



wwPDB X-ray Structure Validation Summary Report ⓘ

May 19, 2020 – 08:24 am BST

PDB ID : 4DV1
Title : Crystal structure of the *Thermus thermophilus* 30S ribosomal subunit with a 16S rRNA mutation, U20G, 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 : 3.85 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:

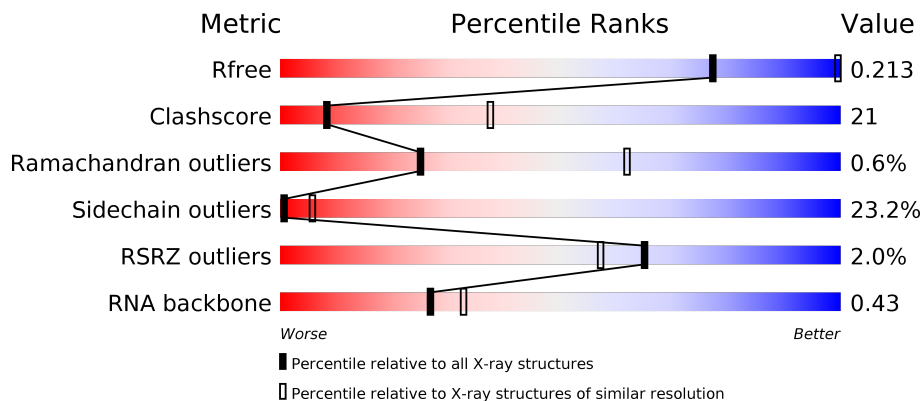
MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.11
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber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

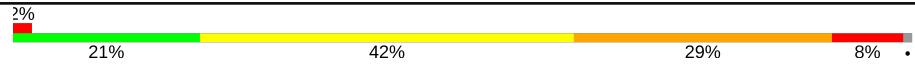

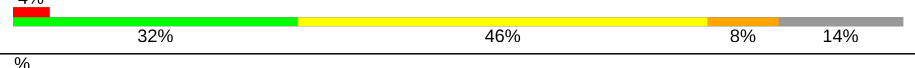

The reported resolution of this entry is 3.85 Å.

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	1242 (4.08-3.60)
Clashscore	141614	1004 (4.04-3.64)
Ramachandran outliers	138981	1003 (4.06-3.62)
Sidechain outliers	138945	1266 (4.08-3.60)
RSRZ outliers	127900	1149 (4.08-3.60)
RNA backbone	3102	1038 (4.68-3.00)

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	PSU	A	1540	-	-	-	X
1	PSU	A	1541	-	-	-	X
23	MG	A	1661	-	-	-	X
23	MG	A	1750	-	-	-	X
23	MG	A	1758	-	-	-	X
23	MG	A	1771	-	-	-	X
23	MG	A	1785	-	-	-	X
23	MG	A	1794	-	-	-	X

2 Entry composition [i](#)

There are 25 unique types of molecules in this entry. The entry contains 52297 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	32510	14478	6014	10506	1512	0	0	0

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	20	G	U	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

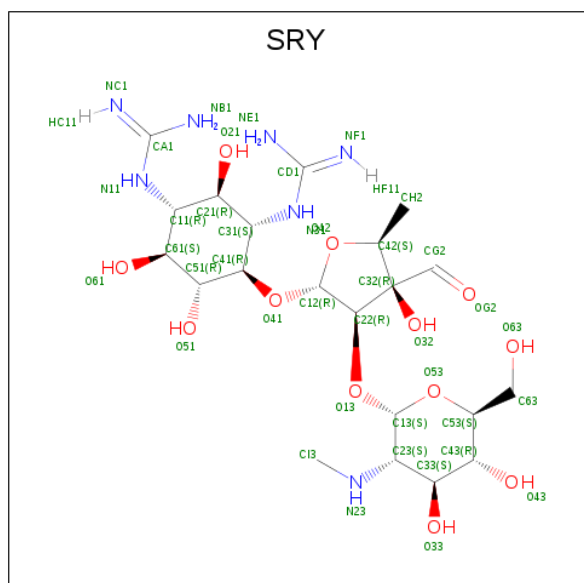
- Molecule 20 is a protein called ribosomal protein S20.

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



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	1	Total Mg 1 1	0	0
23	J	1	Total Mg 1 1	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	2	Total Mg 2 2	0	0
23	B	1	Total Mg 1 1	0	0
23	I	1	Total Mg 1 1	0	0
23	A	230	Total Mg 230 230	0	0
23	T	2	Total Mg 2 2	0	0
23	N	2	Total Mg 2 2	0	0
23	S	2	Total Mg 2 2	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	396	Total O 396 396	0	0
25	E	6	Total O 6 6	0	0

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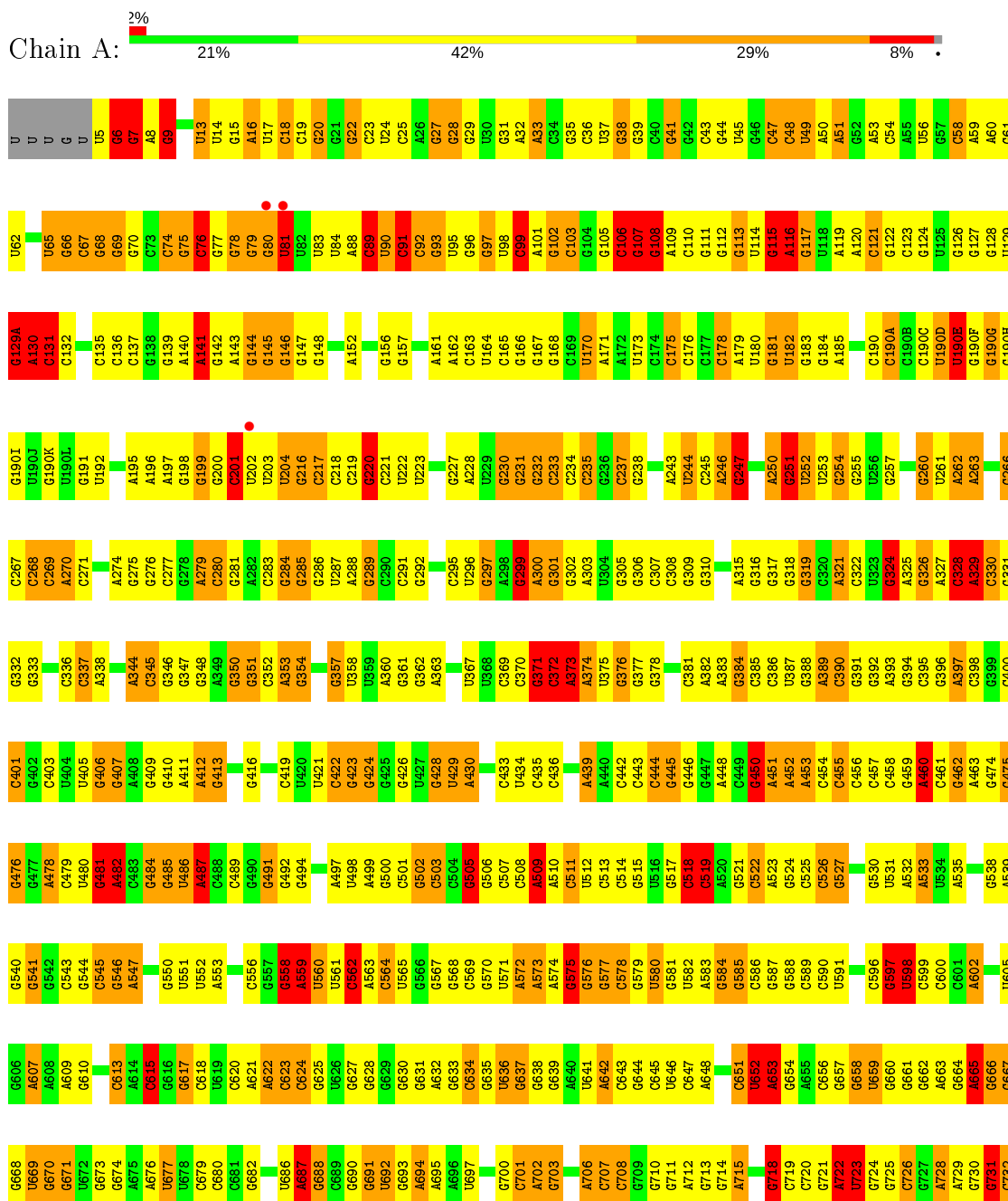
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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
25	G	1	Total O 1 1	0	0
25	J	1	Total O 1 1	0	0
25	N	1	Total O 1 1	0	0
25	Q	1	Total O 1 1	0	0
25	T	3	Total O 3 3	0	0
25	U	1	Total O 1 1	0	0

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.

