



Full wwPDB EM Validation Report ⓘ

May 20, 2026 – 10:28 PM JST

PDB ID : 9UZK / pdb_00009uzk
EMDB ID : EMD-64644
Title : EMCV IRES captured on mammalian 40S with initiator tRNA
Authors : Das, D.; Hussain, T.
Deposited on : 2025-05-16
Resolution : 4.60 Å(reported)
Based on initial models : 8OZ0, ., 6YAN

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

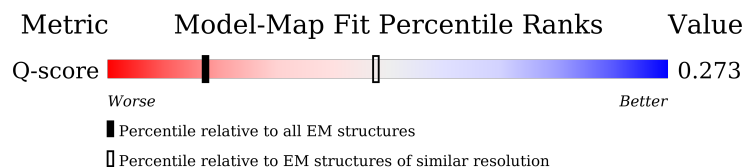
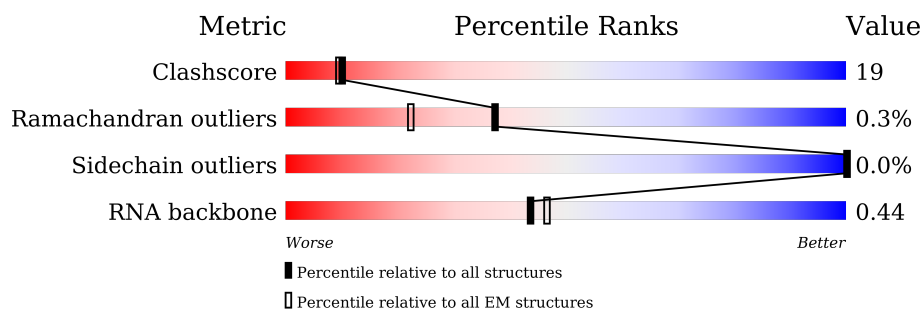
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 4.60 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.









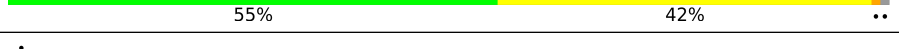
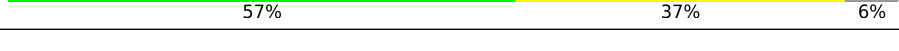
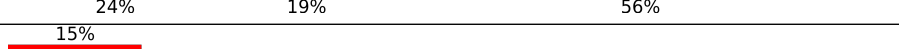
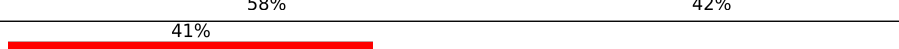
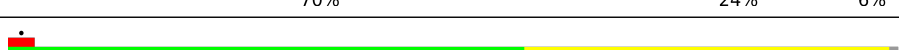

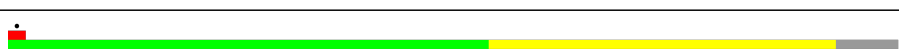

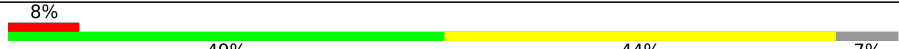





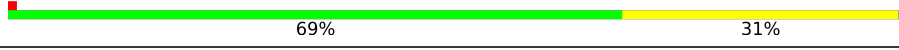
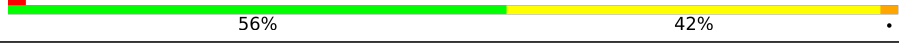



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	2407 (4.10 - 5.10)

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	1863	
2	C	295	
3	D	264	


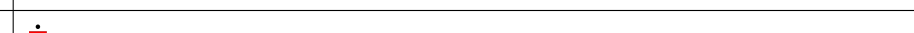
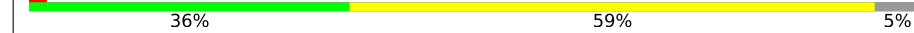

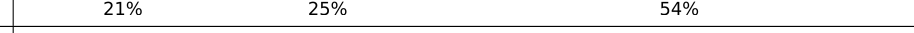

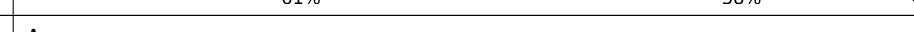
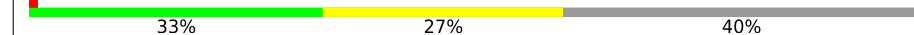
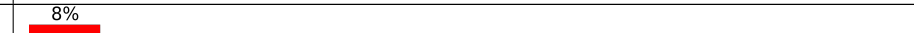
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Mol	Chain	Length	Quality of chain
4	E	226	
5	F	243	
6	G	263	
7	H	204	
8	I	249	
9	J	194	
10	K	208	
11	L	194	
12	M	225	
13	N	158	
14	O	132	
15	P	151	
16	Q	168	
17	R	145	
18	S	146	
19	T	135	
20	U	152	
21	V	141	
22	W	119	
23	X	83	
24	Y	130	
25	Z	143	
26	a	126	
27	b	115	
28	c	84	

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Mol	Chain	Length	Quality of chain
29	d	64	
30	e	56	
31	f	156	
32	g	317	
33	h	125	
34	i	59	
35	l	25	
36	y	75	
37	z	93	

2 Entry composition [i](#)

There are 37 unique types of molecules in this entry. The entry contains 80043 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
1	2	1744	Total	C	N	O	P	0	0
			37194	16608	6662	12184	1740		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
2	C	208	Total	C	N	O	S	0	0
			1642	1045	289	300	8		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
3	D	215	Total	C	N	O	S	0	0
			1741	1107	309	310	15		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
4	E	222	Total	C	N	O	S	0	0
			1721	1114	295	303	9		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
5	F	227	Total	C	N	O	S	0	0
			1764	1124	317	315	8		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
6	G	263	Total	C	N	O	S	0	0
			2083	1329	385	359	10		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
7	H	191	Total	C	N	O	S	0	0
			1509	943	286	273	7		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
8	I	237	Total	C	N	O	S	0	0
			1923	1200	387	329	7		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
9	J	190	Total	C	N	O	S	0	0
			1530	975	281	273	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
10	K	206	Total	C	N	O	S	0	0
			1679	1054	329	291	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
11	L	182	Total	C	N	O	S	0	0
			1498	952	300	244	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
12	M	98	Total	C	N	O	S	0	0
			827	539	148	134	6		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
M	-30	THR	ALA	conflict	UNP A0AAG1W9A6

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

Mol	Chain	Residues	Atoms					AltConf	Trace
13	N	158	Total	C	N	O	S	0	0
			1296	827	241	221	7		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
14	O	124	Total	C	N	O	S	0	0
			958	600	170	179	9		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
15	P	150	Total	C	N	O	S	0	0
			1208	773	229	205	1		

- Molecule 16 is a protein called Ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	Q	136	Total	C	N	O	S	0	0
			1016	621	199	190	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
17	R	135	Total	C	N	O	S	0	0
			1111	704	211	189	7		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
18	S	141	Total	C	N	O	S	0	0
			1123	715	212	193	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
19	T	126	Total	C	N	O	S	0	0
			1019	639	188	187	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
20	U	142	Total	C	N	O	S	0	0
			1172	733	239	199	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
21	V	141	Total	C	N	O	S	0	0
			1113	701	213	196	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
22	W	104	Total	C	N	O	S	0	0
			822	514	156	148	4		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
23	X	82	Total	C	N	O	S	0	0
			619	378	117	119	5		

There are 5 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
X	3	SER	ASN	conflict	UNP G1TM82
X	4	ASN	ASP	conflict	UNP G1TM82
X	33	PRO	GLN	conflict	UNP G1TM82
X	50	SER	PHE	conflict	UNP G1TM82
X	76	HIS	ASP	conflict	UNP G1TM82

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Z	142	Total	C	N	O	S	0	0
			1106	698	220	184	4		

- Molecule 26 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	a	126	Total	C	N	O	S	0	0
			1022	645	198	174	5		

- Molecule 27 is a protein called Small ribosomal subunit protein eS26.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	b	99	Total	C	N	O	S	0	0
			789	491	162	130	6		

- Molecule 28 is a protein called Small ribosomal subunit protein eS27.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	c	84	Total	C	N	O	S	0	0
			659	413	122	116	8		

- Molecule 29 is a protein called Small ribosomal subunit protein eS28.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	d	64	Total	C	N	O	S	0	0
			507	308	102	95	2		

- Molecule 30 is a protein called Small ribosomal subunit protein uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	e	53	Total	C	N	O	S	0	0
			445	278	90	72	5		

- Molecule 31 is a protein called Ubiquitin-ribosomal protein eS31 fusion protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	f	71	Total	C	N	O	S	0	0
			581	367	109	98	7		

- Molecule 32 is a protein called Small ribosomal subunit protein RACK1.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	g	313	Total	C	N	O	S	0	0
			2436	1535	424	465	12		

- Molecule 33 is a protein called Small ribosomal subunit protein eS25.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	h	75	Total	C	N	O	S	0	0
			598	382	111	104	1		

- Molecule 34 is a protein called Small ribosomal subunit protein eS30.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	i	59	Total	C	N	O	S	0	0
			473	293	104	75	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
35	l	25	Total	C	N	O	S	0	0
			240	145	64	28	3		

- Molecule 36 is a RNA chain called Initiator tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	y	75	Total	C	N	O	P	0	0
			1604	717	298	515	74		

- Molecule 37 is a RNA chain called EMCV IRES.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	z	93	Total	C	N	O	P	0	0
			1981	885	361	642	93		

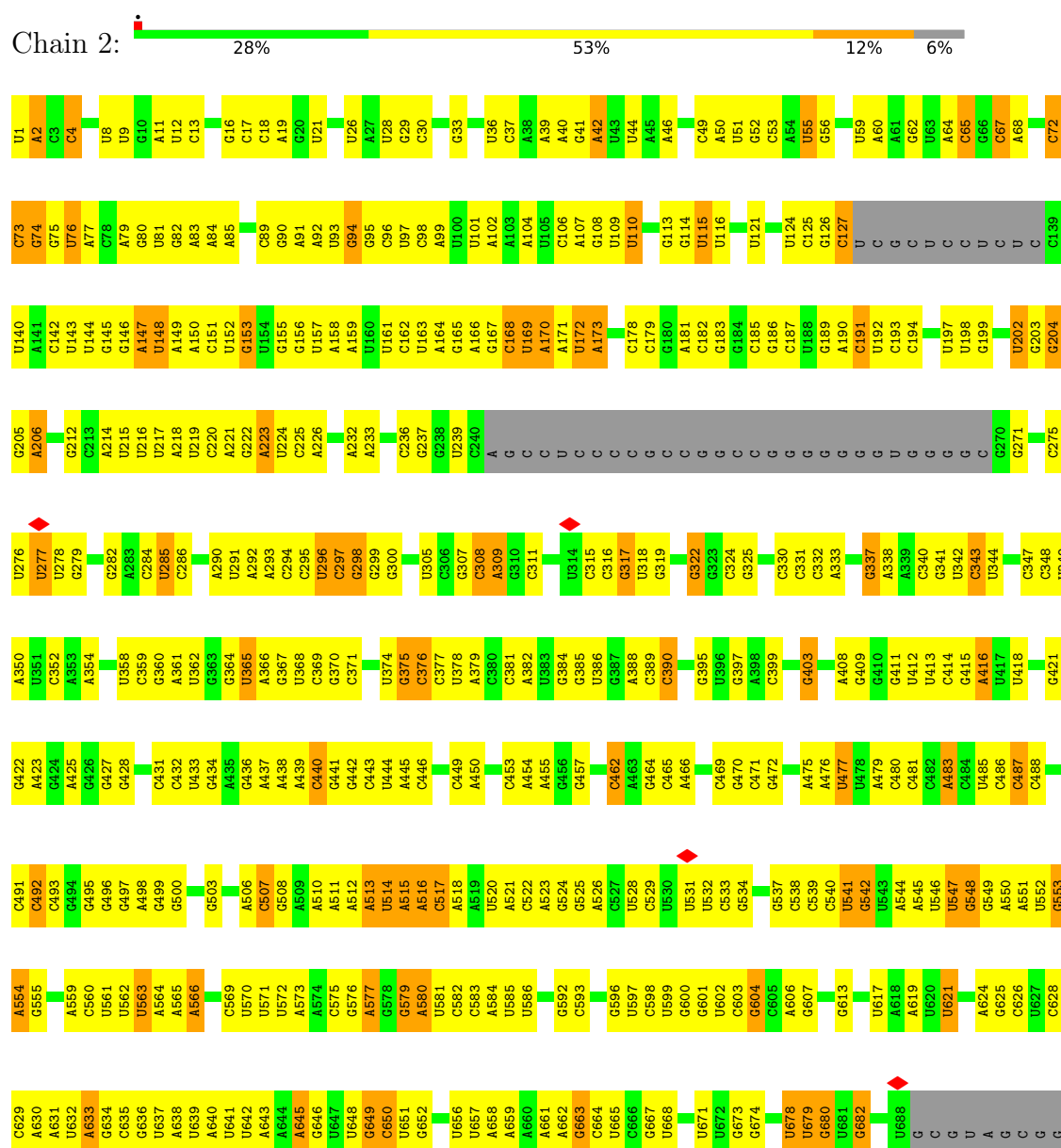
There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
z	831	A	-	expression tag	GB 485965777
z	832	A	-	expression tag	GB 485965777
z	833	U	-	expression tag	GB 485965777
z	834	A	-	expression tag	GB 485965777
z	835	U	-	expression tag	GB 485965777
z	836	G	-	expression tag	GB 485965777
z	837	G	-	expression tag	GB 485965777
z	838	C	-	expression tag	GB 485965777

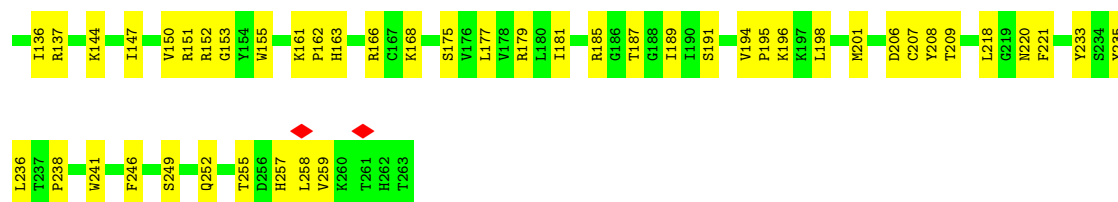
3 Residue-property plots

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

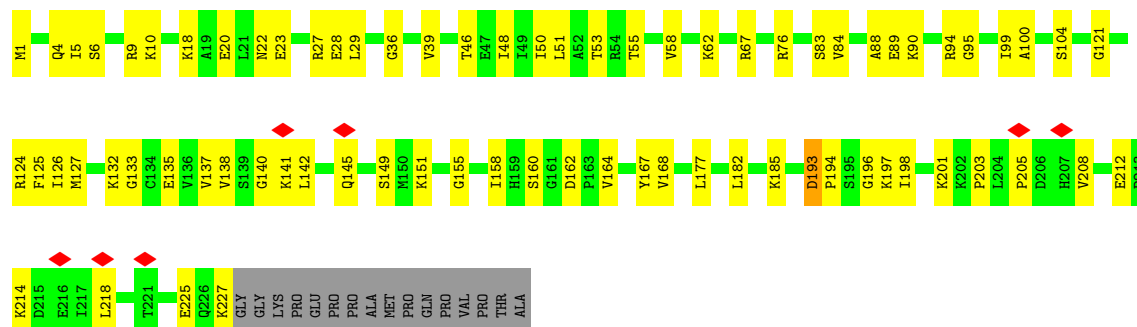
• Molecule 1: 18S ribosomal RNA



A1636	G1668	U1501	U1437	G1371	C1299	I1236	U1169	G1100	A1031	U961	C896	G828	G
U1637	C1669	A1502	U1438	A1372	U1300	I1237	A1169	G1101	A1032	U965	G897	C829	C
U1638	G1570	G1503	C1439	U1373	C1301	U1238	U1173	C1102	G1033	G966	G898	C830	G
C1639	G1571	U1440	U1440	A1374	U1304	U1239	U1174	G1103	C1034	C899	A899	C831	G
C1640	G1572	U1441	U1305	A1375	C1305	U1240	G1175	C1104	C1035	C967	U900	G832	U
C1641	U1573	A1442	U1306	C1376	U1306	U1241	C1176	C1105	U1041	A968	C901	A833	C
A1642	G1443	U1443	C1307	G1377	C1307	G1241	U1177	G1106	U1042	C969	U902	G834	C
G1643	A1444	U1444	G1308	A1382	U1308	U1244	A1177	U1107	U1043	C970	G903	C835	G
U1644	G1445	G1510	C1309	U1378	A1309	C1245	A1178	U1108	C1043	G971	A904	C836	G
A1645	G1446	G1511	A1309	A1383	C1456	U1246	G1179	A1109	G1044	G972	G905	C837	C
U1646	G1447	G1512	U1314	A1384	U1314	A1247	G1180	U1110	A1045	U976	C907	C838	G
A1647	A1448	C1513	U1315	U1385	U1315	A1248	C1181	U1111	C1049	A977	C908	C839	C
U1648	U1514	U1386	G1314	U1387	G1314	G1248	U1182	U1112	G1050	G978	U910	U840	G
A1649	U1515	C1387	U1315	C1387	U1315	A1249	G1183	C1113	A1051	A979	G911	A843	A
A1584	C1516	U1388	G1316	U1388	G1316	G1250	A1184	U1052	C1053	C980	U911	U844	G
C1585	A1517	C1389	G1317	U1389	G1317	G1251	A1185	C1054	A912	G981	U913	A845	U
C1586	U1518	G1390	U1318	G1390	U1318	G1252	A1186	C1055	U914	U914	U914	C846	C
G1587	G1519	C1391	G1319	U1391	U1319	G1253	C1187	C1056	C984	C984	U915	C847	C
C1588	U1520	A1392	G1320	U1392	G1320	A1254	U1188	C1121	C985	C985	A916	C848	C
A1589	U1521	U1393	G1321	U1393	G1321	A1255	U1189	C1122	C986	C986	G917	U853	C
U1590	C1522	C1394	G1322	U1394	G1322	A1256	U1190	C1123	C987	C987	G917	U854	C
C1591	U1523	C1395	G1323	U1395	G1323	C1257	A1191	C1124	C988	C988	A918	U855	C
G1592	G1524	U1396	G1324	U1396	G1324	C1258	A1192	C1125	C989	C989	G919	A854	C
U1593	C1525	C1463	U1325	U1397	U1325	U1259	G1193	G1126	U1060	U999	G920	G855	C
G1594	U1526	A1465	G1326	A1398	U1326	C1260	G1194	G1127	C1061	A993	G921	G856	C
U1595	C1527	C1466	G1327	C1399	U1327	A1261	A1195	U1127	U1062	A994	A922	G784	C
A1596	U1528	C1467	A1328	U1400	U1328	C1262	A1196	C1128	C1063	G995	G923	U857	C
U1597	C1529	G1468	G1331	G1401	G1331	G1263	A1197	C1129	C1064	U999	G924	U858	C
G1598	U1530	C1469	C1332	G1402	C1332	C1264	U1198	G1130	U1065	U999	G925	U859	C
A1601	C1531	A1470	C1333	U1403	C1333	C1265	U1199	C1131	A1066	U999	G926	U860	C
A1602	U1532	G1471	U1338	U1404	U1338	C1266	A1200	C1134	U1067	U999	G927	U861	C
U1603	C1533	A1472	U1339	U1405	U1339	C1267	G1202	C1135	U1068	U999	G928	U862	C
C1604	U1534	G1473	U1340	U1406	U1340	G1270	G1203	C1136	C1070	U999	G929	U863	C
U1671	G1541	U1474	C1351	C1408	C1351	A1272	A1204	G1137	C1071	U999	G930	U864	C
A1609	C1542	G1475	G1352	G1409	U1343	C1273	A1205	G1138	G1072	U999	G931	U865	C
U1610	U1543	A1476	C1353	A1410	G1344	A1274	G1206	A1139	A1073	U999	G932	U866	C
U1611	G1544	G1477	U1354	C1411	G1347	G1276	G1207	A1140	U1076	U999	G933	U867	C
G1612	U1545	C1478	U1355	C1412	G1348	G1277	C1211	A1141	A1077	U999	G934	U868	C
C1613	G1546	A1479	C1356	C1413	U1349	A1278	U1212	C1142	A1079	U999	G935	U869	C
A1614	U1547	U1482	U1357	C1414	G1350	C1279	A1213	C1143	A1080	U999	G936	U870	C
A1615	C1548	A1483	U1358	C1415	C1351	C1280	A1214	A1144	U1011	U999	G937	U871	C
U1616	U1549	U1484	C1352	G1418	G1352	G1281	C1215	A1145	U1012	U999	G938	U872	C
U1617	U1550	U1485	C1353	C1419	U1353	G1282	A1216	A1146	U1013	U999	G939	U873	C
A1618	A1551	G1486	U1354	G1420	U1354	A1283	G1220	U1150	C1086	U999	G940	U874	C
U1619	C1552	G1487	U1355	G1421	U1355	U1284	U1221	U1151	C1087	U999	G941	U875	C
C1622	U1553	U1488	C1356	G1422	U1356	U1285	U1222	G1152	U1017	U999	G942	U876	C
C1624	U1554	C1489	U1357	G1423	U1357	U1286	U1223	G1153	U1018	U999	G943	U877	C
A1625	U1555	U1490	C1358	G1424	U1358	A1287	U1224	G1154	A1019	U999	G944	U878	C
A1626	G1558	G1491	U1360	G1425	U1360	U1288	U1225	G1155	A1020	U999	G945	U879	C
U1627	C1559	U1492	G1361	G1426	U1361	A1289	U1226	U1156	U1021	U999	G946	U880	C
U1628	U1560	G1493	C1362	U1427	U1362	G1290	A1224	U1157	C1022	U999	G947	U881	C
C1703	G1561	A1494	G1363	U1428	U1363	A1291	U1225	G1160	U1023	U999	G948	U882	C
U1629	U1562	U1495	A1365	C1430	U1365	G1294	U1226	G1161	G1093	U999	G949	U883	C
C1630	C1563	C1431	A1366	C1431	U1366	A1295	U1227	G1162	C1094	U999	G950	U884	C
G1631	U1564	C1432	U1367	C1432	U1367	U1296	U1228	G1163	G1095	U999	G951	U885	C
U1707	G1565	C1433	U1368	C1433	U1368	U1297	U1229	G1164	A1096	U999	G952	U886	C
U1708	U1566	C1434	C1369	U1297	U1369	A1297	G1232	G1165	U1097	U999	G953	U887	C
U1709	C1567	U1500	C1370	C1436	U1370	G1298	G1233	G1166	G1098	U999	G954	U888	C
A1635	C1567	U1500	C1370	C1436	U1370	G1298	G1233	G1167	C1099	U999	G955	U889	C



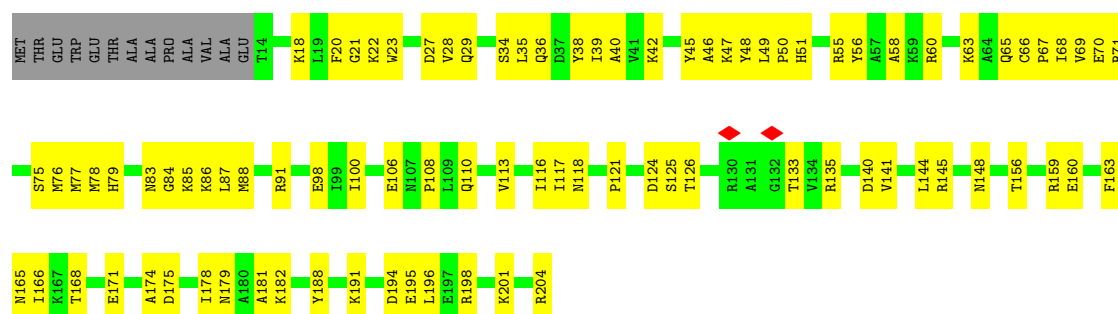
• Molecule 5: Small ribosomal subunit protein uS3



• Molecule 6: Small ribosomal subunit protein eS4

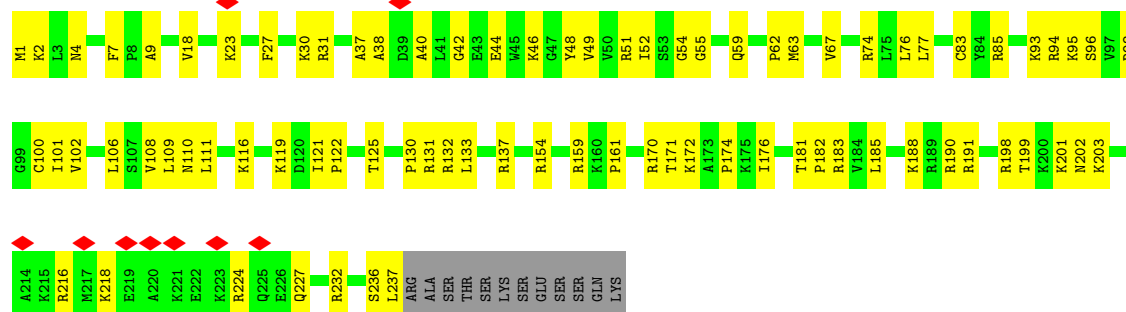


• Molecule 7: Small ribosomal subunit protein uS7



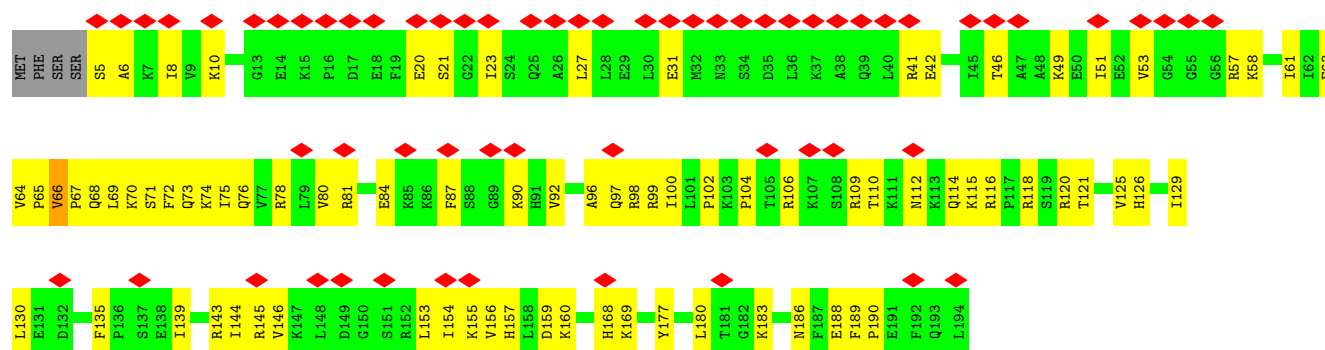
• Molecule 8: Small ribosomal subunit protein eS6

Chain I: 



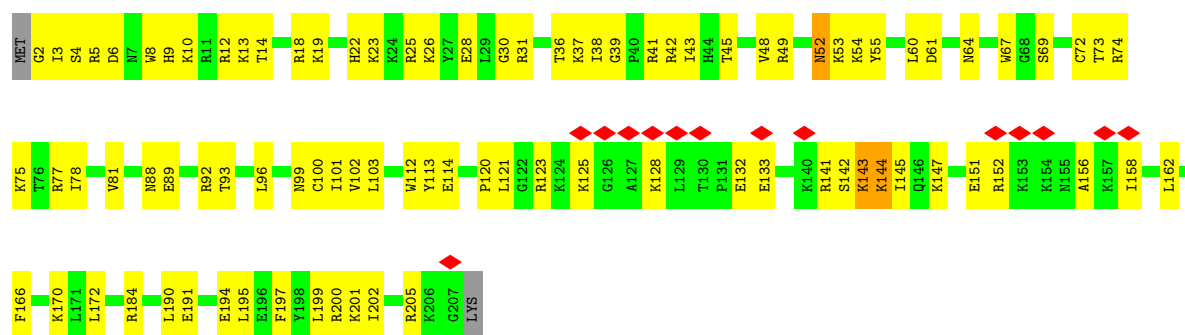
• Molecule 9: Small ribosomal subunit protein eS7

Chain J: 



• Molecule 10: Small ribosomal subunit protein eS8

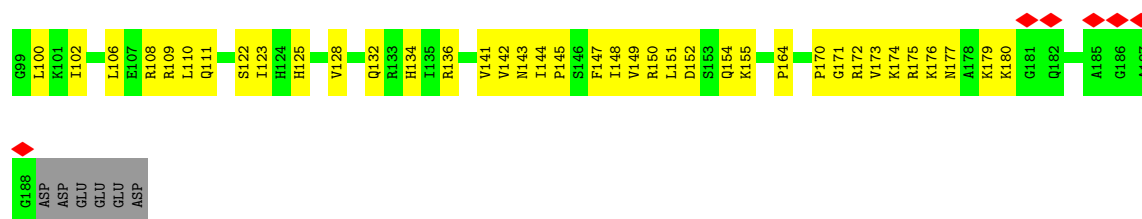
Chain K: 



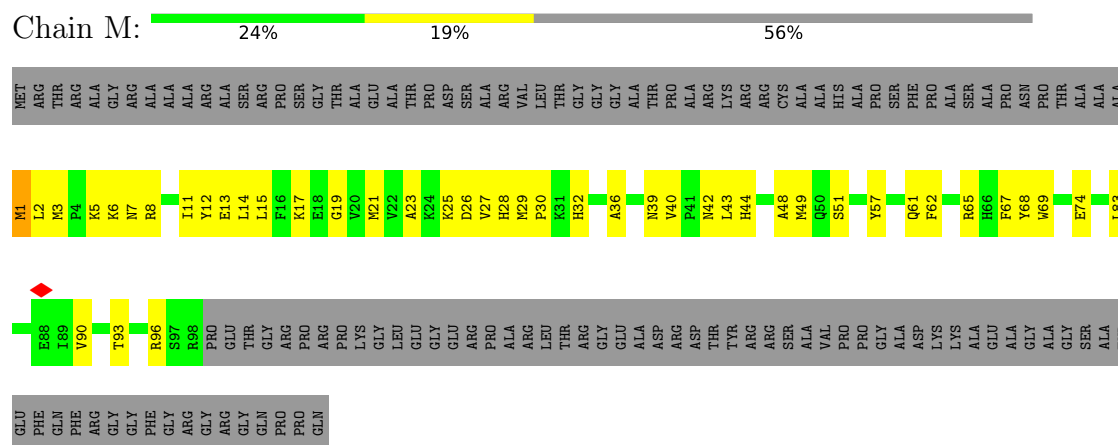
• Molecule 11: Small ribosomal subunit protein uS4

Chain L: 

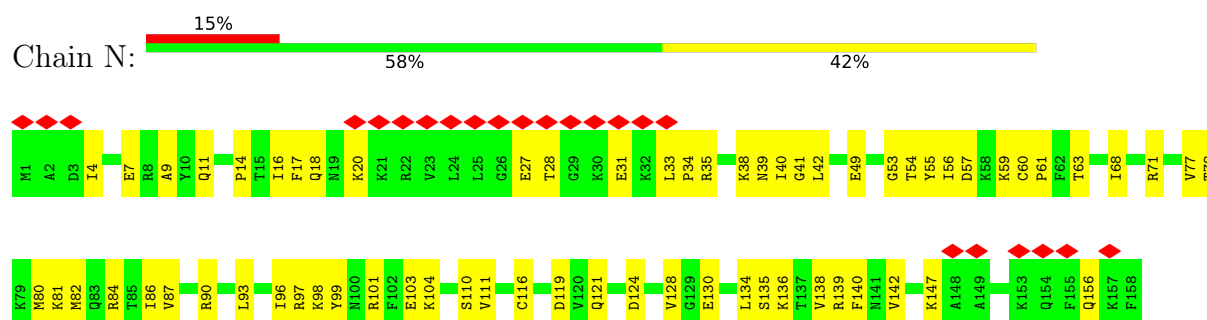




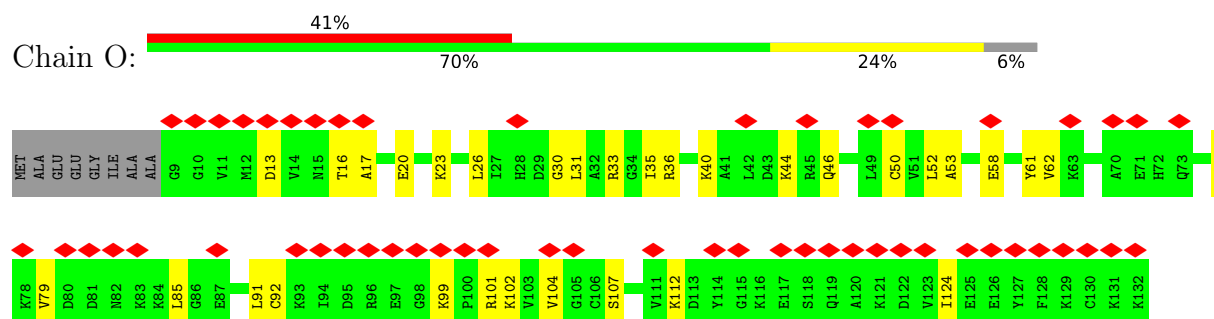
- Molecule 12: Small ribosomal subunit protein eS10



- Molecule 13: Small ribosomal subunit protein uS17



- Molecule 14: Small ribosomal subunit protein eS12

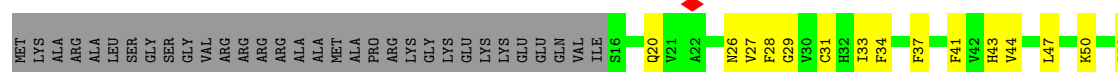


- Molecule 15: Small ribosomal subunit protein uS15





• Molecule 16: Ribosomal protein S14



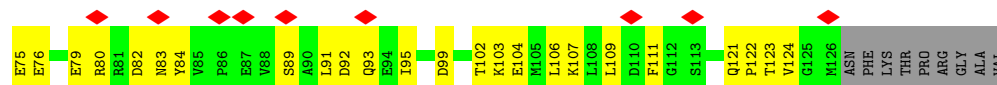
• Molecule 17: Small ribosomal subunit protein uS19



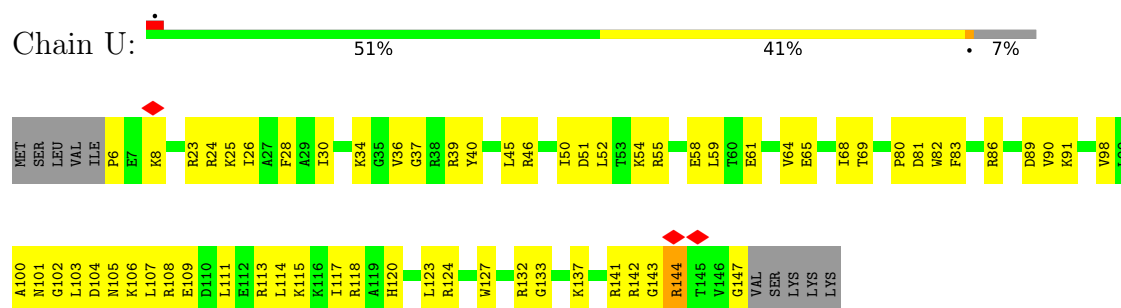
• Molecule 18: Small ribosomal subunit protein uS9



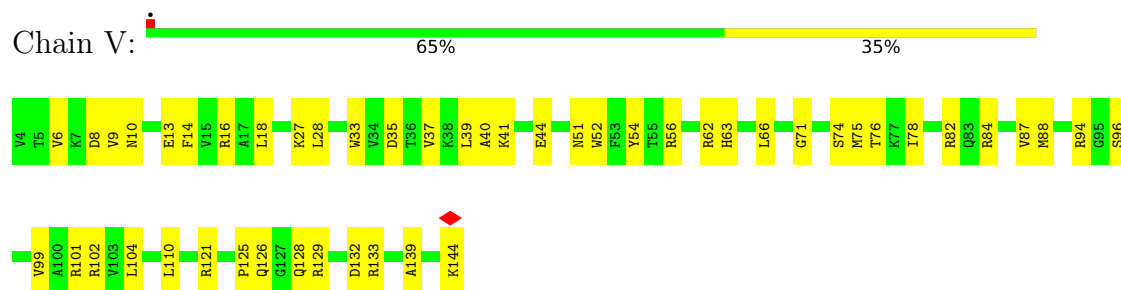
• Molecule 19: Small ribosomal subunit protein eS17



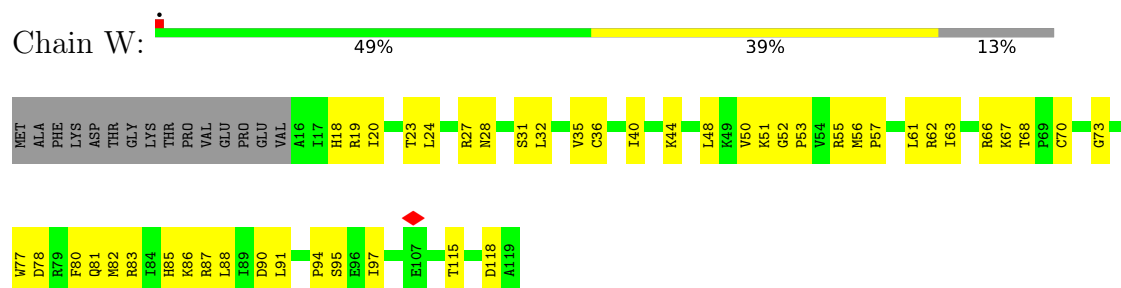
- Molecule 20: Small ribosomal subunit protein uS13



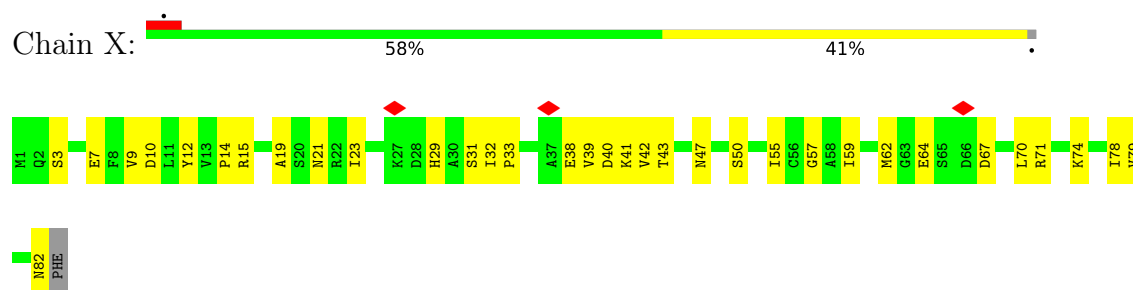
- Molecule 21: Small ribosomal subunit protein eS19



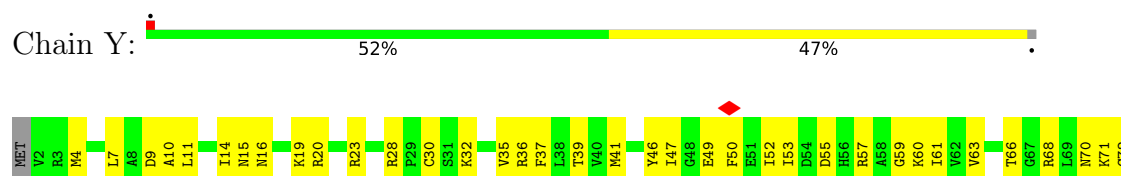
- Molecule 22: Small ribosomal subunit protein uS10

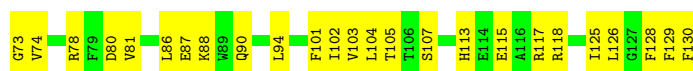


- Molecule 23: Small ribosomal subunit protein eS21



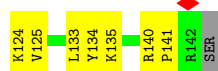
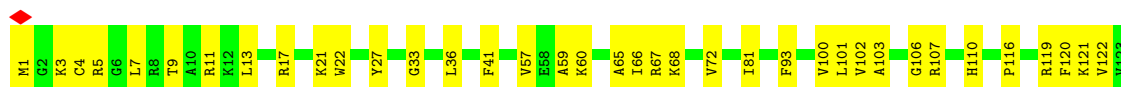
- Molecule 24: Small ribosomal subunit protein uS8





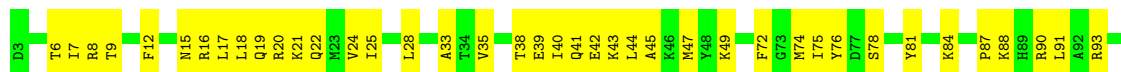
- Molecule 25: Small ribosomal subunit protein uS12

Chain Z: 69% 31%



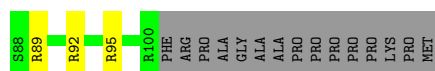
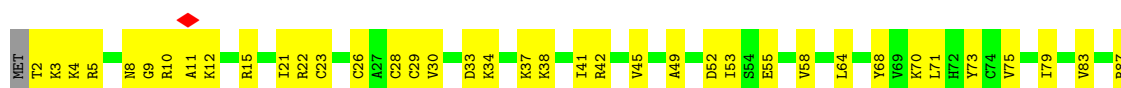
- Molecule 26: 40S ribosomal protein S24

