



Full wwPDB EM Validation Report ⓘ

Apr 17, 2024 – 09:25 pm BST

PDB ID : 7OIF
EMDB ID : EMD-12928
Title : CspA-27 cotranslational folding intermediate 2
Authors : Agirrezabala, X.; Samatova, E.; Macher, M.; Liutkute, M.; Gil-Carton, D.;
Novacek, J.; Valle, M.; Rodnina, M.V.
Deposited on : 2021-05-11
Resolution : 3.00 Å(reported)
Based on initial model : 6ORE

This is a Full wwPDB EM Validation 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/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

EMDB validation analysis : 0.0.1.dev92
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

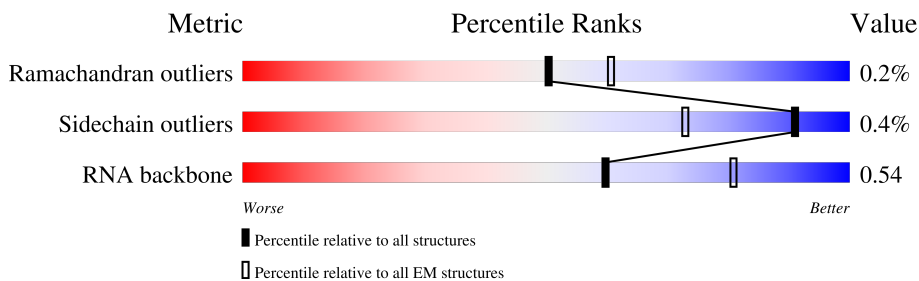
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.00 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)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the 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 EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	1	2903	
2	2	1534	
3	3	120	
4	4	6	
5	C	271	
6	D	209	
7	E	201	
8	F	177	

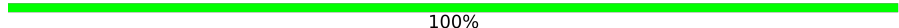
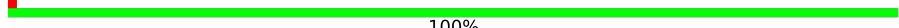
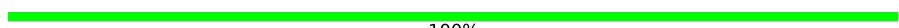



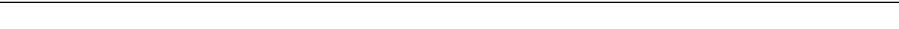

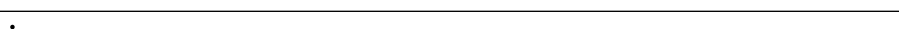
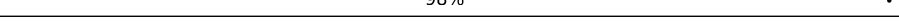
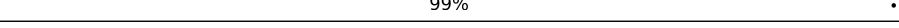
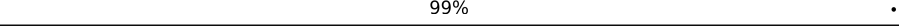
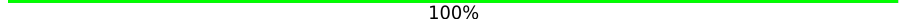
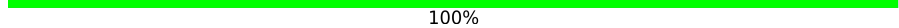

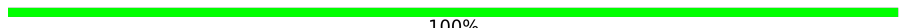
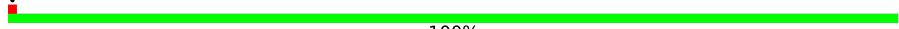





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Mol	Chain	Length	Quality of chain
9	G	175	100%
10	H	149	58% 99%
11	I	142	100%
12	J	123	98%
13	K	144	99%
14	L	136	99%
15	M	119	99%
16	N	116	100%
17	O	114	97%
18	P	117	100%
19	Q	103	98%
20	R	110	97%
21	S	94	99%
22	T	103	100%
23	U	94	100%
24	V	80	6% 98%
25	W	77	100%
26	X	62	98%
27	Y	58	100%
28	Z	66	6% 100%
29	a	56	98%
30	b	52	100%
31	c	46	100%
32	d	64	97%
33	e	38	100%

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Mol	Chain	Length	Quality of chain
34	f	225	 100%
35	g	208	 100%
36	h	205	 100%
37	i	156	 97%
38	j	104	 99%
39	k	151	 100%
40	l	129	 100%
41	m	127	 99%
42	n	99	 98%
43	o	117	 99%
44	p	123	 99%
45	q	116	 100%
46	r	100	 100%
47	s	88	 100%
48	t	82	 100%
49	u	80	 100%
50	v	66	 100%
51	w	83	 99%
52	x	86	 98%
53	y	70	 100%
54	z	88	 56% 35% 9%
55	B	27	 19% 89% 11%

2 Entry composition [i](#)

There are 57 unique types of molecules in this entry. The entry contains 145152 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 23S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	1	2903	62336	27816	11470	20147	2903	0	0

- Molecule 2 is a RNA chain called 16S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	2	1534	32929	14693	6041	10661	1534	0	0

- Molecule 3 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	3	120	2569	1144	468	837	120	0	0

- Molecule 4 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	4	6	126	56	20	44	6	0	0

- Molecule 5 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	C	271	2082	1288	423	364	7	0	0

- Molecule 6 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	D	209	1565	979	288	294	4	0	0

- Molecule 7 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	E	201	1552	974	283	290	5	0	0

- Molecule 8 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	F	177	1410	899	249	256	6	0	0

- Molecule 9 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	G	175	1313	826	241	244	2	0	0

- Molecule 10 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	H	149	1111	699	197	214	1	0	0

- Molecule 11 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	I	142	1129	714	212	199	4	0	0

- Molecule 12 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	J	123	946	593	181	166	6	0	0

- Molecule 13 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	K	144	1053	654	207	190	2	0	0

- Molecule 14 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	L	136	1074	686	205	177	6	0	0

- Molecule 15 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	M	119	951	588	195	163	5	0	0

- Molecule 16 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
16	N	116	892	552	178	162	0	0

- Molecule 17 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	O	114	917	574	179	163	1	0	0

- Molecule 18 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
18	P	117	947	604	192	151	0	0

- Molecule 19 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	Q	103	816	516	153	145	2	0	0

- Molecule 20 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	R	110	857	532	166	156	3	0	0

- Molecule 21 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	S	94	Total	C	N	O	S	0	0
			746	470	140	134	2		

- Molecule 22 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	T	103	Total	C	N	O	S	0	0
			788	498	148	142			

- Molecule 23 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	U	94	Total	C	N	O	S	0	0
			753	479	137	134	3		

- Molecule 24 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	V	80	Total	C	N	O	S	0	0
			601	370	121	109	1		

- Molecule 25 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	W	77	Total	C	N	O	S	0	0
			625	388	129	106	2		

- Molecule 26 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	X	62	Total	C	N	O	S	0	0
			501	308	98	94	1		

- Molecule 27 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	Y	58	Total	C	N	O	S	0	0
			448	281	87	78	2		

- Molecule 28 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	Z	66	Total	C	N	O	S	0	0
			522	323	99	94	6		

- Molecule 29 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	a	56	Total	C	N	O	S	0	0
			444	269	94	80	1		

- Molecule 30 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
30	b	52	Total	C	N	O	0	0
			426	275	78	73		

- Molecule 31 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	c	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 32 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	d	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 33 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	e	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

- Molecule 34 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	f	225	Total	C	N	O	S	0	0
			1760	1113	316	323	8		

- Molecule 35 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	g	208	Total	C	N	O	S	0	0
			1636	1036	307	290	3		

- Molecule 36 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	h	205	Total	C	N	O	S	0	0
			1643	1026	315	298	4		

- Molecule 37 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	i	156	Total	C	N	O	S	0	0
			1152	717	217	212	6		

- Molecule 38 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	j	104	Total	C	N	O	S	0	0
			848	536	153	152	7		

- Molecule 39 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	k	151	Total	C	N	O	S	0	0
			1181	735	227	215	4		

- Molecule 40 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	l	129	Total	C	N	O	S	0	0
			979	616	173	184	6		

- Molecule 41 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	m	127	Total	C	N	O	S	0	0
			1022	634	206	179	3		

- Molecule 42 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	n	99	790	495	151	143	1	0	0

- Molecule 43 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	o	117	877	540	174	160	3	0	0

- Molecule 44 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	p	123	957	591	196	165	5	0	0

- Molecule 45 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
45	q	116	900	558	181	158	3	0	0

- Molecule 46 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
46	r	100	805	499	164	139	3	0	0

- Molecule 47 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
47	s	88	714	439	144	130	1	0	0

- Molecule 48 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
48	t	82	649	406	128	114	1	0	0

- Molecule 49 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	u	80	Total	C	N	O	S	0	0
			648	411	121	113	3		

- Molecule 50 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	v	66	Total	C	N	O	S	0	0
			544	344	102	97	1		

- Molecule 51 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	w	83	Total	C	N	O	S	0	0
			663	424	126	111	2		

- Molecule 52 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	x	86	Total	C	N	O	S	0	0
			669	414	138	114	3		

- Molecule 53 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	y	70	Total	C	N	O	S	0	0
			589	366	125	97	1		

- Molecule 54 is a RNA chain called tRNA-Ser.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	z	88	Total	C	N	O	P	0	0
			1891	841	341	621	88		

- Molecule 55 is a protein called CspA transcriptional activator.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	B	27	Total	C	N	O	S	0	0
			205	132	32	39	2		

- Molecule 56 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	AltConf
56	1	276	Total Mg 276 276	0
56	2	119	Total Mg 119 119	0
56	3	8	Total Mg 8 8	0
56	4	1	Total Mg 1 1	0
56	C	1	Total Mg 1 1	0
56	D	2	Total Mg 2 2	0
56	P	1	Total Mg 1 1	0
56	T	1	Total Mg 1 1	0
56	a	2	Total Mg 2 2	0
56	h	1	Total Mg 1 1	0
56	q	1	Total Mg 1 1	0
56	r	1	Total Mg 1 1	0
56	z	2	Total Mg 2 2	0

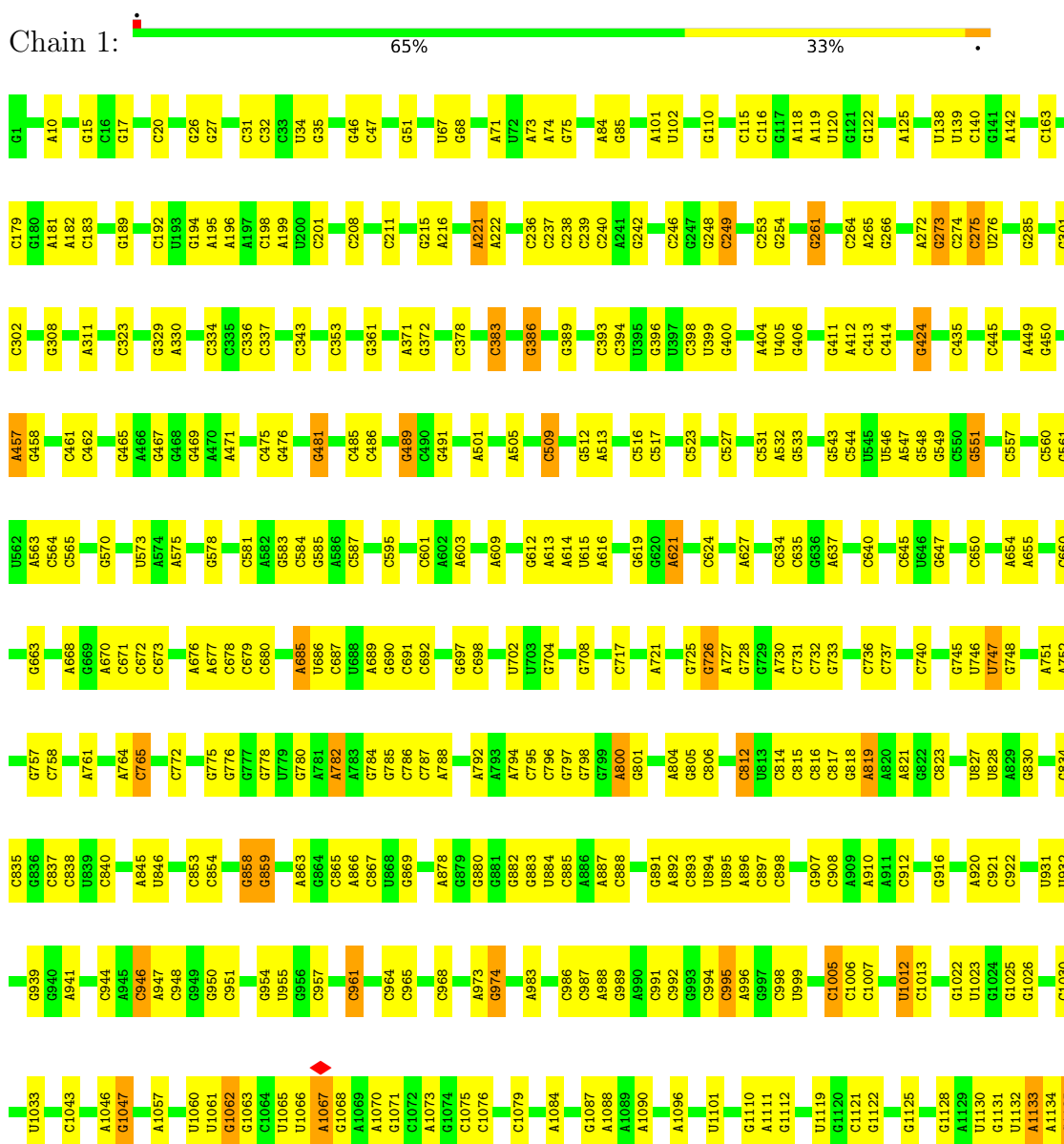
- Molecule 57 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	AltConf
57	Z	1	Total Zn 1 1	0
57	e	1	Total Zn 1 1	0

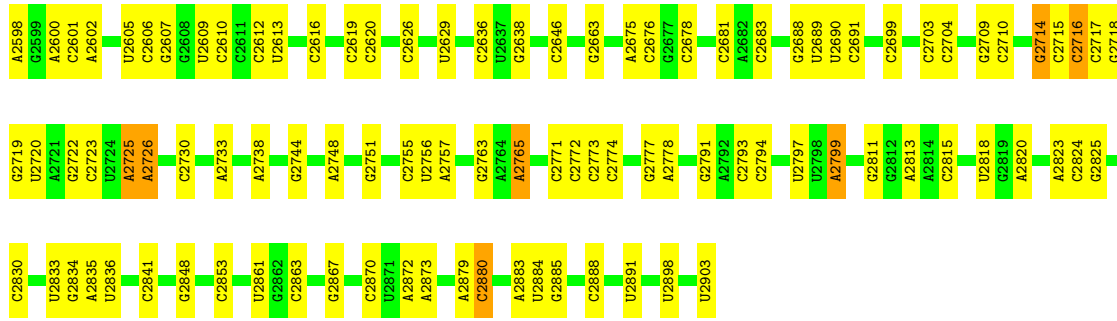
3 Residue-property plots i

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map 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 diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

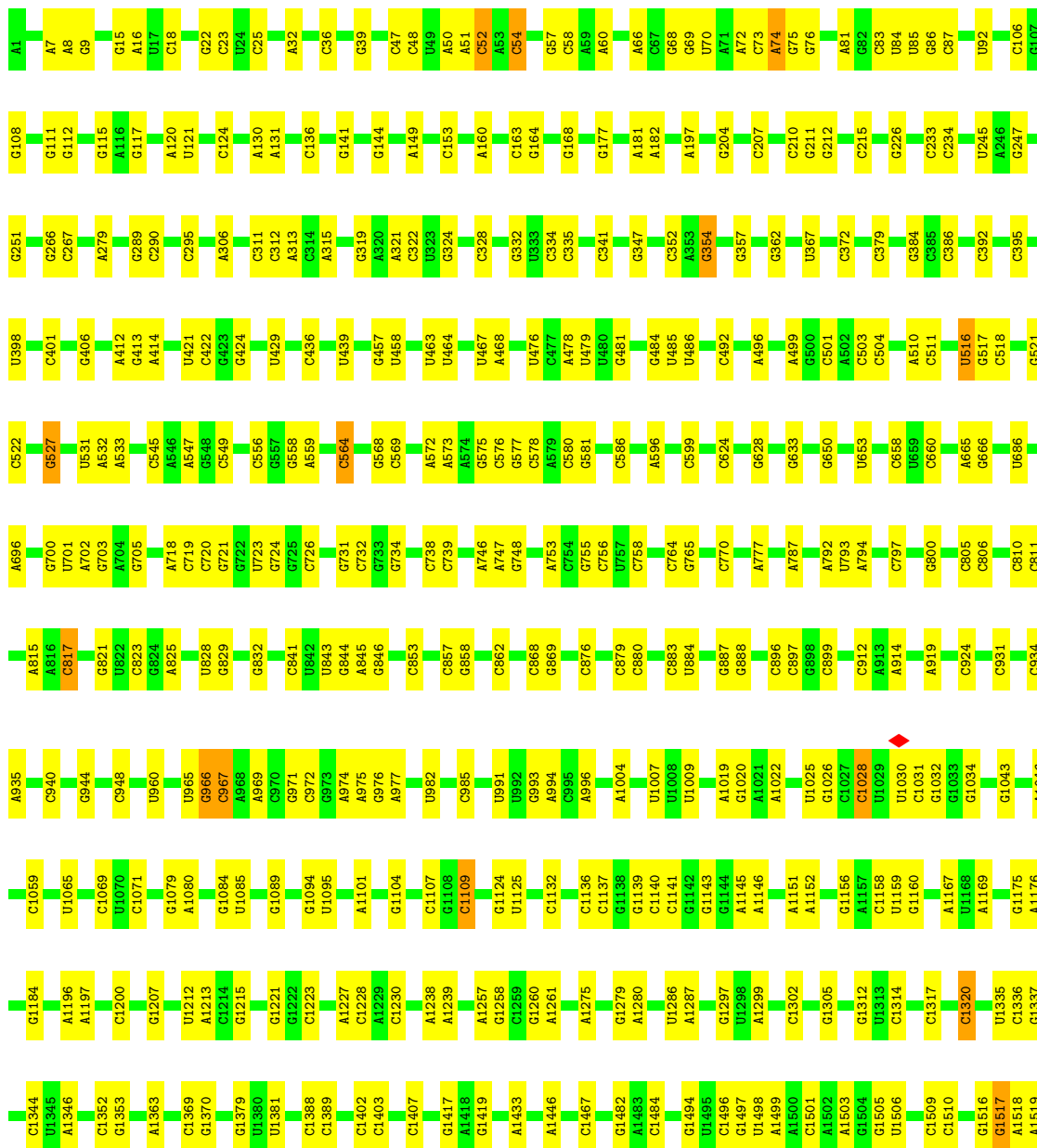
- Molecule 1: 23S rRNA



G1136	G1139	G1140	U1141	A1142	A1143	A1144	C1145	C1146	C1152	C1153	C1154	A1155	A1156	C1161	A1169	C1170	G1171	C1172	U1173	U1174	A1175	U1176	C1177	C1178	C1179	G1182	G1186	G1187	G1192	C1196	C1200	G1206	C1207	C1208	G1212	G1215	G1218	G1236	G1237	C1243	A1247								
G1250	C1251	A1253	G1256	C1257	C1261	A1264	A1265	C1266	C1270	G1271	A1272	C1278	G1283	C1289	C1290	C1291	C1297	C1298	C1299	C1300	A1301	C1305	C1306	U1313	C1314	C1319	C1320	A1321	C1322	C1323	U1329	C1330	C1335	G1339	U1340	G1341	C1345	C1348	C1349	C1350	U1352								
A1353	A1354	C1357	G1358	C1362	C1363	A1365	G1368	G1369	C1370	G1371	C1376	G1377	A1378	U1379	C1380	G1381	C1382	A1383	A1384	A1385	C1386	C1388	G1408	U1411	C1417	A1418	A1419	G1426	A1427	C1428	C1437	G1452	G1456	G1459	U1460	G1468	G1471	U1476	C1604	C1605	C1606	C1607	A1608	C1612					
A1494	A1503	A1504	A1508	A1509	G1510	G1514	A1515	A1524	G1529	A1530	A1531	A1532	A1535	C1536	G1537	C1558	U1559	C1564	C1565	A1566	C1567	G1568	A1569	A1570	A1571	C1577	U1578	A1579	A1580	A1583	G1587	G1588	U1589	A1590	C1604	C1605	C1606	C1607	A1608	C1612									
G1613	A1614	C1615	A1616	G1617	A1618	G1619	C1625	G1631	A1634	C1638	C1639	C1646	U1647	U1648	U1649	A1650	G1651	A1652	A1653	C1656	U1657	C1658	A1668	C1670	G1674	C1675	A1678	C1691	C1694	C1708	G1715	C1728	U1729	C1730	G1731	G1732	G1738	C1833	G1835	C1836	A1837	A1838	G1839						
C1760	C1761	C1764	C1768	U1769	G1770	A1771	A1772	A1773	C1774	U1782	A1783	C1788	A1789	C1790	A1791	G1792	C1793	A1794	C1795	C1800	A1801	A1802	A1803	C1804	A1805	C1806	A1807	A1808	A1809	A1810	G1811	G1814	A1815	C1832	G1833	G1835	C1836	A1837	A1838	G1839									
C1843	C1844	A1847	A1848	A1853	G1857	A1858	G1862	U1865	C1868	G1869	C1870	A1871	A1872	G1873	C1879	G1888	C1893	G1896	G1897	C1902	C1905	G1906	G1907	U1911	A1912	A1913	C1914	3TD1915	A1916	U1917	U1923	C1924	G1929	G1930	C1934	G1935	A1936	A1937	A1938	U1939	C1947								
G1950	U1955	U1956	C1957	C1958	C1961	C1962	C1967	A1970	U1971	U1972	G1973	C1974	A1977	C1985	C1986	G1989	C1990	U1991	U1992	U1993	C1994	U1995	C1996	C1997	A1998	C1999	C2000	C2001	C2002	C2006	U2007	C2008	A2009	G2012	A2013	A2014	U2022	C2023	G2024	C2025	A2030	A2031	G2032	A2033	C2036				
A2042	C2043	C2044	C2045	C2046	C2047	C2050	A2051	A2052	C2053	A2054	C2055	C2056	A2060	G2061	A2062	C2063	C2064	C2065	C2066	C2069	C2072	C2073	C2078	C2089	C2090	C2091	U2092	C2093	A2094	A2095	C2100	A2101	C2102	C2103	C2104	C2107	C2110	U2111	G2112	U2113	A2114	G2115	C2116	A2117	U2118	A2119	G2120	U2122	
G2125	A2126	G2127	G2128	U2131	U2132	G2133	A2134	U2137	G2138	U2139	G2140	G2141	A2142	C2143	G2144	C2145	C2146	A2147	A2158	G2159	G2162	A2163	C2164	C2165	U2166	U2167	G2168	A2169	A2170	A2171	U2172	A2173	C2178	C2179	U2180	U2181	U2182	A2183	G2189	C2190	A2191	U2192	C2193	U2194	U2195	A2198	G2204	A2211	C2214
A2225	C2226	U2229	U2230	U2231	C2232	G2237	G2238	G2239	U2243	U2244	C2248	U2249	G2250	G2251	C2254	C2258	U2259	C2260	C2261	U2262	C2263	C2264	U2265	A2266	A2274	A2278	A2281	C2282	C2283	A2284	C2285	G2286	A2287	A2288	U2305	C2306	G2307	G2308	A2309	A2314	A2425	A2426	G2427	G2428	G2429	A2430	U2431	C2326	
A2327	C2332	A2333	U2334	A2335	A2336	C2339	G2345	A2346	C2347	C2350	C2351	G2357	A2358	C2359	U2360	C2361	C2362	C2363	C2364	C2365	C2368	C2374	G2375	A2376	C2380	A2381	G2382	G2383	U2384	C2385	U2402	C2403	U2404	G2405	A2406	G2415	C2416	C2417	U2423	C2424	A2425	A2426	G2427	G2428	G2429	A2430	U2431	U2511	
A2434	A2435	C2440	U2441	C2442	C2443	G2444	C2445	G2446	A2448	A2451	C2452	A2453	G2454	C2455	U2457	G2458	A2459	C2462	C2465	C2466	C2467	A2468	G2469	G2470	C2475	A2476	U2477	A2478	U2479	C2480	G2481	C2486	C2487	C2488	C2497	C2498	C2499	U2500	C2501	G2502	A2503	A2504	A2505	A2506	C2507	C2510	U2511		
C2513	U2514	C2515	A2516	C2517	A2518	U2519	C2520	C2521	G2526	G2527	C2528	G2535	C2538	C2539	C2540	A2541	A2542	A2547	G2550	C2551	U2552	G2553	U2554	C2558	C2559	A2564	A2565	A2566	G2567	C2572	C2573	G2574	C2575	U2579	U2580	G2583	U2586	A2587	G2588	A2589	A2590	C2591	C2594	C2597					

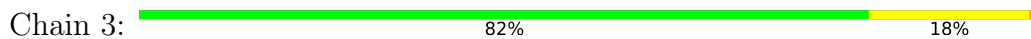


• Molecule 2: 16S rRNA

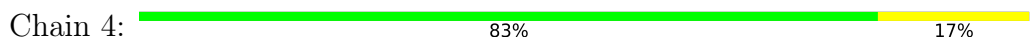




- Molecule 3: 5S rRNA



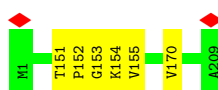
- Molecule 4: mRNA



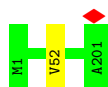
- Molecule 5: 50S ribosomal protein L2



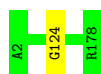
- Molecule 6: 50S ribosomal protein L3



- Molecule 7: 50S ribosomal protein L4



- Molecule 8: 50S ribosomal protein L5

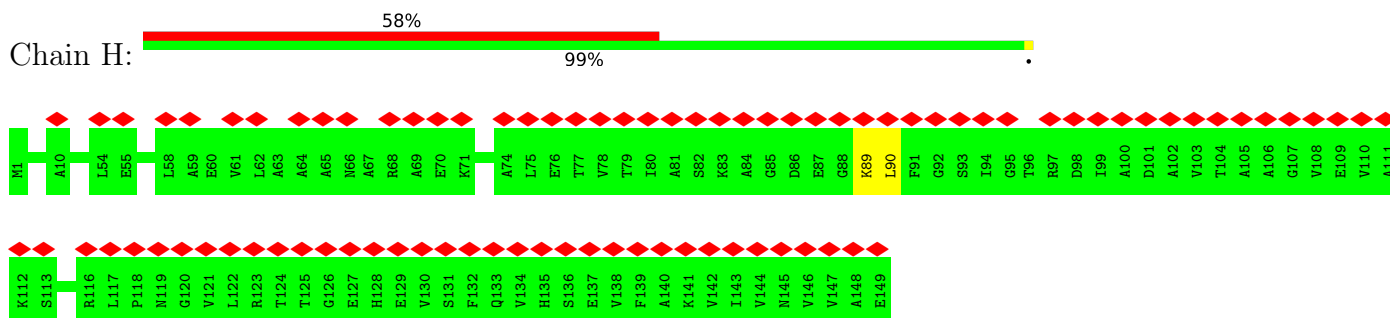


- Molecule 9: 50S ribosomal protein L6





- Molecule 10: 50S ribosomal protein L9



- Molecule 11: 50S ribosomal protein L13

Chain I: 100%

There are no outlier residues recorded for this chain.

