



# Full wwPDB X-ray Structure Validation Report ⓘ

Dec 10, 2022 – 09:08 PM EST

PDB ID : 1IBM  
Title : STRUCTURE OF THE THERMUS THERMOPHILUS 30S RIBOSOMAL SUBUNIT IN COMPLEX WITH A MESSENGER RNA FRAGMENT AND COGNATE TRANSFER RNA ANTICODON STEM-LOOP BOUND AT THE A SITE  
Authors : Ogle, J.M.; Brodersen, D.E.; Clemons Jr., W.M.; Tarry, M.J.; Carter, A.P.; Ramakrishnan, V.  
Deposited on : 2001-03-28  
Resolution : 3.31 Å(reported)

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

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4.02b-467  
Xtrriage (Phenix) : 1.13  
EDS : 2.31.2  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.31.2

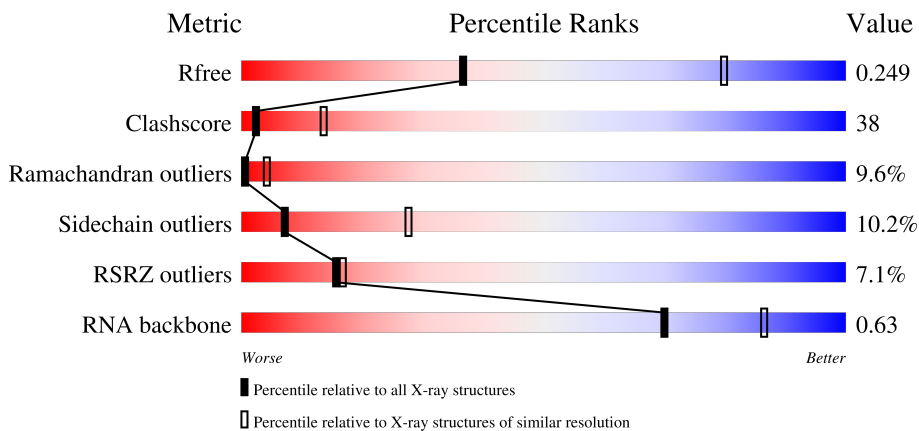
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.31 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	130704	1089 (3.36-3.28)
Clashscore	141614	1137 (3.36-3.28)
Ramachandran outliers	138981	1115 (3.36-3.28)
Sidechain outliers	138945	1114 (3.36-3.28)
RSRZ outliers	127900	1059 (3.36-3.28)
RNA backbone	3102	1125 (3.74-2.90)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 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 electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1522	<div style="display: flex; align-items: center;"> <div style="width: 3%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 27%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 59%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 11%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 2%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 2%; height: 10px; background-color: grey;"></div> </div> <p style="font-size: small; margin-top: 5px;"> <span style="display: inline-block; width: 3%; height: 10px; background-color: red; margin-right: 5px;"></span> 3%  <span style="display: inline-block; width: 27%; height: 10px; background-color: green; margin-right: 5px;"></span> 27%  <span style="display: inline-block; width: 59%; height: 10px; background-color: yellow; margin-right: 5px;"></span> 59%  <span style="display: inline-block; width: 11%; height: 10px; background-color: orange; margin-right: 5px;"></span> 11%  <span style="display: inline-block; width: 2%; height: 10px; background-color: red; margin-right: 5px;"></span> ..         </p>
2	X	6	<div style="display: flex; align-items: center;"> <div style="width: 67%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 33%; height: 10px; background-color: yellow; margin-right: 5px;"></div> </div> <p style="font-size: small; margin-top: 5px;"> <span style="display: inline-block; width: 67%; height: 10px; background-color: red; margin-right: 5px;"></span> 67%  <span style="display: inline-block; width: 67%; height: 10px; background-color: green; margin-right: 5px;"></span> 67%  <span style="display: inline-block; width: 33%; height: 10px; background-color: yellow; margin-right: 5px;"></span> 33%         </p>
3	Y	15	<div style="display: flex; align-items: center;"> <div style="width: 20%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 33%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 27%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 7%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 7%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 27%; height: 10px; background-color: grey;"></div> </div> <p style="font-size: small; margin-top: 5px;"> <span style="display: inline-block; width: 20%; height: 10px; background-color: red; margin-right: 5px;"></span> 20%  <span style="display: inline-block; width: 33%; height: 10px; background-color: green; margin-right: 5px;"></span> 33%  <span style="display: inline-block; width: 27%; height: 10px; background-color: yellow; margin-right: 5px;"></span> 27%  <span style="display: inline-block; width: 7%; height: 10px; background-color: orange; margin-right: 5px;"></span> 7%  <span style="display: inline-block; width: 7%; height: 10px; background-color: red; margin-right: 5px;"></span> 7%  <span style="display: inline-block; width: 27%; height: 10px; background-color: grey;"></span> 27%         </p>

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Mol	Chain	Length	Quality of chain
4	Z	4	
5	B	256	
6	C	239	
7	D	209	
8	E	162	
9	F	101	
10	G	156	
11	H	138	
12	I	128	
13	J	105	
14	K	129	
15	L	135	
16	M	126	
17	N	61	
18	O	89	
19	P	88	
20	Q	105	
21	R	88	
22	S	93	
23	T	106	
24	V	26	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	MG	A	1628	-	-	-	X

## 2 Entry composition [i](#)

There are 26 unique types of molecules in this entry. The entry contains 52160 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 16S RIBOSOMAL RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	A	1507	32391	14418	6002	10465	1506	0	0	0

- Molecule 2 is a RNA chain called P-SITE MESSENGER RNA FRAGMENT.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
2	X	6	117	54	14	44	5	0	0	0

- Molecule 3 is a RNA chain called ANTICODON STEM-LOOP OF PHENYLALANINE TRANSFER RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
3	Y	11	233	106	44	73	10	0	0	0

- Molecule 4 is a RNA chain called A-SITE MESSENGER RNA FRAGMENT.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
4	Z	4	77	36	8	30	3	0	0	0

- Molecule 5 is a protein called 30S RIBOSOMAL PROTEIN S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	B	234	1900	1213	341	341	5	0	0	0

- Molecule 6 is a protein called 30S RIBOSOMAL PROTEIN S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
6	C	206	1612	1016	314	281	1	0	0	0

- Molecule 7 is a protein called 30S RIBOSOMAL PROTEIN S4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
7	D	208	1703	1066	339	291	7	0	0	0

- Molecule 8 is a protein called 30S RIBOSOMAL PROTEIN S5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
8	E	150	1146	724	217	201	4	0	0	0

- Molecule 9 is a protein called 30S RIBOSOMAL PROTEIN S6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
9	F	101	843	531	155	154	3	0	0	0

- Molecule 10 is a protein called 30S RIBOSOMAL PROTEIN S7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
10	G	155	1257	781	252	218	6	0	0	0

- Molecule 11 is a protein called 30S RIBOSOMAL PROTEIN S8.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
11	H	138	1116	705	215	193	3	0	0	0

- Molecule 12 is a protein called 30S RIBOSOMAL PROTEIN S9.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
12	I	127	1011	639	198	174	0	0	0

- Molecule 13 is a protein called 30S RIBOSOMAL PROTEIN S10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
13	J	98	792	498	156	137	1	0	0	0

- Molecule 14 is a protein called 30S RIBOSOMAL PROTEIN S11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
14	K	119	885	549	168	165	3	0	0	0

- Molecule 15 is a protein called 30S RIBOSOMAL PROTEIN S12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
15	L	124	970	611	195	163	1	0	0	0

- Molecule 16 is a protein called 30S RIBOSOMAL PROTEIN S13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
16	M	118	937	579	193	163	2	0	0	0

- Molecule 17 is a protein called 30S RIBOSOMAL PROTEIN S14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
17	N	60	492	312	104	72	4	0	0	0

- Molecule 18 is a protein called 30S RIBOSOMAL PROTEIN S15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
18	O	88	734	459	147	126	2	0	0	0

- Molecule 19 is a protein called 30S RIBOSOMAL PROTEIN S16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
19	P	83	700	443	139	117	1	0	0	0

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
P	?	-	PHE	conflict	GB 12056104
P	?	-	HIS	conflict	GB 12056104
P	?	-	TYR	conflict	GB 12056104

- Molecule 20 is a protein called 30S RIBOSOMAL PROTEIN S17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
20	Q	104	857	547	161	147	2	0	0	0

- Molecule 21 is a protein called 30S RIBOSOMAL PROTEIN S18.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
21	R	73	597	380	118	99		0	0	0

- Molecule 22 is a protein called 30S RIBOSOMAL PROTEIN S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
22	S	87	697	444	130	121	2	0	0	0

- Molecule 23 is a protein called 30S RIBOSOMAL PROTEIN S20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
23	T	99	763	470	162	129	2	0	0	0

- Molecule 24 is a protein called 30S RIBOSOMAL PROTEIN THX.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
24	V	24	208	128	50	30	0	0	0

- Molecule 25 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
25	A	118	Total	Mg	0	0
			118	118		
25	D	1	Total	Mg	0	0
			1	1		

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<b>Mol</b>	<b>Chain</b>	<b>Residues</b>	<b>Atoms</b>		<b>ZeroOcc</b>	<b>AltConf</b>
25	H	1	Total	Mg	0	0
			1	1		

- Molecule 26 is ZINC ION (three-letter code: ZN) (formula: Zn).

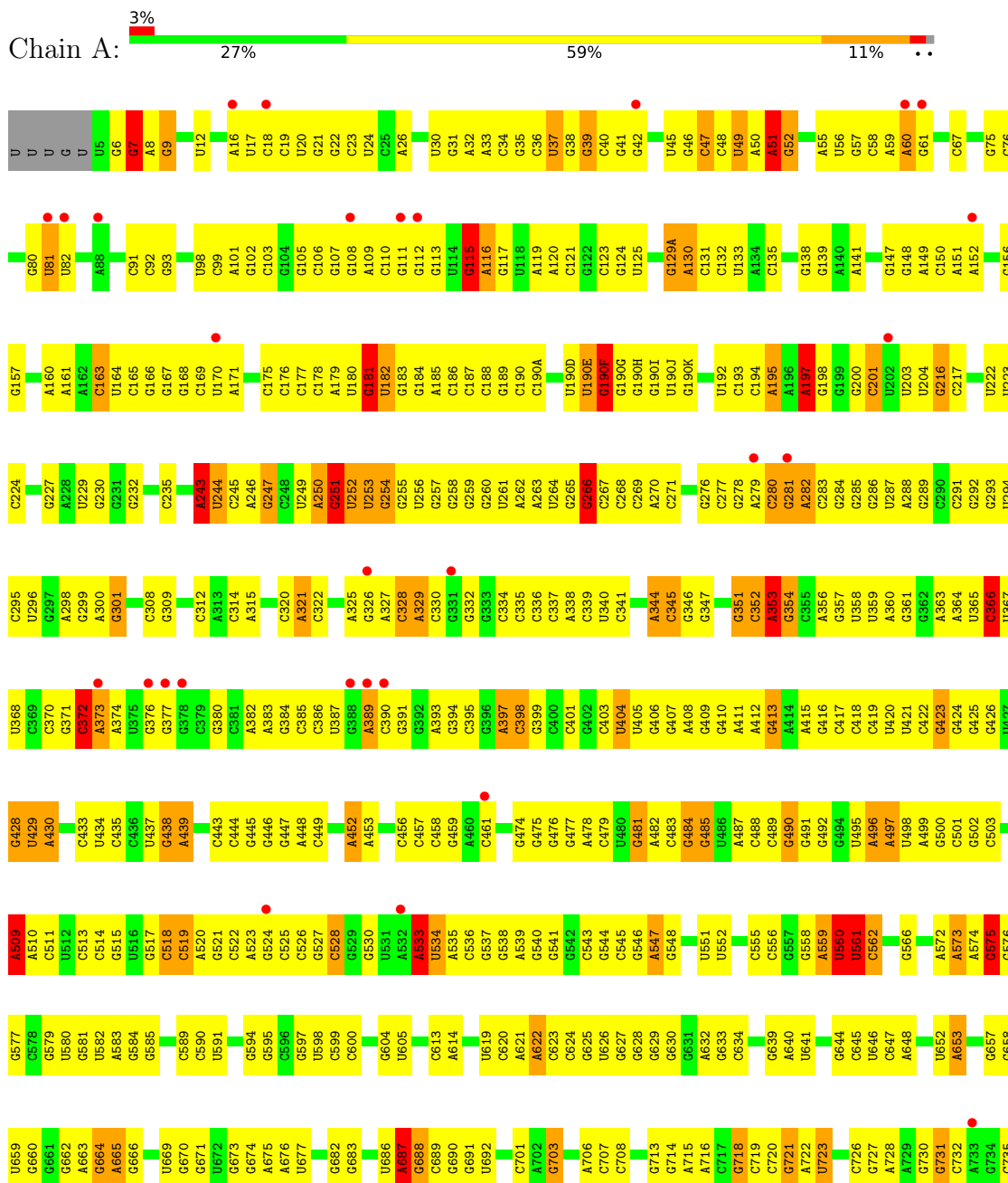
<b>Mol</b>	<b>Chain</b>	<b>Residues</b>	<b>Atoms</b>		<b>ZeroOcc</b>	<b>AltConf</b>
26	D	1	Total	Zn	0	0
			1	1		
26	N	1	Total	Zn	0	0
			1	1		



### 3 Residue-property plots i

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron 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 dot above a residue indicates a poor fit to the electron density ( $RSRZ > 2$ ). 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.

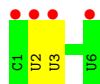
#### • Molecule 1: 16S RIBOSOMAL RNA



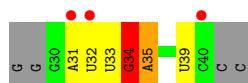
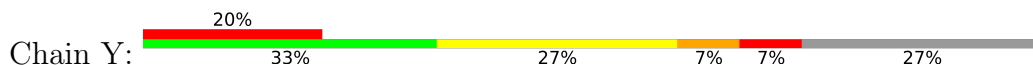
C	G1470	G1396	G1334	G1370	C1203	C1140	G1068	G947	C880	C808	C736
U	G1471	C1397	C1335	G1271	A1204	C1141	C1069	C948	C881	C811	A737
C	A1472	A1398	A1336	G1272	G1205	G1142	U1070	A949	C883	C812	C738
U	G1473	G1399	G1337	G1276	G1206	G1143	G1071	U950	U884	C813	G741
U	G1474	G1400	G1338	U1277	C1207	G1144	A1014	G951	G889	U813	G742
U	G1475	G1401	G1339	U1278	C1208	G1145	A1015	U952	A889	A814	U743
U	G1476	A1340	A1341	U1279	U1212	A1146	A1016	G953	A890	A815	C744
C	C1477	U1341	C1342	A1280	A1213	A1147	G1017	G954	U891	A816	C745
U	C1478	A1342	A1343	A1281	A1214	U1148	U1078	U955	A892	C817	C746
C	C1479	C1344	C1344	C1282	C1215	U1149	G1079	A958	A893	A818	A746
U	G1480	G1344	G1344	C1282	G1215	U1150	A1080	A959	C893	A819	C747
U	U1481	A1345	A1345	G1283	G1216	U1151	G1081	A960	C894	U820	C748
U	G1482	U1346	U1346	C1284	C1217	A1152	G1082	A961	C895	U821	C749
C	G1487	G1347	G1347	A1285	C1218	C1153	G1023	U961	C896	C822	G750
U	G1488	U1348	U1348	A1286	U1219	U1086	C962	C897	C897	C823	U751
U	G1489	A1349	A1349	A1287	U1220	U1091	U1024	C898	C898	C824	G752
U	G1490	U1350	U1350	A1288	G1221	U1091	U1025	C899	C899	C824	G753
U	G1491	U1351	U1351	A1289	G1222	A1093	G1026	C900	A900	C825	G755
U	G1492	C1352	C1352	U1290	C1223	U1094	G1028	A901	A901	C826	C756
U	G1493	G1353	G1353	G1291	G1224	U1095	C1029	A902	A902	C827	U757
U	U1494	U1354	U1354	U1292	G1225	U1096	C1030	A903	A903	C828	G758
U	U1495	A1356	A1356	G1293	C1226	U1097	U1031	A904	A904	C829	G759
U	U1496	A1357	A1357	G1294	A1227	C1098	C1030A	A905	A905	C830	G760
U	G1497	U1358	U1358	G1295	G1228	U1099	C1030B	A906	A906	C831	G761
U	U1498	U1359	U1359	G1296	G1229	G1100	G1030C	A907	A907	C832	G762
U	A1499	A1360	A1360	G1297	C1230	A1101	A1030D	A908	A908	C833	G763
U	A1500	G1361	G1361	C1298	G1231	A1102	G1031	A909	A909	C834	G764
U	A1501	C1361A	C1361A	U1299	G1232	A1103	G1032	A910	A910	C835	G765
U	A1502	A1362	A1362	G1300	C1234	C1103	G1033	A911	A911	C836	G766
U	A1503	A1363	A1363	U1301	U1235	A1104	G1034	A912	A912	C837	G767
U	G1504	U1364	U1364	G1302	A1236	A1105	C1037	A913	A913	C838	G768
U	G1505	G1365	G1365	U1302	C1237	A1106	C1038	A914	A914	C839	G769
U	U1506	U1366	U1366	G1303	A1238	G1107	C1039	A915	A915	C840	G770
U	A1507	G1367	G1367	U1304	U1239	U1108	U1040	A916	A916	C841	G771
U	U1510	G1368	G1368	G1305	U1240	C1112	A1041	A917	A917	C842	G772
U	U1511	U1436	U1436	A1306	G1241	G1115	U1042	A918	A918	C843	G773
U	U1512	C1437	C1437	U1307	U1242	G1116	A1043	A919	A919	C844	G774
U	U1513	G1438	G1438	U1308	C1243	G1117	U1044	A920	A920	C845	G775
U	C1439	U1372	U1372	G1309	U1247	G1118	A1045	A921	A921	C846	G776
U	C1440	U1373	U1373	U1313	A1248	C1119	U1046	A922	A922	C847	G777
U	G1441	A1374	A1374	C1314	U1249	U1121	U1047	A923	A923	C848	G778
U	G1442	A1375	A1375	U1315	A1250	U1122	U1048	A924	A924	C849	G779
U	G1443	U1376	U1376	U1316	A1251	U1123	G1050	A925	A925	C850	G780
U	A1444	U1377	U1377	C1317	A1252	A1123	C1051	A926	A926	C851	G781
U	A1446	C1378	C1378	A1318	G1253	G1124	U1052	A927	A927	C852	G782
U	A1451	G1379	G1379	A1319	C1254	U1125	G1053	A928	A928	C853	G783
U	G1452	U1380	U1380	C1320	G1255	U1126	U1054	A929	A929	C854	G784
U	G1453	U1381	U1381	C1321	A1256	G1127	A1055	A930	A930	C855	G785
U	G1454	C1382	C1382	G1322	U1257	C1128	U1056	A931	A931	C856	G786
U	G1455	C1383	C1383	G1323	G1258	U1129	G1057	A932	A932	C857	G787
U	A1456	U1384	U1384	A1324	C1289	C1130	G1058	A933	A933	C858	G788
U	A1459	G1385	G1385	A1325	U1280	U1131	U1059	A934	A934	C859	G789
U	G1460	U1386	U1386	C1326	A1281	G1132	C1060	A935	A935	C860	G790
U	G1461	G1386	G1386	C1327	U1282	U1133	U1061	A936	A936	C861	G791
U	G1462	U1390	U1390	C1328	C1263	U1134	G1062	A937	A937	C862	G792
U	G1465	U1391	U1391	A1329	G1264	U1135	U1063	A938	A938	C863	G793
U	G1466	G1392	G1392	U1330	G1265	U1136	G1064	A939	A939	C864	G794
U	G1467	U1393	U1393	G1331	A1268	C1137	U1065	A940	A940	C865	G795
U	A1468	A1394	A1394	A1332	A1269	U1138	U1066	A941	A941	C866	G796
U	G1469	C1395	C1395	A1333	A1269	U1139	U1067	A942	A942	C867	G797
U	G1470	C1395	C1395	A1333	A1269	U1199	G1068	A943	A943	C868	G798
U	G1471	C1395	C1395	A1333	A1269	C1200	U1069	A944	A944	C869	G799
U	G1472	C1395	C1395	A1333	A1269	A1201	U1069	A945	A945	C870	G800
U	G1473	C1395	C1395	A1333	A1269	G1202	U1069	A946	A946	C871	G801
U	G1474	C1395	C1395	A1333	A1269	G1202	U1069	A947	A947	C872	G802
U	G1475	C1395	C1395	A1333	A1269	G1202	U1069	A948	A948	C873	G803
U	G1476	C1395	C1395	A1333	A1269	G1202	U1069	A949	A949	C874	G804
U	G1477	C1395	C1395	A1333	A1269	G1202	U1069	A950	A950	C875	G805
U	G1478	C1395	C1395	A1333	A1269	G1202	U1069	A951	A951	C876	G806
U	G1479	C1395	C1395	A1333	A1269	G1202	U1069	A952	A952	C877	G807
U	G1480	C1395	C1395	A1333	A1269	G1202	U1069	A953	A953	C878	G808
U	G1481	C1395	C1395	A1333	A1269	G1202	U1069	A954	A954	C879	G809
U	G1482	C1395	C1395	A1333	A1269	G1202	U1069	A955	A955	C880	G810

● Molecule 2: P-SITE MESSENGER RNA FRAGMENT





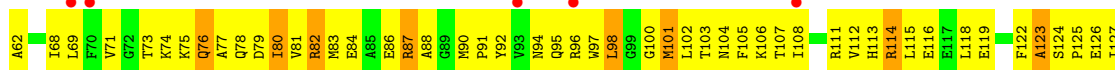
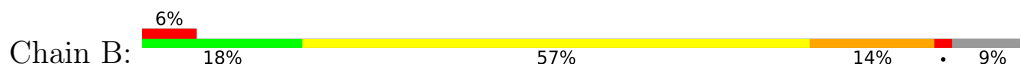
- Molecule 3: ANTICODON STEM-LOOP OF PHENYLALANINE TRANSFER RNA



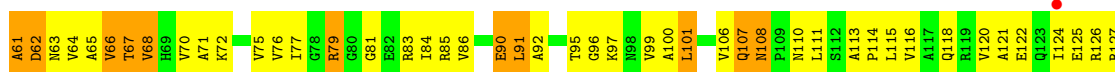
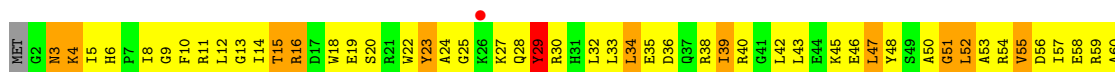
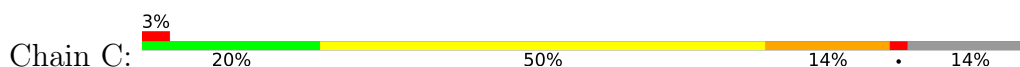
- Molecule 4: A-SITE MESSENGER RNA FRAGMENT

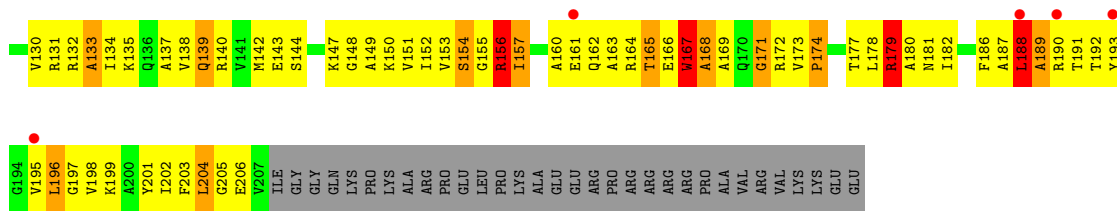


- Molecule 5: 30S RIBOSOMAL PROTEIN S2

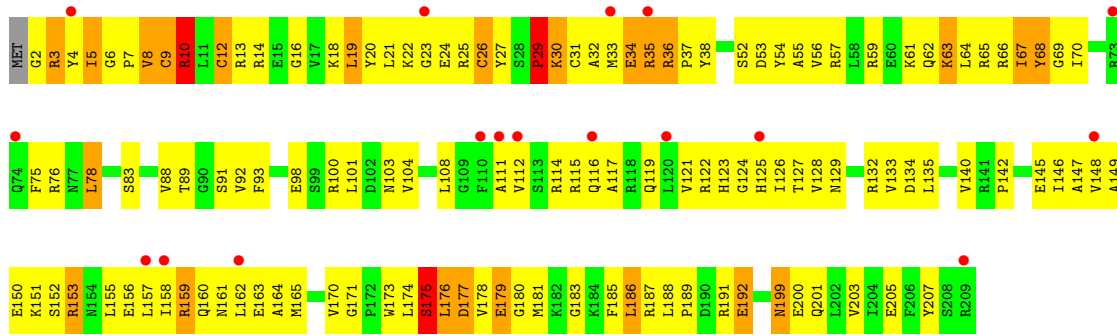
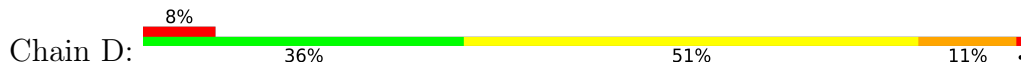


- Molecule 6: 30S RIBOSOMAL PROTEIN S3

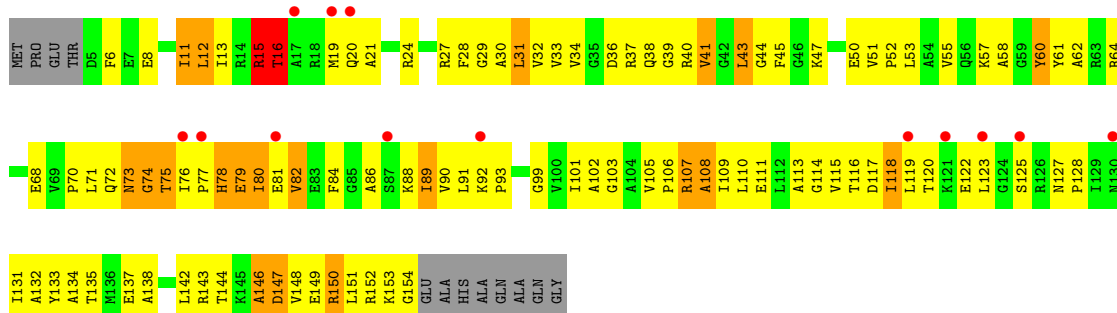
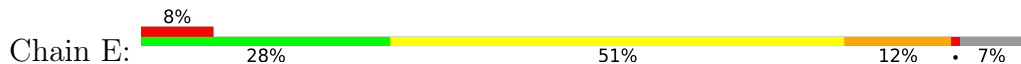