Chain a: 56% 42%



- Molecule 27: Small ribosomal subunit protein eS26

Chain b: 50% 36% 14%



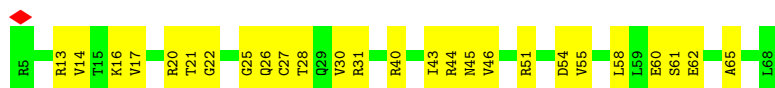
- Molecule 28: Small ribosomal subunit protein eS27

Chain c: 55% 45%



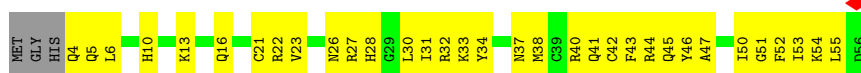
- Molecule 29: Small ribosomal subunit protein eS28

Chain d: 59% 41%



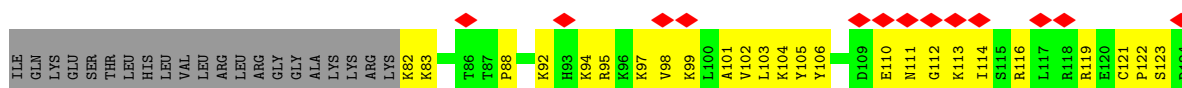
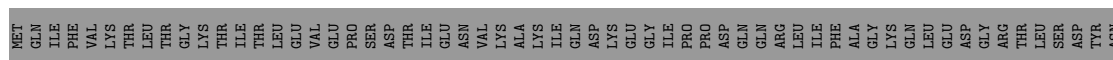
- Molecule 30: Small ribosomal subunit protein uS14

Chain e: 



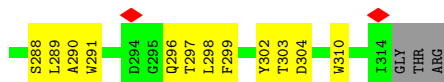
- Molecule 31: Ubiquitin-ribosomal protein eS31 fusion protein

Chain f: 



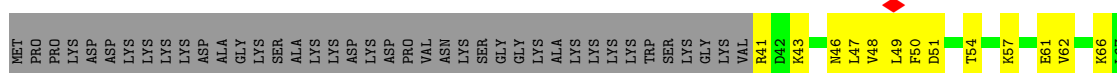
- Molecule 32: Small ribosomal subunit protein RACK1

Chain g: 

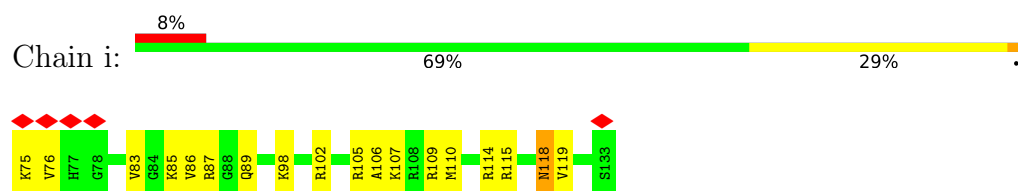


- Molecule 33: Small ribosomal subunit protein eS25

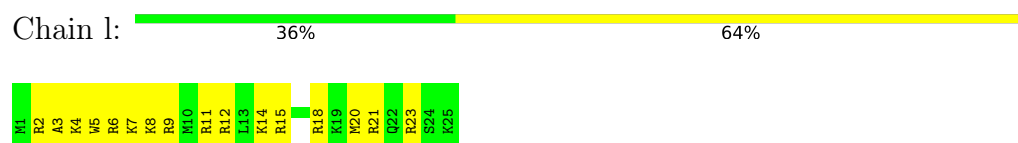
Chain h: 



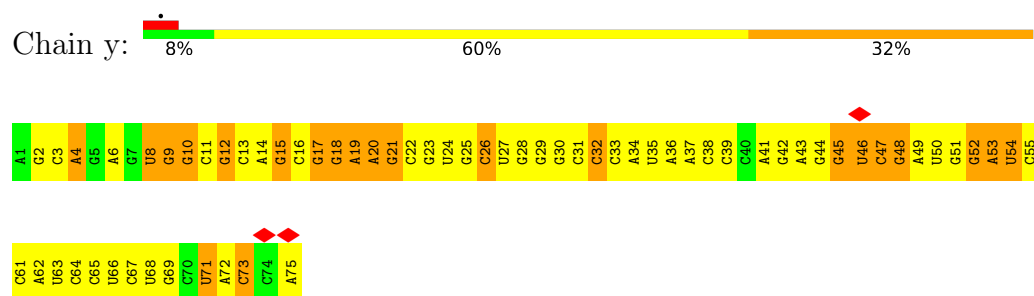
- Molecule 34: Small ribosomal subunit protein eS30



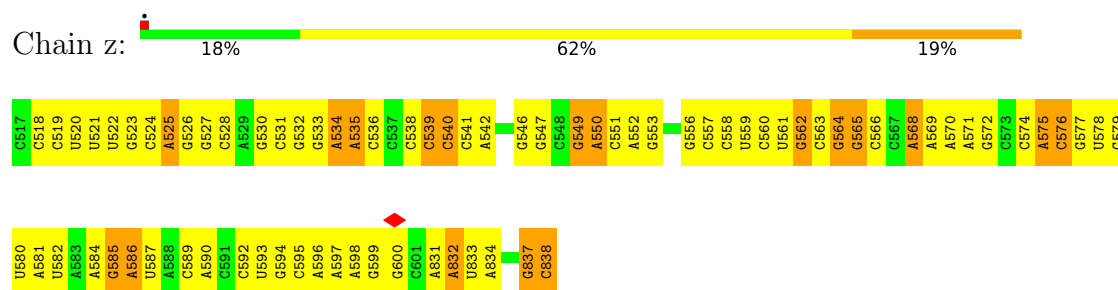
- Molecule 35: Small ribosomal subunit protein eS32



- Molecule 36: Initiator tRNA



- Molecule 37: EMCV IRES



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	55231	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/\text{\AA}^2$)	55	Depositor
Minimum defocus (nm)	1250	Depositor
Maximum defocus (nm)	2750	Depositor
Magnification	36000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.621	Depositor
Minimum map value	-0.247	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.022	Depositor
Recommended contour level	0.0811	Depositor
Map size (\AA)	467.99997, 467.99997, 467.99997	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.17, 1.17, 1.17	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	2	0.12	0/41584	0.29	0/64804
2	C	0.18	0/1679	0.47	0/2283
3	D	0.16	0/1769	0.46	0/2367
4	E	0.19	0/1757	0.43	0/2371
5	F	0.14	0/1792	0.44	2/2412 (0.1%)
6	G	0.15	0/2125	0.39	0/2856
7	H	0.16	0/1531	0.39	0/2059
8	I	0.11	0/1945	0.35	0/2587
9	J	0.17	0/1553	0.45	0/2079
10	K	0.14	0/1708	0.46	2/2278 (0.1%)
11	L	0.15	0/1522	0.41	0/2031
12	M	0.16	0/851	0.50	2/1147 (0.2%)
13	N	0.16	0/1319	0.41	0/1761
14	O	0.09	0/968	0.32	0/1296
15	P	0.13	0/1232	0.39	0/1656
16	Q	0.14	0/1029	0.42	0/1380
17	R	0.14	0/1132	0.46	0/1510
18	S	0.13	0/1141	0.38	0/1528
19	T	0.15	0/1031	0.46	0/1383
20	U	0.15	0/1190	0.47	0/1592
21	V	0.13	0/1133	0.35	0/1517
22	W	0.12	0/832	0.33	0/1117
23	X	0.13	0/626	0.42	0/839
24	Y	0.19	0/1051	0.45	0/1406
25	Z	0.14	0/1124	0.41	0/1500
26	a	0.20	0/1038	0.57	4/1377 (0.3%)
27	b	0.21	0/802	0.44	0/1076
28	c	0.22	0/673	0.50	2/902 (0.2%)
29	d	0.14	0/509	0.41	0/680
30	e	0.15	0/455	0.46	0/603
31	f	0.13	0/593	0.41	0/786
32	g	0.11	0/2493	0.34	0/3394
33	h	0.15	0/604	0.34	0/810
34	i	0.12	0/478	0.57	2/628 (0.3%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	l	0.14	0/241	0.41	0/305
36	y	0.13	0/1795	0.30	0/2798
37	z	0.11	0/2213	0.27	0/3442
All	All	0.13	0/85518	0.35	14/124560 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
3	D	0	1
9	J	0	1
18	S	0	1
26	a	0	2
All	All	0	5

There are no bond length outliers.

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
12	M	1	MET	CA-C-N	8.63	137.23	121.70
12	M	1	MET	C-N-CA	8.63	137.23	121.70
5	F	197	LYS	CA-C-N	7.29	134.83	121.70
5	F	197	LYS	C-N-CA	7.29	134.83	121.70
34	i	118	ASN	CA-C-N	6.48	133.36	121.70
34	i	118	ASN	C-N-CA	6.48	133.36	121.70
28	c	81	ARG	CA-C-N	6.45	133.31	121.70
28	c	81	ARG	C-N-CA	6.45	133.31	121.70
26	a	42	GLU	CA-CB-CG	5.86	125.81	114.10
10	K	143	LYS	CA-C-N	5.27	131.60	121.54
10	K	143	LYS	C-N-CA	5.27	131.60	121.54
26	a	42	GLU	N-CA-CB	5.25	117.93	110.16
26	a	101	LYS	CA-C-N	-5.03	116.45	122.44
26	a	101	LYS	C-N-CA	-5.03	116.45	122.44

There are no chirality outliers.

All (5) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
3	D	208	HIS	Peptide

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Mol	Chain	Res	Type	Group
9	J	66	VAL	Peptide
18	S	43	GLU	Peptide
26	a	102	THR	Peptide
26	a	103	SER	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	2	37194	0	18795	1207	0
2	C	1642	0	1646	97	0
3	D	1741	0	1815	82	0
4	E	1721	0	1812	69	0
5	F	1764	0	1863	58	0
6	G	2083	0	2189	98	0
7	H	1509	0	1563	75	0
8	I	1923	0	2088	63	0
9	J	1530	0	1627	83	0
10	K	1679	0	1760	77	0
11	L	1498	0	1608	72	0
12	M	827	0	854	35	0
13	N	1296	0	1374	59	0
14	O	958	0	993	26	0
15	P	1208	0	1294	58	0
16	Q	1016	0	1039	47	0
17	R	1111	0	1168	67	0
18	S	1123	0	1193	60	0
19	T	1019	0	1075	56	0
20	U	1172	0	1226	67	0
21	V	1113	0	1149	37	0
22	W	822	0	887	43	0
23	X	619	0	622	35	0
24	Y	1034	0	1080	70	0
25	Z	1106	0	1179	41	0
26	a	1022	0	1084	54	0
27	b	789	0	839	45	0
28	c	659	0	683	32	0
29	d	507	0	536	21	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
30	e	445	0	442	36	0
31	f	581	0	599	39	0
32	g	2436	0	2393	95	0
33	h	598	0	656	30	0
34	i	473	0	524	17	0
35	l	240	0	289	17	0
36	y	1604	0	816	61	0
37	z	1981	0	1011	74	0
All	All	80043	0	61771	2688	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 19.

