Full wwPDB EM Validation Report ⓘ

Nov 17, 2025 – 04:13 PM JST

PDB ID	:	9KMU / pdb_00009kmu
EMDB ID	:	EMD-62445
Title	:	Bat SARSr-CoV RaTG15 Nsp1 bound to the Human 40S Ribosomal subunit-State2
Authors	:	Yuan, S.; Yan, R.; Wu, M.
Deposited on	:	2024-11-18
Resolution	:	2.87 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

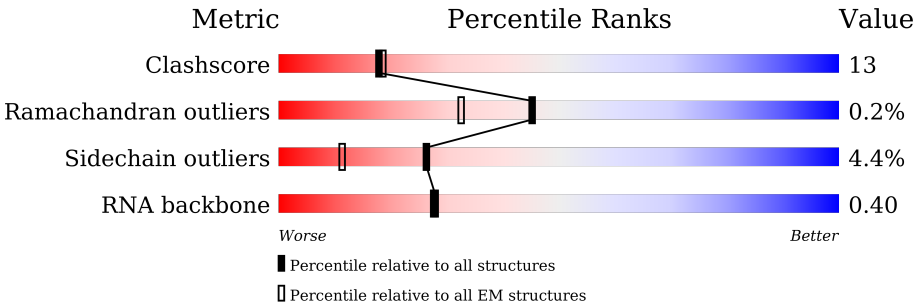
EMDB validation analysis	:	0.0.1.dev129
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

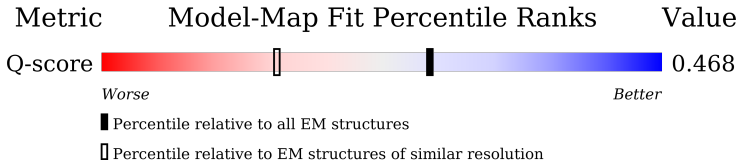
1 Overall quality at a glance

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

The reported resolution of this entry is 2.87 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.





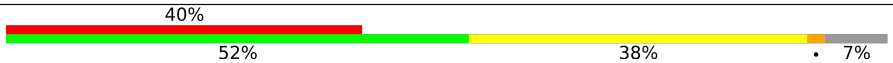
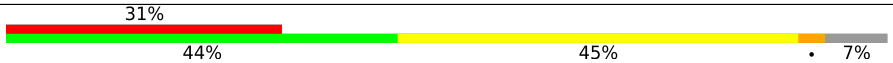
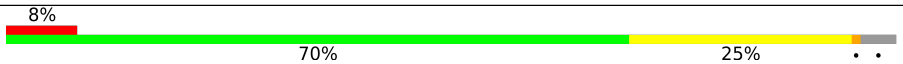
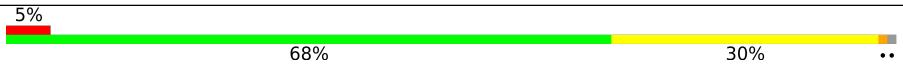
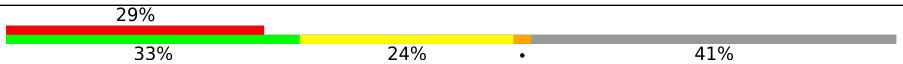
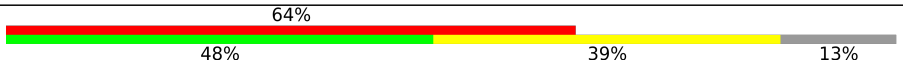
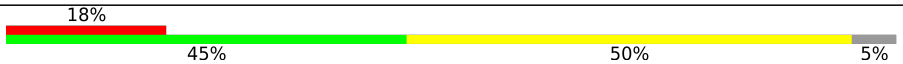
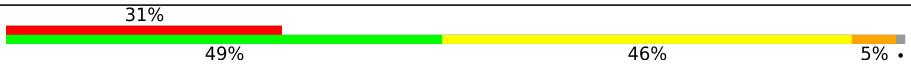
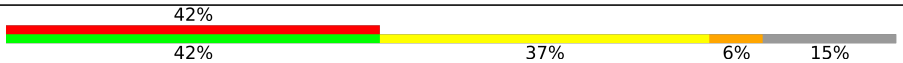
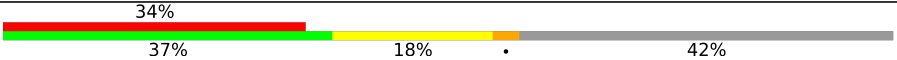
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	12062 (2.37 - 3.37)

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	2	1869	6% 36% 37% 15% 11%
2	A	295	50% 21% 28%
3	B	264	49% 31% 19%

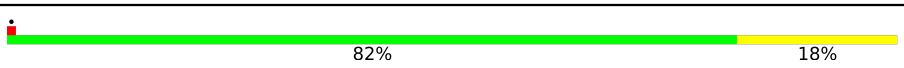
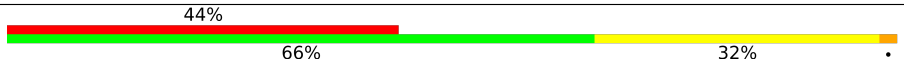
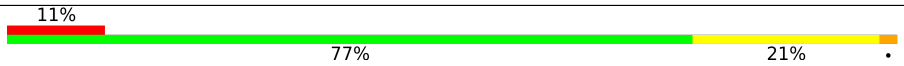
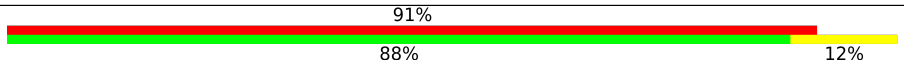
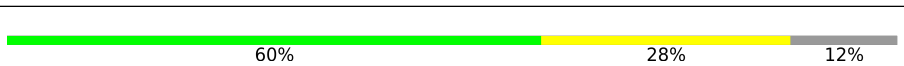
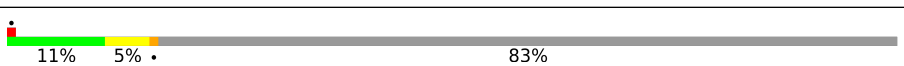
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
4	C	293	
5	D	243	
6	E	263	
7	F	204	
8	G	249	
9	H	194	
10	I	208	
11	J	194	
12	K	165	
13	L	158	
14	M	132	
15	N	151	
16	O	151	
17	P	145	
18	Q	146	
19	R	135	
20	S	152	
21	T	145	
22	U	119	
23	V	83	
24	W	130	
25	X	143	
26	Y	130	
27	Z	125	
28	a	101	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
29	b	82	
30	c	62	
31	d	55	
32	e	56	
33	f	74	
34	g	315	
35	h	25	
36	n	180	

2 Entry composition

There are 36 unique types of molecules in this entry. The entry contains 74574 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	2	1660	35423	15824	6374	11575	1650	0	0

- Molecule 2 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	A	213	1686	1072	295	311	8	0	0

- Molecule 3 is a protein called Small ribosomal subunit protein eS1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	B	213	1729	1098	309	308	14	0	0

- Molecule 4 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	C	218	1690	1094	289	297	10	0	0

- Molecule 5 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	D	225	1752	1117	315	313	7	0	0

- Molecule 6 is a protein called Small ribosomal subunit protein eS4, X isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	E	262	2076	1324	386	358	8	0	0

- Molecule 7 is a protein called Small ribosomal subunit protein uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	F	189	Total	C	N	O	S	0	0
			1495	934	284	270	7		

- Molecule 8 is a protein called Small ribosomal subunit protein eS6.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	G	230	Total	C	N	O	S	0	0
			1864	1164	373	320	7		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	221	ARG	LYS	variant	UNP P62753

- Molecule 9 is a protein called Small ribosomal subunit protein eS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	H	186	Total	C	N	O	S	0	0
			1501	957	276	267	1		

- Molecule 10 is a protein called Small ribosomal subunit protein eS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	I	205	Total	C	N	O	S	0	0
			1682	1056	331	290	5		

- Molecule 11 is a protein called Small ribosomal subunit protein uS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	J	180	Total	C	N	O	S	0	0
			1499	955	300	242	2		

- Molecule 12 is a protein called Small ribosomal subunit protein eS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	K	97	Total	C	N	O	S	0	0
			816	533	144	133	6		

- Molecule 13 is a protein called Small ribosomal subunit protein uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	L	151	Total	C	N	O	S	0	0
			1229	782	230	211	6		

- Molecule 14 is a protein called Small ribosomal subunit protein eS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	M	121	Total	C	N	O	S	0	0
			935	586	165	175	9		

- Molecule 15 is a protein called Small ribosomal subunit protein uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	N	149	Total	C	N	O	S	0	0
			1202	770	228	203	1		

- Molecule 16 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	O	135	Total	C	N	O	S	0	0
			1010	618	198	188	6		

- Molecule 17 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	P	126	Total	C	N	O	S	0	0
			1037	659	196	175	7		

- Molecule 18 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	Q	138	Total	C	N	O	S	0	0
			1097	698	206	190	3		

- Molecule 19 is a protein called Small ribosomal subunit protein eS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	R	132	Total	C	N	O	S	0	0
			1068	670	199	195	4		

- Molecule 20 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	S	143	Total	C	N	O	S	0	0
			1184	743	240	200	1		

- Molecule 21 is a protein called Small ribosomal subunit protein eS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	T	144	Total	C	N	O	S	0	0
			1123	703	217	200	3		

- Molecule 22 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	U	101	Total	C	N	O	S	0	0
			803	504	153	142	4		

- Molecule 23 is a protein called Small ribosomal subunit protein eS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	V	82	Total	C	N	O	S	0	0
			625	384	116	120	5		

- Molecule 24 is a protein called Small ribosomal subunit protein uS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	W	129	Total	C	N	O	S	0	0
			1034	659	193	176	6		

- Molecule 25 is a protein called Small ribosomal subunit protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	X	141	Total	C	N	O	S	0	0
			1098	693	219	183	3		

- Molecule 26 is a protein called Small ribosomal subunit protein eS24.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	Y	124	Total	C	N	O	S	0	0
			1014	641	198	170	5		

- Molecule 27 is a protein called Small ribosomal subunit protein eS25.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	Z	72	Total	C	N	O	S	0	0
			574	368	104	101	1		

- Molecule 28 is a protein called Small ribosomal subunit protein eS26.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	a	99	Total	C	N	O	S	0	0
			794	494	165	130	5		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
a	78	VAL	ALA	conflict	UNP P62854

- Molecule 29 is a protein called Small ribosomal subunit protein eS27.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	b	82	Total	C	N	O	S	0	0
			641	402	118	114	7		

- Molecule 30 is a protein called Small ribosomal subunit protein eS28.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	c	62	Total	C	N	O	S	0	0
			489	297	97	93	2		

- Molecule 31 is a protein called Small ribosomal subunit protein uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	d	55	Total	C	N	O	S	0	0
			459	286	94	74	5		

- Molecule 32 is a protein called Small ribosomal subunit protein eS30.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	e	56	Total	C	N	O	S	0	0
			442	273	96	72	1		

- Molecule 33 is a protein called Small ribosomal subunit protein eS31.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	f	74	Total	C	N	O	S	0	0
			611	385	117	102	7		

- Molecule 34 is a protein called Small ribosomal subunit protein RACK1.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	g	314	Total	C	N	O	S	0	0
			2441	1537	425	467	12		

- Molecule 35 is a protein called Small ribosomal subunit protein eS32.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	h	22	Total	C	N	O	S	0	0
			213	130	57	23	3		

- Molecule 36 is a protein called ORF1ab polyprotein.

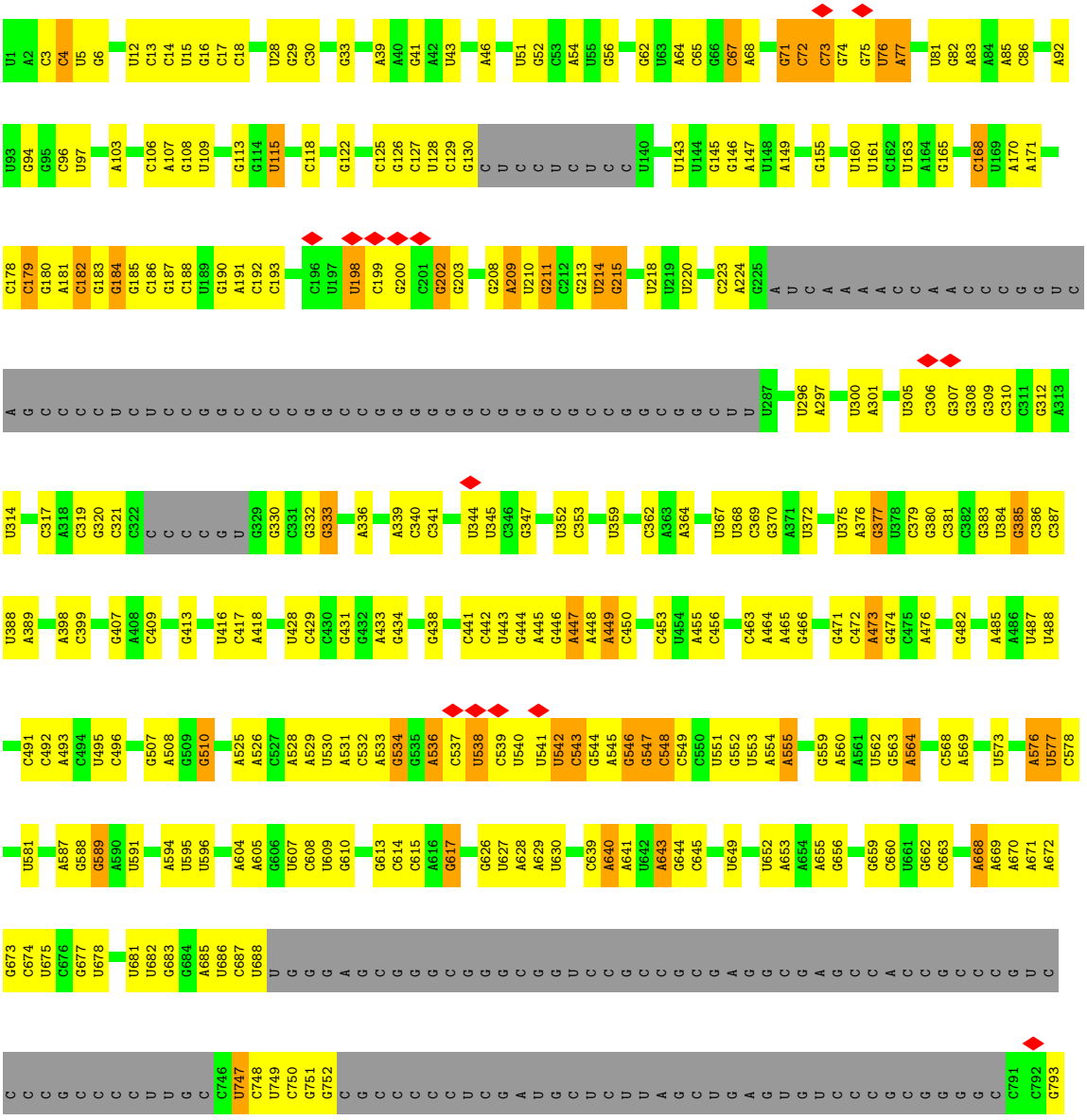
Mol	Chain	Residues	Atoms					AltConf	Trace
36	n	30	Total	C	N	O	S	0	0
			238	146	41	49	2		

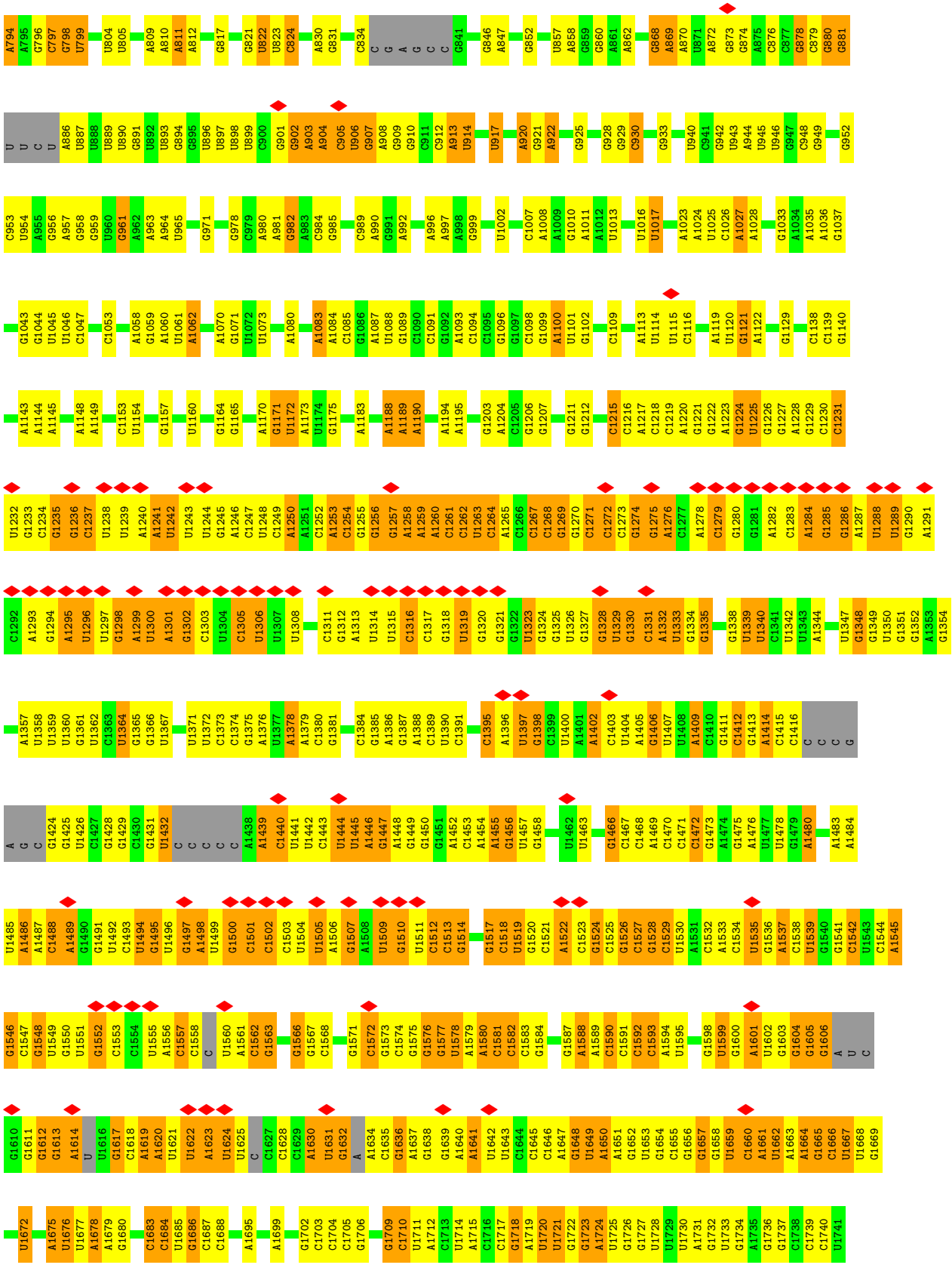
3 Residue-property plots (i)

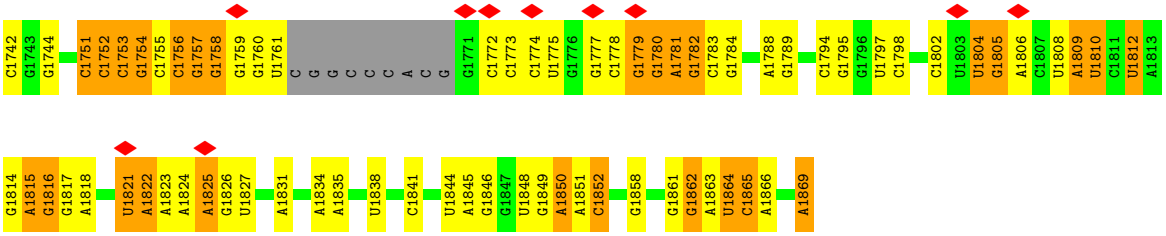
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: 18S ribosomal RNA

Chain 2:

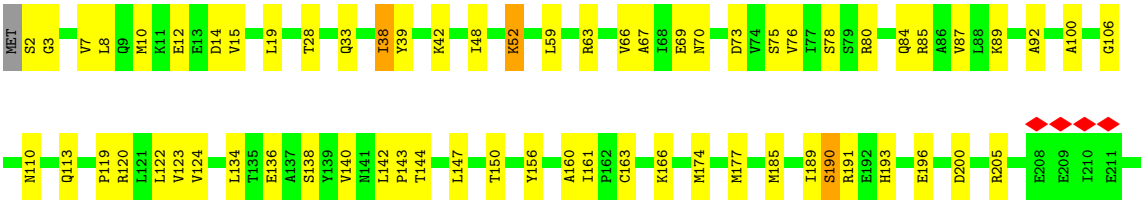


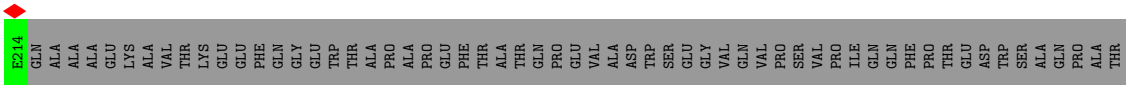

A794 A795 G796 C797 G798 U799 U804 U805 A809 A810 A811 A812 G817 G821 U822 U823 C824 A830 G831 C834 C G A G C C G841 G846 A847 G852 U857 A858 G859 G860 A861 A862 G868 A869 A870 U871 A872 G873 G874 A875 C876 C877 G878 C879 G880 G881
U U C U A886 U887 U888 U889 U890 G891 U892 U893 G894 G895 U896 U897 U898 U899 C900 G901 G902 A903 A904 C905 U906 G907 A908 G909 G910 C911 C912 A913 U914 U917 A920 G921 A922 G925 G928 G929 C930 G933 U940 C941 G942 U943 A944 U945 U946 G947 C948 G949 G952
C953 U954 A955 G956 A957 G958 G959 U960 G961 A962 A963 A964 U965 G971 G978 C979 A980 A981 G982 A983 C984 G985 C989 A990 G991 A992 A996 A997 A998 G999 U1002 C1007 A1008 A1009 G1010 A1011 A1012 U1013 U1016 U1017 A1023 A1024 U1025 C1026 A1027 A1028 G1033 A1034 A1035 A1036 G1037
G1043 G1044 U1045 U1046 C1047 C1053 A1058 G1059 A1060 U1061 A1062 A1070 G1071 U1072 U1073 A1080 A1083 A1084 C1085 G1086 A1087 U1088 G1089 C1090 C1091 G1092 A1093 C1094 C1095 G1096 G1097 C1098 G1099 A1100 U1101 G1102 C1109 A1113 U1114 U1115 C1116 A1119 U1120 G1121 A1122 G1129 C1138 C1139 G1140
A1143 A1144 A1145 A1148 A1149 C1153 U1154 G1157 U1160 G1164 G1165 A1170 G1171 U1172 A1173 U1174 G1175 A1183 A1188 A1189 A1190 A1194 A1195 G1203 A1204 C1205 G1206 G1207 G1211 G1212 C1215 C1216 A1217 C1218 C1219 A1220 G1221 G1222 A1223 G1224 U1225 G1226 G1227 A1228 G1229 C1230 C1231
U1232 G1233 C1234 G1235 G1236 C1237 U1238 U1239 A1240 A1241 U1242 U1243 U1244 G1245 A1246 C1247 U1248 C1249 A1250 A1251 C1252 A1253 C1254 G1255 G1256 G1257 A1258 A1259 A1260 C1261 C1262 U1263 C1264 A1265 C1266 C1267 C1268 G1269 G1270 C1271 C1272 C1273 G1274 G1275 A1276 C1277 A1278 C1279 G1280 G1281 A1282 C1283 A1284 G1285 G1286 A1287 U1288 U1289 G1290 A1291
C1292 A1293 G1294 A1295 U1296 U1297 G1298 A1299 U1300 A1301 G1302 C1303 U1304 C1305 U1306 U1307 U1308 C1311 G1312 A1313 U1314 U1315 C1316 C1317 G1318 U1319 G1320 G1321 G1322 U1323 G1324 G1325 U1326 G1327 G1328 U1329 G1330 C1331 A1332 U1333 G1334 G1335 G1338 U1339 U1340 C1341 U1342 U1343 A1344 U1347 G1348 G1349 U1350 G1351 G1352 A1353 G1354
A1357 U1358 U1359 U1360 G1361 U1362 C1363 U1364 G1365 G1366 U1367 U1371 U1372 C1373 C1374 G1375 A1376 U1377 A1378 A1379 C1380 G1381 C1384 G1385 A1386 G1387 A1388 C1389 U1390 C1391 C1395 A1396 U1397 G1398 C1399 U1400 A1401 A1402 C1403 U1404 A1405 G1406 U1407 U1408 A1409 C1410 G1411 C1412 G1413 A1414 C1415 C1416 C C C G
A G C G1424 G1425 U1426 C1427 G1428 G1429 C1430 G1431 U1432 C C C C C A1438 A1439 C1440 U1441 U1442 C1443 U1444 U1445 A1446 G1447 A1448 G1449 G1450 G1451 A1452 C1453 A1454 A1455 G1456 U1457 G1458 U1462 U1463 G1466 C1467 C1468 A1469 C1470 C1471 C1472 G1473 A1474 G1475 A1476 U1477 U1478 G1479 A1480 A1483 A1484
U1485 A1486 A1487 C1488 A1489 G1490 G1491 U1492 C1493 U1494 G1495 U1496 G1497 A1498 U1499 G1500 C1501 C1502 C1503 U1504 U1505 A1506 G1507 A1508 U1509 G1510 U1511 C1512 C1513 G1514 G1517 C1518 U1519 G1520 C1521 A1522 C1523 G1524 C1525 G1526 C1527 G1528 C1529 U1530 A1531 C1532 A1533 C1534 U1535 G1536 A1537 C1538 U1539 G1540 G1541 C1542 U1543 C1544 A1545
G1546 C1547 G1548 U1549 G1550 U1551 G1552 C1553 C1554 U1555 A1556 C1557 C1558 C U1560 C1561 C1562 G1563 G1566 G1567 C1568 G1571 C1572 G1573 C1574 G1575 G1576 G1577 U1578 G1579 A1580 C1581 C1582 C1583 G1584 G1587 A1588 A1589 C1590 C1591 C1592 C1593 A1594 U1595 G1598 U1599 G1600 A1601 U1602 G1603 G1604 G1605 G1606 A U C
G1610 G1611 G1612 G1613 A1614 U U1616 G1617 C1618 A1619 A1620 U1621 U1622 A1623 U1624 U1625 C C1627 C1628 C1629 A1630 U1631 G1632 A G1634 C1635 G1636 A1637 G1638 G1639 A1640 A1641 U1642 U1643 C1644 C1645 C1646 A1647 G1648 U1649 A1650 A1651 G1652 U1653 G1654 C1655 G1656 G1657 G1658 U1659 C1660 A1661 U1662 A1663 A1664 G1665 C1666 U1667 U1668 G1669
U1672 A1675 U1676 U1677 A1678 A1679 G1680 C1683 C1684 U1685 G1686 C1687 C1688 A1695 A1699 G1702 C1703 C1704 C1705 G1706 G1709 C1710 U1711 A1712 C1713 U1714 A1715 C1716 C1717 G1718 A1719 U1720 U1721 G1722 G1723 A1724 U1725 G1726 G1727 U1728 U1729 U1730 A1731 G1732 U1733 G1734 A1735 G1736 G1737 C1738 C1739 C1740 U1741



• Molecule 2: Small ribosomal subunit protein uS2

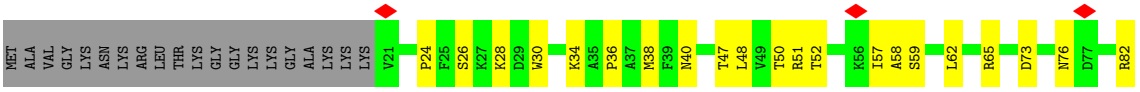
Chain A:

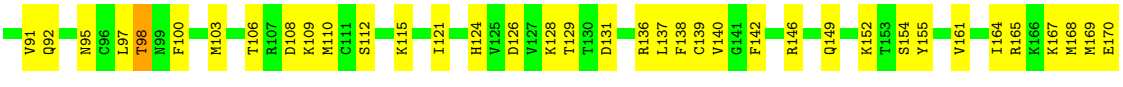


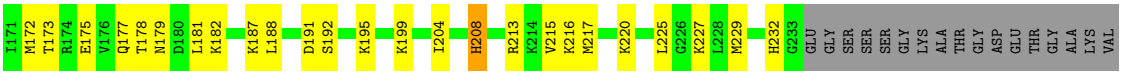


• Molecule 3: Small ribosomal subunit protein eS1

Chain B:

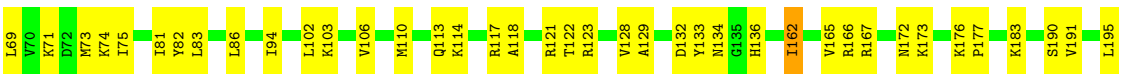


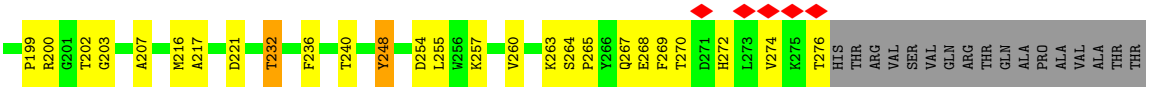




• Molecule 4: Small ribosomal subunit protein uS5

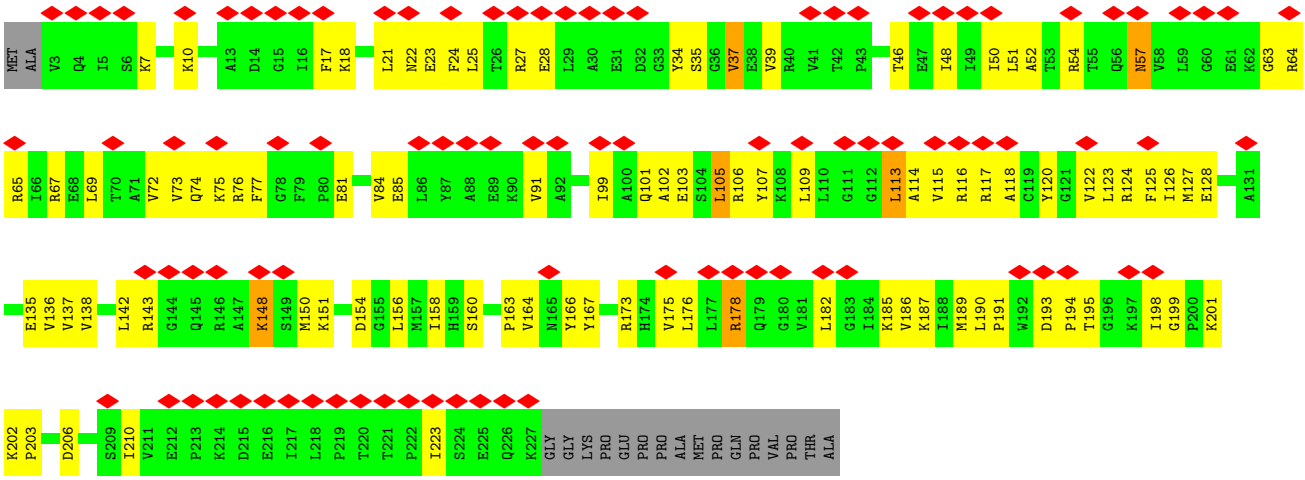
Chain C:





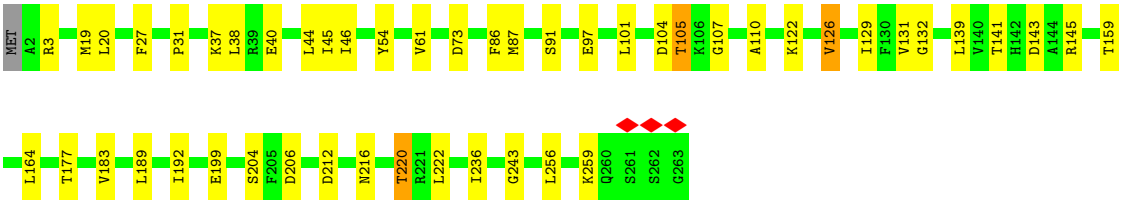
• Molecule 5: Small ribosomal subunit protein uS3

Chain D:



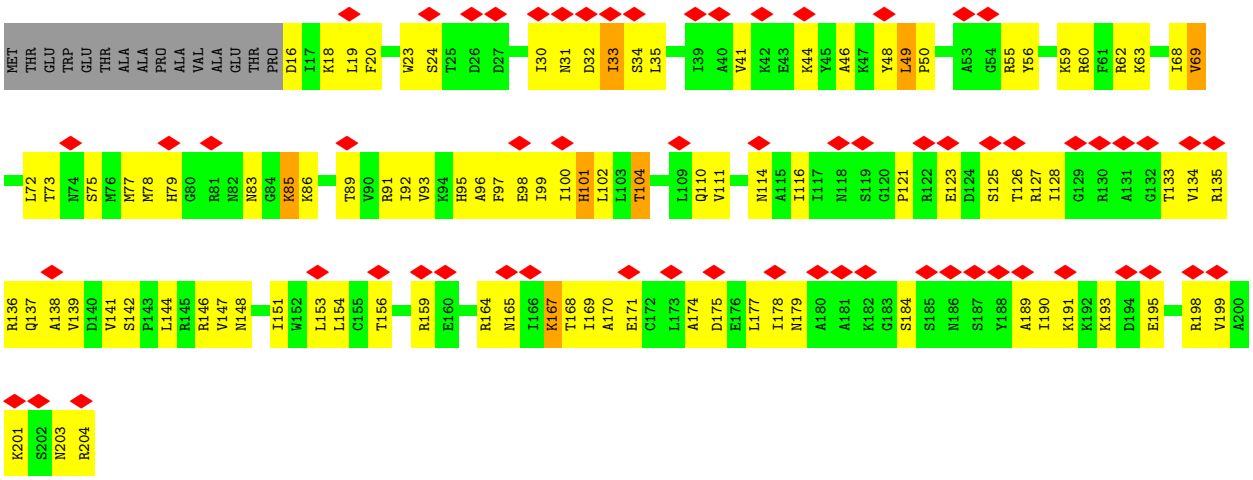
• Molecule 6: Small ribosomal subunit protein eS4, X isoform