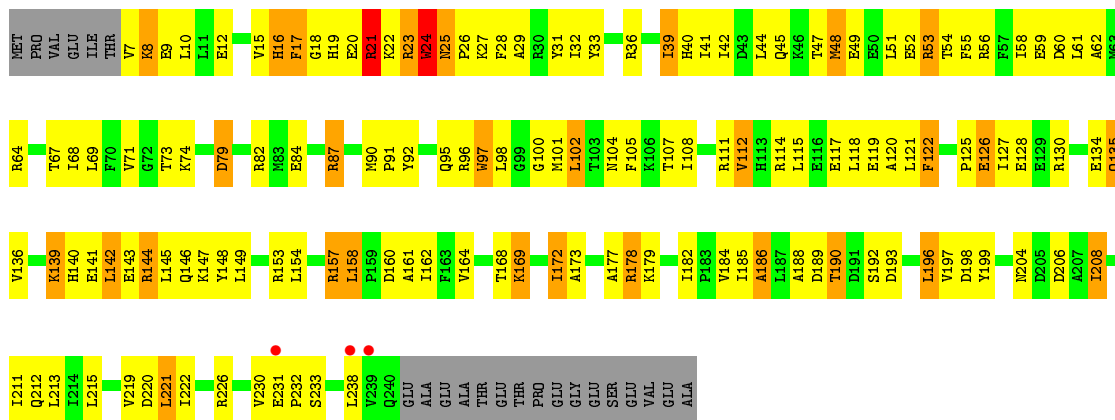
- Molecule 1: 16S rRNA



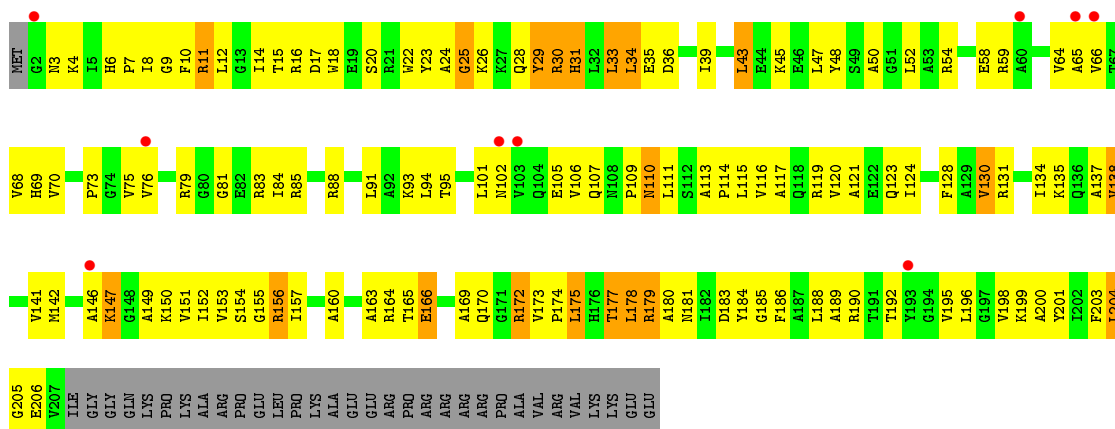
C1509	G1437	G1371	G1245	G1184	C1115	G1051	C985	G925	G861	C795	A733
U1510	G1438	G1312	C1246	G1185	C1116	U1052	A986	G926	C862	C796	G734
U1512	G1441	G1313	U1247	G1186	G1117	G1053	G989	G927	U863	C797	G735
A1513	G1442	G1314	A1248	G1187	C1118	C1054	C989	G928	A864	G798	G736
C1514	G1443	U1315	C1249	A1188	C1119	A1055	C990	G929	A865	A737	A737
C1515	A1444	G1316	A1250	A1189	G1120	A1056	U991	C930	C866	G800	C738
G1516	A1445	A1319	A1251	G1190	G1121	G1057	U992	C931	C867	U891	
G1447	G1448	C1320	A1191	A1192	G1122	G1058	G993	C932	A802	G741	
G1449	G1379	U1192	C1254	C1192	U1124	C1059	G994	G933	G803	G742	
A1518	U1380	G1193	G1255	G1193	U1125	U1060	U994	G934	U870	U743	
A1519	U1381	U1194	A1256	U1194	G1127	C1061	G995	C935	U871	C805	
G1520	C1382	C1322	G1257	U1195	C1128	U1062	C996	A937	U806	C745	
C1521	C1383	A1324	G1258	U1196	C1129	C1063	U1000	A938	A807	A746	
U1522	C1384	C1325	C1259	G1197	A1130	G1064	A1001	U838	A873	A747	
C1524	G1385	C1326	C1260	G1198	U1131	U1065	G1002	G939	C875	C748	
G1525	U1391	G1327	A1261	U1199	C1132	C1066	G1003	C940	C876	C749	
G1526	C1392	C1328	C1262	U1200	G1133	A1067	U1003A	G941	C877	G750	
C1527	U1393	U1330	C1264	A1201	G1138	C1068	A1004	G942	C878	U751	
U1528	A1394	G1331	G1265	C1203	G1139	U1070	A1005	U943	C879	G752	
G1529	C1395	A1332	C1266	A1204	C1140	C1071	C1006	G944	C880	A753	
A1530	G1467	A1333	C1267	U1205	C1141	G1072	C1007	G945	A815	G754	
A1531	A1468	G1334	A1268	G1206	C1142	U1073	C1008	A946	A816	G755	
U1532	G1469	C1335	A1269	G1207	G1144	G1074	U1009	G947	C883	C756	
C1533	C1398	C1336	C1270	G1208	A1014	A1014	U884	C948	G848	U757	
C	C1400	G1337	G1271	C1209	A1015	C1075	U885	A949	A819	G758	
A	G1474	C1338	G1272	G1210	A1016		U886	U950	U820	A758	
C	G1475	A1339	C1277	U1211	C1147	U1078	G887	G951	G821	G760	
U	G1476	C1403	U1278	U1212	U1148	C1018	G888	U952	C822	G761	
V	G1477	A1341	A1279	A1213	C1149	A1080	A889	G953	G823		
U1540	A1478	C1342	A1280	C1214	U1020	U1083	A890	G954	C824	C764	
U1541	C1479	G1343	U1281	G1215	A1152	G1021	U891	U955	G825	G765	
U1542	G1480	C1344	C1282	G1154	C1153	G1022	U892	U956	C826	A766	
C1543	G1482	U1345	U1283	G1155	G1156	U1089	A893	U957	C827	A767	
U1544	A1483	A1346	C1284	C1157	U1158	U1090	A894	A958	A828	A768	
	C1484	C1411	A1285	A1157	G1159	G1026	G895	A959	A829	G769	
		U1348	A1286	G1159	U1159	C1027	C896	U960	G830	C770	
		A1349	A1287	U1159	C1028	U1091	C897	U961	U831	G771	
		C1350	C1288	G1160	C1029	A1092	G898	C962	C832	U772	
		U1351	A1289	C1161	U1093	A1093	C899	G963	U833		
		C1352	G1290	C1162	G1094	U1094	A900	A964	U834		
		G1353	G1291	C1163	C1095	U1095	A901	A965	C894		
		C1354	U1292	G1164	C1096	C1096	G966	G966	U835		
		G1355	C1293	C1165	C1097	C1097	C967	C967	G836		
		C1356	G1294	C1166	C1098	C1098	G968	A968	G837		
		A1357	G1295	A1168	G1099	G1099	G969	A969	G838		
		C1359	C1296	A1169	C1100	C1100	C970	C970	U839		
		G1360	C1297	C1171	A1101	A1095	C971	C971	U840		
		C1361	G1300	G1172	A1102	C1030B	C972	C972	U841		
		C1361A	U1301	G1173	G1103		G973	G973	C848		
		C1362	U1302	G1174	G1104		A974	A974	U850		
		A1363	C1303	G1175	A1105		A975	A975	G851		
		G1364	G1304	A1176	G1042		G976	G976	G786		
		C1365	C1305	A1177	C1043		A977	A977	C852		
		C1366	A1306	G1178	A1044		A978	A978	G853		
		C1367	U1307	A1179	C1045		C979	C979	U788		
		G1368	U1308	A1180	A1046		C980	C980	G854		
		C1369	U1309	G1181	G1047		U921	U921	A790		
		G1370	G1310	G1182	U1048		G922	G922	G855		
				G1183	U1049		A982	A982	U792		
				A1183	G1050		A983	A983	U793		
							C984	C984	A794		

