



wwPDB X-ray Structure Validation Summary Report ⓘ

May 16, 2020 – 12:28 pm BST

PDB ID : 1NKW
Title : Crystal Structure Of The Large Ribosomal Subunit From Deinococcus Radiodurans
Authors : Harms, J.M.; Schlutzen, F.; Zarivach, R.; Bashan, A.; Gat, S.; Agmon, I.; Bartels, H.; Franceschi, F.; Yonath, A.
Deposited on : 2003-01-05
Resolution : 3.10 Å(reported)

This is a wwPDB X-ray Structure Validation Summary Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Xtriage (Phenix) : **NOT EXECUTED**
EDS : **NOT EXECUTED**
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.11

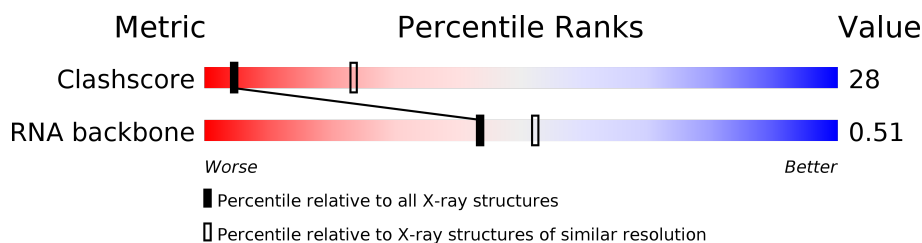
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.10 Å.

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



| Metric | Whole archive (#Entries) | Similar resolution (#Entries, resolution range(Å)) |
|--------------|-----------------------------|---|
| Clashscore | 141614 | 1184 (3.10-3.10) |
| RNA backbone | 3102 | 1116 (3.40-2.80) |





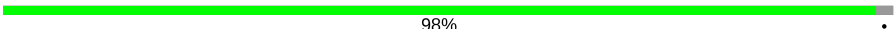


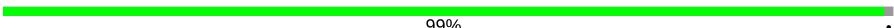
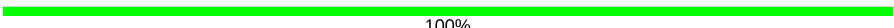




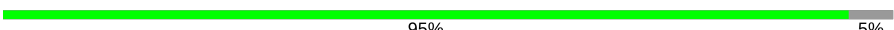
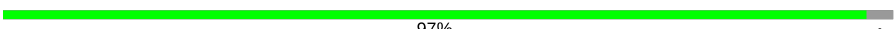


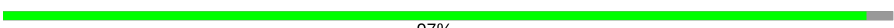

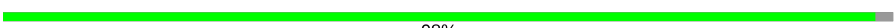
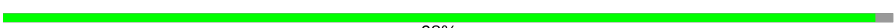

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$.

Note EDS was not executed.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1 | 0 | 2880 | |
| 2 | 9 | 124 | |
| 3 | A | 275 | |
| 4 | B | 211 | |
| 5 | C | 205 | |
| 6 | D | 180 | |
| 7 | E | 212 | |
| 8 | F | 146 | |
| 9 | G | 144 | |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 10 | H | 174 |  82% 18% |
| 11 | I | 134 |  99% . |
| 12 | J | 156 |  90% 10% |
| 13 | K | 142 |  87% . 13% |
| 14 | L | 116 |  98% . |
| 15 | M | 114 |  97% . |
| 16 | N | 166 |  74% . 25% |
| 17 | O | 118 |  99% . |
| 18 | P | 100 |  100% |
| 19 | Q | 134 |  97% . |
| 20 | R | 95 |  98% . |
| 21 | S | 115 |  98% . |
| 22 | T | 253 |  88% 12% |
| 23 | U | 91 |  95% 5% |
| 24 | W | 67 |  97% . |
| 25 | X | 55 |  100% |
| 26 | Y | 73 |  100% |
| 27 | Z | 60 |  97% . |
| 28 | 1 | 82 |  65% 35% |
| 29 | 2 | 47 |  98% . |
| 30 | 3 | 64 |  98% . |
| 31 | 4 | 36 |  97% . |

2 Entry composition

There are 31 unique types of molecules in this entry. The entry contains 65300 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-------|-------|-------|------|---------|---------|-------|
| 1 | 0 | 2766 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 59359 | 26479 | 10949 | 19166 | 2765 | | | |

- Molecule 2 is a RNA chain called 5S ribosomal RNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|-----|---------|---------|-------|
| 2 | 9 | 118 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 2519 | 1124 | 464 | 813 | 118 | | | |

- Molecule 3 is a protein called 50S ribosomal protein L2.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 3 | A | 270 | Total | C | 0 | 0 | 270 |
| | | | 270 | 270 | | | |

- Molecule 4 is a protein called 50S ribosomal protein L3.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 4 | B | 205 | Total | C | 0 | 0 | 205 |
| | | | 205 | 205 | | | |

- Molecule 5 is a protein called 50S ribosomal protein L4.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 5 | C | 197 | Total | C | 0 | 0 | 197 |
| | | | 197 | 197 | | | |

- Molecule 6 is a protein called 50S ribosomal protein L5.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 6 | D | 178 | Total | C | 0 | 0 | 178 |
| | | | 178 | 178 | | | |

- Molecule 7 is a protein called 50S ribosomal protein L6.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 7 | E | 177 | Total | C | 0 | 0 | 177 |
| | | | 177 | 177 | | | |

- Molecule 8 is a protein called 50S ribosomal protein L9.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|----|---------|---------|-------|
| 8 | F | 52 | Total | C | 0 | 0 | 52 |
| | | | 52 | 52 | | | |

- Molecule 9 is a protein called 50S ribosomal protein L11.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 9 | G | 143 | Total | C | 0 | 0 | 143 |
| | | | 143 | 143 | | | |

