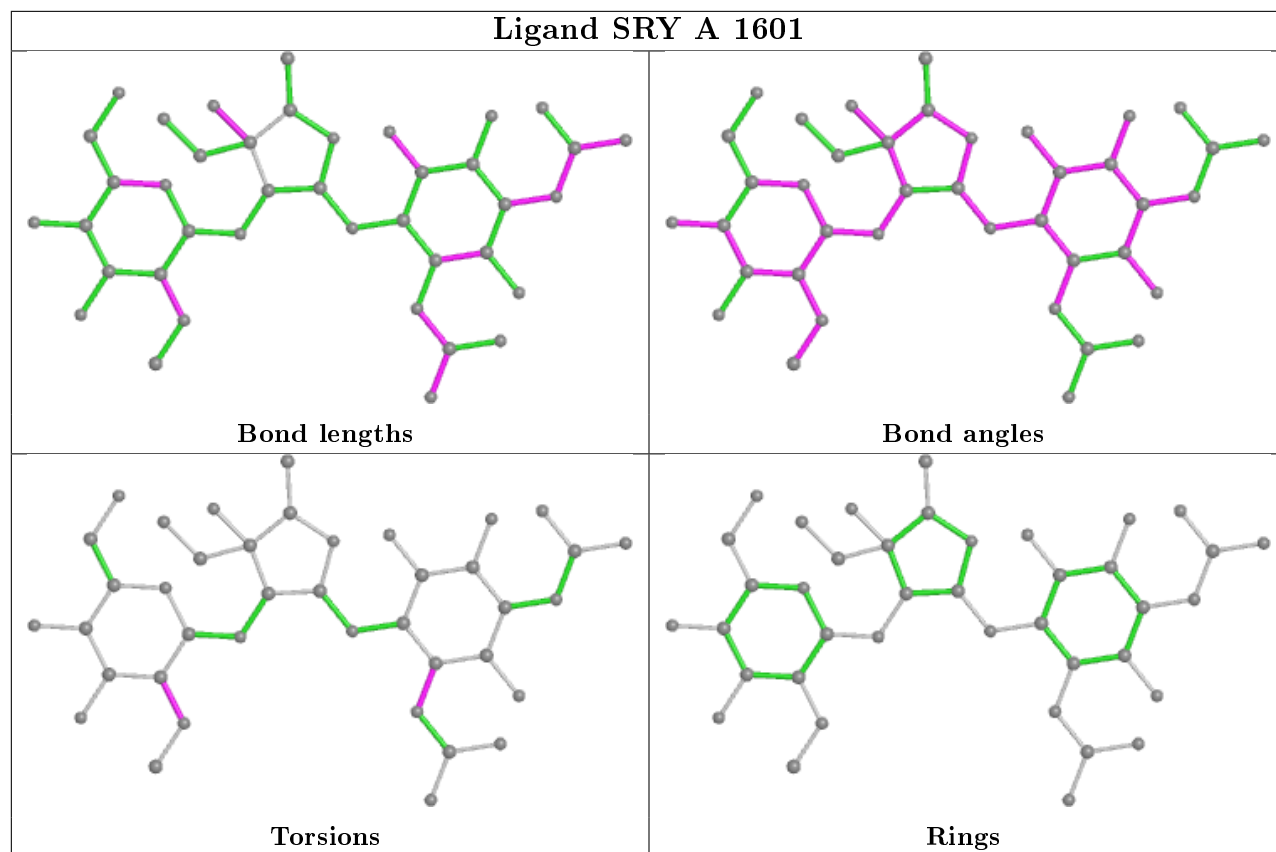
Mol	Chain	Res	Type	Atoms
22	A	1601	SRY	C13-C23-N23-CI3
22	A	1601	SRY	C21-C31-N31-CD1

There are no ring outliers.