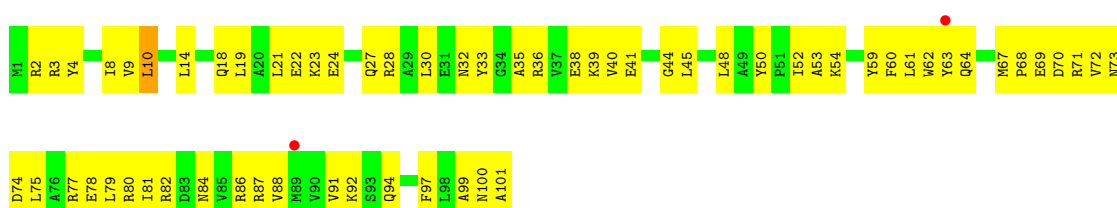
• Molecule 7: 30S RIBOSOMAL PROTEIN S4



• Molecule 8: 30S RIBOSOMAL PROTEIN S5

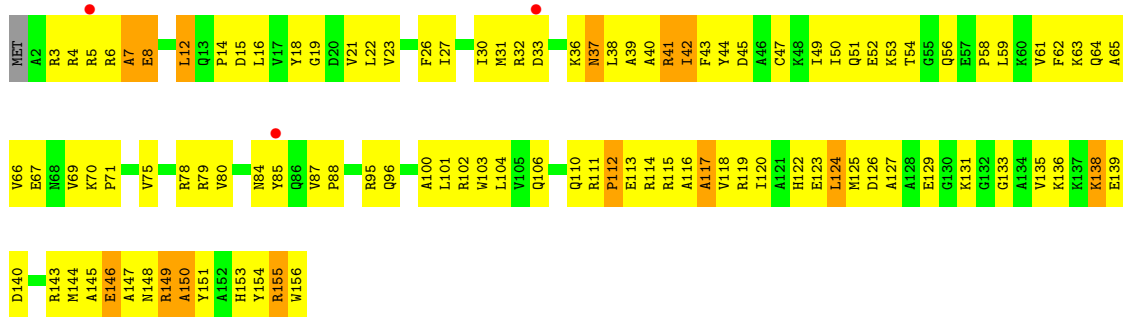


• Molecule 9: 30S RIBOSOMAL PROTEIN S6

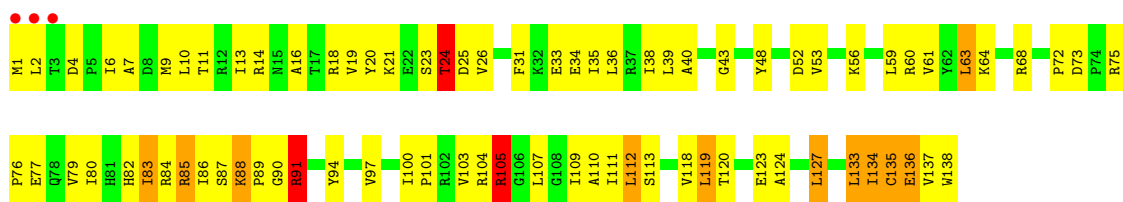


• Molecule 10: 30S RIBOSOMAL PROTEIN S7

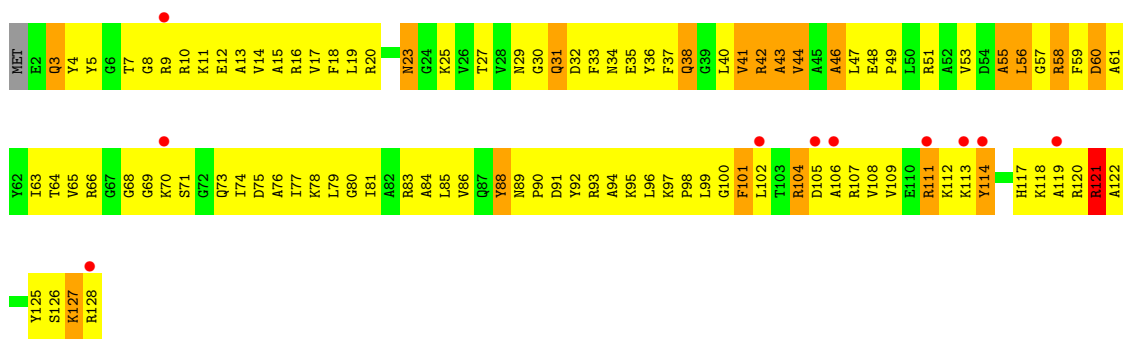




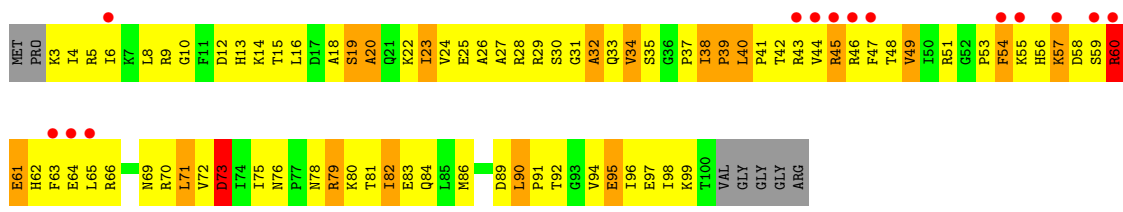
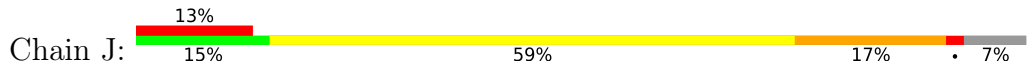
• Molecule 11: 30S RIBOSOMAL PROTEIN S8



• Molecule 12: 30S RIBOSOMAL PROTEIN S9

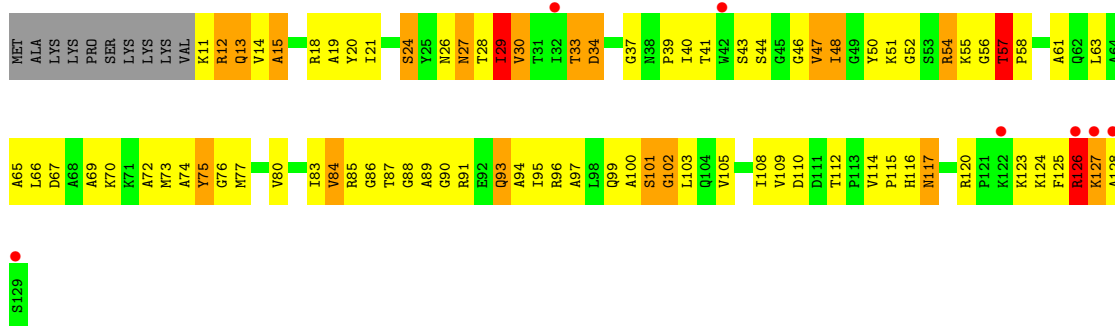


• Molecule 13: 30S RIBOSOMAL PROTEIN S10

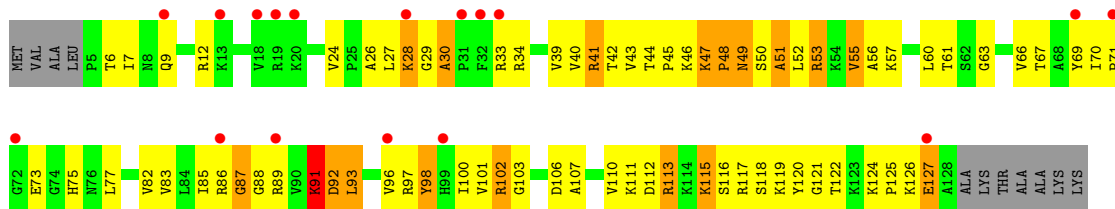


• Molecule 14: 30S RIBOSOMAL PROTEIN S11

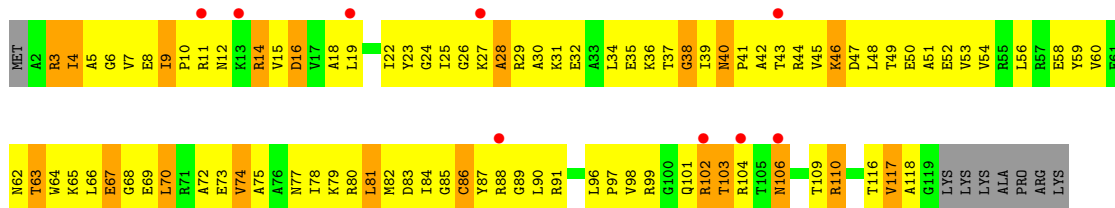




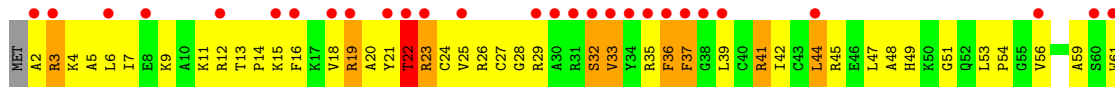
• Molecule 15: 30S RIBOSOMAL PROTEIN S12



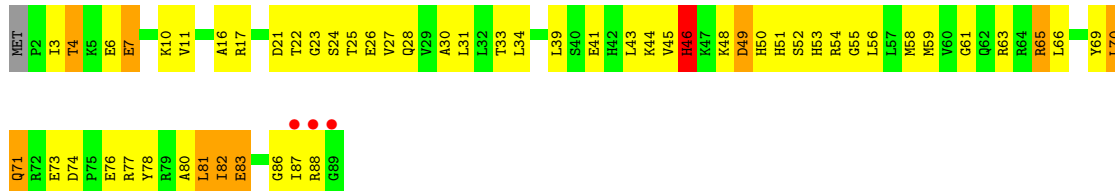
• Molecule 16: 30S RIBOSOMAL PROTEIN S13



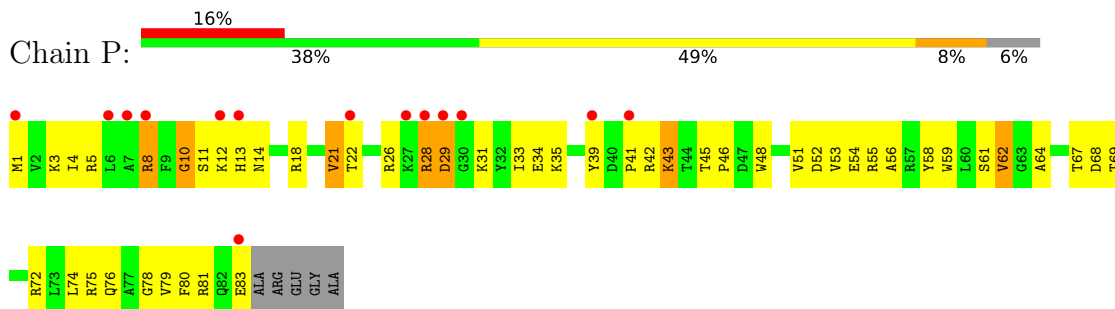
• Molecule 17: 30S RIBOSOMAL PROTEIN S14



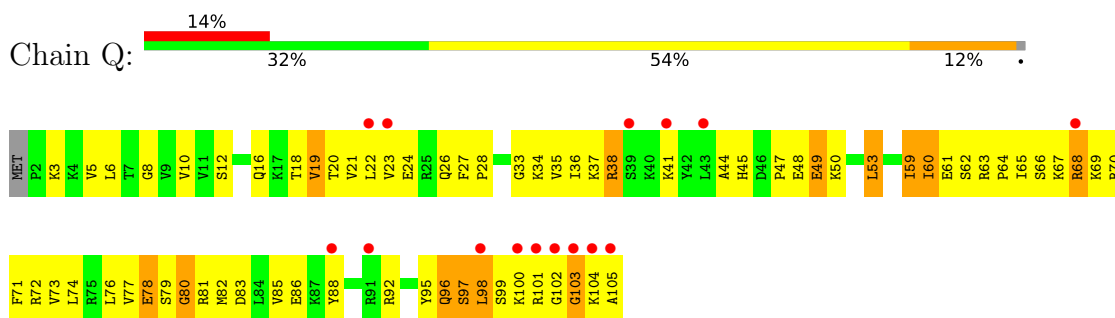
• Molecule 18: 30S RIBOSOMAL PROTEIN S15



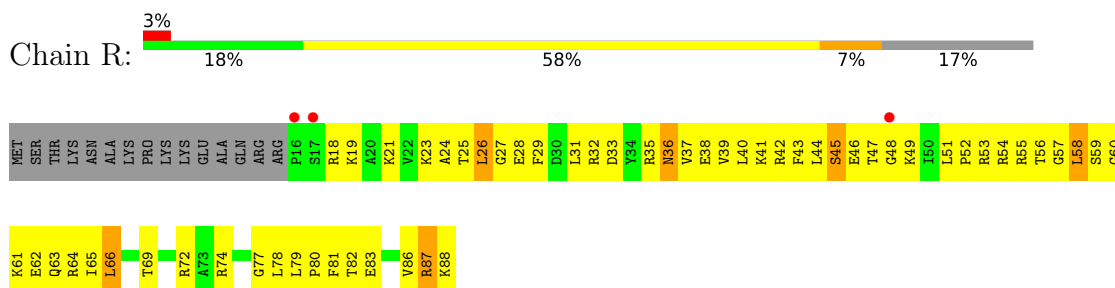
- Molecule 19: 30S RIBOSOMAL PROTEIN S16



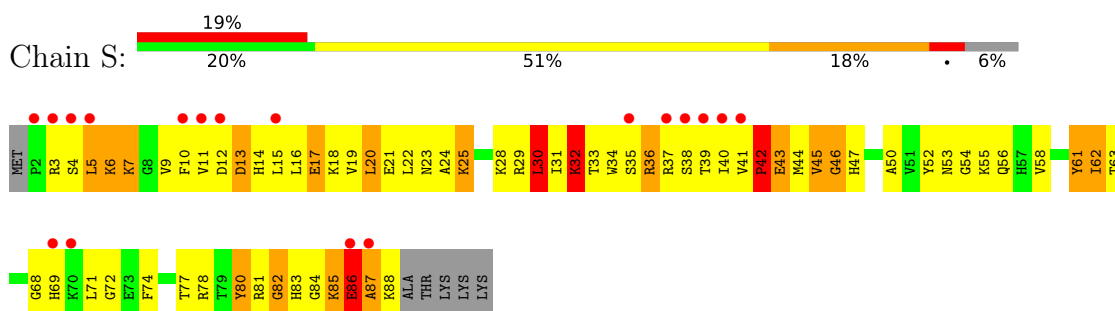
- Molecule 20: 30S RIBOSOMAL PROTEIN S17



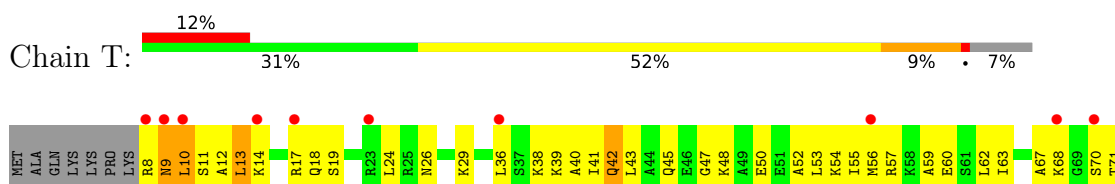
- Molecule 21: 30S RIBOSOMAL PROTEIN S18

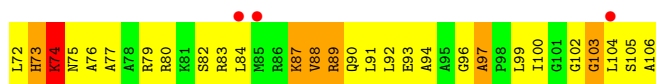


- Molecule 22: 30S RIBOSOMAL PROTEIN S19



- Molecule 23: 30S RIBOSOMAL PROTEIN S20





- Molecule 24: 30S RIBOSOMAL PROTEIN THX





## 4 Data and refinement statistics

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	401.57Å 401.57Å 176.11Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	316.23 – 3.31 200.79 – 3.31	Depositor EDS
% Data completeness (in resolution range)	90.6 (316.23-3.31) 90.6 (200.79-3.31)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	0.12	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	3.34 (at 3.33Å)	Xtrriage
Refinement program	CNS	Depositor
R, $R_{free}$	0.231 , 0.286 0.205 , 0.249	Depositor DCC
$R_{free}$ test set	9648 reflections (5.03%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	76.8	Xtrriage
Anisotropy	0.204	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.25 , 82.9	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.48$ , $\langle L^2 \rangle = 0.31$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.73	EDS
Total number of atoms	52160	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	68.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.54% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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

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	A	0.57	0/36259	0.74	36/56593 (0.1%)
2	X	0.58	0/128	0.76	0/196
3	Y	0.33	0/261	0.76	1/405 (0.2%)
4	Z	0.46	0/84	0.81	0/128
5	B	0.34	0/1935	0.66	0/2609
6	C	0.36	0/1636	0.65	0/2205
7	D	0.39	0/1733	0.65	0/2318
8	E	0.46	0/1162	0.79	0/1564
9	F	0.32	0/856	0.61	0/1154
10	G	0.34	0/1276	0.61	0/1709
11	H	0.45	0/1136	0.75	0/1527
12	I	0.34	0/1029	0.67	0/1378
13	J	0.35	0/805	0.67	1/1082 (0.1%)
14	K	0.40	0/900	0.67	0/1213
15	L	0.43	0/986	0.74	0/1320
16	M	0.36	0/947	0.67	0/1270
17	N	0.41	0/501	0.76	0/664
18	O	0.39	0/745	0.62	0/992
19	P	0.46	0/716	0.77	1/963 (0.1%)
20	Q	0.48	0/870	0.76	0/1159
21	R	0.37	0/603	0.67	0/799
22	S	0.35	0/712	0.71	1/956 (0.1%)
23	T	0.39	0/765	0.71	0/1007
24	V	0.45	0/212	0.67	0/277
All	All	0.51	0/56257	0.73	40/83488 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	1	29

There are no bond length outliers.

All (40) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	181	G	C2'-C3'-O3'	9.30	129.96	109.50
1	A	559	A	C2'-C3'-O3'	8.99	129.29	109.50
1	A	575	G	C2'-C3'-O3'	8.98	129.25	109.50
1	A	366	C	C2'-C3'-O3'	8.93	129.15	109.50
1	A	243	A	C2'-C3'-O3'	8.21	127.56	109.50
1	A	1498	U	C2'-C3'-O3'	8.15	127.43	109.50
1	A	792	A	C2'-C3'-O3'	7.90	126.88	109.50
1	A	266	G	C2'-C3'-O3'	7.52	126.04	109.50
1	A	1299	A	N9-C1'-C2'	7.41	123.64	114.00
1	A	1346	A	C2'-C3'-O3'	7.29	125.54	109.50
1	A	60	A	C2'-C3'-O3'	7.29	125.53	109.50
1	A	560	U	C2'-C3'-O3'	7.23	125.41	109.50
1	A	687	A	C2'-C3'-O3'	6.94	124.80	113.70
1	A	115	G	C2'-C3'-O3'	6.62	124.29	113.70
1	A	812	C	C2'-C3'-O3'	6.37	123.89	113.70
1	A	965	A	C2'-C3'-O3'	6.35	123.86	113.70
1	A	533	A	C2'-C3'-O3'	6.27	123.74	113.70
22	S	54	GLY	N-CA-C	-6.01	98.08	113.10
19	P	21	VAL	N-CA-C	-6.00	94.79	111.00
1	A	197	A	C2'-C3'-O3'	5.97	123.25	113.70
1	A	509	A	C2'-C3'-O3'	5.86	123.08	113.70
1	A	1224	G	N9-C1'-C2'	5.84	121.59	114.00
1	A	1502	A	N9-C1'-C2'	5.80	121.54	114.00
1	A	1380	U	C2'-C3'-O3'	5.78	122.94	113.70
1	A	372	C	C2'-C3'-O3'	5.75	122.89	113.70
1	A	389	A	C5'-C4'-C3'	5.65	125.04	116.00
1	A	481	G	C5'-C4'-C3'	-5.59	107.06	116.00
1	A	484	G	C2'-C3'-O3'	5.58	122.62	113.70
1	A	533	A	N9-C1'-C2'	5.54	121.21	114.00
3	Y	34	G	C2'-C3'-O3'	5.41	122.35	113.70
1	A	353	A	C5'-C4'-O4'	-5.33	102.70	109.10
1	A	1124	G	N9-C1'-C2'	5.23	120.80	114.00
1	A	51	A	N9-C1'-C2'	5.19	120.75	114.00
13	J	60	ARG	N-CA-C	5.13	124.86	111.00
1	A	1380	U	N1-C1'-C2'	5.13	120.67	114.00
1	A	1065	U	C1'-O4'-C4'	-5.11	105.81	109.90
1	A	7	G	C2'-C3'-O3'	5.09	121.84	113.70

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	560	U	OP2-P-O3'	5.05	116.31	105.20
1	A	622	A	N9-C1'-C2'	-5.04	106.45	112.00
1	A	1067	A	C2'-C3'-O3'	5.00	121.70	113.70

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	A	366	C	C3'

All (29) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1048	G	Sidechain
1	A	1073	U	Sidechain
1	A	1299	A	Sidechain
1	A	1330	U	Sidechain
1	A	1360	A	Sidechain
1	A	1396	A	Sidechain
1	A	1446	A	Sidechain
1	A	1502	A	Sidechain
1	A	1519	A	Sidechain
1	A	190(F)	G	Sidechain
1	A	197	A	Sidechain
1	A	24	U	Sidechain
1	A	249	U	Sidechain
1	A	251	G	Sidechain
1	A	253	U	Sidechain
1	A	254	G	Sidechain
1	A	37	U	Sidechain
1	A	380	G	Sidechain
1	A	404	U	Sidechain
1	A	490	G	Sidechain
1	A	528	C	Sidechain
1	A	561	U	Sidechain
1	A	575	G	Sidechain
1	A	641	U	Sidechain
1	A	664	G	Sidechain
1	A	727	G	Sidechain
1	A	879	C	Sidechain
1	A	898	G	Sidechain
1	A	901	A	Sidechain

## 5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	32391	0	16349	1272	0
2	X	117	0	64	3	0
3	Y	233	0	120	11	0
4	Z	77	0	42	4	0
5	B	1900	0	1951	279	0
6	C	1612	0	1677	245	0
7	D	1703	0	1764	163	0
8	E	1146	0	1207	124	0
9	F	843	0	857	84	0
10	G	1257	0	1296	124	0
11	H	1116	0	1177	103	0
12	I	1011	0	1043	158	0
13	J	792	0	835	145	0
14	K	885	0	904	88	0
15	L	970	0	1057	119	0
16	M	937	0	995	121	0
17	N	492	0	529	77	0
18	O	734	0	771	60	0
19	P	700	0	720	54	0
20	Q	857	0	930	99	0
21	R	597	0	668	81	0
22	S	697	0	723	120	0
23	T	763	0	861	82	0
24	V	208	0	221	13	0
25	A	118	0	0	0	0
25	D	1	0	0	0	0
25	H	1	0	0	0	0
26	D	1	0	0	0	0
26	N	1	0	0	0	0
All	All	52160	0	36761	3359	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 38.