• Molecule 2: ribosomal protein S2

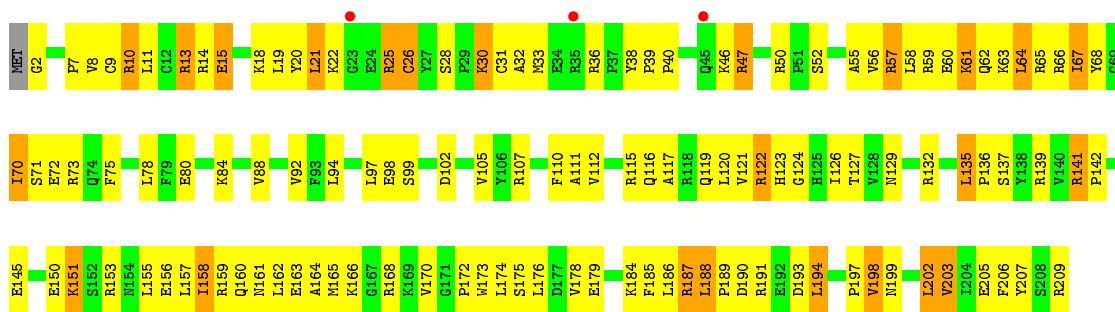




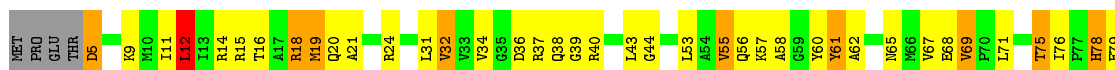
• Molecule 3: ribosomal protein S3

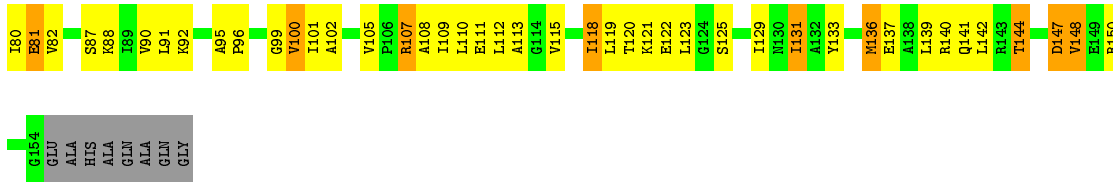


• Molecule 4: ribosomal protein S4

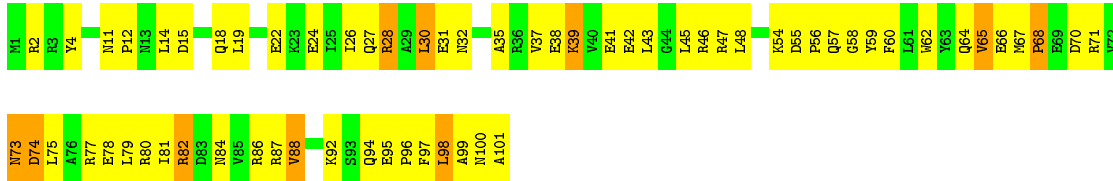
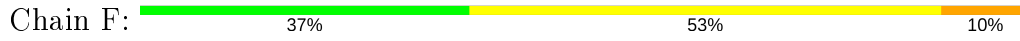