1 monomer is involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
22	A	1601	SRY	7	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%)	-0.45	18 (1%) 79 68	74, 131, 262, 364	0
2	B	234/256 (91%)	-0.63	1 (0%) 92 88	82, 143, 231, 264	0
3	C	206/239 (86%)	-0.20	10 (4%) 29 21	123, 191, 239, 272	0
4	D	208/209 (99%)	-0.50	1 (0%) 91 85	85, 134, 177, 200	0
5	E	150/162 (92%)	-0.61	0 100 100	73, 106, 144, 182	0
6	F	101/101 (100%)	-0.75	0 100 100	106, 153, 181, 203	0
7	G	155/156 (99%)	-0.38	5 (3%) 47 34	128, 180, 226, 251	0
8	H	138/138 (100%)	-0.70	0 100 100	68, 96, 145, 159	0
9	I	127/128 (99%)	-0.31	2 (1%) 72 60	126, 199, 236, 258	0
10	J	98/105 (93%)	0.28	9 (9%) 9 6	165, 229, 278, 305	0
11	K	116/129 (89%)	-0.62	0 100 100	94, 131, 177, 219	0
12	L	123/135 (91%)	-0.51	0 100 100	71, 124, 172, 206	0
13	M	118/126 (93%)	-0.37	2 (1%) 70 58	122, 164, 204, 231	0
14	N	60/61 (98%)	0.29	5 (8%) 11 8	133, 189, 234, 267	0
15	O	87/89 (97%)	-0.54	0 100 100	74, 122, 165, 180	0
16	P	83/88 (94%)	-0.60	0 100 100	92, 125, 166, 203	0
17	Q	99/105 (94%)	-0.67	0 100 100	84, 107, 140, 168	0
18	R	70/88 (79%)	-0.71	0 100 100	92, 129, 180, 220	0
19	S	80/93 (86%)	0.17	5 (6%) 20 13	174, 217, 268, 283	0
20	T	99/106 (93%)	-0.64	1 (1%) 82 72	95, 130, 179, 210	0
21	U	24/27 (88%)	1.40	8 (33%) 0 0	151, 187, 219, 221	0
All	All	3874/4063 (95%)	-0.44	67 (1%) 70 58	68, 141, 239, 364	0

The worst 5 of 67 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	C	103	VAL	6.2
3	C	193	TYR	5.9
10	J	37	PRO	4.6
10	J	34	VAL	4.5
1	A	793	U	4.4

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	1540	20/21	0.79	0.74	207,241,323,324	0
1	PSU	A	1541	20/21	0.81	0.44	159,231,317,318	0
1	2MG	A	1207	24/25	0.91	0.28	175,210,229,233	0
1	M2G	A	966	25/26	0.94	0.20	123,141,169,173	0
1	5MC	A	1400	21/22	0.95	0.19	95,124,131,135	0
1	PSU	A	516	20/21	0.95	0.12	110,141,152,153	0
1	5MC	A	1407	21/22	0.95	0.16	136,148,157,159	0
1	5MC	A	1404	21/22	0.96	0.19	114,124,129,132	0
1	UR3	A	1498	21/22	0.96	0.18	112,123,141,146	0
1	MA6	A	1519	24/25	0.96	0.19	105,122,132,134	0
1	5MC	A	967	21/22	0.96	0.17	129,133,145,149	0
12	0TD	L	92	10/11	0.97	0.37	87,120,138,251	0