- Molecule 10 is a protein called 50S ribosomal protein L13.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 10 | H | 143 | Total | C | 0 | 0 | 143 |
| | | | 143 | 143 | | | |

- Molecule 11 is a protein called 50S ribosomal protein L14.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 11 | I | 132 | Total | C | 0 | 0 | 132 |
| | | | 132 | 132 | | | |

- Molecule 12 is a protein called 50S ribosomal protein L15.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 12 | J | 141 | Total | C | 0 | 0 | 141 |
| | | | 141 | 141 | | | |

- Molecule 13 is a protein called 50S ribosomal protein L16.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 13 | K | 124 | Total | C | 0 | 0 | 124 |
| | | | 124 | 124 | | | |

- Molecule 14 is a protein called 50S ribosomal protein L17.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------------|---------|---------|-------|
| 14 | L | 114 | Total C 114 114 | 0 | 0 | 114 |

- Molecule 15 is a protein called 50S ribosomal protein L18.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------------|---------|---------|-------|
| 15 | M | 111 | Total C 111 111 | 8 | 0 | 111 |

- Molecule 16 is a protein called 50S ribosomal protein L19.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------------|---------|---------|-------|
| 16 | N | 125 | Total C 125 125 | 0 | 0 | 125 |

- Molecule 17 is a protein called 50S ribosomal protein L20.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------------|---------|---------|-------|
| 17 | O | 117 | Total C 117 117 | 16 | 0 | 117 |

- Molecule 18 is a protein called 50S ribosomal protein L21.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------------|---------|---------|-------|
| 18 | P | 100 | Total C 100 100 | 0 | 0 | 100 |

- Molecule 19 is a protein called 50S ribosomal protein L22.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------------|---------|---------|-------|
| 19 | Q | 130 | Total C 130 130 | 0 | 0 | 130 |

- Molecule 20 is a protein called 50S ribosomal protein L23.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 20 | R | 93 | Total C 93 93 | 0 | 0 | 93 |

- Molecule 21 is a protein called 50S ribosomal protein L24.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------------|---------|---------|-------|
| 21 | S | 113 | Total C 113 113 | 0 | 0 | 113 |

- Molecule 22 is a protein called general stress protein CTC.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------------|---------|---------|-------|
| 22 | T | 223 | Total C 223 223 | 43 | 0 | 223 |

- Molecule 23 is a protein called 50S ribosomal protein L27.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 23 | U | 86 | Total C 86 86 | 0 | 0 | 86 |

- Molecule 24 is a protein called 50S ribosomal protein L29.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 24 | W | 65 | Total C 65 65 | 0 | 0 | 65 |

- Molecule 25 is a protein called 50S ribosomal protein L30.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 25 | X | 55 | Total C 55 55 | 4 | 0 | 55 |

- Molecule 26 is a protein called 50S ribosomal protein L31.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 26 | Y | 73 | Total C 73 73 | 0 | 0 | 73 |

- Molecule 27 is a protein called 50S ribosomal protein L32.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 27 | Z | 58 | Total C 58 58 | 0 | 0 | 58 |

- Molecule 28 is a protein called 50S ribosomal protein L33.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 28 | 1 | 53 | Total C 53 53 | 0 | 0 | 53 |

- Molecule 29 is a protein called 50S ribosomal protein L34.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 29 | 2 | 46 | Total C 46 46 | 0 | 0 | 46 |

- Molecule 30 is a protein called 50S ribosomal protein L35.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 30 | 3 | 63 | Total C 63 63 | 0 | 0 | 63 |

- Molecule 31 is a protein called 50S ribosomal protein L36.

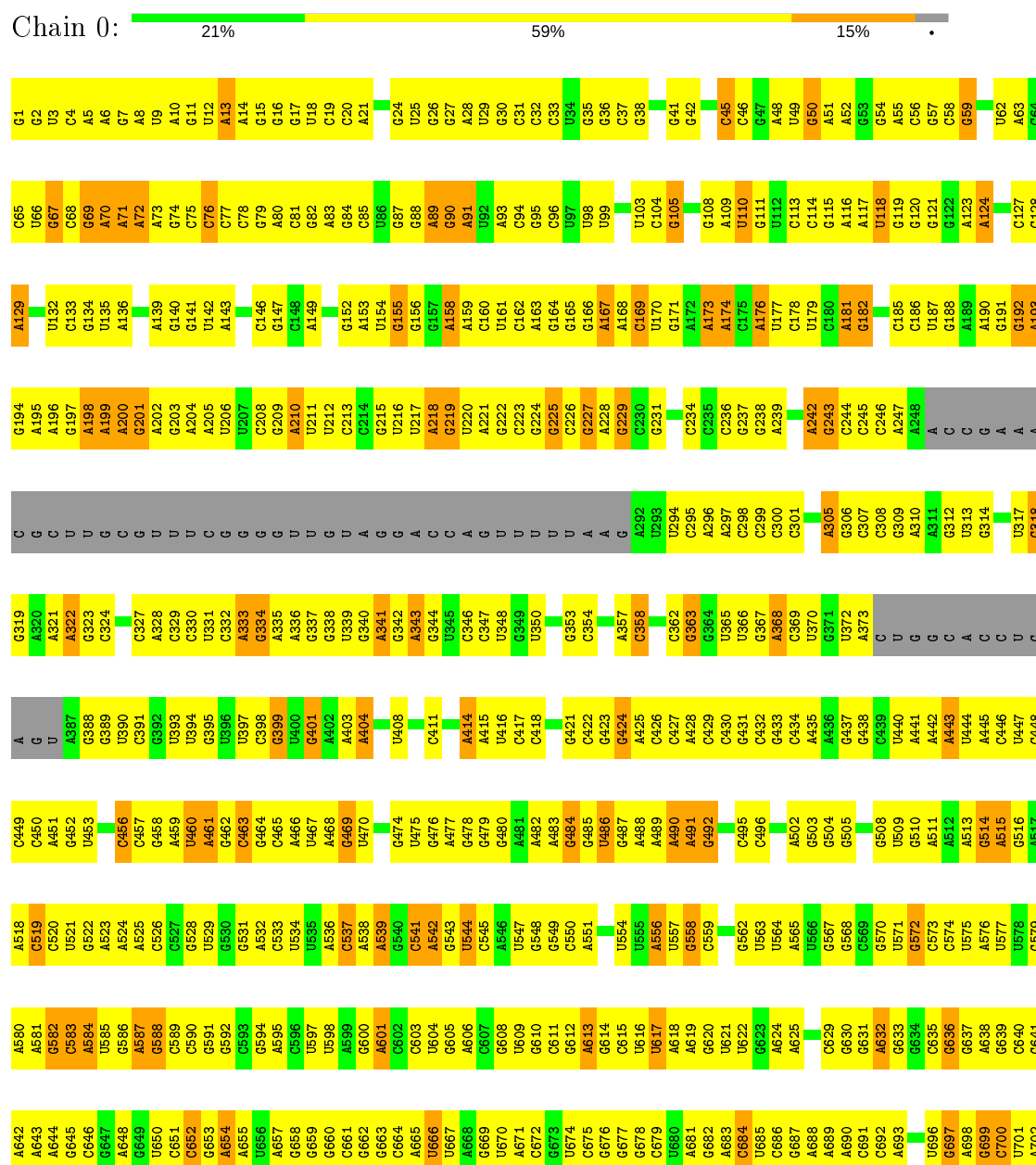
| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 31 | 4 | 35 | Total C 35 35 | 0 | 0 | 35 |