- Molecule 12: 50S ribosomal protein L14

Chain J: 98%



- Molecule 13: 50S ribosomal protein L15

Chain K: 99%



- Molecule 14: 50S ribosomal protein L16

Chain L: 99%



- Molecule 15: 50S ribosomal protein L17

Chain M: 99%



- Molecule 16: 50S ribosomal protein L18

Chain N:  100%

There are no outlier residues recorded for this chain.

- Molecule 17: 50S ribosomal protein L19

Chain O:  97%



- Molecule 18: 50S ribosomal protein L20

Chain P:  100%



- Molecule 19: 50S ribosomal protein L21

Chain Q:  98%



- Molecule 20: 50S ribosomal protein L22

Chain R:  97%



- Molecule 21: 50S ribosomal protein L23

Chain S:  99%



- Molecule 22: 50S ribosomal protein L24

Chain T:  100%

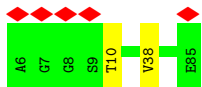
There are no outlier residues recorded for this chain.

- Molecule 23: 50S ribosomal protein L25

Chain U:  100%

There are no outlier residues recorded for this chain.

- Molecule 24: 50S ribosomal protein L27

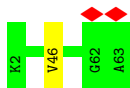


- Molecule 25: 50S ribosomal protein L28



There are no outlier residues recorded for this chain.

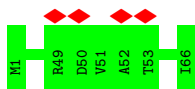
- Molecule 26: 50S ribosomal protein L29



- Molecule 27: 50S ribosomal protein L30



- Molecule 28: 50S ribosomal protein L31



- Molecule 29: 50S ribosomal protein L32



- Molecule 30: 50S ribosomal protein L33





- Molecule 31: 50S ribosomal protein L34

Chain c:  100%



- Molecule 32: 50S ribosomal protein L35

Chain d:  97%



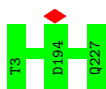
- Molecule 33: 50S ribosomal protein L36

Chain e:  100%



- Molecule 34: 30S ribosomal protein S2

Chain f:  100%



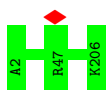
- Molecule 35: 30S ribosomal protein S3

Chain g:  100%



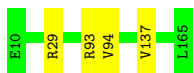
- Molecule 36: 30S ribosomal protein S4

Chain h:  100%



- Molecule 37: 30S ribosomal protein S5

Chain i:  97%



- Molecule 38: 30S ribosomal protein S6

Chain j:  99%



- Molecule 39: 30S ribosomal protein S7

Chain k:  100%

There are no outlier residues recorded for this chain.

- Molecule 40: 30S ribosomal protein S8

Chain l:  100%

There are no outlier residues recorded for this chain.

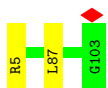
- Molecule 41: 30S ribosomal protein S9

Chain m:  99%



- Molecule 42: 30S ribosomal protein S10

Chain n:  98%



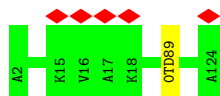
- Molecule 43: 30S ribosomal protein S11

Chain o:  99%



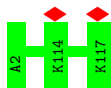
- Molecule 44: 30S ribosomal protein S12

Chain p:  99%



- Molecule 45: 30S ribosomal protein S13

Chain q: 100%



- Molecule 46: 30S ribosomal protein S14

Chain r: 100%

There are no outlier residues recorded for this chain.

- Molecule 47: 30S ribosomal protein S15

Chain s: 100%

There are no outlier residues recorded for this chain.

- Molecule 48: 30S ribosomal protein S16

Chain t: 100%

There are no outlier residues recorded for this chain.

- Molecule 49: 30S ribosomal protein S17

Chain u: 100%



- Molecule 50: 30S ribosomal protein S18

Chain v: 100%

There are no outlier residues recorded for this chain.

- Molecule 51: 30S ribosomal protein S19

Chain w: 99%



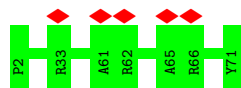
- Molecule 52: 30S ribosomal protein S20

Chain x:  98%



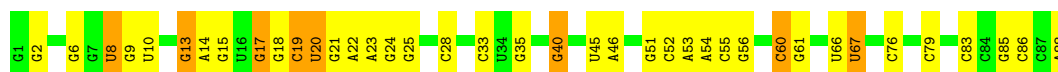
- Molecule 53: 30S ribosomal protein S21

Chain y:  7% 100%




- Molecule 54: tRNA-Ser

Chain z:  56% 35% 9%



- Molecule 55: CspA transcriptional activator

Chain B:  19% 89% 11%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	44182	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	2.2	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	75000	Depositor
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	0.119	Depositor
Minimum map value	-0.042	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.008	Depositor
Recommended contour level	0.02	Depositor
Map size (\AA)	428.00003, 428.00003, 428.00003	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.07, 1.07, 1.07	Depositor

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: 1MG, MA6, G7M, UR3, 2MA, MG, 6MZ, 3TD, OMC, OMG, PSU, 4OC, 5MC, 5MU, FME, 2MG, ZN, OMU, 0TD

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	1	1.78	464/69286 (0.7%)	1.30	284/108087 (0.3%)
2	2	1.57	104/36590 (0.3%)	1.23	64/57074 (0.1%)
3	3	1.52	4/2872 (0.1%)	1.21	4/4478 (0.1%)
4	4	1.38	1/139 (0.7%)	1.12	0/214
5	C	1.18	4/2121 (0.2%)	0.73	0/2852
6	D	1.18	2/1586 (0.1%)	0.72	0/2134
7	E	1.06	1/1571 (0.1%)	0.68	0/2113
8	F	0.80	0/1434	0.67	0/1926
9	G	0.77	0/1333	0.66	0/1805
10	H	0.57	0/1122	0.77	0/1515
11	I	1.14	0/1152	0.70	0/1551
12	J	1.12	1/955 (0.1%)	0.73	0/1279
13	K	1.11	1/1062 (0.1%)	0.77	0/1413
14	L	1.10	0/1093	0.69	0/1460
15	M	1.12	0/964	0.72	0/1289
16	N	0.95	0/902	0.70	0/1209
17	O	1.15	2/929 (0.2%)	0.68	1/1242 (0.1%)
18	P	1.27	0/960	0.73	0/1278
19	Q	1.13	0/829	0.69	0/1107
20	R	1.15	3/864 (0.3%)	0.71	0/1156
21	S	1.07	0/752	0.68	0/1005
22	T	0.90	0/796	0.62	0/1062
23	U	0.96	0/766	0.68	0/1025
24	V	1.13	1/608 (0.2%)	0.71	0/804
25	W	1.08	0/635	0.69	0/848
26	X	0.86	1/502 (0.2%)	0.70	0/667
27	Y	1.02	0/452	0.69	0/605
28	Z	0.66	0/531	0.63	0/709
29	a	1.09	1/450 (0.2%)	0.72	0/599
30	b	0.95	0/433	0.65	0/576
31	c	1.20	0/380	0.74	0/498

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	d	1.15	1/513 (0.2%)	0.71	0/676
33	e	1.15	0/303	0.69	0/397
34	f	0.69	0/1791	0.64	0/2413
35	g	0.90	0/1663	0.66	0/2241
36	h	0.88	0/1665	0.65	0/2227
37	i	1.03	2/1165 (0.2%)	0.74	0/1568
38	j	0.82	0/867	0.66	0/1171
39	k	0.75	0/1195	0.66	0/1602
40	l	0.98	0/989	0.67	0/1326
41	m	0.86	0/1034	0.73	0/1375
42	n	0.76	0/800	0.70	0/1082
43	o	0.86	0/893	0.67	0/1205
44	p	1.05	0/960	0.74	0/1286
45	q	0.82	0/909	0.68	0/1215
46	r	0.88	0/817	0.68	0/1088
47	s	0.86	0/722	0.67	0/964
48	t	0.96	0/659	0.68	0/884
49	u	0.87	0/657	0.67	0/881
50	v	0.86	0/553	0.71	0/743
51	w	0.78	0/680	0.67	0/915
52	x	0.84	0/675	0.71	0/895
53	y	0.73	0/597	0.62	0/792
54	z	1.50	13/2062 (0.6%)	1.53	27/3208 (0.8%)
55	B	0.56	0/200	0.86	0/267
All	All	1.53	606/156438 (0.4%)	1.16	380/234001 (0.2%)