All (2688) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:124:U:H3	1:2:330:C:N4	1.55	1.02
1:2:1704:G:H1	1:2:1818:A:H61	1.00	1.00
1:2:1751:G:H1	1:2:1769:U:H3	1.07	0.97
1:2:432:C:N4	1:2:439:A:H62	1.62	0.96
1:2:432:C:H42	1:2:439:A:N6	1.64	0.94
1:2:1743:G:H1	1:2:1780:U:H3	1.15	0.92
1:2:1836:C:OP2	35:l:4:LYS:NZ	2.03	0.91
1:2:874:G:H1	1:2:904:A:H2	1.04	0.91
1:2:1647:G:H1	1:2:1667:U:H3	0.98	0.91
1:2:116:U:H3	1:2:337:G:H1	0.99	0.90
10:K:142:SER:HA	10:K:145:ILE:HG13	1.54	0.89
9:J:63:PHE:HB3	9:J:97:GLN:HB2	1.55	0.88
6:G:182:MET:HE1	6:G:192:ILE:HG12	1.55	0.87
1:2:1704:G:H1	1:2:1818:A:N6	1.71	0.87
1:2:149:A:N6	1:2:169:U:C2	2.43	0.86
1:2:1394:G:H1	1:2:1444:A:H61	1.19	0.86
10:K:144:LYS:H	10:K:147:LYS:HE2	1.40	0.85
2:C:130:ASP:HB3	2:C:133:PRO:HG2	1.60	0.84
12:M:29:MET:HE2	12:M:32:HIS:HA	1.57	0.84
1:2:847:C:H5''	1:2:848:G:H5'	1.60	0.84
1:2:1472:A:N7	19:T:3:ARG:NH2	2.26	0.83
2:C:38:ILE:HD11	2:C:47:TYR:HB3	1.60	0.83
1:2:874:G:N1	1:2:904:A:C2	2.45	0.83
1:2:146:G:H1	1:2:173:A:H61	1.23	0.83
1:2:1095:G:H1	1:2:1129:A:H61	1.24	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:483:A:H61	1:2:500:G:H1'	1.43	0.82
2:C:203:PHE:O	2:C:205:ARG:NH2	2.13	0.82
1:2:189:G:H3'	10:K:141:ARG:HH12	1.44	0.81
1:2:826:A:OP2	1:2:842:G:N2	2.13	0.81
17:R:13:ARG:HD2	17:R:14:LYS:HB2	1.62	0.81
20:U:46:ARG:HD2	21:V:35:ASP:HB3	1.59	0.81
1:2:940:A:H61	1:2:978:G:H1	1.27	0.81
17:R:17:TYR:HA	20:U:91:LYS:HA	1.61	0.81
1:2:1226:C:HO2'	1:2:1660:G:H1	1.28	0.81
1:2:124:U:H3	1:2:330:C:H42	0.85	0.81
1:2:1012:U:OP1	28:c:20:LYS:NZ	2.15	0.80
1:2:1188:U:OP2	25:Z:119:ARG:NH2	2.13	0.80
1:2:953:A:H3'	1:2:954:G:H21	1.45	0.80
1:2:958:A:H5''	16:Q:66:ARG:HD2	1.63	0.80
1:2:1644:U:H3	1:2:1670:A:H2	1.27	0.80
28:c:42:LYS:HZ3	28:c:57:VAL:H	1.30	0.80
11:L:78:LEU:HD13	11:L:92:MET:HE1	1.62	0.80
1:2:1652:G:H1	1:2:1662:U:H3	1.30	0.79
1:2:1139:A:O3'	1:2:1351:C:N4	2.16	0.79
1:2:668:U:H3	1:2:1023:A:H62	1.27	0.78
9:J:78:ARG:HH12	9:J:81:ARG:HH11	1.29	0.78
9:J:84:GLU:HG3	9:J:92:VAL:HG12	1.66	0.78
25:Z:101:LEU:HD12	25:Z:124:LYS:HD2	1.66	0.78
1:2:432:C:H42	1:2:439:A:H62	0.83	0.77
2:C:122:LEU:HD21	2:C:144:THR:HG22	1.67	0.77
1:2:1450:A:H5''	19:T:3:ARG:HH12	1.50	0.77
1:2:1672:U:OP1	7:H:71:ARG:NH2	2.17	0.77
27:b:89:ARG:HA	27:b:92:ARG:HE	1.49	0.77
1:2:59:U:H5'	1:2:493:C:H41	1.50	0.76
1:2:1408:C:H2'	1:2:1409:G:C8	2.21	0.76
1:2:650:C:H5'	25:Z:13:LEU:HD11	1.66	0.76
1:2:1281:G:H22	31:f:104:LYS:HG2	1.51	0.75
3:D:139:CYS:HA	3:D:212:VAL:HA	1.65	0.75
6:G:10:LYS:HE3	6:G:13:ALA:HB2	1.67	0.75
1:2:1414:C:N4	1:2:1421:G:OP2	2.19	0.75
37:z:589:C:H2'	37:z:590:A:H8	1.52	0.75
14:O:36:ARG:NH2	31:f:129:GLY:O	2.20	0.75
1:2:1320:G:N2	1:2:1500:U:O2	2.20	0.75
1:2:1519:G:OP2	20:U:141:ARG:NH1	2.20	0.75
10:K:113:TYR:HB3	10:K:121:LEU:HD21	1.69	0.75
19:T:79:GLU:HA	19:T:82:ASP:HB3	1.67	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:T:41:ILE:HG12	19:T:47:ARG:HB2	1.68	0.75
1:2:826:A:N6	1:2:840:U:O2	2.19	0.74
17:R:94:VAL:HG12	17:R:107:ILE:HD11	1.67	0.74
1:2:146:G:H1	1:2:173:A:N6	1.85	0.74
1:2:1320:G:H1	1:2:1500:U:H3	1.32	0.74
1:2:1418:G:H2'	1:2:1419:C:H2'	1.70	0.74
32:g:256:ILE:HB	32:g:270:LEU:HB2	1.70	0.74
32:g:5:MET:HE3	32:g:6:THR:H	1.52	0.74
1:2:94:G:OP1	6:G:8:HIS:ND1	2.20	0.73
1:2:309:A:H2	1:2:322:G:H22	1.34	0.73
1:2:1083:A:OP1	27:b:3:LYS:NZ	2.15	0.73
24:Y:11:LEU:HD21	24:Y:74:VAL:HB	1.70	0.73
25:Z:17:ARG:O	25:Z:21:LYS:HB2	1.88	0.73
1:2:1490:U:H4'	1:2:1491:G:H5''	1.69	0.73
10:K:194:GLU:OE1	13:N:18:GLN:NE2	2.21	0.73
13:N:16:ILE:HD11	13:N:34:PRO:HG2	1.70	0.73
21:V:10:ASN:H	21:V:144:LYS:HE2	1.52	0.73
1:2:551:A:O2'	11:L:132:GLN:NE2	2.21	0.73
1:2:800:U:H3	1:2:855:G:H1	1.36	0.73
1:2:1054:A:OP1	36:y:37:A:O2'	2.07	0.73
3:D:65:ARG:HG2	16:Q:50:LYS:HD3	1.69	0.73
26:a:39:GLU:OE1	26:a:43:LYS:NZ	2.21	0.73
6:G:197:ASN:HD22	6:G:209:HIS:HB2	1.52	0.72
1:2:77:A:H4'	8:I:176:ILE:HD12	1.71	0.72
21:V:62:ARG:HH12	21:V:66:LEU:HD11	1.54	0.72
20:U:23:ARG:NH2	33:h:46:ASN:O	2.22	0.72
1:2:1223:G:H1	1:2:1526:A:H61	1.38	0.72
2:C:37:TYR:OH	2:C:57:LYS:NZ	2.17	0.72
6:G:45:ILE:HG22	6:G:61:VAL:HG11	1.72	0.72
1:2:814:A:OP1	11:L:80:ARG:NH2	2.21	0.72
1:2:1284:U:H3	1:2:1307:C:H42	1.35	0.72
2:C:122:LEU:HD13	2:C:124:VAL:HG23	1.71	0.72
10:K:36:THR:HG23	10:K:96:LEU:HB2	1.71	0.71
22:W:81:GLN:HB2	30:e:55:LEU:HD21	1.71	0.71
1:2:645:A:H4'	1:2:646:G:H3'	1.71	0.71
20:U:26:ILE:HG12	20:U:59:LEU:HD11	1.72	0.71
1:2:874:G:N1	1:2:904:A:H2	1.81	0.71
1:2:1651:G:H1	1:2:1663:U:H3	1.36	0.71
25:Z:101:LEU:HB2	25:Z:124:LYS:HB2	1.72	0.71
18:S:85:ARG:HH12	18:S:117:ARG:HD3	1.55	0.71
1:2:1519:G:O2'	36:y:29:G:OP1	2.07	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:842:G:H2'	6:G:19:MET:HE1	1.72	0.71
1:2:1645:A:H5''	18:S:139:ALA:HB2	1.72	0.71
3:D:83:LYS:HD3	3:D:106:THR:HG23	1.73	0.71
7:H:201:LYS:HA	7:H:204:ARG:HG2	1.73	0.71
1:2:275:C:N3	1:2:887:G:O2'	2.24	0.70
9:J:143:ARG:HB2	9:J:155:LYS:HB2	1.71	0.70
31:f:121:CYS:HB3	31:f:132:MET:HB2	1.73	0.70
1:2:795:U:OP2	9:J:112:ASN:ND2	2.24	0.70
11:L:50:LEU:HD13	11:L:102:ILE:HD13	1.72	0.70
7:H:49:LEU:HD23	18:S:49:TYR:HB3	1.72	0.70
26:a:87:PRO:HD2	26:a:90:ARG:HD2	1.73	0.70
33:h:62:VAL:HG11	33:h:96:LEU:HB3	1.72	0.70
33:h:80:ARG:HB3	33:h:83:LEU:HB2	1.73	0.70
8:I:121:ILE:HD12	8:I:122:PRO:HD2	1.73	0.70
16:Q:34:PHE:HB3	16:Q:41:PHE:HB2	1.73	0.70
1:2:4:C:H1'	11:L:18:ARG:HH22	1.56	0.70
1:2:1060:C:OP1	16:Q:149:ARG:NH2	2.24	0.70
11:L:81:LEU:HB3	11:L:87:LEU:HD13	1.73	0.70
1:2:1072:G:O6	1:2:1073:A:N6	2.24	0.70
1:2:865:A:C6	9:J:114:GLN:HB3	2.27	0.70
1:2:1347:G:H2'	1:2:1348:G:H8	1.56	0.70
22:W:51:LYS:HD2	22:W:90:ASP:HB3	1.74	0.70
1:2:914:U:O2'	24:Y:57:ARG:NH1	2.25	0.69
1:2:924:G:H1	1:2:1009:U:H3	1.38	0.69
1:2:53:C:OP1	26:a:112:ASN:ND2	2.25	0.69
1:2:869:G:HO2'	1:2:870:G:H8	1.41	0.69
17:R:15:PHE:HB3	20:U:91:LYS:HB3	1.75	0.69
1:2:1832:U:H1'	16:Q:150:ARG:HE	1.57	0.69
4:E:79:ILE:O	4:E:83:LEU:HB2	1.92	0.69
5:F:193:ASP:HB3	5:F:194:PRO:HD3	1.74	0.69
1:2:365:U:H2'	1:2:366:A:C8	2.28	0.69
1:2:514:U:O2'	1:2:515:A:OP2	2.10	0.69
1:2:1259:U:H1'	30:e:16:GLN:HE21	1.58	0.69
1:2:1537:C:OP1	21:V:62:ARG:NH2	2.23	0.69
1:2:1709:U:H2'	1:2:1710:A:C8	2.27	0.69
1:2:76:U:H4'	8:I:154:ARG:HA	1.74	0.69
1:2:1266:G:H1	1:2:1507:U:H3	1.41	0.69
1:2:1474:U:H2'	1:2:1475:G:C8	2.28	0.69
6:G:11:ARG:HG3	6:G:20:LEU:HD23	1.74	0.69
2:C:31:ASP:HB3	2:C:34:MET:HB2	1.75	0.69
36:y:48:G:N2	37:z:550:A:O2'	2.26	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:g:207:CYS:HB2	32:g:219:TRP:HB2	1.74	0.68
37:z:518:C:H2'	37:z:519:C:C6	2.28	0.68
3:D:40:ASN:OD1	3:D:75:GLN:NE2	2.26	0.68
10:K:12:ARG:HG2	10:K:13:LYS:H	1.58	0.68
28:c:33:MET:HE1	28:c:48:SER:HA	1.76	0.68
1:2:1013:U:OP2	15:P:55:ARG:NH1	2.26	0.68
1:2:1095:G:H1	1:2:1129:A:N6	1.92	0.68
18:S:146:ARG:NH1	36:y:34:A:OP2	2.25	0.68
25:Z:140:ARG:NH1	25:Z:141:PRO:O	2.25	0.68
1:2:294:C:O2	10:K:184:ARG:NH1	2.25	0.68
1:2:1732:G:O6	1:2:1791:U:O2	2.10	0.68
9:J:75:ILE:HG23	9:J:76:GLN:H	1.59	0.68
12:M:3:MET:HE2	12:M:8:ARG:HG3	1.76	0.68
36:y:29:G:H2'	36:y:30:G:C8	2.27	0.68
1:2:1094:C:H2'	1:2:1095:G:C8	2.27	0.68
24:Y:53:ILE:HB	24:Y:60:LYS:HB2	1.74	0.68
1:2:833:A:H5''	26:a:47:MET:HE1	1.75	0.68
36:y:3:C:H2'	36:y:4:A:C8	2.29	0.68
1:2:668:U:OP2	1:2:1022:C:N4	2.26	0.68
6:G:192:ILE:HG13	6:G:243:GLY:HA3	1.76	0.68
11:L:50:LEU:HD21	11:L:54:ARG:HH21	1.58	0.68
13:N:31:GLU:HG2	13:N:33:LEU:H	1.59	0.68
1:2:125:C:OP2	8:I:198:ARG:NH2	2.26	0.68
37:z:575:A:H8	37:z:576:C:H4'	1.59	0.68
1:2:868:A:HO2'	1:2:869:G:H8	1.38	0.68
1:2:1394:G:H1	1:2:1444:A:N6	1.89	0.68
13:N:97:ARG:O	13:N:97:ARG:NH1	2.24	0.68
3:D:51:ARG:O	3:D:53:GLN:NE2	2.27	0.68
6:G:31:PRO:HG3	6:G:43:PRO:HG3	1.76	0.68
1:2:409:G:O3'	24:Y:88:LYS:NZ	2.26	0.67
1:2:1204:A:OP1	1:2:1831:G:N2	2.27	0.67
1:2:1123:C:O2'	28:c:17:ARG:NH1	2.27	0.67
37:z:589:C:H2'	37:z:590:A:C8	2.28	0.67
1:2:980:C:O2'	16:Q:138:ASP:O	2.12	0.67
1:2:876:G:H2'	1:2:877:G:H8	1.58	0.67
1:2:1584:A:H5''	21:V:82:ARG:HD2	1.76	0.67
2:C:80:ARG:HE	2:C:81:ASN:H	1.41	0.67
18:S:11:GLN:HG2	18:S:24:HIS:HB3	1.76	0.67
32:g:87:LEU:HB2	32:g:101:PHE:HB2	1.75	0.67
1:2:1588:C:OP2	33:h:104:ARG:NH1	2.27	0.67
18:S:58:LEU:HG	18:S:108:ILE:HD11	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:492:C:N3	26:a:84:LYS:NZ	2.43	0.67
1:2:1279:C:H42	14:O:102:LYS:HA	1.60	0.67
1:2:1517:A:O2'	20:U:144:ARG:NH1	2.26	0.67
1:2:1598:G:N7	20:U:24:ARG:NH1	2.41	0.67
24:Y:55:ASP:OD2	24:Y:60:LYS:NZ	2.28	0.67
15:P:56:ASP:OD1	28:c:52:THR:OG1	2.12	0.67
1:2:1643:G:N2	1:2:1670:A:OP2	2.27	0.67
5:F:95:GLY:HA2	5:F:126:ILE:HG22	1.76	0.67
17:R:10:ARG:NH1	17:R:10:ARG:O	2.27	0.67
26:a:7:ILE:HG23	26:a:25:ILE:HD11	1.77	0.67
32:g:283:PRO:O	32:g:285:GLN:NE2	2.27	0.67
11:L:134:HIS:CE1	11:L:164:PRO:HD2	2.30	0.67
18:S:138:ARG:NH1	18:S:138:ARG:O	2.27	0.67
34:i:118:ASN:H	34:i:119:VAL:HA	1.60	0.67
1:2:67:C:N4	1:2:151:C:O2'	2.28	0.66
1:2:1534:U:H2'	1:2:1535:G:H8	1.60	0.66
33:h:106:GLN:NE2	33:h:107:VAL:O	2.27	0.66
3:D:179:ASN:HB3	3:D:183:GLU:HB3	1.76	0.66
20:U:30:ILE:HG22	20:U:36:VAL:HG11	1.78	0.66
5:F:137:VAL:HB	5:F:185:LYS:HB3	1.77	0.66
1:2:922:A:H61	1:2:1011:U:H5	1.44	0.66
1:2:1688:G:H21	1:2:1828:A:H8	1.43	0.66
15:P:11:LEU:HD21	28:c:21:LYS:HD2	1.77	0.66
26:a:15:ASN:HD21	26:a:18:LEU:HD12	1.59	0.66
26:a:106:GLN:N	26:a:106:GLN:OE1	2.29	0.66
1:2:1309:A:OP2	14:O:33:ARG:NH2	2.29	0.66
2:C:89:LYS:HE2	2:C:201:LEU:HG	1.78	0.66
1:2:965:U:H3'	1:2:966:G:H21	1.61	0.66
27:b:22:ARG:NH1	27:b:29:CYS:SG	2.69	0.66
1:2:1755:U:O2	1:2:1765:G:N2	2.29	0.66
1:2:886:U:H5'	1:2:887:G:H5''	1.78	0.65
33:h:57:LYS:HE3	33:h:61:GLU:HB3	1.78	0.65
1:2:189:G:H1'	1:2:206:A:N6	2.11	0.65
1:2:937:C:H2'	1:2:938:G:H8	1.60	0.65
10:K:37:LYS:NZ	10:K:93:THR:O	2.29	0.65
16:Q:142:ARG:HH21	27:b:22:ARG:HB3	1.61	0.65
32:g:220:ASP:HB2	32:g:227:LEU:HD21	1.79	0.65
1:2:667:G:N1	1:2:1023:A:OP2	2.26	0.65
1:2:1199:G:H4'	4:E:101:THR:HA	1.78	0.65
1:2:745:U:H2'	1:2:746:C:C6	2.32	0.65
1:2:1712:C:O2'	35:l:21:ARG:NH2	2.28	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:T:18:GLU:HG3	19:T:69:ILE:HD12	1.77	0.65
1:2:427:G:H3'	1:2:428:G:H21	1.61	0.65
1:2:1099:C:H2'	1:2:1100:G:C8	2.31	0.65
2:C:141:ASN:HD21	23:X:29:HIS:HA	1.61	0.65
6:G:43:PRO:HD2	6:G:46:ILE:HD12	1.78	0.65
20:U:147:GLY:HA2	36:y:27:U:H5''	1.78	0.65
21:V:33:TRP:HZ2	21:V:102:ARG:HG3	1.62	0.65
1:2:192:U:OP2	10:K:143:LYS:NZ	2.29	0.65
1:2:1223:G:H1	1:2:1526:A:N6	1.95	0.65
2:C:163:CYS:SG	2:C:164:ASN:N	2.70	0.65
17:R:111:MET:HE1	20:U:117:ILE:HG23	1.79	0.65
24:Y:7:LEU:HD11	24:Y:37:PHE:HD2	1.59	0.65
1:2:1152:U:O4	4:E:179:ARG:NH1	2.30	0.65
1:2:1350:G:N2	1:2:1353:A:OP2	2.27	0.65
1:2:1709:U:H2'	1:2:1710:A:H8	1.62	0.65
1:2:835:C:H1'	1:2:837:G:H1'	1.77	0.64
8:I:42:GLY:O	8:I:46:LYS:NZ	2.29	0.64
1:2:487:C:H4'	6:G:8:HIS:HD2	1.62	0.64
1:2:903:G:H2'	1:2:904:A:C8	2.32	0.64
1:2:1211:C:H42	1:2:1216:A:H61	1.45	0.64
1:2:1382:A:OP2	5:F:160:SER:OG	2.14	0.64
1:2:1802:U:H2'	1:2:1803:A:C8	2.31	0.64
9:J:139:ILE:O	15:P:19:ARG:NH2	2.28	0.64
32:g:159:ASN:ND2	32:g:162:ASN:O	2.30	0.64
1:2:1588:C:O2'	18:S:45:ARG:NH2	2.30	0.64
21:V:125:PRO:O	21:V:128:GLN:NE2	2.29	0.64
1:2:599:U:H2'	1:2:600:G:C8	2.33	0.64
1:2:941:U:H2'	1:2:942:U:C6	2.32	0.64
4:E:45:TRP:NE1	4:E:77:GLU:OE2	2.30	0.64
1:2:915:A:OP1	24:Y:57:ARG:NH1	2.30	0.64
1:2:1493:G:N7	12:M:25:LYS:NZ	2.45	0.64
15:P:19:ARG:HH11	15:P:21:SER:HB2	1.62	0.64
1:2:2:A:H5'	1:2:408:A:H5'	1.79	0.64
1:2:537:G:H2'	1:2:538:C:C6	2.33	0.64
1:2:1773:G:H2'	1:2:1774:G:C8	2.33	0.64
18:S:128:GLU:OE2	18:S:128:GLU:N	2.29	0.64
1:2:295:C:O2	10:K:184:ARG:NH2	2.31	0.64
7:H:156:THR:HA	7:H:159:ARG:HH21	1.63	0.64
12:M:61:GLN:HB2	12:M:68:TYR:HB2	1.78	0.64
13:N:103:GLU:OE2	25:Z:11:ARG:NH1	2.31	0.64
23:X:71:ARG:HH22	24:Y:23:ARG:HH11	1.45	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:106:C:H2'	1:2:107:A:H8	1.63	0.64
1:2:923:C:O2	28:c:51:GLN:NE2	2.31	0.64
3:D:80:ALA:O	3:D:83:LYS:NZ	2.31	0.64
3:D:107:ARG:NH2	16:Q:131:ASP:OD2	2.30	0.64
7:H:71:ARG:NH2	7:H:148:ASN:OD1	2.31	0.64
32:g:13:GLY:HA3	32:g:43:TRP:HH2	1.62	0.64
15:P:99:ARG:NH1	15:P:141:TYR:OH	2.31	0.64
22:W:82:MET:HE1	30:e:52:PHE:HA	1.78	0.64
1:2:635:C:H2'	1:2:636:G:H8	1.63	0.64
1:2:202:U:H2'	1:2:203:G:C8	2.32	0.63
6:G:141:THR:OG1	6:G:143:ASP:OD1	2.13	0.63
10:K:72:CYS:HG	10:K:112:TRP:CD1	2.16	0.63
4:E:79:ILE:HG12	4:E:147:ILE:HD12	1.80	0.63
6:G:175:PHE:O	6:G:198:ARG:NH2	2.26	0.63
17:R:34:MET:SD	17:R:35:GLN:NE2	2.71	0.63
30:e:22:ARG:HH21	30:e:37:ASN:H	1.47	0.63
1:2:55:U:OP1	1:2:441:G:N1	2.31	0.63
1:2:1534:U:H2'	1:2:1535:G:C8	2.33	0.63
3:D:22:VAL:O	3:D:27:LYS:NZ	2.31	0.63
8:I:63:MET:HE1	8:I:98:ARG:HB3	1.80	0.63
17:R:15:PHE:HB3	20:U:91:LYS:HD3	1.79	0.63
18:S:146:ARG:NH2	36:y:32:C:OP2	2.30	0.63
1:2:1440:U:OP1	18:S:15:ARG:NH2	2.32	0.63
2:C:85:ARG:NH1	2:C:201:LEU:O	2.31	0.63
3:D:30:TRP:HB2	16:Q:20:GLN:HE22	1.62	0.63
10:K:48:VAL:HG22	10:K:49:ARG:H	1.62	0.63
1:2:492:C:O3'	6:G:62:LYS:NZ	2.29	0.63
1:2:821:A:H2'	1:2:822:A:H8	1.64	0.63
1:2:1007:A:H5''	15:P:3:ARG:HH22	1.64	0.63
14:O:35:ILE:HG13	31:f:103:LEU:HD13	1.81	0.63
19:T:103:LYS:O	19:T:107:LYS:N	2.31	0.63
1:2:1138:G:N2	1:2:1141:A:OP2	2.30	0.63
31:f:139:HIS:HB2	31:f:150:PHE:HB2	1.80	0.63
1:2:815:G:OP2	11:L:80:ARG:NH1	2.32	0.63
1:2:1588:C:OP1	7:H:91:ARG:NE	2.31	0.63
1:2:75:G:OP2	1:2:75:G:N2	2.27	0.62
1:2:168:C:O2'	8:I:133:LEU:O	2.16	0.62
37:z:551:C:H2'	37:z:552:A:C8	2.33	0.62
1:2:155:G:H2'	1:2:156:G:H8	1.64	0.62
1:2:550:A:OP2	11:L:177:ASN:ND2	2.31	0.62
1:2:978:G:H2'	1:2:979:A:H8	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:z:595:C:H2'	37:z:596:A:H8	1.64	0.62
1:2:671:U:H4'	25:Z:9:THR:HG22	1.81	0.62
8:I:1:MET:N	8:I:18:VAL:O	2.31	0.62
13:N:7:GLU:HG2	13:N:9:ALA:H	1.63	0.62
32:g:34:ALA:HA	32:g:40:ILE:HG22	1.82	0.62
1:2:42:A:O2'	1:2:98:C:OP1	2.14	0.62
1:2:148:U:H2'	1:2:149:A:H8	1.63	0.62
1:2:940:A:N6	1:2:978:G:H1	1.96	0.62
1:2:1043:C:H5''	16:Q:143:LYS:HD3	1.82	0.62
1:2:483:A:H62	1:2:499:G:H21	1.47	0.62
1:2:1612:G:N7	17:R:43:ARG:NH2	2.46	0.62
4:E:106:ARG:HH12	4:E:108:ARG:HE	1.47	0.62
13:N:80:MET:SD	13:N:86:ILE:HG13	2.40	0.62
36:y:27:U:H2'	36:y:28:G:H8	1.64	0.62
1:2:487:C:H4'	6:G:8:HIS:CD2	2.34	0.62
1:2:1216:A:N3	1:2:1672:U:O2'	2.27	0.62
1:2:1409:G:H2'	1:2:1410:A:H8	1.64	0.62
32:g:32:LEU:HD21	32:g:92:LEU:HD21	1.80	0.62
1:2:1086:C:H2'	1:2:1087:C:C6	2.34	0.62
13:N:60:CYS:SG	13:N:63:THR:OG1	2.55	0.62
18:S:23:ALA:HB1	18:S:68:ILE:HD11	1.82	0.62
1:2:832:G:N2	1:2:834:G:OP2	2.33	0.62
1:2:1331:G:H1	1:2:1488:U:H3	1.48	0.62
2:C:124:VAL:HG11	2:C:134:LEU:HD21	1.81	0.62
3:D:164:ILE:O	3:D:168:MET:HG2	2.00	0.62
1:2:1161:G:OP2	1:2:1161:G:N2	2.24	0.62
1:2:1224:A:H2'	1:2:1225:G:C8	2.35	0.62
1:2:1276:G:H22	1:2:1313:U:H3	1.45	0.62
4:E:218:LEU:HA	4:E:221:PHE:HB2	1.82	0.62
7:H:168:THR:OG1	7:H:171:GLU:OE1	2.16	0.62
1:2:124:U:OP1	6:G:148:ARG:NH2	2.33	0.61
1:2:628:C:H2'	1:2:629:C:H6	1.65	0.61
1:2:909:A:N6	9:J:120:ARG:HA	2.14	0.61
2:C:7:VAL:HG11	23:X:43:THR:HA	1.82	0.61
32:g:238:ALA:H	32:g:251:ALA:HB3	1.65	0.61
1:2:307:G:H3'	8:I:183:ARG:HH22	1.64	0.61
1:2:1134:C:OP1	2:C:155:ARG:NH1	2.33	0.61
2:C:74:VAL:HG22	2:C:121:LEU:HB2	1.82	0.61
25:Z:134:TYR:OH	34:i:87:ARG:NH2	2.33	0.61
36:y:9:G:N1	36:y:15:G:O6	2.33	0.61
1:2:1659:A:O2'	1:2:1660:G:H5'	2.01	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1845:A:OP1	35:l:9:ARG:NH2	2.33	0.61
2:C:121:LEU:HD13	2:C:143:PRO:HG2	1.81	0.61
1:2:1344:G:H22	1:2:1377:G:H1	1.47	0.61
1:2:1611:U:O2'	1:2:1656:A:O2'	2.16	0.61
2:C:17:LYS:HE2	2:C:176:TRP:HZ3	1.64	0.61
37:z:595:C:H2'	37:z:596:A:C8	2.35	0.61
4:E:162:PRO:HG2	23:X:9:VAL:HG21	1.81	0.61
10:K:199:LEU:HD13	10:K:202:ILE:HD11	1.81	0.61
17:R:8:LYS:O	17:R:14:LYS:HB3	2.00	0.61
24:Y:71:LYS:N	24:Y:130:PHE:O	2.33	0.61
1:2:162:C:O2'	8:I:95:LYS:NZ	2.34	0.61
1:2:1361:G:H2'	1:2:1362:G:C8	2.36	0.61
1:2:1643:G:H5''	18:S:125:ARG:HG3	1.81	0.61
8:I:130:PRO:O	8:I:132:ARG:NH1	2.33	0.61
29:d:13:ARG:HA	29:d:55:VAL:HA	1.80	0.61
1:2:72:C:O4'	1:2:74:G:N2	2.34	0.61
16:Q:33:ILE:N	16:Q:96:LYS:O	2.32	0.61
26:a:16:ARG:O	26:a:19:GLN:NE2	2.33	0.61
4:E:161:LYS:O	4:E:185:ARG:NH2	2.34	0.61
13:N:40:ILE:HG23	13:N:68:ILE:HD13	1.83	0.61
4:E:63:LEU:HG	4:E:82:PHE:HD1	1.65	0.61
29:d:27:CYS:SG	29:d:28:THR:N	2.74	0.61
1:2:1586:C:OP1	7:H:85:LYS:NZ	2.28	0.61
1:2:1802:U:H2'	1:2:1803:A:H8	1.66	0.61
17:R:86:LEU:H	17:R:89:MET:HE2	1.66	0.61
32:g:88:ARG:HD3	32:g:97:THR:HG21	1.81	0.61
1:2:978:G:H2'	1:2:979:A:C8	2.35	0.60
1:2:1232:G:H21	1:2:1517:A:N6	1.98	0.60
1:2:1792:C:HO2'	10:K:2:GLY:N	1.98	0.60
10:K:64:ASN:HA	10:K:75:LYS:HA	1.83	0.60
10:K:144:LYS:N	10:K:147:LYS:HE2	2.14	0.60
24:Y:41:MET:HB3	24:Y:47:ILE:HD12	1.83	0.60
1:2:434:G:H1	10:K:26:LYS:HE3	1.66	0.60
1:2:882:A:H61	1:2:896:C:H42	1.48	0.60
1:2:1394:G:N2	1:2:1444:A:N1	2.45	0.60
1:2:1716:U:H4'	1:2:1717:G:H5''	1.83	0.60
5:F:214:LYS:HD3	19:T:19:LYS:HB3	1.84	0.60
6:G:128:LYS:H	6:G:140:VAL:HB	1.66	0.60
16:Q:142:ARG:HE	27:b:22:ARG:HB3	1.66	0.60
17:R:60:LEU:HD13	17:R:89:MET:HG3	1.83	0.60
18:S:130:LYS:HA	18:S:137:ALA:HA	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Y:46:TYR:HA	24:Y:68:ARG:HG2	1.83	0.60
32:g:122:SER:OG	32:g:132:TRP:NE1	2.33	0.60
36:y:54:U:N3	36:y:57:A:OP2	2.34	0.60
1:2:1441:U:H4'	22:W:57:PRO:HG3	1.82	0.60
1:2:1574:A:O2'	1:2:1576:C:OP2	2.14	0.60
3:D:46:LYS:HE3	16:Q:27:VAL:HB	1.82	0.60
6:G:153:LEU:HD13	8:I:216:ARG:HH22	1.65	0.60
1:2:165:G:H2'	1:2:166:A:C8	2.36	0.60
1:2:378:U:H2'	1:2:379:A:H8	1.66	0.60
1:2:1123:C:H4'	28:c:17:ARG:HH12	1.67	0.60
1:2:1815:U:H2'	1:2:1816:A:H8	1.66	0.60
13:N:16:ILE:HG13	13:N:17:PHE:H	1.66	0.60
1:2:431:C:H2'	1:2:432:C:C6	2.37	0.60
1:2:1108:U:H3	1:2:1109:A:N6	2.00	0.60
2:C:113:GLN:HB2	2:C:116:PHE:HB2	1.84	0.60
8:I:74:ARG:NH1	8:I:96:SER:OG	2.34	0.60
12:M:1:MET:H2	12:M:2:LEU:HB3	1.66	0.60
24:Y:102:ILE:HG12	24:Y:113:HIS:HD2	1.67	0.60
1:2:9:U:N3	1:2:12:U:OP2	2.33	0.60
1:2:480:C:O2'	1:2:564:A:N1	2.35	0.60
1:2:1273:C:H2'	1:2:1274:A:H8	1.67	0.60
7:H:34:SER:HA	29:d:55:VAL:HG13	1.82	0.60
12:M:65:ARG:NH2	30:e:21:CYS:O	2.35	0.60
16:Q:29:GLY:O	16:Q:94:HIS:N	2.31	0.60
23:X:14:PRO:HB2	23:X:23:ILE:HD11	1.82	0.60
1:2:145:G:H2'	1:2:146:G:C8	2.36	0.60
1:2:911:G:N2	1:2:911:G:OP2	2.35	0.60
1:2:1281:G:N1	31:f:103:LEU:O	2.35	0.60
32:g:209:SER:HG	32:g:219:TRP:CD1	2.20	0.60
36:y:26:C:H2'	36:y:27:U:C6	2.37	0.60
9:J:145:ARG:NH2	24:Y:49:GLU:HG3	2.17	0.60
1:2:483:A:N6	1:2:500:G:H1'	2.15	0.60
1:2:1388:U:H2'	1:2:1389:G:C8	2.36	0.60
1:2:1541:G:H22	1:2:1650:C:H1'	1.67	0.60
1:2:220:C:H2'	1:2:221:A:C8	2.36	0.59
1:2:971:G:OP1	16:Q:98:ARG:NH1	2.35	0.59
1:2:1643:G:C8	18:S:125:ARG:HG2	2.37	0.59
9:J:46:THR:HB	9:J:65:PRO:HG3	1.82	0.59
21:V:104:LEU:HD22	21:V:121:ARG:HG2	1.82	0.59
22:W:70:CYS:H	30:e:40:ARG:HH22	1.50	0.59
1:2:1612:G:H1	17:R:40:ARG:HH22	1.50	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:E:115:ILE:O	4:E:123:GLY:N	2.34	0.59
7:H:28:VAL:HA	7:H:110:GLN:HG3	1.84	0.59
7:H:198:ARG:HA	7:H:201:LYS:HG2	1.84	0.59
20:U:61:GLU:N	20:U:61:GLU:OE2	2.35	0.59
1:2:403:G:OP1	1:2:809:A:N6	2.36	0.59
1:2:1631:G:N7	33:h:41:ARG:NH1	2.49	0.59
8:I:51:ARG:NH1	8:I:52:ILE:O	2.36	0.59
9:J:129:ILE:HD11	9:J:180:LEU:HD13	1.85	0.59
1:2:349:U:H5'	25:Z:22:TRP:HH2	1.68	0.59
1:2:1091:U:O3'	24:Y:20:ARG:NH1	2.32	0.59
1:2:1117:G:O2'	3:D:204:ILE:O	2.20	0.59
7:H:145:ARG:HA	7:H:148:ASN:HD22	1.67	0.59
18:S:70:VAL:HG11	18:S:84:ILE:HG22	1.83	0.59
1:2:492:C:O2	6:G:63:LYS:NZ	2.36	0.59
1:2:1376:C:H2'	1:2:1377:G:C8	2.36	0.59
3:D:103:MET:HG3	3:D:215:VAL:HB	1.84	0.59
7:H:126:THR:OG1	29:d:26:GLN:OE1	2.15	0.59
1:2:110:U:O2'	13:N:71:ARG:NH1	2.35	0.59
10:K:23:LYS:O	10:K:25:ARG:NH1	2.35	0.59
37:z:552:A:H2'	37:z:553:G:C8	2.38	0.59
1:2:378:U:H2'	1:2:379:A:C8	2.38	0.59
4:E:241:TRP:CG	24:Y:68:ARG:HE	2.20	0.59
6:G:10:LYS:HZ2	6:G:12:VAL:HB	1.67	0.59
1:2:866:A:N6	1:2:912:A:O5'	2.35	0.59
1:2:1282:G:N2	1:2:1308:G:O2'	2.34	0.59
1:2:1859:C:OP2	27:b:92:ARG:NH1	2.36	0.59
13:N:87:VAL:HA	13:N:110:SER:HA	1.85	0.59
14:O:13:ASP:HB3	14:O:16:THR:HG22	1.84	0.59
15:P:119:GLU:OE2	15:P:123:HIS:NE2	2.36	0.59
17:R:123:TYR:OH	20:U:124:ARG:NH1	2.35	0.59
1:2:841:G:H2'	1:2:842:G:C8	2.38	0.59
1:2:920:G:N2	15:P:87:ASP:OD2	2.35	0.59
1:2:1276:G:H1	1:2:1313:U:H3	1.51	0.59
26:a:24:VAL:HA	26:a:72:PHE:HA	1.83	0.59
1:2:1687:U:H2'	1:2:1688:G:C8	2.38	0.59
5:F:6:SER:O	5:F:10:LYS:N	2.36	0.59
5:F:22:ASN:OD1	5:F:23:GLU:N	2.36	0.59
36:y:24:U:H2'	36:y:25:G:H8	1.68	0.59
1:2:308:C:OP2	8:I:183:ARG:NH2	2.35	0.58
1:2:741:C:H42	1:2:793:C:H42	1.51	0.58
1:2:1245:C:H5''	1:2:1246:A:H2'	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1249:A:O2'	1:2:1661:C:O2'	2.18	0.58
1:2:1601:G:OP1	21:V:84:ARG:NH2	2.36	0.58
1:2:1751:G:O6	1:2:1769:U:O4	2.21	0.58
6:G:71:LYS:HB2	6:G:91:SER:HB2	1.85	0.58
37:z:522:U:H2'	37:z:523:G:H8	1.67	0.58
1:2:511:A:OP1	11:L:45:ARG:NH1	2.37	0.58
1:2:633:A:OP2	11:L:38:ARG:NH1	2.35	0.58
1:2:1560:C:H2'	1:2:1561:G:C8	2.38	0.58
3:D:60:ASP:HA	3:D:63:LYS:HD2	1.84	0.58
7:H:195:GLU:HA	7:H:198:ARG:HB2	1.83	0.58
17:R:32:GLN:OE1	17:R:32:GLN:N	2.35	0.58
20:U:115:LYS:NZ	37:z:566:C:OP1	2.35	0.58
31:f:123:SER:HG	31:f:144:CYS:HG	1.51	0.58
37:z:532:G:O6	37:z:559:U:N3	2.36	0.58
1:2:166:A:H2'	1:2:167:G:H8	1.68	0.58
1:2:1139:A:H2'	1:2:1140:A:C8	2.38	0.58
1:2:1724:U:O2	1:2:1799:G:N2	2.33	0.58
1:2:1825:A:O2'	1:2:1846:C:OP1	2.20	0.58
10:K:162:LEU:HB3	10:K:166:PHE:HE2	1.68	0.58
15:P:85:PRO:HD2	15:P:88:LEU:HD12	1.85	0.58
1:2:1294:G:OP2	17:R:77:LYS:NZ	2.36	0.58
1:2:1450:A:OP1	19:T:3:ARG:NH1	2.37	0.58
4:E:69:PHE:HD2	4:E:71:LEU:HB2	1.68	0.58
23:X:31:SER:OG	23:X:57:GLY:N	2.36	0.58
33:h:106:GLN:HE22	33:h:108:ILE:HD13	1.67	0.58
1:2:158:A:H2'	1:2:159:A:C8	2.38	0.58
3:D:40:ASN:H	3:D:75:GLN:HE22	1.51	0.58
36:y:18:G:H21	36:y:19:A:H61	1.51	0.58
37:z:547:G:N1	37:z:550:A:OP2	2.34	0.58
1:2:65:C:N4	1:2:169:U:O2'	2.37	0.58
1:2:538:C:H2'	1:2:539:C:C6	2.38	0.58
1:2:678:U:H3	9:J:102:PRO:HA	1.67	0.58
1:2:784:G:H4'	8:I:237:LEU:HB2	1.85	0.58
19:T:20:TYR:CZ	19:T:38:ILE:HD11	2.39	0.58
29:d:20:ARG:NH2	29:d:25:GLY:O	2.37	0.58
32:g:131:LEU:N	32:g:140:TYR:O	2.36	0.58
1:2:127:C:O2'	1:2:212:G:OP2	2.20	0.58
1:2:166:A:H2'	1:2:167:G:C8	2.39	0.58
1:2:431:C:H4'	1:2:1733:C:H5'	1.84	0.58
1:2:874:G:O6	1:2:904:A:N1	2.36	0.58
1:2:970:C:H2'	1:2:971:G:H8	1.69	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1188:U:H2'	1:2:1189:U:C6	2.39	0.58
2:C:36:GLN:OE1	2:C:36:GLN:N	2.31	0.58
10:K:191:GLU:OE1	13:N:20:LYS:NZ	2.32	0.58
28:c:34:ASP:HB3	28:c:80:ARG:HG3	1.85	0.58
36:y:9:G:N2	36:y:20:A:O4'	2.36	0.58
1:2:52:G:O2'	26:a:105:LYS:NZ	2.37	0.58
1:2:376:C:H1'	10:K:5:ARG:HG3	1.86	0.58
1:2:384:G:H2'	1:2:385:G:H8	1.68	0.58
1:2:1006:G:H2'	1:2:1007:A:H8	1.69	0.58
1:2:1611:U:H3	1:2:1615:A:H62	1.50	0.58
2:C:33:GLN:NE2	23:X:64:GLU:OE2	2.37	0.58
7:H:144:LEU:O	7:H:148:ASN:ND2	2.37	0.58
22:W:23:THR:HA	22:W:88:LEU:HA	1.86	0.58
24:Y:90:GLN:HB2	24:Y:94:LEU:HD12	1.86	0.58
32:g:123:GLY:HA3	32:g:151:VAL:HG11	1.85	0.58
1:2:19:A:H5'	25:Z:107:ARG:HH11	1.69	0.58
1:2:1279:C:H4'	31:f:99:LYS:NZ	2.19	0.58
2:C:4:ALA:HB3	2:C:8:LEU:HB2	1.84	0.58
2:C:176:TRP:CE3	2:C:199:PRO:HB3	2.38	0.58
8:I:188:LYS:HG3	8:I:191:ARG:HH12	1.68	0.58
17:R:10:ARG:CZ	17:R:17:TYR:HB3	2.33	0.58
17:R:41:GLN:NE2	17:R:113:GLY:O	2.36	0.58
1:2:148:U:H3	1:2:170:A:H62	1.50	0.57
1:2:740:G:O2'	1:2:741:C:OP1	2.21	0.57
1:2:1371:G:H2'	1:2:1372:A:C8	2.39	0.57
1:2:1562:G:H21	1:2:1562:G:P	2.26	0.57
6:G:181:CYS:HA	6:G:227:VAL:HA	1.84	0.57
7:H:22:LYS:NZ	7:H:98:GLU:OE1	2.37	0.57
8:I:52:ILE:HD11	8:I:109:LEU:HD12	1.85	0.57
19:T:17:ILE:HD11	19:T:21:TYR:HD1	1.69	0.57
1:2:1203:G:N2	1:2:1831:G:O2'	2.37	0.57
1:2:1544:U:OP1	30:e:34:TYR:OH	2.21	0.57
1:2:1669:G:H5''	7:H:86:LYS:HE3	1.86	0.57
13:N:77:VAL:HB	13:N:124:ASP:H	1.69	0.57
37:z:579:G:H2'	37:z:580:U:C6	2.40	0.57
1:2:970:C:H2'	1:2:971:G:C8	2.38	0.57
3:D:222:LYS:HG2	3:D:223:PHE:H	1.69	0.57
9:J:78:ARG:NH1	9:J:81:ARG:HH11	2.01	0.57
16:Q:31:CYS:HB2	16:Q:95:ILE:HA	1.86	0.57
22:W:48:LEU:HD23	22:W:91:LEU:HD23	1.86	0.57
27:b:38:LYS:HB3	27:b:71:LEU:HD11	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:y:21:G:H2'	36:y:22:C:C6	2.39	0.57
1:2:520:U:H2'	1:2:521:A:C8	2.38	0.57
1:2:1350:G:O2'	1:2:1352:G:O6	2.20	0.57
2:C:17:LYS:HD3	2:C:173:LEU:HD11	1.87	0.57
7:H:20:PHE:HA	7:H:48:TYR:HA	1.86	0.57
37:z:564:G:H2'	37:z:565:G:H8	1.68	0.57
1:2:217:U:H2'	1:2:218:A:C8	2.40	0.57
1:2:1861:U:P	27:b:10:ARG:HH22	2.28	0.57
6:G:100:ARG:NH2	6:G:121:TYR:O	2.38	0.57
15:P:22:VAL:HB	15:P:23:PRO:HA	1.86	0.57
17:R:137:HIS:NE2	36:y:30:G:OP2	2.37	0.57
1:2:1154:G:H2'	1:2:1155:G:C8	2.39	0.57
1:2:1240:U:H2'	1:2:1241:G:H8	1.70	0.57
3:D:23:ASP:O	3:D:27:LYS:NZ	2.36	0.57
3:D:183:GLU:OE1	3:D:187:LYS:NZ	2.37	0.57
9:J:6:ALA:HB1	9:J:21:SER:HB3	1.86	0.57
9:J:145:ARG:NH2	24:Y:50:PHE:O	2.38	0.57
10:K:48:VAL:HG11	10:K:54:LYS:HE2	1.86	0.57
19:T:79:GLU:OE2	19:T:79:GLU:N	2.29	0.57
20:U:102:GLY:O	20:U:106:LYS:N	2.33	0.57
1:2:915:A:H62	1:2:1016:A:H2'	1.70	0.57
1:2:1863:A:N6	3:D:114:VAL:O	2.38	0.57
2:C:85:ARG:HB2	2:C:205:ARG:CZ	2.34	0.57
2:C:122:LEU:HD23	2:C:142:LEU:HG	1.86	0.57
8:I:93:LYS:NZ	8:I:94:ARG:O	2.38	0.57
10:K:197:PHE:CZ	10:K:201:LYS:HD2	2.39	0.57
19:T:123:THR:OG1	19:T:124:VAL:N	2.38	0.57
27:b:10:ARG:HB3	27:b:33:ASP:O	2.05	0.57
27:b:28:CYS:SG	27:b:29:CYS:N	2.77	0.57
29:d:40:ARG:HH21	29:d:61:SER:HG	1.53	0.57
2:C:42:LYS:NZ	2:C:47:TYR:O	2.38	0.57
2:C:58:LEU:HD21	2:C:177:MET:HB3	1.86	0.57
1:2:155:G:H2'	1:2:156:G:C8	2.39	0.57
1:2:308:C:H5	8:I:183:ARG:HH21	1.53	0.57
1:2:740:G:H1'	9:J:109:ARG:HB2	1.85	0.57
5:F:132:LYS:NZ	5:F:193:ASP:HB2	2.19	0.57
24:Y:53:ILE:N	24:Y:60:LYS:O	2.28	0.57
32:g:173:LEU:HD22	32:g:187:ASN:HB3	1.85	0.57
1:2:84:A:N3	1:2:150:A:O2'	2.36	0.56
1:2:165:G:H2'	1:2:166:A:H8	1.70	0.56
1:2:1595:G:O3'	33:h:43:LYS:NZ	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:164:A:H3'	1:2:165:G:H21	1.69	0.56
1:2:1798:U:H2'	1:2:1799:G:C8	2.40	0.56
3:D:83:LYS:O	3:D:104:ASP:N	2.34	0.56
3:D:198:GLU:O	3:D:202:GLN:HG3	2.04	0.56
5:F:6:SER:HB3	5:F:9:ARG:HD3	1.87	0.56
6:G:11:ARG:N	6:G:26:VAL:O	2.28	0.56
6:G:137:PRO:HG2	6:G:149:TYR:HA	1.85	0.56
13:N:57:ASP:OD2	13:N:60:CYS:N	2.38	0.56
32:g:39:THR:HG22	32:g:60:ARG:HG2	1.86	0.56
1:2:630:A:H2'	1:2:631:A:C8	2.39	0.56
1:2:1198:U:H2'	1:2:1199:G:C8	2.41	0.56
1:2:1271:G:N2	1:2:1502:A:OP2	2.38	0.56
1:2:1611:U:OP2	17:R:43:ARG:NH1	2.34	0.56
3:D:35:ALA:HB2	3:D:44:ILE:HD11	1.87	0.56
8:I:116:LYS:NZ	8:I:125:THR:OG1	2.36	0.56
21:V:13:GLU:OE2	21:V:16:ARG:NH1	2.38	0.56
26:a:6:THR:HB	26:a:28:LEU:HB2	1.88	0.56
27:b:71:LEU:HD13	27:b:73:TYR:CE1	2.40	0.56
1:2:642:U:H2'	1:2:643:A:H8	1.70	0.56
2:C:144:THR:N	2:C:158:ASP:OD2	2.34	0.56
7:H:175:ASP:OD2	7:H:179:ASN:ND2	2.38	0.56
14:O:30:GLY:HA2	14:O:112:LYS:HD2	1.88	0.56
19:T:15:VAL:O	19:T:19:LYS:HG2	2.06	0.56
21:V:76:THR:HG22	21:V:94:ARG:HB3	1.86	0.56
22:W:20:ILE:N	22:W:91:LEU:O	2.29	0.56
1:2:95:G:H1	1:2:425:A:H61	1.54	0.56
1:2:1140:A:H2'	1:2:1141:A:C8	2.40	0.56
4:E:133:ALA:O	4:E:137:ARG:HG2	2.06	0.56
6:G:182:MET:N	6:G:226:PHE:O	2.38	0.56
9:J:99:ARG:HE	9:J:100:ILE:H	1.54	0.56
20:U:108:ARG:HH22	37:z:530:G:H1'	1.70	0.56
1:2:516:A:H2	1:2:549:G:H22	1.53	0.56
1:2:551:A:OP1	11:L:171:GLY:N	2.29	0.56
1:2:1854:A:OP1	27:b:8:ASN:ND2	2.39	0.56
20:U:114:LEU:O	20:U:118:ARG:N	2.39	0.56
24:Y:70:ASN:CG	24:Y:71:LYS:HG3	2.30	0.56
32:g:20:GLN:NE2	32:g:69:VAL:O	2.33	0.56
1:2:904:A:H2'	1:2:905:G:C8	2.40	0.56
1:2:957:G:N2	37:z:831:A:N1	2.53	0.56
1:2:1375:A:H2'	1:2:1376:C:C6	2.41	0.56
1:2:1409:G:H2'	1:2:1410:A:C8	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:10:LYS:HE3	9:J:20:GLU:HG2	1.87	0.56
12:M:23:ALA:O	12:M:67:PHE:N	2.39	0.56
25:Z:107:ARG:HG3	25:Z:110:HIS:HB3	1.87	0.56
1:2:876:G:H2'	1:2:877:G:C8	2.40	0.56
20:U:142:ARG:HD2	20:U:142:ARG:O	2.06	0.56
22:W:66:ARG:HE	22:W:77:TRP:HE1	1.54	0.56
1:2:142:C:N4	1:2:319:G:OP2	2.39	0.56
1:2:202:U:H2'	1:2:203:G:H8	1.69	0.56
2:C:104:THR:O	2:C:107:THR:OG1	2.23	0.56
7:H:194:ASP:OD1	7:H:195:GLU:N	2.39	0.56
21:V:28:LEU:HD22	21:V:110:LEU:HD11	1.87	0.56
30:e:43:PHE:O	30:e:47:ALA:N	2.38	0.56
36:y:27:U:H2'	36:y:28:G:C8	2.40	0.56
1:2:389:C:H5''	1:2:390:C:C5	2.41	0.56
1:2:1815:U:H2'	1:2:1816:A:C8	2.41	0.56
5:F:158:ILE:HD13	5:F:205:PRO:HB3	1.88	0.56
6:G:195:ILE:HG23	6:G:196:THR:H	1.71	0.56
1:2:1370:C:OP2	19:T:7:LYS:NZ	2.39	0.55
1:2:1571:G:H2'	1:2:1572:G:C8	2.41	0.55
1:2:1592:C:OP2	33:h:85:ARG:NH1	2.39	0.55
1:2:1858:U:O2'	1:2:1860:A:N7	2.38	0.55
10:K:3:ILE:HB	10:K:30:GLY:HA3	1.88	0.55
12:M:62:PHE:CZ	12:M:65:ARG:HA	2.41	0.55
15:P:83:ASP:OD1	15:P:84:LEU:N	2.37	0.55
18:S:83:ALA:O	18:S:86:GLN:NE2	2.39	0.55
19:T:66:VAL:O	19:T:69:ILE:HG22	2.06	0.55
32:g:258:ILE:HG23	32:g:267:VAL:HB	1.88	0.55
1:2:77:A:O2'	8:I:176:ILE:N	2.38	0.55
1:2:860:A:H2'	1:2:861:A:H8	1.70	0.55
1:2:1391:C:H2'	1:2:1392:A:N3	2.21	0.55
1:2:1655:C:O5'	30:e:32:ARG:NH2	2.39	0.55
22:W:18:HIS:HE1	22:W:95:SER:HB2	1.71	0.55
25:Z:72:VAL:HG21	25:Z:100:VAL:HG21	1.88	0.55
37:z:570:A:H3'	37:z:571:A:H8	1.71	0.55
6:G:49:ARG:NH1	6:G:56:LEU:O	2.39	0.55
1:2:21:U:H4'	11:L:19:PRO:HG3	1.88	0.55
1:2:1503:G:C8	31:f:88:PRO:HD2	2.41	0.55
5:F:46:THR:HB	5:F:84:VAL:HA	1.87	0.55
9:J:168:HIS:HE1	9:J:169:LYS:HE3	1.72	0.55