Chain E:



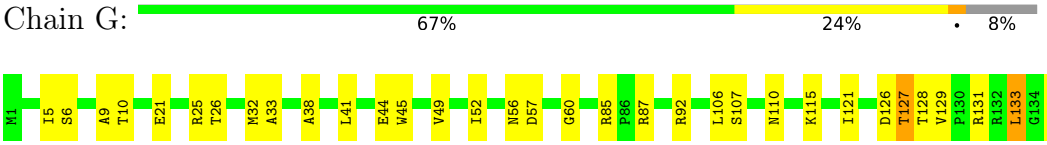
• Molecule 7: Small ribosomal subunit protein uS7

Chain F:



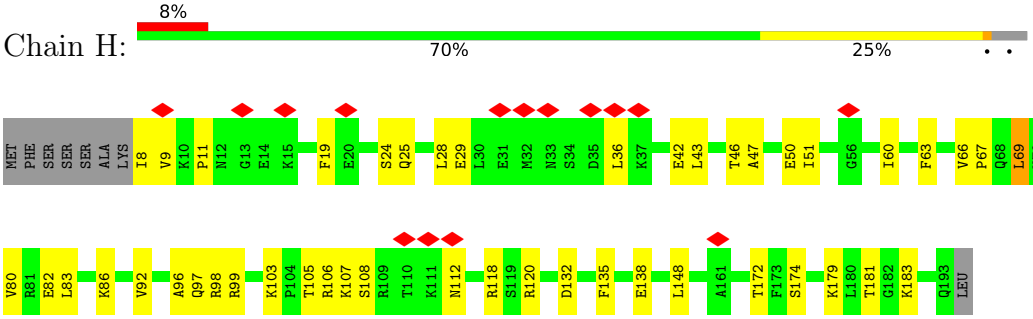
• Molecule 8: Small ribosomal subunit protein eS6

Chain G:



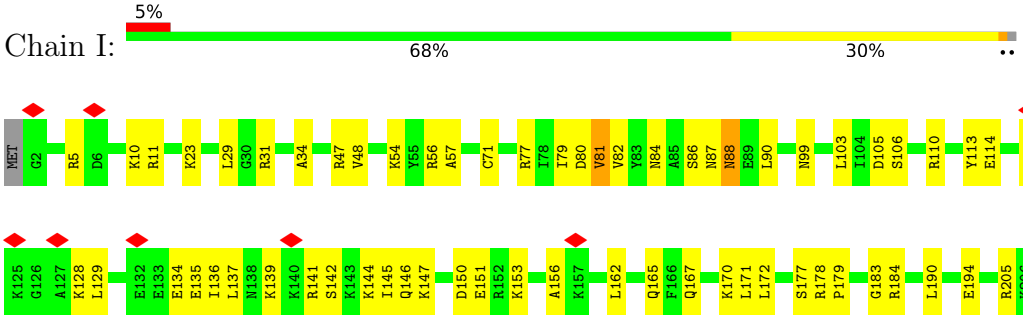
• Molecule 9: Small ribosomal subunit protein eS7

Chain H:



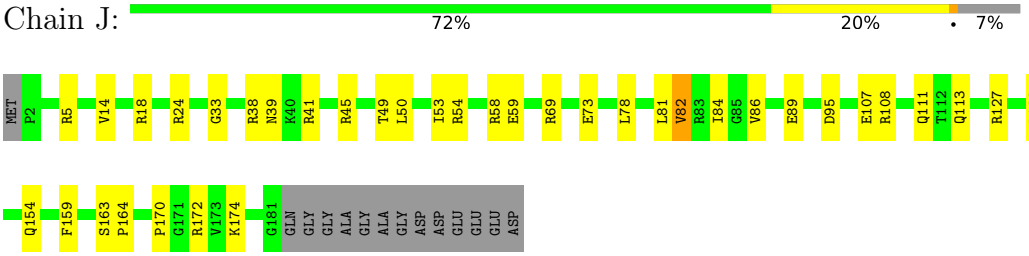
• Molecule 10: Small ribosomal subunit protein eS8

Chain I:



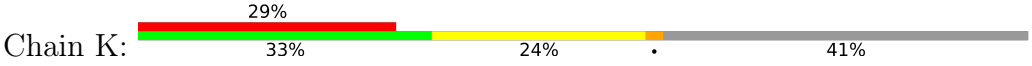
• Molecule 11: Small ribosomal subunit protein uS4

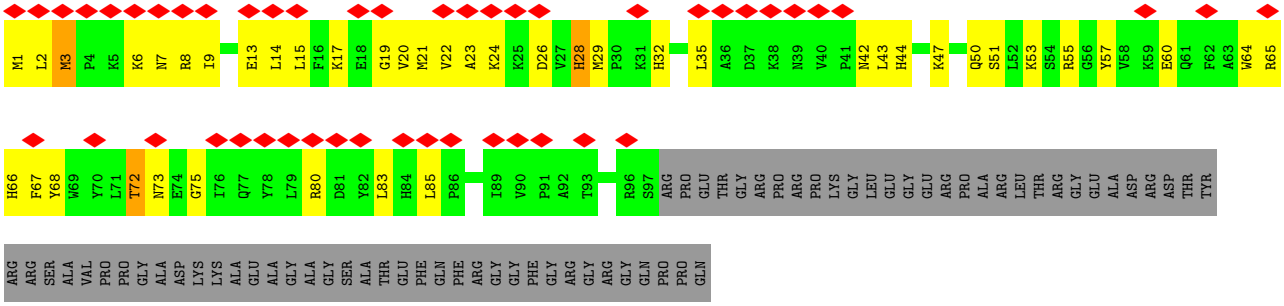
Chain J:



• Molecule 12: Small ribosomal subunit protein eS10

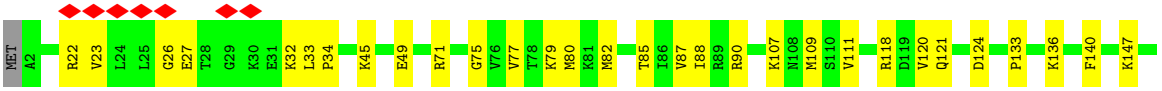
Chain K:





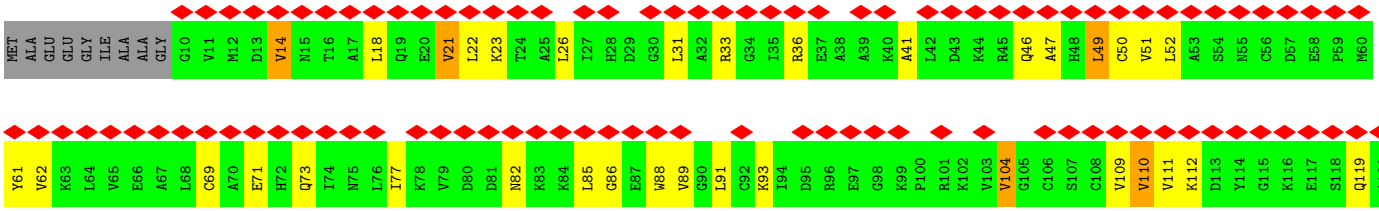
• Molecule 13: Small ribosomal subunit protein uS17

Chain L:



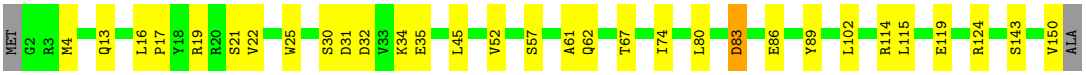
• Molecule 14: Small ribosomal subunit protein eS12

Chain M:



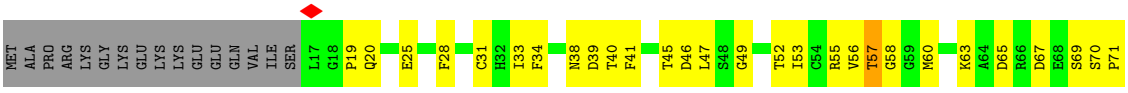
• Molecule 15: Small ribosomal subunit protein uS15

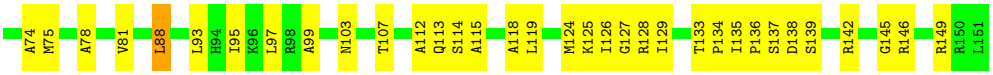
Chain N:



• Molecule 16: Small ribosomal subunit protein uS11

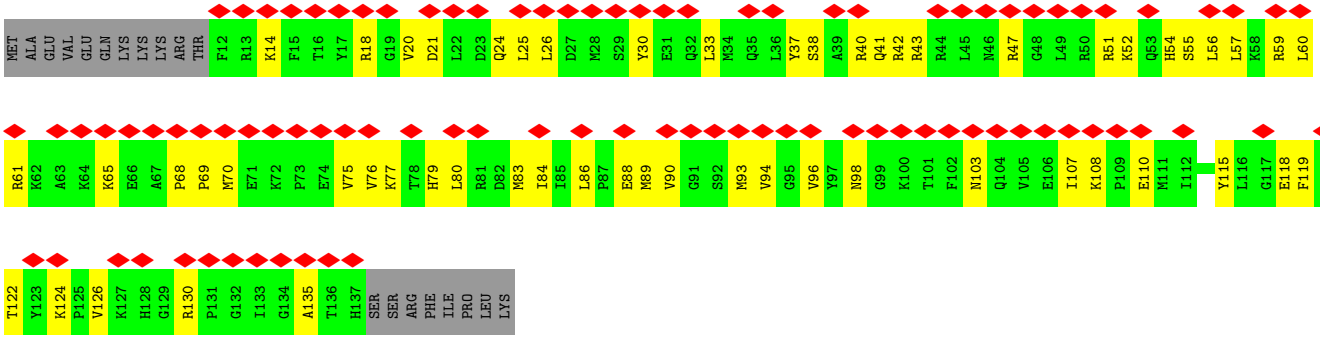
Chain O:





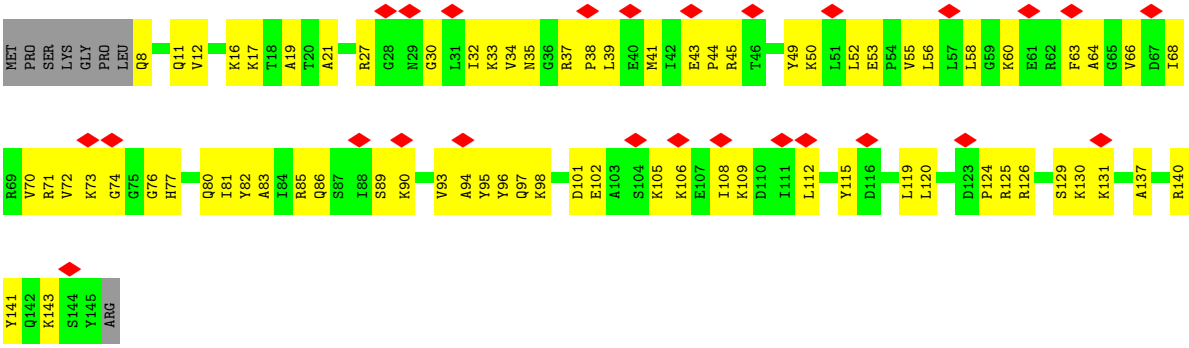
• Molecule 17: Small ribosomal subunit protein uS19

Chain P:



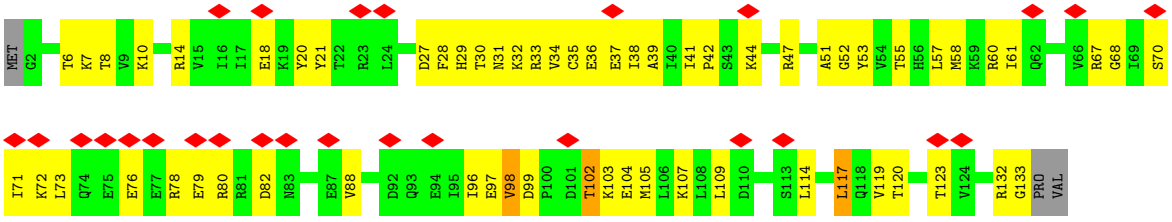
• Molecule 18: Small ribosomal subunit protein uS9

Chain Q:



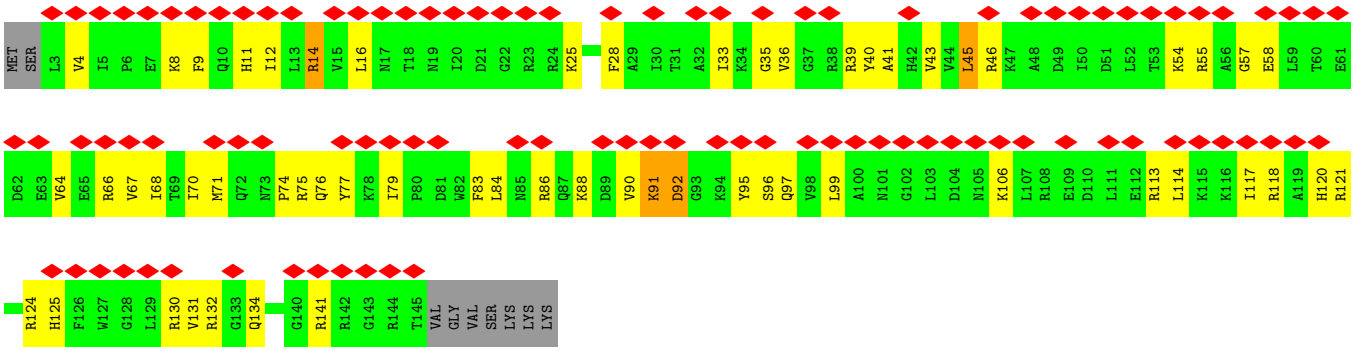
• Molecule 19: Small ribosomal subunit protein eS17

Chain R:

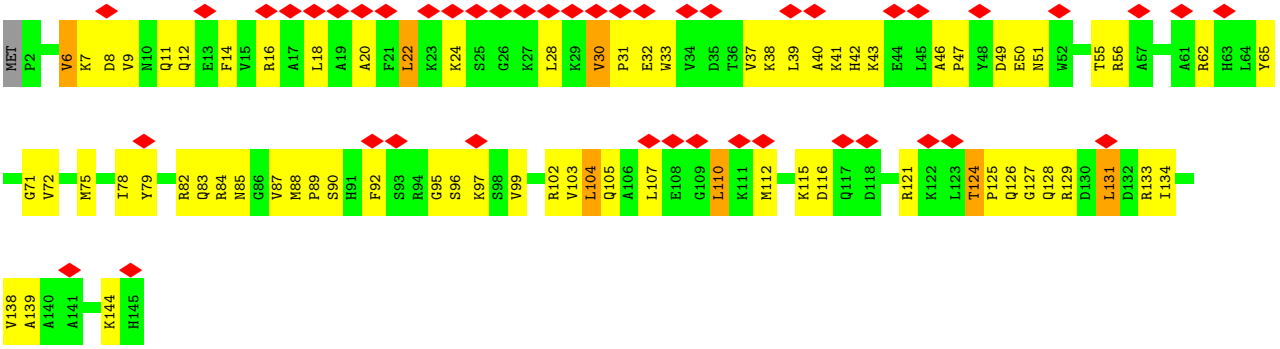


• Molecule 20: Small ribosomal subunit protein uS13

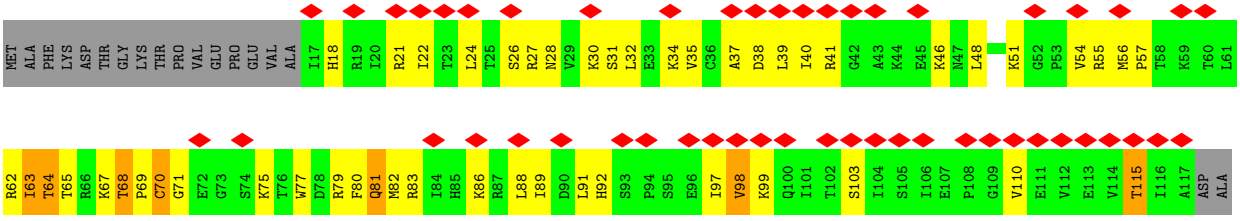
Chain S:



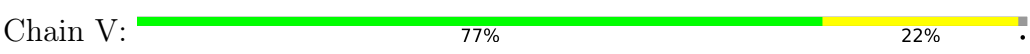
• Molecule 21: Small ribosomal subunit protein eS19

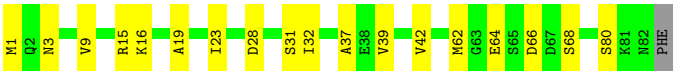


• Molecule 22: Small ribosomal subunit protein uS10

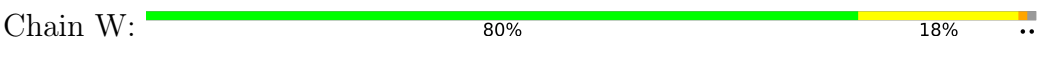


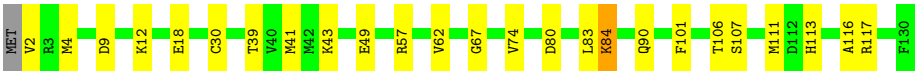
• Molecule 23: Small ribosomal subunit protein eS21





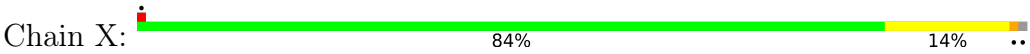
• Molecule 24: Small ribosomal subunit protein uS8

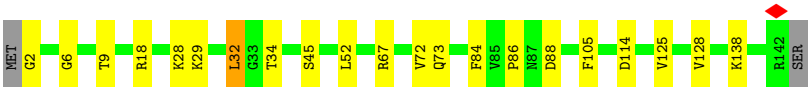




• Molecule 25: Small ribosomal subunit protein uS12

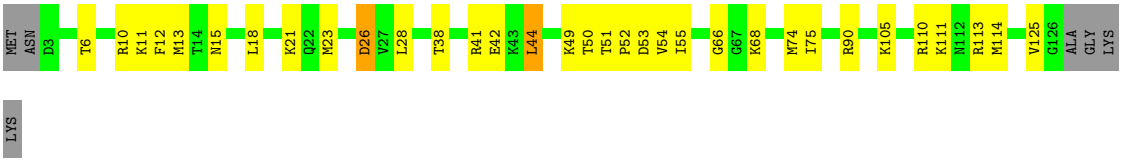
Chain X:





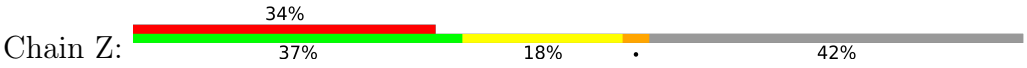
• Molecule 26: Small ribosomal subunit protein eS24

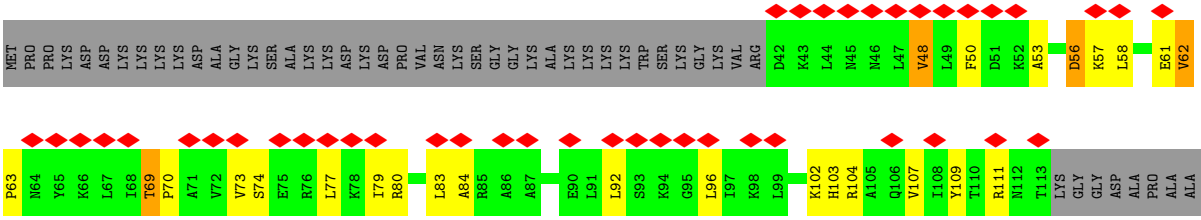
Chain Y:



• Molecule 27: Small ribosomal subunit protein eS25

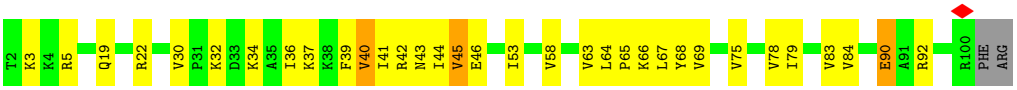
Chain Z:





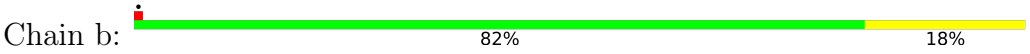
• Molecule 28: Small ribosomal subunit protein eS26

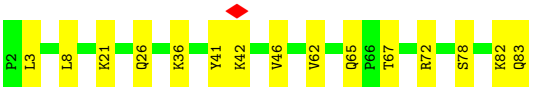
Chain a:



• Molecule 29: Small ribosomal subunit protein eS27

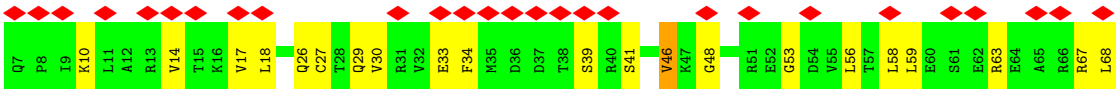
Chain b:





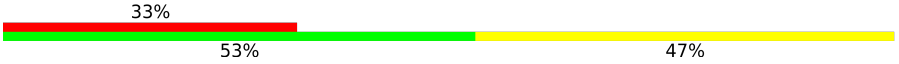
• Molecule 30: Small ribosomal subunit protein eS28

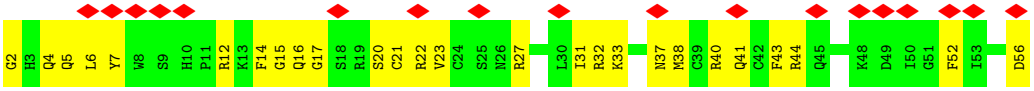
Chain c:



• Molecule 31: Small ribosomal subunit protein uS14

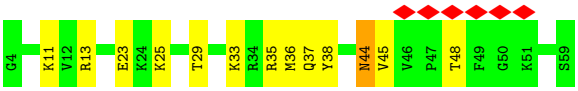
Chain d:





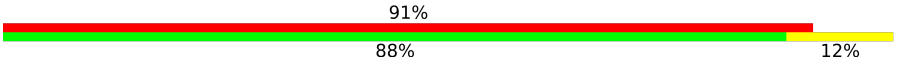
• Molecule 32: Small ribosomal subunit protein eS30

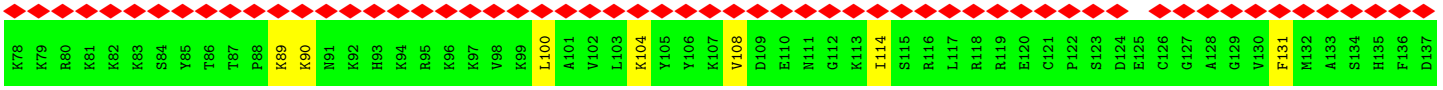
Chain e:

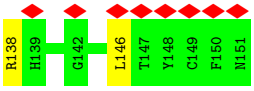


• Molecule 33: Small ribosomal subunit protein eS31

Chain f:

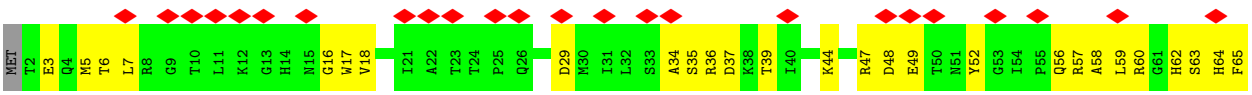


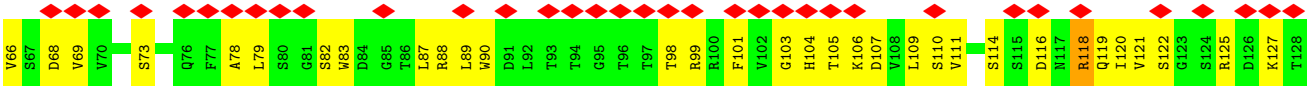


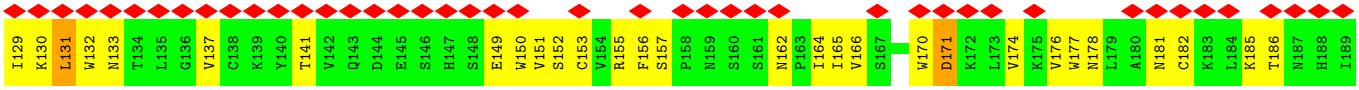


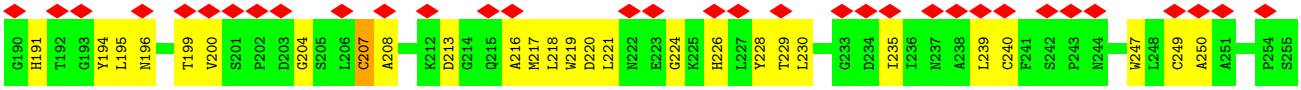
• Molecule 34: Small ribosomal subunit protein RACK1

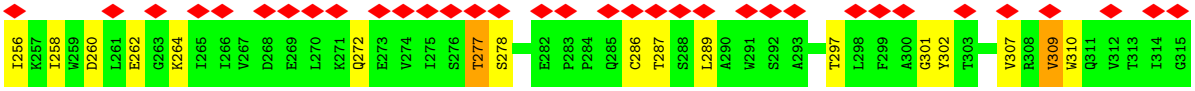
Chain g:









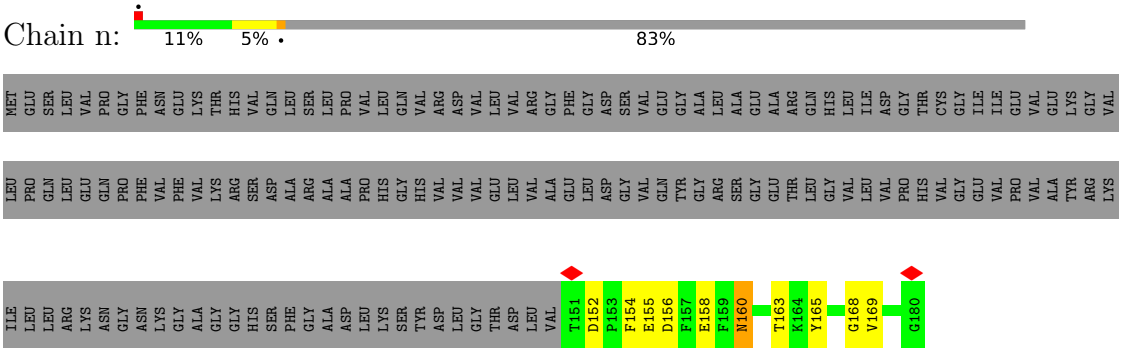


• Molecule 35: Small ribosomal subunit protein eS32

Chain h:

• Molecule 36: ORF1ab polyprotein

Chain n:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	51346	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	JEOL CRYO ARM 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.635	Depositor
Minimum map value	-0.792	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.046	Depositor
Recommended contour level	0.15	Depositor
Map size (Å)	486.4, 486.4, 486.4	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.95, 0.95, 0.95	Depositor

5 Model quality

5.1 Standard geometry

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	2	0.24	1/39611 (0.0%)	0.31	0/61726
2	A	0.21	0/1723	0.33	0/2341
3	B	0.22	0/1756	0.34	0/2350
4	C	0.24	0/1726	0.36	0/2332
5	D	0.20	0/1780	0.50	1/2397 (0.0%)
6	E	0.25	0/2118	0.32	0/2849
7	F	0.21	0/1516	0.50	0/2037
8	G	0.19	0/1887	0.31	0/2513
9	H	0.17	0/1524	0.38	0/2042
10	I	0.21	0/1711	0.34	0/2282
11	J	0.25	0/1524	0.30	0/2035
12	K	0.14	0/840	0.38	0/1133
13	L	0.26	0/1250	0.37	0/1673
14	M	0.12	0/945	0.38	0/1269
15	N	0.20	0/1226	0.29	0/1649
16	O	0.22	0/1023	0.37	0/1372
17	P	0.15	0/1058	0.45	0/1414
18	Q	0.17	0/1114	0.49	0/1492
19	R	0.17	0/1082	0.47	0/1452
20	S	0.14	0/1202	0.43	0/1610
21	T	0.24	0/1143	0.51	1/1530 (0.1%)
22	U	0.14	0/813	0.39	0/1092
23	V	0.21	0/631	0.30	0/844
24	W	0.27	0/1051	0.35	0/1406
25	X	0.25	0/1116	0.37	0/1490
26	Y	0.24	0/1031	0.31	0/1370
27	Z	0.13	0/580	0.42	0/780
28	a	0.22	0/807	0.35	0/1082
29	b	0.21	0/654	0.42	0/876
30	c	0.13	0/491	0.36	0/656
31	d	0.14	0/470	0.43	0/623
32	e	0.20	0/447	0.34	0/587
33	f	0.11	0/623	0.33	0/822
34	g	0.14	0/2498	0.40	0/3399

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
35	h	0.19	0/214	0.28	0/272
36	n	0.23	0/242	0.38	0/324
All	All	0.22	1/79427 (0.0%)	0.35	2/115121 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	2	510	G	C1'-N9	-6.03	1.39	1.48

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	D	198	ILE	N-CA-C	-5.91	106.73	111.81
21	T	110	LEU	N-CA-C	-5.05	106.71	112.92

There are no chirality outliers.

There are no planarity outliers.

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	2	35423	0	17912	703	0
2	A	1686	0	1688	44	0
3	B	1729	0	1803	54	0
4	C	1690	0	1777	51	0
5	D	1752	0	1848	87	0
6	E	2076	0	2177	27	0
7	F	1495	0	1549	75	0
8	G	1864	0	2018	49	0
9	H	1501	0	1593	36	0
10	I	1682	0	1769	50	0
11	J	1499	0	1618	29	0
12	K	816	0	841	40	0
13	L	1229	0	1302	21	0
14	M	935	0	964	28	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
15	N	1202	0	1289	18	0
16	O	1010	0	1034	53	0
17	P	1037	0	1082	51	0
18	Q	1097	0	1161	58	0
19	R	1068	0	1121	58	0
20	S	1184	0	1244	55	0
21	T	1123	0	1153	65	0
22	U	803	0	873	44	0
23	V	625	0	628	14	0
24	W	1034	0	1080	17	0
25	X	1098	0	1167	15	0
26	Y	1014	0	1082	25	0
27	Z	574	0	627	25	0
28	a	794	0	849	28	0
29	b	641	0	665	15	0
30	c	489	0	514	14	0
31	d	459	0	452	37	0
32	e	442	0	487	12	0
33	f	611	0	638	6	0
34	g	2441	0	2396	102	0
35	h	213	0	258	8	0
36	n	238	0	214	8	0
All	All	74574	0	58873	1718	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 13.

