Full wwPDB EM Validation Report ⓘ

Mar 15, 2026 – 08:10 AM UTC

PDB ID	:	9FY2 / pdb_00009fy2
EMDB ID	:	EMD-50856
Title	:	Structure of CliM-stalled Bacillus subtilis 70S ribosome with empty A-site
Authors	:	Gersteuer, F.; Wilson, D.N.
Deposited on	:	2024-07-02
Resolution	:	2.30 Å(reported)

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

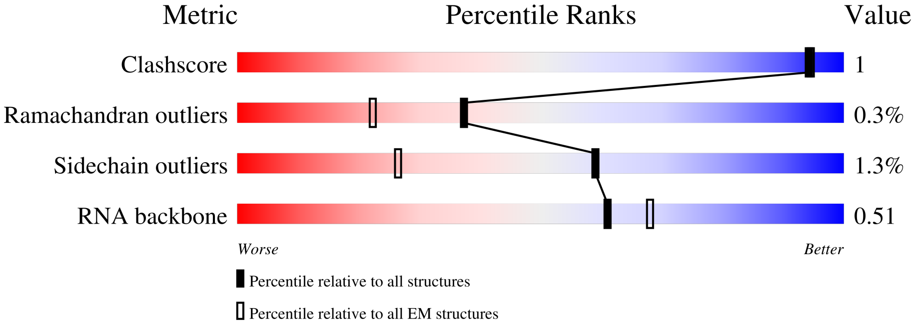
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

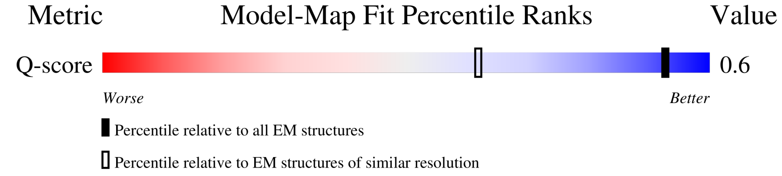
1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 2.30 Å.

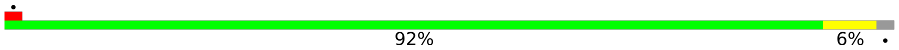
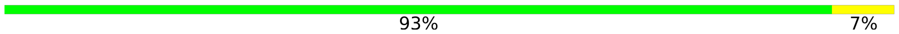
Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	4254 (1.80 - 2.80)

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 <=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	0	59	
2	1	49	
3	2	44	

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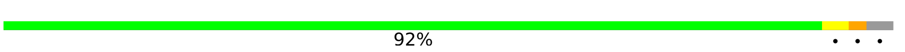
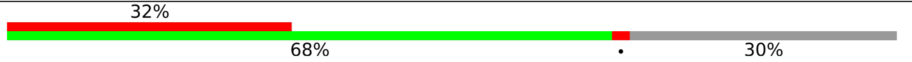
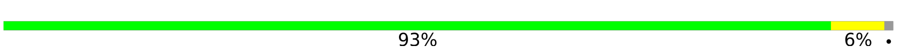
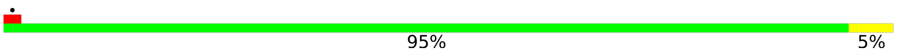
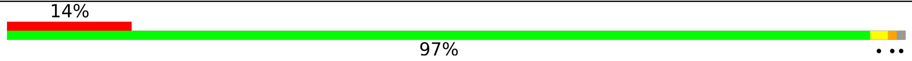
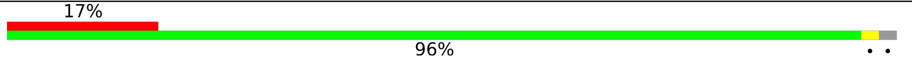
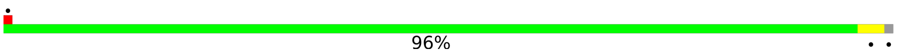
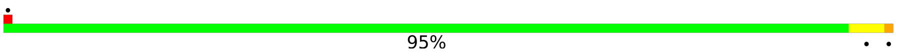
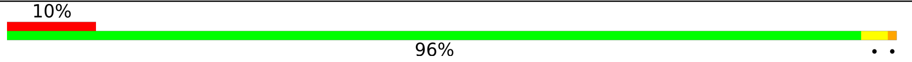
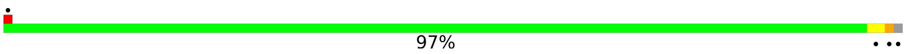
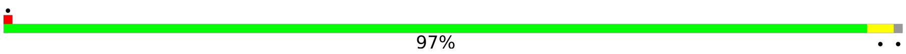
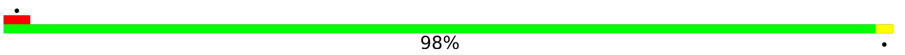
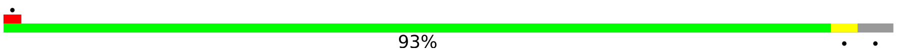
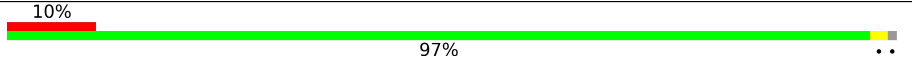
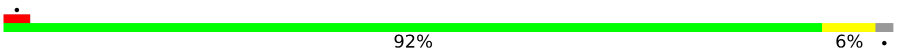
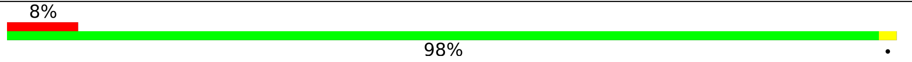
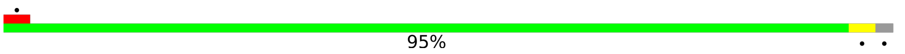
Mol	Chain	Length	Quality of chain
4	3	66	
5	4	37	
6	6	66	
7	B	112	
8	C	277	
9	D	209	
10	E	207	
11	F	179	
12	G	179	
13	J	145	
14	K	122	
15	L	146	
16	M	144	
17	N	120	
18	O	120	
19	P	115	
20	Q	119	
21	R	102	
22	S	113	
23	T	95	
24	U	103	
25	W	94	
26	X	62	
27	Y	66	
28	Z	59	

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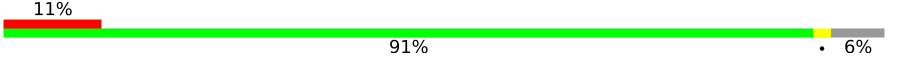
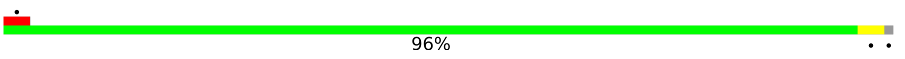
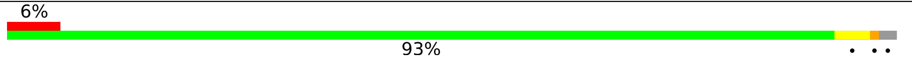
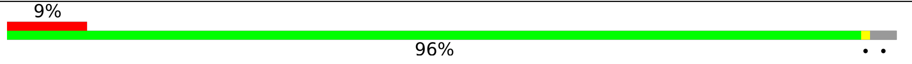
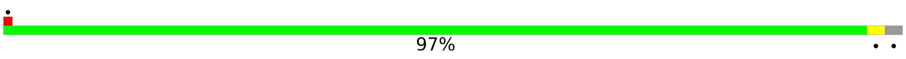
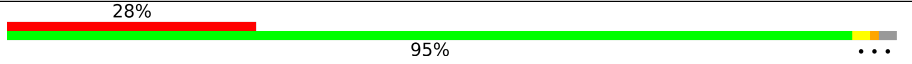
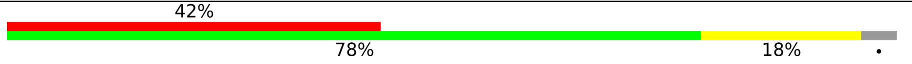
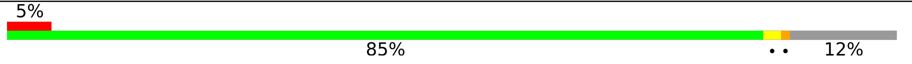
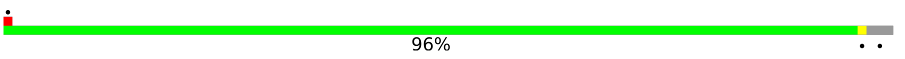
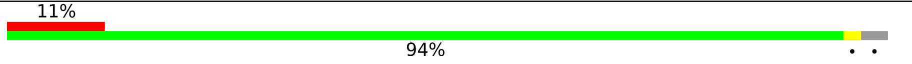
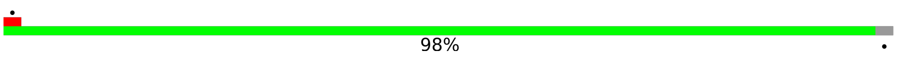
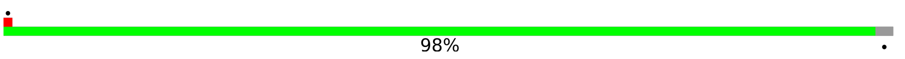
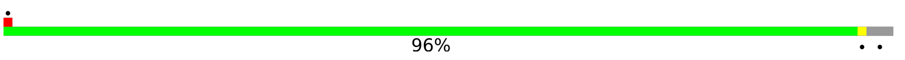
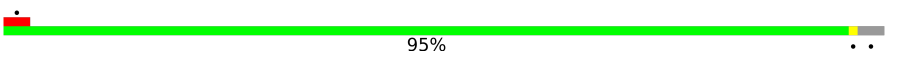
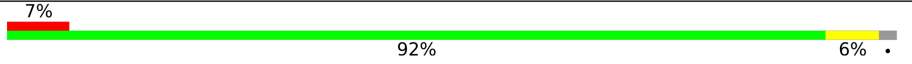
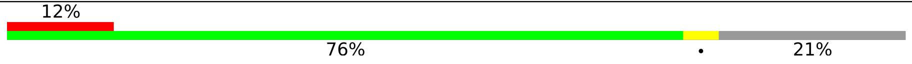
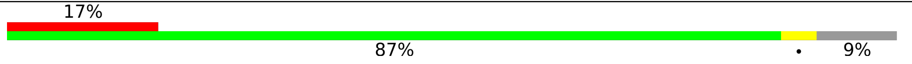
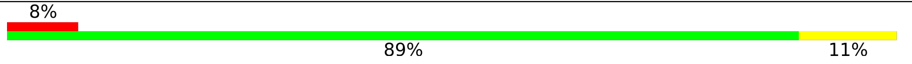
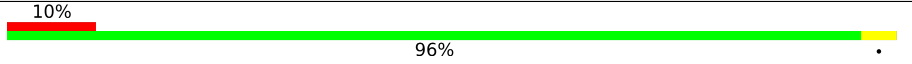
Mol	Chain	Length	Quality of chain
29	c	218	
30	e	166	
31	f	95	
32	g	156	
33	h	132	
34	i	130	
35	j	102	
36	k	131	
37	l	138	
38	m	121	
39	n	61	
40	o	89	
41	p	90	
42	q	87	
43	r	79	
44	t	88	
45	v	76	
46	A	2928	
47	b	246	
48	s	92	
49	5	38	
50	7	6	
51	a	1554	
52	d	200	

2 Entry composition (i)

There are 52 unique types of molecules in this entry. The entry contains 137121 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 protein called Large ribosomal subunit protein bL32.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	0	55	432	267	87	72	6	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
0	11	VAL	MET	conflict	UNP O34687

- Molecule 2 is a protein called 50S ribosomal protein L33 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	1	48	403	245	81	74	3	0	0

- Molecule 3 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	2	44	368	222	89	55	2	0	0

- Molecule 4 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	3	64	512	321	107	82	2	0	0

- Molecule 5 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	4	37	297	186	60	46	5	0	0

- Molecule 6 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	6	46	356	222	63	66	5	0	0

- Molecule 7 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
7	B	112	2392	1068	435	778	111	0	0

- Molecule 8 is a protein called Large ribosomal subunit protein uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	C	273	2093	1301	412	374	6	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	216	VAL	ILE	conflict	UNP P42919

- Molecule 9 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	D	207	1575	988	290	292	5	0	0

- Molecule 10 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	E	206	1567	983	290	292	2	0	0

- Molecule 11 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	F	178	1405	893	245	260	7	0	0

- Molecule 12 is a protein called Large ribosomal subunit protein uL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	G	175	1342	835	248	257	2	0	0

- Molecule 13 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	J	143	1131	714	207	205	5	0	0

- Molecule 14 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	K	122	921	571	173	173	4	0	0

- Molecule 15 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	L	146	1082	671	207	202	2	0	0

- Molecule 16 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	M	135	1076	690	205	176	5	0	0

- Molecule 17 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	N	119	954	583	186	181	4	0	0

- Molecule 18 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	O	120	913	564	176	172	1	0	0

- Molecule 19 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
19	P	114	937	595	184	158	0	0

- Molecule 20 is a protein called Large ribosomal subunit protein bL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	Q	118	950	597	191	158	4	0	0

- Molecule 21 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	R	102	795	506	140	148	1	0	0

- Molecule 22 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	S	110	850	530	165	151	4	0	0

- Molecule 23 is a protein called Large ribosomal subunit protein uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	T	91	733	458	135	137	3	0	0

- Molecule 24 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	U	102	770	482	143	141	4	0	0

- Molecule 25 is a protein called Large ribosomal subunit protein bL27.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
25	W	82	629	390	123	116	0	0

- Molecule 26 is a protein called Large ribosomal subunit protein bL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	X	61	467	288	98	79	2	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
X	33	VAL	LEU	conflict	UNP P37807

- Molecule 27 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	Y	66	540	334	104	100	2	0	0

- Molecule 28 is a protein called Large ribosomal subunit protein uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	Z	58	456	281	89	85	1	0	0

- Molecule 29 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
29	c	204	1608	1004	302	299	3	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
c	148	ILE	VAL	conflict	UNP P21465

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
30	e	164	1219	767	225	225	2	0	0

- Molecule 31 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
31	f	93	765	482	136	145	2	0	0

- Molecule 32 is a protein called Small ribosomal subunit protein uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	g	151	Total	C	N	O	S	0	0
			1199	751	225	217	6		

- Molecule 33 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	h	130	Total	C	N	O	S	0	0
			1030	650	190	187	3		

- Molecule 34 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	i	128	Total	C	N	O	S	0	0
			997	618	198	180	1		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
i	72	PHE	LEU	conflict	UNP P21470

- Molecule 35 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	j	98	Total	C	N	O	S	0	0
			788	497	144	145	2		

- Molecule 36 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	k	115	Total	C	N	O	S	0	0
			847	520	166	159	2		

- Molecule 37 is a protein called Small ribosomal subunit protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	l	134	Total	C	N	O	S	0	0
			1036	642	208	184	2		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
l	2	ALA	PRO	conflict	UNP P21472

- Molecule 38 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
38	m	117	934	573	192	169	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
m	33	ILE	VAL	conflict	UNP P20282

- Molecule 39 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
39	n	60	498	317	98	78	5	0	0

- Molecule 40 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
40	o	87	730	448	149	132	1	0	0

- Molecule 41 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	p	87	691	439	127	123	2	0	0

- Molecule 42 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	q	84	693	438	128	125	2	0	0

- Molecule 43 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	r	65	522	334	97	89	2	0	0

- Molecule 44 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	t	86	658	402	134	121	1	0	0

- Molecule 45 is a RNA chain called P-site tRNA-Phe.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
45	v	76	1622	723	290	533	76	0	0

- Molecule 46 is a RNA chain called 23S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
46	A	2729	58630	26158	10860	18885	2727	0	0

- Molecule 47 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
47	b	195	1564	996	277	285	6	0	0

- Molecule 48 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
48	s	84	680	435	126	117	2	0	0

- Molecule 49 is a protein called Nascent Chain CliM.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
49	5	38	346	232	56	57	1	0	0

- Molecule 50 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
50	7	6	123	55	15	47	6	0	0

- Molecule 51 is a RNA chain called 16S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
51	a	1509	32391	14444	5959	10479	1509	0	0

- Molecule 52 is a protein called 30S ribosomal protein S4.

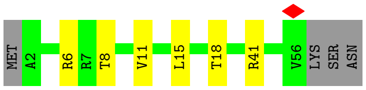
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
52	d	199	1604	1013	298	291	2	0	0

3 Residue-property plots ⓘ

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.

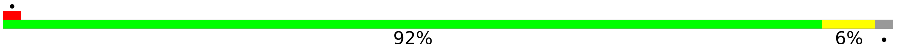
- Molecule 1: Large ribosomal subunit protein bL32

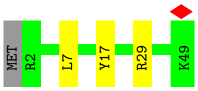
Chain 0:



- Molecule 2: 50S ribosomal protein L33 1

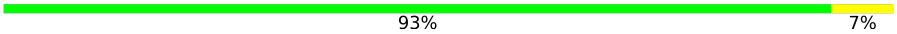
Chain 1:

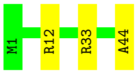




- Molecule 3: 50S ribosomal protein L34

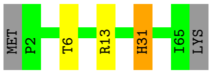
Chain 2:





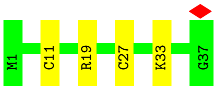
- Molecule 4: 50S ribosomal protein L35

Chain 3:

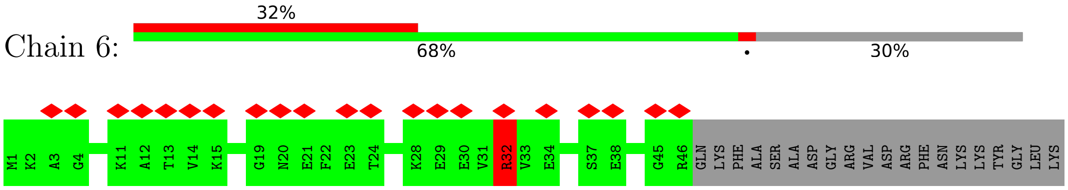


- Molecule 5: 50S ribosomal protein L36

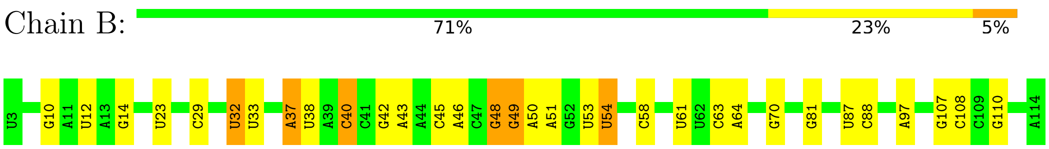
Chain 4:



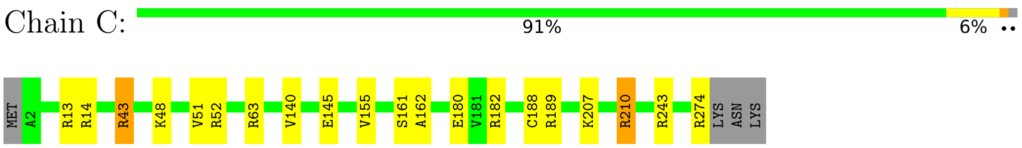
- Molecule 6: 50S ribosomal protein L31



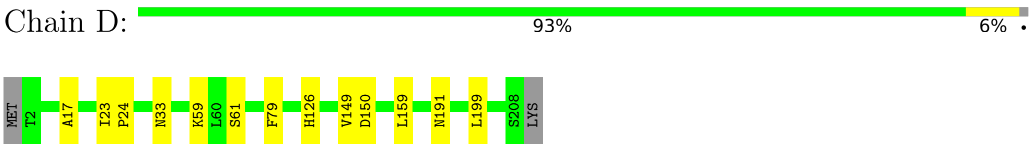
- Molecule 7: 5S rRNA



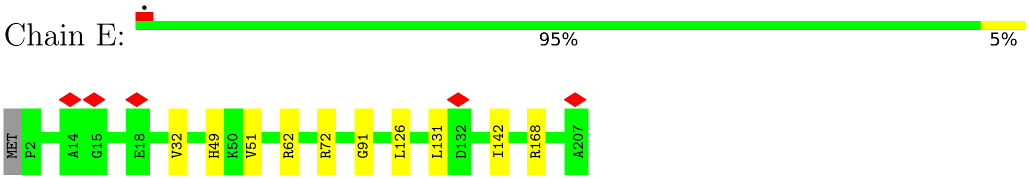
- Molecule 8: Large ribosomal subunit protein uL2



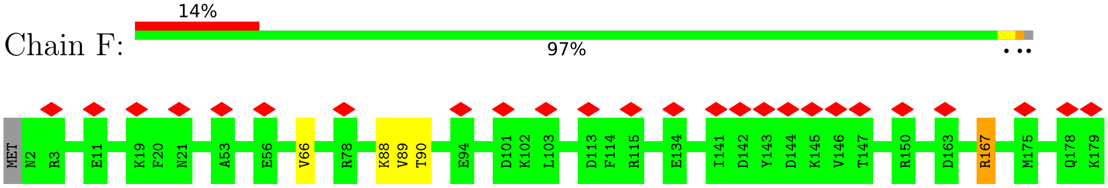
- Molecule 9: 50S ribosomal protein L3



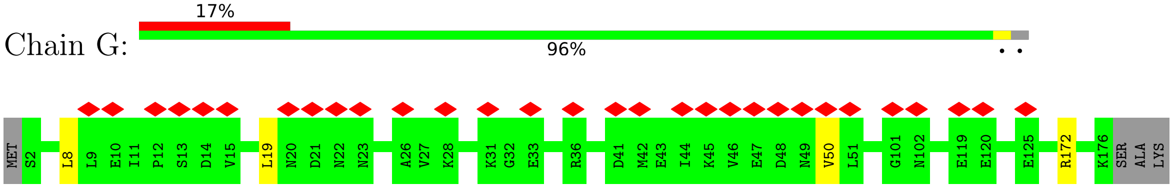
- Molecule 10: 50S ribosomal protein L4



- Molecule 11: 50S ribosomal protein L5

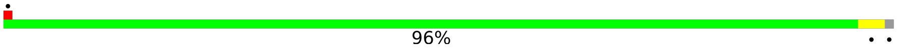


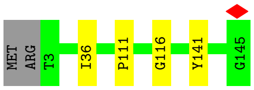
- Molecule 12: Large ribosomal subunit protein uL6



- Molecule 13: 50S ribosomal protein L13

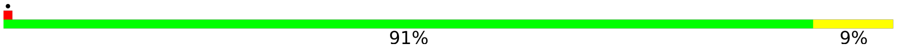
Chain J:

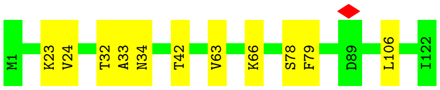




- Molecule 14: 50S ribosomal protein L14

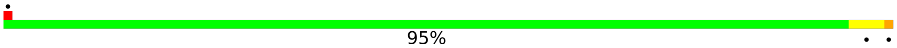
Chain K:

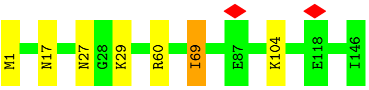




- Molecule 15: 50S ribosomal protein L15

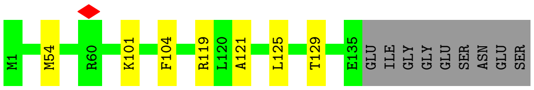
Chain L:





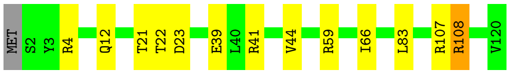
- Molecule 16: 50S ribosomal protein L16

Chain M:



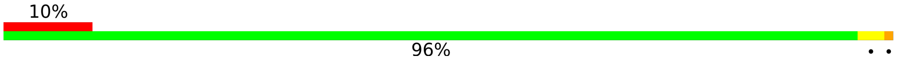
- Molecule 17: 50S ribosomal protein L17

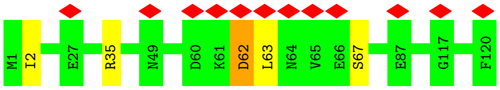
Chain N:



- Molecule 18: 50S ribosomal protein L18

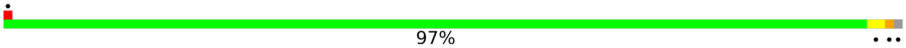
Chain O:

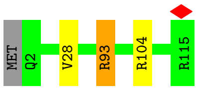




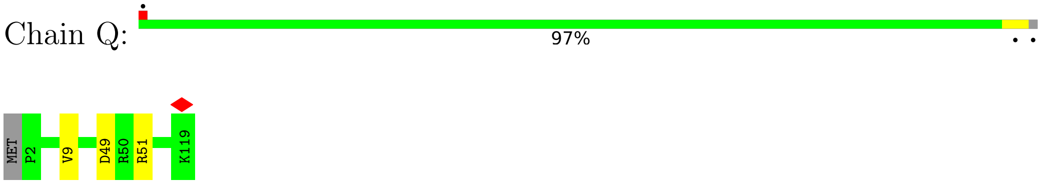
- Molecule 19: 50S ribosomal protein L19

Chain P:

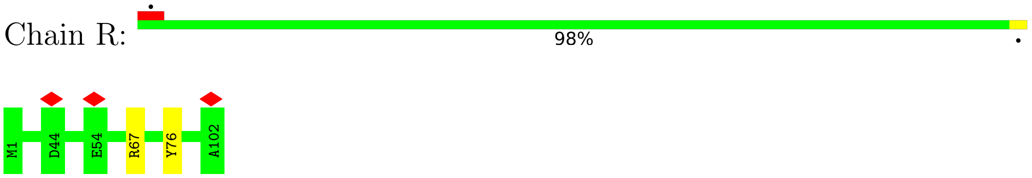




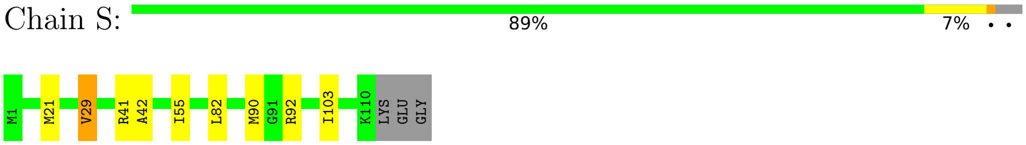
- Molecule 20: Large ribosomal subunit protein bL20