All (606) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
54	z	20	U	C2-N3	15.39	1.48	1.37
54	z	20	U	C5-C6	14.07	1.46	1.34
54	z	9	G	OP3-P	-11.48	1.47	1.61
54	z	20	U	N1-C2	10.20	1.47	1.38
1	1	565	C	N1-C6	-8.15	1.32	1.37
54	z	67	U	OP3-P	-8.11	1.51	1.61
1	1	1376	C	N1-C6	-8.10	1.32	1.37
1	1	2499	C	N1-C6	-8.01	1.32	1.37
54	z	20	U	OP3-P	-8.00	1.51	1.61
1	1	2512	C	N1-C6	-7.88	1.32	1.37
1	1	673	C	N1-C6	-7.71	1.32	1.37
1	1	2681	C	N1-C6	-7.67	1.32	1.37
1	1	815	C	N1-C6	-7.65	1.32	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	1571	A	N9-C4	-7.62	1.33	1.37
1	1	1832	C	N1-C6	-7.59	1.32	1.37
1	1	2065	C	N1-C6	-7.59	1.32	1.37
54	z	20	U	N3-C4	7.51	1.45	1.38
1	1	678	C	N1-C6	-7.48	1.32	1.37
1	1	672	C	N1-C6	-7.38	1.32	1.37
1	1	1790	C	N1-C6	-7.36	1.32	1.37
1	1	786	C	N1-C6	-7.33	1.32	1.37
1	1	2551	C	N1-C6	-7.32	1.32	1.37
1	1	564	C	N1-C6	-7.30	1.32	1.37
1	1	1986	C	N1-C6	-7.29	1.32	1.37
54	z	8	U	OP3-P	-7.26	1.52	1.61
1	1	1298	C	N1-C6	-7.24	1.32	1.37
1	1	2050	C	N1-C6	-7.15	1.32	1.37
1	1	2612	C	N1-C6	-7.15	1.32	1.37
1	1	2064	C	N1-C6	-7.14	1.32	1.37
1	1	732	C	N1-C6	-7.11	1.32	1.37
1	1	796	C	N1-C6	-7.09	1.32	1.37
1	1	2066	C	N1-C6	-7.08	1.32	1.37
1	1	787	C	N1-C6	-7.05	1.32	1.37
2	2	880	C	N1-C6	-7.05	1.32	1.37
1	1	679	C	N1-C6	-7.04	1.32	1.37
1	1	581	C	N1-C6	-7.04	1.32	1.37
1	1	2540	C	N1-C6	-7.03	1.32	1.37
1	1	986	C	N1-C6	-7.03	1.32	1.37
1	1	1934	C	N1-C6	-7.00	1.32	1.37
1	1	2091	C	N1-C6	-6.99	1.32	1.37
1	1	2591	C	N1-C6	-6.94	1.32	1.37
1	1	2264	C	N1-C6	-6.92	1.32	1.37
1	1	987	C	N1-C6	-6.92	1.33	1.37
2	2	1501	C	N1-C6	-6.88	1.33	1.37
2	2	758	C	N1-C6	-6.88	1.33	1.37
1	1	1261	C	N1-C6	-6.87	1.33	1.37
1	1	1999	C	N1-C6	-6.86	1.33	1.37
1	1	1658	C	N1-C6	-6.85	1.33	1.37
1	1	964	C	N1-C6	-6.82	1.33	1.37
1	1	2594	C	N1-C6	-6.81	1.33	1.37
1	1	2443	C	N1-C6	-6.79	1.33	1.37
1	1	691	C	N1-C6	-6.79	1.33	1.37
1	1	1363	C	N1-C6	-6.78	1.33	1.37
1	1	1612	C	N1-C6	-6.78	1.33	1.37
1	1	671	C	N1-C6	-6.77	1.33	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	2008	C	N1-C6	-6.77	1.33	1.37
2	2	879	C	N1-C6	-6.77	1.33	1.37
2	2	1230	C	N1-C6	-6.77	1.33	1.37
2	2	810	C	N1-C6	-6.73	1.33	1.37
1	1	2000	C	N1-C6	-6.73	1.33	1.37
1	1	398	C	N1-C6	-6.72	1.33	1.37
1	1	944	C	N1-C6	-6.71	1.33	1.37
1	1	1152	C	N1-C6	-6.71	1.33	1.37
1	1	1006	C	N1-C6	-6.69	1.33	1.37
1	1	1291	C	N1-C6	-6.69	1.33	1.37
1	1	1822	C	N1-C6	-6.69	1.33	1.37
1	1	946	C	N1-C6	-6.66	1.33	1.37
1	1	1905	C	N1-C6	-6.65	1.33	1.37
1	1	2260	C	N1-C6	-6.64	1.33	1.37
1	1	2006	C	N1-C6	-6.62	1.33	1.37
1	1	1795	C	N1-C6	-6.62	1.33	1.37
1	1	2496	C	N1-C6	-6.62	1.33	1.37
1	1	2717	C	N1-C6	-6.61	1.33	1.37
1	1	698	C	N1-C6	-6.59	1.33	1.37
1	1	239	C	N1-C6	-6.59	1.33	1.37
1	1	584	C	N1-C6	-6.59	1.33	1.37
1	1	635	C	N1-C6	-6.58	1.33	1.37
2	2	16	A	N9-C4	-6.56	1.33	1.37
1	1	2426	A	N9-C4	-6.56	1.33	1.37
1	1	1639	C	N1-C6	-6.54	1.33	1.37
1	1	1974	C	N1-C6	-6.53	1.33	1.37
1	1	2456	C	N1-C6	-6.53	1.33	1.37
2	2	719	C	N1-C6	-6.53	1.33	1.37
4	4	5	C	N1-C6	-6.52	1.33	1.37
1	1	1958	C	N1-C6	-6.52	1.33	1.37
1	1	1947	C	N1-C6	-6.51	1.33	1.37
1	1	968	C	N1-C6	-6.51	1.33	1.37
1	1	634	C	N1-C6	-6.50	1.33	1.37
1	1	1351	C	N1-C6	-6.50	1.33	1.37
1	1	817	C	N1-C6	-6.47	1.33	1.37
1	1	1638	C	N1-C6	-6.47	1.33	1.37
1	1	1793	C	N1-C6	-6.47	1.33	1.37
1	1	692	C	N1-C6	-6.46	1.33	1.37
1	1	782	A	N9-C4	-6.46	1.33	1.37
1	1	1007	C	N1-C6	-6.44	1.33	1.37
1	1	823	C	N1-C6	-6.41	1.33	1.37
1	1	2045	C	N1-C6	-6.41	1.33	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	840	C	N1-C6	-6.40	1.33	1.37
1	1	1604	C	N1-C6	-6.40	1.33	1.37
1	1	523	C	N1-C6	-6.38	1.33	1.37
1	1	2515	C	N1-C6	-6.37	1.33	1.37
1	1	2730	C	N1-C6	-6.37	1.33	1.37
2	2	811	C	N1-C6	-6.36	1.33	1.37
1	1	1370	C	N1-C6	-6.36	1.33	1.37
1	1	806	C	N1-C6	-6.35	1.33	1.37
1	1	1161	C	N1-C6	-6.34	1.33	1.37
1	1	2442	C	N1-C6	-6.34	1.33	1.37
1	1	238	C	N1-C6	-6.32	1.33	1.37
1	1	601	C	N1-C6	-6.32	1.33	1.37
1	1	414	C	N1-C6	-6.31	1.33	1.37
1	1	1257	C	N1-C6	-6.29	1.33	1.37
1	1	2715	C	N1-C6	-6.29	1.33	1.37
1	1	516	C	N1-C6	-6.29	1.33	1.37
1	1	2716	C	N1-C6	-6.28	1.33	1.37
1	1	772	C	N1-C6	-6.25	1.33	1.37
1	1	2704	C	N1-C6	-6.24	1.33	1.37
1	1	951	C	N1-C6	-6.24	1.33	1.37
1	1	814	C	N1-C6	-6.23	1.33	1.37
1	1	2063	C	N1-C6	-6.22	1.33	1.37
1	1	2521	C	N1-C6	-6.22	1.33	1.37
1	1	32	C	N1-C6	-6.21	1.33	1.37
1	1	2738	A	N9-C4	-6.21	1.34	1.37
1	1	2841	C	N1-C6	-6.21	1.33	1.37
2	2	23	C	N1-C6	-6.21	1.33	1.37
1	1	2350	C	N1-C6	-6.21	1.33	1.37
1	1	2501	C	N1-C6	-6.21	1.33	1.37
1	1	2427	C	N1-C6	-6.19	1.33	1.37
1	1	2055	C	N1-C6	-6.19	1.33	1.37
1	1	1270	C	N1-C6	-6.17	1.33	1.37
1	1	731	C	N1-C6	-6.17	1.33	1.37
1	1	2368	C	N1-C6	-6.16	1.33	1.37
2	2	1389	C	N1-C6	-6.16	1.33	1.37
20	R	50	VAL	CB-CG1	-6.16	1.40	1.52
1	1	1564	C	N1-C6	-6.16	1.33	1.37
54	z	20	U	C4-O4	-6.15	1.18	1.23
1	1	1153	C	N1-C6	-6.14	1.33	1.37
1	1	2510	C	N1-C6	-6.13	1.33	1.37
2	2	919	A	N9-C4	-6.13	1.34	1.37
1	1	2347	C	N1-C6	-6.12	1.33	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	2285	C	N1-C6	-6.11	1.33	1.37
2	2	1520	C	N1-C6	-6.11	1.33	1.37
1	1	1646	C	N1-C6	-6.09	1.33	1.37
1	1	2044	C	N1-C6	-6.09	1.33	1.37
1	1	531	C	N1-C6	-6.09	1.33	1.37
1	1	31	C	N1-C6	-6.08	1.33	1.37
1	1	246	C	N1-C6	-6.08	1.33	1.37
1	1	1606	C	N1-C6	-6.08	1.33	1.37
1	1	1675	C	N1-C6	-6.08	1.33	1.37
1	1	378	C	N1-C6	-6.07	1.33	1.37
1	1	1789	A	N9-C4	-6.07	1.34	1.37
1	1	2683	C	N1-C6	-6.07	1.33	1.37
1	1	2042	A	N9-C4	-6.07	1.34	1.37
2	2	311	C	N1-C6	-6.07	1.33	1.37
1	1	462	C	N1-C6	-6.06	1.33	1.37
1	1	2710	C	N1-C6	-6.06	1.33	1.37
1	1	527	C	N1-C6	-6.05	1.33	1.37
1	1	1985	C	N1-C6	-6.05	1.33	1.37
1	1	486	C	N1-C6	-6.03	1.33	1.37
2	2	1071	C	N1-C6	-6.03	1.33	1.37
2	2	868	C	N1-C6	-6.02	1.33	1.37
1	1	1354	A	N9-C4	-6.01	1.34	1.37
1	1	253	C	N1-C6	-6.00	1.33	1.37
1	1	2001	C	N1-C6	-6.00	1.33	1.37
1	1	758	C	N1-C6	-6.00	1.33	1.37
2	2	1496	C	N1-C6	-5.99	1.33	1.37
1	1	1760	C	N1-C6	-5.99	1.33	1.37
2	2	1509	C	N1-C6	-5.99	1.33	1.37
1	1	394	C	N1-C6	-5.99	1.33	1.37
1	1	992	C	N1-C6	-5.98	1.33	1.37
1	1	1656	C	N1-C6	-5.98	1.33	1.37
1	1	237	C	N1-C6	-5.98	1.33	1.37
1	1	2078	C	N1-C6	-5.98	1.33	1.37
1	1	2374	C	N1-C6	-5.98	1.33	1.37
2	2	924	C	N1-C6	-5.97	1.33	1.37
1	1	1305	C	N1-C6	-5.97	1.33	1.37
1	1	1957	C	N1-C6	-5.97	1.33	1.37
1	1	991	C	N1-C6	-5.97	1.33	1.37
1	1	1967	C	N1-C6	-5.96	1.33	1.37
1	1	2606	C	N1-C6	-5.96	1.33	1.37
1	1	1783	A	N9-C4	-5.95	1.34	1.37
1	1	2261	C	N1-C6	-5.95	1.33	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	660	C	N1-C6	-5.95	1.33	1.37
1	1	737	C	N1-C6	-5.95	1.33	1.37
1	1	676	A	N9-C4	-5.94	1.34	1.37
1	1	211	C	N1-C6	-5.93	1.33	1.37
1	1	804	A	N9-C4	-5.93	1.34	1.37
1	1	947	A	N9-C4	-5.93	1.34	1.37
6	D	155	VAL	CB-CG2	-5.93	1.40	1.52
1	1	795	C	N1-C6	-5.93	1.33	1.37
1	1	2118	U	O3'-P	-5.93	1.54	1.61
1	1	595	C	N1-C6	-5.93	1.33	1.37
1	1	1187	G	N9-C4	-5.93	1.33	1.38
1	1	1140	C	N1-C6	-5.92	1.33	1.37
1	1	583	G	N9-C8	-5.92	1.33	1.37
1	1	740	C	N1-C6	-5.92	1.33	1.37
1	1	461	C	N1-C6	-5.92	1.33	1.37
1	1	1833	C	N1-C6	-5.91	1.33	1.37
1	1	1802	A	N9-C4	-5.91	1.34	1.37
1	1	2678	C	N1-C6	-5.91	1.33	1.37
1	1	2601	C	N1-C6	-5.91	1.33	1.37
2	2	756	C	N1-C6	-5.90	1.33	1.37
1	1	1264	A	N9-C4	-5.90	1.34	1.37
1	1	2723	C	N1-C6	-5.90	1.33	1.37
1	1	2539	C	N1-C6	-5.89	1.33	1.37
2	2	18	C	N1-C6	-5.89	1.33	1.37
1	1	1208	C	N1-C6	-5.89	1.33	1.37
1	1	2263	C	N1-C6	-5.89	1.33	1.37
1	1	865	C	N1-C6	-5.88	1.33	1.37
1	1	2626	C	N1-C6	-5.88	1.33	1.37
2	2	401	C	N1-C6	-5.88	1.33	1.37
2	2	1433	A	N9-C4	-5.88	1.34	1.37
1	1	2248	C	N1-C6	-5.87	1.33	1.37
2	2	720	C	N1-C6	-5.85	1.33	1.37
1	1	1837	C	N1-C6	-5.85	1.33	1.37
1	1	624	C	N1-C6	-5.83	1.33	1.37
1	1	249	C	N1-C6	-5.83	1.33	1.37
1	1	445	C	N1-C6	-5.83	1.33	1.37
1	1	1670	C	N1-C6	-5.83	1.33	1.37
1	1	2520	C	N1-C6	-5.83	1.33	1.37
1	1	821	A	N9-C4	-5.83	1.34	1.37
1	1	912	C	N1-C6	-5.83	1.33	1.37
1	1	867	C	N1-C6	-5.82	1.33	1.37
1	1	2359	C	N1-C6	-5.82	1.33	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	1278	C	N1-C6	-5.82	1.33	1.37
2	2	912	C	N1-C6	-5.82	1.33	1.37
2	2	290	C	N1-C6	-5.81	1.33	1.37
2	2	25	C	N1-C6	-5.81	1.33	1.37
1	1	2619	C	N1-C6	-5.81	1.33	1.37
2	2	549	C	N1-C6	-5.81	1.33	1.37
1	1	672	C	C4-C5	-5.80	1.38	1.43
1	1	1768	C	N1-C6	-5.80	1.33	1.37
1	1	2853	C	N1-C6	-5.80	1.33	1.37
1	1	800	A	N9-C4	-5.80	1.34	1.37
1	1	1752	C	N1-C6	-5.80	1.33	1.37
1	1	1990	C	N1-C6	-5.80	1.33	1.37
2	2	931	C	N1-C6	-5.80	1.33	1.37
2	2	1344	C	N1-C6	-5.79	1.33	1.37
1	1	2497	A	N9-C4	-5.79	1.34	1.37
1	1	2014	A	N9-C4	-5.78	1.34	1.37
2	2	295	C	N1-C6	-5.78	1.33	1.37
1	1	801	G	N9-C4	-5.78	1.33	1.38
1	1	1556	C	N1-C6	-5.78	1.33	1.37
1	1	838	C	N1-C6	-5.77	1.33	1.37
1	1	1121	C	N1-C6	-5.77	1.33	1.37
1	1	2538	C	N1-C6	-5.77	1.33	1.37
1	1	1617	C	N1-C6	-5.77	1.33	1.37
1	1	1652	A	N9-C4	-5.76	1.34	1.37
1	1	1357	C	N1-C6	-5.75	1.33	1.37
1	1	994	C	N1-C6	-5.75	1.33	1.37
1	1	1794	A	N9-C4	-5.75	1.34	1.37
1	1	2824	C	N1-C6	-5.75	1.33	1.37
1	1	922	C	N1-C6	-5.75	1.33	1.37
1	1	1805	A	N9-C4	-5.74	1.34	1.37
2	2	1510	C	N1-C6	-5.74	1.33	1.37
1	1	650	C	N1-C6	-5.73	1.33	1.37
1	1	1668	A	N9-C4	-5.73	1.34	1.37
1	1	2051	A	N9-C4	-5.73	1.34	1.37
1	1	727	A	N9-C4	-5.72	1.34	1.37
1	1	1200	C	N1-C6	-5.72	1.33	1.37
1	1	2676	C	N1-C6	-5.72	1.33	1.37
2	2	1200	C	N1-C6	-5.72	1.33	1.37
1	1	2517	C	N1-C6	-5.72	1.33	1.37
1	1	2226	C	N1-C6	-5.72	1.33	1.37
1	1	2364	C	N1-C6	-5.72	1.33	1.37
1	1	1994	C	N1-C6	-5.72	1.33	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	73	A	N9-C4	-5.71	1.34	1.37
1	1	192	C	N1-C6	-5.71	1.33	1.37
1	1	1362	C	N1-C6	-5.71	1.33	1.37
2	2	586	C	N1-C6	-5.71	1.33	1.37
1	1	1902	C	N1-C6	-5.71	1.33	1.37
1	1	2616	C	N1-C6	-5.70	1.33	1.37
1	1	581	C	C4-C5	-5.70	1.38	1.43
1	1	457	A	N9-C4	-5.70	1.34	1.37
1	1	920	A	N9-C4	-5.70	1.34	1.37
1	1	1265	A	N9-C4	-5.70	1.34	1.37
1	1	2073	C	N1-C6	-5.69	1.33	1.37
2	2	1059	C	N1-C6	-5.68	1.33	1.37
2	2	335	C	N1-C6	-5.67	1.33	1.37
5	C	221	ARG	CB-CG	-5.67	1.37	1.52
1	1	509	C	N1-C6	-5.67	1.33	1.37
1	1	1251	C	N1-C6	-5.67	1.33	1.37
1	1	2699	C	N1-C6	-5.67	1.33	1.37
1	1	837	C	N1-C6	-5.67	1.33	1.37
1	1	1936	A	N9-C4	-5.67	1.34	1.37
1	1	1350	C	N1-C6	-5.67	1.33	1.37
1	1	2065	C	C4-C5	-5.67	1.38	1.43
54	z	33	C	N1-C6	-5.66	1.33	1.37
1	1	816	C	N1-C6	-5.65	1.33	1.37
1	1	2830	C	N1-C6	-5.65	1.33	1.37
1	1	2025	C	N1-C6	-5.65	1.33	1.37
1	1	765	C	N1-C6	-5.65	1.33	1.37
1	1	2072	C	N1-C6	-5.65	1.33	1.37
1	1	1838	C	N1-C6	-5.65	1.33	1.37
1	1	413	C	N1-C6	-5.64	1.33	1.37
1	1	2009	A	N9-C4	-5.64	1.34	1.37
1	1	1815	A	N9-C4	-5.64	1.34	1.37
1	1	2598	A	N9-C4	-5.64	1.34	1.37
20	R	47	VAL	CB-CG1	-5.64	1.41	1.52
1	1	1568	G	N9-C4	-5.63	1.33	1.38
1	1	1806	C	N1-C6	-5.63	1.33	1.37
1	1	195	A	N9-C4	-5.63	1.34	1.37
1	1	393	C	N1-C6	-5.63	1.33	1.37
2	2	1223	C	N1-C6	-5.63	1.33	1.37
1	1	1961	C	N1-C6	-5.63	1.33	1.37
1	1	2053	G	N9-C8	-5.63	1.33	1.37
1	1	2502	G	N9-C4	-5.63	1.33	1.38
1	1	587	C	N1-C6	-5.62	1.33	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	334	C	N1-C6	-5.62	1.33	1.37
1	1	1977	A	N9-C4	-5.62	1.34	1.37
1	1	1823	G	N9-C8	-5.62	1.33	1.37
2	2	313	A	N9-C4	-5.61	1.34	1.37
1	1	2815	C	N1-C6	-5.61	1.33	1.37
1	1	998	C	N1-C6	-5.61	1.33	1.37
1	1	2254	C	N1-C6	-5.61	1.33	1.37
2	2	726	C	N1-C6	-5.60	1.33	1.37
2	2	522	C	N1-C6	-5.60	1.33	1.37
1	1	1836	C	N1-C6	-5.60	1.33	1.37
32	d	58	VAL	CB-CG2	-5.60	1.41	1.52
1	1	1843	C	N1-C6	-5.60	1.33	1.37
2	2	797	C	N1-C6	-5.60	1.33	1.37
1	1	334	C	N1-C6	-5.59	1.33	1.37
1	1	201	C	N1-C6	-5.59	1.33	1.37
1	1	2036	C	N1-C6	-5.59	1.33	1.37
1	1	2452	C	N1-C6	-5.58	1.33	1.37
1	1	948	C	N1-C6	-5.58	1.33	1.37
1	1	2465	C	N1-C6	-5.58	1.33	1.37
2	2	312	C	N1-C6	-5.58	1.33	1.37
1	1	2023	C	N1-C6	-5.58	1.33	1.37
1	1	2006	C	C4-C5	-5.58	1.38	1.43
2	2	1069	C	N1-C6	-5.58	1.33	1.37
1	1	236	C	N1-C6	-5.57	1.33	1.37
1	1	689	A	N9-C4	-5.57	1.34	1.37
1	1	1819	A	N9-C4	-5.57	1.34	1.37
24	V	38	VAL	CB-CG1	-5.56	1.41	1.52
1	1	2772	C	N1-C6	-5.55	1.33	1.37
2	2	823	C	N1-C6	-5.55	1.33	1.37
1	1	2089	C	N1-C6	-5.55	1.33	1.37
1	1	517	C	N1-C6	-5.55	1.33	1.37
2	2	897	C	N1-C6	-5.55	1.33	1.37
1	1	2232	C	N1-C6	-5.54	1.33	1.37
1	1	863	A	N9-C4	-5.54	1.34	1.37
1	1	1146	C	N1-C6	-5.54	1.33	1.37
1	1	2499	C	C5-C6	-5.54	1.29	1.34
1	1	1577	C	N1-C6	-5.53	1.33	1.37
54	z	20	U	C4-C5	5.52	1.48	1.43
1	1	2564	A	N9-C4	-5.52	1.34	1.37
1	1	2880	C	N1-C6	-5.52	1.33	1.37
1	1	680	C	N1-C6	-5.52	1.33	1.37
1	1	2047	C	N1-C6	-5.52	1.33	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	2486	C	N1-C6	-5.52	1.33	1.37
1	1	2579	C	N1-C6	-5.51	1.33	1.37
1	1	2620	C	N1-C6	-5.50	1.33	1.37
1	1	1804	C	N1-C6	-5.50	1.33	1.37
1	1	2358	A	N9-C4	-5.50	1.34	1.37
1	1	908	C	N1-C6	-5.50	1.33	1.37
1	1	2480	C	N1-C6	-5.50	1.33	1.37
1	1	1625	C	N1-C6	-5.50	1.33	1.37
1	1	198	C	C4-C5	-5.50	1.38	1.43
1	1	2440	C	N1-C6	-5.50	1.33	1.37
1	1	557	C	N1-C6	-5.50	1.33	1.37
1	1	1830	C	C4-C5	-5.50	1.38	1.43
1	1	2466	C	N1-C6	-5.50	1.33	1.37
1	1	1650	A	N9-C4	-5.49	1.34	1.37
1	1	751	A	N9-C4	-5.49	1.34	1.37
1	1	383	C	N1-C6	-5.49	1.33	1.37
2	2	738	C	N1-C6	-5.49	1.33	1.37
1	1	988	A	N9-C4	-5.48	1.34	1.37
1	1	475	C	N1-C6	-5.48	1.33	1.37
1	1	794	A	N9-C4	-5.48	1.34	1.37
2	2	1314	C	N1-C6	-5.47	1.33	1.37
1	1	1557	C	N1-C6	-5.47	1.33	1.37
2	2	341	C	N1-C6	-5.47	1.33	1.37
1	1	1810	A	N9-C4	-5.47	1.34	1.37
1	1	1708	C	N1-C6	-5.46	1.33	1.37
1	1	501	A	N9-C4	-5.46	1.34	1.37
1	1	687	C	N1-C6	-5.46	1.33	1.37
2	2	545	C	N1-C6	-5.46	1.33	1.37
1	1	337	C	N1-C6	-5.46	1.33	1.37
1	1	1565	C	N3-C4	-5.45	1.30	1.33
1	1	1005	C	N1-C6	-5.45	1.33	1.37
1	1	116	C	N1-C6	-5.44	1.33	1.37
5	C	162	VAL	CB-CG1	-5.44	1.41	1.52
1	1	1678	A	N9-C4	-5.44	1.34	1.37
1	1	1615	C	N1-C6	-5.44	1.33	1.37
1	1	1997	C	N1-C6	-5.44	1.33	1.37
1	1	2475	C	N1-C6	-5.44	1.33	1.37
1	1	1243	C	N1-C6	-5.43	1.33	1.37
2	2	770	C	N1-C6	-5.43	1.33	1.37
1	1	2230	G	N9-C8	-5.43	1.34	1.37
1	1	208	C	N1-C6	-5.43	1.33	1.37
1	1	780	G	N9-C4	-5.42	1.33	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	1694	C	N1-C6	-5.42	1.33	1.37
2	2	940	C	N1-C6	-5.42	1.33	1.37
1	1	2417	C	N1-C6	-5.42	1.33	1.37
1	1	2591	C	C4-C5	-5.40	1.38	1.43
7	E	52	VAL	CB-CG2	-5.40	1.41	1.52
1	1	583	G	N9-C4	-5.40	1.33	1.38
1	1	1319	C	N1-C6	-5.40	1.33	1.37
1	1	1348	C	N1-C6	-5.39	1.33	1.37
1	1	2468	A	N9-C4	-5.39	1.34	1.37
2	2	556	C	N1-C6	-5.39	1.33	1.37
2	2	1388	C	N1-C6	-5.39	1.33	1.37
1	1	194	G	N9-C8	-5.39	1.34	1.37
2	2	1080	A	N9-C4	-5.39	1.34	1.37
1	1	757	G	N9-C4	-5.39	1.33	1.38
3	3	97	C	N1-C6	-5.39	1.33	1.37
1	1	240	C	N1-C6	-5.38	1.33	1.37
1	1	2774	C	N1-C6	-5.38	1.33	1.37
2	2	985	C	N1-C6	-5.38	1.33	1.37
1	1	1427	A	N9-C4	-5.37	1.34	1.37
2	2	899	C	N1-C6	-5.37	1.33	1.37
2	2	1484	C	N1-C6	-5.37	1.33	1.37
1	1	1670	C	C4-C5	-5.37	1.38	1.43
1	1	1879	C	N1-C6	-5.36	1.33	1.37
2	2	732	C	N1-C6	-5.35	1.33	1.37
1	1	2675	A	N9-C4	-5.35	1.34	1.37
2	2	501	C	N1-C6	-5.34	1.33	1.37
3	3	90	C	N1-C6	-5.34	1.33	1.37
1	1	2771	C	N1-C6	-5.34	1.33	1.37
1	1	26	G	N9-C4	-5.34	1.33	1.38
1	1	1570	A	N9-C4	-5.34	1.34	1.37
1	1	806	C	C4-C5	-5.34	1.38	1.43
2	2	1109	C	N1-C6	-5.34	1.33	1.37
1	1	2332	C	N1-C6	-5.33	1.33	1.37
2	2	106	C	N1-C6	-5.33	1.33	1.37
1	1	1691	C	N1-C6	-5.32	1.33	1.37
3	3	91	C	N1-C6	-5.32	1.33	1.37
1	1	2559	C	N1-C6	-5.32	1.33	1.37
1	1	1550	C	N1-C6	-5.32	1.33	1.37
1	1	2274	A	N9-C4	-5.31	1.34	1.37
1	1	2500	U	N1-C6	-5.31	1.33	1.38
1	1	183	C	N1-C6	-5.30	1.33	1.37
1	1	2507	C	N1-C6	-5.30	1.33	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	883	C	N1-C6	-5.30	1.33	1.37
1	1	1143	A	C5-C6	-5.30	1.36	1.41
1	1	778	G	N9-C8	-5.30	1.34	1.37
1	1	1364	G	N9-C8	-5.30	1.34	1.37
1	1	2013	A	C6-N1	-5.30	1.31	1.35
2	2	580	C	N1-C6	-5.30	1.33	1.37
1	1	921	C	N1-C6	-5.29	1.33	1.37
1	1	2043	C	N1-C6	-5.29	1.33	1.37
1	1	1135	C	N1-C6	-5.29	1.33	1.37
1	1	1774	C	C4-C5	-5.28	1.38	1.43
1	1	2773	C	N1-C6	-5.28	1.33	1.37
17	O	61	VAL	CB-CG1	-5.28	1.41	1.52
2	2	599	C	N1-C6	-5.27	1.33	1.37
1	1	1614	A	N9-C4	-5.27	1.34	1.37
1	1	560	C	N1-C6	-5.26	1.33	1.37
1	1	1297	C	N1-C6	-5.26	1.33	1.37
2	2	36	C	N1-C6	-5.26	1.33	1.37
1	1	2575	C	N1-C6	-5.26	1.33	1.37
2	2	857	C	N1-C6	-5.26	1.33	1.37
1	1	1192	G	N9-C4	-5.25	1.33	1.38
2	2	379	C	N1-C6	-5.25	1.33	1.37
2	2	862	C	N1-C6	-5.25	1.33	1.37
1	1	621	A	N9-C4	-5.25	1.34	1.37
2	2	825	A	N9-C4	-5.25	1.34	1.37
1	1	835	C	N1-C6	-5.25	1.34	1.37
1	1	1323	C	N1-C6	-5.25	1.34	1.37
1	1	2715	C	C4-C5	-5.25	1.38	1.43
1	1	2813	A	N9-C4	-5.25	1.34	1.37
1	1	640	C	N1-C6	-5.24	1.34	1.37
1	1	1754	A	N9-C4	-5.24	1.34	1.37
1	1	788	A	N9-C4	-5.24	1.34	1.37
1	1	2722	G	N3-C4	-5.24	1.31	1.35
1	1	20	C	N1-C6	-5.23	1.34	1.37
1	1	668	A	N9-C4	-5.23	1.34	1.37
1	1	1386	C	N1-C6	-5.23	1.34	1.37
1	1	1893	C	N1-C6	-5.23	1.34	1.37
1	1	2719	G	N1-C2	-5.23	1.33	1.37
1	1	965	C	N1-C6	-5.22	1.34	1.37
2	2	564	C	N1-C6	-5.22	1.34	1.37
1	1	115	C	N1-C6	-5.22	1.34	1.37
1	1	1330	C	N1-C6	-5.22	1.34	1.37
54	z	35	G	N9-C4	-5.22	1.33	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	471	A	N9-C4	-5.22	1.34	1.37
1	1	2266	A	N9-C4	-5.21	1.34	1.37
37	i	137	VAL	CB-CG1	-5.21	1.42	1.52
2	2	696	A	N9-C4	-5.21	1.34	1.37
1	1	585	G	N9-C8	-5.20	1.34	1.37
2	2	1521	C	N1-C6	-5.20	1.34	1.37
1	1	1030	C	N1-C6	-5.20	1.34	1.37
2	2	817	C	N1-C6	-5.20	1.34	1.37
2	2	52	C	N1-C6	-5.20	1.34	1.37
54	z	83	C	N1-C6	-5.20	1.34	1.37
1	1	1771	C	N1-C6	-5.20	1.34	1.37
1	1	1853	A	N9-C4	-5.19	1.34	1.37
1	1	485	C	N1-C6	-5.19	1.34	1.37
2	2	853	C	N1-C6	-5.19	1.34	1.37
2	2	58	C	N1-C6	-5.19	1.34	1.37
2	2	503	C	N1-C6	-5.19	1.34	1.37
1	1	2459	A	N9-C4	-5.19	1.34	1.37
1	1	2590	A	N9-C4	-5.18	1.34	1.37
1	1	2863	C	N1-C6	-5.18	1.34	1.37
1	1	2636	C	N1-C6	-5.18	1.34	1.37
1	1	954	G	N9-C8	-5.18	1.34	1.37
1	1	1670	C	C4-N4	-5.18	1.29	1.33
29	a	3	VAL	CB-CG1	-5.17	1.42	1.52
1	1	2283	C	N1-C6	-5.17	1.34	1.37
1	1	1253	A	N9-C4	-5.17	1.34	1.37
1	1	449	A	N9-C4	-5.17	1.34	1.37
1	1	1306	C	N1-C6	-5.17	1.34	1.37
1	1	854	C	N1-C6	-5.17	1.34	1.37
1	1	2691	C	N1-C6	-5.17	1.34	1.37
1	1	853	C	N1-C6	-5.16	1.34	1.37
1	1	1996	C	N1-C6	-5.16	1.34	1.37
1	1	991	C	C4-C5	-5.16	1.38	1.43
1	1	2579	C	C4-C5	-5.16	1.38	1.43
1	1	1788	C	N1-C6	-5.16	1.34	1.37
2	2	896	C	N1-C6	-5.16	1.34	1.37
2	2	948	C	N1-C6	-5.16	1.34	1.37
1	1	995	C	N1-C6	-5.16	1.34	1.37
2	2	624	C	N1-C6	-5.16	1.34	1.37
1	1	2870	C	N1-C6	-5.15	1.34	1.37
13	K	60	ARG	C-N	-5.15	1.22	1.34
1	1	179	C	N1-C6	-5.15	1.34	1.37
2	2	504	C	N1-C6	-5.15	1.34	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	D	170	VAL	CB-CG2	-5.15	1.42	1.52
1	1	1790	C	C4-C5	-5.14	1.38	1.43
1	1	2600	A	N9-C4	-5.14	1.34	1.37
1	1	242	G	N9-C4	-5.14	1.33	1.38
1	1	1145	C	N1-C6	-5.14	1.34	1.37
5	C	228	VAL	CB-CG1	-5.14	1.42	1.52
1	1	2550	G	N9-C8	-5.14	1.34	1.37
1	1	2258	C	N1-C6	-5.13	1.34	1.37
1	1	2362	C	N1-C6	-5.13	1.34	1.37
1	1	677	A	N9-C4	-5.13	1.34	1.37
1	1	2565	A	N9-C4	-5.13	1.34	1.37
2	2	806	C	N1-C6	-5.13	1.34	1.37
2	2	1352	C	N1-C6	-5.13	1.34	1.37
1	1	469	G	C6-N1	-5.13	1.35	1.39
1	1	740	C	C4-C5	-5.13	1.38	1.43
1	1	939	G	N9-C8	-5.13	1.34	1.37
17	O	47	VAL	CB-CG2	-5.12	1.42	1.52
1	1	806	C	N3-C4	-5.12	1.30	1.33
20	R	98	LYS	CA-CB	-5.12	1.42	1.53
1	1	1335	C	N1-C6	-5.12	1.34	1.37
2	2	578	C	N1-C6	-5.12	1.34	1.37
1	1	182	A	N9-C4	-5.12	1.34	1.37
2	2	233	C	N1-C6	-5.12	1.34	1.37
2	2	876	C	N1-C6	-5.12	1.34	1.37
1	1	812	C	N1-C6	-5.11	1.34	1.37
1	1	469	G	N1-C2	-5.11	1.33	1.37
1	1	47	C	N1-C6	-5.11	1.34	1.37
1	1	1385	A	N9-C4	-5.11	1.34	1.37
1	1	2036	C	C4-C5	-5.11	1.38	1.43
2	2	54	C	N1-C6	-5.11	1.34	1.37
2	2	234	C	N1-C6	-5.11	1.34	1.37
1	1	2448	A	N9-C4	-5.10	1.34	1.37
2	2	764	C	N1-C6	-5.10	1.34	1.37
2	2	1524	C	N1-C6	-5.10	1.34	1.37
26	X	46	VAL	CB-CG1	-5.10	1.42	1.52
1	1	1196	C	N1-C6	-5.09	1.34	1.37
1	1	2451	A	N9-C4	-5.09	1.34	1.37
1	1	761	A	N9-C4	-5.09	1.34	1.37
1	1	834	G	N9-C4	-5.09	1.33	1.38
2	2	315	A	N9-C4	-5.09	1.34	1.37
2	2	765	G	N9-C4	-5.09	1.33	1.38
1	1	2434	A	N9-C4	-5.09	1.34	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	1803	A	N9-C4	-5.08	1.34	1.37
2	2	395	C	N1-C6	-5.08	1.34	1.37
3	3	93	C	N1-C6	-5.08	1.34	1.37
37	i	94	VAL	CB-CG1	-5.08	1.42	1.52
5	C	195	VAL	CB-CG2	-5.08	1.42	1.52
1	1	2281	A	N9-C4	-5.07	1.34	1.37
1	1	2339	C	N1-C6	-5.07	1.34	1.37
1	1	2443	C	C4-C5	-5.07	1.38	1.43
2	2	739	C	N1-C6	-5.07	1.34	1.37
1	1	2490	G	N9-C4	-5.06	1.33	1.38
2	2	658	C	N1-C6	-5.06	1.34	1.37
1	1	797	G	N9-C8	-5.06	1.34	1.37
1	1	2719	G	N9-C4	-5.06	1.33	1.38
2	2	115	G	N9-C4	-5.06	1.33	1.38
1	1	2462	C	N1-C6	-5.05	1.34	1.37
1	1	2688	G	N9-C4	-5.05	1.33	1.38
2	2	386	C	N1-C6	-5.05	1.34	1.37
2	2	136	C	N1-C6	-5.05	1.34	1.37
1	1	998	C	C4-C5	-5.05	1.39	1.43
1	1	2558	C	N1-C6	-5.05	1.34	1.37
1	1	2527	C	N1-C6	-5.05	1.34	1.37
2	2	805	C	N1-C6	-5.05	1.34	1.37
1	1	1143	A	N9-C4	-5.04	1.34	1.37
1	1	1187	G	N3-C4	-5.04	1.31	1.35
1	1	1314	C	C4-C5	-5.04	1.39	1.43
2	2	124	C	N1-C6	-5.04	1.34	1.37
1	1	690	G	N9-C8	-5.04	1.34	1.37
2	2	569	C	N1-C6	-5.03	1.34	1.37
1	1	782	A	N3-C4	-5.03	1.31	1.34
1	1	2526	G	N9-C4	-5.03	1.33	1.38
1	1	1605	C	N1-C6	-5.03	1.34	1.37
1	1	1844	C	N1-C6	-5.03	1.34	1.37
1	1	2456	C	C4-C5	-5.03	1.39	1.43
1	1	1371	G	N9-C4	-5.02	1.33	1.38
1	1	2725	A	N9-C4	-5.02	1.34	1.37
1	1	1133	A	N9-C4	-5.02	1.34	1.37
1	1	2542	A	N9-C4	-5.02	1.34	1.37
1	1	2589	A	N9-C4	-5.02	1.34	1.37
12	J	92	GLU	C-N	-5.02	1.22	1.34
1	1	863	A	C6-N6	-5.01	1.29	1.33
1	1	2380	C	N1-C6	-5.01	1.34	1.37
1	1	1339	G	N9-C4	-5.01	1.33	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	1369	C	N1-C6	-5.01	1.34	1.37
1	1	336	C	N1-C6	-5.01	1.34	1.37
1	1	302	C	N1-C6	-5.00	1.34	1.37
1	1	736	C	C4-C5	-5.00	1.39	1.43
2	2	1467	C	N1-C6	-5.00	1.34	1.37

