



Full wwPDB EM Validation Report ⓘ

Mar 15, 2026 – 11:11 AM UTC

PDB ID : 8VR4 / pdb_00008vr4
EMDB ID : EMD-43476
Title : Structure of Mycobacterium smegmatis 50S ribosomal subunit bound to HflX and erythromycin:50S-HflX-A-Ery
Authors : Majumdar, S.; Koripella, R.K.; Sharma, M.R.; Manjari, S.R.; Banavali, N.K.; Agrawal, R.K.
Deposited on : 2024-01-20
Resolution : 2.80 Å (reported)
Based on initial models : 6DZI, 5O61

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:

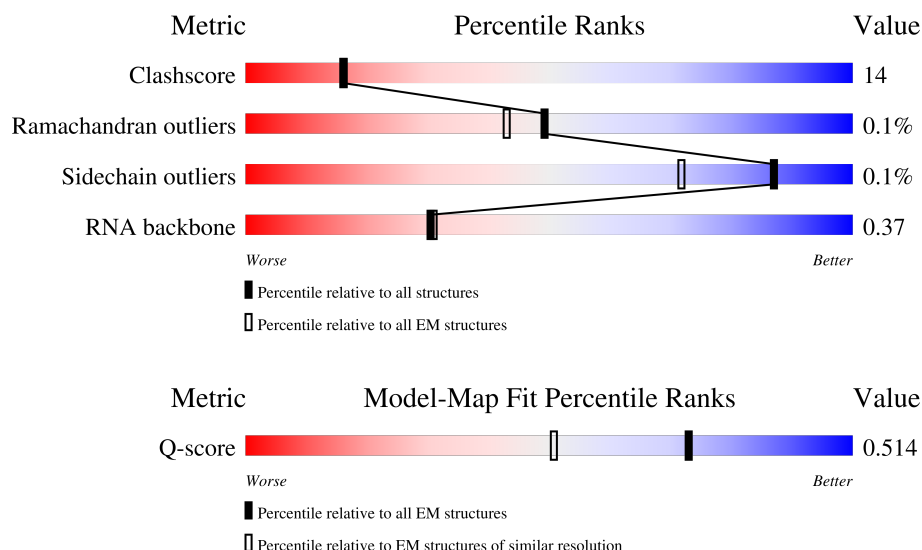
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance

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

The reported resolution of this entry is 2.80 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	11806 (2.30 - 3.30)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	2	61	
2	3	24	

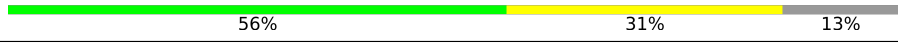
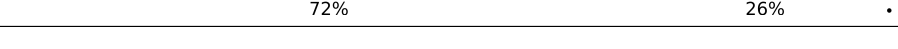
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Mol	Chain	Length	Quality of chain
3	4	470	
4	B	118	
5	C	278	
6	D	217	
7	E	215	
8	F	187	
9	G	179	
10	H	151	
11	J	142	
12	K	147	
13	L	122	
14	M	147	
15	N	138	
16	O	199	
17	P	127	
18	Q	113	
19	R	129	
20	S	103	
21	T	153	
22	U	100	
23	V	105	
24	W	215	
25	X	88	
26	Y	64	
27	Z	77	

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Mol	Chain	Length	Quality of chain
28	b	57	
29	c	55	
30	d	47	
31	e	64	
32	f	37	
33	g	75	
34	A	3120	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
35	GCP	4	501	-	-	X	-

2 Entry composition

There are 36 unique types of molecules in this entry. The entry contains 99354 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms				AltConf	Trace
1	2	59	Total	C	N	O	0	0
			474	292	95	87		

- Molecule 2 is a protein called 50S Ribosomal Protein L27.

Mol	Chain	Residues	Atoms				AltConf	Trace
2	3	23	Total	C	N	O	0	0
			189	111	50	28		

- Molecule 3 is a protein called GTPase HflX.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	4	426	Total	C	N	O	S	0	0
			3206	1984	593	622	7		

- Molecule 4 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	B	118	Total	C	N	O	P	0	0
			2522	1126	468	810	118		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
5	C	275	Total	C	N	O	S	0	0
			2110	1298	438	370	4		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
6	D	214	Total	C	N	O	S	0	0
			1586	982	310	290	4		

- Molecule 7 is a protein called 50S Ribosomal Protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	E	209	Total	C	N	O	S	0	0
			1569	969	295	303	2		

- Molecule 8 is a protein called 50S Ribosomal Protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	F	182	Total	C	N	O	S	0	0
			1442	906	270	260	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
9	G	176	Total	C	N	O	S	0	0
			1344	843	249	251	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
10	H	151	Total	C	N	O	S	0	0
			1018	635	188	194	1		

- Molecule 11 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	J	132	Total	C	N	O	S	0	0
			979	617	173	186	3		

- Molecule 12 is a protein called 50S Ribosomal Protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	K	146	Total	C	N	O	S	0	0
			1130	722	207	200	1		

- Molecule 13 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	L	122	Total	C	N	O	S	0	0
			938	586	179	170	3		

- Molecule 14 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	M	145	Total	C	N	O	S	0	0
			1078	676	205	194	3		

- Molecule 15 is a protein called Large ribosomal subunit protein uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	N	136	Total	C	N	O	S	0	0
			1092	690	213	187	2		

- Molecule 16 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	O	118	Total	C	N	O	S	0	0
			928	583	180	163	2		

- Molecule 17 is a protein called 50S Ribosomal Protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	P	126	Total	C	N	O	S	0	0
			956	586	199	171			

- Molecule 18 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	Q	113	Total	C	N	O	S	0	0
			907	570	171	165	1		

- Molecule 19 is a protein called 50S Ribosomal Protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	R	124	Total	C	N	O	S	0	0
			988	613	203	172			

- Molecule 20 is a protein called 50S Ribosomal Protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	S	100	Total	C	N	O	S	0	0
			754	478	137	139			

- Molecule 21 is a protein called 50S Ribosomal Protein L22.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	T	114	Total	C	N	O	0	0
			873	543	171	159		

- Molecule 22 is a protein called 50S Ribosomal Protein L23.

Mol	Chain	Residues	Atoms				AltConf	Trace
22	U	97	Total	C	N	O	0	0
			756	479	138	139		

- Molecule 23 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	V	97	Total	C	N	O	S	0	0
			732	456	137	137	2		

- Molecule 24 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms				AltConf	Trace
24	W	103	Total	C	N	O	0	0
			792	487	159	146		

- Molecule 25 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms				AltConf	Trace
25	X	79	Total	C	N	O	0	0
			586	361	123	102		

- Molecule 26 is a protein called 50S Ribosomal Protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	Y	63	Total	C	N	O	S	0	0
			470	283	103	80	4		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
27	Z	64	Total	C	N	O	S	0	0
			531	324	103	103	1		

- Molecule 28 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	b	54	Total	C	N	O	S	0	0
			423	260	93	69	1		

- Molecule 29 is a protein called 50S Ribosomal Protein L33.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	c	48	Total	C	N	O	S	0	0
			397	244	81	68	4		

- Molecule 30 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	d	46	Total	C	N	O	S	0	0
			377	225	97	54	1		

- Molecule 31 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	e	63	Total	C	N	O		0	0
			502	302	115	85			

- Molecule 32 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	f	37	Total	C	N	O	S	0	0
			299	181	66	47	5		

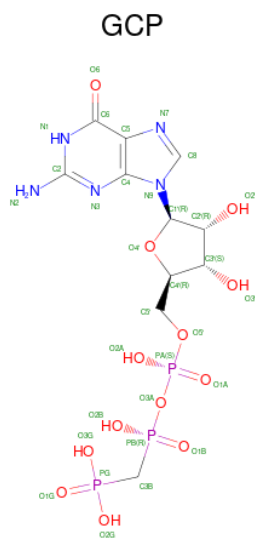
- Molecule 33 is a protein called 50S Ribosomal Protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	g	48	Total	C	N	O	S	0	0
			364	225	63	71	5		

- Molecule 34 is a RNA chain called 23S ribosomal RNA.

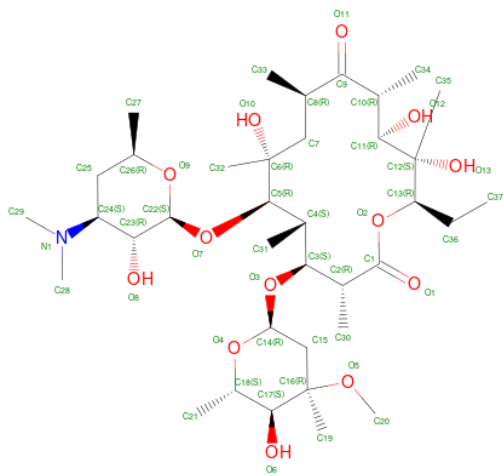
Mol	Chain	Residues	Atoms					AltConf	Trace
34	A	3118	Total	C	N	O	P	0	0
			66959	29844	12308	21689	3118		

- Molecule 35 is PHOSPHOMETHYLPHOSPHONIC ACID GUANYLATE ESTER (CCD ID: GCP) (formula: $C_{11}H_{18}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).

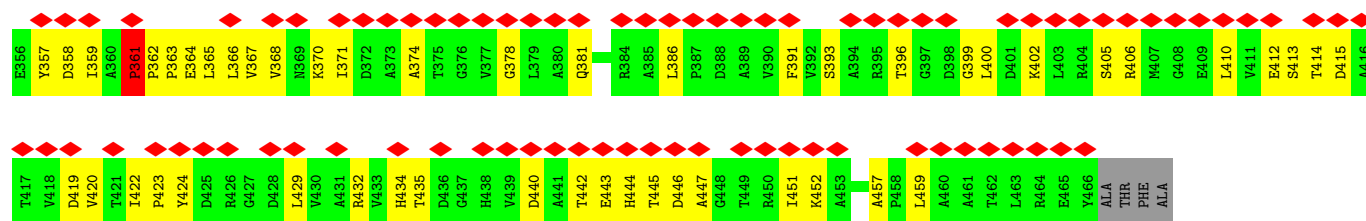


Mol	Chain	Residues	Atoms					AltConf
35	4	1	Total	C	N	O	P	0
			32	11	5	13	3	

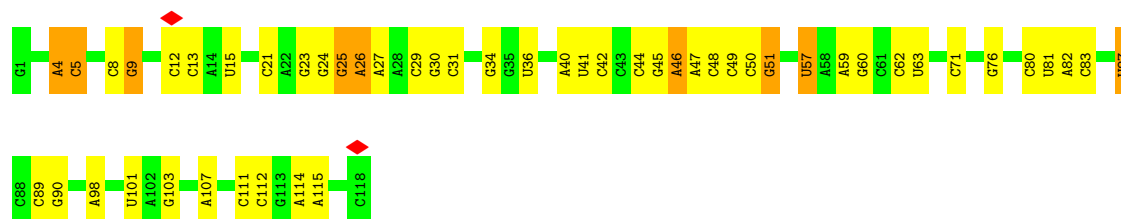
- Molecule 36 is ERYTHROMYCIN A (CCD ID: ERY) (formula: $C_{37}H_{67}NO_{13}$).



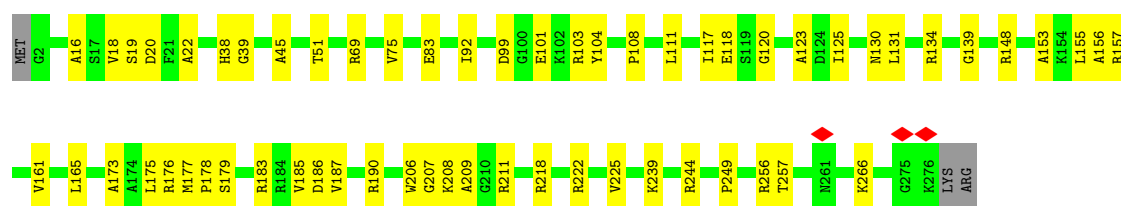
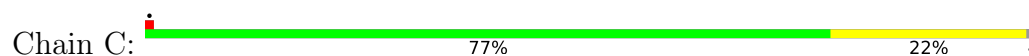
Mol	Chain	Residues	Atoms				AltConf
36	A	1	Total	C	N	O	0
			51	37	1	13	



• Molecule 4: 5S ribosomal RNA



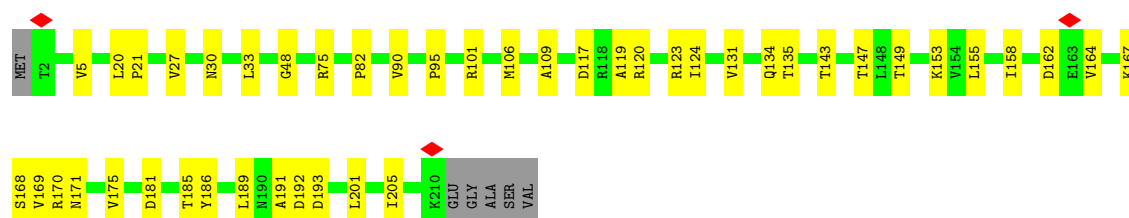
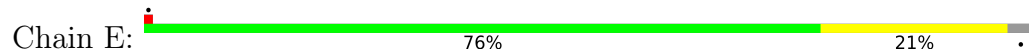
• Molecule 5: 50S ribosomal protein L2



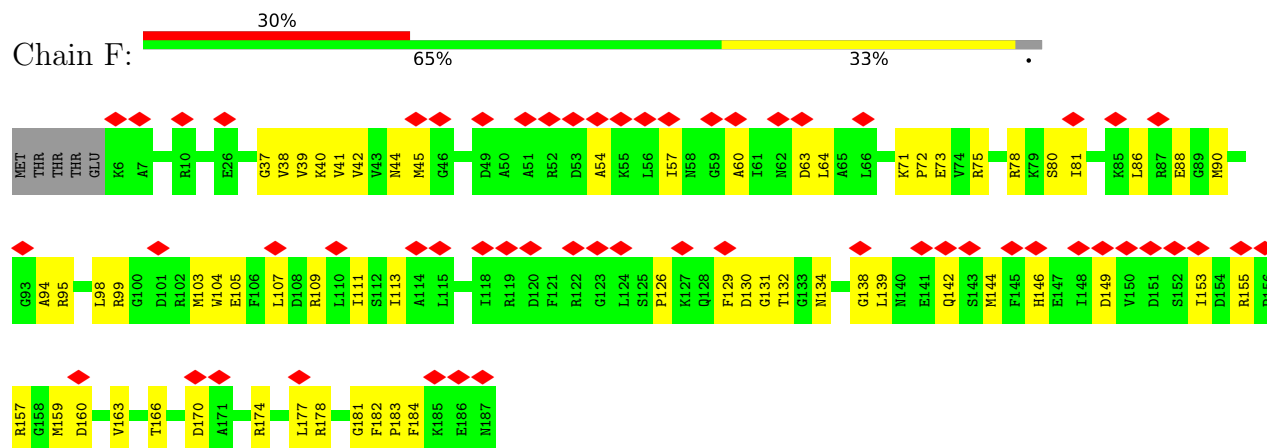
• Molecule 6: 50S ribosomal protein L3



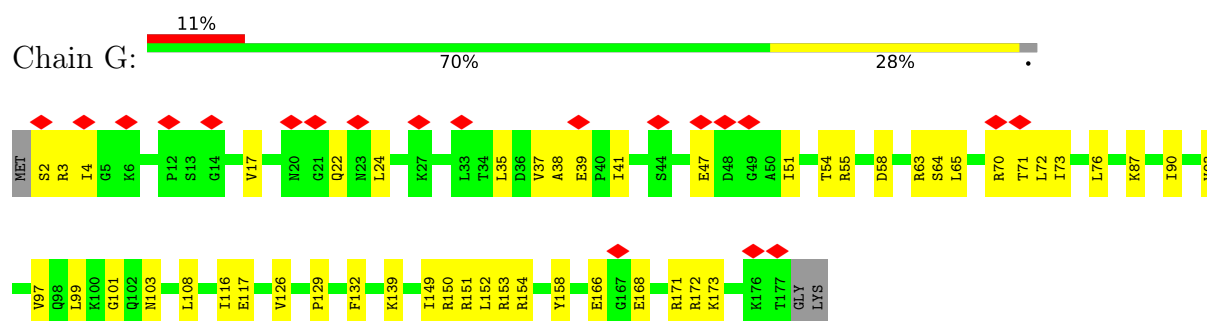
• Molecule 7: 50S Ribosomal Protein L4



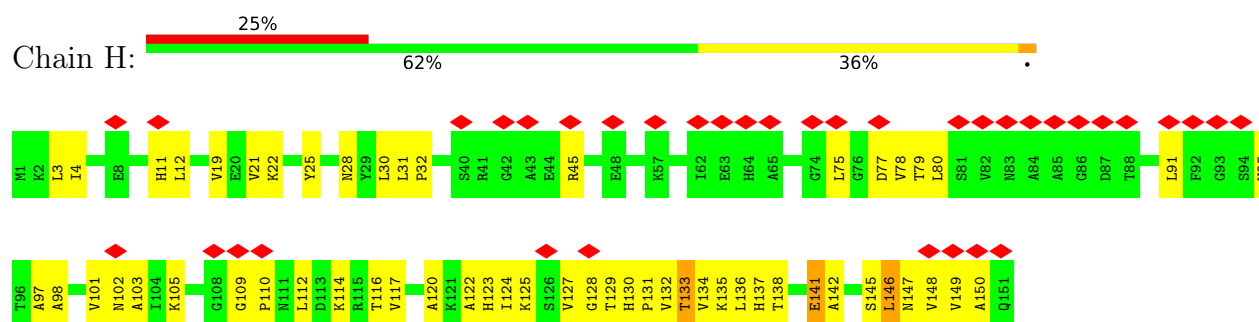
- Molecule 8: 50S Ribosomal Protein L5



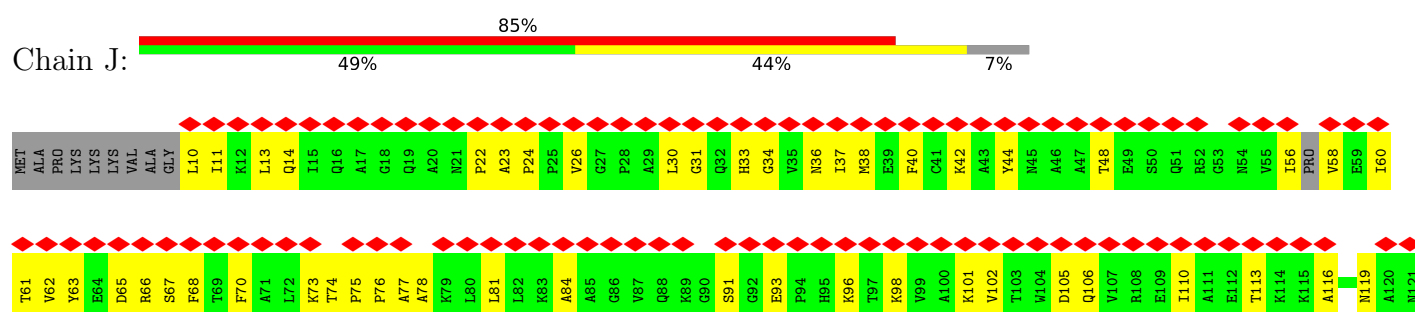
- Molecule 9: 50S ribosomal protein L6



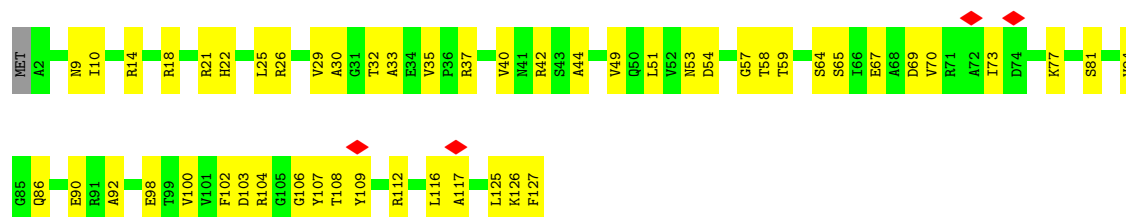
- Molecule 10: 50S ribosomal protein L9



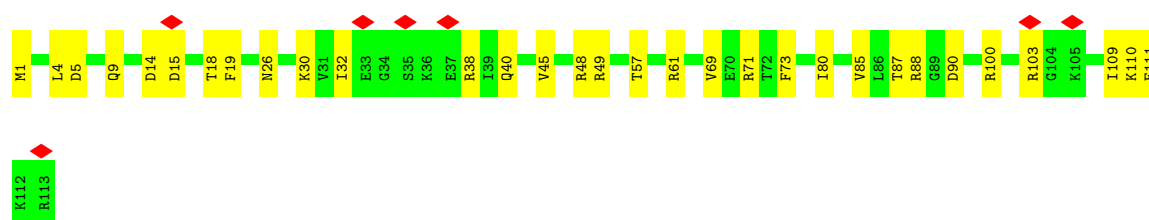
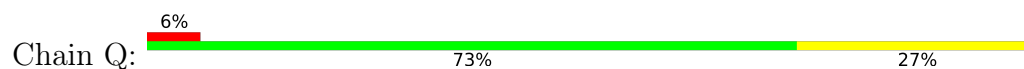
- Molecule 11: 50S ribosomal protein L11



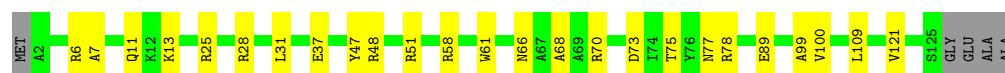
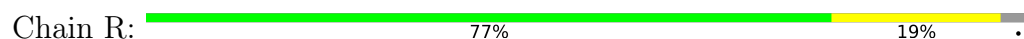




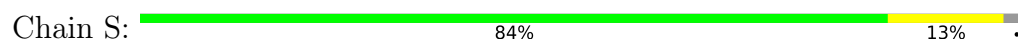
- Molecule 18: 50S ribosomal protein L19



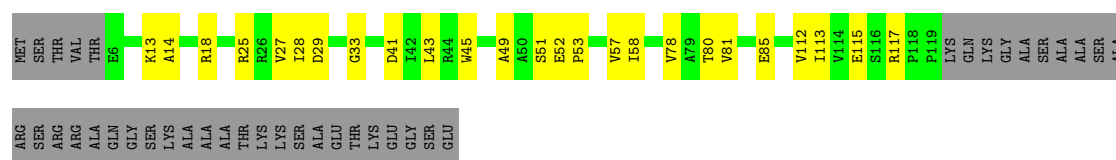
- Molecule 19: 50S Ribosomal Protein L20



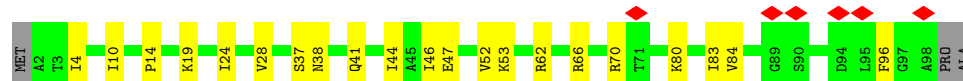
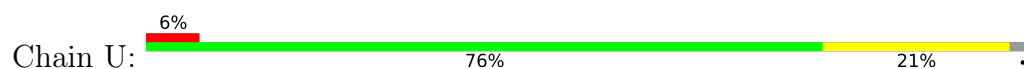
- Molecule 20: 50S Ribosomal Protein L21



- Molecule 21: 50S Ribosomal Protein L22



- Molecule 22: 50S Ribosomal Protein L23



- Molecule 23: 50S ribosomal protein L24



Chain c:  56% 31% 13%



- Molecule 30: 50S ribosomal protein L34

Chain d:  72% 26% .



- Molecule 31: 50S ribosomal protein L35

Chain e:  70% 28% .

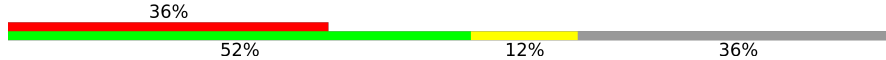


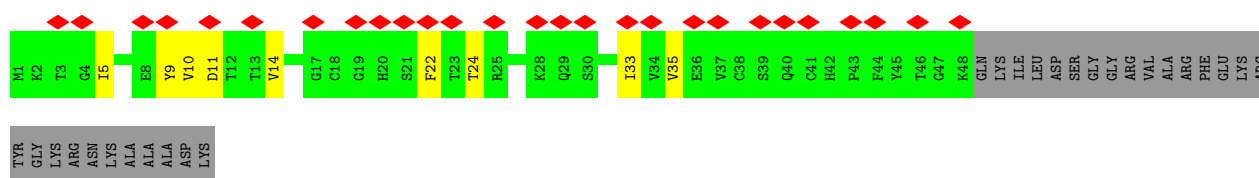
- Molecule 32: 50S ribosomal protein L36

Chain f:  89% 11%



- Molecule 33: 50S Ribosomal Protein L31

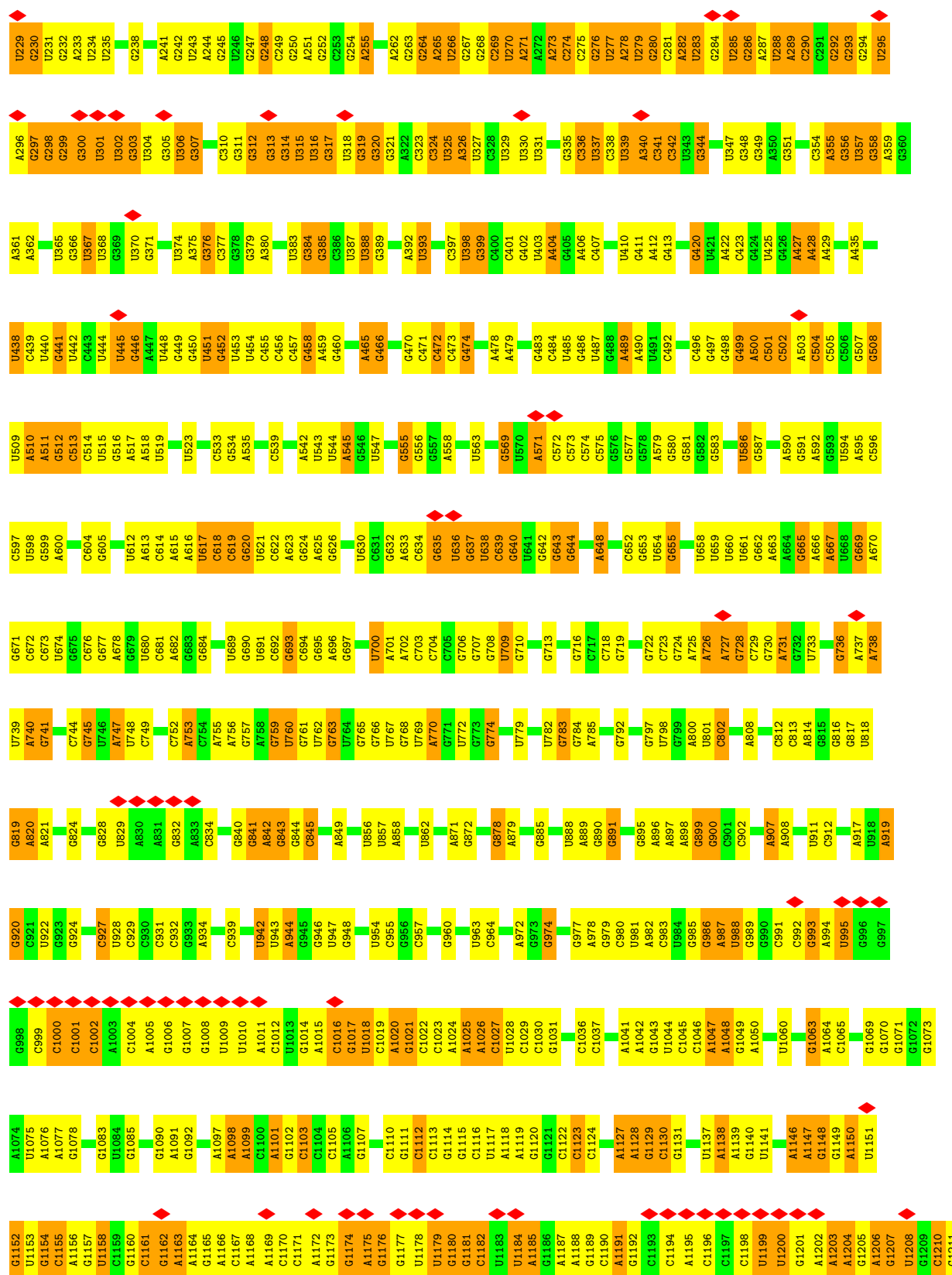
Chain g:  36% 52% 12% 36%



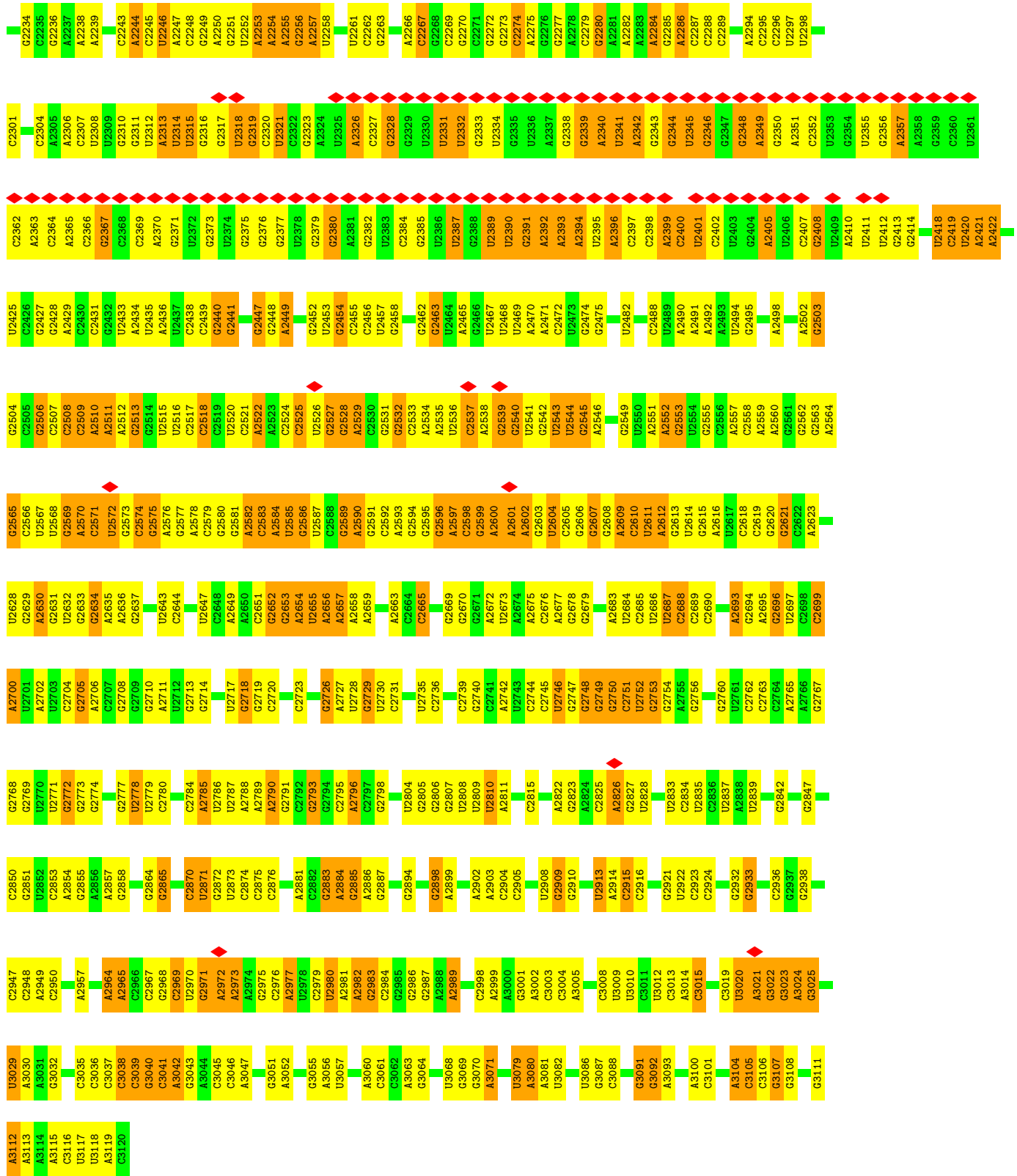
- Molecule 34: 23S ribosomal RNA

Chain A:  9% 39% 41% 20%





A2146	U1881	A1806	U1721	G1647	U1585	G1522	G1447	G1353	G1275	U2122
U2147	G1885	C1807	C1722	A1648	G1586	U1523	C1448	U1358	G1276	A1213
C2148	A1886	U1808	C1723	C1649	G1587	G1526	C1449	G1359	A1284	A1214
C2149	A1887	A1810	G1724	G1650	G1588	U1527	G1453	U1364	C1286	U2115
U2150	C1888	A1811	G1725	A1652	G1589	G1528	G1454	U1365	C1287	G1217
A2151	A1892	A1812	C1726	G1653	G1590	U1529	G1455	G1366	C1288	C1218
A2152	G1897	C1813	U1727	G1654	U1591	G1530	G1456	G1367	U2119	C1219
G2153	A1896	A1814	U1728	A1655	G1592	C1531	G1457	A1368	A1221	C1220
U2154	A1897	G1815	A1729	A1656	G1593	U1532	G1458	A1369	C1222	C1221
U2155	A1897	G1816	U1730	G1657	U1594	U1533	U1459	U1370	U222	C1223
G2156	U1731	C1817	A1731	G1658	G1594	C1534	C1460	G1371	G1293	G1224
G2157	C1734	C1822	C1734	G1661	G1595	C1535	A1464	U1294	U1294	G1225
A2160	U1735	C1823	U1735	C1662	G1596	A1536	C1465	U1295	G1295	U1226
A2161	U1736	G1824	U1736	U1665	G1597	U1537	C1466	G1296	G1297	C1227
A2162	U1737	C1825	A1737	A1666	U1598	G1538	U1467	G1297	C1298	U228
U2163	U1738	A1826	G1738	A1667	U1599	A1539	A1468	U1298	U1299	A1229
C2164	A1750	A1827	A1750	U1671	U1600	U1540	G1473	G1300	G1301	G1230
C2165	C1753	C1828	C1753	C1672	G1601	G1541	A1474	G1302	G1302	A1233
C2166	G1754	A1830	G1754	A1673	U1602	A1542	G1475	G1305	G1305	U1234
U2175	G1754	A1831	G1754	G1674	G1603	A1543	G1476	U1387	U1387	U1235
A2176	A1755	A1832	A1755	U1675	G1604	U1544	G1477	U1388	U1388	G1236
A2177	G1756	A1833	G1756	G1676	G1605	C1545	C1478	U1389	U1389	U1237
G2178	U1757	C1835	U1757	G1677	G1606	A1546	G1479	A1390	G1238	G1239
U2179	U1758	A1836	U1758	U1678	G1607	G1547	A1480	G1391	G1311	G1240
U2180	G1758	G1837	G1758	A1679	U1608	C1548	G1484	C1392	C1312	C1241
C2181	A1759	U1681	A1759	U1680	G1609	G1549	C1485	C1393	C1313	C1242
U2187	C1762	G1845	C1762	U1685	G1610	U1550	G1486	G1396	C1314	G1243
G2188	G1763	G1846	G1763	U1686	U1611	G1551	G1489	A1399	C1315	U1244
C2191	C1768	A1848	C1768	G1687	U1612	A1552	U1490	A1245	C1316	U1245
A2193	G1769	G1849	G1769	U1688	G1613	C1553	C1491	G1407	C1317	G1246
A2194	A1691	A1850	A1691	A1690	G1614	U1554	G1492	C1408	G1247	U1247
U2195	U1771	A1851	U1771	A1691	G1615	U1555	A1493	G1409	U1248	U1248
G2196	C1776	A1852	C1776	G1692	U1616	A1559	U1494	C1410	G1249	G1249
A2197	U1777	U1853	U1777	C1693	A1616	A1563	G1495	G1411	U1250	A1251
A2205	A1778	A1854	A1778	U1694	C1617	A1564	U1500	A1415	G1325	C1252
C2206	U1784	G1855	U1784	U1695	U1620	U1565	A1501	A1416	C1326	C1253
G2204	C1785	C1856	C1785	G1696	C1621	A1566	C1502	A1417	A1327	G1254
A2205	G1786	A1857	G1786	U1697	U1622	A1567	G1503	G1418	G1332	G1257
C2206	A1789	G1858	A1789	G1703	G1623	A1568	G1504	A1422	C1333	C1258
U2214	G1793	G1859	G1793	U1704	U1624	C1569	U1505	G1425	C1334	U1259
U2215	C1794	A1861	C1794	C1705	U1625	A1566	U1506	U1426	G1335	C1260
G2216	C1795	A1862	C1795	G1706	G1626	C1567	A1507	G1427	A1336	A1261
U2217	U1796	G1863	U1796	A1708	U1627	G1568	U1508	U1428	G1337	A1262
U2219	C1797	G1864	C1797	U1709	A1628	A1569	A1509	C1429	U1338	G1263
C2220	U1798	A1865	U1798	A1710	U1629	C1570	A1510	C1430	A1340	C1264
G2221	C1799	G1866	C1799	G1712	G1630	C1571	U1511	G1434	G1343	A1267
A2221	U1799	A1867	U1799	U1713	U1633	G1572	U1512	C1435	C1344	C1268
C2224	A1800	G1868	A1800	U1714	A1631	U1573	G1513	G1436	A1344	G1269
A2225	C1801	G1869	C1801	A1715	G1632	G1574	G1514	U1444	U1345	G1270
U2226	G1802	A1870	G1802	U1716	U1633	A1575	A1515	G1351	U1346	C1271
A2227	A	G1871	A	U1717	U1634	C1576	C1513	A1352	G1272	C1272
G2228	G1804	G1872	G1804	C1718	C1634	C1577	G1516	G1352	G1273	A1274
U2139	G1805	A1873	G1805				U1517			
A2140		A1874					A1518			
U2141		G1875					C1521			
A2142										
A2143										
C2144										
C2145										



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	46709	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	62.87	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	1600	Depositor
Magnification	81000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	1.133	Depositor
Minimum map value	-0.523	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.046	Depositor
Recommended contour level	0.17	Depositor
Map size (Å)	433.152, 433.152, 433.152	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.846, 0.846, 0.846	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.30	0/477	0.37	0/640
2	3	0.33	0/191	0.44	0/247
3	4	0.32	1/3245 (0.0%)	0.58	5/4399 (0.1%)
4	B	0.26	0/2821	0.31	0/4396
5	C	0.31	0/2153	0.39	0/2895
6	D	0.39	0/1608	0.52	2/2164 (0.1%)
7	E	0.30	0/1592	0.37	0/2153
8	F	0.21	0/1464	0.42	0/1969
9	G	0.22	0/1365	0.39	0/1843
10	H	0.51	0/1027	0.69	2/1398 (0.1%)
11	J	0.24	0/993	0.53	0/1345
12	K	0.30	0/1157	0.37	0/1567
13	L	0.29	0/946	0.37	0/1268
14	M	0.30	0/1091	0.41	0/1457
15	N	0.36	0/1118	0.48	1/1506 (0.1%)
16	O	0.31	0/945	0.47	0/1267
17	P	0.30	0/966	0.40	0/1298
18	Q	0.28	0/921	0.36	0/1236
19	R	0.34	0/1000	0.34	0/1341
20	S	0.31	0/764	0.38	0/1030
21	T	0.31	0/887	0.36	0/1204
22	U	0.29	0/766	0.39	0/1030
23	V	0.26	0/738	0.35	0/987
24	W	0.23	0/802	0.37	0/1086
25	X	0.34	0/595	0.38	0/798
26	Y	0.31	0/478	0.39	0/641
27	Z	0.27	0/534	0.31	0/713
28	b	0.30	0/427	0.37	0/572
29	c	0.34	0/405	0.58	0/542
30	d	0.35	0/380	0.37	0/500
31	e	0.30	0/507	0.34	0/672
32	f	0.32	0/303	0.38	0/401

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	g	0.19	0/372	0.33	0/503
34	A	0.34	0/74975	0.36	0/116984
All	All	0.33	1/108013 (0.0%)	0.38	10/162052 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	4	241	ARG	CA-C	-5.65	1.45	1.52

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	4	361	PRO	N-CA-C	-12.34	95.64	110.70
3	4	241	ARG	N-CA-C	-9.35	100.78	110.97
15	N	59	LYS	CB-CA-C	-7.57	107.84	116.54
6	D	156	THR	CA-C-N	-7.12	110.94	119.84
6	D	156	THR	C-N-CA	-7.12	110.94	119.84
10	H	146	LEU	N-CA-C	5.79	116.90	107.23
3	4	239	SER	N-CA-C	-5.48	103.47	110.53
3	4	341	ALA	N-CA-C	-5.46	108.40	114.62
10	H	130	HIS	N-CA-C	-5.16	102.06	109.48
3	4	358	ASP	N-CA-C	5.11	116.06	108.86

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	474	0	500	14	0
2	3	189	0	205	2	0
3	4	3206	0	3254	197	0
4	B	2522	0	1285	37	0
5	C	2110	0	2165	51	0
6	D	1586	0	1627	46	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	E	1569	0	1607	35	0
8	F	1442	0	1472	47	0
9	G	1344	0	1395	48	0
10	H	1018	0	988	50	0
11	J	979	0	1002	53	0
12	K	1130	0	1167	22	0
13	L	938	0	1000	26	0
14	M	1078	0	1151	28	0
15	N	1092	0	1128	24	0
16	O	928	0	972	28	0
17	P	956	0	991	55	0
18	Q	907	0	938	22	0
19	R	988	0	1038	31	0
20	S	754	0	802	11	0
21	T	873	0	909	22	0
22	U	756	0	802	15	0
23	V	732	0	782	21	0
24	W	792	0	815	13	0
25	X	586	0	601	12	0
26	Y	470	0	484	13	0
27	Z	531	0	541	9	0
28	b	423	0	463	15	0
29	c	397	0	407	18	0
30	d	377	0	411	10	0
31	e	502	0	541	17	0
32	f	299	0	324	4	0
33	g	364	0	352	10	0
34	A	66959	0	33690	1582	0
35	4	32	0	14	11	0
36	A	51	0	67	19	0
All	All	99354	0	65890	2301	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 14.