All (3359) 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:A:1397:C:OP2	8:E:24:ARG:NH2	1.62	1.27
5:B:84:GLU:HB3	5:B:219:VAL:HG21	1.25	1.18
6:C:14:ILE:HG22	6:C:15:THR:H	1.12	1.15
1:A:1443:G:H5''	1:A:1446:A:H5'	1.31	1.11
7:D:36:ARG:H	7:D:37:PRO:HD3	0.95	1.11
13:J:45:ARG:HB3	13:J:45:ARG:HH11	0.96	1.10
23:T:74:LYS:HG2	23:T:75:ASN:H	1.01	1.09
8:E:80:ILE:CD1	8:E:91:LEU:HB2	1.84	1.06
8:E:80:ILE:HD11	8:E:91:LEU:HB2	1.38	1.05
1:A:1116:C:H2'	1:A:1117:G:H5''	1.39	1.04
7:D:36:ARG:H	7:D:37:PRO:CD	1.70	1.04
19:P:22:THR:HA	19:P:33:ILE:HD13	1.37	1.04
10:G:5:ARG:HG3	10:G:6:ARG:H	1.21	1.04
17:N:24:CYS:HB3	17:N:28:GLY:H	1.20	1.04
12:I:65:VAL:HG11	12:I:73:GLN:HB3	1.37	1.04
15:L:41:ARG:HG2	15:L:42:THR:H	1.18	1.04
1:A:243:A:H4'	1:A:244:U:H5'	1.41	1.03
22:S:40:ILE:HD13	22:S:62:ILE:HD13	1.40	1.03
1:A:1004:A:H2'	1:A:1005:A:H5'	1.38	1.03
15:L:46:LYS:HG2	15:L:47:LYS:H	1.18	1.03
15:L:93:LEU:HD23	15:L:93:LEU:H	1.25	1.02
16:M:78:ILE:HA	16:M:81:LEU:HD21	1.42	1.02
12:I:93:ARG:HB3	12:I:97:LYS:HE3	1.39	1.02
13:J:45:ARG:HB3	13:J:45:ARG:NH1	1.74	1.01
1:A:452:A:HO2'	1:A:453:A:H8	1.03	1.01
14:K:54:ARG:HB3	14:K:54:ARG:HH11	1.23	1.01
16:M:49:THR:HG22	16:M:51:ALA:H	1.24	1.00
22:S:55:LYS:HG2	22:S:56:GLN:HE21	1.24	0.99
6:C:8:ILE:HG23	6:C:16:ARG:HG2	1.46	0.98
7:D:36:ARG:N	7:D:37:PRO:HD3	1.79	0.97
16:M:81:LEU:HD23	16:M:81:LEU:H	1.28	0.97
6:C:179:ARG:HD3	6:C:206:GLU:HB3	1.46	0.97
19:P:58:TYR:O	19:P:61:SER:HB3	1.63	0.96
13:J:90:LEU:H	13:J:91:PRO:HD2	1.29	0.96
16:M:10:PRO:HB2	16:M:18:ALA:HB1	1.48	0.95
18:O:70:LEU:HD12	18:O:78:TYR:HB2	1.48	0.95
5:B:16:HIS:NE2	5:B:214:ILE:HG12	1.81	0.95
1:A:1305:G:HO2'	1:A:1306:A:H8	1.10	0.95
20:Q:67:LYS:HA	20:Q:70:ARG:HH12	1.32	0.94
1:A:1443:G:H5''	1:A:1446:A:C5'	1.96	0.94
24:V:6:ARG:HB3	24:V:15:ARG:HH21	1.29	0.94
18:O:26:GLU:OE1	18:O:77:ARG:HD2	1.68	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:T:74:LYS:CG	23:T:75:ASN:H	1.80	0.94
7:D:151:LYS:H	7:D:151:LYS:HD2	1.31	0.93
1:A:1502:A:H2	1:A:1505:G:H1	1.12	0.93
23:T:74:LYS:HG2	23:T:75:ASN:N	1.84	0.93
7:D:7:PRO:HG2	7:D:10:ARG:HD2	1.49	0.93
6:C:179:ARG:O	6:C:179:ARG:HG2	1.68	0.93
5:B:75:LYS:HA	5:B:78:GLN:HG3	1.51	0.93
1:A:1139:G:H4'	1:A:1140:C:H5'	1.50	0.93
8:E:110:LEU:HD13	8:E:118:ILE:HD12	1.49	0.92
12:I:8:GLY:HA2	12:I:79:LEU:HD12	1.51	0.92
15:L:91:LYS:HA	15:L:91:LYS:HE3	1.52	0.92
3:Y:34:G:H2'	3:Y:35:A:H8	1.31	0.92
1:A:1305:G:O2'	1:A:1306:A:H8	1.51	0.92
14:K:40:ILE:HG22	14:K:41:THR:HG23	1.49	0.92
15:L:93:LEU:HD12	15:L:96:VAL:HG21	1.50	0.91
22:S:85:LYS:H	22:S:85:LYS:HE3	1.36	0.91
13:J:79:ARG:HH11	13:J:79:ARG:HA	1.33	0.91
1:A:939:G:H5''	10:G:102:ARG:HH22	1.36	0.91
6:C:188:LEU:HD13	6:C:189:ALA:H	1.36	0.91
11:H:113:SER:HB2	11:H:134:ILE:HD11	1.53	0.91
1:A:1116:C:C2'	1:A:1117:G:H5''	2.00	0.91
17:N:36:PHE:O	17:N:36:PHE:HD1	1.52	0.91
1:A:382:A:H2'	1:A:383:A:C8	2.06	0.91
1:A:1368:G:O2'	1:A:1369:C:H5'	1.71	0.91
9:F:44:GLY:HA2	9:F:59:TYR:CE1	2.06	0.90
7:D:175:SER:HB3	7:D:186:LEU:HD21	1.54	0.90
8:E:51:VAL:HB	8:E:52:PRO:HD3	1.50	0.90
8:E:43:LEU:HD11	8:E:132:ALA:HB1	1.54	0.90
12:I:29:ASN:ND2	12:I:64:THR:HA	1.85	0.90
8:E:41:VAL:HG22	8:E:113:ALA:HA	1.53	0.89
1:A:967:C:H4'	12:I:128:ARG:HG3	1.54	0.89
23:T:57:ARG:HD2	23:T:102:GLY:HA3	1.53	0.89
7:D:29:PRO:O	7:D:30:LYS:HG3	1.73	0.89
18:O:16:ALA:HB1	18:O:21:ASP:HB3	1.51	0.89
3:Y:34:G:H2'	3:Y:35:A:C8	2.06	0.89
6:C:50:ALA:HB1	6:C:70:VAL:HG11	1.52	0.88
5:B:178:ARG:HH11	5:B:178:ARG:HG3	1.39	0.88
1:A:371:G:O2'	1:A:372:C:H5'	1.72	0.88
1:A:954:G:H21	1:A:1227:A:H62	1.21	0.88
13:J:32:ALA:HB2	13:J:76:ASN:HB2	1.56	0.88
12:I:17:VAL:HG21	12:I:80:GLY:HA3	1.56	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:438:G:H4'	1:A:439:A:OP1	1.74	0.87
5:B:80:ILE:HD11	5:B:208:ILE:HG12	1.53	0.87
1:A:1236:A:H4'	1:A:1304:G:H4'	1.57	0.87
1:A:1348:U:H2'	1:A:1349:A:H8	1.36	0.87
5:B:77:ALA:HB2	5:B:211:ILE:HD13	1.57	0.87
13:J:79:ARG:HA	13:J:79:ARG:NH1	1.89	0.87
3:Y:34:G:H1	4:Z:3:U:H3	1.22	0.86
1:A:1216:G:H5''	17:N:5:ALA:HB2	1.58	0.86
14:K:84:VAL:HG23	14:K:110:ASP:HA	1.57	0.86
16:M:4:ILE:HG22	16:M:5:ALA:N	1.89	0.86
1:A:1497:G:O2'	1:A:1498:U:H5'	1.76	0.86
22:S:31:ILE:HG22	22:S:32:LYS:H	1.40	0.86
7:D:19:LEU:HD21	7:D:67:ILE:HG12	1.56	0.86
7:D:149:ALA:HB3	7:D:152:SER:HB2	1.58	0.86
9:F:100:ASN:HD22	21:R:23:LYS:HG2	1.39	0.86
1:A:528:C:H41	15:L:49:ASN:HD21	1.22	0.85
1:A:946:A:H2'	1:A:947:G:C8	2.11	0.85
1:A:1054:C:O2	1:A:1054:C:H3'	1.76	0.85
1:A:977:A:H2'	1:A:978:A:H5''	1.58	0.85
22:S:42:PRO:O	22:S:45:VAL:HG23	1.76	0.85
23:T:73:HIS:C	23:T:74:LYS:HD3	1.95	0.85
8:E:115:VAL:HG11	8:E:118:ILE:HD11	1.57	0.85
13:J:23:ILE:HD12	13:J:23:ILE:H	1.40	0.85
1:A:243:A:C4'	1:A:244:U:H5'	2.06	0.84
1:A:1356:G:H2'	1:A:1357:A:C8	2.12	0.84
11:H:64:LYS:HG2	11:H:79:VAL:HG21	1.57	0.84
6:C:108:ASN:HD21	6:C:111:LEU:HG	1.42	0.84
1:A:1152:A:H5''	13:J:13:HIS:HD2	1.42	0.84
1:A:1298:C:H2'	10:G:114:ARG:HH12	1.41	0.84
6:C:32:LEU:HD21	6:C:59:ARG:HD2	1.58	0.83
5:B:197:VAL:HB	5:B:200:ILE:HG23	1.58	0.83
6:C:23:TYR:HD2	6:C:24:ALA:N	1.76	0.83
13:J:45:ARG:HH11	13:J:45:ARG:CB	1.86	0.83
1:A:1124:G:H3'	1:A:1145:C:H41	1.43	0.83
1:A:1133:G:H2'	1:A:1134:G:H8	1.41	0.83
8:E:41:VAL:CG2	8:E:113:ALA:HA	2.08	0.83
10:G:69:VAL:HG21	10:G:104:LEU:HD21	1.59	0.83
6:C:150:LYS:HE2	6:C:152:ILE:HD11	1.61	0.83
17:N:3:ARG:NH1	17:N:6:LEU:HD11	1.94	0.82
12:I:89:ASN:HD21	12:I:91:ASP:HB2	1.43	0.82
1:A:1352:C:H2'	1:A:1353:G:C8	2.13	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:F:30:LEU:HD11	9:F:63:TYR:HD1	1.44	0.82
14:K:48:ILE:HD12	14:K:63:LEU:HB3	1.60	0.82
1:A:560:U:H5'	1:A:566:G:N2	1.94	0.82
6:C:14:ILE:HG22	6:C:15:THR:N	1.94	0.81
13:J:71:LEU:HD13	13:J:72:VAL:H	1.44	0.81
20:Q:76:LEU:HD23	20:Q:77:VAL:N	1.93	0.81
1:A:359:U:H2'	1:A:360:A:H8	1.44	0.81
1:A:939:G:H5''	10:G:102:ARG:NH2	1.95	0.81
1:A:1435:G:H2'	1:A:1436:U:C6	2.15	0.81
7:D:128:VAL:HG12	7:D:129:ASN:ND2	1.95	0.81
8:E:12:LEU:HD13	8:E:31:LEU:HB2	1.63	0.81
13:J:71:LEU:HD13	13:J:72:VAL:N	1.95	0.81
15:L:124:LYS:HD2	15:L:125:PRO:HD2	1.62	0.81
6:C:6:HIS:CD2	6:C:8:ILE:HB	2.16	0.81
1:A:1443:G:C5'	1:A:1446:A:H5'	2.11	0.81
6:C:157:ILE:HD11	6:C:166:GLU:HB2	1.62	0.81
12:I:127:LYS:H	12:I:127:LYS:HD2	1.45	0.81
11:H:119:LEU:HD12	11:H:124:ALA:HA	1.63	0.81
1:A:1115:C:H1'	17:N:61:TRP:O	1.81	0.81
1:A:579:G:H5'	1:A:728:A:H1'	1.62	0.81
1:A:1003(A):G:H2'	1:A:1004:A:H4'	1.62	0.81
1:A:1391:U:H2'	1:A:1392:G:C8	2.16	0.81
1:A:109:A:H2'	1:A:326:G:N2	1.95	0.80
7:D:35:ARG:O	7:D:36:ARG:HB2	1.79	0.80
1:A:1152:A:H5''	13:J:13:HIS:CD2	2.16	0.80
13:J:30:SER:HB3	13:J:84:GLN:HE21	1.46	0.80
11:H:80:ILE:O	11:H:80:ILE:HG22	1.82	0.80
1:A:1064:G:H4'	1:A:1065:U:C5'	2.12	0.80
1:A:235:C:H5'	20:Q:70:ARG:HG2	1.62	0.80
1:A:918:A:H2'	1:A:919:A:C8	2.16	0.80
7:D:150:GLU:HA	7:D:153:ARG:NE	1.97	0.80
8:E:11:ILE:HB	8:E:31:LEU:HB3	1.64	0.80
17:N:36:PHE:O	17:N:36:PHE:CD1	2.35	0.80
1:A:129(A):G:HO2'	1:A:190(E):U:H2'	1.44	0.80
1:A:1190:G:OP1	6:C:4:LYS:HA	1.82	0.80
16:M:86:CYS:SG	16:M:88:ARG:HG2	2.22	0.80
16:M:5:ALA:HB3	16:M:8:GLU:HG3	1.64	0.80
1:A:99:C:H2'	1:A:101:A:C8	2.17	0.79
6:C:24:ALA:HB2	6:C:32:LEU:HD13	1.65	0.79
1:A:501:C:H2'	1:A:502:G:H8	1.45	0.79
1:A:797:C:OP1	14:K:124:LYS:HE2	1.82	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1356:G:H2'	1:A:1357:A:H8	1.47	0.79
16:M:91:ARG:HB2	16:M:98:VAL:HG13	1.65	0.79
7:D:83:SER:HA	7:D:89:THR:HG23	1.65	0.79
1:A:760:G:H1	20:Q:105:ALA:HA	1.48	0.79
14:K:66:LEU:HB3	14:K:70:LYS:HE3	1.65	0.79
1:A:351:G:H4'	1:A:352:C:OP1	1.81	0.79
6:C:14:ILE:CG2	6:C:15:THR:H	1.95	0.78
11:H:24:THR:HG22	11:H:63:LEU:HD21	1.64	0.78
7:D:142:PRO:HG2	7:D:187:ARG:HH21	1.48	0.78
1:A:254:G:OP1	20:Q:67:LYS:O	2.01	0.78
10:G:26:PHE:CE2	10:G:30:ILE:HD11	2.18	0.78
22:S:20:LEU:HA	22:S:23:ASN:HD22	1.47	0.78
7:D:32:ALA:C	7:D:34:GLU:H	1.85	0.78
22:S:16:LEU:O	22:S:19:VAL:HG12	1.84	0.78
23:T:73:HIS:O	23:T:74:LYS:HD3	1.83	0.78
1:A:1148:U:H4'	12:I:14:VAL:HG11	1.66	0.78
9:F:91:VAL:HG12	9:F:92:LYS:H	1.47	0.78
1:A:1064:G:H4'	1:A:1065:U:H5'	1.64	0.78
1:A:538:G:OP2	15:L:115:LYS:HG3	1.83	0.78
5:B:18:GLY:HA2	5:B:41:ILE:HA	1.63	0.78
5:B:84:GLU:HB3	5:B:219:VAL:CG2	2.11	0.78
6:C:58:GLU:HB3	13:J:92:THR:HG21	1.66	0.78
7:D:199:ASN:HD21	7:D:201:GLN:HB2	1.49	0.78
16:M:81:LEU:H	16:M:81:LEU:CD2	1.96	0.78
5:B:178:ARG:HH21	5:B:196:LEU:HA	1.49	0.78
12:I:53:VAL:HG21	12:I:85:LEU:HD21	1.66	0.78
6:C:191:THR:HG21	6:C:193:TYR:CZ	2.18	0.77
5:B:42:ILE:HD11	5:B:189:ASP:HB2	1.65	0.77
6:C:191:THR:HG22	6:C:192:THR:N	1.98	0.77
7:D:25:ARG:C	7:D:27:TYR:H	1.87	0.77
1:A:1168:A:H2'	1:A:1169:A:C8	2.19	0.77
1:A:1250:A:H4'	12:I:68:GLY:H	1.48	0.77
6:C:116:VAL:HG21	6:C:202:ILE:HD11	1.63	0.77
15:L:46:LYS:HG2	15:L:47:LYS:N	1.97	0.77
1:A:1226:C:H4'	1:A:1227:A:OP1	1.85	0.77
12:I:70:LYS:O	12:I:74:ILE:HG13	1.84	0.77
13:J:30:SER:OG	13:J:81:THR:HA	1.85	0.77
15:L:89:ARG:NH1	15:L:97:ARG:HG2	1.99	0.77
16:M:65:LYS:HG3	16:M:69:GLU:OE2	1.85	0.77
1:A:1226:C:H1'	22:S:83:HIS:CE1	2.19	0.77
7:D:199:ASN:ND2	7:D:201:GLN:HB2	2.00	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:972:C:H4'	13:J:57:LYS:HD3	1.65	0.77
15:L:47:LYS:HB3	15:L:48:PRO:HD3	1.65	0.77
21:R:48:GLY:H	21:R:82:THR:HA	1.51	0.77
1:A:1366:C:H2'	1:A:1367:C:H6	1.47	0.76
6:C:195:VAL:O	6:C:196:LEU:HD23	1.85	0.76
1:A:17:U:H2'	1:A:18:C:C6	2.20	0.76
5:B:115:LEU:HD21	5:B:153:ARG:NH2	1.99	0.76
6:C:191:THR:HG22	6:C:193:TYR:H	1.50	0.76
9:F:10:LEU:H	9:F:10:LEU:HD12	1.49	0.76
20:Q:101:ARG:HA	20:Q:101:ARG:HE	1.50	0.76
1:A:983:A:H5'	1:A:984:C:OP2	1.86	0.76
1:A:1195:C:H3'	1:A:1196:U:H5''	1.66	0.76
5:B:200:ILE:HD13	5:B:202:PRO:HD3	1.67	0.76
12:I:29:ASN:HD21	12:I:64:THR:HA	1.47	0.76
15:L:41:ARG:HG2	15:L:42:THR:N	1.98	0.76
14:K:54:ARG:O	14:K:57:THR:HG23	1.85	0.76
1:A:1236:A:H2'	1:A:1237:C:C6	2.21	0.76
5:B:44:LEU:HA	5:B:47:THR:OG1	1.85	0.76
5:B:53:ARG:O	5:B:56:ARG:HB3	1.85	0.76
7:D:2:GLY:N	7:D:3:ARG:HE	1.84	0.76
10:G:54:THR:HG22	10:G:56:GLN:H	1.50	0.76
1:A:180:U:H2'	1:A:181:G:H5'	1.67	0.76
7:D:146:ILE:N	7:D:146:ILE:HD12	2.01	0.76
5:B:188:ALA:O	5:B:202:PRO:HA	1.86	0.76
6:C:6:HIS:HD2	6:C:9:GLY:H	1.33	0.76
5:B:15:VAL:HG11	5:B:210:SER:N	2.01	0.75
16:M:3:ARG:HG2	16:M:9:ILE:HG23	1.67	0.75
19:P:22:THR:CA	19:P:33:ILE:HD13	2.16	0.75
1:A:266:G:H5''	1:A:268:C:H41	1.52	0.75
7:D:30:LYS:C	7:D:32:ALA:H	1.86	0.75
1:A:750:G:N3	18:O:23:GLY:HA3	2.01	0.75
6:C:5:ILE:HD13	6:C:10:PHE:HB2	1.69	0.75
17:N:24:CYS:HB3	17:N:28:GLY:N	2.00	0.75
3:Y:34:G:H8	3:Y:34:G:H5'	1.50	0.75
13:J:6:ILE:HA	13:J:98:ILE:HG12	1.69	0.75
1:A:818:G:O2'	1:A:819:A:H5''	1.87	0.75
6:C:23:TYR:CD2	6:C:24:ALA:N	2.54	0.75
11:H:63:LEU:HD22	11:H:63:LEU:H	1.52	0.75
1:A:250:A:H4'	1:A:251:G:O5'	1.86	0.75
1:A:447:G:H2'	1:A:485:G:N2	2.02	0.75
5:B:130:ARG:HB3	5:B:131:PRO:HD2	1.69	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:M:81:LEU:HD23	16:M:81:LEU:N	2.01	0.75
5:B:25:ASN:HD22	5:B:25:ASN:C	1.90	0.74
13:J:6:ILE:HG23	13:J:98:ILE:HD11	1.66	0.74
15:L:27:LEU:C	15:L:29:GLY:H	1.90	0.74
1:A:130:A:OP2	1:A:190(E):U:H2'	1.87	0.74
16:M:22:ILE:HB	16:M:25:ILE:HD12	1.69	0.74
9:F:36:ARG:HH12	9:F:38:GLU:HG2	1.52	0.74
13:J:61:GLU:OE1	17:N:45:ARG:HD2	1.88	0.74
11:H:90:GLY:O	11:H:91:ARG:HB2	1.87	0.74
12:I:106:ALA:O	12:I:108:VAL:HG23	1.87	0.74
15:L:77:LEU:HD21	15:L:107:ALA:HA	1.69	0.74
6:C:10:PHE:CE2	6:C:178:LEU:HD13	2.22	0.74
1:A:1281:U:H5'	1:A:1282:C:C5	2.23	0.74
1:A:1003(A):G:H2'	1:A:1004:A:C4'	2.17	0.74
10:G:23:VAL:O	10:G:27:ILE:HG13	1.87	0.74
1:A:129(A):G:O2'	1:A:190(E):U:H2'	1.87	0.73
7:D:126:ILE:HG22	7:D:127:THR:N	2.03	0.73
15:L:93:LEU:HD23	15:L:93:LEU:N	2.02	0.73
18:O:70:LEU:HD12	18:O:78:TYR:CB	2.18	0.73
5:B:30:ARG:HG3	5:B:31:TYR:CD2	2.23	0.73
6:C:14:ILE:O	6:C:16:ARG:N	2.20	0.73
14:K:27:ASN:HA	14:K:56:GLY:HA2	1.68	0.73
20:Q:97:SER:HB2	20:Q:102:GLY:O	1.86	0.73
1:A:1145:C:HO2'	1:A:1146:A:H8	1.35	0.73
1:A:1435:G:H2'	1:A:1436:U:H6	1.51	0.73
6:C:134:ILE:HG23	6:C:151:VAL:HB	1.71	0.73
15:L:43:VAL:HG12	15:L:44:THR:N	2.03	0.73
5:B:124:SER:HB2	5:B:125:PRO:HD2	1.69	0.73
13:J:44:VAL:HG22	13:J:66:ARG:HG2	1.71	0.73
5:B:69:LEU:HB3	5:B:162:ILE:HG13	1.68	0.73
5:B:114:ARG:NH1	5:B:118:LEU:HD21	2.03	0.73
15:L:75:HIS:HD2	15:L:77:LEU:H	1.35	0.73
1:A:390:C:H2'	1:A:391:G:C8	2.24	0.73
19:P:74:LEU:O	19:P:79:VAL:HG23	1.88	0.73
1:A:474:G:H2'	1:A:475:G:H8	1.52	0.73
1:A:382:A:H2'	1:A:383:A:H8	1.54	0.72
15:L:86:ARG:HH11	15:L:86:ARG:HG3	1.52	0.72
1:A:1125:U:H5''	1:A:1126:U:H5	1.53	0.72
1:A:291:C:O2'	1:A:292:G:H5'	1.89	0.72
20:Q:67:LYS:O	20:Q:68:ARG:CB	2.37	0.72
1:A:817:C:H4'	1:A:818:G:OP1	1.88	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:F:99:ALA:HB2	21:R:31:LEU:HD11	1.71	0.72
13:J:8:LEU:HD23	13:J:96:ILE:HG12	1.72	0.72
13:J:39:PRO:O	13:J:40:LEU:HB2	1.89	0.72
1:A:1054:C:H2'	1:A:1055:A:H5''	1.71	0.72
1:A:1142:G:H2'	1:A:1143:G:O4'	1.89	0.72
6:C:137:ALA:HA	6:C:140:ARG:HH11	1.54	0.72
1:A:376:G:H5''	19:P:5:ARG:HD2	1.69	0.72
8:E:110:LEU:O	8:E:113:ALA:HB3	1.89	0.72
20:Q:27:PHE:CZ	20:Q:36:ILE:HD11	2.24	0.72
6:C:25:GLY:H	6:C:28:GLN:HB2	1.53	0.72
9:F:94:GLN:HB3	21:R:32:ARG:HD3	1.72	0.72
15:L:27:LEU:HD23	15:L:28:LYS:HB2	1.71	0.72
22:S:3:ARG:HH22	22:S:69:HIS:HE1	1.35	0.72
22:S:80:TYR:HD2	22:S:81:ARG:N	1.87	0.72
1:A:359:U:H2'	1:A:360:A:C8	2.25	0.72
1:A:524:G:H2'	1:A:525:C:C6	2.25	0.72
6:C:107:GLN:NE2	6:C:107:GLN:H	1.88	0.72
13:J:53:PRO:HA	17:N:41:ARG:HH21	1.53	0.72
5:B:15:VAL:CG2	5:B:209:ARG:HG3	2.20	0.71
22:S:22:LEU:HD13	22:S:28:LYS:HB3	1.71	0.71
7:D:13:ARG:HD2	7:D:38:TYR:O	1.90	0.71
20:Q:45:HIS:NE2	20:Q:47:PRO:HG3	2.05	0.71
21:R:74:ARG:HB3	21:R:81:PHE:CE1	2.25	0.71
1:A:1137:C:H4'	1:A:1138:G:C2	2.25	0.71
12:I:114:TYR:HE1	13:J:59:SER:O	1.73	0.71
18:O:78:TYR:CZ	18:O:82:ILE:HD11	2.24	0.71
1:A:353:A:H5'	1:A:353:A:H8	1.54	0.71
1:A:447:G:H2'	1:A:485:G:H22	1.56	0.71
1:A:1112:C:O2	6:C:179:ARG:HB3	1.89	0.71
5:B:69:LEU:HD12	5:B:155:LEU:HD11	1.71	0.71
23:T:39:LYS:HD2	23:T:55:ILE:CD1	2.19	0.71
1:A:1277:C:H2'	1:A:1278:U:H5'	1.72	0.71
8:E:110:LEU:O	8:E:115:VAL:HB	1.90	0.71
1:A:900:A:H2'	1:A:901:A:C8	2.24	0.71
14:K:91:ARG:HD3	21:R:88:LYS:HE2	1.72	0.71
1:A:201:C:H42	1:A:216:G:H1	1.36	0.71
1:A:1095:U:H2'	1:A:1096:C:C6	2.25	0.71
6:C:131:ARG:HG2	6:C:135:LYS:HE3	1.71	0.71
12:I:111:ARG:CB	12:I:111:ARG:HH11	2.03	0.71
22:S:17:GLU:HA	22:S:20:LEU:HD11	1.71	0.71
5:B:25:ASN:ND2	5:B:27:LYS:H	1.88	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:116:ALA:HA	10:G:119:ARG:CZ	2.21	0.71
21:R:36:ASN:ND2	21:R:38:GLU:HG2	2.04	0.71
5:B:178:ARG:HH21	5:B:196:LEU:C	1.94	0.71
8:E:50:GLU:HG3	8:E:53:LEU:HB2	1.73	0.71
16:M:78:ILE:HA	16:M:81:LEU:CD2	2.16	0.71
19:P:8:ARG:HB2	19:P:28:ARG:NH1	2.05	0.71
1:A:1151:A:HO2'	1:A:1152:A:H8	1.39	0.71
5:B:15:VAL:HG21	5:B:209:ARG:HG3	1.72	0.71
6:C:191:THR:CG2	6:C:192:THR:N	2.53	0.71
17:N:4:LYS:HA	17:N:7:ILE:CD1	2.21	0.71