All (380) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
54	z	67	U	O5'-P-OP1	-26.51	78.89	110.70
54	z	8	U	O5'-P-OP1	-19.49	87.31	110.70
54	z	20	U	C2-N3-C4	-14.79	118.13	127.00
54	z	20	U	C5-C4-O4	-12.55	118.37	125.90
54	z	20	U	N3-C4-C5	9.82	120.49	114.60
1	1	1871	A	O4'-C1'-N9	9.71	115.97	108.20
54	z	20	U	N1-C2-N3	9.16	120.40	114.90
54	z	19	C	OP2-P-O3'	-9.04	85.32	105.20
1	1	1509	A	O4'-C1'-N9	8.77	115.22	108.20
1	1	1923	U	O4'-C1'-N1	8.69	115.15	108.20
1	1	2193	G	C4-N9-C1'	8.67	137.77	126.50
54	z	67	U	O5'-P-OP2	8.47	120.86	110.70
1	1	1670	C	N3-C4-C5	8.44	125.28	121.90
1	1	1313	U	C2-N1-C1'	8.39	127.77	117.70
1	1	2719	G	C2-N3-C4	-8.30	107.75	111.90
2	2	74	A	O4'-C1'-N9	8.28	114.82	108.20
1	1	221	A	O4'-C1'-N9	8.22	114.78	108.20
1	1	1062	G	N3-C4-N9	8.21	130.93	126.00
1	1	1670	C	C5-C4-N4	-8.03	114.58	120.20
1	1	1067	A	O4'-C1'-N9	-7.97	101.82	108.20
1	1	2193	G	C8-N9-C1'	-7.74	116.94	127.00
1	1	1062	G	C8-N9-C1'	-7.72	116.96	127.00
1	1	752	A	N1-C6-N6	7.71	123.22	118.60
1	1	1062	G	C4-N9-C1'	7.70	136.50	126.50
1	1	2193	G	C6-C5-N7	-7.66	125.81	130.40
54	z	40	G	N1-C2-N2	-7.56	109.40	116.20
1	1	1761	C	C5-C4-N4	-7.39	115.02	120.20
54	z	9	G	C2-N3-C4	-7.38	108.21	111.90
1	1	565	C	C6-N1-C2	7.35	123.24	120.30
1	1	481	G	O4'-C1'-N9	7.34	114.07	108.20
54	z	20	U	OP1-P-OP2	7.31	130.57	119.60
1	1	801	G	C2-N3-C4	-7.21	108.30	111.90
1	1	1790	C	C5-C4-N4	-7.18	115.18	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2512	C	C5'-C4'-C3'	7.14	127.43	116.00
54	z	19	C	OP1-P-O3'	-7.09	89.61	105.20
2	2	800	G	C2-N3-C4	-7.03	108.38	111.90
1	1	1125	G	C2-N3-C4	-7.02	108.39	111.90
2	2	1200	C	C5-C4-N4	-7.00	115.30	120.20
54	z	20	U	C5-C6-N1	-6.91	119.25	122.70
1	1	1313	U	C6-N1-C1'	-6.87	111.58	121.20
1	1	2755	C	C5-C4-N4	-6.85	115.40	120.20
1	1	1171	G	C8-N9-C1'	-6.85	118.10	127.00
2	2	1403	C	C5-C4-N4	-6.79	115.44	120.20
2	2	575	G	N3-C4-N9	-6.78	121.93	126.00
1	1	801	G	N3-C4-C5	6.78	131.99	128.60
1	1	974	G	O4'-C1'-N9	6.74	113.59	108.20
1	1	1075	C	N1-C2-O2	6.74	122.94	118.90
54	z	8	U	O5'-P-OP2	6.71	118.75	110.70
1	1	1143	A	N1-C6-N6	6.68	122.61	118.60
54	z	40	G	C2-N3-C4	-6.66	108.57	111.90
1	1	2799	A	N9-C4-C5	-6.66	103.14	105.80
1	1	1062	G	C6-C5-N7	-6.65	126.41	130.40
1	1	1143	A	C5-C6-N6	-6.64	118.39	123.70
2	2	686	U	O4'-C1'-N1	6.62	113.50	108.20
2	2	792	A	O4'-C1'-N9	6.62	113.50	108.20
2	2	117	G	C2-N3-C4	-6.60	108.60	111.90
2	2	354	G	C2-N3-C4	-6.58	108.61	111.90
1	1	916	G	C2-N3-C4	-6.57	108.61	111.90
1	1	2688	G	C2-N3-C4	-6.57	108.61	111.90
2	2	15	G	C2-N3-C4	-6.54	108.63	111.90
1	1	450	G	C2-N3-C4	-6.54	108.63	111.90
1	1	2314	A	O4'-C1'-N9	6.54	113.43	108.20
1	1	728	G	N3-C2-N2	-6.54	115.33	119.90
1	1	818	G	C2-N3-C4	-6.47	108.66	111.90
1	1	733	G	C2-N3-C4	-6.44	108.68	111.90
1	1	2351	G	C2-N3-C4	-6.42	108.69	111.90
1	1	1062	G	N9-C4-C5	-6.41	102.83	105.40
1	1	1350	C	N3-C4-C5	6.41	124.46	121.90
1	1	2610	C	N3-C4-C5	6.41	124.46	121.90
1	1	2195	U	O4'-C1'-N1	6.41	113.33	108.20
54	z	35	G	N3-C4-C5	6.41	131.80	128.60
54	z	60	C	C5-C4-N4	-6.39	115.73	120.20
1	1	476	G	C2-N3-C4	-6.38	108.71	111.90
1	1	275	C	C2-N1-C1'	-6.37	111.80	118.80
1	1	1075	C	N3-C2-O2	-6.37	117.44	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	323	C	C2-N1-C1'	6.35	125.79	118.80
1	1	27	G	C2-N3-C4	-6.33	108.73	111.90
1	1	1187	G	N3-C4-C5	6.31	131.76	128.60
1	1	2607	G	C2-N3-C4	-6.29	108.75	111.90
1	1	1076	C	N3-C2-O2	-6.26	117.52	121.90
1	1	2765	A	O4'-C1'-N9	6.25	113.20	108.20
1	1	1261	C	C6-N1-C2	6.21	122.78	120.30
1	1	801	G	N3-C4-N9	-6.19	122.28	126.00
1	1	1870	C	O5'-P-OP1	6.19	118.13	110.70
1	1	2248	C	C2-N1-C1'	6.18	125.60	118.80
1	1	2715	C	C2-N1-C1'	6.16	125.58	118.80
1	1	806	C	N1-C2-O2	6.14	122.58	118.90
1	1	512	G	O4'-C1'-N9	6.13	113.11	108.20
2	2	1221	G	N3-C4-C5	6.13	131.66	128.60
1	1	2499	C	C5-C4-N4	-6.12	115.92	120.20
1	1	2799	A	C4-C5-N7	6.10	113.75	110.70
1	1	1814	G	C2-N3-C4	-6.09	108.86	111.90
2	2	1337	G	N3-C4-C5	6.08	131.64	128.60
1	1	2365	G	C2-N3-C4	-6.07	108.86	111.90
1	1	469	G	C2-N3-C4	-6.04	108.88	111.90
1	1	748	G	O4'-C1'-N9	6.04	113.03	108.20
1	1	2499	C	C6-N1-C2	6.03	122.71	120.30
1	1	1171	G	N9-C4-C5	-6.03	102.99	105.40
2	2	324	G	N3-C4-C5	6.02	131.61	128.60
2	2	1482	G	C2-N3-C4	-6.02	108.89	111.90
1	1	2709	G	C2-N3-C4	-6.01	108.89	111.90
1	1	198	C	N1-C2-O2	6.01	122.51	118.90
1	1	254	G	C2-N3-C4	-6.01	108.90	111.90
1	1	561	G	C2-N3-C4	-6.01	108.90	111.90
1	1	2597	G	C2-N3-C4	-6.00	108.90	111.90
1	1	2720	U	N3-C4-O4	5.99	123.59	119.40
1	1	2715	C	C6-N1-C1'	-5.99	113.62	120.80
2	2	324	G	C2-N3-C4	-5.98	108.91	111.90
1	1	1187	G	C2-N3-C4	-5.97	108.92	111.90
54	z	40	G	N1-C2-N3	5.95	127.47	123.90
1	1	242	G	N3-C4-N9	-5.93	122.44	126.00
1	1	1996	C	C5-C4-N4	-5.93	116.05	120.20
1	1	1670	C	C6-N1-C2	5.93	122.67	120.30
2	2	362	G	C2-N3-C4	-5.92	108.94	111.90
1	1	2332	C	C6-N1-C2	5.92	122.67	120.30
54	z	13	G	C2-N3-C4	-5.91	108.94	111.90
1	1	704	G	O4'-C1'-N9	5.91	112.93	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2499	C	N3-C4-C5	5.91	124.26	121.90
1	1	1283	G	N3-C4-N9	-5.91	122.45	126.00
1	1	1171	G	C4-N9-C1'	5.90	134.17	126.50
1	1	189	G	C2-N3-C4	-5.90	108.95	111.90
17	O	51	ARG	NE-CZ-NH2	-5.90	117.35	120.30
1	1	1568	G	N3-C4-C5	5.90	131.55	128.60
1	1	1568	G	N3-C4-N9	-5.89	122.46	126.00
1	1	1350	C	C6-N1-C2	5.89	122.66	120.30
1	1	1792	G	C2-N3-C4	-5.89	108.96	111.90
1	1	323	C	C6-N1-C1'	-5.88	113.74	120.80
1	1	619	G	C2-N3-C4	-5.87	108.96	111.90
1	1	961	C	C5-C4-N4	-5.87	116.09	120.20
1	1	1358	G	C2-N3-C4	-5.84	108.98	111.90
1	1	242	G	N3-C4-C5	5.83	131.51	128.60
2	2	1156	G	N3-C4-C5	5.83	131.51	128.60
1	1	2248	C	C6-N1-C1'	-5.83	113.81	120.80
1	1	476	G	N3-C4-C5	5.81	131.50	128.60
1	1	998	C	N1-C2-O2	5.79	122.38	118.90
1	1	1653	G	C2-N3-C4	-5.78	109.01	111.90
1	1	2638	G	C2-N3-C4	-5.78	109.01	111.90
1	1	1382	G	C5-C6-O6	5.78	132.06	128.60
2	2	991	U	O4'-C1'-N1	5.77	112.81	108.20
1	1	458	G	O4'-C1'-N9	5.76	112.81	108.20
1	1	1567	G	C2-N3-C4	-5.76	109.02	111.90
1	1	2193	G	C4-C5-N7	5.76	113.10	110.80
1	1	2499	C	C6-N1-C1'	-5.75	113.89	120.80
1	1	663	G	C2-N3-C4	-5.75	109.02	111.90
1	1	2244	U	N3-C4-O4	5.75	123.43	119.40
1	1	565	C	N3-C4-C5	5.74	124.20	121.90
1	1	2286	G	C2-N3-C4	-5.74	109.03	111.90
1	1	2100	G	C4-C5-N7	5.74	113.10	110.80
1	1	386	G	N3-C4-N9	-5.74	122.56	126.00
1	1	1615	C	C5-C4-N4	-5.74	116.19	120.20
1	1	1172	C	C6-N1-C2	5.73	122.59	120.30
2	2	1337	G	N3-C4-N9	-5.72	122.57	126.00
1	1	1299	G	C2-N3-C4	-5.72	109.04	111.90
2	2	1007	U	O4'-C1'-N1	5.71	112.77	108.20
1	1	2591	C	C2-N1-C1'	5.71	125.08	118.80
1	1	2715	C	N1-C2-O2	5.71	122.33	118.90
1	1	274	C	N1-C2-O2	5.70	122.32	118.90
1	1	1154	G	C2-N3-C4	-5.68	109.06	111.90
1	1	67	U	N3-C4-O4	5.68	123.37	119.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	1790	C	C6-N1-C2	5.68	122.57	120.30
2	2	1320	C	C6-N1-C2	5.67	122.57	120.30
1	1	1371	G	C2-N3-C4	-5.67	109.06	111.90
1	1	697	G	C2-N3-C4	-5.67	109.06	111.90
1	1	1377	G	C2-N3-C4	-5.67	109.07	111.90
1	1	1857	G	O4'-C1'-N9	5.66	112.72	108.20
1	1	2591	C	C6-N1-C1'	-5.65	114.02	120.80
1	1	726	G	N3-C4-N9	-5.64	122.61	126.00
1	1	1728	C	C2-N1-C1'	-5.64	112.59	118.80
1	1	400	G	C2-N3-C4	-5.64	109.08	111.90
1	1	672	C	C2-N1-C1'	5.63	125.00	118.80
1	1	1349	C	N3-C2-O2	-5.63	117.96	121.90
1	1	2726	A	C5-C6-N6	-5.63	119.20	123.70
1	1	957	C	C5-C4-N4	-5.62	116.26	120.20
3	3	76	G	C2-N3-C4	-5.62	109.09	111.90
1	1	708	G	O3'-P-O5'	-5.62	93.32	104.00
1	1	786	C	C6-N1-C2	5.62	122.55	120.30
2	2	1200	C	N3-C4-N4	5.62	121.93	118.00
1	1	585	G	C2-N3-C4	-5.62	109.09	111.90
1	1	2704	C	C2-N1-C1'	5.61	124.97	118.80
1	1	1283	G	N3-C4-C5	5.61	131.41	128.60
1	1	1771	C	N1-C2-O2	5.61	122.26	118.90
1	1	1075	C	C6-N1-C1'	-5.60	114.08	120.80
1	1	1471	G	C2-N3-C4	-5.60	109.10	111.90
1	1	2100	G	N1-C6-O6	5.60	123.26	119.90
1	1	1670	C	C2-N3-C4	-5.60	117.10	119.90
1	1	1830	C	N1-C2-O2	5.60	122.26	118.90
2	2	558	G	C2-N3-C4	-5.57	109.11	111.90
3	3	75	G	C2-N3-C4	-5.57	109.11	111.90
2	2	215	C	C2-N1-C1'	5.56	124.92	118.80
1	1	1770	G	C2-N3-C4	-5.55	109.12	111.90
1	1	672	C	N1-C2-O2	5.55	122.23	118.90
1	1	2799	A	C6-C5-N7	-5.55	128.42	132.30
1	1	386	G	C2-N3-C4	-5.54	109.13	111.90
2	2	746	A	N9-C4-C5	-5.54	103.58	105.80
1	1	1950	G	C2-N3-C4	-5.54	109.13	111.90
1	1	2430	A	N1-C6-N6	5.54	121.92	118.60
2	2	858	G	C2-N3-C4	-5.54	109.13	111.90
1	1	640	C	C2-N1-C1'	5.52	124.87	118.80
1	1	581	C	C5-C4-N4	-5.51	116.34	120.20
1	1	1631	G	C2-N3-C4	-5.51	109.15	111.90
2	2	1337	G	C4-N9-C1'	-5.50	119.35	126.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2714	G	C2-N3-C4	-5.50	109.15	111.90
2	2	111	G	C2-N3-C4	-5.50	109.15	111.90
1	1	2704	C	C6-N1-C1'	-5.49	114.21	120.80
1	1	275	C	C6-N1-C1'	5.49	127.39	120.80
1	1	2502	G	N3-C4-N9	-5.49	122.71	126.00
2	2	549	C	C6-N1-C2	5.49	122.50	120.30
1	1	1062	G	C4-C5-N7	5.47	112.99	110.80
1	1	2424	C	N3-C4-C5	5.46	124.09	121.90
1	1	2722	G	C2-N3-C4	-5.46	109.17	111.90
1	1	2237	G	C2-N3-C4	-5.45	109.17	111.90
1	1	1426	G	C2-N3-C4	-5.45	109.17	111.90
1	1	757	G	N3-C4-C5	5.45	131.32	128.60
1	1	1530	G	C4-C5-N7	5.45	112.98	110.80
1	1	1930	G	C2-N3-C4	-5.45	109.17	111.90
54	z	35	G	C2-N3-C4	-5.44	109.18	111.90
1	1	858	G	C2-N3-C4	-5.44	109.18	111.90
1	1	578	G	C2-N3-C4	-5.44	109.18	111.90
1	1	551	G	C8-N9-C1'	-5.44	119.93	127.00
1	1	2601	C	C6-N1-C2	5.44	122.47	120.30
2	2	581	G	C2-N3-C4	-5.44	109.18	111.90
1	1	883	G	N3-C4-N9	-5.43	122.74	126.00
2	2	362	G	N3-C4-C5	5.43	131.31	128.60
1	1	640	C	C6-N1-C2	-5.42	118.13	120.30
1	1	386	G	N3-C4-C5	5.42	131.31	128.60
1	1	1989	G	C2-N3-C4	-5.42	109.19	111.90
2	2	1505	G	N3-C4-C5	5.42	131.31	128.60
1	1	2282	G	O4'-C1'-N9	5.39	112.51	108.20
54	z	28	C	C2-N1-C1'	5.39	124.73	118.80
1	1	583	G	C2-N3-C4	-5.38	109.21	111.90
1	1	725	G	C2-N3-C4	-5.38	109.21	111.90
2	2	869	G	C2-N3-C4	-5.38	109.21	111.90
1	1	2415	G	C2-N3-C4	-5.37	109.21	111.90
2	2	168	G	C4-C5-N7	5.37	112.95	110.80
1	1	2834	G	C2-N3-C4	-5.37	109.21	111.90
1	1	2454	G	C2-N3-C4	-5.37	109.22	111.90
1	1	570	G	C2-N3-C4	-5.36	109.22	111.90
1	1	1514	G	C2-N3-C4	-5.36	109.22	111.90
1	1	2447	G	C2-N3-C4	-5.36	109.22	111.90
1	1	748	G	N3-C4-N9	-5.35	122.79	126.00
1	1	2193	G	N3-C4-N9	5.34	129.21	126.00
2	2	1467	C	N3-C4-C5	5.33	124.03	121.90
1	1	685	A	O4'-C1'-N9	5.33	112.47	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	1459	G	N3-C4-C5	5.33	131.27	128.60
1	1	1564	C	N1-C2-O2	5.33	122.10	118.90
1	1	1936	A	N1-C6-N6	5.32	121.79	118.60
1	1	2127	G	N3-C4-N9	-5.32	122.81	126.00
1	1	1790	C	N3-C4-C5	5.31	124.03	121.90
1	1	830	G	C2-N3-C4	-5.31	109.24	111.90
1	1	1313	U	C5-C6-N1	5.31	125.36	122.70
1	1	1459	G	N3-C4-N9	-5.30	122.82	126.00
1	1	261	G	N3-C4-C5	5.30	131.25	128.60
1	1	1047	G	O4'-C1'-N9	5.30	112.44	108.20
1	1	465	G	C2-N3-C4	-5.29	109.25	111.90
1	1	424	G	N3-C4-C5	5.29	131.24	128.60
1	1	1675	C	C5-C4-N4	-5.28	116.50	120.20
1	1	1063	G	N1-C2-N2	-5.28	111.45	116.20
2	2	1028	C	O4'-C1'-N1	-5.27	103.99	108.20
2	2	168	G	C6-C5-N7	-5.26	127.24	130.40
1	1	1187	G	N3-C4-N9	-5.26	122.84	126.00
54	z	25	G	N3-C4-C5	5.26	131.23	128.60
1	1	1079	C	C2-N1-C1'	5.25	124.58	118.80
1	1	2258	C	N1-C2-O2	5.25	122.05	118.90
54	z	83	C	C6-N1-C2	5.25	122.40	120.30
2	2	108	G	C4-C5-N7	5.25	112.90	110.80
2	2	60	A	C8-N9-C4	-5.25	103.70	105.80
1	1	2100	G	N9-C4-C5	-5.24	103.30	105.40
1	1	2848	G	O4'-C1'-N9	5.24	112.39	108.20
1	1	2012	G	C2-N3-C4	-5.24	109.28	111.90
1	1	581	C	C6-N1-C1'	-5.24	114.52	120.80
1	1	2583	G	C2-N3-C4	-5.24	109.28	111.90
1	1	2405	G	C2-N3-C4	-5.23	109.28	111.90
1	1	273	G	N9-C4-C5	-5.23	103.31	105.40
1	1	1800	C	C5-C4-N4	-5.23	116.54	120.20
2	2	153	C	C6-N1-C1'	-5.23	114.53	120.80
1	1	26	G	C2-N3-C4	-5.22	109.29	111.90
1	1	1888	G	C2-N3-C4	-5.22	109.29	111.90
1	1	1935	G	C2-N3-C4	-5.22	109.29	111.90
54	z	6	G	N3-C4-N9	-5.22	122.87	126.00
1	1	2382	G	C2-N3-C4	-5.22	109.29	111.90
2	2	1417	G	C2-N3-C4	-5.22	109.29	111.90
2	2	1521	C	N1-C2-O2	5.22	122.03	118.90
1	1	389	G	C2-N3-C4	-5.22	109.29	111.90
1	1	1761	C	N3-C4-N4	5.22	121.65	118.00
1	1	587	C	C5-C4-N4	-5.21	116.55	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	1339	G	C2-N3-C4	-5.21	109.29	111.90
1	1	1961	C	N3-C4-C5	5.21	123.98	121.90
1	1	2481	G	C2-N3-C4	-5.20	109.30	111.90
1	1	2490	G	N3-C4-C5	5.20	131.20	128.60
1	1	1897	G	N3-C4-C5	5.20	131.20	128.60
1	1	2502	G	C2-N3-C4	-5.20	109.30	111.90
1	1	2703	C	C6-N1-C1'	-5.20	114.56	120.80
2	2	549	C	N3-C4-C5	5.20	123.98	121.90
1	1	1838	C	C5-C4-N4	-5.19	116.56	120.20
1	1	27	G	N3-C4-C5	5.19	131.20	128.60
1	1	2193	G	N7-C8-N9	5.19	115.70	113.10
2	2	1079	G	C2-N3-C4	-5.19	109.31	111.90
1	1	721	A	N9-C4-C5	-5.18	103.73	105.80
2	2	944	G	C2-N3-C4	-5.18	109.31	111.90
2	2	586	C	C6-N1-C2	5.18	122.37	120.30
1	1	672	C	C6-N1-C1'	-5.17	114.59	120.80
2	2	1107	C	N3-C4-C5	5.17	123.97	121.90
1	1	752	A	C5-N7-C8	-5.17	101.32	103.90
1	1	1012	U	N3-C4-O4	5.17	123.02	119.40
1	1	1828	G	C2-N3-C4	-5.17	109.32	111.90
2	2	628	G	N3-C4-C5	5.17	131.18	128.60
1	1	859	G	N3-C4-N9	-5.16	122.91	126.00
1	1	950	G	C2-N3-C4	-5.16	109.32	111.90
2	2	168	G	N9-C4-C5	-5.15	103.34	105.40
1	1	1075	C	C2-N1-C1'	5.15	124.47	118.80
1	1	2763	G	C2-N3-C4	-5.15	109.32	111.90
1	1	726	G	N3-C4-C5	5.15	131.17	128.60
1	1	301	G	N3-C4-C5	5.15	131.17	128.60
1	1	2719	G	N1-C2-N3	5.15	126.99	123.90
1	1	2006	C	C5-C4-N4	-5.15	116.60	120.20
1	1	2063	C	C2-N3-C4	-5.14	117.33	119.90
1	1	1289	C	N1-C2-O2	5.14	121.99	118.90
1	1	1530	G	N1-C6-O6	5.14	122.98	119.90
1	1	752	A	C5-C6-N6	-5.14	119.59	123.70
2	2	357	G	C2-N3-C4	-5.14	109.33	111.90
2	2	1221	G	N3-C4-N9	-5.13	122.92	126.00
1	1	1349	C	C2-N1-C1'	5.13	124.44	118.80
1	1	2100	G	C6-C5-N7	-5.12	127.33	130.40
1	1	2214	C	N3-C4-C5	5.11	123.95	121.90
1	1	2452	C	N3-C4-C5	5.11	123.95	121.90
2	2	1221	G	C2-N3-C4	-5.11	109.34	111.90
1	1	1171	G	C6-C5-N7	-5.11	127.33	130.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	1186	G	C2-N3-C4	-5.11	109.35	111.90
2	2	112	G	C2-N3-C4	-5.11	109.35	111.90
1	1	67	U	C5-C4-O4	-5.10	122.84	125.90
1	1	489	G	C2-N3-C4	-5.10	109.35	111.90
2	2	1505	G	C2-N3-C4	-5.10	109.35	111.90
1	1	551	G	C4-N9-C1'	5.10	133.12	126.50
2	2	322	C	C5-C4-N4	-5.10	116.63	120.20
1	1	1215	G	C2-N3-C4	-5.09	109.36	111.90
1	1	1839	G	C2-N3-C4	-5.09	109.36	111.90
3	3	96	G	N3-C4-N9	-5.09	122.95	126.00
1	1	780	G	C2-N3-C4	-5.09	109.36	111.90
1	1	2688	G	N3-C4-C5	5.08	131.14	128.60
2	2	666	G	N3-C4-N9	-5.08	122.95	126.00
1	1	2722	G	N1-C2-N3	5.08	126.95	123.90
2	2	705	G	C2-N3-C4	-5.08	109.36	111.90
1	1	1771	C	C2-N1-C1'	5.08	124.38	118.80
2	2	492	C	C6-N1-C1'	-5.08	114.71	120.80
1	1	1313	U	O4'-C1'-N1	5.07	112.26	108.20
1	1	2214	C	C5-C4-N4	-5.07	116.65	120.20
1	1	1350	C	C6-N1-C1'	-5.07	114.72	120.80
1	1	704	G	N3-C4-C5	5.07	131.13	128.60
54	z	60	C	N3-C4-C5	5.07	123.93	121.90
1	1	1788	C	C2-N1-C1'	5.06	124.37	118.80
1	1	2307	G	N3-C4-N9	-5.06	122.96	126.00
1	1	2888	C	N1-C2-O2	5.06	121.94	118.90
1	1	1278	C	C6-N1-C2	5.06	122.32	120.30
2	2	1517	G	C2-N3-C4	-5.06	109.37	111.90
1	1	527	C	O4'-C1'-N1	5.05	112.24	108.20
2	2	888	G	C2-N3-C4	-5.04	109.38	111.90
3	3	117	G	N3-C4-C5	5.04	131.12	128.60
1	1	728	G	C2-N3-C4	-5.04	109.38	111.90
54	z	9	G	OP1-P-OP2	5.04	127.16	119.60
1	1	17	G	C2-N3-C4	-5.04	109.38	111.90
1	1	819	A	N1-C6-N6	5.04	121.62	118.60
1	1	308	G	C2-N3-C4	-5.04	109.38	111.90
1	1	68	G	C2-N3-C4	-5.04	109.38	111.90
1	1	469	G	N1-C2-N2	-5.03	111.67	116.20
1	1	560	C	N1-C2-O2	5.03	121.92	118.90
1	1	2588	G	C2-N3-C4	-5.03	109.38	111.90
54	z	35	G	N3-C4-N9	-5.03	122.98	126.00
1	1	798	G	N3-C4-C5	5.03	131.12	128.60
1	1	2100	G	C5-C6-O6	-5.03	125.58	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2189	U	O4'-C1'-N1	5.03	112.22	108.20
1	1	1452	G	N3-C4-C5	5.02	131.11	128.60
1	1	2505	G	C2-N3-C4	-5.02	109.39	111.90
2	2	1084	G	N3-C4-C5	5.02	131.11	128.60
2	2	207	C	C2-N1-C1'	-5.02	113.28	118.80
2	2	869	G	N3-C4-C5	5.02	131.11	128.60
2	2	57	G	N3-C4-C5	5.02	131.11	128.60
1	1	1456	G	N3-C4-C5	5.01	131.11	128.60
1	1	1171	G	N3-C4-N9	5.01	129.01	126.00
1	1	2719	G	N3-C4-C5	5.01	131.11	128.60
1	1	1905	C	N3-C4-C5	5.00	123.90	121.90

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

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 PDB entries followed by that with respect to all EM entries.