All (2301) 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)
10:H:116:THR:HB	10:H:134:VAL:HG13	1.31	1.12
34:A:2569:G:N7	34:A:2595:G:N2	2.01	1.08
3:4:240:ARG:HG2	3:4:245:ILE:HB	1.08	1.07

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2575:G:H21	34:A:2590:A:H62	1.06	1.02
1:2:11:SER:OG	34:A:1107:G:OP2	1.78	1.01
12:K:136:GLN:NE2	34:A:3118:U:O2'	1.93	1.01
34:A:2968:G:N2	34:A:2984:C:C2	2.29	1.00
34:A:2569:G:C5	34:A:2595:G:N2	2.31	0.99
17:P:104:ARG:NH2	34:A:2518:C:OP1	1.96	0.98
34:A:319:G:O2'	34:A:320:G:OP1	1.80	0.98
3:4:240:ARG:CG	3:4:245:ILE:HB	1.93	0.97
34:A:2016:G:OP1	34:A:2019:A:O2'	1.81	0.97
34:A:135:G:O2'	34:A:136:U:OP1	1.80	0.97
34:A:2513:G:O2'	34:A:2607:G:O2'	1.81	0.97
34:A:281:C:O2'	34:A:282:A:OP1	1.80	0.97
3:4:240:ARG:HG2	3:4:245:ILE:CB	1.96	0.96
9:G:70:ARG:NH2	9:G:71:THR:OG1	1.98	0.95
34:A:1122:C:O2'	34:A:1128:A:N7	1.99	0.94
34:A:81:A:N1	34:A:96:G:O2'	2.00	0.94
34:A:271:A:N6	34:A:315:U:O2	2.01	0.94
34:A:2166:C:OP2	34:A:2167:U:O2'	1.84	0.93
34:A:2255:A:N3	34:A:2679:G:O2'	2.02	0.93
5:C:179:SER:OG	34:A:2016:G:O6	1.87	0.93
26:Y:26:SER:OG	34:A:188:G:OP1	1.87	0.92
34:A:1675:U:O2'	34:A:1676:G:N7	2.01	0.92
34:A:2575:G:N2	34:A:2589:G:O2'	2.03	0.92
10:H:117:VAL:O	34:A:163:U:O2'	1.87	0.92
14:M:84:ASN:ND2	14:M:117:LYS:O	2.04	0.91
34:A:298:G:O2'	34:A:299:G:O5'	1.88	0.91
34:A:1175:A:N6	34:A:1216:A:OP1	2.03	0.90
3:4:198:VAL:HG21	36:A:3201:ERY:H203	1.51	0.90
34:A:2575:G:N2	34:A:2590:A:H62	1.69	0.90
28:b:16:ARG:NH2	34:A:1379:G:OP1	2.03	0.90
34:A:339:U:O4	34:A:341:C:N4	2.05	0.90
3:4:255:ASN:ND2	3:4:274:ASN:O	2.05	0.89
4:B:25:G:O2'	4:B:26:A:OP2	1.89	0.89
34:A:669:G:O2'	34:A:1369:A:OP1	1.89	0.89
34:A:2576:A:OP2	34:A:2589:G:N2	2.05	0.89
34:A:2389:U:O4	34:A:2391:G:O2'	1.90	0.89
34:A:2163:U:OP1	34:A:2828:U:O2'	1.90	0.88
34:A:2453:U:O2'	34:A:2454:G:OP2	1.91	0.88
5:C:177:MET:SD	34:A:2016:G:N2	2.47	0.88
34:A:1154:G:H1	34:A:1237:U:H3	1.21	0.88
34:A:199:U:O2	34:A:474:G:N2	2.07	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:380:A:N1	34:A:404:A:O2'	2.05	0.87
34:A:2164:U:O2	34:A:2166:C:N4	2.07	0.87
34:A:3024:A:O2'	34:A:3025:G:OP1	1.92	0.87
34:A:1153:U:H3	34:A:1238:G:H1	1.22	0.87
34:A:2569:G:N7	34:A:2595:G:C2	2.42	0.87
34:A:451:U:O2'	34:A:452:G:O5'	1.92	0.87
32:f:22:ARG:NH2	34:A:2965:A:OP1	2.07	0.87
10:H:127:VAL:HA	10:H:148:VAL:HB	1.56	0.87
17:P:100:VAL:CG2	17:P:127:PHE:HB3	2.05	0.86
34:A:1854:U:O2'	34:A:1977:C:O2'	1.92	0.86
34:A:2282:A:N1	36:A:3201:ERY:O8	2.07	0.86
34:A:2341:U:OP1	34:A:2370:A:O2'	1.91	0.86
16:O:42:ARG:NH2	34:A:3038:C:OP1	2.09	0.86
34:A:1521:C:O2'	34:A:1522:G:OP1	1.92	0.86
34:A:1548:C:O2'	34:A:1549:G:O5'	1.91	0.86
34:A:1996:U:OP2	34:A:2001:A:N6	2.09	0.86
34:A:2103:C:O2'	34:A:2104:G:O5'	1.92	0.86
34:A:1954:C:O2'	34:A:1955:A:OP2	1.94	0.86
9:G:154:ARG:NH2	34:A:2750:G:OP1	2.09	0.86
34:A:499:G:OP2	34:A:2630:A:O2'	1.93	0.85
34:A:1168:A:N1	34:A:1227:C:O2'	2.08	0.85
34:A:999:C:OP1	34:A:1002:C:N4	2.09	0.85
17:P:100:VAL:HG22	17:P:127:PHE:HB3	1.56	0.85
34:A:2439:C:O2'	34:A:2440:G:OP2	1.92	0.85
34:A:695:G:HO2'	34:A:697:G:HO2'	1.23	0.85
19:R:70:ARG:NH2	34:A:1129:G:OP2	2.09	0.85
34:A:987:A:O2'	34:A:988:U:OP1	1.94	0.85
3:4:434:HIS:ND1	34:A:1185:A:O2'	2.09	0.85
34:A:3019:C:O2'	34:A:3020:U:O4'	1.94	0.85
34:A:312:G:O2'	34:A:314:G:O5'	1.95	0.85
3:4:242:ARG:HD2	34:A:2885:G:H22	1.37	0.85
34:A:1323:G:O2'	34:A:1352:A:N1	2.10	0.85
34:A:134:A:O2'	34:A:135:G:O5'	1.93	0.84
34:A:329:U:O2'	34:A:446:G:O6	1.93	0.84
34:A:2968:G:N2	34:A:2984:C:O2	2.10	0.84
34:A:1146:A:N3	34:A:2710:G:O2'	2.10	0.84
34:A:284:G:O6	34:A:286:G:O2'	1.94	0.84
34:A:2384:C:O2'	34:A:2396:A:N1	2.10	0.84
34:A:2474:G:O2'	34:A:2720:C:OP1	1.93	0.84
34:A:2589:G:O2'	34:A:2590:A:N7	2.10	0.84
34:A:1411:G:OP1	34:A:2933:G:O2'	1.95	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:974:G:O2'	34:A:1031:G:O6	1.94	0.84
34:A:1229:A:O2'	34:A:1230:G:OP2	1.94	0.84
34:A:1001:C:O2	34:A:1005:A:N6	2.10	0.84
34:A:1708:A:O2'	34:A:1709:U:O5'	1.96	0.84
11:J:119:ASN:OD1	34:A:1173:G:O2'	1.95	0.84
34:A:2393:A:O2'	34:A:2394:A:OP2	1.95	0.84
11:J:26:VAL:O	11:J:30:LEU:N	2.12	0.83
11:J:74:THR:OG1	34:A:1177:G:O4'	1.96	0.83
34:A:1174:G:N2	34:A:1207:G:O6	2.11	0.83
34:A:2224:C:O2'	34:A:2913:U:OP2	1.94	0.83
15:N:22:SER:OG	34:A:978:A:OP1	1.95	0.83
34:A:1102:G:OP1	34:A:1103:C:N4	2.10	0.83
34:A:1696:G:O2'	34:A:1736:G:O6	1.96	0.83
3:4:293:ARG:NH1	3:4:413:SER:O	2.12	0.83
9:G:2:SER:N	34:A:2973:A:OP2	2.11	0.83
34:A:2320:C:O2'	34:A:2321:U:O4'	1.97	0.83
34:A:336:C:O2'	34:A:337:U:OP1	1.96	0.83
34:A:1580:A:O2'	34:A:1581:C:O5'	1.97	0.82
34:A:1153:U:H3'	34:A:1154:G:C8	2.13	0.82
34:A:2536:U:OP1	34:A:2537:C:N4	2.13	0.82
4:B:31:C:OP1	17:P:14:ARG:NH1	2.12	0.82
5:C:123:ALA:HB3	5:C:131:LEU:HD21	1.59	0.82
34:A:842:A:O2'	34:A:843:G:O5'	1.97	0.82
34:A:2364:C:O2	34:A:2373:G:N2	2.12	0.82
32:f:31:ARG:NE	34:A:2752:U:OP1	2.13	0.82
34:A:392:A:O2'	34:A:393:U:OP2	1.98	0.82
4:B:27:A:N3	4:B:114:A:O2'	2.13	0.82
18:Q:19:PHE:O	18:Q:49:ARG:NH1	2.13	0.81
34:A:1184:U:O2'	34:A:1187:A:N7	2.12	0.81
34:A:1251:A:O2'	34:A:1252:G:OP2	1.96	0.81
34:A:1580:A:N6	34:A:1592:G:O6	2.12	0.81
16:O:41:ALA:HA	16:O:113:ILE:HD11	1.62	0.81
34:A:295:U:O2	34:A:340:A:N6	2.12	0.81
16:O:106:ASP:OD1	34:A:1867:G:O2'	1.98	0.81
34:A:1927:C:O2'	34:A:3080:A:N3	2.13	0.81
34:A:2569:G:O2'	34:A:2605:C:O2'	1.98	0.81
5:C:83:GLU:OE1	5:C:104:TYR:OH	1.97	0.81
26:Y:2:ALA:N	34:A:1479:G:OP1	2.13	0.81
34:A:544:U:O2	34:A:547:U:O2'	1.98	0.81
34:A:1822:C:O2'	34:A:1828:A:N1	2.13	0.81
34:A:2348:G:O6	34:A:2349:A:N6	2.14	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:F:71:LYS:NZ	33:g:5:ILE:O	2.14	0.80
34:A:1887:A:O2'	34:A:1888:C:OP1	1.98	0.80
31:e:54:ASP:OD2	34:A:2583:C:O2'	1.99	0.80
34:A:2482:U:O2'	34:A:2651:C:OP2	1.98	0.80
34:A:2151:A:O2'	34:A:2152:A:O5'	1.99	0.80
34:A:2394:A:O2'	34:A:2396:A:OP1	1.99	0.80
34:A:269:C:O2'	34:A:270:U:O5'	2.00	0.80
34:A:324:C:O2	34:A:452:G:N2	2.14	0.80
34:A:2539:G:O2'	34:A:2541:U:OP2	1.99	0.80
34:A:2777:G:O4'	34:A:2806:G:O2'	1.97	0.80
34:A:427:A:O2'	34:A:429:A:N6	2.15	0.80
8:F:63:ASP:OD2	8:F:157:ARG:NH1	2.15	0.80
34:A:465:A:O2'	34:A:466:G:OP1	1.98	0.80
34:A:1939:U:O2'	34:A:1940:A:O5'	1.99	0.80
34:A:2136:A:O2'	34:A:2137:A:N7	2.15	0.80
22:U:66:ARG:NH1	34:A:1427:U:OP1	2.15	0.80
34:A:114:G:OP2	34:A:116:A:O2'	1.99	0.79
34:A:218:A:N3	34:A:234:U:O2'	2.15	0.79
3:4:191:ALA:HB3	3:4:207:LYS:HD2	1.62	0.79
34:A:283:U:O2'	34:A:284:G:O4'	1.99	0.79
34:A:660:U:O2	34:A:2254:A:N6	2.14	0.79
19:R:51:ARG:NH1	34:A:1111:G:OP2	2.15	0.79
34:A:191:G:O6	34:A:202:C:O2'	2.00	0.79
34:A:234:U:O4	34:A:263:G:N2	2.15	0.79
34:A:2575:G:H21	34:A:2590:A:N6	1.81	0.79
34:A:3020:U:O2'	34:A:3021:A:OP2	2.00	0.79
34:A:1172:A:OP2	34:A:1224:G:N2	2.15	0.78
8:F:39:VAL:HG12	8:F:40:LYS:H	1.48	0.78
18:Q:48:ARG:NH2	34:A:2909:G:OP2	2.15	0.78
17:P:21:ARG:NH1	17:P:106:GLY:O	2.15	0.78
34:A:555:G:HO2'	34:A:911:U:HO2'	1.23	0.78
34:A:820:A:OP2	34:A:841:G:N2	2.16	0.78
34:A:337:U:O2	34:A:344:G:O6	2.02	0.77
6:D:157:PRO:HD3	34:A:2795:C:O2'	1.84	0.77
34:A:636:U:O2'	34:A:637:G:OP1	2.02	0.77
34:A:535:A:N1	34:A:542:A:O2'	2.15	0.77
16:O:10:LEU:HD21	16:O:40:LYS:HA	1.65	0.77
34:A:78:G:O2'	34:A:376:G:O2'	2.03	0.77
34:A:1001:C:N4	34:A:1004:C:OP2	2.16	0.77
34:A:2328:G:N2	34:A:2408:G:O6	2.17	0.77
34:A:1098:A:N3	34:A:2261:U:O2'	2.18	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:434:HIS:CG	34:A:1185:A:HO2'	2.03	0.77
34:A:142:C:O2'	34:A:143:G:OP2	2.03	0.77
3:4:278:ALA:HB3	35:4:501:GCP:O3G	1.85	0.77
4:B:59:A:N3	17:P:9:ASN:ND2	2.33	0.77
34:A:263:G:O2'	34:A:517:A:N3	2.18	0.77
34:A:819:G:O2'	34:A:842:A:N6	2.17	0.77
34:A:2847:G:OP1	34:A:3047:A:O2'	2.00	0.77
34:A:2301:C:HO2'	34:A:2657:A:HO2'	0.79	0.76
3:4:148:LEU:HD21	3:4:168:GLN:HA	1.67	0.76
34:A:1147:A:O2'	34:A:1243:G:N2	2.12	0.76
34:A:661:U:O2'	34:A:1101:A:N1	2.18	0.76
27:Z:22:LEU:HD21	27:Z:58:TYR:CE1	2.19	0.76
10:H:137:HIS:CG	10:H:138:THR:H	2.04	0.76
34:A:380:A:N3	34:A:401:C:O2'	2.19	0.76
34:A:2178:G:O2'	34:A:2180:U:O4	2.01	0.76
3:4:240:ARG:HA	3:4:243:SER:HB3	1.66	0.76
34:A:1592:G:O2'	34:A:1593:U:O5'	2.03	0.76
3:4:51:LEU:HB3	3:4:67:LEU:HD11	1.67	0.76
34:A:457:C:N4	34:A:492:C:OP2	2.18	0.76
21:T:53:PRO:O	21:T:57:VAL:HG23	1.85	0.75
34:A:1576:C:O2'	34:A:1577:C:O4'	2.02	0.75
34:A:1711:G:O2'	34:A:1712:G:OP1	2.03	0.75
34:A:1938:G:N1	34:A:1954:C:O2'	2.20	0.75
23:V:58:GLY:N	34:A:571:A:N7	2.35	0.75
34:A:2344:G:N2	34:A:2401:U:O2	2.19	0.75
34:A:297:G:O2'	34:A:298:G:O5'	2.03	0.75
34:A:3019:C:O2'	34:A:3020:U:O5'	2.05	0.75
34:A:271:A:N3	34:A:456:C:O2'	2.18	0.74
34:A:306:U:O2'	34:A:307:G:OP2	2.05	0.74
23:V:90:GLU:N	23:V:90:GLU:OE2	2.19	0.74
30:d:13:ARG:NH2	34:A:1493:A:OP1	2.20	0.74
34:A:7:U:O2'	34:A:8:U:O4'	2.00	0.74
34:A:639:C:O2'	34:A:640:G:OP2	2.03	0.74
34:A:1540:U:OP2	34:A:1629:G:N2	2.20	0.74
34:A:2982:A:O2'	34:A:2983:G:O4'	2.04	0.74
6:D:63:ILE:HG23	34:A:3032:G:H5''	1.70	0.74
34:A:802:C:O2'	34:A:1997:A:N1	2.19	0.74
34:A:1624:U:O2'	34:A:1625:G:N7	2.16	0.74
34:A:3022:G:O2'	34:A:3023:G:O4'	2.04	0.73
34:A:922:U:O2'	34:A:2284:A:N1	2.19	0.73
34:A:1153:U:H3'	34:A:1154:G:H8	1.53	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:829:U:O2'	34:A:832:G:N7	2.17	0.73
34:A:1672:C:O2'	34:A:1679:A:N6	2.20	0.73
3:4:198:VAL:HG21	36:A:3201:ERY:C20	2.18	0.73
8:F:111:ILE:HD11	8:F:183:PRO:HD3	1.70	0.73
34:A:2656:A:O2'	34:A:2657:A:OP1	2.07	0.73
34:A:3039:C:O2'	34:A:3040:G:OP2	2.07	0.73
3:4:304:VAL:HG23	3:4:305:ARG:H	1.53	0.73
34:A:2177:A:N7	34:A:2784:C:O2'	2.19	0.73
4:B:5:C:OP1	4:B:62:C:O2'	2.07	0.73
34:A:1900:C:OP2	34:A:1917:G:N2	2.20	0.73
3:4:177:ARG:NH1	34:A:2827:G:OP2	2.21	0.72
34:A:1156:A:H2'	34:A:1157:G:C8	2.24	0.72
8:F:78:ARG:NH2	34:A:2539:G:O6	2.22	0.72
16:O:6:LYS:NZ	34:A:3041:C:OP2	2.21	0.72
19:R:121:VAL:O	34:A:1269:C:O2'	2.06	0.72
11:J:62:VAL:O	11:J:63:TYR:CD1	2.43	0.72
34:A:2070:A:N3	34:A:2457:U:O2'	2.21	0.72
34:A:665:G:O6	34:A:2253:A:O2'	2.03	0.72
3:4:370:LYS:HB3	35:4:501:GCP:O6	1.88	0.72
16:O:82:GLU:N	16:O:82:GLU:OE2	2.23	0.72
34:A:137:G:HO2'	34:A:1523:U:HO2'	0.84	0.72
34:A:944:A:N7	34:A:2471:A:O2'	2.21	0.72
34:A:2693:A:N6	34:A:2705:G:O2'	2.20	0.72
34:A:2964:A:OP2	34:A:2987:G:N2	2.15	0.72
10:H:117:VAL:HA	10:H:133:THR:O	1.90	0.72
34:A:1530:G:H21	34:A:1806:A:N6	1.87	0.72
34:A:667:A:OP2	34:A:2723:C:O2'	2.08	0.71
34:A:723:C:O2	34:A:733:U:O2'	2.07	0.71
34:A:2418:U:O2'	34:A:2419:C:O5'	2.06	0.71
34:A:2569:G:C6	34:A:2595:G:N2	2.54	0.71
34:A:2702:A:O2'	34:A:2760:G:N2	2.23	0.71
34:A:66:C:O2	34:A:70:A:O2'	2.08	0.71
34:A:1174:G:OP1	34:A:1204:A:N6	2.23	0.71
11:J:105:ASP:OD1	11:J:106:GLN:N	2.23	0.71
27:Z:51:ARG:NH2	34:A:58:G:OP2	2.23	0.71
34:A:1160:G:H22	34:A:1230:G:H22	1.38	0.71
11:J:65:ASP:OD2	11:J:67:SER:OG	2.06	0.71
6:D:148:PRO:O	34:A:2735:U:O2'	2.08	0.71
10:H:134:VAL:HG12	10:H:136:LEU:HG	1.71	0.71
3:4:340:LEU:HD12	3:4:340:LEU:O	1.90	0.71
34:A:1203:A:N3	34:A:1223:U:O2'	2.24	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2968:G:C2	34:A:2984:C:C2	2.79	0.71
8:F:130:ASP:OD1	34:A:2526:U:N3	2.24	0.70
34:A:1642:G:O2'	34:A:1643:G:OP2	2.07	0.70
34:A:223:A:N7	34:A:507:G:O2'	2.22	0.70
34:A:731:A:N1	34:A:745:G:O2'	2.23	0.70
14:M:14:GLY:O	34:A:690:G:O2'	2.08	0.70
34:A:637:G:O2'	34:A:638:U:OP2	2.09	0.70
9:G:2:SER:OG	9:G:55:ARG:NH1	2.24	0.70
3:4:402:LYS:O	3:4:405:SER:OG	2.10	0.70
34:A:510:A:O2'	34:A:511:A:OP1	2.08	0.70
34:A:671:G:O2'	34:A:2243:C:OP1	2.10	0.70
34:A:2569:G:O6	34:A:2595:G:N1	2.24	0.70
34:A:222:A:OP2	34:A:508:G:O2'	2.09	0.70
34:A:1212:U:O2'	34:A:1213:A:OP1	2.08	0.70
3:4:255:ASN:H	35:4:501:GCP:H3B2	1.55	0.70
3:4:52:VAL:HG21	3:4:106:LEU:HD11	1.74	0.70
34:A:2555:G:O2'	34:A:2560:A:N1	2.23	0.70
34:A:2788:A:OP1	34:A:2872:G:O2'	2.03	0.70
30:d:27:THR:HG23	30:d:30:GLY:H	1.56	0.69
34:A:500:A:O2'	34:A:501:C:OP1	2.10	0.69
3:4:344:ASN:O	3:4:348:THR:HG23	1.91	0.69
11:J:22:PRO:O	11:J:26:VAL:HG12	1.91	0.69
34:A:2331:U:O2'	34:A:2332:U:OP1	2.11	0.69
3:4:262:LEU:HD13	3:4:297:LEU:HD22	1.74	0.69
3:4:262:LEU:CD1	3:4:297:LEU:HD22	2.23	0.69
8:F:44:ASN:OD1	8:F:45:MET:N	2.25	0.69
34:A:249:C:OP2	34:A:2618:C:O2'	2.11	0.69
34:A:1179:U:N3	34:A:1187:A:OP1	2.26	0.69
34:A:1754:G:N2	34:A:1759:A:C6	2.61	0.69
12:K:125:TYR:OH	12:K:132:HIS:NE2	2.24	0.69
34:A:738:A:H61	34:A:2573:G:H21	1.41	0.69
34:A:2420:U:O2'	34:A:2421:A:O5'	2.10	0.69
20:S:74:ARG:NH1	34:A:1337:G:O6	2.26	0.69
34:A:1381:G:O2'	34:A:2236:G:O6	2.11	0.69
12:K:102:GLU:O	12:K:106:ILE:HD12	1.93	0.68
12:K:102:GLU:OE1	34:A:3004:C:N4	2.26	0.68
34:A:1754:G:N2	34:A:1759:A:N6	2.41	0.68
34:A:813:C:O2'	34:A:849:A:N6	2.26	0.68
5:C:257:THR:OG1	34:A:2014:G:O2'	2.10	0.68
27:Z:11:ARG:NH2	34:A:74:C:O2'	2.26	0.68
34:A:858:A:O2'	34:A:1877:U:OP1	2.12	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:1447:G:N7	34:A:1827:A:O2'	2.24	0.68
34:A:2765:A:H1'	34:A:2989:A:H61	1.58	0.68
9:G:3:ARG:NH2	34:A:1230:G:O3'	2.24	0.68
34:A:2256:G:OP1	34:A:2678:G:O2'	2.06	0.68
34:A:2971:G:H2'	34:A:2972:A:C8	2.28	0.68
34:A:9:U:O2'	34:A:10:A:OP1	2.10	0.68
34:A:303:G:O2'	34:A:304:U:O4'	2.10	0.68
34:A:2135:U:O2'	34:A:2136:A:O5'	2.01	0.68
11:J:60:ILE:HG22	11:J:68:PHE:CE2	2.29	0.68
34:A:159:A:N3	34:A:2431:C:O2'	2.26	0.68
34:A:502:C:H42	34:A:2632:U:H3	1.42	0.68
34:A:2339:G:O2'	34:A:2394:A:N6	2.23	0.68
3:4:70:LEU:HD23	3:4:119:ILE:HG23	1.74	0.67
34:A:133:G:H2'	34:A:134:A:O4'	1.93	0.67
34:A:2124:A:O2'	34:A:2125:A:OP1	2.09	0.67
34:A:1754:G:H21	34:A:1759:A:N6	1.92	0.67
34:A:2342:A:O2'	34:A:2392:A:N7	2.27	0.67
10:H:122:ALA:O	10:H:123:HIS:C	2.37	0.67
34:A:131:A:O2'	34:A:132:C:OP1	2.09	0.67
3:4:169:MET:HE2	3:4:218:ARG:NE	2.10	0.67
34:A:1321:C:O2'	34:A:1344:A:N1	2.27	0.67
11:J:73:LYS:O	11:J:74:THR:HG23	1.93	0.67
34:A:960:G:OP2	34:A:960:G:N2	2.26	0.67
34:A:2081:U:O2'	34:A:2082:U:O4'	2.13	0.67
34:A:2389:U:O2	34:A:2393:A:N7	2.28	0.67
34:A:1521:C:HO2'	34:A:1522:G:P	2.17	0.67
34:A:2420:U:N3	34:A:2449:A:N7	2.33	0.67
19:R:58:ARG:NH1	34:A:1115:G:OP2	2.26	0.67
5:C:177:MET:HE2	5:C:183:ARG:HB3	1.77	0.66
4:B:50:C:OP2	17:P:112:ARG:NH1	2.28	0.66
17:P:127:PHE:O	34:A:2601:A:O2'	2.13	0.66
17:P:22:HIS:NE2	17:P:103:ASP:OD2	2.28	0.66
34:A:298:G:O2'	34:A:299:G:O4'	2.13	0.66
34:A:1154:G:H22	34:A:1237:U:H3	1.44	0.66
34:A:1530:G:H21	34:A:1806:A:H61	1.42	0.66
34:A:1160:G:H22	34:A:1230:G:N2	1.94	0.66
34:A:1422:A:N6	34:A:1824:C:O2'	2.29	0.66
34:A:2665:C:OP2	34:A:2810:U:O2'	2.11	0.66
3:4:213:ARG:NH2	34:A:2778:U:O2	2.29	0.66
3:4:245:ILE:HG23	3:4:294:PRO:O	1.96	0.66
17:P:100:VAL:HG23	17:P:127:PHE:CB	2.26	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:U:70:ARG:NH2	34:A:544:U:OP1	2.28	0.66
34:A:1954:C:HO2'	34:A:1955:A:P	2.18	0.66
9:G:150:ARG:NH1	9:G:168:GLU:OE1	2.28	0.66
10:H:129:THR:OG1	10:H:145:SER:HB2	1.95	0.66
28:b:3:VAL:HG12	34:A:2239:A:N3	2.11	0.66
34:A:1542:A:O2'	34:A:1543:A:O4'	2.14	0.66
3:4:434:HIS:CE1	34:A:1185:A:HO2'	2.12	0.65
1:2:16:ARG:NH1	4:B:83:C:OP1	2.29	0.65
7:E:171:ASN:ND2	34:A:402:G:N3	2.45	0.65
34:A:666:A:N6	34:A:2258:U:OP1	2.27	0.65
34:A:269:C:O2'	34:A:270:U:O4'	2.14	0.65
34:A:1154:G:H3'	34:A:1155:C:H5''	1.79	0.65
9:G:108:LEU:O	9:G:153:ARG:NH1	2.29	0.65
12:K:27:ARG:NH1	34:A:1260:C:O2'	2.29	0.65
19:R:25:ARG:NH1	34:A:2245:C:OP1	2.30	0.65
34:A:1647:G:OP2	34:A:1648:A:O2'	2.01	0.65
34:A:2050:C:O2'	34:A:2193:A:N1	2.25	0.65
9:G:58:ASP:O	9:G:63:ARG:NH1	2.30	0.65
34:A:132:C:N4	34:A:133:G:O6	2.29	0.65
3:4:240:ARG:CA	3:4:243:SER:HB3	2.26	0.65
3:4:354:VAL:HG21	3:4:362:PRO:HD3	1.79	0.65
8:F:45:MET:CE	8:F:60:ALA:HB1	2.26	0.65
34:A:2327:C:O2'	34:A:2328:G:O4'	2.13	0.65
34:A:2851:G:N2	34:A:3001:G:OP2	2.22	0.65
34:A:3012:U:O2'	34:A:3030:A:N3	2.24	0.65
3:4:198:VAL:O	36:A:3201:ERY:H273	1.97	0.65
3:4:244:GLU:O	3:4:293:ARG:NH2	2.29	0.65
5:C:257:THR:HG1	34:A:2014:G:HO2'	1.40	0.65
8:F:132:THR:N	34:A:2526:U:O2	2.30	0.65
34:A:1017:G:C2	34:A:1018:U:C5	2.85	0.65
3:4:217:GLU:OE2	34:A:2780:C:O2'	2.09	0.65
6:D:160:VAL:HG21	34:A:2842:G:H21	1.61	0.65
34:A:1548:C:HO2'	34:A:1549:G:P	2.18	0.65
34:A:1156:A:H2'	34:A:1157:G:H8	1.60	0.64
34:A:1754:G:N2	34:A:1759:A:C5	2.65	0.64
34:A:1941:A:O2'	34:A:1942:G:N7	2.27	0.64
7:E:189:LEU:CD1	14:M:9:LEU:HD11	2.26	0.64
8:F:142:GLN:OE1	8:F:142:GLN:N	2.26	0.64
34:A:678:A:N1	34:A:924:G:O2'	2.27	0.64
34:A:1248:U:N3	34:A:2249:G:OP1	2.28	0.64
14:M:77:VAL:HG11	34:A:730:G:N1	2.13	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:d:28:ARG:NH2	34:A:210:G:OP1	2.30	0.64
34:A:319:G:HO2'	34:A:320:G:P	2.15	0.64
34:A:2968:G:C2	34:A:2984:C:O2	2.50	0.64
3:4:288:GLU:N	3:4:288:GLU:OE2	2.29	0.64
17:P:102:PHE:HB2	17:P:127:PHE:HD2	1.62	0.64
34:A:500:A:H61	34:A:2634:G:H1	1.46	0.64
34:A:2135:U:HO2'	34:A:2136:A:P	2.19	0.64
3:4:244:GLU:HB3	3:4:293:ARG:NE	2.13	0.64
11:J:98:LYS:NZ	11:J:141:VAL:O	2.26	0.64
19:R:75:THR:HG23	34:A:1128:A:O3'	1.97	0.64
34:A:2602:A:H2'	34:A:2603:G:O4'	1.98	0.64
11:J:31:GLY:CA	11:J:37:ILE:HG23	2.27	0.64
34:A:2527:G:N1	34:A:2538:A:O2'	2.30	0.64
34:A:738:A:N6	34:A:2573:G:H21	1.96	0.64
12:K:116:ARG:NH2	34:A:615:A:OP2	2.31	0.64
22:U:37:SER:O	22:U:80:LYS:NZ	2.29	0.64
3:4:181:GLU:OE1	3:4:181:GLU:N	2.31	0.63
31:e:38:THR:HG21	34:A:2572:U:P	2.38	0.63
6:D:108:ASP:OD1	6:D:185:VAL:N	2.31	0.63
34:A:891:G:N7	34:A:908:A:O2'	2.31	0.63
34:A:1636:A:H2	34:A:1805:G:H1'	1.64	0.63
19:R:89:GLU:OE2	19:R:89:GLU:N	2.27	0.63
34:A:500:A:N6	34:A:2634:G:H1	1.96	0.63
34:A:2328:G:O2'	34:A:2407:C:N3	2.28	0.63
3:4:236:GLN:O	3:4:240:ARG:HD2	1.98	0.63
34:A:1218:C:O2	34:A:1219:U:N3	2.31	0.63
5:C:148:ARG:NH2	34:A:2425:U:O2	2.32	0.63
34:A:2569:G:N2	34:A:2606:G:OP2	2.30	0.63
6:D:62:VAL:HG11	6:D:77:PRO:HB2	1.79	0.63
25:X:18:ALA:O	25:X:20:ARG:NH1	2.31	0.63
34:A:402:G:O2'	34:A:404:A:OP2	2.14	0.63
3:4:110:VAL:HG22	3:4:118:VAL:HG21	1.81	0.63
3:4:240:ARG:HH21	3:4:296:VAL:HG11	1.62	0.62
34:A:131:A:HO2'	34:A:132:C:P	2.22	0.62
34:A:1182:C:O2	34:A:1192:G:N1	2.32	0.62
9:G:38:ALA:HB3	9:G:65:LEU:HD21	1.80	0.62
9:G:71:THR:HG21	34:A:2971:G:OP1	1.99	0.62
9:G:139:LYS:NZ	34:A:2970:U:OP1	2.23	0.62
3:4:132:LEU:O	3:4:136:VAL:HG22	1.99	0.62
34:A:1527:U:N3	34:A:1528:G:N7	2.47	0.62
34:A:2747:G:H2'	34:A:2748:G:C1'	2.28	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:P:102:PHE:HB2	17:P:127:PHE:CD2	2.33	0.62
34:A:842:A:HO2'	34:A:843:G:P	2.21	0.62
3:4:49:VAL:HG23	3:4:117:THR:HG22	1.82	0.62
7:E:5:VAL:HG21	7:E:20:LEU:HD11	1.80	0.62
13:L:54:ARG:NH1	34:A:2176:A:OP2	2.32	0.62
13:L:77:ILE:HD12	18:Q:71:ARG:HG2	1.81	0.62
14:M:61:LEU:O	31:e:13:ARG:NH1	2.33	0.62
17:P:127:PHE:C	34:A:2601:A:O2'	2.43	0.62
31:e:7:HIS:NE2	34:A:251:A:OP1	2.30	0.62
34:A:724:G:H21	34:A:726:A:H8	1.45	0.62
3:4:328:LEU:HD13	3:4:362:PRO:HB2	1.81	0.62
34:A:479:A:O2'	34:A:498:G:OP1	2.14	0.62
34:A:2176:A:H2'	34:A:2177:A:C8	2.35	0.62
34:A:2509:C:O2'	34:A:2511:A:C8	2.52	0.62
17:P:127:PHE:C	34:A:2601:A:HO2'	2.08	0.62
34:A:1856:C:O2	34:A:2922:U:O2'	2.17	0.62
15:N:77:LYS:NZ	15:N:82:ARG:O	2.28	0.61
10:H:137:HIS:CG	10:H:138:THR:N	2.68	0.61
34:A:899:G:O2'	34:A:900:G:OP2	2.16	0.61
34:A:2509:C:O2'	34:A:2510:A:H5'	2.00	0.61
3:4:117:THR:HG22	3:4:117:THR:O	2.01	0.61
5:C:222:ARG:NH1	34:A:2044:U:OP2	2.32	0.61
34:A:1532:G:N3	34:A:1802:G:O2'	2.33	0.61
8:F:73:GLU:OE2	8:F:75:ARG:NH1	2.31	0.61
34:A:2075:G:O2'	34:A:2076:A:OP2	2.16	0.61
3:4:297:LEU:HD23	3:4:298:THR:N	2.16	0.61
10:H:116:THR:O	10:H:135:LYS:N	2.28	0.61
34:A:500:A:HO2'	34:A:501:C:P	2.24	0.61
34:A:2670:G:N2	34:A:2673:U:O2	2.31	0.61
34:A:2748:G:C6	34:A:2749:G:N7	2.69	0.61
31:e:44:LEU:HD21	34:A:2585:U:H5'	1.82	0.61
10:H:102:ASN:OD1	10:H:103:ALA:N	2.33	0.61
30:d:37:ARG:NH2	34:A:555:G:N7	2.49	0.61
34:A:2525:C:N4	34:A:2527:G:O6	2.34	0.61
6:D:156:THR:N	34:A:2796:A:OP2	2.22	0.61
8:F:170:ASP:OD2	8:F:174:ARG:NH2	2.34	0.61
9:G:35:LEU:HD22	9:G:76:LEU:HD13	1.82	0.61
9:G:47:GLU:OE1	9:G:47:GLU:N	2.34	0.61
34:A:1083:G:O4'	34:A:2491:A:N6	2.33	0.61
34:A:2749:G:H2'	34:A:2750:G:C8	2.35	0.61
3:4:365:LEU:HD21	3:4:367:VAL:HB	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:C:175:LEU:HD11	5:C:185:VAL:HG11	1.82	0.60
7:E:149:THR:OG1	7:E:193:ASP:OD2	2.16	0.60
34:A:2003:A:H1'	34:A:2162:A:N6	2.16	0.60
14:M:22:VAL:HG12	14:M:33:ALA:HB1	1.83	0.60
31:e:33:LEU:HD23	31:e:36:LYS:HD2	1.82	0.60
3:4:250:ILE:HD12	3:4:297:LEU:HD21	1.83	0.60
3:4:196:GLY:O	34:A:2286:A:O2'	2.18	0.60
14:M:80:VAL:CG1	14:M:118:LEU:HD13	2.31	0.60
34:A:294:G:O2'	34:A:295:U:O4'	2.19	0.60
34:A:1168:A:H61	34:A:1227:C:H2'	1.67	0.60
34:A:2970:U:H3'	34:A:2971:G:C4'	2.32	0.60
17:P:33:ALA:N	17:P:53:ASN:OD1	2.35	0.60
34:A:2600:A:C8	34:A:2601:A:N7	2.69	0.60
3:4:239:SER:O	3:4:241:ARG:N	2.34	0.60
17:P:100:VAL:CG2	17:P:127:PHE:CB	2.77	0.60
34:A:2315:U:O4	34:A:2422:A:C5	2.54	0.60
34:A:2756:G:O2'	34:A:2881:A:N1	2.33	0.60
1:2:28:LEU:HD21	1:2:35:VAL:HG22	1.84	0.60
3:4:240:ARG:O	3:4:245:ILE:N	2.34	0.60
34:A:1157:G:N2	34:A:1233:A:N1	2.49	0.60
34:A:2288:C:O2'	34:A:2475:G:N2	2.34	0.60
34:A:2571:C:H2'	34:A:2606:G:C5	2.36	0.60
17:P:51:LEU:HD11	17:P:92:ALA:HB2	1.84	0.60
34:A:136:U:N3	34:A:138:A:O5'	2.35	0.60
3:4:366:LEU:HD22	3:4:386:LEU:HD13	1.83	0.60
7:E:189:LEU:HD13	14:M:9:LEU:HD11	1.81	0.60
16:O:44:LEU:HD23	16:O:113:ILE:HD12	1.84	0.60
34:A:298:G:HO2'	34:A:299:G:P	2.24	0.60
10:H:133:THR:CG2	10:H:141:GLU:HG3	2.31	0.60
29:c:44:ASN:OD1	29:c:45:CYS:N	2.35	0.60
34:A:451:U:HO2'	34:A:452:G:C5'	2.13	0.60
34:A:988:U:C2	34:A:1021:G:N2	2.70	0.60
34:A:2006:A:H2'	34:A:2007:C:O4'	2.02	0.60
34:A:2440:G:O2'	34:A:2441:G:OP2	2.17	0.60
34:A:2576:A:P	34:A:2589:G:H22	2.21	0.60
19:R:66:ASN:ND2	34:A:1128:A:O5'	2.35	0.59
25:X:15:ASP:OD2	34:A:2488:C:N4	2.35	0.59
34:A:701:A:OP2	34:A:713:G:N1	2.28	0.59
34:A:1580:A:HO2'	34:A:1581:C:P	2.25	0.59
34:A:2145:C:OP2	34:A:2146:A:N6	2.35	0.59
6:D:169:ARG:NH2	34:A:3046:C:H41	2.00	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:718:C:O2'	34:A:772:U:OP1	2.19	0.59
34:A:2082:U:P	34:A:2633:G:H21	2.24	0.59
34:A:2357:A:N7	34:A:2382:G:O2'	2.36	0.59
8:F:54:ALA:O	8:F:57:ILE:HG22	2.01	0.59
10:H:133:THR:HG23	10:H:141:GLU:HG3	1.84	0.59
14:M:84:ASN:OD1	14:M:118:LEU:HD12	2.02	0.59
34:A:3040:G:O2'	34:A:3041:C:OP2	2.20	0.59
23:V:44:HIS:ND1	34:A:569:G:OP2	2.34	0.59
34:A:2035:U:HO2'	34:A:2036:A:P	2.25	0.59
34:A:2596:G:H2'	34:A:2597:A:C1'	2.31	0.59
34:A:2968:G:N1	34:A:2984:C:N3	2.50	0.59
34:A:2980:U:O2'	34:A:2981:A:OP2	2.18	0.59
4:B:29:C:O2'	4:B:60:G:N2	2.34	0.59
31:e:43:ARG:NE	34:A:2586:G:OP2	2.35	0.59
34:A:1122:C:O2'	34:A:1129:G:O2'	2.21	0.59
3:4:197:GLY:O	3:4:198:VAL:HG23	2.03	0.59
5:C:75:VAL:HG11	5:C:99:ASP:OD2	2.03	0.59
34:A:1804:G:H3'	34:A:1805:G:O4'	2.03	0.59
10:H:128:GLY:O	10:H:147:ASN:HA	2.03	0.59
16:O:68:LYS:HB2	34:A:2932:G:H5'	1.85	0.59
34:A:68:A:OP1	34:A:69:U:O2'	2.17	0.59
34:A:339:U:H3'	34:A:340:A:H5''	1.85	0.59
11:J:42:LYS:HD3	11:J:42:LYS:N	2.18	0.59
34:A:2506:G:O2'	34:A:2614:U:O4	2.20	0.59
34:A:2601:A:O2'	34:A:2602:A:OP1	2.21	0.59
11:J:31:GLY:HA2	11:J:37:ILE:HG23	1.84	0.59
34:A:24:G:O2'	34:A:25:A:OP2	2.21	0.59
34:A:2419:C:O2	34:A:2420:U:C6	2.55	0.59
3:4:255:ASN:H	35:4:501:GCP:C3B	2.16	0.58
9:G:22:GLN:NE2	9:G:39:GLU:OE1	2.35	0.58
22:U:62:ARG:NH2	34:A:1455:U:OP2	2.36	0.58
34:A:3042:A:O2'	34:A:3047:A:N1	2.33	0.58
13:L:115:VAL:HG13	13:L:121:VAL:HG21	1.86	0.58
20:S:42:VAL:HG22	20:S:49:THR:HB	1.84	0.58
21:T:78:VAL:HG23	21:T:78:VAL:O	2.02	0.58
32:f:1:MET:N	34:A:2750:G:N3	2.50	0.58
34:A:161:U:H4'	34:A:162:A:OP1	2.01	0.58
34:A:489:A:H61	34:A:510:A:H61	1.51	0.58
34:A:2018:G:N1	34:A:2028:G:OP2	2.36	0.58
26:Y:32:ASN:ND2	34:A:2454:G:N3	2.51	0.58
34:A:52:G:O2'	34:A:124:A:N1	2.34	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2750:G:H2'	34:A:2751:C:O4'	2.02	0.58
31:e:12:LYS:NZ	34:A:249:C:O2	2.34	0.58
3:4:136:VAL:HG23	3:4:138:VAL:H	1.68	0.58
28:b:3:VAL:HG12	34:A:2239:A:C2	2.38	0.58
34:A:1598:U:O2'	34:A:1601:G:O6	2.20	0.58
13:L:32:TYR:HH	34:A:2220:C:H5	1.52	0.58
24:W:24:SER:OG	24:W:28:ARG:NH1	2.37	0.58
34:A:942:U:O2'	34:A:2654:A:N7	2.19	0.58
34:A:1885:G:O2'	34:A:2215:U:O4	2.20	0.58
3:4:277:PHE:HA	35:4:501:GCP:O2G	2.03	0.58
12:K:6:PRO:HG2	12:K:48:VAL:HG21	1.84	0.58
3:4:254:THR:HA	35:4:501:GCP:H3B1	1.86	0.58
8:F:109:ARG:HG3	33:g:24:THR:HG21	1.86	0.58
34:A:288:U:H1'	34:A:289:A:H2'	1.86	0.58
3:4:237:ARG:O	3:4:241:ARG:HB3	2.04	0.58
6:D:3:ARG:NE	6:D:210:SER:O	2.30	0.58
11:J:102:VAL:HG13	11:J:141:VAL:HA	1.85	0.58
34:A:29:C:N4	34:A:535:A:OP2	2.37	0.58
34:A:2327:C:O2'	34:A:2328:G:O5'	2.22	0.58
34:A:2970:U:H3'	34:A:2971:G:H4'	1.84	0.58
16:O:24:LEU:HB3	16:O:44:LEU:HD22	1.85	0.58
22:U:24:ILE:HD11	22:U:96:PHE:CE1	2.38	0.58
24:W:28:ARG:NH2	24:W:93:GLN:O	2.37	0.58
34:A:665:G:N1	34:A:2255:A:OP1	2.35	0.58
34:A:1146:A:OP2	34:A:1244:A:N6	2.37	0.58
16:O:45:ARG:HB3	16:O:46:PRO:HD3	1.86	0.57
28:b:10:ARG:O	28:b:14:ARG:HG2	2.04	0.57
34:A:908:A:OP2	34:A:2294:A:O2'	2.22	0.57
34:A:931:C:OP1	34:A:1300:G:O2'	2.20	0.57
3:4:240:ARG:HD2	3:4:241:ARG:N	2.19	0.57
7:E:169:VAL:HG22	7:E:175:VAL:HG11	1.86	0.57
3:4:235:THR:HG21	34:A:2697:U:OP1	2.04	0.57
34:A:297:G:HO2'	34:A:298:G:P	2.27	0.57
5:C:134:ARG:O	5:C:134:ARG:NH1	2.36	0.57
19:R:31:LEU:HD13	34:A:672:C:H4'	1.87	0.57
20:S:44:ASP:O	20:S:46:ALA:N	2.37	0.57
34:A:2399:A:O2'	34:A:2400:C:P	2.62	0.57
8:F:41:VAL:HG22	8:F:163:VAL:HG12	1.86	0.57
9:G:171:ARG:NH2	34:A:2751:C:OP1	2.37	0.57
36:A:3201:ERY:H14	36:A:3201:ERY:C30	2.33	0.57
17:P:127:PHE:O	17:P:127:PHE:CG	2.58	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:Q:57:THR:OG1	34:A:2908:U:OP1	2.16	0.57
34:A:134:A:H2'	34:A:135:G:C8	2.40	0.57
34:A:1453:G:O2'	34:A:1508:A:N1	2.33	0.57
34:A:2339:G:N2	34:A:2384:C:OP1	2.36	0.57