13:N:121:GLN:N	13:N:124:ASP:OD2	2.36	0.55
32:g:215:GLN:HG2	32:g:231:ASP:HA	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:630:A:H2'	1:2:631:A:H8	1.72	0.55
1:2:668:U:O4	1:2:1023:A:N7	2.39	0.55
1:2:1173:U:H2'	1:2:1174:U:C6	2.42	0.55
1:2:1213:A:H2'	1:2:1214:C:C6	2.42	0.55
1:2:1294:G:H2'	1:2:1295:A:O4'	2.07	0.55
1:2:1427:G:H2'	1:2:1428:U:C5	2.42	0.55
11:L:176:LYS:HA	11:L:179:LYS:HZ3	1.71	0.55
13:N:101:ARG:HG3	25:Z:7:LEU:HA	1.89	0.55
37:z:564:G:H2'	37:z:565:G:C8	2.41	0.55
1:2:191:C:H2'	1:2:192:U:H6	1.72	0.55
1:2:364:G:H5''	13:N:59:LYS:HE3	1.89	0.55
1:2:440:C:OP1	6:G:3:ARG:NH2	2.39	0.55
1:2:918:A:OP1	24:Y:28:ARG:NH1	2.29	0.55
1:2:1019:A:H2'	1:2:1020:A:C8	2.41	0.55
1:2:1687:U:H2'	1:2:1688:G:H8	1.72	0.55
10:K:73:THR:O	10:K:74:ARG:NH1	2.34	0.55
1:2:526:A:H62	1:2:537:G:H21	1.53	0.55
1:2:1045:A:N7	1:2:1065:U:O4	2.39	0.55
1:2:1327:C:H4'	1:2:1328:A:H5''	1.88	0.55
1:2:1847:C:H2'	1:2:1848:U:C6	2.42	0.55
3:D:36:PRO:HB2	3:D:38:MET:HE1	1.88	0.55
4:E:187:THR:N	4:E:206:ASP:OD2	2.40	0.55
6:G:173:ILE:HG21	6:G:227:VAL:HG11	1.88	0.55
13:N:128:VAL:HG12	13:N:142:VAL:HA	1.88	0.55
20:U:106:LYS:NZ	20:U:109:GLU:OE2	2.38	0.55
27:b:37:LYS:HZ1	27:b:70:LYS:HG2	1.72	0.55
1:2:624:A:H2'	1:2:625:G:H8	1.72	0.55
1:2:914:U:H3'	15:P:64:ARG:HH22	1.70	0.55
1:2:1624:C:H2'	1:2:1625:A:H8	1.72	0.55
3:D:144:LYS:HA	3:D:208:HIS:ND1	2.22	0.55
7:H:27:ASP:O	7:H:29:GLN:NE2	2.36	0.55
20:U:123:LEU:HB3	20:U:127:TRP:CZ3	2.42	0.55
37:z:551:C:H2'	37:z:552:A:H8	1.71	0.55
37:z:597:A:H2'	37:z:598:A:C8	2.42	0.55
1:2:606:A:H5''	25:Z:68:LYS:HZ1	1.72	0.55
1:2:1531:G:H2'	1:2:1532:A:H8	1.72	0.55
1:2:1704:G:N2	1:2:1818:A:N1	2.47	0.55
7:H:40:ALA:HB1	7:H:45:TYR:CD2	2.42	0.55
31:f:95:ARG:HG3	31:f:97:LYS:H	1.70	0.55
1:2:859:U:O4	1:2:860:A:N6	2.40	0.55
1:2:1351:C:H2'	1:2:1352:G:C4	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1593:G:OP2	33:h:82:SER:OG	2.19	0.55
1:2:1593:G:O6	33:h:85:ARG:NH2	2.40	0.55
1:2:1800:A:H2'	1:2:1801:C:C6	2.42	0.55
4:E:54:LEU:HG	4:E:258:LEU:HD21	1.89	0.55
7:H:77:MET:O	7:H:83:ASN:ND2	2.39	0.55
7:H:110:GLN:OE1	7:H:110:GLN:N	2.37	0.55
18:S:21:ALA:HA	18:S:72:VAL:HG12	1.89	0.55
24:Y:115:GLU:OE2	24:Y:118:ARG:NH2	2.38	0.55
30:e:5:GLN:CD	30:e:6:LEU:H	2.15	0.55
1:2:146:G:O2'	1:2:147:A:H5''	2.07	0.54
1:2:579:G:H5''	1:2:580:A:C8	2.42	0.54
1:2:944:C:H2'	1:2:945:G:C8	2.42	0.54
1:2:1169:A:H62	1:2:1183:G:H21	1.56	0.54
1:2:1289:A:N3	31:f:138:ARG:NH1	2.55	0.54
1:2:1445:G:H2'	1:2:1446:G:O4'	2.06	0.54
2:C:50:ASN:ND2	2:C:53:ARG:HG2	2.22	0.54
9:J:98:ARG:HG3	9:J:125:VAL:HG22	1.89	0.54
24:Y:37:PHE:CE1	24:Y:41:MET:HE3	2.42	0.54
36:y:50:U:H4'	37:z:539:C:H42	1.71	0.54
4:E:108:ARG:NH1	4:E:128:CYS:SG	2.79	0.54
7:H:21:GLY:H	7:H:48:TYR:HD1	1.55	0.54
10:K:101:ILE:HG22	10:K:172:LEU:HD12	1.89	0.54
1:2:619:A:O2'	1:2:621:U:OP1	2.25	0.54
1:2:835:C:N4	26:a:9:THR:O	2.40	0.54
1:2:1139:A:H5'	4:E:175:SER:HB3	1.89	0.54
1:2:1567:C:H2'	1:2:1568:G:C8	2.42	0.54
3:D:37:ALA:N	3:D:231:LEU:O	2.34	0.54
3:D:208:HIS:CG	3:D:208:HIS:O	2.61	0.54
4:E:151:ARG:HB2	4:E:233:TYR:HD2	1.72	0.54
6:G:100:ARG:HB2	6:G:114:ILE:HD13	1.89	0.54
20:U:143:GLY:O	20:U:144:ARG:HD3	2.08	0.54
1:2:743:U:O2'	1:2:744:C:O5'	2.25	0.54
1:2:937:C:H2'	1:2:938:G:C8	2.41	0.54
1:2:1097:U:H2'	1:2:1098:G:C8	2.41	0.54
1:2:1198:U:H2'	1:2:1199:G:H8	1.71	0.54
1:2:1640:C:O3'	18:S:138:ARG:NE	2.41	0.54
1:2:1728:U:H2'	1:2:1729:G:O4'	2.07	0.54
1:2:1775:A:H2'	1:2:1776:G:C8	2.42	0.54
3:D:51:ARG:HG3	3:D:53:GLN:HE22	1.72	0.54
5:F:135:GLU:N	5:F:135:GLU:OE2	2.41	0.54
9:J:41:ARG:HH11	9:J:42:GLU:H	1.55	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:L:38:ARG:HA	34:i:105:ARG:HB3	1.88	0.54
22:W:66:ARG:HE	22:W:77:TRP:NE1	2.05	0.54
24:Y:37:PHE:O	24:Y:41:MET:HG2	2.07	0.54
26:a:12:PHE:HZ	26:a:21:LYS:HD2	1.73	0.54
28:c:1:MET:HG3	28:c:5:LYS:HG2	1.89	0.54
31:f:116:ARG:HH12	31:f:119:ARG:HA	1.72	0.54
1:2:1000:U:H2'	1:2:1001:G:H8	1.71	0.54
1:2:1105:C:H2'	1:2:1106:G:O4'	2.08	0.54
1:2:1223:G:C2	1:2:1224:A:C8	2.96	0.54
1:2:1244:U:H2'	1:2:1245:C:C6	2.43	0.54
1:2:1361:G:H2'	1:2:1362:G:H8	1.70	0.54
3:D:133:TYR:CE1	3:D:221:PRO:HD2	2.42	0.54
15:P:40:LEU:HD22	15:P:50:ILE:HG12	1.89	0.54
32:g:17:TRP:CD1	32:g:303:THR:HG1	2.25	0.54
36:y:3:C:H2'	36:y:4:A:H8	1.72	0.54
37:z:599:G:H2'	37:z:600:G:C8	2.42	0.54
1:2:367:G:OP1	10:K:99:ASN:ND2	2.41	0.54
1:2:538:C:H2'	1:2:539:C:H6	1.73	0.54
1:2:604:G:H5'	34:i:76:VAL:HG22	1.89	0.54
1:2:1552:C:OP1	30:e:13:LYS:NZ	2.28	0.54
3:D:162:ARG:HG2	3:D:165:ARG:HH21	1.72	0.54
4:E:110:LYS:HD3	4:E:128:CYS:HB2	1.90	0.54
9:J:159:ASP:OD1	9:J:160:LYS:N	2.41	0.54
16:Q:117:ARG:HD3	16:Q:121:ARG:HH21	1.73	0.54
32:g:13:GLY:HA3	32:g:43:TRP:CH2	2.41	0.54
33:h:68:ILE:HB	33:h:109:TYR:HB2	1.88	0.54
37:z:831:A:H5''	37:z:832:A:C4	2.43	0.54
1:2:632:U:H4'	1:2:634:G:H4'	1.90	0.54
1:2:1382:A:H2'	1:2:1383:G:O4'	2.08	0.54
2:C:125:THR:HG22	2:C:147:LEU:HD13	1.88	0.54
6:G:127:ARG:N	6:G:140:VAL:O	2.33	0.54
10:K:8:TRP:CD1	10:K:22:HIS:HE2	2.26	0.54
11:L:111:GLN:OE1	11:L:111:GLN:N	2.39	0.54
18:S:39:LEU:HA	18:S:42:ILE:HG12	1.90	0.54
37:z:522:U:H2'	37:z:523:G:C8	2.43	0.54
1:2:1260:C:H4'	1:2:1261:A:H5'	1.89	0.54
1:2:1560:C:H2'	1:2:1561:G:H8	1.72	0.54
1:2:1695:C:N3	1:2:1828:A:N6	2.56	0.54
1:2:1700:C:H2'	1:2:1701:G:C8	2.43	0.54
7:H:100:ILE:HD11	7:H:108:PRO:HB3	1.90	0.54
10:K:6:ASP:OD1	10:K:9:HIS:ND1	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:P:52:VAL:HA	15:P:55:ARG:HG2	1.88	0.54
18:S:60:LYS:O	18:S:64:ALA:N	2.41	0.54
36:y:42:G:H2'	36:y:43:A:C8	2.42	0.54
1:2:1099:C:H2'	1:2:1100:G:H8	1.71	0.54
3:D:49:VAL:HG12	3:D:65:ARG:NH2	2.22	0.54
10:K:190:LEU:HD11	10:K:194:GLU:HB3	1.90	0.54
13:N:111:VAL:HG22	13:N:140:PHE:HB2	1.90	0.54
17:R:10:ARG:HH12	17:R:21:ASP:HA	1.72	0.54
27:b:37:LYS:NZ	27:b:71:LEU:O	2.35	0.54
1:2:600:G:H2'	1:2:601:G:H8	1.73	0.54
1:2:864:G:N7	9:J:115:LYS:HG3	2.23	0.54
22:W:55:ARG:HA	22:W:87:ARG:HG3	1.88	0.54
23:X:74:LYS:HA	23:X:79:VAL:HG13	1.89	0.54
25:Z:41:PHE:HZ	25:Z:102:VAL:HG23	1.73	0.54
32:g:40:ILE:HG13	32:g:59:LEU:HB2	1.90	0.54
1:2:191:C:H2'	1:2:192:U:C6	2.43	0.53
1:2:977:A:H2'	1:2:978:G:C8	2.43	0.53
15:P:30:SER:O	15:P:34:LYS:HG2	2.07	0.53
30:e:52:PHE:CZ	30:e:54:LYS:HA	2.43	0.53
33:h:66:LYS:HA	33:h:111:ARG:HB2	1.89	0.53
35:l:8:LYS:O	35:l:12:ARG:HG2	2.08	0.53
2:C:112:ILE:HG13	2:C:112:ILE:O	2.08	0.53
7:H:28:VAL:O	7:H:42:LYS:NZ	2.37	0.53
8:I:23:LYS:HG2	8:I:40:ALA:HB1	1.90	0.53
15:P:19:ARG:HG2	15:P:22:VAL:HG13	1.89	0.53
17:R:39:ALA:HA	17:R:42:ARG:NE	2.23	0.53
24:Y:7:LEU:HD11	24:Y:37:PHE:CD2	2.43	0.53
1:2:403:G:N2	1:2:415:G:H1'	2.24	0.53
1:2:1067:G:H2'	1:2:1068:U:O4'	2.08	0.53
1:2:1199:G:H2'	1:2:1200:A:C8	2.43	0.53
1:2:1648:U:H3	1:2:1666:G:H1	1.55	0.53
8:I:76:LEU:HA	8:I:94:ARG:HA	1.90	0.53
13:N:135:SER:H	13:N:138:VAL:HG12	1.73	0.53
26:a:88:LYS:HB2	26:a:97:TYR:HE2	1.73	0.53
37:z:535:A:O2'	37:z:540:C:N3	2.38	0.53
1:2:341:G:H2'	1:2:342:U:H6	1.73	0.53
1:2:898:G:H2'	1:2:899:A:C8	2.43	0.53
1:2:1160:G:H2'	1:2:1161:G:N3	2.23	0.53
1:2:1249:A:HO2'	1:2:1661:C:HO2'	1.50	0.53
1:2:1403:U:H2'	1:2:1404:U:C6	2.44	0.53
12:M:3:MET:HB3	12:M:44:HIS:CG	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1648:U:H2'	1:2:1649:G:C8	2.43	0.53
1:2:1736:U:OP1	10:K:42:ARG:NH1	2.41	0.53
17:R:78:THR:N	17:R:95:GLY:O	2.40	0.53
26:a:114:MET:HE3	26:a:114:MET:O	2.08	0.53
1:2:106:C:H2'	1:2:107:A:C8	2.43	0.53
9:J:143:ARG:HH12	24:Y:53:ILE:HA	1.73	0.53
36:y:46:U:H4'	36:y:47:C:C5	2.43	0.53
1:2:642:U:H2'	1:2:643:A:C8	2.43	0.53
1:2:1405:A:H2'	1:2:1406:C:O4'	2.09	0.53
5:F:62:LYS:HA	12:M:96:ARG:HG3	1.91	0.53
22:W:36:CYS:O	22:W:40:ILE:N	2.40	0.53
37:z:527:G:N2	37:z:563:C:O2'	2.39	0.53
1:2:115:U:O2'	1:2:371:C:O2	2.19	0.53
1:2:1015:C:H2'	1:2:1016:A:C4	2.44	0.53
1:2:1290:G:H2'	1:2:1291:A:C8	2.43	0.53
1:2:1492:U:O2'	1:2:1494:A:OP1	2.19	0.53
9:J:143:ARG:HH12	24:Y:53:ILE:HG12	1.73	0.53
16:Q:44:VAL:HG13	16:Q:53:ILE:HG13	1.91	0.53
33:h:102:LYS:HA	33:h:107:VAL:HG12	1.91	0.53
4:E:255:THR:HA	4:E:258:LEU:HB2	1.89	0.53
6:G:11:ARG:HA	6:G:28:ALA:HB2	1.89	0.53
9:J:145:ARG:N	9:J:153:LEU:O	2.39	0.53
9:J:160:LYS:HA	9:J:189:PHE:HZ	1.74	0.53
21:V:37:VAL:HG12	21:V:39:LEU:H	1.73	0.53
30:e:37:ASN:O	30:e:38:MET:HE2	2.09	0.53
1:2:548:G:H2'	1:2:549:G:C8	2.43	0.53
1:2:592:G:OP2	1:2:593:C:O2'	2.25	0.53
1:2:867:U:OP2	15:P:76:LYS:NZ	2.32	0.53
1:2:913:U:H5'	9:J:118:ARG:HB2	1.90	0.53
1:2:1029:G:N1	1:2:1076:A:O2'	2.34	0.53
1:2:1840:G:O6	35:l:8:LYS:NZ	2.42	0.53
3:D:198:GLU:HB2	3:D:210:VAL:HG11	1.91	0.53
10:K:162:LEU:HB3	10:K:166:PHE:CE2	2.44	0.53
12:M:12:TYR:HB3	12:M:83:LEU:HD11	1.91	0.53
15:P:19:ARG:HG3	15:P:21:SER:H	1.74	0.53
15:P:70:LYS:O	15:P:74:ILE:HD12	2.07	0.53
17:R:18:ARG:H	20:U:91:LYS:HA	1.73	0.53
26:a:102:THR:OG1	26:a:106:GLN:NE2	2.42	0.53
28:c:1:MET:HG2	28:c:3:LEU:H	1.73	0.53
1:2:29:G:H2'	1:2:30:C:C6	2.45	0.52
1:2:158:A:H2	1:2:453:C:H1'	1.72	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:641:U:H2'	1:2:642:U:C6	2.44	0.52
8:I:182:PRO:HA	8:I:185:LEU:HD12	1.90	0.52
10:K:41:ARG:HE	10:K:43:ILE:HD11	1.75	0.52
11:L:87:LEU:HD11	11:L:100:LEU:HD11	1.91	0.52
36:y:17:G:O2'	36:y:59:A:N1	2.36	0.52
1:2:507:C:H2'	1:2:508:G:O4'	2.08	0.52
1:2:577:A:H5'	1:2:582:C:C5	2.45	0.52
1:2:819:U:H5	11:L:143:ASN:HB2	1.74	0.52
1:2:1044:G:N1	1:2:1065:U:OP2	2.37	0.52
2:C:183:LEU:HD12	2:C:189:ILE:HD13	1.91	0.52
3:D:227:LYS:O	3:D:231:LEU:HG	2.09	0.52
6:G:11:ARG:NE	6:G:27:PHE:O	2.31	0.52
16:Q:119:LEU:O	16:Q:124:MET:HB2	2.09	0.52
24:Y:11:LEU:O	24:Y:15:ASN:ND2	2.42	0.52
27:b:37:LYS:NZ	27:b:70:LYS:HG2	2.24	0.52
1:2:1305:C:OP2	31:f:105:TYR:OH	2.20	0.52
5:F:132:LYS:HZ3	5:F:193:ASP:HB2	1.74	0.52
5:F:138:VAL:O	5:F:149:SER:HA	2.09	0.52
7:H:75:SER:O	7:H:76:MET:HE2	2.10	0.52
7:H:178:ILE:HG22	7:H:182:LYS:HZ2	1.75	0.52
10:K:120:PRO:HB2	10:K:123:ARG:HE	1.72	0.52
17:R:32:GLN:HA	17:R:35:GLN:HG2	1.91	0.52
37:z:580:U:O4	37:z:581:A:N6	2.42	0.52
1:2:549:G:H2'	1:2:550:A:H8	1.75	0.52
1:2:942:U:H2'	1:2:943:G:C8	2.44	0.52
1:2:1043:C:H2'	1:2:1044:G:C8	2.44	0.52
1:2:1283:A:H5'	31:f:99:LYS:NZ	2.24	0.52
1:2:1289:A:H2'	1:2:1290:G:C8	2.44	0.52
1:2:1428:U:H2'	1:2:1429:C:C6	2.45	0.52
1:2:1659:A:H2'	1:2:1661:C:H41	1.74	0.52
1:2:1688:G:N2	1:2:1828:A:H8	2.06	0.52
2:C:161:ILE:HD12	2:C:162:PRO:HD2	1.90	0.52
7:H:106:GLU:OE2	7:H:110:GLN:HB2	2.09	0.52
9:J:126:HIS:HA	9:J:129:ILE:HG22	1.91	0.52
13:N:96:ILE:HG22	13:N:99:TYR:H	1.73	0.52
16:Q:43:HIS:CD2	16:Q:55:ARG:HB2	2.43	0.52
32:g:21:ILE:HG22	32:g:33:SER:HA	1.89	0.52
32:g:78:ALA:HB3	32:g:90:TRP:HB2	1.91	0.52
36:y:10:G:P	36:y:45:G:H21	2.33	0.52
1:2:1069:U:H2'	1:2:1070:C:C6	2.44	0.52
1:2:1355:U:OP1	4:E:99:LYS:NZ	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1469:G:N2	1:2:1471:G:H5''	2.24	0.52
1:2:1668:U:O2'	7:H:84:GLY:O	2.22	0.52
3:D:163:GLN:HG3	3:D:204:ILE:HD12	1.92	0.52
7:H:121:PRO:HG2	7:H:196:LEU:HD12	1.91	0.52
36:y:57:A:O2'	36:y:59:A:OP2	2.27	0.52
1:2:1:U:O4	11:L:47:LYS:NZ	2.33	0.52
1:2:510:A:H2'	1:2:511:A:H8	1.74	0.52
1:2:549:G:H2'	1:2:550:A:C8	2.44	0.52
1:2:1444:A:H3'	1:2:1445:G:H5''	1.92	0.52
3:D:193:ILE:O	3:D:197:ILE:HG13	2.10	0.52
5:F:196:GLY:H	5:F:198:ILE:HG13	1.74	0.52
8:I:224:ARG:O	8:I:227:GLN:HG3	2.10	0.52
32:g:34:ALA:HB1	32:g:66:VAL:HG12	1.92	0.52
35:l:15:ARG:HA	35:l:18:ARG:HE	1.74	0.52
1:2:1211:C:H42	1:2:1216:A:N6	2.07	0.52
1:2:1652:G:H2'	1:2:1653:G:C8	2.44	0.52
9:J:110:THR:HG23	9:J:112:ASN:H	1.74	0.52
10:K:191:GLU:HG3	13:N:18:GLN:NE2	2.25	0.52
16:Q:142:ARG:HG3	27:b:22:ARG:HH21	1.73	0.52
20:U:25:LYS:HA	20:U:55:ARG:HA	1.92	0.52
20:U:45:LEU:HD22	20:U:50:ILE:HD11	1.90	0.52
1:2:192:U:H3	1:2:203:G:H1	1.56	0.52
1:2:868:A:O2'	1:2:869:G:H8	1.90	0.52
1:2:1482:A:OP1	5:F:151:LYS:HE3	2.10	0.52
1:2:1625:A:H5''	20:U:37:GLY:H	1.73	0.52
3:D:165:ARG:O	3:D:169:MET:HG2	2.10	0.52
9:J:100:ILE:HG22	9:J:125:VAL:HG11	1.92	0.52
10:K:132:GLU:HG2	10:K:133:GLU:OE1	2.10	0.52
16:Q:141:ARG:NH1	16:Q:142:ARG:O	2.43	0.52
30:e:26:ASN:ND2	30:e:27:ARG:O	2.43	0.52
1:2:842:G:OP2	6:G:108:ARG:NH2	2.43	0.52
1:2:1043:C:O3'	16:Q:141:ARG:NH1	2.43	0.52
1:2:1130:G:H2'	1:2:1131:C:C6	2.44	0.52
2:C:85:ARG:NH2	19:T:82:ASP:O	2.43	0.52
5:F:5:ILE:HD12	5:F:9:ARG:HB3	1.91	0.52
11:L:170:PRO:HB3	11:L:174:LYS:HD2	1.91	0.52
12:M:21:MET:HB3	12:M:69:TRP:HB2	1.92	0.52
32:g:5:MET:HE3	32:g:6:THR:N	2.23	0.52
32:g:132:TRP:HA	32:g:139:LYS:H	1.73	0.52
1:2:1388:U:H3	1:2:1474:U:H3	1.58	0.52
1:2:1540:A:H2'	1:2:1541:G:C8	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:179:ALA:O	2:C:183:LEU:HD23	2.09	0.52
3:D:123:ALA:HB3	3:D:169:MET:HE3	1.92	0.52
9:J:49:LYS:HG3	9:J:63:PHE:HE2	1.75	0.52
20:U:143:GLY:C	20:U:144:ARG:HD3	2.35	0.52
22:W:80:PHE:HA	30:e:52:PHE:CE2	2.45	0.52
32:g:87:LEU:HD21	32:g:111:VAL:HG21	1.92	0.52
1:2:600:G:H2'	1:2:601:G:C8	2.45	0.51
1:2:1626:U:O3'	20:U:34:LYS:NZ	2.39	0.51
8:I:106:LEU:HD13	8:I:109:LEU:HD11	1.92	0.51
12:M:65:ARG:HH12	30:e:23:VAL:C	2.18	0.51
18:S:50:LYS:HD3	18:S:81:ILE:HD12	1.93	0.51
26:a:91:LEU:HB3	26:a:97:TYR:HB3	1.92	0.51
27:b:9:GLY:HA3	27:b:12:LYS:HD2	1.92	0.51
1:2:513:A:H62	1:2:584:A:H62	1.56	0.51
1:2:544:A:H2'	1:2:545:A:C8	2.45	0.51
1:2:858:A:C5	24:Y:107:SER:HA	2.45	0.51
1:2:988:A:H2'	1:2:989:G:H8	1.75	0.51
1:2:1135:C:H2'	1:2:1136:G:O4'	2.10	0.51
1:2:1163:G:H2'	1:2:1164:G:O4'	2.10	0.51
3:D:35:ALA:HB3	3:D:42:ARG:HA	1.92	0.51
3:D:67:PHE:HB2	3:D:86:LEU:HB2	1.92	0.51
8:I:67:VAL:O	8:I:100:CYS:N	2.42	0.51
9:J:99:ARG:HH21	9:J:100:ILE:HG12	1.75	0.51
11:L:122:SER:H	11:L:125:HIS:HB3	1.75	0.51
28:c:35:VAL:HG11	28:c:63:LEU:HD11	1.92	0.51
32:g:31:ILE:HG22	32:g:45:LEU:HD21	1.92	0.51
32:g:129:ILE:HB	32:g:142:VAL:HB	1.92	0.51
1:2:104:A:OP1	10:K:12:ARG:NE	2.43	0.51
1:2:947:C:H2'	1:2:948:G:C8	2.45	0.51
1:2:1294:G:N3	17:R:79:HIS:ND1	2.57	0.51
1:2:1582:G:OP1	1:2:1582:G:N2	2.43	0.51
7:H:140:ASP:OD1	7:H:141:VAL:N	2.42	0.51
24:Y:30:CYS:SG	24:Y:61:ILE:HG12	2.50	0.51
1:2:191:C:H4'	1:2:191:C:OP1	2.10	0.51
1:2:664:C:H2'	1:2:665:U:C6	2.46	0.51
1:2:1178:A:O3'	35:l:15:ARG:NH1	2.43	0.51
1:2:1206:G:H2'	1:2:1207:G:H8	1.75	0.51
1:2:1280:A:H4'	1:2:1281:G:H5''	1.92	0.51
1:2:1386:U:C2	1:2:1477:G:N2	2.79	0.51
1:2:1531:G:H2'	1:2:1532:A:C8	2.45	0.51
4:E:181:ILE:HB	4:E:208:TYR:HB2	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:E:191:SER:HB2	4:E:196:LYS:HG3	1.91	0.51
6:G:230:LYS:HB3	6:G:233:LYS:HB2	1.91	0.51
6:G:255:ARG:HD3	6:G:256:LEU:HD22	1.92	0.51
10:K:114:GLU:HG3	10:K:121:LEU:HD23	1.92	0.51
17:R:9:LYS:O	20:U:91:LYS:NZ	2.38	0.51
23:X:70:LEU:HD12	23:X:71:ARG:HG3	1.92	0.51
28:c:23:ARG:NH1	28:c:27:SER:OG	2.43	0.51
34:i:85:LYS:O	34:i:89:GLN:NE2	2.44	0.51
1:2:366:A:H2'	1:2:367:G:O4'	2.10	0.51
1:2:985:C:H5''	3:D:116:LYS:HD2	1.93	0.51
1:2:1093:G:H4'	2:C:32:PHE:CG	2.45	0.51
1:2:1281:G:OP1	14:O:107:SER:OG	2.29	0.51
1:2:1404:U:OP1	18:S:71:ARG:NH1	2.44	0.51
1:2:1660:G:C4	21:V:88:MET:HE1	2.45	0.51
2:C:75:SER:O	2:C:123:VAL:N	2.44	0.51
9:J:139:ILE:H	15:P:19:ARG:HH22	1.58	0.51
16:Q:127:GLY:HA2	27:b:58:VAL:HG22	1.92	0.51
20:U:101:ASN:O	20:U:105:ASN:ND2	2.43	0.51
32:g:24:THR:HG23	32:g:27:PHE:H	1.75	0.51
1:2:151:C:H2'	1:2:152:U:H6	1.74	0.51
1:2:562:U:H2'	1:2:563:U:C2	2.45	0.51
1:2:967:G:H4'	1:2:968:A:H8	1.75	0.51
1:2:1119:C:H4'	3:D:149:GLN:HB2	1.93	0.51
2:C:178:LEU:O	2:C:182:VAL:HG22	2.11	0.51
6:G:69:PHE:CG	26:a:17:LEU:HD11	2.46	0.51
12:M:36:ALA:HB1	12:M:39:ASN:HD21	1.74	0.51
17:R:30:TYR:HA	17:R:33:LEU:HB3	1.92	0.51
32:g:206:LEU:HD21	32:g:218:LEU:HD12	1.91	0.51
1:2:16:G:H2'	1:2:17:C:C6	2.46	0.51
1:2:449:C:H3'	1:2:450:A:H8	1.76	0.51
1:2:1097:U:H2'	1:2:1098:G:H8	1.76	0.51
1:2:1511:G:O3'	17:R:122:THR:OG1	2.24	0.51
4:E:195:PRO:HA	4:E:198:LEU:HG	1.92	0.51
5:F:167:TYR:OH	5:F:201:LYS:O	2.26	0.51
11:L:52:LYS:HA	11:L:55:LYS:HE3	1.93	0.51
23:X:62:MET:HE3	23:X:62:MET:O	2.11	0.51
23:X:64:GLU:HG2	28:c:3:LEU:HD23	1.93	0.51
26:a:24:VAL:HB	26:a:72:PHE:HD1	1.75	0.51
32:g:64:HIS:ND1	32:g:83:TRP:HB2	2.26	0.51
37:z:521:U:H2'	37:z:522:U:C6	2.45	0.51
37:z:541:C:H2'	37:z:542:A:C8	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:369:C:H2'	1:2:370:G:C8	2.46	0.51
1:2:628:C:H2'	1:2:629:C:C6	2.44	0.51
1:2:736:C:O4'	9:J:99:ARG:NH2	2.44	0.51
1:2:1634:G:H21	36:y:41:A:H4'	1.76	0.51
1:2:1796:C:H2'	1:2:1797:U:H6	1.76	0.51
3:D:151:ARG:HD3	3:D:152:LYS:H	1.75	0.51
6:G:184:THR:HG22	6:G:224:ASN:HA	1.92	0.51
10:K:191:GLU:HG3	13:N:18:GLN:HE21	1.75	0.51
20:U:80:PRO:HB2	20:U:82:TRP:NE1	2.26	0.51
23:X:38:GLU:N	23:X:38:GLU:OE1	2.44	0.51
24:Y:78:ARG:NH1	24:Y:126:LEU:HD13	2.26	0.51
32:g:5:MET:HE2	32:g:310:TRP:HB3	1.93	0.51
32:g:41:ILE:HD13	32:g:55:PRO:HB3	1.92	0.51
1:2:1013:U:H2'	1:2:1014:U:H6	1.75	0.51
1:2:1537:C:O2'	18:S:43:GLU:OE1	2.24	0.51
1:2:1796:C:H2'	1:2:1797:U:C6	2.45	0.51
2:C:181:GLU:O	2:C:185:MET:HG2	2.11	0.51
7:H:50:PRO:HB3	7:H:69:VAL:HG12	1.93	0.51
9:J:144:ILE:HA	9:J:154:ILE:HA	1.92	0.51
14:O:52:LEU:N	14:O:77:ILE:O	2.39	0.51
22:W:70:CYS:H	30:e:40:ARG:NH2	2.09	0.51
26:a:21:LYS:HB2	26:a:75:ILE:HB	1.92	0.51
1:2:624:A:H2'	1:2:625:G:C8	2.45	0.51
2:C:80:ARG:O	2:C:84:GLN:NE2	2.41	0.51
3:D:49:VAL:HG11	3:D:62:LEU:HB2	1.92	0.51
4:E:218:LEU:HA	4:E:221:PHE:CB	2.41	0.51
15:P:49:GLN:HA	15:P:52:VAL:HG22	1.94	0.51
32:g:216:ALA:HB3	32:g:230:LEU:HB2	1.92	0.51
1:2:663:G:H2'	1:2:664:C:C6	2.46	0.50
1:2:1236:A:C4	17:R:100:LYS:HE2	2.47	0.50
1:2:1718:G:H2'	1:2:1719:A:H8	1.76	0.50
20:U:120:HIS:O	20:U:124:ARG:HG2	2.10	0.50
1:2:4:C:H1'	11:L:18:ARG:NH2	2.23	0.50
1:2:96:C:H2'	1:2:97:U:H6	1.75	0.50
1:2:987:G:C6	1:2:1130:G:H4'	2.45	0.50
1:2:1164:G:H2'	1:2:1165:G:O4'	2.11	0.50
28:c:61:THR:HG23	28:c:62:VAL:HG23	1.92	0.50
32:g:155:ARG:HG2	32:g:198:VAL:HG23	1.94	0.50
32:g:290:ALA:HB3	32:g:299:PHE:HB2	1.94	0.50
1:2:28:U:H2'	1:2:29:G:C8	2.46	0.50
1:2:411:G:H5'	13:N:98:LYS:HG3	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:454:A:H3'	1:2:455:A:H8	1.76	0.50
1:2:794:G:N7	9:J:106:ARG:HA	2.27	0.50
1:2:1069:U:H2'	1:2:1070:C:H6	1.76	0.50
1:2:1266:G:O6	1:2:1507:U:O4	2.29	0.50
1:2:1268:C:OP1	31:f:94:LYS:NZ	2.45	0.50
1:2:1615:A:H2'	17:R:40:ARG:NH2	2.26	0.50
1:2:1623:C:H2'	1:2:1624:C:C6	2.46	0.50
1:2:1643:G:H5'	18:S:126:ARG:O	2.12	0.50
16:Q:37:PHE:HE1	16:Q:110:PRO:HD3	1.75	0.50
23:X:3:SER:OG	23:X:7:GLU:HG3	2.11	0.50
27:b:10:ARG:H	27:b:12:LYS:NZ	2.09	0.50
31:f:105:TYR:HB2	31:f:131:PHE:HE2	1.76	0.50
33:h:57:LYS:HG2	33:h:77:LEU:HD21	1.92	0.50
1:2:365:U:O2'	13:N:7:GLU:OE2	2.18	0.50
1:2:389:C:H5''	1:2:390:C:H5	1.75	0.50
1:2:856:G:H21	24:Y:107:SER:HB3	1.76	0.50
1:2:1220:G:H1	1:2:1637:U:H3	1.60	0.50
1:2:1537:C:H2'	1:2:1538:U:C2	2.47	0.50
1:2:1612:G:O6	17:R:43:ARG:NE	2.38	0.50
10:K:88:ASN:OD1	10:K:205:ARG:NH1	2.43	0.50
20:U:98:VAL:HG11	20:U:106:LYS:HG2	1.92	0.50
24:Y:35:VAL:O	24:Y:39:THR:HG23	2.11	0.50
28:c:37:CYS:SG	28:c:60:SER:OG	2.64	0.50
1:2:116:U:O4	1:2:337:G:O6	2.30	0.50
1:2:495:G:H2'	1:2:496:G:H8	1.77	0.50
1:2:792:G:H2'	1:2:793:C:C6	2.46	0.50
1:2:1799:G:H2'	1:2:1800:A:C8	2.47	0.50
5:F:50:ILE:HG22	5:F:88:ALA:HA	1.93	0.50
6:G:133:THR:O	6:G:136:ILE:HG13	2.12	0.50
6:G:238:LEU:O	6:G:242:LYS:NZ	2.44	0.50
24:Y:10:ALA:O	24:Y:14:ILE:HD12	2.11	0.50
31:f:132:MET:HG2	31:f:141:CYS:HB2	1.93	0.50
32:g:154:VAL:O	32:g:155:ARG:NH1	2.40	0.50
1:2:370:G:H5''	10:K:31:ARG:HH21	1.77	0.50
1:2:1854:A:H5''	27:b:8:ASN:HD21	1.77	0.50
2:C:85:ARG:HG2	2:C:89:LYS:NZ	2.26	0.50
9:J:67:PRO:HG2	9:J:68:GLN:OE1	2.11	0.50
10:K:100:CYS:SG	10:K:101:ILE:N	2.85	0.50
18:S:146:ARG:HH21	36:y:31:C:P	2.35	0.50
20:U:80:PRO:HB2	20:U:82:TRP:CD1	2.47	0.50
24:Y:41:MET:HE1	24:Y:129:PHE:CD1	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:a:40:ILE:HA	26:a:43:LYS:HZ3	1.76	0.50
1:2:1685:U:H2'	1:2:1686:U:H6	1.77	0.50
1:2:1710:A:N1	1:2:1812:A:H2	2.10	0.50
1:2:1792:C:O2'	10:K:2:GLY:N	2.45	0.50
2:C:77:ILE:HG22	2:C:123:VAL:O	2.12	0.50
13:N:84:ARG:N	13:N:84:ARG:HD2	2.27	0.50
19:T:99:ASP:OD1	19:T:102:THR:OG1	2.29	0.50
25:Z:59:ALA:N	25:Z:65:ALA:O	2.42	0.50
30:e:27:ARG:HA	30:e:30:LEU:HD23	1.94	0.50
32:g:206:LEU:HD11	32:g:218:LEU:HB3	1.93	0.50
1:2:444:U:O3'	8:I:94:ARG:NH2	2.32	0.50
1:2:552:U:H2'	1:2:553:G:C8	2.47	0.50
1:2:742:C:H2'	1:2:743:U:C6	2.47	0.50
1:2:1743:G:O6	1:2:1780:U:O4	2.30	0.50
8:I:27:PHE:HA	8:I:30:LYS:HD2	1.92	0.50
8:I:37:ALA:HA	8:I:49:VAL:HA	1.94	0.50
17:R:11:THR:HA	17:R:16:THR:HG22	1.93	0.50
24:Y:101:PHE:HB2	24:Y:129:PHE:CZ	2.46	0.50
24:Y:104:LEU:HB3	24:Y:125:ILE:HD12	1.92	0.50
1:2:98:C:OP2	1:2:416:A:O2'	2.30	0.50
1:2:374:U:H4'	13:N:134:LEU:O	2.12	0.50
1:2:381:C:H2'	1:2:382:A:H8	1.77	0.50
1:2:545:A:H2'	1:2:546:U:C6	2.47	0.50
1:2:797:U:H2'	1:2:798:A:H8	1.76	0.50
1:2:1491:G:N2	30:e:45:GLN:OE1	2.41	0.50
2:C:198:MET:HE2	19:T:89:SER:HB3	1.94	0.50
3:D:137:LEU:HD11	3:D:176:VAL:HG21	1.93	0.50
14:O:40:LYS:HZ1	14:O:44:LYS:HE3	1.76	0.50
29:d:31:ARG:HH11	29:d:43:ILE:HG12	1.77	0.50
1:2:944:C:H2'	1:2:945:G:H8	1.76	0.49
1:2:1718:G:H2'	1:2:1719:A:C8	2.47	0.49
2:C:89:LYS:CE	2:C:201:LEU:HG	2.40	0.49
5:F:203:PRO:HA	5:F:208:VAL:HG13	1.94	0.49
6:G:54:TYR:HH	26:a:17:LEU:H	1.59	0.49
13:N:35:ARG:NH2	13:N:53:GLY:O	2.45	0.49
32:g:251:ALA:HB2	32:g:289:LEU:HD23	1.94	0.49
37:z:560:C:H2'	37:z:561:U:H6	1.76	0.49
1:2:291:U:H2'	1:2:292:A:C8	2.47	0.49
1:2:332:C:C2	1:2:333:A:C8	3.00	0.49
1:2:853:U:H4'	6:G:201:HIS:NE2	2.27	0.49
1:2:1193:G:H2'	1:2:1194:G:H8	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:111:CYS:HA	3:D:114:VAL:HG12	1.94	0.49
5:F:127:MET:HE1	5:F:133:GLY:HA2	1.93	0.49
5:F:225:GLU:O	5:F:227:LYS:NZ	2.42	0.49
16:Q:91:THR:HA	16:Q:124:MET:HE1	1.94	0.49
24:Y:105:THR:HB	24:Y:126:LEU:HD21	1.94	0.49
26:a:45:ALA:O	26:a:49:LYS:N	2.45	0.49
32:g:125:ARG:HG2	32:g:150:TRP:CD2	2.47	0.49
32:g:251:ALA:HA	32:g:256:ILE:HD12	1.94	0.49
1:2:149:A:C5	1:2:170:A:N6	2.80	0.49
1:2:349:U:C5'	25:Z:22:TRP:HH2	2.26	0.49
1:2:1123:C:H2'	1:2:1124:C:C6	2.47	0.49
1:2:1711:C:H2'	1:2:1712:C:H6	1.76	0.49
6:G:136:ILE:HG23	6:G:149:TYR:CE1	2.47	0.49
11:L:106:LEU:HA	11:L:109:ARG:HG3	1.93	0.49
23:X:21:ASN:HD21	24:Y:66:THR:HB	1.77	0.49
24:Y:41:MET:HE1	24:Y:129:PHE:CE1	2.48	0.49
24:Y:101:PHE:HA	24:Y:113:HIS:NE2	2.27	0.49
25:Z:1:MET:SD	25:Z:3:LYS:NZ	2.72	0.49
1:2:445:A:H2'	1:2:446:C:C6	2.47	0.49
1:2:865:A:C5	1:2:911:G:H1'	2.47	0.49
1:2:1395:C:H5''	32:g:100:ARG:CZ	2.42	0.49
1:2:1537:C:OP1	21:V:63:HIS:NE2	2.45	0.49
1:2:1668:U:OP2	18:S:17:LYS:HD2	2.13	0.49
5:F:46:THR:N	5:F:83:SER:O	2.44	0.49
13:N:93:LEU:HD23	13:N:93:LEU:H	1.77	0.49
16:Q:27:VAL:HG23	16:Q:91:THR:H	1.77	0.49
18:S:124:PRO:O	18:S:126:ARG:NH1	2.45	0.49
37:z:574:C:O2'	37:z:575:A:OP1	2.25	0.49
1:2:158:A:C2	1:2:453:C:H1'	2.48	0.49
1:2:232:A:H2'	1:2:233:A:C8	2.47	0.49
1:2:551:A:H2'	1:2:552:U:C6	2.47	0.49
1:2:1278:A:H62	14:O:101:ARG:HB3	1.76	0.49
1:2:1583:A:H2'	1:2:1584:A:O4'	2.12	0.49
1:2:1803:A:H2'	1:2:1804:U:C6	2.48	0.49
1:2:1836:C:H2'	1:2:1837:G:H8	1.78	0.49
2:C:199:PRO:HG2	19:T:91:LEU:HD11	1.93	0.49
4:E:235:TYR:OH	24:Y:71:LYS:HD2	2.12	0.49
4:E:236:LEU:HD21	24:Y:70:ASN:CG	2.38	0.49
7:H:188:TYR:HA	7:H:191:LYS:HE2	1.95	0.49
10:K:39:GLY:O	10:K:61:ASP:HB2	2.13	0.49
18:S:86:GLN:O	18:S:90:LYS:HG2	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:a:38:THR:HA	26:a:41:GLN:HG2	1.93	0.49
32:g:155:ARG:HG3	32:g:199:THR:HA	1.94	0.49
1:2:96:C:H2'	1:2:97:U:C6	2.47	0.49
1:2:190:A:H3'	1:2:191:C:H5''	1.94	0.49
1:2:904:A:H2'	1:2:905:G:H8	1.77	0.49
1:2:1128:C:H2'	1:2:1129:A:O4'	2.13	0.49
1:2:1451:A:H2'	1:2:1452:G:H8	1.77	0.49
1:2:1453:U:H2'	1:2:1454:G:C8	2.48	0.49
1:2:1553:C:H2'	1:2:1554:C:C6	2.48	0.49
13:N:77:VAL:HG22	13:N:86:ILE:HD11	1.93	0.49
16:Q:142:ARG:NH2	27:b:28:CYS:O	2.45	0.49
17:R:10:ARG:NH2	17:R:20:VAL:O	2.43	0.49
19:T:27:ASP:OD2	19:T:30:THR:N	2.38	0.49
19:T:109:LEU:HG	19:T:111:PHE:CD2	2.46	0.49
27:b:73:TYR:HE2	27:b:83:VAL:HG11	1.78	0.49
28:c:11:SER:HB2	28:c:15:GLU:HB2	1.93	0.49
32:g:206:LEU:HD11	32:g:218:LEU:HD12	1.93	0.49
36:y:12:G:C6	36:y:23:G:C6	3.01	0.49
37:z:831:A:H5''	37:z:832:A:C5	2.47	0.49
1:2:193:C:H2'	1:2:194:C:C6	2.47	0.49
1:2:495:G:H2'	1:2:496:G:C8	2.48	0.49
1:2:599:U:H2'	1:2:600:G:H8	1.77	0.49
1:2:1313:U:H2'	1:2:1314:G:C8	2.47	0.49
1:2:1769:U:H2'	1:2:1770:G:C8	2.48	0.49
2:C:50:ASN:HD22	2:C:53:ARG:HG2	1.77	0.49
32:g:33:SER:HB3	32:g:43:TRP:HE1	1.77	0.49
32:g:87:LEU:HD11	32:g:108:VAL:HG21	1.95	0.49
1:2:121:U:O3'	6:G:77:ARG:NH2	2.46	0.49
1:2:148:U:O4	1:2:170:A:N7	2.46	0.49
1:2:869:G:H5''	13:N:156:GLN:HG2	1.95	0.49
1:2:1320:G:H2'	1:2:1321:G:C8	2.48	0.49
1:2:1596:A:O5'	33:h:41:ARG:NH2	2.45	0.49
4:E:194:VAL:HG23	4:E:195:PRO:HD3	1.94	0.49
8:I:4:ASN:HB3	8:I:110:ASN:HD22	1.78	0.49
18:S:55:VAL:HA	18:S:63:PHE:CE2	2.48	0.49
18:S:146:ARG:HE	36:y:31:C:P	2.35	0.49
32:g:207:CYS:N	32:g:219:TRP:O	2.33	0.49
1:2:107:A:H2'	1:2:108:G:C8	2.48	0.49
1:2:1450:A:N7	1:2:1472:A:N6	2.61	0.49
1:2:1674:A:N6	7:H:58:ALA:H	2.11	0.49
3:D:218:LEU:O	3:D:219:LYS:HE2	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:65:PRO:HB2	9:J:67:PRO:HD3	1.95	0.49
13:N:119:ASP:N	13:N:119:ASP:OD1	2.46	0.49
31:f:135:HIS:HD2	31:f:140:TYR:H	1.61	0.49
1:2:67:C:N4	1:2:151:C:HO2'	2.10	0.49
1:2:162:C:H2'	1:2:163:U:O4'	2.12	0.49
1:2:189:G:O2'	1:2:205:G:N2	2.38	0.49
1:2:389:C:N3	13:N:104:LYS:NZ	2.57	0.49
1:2:413:U:H2'	1:2:414:C:C6	2.48	0.49
1:2:547:U:C2	1:2:548:G:C8	3.00	0.49
1:2:831:C:H3'	26:a:8:ARG:HH22	1.78	0.49
1:2:930:G:H22	1:2:1004:A:H2	1.60	0.49
1:2:1151:U:O2'	1:2:1152:U:H5'	2.13	0.49
1:2:1707:A:H2'	1:2:1708:C:C6	2.48	0.49
7:H:20:PHE:HB3	7:H:23:TRP:HB2	1.95	0.49
7:H:160:GLU:HA	7:H:163:PHE:HB2	1.94	0.49
9:J:68:GLN:HB3	9:J:71:SER:HB2	1.95	0.49
11:L:61:LEU:HD11	11:L:95:ASP:HA	1.94	0.49
12:M:27:VAL:HG12	12:M:43:LEU:HD21	1.93	0.49
17:R:83:MET:HA	17:R:83:MET:HE3	1.94	0.49
18:S:86:GLN:O	18:S:89:SER:OG	2.28	0.49
1:2:993:A:H2'	1:2:994:A:C8	2.48	0.48
1:2:1000:U:H2'	1:2:1001:G:C8	2.47	0.48
1:2:1045:A:O2'	1:2:1848:U:O2	2.27	0.48
1:2:1397:A:H4'	22:W:52:GLY:HA3	1.94	0.48
1:2:1429:C:H2'	1:2:1430:C:C6	2.48	0.48
10:K:151:GLU:HB2	10:K:152:ARG:HH11	1.77	0.48
11:L:54:ARG:NH1	11:L:98:LEU:HG	2.28	0.48
12:M:1:MET:H1	12:M:3:MET:N	2.11	0.48
25:Z:60:LYS:HE3	25:Z:116:PRO:HB3	1.95	0.48
27:b:10:ARG:H	27:b:12:LYS:HZ3	1.60	0.48
37:z:520:U:H2'	37:z:521:U:C6	2.48	0.48
1:2:164:A:H3'	1:2:165:G:N2	2.28	0.48
1:2:217:U:H2'	1:2:218:A:H8	1.76	0.48
1:2:521:A:H2'	1:2:522:C:C6	2.48	0.48
1:2:606:A:H5''	25:Z:68:LYS:NZ	2.28	0.48
1:2:1663:U:OP2	18:S:141:TYR:OH	2.31	0.48
6:G:251:GLU:O	6:G:254:LYS:HG2	2.13	0.48
7:H:55:ARG:NH2	18:S:123:ASP:OD1	2.47	0.48
9:J:104:PRO:HD3	9:J:116:ARG:NH1	2.28	0.48
11:L:132:GLN:HG3	11:L:134:HIS:CD2	2.48	0.48
12:M:57:TYR:HA	12:M:74:GLU:HG3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:W:66:ARG:HA	22:W:77:TRP:CD1	2.48	0.48
32:g:131:LEU:O	32:g:139:LYS:N	2.46	0.48
1:2:64:A:N6	1:2:83:A:OP2	2.34	0.48
1:2:151:C:N3	1:2:168:C:N4	2.58	0.48
1:2:874:G:C6	1:2:904:A:N1	2.81	0.48
1:2:959:A:H2'	1:2:960:A:C8	2.48	0.48
1:2:1424:G:C2	1:2:1425:G:C8	3.01	0.48
1:2:1668:U:H2'	1:2:1669:G:O4'	2.14	0.48
5:F:201:LYS:HZ3	5:F:203:PRO:HB2	1.77	0.48
13:N:11:GLN:HB2	13:N:56:ILE:HG13	1.95	0.48
19:T:29:HIS:HA	19:T:32:LYS:HE3	1.94	0.48
20:U:23:ARG:NH1	33:h:48:VAL:HG22	2.28	0.48
31:f:135:HIS:HB2	31:f:138:ARG:HB2	1.94	0.48
35:l:20:MET:HA	35:l:23:ARG:HE	1.79	0.48
37:z:535:A:O2'	37:z:541:C:N4	2.47	0.48
1:2:531:U:H2'	1:2:532:U:C6	2.48	0.48
1:2:625:G:H2'	1:2:626:C:C6	2.47	0.48
1:2:927:C:H2'	1:2:928:G:C8	2.49	0.48
1:2:1562:G:H2'	1:2:1563:C:C6	2.47	0.48
1:2:1563:C:H2'	1:2:1564:A:C4	2.48	0.48
6:G:246:LEU:HD21	6:G:250:GLU:HG3	1.95	0.48
17:R:10:ARG:NH1	17:R:21:ASP:HA	2.29	0.48
19:T:83:ASN:OD1	19:T:84:TYR:N	2.46	0.48
24:Y:86:LEU:HD23	24:Y:117:ARG:HH21	1.78	0.48
31:f:106:TYR:CD1	31:f:114:ILE:HD12	2.48	0.48
37:z:541:C:H2'	37:z:542:A:H8	1.78	0.48
1:2:19:A:H5'	25:Z:107:ARG:NH1	2.28	0.48
1:2:51:U:H2'	1:2:52:G:C8	2.49	0.48
1:2:533:C:H2'	1:2:534:G:O4'	2.12	0.48
1:2:1142:C:O2'	1:2:1146:A:N1	2.43	0.48
1:2:1584:A:H2'	1:2:1585:C:O4'	2.14	0.48
9:J:168:HIS:ND1	9:J:169:LYS:HG3	2.28	0.48
10:K:141:ARG:NH2	10:K:142:SER:O	2.39	0.48
13:N:78:THR:OG1	13:N:87:VAL:O	2.27	0.48
17:R:81:ARG:HB2	17:R:117:GLY:HA3	1.95	0.48
1:2:144:U:H2'	1:2:145:G:C8	2.49	0.48
1:2:422:G:H2'	1:2:423:A:C8	2.48	0.48
1:2:520:U:H2'	1:2:521:A:H8	1.76	0.48
1:2:571:U:H2'	1:2:572:U:C6	2.48	0.48
1:2:663:G:H2'	1:2:664:C:H6	1.78	0.48
1:2:1089:A:H1'	24:Y:9:ASP:OD1	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1232:G:O6	20:U:137:LYS:HE3	2.14	0.48
1:2:1837:G:OP2	35:l:4:LYS:HG2	2.14	0.48
6:G:35:PRO:HG2	6:G:36:HIS:HD1	1.78	0.48
20:U:114:LEU:HA	20:U:117:ILE:HB	1.94	0.48
24:Y:59:GLY:C	24:Y:60:LYS:HD3	2.37	0.48
25:Z:68:LYS:HZ2	34:i:83:VAL:HA	1.77	0.48
25:Z:81:ILE:HG12	25:Z:120:PHE:CD2	2.49	0.48
1:2:550:A:H2'	1:2:551:A:C8	2.48	0.48
1:2:1027:A:H2'	1:2:1028:C:C6	2.49	0.48
1:2:1088:G:C2	1:2:1154:G:C6	3.02	0.48
1:2:1274:A:C4	1:2:1316:G:N2	2.81	0.48
1:2:1448:A:N6	1:2:1469:G:O2'	2.47	0.48
1:2:1561:G:O3'	1:2:1562:G:N2	2.44	0.48
6:G:163:ASP:OD1	6:G:164:LEU:N	2.47	0.48
16:Q:149:ARG:N	27:b:26:CYS:O	2.47	0.48
22:W:66:ARG:HE	22:W:77:TRP:CD1	2.32	0.48
34:i:86:VAL:HG12	34:i:86:VAL:O	2.14	0.48
36:y:56:G:O2'	36:y:57:A:O4'	2.27	0.48
1:2:1290:G:H2'	1:2:1291:A:H8	1.78	0.48
1:2:1732:G:O6	1:2:1791:U:C2	2.66	0.48