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	
5	C	269/271 (99%)	256 (95%)	13 (5%)	0	100	100
6	D	207/209 (99%)	200 (97%)	4 (2%)	3 (1%)	11	43
7	E	199/201 (99%)	197 (99%)	2 (1%)	0	100	100
8	F	175/177 (99%)	163 (93%)	11 (6%)	1 (1%)	25	64
9	G	173/175 (99%)	161 (93%)	12 (7%)	0	100	100
10	H	147/149 (99%)	137 (93%)	8 (5%)	2 (1%)	11	43
11	I	140/142 (99%)	137 (98%)	3 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
12	J	121/123 (98%)	119 (98%)	2 (2%)	0	100	100
13	K	142/144 (99%)	138 (97%)	4 (3%)	0	100	100
14	L	134/136 (98%)	129 (96%)	5 (4%)	0	100	100
15	M	117/119 (98%)	114 (97%)	3 (3%)	0	100	100
16	N	114/116 (98%)	111 (97%)	3 (3%)	0	100	100
17	O	112/114 (98%)	110 (98%)	2 (2%)	0	100	100
18	P	115/117 (98%)	114 (99%)	1 (1%)	0	100	100
19	Q	101/103 (98%)	93 (92%)	6 (6%)	2 (2%)	7	34
20	R	108/110 (98%)	106 (98%)	2 (2%)	0	100	100
21	S	92/94 (98%)	90 (98%)	2 (2%)	0	100	100
22	T	101/103 (98%)	95 (94%)	6 (6%)	0	100	100
23	U	92/94 (98%)	89 (97%)	3 (3%)	0	100	100
24	V	78/80 (98%)	72 (92%)	6 (8%)	0	100	100
25	W	75/77 (97%)	74 (99%)	1 (1%)	0	100	100
26	X	60/62 (97%)	60 (100%)	0	0	100	100
27	Y	56/58 (97%)	55 (98%)	1 (2%)	0	100	100
28	Z	64/66 (97%)	60 (94%)	4 (6%)	0	100	100
29	a	54/56 (96%)	52 (96%)	2 (4%)	0	100	100
30	b	50/52 (96%)	49 (98%)	1 (2%)	0	100	100
31	c	44/46 (96%)	44 (100%)	0	0	100	100
32	d	62/64 (97%)	58 (94%)	4 (6%)	0	100	100
33	e	36/38 (95%)	35 (97%)	1 (3%)	0	100	100
34	f	223/225 (99%)	209 (94%)	14 (6%)	0	100	100
35	g	206/208 (99%)	195 (95%)	11 (5%)	0	100	100
36	h	203/205 (99%)	200 (98%)	3 (2%)	0	100	100
37	i	154/156 (99%)	144 (94%)	10 (6%)	0	100	100
38	j	102/104 (98%)	99 (97%)	3 (3%)	0	100	100
39	k	149/151 (99%)	144 (97%)	5 (3%)	0	100	100
40	l	127/129 (98%)	125 (98%)	2 (2%)	0	100	100
41	m	125/127 (98%)	118 (94%)	7 (6%)	0	100	100
42	n	97/99 (98%)	92 (95%)	5 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
43	o	115/117 (98%)	109 (95%)	6 (5%)	0	100	100
44	p	120/123 (98%)	113 (94%)	7 (6%)	0	100	100
45	q	114/116 (98%)	108 (95%)	6 (5%)	0	100	100
46	r	98/100 (98%)	97 (99%)	1 (1%)	0	100	100
47	s	86/88 (98%)	84 (98%)	2 (2%)	0	100	100
48	t	80/82 (98%)	78 (98%)	2 (2%)	0	100	100
49	u	78/80 (98%)	75 (96%)	3 (4%)	0	100	100
50	v	64/66 (97%)	64 (100%)	0	0	100	100
51	w	81/83 (98%)	79 (98%)	2 (2%)	0	100	100
52	x	84/86 (98%)	84 (100%)	0	0	100	100
53	y	68/70 (97%)	66 (97%)	2 (3%)	0	100	100
55	B	25/27 (93%)	19 (76%)	5 (20%)	1 (4%)	3	17
All	All	5637/5738 (98%)	5420 (96%)	208 (4%)	9 (0%)	50	82

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
6	D	152	PRO
6	D	153	GLY
6	D	154	LYS
10	H	90	LEU
19	Q	52	PRO
19	Q	53	PHE
10	H	89	LYS
8	F	124	GLY
55	B	23	PRO

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	C	216/216 (100%)	216 (100%)	0	100	100
6	D	164/164 (100%)	163 (99%)	1 (1%)	86	95
7	E	165/165 (100%)	165 (100%)	0	100	100
8	F	148/148 (100%)	148 (100%)	0	100	100
9	G	136/136 (100%)	136 (100%)	0	100	100
10	H	114/114 (100%)	114 (100%)	0	100	100
11	I	116/116 (100%)	116 (100%)	0	100	100
12	J	104/104 (100%)	103 (99%)	1 (1%)	76	91
13	K	103/103 (100%)	102 (99%)	1 (1%)	76	91
14	L	109/109 (100%)	108 (99%)	1 (1%)	78	92
15	M	99/99 (100%)	98 (99%)	1 (1%)	76	91
16	N	86/86 (100%)	86 (100%)	0	100	100
17	O	99/99 (100%)	99 (100%)	0	100	100
18	P	89/89 (100%)	89 (100%)	0	100	100
19	Q	84/84 (100%)	84 (100%)	0	100	100
20	R	93/93 (100%)	93 (100%)	0	100	100
21	S	81/81 (100%)	80 (99%)	1 (1%)	71	90
22	T	84/84 (100%)	84 (100%)	0	100	100
23	U	78/78 (100%)	78 (100%)	0	100	100
24	V	59/59 (100%)	58 (98%)	1 (2%)	60	85
25	W	67/67 (100%)	67 (100%)	0	100	100
26	X	54/54 (100%)	54 (100%)	0	100	100
27	Y	48/48 (100%)	48 (100%)	0	100	100
28	Z	59/59 (100%)	59 (100%)	0	100	100
29	a	47/47 (100%)	47 (100%)	0	100	100
30	b	47/47 (100%)	47 (100%)	0	100	100
31	c	38/38 (100%)	38 (100%)	0	100	100
32	d	51/51 (100%)	50 (98%)	1 (2%)	55	83
33	e	34/34 (100%)	34 (100%)	0	100	100
34	f	187/187 (100%)	187 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
35	g	171/171 (100%)	170 (99%)	1 (1%)	86	95
36	h	172/172 (100%)	172 (100%)	0	100	100
37	i	119/119 (100%)	117 (98%)	2 (2%)	60	85
38	j	91/91 (100%)	90 (99%)	1 (1%)	73	90
39	k	124/124 (100%)	124 (100%)	0	100	100
40	l	104/104 (100%)	104 (100%)	0	100	100
41	m	105/105 (100%)	104 (99%)	1 (1%)	76	91
42	n	86/86 (100%)	84 (98%)	2 (2%)	50	80
43	o	90/90 (100%)	89 (99%)	1 (1%)	73	90
44	p	102/102 (100%)	102 (100%)	0	100	100
45	q	94/94 (100%)	94 (100%)	0	100	100
46	r	83/83 (100%)	83 (100%)	0	100	100
47	s	76/76 (100%)	76 (100%)	0	100	100
48	t	65/65 (100%)	65 (100%)	0	100	100
49	u	74/74 (100%)	74 (100%)	0	100	100
50	v	57/57 (100%)	57 (100%)	0	100	100
51	w	72/72 (100%)	71 (99%)	1 (1%)	67	88
52	x	65/65 (100%)	63 (97%)	2 (3%)	40	75
53	y	60/60 (100%)	60 (100%)	0	100	100
55	B	20/20 (100%)	19 (95%)	1 (5%)	24	60
All	All	4689/4689 (100%)	4669 (100%)	20 (0%)	91	97

All (20) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
6	D	151	THR
12	J	17	ARG
13	K	48	ARG
14	L	59	ARG
15	M	80	PHE
21	S	72	GLN
24	V	10	THR
32	d	31	HIS
35	g	164	ARG
37	i	29	ARG

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Mol	Chain	Res	Type
37	i	93	ARG
38	j	72	ASP
41	m	106	ARG
42	n	5	ARG
42	n	87	LEU
43	o	56	ARG
51	w	78	ARG
52	x	57	ILE
52	x	85	LYS
55	B	12	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
32	d	31	HIS

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	2898/2903 (99%)	498 (17%)	14 (0%)
2	2	1529/1534 (99%)	249 (16%)	4 (0%)
3	3	119/120 (99%)	15 (12%)	0
4	4	5/6 (83%)	0	0
54	z	87/88 (98%)	31 (35%)	0
All	All	4638/4651 (99%)	793 (17%)	18 (0%)

All (793) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	10	A
1	1	15	G
1	1	34	U
1	1	35	G
1	1	46	G
1	1	51	G
1	1	71	A
1	1	74	A
1	1	75	G
1	1	84	A
1	1	85	G

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Mol	Chain	Res	Type
1	1	101	A
1	1	102	U
1	1	110	G
1	1	118	A
1	1	119	A
1	1	120	U
1	1	122	G
1	1	125	A
1	1	138	U
1	1	139	U
1	1	140	C
1	1	142	A
1	1	163	C
1	1	181	A
1	1	196	A
1	1	199	A
1	1	215	G
1	1	216	A
1	1	221	A
1	1	222	A
1	1	248	G
1	1	249	C
1	1	261	G
1	1	264	C
1	1	265	A
1	1	266	G
1	1	272	A
1	1	273	G
1	1	275	C
1	1	276	U
1	1	285	G
1	1	311	A
1	1	329	G
1	1	330	A
1	1	343	C
1	1	353	C
1	1	361	G
1	1	371	A
1	1	372	G
1	1	383	C
1	1	386	G
1	1	396	G

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Mol	Chain	Res	Type
1	1	399	U
1	1	405	U
1	1	406	G
1	1	411	G
1	1	412	A
1	1	424	G
1	1	435	C
1	1	457	A
1	1	467	G
1	1	481	G
1	1	489	G
1	1	491	G
1	1	505	A
1	1	509	C
1	1	513	A
1	1	532	A
1	1	533	G
1	1	543	G
1	1	544	C
1	1	546	U
1	1	547	A
1	1	548	G
1	1	549	G
1	1	551	G
1	1	563	A
1	1	573	U
1	1	575	A
1	1	603	A
1	1	609	A
1	1	612	G
1	1	613	A
1	1	614	A
1	1	615	U
1	1	616	A
1	1	621	A
1	1	627	A
1	1	637	A
1	1	645	C
1	1	647	G
1	1	654	A
1	1	655	A
1	1	670	A

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Mol	Chain	Res	Type
1	1	685	A
1	1	686	U
1	1	702	U
1	1	717	C
1	1	726	G
1	1	730	A
1	1	747	5MU
1	1	764	A
1	1	765	C
1	1	775	G
1	1	776	G
1	1	782	A
1	1	784	G
1	1	785	G
1	1	792	A
1	1	800	A
1	1	805	G
1	1	812	C
1	1	819	A
1	1	827	U
1	1	828	U
1	1	845	A
1	1	846	U
1	1	858	G
1	1	859	G
1	1	866	A
1	1	869	G
1	1	878	A
1	1	880	G
1	1	882	G
1	1	884	U
1	1	885	C
1	1	887	A
1	1	888	C
1	1	891	G
1	1	892	A
1	1	893	C
1	1	895	U
1	1	896	A
1	1	897	C
1	1	898	C
1	1	907	G

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Mol	Chain	Res	Type
1	1	910	A
1	1	931	U
1	1	932	U
1	1	941	A
1	1	946	C
1	1	961	C
1	1	973	A
1	1	974	G
1	1	983	A
1	1	989	G
1	1	995	C
1	1	996	A
1	1	999	U
1	1	1005	C
1	1	1012	U
1	1	1013	C
1	1	1022	G
1	1	1023	U
1	1	1025	G
1	1	1026	G
1	1	1033	U
1	1	1043	C
1	1	1046	A
1	1	1047	G
1	1	1057	A
1	1	1060	U
1	1	1061	U
1	1	1062	G
1	1	1065	U
1	1	1066	U
1	1	1067	A
1	1	1068	G
1	1	1070	A
1	1	1071	G
1	1	1073	A
1	1	1084	A
1	1	1087	G
1	1	1088	A
1	1	1090	A
1	1	1096	A
1	1	1101	U
1	1	1110	G

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Mol	Chain	Res	Type
1	1	1111	A
1	1	1112	G
1	1	1119	U
1	1	1122	G
1	1	1128	G
1	1	1130	U
1	1	1131	G
1	1	1132	U
1	1	1133	A
1	1	1134	A
1	1	1135	C
1	1	1136	G
1	1	1139	G
1	1	1142	A
1	1	1156	A
1	1	1169	A
1	1	1170	C
1	1	1171	G
1	1	1173	U
1	1	1174	U
1	1	1175	A
1	1	1176	U
1	1	1177	G
1	1	1178	C
1	1	1179	G
1	1	1182	G
1	1	1186	G
1	1	1206	G
1	1	1212	G
1	1	1218	G
1	1	1236	G
1	1	1238	G
1	1	1247	A
1	1	1250	G
1	1	1253	A
1	1	1256	G
1	1	1266	G
1	1	1271	G
1	1	1272	A
1	1	1300	G
1	1	1301	A
1	1	1321	A

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Mol	Chain	Res	Type
1	1	1329	U
1	1	1341	G
1	1	1345	C
1	1	1352	U
1	1	1365	A
1	1	1368	G
1	1	1379	U
1	1	1380	G
1	1	1383	A
1	1	1386	C
1	1	1408	G
1	1	1411	U
1	1	1417	C
1	1	1419	A
1	1	1427	A
1	1	1428	C
1	1	1437	C
1	1	1460	U
1	1	1468	U
1	1	1476	U
1	1	1482	G
1	1	1490	A
1	1	1493	C
1	1	1494	A
1	1	1503	A
1	1	1504	A
1	1	1508	A
1	1	1509	A
1	1	1510	G
1	1	1515	A
1	1	1524	G
1	1	1529	G
1	1	1530	G
1	1	1532	A
1	1	1535	A
1	1	1536	C
1	1	1537	G
1	1	1554	U
1	1	1559	U
1	1	1566	A
1	1	1569	A
1	1	1578	U

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Mol	Chain	Res	Type
1	1	1580	A
1	1	1583	A
1	1	1587	G
1	1	1589	U
1	1	1590	A
1	1	1608	A
1	1	1619	G
1	1	1634	A
1	1	1647	U
1	1	1648	U
1	1	1649	G
1	1	1651	G
1	1	1674	G
1	1	1715	G
1	1	1729	U
1	1	1730	C
1	1	1732	C
1	1	1738	G
1	1	1756	G
1	1	1764	C
1	1	1773	A
1	1	1782	U
1	1	1791	A
1	1	1800	C
1	1	1801	A
1	1	1808	A
1	1	1811	G
1	1	1816	C
1	1	1829	A
1	1	1833	C
1	1	1847	A
1	1	1848	A
1	1	1858	A
1	1	1862	G
1	1	1865	U
1	1	1868	C
1	1	1869	G
1	1	1870	C
1	1	1871	A
1	1	1872	A
1	1	1873	G
1	1	1896	G

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Mol	Chain	Res	Type
1	1	1906	G
1	1	1907	G
1	1	1912	A
1	1	1914	C
1	1	1923	U
1	1	1924	C
1	1	1929	G
1	1	1930	G
1	1	1936	A
1	1	1937	A
1	1	1938	A
1	1	1955	U
1	1	1967	C
1	1	1970	A
1	1	1971	U
1	1	1972	G
1	1	1991	U
1	1	1992	G
1	1	1993	U
1	1	1997	C
1	1	2002	G
1	1	2022	U
1	1	2023	C
1	1	2031	A
1	1	2033	A
1	1	2043	C
1	1	2052	A
1	1	2055	C
1	1	2056	G
1	1	2060	A
1	1	2061	G
1	1	2062	A
1	1	2069	G7M
1	1	2093	G
1	1	2095	A
1	1	2100	G
1	1	2102	G
1	1	2104	C
1	1	2107	G
1	1	2110	G
1	1	2112	G
1	1	2113	U

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Mol	Chain	Res	Type
1	1	2115	G
1	1	2116	G
1	1	2117	A
1	1	2118	U
1	1	2119	A
1	1	2121	G
1	1	2122	U
1	1	2125	G
1	1	2127	G
1	1	2128	G
1	1	2131	U
1	1	2132	U
1	1	2133	G
1	1	2134	A
1	1	2139	U
1	1	2140	G
1	1	2142	A
1	1	2143	C
1	1	2145	C
1	1	2146	C
1	1	2147	A
1	1	2158	A
1	1	2159	G
1	1	2162	G
1	1	2163	A
1	1	2164	C
1	1	2165	C
1	1	2168	G
1	1	2169	A
1	1	2171	A
1	1	2172	U
1	1	2173	A
1	1	2178	C
1	1	2183	A
1	1	2189	U
1	1	2190	G
1	1	2191	A
1	1	2194	U
1	1	2198	A
1	1	2204	G
1	1	2211	A
1	1	2225	A

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Mol	Chain	Res	Type
1	1	2229	U
1	1	2238	G
1	1	2239	G
1	1	2243	U
1	1	2250	G
1	1	2278	A
1	1	2283	C
1	1	2286	G
1	1	2287	A
1	1	2288	A
1	1	2305	U
1	1	2309	A
1	1	2319	G
1	1	2322	A
1	1	2325	G
1	1	2327	A
1	1	2333	A
1	1	2334	U
1	1	2336	A
1	1	2345	G
1	1	2347	C
1	1	2350	C
1	1	2357	G
1	1	2361	G
1	1	2376	A
1	1	2383	G
1	1	2385	C
1	1	2402	U
1	1	2403	C
1	1	2406	A
1	1	2423	U
1	1	2424	C
1	1	2425	A
1	1	2429	G
1	1	2430	A
1	1	2431	U
1	1	2435	A
1	1	2441	U
1	1	2445	2MG
1	1	2448	A
1	1	2470	G
1	1	2476	A

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Mol	Chain	Res	Type
1	1	2478	A
1	1	2480	C
1	1	2491	U
1	1	2498	OMC
1	1	2502	G
1	1	2504	PSU
1	1	2505	G
1	1	2506	U
1	1	2507	C
1	1	2513	A
1	1	2518	A
1	1	2520	C
1	1	2529	G
1	1	2535	G
1	1	2547	A
1	1	2554	U
1	1	2566	A
1	1	2567	G
1	1	2572	A
1	1	2573	C
1	1	2586	U
1	1	2602	A
1	1	2609	U
1	1	2613	U
1	1	2629	U
1	1	2646	C
1	1	2663	G
1	1	2689	U
1	1	2690	U
1	1	2714	G
1	1	2716	C
1	1	2718	G
1	1	2725	A
1	1	2726	A
1	1	2733	A
1	1	2744	G
1	1	2748	A
1	1	2751	G
1	1	2757	A
1	1	2765	A
1	1	2777	G
1	1	2778	A

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Mol	Chain	Res	Type
1	1	2791	G
1	1	2793	C
1	1	2794	C
1	1	2797	U
1	1	2799	A
1	1	2811	G
1	1	2818	U
1	1	2820	A
1	1	2823	A
1	1	2825	G
1	1	2833	U
1	1	2835	A
1	1	2836	U
1	1	2861	U
1	1	2867	G
1	1	2872	A
1	1	2873	A
1	1	2879	A
1	1	2880	C
1	1	2883	A
1	1	2884	U
1	1	2885	G
1	1	2891	U
1	1	2898	U
1	1	2903	U
2	2	7	A
2	2	8	A
2	2	9	G
2	2	22	G
2	2	32	A
2	2	39	G
2	2	47	C
2	2	48	C
2	2	50	A
2	2	51	A
2	2	52	C
2	2	54	C
2	2	66	A
2	2	68	G
2	2	69	G
2	2	70	U
2	2	72	A

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Mol	Chain	Res	Type
2	2	73	C
2	2	74	A
2	2	75	G
2	2	76	G
2	2	81	A
2	2	83	C
2	2	84	U
2	2	85	U
2	2	86	G
2	2	87	C
2	2	92	U
2	2	120	A
2	2	121	U
2	2	130	A
2	2	131	A
2	2	141	G
2	2	144	G
2	2	149	A
2	2	160	A
2	2	163	C
2	2	164	G
2	2	177	G
2	2	181	A
2	2	182	A
2	2	197	A
2	2	204	G
2	2	210	C
2	2	211	G
2	2	212	G
2	2	226	G
2	2	245	U
2	2	247	G
2	2	251	G
2	2	266	G
2	2	267	C
2	2	279	A
2	2	289	G
2	2	306	A
2	2	319	G
2	2	321	A
2	2	328	C
2	2	332	G

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Mol	Chain	Res	Type
2	2	347	G
2	2	352	C
2	2	354	G
2	2	367	U
2	2	372	C
2	2	384	G
2	2	392	C
2	2	398	U
2	2	406	G
2	2	412	A
2	2	413	G
2	2	414	A
2	2	421	U
2	2	422	C
2	2	424	G
2	2	429	U
2	2	436	C
2	2	439	U
2	2	457	G
2	2	458	U
2	2	463	U
2	2	464	U
2	2	467	U
2	2	468	A
2	2	476	U
2	2	478	A
2	2	479	U
2	2	481	G
2	2	484	G
2	2	485	U
2	2	486	U
2	2	496	A
2	2	499	A
2	2	510	A
2	2	511	C
2	2	517	G
2	2	518	C
2	2	521	G
2	2	527	G7M
2	2	531	U
2	2	532	A
2	2	533	A

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Mol	Chain	Res	Type
2	2	547	A
2	2	559	A
2	2	564	C
2	2	568	G
2	2	572	A
2	2	573	A
2	2	576	C
2	2	577	G
2	2	596	A
2	2	633	G
2	2	650	G
2	2	653	U
2	2	660	C
2	2	665	A
2	2	700	G
2	2	701	U
2	2	702	A
2	2	703	G
2	2	718	A
2	2	721	G
2	2	723	U
2	2	724	G
2	2	731	G
2	2	734	G
2	2	747	A
2	2	748	G
2	2	753	A
2	2	755	G
2	2	777	A
2	2	787	A
2	2	793	U
2	2	794	A
2	2	815	A
2	2	817	C
2	2	821	G
2	2	828	U
2	2	829	G
2	2	832	G
2	2	841	C
2	2	843	U
2	2	844	G
2	2	845	A

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Mol	Chain	Res	Type
2	2	846	G
2	2	884	U
2	2	887	G
2	2	914	A
2	2	934	C
2	2	935	A
2	2	960	U
2	2	965	U
2	2	966	2MG
2	2	967	5MC
2	2	969	A
2	2	971	G
2	2	972	C
2	2	974	A
2	2	975	A
2	2	976	G
2	2	977	A
2	2	982	U
2	2	993	G
2	2	994	A
2	2	996	A
2	2	1004	A
2	2	1009	U
2	2	1019	A
2	2	1020	G
2	2	1022	A
2	2	1025	U
2	2	1026	G
2	2	1028	C
2	2	1030	U
2	2	1031	C
2	2	1032	G
2	2	1034	G
2	2	1043	G
2	2	1046	A
2	2	1065	U
2	2	1085	U
2	2	1089	G
2	2	1094	G
2	2	1095	U
2	2	1101	A
2	2	1104	G

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Mol	Chain	Res	Type
2	2	1124	G
2	2	1125	U
2	2	1132	C
2	2	1136	C
2	2	1137	C
2	2	1139	G
2	2	1140	C
2	2	1141	C
2	2	1143	G
2	2	1146	A
2	2	1151	A
2	2	1152	A
2	2	1158	C
2	2	1159	U
2	2	1160	G
2	2	1167	A
2	2	1169	A
2	2	1175	G
2	2	1176	A
2	2	1184	G
2	2	1196	A
2	2	1197	A
2	2	1212	U
2	2	1213	A
2	2	1215	G
2	2	1227	A
2	2	1228	C
2	2	1238	A
2	2	1239	A
2	2	1257	A
2	2	1258	G
2	2	1260	G
2	2	1261	A
2	2	1275	A
2	2	1279	G
2	2	1280	A
2	2	1286	U
2	2	1287	A
2	2	1297	G
2	2	1299	A
2	2	1302	C
2	2	1305	G

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Mol	Chain	Res	Type
2	2	1312	G
2	2	1317	C
2	2	1320	C
2	2	1335	U
2	2	1336	C
2	2	1346	A
2	2	1353	G
2	2	1363	A
2	2	1370	G
2	2	1379	G
2	2	1381	U
2	2	1419	G
2	2	1446	A
2	2	1494	G
2	2	1497	G
2	2	1499	A
2	2	1503	A
2	2	1506	U
2	2	1517	G
2	2	1529	G
2	2	1530	G
2	2	1534	A
3	3	2	G
3	3	9	G
3	3	13	G
3	3	24	G
3	3	35	C
3	3	36	C
3	3	45	A
3	3	51	G
3	3	56	G
3	3	66	A
3	3	88	C
3	3	89	U
3	3	90	C
3	3	99	A
3	3	109	A
54	z	2	G
54	z	8	U
54	z	10	U
54	z	13	G
54	z	14	A