6:D:62:VAL:HG11	6:D:77:PRO:CB	2.35	0.57
17:P:127:PHE:OXT	34:A:2601:A:O2'	2.23	0.57
9:G:39:GLU:O	9:G:41:ILE:N	2.34	0.57
10:H:91:LEU:HG	10:H:125:LYS:O	2.04	0.57
34:A:2509:C:O2	34:A:2509:C:H2'	2.05	0.57
6:D:65:PRO:O	34:A:3010:U:O2'	2.22	0.57
17:P:100:VAL:HG23	17:P:127:PHE:HB2	1.86	0.57
26:Y:32:ASN:ND2	26:Y:34:GLN:OE1	2.38	0.57
34:A:28:C:O2'	34:A:1353:G:OP1	2.22	0.57
34:A:1210:C:H2'	34:A:1211:G:O4'	2.05	0.57
34:A:2253:A:N6	34:A:2257:A:OP2	2.30	0.57
34:A:2376:G:OP1	34:A:2379:G:N2	2.38	0.57
3:4:161:LYS:NZ	34:A:2706:A:O3'	2.38	0.56
23:V:91:THR:O	23:V:91:THR:HG22	2.05	0.56
26:Y:2:ALA:C	26:Y:33:ILE:HD11	2.30	0.56
3:4:381:GLN:OE1	3:4:381:GLN:N	2.38	0.56
6:D:79:ARG:NH2	34:A:3051:G:OP1	2.38	0.56
7:E:75:ARG:NH1	34:A:2669:G:OP1	2.34	0.56
9:G:103:ASN:OD1	9:G:117:GLU:HA	2.05	0.56
34:A:1153:U:C6	34:A:1153:U:H5''	2.40	0.56
34:A:2313:A:N6	34:A:2452:G:O6	2.38	0.56
34:A:2854:A:N3	34:A:3112:A:O2'	2.31	0.56
8:F:160:ASP:OD2	34:A:2529:A:N6	2.38	0.56
13:L:22:ILE:HD11	13:L:42:THR:HB	1.86	0.56
34:A:32:G:H1'	34:A:542:A:C4	2.41	0.56
34:A:134:A:C8	34:A:135:G:N7	2.73	0.56
34:A:503:A:H3'	34:A:504:C:C5'	2.36	0.56
34:A:1154:G:N2	34:A:1237:U:H3	2.03	0.56
34:A:2576:A:H8	34:A:2589:G:H21	1.54	0.56
34:A:2687:U:H2'	34:A:2688:C:O4'	2.05	0.56
34:A:3052:A:O2'	34:A:3105:C:OP1	2.15	0.56
3:4:209:GLU:OE2	3:4:212:ARG:NH1	2.39	0.56
4:B:46:A:O4'	8:F:99:ARG:NH1	2.38	0.56
34:A:451:U:H2'	34:A:452:G:C8	2.41	0.56
34:A:1019:C:H2'	34:A:1020:A:C8	2.41	0.56
36:A:3201:ERY:H203	36:A:3201:ERY:O6	2.05	0.56
3:4:106:LEU:O	3:4:110:VAL:HG23	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:247:G:OP2	34:A:249:C:N4	2.33	0.56
34:A:844:G:O2'	34:A:878:G:H4'	2.05	0.56
34:A:1549:G:O2'	34:A:1550:G:OP2	2.16	0.56
17:P:37:ARG:NH2	17:P:54:ASP:OD1	2.34	0.56
34:A:726:A:O2'	34:A:727:A:OP2	2.22	0.56
34:A:1543:A:O2'	34:A:1544:U:O4'	2.23	0.56
34:A:1247:A:O2'	34:A:2739:C:O2	2.19	0.56
3:4:154:HIS:HB3	3:4:280:LEU:HD21	1.88	0.56
3:4:440:ASP:O	3:4:442:THR:N	2.36	0.56
11:J:26:VAL:HG22	11:J:30:LEU:HD23	1.88	0.56
34:A:1314:C:HO2'	34:A:1315:C:H6	1.53	0.56
34:A:2571:C:H4'	34:A:2572:U:C5	2.40	0.56
3:4:378:GLY:O	3:4:381:GLN:NE2	2.33	0.56
34:A:9:U:HO2'	34:A:10:A:P	2.28	0.56
34:A:296:A:N6	34:A:339:U:O2	2.38	0.56
34:A:723:C:OP1	34:A:744:C:O2'	2.23	0.56
34:A:1750:A:N6	34:A:1763:G:O2'	2.35	0.56
17:P:44:ALA:O	17:P:77:LYS:NZ	2.32	0.55
34:A:725:A:HO2'	34:A:726:A:P	2.29	0.55
34:A:1390:A:N1	34:A:1410:C:O2'	2.33	0.55
34:A:1900:C:HO2'	34:A:1901:C:H6	1.55	0.55
34:A:2146:A:O2'	34:A:2147:U:O4'	2.17	0.55
34:A:2571:C:H6	34:A:2593:A:N6	2.04	0.55
34:A:2599:G:H3'	34:A:2600:A:H5''	1.88	0.55
6:D:28:VAL:HG22	6:D:193:LEU:HD22	1.88	0.55
17:P:117:ALA:O	17:P:127:PHE:HZ	1.89	0.55
18:Q:1:MET:N	34:A:3064:G:O2'	2.39	0.55
34:A:242:G:O2'	34:A:254:G:O6	2.20	0.55
34:A:741:G:H21	34:A:2575:G:H5'	1.70	0.55
34:A:757:G:OP2	34:A:757:G:N2	2.37	0.55
34:A:2835:U:H1'	36:A:3201:ERY:H351	1.88	0.55
8:F:105:GLU:OE2	33:g:9:TYR:OH	2.21	0.55
9:G:99:LEU:HD11	9:G:101:GLY:O	2.06	0.55
14:M:22:VAL:CG1	14:M:33:ALA:HB1	2.36	0.55
8:F:129:PHE:CE1	8:F:177:LEU:HD12	2.42	0.55
17:P:102:PHE:HB3	34:A:2601:A:C2	2.41	0.55
34:A:336:C:O2'	34:A:337:U:P	2.65	0.55
34:A:808:A:O2'	34:A:1468:A:N3	2.33	0.55
34:A:1592:G:HO2'	34:A:1593:U:P	2.29	0.55
34:A:2601:A:H2'	34:A:2602:A:C8	2.42	0.55
10:H:98:ALA:HB2	10:H:114:LYS:HE3	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:H:122:ALA:HB1	10:H:131:PRO:O	2.07	0.55
34:A:1527:U:C2	34:A:1528:G:N7	2.74	0.55
34:A:2510:A:H5''	34:A:2511:A:O4'	2.06	0.55
34:A:2729:G:O2'	34:A:2730:U:O5'	2.24	0.55
11:J:123:ILE:HG22	34:A:1200:U:C5	2.41	0.55
14:M:80:VAL:HG13	14:M:118:LEU:HD13	1.89	0.55
34:A:613:A:O2'	34:A:2267:C:O2	2.21	0.55
34:A:2576:A:H2'	34:A:2577:G:N9	2.21	0.55
7:E:169:VAL:CG2	7:E:175:VAL:HG11	2.36	0.55
34:A:991:C:H2'	34:A:992:C:C1'	2.36	0.55
3:4:326:ASP:O	3:4:363:PRO:HG2	2.07	0.55
12:K:84:LEU:HD22	34:A:1249:G:H4'	1.89	0.55
34:A:2128:G:H5'	34:A:2129:C:OP2	2.07	0.55
34:A:3024:A:HO2'	34:A:3025:G:P	2.27	0.55
8:F:113:ILE:HG23	33:g:35:VAL:HG11	1.90	0.54
24:W:41:GLY:O	24:W:43:ASP:N	2.38	0.54
28:b:6:ARG:HE	34:A:2243:C:H41	1.54	0.54
36:A:3201:ERY:C30	36:A:3201:ERY:C14	2.85	0.54
1:2:46:LEU:O	1:2:50:VAL:HG22	2.07	0.54
3:4:208:ILE:HD12	3:4:208:ILE:H	1.72	0.54
34:A:1250:U:H3'	34:A:1251:A:H5''	1.90	0.54
34:A:2352:C:H2'	34:A:2382:G:H22	1.71	0.54
5:C:108:PRO:HD2	5:C:111:LEU:HD22	1.88	0.54
13:L:43:VAL:HG21	13:L:52:VAL:CG1	2.38	0.54
34:A:136:U:C2	34:A:138:A:O5'	2.60	0.54
3:4:223:ARG:O	3:4:226:ILE:HG23	2.07	0.54
7:E:27:VAL:O	7:E:120:ARG:NH2	2.40	0.54
14:M:51:GLU:OE2	31:e:57:ARG:NH1	2.40	0.54
15:N:118:LEU:HD12	15:N:131:ILE:HG23	1.88	0.54
19:R:109:LEU:HD21	20:S:41:LEU:CD1	2.38	0.54
34:A:465:A:HO2'	34:A:466:G:P	2.23	0.54
34:A:1122:C:H1'	34:A:1128:A:N7	2.22	0.54
34:A:1518:A:O2'	34:A:1692:G:O2'	2.06	0.54
34:A:2569:G:C6	34:A:2571:C:N3	2.75	0.54
34:A:2598:C:H3'	34:A:2599:G:H5''	1.88	0.54
5:C:218:ARG:NH1	34:A:895:G:OP1	2.36	0.54
8:F:139:LEU:HD12	8:F:144:MET:SD	2.47	0.54
34:A:1000:C:H2'	34:A:1007:G:H22	1.73	0.54
34:A:2577:G:O5'	34:A:2577:G:H8	1.90	0.54
5:C:120:GLY:O	5:C:131:LEU:HD23	2.08	0.54
5:C:239:LYS:NZ	34:A:2196:G:OP2	2.35	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:5:VAL:CG2	7:E:20:LEU:HD11	2.38	0.54
11:J:11:ILE:HG23	11:J:60:ILE:HD11	1.89	0.54
12:K:15:TRP:CE3	12:K:55:ILE:HD11	2.43	0.54
22:U:14:PRO:HD3	27:Z:34:PHE:CD1	2.42	0.54
34:A:135:G:HO2'	34:A:136:U:P	2.29	0.54
34:A:2274:C:O2'	34:A:2275:A:O5'	2.16	0.54
3:4:250:ILE:CD1	3:4:297:LEU:HD21	2.38	0.54
3:4:391:PHE:O	3:4:399:GLY:N	2.36	0.54
23:V:34:LEU:HD11	23:V:63:GLU:HB2	1.90	0.54
34:A:907:A:N3	34:A:2295:C:O2'	2.35	0.54
5:C:111:LEU:HD11	5:C:117:ILE:HD11	1.90	0.54
5:C:118:GLU:HG2	5:C:123:ALA:HB1	1.89	0.54
5:C:130:ASN:OD1	5:C:190:ARG:NE	2.40	0.54
13:L:10:VAL:CG2	13:L:19:ILE:HG23	2.38	0.54
34:A:293:G:O2'	34:A:294:G:O4'	2.25	0.54
34:A:726:A:H1'	34:A:727:A:C5'	2.37	0.54
8:F:39:VAL:HG12	8:F:40:LYS:N	2.20	0.54
8:F:131:GLY:HA3	8:F:170:ASP:HA	1.88	0.54
34:A:1127:A:N3	34:A:1272:C:O2'	2.41	0.54
34:A:1434:G:O2'	34:A:1435:C:H5'	2.08	0.54
34:A:2315:U:O2	34:A:2315:U:C2'	2.56	0.54
15:N:99:PRO:HB2	24:W:88:ILE:HD11	1.89	0.54
21:T:80:THR:OG1	21:T:113:ILE:HD12	2.08	0.54
23:V:75:ASP:OD1	23:V:76:SER:N	2.40	0.54
34:A:2088:C:H2'	34:A:2089:C:C1'	2.38	0.54
34:A:2467:U:H2'	34:A:2468:U:C6	2.43	0.54
3:4:327:LEU:HA	3:4:363:PRO:HB2	1.90	0.53
3:4:434:HIS:ND1	34:A:1185:A:H1'	2.23	0.53
4:B:8:C:OP1	17:P:18:ARG:NH2	2.39	0.53
6:D:139:HIS:NE2	34:A:1888:C:O2	2.35	0.53
23:V:94:LYS:NZ	34:A:377:C:O3'	2.41	0.53
34:A:229:U:H4'	34:A:230:G:OP2	2.07	0.53
34:A:1122:C:H2'	34:A:1129:G:O2'	2.08	0.53
34:A:2572:U:H6	34:A:2573:G:C8	2.26	0.53
4:B:15:U:OP2	4:B:71:C:O2'	2.27	0.53
5:C:175:LEU:HD11	5:C:185:VAL:CG1	2.39	0.53
9:G:116:ILE:HD11	9:G:152:LEU:HD11	1.89	0.53
21:T:14:ALA:HB2	21:T:57:VAL:HG22	1.89	0.53
34:A:2310:G:C6	34:A:2311:G:O6	2.61	0.53
34:A:2527:G:O2'	34:A:2528:G:O4'	2.26	0.53
3:4:142:ASP:OD1	3:4:145:ALA:HB3	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B:81:U:H2'	4:B:82:A:C8	2.43	0.53
10:H:97:ALA:HB3	10:H:114:LYS:HE2	1.90	0.53
11:J:56:ILE:HG22	11:J:70:PHE:HE2	1.73	0.53
12:K:13:ARG:NH2	12:K:49:ASP:O	2.40	0.53
34:A:726:A:H1'	34:A:727:A:H5'	1.90	0.53
34:A:1157:G:H1	34:A:1233:A:N6	2.07	0.53
3:4:240:ARG:H	3:4:243:SER:HB3	1.73	0.53
21:T:115:GLU:OE1	21:T:117:ARG:NH2	2.42	0.53
34:A:1314:C:C2	34:A:1315:C:C5	2.96	0.53
34:A:2532:G:N2	34:A:2535:A:N7	2.56	0.53
3:4:293:ARG:HH11	3:4:414:THR:HG23	1.73	0.53
4:B:41:U:N3	4:B:45:G:OP2	2.39	0.53
8:F:64:LEU:HD12	8:F:94:ALA:HB1	1.90	0.53
15:N:57:HIS:C	15:N:59:LYS:H	2.17	0.53
26:Y:36:VAL:HG12	26:Y:63:ARG:HH21	1.73	0.53
29:c:26:LYS:O	34:A:2510:A:N6	2.42	0.53
34:A:2521:C:O2	34:A:2557:A:N6	2.34	0.53
34:A:2825:C:H4'	34:A:2826:A:N7	2.22	0.53
10:H:116:THR:CB	10:H:134:VAL:HG13	2.22	0.53
31:e:33:LEU:HD13	34:A:2643:U:OP2	2.09	0.53
34:A:681:C:H2'	34:A:682:A:C8	2.43	0.53
34:A:1169:A:H3'	34:A:1170:C:C6	2.43	0.53
34:A:3040:G:O2'	34:A:3042:A:N6	2.39	0.53
3:4:236:GLN:HB2	3:4:240:ARG:HG3	1.91	0.53
9:G:126:VAL:HG23	9:G:126:VAL:O	2.08	0.53
10:H:28:ASN:C	10:H:32:PRO:HG2	2.33	0.53
14:M:40:THR:OG1	34:A:946:G:O2'	2.25	0.53
34:A:1149:G:H2'	34:A:1150:A:O4'	2.08	0.53
3:4:240:ARG:N	3:4:243:SER:HB3	2.24	0.53
34:A:287:A:H62	34:A:300:G:H8	1.56	0.53
13:L:43:VAL:HG21	13:L:52:VAL:HG11	1.91	0.53
19:R:109:LEU:HD21	20:S:41:LEU:HD11	1.90	0.53
25:X:17:ALA:O	25:X:19:GLN:NE2	2.42	0.53
34:A:281:C:O2'	34:A:282:A:P	2.66	0.53
34:A:725:A:O2'	34:A:726:A:O5'	2.25	0.53
34:A:986:G:C2'	34:A:987:A:OP1	2.56	0.53
34:A:1162:G:H4'	34:A:1163:A:OP1	2.08	0.53
34:A:2419:C:O2	34:A:2419:C:C2'	2.57	0.53
7:E:48:GLY:O	7:E:95:PRO:HA	2.08	0.53
19:R:25:ARG:N	34:A:620:G:OP1	2.32	0.53
34:A:928:U:H2'	34:A:929:C:C6	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2035:U:O2'	34:A:2036:A:OP1	2.26	0.53
34:A:2288:C:H2'	34:A:2289:C:C6	2.44	0.53
34:A:2515:U:H2'	34:A:2516:U:C6	2.44	0.53
34:A:2749:G:H1'	34:A:2965:A:O2'	2.09	0.53
3:4:45:ARG:HE	3:4:47:GLU:CG	2.22	0.52
3:4:365:LEU:CD2	3:4:367:VAL:HB	2.38	0.52
34:A:737:A:H61	34:A:2593:A:H1'	1.74	0.52
34:A:1122:C:C2'	34:A:1129:G:O2'	2.58	0.52
34:A:1425:G:N2	34:A:1428:U:C4	2.77	0.52
34:A:1627:U:N3	34:A:1628:A:O2'	2.31	0.52
34:A:2331:U:O4	34:A:2405:A:N6	2.41	0.52
34:A:2389:U:O2'	34:A:2390:U:O5'	2.26	0.52
34:A:2748:G:C3'	34:A:2749:G:H5''	2.39	0.52
34:A:1154:G:H8	34:A:1154:G:OP2	1.92	0.52
34:A:2575:G:H22	34:A:2589:G:C2'	2.19	0.52
34:A:2749:G:H3'	34:A:2750:G:H8	1.75	0.52
34:A:2036:A:P	34:A:2036:A:N3	2.83	0.52
34:A:2574:C:H41	34:A:2606:G:H1	1.56	0.52
5:C:244:ARG:NH1	34:A:2463:G:OP2	2.41	0.52
19:R:75:THR:HG23	34:A:1129:G:P	2.49	0.52
19:R:77:ASN:ND2	34:A:1270:G:N3	2.57	0.52
34:A:312:G:N2	34:A:313:G:N7	2.52	0.52
34:A:1073:G:O6	34:A:1075:U:O2'	2.26	0.52
34:A:1138:A:N1	34:A:1259:U:H2'	2.24	0.52
34:A:2454:G:C8	34:A:2455:C:C5	2.98	0.52
34:A:2621:G:O6	34:A:2643:U:O2	2.28	0.52
36:A:3201:ERY:H14	36:A:3201:ERY:H302	1.90	0.52
1:2:9:VAL:HG11	1:2:55:GLU:HG3	1.91	0.52
3:4:52:VAL:C	3:4:67:LEU:HD13	2.34	0.52
3:4:308:PRO:O	3:4:309:THR:OG1	2.19	0.52
6:D:137:ALA:N	34:A:2218:C:OP1	2.38	0.52
15:N:74:LEU:HD12	15:N:92:TRP:HE1	1.74	0.52
34:A:1658:G:O2'	34:A:1738:G:O2'	2.16	0.52
34:A:2629:G:O2'	34:A:2635:A:N6	2.37	0.52
3:4:362:PRO:O	3:4:363:PRO:C	2.51	0.52
4:B:50:C:OP1	17:P:112:ARG:N	2.35	0.52
16:O:44:LEU:HD23	16:O:113:ILE:CD1	2.39	0.52
30:d:6:ARG:O	30:d:9:GLN:NE2	2.40	0.52
34:A:1530:G:N2	34:A:1806:A:H61	2.07	0.52
34:A:2420:U:C5	34:A:2448:G:C6	2.98	0.52
3:4:232:ILE:HG23	34:A:2696:G:O2'	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:258:LYS:HG3	35:4:501:GCP:O1B	2.10	0.52
10:H:28:ASN:O	10:H:32:PRO:HG2	2.10	0.52
34:A:580:G:H2'	34:A:581:G:O4'	2.09	0.52
34:A:636:U:O2'	34:A:637:G:P	2.67	0.52
34:A:1291:G:H2'	34:A:1292:U:O4'	2.09	0.52
34:A:1301:G:H2'	34:A:1302:G:O4'	2.10	0.52
34:A:1725:G:H2'	34:A:1726:C:O4'	2.09	0.52
34:A:2310:G:C6	34:A:2311:G:C6	2.98	0.52
34:A:2346:G:OP1	34:A:2392:A:O2'	2.27	0.52
34:A:2516:U:H2'	34:A:2517:C:O4'	2.10	0.52
34:A:2656:A:HO2'	34:A:2657:A:P	2.32	0.52
3:4:193:GLY:O	34:A:2287:C:O2'	2.26	0.52
4:B:98:A:N3	34:A:978:A:O2'	2.43	0.52
5:C:51:THR:HG23	34:A:2040:G:H5''	1.92	0.52
11:J:48:THR:HG22	11:J:48:THR:O	2.09	0.52
15:N:40:ALA:HB2	15:N:127:ILE:HG21	1.92	0.52
34:A:1168:A:H4'	34:A:2976:C:C2	2.45	0.52
34:A:1991:C:O2	34:A:1991:C:H2'	2.09	0.52
34:A:2282:A:H2	36:A:3201:ERY:H311	1.75	0.52
4:B:25:G:O2'	4:B:26:A:P	2.67	0.52
5:C:123:ALA:HB3	5:C:131:LEU:CD2	2.38	0.52
10:H:3:LEU:HD21	10:H:21:VAL:HG12	1.91	0.52
10:H:149:VAL:HG22	10:H:150:ALA:N	2.25	0.52
34:A:1707:G:O2'	34:A:1708:A:H5'	2.09	0.52
10:H:21:VAL:HG21	10:H:25:TYR:CD2	2.45	0.52
34:A:983:C:N3	34:A:1027:C:O2'	2.42	0.52
34:A:2075:G:HO2'	34:A:2076:A:P	2.31	0.52
4:B:101:U:HO2'	24:W:38:TYR:HH	1.58	0.51
15:N:1:MET:HE1	15:N:45:ARG:HD2	1.91	0.51
34:A:284:G:N7	34:A:285:U:O2'	2.35	0.51
1:2:9:VAL:HG11	1:2:55:GLU:CG	2.40	0.51
3:4:442:THR:OG1	3:4:443:GLU:N	2.43	0.51
11:J:26:VAL:HG22	11:J:30:LEU:CD2	2.40	0.51
11:J:60:ILE:O	11:J:60:ILE:HG13	2.09	0.51
22:U:19:LYS:NZ	34:A:1509:U:O2	2.42	0.51
29:c:23:TYR:CE1	34:A:2572:U:H1'	2.45	0.51
34:A:274:C:C2	34:A:275:C:H5	2.28	0.51
34:A:2566:C:O2'	34:A:2597:A:H4'	2.10	0.51
34:A:2595:G:C2'	34:A:2596:G:H5'	2.40	0.51
34:A:2746:U:O2	34:A:2989:A:C4	2.64	0.51
3:4:332:VAL:HG21	3:4:368:VAL:HG22	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B:46:A:C4	4:B:47:A:C8	2.99	0.51
34:A:1900:C:O2'	34:A:1901:C:H6	1.93	0.51
34:A:2457:U:H2'	34:A:2458:G:C8	2.45	0.51
34:A:2585:U:O2	34:A:2585:U:H2'	2.09	0.51
34:A:2656:A:O2'	34:A:2657:A:P	2.68	0.51
7:E:82:PRO:HB3	7:E:90:VAL:CG2	2.40	0.51
34:A:643:G:O2'	34:A:644:G:P	2.68	0.51
34:A:655:G:H22	34:A:670:A:H2	1.59	0.51
34:A:1624:U:C2	34:A:1625:G:O6	2.64	0.51
34:A:1811:C:H2'	34:A:1812:A:C8	2.45	0.51
34:A:2007:C:C3'	34:A:2008:A:C8	2.94	0.51
34:A:2007:C:H2'	34:A:2008:A:C8	2.46	0.51
4:B:49:C:OP2	17:P:42:ARG:NH2	2.44	0.51
13:L:24:VAL:HG13	13:L:33:ALA:HB2	1.93	0.51
15:N:40:ALA:HB2	15:N:127:ILE:CG2	2.40	0.51
34:A:194:A:H61	34:A:197:C:H3'	1.74	0.51
34:A:2419:C:O2	34:A:2419:C:H2'	2.10	0.51
3:4:51:LEU:CB	3:4:67:LEU:HD11	2.37	0.51
3:4:420:VAL:HG23	3:4:420:VAL:O	2.10	0.51
4:B:80:C:H2'	4:B:81:U:O4'	2.11	0.51
11:J:13:LEU:O	11:J:58:VAL:HG21	2.10	0.51
12:K:36:LEU:HD21	12:K:54:VAL:HG22	1.91	0.51
21:T:49:ALA:HB3	34:A:2234:G:H5''	1.91	0.51
34:A:618:C:OP1	34:A:653:G:N2	2.42	0.51
34:A:2695:A:H3'	34:A:2696:G:H5''	1.92	0.51
34:A:3043:G:O2'	34:A:3045:C:OP2	2.26	0.51
3:4:354:VAL:HG21	3:4:362:PRO:CD	2.40	0.51
15:N:124:LYS:O	34:A:2708:G:O2'	2.16	0.51
19:R:73:ASP:O	19:R:73:ASP:CG	2.53	0.51
19:R:78:ARG:NH2	34:A:1269:C:O2	2.42	0.51
34:A:403:U:O2'	34:A:422:A:N3	2.43	0.51
34:A:752:C:H2'	34:A:753:A:C8	2.46	0.51
34:A:2536:U:H3'	34:A:2537:C:C6	2.46	0.51
34:A:2565:G:H2'	34:A:2566:C:O4'	2.10	0.51
4:B:111:C:O2'	17:P:59:THR:N	2.44	0.51
16:O:20:LEU:HD11	34:A:1392:G:H4'	1.92	0.51
17:P:65:SER:HA	17:P:70:VAL:HG11	1.92	0.51
19:R:77:ASN:OD1	19:R:78:ARG:N	2.44	0.51
34:A:662:G:H2'	34:A:2254:A:N7	2.25	0.51
34:A:1153:U:H5''	34:A:1153:U:H6	1.75	0.51
14:M:24:ARG:NE	34:A:1365:G:OP2	2.40	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2455:C:H2'	34:A:2456:C:O4'	2.10	0.51
34:A:1291:G:N2	34:A:1293:G:C5	2.79	0.51
34:A:2389:U:O2	34:A:2393:A:C5	2.63	0.51
3:4:240:ARG:H	3:4:243:SER:CB	2.24	0.50
4:B:41:U:O2'	4:B:44:C:OP2	2.22	0.50
34:A:1489:G:OP1	34:A:2435:U:O2'	2.25	0.50
34:A:3079:U:H4'	34:A:3080:A:OP1	2.11	0.50
3:4:44:LEU:HD22	3:4:149:ASP:OD2	2.11	0.50
3:4:323:VAL:HG21	3:4:357:TYR:CD2	2.46	0.50
3:4:442:THR:OG1	3:4:443:GLU:OE1	2.29	0.50
4:B:40:A:H2'	4:B:41:U:C6	2.47	0.50
8:F:80:SER:OG	8:F:88:GLU:N	2.35	0.50
17:P:49:VAL:CG1	17:P:116:LEU:HD11	2.41	0.50
34:A:9:U:O2	34:A:2850:C:H4'	2.12	0.50
34:A:87:C:OP2	34:A:88:A:O2'	2.14	0.50
34:A:231:U:H2'	34:A:232:G:O4'	2.12	0.50
34:A:624:G:O2'	34:A:648:A:N6	2.39	0.50
34:A:2008:A:C2	34:A:2046:A:H4'	2.46	0.50
3:4:70:LEU:HD23	3:4:119:ILE:CG2	2.42	0.50
13:L:7:ARG:NH1	13:L:18:GLU:OE2	2.43	0.50
15:N:71:ASP:OD1	15:N:71:ASP:N	2.44	0.50
34:A:312:G:H4'	34:A:313:G:OP1	2.11	0.50
34:A:2294:A:H2'	34:A:2295:C:C6	2.46	0.50
34:A:2345:U:O2'	34:A:2346:G:O5'	2.28	0.50
3:4:262:LEU:HD23	3:4:270:VAL:HG11	1.93	0.50
3:4:393:SER:OG	3:4:396:THR:OG1	2.28	0.50
4:B:31:C:O2	4:B:31:C:H2'	2.10	0.50
12:K:12:THR:O	12:K:41:LYS:NZ	2.41	0.50
34:A:636:U:HO2'	34:A:637:G:P	2.32	0.50
34:A:782:U:H2'	34:A:783:G:O4'	2.11	0.50
34:A:2542:G:H2'	34:A:2543:U:H5'	1.93	0.50
1:2:21:GLU:OE2	34:A:964:C:O2'	2.24	0.50
10:H:149:VAL:HG22	10:H:150:ALA:H	1.76	0.50
20:S:39:VAL:HG11	20:S:42:VAL:HG13	1.92	0.50
34:A:45:G:O2'	34:A:115:A:N1	2.38	0.50
34:A:282:A:H2'	34:A:283:U:O4'	2.11	0.50
34:A:821:A:N6	34:A:840:G:O2'	2.37	0.50
34:A:1223:U:N3	34:A:1224:G:O6	2.45	0.50
34:A:2027:A:H2'	34:A:2028:G:O4'	2.11	0.50
34:A:2527:G:O2'	34:A:2528:G:O5'	2.27	0.50
8:F:86:LEU:HD12	8:F:90:MET:SD	2.52	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:161:U:O2	34:A:162:A:C5	2.65	0.50
34:A:389:G:N1	34:A:392:A:OP2	2.38	0.50
34:A:828:G:N2	34:A:834:C:N3	2.59	0.50
34:A:978:A:H2'	34:A:979:G:C8	2.46	0.50
34:A:2603:G:H3'	34:A:2604:U:C5	2.47	0.50
34:A:2948:C:H2'	34:A:2949:A:C8	2.47	0.50
34:A:2976:C:H3'	34:A:2977:A:O4'	2.12	0.50
5:C:186:ASP:OD2	5:C:187:VAL:N	2.45	0.50
10:H:80:LEU:HD12	10:H:146:LEU:HD21	1.92	0.50
14:M:77:VAL:HG11	34:A:730:G:H1	1.76	0.50
21:T:13:LYS:O	34:A:580:G:O2'	2.28	0.50
25:X:64:PRO:HB3	34:A:759:G:H1	1.75	0.50
33:g:14:VAL:O	33:g:14:VAL:HG13	2.11	0.50
34:A:90:C:H2'	34:A:91:C:O4'	2.11	0.50
34:A:388:U:H2'	34:A:389:G:O4'	2.12	0.50
34:A:2527:G:C2	34:A:2538:A:O2'	2.65	0.50
34:A:2717:U:C4	34:A:2718:G:C8	3.00	0.50
34:A:2796:A:OP1	34:A:2798:G:O2'	2.20	0.50
5:C:16:ALA:HB2	5:C:207:GLY:HA3	1.93	0.50
6:D:39:ILE:CG2	6:D:92:VAL:HG13	2.42	0.50
33:g:14:VAL:CG1	33:g:22:PHE:HB2	2.42	0.50
34:A:142:C:HO2'	34:A:143:G:P	2.27	0.50
34:A:325:U:H5'	34:A:326:A:O5'	2.12	0.50
34:A:1210:C:C2'	34:A:1211:G:O5'	2.60	0.50
34:A:2399:A:H2'	34:A:2400:C:C6	2.47	0.50
3:4:261:LEU:HD11	3:4:331:VAL:HG23	1.94	0.50
5:C:45:ALA:N	34:A:2029:A:O2'	2.45	0.50
7:E:143:THR:O	7:E:147:THR:HG23	2.11	0.50
19:R:47:TYR:OH	34:A:1110:C:OP1	2.28	0.50
34:A:2338:G:H2'	34:A:2340:A:C8	2.47	0.50
34:A:2573:G:N3	34:A:2573:G:H2'	2.26	0.50
34:A:2982:A:O2'	34:A:2983:G:C5'	2.59	0.50
3:4:240:ARG:NH2	3:4:296:VAL:HG11	2.27	0.49
34:A:586:U:H2'	34:A:587:G:O4'	2.12	0.49
34:A:737:A:H3'	34:A:738:A:H8	1.77	0.49
34:A:1940:A:H2'	34:A:1941:A:H4'	1.93	0.49
34:A:2921:G:H2'	34:A:2922:U:O4'	2.12	0.49
3:4:366:LEU:O	3:4:366:LEU:HD23	2.11	0.49
14:M:60:ARG:O	34:A:2616:A:O2'	2.23	0.49
24:W:59:ARG:NH2	24:W:92:ILE:HD11	2.27	0.49
29:c:24:ILE:O	29:c:24:ILE:HG23	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2019:A:H2'	34:A:2020:A:C8	2.47	0.49
3:4:444:HIS:ND1	3:4:446:ASP:O	2.38	0.49
17:P:86:GLN:O	17:P:90:GLU:HG3	2.12	0.49
34:A:1802:G:O3'	34:A:1804:G:O4'	2.29	0.49
34:A:2025:C:O2	34:A:2025:C:O4'	2.30	0.49
34:A:2238:A:H2'	34:A:2239:A:C8	2.47	0.49
34:A:2748:G:C5	34:A:2749:G:N7	2.80	0.49
34:A:2969:C:H2'	34:A:2970:U:O4'	2.12	0.49
9:G:93:VAL:HG23	9:G:93:VAL:O	2.12	0.49
22:U:38:ASN:HB3	34:A:1817:C:H5'	1.95	0.49
34:A:134:A:H2'	34:A:135:G:H8	1.76	0.49
34:A:633:A:H2'	34:A:634:C:C1'	2.42	0.49
34:A:1129:G:OP2	34:A:1129:G:H3'	2.12	0.49
34:A:1802:G:H4'	34:A:1804:G:H4'	1.94	0.49
34:A:1807:C:O2'	34:A:1808:A:H5'	2.11	0.49
34:A:2204:G:O2'	34:A:2206:C:OP2	2.27	0.49
34:A:2470:A:H2'	34:A:2471:A:C8	2.48	0.49
34:A:2601:A:O2'	34:A:2602:A:P	2.70	0.49
3:4:242:ARG:C	3:4:244:GLU:H	2.20	0.49
5:C:179:SER:CB	34:A:2016:G:O6	2.59	0.49
34:A:264:G:H4'	34:A:516:G:H22	1.77	0.49
34:A:348:G:C2	34:A:349:G:C8	3.00	0.49
34:A:736:G:H5'	34:A:737:A:OP2	2.12	0.49
34:A:1161:C:O2	34:A:1162:G:C2	2.65	0.49
34:A:681:C:H2'	34:A:682:A:H8	1.78	0.49
34:A:1473:G:O2'	34:A:1474:A:O5'	2.26	0.49
34:A:2453:U:HO2'	34:A:2454:G:P	2.26	0.49
34:A:2615:G:N2	34:A:2653:G:O4'	2.46	0.49
3:4:242:ARG:CZ	34:A:2885:G:H1	2.26	0.49
34:A:691:U:H2'	34:A:692:C:C6	2.48	0.49
34:A:747:A:H2	34:A:768:G:H21	1.61	0.49
34:A:857:U:H2'	34:A:858:A:C8	2.47	0.49
34:A:2576:A:H2'	34:A:2577:G:C8	2.48	0.49
34:A:2751:C:C5'	34:A:2752:U:OP2	2.61	0.49
34:A:3070:G:H4'	34:A:3071:A:H5'	1.95	0.49
3:4:130:ASN:ND2	3:4:178:GLY:O	2.45	0.49
3:4:240:ARG:CD	3:4:245:ILE:HB	2.42	0.49
3:4:322:VAL:HG13	3:4:328:LEU:HD21	1.95	0.49
6:D:52:LEU:HD11	6:D:84:LEU:HD11	1.94	0.49
8:F:45:MET:SD	8:F:157:ARG:HB3	2.53	0.49
34:A:726:A:O2'	34:A:727:A:P	2.71	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:1063:G:O6	34:A:1090:G:N2	2.46	0.49
34:A:2282:A:C2	36:A:3201:ERY:H311	2.48	0.49
34:A:3022:G:HO2'	34:A:3023:G:C4'	2.25	0.49
15:N:42:ILE:HG13	15:N:97:VAL:HG21	1.95	0.49
34:A:1179:U:O2'	34:A:1180:G:OP1	2.29	0.49
3:4:236:GLN:HB2	3:4:240:ARG:NE	2.28	0.49
4:B:4:A:O2'	4:B:23:G:N2	2.46	0.49
6:D:28:VAL:HG13	6:D:191:VAL:CG1	2.43	0.49
15:N:58:ILE:HG13	15:N:108:TYR:CD1	2.47	0.49
34:A:819:G:H2'	34:A:841:G:N2	2.27	0.49
34:A:1098:A:O2'	34:A:1099:A:O5'	2.31	0.49
34:A:2571:C:H2'	34:A:2606:G:C4	2.47	0.49
6:D:38:ARG:NH1	34:A:3008:C:O2'	2.46	0.48
21:T:28:ILE:HG23	21:T:81:VAL:HG13	1.94	0.48
24:W:59:ARG:HH22	24:W:92:ILE:HD11	1.78	0.48
34:A:323:C:H3'	34:A:324:C:C4'	2.43	0.48
34:A:2054:C:O2'	34:A:2151:A:H1'	2.13	0.48
34:A:2090:U:HO2'	34:A:2093:G:N2	2.10	0.48
34:A:2569:G:C6	34:A:2605:C:C4	3.00	0.48
34:A:3022:G:O2'	34:A:3023:G:O5'	2.27	0.48
10:H:109:GLY:N	10:H:110:PRO:CD	2.76	0.48
11:J:133:THR:O	11:J:133:THR:HG23	2.12	0.48
34:A:222:A:H1'	34:A:508:G:H21	1.77	0.48
34:A:587:G:N1	34:A:590:A:OP2	2.46	0.48
34:A:1129:G:P	34:A:1129:G:H3'	2.54	0.48
34:A:1237:U:H3'	34:A:1237:U:OP2	2.13	0.48
34:A:1284:A:H2'	34:A:1285:G:H8	1.79	0.48
1:2:6:ILE:HD11	1:2:47:ILE:HD11	1.94	0.48
16:O:9:ARG:NH2	34:A:2914:A:OP1	2.46	0.48
34:A:1526:A:H2'	34:A:1527:U:O4'	2.12	0.48
34:A:2016:G:C4	34:A:2036:A:C6	3.01	0.48
34:A:2810:U:H2'	34:A:2811:A:O4'	2.14	0.48
2:3:6:ARG:NE	34:A:1252:G:O6	2.46	0.48
7:E:30:ASN:ND2	34:A:693:G:OP1	2.46	0.48
34:A:280:G:H2'	34:A:280:G:N3	2.29	0.48
34:A:326:A:N6	34:A:450:G:C6	2.81	0.48
34:A:2345:U:O2'	34:A:2346:G:P	2.71	0.48
3:4:240:ARG:CD	3:4:240:ARG:C	2.86	0.48
16:O:9:ARG:N	34:A:2226:U:OP1	2.38	0.48
34:A:673:C:H2'	34:A:674:U:C6	2.48	0.48
34:A:1157:G:C6	34:A:1158:U:C4	3.01	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:1235:U:H5''	34:A:1236:G:H4'	1.94	0.48
34:A:1900:C:O2'	34:A:1901:C:O5'	2.31	0.48
3:4:207:LYS:HE2	3:4:207:LYS:HA	1.94	0.48
3:4:304:VAL:HG23	3:4:305:ARG:N	2.25	0.48
6:D:156:THR:O	34:A:1248:U:C4	2.66	0.48
34:A:255:A:O2'	34:A:472:C:OP2	2.23	0.48
34:A:357:U:H4'	34:A:358:G:O5'	2.13	0.48
34:A:2249:G:H2'	34:A:2250:A:C8	2.48	0.48
34:A:2583:C:C2	34:A:2584:A:C8	3.01	0.48
34:A:2855:G:O2'	34:A:3111:G:O2'	2.28	0.48
3:4:45:ARG:HE	3:4:47:GLU:HG2	1.78	0.48
9:G:17:VAL:HG11	9:G:51:ILE:HD11	1.94	0.48
10:H:132:VAL:HG12	10:H:133:THR:N	2.29	0.48
14:M:73:THR:O	14:M:73:THR:HG23	2.14	0.48
17:P:126:LYS:O	17:P:127:PHE:OXT	2.32	0.48
34:A:1873:A:N6	34:A:2229:A:O2'	2.47	0.48
34:A:2130:G:H5''	34:A:2130:G:H8	1.78	0.48
34:A:3013:C:O2'	34:A:3113:A:N6	2.44	0.48
3:4:422:ILE:HG22	3:4:429:LEU:HD12	1.96	0.48
23:V:7:ASP:OD2	23:V:96:ARG:NH1	2.40	0.48
34:A:191:G:O2'	34:A:792:G:N2	2.42	0.48
34:A:500:A:P	34:A:500:A:H8	2.37	0.48
34:A:577:G:N2	34:A:1436:C:OP2	2.46	0.48
34:A:740:A:H4'	34:A:741:G:OP1	2.14	0.48
34:A:1211:G:N2	34:A:1217:G:C6	2.81	0.48
34:A:2024:G:N2	34:A:2027:A:OP2	2.44	0.48
34:A:2399:A:O2'	34:A:2400:C:O5'	2.32	0.48
34:A:2528:G:N2	34:A:2536:U:O2	2.46	0.48
34:A:3039:C:O2'	34:A:3040:G:H8	1.97	0.48
9:G:151:ARG:NH2	34:A:2967:C:OP1	2.47	0.48
27:Z:59:THR:HG21	34:A:74:C:O4'	2.14	0.48
34:A:104:G:O3'	34:A:374:U:O2'	2.28	0.48
34:A:800:A:C8	34:A:888:U:C4	3.01	0.48
34:A:908:A:N6	34:A:2296:C:OP1	2.46	0.48
34:A:911:U:H2'	34:A:912:C:C6	2.48	0.48
34:A:1476:G:H2'	34:A:1477:C:C6	2.49	0.48
34:A:1794:C:N4	34:A:1795:C:N4	2.62	0.48
34:A:1808:A:H2'	34:A:1809:U:O4'	2.14	0.48
7:E:119:ALA:HB2	7:E:124:ILE:HD12	1.96	0.48
34:A:899:G:O2'	34:A:900:G:P	2.72	0.48
34:A:1540:U:H2'	34:A:1541:G:O3'	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:1648:A:H4'	34:A:1649:C:O5'	2.14	0.48
34:A:2068:U:H2'	34:A:2069:U:O4'	2.14	0.48
34:A:2256:G:O6	34:A:2677:A:O2'	2.30	0.48
34:A:2420:U:O2'	34:A:2421:A:H8	1.97	0.48
3:4:240:ARG:CD	3:4:241:ARG:N	2.76	0.47
15:N:80:GLU:OE2	34:A:2717:U:O2'	2.24	0.47
17:P:40:VAL:HG12	17:P:103:ASP:O	2.14	0.47
22:U:4:ILE:HB	27:Z:22:LEU:HD23	1.96	0.47
34:A:1069:G:C6	34:A:1083:G:C6	3.01	0.47
34:A:1137:U:OP1	34:A:1152:G:O2'	2.17	0.47
34:A:1251:A:O2'	34:A:1252:G:P	2.72	0.47
34:A:1314:C:O2'	34:A:1315:C:O5'	2.32	0.47
34:A:1475:G:C8	34:A:1476:G:C8	3.02	0.47
34:A:1516:G:H2'	34:A:1517:U:O4'	2.13	0.47
34:A:1574:G:N2	34:A:1600:G:OP1	2.47	0.47
34:A:1577:C:H2'	34:A:1578:G:C4	2.49	0.47
34:A:1616:A:C5	34:A:1617:C:N4	2.82	0.47
34:A:1877:U:C2	34:A:1878:G:C8	3.01	0.47
34:A:2771:U:O2'	34:A:2772:G:P	2.72	0.47
34:A:2915:C:H4'	34:A:3092:G:O2'	2.14	0.47
4:B:23:G:H2'	4:B:24:G:C8	2.49	0.47
8:F:113:ILE:HG21	8:F:146:HIS:CG	2.49	0.47
8:F:178:ARG:NH2	8:F:184:PHE:O	2.48	0.47
29:c:8:ARG:HD3	34:A:2508:C:OP2	2.14	0.47
34:A:220:A:C2	34:A:266:U:H4'	2.49	0.47
34:A:1535:C:O2	34:A:1535:C:O4'	2.31	0.47
34:A:1635:A:O5'	34:A:1636:A:P	2.72	0.47
34:A:1704:U:H2'	34:A:1705:C:C6	2.49	0.47
3:4:146:LEU:O	3:4:149:ASP:OD1	2.30	0.47
3:4:200:THR:O	3:4:200:THR:HG22	2.14	0.47
3:4:257:GLY:HA2	35:4:501:GCP:O1A	2.14	0.47
9:G:71:THR:HG21	34:A:2971:G:P	2.54	0.47
10:H:98:ALA:HB2	34:A:281:C:OP1	2.14	0.47
11:J:10:LEU:HB2	11:J:61:THR:O	2.14	0.47
15:N:57:HIS:C	15:N:59:LYS:N	2.70	0.47
21:T:14:ALA:CB	21:T:57:VAL:HG22	2.45	0.47
25:X:44:HIS:ND1	34:A:2555:G:OP1	2.46	0.47
34:A:49:A:OP2	34:A:114:G:N1	2.30	0.47
34:A:93:A:H3'	34:A:94:G:H5''	1.96	0.47
34:A:920:G:N2	34:A:944:A:OP1	2.42	0.47
34:A:1550:G:O2'	34:A:1551:U:P	2.72	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:1561:C:H2'	34:A:1562:C:C6	2.49	0.47
34:A:2036:A:OP1	34:A:2036:A:C2	2.67	0.47
34:A:2316:G:N1	34:A:2419:C:C5	2.82	0.47
34:A:2389:U:O4'	34:A:2393:A:N6	2.46	0.47
34:A:2516:U:H5''	34:A:2603:G:H21	1.78	0.47
3:4:198:VAL:C	36:A:3201:ERY:H273	2.39	0.47
6:D:69:GLN:NE2	34:A:3009:U:O2	2.47	0.47
9:G:2:SER:CA	34:A:2973:A:OP2	2.62	0.47
14:M:32:THR:OG1	34:A:1305:G:OP1	2.24	0.47
23:V:44:HIS:CD2	23:V:59:ILE:HD12	2.49	0.47
34:A:672:C:H2'	34:A:673:C:C6	2.50	0.47
34:A:1001:C:OP1	34:A:1007:G:N2	2.47	0.47
34:A:1137:U:O2'	34:A:1139:A:C2	2.58	0.47
34:A:1168:A:H2'	34:A:1169:A:C8	2.49	0.47
34:A:1974:A:O2'	34:A:1975:A:OP1	2.20	0.47