All (1718) 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)
5:D:195:THR:CG2	5:D:199:GLY:O	1.66	1.44
5:D:195:THR:HG23	5:D:199:GLY:CA	1.46	1.44
5:D:195:THR:HG23	5:D:199:GLY:C	1.57	1.26
5:D:195:THR:HG21	5:D:199:GLY:O	1.21	1.25
1:2:1172:U:H3	1:2:1188:A:N6	1.32	1.23
5:D:195:THR:CG2	5:D:199:GLY:C	2.14	1.17
5:D:191:PRO:HB2	5:D:194:PRO:HD2	1.29	1.14
5:D:195:THR:CG2	5:D:199:GLY:CA	2.31	1.08
5:D:195:THR:HG23	5:D:199:GLY:HA3	1.32	1.07
34:g:118:ARG:HH21	34:g:133:ASN:HB3	1.17	1.03
1:2:1605:G:N2	1:2:1634:A:H62	1.61	0.99

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1605:G:C2	1:2:1634:A:N6	2.34	0.96
1:2:1215:C:H42	1:2:1220:A:H61	1.06	0.96
5:D:105:LEU:HB2	5:D:118:ALA:HB1	1.48	0.96
32:e:44:ASN:C	32:e:44:ASN:HD22	1.73	0.96
1:2:1172:U:N3	1:2:1188:A:N6	2.01	0.95
13:L:80:MET:HE1	13:L:120:VAL:HG23	1.49	0.94
1:2:880:G:H22	1:2:907:G:H1'	1.36	0.90
1:2:1335:G:N2	1:2:1492:U:O2	2.04	0.89
5:D:195:THR:CG2	5:D:199:GLY:N	2.36	0.88
17:P:89:MET:HE1	17:P:107:ILE:HG13	1.55	0.87
1:2:1172:U:C2	1:2:1188:A:N6	2.42	0.86
1:2:64:A:H2	1:2:83:A:H62	1.22	0.86
1:2:1513:C:H5"	1:2:1514:G:H21	1.41	0.85
1:2:1864:U:H5'	28:a:79:ILE:HD11	1.57	0.85
5:D:195:THR:HG22	5:D:199:GLY:N	1.93	0.83
12:K:3:MET:HE1	12:K:8:ARG:HB2	1.58	0.83
7:F:201:LYS:HA	7:F:201:LYS:HE3	1.60	0.83
18:Q:97:GLN:HB2	18:Q:105:LYS:HE3	1.62	0.82
1:2:1323:U:OP2	1:2:1497:G:N2	2.13	0.82
1:2:880:G:N2	1:2:907:G:N3	2.28	0.82
7:F:104:THR:HG21	7:F:111:VAL:HG21	1.62	0.82
1:2:1211:G:H1	1:2:1688:C:H5	1.27	0.81
34:g:66:VAL:HA	34:g:82:SER:HA	1.62	0.81
14:M:26:LEU:HD11	14:M:91:LEU:HD13	1.62	0.81
31:d:23:VAL:HB	31:d:38:MET:HE3	1.63	0.81
1:2:1739:C:H5	1:2:1795:G:H1	1.27	0.81
1:2:1215:C:N4	1:2:1220:A:H61	1.78	0.80
8:G:141:ILE:HD11	8:G:153:VAL:HB	1.63	0.80
1:2:1335:G:H1	1:2:1492:U:H3	0.81	0.80
34:g:220:ASP:HB2	34:g:224:GLY:H	1.45	0.80
1:2:1537:A:H62	27:Z:104:ARG:HH21	1.30	0.80
27:Z:57:LYS:HD3	27:Z:77:LEU:HD13	1.63	0.79
5:D:191:PRO:HB2	5:D:194:PRO:CD	2.10	0.79
1:2:1230:C:O2'	1:2:1665:G:N2	2.15	0.79
13:L:77:VAL:HG11	13:L:80:MET:HE3	1.63	0.79
21:T:56:ARG:NH2	21:T:75:MET:O	2.16	0.79
34:g:16:GLY:HA3	34:g:37:ASP:HB3	1.66	0.78
5:D:136:VAL:HG22	5:D:186:VAL:HG12	1.65	0.78
9:H:69:LEU:HG	9:H:96:ALA:HB2	1.64	0.77
12:K:21:MET:HE3	12:K:22:VAL:H	1.50	0.77
1:2:1544:C:N3	1:2:1589:A:N1	2.32	0.77

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:T:125:PRO:O	21:T:128:GLN:HG3	1.84	0.77
1:2:1549:U:H2'	1:2:1550:G:H8	1.51	0.76
7:F:96:ALA:HA	7:F:99:ILE:HB	1.67	0.76
26:Y:52:PRO:HA	26:Y:55:ILE:HD12	1.67	0.76
20:S:39:ARG:HH21	20:S:83:PHE:HZ	1.34	0.76
1:2:1442:U:H1'	18:Q:11:GLN:HB3	1.68	0.76
21:T:18:LEU:HD23	21:T:134:ILE:HG21	1.67	0.76
5:D:195:THR:HG23	5:D:199:GLY:N	2.00	0.75
1:2:1215:C:H42	1:2:1220:A:N6	1.82	0.75
1:2:1545:A:H3'	1:2:1546:G:H21	1.51	0.75
1:2:1324:G:O2'	1:2:1510:G:N2	2.20	0.75
1:2:1517:G:H2'	1:2:1518:C:H5"	1.68	0.74
19:R:98:VAL:HG13	19:R:102:THR:HG23	1.68	0.74
7:F:92:ILE:HG13	7:F:170:ALA:HB2	1.68	0.74
3:B:126:ASP:OD2	3:B:136:ARG:NH1	2.21	0.74
5:D:51:LEU:HD11	5:D:91:VAL:HG22	1.70	0.74
9:H:19:PHE:HE2	9:H:50:GLU:HB2	1.52	0.74
30:c:17:VAL:HA	30:c:30:VAL:HG23	1.70	0.74
34:g:114:SER:HB3	34:g:119:GLN:HB3	1.69	0.74
22:U:64:THR:HG23	22:U:77:TRP:HB3	1.70	0.74
1:2:1496:U:O2'	12:K:64:TRP:NE1	2.21	0.73
1:2:1258:A:OP2	1:2:1664:A:N6	2.22	0.73
1:2:94:G:HO2'	1:2:508:A:HO2'	1.32	0.73
1:2:1224:G:H5'	1:2:1225:U:H5'	1.70	0.73
16:O:46:ASP:OD1	16:O:47:LEU:N	2.22	0.73
19:R:29:HIS:HA	19:R:32:LYS:NZ	2.04	0.73
1:2:1709:G:H5'	1:2:1710:C:H4'	1.71	0.73
1:2:617:G:H4'	25:X:88:ASP:HB3	1.71	0.73
1:2:1172:U:O4	1:2:1188:A:N7	2.22	0.73
1:2:385:G:O2'	10:I:10:LYS:NZ	2.21	0.73
21:T:107:LEU:HD23	21:T:112:MET:CE	2.19	0.73
1:2:1592:C:O2	21:T:12:GLN:NE2	2.22	0.72
8:G:159:ARG:HG2	8:G:173:ALA:HB2	1.72	0.72
10:I:88:ASN:HB3	10:I:205:ARG:HH12	1.53	0.72
1:2:1254:C:H1'	22:U:71:GLY:H	1.54	0.71
4:C:200:ARG:O	11:J:54:ARG:NH2	2.22	0.71
1:2:1470:C:OP2	7:F:59:LYS:NZ	2.22	0.71
1:2:878:G:H1	1:2:908:A:H61	1.38	0.71
1:2:1398:G:N3	34:g:63:SER:OG	2.23	0.71
7:F:137:GLN:OE1	30:c:63:ARG:NH2	2.23	0.71
34:g:118:ARG:NH2	34:g:133:ASN:HB3	1.99	0.71

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:952:G:H21	16:O:52:THR:HG21	1.54	0.71
5:D:7:LYS:HD2	5:D:10:LYS:HE3	1.72	0.71
3:B:73:ASP:OD1	16:O:128:ARG:NH1	2.23	0.71
1:2:1779:G:H1	8:G:9:ALA:HB2	1.55	0.71
34:g:109:LEU:HD22	34:g:152:SER:HA	1.73	0.71
28:a:40:VAL:HG22	28:a:69:VAL:HB	1.73	0.70
1:2:297:A:H5'	6:E:132:GLY:HA2	1.73	0.70
20:S:124:ARG:HE	20:S:131:VAL:HG23	1.56	0.70
1:2:747:U:O4	1:2:798:G:N2	2.23	0.70
5:D:39:VAL:HG12	5:D:48:ILE:HG13	1.74	0.70
1:2:1592:C:O2'	18:Q:45:ARG:NH1	2.25	0.70
7:F:77:MET:HB2	7:F:89:THR:HG21	1.72	0.70
2:A:66:VAL:HG21	2:A:185:MET:HB3	1.74	0.70
27:Z:57:LYS:HA	27:Z:61:GLU:HB3	1.74	0.70
20:S:46:ARG:NH2	21:T:50:GLU:OE1	2.25	0.70
1:2:747:U:H3'	1:2:796:G:H21	1.53	0.70
1:2:799:U:OP1	9:H:108:SER:OG	2.10	0.70
20:S:70:ILE:HG13	20:S:76:GLN:HG2	1.74	0.69
22:U:38:ASP:OD1	22:U:41:ARG:NH2	2.25	0.69
34:g:65:PHE:HB2	34:g:83:TRP:HE3	1.55	0.69
17:P:130:ARG:NH1	17:P:130:ARG:O	2.25	0.69
34:g:65:PHE:HB2	34:g:83:TRP:CE3	2.26	0.69
1:2:886:A:N6	1:2:901:G:O6	2.25	0.69
1:2:1550:G:N2	1:2:1577:G:H21	1.90	0.69
21:T:72:VAL:HG11	21:T:104:LEU:HD22	1.75	0.69
16:O:97:LEU:HD11	16:O:112:ALA:HB1	1.74	0.69
8:G:135:PRO:HB2	8:G:141:ILE:HG22	1.75	0.69
1:2:1648:G:N2	1:2:1675:A:OP2	2.26	0.69
1:2:1858:G:OP2	16:O:146:ARG:NH2	2.26	0.69
16:O:113:GLN:HE22	28:a:45:VAL:HA	1.56	0.69
25:X:67:ARG:NH2	25:X:114:ASP:OD2	2.24	0.69
28:a:44:ILE:HD12	28:a:65:PRO:HG2	1.75	0.69
34:g:106:LYS:HG3	34:g:125:ARG:HG3	1.73	0.69
18:Q:93:VAL:HA	18:Q:105:LYS:HZ1	1.56	0.69
34:g:152:SER:OG	34:g:195:LEU:O	2.10	0.68
11:J:89:GLU:OE2	11:J:89:GLU:N	2.23	0.68
1:2:1542:C:OP1	21:T:62:ARG:NH2	2.26	0.68
18:Q:95:TYR:HA	18:Q:98:LYS:HE2	1.75	0.68
24:W:90:GLN:OE1	24:W:117:ARG:NH2	2.27	0.68
3:B:57:ILE:HG22	3:B:59:SER:H	1.59	0.68
7:F:32:ASP:O	7:F:34:SER:N	2.26	0.68

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1756:C:H1'	1:2:1758:G:H1	1.58	0.68
1:2:942:G:H21	16:O:137:SER:HB2	1.59	0.68
9:H:80:VAL:HG23	9:H:92:VAL:HB	1.75	0.67
15:N:83:ASP:OD1	15:N:83:ASP:N	2.26	0.67
18:Q:89:SER:O	18:Q:93:VAL:HG23	1.93	0.67
7:F:128:ILE:HD13	7:F:137:GLN:HB2	1.74	0.67
1:2:643:A:OP1	11:J:39:ASN:ND2	2.27	0.67
1:2:940:U:H3	1:2:1002:U:H3	1.41	0.67
5:D:65:ARG:HG3	5:D:69:LEU:HD12	1.76	0.67
1:2:73:C:O2'	1:2:76:U:O4	2.12	0.67
10:I:80:ASP:OD1	10:I:81:VAL:N	2.27	0.67
19:R:28:PHE:HA	19:R:31:ASN:HB2	1.76	0.67
30:c:33:GLU:HG2	30:c:41:SER:HB3	1.75	0.67
34:g:118:ARG:NH1	34:g:119:GLN:HB2	2.09	0.67
1:2:928:G:H1	1:2:1013:U:H3	1.41	0.67
1:2:1170:A:H5'	1:2:1172:U:H1'	1.75	0.67
3:B:47:THR:OG1	3:B:65:ARG:NH1	2.27	0.67
34:g:110:SER:HB2	34:g:153:CYS:HA	1.77	0.67
34:g:149:GLU:HB2	34:g:171:ASP:HB3	1.76	0.67
34:g:121:VAL:HG23	34:g:131:LEU:HB3	1.76	0.67
10:I:11:ARG:O	13:L:136:LYS:NZ	2.26	0.67
1:2:1289:U:OP2	1:2:1290:G:N2	2.28	0.67
19:R:6:THR:HG22	19:R:8:THR:H	1.59	0.67
2:A:84:GLN:HG2	2:A:100:ALA:HB1	1.76	0.66
1:2:1258:A:N6	1:2:1660:C:OP1	2.27	0.66
21:T:83:GLN:NE2	21:T:85:ASN:OD1	2.28	0.66
1:2:202:G:H3'	1:2:203:G:H8	1.59	0.66
1:2:1398:G:O6	1:2:1448:A:N1	2.29	0.66
9:H:19:PHE:CE2	9:H:50:GLU:HB2	2.30	0.66
12:K:29:MET:HE3	12:K:42:ASN:HB3	1.76	0.66
5:D:101:GLN:HB3	5:D:122:VAL:HG23	1.77	0.66
1:2:925:G:H1	1:2:1017:U:H3	1.43	0.66
1:2:1295:A:H2	33:f:138:ARG:HH12	1.44	0.66
1:2:1721:U:OP2	1:2:1814:G:N2	2.26	0.66
34:g:153:CYS:SG	34:g:155:ARG:NH1	2.69	0.66
1:2:1709:G:OP1	1:2:1710:C:O2'	2.13	0.66
19:R:29:HIS:HB2	34:g:36:ARG:HH12	1.60	0.66
11:J:134:HIS:ND1	11:J:163:SER:OG	2.27	0.66
1:2:1290:G:N2	1:2:1302:G:OP1	2.28	0.66
2:A:42:LYS:HG3	2:A:48:ILE:HD11	1.78	0.66
5:D:124:ARG:NH1	5:D:125:PHE:HB2	2.11	0.66

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:F:19:LEU:HB2	7:F:23:TRP:HB2	1.78	0.66
34:g:5:MET:HA	34:g:5:MET:HE3	1.76	0.66
1:2:171:A:H5"	8:G:177:GLN:HG2	1.77	0.65
1:2:1406:G:O2'	1:2:1443:C:N4	2.30	0.65
11:J:59:GLU:OE2	11:J:69:ARG:NH2	2.29	0.65
13:L:82:MET:HE3	13:L:85:THR:HB	1.78	0.65
20:S:121:ARG:O	20:S:125:HIS:ND1	2.30	0.65
1:2:909:G:H2'	1:2:910:G:C8	2.32	0.65
1:2:1296:U:O2'	1:2:1299:A:OP1	2.14	0.65
1:2:640:A:H2'	1:2:641:A:C8	2.32	0.65
1:2:1143:A:H5'	4:C:190:SER:HB3	1.78	0.65
14:M:14:VAL:HG21	14:M:127:TYR:HB2	1.79	0.65
1:2:536:A:H2'	1:2:538:U:H5	1.61	0.65
1:2:1328:G:H8	1:2:1502:C:H41	1.44	0.65
1:2:1375:G:OP1	19:R:67:ARG:NH1	2.30	0.65
1:2:1864:U:OP2	28:a:5:ARG:NH2	2.28	0.65
5:D:143:ARG:NH2	36:n:156:ASP:OD1	2.29	0.65
17:P:110:GLU:HB3	20:S:117:ILE:HD13	1.78	0.65
30:c:14:VAL:HB	30:c:53:GLY:H	1.62	0.65
1:2:507:G:O6	26:Y:105:LYS:NZ	2.31	0.64
20:S:74:PRO:HB3	20:S:97:GLN:HB2	1.80	0.64
1:2:1303:C:O2'	33:f:90:LYS:NZ	2.30	0.64
1:2:1657:G:H2'	1:2:1658:G:C8	2.31	0.64
2:A:38:ILE:HD11	2:A:150:THR:HG22	1.80	0.64
26:Y:55:ILE:HG12	26:Y:75:ILE:HG12	1.79	0.64
12:K:23:ALA:HB3	12:K:67:PHE:HB2	1.79	0.64
20:S:41:ALA:O	20:S:45:LEU:HD23	1.96	0.64
20:S:120:HIS:CD2	20:S:124:ARG:HH12	2.15	0.64
1:2:909:G:H2'	1:2:910:G:H8	1.62	0.64
21:T:107:LEU:HD23	21:T:112:MET:HE2	1.78	0.64
32:e:44:ASN:C	32:e:44:ASN:ND2	2.50	0.64
8:G:49:VAL:HB	8:G:115:LYS:HB2	1.79	0.64
34:g:62:HIS:HA	34:g:88:ARG:HH12	1.62	0.64
9:H:9:VAL:HG22	9:H:11:PRO:HD3	1.80	0.64
12:K:24:LYS:HE3	12:K:26:ASP:HB2	1.79	0.64
1:2:317:C:H5	1:2:333:G:H1	1.46	0.63
1:2:1406:G:OP1	1:2:1428:G:N2	2.31	0.63
1:2:1444:U:H1'	1:2:1545:A:H61	1.63	0.63
5:D:123:LEU:O	5:D:127:MET:HG2	1.98	0.63
15:N:115:LEU:O	15:N:119:GLU:HG2	1.98	0.63
1:2:1262:C:OP1	31:d:12:ARG:NH2	2.31	0.63

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:77:A:H1'	8:G:176:ILE:HD12	1.80	0.63
17:P:90:VAL:HG22	17:P:107:ILE:HG22	1.80	0.63
30:c:46:VAL:HG11	30:c:56:LEU:HD13	1.80	0.63
1:2:1757:G:H22	1:2:1775:U:H2'	1.64	0.63
8:G:201:LYS:NZ	8:G:202:ASN:OD1	2.31	0.63
17:P:130:ARG:HD3	17:P:130:ARG:H	1.62	0.63
34:g:68:ASP:HB3	34:g:111:VAL:H	1.63	0.63
2:A:10:MET:HE2	2:A:15:VAL:HG22	1.80	0.63
7:F:121:PRO:HA	7:F:193:LYS:HG3	1.80	0.63
34:g:103:GLY:HA3	34:g:132:TRP:HH2	1.62	0.63
12:K:43:LEU:O	12:K:47:LYS:HG3	1.98	0.63
34:g:62:HIS:HA	34:g:88:ARG:NH1	2.13	0.63
1:2:178:C:H2'	1:2:179:C:C6	2.34	0.63
1:2:1373:C:O3'	19:R:10:LYS:NZ	2.32	0.63
1:2:1600:G:O2'	1:2:1602:U:N3	2.31	0.63
9:H:82:GLU:O	9:H:86:LYS:HG2	1.99	0.63
9:H:148:LEU:HD13	24:W:49:GLU:HG3	1.80	0.63
34:g:89:LEU:HD12	34:g:99:ARG:HB2	1.80	0.63
1:2:1500:G:O2'	1:2:1501:C:OP1	2.17	0.62
1:2:615:C:O2	32:e:11:LYS:NZ	2.29	0.62
1:2:1658:G:H5'	31:d:33:LYS:HE3	1.81	0.62
12:K:53:LYS:HB3	12:K:60:GLU:HB3	1.81	0.62
15:N:34:LYS:HE2	15:N:67:THR:HG23	1.80	0.62
1:2:1653:U:H2'	1:2:1654:G:H8	1.63	0.62
6:E:129:ILE:HD11	6:E:139:LEU:HD12	1.82	0.62
18:Q:96:TYR:HD2	18:Q:105:LYS:HZ3	1.47	0.62
1:2:1398:G:H1	1:2:1448:A:H2	1.46	0.62
10:I:150:ASP:HA	10:I:153:LYS:HG3	1.81	0.62
1:2:1318:G:H5'	1:2:1505:U:H3	1.65	0.62
1:2:1354:G:N2	1:2:1357:A:OP2	2.23	0.62
1:2:1412:C:H41	1:2:1413:G:H21	1.48	0.62
2:A:2:SER:OG	2:A:3:GLY:N	2.31	0.62
13:L:147:LYS:HD3	13:L:151:THR:HG21	1.81	0.62
34:g:29:ASP:HB3	34:g:44:LYS:HG3	1.81	0.62
1:2:1395:C:H1'	1:2:1450:G:H22	1.64	0.62
7:F:190:ILE:HD12	7:F:191:LYS:N	2.15	0.62
19:R:78:ARG:O	19:R:82:ASP:N	2.33	0.62
21:T:71:GLY:HA2	21:T:121:ARG:HE	1.64	0.62
2:A:200:ASP:O	2:A:205:ARG:NH2	2.32	0.62
16:O:67:ASP:O	16:O:70:SER:OG	2.15	0.62
1:2:1533:A:OP2	1:2:1636:G:N2	2.32	0.62

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:Q:131:LYS:HB2	18:Q:140:ARG:HH22	1.65	0.62
20:S:75:ARG:NH1	20:S:79:ILE:O	2.32	0.62
1:2:170:A:OP2	8:G:140:ARG:NH1	2.32	0.61
1:2:913:A:OP1	9:H:99:ARG:NH2	2.33	0.61
1:2:1171:G:N2	1:2:1188:A:OP2	2.28	0.61
1:2:1300:U:O2	31:d:2:GLY:N	2.33	0.61
1:2:1652:G:H1	1:2:1672:U:H3	1.46	0.61
7:F:96:ALA:HB1	7:F:174:ALA:HB2	1.82	0.61
11:J:107:GLU:O	11:J:113:GLN:NE2	2.32	0.61
29:b:65:GLN:HB2	29:b:72:ARG:HB3	1.82	0.61
34:g:48:ASP:OD1	34:g:49:GLU:N	2.33	0.61
1:2:796:G:O2'	1:2:797:C:O4'	2.17	0.61
1:2:1234:C:O2'	1:2:1526:G:N2	2.33	0.61
7:F:136:ARG:HB2	7:F:203:ASN:HD21	1.65	0.61
1:2:588:G:OP2	1:2:588:G:N2	2.29	0.61
1:2:1249:C:O2'	18:Q:143:LYS:NZ	2.32	0.61
2:A:52:LYS:N	2:A:52:LYS:HD3	2.15	0.61
1:2:531:A:H62	1:2:552:G:H21	1.47	0.61
1:2:1098:C:H2'	1:2:1099:G:C8	2.35	0.61
2:A:122:LEU:HD23	2:A:144:THR:HG23	1.82	0.61
34:g:17:TRP:O	34:g:35:SER:OG	2.15	0.61
11:J:18:ARG:O	11:J:24:ARG:NH1	2.34	0.61
1:2:491:C:C2	1:2:510:G:C2	2.89	0.61
1:2:581:U:H4'	26:Y:66:GLY:HA2	1.83	0.61
1:2:878:G:H1	1:2:908:A:N6	1.98	0.61
1:2:1655:C:OP1	21:T:92:PHE:N	2.33	0.61
7:F:167:LYS:NZ	7:F:168:THR:O	2.34	0.61
12:K:72:THR:HG23	12:K:75:GLY:H	1.64	0.61
17:P:51:ARG:NH1	31:d:4:GLN:OE1	2.34	0.61
18:Q:12:VAL:HG13	18:Q:90:LYS:HE2	1.82	0.61
21:T:107:LEU:CD2	21:T:112:MET:HE2	2.31	0.61
34:g:216:ALA:HB3	34:g:230:LEU:HB3	1.82	0.61
1:2:178:C:H2'	1:2:179:C:H6	1.66	0.61
1:2:1249:C:H5'	1:2:1250:A:H5'	1.82	0.61
1:2:1601:A:O2'	1:2:1635:C:N4	2.34	0.61
2:A:80:ARG:HH22	2:A:166:LYS:HA	1.66	0.61
1:2:380:G:O6	10:I:178:ARG:NH2	2.33	0.61
22:U:81:GLN:HE21	22:U:83:ARG:HB2	1.66	0.61
3:B:139:CYS:HB3	3:B:172:MET:HE1	1.81	0.60
14:M:41:ALA:HA	14:M:46:GLN:HB2	1.82	0.60
26:Y:110:ARG:O	26:Y:114:MET:HG3	2.00	0.60

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:78:VAL:HG22	28:a:83:VAL:HB	1.83	0.60
1:2:639:C:HO2'	1:2:640:A:H8	1.50	0.60
26:Y:10:ARG:NH1	26:Y:26:ASP:OD2	2.35	0.60
10:I:134:GLU:HA	10:I:137:LEU:HD12	1.82	0.60
1:2:957:A:H3'	1:2:958:G:H21	1.65	0.60
1:2:1246:A:O2'	22:U:70:CYS:SG	2.59	0.60
1:2:1612:G:O2'	1:2:1613:G:OP1	2.14	0.60
1:2:1740:C:H42	1:2:1794:C:H42	1.49	0.60
11:J:84:ILE:HG13	11:J:86:VAL:HG23	1.83	0.60
34:g:37:ASP:OD1	34:g:39:THR:OG1	2.18	0.60
1:2:678:U:OP2	1:2:1026:C:N4	2.30	0.60
10:I:110:ARG:O	10:I:114:GLU:HG2	2.02	0.60
1:2:126:G:O6	8:G:196:LYS:NZ	2.34	0.60
1:2:546:G:OP1	1:2:547:G:N1	2.34	0.60
1:2:1546:G:H22	1:2:1588:A:H61	1.50	0.60
3:B:138:PHE:O	3:B:213:ARG:N	2.35	0.60
14:M:50:CYS:SG	14:M:51:VAL:N	2.75	0.60
16:O:56:VAL:HG22	16:O:81:VAL:HG23	1.83	0.60
22:U:27:ARG:NH2	22:U:82:MET:HB3	2.16	0.60
1:2:1091:C:HO2'	24:W:2:VAL:N	2.00	0.60
1:2:1657:G:N2	1:2:1667:U:O2	2.34	0.60
10:I:141:ARG:HB3	10:I:145:ILE:HD11	1.83	0.60
1:2:913:A:H1'	9:H:66:VAL:HB	1.83	0.60
5:D:167:TYR:HA	5:D:190:LEU:HB2	1.84	0.60
2:A:85:ARG:NH2	19:R:82:ASP:O	2.35	0.60
8:G:126:ASP:OD1	8:G:127:THR:N	2.35	0.60
1:2:617:G:N7	25:X:67:ARG:NH1	2.44	0.59
1:2:860:G:N2	24:W:107:SER:OG	2.34	0.59
34:g:199:THR:HG21	34:g:240:CYS:HA	1.83	0.59
1:2:581:U:OP1	11:J:133:ARG:NH2	2.35	0.59
1:2:749:U:O4	1:2:794:A:O2'	2.15	0.59
1:2:1600:G:H22	27:Z:80:ARG:HH21	1.49	0.59
6:E:259:LYS:O	6:E:259:LYS:NZ	2.31	0.59
8:G:129:VAL:HG12	8:G:131:ARG:H	1.66	0.59
19:R:29:HIS:HA	19:R:32:LYS:HZ2	1.67	0.59
10:I:119:LEU:HD22	10:I:156:ALA:HA	1.84	0.59
31:d:38:MET:HE2	31:d:38:MET:HA	1.83	0.59
1:2:1619:A:H5"	17:P:40:ARG:HA	1.84	0.59
5:D:106:ARG:HB2	5:D:173:ARG:HD3	1.84	0.59
15:N:25:TRP:HB3	29:b:82:LYS:HD3	1.84	0.59
34:g:109:LEU:HD11	34:g:125:ARG:HG2	1.84	0.59

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:K:3:MET:HG3	12:K:44:HIS:HB3	1.84	0.59
20:S:113:ARG:O	20:S:117:ILE:HG13	2.02	0.59
6:E:37:LYS:HB2	6:E:40:GLU:HG3	1.83	0.59
12:K:65:ARG:NH1	31:d:20:SER:OG	2.35	0.59
17:P:61:ARG:O	17:P:65:LYS:HB2	2.02	0.59
16:O:145:GLY:O	28:a:22:ARG:NH2	2.35	0.59
17:P:18:ARG:HH21	20:S:88:LYS:HD3	1.67	0.59
7:F:110:GLN:HE21	7:F:114:ASN:HD21	1.50	0.59
18:Q:19:ALA:HA	18:Q:74:GLY:HA3	1.84	0.59
22:U:81:GLN:HE21	22:U:83:ARG:H	1.48	0.59
1:2:917:U:H1'	9:H:118:ARG:HG2	1.85	0.59
4:C:165:VAL:HG21	4:C:217:ALA:HB1	1.83	0.59
27:Z:70:PRO:HB3	27:Z:84:ALA:HB1	1.84	0.59
1:2:107:A:H2'	1:2:108:G:C8	2.38	0.59
1:2:952:G:H2'	1:2:953:C:C6	2.37	0.59
1:2:1544:C:N4	1:2:1589:A:C2	2.71	0.59
1:2:1549:U:H2'	1:2:1550:G:C8	2.35	0.59
14:M:23:LYS:NZ	14:M:88:TRP:O	2.36	0.59
20:S:90:VAL:HG23	20:S:91:LYS:HG3	1.85	0.59
1:2:1204:A:H5"	4:C:117:ARG:NH1	2.18	0.58
1:2:1666:C:O2'	1:2:1667:U:OP1	2.21	0.58
17:P:20:VAL:HG13	17:P:24:GLN:HB2	1.85	0.58
1:2:1676:U:O3'	7:F:148:ASN:ND2	2.31	0.58
7:F:19:LEU:HD22	7:F:48:TYR:HA	1.86	0.58
17:P:77:LYS:HD2	17:P:79:HIS:CE1	2.39	0.58
24:W:57:ARG:NH1	29:b:26:GLN:OE1	2.35	0.58
28:a:32:LYS:O	28:a:37:LYS:NZ	2.36	0.58
34:g:78:ALA:O	34:g:89:LEU:HA	2.03	0.58
35:h:1:MET:HE1	35:h:9:ARG:HE	1.68	0.58
1:2:677:G:N1	1:2:1027:A:OP2	2.24	0.58
1:2:1203:G:H2'	1:2:1204:A:C8	2.38	0.58
1:2:1493:C:O2	1:2:1498:A:N6	2.36	0.58
4:C:263:LYS:HG3	4:C:267:GLN:HE21	1.67	0.58
1:2:562:U:H2'	1:2:563:G:C8	2.37	0.58
34:g:185:LYS:HG3	34:g:186:THR:HG23	1.84	0.58
1:2:613:G:N2	1:2:626:G:OP1	2.37	0.58
1:2:857:U:H2'	1:2:858:A:C8	2.38	0.58
1:2:1219:C:H42	1:2:1646:C:H42	1.51	0.58
1:2:1528:G:H21	1:2:1529:C:H5	1.49	0.58
4:C:75:ILE:HD11	4:C:265:PRO:HB3	1.85	0.58
1:2:1172:U:H3	1:2:1188:A:H62	0.61	0.58

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1237:C:H5'	17:P:130:ARG:HH22	1.69	0.58
5:D:75:LYS:HD2	12:K:22:VAL:HB	1.86	0.58
19:R:30:THR:O	19:R:34:VAL:HG13	2.04	0.58
16:O:28:PHE:HZ	28:a:58:VAL:HG21	1.67	0.58
31:d:16:GLN:OE1	31:d:27:ARG:NH2	2.36	0.58
17:P:51:ARG:HA	17:P:54:HIS:HE1	1.69	0.58
3:B:108:ASP:OD1	3:B:109:LYS:N	2.37	0.57
1:2:1594:A:OP2	27:Z:102:LYS:NZ	2.37	0.57
3:B:152:LYS:HE2	19:R:133:GLY:HA2	1.86	0.57
17:P:40:ARG:HH22	17:P:84:ILE:HG22	1.70	0.57
34:g:239:LEU:HD23	34:g:250:ALA:HB2	1.86	0.57
1:2:1533:A:N7	7:F:164:ARG:NH2	2.52	0.57
1:2:1342:U:H3	1:2:1483:A:H2'	1.70	0.57
3:B:26:SER:O	3:B:51:ARG:NH2	2.38	0.57
13:L:22:ARG:HH21	13:L:27:GLU:HG3	1.68	0.57
20:S:92:ASP:OD1	20:S:92:ASP:N	2.37	0.57
1:2:381:C:OP2	10:I:54:LYS:NZ	2.35	0.57
1:2:545:A:OP2	1:2:546:G:N2	2.37	0.57
1:2:1599:U:N3	7:F:165:ASN:O	2.37	0.57
8:G:5:ILE:HG21	8:G:45:TRP:HH2	1.69	0.57
12:K:80:ARG:HA	12:K:85:LEU:HD12	1.85	0.57
13:L:75:GLY:HA3	13:L:88:ILE:HD12	1.85	0.57
13:L:111:VAL:HG12	13:L:140:PHE:HB2	1.87	0.57
18:Q:130:LYS:HA	18:Q:137:ALA:HA	1.86	0.57
1:2:429:C:O2'	1:2:811:A:N1	2.37	0.57
1:2:996:A:H2'	1:2:997:A:C8	2.40	0.57
5:D:27:ARG:HH22	12:K:64:TRP:CD1	2.23	0.57
7:F:30:ILE:HG23	7:F:31:ASN:H	1.68	0.57
7:F:195:GLU:HG2	7:F:198:ARG:HH21	1.69	0.57
9:H:98:ARG:NH2	9:H:132:ASP:OD2	2.38	0.57
1:2:1255:G:N2	1:2:1494:U:O2	2.37	0.57
1:2:1512:C:O2'	1:2:1513:C:O2	2.21	0.57
1:2:1545:A:H3'	1:2:1546:G:N2	2.19	0.57
1:2:1817:G:H2'	1:2:1818:A:C8	2.40	0.57
1:2:928:G:H2'	1:2:929:G:C8	2.40	0.57
18:Q:37:ARG:HG3	21:T:7:LYS:HG3	1.87	0.57
18:Q:105:LYS:HZ3	18:Q:108:ILE:HD11	1.69	0.57
20:S:74:PRO:HB2	20:S:75:ARG:HH21	1.69	0.57
1:2:213:G:H2'	1:2:214:U:O4'	2.05	0.57
1:2:532:C:H2'	1:2:533:A:H8	1.70	0.57
1:2:1457:U:H2'	1:2:1458:G:H8	1.70	0.57