1	4OC	A	1402	22/23	0.97	0.18	108,117,120,127	0
1	7MG	A	527	24/25	0.98	0.13	103,112,124,131	0
1	MA6	A	1518	24/25	0.98	0.10	121,127,148,148	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	1767	1/1	0.37	0.47	93,93,93,93	0
23	MG	A	1661	1/1	0.43	0.60	89,89,89,89	0
23	MG	A	1837	1/1	0.47	0.50	103,103,103,103	0
23	MG	A	1684	1/1	0.50	0.39	133,133,133,133	0
23	MG	A	1709	1/1	0.55	0.32	117,117,117,117	0
23	MG	A	1731	1/1	0.59	0.55	95,95,95,95	0
23	MG	H	204	1/1	0.67	0.65	105,105,105,105	0
23	MG	A	1794	1/1	0.67	0.53	127,127,127,127	0
23	MG	A	1748	1/1	0.67	0.16	143,143,143,143	0
23	MG	A	1673	1/1	0.69	0.51	73,73,73,73	0
23	MG	P	103	1/1	0.70	0.23	102,102,102,102	0
23	MG	A	1671	1/1	0.71	1.24	125,125,125,125	0
23	MG	A	1797	1/1	0.72	0.79	127,127,127,127	0
23	MG	Q	201	1/1	0.73	0.12	115,115,115,115	0
23	MG	A	1761	1/1	0.74	0.23	97,97,97,97	0
23	MG	A	1729	1/1	0.74	0.36	102,102,102,102	0
23	MG	S	101	1/1	0.74	0.19	93,93,93,93	0
23	MG	A	1793	1/1	0.75	1.41	105,105,105,105	0
23	MG	A	1658	1/1	0.75	0.63	120,120,120,120	0
23	MG	A	1720	1/1	0.76	0.56	112,112,112,112	0
23	MG	A	1663	1/1	0.76	0.11	109,109,109,109	0
23	MG	A	1737	1/1	0.77	0.30	128,128,128,128	0
23	MG	D	302	1/1	0.77	0.16	123,123,123,123	0
23	MG	A	1739	1/1	0.78	0.44	92,92,92,92	0
23	MG	A	1695	1/1	0.79	0.32	121,121,121,121	0
23	MG	A	1713	1/1	0.79	0.38	96,96,96,96	0
23	MG	A	1667	1/1	0.80	0.23	100,100,100,100	0
23	MG	A	1802	1/1	0.80	0.34	86,86,86,86	0
23	MG	A	1799	1/1	0.80	0.50	109,109,109,109	0
23	MG	A	1769	1/1	0.81	0.24	112,112,112,112	0
23	MG	A	1758	1/1	0.81	1.09	98,98,98,98	0
23	MG	N	102	1/1	0.81	0.35	112,112,112,112	0
23	MG	A	1832	1/1	0.82	0.26	109,109,109,109	0
23	MG	A	1841	1/1	0.82	0.47	392,392,392,392	0
23	MG	A	1710	1/1	0.82	0.53	73,73,73,73	0
23	MG	A	1798	1/1	0.82	0.65	122,122,122,122	0
23	MG	A	1760	1/1	0.82	0.29	105,105,105,105	0
23	MG	A	1719	1/1	0.82	0.20	113,113,113,113	0
23	MG	A	1796	1/1	0.82	0.49	107,107,107,107	0
23	MG	A	1779	1/1	0.82	0.34	91,91,91,91	0
23	MG	A	1659	1/1	0.83	0.20	108,108,108,108	0
23	MG	A	1613	1/1	0.83	0.45	98,98,98,98	0
23	MG	A	1747	1/1	0.83	0.35	111,111,111,111	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