3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. 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. 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.

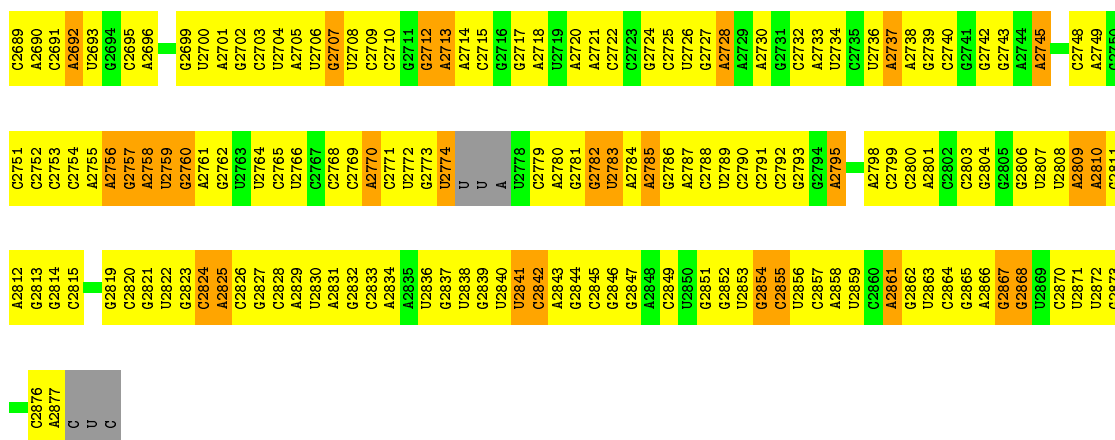
Note EDS was not executed.