7:D:119:GLN:HG2	7:D:123:HIS:CD2	2.25	0.70
1:A:1152:A:H5'	13:J:70:ARG:HH21	1.56	0.70
1:A:1518:A:H2'	1:A:1519:A:C8	2.26	0.70
20:Q:12:SER:HB3	20:Q:20:THR:HB	1.73	0.70
24:V:6:ARG:HB3	24:V:15:ARG:NH2	2.04	0.70
1:A:1196:U:OP1	1:A:1197:G:H5'	1.91	0.70
1:A:1502:A:H2	1:A:1505:G:N1	1.87	0.70
5:B:185:ILE:N	5:B:185:ILE:HD12	2.06	0.70
10:G:138:LYS:HD2	10:G:138:LYS:C	2.11	0.70
12:I:9:ARG:HA	12:I:13:ALA:O	1.91	0.70
7:D:23:GLY:HA3	7:D:112:VAL:HG12	1.73	0.70
10:G:5:ARG:HG3	10:G:6:ARG:N	2.02	0.70
21:R:59:SER:OG	21:R:62:GLU:HG3	1.90	0.70
5:B:23:ARG:NH1	5:B:191:ASP:HA	2.05	0.70
6:C:100:ALA:O	6:C:101:LEU:HB2	1.89	0.70
1:A:370:C:O2'	1:A:371:G:H5'	1.91	0.70
22:S:20:LEU:HD12	22:S:21:GLU:N	2.07	0.70
1:A:664:G:OP1	21:R:64:ARG:HD2	1.91	0.70
1:A:1402:C:H2'	1:A:1403:C:H6	1.56	0.70
23:T:53:LEU:HB2	23:T:100:ILE:HG21	1.72	0.70
16:M:3:ARG:HA	16:M:8:GLU:O	1.92	0.70
1:A:135:C:O2	19:P:1:MET:HB2	1.92	0.70
1:A:1133:G:H2'	1:A:1134:G:C8	2.27	0.70
1:A:1343:G:H2'	1:A:1344:C:C6	2.27	0.70
1:A:1475:G:H2'	1:A:1476:G:H8	1.56	0.70
11:H:119:LEU:HD12	11:H:124:ALA:CA	2.21	0.70
1:A:1298:C:H4'	1:A:1299:A:O4'	1.91	0.69
5:B:17:PHE:HB3	5:B:44:LEU:HD11	1.73	0.69
16:M:88:ARG:NH1	22:S:3:ARG:HH21	1.90	0.69
1:A:269:C:H2'	1:A:270:A:C8	2.27	0.69
1:A:848:C:O2'	1:A:849:C:H5'	1.93	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:972:C:H4'	13:J:57:LYS:CD	2.22	0.69
6:C:188:LEU:CD1	6:C:189:ALA:H	2.02	0.69
7:D:151:LYS:H	7:D:151:LYS:CD	2.04	0.69
11:H:19:VAL:HG23	11:H:21:LYS:HG2	1.74	0.69
12:I:118:LYS:O	12:I:119:ALA:HB3	1.91	0.69
1:A:1064:G:C4'	1:A:1065:U:H5'	2.22	0.69
1:A:1313:U:O4	22:S:4:SER:HB3	1.91	0.69
15:L:75:HIS:CD2	15:L:77:LEU:H	2.10	0.69
1:A:939:G:H5''	10:G:102:ARG:HH12	1.56	0.69
1:A:1053:G:HO2'	1:A:1199:U:H5	1.39	0.69
7:D:25:ARG:NH2	7:D:30:LYS:HD3	2.07	0.69
11:H:31:PHE:O	11:H:34:GLU:HB2	1.92	0.69
1:A:1490:C:O2'	1:A:1491:G:H5'	1.91	0.69
6:C:52:LEU:HD23	6:C:52:LEU:H	1.58	0.69
1:A:478:A:O2'	1:A:479:C:H5'	1.92	0.69
10:G:138:LYS:HD2	10:G:138:LYS:O	1.92	0.69
14:K:54:ARG:HB3	14:K:54:ARG:NH1	2.05	0.69
18:O:65:ARG:NH1	18:O:65:ARG:HB2	2.08	0.69
5:B:91:PRO:HA	5:B:154:LEU:HD12	1.74	0.69
8:E:75:THR:HG23	8:E:76:ILE:N	2.08	0.69
10:G:61:VAL:O	10:G:64:GLN:HB3	1.91	0.69
1:A:731:G:OP1	1:A:766:A:H1'	1.93	0.69
1:A:959:A:H3'	1:A:960:U:H5''	1.75	0.69
1:A:1015:A:H2'	1:A:1016:A:C8	2.28	0.69
5:B:42:ILE:HD12	5:B:203:GLY:HA2	1.74	0.69
5:B:97:TRP:HZ2	5:B:102:LEU:HD13	1.58	0.69
5:B:132:LYS:O	5:B:136:VAL:HG23	1.92	0.69
6:C:62:ASP:HA	6:C:97:LYS:CG	2.23	0.69
7:D:65:ARG:HB2	7:D:75:PHE:CE1	2.28	0.69
7:D:103:ASN:OD1	7:D:114:ARG:NH2	2.26	0.69
7:D:156:GLU:O	7:D:159:ARG:HB2	1.93	0.69
9:F:64:GLN:O	9:F:64:GLN:HG2	1.93	0.69
13:J:94:VAL:HG12	13:J:95:GLU:N	2.06	0.69
16:M:4:ILE:HG22	16:M:5:ALA:H	1.57	0.69
22:S:40:ILE:HG21	22:S:62:ILE:HD13	1.73	0.69
23:T:53:LEU:HB2	23:T:100:ILE:CG2	2.23	0.69
13:J:60:ARG:HD2	13:J:60:ARG:N	2.06	0.69
5:B:156:LYS:O	5:B:156:LYS:HD3	1.93	0.69
9:F:30:LEU:HD11	9:F:63:TYR:CD1	2.27	0.69
12:I:89:ASN:ND2	12:I:91:ASP:HB2	2.07	0.69
1:A:393:A:O2'	1:A:394:G:H5'	1.91	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:L:87:GLY:HA2	15:L:98:TYR:HA	1.74	0.68
22:S:44:MET:O	22:S:47:HIS:HB2	1.94	0.68
1:A:975:A:O5'	1:A:976:G:H5'	1.93	0.68
1:A:1030(A):G:H1'	1:A:1031:G:H22	1.57	0.68
20:Q:68:ARG:H	20:Q:70:ARG:NH1	1.91	0.68
1:A:920:U:H2'	1:A:921:U:C6	2.28	0.68
1:A:1020:U:H2'	1:A:1021:G:C8	2.27	0.68
5:B:23:ARG:HH12	5:B:191:ASP:HA	1.58	0.68
6:C:107:GLN:H	6:C:107:GLN:CD	1.95	0.68
7:D:142:PRO:HG2	7:D:187:ARG:NH2	2.07	0.68
13:J:10:GLY:N	13:J:16:LEU:HD21	2.08	0.68
1:A:425:G:O2'	1:A:426:G:H5'	1.94	0.68
8:E:77:PRO:O	8:E:78:HIS:HB3	1.92	0.68
1:A:977:A:C2'	1:A:978:A:H5''	2.24	0.68
1:A:1250:A:H5''	12:I:68:GLY:N	2.09	0.68
1:A:175:C:H2'	1:A:176:C:H6	1.59	0.68
1:A:1051:C:H2'	1:A:1052:U:H6	1.57	0.68
7:D:3:ARG:HB3	7:D:3:ARG:NH1	2.09	0.68
7:D:98:GLU:HG2	7:D:189:PRO:HG3	1.76	0.68
8:E:103:GLY:O	8:E:106:PRO:HD2	1.94	0.68
15:L:93:LEU:CD1	15:L:96:VAL:HG21	2.24	0.68
16:M:88:ARG:HH11	22:S:3:ARG:HH21	1.38	0.68
17:N:27:CYS:SG	17:N:29:ARG:HB2	2.32	0.68
22:S:20:LEU:HA	22:S:23:ASN:ND2	2.07	0.68
5:B:209:ARG:HE	5:B:239:VAL:HG11	1.58	0.68
21:R:53:ARG:HD2	21:R:58:LEU:O	1.93	0.68
1:A:528:C:H41	15:L:49:ASN:ND2	1.89	0.68
5:B:9:GLU:HG2	5:B:10:LEU:N	2.09	0.68
6:C:10:PHE:CZ	6:C:178:LEU:HD13	2.29	0.68
21:R:52:PRO:O	21:R:56:THR:HG23	1.93	0.68
1:A:1057:G:H5''	6:C:154:SER:HB2	1.76	0.68
16:M:117:VAL:HG12	16:M:118:ALA:H	1.59	0.68
22:S:80:TYR:CD2	22:S:81:ARG:N	2.62	0.68
1:A:75:G:O2'	1:A:76:C:H5'	1.95	0.67
1:A:731:G:O2'	1:A:732:C:H5'	1.94	0.67
1:A:620:C:N1	7:D:135:LEU:HD13	2.09	0.67
5:B:128:GLU:HA	5:B:135:GLN:NE2	2.10	0.67
7:D:3:ARG:HB3	7:D:3:ARG:HH11	1.58	0.67
18:O:16:ALA:CB	18:O:21:ASP:HB3	2.24	0.67
5:B:178:ARG:HH21	5:B:196:LEU:CA	2.06	0.67
6:C:23:TYR:HD2	6:C:23:TYR:C	1.98	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:E:144:THR:O	8:E:148:VAL:HG23	1.94	0.67
11:H:85:ARG:HD3	11:H:86:ILE:N	2.09	0.67
15:L:47:LYS:CB	15:L:48:PRO:CD	2.72	0.67
19:P:28:ARG:HG2	19:P:29:ASP:OD1	1.94	0.67
20:Q:97:SER:OG	20:Q:103:GLY:HA2	1.95	0.67
23:T:70:SER:HA	23:T:73:HIS:CD2	2.30	0.67
1:A:1226:C:H5'	16:M:103:THR:OG1	1.94	0.67
14:K:99:GLN:HA	14:K:105:VAL:HG21	1.76	0.67
19:P:10:GLY:HA3	19:P:14:ASN:O	1.94	0.67
12:I:128:ARG:HG2	12:I:128:ARG:OXT	1.95	0.67
15:L:110:VAL:O	15:L:122:THR:HG22	1.93	0.67
1:A:1003(A):G:C2'	1:A:1004:A:H4'	2.24	0.67
1:A:1016:A:H2'	1:A:1017:G:O4'	1.93	0.67
1:A:1319:A:H5'	1:A:1320:C:OP1	1.94	0.67
7:D:32:ALA:C	7:D:34:GLU:N	2.48	0.67
9:F:30:LEU:HB3	9:F:35:ALA:HB3	1.75	0.67
14:K:74:ALA:C	14:K:76:GLY:H	1.97	0.67
22:S:24:ALA:HB3	22:S:25:LYS:NZ	2.10	0.67
7:D:30:LYS:C	7:D:32:ALA:N	2.49	0.67
1:A:954:G:H2'	1:A:955:U:H6	1.60	0.67
1:A:1065:U:H4'	1:A:1066:C:O5'	1.94	0.67
5:B:68:ILE:H	5:B:90:MET:HE3	1.60	0.67
1:A:1229:A:H2'	1:A:1230:C:H6	1.60	0.67
1:A:1329:A:O2'	1:A:1330:U:H5'	1.95	0.67
10:G:23:VAL:HG12	10:G:27:ILE:HD11	1.77	0.67
15:L:43:VAL:HG12	15:L:44:THR:H	1.59	0.67
23:T:39:LYS:HD2	23:T:55:ILE:HD12	1.76	0.67
1:A:1480:G:H2'	1:A:1481:U:C6	2.30	0.66
7:D:23:GLY:O	7:D:27:TYR:HD1	1.78	0.66
1:A:1224:G:H2'	22:S:78:ARG:HH22	1.60	0.66
6:C:191:THR:HG21	6:C:193:TYR:CE2	2.29	0.66
9:F:91:VAL:HG12	9:F:92:LYS:N	2.10	0.66
20:Q:60:ILE:HD13	20:Q:61:GLU:N	2.10	0.66
23:T:90:GLN:O	23:T:93:GLU:HB2	1.94	0.66
24:V:12:LYS:HG3	24:V:17:THR:OG1	1.95	0.66
5:B:139:LYS:O	5:B:143:GLU:HG2	1.95	0.66
12:I:8:GLY:CA	12:I:79:LEU:HD12	2.23	0.66
13:J:15:THR:HG23	13:J:94:VAL:HG22	1.77	0.66
18:O:56:LEU:HA	18:O:59:MET:CE	2.26	0.66
1:A:1381:U:O2'	1:A:1382:C:H5'	1.94	0.66
22:S:16:LEU:C	22:S:18:LYS:H	1.97	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:195:VAL:C	6:C:196:LEU:HD23	2.15	0.66
13:J:10:GLY:H	13:J:16:LEU:HD11	1.60	0.66
14:K:87:THR:HG23	14:K:91:ARG:NH2	2.10	0.66
17:N:9:LYS:O	17:N:9:LYS:HD3	1.95	0.66
1:A:1086:U:H3	1:A:1099:G:H22	1.43	0.66
6:C:19:GLU:HB3	6:C:40:ARG:HH21	1.60	0.66
1:A:939:G:H5''	10:G:102:ARG:NH1	2.10	0.66
1:A:1057:G:O2'	1:A:1058:G:H5'	1.96	0.66
18:O:88:ARG:HH11	18:O:88:ARG:HA	1.60	0.66
21:R:26:LEU:HD23	21:R:29:PHE:CE2	2.31	0.66
22:S:85:LYS:HE3	22:S:85:LYS:N	2.09	0.66
16:M:19:LEU:HA	16:M:22:ILE:HD13	1.78	0.66
1:A:376:G:H2'	1:A:377:G:H8	1.61	0.66
5:B:102:LEU:HD21	5:B:162:ILE:CD1	2.26	0.66
11:H:10:LEU:HD22	11:H:83:ILE:HD11	1.78	0.66
12:I:111:ARG:HH11	12:I:111:ARG:HB3	1.60	0.66
15:L:117:ARG:NH2	15:L:124:LYS:HA	2.10	0.66
23:T:97:ALA:O	23:T:99:LEU:N	2.26	0.66
1:A:457:C:H2'	1:A:458:C:C6	2.31	0.65
1:A:1001:A:H2'	1:A:1002:G:C8	2.31	0.65
6:C:108:ASN:ND2	6:C:111:LEU:HG	2.10	0.65
8:E:72:GLN:O	8:E:73:ASN:HB3	1.95	0.65
12:I:114:TYR:CE1	13:J:60:ARG:HB2	2.31	0.65
13:J:6:ILE:HB	13:J:72:VAL:HB	1.77	0.65
22:S:52:TYR:HA	22:S:56:GLN:O	1.94	0.65
12:I:5:TYR:O	12:I:84:ALA:HA	1.95	0.65
13:J:51:ARG:NH2	13:J:61:GLU:HB2	2.11	0.65
16:M:40:ASN:HB3	16:M:43:THR:HG23	1.78	0.65
18:O:39:LEU:HD22	18:O:56:LEU:HD13	1.78	0.65
19:P:69:THR:O	19:P:72:ARG:HB3	1.96	0.65
1:A:393:A:OP2	19:P:12:LYS:HE2	1.96	0.65
6:C:55:VAL:O	6:C:55:VAL:HG12	1.96	0.65
7:D:112:VAL:HG23	7:D:161:ASN:HD21	1.61	0.65
22:S:22:LEU:HD22	22:S:28:LYS:HD2	1.78	0.65
1:A:1369:C:H2'	1:A:1370:G:C8	2.31	0.65
16:M:102:ARG:NH1	16:M:102:ARG:HB2	2.11	0.65
18:O:77:ARG:O	18:O:80:ALA:HB3	1.95	0.65
23:T:13:LEU:HD12	23:T:14:LYS:N	2.11	0.65
1:A:452:A:O2'	1:A:453:A:H8	1.78	0.65
1:A:1298:C:C4	10:G:114:ARG:HD3	2.31	0.65
7:D:10:ARG:HH11	7:D:10:ARG:HG3	1.62	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:129(A):G:O2'	1:A:130:A:OP2	2.14	0.65
1:A:1002:G:H2'	1:A:1003:G:C8	2.31	0.65
1:A:1178:G:N2	1:A:1180:A:H3'	2.12	0.65
1:A:1330:U:OP1	16:M:23:TYR:O	2.15	0.65
1:A:1426:C:H2'	1:A:1427:U:C6	2.31	0.65
13:J:16:LEU:CD2	13:J:94:VAL:HG13	2.26	0.65
15:L:46:LYS:HE3	15:L:47:LYS:HG3	1.78	0.65
1:A:992:U:H4'	1:A:993:G:O5'	1.96	0.65
1:A:1152:A:H2'	1:A:1153:C:C6	2.32	0.65
19:P:42:ARG:O	19:P:43:LYS:C	2.34	0.65
21:R:33:ASP:OD2	21:R:36:ASN:HB2	1.96	0.65
1:A:149:A:H2'	1:A:150:C:C6	2.30	0.65
1:A:338:A:H2'	1:A:339:C:C6	2.32	0.65
1:A:491:G:H2'	1:A:492:G:H8	1.62	0.65
1:A:1038:C:H2'	1:A:1039:C:C6	2.31	0.65
15:L:53:ARG:NH1	15:L:92:ASP:OD2	2.30	0.65
18:O:74:ASP:OD1	18:O:76:GLU:HB3	1.97	0.65
1:A:624:C:H2'	1:A:625:G:H8	1.62	0.65
1:A:1031:G:H2'	1:A:1032:G:H8	1.60	0.65
12:I:4:TYR:CG	12:I:88:TYR:HB2	2.31	0.65
1:A:860:A:H2'	1:A:861:G:O4'	1.97	0.65
1:A:1226:C:O2	22:S:83:HIS:CE1	2.50	0.65
11:H:104:ARG:NH2	11:H:138:TRP:CH2	2.65	0.65
12:I:93:ARG:HB3	12:I:97:LYS:CE	2.23	0.65
14:K:54:ARG:O	14:K:57:THR:CG2	2.45	0.65
20:Q:26:GLN:O	20:Q:27:PHE:HB3	1.97	0.65
1:A:405:U:H3'	1:A:406:G:H5'	1.79	0.64
1:A:1047:G:H5''	17:N:4:LYS:HG3	1.79	0.64
5:B:98:LEU:O	5:B:101:MET:HG3	1.97	0.64
1:A:1202:G:O2'	1:A:1203:C:H5'	1.97	0.64
10:G:15:ASP:HB3	10:G:19:GLY:H	1.61	0.64
10:G:70:LYS:HG2	10:G:100:ALA:HB2	1.79	0.64
1:A:141:A:H1'	1:A:182:U:O2	1.96	0.64
1:A:260:G:H2'	1:A:261:U:C6	2.32	0.64
1:A:458:C:H2'	1:A:459:G:H8	1.61	0.64
1:A:1010:G:H2'	1:A:1011:G:H8	1.63	0.64
1:A:1056:U:H5'	6:C:163:ALA:HB2	1.79	0.64
6:C:107:GLN:O	6:C:108:ASN:HB3	1.95	0.64
6:C:138:VAL:HG22	6:C:151:VAL:HG23	1.79	0.64
9:F:97:PHE:HB2	21:R:32:ARG:HH21	1.62	0.64
5:B:18:GLY:CA	5:B:41:ILE:HA	2.25	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:F:19:LEU:C	9:F:19:LEU:HD23	2.18	0.64
12:I:120:ARG:O	12:I:122:ALA:N	2.30	0.64
19:P:28:ARG:HG2	19:P:28:ARG:HH11	1.62	0.64
20:Q:81:ARG:HG3	20:Q:81:ARG:O	1.97	0.64
1:A:113:G:H1'	1:A:354:G:H5'	1.80	0.64
6:C:110:ASN:O	6:C:111:LEU:HD23	1.97	0.64
8:E:13:ILE:HG22	8:E:30:ALA:HB2	1.78	0.64
14:K:87:THR:HG22	14:K:88:GLY:H	1.61	0.64
16:M:37:THR:O	16:M:39:ILE:HG13	1.98	0.64
1:A:677:U:H3	1:A:713:G:H22	1.43	0.64
5:B:223:ILE:O	5:B:225:ALA:N	2.26	0.64
10:G:50:ILE:O	10:G:54:THR:HB	1.98	0.64
1:A:1001:A:H2'	1:A:1002:G:H8	1.62	0.64
1:A:1068:G:N7	1:A:1094:G:H2'	2.13	0.64
5:B:77:ALA:CB	5:B:211:ILE:HD13	2.27	0.64
6:C:23:TYR:CD2	6:C:23:TYR:C	2.71	0.64
15:L:45:PRO:HD3	15:L:51:ALA:O	1.98	0.64
6:C:110:ASN:HD21	6:C:140:ARG:HB3	1.62	0.64
10:G:67:GLU:HA	10:G:70:LYS:HE2	1.79	0.64
12:I:79:LEU:HD11	12:I:83:ARG:HD2	1.79	0.64
15:L:83:VAL:HG21	15:L:100:ILE:HD13	1.79	0.64
16:M:54:VAL:O	16:M:58:GLU:HG2	1.98	0.64
1:A:287:U:O2'	1:A:288:A:H5'	1.98	0.64
1:A:397:A:H5'	1:A:398:C:OP1	1.98	0.64
1:A:1145:C:O2'	1:A:1146:A:H8	1.79	0.64
6:C:64:VAL:HB	6:C:99:VAL:HG23	1.78	0.64
12:I:78:LYS:HD3	12:I:101:PHE:CD2	2.33	0.64
13:J:60:ARG:O	13:J:61:GLU:HB3	1.98	0.64
15:L:47:LYS:HB3	15:L:48:PRO:CD	2.28	0.64
1:A:147:G:O2'	1:A:148:G:H5'	1.98	0.64
6:C:188:LEU:O	6:C:189:ALA:HB2	1.97	0.64
6:C:189:ALA:HB3	6:C:196:LEU:O	1.98	0.64
15:L:27:LEU:C	15:L:29:GLY:N	2.48	0.64
18:O:33:THR:HG23	18:O:63:ARG:NH1	2.13	0.64
22:S:22:LEU:HD13	22:S:28:LYS:CB	2.27	0.64
1:A:328:C:H4'	1:A:329:A:O5'	1.97	0.63
1:A:853:G:O2'	1:A:854:G:H5'	1.98	0.63
1:A:1468:A:H2'	1:A:1469:G:O4'	1.97	0.63
8:E:40:ARG:HG2	8:E:40:ARG:HH11	1.62	0.63
11:H:86:ILE:HD11	11:H:136:GLU:HB2	1.80	0.63
23:T:56:MET:HE3	23:T:88:VAL:HG11	1.78	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:669:U:H2'	1:A:670:G:C8	2.33	0.63
1:A:1030:C:H2'	1:A:1030(A):G:H5'	1.80	0.63
1:A:1030(C):G:H2'	1:A:1030(D):A:H8	1.63	0.63
5:B:50:GLU:HG3	5:B:200:ILE:HD11	1.79	0.63
13:J:30:SER:HB3	13:J:84:GLN:NE2	2.14	0.63
16:M:36:LYS:HD2	16:M:59:TYR:OH	1.99	0.63
17:N:14:PRO:O	17:N:15:LYS:HB3	1.99	0.63
22:S:20:LEU:O	22:S:23:ASN:HB2	1.98	0.63
1:A:390:C:O3'	19:P:28:ARG:NH2	2.31	0.63
1:A:1054:C:O2	1:A:1054:C:C3'	2.45	0.63
6:C:62:ASP:HA	6:C:97:LYS:HG2	1.81	0.63
7:D:108:LEU:HD23	7:D:174:LEU:HD13	1.78	0.63
7:D:152:SER:O	7:D:158:ILE:HD12	1.99	0.63
11:H:31:PHE:O	11:H:35:ILE:HD12	1.98	0.63
6:C:134:ILE:HG22	6:C:168:ALA:HB3	1.81	0.63
8:E:93:PRO:HG2	11:H:105:ARG:NH2	2.13	0.63
10:G:87:VAL:HG13	10:G:88:PRO:HD2	1.80	0.63
14:K:84:VAL:HG21	21:R:88:LYS:HD3	1.80	0.63
23:T:10:LEU:HD12	23:T:12:ALA:HB3	1.80	0.63
1:A:1222:G:O2'	1:A:1223:C:H5'	1.99	0.63
1:A:1250:A:C4'	12:I:68:GLY:H	2.10	0.63
1:A:1333:A:H2'	1:A:1334:G:O4'	1.98	0.63
8:E:71:LEU:HD21	8:E:115:VAL:HG23	1.80	0.63
9:F:2:ARG:CZ	9:F:69:GLU:HG2	2.28	0.63
13:J:90:LEU:H	13:J:91:PRO:CD	2.06	0.63
1:A:1262:C:H2'	1:A:1263:C:H6	1.63	0.63
5:B:39:ILE:HG22	5:B:40:HIS:O	1.98	0.63
8:E:76:ILE:HG23	8:E:77:PRO:HD2	1.78	0.63
12:I:114:TYR:CD1	13:J:60:ARG:HB2	2.33	0.63
21:R:55:ARG:NH1	21:R:55:ARG:HB3	2.13	0.63
1:A:190(H):G:O2'	1:A:190(I):G:H5'	1.98	0.63
1:A:627:G:O2'	1:A:628:G:H5'	1.98	0.63
1:A:1347:G:O2'	1:A:1348:U:P	2.55	0.63
10:G:71:PRO:HD3	10:G:103:TRP:CZ3	2.33	0.63
18:O:39:LEU:HD23	18:O:39:LEU:C	2.19	0.63
6:C:15:THR:O	6:C:16:ARG:HB2	1.98	0.63
13:J:20:ALA:O	13:J:24:VAL:HG23	1.98	0.63
15:L:6:THR:OG1	15:L:9:GLN:HG3	1.99	0.63
1:A:353:A:H5'	1:A:353:A:C8	2.34	0.63
5:B:102:LEU:HD21	5:B:162:ILE:HD12	1.80	0.63
6:C:70:VAL:HG12	6:C:71:ALA:N	2.13	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:M:34:LEU:HD13	16:M:41:PRO:HA	1.79	0.63
1:A:1095:U:H2'	1:A:1096:C:H6	1.64	0.62
1:A:1370:G:O2'	1:A:1371:G:H5'	1.98	0.62
5:B:217:ARG:HA	5:B:220:ASP:OD2	1.98	0.62
6:C:77:ILE:HA	6:C:84:ILE:HB	1.80	0.62
7:D:126:ILE:HG22	7:D:127:THR:H	1.64	0.62
10:G:59:LEU:HD11	10:G:63:LYS:HE3	1.81	0.62
1:A:160:A:H1'	1:A:344:A:N7	2.14	0.62
1:A:186:C:O3'	23:T:82:SER:HB3	1.99	0.62
1:A:192:U:H1'	23:T:103:GLY:HA2	1.82	0.62
1:A:352:C:H4'	1:A:354:G:OP1	1.99	0.62
1:A:673:G:H2'	1:A:674:G:C8	2.34	0.62
1:A:1251:A:H4'	12:I:12:GLU:OE1	1.99	0.62
1:A:1306:A:N6	1:A:1331:G:H1'	2.14	0.62
5:B:102:LEU:HB3	5:B:180:LEU:HD12	1.81	0.62
20:Q:63:ARG:HG2	20:Q:64:PRO:N	2.13	0.62
1:A:107:G:C2'	1:A:108:G:H5'	2.29	0.62
1:A:838:G:H2'	1:A:839:U:H5''	1.80	0.62
1:A:1250:A:H4'	12:I:68:GLY:N	2.14	0.62
15:L:115:LYS:O	15:L:117:ARG:N	2.32	0.62
17:N:3:ARG:CZ	17:N:6:LEU:HD11	2.29	0.62
1:A:258:G:H2'	1:A:259:G:H8	1.64	0.62
1:A:528:C:H5'	1:A:535:A:C6	2.34	0.62
1:A:960:U:O2	1:A:960:U:H2'	1.98	0.62