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1468:C:H2'	1:2:1469:A:C8	2.40	0.57
6:E:54:TYR:OH	6:E:97:GLU:OE2	2.15	0.57
34:g:226:HIS:NE2	34:g:228:TYR:O	2.38	0.57
1:2:879:C:H2'	1:2:880:G:H4'	1.87	0.56
1:2:1844:U:P	35:h:11:ARG:HH22	2.27	0.56
3:B:40:ASN:ND2	3:B:76:ASN:OD1	2.38	0.56
7:F:69:VAL:O	7:F:72:LEU:HG	2.05	0.56
1:2:145:G:H2'	1:2:146:G:C8	2.40	0.56
17:P:98:ASN:HB2	17:P:122:THR:HG22	1.87	0.56
18:Q:131:LYS:HB2	18:Q:140:ARG:NH2	2.20	0.56
1:2:1567:G:H2'	1:2:1568:C:C5	2.40	0.56
5:D:138:VAL:HG22	5:D:182:LEU:HD22	1.88	0.56
8:G:57:ASP:HA	8:G:106:LEU:HA	1.88	0.56
20:S:33:ILE:HG22	20:S:35:GLY:H	1.70	0.56
21:T:110:LEU:HD23	21:T:112:MET:SD	2.46	0.56
25:X:29:LYS:HD2	25:X:29:LYS:C	2.31	0.56
1:2:943:U:O2'	16:O:135:ILE:O	2.23	0.56
1:2:1567:G:H5'	21:T:37:VAL:HG23	1.87	0.56
1:2:1824:A:H2'	1:2:1825:A:H4'	1.87	0.56
8:G:57:ASP:O	8:G:107:SER:OG	2.22	0.56
16:O:113:GLN:OE1	28:a:46:GLU:N	2.37	0.56
20:S:130:ARG:HD3	20:S:134:GLN:HB2	1.87	0.56
34:g:200:VAL:HG13	34:g:207:CYS:HB2	1.88	0.56
1:2:1560:U:O4	1:2:1572:C:N4	2.38	0.56
1:2:384:U:O4	10:I:5:ARG:NH2	2.33	0.56
1:2:846:G:H2'	6:E:19:MET:HG2	1.88	0.56
1:2:1231:C:N4	1:2:1666:C:O2'	2.39	0.56
18:Q:53:GLU:OE2	18:Q:115:TYR:OH	2.19	0.56
1:2:817:G:H4'	11:J:73:GLU:OE1	2.04	0.56
1:2:1013:U:OP1	1:2:1129:G:O2'	2.24	0.56
1:2:1329:U:O4	1:2:1501:C:N4	2.38	0.56
1:2:1653:U:H2'	1:2:1654:G:C8	2.40	0.56
9:H:25:GLN:O	9:H:29:GLU:HG2	2.06	0.56
19:R:104:GLU:OE1	19:R:107:LYS:NZ	2.38	0.56
1:2:1669:G:O2'	22:U:62:ARG:NH1	2.38	0.56
34:g:36:ARG:HB2	34:g:65:PHE:HB3	1.88	0.56
1:2:495:U:H2'	1:2:496:C:O4'	2.06	0.56
1:2:547:G:OP1	1:2:549:C:N4	2.32	0.56
1:2:1153:C:OP1	24:W:12:LYS:NZ	2.39	0.56
1:2:1235:G:H21	1:2:1524:G:H3'	1.71	0.56
1:2:1514:G:O6	31:d:12:ARG:NH2	2.39	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1614:A:N6	17:P:43:ARG:HD2	2.21	0.56
5:D:124:ARG:O	5:D:128:GLU:HG3	2.06	0.56
6:E:31:PRO:HG2	6:E:38:LEU:HG	1.87	0.56
7:F:33:ILE:HG23	7:F:34:SER:H	1.70	0.56
1:2:1546:G:N2	1:2:1588:A:H61	2.05	0.55
1:2:1562:C:N4	1:2:1563:G:O6	2.39	0.55
2:A:52:LYS:HE3	19:R:109:LEU:HB2	1.87	0.55
18:Q:34:VAL:HA	18:Q:70:VAL:HB	1.88	0.55
1:2:4:C:H4'	4:C:207:ALA:HB2	1.88	0.55
1:2:1480:A:H4'	18:Q:131:LYS:HD2	1.88	0.55
1:2:455:A:H2'	1:2:456:C:C6	2.41	0.55
1:2:1113:A:H2'	1:2:1114:U:C6	2.41	0.55
1:2:1657:G:H2'	1:2:1658:G:H8	1.71	0.55
5:D:195:THR:HG22	5:D:199:GLY:H	1.71	0.55
21:T:42:HIS:HB2	21:T:83:GLN:HA	1.87	0.55
22:U:31:SER:HA	22:U:34:LYS:HD3	1.87	0.55
28:a:19:GLN:H	28:a:19:GLN:CD	2.13	0.55
34:g:120:ILE:O	34:g:131:LEU:HA	2.06	0.55
1:2:77:A:C8	8:G:154:ARG:HG2	2.41	0.55
1:2:1468:C:H2'	1:2:1469:A:H8	1.71	0.55
17:P:40:ARG:HH21	17:P:115:TYR:HD1	1.54	0.55
21:T:75:MET:HA	21:T:78:ILE:HG12	1.88	0.55
21:T:124:THR:HG23	21:T:127:GLY:HA3	1.88	0.55
31:d:20:SER:HB2	31:d:27:ARG:HA	1.88	0.55
7:F:133:THR:O	7:F:136:ARG:NH1	2.39	0.55
1:2:29:G:H2'	1:2:30:C:C6	2.41	0.55
1:2:1414:A:H5"	21:T:128:GLN:HE22	1.72	0.55
1:2:1668:U:OP2	18:Q:141:TYR:OH	2.19	0.55
5:D:210:ILE:HG13	19:R:39:ALA:HB2	1.87	0.55
20:S:58:GLU:HG3	27:Z:50:PHE:CE2	2.42	0.55
1:2:1236:G:H1	1:2:1522:A:H62	1.54	0.55
12:K:28:HIS:CE1	31:d:12:ARG:HB2	2.42	0.55
16:O:135:ILE:O	16:O:135:ILE:HD12	2.06	0.55
1:2:186:C:H2'	1:2:187:G:C8	2.42	0.55
1:2:981:A:H2'	1:2:982:G:C8	2.42	0.55
1:2:1119:A:O3'	29:b:72:ARG:NH1	2.40	0.55
19:R:27:ASP:O	19:R:31:ASN:N	2.40	0.55
1:2:1275:G:H4'	1:2:1276:A:H8	1.71	0.55
7:F:100:ILE:O	7:F:104:THR:OG1	2.23	0.55
17:P:77:LYS:HD2	17:P:79:HIS:HE1	1.72	0.55
1:2:943:U:H2'	1:2:944:A:H8	1.72	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1190:A:N3	1:2:1714:U:O2'	2.38	0.55
1:2:1544:C:C4	1:2:1589:A:N1	2.75	0.55
11:J:113:GLN:OE1	11:J:154:GLN:NE2	2.39	0.55
1:2:109:U:O2	13:L:71:ARG:NH2	2.41	0.54
1:2:1753:C:N4	1:2:1781:A:OP2	2.39	0.54
1:2:1757:G:O2'	1:2:1758:G:OP1	2.23	0.54
2:A:52:LYS:HD2	19:R:109:LEU:HD22	1.89	0.54
7:F:55:ARG:NH2	18:Q:125:ARG:HB2	2.21	0.54
17:P:108:LYS:HG3	17:P:110:GLU:H	1.72	0.54
1:2:880:G:N1	1:2:906:U:C4	2.76	0.54
1:2:1217:A:H2'	1:2:1218:C:C6	2.42	0.54
1:2:1402:A:H4'	22:U:51:LYS:HD2	1.88	0.54
5:D:109:LEU:HD13	5:D:175:VAL:HG11	1.89	0.54
16:O:31:CYS:HB2	16:O:93:LEU:HD23	1.89	0.54
20:S:8:LYS:O	20:S:8:LYS:HD2	2.06	0.54
36:n:160:ASN:ND2	36:n:163:THR:OG1	2.35	0.54
1:2:223:C:H2'	1:2:224:A:C8	2.42	0.54
1:2:379:C:O2	10:I:5:ARG:NE	2.37	0.54
1:2:568:C:H2'	1:2:569:A:C8	2.42	0.54
1:2:1024:A:OP2	15:N:124:ARG:NH2	2.40	0.54
1:2:1544:C:O2	1:2:1589:A:N6	2.41	0.54
7:F:83:ASN:OD1	7:F:85:LYS:NZ	2.40	0.54
18:Q:49:TYR:HA	18:Q:52:LEU:HB3	1.87	0.54
20:S:70:ILE:HD11	20:S:77:TYR:HE2	1.72	0.54
1:2:118:C:H1'	1:2:445:A:C5	2.43	0.54
1:2:1254:C:O2'	22:U:69:PRO:O	2.25	0.54
5:D:54:ARG:HB3	5:D:57:ASN:HB2	1.89	0.54
10:I:172:LEU:HB3	10:I:190:LEU:HD12	1.90	0.54
22:U:24:LEU:HD13	22:U:35:VAL:HG11	1.88	0.54
22:U:81:GLN:HE21	22:U:83:ARG:N	2.05	0.54
1:2:1033:G:N1	1:2:1080:A:O2'	2.36	0.54
1:2:1546:G:H3'	1:2:1548:G:C2	2.43	0.54
7:F:93:VAL:O	7:F:97:PHE:HB2	2.08	0.54
1:2:388:U:H2'	1:2:389:A:H8	1.73	0.54
1:2:641:A:O2'	1:2:645:C:OP1	2.26	0.54
1:2:1628:C:O3'	21:T:38:LYS:NZ	2.41	0.54
1:2:1797:U:H2'	1:2:1798:C:C6	2.42	0.54
7:F:125:SER:HB2	7:F:203:ASN:HD22	1.73	0.54
17:P:56:LEU:O	17:P:59:ARG:HG3	2.07	0.54
34:g:170:TRP:HA	34:g:194:TYR:HB2	1.90	0.54
1:2:15:U:H2'	1:2:16:G:O4'	2.08	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1472:C:N4	1:2:1473:G:O6	2.41	0.54
1:2:1480:A:O2'	31:d:56:ASP:OD1	2.26	0.54
5:D:35:SER:HA	5:D:99:ILE:HG21	1.89	0.54
5:D:113:LEU:HD11	5:D:118:ALA:HB2	1.88	0.54
11:J:108:ARG:NH2	11:J:154:GLN:OE1	2.26	0.54
17:P:51:ARG:O	17:P:52:LYS:HG2	2.07	0.54
1:2:1190:A:OP1	25:X:34:THR:OG1	2.18	0.54
1:2:1623:A:H2	20:S:132:ARG:HH21	1.54	0.54
3:B:34:LYS:O	3:B:98:THR:OG1	2.26	0.54
3:B:97:LEU:HG	3:B:232:HIS:CE1	2.42	0.54
5:D:191:PRO:CB	5:D:194:PRO:HD2	2.20	0.54
23:V:62:MET:HG2	23:V:64:GLU:HG2	1.89	0.54
17:P:96:VAL:HB	17:P:103:ASN:HB2	1.89	0.54
36:n:155:GLU:HA	36:n:158:GLU:HB2	1.88	0.54
1:2:28:U:H2'	1:2:29:G:H8	1.72	0.53
1:2:942:G:H2'	1:2:943:U:C6	2.43	0.53
1:2:1219:C:H42	1:2:1646:C:N4	2.06	0.53
1:2:1589:A:O2'	1:2:1653:U:O2'	2.17	0.53
4:C:255:LEU:HD13	23:V:23:ILE:HD11	1.89	0.53
10:I:106:SER:HB3	10:I:171:LEU:HG	1.89	0.53
34:g:65:PHE:O	34:g:83:TRP:HB2	2.07	0.53
1:2:1406:G:H2'	1:2:1407:U:C6	2.43	0.53
2:A:76:VAL:HG12	2:A:123:VAL:HB	1.90	0.53
5:D:102:ALA:HB1	5:D:173:ARG:HE	1.72	0.53
13:L:49:GLU:HG2	13:L:118:ARG:NH2	2.23	0.53
30:c:18:LEU:HB2	30:c:29:GLN:HG2	1.88	0.53
1:2:1507:G:H21	33:f:89:LYS:HD2	1.73	0.53
3:B:139:CYS:HA	3:B:213:ARG:H	1.73	0.53
7:F:175:ASP:HA	7:F:178:ILE:HG12	1.90	0.53
14:M:50:CYS:O	14:M:77:ILE:N	2.32	0.53
20:S:46:ARG:NH1	21:T:47:PRO:O	2.37	0.53
1:2:85:A:H2'	1:2:86:C:C6	2.44	0.53
1:2:687:C:O2'	9:H:103:LYS:NZ	2.31	0.53
19:R:21:TYR:HE2	19:R:73:LEU:HD23	1.74	0.53
20:S:74:PRO:HG3	20:S:96:SER:HA	1.88	0.53
34:g:166:VAL:HB	34:g:221:LEU:HD21	1.91	0.53
1:2:747:U:H3'	1:2:796:G:N2	2.23	0.53
1:2:1188:A:H2'	1:2:1189:A:H8	1.73	0.53
1:2:1384:C:H5"	5:D:158:ILE:HG22	1.90	0.53
27:Z:79:ILE:HB	27:Z:83:LEU:HD23	1.90	0.53
1:2:127:C:O2'	1:2:215:G:O2'	2.27	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:I:177:SER:OG	10:I:184:ARG:O	2.26	0.53
17:P:118:GLU:O	20:S:120:HIS:ND1	2.39	0.53
21:T:30:VAL:HG12	21:T:31:PRO:HD2	1.89	0.53
1:2:449:A:OP1	10:I:23:LYS:NZ	2.38	0.53
1:2:953:C:O2	16:O:55:ARG:NH2	2.41	0.53
1:2:1400:U:O2	22:U:55:ARG:NH1	2.40	0.53
21:T:65:TYR:HD2	21:T:131:LEU:HD23	1.73	0.53
1:2:1301:A:H5'	31:d:6:LEU:HD12	1.91	0.53
12:K:29:MET:HG3	12:K:42:ASN:HD22	1.74	0.53
1:2:17:C:H2'	1:2:18:C:C6	2.44	0.53
3:B:173:THR:O	3:B:177:GLN:HG2	2.09	0.53
34:g:199:THR:OG1	34:g:239:LEU:O	2.22	0.53
1:2:860:G:N2	24:W:107:SER:HG	2.07	0.53
1:2:1809:A:H8	1:2:1810:U:C5	2.26	0.53
5:D:25:LEU:HD21	5:D:37:VAL:HG21	1.90	0.53
14:M:22:LEU:HD12	14:M:85:LEU:HD22	1.91	0.53
16:O:103:ASN:HB3	16:O:142:ARG:HG2	1.91	0.53
21:T:40:ALA:HA	21:T:95:GLY:HA2	1.90	0.53
2:A:78:SER:HB2	2:A:87:VAL:HG21	1.92	0.52
3:B:110:MET:HE1	3:B:140:VAL:HG11	1.91	0.52
4:C:73:MET:HE2	4:C:73:MET:N	2.24	0.52
12:K:32:HIS:HB3	12:K:35:LEU:HB2	1.90	0.52
1:2:115:U:O2'	1:2:381:C:O2	2.22	0.52
1:2:677:G:OP1	15:N:124:ARG:NH1	2.42	0.52
1:2:1285:G:N7	14:M:33:ARG:HB2	2.24	0.52
1:2:1509:U:H3'	1:2:1510:G:C8	2.44	0.52
3:B:52:THR:HG23	3:B:57:ILE:HA	1.90	0.52
17:P:76:VAL:HG23	17:P:94:VAL:HA	1.91	0.52
18:Q:38:PRO:HD2	18:Q:41:MET:HE1	1.90	0.52
1:2:17:C:O2'	1:2:1194:A:N1	2.37	0.52
8:G:56:ASN:ND2	8:G:60:GLY:O	2.43	0.52
34:g:60:ARG:H	34:g:60:ARG:HD2	1.74	0.52
1:2:81:U:H2'	1:2:82:G:O4'	2.09	0.52
1:2:155:G:N2	8:G:56:ASN:OD1	2.43	0.52
1:2:536:A:H2'	1:2:538:U:C5	2.44	0.52
1:2:1037:G:H4'	1:2:1845:A:H4'	1.91	0.52
1:2:1581:C:H5'	1:2:1582:C:H5	1.75	0.52
20:S:43:VAL:HA	20:S:46:ARG:HG2	1.92	0.52
32:e:45:VAL:O	32:e:48:THR:HG22	2.10	0.52
34:g:118:ARG:HH12	34:g:119:GLN:HB2	1.72	0.52
1:2:617:G:H4'	25:X:88:ASP:CB	2.38	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:M:52:LEU:HD21	14:M:62:VAL:HG23	1.91	0.52
20:S:84:LEU:HD13	20:S:95:TYR:HD1	1.74	0.52
1:2:1217:A:H2'	1:2:1218:C:H6	1.75	0.52
7:F:135:ARG:NH1	7:F:135:ARG:O	2.43	0.52
22:U:46:LYS:HD3	22:U:97:ILE:HG12	1.92	0.52
1:2:12:U:H2'	1:2:13:C:C6	2.45	0.52
1:2:902:G:OP1	1:2:904:A:N6	2.43	0.52
1:2:1188:A:H2'	1:2:1189:A:C8	2.44	0.52
1:2:1254:C:H2'	1:2:1255:G:H8	1.74	0.52
1:2:1613:G:C6	1:2:1614:A:H1'	2.45	0.52
22:U:31:SER:O	22:U:34:LYS:HG2	2.10	0.52
34:g:64:HIS:CG	34:g:83:TRP:HB3	2.45	0.52
1:2:5:U:H2'	1:2:6:G:H8	1.74	0.52
1:2:639:C:O2'	1:2:640:A:H8	1.92	0.52
2:A:19:LEU:HD13	19:R:117:LEU:HD11	1.91	0.52
21:T:20:ALA:O	21:T:24:LYS:HG2	2.10	0.52
1:2:1541:G:N2	1:2:1594:A:OP1	2.43	0.52
1:2:1720:U:H2'	1:2:1814:G:N2	2.25	0.52
20:S:39:ARG:HH12	21:T:46:ALA:HB2	1.75	0.52
20:S:55:ARG:HD2	27:Z:83:LEU:HD13	1.91	0.52
20:S:66:ARG:HG2	20:S:66:ARG:HH11	1.75	0.52
20:S:113:ARG:HE	20:S:114:LEU:HD22	1.74	0.52
1:2:39:A:OP2	11:J:5:ARG:NH1	2.43	0.52
1:2:1552:G:OP1	1:2:1578:U:N3	2.42	0.52
6:E:206:ASP:HB2	6:E:222:LEU:HB2	1.92	0.52
13:L:79:LYS:HB2	13:L:87:VAL:HB	1.92	0.52
20:S:57:GLY:HA3	27:Z:50:PHE:HD2	1.75	0.52
1:2:181:A:H3'	1:2:182:C:H5'	1.92	0.51
1:2:1010:G:H2'	1:2:1011:A:C8	2.45	0.51
1:2:1144:A:H2'	1:2:1145:A:C8	2.45	0.51
1:2:1493:C:N3	1:2:1499:U:O2	2.43	0.51
1:2:1686:G:H2'	1:2:1687:C:C6	2.45	0.51
1:2:1723:G:N1	1:2:1812:U:O2	2.43	0.51
1:2:1845:A:H2'	1:2:1846:G:C8	2.45	0.51
34:g:256:ILE:HD13	34:g:289:LEU:HD21	1.91	0.51
1:2:980:A:H2'	1:2:981:A:C8	2.44	0.51
1:2:1754:G:N2	1:2:1781:A:OP2	2.42	0.51
3:B:129:THR:OG1	3:B:131:ASP:OD1	2.22	0.51
4:C:113:GLN:OE1	4:C:122:THR:OG1	2.27	0.51
34:g:17:TRP:HB2	34:g:36:ARG:HD2	1.92	0.51
1:2:106:C:H2'	1:2:107:A:H8	1.75	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1335:G:O6	1:2:1492:U:O4	2.28	0.51
35:h:1:MET:HE1	35:h:9:ARG:NE	2.26	0.51
1:2:5:U:H2'	1:2:6:G:C8	2.45	0.51
1:2:544:G:H2'	1:2:545:A:H8	1.76	0.51
1:2:1230:C:HO2'	1:2:1665:G:N2	2.05	0.51
1:2:1361:G:N2	1:2:1362:U:O2'	2.43	0.51
1:2:1519:U:O2	1:2:1622:U:O2'	2.29	0.51
5:D:21:LEU:HD12	5:D:22:ASN:N	2.26	0.51
9:H:47:ALA:HB3	9:H:63:PHE:HD2	1.75	0.51
13:L:33:LEU:HD12	13:L:34:PRO:HD2	1.92	0.51
1:2:372:U:O2'	13:L:82:MET:SD	2.59	0.51
1:2:555:A:H8	32:e:25:LYS:HE3	1.76	0.51
1:2:920:A:O2'	1:2:922:A:OP1	2.27	0.51
1:2:1260:A:H61	1:2:1620:A:H2	1.58	0.51
1:2:1709:G:O2'	1:2:1710:C:OP2	2.29	0.51
7:F:18:LYS:HB2	7:F:24:SER:HA	1.93	0.51
9:H:8:ILE:HD12	9:H:24:SER:HB2	1.91	0.51
16:O:25:GLU:OE1	16:O:25:GLU:N	2.44	0.51
28:a:42:ARG:NH1	28:a:43:ASN:O	2.43	0.51
1:2:85:A:H2'	1:2:86:C:H6	1.76	0.51
1:2:1160:U:O4	25:X:2:GLY:N	2.44	0.51
1:2:1486:A:H2'	1:2:1487:A:O4'	2.11	0.51
12:K:15:LEU:HD12	12:K:21:MET:HB2	1.93	0.51
1:2:184:G:H2'	1:2:185:G:C8	2.45	0.51
1:2:1472:C:N3	1:2:1476:A:N7	2.58	0.51
12:K:1:MET:H2	12:K:47:LYS:HD2	1.76	0.51
12:K:26:ASP:O	12:K:42:ASN:ND2	2.44	0.51
20:S:84:LEU:HD23	20:S:86:ARG:H	1.75	0.51
1:2:1589:A:H4'	21:T:82:ARG:HD3	1.93	0.51
1:2:1663:A:H2'	1:2:1664:A:H4'	1.93	0.51
1:2:1722:G:O6	1:2:1812:U:N3	2.43	0.51
19:R:103:LYS:HD2	19:R:119:VAL:HG22	1.93	0.51
34:g:166:VAL:HG23	34:g:176:VAL:HG22	1.93	0.51
1:2:388:U:H2'	1:2:389:A:C8	2.46	0.51
19:R:35:CYS:HB3	19:R:41:ILE:HD11	1.93	0.51
19:R:96:ILE:HD12	19:R:96:ILE:O	2.11	0.51
22:U:81:GLN:NE2	22:U:83:ARG:HB2	2.26	0.51
36:n:156:ASP:O	36:n:160:ASN:HB2	2.11	0.51
1:2:1101:U:H2'	1:2:1102:G:H8	1.76	0.51
1:2:1358:U:H5'	4:C:114:LYS:HD2	1.92	0.51
5:D:124:ARG:HH12	5:D:125:PHE:HB2	1.74	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:F:154:LEU:HB3	7:F:189:ALA:HB2	1.92	0.51
25:X:6:GLY:O	25:X:9:THR:OG1	2.25	0.51
34:g:191:HIS:CD2	34:g:195:LEU:HD11	2.46	0.51
1:2:1487:A:H4'	4:C:118:ALA:HB1	1.92	0.50
1:2:1821:U:O2'	1:2:1822:A:OP1	2.27	0.50
4:C:132:ASP:OD1	4:C:136:HIS:HB2	2.10	0.50
4:C:236:PHE:O	4:C:240:THR:HG22	2.10	0.50
18:Q:82:TYR:HD1	18:Q:85:ARG:HH21	1.58	0.50
34:g:132:TRP:HE1	34:g:141:THR:HG22	1.76	0.50
1:2:1262:C:C2	31:d:15:GLY:HA2	2.46	0.50
1:2:1661:A:H2'	1:2:1662:U:H5	1.75	0.50
2:A:33:GLN:NE2	23:V:64:GLU:OE2	2.34	0.50
2:A:106:GLY:N	2:A:136:GLU:OE2	2.27	0.50
1:2:929:G:H2'	1:2:930:C:O4'	2.10	0.50
1:2:1736:G:H2'	1:2:1737:G:C8	2.47	0.50
14:M:33:ARG:HA	14:M:104:VAL:HG12	1.94	0.50
28:a:90:GLU:H	28:a:90:GLU:CD	2.18	0.50
34:g:217:MET:HB2	34:g:226:HIS:CD2	2.46	0.50
1:2:1373:C:OP1	19:R:7:LYS:HB3	2.12	0.50
7:F:78:MET:HE2	7:F:79:HIS:NE2	2.27	0.50
16:O:136:PRO:HG3	16:O:139:SER:HB3	1.94	0.50
1:2:880:G:N2	1:2:907:G:H1'	2.16	0.50
1:2:1088:U:H4'	1:2:1089:G:OP2	2.12	0.50
1:2:1256:G:C2	31:d:31:ILE:HG12	2.46	0.50
1:2:1349:G:H2'	1:2:1350:U:C6	2.47	0.50
1:2:1367:U:HO2'	1:2:1466:G:HO2'	1.57	0.50
2:A:7:VAL:HG13	2:A:8:LEU:HG	1.92	0.50
8:G:152:ASP:OD1	8:G:154:ARG:N	2.39	0.50
14:M:119:GLN:O	14:M:123:VAL:HG13	2.11	0.50
19:R:44:LYS:HA	19:R:47:ARG:HG2	1.93	0.50
1:2:902:G:N7	1:2:903:A:N6	2.57	0.50
1:2:1060:A:O2'	1:2:1062:A:N7	2.39	0.50
1:2:1235:G:H2'	1:2:1236:G:C8	2.46	0.50
1:2:1618:C:P	17:P:47:ARG:HH21	2.34	0.50
10:I:79:ILE:HD13	10:I:170:LYS:HZ3	1.76	0.50
1:2:1083:A:N7	1:2:1841:C:O2'	2.44	0.50
1:2:1366:G:O2'	1:2:1367:U:H5'	2.11	0.50
1:2:1446:A:O2'	1:2:1447:G:N7	2.34	0.50
1:2:1491:G:H2'	1:2:1492:U:C6	2.46	0.50
1:2:1605:G:N2	1:2:1606:G:O6	2.44	0.50
5:D:193:ASP:HB2	5:D:194:PRO:HD3	1.94	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:G:38:ALA:HB1	8:G:41:LEU:HD12	1.93	0.50
1:2:187:G:H2'	1:2:188:C:C6	2.47	0.50
1:2:681:U:O2'	1:2:1160:U:OP1	2.29	0.50
1:2:1222:G:H2'	1:2:1223:A:C8	2.47	0.50
1:2:1736:G:H2'	1:2:1737:G:H8	1.77	0.50
3:B:36:PRO:HA	3:B:232:HIS:CD2	2.47	0.50
8:G:33:ALA:N	8:G:52:ILE:O	2.33	0.50
20:S:55:ARG:CZ	27:Z:83:LEU:HD22	2.41	0.50
21:T:22:LEU:HD11	21:T:28:LEU:HB2	1.92	0.50
31:d:27:ARG:O	31:d:27:ARG:NH1	2.42	0.50
1:2:903:A:C8	1:2:903:A:H5'	2.47	0.50
1:2:1456:G:H2'	1:2:1457:U:C6	2.46	0.50
2:A:110:ASN:HB3	2:A:113:GLN:HG3	1.94	0.50
9:H:42:GLU:N	9:H:42:GLU:OE2	2.45	0.50
11:J:111:GLN:NE2	11:J:127:ARG:HB2	2.27	0.50
18:Q:53:GLU:OE1	18:Q:85:ARG:NH1	2.45	0.50
30:c:39:SER:O	30:c:39:SER:OG	2.30	0.50
34:g:109:LEU:HD13	34:g:151:VAL:O	2.11	0.50
34:g:247:TRP:NE1	34:g:260:ASP:OD1	2.45	0.50
1:2:3:C:O2	11:J:18:ARG:NH2	2.40	0.49
1:2:198:U:O4	1:2:202:G:N1	2.45	0.49
1:2:491:C:H1'	1:2:510:G:N2	2.26	0.49
1:2:656:G:N2	1:2:663:C:H5"	2.26	0.49
1:2:957:A:OP1	16:O:57:THR:OG1	2.23	0.49
1:2:1220:A:H2'	1:2:1221:G:O4'	2.12	0.49
1:2:1276:A:H1'	12:K:55:ARG:HA	1.93	0.49
3:B:82:ARG:HD3	3:B:103:MET:HE2	1.93	0.49
3:B:146:ARG:HB2	3:B:149:GLN:HB2	1.94	0.49
3:B:227:LYS:HB3	3:B:227:LYS:NZ	2.27	0.49
5:D:51:LEU:HD22	5:D:52:ALA:H	1.77	0.49
11:J:170:PRO:HB3	11:J:174:LYS:HD3	1.94	0.49
20:S:25:LYS:HG2	27:Z:80:ARG:HH11	1.77	0.49
21:T:14:PHE:HA	21:T:138:VAL:HG11	1.92	0.49
21:T:133:ARG:NE	21:T:133:ARG:HA	2.26	0.49
22:U:18:HIS:O	22:U:92:HIS:ND1	2.45	0.49
26:Y:28:LEU:HD13	26:Y:68:LYS:HB3	1.94	0.49
26:Y:38:THR:O	26:Y:42:GLU:HG2	2.11	0.49
26:Y:74:MET:HE1	26:Y:90:ARG:HH21	1.76	0.49
34:g:7:LEU:HD21	34:g:272:GLN:HG3	1.94	0.49
34:g:176:VAL:HB	34:g:186:THR:OG1	2.12	0.49
1:2:168:C:O2	8:G:133:LEU:HD23	2.12	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1101:U:H2'	1:2:1102:G:C8	2.47	0.49
1:2:1366:G:H2'	1:2:1367:U:O4'	2.12	0.49
1:2:1457:U:H2'	1:2:1458:G:C8	2.45	0.49
1:2:1590:C:H5	18:Q:77:HIS:CE1	2.30	0.49
1:2:1794:C:H2'	1:2:1795:G:C8	2.47	0.49
2:A:163:CYS:SG	2:A:174:MET:HE2	2.52	0.49
5:D:72:VAL:HA	5:D:75:LYS:HE2	1.93	0.49
5:D:113:LEU:HD22	5:D:114:ALA:N	2.27	0.49
16:O:99:ALA:H	16:O:133:THR:HB	1.77	0.49
17:P:83:MET:HE2	17:P:83:MET:N	2.27	0.49
24:W:111:MET:HE3	24:W:116:ALA:HA	1.94	0.49
34:g:58:ALA:O	34:g:60:ARG:NH1	2.46	0.49
34:g:104:HIS:CD2	34:g:130:LYS:HD3	2.47	0.49
1:2:913:A:O2'	1:2:914:U:OP1	2.26	0.49
1:2:1351:G:H1	1:2:1360:U:H5	1.58	0.49
1:2:1407:U:O2	1:2:1439:A:N6	2.45	0.49
1:2:1409:A:H61	1:2:1432:U:H5"	1.76	0.49
28:a:78:VAL:HG13	28:a:84:VAL:HG22	1.94	0.49
1:2:126:G:H5'	8:G:195:LYS:NZ	2.27	0.49
1:2:589:G:N2	32:e:23:GLU:OE2	2.45	0.49
1:2:1236:G:H21	17:P:130:ARG:HH12	1.59	0.49
1:2:1488:C:H3'	1:2:1489:A:H4'	1.95	0.49
4:C:167:ARG:HB3	4:C:177:PRO:HB2	1.95	0.49
6:E:212:ASP:OD2	6:E:216:ASN:ND2	2.44	0.49
7:F:63:LYS:HG3	7:F:144:LEU:HD11	1.93	0.49
7:F:100:ILE:HG21	7:F:177:LEU:HD22	1.94	0.49
1:2:985:G:H4'	16:O:138:ASP:OD2	2.12	0.49
1:2:1330:G:H1	1:2:1493:C:H5	1.60	0.49
1:2:1557:C:C2	1:2:1661:A:H5'	2.48	0.49
1:2:1646:C:H1'	1:2:1678:A:H2	1.77	0.49
9:H:43:LEU:HD21	9:H:71:SER:HB2	1.93	0.49
15:N:67:THR:HG21	15:N:74:ILE:HD11	1.95	0.49
21:T:39:LEU:HD23	21:T:47:PRO:HD3	1.94	0.49
25:X:84:PHE:CE2	25:X:86:PRO:HA	2.46	0.49
1:2:65:C:C2	8:G:133:LEU:HD12	2.48	0.49
1:2:1753:C:H5'	1:2:1754:G:H5"	1.94	0.49
21:T:65:TYR:CD2	21:T:131:LEU:HD23	2.48	0.49
26:Y:23:MET:HE1	26:Y:75:ILE:HD12	1.95	0.49
1:2:220:U:H5	1:2:301:A:N1	2.09	0.49
1:2:964:A:H2'	1:2:965:U:H6	1.78	0.49
1:2:1164:G:O2'	1:2:1165:G:H5'	2.12	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1815:A:H5'	1:2:1816:G:C8	2.48	0.49
6:E:126:VAL:HA	6:E:141:THR:HA	1.95	0.49
25:X:52:LEU:HD11	25:X:73:GLN:HB2	1.94	0.49
28:a:36:ILE:HD13	28:a:78:VAL:HG11	1.95	0.49
1:2:1587:G:OP1	1:2:1587:G:N2	2.46	0.49
19:R:34:VAL:O	19:R:37:GLU:HG2	2.13	0.49
1:2:528:A:H2'	1:2:529:A:C8	2.47	0.49
1:2:544:G:H2'	1:2:545:A:C8	2.48	0.49
1:2:1614:A:H62	17:P:43:ARG:HD2	1.77	0.49
17:P:38:SER:O	17:P:42:ARG:HB2	2.12	0.49
1:2:1235:G:O2'	1:2:1524:G:N2	2.45	0.49
4:C:272:HIS:O	4:C:276:THR:OG1	2.24	0.49
13:L:23:VAL:HG23	13:L:26:GLY:H	1.77	0.49
16:O:119:LEU:O	16:O:124:MET:HB2	2.13	0.49
1:2:125:C:OP1	8:G:202:ASN:ND2	2.46	0.48
1:2:340:C:H2'	1:2:341:C:C6	2.48	0.48
1:2:376:A:N3	10:I:86:SER:OG	2.36	0.48
1:2:1275:G:H4'	1:2:1276:A:C8	2.48	0.48
1:2:1397:U:H5'	1:2:1398:G:C8	2.47	0.48
1:2:1705:C:H2'	1:2:1706:G:C8	2.49	0.48
12:K:3:MET:CE	12:K:8:ARG:HB2	2.36	0.48
12:K:64:TRP:HB3	31:d:23:VAL:O	2.13	0.48
19:R:53:TYR:O	19:R:57:LEU:HD22	2.13	0.48
22:U:79:ARG:HD2	22:U:79:ARG:C	2.38	0.48
34:g:116:ASP:OD2	34:g:118:ARG:HG2	2.13	0.48
1:2:532:C:H2'	1:2:533:A:C8	2.48	0.48
1:2:1270:G:N2	1:2:1301:A:OP2	2.46	0.48
4:C:191:VAL:HG11	4:C:236:PHE:HA	1.95	0.48
5:D:126:ILE:HG22	5:D:127:MET:SD	2.53	0.48
7:F:167:LYS:NZ	7:F:171:GLU:HB2	2.28	0.48
21:T:16:ARG:NH2	21:T:55:THR:HG23	2.28	0.48
28:a:36:ILE:HG21	28:a:78:VAL:HG21	1.94	0.48
34:g:62:HIS:CE1	34:g:66:VAL:HB	2.48	0.48
1:2:380:G:P	10:I:56:ARG:HH22	2.36	0.48
1:2:1238:U:C2	17:P:126:VAL:HA	2.47	0.48
5:D:206:ASP:OD1	5:D:206:ASP:N	2.46	0.48
7:F:123:GLU:CD	7:F:201:LYS:HZ3	2.21	0.48