34:A:2439:C:O2'	34:A:2440:G:H8	1.96	0.47
6:D:18:ASP:OD1	6:D:24:VAL:HG21	2.15	0.47
6:D:153:GLY:HA2	34:A:2798:G:O2'	2.14	0.47
34:A:202:C:OP2	34:A:203:A:O2'	2.30	0.47
34:A:503:A:P	34:A:504:C:H5''	2.55	0.47
34:A:748:U:H2'	34:A:749:C:O4'	2.14	0.47
34:A:1168:A:O2'	34:A:2976:C:C6	2.66	0.47
34:A:1812:A:OP2	34:A:1813:C:H5''	2.14	0.47
34:A:3042:A:H2'	34:A:3043:G:O4'	2.15	0.47
11:J:37:ILE:HG22	11:J:38:MET:HE3	1.97	0.47
34:A:9:U:O2'	34:A:10:A:P	2.72	0.47
34:A:738:A:O3'	34:A:740:A:N7	2.48	0.47
34:A:1292:U:H4'	34:A:1293:G:H5'	1.96	0.47
34:A:2399:A:O2'	34:A:2400:C:OP1	2.31	0.47
11:J:40:PHE:O	11:J:44:TYR:CD1	2.68	0.47
17:P:51:LEU:CD1	17:P:92:ALA:HB2	2.43	0.47
34:A:23:G:H2'	34:A:24:G:O4'	2.15	0.47
34:A:193:G:H2'	34:A:194:A:O4'	2.15	0.47
34:A:1160:G:H2'	34:A:1161:C:C5'	2.45	0.47
34:A:1271:C:HO2'	34:A:1272:C:P	2.37	0.47
34:A:1457:A:HO2'	34:A:1459:U:P	2.38	0.47
34:A:1810:A:H2'	34:A:1811:C:O4'	2.15	0.47
34:A:1811:C:H2'	34:A:1812:A:H8	1.79	0.47
34:A:1888:C:OP1	34:A:2773:G:H5'	2.15	0.47
34:A:2389:U:C2	34:A:2393:A:N7	2.83	0.47
34:A:2609:A:C2'	34:A:2610:C:H5'	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:3043:G:N2	34:A:3045:C:OP1	2.43	0.47
18:Q:30:LYS:NZ	18:Q:32:ILE:HD13	2.30	0.47
32:f:20:HIS:N	34:A:2981:A:OP1	2.42	0.47
34:A:450:G:N1	34:A:451:U:C4	2.83	0.47
34:A:1157:G:H1	34:A:1233:A:H61	1.62	0.47
34:A:2510:A:H4'	34:A:2511:A:O5'	2.14	0.47
34:A:2521:C:N3	34:A:2545:G:N2	2.63	0.47
34:A:2572:U:OP2	34:A:2573:G:OP2	2.32	0.47
34:A:2656:A:N7	34:A:2657:A:C6	2.83	0.47
34:A:2982:A:O2'	34:A:2983:G:O5'	2.32	0.47
3:4:262:LEU:HD12	3:4:297:LEU:HD22	1.95	0.47
3:4:413:SER:O	3:4:414:THR:HG23	2.15	0.47
5:C:38:HIS:ND1	5:C:39:GLY:O	2.43	0.47
6:D:27:THR:HG21	6:D:198:ILE:HG12	1.97	0.47
15:N:18:ARG:NH1	34:A:977:G:OP1	2.48	0.47
21:T:18:ARG:NH2	34:A:1436:C:O2'	2.48	0.47
22:U:10:ILE:HG21	22:U:41:GLN:NE2	2.29	0.47
23:V:10:LEU:HD23	23:V:10:LEU:C	2.40	0.47
23:V:88:ASP:HB3	23:V:90:GLU:OE2	2.14	0.47
26:Y:33:ILE:HA	26:Y:52:CYS:HA	1.97	0.47
34:A:274:C:N3	34:A:275:C:H5	2.13	0.47
34:A:1616:A:N7	34:A:1617:C:N4	2.63	0.47
34:A:2750:G:C4	34:A:2751:C:C6	3.03	0.47
9:G:24:LEU:HD23	9:G:35:LEU:HD21	1.96	0.47
9:G:72:LEU:HD23	9:G:72:LEU:C	2.40	0.47
10:H:97:ALA:O	10:H:101:VAL:HG23	2.15	0.47
18:Q:100:ARG:O	18:Q:103:ARG:NH2	2.48	0.47
29:c:8:ARG:NH2	34:A:2509:C:N3	2.63	0.47
34:A:988:U:C2'	34:A:989:G:O5'	2.63	0.47
34:A:1017:G:C2	34:A:1018:U:C6	3.03	0.47
34:A:2176:A:C5	34:A:2177:A:C6	3.03	0.47
34:A:2282:A:C2	36:A:3201:ERY:H72	2.50	0.47
3:4:412:GLU:O	3:4:413:SER:OG	2.28	0.46
8:F:39:VAL:O	8:F:40:LYS:C	2.59	0.46
9:G:35:LEU:HD23	9:G:35:LEU:H	1.81	0.46
12:K:82:GLY:N	34:A:1249:G:OP1	2.43	0.46
16:O:20:LEU:HD11	34:A:1392:G:C4'	2.45	0.46
17:P:26:ARG:NH1	17:P:29:VAL:O	2.48	0.46
34:A:947:U:H2'	34:A:948:G:C8	2.49	0.46
34:A:1500:A:O2'	34:A:1511:U:O2	2.32	0.46
34:A:1527:U:H2'	34:A:1528:G:H8	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2419:C:OP2	34:A:2419:C:C2	2.68	0.46
34:A:2511:A:C5	34:A:2513:G:C8	3.03	0.46
34:A:2539:G:H5'	34:A:2540:G:OP1	2.14	0.46
34:A:2574:C:OP1	34:A:2574:C:H4'	2.16	0.46
3:4:42:ARG:O	3:4:149:ASP:HB2	2.16	0.46
3:4:240:ARG:HD3	3:4:245:ILE:O	2.14	0.46
5:C:177:MET:HB3	34:A:2016:G:N1	2.31	0.46
6:D:13:MET:SD	6:D:27:THR:OG1	2.73	0.46
11:J:37:ILE:HG22	11:J:38:MET:CE	2.45	0.46
13:L:2:ILE:HD11	13:L:82:ASN:CG	2.40	0.46
17:P:49:VAL:HG11	17:P:116:LEU:HD11	1.97	0.46
34:A:41:A:H2'	34:A:42:G:O4'	2.16	0.46
34:A:42:G:H5'	34:A:43:C:OP1	2.15	0.46
34:A:1044:U:H3'	34:A:1045:C:O2	2.15	0.46
34:A:1847:U:O2	34:A:2922:U:H4'	2.16	0.46
34:A:1919:A:OP1	34:A:1980:G:N1	2.40	0.46
34:A:2572:U:OP1	34:A:2606:G:N3	2.49	0.46
34:A:2970:U:C2	34:A:2971:G:H1'	2.51	0.46
6:D:6:ILE:HG21	6:D:31:ALA:HB1	1.97	0.46
7:E:117:ASP:C	7:E:117:ASP:OD1	2.58	0.46
11:J:78:ALA:CB	11:J:137:MET:HE2	2.45	0.46
12:K:15:TRP:HE3	12:K:55:ILE:HD11	1.78	0.46
12:K:68:LYS:HZ2	34:A:1258:C:P	2.35	0.46
23:V:58:GLY:CA	34:A:571:A:N7	2.78	0.46
29:c:41:PHE:HE1	34:A:2572:U:C5	2.33	0.46
34:A:54:C:H2'	34:A:55:G:O4'	2.15	0.46
34:A:392:A:HO2'	34:A:393:U:P	2.30	0.46
34:A:500:A:H8	34:A:500:A:O5'	1.97	0.46
34:A:891:G:N2	34:A:2465:A:OP1	2.48	0.46
34:A:1169:A:H5'	34:A:2976:C:H1'	1.96	0.46
34:A:1225:G:H2'	34:A:1226:U:C6	2.50	0.46
34:A:1630:U:H2'	34:A:1631:A:O4'	2.16	0.46
34:A:2008:A:C2	34:A:2046:A:C4'	2.98	0.46
34:A:2067:G:C6	34:A:2068:U:C4	3.03	0.46
34:A:2216:G:N2	34:A:2220:C:O2'	2.48	0.46
34:A:2411:U:H2'	34:A:2412:U:O4'	2.15	0.46
36:A:3201:ERY:H213	36:A:3201:ERY:H193	1.97	0.46
3:4:406:ARG:C	3:4:410:LEU:HD13	2.41	0.46
5:C:208:LYS:NZ	34:A:879:A:OP1	2.32	0.46
6:D:40:ARG:HA	6:D:45:ASP:OD1	2.15	0.46
7:E:90:VAL:HG21	34:A:678:A:H5'	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:L:35:ILE:O	13:L:69:ARG:NH1	2.49	0.46
18:Q:32:ILE:HG23	18:Q:32:ILE:O	2.14	0.46
24:W:57:VAL:HG11	24:W:67:LEU:HD22	1.98	0.46
29:c:16:GLU:OE2	29:c:52:LYS:CB	2.64	0.46
34:A:954:U:H2'	34:A:955:C:C6	2.51	0.46
34:A:1214:A:O2'	34:A:1215:U:O5'	2.32	0.46
34:A:1314:C:O2'	34:A:1315:C:H6	1.98	0.46
34:A:1606:G:H2'	34:A:1607:C:O4'	2.16	0.46
34:A:2571:C:C4'	34:A:2572:U:C5	2.98	0.46
34:A:2600:A:N9	34:A:2601:A:N7	2.63	0.46
6:D:36:VAL:HG11	6:D:39:ILE:HD11	1.98	0.46
7:E:101:ARG:NH1	34:A:774:G:OP1	2.42	0.46
8:F:142:GLN:NE2	8:F:155:ARG:O	2.49	0.46
14:M:80:VAL:HG11	14:M:118:LEU:HB2	1.96	0.46
16:O:8:PRO:HG2	34:A:1870:U:C4	2.50	0.46
21:T:25:ARG:NH2	34:A:604:C:O2'	2.49	0.46
21:T:25:ARG:O	21:T:29:ASP:OD2	2.34	0.46
21:T:81:VAL:HG23	21:T:112:VAL:HG22	1.97	0.46
34:A:265:A:N1	34:A:515:U:O2'	2.44	0.46
34:A:1237:U:OP2	34:A:1238:G:OP2	2.34	0.46
34:A:2015:U:H4'	34:A:2016:G:OP1	2.14	0.46
34:A:2313:A:OP2	34:A:2314:U:OP2	2.33	0.46
34:A:2539:G:H4'	34:A:2540:G:O5'	2.14	0.46
4:B:26:A:H2	4:B:115:A:H1'	1.80	0.46
5:C:101:GLU:OE2	5:C:103:ARG:NE	2.47	0.46
11:J:74:THR:HG1	34:A:1177:G:C4'	2.27	0.46
13:L:80:ASP:OD2	18:Q:61:ARG:NH2	2.44	0.46
28:b:5:LYS:HE2	34:A:2280:G:O2'	2.16	0.46
34:A:274:C:O2	34:A:275:C:C5	2.69	0.46
34:A:512:G:C3'	34:A:513:C:H5''	2.45	0.46
34:A:1485:C:H2'	34:A:1486:G:O4'	2.15	0.46
34:A:1538:G:O6	34:A:1635:A:N6	2.49	0.46
34:A:2075:G:O2'	34:A:2076:A:P	2.73	0.46
34:A:2177:A:C8	34:A:2784:C:H1'	2.51	0.46
34:A:2180:U:C4	34:A:2181:C:C5	3.03	0.46
34:A:2695:A:C2'	34:A:2696:G:OP1	2.63	0.46
34:A:3024:A:O2'	34:A:3025:G:P	2.73	0.46
3:4:198:VAL:HG12	3:4:199:GLY:N	2.29	0.46
6:D:16:VAL:HG21	6:D:183:HIS:CE1	2.50	0.46
8:F:130:ASP:OD1	34:A:2526:U:C4	2.68	0.46
11:J:102:VAL:CG1	11:J:141:VAL:HA	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:J:137:MET:HG3	11:J:139:ILE:HG22	1.98	0.46
19:R:48:ARG:NH2	34:A:652:C:O2	2.47	0.46
21:T:43:LEU:HD11	21:T:58:ILE:HD12	1.96	0.46
23:V:27:TYR:O	23:V:31:ASN:N	2.48	0.46
34:A:316:U:O2'	34:A:317:G:OP2	2.30	0.46
34:A:724:G:N2	34:A:726:A:H2'	2.30	0.46
34:A:939:C:H1'	34:A:2582:A:N7	2.31	0.46
34:A:1222:C:H2'	34:A:1223:U:O4'	2.15	0.46
34:A:1560:U:H2'	34:A:1561:C:O4'	2.16	0.46
34:A:2453:U:O2'	34:A:2454:G:P	2.73	0.46
3:4:359:ILE:O	3:4:359:ILE:HG23	2.15	0.46
4:B:47:A:C5	4:B:48:C:C5	3.04	0.46
10:H:95:VAL:HG21	10:H:124:ILE:HG21	1.97	0.46
12:K:27:ARG:NH1	34:A:1260:C:HO2'	2.13	0.46
28:b:6:ARG:NE	34:A:2243:C:H41	2.13	0.46
34:A:92:G:H2'	34:A:93:A:O4'	2.16	0.46
34:A:273:A:P	34:A:273:A:H8	2.38	0.46
34:A:545:A:N1	34:A:558:A:H5''	2.30	0.46
34:A:1071:G:O2'	34:A:2498:A:N1	2.41	0.46
34:A:1224:G:H2'	34:A:1225:G:C8	2.51	0.46
34:A:2193:A:H2'	34:A:2196:G:H21	1.80	0.46
34:A:2508:C:N4	34:A:2509:C:H41	2.14	0.46
34:A:2693:A:H61	34:A:2705:G:C2'	2.25	0.46
34:A:2870:C:H2'	34:A:2871:U:O4'	2.15	0.46
34:A:2970:U:C3'	34:A:2971:G:H4'	2.46	0.46
34:A:3036:C:C4	34:A:3037:C:C5	3.04	0.46
16:O:63:ARG:HA	16:O:80:PHE:CZ	2.51	0.46
17:P:25:LEU:HD23	17:P:25:LEU:C	2.41	0.46
26:Y:14:PHE:CZ	26:Y:28:ARG:HD2	2.51	0.46
34:A:265:A:O2'	34:A:266:U:OP2	2.29	0.46
34:A:410:U:O2'	34:A:411:G:OP1	2.29	0.46
34:A:1334:C:H2'	34:A:1335:G:O4'	2.15	0.46
34:A:1666:A:N6	34:A:1687:G:O2'	2.46	0.46
34:A:1690:A:H2'	34:A:1691:A:C8	2.51	0.46
34:A:2596:G:H2'	34:A:2597:A:O4'	2.15	0.46
34:A:2971:G:OP1	34:A:2972:A:OP1	2.34	0.46
1:2:10:ARG:NH2	34:A:1105:C:OP1	2.49	0.46
10:H:4:ILE:HD12	10:H:45:ARG:CB	2.46	0.46
11:J:33:HIS:O	11:J:36:ASN:N	2.38	0.46
34:A:326:A:N6	34:A:450:G:O6	2.49	0.46
34:A:1179:U:H3'	34:A:1180:G:C5'	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:1542:A:O2'	34:A:1543:A:O5'	2.32	0.46
9:G:63:ARG:NE	34:A:2973:A:O2'	2.49	0.45
11:J:73:LYS:HA	11:J:113:THR:HG22	1.98	0.45
13:L:104:ARG:HD3	13:L:121:VAL:HG12	1.97	0.45
13:L:122:LEU:HD12	18:Q:69:VAL:HG11	1.98	0.45
21:T:33:GLY:H	21:T:78:VAL:HG23	1.80	0.45
34:A:226:A:O2'	34:A:227:A:N7	2.50	0.45
34:A:1210:C:O2'	34:A:1211:G:O5'	2.28	0.45
34:A:1478:C:O2'	34:A:2026:A:N3	2.44	0.45
34:A:2612:A:N7	34:A:2613:G:C6	2.83	0.45
5:C:92:ILE:HD12	5:C:104:TYR:CD1	2.51	0.45
8:F:98:LEU:C	8:F:103:MET:HB3	2.41	0.45
12:K:102:GLU:O	12:K:106:ILE:CD1	2.62	0.45
28:b:37:ARG:NH2	28:b:55:ASP:O	2.49	0.45
29:c:41:PHE:CE1	34:A:2572:U:C5	3.04	0.45
34:A:1204:A:H4'	34:A:1205:G:OP1	2.16	0.45
34:A:1326:G:H1'	34:A:1352:A:N6	2.31	0.45
34:A:1527:U:C2	34:A:1528:G:C8	3.04	0.45
34:A:1939:U:C5	34:A:1954:C:O2	2.70	0.45
34:A:2751:C:O5'	34:A:2752:U:OP2	2.34	0.45
3:4:218:ARG:O	3:4:222:LEU:HD23	2.16	0.45
3:4:296:VAL:HG13	3:4:296:VAL:O	2.15	0.45
23:V:45:THR:O	34:A:571:A:H1'	2.17	0.45
34:A:262:A:N3	34:A:518:A:O2'	2.47	0.45
34:A:263:G:H2'	34:A:264:G:O4'	2.15	0.45
34:A:319:G:H1'	34:A:320:G:P	2.57	0.45
34:A:325:U:H3'	34:A:326:A:H5''	1.99	0.45
34:A:451:U:C2'	34:A:452:G:O5'	2.64	0.45
34:A:665:G:O6	34:A:2253:A:C2'	2.65	0.45
34:A:1237:U:H2'	34:A:1238:G:O4'	2.16	0.45
34:A:1314:C:O2'	34:A:1315:C:P	2.74	0.45
34:A:1642:G:N3	34:A:1643:G:C8	2.84	0.45
34:A:2384:C:C2'	34:A:2385:G:H5'	2.47	0.45
34:A:2713:G:O2'	34:A:2714:G:H5'	2.15	0.45
34:A:2749:G:C2	34:A:2750:G:C5	3.03	0.45
34:A:3035:C:C4	34:A:3036:C:C5	3.04	0.45
3:4:90:ASP:O	3:4:91:LYS:C	2.59	0.45
6:D:154:CYS:O	34:A:2277:G:H5''	2.17	0.45
15:N:59:LYS:HB3	15:N:60:ARG:H	1.41	0.45
34:A:268:G:C2	34:A:269:C:O2	2.69	0.45
34:A:294:G:O2'	34:A:295:U:O5'	2.34	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:356:G:H2'	34:A:357:U:C5	2.52	0.45
34:A:458:G:H4'	34:A:459:A:OP2	2.16	0.45
34:A:759:G:H5'	34:A:760:U:O4'	2.17	0.45
34:A:765:G:C2	34:A:766:G:C8	3.05	0.45
34:A:767:U:H2'	34:A:768:G:H5'	1.98	0.45
34:A:856:U:H2'	34:A:857:U:O4'	2.17	0.45
34:A:1016:C:C2	34:A:1017:G:H1'	2.51	0.45
34:A:1576:C:H2'	34:A:1577:C:C6	2.51	0.45
34:A:2314:U:H4'	34:A:2315:U:OP2	2.15	0.45
34:A:2525:C:N3	34:A:2540:G:C2	2.84	0.45
34:A:2552:A:H2'	34:A:2553:G:C8	2.51	0.45
34:A:3008:C:H2'	34:A:3009:U:O4'	2.16	0.45
36:A:3201:ERY:H4	36:A:3201:ERY:H71	1.70	0.45
3:4:226:ILE:HG13	3:4:226:ILE:O	2.15	0.45
3:4:459:LEU:HD23	3:4:459:LEU:C	2.42	0.45
6:D:183:HIS:N	6:D:193:LEU:O	2.46	0.45
8:F:42:VAL:HG11	34:A:2538:A:OP1	2.17	0.45
8:F:142:GLN:HB3	8:F:157:ARG:HB2	1.99	0.45
9:G:54:THR:HG22	9:G:55:ARG:N	2.31	0.45
9:G:63:ARG:O	34:A:2973:A:OP1	2.35	0.45
13:L:40:VAL:HG11	34:A:2785:A:O2'	2.16	0.45
13:L:104:ARG:O	13:L:108:GLU:HG3	2.17	0.45
18:Q:26:ASN:O	18:Q:26:ASN:OD1	2.34	0.45
19:R:6:ARG:HG2	34:A:1365:G:C5'	2.47	0.45
31:e:35:HIS:NE2	34:A:2615:G:OP1	2.49	0.45
34:A:618:C:OP1	34:A:653:G:N1	2.47	0.45
34:A:1157:G:H2'	34:A:1157:G:N3	2.29	0.45
34:A:1636:A:C5	34:A:1802:G:N2	2.85	0.45
34:A:2317:G:H2'	34:A:2318:U:C5	2.51	0.45
34:A:2575:G:O6	34:A:2606:G:C2	2.70	0.45
34:A:2964:A:H3'	34:A:2965:A:C8	2.52	0.45
3:4:329:ILE:HD12	3:4:365:LEU:HD22	1.99	0.45
5:C:249:PRO:HD3	34:A:2041:G:O3'	2.16	0.45
6:D:123:PHE:HA	6:D:169:ARG:HA	1.99	0.45
7:E:33:LEU:HD21	7:E:109:ALA:HB3	1.97	0.45
13:L:12:ASP:OD2	13:L:14:THR:HG23	2.16	0.45
16:O:45:ARG:HG3	16:O:95:THR:HG23	1.99	0.45
21:T:85:GLU:O	34:A:21:G:O2'	2.33	0.45
34:A:768:G:HO2'	34:A:769:U:H5	1.63	0.45
34:A:1115:G:O2'	34:A:1116:C:H5'	2.17	0.45
34:A:1493:A:O2'	34:A:1495:G:N7	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2016:G:C2	34:A:2036:A:N1	2.84	0.45
34:A:2244:A:O2'	34:A:2246:U:OP2	2.19	0.45
34:A:2597:A:H3'	34:A:2598:C:C6	2.51	0.45
34:A:2971:G:OP1	34:A:2971:G:H4'	2.17	0.45
3:4:415:ASP:OD2	3:4:457:ALA:HA	2.17	0.45
7:E:158:ILE:HD11	7:E:162:ASP:OD1	2.16	0.45
34:A:301:U:H3'	34:A:302:U:H4'	1.99	0.45
34:A:693:G:H2'	34:A:694:C:C6	2.52	0.45
34:A:1027:C:O2'	34:A:1028:U:H5'	2.15	0.45
34:A:1251:A:C2'	34:A:1252:G:OP2	2.65	0.45
34:A:1900:C:C2	34:A:1901:C:C5	3.05	0.45
34:A:2749:G:C2'	34:A:2750:G:O4'	2.64	0.45
34:A:2969:C:N4	34:A:2980:U:C5	2.85	0.45
1:2:25:THR:HG23	34:A:1043:G:N3	2.31	0.45
3:4:240:ARG:O	3:4:241:ARG:C	2.58	0.45
7:E:181:ASP:O	34:A:710:G:O2'	2.32	0.45
15:N:27:VAL:HG13	15:N:105:GLU:OE2	2.17	0.45
17:P:32:THR:O	17:P:35:VAL:N	2.50	0.45
18:Q:45:VAL:HG21	18:Q:109:ILE:HG13	1.99	0.45
23:V:4:HIS:CE1	34:A:81:A:OP1	2.69	0.45
23:V:31:ASN:OD1	23:V:68:VAL:HG12	2.17	0.45
25:X:42:GLY:O	25:X:57:ASP:HB3	2.17	0.45
34:A:357:U:H1'	34:A:358:G:OP2	2.17	0.45
34:A:1119:A:H2'	34:A:1120:G:O4'	2.16	0.45
34:A:2522:A:N6	34:A:2542:G:N3	2.64	0.45
34:A:2551:A:H2'	34:A:2552:A:C8	2.52	0.45
34:A:2572:U:H5''	34:A:2573:G:OP2	2.17	0.45
34:A:3022:G:H2'	34:A:3023:G:C8	2.51	0.45
3:4:169:MET:HE2	3:4:218:ARG:CZ	2.47	0.45
3:4:233:ARG:NH1	3:4:321:GLU:OE2	2.50	0.45
3:4:253:TYR:HA	3:4:303:PHE:O	2.17	0.45
6:D:48:SER:OG	6:D:86:LEU:O	2.22	0.45
10:H:77:ASP:O	10:H:77:ASP:OD1	2.35	0.45
10:H:78:VAL:HG12	10:H:79:THR:N	2.32	0.45
13:L:66:VAL:HA	13:L:79:PHE:O	2.17	0.45
25:X:37:LEU:N	25:X:59:LEU:O	2.47	0.45
34:A:292:G:H2'	34:A:293:G:H5'	1.98	0.45
34:A:320:G:OP1	34:A:320:G:H8	2.00	0.45
34:A:445:U:O2	34:A:445:U:H2'	2.17	0.45
34:A:663:A:N3	34:A:663:A:H2'	2.32	0.45
34:A:702:A:H2'	34:A:703:C:O4'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:991:C:H2'	34:A:992:C:N1	2.32	0.45
34:A:1566:A:H62	34:A:1605:G:H1	1.64	0.45
34:A:2469:U:OP1	34:A:2654:A:N6	2.39	0.45
34:A:2494:U:H2'	34:A:2495:G:O4'	2.16	0.45
34:A:2592:C:H2'	34:A:2593:A:C8	2.52	0.45
34:A:2594:G:N2	34:A:2595:G:N3	2.64	0.45
3:4:277:PHE:CA	35:4:501:GCP:O2G	2.65	0.45
10:H:11:HIS:HB3	34:A:2317:G:H4'	1.99	0.45
11:J:128:LYS:O	11:J:132:GLY:N	2.47	0.45
13:L:105:GLU:OE1	13:L:105:GLU:N	2.43	0.45
34:A:325:U:H4'	34:A:326:A:OP2	2.17	0.45
34:A:503:A:O5'	34:A:504:C:H5''	2.17	0.45
34:A:784:G:H2'	34:A:785:A:N7	2.32	0.45
34:A:1048:A:C6	34:A:1050:A:C8	3.05	0.45
34:A:1191:A:H2'	34:A:1192:G:O4'	2.17	0.45
34:A:1530:G:H2'	34:A:1531:C:C2	2.51	0.45
34:A:1577:C:H2'	34:A:1578:G:N9	2.31	0.45
34:A:1930:C:OP2	34:A:1931:A:O2'	2.22	0.45
34:A:2266:A:H2'	34:A:2267:C:H5'	1.98	0.45
34:A:2312:U:O2	34:A:2454:G:C2	2.70	0.45
34:A:2340:A:O4'	34:A:2394:A:N6	2.50	0.45
7:E:21:PRO:CD	7:E:205:ILE:HD12	2.47	0.44
7:E:192:ASP:OD1	14:M:5:LYS:NZ	2.44	0.44
9:G:87:LYS:O	9:G:166:GLU:N	2.49	0.44
18:Q:19:PHE:HB3	18:Q:85:VAL:HG22	1.99	0.44
21:T:43:LEU:CD1	21:T:58:ILE:HD12	2.47	0.44
34:A:160:A:N1	34:A:2441:G:O2'	2.48	0.44
34:A:277:U:O2	34:A:277:U:H2'	2.16	0.44
34:A:303:G:H2'	34:A:304:U:C6	2.52	0.44
34:A:383:U:H3'	34:A:384:G:C5'	2.47	0.44
34:A:512:G:H2'	34:A:513:C:O4'	2.17	0.44
34:A:1313:U:C2'	34:A:1314:C:H5'	2.47	0.44
34:A:1327:A:H2'	34:A:1328:A:O4'	2.17	0.44
34:A:1650:G:H2'	34:A:1651:C:C6	2.51	0.44
34:A:2883:G:H3'	34:A:2884:A:H5'	1.97	0.44
3:4:96:THR:O	3:4:98:ILE:N	2.47	0.44
9:G:35:LEU:CD1	9:G:72:LEU:HD22	2.47	0.44
13:L:16:ALA:HB2	13:L:52:VAL:HG11	1.99	0.44
24:W:36:VAL:O	24:W:36:VAL:HG13	2.16	0.44
34:A:219:G:N1	34:A:516:G:OP2	2.43	0.44
34:A:248:G:O5'	34:A:249:C:H5''	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:337:U:C2	34:A:344:G:O6	2.69	0.44
34:A:843:G:O2'	34:A:845:C:H5''	2.17	0.44
34:A:979:G:O2'	34:A:980:C:H5'	2.17	0.44
34:A:1509:U:H2'	34:A:1510:A:O4'	2.17	0.44
34:A:1703:G:H2'	34:A:1704:U:C6	2.52	0.44
34:A:2247:A:H2'	34:A:2248:C:C6	2.53	0.44
34:A:2452:G:C5	34:A:2453:U:O4	2.71	0.44
34:A:2526:U:H3'	34:A:2527:G:H5''	1.99	0.44
34:A:2596:G:H2'	34:A:2597:A:N9	2.32	0.44
3:4:272:VAL:HG12	35:4:501:GCP:H3'	1.99	0.44
5:C:161:VAL:HG13	5:C:178:PRO:CG	2.47	0.44
6:D:151:ILE:HD11	34:A:2274:C:O2'	2.18	0.44
9:G:173:LYS:NZ	34:A:2754:G:N7	2.65	0.44
11:J:81:LEU:HD13	11:J:84:ALA:HB3	1.98	0.44
17:P:40:VAL:O	17:P:40:VAL:HG13	2.16	0.44
18:Q:18:THR:O	18:Q:88:ARG:NH1	2.44	0.44
34:A:45:G:N1	34:A:176:G:OP2	2.50	0.44
34:A:354:C:H2'	34:A:355:A:O4'	2.17	0.44
34:A:621:U:H2'	34:A:622:C:C6	2.51	0.44
34:A:700:U:H5''	34:A:713:G:O6	2.16	0.44
34:A:709:U:O2'	34:A:710:G:H5'	2.17	0.44
34:A:896:A:O2'	34:A:2005:C:O2	2.34	0.44
34:A:963:U:C2	34:A:964:C:C6	3.05	0.44
34:A:1128:A:H3'	34:A:1129:G:H3'	1.99	0.44
34:A:1176:G:O2'	34:A:1177:G:N7	2.49	0.44
34:A:1850:A:O2'	34:A:1851:G:O5'	2.31	0.44
34:A:2502:A:H2'	34:A:2503:G:O4'	2.18	0.44
34:A:2521:C:C2	34:A:2557:A:N1	2.85	0.44
34:A:3060:A:C5	34:A:3061:C:C5	3.05	0.44
3:4:251:VAL:HG11	3:4:322:VAL:CG2	2.47	0.44
8:F:73:GLU:OE2	8:F:95:ARG:NH2	2.49	0.44
18:Q:5:ASP:O	18:Q:9:GLN:HG2	2.17	0.44
19:R:77:ASN:HB3	34:A:1128:A:O2'	2.18	0.44
20:S:19:GLY:N	20:S:99:VAL:O	2.34	0.44
29:c:24:ILE:HD13	34:A:2643:U:O3'	2.17	0.44
31:e:5:LYS:NZ	34:A:254:G:N7	2.65	0.44
34:A:206:A:H2'	34:A:207:C:O4'	2.16	0.44
34:A:1041:A:H2'	34:A:1042:A:O4'	2.18	0.44
34:A:1339:G:N7	34:A:1340:A:C6	2.85	0.44
34:A:1552:A:H2'	34:A:1617:C:N3	2.33	0.44
34:A:2060:C:C2'	34:A:2061:U:H5'	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2883:G:H3'	34:A:2884:A:C5'	2.48	0.44
34:A:2971:G:O3'	34:A:2972:A:O4'	2.35	0.44
4:B:46:A:C5	4:B:47:A:C8	3.05	0.44
5:C:176:ARG:CZ	5:C:177:MET:O	2.66	0.44
15:N:112:LYS:NZ	15:N:116:ASP:OD2	2.50	0.44
34:A:384:G:H2'	34:A:385:G:H8	1.82	0.44
34:A:1493:A:N6	34:A:1789:A:N1	2.63	0.44
34:A:1653:G:H2'	34:A:1654:G:O4'	2.16	0.44
34:A:1711:G:O2'	34:A:1712:G:P	2.75	0.44
34:A:2176:A:C2	34:A:2177:A:C4	3.05	0.44
34:A:2577:G:H8	34:A:2577:G:P	2.41	0.44
34:A:2594:G:N1	34:A:2595:G:C2	2.86	0.44
34:A:3086:U:OP2	34:A:3087:G:O2'	2.20	0.44
4:B:9:G:OP1	17:P:26:ARG:NE	2.46	0.44
5:C:125:ILE:HD13	5:C:131:LEU:HD12	2.00	0.44
9:G:90:ILE:HD11	9:G:132:PHE:CE1	2.53	0.44
23:V:86:ARG:NE	23:V:88:ASP:OD1	2.51	0.44
27:Z:14:THR:OG1	27:Z:17:GLU:HG3	2.17	0.44
34:A:160:A:H62	34:A:165:U:H3	1.65	0.44
34:A:310:C:H2'	34:A:311:G:C8	2.52	0.44
34:A:1549:G:O2'	34:A:1550:G:H5'	2.17	0.44
34:A:1675:U:O2'	34:A:1676:G:C8	2.61	0.44
34:A:2162:A:O2'	34:A:2163:U:H5''	2.18	0.44
34:A:2747:G:C6	34:A:2748:G:C6	3.04	0.44
34:A:2751:C:H2'	34:A:2752:U:O4'	2.18	0.44
3:4:443:GLU:O	3:4:445:THR:N	2.43	0.44
5:C:153:ALA:O	5:C:157:ARG:HD3	2.18	0.44
8:F:181:GLY:O	8:F:182:PHE:C	2.61	0.44
9:G:97:VAL:N	9:G:129:PRO:O	2.42	0.44
10:H:12:LEU:O	10:H:19:VAL:HG11	2.17	0.44
11:J:34:GLY:HA2	11:J:37:ILE:HG13	1.98	0.44
16:O:51:LEU:HD13	16:O:70:ILE:HD11	1.99	0.44
21:T:27:VAL:HG11	21:T:51:SER:HA	1.99	0.44
21:T:41:ASP:HB3	28:b:27:LEU:HD13	2.00	0.44
23:V:12:ILE:N	23:V:70:ASN:O	2.43	0.44
30:d:42:ARG:NH2	34:A:556:G:N7	2.51	0.44
34:A:226:A:C2	34:A:2631:G:H1'	2.52	0.44
34:A:842:A:H2'	34:A:843:G:O4'	2.17	0.44
34:A:1317:G:C5	34:A:1359:G:C2	3.06	0.44
34:A:1661:G:H2'	34:A:1662:C:O4'	2.17	0.44
34:A:1675:U:O2'	34:A:1675:U:O2	2.35	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:1710:A:O2'	34:A:1711:G:H5''	2.18	0.44
34:A:1755:A:N3	34:A:1758:G:N2	2.66	0.44
34:A:2007:C:H2'	34:A:2008:A:N7	2.31	0.44
34:A:2017:C:C5	34:A:2036:A:N6	2.85	0.44
34:A:2103:C:O2'	34:A:2104:G:C5'	2.65	0.44
34:A:2348:G:N2	34:A:2394:A:OP1	2.50	0.44
1:2:25:THR:O	34:A:1043:G:O2'	2.28	0.44
3:4:49:VAL:CG1	3:4:81:VAL:HA	2.48	0.44
5:C:125:ILE:HD13	5:C:131:LEU:CD1	2.48	0.44
6:D:199:PRO:HA	34:A:2904:C:H5'	1.98	0.44
7:E:21:PRO:HD2	7:E:205:ILE:HD12	2.00	0.44
11:J:101:LYS:HD2	11:J:142:GLU:HB2	2.00	0.44
14:M:37:THR:HG22	34:A:1060:U:OP1	2.18	0.44
34:A:680:U:H2'	34:A:681:C:C6	2.52	0.44
34:A:1064:A:H2'	34:A:1065:C:C6	2.53	0.44
34:A:1648:A:H4'	34:A:1649:C:O4'	2.18	0.44
34:A:1675:U:P	34:A:1675:U:O4'	2.76	0.44
34:A:1812:A:H3'	34:A:1813:C:C4'	2.47	0.44
34:A:2525:C:C2	34:A:2526:U:C5	3.06	0.44
34:A:2702:A:C8	34:A:2753:G:C5	3.06	0.44
34:A:2748:G:N1	34:A:2749:G:C5	2.86	0.44
34:A:2902:A:H2'	34:A:2903:A:C8	2.52	0.44
3:4:237:ARG:O	3:4:241:ARG:CB	2.66	0.44
6:D:144:VAL:HA	6:D:147:ARG:HG3	2.00	0.44
8:F:149:ASP:O	8:F:153:ILE:HG23	2.17	0.44
9:G:71:THR:CG2	34:A:2971:G:P	3.06	0.44
11:J:135:ARG:HA	11:J:140:THR:HG21	2.00	0.44
21:T:81:VAL:CG2	21:T:112:VAL:HG22	2.48	0.44
23:V:46:ALA:HA	34:A:571:A:O2'	2.17	0.44
30:d:10:PRO:HD3	34:A:1830:C:H4'	1.99	0.44
34:A:277:U:H3'	34:A:278:A:H8	1.83	0.44
34:A:643:G:HO2'	34:A:644:G:P	2.40	0.44
34:A:840:G:C6	34:A:841:G:N1	2.86	0.44
34:A:1118:A:H2'	34:A:1119:A:C8	2.53	0.44
34:A:1848:A:H5'	34:A:1849:G:OP2	2.18	0.44
34:A:1878:G:C6	34:A:2225:A:C6	3.06	0.44
34:A:2156:A:H2'	34:A:2157:G:O4'	2.17	0.44
34:A:2970:U:N3	34:A:2971:G:H1'	2.33	0.44
34:A:3052:A:OP1	34:A:3055:G:H4'	2.18	0.44
8:F:37:GLY:N	8:F:166:THR:OG1	2.50	0.43
25:X:33:ALA:N	34:A:759:G:O6	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:88:A:N3	34:A:89:A:N7	2.66	0.43
34:A:2916:C:H5''	34:A:3091:G:O2'	2.18	0.43
3:4:169:MET:HE1	3:4:222:LEU:HG	1.99	0.43
3:4:205:GLU:HG3	34:A:2731:C:O2'	2.18	0.43
3:4:370:LYS:CB	35:4:501:GCP:O6	2.62	0.43
9:G:37:VAL:HG11	9:G:73:ILE:HD11	2.00	0.43
12:K:26:GLY:HA3	34:A:1258:C:H5'	1.99	0.43
16:O:59:ALA:HB3	16:O:62:ASN:OD1	2.18	0.43
34:A:30:U:O4	34:A:534:G:O2'	2.32	0.43
34:A:658:U:H2'	34:A:659:U:O4'	2.18	0.43
34:A:767:U:C2'	34:A:768:G:H5'	2.48	0.43
34:A:1550:G:O2'	34:A:1551:U:OP2	2.33	0.43
34:A:1804:G:C6	34:A:1805:G:C5	3.06	0.43
34:A:2693:A:H2'	34:A:2694:G:O4'	2.18	0.43
34:A:2694:G:O6	34:A:2700:A:O2'	2.30	0.43
36:A:3201:ERY:H321	36:A:3201:ERY:H8	1.81	0.43
3:4:95:SER:O	3:4:128:GLN:HA	2.18	0.43
3:4:201:ARG:CB	34:A:2675:A:C2	3.01	0.43
17:P:98:GLU:CD	17:P:98:GLU:N	2.76	0.43
28:b:45:LYS:O	28:b:49:LEU:HD13	2.18	0.43
34:A:191:G:O2'	34:A:917:A:N3	2.44	0.43
34:A:844:G:H4'	34:A:878:G:H5'	2.00	0.43
34:A:978:A:H2'	34:A:979:G:H8	1.81	0.43
34:A:987:A:HO2'	34:A:988:U:P	2.29	0.43
34:A:1715:A:H2	34:A:1797:C:O2	2.01	0.43
34:A:2318:U:H2'	34:A:2319:G:C4'	2.49	0.43
34:A:3029:U:O2	34:A:3030:A:C8	2.72	0.43
6:D:29:VAL:HG21	6:D:194:ILE:HD12	2.01	0.43
10:H:120:ALA:N	34:A:164:A:OP1	2.30	0.43
11:J:110:ILE:HD11	11:J:126:ALA:HB1	2.00	0.43
16:O:77:HIS:CE1	34:A:1674:G:HO2'	2.26	0.43
17:P:126:LYS:C	17:P:127:PHE:OXT	2.60	0.43
29:c:25:THR:HB	34:A:2510:A:H61	1.84	0.43
34:A:579:A:H2'	34:A:580:G:O4'	2.18	0.43
34:A:1207:G:O2'	34:A:1208:U:OP2	2.32	0.43
34:A:1753:C:C2	34:A:1754:G:C8	3.06	0.43
34:A:2320:C:O2'	34:A:2321:U:OP1	2.37	0.43
34:A:2702:A:H4'	34:A:2751:C:O2'	2.17	0.43
36:A:3201:ERY:O13	36:A:3201:ERY:H343	2.17	0.43
3:4:87:GLN:OE1	3:4:88:ARG:N	2.51	0.43
3:4:172:MET:SD	3:4:215:ILE:HD13	2.59	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:293:ARG:O	3:4:294:PRO:C	2.61	0.43
3:4:420:VAL:N	3:4:451:ILE:O	2.51	0.43
10:H:105:LYS:NZ	34:A:283:U:OP1	2.52	0.43
13:L:58:VAL:HG21	13:L:86:ILE:HD12	2.01	0.43
16:O:20:LEU:HD21	16:O:40:LYS:HE3	2.00	0.43
25:X:29:GLN:OE1	34:A:1037:C:O2'	2.23	0.43
34:A:290:C:H1'	34:A:301:U:O4	2.19	0.43
34:A:324:C:H2'	34:A:325:U:O4'	2.19	0.43
34:A:335:G:C2	34:A:347:U:O2	2.71	0.43
34:A:465:A:O2'	34:A:466:G:H5'	2.18	0.43
34:A:619:C:O2	34:A:619:C:H2'	2.18	0.43
34:A:690:G:H2'	34:A:691:U:O4'	2.18	0.43
34:A:752:C:H2'	34:A:753:A:O4'	2.19	0.43
34:A:1025:A:H2'	34:A:1026:A:C8	2.54	0.43
34:A:1539:A:H2'	34:A:1540:U:O4'	2.16	0.43
34:A:1825:C:H4'	34:A:1826:A:O5'	2.18	0.43
34:A:2114:A:O4'	34:A:2308:U:O2'	2.34	0.43
34:A:2594:G:H22	34:A:2595:G:H21	1.66	0.43
34:A:2739:C:H2'	34:A:2740:G:H8	1.83	0.43
3:4:75:GLU:O	3:4:78:GLY:N	2.49	0.43
10:H:112:LEU:HD13	10:H:116:THR:OG1	2.18	0.43
16:O:8:PRO:CG	34:A:1870:U:C4	3.02	0.43
17:P:98:GLU:N	17:P:98:GLU:OE2	2.51	0.43
34:A:288:U:O2'	34:A:289:A:OP2	2.23	0.43
34:A:842:A:HO2'	34:A:843:G:C5'	2.20	0.43
34:A:1015:A:C2'	34:A:1016:C:H5'	2.49	0.43
34:A:1090:G:OP2	34:A:1091:A:O2'	2.31	0.43
34:A:1671:U:H2'	34:A:1672:C:C6	2.54	0.43
34:A:1755:A:H2'	34:A:1756:G:O4'	2.18	0.43
34:A:1811:C:C2	34:A:1812:A:N7	2.86	0.43
34:A:2269:C:H2'	34:A:2270:G:O4'	2.19	0.43
34:A:2297:U:H2'	34:A:2298:U:C6	2.54	0.43
34:A:2584:A:H2'	34:A:2584:A:N3	2.34	0.43
34:A:2654:A:N3	34:A:2654:A:H2'	2.33	0.43
34:A:2922:U:H2'	34:A:2923:C:C6	2.54	0.43
34:A:3104:A:H5'	34:A:3105:C:O4'	2.19	0.43
3:4:197:GLY:HA3	34:A:2286:A:C8	2.54	0.43
5:C:222:ARG:O	5:C:225:VAL:HG22	2.19	0.43
34:A:625:A:H2'	34:A:626:G:O4'	2.19	0.43
34:A:729:C:O2'	34:A:733:U:OP1	2.35	0.43
34:A:812:C:H2'	34:A:813:C:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:1047:A:P	34:A:1297:G:H21	2.42	0.43
34:A:1317:G:H2'	34:A:1318:C:O4'	2.19	0.43
34:A:1860:G:O2'	34:A:1861:G:H5'	2.19	0.43
34:A:2081:U:O3'	34:A:2633:G:N2	2.43	0.43
34:A:2176:A:C4	34:A:2177:A:C5	3.06	0.43
34:A:2545:G:C2'	34:A:2545:G:N3	2.81	0.43
34:A:2574:C:N4	34:A:2606:G:H1	2.16	0.43
3:4:70:LEU:HD22	3:4:121:ASP:HA	1.99	0.43
6:D:115:THR:HG21	6:D:174:ARG:CZ	2.49	0.43
8:F:45:MET:HE3	8:F:60:ALA:HB1	1.97	0.43
11:J:42:LYS:N	11:J:42:LYS:CD	2.81	0.43
23:V:46:ALA:HA	34:A:571:A:H1'	2.01	0.43
25:X:68:GLU:C	25:X:68:GLU:OE1	2.62	0.43
34:A:654:U:O2'	34:A:655:G:OP2	2.29	0.43
34:A:842:A:H2'	34:A:843:G:C8	2.53	0.43
34:A:994:A:H3'	34:A:995:U:H5'	2.00	0.43
34:A:1637:G:H2'	34:A:1638:C:C6	2.53	0.43
34:A:2596:G:O5'	34:A:2597:A:P	2.77	0.43
34:A:2765:A:H1'	34:A:2989:A:N6	2.31	0.43
34:A:2808:U:O2	34:A:2809:U:C5	2.71	0.43
34:A:2883:G:C2	34:A:2885:G:OP2	2.72	0.43
3:4:293:ARG:HD2	3:4:414:THR:HG21	2.01	0.43
3:4:400:LEU:HD12	3:4:400:LEU:C	2.44	0.43
15:N:7:VAL:HG11	15:N:93:TRP:HZ3	1.83	0.43
17:P:108:THR:HG22	17:P:109:TYR:N	2.34	0.43
34:A:620:G:H2'	34:A:621:U:C6	2.53	0.43
34:A:1168:A:H4'	34:A:2976:C:N3	2.34	0.43
34:A:1226:U:H2'	34:A:1228:A:N1	2.34	0.43
34:A:1364:U:OP1	34:A:1365:G:OP1	2.36	0.43