• Molecule 5: ribosomal protein S5

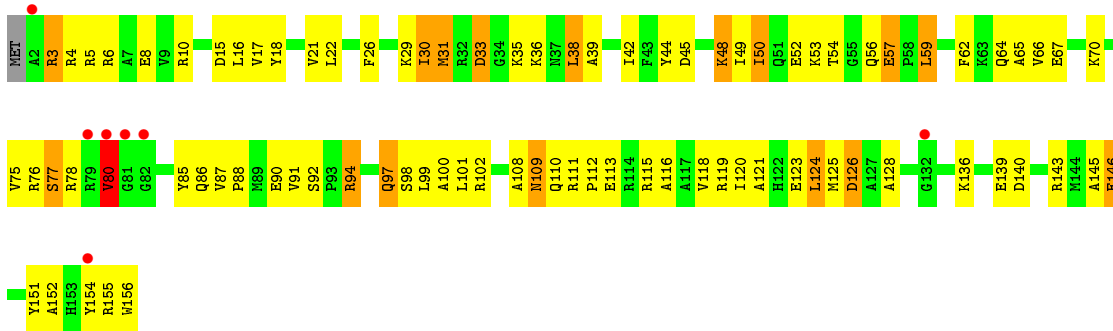




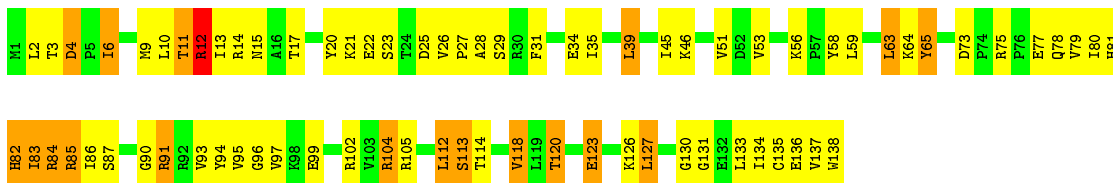
- Molecule 6: ribosomal protein S6



- Molecule 7: ribosomal protein S7



- Molecule 8: ribosomal protein S8

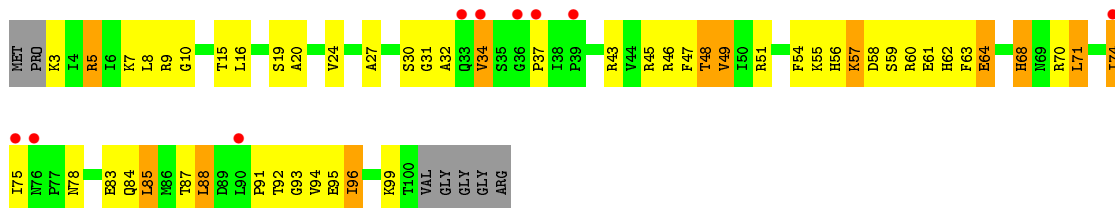


- Molecule 9: ribosomal protein S9

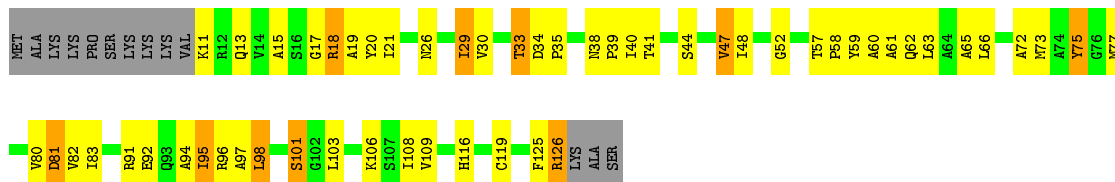




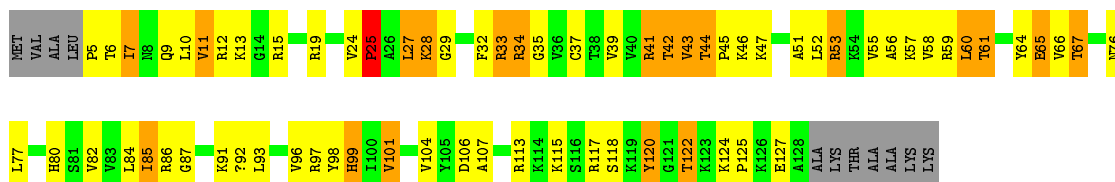
- Molecule 10: ribosomal protein S10



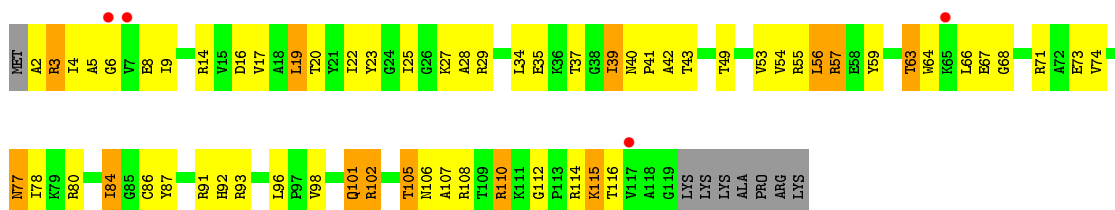
- Molecule 11: ribosomal protein S11



- Molecule 12: ribosomal protein S12



- Molecule 13: ribosomal protein S13



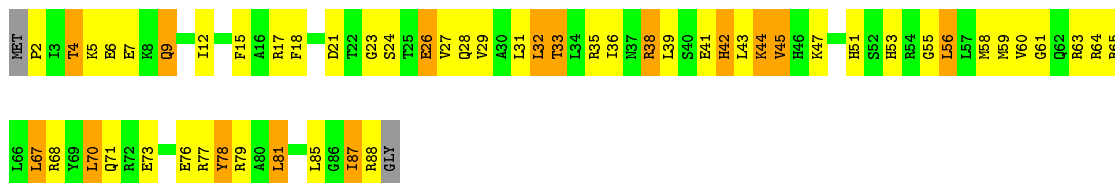
- Molecule 14: ribosomal protein S14





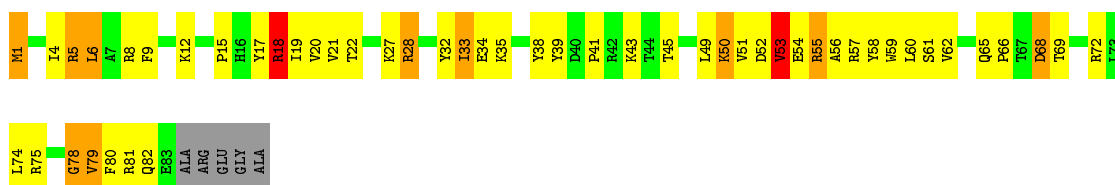
- Molecule 15: ribosomal protein S15

Chain O: 37% 44% 17%



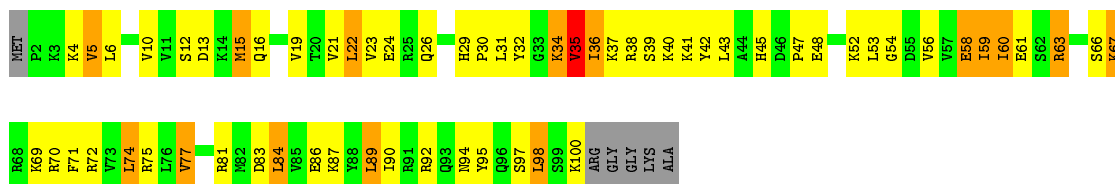
- Molecule 16: ribosomal protein S16

Chain P: 36% 44% 11% 6%



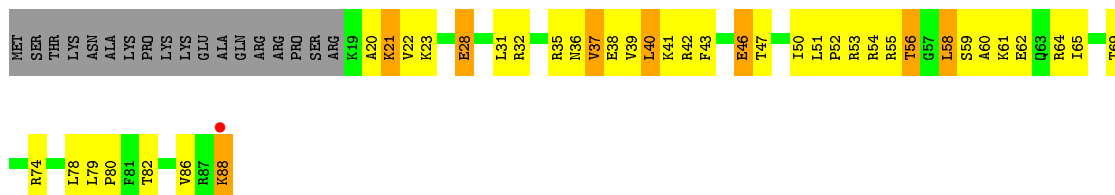
- Molecule 17: ribosomal protein S17

Chain Q: 35% 44% 14% 6%



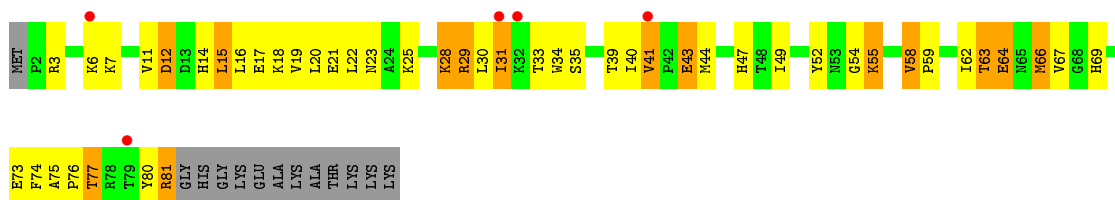
- Molecule 18: ribosomal protein S18

Chain R: 34% 36% 9% 20%

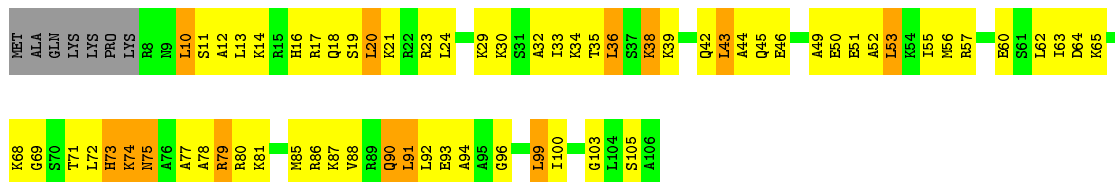


- Molecule 19: ribosomal protein S19

Chain S: 5% 34% 37% 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	403.45Å 403.45Å 173.41Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	34.93 – 3.85 34.93 – 3.85	Depositor EDS
% Data completeness (in resolution range)	97.3 (34.93-3.85) 97.1 (34.93-3.85)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.90 (at 3.87Å)	Xtrriage
Refinement program	PHENIX dev_978	Depositor
R, R_{free}	0.150 , 0.212 0.151 , 0.213	Depositor DCC
R_{free} test set	6512 reflections (4.97%)	wwPDB-VP
Wilson B-factor (Å ²)	161.1	Xtrriage
Anisotropy	0.278	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.20 , 133.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.46$, $\langle L^2 \rangle = 0.29$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	52297	wwPDB-VP
Average B, all atoms (Å ²)	198.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.67% of the height of the origin peak. No significant pseudotranslation is detected.*

¹ Intensities estimated from amplitudes.

² Theoretical 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	1.12	108/36044 (0.3%)	1.81	1604/56250 (2.9%)
2	B	0.63	0/1935	0.79	0/2609
3	C	0.59	0/1636	0.78	1/2205 (0.0%)
4	D	0.69	0/1733	0.89	2/2318 (0.1%)
5	E	0.88	0/1162	1.05	3/1564 (0.2%)
6	F	0.61	0/856	0.79	1/1154 (0.1%)
7	G	0.64	0/1276	0.84	0/1709
8	H	1.01	1/1136 (0.1%)	1.12	2/1527 (0.1%)
9	I	0.61	0/1029	0.82	0/1379
10	J	0.56	0/805	0.80	0/1082
11	K	0.68	0/879	0.89	0/1187
12	L	0.77	0/977	1.01	1/1306 (0.1%)
13	M	0.66	0/947	0.85	0/1270
14	N	0.64	0/501	0.83	0/664
15	O	0.73	0/740	0.91	0/987
16	P	0.77	0/716	1.00	2/963 (0.2%)
17	Q	0.97	0/836	1.14	6/1117 (0.5%)
18	R	0.70	0/579	0.87	1/768 (0.1%)
19	S	0.55	0/661	0.75	0/890
20	T	0.74	0/765	1.00	1/1007 (0.1%)
21	U	0.64	0/212	0.78	0/277
All	All	1.00	109/55425 (0.2%)	1.58	1624/82233 (2.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
2	B	0	2
8	H	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
10	J	0	1
12	L	0	1
13	M	0	1
16	P	0	2
20	T	0	1
All	All	0	9

The worst 5 of 109 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1509	C	N3-C4	-10.95	1.26	1.33
1	A	279	A	N9-C4	-10.62	1.31	1.37
1	A	573	A	N7-C5	-8.71	1.34	1.39
1	A	1523	G	N7-C5	-8.10	1.34	1.39
1	A	715	A	N9-C4	-8.01	1.33	1.37

The worst 5 of 1624 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	573	A	C8-N9-C4	-18.34	98.46	105.80
1	A	1505	G	C8-N9-C4	-15.18	100.33	106.40
1	A	372	C	C6-N1-C2	13.96	125.89	120.30
1	A	279	A	C5-N7-C8	-13.43	97.18	103.90
1	A	481	G	N3-C4-N9	13.26	133.96	126.00

There are no chirality outliers.

5 of 9 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	186	ALA	Peptide
2	B	8	LYS	Peptide
8	H	90	GLY	Peptide
10	J	87	THR	Peptide
12	L	25	PRO	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	32510	0	16434	862	0
2	B	1900	0	1951	98	0
3	C	1612	0	1677	122	0
4	D	1703	0	1763	105	0
5	E	1146	0	1207	59	0
6	F	843	0	857	47	0
7	G	1257	0	1296	69	0
8	H	1116	0	1177	60	0
9	I	1010	0	1037	75	0
10	J	792	0	835	49	0
11	K	864	0	881	37	0
12	L	972	0	1058	67	0
13	M	937	0	995	51	0
14	N	492	0	529	49	0
15	O	729	0	768	37	0
16	P	700	0	720	49	0
17	Q	823	0	893	52	0
18	R	574	0	644	41	0
19	S	647	0	673	34	0
20	T	763	0	861	49	0
21	U	208	0	221	15	0
22	A	40	0	37	7	0
23	A	230	0	0	0	0
23	B	1	0	0	0	0
23	D	1	0	0	0	0
23	E	1	0	0	0	0
23	H	2	0	0	0	0
23	I	1	0	0	0	0
23	J	1	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	1	0	0	0	0
23	S	2	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	396	0	0	4	0
25	E	6	0	0	0	0
25	G	1	0	0	1	0
25	J	1	0	0	0	0
25	N	1	0	0	0	0
25	Q	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
25	T	3	0	0	1	0
25	U	1	0	0	0	0
All	All	52297	0	36514	1832	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 21.

The worst 5 of 1832 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:1443:G:H5''	1:A:1446:A:H5'	1.37	1.01
1:A:103:C:OP1	20:T:17:ARG:NH1	1.98	0.95
12:L:87:GLY:HA2	12:L:98:TYR:HA	1.50	0.91
1:A:279:A:OP2	17:Q:95:TYR:OH	1.89	0.90
4:D:68:TYR:OH	4:D:98:GLU:OE1	1.91	0.89

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%)	200 (86%)	30 (13%)	2 (1%)	17	53
3	C	204/239 (85%)	179 (88%)	25 (12%)	0	100	100
4	D	206/209 (99%)	186 (90%)	20 (10%)	0	100	100
5	E	148/162 (91%)	136 (92%)	11 (7%)	1 (1%)	22	59
6	F	99/101 (98%)	90 (91%)	8 (8%)	1 (1%)	15	51
7	G	153/156 (98%)	136 (89%)	16 (10%)	1 (1%)	22	59
8	H	136/138 (99%)	129 (95%)	7 (5%)	0	100	100
9	I	125/128 (98%)	114 (91%)	10 (8%)	1 (1%)	19	56

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
10	J	96/105 (91%)	82 (85%)	13 (14%)	1 (1%)	15	51
11	K	114/129 (88%)	103 (90%)	11 (10%)	0	100	100
12	L	121/135 (90%)	107 (88%)	12 (10%)	2 (2%)	9	42
13	M	116/126 (92%)	103 (89%)	12 (10%)	1 (1%)	17	53
14	N	58/61 (95%)	49 (84%)	9 (16%)	0	100	100
15	O	85/89 (96%)	80 (94%)	4 (5%)	1 (1%)	13	48
16	P	81/88 (92%)	75 (93%)	5 (6%)	1 (1%)	13	48
17	Q	97/105 (92%)	89 (92%)	8 (8%)	0	100	100
18	R	68/88 (77%)	59 (87%)	9 (13%)	0	100	100
19	S	78/93 (84%)	67 (86%)	10 (13%)	1 (1%)	12	46
20	T	97/106 (92%)	85 (88%)	11 (11%)	1 (1%)	15	51
21	U	22/27 (82%)	20 (91%)	2 (9%)	0	100	100
All	All	2336/2541 (92%)	2089 (89%)	233 (10%)	14 (1%)	25	62

5 of 14 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
19	S	31	ILE
12	L	28	LYS
2	B	21	ARG
2	B	24	TRP
9	I	119	ALA

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	B	202/220 (92%)	158 (78%)	44 (22%)	1	7
3	C	160/188 (85%)	129 (81%)	31 (19%)	1	9
4	D	180/181 (99%)	136 (76%)	44 (24%)	0	5
5	E	115/123 (94%)	83 (72%)	32 (28%)	0	3