19:R:97:GLU:HB3	19:R:120:THR:OG1	2.12	0.48
31:d:22:ARG:HG2	31:d:37:ASN:HB3	1.95	0.48
34:g:219:TRP:HA	34:g:219:TRP:CE3	2.48	0.48
1:2:555:A:C8	32:e:25:LYS:HE3	2.48	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1815:A:H5'	1:2:1816:G:H8	1.79	0.48
15:N:19:ARG:HH12	29:b:83:GLN:CD	2.21	0.48
15:N:86:GLU:H	15:N:86:GLU:CD	2.19	0.48
19:R:28:PHE:O	19:R:31:ASN:N	2.45	0.48
19:R:51:ALA:O	19:R:55:THR:HG23	2.13	0.48
34:g:64:HIS:ND1	34:g:83:TRP:HB3	2.28	0.48
1:2:1495:G:O4'	31:d:41:GLN:NE2	2.45	0.48
8:G:32:MET:HA	8:G:52:ILE:HG22	1.96	0.48
18:Q:60:LYS:HE2	18:Q:60:LYS:HB2	1.68	0.48
27:Z:96:LEU:O	27:Z:111:ARG:HD3	2.14	0.48
34:g:301:GLY:HA2	34:g:307:VAL:HG22	1.94	0.48
1:2:822:U:H2'	1:2:824:C:OP2	2.13	0.48
1:2:1442:U:H2'	1:2:1443:C:O4'	2.14	0.48
1:2:1475:G:H5'	18:Q:124:PRO:HG2	1.96	0.48
1:2:1589:A:H5'	21:T:82:ARG:HH11	1.78	0.48
3:B:58:ALA:O	3:B:62:LEU:HB2	2.14	0.48
11:J:78:LEU:O	11:J:82:VAL:HG13	2.12	0.48
15:N:16:LEU:HD11	15:N:62:GLN:HG3	1.95	0.48
18:Q:112:LEU:HD22	18:Q:120:LEU:HG	1.96	0.48
20:S:16:LEU:HD23	20:S:16:LEU:H	1.79	0.48
4:C:199:PRO:O	4:C:202:THR:HG23	2.13	0.48
5:D:195:THR:HG22	5:D:199:GLY:O	1.93	0.48
10:I:144:LYS:HG3	10:I:145:ILE:N	2.27	0.48
20:S:84:LEU:HD23	20:S:86:ARG:N	2.28	0.48
28:a:53:ILE:HG21	28:a:64:LEU:HD21	1.95	0.48
1:2:907:G:N2	1:2:908:A:N7	2.61	0.48
1:2:1183:A:OP2	35:h:18:ARG:NH2	2.47	0.48
1:2:1390:U:H2'	1:2:1391:C:C6	2.48	0.48
1:2:1818:A:O2'	35:h:13:LEU:HD11	2.13	0.48
3:B:36:PRO:HB2	3:B:38:MET:SD	2.54	0.48
4:C:173:LYS:O	23:V:3:ASN:HB2	2.13	0.48
4:C:199:PRO:HG3	11:J:58:ARG:HD3	1.94	0.48
16:O:34:PHE:HB3	16:O:41:PHE:HB2	1.96	0.48
29:b:41:TYR:CE1	29:b:42:LYS:HG3	2.49	0.48
1:2:1284:A:N7	14:M:91:LEU:HD11	2.29	0.48
1:2:1397:U:H5'	1:2:1398:G:H8	1.79	0.48
1:2:1456:G:H2'	1:2:1457:U:H6	1.79	0.48
1:2:1532:C:O2'	1:2:1604:G:N2	2.47	0.48
1:2:1566:G:O3'	1:2:1567:G:N2	2.47	0.48
2:A:39:TYR:CD2	19:R:105:MET:HB2	2.49	0.48
2:A:147:LEU:HD23	2:A:161:ILE:HD12	1.94	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:I:135:GLU:O	10:I:139:LYS:HG3	2.14	0.48
22:U:24:LEU:HD12	22:U:32:LEU:HD22	1.96	0.48
14:M:110:VAL:HG12	14:M:111:VAL:H	1.79	0.48
27:Z:62:VAL:HG13	27:Z:63:PRO:HD3	1.96	0.48
1:2:1600:G:H22	27:Z:80:ARG:NH2	2.12	0.47
1:2:1714:U:H2'	1:2:1715:A:C8	2.49	0.47
1:2:1727:G:O6	1:2:1805:G:O2'	2.30	0.47
13:L:45:LYS:HB3	13:L:45:LYS:HE2	1.64	0.47
15:N:16:LEU:HD12	15:N:17:PRO:HD2	1.96	0.47
29:b:62:VAL:HG21	29:b:65:GLN:NE2	2.29	0.47
34:g:122:SER:HB2	34:g:130:LYS:HE2	1.94	0.47
1:2:1254:C:H2'	1:2:1255:G:C8	2.49	0.47
1:2:1380:C:H2'	1:2:1381:G:O4'	2.14	0.47
1:2:1660:C:OP2	31:d:16:GLN:NE2	2.46	0.47
1:2:1678:A:O2'	1:2:1679:A:O4'	2.26	0.47
5:D:116:ARG:NH1	36:n:152:ASP:H	2.12	0.47
11:J:45:ARG:O	11:J:49:THR:HG23	2.14	0.47
16:O:56:VAL:HG12	16:O:60:MET:HE1	1.96	0.47
1:2:186:C:H2'	1:2:187:G:H8	1.79	0.47
1:2:656:G:H5'	1:2:662:G:N2	2.29	0.47
1:2:1539:U:H4'	21:T:47:PRO:HA	1.96	0.47
5:D:158:ILE:HG13	5:D:164:VAL:HG13	1.96	0.47
17:P:51:ARG:HE	17:P:51:ARG:H	1.63	0.47
19:R:28:PHE:CD1	19:R:28:PHE:C	2.92	0.47
19:R:33:ARG:O	19:R:36:GLU:HG2	2.14	0.47
20:S:68:ILE:HA	20:S:71:MET:HE3	1.95	0.47
1:2:659:G:HO2'	1:2:662:G:HO2'	1.57	0.47
1:2:1240:A:H2'	1:2:1241:A:C5	2.49	0.47
1:2:1285:G:O6	14:M:33:ARG:N	2.47	0.47
2:A:75:SER:HB3	2:A:119:PRO:HB3	1.97	0.47
1:2:28:U:H2'	1:2:29:G:C8	2.50	0.47
1:2:447:A:N3	6:E:3:ARG:NH1	2.62	0.47
1:2:1539:U:OP2	21:T:43:LYS:NZ	2.37	0.47
1:2:1848:U:H2'	1:2:1850:A:OP2	2.14	0.47
1:2:1865:C:O2	28:a:92:ARG:HB3	2.14	0.47
2:A:190:SER:HB3	2:A:193:HIS:CE1	2.50	0.47
5:D:109:LEU:HA	5:D:113:LEU:HB3	1.96	0.47
6:E:20:LEU:HD21	6:E:46:ILE:HD12	1.96	0.47
20:S:67:VAL:O	20:S:70:ILE:HG22	2.14	0.47
21:T:72:VAL:HA	21:T:75:MET:SD	2.53	0.47
22:U:63:ILE:HD13	31:d:43:PHE:CZ	2.50	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:g:17:TRP:N	34:g:17:TRP:CD1	2.82	0.47
1:2:984:C:O2'	16:O:138:ASP:HB3	2.14	0.47
1:2:1007:C:H2'	1:2:1008:A:C8	2.49	0.47
1:2:1414:A:H5"	21:T:128:GLN:NE2	2.28	0.47
1:2:1441:U:OP1	18:Q:8:GLN:NE2	2.34	0.47
6:E:122:LYS:NZ	6:E:143:ASP:OD2	2.33	0.47
10:I:141:ARG:HD3	10:I:146:GLN:OE1	2.14	0.47
17:P:30:TYR:HB3	17:P:33:LEU:HB3	1.96	0.47
20:S:11:HIS:ND1	20:S:11:HIS:O	2.48	0.47
20:S:121:ARG:HG2	20:S:131:VAL:HG21	1.96	0.47
1:2:463:C:O2'	1:2:466:G:O6	2.29	0.47
1:2:943:U:C2	1:2:944:A:C8	3.02	0.47
1:2:1242:U:O2'	1:2:1518:C:O4'	2.33	0.47
1:2:1267:C:H2'	1:2:1268:C:C4	2.50	0.47
1:2:1339:U:O2'	1:2:1340:U:OP1	2.30	0.47
1:2:1726:G:O6	1:2:1809:A:N6	2.47	0.47
1:2:1788:A:H2'	1:2:1789:G:O4'	2.14	0.47
4:C:183:LYS:HA	4:C:195:LEU:O	2.15	0.47
5:D:195:THR:CG2	5:D:199:GLY:HA3	2.23	0.47
6:E:45:ILE:HA	6:E:61:VAL:HG11	1.97	0.47
6:E:104:ASP:OD1	6:E:105:THR:N	2.47	0.47
7:F:32:ASP:O	7:F:35:LEU:N	2.40	0.47
7:F:49:LEU:HD22	7:F:50:PRO:HD2	1.96	0.47
16:O:78:ALA:HB3	16:O:118:ALA:HB3	1.96	0.47
22:U:80:PHE:CD1	31:d:52:PHE:HB3	2.50	0.47
24:W:18:GLU:OE2	24:W:67:GLY:HA2	2.14	0.47
26:Y:41:ARG:NH2	26:Y:52:PRO:O	2.46	0.47
1:2:594:A:H61	1:2:643:A:H5"	1.79	0.47
1:2:1043:G:H2'	1:2:1044:G:O4'	2.15	0.47
1:2:1618:C:H2'	1:2:1619:A:C5	2.50	0.47
1:2:1677:U:H5'	7:F:148:ASN:HD22	1.80	0.47
14:M:82:ASN:OD1	14:M:82:ASN:N	2.46	0.47
19:R:29:HIS:HA	19:R:32:LYS:HZ3	1.80	0.47
22:U:28:ASN:OD1	22:U:30:LYS:N	2.47	0.47
1:2:1344:A:N6	1:2:1386:A:H5'	2.30	0.47
1:2:1352:G:H1	1:2:1359:U:H5	1.63	0.47
1:2:1486:A:OP2	5:D:151:LYS:NZ	2.47	0.47
3:B:124:HIS:HA	3:B:137:LEU:O	2.15	0.47
3:B:142:PHE:O	3:B:208:HIS:N	2.48	0.47
9:H:36:LEU:HD12	9:H:36:LEU:O	2.15	0.47
19:R:79:GLU:HA	19:R:82:ASP:HB2	1.97	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:n:152:ASP:O	36:n:156:ASP:HB2	2.15	0.47
1:2:92:A:H1'	6:E:3:ARG:HB2	1.96	0.47
1:2:1296:U:H1'	1:2:1303:C:H42	1.79	0.47
1:2:1335:G:N1	1:2:1492:U:N3	2.25	0.47
1:2:1593:C:O2	1:2:1594:A:N6	2.48	0.47
6:E:107:GLY:HA2	6:E:189:LEU:HD22	1.96	0.47
8:G:142:ARG:HH21	8:G:153:VAL:HG11	1.80	0.47
8:G:219:GLU:O	8:G:222:GLU:HG3	2.15	0.47
21:T:32:GLU:HG3	21:T:33:TRP:CD1	2.50	0.47
21:T:43:LYS:HE2	21:T:43:LYS:HA	1.97	0.47
1:2:359:U:OP2	25:X:18:ARG:HD2	2.15	0.46
1:2:529:A:H2'	1:2:530:U:O4'	2.15	0.46
1:2:804:U:H2'	1:2:805:U:C6	2.49	0.46
1:2:903:A:H2'	1:2:903:A:N3	2.30	0.46
1:2:945:U:H2'	1:2:946:U:C6	2.50	0.46
1:2:1286:G:N2	1:2:1316:C:O2	2.48	0.46
1:2:1402:A:C2	22:U:54:VAL:HA	2.50	0.46
5:D:7:LYS:HA	5:D:10:LYS:HE3	1.97	0.46
5:D:69:LEU:O	5:D:73:VAL:HG12	2.14	0.46
8:G:138:ALA:O	8:G:141:ILE:HG13	2.15	0.46
19:R:27:ASP:OD2	19:R:30:THR:HG23	2.15	0.46
21:T:11:GLN:OE1	21:T:62:ARG:NH2	2.48	0.46
1:2:446:G:OP2	10:I:47:ARG:NH2	2.44	0.46
1:2:1010:G:H2'	1:2:1011:A:H8	1.79	0.46
1:2:1260:A:H5'	1:2:1517:G:O6	2.15	0.46
5:D:73:VAL:HG23	5:D:77:PHE:CD1	2.50	0.46
14:M:51:VAL:HG22	14:M:77:ILE:HB	1.98	0.46
16:O:39:ASP:C	16:O:39:ASP:OD1	2.58	0.46
27:Z:56:ASP:OD1	27:Z:56:ASP:N	2.47	0.46
1:2:380:G:N1	1:2:383:G:OP2	2.38	0.46
1:2:1447:G:H2'	1:2:1448:A:H8	1.79	0.46
12:K:15:LEU:O	12:K:19:GLY:N	2.41	0.46
19:R:67:ARG:HH11	19:R:67:ARG:HG3	1.80	0.46
25:X:28:LYS:O	25:X:32:LEU:HB2	2.14	0.46
1:2:16:G:H2'	1:2:17:C:C6	2.49	0.46
1:2:202:G:H3'	1:2:203:G:C8	2.46	0.46
1:2:1378:A:H4'	1:2:1379:A:O5'	2.15	0.46
1:2:1535:U:C4	7:F:159:ARG:HD3	2.50	0.46
1:2:1666:C:HO2'	1:2:1667:U:P	2.37	0.46
7:F:179:ASN:OD1	7:F:184:SER:HB3	2.15	0.46
9:H:138:GLU:OE2	15:N:21:SER:OG	2.20	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:Q:52:LEU:HG	18:Q:56:LEU:HD22	1.98	0.46
21:T:56:ARG:HH22	21:T:78:ILE:HB	1.79	0.46
34:g:157:SER:HB2	34:g:204:GLY:HA2	1.98	0.46
34:g:286:CYS:HA	34:g:302:TYR:HA	1.97	0.46
1:2:573:U:H1'	1:2:577:U:O4	2.15	0.46
1:2:1253:A:O5'	1:2:1527:C:N4	2.48	0.46
1:2:1269:G:H22	1:2:1513:C:H1'	1.80	0.46
1:2:1568:C:H5'	21:T:41:LYS:NZ	2.31	0.46
5:D:23:GLU:OE2	5:D:27:ARG:NH2	2.47	0.46
9:H:112:ASN:OD1	9:H:112:ASN:N	2.48	0.46
18:Q:105:LYS:NZ	18:Q:108:ILE:HD11	2.29	0.46
22:U:75:LYS:H	22:U:75:LYS:HD2	1.80	0.46
1:2:563:G:O2'	1:2:564:A:H8	1.98	0.46
1:2:1046:U:H2'	1:2:1047:C:O4'	2.16	0.46
1:2:1215:C:O2'	1:2:1645:C:OP2	2.28	0.46
1:2:1262:C:H1'	31:d:17:GLY:H	1.81	0.46
1:2:1339:U:H2'	1:2:1340:U:C6	2.51	0.46
4:C:263:LYS:HG2	4:C:268:GLU:HB2	1.98	0.46
5:D:64:ARG:NH1	12:K:73:ASN:OD1	2.45	0.46
15:N:31:ASP:OD1	15:N:32:ASP:N	2.49	0.46
17:P:98:ASN:HB3	17:P:103:ASN:OD1	2.16	0.46
18:Q:112:LEU:HD21	18:Q:119:LEU:HB2	1.98	0.46
35:h:2:ARG:HB3	35:h:5:TRP:CD1	2.50	0.46
1:2:71:G:H1'	1:2:72:C:H6	1.80	0.46
1:2:908:A:H2'	1:2:908:A:N3	2.31	0.46
1:2:1084:A:OP1	1:2:1858:G:O2'	2.28	0.46
1:2:1256:G:H8	22:U:77:TRP:HZ3	1.64	0.46
1:2:1332:A:O4'	1:2:1500:G:N1	2.48	0.46
4:C:232:THR:O	4:C:232:THR:OG1	2.34	0.46
4:C:263:LYS:HD3	4:C:268:GLU:HA	1.97	0.46
7:F:147:VAL:O	7:F:151:ILE:HG13	2.15	0.46
7:F:167:LYS:HZ1	7:F:171:GLU:HB2	1.81	0.46
10:I:113:TYR:OH	10:I:119:LEU:HB2	2.16	0.46
14:M:49:LEU:HD13	14:M:128:PHE:HB2	1.98	0.46
14:M:61:TYR:HB2	33:f:100:LEU:HD13	1.98	0.46
18:Q:102:GLU:HA	18:Q:105:LYS:HB3	1.98	0.46
19:R:10:LYS:HD2	19:R:53:TYR:CE2	2.51	0.46
19:R:60:ARG:HD2	19:R:60:ARG:HA	1.75	0.46
19:R:67:ARG:HG3	19:R:68:GLY:N	2.29	0.46
20:S:106:LYS:HD3	20:S:106:LYS:HA	1.60	0.46
1:2:1523:C:H42	17:P:135:ALA:HB1	1.81	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1630:A:H2'	1:2:1631:U:H6	1.81	0.46
2:A:85:ARG:HH12	2:A:205:ARG:HH21	1.64	0.46
7:F:153:LEU:CD2	7:F:189:ALA:HA	2.46	0.46
22:U:37:ALA:HA	22:U:40:ILE:HG22	1.97	0.46
34:g:125:ARG:HB3	34:g:150:TRP:NE1	2.30	0.46
1:2:122:G:H1'	6:E:145:ARG:HA	1.97	0.46
1:2:160:U:O2'	1:2:161:U:H3'	2.16	0.46
1:2:352:U:H2'	1:2:353:C:C6	2.51	0.46
1:2:959:G:OP2	16:O:38:ASN:ND2	2.33	0.46
1:2:1016:U:C6	15:N:61:ALA:HB1	2.51	0.46
3:B:128:LYS:HB2	3:B:128:LYS:HE2	1.68	0.46
11:J:84:ILE:HA	11:J:150:ARG:HA	1.97	0.46
14:M:26:LEU:HD12	14:M:31:LEU:HD21	1.98	0.46
16:O:40:THR:O	16:O:58:GLY:N	2.46	0.46
16:O:45:THR:HA	16:O:52:THR:HA	1.97	0.46
17:P:59:ARG:NH1	17:P:76:VAL:HG12	2.31	0.46
20:S:117:ILE:O	20:S:118:ARG:HG3	2.16	0.46
1:2:1373:C:OP1	19:R:7:LYS:HE2	2.16	0.46
1:2:1445:U:H5"	1:2:1446:A:OP1	2.16	0.46
1:2:1606:G:N7	1:2:1632:G:H8	2.14	0.46
4:C:74:LYS:HA	4:C:74:LYS:HD3	1.65	0.46
8:G:10:THR:HB	8:G:128:THR:HA	1.98	0.46
21:T:16:ARG:NE	21:T:16:ARG:HA	2.31	0.46
25:X:128:VAL:HG12	25:X:138:LYS:HD3	1.98	0.46
1:2:376:A:H2'	1:2:377:G:O4'	2.16	0.45
1:2:526:A:OP1	32:e:35:ARG:NH1	2.49	0.45
1:2:943:U:H2'	1:2:944:A:C8	2.50	0.45
1:2:1606:G:C6	1:2:1632:G:H1'	2.51	0.45
12:K:13:GLU:HG3	12:K:83:LEU:HD21	1.97	0.45
20:S:33:ILE:HD13	20:S:99:LEU:HD13	1.97	0.45
31:d:44:ARG:HA	31:d:44:ARG:HE	1.80	0.45
1:2:170:A:OP1	8:G:137:ARG:N	2.41	0.45
1:2:1510:G:H2'	1:2:1511:U:C6	2.51	0.45
1:2:1617:G:H1'	31:d:14:PHE:CZ	2.51	0.45
1:2:1620:A:H8	1:2:1624:U:OP1	1.99	0.45
1:2:1852:C:OP2	35:h:1:MET:HG3	2.15	0.45
2:A:14:ASP:HB3	2:A:177:MET:HE1	1.97	0.45
9:H:181:THR:HG22	9:H:183:LYS:H	1.81	0.45
17:P:76:VAL:HG23	17:P:94:VAL:HG13	1.98	0.45
17:P:86:LEU:HG	17:P:88:GLU:H	1.81	0.45
1:2:314:U:H5	1:2:336:A:N1	2.15	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1395:C:O2'	1:2:1450:G:N2	2.49	0.45
1:2:1733:U:H2'	1:2:1734:G:O4'	2.17	0.45
4:C:257:LYS:O	23:V:16:LYS:NZ	2.45	0.45
5:D:202:LYS:HE3	5:D:202:LYS:HB2	1.84	0.45
10:I:119:LEU:HB3	10:I:120:PRO:CD	2.47	0.45
11:J:95:ASP:OD1	11:J:95:ASP:N	2.50	0.45
12:K:14:LEU:HA	12:K:17:LYS:HG2	1.98	0.45
14:M:69:CYS:O	14:M:73:GLN:N	2.49	0.45
19:R:10:LYS:O	19:R:14:ARG:HG3	2.16	0.45
26:Y:26:ASP:OD1	26:Y:26:ASP:N	2.50	0.45
1:2:67:C:C6	8:G:162:LEU:HD11	2.51	0.45
1:2:1269:G:O2'	1:2:1270:G:O4'	2.26	0.45
1:2:1387:G:H2'	1:2:1388:A:O4'	2.17	0.45
1:2:1548:G:H1	1:2:1655:C:HO2'	1.64	0.45
3:B:164:ILE:O	3:B:168:MET:HG3	2.16	0.45
5:D:34:TYR:HA	5:D:52:ALA:HB2	1.99	0.45
18:Q:27:ARG:H	18:Q:27:ARG:HD2	1.81	0.45
26:Y:12:PHE:HZ	26:Y:21:LYS:HD3	1.82	0.45
26:Y:74:MET:HE1	26:Y:90:ARG:NH2	2.31	0.45
27:Z:74:SER:HA	27:Z:79:ILE:HG12	1.99	0.45
1:2:65:C:C6	8:G:174:PRO:HB3	2.51	0.45
1:2:546:G:H4'	1:2:548:C:N4	2.31	0.45
1:2:831:G:N7	26:Y:11:LYS:NZ	2.61	0.45
1:2:1364:U:H2'	1:2:1365:G:H5'	1.99	0.45
1:2:1375:G:H2'	1:2:1376:A:C8	2.51	0.45
1:2:1866:A:N6	28:a:84:VAL:HB	2.32	0.45
4:C:121:ARG:NH1	4:C:123:ARG:HG3	2.32	0.45
5:D:203:PRO:HG2	19:R:42:PRO:HG3	1.98	0.45
16:O:33:ILE:HD12	16:O:95:ILE:HG23	1.98	0.45
20:S:40:TYR:OH	20:S:83:PHE:O	2.33	0.45
21:T:6:VAL:HG22	21:T:14:PHE:CZ	2.52	0.45
22:U:26:SER:HB2	22:U:110:VAL:HG13	1.99	0.45
34:g:36:ARG:CB	34:g:65:PHE:HB3	2.46	0.45
34:g:65:PHE:N	34:g:65:PHE:CD1	2.83	0.45
34:g:181:ASN:OD1	34:g:182:CYS:N	2.49	0.45
1:2:106:C:H2'	1:2:107:A:C8	2.51	0.45
1:2:443:U:H2'	1:2:444:G:O4'	2.17	0.45
1:2:1869:A:C5	28:a:39:PHE:HE2	2.35	0.45
3:B:192:SER:HA	3:B:195:LYS:HE2	1.99	0.45
5:D:74:GLN:CD	5:D:81:GLU:HA	2.42	0.45
7:F:95:HIS:ND1	7:F:98:GLU:OE2	2.38	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:G:200:LYS:HB2	8:G:200:LYS:HE3	1.59	0.45
17:P:21:ASP:O	17:P:25:LEU:HD12	2.17	0.45
21:T:124:THR:HG23	21:T:127:GLY:H	1.82	0.45
1:2:1263:U:O2'	1:2:1264:C:OP1	2.30	0.45
1:2:1344:A:N1	1:2:1385:G:O2'	2.37	0.45
1:2:1548:G:N2	1:2:1655:C:HO2'	2.15	0.45
1:2:1630:A:H2'	1:2:1631:U:C6	2.52	0.45
3:B:225:LEU:HD11	3:B:229:MET:HE2	1.99	0.45
5:D:148:LYS:HG2	5:D:150:MET:HG2	1.98	0.45
8:G:85:ARG:O	8:G:87:ARG:NH1	2.49	0.45
14:M:41:ALA:HB1	14:M:47:ALA:HB2	1.99	0.45
16:O:103:ASN:OD1	16:O:139:SER:HB2	2.17	0.45
19:R:73:LEU:O	19:R:76:GLU:HG3	2.16	0.45
34:g:34:ALA:HB2	34:g:69:VAL:HB	1.98	0.45
34:g:114:SER:HA	34:g:156:PHE:CE2	2.51	0.45
1:2:551:U:H2'	1:2:552:G:O4'	2.16	0.45
1:2:904:A:H4'	1:2:905:C:C5	2.52	0.45
1:2:948:C:H2'	1:2:949:G:H8	1.82	0.45
1:2:1330:G:H4'	1:2:1331:C:H3'	1.98	0.45
1:2:1544:C:N3	1:2:1589:A:C6	2.85	0.45
1:2:1666:C:H2'	1:2:1667:U:O4'	2.16	0.45
1:2:1704:C:H2'	1:2:1705:C:C6	2.51	0.45
1:2:1780:G:H4'	1:2:1781:A:C5	2.52	0.45
3:B:188:LEU:HD11	3:B:215:VAL:HG21	1.98	0.45
7:F:59:LYS:HG2	7:F:60:ARG:N	2.32	0.45
10:I:87:ASN:HB3	10:I:90:LEU:HG	1.98	0.45
14:M:18:LEU:O	14:M:21:VAL:HG12	2.17	0.45
18:Q:106:LYS:HA	18:Q:109:LYS:HG2	1.99	0.45
1:2:1335:G:OP2	5:D:185:LYS:HE3	2.17	0.45
1:2:1373:C:H2'	1:2:1374:C:C6	2.52	0.45
1:2:1493:C:N3	1:2:1499:U:C2	2.85	0.45
1:2:1548:G:N2	1:2:1655:C:O2'	2.50	0.45
7:F:204:ARG:HG2	30:c:63:ARG:CZ	2.47	0.45
18:Q:32:ILE:HG23	18:Q:68:ILE:HB	1.99	0.45
18:Q:96:TYR:HE2	18:Q:105:LYS:HA	1.82	0.45
19:R:99:ASP:O	19:R:103:LYS:HG3	2.17	0.45
20:S:12:ILE:CG2	20:S:14:ARG:HH21	2.29	0.45
21:T:8:ASP:OD1	21:T:9:VAL:N	2.50	0.45
1:2:106:C:OP1	1:2:431:G:O2'	2.32	0.45
1:2:685:A:H2'	1:2:686:U:O4'	2.16	0.45
1:2:1120:U:P	29:b:72:ARG:HH12	2.40	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1606:G:P	21:T:84:ARG:HH21	2.38	0.45
5:D:72:VAL:HG13	12:K:68:TYR:CD1	2.52	0.45
20:S:9:PHE:CE1	20:S:57:GLY:HA2	2.52	0.45
22:U:99:LYS:O	22:U:103:SER:OG	2.24	0.45
29:b:36:LYS:HB2	29:b:78:SER:OG	2.17	0.45
1:2:1439:A:C2	1:2:1440:C:H4'	2.52	0.44
2:A:73:ASP:HB3	2:A:120:ARG:HB2	1.99	0.44
13:L:107:LYS:HE2	13:L:107:LYS:HB3	1.80	0.44
17:P:75:VAL:HG22	17:P:93:MET:SD	2.56	0.44
20:S:54:LYS:HD2	20:S:58:GLU:HB2	1.99	0.44
27:Z:56:ASP:O	27:Z:57:LYS:HG2	2.17	0.44
28:a:66:LYS:HE2	28:a:66:LYS:HB2	1.69	0.44
34:g:5:MET:HE2	34:g:310:TRP:O	2.17	0.44
1:2:317:C:OP2	8:G:183:ARG:NH1	2.43	0.44
1:2:1258:A:N7	1:2:1661:A:N6	2.66	0.44
1:2:1618:C:H4'	17:P:41:GLN:HE21	1.82	0.44
2:A:160:ALA:HB3	23:V:66:ASP:OD2	2.16	0.44
3:B:199:LYS:HE3	3:B:199:LYS:HB3	1.49	0.44
5:D:201:LYS:HD3	5:D:201:LYS:HA	1.87	0.44
7:F:63:LYS:H	7:F:63:LYS:HG2	1.44	0.44
10:I:135:GLU:O	10:I:139:LYS:N	2.50	0.44
14:M:85:LEU:O	14:M:89:VAL:HG13	2.16	0.44
34:g:99:ARG:HD3	34:g:101:PHE:CZ	2.52	0.44
1:2:211:G:P	1:2:211:G:H8	2.41	0.44
1:2:1274:G:H21	12:K:47:LYS:HD3	1.82	0.44
2:A:138:SER:HB2	2:A:156:TYR:CE1	2.52	0.44
3:B:139:CYS:CB	3:B:172:MET:HE1	2.48	0.44
7:F:204:ARG:NH1	30:c:63:ARG:HG3	2.33	0.44
10:I:142:SER:O	10:I:146:GLN:HB2	2.18	0.44
13:L:121:GLN:N	13:L:124:ASP:OD2	2.47	0.44
21:T:49:ASP:C	21:T:51:ASN:H	2.24	0.44
28:a:41:ILE:HG12	28:a:68:TYR:CE1	2.52	0.44
34:g:208:ALA:HA	34:g:218:LEU:HA	1.99	0.44
1:2:444:G:N1	1:2:447:A:OP2	2.49	0.44
1:2:862:A:C8	24:W:107:SER:HA	2.52	0.44
1:2:1047:C:H4'	16:O:142:ARG:O	2.17	0.44
1:2:1862:G:O6	28:a:34:LYS:HE2	2.17	0.44
2:A:67:ALA:HB2	23:V:37:ALA:HB2	1.98	0.44
3:B:187:LYS:HB3	3:B:187:LYS:HE2	1.72	0.44
4:C:216:MET:HE3	4:C:216:MET:HB3	1.76	0.44
11:J:53:ILE:HD13	11:J:81:LEU:HD21	1.98	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:M:86:GLY:O	14:M:89:VAL:HG22	2.17	0.44
34:g:79:LEU:HB2	34:g:87:LEU:HD11	2.00	0.44
34:g:162:ASN:OD1	34:g:162:ASN:N	2.51	0.44
1:2:96:C:O2	1:2:473:A:O2'	2.33	0.44
1:2:531:A:H62	1:2:552:G:N2	2.13	0.44
1:2:952:G:N2	16:O:52:THR:HG21	2.28	0.44
1:2:1255:G:OP2	1:2:1257:G:N2	2.50	0.44
1:2:1511:U:OP1	1:2:1514:G:N1	2.44	0.44
1:2:1568:C:P	21:T:41:LYS:HZ1	2.40	0.44
2:A:59:LEU:HD23	2:A:59:LEU:HA	1.82	0.44
3:B:165:ARG:HG2	3:B:169:MET:HE2	2.00	0.44
7:F:33:ILE:HG23	7:F:34:SER:N	2.32	0.44
7:F:69:VAL:HA	7:F:72:LEU:HD21	1.99	0.44
7:F:100:ILE:HG13	7:F:101:HIS:N	2.32	0.44
10:I:147:LYS:O	10:I:151:GLU:HG3	2.17	0.44
10:I:162:LEU:HD23	10:I:162:LEU:HA	1.83	0.44
10:I:165:GLN:HB3	10:I:171:LEU:HD23	2.00	0.44
11:J:151:LEU:HD23	11:J:151:LEU:HA	1.90	0.44
20:S:33:ILE:HG21	20:S:99:LEU:HD13	1.99	0.44
34:g:18:VAL:HA	34:g:35:SER:HA	1.98	0.44
1:2:126:G:H5'	8:G:195:LYS:HZ2	1.82	0.44
1:2:1260:A:N7	1:2:1261:C:N4	2.66	0.44
1:2:1455:A:C6	1:2:1456:G:C8	3.05	0.44
2:A:70:ASN:C	2:A:70:ASN:HD22	2.25	0.44
5:D:57:ASN:OD1	5:D:57:ASN:N	2.49	0.44
5:D:185:LYS:HD2	5:D:187:LYS:NZ	2.33	0.44
6:E:73:ASP:HA	6:E:164:LEU:HD13	1.99	0.44
10:I:57:ALA:HB2	10:I:183:GLY:HA2	1.99	0.44
11:J:134:HIS:CE1	11:J:164:PRO:HD2	2.53	0.44
13:L:22:ARG:NH2	13:L:27:GLU:HG3	2.32	0.44
17:P:14:LYS:HE3	17:P:14:LYS:HB3	1.76	0.44
18:Q:32:ILE:HB	18:Q:39:LEU:HD11	2.00	0.44
22:U:21:ARG:HB3	22:U:115:THR:HG23	1.98	0.44
22:U:91:LEU:HD13	22:U:98:VAL:HG11	1.99	0.44
27:Z:92:LEU:HD11	27:Z:109:TYR:CE2	2.52	0.44
1:2:1593:C:OP1	27:Z:103:HIS:HA	2.17	0.44
10:I:123:ARG:HG2	10:I:128:LYS:NZ	2.33	0.44
32:e:33:LYS:O	32:e:37:GLN:HG3	2.18	0.44
1:2:43:U:OP2	1:2:485:A:N6	2.47	0.44
1:2:1279:C:H2'	1:2:1280:G:C8	2.53	0.44
28:a:19:GLN:OE1	28:a:19:GLN:N	2.27	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:g:78:ALA:HB3	34:g:90:TRP:HD1	1.83	0.44
7:F:91:ARG:HH21	7:F:95:HIS:CE1	2.35	0.44
18:Q:16:LYS:HB3	18:Q:83:ALA:HB2	1.99	0.44
22:U:68:THR:O	22:U:68:THR:OG1	2.36	0.44
34:g:277:THR:HG23	34:g:278:SER:H	1.83	0.44
34:g:297:THR:CG2	34:g:309:VAL:HG22	2.48	0.44
36:n:165:TYR:O	36:n:169:VAL:HG13	2.17	0.44
1:2:542:U:H3'	1:2:543:C:O4'	2.18	0.43
1:2:643:A:OP1	11:J:41:ARG:NH2	2.51	0.43
1:2:649:U:H1'	25:X:45:SER:HB3	2.00	0.43
1:2:1241:A:H2'	1:2:1242:U:C6	2.53	0.43
1:2:1252:C:H5"	1:2:1254:C:P	2.57	0.43
1:2:1254:C:H1'	22:U:71:GLY:N	2.27	0.43
5:D:116:ARG:NH1	5:D:117:ARG:HB2	2.33	0.43
7:F:86:LYS:O	7:F:89:THR:OG1	2.18	0.43
9:H:60:ILE:HD11	9:H:92:VAL:HG22	2.00	0.43
16:O:45:THR:OG1	16:O:49:GLY:HA2	2.18	0.43
22:U:62:ARG:HA	22:U:79:ARG:NH1	2.33	0.43
26:Y:23:MET:HE3	26:Y:23:MET:HB3	1.86	0.43
27:Z:58:LEU:O	27:Z:58:LEU:HD13	2.18	0.43
1:2:165:G:H1'	8:G:110:ASN:HD22	1.82	0.43
1:2:528:A:H2'	1:2:529:A:H8	1.83	0.43
1:2:1276:A:H61	1:2:1321:G:H1'	1.83	0.43
1:2:1581:C:OP2	1:2:1582:C:N4	2.49	0.43
1:2:1635:C:O2'	1:2:1638:G:N2	2.51	0.43
1:2:1660:C:H5	31:d:32:ARG:HB2	1.84	0.43
1:2:1705:C:H2'	1:2:1706:G:H8	1.83	0.43
4:C:75:ILE:HG21	4:C:81:ILE:CD1	2.48	0.43
5:D:46:THR:O	5:D:84:VAL:HA	2.18	0.43
5:D:109:LEU:HD13	5:D:175:VAL:HG21	2.00	0.43