• Molecule 1: 23S ribosomal RNA



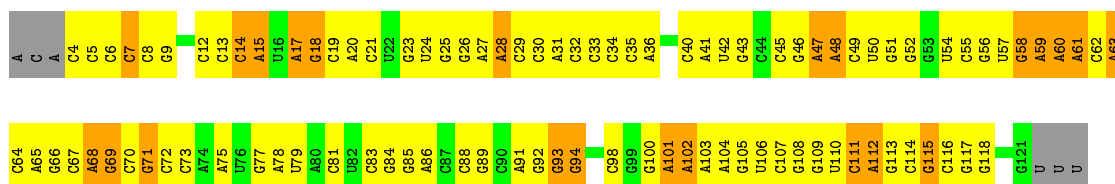
| | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|
| C1633 | A1437 | G1374 | C1310 | G1249 | A1179 | G1106 | U1034 | C968 | C | A834 | A703 |
| A1634 | G1438 | C1375 | C1311 | G1250 | A1180 | A1107 | G1035 | U969 | U | U835 | G704 |
| G1635 | G1439 | C1376 | G1312 | A1251 | C1181 | G1110 | G1036 | A970 | A | U836 | G705 |
| G1636 | G1440 | G1377 | U1313 | C1252 | U1182 | G1111 | U1037 | A971 | U | U837 | A706 |
| U1637 | A1441 | A1378 | A1314 | C1253 | G1183 | C1112 | A1038 | C972 | C | A838 | U707 |
| G1638 | C1442 | C1379 | A1315 | G1254 | G1184 | G1113 | A1039 | U973 | C | U839 | |
| U1639 | G1443 | C1380 | G1316 | G1255 | C1185 | C1114 | A1040 | U974 | A911 | U840 | A712 |
| C1640 | G1444 | G1381 | G1317 | A1256 | G1190 | A1115 | G1041 | C975 | A912 | G841 | G713 |
| C1641 | A1445 | G1382 | A1318 | C1256 | G1191 | C1116 | U1044 | C976 | A913 | A842 | |
| G1642 | U1446 | C1383 | C1319 | U1257 | A1192 | G1117 | G1045 | U978 | C914 | G843 | U716 |
| A1643 | U1447 | G1384 | A1320 | G1258 | G1193 | G1118 | U1046 | U979 | G915 | G844 | G717 |
| G1644 | A1448 | C1385 | A1321 | A1259 | U1194 | A1122 | U1047 | A980 | U916 | U845 | A718 |
| U1645 | C1449 | A1386 | G1322 | A1260 | G1195 | G1123 | U1048 | C981 | A918 | U846 | A719 |
| | G1450 | G1387 | G1323 | G1261 | U1196 | A1124 | | C982 | U919 | C847 | A720 |
| C1648 | C1451 | C1388 | U1324 | U1262 | G1197 | U1125 | G1053 | C983 | U922 | A848 | C721 |
| U1651 | U1452 | C1389 | G1325 | C1263 | C1198 | A1126 | A1054 | U983 | A923 | U852 | C722 |
| A1655 | A1453 | G1390 | U1326 | C1264 | G1200 | U1130 | A1055 | U984 | A924 | U853 | G726 |
| C1652 | U1454 | A1391 | C1327 | G1265 | G1201 | G1131 | U1056 | A986 | A925 | C853 | U727 |
| G1653 | G1455 | U1392 | C1328 | G1266 | U1202 | C1132 | A1057 | C987 | C926 | U857 | G728 |
| A1654 | C1456 | C1393 | U1329 | U1267 | G1203 | G1133 | G1058 | | C927 | G858 | |
| C1655 | A1457 | G1397 | G1332 | A1268 | U1204 | C1134 | U1062 | A990 | U928 | U859 | G732 |
| U1656 | U1458 | C1398 | C1333 | G1269 | A1205 | G1135 | G1063 | A991 | U929 | U860 | G733 |
| A1657 | U1459 | A1399 | A1334 | C1270 | G1206 | G1136 | C1064 | A994 | A930 | G861 | G734 |
| U1658 | C1460 | C1399 | A1335 | G1271 | G1207 | G1137 | A1065 | A995 | G931 | A796 | G735 |
| G1659 | A1461 | A1400 | G1336 | G1272 | U1208 | A1138 | G1066 | C996 | G932 | A797 | G736 |
| A1660 | C1462 | G1401 | U1337 | G1273 | A1209 | A1139 | U1067 | A999 | C933 | U866 | C737 |
| C1661 | U1463 | G1402 | G1338 | U1274 | U1212 | A1140 | A1068 | A999 | C934 | U867 | C738 |
| G1662 | G1464 | U1403 | C1339 | A1275 | U1213 | U1141 | G1069 | A999 | C935 | U868 | G739 |
| U1663 | C1465 | C1404 | U1340 | G1276 | U1217 | G1142 | U1072 | A999 | C936 | A801 | A740 |
| C1664 | G1466 | A1405 | C1341 | A1277 | U1218 | C1145 | G1073 | A999 | C937 | A802 | G742 |
| G1665 | U1467 | A1406 | G1342 | G1278 | C1219 | G1146 | G1074 | A999 | C938 | C803 | G743 |
| A1666 | A1468 | G1407 | U1343 | U1279 | G1220 | G1147 | U1075 | A999 | C939 | C804 | A743 |
| C1667 | U1469 | A1408 | C1344 | A1280 | G1221 | G1148 | U1076 | A999 | C940 | G805 | C744 |
| G1668 | U1470 | U1409 | G1345 | U1281 | G1222 | G1149 | U1077 | A999 | C941 | U806 | C745 |
| U1669 | G1471 | U1410 | C1346 | G1282 | U1223 | C1150 | A1081 | A999 | C942 | A807 | G746 |
| C1670 | U1472 | C1411 | C1347 | A1283 | G1224 | G1151 | U1082 | A999 | C943 | U810 | A747 |
| G1671 | C1473 | G1412 | C1348 | U1284 | U1225 | C1152 | C1083 | A999 | C944 | G811 | A748 |
| U1672 | U1474 | U1413 | C1349 | A1285 | G1226 | A1153 | G1086 | A999 | C945 | G812 | C749 |
| C1673 | U1475 | U1414 | A1349 | U1286 | U1227 | G1154 | C1087 | A999 | C946 | G813 | C750 |
| G1674 | U1476 | C1415 | G1350 | A1287 | U1228 | G1155 | A1088 | A999 | C947 | G814 | G751 |
| U1675 | G1477 | U1416 | C1351 | A1288 | U1229 | U1156 | C1089 | A999 | C948 | A815 | G752 |
| C1676 | C1478 | A1417 | G1352 | U1289 | U1230 | A1162 | U1090 | A999 | C949 | U816 | U753 |
| G1677 | U1479 | C1418 | C1353 | A1290 | U1231 | C1163 | C1091 | A999 | C950 | U817 | C754 |
| U1678 | G1480 | G1419 | A1354 | A1291 | U1232 | G1164 | U1092 | A999 | C951 | U818 | C755 |
| C1679 | U1481 | | A1355 | G1292 | U1233 | C1165 | C1093 | A999 | C952 | G819 | C756 |
| U1680 | U1482 | C1422 | C1356 | A1293 | U1234 | G1166 | A1095 | A999 | C953 | U820 | G757 |
| A1681 | G1483 | U1423 | G1359 | G1294 | U1235 | U1167 | A1096 | A999 | C954 | U821 | C758 |
| C1682 | U1484 | U1424 | U1362 | A1295 | U1236 | G1168 | U1099 | A999 | C955 | G | U759 |
| G1683 | U1485 | G1425 | C1363 | G1296 | U1237 | A1169 | A1099 | A999 | C956 | G | U760 |
| U1684 | A1486 | U1426 | U1364 | A1297 | U1238 | C1169 | G1100 | A999 | C957 | G | G761 |
| A1685 | C1487 | G1427 | U1365 | U1298 | U1239 | G1170 | U1101 | A999 | C958 | G | A762 |
| C1686 | U1488 | G1428 | U1366 | A1299 | U1240 | A1171 | G1102 | A999 | C959 | G | A763 |
| | G1489 | U1429 | U1367 | U1300 | U1241 | C1172 | U1103 | A999 | C960 | G | A764 |
| U1690 | U1490 | G1430 | U1368 | U1301 | U1242 | G1173 | U1104 | A999 | C961 | G | C765 |
| G1691 | C1491 | U1431 | G1369 | U1302 | U1243 | U1174 | G1105 | A999 | C962 | G | A766 |
| C1692 | A1492 | G1432 | U1370 | U1303 | U1244 | A1175 | C1103 | A999 | C963 | G | G767 |
| A1693 | U1493 | A1433 | U1371 | U1304 | U1245 | U1176 | G1104 | A999 | C964 | G | U768 |
| U1694 | G1494 | U1434 | G1372 | U1305 | U1246 | U1177 | U1105 | A999 | C965 | G | C769 |
| G1695 | U1495 | U1435 | C1373 | U1306 | U1247 | U1178 | | A999 | C966 | G | U770 |
| C1696 | G1496 | G1436 | G1374 | G1309 | U1248 | | | A999 | C967 | G | |

| | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| U2626 | G2562 | U2498 | G3362 | U2291 | G2217 | A | G2093 | C2026 | A1961 | A1901 | C1824 | G1761 | U1697 |
| G2627 | U2563 | C2499 | G2363 | U2296 | G2218 | U | C2094 | C2027 | C1962 | A1902 | C1825 | C1762 | C1698 |
| G2628 | U2564 | U2501 | G2364 | G2297 | A2220 | A | G2095 | G2095 | G1963 | G1903 | G1826 | G1763 | A1699 |
| C2630 | C2565 | G2502 | U2365 | G2298 | U2221 | C2157 | U2096 | U2030 | A1964 | G1904 | G1827 | A1764 | |
| C2631 | G2566 | G2503 | U2369 | U2299 | G2225 | C2158 | A2159 | G2032 | A2031 | U1965 | C1703 | C1765 | G1704 |
| U2682 | A2567 | G2504 | G3370 | G2300 | A2226 | C2160 | G | C2033 | C1966 | U1906 | G1830 | U1766 | U1706 |
| A2633 | U2569 | G2505 | A2371 | A2301 | G2227 | C2161 | U | A2034 | U1967 | C1907 | G1831 | G1767 | U1705 |
| G2634 | C2570 | G2506 | A2372 | C2302 | U2228 | C2162 | A | | G1968 | C1908 | | U1768 | A1706 |
| A2635 | U2571 | G2507 | G2375 | C2303 | G2229 | U2163 | A | | G1969 | U1909 | G1834 | U1769 | A1707 |
| G2636 | G2572 | A2508 | G2376 | A2306 | U2230 | G2164 | G2103 | G2038 | A1970 | A1910 | C1835 | U1770 | C1708 |
| G2637 | C2573 | G2509 | U2377 | A2307 | C2233 | A2165 | G2104 | A2040 | C1971 | A1911 | C1836 | A1771 | U1709 |
| G2638 | U2574 | G2510 | G2378 | A2308 | G2234 | A2166 | G2105 | A2041 | C1972 | G1912 | G1837 | C1772 | U1710 |
| A2639 | U2575 | A2512 | G2379 | A2309 | G2235 | A2167 | G2106 | A2042 | U1974 | U1914 | A1838 | C1773 | C1711 |
| A2640 | G2576 | | U2380 | G2310 | G2236 | A2168 | G2107 | A2043 | G1975 | A1915 | A1840 | A1774 | G1712 |
| A2641 | U2577 | | U2381 | U2311 | U2237 | A2169 | | G2044 | U1976 | G1916 | G1841 | A1775 | G1713 |
| G2642 | G2578 | C2516 | A2382 | U2312 | C2240 | U2170 | G2110 | C2046 | C1977 | C1917 | G1842 | U1778 | A1715 |
| G2643 | A2579 | C2517 | G2383 | G2313 | U2241 | U2171 | C | U2047 | U1978 | G1918 | U1843 | A1779 | G1716 |
| A2644 | C2580 | C2518 | G2384 | A2314 | C2242 | U2172 | U | C2048 | C1979 | A1919 | C1844 | C1779 | A1717 |
| C2645 | U2581 | C2519 | U2385 | A2315 | G2243 | G2173 | U | C2049 | A1980 | A1920 | A1845 | A1780 | A1718 |
| C2646 | G2582 | A2520 | G2386 | G2316 | C2244 | G2174 | G | G2050 | A1981 | A1921 | G1846 | G1781 | G1719 |
| | U2583 | G2521 | | G2317 | A2245 | A2175 | G | U2051 | C1982 | U1922 | G1847 | A1782 | G1720 |
| G2650 | U2584 | G2522 | | U2318 | A2246 | U2176 | | G2052 | G1969 | C1924 | G1848 | C1783 | G1721 |
| U2651 | C2585 | G2523 | A2389 | G2319 | U2247 | U2177 | A2117 | G2053 | U1980 | G1925 | G1849 | C1784 | G1722 |
| G2652 | G2586 | G2524 | A2390 | G2320 | A2248 | U2178 | A2118 | A2054 | C1981 | C1926 | G1850 | A1785 | U1723 |
| A2653 | U2587 | U2585 | A2391 | G2321 | | C2179 | A2119 | | G1982 | U1927 | A1851 | C1786 | G1724 |
| A2654 | G2588 | U2526 | G2392 | U2322 | U2251 | G2173 | U | G2055 | C1983 | G1928 | | U1787 | C1725 |
| | C2589 | | G2393 | U2323 | C2252 | G2174 | U | C2056 | G1984 | C1929 | G1854 | C1788 | C1726 |
| G2655 | U2590 | C2530 | G2394 | U2324 | A2253 | A2181 | U | U2057 | U1985 | U1929 | G1855 | U1789 | G1727 |