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
6	F	90/90 (100%)	70 (78%)	20 (22%)	1	7
7	G	126/127 (99%)	96 (76%)	30 (24%)	0	5
8	H	119/119 (100%)	91 (76%)	28 (24%)	1	5
9	I	98/99 (99%)	76 (78%)	22 (22%)	1	6
10	J	87/92 (95%)	71 (82%)	16 (18%)	1	11
11	K	88/99 (89%)	71 (81%)	17 (19%)	1	10
12	L	103/110 (94%)	75 (73%)	28 (27%)	0	3
13	M	94/101 (93%)	74 (79%)	20 (21%)	1	7
14	N	49/50 (98%)	39 (80%)	10 (20%)	1	8
15	O	79/80 (99%)	56 (71%)	23 (29%)	0	2
16	P	72/74 (97%)	57 (79%)	15 (21%)	1	8
17	Q	94/97 (97%)	71 (76%)	23 (24%)	0	5
18	R	61/77 (79%)	47 (77%)	14 (23%)	1	6
19	S	71/80 (89%)	51 (72%)	20 (28%)	0	2
20	T	76/82 (93%)	55 (72%)	21 (28%)	0	3
21	U	19/22 (86%)	16 (84%)	3 (16%)	2	16
All	All	1983/2111 (94%)	1522 (77%)	461 (23%)	1	6

5 of 461 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
8	H	39	LEU
10	J	63	PHE
19	S	29	ARG
8	H	83	ILE
9	I	38	GLN

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 8 such sidechains are listed below:

Mol	Chain	Res	Type
6	F	73	ASN
15	O	46	HIS
7	G	110	GLN
4	D	119	GLN
6	F	100	ASN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1508/1522 (99%)	390 (25%)	45 (2%)

5 of 390 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	6	G
1	A	7	G
1	A	9	G
1	A	19	C
1	A	22	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	812	C
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	M2G	A	966	1	20,27,28	1.75	4 (20%)	22,40,43	2.17	4 (18%)
1	5MC	A	1400	1	15,22,23	1.02	1 (6%)	19,32,35	1.15	2 (10%)
1	MA6	A	1519	1	19,26,27	2.00	5 (26%)	18,38,41	0.80	0
1	5MC	A	1407	1	15,22,23	1.69	3 (20%)	19,32,35	0.88	1 (5%)
1	2MG	A	1207	1	19,26,27	2.41	4 (21%)	21,38,41	2.07	3 (14%)
1	PSU	A	516	1	17,21,22	1.35	2 (11%)	20,30,33	3.86	6 (30%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	PSU	A	1540	1	17,21,22	1.14	1 (5%)	20,30,33	3.53	7 (35%)
1	UR3	A	1498	1	14,22,23	1.16	1 (7%)	15,32,35	1.13	1 (6%)
1	4OC	A	1402	1	16,23,24	1.19	2 (12%)	17,32,35	0.78	0
1	7MG	A	527	1	22,26,27	1.91	6 (27%)	28,39,42	1.69	4 (14%)
1	PSU	A	1541	1	17,21,22	1.03	1 (5%)	20,30,33	3.22	5 (25%)
1	5MC	A	967	1	15,22,23	1.00	1 (6%)	19,32,35	1.08	1 (5%)
12	0TD	L	92	12	4,9,10	1.10	0	3,11,13	3.74	2 (66%)
1	MA6	A	1518	1	19,26,27	1.63	3 (15%)	18,38,41	1.46	2 (11%)
1	5MC	A	1404	1	15,22,23	1.29	2 (13%)	19,32,35	1.21	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	M2G	A	966	1	-	4/7/29/30	0/3/3/3
1	5MC	A	1400	1	-	2/5/25/26	0/2/2/2
1	MA6	A	1519	1	-	5/7/29/30	0/3/3/3
1	5MC	A	1407	1	-	0/5/25/26	0/2/2/2
1	2MG	A	1207	1	-	2/5/27/28	0/3/3/3
1	PSU	A	516	1	-	0/7/25/26	0/2/2/2
1	PSU	A	1540	1	-	3/7/25/26	0/2/2/2
1	UR3	A	1498	1	-	3/5/25/26	0/2/2/2
1	4OC	A	1402	1	-	5/9/29/30	0/2/2/2
1	7MG	A	527	1	-	2/7/37/38	0/3/3/3
1	PSU	A	1541	1	-	1/7/25/26	0/2/2/2
1	5MC	A	967	1	-	1/5/25/26	0/2/2/2
12	0TD	L	92	12	-	2/3/12/14	-
1	MA6	A	1518	1	-	5/7/29/30	0/3/3/3
1	5MC	A	1404	1	-	0/5/25/26	0/2/2/2

The worst 5 of 36 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1207	2MG	C2-N2	7.34	1.40	1.34
1	A	1207	2MG	C6-N1	6.10	1.43	1.33
1	A	1407	5MC	C5-C4	5.20	1.49	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1519	MA6	C6-N1	5.18	1.40	1.33
1	A	966	M2G	C6-N1	4.50	1.40	1.33

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

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	516	PSU	N1-C2-N3	-13.59	117.63	128.43
1	A	1540	PSU	N1-C2-N3	-11.62	119.20	128.43
1	A	1541	PSU	N1-C2-N3	-10.00	120.48	128.43
1	A	516	PSU	C4-N3-C2	7.79	121.72	115.14
1	A	1207	2MG	C5-C6-N1	-7.52	113.14	123.43

There are no chirality outliers.

5 of 35 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	1519	MA6	C5-C6-N6-C9
1	A	1519	MA6	N1-C6-N6-C9
1	A	1207	2MG	O4'-C4'-C5'-O5'
1	A	1207	2MG	C3'-C4'-C5'-O5'
1	A	1540	PSU	O4'-C1'-C5-C6

There are no ring outliers.

11 monomers are involved in 19 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	1400	5MC	3	0
1	A	1519	MA6	4	0
1	A	1207	2MG	1	0
1	A	1540	PSU	1	0
1	A	1498	UR3	3	0
1	A	527	7MG	1	0
1	A	1541	PSU	1	0
1	A	967	5MC	1	0
12	L	92	0TD	2	0
1	A	1518	MA6	2	0
1	A	1404	5MC	3	0

5.5 Carbohydrates

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

Of 250 ligands modelled in this entry, 249 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	2.37	13 (32%)	49,63,63	2.27	13 (26%)

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	-	-	5/20/87/87	0/3/3/3

The worst 5 of 13 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
22	A	1601	SRY	CD1-N31	9.33	1.49	1.33
22	A	1601	SRY	CA1-N11	5.93	1.43	1.33
22	A	1601	SRY	O53-C53	-3.40	1.36	1.44
22	A	1601	SRY	C11-N11	-3.34	1.40	1.45
22	A	1601	SRY	C23-N23	-2.85	1.42	1.47

The worst 5 of 13 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
22	A	1601	SRY	C12-O42-C42	-5.92	99.07	108.38
22	A	1601	SRY	C13-O13-C22	-5.92	105.98	116.25
22	A	1601	SRY	C61-C11-N11	-5.88	99.52	110.62
22	A	1601	SRY	O41-C12-O42	-4.32	106.75	111.43
22	A	1601	SRY	C43-C33-C23	-4.14	104.28	110.34

There are no chirality outliers.

All (5) torsion outliers are listed below:

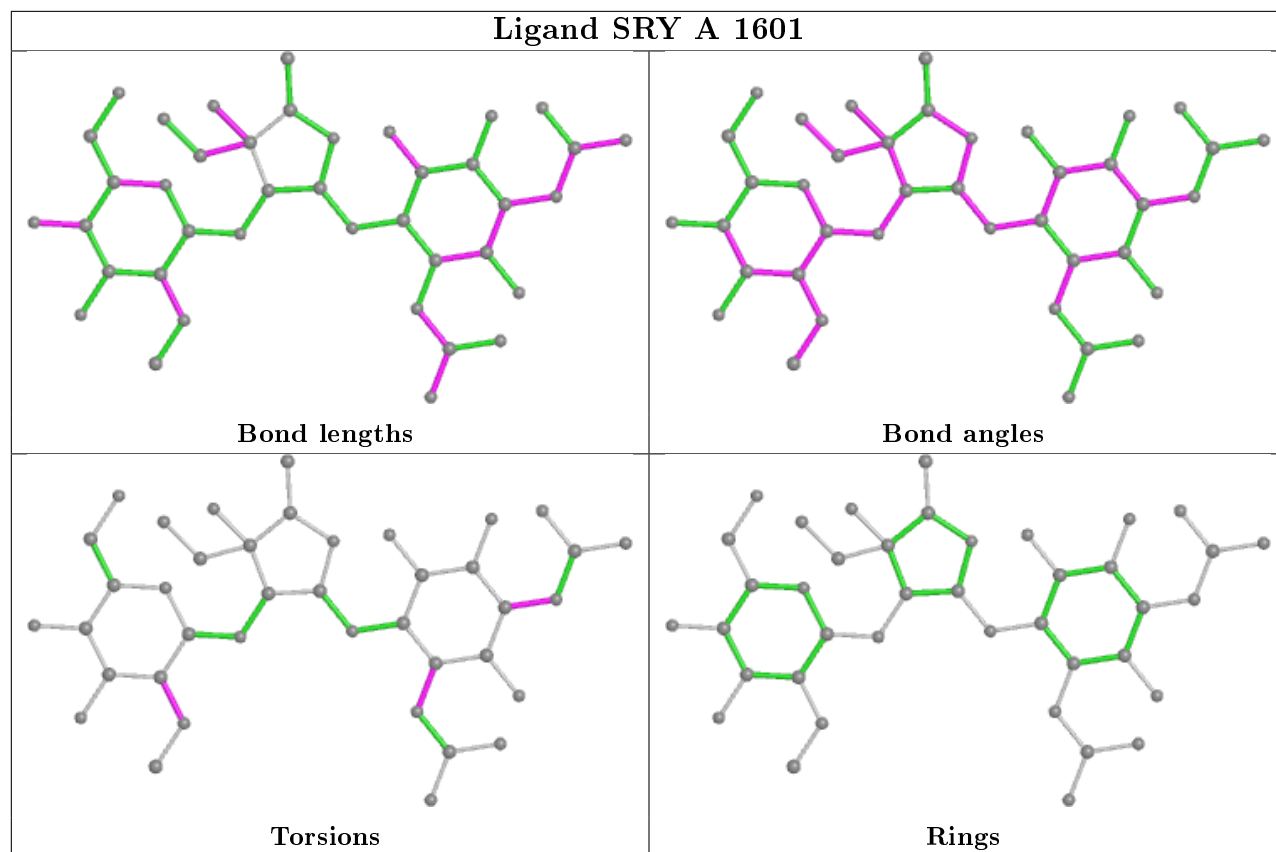
Mol	Chain	Res	Type	Atoms
22	A	1601	SRY	C13-C23-N23-CI3
22	A	1601	SRY	C41-C31-N31-CD1
22	A	1601	SRY	C21-C31-N31-CD1
22	A	1601	SRY	C21-C11-N11-CA1
22	A	1601	SRY	C61-C11-N11-CA1