7:F:126:THR:O	7:F:136:ARG:HB3	2.18	0.43
10:I:77:ARG:NH2	10:I:79:ILE:HG12	2.32	0.43
34:g:18:VAL:HG12	34:g:35:SER:HB2	2.00	0.43
1:2:630:U:H5	36:n:168:GLY:HA3	1.83	0.43
1:2:809:A:H2'	1:2:810:A:O4'	2.18	0.43
1:2:913:A:O2'	9:H:67:PRO:HD3	2.19	0.43
3:B:121:ILE:HG12	3:B:161:VAL:HG13	2.01	0.43
4:C:71:LYS:O	4:C:71:LYS:HG3	2.18	0.43
4:C:74:LYS:HB3	4:C:269:PHE:CD2	2.54	0.43
7:F:167:LYS:HA	7:F:167:LYS:HD2	1.59	0.43
9:H:107:LYS:HB2	9:H:107:LYS:HE3	1.59	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:L:90:ARG:HD2	13:L:109:MET:HE2	1.98	0.43
18:Q:53:GLU:O	18:Q:56:LEU:HD23	2.18	0.43
31:d:17:GLY:HA2	31:d:27:ARG:HD3	2.01	0.43
34:g:133:ASN:HD21	34:g:137:VAL:H	1.65	0.43
1:2:433:A:H2'	1:2:434:G:C8	2.53	0.43
1:2:913:A:N6	9:H:120:ARG:HD3	2.34	0.43
1:2:1225:U:H5	1:2:1641:A:C8	2.37	0.43
1:2:1496:U:O4	1:2:1498:A:N6	2.51	0.43
2:A:140:VAL:HG23	2:A:142:LEU:HB2	2.01	0.43
10:I:139:LYS:HB2	10:I:139:LYS:HE3	1.88	0.43
14:M:71:GLU:HG3	33:f:114:ILE:HD11	2.00	0.43
18:Q:35:ASN:HD21	18:Q:72:VAL:H	1.65	0.43
18:Q:43:GLU:HB2	18:Q:44:PRO:HD3	2.01	0.43
19:R:76:GLU:O	19:R:79:GLU:HG3	2.19	0.43
21:T:39:LEU:HD13	21:T:99:VAL:HG21	2.01	0.43
21:T:99:VAL:O	21:T:103:VAL:HG23	2.19	0.43
22:U:65:THR:HG23	31:d:40:ARG:HG2	1.99	0.43
34:g:191:HIS:NE2	34:g:195:LEU:HD11	2.34	0.43
1:2:145:G:O6	8:G:178:ARG:NH2	2.52	0.43
1:2:434:G:OP1	10:I:23:LYS:HG2	2.19	0.43
1:2:908:A:C5	1:2:909:G:C8	3.07	0.43
1:2:956:G:O5'	16:O:60:MET:HG2	2.19	0.43
1:2:1449:G:H2'	1:2:1450:G:C8	2.53	0.43
8:G:181:THR:HG22	8:G:182:PRO:HD2	2.01	0.43
16:O:75:MET:HE2	16:O:75:MET:HB3	1.81	0.43
16:O:119:LEU:HD23	16:O:119:LEU:HA	1.88	0.43
18:Q:86:GLN:HG2	18:Q:90:LYS:HD3	1.99	0.43
22:U:39:LEU:HD13	22:U:39:LEU:HA	1.90	0.43
22:U:81:GLN:NE2	22:U:83:ARG:H	2.15	0.43
23:V:1:MET:O	23:V:9:VAL:HG22	2.18	0.43
1:2:453:C:O2'	8:G:92:ARG:O	2.31	0.43
1:2:682:U:O2'	24:W:4:MET:SD	2.73	0.43
1:2:1258:A:OP2	1:2:1659:U:H1'	2.18	0.43
4:C:74:LYS:HD2	4:C:269:PHE:CD1	2.53	0.43
4:C:74:LYS:HE3	4:C:272:HIS:CE1	2.54	0.43
5:D:37:VAL:HG22	5:D:50:ILE:HG13	2.01	0.43
5:D:163:PRO:HA	5:D:166:TYR:CZ	2.54	0.43
9:H:46:THR:HG21	9:H:97:GLN:HG2	2.00	0.43
15:N:13:GLN:HG3	29:b:21:LYS:HE3	2.00	0.43
17:P:33:LEU:HD23	17:P:37:TYR:HD1	1.83	0.43
18:Q:101:ASP:HA	34:g:56:GLN:OE1	2.18	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:R:14:ARG:O	19:R:18:GLU:HB2	2.18	0.43
20:S:39:ARG:CZ	20:S:39:ARG:HB3	2.48	0.43
21:T:102:ARG:HA	21:T:105:GLN:OE1	2.19	0.43
22:U:46:LYS:HE2	22:U:48:LEU:HD11	1.99	0.43
23:V:28:ASP:OD2	23:V:31:SER:HB3	2.19	0.43
26:Y:6:THR:HB	26:Y:28:LEU:HB2	2.01	0.43
1:2:65:C:O2'	8:G:160:LYS:HE3	2.19	0.43
1:2:953:C:H2'	1:2:954:U:C6	2.54	0.43
3:B:92:GLN:O	3:B:95:ASN:HB2	2.19	0.43
3:B:112:SER:O	3:B:115:LYS:NZ	2.52	0.43
5:D:63:GLY:O	5:D:67:ARG:HG2	2.19	0.43
5:D:76:ARG:HB2	12:K:68:TYR:HE1	1.83	0.43
9:H:36:LEU:HD13	9:H:75:ILE:HD12	1.99	0.43
15:N:89:TYR:CE2	15:N:150:VAL:HG13	2.53	0.43
16:O:93:LEU:O	16:O:127:GLY:N	2.40	0.43
1:2:1025:U:H2'	1:2:1026:C:O4'	2.18	0.43
1:2:1087:A:OP1	28:a:3:LYS:HD2	2.19	0.43
1:2:1667:U:H5'	18:Q:141:TYR:CE2	2.54	0.43
2:A:69:GLU:OE1	2:A:69:GLU:N	2.50	0.43
7:F:201:LYS:HE3	7:F:201:LYS:CA	2.39	0.43
10:I:144:LYS:O	10:I:147:LYS:HG2	2.19	0.43
12:K:1:MET:SD	12:K:51:SER:HB3	2.59	0.43
20:S:75:ARG:HH22	20:S:84:LEU:HD12	1.84	0.43
27:Z:53:ALA:HB2	27:Z:77:LEU:HD11	2.00	0.43
33:f:104:LYS:HD3	33:f:131:PHE:CD2	2.54	0.43
34:g:297:THR:HG21	34:g:309:VAL:HG22	2.01	0.43
1:2:1139:C:H2'	1:2:1140:G:O4'	2.18	0.43
7:F:141:VAL:HB	7:F:146:ARG:HG3	2.01	0.43
10:I:177:SER:O	10:I:179:PRO:HD3	2.18	0.43
26:Y:44:LEU:HD13	26:Y:44:LEU:HA	1.85	0.43
34:g:127:LYS:HE3	34:g:127:LYS:HB2	1.80	0.43
1:2:1206:G:H1'	1:2:1834:A:C4	2.54	0.43
2:A:12:GLU:HG2	19:R:114:LEU:HD21	2.01	0.43
2:A:143:PRO:HG3	23:V:32:ILE:HB	2.00	0.43
4:C:129:ALA:C	4:C:216:MET:HE1	2.44	0.43
12:K:47:LYS:HA	12:K:50:GLN:HG2	2.01	0.43
16:O:53:ILE:HG23	16:O:88:LEU:HD13	2.01	0.43
17:P:130:ARG:HD3	17:P:130:ARG:N	2.32	0.43
18:Q:17:LYS:O	18:Q:126:ARG:NH1	2.40	0.43
18:Q:58:LEU:HD11	18:Q:63:PHE:CD2	2.54	0.43
29:b:36:LYS:HE2	29:b:36:LYS:HA	2.00	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:g:249:CYS:HB2	34:g:258:ILE:HG12	2.00	0.43
1:2:387:C:OP2	10:I:10:LYS:HE3	2.19	0.42
1:2:476:A:N3	1:2:488:U:O2'	2.34	0.42
1:2:533:A:H2'	1:2:534:G:C8	2.54	0.42
1:2:961:G:OP1	16:O:149:ARG:NH2	2.47	0.42
1:2:1305:C:H2'	1:2:1306:U:H5	1.83	0.42
1:2:1319:U:OP1	1:2:1505:U:N3	2.52	0.42
1:2:1533:A:C8	1:2:1604:G:H1'	2.54	0.42
1:2:1542:C:H5'	21:T:62:ARG:HH21	1.84	0.42
1:2:1702:G:H2'	1:2:1703:C:O4'	2.19	0.42
1:2:1844:U:H2'	1:2:1845:A:C8	2.54	0.42
3:B:100:PHE:HB3	3:B:181:LEU:HD21	1.99	0.42
4:C:75:ILE:HG21	4:C:81:ILE:HD12	2.01	0.42
8:G:225:GLN:HA	8:G:228:ILE:HG22	2.01	0.42
9:H:51:ILE:HG21	9:H:179:LYS:HG2	2.00	0.42
34:g:260:ASP:HB2	34:g:264:LYS:H	1.84	0.42
1:2:398:A:OP1	1:2:399:C:O2'	2.31	0.42
1:2:1270:G:N2	1:2:1298:G:N7	2.67	0.42
2:A:2:SER:OG	23:V:80:SER:OG	2.36	0.42
3:B:82:ARG:NH1	3:B:191:ASP:OD2	2.52	0.42
3:B:97:LEU:HG	3:B:232:HIS:ND1	2.34	0.42
4:C:172:ASN:ND2	11:J:95:ASP:OD2	2.46	0.42
4:C:254:ASP:HB2	23:V:1:MET:HG2	2.01	0.42
16:O:113:GLN:NE2	28:a:45:VAL:HA	2.30	0.42
18:Q:52:LEU:O	18:Q:55:VAL:HG22	2.20	0.42
1:2:495:U:O2'	6:E:27:PHE:O	2.37	0.42
1:2:1272:C:H4'	12:K:2:LEU:HD12	2.01	0.42
1:2:1348:G:C8	1:2:1349:G:C8	3.07	0.42
1:2:1388:A:H2'	1:2:1389:C:H5'	1.99	0.42
1:2:1667:U:H2'	1:2:1668:U:C6	2.53	0.42
3:B:164:ILE:HG22	3:B:168:MET:HE3	2.01	0.42
5:D:24:PHE:O	5:D:28:GLU:HG3	2.19	0.42
5:D:123:LEU:HD11	5:D:154:ASP:HB2	2.01	0.42
7:F:20:PHE:HD2	7:F:23:TRP:CD1	2.37	0.42
10:I:153:LYS:O	10:I:156:ALA:HB2	2.19	0.42
14:M:21:VAL:HG23	14:M:112:LYS:NZ	2.34	0.42
24:W:39:THR:O	24:W:43:LYS:HG2	2.19	0.42
34:g:133:ASN:HD21	34:g:137:VAL:N	2.18	0.42
1:2:595:U:H2'	1:2:596:U:C6	2.54	0.42
1:2:643:A:OP1	11:J:38:ARG:NH1	2.52	0.42
1:2:1330:G:N2	1:2:1333:U:OP2	2.44	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1471:C:H2'	1:2:1472:C:O4'	2.20	0.42
4:C:203:GLY:H	4:C:221:ASP:HB3	1.84	0.42
7:F:75:SER:C	7:F:77:MET:H	2.28	0.42
7:F:138:ALA:HB3	7:F:204:ARG:HG3	2.01	0.42
16:O:56:VAL:HG22	16:O:81:VAL:CG2	2.48	0.42
16:O:74:ALA:HB1	16:O:115:ALA:HB2	2.02	0.42
20:S:58:GLU:HG3	27:Z:50:PHE:HE2	1.84	0.42
34:g:57:ARG:NH2	34:g:59:LEU:HD22	2.34	0.42
1:2:609:U:H2'	1:2:610:G:H8	1.83	0.42
1:2:1804:U:H4'	1:2:1805:G:OP1	2.19	0.42
3:B:178:THR:HG23	3:B:179:ASN:OD1	2.19	0.42
9:H:76:GLN:HG2	9:H:135:PHE:CD2	2.54	0.42
18:Q:21:ALA:HB2	18:Q:72:VAL:HG22	2.01	0.42
19:R:80:ARG:HD3	19:R:80:ARG:HA	1.84	0.42
34:g:3:GLU:HG3	34:g:247:TRP:CH2	2.54	0.42
1:2:96:C:H2'	1:2:97:U:C6	2.54	0.42
1:2:375:U:H2'	1:2:376:A:C8	2.54	0.42
1:2:1445:U:H4'	22:U:57:PRO:HG3	2.02	0.42
1:2:1526:G:H2'	1:2:1528:G:O6	2.19	0.42
3:B:136:ARG:HB3	3:B:216:LYS:HG3	2.01	0.42
7:F:79:HIS:CE1	7:F:156:THR:HG23	2.54	0.42
10:I:34:ALA:HB2	10:I:56:ARG:HD3	2.01	0.42
17:P:51:ARG:HH12	31:d:4:GLN:HB3	1.85	0.42
19:R:67:ARG:NH1	19:R:67:ARG:HG3	2.35	0.42
26:Y:53:ASP:OD1	26:Y:54:VAL:HG13	2.19	0.42
34:g:260:ASP:HB3	34:g:262:GLU:H	1.84	0.42
1:2:576:A:H4'	1:2:577:U:H5	1.84	0.42
1:2:682:U:H2'	1:2:683:G:O4'	2.19	0.42
1:2:909:G:C2	1:2:910:G:C5	3.07	0.42
5:D:75:LYS:NZ	12:K:20:VAL:HB	2.35	0.42
9:H:148:LEU:HA	9:H:148:LEU:HD12	1.84	0.42
1:2:51:U:H2'	1:2:52:G:C8	2.54	0.42
1:2:384:U:H5'	13:L:133:PRO:O	2.20	0.42
1:2:1285:G:C6	14:M:36:ARG:HB2	2.55	0.42
1:2:1666:C:O2'	1:2:1667:U:P	2.77	0.42
2:A:70:ASN:HB3	2:A:73:ASP:OD2	2.19	0.42
6:E:192:ILE:HB	6:E:243:GLY:HA3	2.00	0.42
8:G:133:LEU:HD12	8:G:133:LEU:HA	1.76	0.42
18:Q:21:ALA:HA	18:Q:71:ARG:O	2.19	0.42
19:R:58:MET:HA	19:R:61:ILE:HG22	2.02	0.42
22:U:67:LYS:HA	22:U:67:LYS:HD2	1.78	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:d:21:CYS:HB2	31:d:37:ASN:C	2.45	0.42
1:2:1300:U:C2	31:d:5:GLN:HG3	2.55	0.42
1:2:1447:G:H2'	1:2:1448:A:C8	2.54	0.42
1:2:1659:U:OP1	31:d:31:ILE:HG23	2.20	0.42
1:2:1723:G:H2'	1:2:1724:A:H8	1.85	0.42
1:2:1780:G:H4'	1:2:1781:A:N7	2.35	0.42
4:C:94:ILE:HG22	4:C:102:LEU:HD11	2.02	0.42
5:D:109:LEU:HD11	5:D:115:VAL:HB	2.01	0.42
5:D:158:ILE:HG12	5:D:189:MET:HE3	2.02	0.42
6:E:19:MET:HE3	6:E:19:MET:HB2	1.82	0.42
7:F:127:ARG:HA	7:F:136:ARG:HB3	2.02	0.42
9:H:76:GLN:HG2	9:H:135:PHE:HD2	1.85	0.42
10:I:129:LEU:HD11	10:I:134:GLU:HB3	2.01	0.42
16:O:20:GLN:H	16:O:20:GLN:HG2	1.72	0.42
18:Q:30:GLY:HA3	18:Q:64:ALA:HA	2.02	0.42
21:T:88:MET:SD	21:T:89:PRO:HD2	2.60	0.42
22:U:22:ILE:HD11	22:U:89:ILE:HB	2.00	0.42
22:U:54:VAL:HB	22:U:88:LEU:HB2	2.02	0.42
26:Y:13:MET:HE2	26:Y:13:MET:HB3	1.93	0.42
26:Y:49:LYS:HE2	26:Y:49:LYS:HB2	1.75	0.42
1:2:491:C:C2	1:2:510:G:N2	2.88	0.42
1:2:1546:G:N7	1:2:1654:G:N2	2.68	0.42
1:2:1618:C:N4	31:d:12:ARG:HA	2.35	0.42
8:G:145:PHE:HB3	8:G:147:LEU:HD23	2.01	0.42
23:V:19:ALA:HB2	23:V:68:SER:HB3	2.02	0.42
1:2:54:A:OP1	26:Y:111:LYS:NZ	2.28	0.41
1:2:190:G:N2	1:2:209:A:OP2	2.41	0.41
1:2:1204:A:H5"	4:C:117:ARG:HH11	1.84	0.41
4:C:103:LYS:HB3	4:C:103:LYS:HE3	1.78	0.41
12:K:14:LEU:O	12:K:17:LYS:HG2	2.20	0.41
21:T:40:ALA:HA	21:T:96:SER:H	1.85	0.41
24:W:101:PHE:HA	24:W:113:HIS:CE1	2.55	0.41
34:g:57:ARG:HH21	34:g:59:LEU:HD22	1.85	0.41
1:2:191:A:H62	1:2:208:G:H21	1.67	0.41
1:2:879:C:C2'	1:2:880:G:H4'	2.49	0.41
1:2:1121:G:O2'	3:B:204:ILE:O	2.25	0.41
1:2:1230:C:N4	1:2:1529:C:O2	2.54	0.41
1:2:1258:A:H61	1:2:1660:C:H4'	1.85	0.41
1:2:1493:C:O4'	1:2:1496:U:H5	2.03	0.41
2:A:190:SER:OG	2:A:191:ARG:N	2.53	0.41
7:F:44:LYS:HD3	7:F:44:LYS:HA	1.83	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:F:72:LEU:HD12	7:F:73:THR:N	2.35	0.41
11:J:113:GLN:CD	11:J:154:GLN:HE22	2.27	0.41
12:K:72:THR:OG1	12:K:73:ASN:N	2.53	0.41
17:P:68:PRO:HA	17:P:69:PRO:HD3	1.93	0.41
18:Q:73:LYS:HA	18:Q:73:LYS:HD3	1.72	0.41
18:Q:94:ALA:O	18:Q:98:LYS:HG2	2.20	0.41
19:R:70:SER:C	19:R:71:ILE:HD12	2.46	0.41
19:R:107:LYS:HE3	19:R:107:LYS:HB2	1.74	0.41
34:g:185:LYS:HG3	34:g:186:THR:N	2.35	0.41
34:g:194:TYR:CE1	34:g:196:ASN:HB2	2.55	0.41
1:2:340:C:H2'	1:2:341:C:H6	1.85	0.41
1:2:441:C:H2'	1:2:442:C:C6	2.56	0.41
1:2:674:C:H2'	1:2:675:U:C6	2.55	0.41
1:2:1288:U:H3'	1:2:1289:U:C6	2.55	0.41
1:2:1617:G:H8	17:P:43:ARG:HH22	1.68	0.41
4:C:82:TYR:OH	4:C:162:ILE:HG22	2.21	0.41
5:D:195:THR:CG2	5:D:199:GLY:H	2.23	0.41
21:T:124:THR:HG23	21:T:127:GLY:CA	2.49	0.41
24:W:62:VAL:HG11	29:b:8:LEU:HG	2.00	0.41
24:W:83:LEU:HA	24:W:83:LEU:HD23	1.79	0.41
26:Y:50:THR:OG1	26:Y:51:THR:N	2.52	0.41
1:2:1298:G:N2	1:2:1299:A:H61	2.17	0.41
1:2:1338:G:H2'	1:2:1339:U:C6	2.55	0.41
1:2:1649:U:O2'	1:2:1650:A:OP1	2.33	0.41
1:2:1753:C:C5'	1:2:1754:G:H5"	2.50	0.41
3:B:24:PRO:O	3:B:28:LYS:HG3	2.19	0.41
5:D:103:GLU:HG2	5:D:107:TYR:CD1	2.56	0.41
27:Z:69:THR:O	27:Z:73:VAL:HG23	2.19	0.41
29:b:67:THR:HG21	29:b:72:ARG:HE	1.86	0.41
34:g:47:ARG:NH2	34:g:52:TYR:O	2.53	0.41
1:2:959:G:O6	16:O:65:ASP:HB3	2.20	0.41
1:2:963:A:H2'	1:2:964:A:C8	2.55	0.41
1:2:1189:A:H4'	1:2:1190:A:OP1	2.21	0.41
1:2:1560:U:N3	1:2:1574:C:O2	2.53	0.41
1:2:1845:A:H2'	1:2:1846:G:H8	1.86	0.41
4:C:86:LEU:HD11	4:C:265:PRO:HG2	2.02	0.41
10:I:113:TYR:CE1	10:I:119:LEU:HB2	2.55	0.41
21:T:126:GLN:O	21:T:129:ARG:HB2	2.20	0.41
30:c:10:LYS:HE2	30:c:34:PHE:CE1	2.56	0.41
34:g:129:ILE:HD11	34:g:151:VAL:HG11	2.03	0.41
34:g:165:ILE:HG13	34:g:177:TRP:O	2.20	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:192:C:H2'	1:2:193:C:H6	1.86	0.41
1:2:218:U:H5	10:I:184:ARG:HH12	1.67	0.41
1:2:1683:C:H2'	1:2:1684:C:H2'	2.02	0.41
3:B:139:CYS:HB3	3:B:172:MET:CE	2.47	0.41
4:C:133:TYR:CZ	4:C:216:MET:HG2	2.55	0.41
6:E:183:VAL:HG13	6:E:220:THR:HG21	2.03	0.41
7:F:77:MET:O	7:F:77:MET:HG2	2.20	0.41
15:N:114:ARG:HD3	15:N:114:ARG:HA	1.74	0.41
17:P:57:LEU:HA	17:P:60:LEU:HG	2.02	0.41
18:Q:76:GLY:O	18:Q:80:GLN:HG3	2.20	0.41
32:e:44:ASN:ND2	32:e:44:ASN:O	2.43	0.41
1:2:65:C:C5	8:G:174:PRO:HB3	2.56	0.41
1:2:184:G:H2'	1:2:185:G:H8	1.84	0.41
1:2:491:C:C2	1:2:510:G:N1	2.89	0.41
1:2:868:G:O2'	1:2:869:A:OP1	2.33	0.41
1:2:1100:A:OP1	19:R:132:ARG:NH1	2.54	0.41
1:2:1299:A:C8	17:P:59:ARG:HB3	2.56	0.41
1:2:1469:A:H2'	1:2:1470:C:C6	2.56	0.41
1:2:1510:G:O2'	1:2:1511:U:O4'	2.39	0.41
1:2:1602:U:H2'	1:2:1603:G:N7	2.36	0.41
1:2:1809:A:H8	1:2:1810:U:H5	1.68	0.41
2:A:196:GLU:H	2:A:196:GLU:CD	2.28	0.41
3:B:217:MET:HE2	3:B:220:LYS:HG3	2.03	0.41
5:D:18:LYS:HA	5:D:21:LEU:HG	2.01	0.41
8:G:44:GLU:HG3	8:G:121:ILE:HG13	2.02	0.41
9:H:83:LEU:HB3	9:H:92:VAL:HG21	2.03	0.41
11:J:33:GLY:HA3	32:e:38:TYR:CG	2.56	0.41
17:P:20:VAL:HG13	17:P:24:GLN:CB	2.49	0.41
19:R:20:TYR:CD2	19:R:38:ILE:HB	2.55	0.41
1:2:381:C:OP1	10:I:31:ARG:NH2	2.54	0.41
1:2:1347:U:H2'	1:2:1348:G:N3	2.36	0.41
1:2:1551:U:H2'	1:2:1578:U:H3	1.86	0.41
1:2:1665:G:N2	21:T:87:VAL:HG11	2.35	0.41
1:2:1752:C:N4	1:2:1782:G:C2	2.89	0.41
2:A:2:SER:O	2:A:63:ARG:NH2	2.53	0.41
2:A:124:VAL:HG21	2:A:134:LEU:HD11	2.03	0.41
3:B:48:LEU:HD23	3:B:48:LEU:H	1.86	0.41
4:C:106:VAL:HG22	4:C:128:VAL:HG22	2.02	0.41
4:C:110:MET:HE3	4:C:110:MET:HB2	1.81	0.41
5:D:178:ARG:HD2	5:D:178:ARG:HA	1.84	0.41
21:T:56:ARG:NH2	21:T:78:ILE:HB	2.36	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:T:116:ASP:N	21:T:116:ASP:OD1	2.54	0.41
1:2:381:C:H5'	10:I:48:VAL:HB	2.03	0.41
1:2:1238:U:N3	17:P:124:LYS:O	2.32	0.41
1:2:1567:G:H21	1:2:1567:G:P	2.43	0.41
3:B:30:TRP:CE3	16:O:19:PRO:HG3	2.55	0.41
3:B:106:THR:OG1	3:B:108:ASP:OD1	2.31	0.41
4:C:83:LEU:O	23:V:15:ARG:HD3	2.20	0.41
4:C:166:ARG:HB2	4:C:248:TYR:CD2	2.56	0.41
4:C:270:THR:O	4:C:274:VAL:HG23	2.20	0.41
5:D:17:PHE:HD1	5:D:77:PHE:CD2	2.39	0.41
6:E:86:PHE:O	6:E:87:MET:HB2	2.21	0.41
7:F:41:VAL:HA	7:F:46:ALA:HB2	2.02	0.41
7:F:123:GLU:OE2	30:c:59:LEU:HD22	2.21	0.41
7:F:167:LYS:HZ2	7:F:168:THR:H	1.69	0.41
8:G:110:ASN:OD1	8:G:110:ASN:N	2.54	0.41
10:I:82:VAL:HG11	10:I:103:LEU:HG	2.02	0.41
15:N:80:LEU:HD23	15:N:80:LEU:H	1.86	0.41
16:O:71:PRO:O	16:O:114:SER:OG	2.33	0.41
18:Q:50:LYS:HB2	18:Q:50:LYS:HE2	1.84	0.41
19:R:28:PHE:C	19:R:31:ASN:H	2.28	0.41
21:T:115:LYS:HE2	21:T:115:LYS:HB2	1.86	0.41
21:T:139:ALA:O	21:T:144:LYS:N	2.49	0.41
22:U:56:MET:HG3	22:U:86:LYS:HD2	2.03	0.41
31:d:31:ILE:HD13	31:d:31:ILE:HA	1.90	0.41
1:2:300:U:H2'	1:2:301:A:C8	2.56	0.41
1:2:1070:A:H2'	1:2:1071:G:O4'	2.20	0.41
1:2:1284:A:H61	14:M:93:LYS:HB2	1.86	0.41
7:F:16:ASP:OD1	7:F:16:ASP:N	2.54	0.41
9:H:118:ARG:HD3	9:H:118:ARG:HA	1.86	0.41
12:K:55:ARG:HB3	12:K:57:TYR:CE2	2.55	0.41
16:O:125:LYS:HB3	28:a:58:VAL:HG13	2.03	0.41
18:Q:33:LYS:HE3	18:Q:35:ASN:N	2.36	0.41
18:Q:89:SER:HB3	18:Q:112:LEU:HD11	2.03	0.41
22:U:31:SER:O	22:U:35:VAL:HG23	2.21	0.41
30:c:10:LYS:HG3	30:c:58:LEU:HG	2.03	0.41
34:g:165:ILE:HD11	34:g:177:TRP:HB2	2.02	0.41
1:2:106:C:H5"	1:2:431:G:O2'	2.21	0.40
1:2:416:U:H2'	1:2:417:C:O4'	2.21	0.40
1:2:652:U:H2'	1:2:653:A:C8	2.56	0.40
1:2:1093:A:H2'	1:2:1094:C:C6	2.56	0.40
1:2:1218:C:H2'	1:2:1219:C:C6	2.57	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1259:A:O2'	1:2:1264:C:OP1	2.28	0.40
1:2:1300:U:C4	17:P:55:SER:HB2	2.56	0.40
1:2:1654:G:H2'	1:2:1655:C:C6	2.56	0.40
1:2:1703:C:H2'	1:2:1704:C:O4'	2.21	0.40
10:I:79:ILE:HD11	10:I:105:ASP:OD1	2.20	0.40
16:O:63:LYS:HB2	16:O:63:LYS:HE3	1.79	0.40
24:W:84:LYS:HB2	24:W:84:LYS:HE3	1.75	0.40
25:X:88:ASP:OD2	32:e:13:ARG:HB2	2.20	0.40
1:2:1271:C:H4'	31:d:7:TYR:CD1	2.56	0.40
1:2:1350:U:C2	1:2:1351:G:C8	3.09	0.40
1:2:1453:C:O2'	19:R:52:GLY:HA3	2.20	0.40
1:2:1657:G:H1	1:2:1667:U:H3	1.67	0.40
1:2:1751:C:H1'	1:2:1784:G:H22	1.86	0.40
2:A:89:LYS:O	2:A:92:ALA:HB3	2.21	0.40
5:D:135:GLU:OE2	5:D:137:VAL:HB	2.21	0.40
7:F:142:SER:OG	30:c:48:GLY:HA3	2.20	0.40
9:H:28:LEU:HA	9:H:28:LEU:HD23	1.85	0.40
9:H:106:ARG:HH11	9:H:106:ARG:HG2	1.86	0.40
10:I:190:LEU:HD22	10:I:194:GLU:HG2	2.03	0.40
12:K:6:LYS:O	12:K:9:ILE:HG13	2.21	0.40
18:Q:81:ILE:C	18:Q:83:ALA:H	2.29	0.40
20:S:55:ARG:HH22	27:Z:48:VAL:HA	1.85	0.40
26:Y:113:ARG:HB3	26:Y:125:VAL:HG11	2.02	0.40
28:a:75:VAL:O	28:a:78:VAL:HG12	2.21	0.40
34:g:286:CYS:HB2	34:g:302:TYR:CE1	2.56	0.40
1:2:944:A:H5"	16:O:134:PRO:HB2	2.04	0.40
1:2:1517:G:H2'	1:2:1517:G:N3	2.37	0.40
3:B:167:LYS:HD3	3:B:170:GLU:OE1	2.22	0.40
4:C:69:LEU:O	4:C:74:LYS:HB2	2.21	0.40
4:C:132:ASP:C	4:C:134:ASN:H	2.29	0.40
12:K:66:HIS:NE2	31:d:22:ARG:HB2	2.36	0.40
16:O:60:MET:HE2	16:O:60:MET:HB2	1.72	0.40
19:R:71:ILE:HG22	19:R:72:LYS:N	2.37	0.40
20:S:64:VAL:HA	20:S:67:VAL:HG12	2.03	0.40
26:Y:15:ASN:ND2	26:Y:18:LEU:HB2	2.36	0.40
29:b:8:LEU:HD23	29:b:8:LEU:HA	1.83	0.40
34:g:83:TRP:HA	34:g:107:ASP:CG	2.45	0.40
35:h:2:ARG:HD3	35:h:5:TRP:NE1	2.37	0.40
1:2:14:C:O2'	1:2:668:A:N1	2.53	0.40
1:2:296:U:O2'	6:E:131:VAL:O	2.23	0.40
1:2:383:G:O2'	13:L:133:PRO:O	2.38	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:881:G:O6	1:2:904:A:O2'	2.25	0.40
1:2:989:C:OP2	3:B:155:TYR:OH	2.22	0.40
1:2:1660:C:H5"	31:d:32:ARG:HH11	1.87	0.40
3:B:175:GLU:OE2	3:B:175:GLU:HA	2.21	0.40
3:B:208:HIS:C	3:B:208:HIS:ND1	2.79	0.40
5:D:158:ILE:HG23	5:D:189:MET:HE1	2.03	0.40
5:D:160:SER:C	5:D:164:VAL:HG21	2.46	0.40
6:E:44:LEU:HD12	6:E:44:LEU:HA	1.84	0.40
6:E:104:ASP:HB2	6:E:110:ALA:HB2	2.04	0.40
19:R:72:LYS:HE3	19:R:72:LYS:HB2	1.97	0.40
20:S:75:ARG:NH2	20:S:84:LEU:HD12	2.36	0.40
24:W:9:ASP:OD1	24:W:9:ASP:N	2.54	0.40
29:b:65:GLN:OE1	29:b:65:GLN:HA	2.20	0.40
1:2:455:A:H2'	1:2:456:C:H6	1.83	0.40
1:2:1035:A:H2'	1:2:1036:A:O4'	2.21	0.40
1:2:1058:A:H2'	1:2:1059:G:C8	2.57	0.40
1:2:1445:U:H1'	1:2:1580:A:N6	2.37	0.40
1:2:1467:C:H2'	1:2:1468:C:C6	2.57	0.40
1:2:1566:G:O6	21:T:97:LYS:NZ	2.35	0.40
1:2:1576:G:N3	1:2:1582:C:O2'	2.55	0.40
1:2:1718:G:H4'	1:2:1816:G:N2	2.37	0.40
7:F:56:TYR:O	7:F:62:ARG:HB2	2.22	0.40
8:G:21:GLU:O	8:G:25:ARG:HG2	2.21	0.40
12:K:3:MET:CG	12:K:44:HIS:HB3	2.49	0.40
20:S:36:VAL:HG12	20:S:41:ALA:HB2	2.03	0.40
30:c:67:ARG:CZ	30:c:68:LEU:HG	2.52	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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
2	A	211/295 (72%)	206 (98%)	4 (2%)	1 (0%)	25 53
3	B	211/264 (80%)	206 (98%)	5 (2%)	0	100 100
4	C	216/293 (74%)	206 (95%)	10 (5%)	0	100 100
5	D	223/243 (92%)	206 (92%)	17 (8%)	0	100 100
6	E	260/263 (99%)	250 (96%)	10 (4%)	0	100 100
7	F	187/204 (92%)	167 (89%)	19 (10%)	1 (0%)	25 53
8	G	228/249 (92%)	221 (97%)	7 (3%)	0	100 100
9	H	184/194 (95%)	177 (96%)	7 (4%)	0	100 100
10	I	203/208 (98%)	189 (93%)	14 (7%)	0	100 100
11	J	178/194 (92%)	168 (94%)	10 (6%)	0	100 100
12	K	95/165 (58%)	86 (90%)	9 (10%)	0	100 100
13	L	149/158 (94%)	144 (97%)	4 (3%)	1 (1%)	19 46
14	M	119/132 (90%)	107 (90%)	10 (8%)	2 (2%)	7 24
15	N	147/151 (97%)	146 (99%)	1 (1%)	0	100 100
16	O	133/151 (88%)	128 (96%)	5 (4%)	0	100 100
17	P	124/145 (86%)	109 (88%)	15 (12%)	0	100 100
18	Q	136/146 (93%)	123 (90%)	13 (10%)	0	100 100
19	R	130/135 (96%)	129 (99%)	1 (1%)	0	100 100
20	S	141/152 (93%)	123 (87%)	17 (12%)	1 (1%)	19 46
21	T	142/145 (98%)	131 (92%)	11 (8%)	0	100 100
22	U	99/119 (83%)	88 (89%)	11 (11%)	0	100 100
23	V	80/83 (96%)	79 (99%)	1 (1%)	0	100 100
24	W	127/130 (98%)	118 (93%)	9 (7%)	0	100 100
25	X	139/143 (97%)	135 (97%)	4 (3%)	0	100 100
26	Y	122/130 (94%)	119 (98%)	3 (2%)	0	100 100
27	Z	70/125 (56%)	61 (87%)	9 (13%)	0	100 100
28	a	97/101 (96%)	93 (96%)	3 (3%)	1 (1%)	13 36
29	b	80/82 (98%)	77 (96%)	3 (4%)	0	100 100
30	c	60/62 (97%)	55 (92%)	5 (8%)	0	100 100
31	d	53/55 (96%)	46 (87%)	7 (13%)	0	100 100
32	e	54/56 (96%)	50 (93%)	4 (7%)	0	100 100
33	f	72/74 (97%)	61 (85%)	10 (14%)	1 (1%)	9 29