23	MG	A	1804	1/1	0.83	0.55	77,77,77,77	0
23	MG	A	1741	1/1	0.83	0.27	113,113,113,113	0
23	MG	A	1753	1/1	0.84	0.18	168,168,168,168	0
23	MG	A	1733	1/1	0.84	0.28	111,111,111,111	0
23	MG	A	1782	1/1	0.84	0.18	108,108,108,108	0
23	MG	A	1632	1/1	0.85	0.24	105,105,105,105	0
23	MG	A	1693	1/1	0.85	0.18	104,104,104,104	0
23	MG	A	1823	1/1	0.85	0.23	317,317,317,317	0
23	MG	A	1700	1/1	0.85	0.32	107,107,107,107	0
23	MG	B	302	1/1	0.86	0.25	89,89,89,89	0
23	MG	A	1726	1/1	0.86	0.29	91,91,91,91	0
23	MG	A	1691	1/1	0.86	0.28	163,163,163,163	0
23	MG	M	201	1/1	0.86	0.55	101,101,101,101	0
23	MG	A	1743	1/1	0.86	0.24	113,113,113,113	0
23	MG	A	1607	1/1	0.86	0.12	156,156,156,156	0
23	MG	A	1624	1/1	0.86	0.34	97,97,97,97	0
23	MG	A	1784	1/1	0.86	0.79	93,93,93,93	0
23	MG	A	1715	1/1	0.87	0.08	120,120,120,120	0
23	MG	B	301	1/1	0.87	0.34	110,110,110,110	0
23	MG	A	1854	1/1	0.87	0.23	103,103,103,103	0
23	MG	A	1685	1/1	0.87	0.16	269,269,269,269	0
23	MG	A	1744	1/1	0.87	0.27	99,99,99,99	0
23	MG	A	1853	1/1	0.88	0.32	338,338,338,338	0
23	MG	A	1725	1/1	0.88	0.38	91,91,91,91	0
23	MG	A	1664	1/1	0.88	0.24	133,133,133,133	0
23	MG	A	1810	1/1	0.88	0.26	85,85,85,85	0
23	MG	J	201	1/1	0.88	0.37	107,107,107,107	0
23	MG	A	1740	1/1	0.88	0.33	123,123,123,123	0
23	MG	A	1786	1/1	0.88	0.22	78,78,78,78	0
23	MG	A	1817	1/1	0.88	0.99	312,312,312,312	0
23	MG	A	1750	1/1	0.88	0.41	115,115,115,115	0
23	MG	A	1833	1/1	0.89	0.12	98,98,98,98	0
23	MG	A	1680	1/1	0.89	0.43	104,104,104,104	0
23	MG	A	1768	1/1	0.90	0.22	112,112,112,112	0
23	MG	A	1718	1/1	0.90	0.17	95,95,95,95	0
23	MG	A	1677	1/1	0.90	0.32	97,97,97,97	0
23	MG	A	1781	1/1	0.90	0.48	101,101,101,101	0
23	MG	A	1815	1/1	0.90	0.26	355,355,355,355	0
23	MG	A	1759	1/1	0.90	0.37	96,96,96,96	0
23	MG	A	1772	1/1	0.90	0.50	117,117,117,117	0
23	MG	A	1745	1/1	0.90	0.38	85,85,85,85	0
23	MG	A	1787	1/1	0.90	0.17	81,81,81,81	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
23	MG	A	1738	1/1	0.90	0.26	89,89,89,89	0
23	MG	A	1835	1/1	0.90	0.56	128,128,128,128	0
23	MG	A	1783	1/1	0.91	0.13	133,133,133,133	0
23	MG	A	1746	1/1	0.91	0.23	123,123,123,123	0
23	MG	H	201	1/1	0.91	0.35	83,83,83,83	0
23	MG	A	1728	1/1	0.91	0.28	82,82,82,82	0