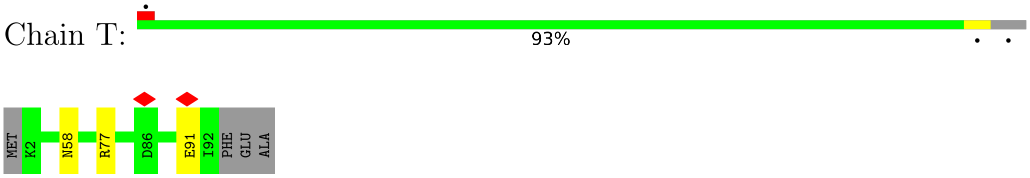
- Molecule 21: 50S ribosomal protein L21



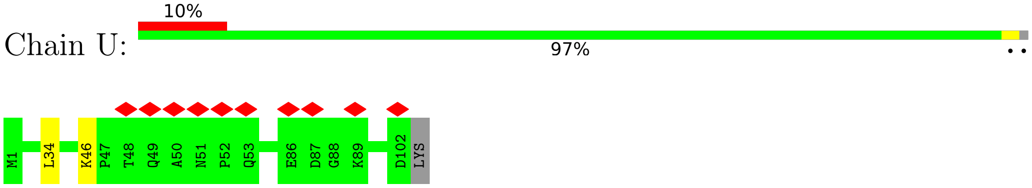
- Molecule 22: 50S ribosomal protein L22



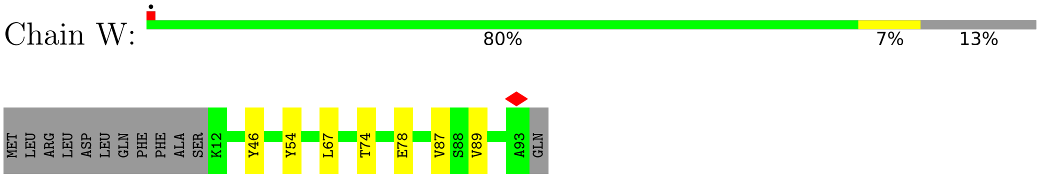
- Molecule 23: Large ribosomal subunit protein uL23



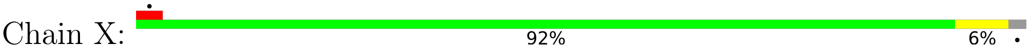
- Molecule 24: 50S ribosomal protein L24

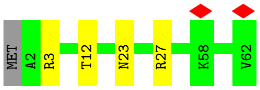


- Molecule 25: Large ribosomal subunit protein bL27



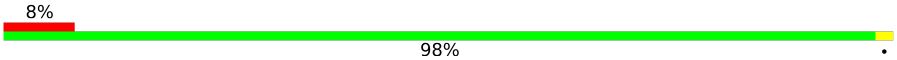
- Molecule 26: Large ribosomal subunit protein bL28

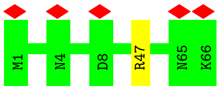




- Molecule 27: 50S ribosomal protein L29

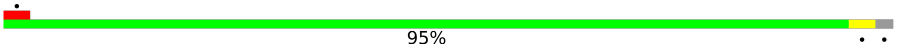
Chain Y:

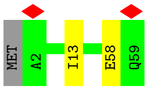




- Molecule 28: Large ribosomal subunit protein uL30

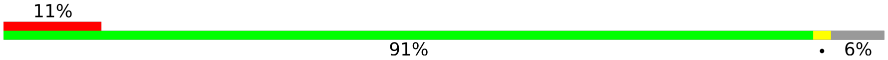
Chain Z:

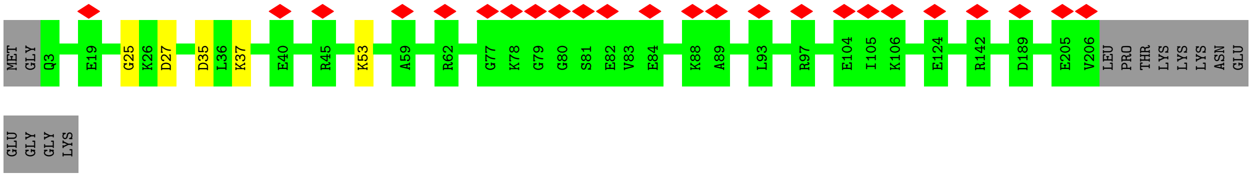




- Molecule 29: Small ribosomal subunit protein uS3

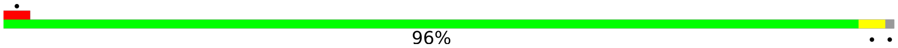
Chain c:

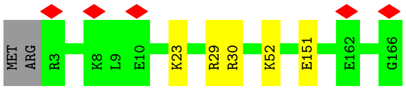




- Molecule 30: 30S ribosomal protein S5

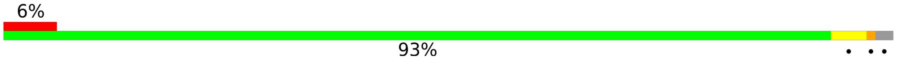
Chain e:

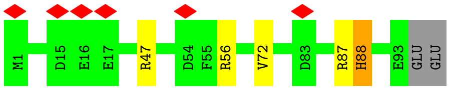




- Molecule 31: 30S ribosomal protein S6

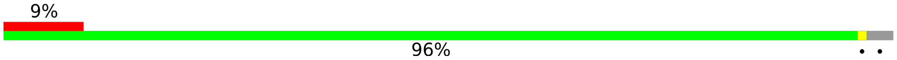
Chain f:

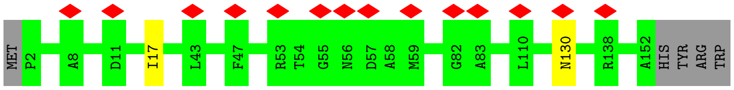




- Molecule 32: Small ribosomal subunit protein uS7

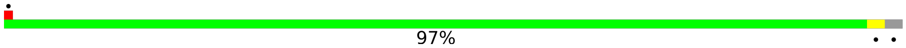
Chain g:

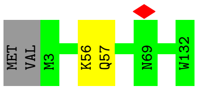




- Molecule 33: 30S ribosomal protein S8

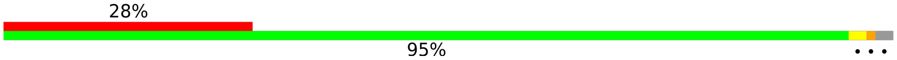
Chain h:

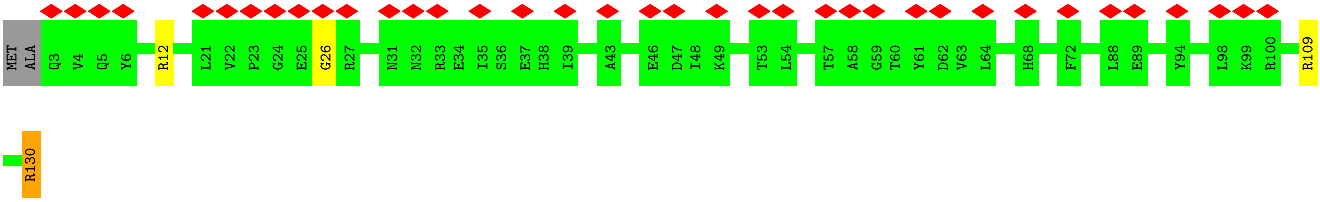




- Molecule 34: Small ribosomal subunit protein uS9

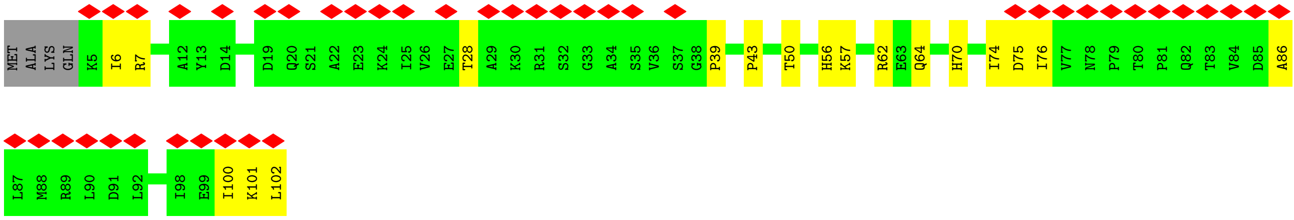
Chain i:





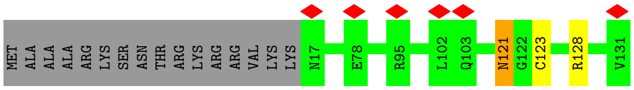
- Molecule 35: 30S ribosomal protein S10

Chain j:



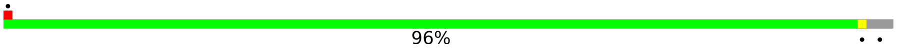
- Molecule 36: 30S ribosomal protein S11

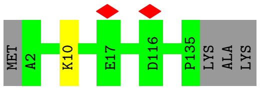
Chain k:



- Molecule 37: Small ribosomal subunit protein uS12

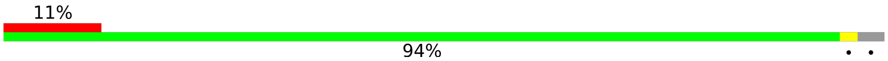
Chain l:

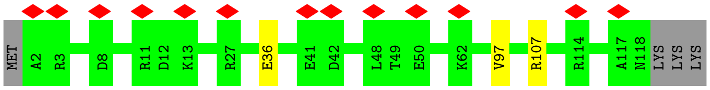




- Molecule 38: Small ribosomal subunit protein uS13

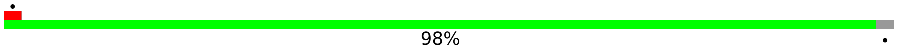
Chain m:

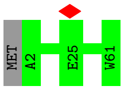




- Molecule 39: 30S ribosomal protein S14

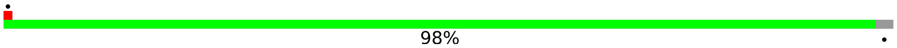
Chain n:

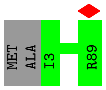




- Molecule 40: 30S ribosomal protein S15

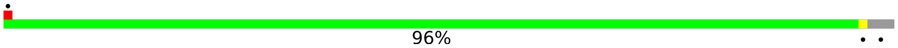
Chain o:

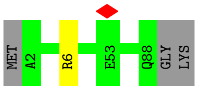




- Molecule 41: 30S ribosomal protein S16

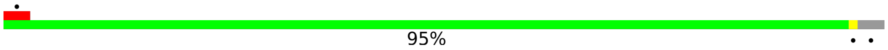
Chain p:

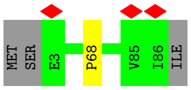




- Molecule 42: 30S ribosomal protein S17

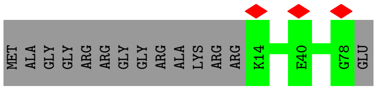
Chain q:





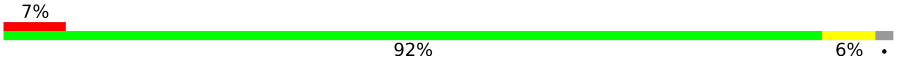
- Molecule 43: 30S ribosomal protein S18

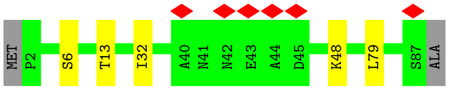
Chain r:



- Molecule 44: 30S ribosomal protein S20

Chain t:



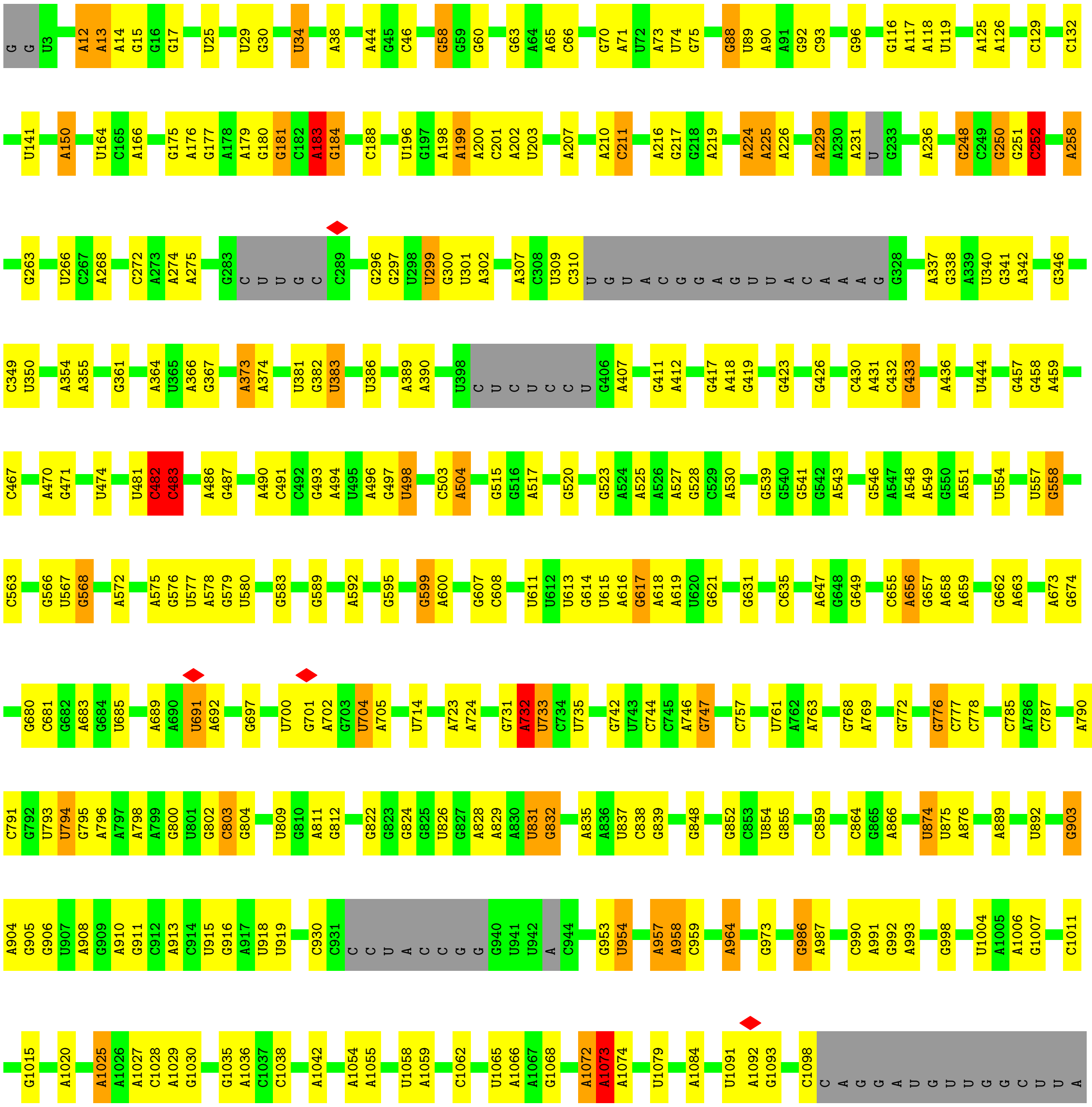


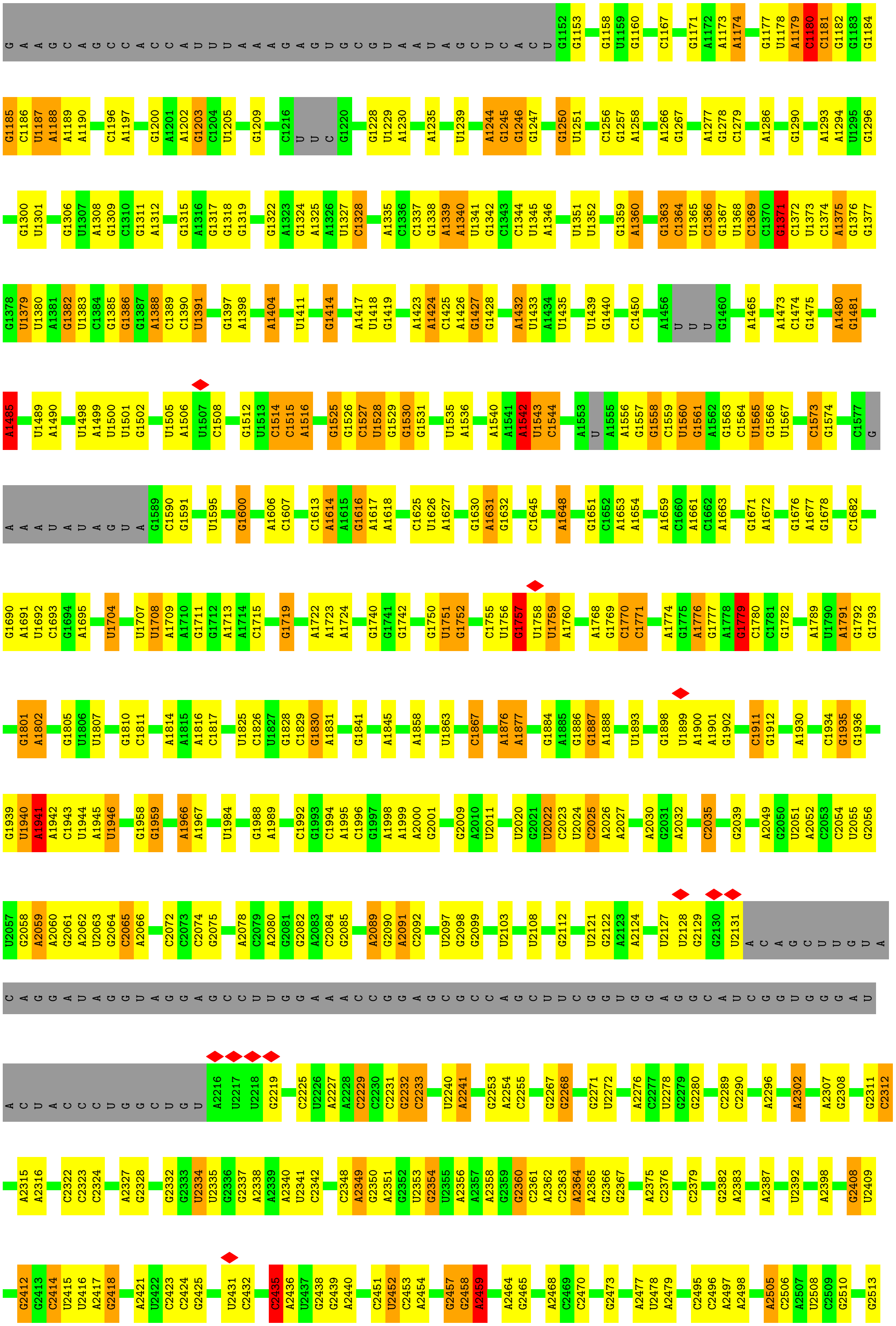
- Molecule 45: P-site tRNA-Phe

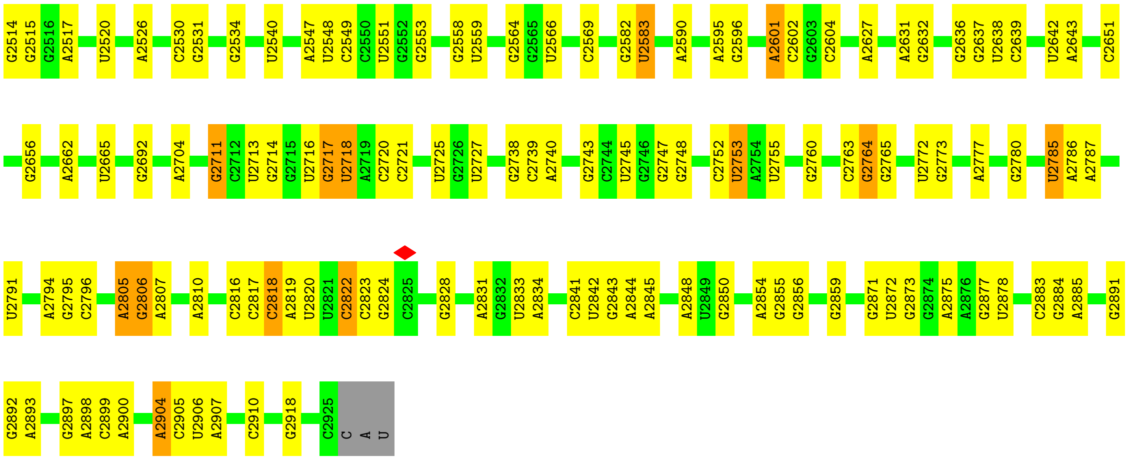
Chain v:

- Molecule 46: 23S rRNA

Chain A:

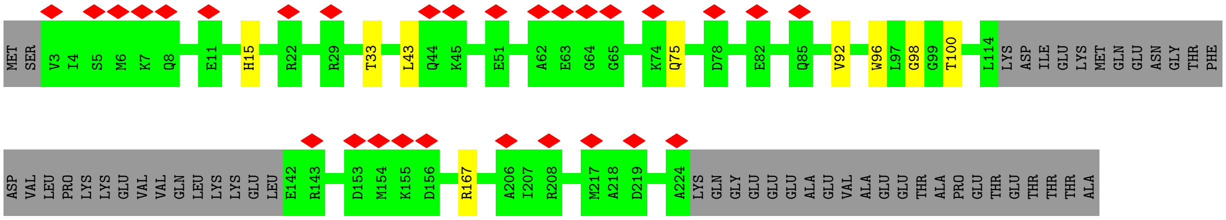



G A A G C A G C C A C C A U U U A A A G A G U G C G U A A U A G C U C A C U G1152 G1153 G1158 U1159 G1160 C1167 G1171 A1172 A1173 A1174 G1177 U1178 A1179 C1180 C1181 G1182 G1183 G1184
G1185 C1186 U1187 A1188 A1189 A1190 C1196 A1197 G1200 A1201 A1202 G1203 C1204 U1205 G1209 C1216 U U C G1220 G1228 U1229 A1230 A1235 U1239 A1244 G1245 G1246 G1247 G1250 U1251 C1256 G1257 A1258 A1266 G1267 A1277 G1278 C1279 A1286 G1290 A1293 A1294 U1295 G1296
G1300 U1301 G1306 U1307 A1308 G1309 C1310 G1311 A1312 G1315 A1316 G1317 G1318 G1319 G1322 A1323 G1324 A1325 A1326 U1327 C1328 A1335 C1336 C1337 G1338 A1339 A1340 U1341 G1342 C1343 C1344 U1345 A1346 U1351 U1352 G1359 A1360 G1363 C1364 U1365 C1366 G1367 U1368 C1369 C1370 G1371 C1372 U1373 C1374 A1375 G1376 G1377
G1378 U1379 U1380 A1381 G1382 U1383 C1384 G1385 G1386 G1387 A1388 C1389 C1390 U1391 G1397 A1398 A1404 U1411 G1414 A1417 U1418 G1419 A1423 A1424 C1425 A1426 G1427 G1428 A1432 U1433 A1434 U1435 U1439 G1440 C1450 A1456 U U U G1460 A1465 A1473 C1474 G1475 A1480 G1481
A1485 U1489 A1490 U1498 A1499 U1500 U1501 G1502 U1505 A1506 U1507 C1508 G1512 U1513 C1514 C1515 A1516 G1525 G1526 C1527 U1528 G1529 G1530 G1531 U1535 A1536 A1540 A1541 A1542 U1543 C1544 A1553 U A1555 A1556 G1557 G1558 C1559 U1560 G1561 A1562 G1563 C1564 U1565 G1566 U1567 C1573 G1574 C1577 G
A A A U A U A G U A G1589 C1590 G1591 U1595 G1600 A1606 C1607 C1613 A1614 A1615 G1616 A1617 A1618 C1625 U1626 A1627 G1630 A1631 G1632 C1645 A1648 G1651 C1652 A1653 A1654 A1659 C1660 A1661 C1662 A1663 G1671 A1672 G1676 A1677 G1678 C1682
G1690 A1691 U1692 C1693 G1694 A1695 U1704 U1707 U1708 A1709 A1710 G1711 G1712 A1713 A1714 C1715 G1719 A1722 A1723 A1724 G1740 G1741 G1742 G1750 U1751 G1752 C1755 U1756 G1757 U1758 U1759 A1760 A1768 G1769 C1770 C1771 A1774 G1775 A1776 G1777 A1778 G1779 C1780 C1781 G1782 A1789 U1790 A1791 G1792 G1793
G1801 A1802 G1805 U1806 U1807 G1810 C1811 A1814 A1815 A1816 C1817 U1825 C1826 U1827 G1828 C1829 G1830 A1831 G1841 A1845 A1858 U1863 C1867 A1876 A1877 G1884 A1885 G1886 G1887 A1888 U1893 G1898 U1899 A1900 A1901 G1902 C1911 G1912 A1930 C1934 G1935 G1936
G1939 U1940 A1941 A1942 C1943 U1944 A1945 U1946 G1958 G1959 A1966 A1967 U1984 G1988 A1989 C1992 G1993 C1994 A1995 C1996 G1997 A1998 A1999 A2000 G2001 G2009 A2010 U2011 U2020 G2021 U2022 C2023 U2024 C2025 A2026 A2027 A2030 G2031 A2032 C2035 G2039 A2049 G2050 U2051 A2052 C2053 C2054 U2055 G2056
U2057 G2058 A2059 A2060 G2061 A2062 U2063 G2064 C2065 A2066 C2072 C2073 C2074 G2075 A2078 C2079 A2080 G2081 G2082 A2083 C2084 G2085 A2089 G2090 A2091 C2092 U2097 G2098 G2099 U2103 U2108 G2112 U2121 G2122 A2123 A2124 U2127 U2128 G2129 G2130 U2131 A C A G C U U G U A
C A G G A U A G G U A G G A G C C U U G G A A A C C G G A G C G C C A G C U U C G G U G G A G G C A U C G G U G G G A U
A C U A C C C U G G C U G U A2216 U2217 U2218 G2219 C2225 U2226 A2227 A2228 C2229 C2230 C2231 G2232 C2233 U2240 A2241 G2253 A2254 C2255 G2267 G2268 G2271 U2272 A2276 C2277 U2278 G2279 G2280 C2289 C2290 A2296 A2302 A2307 G2308 G2311 C2312
A2315 A2316 C2322 C2323 C2324 A2327 G2328 G2332 G2333 U2334 U2335 G2336 G2337 A2338 A2339 A2340 U2341 C2342 C2348 A2349 G2350 A2351 G2352 U2353 G2354 U2355 A2356 A2357 A2358 G2359 G2360 C2361 A2362 C2363 A2364 A2365 G2366 G2367 A2375 C2376 C2379 G2382 A2383 A2387 U2392 A2398 G2408 U2409
G2412 G2413 C2414 U2415 U2416 A2417 G2418 A2421 U2422 C2423 C2424 G2425 U2431 C2432 C2435 A2436 U2437 G2438 G2439 A2440 C2451 U2452 C2453 A2454 G2457 G2458 A2459 A2464 G2465 A2468 C2469 C2470 G2473 A2477 U2478 A2479 C2495 C2496 A2497 A2498 A2505 C2506 A2507 U2508 C2509 G2510 G2513