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
34	g	312/315 (99%)	285 (91%)	26 (8%)	1 (0%)	37 63
35	h	20/25 (80%)	20 (100%)	0	0	100 100
36	n	28/180 (16%)	25 (89%)	3 (11%)	0	100 100
All	All	4830/5567 (87%)	4534 (94%)	287 (6%)	9 (0%)	45 71

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	A	189	ILE
7	F	33	ILE
14	M	109	VAL
14	M	110	VAL
28	a	63	VAL
13	L	32	LYS
20	S	91	LYS
34	g	235	ILE
33	f	108	VAL

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
2	A	179/243 (74%)	175 (98%)	4 (2%)	47 76
3	B	194/231 (84%)	188 (97%)	6 (3%)	35 67
4	C	184/225 (82%)	178 (97%)	6 (3%)	33 65
5	D	189/202 (94%)	177 (94%)	12 (6%)	15 39
6	E	224/225 (100%)	213 (95%)	11 (5%)	21 50
7	F	159/170 (94%)	146 (92%)	13 (8%)	9 26
8	G	200/218 (92%)	193 (96%)	7 (4%)	31 63
9	H	167/174 (96%)	161 (96%)	6 (4%)	30 62
10	I	178/180 (99%)	170 (96%)	8 (4%)	23 53

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
11	J	160/168 (95%)	155 (97%)	5 (3%)	35 67
12	K	88/136 (65%)	84 (96%)	4 (4%)	23 53
13	L	135/142 (95%)	135 (100%)	0	100 100
14	M	102/108 (94%)	98 (96%)	4 (4%)	27 59
15	N	130/131 (99%)	120 (92%)	10 (8%)	10 29
16	O	105/119 (88%)	99 (94%)	6 (6%)	17 43
17	P	112/130 (86%)	108 (96%)	4 (4%)	30 62
18	Q	114/121 (94%)	112 (98%)	2 (2%)	54 80
19	R	119/122 (98%)	114 (96%)	5 (4%)	25 56
20	S	124/132 (94%)	118 (95%)	6 (5%)	21 51
21	T	114/115 (99%)	106 (93%)	8 (7%)	12 34
22	U	93/107 (87%)	86 (92%)	7 (8%)	11 31
23	V	66/67 (98%)	64 (97%)	2 (3%)	36 68
24	W	112/113 (99%)	106 (95%)	6 (5%)	18 46
25	X	113/115 (98%)	109 (96%)	4 (4%)	31 63
26	Y	108/112 (96%)	106 (98%)	2 (2%)	52 79
27	Z	64/103 (62%)	59 (92%)	5 (8%)	10 28
28	a	87/89 (98%)	82 (94%)	5 (6%)	17 43
29	b	74/74 (100%)	72 (97%)	2 (3%)	40 71
30	c	55/55 (100%)	52 (94%)	3 (6%)	18 45
31	d	48/48 (100%)	48 (100%)	0	100 100
32	e	45/45 (100%)	42 (93%)	3 (7%)	13 36
33	f	67/67 (100%)	66 (98%)	1 (2%)	60 84
34	g	272/273 (100%)	256 (94%)	16 (6%)	16 42
35	h	21/24 (88%)	21 (100%)	0	100 100
36	n	26/147 (18%)	24 (92%)	2 (8%)	10 29
All	All	4228/4731 (89%)	4043 (96%)	185 (4%)	26 54

All (185) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	A	28	THR
2	A	38	ILE

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	A	52	LYS
2	A	190	SER
3	B	50	THR
3	B	91	VAL
3	B	98	THR
3	B	154	SER
3	B	182	LYS
3	B	208	HIS
4	C	162	ILE
4	C	176	LYS
4	C	232	THR
4	C	248	TYR
4	C	260	VAL
4	C	264	SER
5	D	37	VAL
5	D	57	ASN
5	D	85	GLU
5	D	105	LEU
5	D	113	LEU
5	D	120	TYR
5	D	142	LEU
5	D	148	LYS
5	D	156	LEU
5	D	176	LEU
5	D	178	ARG
5	D	223	ILE
6	E	91	SER
6	E	101	LEU
6	E	105	THR
6	E	126	VAL
6	E	159	THR
6	E	177	THR
6	E	199	GLU
6	E	204	SER
6	E	220	THR
6	E	236	ILE
6	E	256	LEU
7	F	49	LEU
7	F	68	ILE
7	F	69	VAL
7	F	85	LYS
7	F	101	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
7	F	102	LEU
7	F	104	THR
7	F	116	ILE
7	F	134	VAL
7	F	139	VAL
7	F	167	LYS
7	F	169	ILE
7	F	199	VAL
8	G	6	SER
8	G	26	THR
8	G	127	THR
8	G	133	LEU
8	G	141	ILE
8	G	171	THR
8	G	176	ILE
9	H	69	LEU
9	H	71	SER
9	H	78	ARG
9	H	105	THR
9	H	172	THR
9	H	174	SER
10	I	29	LEU
10	I	71	CYS
10	I	81	VAL
10	I	84	ASN
10	I	88	ASN
10	I	99	ASN
10	I	136	ILE
10	I	167	GLN
11	J	14	VAL
11	J	50	LEU
11	J	82	VAL
11	J	159	PHE
11	J	172	ARG
12	K	3	MET
12	K	7	ASN
12	K	28	HIS
12	K	72	THR
14	M	14	VAL
14	M	21	VAL
14	M	49	LEU
14	M	104	VAL

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
15	N	4	MET
15	N	22	VAL
15	N	30	SER
15	N	35	GLU
15	N	45	LEU
15	N	52	VAL
15	N	57	SER
15	N	83	ASP
15	N	102	LEU
15	N	143	SER
16	O	57	THR
16	O	69	SER
16	O	88	LEU
16	O	107	THR
16	O	126	ILE
16	O	129	ILE
17	P	26	LEU
17	P	70	MET
17	P	80	LEU
17	P	119	PHE
18	Q	66	VAL
18	Q	129	SER
19	R	88	VAL
19	R	98	VAL
19	R	102	THR
19	R	117	LEU
19	R	123	THR
20	S	4	VAL
20	S	14	ARG
20	S	28	PHE
20	S	45	LEU
20	S	92	ASP
20	S	141	ARG
21	T	6	VAL
21	T	22	LEU
21	T	30	VAL
21	T	79	TYR
21	T	90	SER
21	T	104	LEU
21	T	124	THR
21	T	131	LEU
22	U	63	ILE

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
22	U	64	THR
22	U	68	THR
22	U	70	CYS
22	U	81	GLN
22	U	98	VAL
22	U	115	THR
23	V	39	VAL
23	V	42	VAL
24	W	30	CYS
24	W	41	MET
24	W	74	VAL
24	W	80	ASP
24	W	84	LYS
24	W	106	THR
25	X	32	LEU
25	X	72	VAL
25	X	105	PHE
25	X	125	VAL
26	Y	26	ASP
26	Y	44	LEU
27	Z	48	VAL
27	Z	56	ASP
27	Z	62	VAL
27	Z	69	THR
27	Z	107	VAL
28	a	30	VAL
28	a	40	VAL
28	a	45	VAL
28	a	67	LEU
28	a	90	GLU
29	b	3	LEU
29	b	46	VAL
30	c	26	GLN
30	c	27	CYS
30	c	46	VAL
32	e	29	THR
32	e	36	MET
32	e	44	ASN
33	f	146	LEU
34	g	6	THR
34	g	73	SER
34	g	98	THR

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	g	105	THR
34	g	118	ARG
34	g	131	LEU
34	g	164	ILE
34	g	171	ASP
34	g	174	VAL
34	g	178	ASN
34	g	207	CYS
34	g	213	ASP
34	g	229	THR
34	g	277	THR
34	g	287	THR
34	g	309	VAL
36	n	154	PHE
36	n	160	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (42) such sidechains are listed below:

Mol	Chain	Res	Type
2	A	70	ASN
2	A	113	GLN
2	A	131	HIS
2	A	132	GLN
3	B	158	HIS
3	B	159	GLN
3	B	232	HIS
5	D	159	HIS
5	D	179	GLN
7	F	65	GLN
7	F	110	GLN
7	F	203	ASN
8	G	227	GLN
9	H	33	ASN
9	H	91	HIS
12	K	7	ASN
12	K	28	HIS
13	L	13	GLN
14	M	46	GLN
14	M	48	HIS
17	P	53	GLN
17	P	54	HIS
17	P	103	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
17	P	114	HIS
18	Q	35	ASN
21	T	12	GLN
21	T	51	ASN
21	T	83	GLN
21	T	126	GLN
22	U	81	GLN
25	X	23	HIS
25	X	26	GLN
25	X	31	HIS
25	X	73	GLN
26	Y	63	HIS
26	Y	85	ASN
29	b	26	GLN
32	e	15	GLN
32	e	44	ASN
34	g	104	HIS
36	n	160	ASN
36	n	172	ASN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	2	1645/1869 (88%)	549 (33%)	22 (1%)

All (549) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	2	4	C
1	2	33	G
1	2	41	G
1	2	46	A
1	2	56	G
1	2	62	G
1	2	67	C
1	2	68	A
1	2	71	G
1	2	72	C
1	2	73	C
1	2	74	G
1	2	75	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	2	76	U
1	2	77	A
1	2	103	A
1	2	113	G
1	2	115	U
1	2	128	U
1	2	129	C
1	2	130	G
1	2	143	U
1	2	147	A
1	2	149	A
1	2	163	U
1	2	168	C
1	2	179	C
1	2	180	G
1	2	182	C
1	2	183	G
1	2	184	G
1	2	198	U
1	2	199	C
1	2	200	G
1	2	202	G
1	2	209	A
1	2	210	U
1	2	211	G
1	2	214	U
1	2	215	G
1	2	305	U
1	2	306	C
1	2	307	G
1	2	308	G
1	2	309	G
1	2	310	C
1	2	312	G
1	2	319	C
1	2	320	G
1	2	321	C
1	2	330	G
1	2	333	G
1	2	339	A
1	2	344	U
1	2	345	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	2	347	G
1	2	362	C
1	2	364	A
1	2	367	U
1	2	368	U
1	2	369	C
1	2	370	G
1	2	377	G
1	2	385	G
1	2	386	C
1	2	407	G
1	2	409	C
1	2	413	G
1	2	418	A
1	2	428	U
1	2	438	G
1	2	447	A
1	2	448	A
1	2	449	A
1	2	450	C
1	2	464	A
1	2	465	A
1	2	471	G
1	2	472	C
1	2	473	A
1	2	474	G
1	2	482	G
1	2	487	U
1	2	492	C
1	2	493	A
1	2	525	A
1	2	534	G
1	2	536	A
1	2	537	C
1	2	538	U
1	2	539	C
1	2	540	U
1	2	541	U
1	2	542	U
1	2	543	C
1	2	546	G
1	2	547	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	2	548	C
1	2	553	U
1	2	554	A
1	2	555	A
1	2	559	G
1	2	560	A
1	2	564	A
1	2	576	A
1	2	577	U
1	2	578	C
1	2	587	A
1	2	589	G
1	2	591	U
1	2	604	A
1	2	605	A
1	2	607	U
1	2	608	C
1	2	614	C
1	2	617	G
1	2	627	U
1	2	628	A
1	2	629	A
1	2	640	A
1	2	643	A
1	2	644	G
1	2	655	A
1	2	660	C
1	2	668	A
1	2	669	A
1	2	670	A
1	2	671	A
1	2	672	A
1	2	673	G
1	2	688	U
1	2	747	U
1	2	748	C
1	2	750	C
1	2	751	G
1	2	752	G
1	2	793	G
1	2	794	A
1	2	797	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	2	798	G
1	2	799	U
1	2	811	A
1	2	812	A
1	2	821	G
1	2	822	U
1	2	823	U
1	2	824	C
1	2	830	A
1	2	834	C
1	2	847	A
1	2	852	G
1	2	869	A
1	2	870	A
1	2	872	A
1	2	873	G
1	2	874	G
1	2	876	C
1	2	878	G
1	2	880	G
1	2	881	G
1	2	887	U
1	2	889	U
1	2	890	U
1	2	891	G
1	2	893	U
1	2	894	G
1	2	896	U
1	2	897	U
1	2	898	U
1	2	899	U
1	2	902	G
1	2	903	A
1	2	904	A
1	2	905	C
1	2	906	U
1	2	907	G
1	2	912	C
1	2	913	A
1	2	914	U
1	2	917	U
1	2	920	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	2	921	G
1	2	922	A
1	2	930	C
1	2	933	G
1	2	961	G
1	2	971	G
1	2	978	G
1	2	982	G
1	2	990	A
1	2	992	A
1	2	999	G
1	2	1017	U
1	2	1023	A
1	2	1027	A
1	2	1028	A
1	2	1045	U
1	2	1053	C
1	2	1061	U
1	2	1062	A
1	2	1073	U
1	2	1083	A
1	2	1085	C
1	2	1096	G
1	2	1100	A
1	2	1109	C
1	2	1115	U
1	2	1116	C
1	2	1121	G
1	2	1122	A
1	2	1138	C
1	2	1148	A
1	2	1149	A
1	2	1154	U
1	2	1157	G
1	2	1171	G
1	2	1172	U
1	2	1173	A
1	2	1175	G
1	2	1188	A
1	2	1190	A
1	2	1195	A
1	2	1207	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	2	1212	G
1	2	1215	C
1	2	1216	C
1	2	1224	G
1	2	1225	U
1	2	1226	G
1	2	1227	G
1	2	1228	A
1	2	1229	G
1	2	1231	C
1	2	1232	U
1	2	1233	G
1	2	1235	G
1	2	1236	G
1	2	1237	C
1	2	1239	U
1	2	1241	A
1	2	1242	U
1	2	1243	U
1	2	1244	U
1	2	1245	G
1	2	1247	C
1	2	1248	U
1	2	1250	A
1	2	1253	A
1	2	1254	C
1	2	1256	G
1	2	1257	G
1	2	1258	A
1	2	1259	A
1	2	1260	A
1	2	1261	C
1	2	1262	C
1	2	1263	U
1	2	1264	C
1	2	1265	A
1	2	1267	C
1	2	1268	C
1	2	1269	G
1	2	1271	C
1	2	1272	C
1	2	1273	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	2	1274	G
1	2	1275	G
1	2	1276	A
1	2	1278	A
1	2	1279	C
1	2	1282	A
1	2	1283	C
1	2	1284	A
1	2	1285	G
1	2	1286	G
1	2	1287	A
1	2	1288	U
1	2	1289	U
1	2	1291	A
1	2	1293	A
1	2	1294	G
1	2	1295	A
1	2	1296	U
1	2	1297	U
1	2	1298	G
1	2	1299	A
1	2	1300	U
1	2	1301	A
1	2	1302	G
1	2	1305	C
1	2	1306	U
1	2	1308	U
1	2	1311	C
1	2	1312	G
1	2	1313	A
1	2	1314	U
1	2	1315	U
1	2	1316	C
1	2	1317	C
1	2	1319	U
1	2	1320	G
1	2	1323	U
1	2	1325	G
1	2	1326	U
1	2	1327	G
1	2	1328	G
1	2	1329	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	2	1330	G
1	2	1331	C
1	2	1332	A
1	2	1333	U
1	2	1334	G
1	2	1335	G
1	2	1340	U
1	2	1348	G
1	2	1364	U
1	2	1371	U
1	2	1372	U
1	2	1378	A
1	2	1395	C
1	2	1396	A
1	2	1397	U
1	2	1398	G
1	2	1402	A
1	2	1403	C
1	2	1404	U
1	2	1405	A
1	2	1406	G
1	2	1409	A
1	2	1411	G
1	2	1412	C
1	2	1414	A
1	2	1415	C
1	2	1416	C
1	2	1425	G
1	2	1426	U
1	2	1429	G
1	2	1431	G
1	2	1432	U
1	2	1439	A
1	2	1440	C
1	2	1444	U
1	2	1445	U
1	2	1446	A
1	2	1447	G
1	2	1452	A
1	2	1454	A
1	2	1455	A
1	2	1456	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	2	1463	U
1	2	1466	G
1	2	1472	C
1	2	1478	U
1	2	1480	A
1	2	1484	A
1	2	1485	U
1	2	1486	A
1	2	1488	C
1	2	1489	A
1	2	1494	U
1	2	1495	G
1	2	1497	G
1	2	1498	A
1	2	1500	G
1	2	1501	C
1	2	1502	C
1	2	1503	C
1	2	1504	U
1	2	1505	U
1	2	1506	A
1	2	1507	G
1	2	1509	U
1	2	1510	G
1	2	1512	C
1	2	1513	C
1	2	1514	G
1	2	1517	G
1	2	1518	C
1	2	1519	U
1	2	1520	G
1	2	1521	C
1	2	1522	A
1	2	1524	G
1	2	1525	C
1	2	1526	G
1	2	1527	C
1	2	1528	G
1	2	1529	C
1	2	1530	U
1	2	1534	C
1	2	1535	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	2	1536	G
1	2	1537	A
1	2	1538	C
1	2	1539	U
1	2	1542	C
1	2	1545	A
1	2	1546	G
1	2	1547	C
1	2	1548	G
1	2	1552	G
1	2	1553	C
1	2	1555	U
1	2	1556	A
1	2	1557	C
1	2	1558	C
1	2	1561	A
1	2	1562	C
1	2	1563	G
1	2	1566	G
1	2	1571	G
1	2	1572	C
1	2	1573	G
1	2	1575	G
1	2	1576	G
1	2	1577	G
1	2	1578	U
1	2	1579	A
1	2	1580	A
1	2	1581	C
1	2	1582	C
1	2	1583	C
1	2	1584	G
1	2	1588	A
1	2	1590	C
1	2	1591	C
1	2	1592	C
1	2	1593	C
1	2	1595	U
1	2	1598	G
1	2	1599	U
1	2	1601	A
1	2	1604	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	2	1605	G
1	2	1606	G
1	2	1611	G
1	2	1613	G
1	2	1614	A
1	2	1617	G
1	2	1619	A
1	2	1620	A
1	2	1621	U
1	2	1622	U
1	2	1623	A
1	2	1624	U
1	2	1625	U
1	2	1630	A
1	2	1631	U
1	2	1632	G
1	2	1636	G
1	2	1637	A
1	2	1639	G
1	2	1640	A
1	2	1641	A
1	2	1642	U
1	2	1643	U
1	2	1647	A
1	2	1648	G
1	2	1649	U
1	2	1650	A
1	2	1651	A
1	2	1656	G
1	2	1657	G
1	2	1659	U
1	2	1660	C
1	2	1661	A
1	2	1662	U
1	2	1664	A
1	2	1665	G
1	2	1666	C
1	2	1667	U
1	2	1672	U
1	2	1675	A
1	2	1676	U
1	2	1678	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	2	1680	G
1	2	1683	C
1	2	1684	C
1	2	1685	U
1	2	1686	G
1	2	1695	A
1	2	1699	A
1	2	1709	G
1	2	1710	C
1	2	1711	U
1	2	1712	A
1	2	1717	C
1	2	1718	G
1	2	1719	A
1	2	1720	U
1	2	1721	U
1	2	1723	G
1	2	1724	A
1	2	1725	U
1	2	1728	U
1	2	1730	U
1	2	1731	A
1	2	1732	G
1	2	1742	C
1	2	1744	G
1	2	1751	C
1	2	1752	C
1	2	1753	C
1	2	1754	G
1	2	1755	C
1	2	1756	C
1	2	1758	G
1	2	1759	G
1	2	1760	G
1	2	1761	U
1	2	1772	C
1	2	1773	C
1	2	1774	C
1	2	1777	G
1	2	1778	C
1	2	1779	G
1	2	1780	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	2	1781	A
1	2	1782	G
1	2	1783	C
1	2	1802	C
1	2	1804	U
1	2	1805	G
1	2	1806	A
1	2	1808	U
1	2	1809	A
1	2	1810	U
1	2	1812	U
1	2	1815	A
1	2	1816	G
1	2	1821	U
1	2	1822	A
1	2	1823	A
1	2	1825	A
1	2	1826	G
1	2	1827	U
1	2	1831	A
1	2	1835	A
1	2	1838	U
1	2	1849	G
1	2	1850	A
1	2	1851	A
1	2	1852	C
1	2	1861	G
1	2	1862	G
1	2	1863	A
1	2	1864	U
1	2	1865	C
1	2	1869	A

All (22) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	2	332	G
1	2	604	A
1	2	868	G
1	2	902	G
1	2	1189	A
1	2	1263	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	2	1329	U
1	2	1339	U
1	2	1424	G
1	2	1500	G
1	2	1528	G
1	2	1546	G
1	2	1557	C
1	2	1571	G
1	2	1612	G
1	2	1647	A
1	2	1649	U
1	2	1666	C
1	2	1709	G
1	2	1757	G
1	2	1804	U
1	2	1821	U

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

There are no non-standard protein/DNA/RNA residues in this entry.

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.

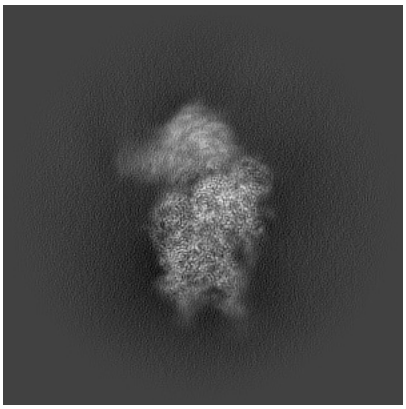
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-62445. These allow visual inspection of the internal detail of the map and identification of artifacts.

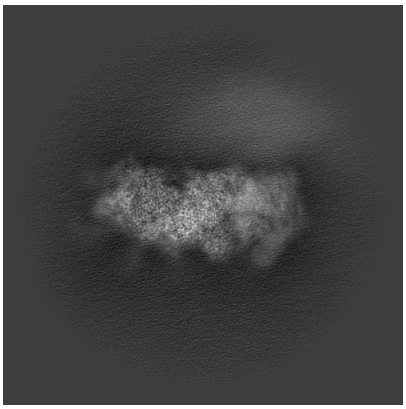
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

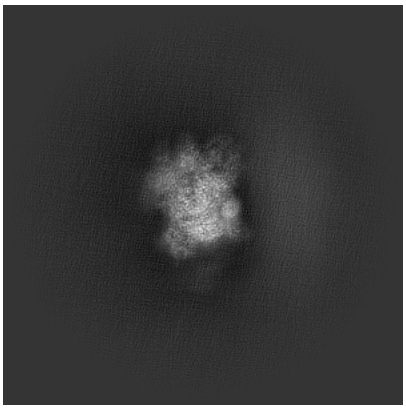
6.1.1 Primary map



X

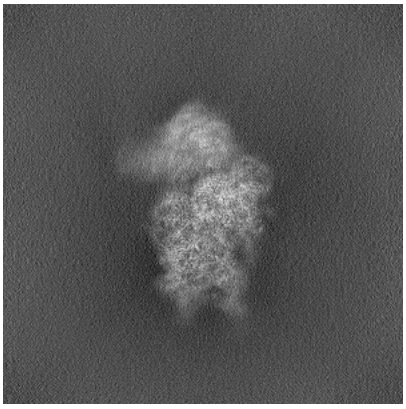


Y

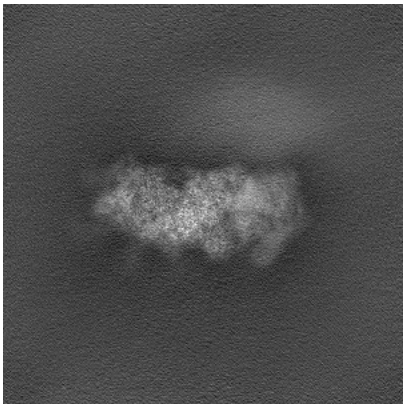


Z

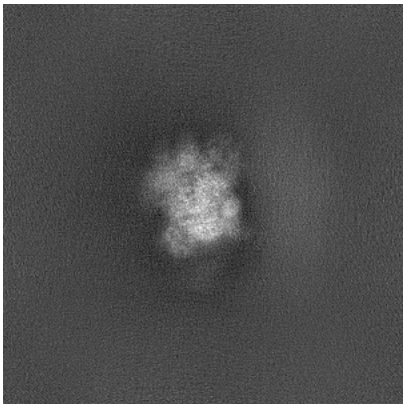
6.1.2 Raw map



X



Y

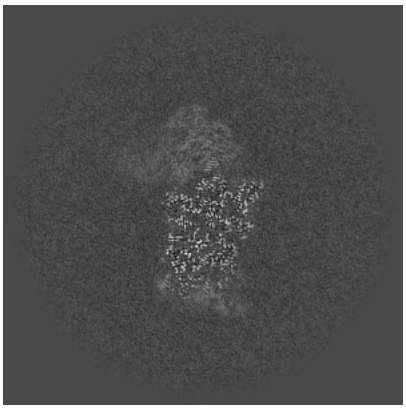


Z

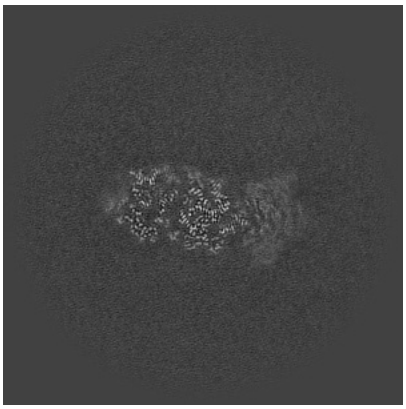
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

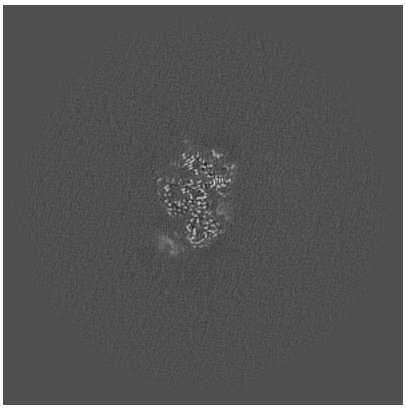
6.2.1 Primary map



X Index: 256

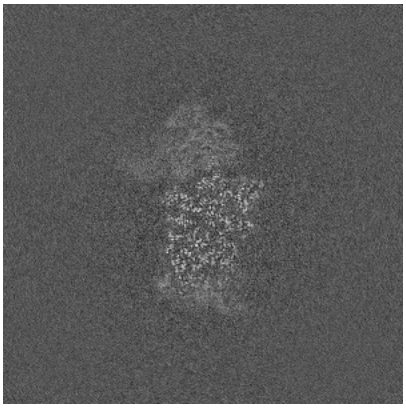


Y Index: 256

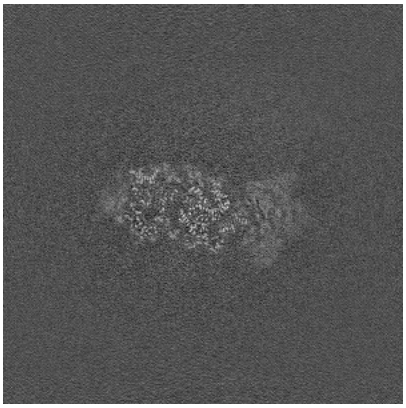


Z Index: 256

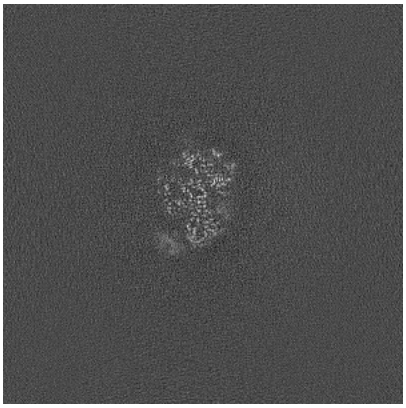
6.2.2 Raw map



X Index: 256



Y Index: 256

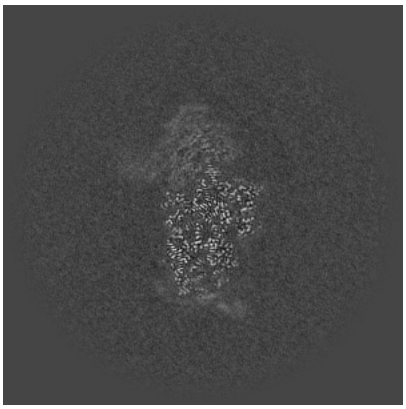


Z Index: 256

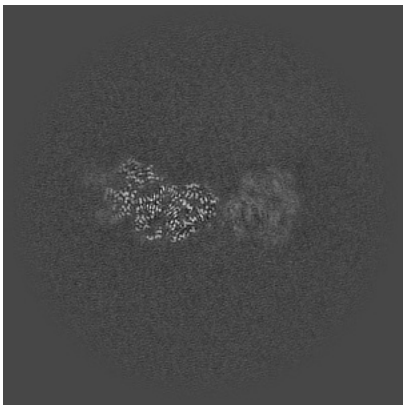
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

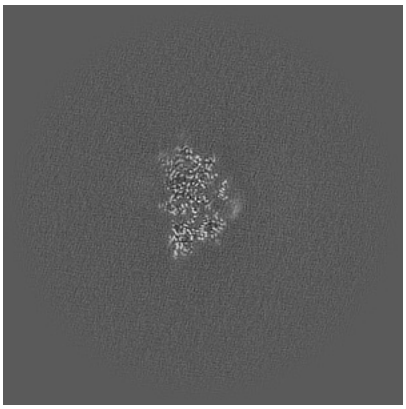
6.3.1 Primary map



X Index: 251

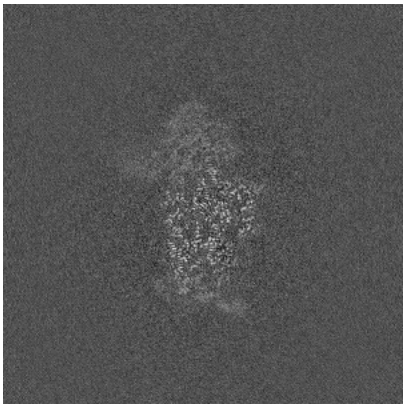


Y Index: 225

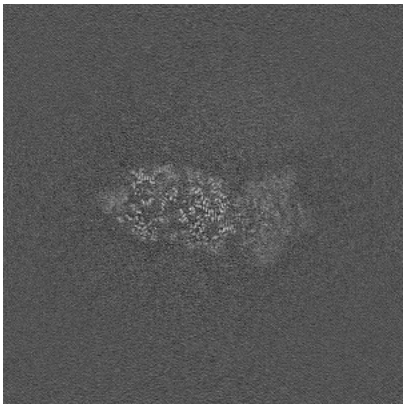


Z Index: 236

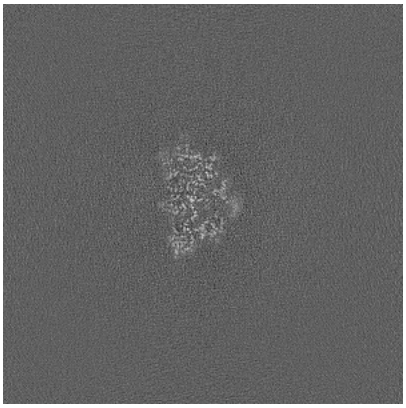
6.3.2 Raw map



X Index: 251



Y Index: 257

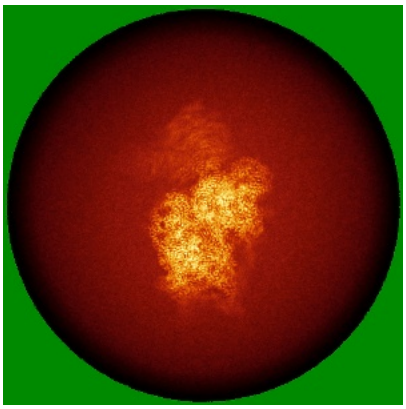


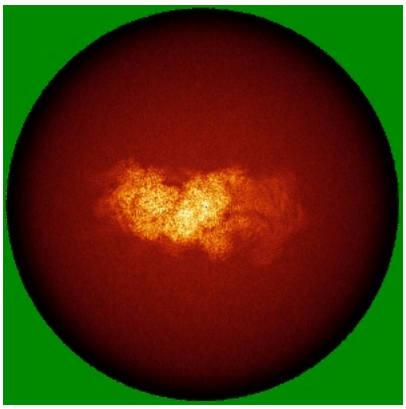
Z Index: 237

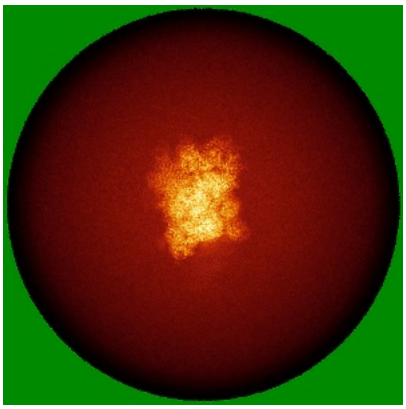
The images above show the largest variance slices of the map in three orthogonal directions.