1:A:1513:A:H2'	1:A:1514:C:C6	2.34	0.62
6:C:47:LEU:H	6:C:47:LEU:CD1	2.13	0.62
11:H:134:ILE:HG22	11:H:135:CYS:N	2.14	0.62
12:I:25:LYS:HG2	12:I:60:ASP:OD2	1.99	0.62
12:I:100:GLY:O	12:I:102:LEU:N	2.30	0.62
14:K:80:VAL:HG21	14:K:103:LEU:HD13	1.81	0.62
16:M:62:ASN:O	16:M:63:THR:HB	1.99	0.62
1:A:1221:G:O3'	22:S:77:THR:HG21	1.98	0.62
1:A:1438:G:H2'	1:A:1439:C:C6	2.35	0.62
5:B:98:LEU:HD23	5:B:98:LEU:N	2.15	0.62
8:E:12:LEU:CD1	8:E:31:LEU:HB2	2.30	0.62
20:Q:68:ARG:H	20:Q:70:ARG:HH11	1.47	0.62
1:A:344:A:H4'	1:A:345:C:OP2	2.00	0.62
1:A:386:C:O2'	1:A:387:U:H5'	1.99	0.62
1:A:967:C:C4'	12:I:128:ARG:HG3	2.29	0.62
6:C:191:THR:CG2	6:C:192:THR:H	2.12	0.62
21:R:61:LYS:O	21:R:65:ILE:HG13	2.00	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:357:G:O2'	1:A:358:U:H5'	2.00	0.62
1:A:761:G:H5''	20:Q:102:GLY:HA3	1.79	0.62
1:A:1072:G:H2'	1:A:1073:U:C6	2.33	0.62
23:T:96:GLY:O	23:T:97:ALA:CB	2.47	0.62
1:A:390:C:H2'	1:A:391:G:H8	1.63	0.62
5:B:124:SER:O	5:B:127:ILE:HG13	1.99	0.62
5:B:185:ILE:HD12	5:B:185:ILE:H	1.65	0.62
11:H:138:TRP:CE3	11:H:138:TRP:OXT	2.53	0.62
17:N:32:SER:HB2	17:N:41:ARG:HB3	1.81	0.62
1:A:192:U:C1'	23:T:103:GLY:HA2	2.30	0.62
1:A:371:G:C2'	1:A:372:C:H5'	2.30	0.62
5:B:84:GLU:OE1	5:B:216:SER:HA	1.99	0.62
9:F:67:MET:CE	9:F:72:VAL:HA	2.30	0.62
12:I:47:LEU:C	12:I:49:PRO:HD2	2.20	0.62
15:L:24:VAL:O	15:L:26:ALA:N	2.31	0.62
1:A:190(F):G:H4'	1:A:190(G):G:OP2	1.99	0.61
8:E:36:ASP:O	8:E:37:ARG:HB2	1.99	0.61
13:J:51:ARG:CZ	13:J:61:GLU:HB2	2.30	0.61
15:L:57:LYS:HD3	15:L:67:THR:HB	1.82	0.61
16:M:49:THR:HG22	16:M:51:ALA:N	2.06	0.61
16:M:50:GLU:O	16:M:54:VAL:HG23	1.99	0.61
1:A:1152:A:H5'	13:J:70:ARG:NH2	2.15	0.61
1:A:1527:C:O2'	1:A:1528:U:H5'	1.99	0.61
7:D:176:LEU:HA	7:D:183:GLY:HA2	1.82	0.61
9:F:67:MET:HE1	9:F:72:VAL:HA	1.82	0.61
14:K:72:ALA:HB1	14:K:77:MET:HG3	1.81	0.61
22:S:87:ALA:O	22:S:88:LYS:HB3	2.00	0.61
1:A:1112:C:N3	6:C:178:LEU:N	2.47	0.61
1:A:1161:C:H2'	1:A:1162:C:C6	2.34	0.61
1:A:1226:C:C5	16:M:104:ARG:HA	2.35	0.61
2:X:2:U:H2'	2:X:3:U:H5'	1.82	0.61
10:G:122:HIS:HA	10:G:125:MET:HE3	1.82	0.61
12:I:49:PRO:HD3	12:I:78:LYS:HG2	1.82	0.61
15:L:34:ARG:O	15:L:61:THR:HG23	1.99	0.61
22:S:40:ILE:HG21	22:S:62:ILE:CD1	2.30	0.61
1:A:187:C:O2	23:T:105:SER:HB3	2.01	0.61
1:A:560:U:O2'	1:A:561:U:OP2	2.11	0.61
1:A:580:U:H2'	1:A:581:G:O4'	1.99	0.61
1:A:689:C:P	14:K:46:GLY:HA3	2.41	0.61
1:A:1148:U:H2'	1:A:1149:C:O4'	2.00	0.61
5:B:126:GLU:O	5:B:129:GLU:HB3	2.01	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:19:GLU:HG2	6:C:54:ARG:HE	1.65	0.61
8:E:33:VAL:HG11	8:E:109:ILE:HA	1.82	0.61
10:G:51:GLN:C	10:G:53:LYS:H	2.03	0.61
12:I:19:LEU:HD23	12:I:61:ALA:HB2	1.83	0.61
1:A:839:U:H5'	1:A:840:C:H5	1.65	0.61
1:A:840:C:H5''	1:A:841:U:OP1	2.00	0.61
1:A:1296:C:H4'	1:A:1302:U:C5	2.36	0.61
6:C:47:LEU:N	6:C:47:LEU:HD12	2.15	0.61
7:D:3:ARG:H	7:D:3:ARG:CZ	2.14	0.61
9:F:18:GLN:O	9:F:21:LEU:HB3	2.00	0.61
12:I:48:GLU:N	12:I:49:PRO:HD2	2.15	0.61
6:C:6:HIS:CD2	6:C:9:GLY:H	2.16	0.61
6:C:52:LEU:H	6:C:52:LEU:CD2	2.13	0.61
11:H:60:ARG:HH11	11:H:60:ARG:HG3	1.65	0.61
11:H:118:VAL:C	11:H:119:LEU:HD23	2.19	0.61
23:T:97:ALA:O	23:T:99:LEU:HG	2.01	0.61
1:A:501:C:H2'	1:A:502:G:C8	2.33	0.61
1:A:1202:G:C2'	1:A:1203:C:H5'	2.31	0.61
1:A:1325:C:O3'	24:V:17:THR:HG21	2.01	0.61
5:B:223:ILE:C	5:B:225:ALA:H	2.03	0.61
9:F:99:ALA:HB2	21:R:31:LEU:CD1	2.31	0.61
10:G:51:GLN:O	10:G:53:LYS:N	2.34	0.61
18:O:7:GLU:O	18:O:11:VAL:HG23	2.00	0.61
20:Q:5:VAL:O	20:Q:6:LEU:HD23	2.00	0.61
1:A:386:C:C2'	1:A:387:U:H5'	2.30	0.61
1:A:496:A:H4'	1:A:497:A:OP1	1.98	0.61
1:A:958:A:C8	22:S:55:LYS:HD2	2.36	0.61
1:A:975:A:H5'	1:A:975:A:H8	1.65	0.61
1:A:1002:G:H2'	1:A:1003:G:H8	1.66	0.61
1:A:1250:A:H5''	12:I:68:GLY:H	1.63	0.61
1:A:545:C:O2'	1:A:546:G:H5'	2.01	0.61
1:A:939:G:H5''	10:G:102:ARG:CZ	2.31	0.61
1:A:1056:U:C5'	6:C:163:ALA:HB2	2.31	0.61
9:F:75:LEU:O	9:F:78:GLU:HB3	2.01	0.61
12:I:90:PRO:O	12:I:93:ARG:HG3	2.01	0.61
1:A:1339:A:H2'	1:A:1340:A:O4'	2.01	0.61
6:C:70:VAL:O	6:C:106:VAL:HG23	2.00	0.61
7:D:20:TYR:O	7:D:21:LEU:HD23	2.01	0.61
13:J:23:ILE:HD12	13:J:23:ILE:N	2.15	0.61
13:J:82:ILE:HG22	13:J:82:ILE:O	2.00	0.61
14:K:69:ALA:O	14:K:73:MET:HG2	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:L:92:ASP:HB2	15:L:93:LEU:HD23	1.83	0.61
15:L:119:LYS:O	15:L:120:TYR:HB2	2.01	0.61
18:O:56:LEU:HA	18:O:59:MET:HE3	1.82	0.61
22:S:45:VAL:HG12	22:S:46:GLY:N	2.16	0.61
23:T:87:LYS:O	23:T:91:LEU:HD12	2.01	0.61
1:A:411:A:N9	1:A:413:G:H1'	2.15	0.60
8:E:44:GLY:HA3	8:E:62:ALA:HB2	1.81	0.60
12:I:17:VAL:CG2	12:I:80:GLY:HA3	2.31	0.60
16:M:4:ILE:CG2	16:M:5:ALA:N	2.61	0.60
16:M:32:GLU:OE1	16:M:64:TRP:HZ2	1.83	0.60
21:R:53:ARG:NH1	21:R:60:GLY:N	2.49	0.60
1:A:924:C:H5'	1:A:1399:C:OP2	2.02	0.60
1:A:975:A:H5'	1:A:975:A:C8	2.36	0.60
1:A:1030(D):A:H2'	1:A:1031:G:H5'	1.83	0.60
5:B:8:LYS:N	5:B:8:LYS:HD2	2.16	0.60
5:B:136:VAL:HG12	5:B:140:HIS:NE2	2.17	0.60
11:H:101:PRO:HG3	11:H:133:LEU:HD11	1.81	0.60
12:I:81:ILE:O	12:I:85:LEU:HB2	2.01	0.60
13:J:6:ILE:HG23	13:J:98:ILE:CD1	2.30	0.60
16:M:97:PRO:HB2	16:M:101:GLN:OE1	2.01	0.60
1:A:560:U:H5'	1:A:566:G:C2	2.35	0.60
1:A:1004:A:H2'	1:A:1005:A:C5'	2.25	0.60
1:A:1053:G:C4'	1:A:1054:C:H5'	2.30	0.60
16:M:5:ALA:HB3	16:M:8:GLU:CG	2.31	0.60
23:T:67:ALA:HB2	23:T:77:ALA:HB2	1.83	0.60
1:A:1281:U:H4'	1:A:1282:C:OP2	2.02	0.60
1:A:1347:G:O2'	1:A:1348:U:OP2	2.18	0.60
5:B:134:GLU:C	5:B:136:VAL:H	2.04	0.60
6:C:27:LYS:HA	6:C:30:ARG:HH12	1.64	0.60
8:E:115:VAL:CG1	8:E:116:THR:N	2.65	0.60
11:H:91:ARG:HG3	15:L:7:ILE:HG13	1.84	0.60
13:J:23:ILE:H	13:J:23:ILE:CD1	2.12	0.60
16:M:102:ARG:HB2	16:M:102:ARG:HH11	1.66	0.60
22:S:30:LEU:O	22:S:31:ILE:HD13	2.02	0.60
22:S:53:ASN:HD22	22:S:53:ASN:N	1.99	0.60
1:A:858:G:O2'	1:A:859:A:H5'	2.02	0.60
1:A:954:G:H2'	1:A:955:U:C6	2.35	0.60
1:A:1207:G:H2'	1:A:1208:C:H6	1.66	0.60
5:B:115:LEU:HD21	5:B:153:ARG:CZ	2.31	0.60
9:F:82:ARG:HA	9:F:82:ARG:HE	1.67	0.60
13:J:79:ARG:O	13:J:83:GLU:HB2	2.00	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:420:U:H2'	1:A:422:C:C5	2.36	0.60
1:A:686:U:O4	1:A:703:G:H1'	2.01	0.60
1:A:1222:G:P	22:S:77:THR:HG21	2.42	0.60
6:C:19:GLU:O	6:C:40:ARG:NH2	2.35	0.60
6:C:29:TYR:OH	17:N:54:PRO:HG2	2.01	0.60
16:M:81:LEU:O	16:M:89:GLY:HA3	2.01	0.60
21:R:48:GLY:O	21:R:74:ARG:NH2	2.35	0.60
1:A:300:A:H2'	1:A:301:G:O4'	2.02	0.60
8:E:32:VAL:O	8:E:43:LEU:HD23	2.02	0.60
20:Q:104:LYS:O	20:Q:105:ALA:HB2	2.02	0.60
22:S:15:LEU:HD21	22:S:38:SER:CB	2.31	0.60
1:A:1358:U:H3'	1:A:1359:C:H6	1.65	0.60
1:A:1426:C:H2'	1:A:1427:U:H6	1.66	0.60
5:B:129:GLU:O	5:B:130:ARG:HB2	2.02	0.60
6:C:155:GLY:O	6:C:156:ARG:HB2	2.02	0.60
7:D:59:ARG:HH22	7:D:66:ARG:NH1	2.00	0.60
11:H:97:VAL:HA	11:H:100:ILE:HG13	1.83	0.60
14:K:99:GLN:HA	14:K:105:VAL:CG2	2.30	0.60
15:L:27:LEU:O	15:L:29:GLY:N	2.34	0.60
23:T:50:GLU:HA	23:T:100:ILE:HB	1.82	0.60
1:A:1004:A:H5'	1:A:1024:G:H1	1.66	0.60
1:A:1117:G:H5'	1:A:1117:G:H8	1.67	0.60
1:A:1251:A:H2'	1:A:1252:A:C8	2.37	0.60
5:B:218:ALA:O	5:B:222:ILE:HG13	2.01	0.60
7:D:162:LEU:O	7:D:162:LEU:HD23	2.02	0.60
8:E:81:GLU:HG2	8:E:90:VAL:HG13	1.81	0.60
8:E:92:LYS:O	8:E:118:ILE:HG22	2.02	0.60
16:M:19:LEU:O	16:M:22:ILE:HD13	2.02	0.60
22:S:28:LYS:HG2	22:S:29:ARG:H	1.67	0.60
23:T:71:THR:O	23:T:72:LEU:HD23	2.01	0.60
1:A:1128:C:O2'	1:A:1130:A:H8	1.84	0.60
1:A:1329:A:P	16:M:28:ALA:HB3	2.41	0.60
6:C:58:GLU:HB2	6:C:65:ALA:HB2	1.84	0.60
22:S:3:ARG:HH22	22:S:69:HIS:CE1	2.18	0.60
23:T:40:ALA:HB2	23:T:55:ILE:HG22	1.83	0.60
1:A:434:U:H2'	1:A:435:C:C6	2.37	0.59
1:A:1165:C:O2'	1:A:1166:G:H5'	2.01	0.59
1:A:1195:C:H3'	1:A:1196:U:C5'	2.32	0.59
1:A:1257:U:H5'	1:A:1258:G:OP1	2.02	0.59
5:B:42:ILE:CD1	5:B:203:GLY:HA2	2.32	0.59
5:B:87:ARG:NH1	5:B:233:SER:HA	2.15	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:167:PRO:HG2	5:B:168:THR:H	1.66	0.59
6:C:115:LEU:HD23	6:C:118:GLN:OE1	2.01	0.59
7:D:25:ARG:C	7:D:27:TYR:N	2.49	0.59
16:M:24:GLY:HA3	16:M:66:LEU:HD22	1.84	0.59
22:S:15:LEU:HD21	22:S:38:SER:HB3	1.84	0.59
23:T:96:GLY:O	23:T:97:ALA:HB3	2.02	0.59
7:D:101:LEU:HD23	7:D:101:LEU:C	2.22	0.59
7:D:145:GLU:C	7:D:146:ILE:HD12	2.23	0.59
9:F:3:ARG:HH21	9:F:64:GLN:NE2	2.00	0.59
15:L:47:LYS:CB	15:L:48:PRO:HD3	2.32	0.59
23:T:54:LYS:HA	23:T:57:ARG:HH11	1.67	0.59
1:A:179:A:H2'	1:A:180:U:C6	2.37	0.59
1:A:255:G:O6	1:A:266:G:O6	2.20	0.59
1:A:867:G:O2'	1:A:868:C:H5'	2.03	0.59
1:A:1182:G:O2'	1:A:1183:A:OP2	2.18	0.59
1:A:1470:G:O2'	1:A:1471:G:H5'	2.02	0.59
10:G:85:TYR:HD1	10:G:154:TYR:HE1	1.51	0.59
1:A:664:G:H22	1:A:741:G:H1	1.49	0.59
1:A:1495:U:H2'	1:A:1496:C:C6	2.37	0.59
6:C:36:ASP:HA	6:C:39:ILE:HD12	1.83	0.59
8:E:78:HIS:HD2	11:H:107:LEU:HD22	1.67	0.59
13:J:96:ILE:HG22	13:J:97:GLU:N	2.17	0.59
16:M:74:VAL:O	16:M:77:ASN:HB3	2.03	0.59
17:N:21:TYR:HE2	17:N:23:ARG:NE	2.01	0.59
23:T:26:ASN:HB3	23:T:71:THR:HG23	1.83	0.59
12:I:112:LYS:HD3	12:I:112:LYS:C	2.23	0.59
15:L:97:ARG:HB2	15:L:98:TYR:CE1	2.38	0.59
1:A:1347:G:C2'	1:A:1348:U:OP2	2.51	0.59
1:A:1412:C:H2'	1:A:1413:A:C8	2.37	0.59
6:C:12:LEU:HD11	17:N:51:GLY:HA2	1.84	0.59
6:C:25:GLY:N	6:C:28:GLN:HB2	2.15	0.59
13:J:3:LYS:N	13:J:75:ILE:HA	2.18	0.59
1:A:1128:C:O2'	1:A:1130:A:C8	2.53	0.59
1:A:1329:A:OP1	16:M:28:ALA:HB3	2.02	0.59
1:A:1413:A:H2	1:A:1487:G:H22	1.47	0.59
6:C:3:ASN:ND2	6:C:3:ASN:H	1.99	0.59
7:D:104:VAL:HG21	7:D:140:VAL:HG21	1.84	0.59
10:G:58:PRO:HG2	10:G:59:LEU:H	1.67	0.59
13:J:47:PHE:HB2	13:J:63:PHE:HB2	1.84	0.59
1:A:666:G:H5'	1:A:726:C:H1'	1.83	0.59
1:A:1030(C):G:H2'	1:A:1030(D):A:C8	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1241:G:H2'	1:A:1242:C:C6	2.37	0.59
5:B:103:THR:O	5:B:103:THR:HG22	2.01	0.59
5:B:180:LEU:O	5:B:181:PHE:HB2	2.02	0.59
7:D:149:ALA:HB3	7:D:152:SER:CB	2.32	0.59
1:A:1367:C:H5'	13:J:60:ARG:NH1	2.17	0.59
5:B:114:ARG:HH12	5:B:118:LEU:HD21	1.66	0.59
5:B:187:LEU:HD23	5:B:214:ILE:HG21	1.83	0.59
6:C:147:LYS:HD2	6:C:203:PHE:HE2	1.68	0.59
7:D:150:GLU:H	7:D:150:GLU:CD	2.05	0.59
20:Q:68:ARG:HG2	20:Q:68:ARG:HH11	1.68	0.59
20:Q:101:ARG:HA	20:Q:101:ARG:NE	2.18	0.59
22:S:33:THR:HG22	22:S:34:TRP:N	2.17	0.59
1:A:438:G:C4'	1:A:439:A:OP1	2.49	0.59
1:A:619:U:O2	7:D:133:VAL:HA	2.03	0.59
1:A:947:G:H2'	1:A:948:C:O4'	2.03	0.59
5:B:101:MET:HA	5:B:108:ILE:HG13	1.84	0.59
5:B:140:HIS:O	5:B:143:GLU:HB2	2.03	0.59
5:B:224:GLN:O	5:B:224:GLN:HG2	2.02	0.59
12:I:93:ARG:HE	12:I:97:LYS:HE3	1.68	0.59
16:M:40:ASN:HD22	16:M:41:PRO:CD	2.16	0.59
1:A:46:G:H2'	1:A:366:C:C5	2.38	0.58
1:A:149:A:O2'	1:A:150:C:H5'	2.02	0.58
1:A:160:A:H2'	1:A:161:A:O4'	2.02	0.58
1:A:1052:U:H2'	1:A:1055:A:OP1	2.03	0.58
1:A:1182:G:H4'	1:A:1183:A:H5''	1.84	0.58
1:A:1329:A:C2'	1:A:1330:U:H5'	2.33	0.58
5:B:118:LEU:HD11	5:B:141:GLU:OE2	2.03	0.58
5:B:184:VAL:N	5:B:198:ASP:OD2	2.33	0.58
5:B:200:ILE:HD12	5:B:200:ILE:O	2.02	0.58
7:D:57:ARG:NH2	7:D:205:GLU:OE2	2.36	0.58
13:J:12:ASP:HB3	13:J:15:THR:HB	1.85	0.58
1:A:899:C:H2'	1:A:900:A:C8	2.37	0.58
1:A:913:A:H1'	1:A:914:A:O4'	2.02	0.58
5:B:15:VAL:O	5:B:16:HIS:O	2.21	0.58
5:B:128:GLU:HA	5:B:135:GLN:HE21	1.68	0.58
20:Q:10:VAL:O	20:Q:53:LEU:HD13	2.03	0.58
22:S:7:LYS:O	22:S:7:LYS:HD3	2.02	0.58
22:S:62:ILE:HD12	22:S:63:THR:N	2.18	0.58
1:A:403:C:H2'	1:A:404:U:H6	1.67	0.58
1:A:1149:C:H2'	1:A:1150:U:C6	2.38	0.58
6:C:174:PRO:O	6:C:177:THR:HG22	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:D:3:ARG:CZ	7:D:3:ARG:N	2.66	0.58
7:D:61:LYS:HD2	7:D:207:TYR:OH	2.04	0.58
12:I:114:TYR:CE1	13:J:59:SER:O	2.56	0.58
5:B:25:ASN:HD22	5:B:27:LYS:H	1.50	0.58
5:B:130:ARG:CB	5:B:131:PRO:HD2	2.33	0.58
5:B:178:ARG:HG3	5:B:178:ARG:NH1	2.11	0.58
6:C:47:LEU:HD23	6:C:68:VAL:HG11	1.85	0.58
6:C:131:ARG:O	6:C:135:LYS:HG3	2.04	0.58
12:I:78:LYS:HD3	12:I:101:PHE:HD2	1.68	0.58
18:O:41:GLU:HA	18:O:44:LYS:HG2	1.85	0.58
19:P:52:ASP:O	19:P:52:ASP:OD1	2.21	0.58
20:Q:69:LYS:O	20:Q:70:ARG:HD2	2.03	0.58
22:S:45:VAL:HA	22:S:62:ILE:HG13	1.85	0.58
1:A:481:G:O2'	1:A:483:C:N4	2.37	0.58
1:A:1226:C:O2	22:S:83:HIS:NE2	2.36	0.58
6:C:64:VAL:HG12	6:C:66:VAL:HG23	1.85	0.58
11:H:109:ILE:HG13	11:H:110:ALA:N	2.18	0.58
17:N:37:PHE:CE2	17:N:53:LEU:HD13	2.39	0.58
1:A:21:G:H2'	1:A:22:G:C8	2.39	0.58
1:A:613:C:O2'	1:A:614:A:H5'	2.02	0.58
1:A:691:G:O2'	1:A:797:C:H4'	2.03	0.58
1:A:1158:C:H5''	5:B:133:LYS:HE3	1.85	0.58
8:E:122:GLU:OE1	8:E:131:ILE:HG13	2.03	0.58
11:H:103:VAL:HG21	11:H:110:ALA:HB2	1.86	0.58
16:M:23:TYR:HB2	16:M:67:GLU:OE2	2.03	0.58
22:S:25:LYS:HD2	22:S:25:LYS:N	2.19	0.58
22:S:28:LYS:HG2	22:S:29:ARG:N	2.17	0.58
1:A:961:U:O2'	1:A:962:C:H5'	2.03	0.58
1:A:1091:U:O2	1:A:1093:A:C8	2.57	0.58
1:A:1138:G:C6	1:A:1140:C:H1'	2.38	0.58
9:F:10:LEU:HD11	9:F:59:TYR:HD2	1.69	0.58
10:G:23:VAL:CG1	10:G:27:ILE:HD11	2.34	0.58
12:I:79:LEU:CD1	12:I:83:ARG:HD2	2.34	0.58
13:J:31:GLY:HA2	13:J:78:ASN:ND2	2.19	0.58
15:L:88:GLY:H	15:L:98:TYR:HA	1.69	0.58
20:Q:66:SER:O	20:Q:70:ARG:NH1	2.37	0.58
1:A:254:G:O2'	1:A:255:G:H5'	2.04	0.58
1:A:256:U:H2'	1:A:257:G:C8	2.39	0.58
1:A:284:G:H2'	1:A:285:G:H8	1.69	0.58
1:A:403:C:O2'	1:A:404:U:H5'	2.04	0.58
1:A:915:A:H2'	1:A:916:G:H5'	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:939:G:H2'	1:A:940:C:C6	2.39	0.58
1:A:977:A:H2'	1:A:978:A:C5'	2.32	0.58
1:A:1320:C:N3	22:S:36:ARG:HG3	2.19	0.58
6:C:29:TYR:CZ	17:N:54:PRO:HG2	2.39	0.58
21:R:57:GLY:C	21:R:58:LEU:HD23	2.24	0.58
1:A:882:C:O2'	1:A:883:C:H5'	2.03	0.58
1:A:1030(A):G:H1'	1:A:1031:G:N2	2.19	0.58
1:A:1053:G:C3'	1:A:1054:C:H5'	2.34	0.58
1:A:1366:C:H2'	1:A:1367:C:C6	2.34	0.58
1:A:1495:U:H2'	1:A:1496:C:H6	1.69	0.58
5:B:28:PHE:CE1	5:B:189:ASP:HA	2.39	0.58
7:D:132:ARG:O	7:D:133:VAL:HG23	2.04	0.58
13:J:51:ARG:HB3	13:J:59:SER:HB3	1.86	0.58
13:J:81:THR:C	13:J:83:GLU:H	2.07	0.58
13:J:94:VAL:HG12	13:J:95:GLU:H	1.66	0.58
16:M:60:VAL:HG22	16:M:64:TRP:CZ3	2.39	0.58
16:M:81:LEU:O	16:M:86:CYS:HB3	2.03	0.58
19:P:67:THR:HG22	19:P:68:ASP:N	2.19	0.58
1:A:1423:G:O2'	1:A:1424:C:H5'	2.03	0.58
5:B:19:HIS:HB3	5:B:189:ASP:OD2	2.04	0.58
5:B:100:GLY:O	5:B:104:ASN:N	2.36	0.58
7:D:174:LEU:O	7:D:186:LEU:HD11	2.03	0.58
8:E:15:ARG:O	8:E:27:ARG:O	2.22	0.58
12:I:114:TYR:H	12:I:114:TYR:HD2	1.51	0.58
18:O:50:HIS:O	18:O:53:HIS:N	2.37	0.58
18:O:87:ILE:O	18:O:88:ARG:HB2	2.04	0.58
5:B:142:LEU:HD22	5:B:146:GLN:HE22	1.68	0.57
7:D:8:VAL:O	7:D:10:ARG:N	2.37	0.57
7:D:146:ILE:N	7:D:146:ILE:CD1	2.67	0.57
9:F:101:ALA:HA	21:R:28:GLU:HG3	1.85	0.57
10:G:146:GLU:HA	10:G:149:ARG:HG2	1.85	0.57
11:H:1:MET:HG2	11:H:2:LEU:N	2.19	0.57
11:H:63:LEU:HD22	11:H:63:LEU:N	2.17	0.57
16:M:29:ARG:HB3	16:M:64:TRP:CH2	2.39	0.57
18:O:53:HIS:O	18:O:56:LEU:HB3	2.03	0.57
19:P:21:VAL:HG21	19:P:59:TRP:CD1	2.39	0.57
20:Q:67:LYS:O	20:Q:68:ARG:HB2	2.03	0.57
1:A:993:G:H4'	1:A:994:A:OP2	2.04	0.57
1:A:1132:C:H2'	1:A:1133:G:C8	2.38	0.57
1:A:1277:C:H2'	1:A:1278:U:C5'	2.33	0.57