5:F:36:GLY:C	5:F:51:LEU:HB3	2.39	0.48
12:M:5:LYS:HA	12:M:8:ARG:HH11	1.79	0.48
14:O:52:LEU:HD11	14:O:62:VAL:HG12	1.96	0.48
22:W:24:LEU:HD13	22:W:32:LEU:HB2	1.95	0.48
32:g:66:VAL:HG22	32:g:82:SER:OG	2.13	0.48
1:2:1824:U:OP2	37:z:834:A:O2'	2.31	0.48
5:F:1:MET:HG2	5:F:4:GLN:HB2	1.95	0.48
5:F:20:GLU:OE2	5:F:76:ARG:NE	2.47	0.48
7:H:38:TYR:OH	29:d:51:ARG:NH1	2.37	0.48
7:H:124:ASP:OD1	7:H:125:SER:N	2.46	0.48
19:T:36:GLU:HB3	19:T:47:ARG:HD2	1.96	0.48
25:Z:1:MET:HE3	25:Z:5:ARG:HE	1.79	0.48
32:g:270:LEU:HD21	32:g:298:LEU:HD11	1.96	0.48
37:z:527:G:H2'	37:z:528:C:C6	2.48	0.48
1:2:121:U:H5''	6:G:77:ARG:NH1	2.29	0.48
1:2:411:G:OP1	13:N:97:ARG:NH1	2.47	0.48
1:2:446:C:O2	1:2:1794:A:O2'	2.32	0.48
1:2:497:G:OP2	26:a:104:ARG:NH2	2.47	0.48
1:2:878:U:H2'	1:2:879:U:C6	2.49	0.48
1:2:1007:A:OP1	15:P:3:ARG:NH1	2.46	0.48
1:2:1344:G:N2	1:2:1377:G:H22	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:59:ASP:O	6:G:62:LYS:HG3	2.13	0.48
9:J:144:ILE:HD11	24:Y:52:ILE:HG22	1.96	0.48
10:K:190:LEU:HD23	10:K:195:LEU:HD23	1.95	0.48
17:R:98:ASN:HB3	17:R:120:SER:HB2	1.95	0.48
18:S:10:VAL:HG21	18:S:98:LYS:HZ3	1.77	0.48
23:X:40:ASP:OD2	23:X:43:THR:OG1	2.26	0.48
32:g:41:ILE:HG21	32:g:55:PRO:HB3	1.96	0.48
36:y:60:C:H2'	36:y:61:C:C6	2.49	0.48
1:2:106:C:H5''	1:2:421:G:O2'	2.13	0.47
1:2:603:C:OP1	34:i:75:LYS:N	2.47	0.47
1:2:1347:G:H2'	1:2:1348:G:C8	2.44	0.47
1:2:1528:A:N6	1:2:1529:C:H41	2.12	0.47
1:2:1629:A:H2'	1:2:1630:C:O4'	2.13	0.47
1:2:1863:A:C6	3:D:115:LYS:HG2	2.48	0.47
10:K:38:ILE:HD12	10:K:60:LEU:O	2.13	0.47
10:K:89:GLU:OE1	10:K:92:ARG:NH1	2.47	0.47
15:P:83:ASP:OD1	15:P:84:LEU:HD23	2.13	0.47
28:c:16:LYS:HA	28:c:23:ARG:HD2	1.95	0.47
32:g:17:TRP:HB2	32:g:36:ARG:HD2	1.96	0.47
32:g:22:ALA:HB3	32:g:32:LEU:HB2	1.96	0.47
1:2:343:C:H2'	1:2:344:U:C6	2.48	0.47
1:2:678:U:H5	1:2:736:C:H42	1.61	0.47
1:2:1125:G:H2'	1:2:1126:G:N9	2.30	0.47
1:2:1551:A:H3'	30:e:13:LYS:HE2	1.96	0.47
1:2:1554:C:H2'	1:2:1555:U:O4'	2.13	0.47
1:2:1601:G:N2	1:2:1627:G:O2'	2.44	0.47
2:C:189:ILE:H	2:C:189:ILE:HD12	1.78	0.47
5:F:196:GLY:C	5:F:198:ILE:HA	2.39	0.47
6:G:137:PRO:HB2	6:G:150:PRO:HD2	1.95	0.47
16:Q:26:ASN:HB3	16:Q:92:ALA:HB2	1.96	0.47
16:Q:132:VAL:HG13	16:Q:132:VAL:O	2.14	0.47
18:S:38:PRO:HG2	21:V:8:ASP:HA	1.96	0.47
18:S:105:LYS:HA	18:S:108:ILE:HG22	1.96	0.47
20:U:123:LEU:HB3	20:U:127:TRP:HZ3	1.78	0.47
28:c:32:PHE:HA	28:c:47:PHE:HA	1.95	0.47
28:c:34:ASP:HA	28:c:45:THR:HA	1.94	0.47
32:g:101:PHE:HB3	32:g:132:TRP:CZ3	2.49	0.47
37:z:534:A:O2'	37:z:535:A:O5'	2.30	0.47
37:z:837:G:H4'	37:z:838:C:H5'	1.95	0.47
1:2:89:C:H2'	1:2:90:G:C8	2.50	0.47
1:2:477:U:O4'	1:2:503:G:N2	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:744:C:H2'	1:2:745:U:C2	2.48	0.47
1:2:942:U:H2'	1:2:943:G:H8	1.79	0.47
1:2:1411:C:H2'	1:2:1412:C:C6	2.49	0.47
1:2:1833:U:H5'	16:Q:150:ARG:NH1	2.30	0.47
4:E:69:PHE:CD2	4:E:71:LEU:HB2	2.48	0.47
7:H:133:THR:OG1	7:H:135:ARG:NH1	2.47	0.47
8:I:202:ASN:OD1	8:I:203:LYS:N	2.47	0.47
11:L:134:HIS:HE1	11:L:164:PRO:HD2	1.78	0.47
25:Z:100:VAL:HG12	25:Z:125:VAL:HG12	1.96	0.47
30:e:22:ARG:HB2	30:e:38:MET:HE1	1.95	0.47
33:h:80:ARG:HD3	33:h:81:GLY:H	1.79	0.47
1:2:909:A:N6	9:J:98:ARG:HD2	2.30	0.47
1:2:917:G:H2'	24:Y:28:ARG:NH2	2.29	0.47
1:2:957:G:C2	37:z:831:A:N1	2.83	0.47
1:2:1033:G:H2'	1:2:1034:U:H6	1.79	0.47
1:2:1609:A:OP2	17:R:42:ARG:NH2	2.47	0.47
7:H:20:PHE:HD2	7:H:23:TRP:HD1	1.62	0.47
11:L:170:PRO:O	11:L:175:ARG:NH2	2.41	0.47
23:X:38:GLU:OE1	23:X:50:SER:HA	2.14	0.47
37:z:540:C:H2'	37:z:541:C:C6	2.49	0.47
37:z:579:G:H2'	37:z:580:U:H6	1.79	0.47
1:2:151:C:H2'	1:2:152:U:C6	2.49	0.47
1:2:279:G:H1'	6:G:131:VAL:HG21	1.96	0.47
1:2:324:C:OP2	8:I:190:ARG:NH2	2.47	0.47
1:2:526:A:H62	1:2:537:G:N2	2.13	0.47
1:2:951:A:H4'	1:2:952:G:H4'	1.97	0.47
1:2:1031:A:H2'	1:2:1032:A:O4'	2.15	0.47
1:2:1257:C:O2	30:e:10:HIS:NE2	2.47	0.47
1:2:1332:C:H2'	1:2:1333:C:O4'	2.14	0.47
1:2:1405:A:OP1	18:S:26:LYS:NZ	2.45	0.47
4:E:249:SER:HB2	4:E:252:GLN:HE22	1.78	0.47
7:H:174:ALA:O	7:H:178:ILE:HG12	2.14	0.47
8:I:7:PHE:CE2	8:I:9:ALA:HB3	2.49	0.47
11:L:95:ASP:OD1	11:L:96:TYR:N	2.47	0.47
15:P:23:PRO:HB2	15:P:25:TRP:CE3	2.49	0.47
18:S:146:ARG:NE	36:y:31:C:OP2	2.39	0.47
22:W:19:ARG:O	22:W:118:ASP:N	2.48	0.47
32:g:174:VAL:HB	32:g:188:HIS:ND1	2.30	0.47
1:2:522:C:H2'	1:2:523:A:H8	1.79	0.47
1:2:871:A:H2'	1:2:872:C:C6	2.49	0.47
1:2:908:C:H3'	1:2:909:A:H3'	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1093:G:H2'	1:2:1094:C:C6	2.50	0.47
1:2:1142:C:H2'	1:2:1143:C:C6	2.50	0.47
1:2:1847:C:H5	35:l:5:TRP:CZ3	2.33	0.47
4:E:249:SER:HB2	4:E:252:GLN:NE2	2.30	0.47
9:J:146:VAL:HB	24:Y:49:GLU:OE1	2.14	0.47
26:a:15:ASN:ND2	26:a:22:GLN:OE1	2.47	0.47
1:2:18:C:O3'	25:Z:107:ARG:NH1	2.48	0.47
1:2:337:G:H2'	1:2:338:A:C8	2.50	0.47
1:2:361:A:OP2	10:K:10:LYS:HG3	2.15	0.47
1:2:514:U:H5'	1:2:515:A:H5'	1.96	0.47
1:2:525:G:H2'	1:2:526:A:H8	1.80	0.47
1:2:542:G:H4'	34:i:114:ARG:HD3	1.96	0.47
1:2:553:G:N7	1:2:576:G:N2	2.62	0.47
1:2:965:U:H3'	1:2:966:G:N2	2.28	0.47
1:2:999:U:H5''	3:D:165:ARG:NH1	2.29	0.47
1:2:1125:G:H2'	1:2:1126:G:C4	2.50	0.47
1:2:1373:U:H3'	2:C:102:ARG:NH2	2.29	0.47
1:2:1398:A:H2'	1:2:1401:A:C5	2.49	0.47
1:2:1402:G:H2'	1:2:1403:U:C6	2.49	0.47
2:C:85:ARG:HH21	19:T:82:ASP:C	2.22	0.47
5:F:53:THR:O	5:F:90:LYS:HG3	2.15	0.47
5:F:100:ALA:O	5:F:104:SER:N	2.41	0.47
6:G:255:ARG:NH1	6:G:255:ARG:O	2.48	0.47
7:H:77:MET:SD	7:H:84:GLY:N	2.88	0.47
8:I:216:ARG:O	8:I:218:LYS:N	2.48	0.47
9:J:126:HIS:O	9:J:130:LEU:HD23	2.15	0.47
11:L:26:ASP:OD1	34:i:115:ARG:NH2	2.47	0.47
11:L:136:ARG:HG2	11:L:141:VAL:HG22	1.96	0.47
11:L:176:LYS:O	11:L:180:LYS:HG2	2.15	0.47
15:P:5:HIS:HD2	15:P:121:ARG:HE	1.63	0.47
18:S:132:PHE:O	18:S:140:ARG:NH1	2.36	0.47
27:b:52:ASP:HA	27:b:55:GLU:HG2	1.96	0.47
32:g:208:ALA:HA	32:g:218:LEU:HD13	1.96	0.47
37:z:584:A:H2'	37:z:586:A:N7	2.30	0.47
1:2:12:U:H2'	1:2:13:C:C6	2.50	0.47
1:2:91:A:P	1:2:436:G:H22	2.37	0.47
1:2:318:U:H2'	1:2:319:G:H8	1.80	0.47
1:2:443:C:H2'	1:2:444:U:H6	1.79	0.47
1:2:837:G:H2'	1:2:838:C:C6	2.50	0.47
1:2:921:G:O2'	15:P:87:ASP:OD1	2.32	0.47
1:2:1053:C:H5'	37:z:832:A:H4'	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1090:C:O2	24:Y:16:ASN:ND2	2.48	0.47
1:2:1748:G:H2'	1:2:1749:C:H6	1.80	0.47
2:C:76:VAL:HA	2:C:123:VAL:HB	1.96	0.47
3:D:185:VAL:HA	3:D:188:LEU:HG	1.97	0.47
8:I:102:VAL:HG22	8:I:106:LEU:HD11	1.97	0.47
10:K:8:TRP:O	10:K:18:ARG:HD2	2.15	0.47
19:T:13:ALA:O	19:T:17:ILE:HG22	2.14	0.47
24:Y:87:GLU:HA	24:Y:90:GLN:HG3	1.96	0.47
26:a:39:GLU:O	26:a:43:LYS:HG2	2.14	0.47
28:c:34:ASP:HB2	28:c:82:LYS:HE2	1.96	0.47
33:h:91:LEU:HD23	33:h:94:LYS:HD2	1.97	0.47
36:y:34:A:H2'	36:y:35:U:C6	2.50	0.47
1:2:146:G:O2'	1:2:147:A:H8	1.98	0.47
1:2:413:U:H2'	1:2:414:C:H6	1.79	0.47
1:2:425:A:OP1	10:K:23:LYS:NZ	2.28	0.47
1:2:1007:A:H5''	15:P:3:ARG:HH12	1.80	0.47
1:2:1199:G:H2'	1:2:1200:A:H8	1.80	0.47
1:2:1319:U:H2'	1:2:1320:G:C8	2.49	0.47
1:2:1443:G:H2'	1:2:1444:A:C8	2.50	0.47
1:2:1702:U:H2'	1:2:1703:C:C6	2.49	0.47
1:2:1789:G:H2'	1:2:1790:G:H8	1.79	0.47
2:C:85:ARG:HB2	2:C:205:ARG:NH1	2.30	0.47
4:E:133:ALA:O	4:E:136:ILE:HG22	2.14	0.47
8:I:199:THR:HA	8:I:202:ASN:ND2	2.29	0.47
9:J:160:LYS:HA	9:J:189:PHE:CZ	2.49	0.47
1:2:1002:C:H2'	1:2:1003:C:C6	2.50	0.47
1:2:1191:A:H2'	1:2:1192:A:C8	2.50	0.47
1:2:1196:A:H2'	1:2:1197:U:C6	2.50	0.47
1:2:1612:G:H1	17:R:40:ARG:NH2	2.13	0.47
1:2:1798:U:H2'	1:2:1799:G:H8	1.80	0.47
1:2:1832:U:O2'	16:Q:150:ARG:NH2	2.43	0.47
6:G:6:LYS:HB3	6:G:30:ARG:HH22	1.79	0.47
11:L:89:GLU:HA	11:L:92:MET:HG2	1.97	0.47
22:W:50:VAL:HG23	22:W:91:LEU:HG	1.97	0.47
26:a:20:ARG:HH11	26:a:76:TYR:HH	1.59	0.47
1:2:203:G:H2'	1:2:204:G:O4'	2.14	0.46
1:2:215:U:H2'	1:2:216:U:H6	1.80	0.46
1:2:284:C:H2'	1:2:286:C:H5'	1.97	0.46
1:2:1091:U:O2'	24:Y:20:ARG:NH1	2.48	0.46
1:2:1270:G:OP1	1:2:1270:G:N2	2.30	0.46
1:2:1509:G:H2'	1:2:1510:G:H8	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:89:VAL:HG12	6:G:100:ARG:HG3	1.96	0.46
8:I:76:LEU:HD23	8:I:94:ARG:HB2	1.97	0.46
13:N:49:GLU:HB2	13:N:116:CYS:SG	2.55	0.46
36:y:30:G:H2'	36:y:31:C:C6	2.50	0.46
36:y:30:G:H2'	36:y:31:C:H6	1.80	0.46
1:2:317:G:H1'	1:2:318:U:C6	2.50	0.46
1:2:820:C:H5'	11:L:147:PHE:CE1	2.50	0.46
1:2:1034:U:H1'	1:2:1176:C:H42	1.81	0.46
1:2:1289:A:H2'	1:2:1290:G:H8	1.79	0.46
1:2:1413:C:C2	1:2:1415:C:C5	3.04	0.46
1:2:1615:A:P	17:R:40:ARG:HH21	2.38	0.46
1:2:1652:G:H2'	1:2:1653:G:H8	1.81	0.46
1:2:1804:U:H2'	1:2:1805:C:C6	2.49	0.46
7:H:78:MET:HG3	7:H:159:ARG:NH1	2.30	0.46
9:J:69:LEU:HA	9:J:72:PHE:CD1	2.51	0.46
10:K:12:ARG:HG2	10:K:13:LYS:N	2.29	0.46
13:N:61:PRO:HB3	13:N:68:ILE:HD11	1.97	0.46
15:P:63:VAL:HG21	15:P:71:ILE:HD11	1.96	0.46
18:S:22:VAL:HB	18:S:71:ARG:HG3	1.97	0.46
19:T:93:GLN:HG3	19:T:95:ILE:HG22	1.98	0.46
27:b:21:ILE:N	27:b:30:VAL:O	2.34	0.46
1:2:17:C:H2'	1:2:18:C:C6	2.50	0.46
1:2:551:A:N7	11:L:173:VAL:HG21	2.30	0.46
1:2:903:G:H2'	1:2:904:A:H8	1.81	0.46
1:2:1748:G:H2'	1:2:1749:C:C6	2.50	0.46
6:G:54:TYR:HE2	26:a:17:LEU:HB3	1.80	0.46
21:V:75:MET:O	21:V:78:ILE:HG22	2.15	0.46
22:W:94:PRO:HD2	22:W:97:ILE:HD11	1.96	0.46
24:Y:52:ILE:HD12	24:Y:60:LYS:C	2.40	0.46
36:y:68:U:H2'	36:y:69:G:C8	2.51	0.46
1:2:185:C:H2'	1:2:186:G:C8	2.50	0.46
1:2:444:U:H2'	1:2:445:A:C8	2.50	0.46
1:2:728:U:H5''	1:2:729:C:C6	2.50	0.46
1:2:840:U:H2'	1:2:841:G:C8	2.50	0.46
1:2:910:U:O2'	9:J:120:ARG:NH2	2.48	0.46
1:2:1108:U:H3	1:2:1109:A:H62	1.62	0.46
1:2:1160:G:H2'	1:2:1161:G:C2	2.50	0.46
2:C:68:ILE:HD11	2:C:121:LEU:HG	1.96	0.46
10:K:199:LEU:HA	10:K:202:ILE:HG12	1.97	0.46
11:L:108:ARG:HE	11:L:154:GLN:HE22	1.62	0.46
15:P:75:LEU:HB3	15:P:81:ALA:HA	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:b:49:ALA:O	27:b:53:ILE:HB	2.15	0.46
1:2:73:C:O2	1:2:74:G:H1'	2.16	0.46
1:2:294:C:H2'	1:2:295:C:C6	2.50	0.46
1:2:483:A:H62	1:2:499:G:N2	2.12	0.46
1:2:1103:G:C6	1:2:1122:G:C6	3.04	0.46
1:2:1214:C:H2'	1:2:1215:C:C6	2.51	0.46
1:2:1333:C:HO2'	22:W:68:THR:HG1	1.53	0.46
1:2:1701:G:H4'	35:l:2:ARG:HH12	1.81	0.46
2:C:57:LYS:HE2	2:C:159:ILE:HD11	1.97	0.46
2:C:70:ASN:ND2	4:E:259:VAL:HG21	2.30	0.46
3:D:145:LYS:NZ	3:D:149:GLN:O	2.48	0.46
8:I:55:GLY:H	8:I:63:MET:HB2	1.81	0.46
9:J:51:ILE:HG12	9:J:61:ILE:HD11	1.98	0.46
9:J:78:ARG:HH12	9:J:81:ARG:HD2	1.80	0.46
10:K:103:LEU:HD22	10:K:170:LYS:HB3	1.97	0.46
15:P:19:ARG:HD2	15:P:21:SER:HB2	1.98	0.46
25:Z:68:LYS:NZ	34:i:83:VAL:HA	2.31	0.46
28:c:19:HIS:HB3	28:c:22:LYS:NZ	2.30	0.46
28:c:67:THR:OG1	28:c:70:LYS:O	2.28	0.46
32:g:31:ILE:HG22	32:g:43:TRP:HB2	1.98	0.46
34:i:102:ARG:HH11	34:i:106:ALA:HB1	1.80	0.46
36:y:67:C:H2'	36:y:68:U:C6	2.51	0.46
37:z:560:C:H2'	37:z:561:U:C6	2.50	0.46
1:2:297:C:H2'	1:2:298:G:C8	2.51	0.46
1:2:330:C:H2'	1:2:331:C:C6	2.51	0.46
1:2:950:U:P	3:D:24:PRO:HG3	2.55	0.46
1:2:1002:C:H2'	1:2:1003:C:H6	1.80	0.46
1:2:1088:G:C2	1:2:1089:A:N7	2.84	0.46
1:2:1571:G:H2'	1:2:1572:G:H8	1.79	0.46
5:F:140:GLY:HA3	5:F:182:LEU:HD23	1.98	0.46
7:H:39:ILE:HG23	7:H:68:ILE:HG13	1.97	0.46
9:J:116:ARG:NH2	9:J:121:THR:OG1	2.49	0.46
15:P:27:LYS:HG3	15:P:28:LEU:HG	1.97	0.46
26:a:20:ARG:NH1	26:a:76:TYR:OH	2.40	0.46
32:g:60:ARG:O	32:g:90:TRP:HH2	1.98	0.46
33:h:62:VAL:HG22	33:h:97:ILE:HD11	1.97	0.46
1:2:370:G:H1'	10:K:5:ARG:NE	2.30	0.46
1:2:678:U:O2'	1:2:679:U:OP2	2.31	0.46
1:2:1672:U:OP2	7:H:63:LYS:NZ	2.48	0.46
1:2:1741:U:OP1	8:I:31:ARG:NH2	2.49	0.46
2:C:178:LEU:HD12	2:C:178:LEU:HA	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:193:ILE:H	3:D:193:ILE:HD12	1.80	0.46
4:E:45:TRP:HZ3	4:E:56:LYS:HD3	1.81	0.46
6:G:202:PRO:HB2	13:N:42:LEU:HD13	1.98	0.46
7:H:35:LEU:HD12	7:H:117:ILE:HD12	1.98	0.46
21:V:14:PHE:CZ	21:V:18:LEU:HD22	2.51	0.46
27:b:12:LYS:NZ	27:b:33:ASP:O	2.49	0.46
32:g:172:LYS:HG2	32:g:194:TYR:HA	1.96	0.46
37:z:569:A:H2'	37:z:570:A:O4'	2.15	0.46
1:2:976:A:H2'	1:2:977:A:C8	2.51	0.46
1:2:1262:C:C4	1:2:1512:G:N2	2.84	0.46
1:2:1322:U:O4	30:e:28:HIS:NE2	2.46	0.46
1:2:1545:G:H3'	1:2:1574:A:H61	1.81	0.46
2:C:19:LEU:HD11	19:T:106:LEU:HD11	1.98	0.46
2:C:35:GLU:O	2:C:38:ILE:HG22	2.16	0.46
2:C:151:ASP:N	2:C:151:ASP:OD1	2.47	0.46
3:D:89:GLU:N	3:D:89:GLU:OE1	2.48	0.46
4:E:163:HIS:CG	4:E:185:ARG:HG2	2.51	0.46
15:P:113:PHE:CE2	15:P:117:LEU:HD11	2.50	0.46
23:X:19:ALA:HB2	23:X:55:ILE:HD12	1.98	0.46
30:e:40:ARG:NH1	30:e:41:GLN:HG3	2.30	0.46
30:e:52:PHE:O	30:e:53:ILE:HD13	2.16	0.46
1:2:76:U:OP2	8:I:159:ARG:NH1	2.49	0.46
1:2:524:G:H2'	1:2:525:G:C8	2.50	0.46
1:2:869:G:O2'	1:2:870:G:H8	1.97	0.46
2:C:169:HIS:HB3	2:C:203:PHE:CE1	2.51	0.46
3:D:40:ASN:H	3:D:75:GLN:NE2	2.12	0.46
5:F:227:LYS:HZ1	32:g:187:ASN:CG	2.23	0.46
15:P:45:LEU:HB3	15:P:49:GLN:HB2	1.98	0.46
21:V:44:GLU:OE1	21:V:44:GLU:N	2.48	0.46
22:W:67:LYS:HA	30:e:44:ARG:NH1	2.31	0.46
23:X:21:ASN:ND2	24:Y:66:THR:HB	2.31	0.46
36:y:65:C:H2'	36:y:66:U:C6	2.51	0.46
1:2:1276:G:N2	1:2:1313:U:H3	2.14	0.46
1:2:1795:A:H2'	1:2:1796:C:C6	2.51	0.46
3:D:107:ARG:HH22	16:Q:131:ASP:C	2.24	0.46
7:H:145:ARG:HA	7:H:148:ASN:ND2	2.31	0.46
11:L:85:GLY:HA3	11:L:151:LEU:HD13	1.97	0.46
11:L:109:ARG:NE	11:L:111:GLN:HE22	2.14	0.46
28:c:79:PHE:O	28:c:80:ARG:NH1	2.40	0.46
32:g:154:VAL:HG13	32:g:166:VAL:O	2.16	0.46
1:2:64:A:H2	1:2:83:A:H62	1.63	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:168:C:H4'	8:I:131:ARG:HH21	1.81	0.45
1:2:220:C:H2'	1:2:221:A:H8	1.81	0.45
1:2:540:C:H2'	1:2:541:U:C6	2.51	0.45
1:2:957:G:H2'	1:2:958:A:C8	2.52	0.45
1:2:1007:A:H5''	15:P:3:ARG:NH2	2.31	0.45
1:2:1138:G:H2'	1:2:1140:A:OP2	2.16	0.45
1:2:1222:G:N2	1:2:1634:G:C8	2.84	0.45
2:C:8:LEU:HD11	23:X:39:VAL:HG21	1.99	0.45
6:G:64:ILE:HD12	26:a:17:LEU:HG	1.98	0.45
8:I:161:PRO:HA	8:I:171:THR:HA	1.98	0.45
8:I:232:ARG:O	8:I:236:SER:OG	2.28	0.45
10:K:81:VAL:HG12	10:K:102:VAL:HG12	1.97	0.45
11:L:24:ARG:HH21	11:L:25:LEU:HD21	1.81	0.45
11:L:128:VAL:O	11:L:132:GLN:HB2	2.16	0.45
14:O:26:LEU:HD12	14:O:31:LEU:HD21	1.97	0.45
22:W:40:ILE:O	22:W:44:LYS:HG2	2.15	0.45
36:y:52:G:H21	36:y:53:A:H62	1.64	0.45
1:2:36:U:H2'	1:2:37:C:H6	1.81	0.45
1:2:149:A:N7	1:2:169:U:C4	2.84	0.45
1:2:664:C:H2'	1:2:665:U:H6	1.80	0.45
1:2:941:U:H2'	1:2:942:U:H6	1.79	0.45
1:2:1019:A:H2'	1:2:1020:A:H8	1.79	0.45
1:2:1030:A:H2'	1:2:1031:A:O4'	2.16	0.45
1:2:1801:C:H2'	1:2:1802:U:O4'	2.16	0.45
3:D:167:LYS:HA	3:D:170:GLU:OE1	2.17	0.45
3:D:194:GLY:HA2	3:D:197:ILE:HD12	1.98	0.45
4:E:64:GLU:HB2	23:X:12:TYR:CD1	2.51	0.45
7:H:140:ASP:HB3	29:d:46:VAL:HG22	1.97	0.45
19:T:71:ILE:HG23	19:T:74:GLN:H	1.81	0.45
23:X:71:ARG:HH12	24:Y:23:ARG:NH1	2.15	0.45
24:Y:4:MET:N	24:Y:4:MET:SD	2.89	0.45
1:2:1093:G:H4'	2:C:32:PHE:CD1	2.52	0.45
1:2:1105:C:H6	19:T:122:PRO:HB3	1.81	0.45
1:2:1273:C:H2'	1:2:1274:A:C8	2.48	0.45
1:2:1419:C:O2'	1:2:1420:G:O5'	2.29	0.45
2:C:122:LEU:CD1	2:C:124:VAL:HG23	2.44	0.45
3:D:62:LEU:O	3:D:65:ARG:HG3	2.16	0.45
3:D:217:MET:SD	3:D:218:LEU:N	2.89	0.45
9:J:160:LYS:HD2	9:J:189:PHE:HZ	1.81	0.45
14:O:20:GLU:HA	14:O:23:LYS:HG3	1.98	0.45
14:O:61:TYR:OH	14:O:107:SER:HB2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:U:120:HIS:CE1	20:U:124:ARG:HD3	2.51	0.45
32:g:296:GLN:HG2	32:g:297:THR:HG23	1.99	0.45
36:y:36:A:H3'	36:y:37:A:H8	1.81	0.45
36:y:71:U:H3'	36:y:73:C:OP2	2.16	0.45
1:2:50:A:OP2	1:2:462:C:N4	2.49	0.45
1:2:364:G:O6	1:2:375:G:O6	2.35	0.45
1:2:433:U:H2'	1:2:434:G:C8	2.51	0.45
1:2:571:U:H1'	26:a:33:ALA:HB3	1.99	0.45
1:2:745:U:H2'	1:2:746:C:N1	2.31	0.45
1:2:1279:C:H4'	31:f:99:LYS:HZ2	1.80	0.45
1:2:1313:U:H2'	1:2:1314:G:H8	1.80	0.45
1:2:1324:G:H2'	1:2:1325:U:C6	2.51	0.45
1:2:1365:A:H62	19:T:3:ARG:H	1.62	0.45
1:2:1460:C:H2'	1:2:1461:A:C8	2.52	0.45
1:2:1768:C:H2'	1:2:1769:U:H6	1.81	0.45
1:2:1800:A:H2'	1:2:1801:C:H6	1.79	0.45
2:C:10:MET:HG3	19:T:111:PHE:CE2	2.50	0.45
2:C:26:GLY:H	2:C:46:ILE:HG23	1.80	0.45
7:H:78:MET:HG3	7:H:159:ARG:HH11	1.82	0.45
9:J:69:LEU:O	9:J:73:GLN:HG2	2.16	0.45
11:L:150:ARG:O	11:L:154:GLN:HG3	2.17	0.45
19:T:45:LYS:HE2	19:T:49:LYS:HD2	1.98	0.45
20:U:52:LEU:HD23	20:U:52:LEU:H	1.80	0.45
31:f:121:CYS:SG	31:f:130:VAL:HG23	2.56	0.45
37:z:581:A:H2'	37:z:582:U:C6	2.51	0.45
1:2:552:U:C4'	11:L:132:GLN:HE22	2.29	0.45
1:2:1618:A:C8	20:U:132:ARG:HG2	2.52	0.45
5:F:218:LEU:HD21	32:g:172:LYS:HE2	1.99	0.45
17:R:7:LYS:O	17:R:9:LYS:NZ	2.38	0.45
18:S:29:ASN:N	18:S:67:ASP:OD1	2.47	0.45
18:S:80:GLN:O	18:S:84:ILE:HG12	2.16	0.45
32:g:45:LEU:HD22	32:g:52:TYR:CE2	2.51	0.45
35:l:7:LYS:O	35:l:11:ARG:HG3	2.17	0.45
1:2:565:A:H2'	1:2:566:A:O4'	2.17	0.45
1:2:1054:A:H2'	1:2:1055:G:O4'	2.16	0.45
1:2:1244:U:C2	36:y:33:C:H5'	2.51	0.45
1:2:1300:U:H2'	1:2:1301:C:C6	2.52	0.45
1:2:1309:A:O2'	14:O:91:LEU:HB2	2.17	0.45
1:2:1384:A:H5''	19:T:45:LYS:NZ	2.32	0.45
4:E:185:ARG:O	11:L:98:LEU:HD11	2.17	0.45
5:F:67:ARG:NE	12:M:93:THR:HA	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:10:LYS:HA	6:G:27:PHE:HA	1.98	0.45
6:G:137:PRO:HG2	6:G:150:PRO:HD2	1.99	0.45
8:I:38:ALA:N	8:I:48:TYR:O	2.50	0.45
9:J:73:GLN:HB3	9:J:135:PHE:CZ	2.51	0.45
10:K:69:SER:HB3	13:N:20:LYS:HZ3	1.81	0.45
11:L:42:GLU:OE1	11:L:42:GLU:N	2.42	0.45
13:N:27:GLU:HA	13:N:28:THR:HA	1.61	0.45
20:U:51:ASP:OD1	20:U:52:LEU:N	2.50	0.45
22:W:32:LEU:HD21	22:W:85:HIS:HB2	1.97	0.45
22:W:61:LEU:O	22:W:81:GLN:HA	2.16	0.45
32:g:153:CYS:HB3	32:g:198:VAL:HG22	1.99	0.45
36:y:48:G:H2'	36:y:49:A:C8	2.52	0.45
36:y:64:C:H2'	36:y:65:C:C6	2.51	0.45
37:z:596:A:H2'	37:z:597:A:H8	1.82	0.45
1:2:386:U:H4'	10:K:14:THR:HG22	1.98	0.45
1:2:800:U:H2'	1:2:801:U:C6	2.51	0.45
1:2:834:G:N3	1:2:836:C:N4	2.65	0.45
1:2:899:A:H2'	1:2:900:A:C8	2.52	0.45
1:2:1089:A:H2'	1:2:1090:C:C6	2.52	0.45
1:2:1839:A:H2'	1:2:1840:G:C8	2.52	0.45
2:C:130:ASP:O	2:C:134:LEU:HD23	2.17	0.45
3:D:23:ASP:O	3:D:26:SER:OG	2.29	0.45
10:K:22:HIS:HB2	10:K:25:ARG:NH1	2.32	0.45
13:N:38:LYS:NZ	13:N:39:ASN:OD1	2.28	0.45
20:U:24:ARG:HD2	20:U:28:PHE:HB2	1.98	0.45
20:U:104:ASP:N	20:U:104:ASP:OD1	2.47	0.45
31:f:110:GLU:O	31:f:113:LYS:N	2.50	0.45
31:f:146:LEU:HG	31:f:147:THR:HG23	1.99	0.45
1:2:77:A:C6	8:I:181:THR:HG21	2.52	0.45
1:2:575:C:OP2	11:L:172:ARG:NH1	2.49	0.45
1:2:820:C:N3	11:L:144:ILE:HG13	2.31	0.45
1:2:1570:G:H2'	1:2:1571:G:H8	1.81	0.45
1:2:1675:G:H4'	29:d:20:ARG:HD3	1.98	0.45
3:D:214:LYS:HB3	3:D:216:LYS:HZ3	1.82	0.45
6:G:136:ILE:HG23	6:G:149:TYR:CD1	2.52	0.45
7:H:36:GLN:C	7:H:38:TYR:H	2.25	0.45
10:K:45:THR:HG22	10:K:53:LYS:HD2	1.99	0.45
11:L:22:LYS:HA	11:L:22:LYS:HD2	1.84	0.45
12:M:15:LEU:HD13	12:M:21:MET:HB2	1.99	0.45
14:O:50:CYS:O	14:O:77:ILE:N	2.49	0.45
1:2:65:C:C6	8:I:174:PRO:HB3	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:895:U:H2'	1:2:896:C:O4'	2.17	0.45
1:2:988:A:N7	27:b:15:ARG:NH1	2.65	0.45
1:2:1431:C:H2'	1:2:1432:C:C4	2.52	0.45
2:C:182:VAL:O	2:C:186:ARG:HD3	2.17	0.45
5:F:50:ILE:O	5:F:89:GLU:HG3	2.16	0.45
7:H:47:LYS:HZ2	18:S:115:TYR:HE1	1.64	0.45
9:J:143:ARG:NH1	24:Y:53:ILE:HA	2.32	0.45
14:O:85:LEU:HD23	14:O:107:SER:H	1.81	0.45
17:R:14:LYS:HE2	37:z:563:C:H2'	1.99	0.45
19:T:54:VAL:HA	19:T:57:LEU:HD13	1.99	0.45
19:T:121:GLN:NE2	19:T:122:PRO:O	2.50	0.45
20:U:64:VAL:O	20:U:68:ILE:HG13	2.17	0.45
23:X:67:ASP:HA	23:X:70:LEU:HG	1.98	0.45
28:c:13:GLU:O	28:c:17:ARG:HB2	2.17	0.45
31:f:106:TYR:CG	31:f:114:ILE:HD12	2.52	0.45
32:g:152:SER:H	32:g:169:GLY:HA2	1.82	0.45
1:2:371:C:OP2	10:K:31:ARG:NH2	2.50	0.45
1:2:1119:C:O3'	3:D:149:GLN:HG3	2.17	0.45
6:G:86:PHE:HE1	6:G:102:ILE:HA	1.81	0.45
13:N:4:ILE:HD11	13:N:54:THR:HG23	1.98	0.45
21:V:27:LYS:HB3	21:V:110:LEU:HD21	1.98	0.45
22:W:20:ILE:HG13	22:W:115:THR:O	2.17	0.45
37:z:525:A:H3'	37:z:526:G:H21	1.82	0.45
37:z:564:G:H22	37:z:574:C:H1'	1.82	0.45
1:2:72:C:H4'	1:2:73:C:H6	1.81	0.44
1:2:580:A:H4'	34:i:98:LYS:HE2	1.98	0.44
1:2:831:C:O2'	1:2:832:G:N2	2.50	0.44
1:2:1506:G:H2'	1:2:1506:G:N3	2.32	0.44
1:2:1736:U:OP1	10:K:42:ARG:HD3	2.17	0.44
1:2:1803:A:H2'	1:2:1804:U:H6	1.82	0.44
4:E:207:CYS:SG	4:E:208:TYR:N	2.90	0.44
7:H:67:PRO:O	7:H:70:GLU:HB3	2.17	0.44
11:L:21:GLU:OE1	11:L:24:ARG:N	2.38	0.44
12:M:27:VAL:HG23	12:M:28:HIS:CE1	2.52	0.44
17:R:25:LEU:HB3	17:R:87:PRO:HG3	1.99	0.44
20:U:108:ARG:HA	20:U:111:LEU:HD13	1.99	0.44
20:U:109:GLU:O	20:U:113:ARG:N	2.40	0.44
31:f:146:LEU:HD23	31:f:146:LEU:H	1.82	0.44
37:z:592:C:H2'	37:z:593:U:H6	1.81	0.44
1:2:223:A:C5	1:2:277:U:H5'	2.52	0.44
1:2:343:C:H4'	13:N:90:ARG:HH12	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:384:G:H4'	13:N:82:MET:HE1	1.98	0.44
1:2:1195:A:H5''	27:b:2:THR:HG22	1.99	0.44
1:2:1355:U:H2'	1:2:1356:U:C6	2.51	0.44
1:2:1494:A:OP2	5:F:27:ARG:NH2	2.50	0.44
1:2:1674:A:OP1	7:H:60:ARG:NH1	2.50	0.44
1:2:1789:G:H2'	1:2:1790:G:C8	2.51	0.44
2:C:73:ASP:OD1	2:C:73:ASP:N	2.50	0.44
4:E:79:ILE:HG21	4:E:144:LYS:O	2.17	0.44
6:G:62:LYS:HA	6:G:65:CYS:SG	2.58	0.44
8:I:44:GLU:HG3	8:I:119:LYS:HB2	1.99	0.44
16:Q:141:ARG:HG2	27:b:22:ARG:NH2	2.33	0.44
17:R:59:ARG:O	17:R:63:ALA:N	2.44	0.44
22:W:56:MET:HE3	22:W:86:LYS:HE2	2.00	0.44
25:Z:57:VAL:HG23	25:Z:67:ARG:HB2	1.98	0.44
29:d:16:LYS:O	29:d:31:ARG:N	2.48	0.44
37:z:521:U:H2'	37:z:522:U:H6	1.81	0.44
1:2:12:U:H2'	1:2:13:C:H6	1.82	0.44
1:2:189:G:H1'	1:2:206:A:H61	1.82	0.44
1:2:497:G:OP1	26:a:108:LYS:NZ	2.41	0.44
1:2:573:A:H2'	1:2:573:A:N3	2.33	0.44
1:2:1088:G:OP1	15:P:2:GLY:N	2.50	0.44
1:2:1117:G:C6	1:2:1118:A:C5	3.05	0.44
1:2:1176:C:H2'	1:2:1177:A:O4'	2.18	0.44
1:2:1326:G:N2	1:2:1331:G:O6	2.50	0.44
1:2:1414:C:H4'	1:2:1415:C:H5'	2.00	0.44
1:2:1442:A:H4'	22:W:87:ARG:HH22	1.83	0.44
1:2:1603:U:H2'	1:2:1604:C:O4'	2.17	0.44
1:2:1697:G:O6	1:2:1830:G:N2	2.50	0.44
9:J:87:PHE:HB3	9:J:90:LYS:HD2	1.98	0.44
11:L:54:ARG:HH12	11:L:98:LEU:HA	1.82	0.44
12:M:48:ALA:O	12:M:51:SER:OG	2.34	0.44
18:S:10:VAL:HG11	18:S:98:LYS:HE2	1.98	0.44
18:S:82:TYR:O	18:S:86:GLN:HG3	2.16	0.44
19:T:73:LEU:O	19:T:76:GLU:HG2	2.18	0.44
21:V:87:VAL:HG13	21:V:88:MET:HE2	1.98	0.44
24:Y:15:ASN:ND2	24:Y:72:CYS:SG	2.91	0.44
24:Y:87:GLU:OE2	24:Y:117:ARG:NH2	2.50	0.44
26:a:24:VAL:HB	26:a:72:PHE:CD1	2.52	0.44
36:y:46:U:H4'	36:y:47:C:H5	1.82	0.44
37:z:596:A:H2'	37:z:597:A:C8	2.53	0.44
1:2:479:A:H2'	1:2:480:C:H6	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:799:C:H2'	1:2:800:U:H6	1.82	0.44
1:2:1063:C:H2'	1:2:1064:G:C8	2.53	0.44
1:2:1123:C:C4'	28:c:17:ARG:HH12	2.30	0.44
1:2:1383:G:C2	1:2:1384:A:H1'	2.52	0.44
1:2:1513:C:H5''	1:2:1514:U:H5''	1.99	0.44
1:2:1558:G:C6	1:2:1559:C:C4	3.05	0.44
1:2:1667:U:H2'	1:2:1668:U:H6	1.83	0.44
3:D:112:SER:HA	27:b:68:TYR:HE2	1.83	0.44
6:G:49:ARG:HD3	6:G:61:VAL:HG21	1.98	0.44
6:G:247:THR:HG23	6:G:250:GLU:H	1.80	0.44
8:I:77:LEU:N	8:I:93:LYS:O	2.41	0.44
12:M:90:VAL:HG13	12:M:90:VAL:O	2.17	0.44
15:P:142:GLU:OE1	15:P:144:SER:OG	2.29	0.44
19:T:17:ILE:HD11	19:T:21:TYR:CD1	2.51	0.44
22:W:78:ASP:OD1	22:W:78:ASP:N	2.50	0.44
31:f:135:HIS:CD2	31:f:140:TYR:HB3	2.53	0.44
36:y:21:G:H2'	36:y:22:C:H6	1.80	0.44
1:2:145:G:H2'	1:2:146:G:H8	1.82	0.44
1:2:198:U:H3'	1:2:199:G:H8	1.82	0.44
1:2:639:U:OP2	25:Z:106:GLY:HA2	2.16	0.44
1:2:957:G:N3	37:z:831:A:C6	2.86	0.44
1:2:1028:C:H5''	15:P:109:LYS:HZ2	1.82	0.44
1:2:1135:C:H3'	1:2:1136:G:C8	2.53	0.44
1:2:1144:A:H4'	1:2:1145:A:O4'	2.17	0.44
1:2:1294:G:N3	17:R:79:HIS:CE1	2.85	0.44
1:2:1407:G:H3'	1:2:1408:C:H5''	2.00	0.44
1:2:1517:A:O2'	20:U:143:GLY:O	2.27	0.44
1:2:1586:C:H5''	7:H:88:MET:HE3	1.99	0.44
2:C:56:GLU:OE1	23:X:79:VAL:HA	2.17	0.44
4:E:153:GLY:HA3	4:E:166:ARG:HA	1.99	0.44
6:G:29:PRO:HG3	6:G:45:ILE:HD11	2.00	0.44
10:K:125:LYS:HG3	10:K:128:LYS:H	1.83	0.44
12:M:26:ASP:CB	12:M:29:MET:HB2	2.47	0.44
20:U:6:PRO:O	33:h:49:LEU:HD12	2.17	0.44
22:W:61:LEU:H	22:W:83:ARG:HH21	1.65	0.44
22:W:82:MET:HA	22:W:82:MET:HE2	1.99	0.44
32:g:131:LEU:HB3	32:g:139:LYS:HB3	1.99	0.44
37:z:540:C:H2'	37:z:541:C:H6	1.83	0.44
1:2:185:C:H2'	1:2:186:G:H8	1.83	0.44
1:2:215:U:H2'	1:2:216:U:C6	2.52	0.44
1:2:864:G:O2'	9:J:112:ASN:O	2.30	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1103:G:H2'	1:2:1104:G:H8	1.83	0.44
1:2:1286:G:N2	1:2:1306:U:H1'	2.33	0.44
1:2:1300:U:H4'	31:f:92:LYS:HD3	2.00	0.44
1:2:1643:G:O2'	18:S:127:CYS:SG	2.59	0.44
4:E:72:PRO:HG3	23:X:29:HIS:CG	2.52	0.44
7:H:113:VAL:HA	7:H:116:ILE:HB	1.99	0.44
7:H:118:ASN:ND2	7:H:181:ALA:O	2.50	0.44
8:I:111:LEU:HD23	8:I:111:LEU:H	1.82	0.44
15:P:19:ARG:HD3	15:P:20:ARG:H	1.82	0.44
16:Q:95:ILE:HB	16:Q:129:ILE:HG22	2.00	0.44
19:T:92:ASP:OD1	19:T:92:ASP:N	2.49	0.44
24:Y:102:ILE:HG12	24:Y:113:HIS:CD2	2.49	0.44
26:a:12:PHE:CZ	26:a:21:LYS:HD2	2.51	0.44
27:b:41:ILE:HG22	27:b:68:TYR:CE1	2.53	0.44
36:y:9:G:N7	36:y:19:A:O2'	2.51	0.44
36:y:48:G:N2	37:z:550:A:HO2'	2.14	0.44
1:2:83:A:C5	1:2:84:A:C8	3.04	0.44
1:2:397:G:OP1	1:2:397:G:N2	2.38	0.44
1:2:485:U:H2'	1:2:486:C:O4'	2.18	0.44
1:2:746:C:H2'	1:2:747:G:N9	2.33	0.44
1:2:1103:G:OP2	28:c:70:LYS:NZ	2.50	0.44
1:2:1123:C:H2'	1:2:1124:C:H6	1.82	0.44
1:2:1154:G:C6	1:2:1155:G:C6	3.05	0.44
1:2:1283:A:N6	1:2:1284:U:O2	2.51	0.44
1:2:1412:C:H2'	1:2:1413:C:C6	2.53	0.44
1:2:1447:G:O2'	1:2:1470:A:N6	2.51	0.44
1:2:1535:G:H2'	1:2:1536:G:C8	2.53	0.44
1:2:1614:A:OP2	17:R:47:ARG:NH2	2.39	0.44
1:2:1626:U:H2'	1:2:1627:G:O4'	2.18	0.44
3:D:84:PHE:CE1	3:D:103:MET:HB3	2.52	0.44
6:G:195:ILE:HG23	6:G:196:THR:N	2.32	0.44
11:L:93:LYS:HD2	11:L:93:LYS:HA	1.84	0.44
17:R:79:HIS:CD2	17:R:97:TYR:CD2	3.05	0.44
18:S:45:ARG:NH1	21:V:10:ASN:HD21	2.16	0.44
20:U:109:GLU:N	20:U:109:GLU:OE1	2.50	0.44
25:Z:102:VAL:HA	25:Z:122:VAL:HA	2.00	0.44
26:a:38:THR:O	26:a:41:GLN:HG2	2.17	0.44
36:y:19:A:H1'	36:y:58:A:C8	2.52	0.44
1:2:285:U:O4	13:N:14:PRO:HG2	2.18	0.44
1:2:469:C:C2	1:2:470:G:C8	3.05	0.44
1:2:560:C:H2'	1:2:561:U:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:750:G:H2'	1:2:751:C:C6	2.53	0.44
1:2:829:C:H1'	6:G:262:SER:HB2	2.00	0.44
1:2:1465:A:H2'	1:2:1466:C:H6	1.82	0.44
2:C:11:LYS:H	2:C:55:TRP:HH2	1.63	0.44
2:C:33:GLN:C	2:C:34:MET:HE2	2.43	0.44
2:C:120:ARG:NE	4:E:252:GLN:OE1	2.51	0.44
4:E:120:GLY:O	4:E:150:VAL:HG22	2.18	0.44
6:G:180:LEU:HB3	6:G:228:ILE:HG22	2.00	0.44
7:H:46:ALA:O	7:H:47:LYS:NZ	2.49	0.44
9:J:27:LEU:O	9:J:31:GLU:HG2	2.18	0.44
22:W:61:LEU:HD12	22:W:62:ARG:H	1.82	0.44
32:g:280:LYS:HD2	32:g:280:LYS:HA	1.83	0.44
36:y:67:C:H2'	36:y:68:U:H6	1.83	0.44
1:2:471:C:H2'	1:2:472:G:C8	2.53	0.44
1:2:679:U:H2'	1:2:680:G:C8	2.53	0.44
1:2:939:U:H2'	1:2:940:A:H8	1.83	0.44
1:2:1051:A:C5	1:2:1052:U:C4	3.06	0.44
1:2:1447:G:C2'	1:2:1470:A:H61	2.31	0.44
1:2:1453:U:H2'	1:2:1454:G:H8	1.83	0.44
1:2:1774:G:O6	1:2:1775:A:N6	2.51	0.44
1:2:1858:U:O4	27:b:34:LYS:NZ	2.44	0.44
2:C:9:GLN:HG3	2:C:10:MET:H	1.82	0.44
3:D:107:ARG:HA	3:D:110:MET:HG3	2.00	0.44
5:F:28:GLU:HG3	5:F:29:LEU:HG	1.99	0.44
12:M:7:ASN:O	12:M:11:ILE:HG12	2.18	0.44
37:z:581:A:H2'	37:z:582:U:H6	1.83	0.44
1:2:115:U:H2'	1:2:116:U:C6	2.53	0.43
1:2:170:A:OP1	8:I:137:ARG:HG3	2.18	0.43
1:2:214:A:H61	1:2:295:C:N4	2.16	0.43
1:2:811:U:N3	1:2:812:A:N7	2.66	0.43
1:2:843:A:H2'	1:2:844:U:O4'	2.18	0.43
1:2:1102:C:OP1	28:c:70:LYS:NZ	2.37	0.43
1:2:1289:A:H1'	31:f:138:ARG:HD3	2.00	0.43
1:2:1369:C:OP1	19:T:7:LYS:HG2	2.18	0.43
1:2:1487:G:H2'	1:2:1488:U:C6	2.53	0.43
2:C:89:LYS:HZ3	2:C:202:TYR:HD1	1.65	0.43
2:C:123:VAL:HA	2:C:145:ILE:HG23	2.00	0.43
3:D:147:ASN:OD1	3:D:148:ASN:N	2.51	0.43
6:G:35:PRO:HG2	6:G:36:HIS:ND1	2.33	0.43
6:G:125:LYS:HB2	6:G:226:PHE:CD1	2.52	0.43
7:H:18:LYS:HZ3	7:H:48:TYR:HE2	1.66	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:78:MET:HG2	7:H:79:HIS:CG	2.53	0.43
8:I:63:MET:HE1	8:I:98:ARG:HD2	2.00	0.43
12:M:32:HIS:HB2	12:M:40:VAL:HB	2.00	0.43
14:O:99:LYS:HZ2	14:O:102:LYS:HG3	1.82	0.43
28:c:21:LYS:NZ	28:c:26:GLN:OE1	2.50	0.43
1:2:11:A:N1	1:2:1196:A:H2	2.16	0.43
1:2:673:G:N1	1:2:1018:U:OP2	2.46	0.43
1:2:924:G:H2'	1:2:925:G:C8	2.53	0.43
1:2:1206:G:H2'	1:2:1207:G:C8	2.53	0.43
1:2:1255:A:H1'	1:2:1260:C:H42	1.82	0.43
1:2:1261:A:H2'	1:2:1261:A:N3	2.33	0.43
4:E:78:ILE:H	4:E:78:ILE:HD12	1.82	0.43
10:K:114:GLU:CD	10:K:123:ARG:HH22	2.27	0.43
11:L:147:PHE:HD2	11:L:149:VAL:HG22	1.82	0.43
12:M:1:MET:N	12:M:2:LEU:HB3	2.31	0.43
14:O:58:GLU:OE2	31:f:104:LYS:NZ	2.51	0.43
22:W:24:LEU:N	22:W:87:ARG:O	2.39	0.43
26:a:35:VAL:HG23	26:a:40:ILE:HD11	2.00	0.43
37:z:582:U:N3	37:z:585:G:OP2	2.37	0.43
1:2:94:G:HO2'	1:2:498:A:HO2'	1.60	0.43
1:2:528:U:H2'	1:2:529:C:C6	2.53	0.43
1:2:799:C:H2'	1:2:800:U:C6	2.54	0.43
1:2:1154:G:N1	1:2:1155:G:C6	2.86	0.43
1:2:1194:G:H2'	1:2:1195:A:C8	2.53	0.43
1:2:1386:U:H2'	1:2:1387:C:H6	1.84	0.43
1:2:1450:A:OP1	19:T:49:LYS:NZ	2.50	0.43
1:2:1474:U:H2'	1:2:1475:G:H8	1.77	0.43
1:2:1721:G:H2'	1:2:1722:G:H8	1.84	0.43
2:C:80:ARG:NE	2:C:81:ASN:OD1	2.51	0.43
3:D:177:GLN:NE2	3:D:178:THR:HG23	2.32	0.43
4:E:168:LYS:HD2	4:E:179:ARG:NE	2.33	0.43
6:G:70:ILE:C	6:G:71:LYS:HD3	2.44	0.43
7:H:56:TYR:OH	7:H:66:CYS:HB2	2.19	0.43
11:L:86:VAL:HG23	11:L:87:LEU:HD12	2.01	0.43
16:Q:31:CYS:SG	16:Q:93:LEU:HD12	2.58	0.43
20:U:40:TYR:HA	20:U:83:PHE:CE2	2.53	0.43
24:Y:32:LYS:HG3	24:Y:36:ARG:HH21	1.82	0.43
32:g:31:ILE:HG23	32:g:43:TRP:CD1	2.53	0.43
32:g:33:SER:CB	32:g:43:TRP:HE1	2.31	0.43
32:g:197:THR:HG21	32:g:238:ALA:HA	1.99	0.43
32:g:206:LEU:HD12	32:g:219:TRP:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:221:A:H2'	1:2:222:G:O4'	2.18	0.43
1:2:290:A:H2'	1:2:291:U:C6	2.53	0.43
1:2:649:G:O4'	1:2:652:G:N2	2.50	0.43