23	MG	A	1655	1/1	0.91	0.32	137,137,137,137	0
23	MG	A	1614	1/1	0.92	0.25	83,83,83,83	0
23	MG	A	1705	1/1	0.92	0.20	97,97,97,97	0
23	MG	A	1603	1/1	0.92	0.23	126,126,126,126	0
23	MG	A	1656	1/1	0.92	0.23	152,152,152,152	0
23	MG	A	1830	1/1	0.92	0.33	322,322,322,322	0
23	MG	A	1754	1/1	0.92	0.22	177,177,177,177	0
23	MG	A	1766	1/1	0.92	0.43	146,146,146,146	0
23	MG	A	1849	1/1	0.92	0.17	296,296,296,296	0
23	MG	A	1616	1/1	0.92	0.46	90,90,90,90	0
23	MG	A	1702	1/1	0.92	0.16	106,106,106,106	0
23	MG	A	1615	1/1	0.92	0.43	94,94,94,94	0
23	MG	A	1645	1/1	0.92	0.13	138,138,138,138	0
23	MG	A	1765	1/1	0.92	0.52	124,124,124,124	0
23	MG	A	1668	1/1	0.92	0.35	149,149,149,149	0
23	MG	T	201	1/1	0.92	0.22	92,92,92,92	0
23	MG	A	1626	1/1	0.92	0.25	146,146,146,146	0
23	MG	H	203	1/1	0.92	0.41	124,124,124,124	0
23	MG	A	1647	1/1	0.92	0.20	115,115,115,115	0
23	MG	A	1686	1/1	0.93	0.12	130,130,130,130	0
23	MG	A	1627	1/1	0.93	0.39	97,97,97,97	0
23	MG	A	1755	1/1	0.93	0.11	159,159,159,159	0
23	MG	A	1801	1/1	0.93	0.40	111,111,111,111	0
23	MG	A	1790	1/1	0.93	0.17	129,129,129,129	0
23	MG	A	1819	1/1	0.93	0.11	286,286,286,286	0
23	MG	A	1785	1/1	0.93	0.28	74,74,74,74	0
23	MG	A	1699	1/1	0.93	0.30	221,221,221,221	0
23	MG	A	1650	1/1	0.93	0.32	127,127,127,127	0
23	MG	A	1723	1/1	0.93	0.35	92,92,92,92	0
23	MG	A	1795	1/1	0.93	0.74	107,107,107,107	0
23	MG	A	1818	1/1	0.93	0.08	266,266,266,266	0
23	MG	A	1697	1/1	0.94	0.24	145,145,145,145	0
23	MG	A	1634	1/1	0.94	0.37	82,82,82,82	0
23	MG	H	202	1/1	0.94	0.15	83,83,83,83	0
23	MG	A	1682	1/1	0.94	0.13	171,171,171,171	0
23	MG	A	1827	1/1	0.94	0.18	200,200,200,200	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
23	MG	A	1811	1/1	0.94	0.12	87,87,87,87	0
23	MG	A	1813	1/1	0.94	0.28	228,228,228,228	0
23	MG	A	1676	1/1	0.94	0.23	81,81,81,81	0
23	MG	A	1812	1/1	0.94	0.28	183,183,183,183	0
23	MG	A	1674	1/1	0.94	0.27	94,94,94,94	0
23	MG	A	1721	1/1	0.94	0.23	115,115,115,115	0
23	MG	A	1639	1/1	0.94	0.14	116,116,116,116	0
23	MG	A	1712	1/1	0.94	0.23	91,91,91,91	0
23	MG	A	1752	1/1	0.94	0.10	110,110,110,110	0
23	MG	A	1660	1/1	0.94	0.13	173,173,173,173	0
23	MG	A	1848	1/1	0.94	0.24	336,336,336,336	0