1:A:1407:C:O2'	1:A:1408:A:H5'	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:D:191:ARG:O	7:D:191:ARG:HD2	2.03	0.57
10:G:21:VAL:HG23	10:G:22:LEU:N	2.19	0.57
18:O:70:LEU:HD12	18:O:78:TYR:CA	2.34	0.57
23:T:48:LYS:O	23:T:52:ALA:HB2	2.05	0.57
1:A:1154:G:H2'	1:A:1155:G:H8	1.69	0.57
1:A:1250:A:C5'	12:I:68:GLY:H	2.17	0.57
6:C:130:VAL:O	6:C:134:ILE:HG13	2.04	0.57
1:A:6:G:H4'	1:A:298:A:H4'	1.87	0.57
1:A:26:A:N6	1:A:558:G:H1'	2.20	0.57
1:A:457:C:H2'	1:A:458:C:H6	1.67	0.57
8:E:144:THR:HG22	8:E:146:ALA:H	1.69	0.57
10:G:12:LEU:HD12	10:G:12:LEU:N	2.19	0.57
10:G:140:ASP:O	10:G:143:ARG:HB2	2.03	0.57
14:K:110:ASP:HB2	21:R:88:LYS:HD2	1.86	0.57
22:S:13:ASP:O	22:S:16:LEU:HB3	2.04	0.57
1:A:190(J):U:H2'	1:A:190(K):G:C8	2.40	0.57
1:A:1007:C:N4	1:A:1022:G:H1	2.02	0.57
1:A:1106:G:H5''	6:C:172:ARG:HG2	1.87	0.57
6:C:59:ARG:HH11	6:C:97:LYS:HZ2	1.52	0.57
6:C:77:ILE:O	6:C:83:ARG:HB3	2.05	0.57
16:M:23:TYR:CB	16:M:67:GLU:HA	2.35	0.57
20:Q:97:SER:CB	20:Q:103:GLY:HA2	2.34	0.57
1:A:178:C:O2'	1:A:179:A:H5'	2.04	0.57
1:A:413:G:H22	1:A:428:G:H1'	1.70	0.57
1:A:1104:G:O5'	5:B:111:ARG:HD2	2.04	0.57
1:A:1277:C:O2'	1:A:1279:A:H1'	2.05	0.57
1:A:1522:U:O2'	1:A:1523:G:H5'	2.05	0.57
5:B:186:ALA:HB3	5:B:197:VAL:HG11	1.85	0.57
10:G:85:TYR:O	10:G:87:VAL:HG23	2.05	0.57
20:Q:8:GLY:HA3	20:Q:21:VAL:HG12	1.87	0.57
22:S:20:LEU:HD12	22:S:21:GLU:H	1.70	0.57
1:A:686:U:HO2'	1:A:687:A:H8	1.52	0.57
1:A:833:U:H2'	1:A:834:C:C6	2.38	0.57
1:A:839:U:H5'	1:A:840:C:C5	2.39	0.57
1:A:1097:C:H2'	1:A:1098:C:C6	2.39	0.57
1:A:1360:A:H2'	1:A:1361:G:O4'	2.05	0.57
6:C:70:VAL:HG12	6:C:71:ALA:H	1.67	0.57
7:D:128:VAL:HG12	7:D:129:ASN:HD21	1.69	0.57
12:I:29:ASN:HD21	12:I:64:THR:CA	2.15	0.57
13:J:49:VAL:O	13:J:60:ARG:HA	2.05	0.57
14:K:108:ILE:HB	21:R:87:ARG:O	2.05	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:337:C:H2'	1:A:338:A:H8	1.69	0.57
1:A:682:G:O2'	1:A:683:G:H5'	2.05	0.57
7:D:26:CYS:HA	7:D:31:CYS:HB2	1.86	0.57
11:H:10:LEU:CD2	11:H:83:ILE:HD11	2.35	0.57
13:J:63:PHE:CZ	17:N:45:ARG:HG3	2.40	0.57
15:L:98:TYR:N	15:L:98:TYR:CD1	2.72	0.57
16:M:60:VAL:HG22	16:M:64:TRP:HZ3	1.70	0.57
19:P:18:ARG:HE	19:P:35:LYS:NZ	2.03	0.57
23:T:87:LYS:O	23:T:88:VAL:C	2.42	0.57
1:A:1042:G:O2'	1:A:1043:C:H5'	2.04	0.57
5:B:178:ARG:O	5:B:181:PHE:N	2.28	0.57
6:C:46:GLU:O	6:C:48:TYR:N	2.36	0.57
7:D:65:ARG:HB2	7:D:75:PHE:CD1	2.40	0.57
10:G:69:VAL:HG12	10:G:103:TRP:HE3	1.70	0.57
10:G:78:ARG:NH1	10:G:154:TYR:O	2.38	0.57
13:J:8:LEU:CD2	13:J:96:ILE:HG12	2.35	0.57
14:K:21:ILE:HG12	14:K:30:VAL:HG12	1.87	0.57
14:K:48:ILE:HD12	14:K:63:LEU:CB	2.34	0.57
21:R:36:ASN:O	21:R:39:VAL:HG12	2.05	0.57
1:A:227:G:O2'	19:P:62:VAL:HG11	2.05	0.57
1:A:1221:G:H4'	22:S:53:ASN:O	2.04	0.57
5:B:178:ARG:HH11	5:B:178:ARG:CG	2.14	0.57
8:E:51:VAL:HB	8:E:52:PRO:CD	2.28	0.57
10:G:139:GLU:O	10:G:143:ARG:HG3	2.05	0.57
12:I:36:TYR:CD2	12:I:37:PHE:CE2	2.93	0.57
13:J:12:ASP:HB3	13:J:15:THR:CG2	2.35	0.57
14:K:24:SER:C	14:K:26:ASN:H	2.08	0.57
15:L:86:ARG:HG3	15:L:86:ARG:NH1	2.18	0.57
1:A:1229:A:H2'	1:A:1230:C:C6	2.38	0.56
1:A:1277:C:H1'	1:A:1282:C:O2	2.05	0.56
6:C:47:LEU:H	6:C:47:LEU:HD12	1.70	0.56
8:E:77:PRO:O	8:E:78:HIS:CB	2.53	0.56
9:F:9:VAL:HG22	9:F:60:PHE:CD2	2.39	0.56
14:K:84:VAL:HG11	14:K:95:ILE:HD11	1.86	0.56
18:O:4:THR:OG1	18:O:7:GLU:HB2	2.04	0.56
22:S:4:SER:O	22:S:5:LEU:HG	2.05	0.56
1:A:1064:G:H4'	1:A:1065:U:H5''	1.87	0.56
5:B:161:ALA:HB1	5:B:185:ILE:HD11	1.86	0.56
6:C:36:ASP:OD1	6:C:57:ILE:HD12	2.05	0.56
7:D:175:SER:CB	7:D:186:LEU:HD21	2.33	0.56
12:I:53:VAL:CG2	12:I:85:LEU:HD21	2.33	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:J:3:LYS:O	13:J:4:ILE:HD13	2.05	0.56
14:K:74:ALA:O	14:K:76:GLY:N	2.38	0.56
17:N:36:PHE:O	17:N:37:PHE:CG	2.58	0.56
1:A:394:G:H2'	1:A:395:C:C6	2.40	0.56
1:A:477:G:H2'	1:A:478:A:H8	1.70	0.56
1:A:538:G:H2'	1:A:539:A:C8	2.40	0.56
1:A:1054:C:H5	1:A:1196:U:C5	2.23	0.56
1:A:1351:U:O2'	1:A:1352:C:H5'	2.04	0.56
5:B:45:GLN:O	5:B:48:MET:HB2	2.04	0.56
8:E:74:GLY:HA3	8:E:116:THR:HG22	1.86	0.56
12:I:4:TYR:CD1	12:I:88:TYR:HB2	2.40	0.56
12:I:44:VAL:HG13	12:I:51:ARG:NH2	2.20	0.56
12:I:104:ARG:C	12:I:104:ARG:HD3	2.24	0.56
22:S:41:VAL:HG22	22:S:44:MET:CE	2.35	0.56
23:T:57:ARG:HD2	23:T:102:GLY:CA	2.31	0.56
1:A:22:G:H2'	1:A:23:C:C6	2.39	0.56
1:A:878:G:H5'	11:H:89:PRO:HG2	1.87	0.56
1:A:949:A:N7	16:M:106:ASN:ND2	2.53	0.56
1:A:1216:G:H5''	17:N:5:ALA:CB	2.33	0.56
5:B:76:GLN:HG3	5:B:206:ASP:OD1	2.06	0.56
6:C:13:GLY:O	6:C:14:ILE:HD13	2.06	0.56
9:F:100:ASN:ND2	21:R:23:LYS:HG2	2.16	0.56
16:M:30:ALA:O	16:M:34:LEU:HB2	2.06	0.56
19:P:81:ARG:HG3	19:P:83:GLU:HG2	1.88	0.56
21:R:88:LYS:OXT	21:R:88:LYS:HG2	2.05	0.56
22:S:30:LEU:HD22	22:S:31:ILE:O	2.06	0.56
1:A:337:C:H2'	1:A:338:A:C8	2.40	0.56
1:A:1316:G:H4'	17:N:18:VAL:CG1	2.35	0.56
6:C:54:ARG:HG3	6:C:55:VAL:H	1.71	0.56
7:D:121:VAL:O	7:D:134:ASP:HA	2.05	0.56
13:J:56:HIS:O	13:J:58:ASP:N	2.38	0.56
14:K:11:LYS:O	14:K:12:ARG:HB2	2.04	0.56
14:K:54:ARG:HH11	14:K:54:ARG:CB	2.07	0.56
18:O:26:GLU:HA	18:O:81:LEU:HD11	1.87	0.56
1:A:818:G:C2'	1:A:819:A:H5''	2.34	0.56
1:A:1091:U:O2	1:A:1093:A:H8	1.88	0.56
6:C:33:LEU:HD11	17:N:53:LEU:CD2	2.35	0.56
7:D:177:ASP:OD1	7:D:180:GLY:N	2.39	0.56
11:H:103:VAL:HG21	11:H:109:ILE:O	2.06	0.56
15:L:28:LYS:C	15:L:30:ALA:H	2.07	0.56
15:L:41:ARG:CG	15:L:42:THR:H	1.99	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:M:23:TYR:HB3	16:M:67:GLU:HA	1.86	0.56
16:M:110:ARG:HG2	16:M:110:ARG:HH11	1.71	0.56
22:S:16:LEU:O	22:S:18:LYS:N	2.38	0.56
1:A:109:A:H2'	1:A:326:G:H21	1.70	0.56
1:A:707:C:OP1	14:K:85:ARG:NH1	2.38	0.56
1:A:778:G:O2'	1:A:779:C:H5'	2.05	0.56
1:A:839:U:O2	1:A:839:U:H2'	2.05	0.56
1:A:1281:U:H5'	1:A:1282:C:H5	1.70	0.56
1:A:1510:U:H2'	1:A:1511:G:C8	2.40	0.56
6:C:171:GLY:O	6:C:173:VAL:HG23	2.06	0.56
7:D:16:GLY:O	7:D:33:MET:HE2	2.05	0.56
8:E:144:THR:HB	8:E:147:ASP:OD2	2.05	0.56
14:K:77:MET:CE	14:K:80:VAL:HG22	2.36	0.56
20:Q:27:PHE:CE1	20:Q:36:ILE:HD11	2.40	0.56
1:A:56:U:H2'	1:A:57:G:C8	2.41	0.56
1:A:149:A:H2'	1:A:150:C:H6	1.71	0.56
1:A:991:U:O4	1:A:1212:U:H1'	2.05	0.56
1:A:997:U:O2'	1:A:998:G:H5'	2.05	0.56
1:A:1161:C:H2'	1:A:1162:C:H6	1.69	0.56
5:B:16:HIS:HE1	5:B:213:LEU:HD13	1.70	0.56
5:B:77:ALA:HB2	5:B:211:ILE:CD1	2.33	0.56
6:C:34:LEU:HD23	6:C:34:LEU:O	2.06	0.56
6:C:137:ALA:CA	6:C:140:ARG:HH11	2.17	0.56
6:C:154:SER:OG	6:C:155:GLY:N	2.39	0.56
8:E:115:VAL:HG11	8:E:118:ILE:CD1	2.33	0.56
8:E:147:ASP:OD2	8:E:147:ASP:N	2.39	0.56
17:N:4:LYS:HA	17:N:7:ILE:HD12	1.87	0.56
17:N:29:ARG:HG2	17:N:29:ARG:HH11	1.71	0.56
13:J:35:SER:HB3	13:J:72:VAL:O	2.06	0.56
16:M:6:GLY:O	16:M:8:GLU:N	2.39	0.56
16:M:31:LYS:O	16:M:35:GLU:HB2	2.05	0.56
1:A:833:U:H2'	1:A:834:C:H6	1.70	0.56
1:A:1230:C:H2'	1:A:1231:G:H8	1.71	0.56
8:E:12:LEU:HD22	8:E:12:LEU:C	2.27	0.56
10:G:23:VAL:HG12	10:G:27:ILE:CD1	2.35	0.56
12:I:125:TYR:HE1	12:I:128:ARG:HB3	1.71	0.56
14:K:40:ILE:HG23	14:K:75:TYR:CD2	2.41	0.56
20:Q:67:LYS:CA	20:Q:70:ARG:HH12	2.12	0.56
1:A:91:C:H2'	1:A:92:C:H6	1.71	0.55
1:A:258:G:O2'	1:A:259:G:H5'	2.05	0.55
1:A:760:G:N2	20:Q:104:LYS:H	2.04	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:959:A:C2	1:A:1222:G:O4'	2.59	0.55
17:N:11:LYS:C	17:N:13:THR:H	2.10	0.55
1:A:401:C:H1'	1:A:622:A:H1'	1.88	0.55
1:A:791:G:H2'	1:A:792:A:H5''	1.88	0.55
1:A:1106:G:OP1	6:C:172:ARG:HD3	2.06	0.55
1:A:1437:C:H2'	1:A:1438:G:H8	1.70	0.55
1:A:1465:C:O2'	1:A:1466:C:H5'	2.06	0.55
5:B:228:GLY:O	5:B:229:VAL:C	2.43	0.55
6:C:24:ALA:HB1	6:C:28:GLN:HB3	1.86	0.55
6:C:177:THR:HG23	6:C:177:THR:O	2.06	0.55
12:I:59:PHE:HZ	12:I:88:TYR:CD2	2.25	0.55
12:I:117:HIS:HB2	12:I:121:ARG:O	2.07	0.55
13:J:24:VAL:O	13:J:28:ARG:HG3	2.06	0.55
1:A:889:A:H5'	1:A:891:U:H1'	1.89	0.55
1:A:1316:G:N2	1:A:1318:A:H3'	2.20	0.55
1:A:35:G:H2'	1:A:36:C:C6	2.41	0.55
1:A:538:G:H2'	1:A:539:A:H8	1.71	0.55
1:A:1358:U:H3'	1:A:1359:C:C6	2.41	0.55
5:B:111:ARG:NE	5:B:111:ARG:HA	2.22	0.55
7:D:6:GLY:H	7:D:115:ARG:HH22	1.54	0.55
11:H:107:LEU:N	11:H:107:LEU:CD1	2.70	0.55
12:I:93:ARG:NE	12:I:97:LYS:HE3	2.21	0.55
21:R:36:ASN:HD21	21:R:38:GLU:HG2	1.70	0.55
1:A:338:A:H2'	1:A:339:C:H6	1.71	0.55
1:A:547:A:H4'	1:A:548:G:O5'	2.06	0.55
1:A:818:G:H3'	1:A:819:A:C5'	2.37	0.55
1:A:974:A:H8	1:A:974:A:OP1	1.89	0.55
1:A:1367:C:C2	1:A:1368:G:C8	2.94	0.55
1:A:1454:G:H2'	1:A:1455:G:H8	1.72	0.55
6:C:134:ILE:CG2	6:C:168:ALA:HB3	2.37	0.55
9:F:48:LEU:HD21	9:F:60:PHE:CZ	2.41	0.55
11:H:14:ARG:HB3	11:H:14:ARG:HH11	1.72	0.55
11:H:48:TYR:CD1	11:H:48:TYR:C	2.78	0.55
20:Q:96:GLN:O	20:Q:97:SER:CB	2.54	0.55
1:A:266:G:H5'	1:A:266:G:C8	2.42	0.55
1:A:443:C:O2'	1:A:444:C:H5'	2.06	0.55
1:A:644:G:O2'	1:A:645:C:H5'	2.06	0.55
11:H:24:THR:HG23	11:H:61:VAL:HB	1.89	0.55
16:M:26:GLY:O	16:M:28:ALA:N	2.39	0.55
20:Q:67:LYS:HA	20:Q:70:ARG:NH1	2.13	0.55
1:A:838:G:C2'	1:A:839:U:H5''	2.37	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1472:U:O2'	1:A:1473:A:H5'	2.06	0.55
1:A:1521:G:H2'	1:A:1522:U:C6	2.41	0.55
9:F:38:GLU:HB2	9:F:64:GLN:O	2.06	0.55
21:R:25:THR:HB	21:R:42:ARG:HH22	1.71	0.55
1:A:998:G:O2'	1:A:999:C:H5'	2.07	0.55
1:A:1223:C:OP1	1:A:1224:G:H3'	2.06	0.55
1:A:1264:C:H2'	1:A:1265:G:H8	1.72	0.55
1:A:1349:A:OP2	12:I:118:LYS:NZ	2.40	0.55
5:B:84:GLU:HA	5:B:87:ARG:HB2	1.88	0.55
7:D:64:LEU:HD12	7:D:75:PHE:HZ	1.72	0.55
13:J:5:ARG:HA	13:J:73:ASP:OD1	2.07	0.55
17:N:9:LYS:HG3	17:N:21:TYR:O	2.06	0.55
19:P:12:LYS:O	19:P:13:HIS:HB2	2.07	0.55
1:A:58:C:O2'	1:A:59:A:H5'	2.06	0.55
1:A:1326:C:H5''	24:V:12:LYS:HZ2	1.71	0.55
5:B:90:MET:N	5:B:90:MET:SD	2.80	0.55
7:D:18:LYS:HE2	7:D:20:TYR:HE2	1.71	0.55
9:F:10:LEU:HD12	9:F:59:TYR:O	2.07	0.55
11:H:36:LEU:CD1	11:H:59:LEU:HD13	2.37	0.55
13:J:45:ARG:NH2	17:N:36:PHE:CD2	2.75	0.55
21:R:48:GLY:N	21:R:82:THR:HA	2.22	0.55
22:S:12:ASP:O	22:S:15:LEU:HG	2.07	0.55
22:S:31:ILE:HG22	22:S:32:LYS:N	2.18	0.55
1:A:590:C:O2'	1:A:591:U:H5'	2.07	0.55
1:A:1226:C:H1'	22:S:83:HIS:HE1	1.68	0.55
1:A:1320:C:O2	22:S:36:ARG:NH1	2.40	0.55
5:B:91:PRO:HG3	5:B:154:LEU:HB2	1.88	0.55
8:E:6:PHE:HB3	8:E:34:VAL:CG1	2.37	0.55
22:S:10:PHE:CD2	22:S:11:VAL:N	2.75	0.55
1:A:165:C:H2'	1:A:166:G:H8	1.72	0.54
1:A:647:C:H2'	1:A:648:A:H8	1.72	0.54
1:A:975:A:O2'	17:N:32:SER:HA	2.07	0.54
1:A:1306:A:H2'	1:A:1307:U:O4'	2.06	0.54
5:B:74:LYS:HZ3	5:B:206:ASP:HB2	1.72	0.54
6:C:91:LEU:HG	6:C:99:VAL:HG21	1.89	0.54
15:L:28:LYS:C	15:L:30:ALA:N	2.59	0.54
16:M:36:LYS:HD2	16:M:59:TYR:CZ	2.42	0.54
1:A:255:G:H1'	20:Q:16:GLN:NE2	2.21	0.54
1:A:398:C:O2'	1:A:399:G:H5'	2.07	0.54
1:A:939:G:C5'	10:G:102:ARG:HH12	2.20	0.54
4:Z:2:U:H6	4:Z:2:U:H5'	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:223:ILE:HD13	5:B:230:VAL:HG21	1.89	0.54
11:H:4:ASP:OD2	11:H:85:ARG:NH1	2.40	0.54
12:I:8:GLY:HA2	12:I:79:LEU:CD1	2.32	0.54
12:I:86:VAL:HG13	12:I:90:PRO:HA	1.89	0.54
18:O:45:VAL:HB	18:O:46:HIS:ND1	2.22	0.54
1:A:499:A:H4'	1:A:500:G:H5'	1.88	0.54
1:A:797:C:O2'	1:A:798:G:H5'	2.06	0.54
1:A:951:G:O2'	1:A:952:U:H5'	2.06	0.54
1:A:1279:A:H5''	1:A:1280:A:OP1	2.07	0.54
1:A:1309:G:O3'	16:M:77:ASN:ND2	2.40	0.54
1:A:1402:C:O2	1:A:1500:A:N1	2.41	0.54
6:C:18:TRP:HE3	6:C:18:TRP:H	1.56	0.54
15:L:41:ARG:HB3	15:L:41:ARG:HH11	1.72	0.54
17:N:22:THR:OG1	17:N:33:VAL:HG21	2.07	0.54
1:A:110:C:H2'	1:A:111:G:O4'	2.06	0.54
1:A:644:G:C5	1:A:645:C:C5	2.96	0.54
1:A:818:G:C3'	1:A:819:A:H5''	2.37	0.54
1:A:942:G:H2'	1:A:943:U:H6	1.71	0.54
1:A:1291:G:H4'	12:I:38:GLN:O	2.08	0.54
5:B:28:PHE:CZ	5:B:189:ASP:HA	2.42	0.54
5:B:137:ARG:HA	5:B:140:HIS:HD2	1.73	0.54
15:L:83:VAL:HG22	15:L:100:ILE:HG23	1.89	0.54
21:R:40:LEU:O	21:R:42:ARG:N	2.41	0.54
22:S:22:LEU:CD2	22:S:28:LYS:HD2	2.38	0.54
1:A:437:U:H5''	7:D:155:LEU:HD22	1.89	0.54
1:A:528:C:H5'	1:A:535:A:N6	2.23	0.54
1:A:1300:G:HO2'	1:A:1301:U:H6	1.54	0.54
8:E:101:ILE:HD12	8:E:119:LEU:HD23	1.89	0.54
9:F:2:ARG:NE	9:F:69:GLU:HG2	2.22	0.54
16:M:40:ASN:HD22	16:M:41:PRO:HD2	1.73	0.54
22:S:15:LEU:CD2	22:S:33:THR:HG21	2.38	0.54
1:A:539:A:H2'	1:A:540:G:C8	2.43	0.54
1:A:1533:C:O2'	1:A:1534:A:H5'	2.08	0.54
5:B:10:LEU:O	5:B:10:LEU:HD23	2.08	0.54
6:C:43:LEU:HD12	6:C:68:VAL:HG21	1.88	0.54
6:C:167:TRP:O	6:C:168:ALA:HB3	2.07	0.54
17:N:9:LYS:HD3	17:N:9:LYS:C	2.28	0.54
1:A:929:G:H5''	1:A:1533:C:N4	2.23	0.54
1:A:1255:G:O2'	1:A:1258:G:H1'	2.07	0.54
1:A:1293:G:O2'	1:A:1294:G:H5'	2.08	0.54
1:A:1381:U:H2'	1:A:1382:C:H6	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:73:THR:HG23	5:B:95:GLN:O	2.08	0.54
6:C:188:LEU:HD13	6:C:189:ALA:N	2.15	0.54
7:D:12:CYS:SG	7:D:19:LEU:O	2.66	0.54
19:P:34:GLU:OE2	19:P:55:ARG:HD3	2.08	0.54
1:A:287:U:C2'	1:A:288:A:H5'	2.38	0.54
1:A:448:A:H2'	1:A:449:C:C6	2.43	0.54
1:A:920:U:H2'	1:A:921:U:H6	1.71	0.54
1:A:1342:C:O2'	1:A:1343:G:H5'	2.07	0.54
8:E:57:LYS:HG2	8:E:61:TYR:CE2	2.43	0.54
10:G:145:ALA:O	10:G:147:ALA:N	2.41	0.54
12:I:79:LEU:HD13	12:I:79:LEU:C	2.28	0.54
12:I:118:LYS:O	12:I:119:ALA:CB	2.56	0.54
1:A:1366:C:C2	1:A:1367:C:C5	2.96	0.54
11:H:20:TYR:CE1	11:H:76:PRO:HD2	2.43	0.54
14:K:110:ASP:HB2	21:R:88:LYS:CD	2.38	0.54
20:Q:45:HIS:CD2	20:Q:47:PRO:HG3	2.42	0.54
1:A:513:C:H2'	1:A:514:C:C6	2.43	0.54
1:A:664:G:H2'	1:A:666:G:OP1	2.07	0.54
1:A:1258:G:H1	1:A:1277:C:N4	2.05	0.54
1:A:1428:A:H2'	1:A:1429:C:C6	2.43	0.54
5:B:166:ASP:OD2	5:B:169:LYS:HB2	2.08	0.54
7:D:76:ARG:HG2	7:D:76:ARG:HH11	1.73	0.54
7:D:126:ILE:CG2	7:D:127:THR:N	2.69	0.54
8:E:102:ALA:HB1	8:E:106:PRO:HB2	1.90	0.54
11:H:11:THR:HA	11:H:14:ARG:NH1	2.23	0.54
23:T:100:ILE:O	23:T:100:ILE:HG12	2.08	0.54
1:A:281:G:O2'	1:A:282:A:OP2	2.22	0.53
1:A:502:G:H2'	1:A:503:C:H6	1.72	0.53
1:A:657:G:O2'	1:A:658:G:H5'	2.09	0.53
1:A:730:G:N2	1:A:765:G:H5''	2.23	0.53
1:A:750:G:C2	18:O:23:GLY:HA3	2.43	0.53
1:A:1461:G:O2'	1:A:1462:G:H5'	2.08	0.53
1:A:1497:G:C2'	1:A:1498:U:H5'	2.38	0.53
12:I:16:ARG:HB2	12:I:64:THR:HB	1.90	0.53
12:I:59:PHE:O	12:I:60:ASP:HB2	2.07	0.53
14:K:120:ARG:NH2	14:K:126:ARG:NH1	2.56	0.53
14:K:123:LYS:O	14:K:124:LYS:C	2.47	0.53
16:M:116:THR:HG22	16:M:117:VAL:N	2.23	0.53
20:Q:59:ILE:HG23	20:Q:71:PHE:CD1	2.43	0.53
20:Q:95:TYR:O	20:Q:97:SER:N	2.42	0.53
21:R:86:VAL:O	21:R:87:ARG:HB2	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:16:A:C2'	1:A:17:U:H5'	2.39	0.53
1:A:722:A:H4'	1:A:723:U:C5	2.44	0.53
1:A:923:A:OP1	8:E:21:ALA:HB2	2.08	0.53
1:A:953:G:H2'	1:A:954:G:O4'	2.09	0.53
7:D:33:MET:HE3	7:D:37:PRO:HB3	1.91	0.53
9:F:75:LEU:C	9:F:75:LEU:HD13	2.29	0.53
22:S:33:THR:HG22	22:S:35:SER:H	1.73	0.53
1:A:254:G:H21	20:Q:16:GLN:NE2	2.07	0.53
1:A:1070:U:O2'	1:A:1071:C:H5'	2.07	0.53
1:A:1475:G:H2'	1:A:1476:G:C8	2.39	0.53
6:C:147:LYS:HD2	6:C:203:PHE:CE2	2.44	0.53
14:K:43:SER:HA	14:K:47:VAL:HG21	1.88	0.53
22:S:85:LYS:O	22:S:86:GLU:HG2	2.07	0.53
1:A:101:A:O2'	1:A:102:G:H5'	2.07	0.53
1:A:750:G:H1'	18:O:22:THR:OG1	2.08	0.53
1:A:1003(A):G:O2'	1:A:1004:A:H4'	2.08	0.53