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%)	-0.37	23 (1%) 73 66	106, 179, 327, 407	0
2	B	234/256 (91%)	-0.58	3 (1%) 77 70	145, 211, 332, 358	0
3	C	206/239 (86%)	-0.31	9 (4%) 34 29	181, 265, 316, 365	0
4	D	208/209 (99%)	-0.43	3 (1%) 75 67	124, 193, 249, 283	0
5	E	150/162 (92%)	-0.67	0 100 100	104, 150, 199, 232	0
6	F	101/101 (100%)	-0.71	0 100 100	155, 212, 246, 277	0
7	G	155/156 (99%)	-0.42	7 (4%) 33 28	172, 228, 288, 335	0
8	H	138/138 (100%)	-0.77	0 100 100	94, 135, 187, 218	0
9	I	127/128 (99%)	-0.37	1 (0%) 86 80	201, 250, 303, 322	0
10	J	98/105 (93%)	0.04	9 (9%) 9 7	220, 277, 355, 391	0
11	K	116/129 (89%)	-0.70	0 100 100	130, 171, 224, 258	0
12	L	123/135 (91%)	-0.54	0 100 100	107, 175, 218, 248	0
13	M	118/126 (93%)	-0.47	4 (3%) 45 37	162, 214, 254, 309	0
14	N	60/61 (98%)	0.14	7 (11%) 4 4	187, 249, 314, 329	0
15	O	87/89 (97%)	-0.54	0 100 100	113, 171, 213, 232	0
16	P	83/88 (94%)	-0.58	0 100 100	130, 180, 220, 274	0
17	Q	99/105 (94%)	-0.65	0 100 100	116, 150, 201, 232	0
18	R	70/88 (79%)	-0.63	1 (1%) 75 67	116, 183, 245, 259	0
19	S	80/93 (86%)	0.11	5 (6%) 20 15	234, 284, 341, 352	0
20	T	99/106 (93%)	-0.69	0 100 100	124, 172, 240, 267	0
21	U	24/27 (88%)	0.57	4 (16%) 1 2	198, 248, 286, 302	0
All	All	3874/4063 (95%)	-0.43	76 (1%) 65 57	94, 194, 306, 407	0