23	MG	P	101	1/1	0.94	0.30	77,77,77,77	0
23	MG	A	1735	1/1	0.94	0.25	95,95,95,95	0
23	MG	A	1792	1/1	0.94	0.13	111,111,111,111	0
23	MG	A	1732	1/1	0.94	0.12	114,114,114,114	0
23	MG	A	1828	1/1	0.94	0.61	289,289,289,289	0
23	MG	E	201	1/1	0.94	0.06	228,228,228,228	0
23	MG	T	202	1/1	0.95	0.32	267,267,267,267	0
23	MG	A	1836	1/1	0.95	0.10	175,175,175,175	0
23	MG	A	1602	1/1	0.95	0.15	144,144,144,144	0
23	MG	A	1622	1/1	0.95	0.13	86,86,86,86	0
23	MG	A	1714	1/1	0.95	0.15	130,130,130,130	0
23	MG	A	1724	1/1	0.95	0.18	71,71,71,71	0
23	MG	A	1839	1/1	0.95	0.11	137,137,137,137	0
23	MG	A	1637	1/1	0.95	0.28	127,127,127,127	0
23	MG	A	1770	1/1	0.95	0.21	108,108,108,108	0
23	MG	A	1775	1/1	0.95	0.10	235,235,235,235	0
23	MG	A	1771	1/1	0.95	0.22	77,77,77,77	0
23	MG	A	1742	1/1	0.95	0.12	77,77,77,77	0
23	MG	A	1850	1/1	0.95	0.17	270,270,270,270	0
23	MG	A	1653	1/1	0.95	0.20	145,145,145,145	0
23	MG	A	1814	1/1	0.96	0.27	360,360,360,360	0
23	MG	A	1706	1/1	0.96	0.32	97,97,97,97	0
23	MG	A	1623	1/1	0.96	0.09	146,146,146,146	0
23	MG	A	1681	1/1	0.96	0.07	208,208,208,208	0
23	MG	A	1840	1/1	0.96	0.27	386,386,386,386	0
23	MG	A	1704	1/1	0.96	0.18	105,105,105,105	0
23	MG	A	1611	1/1	0.96	0.05	127,127,127,127	0
23	MG	A	1665	1/1	0.96	0.13	176,176,176,176	0
23	MG	A	1800	1/1	0.96	0.27	108,108,108,108	0
23	MG	P	102	1/1	0.96	0.25	100,100,100,100	0
22	SRY	A	1601	40/40	0.96	0.22	85,115,145,148	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
23	MG	A	1604	1/1	0.96	0.30	92,92,92,92	0
23	MG	A	1651	1/1	0.96	0.56	108,108,108,108	0
23	MG	A	1666	1/1	0.96	0.18	136,136,136,136	0
23	MG	A	1692	1/1	0.96	0.17	170,170,170,170	0
23	MG	A	1834	1/1	0.96	0.28	130,130,130,130	0
23	MG	A	1844	1/1	0.96	0.13	383,383,383,383	0
23	MG	A	1657	1/1	0.96	0.22	116,116,116,116	0
23	MG	A	1694	1/1	0.96	0.06	95,95,95,95	0
23	MG	A	1633	1/1	0.96	0.15	88,88,88,88	0
23	MG	A	1762	1/1	0.96	0.27	122,122,122,122	0
23	MG	A	1730	1/1	0.96	0.20	91,91,91,91	0
23	MG	A	1711	1/1	0.96	0.23	93,93,93,93	0
23	MG	A	1638	1/1	0.97	0.18	96,96,96,96	0
23	MG	A	1773	1/1	0.97	0.15	135,135,135,135	0
23	MG	A	1852	1/1	0.97	0.14	404,404,404,404	0
23	MG	A	1670	1/1	0.97	0.27	113,113,113,113	0