34:A:1762:C:H2'	34:A:1763:G:O4'	2.19	0.43
34:A:1989:G:N2	34:A:1991:C:H5''	2.34	0.43
34:A:2016:G:C2	34:A:2036:A:C2	3.07	0.43
34:A:2273:G:C2'	34:A:2274:C:H5'	2.49	0.43
34:A:2504:G:O2'	34:A:2612:A:N1	2.47	0.43
34:A:2596:G:C2'	34:A:2597:A:O4'	2.67	0.43
34:A:2785:A:C2'	34:A:2786:U:O5'	2.67	0.43
3:4:361:PRO:O	3:4:362:PRO:C	2.62	0.43
6:D:142:GLN:NE2	34:A:2804:U:OP1	2.47	0.43
9:G:64:SER:OG	34:A:2973:A:H1'	2.19	0.43
11:J:122:ASP:CG	34:A:1199:U:O2'	2.62	0.43
12:K:28:LEU:HD23	12:K:62:ILE:HD13	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:M:50:PHE:HE2	34:A:947:U:HO2'	1.64	0.43
16:O:7:GLY:O	16:O:9:ARG:NH1	2.52	0.43
22:U:28:VAL:CG1	22:U:83:ILE:HG22	2.49	0.43
24:W:28:ARG:NE	24:W:93:GLN:O	2.52	0.43
28:b:28:VAL:HG13	34:A:3107:G:O3'	2.19	0.43
34:A:227:A:N1	34:A:505:C:O2'	2.50	0.43
34:A:281:C:HO2'	34:A:282:A:P	2.29	0.43
34:A:555:G:O2'	34:A:911:U:O2'	2.06	0.43
34:A:616:A:H4'	34:A:617:U:C6	2.54	0.43
34:A:993:G:O2'	34:A:994:A:C8	2.69	0.43
34:A:1025:A:H2	34:A:2488:C:O2	2.02	0.43
34:A:1112:C:H6	34:A:1112:C:H5''	1.83	0.43
34:A:1148:G:H2'	34:A:1149:G:O5'	2.18	0.43
34:A:1292:U:C4'	34:A:1293:G:OP2	2.67	0.43
34:A:1293:G:H4'	34:A:1294:U:OP1	2.17	0.43
34:A:2071:A:H2'	34:A:2072:G:H5'	2.01	0.43
34:A:2367:G:C2'	34:A:2370:A:H61	2.30	0.43
34:A:2509:C:H5'	34:A:2512:A:C2	2.54	0.43
34:A:2570:A:H5''	34:A:2606:G:H4'	2.01	0.43
34:A:2864:G:H2'	34:A:2865:G:O4'	2.18	0.43
34:A:3046:C:O2	34:A:3046:C:O5'	2.36	0.43
3:4:151:PHE:CZ	3:4:277:PHE:CE2	3.07	0.42
6:D:28:VAL:HG13	6:D:191:VAL:HG11	2.00	0.42
6:D:156:THR:O	34:A:1248:U:O4	2.36	0.42
10:H:112:LEU:C	10:H:112:LEU:HD12	2.43	0.42
27:Z:22:LEU:HD21	27:Z:58:TYR:HE1	1.77	0.42
29:c:21:ARG:NH1	34:A:2623:A:O4'	2.52	0.42
30:d:33:ILE:HD11	34:A:798:U:H5'	2.01	0.42
34:A:450:G:H2'	34:A:451:U:H5'	2.01	0.42
34:A:574:C:C2	34:A:575:C:C5	3.07	0.42
34:A:616:A:H4'	34:A:617:U:H6	1.84	0.42
34:A:727:A:O5'	34:A:728:G:OP2	2.37	0.42
34:A:829:U:N3	34:A:832:G:OP2	2.52	0.42
34:A:898:A:N3	34:A:899:G:H5''	2.34	0.42
34:A:993:G:H5'	34:A:994:A:O5'	2.19	0.42
34:A:1181:G:N2	34:A:1182:C:O4'	2.52	0.42
34:A:1247:A:N1	34:A:2793:G:O2'	2.40	0.42
34:A:1392:G:H2'	34:A:1393:C:C6	2.53	0.42
3:4:105:GLU:OE1	34:A:2133:G:OP2	2.37	0.42
4:B:34:G:C6	4:B:51:G:O6	2.72	0.42
10:H:12:LEU:HD21	10:H:30:LEU:HD11	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:J:91:SER:OG	11:J:137:MET:O	2.33	0.42
16:O:65:GLU:O	16:O:68:LYS:HG2	2.19	0.42
29:c:39:LYS:O	34:A:2568:U:H3'	2.19	0.42
34:A:248:G:C4	34:A:2655:U:H4'	2.54	0.42
34:A:987:A:O2'	34:A:988:U:P	2.76	0.42
34:A:1343:G:H2'	34:A:1345:G:C8	2.53	0.42
34:A:1633:U:H2'	34:A:1634:C:C6	2.55	0.42
34:A:1896:A:H2'	34:A:1897:A:O4'	2.19	0.42
34:A:2749:G:H2'	34:A:2750:G:O4'	2.19	0.42
34:A:2947:C:H2'	34:A:2948:C:O4'	2.19	0.42
3:4:405:SER:OG	3:4:406:ARG:HD2	2.18	0.42
7:E:135:THR:O	7:E:135:THR:HG23	2.19	0.42
9:G:35:LEU:HD13	9:G:72:LEU:HD22	2.01	0.42
10:H:22:LYS:HG2	34:A:2316:G:OP1	2.20	0.42
17:P:18:ARG:HD2	17:P:107:TYR:CZ	2.54	0.42
17:P:53:ASN:O	17:P:57:GLY:N	2.46	0.42
29:c:16:GLU:OE2	29:c:52:LYS:HB3	2.20	0.42
34:A:162:A:C3'	34:A:163:U:H5''	2.49	0.42
34:A:762:U:H2'	34:A:763:G:C8	2.54	0.42
34:A:1263:G:O2'	34:A:1264:C:H5'	2.20	0.42
34:A:1504:G:O2'	34:A:1505:U:H5'	2.19	0.42
34:A:1529:U:H2'	34:A:1530:G:C5'	2.49	0.42
34:A:1691:A:H2'	34:A:1692:G:O4'	2.19	0.42
34:A:1800:G:O3'	34:A:1801:C:O4'	2.37	0.42
34:A:2315:U:H3	34:A:2449:A:H2'	1.84	0.42
34:A:2583:C:C4	34:A:2584:A:N7	2.87	0.42
34:A:2684:U:C4	34:A:2685:C:C5	3.07	0.42
34:A:2750:G:C5	34:A:2751:C:C5	3.08	0.42
34:A:2968:G:N2	34:A:2983:G:N2	2.67	0.42
34:A:3046:C:O2	34:A:3046:C:O4'	2.35	0.42
9:G:72:LEU:HD23	9:G:72:LEU:O	2.19	0.42
15:N:43:THR:HG22	15:N:94:VAL:HG12	2.01	0.42
15:N:58:ILE:HD12	15:N:113:THR:HG22	2.00	0.42
22:U:41:GLN:NE2	34:A:142:C:H4'	2.34	0.42
34:A:1006:G:H2'	34:A:1007:G:C8	2.54	0.42
34:A:1577:C:C4	34:A:1578:G:O6	2.73	0.42
34:A:1612:U:O2'	34:A:1613:G:H8	2.02	0.42
34:A:2572:U:H3'	34:A:2573:G:H8	1.85	0.42
34:A:2615:G:C6	34:A:2651:C:H1'	2.54	0.42
34:A:3022:G:HO2'	34:A:3023:G:C5'	2.30	0.42
34:A:3038:C:H2'	34:A:3039:C:C5'	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:222:LEU:O	3:4:225:GLU:HB3	2.19	0.42
3:4:406:ARG:O	3:4:410:LEU:HD13	2.18	0.42
3:4:434:HIS:CE1	34:A:1185:A:O2'	2.67	0.42
4:B:111:C:H4'	17:P:58:THR:HG23	2.01	0.42
15:N:58:ILE:O	15:N:58:ILE:HG23	2.19	0.42
18:Q:14:ASP:O	18:Q:15:ASP:CB	2.67	0.42
21:T:45:TRP:NE1	28:b:38:LYS:O	2.52	0.42
34:A:222:A:P	34:A:508:G:O2'	2.77	0.42
34:A:401:C:H2'	34:A:402:G:O4'	2.20	0.42
34:A:569:G:H4'	34:A:569:G:OP1	2.19	0.42
34:A:624:G:C2'	34:A:648:A:H61	2.31	0.42
34:A:643:G:O2'	34:A:644:G:OP1	2.36	0.42
34:A:979:G:H2'	34:A:980:C:C6	2.54	0.42
34:A:1380:A:O4'	34:A:1382:U:C6	2.73	0.42
34:A:1878:G:C6	34:A:2225:A:N1	2.87	0.42
34:A:2540:G:N2	34:A:2541:U:H1'	2.34	0.42
34:A:2699:C:C5'	34:A:2700:A:OP2	2.68	0.42
34:A:2972:A:C6	34:A:2973:A:N7	2.87	0.42
5:C:266:LYS:HE2	34:A:2447:G:O3'	2.19	0.42
11:J:14:GLN:OE1	34:A:1180:G:H4'	2.20	0.42
12:K:43:THR:HG22	19:R:100:VAL:HG13	2.00	0.42
13:L:12:ASP:OD1	13:L:12:ASP:C	2.63	0.42
34:A:184:C:C2	34:A:185:G:C8	3.08	0.42
34:A:234:U:H2'	34:A:235:U:O4'	2.20	0.42
34:A:241:A:O4'	34:A:243:U:C6	2.72	0.42
34:A:269:C:C5	34:A:270:U:C4	3.08	0.42
34:A:403:U:O2	34:A:423:C:H4'	2.20	0.42
34:A:928:U:C2	34:A:1310:G:N2	2.87	0.42
34:A:1241:C:C2	34:A:1242:C:C5	3.07	0.42
34:A:1436:C:OP1	34:A:1436:C:O4'	2.37	0.42
34:A:1784:C:H2'	34:A:1785:C:C6	2.54	0.42
34:A:1845:G:C6	34:A:1858:A:N7	2.87	0.42
34:A:2103:C:C2	34:A:2104:G:C8	3.07	0.42
34:A:2566:C:H2'	34:A:2567:U:O4'	2.20	0.42
34:A:2599:G:H2'	34:A:2600:A:C8	2.55	0.42
34:A:2636:A:H2'	34:A:2637:G:O4'	2.20	0.42
3:4:371:ILE:O	3:4:374:ALA:HB2	2.20	0.42
4:B:76:G:H21	24:W:94:HIS:CE1	2.38	0.42
5:C:20:ASP:O	5:C:22:ALA:N	2.51	0.42
7:E:155:LEU:HB2	7:E:191:ALA:HB2	2.00	0.42
7:E:167:LYS:HG2	7:E:170:ARG:NH2	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:F:113:ILE:HD12	33:g:35:VAL:HG21	2.02	0.42
11:J:116:ALA:HA	11:J:123:ILE:HA	2.02	0.42
24:W:48:GLU:HG3	24:W:48:GLU:O	2.20	0.42
34:A:500:A:N1	34:A:2634:G:N2	2.62	0.42
34:A:512:G:H3'	34:A:513:C:H5''	2.02	0.42
34:A:677:G:O6	34:A:1366:A:O2'	2.29	0.42
34:A:723:C:H1'	34:A:733:U:O2'	2.19	0.42
34:A:891:G:N1	34:A:2295:C:OP1	2.51	0.42
34:A:1101:A:O2'	34:A:1102:G:H5'	2.19	0.42
34:A:1246:A:O2'	34:A:1247:A:C8	2.67	0.42
34:A:1569:A:N1	34:A:1603:G:C6	2.88	0.42
34:A:1845:G:C6	34:A:1858:A:C5	3.07	0.42
34:A:2007:C:C2'	34:A:2008:A:C8	3.03	0.42
34:A:2262:C:H2'	34:A:2263:G:O4'	2.19	0.42
34:A:2552:A:H2'	34:A:2553:G:C1'	2.50	0.42
34:A:2719:G:C5	34:A:2720:C:C5	3.08	0.42
34:A:2748:G:O6	34:A:2749:G:O6	2.38	0.42
34:A:2998:C:H2'	34:A:2999:A:O4'	2.19	0.42
34:A:3014:A:N6	34:A:3113:A:OP2	2.53	0.42
3:4:116:ASP:OD1	3:4:138:VAL:HB	2.20	0.42
3:4:423:PRO:O	3:4:424:TYR:CB	2.67	0.42
9:G:99:LEU:HD12	9:G:103:ASN:O	2.20	0.42
14:M:80:VAL:CG1	14:M:118:LEU:HB2	2.50	0.42
34:A:78:G:O2'	34:A:79:G:H5'	2.20	0.42
34:A:319:G:C2'	34:A:320:G:OP1	2.66	0.42
34:A:1117:U:O2	34:A:1118:A:C8	2.72	0.42
34:A:1253:C:O2	34:A:1253:C:O4'	2.36	0.42
34:A:1271:C:O2'	34:A:1272:C:P	2.77	0.42
34:A:1312:G:N2	34:A:1364:U:O2'	2.53	0.42
34:A:2413:G:C2	34:A:2414:G:N7	2.88	0.42
34:A:2596:G:N2	34:A:2605:C:C2	2.87	0.42
34:A:2686:U:H2'	34:A:2687:U:C6	2.55	0.42
34:A:2710:G:H2'	34:A:2711:A:O4'	2.20	0.42
7:E:185:THR:O	7:E:186:TYR:C	2.63	0.42
13:L:28:SER:HB2	34:A:2790:A:N1	2.35	0.42
19:R:13:LYS:NZ	34:A:927:C:OP1	2.53	0.42
26:Y:31:PRO:HB2	26:Y:33:ILE:HG23	2.02	0.42
28:b:14:ARG:HB2	34:A:13:G:H5''	2.02	0.42
34:A:944:A:C8	34:A:2472:C:H5'	2.54	0.42
34:A:1284:A:H2'	34:A:1285:G:C8	2.53	0.42
34:A:1528:G:H2'	34:A:1529:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:1810:A:C2'	34:A:1811:C:O4'	2.68	0.42
34:A:1906:U:O2'	34:A:1918:A:N7	2.40	0.42
34:A:2972:A:N1	34:A:2973:A:C5	2.87	0.42
34:A:3022:G:C2'	34:A:3023:G:O4'	2.68	0.42
3:4:126:PRO:HG3	3:4:175:ARG:HD3	2.01	0.42
8:F:64:LEU:HB3	8:F:72:PRO:HG3	2.02	0.42
8:F:107:LEU:HD21	8:F:163:VAL:HG11	2.02	0.42
9:G:4:ILE:O	9:G:4:ILE:HG22	2.20	0.42
11:J:81:LEU:HD21	11:J:102:VAL:HG23	2.02	0.42
19:R:6:ARG:NE	34:A:1366:A:H2	2.18	0.42
20:S:3:THR:HA	20:S:43:VAL:O	2.20	0.42
33:g:14:VAL:HG12	33:g:22:PHE:HB2	2.02	0.42
34:A:76:C:O2'	34:A:428:A:N3	2.47	0.42
34:A:379:G:O6	34:A:420:G:H5''	2.20	0.42
34:A:617:U:O2	34:A:2245:C:C5	2.72	0.42
34:A:986:G:O2'	34:A:987:A:OP1	2.33	0.42
34:A:1123:C:C2	34:A:1124:C:C5	3.08	0.42
34:A:1378:U:C4	34:A:1379:G:C6	3.07	0.42
34:A:1560:U:C2	34:A:1561:C:C6	3.08	0.42
34:A:2008:A:H2	34:A:2046:A:C1'	2.33	0.42
34:A:2603:G:C3'	34:A:2604:U:C6	3.03	0.42
34:A:2965:A:N1	34:A:2986:G:N2	2.62	0.42
3:4:171:TYR:CD1	3:4:171:TYR:C	2.98	0.41
3:4:197:GLY:O	3:4:198:VAL:CG2	2.68	0.41
11:J:123:ILE:O	11:J:123:ILE:HG12	2.19	0.41
17:P:117:ALA:O	17:P:127:PHE:CZ	2.71	0.41
24:W:8:PRO:HB2	24:W:68:THR:OG1	2.20	0.41
26:Y:37:ARG:HB3	26:Y:46:LYS:HB3	2.01	0.41
31:e:16:ARG:NH1	31:e:22:ILE:HD11	2.35	0.41
34:A:473:C:O2'	34:A:478:A:N1	2.51	0.41
34:A:695:G:H2'	34:A:770:A:N1	2.35	0.41
34:A:740:A:O3'	34:A:741:G:O4'	2.38	0.41
34:A:934:A:H5''	34:A:1091:A:N1	2.35	0.41
34:A:1313:U:O2'	34:A:1314:C:H5'	2.20	0.41
34:A:1813:C:OP1	34:A:1813:C:H4'	2.19	0.41
34:A:2065:A:H2'	34:A:2066:G:O4'	2.20	0.41
34:A:2316:G:N1	34:A:2419:C:C6	2.88	0.41
34:A:2326:A:H61	34:A:2410:A:N6	2.17	0.41
34:A:2440:G:O2'	34:A:2441:G:P	2.77	0.41
34:A:2748:G:H3'	34:A:2749:G:H5''	2.02	0.41
34:A:2968:G:H2'	34:A:2969:C:O4'	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:119:ILE:HA	3:4:141:ILE:HG22	2.01	0.41
3:4:187:ALA:O	3:4:190:ARG:NH2	2.53	0.41
3:4:240:ARG:O	3:4:244:GLU:N	2.54	0.41
3:4:293:ARG:HD2	3:4:414:THR:CG2	2.49	0.41
7:E:131:VAL:HG21	7:E:168:SER:OG	2.20	0.41
7:E:134:GLN:O	7:E:164:VAL:HG22	2.20	0.41
8:F:38:VAL:HG12	8:F:104:TRP:CZ2	2.55	0.41
12:K:102:GLU:HG2	12:K:106:ILE:CD1	2.50	0.41
21:T:52:GLU:HB3	21:T:53:PRO:HD3	2.01	0.41
22:U:46:ILE:HG21	22:U:84:VAL:HG11	2.01	0.41
30:d:11:ASN:ND2	34:A:885:G:OP1	2.42	0.41
33:g:14:VAL:HG23	33:g:33:ILE:HG13	2.02	0.41
34:A:245:G:H21	34:A:472:C:HO2'	1.61	0.41
34:A:245:G:N2	34:A:472:C:O2'	2.35	0.41
34:A:273:A:H2'	34:A:274:C:O4'	2.20	0.41
34:A:367:U:H2'	34:A:368:U:O4'	2.20	0.41
34:A:398:U:H2'	34:A:399:G:O4'	2.20	0.41
34:A:818:U:H2'	34:A:819:G:H1'	2.02	0.41
34:A:985:G:C6	34:A:986:G:O6	2.73	0.41
34:A:1099:A:N1	34:A:2251:G:O2'	2.36	0.41
34:A:1827:A:H4'	34:A:1835:C:OP1	2.20	0.41
34:A:2089:C:H6	34:A:2089:C:OP2	2.03	0.41
34:A:2163:U:O4'	34:A:2815:C:O2'	2.23	0.41
34:A:2315:U:H3	34:A:2449:A:C2'	2.33	0.41
34:A:2339:G:H2'	34:A:2340:A:C8	2.55	0.41
34:A:2527:G:N2	34:A:2538:A:O2'	2.53	0.41
34:A:2898:G:H3'	34:A:2899:A:H8	1.84	0.41
34:A:3117:U:H2'	34:A:3118:U:O4'	2.20	0.41
3:4:261:LEU:HD11	3:4:331:VAL:CG2	2.50	0.41
3:4:419:ASP:HA	3:4:452:LYS:HG2	2.03	0.41
5:C:209:ALA:HB2	34:A:2007:C:O2'	2.20	0.41
6:D:119:LYS:NZ	34:A:2905:C:OP2	2.50	0.41
6:D:151:ILE:CG2	6:D:160:VAL:HG13	2.50	0.41
23:V:10:LEU:HD23	23:V:11:VAL:N	2.36	0.41
28:b:28:VAL:HG21	28:b:41:ARG:HB2	2.02	0.41
34:A:25:A:H1'	34:A:600:A:C2	2.55	0.41
34:A:341:C:H4'	34:A:342:C:OP1	2.20	0.41
34:A:563:U:H4'	34:A:597:C:H5'	2.02	0.41
34:A:978:A:O2'	34:A:979:G:H5'	2.21	0.41
34:A:1018:U:C4	34:A:1019:C:N4	2.88	0.41
34:A:1045:C:O2	34:A:1045:C:O4'	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:1207:G:N2	34:A:1220:C:N3	2.68	0.41
34:A:1430:C:C2	34:A:1453:G:N2	2.89	0.41
34:A:1479:G:HO2'	34:A:2025:C:H5	1.62	0.41
34:A:1735:U:H2'	34:A:1736:G:O4'	2.21	0.41
34:A:2011:U:H2'	34:A:2012:C:C6	2.54	0.41
34:A:2543:U:C4'	34:A:2544:U:OP1	2.69	0.41
34:A:2543:U:O2	34:A:2544:U:C6	2.74	0.41
34:A:2577:G:C8	34:A:2577:G:P	3.13	0.41
34:A:2652:G:H5''	34:A:2653:G:H5'	2.02	0.41
34:A:2768:G:H2'	34:A:2769:G:O4'	2.20	0.41
34:A:2787:U:O2	34:A:2789:A:C8	2.74	0.41
3:4:87:GLN:NE2	3:4:89:ARG:HE	2.18	0.41
5:C:155:LEU:HD22	5:C:177:MET:HE1	2.02	0.41
8:F:126:PRO:O	8:F:129:PHE:HB2	2.19	0.41
10:H:31:LEU:HB2	10:H:32:PRO:CD	2.50	0.41
10:H:136:LEU:HD11	10:H:142:ALA:HB2	2.03	0.41
17:P:9:ASN:OD1	17:P:10:ILE:N	2.53	0.41
18:Q:38:ARG:NH2	18:Q:40:GLN:OE1	2.52	0.41
29:c:41:PHE:HB2	29:c:47:THR:C	2.45	0.41
31:e:31:HIS:NE2	34:A:2616:A:OP2	2.54	0.41
31:e:50:VAL:HG11	31:e:58:ILE:HD13	2.00	0.41
34:A:251:A:C5	34:A:252:G:H1'	2.56	0.41
34:A:483:G:H2'	34:A:484:C:C6	2.55	0.41
34:A:1173:G:N2	34:A:1203:A:H1'	2.35	0.41
34:A:1886:A:O2'	34:A:1892:G:N7	2.50	0.41
34:A:2320:C:C2'	34:A:2321:U:H5''	2.50	0.41
34:A:2525:C:C4	34:A:2527:G:O6	2.74	0.41
34:A:2571:C:C6	34:A:2573:G:O6	2.74	0.41
34:A:3068:U:H2'	34:A:3069:G:O4'	2.20	0.41
1:2:8:GLN:O	1:2:32:ARG:N	2.41	0.41
5:C:18:VAL:HG22	5:C:19:SER:N	2.36	0.41
9:G:2:SER:HA	34:A:2973:A:OP2	2.21	0.41
9:G:132:PHE:HZ	9:G:149:ILE:HG21	1.86	0.41
10:H:123:HIS:CE1	34:A:157:U:OP1	2.73	0.41
11:J:40:PHE:CD1	11:J:66:ARG:HD3	2.55	0.41
14:M:22:VAL:HG12	14:M:33:ALA:CB	2.49	0.41
34:A:163:U:H2'	34:A:164:A:H5'	2.02	0.41
34:A:276:G:H5'	34:A:277:U:OP2	2.20	0.41
34:A:1257:G:O2'	34:A:1262:A:N1	2.31	0.41
34:A:1612:U:O2'	34:A:1613:G:P	2.78	0.41
34:A:2177:A:C8	34:A:2784:C:C1'	3.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2252:U:H2'	34:A:2253:A:O5'	2.20	0.41
34:A:2313:A:O5'	34:A:2314:U:OP2	2.38	0.41
34:A:2569:G:N3	34:A:2605:C:H2'	2.35	0.41
34:A:2908:U:H2'	34:A:2909:G:O4'	2.20	0.41
34:A:2975:G:HO2'	34:A:2976:C:C5'	2.33	0.41
1:2:50:VAL:O	1:2:54:VAL:HG22	2.21	0.41
2:3:13:HIS:C	4:B:87:U:O2	2.64	0.41
3:4:198:VAL:CG1	3:4:199:GLY:N	2.82	0.41
3:4:235:THR:HB	34:A:2753:G:H1'	2.02	0.41
3:4:242:ARG:NH1	34:A:2885:G:H1	2.19	0.41
3:4:301:VAL:HG23	3:4:315:PHE:CE2	2.55	0.41
5:C:69:ARG:O	5:C:190:ARG:NE	2.54	0.41
7:E:123:ARG:HD2	7:E:193:ASP:OD1	2.20	0.41
9:G:132:PHE:CZ	9:G:149:ILE:HG21	2.56	0.41
10:H:116:THR:O	10:H:134:VAL:HA	2.21	0.41
34:A:35:A:H2'	34:A:36:C:O4'	2.20	0.41
34:A:226:A:O2'	34:A:227:A:C8	2.71	0.41
34:A:247:G:H4'	34:A:474:G:C5	2.55	0.41
34:A:347:U:H2'	34:A:348:G:C8	2.56	0.41
34:A:703:C:H2'	34:A:704:C:H6	1.86	0.41
34:A:1036:C:C2	34:A:1037:C:C5	3.08	0.41
34:A:1203:A:H2'	34:A:1204:A:H5'	2.03	0.41
34:A:1407:G:O2'	34:A:1408:C:H5'	2.20	0.41
34:A:1559:A:C6	34:A:1613:G:C6	3.09	0.41
34:A:2315:U:C4	34:A:2449:A:C8	3.08	0.41
34:A:2357:A:C5	34:A:2382:G:O2'	2.70	0.41
34:A:2903:A:H2'	34:A:2904:C:O4'	2.21	0.41
3:4:182:SER:O	3:4:185:ARG:HD2	2.21	0.41
3:4:236:GLN:HA	3:4:240:ARG:HB3	2.03	0.41
8:F:81:ILE:O	8:F:81:ILE:HG23	2.19	0.41
17:P:64:SER:O	17:P:67:GLU:HG3	2.21	0.41
19:R:37:GLU:OE2	34:A:1367:G:N2	2.41	0.41
29:c:35:ARG:NH2	29:c:53:GLU:O	2.53	0.41
34:A:65:G:H2'	34:A:66:C:O4'	2.21	0.41
34:A:123:A:H2'	34:A:124:A:C8	2.56	0.41
34:A:165:U:O2'	34:A:166:A:C8	2.67	0.41
34:A:269:C:C6	34:A:270:U:N3	2.88	0.41
34:A:279:U:O2	34:A:279:U:H2'	2.20	0.41
34:A:323:C:C2	34:A:324:C:H1'	2.56	0.41
34:A:943:U:H2'	34:A:944:A:C8	2.55	0.41
34:A:1415:A:H4'	34:A:1416:A:H5''	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:1526:A:H2'	34:A:1527:U:C6	2.54	0.41
34:A:1615:G:H2'	34:A:1616:A:C8	2.56	0.41
34:A:1643:G:C2	34:A:1796:U:O2	2.74	0.41
34:A:1799:A:C2'	34:A:1800:G:OP1	2.68	0.41
34:A:1847:U:H5''	34:A:1848:A:OP2	2.21	0.41
34:A:2011:U:H2'	34:A:2012:C:H6	1.85	0.41
34:A:2375:G:H2'	34:A:2376:G:C8	2.55	0.41
34:A:2439:C:HO2'	34:A:2440:G:P	2.35	0.41
34:A:2663:A:H5'	34:A:2665:C:O5'	2.20	0.41
3:4:54:VAL:O	3:4:87:GLN:NE2	2.54	0.41
3:4:56:THR:HG23	3:4:57:GLU:OE2	2.21	0.41
7:E:153:LYS:O	7:E:192:ASP:N	2.51	0.41
9:G:158:TYR:O	9:G:172:ARG:NH1	2.54	0.41
10:H:109:GLY:N	10:H:110:PRO:HD2	2.35	0.41
16:O:81:ALA:HB3	16:O:82:GLU:OE2	2.20	0.41
20:S:41:LEU:CD2	20:S:43:VAL:HG23	2.50	0.41
22:U:52:VAL:HG22	22:U:53:LYS:N	2.36	0.41
34:A:248:G:H2'	34:A:2656:A:OP1	2.21	0.41
34:A:294:G:O2'	34:A:295:U:C5'	2.69	0.41
34:A:1129:G:H4'	34:A:1130:C:OP1	2.21	0.41
34:A:1542:A:N1	34:A:1629:G:H5''	2.36	0.41
34:A:1564:A:N6	34:A:1607:C:O2'	2.53	0.41
34:A:1734:C:H2'	34:A:1735:U:O4'	2.21	0.41
34:A:2214:C:H2'	34:A:2215:U:C1'	2.50	0.41
34:A:2261:U:H2'	34:A:2262:C:C6	2.56	0.41
34:A:2508:C:O2'	34:A:2512:A:N1	2.39	0.41
34:A:2702:A:H1'	34:A:2752:U:O2'	2.21	0.41
34:A:2726:G:H5''	34:A:2727:A:H5''	2.02	0.41
34:A:2751:C:H5''	34:A:2752:U:OP2	2.21	0.41
36:A:3201:ERY:H14	36:A:3201:ERY:H193	1.59	0.41
1:2:31:ILE:HG22	1:2:32:ARG:N	2.36	0.41
3:4:101:GLY:HA3	34:A:2131:G:O3'	2.20	0.41
3:4:415:ASP:OD1	3:4:415:ASP:O	2.38	0.41
3:4:432:ARG:HA	3:4:435:THR:OG1	2.21	0.41
4:B:5:C:OP1	4:B:63:U:H5'	2.20	0.41
5:C:206:TRP:O	5:C:211:ARG:HG3	2.21	0.41
5:C:256:ARG:NH1	34:A:2062:G:OP1	2.54	0.41
5:C:256:ARG:HG3	5:C:256:ARG:HH11	1.86	0.41
7:E:201:LEU:O	7:E:205:ILE:HG12	2.21	0.41
11:J:77:ALA:O	11:J:134:ALA:HB1	2.21	0.41
17:P:32:THR:O	17:P:35:VAL:C	2.63	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:Q:90:ASP:HB3	18:Q:110:LYS:HB2	2.02	0.41
19:R:7:ALA:O	19:R:11:GLN:HG2	2.21	0.41
19:R:58:ARG:HA	19:R:61:TRP:CE3	2.56	0.41
20:S:16:VAL:HB	20:S:99:VAL:HG21	2.03	0.41
20:S:84:TYR:CE2	34:A:1302:G:H5''	2.56	0.41
27:Z:38:THR:O	27:Z:38:THR:HG22	2.20	0.41
29:c:15:CYS:O	29:c:19:LYS:N	2.52	0.41
30:d:29:ALA:HB1	34:A:797:G:H4'	2.02	0.41
34:A:48:G:H1'	34:A:115:A:N6	2.35	0.41
34:A:114:G:H5''	34:A:115:A:OP2	2.21	0.41
34:A:166:A:H2'	34:A:167:G:O4'	2.21	0.41
34:A:175:G:O2'	34:A:176:G:H5'	2.21	0.41
34:A:199:U:O4	34:A:250:G:N2	2.54	0.41
34:A:271:A:N3	34:A:271:A:H2'	2.36	0.41
34:A:271:A:C2	34:A:320:G:N2	2.89	0.41
34:A:451:U:HO2'	34:A:452:G:P	2.31	0.41
34:A:722:G:H2'	34:A:723:C:C6	2.56	0.41
34:A:738:A:H61	34:A:2573:G:N2	2.14	0.41
34:A:889:A:N1	34:A:902:C:O2'	2.44	0.41
34:A:919:A:C5'	34:A:920:G:P	3.09	0.41
34:A:932:C:O2'	34:A:954:U:H5''	2.21	0.41
34:A:1157:G:N2	34:A:1233:A:C2	2.74	0.41
34:A:1296:G:O2'	34:A:1297:G:H5'	2.21	0.41
34:A:1464:A:H3'	34:A:1465:C:C5'	2.51	0.41
34:A:1694:C:O2	34:A:1694:C:H2'	2.21	0.41
34:A:1703:G:C6	34:A:1727:A:C2	3.08	0.41
34:A:1845:G:C2	34:A:1846:G:C8	3.08	0.41
34:A:1872:A:N1	34:A:2272:G:O2'	2.54	0.41
34:A:2034:G:H2'	34:A:2035:U:H5'	2.02	0.41
34:A:2380:G:OP1	34:A:2380:G:C4	2.74	0.41
34:A:2392:A:H3'	34:A:2393:A:C5'	2.51	0.41
34:A:2452:G:C6	34:A:2453:U:O4	2.74	0.41
34:A:2567:U:H4'	34:A:2596:G:O3'	2.21	0.41
34:A:2569:G:O2'	34:A:2605:C:C2'	2.69	0.41
34:A:2613:G:H5''	34:A:2614:U:O4'	2.20	0.41
34:A:2749:G:C3'	34:A:2750:G:H8	2.34	0.41
34:A:2965:A:H61	34:A:2986:G:H1	1.69	0.41
34:A:3116:C:H2'	34:A:3117:U:C6	2.56	0.41
36:A:3201:ERY:H4	36:A:3201:ERY:H11	2.02	0.41
6:D:132:PHE:CE2	34:A:2736:C:H4'	2.56	0.41
6:D:156:THR:HB	34:A:2795:C:O3'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:G:116:ILE:CD1	9:G:152:LEU:HD11	2.51	0.41
10:H:31:LEU:HB2	10:H:32:PRO:HD3	2.03	0.41
16:O:45:ARG:HG3	16:O:95:THR:CG2	2.51	0.41
17:P:81:SER:HA	17:P:84:VAL:HG12	2.02	0.41
17:P:125:LEU:HA	17:P:125:LEU:HD12	1.79	0.41
26:Y:14:PHE:CG	34:A:187:G:H5''	2.56	0.41
34:A:1174:G:P	34:A:1204:A:N6	2.93	0.41
34:A:1456:G:C2	34:A:1513:C:H4'	2.56	0.41
34:A:1665:U:H2'	34:A:1666:A:H8	1.87	0.41
34:A:1938:G:C2	34:A:1954:C:O2'	2.74	0.41
34:A:2367:G:O2'	34:A:2370:A:N6	2.34	0.41
34:A:2598:C:H3'	34:A:2599:G:C5'	2.50	0.41
34:A:3056:A:O4'	34:A:3100:A:N6	2.54	0.41
3:4:156:THR:O	34:A:2706:A:O2'	2.34	0.40
4:B:25:G:N7	4:B:57:U:H2'	2.36	0.40
6:D:11:LEU:HB3	18:Q:4:LEU:HD21	2.03	0.40
16:O:95:THR:OG1	16:O:114:GLU:O	2.22	0.40
18:Q:73:PHE:HB3	18:Q:80:ILE:HD11	2.04	0.40
19:R:28:ARG:NH2	34:A:619:C:O2	2.54	0.40
22:U:44:ILE:O	22:U:47:GLU:HG2	2.21	0.40
25:X:64:PRO:CB	34:A:759:G:H1	2.34	0.40
26:Y:36:VAL:HG12	26:Y:63:ARG:NH2	2.35	0.40
34:A:438:U:C5	34:A:439:C:C5	3.09	0.40
34:A:988:U:H2'	34:A:989:G:O5'	2.21	0.40
34:A:1236:G:O5'	34:A:1237:U:OP1	2.39	0.40
34:A:1570:C:H2'	34:A:1571:C:C6	2.56	0.40
34:A:2036:A:N3	34:A:2036:A:H2'	2.35	0.40
34:A:2064:A:N7	34:A:2065:A:N6	2.69	0.40
34:A:2288:C:H2'	34:A:2289:C:H6	1.86	0.40
34:A:2511:A:N7	34:A:2513:G:C8	2.89	0.40
34:A:2594:G:H22	34:A:2595:G:N2	2.19	0.40
34:A:2611:U:H5''	34:A:2612:A:OP2	2.21	0.40
34:A:2654:A:C3'	34:A:2655:U:H5'	2.51	0.40
10:H:131:PRO:HA	10:H:145:SER:HA	2.04	0.40
13:L:79:PHE:CD1	18:Q:69:VAL:HG22	2.56	0.40
19:R:70:ARG:CZ	34:A:1129:G:OP1	2.69	0.40
34:A:336:C:HO2'	34:A:337:U:P	2.34	0.40
34:A:440:U:H2'	34:A:441:G:C8	2.56	0.40
34:A:500:A:H2'	34:A:501:C:O5'	2.21	0.40
34:A:634:C:H3'	34:A:635:G:H4'	2.04	0.40
34:A:844:G:H5'	34:A:845:C:H5''	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:1147:A:C2	34:A:1244:A:OP1	2.73	0.40
34:A:1430:C:O2'	34:A:1507:G:H1'	2.21	0.40
34:A:1549:G:C4	34:A:1550:G:C8	3.09	0.40
34:A:1708:A:HO2'	34:A:1709:U:H6	1.64	0.40
34:A:1881:U:O2'	34:A:2910:G:H4'	2.21	0.40
34:A:1934:G:C5	34:A:1935:C:C5	3.09	0.40
34:A:2028:G:H2'	34:A:2029:A:O4'	2.20	0.40
34:A:2428:G:O2'	34:A:2429:A:H5'	2.21	0.40
34:A:2857:A:H2'	34:A:2858:G:C8	2.56	0.40
3:4:424:TYR:CB	3:4:447:ALA:HB1	2.51	0.40
5:C:165:LEU:HD11	5:C:173:ALA:HB1	2.04	0.40
11:J:73:LYS:HB3	34:A:1177:G:H5'	2.04	0.40
11:J:75:PRO:O	11:J:76:PRO:C	2.65	0.40
11:J:77:ALA:HB3	34:A:1206:A:N1	2.36	0.40
12:K:13:ARG:NH1	12:K:49:ASP:O	2.55	0.40
13:L:69:ARG:HD3	13:L:105:GLU:HG2	2.04	0.40
14:M:62:PRO:HG2	31:e:25:GLN:HB2	2.03	0.40
14:M:79:ASN:HA	14:M:113:LEU:O	2.21	0.40
14:M:118:LEU:CD2	14:M:137:ILE:HA	2.51	0.40
15:N:29:PHE:HB3	15:N:65:TRP:CE2	2.56	0.40
17:P:69:ASP:O	17:P:73:ILE:HG12	2.21	0.40
26:Y:25:THR:HG21	34:A:2304:C:H4'	2.03	0.40
29:c:8:ARG:NH2	34:A:2509:C:C2	2.90	0.40
34:A:132:C:N3	34:A:133:G:C6	2.89	0.40
34:A:270:U:H5	34:A:271:A:N7	2.19	0.40
34:A:1203:A:O2'	34:A:1222:C:O2	2.38	0.40
34:A:1219:U:O2'	34:A:1220:C:C5	2.74	0.40
34:A:1656:A:O2'	34:A:1657:G:H5'	2.21	0.40
34:A:1990:A:N7	34:A:2046:A:H1'	2.36	0.40
34:A:2037:U:H4'	34:A:2038:A:OP2	2.21	0.40
34:A:2508:C:N3	34:A:2509:C:H5	2.20	0.40
34:A:2752:U:H2'	34:A:2754:G:O5'	2.21	0.40
34:A:3039:C:O2'	34:A:3040:G:H5'	2.22	0.40
3:4:76:THR:CG2	3:4:154:HIS:NE2	2.84	0.40
3:4:185:ARG:HD3	3:4:185:ARG:H	1.87	0.40
3:4:330:HIS:CE1	3:4:364:GLU:HG3	2.56	0.40
3:4:444:HIS:O	3:4:444:HIS:CG	2.73	0.40
4:B:40:A:C2	4:B:45:G:C2	3.09	0.40
5:C:139:GLY:N	5:C:165:LEU:O	2.37	0.40
5:C:155:LEU:O	5:C:156:ALA:HB3	2.21	0.40
7:E:33:LEU:HD12	7:E:106:MET:HE2	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:H:75:LEU:C	10:H:75:LEU:HD23	2.47	0.40
11:J:23:ALA:HB3	11:J:24:PRO:HD3	2.03	0.40
11:J:93:GLU:HB2	11:J:96:LYS:HB2	2.03	0.40
14:M:70:ARG:NH2	34:A:244:A:O2'	2.55	0.40
17:P:30:ALA:O	17:P:54:ASP:OD2	2.40	0.40
18:Q:87:THR:HB	18:Q:111:GLU:OE2	2.21	0.40
25:X:36:ILE:HG23	25:X:58:THR:CG2	2.51	0.40
28:b:10:ARG:NH2	28:b:14:ARG:NH2	2.69	0.40
31:e:35:HIS:CE1	34:A:2615:G:OP1	2.74	0.40
33:g:10:VAL:HG22	33:g:11:ASP:OD1	2.22	0.40
34:A:406:A:C2'	34:A:407:C:H5'	2.52	0.40
34:A:727:A:H8	34:A:728:G:H4'	1.86	0.40
34:A:752:C:H2'	34:A:753:A:C1'	2.52	0.40
34:A:1337:G:N1	34:A:1340:A:OP2	2.45	0.40
34:A:1358:U:H2'	34:A:1359:G:O4'	2.21	0.40
34:A:1583:U:N3	34:A:1586:C:H4'	2.36	0.40
34:A:1614:G:H2'	34:A:1615:G:C8	2.56	0.40
34:A:1796:U:H2'	34:A:1797:C:C1'	2.51	0.40
34:A:1814:G:N3	34:A:1814:G:H2'	2.36	0.40
34:A:2151:A:C2'	34:A:2152:A:O5'	2.69	0.40
34:A:2274:C:H2'	34:A:2275:A:C8	2.57	0.40
34:A:2751:C:H3'	34:A:2752:U:O4'	2.22	0.40
34:A:2777:G:N3	34:A:2807:G:H1'	2.37	0.40
34:A:2973:A:OP1	34:A:2973:A:H4'	2.21	0.40
3:4:200:THR:HG21	34:A:2728:U:C6	2.57	0.40
7:E:82:PRO:HB3	7:E:90:VAL:HG23	2.02	0.40
8:F:138:GLY:HA2	8:F:159:MET:O	2.20	0.40
19:R:6:ARG:NH1	34:A:676:C:OP2	2.55	0.40
19:R:68:ALA:HB2	19:R:99:ALA:HB1	2.04	0.40
34:A:135:G:O2'	34:A:136:U:P	2.74	0.40
34:A:348:G:N3	34:A:349:G:C8	2.90	0.40
34:A:598:U:O4	34:A:599:G:N1	2.54	0.40
34:A:741:G:N2	34:A:2575:G:OP1	2.55	0.40
34:A:1325:U:C3'	34:A:1326:G:H5'	2.51	0.40
34:A:1529:U:H3	34:A:1806:A:H2	1.69	0.40
34:A:2348:G:H3'	34:A:2349:A:H2'	2.04	0.40
34:A:2387:U:OP1	34:A:2393:A:O2'	2.25	0.40
34:A:2524:C:O2'	34:A:2525:C:OP1	2.28	0.40
34:A:2595:G:H2'	34:A:2596:G:H5'	2.02	0.40
34:A:2600:A:C4	34:A:2601:A:N7	2.90	0.40
34:A:2874:C:N3	34:A:2875:C:C5	2.90	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2972:A:H3'	34:A:2973:A:H5''	2.04	0.40
34:A:3014:A:C2	34:A:3015:C:C5	3.09	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	2	57/61 (93%)	53 (93%)	4 (7%)	0	100	100
2	3	21/24 (88%)	20 (95%)	1 (5%)	0	100	100
3	4	424/470 (90%)	347 (82%)	76 (18%)	1 (0%)	43	72
5	C	273/278 (98%)	251 (92%)	22 (8%)	0	100	100
6	D	212/217 (98%)	198 (93%)	13 (6%)	1 (0%)	24	55
7	E	207/215 (96%)	198 (96%)	9 (4%)	0	100	100
8	F	180/187 (96%)	155 (86%)	24 (13%)	1 (1%)	21	51
9	G	174/179 (97%)	161 (92%)	13 (8%)	0	100	100
10	H	149/151 (99%)	130 (87%)	19 (13%)	0	100	100
11	J	128/142 (90%)	92 (72%)	36 (28%)	0	100	100
12	K	144/147 (98%)	135 (94%)	9 (6%)	0	100	100
13	L	120/122 (98%)	113 (94%)	7 (6%)	0	100	100
14	M	143/147 (97%)	129 (90%)	14 (10%)	0	100	100
15	N	134/138 (97%)	127 (95%)	7 (5%)	0	100	100
16	O	116/199 (58%)	111 (96%)	5 (4%)	0	100	100
17	P	124/127 (98%)	118 (95%)	6 (5%)	0	100	100
18	Q	111/113 (98%)	103 (93%)	8 (7%)	0	100	100
19	R	122/129 (95%)	120 (98%)	2 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
20	S	98/103 (95%)	93 (95%)	5 (5%)	0	100	100
21	T	112/153 (73%)	107 (96%)	5 (4%)	0	100	100
22	U	95/100 (95%)	90 (95%)	5 (5%)	0	100	100
23	V	93/105 (89%)	84 (90%)	9 (10%)	0	100	100
24	W	101/215 (47%)	95 (94%)	6 (6%)	0	100	100
25	X	77/88 (88%)	75 (97%)	2 (3%)	0	100	100
26	Y	61/64 (95%)	56 (92%)	5 (8%)	0	100	100
27	Z	62/77 (80%)	62 (100%)	0	0	100	100
28	b	52/57 (91%)	52 (100%)	0	0	100	100
29	c	46/55 (84%)	44 (96%)	2 (4%)	0	100	100
30	d	44/47 (94%)	43 (98%)	1 (2%)	0	100	100
31	e	61/64 (95%)	60 (98%)	1 (2%)	0	100	100
32	f	35/37 (95%)	35 (100%)	0	0	100	100
33	g	46/75 (61%)	39 (85%)	7 (15%)	0	100	100
All	All	3822/4286 (89%)	3496 (92%)	323 (8%)	3 (0%)	49	77