| G2656 | G2591 | G2532 | A2467 | G2325 | G2255 | C2184 | G | U2058 | C1986 | G1930 | G1856 | G1790 | A1728 |
| G2657 | U2592 | U2532 | G2396 | A2326 | | U2185 | | U2059 | A1986 | G1931 | G1857 | C1791 | C1729 |
| A2658 | C2593 | U2533 | A2397 | G2327 | G2261 | U2186 | U | A2060 | A1987 | G1932 | C1858 | C1792 | G1730 |
| C2659 | U2594 | U2534 | U2398 | U2327 | C2262 | | U | | A1988 | G1933 | | A1799 | G1731 |
| C2660 | C2595 | C2535 | G2399 | G2328 | C2263 | A2191 | U | A2063 | U1989 | U1934 | A1860 | U1793 | U1732 |
| C2662 | G2596 | G2536 | | U2329 | C2264 | U2192 | U | A2065 | G2001 | A1935 | G1861 | U1733 | |
| | C2597 | C2537 | U2402 | G2330 | C2265 | C2193 | G | G2066 | G2002 | G1936 | C1862 | G1734 | G1735 |
| G2665 | C2598 | C2538 | C2403 | A2331 | A2266 | A2194 | G | U2067 | A2003 | U1938 | G1864 | C1801 | C1736 |
| U2666 | U2599 | C2539 | A2404 | | A2267 | C2195 | G2132 | C2068 | U2004 | U1939 | C1865 | A1802 | |
| C2667 | G2604 | U2541 | A2405 | G2335 | G2268 | U2196 | G2133 | U2069 | U2005 | C1940 | G1866 | G1803 | U1738 |
| U2668 | C2605 | U2542 | C2406 | G2336 | C2269 | U2197 | U2134 | G2070 | G2006 | C1941 | A1867 | U1804 | G1739 |
| C2669 | G2606 | A2543 | G2407 | A2337 | U2270 | U2198 | C2135 | G2071 | G2007 | G1942 | A1868 | G1805 | G1740 |
| C2670 | C2607 | A2544 | G2408 | | C2271 | C2199 | G2136 | C2072 | C2008 | A1943 | A1869 | G1806 | G1741 |
| C2671 | U2608 | A2545 | U2410 | G2341 | A2272 | G2200 | G2137 | A2073 | U2009 | C1944 | U1870 | A1807 | G1742 |
| U2672 | G2609 | G2546 | A2411 | U2342 | A2273 | G2201 | U2138 | | G2010 | U1946 | G1871 | C1808 | C1743 |
| G2673 | | C2547 | A2412 | G2343 | C2274 | G2202 | G2139 | G2076 | U2011 | G1947 | A1872 | G1809 | |
| U2674 | G2613 | U2548 | A2413 | G2344 | U2275 | G2203 | A | G2077 | A2012 | C1948 | U1810 | G1747 | |
| U2675 | A2614 | G2549 | A2414 | A2345 | C2276 | A2204 | G | U2078 | A2013 | A1949 | U1811 | U1748 | U1749 |
| G2676 | C2615 | C2550 | G2415 | C2346 | A2277 | C2205 | C | U2080 | G2015 | C1950 | A1812 | G1749 | A1750 |
| C2677 | U2616 | A2551 | G2416 | A2347 | U2278 | C2206 | U | U2081 | A2016 | G1951 | A1813 | A1751 | |
| C2678 | G2617 | C2552 | C2419 | G2351 | G2279 | G2207 | C | | U2017 | A1952 | G1814 | U1752 | |
| G2679 | U2618 | G2553 | C2420 | A2352 | A2280 | U2208 | A | C2082 | C2018 | A1953 | G1815 | U1753 | |
| U2680 | A2619 | C2554 | C2421 | G2353 | C2281 | G2209 | A | G2083 | G2019 | A1954 | G1816 | A1754 | |
| C2682 | C2620 | G2555 | C2422 | G2354 | | C2210 | C | G2084 | G2020 | G1955 | G1817 | G1755 | |
| C2683 | G2621 | A2556 | G2423 | G2355 | U2285 | U2211 | G | U2085 | G2021 | G1956 | G1818 | G1756 | |
| A2684 | U2622 | G2557 | G2424 | A2356 | U2286 | U2212 | U | G2086 | C2022 | C1957 | U1819 | C1757 | |
| A2685 | G2623 | U2559 | G2425 | A2357 | G2287 | G2213 | G | | C2023 | G1958 | G1820 | C1758 | |
| G2686 | U2624 | G2560 | A2426 | A2357 | A2288 | G2214 | A | U2090 | U2024 | U1959 | A1821 | C1759 | |
| G2687 | C2625 | | A2427 | | A2289 | G2215 | | C2091 | C1759 | | C1822 | | |
| G2688 | U2625 | | U2428 | G2361 | A2290 | G2216 | A | U2092 | A2025 | A1960 | G1823 | | |