The worst 5 of 76 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
7	G	81	GLY	5.3
19	S	79	THR	5.2
1	A	1018	C	5.1
4	D	35	ARG	4.8
10	J	34	VAL	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	0.78	0.63	235,263,334,335	0
1	PSU	A	1541	20/21	0.79	0.41	297,305,321,325	0
1	PSU	A	516	20/21	0.92	0.16	163,188,214,220	0
1	2MG	A	1207	24/25	0.93	0.33	231,289,310,316	0
1	5MC	A	1400	21/22	0.94	0.23	142,169,178,182	0
1	MA6	A	1519	24/25	0.94	0.20	144,181,202,206	0
1	UR3	A	1498	21/22	0.95	0.20	160,183,204,223	0
1	M2G	A	966	25/26	0.95	0.17	177,182,207,211	0
1	5MC	A	967	21/22	0.95	0.14	182,192,200,205	0
1	4OC	A	1402	22/23	0.96	0.19	150,156,180,192	0
12	0TD	L	92	10/11	0.96	0.28	121,166,173,350	0
1	7MG	A	527	24/25	0.97	0.15	125,146,165,180	0
1	5MC	A	1407	21/22	0.97	0.15	171,191,202,207	0
1	MA6	A	1518	24/25	0.97	0.12	151,187,221,227	0
1	5MC	A	1404	21/22	0.97	0.13	166,182,196,204	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	P	101	1/1	0.30	0.34	122,122,122,122	0
23	MG	A	1758	1/1	0.60	0.75	128,128,128,128	0
23	MG	A	1757	1/1	0.64	0.30	143,143,143,143	0
23	MG	S	102	1/1	0.67	0.16	156,156,156,156	0
23	MG	A	1681	1/1	0.67	0.11	243,243,243,243	0
23	MG	A	1785	1/1	0.69	1.14	142,142,142,142	0
23	MG	A	1784	1/1	0.70	0.40	145,145,145,145	0
23	MG	A	1771	1/1	0.70	0.70	138,138,138,138	0
23	MG	A	1672	1/1	0.72	0.26	102,102,102,102	0
23	MG	A	1730	1/1	0.74	0.39	134,134,134,134	0
23	MG	A	1794	1/1	0.75	0.71	206,206,206,206	0
23	MG	A	1773	1/1	0.76	0.12	162,162,162,162	0
23	MG	A	1667	1/1	0.76	0.39	143,143,143,143	0
23	MG	A	1661	1/1	0.76	0.58	124,124,124,124	0
23	MG	A	1782	1/1	0.77	0.28	131,131,131,131	0
23	MG	A	1738	1/1	0.78	0.24	123,123,123,123	0
23	MG	A	1750	1/1	0.78	0.50	125,125,125,125	0
23	MG	A	1659	1/1	0.78	0.38	142,142,142,142	0
23	MG	A	1707	1/1	0.79	0.28	120,120,120,120	0
23	MG	A	1714	1/1	0.80	0.21	143,143,143,143	0
23	MG	A	1712	1/1	0.80	0.30	138,138,138,138	0
23	MG	A	1727	1/1	0.81	0.17	138,138,138,138	0
23	MG	A	1825	1/1	0.82	0.15	377,377,377,377	0
23	MG	N	103	1/1	0.82	0.28	156,156,156,156	0
23	MG	A	1723	1/1	0.82	0.33	109,109,109,109	0
23	MG	A	1760	1/1	0.83	0.24	130,130,130,130	0
23	MG	A	1620	1/1	0.83	0.82	197,197,197,197	0
23	MG	A	1827	1/1	0.84	0.29	391,391,391,391	0
23	MG	A	1739	1/1	0.85	0.19	162,162,162,162	0
23	MG	A	1668	1/1	0.86	0.94	173,173,173,173	0
23	MG	A	1776	1/1	0.86	0.21	111,111,111,111	0
23	MG	A	1817	1/1	0.86	0.11	197,197,197,197	0
23	MG	A	1787	1/1	0.87	0.32	102,102,102,102	0
23	MG	A	1783	1/1	0.87	0.79	133,133,133,133	0
23	MG	A	1828	1/1	0.87	0.19	356,356,356,356	0
23	MG	A	1673	1/1	0.87	0.17	118,118,118,118	0
23	MG	A	1736	1/1	0.87	0.28	125,125,125,125	0
23	MG	A	1779	1/1	0.87	0.22	146,146,146,146	0
23	MG	A	1819	1/1	0.88	0.15	483,483,483,483	0
23	MG	A	1701	1/1	0.88	0.29	129,129,129,129	0
23	MG	A	1699	1/1	0.88	0.15	135,135,135,135	0
23	MG	A	1737	1/1	0.88	0.37	140,140,140,140	0
23	MG	A	1774	1/1	0.88	0.50	128,128,128,128	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
23	MG	A	1718	1/1	0.88	0.37	144,144,144,144	0
23	MG	A	1607	1/1	0.88	0.10	161,161,161,161	0
23	MG	A	1703	1/1	0.88	0.46	180,180,180,180	0
23	MG	A	1731	1/1	0.89	0.29	148,148,148,148	0
23	MG	A	1778	1/1	0.89	0.11	156,156,156,156	0
23	MG	A	1777	1/1	0.89	0.16	107,107,107,107	0
23	MG	N	102	1/1	0.89	0.18	214,214,214,214	0
23	MG	A	1759	1/1	0.89	0.41	161,161,161,161	0
23	MG	A	1655	1/1	0.89	0.31	181,181,181,181	0
23	MG	A	1664	1/1	0.89	0.44	226,226,226,226	0
23	MG	A	1675	1/1	0.89	0.35	121,121,121,121	0
23	MG	A	1694	1/1	0.89	0.74	180,180,180,180	0
23	MG	A	1683	1/1	0.89	0.11	422,422,422,422	0
23	MG	A	1775	1/1	0.90	0.70	123,123,123,123	0
23	MG	A	1710	1/1	0.90	0.11	161,161,161,161	0
23	MG	A	1688	1/1	0.90	0.21	301,301,301,301	0
23	MG	A	1651	1/1	0.90	0.44	140,140,140,140	0
23	MG	A	1765	1/1	0.90	0.14	372,372,372,372	0
23	MG	A	1697	1/1	0.90	0.38	135,135,135,135	0
23	MG	A	1786	1/1	0.91	0.15	145,145,145,145	0
23	MG	A	1793	1/1	0.91	0.19	302,302,302,302	0
23	MG	A	1728	1/1	0.91	0.16	150,150,150,150	0
23	MG	A	1735	1/1	0.91	0.23	155,155,155,155	0
23	MG	A	1772	1/1	0.91	0.18	121,121,121,121	0
23	MG	A	1645	1/1	0.91	0.12	146,146,146,146	0
23	MG	A	1816	1/1	0.91	0.08	262,262,262,262	0
23	MG	A	1639	1/1	0.91	0.24	126,126,126,126	0
23	MG	A	1626	1/1	0.91	0.34	118,118,118,118	0
23	MG	A	1715	1/1	0.92	0.35	151,151,151,151	0
23	MG	A	1751	1/1	0.92	0.33	133,133,133,133	0
23	MG	A	1734	1/1	0.92	0.33	163,163,163,163	0
23	MG	A	1692	1/1	0.92	0.70	142,142,142,142	0
23	MG	A	1621	1/1	0.92	0.20	166,166,166,166	0
23	MG	A	1637	1/1	0.92	0.19	143,143,143,143	0
23	MG	A	1658	1/1	0.92	0.41	146,146,146,146	0
23	MG	A	1653	1/1	0.92	0.53	185,185,185,185	0
23	MG	A	1831	1/1	0.92	0.24	484,484,484,484	0
23	MG	A	1744	1/1	0.92	0.25	176,176,176,176	0
23	MG	A	1813	1/1	0.92	0.22	146,146,146,146	0
23	MG	A	1815	1/1	0.93	0.22	190,190,190,190	0
23	MG	A	1647	1/1	0.93	0.19	180,180,180,180	0
23	MG	A	1829	1/1	0.93	0.09	323,323,323,323	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
23	MG	A	1650	1/1	0.93	0.22	155,155,155,155	0
23	MG	A	1685	1/1	0.93	0.09	263,263,263,263	0
23	MG	A	1696	1/1	0.93	0.23	245,245,245,245	0
23	MG	I	201	1/1	0.93	0.29	204,204,204,204	0
23	MG	A	1720	1/1	0.93	0.23	139,139,139,139	0
23	MG	A	1749	1/1	0.93	0.65	126,126,126,126	0
23	MG	K	201	1/1	0.93	0.08	181,181,181,181	0
23	MG	A	1640	1/1	0.93	0.36	129,129,129,129	0
23	MG	A	1768	1/1	0.94	0.04	550,550,550,550	0
23	MG	A	1745	1/1	0.94	0.28	235,235,235,235	0
23	MG	E	201	1/1	0.94	0.09	435,435,435,435	0
23	MG	A	1822	1/1	0.94	0.15	374,374,374,374	0
23	MG	A	1676	1/1	0.94	0.32	133,133,133,133	0
23	MG	A	1796	1/1	0.94	0.33	372,372,372,372	0
23	MG	A	1781	1/1	0.94	0.34	145,145,145,145	0
23	MG	A	1788	1/1	0.94	0.17	156,156,156,156	0
23	MG	A	1702	1/1	0.94	0.09	126,126,126,126	0
23	MG	B	301	1/1	0.94	0.44	181,181,181,181	0
23	MG	A	1635	1/1	0.95	0.35	214,214,214,214	0
23	MG	A	1762	1/1	0.95	0.30	109,109,109,109	0
23	MG	A	1755	1/1	0.95	0.21	190,190,190,190	0
23	MG	A	1704	1/1	0.95	0.29	118,118,118,118	0
23	MG	A	1767	1/1	0.95	0.28	327,327,327,327	0
23	MG	A	1665	1/1	0.95	0.04	247,247,247,247	0
22	SRY	A	1601	40/40	0.95	0.20	123,154,201,206	0
23	MG	A	1656	1/1	0.95	0.34	173,173,173,173	0
23	MG	A	1604	1/1	0.95	0.17	133,133,133,133	0
23	MG	A	1713	1/1	0.95	0.22	133,133,133,133	0
23	MG	A	1622	1/1	0.95	0.68	138,138,138,138	0
23	MG	A	1693	1/1	0.95	0.17	179,179,179,179	0
23	MG	A	1618	1/1	0.95	0.22	152,152,152,152	0
23	MG	A	1820	1/1	0.95	0.11	265,265,265,265	0
23	MG	A	1802	1/1	0.95	0.20	457,457,457,457	0
23	MG	A	1705	1/1	0.95	0.27	153,153,153,153	0
23	MG	A	1741	1/1	0.95	0.17	145,145,145,145	0
23	MG	A	1789	1/1	0.95	0.16	152,152,152,152	0
23	MG	A	1663	1/1	0.95	0.38	138,138,138,138	0
23	MG	S	101	1/1	0.95	0.32	138,138,138,138	0
23	MG	A	1695	1/1	0.95	0.12	245,245,245,245	0
23	MG	A	1660	1/1	0.95	0.07	194,194,194,194	0
23	MG	A	1641	1/1	0.95	0.10	134,134,134,134	0
23	MG	A	1810	1/1	0.96	0.14	117,117,117,117	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
23	MG	A	1804	1/1	0.96	0.30	420,420,420,420	0
23	MG	A	1689	1/1	0.96	0.57	151,151,151,151	0
23	MG	A	1716	1/1	0.96	0.30	121,121,121,121	0
23	MG	M	201	1/1	0.96	0.41	163,163,163,163	0
23	MG	A	1708	1/1	0.96	0.19	119,119,119,119	0
23	MG	A	1800	1/1	0.96	0.23	400,400,400,400	0
23	MG	A	1809	1/1	0.96	0.23	281,281,281,281	0
23	MG	A	1742	1/1	0.96	0.11	134,134,134,134	0
23	MG	A	1670	1/1	0.96	0.36	173,173,173,173	0
23	MG	A	1766	1/1	0.96	0.19	220,220,220,220	0
23	MG	A	1654	1/1	0.96	0.18	201,201,201,201	0
23	MG	A	1722	1/1	0.96	0.20	116,116,116,116	0
23	MG	A	1615	1/1	0.96	0.34	129,129,129,129	0
23	MG	A	1652	1/1	0.96	0.32	141,141,141,141	0
23	MG	A	1748	1/1	0.96	0.20	204,204,204,204	0
23	MG	A	1769	1/1	0.96	0.25	209,209,209,209	0
23	MG	J	201	1/1	0.97	0.21	138,138,138,138	0
23	MG	A	1686	1/1	0.97	0.14	150,150,150,150	0
23	MG	A	1808	1/1	0.97	0.20	444,444,444,444	0
23	MG	A	1679	1/1	0.97	0.46	133,133,133,133	0
23	MG	H	202	1/1	0.97	0.16	137,137,137,137	0
23	MG	A	1790	1/1	0.97	0.23	148,148,148,148	0
23	MG	A	1721	1/1	0.97	0.23	135,135,135,135	0
23	MG	A	1623	1/1	0.97	0.14	170,170,170,170	0
23	MG	A	1807	1/1	0.97	0.39	427,427,427,427	0
23	MG	A	1780	1/1	0.97	0.11	111,111,111,111	0
23	MG	A	1603	1/1	0.97	0.12	128,128,128,128	0
23	MG	A	1617	1/1	0.97	0.21	129,129,129,129	0
23	MG	A	1632	1/1	0.97	0.16	91,91,91,91	0
23	MG	A	1624	1/1	0.97	0.28	210,210,210,210	0
23	MG	A	1798	1/1	0.97	0.39	454,454,454,454	0
23	MG	A	1814	1/1	0.97	0.08	128,128,128,128	0
23	MG	A	1706	1/1	0.97	0.26	163,163,163,163	0
23	MG	A	1791	1/1	0.97	0.11	144,144,144,144	0
23	MG	A	1611	1/1	0.97	0.04	223,223,223,223	0
23	MG	A	1657	1/1	0.97	0.14	177,177,177,177	0
23	MG	A	1756	1/1	0.97	0.29	213,213,213,213	0
23	MG	A	1616	1/1	0.97	0.13	107,107,107,107	0
23	MG	A	1614	1/1	0.97	0.15	94,94,94,94	0
23	MG	A	1746	1/1	0.97	0.12	282,282,282,282	0
23	MG	A	1634	1/1	0.97	0.09	112,112,112,112	0
23	MG	A	1631	1/1	0.97	0.19	127,127,127,127	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
23	MG	A	1732	1/1	0.97	0.16	131,131,131,131	0
23	MG	H	201	1/1	0.97	0.41	131,131,131,131	0
23	MG	A	1764	1/1	0.97	0.15	308,308,308,308	0
23	MG	A	1625	1/1	0.97	0.20	134,134,134,134	0
23	MG	A	1763	1/1	0.97	0.08	181,181,181,181	0
23	MG	A	1743	1/1	0.97	0.29	183,183,183,183	0
23	MG	A	1629	1/1	0.97	0.11	125,125,125,125	0
23	MG	A	1608	1/1	0.97	0.19	118,118,118,118	0
23	MG	A	1826	1/1	0.97	0.28	458,458,458,458	0
23	MG	A	1799	1/1	0.97	0.25	242,242,242,242	0
23	MG	M	202	1/1	0.97	0.67	148,148,148,148	0
23	MG	A	1648	1/1	0.98	0.24	230,230,230,230	0
23	MG	A	1811	1/1	0.98	0.34	346,346,346,346	0
23	MG	A	1666	1/1	0.98	0.15	187,187,187,187	0
23	MG	T	201	1/1	0.98	0.18	142,142,142,142	0
23	MG	A	1724	1/1	0.98	0.09	176,176,176,176	0
23	MG	A	1671	1/1	0.98	0.12	208,208,208,208	0
23	MG	A	1691	1/1	0.98	0.14	187,187,187,187	0
23	MG	A	1797	1/1	0.98	0.14	429,429,429,429	0
23	MG	A	1709	1/1	0.98	0.10	141,141,141,141	0
23	MG	A	1638	1/1	0.98	0.27	170,170,170,170	0
23	MG	A	1818	1/1	0.98	0.55	483,483,483,483	0
23	MG	D	302	1/1	0.98	0.16	186,186,186,186	0
23	MG	A	1830	1/1	0.98	0.16	494,494,494,494	0
23	MG	A	1717	1/1	0.98	0.17	110,110,110,110	0
23	MG	A	1680	1/1	0.98	0.41	306,306,306,306	0
23	MG	A	1803	1/1	0.98	0.18	342,342,342,342	0
23	MG	A	1662	1/1	0.98	0.12	162,162,162,162	0
23	MG	A	1602	1/1	0.98	0.28	180,180,180,180	0
23	MG	A	1795	1/1	0.98	0.10	457,457,457,457	0
23	MG	A	1753	1/1	0.98	0.06	118,118,118,118	0
23	MG	A	1606	1/1	0.98	0.24	126,126,126,126	0
23	MG	A	1684	1/1	0.98	0.09	124,124,124,124	0
23	MG	A	1687	1/1	0.98	0.17	96,96,96,96	0
23	MG	A	1610	1/1	0.98	0.12	193,193,193,193	0
23	MG	A	1646	1/1	0.98	0.06	131,131,131,131	0
23	MG	A	1711	1/1	0.98	0.31	187,187,187,187	0
23	MG	A	1754	1/1	0.98	0.26	177,177,177,177	0
23	MG	A	1609	1/1	0.98	0.19	155,155,155,155	0
23	MG	A	1801	1/1	0.98	0.11	423,423,423,423	0
23	MG	A	1733	1/1	0.98	0.05	126,126,126,126	0
23	MG	A	1649	1/1	0.98	0.10	192,192,192,192	0