23	MG	A	1734	1/1	0.97	0.30	108,108,108,108	0
23	MG	A	1831	1/1	0.97	0.13	168,168,168,168	0
23	MG	A	1774	1/1	0.97	0.21	272,272,272,272	0
23	MG	A	1621	1/1	0.97	0.19	87,87,87,87	0
23	MG	A	1727	1/1	0.97	0.24	95,95,95,95	0
23	MG	A	1644	1/1	0.97	0.26	117,117,117,117	0
23	MG	A	1690	1/1	0.97	0.32	324,324,324,324	0
23	MG	A	1780	1/1	0.97	0.15	107,107,107,107	0
23	MG	A	1777	1/1	0.97	0.07	485,485,485,485	0
23	MG	A	1662	1/1	0.97	0.12	141,141,141,141	0
23	MG	A	1788	1/1	0.97	0.88	99,99,99,99	0
23	MG	A	1789	1/1	0.97	0.06	118,118,118,118	0
23	MG	A	1820	1/1	0.97	0.10	313,313,313,313	0
23	MG	A	1707	1/1	0.97	0.14	113,113,113,113	0
23	MG	A	1778	1/1	0.97	0.14	129,129,129,129	0
23	MG	A	1845	1/1	0.97	0.21	159,159,159,159	0
23	MG	A	1619	1/1	0.97	0.20	141,141,141,141	0
23	MG	A	1689	1/1	0.97	0.10	75,75,75,75	0
23	MG	A	1791	1/1	0.97	0.10	74,74,74,74	0
23	MG	M	202	1/1	0.97	0.53	111,111,111,111	0
23	MG	A	1708	1/1	0.97	0.19	135,135,135,135	0
23	MG	A	1678	1/1	0.97	0.24	149,149,149,149	0
23	MG	A	1847	1/1	0.97	0.15	296,296,296,296	0
23	MG	A	1805	1/1	0.97	0.06	93,93,93,93	0
23	MG	A	1809	1/1	0.97	0.18	96,96,96,96	0
23	MG	A	1648	1/1	0.97	0.09	227,227,227,227	0

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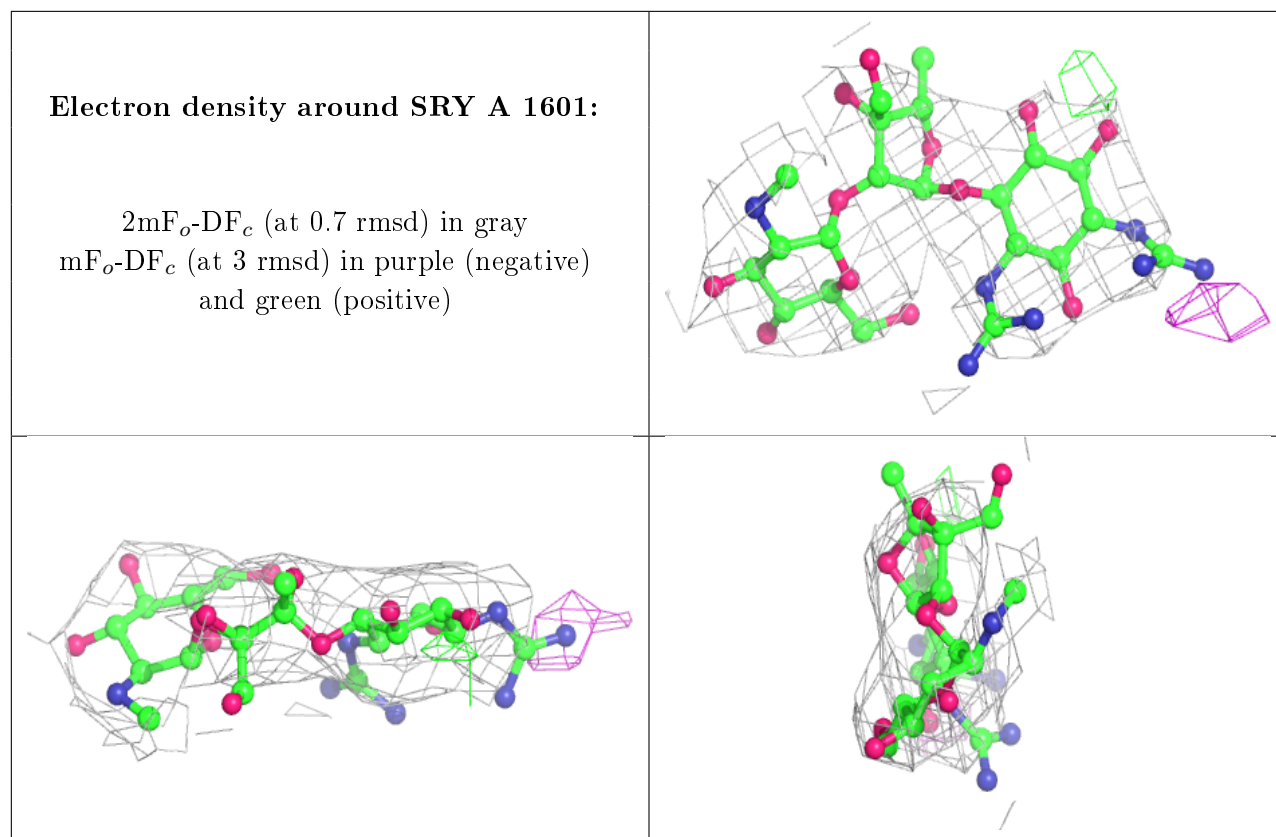
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
23	MG	A	1764	1/1	0.97	0.09	118,118,118,118	0
23	MG	A	1822	1/1	0.97	0.04	157,157,157,157	0
23	MG	A	1826	1/1	0.97	0.10	304,304,304,304	0
23	MG	A	1636	1/1	0.98	0.34	176,176,176,176	0
23	MG	A	1610	1/1	0.98	0.18	129,129,129,129	0
23	MG	A	1756	1/1	0.98	0.07	203,203,203,203	0
23	MG	A	1763	1/1	0.98	0.14	93,93,93,93	0
23	MG	A	1851	1/1	0.98	0.16	208,208,208,208	0
23	MG	A	1687	1/1	0.98	0.07	210,210,210,210	0
23	MG	A	1683	1/1	0.98	0.22	159,159,159,159	0
23	MG	A	1675	1/1	0.98	0.18	79,79,79,79	0
23	MG	A	1612	1/1	0.98	0.13	75,75,75,75	0
23	MG	A	1698	1/1	0.98	0.05	170,170,170,170	0
23	MG	A	1736	1/1	0.98	0.13	84,84,84,84	0
23	MG	A	1640	1/1	0.98	0.19	96,96,96,96	0
23	MG	A	1652	1/1	0.98	0.11	114,114,114,114	0
23	MG	J	202	1/1	0.98	0.17	105,105,105,105	0
23	MG	A	1628	1/1	0.98	0.16	171,171,171,171	0
23	MG	A	1620	1/1	0.98	0.32	128,128,128,128	0