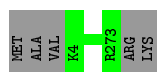
- Molecule 2: 5S ribosomal RNA

Chain 9: 18% 59% 19% 5%



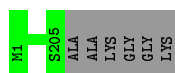
- Molecule 3: 50S ribosomal protein L2

Chain A: 98%



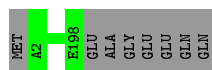
- Molecule 4: 50S ribosomal protein L3

Chain B: 97%



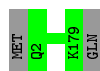
- Molecule 5: 50S ribosomal protein L4

Chain C: 96%



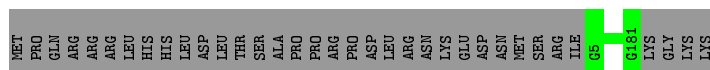
- Molecule 6: 50S ribosomal protein L5

Chain D: 99%



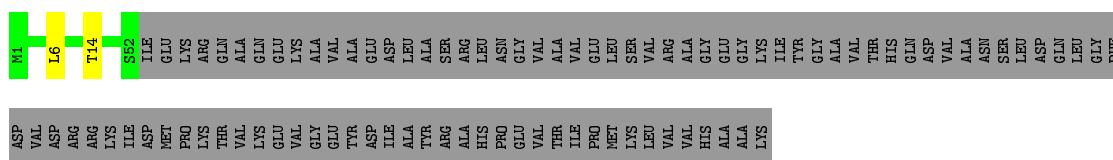
- Molecule 7: 50S ribosomal protein L6

Chain E: 83% 17%



- Molecule 8: 50S ribosomal protein L9

Chain F: 34% . 64%



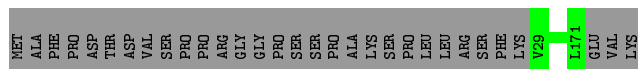
- Molecule 9: 50S ribosomal protein L11

Chain G: 99% .



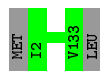
- Molecule 10: 50S ribosomal protein L13

Chain H: 82% 18%



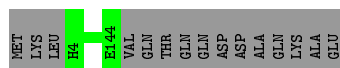
- Molecule 11: 50S ribosomal protein L14

Chain I: 99% .




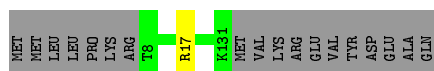
- Molecule 12: 50S ribosomal protein L15

Chain J: 90% 10%



- Molecule 13: 50S ribosomal protein L16

Chain K:  87% 13%



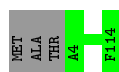
- Molecule 14: 50S ribosomal protein L17

Chain L:  98%



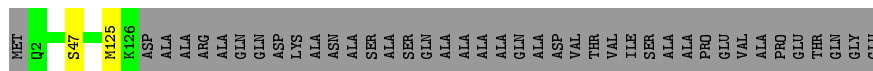
- Molecule 15: 50S ribosomal protein L18

Chain M:  97%



- Molecule 16: 50S ribosomal protein L19

Chain N:  74% 25%



- Molecule 17: 50S ribosomal protein L20

Chain O:  99%



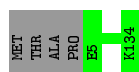
- Molecule 18: 50S ribosomal protein L21

Chain P:  100%

There are no outlier residues recorded for this chain.

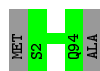
- Molecule 19: 50S ribosomal protein L22

Chain Q:  97%



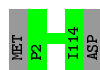
- Molecule 20: 50S ribosomal protein L23

Chain R:  98%



- Molecule 21: 50S ribosomal protein L24

Chain S: 98% .



- Molecule 22: general stress protein CTC

Chain T: 88% 12%



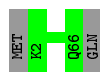
- Molecule 23: 50S ribosomal protein L27

Chain U: 95% 5%



- Molecule 24: 50S ribosomal protein L29

Chain W: 97% .



- Molecule 25: 50S ribosomal protein L30

Chain X: 100%

There are no outlier residues recorded for this chain.

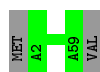
- Molecule 26: 50S ribosomal protein L31

Chain Y: 100%

There are no outlier residues recorded for this chain.

- Molecule 27: 50S ribosomal protein L32

Chain Z: 97% .



- Molecule 28: 50S ribosomal protein L33



• Molecule 29: 50S ribosomal protein L34



• Molecule 30: 50S ribosomal protein L35



• Molecule 31: 50S ribosomal protein L36



4 Data and refinement statistics

Xtriage (Phenix) and EDS were not executed - this section is therefore incomplete.

| Property | Value | Source |
|--|--|-----------|
| Space group | I 2 2 2 | Depositor |
| Cell constants a, b, c, α , β , γ | 170.00 Å 410.00 Å 697.00 Å 90.00° 90.00° 90.00° | Depositor |
| Resolution (Å) | 15.00 – 3.10 | Depositor |
| % Data completeness (in resolution range) | (Not available) (15.00-3.10) | Depositor |
| R_{merge} | (Not available) | Depositor |
| R_{sym} | (Not available) | Depositor |
| Refinement program | CNS | Depositor |
| R, R_{free} | 0.240 , 0.274 | Depositor |
| Estimated twinning fraction | No twinning to report. | Xtriage |
| Total number of atoms | 65300 | wwPDB-VP |
| Average B, all atoms (Å ²) | 47.0 | wwPDB-VP |

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|-------------|-------------|-----------------|
| | | RMSZ | $\# Z > 5$ | RMSZ | $\# Z > 5$ |
| 1 | 0 | 0.25 | 0/66467 | 0.70 | 6/103673 (0.0%) |
| 2 | 9 | 0.59 | 0/2816 | 0.81 | 1/4388 (0.0%) |
| All | All | 0.27 | 0/69283 | 0.70 | 7/108061 (0.0%) |

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

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1 | 0 | 0 | 5 |

There are no bond length outliers.