1:2:868:A:H1'	1:2:869:G:H5'	2.00	0.43
1:2:1155:G:OP2	25:Z:5:ARG:NH1	2.50	0.43
2:C:90:PHE:CD2	2:C:175:TRP:HZ3	2.36	0.43
5:F:22:ASN:HD21	30:e:46:TYR:HE1	1.66	0.43
5:F:141:LYS:O	5:F:142:LEU:HD23	2.19	0.43
6:G:15:PRO:HG3	6:G:39:ARG:CZ	2.48	0.43
6:G:100:ARG:O	6:G:112:HIS:HB2	2.18	0.43
6:G:128:LYS:HE2	6:G:140:VAL:HG11	1.99	0.43
9:J:80:VAL:HG13	9:J:92:VAL:HG13	2.00	0.43
20:U:118:ARG:NE	37:z:569:A:OP1	2.39	0.43
22:W:28:ASN:HB2	22:W:31:SER:HB2	1.99	0.43
25:Z:103:ALA:O	25:Z:121:LYS:N	2.50	0.43
29:d:31:ARG:NH1	29:d:43:ILE:HG12	2.33	0.43
31:f:119:ARG:CZ	31:f:132:MET:HE2	2.48	0.43
1:2:163:U:O3'	8:I:83:CYS:HA	2.18	0.43
1:2:186:G:H2'	1:2:187:C:C6	2.53	0.43
1:2:520:U:H3	1:2:544:A:H62	1.65	0.43
1:2:1123:C:H4'	28:c:17:ARG:NH1	2.31	0.43
1:2:1167:G:N2	1:2:1184:A:OP2	2.52	0.43
1:2:1637:U:H2'	1:2:1638:U:C6	2.54	0.43
2:C:58:LEU:HD12	2:C:178:LEU:HD13	2.01	0.43
2:C:155:ARG:HG2	2:C:156:TYR:HD1	1.83	0.43
15:P:126:ALA:HB1	15:P:139:TRP:HZ3	1.83	0.43
20:U:23:ARG:HH12	33:h:47:LEU:HA	1.83	0.43
22:W:27:ARG:NH2	30:e:51:GLY:O	2.51	0.43
22:W:81:GLN:HB3	22:W:83:ARG:NH2	2.32	0.43
26:a:44:LEU:O	26:a:47:MET:HB3	2.19	0.43
28:c:35:VAL:HB	28:c:63:LEU:HD21	1.99	0.43
37:z:580:U:H2'	37:z:581:A:C8	2.54	0.43
1:2:1195:A:OP1	27:b:2:THR:N	2.51	0.43
3:D:81:PHE:CD1	3:D:109:LYS:HE2	2.53	0.43
7:H:51:HIS:ND1	18:S:82:TYR:OH	2.39	0.43
8:I:201:LYS:HA	8:I:201:LYS:HD3	1.86	0.43
9:J:75:ILE:HG23	9:J:76:GLN:N	2.32	0.43
10:K:4:SER:HA	10:K:28:GLU:OE1	2.19	0.43
10:K:48:VAL:HG12	10:K:52:ASN:O	2.18	0.43
16:Q:28:PHE:HB2	16:Q:47:LEU:HD11	2.00	0.43
1:2:282:G:H21	13:N:41:GLY:HA3	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:296:U:H5''	1:2:297:C:C2	2.53	0.43
1:2:479:A:H2'	1:2:480:C:C6	2.54	0.43
1:2:602:U:C5	1:2:603:C:H5	2.37	0.43
1:2:812:A:H2'	1:2:813:G:C8	2.53	0.43
1:2:943:G:H2'	1:2:944:C:H6	1.84	0.43
1:2:952:G:H2'	1:2:953:A:H8	1.83	0.43
1:2:1282:G:O6	14:O:36:ARG:HB3	2.18	0.43
1:2:1375:A:H2'	1:2:1376:C:H6	1.84	0.43
1:2:1641:C:C4	1:2:1673:A:C8	3.06	0.43
5:F:193:ASP:HB3	5:F:194:PRO:CD	2.46	0.43
9:J:41:ARG:HA	9:J:41:ARG:HD2	1.74	0.43
11:L:84:ILE:HG13	11:L:86:VAL:HG22	2.00	0.43
17:R:86:LEU:HB3	17:R:87:PRO:HD2	2.01	0.43
18:S:29:ASN:N	18:S:29:ASN:OD1	2.50	0.43
21:V:139:ALA:HA	21:V:144:LYS:HB2	2.00	0.43
25:Z:33:GLY:O	25:Z:36:LEU:HG	2.19	0.43
32:g:101:PHE:CD1	32:g:136:GLY:HA2	2.54	0.43
34:i:107:LYS:O	34:i:110:MET:HG3	2.19	0.43
1:2:109:U:O2'	13:N:71:ARG:NH2	2.51	0.43
1:2:554:A:H2'	1:2:555:G:O4'	2.19	0.43
1:2:606:A:OP1	25:Z:66:ILE:HB	2.18	0.43
1:2:744:C:H2'	1:2:745:U:C4	2.54	0.43
1:2:900:A:H2'	1:2:901:C:C6	2.54	0.43
1:2:942:U:C2	1:2:943:G:C8	3.07	0.43
1:2:1028:C:H5''	15:P:109:LYS:NZ	2.33	0.43
1:2:1220:G:H2'	1:2:1221:U:C6	2.54	0.43
1:2:1614:A:P	17:R:47:ARG:HH21	2.42	0.43
2:C:169:HIS:CE1	2:C:203:PHE:HB3	2.54	0.43
4:E:195:PRO:HB3	4:E:221:PHE:HE1	1.83	0.43
5:F:39:VAL:HG23	5:F:48:ILE:HG13	2.01	0.43
5:F:164:VAL:O	5:F:168:VAL:HG22	2.18	0.43
9:J:23:ILE:HG13	9:J:87:PHE:HE2	1.83	0.43
9:J:66:VAL:HG13	9:J:69:LEU:HB2	2.01	0.43
12:M:15:LEU:O	12:M:19:GLY:N	2.45	0.43
15:P:142:GLU:H	15:P:145:THR:HG1	1.62	0.43
19:T:25:GLY:O	19:T:58:MET:HG2	2.19	0.43
27:b:23:CYS:HB3	27:b:28:CYS:H	1.84	0.43
32:g:78:ALA:O	32:g:90:TRP:N	2.51	0.43
32:g:119:GLN:HG2	32:g:139:LYS:NZ	2.34	0.43
37:z:597:A:H2'	37:z:598:A:H8	1.83	0.43
1:2:11:A:H5'	4:E:98:GLN:HE22	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:29:G:C6	1:2:636:G:C6	3.06	0.43
1:2:51:U:H2'	1:2:52:G:H8	1.83	0.43
1:2:331:C:H2'	1:2:332:C:H6	1.84	0.43
1:2:951:A:H5''	16:Q:60:MET:HE2	2.00	0.43
1:2:970:C:C2	1:2:971:G:C8	3.07	0.43
1:2:1095:G:N2	1:2:1129:A:N1	2.56	0.43
1:2:1194:G:H2'	1:2:1195:A:H8	1.84	0.43
1:2:1252:G:O6	30:e:31:ILE:HD11	2.19	0.43
1:2:1338:U:H3	1:2:1479:A:N6	2.17	0.43
1:2:1462:G:H2'	1:2:1463:C:C6	2.54	0.43
1:2:1497:C:H2'	1:2:1498:C:C6	2.54	0.43
1:2:1589:A:H62	33:h:104:ARG:HD2	1.83	0.43
5:F:23:GLU:HB2	30:e:46:TYR:OH	2.18	0.43
6:G:160:ILE:HD12	6:G:169:ILE:HG21	2.00	0.43
6:G:191:ARG:CZ	6:G:245:ARG:HE	2.32	0.43
13:N:71:ARG:H	13:N:130:GLU:CD	2.26	0.43
20:U:8:LYS:HD2	33:h:50:PHE:O	2.18	0.43
22:W:61:LEU:HD23	22:W:82:MET:HG2	2.00	0.43
23:X:39:VAL:HG23	23:X:41:LYS:H	1.84	0.43
24:Y:15:ASN:ND2	24:Y:72:CYS:O	2.47	0.43
1:2:2:A:C5	1:2:408:A:H1'	2.54	0.43
1:2:332:C:H2'	1:2:333:A:H8	1.84	0.43
1:2:411:G:O3'	13:N:98:LYS:NZ	2.52	0.43
1:2:532:U:H2'	1:2:533:C:O4'	2.18	0.43
1:2:818:U:H2'	1:2:820:C:OP2	2.19	0.43
1:2:824:G:H4'	6:G:23:LEU:HD11	2.01	0.43
1:2:924:G:C6	1:2:1010:G:C6	3.07	0.43
1:2:1016:A:N7	15:P:70:LYS:NZ	2.67	0.43
1:2:1195:A:H2'	1:2:1196:A:C8	2.54	0.43
1:2:1328:A:H62	1:2:1489:C:H42	1.65	0.43
1:2:1535:G:C6	1:2:1589:A:N1	2.87	0.43
1:2:1707:A:H2'	1:2:1708:C:H6	1.83	0.43
3:D:85:LYS:N	3:D:102:GLY:O	2.42	0.43
3:D:195:LYS:HD3	3:D:195:LYS:HA	1.85	0.43
5:F:55:THR:HA	5:F:58:VAL:HB	2.01	0.43
5:F:162:ASP:O	5:F:164:VAL:N	2.52	0.43
9:J:143:ARG:HH22	24:Y:53:ILE:HA	1.83	0.43
12:M:5:LYS:HG3	12:M:6:LYS:HD3	2.00	0.43
18:S:76:GLY:O	18:S:80:GLN:N	2.42	0.43
24:Y:49:GLU:CD	24:Y:50:PHE:H	2.26	0.43
28:c:30:SER:HB2	28:c:48:SER:OG	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:348:C:H2'	1:2:349:U:C6	2.54	0.42
1:2:559:A:H2'	1:2:560:C:C6	2.54	0.42
1:2:740:G:H2'	1:2:741:C:C6	2.54	0.42
1:2:1413:C:OP1	21:V:129:ARG:HD3	2.18	0.42
1:2:1615:A:H8	17:R:40:ARG:NH2	2.16	0.42
3:D:171:ILE:HG21	3:D:197:ILE:HG12	2.00	0.42
3:D:227:LYS:HA	3:D:230:GLU:HB3	2.01	0.42
4:E:119:ASN:O	4:E:152:ARG:NH2	2.26	0.42
4:E:238:PRO:HA	4:E:241:TRP:CE2	2.54	0.42
5:F:177:LEU:HD23	5:F:177:LEU:HA	1.90	0.42
6:G:69:PHE:CD2	26:a:17:LEU:HD11	2.54	0.42
6:G:127:ARG:HB2	6:G:140:VAL:HG12	2.00	0.42
6:G:137:PRO:HD2	6:G:149:TYR:CD1	2.54	0.42
19:T:50:ILE:O	19:T:54:VAL:HG23	2.19	0.42
24:Y:73:GLY:HA3	24:Y:128:PHE:CZ	2.54	0.42
32:g:19:THR:O	32:g:288:SER:HB3	2.18	0.42
32:g:99:ARG:NH1	32:g:134:THR:O	2.52	0.42
1:2:664:C:H42	1:2:1027:A:H61	1.67	0.42
1:2:831:C:O5'	26:a:8:ARG:NH2	2.52	0.42
1:2:1035:C:N4	1:2:1073:A:H61	2.17	0.42
1:2:1103:G:H2'	1:2:1104:G:C8	2.54	0.42
1:2:1404:U:H2'	1:2:1405:A:O4'	2.19	0.42
1:2:1451:A:H61	1:2:1467:C:H42	1.66	0.42
1:2:1653:G:H5''	30:e:33:LYS:HZ2	1.84	0.42
3:D:129:THR:OG1	3:D:131:ASP:OD1	2.28	0.42
3:D:140:VAL:N	3:D:211:PHE:O	2.36	0.42
11:L:36:GLY:CA	11:L:123:ILE:HD12	2.49	0.42
11:L:108:ARG:NE	11:L:154:GLN:HE22	2.18	0.42
13:N:16:ILE:HG13	13:N:17:PHE:N	2.31	0.42
17:R:76:VAL:O	17:R:95:GLY:N	2.38	0.42
19:T:72:LYS:HD2	19:T:75:GLU:OE2	2.20	0.42
19:T:80:ARG:HA	19:T:83:ASN:ND2	2.34	0.42
19:T:122:PRO:HA	19:T:123:THR:HA	1.85	0.42
20:U:24:ARG:HD3	20:U:25:LYS:H	1.84	0.42
24:Y:80:ASP:OD1	24:Y:81:VAL:N	2.52	0.42
27:b:75:VAL:O	27:b:79:ILE:HG22	2.19	0.42
36:y:18:G:O5'	36:y:59:A:N6	2.52	0.42
1:2:96:C:H1'	1:2:464:G:H5'	2.01	0.42
1:2:792:G:O2'	1:2:793:C:O4'	2.33	0.42
1:2:797:U:H2'	1:2:798:A:C8	2.54	0.42
1:2:955:G:H2'	1:2:956:U:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:967:G:H4'	1:2:968:A:C8	2.54	0.42
1:2:1095:G:H2'	1:2:1096:A:H8	1.84	0.42
1:2:1236:A:H2'	1:2:1237:A:C8	2.54	0.42
1:2:1309:A:H3'	14:O:92:CYS:SG	2.59	0.42
1:2:1328:A:O2'	5:F:145:GLN:O	2.37	0.42
1:2:1517:A:C8	17:R:128:HIS:CD2	3.07	0.42
1:2:1766:C:H2'	1:2:1767:C:C6	2.54	0.42
1:2:1860:A:H4'	27:b:95:ARG:HD2	2.02	0.42
4:E:77:GLU:O	4:E:81:PHE:N	2.52	0.42
4:E:177:LEU:HD23	4:E:177:LEU:H	1.84	0.42
5:F:133:GLY:HA2	5:F:155:GLY:HA3	2.01	0.42
6:G:132:GLY:N	6:G:136:ILE:O	2.36	0.42
11:L:152:ASP:O	11:L:155:LYS:HG2	2.20	0.42
1:2:236:C:H2'	1:2:237:G:C8	2.54	0.42
1:2:882:A:C2	1:2:897:G:C4	3.08	0.42
1:2:1386:U:C2	1:2:1387:C:C5	3.07	0.42
1:2:1394:G:H2'	1:2:1395:C:H6	1.84	0.42
1:2:1699:C:O2'	1:2:1700:C:H5'	2.20	0.42
1:2:1769:U:H2'	1:2:1770:G:H8	1.83	0.42
2:C:143:PRO:HB3	23:X:32:ILE:HD12	2.00	0.42
4:E:168:LYS:HD2	4:E:179:ARG:CZ	2.49	0.42
9:J:139:ILE:H	15:P:19:ARG:NH2	2.17	0.42
9:J:144:ILE:HG22	9:J:154:ILE:HG23	2.02	0.42
11:L:83:ARG:HD2	11:L:150:ARG:HG2	2.01	0.42
15:P:38:TYR:O	15:P:42:LYS:HG3	2.19	0.42
17:R:98:ASN:CG	17:R:99:GLY:H	2.26	0.42
19:T:6:THR:O	19:T:10:LYS:HG2	2.19	0.42
27:b:45:VAL:HG13	27:b:64:LEU:HD11	2.00	0.42
34:i:89:GLN:OE1	34:i:89:GLN:N	2.52	0.42
1:2:152:U:H2'	1:2:153:G:C8	2.54	0.42
1:2:812:A:H2'	1:2:813:G:O4'	2.19	0.42
1:2:839:C:H1'	6:G:263:GLY:H	1.84	0.42
1:2:960:A:H2'	1:2:961:U:C6	2.54	0.42
1:2:1222:G:O6	1:2:1636:A:N6	2.52	0.42
1:2:1271:G:H1	1:2:1502:A:H2'	1.85	0.42
1:2:1507:U:H2'	1:2:1508:C:C6	2.54	0.42
1:2:1697:G:C5	1:2:1698:C:C4	3.08	0.42
3:D:33:VAL:HA	3:D:96:CYS:HB2	2.00	0.42
3:D:113:MET:HE1	3:D:211:PHE:CE2	2.54	0.42
4:E:233:TYR:OH	23:X:12:TYR:O	2.36	0.42
6:G:104:ASP:N	6:G:108:ARG:O	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:38:TYR:CD1	7:H:144:LEU:HD13	2.54	0.42
8:I:170:ARG:HD3	8:I:172:LYS:HG2	2.00	0.42
10:K:195:LEU:O	10:K:199:LEU:HD23	2.20	0.42
18:S:40:GLU:O	18:S:48:GLN:NE2	2.52	0.42
20:U:23:ARG:HH12	33:h:48:VAL:H	1.68	0.42
20:U:80:PRO:HB2	20:U:82:TRP:HE1	1.84	0.42
20:U:89:ASP:O	20:U:90:VAL:HG23	2.19	0.42
35:l:20:MET:O	35:l:23:ARG:HG2	2.19	0.42
1:2:51:U:C2	1:2:52:G:N7	2.88	0.42
1:2:682:G:C6	1:2:733:G:N1	2.88	0.42
1:2:826:A:C6	1:2:841:G:N1	2.88	0.42
1:2:1226:C:H1'	1:2:1660:G:H22	1.84	0.42
1:2:1352:G:O3'	4:E:110:LYS:NZ	2.52	0.42
2:C:87:VAL:HG12	2:C:175:TRP:CH2	2.54	0.42
2:C:124:VAL:O	2:C:146:ALA:HA	2.19	0.42
3:D:225:LEU:HD23	3:D:228:LEU:HD13	2.01	0.42
11:L:147:PHE:CD2	11:L:149:VAL:HG22	2.54	0.42
13:N:81:LYS:HE2	13:N:81:LYS:HB3	1.87	0.42
15:P:64:ARG:HD3	15:P:70:LYS:HG2	2.00	0.42
17:R:59:ARG:HH21	17:R:76:VAL:HG13	1.84	0.42
17:R:122:THR:HG23	17:R:123:TYR:HD1	1.84	0.42
19:T:104:GLU:HA	19:T:107:LYS:HB3	2.00	0.42
23:X:59:ILE:HD11	23:X:64:GLU:HB2	2.01	0.42
25:Z:67:ARG:HD3	25:Z:67:ARG:HA	1.77	0.42
29:d:17:VAL:HG23	29:d:30:VAL:HG22	2.01	0.42
29:d:43:ILE:O	29:d:44:ARG:HD2	2.19	0.42
31:f:111:ASN:HA	31:f:112:GLY:HA2	1.57	0.42
37:z:547:G:C2	37:z:549:G:H8	2.37	0.42
37:z:561:U:H2'	37:z:562:G:O4'	2.20	0.42
1:2:376:C:OP2	13:N:136:LYS:NZ	2.35	0.42
1:2:432:C:H2'	1:2:433:U:C6	2.54	0.42
1:2:565:A:OP1	26:a:93:ARG:NH2	2.52	0.42
1:2:839:C:H2'	1:2:840:U:C6	2.55	0.42
1:2:1187:C:H2'	1:2:1188:U:C6	2.54	0.42
1:2:1228:U:H2'	1:2:1229:G:C8	2.54	0.42
1:2:1236:A:N3	17:R:100:LYS:HE2	2.35	0.42
1:2:1561:G:OP2	21:V:101:ARG:NH2	2.45	0.42
1:2:1640:C:H5''	18:S:138:ARG:CZ	2.50	0.42
1:2:1767:C:H2'	1:2:1768:C:H6	1.84	0.42
2:C:31:ASP:OD1	2:C:32:PHE:N	2.52	0.42
2:C:53:ARG:NH1	23:X:82:ASN:OD1	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:E:92:LEU:HB2	4:E:112:PHE:HB2	2.00	0.42
6:G:6:LYS:HG2	6:G:30:ARG:HH12	1.83	0.42
12:M:14:LEU:HA	12:M:17:LYS:HG2	2.02	0.42
14:O:46:GLN:HE22	14:O:112:LYS:HB3	1.85	0.42
17:R:10:ARG:HA	17:R:10:ARG:HD2	1.75	0.42
17:R:39:ALA:HA	17:R:42:ARG:HE	1.84	0.42
33:h:103:HIS:CG	33:h:104:ARG:N	2.87	0.42
36:y:8:U:O3'	36:y:9:G:H3'	2.19	0.42
1:2:8:U:O2'	1:2:9:U:H5'	2.19	0.42
1:2:144:U:H2'	1:2:145:G:H8	1.83	0.42
1:2:865:A:C4	1:2:911:G:H1'	2.55	0.42
1:2:882:A:H61	1:2:896:C:N4	2.15	0.42
1:2:1014:U:H2'	1:2:1015:C:C6	2.54	0.42
1:2:1233:C:H4'	17:R:128:HIS:HE1	1.85	0.42
1:2:1237:A:H2	1:2:1511:G:H21	1.66	0.42
1:2:1301:C:H5'	31:f:92:LYS:NZ	2.35	0.42
1:2:1327:C:H4'	1:2:1328:A:C5'	2.49	0.42
1:2:1351:C:O2	4:E:220:ASN:ND2	2.53	0.42
1:2:1611:U:H2'	1:2:1612:G:O4'	2.20	0.42
2:C:105:PRO:CB	2:C:132:GLN:HE21	2.33	0.42
4:E:93:LYS:HD3	4:E:95:MET:SD	2.60	0.42
7:H:140:ASP:OD2	29:d:58:LEU:HG	2.20	0.42
11:L:122:SER:OG	11:L:123:ILE:N	2.53	0.42
15:P:38:TYR:CD1	15:P:78:LYS:HE2	2.54	0.42
21:V:6:VAL:HA	21:V:9:VAL:HG22	2.02	0.42
22:W:31:SER:O	22:W:35:VAL:HG23	2.20	0.42
23:X:9:VAL:HG22	23:X:10:ASP:H	1.85	0.42
29:d:44:ARG:HA	29:d:65:ALA:HB3	2.01	0.42
1:2:157:U:H4'	8:I:59:GLN:HA	2.02	0.42
1:2:348:C:C2	1:2:395:G:C2	3.07	0.42
1:2:360:G:N2	1:2:362:U:O4	2.52	0.42
1:2:517:C:OP1	11:L:125:HIS:N	2.52	0.42
1:2:561:U:H2'	1:2:562:U:C6	2.55	0.42
1:2:1088:G:N1	1:2:1154:G:O6	2.53	0.42
1:2:1105:C:C6	19:T:122:PRO:HB3	2.55	0.42
1:2:1251:G:OP1	1:2:1252:G:O2'	2.33	0.42
1:2:1260:C:O2	1:2:1512:G:N2	2.50	0.42
1:2:1413:C:H2'	1:2:1415:C:C6	2.55	0.42
1:2:1535:G:C2	1:2:1536:G:C5	3.08	0.42
1:2:1848:U:H2'	1:2:1849:G:H8	1.84	0.42
25:Z:135:LYS:HD2	25:Z:135:LYS:HA	1.89	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:a:88:LYS:HA	26:a:91:LEU:HD12	2.01	0.42
33:h:106:GLN:HE22	33:h:108:ILE:CD1	2.30	0.42
1:2:1068:U:H5''	1:2:1069:U:OP2	2.20	0.42
1:2:1436:C:H2'	1:2:1437:U:C6	2.55	0.42
1:2:1482:A:H2'	1:2:1483:A:O4'	2.20	0.42
1:2:1553:C:H2'	1:2:1554:C:H6	1.84	0.42
1:2:1795:A:H2'	1:2:1796:C:H6	1.84	0.42
1:2:1860:A:N6	27:b:87:ARG:HD2	2.35	0.42
4:E:45:TRP:CZ3	4:E:56:LYS:HD3	2.55	0.42
6:G:165:GLU:OE1	6:G:165:GLU:N	2.52	0.42
9:J:58:LYS:HD2	9:J:58:LYS:HA	1.93	0.42
9:J:157:HIS:HA	9:J:188:GLU:O	2.20	0.42
9:J:177:TYR:CE2	9:J:183:LYS:HB2	2.55	0.42
15:P:100:LYS:HA	15:P:103:GLU:HG2	2.02	0.42
17:R:79:HIS:CE1	17:R:102:PHE:HZ	2.37	0.42
17:R:106:GLU:OE2	17:R:107:ILE:N	2.53	0.42
20:U:103:LEU:O	20:U:107:LEU:N	2.52	0.42
22:W:36:CYS:SG	22:W:53:PRO:HB3	2.59	0.42
26:a:22:GLN:HB2	26:a:72:PHE:CZ	2.54	0.42
32:g:206:LEU:HD13	32:g:227:LEU:HD12	2.01	0.42
36:y:38:C:H3'	36:y:39:C:C6	2.55	0.42
1:2:81:U:H2'	1:2:82:G:O4'	2.19	0.41
1:2:163:U:OP1	8:I:85:ARG:N	2.53	0.41
1:2:872:C:O2'	1:2:873:C:O2	2.26	0.41
1:2:1573:U:N3	5:F:1:MET:O	2.53	0.41
1:2:1622:C:O3'	21:V:41:LYS:HD2	2.20	0.41
1:2:1858:U:H3'	27:b:5:ARG:NH2	2.35	0.41
4:E:51:LEU:O	4:E:55:VAL:HG23	2.20	0.41
4:E:57:ASP:OD2	4:E:257:HIS:ND1	2.53	0.41
5:F:203:PRO:HG3	19:T:42:PRO:HB2	2.02	0.41
6:G:182:MET:HB3	6:G:226:PHE:HB3	2.02	0.41
9:J:70:LYS:O	9:J:74:LYS:HG3	2.18	0.41
9:J:100:ILE:HG22	9:J:125:VAL:HG21	2.02	0.41
11:L:18:ARG:O	11:L:24:ARG:NH1	2.53	0.41
12:M:42:ASN:C	12:M:44:HIS:H	2.27	0.41
15:P:142:GLU:OE1	15:P:144:SER:N	2.46	0.41
17:R:17:TYR:HA	20:U:91:LYS:HG2	2.01	0.41
23:X:42:VAL:HG23	23:X:43:THR:HG23	2.01	0.41
24:Y:30:CYS:SG	24:Y:61:ILE:N	2.90	0.41
26:a:111:LYS:O	26:a:115:LYS:HG3	2.20	0.41
29:d:16:LYS:HA	29:d:16:LYS:HD2	1.79	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:g:241:PHE:CE1	32:g:248:LEU:HD13	2.55	0.41
1:2:40:A:H2'	1:2:476:A:N7	2.35	0.41
1:2:377:C:H2'	1:2:378:U:C6	2.54	0.41
1:2:465:C:H2'	1:2:497:G:H21	1.85	0.41
1:2:1006:G:H2'	1:2:1007:A:C8	2.53	0.41
1:2:1184:A:H2'	1:2:1185:A:O4'	2.21	0.41
1:2:1453:U:C2	1:2:1454:G:N7	2.88	0.41
1:2:1652:G:C2	1:2:1653:G:C5	3.08	0.41
2:C:83:GLY:O	2:C:87:VAL:HG22	2.20	0.41
3:D:173:THR:O	3:D:177:GLN:HG3	2.20	0.41
4:E:179:ARG:O	4:E:209:THR:HA	2.20	0.41
6:G:112:HIS:HE1	6:G:239:PRO:HG3	1.85	0.41
14:O:58:GLU:HG3	14:O:61:TYR:H	1.85	0.41
15:P:47:PRO:HA	15:P:50:ILE:HD12	2.00	0.41
15:P:98:VAL:HG11	15:P:115:LEU:HB2	2.02	0.41
16:Q:124:MET:HA	16:Q:124:MET:HE3	2.02	0.41
21:V:51:ASN:HB3	21:V:54:TYR:HD2	1.86	0.41
24:Y:15:ASN:O	24:Y:19:LYS:HG3	2.19	0.41
24:Y:115:GLU:CD	24:Y:118:ARG:HH12	2.28	0.41
25:Z:21:LYS:NZ	25:Z:27:TYR:CZ	2.83	0.41
32:g:291:TRP:CZ3	32:g:298:LEU:HB3	2.56	0.41
37:z:575:A:C8	37:z:576:C:H4'	2.47	0.41
1:2:167:G:N1	1:2:168:C:N4	2.68	0.41
1:2:348:C:H2'	1:2:349:U:H6	1.84	0.41
1:2:512:A:H5''	11:L:145:PRO:HD2	2.02	0.41
1:2:649:G:O2'	1:2:652:G:O2'	2.20	0.41
1:2:1120:C:H2'	1:2:1121:C:C6	2.55	0.41
1:2:1192:A:C5	1:2:1193:G:C8	3.08	0.41
1:2:1328:A:N1	1:2:1496:G:C5	2.88	0.41
1:2:1498:C:H2'	1:2:1499:C:H6	1.85	0.41
1:2:1833:U:H5'	16:Q:150:ARG:CZ	2.50	0.41
2:C:199:PRO:HG2	19:T:91:LEU:CD1	2.50	0.41
5:F:51:LEU:HD12	5:F:89:GLU:OE2	2.21	0.41
8:I:62:PRO:O	8:I:63:MET:HE2	2.19	0.41
10:K:67:TRP:HE1	13:N:20:LYS:NZ	2.19	0.41
13:N:80:MET:SD	13:N:86:ILE:HA	2.60	0.41
13:N:147:LYS:HD2	13:N:147:LYS:HA	1.81	0.41
15:P:26:LEU:H	15:P:26:LEU:HD12	1.85	0.41
16:Q:142:ARG:NH2	27:b:22:ARG:HB3	2.32	0.41
18:S:8:GLN:HB2	18:S:27:ARG:HB2	2.02	0.41
18:S:85:ARG:HH22	18:S:117:ARG:HB3	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:a:109:GLU:O	26:a:113:ARG:HG2	2.20	0.41
32:g:130:LYS:HA	32:g:141:THR:HA	2.03	0.41
1:2:74:G:O6	8:I:170:ARG:NH2	2.53	0.41
1:2:516:A:H5''	34:i:109:ARG:HH12	1.85	0.41
1:2:560:C:C2	1:2:561:U:C5	3.08	0.41
1:2:656:U:H2'	1:2:657:U:C6	2.56	0.41
1:2:1030:A:C2	1:2:1031:A:H1'	2.55	0.41
1:2:1180:G:H2'	1:2:1181:C:C6	2.56	0.41
1:2:1431:C:H4'	1:2:1432:C:OP1	2.21	0.41
1:2:1721:G:H2'	1:2:1722:G:C8	2.56	0.41
1:2:1734:C:H2'	1:2:1735:C:H6	1.86	0.41
1:2:1814:G:H2'	1:2:1815:U:C6	2.55	0.41
5:F:18:LYS:HB3	30:e:50:ILE:HG21	2.01	0.41
15:P:29:THR:O	15:P:33:VAL:HG23	2.20	0.41
17:R:33:LEU:HD21	17:R:86:LEU:HD22	2.03	0.41
32:g:302:TYR:HB2	32:g:304:ASP:OD1	2.21	0.41
36:y:8:U:O2'	36:y:10:G:OP1	2.24	0.41
36:y:29:G:H2'	36:y:30:G:H8	1.80	0.41
37:z:579:G:C6	37:z:590:A:C6	3.08	0.41
1:2:85:A:H5''	26:a:118:ARG:NH1	2.35	0.41
1:2:92:A:C8	1:2:437:A:C4	3.09	0.41
1:2:108:G:C6	1:2:109:U:N3	2.88	0.41
1:2:376:C:H4'	10:K:9:HIS:HE1	1.85	0.41
1:2:553:G:O2'	1:2:554:A:O5'	2.37	0.41
1:2:585:U:H2'	1:2:586:U:C6	2.55	0.41
1:2:625:G:H2'	1:2:626:C:H6	1.85	0.41
1:2:796:U:H2'	1:2:797:U:O4'	2.20	0.41
1:2:837:G:H2'	1:2:838:C:H6	1.84	0.41
1:2:1816:A:H2'	1:2:1817:A:C8	2.55	0.41
6:G:182:MET:HE2	6:G:182:MET:HA	2.02	0.41
9:J:153:LEU:HD21	9:J:186:ASN:HB2	2.02	0.41
18:S:32:ILE:O	18:S:39:LEU:HD22	2.20	0.41
24:Y:103:VAL:HG13	24:Y:126:LEU:HB2	2.02	0.41
27:b:41:ILE:O	27:b:42:ARG:NH1	2.54	0.41
30:e:23:VAL:HG13	30:e:38:MET:SD	2.60	0.41
34:i:114:ARG:HA	34:i:114:ARG:HD2	1.80	0.41
36:y:27:U:C2	36:y:42:G:N2	2.88	0.41
1:2:102:A:OP2	10:K:19:LYS:NZ	2.39	0.41
1:2:412:U:H2'	1:2:413:U:C6	2.55	0.41
1:2:569:C:H2'	1:2:570:U:O4'	2.20	0.41
1:2:637:U:C2	1:2:638:A:C8	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:820:C:C2	11:L:144:ILE:HG13	2.55	0.41
1:2:905:G:C2	1:2:906:G:C5	3.09	0.41
1:2:1060:C:O3'	16:Q:149:ARG:NH1	2.53	0.41
1:2:1383:G:H3'	1:2:1384:A:H8	1.85	0.41
1:2:1717:G:H2'	1:2:1718:G:C8	2.56	0.41
1:2:1834:U:H2'	1:2:1835:C:C6	2.55	0.41
2:C:184:ARG:HA	2:C:190:SER:HB3	2.01	0.41
4:E:236:LEU:H	4:E:236:LEU:HD23	1.86	0.41
7:H:63:LYS:HB3	7:H:63:LYS:HE2	1.81	0.41
7:H:85:LYS:HD3	7:H:88:MET:SD	2.61	0.41
9:J:104:PRO:HD3	9:J:116:ARG:HH11	1.85	0.41
14:O:53:ALA:HA	14:O:79:VAL:O	2.21	0.41
15:P:62:GLN:OE1	15:P:63:VAL:N	2.53	0.41
15:P:113:PHE:O	15:P:117:LEU:HG	2.19	0.41
26:a:20:ARG:HD2	26:a:76:TYR:CZ	2.55	0.41
31:f:95:ARG:HH21	31:f:98:VAL:HG21	1.86	0.41
32:g:22:ALA:HB3	32:g:32:LEU:HD12	2.01	0.41
32:g:36:ARG:HG2	32:g:65:PHE:HB3	2.03	0.41
32:g:177:TRP:HA	32:g:183:LYS:O	2.20	0.41
36:y:16:C:O2	36:y:58:A:N6	2.54	0.41
1:2:368:U:H2'	1:2:369:C:O4'	2.21	0.41
1:2:559:A:H2'	1:2:560:C:H6	1.84	0.41
1:2:1275:C:H2'	1:2:1276:G:C8	2.55	0.41
1:2:1588:C:H2'	1:2:1589:A:C8	2.56	0.41
1:2:1766:C:H2'	1:2:1767:C:H6	1.86	0.41
1:2:1828:A:H2	1:2:1831:G:N1	2.19	0.41
3:D:212:VAL:HG13	3:D:212:VAL:O	2.20	0.41
6:G:91:SER:HA	6:G:98:ASN:OD1	2.19	0.41
9:J:139:ILE:HD12	9:J:156:VAL:HG13	2.03	0.41
11:L:75:ASN:HA	11:L:78:LEU:HG	2.02	0.41
13:N:55:TYR:OH	13:N:116:CYS:HB2	2.20	0.41
15:P:101:HIS:NE2	15:P:108:ASP:OD2	2.54	0.41
20:U:34:LYS:HB3	20:U:100:ALA:HA	2.03	0.41
20:U:65:GLU:O	20:U:69:THR:HG23	2.21	0.41
23:X:15:ARG:NH1	23:X:33:PRO:HG3	2.36	0.41
30:e:4:GLN:NE2	30:e:5:GLN:HB2	2.34	0.41
37:z:568:A:H3'	37:z:569:A:H8	1.86	0.41
37:z:592:C:C2	37:z:593:U:C5	3.09	0.41
1:2:741:C:H2'	1:2:742:C:O4'	2.21	0.41
1:2:987:G:H1'	27:b:11:ALA:HA	2.02	0.41
1:2:1013:U:H2'	1:2:1014:U:C6	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1239:U:H2'	1:2:1240:U:O4'	2.21	0.41
1:2:1281:G:H21	31:f:101:ALA:C	2.29	0.41
1:2:1491:G:H22	30:e:45:GLN:CD	2.27	0.41
1:2:1615:A:H1'	1:2:1619:U:OP2	2.21	0.41
1:2:1660:G:C5	21:V:88:MET:HE1	2.56	0.41
1:2:1721:G:C6	1:2:1803:A:C6	3.08	0.41
1:2:1811:G:H2'	1:2:1812:A:C8	2.56	0.41
4:E:98:GLN:HB3	4:E:107:THR:HG22	2.01	0.41
4:E:155:TRP:H	4:E:163:HIS:CE1	2.38	0.41
6:G:72:ILE:HD11	6:G:88:ASP:HB3	2.02	0.41
6:G:122:LYS:HE3	6:G:143:ASP:OD2	2.20	0.41
11:L:18:ARG:HD3	11:L:18:ARG:HA	1.82	0.41
19:T:58:MET:SD	19:T:61:ILE:HD11	2.61	0.41
25:Z:21:LYS:O	25:Z:21:LYS:HD3	2.20	0.41
26:a:15:ASN:ND2	26:a:20:ARG:HE	2.19	0.41
33:h:98:LYS:O	33:h:110:THR:HG22	2.19	0.41
36:y:49:A:H4'	37:z:551:C:O3'	2.20	0.41
37:z:584:A:H4'	37:z:585:G:C5	2.56	0.41
1:2:67:C:H41	1:2:151:C:H4'	1.86	0.41
1:2:152:U:H2'	1:2:153:G:O4'	2.21	0.41
1:2:487:C:H2'	1:2:488:C:C6	2.56	0.41
1:2:539:C:H2'	1:2:540:C:O4'	2.20	0.41
1:2:551:A:OP2	11:L:174:LYS:N	2.34	0.41
1:2:742:C:H2'	1:2:743:U:C5	2.55	0.41
1:2:743:U:O2'	1:2:744:C:O4'	2.27	0.41
1:2:746:C:H2'	1:2:747:G:C8	2.56	0.41
1:2:820:C:H5'	11:L:147:PHE:CD1	2.56	0.41
1:2:921:G:C2	1:2:922:A:C8	3.09	0.41
1:2:959:A:P	16:Q:66:ARG:HB3	2.61	0.41
1:2:1007:A:O3'	15:P:3:ARG:NH2	2.54	0.41
1:2:1280:A:OP2	14:O:104:VAL:HG21	2.19	0.41
1:2:1301:C:H5'	31:f:92:LYS:HZ3	1.86	0.41
1:2:1331:G:H2'	1:2:1332:C:O4'	2.21	0.41
1:2:1491:G:H2'	1:2:1492:U:C6	2.56	0.41
1:2:1528:A:OP1	7:H:164:ARG:NH2	2.53	0.41
1:2:1540:A:O5'	18:S:74:GLY:HA2	2.21	0.41
1:2:1568:G:H2'	1:2:1569:C:C6	2.56	0.41
1:2:1573:U:O2'	5:F:1:MET:N	2.54	0.41
1:2:1586:C:O2'	7:H:87:LEU:HD23	2.21	0.41
1:2:1589:A:C6	1:2:1590:U:C5	3.08	0.41
1:2:1667:U:H2'	1:2:1668:U:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1695:C:C2	1:2:1828:A:N6	2.89	0.41
2:C:38:ILE:HD12	2:C:38:ILE:HA	1.82	0.41
2:C:198:MET:SD	2:C:199:PRO:HD2	2.61	0.41
3:D:144:LYS:HD3	3:D:208:HIS:CG	2.56	0.41
4:E:118:TYR:CE1	4:E:201:MET:HA	2.56	0.41
4:E:255:THR:HA	4:E:258:LEU:HD12	2.03	0.41
6:G:94:LYS:O	26:a:16:ARG:NH2	2.54	0.41
8:I:30:LYS:O	8:I:101:ILE:HA	2.20	0.41
9:J:64:VAL:HG22	9:J:96:ALA:HA	2.03	0.41
9:J:157:HIS:HB3	9:J:190:PRO:HG3	2.03	0.41
10:K:143:LYS:O	10:K:144:LYS:HB2	2.21	0.41
11:L:172:ARG:HD3	11:L:172:ARG:HA	1.74	0.41
12:M:15:LEU:HD22	12:M:49:MET:HE1	2.02	0.41
12:M:29:MET:HA	12:M:30:PRO:HD3	1.94	0.41
16:Q:103:ASN:HD21	16:Q:139:SER:HB2	1.86	0.41
18:S:14:GLY:HA3	18:S:86:GLN:HE22	1.85	0.41
21:V:52:TRP:HZ3	21:V:56:ARG:HE	1.69	0.41
23:X:47:ASN:OD1	23:X:47:ASN:N	2.54	0.41
26:a:74:MET:HE3	26:a:75:ILE:H	1.84	0.41
29:d:60:GLU:HG2	29:d:62:GLU:H	1.85	0.41
1:2:296:U:C2	10:K:55:TYR:HE2	2.39	0.41
1:2:650:C:H2'	1:2:651:U:C6	2.56	0.41
1:2:820:C:H2'	1:2:821:A:C8	2.56	0.41
1:2:1026:A:H2'	1:2:1027:A:H8	1.85	0.41
1:2:1211:C:N4	1:2:1216:A:H61	2.13	0.41
1:2:1637:U:H2'	1:2:1638:U:H6	1.86	0.41
1:2:1735:C:H2'	1:2:1736:U:C6	2.55	0.41
1:2:1767:C:H2'	1:2:1768:C:C6	2.56	0.41
1:2:1771:G:H2'	1:2:1772:C:C6	2.56	0.41
1:2:1794:A:H2'	1:2:1795:A:O4'	2.21	0.41
2:C:13:GLU:O	2:C:17:LYS:HG2	2.20	0.41
5:F:121:GLY:HA2	5:F:124:ARG:HE	1.85	0.41
7:H:178:ILE:HG22	7:H:182:LYS:NZ	2.36	0.41
9:J:5:SER:HB3	9:J:8:ILE:HG12	2.03	0.41
10:K:151:GLU:HB2	10:K:152:ARG:NH1	2.36	0.41
11:L:110:LEU:HD21	11:L:142:VAL:HG21	2.02	0.41
13:N:136:LYS:C	13:N:139:ARG:HH12	2.29	0.41
16:Q:31:CYS:SG	16:Q:95:ILE:HG13	2.61	0.41
21:V:71:GLY:O	21:V:74:SER:OG	2.32	0.41
21:V:126:GLN:O	21:V:129:ARG:HB3	2.21	0.41
25:Z:93:PHE:CD2	25:Z:133:LEU:HB3	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:y:63:U:H2'	36:y:64:C:C6	2.55	0.41
1:2:62:G:O2'	1:2:172:U:OP1	2.39	0.40
1:2:487:C:H2'	1:2:488:C:H6	1.84	0.40
1:2:673:G:N2	1:2:1018:U:OP2	2.54	0.40
1:2:853:U:H2'	1:2:854:A:C8	2.57	0.40
1:2:966:G:N2	1:2:966:G:OP1	2.54	0.40
1:2:1061:G:OP2	16:Q:149:ARG:NH2	2.54	0.40
1:2:1193:G:H2'	1:2:1194:G:C8	2.55	0.40
1:2:1216:A:H2'	1:2:1217:G:O4'	2.22	0.40
1:2:1294:G:C6	1:2:1295:A:C6	3.10	0.40
1:2:1343:U:H2'	1:2:1344:G:C8	2.56	0.40
1:2:1389:G:N2	1:2:1474:U:O4'	2.54	0.40
1:2:1594:U:H5	7:H:165:ASN:C	2.28	0.40
1:2:1618:A:O5'	20:U:133:GLY:HA3	2.21	0.40
1:2:1732:G:C6	1:2:1791:U:O2	2.73	0.40
1:2:1818:A:O2'	1:2:1819:A:H5''	2.21	0.40
2:C:63:ARG:NH1	23:X:78:ILE:HD13	2.36	0.40
2:C:140:VAL:HG12	2:C:140:VAL:O	2.20	0.40
6:G:85:GLY:O	6:G:101:LEU:HD23	2.21	0.40
7:H:65:GLN:OE1	7:H:65:GLN:N	2.53	0.40
9:J:144:ILE:HG22	9:J:154:ILE:HG12	2.03	0.40
11:L:91:LYS:HB3	11:L:96:TYR:HD2	1.84	0.40
20:U:54:LYS:HB2	20:U:58:GLU:OE2	2.22	0.40
21:V:41:LYS:HA	21:V:41:LYS:HD3	1.80	0.40
26:a:78:SER:H	26:a:81:TYR:HD2	1.69	0.40
27:b:4:LYS:HG2	27:b:5:ARG:HD2	2.03	0.40
29:d:14:VAL:HG12	29:d:54:ASP:O	2.21	0.40
29:d:21:THR:HG22	29:d:22:GLY:N	2.36	0.40
29:d:45:ASN:OD1	29:d:65:ALA:HB1	2.21	0.40
30:e:42:CYS:HA	30:e:45:GLN:HB2	2.04	0.40
31:f:82:LYS:C	31:f:83:LYS:HD2	2.46	0.40
32:g:101:PHE:CE1	32:g:136:GLY:HA2	2.56	0.40
33:h:51:ASP:HB2	33:h:54:THR:HG23	2.02	0.40
36:y:12:G:H2'	36:y:13:C:O4'	2.21	0.40
36:y:50:U:H2'	36:y:51:G:C8	2.57	0.40
37:z:571:A:C4	37:z:572:G:C8	3.09	0.40
1:2:149:A:N7	1:2:169:U:O4	2.55	0.40
1:2:499:G:H2'	1:2:500:G:C8	2.56	0.40
1:2:813:G:N2	1:2:844:U:O4	2.54	0.40
1:2:1093:G:H2'	1:2:1094:C:H6	1.86	0.40
1:2:1139:A:H8	1:2:1139:A:OP1	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1412:C:O2'	21:V:132:ASP:OD2	2.38	0.40
1:2:1624:C:H5''	20:U:39:ARG:HG2	2.03	0.40
1:2:1731:G:H2'	1:2:1732:G:H8	1.86	0.40
2:C:63:ARG:CZ	23:X:78:ILE:HB	2.52	0.40
5:F:212:GLU:OE2	19:T:38:ILE:HG13	2.21	0.40
7:H:156:THR:HB	7:H:188:TYR:HE2	1.86	0.40
19:T:31:ASN:C	19:T:31:ASN:HD22	2.29	0.40
22:W:63:ILE:HB	22:W:80:PHE:HD2	1.86	0.40
24:Y:50:PHE:HB2	24:Y:63:VAL:HG22	2.03	0.40
31:f:102:VAL:HG13	31:f:103:LEU:N	2.36	0.40
32:g:106:LYS:HB2	32:g:126:ASP:OD1	2.21	0.40
32:g:191:HIS:CD2	32:g:217:MET:HG3	2.56	0.40
1:2:523:A:H2'	1:2:524:G:C8	2.56	0.40
1:2:888:U:H2'	1:2:889:U:C6	2.57	0.40
1:2:1109:A:H2'	1:2:1110:U:C6	2.56	0.40
1:2:1173:U:H2'	1:2:1174:U:H6	1.82	0.40
1:2:1200:A:H2'	1:2:1201:C:C6	2.56	0.40
1:2:1294:G:H5'	17:R:102:PHE:CZ	2.55	0.40
1:2:1560:C:OP2	21:V:102:ARG:NH2	2.42	0.40
1:2:1712:C:H2'	1:2:1713:G:O4'	2.22	0.40
1:2:1786:G:H2'	1:2:1787:A:H8	1.87	0.40
1:2:1788:C:H2'	1:2:1789:G:O4'	2.21	0.40
1:2:1809:A:H3'	1:2:1810:G:H8	1.86	0.40
5:F:94:ARG:HB2	5:F:125:PHE:HZ	1.86	0.40
6:G:207:VAL:HG22	6:G:219:ALA:HB1	2.03	0.40
8:I:2:LYS:O	8:I:108:VAL:HA	2.21	0.40
8:I:54:GLY:O	8:I:110:ASN:N	2.53	0.40
9:J:118:ARG:O	9:J:121:THR:HG22	2.21	0.40
10:K:77:ARG:HD2	10:K:78:ILE:O	2.21	0.40
10:K:197:PHE:O	10:K:200:ARG:HG2	2.21	0.40
12:M:13:GLU:CD	12:M:83:LEU:HD13	2.47	0.40
12:M:26:ASP:HB2	12:M:29:MET:HB2	2.04	0.40
17:R:82:ASP:OD1	17:R:82:ASP:N	2.54	0.40
17:R:85:ILE:HG21	17:R:111:MET:HB3	2.03	0.40
20:U:81:ASP:OD1	20:U:81:ASP:N	2.55	0.40
20:U:86:ARG:HD2	20:U:89:ASP:OD2	2.21	0.40
26:a:124:ASN:OD1	26:a:124:ASN:N	2.53	0.40
31:f:122:PRO:HD2	31:f:148:TYR:CZ	2.56	0.40
35:l:3:ALA:HA	35:l:6:ARG:CZ	2.51	0.40
35:l:5:TRP:CD1	35:l:5:TRP:N	2.88	0.40
35:l:15:ARG:O	35:l:18:ARG:HG2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:218:A:H2'	1:2:219:U:H6	1.86	0.40
1:2:483:A:N6	1:2:499:G:H21	2.15	0.40
1:2:560:C:H2'	1:2:561:U:H6	1.85	0.40
1:2:845:A:H2'	1:2:846:C:C6	2.56	0.40
1:2:860:A:H2'	1:2:861:A:C8	2.53	0.40
1:2:1087:C:H2'	1:2:1088:G:C8	2.56	0.40
1:2:1181:C:H2'	1:2:1182:U:C6	2.56	0.40
1:2:1246:A:H4'	22:W:73:GLY:HA2	2.03	0.40
1:2:1286:G:H2'	1:2:1287:A:O4'	2.21	0.40
1:2:1372:A:P	19:T:67:ARG:HH12	2.44	0.40
1:2:1805:C:H2'	1:2:1806:U:C6	2.57	0.40
2:C:199:PRO:HB2	19:T:91:LEU:HD21	2.02	0.40
3:D:31:TYR:CD1	3:D:94:LYS:HA	2.57	0.40
4:E:151:ARG:HB2	4:E:233:TYR:CD2	2.54	0.40
4:E:189:ILE:O	4:E:189:ILE:HG13	2.22	0.40
6:G:45:ILE:CG2	6:G:80:ILE:HB	2.51	0.40
6:G:125:LYS:NZ	6:G:225:ILE:O	2.44	0.40
21:V:96:SER:HB2	21:V:99:VAL:HG22	2.03	0.40
21:V:129:ARG:HG3	21:V:133:ARG:HH21	1.87	0.40
37:z:584:A:H2'	37:z:586:A:C8	2.56	0.40
1:2:50:A:H2'	1:2:51:U:O4'	2.22	0.40
1:2:874:G:C2	1:2:905:G:C2	3.10	0.40
1:2:971:G:C4	1:2:972:G:C8	3.10	0.40
1:2:984:C:H5''	3:D:116:LYS:HG2	2.03	0.40
1:2:1019:A:OP2	15:P:124:ARG:NH2	2.48	0.40
1:2:1169:A:OP2	35:l:14:LYS:NZ	2.44	0.40
1:2:1257:C:H2'	1:2:1258:C:O4'	2.22	0.40
1:2:1643:G:H5''	18:S:125:ARG:CG	2.50	0.40
5:F:99:ILE:H	5:F:99:ILE:HD12	1.86	0.40
7:H:166:ILE:HD12	7:H:166:ILE:HA	1.94	0.40
9:J:53:VAL:HG22	9:J:57:ARG:O	2.22	0.40
9:J:160:LYS:HD2	9:J:189:PHE:CZ	2.56	0.40
14:O:17:ALA:HA	14:O:124:ILE:HD12	2.04	0.40
18:S:28:GLY:HA3	18:S:67:ASP:OD2	2.22	0.40
25:Z:4:CYS:SG	25:Z:9:THR:HG21	2.61	0.40
32:g:44:LYS:HG2	32:g:54:ILE:O	2.22	0.40
32:g:170:TRP:HA	32:g:194:TYR:HB2	2.03	0.40
32:g:191:HIS:CG	32:g:195:LEU:HD11	2.56	0.40
37:z:523:G:H2'	37:z:524:C:H6	1.87	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	
2	C	206/295 (70%)	176 (85%)	29 (14%)	1 (0%)	24	63
3	D	213/264 (81%)	188 (88%)	24 (11%)	1 (0%)	24	63
4	E	220/226 (97%)	210 (96%)	9 (4%)	1 (0%)	24	63
5	F	225/243 (93%)	211 (94%)	13 (6%)	1 (0%)	30	67
6	G	261/263 (99%)	240 (92%)	21 (8%)	0	100	100
7	H	189/204 (93%)	172 (91%)	17 (9%)	0	100	100
8	I	233/249 (94%)	223 (96%)	10 (4%)	0	100	100
9	J	188/194 (97%)	174 (93%)	14 (7%)	0	100	100
10	K	204/208 (98%)	177 (87%)	23 (11%)	4 (2%)	6	31
11	L	180/194 (93%)	173 (96%)	6 (3%)	1 (1%)	21	58
12	M	96/225 (43%)	83 (86%)	13 (14%)	0	100	100
13	N	156/158 (99%)	149 (96%)	7 (4%)	0	100	100
14	O	122/132 (92%)	109 (89%)	13 (11%)	0	100	100
15	P	148/151 (98%)	144 (97%)	4 (3%)	0	100	100
16	Q	134/168 (80%)	115 (86%)	19 (14%)	0	100	100
17	R	133/145 (92%)	115 (86%)	18 (14%)	0	100	100
18	S	139/146 (95%)	133 (96%)	6 (4%)	0	100	100
19	T	124/135 (92%)	116 (94%)	8 (6%)	0	100	100
20	U	140/152 (92%)	123 (88%)	16 (11%)	1 (1%)	18	55
21	V	139/141 (99%)	127 (91%)	11 (8%)	1 (1%)	18	55
22	W	102/119 (86%)	97 (95%)	5 (5%)	0	100	100
23	X	80/83 (96%)	71 (89%)	9 (11%)	0	100	100
24	Y	127/130 (98%)	117 (92%)	10 (8%)	0	100	100
25	Z	140/143 (98%)	132 (94%)	8 (6%)	0	100	100
26	a	122/126 (97%)	111 (91%)	9 (7%)	2 (2%)	7	37