13:J:12:ASP:OD1	13:J:14:LYS:N	2.39	0.53
15:L:43:VAL:CG1	15:L:44:THR:N	2.71	0.53
15:L:126:LYS:N	15:L:126:LYS:HD2	2.23	0.53
16:M:69:GLU:O	16:M:72:ALA:HB3	2.08	0.53
1:A:1264:C:H2'	1:A:1265:G:C8	2.43	0.53
5:B:9:GLU:OE1	5:B:12:GLU:HA	2.08	0.53
6:C:172:ARG:HB3	6:C:172:ARG:HH11	1.74	0.53
7:D:55:ALA:O	7:D:59:ARG:HG2	2.08	0.53
8:E:15:ARG:O	8:E:16:THR:CB	2.56	0.53
9:F:40:VAL:CG1	9:F:41:GLU:N	2.72	0.53
11:H:4:ASP:OD2	11:H:7:ALA:HB2	2.08	0.53
11:H:86:ILE:O	11:H:88:LYS:HG2	2.08	0.53
1:A:190(E):U:O2'	20:Q:63:ARG:NH2	2.41	0.53
1:A:513:C:H2'	1:A:514:C:H6	1.72	0.53
1:A:518:C:O2'	1:A:519:C:OP2	2.24	0.53
1:A:620:C:C6	7:D:135:LEU:HD13	2.44	0.53
1:A:743:U:H2'	1:A:744:C:C6	2.43	0.53
1:A:1511:G:H2'	1:A:1512:U:O4'	2.08	0.53
5:B:78:GLN:HA	5:B:94:ASN:OD1	2.07	0.53
6:C:70:VAL:HG12	6:C:72:LYS:H	1.74	0.53
8:E:80:ILE:N	8:E:80:ILE:HD12	2.23	0.53
8:E:105:VAL:HB	8:E:106:PRO:HD3	1.90	0.53
13:J:63:PHE:CE1	17:N:45:ARG:HG3	2.44	0.53
15:L:61:THR:C	15:L:63:GLY:H	2.12	0.53
16:M:15:VAL:HG22	16:M:45:VAL:HG22	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:O:46:HIS:ND1	18:O:46:HIS:N	2.57	0.53
22:S:30:LEU:C	22:S:31:ILE:HD13	2.29	0.53
1:A:75:G:HO2'	1:A:76:C:H5'	1.74	0.53
1:A:112:G:N2	1:A:354:G:H5'	2.23	0.53
1:A:692:U:OP1	14:K:124:LYS:HE3	2.08	0.53
1:A:1000:U:H2'	1:A:1001:A:O4'	2.08	0.53
1:A:1054:C:N4	3:Y:34:G:C8	2.72	0.53
1:A:1487:G:O2'	1:A:1488:G:H5'	2.08	0.53
5:B:15:VAL:HG11	5:B:209:ARG:HB3	1.90	0.53
5:B:137:ARG:NH1	5:B:137:ARG:HB3	2.24	0.53
5:B:178:ARG:O	5:B:180:LEU:N	2.41	0.53
6:C:62:ASP:HA	6:C:97:LYS:HG3	1.88	0.53
11:H:23:SER:C	11:H:24:THR:HG22	2.28	0.53
12:I:33:PHE:C	12:I:35:GLU:H	2.12	0.53
22:S:15:LEU:C	22:S:15:LEU:HD12	2.29	0.53
1:A:47:C:H5''	1:A:365:U:C6	2.44	0.53
1:A:80:G:H3'	1:A:81:U:H5''	1.91	0.53
1:A:277:C:H5''	20:Q:68:ARG:NH2	2.24	0.53
1:A:889:A:N1	1:A:907:A:H5''	2.24	0.53
1:A:915:A:C2'	1:A:916:G:H5'	2.39	0.53
1:A:1038:C:H2'	1:A:1039:C:C5	2.44	0.53
1:A:1313:U:OP2	22:S:6:LYS:HA	2.08	0.53
6:C:42:LEU:HA	6:C:45:LYS:HB2	1.91	0.53
6:C:118:GLN:O	6:C:122:GLU:HG3	2.09	0.53
7:D:34:GLU:HG3	7:D:35:ARG:NH2	2.24	0.53
8:E:111:GLU:C	8:E:113:ALA:H	2.11	0.53
1:A:105:G:H2'	1:A:106:C:C6	2.44	0.53
1:A:166:G:O2'	1:A:167:G:H5'	2.09	0.53
1:A:474:G:O2'	1:A:475:G:H5'	2.09	0.53
1:A:1167:A:H2'	1:A:1168:A:C8	2.43	0.53
1:A:1247:U:O2'	1:A:1248:A:H5'	2.09	0.53
5:B:45:GLN:CD	5:B:45:GLN:H	2.12	0.53
7:D:8:VAL:HG12	7:D:21:LEU:HD13	1.90	0.53
7:D:187:ARG:HE	7:D:188:LEU:H	1.56	0.53
9:F:22:GLU:OE2	9:F:84:ASN:HB2	2.08	0.53
11:H:14:ARG:O	11:H:18:ARG:HD3	2.09	0.53
15:L:75:HIS:HD2	15:L:77:LEU:N	2.05	0.53
8:E:28:PHE:O	8:E:47:LYS:HA	2.09	0.53
11:H:86:ILE:HD11	11:H:136:GLU:CB	2.38	0.53
20:Q:12:SER:HB3	20:Q:20:THR:CB	2.38	0.53
23:T:56:MET:HE1	23:T:104:LEU:HG	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:T:63:ILE:HD13	23:T:80:ARG:HB3	1.91	0.53
1:A:180:U:C2'	1:A:181:G:H5'	2.37	0.52
1:A:490:G:H2'	1:A:491:G:H8	1.74	0.52
1:A:652:U:O4	1:A:752:G:O2'	2.20	0.52
1:A:1348:U:H2'	1:A:1349:A:C8	2.28	0.52
1:A:1372:U:O2'	1:A:1373:G:H5'	2.09	0.52
6:C:57:ILE:CG2	6:C:58:GLU:N	2.72	0.52
10:G:75:VAL:HA	10:G:87:VAL:O	2.08	0.52
10:G:116:ALA:HA	10:G:119:ARG:NH2	2.23	0.52
11:H:83:ILE:HG23	11:H:83:ILE:O	2.09	0.52
13:J:4:ILE:O	13:J:6:ILE:HG13	2.09	0.52
13:J:16:LEU:HD23	13:J:94:VAL:HG13	1.90	0.52
18:O:48:LYS:O	18:O:50:HIS:N	2.42	0.52
1:A:676:A:H1'	14:K:115:PRO:HB3	1.92	0.52
1:A:1124:G:C3'	1:A:1145:C:H41	2.19	0.52
1:A:1441:G:H4'	1:A:1442:G:C5	2.44	0.52
5:B:21:ARG:HH11	5:B:21:ARG:HG3	1.74	0.52
5:B:50:GLU:HG3	5:B:200:ILE:CD1	2.38	0.52
5:B:178:ARG:NH2	5:B:196:LEU:HA	2.21	0.52
5:B:230:VAL:HG12	5:B:231:GLU:N	2.24	0.52
9:F:91:VAL:HG13	21:R:72:ARG:NH2	2.23	0.52
10:G:15:ASP:OD1	10:G:44:TYR:OH	2.27	0.52
10:G:65:ALA:O	10:G:69:VAL:HG23	2.09	0.52
19:P:22:THR:HA	19:P:33:ILE:CD1	2.25	0.52
19:P:28:ARG:NH1	19:P:28:ARG:HG2	2.22	0.52
20:Q:68:ARG:N	20:Q:70:ARG:NH1	2.57	0.52
23:T:24:LEU:HD12	23:T:24:LEU:O	2.10	0.52
23:T:92:LEU:O	23:T:96:GLY:HA3	2.10	0.52
1:A:344:A:H5''	1:A:345:C:H5	1.74	0.52
1:A:760:G:H1	20:Q:105:ALA:CA	2.19	0.52
1:A:818:G:C3'	1:A:819:A:C5'	2.86	0.52
1:A:1003(A):G:C2	1:A:1004:A:H1'	2.43	0.52
1:A:1222:G:OP1	22:S:77:THR:HG21	2.10	0.52
1:A:1241:G:H2'	1:A:1242:C:H6	1.75	0.52
5:B:159:PRO:HB2	5:B:161:ALA:O	2.09	0.52
6:C:139:GLN:O	6:C:143:GLU:N	2.41	0.52
12:I:4:TYR:CE2	12:I:88:TYR:HA	2.45	0.52
15:L:102:ARG:NH2	15:L:110:VAL:HA	2.25	0.52
18:O:17:ARG:HG3	18:O:17:ARG:HH11	1.74	0.52
18:O:65:ARG:HB2	18:O:65:ARG:HH11	1.72	0.52
20:Q:60:ILE:HD13	20:Q:61:GLU:H	1.72	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:98:U:O2'	1:A:99:C:H5'	2.08	0.52
1:A:794:A:H2'	1:A:795:C:C6	2.44	0.52
1:A:927:G:H4'	1:A:1503:A:N7	2.25	0.52
1:A:1023:G:H2'	1:A:1023:G:N3	2.24	0.52
1:A:1056:U:H5'	6:C:163:ALA:CB	2.39	0.52
1:A:1060:C:O2'	1:A:1061:G:H5'	2.09	0.52
1:A:1151:A:O2'	1:A:1152:A:H8	1.91	0.52
1:A:1286:A:C8	1:A:1287:A:H4'	2.44	0.52
7:D:142:PRO:CG	7:D:187:ARG:HH21	2.21	0.52
12:I:23:ASN:HD22	12:I:23:ASN:C	2.12	0.52
14:K:33:THR:HG21	14:K:37:GLY:HA2	1.90	0.52
15:L:50:SER:O	15:L:51:ALA:HB2	2.10	0.52
15:L:119:LYS:O	15:L:120:TYR:CB	2.57	0.52
21:R:74:ARG:HB3	21:R:81:PHE:CZ	2.44	0.52
1:A:538:G:O2'	1:A:539:A:H5'	2.10	0.52
1:A:1256:A:O2'	1:A:1257:U:H4'	2.10	0.52
6:C:40:ARG:HH11	6:C:40:ARG:HG3	1.75	0.52
6:C:180:ALA:O	6:C:181:ASN:HB3	2.09	0.52
7:D:100:ARG:O	7:D:103:ASN:HB3	2.08	0.52
7:D:111:ALA:HB3	7:D:117:ALA:HB2	1.90	0.52
7:D:151:LYS:HD2	7:D:151:LYS:N	2.11	0.52
8:E:80:ILE:HD12	8:E:80:ILE:H	1.75	0.52
8:E:82:VAL:O	8:E:88:LYS:HA	2.09	0.52
10:G:80:VAL:HG11	10:G:154:TYR:CE1	2.45	0.52
16:M:40:ASN:HD22	16:M:41:PRO:N	2.07	0.52
21:R:47:THR:HA	21:R:83:GLU:HB2	1.90	0.52
23:T:76:ALA:O	23:T:80:ARG:HG2	2.09	0.52
1:A:115:G:H1'	1:A:116:A:N7	2.25	0.52
1:A:625:G:H2'	1:A:626:U:C6	2.44	0.52
1:A:938:A:N6	1:A:939:G:C6	2.78	0.52
1:A:961:U:C2'	1:A:962:C:H5'	2.40	0.52
1:A:1049:U:H1'	1:A:1201:A:N7	2.24	0.52
6:C:33:LEU:HD11	17:N:53:LEU:HD22	1.90	0.52
6:C:90:GLU:C	6:C:92:ALA:H	2.11	0.52
6:C:174:PRO:HB2	6:C:177:THR:HG22	1.91	0.52
11:H:82:HIS:CG	11:H:83:ILE:H	2.27	0.52
20:Q:6:LEU:O	20:Q:59:ILE:N	2.37	0.52
21:R:86:VAL:HG12	21:R:87:ARG:HD2	1.90	0.52
1:A:229:U:O2'	1:A:230:G:H5'	2.10	0.52
1:A:417:C:O2'	1:A:418:C:H5'	2.10	0.52
1:A:521:G:O2'	1:A:522:C:H5'	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:836:G:C6	1:A:851:G:C6	2.98	0.52
1:A:980:C:H3'	1:A:981:U:C6	2.45	0.52
8:E:109:ILE:O	8:E:113:ALA:HB2	2.10	0.52
11:H:83:ILE:CB	11:H:137:VAL:HG22	2.40	0.52
12:I:27:THR:HG23	12:I:30:GLY:O	2.09	0.52
12:I:46:ALA:O	12:I:49:PRO:HD2	2.10	0.52
12:I:46:ALA:HA	12:I:78:LYS:HB2	1.92	0.52
21:R:60:GLY:O	21:R:64:ARG:HB2	2.09	0.52
1:A:718:G:C8	14:K:116:HIS:HB3	2.45	0.52
1:A:866:C:H2'	1:A:867:G:O4'	2.10	0.52
1:A:1453:G:H2'	1:A:1454:G:O4'	2.10	0.52
6:C:5:ILE:O	6:C:5:ILE:HD12	2.10	0.52
7:D:149:ALA:O	7:D:153:ARG:N	2.43	0.52
11:H:120:THR:HG23	11:H:123:GLU:OE2	2.09	0.52
12:I:4:TYR:HB2	12:I:19:LEU:HB2	1.91	0.52
13:J:30:SER:CB	13:J:81:THR:HA	2.40	0.52
13:J:49:VAL:O	13:J:60:ARG:O	2.27	0.52
16:M:24:GLY:CA	16:M:66:LEU:HD22	2.39	0.52
23:T:13:LEU:HD12	23:T:13:LEU:C	2.31	0.52
1:A:19:C:H2'	1:A:20:U:H6	1.75	0.52
1:A:186:C:H2'	1:A:187:C:C6	2.45	0.52
1:A:996:A:H2'	1:A:997:U:C6	2.45	0.52
1:A:1105:A:H2'	1:A:1106:G:H8	1.75	0.52
1:A:1238:A:OP1	1:A:1336:C:H5	1.92	0.52
1:A:1260:C:O5'	1:A:1284:C:H4'	2.10	0.52
1:A:1305:G:H5'	24:V:4:GLY:HA3	1.91	0.52
5:B:23:ARG:C	5:B:23:ARG:HD3	2.30	0.52
6:C:39:ILE:O	6:C:43:LEU:HD23	2.10	0.52
7:D:7:PRO:HG2	7:D:10:ARG:CD	2.31	0.52
14:K:74:ALA:C	14:K:76:GLY:N	2.60	0.52
15:L:70:ILE:HG12	15:L:100:ILE:HD12	1.92	0.52
17:N:35:ARG:C	17:N:37:PHE:H	2.13	0.52
21:R:46:GLU:CD	21:R:46:GLU:N	2.63	0.52
24:V:23:PRO:C	24:V:25:LYS:H	2.13	0.52
1:A:424:G:O2'	1:A:425:G:H5'	2.10	0.52
6:C:132:ARG:O	6:C:133:ALA:C	2.48	0.52
6:C:156:ARG:HH11	6:C:156:ARG:HG3	1.74	0.52
7:D:177:ASP:OD1	7:D:179:GLU:HB2	2.09	0.52
12:I:117:HIS:C	12:I:118:LYS:HG3	2.30	0.52
12:I:117:HIS:O	12:I:118:LYS:HG3	2.10	0.52
16:M:98:VAL:O	16:M:98:VAL:HG12	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:S:15:LEU:HD23	22:S:33:THR:HG21	1.92	0.52
22:S:24:ALA:HB3	22:S:25:LYS:HZ2	1.74	0.52
22:S:35:SER:C	22:S:37:ARG:H	2.13	0.52
5:B:9:GLU:OE1	5:B:11:LEU:O	2.28	0.51
5:B:144:ARG:HG3	5:B:145:LEU:N	2.24	0.51
7:D:108:LEU:CD2	7:D:174:LEU:HD13	2.41	0.51
8:E:135:THR:O	8:E:138:ALA:HB3	2.10	0.51
12:I:40:LEU:O	12:I:41:VAL:C	2.48	0.51
12:I:42:ARG:O	12:I:43:ALA:C	2.48	0.51
15:L:89:ARG:CZ	15:L:97:ARG:HG2	2.40	0.51
16:M:96:LEU:O	16:M:97:PRO:C	2.47	0.51
18:O:33:THR:HG23	18:O:63:ARG:HH12	1.75	0.51
22:S:16:LEU:O	22:S:20:LEU:HG	2.10	0.51
1:A:334:C:H2'	1:A:335:C:C6	2.46	0.51
1:A:629:G:O2'	1:A:630:G:H5'	2.09	0.51
1:A:909:A:H2'	1:A:910:C:O4'	2.10	0.51
1:A:1060:C:H5''	13:J:51:ARG:HG2	1.92	0.51
1:A:1363:A:H1'	1:A:1365:G:N7	2.25	0.51
5:B:69:LEU:C	5:B:69:LEU:HD23	2.29	0.51
5:B:77:ALA:CB	5:B:80:ILE:HD12	2.39	0.51
5:B:118:LEU:HD11	5:B:141:GLU:CD	2.31	0.51
7:D:160:GLN:O	7:D:163:GLU:HB3	2.10	0.51
7:D:187:ARG:HG3	7:D:188:LEU:N	2.26	0.51
8:E:68:GLU:O	8:E:70:PRO:HD3	2.11	0.51
11:H:83:ILE:HA	11:H:137:VAL:HG22	1.92	0.51
13:J:64:GLU:N	17:N:59:ALA:HB2	2.25	0.51
19:P:43:LYS:HB3	19:P:48:TRP:CD1	2.45	0.51
21:R:87:ARG:HG3	21:R:87:ARG:HH11	1.75	0.51
23:T:67:ALA:HA	23:T:73:HIS:H	1.74	0.51
1:A:107:G:H2'	1:A:108:G:H5'	1.92	0.51
1:A:1057:G:H2'	1:A:1058:G:O4'	2.10	0.51
1:A:1128:C:O2	1:A:1130:A:N7	2.43	0.51
5:B:207:ALA:O	5:B:210:SER:HB3	2.10	0.51
12:I:126:SER:O	12:I:128:ARG:N	2.43	0.51
15:L:124:LYS:HE2	15:L:127:GLU:OE2	2.10	0.51
22:S:11:VAL:HG22	22:S:39:THR:O	2.10	0.51
1:A:822:C:O2'	1:A:823:G:H5'	2.10	0.51
1:A:1077:G:N2	1:A:1080:A:OP2	2.41	0.51
1:A:1124:G:O2'	13:J:38:ILE:HD13	2.11	0.51
1:A:1153:C:H2'	1:A:1154:G:H8	1.76	0.51
1:A:1390:U:H2'	1:A:1391:U:H6	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:69:LEU:HD22	5:B:71:VAL:CG2	2.41	0.51
5:B:197:VAL:CB	5:B:200:ILE:HG23	2.37	0.51
6:C:34:LEU:CD1	17:N:25:VAL:HG21	2.40	0.51
7:D:192:GLU:N	7:D:192:GLU:OE1	2.44	0.51
12:I:48:GLU:HA	12:I:51:ARG:HH11	1.76	0.51
12:I:76:ALA:O	12:I:79:LEU:HB3	2.10	0.51
15:L:93:LEU:H	15:L:93:LEU:CD2	2.00	0.51
16:M:11:ARG:CG	16:M:12:ASN:N	2.72	0.51
16:M:22:ILE:CB	16:M:25:ILE:HD12	2.41	0.51
1:A:189:G:H2'	1:A:190:C:C6	2.45	0.51
1:A:223:U:H5'	23:T:68:LYS:NZ	2.25	0.51
1:A:258:G:H2'	1:A:259:G:C8	2.44	0.51
1:A:761:G:H5'	20:Q:103:GLY:H	1.75	0.51
1:A:972:C:H4'	13:J:57:LYS:CG	2.40	0.51
1:A:1172:C:H2'	1:A:1173:G:H8	1.74	0.51
1:A:1176:A:H2'	1:A:1177:G:C8	2.45	0.51
1:A:1431:C:H2'	1:A:1432:G:H5'	1.92	0.51
5:B:33:TYR:O	5:B:34:ALA:HB2	2.10	0.51
5:B:126:GLU:HG2	5:B:129:GLU:OE1	2.11	0.51
6:C:120:VAL:O	6:C:124:ILE:HG13	2.10	0.51
6:C:126:ARG:O	6:C:127:ARG:HB2	2.09	0.51
6:C:134:ILE:HD11	6:C:153:VAL:CG2	2.41	0.51
7:D:21:LEU:O	7:D:22:LYS:HG3	2.10	0.51
7:D:62:GLN:O	7:D:66:ARG:HB2	2.09	0.51
7:D:111:ALA:CB	7:D:117:ALA:HB2	2.40	0.51
8:E:111:GLU:C	8:E:113:ALA:N	2.64	0.51
9:F:40:VAL:HG12	9:F:41:GLU:N	2.25	0.51
10:G:151:TYR:HA	10:G:153:HIS:CE1	2.45	0.51
12:I:93:ARG:C	12:I:95:LYS:H	2.13	0.51
15:L:101:VAL:O	15:L:103:GLY:N	2.43	0.51
17:N:37:PHE:CZ	17:N:53:LEU:HD13	2.46	0.51
18:O:27:VAL:O	18:O:30:ALA:HB3	2.10	0.51
18:O:66:LEU:O	18:O:69:TYR:HB3	2.11	0.51
23:T:41:ILE:HD11	23:T:87:LYS:HZ1	1.74	0.51
1:A:625:G:O2'	1:A:626:U:H5'	2.10	0.51
1:A:811:C:H4'	1:A:900:A:N6	2.25	0.51
1:A:910:C:P	15:L:97:ARG:HH22	2.33	0.51
1:A:1268:A:H2'	1:A:1269:A:C8	2.45	0.51
1:A:1345:U:C2	1:A:1377:A:N1	2.79	0.51
5:B:132:LYS:HA	5:B:135:GLN:HB3	1.92	0.51
5:B:223:ILE:C	5:B:225:ALA:N	2.64	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:157:ILE:CD1	6:C:166:GLU:HB2	2.37	0.51
7:D:126:ILE:CG2	7:D:127:THR:H	2.24	0.51
9:F:53:ALA:O	9:F:54:LYS:HB2	2.09	0.51
10:G:22:LEU:HD11	10:G:101:LEU:HD21	1.92	0.51
11:H:38:ILE:N	11:H:38:ILE:HD12	2.25	0.51
12:I:10:ARG:HD2	12:I:11:LYS:N	2.25	0.51
1:A:335:C:O2'	1:A:336:C:H5'	2.11	0.51
1:A:624:C:H2'	1:A:625:G:C8	2.44	0.51
1:A:1101:A:H4'	1:A:1102:A:O5'	2.11	0.51
1:A:1402:C:H2'	1:A:1403:C:C6	2.40	0.51
8:E:41:VAL:HG21	8:E:113:ALA:HA	1.91	0.51
11:H:31:PHE:O	11:H:35:ILE:CD1	2.58	0.51
11:H:135:CYS:SG	11:H:136:GLU:N	2.83	0.51
22:S:15:LEU:HD12	22:S:16:LEU:N	2.26	0.51
22:S:50:ALA:HA	22:S:58:VAL:O	2.11	0.51
23:T:8:ARG:O	23:T:9:ASN:HB2	2.11	0.51
1:A:16:A:H2'	1:A:17:U:H5'	1.92	0.51
1:A:308:C:H2'	1:A:309:G:H8	1.75	0.51
1:A:1054:C:C2'	1:A:1055:A:H5''	2.41	0.51
6:C:139:GLN:CA	6:C:139:GLN:HE21	2.24	0.51
9:F:10:LEU:CD1	9:F:59:TYR:HD2	2.24	0.51
10:G:144:MET:O	10:G:147:ALA:HB3	2.11	0.51
11:H:107:LEU:N	11:H:107:LEU:HD12	2.26	0.51
12:I:104:ARG:HD3	12:I:105:ASP:N	2.26	0.51
13:J:75:ILE:HG22	13:J:76:ASN:N	2.24	0.51
16:M:15:VAL:HG21	16:M:48:LEU:HD21	1.92	0.51
19:P:18:ARG:HE	19:P:35:LYS:HZ2	1.59	0.51
19:P:43:LYS:HB3	19:P:48:TRP:NE1	2.25	0.51
21:R:43:PHE:C	21:R:51:LEU:HD12	2.31	0.51
21:R:58:LEU:HD12	21:R:63:GLN:HA	1.93	0.51
1:A:39:G:O2'	1:A:40:C:H5'	2.11	0.51
1:A:243:A:C5'	1:A:244:U:H5'	2.41	0.51
1:A:657:G:H4'	18:O:28:GLN:HG2	1.91	0.51
1:A:1010:G:H2'	1:A:1011:G:C8	2.44	0.51
1:A:1060:C:C2	1:A:1198:G:C2	2.99	0.51
1:A:1300:G:O2'	1:A:1301:U:H6	1.94	0.51
1:A:1347:G:N2	1:A:1373:G:H2'	2.26	0.51
3:Y:31:A:H2'	3:Y:32:U:O4'	2.11	0.51
6:C:134:ILE:HG22	6:C:168:ALA:CB	2.40	0.51
15:L:43:VAL:HG23	15:L:55:VAL:HG21	1.93	0.51
20:Q:63:ARG:HG2	20:Q:64:PRO:CD	2.41	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:S:38:SER:OG	22:S:71:LEU:HD12	2.11	0.51
22:S:41:VAL:HB	22:S:42:PRO:HD2	1.92	0.51
23:T:38:LYS:O	23:T:39:LYS:C	2.49	0.51
1:A:883:C:O2'	1:A:884:U:H5'	2.12	0.51
1:A:1030(B):C:H2'	1:A:1030(C):G:O4'	2.10	0.51
1:A:1053:G:C4	1:A:1199:U:C5	2.99	0.51
1:A:1206:G:C6	1:A:1207:G:C5	2.99	0.51
1:A:1431:C:C2'	1:A:1432:G:H5'	2.40	0.51
6:C:177:THR:CG2	6:C:180:ALA:HB2	2.41	0.51
7:D:117:ALA:O	7:D:121:VAL:HG23	2.11	0.51
11:H:103:VAL:CG2	11:H:110:ALA:HB2	2.40	0.51
13:J:94:VAL:CG1	13:J:95:GLU:N	2.74	0.51
14:K:58:PRO:O	14:K:61:ALA:HB3	2.10	0.51
16:M:86:CYS:SG	16:M:88:ARG:CG	2.97	0.51
1:A:130:A:H5'	20:Q:63:ARG:NH2	2.26	0.50
1:A:308:C:H2'	1:A:309:G:C8	2.46	0.50
1:A:491:G:H2'	1:A:492:G:C8	2.43	0.50
1:A:1466:C:H2'	1:A:1467:G:O4'	2.11	0.50
5:B:32:ILE:HG23	5:B:40:HIS:HB3	1.93	0.50
6:C:48:TYR:O	6:C:51:GLY:N	2.41	0.50
6:C:54:ARG:HG3	6:C:55:VAL:N	2.26	0.50
8:E:151:LEU:HD11	11:H:77:GLU:OE2	2.11	0.50
14:K:14:VAL:HG21	14:K:40:ILE:HD11	1.93	0.50
14:K:48:ILE:CD1	14:K:63:LEU:HB3	2.38	0.50
20:Q:78:GLU:HG3	20:Q:78:GLU:O	2.10	0.50
22:S:16:LEU:C	22:S:18:LYS:N	2.64	0.50
1:A:646:U:H2'	1:A:647:C:C6	2.46	0.50
1:A:954:G:H21	1:A:1227:A:N6	2.00	0.50
1:A:1221:G:C2'	1:A:1222:G:H5'	2.41	0.50
1:A:1313:U:O4	22:S:4:SER:CB	2.58	0.50
6:C:149:ALA:HA	6:C:201:TYR:O	2.11	0.50
6:C:172:ARG:HB3	6:C:172:ARG:NH1	2.26	0.50
21:R:18:ARG:HH22	21:R:21:LYS:HZ1	1.58	0.50
22:S:42:PRO:O	22:S:43:GLU:C	2.49	0.50