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	4	361	PRO
8	F	134	ASN
6	D	155	ALA

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	2	52/54 (96%)	52 (100%)	0	100	100
2	3	18/19 (95%)	18 (100%)	0	100	100
3	4	333/372 (90%)	332 (100%)	1 (0%)	86	95

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	C	215/218 (99%)	215 (100%)	0	100	100
6	D	159/163 (98%)	159 (100%)	0	100	100
7	E	169/173 (98%)	169 (100%)	0	100	100
8	F	150/156 (96%)	150 (100%)	0	100	100
9	G	147/150 (98%)	147 (100%)	0	100	100
10	H	90/116 (78%)	88 (98%)	2 (2%)	45	78
11	J	100/108 (93%)	100 (100%)	0	100	100
12	K	119/120 (99%)	119 (100%)	0	100	100
13	L	100/100 (100%)	100 (100%)	0	100	100
14	M	112/114 (98%)	112 (100%)	0	100	100
15	N	114/116 (98%)	113 (99%)	1 (1%)	70	89
16	O	97/158 (61%)	97 (100%)	0	100	100
17	P	93/94 (99%)	93 (100%)	0	100	100
18	Q	100/100 (100%)	100 (100%)	0	100	100
19	R	97/99 (98%)	97 (100%)	0	100	100
20	S	81/83 (98%)	81 (100%)	0	100	100
21	T	90/117 (77%)	90 (100%)	0	100	100
22	U	83/85 (98%)	83 (100%)	0	100	100
23	V	81/86 (94%)	81 (100%)	0	100	100
24	W	83/168 (49%)	83 (100%)	0	100	100
25	X	58/63 (92%)	58 (100%)	0	100	100
26	Y	50/51 (98%)	50 (100%)	0	100	100
27	Z	58/66 (88%)	58 (100%)	0	100	100
28	b	43/46 (94%)	43 (100%)	0	100	100
29	c	46/52 (88%)	46 (100%)	0	100	100
30	d	35/36 (97%)	35 (100%)	0	100	100
31	e	53/54 (98%)	53 (100%)	0	100	100
32	f	35/35 (100%)	35 (100%)	0	100	100
33	g	43/63 (68%)	43 (100%)	0	100	100
All	All	3104/3435 (90%)	3100 (100%)	4 (0%)	87	97

All (4) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	4	240	ARG
10	H	133	THR
10	H	141	GLU
15	N	58	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (18) such sidechains are listed below:

Mol	Chain	Res	Type
3	4	344	ASN
5	C	53	HIS
7	E	151	ASN
7	E	208	ASN
9	G	75	ASN
9	G	86	GLN
10	H	28	ASN
11	J	95	HIS
11	J	106	GLN
12	K	117	GLN
12	K	136	GLN
13	L	91	ASN
17	P	46	HIS
19	R	66	ASN
21	T	48	GLN
21	T	67	ASN
22	U	41	GLN
31	e	28	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
34	A	3116/3120 (99%)	1011 (32%)	66 (2%)
4	B	117/118 (99%)	19 (16%)	1 (0%)
All	All	3233/3238 (99%)	1030 (31%)	67 (2%)

All (1030) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
4	B	4	A
4	B	5	C
4	B	9	G
4	B	12	C

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Mol	Chain	Res	Type
4	B	13	C
4	B	21	C
4	B	26	A
4	B	30	G
4	B	36	U
4	B	42	C
4	B	46	A
4	B	51	G
4	B	57	U
4	B	87	U
4	B	89	C
4	B	90	G
4	B	103	G
4	B	107	A
4	B	112	C
34	A	4	G
34	A	6	G
34	A	7	U
34	A	9	U
34	A	10	A
34	A	19	U
34	A	20	G
34	A	31	U
34	A	32	G
34	A	41	A
34	A	42	G
34	A	55	G
34	A	58	G
34	A	60	A
34	A	61	G
34	A	68	A
34	A	71	A
34	A	72	G
34	A	80	G
34	A	81	A
34	A	83	C
34	A	91	C
34	A	92	G
34	A	94	G
34	A	96	G
34	A	98	U
34	A	99	G

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Mol	Chain	Res	Type
34	A	102	C
34	A	103	C
34	A	107	G
34	A	108	A
34	A	114	G
34	A	115	A
34	A	116	A
34	A	117	U
34	A	125	C
34	A	126	C
34	A	127	C
34	A	129	G
34	A	130	C
34	A	131	A
34	A	132	C
34	A	133	G
34	A	134	A
34	A	135	G
34	A	136	U
34	A	141	U
34	A	143	G
34	A	145	G
34	A	151	A
34	A	156	C
34	A	161	U
34	A	162	A
34	A	163	U
34	A	164	A
34	A	166	A
34	A	169	C
34	A	172	C
34	A	175	G
34	A	195	A
34	A	198	A
34	A	212	A
34	A	214	G
34	A	215	A
34	A	218	A
34	A	220	A
34	A	221	A
34	A	222	A
34	A	223	A

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Mol	Chain	Res	Type
34	A	224	C
34	A	227	A
34	A	229	U
34	A	230	G
34	A	233	A
34	A	238	G
34	A	248	G
34	A	255	A
34	A	264	G
34	A	265	A
34	A	266	U
34	A	267	G
34	A	270	U
34	A	271	A
34	A	273	A
34	A	274	C
34	A	276	G
34	A	277	U
34	A	278	A
34	A	279	U
34	A	280	G
34	A	282	A
34	A	283	U
34	A	285	U
34	A	286	G
34	A	288	U
34	A	289	A
34	A	290	C
34	A	292	G
34	A	293	G
34	A	295	U
34	A	298	G
34	A	299	G
34	A	300	G
34	A	301	U
34	A	302	U
34	A	303	G
34	A	305	G
34	A	306	U
34	A	307	G
34	A	312	G
34	A	313	G

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Mol	Chain	Res	Type
34	A	314	G
34	A	315	U
34	A	316	U
34	A	317	G
34	A	318	U
34	A	319	G
34	A	320	G
34	A	321	G
34	A	324	C
34	A	325	U
34	A	326	A
34	A	327	U
34	A	330	U
34	A	331	U
34	A	336	C
34	A	337	U
34	A	338	C
34	A	339	U
34	A	340	A
34	A	342	C
34	A	344	G
34	A	351	G
34	A	355	A
34	A	357	U
34	A	358	G
34	A	359	A
34	A	361	A
34	A	362	A
34	A	365	U
34	A	366	G
34	A	367	U
34	A	370	U
34	A	371	G
34	A	375	A
34	A	376	G
34	A	384	G
34	A	385	G
34	A	387	U
34	A	388	U
34	A	393	U
34	A	397	C
34	A	398	U

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Mol	Chain	Res	Type
34	A	399	G
34	A	404	A
34	A	412	A
34	A	413	G
34	A	420	G
34	A	425	U
34	A	427	A
34	A	428	A
34	A	435	A
34	A	438	U
34	A	441	G
34	A	442	U
34	A	444	U
34	A	445	U
34	A	446	G
34	A	448	U
34	A	449	G
34	A	451	U
34	A	452	G
34	A	453	U
34	A	454	U
34	A	455	C
34	A	458	G
34	A	460	G
34	A	466	G
34	A	470	G
34	A	471	C
34	A	472	C
34	A	474	G
34	A	485	U
34	A	486	G
34	A	487	U
34	A	489	A
34	A	490	A
34	A	496	C
34	A	497	G
34	A	499	G
34	A	500	A
34	A	501	C
34	A	502	C
34	A	504	C
34	A	508	G

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Mol	Chain	Res	Type
34	A	509	U
34	A	510	A
34	A	511	A
34	A	512	G
34	A	513	C
34	A	514	C
34	A	519	U
34	A	523	U
34	A	533	C
34	A	539	C
34	A	543	U
34	A	545	A
34	A	555	G
34	A	569	G
34	A	571	A
34	A	572	C
34	A	573	C
34	A	583	G
34	A	586	U
34	A	591	G
34	A	592	A
34	A	594	U
34	A	595	A
34	A	596	C
34	A	605	G
34	A	612	U
34	A	614	C
34	A	617	U
34	A	618	C
34	A	619	C
34	A	620	G
34	A	623	A
34	A	630	U
34	A	632	G
34	A	635	G
34	A	636	U
34	A	637	G
34	A	638	U
34	A	639	C
34	A	640	G
34	A	642	G
34	A	644	G

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Mol	Chain	Res	Type
34	A	648	A
34	A	655	G
34	A	665	G
34	A	667	A
34	A	669	G
34	A	684	G
34	A	689	U
34	A	693	G
34	A	696	A
34	A	700	U
34	A	706	G
34	A	707	G
34	A	708	G
34	A	709	U
34	A	716	G
34	A	719	G
34	A	726	A
34	A	727	A
34	A	728	G
34	A	731	A
34	A	736	G
34	A	739	U
34	A	740	A
34	A	741	G
34	A	745	G
34	A	747	A
34	A	753	A
34	A	755	A
34	A	756	A
34	A	759	G
34	A	760	U
34	A	761	G
34	A	763	G
34	A	770	A
34	A	774	G
34	A	779	U
34	A	783	G
34	A	801	U
34	A	802	C
34	A	814	A
34	A	816	G
34	A	817	G

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Mol	Chain	Res	Type
34	A	819	G
34	A	820	A
34	A	824	G
34	A	841	G
34	A	843	G
34	A	845	C
34	A	862	U
34	A	871	A
34	A	872	G
34	A	878	G
34	A	890	G
34	A	891	G
34	A	897	A
34	A	899	G
34	A	900	G
34	A	907	A
34	A	919	A
34	A	920	G
34	A	927	C
34	A	942	U
34	A	944	A
34	A	957	C
34	A	972	A
34	A	974	G
34	A	981	U
34	A	982	A
34	A	986	G
34	A	987	A
34	A	988	U
34	A	993	G
34	A	995	U
34	A	1000	C
34	A	1001	C
34	A	1002	C
34	A	1008	G
34	A	1009	U
34	A	1010	U
34	A	1011	A
34	A	1012	C
34	A	1014	G
34	A	1016	C
34	A	1017	G

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Mol	Chain	Res	Type
34	A	1018	U
34	A	1020	A
34	A	1021	G
34	A	1022	C
34	A	1023	C
34	A	1024	A
34	A	1025	A
34	A	1026	A
34	A	1027	C
34	A	1029	C
34	A	1030	C
34	A	1046	C
34	A	1047	A
34	A	1048	A
34	A	1049	G
34	A	1063	G
34	A	1070	G
34	A	1076	A
34	A	1078	G
34	A	1085	G
34	A	1092	G
34	A	1097	A
34	A	1098	A
34	A	1099	A
34	A	1101	A
34	A	1103	C
34	A	1112	C
34	A	1113	C
34	A	1114	G
34	A	1123	C
34	A	1127	A
34	A	1128	A
34	A	1129	G
34	A	1130	C
34	A	1131	G
34	A	1138	A
34	A	1140	G
34	A	1141	U
34	A	1146	A
34	A	1147	A
34	A	1148	G
34	A	1150	A

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Mol	Chain	Res	Type
34	A	1151	U
34	A	1152	G
34	A	1154	G
34	A	1155	C
34	A	1158	U
34	A	1161	C
34	A	1162	G
34	A	1163	A
34	A	1164	A
34	A	1165	G
34	A	1166	A
34	A	1167	C
34	A	1171	C
34	A	1174	G
34	A	1175	A
34	A	1176	G
34	A	1178	U
34	A	1179	U
34	A	1180	G
34	A	1181	G
34	A	1182	C
34	A	1184	U
34	A	1185	A
34	A	1188	A
34	A	1189	G
34	A	1190	C
34	A	1191	A
34	A	1194	C
34	A	1195	A
34	A	1196	C
34	A	1198	C
34	A	1199	U
34	A	1200	U
34	A	1201	G
34	A	1202	A
34	A	1203	A
34	A	1204	A
34	A	1206	A
34	A	1207	G
34	A	1208	U
34	A	1210	C
34	A	1212	U

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Mol	Chain	Res	Type
34	A	1213	A
34	A	1214	A
34	A	1220	C
34	A	1224	G
34	A	1225	G
34	A	1228	A
34	A	1229	A
34	A	1230	G
34	A	1234	U
34	A	1235	U
34	A	1236	G
34	A	1237	U
34	A	1239	C
34	A	1243	G
34	A	1244	A
34	A	1245	U
34	A	1246	A
34	A	1247	A
34	A	1248	U
34	A	1251	A
34	A	1252	G
34	A	1253	C
34	A	1254	G
34	A	1259	U
34	A	1260	C
34	A	1261	A
34	A	1263	G
34	A	1267	A
34	A	1269	C
34	A	1270	G
34	A	1271	C
34	A	1272	C
34	A	1274	A
34	A	1276	G
34	A	1285	G
34	A	1286	C
34	A	1287	C
34	A	1288	A
34	A	1292	U
34	A	1293	G
34	A	1298	C
34	A	1300	G

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Mol	Chain	Res	Type
34	A	1301	G
34	A	1314	C
34	A	1315	C
34	A	1316	U
34	A	1325	U
34	A	1326	G
34	A	1332	G
34	A	1343	G
34	A	1344	A
34	A	1346	U
34	A	1351	G
34	A	1353	G
34	A	1359	G
34	A	1366	A
34	A	1368	A
34	A	1371	G
34	A	1377	A
34	A	1386	G
34	A	1387	A
34	A	1389	U
34	A	1390	A
34	A	1396	G
34	A	1399	A
34	A	1415	A
34	A	1416	A
34	A	1418	G
34	A	1428	U
34	A	1436	C
34	A	1444	U
34	A	1449	C
34	A	1456	G
34	A	1457	A
34	A	1460	C
34	A	1465	C
34	A	1467	U
34	A	1474	A
34	A	1480	A
34	A	1484	G
34	A	1491	C
34	A	1493	A
34	A	1494	U
34	A	1501	C

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Mol	Chain	Res	Type
34	A	1502	G
34	A	1507	G
34	A	1508	A
34	A	1510	A
34	A	1511	U
34	A	1513	C
34	A	1521	C
34	A	1522	G
34	A	1526	A
34	A	1531	C
34	A	1532	G
34	A	1534	C
34	A	1535	C
34	A	1540	U
34	A	1541	G
34	A	1542	A
34	A	1543	A
34	A	1545	C
34	A	1546	A
34	A	1549	G
34	A	1550	G
34	A	1551	U
34	A	1553	C
34	A	1554	U
34	A	1559	A
34	A	1566	A
34	A	1567	C
34	A	1573	U
34	A	1574	G
34	A	1575	A
34	A	1576	C
34	A	1578	G
34	A	1580	A
34	A	1581	C
34	A	1582	C
34	A	1583	U
34	A	1586	C
34	A	1587	G
34	A	1588	G
34	A	1589	G
34	A	1591	U
34	A	1593	U

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Mol	Chain	Res	Type
34	A	1597	G
34	A	1599	U
34	A	1600	G
34	A	1603	G
34	A	1609	G
34	A	1611	A
34	A	1613	G
34	A	1616	A
34	A	1617	C
34	A	1618	C
34	A	1619	U
34	A	1621	C
34	A	1622	G
34	A	1623	U
34	A	1624	U
34	A	1625	G
34	A	1629	G
34	A	1630	U
34	A	1631	A
34	A	1635	A
34	A	1636	A
34	A	1640	A
34	A	1641	U
34	A	1643	G
34	A	1648	A
34	A	1649	C
34	A	1675	U
34	A	1678	U
34	A	1679	A
34	A	1681	U
34	A	1685	G
34	A	1697	U
34	A	1703	G
34	A	1709	U
34	A	1710	A
34	A	1711	G
34	A	1712	G
34	A	1713	U
34	A	1714	A
34	A	1716	A
34	A	1717	U
34	A	1718	C

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Mol	Chain	Res	Type
34	A	1721	U
34	A	1722	C
34	A	1723	U
34	A	1727	A
34	A	1728	U
34	A	1731	A
34	A	1737	A
34	A	1754	G
34	A	1755	A
34	A	1756	G
34	A	1759	A
34	A	1768	C
34	A	1769	G
34	A	1770	G
34	A	1771	U
34	A	1776	C
34	A	1778	A
34	A	1786	G
34	A	1789	A
34	A	1793	G
34	A	1794	C
34	A	1795	C
34	A	1796	U
34	A	1797	C
34	A	1799	A
34	A	1800	G
34	A	1801	C
34	A	1802	G
34	A	1805	G
34	A	1809	U
34	A	1813	C
34	A	1814	G
34	A	1815	G
34	A	1816	C
34	A	1817	C
34	A	1825	C
34	A	1826	A
34	A	1827	A
34	A	1828	A
34	A	1832	A
34	A	1835	C
34	A	1837	G

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Mol	Chain	Res	Type
34	A	1845	G
34	A	1847	U
34	A	1848	A
34	A	1850	A
34	A	1851	G
34	A	1852	A
34	A	1858	A
34	A	1864	U
34	A	1866	C
34	A	1871	G
34	A	1872	A
34	A	1878	G
34	A	1887	A
34	A	1888	C
34	A	1892	G
34	A	1901	C
34	A	1902	C
34	A	1903	C
34	A	1904	C
34	A	1911	U
34	A	1927	C
34	A	1939	U
34	A	1940	A
34	A	1941	A
34	A	1942	G
34	A	1945	U
34	A	1946	U
34	A	1947	U
34	A	1948	A
34	A	1949	C
34	A	1955	A
34	A	1969	G
34	A	1973	C
34	A	1976	A
34	A	1978	C
34	A	1981	U
34	A	1990	A
34	A	2004	A
34	A	2016	G
34	A	2017	C
34	A	2018	G
34	A	2025	C

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Mol	Chain	Res	Type
34	A	2033	U
34	A	2036	A
34	A	2037	U
34	A	2046	A
34	A	2052	G
34	A	2061	U
34	A	2063	G
34	A	2065	A
34	A	2070	A
34	A	2073	A
34	A	2074	G
34	A	2075	G
34	A	2080	G
34	A	2081	U
34	A	2082	U
34	A	2083	A
34	A	2086	U
34	A	2087	C
34	A	2089	C
34	A	2090	U
34	A	2091	U
34	A	2092	U
34	A	2093	G
34	A	2094	G
34	A	2095	G
34	A	2102	G
34	A	2104	G
34	A	2112	U
34	A	2130	G
34	A	2132	U
34	A	2133	G
34	A	2134	G
34	A	2136	A
34	A	2137	A
34	A	2138	C
34	A	2139	U
34	A	2140	A
34	A	2141	U
34	A	2142	A
34	A	2143	A
34	A	2144	C
34	A	2146	A

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Mol	Chain	Res	Type
34	A	2148	C
34	A	2150	U
34	A	2151	A
34	A	2152	A
34	A	2153	G
34	A	2154	G
34	A	2160	A
34	A	2161	A
34	A	2162	A
34	A	2163	U
34	A	2175	U
34	A	2177	A
34	A	2178	G
34	A	2179	U
34	A	2187	U
34	A	2188	G
34	A	2191	C
34	A	2194	A
34	A	2195	U
34	A	2196	G
34	A	2197	G
34	A	2215	U
34	A	2217	U
34	A	2220	C
34	A	2221	A
34	A	2226	U
34	A	2228	G
34	A	2244	A
34	A	2246	U
34	A	2253	A
34	A	2254	A
34	A	2255	A
34	A	2256	G
34	A	2257	A
34	A	2267	C
34	A	2274	C
34	A	2279	C
34	A	2280	G
34	A	2284	A
34	A	2285	G
34	A	2286	A
34	A	2306	A

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Mol	Chain	Res	Type
34	A	2307	C
34	A	2313	A
34	A	2314	U
34	A	2315	U
34	A	2318	U
34	A	2319	G
34	A	2321	U
34	A	2323	G
34	A	2326	A
34	A	2328	G
34	A	2332	U
34	A	2333	G
34	A	2334	U
34	A	2339	G
34	A	2340	A
34	A	2341	U
34	A	2342	A
34	A	2343	G
34	A	2344	G
34	A	2345	U
34	A	2346	G
34	A	2348	G
34	A	2349	A
34	A	2350	G
34	A	2351	A
34	A	2355	U
34	A	2356	G
34	A	2357	A
34	A	2362	C
34	A	2363	A
34	A	2365	A
34	A	2366	C
34	A	2367	G
34	A	2369	C
34	A	2371	G
34	A	2377	G
34	A	2380	G
34	A	2387	U
34	A	2389	U
34	A	2390	U
34	A	2391	G
34	A	2392	A

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Mol	Chain	Res	Type
34	A	2393	A
34	A	2394	A
34	A	2395	U
34	A	2396	A
34	A	2397	C
34	A	2398	C
34	A	2399	A
34	A	2400	C
34	A	2401	U
34	A	2402	C
34	A	2405	A
34	A	2408	G
34	A	2419	C
34	A	2421	A
34	A	2422	A
34	A	2427	G
34	A	2433	U
34	A	2434	A
34	A	2436	A
34	A	2438	C
34	A	2440	G
34	A	2441	G
34	A	2447	G
34	A	2449	A
34	A	2454	G
34	A	2462	G
34	A	2463	G
34	A	2490	A
34	A	2492	A
34	A	2503	G
34	A	2506	G
34	A	2507	C
34	A	2508	C
34	A	2509	C
34	A	2510	A
34	A	2511	A
34	A	2513	G
34	A	2518	C
34	A	2520	U
34	A	2522	A
34	A	2525	C
34	A	2527	G

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Mol	Chain	Res	Type
34	A	2528	G
34	A	2529	A
34	A	2531	G
34	A	2532	G
34	A	2533	C
34	A	2534	A
34	A	2537	C
34	A	2540	G
34	A	2543	U
34	A	2544	U
34	A	2545	G
34	A	2546	A
34	A	2549	G
34	A	2552	A
34	A	2553	G
34	A	2558	C
34	A	2559	A
34	A	2562	G
34	A	2563	G
34	A	2564	A
34	A	2565	G
34	A	2569	G
34	A	2570	A
34	A	2571	C
34	A	2572	U
34	A	2574	C
34	A	2575	G
34	A	2578	A
34	A	2579	C
34	A	2580	G
34	A	2581	G
34	A	2582	A
34	A	2583	C
34	A	2584	A
34	A	2585	U
34	A	2586	G
34	A	2587	U
34	A	2589	G
34	A	2590	A
34	A	2591	G
34	A	2596	G
34	A	2597	A

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Mol	Chain	Res	Type
34	A	2598	C
34	A	2599	G
34	A	2600	A
34	A	2601	A
34	A	2602	A
34	A	2604	U
34	A	2607	G
34	A	2608	G
34	A	2609	A
34	A	2610	C
34	A	2611	U
34	A	2612	A
34	A	2619	C
34	A	2620	G
34	A	2621	G
34	A	2628	U
34	A	2630	A
34	A	2634	G
34	A	2644	C
34	A	2647	U
34	A	2649	A
34	A	2652	G
34	A	2653	G
34	A	2654	A
34	A	2655	U
34	A	2657	A
34	A	2658	A
34	A	2659	A
34	A	2665	C
34	A	2672	A
34	A	2676	C
34	A	2683	A
34	A	2687	U
34	A	2688	C
34	A	2689	C
34	A	2690	C
34	A	2693	A
34	A	2696	G
34	A	2700	A
34	A	2704	C
34	A	2705	G
34	A	2718	G

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Mol	Chain	Res	Type
34	A	2726	G
34	A	2729	G
34	A	2742	A
34	A	2744	C
34	A	2745	C
34	A	2746	U
34	A	2748	G
34	A	2749	G
34	A	2750	G
34	A	2751	C
34	A	2752	U
34	A	2753	G
34	A	2762	C
34	A	2763	C
34	A	2767	G
34	A	2772	G
34	A	2774	G
34	A	2778	U
34	A	2779	U
34	A	2785	A
34	A	2790	A
34	A	2791	G
34	A	2793	G
34	A	2796	A
34	A	2805	G
34	A	2810	U
34	A	2822	A
34	A	2823	G
34	A	2826	A
34	A	2833	U
34	A	2834	C
34	A	2837	U
34	A	2839	U
34	A	2853	C
34	A	2865	G
34	A	2870	C
34	A	2871	U
34	A	2873	U
34	A	2876	C
34	A	2883	G
34	A	2884	A
34	A	2885	G

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Mol	Chain	Res	Type
34	A	2886	A
34	A	2887	G
34	A	2894	G
34	A	2898	G
34	A	2909	G
34	A	2913	U
34	A	2915	C
34	A	2924	C
34	A	2933	G
34	A	2936	C
34	A	2938	G
34	A	2950	C
34	A	2957	A
34	A	2964	A
34	A	2965	A
34	A	2969	C
34	A	2971	G
34	A	2972	A
34	A	2973	A
34	A	2977	A
34	A	2979	C
34	A	2980	U
34	A	2982	A
34	A	2983	G
34	A	2989	A
34	A	3002	A
34	A	3003	C
34	A	3005	A
34	A	3015	C
34	A	3020	U
34	A	3021	A
34	A	3022	G
34	A	3023	G
34	A	3024	A
34	A	3025	G
34	A	3029	U
34	A	3038	C
34	A	3039	C
34	A	3040	G
34	A	3041	C
34	A	3042	A
34	A	3057	U

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Mol	Chain	Res	Type
34	A	3063	A
34	A	3071	A
34	A	3080	A
34	A	3081	A
34	A	3082	U
34	A	3088	C
34	A	3091	G
34	A	3092	G
34	A	3093	A
34	A	3101	C
34	A	3104	A
34	A	3105	C
34	A	3106	C
34	A	3107	G
34	A	3108	G
34	A	3112	A
34	A	3115	A
34	A	3119	A

All (67) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
4	B	25	G
34	A	9	U
34	A	54	C
34	A	98	U
34	A	129	G
34	A	131	A
34	A	135	G
34	A	161	U
34	A	223	A
34	A	229	U
34	A	269	C
34	A	297	G
34	A	318	U
34	A	319	G
34	A	325	U
34	A	336	C
34	A	341	C
34	A	356	G
34	A	357	U
34	A	465	A

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Mol	Chain	Res	Type
34	A	500	A
34	A	510	A
34	A	636	U
34	A	643	G
34	A	738	A
34	A	740	A
34	A	842	A
34	A	899	G
34	A	981	U
34	A	986	G
34	A	1077	A
34	A	1150	A
34	A	1212	U
34	A	1251	A
34	A	1271	C
34	A	1292	U
34	A	1473	G
34	A	1521	C
34	A	1542	A
34	A	1573	U
34	A	1580	A
34	A	1711	G
34	A	1887	A
34	A	1947	U
34	A	2015	U
34	A	2035	U
34	A	2073	A
34	A	2094	G
34	A	2314	U
34	A	2315	U
34	A	2331	U
34	A	2342	A
34	A	2345	U
34	A	2399	A
34	A	2418	U
34	A	2420	U
34	A	2510	A
34	A	2527	G
34	A	2528	G
34	A	2539	G
34	A	2543	U
34	A	2571	C

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Mol	Chain	Res	Type
34	A	2601	A
34	A	2656	A
34	A	2699	C
34	A	3024	A
34	A	3079	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](#)

2 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
36	ERY	A	3201	-	53,53,53	1.40	9 (16%)	82,82,82	1.88	22 (26%)
35	GCP	4	501	-	32,34,34	1.32	5 (15%)	49,54,54	1.86	10 (20%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
36	ERY	A	3201	-	-	21/72/107/107	0/3/3/3
35	GCP	4	501	-	-	4/19/38/38	0/3/3/3

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
36	A	3201	ERY	O2-C1	4.00	1.43	1.34
36	A	3201	ERY	O2-C13	-3.55	1.40	1.46
35	4	501	GCP	C5-C4	2.93	1.46	1.38
36	A	3201	ERY	C15-C16	-2.80	1.47	1.52
35	4	501	GCP	C6-N1	-2.68	1.33	1.38
36	A	3201	ERY	O5-C16	-2.62	1.39	1.44
36	A	3201	ERY	C10-C9	-2.55	1.48	1.52
36	A	3201	ERY	O10-C6	-2.44	1.40	1.44
35	4	501	GCP	PG-O2G	2.36	1.60	1.55
35	4	501	GCP	PG-O3G	2.28	1.60	1.55
35	4	501	GCP	C5-N7	-2.15	1.34	1.39
36	A	3201	ERY	O9-C26	-2.09	1.40	1.44
36	A	3201	ERY	C2-C1	-2.07	1.47	1.51
36	A	3201	ERY	C6-C5	-2.04	1.51	1.55

All (32) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
36	A	3201	ERY	C16-C15-C14	-6.52	103.98	114.99
35	4	501	GCP	C5-C4-N3	-5.91	118.98	128.39
35	4	501	GCP	C2-N3-C4	4.89	120.72	112.30
35	4	501	GCP	N9-C4-N3	4.52	134.98	125.95
36	A	3201	ERY	O5-C16-C15	-4.26	106.40	112.95
36	A	3201	ERY	O3-C3-C2	-4.08	104.28	111.16
36	A	3201	ERY	C6-C5-C4	-3.86	108.28	113.89
36	A	3201	ERY	O3-C3-C4	-3.67	103.91	108.23
35	4	501	GCP	PB-O3A-PA	-3.61	120.59	132.37
36	A	3201	ERY	O9-C22-C23	-3.53	103.12	110.37
36	A	3201	ERY	C7-C8-C9	-3.50	107.45	113.32
36	A	3201	ERY	O5-C16-C17	3.49	108.92	103.86
35	4	501	GCP	C6-C5-N7	3.46	136.59	130.29
36	A	3201	ERY	O3-C14-C15	-3.37	103.36	108.99
36	A	3201	ERY	O6-C17-C16	-3.10	105.46	111.08
36	A	3201	ERY	O2-C1-C2	3.02	117.98	111.53
36	A	3201	ERY	C35-C12-C11	-2.74	108.39	113.14
35	4	501	GCP	C4-C5-N7	-2.45	106.78	110.67
36	A	3201	ERY	C25-C24-N1	-2.44	108.72	115.59
35	4	501	GCP	C3'-C2'-C1'	2.41	106.03	101.46
36	A	3201	ERY	C6-C7-C8	-2.36	110.90	115.61
36	A	3201	ERY	C31-C4-C3	-2.30	107.34	111.40
36	A	3201	ERY	O12-C11-C10	-2.26	107.56	110.77
36	A	3201	ERY	C34-C10-C11	-2.24	111.46	114.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
35	4	501	GCP	O6-C6-C5	-2.23	120.64	126.53
36	A	3201	ERY	C13-O2-C1	-2.22	114.31	118.20
35	4	501	GCP	C5-C6-N1	2.22	118.91	113.25
36	A	3201	ERY	C29-N1-C24	-2.20	106.83	113.15
35	4	501	GCP	C2'-C1'-N9	-2.06	107.52	113.25
36	A	3201	ERY	C30-C2-C1	-2.06	104.38	108.97
36	A	3201	ERY	O9-C26-C27	-2.04	103.06	106.88
36	A	3201	ERY	C14-O4-C18	2.03	119.38	113.82

There are no chirality outliers.

All (25) torsion outliers are listed below:

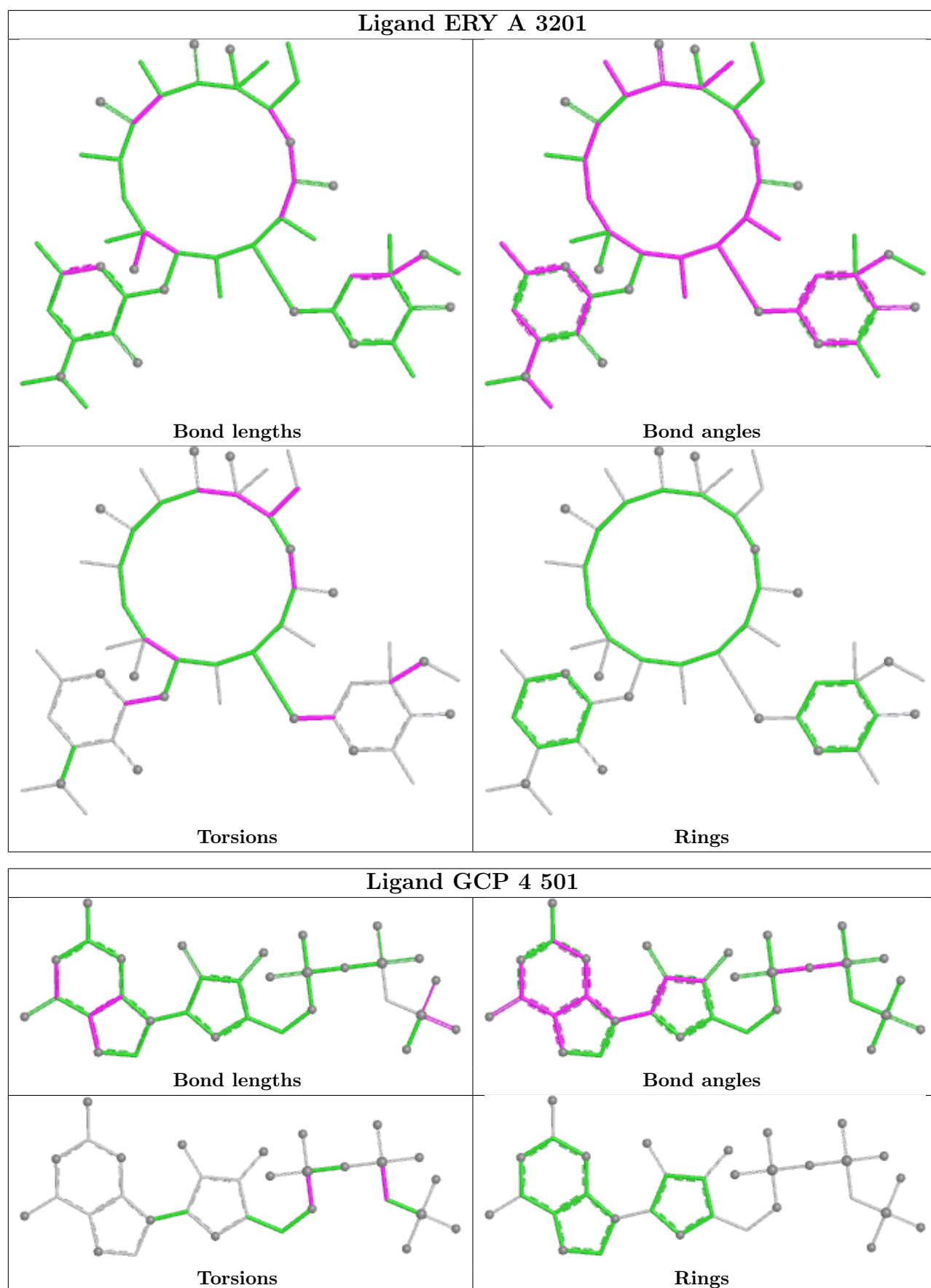
Mol	Chain	Res	Type	Atoms
35	4	501	GCP	PG-C3B-PB-O1B
35	4	501	GCP	PG-C3B-PB-O2B
35	4	501	GCP	PG-C3B-PB-O3A
36	A	3201	ERY	C10-C11-C12-O13
36	A	3201	ERY	O13-C12-C13-O2
36	A	3201	ERY	C15-C16-O5-C20
36	A	3201	ERY	C17-C16-O5-C20
36	A	3201	ERY	C2-C1-O2-C13
36	A	3201	ERY	O1-C1-O2-C13
36	A	3201	ERY	C35-C12-C13-O2
36	A	3201	ERY	C35-C12-C13-C36
36	A	3201	ERY	O13-C12-C13-C36
36	A	3201	ERY	C11-C12-C13-O2
36	A	3201	ERY	C11-C12-C13-C36
36	A	3201	ERY	O7-C5-C6-C7
36	A	3201	ERY	C4-C5-C6-O10
36	A	3201	ERY	C19-C16-O5-C20
36	A	3201	ERY	C10-C11-C12-C35
36	A	3201	ERY	O12-C11-C12-O13
36	A	3201	ERY	O12-C11-C12-C13
35	4	501	GCP	C5'-O5'-PA-O2A
36	A	3201	ERY	C4-C5-C6-C32
36	A	3201	ERY	O2-C13-C36-C37
36	A	3201	ERY	O4-C14-O3-C3
36	A	3201	ERY	C23-C22-O7-C5

There are no ring outliers.

2 monomers are involved in 30 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
36	A	3201	ERY	19	0
35	4	501	GCP	11	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

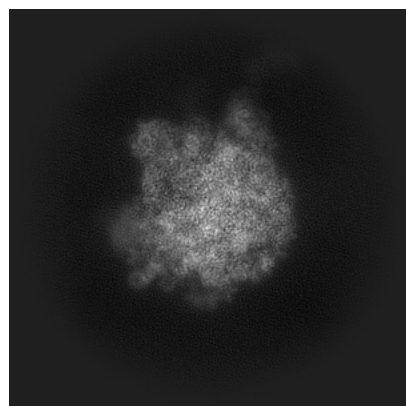
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-43476. These allow visual inspection of the internal detail of the map and identification of artifacts.