23	MG	A	1701	1/1	0.98	0.25	87,87,87,87	0
23	MG	A	1825	1/1	0.98	0.15	272,272,272,272	0
23	MG	A	1824	1/1	0.98	0.13	168,168,168,168	0
23	MG	A	1679	1/1	0.98	0.08	116,116,116,116	0
23	MG	A	1803	1/1	0.98	0.24	123,123,123,123	0
23	MG	A	1641	1/1	0.98	0.15	87,87,87,87	0
23	MG	A	1642	1/1	0.98	0.15	105,105,105,105	0
23	MG	A	1776	1/1	0.98	0.13	299,299,299,299	0
23	MG	A	1821	1/1	0.98	0.16	338,338,338,338	0
23	MG	A	1806	1/1	0.98	0.23	88,88,88,88	0
23	MG	A	1625	1/1	0.98	0.12	179,179,179,179	0
23	MG	A	1669	1/1	0.98	0.39	102,102,102,102	0
23	MG	A	1617	1/1	0.98	0.15	75,75,75,75	0
23	MG	A	1749	1/1	0.98	0.10	99,99,99,99	0
23	MG	A	1716	1/1	0.98	0.15	86,86,86,86	0
23	MG	A	1838	1/1	0.98	0.23	126,126,126,126	0
23	MG	A	1722	1/1	0.99	0.13	71,71,71,71	0
23	MG	A	1630	1/1	0.99	0.21	145,145,145,145	0
23	MG	A	1608	1/1	0.99	0.28	80,80,80,80	0
23	MG	A	1646	1/1	0.99	0.10	99,99,99,99	0
23	MG	A	1757	1/1	0.99	0.16	106,106,106,106	0
23	MG	A	1606	1/1	0.99	0.29	96,96,96,96	0
23	MG	A	1808	1/1	0.99	0.19	107,107,107,107	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
23	MG	A	1629	1/1	0.99	0.32	138,138,138,138	0
23	MG	A	1696	1/1	0.99	0.10	141,141,141,141	0
23	MG	A	1672	1/1	0.99	0.10	123,123,123,123	0
23	MG	A	1751	1/1	0.99	0.11	108,108,108,108	0
23	MG	A	1816	1/1	0.99	0.10	282,282,282,282	0
23	MG	A	1846	1/1	0.99	0.29	399,399,399,399	0
23	MG	A	1717	1/1	0.99	0.20	106,106,106,106	0
23	MG	A	1688	1/1	0.99	0.12	99,99,99,99	0
24	ZN	N	101	1/1	0.99	0.15	168,168,168,168	0
23	MG	A	1635	1/1	0.99	0.04	62,62,62,62	0
23	MG	A	1643	1/1	0.99	0.10	90,90,90,90	0
23	MG	A	1829	1/1	0.99	0.14	93,93,93,93	0
23	MG	A	1654	1/1	0.99	0.14	143,143,143,143	0
23	MG	A	1609	1/1	0.99	0.22	108,108,108,108	0
23	MG	A	1807	1/1	0.99	0.06	111,111,111,111	0
23	MG	A	1605	1/1	0.99	0.09	123,123,123,123	0
23	MG	A	1618	1/1	0.99	0.22	108,108,108,108	0
23	MG	A	1703	1/1	0.99	0.05	109,109,109,109	0
23	MG	A	1649	1/1	0.99	0.12	162,162,162,162	0
24	ZN	D	301	1/1	1.00	0.32	127,127,127,127	0
23	MG	A	1843	1/1	1.00	0.10	55,55,55,55	0
23	MG	A	1631	1/1	1.00	0.10	71,71,71,71	0
23	MG	A	1842	1/1	1.00	0.15	73,73,73,73	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.