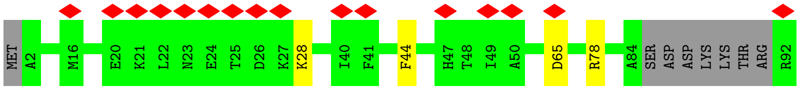
- Molecule 47: 30S ribosomal protein S2

Chain b:



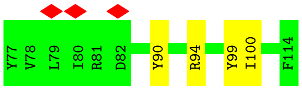
- Molecule 48: Small ribosomal subunit protein uS19

Chain s:



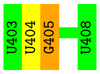
- Molecule 49: Nascent Chain CliM

Chain 5:



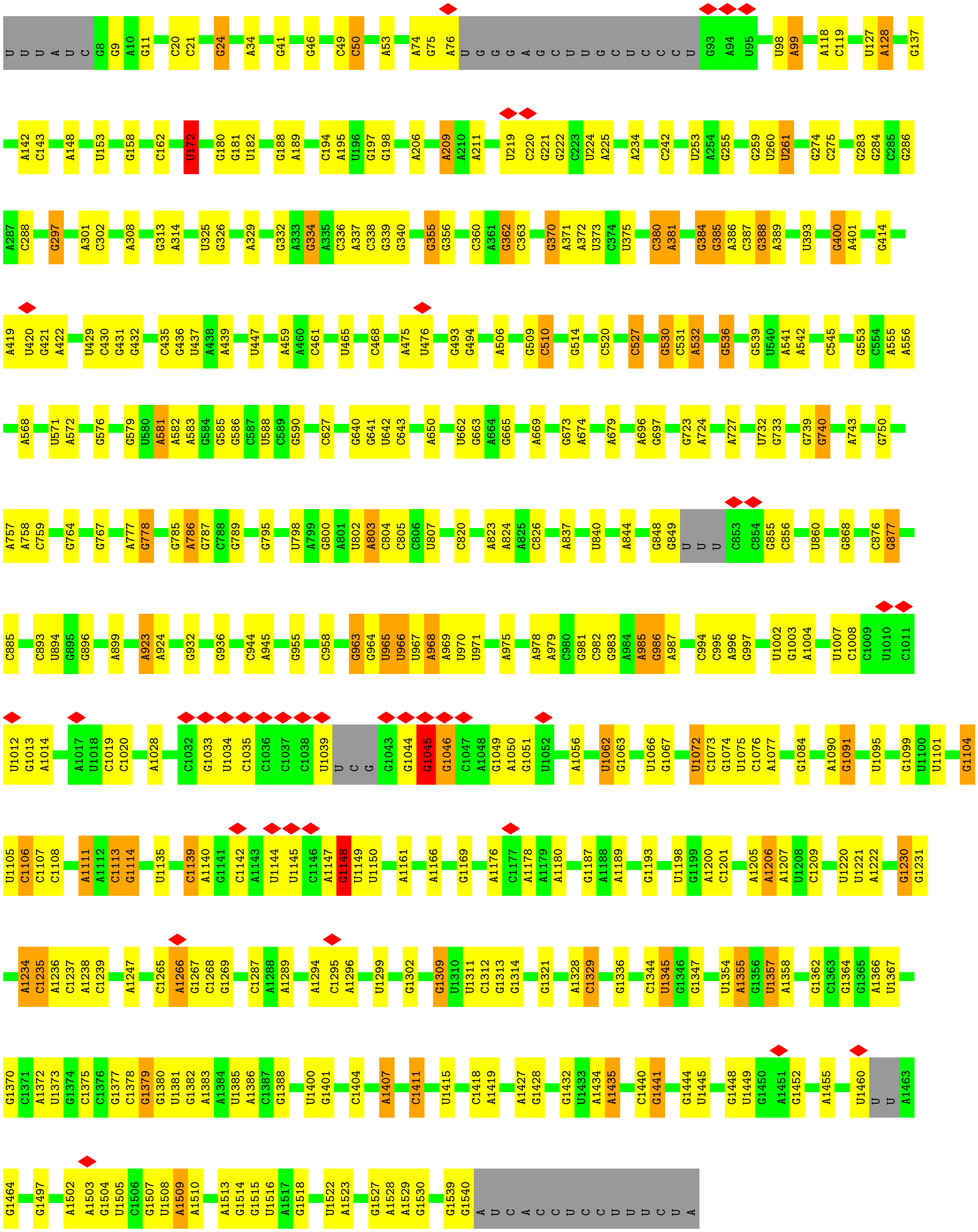
- Molecule 50: mRNA

Chain 7:



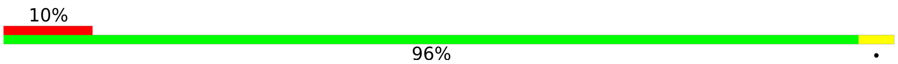
- Molecule 51: 16S rRNA

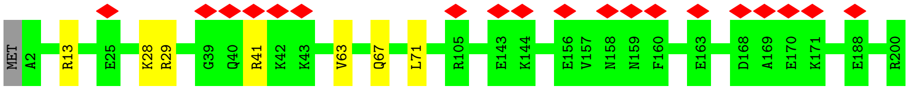
Chain a:



- Molecule 52: 30S ribosomal protein S4

Chain d:




MET
A2
R13
E25
K28
R29
G39
Q40
R41
K42
K43
V63
Q67
L71
R105
E143
K144
E156
V157
N158
N159
F160
E163
D168
A169
E170
K171
E188
R200

4 Experimental information ⓘ

Property	**Value**	**Source**
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	368433	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	1.14	Depositor
Minimum defocus (nm)	300	Depositor
Maximum defocus (nm)	900	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.060	Depositor
Minimum map value	-0.016	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.008	Depositor
Map size (Å)	319.104, 319.104, 319.104	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.83100003, 0.83100003, 0.83100003	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: OMG, PSU

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
1	0	0.64	0/439	1.16	1/584 (0.2%)
2	1	0.50	0/408	0.93	0/541
3	2	0.65	0/371	1.05	0/483
4	3	0.64	0/519	1.06	2/680 (0.3%)
5	4	0.52	0/300	0.99	0/393
6	6	0.54	0/363	1.01	0/485
7	B	0.57	0/2675	1.06	13/4170 (0.3%)
8	C	0.59	0/2130	1.01	0/2858
9	D	0.57	0/1597	1.00	2/2140 (0.1%)
10	E	0.54	0/1586	0.98	0/2139
11	F	0.51	0/1424	1.05	0/1910
12	G	0.52	0/1360	0.97	0/1832
13	J	0.56	0/1154	0.96	0/1552
14	K	0.52	0/928	0.99	0/1245
15	L	0.55	0/1094	1.01	0/1457
16	M	0.53	0/1099	1.00	0/1468
17	N	0.57	0/961	1.16	2/1284 (0.2%)
18	O	0.54	0/922	1.00	0/1236
19	P	0.53	0/950	1.01	0/1269
20	Q	0.60	0/962	1.03	0/1277
21	R	0.48	0/806	0.90	0/1080
22	S	0.60	0/859	1.07	0/1156
23	T	0.53	0/739	1.04	0/985
24	U	0.54	0/780	0.94	0/1043
25	W	0.54	0/637	1.06	1/846 (0.1%)
26	X	0.53	0/471	1.03	1/626 (0.2%)
27	Y	0.46	0/541	1.06	0/718
28	Z	0.51	0/458	1.00	0/613
29	c	0.51	0/1630	1.02	0/2193
30	e	0.52	0/1231	1.01	1/1655 (0.1%)
31	f	0.46	0/776	0.96	0/1043
32	g	0.51	0/1215	1.09	0/1629

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\| > 5$	RMSZ	#$\|Z\| > 5$
33	h	0.49	0/1042	0.93	0/1397
34	i	0.54	0/1011	1.00	0/1356
35	j	0.54	0/800	1.08	1/1077 (0.1%)
36	k	0.55	0/861	0.97	0/1164
37	l	0.50	0/1052	0.92	0/1413
38	m	0.54	0/940	1.08	0/1257
39	n	0.51	0/508	1.00	0/672
40	o	0.48	0/738	1.07	0/985
41	p	0.48	0/704	0.97	0/945
42	q	0.46	0/701	0.90	0/936
43	r	0.48	0/530	1.01	0/710
44	t	0.49	0/661	1.17	0/882
45	v	0.58	0/1812	1.07	6/2823 (0.2%)
46	A	0.56	0/65622	1.20	489/102356 (0.5%)
47	b	0.49	0/1586	1.07	0/2130
48	s	0.52	0/696	1.05	1/931 (0.1%)
49	5	0.52	0/356	1.04	0/481
50	7	0.66	0/135	1.13	1/207 (0.5%)
51	a	0.56	0/36267	1.06	152/56571 (0.3%)
52	d	0.50	0/1635	1.01	0/2196
All	All	0.55	0/149042	1.12	673/223079 (0.3%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	0	0	2
2	1	0	1
3	2	0	1
5	4	0	1
6	6	0	1
8	C	0	7
10	E	0	3
11	F	0	1
12	G	0	1
15	L	0	1
16	M	0	1
17	N	0	3
18	O	0	1
19	P	0	2

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Mol	Chain	#Chirality outliers	#Planarity outliers
20	Q	0	1
21	R	0	1
22	S	0	1
26	X	0	1
27	Y	0	1
30	e	0	2
31	f	0	2
34	i	0	3
35	j	0	1
38	m	0	1
46	A	0	3
47	b	0	1
48	s	0	1
51	a	0	1
52	d	0	2
All	All	0	48

There are no bond length outliers.