The worst 5 of 7 bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^{\circ}$) | Ideal($^{\circ}$) |
|-----|-------|------|------|-------------|-------|------------------------|---------------------|
| 2 | 9 | 94 | G | N9-C1'-C2' | -6.58 | 104.76 | 112.00 |
| 1 | 0 | 2428 | U | N1-C1'-C2' | 6.19 | 122.04 | 114.00 |
| 1 | 0 | 1279 | G | N9-C1'-C2' | 5.63 | 121.32 | 114.00 |
| 1 | 0 | 843 | G | C2'-C3'-O3' | 5.44 | 122.40 | 113.70 |
| 1 | 0 | 2660 | C | N1-C1'-C2' | 5.26 | 120.84 | 114.00 |

There are no chirality outliers.

All (5) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|------|------|-----------|
| 1 | 0 | 1264 | C | Sidechain |
| 1 | 0 | 1342 | U | Sidechain |
| 1 | 0 | 2251 | U | Sidechain |
| 1 | 0 | 2668 | U | Sidechain |
| 1 | 0 | 788 | G | Sidechain |

5.2 Too-close contacts ⓘ

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | 0 | 59359 | 0 | 29917 | 2555 | 1 |
| 2 | 9 | 2519 | 0 | 1285 | 147 | 0 |
| 3 | A | 270 | 0 | 0 | 0 | 0 |
| 4 | B | 205 | 0 | 0 | 0 | 0 |
| 5 | C | 197 | 0 | 0 | 0 | 0 |
| 6 | D | 178 | 0 | 0 | 0 | 0 |
| 7 | E | 177 | 0 | 0 | 0 | 0 |
| 8 | F | 52 | 0 | 0 | 1 | 0 |
| 9 | G | 143 | 0 | 0 | 0 | 0 |
| 10 | H | 143 | 0 | 0 | 0 | 0 |
| 11 | I | 132 | 0 | 0 | 0 | 0 |
| 12 | J | 141 | 0 | 0 | 0 | 0 |
| 13 | K | 124 | 0 | 0 | 1 | 0 |
| 14 | L | 114 | 0 | 0 | 0 | 0 |
| 15 | M | 111 | 0 | 0 | 0 | 0 |
| 16 | N | 125 | 0 | 0 | 1 | 1 |
| 17 | O | 117 | 0 | 0 | 0 | 0 |
| 18 | P | 100 | 0 | 0 | 0 | 0 |
| 19 | Q | 130 | 0 | 0 | 0 | 0 |
| 20 | R | 93 | 0 | 0 | 0 | 0 |
| 21 | S | 113 | 0 | 0 | 0 | 0 |
| 22 | T | 223 | 0 | 0 | 0 | 0 |
| 23 | U | 86 | 0 | 0 | 0 | 0 |
| 24 | W | 65 | 0 | 0 | 0 | 0 |
| 25 | X | 55 | 0 | 0 | 0 | 0 |
| 26 | Y | 73 | 0 | 0 | 0 | 0 |
| 27 | Z | 58 | 0 | 0 | 0 | 0 |
| 28 | 1 | 53 | 0 | 0 | 0 | 0 |
| 29 | 2 | 46 | 0 | 0 | 0 | 0 |
| 30 | 3 | 63 | 0 | 0 | 0 | 0 |
| 31 | 4 | 35 | 0 | 0 | 0 | 0 |
| All | All | 65300 | 0 | 31202 | 2696 | 1 |

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 28.

The worst 5 of 2696 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------|--------------------------|-------------------|
| 1:0:1679:U:H2' | 1:0:1680:U:H5'' | 1.22 | 1.12 |
| 1:0:362:C:H2' | 1:0:363:G:H4' | 1.34 | 1.10 |
| 1:0:918:A:H2' | 1:0:919:U:H5'' | 1.29 | 1.10 |
| 1:0:2548:G:H2' | 1:0:2549:G:H5'' | 1.10 | 1.09 |
| 1:0:2058:U:H1' | 1:0:2576:G:H21 | 1.08 | 1.08 |

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------------|--------------------------|-------------------|
| 1:0:1552:C:OP1 | 16:N:47:SER:CA[8_455] | 1.97 | 0.23 |

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

There are no protein backbone outliers to report in this entry.

5.3.2 Protein sidechains [i](#)

There are no protein residues with a non-rotameric sidechain to report in this entry.

5.3.3 RNA [i](#)

| Mol | Chain | Analysed | Backbone Outliers | Pucker Outliers |
|-----|-------|-----------------|-------------------|-----------------|
| 1 | 0 | 2757/2880 (95%) | 523 (18%) | 48 (1%) |
| 2 | 9 | 117/124 (94%) | 23 (19%) | 1 (0%) |
| All | All | 2874/3004 (95%) | 546 (18%) | 49 (1%) |

5 of 546 RNA backbone outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | 0 | 13 | A |
| 1 | 0 | 35 | G |
| 1 | 0 | 45 | C |
| 1 | 0 | 48 | A |
| 1 | 0 | 49 | U |

5 of 49 RNA pucker outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | 0 | 1495 | G |
| 1 | 0 | 1820 | G |
| 1 | 0 | 2660 | C |
| 1 | 0 | 1651 | U |
| 1 | 0 | 1938 | 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 carbohydrates 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 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates ⓘ

EDS was not executed - this section is therefore empty.

6.4 Ligands ⓘ

EDS was not executed - this section is therefore empty.

6.5 Other polymers ⓘ

EDS was not executed - this section is therefore empty.