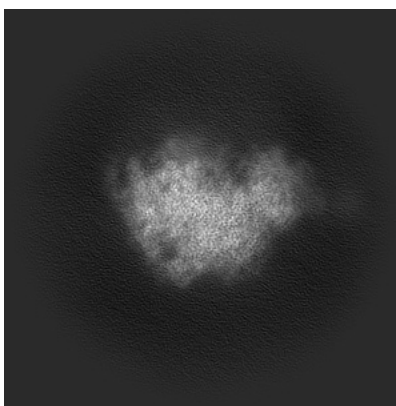
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

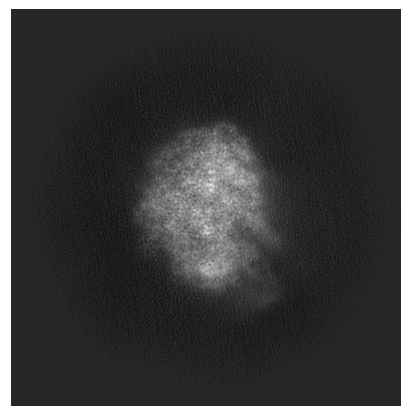
6.1.1 Primary map



X

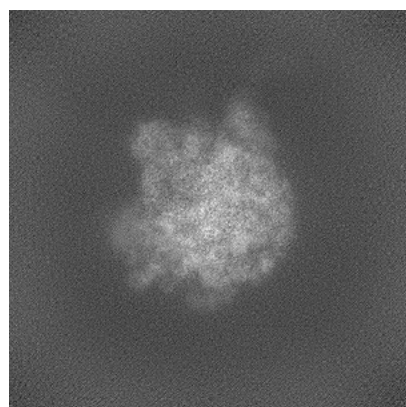


Y

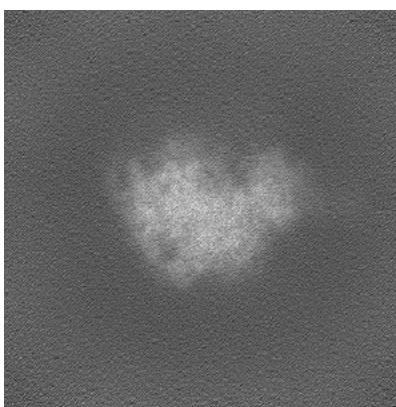


Z

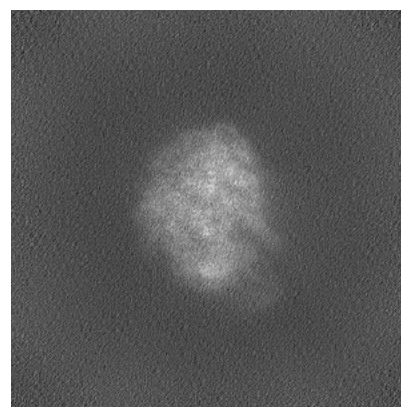
6.1.2 Raw map



X



Y

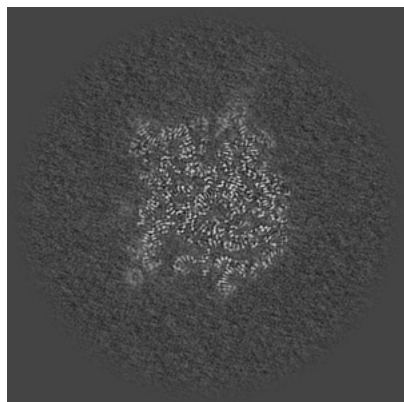


Z

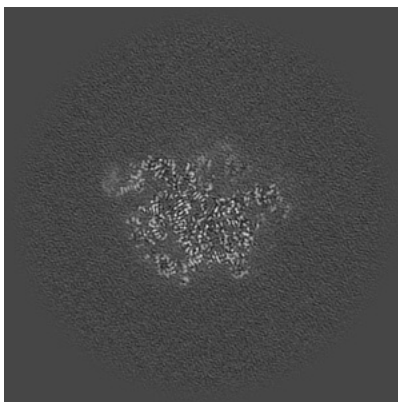
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

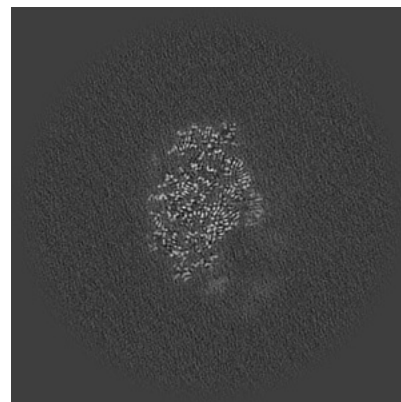
6.2.1 Primary map



X Index: 256

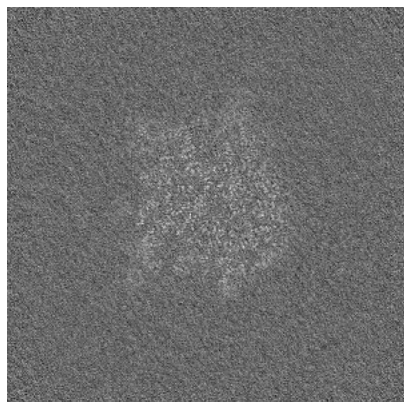


Y Index: 256

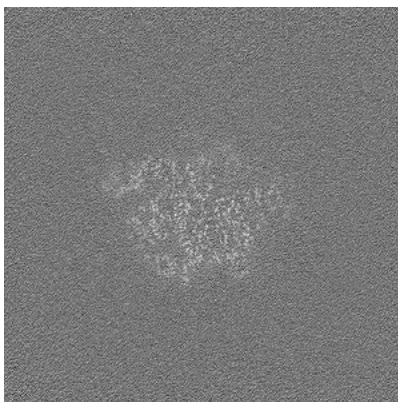


Z Index: 256

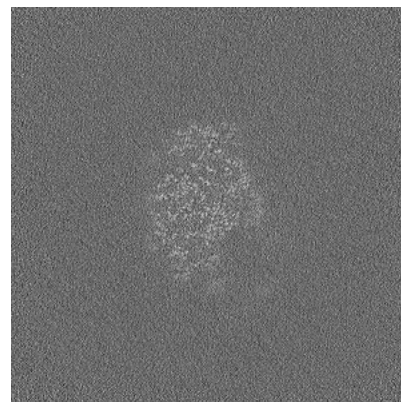
6.2.2 Raw map



X Index: 256



Y Index: 256

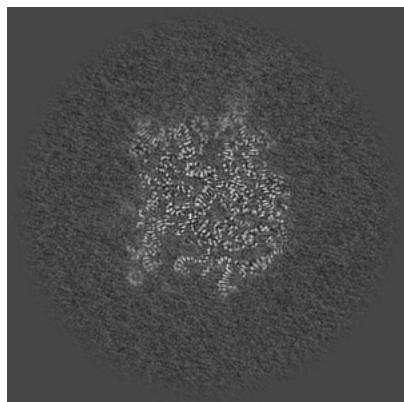


Z Index: 256

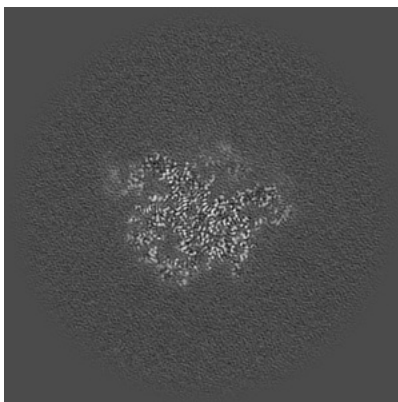
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

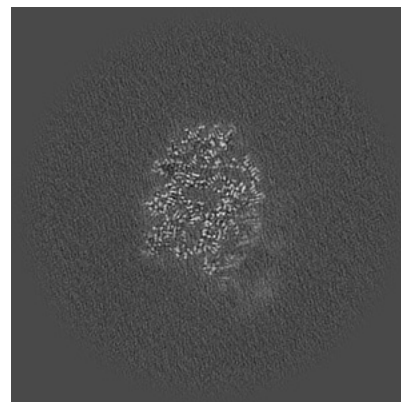
6.3.1 Primary map



X Index: 255

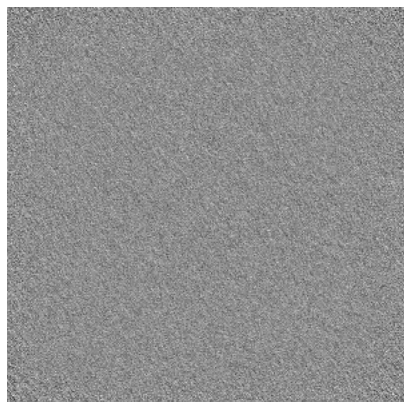


Y Index: 253

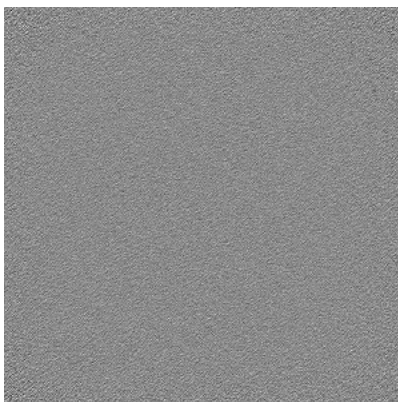


Z Index: 245

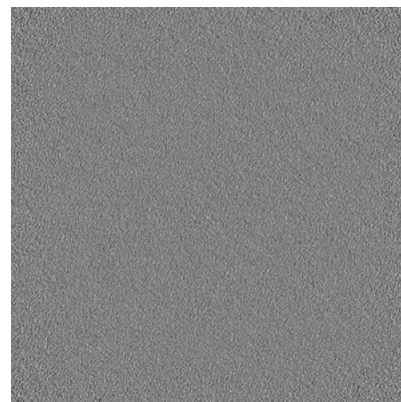
6.3.2 Raw map



X Index: 0



Y Index: 0

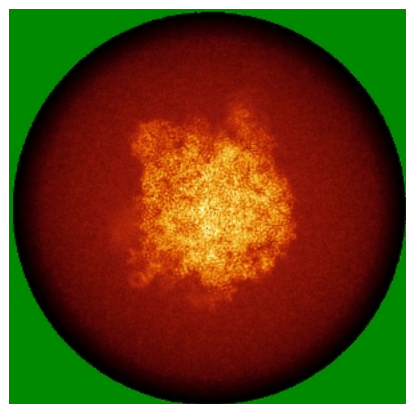


Z Index: 0

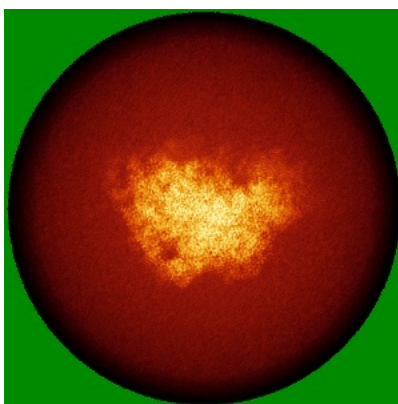
The images above show the largest variance slices of the map in three orthogonal directions.

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

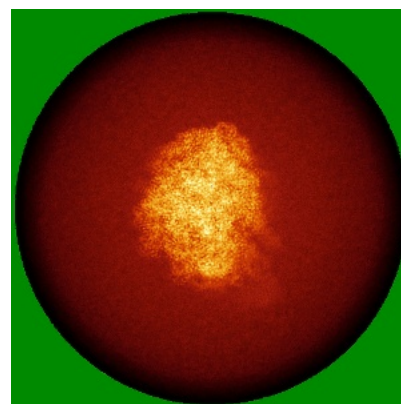
6.4.1 Primary map



X

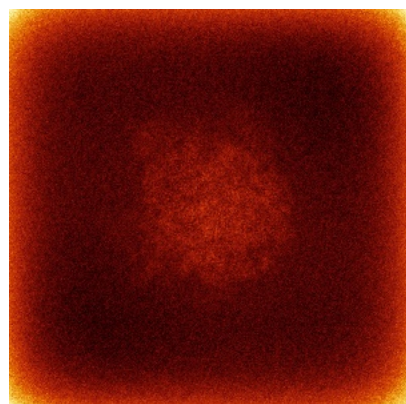


Y

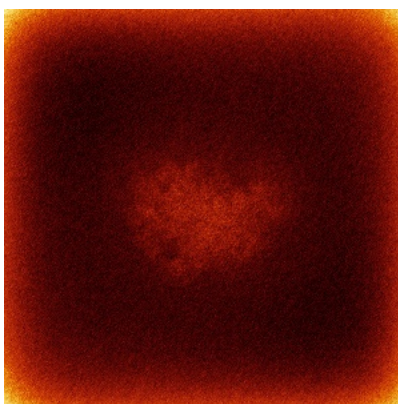


Z

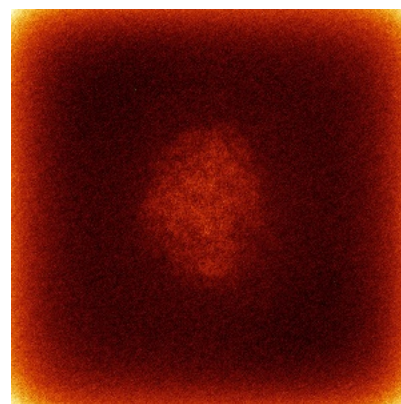
6.4.2 Raw map



X



Y

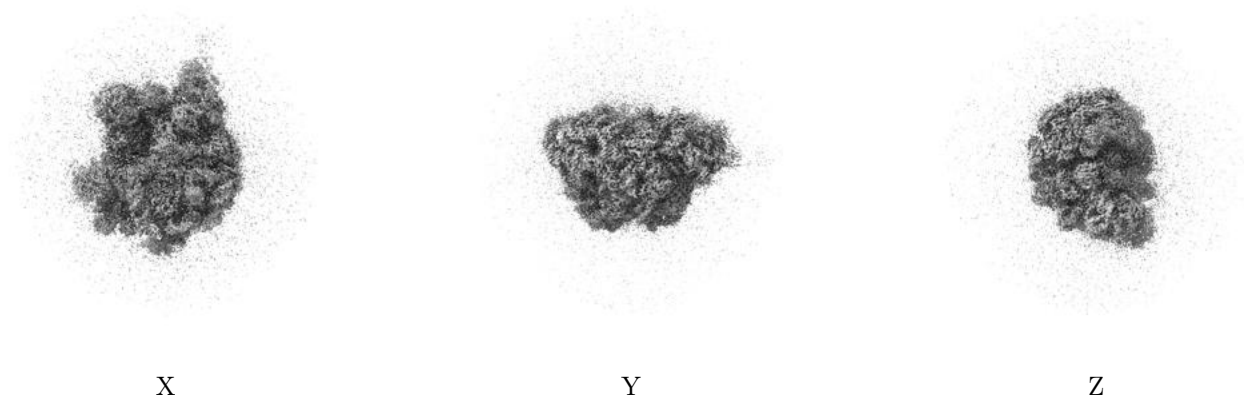


Z

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.

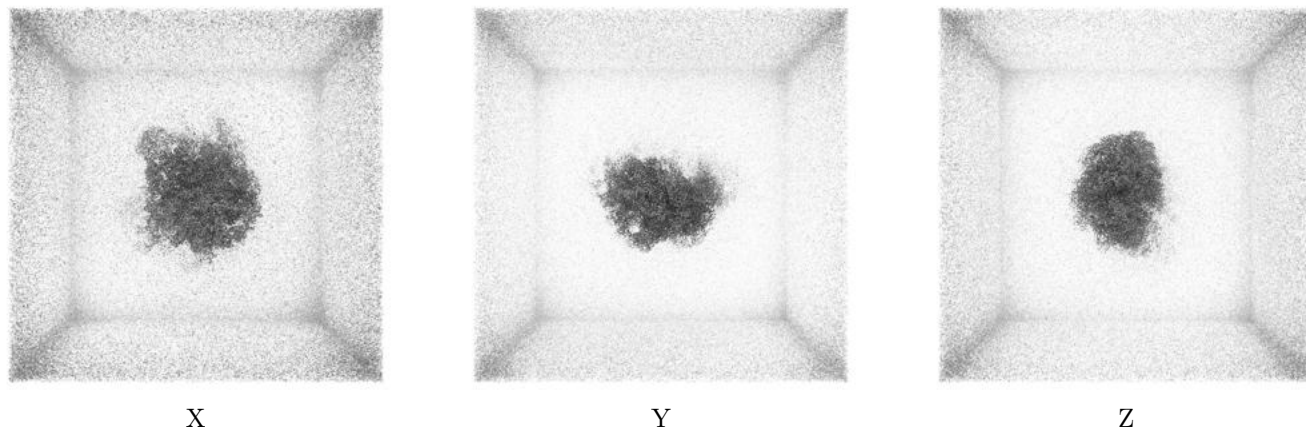
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.17. 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



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.

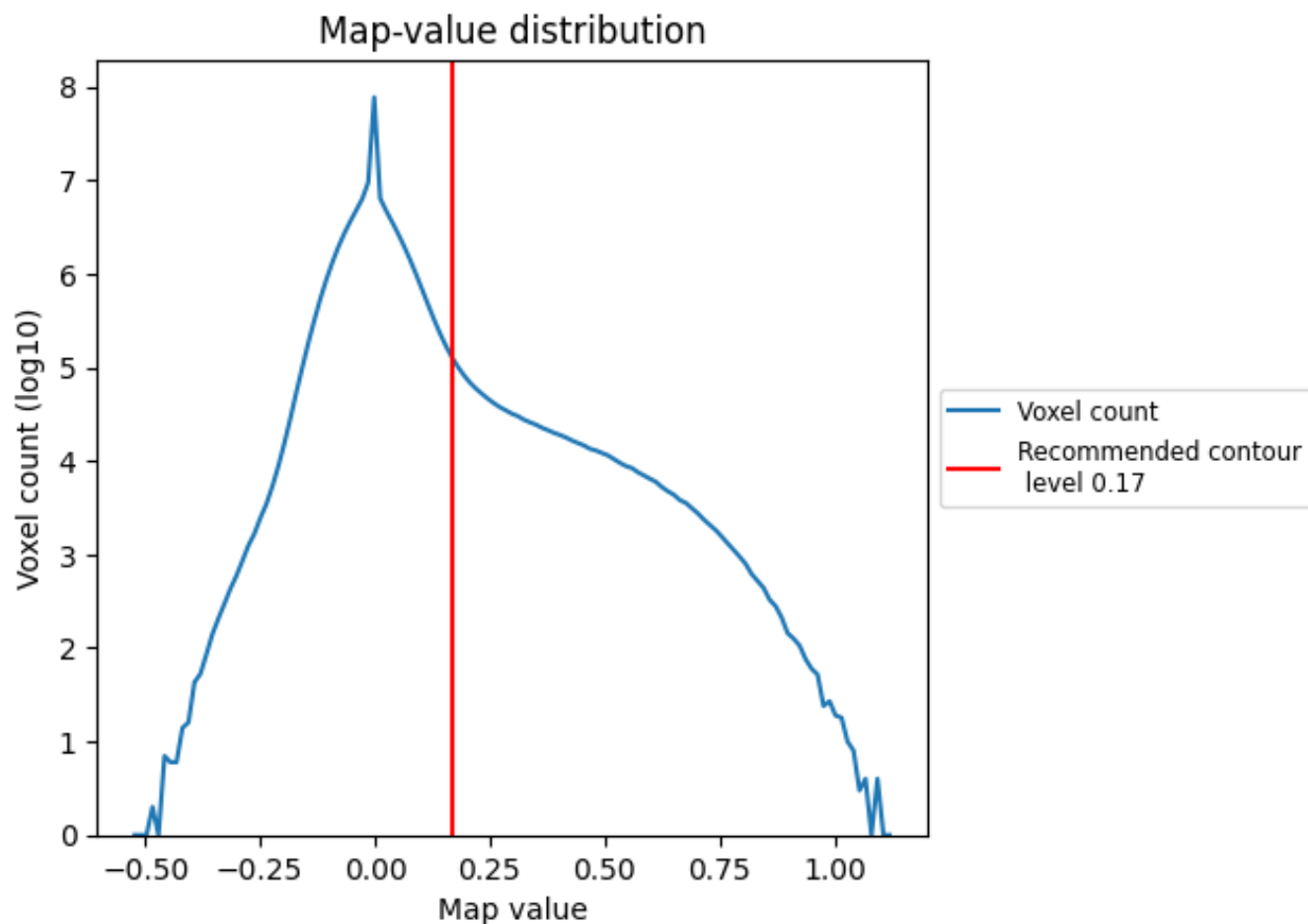
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

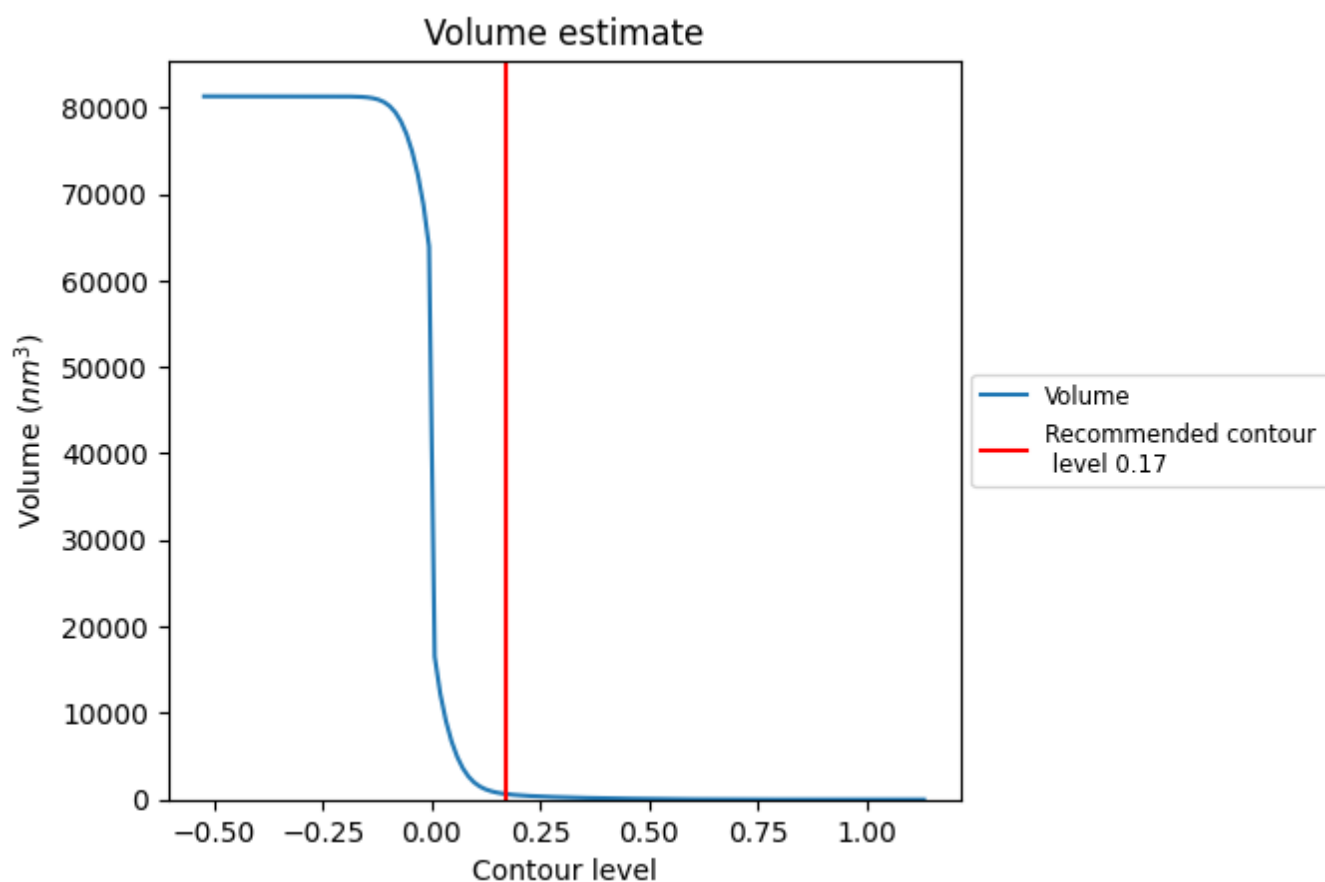
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

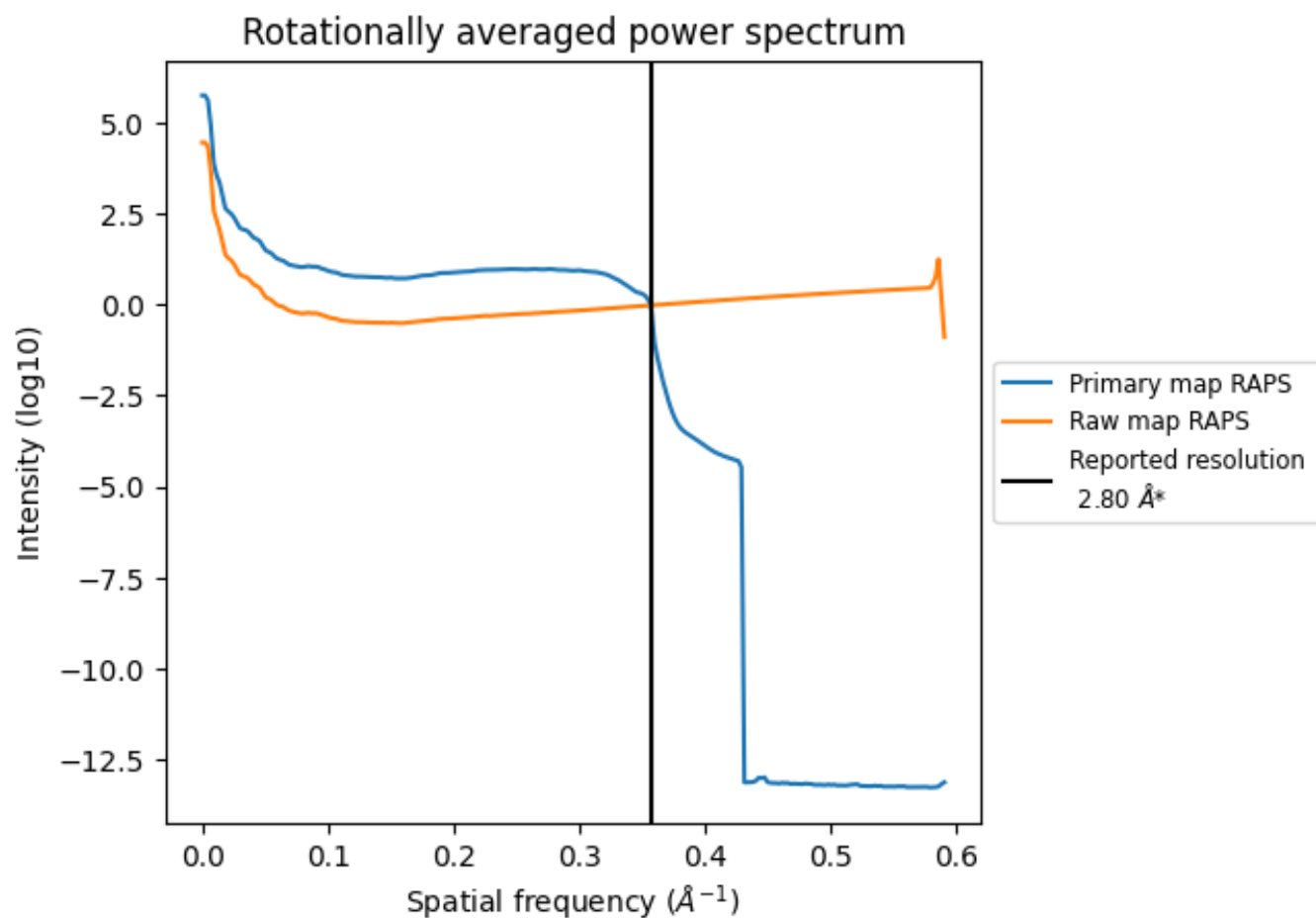
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 652 nm³; this corresponds to an approximate mass of 589 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

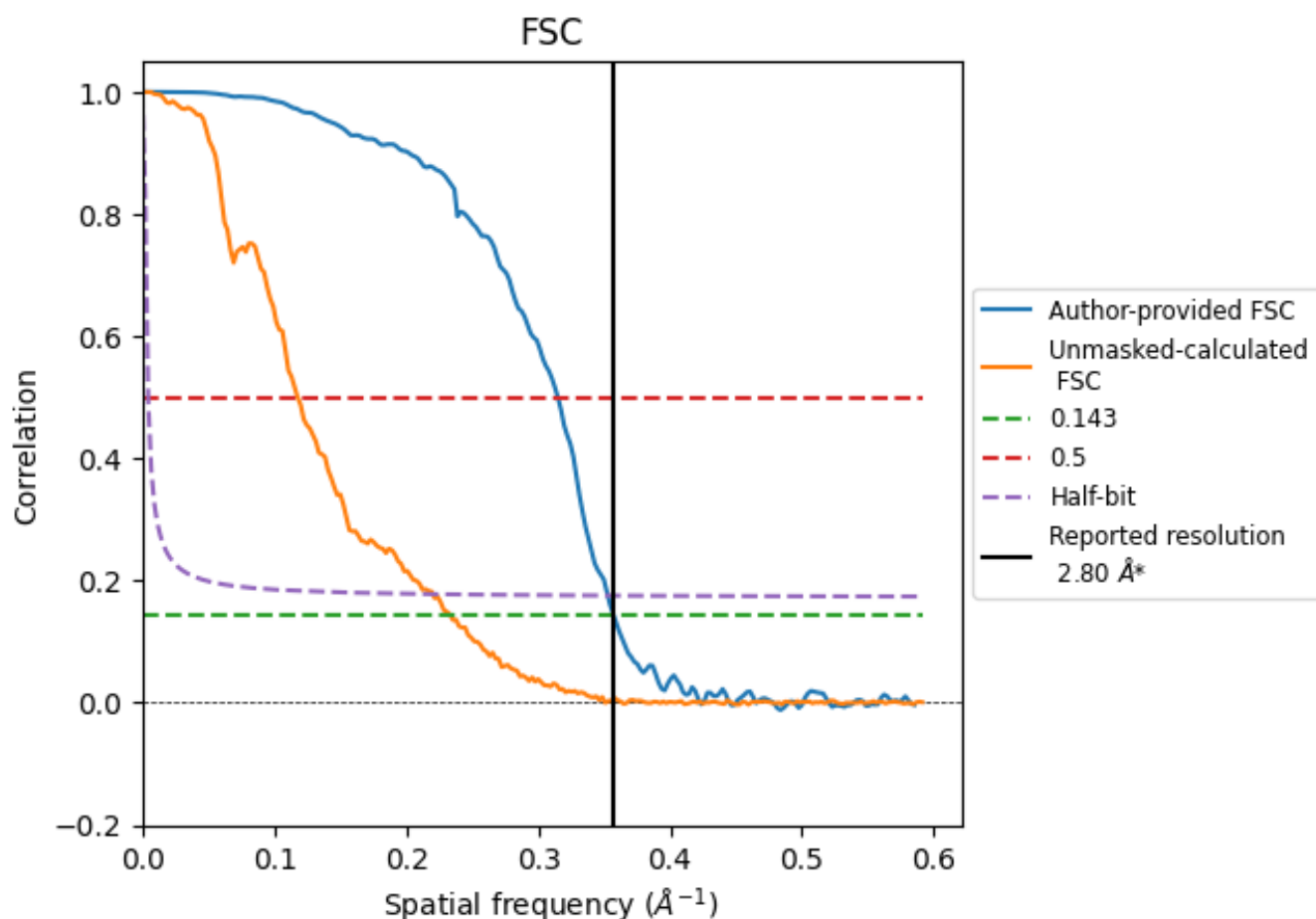


*Reported resolution corresponds to spatial frequency of 0.357 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.357 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

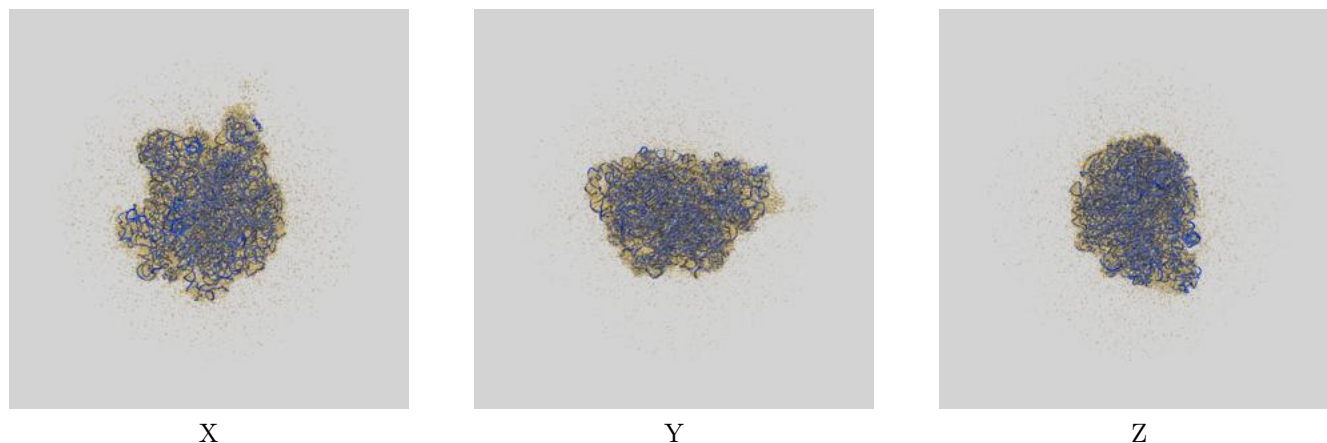
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.80	-	-
Author-provided FSC curve	2.80	3.17	2.84
Unmasked-calculated*	4.28	8.49	4.54

*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 4.28 differs from the reported value 2.8 by more than 10 %

9 Map-model fit [i](#)

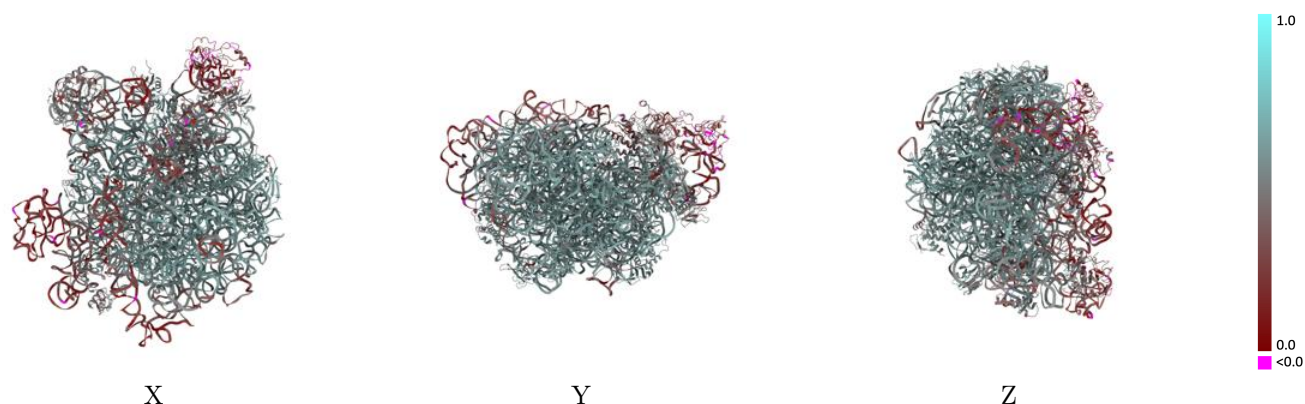
This section contains information regarding the fit between EMDB map EMD-43476 and PDB model 8VR4. Per-residue inclusion information can be found in section [3](#) on page [11](#).

9.1 Map-model overlay [i](#)



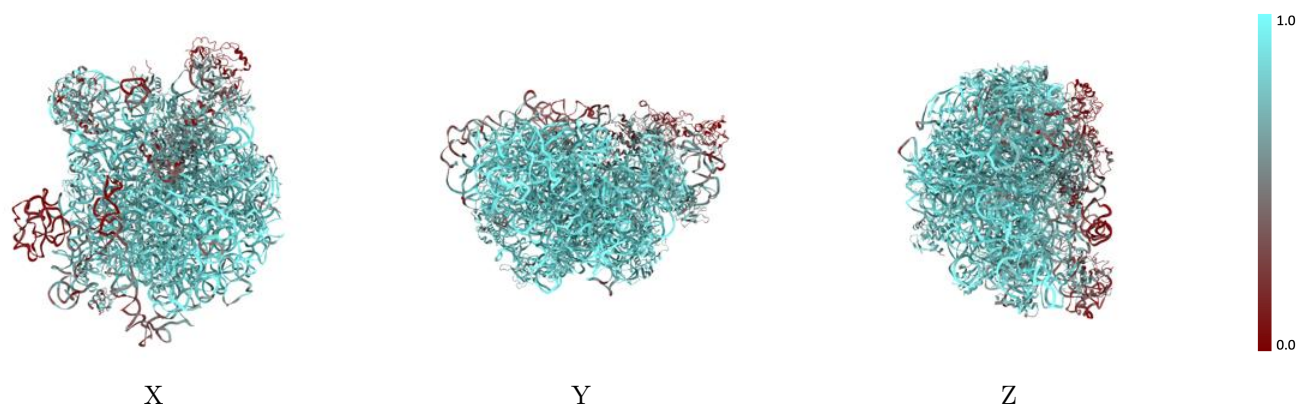
The images above show the 3D surface view of the map at the recommended contour level 0.17 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



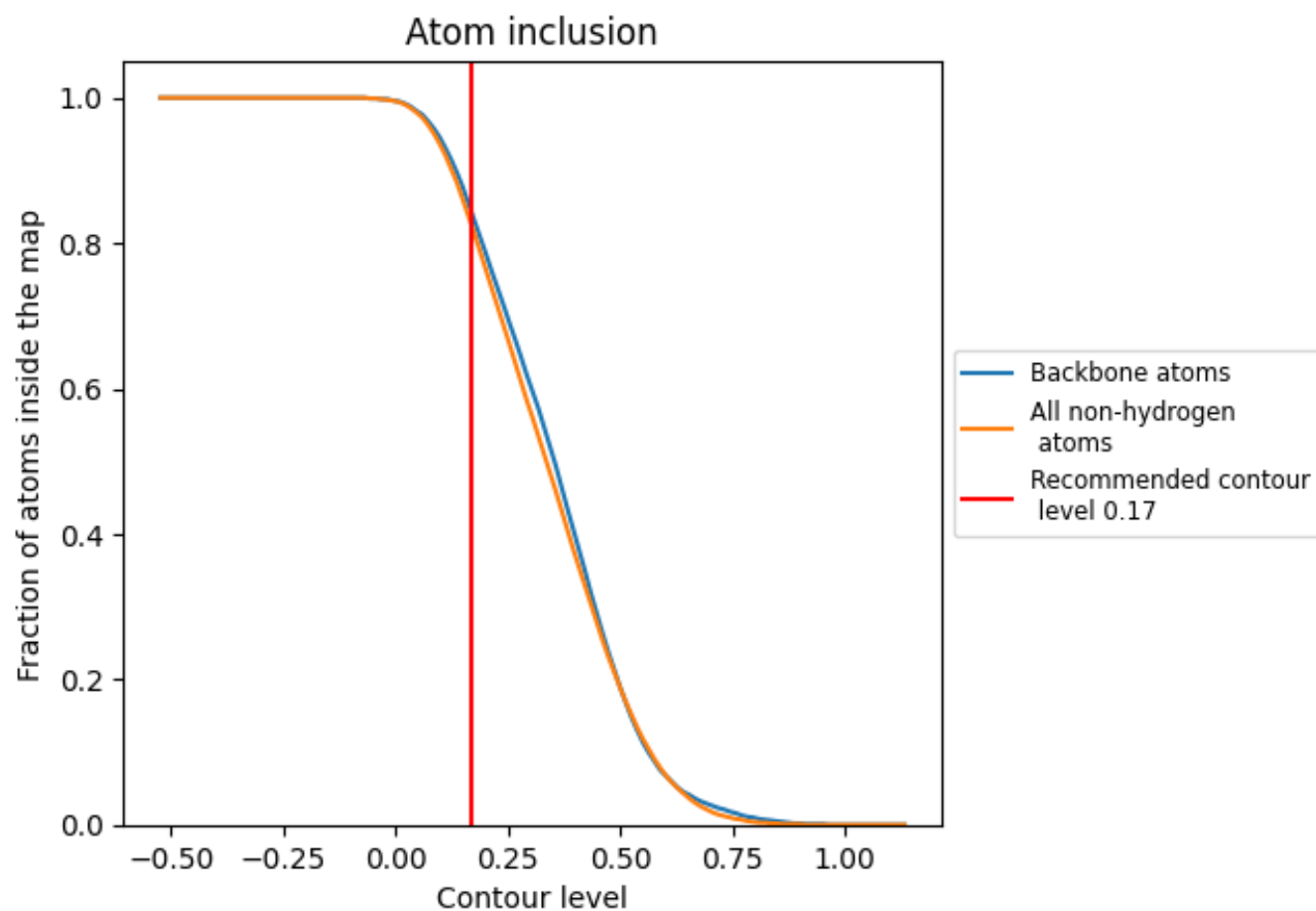
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.17).

9.4 Atom inclusion [i](#)



At the recommended contour level, 84% of all backbone atoms, 82% 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 (0.17) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8230	 0.5140
2	 0.8840	 0.5990
3	 0.9500	 0.6050
4	 0.4390	 0.3530
A	 0.8480	 0.5100
B	 0.8970	 0.5240
C	 0.8860	 0.5910
D	 0.9020	 0.5890
E	 0.8550	 0.5780
F	 0.5290	 0.4140
G	 0.7110	 0.4890
H	 0.5750	 0.4550
J	 0.1260	 0.1600
K	 0.9200	 0.6000
L	 0.8660	 0.5860
M	 0.8770	 0.5880
N	 0.8720	 0.5920
O	 0.9090	 0.5840
P	 0.8040	 0.5300
Q	 0.8120	 0.5710
R	 0.9210	 0.5950
S	 0.9010	 0.6020
T	 0.9010	 0.5970
U	 0.8380	 0.5670
V	 0.8010	 0.5400
W	 0.7070	 0.5300
X	 0.9010	 0.6020
Y	 0.8830	 0.5780
Z	 0.8260	 0.5570
b	 0.9050	 0.5950
c	 0.8520	 0.5740
d	 0.9430	 0.6020
e	 0.9400	 0.6090
f	 0.9230	 0.6000
g	 0.3360	 0.3370