All (673) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
46	A	732	A	O3'-P-O5'	-18.09	76.87	104.00
46	A	490	A	O3'-P-O5'	-14.84	81.74	104.00
46	A	1244	A	O3'-P-O5'	14.61	125.91	104.00
46	A	2904	A	C2'-C3'-O3'	14.52	131.28	109.50
46	A	1363	G	O3'-P-O5'	-12.18	85.74	104.00
51	a	261	U	O3'-P-O5'	-11.48	86.78	104.00
46	A	1707	U	O3'-P-O5'	-11.28	87.08	104.00
51	a	20	C	O3'-P-O5'	-11.24	87.15	104.00
46	A	354	A	O3'-P-O5'	-11.20	87.20	104.00
51	a	387	C	O3'-P-O5'	-11.15	87.27	104.00
46	A	2121	U	O3'-P-O5'	-10.89	87.67	104.00
46	A	2738	G	O3'-P-O5'	-10.88	87.69	104.00
46	A	2739	C	O3'-P-O5'	-10.83	87.75	104.00
46	A	207	A	O3'-P-O5'	-10.79	87.82	104.00
46	A	1375	A	O3'-P-O5'	-10.34	88.49	104.00
46	A	481	U	O3'-P-O5'	10.26	119.39	104.00
46	A	1277	A	O3'-P-O5'	-10.23	88.65	104.00
46	A	986	G	O3'-P-O5'	10.11	119.16	104.00
46	A	1810	G	O3'-P-O5'	-10.06	88.91	104.00
46	A	1177	G	O3'-P-O5'	-10.01	88.98	104.00
51	a	963	G	O3'-P-O5'	-9.99	89.01	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	A	2859	G	O3'-P-O5'	-9.70	89.45	104.00
46	A	2711	G	O3'-P-O5'	-9.67	89.50	104.00
46	A	1606	A	O3'-P-O5'	-9.59	89.62	104.00
46	A	1966	A	O3'-P-O5'	-9.45	89.83	104.00
46	A	2740	A	O3'-P-O5'	-9.39	89.92	104.00
46	A	2414	C	O3'-P-O5'	-9.38	89.92	104.00
46	A	2636	G	O3'-P-O5'	-9.37	89.94	104.00
46	A	2074	C	O3'-P-O5'	-9.22	90.17	104.00
51	a	785	G	O3'-P-O5'	-9.14	90.29	104.00
46	A	2842	U	O3'-P-O5'	-8.94	90.59	104.00
46	A	2308	G	O3'-P-O5'	-8.84	90.74	104.00
46	A	1318	G	O3'-P-O5'	-8.80	90.80	104.00
51	a	789	G	O3'-P-O5'	-8.79	90.81	104.00
46	A	482	C	C4'-C3'-O3'	8.77	122.56	109.40
46	A	1167	C	O3'-P-O5'	-8.74	90.89	104.00
46	A	2457	G	O3'-P-O5'	-8.71	90.94	104.00
51	a	1508	U	O3'-P-O5'	-8.63	91.06	104.00
46	A	828	A	O3'-P-O5'	-8.59	91.12	104.00
46	A	1884	G	O3'-P-O5'	-8.54	91.19	104.00
51	a	355	G	O3'-P-O5'	-8.48	91.28	104.00
46	A	1180	C	O3'-P-O5'	-8.47	91.30	104.00
46	A	1690	G	C2'-C3'-O3'	-8.45	101.03	113.70
46	A	1004	U	O3'-P-O5'	-8.39	91.42	104.00
51	a	786	A	O3'-P-O5'	-8.39	91.42	104.00
46	A	1371	G	O3'-P-O5'	-8.35	91.47	104.00
46	A	1250	G	C4'-C3'-O3'	8.34	121.90	109.40
51	a	127	U	O3'-P-O5'	-8.32	91.52	104.00
46	A	874	U	C2'-C3'-O3'	-8.21	101.39	113.70
46	A	1173	A	O3'-P-O5'	-8.15	91.77	104.00
46	A	116	G	O3'-P-O5'	-8.14	91.79	104.00
46	A	1939	G	O3'-P-O5'	-8.13	91.80	104.00
51	a	896	G	O3'-P-O5'	-8.13	91.81	104.00
46	A	1934	C	O3'-P-O5'	-8.11	91.84	104.00
46	A	2418	G	C4'-C3'-O3'	-8.09	100.87	113.00
51	a	696	A	O3'-P-O5'	-8.08	91.87	104.00
46	A	1398	A	O3'-P-O5'	-8.05	91.92	104.00
46	A	1876	A	O3'-P-O5'	-8.04	91.94	104.00
7	B	14	G	O3'-P-O5'	-8.01	91.99	104.00
46	A	1940	U	O3'-P-O5'	-7.96	92.06	104.00
46	A	2424	C	O3'-P-O5'	-7.93	92.10	104.00
46	A	2340	A	O3'-P-O5'	-7.92	92.12	104.00
46	A	1751	U	O3'-P-O5'	-7.89	92.16	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	A	383	U	O3'-P-O5'	-7.89	92.17	104.00
46	A	2382	G	O3'-P-O5'	-7.88	92.18	104.00
46	A	126	A	O3'-P-O5'	-7.87	92.19	104.00
51	a	385	G	O3'-P-O5'	-7.87	92.20	104.00
51	a	966	U	O3'-P-O5'	-7.87	92.20	104.00
46	A	2051	U	O3'-P-O5'	-7.85	92.22	104.00
51	a	986	G	O3'-P-O5'	-7.85	92.23	104.00
46	A	1417	A	C2'-C3'-O3'	7.85	121.27	109.50
46	A	723	A	O3'-P-O5'	-7.83	92.26	104.00
51	a	1090	A	O3'-P-O5'	-7.82	92.28	104.00
51	a	118	A	O3'-P-O5'	-7.80	92.30	104.00
46	A	1751	U	C4'-C3'-O3'	7.80	121.09	109.40
46	A	1337	C	O3'-P-O5'	7.79	115.68	104.00
46	A	2334	U	O3'-P-O5'	-7.78	92.33	104.00
46	A	225	A	O3'-P-O5'	-7.77	92.35	104.00
46	A	1770	C	O3'-P-O5'	-7.77	92.35	104.00
46	A	613	U	C4'-C3'-O3'	-7.74	101.39	113.00
46	A	2831	A	O3'-P-O5'	-7.73	92.40	104.00
46	A	66	C	O3'-P-O5'	-7.71	92.43	104.00
46	A	1886	G	O3'-P-O5'	-7.70	92.45	104.00
46	A	2412	G	O3'-P-O5'	-7.69	92.46	104.00
46	A	1181	C	C4'-C3'-O3'	-7.68	101.48	113.00
46	A	2032	A	O3'-P-O5'	-7.67	92.50	104.00
46	A	1708	U	C4'-C3'-O3'	-7.64	101.54	113.00
46	A	803	C	O3'-P-O5'	-7.64	92.54	104.00
46	A	444	U	O3'-P-O5'	-7.61	92.58	104.00
51	a	1419	A	O3'-P-O5'	-7.60	92.60	104.00
51	a	356	G	O3'-P-O5'	-7.57	92.65	104.00
46	A	1179	A	O3'-P-O5'	-7.55	92.67	104.00
46	A	13	A	O3'-P-O5'	-7.55	92.67	104.00
46	A	2035	C	C4'-C3'-O3'	-7.55	101.67	113.00
51	a	260	U	O3'-P-O5'	-7.49	92.76	104.00
46	A	252	C	O3'-P-O5'	-7.49	92.76	104.00
46	A	129	C	O3'-P-O5'	-7.49	92.77	104.00
51	a	840	U	O3'-P-O5'	-7.46	92.81	104.00
46	A	266	U	O3'-P-O5'	-7.44	92.84	104.00
26	X	27	ARG	CB-CA-C	-7.43	95.59	110.30
51	a	1382	G	O3'-P-O5'	-7.43	92.86	104.00
50	7	405	G	O3'-P-O5'	-7.42	92.87	104.00
46	A	1200	G	O3'-P-O5'	-7.41	92.89	104.00
46	A	543	A	O3'-P-O5'	-7.39	92.91	104.00
45	v	47	U	C2'-C3'-O3'	7.33	120.50	109.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	A	2392	U	O3'-P-O5'	-7.32	93.03	104.00
46	A	794	U	C4'-C3'-O3'	-7.31	102.03	113.00
46	A	2054	C	O3'-P-O5'	-7.25	93.12	104.00
51	a	981	G	O3'-P-O5'	-7.25	93.12	104.00
46	A	1708	U	O3'-P-O5'	-7.23	93.16	104.00
46	A	2302	A	C4'-C3'-O3'	-7.22	102.17	113.00
51	a	795	G	O3'-P-O5'	-7.22	93.18	104.00
46	A	746	A	O3'-P-O5'	-7.21	93.19	104.00
46	A	1055	A	O3'-P-O5'	-7.18	93.23	104.00
46	A	889	A	O3'-P-O5'	-7.17	93.25	104.00
46	A	2030	A	O3'-P-O5'	-7.15	93.27	104.00
51	a	386	A	O3'-P-O5'	-7.14	93.29	104.00
46	A	88	G	C2'-C3'-O3'	7.14	124.41	113.70
46	A	2753	U	C3'-C2'-O2'	7.13	121.39	110.70
45	v	70	G	O3'-P-O5'	-7.12	93.32	104.00
46	A	432	C	O3'-P-O5'	-7.12	93.33	104.00
46	A	1339	A	C2'-C3'-O3'	7.11	120.16	109.50
46	A	2704	A	O3'-P-O5'	-7.10	93.36	104.00
46	A	1740	G	O3'-P-O5'	-7.10	93.36	104.00
7	B	54	U	O3'-P-O5'	-7.09	93.36	104.00
51	a	994	C	O3'-P-O5'	-7.09	93.36	104.00
46	A	1560	U	O3'-P-O5'	-7.09	93.37	104.00
51	a	1383	A	O3'-P-O5'	-7.08	93.39	104.00
7	B	42	G	O3'-P-O5'	-7.07	93.40	104.00
46	A	497	G	O3'-P-O5'	-7.06	93.41	104.00
51	a	860	U	O3'-P-O5'	-7.05	93.43	104.00
51	a	1091	G	C4'-C3'-O3'	-7.05	102.43	113.00
46	A	1759	U	C4'-C3'-O3'	7.02	119.94	109.40
46	A	1988	G	O3'-P-O5'	-7.01	93.48	104.00
46	A	1998	A	C4'-C3'-O3'	-7.01	102.49	113.00
51	a	372	A	C4'-C3'-O3'	7.01	123.51	113.00
46	A	196	U	O3'-P-O5'	-6.98	93.53	104.00
46	A	1769	G	O3'-P-O5'	-6.98	93.53	104.00
46	A	2805	A	O3'-P-O5'	6.96	114.44	104.00
46	A	1184	G	C2'-C3'-O3'	-6.96	103.26	113.70
46	A	2091	A	O3'-P-O5'	-6.96	93.57	104.00
46	A	217	G	O3'-P-O5'	-6.95	93.57	104.00
51	a	1448	G	O3'-P-O5'	-6.95	93.58	104.00
46	A	1279	C	O3'-P-O5'	-6.95	93.58	104.00
51	a	385	G	C4'-C3'-O3'	-6.94	102.59	113.00
51	a	1091	G	O3'-P-O5'	-6.94	93.59	104.00
46	A	2526	A	O3'-P-O5'	-6.93	93.60	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
51	a	885	C	O3'-P-O5'	-6.93	93.61	104.00
46	A	349	C	O3'-P-O5'	-6.93	93.61	104.00
46	A	2583	U	O5'-P-OP1	-6.91	87.28	108.00
46	A	1244	A	C2'-C3'-O3'	6.90	124.05	113.70
46	A	1202	A	O3'-P-O5'	6.89	114.34	104.00
46	A	2387	A	O3'-P-O5'	-6.88	93.69	104.00
46	A	1196	C	O3'-P-O5'	-6.87	93.69	104.00
46	A	539	G	O3'-P-O5'	-6.86	93.71	104.00
46	A	1294	A	C4'-C3'-O3'	-6.85	102.72	113.00
46	A	1600	G	O3'-P-O5'	-6.85	93.73	104.00
51	a	965	U	C2'-C3'-O3'	6.84	123.97	113.70
46	A	776	G	C4'-C3'-O3'	-6.83	102.76	113.00
46	A	1174	A	O3'-P-O5'	-6.82	93.76	104.00
46	A	1841	G	C4'-C3'-O3'	-6.82	102.78	113.00
46	A	2639	C	O3'-P-O5'	-6.82	93.78	104.00
46	A	342	A	O3'-P-O5'	-6.81	93.78	104.00
46	A	831	U	C2'-C3'-O3'	-6.80	103.50	113.70
51	a	1113	C	O3'-P-O5'	-6.76	93.86	104.00
51	a	739	G	O3'-P-O5'	6.76	114.14	104.00
46	A	772	G	C4'-C3'-O3'	-6.76	102.86	113.00
46	A	2717	G	C1'-C2'-O2'	6.75	118.53	108.40
51	a	982	C	C4'-C3'-O3'	-6.75	102.87	113.00
46	A	481	U	C2'-C3'-O3'	6.73	119.59	109.50
7	B	48	G	C2'-C3'-O3'	6.73	123.79	113.70
51	a	283	G	O3'-P-O5'	-6.72	93.92	104.00
46	A	1480	A	O3'-P-O5'	-6.72	93.92	104.00
46	A	2713	U	C2'-C3'-O3'	-6.72	103.62	113.70
46	A	436	A	O3'-P-O5'	-6.71	93.94	104.00
51	a	588	U	O3'-P-O5'	-6.71	93.94	104.00
46	A	2747	G	C1'-C2'-O2'	6.70	118.45	108.40
46	A	1171	G	C4'-C3'-O3'	-6.70	102.96	113.00
51	a	641	G	C2'-C3'-O3'	6.68	119.52	109.50
46	A	1941	A	C2'-C3'-O3'	6.68	119.52	109.50
46	A	1998	A	O3'-P-O5'	-6.68	93.99	104.00
46	A	1625	C	O3'-P-O5'	-6.66	94.00	104.00
46	A	2452	U	O3'-P-O5'	-6.66	94.00	104.00
46	A	1328	C	O3'-P-O5'	-6.65	94.02	104.00
46	A	34	U	C2'-C3'-O3'	6.65	119.47	109.50
46	A	1672	A	C2'-C3'-O3'	6.64	123.66	113.70
46	A	2459	A	O4'-C4'-C3'	-6.64	99.46	106.10
51	a	1357	U	O3'-P-O5'	-6.64	94.04	104.00
46	A	201	C	O3'-P-O5'	-6.63	94.06	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
51	a	1200	A	O3'-P-O5'	-6.62	94.06	104.00
46	A	1645	C	O3'-P-O5'	-6.62	94.08	104.00
46	A	2805	A	C4'-C3'-O3'	6.61	119.31	109.40
46	A	1258	A	C2'-C3'-O3'	6.60	123.61	113.70
46	A	1481	G	O3'-P-O5'	-6.59	94.11	104.00
46	A	2753	U	C4'-C3'-O3'	-6.58	103.12	113.00
51	a	1364	G	O3'-P-O5'	-6.58	94.13	104.00
45	v	69	A	O3'-P-O5'	-6.56	94.16	104.00
46	A	25	U	O3'-P-O5'	-6.55	94.17	104.00
46	A	1258	A	C4'-C3'-O3'	-6.55	103.17	113.00
46	A	2416	U	O3'-P-O5'	-6.55	94.17	104.00
46	A	1941	A	O3'-P-O5'	-6.54	94.18	104.00
51	a	339	G	O3'-P-O5'	-6.54	94.19	104.00
46	A	2805	A	P-O3'-C3'	6.54	130.00	120.20
51	a	759	C	O3'-P-O5'	-6.53	94.21	104.00
46	A	572	A	C4'-C3'-O3'	-6.51	103.24	113.00
46	A	1893	U	O3'-P-O5'	-6.51	94.24	104.00
46	A	1742	G	O3'-P-O5'	-6.48	94.28	104.00
46	A	2842	U	C3'-C2'-O2'	6.48	120.42	110.70
46	A	1258	A	O3'-P-O5'	-6.47	94.30	104.00
46	A	483	C	O3'-P-O5'	-6.44	94.33	104.00
46	A	998	G	O3'-P-O5'	-6.44	94.34	104.00
46	A	2548	U	O3'-P-O5'	-6.44	94.34	104.00
51	a	553	G	O3'-P-O5'	-6.44	94.34	104.00
46	A	1930	A	C4'-C3'-O3'	-6.43	103.35	113.00
46	A	1286	A	O3'-P-O5'	-6.43	94.36	104.00
46	A	2271	G	O3'-P-O5'	-6.43	94.36	104.00
46	A	1814	A	C4'-C3'-O3'	-6.42	103.37	113.00
51	a	572	A	O3'-P-O5'	-6.41	94.38	104.00
46	A	2530	C	O3'-P-O5'	-6.40	94.41	104.00
51	a	381	A	O3'-P-O5'	-6.39	94.41	104.00
7	B	45	C	O3'-P-O5'	-6.38	94.43	104.00
46	A	2065	C	O3'-P-O5'	-6.38	94.43	104.00
46	A	1188	A	O3'-P-O5'	-6.38	94.44	104.00
46	A	2307	A	O3'-P-O5'	-6.38	94.44	104.00
51	a	436	G	O3'-P-O5'	-6.37	94.45	104.00
51	a	583	A	C4'-C3'-O3'	-6.35	103.47	113.00
51	a	1077	A	O3'-P-O5'	-6.34	94.48	104.00
51	a	261	U	C4'-C3'-O3'	-6.34	103.49	113.00
46	A	1424	A	O3'-P-O5'	-6.33	94.50	104.00
46	A	44	A	O3'-P-O5'	-6.32	94.52	104.00
51	a	679	A	O3'-P-O5'	-6.32	94.52	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
46	A	1704	U	O3'-P-O5'	-6.32	94.52	104.00
46	A	1995	A	O3'-P-O5'	-6.31	94.54	104.00
46	A	457	G	C2'-C3'-O3'	-6.29	104.27	113.70
46	A	1776	A	O3'-P-O5'	-6.28	94.58	104.00
46	A	918	U	O3'-P-O5'	-6.27	94.59	104.00
46	A	1369	C	O3'-P-O5'	-6.27	94.60	104.00
7	B	81	G	O3'-P-O5'	-6.26	94.61	104.00
46	A	1676	G	O3'-P-O5'	-6.26	94.61	104.00
51	a	1201	C	O3'-P-O5'	-6.26	94.61	104.00
51	a	1514	G	O3'-P-O5'	-6.26	94.61	104.00
46	A	274	A	O3'-P-O5'	-6.25	94.62	104.00
46	A	1335	A	C4'-C3'-O3'	-6.24	103.64	113.00
51	a	1329	C	O3'-P-O5'	-6.24	94.64	104.00
46	A	1525	G	C2'-C3'-O3'	6.24	123.05	113.70
51	a	1266	A	C2'-C3'-O3'	6.23	118.85	109.50
46	A	1300	G	O3'-P-O5'	-6.23	94.66	104.00
51	a	805	C	O3'-P-O5'	-6.23	94.66	104.00
7	B	70	G	O3'-P-O5'	-6.20	94.69	104.00
46	A	958	A	O3'-P-O5'	-6.20	94.70	104.00
46	A	1427	G	C3'-C2'-O2'	6.20	119.99	110.70
46	A	2601	A	O3'-P-O5'	-6.19	94.72	104.00
46	A	2553	G	O3'-P-O5'	-6.18	94.72	104.00
51	a	510	C	O3'-P-O5'	-6.18	94.73	104.00
46	A	1386	G	C4'-C3'-C2'	-6.17	96.43	102.60
46	A	1886	G	C4'-C3'-O3'	-6.17	103.74	113.00
46	A	583	G	C4'-C3'-O3'	-6.17	103.75	113.00
46	A	1379	U	C2'-C3'-O3'	-6.17	100.25	109.50
46	A	635	C	O3'-P-O5'	-6.15	94.78	104.00
51	a	393	U	O3'-P-O5'	-6.15	94.78	104.00
46	A	1565	U	C2'-C3'-O3'	6.14	122.90	113.70
46	A	656	A	O3'-P-O5'	-6.12	94.82	104.00
51	a	1148	G	C2'-C3'-O3'	6.12	118.68	109.50
46	A	2506	C	O3'-P-O5'	-6.12	94.82	104.00
46	A	2643	A	O3'-P-O5'	-6.10	94.85	104.00
46	A	993	A	C4'-C3'-O3'	-6.10	103.86	113.00
46	A	1065	U	C4'-C3'-O3'	-6.09	103.86	113.00
46	A	1181	C	O3'-P-O5'	6.09	113.14	104.00
46	A	1671	G	O3'-P-O5'	-6.09	94.86	104.00
46	A	1369	C	C4'-C3'-O3'	-6.09	103.87	113.00
51	a	1198	U	O3'-P-O5'	-6.08	94.88	104.00
46	A	470	A	O3'-P-O5'	-6.07	94.89	104.00
51	a	21	C	C4'-C3'-O3'	-6.07	103.90	113.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
46	A	2290	C	O3'-P-O5'	-6.06	94.91	104.00
46	A	2459	A	C1'-O4'-C4'	-6.06	103.64	109.70
46	A	386	U	O3'-P-O5'	-6.06	94.92	104.00
46	A	199	A	C1'-C2'-O2'	-6.05	102.72	111.80
46	A	1185	G	O5'-P-OP2	-6.05	89.86	108.00
46	A	1383	U	O3'-P-O5'	-6.05	94.93	104.00
51	a	1377	G	O3'-P-O5'	-6.04	94.94	104.00
46	A	2058	G	O3'-P-O5'	-6.04	94.94	104.00
46	A	1802	A	C2'-C3'-O3'	6.04	122.76	113.70
51	a	837	A	O3'-P-O5'	-6.03	94.95	104.00
46	A	1006	A	O3'-P-O5'	6.03	113.04	104.00
46	A	1512	G	C1'-C2'-O2'	6.03	117.44	108.40
46	A	1807	U	C1'-C2'-O2'	6.02	117.42	108.40
51	a	1235	C	O3'-P-O5'	-6.01	94.98	104.00
51	a	576	G	O3'-P-O5'	-6.00	94.99	104.00
46	A	1888	A	O3'-P-O5'	-6.00	95.00	104.00
51	a	1372	A	O3'-P-O5'	-6.00	95.01	104.00
46	A	2748	G	O3'-P-O5'	-5.99	95.01	104.00
46	A	1651	G	O3'-P-O5'	-5.99	95.02	104.00
46	A	2551	U	O3'-P-O5'	-5.99	95.02	104.00
51	a	955	G	O3'-P-O5'	-5.99	95.02	104.00
46	A	2383	A	C4'-C3'-O3'	-5.97	104.04	113.00
46	A	2024	U	O3'-P-O5'	5.96	112.95	104.00
46	A	1771	C	O3'-P-O5'	-5.96	95.06	104.00
46	A	1345	U	O3'-P-O5'	-5.96	95.07	104.00
46	A	1695	A	O3'-P-O5'	-5.96	95.07	104.00
46	A	2025	C	O3'-P-O5'	-5.95	95.08	104.00
46	A	125	A	C2'-C3'-O3'	-5.94	104.78	113.70
46	A	1959	G	O3'-P-O5'	-5.94	95.09	104.00
35	j	43	PRO	N-CA-C	5.94	120.40	111.14
51	a	509	G	O3'-P-O5'	-5.93	95.11	104.00
51	a	877	G	O3'-P-O5'	-5.93	95.11	104.00
46	A	1197	A	C2'-C3'-O3'	5.92	122.59	113.70
46	A	1374	C	O3'-P-O5'	-5.92	95.12	104.00
46	A	2805	A	C2'-C3'-O3'	5.92	118.38	109.50
46	A	2855	G	O3'-P-O5'	-5.91	95.14	104.00
51	a	899	A	O3'-P-O5'	-5.91	95.14	104.00
46	A	2514	G	O3'-P-O5'	-5.91	95.14	104.00
46	A	911	G	C3'-C2'-O2'	5.90	119.56	110.70
46	A	575	A	O3'-P-O5'	-5.90	95.15	104.00
51	a	581	A	O3'-P-O5'	-5.90	95.15	104.00
46	A	30	G	C2'-C3'-O3'	-5.89	104.86	113.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
46	A	1306	G	O3'-P-O5'	-5.89	95.16	104.00
46	A	2311	G	O3'-P-O5'	-5.89	95.16	104.00
46	A	2332	G	O3'-P-O5'	-5.89	95.17	104.00
46	A	2662	A	O3'-P-O5'	-5.88	95.17	104.00
51	a	297	G	O3'-P-O5'	-5.88	95.19	104.00
46	A	417	G	O3'-P-O5'	-5.87	95.19	104.00
46	A	953	G	O3'-P-O5'	-5.87	95.19	104.00
46	A	903	G	O3'-P-O5'	-5.87	95.19	104.00
46	A	2358	A	C1'-C2'-O2'	5.87	117.21	108.40
46	A	746	A	C4'-C3'-O3'	-5.87	104.20	113.00
46	A	2910	C	O3'-P-O5'	-5.87	95.20	104.00
46	A	338	G	O3'-P-O5'	-5.86	95.22	104.00
46	A	828	A	C4'-C3'-O3'	-5.85	104.22	113.00
46	A	1258	A	P-O5'-C5'	-5.84	112.14	120.90
46	A	198	A	C4'-C3'-O3'	-5.84	104.24	113.00
46	A	621	G	O3'-P-O5'	-5.83	95.26	104.00
46	A	1940	U	C4'-C3'-O3'	-5.83	104.26	113.00
46	A	2418	G	O3'-P-O5'	-5.83	95.26	104.00
51	a	1230	G	C2'-C3'-O3'	-5.82	104.96	113.70
46	A	2103	U	C3'-C2'-O2'	5.82	119.43	110.70
51	a	1370	G	O3'-P-O5'	-5.81	95.28	104.00
46	A	795	G	C4'-C3'-O3'	-5.81	104.29	113.00
51	a	334	G	O3'-P-O5'	-5.81	95.29	104.00
51	a	128	A	O3'-P-O5'	-5.81	95.29	104.00
46	A	2495	C	C4'-C3'-O3'	-5.80	104.30	113.00
46	A	1648	A	O3'-P-O5'	-5.80	95.30	104.00
51	a	1418	C	O3'-P-O5'	-5.80	95.31	104.00
46	A	1301	U	O3'-P-O5'	-5.79	95.32	104.00
46	A	250	G	C4'-C3'-O3'	-5.78	104.34	113.00
46	A	1205	U	O3'-P-O5'	-5.78	95.33	104.00
46	A	1230	A	C4'-C3'-O3'	-5.77	104.34	113.00
46	A	1277	A	C4'-C3'-O3'	5.77	118.06	109.40
46	A	809	U	C1'-C2'-O2'	-5.77	103.15	111.80
51	a	1358	A	C2'-C3'-O3'	-5.77	105.05	113.70
46	A	38	A	C4'-C3'-O3'	-5.77	104.35	113.00
1	0	8	THR	CA-CB-OG1	-5.76	100.96	109.60
46	A	132	C	O3'-P-O5'	-5.76	95.36	104.00
46	A	2415	U	O3'-P-O5'	-5.76	95.36	104.00
46	A	1203	G	O5'-P-OP1	-5.76	90.73	108.00
46	A	1364	C	O5'-P-OP2	5.76	125.27	108.00
45	v	3	C	O3'-P-O5'	-5.75	95.37	104.00
51	a	1101	U	O3'-P-O5'	-5.75	95.37	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
46	A	1256	C	C4'-C3'-O3'	-5.75	104.37	113.00
46	A	1388	A	P-O5'-C5'	-5.75	112.27	120.90
46	A	1816	A	C4'-C3'-O3'	-5.75	104.37	113.00
46	A	1543	U	O3'-P-O5'	-5.75	95.38	104.00
46	A	1789	A	O3'-P-O5'	-5.74	95.39	104.00
46	A	583	G	O3'-P-O5'	-5.73	95.40	104.00
46	A	1757	G	C1'-O4'-C4'	-5.73	103.97	109.70
46	A	1360	A	C4'-C3'-O3'	-5.73	104.41	113.00
51	a	172	U	O3'-P-O5'	-5.72	95.42	104.00
51	a	1427	A	O3'-P-O5'	-5.72	95.42	104.00
46	A	373	A	O3'-P-O5'	-5.71	95.43	104.00
46	A	1054	A	O3'-P-O5'	-5.71	95.43	104.00
46	A	1935	G	O3'-P-O5'	-5.71	95.43	104.00
46	A	919	U	O3'-P-O5'	-5.71	95.44	104.00
51	a	536	G	O3'-P-O5'	-5.71	95.44	104.00
46	A	1055	A	C4'-C3'-O3'	-5.71	104.44	113.00
46	A	525	A	O3'-P-O5'	-5.70	95.45	104.00
46	A	1475	G	O3'-P-O5'	-5.70	95.46	104.00
51	a	286	G	O3'-P-O5'	-5.69	95.46	104.00
46	A	2582	G	C1'-C2'-O2'	5.69	116.94	108.40
46	A	1352	U	O4'-C4'-C3'	-5.68	98.32	104.00
46	A	2760	G	C4'-C3'-O3'	-5.68	104.48	113.00
46	A	2872	U	C4'-C3'-O3'	-5.68	104.48	113.00
46	A	2324	C	O3'-P-O5'	-5.67	95.49	104.00
46	A	733	U	O5'-P-OP1	5.67	125.01	108.00
46	A	1239	U	O3'-P-O5'	-5.67	95.50	104.00
51	a	1104	G	O3'-P-O5'	-5.67	95.50	104.00
46	A	2289	C	C4'-C3'-O3'	-5.66	104.50	113.00
46	A	1391	U	O3'-P-O5'	-5.66	95.52	104.00
46	A	2569	C	C4'-C3'-C2'	-5.65	96.95	102.60
51	a	590	G	O3'-P-O5'	-5.65	95.53	104.00
46	A	778	C	O3'-P-O5'	-5.64	95.53	104.00
51	a	198	G	O3'-P-O5'	-5.64	95.54	104.00
46	A	1338	G	O3'-P-O5'	-5.64	95.54	104.00
9	D	150	ASP	CA-CB-CG	5.63	118.23	112.60
46	A	1750	G	O3'-P-O5'	-5.63	95.56	104.00
46	A	2796	C	O3'-P-O5'	-5.63	95.56	104.00
46	A	2312	C	O3'-P-O5'	-5.62	95.57	104.00
51	a	555	A	O3'-P-O5'	-5.61	95.59	104.00
51	a	640	G	O3'-P-O5'	-5.61	95.59	104.00
46	A	1631	A	C4'-C3'-O3'	5.60	117.80	109.40
51	a	1268	C	O3'-P-O5'	-5.60	95.60	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	B	37	A	C4'-C3'-C2'	-5.60	97.00	102.60
46	A	258	A	C2'-C3'-O3'	-5.59	105.31	113.70
46	A	1911	C	O3'-P-O5'	-5.59	95.62	104.00
51	a	868	G	O3'-P-O5'	-5.58	95.63	104.00
51	a	1072	U	C4'-C3'-O3'	-5.58	104.63	113.00
46	A	1186	C	O3'-P-O5'	-5.58	95.63	104.00
46	A	1752	G	O3'-P-O5'	-5.58	95.63	104.00
51	a	767	G	C4'-C3'-O3'	-5.58	104.63	113.00
46	A	1616	G	O3'-P-O5'	-5.58	95.64	104.00
51	a	206	A	O3'-P-O5'	-5.57	95.65	104.00
51	a	982	C	O3'-P-O5'	-5.57	95.65	104.00
46	A	835	A	O3'-P-O5'	-5.57	95.65	104.00
46	A	2436	A	O3'-P-O5'	-5.56	95.66	104.00
46	A	541	G	O3'-P-O5'	-5.56	95.66	104.00
46	A	2665	U	O3'-P-O5'	-5.55	95.67	104.00
51	a	807	U	O3'-P-O5'	-5.55	95.67	104.00
46	A	2753	U	C1'-C2'-O2'	-5.55	100.07	108.40
51	a	965	U	C4'-C3'-C2'	-5.55	97.05	102.60
46	A	496	A	C3'-C2'-O2'	5.55	119.02	110.70
46	A	1618	A	O3'-P-O5'	-5.54	95.69	104.00
46	A	1246	G	O4'-C4'-C3'	-5.54	98.46	104.00
46	A	1530	G	C2'-C3'-O3'	5.54	122.01	113.70
46	A	2049	A	O3'-P-O5'	-5.53	95.70	104.00
46	A	2229	C	O3'-P-O5'	-5.53	95.70	104.00
46	A	1397	G	O3'-P-O5'	-5.53	95.70	104.00
46	A	2023	C	C3'-C2'-O2'	5.53	119.00	110.70
17	N	22	THR	CA-CB-OG1	-5.53	101.31	109.60
51	a	532	A	O3'-P-O5'	-5.52	95.73	104.00
46	A	14	A	O3'-P-O5'	-5.51	95.73	104.00
46	A	1419	G	C3'-C2'-O2'	5.51	118.97	110.70
46	A	2904	A	C4'-C3'-O3'	-5.50	101.15	109.40
46	A	1011	C	C4'-C3'-O3'	-5.50	104.75	113.00
46	A	704	U	O3'-P-O5'	-5.50	95.75	104.00
46	A	1267	G	C4'-C3'-O3'	-5.50	104.75	113.00
46	A	181	G	C4'-C3'-O3'	-5.49	104.77	113.00
46	A	2727	U	C4'-C3'-O3'	-5.49	104.77	113.00
46	A	915	U	O3'-P-O5'	-5.48	95.78	104.00
46	A	1184	G	O3'-P-O5'	5.48	112.22	104.00
46	A	2872	U	O3'-P-O5'	-5.48	95.78	104.00
51	a	436	G	C4'-C3'-O3'	5.48	117.62	109.40
46	A	2278	U	O3'-P-O5'	-5.48	95.78	104.00
51	a	400	G	O3'-P-O5'	-5.48	95.78	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
51	a	848	G	C2'-C3'-O3'	5.48	121.92	113.70
46	A	1516	A	C4'-C3'-O3'	-5.47	104.80	113.00
46	A	2549	C	O3'-P-O5'	-5.46	95.81	104.00
7	B	32	U	O3'-P-O5'	-5.46	95.81	104.00
46	A	517	A	O3'-P-O5'	-5.46	95.81	104.00
51	a	1206	A	C4'-C3'-O3'	-5.46	104.81	113.00
46	A	29	U	O3'-P-O5'	-5.46	95.81	104.00
51	a	1385	U	O3'-P-O5'	-5.46	95.81	104.00
46	A	342	A	C4'-C3'-O3'	-5.45	104.83	113.00
46	A	826	U	C2'-C3'-O3'	-5.44	105.54	113.70
51	a	669	A	O3'-P-O5'	-5.44	95.84	104.00
46	A	296	G	O3'-P-O5'	-5.44	95.84	104.00
46	A	2075	G	O3'-P-O5'	-5.44	95.84	104.00
46	A	785	C	O3'-P-O5'	5.44	112.15	104.00
46	A	297	G	O3'-P-O5'	-5.43	95.85	104.00
17	N	23	ASP	CA-CB-CG	5.42	118.02	112.60
51	a	1313	G	O3'-P-O5'	-5.42	95.87	104.00
46	A	2907	A	C4'-C3'-O3'	-5.42	104.87	113.00
46	A	2059	A	O3'-P-O5'	-5.42	95.87	104.00
51	a	1239	C	O3'-P-O5'	-5.41	95.88	104.00
46	A	1027	A	C2'-C3'-O3'	-5.41	105.59	113.70
51	a	1294	A	O3'-P-O5'	-5.41	95.89	104.00
46	A	2745	U	C4'-C3'-O3'	-5.41	104.89	113.00
51	a	1411	C	C3'-C2'-O2'	5.40	118.81	110.70
51	a	302	C	O3'-P-O5'	-5.40	95.90	104.00
51	a	363	C	C4'-C3'-O3'	-5.40	104.90	113.00
51	a	362	G	C4'-C3'-O3'	-5.39	104.91	113.00
46	A	1244	A	C4'-C3'-C2'	-5.39	97.21	102.60
46	A	1414	G	O3'-P-O5'	-5.39	95.92	104.00
46	A	2871	G	O3'-P-O5'	5.39	112.08	104.00
51	a	823	A	O3'-P-O5'	-5.39	95.92	104.00
46	A	1774	A	O3'-P-O5'	-5.38	95.92	104.00
46	A	2354	G	O3'-P-O5'	-5.38	95.92	104.00
46	A	1722	A	C2'-C3'-O3'	-5.38	105.63	113.70
46	A	802	G	O3'-P-O5'	-5.38	95.93	104.00
46	A	1340	A	O3'-P-O5'	-5.38	95.93	104.00
46	A	558	G	O4'-C1'-N9	5.38	116.27	108.20
51	a	820	C	C4'-C3'-O3'	-5.38	104.94	113.00
46	A	731	G	O3'-P-O5'	-5.37	95.94	104.00
51	a	380	C	O3'-P-O5'	-5.37	95.95	104.00
46	A	691	U	O4'-C1'-C2'	-5.37	102.23	107.60
7	B	46	A	C4'-C3'-O3'	-5.37	104.95	113.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
46	A	1485	A	O4'-C4'-C3'	-5.37	98.64	104.00
46	A	2510	G	C4'-C3'-O3'	-5.36	104.95	113.00
46	A	2873	G	C3'-C2'-O2'	5.36	122.64	114.60
46	A	649	G	O3'-P-O5'	-5.36	95.96	104.00
46	A	1863	U	C4'-C3'-O3'	-5.35	104.97	113.00
46	A	1779	G	O3'-P-O5'	-5.35	95.97	104.00
45	v	45	U	O3'-P-O5'	-5.35	95.98	104.00
46	A	1073	A	C4'-C3'-O3'	-5.34	104.98	113.00
46	A	1200	G	C2'-C3'-O3'	-5.34	105.69	113.70
25	W	46	TYR	CB-CA-C	5.34	118.03	110.24
46	A	381	U	O3'-P-O5'	-5.34	95.99	104.00
46	A	1711	G	O4'-C4'-C3'	-5.34	98.66	104.00
46	A	1390	C	C4'-C3'-C2'	-5.34	97.26	102.60
46	A	2022	U	C4'-C3'-C2'	-5.33	97.27	102.60
46	A	527	A	O3'-P-O5'	-5.33	96.00	104.00
46	A	88	G	O3'-P-O5'	5.33	112.00	104.00
46	A	224	A	O3'-P-O5'	-5.33	96.01	104.00
46	A	1558	G	O3'-P-O5'	-5.33	96.01	104.00
46	A	1709	A	C4'-C3'-O3'	-5.33	105.01	113.00
51	a	995	C	O3'-P-O5'	-5.33	96.01	104.00
46	A	916	G	O3'-P-O5'	-5.33	96.01	104.00
51	a	384	G	O3'-P-O5'	-5.32	96.02	104.00
51	a	1207	A	O3'-P-O5'	-5.32	96.02	104.00
51	a	893	C	C4'-C3'-O3'	-5.32	105.02	113.00
46	A	482	C	C4'-C3'-C2'	-5.32	97.28	102.60
46	A	1618	A	C3'-C2'-O2'	5.32	118.67	110.70
51	a	1404	C	O3'-P-O5'	-5.31	96.03	104.00
46	A	263	G	O3'-P-O5'	-5.31	96.03	104.00
46	A	504	A	O3'-P-O5'	-5.31	96.03	104.00
46	A	1567	U	O3'-P-O5'	-5.31	96.04	104.00
46	A	1614	A	O3'-P-O5'	-5.31	96.04	104.00
51	a	739	G	C2'-C3'-O3'	-5.31	105.74	113.70
46	A	1351	U	C1'-C2'-O2'	-5.30	103.85	111.80
46	A	58	G	O3'-P-O5'	-5.30	96.05	104.00
46	A	557	U	C4'-C3'-O3'	-5.30	105.05	113.00
46	A	1339	A	C4'-C3'-O3'	5.30	117.34	109.40
46	A	1801	G	C1'-C2'-O2'	5.29	116.34	108.40
51	a	1045	G	O3'-P-O5'	5.29	111.94	104.00
46	A	426	G	O3'-P-O5'	-5.29	96.07	104.00
46	A	2816	C	O3'-P-O5'	-5.29	96.07	104.00
46	A	1678	G	C4'-C3'-O3'	-5.28	105.07	113.00
4	3	6	THR	CA-CB-OG1	-5.28	101.68	109.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
30	e	23	LYS	CB-CA-C	5.28	118.54	109.51
46	A	1867	C	O5'-P-OP1	-5.28	92.16	108.00
46	A	2078	A	O3'-P-O5'	-5.28	96.08	104.00
46	A	2435	C	O3'-P-O5'	-5.28	96.08	104.00
46	A	714	U	O3'-P-O5'	-5.28	96.09	104.00
46	A	1366	C	C4'-C3'-O3'	-5.28	105.09	113.00
46	A	1682	C	C1'-C2'-O2'	5.28	116.31	108.40
46	A	2097	U	O3'-P-O5'	5.28	111.91	104.00
46	A	1989	A	C4'-C3'-O3'	-5.27	105.09	113.00
51	a	1345	U	O3'-P-O5'	-5.27	96.09	104.00
46	A	141	U	O3'-P-O5'	-5.27	96.09	104.00
46	A	493	G	O3'-P-O5'	-5.27	96.09	104.00
46	A	2844	A	O3'-P-O5'	-5.27	96.09	104.00
9	D	33	ASN	CA-CB-CG	5.27	117.87	112.60
46	A	2740	A	C4'-C3'-O3'	-5.27	105.10	113.00
51	a	142	A	O3'-P-O5'	-5.27	96.10	104.00
46	A	2791	U	O3'-P-O5'	-5.27	96.10	104.00
46	A	1229	U	C4'-C3'-O3'	-5.26	105.11	113.00
51	a	1147	A	O3'-P-O5'	-5.26	96.11	104.00
46	A	1432	A	C2'-C3'-O3'	-5.26	105.81	113.70
46	A	2721	C	C4'-C3'-C2'	-5.26	97.34	102.60
46	A	1228	G	C4'-C3'-O3'	-5.26	105.11	113.00
46	A	787	C	C4'-C3'-O3'	-5.25	105.12	113.00
51	a	371	A	O3'-P-O5'	-5.25	96.12	104.00
46	A	423	G	O3'-P-O5'	-5.25	96.13	104.00
46	A	1791	A	O3'-P-O5'	-5.25	96.13	104.00
46	A	70	G	C1'-C2'-O2'	-5.25	103.93	111.80
46	A	769	A	O3'-P-O5'	-5.24	96.14	104.00
46	A	1428	G	O3'-P-O5'	-5.24	96.14	104.00
46	A	65	A	C4'-C3'-O3'	-5.24	105.15	113.00
46	A	1382	G	C4'-C3'-O3'	5.24	120.86	113.00
46	A	1257	G	O3'-P-O5'	-5.23	96.16	104.00
46	A	1591	G	O3'-P-O5'	-5.23	96.16	104.00
51	a	1309	G	O3'-P-O5'	-5.23	96.15	104.00
46	A	2740	A	C3'-C2'-O2'	5.23	118.54	110.70
46	A	2843	G	C3'-C2'-O2'	5.23	118.54	110.70
51	a	579	G	C4'-C3'-O3'	-5.22	105.16	113.00
46	A	1319	G	O3'-P-O5'	-5.22	96.17	104.00
46	A	2063	U	C4'-C3'-O3'	-5.22	105.17	113.00
46	A	2296	A	N9-C1'-C2'	5.22	119.83	112.00
46	A	1542	A	C4'-C3'-O3'	5.22	117.22	109.40
51	a	1336	G	C4'-C3'-O3'	-5.21	105.18	113.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	A	1235	A	O3'-P-O5'	-5.21	96.18	104.00
51	a	923	A	O3'-P-O5'	-5.21	96.18	104.00
46	A	2854	A	O3'-P-O5'	-5.21	96.18	104.00
46	A	12	A	O3'-P-O5'	-5.21	96.19	104.00
46	A	546	G	O3'-P-O5'	-5.20	96.20	104.00
46	A	1613	C	O3'-P-O5'	-5.20	96.20	104.00
46	A	2253	G	O3'-P-O5'	-5.20	96.20	104.00
51	a	983	G	C4'-C3'-O3'	-5.20	105.20	113.00
46	A	515	G	C4'-C3'-O3'	-5.19	105.21	113.00
46	A	747	G	C4'-C3'-O3'	-5.19	105.22	113.00
46	A	768	G	O3'-P-O5'	-5.19	96.21	104.00
46	A	2478	U	C1'-C2'-O2'	-5.19	104.02	111.80
51	a	740	G	O5'-P-OP2	-5.18	92.44	108.00
46	A	1715	C	C3'-C2'-O2'	5.18	118.47	110.70
46	A	1934	C	C4'-C3'-O3'	-5.18	105.23	113.00
46	A	2904	A	P-O3'-C3'	5.18	127.97	120.20
46	A	1782	G	C2'-C3'-O3'	5.18	121.47	113.70
46	A	2353	U	C4'-C3'-O3'	-5.18	105.23	113.00
46	A	2505	A	O3'-P-O5'	5.18	111.76	104.00
46	A	2112	G	O3'-P-O5'	-5.17	96.24	104.00
46	A	1036	A	O3'-P-O5'	-5.17	96.25	104.00
51	a	844	A	O3'-P-O5'	-5.17	96.25	104.00
46	A	1751	U	P-O3'-C3'	5.17	127.95	120.20
46	A	1627	A	O3'-P-O5'	-5.16	96.26	104.00
46	A	1380	U	C3'-C2'-O2'	-5.16	106.86	114.60
51	a	301	A	O3'-P-O5'	-5.16	96.26	104.00
46	A	188	C	O3'-P-O5'	-5.16	96.27	104.00
46	A	1025	A	C4'-C3'-C2'	-5.15	97.45	102.60
51	a	1062	U	O3'-P-O5'	-5.15	96.27	104.00
46	A	30	G	O3'-P-O5'	-5.15	96.28	104.00
46	A	1209	G	O3'-P-O5'	-5.15	96.28	104.00
51	a	1528	A	C1'-C2'-O2'	5.15	116.12	108.40
46	A	498	U	C1'-O4'-C4'	-5.14	104.75	109.90
46	A	824	G	O3'-P-O5'	5.14	111.71	104.00
46	A	1651	G	C2'-C3'-O3'	-5.14	105.99	113.70
46	A	125	A	C4'-C3'-O3'	-5.14	105.29	113.00
46	A	2520	U	C4'-C3'-O3'	-5.14	105.30	113.00
46	A	211	C	O3'-P-O5'	-5.13	96.30	104.00
7	B	49	G	C2'-C3'-O3'	5.13	121.39	113.70
7	B	29	C	O3'-P-O5'	-5.13	96.31	104.00
46	A	1424	A	C4'-C3'-O3'	5.13	117.09	109.40
46	A	180	G	C3'-C2'-O2'	5.13	118.39	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	A	589	G	O3'-P-O5'	-5.13	96.31	104.00
46	A	2272	U	C4'-C3'-O3'	-5.12	105.31	113.00
46	A	2841	C	O3'-P-O5'	-5.12	96.31	104.00
46	A	744	C	C4'-C3'-O3'	-5.12	105.32	113.00
7	B	37	A	C2'-C3'-O3'	5.12	121.38	113.70
46	A	1363	G	C2'-C3'-O3'	5.12	117.17	109.50
51	a	388	G	O3'-P-O5'	-5.11	96.34	104.00
46	A	1817	C	C3'-C2'-O2'	5.10	118.35	110.70
46	A	299	U	O3'-P-O5'	-5.09	96.36	104.00
46	A	1877	A	O3'-P-O5'	-5.09	96.36	104.00
51	a	789	G	C4'-C3'-O3'	-5.09	105.36	113.00
46	A	2725	U	C3'-C2'-O2'	5.09	118.33	110.70
46	A	1062	C	O3'-P-O5'	-5.09	96.37	104.00
46	A	2082	G	O4'-C4'-C3'	-5.09	98.91	104.00
51	a	326	G	C4'-C3'-C2'	-5.09	97.51	102.60
46	A	2473	G	O3'-P-O5'	-5.08	96.38	104.00
46	A	2473	G	C4'-C3'-O3'	-5.08	105.38	113.00
51	a	370	G	C1'-C2'-O2'	5.08	116.02	108.40
51	a	1509	A	C4'-C3'-O3'	-5.08	105.38	113.00
46	A	1807	U	C4'-C3'-O3'	-5.08	105.39	113.00
51	a	740	G	O3'-P-O5'	-5.08	96.39	104.00
46	A	2717	G	C2'-C3'-O3'	-5.07	106.09	113.70
46	A	1351	U	C2'-C3'-O3'	5.07	117.11	109.50
46	A	1564	C	O3'-P-O5'	-5.07	96.39	104.00
46	A	2468	A	C4'-C3'-O3'	5.07	117.01	109.40
46	A	599	G	O3'-P-O5'	-5.07	96.40	104.00
46	A	1197	A	C4'-C3'-O3'	-5.07	105.40	113.00
46	A	2496	C	C4'-C3'-O3'	-5.07	105.40	113.00
46	A	757	C	O3'-P-O5'	-5.06	96.41	104.00
46	A	864	C	C4'-C3'-C2'	-5.06	97.54	102.60
46	A	1186	C	C4'-C3'-O3'	-5.05	105.42	113.00
46	A	2764	G	O3'-P-O5'	-5.05	96.42	104.00
46	A	1277	A	C2'-C3'-O3'	-5.05	101.92	109.50
46	A	1561	G	O3'-P-O5'	-5.05	96.42	104.00
46	A	2425	G	C4'-C3'-O3'	-5.05	105.43	113.00
46	A	724	A	C4'-C3'-O3'	-5.04	105.43	113.00
46	A	1373	U	O3'-P-O5'	-5.04	96.43	104.00
46	A	2225	C	O3'-P-O5'	-5.04	96.44	104.00
46	A	1573	C	C3'-C2'-O2'	5.04	118.26	110.70
46	A	910	A	C4'-C3'-O3'	-5.04	105.44	113.00
51	a	530	G	C1'-C2'-O2'	5.03	115.95	108.40
46	A	563	C	O3'-P-O5'	-5.03	96.45	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
46	A	183	A	C1'-C2'-O2'	5.03	115.94	108.40
46	A	274	A	C4'-C3'-O3'	-5.03	105.45	113.00
51	a	1407	A	O3'-P-O5'	-5.03	96.45	104.00
51	a	50	C	O3'-P-O5'	-5.03	96.46	104.00
46	A	798	A	C2'-C3'-O3'	-5.03	106.16	113.70
4	3	13	ARG	CB-CA-C	-5.02	101.27	109.56
51	a	1441	G	O3'-P-O5'	-5.02	96.47	104.00
51	a	1381	U	O3'-P-O5'	-5.02	96.47	104.00
48	s	44	PHE	CA-CB-CG	5.02	118.82	113.80
46	A	611	U	C4'-C3'-O3'	-5.02	105.48	113.00
46	A	1386	G	C3'-C2'-O2'	5.01	118.22	110.70
51	a	650	A	O3'-P-O5'	-5.01	96.48	104.00
46	A	2822	C	O3'-P-O5'	-5.01	96.48	104.00
46	A	724	A	O3'-P-O5'	-5.01	96.48	104.00
51	a	894	U	O3'-P-O5'	-5.01	96.48	104.00
46	A	832	G	C4'-C3'-O3'	-5.01	105.48	113.00
51	a	778	G	C4'-C3'-O3'	-5.01	105.49	113.00
46	A	2091	A	OP2-P-O3'	5.01	123.02	108.00
45	v	20	U	C2'-C3'-O3'	5.01	117.01	109.50
46	A	1515	C	O3'-P-O5'	-5.01	96.49	104.00
46	A	367	G	O3'-P-O5'	-5.00	96.49	104.00
51	a	308	A	O3'-P-O5'	-5.00	96.50	104.00