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Mol	Chain	Res	Type
54	z	15	G
54	z	17	OMG
54	z	18	G
54	z	19	C
54	z	20	U
54	z	21	G
54	z	22	A
54	z	23	A
54	z	24	G
54	z	40	G
54	z	45	U
54	z	46	A
54	z	51	G
54	z	52	C
54	z	53	A
54	z	54	A
54	z	55	C
54	z	56	G
54	z	60	C
54	z	61	G
54	z	67	U
54	z	76	C
54	z	79	C
54	z	85	G
54	z	86	C
54	z	88	A

All (18) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	404	A
1	1	613	A
1	1	784	G
1	1	887	A
1	1	891	G
1	1	894	U
1	1	1175	A
1	1	1379	U
1	1	2116	G
1	1	2118	U
1	1	2127	G
1	1	2146	C

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Mol	Chain	Res	Type
1	1	2189	U
1	1	2756	U
2	2	516	PSU
2	2	966	2MG
2	2	1109	C
2	2	1145	A

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

37 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	OMG	1	2251	54,1	18,26,27	2.06	6 (33%)	19,38,41	1.45	5 (26%)
1	PSU	1	2580	56,1	18,21,22	1.14	2 (11%)	22,30,33	1.82	5 (22%)
1	2MG	1	2445	1	18,26,27	2.08	6 (33%)	16,38,41	1.33	4 (25%)
1	5MC	1	1962	1	18,22,23	3.07	7 (38%)	26,32,35	1.10	3 (11%)
1	PSU	1	955	56,1	18,21,22	1.11	1 (5%)	22,30,33	2.08	4 (18%)
1	G7M	1	2069	1	20,26,27	2.08	8 (40%)	17,39,42	1.37	2 (11%)
2	UR3	2	1498	2,56	19,22,23	2.39	6 (31%)	26,32,35	0.99	2 (7%)
1	2MG	1	1835	1	18,26,27	2.03	7 (38%)	16,38,41	1.37	3 (18%)
1	OMU	1	2552	1	19,22,23	2.64	6 (31%)	26,31,34	1.78	6 (23%)
54	5MU	z	66	54	19,22,23	4.51	7 (36%)	28,32,35	3.82	11 (39%)
2	5MC	2	1407	2	18,22,23	3.03	7 (38%)	26,32,35	0.91	1 (3%)
1	1MG	1	745	1	18,26,27	2.68	6 (33%)	19,39,42	1.25	3 (15%)
1	OMC	1	2498	56,1	19,22,23	2.46	6 (31%)	26,31,34	1.00	2 (7%)
1	PSU	1	2457	1	18,21,22	1.20	2 (11%)	22,30,33	2.12	5 (22%)
2	PSU	2	516	2,56	18,21,22	1.04	1 (5%)	22,30,33	1.90	4 (18%)
1	6MZ	1	1618	1	18,25,26	1.89	4 (22%)	16,36,39	3.32	3 (18%)
2	2MG	2	1516	2	18,26,27	2.18	7 (38%)	16,38,41	1.47	4 (25%)
2	MA6	2	1518	2	18,26,27	1.43	1 (5%)	19,38,41	3.70	2 (10%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	G7M	2	527	2	20,26,27	2.23	9 (45%)	17,39,42	1.03	1 (5%)
1	3TD	1	1915	1	18,22,23	3.87	6 (33%)	22,32,35	1.41	2 (9%)
2	2MG	2	1207	2	18,26,27	2.16	7 (38%)	16,38,41	1.24	3 (18%)
54	OMG	z	17	54	22,27,27	3.47	7 (31%)	26,41,41	11.75	11 (42%)
1	PSU	1	1911	1	18,21,22	1.01	1 (5%)	22,30,33	1.95	5 (22%)
1	PSU	1	2605	1	18,21,22	1.08	1 (5%)	22,30,33	2.00	4 (18%)
2	4OC	2	1402	2	20,23,24	2.68	8 (40%)	26,32,35	1.09	1 (3%)
1	5MU	1	1939	56,1	19,22,23	4.17	7 (36%)	28,32,35	3.76	9 (32%)
44	0TD	p	89	44	7,9,10	1.38	0	6,11,13	1.93	2 (33%)
1	5MU	1	747	1	19,22,23	4.42	7 (36%)	28,32,35	3.78	10 (35%)
2	2MG	2	966	2	18,26,27	2.25	7 (38%)	16,38,41	1.41	2 (12%)
1	PSU	1	2504	1	18,21,22	1.08	1 (5%)	22,30,33	1.93	5 (22%)
55	FME	B	1	55	8,9,10	0.50	0	7,9,11	1.12	1 (14%)
1	PSU	1	1917	1	18,21,22	1.03	1 (5%)	22,30,33	2.03	5 (22%)
1	2MA	1	2503	56,1	17,25,26	2.17	3 (17%)	17,37,40	1.34	3 (17%)
1	PSU	1	746	56,1	18,21,22	1.03	1 (5%)	22,30,33	1.76	3 (13%)
1	6MZ	1	2030	1	18,25,26	1.96	5 (27%)	16,36,39	3.17	3 (18%)
2	5MC	2	967	2	18,22,23	3.23	7 (38%)	26,32,35	1.01	2 (7%)
2	MA6	2	1519	2	18,26,27	1.42	2 (11%)	19,38,41	3.42	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	OMG	1	2251	54,1	-	0/5/27/28	0/3/3/3
1	PSU	1	2580	56,1	-	0/7/25/26	0/2/2/2
1	2MG	1	2445	1	-	2/5/27/28	0/3/3/3
1	5MC	1	1962	1	-	0/7/25/26	0/2/2/2
1	PSU	1	955	56,1	-	0/7/25/26	0/2/2/2
1	G7M	1	2069	1	-	1/3/25/26	0/3/3/3
2	UR3	2	1498	2,56	-	0/7/25/26	0/2/2/2
1	2MG	1	1835	1	-	2/5/27/28	0/3/3/3
1	OMU	1	2552	1	-	0/9/27/28	0/2/2/2
54	5MU	z	66	54	-	2/7/25/26	0/2/2/2
2	5MC	2	1407	2	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	1MG	1	745	1	-	0/3/25/26	0/3/3/3
1	OMC	1	2498	56,1	-	0/9/27/28	0/2/2/2
1	PSU	1	2457	1	-	0/7/25/26	0/2/2/2
2	PSU	2	516	2,56	-	2/7/25/26	0/2/2/2
1	6MZ	1	1618	1	-	4/5/27/28	0/3/3/3
2	2MG	2	1516	2	-	0/5/27/28	0/3/3/3
2	MA6	2	1518	2	-	0/7/29/30	0/3/3/3
2	G7M	2	527	2	-	3/3/25/26	0/3/3/3
1	3TD	1	1915	1	-	2/7/25/26	0/2/2/2
2	2MG	2	1207	2	-	0/5/27/28	0/3/3/3
54	OMG	z	17	54	-	3/8/28/28	0/3/3/3
1	PSU	1	1911	1	-	0/7/25/26	0/2/2/2
1	PSU	1	2605	1	-	0/7/25/26	0/2/2/2
2	4OC	2	1402	2	-	2/9/29/30	0/2/2/2
1	5MU	1	1939	56,1	-	0/7/25/26	0/2/2/2
44	0TD	p	89	44	-	2/7/12/14	-
1	5MU	1	747	1	-	0/7/25/26	0/2/2/2
2	2MG	2	966	2	-	2/5/27/28	0/3/3/3
1	PSU	1	2504	1	-	2/7/25/26	0/2/2/2
55	FME	B	1	55	-	4/7/9/11	-
1	PSU	1	1917	1	-	0/7/25/26	0/2/2/2
1	2MA	1	2503	56,1	-	2/3/25/26	0/3/3/3
1	PSU	1	746	56,1	-	1/7/25/26	0/2/2/2
1	6MZ	1	2030	1	-	4/5/27/28	0/3/3/3
2	5MC	2	967	2	-	2/7/25/26	0/2/2/2
2	MA6	2	1519	2	-	2/7/29/30	0/3/3/3

All (170) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	1915	3TD	C6-C5	11.21	1.48	1.35
54	z	66	5MU	C2-N1	10.77	1.55	1.38
1	1	747	5MU	C2-N1	10.18	1.54	1.38
54	z	66	5MU	C6-N1	9.75	1.54	1.38
54	z	17	OMG	O6-C6	-9.32	1.04	1.23
1	1	747	5MU	C6-N1	9.21	1.53	1.38
1	1	1939	5MU	C2-N1	9.04	1.53	1.38
54	z	66	5MU	C4-C5	8.54	1.59	1.44
1	1	1915	3TD	C2-N1	8.52	1.48	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	1939	5MU	C6-N1	8.48	1.52	1.38
1	1	747	5MU	C4-C5	8.48	1.58	1.44
1	1	1939	5MU	C4-C5	8.33	1.58	1.44
1	1	747	5MU	C4-N3	-8.02	1.23	1.38
1	1	1939	5MU	C4-N3	-7.99	1.24	1.38
2	2	967	5MC	C6-C5	7.96	1.47	1.34
54	z	17	OMG	C2-N3	7.95	1.52	1.33
2	2	1407	5MC	C6-C5	7.75	1.47	1.34
1	1	745	1MG	C2-N2	7.57	1.47	1.34
54	z	66	5MU	C4-N3	-7.51	1.24	1.38
1	1	1962	5MC	C6-C5	7.24	1.46	1.34
54	z	17	OMG	C4-N3	7.01	1.54	1.37
1	1	1962	5MC	C4-N3	6.18	1.44	1.34
1	1	2503	2MA	C2-N3	6.15	1.44	1.31
2	2	967	5MC	C4-N3	6.07	1.44	1.34
2	2	1402	4OC	C4-N3	6.03	1.43	1.32
1	1	2552	OMU	C2-N3	5.90	1.48	1.38
2	2	1498	UR3	C6-C5	5.88	1.48	1.35
2	2	967	5MC	C2-N3	5.61	1.47	1.36
1	1	2552	OMU	C2-N1	5.59	1.47	1.38
1	1	1962	5MC	C2-N3	5.54	1.47	1.36
1	1	2030	6MZ	C6-N6	5.43	1.43	1.35
2	2	1402	4OC	C2-N3	5.37	1.47	1.36
2	2	1407	5MC	C4-N3	5.36	1.43	1.34
1	1	1915	3TD	C6-N1	5.32	1.45	1.36
1	1	1618	6MZ	C6-N6	5.20	1.43	1.35
2	2	1402	4OC	C6-C5	5.19	1.47	1.35
2	2	1407	5MC	C2-N3	5.10	1.46	1.36
2	2	527	G7M	C2-N3	5.09	1.45	1.33
1	1	2498	OMC	C2-N3	5.08	1.46	1.36
1	1	2498	OMC	C6-C5	5.07	1.46	1.35
54	z	66	5MU	C6-C5	5.02	1.42	1.34
54	z	17	OMG	C2-N1	5.01	1.50	1.37
2	2	1498	UR3	C2-N1	4.81	1.45	1.38
1	1	747	5MU	C6-C5	4.79	1.42	1.34
1	1	2552	OMU	C6-C5	4.78	1.46	1.35
1	1	2251	OMG	C2-N3	4.50	1.44	1.33
2	2	527	G7M	C4-N3	4.50	1.48	1.37
2	2	966	2MG	C2-N2	4.49	1.43	1.33
2	2	1207	2MG	C2-N2	4.48	1.43	1.33
2	2	966	2MG	C4-N3	4.44	1.48	1.37
2	2	1207	2MG	C4-N3	4.34	1.47	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	1915	3TD	C2-N3	4.32	1.48	1.38
1	1	2503	2MA	C4-N3	4.31	1.47	1.37
2	2	527	G7M	C2-N2	4.28	1.44	1.34
1	1	1939	5MU	C6-C5	4.27	1.41	1.34
2	2	1498	UR3	C2-N3	4.24	1.47	1.39
1	1	745	1MG	C2-N3	4.21	1.42	1.34
2	2	1516	2MG	C2-N2	4.08	1.42	1.33
1	1	2445	2MG	C2-N2	4.06	1.42	1.33
1	1	745	1MG	O6-C6	-4.06	1.14	1.22
2	2	967	5MC	C4-N4	4.05	1.44	1.34
54	z	17	OMG	C6-N1	4.05	1.43	1.37
1	1	1835	2MG	C4-N3	4.01	1.47	1.37
1	1	745	1MG	C4-N3	3.98	1.47	1.37
1	1	2069	G7M	C2-N3	3.97	1.42	1.33
1	1	1835	2MG	C2-N2	3.97	1.42	1.33
2	2	1516	2MG	C4-N3	3.95	1.46	1.37
1	1	2498	OMC	C4-N3	3.89	1.42	1.34
2	2	966	2MG	C2-N1	3.82	1.42	1.36
2	2	1516	2MG	C2-N1	3.80	1.42	1.36
1	1	1962	5MC	C4-N4	3.80	1.44	1.34
1	1	2251	OMG	C4-N3	3.78	1.46	1.37
2	2	1407	5MC	C4-N4	3.70	1.43	1.34
1	1	2498	OMC	C4-N4	3.69	1.42	1.33
2	2	1519	MA6	C5-C4	-3.66	1.31	1.40
1	1	2445	2MG	C4-N3	3.66	1.46	1.37
2	2	967	5MC	C2-N1	3.64	1.47	1.40
2	2	1518	MA6	C5-C4	-3.59	1.31	1.40
1	1	2069	G7M	C4-N3	3.58	1.46	1.37
1	1	2069	G7M	C2-N2	3.53	1.42	1.34
2	2	1407	5MC	C6-N1	3.52	1.44	1.38
2	2	1402	4OC	C4-N4	3.51	1.43	1.35
1	1	747	5MU	O4-C4	-3.51	1.16	1.23
1	1	2552	OMU	C4-N3	3.50	1.44	1.38
2	2	1207	2MG	C2-N1	3.45	1.42	1.36
1	1	2498	OMC	O2-C2	-3.41	1.17	1.23
2	2	967	5MC	C6-N1	3.41	1.43	1.38
1	1	2503	2MA	C5-C4	-3.37	1.34	1.43
1	1	2030	6MZ	C5-C4	-3.37	1.32	1.40
54	z	17	OMG	C2-N2	3.36	1.42	1.34
1	1	1962	5MC	C2-N1	3.36	1.47	1.40
1	1	1618	6MZ	C5-C4	-3.35	1.32	1.40
1	1	2445	2MG	C5-C4	-3.33	1.34	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	1407	5MC	O2-C2	-3.32	1.17	1.23
2	2	1498	UR3	C3U-N3	-3.32	1.40	1.47
1	1	1939	5MU	O4-C4	-3.29	1.17	1.23
54	z	66	5MU	O4-C4	-3.25	1.17	1.23
2	2	1402	4OC	C2-N1	3.25	1.47	1.40
1	1	1962	5MC	O2-C2	-3.19	1.17	1.23
1	1	2251	OMG	C5-C4	-3.18	1.35	1.43
1	1	2498	OMC	C2-N1	3.18	1.46	1.40
1	1	1962	5MC	C6-N1	3.15	1.43	1.38
2	2	1402	4OC	O2-C2	-3.14	1.17	1.23
54	z	17	OMG	C5-C6	3.11	1.53	1.47
1	1	1835	2MG	C2-N1	3.09	1.41	1.36
1	1	2552	OMU	O4-C4	-3.04	1.18	1.24
1	1	2445	2MG	C2-N1	3.04	1.41	1.36
2	2	967	5MC	O2-C2	-3.04	1.18	1.23
2	2	1516	2MG	C5-C4	-3.04	1.35	1.43
1	1	1835	2MG	C5-C4	-2.98	1.35	1.43
2	2	1407	5MC	C2-N1	2.93	1.46	1.40
1	1	2552	OMU	O2-C2	-2.92	1.17	1.23
2	2	1207	2MG	C5-C4	-2.91	1.35	1.43
1	1	1939	5MU	O2-C2	-2.87	1.17	1.23
1	1	2069	G7M	C5-C4	-2.83	1.33	1.39
1	1	745	1MG	C5-C4	-2.79	1.36	1.43
1	1	2251	OMG	O6-C6	-2.79	1.17	1.23
2	2	966	2MG	C5-C4	-2.78	1.36	1.43
2	2	1516	2MG	C6-N1	2.75	1.42	1.37
2	2	966	2MG	C6-N1	2.75	1.42	1.37
1	1	2445	2MG	O6-C6	-2.72	1.17	1.23
2	2	1516	2MG	C5-C6	2.70	1.52	1.47
1	1	747	5MU	O2-C2	-2.70	1.18	1.23
1	1	2069	G7M	O6-C6	-2.69	1.17	1.23
2	2	966	2MG	C5-C6	2.67	1.52	1.47
2	2	1402	4OC	C5-C4	2.65	1.46	1.40
1	1	2069	G7M	CN7-N7	-2.65	1.41	1.47
1	1	2030	6MZ	C6-N1	-2.65	1.30	1.34
1	1	1835	2MG	O6-C6	-2.62	1.18	1.23
1	1	1915	3TD	O2-C2	-2.61	1.18	1.23
1	1	2445	2MG	C2'-C1'	-2.52	1.49	1.53
54	z	66	5MU	O2-C2	-2.48	1.18	1.23
1	1	2251	OMG	C6-N1	2.48	1.41	1.37
2	2	1207	2MG	C5-C6	2.47	1.52	1.47
1	1	2251	OMG	C2-N2	2.46	1.40	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	2069	G7M	C6-N1	2.46	1.41	1.37
1	1	1915	3TD	O4-C4	-2.44	1.18	1.23
2	2	1498	UR3	O2-C2	-2.44	1.18	1.22
1	1	2504	PSU	C4-C5	-2.44	1.37	1.44
1	1	2605	PSU	C4-C5	-2.44	1.37	1.44
1	1	1618	6MZ	C6-N1	-2.43	1.30	1.34
1	1	2457	PSU	C4-C5	-2.43	1.37	1.44
1	1	2580	PSU	C4-C5	-2.41	1.37	1.44
2	2	1207	2MG	C6-N1	2.41	1.41	1.37
2	2	527	G7M	O6-C6	-2.40	1.18	1.23
2	2	1516	2MG	O6-C6	-2.38	1.18	1.23
2	2	1207	2MG	O6-C6	-2.37	1.18	1.23
1	1	955	PSU	C4-C5	-2.36	1.37	1.44
2	2	527	G7M	C6-N1	2.34	1.41	1.37
1	1	745	1MG	C2'-C1'	-2.33	1.50	1.53
2	2	527	G7M	C5-C6	2.31	1.51	1.45
1	1	1911	PSU	C4-C5	-2.29	1.37	1.44
2	2	1519	MA6	C4-N3	-2.28	1.32	1.35
2	2	516	PSU	C4-C5	-2.27	1.37	1.44
1	1	1835	2MG	C5-C6	2.27	1.52	1.47
1	1	2030	6MZ	C5-N7	-2.23	1.31	1.39
1	1	1917	PSU	C4-C5	-2.20	1.37	1.44
2	2	966	2MG	O6-C6	-2.15	1.18	1.23
2	2	527	G7M	C2-N1	2.14	1.43	1.37
2	2	1402	4OC	C6-N1	2.14	1.43	1.38
1	1	1835	2MG	C6-N1	2.13	1.41	1.37
1	1	746	PSU	C4-C5	-2.10	1.38	1.44
2	2	527	G7M	CN7-N7	-2.08	1.42	1.47
2	2	1498	UR3	C6-N1	2.08	1.43	1.38
1	1	2457	PSU	O4'-C1'	-2.06	1.41	1.43
1	1	2069	G7M	C5-C6	2.05	1.50	1.45
2	2	527	G7M	C5-C4	-2.04	1.34	1.39
1	1	1618	6MZ	C5-N7	-2.04	1.32	1.39
1	1	2580	PSU	C6-N1	-2.03	1.32	1.36
1	1	2030	6MZ	C2'-C1'	-2.01	1.50	1.53

All (143) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
54	z	17	OMG	O6-C6-N1	-48.77	63.06	120.65
54	z	17	OMG	O6-C6-C5	-31.23	63.37	124.37
2	2	1518	MA6	N1-C6-N6	-14.84	101.43	117.06

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	2	1519	MA6	N1-C6-N6	-13.59	102.76	117.06
54	z	66	5MU	C5-C4-N3	12.53	126.01	115.31
1	1	747	5MU	C5-C4-N3	12.21	125.74	115.31
1	1	1939	5MU	C5-C4-N3	11.79	125.38	115.31
1	1	2030	6MZ	C1'-N9-C4	-11.46	106.51	126.64
1	1	1618	6MZ	C1'-N9-C4	-11.32	106.75	126.64
54	z	66	5MU	C5-C6-N1	-10.44	112.60	123.34
1	1	747	5MU	C5-C6-N1	-9.95	113.10	123.34
1	1	1939	5MU	C5-C6-N1	-9.73	113.33	123.34
54	z	17	OMG	C5-C6-N1	7.07	126.43	113.95
54	z	66	5MU	O4-C4-C5	-7.06	116.72	124.90
1	1	1939	5MU	C5M-C5-C4	6.30	125.70	118.77
54	z	17	OMG	OP3-P-OP1	-6.06	86.95	110.68
1	1	747	5MU	O4-C4-C5	-5.93	118.03	124.90
54	z	17	OMG	OP3-P-O5'	-5.83	91.21	106.73
1	1	1939	5MU	C5M-C5-C6	-5.82	115.08	122.85
1	1	2457	PSU	C4-N3-C2	-5.73	118.08	126.34
54	z	17	OMG	C2-N1-C6	-5.53	114.92	125.10
2	2	1518	MA6	N3-C2-N1	-5.46	120.14	128.68
54	z	66	5MU	C4-N3-C2	-5.46	120.28	127.35
1	1	2605	PSU	C4-N3-C2	-5.44	118.50	126.34
2	2	516	PSU	C4-N3-C2	-5.36	118.61	126.34
1	1	747	5MU	C4-N3-C2	-5.34	120.44	127.35
1	1	1939	5MU	O4-C4-C5	-5.34	118.71	124.90
1	1	2457	PSU	N1-C2-N3	5.33	121.16	115.13
54	z	17	OMG	OP3-P-OP2	-5.29	87.43	107.64
1	1	955	PSU	C4-N3-C2	-5.27	118.75	126.34
1	1	2552	OMU	C4-N3-C2	-5.25	119.66	126.58
2	2	1519	MA6	N3-C2-N1	-5.18	120.59	128.68
1	1	1917	PSU	C4-N3-C2	-5.17	118.89	126.34
1	1	1911	PSU	C4-N3-C2	-5.14	118.93	126.34
1	1	746	PSU	C4-N3-C2	-5.05	119.06	126.34
1	1	1917	PSU	N1-C2-N3	4.94	120.73	115.13
1	1	955	PSU	N1-C2-N3	4.88	120.66	115.13
1	1	2504	PSU	C4-N3-C2	-4.87	119.33	126.34
1	1	2504	PSU	N1-C2-N3	4.80	120.57	115.13
54	z	17	OMG	OP2-P-OP1	4.80	129.47	110.68
1	1	1618	6MZ	N3-C2-N1	-4.80	121.18	128.68
1	1	2580	PSU	C4-N3-C2	-4.79	119.43	126.34
1	1	1911	PSU	N1-C2-N3	4.70	120.45	115.13
1	1	1939	5MU	C4-N3-C2	-4.68	121.30	127.35
1	1	747	5MU	C5M-C5-C6	-4.60	116.71	122.85