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
27	b	97/115 (84%)	88 (91%)	9 (9%)	0	100	100
28	c	82/84 (98%)	74 (90%)	8 (10%)	0	100	100
29	d	62/64 (97%)	60 (97%)	2 (3%)	0	100	100
30	e	51/56 (91%)	41 (80%)	10 (20%)	0	100	100
31	f	69/156 (44%)	58 (84%)	11 (16%)	0	100	100
32	g	311/317 (98%)	285 (92%)	26 (8%)	0	100	100
33	h	73/125 (58%)	70 (96%)	3 (4%)	0	100	100
34	i	57/59 (97%)	52 (91%)	5 (9%)	0	100	100
35	l	23/25 (92%)	23 (100%)	0	0	100	100
All	All	4846/5495 (88%)	4437 (92%)	396 (8%)	13 (0%)	37	71

All (13) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
20	U	144	ARG
5	F	193	ASP
10	K	156	ALA
26	a	103	SER
10	K	144	LYS
21	V	40	ALA
2	C	206	ASP
3	D	207	LEU
10	K	52	ASN
10	K	158	ILE
11	L	148	ILE
26	a	104	ARG
4	E	246	PHE

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.

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	C	174/244 (71%)	174 (100%)	0	100	100
3	D	196/231 (85%)	196 (100%)	0	100	100
4	E	186/187 (100%)	186 (100%)	0	100	100
5	F	190/202 (94%)	190 (100%)	0	100	100
6	G	225/225 (100%)	225 (100%)	0	100	100
7	H	161/170 (95%)	161 (100%)	0	100	100
8	I	207/218 (95%)	207 (100%)	0	100	100
9	J	170/174 (98%)	170 (100%)	0	100	100
10	K	177/180 (98%)	177 (100%)	0	100	100
11	L	157/168 (94%)	157 (100%)	0	100	100
12	M	89/173 (51%)	89 (100%)	0	100	100
13	N	142/142 (100%)	142 (100%)	0	100	100
14	O	104/108 (96%)	104 (100%)	0	100	100
15	P	130/131 (99%)	130 (100%)	0	100	100
16	Q	106/130 (82%)	106 (100%)	0	100	100
17	R	121/130 (93%)	120 (99%)	1 (1%)	73	77
18	S	117/121 (97%)	117 (100%)	0	100	100
19	T	114/121 (94%)	114 (100%)	0	100	100
20	U	122/132 (92%)	122 (100%)	0	100	100
21	V	113/113 (100%)	113 (100%)	0	100	100
22	W	94/107 (88%)	94 (100%)	0	100	100
23	X	67/68 (98%)	67 (100%)	0	100	100
24	Y	112/113 (99%)	112 (100%)	0	100	100
25	Z	114/115 (99%)	114 (100%)	0	100	100
26	a	108/108 (100%)	108 (100%)	0	100	100
27	b	87/99 (88%)	87 (100%)	0	100	100
28	c	76/76 (100%)	76 (100%)	0	100	100
29	d	57/57 (100%)	57 (100%)	0	100	100
30	e	47/49 (96%)	47 (100%)	0	100	100
31	f	64/140 (46%)	64 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
32	g	272/275 (99%)	272 (100%)	0	100	100
33	h	66/103 (64%)	66 (100%)	0	100	100
34	i	49/49 (100%)	49 (100%)	0	100	100
35	l	24/24 (100%)	24 (100%)	0	100	100
All	All	4238/4683 (90%)	4237 (100%)	1 (0%)	100	100

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
17	R	104	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (51) such sidechains are listed below:

Mol	Chain	Res	Type
2	C	50	ASN
2	C	70	ASN
2	C	132	GLN
2	C	141	ASN
3	D	53	GLN
3	D	75	GLN
3	D	159	GLN
3	D	163	GLN
3	D	179	ASN
3	D	186	ASN
6	G	17	HIS
6	G	112	HIS
6	G	197	ASN
6	G	216	ASN
7	H	79	HIS
7	H	82	ASN
8	I	110	ASN
9	J	168	HIS
9	J	186	ASN
10	K	64	ASN
11	L	113	GLN
11	L	124	HIS
11	L	132	GLN
11	L	134	HIS
11	L	154	GLN
12	M	7	ASN

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Mol	Chain	Res	Type
13	N	5	GLN
13	N	83	GLN
13	N	94	HIS
13	N	121	GLN
13	N	156	GLN
14	O	73	GLN
15	P	5	HIS
15	P	105	ASN
16	Q	20	GLN
17	R	35	GLN
20	U	19	ASN
21	V	137	GLN
25	Z	26	GLN
25	Z	31	HIS
26	a	15	ASN
26	a	29	HIS
26	a	112	ASN
30	e	26	ASN
31	f	91	ASN
31	f	93	HIS
31	f	135	HIS
32	g	133	ASN
32	g	305	ASN
33	h	106	GLN
34	i	111	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	2	1733/1863 (93%)	383 (22%)	7 (0%)
36	y	74/75 (98%)	33 (44%)	0
37	z	91/93 (97%)	31 (34%)	0
All	All	1898/2031 (93%)	447 (23%)	7 (0%)

All (447) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	2	2	A
1	2	4	C
1	2	26	U
1	2	33	G

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Mol	Chain	Res	Type
1	2	39	A
1	2	41	G
1	2	42	A
1	2	44	U
1	2	46	A
1	2	49	C
1	2	55	U
1	2	56	G
1	2	60	A
1	2	65	C
1	2	67	C
1	2	68	A
1	2	72	C
1	2	73	C
1	2	74	G
1	2	76	U
1	2	79	A
1	2	80	G
1	2	93	U
1	2	94	G
1	2	99	A
1	2	101	U
1	2	110	U
1	2	113	G
1	2	114	G
1	2	115	U
1	2	126	G
1	2	127	C
1	2	140	U
1	2	143	U
1	2	147	A
1	2	148	U
1	2	153	G
1	2	161	U
1	2	168	C
1	2	169	U
1	2	170	A
1	2	171	A
1	2	172	U
1	2	173	A
1	2	178	C
1	2	179	C

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Mol	Chain	Res	Type
1	2	181	A
1	2	182	C
1	2	183	G
1	2	191	C
1	2	197	U
1	2	202	U
1	2	204	G
1	2	206	A
1	2	223	A
1	2	224	U
1	2	225	C
1	2	226	A
1	2	239	U
1	2	271	G
1	2	276	U
1	2	277	U
1	2	278	U
1	2	285	U
1	2	293	A
1	2	296	U
1	2	297	C
1	2	298	G
1	2	299	G
1	2	300	G
1	2	305	U
1	2	308	C
1	2	309	A
1	2	311	C
1	2	315	C
1	2	316	C
1	2	317	G
1	2	322	G
1	2	325	G
1	2	337	G
1	2	340	C
1	2	343	C
1	2	347	C
1	2	350	A
1	2	352	C
1	2	354	A
1	2	358	U
1	2	359	C

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Mol	Chain	Res	Type
1	2	365	U
1	2	375	G
1	2	376	C
1	2	388	A
1	2	390	C
1	2	399	C
1	2	403	G
1	2	416	A
1	2	418	U
1	2	438	A
1	2	440	C
1	2	442	G
1	2	457	G
1	2	462	C
1	2	466	A
1	2	475	A
1	2	477	U
1	2	481	C
1	2	483	A
1	2	487	C
1	2	491	C
1	2	492	C
1	2	506	A
1	2	507	C
1	2	513	A
1	2	514	U
1	2	515	A
1	2	517	C
1	2	518	A
1	2	541	U
1	2	542	G
1	2	547	U
1	2	548	G
1	2	553	G
1	2	554	A
1	2	563	U
1	2	566	A
1	2	577	A
1	2	579	G
1	2	580	A
1	2	581	U
1	2	583	C

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Mol	Chain	Res	Type
1	2	596	G
1	2	597	U
1	2	598	C
1	2	604	G
1	2	607	G
1	2	613	G
1	2	617	U
1	2	621	U
1	2	633	A
1	2	640	A
1	2	645	A
1	2	648	U
1	2	649	G
1	2	650	C
1	2	658	A
1	2	659	A
1	2	661	A
1	2	662	A
1	2	663	G
1	2	674	G
1	2	678	U
1	2	679	U
1	2	680	G
1	2	682	G
1	2	729	C
1	2	735	C
1	2	736	C
1	2	737	C
1	2	738	U
1	2	739	U
1	2	740	G
1	2	741	C
1	2	742	C
1	2	743	U
1	2	744	C
1	2	747	G
1	2	748	G
1	2	749	C
1	2	750	G
1	2	789	G
1	2	794	G
1	2	796	U

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Mol	Chain	Res	Type
1	2	800	U
1	2	807	A
1	2	818	U
1	2	819	U
1	2	820	C
1	2	823	A
1	2	827	G
1	2	832	G
1	2	833	A
1	2	835	C
1	2	837	G
1	2	843	A
1	2	868	A
1	2	869	G
1	2	870	G
1	2	873	C
1	2	874	G
1	2	883	U
1	2	886	U
1	2	894	U
1	2	901	C
1	2	903	G
1	2	907	C
1	2	909	A
1	2	910	U
1	2	913	U
1	2	915	A
1	2	916	A
1	2	918	A
1	2	929	G
1	2	930	G
1	2	951	A
1	2	952	G
1	2	956	U
1	2	957	G
1	2	966	G
1	2	967	G
1	2	980	C
1	2	981	G
1	2	986	A
1	2	988	A
1	2	995	G

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Mol	Chain	Res	Type
1	2	1004	A
1	2	1012	U
1	2	1013	U
1	2	1016	A
1	2	1019	A
1	2	1022	C
1	2	1023	A
1	2	1041	U
1	2	1045	A
1	2	1049	C
1	2	1051	A
1	2	1056	A
1	2	1057	U
1	2	1058	A
1	2	1076	A
1	2	1079	A
1	2	1081	C
1	2	1095	G
1	2	1107	U
1	2	1108	U
1	2	1112	C
1	2	1113	C
1	2	1125	G
1	2	1129	A
1	2	1135	C
1	2	1144	A
1	2	1145	A
1	2	1146	A
1	2	1150	U
1	2	1151	U
1	2	1153	G
1	2	1160	G
1	2	1164	G
1	2	1190	A
1	2	1191	A
1	2	1192	A
1	2	1203	G
1	2	1204	A
1	2	1211	C
1	2	1212	C
1	2	1217	G
1	2	1220	G

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Mol	Chain	Res	Type
1	2	1238	U
1	2	1244	U
1	2	1245	C
1	2	1247	A
1	2	1249	A
1	2	1252	G
1	2	1253	G
1	2	1254	A
1	2	1261	A
1	2	1266	G
1	2	1269	C
1	2	1271	G
1	2	1280	A
1	2	1285	U
1	2	1297	A
1	2	1298	G
1	2	1299	C
1	2	1304	U
1	2	1317	G
1	2	1323	G
1	2	1333	C
1	2	1339	U
1	2	1352	G
1	2	1354	U
1	2	1359	C
1	2	1360	U
1	2	1365	A
1	2	1367	U
1	2	1368	U
1	2	1374	A
1	2	1386	U
1	2	1399	C
1	2	1408	C
1	2	1409	G
1	2	1411	C
1	2	1414	C
1	2	1415	C
1	2	1420	G
1	2	1427	G
1	2	1431	C
1	2	1432	C
1	2	1433	C

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Mol	Chain	Res	Type
1	2	1438	U
1	2	1440	U
1	2	1445	G
1	2	1446	G
1	2	1448	A
1	2	1449	C
1	2	1450	A
1	2	1459	U
1	2	1471	G
1	2	1472	A
1	2	1473	U
1	2	1485	A
1	2	1486	G
1	2	1489	C
1	2	1490	U
1	2	1491	G
1	2	1494	A
1	2	1503	G
1	2	1506	G
1	2	1507	U
1	2	1508	C
1	2	1514	U
1	2	1516	C
1	2	1517	A
1	2	1528	A
1	2	1531	G
1	2	1535	G
1	2	1539	C
1	2	1543	G
1	2	1547	G
1	2	1548	C
1	2	1549	C
1	2	1550	U
1	2	1551	A
1	2	1555	U
1	2	1565	G
1	2	1569	C
1	2	1574	A
1	2	1575	A
1	2	1580	U
1	2	1582	G
1	2	1583	A

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Mol	Chain	Res	Type
1	2	1593	G
1	2	1596	A
1	2	1601	G
1	2	1616	U
1	2	1617	U
1	2	1618	A
1	2	1641	C
1	2	1643	G
1	2	1649	G
1	2	1656	A
1	2	1659	A
1	2	1660	G
1	2	1675	G
1	2	1694	A
1	2	1695	C
1	2	1696	C
1	2	1715	U
1	2	1716	U
1	2	1717	G
1	2	1724	U
1	2	1732	G
1	2	1739	G
1	2	1777	C
1	2	1778	G
1	2	1791	U
1	2	1792	C
1	2	1814	G
1	2	1817	A
1	2	1823	G
1	2	1825	A
1	2	1832	U
1	2	1833	U
1	2	1834	U
1	2	1843	G
1	2	1846	C
1	2	1853	A
1	2	1855	G
1	2	1856	G
1	2	1857	A
1	2	1858	U
1	2	1859	C
1	2	1861	U

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Mol	Chain	Res	Type
1	2	1862	U
36	y	2	G
36	y	4	A
36	y	6	A
36	y	8	U
36	y	9	G
36	y	10	G
36	y	11	C
36	y	12	G
36	y	14	A
36	y	15	G
36	y	17	G
36	y	18	G
36	y	19	A
36	y	20	A
36	y	21	G
36	y	26	C
36	y	32	C
36	y	44	G
36	y	45	G
36	y	46	U
36	y	47	C
36	y	48	G
36	y	52	G
36	y	53	A
36	y	54	U
36	y	55	C
36	y	58	A
36	y	60	C
36	y	62	A
36	y	71	U
36	y	72	A
36	y	73	C
36	y	75	A
37	z	525	A
37	z	531	C
37	z	533	G
37	z	534	A
37	z	535	A
37	z	536	C
37	z	538	C
37	z	539	C

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Mol	Chain	Res	Type
37	z	540	C
37	z	546	G
37	z	549	G
37	z	550	A
37	z	556	G
37	z	557	C
37	z	558	C
37	z	562	G
37	z	564	G
37	z	565	G
37	z	568	A
37	z	575	A
37	z	576	C
37	z	577	G
37	z	578	U
37	z	585	G
37	z	586	A
37	z	587	U
37	z	594	G
37	z	832	A
37	z	833	U
37	z	837	G
37	z	838	C

All (7) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	2	514	U
1	2	516	A
1	2	740	G
1	2	747	G
1	2	914	U
1	2	1338	U
1	2	1431	C

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	2	2
37	z	1
8	I	1
26	a	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	z	601:C	O3'	831:A	P	113.27
1	2	730:C	O3'	731:C	P	8.43
1	2	363:G	O3'	364:G	P	3.41
1	I	217:MET	C	218:LYS	N	3.36
1	a	9:THR	C	10:ARG	N	3.13

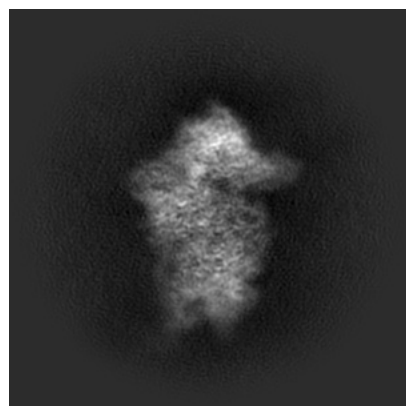
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-64644. These allow visual inspection of the internal detail of the map and identification of artifacts.