There are no chirality outliers.

All (48) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	0	41	ARG	Sidechain
1	0	6	ARG	Sidechain
2	1	29	ARG	Sidechain
3	2	33	ARG	Sidechain
5	4	19	ARG	Sidechain
6	6	32	ARG	Sidechain
46	A	1801	G	Sidechain
46	A	2066	A	Sidechain
46	A	558	G	Sidechain
8	C	13	ARG	Sidechain
8	C	14	ARG	Sidechain
8	C	189	ARG	Sidechain
8	C	210	ARG	Sidechain
8	C	274	ARG	Sidechain
8	C	43	ARG	Sidechain

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Mol	Chain	Res	Type	Group
8	C	52	ARG	Sidechain
10	E	168	ARG	Sidechain
10	E	62	ARG	Sidechain
10	E	72	ARG	Sidechain
11	F	167	ARG	Sidechain
12	G	172	ARG	Sidechain
15	L	60	ARG	Sidechain
16	M	119	ARG	Sidechain
17	N	107	ARG	Sidechain
17	N	108	ARG	Sidechain
17	N	59	ARG	Sidechain
18	O	35	ARG	Sidechain
19	P	104	ARG	Sidechain
19	P	93	ARG	Sidechain
20	Q	51	ARG	Sidechain
21	R	67	ARG	Sidechain
22	S	41	ARG	Sidechain
26	X	3	ARG	Sidechain
27	Y	47	ARG	Sidechain
51	a	370	G	Sidechain
47	b	167	ARG	Sidechain
52	d	13	ARG	Sidechain
52	d	29	ARG	Sidechain
30	e	29	ARG	Sidechain
30	e	30	ARG	Sidechain
31	f	47	ARG	Sidechain
31	f	56	ARG	Sidechain
34	i	109	ARG	Sidechain
34	i	12	ARG	Sidechain
34	i	130	ARG	Sidechain
35	j	62	ARG	Sidechain
38	m	107	ARG	Sidechain
48	s	78	ARG	Sidechain

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	432	0	454	3	0
2	1	403	0	414	1	0
3	2	368	0	410	1	0
4	3	512	0	564	1	0
5	4	297	0	342	2	0
6	6	356	0	350	1	0
7	B	2392	0	1213	1	0
8	C	2093	0	2179	10	0
9	D	1575	0	1642	7	0
10	E	1567	0	1652	2	0
11	F	1405	0	1467	2	0
12	G	1342	0	1388	1	0
13	J	1131	0	1169	2	0
14	K	921	0	977	4	0
15	L	1082	0	1132	2	0
16	M	1076	0	1145	3	0
17	N	954	0	983	6	0
18	O	913	0	947	0	0
19	P	937	0	1008	0	0
20	Q	950	0	1018	1	0
21	R	795	0	838	1	0
22	S	850	0	911	4	0
23	T	733	0	781	2	0
24	U	770	0	825	1	0
25	W	629	0	644	3	0
26	X	467	0	512	2	0
27	Y	540	0	581	0	0
28	Z	456	0	491	1	0
29	c	1608	0	1646	0	0
30	e	1219	0	1300	1	0
31	f	765	0	765	0	0
32	g	1199	0	1256	0	0
33	h	1030	0	1086	0	0
34	i	997	0	1033	1	0
35	j	788	0	832	8	0
36	k	847	0	860	1	0
37	l	1036	0	1091	0	0
38	m	934	0	995	0	0
39	n	498	0	533	0	0
40	o	730	0	759	0	0
41	p	691	0	718	1	0
42	q	693	0	734	1	0
43	r	522	0	558	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
44	t	658	0	715	1	0
45	v	1622	0	820	1	0
46	A	58630	0	29517	151	0
47	b	1564	0	1625	2	0
48	s	680	0	694	0	0
49	5	346	0	345	2	0
50	7	123	0	62	0	0
51	a	32391	0	16310	51	0
52	d	1604	0	1638	1	0
All	All	137121	0	91929	248	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 1.