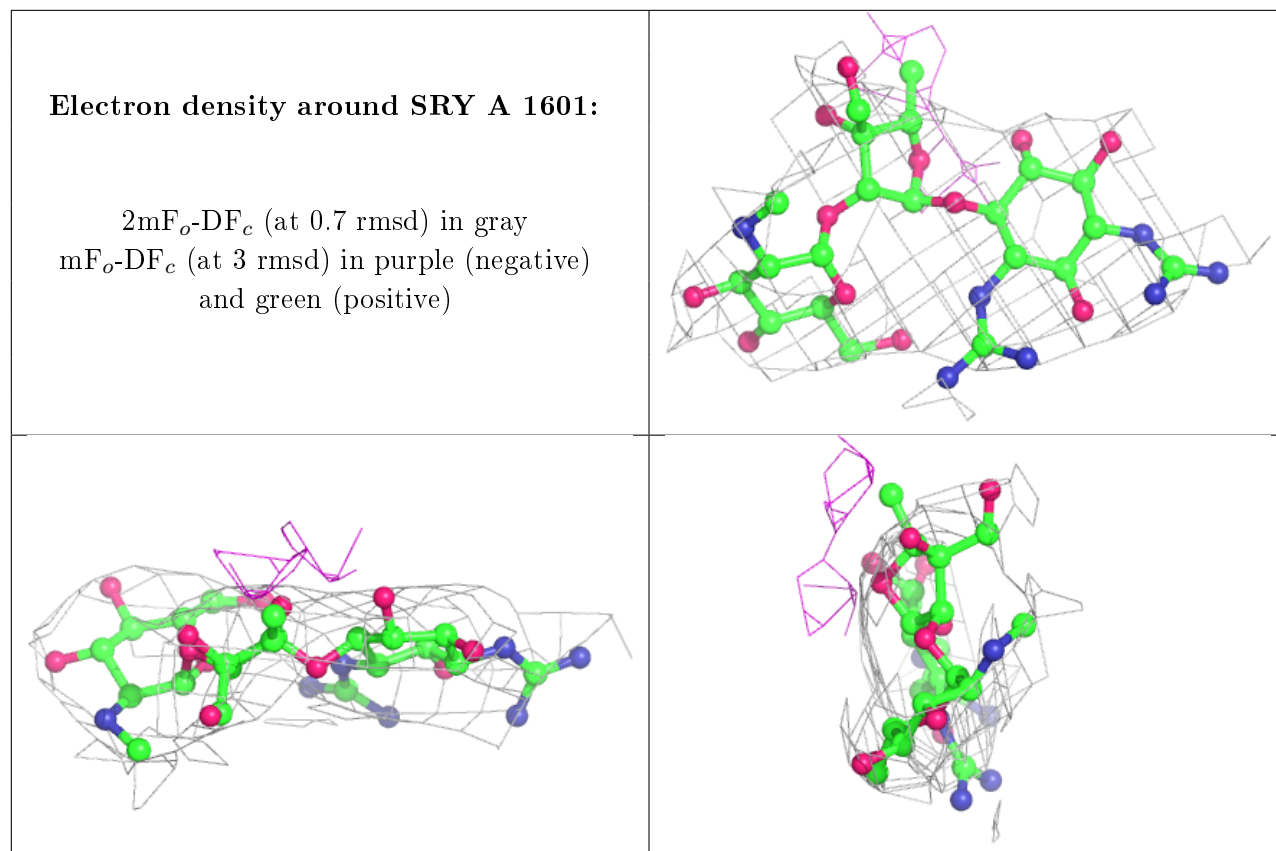
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
23	MG	A	1752	1/1	0.98	0.21	147,147,147,147	0
23	MG	A	1740	1/1	0.98	0.22	123,123,123,123	0
23	MG	A	1805	1/1	0.98	0.10	426,426,426,426	0
23	MG	A	1729	1/1	0.98	0.40	123,123,123,123	0
23	MG	A	1698	1/1	0.98	0.19	131,131,131,131	0
23	MG	T	202	1/1	0.98	0.24	450,450,450,450	0
23	MG	A	1627	1/1	0.98	0.12	160,160,160,160	0
23	MG	A	1700	1/1	0.98	0.13	134,134,134,134	0
23	MG	A	1612	1/1	0.99	0.07	123,123,123,123	0
23	MG	A	1677	1/1	0.99	0.18	191,191,191,191	0
24	ZN	N	101	1/1	0.99	0.19	336,336,336,336	0
23	MG	A	1682	1/1	0.99	0.12	365,365,365,365	0
23	MG	A	1619	1/1	0.99	0.35	253,253,253,253	0
23	MG	A	1747	1/1	0.99	0.18	296,296,296,296	0
23	MG	A	1690	1/1	0.99	0.20	216,216,216,216	0
23	MG	A	1761	1/1	0.99	0.13	158,158,158,158	0
23	MG	A	1636	1/1	0.99	0.70	186,186,186,186	0
23	MG	A	1726	1/1	0.99	0.18	130,130,130,130	0
23	MG	A	1806	1/1	0.99	0.16	392,392,392,392	0
23	MG	A	1792	1/1	0.99	0.20	127,127,127,127	0
23	MG	A	1643	1/1	0.99	0.30	135,135,135,135	0
23	MG	A	1613	1/1	0.99	0.20	126,126,126,126	0
23	MG	A	1644	1/1	0.99	0.16	175,175,175,175	0
23	MG	A	1824	1/1	0.99	0.18	366,366,366,366	0
23	MG	A	1628	1/1	0.99	0.45	191,191,191,191	0
23	MG	A	1821	1/1	0.99	0.18	236,236,236,236	0
24	ZN	D	301	1/1	0.99	0.32	159,159,159,159	0
23	MG	A	1633	1/1	0.99	0.43	125,125,125,125	0
23	MG	A	1725	1/1	0.99	0.14	153,153,153,153	0
23	MG	A	1674	1/1	0.99	0.16	112,112,112,112	0
23	MG	A	1719	1/1	0.99	0.17	105,105,105,105	0
23	MG	A	1630	1/1	0.99	0.13	92,92,92,92	0
23	MG	A	1605	1/1	0.99	0.08	148,148,148,148	0
23	MG	A	1642	1/1	0.99	0.17	107,107,107,107	0
23	MG	A	1812	1/1	0.99	0.08	226,226,226,226	0
23	MG	A	1678	1/1	0.99	0.10	136,136,136,136	0
23	MG	A	1669	1/1	0.99	0.29	138,138,138,138	0
23	MG	A	1770	1/1	0.99	0.26	141,141,141,141	0
23	MG	A	1823	1/1	1.00	0.14	194,194,194,194	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.