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2605	PSU	N1-C2-N3	4.59	120.33	115.13
1	1	1618	6MZ	C9-N6-C6	-4.49	119.00	122.87
1	1	2580	PSU	N1-C2-N3	4.43	120.15	115.13
1	1	2030	6MZ	N3-C2-N1	-4.31	121.95	128.68
1	1	747	5MU	N3-C2-N1	4.30	120.60	114.89
1	1	746	PSU	N1-C2-N3	4.29	119.99	115.13
1	1	747	5MU	C5M-C5-C4	4.13	123.31	118.77
1	1	1915	3TD	N1-C2-N3	3.97	119.27	116.14
54	z	66	5MU	N3-C2-N1	3.95	120.14	114.89
2	2	516	PSU	N1-C2-N3	3.95	119.61	115.13
1	1	2503	2MA	C5-C6-N1	3.80	120.58	114.02
44	p	89	0TD	OD2-CG-CB	3.74	121.22	113.15
1	1	1915	3TD	C4-N3-C2	-3.69	120.60	124.61
1	1	2552	OMU	N3-C2-N1	3.62	119.70	114.89
1	1	1939	5MU	N3-C2-N1	3.54	119.58	114.89
1	1	2457	PSU	O2-C2-N1	-3.47	118.97	122.79
54	z	66	5MU	C5M-C5-C6	-3.41	118.29	122.85
1	1	955	PSU	C6-C5-C4	3.41	120.58	118.20
2	2	1402	4OC	CM4-N4-C4	-3.38	115.84	122.45
1	1	2552	OMU	CM2-O2'-C2'	-3.35	105.74	114.52
54	z	17	OMG	O5'-P-OP1	3.31	115.75	106.47
1	1	2605	PSU	C6-C5-C4	3.30	120.50	118.20
1	1	1917	PSU	C6-C5-C4	3.26	120.48	118.20
2	2	1516	2MG	CM2-N2-C2	-3.26	116.66	123.86
1	1	2251	OMG	C2-N1-C6	-3.22	119.16	125.10
1	1	1911	PSU	O2-C2-N1	-3.22	119.24	122.79
1	1	1835	2MG	CM2-N2-C2	-3.20	116.80	123.86
1	1	746	PSU	O2-C2-N1	-3.20	119.27	122.79
1	1	1917	PSU	O2-C2-N1	-3.13	119.35	122.79
2	2	1516	2MG	C5-C6-N1	3.12	119.46	113.95
1	1	2069	G7M	C2-N1-C6	-3.09	119.42	125.10
1	1	955	PSU	O2-C2-N1	-3.04	119.44	122.79
1	1	1835	2MG	C5-C6-N1	3.02	119.28	113.95
1	1	2504	PSU	O2-C2-N1	-3.00	119.48	122.79
1	1	745	1MG	C5-C6-N1	3.00	118.41	113.90
1	1	2498	OMC	CM2-O2'-C2'	-2.97	106.73	114.52
2	2	1207	2MG	C5-C6-N1	2.95	119.17	113.95
54	z	17	OMG	OP2-P-O5'	2.94	114.54	106.73
2	2	1407	5MC	C5-C6-N1	-2.93	120.32	123.34
2	2	527	G7M	C2-N1-C6	-2.91	119.75	125.10
1	1	2552	OMU	O4-C4-C5	-2.91	120.05	125.16
1	1	2552	OMU	C5-C4-N3	2.89	119.17	114.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2580	PSU	O2-C2-N1	-2.84	119.66	122.79
2	2	966	2MG	C5-C6-N1	2.82	118.94	113.95
1	1	2504	PSU	C6-C5-C4	2.82	120.17	118.20
1	1	2251	OMG	C5-C6-N1	2.82	118.93	113.95
1	1	2251	OMG	CM2-O2'-C2'	-2.77	107.26	114.52
2	2	967	5MC	CM5-C5-C6	-2.74	119.19	122.85
1	1	747	5MU	O2-C2-N1	-2.73	119.16	122.79
54	z	66	5MU	C6-C5-C4	2.71	120.30	118.03
1	1	2445	2MG	C5-C6-N1	2.70	118.72	113.95
2	2	1498	UR3	C4-N3-C2	-2.68	122.04	124.56
1	1	1939	5MU	O2-C2-N1	-2.66	119.25	122.79
54	z	66	5MU	O2-C2-N1	-2.64	119.27	122.79
1	1	2069	G7M	N2-C2-N1	2.62	122.29	116.71
1	1	1962	5MC	C5-C6-N1	-2.59	120.67	123.34
1	1	2552	OMU	O2-C2-N1	-2.50	119.46	122.79
1	1	2445	2MG	CM2-N2-C2	-2.49	118.35	123.86
2	2	966	2MG	C8-N7-C5	2.47	107.70	102.99
2	2	1498	UR3	C1'-N1-C2	2.47	121.16	116.99
2	2	967	5MC	C5-C6-N1	-2.46	120.81	123.34
55	B	1	FME	O-C-CA	-2.42	118.44	124.78
54	z	66	5MU	C5M-C5-C4	2.40	121.41	118.77
1	1	2503	2MA	C8-N7-C5	2.39	107.55	102.99
1	1	1962	5MC	C5-C4-N4	-2.37	117.94	121.48
1	1	2457	PSU	C6-N1-C2	-2.35	120.28	122.68
1	1	747	5MU	C6-C5-C4	2.33	119.98	118.03
54	z	66	5MU	C1'-N1-C2	2.32	121.77	117.57
1	1	745	1MG	CM1-N1-C2	-2.32	118.31	120.72
1	1	2605	PSU	O2-C2-N1	-2.31	120.25	122.79
44	p	89	0TD	OD1-CG-CB	-2.31	117.61	122.44
1	1	2504	PSU	C6-N1-C2	-2.29	120.34	122.68
2	2	1207	2MG	CM2-N2-C2	-2.28	118.83	123.86
1	1	1911	PSU	C6-C5-C4	2.27	119.78	118.20
1	1	2251	OMG	C8-N7-C5	2.26	107.30	102.99
1	1	1962	5MC	CM5-C5-C6	-2.24	119.86	122.85
2	2	1516	2MG	C8-N7-C5	2.23	107.25	102.99
2	2	1207	2MG	C8-N7-C5	2.23	107.24	102.99
2	2	516	PSU	O2-C2-N1	-2.22	120.35	122.79
1	1	2445	2MG	O6-C6-C5	-2.21	120.06	124.37
1	1	2445	2MG	C8-N7-C5	2.21	107.19	102.99
1	1	1939	5MU	O4-C4-N3	-2.20	115.91	120.12
1	1	1917	PSU	C6-N1-C2	-2.18	120.45	122.68
2	2	516	PSU	O4'-C1'-C2'	2.18	108.22	105.14

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2580	PSU	O4'-C1'-C2'	2.18	108.22	105.14
1	1	1911	PSU	C6-N1-C2	-2.18	120.46	122.68
54	z	66	5MU	C1'-N1-C6	-2.15	117.55	121.12
1	1	2498	OMC	C2'-C1'-N1	-2.14	110.06	114.22
1	1	2030	6MZ	C9-N6-C6	-2.14	121.03	122.87
1	1	2580	PSU	C6-N1-C2	-2.10	120.53	122.68
1	1	2457	PSU	O4'-C1'-C2'	2.09	108.09	105.14
1	1	2503	2MA	CM2-C2-N1	2.08	120.85	116.23
2	2	1516	2MG	O6-C6-C5	-2.06	120.35	124.37
54	z	17	OMG	C8-N7-C5	2.04	106.88	102.99
1	1	745	1MG	C8-N7-C5	2.04	106.88	102.99
1	1	1835	2MG	C8-N7-C5	2.04	106.88	102.99
1	1	2251	OMG	O6-C6-C5	-2.04	120.40	124.37
1	1	747	5MU	O4-C4-N3	-2.03	116.23	120.12

There are no chirality outliers.

All (44) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	2	516	PSU	O4'-C1'-C5-C4
2	2	516	PSU	O4'-C1'-C5-C6
2	2	527	G7M	C3'-C4'-C5'-O5'
2	2	967	5MC	O4'-C4'-C5'-O5'
2	2	967	5MC	C3'-C4'-C5'-O5'
2	2	1519	MA6	O4'-C4'-C5'-O5'
1	1	1618	6MZ	N1-C6-N6-C9
1	1	1618	6MZ	O4'-C4'-C5'-O5'
1	1	1618	6MZ	C3'-C4'-C5'-O5'
1	1	1915	3TD	O4'-C1'-C5-C4
1	1	1915	3TD	O4'-C1'-C5-C6
1	1	2030	6MZ	N1-C6-N6-C9
1	1	2445	2MG	C3'-C4'-C5'-O5'
1	1	2504	PSU	O4'-C4'-C5'-O5'
54	z	17	OMG	C5'-O5'-P-OP3
2	2	1519	MA6	C3'-C4'-C5'-O5'
1	1	2030	6MZ	O4'-C4'-C5'-O5'
1	1	2030	6MZ	C3'-C4'-C5'-O5'
1	1	2504	PSU	C3'-C4'-C5'-O5'
55	B	1	FME	CA-CB-CG-SD
2	2	527	G7M	O4'-C4'-C5'-O5'
2	2	1402	4OC	O4'-C4'-C5'-O5'
1	1	2503	2MA	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
55	B	1	FME	N-CA-CB-CG
1	1	1835	2MG	C3'-C4'-C5'-O5'
1	1	1835	2MG	O4'-C4'-C5'-O5'
1	1	2445	2MG	O4'-C4'-C5'-O5'
54	z	66	5MU	O4'-C4'-C5'-O5'
54	z	17	OMG	C5'-O5'-P-OP1
55	B	1	FME	O1-CN-N-CA
55	B	1	FME	CB-CG-SD-CE
54	z	66	5MU	C3'-C4'-C5'-O5'
1	1	1618	6MZ	C5-C6-N6-C9
1	1	2030	6MZ	C5-C6-N6-C9
2	2	1402	4OC	C3'-C4'-C5'-O5'
44	p	89	0TD	CG-CB-SB-CSB
2	2	527	G7M	C4'-C5'-O5'-P
44	p	89	0TD	SB-CB-CG-OD1
1	1	2503	2MA	C3'-C4'-C5'-O5'
2	2	966	2MG	C3'-C4'-C5'-O5'
2	2	966	2MG	O4'-C4'-C5'-O5'
1	1	746	PSU	O4'-C1'-C5-C6
1	1	2069	G7M	O4'-C4'-C5'-O5'
54	z	17	OMG	O4'-C4'-C5'-O5'

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 418 ligands modelled in this entry, 418 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

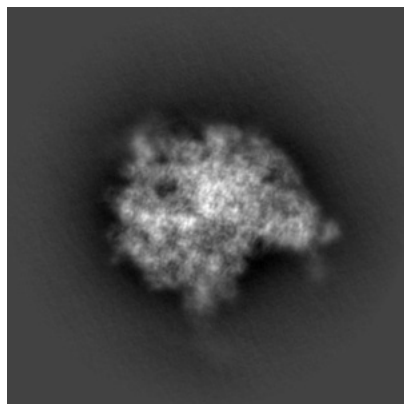
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-12928. These allow visual inspection of the internal detail of the map and identification of artifacts.

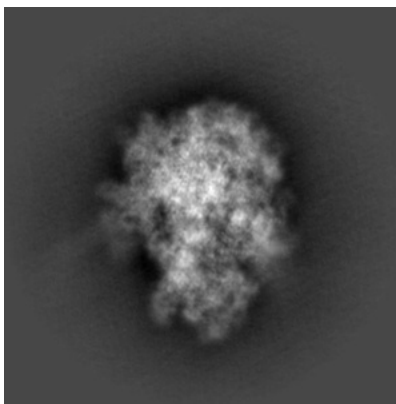
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

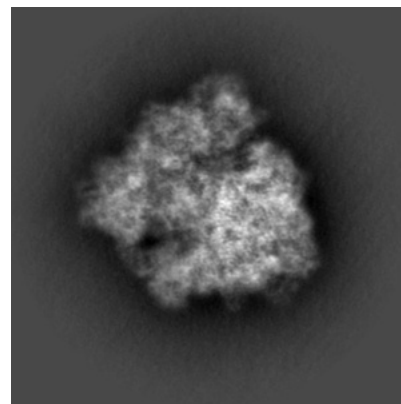
6.1.1 Primary map



X

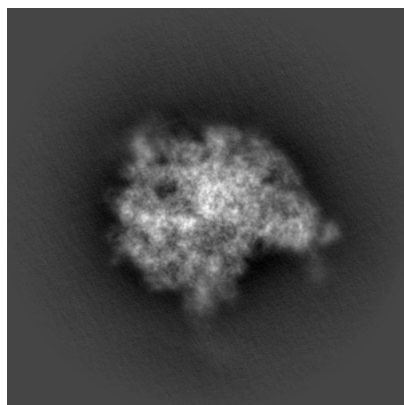


Y

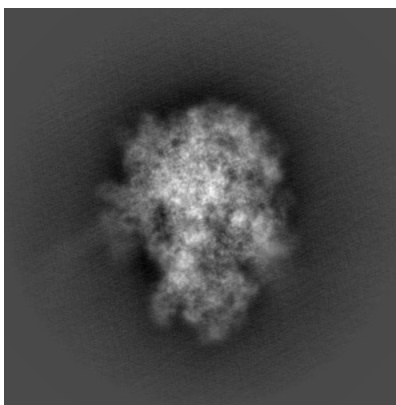


Z

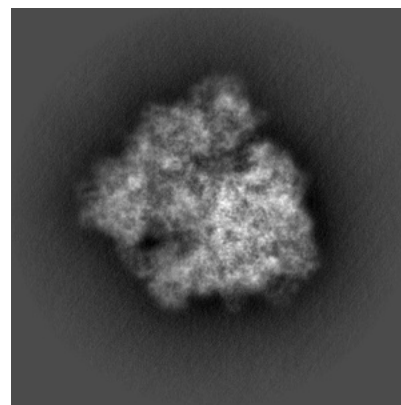
6.1.2 Raw map



X



Y

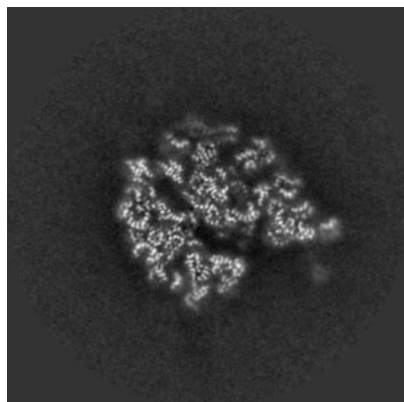


Z

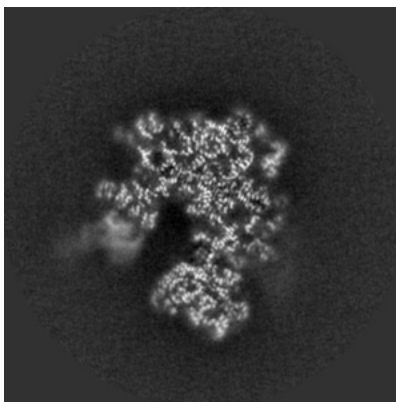
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

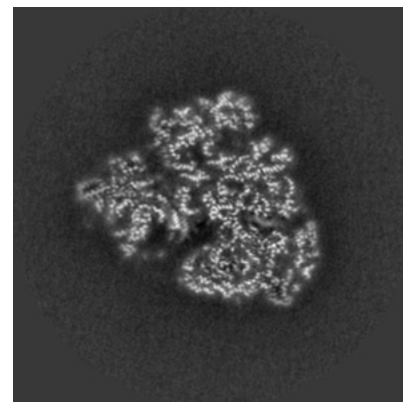
6.2.1 Primary map



X Index: 200

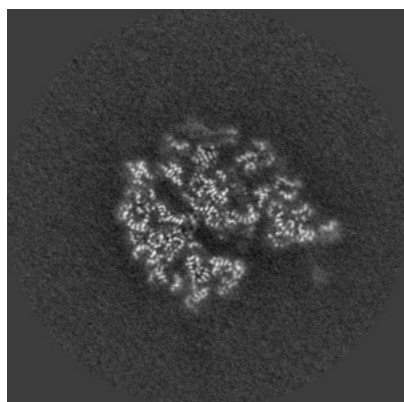


Y Index: 200

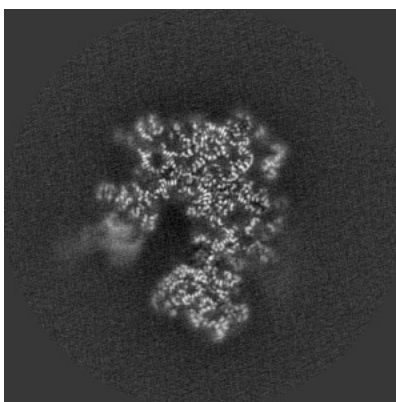


Z Index: 200

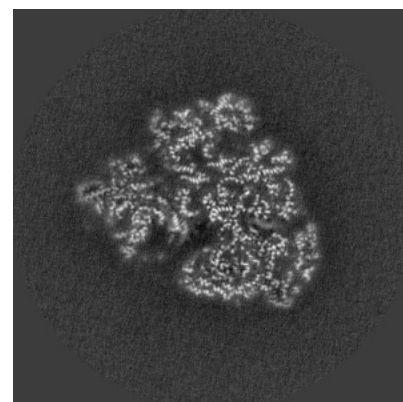
6.2.2 Raw map



X Index: 200



Y Index: 200

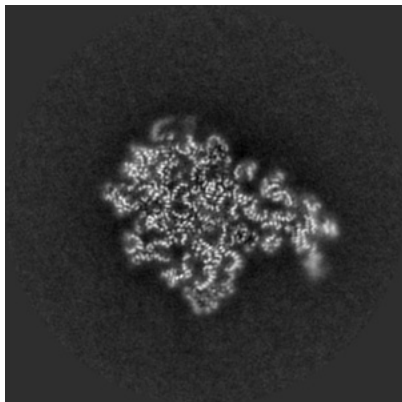


Z Index: 200

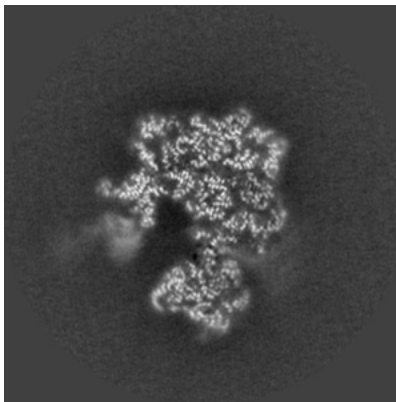
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

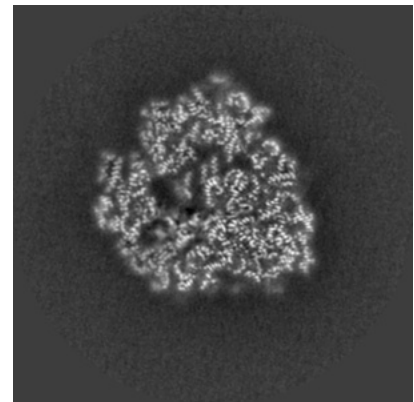
6.3.1 Primary map



X Index: 216

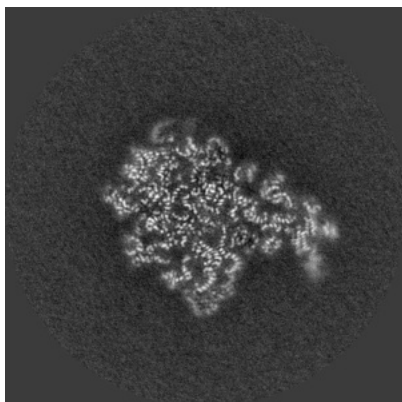


Y Index: 205

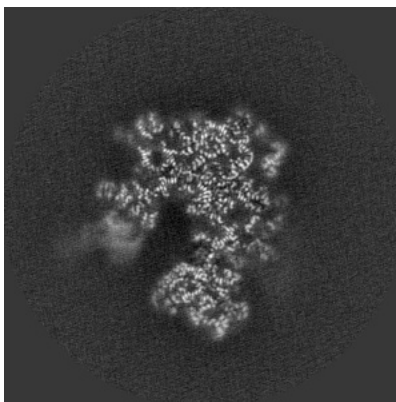


Z Index: 187

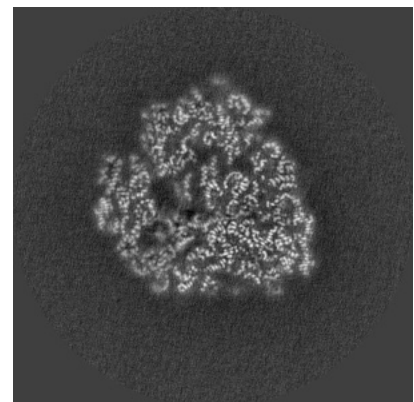
6.3.2 Raw map



X Index: 216



Y Index: 200

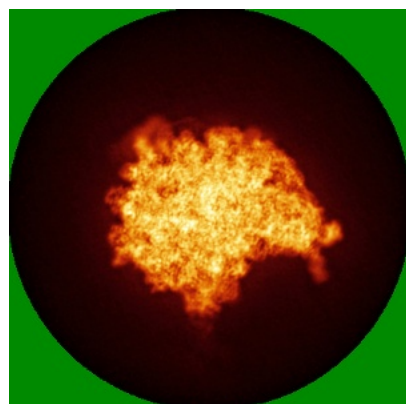


Z Index: 188

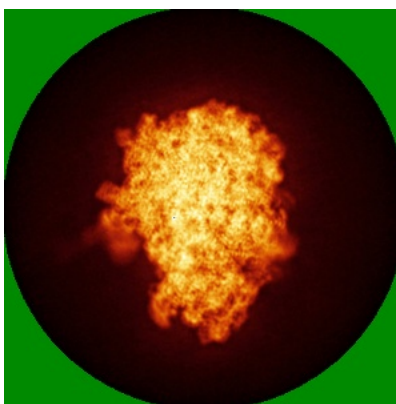
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

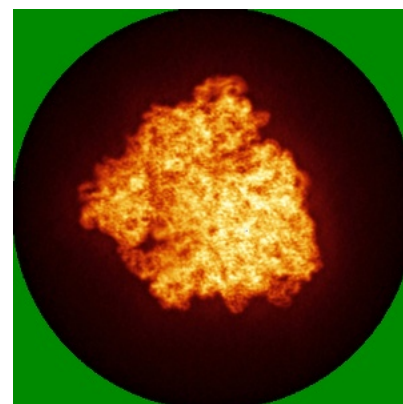
6.4.1 Primary map



X

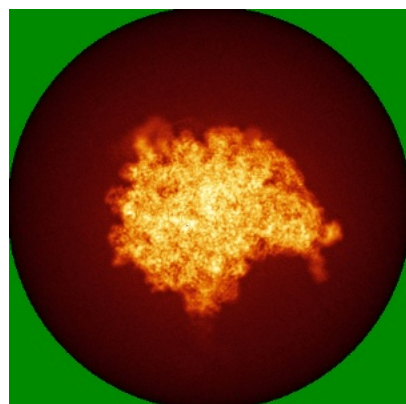


Y

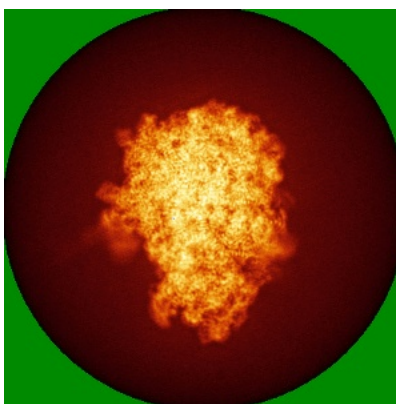


Z

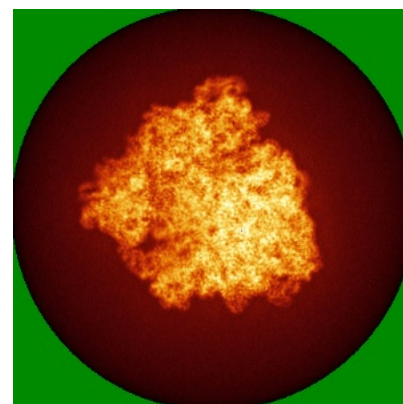
6.4.2 Raw map



X



Y



Z

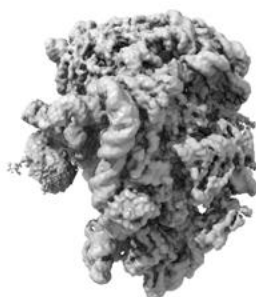
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.02. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X



Y



Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

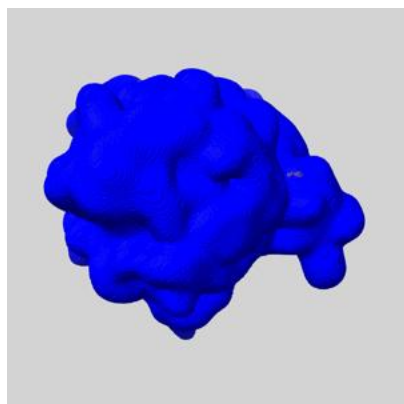
6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

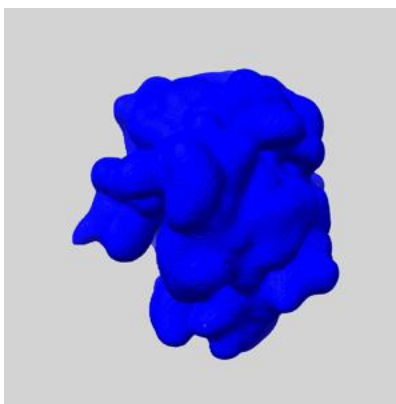
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

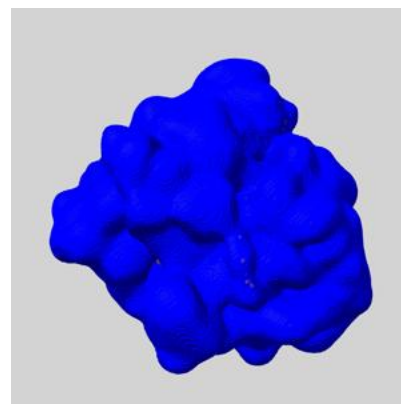
6.6.1 emd_12928_msk_1.map [i](#)