All (248) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:A:2806:G:OP2	46:A:2810:A:O2'	2.07	0.73
46:A:2231:C:O2'	46:A:2233:C:OP1	2.09	0.70
46:A:1367:G:H2'	46:A:1369:C:C5	2.26	0.70
46:A:1887:G:O2'	46:A:1912:G:N2	2.33	0.61
46:A:1359:G:C2	46:A:1368:U:H5"	2.35	0.61
46:A:790:A:O2'	46:A:1704:U:OP1	2.18	0.60
51:a:673:G:H22	51:a:750:G:H1	1.50	0.59
15:L:17:ASN:HD21	15:L:27:ASN:HD22	1.50	0.59
23:T:58:ASN:ND2	23:T:77:ARG:HH11	2.00	0.59
36:k:121:ASN:HB2	51:a:727:A:H5'	1.85	0.58
46:A:2092:C:O2	46:A:2479:A:N1	2.36	0.58
46:A:1542:A:O2'	46:A:1544:C:N4	2.36	0.58
35:j:28:THR:HG22	35:j:86:ALA:HB1	1.87	0.57
46:A:2009:G:O2'	46:A:2011:U:OP2	2.23	0.56
51:a:969:A:C2	51:a:1231:G:O4'	2.58	0.56
46:A:1377:G:O2'	46:A:1432:A:N1	2.38	0.56
46:A:1379:U:C5	46:A:1648:A:C8	2.93	0.56
25:W:67:LEU:HD13	25:W:87:VAL:HG12	1.88	0.56
22:S:29:VAL:HG22	22:S:55:ILE:HD11	1.86	0.56
51:a:1400:U:H2'	51:a:1401:G:C8	2.40	0.56
9:D:24:PRO:HB3	46:A:2711:G:C2	2.41	0.55
46:A:2229:C:O2	46:A:2255:C:N4	2.39	0.55
46:A:747:G:O2'	46:A:1677:A:N3	2.37	0.55
46:A:567:U:O2'	46:A:568:G:N7	2.36	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:A:1366:C:C4	46:A:1367:G:C6	2.95	0.54
46:A:1367:G:H2’	46:A:1369:C:C4	2.42	0.54
51:a:1107:C:H2’	51:a:1108:C:C6	2.42	0.54
46:A:1074:A:N3	46:A:2515:G:O2’	2.41	0.54
22:S:21:MET:HE2	22:S:103:ILE:HG23	1.88	0.54
51:a:778:G:H4’	51:a:1523:A:H4’	1.88	0.54
51:a:985:A:N1	51:a:1375:C:O2’	2.34	0.54
51:a:1444:G:H2’	51:a:1445:U:C6	2.43	0.53
46:A:2417:A:N7	46:A:2418:G:C6	2.76	0.53
14:K:23:LYS:NZ	46:A:2590:A:N3	2.56	0.53
46:A:523:G:H4’	46:A:548:A:N1	2.24	0.52
46:A:229:A:O2’	46:A:231:A:N1	2.36	0.52
1:0:15:LEU:O	1:0:18:THR:HG23	2.10	0.52
51:a:1379:G:C2	51:a:1380:G:C8	2.98	0.52
46:A:1072:A:OP2	46:A:1180:C:O2’	2.18	0.52
46:A:1363:G:C2	46:A:1367:G:N1	2.78	0.52
46:A:656:A:H2	46:A:662:G:H22	1.57	0.51
46:A:1322:G:O2’	46:A:1324:G:N7	2.31	0.51
51:a:1072:U:H2’	51:a:1073:C:C6	2.45	0.51
15:L:69:ILE:HD13	46:A:2435:C:C6	2.46	0.51
35:j:70:HIS:HD1	51:a:1161:A:P	2.33	0.51
46:A:1073:A:C2	46:A:2517:A:H5’	2.46	0.51
51:a:421:G:N7	52:d:28:LYS:NZ	2.58	0.51
46:A:1327:U:H5	46:A:1365:U:O2	1.94	0.51
8:C:63:ARG:NH2	46:A:1616:G:OP2	2.44	0.51
8:C:180:GLU:OE1	46:A:1828:G:O2’	2.24	0.51
46:A:1485:A:H2	46:A:1600:G:H21	1.59	0.50
14:K:63:VAL:HG12	14:K:106:LEU:HD11	1.93	0.50
46:A:1755:C:O2’	46:A:2883:C:N3	2.43	0.50
46:A:2360:G:O2’	46:A:2365:A:N1	2.41	0.50
26:X:23:ASN:ND2	46:A:2108:U:O2’	2.44	0.50
51:a:1084:G:O2’	51:a:1111:A:N1	2.41	0.50
46:A:1028:C:O2	46:A:1028:C:O5’	2.29	0.50
17:N:66:ILE:HD11	17:N:83:LEU:HD22	1.93	0.50
1:0:11:VAL:HG22	46:A:17:G:H5”	1.93	0.50
41:p:6:ARG:HB2	51:a:384:G:H5”	1.93	0.50
46:A:2817:C:O2’	46:A:2834:A:N3	2.39	0.50
9:D:59:LYS:NZ	46:A:2856:G:OP1	2.44	0.50
35:j:100:ILE:HG22	35:j:102:LEU:HG	1.94	0.50
17:N:21:THR:HG23	17:N:44:VAL:HG22	1.93	0.49
46:A:1245:G:C5’	46:A:1245:G:N3	2.75	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:A:1363:G:N1	46:A:1367:G:C6	2.81	0.49
34:i:130:ARG:NH2	45:v:33:U:OP2	2.45	0.49
51:a:1378:C:H2'	51:a:1379:G:C8	2.48	0.49
46:A:2651:C:O2'	46:A:2850:G:N7	2.46	0.49
46:A:2877:G:H2'	46:A:2878:U:O4'	2.13	0.48
21:R:76:TYR:OH	46:A:608:C:OP1	2.29	0.48
51:a:224:U:H2'	51:a:225:A:C8	2.49	0.48
24:U:46:LYS:HG2	46:A:530:A:H5"	1.96	0.48
46:A:2421:A:C8	46:A:2458:G:C2	3.02	0.48
46:A:2818:C:H2'	46:A:2819:A:C8	2.49	0.48
17:N:108:ARG:NH2	46:A:1366:C:O2'	2.47	0.48
46:A:150:A:H61	46:A:179:A:H2	1.59	0.47
46:A:1713:A:O2'	46:A:1719:G:N7	2.38	0.47
46:A:2035:C:O2'	46:A:2848:A:N3	2.48	0.47
47:b:96:TRP:CZ2	47:b:100:THR:HB	2.49	0.47
46:A:482:C:O2'	46:A:483:C:P	2.72	0.47
22:S:90:MET:HB3	49:5:99:TYR:HA	1.96	0.47
46:A:1411:U:HO2'	46:A:2241:A:H8	1.62	0.47
46:A:2366:G:C2	46:A:2367:G:C8	3.02	0.47
46:A:2656:G:O2'	46:A:2810:A:N1	2.44	0.47
51:a:1355:A:C8	51:a:1357:U:C2	3.02	0.47
8:C:210:ARG:NE	46:A:1614:A:OP1	2.48	0.47
46:A:2349:A:C2	46:A:2362:A:C8	3.02	0.47
22:S:42:ALA:HB2	46:A:2039:G:H5"	1.97	0.46
51:a:1106:C:H2'	51:a:1107:C:O4'	2.14	0.46
46:A:1756:U:C4	46:A:1757:G:C5	3.04	0.46
46:A:614:G:H2'	46:A:2059:A:N7	2.30	0.46
46:A:1941:A:H2	46:A:1946:U:H3	1.63	0.46
51:a:1062:U:O4	51:a:1209:C:C2	2.69	0.46
46:A:761:U:O2'	46:A:763:A:N7	2.44	0.46
46:A:957:A:H2'	46:A:958:A:C8	2.50	0.46
25:W:54:TYR:OH	46:A:2361:C:OP1	2.27	0.46
8:C:243:ARG:NH2	46:A:2268:G:OP2	2.49	0.46
16:M:101:LYS:NZ	46:A:954:U:O3'	2.49	0.46
17:N:66:ILE:CD1	17:N:83:LEU:HD22	2.45	0.46
51:a:1434:A:H2'	51:a:1435:A:O4'	2.16	0.46
46:A:1363:G:C2	46:A:1367:G:C6	3.03	0.46
46:A:1755:C:C4	46:A:1756:U:C4	3.03	0.46
46:A:1941:A:N7	51:a:1505:U:H1'	2.31	0.46
46:A:1385:G:C6	46:A:1386:G:N7	2.85	0.45
51:a:1411:C:O2	51:a:1510:A:N1	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:A:796:A:N1	46:A:800:G:O2’	2.39	0.45
51:a:1510:A:H5”	51:a:1518:G:H5”	1.99	0.45
23:T:58:ASN:HD21	23:T:77:ARG:HH11	1.61	0.45
51:a:777:A:N3	51:a:1522:U:O2’	2.47	0.45
46:A:903:G:H2’	46:A:904:A:C8	2.52	0.45
46:A:2508:U:OP1	46:A:2566:U:O2’	2.31	0.45
51:a:1045:G:H3’	51:a:1046:G:H5”	1.99	0.45
46:A:732:A:H1’	46:A:735:U:O4	2.17	0.44
51:a:1187:G:N2	51:a:1189:A:H3’	2.32	0.44
46:A:908:A:C2	46:A:964:A:C4	3.06	0.44
46:A:1424:A:C4	46:A:1425:C:C5	3.05	0.44
46:A:1066:A:C2	46:A:1187:U:C2	3.06	0.44
46:A:1573:C:N4	46:A:1574:G:C6	2.86	0.44
5:4:33:LYS:NZ	46:A:2772:U:OP1	2.49	0.44
46:A:1363:G:C6	46:A:1367:G:C6	3.05	0.44
51:a:1139:C:H2’	51:a:1148:G:N7	2.33	0.44
46:A:58:G:N3	46:A:73:A:H2	2.16	0.44
8:C:145:GLU:HB2	8:C:188:CYS:HB3	2.00	0.44
13:J:111:PRO:O	13:J:116:GLY:HA3	2.17	0.44
51:a:1354:U:C2	51:a:1386:A:C2	3.05	0.44
7:B:40:C:O2	11:F:90:THR:N	2.45	0.44
46:A:210:A:H2’	46:A:211:C:O4’	2.18	0.44
46:A:2884:G:C6	46:A:2885:A:N6	2.86	0.44
51:a:24:G:O2’	51:a:923:A:N1	2.49	0.44
51:a:963:G:C6	51:a:1238:A:C6	3.05	0.44
17:N:4:ARG:NH1	17:N:39:GLU:OE1	2.46	0.43
51:a:98:U:H1’	51:a:99:A:C2	2.53	0.43
4:3:31:HIS:HE1	46:A:2421:A:OP2	2.01	0.43
46:A:674:G:H4’	46:A:697:G:O2’	2.17	0.43
46:A:2438:G:C6	46:A:2439:G:C5	3.06	0.43
46:A:2439:G:C6	46:A:2440:A:C4	3.05	0.43
9:D:17:ALA:HB2	9:D:23:ILE:CD1	2.48	0.43
46:A:486:A:H2’	46:A:487:G:O4’	2.18	0.43
46:A:1359:G:N1	46:A:1368:U:H5”	2.34	0.43
51:a:1379:G:N3	51:a:1380:G:C8	2.86	0.43
51:a:1440:C:H2’	51:a:1441:G:O4’	2.19	0.43
35:j:50:THR:HG23	35:j:64:GLN:HG2	2.01	0.43
46:A:200:A:N6	46:A:2459:A:H2’	2.34	0.43
46:A:1480:A:H2’	46:A:1481:G:O4’	2.19	0.43
8:C:140:VAL:HG13	8:C:161:SER:HB2	2.01	0.43
46:A:494:A:O2’	46:A:520:G:N7	2.50	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:E:131:LEU:HD21	10:E:142:ILE:HD12	2.01	0.43
46:A:876:A:N7	46:A:2276:A:O2'	2.49	0.43
46:A:2540:U:O4	46:A:2604:C:N3	2.51	0.43
25:W:74:THR:O	25:W:89:VAL:HA	2.18	0.43
46:A:2322:C:N4	46:A:2323:C:N4	2.66	0.43
51:a:1366:A:H2'	51:a:1367:U:C6	2.54	0.43
46:A:364:A:H4'	46:A:366:A:C8	2.54	0.43
2:1:7:LEU:HB2	2:1:17:TYR:HB2	2.01	0.42
30:e:52:LYS:HE3	51:a:1091:G:OP2	2.19	0.42
46:A:2875:A:OP2	46:A:2891:G:N1	2.35	0.42
46:A:1527:C:H3'	46:A:1528:U:H5"	2.01	0.42
51:a:968:A:N6	51:a:1230:G:O2'	2.52	0.42
51:a:1295:C:H2'	51:a:1296:A:H4'	2.00	0.42
46:A:1514:C:N4	46:A:1515:C:N4	2.67	0.42
51:a:723:G:H2'	51:a:724:A:C8	2.54	0.42
51:a:798:U:O2'	51:a:800:G:N7	2.50	0.42
8:C:243:ARG:HH22	46:A:2268:G:P	2.42	0.42
46:A:1308:A:H2'	46:A:1309:G:O4'	2.18	0.42
46:A:1371:G:N3	46:A:1371:G:H5'	2.34	0.42
46:A:1426:A:C6	46:A:1427:G:C5	3.08	0.42
16:M:54:MET:HE2	16:M:121:ALA:CB	2.50	0.42
9:D:149:VAL:HG11	46:A:2601:A:N7	2.34	0.42
42:q:68:PRO:HG3	51:a:242:C:H4'	2.01	0.42
46:A:681:C:O2'	46:A:685:U:OP1	2.29	0.42
46:A:2027:A:O2'	46:A:2753:U:O2'	2.35	0.42
46:A:2439:G:C2	46:A:2440:A:H1'	2.54	0.42
51:a:527:C:H2'	51:a:539:G:C8	2.54	0.42
12:G:8:LEU:HD13	12:G:50:VAL:HG13	2.02	0.42
14:K:24:VAL:HG13	14:K:33:ALA:HB2	2.01	0.42
46:A:268:A:N1	46:A:474:U:O2'	2.46	0.42
46:A:617:G:O2'	46:A:618:A:H3'	2.20	0.42
46:A:1424:A:C2	46:A:1425:C:C2	3.08	0.42
9:D:126:HIS:CD2	9:D:159:LEU:HB3	2.55	0.42
28:Z:13:ILE:HD11	46:A:1035:G:C8	2.55	0.42
46:A:689:A:N1	46:A:2398:A:O2'	2.52	0.42
46:A:704:U:H2'	46:A:705:A:C8	2.55	0.42
46:A:2362:A:H5'	46:A:2364:A:H1'	2.01	0.42
46:A:2408:G:H2'	46:A:2409:U:C6	2.55	0.42
5:4:11:CYS:SG	5:4:27:CYS:SG	3.18	0.41
35:j:56:HIS:O	35:j:57:LYS:HG2	2.20	0.41
46:A:248:G:O2'	46:A:431:A:N1	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:A:655:C:H42	46:A:663:A:H61	1.68	0.41
46:A:2716:U:H2'	46:A:2717:G:O4'	2.19	0.41
51:a:172:U:O4'	51:a:211:A:C5	2.73	0.41
3:2:12:ARG:HG2	3:2:44:ALA:HB1	2.03	0.41
46:A:250:G:H4'	46:A:433:G:C5	2.55	0.41
46:A:340:U:H2'	46:A:341:G:O4'	2.19	0.41
46:A:854:U:O2'	46:A:2089:A:N1	2.52	0.41
51:a:180:G:C2	51:a:209:A:C4	3.08	0.41
51:a:381:A:O2'	51:a:459:A:N7	2.53	0.41
6:6:32:ARG:CG	6:6:32:ARG:HH11	2.32	0.41
46:A:183:A:H5'	46:A:184:G:H5"	2.02	0.41
46:A:1723:A:H2'	46:A:1724:A:O4'	2.20	0.41
46:A:656:A:H2	46:A:662:G:N2	2.17	0.41
46:A:1366:C:N4	46:A:1367:G:N1	2.68	0.41
35:j:7:ARG:O	35:j:101:LYS:N	2.54	0.41
46:A:1779:G:C6	46:A:1780:C:C4	3.08	0.41
46:A:2752:C:N4	46:A:2753:U:C4	2.89	0.41
51:a:996:A:H2'	51:a:997:G:C8	2.56	0.41
17:N:41:ARG:NH1	46:A:2906:U:O2	2.53	0.41
46:A:252:C:OP2	46:A:2423:C:O2'	2.33	0.41
26:X:12:THR:HG21	46:A:1404:A:OP1	2.21	0.41
35:j:6:ILE:HB	35:j:76:ILE:HB	2.03	0.41
46:A:2785:U:H5	46:A:2787:A:N7	2.18	0.41
51:a:332:G:N2	51:a:334:G:H3'	2.36	0.41
1:0:18:THR:HG22	46:A:15:G:H4'	2.02	0.41
9:D:149:VAL:HG23	46:A:2604:C:H5'	2.02	0.41
10:E:51:VAL:HG21	10:E:91:GLY:HA3	2.02	0.41
14:K:66:LYS:HA	14:K:79:PHE:O	2.20	0.41
46:A:1825:U:H2'	46:A:1826:C:C6	2.55	0.41
46:A:2327:A:H2'	46:A:2328:G:O4'	2.21	0.41
51:a:803:A:C5	51:a:804:C:C4	3.08	0.41
51:a:1107:C:H2'	51:a:1108:C:C5	2.55	0.41
8:C:207:LYS:HB2	46:A:776:G:C6	2.56	0.41
16:M:104:PHE:HE1	16:M:125:LEU:HD11	1.85	0.41
20:Q:49:ASP:OD2	46:A:580:U:O2'	2.21	0.41
46:A:1439:U:C4	46:A:1440:G:N7	2.89	0.41
46:A:2055:U:H2'	46:A:2056:G:O4'	2.21	0.41
51:a:1113:C:H2'	51:a:1114:G:O4'	2.21	0.41
8:C:43:ARG:HA	8:C:48:LYS:O	2.21	0.40
35:j:7:ARG:HA	35:j:75:ASP:HA	2.03	0.40
44:t:32:ILE:HG23	44:t:79:LEU:HD21	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:A:382:G:C5	46:A:383:U:C5	3.09	0.40
8:C:155:VAL:HG21	8:C:162:ALA:HB2	2.03	0.40
9:D:79:PHE:CG	9:D:199:LEU:HD13	2.56	0.40
11:F:66:VAL:N	11:F:88:LYS:O	2.52	0.40
46:A:1426:A:H2’	46:A:1427:G:O4’	2.20	0.40
46:A:1659:A:OP2	49:5:90:TYR:OH	2.30	0.40
46:A:1830:G:H4’	46:A:2232:G:C2	2.56	0.40
46:A:2785:U:C5	46:A:2787:A:N7	2.88	0.40
13:J:36:ILE:HD11	13:J:141:TYR:CE2	2.56	0.40
46:A:790:A:H2’	46:A:791:C:O4’	2.21	0.40
46:A:2465:G:O2’	46:A:2627:A:N1	2.50	0.40
51:a:876:C:C4	51:a:877:G:H1’	2.56	0.40
46:A:58:G:N3	46:A:73:A:C2	2.89	0.40
46:A:566:G:C5	46:A:567:U:C4	3.09	0.40
46:A:1322:G:N2	46:A:1324:G:H3’	2.35	0.40
51:a:1234:A:N3	51:a:1234:A:H2’	2.36	0.40
46:A:662:G:H8	46:A:662:G:O5’	2.05	0.40
46:A:803:C:H2’	46:A:804:G:O4’	2.21	0.40
47:b:15:HIS:HB3	47:b:43:LEU:HD21	2.04	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	
1	0	53/59 (90%)	48 (91%)	5 (9%)	0	100	100
2	1	46/49 (94%)	42 (91%)	4 (9%)	0	100	100
3	2	42/44 (96%)	41 (98%)	1 (2%)	0	100	100
4	3	62/66 (94%)	62 (100%)	0	0	100	100
5	4	35/37 (95%)	35 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
6	6	44/66 (67%)	37 (84%)	7 (16%)	0	100	100
8	C	271/277 (98%)	261 (96%)	10 (4%)	0	100	100
9	D	205/209 (98%)	199 (97%)	6 (3%)	0	100	100
10	E	204/207 (99%)	199 (98%)	5 (2%)	0	100	100
11	F	176/179 (98%)	159 (90%)	17 (10%)	0	100	100
12	G	173/179 (97%)	156 (90%)	17 (10%)	0	100	100
13	J	141/145 (97%)	137 (97%)	4 (3%)	0	100	100
14	K	120/122 (98%)	111 (92%)	9 (8%)	0	100	100
15	L	144/146 (99%)	139 (96%)	4 (3%)	1 (1%)	18	23
16	M	133/144 (92%)	125 (94%)	8 (6%)	0	100	100
17	N	117/120 (98%)	108 (92%)	9 (8%)	0	100	100
18	O	118/120 (98%)	109 (92%)	6 (5%)	3 (2%)	4	3
19	P	112/115 (97%)	111 (99%)	0	1 (1%)	14	17
20	Q	116/119 (98%)	113 (97%)	3 (3%)	0	100	100
21	R	100/102 (98%)	99 (99%)	1 (1%)	0	100	100
22	S	108/113 (96%)	107 (99%)	1 (1%)	0	100	100
23	T	89/95 (94%)	85 (96%)	4 (4%)	0	100	100
24	U	100/103 (97%)	92 (92%)	8 (8%)	0	100	100
25	W	80/94 (85%)	75 (94%)	5 (6%)	0	100	100
26	X	59/62 (95%)	58 (98%)	1 (2%)	0	100	100
27	Y	64/66 (97%)	63 (98%)	1 (2%)	0	100	100
28	Z	56/59 (95%)	52 (93%)	4 (7%)	0	100	100
29	c	202/218 (93%)	184 (91%)	17 (8%)	1 (0%)	24	31
30	e	162/166 (98%)	159 (98%)	3 (2%)	0	100	100
31	f	91/95 (96%)	89 (98%)	1 (1%)	1 (1%)	11	13
32	g	149/156 (96%)	139 (93%)	9 (6%)	1 (1%)	18	23
33	h	128/132 (97%)	125 (98%)	3 (2%)	0	100	100
34	i	126/130 (97%)	115 (91%)	10 (8%)	1 (1%)	16	20
35	j	96/102 (94%)	87 (91%)	8 (8%)	1 (1%)	12	15
36	k	113/131 (86%)	105 (93%)	6 (5%)	2 (2%)	6	6
37	l	132/138 (96%)	127 (96%)	5 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
38	m	115/121 (95%)	107 (93%)	7 (6%)	1 (1%)	14	17
39	n	58/61 (95%)	55 (95%)	3 (5%)	0	100	100
40	o	85/89 (96%)	81 (95%)	4 (5%)	0	100	100
41	p	85/90 (94%)	82 (96%)	3 (4%)	0	100	100
42	q	82/87 (94%)	78 (95%)	4 (5%)	0	100	100
43	r	63/79 (80%)	62 (98%)	1 (2%)	0	100	100
44	t	84/88 (96%)	81 (96%)	3 (4%)	0	100	100
47	b	191/246 (78%)	181 (95%)	9 (5%)	1 (0%)	24	31
48	s	81/92 (88%)	73 (90%)	7 (9%)	1 (1%)	10	12
49	5	36/38 (95%)	32 (89%)	4 (11%)	0	100	100
52	d	197/200 (98%)	185 (94%)	11 (6%)	1 (0%)	24	31
All	All	5244/5556 (94%)	4970 (95%)	258 (5%)	16 (0%)	37	46

All (16) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
18	O	2	ILE
31	f	88	HIS
36	k	121	ASN
38	m	36	GLU
52	d	67	GLN
32	g	130	ASN
15	L	29	LYS
36	k	123	CYS
48	s	65	ASP
18	O	62	ASP
18	O	67	SER
19	P	28	VAL
47	b	98	GLY
29	c	25	GLY
35	j	39	PRO
34	i	26	GLY

5.3.2 Protein sidechains ⓘ

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.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	49/53 (92%)	49 (100%)	0	100	100
2	1	46/47 (98%)	46 (100%)	0	100	100
3	2	39/39 (100%)	39 (100%)	0	100	100
4	3	54/56 (96%)	53 (98%)	1 (2%)	50	69
5	4	35/35 (100%)	35 (100%)	0	100	100
6	6	39/55 (71%)	38 (97%)	1 (3%)	40	59
8	C	221/225 (98%)	219 (99%)	2 (1%)	70	84
9	D	168/170 (99%)	166 (99%)	2 (1%)	63	79
10	E	169/170 (99%)	166 (98%)	3 (2%)	51	70
11	F	153/154 (99%)	151 (99%)	2 (1%)	61	77
12	G	148/151 (98%)	147 (99%)	1 (1%)	76	87
13	J	121/123 (98%)	121 (100%)	0	100	100
14	K	101/101 (100%)	97 (96%)	4 (4%)	28	42
15	L	110/110 (100%)	107 (97%)	3 (3%)	39	58
16	M	109/116 (94%)	108 (99%)	1 (1%)	70	84
17	N	99/100 (99%)	98 (99%)	1 (1%)	68	82
18	O	93/93 (100%)	91 (98%)	2 (2%)	45	65
19	P	99/100 (99%)	98 (99%)	1 (1%)	68	82
20	Q	97/98 (99%)	96 (99%)	1 (1%)	68	82
21	R	84/84 (100%)	84 (100%)	0	100	100
22	S	91/93 (98%)	88 (97%)	3 (3%)	33	50
23	T	82/85 (96%)	81 (99%)	1 (1%)	63	79
24	U	86/87 (99%)	85 (99%)	1 (1%)	63	79
25	W	63/74 (85%)	62 (98%)	1 (2%)	55	73
26	X	49/50 (98%)	49 (100%)	0	100	100
27	Y	57/57 (100%)	57 (100%)	0	100	100
28	Z	52/53 (98%)	51 (98%)	1 (2%)	50	69
29	c	167/178 (94%)	163 (98%)	4 (2%)	43	62
30	e	128/130 (98%)	127 (99%)	1 (1%)	73	86
31	f	82/84 (98%)	79 (96%)	3 (4%)	30	45

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
32	g	127/132 (96%)	126 (99%)	1 (1%)	73	86
33	h	110/112 (98%)	108 (98%)	2 (2%)	51	70
34	i	101/102 (99%)	101 (100%)	0	100	100
35	j	89/92 (97%)	88 (99%)	1 (1%)	65	81
36	k	87/100 (87%)	86 (99%)	1 (1%)	65	81
37	l	112/115 (97%)	111 (99%)	1 (1%)	70	84
38	m	100/104 (96%)	99 (99%)	1 (1%)	68	82
39	n	53/54 (98%)	53 (100%)	0	100	100
40	o	82/83 (99%)	82 (100%)	0	100	100
41	p	74/76 (97%)	74 (100%)	0	100	100
42	q	77/80 (96%)	77 (100%)	0	100	100
43	r	56/64 (88%)	56 (100%)	0	100	100
44	t	69/70 (99%)	66 (96%)	3 (4%)	26	39
47	b	167/212 (79%)	164 (98%)	3 (2%)	51	70
48	s	73/81 (90%)	72 (99%)	1 (1%)	59	76
49	5	38/38 (100%)	36 (95%)	2 (5%)	20	30
52	d	172/173 (99%)	169 (98%)	3 (2%)	53	72
All	All	4478/4659 (96%)	4419 (99%)	59 (1%)	59	77

All (59) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	3	31	HIS
6	6	32	ARG
8	C	51	VAL
8	C	182	ARG
9	D	61	SER
9	D	191	ASN
10	E	32	VAL
10	E	49	HIS
10	E	126	LEU
11	F	89	VAL
11	F	167	ARG
12	G	19	LEU
14	K	32	THR
14	K	34	ASN

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Mol	Chain	Res	Type
14	K	42	THR
14	K	78	SER
15	L	1	MET
15	L	69	ILE
15	L	104	LYS
16	M	129	THR
17	N	12	GLN
18	O	62	ASP
18	O	63	LEU
19	P	93	ARG
20	Q	9	VAL
22	S	29	VAL
22	S	82	LEU
22	S	92	ARG
23	T	91	GLU
24	U	34	LEU
25	W	78	GLU
28	Z	58	GLU
29	c	27	ASP
29	c	35	ASP
29	c	37	LYS
29	c	53	LYS
30	e	151	GLU
31	f	72	VAL
31	f	87	ARG
31	f	88	HIS
32	g	17	ILE
33	h	56	LYS
33	h	57	GLN
35	j	74	ILE
36	k	128	ARG
37	l	10	LYS
38	m	97	VAL
44	t	6	SER
44	t	13	THR
44	t	48	LYS
47	b	33	THR
47	b	75	GLN
47	b	92	VAL
48	s	28	LYS
49	5	94	ARG
49	5	100	ILE

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Mol	Chain	Res	Type
52	d	41	ARG
52	d	63	VAL
52	d	71	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (50) such sidechains are listed below:

Mol	Chain	Res	Type
1	0	40	HIS
1	0	50	ASN
2	1	26	ASN
4	3	26	HIS
4	3	31	HIS
4	3	35	ASN
4	3	60	GLN
8	C	86	ASN
8	C	153	GLN
8	C	163	GLN
9	D	14	GLN
9	D	95	GLN
9	D	172	GLN
10	E	9	GLN
10	E	49	HIS
11	F	37	ASN
12	G	102	ASN
13	J	118	GLN
14	K	4	GLN
15	L	17	ASN
17	N	12	GLN
18	O	32	ASN
20	Q	52	GLN
22	S	28	GLN
22	S	73	GLN
23	T	58	ASN
24	U	51	ASN
24	U	53	GLN
26	X	23	ASN
27	Y	27	ASN
27	Y	31	GLN
29	c	135	GLN
29	c	146	GLN
31	f	61	GLN
31	f	64	ASN

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Mol	Chain	Res	Type
32	g	86	GLN
33	h	18	ASN
33	h	57	GLN
34	i	5	GLN
35	j	82	GLN
36	k	42	ASN
38	m	105	ASN
38	m	118	ASN
40	o	72	ASN
43	r	21	ASN
44	t	41	ASN
47	b	8	GLN
47	b	77	GLN
48	s	43	GLN
52	d	115	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
45	v	75/76 (98%)	20 (26%)	0
46	A	2716/2928 (92%)	418 (15%)	91 (3%)
50	7	5/6 (83%)	2 (40%)	0
51	a	1504/1554 (96%)	251 (16%)	0
7	B	111/112 (99%)	24 (21%)	7 (6%)
All	All	4411/4676 (94%)	715 (16%)	98 (2%)

All (715) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
7	B	10	G
7	B	12	U
7	B	23	U
7	B	32	U
7	B	33	U
7	B	38	U
7	B	40	C
7	B	43	A
7	B	48	G
7	B	49	G
7	B	50	A
7	B	51	A

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Mol	Chain	Res	Type
7	B	53	U
7	B	54	U
7	B	58	C
7	B	61	U
7	B	63	C
7	B	64	A
7	B	87	U
7	B	88	C
7	B	97	A
7	B	107	G
7	B	108	C
7	B	110	G
45	v	6	G
45	v	7	G
45	v	9	A
45	v	10	G
45	v	14	A
45	v	17	U
45	v	18	G
45	v	19	G
45	v	20	U
45	v	21	A
45	v	46	G
45	v	47	U
45	v	48	C
45	v	51	C
45	v	58	A
45	v	61	C
45	v	65	C
45	v	69	A
45	v	70	G
45	v	76	A
46	A	12	A
46	A	13	A
46	A	34	U
46	A	46	C
46	A	60	G
46	A	63	G
46	A	71	A
46	A	74	U
46	A	75	G
46	A	89	U

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Mol	Chain	Res	Type
46	A	90	A
46	A	93	C
46	A	96	G
46	A	117	A
46	A	118	A
46	A	119	U
46	A	150	A
46	A	164	U
46	A	166	A
46	A	175	G
46	A	176	A
46	A	177	G
46	A	183	A
46	A	184	G
46	A	199	A
46	A	202	A
46	A	203	U
46	A	216	A
46	A	219	A
46	A	224	A
46	A	225	A
46	A	226	A
46	A	229	A
46	A	236	A
46	A	248	G
46	A	251	G
46	A	258	A
46	A	272	C
46	A	275	A
46	A	299	U
46	A	300	G
46	A	301	U
46	A	302	A
46	A	307	A
46	A	309	U
46	A	310	C
46	A	346	G
46	A	350	U
46	A	355	A
46	A	361	G
46	A	373	A
46	A	374	A

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Mol	Chain	Res	Type
46	A	389	A
46	A	390	A
46	A	407	A
46	A	411	G
46	A	412	A
46	A	418	A
46	A	419	G
46	A	430	C
46	A	433	G
46	A	458	G
46	A	459	A
46	A	467	C
46	A	471	G
46	A	482	C
46	A	483	C
46	A	491	C
46	A	498	U
46	A	503	C
46	A	504	A
46	A	528	G
46	A	551	A
46	A	554	U
46	A	568	G
46	A	576	G
46	A	577	U
46	A	578	A
46	A	579	G
46	A	592	A
46	A	595	G
46	A	599	G
46	A	600	A
46	A	607	G
46	A	615	U
46	A	616	A
46	A	617	G
46	A	619	A
46	A	631	G
46	A	647	A
46	A	657	G
46	A	658	A
46	A	659	A
46	A	673	A

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Mol	Chain	Res	Type
46	A	680	G
46	A	683	A
46	A	691	U
46	A	692	A
46	A	700	U
46	A	701	G
46	A	702	A
46	A	732	A
46	A	733	U
46	A	777	C
46	A	793	U
46	A	794	U
46	A	811	A
46	A	812	G
46	A	822	G
46	A	829	A
46	A	831	U
46	A	832	G
46	A	837	U
46	A	838	C
46	A	839	G
46	A	852	G
46	A	859	C
46	A	866	A
46	A	874	U
46	A	875	U
46	A	892	U
46	A	906	G
46	A	913	A
46	A	930	C
46	A	954	U
46	A	957	A
46	A	959	C
46	A	964	A
46	A	973	G
46	A	987	A
46	A	991	A
46	A	992	G
46	A	1007	G
46	A	1015	G
46	A	1020	A
46	A	1029	A

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Mol	Chain	Res	Type
46	A	1038	C
46	A	1042	A
46	A	1058	U
46	A	1059	A
46	A	1068	G
46	A	1072	A
46	A	1073	A
46	A	1079	U
46	A	1084	A
46	A	1092	A
46	A	1093	G
46	A	1098	C
46	A	1153	G
46	A	1158	G
46	A	1160	G
46	A	1174	A
46	A	1178	U
46	A	1179	A
46	A	1180	C
46	A	1181	C
46	A	1182	G
46	A	1185	G
46	A	1188	A
46	A	1189	A
46	A	1190	A
46	A	1203	G
46	A	1244	A
46	A	1245	G
46	A	1247	G
46	A	1250	G
46	A	1251	U
46	A	1278	G
46	A	1290	G
46	A	1293	A
46	A	1296	G
46	A	1311	G
46	A	1312	A
46	A	1315	G
46	A	1328	C
46	A	1339	A
46	A	1340	A
46	A	1341	U

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Mol	Chain	Res	Type
46	A	1342	G
46	A	1346	A
46	A	1360	A
46	A	1364	C
46	A	1371	G
46	A	1372	C
46	A	1375	A
46	A	1376	G
46	A	1388	A
46	A	1389	C
46	A	1391	U
46	A	1404	A
46	A	1414	G
46	A	1418	U
46	A	1423	A
46	A	1433	U
46	A	1435	U
46	A	1450	C
46	A	1465	A
46	A	1473	A
46	A	1474	C
46	A	1489	U
46	A	1490	A
46	A	1498	U
46	A	1499	A
46	A	1500	U
46	A	1501	U
46	A	1502	G
46	A	1505	U
46	A	1506	A
46	A	1508	C
46	A	1514	C
46	A	1516	A
46	A	1525	G
46	A	1526	G
46	A	1527	C
46	A	1528	U
46	A	1529	G
46	A	1531	G
46	A	1536	A
46	A	1540	A
46	A	1542	A