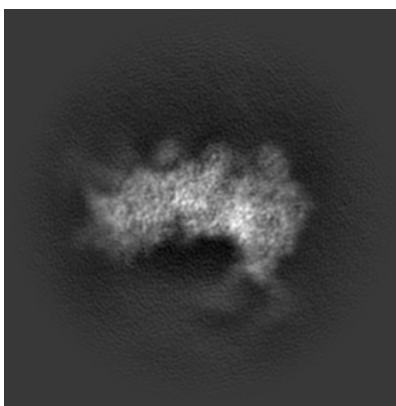
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

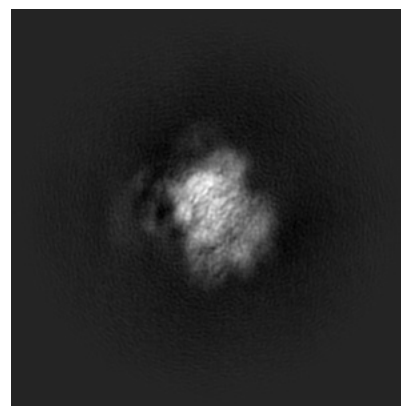
6.1.1 Primary map



X

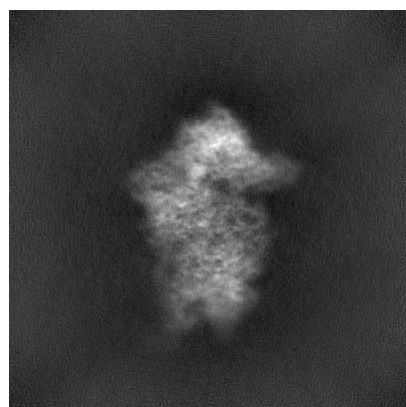


Y

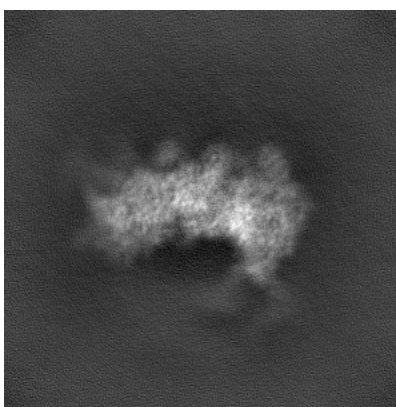


Z

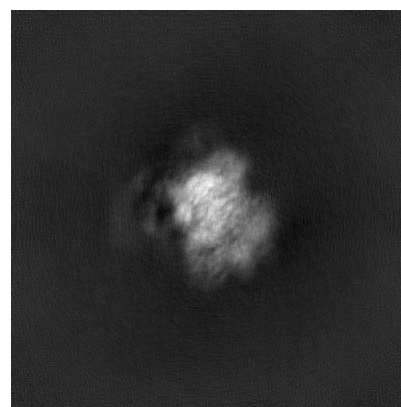
6.1.2 Raw map



X



Y

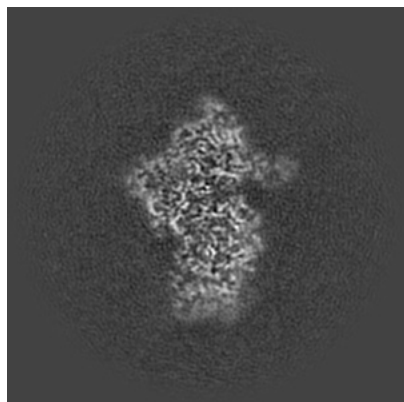


Z

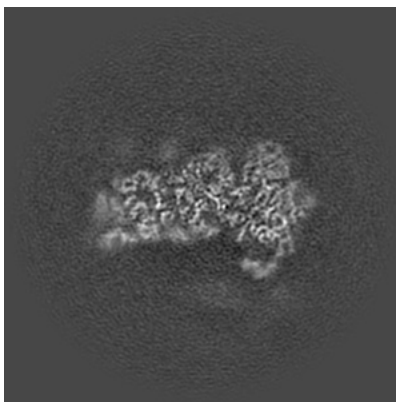
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

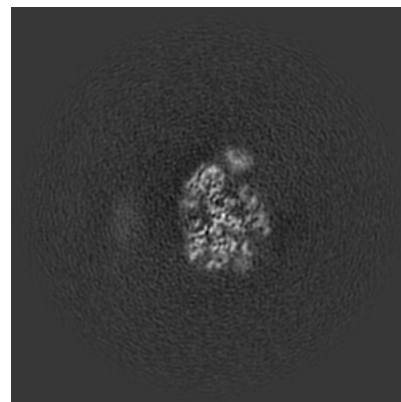
6.2.1 Primary map



X Index: 200

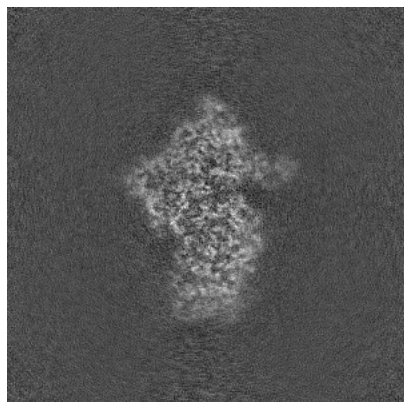


Y Index: 200

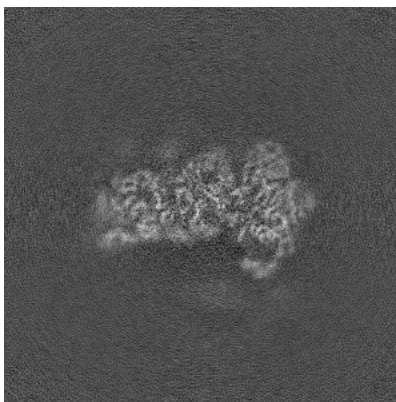


Z Index: 200

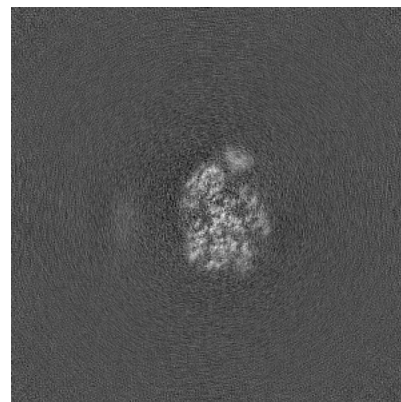
6.2.2 Raw map



X Index: 200



Y Index: 200

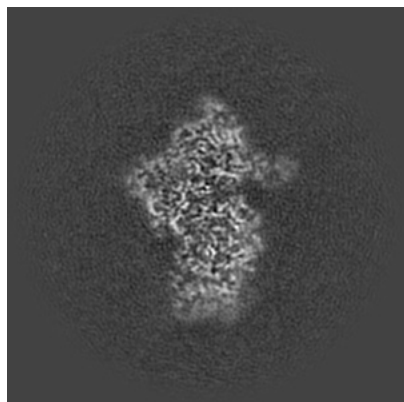


Z Index: 200

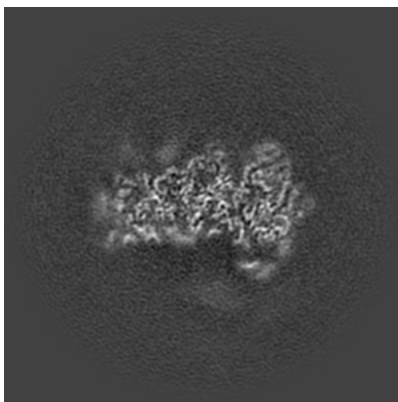
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

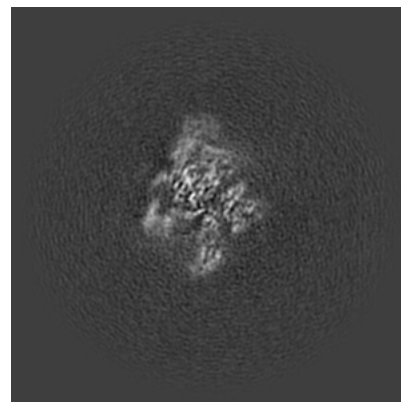
6.3.1 Primary map



X Index: 200

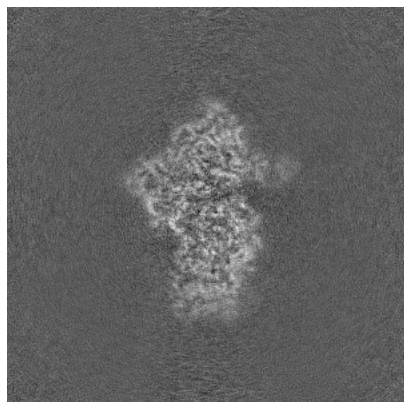


Y Index: 196

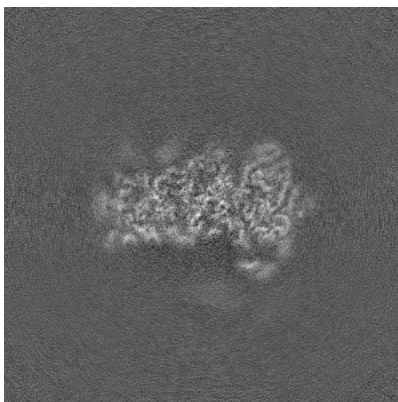


Z Index: 243

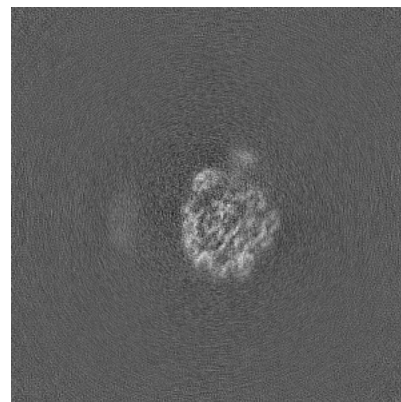
6.3.2 Raw map



X Index: 199



Y Index: 196

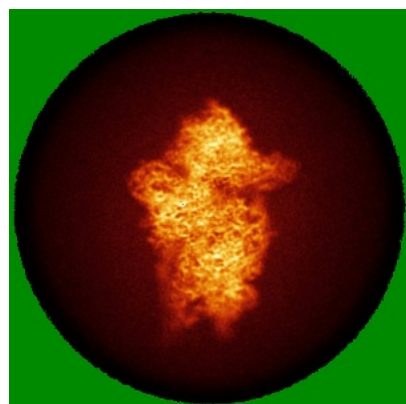


Z Index: 208

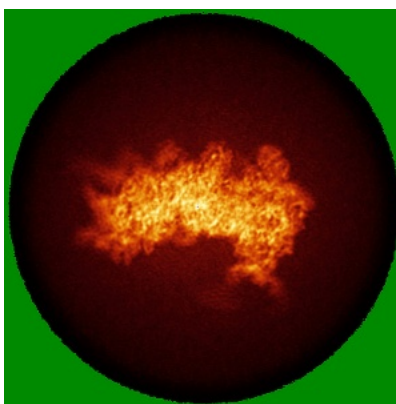
The images above show the largest variance slices of the map in three orthogonal directions.

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

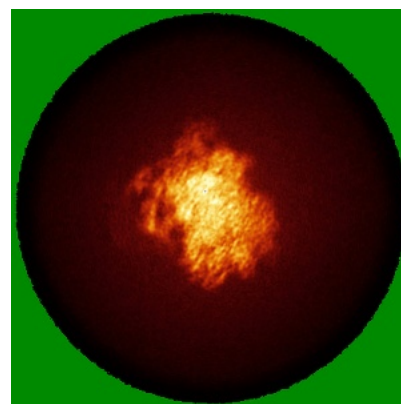
6.4.1 Primary map



X

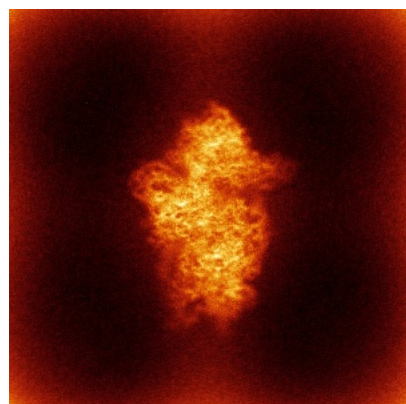


Y

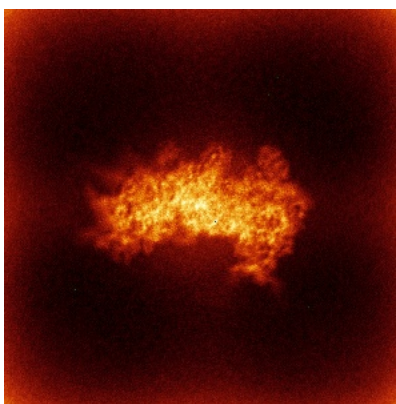


Z

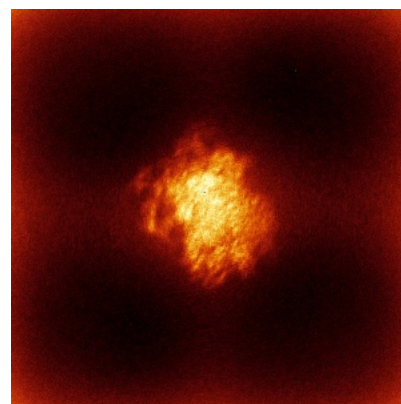
6.4.2 Raw map



X



Y

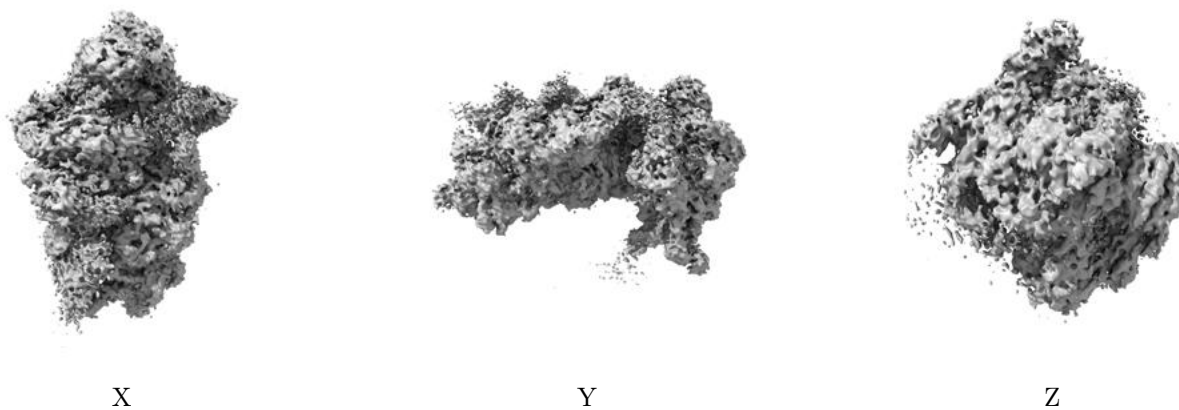


Z

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.

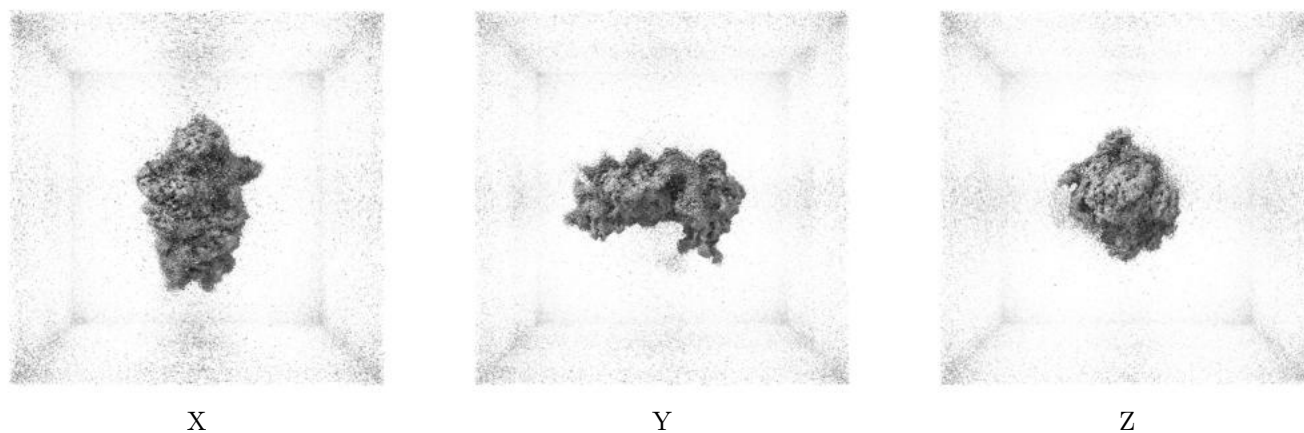
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0811. 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.

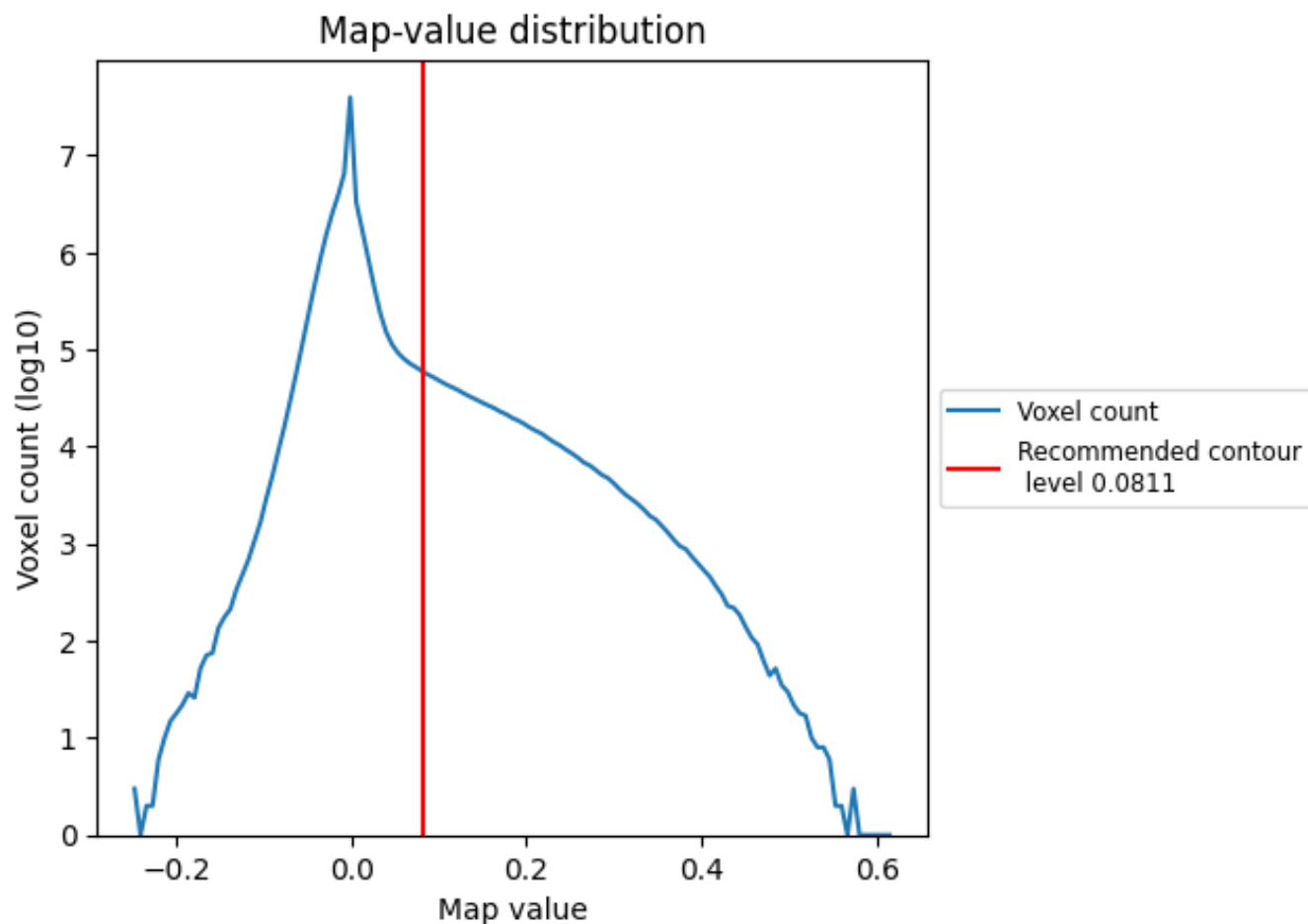
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

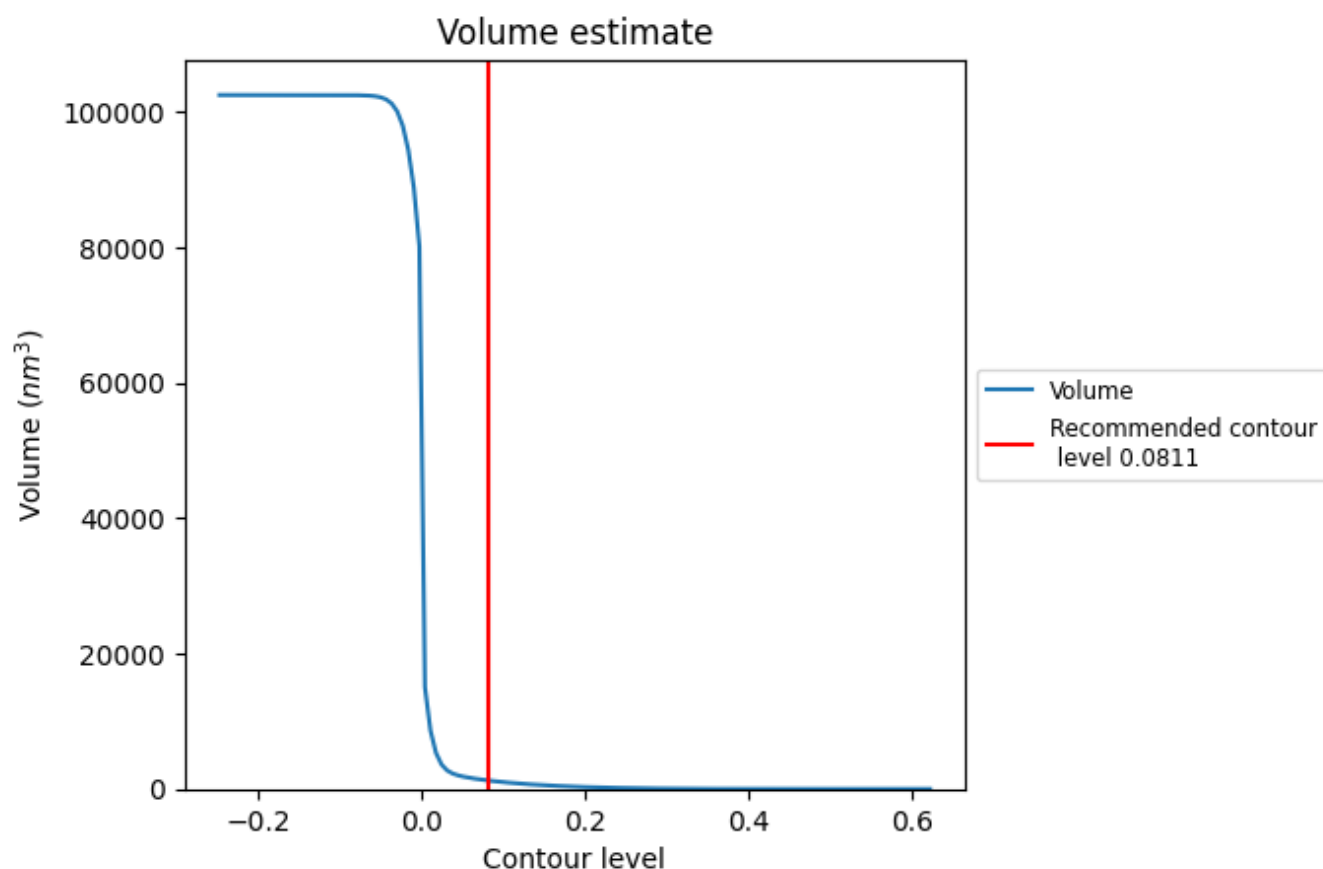
This section contains the results of statistical analysis of the map.

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.

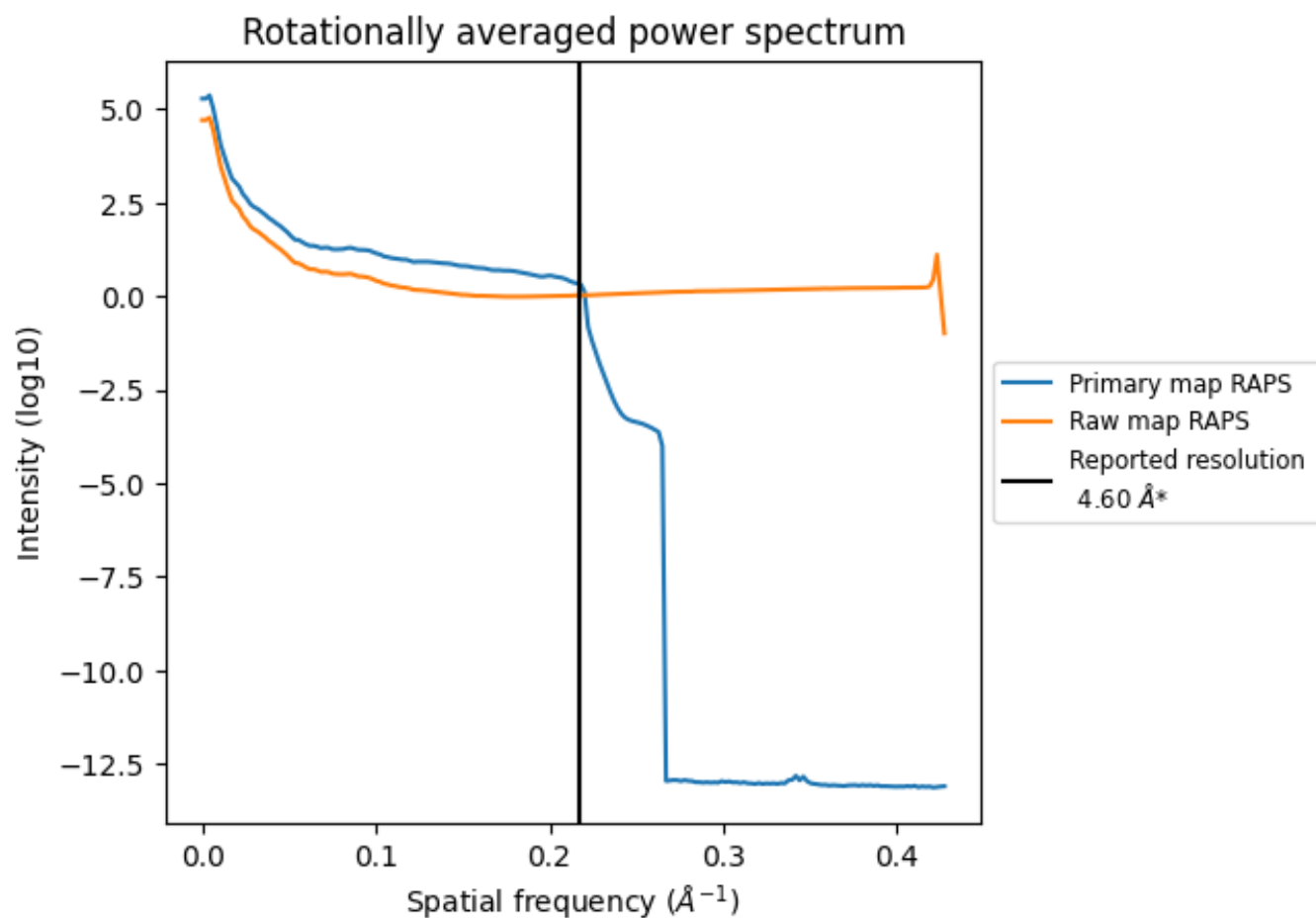
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1251 nm^3 ; this corresponds to an approximate mass of 1130 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 ⓘ

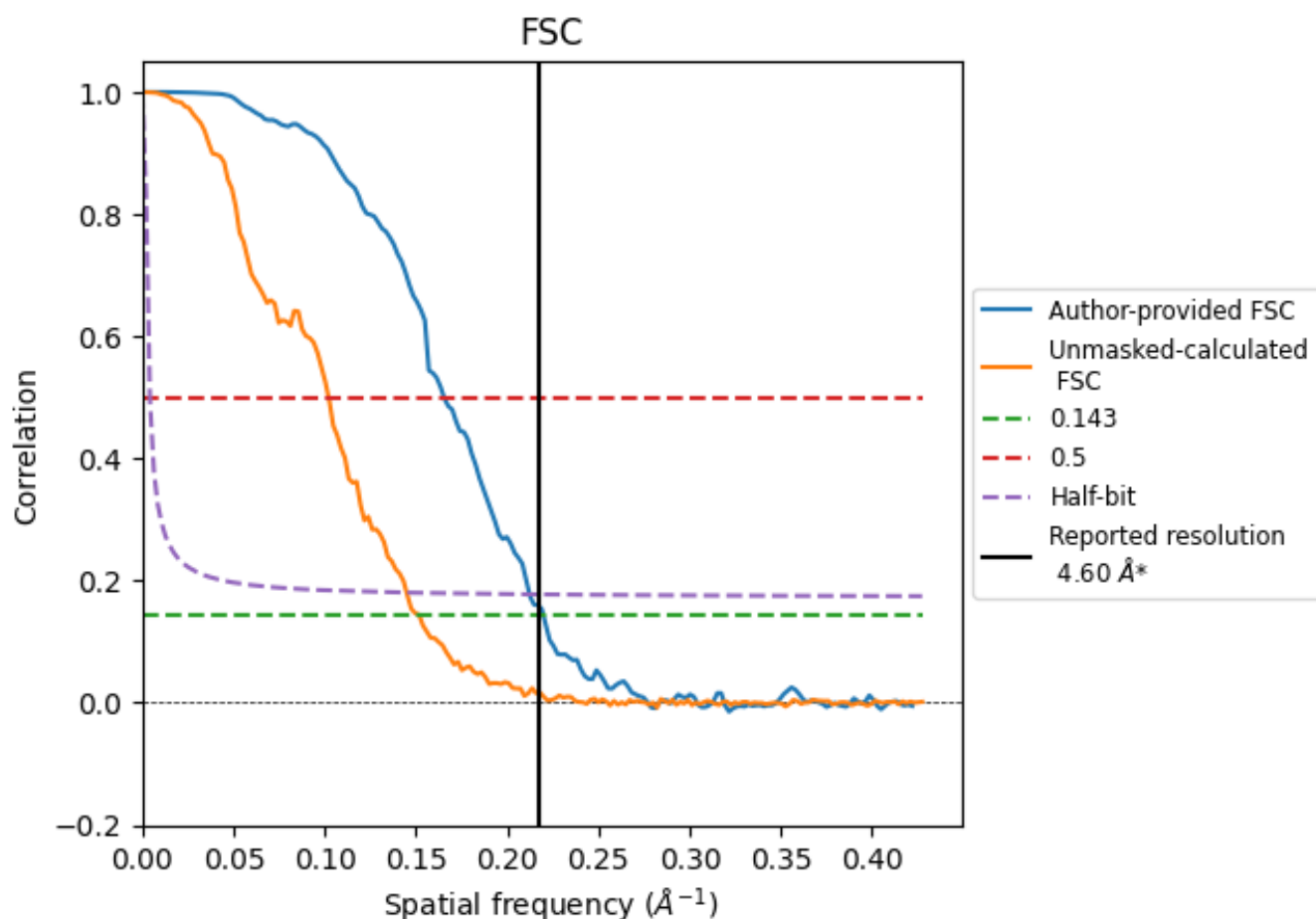


*Reported resolution corresponds to spatial frequency of 0.217 Å⁻¹

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 0.217 Å⁻¹

8.2 Resolution estimates [i](#)

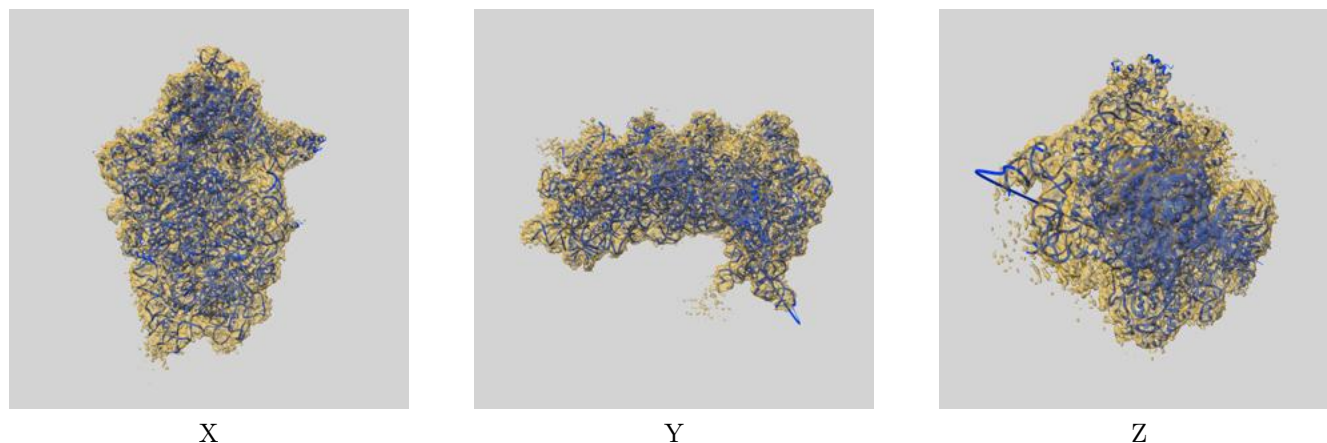
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.60	-	-
Author-provided FSC curve	4.55	6.05	4.71
Unmasked-calculated*	6.58	9.79	6.90

*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 6.58 differs from the reported value 4.6 by more than 10 %

9 Map-model fit [i](#)

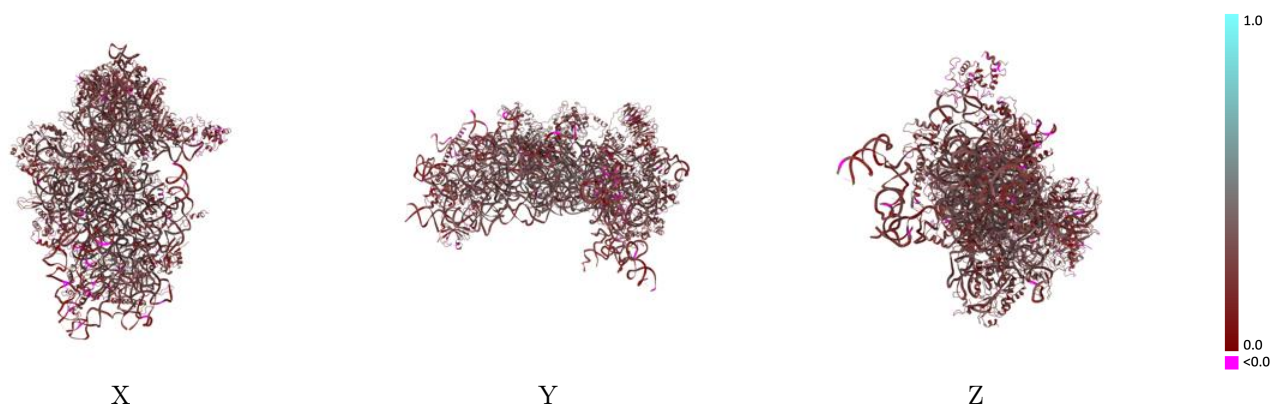
This section contains information regarding the fit between EMDB map EMD-64644 and PDB model 9UZK. Per-residue inclusion information can be found in section 3 on page 11.

9.1 Map-model overlay [i](#)



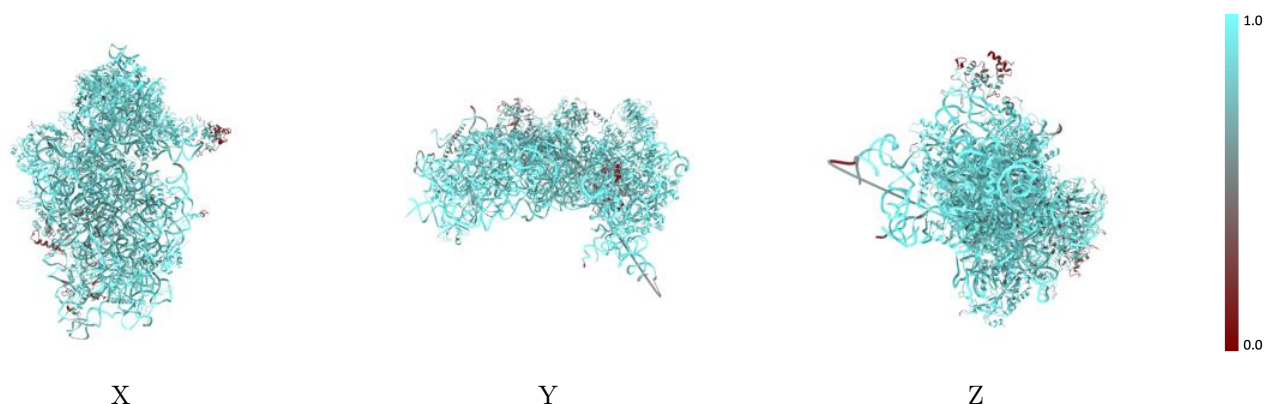
The images above show the 3D surface view of the map at the recommended contour level 0.0811 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



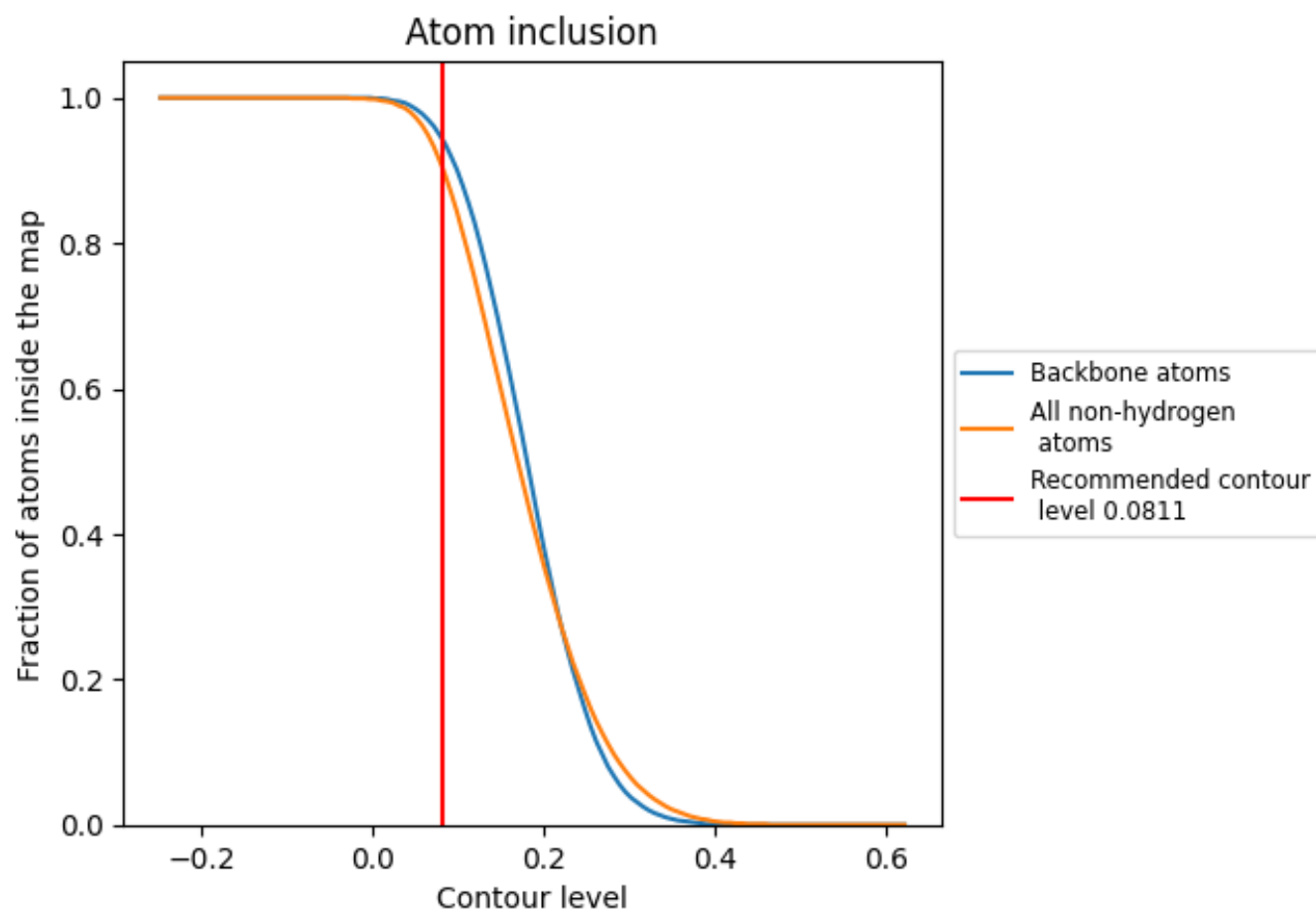
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0811).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 94% of all backbone atoms, 91% 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 (0.0811) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9060	 0.2730
2	 0.9640	 0.2880
C	 0.7970	 0.2600
D	 0.8920	 0.2580
E	 0.8620	 0.2970
F	 0.8480	 0.2630
G	 0.9100	 0.2880
H	 0.8900	 0.2790
I	 0.8790	 0.2400
J	 0.5590	 0.2290
K	 0.8290	 0.2540
L	 0.8730	 0.2790
M	 0.8990	 0.2530
N	 0.7630	 0.2890
O	 0.4810	 0.1680
P	 0.8830	 0.2890
Q	 0.8950	 0.2720
R	 0.9110	 0.2520
S	 0.9080	 0.2680
T	 0.7870	 0.2640
U	 0.9090	 0.2640
V	 0.9550	 0.2640
W	 0.8950	 0.2520
X	 0.8550	 0.2810
Y	 0.8290	 0.3140
Z	 0.9090	 0.3280
a	 0.9520	 0.2630
b	 0.9070	 0.3160
c	 0.8280	 0.2800
d	 0.9120	 0.2950
e	 0.8900	 0.2670
f	 0.6310	 0.1620
g	 0.8720	 0.2360
h	 0.8730	 0.2330
i	 0.8180	 0.2430



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Chain	Atom inclusion	Q-score
l	 0.9310	 0.2970
y	 0.9450	 0.2150
z	 0.9160	 0.1990