X



Y

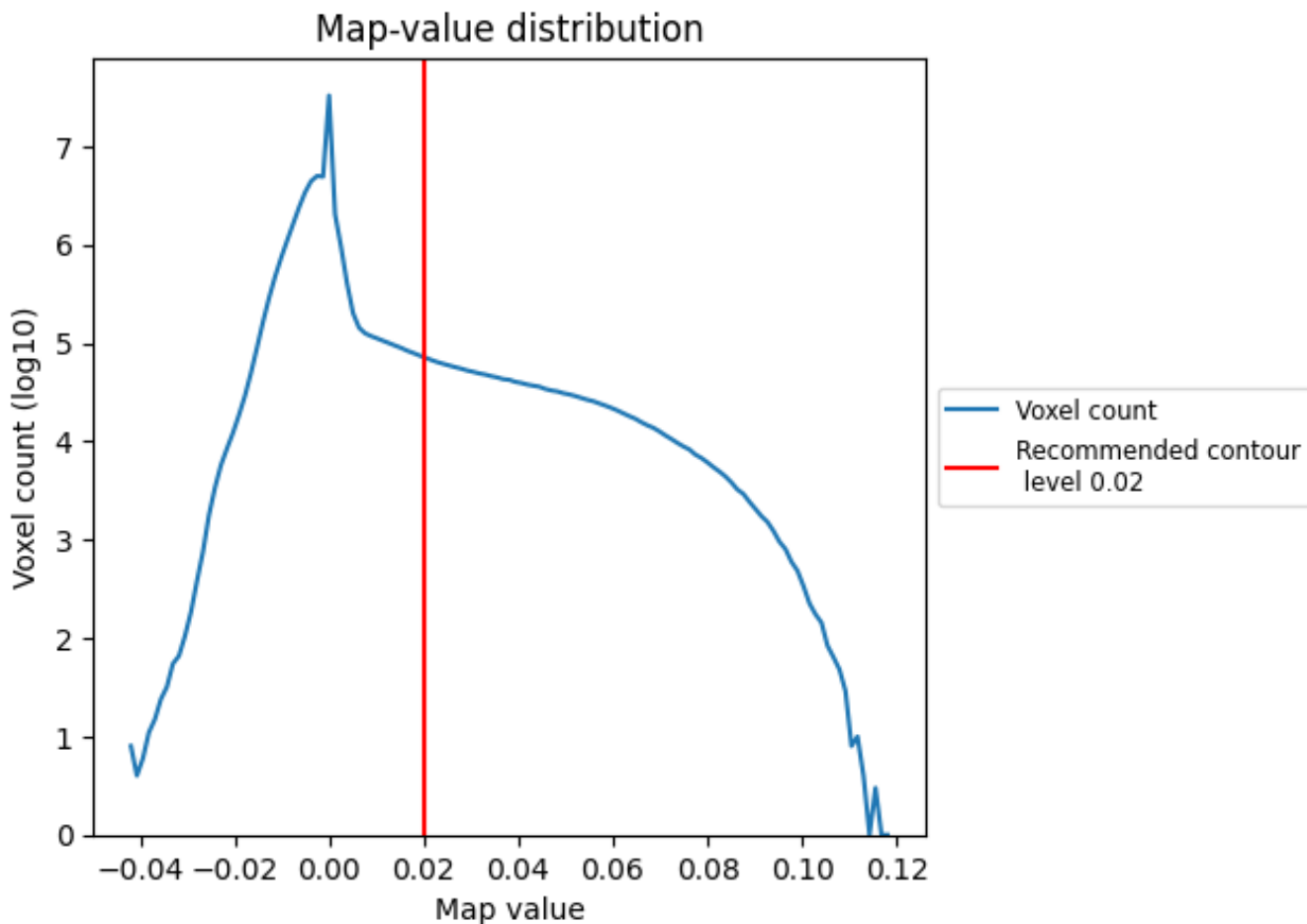


Z

7 Map analysis [i](#)

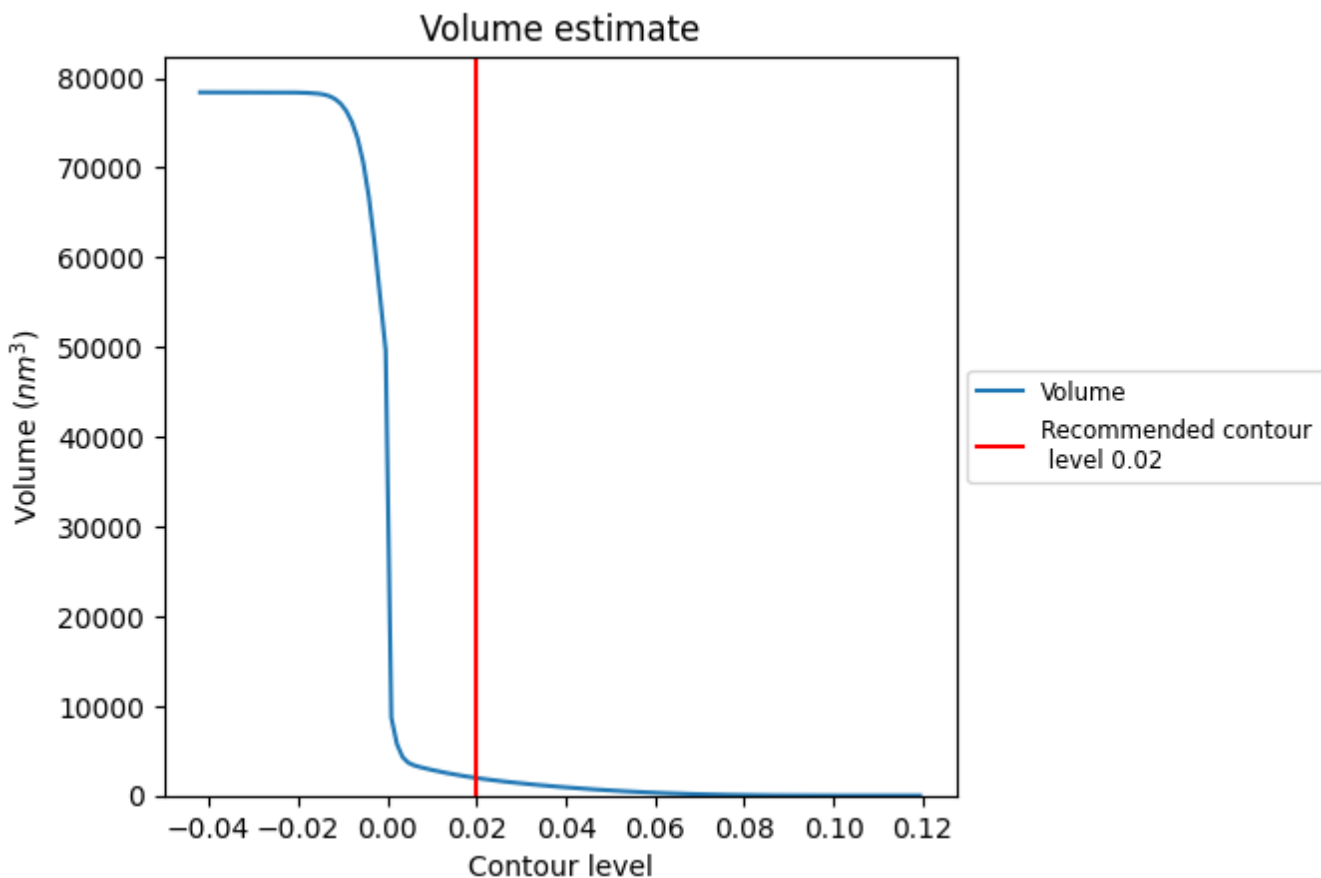
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

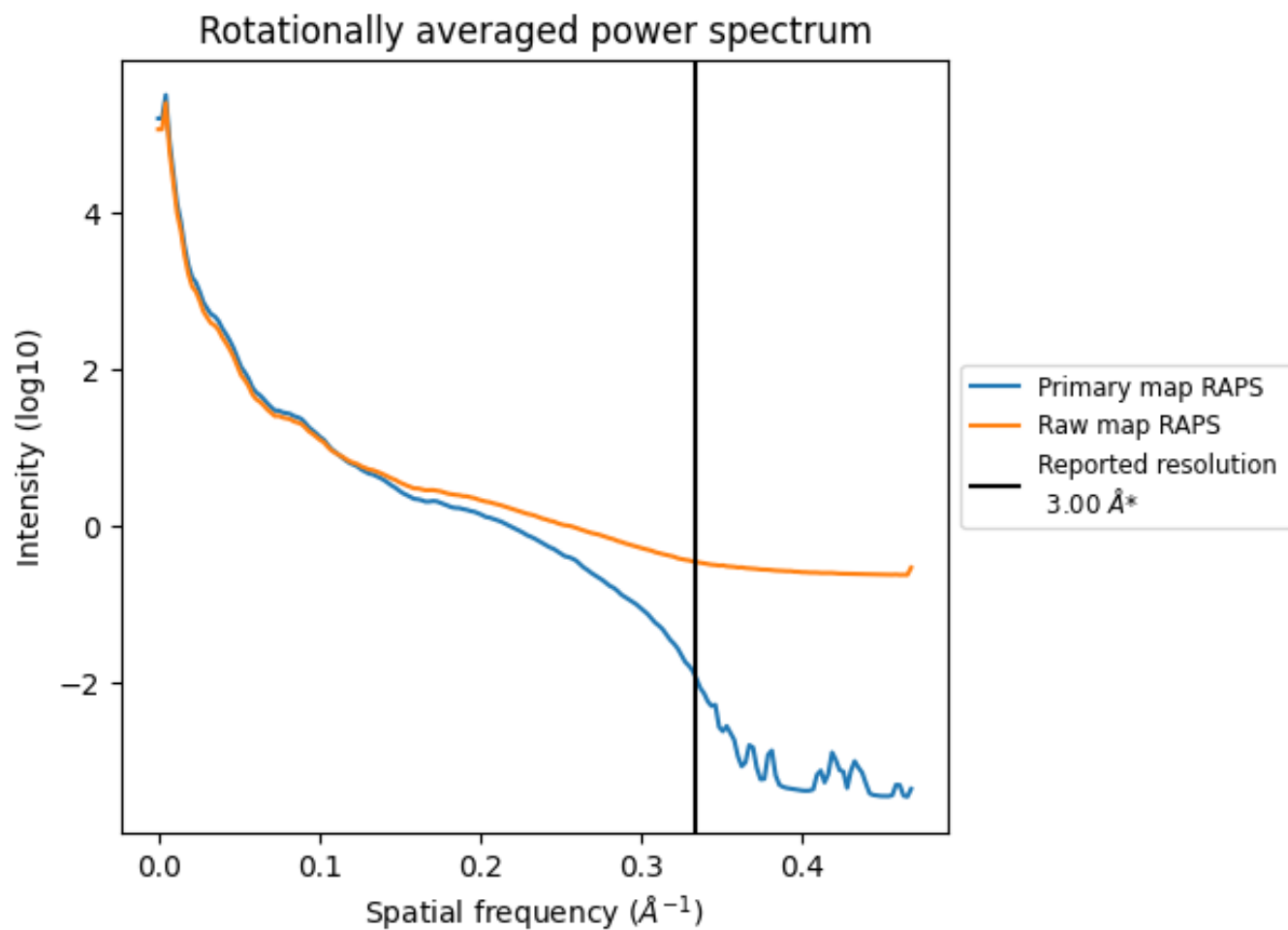
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1958 nm³; this corresponds to an approximate mass of 1769 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum [i](#)

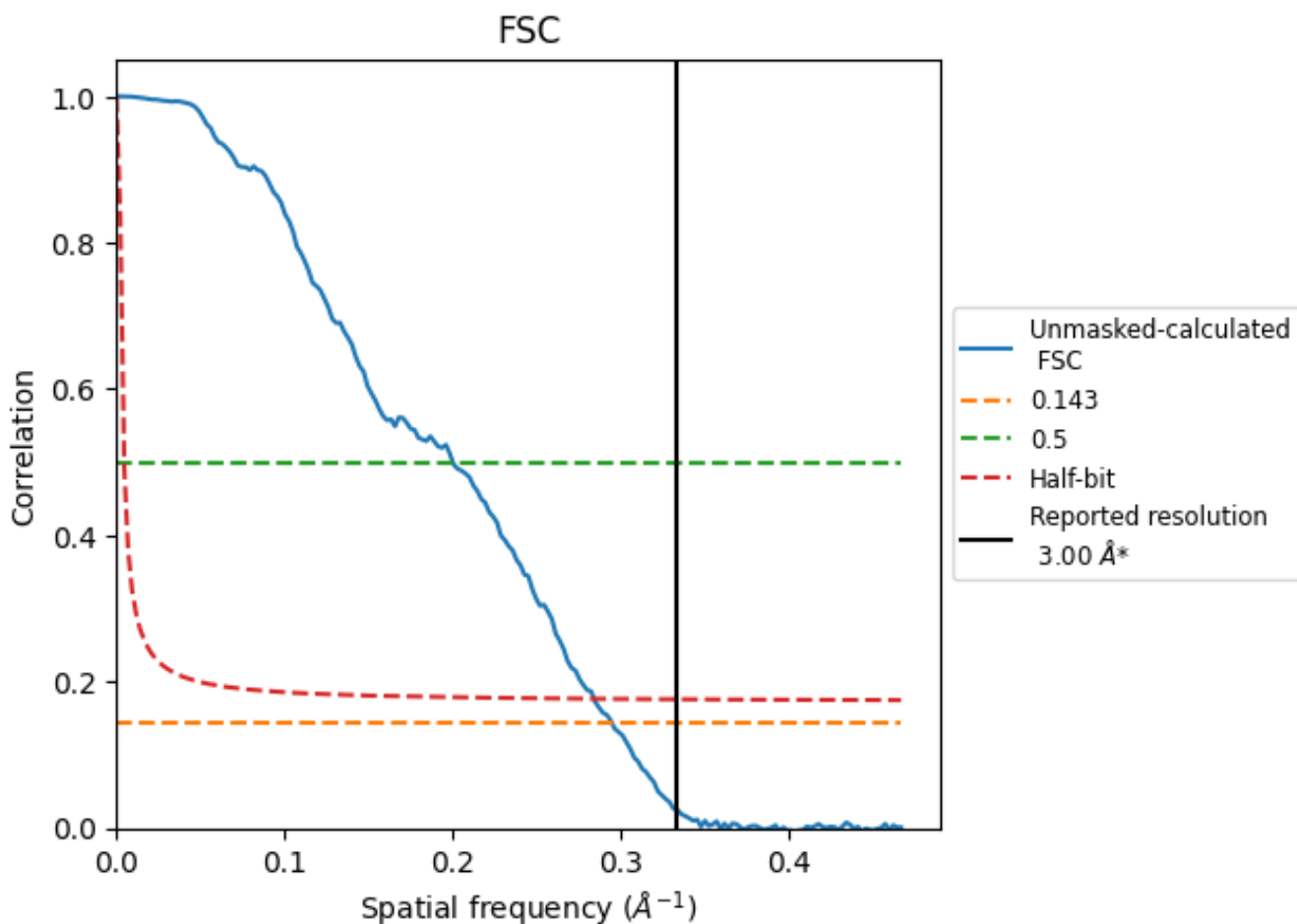


*Reported resolution corresponds to spatial frequency of 0.333 Å⁻¹

8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.333 Å⁻¹

8.2 Resolution estimates [i](#)

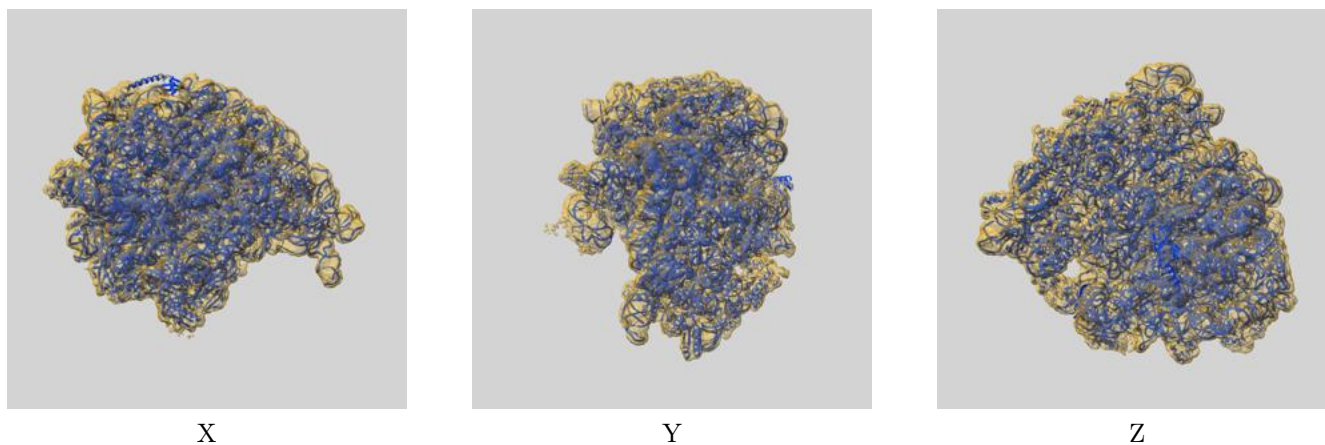
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.00	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.39	4.99	3.52

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.39 differs from the reported value 3.0 by more than 10 %

9 Map-model fit [i](#)

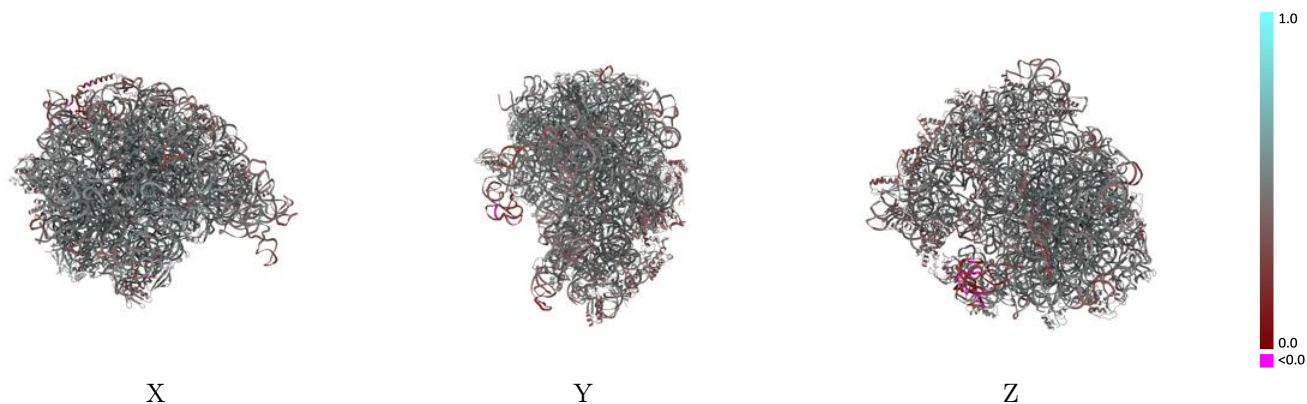
This section contains information regarding the fit between EMDB map EMD-12928 and PDB model 7OIF. Per-residue inclusion information can be found in section 3 on page 14.

9.1 Map-model overlay [i](#)



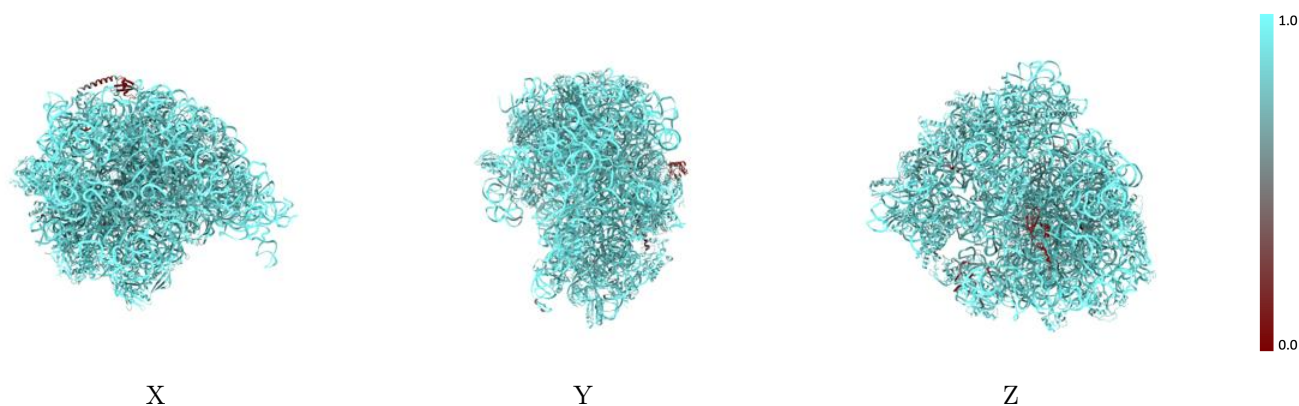
The images above show the 3D surface view of the map at the recommended contour level 0.02 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



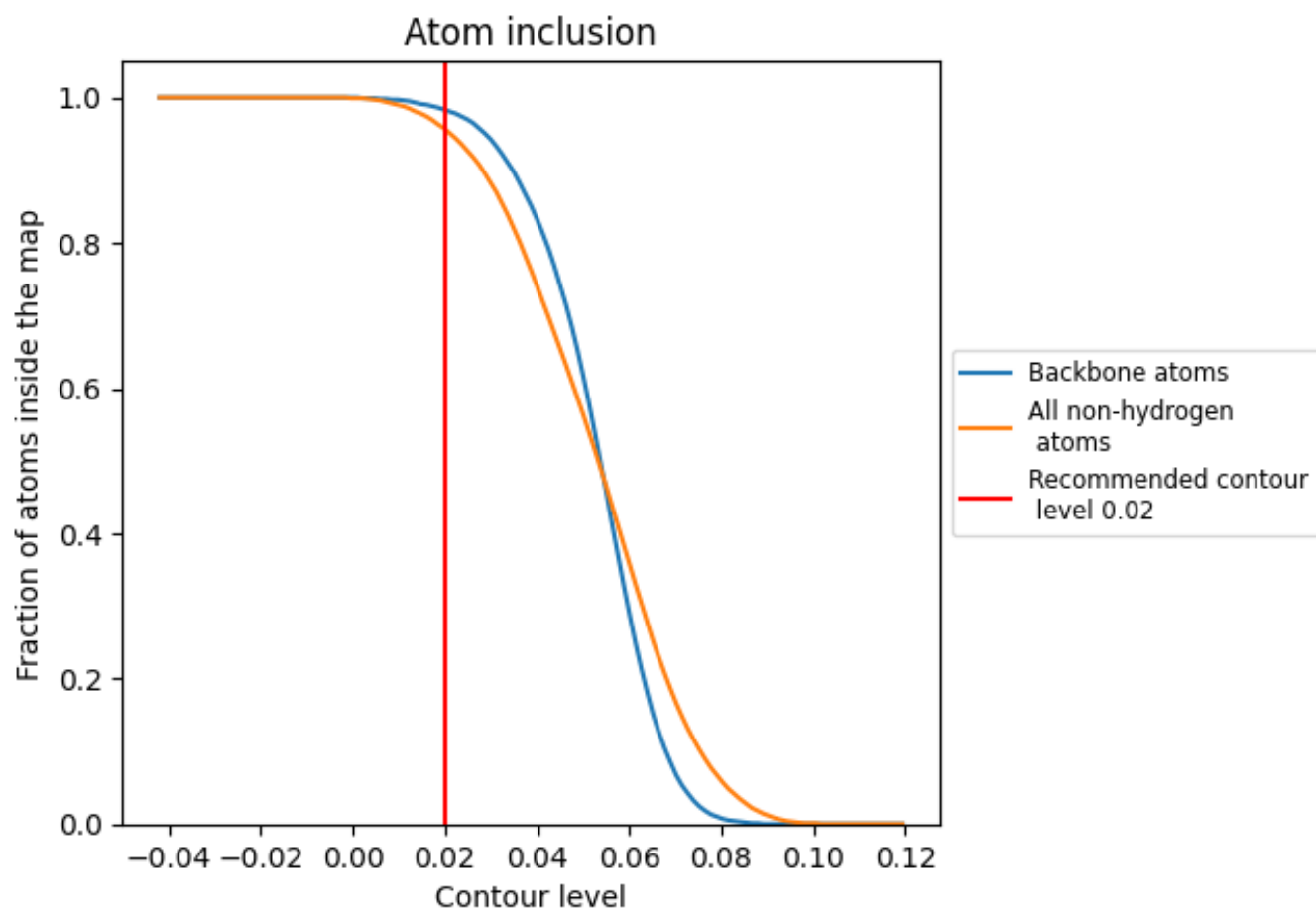
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.02).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 98% of all backbone atoms, 96% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary











































The table lists the average atom inclusion at the recommended contour level (0.02) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9570	 0.4680
1	 0.9860	 0.4780
2	 0.9950	 0.4720
3	 0.9970	 0.4700
4	 0.9610	 0.4570
B	 0.6130	 0.3050
C	 0.9030	 0.5150
D	 0.9140	 0.5060
E	 0.9070	 0.4720
F	 0.8940	 0.4250
G	 0.9250	 0.4350
H	 0.3850	 0.3300
I	 0.9120	 0.4930
J	 0.8570	 0.4940
K	 0.9190	 0.4880
L	 0.8940	 0.4910
M	 0.9400	 0.4950
N	 0.9370	 0.4470
O	 0.8740	 0.4830
P	 0.9350	 0.4840
Q	 0.9130	 0.4970
R	 0.8680	 0.4890
S	 0.8920	 0.4620
T	 0.9050	 0.4590
U	 0.8980	 0.4610
V	 0.8750	 0.5030
W	 0.9030	 0.4810
X	 0.8770	 0.4050
Y	 0.8940	 0.4750
Z	 0.8830	 0.3910
a	 0.8860	 0.4900
b	 0.8350	 0.4750
c	 0.9070	 0.5070
d	 0.9100	 0.5260
e	 0.9250	 0.5010



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Chain	Atom inclusion	Q-score
f	 0.8640	 0.3940
g	 0.8920	 0.4370
h	 0.8970	 0.4320
i	 0.9080	 0.4670
j	 0.8890	 0.4330
k	 0.8830	 0.4020
l	 0.8870	 0.4600
m	 0.9130	 0.4280
n	 0.8540	 0.4100
o	 0.9040	 0.4500
p	 0.8480	 0.4820
q	 0.9090	 0.4260
r	 0.9170	 0.4490
s	 0.9060	 0.4410
t	 0.9440	 0.4620
u	 0.8810	 0.4470
v	 0.9040	 0.4400
w	 0.9160	 0.4380
x	 0.9280	 0.4340
y	 0.7140	 0.3730
z	 0.9760	 0.4220