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Mol	Chain	Res	Type
46	A	1543	U
46	A	1544	C
46	A	1556	A
46	A	1557	G
46	A	1558	G
46	A	1559	C
46	A	1560	U
46	A	1561	G
46	A	1563	G
46	A	1566	G
46	A	1590	C
46	A	1595	U
46	A	1607	C
46	A	1617	A
46	A	1626	U
46	A	1630	G
46	A	1632	G
46	A	1653	A
46	A	1654	A
46	A	1661	A
46	A	1691	A
46	A	1692	U
46	A	1693	C
46	A	1708	U
46	A	1719	G
46	A	1751	U
46	A	1752	G
46	A	1757	G
46	A	1758	U
46	A	1759	U
46	A	1760	A
46	A	1768	A
46	A	1770	C
46	A	1771	C
46	A	1776	A
46	A	1777	G
46	A	1779	G
46	A	1791	A
46	A	1792	G
46	A	1793	G
46	A	1802	A
46	A	1805	G

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Mol	Chain	Res	Type
46	A	1811	C
46	A	1829	C
46	A	1830	G
46	A	1831	A
46	A	1845	A
46	A	1858	A
46	A	1867	C
46	A	1876	A
46	A	1877	A
46	A	1887	G
46	A	1898	G
46	A	1899	U
46	A	1900	A
46	A	1901	A
46	A	1902	G
46	A	1911	C
46	A	1935	G
46	A	1936	G
46	A	1940	U
46	A	1941	A
46	A	1942	A
46	A	1943	C
46	A	1944	U
46	A	1945	A
46	A	1946	U
46	A	1958	G
46	A	1959	G
46	A	1966	A
46	A	1967	A
46	A	1984	U
46	A	1992	C
46	A	1994	C
46	A	1996	C
46	A	1999	A
46	A	2000	A
46	A	2001	G
46	A	2020	U
46	A	2022	U
46	A	2025	C
46	A	2026	A
46	A	2052	A
46	A	2060	A

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Mol	Chain	Res	Type
46	A	2061	G
46	A	2062	A
46	A	2065	C
46	A	2072	C
46	A	2084	C
46	A	2085	G
46	A	2089	A
46	A	2090	G
46	A	2091	A
46	A	2098	G
46	A	2099	G
46	A	2122	G
46	A	2124	A
46	A	2128	U
46	A	2129	G
46	A	2131	U
46	A	2219	G
46	A	2227	A
46	A	2232	G
46	A	2233	C
46	A	2240	U
46	A	2241	A
46	A	2254	A
46	A	2267	G
46	A	2268	G
46	A	2302	A
46	A	2312	C
46	A	2315	A
46	A	2316	A
46	A	2334	U
46	A	2335	U
46	A	2337	G
46	A	2338	A
46	A	2341	U
46	A	2342	C
46	A	2348	C
46	A	2349	A
46	A	2350	G
46	A	2351	A
46	A	2354	G
46	A	2356	A
46	A	2360	G

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Mol	Chain	Res	Type
46	A	2363	C
46	A	2364	A
46	A	2376	C
46	A	2379	C
46	A	2408	G
46	A	2412	G
46	A	2414	C
46	A	2431	U
46	A	2432	C
46	A	2435	C
46	A	2451	C
46	A	2452	U
46	A	2453	C
46	A	2454	A
46	A	2457	G
46	A	2458	G
46	A	2459	A
46	A	2464	A
46	A	2470	C
46	A	2477	A
46	A	2498	A
46	A	2505	A
46	A	2513	G
46	A	2531	G
46	A	2534	G
46	A	2547	A
46	A	2558	G
46	A	2559	U
46	A	2564	G
46	A	2583	U
46	A	2595	A
46	A	2596	G
46	A	2602	C
46	A	2631	A
46	A	2632	G
46	A	2637	G
46	A	2638	U
46	A	2642	U
46	A	2692	G
46	A	2714	G
46	A	2718	PSU
46	A	2720	C

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Mol	Chain	Res	Type
46	A	2743	G
46	A	2755	U
46	A	2763	C
46	A	2764	G
46	A	2765	G
46	A	2773	G
46	A	2777	A
46	A	2780	G
46	A	2786	A
46	A	2794	A
46	A	2795	G
46	A	2806	G
46	A	2807	A
46	A	2818	C
46	A	2820	U
46	A	2822	C
46	A	2823	C
46	A	2824	G
46	A	2828	G
46	A	2833	U
46	A	2845	A
46	A	2892	G
46	A	2893	A
46	A	2897	G
46	A	2898	A
46	A	2899	C
46	A	2900	A
46	A	2904	A
46	A	2905	C
46	A	2918	G
50	7	404	U
50	7	405	G
51	a	9	G
51	a	11	G
51	a	24	G
51	a	34	A
51	a	41	G
51	a	46	G
51	a	49	C
51	a	50	C
51	a	53	A
51	a	74	A

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Mol	Chain	Res	Type
51	a	75	G
51	a	76	A
51	a	99	A
51	a	119	C
51	a	128	A
51	a	137	G
51	a	143	C
51	a	148	A
51	a	153	U
51	a	158	G
51	a	162	C
51	a	172	U
51	a	181	G
51	a	182	U
51	a	188	G
51	a	189	A
51	a	194	C
51	a	195	A
51	a	197	G
51	a	209	A
51	a	219	U
51	a	220	C
51	a	221	G
51	a	222	G
51	a	234	A
51	a	253	U
51	a	255	G
51	a	259	G
51	a	261	U
51	a	274	G
51	a	275	C
51	a	284	G
51	a	288	C
51	a	297	G
51	a	313	G
51	a	314	A
51	a	325	U
51	a	329	A
51	a	336	C
51	a	337	A
51	a	338	C
51	a	340	G

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Mol	Chain	Res	Type
51	a	355	G
51	a	360	C
51	a	362	G
51	a	373	U
51	a	375	U
51	a	380	C
51	a	385	G
51	a	388	G
51	a	389	A
51	a	400	G
51	a	401	A
51	a	414	G
51	a	419	A
51	a	420	U
51	a	422	A
51	a	429	U
51	a	430	C
51	a	431	G
51	a	432	G
51	a	435	C
51	a	437	U
51	a	439	A
51	a	447	U
51	a	461	C
51	a	465	U
51	a	468	C
51	a	475	A
51	a	476	U
51	a	493	G
51	a	494	G
51	a	506	A
51	a	510	C
51	a	514	G
51	a	520	C
51	a	527	C
51	a	530	G
51	a	531	C
51	a	532	A
51	a	536	G
51	a	541	A
51	a	542	A
51	a	545	C

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Mol	Chain	Res	Type
51	a	556	A
51	a	568	A
51	a	571	U
51	a	581	A
51	a	582	A
51	a	585	G
51	a	586	G
51	a	627	C
51	a	642	U
51	a	643	C
51	a	662	U
51	a	663	G
51	a	665	G
51	a	674	A
51	a	697	G
51	a	732	U
51	a	733	G
51	a	740	G
51	a	743	A
51	a	757	A
51	a	758	A
51	a	764	G
51	a	786	A
51	a	787	G
51	a	802	U
51	a	803	A
51	a	824	A
51	a	826	C
51	a	849	G
51	a	855	G
51	a	856	C
51	a	924	A
51	a	932	G
51	a	936	G
51	a	944	C
51	a	945	A
51	a	958	C
51	a	964	G
51	a	965	U
51	a	966	U
51	a	967	U
51	a	968	A

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Mol	Chain	Res	Type
51	a	970	U
51	a	971	U
51	a	975	A
51	a	978	A
51	a	979	A
51	a	985	A
51	a	986	G
51	a	987	A
51	a	1002	U
51	a	1003	G
51	a	1004	A
51	a	1007	U
51	a	1008	C
51	a	1012	U
51	a	1013	G
51	a	1014	A
51	a	1019	C
51	a	1020	C
51	a	1028	A
51	a	1033	G
51	a	1034	U
51	a	1035	C
51	a	1039	U
51	a	1044	G
51	a	1045	G
51	a	1046	G
51	a	1049	G
51	a	1050	A
51	a	1051	G
51	a	1056	A
51	a	1063	G
51	a	1066	U
51	a	1067	G
51	a	1074	G
51	a	1075	U
51	a	1076	C
51	a	1095	U
51	a	1099	G
51	a	1104	G
51	a	1105	U
51	a	1106	C
51	a	1111	A

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Mol	Chain	Res	Type
51	a	1114	G
51	a	1135	U
51	a	1139	C
51	a	1140	A
51	a	1142	C
51	a	1144	U
51	a	1145	U
51	a	1148	G
51	a	1149	U
51	a	1150	U
51	a	1166	A
51	a	1169	G
51	a	1176	A
51	a	1178	A
51	a	1180	A
51	a	1193	G
51	a	1205	A
51	a	1206	A
51	a	1220	U
51	a	1221	U
51	a	1222	A
51	a	1234	A
51	a	1235	C
51	a	1236	A
51	a	1237	C
51	a	1247	A
51	a	1265	C
51	a	1266	A
51	a	1267	G
51	a	1269	G
51	a	1287	C
51	a	1289	A
51	a	1299	U
51	a	1302	G
51	a	1309	G
51	a	1311	U
51	a	1312	C
51	a	1314	G
51	a	1321	G
51	a	1328	A
51	a	1329	C
51	a	1344	C

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Mol	Chain	Res	Type
51	a	1345	U
51	a	1347	G
51	a	1355	A
51	a	1362	G
51	a	1373	U
51	a	1379	G
51	a	1388	G
51	a	1407	A
51	a	1415	U
51	a	1428	G
51	a	1432	G
51	a	1435	A
51	a	1449	U
51	a	1452	G
51	a	1455	A
51	a	1460	U
51	a	1464	G
51	a	1497	G
51	a	1502	A
51	a	1503	A
51	a	1504	G
51	a	1507	G
51	a	1509	A
51	a	1513	A
51	a	1515	G
51	a	1516	U
51	a	1527	G
51	a	1529	A
51	a	1530	G
51	a	1539	G
51	a	1540	G

All (98) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
7	B	12	U
7	B	32	U
7	B	37	A
7	B	48	G
7	B	49	G
7	B	63	C
7	B	64	A

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Mol	Chain	Res	Type
46	A	12	A
46	A	60	G
46	A	75	G
46	A	88	G
46	A	92	G
46	A	176	A
46	A	181	G
46	A	202	A
46	A	252	C
46	A	299	U
46	A	300	G
46	A	337	A
46	A	389	A
46	A	411	G
46	A	458	G
46	A	482	C
46	A	549	A
46	A	599	G
46	A	615	U
46	A	631	G
46	A	691	U
46	A	701	G
46	A	732	A
46	A	742	G
46	A	793	U
46	A	811	A
46	A	831	U
46	A	837	U
46	A	848	G
46	A	855	G
46	A	874	U
46	A	905	G
46	A	986	G
46	A	990	C
46	A	1025	A
46	A	1030	G
46	A	1091	U
46	A	1092	A
46	A	1179	A
46	A	1187	U
46	A	1188	A
46	A	1244	A

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Mol	Chain	Res	Type
46	A	1246	G
46	A	1250	G
46	A	1266	A
46	A	1317	G
46	A	1325	A
46	A	1339	A
46	A	1344	C
46	A	1371	G
46	A	1382	G
46	A	1485	A
46	A	1498	U
46	A	1505	U
46	A	1525	G
46	A	1527	C
46	A	1530	G
46	A	1535	U
46	A	1543	U
46	A	1558	G
46	A	1565	U
46	A	1631	A
46	A	1653	A
46	A	1663	A
46	A	1691	A
46	A	1751	U
46	A	1757	G
46	A	1791	A
46	A	1887	G
46	A	1941	A
46	A	1942	A
46	A	2026	A
46	A	2064	G
46	A	2080	A
46	A	2127	U
46	A	2315	A
46	A	2337	G
46	A	2348	C
46	A	2349	A
46	A	2375	A
46	A	2451	C
46	A	2459	A
46	A	2497	A
46	A	2558	G

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Mol	Chain	Res	Type
46	A	2631	A
46	A	2785	U
46	A	2805	A
46	A	2823	C
46	A	2892	G
46	A	2898	A
46	A	2904	A

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

2 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	$\#\|Z\| > 2$
46	PSU	A	2718	46	18,21,22	0.90	1 (5%)	21,30,33	0.86	0
46	OMG	A	2280	45,46	23,26,27	0.41	0	32,38,41	0.65	1 (3%)

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
46	PSU	A	2718	46	-	0/7/25/26	0/2/2/2
46	OMG	A	2280	45,46	-	0/9/27/28	0/3/3/3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
46	A	2718	PSU	C6-C5	3.10	1.38	1.35

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
46	A	2280	OMG	O3'-C3'-C2'	2.07	116.99	111.19

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates i

There are no oligosaccharides in this entry.

5.6 Ligand geometry i

There are no ligands in this entry.

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.

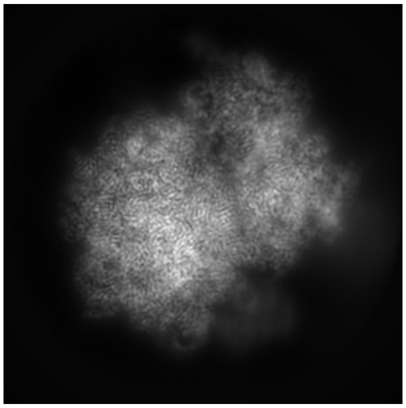
6 Map visualisation ⓘ

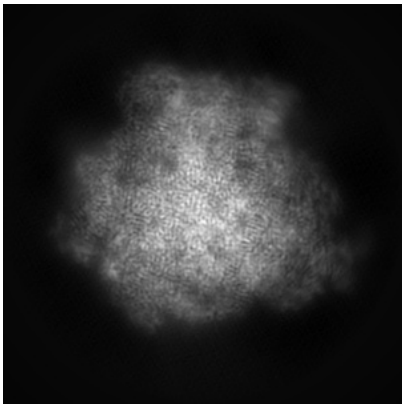
This section contains visualisations of the EMDB entry EMD-50856. These allow visual inspection of the internal detail of the map and identification of artifacts.

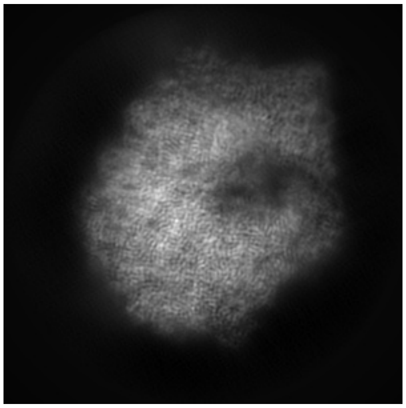
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections ⓘ

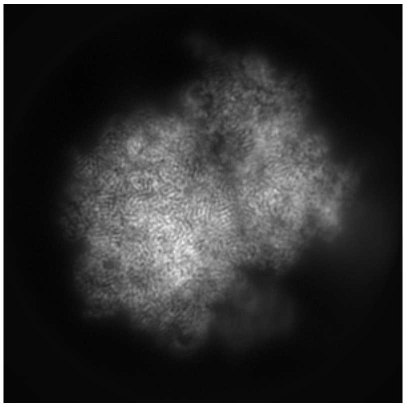
6.1.1 Primary map

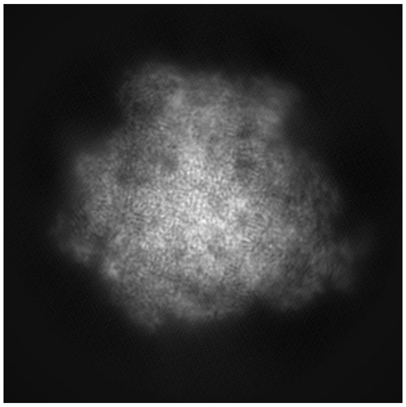

X

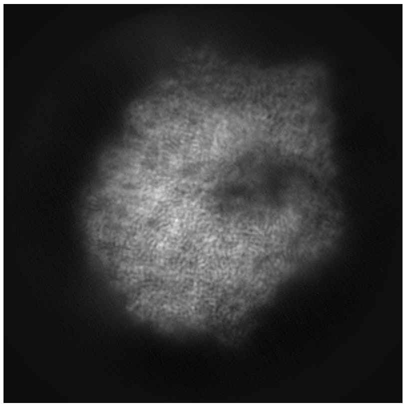

Y


Z

6.1.2 Raw map


X

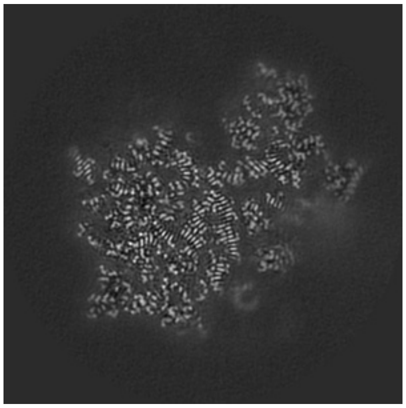

Y

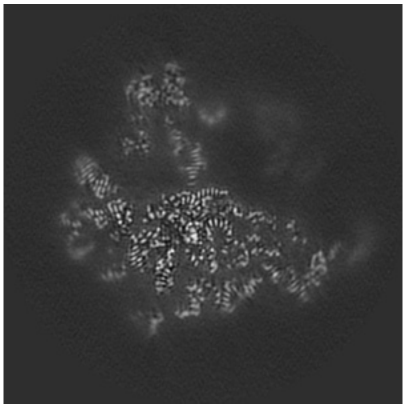

Z

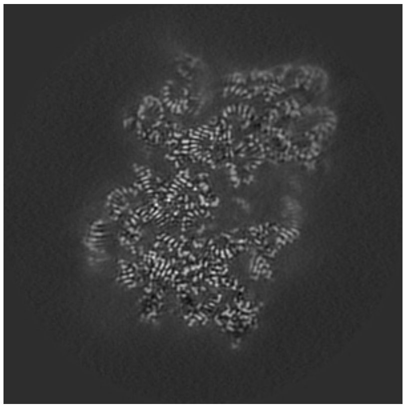
The images above show the map projected in three orthogonal directions.

6.2 Central slices

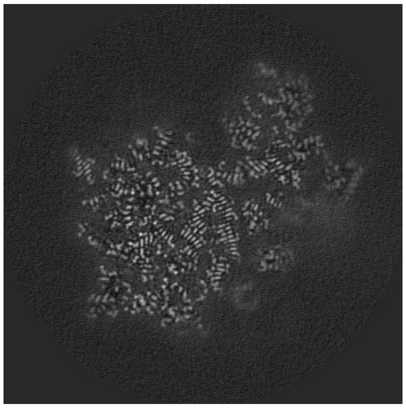
6.2.1 Primary map

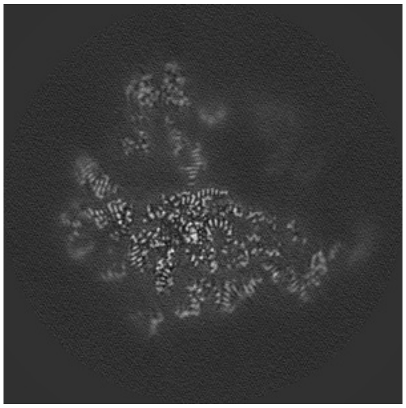

X Index: 192

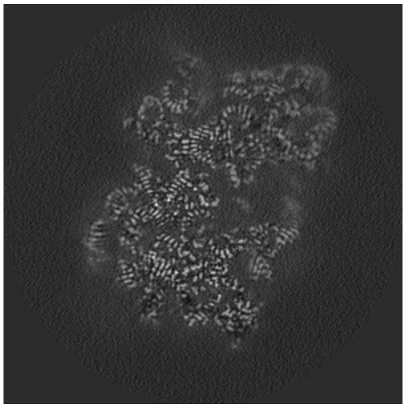

Y Index: 192


Z Index: 192

6.2.2 Raw map


X Index: 192

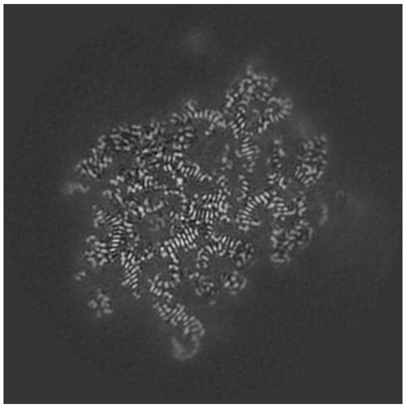

Y Index: 192

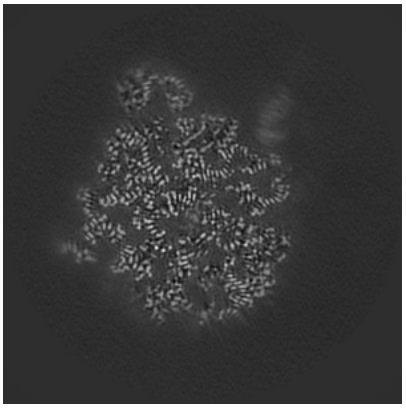

Z Index: 192

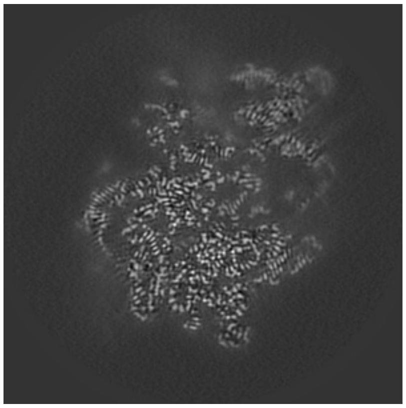
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices ⓘ

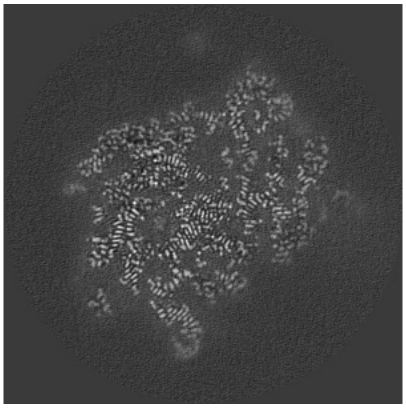
6.3.1 Primary map

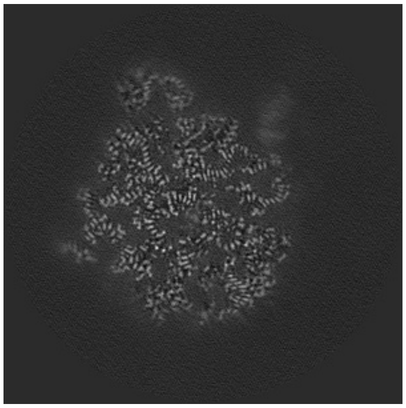

X Index: 164

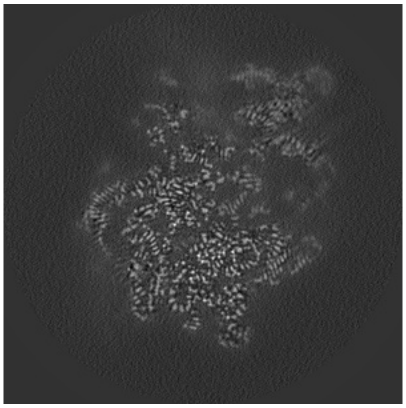

Y Index: 156


Z Index: 178

6.3.2 Raw map


X Index: 166

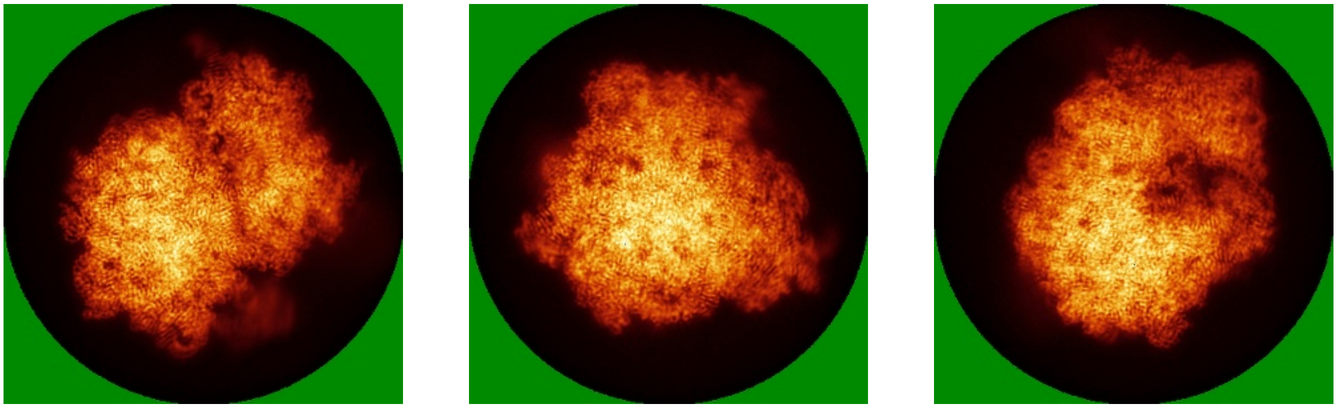

Y Index: 156


Z Index: 178

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

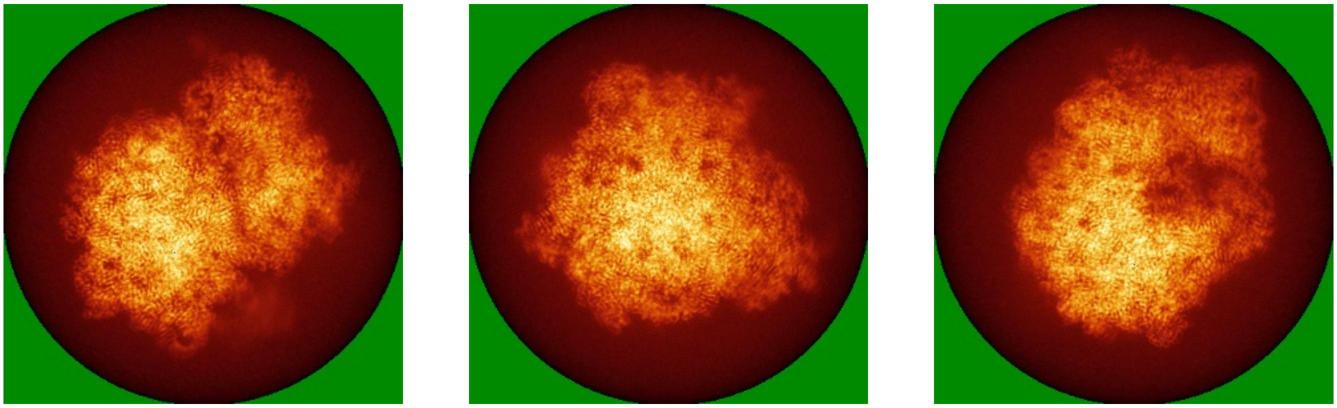
6.4 Orthogonal standard-deviation projections (False-color) ⓘ

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 ⓘ

This section was not generated.