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

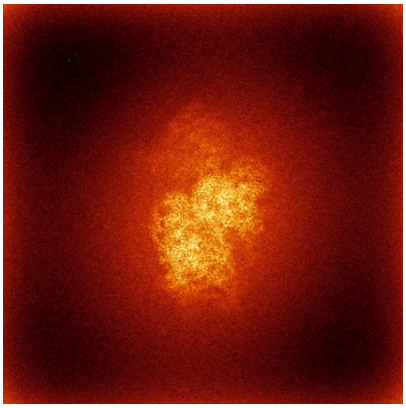
6.4.1 Primary map

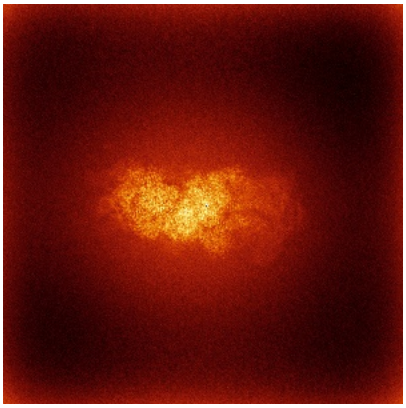

X

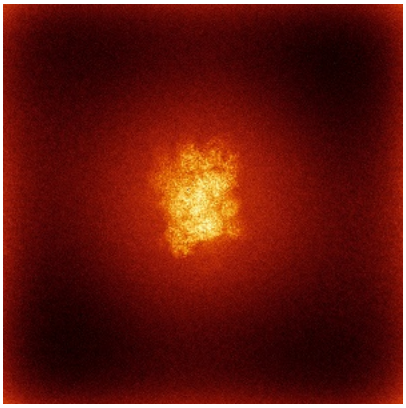

Y


Z

6.4.2 Raw map


X

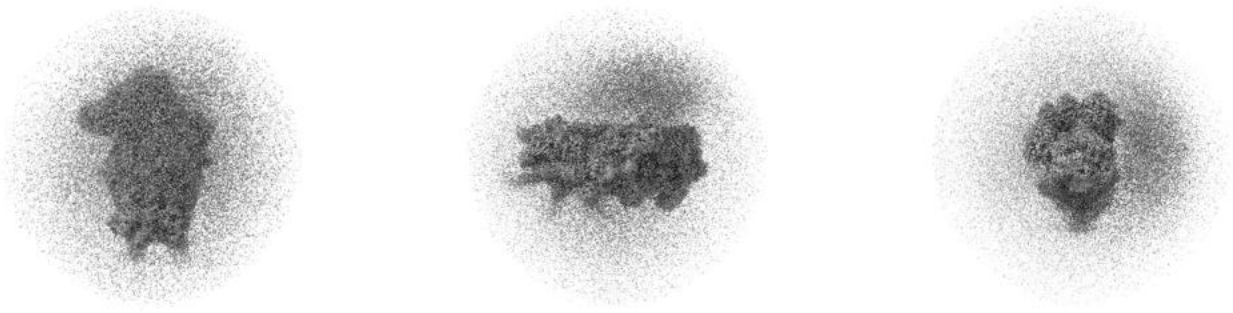

Y


Z

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

6.5 Orthogonal surface views (i)

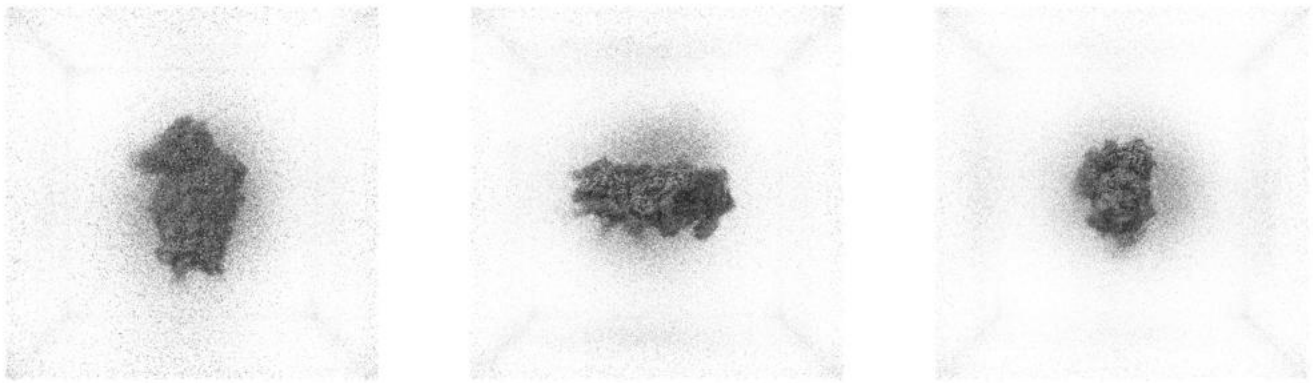
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.15. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

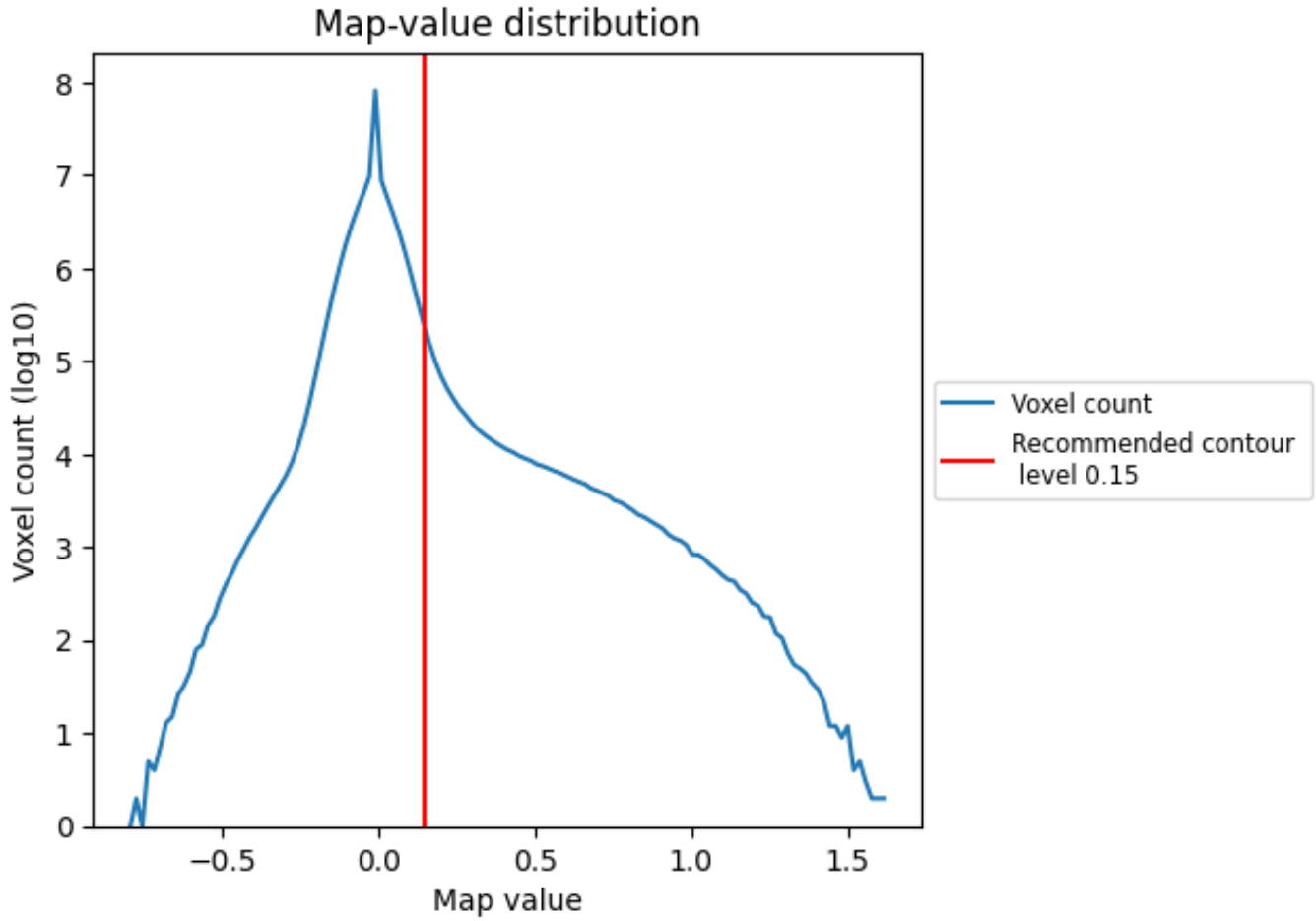
6.6 Mask visualisation (i)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis

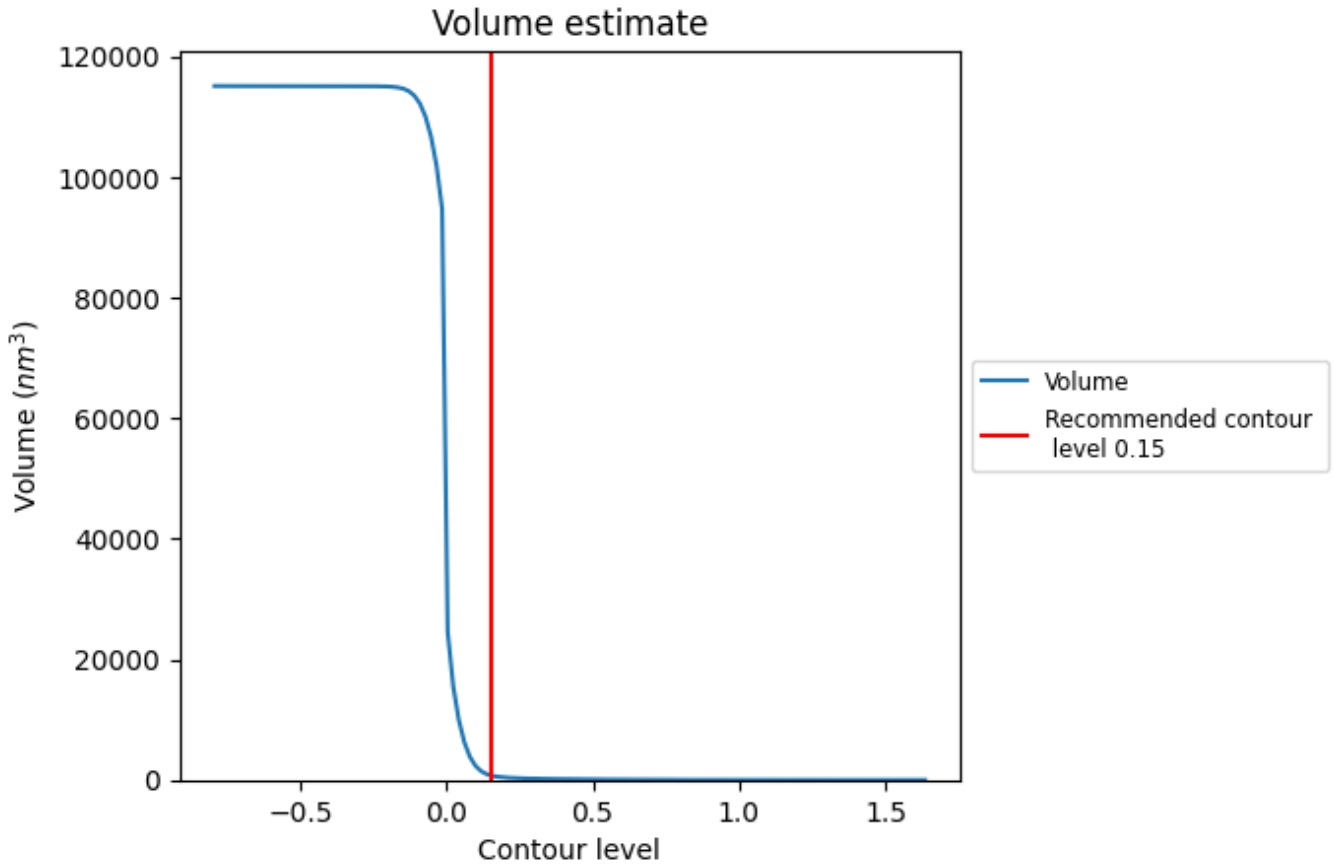
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

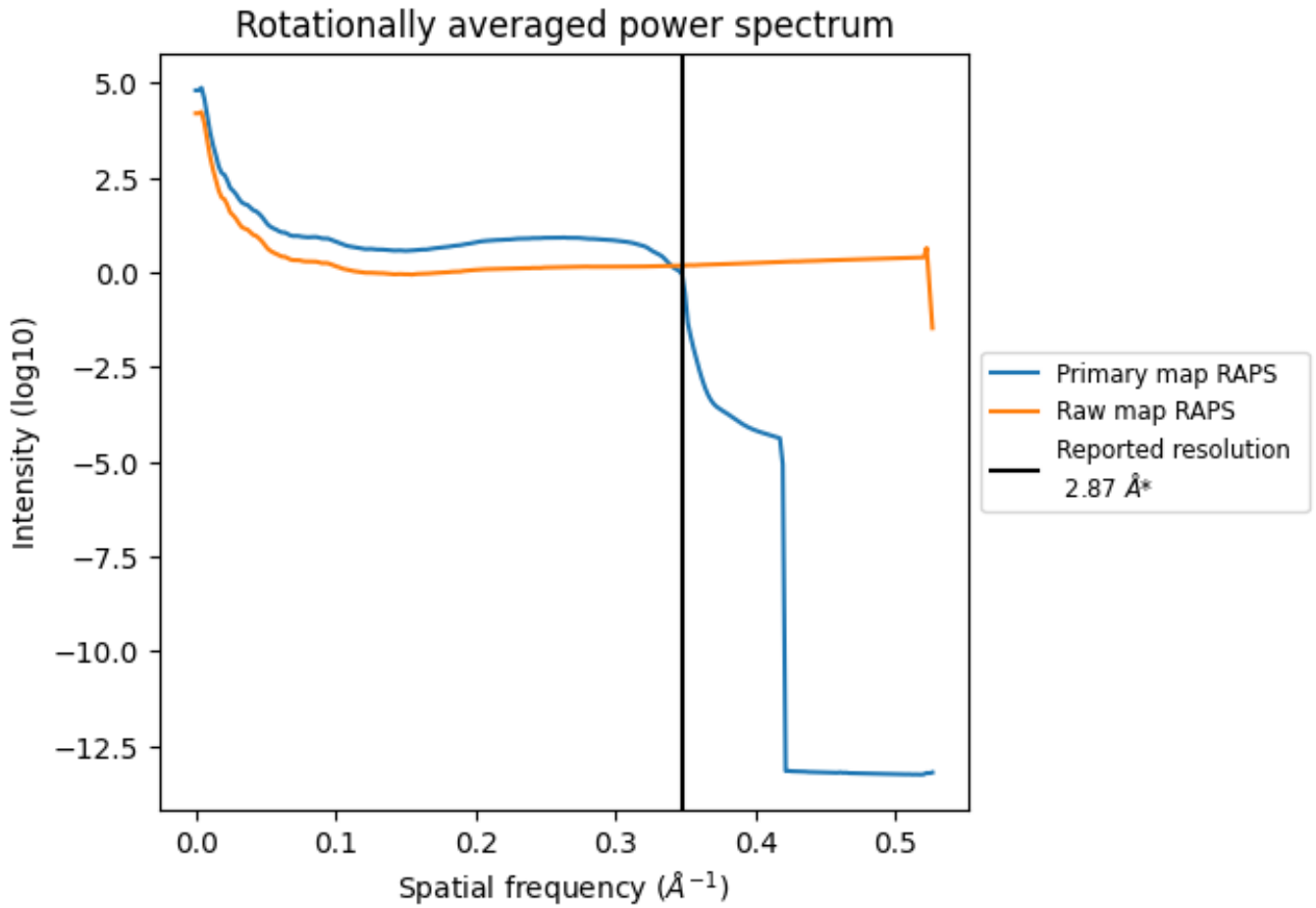
7.2 Volume estimate



The volume at the recommended contour level is 789 nm^3; this corresponds to an approximate mass of 712 kDa.

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

7.3 Rotationally averaged power spectrum (i)

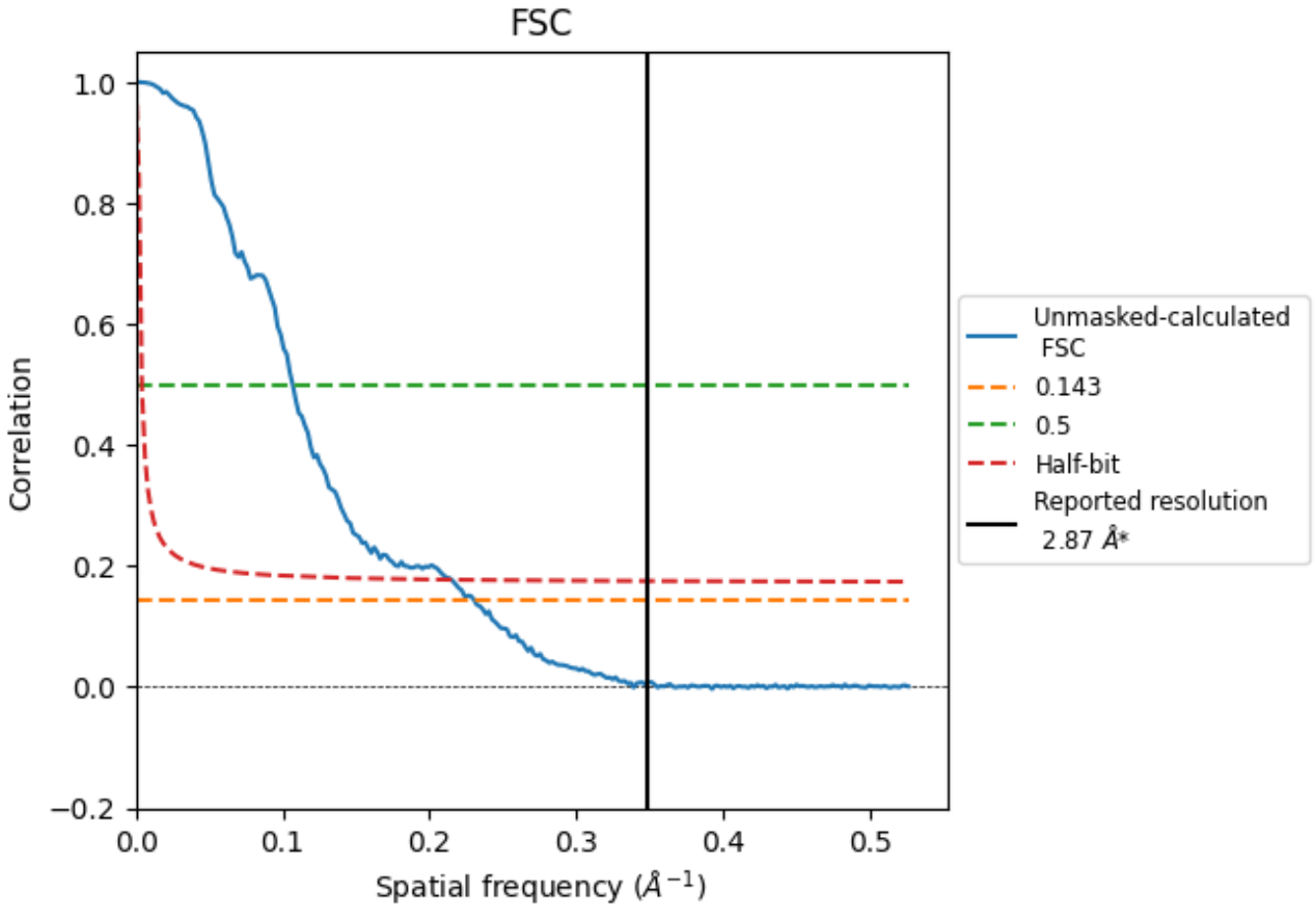


*Reported resolution corresponds to spatial frequency of 0.348 $Å^{-1}$

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 0.348 Å^{-1}

8.2 Resolution estimates (i)

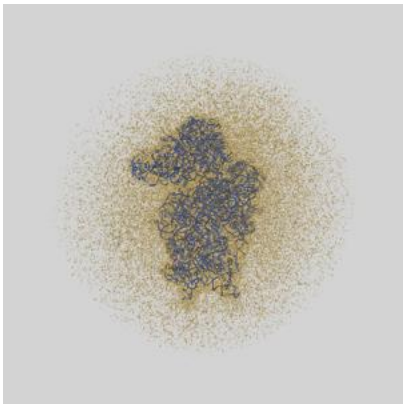
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.87	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.34	9.36	4.65

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.34 differs from the reported value 2.87 by more than 10 %

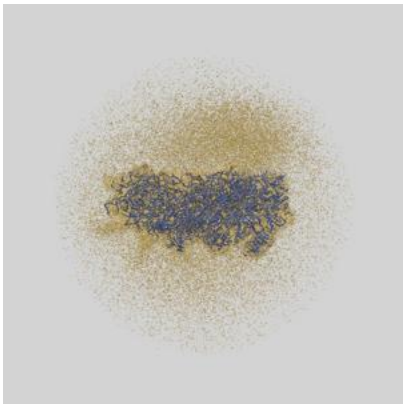
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-62445 and PDB model 9KMU. Per-residue inclusion information can be found in section 3 on page 11.

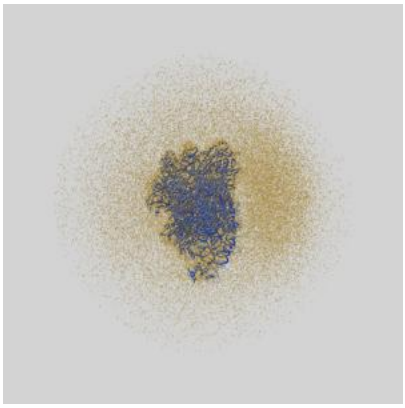
9.1 Map-model overlay



X



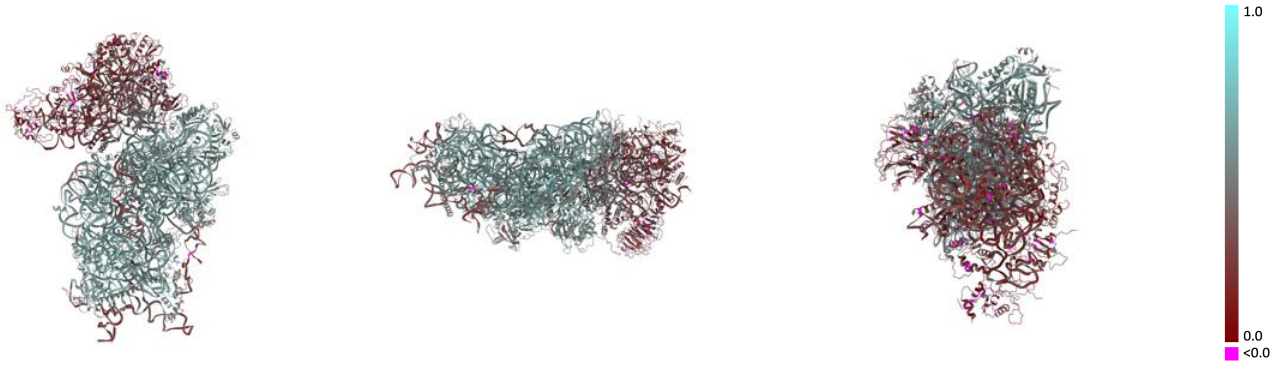
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.15 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

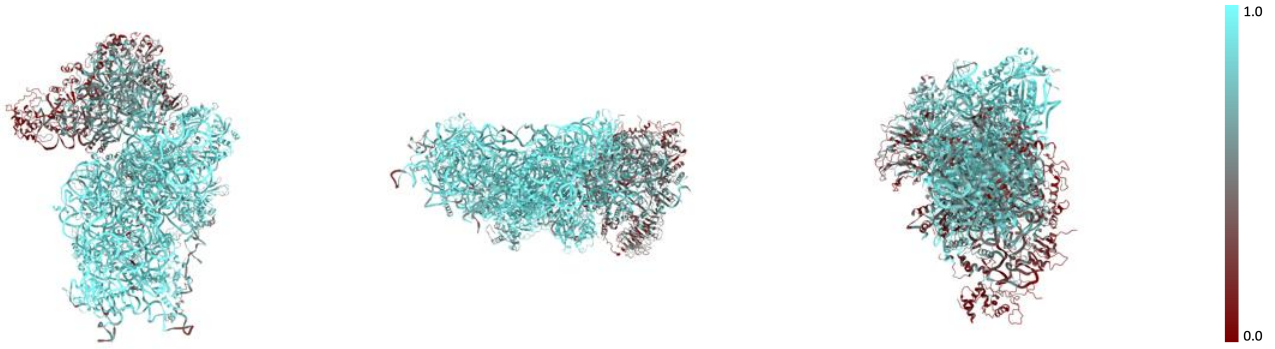
9.2 Q-score mapped to coordinate model (i)



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.

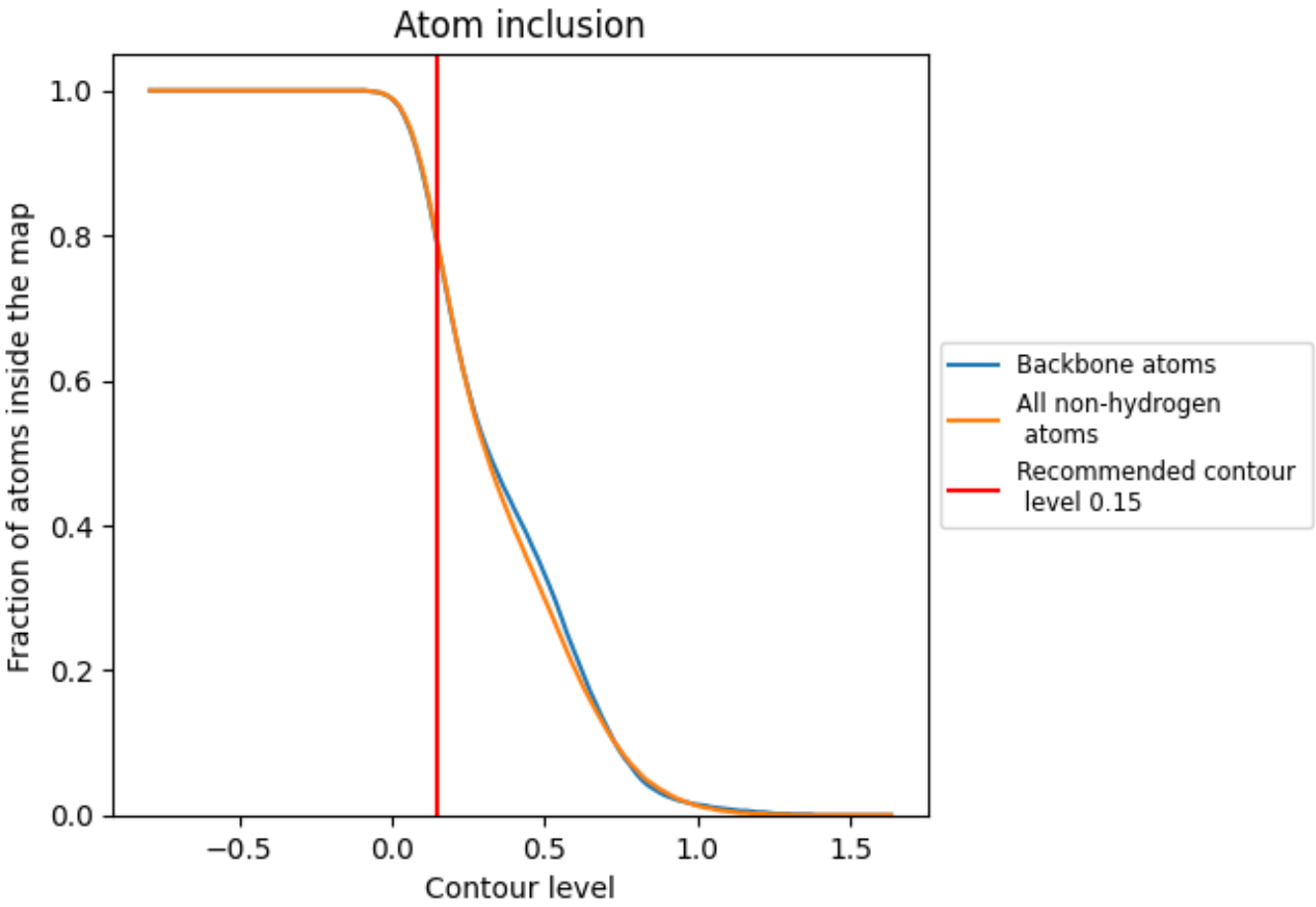
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.15).

9.4 Atom inclusion (i)



At the recommended contour level, 79% of all backbone atoms, 79% 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 (0.15) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7880	0.4680
2	0.8650	0.4840
A	0.9250	0.5710
B	0.9180	0.5660
C	0.9360	0.5890
D	0.4620	0.2810
E	0.9600	0.6080
F	0.5200	0.2980
G	0.9150	0.5400
H	0.7850	0.4920
I	0.8730	0.5390
J	0.9700	0.6040
K	0.4080	0.2480
L	0.9200	0.5810
M	0.1630	0.2130
N	0.9530	0.5810
O	0.9060	0.5630
P	0.2580	0.2430
Q	0.6060	0.3260
R	0.6420	0.3980
S	0.2970	0.2790
T	0.5430	0.2790
U	0.4090	0.2850
V	0.9570	0.5890
W	0.9570	0.6070
X	0.9630	0.5980
Y	0.9630	0.5990
Z	0.3300	0.2530
a	0.9300	0.5780
b	0.8790	0.5420
c	0.4690	0.3100
d	0.5120	0.2700
e	0.8600	0.5500
f	0.1280	0.2490
g	0.3920	0.2590

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
h	0.8870	0.5560
n	0.8500	0.5430