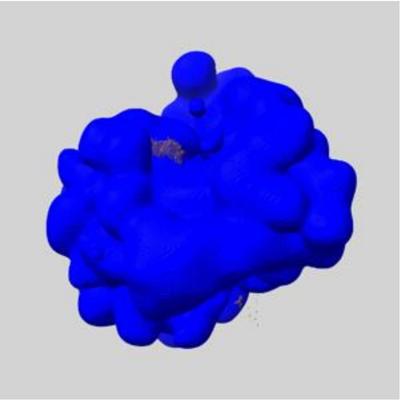
6.6 Mask visualisation ⓘ

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

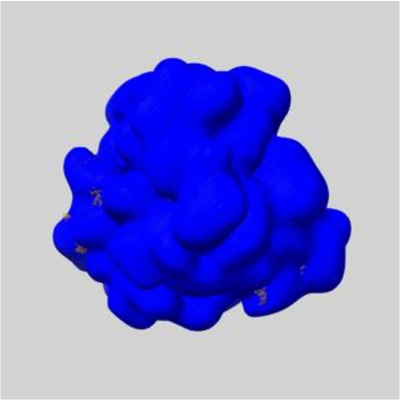
A mask typically either:

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

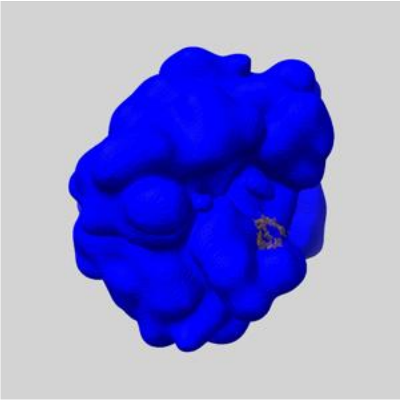
6.6.1 emd_50856_msk_1.map ⓘ



X



Y

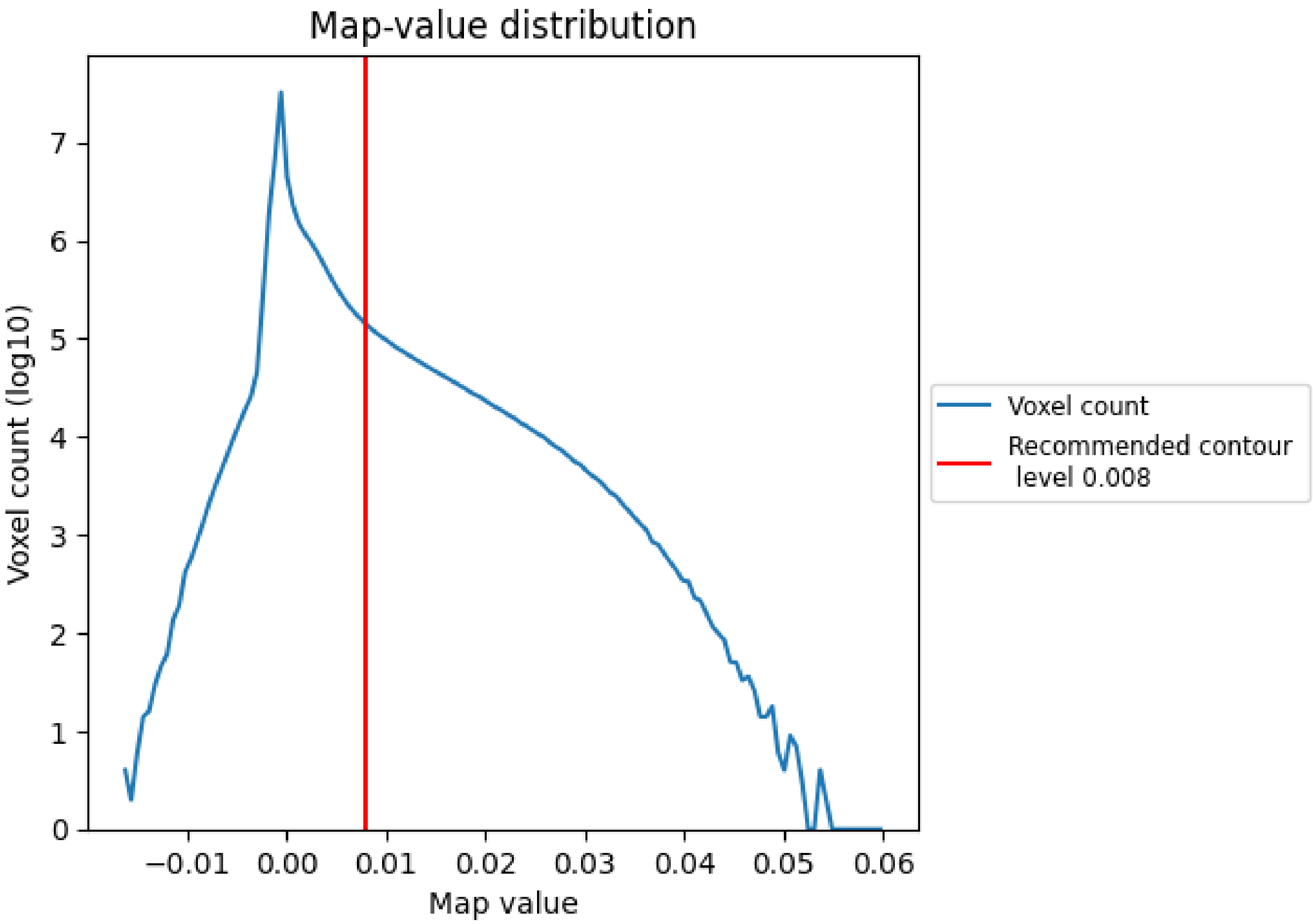


Z

7 Map analysis (i)

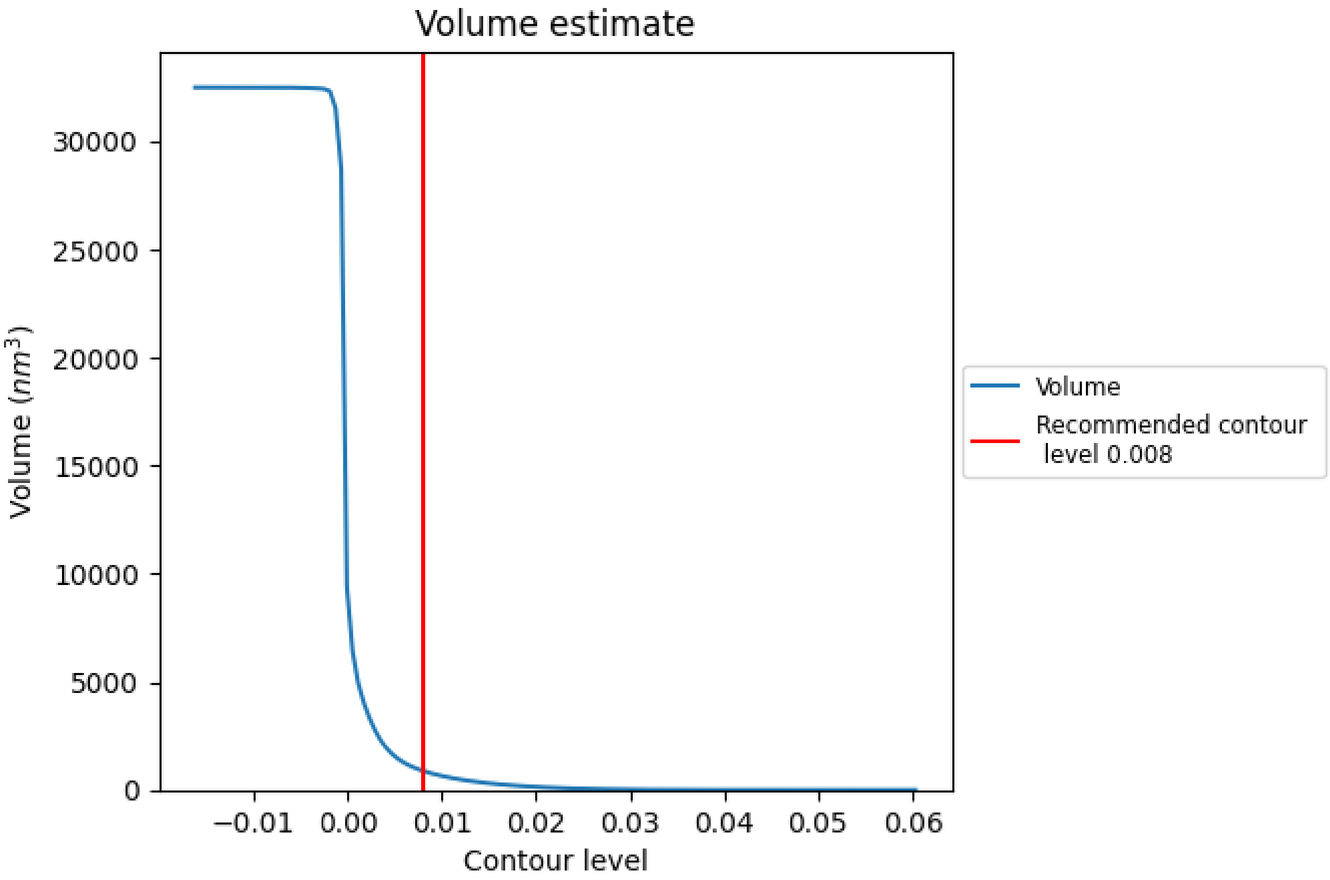
This section contains the results of statistical analysis of the map.

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.

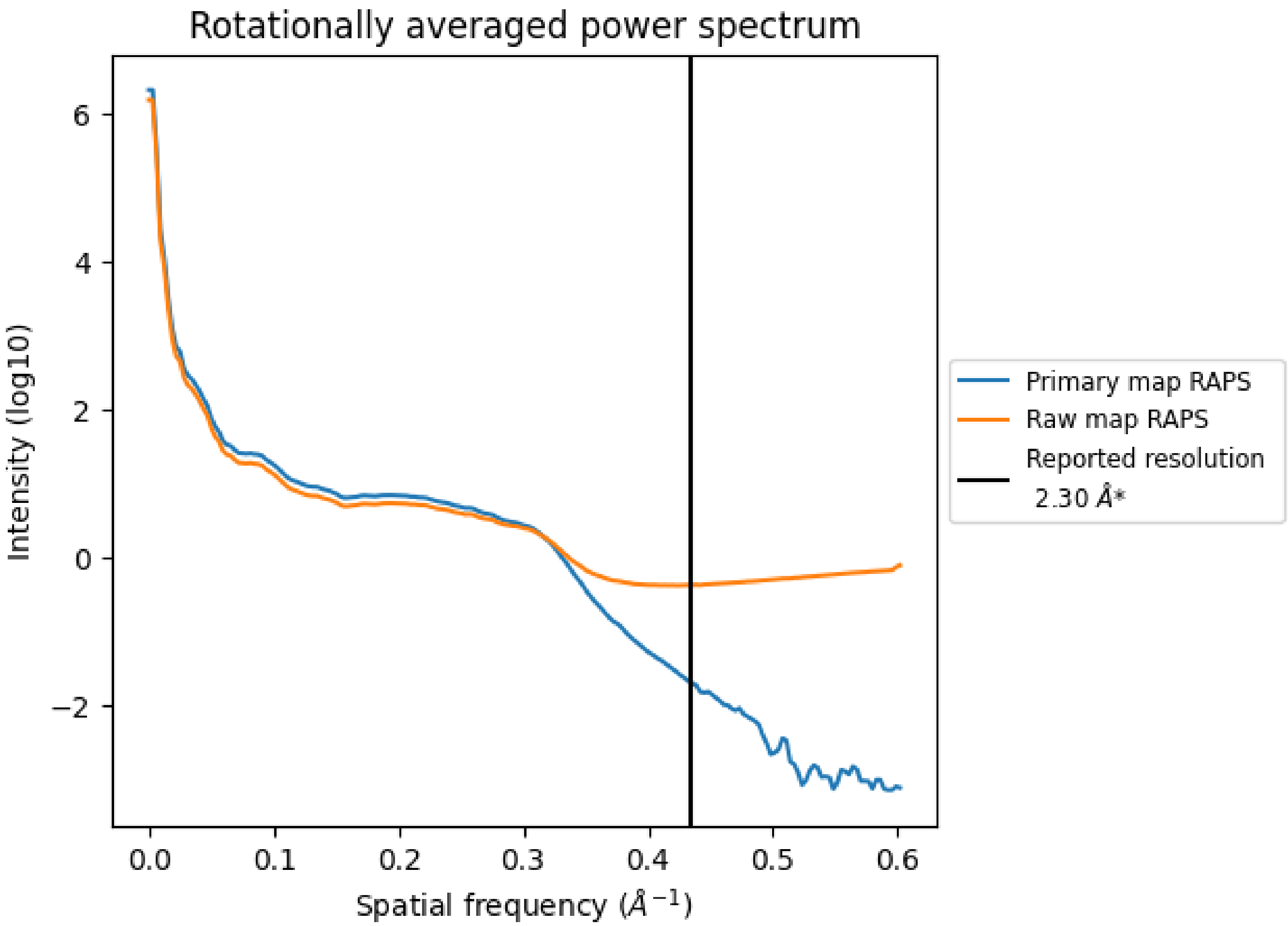
7.2 Volume estimate ⓘ



The volume at the recommended contour level is 887 nm^3; this corresponds to an approximate mass of 802 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 ⓘ

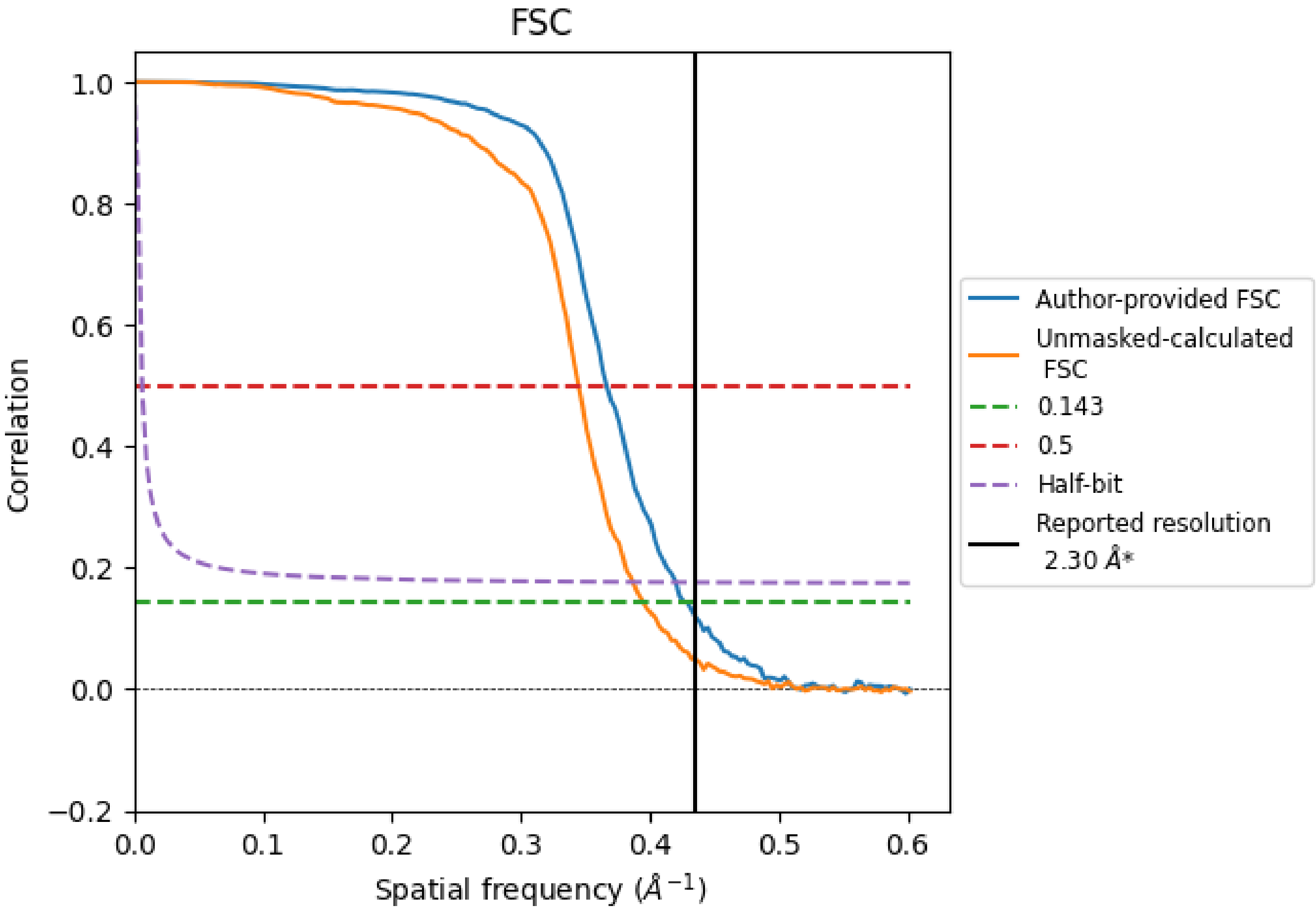


*Reported resolution corresponds to spatial frequency of 0.435 Å^{-1}

8 Fourier-Shell correlation ⓘ

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 ⓘ



*Reported resolution corresponds to spatial frequency of 0.435 $Å^{-1}$

8.2 Resolution estimates ⓘ

Resolution estimate (Å)	**Estimation criterion (FSC cut-off)**		
	0.143	0.5	Half-bit
Reported by author	2.30	-	-
Author-provided FSC curve	2.33	2.73	2.38
Unmasked-calculated*	2.53	2.90	2.58

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

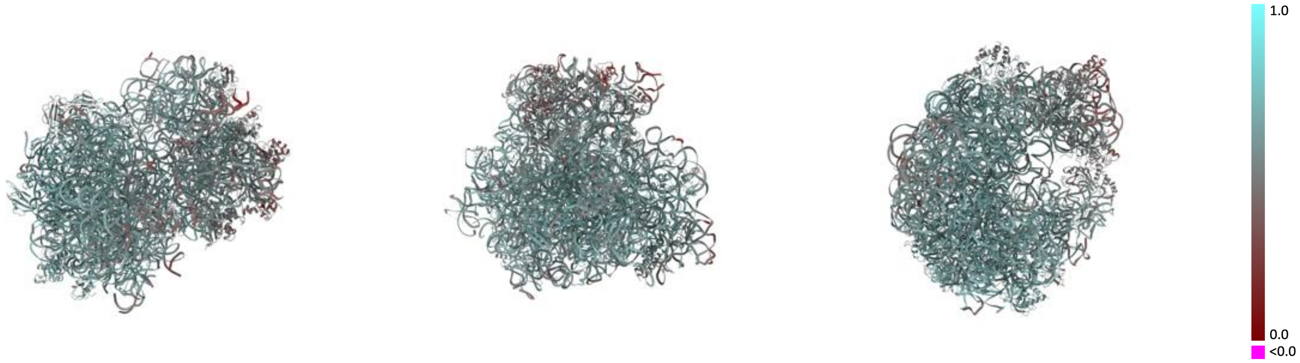
9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-50856 and PDB model 9FY2. Per-residue inclusion information can be found in section 3 on page 14.

9.1 Map-model overlay ⓘ

This section was not generated.

9.2 Q-score mapped to coordinate model ⓘ



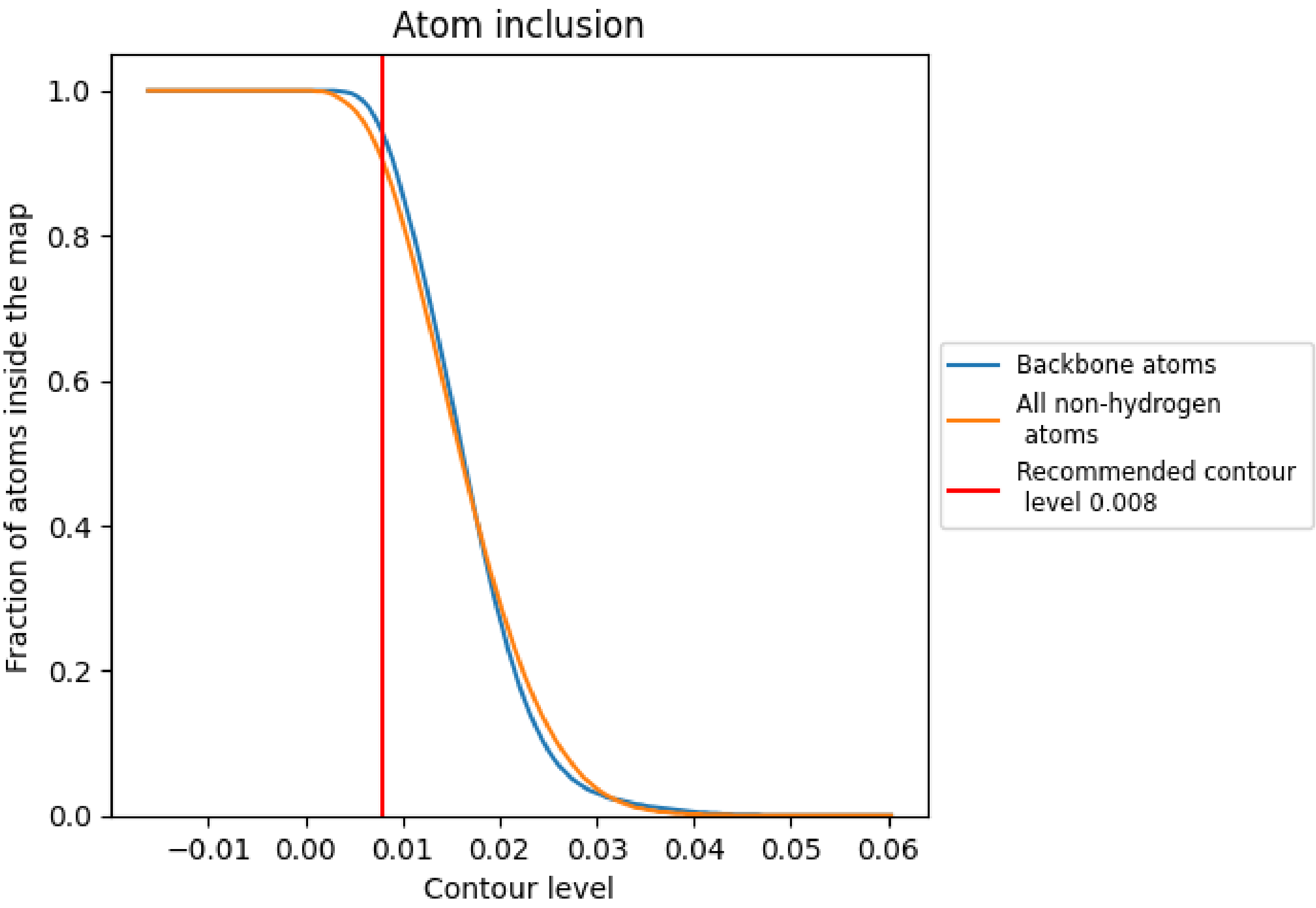
X Y Z

The images above show the model with each residue coloured according 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 ⓘ

This section was not generated.

9.4 Atom inclusion ⓘ



At the recommended contour level, 94% of all backbone atoms, 90% 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 (0.008) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9020	0.6000
0	0.8930	0.6150
1	0.8050	0.5810
2	0.9770	0.6700
3	0.9520	0.6510
4	0.9000	0.6210
5	0.7620	0.5910
6	0.4500	0.4170
7	0.9110	0.5770
A	0.9710	0.6320
B	0.9270	0.5660
C	0.9380	0.6500
D	0.8930	0.6390
E	0.8400	0.6210
F	0.6150	0.4830
G	0.6110	0.5230
J	0.9150	0.6400
K	0.9060	0.6400
L	0.8450	0.6170
M	0.9020	0.6140
N	0.8870	0.5990
O	0.7010	0.5240
P	0.8610	0.6090
Q	0.9140	0.6510
R	0.8420	0.6290
S	0.8960	0.6310
T	0.8240	0.5790
U	0.7540	0.5800
W	0.9140	0.6210
X	0.8170	0.5990
Y	0.7270	0.5480
Z	0.8590	0.6120
a	0.9280	0.5790
b	0.6150	0.5310
c	0.6650	0.5090

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Chain	Atom inclusion	Q-score
d	0.6880	0.5510
e	0.8230	0.5990
f	0.7310	0.5760
g	0.6170	0.4740
h	0.8550	0.6060
i	0.5810	0.4540
j	0.4940	0.4220
k	0.7360	0.5530
l	0.8480	0.6070
m	0.6710	0.4830
n	0.8170	0.5450
o	0.8330	0.5960
p	0.8120	0.5780
q	0.7880	0.5700
r	0.7980	0.5930
s	0.6290	0.4700
t	0.7090	0.5260
v	0.9250	0.5730