1:A:356:A:H1'	1:A:368:U:O2'	2.11	0.50
1:A:384:G:O2'	1:A:385:C:H5'	2.11	0.50
2:X:2:U:OP2	2:X:3:U:H5	1.95	0.50
6:C:70:VAL:C	6:C:106:VAL:HG23	2.31	0.50
6:C:188:LEU:O	6:C:189:ALA:CB	2.60	0.50
8:E:74:GLY:CA	8:E:116:THR:HG22	2.40	0.50
9:F:4:TYR:CE2	9:F:72:VAL:HG22	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:F:60:PHE:CZ	21:R:78:LEU:HD21	2.46	0.50
15:L:117:ARG:CZ	15:L:124:LYS:HA	2.41	0.50
16:M:110:ARG:HH11	16:M:110:ARG:CG	2.25	0.50
20:Q:18:THR:HG23	20:Q:69:LYS:HE3	1.92	0.50
1:A:189:G:H2'	1:A:190:C:H6	1.76	0.50
1:A:321:A:O2'	1:A:322:C:H5'	2.11	0.50
1:A:633:G:H2'	1:A:634:C:C6	2.46	0.50
1:A:1286:A:H2'	1:A:1287:A:H4'	1.93	0.50
1:A:1300:G:O2'	1:A:1301:U:P	2.70	0.50
1:A:1320:C:H41	22:S:37:ARG:HD3	1.76	0.50
5:B:149:LEU:O	5:B:153:ARG:HG3	2.11	0.50
9:F:101:ALA:HB2	21:R:28:GLU:HA	1.92	0.50
14:K:18:ARG:HD2	14:K:83:ILE:HD11	1.92	0.50
21:R:18:ARG:NH2	21:R:21:LYS:NZ	2.60	0.50
23:T:59:ALA:O	23:T:63:ILE:HG13	2.12	0.50
1:A:192:U:O4'	23:T:103:GLY:HA2	2.11	0.50
1:A:670:G:H2'	1:A:671:G:O4'	2.11	0.50
1:A:1202:G:H2'	1:A:1203:C:C5'	2.41	0.50
5:B:92:TYR:CE1	5:B:151:GLY:HA3	2.47	0.50
5:B:174:VAL:O	5:B:177:ALA:HB3	2.11	0.50
23:T:93:GLU:HA	23:T:93:GLU:OE2	2.11	0.50
1:A:281:G:O2'	1:A:282:A:P	2.68	0.50
1:A:373:A:O2'	1:A:374:A:H5'	2.12	0.50
1:A:741:G:H5'	18:O:39:LEU:HD12	1.94	0.50
1:A:818:G:H3'	1:A:819:A:H5'	1.94	0.50
1:A:940:C:H2'	1:A:941:G:H8	1.75	0.50
6:C:47:LEU:CD1	6:C:47:LEU:N	2.73	0.50
6:C:186:PHE:HE1	6:C:197:GLY:HA3	1.76	0.50
8:E:107:ARG:O	8:E:110:LEU:N	2.44	0.50
9:F:48:LEU:HD21	9:F:60:PHE:HZ	1.77	0.50
10:G:148:ASN:C	10:G:150:ALA:N	2.65	0.50
11:H:35:ILE:HG22	11:H:39:LEU:CD2	2.42	0.50
15:L:45:PRO:HB3	15:L:49:ASN:HB3	1.92	0.50
19:P:55:ARG:O	19:P:56:ALA:C	2.47	0.50
22:S:32:LYS:HG3	22:S:32:LYS:O	2.12	0.50
23:T:10:LEU:CD1	23:T:12:ALA:HB3	2.41	0.50
1:A:620:C:H2'	1:A:621:A:O4'	2.10	0.50
1:A:722:A:H4'	1:A:723:U:C4	2.46	0.50
1:A:767:A:O2'	1:A:1524:C:O2	2.29	0.50
1:A:1102:A:H2'	1:A:1103:C:C6	2.46	0.50
1:A:1131:G:H1	1:A:1143:G:H21	1.60	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:Y:33:U:H5'	3:Y:34:G:OP2	2.12	0.50
5:B:54:THR:O	5:B:57:PHE:HB3	2.12	0.50
7:D:200:GLU:O	7:D:203:VAL:N	2.44	0.50
8:E:13:ILE:HA	8:E:29:GLY:O	2.12	0.50
12:I:59:PHE:HZ	12:I:88:TYR:CE2	2.30	0.50
14:K:13:GLN:HA	14:K:75:TYR:O	2.12	0.50
1:A:415:A:H2'	1:A:416:G:C8	2.47	0.50
1:A:942:G:C2	1:A:943:U:C6	3.00	0.50
1:A:1096:C:O2'	1:A:1097:C:H5'	2.11	0.50
6:C:130:VAL:HG13	6:C:153:VAL:HG21	1.92	0.50
7:D:3:ARG:N	7:D:3:ARG:NE	2.59	0.50
7:D:67:ILE:C	7:D:69:GLY:H	2.15	0.50
8:E:40:ARG:HG2	8:E:40:ARG:NH1	2.27	0.50
11:H:138:TRP:OXT	11:H:138:TRP:HE3	1.94	0.50
12:I:30:GLY:O	12:I:31:GLN:C	2.51	0.50
12:I:111:ARG:O	12:I:119:ALA:HB2	2.12	0.50
14:K:100:ALA:O	14:K:102:GLY:N	2.45	0.50
16:M:46:LYS:HE2	16:M:47:ASP:CG	2.31	0.50
19:P:55:ARG:O	19:P:58:TYR:N	2.45	0.50
1:A:115:G:O2'	1:A:116:A:OP2	2.25	0.50
1:A:518:C:O2'	15:L:50:SER:HB3	2.11	0.50
1:A:933:G:O6	10:G:3:ARG:NH2	2.45	0.50
1:A:1030(A):G:H21	1:A:1031:G:H1	1.58	0.50
1:A:1062:U:H2'	1:A:1063:C:C6	2.47	0.50
1:A:1092:A:H8	1:A:1092:A:O5'	1.95	0.50
1:A:1171:G:H2'	1:A:1172:C:C6	2.47	0.50
5:B:87:ARG:HB3	5:B:219:VAL:HG11	1.94	0.50
5:B:137:ARG:HB3	5:B:137:ARG:HH11	1.76	0.50
6:C:52:LEU:HD12	6:C:55:VAL:CG2	2.42	0.50
6:C:191:THR:HG21	6:C:193:TYR:CE1	2.46	0.50
12:I:43:ALA:O	12:I:44:VAL:C	2.50	0.50
15:L:60:LEU:HD23	15:L:66:VAL:HG22	1.93	0.50
1:A:36:C:H4'	15:L:122:THR:O	2.11	0.49
1:A:443:C:H2'	1:A:444:C:H6	1.76	0.49
1:A:458:C:H2'	1:A:459:G:C8	2.45	0.49
1:A:522:C:O2'	1:A:523:A:H5'	2.12	0.49
1:A:862:C:O2'	1:A:863:U:H5'	2.12	0.49
1:A:895:G:H2'	1:A:896:C:C6	2.48	0.49
1:A:1149:C:H2'	1:A:1150:U:H6	1.77	0.49
1:A:1280:A:O4'	13:J:41:PRO:HG3	2.12	0.49
5:B:59:GLU:O	5:B:62:ALA:HB3	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:91:PRO:CA	5:B:154:LEU:HD12	2.41	0.49
5:B:96:ARG:HD2	5:B:97:TRP:H	1.76	0.49
5:B:208:ILE:HA	5:B:211:ILE:HD12	1.94	0.49
8:E:20:GLN:O	8:E:21:ALA:C	2.49	0.49
11:H:112:LEU:HD22	11:H:112:LEU:N	2.27	0.49
13:J:19:SER:HB2	13:J:91:PRO:HG3	1.94	0.49
18:O:56:LEU:HA	18:O:59:MET:HE2	1.93	0.49
20:Q:20:THR:HG21	20:Q:41:LYS:HD2	1.95	0.49
21:R:18:ARG:HH22	21:R:21:LYS:NZ	2.09	0.49
21:R:86:VAL:HG12	21:R:87:ARG:N	2.27	0.49
23:T:87:LYS:O	23:T:89:ARG:N	2.45	0.49
1:A:761:G:H4'	20:Q:103:GLY:N	2.28	0.49
1:A:1038:C:H2'	1:A:1039:C:H6	1.74	0.49
1:A:1306:A:O2'	16:M:109:THR:HG21	2.12	0.49
5:B:16:HIS:O	5:B:17:PHE:O	2.31	0.49
5:B:36:ARG:HD2	5:B:41:ILE:HD12	1.95	0.49
5:B:36:ARG:HD2	5:B:41:ILE:CD1	2.42	0.49
5:B:223:ILE:HG21	5:B:230:VAL:HG23	1.93	0.49
7:D:64:LEU:HD12	7:D:75:PHE:CZ	2.46	0.49
12:I:48:GLU:OE1	12:I:51:ARG:HD2	2.11	0.49
13:J:27:ALA:HB1	13:J:81:THR:HG23	1.94	0.49
13:J:62:HIS:HB3	17:N:59:ALA:HB3	1.93	0.49
18:O:39:LEU:CD2	18:O:56:LEU:HB2	2.42	0.49
1:A:363:A:OP1	15:L:33:ARG:HD2	2.12	0.49
1:A:394:G:H2'	1:A:395:C:H6	1.76	0.49
1:A:530:G:O6	4:Z:3:U:H1'	2.11	0.49
1:A:632:A:C2'	1:A:633:G:H5'	2.42	0.49
1:A:927:G:H2'	1:A:928:G:H8	1.77	0.49
1:A:1065:U:O2'	1:A:1066:C:OP2	2.28	0.49
6:C:160:ALA:O	6:C:162:GLN:N	2.45	0.49
7:D:59:ARG:NH2	7:D:66:ARG:NH1	2.60	0.49
8:E:24:ARG:HG2	8:E:24:ARG:HH11	1.77	0.49
8:E:76:ILE:HG23	8:E:142:LEU:HD13	1.95	0.49
8:E:79:GLU:OE2	11:H:105:ARG:HD3	2.12	0.49
8:E:91:LEU:CD2	8:E:120:THR:HG22	2.42	0.49
8:E:137:GLU:O	8:E:138:ALA:C	2.51	0.49
9:F:60:PHE:O	9:F:61:LEU:HD23	2.12	0.49
10:G:18:TYR:CD2	10:G:59:LEU:HB2	2.48	0.49
10:G:31:MET:CG	10:G:32:ARG:N	2.75	0.49
10:G:135:VAL:O	10:G:139:GLU:HG3	2.12	0.49
12:I:93:ARG:O	12:I:95:LYS:N	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:I:108:VAL:HG12	12:I:109:VAL:N	2.28	0.49
23:T:14:LYS:O	23:T:17:ARG:HB2	2.12	0.49
1:A:132:C:O2'	1:A:133:U:H5'	2.12	0.49
1:A:397:A:H5'	1:A:398:C:P	2.52	0.49
1:A:409:G:H2'	1:A:410:G:O4'	2.13	0.49
1:A:444:C:H2'	1:A:445:G:H8	1.77	0.49
1:A:879:C:O2'	1:A:880:C:H5'	2.12	0.49
1:A:1022:G:H2'	1:A:1023:G:H8	1.76	0.49
1:A:1347:G:C6	12:I:107:ARG:NH2	2.80	0.49
1:A:1474:G:O2'	1:A:1475:G:H5'	2.11	0.49
5:B:97:TRP:HH2	5:B:176:GLU:CD	2.16	0.49
6:C:36:ASP:O	6:C:39:ILE:HB	2.12	0.49
6:C:156:ARG:HB3	6:C:196:LEU:HD22	1.95	0.49
9:F:19:LEU:HD23	9:F:19:LEU:O	2.12	0.49
14:K:101:SER:OG	14:K:102:GLY:N	2.45	0.49
15:L:111:LYS:O	15:L:112:ASP:HB2	2.12	0.49
17:N:35:ARG:O	17:N:37:PHE:N	2.40	0.49
22:S:80:TYR:CD2	22:S:80:TYR:C	2.84	0.49
23:T:79:ARG:O	23:T:80:ARG:C	2.49	0.49
1:A:622:A:C8	1:A:623:C:C6	3.00	0.49
1:A:633:G:H2'	1:A:634:C:H6	1.78	0.49
1:A:737:A:H2'	1:A:738:C:H6	1.77	0.49
1:A:803:G:H2'	1:A:804:U:O4'	2.12	0.49
1:A:939:G:C5'	10:G:102:ARG:HH22	2.17	0.49
1:A:981:U:H5'	17:N:21:TYR:CE1	2.48	0.49
1:A:1020:U:H2'	1:A:1021:G:H8	1.73	0.49
5:B:68:ILE:N	5:B:90:MET:HE3	2.27	0.49
6:C:18:TRP:O	6:C:54:ARG:NH2	2.44	0.49
16:M:15:VAL:HG23	16:M:43:THR:O	2.12	0.49
21:R:47:THR:C	21:R:49:LYS:H	2.16	0.49
1:A:45:U:H2'	1:A:46:G:C8	2.48	0.49
1:A:404:U:O2'	1:A:405:U:H5'	2.11	0.49
1:A:691:G:O6	14:K:52:GLY:HA2	2.12	0.49
1:A:930:C:O2'	1:A:931:C:H5'	2.13	0.49
1:A:1218:C:H2'	1:A:1219:U:C6	2.47	0.49
1:A:1349:A:H2'	1:A:1350:A:H8	1.77	0.49
3:Y:39:U:O5'	3:Y:39:U:H6	1.94	0.49
6:C:84:ILE:O	6:C:84:ILE:HG12	2.13	0.49
6:C:110:ASN:ND2	6:C:140:ARG:HB3	2.28	0.49
7:D:8:VAL:CG1	7:D:21:LEU:HD13	2.43	0.49
9:F:27:GLN:OE1	9:F:27:GLN:HA	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:85:TYR:CD1	10:G:154:TYR:HE1	2.30	0.49
11:H:59:LEU:O	11:H:61:VAL:HG23	2.13	0.49
14:K:47:VAL:HG12	14:K:48:ILE:N	2.27	0.49
1:A:417:C:H2'	1:A:418:C:H6	1.77	0.49
1:A:674:G:O2'	1:A:675:A:H5'	2.13	0.49
1:A:1116:C:C3'	1:A:1117:G:H5''	2.43	0.49
1:A:1522:U:HO2'	1:A:1523:G:H5'	1.78	0.49
5:B:71:VAL:O	5:B:165:VAL:HG23	2.12	0.49
6:C:8:ILE:O	6:C:12:LEU:N	2.45	0.49
6:C:83:ARG:C	6:C:85:ARG:N	2.65	0.49
11:H:53:VAL:O	11:H:53:VAL:HG12	2.13	0.49
18:O:39:LEU:HD21	18:O:56:LEU:HB2	1.94	0.49
20:Q:96:GLN:O	20:Q:97:SER:HB3	2.12	0.49
23:T:91:LEU:C	23:T:93:GLU:N	2.65	0.49
1:A:67:C:O2'	1:A:171:A:H1'	2.12	0.49
1:A:112:G:H4'	1:A:389:A:H5''	1.93	0.49
1:A:246:A:N6	1:A:281:G:H1'	2.28	0.49
1:A:338:A:H2	1:A:351:G:H22	1.60	0.49
1:A:647:C:H2'	1:A:648:A:C8	2.47	0.49
1:A:1399:C:C2	1:A:1401:G:C5	3.00	0.49
5:B:25:ASN:HD22	5:B:26:PRO:N	2.10	0.49
8:E:51:VAL:O	8:E:55:VAL:HG23	2.13	0.49
8:E:107:ARG:O	8:E:108:ALA:C	2.51	0.49
12:I:30:GLY:O	12:I:31:GLN:O	2.31	0.49
12:I:127:LYS:H	12:I:127:LYS:CD	2.20	0.49
15:L:43:VAL:CG1	15:L:44:THR:H	2.23	0.49
16:M:12:ASN:O	16:M:12:ASN:CG	2.51	0.49
16:M:14:ARG:HB3	16:M:16:ASP:OD1	2.13	0.49
19:P:53:VAL:CG2	19:P:54:GLU:N	2.75	0.49
1:A:415:A:H2'	1:A:416:G:H8	1.78	0.49
1:A:716:A:N3	14:K:117:ASN:O	2.46	0.49
1:A:789:U:H4'	2:X:2:U:O2	2.13	0.49
1:A:812:C:H1'	1:A:813:U:OP2	2.13	0.49
1:A:934:C:N3	1:A:1345:U:C5	2.80	0.49
1:A:1205:U:H4'	6:C:195:VAL:CG2	2.43	0.49
1:A:1391:U:H2'	1:A:1392:G:H8	1.73	0.49
1:A:1425:U:H2'	1:A:1426:C:C6	2.47	0.49
5:B:200:ILE:CD1	5:B:202:PRO:HD3	2.41	0.49
6:C:50:ALA:HB2	6:C:75:VAL:HB	1.93	0.49
6:C:67:THR:O	6:C:67:THR:HG22	2.12	0.49
9:F:36:ARG:NH1	9:F:36:ARG:HG2	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:95:ARG:HG3	10:G:95:ARG:HH11	1.77	0.49
13:J:47:PHE:N	13:J:63:PHE:O	2.45	0.49
15:L:89:ARG:HH12	15:L:97:ARG:HE	1.61	0.49
17:N:14:PRO:O	17:N:15:LYS:CB	2.60	0.49
19:P:43:LYS:HB3	19:P:48:TRP:CE2	2.48	0.49
20:Q:76:LEU:HD23	20:Q:76:LEU:C	2.33	0.49
20:Q:82:MET:O	20:Q:83:ASP:C	2.50	0.49
1:A:176:C:H2'	1:A:177:C:H6	1.78	0.49
1:A:255:G:H2'	1:A:256:U:C6	2.48	0.49
1:A:738:C:OP2	9:F:92:LYS:NZ	2.36	0.49
1:A:976:G:C8	1:A:1358:U:O2	2.66	0.49
1:A:1253:G:H2'	1:A:1254:C:C6	2.47	0.49
1:A:1481:U:O2'	1:A:1482:G:H5'	2.12	0.49
5:B:25:ASN:C	5:B:25:ASN:ND2	2.62	0.49
5:B:54:THR:O	5:B:57:PHE:N	2.46	0.49
5:B:162:ILE:O	5:B:162:ILE:CG2	2.61	0.49
6:C:34:LEU:HD22	6:C:38:ARG:NH1	2.28	0.49
6:C:203:PHE:O	6:C:204:LEU:HD23	2.13	0.49
7:D:162:LEU:HD13	7:D:181:MET:HG2	1.95	0.49
9:F:14:LEU:HD13	9:F:19:LEU:HA	1.94	0.49
11:H:14:ARG:HB3	11:H:14:ARG:NH1	2.28	0.49
13:J:53:PRO:HA	17:N:41:ARG:NH2	2.24	0.49
15:L:124:LYS:CD	15:L:125:PRO:HD2	2.38	0.49
21:R:18:ARG:C	21:R:19:LYS:HD2	2.33	0.49
1:A:828:A:H2'	1:A:829:G:O4'	2.13	0.48
1:A:865:A:O2'	1:A:866:C:H5'	2.13	0.48
1:A:1194:U:H2'	1:A:1195:C:C6	2.48	0.48
1:A:1292:U:H5'	12:I:38:GLN:NE2	2.28	0.48
6:C:190:ARG:HB3	6:C:190:ARG:NH1	2.28	0.48
7:D:127:THR:HG23	7:D:147:ALA:HB3	1.95	0.48
11:H:123:GLU:O	11:H:127:LEU:HB2	2.12	0.48
19:P:43:LYS:HG2	19:P:48:TRP:CZ2	2.48	0.48
21:R:74:ARG:HA	21:R:79:LEU:O	2.13	0.48
23:T:14:LYS:O	23:T:18:GLN:HG3	2.13	0.48
1:A:201:C:N4	1:A:216:G:H1	2.08	0.48
1:A:728:A:H8	1:A:728:A:O5'	1.96	0.48
1:A:1152:A:H2'	1:A:1153:C:H6	1.76	0.48
1:A:1488:G:H2'	1:A:1489:G:C8	2.48	0.48
6:C:3:ASN:ND2	6:C:4:LYS:HE2	2.28	0.48
6:C:83:ARG:C	6:C:85:ARG:H	2.16	0.48
10:G:148:ASN:O	10:G:150:ALA:N	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:J:30:SER:HB2	13:J:80:LYS:HG3	1.96	0.48
16:M:87:TYR:O	16:M:90:LEU:N	2.42	0.48
17:N:4:LYS:O	17:N:7:ILE:HG13	2.13	0.48
20:Q:97:SER:HB2	20:Q:103:GLY:CA	2.43	0.48
22:S:80:TYR:HD2	22:S:80:TYR:C	2.15	0.48
1:A:376:G:H2'	1:A:377:G:C8	2.47	0.48
1:A:749:C:P	1:A:749:C:H3'	2.54	0.48
1:A:814:A:N7	1:A:816:A:C4	2.81	0.48
1:A:1262:C:H2'	1:A:1263:C:C6	2.46	0.48
1:A:1392:G:H2'	1:A:1393:U:H6	1.78	0.48
5:B:88:ALA:HB3	5:B:90:MET:HG2	1.95	0.48
6:C:152:ILE:HB	6:C:199:LYS:HB2	1.96	0.48
7:D:127:THR:CG2	7:D:147:ALA:HB3	2.43	0.48
8:E:79:GLU:O	11:H:104:ARG:CZ	2.61	0.48
10:G:95:ARG:HG3	10:G:95:ARG:NH1	2.29	0.48
12:I:63:ILE:HG22	12:I:65:VAL:HG23	1.94	0.48
19:P:4:ILE:HG13	19:P:64:ALA:HB1	1.95	0.48
21:R:52:PRO:HB2	21:R:54:ARG:HG3	1.93	0.48
22:S:32:LYS:HA	22:S:50:ALA:HB3	1.96	0.48
1:A:163:C:O2'	1:A:164:U:H5'	2.13	0.48
1:A:456:C:H2'	1:A:457:C:C6	2.48	0.48
1:A:1372:U:C2'	1:A:1373:G:H5'	2.44	0.48
1:A:1392:G:O2'	1:A:1393:U:H5'	2.13	0.48
3:Y:34:G:H5'	3:Y:34:G:C8	2.39	0.48
5:B:111:ARG:HB3	5:B:149:LEU:HD11	1.94	0.48
5:B:142:LEU:O	5:B:143:GLU:C	2.52	0.48
6:C:50:ALA:HB1	6:C:70:VAL:CG1	2.36	0.48
6:C:187:ALA:O	6:C:198:VAL:N	2.46	0.48
12:I:65:VAL:HG21	12:I:77:ILE:HD11	1.94	0.48
19:P:1:MET:CE	19:P:3:LYS:HD2	2.44	0.48
1:A:166:G:H2'	1:A:167:G:H8	1.79	0.48
1:A:168:G:O2'	1:A:169:C:H5'	2.13	0.48
1:A:877:C:O2'	1:A:878:G:H5'	2.14	0.48
1:A:918:A:H2'	1:A:919:A:H8	1.74	0.48
1:A:1125:U:H3	13:J:5:ARG:HH21	1.61	0.48
5:B:12:GLU:C	5:B:14:GLY:H	2.17	0.48
9:F:8:ILE:HD11	9:F:79:LEU:HD13	1.94	0.48
13:J:45:ARG:O	13:J:64:GLU:HA	2.13	0.48
14:K:116:HIS:O	14:K:117:ASN:HB2	2.14	0.48
15:L:69:TYR:HE2	15:L:71:PRO:HA	1.79	0.48
15:L:97:ARG:HB2	15:L:98:TYR:CD1	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:N:4:LYS:HA	17:N:7:ILE:HD11	1.95	0.48
20:Q:68:ARG:N	20:Q:70:ARG:HH11	2.08	0.48
23:T:10:LEU:O	23:T:12:ALA:N	2.46	0.48
1:A:112:G:H21	1:A:354:G:H5'	1.77	0.48
1:A:314:C:O2'	1:A:315:A:H5'	2.13	0.48
1:A:501:C:O2'	1:A:502:G:H5'	2.14	0.48
1:A:1030(C):G:H2'	1:A:1030(D):A:O4'	2.14	0.48
1:A:1097:C:H2'	1:A:1098:C:H6	1.78	0.48
1:A:1221:G:O2'	1:A:1222:G:H5'	2.12	0.48
1:A:1443:G:H5''	1:A:1446:A:H5''	1.89	0.48
5:B:87:ARG:HG3	5:B:87:ARG:HH11	1.77	0.48
5:B:116:GLU:HA	5:B:119:GLU:OE1	2.13	0.48
5:B:123:ALA:CA	5:B:127:ILE:HD11	2.43	0.48
9:F:69:GLU:O	9:F:72:VAL:HG23	2.14	0.48
22:S:53:ASN:N	22:S:53:ASN:ND2	2.61	0.48
1:A:47:C:C6	1:A:365:U:H2'	2.48	0.48
1:A:103:C:P	23:T:17:ARG:NH1	2.87	0.48
1:A:344:A:O2'	1:A:345:C:OP1	2.30	0.48
1:A:959:A:H2'	1:A:960:U:O4'	2.14	0.48
1:A:966:G:H2'	1:A:967:C:C6	2.49	0.48
1:A:1305:G:H2'	1:A:1331:G:N2	2.28	0.48
1:A:1370:G:H2'	1:A:1371:G:H8	1.78	0.48
1:A:1394:A:C5	1:A:1501:C:H4'	2.49	0.48
1:A:1488:G:H2'	1:A:1489:G:H8	1.79	0.48
5:B:33:TYR:HB3	5:B:41:ILE:O	2.14	0.48
5:B:44:LEU:O	5:B:47:THR:N	2.47	0.48
6:C:43:LEU:CD1	6:C:68:VAL:HG21	2.44	0.48
6:C:95:THR:O	6:C:96:GLY:C	2.51	0.48
7:D:170:VAL:HG22	7:D:171:GLY:H	1.79	0.48
7:D:173:TRP:HB2	7:D:187:ARG:O	2.14	0.48
8:E:99:GLY:O	8:E:117:ASP:HA	2.12	0.48
9:F:33:TYR:CD1	9:F:75:LEU:HA	2.49	0.48
9:F:33:TYR:HA	9:F:71:ARG:NH2	2.27	0.48
9:F:80:ARG:NH1	9:F:88:VAL:HB	2.29	0.48
10:G:62:PHE:HA	10:G:124:LEU:HD22	1.96	0.48
10:G:124:LEU:O	10:G:127:ALA:HB3	2.14	0.48
10:G:149:ARG:C	10:G:151:TYR:H	2.17	0.48
13:J:14:LYS:O	13:J:18:ALA:HB2	2.14	0.48
17:N:41:ARG:HG2	17:N:41:ARG:HH11	1.79	0.48
1:A:109:A:H4'	1:A:110:C:OP2	2.13	0.48
1:A:262:A:C6	1:A:263:A:C6	3.02	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1345:U:C2	1:A:1377:A:C2	3.02	0.48
1:A:1346:A:H61	1:A:1374:A:H3'	1.79	0.48
1:A:1414:U:H2'	1:A:1415:G:H8	1.79	0.48
5:B:19:HIS:NE2	5:B:206:ASP:HB3	2.28	0.48
6:C:60:ALA:O	6:C:61:ALA:HB3	2.13	0.48
8:E:15:ARG:O	8:E:16:THR:HB	2.13	0.48
10:G:22:LEU:HD21	10:G:66:VAL:HG21	1.96	0.48
10:G:120:ILE:O	10:G:124:LEU:HD12	2.12	0.48
15:L:93:LEU:CG	15:L:96:VAL:HG21	2.43	0.48
17:N:21:TYR:CE2	17:N:23:ARG:NE	2.81	0.48
21:R:40:LEU:C	21:R:42:ARG:N	2.66	0.48
1:A:12:U:H4'	1:A:526:C:H4'	1.96	0.48
1:A:175:C:O2'	1:A:176:C:H5'	2.13	0.48
1:A:264:U:H2'	1:A:265:G:O4'	2.14	0.48
1:A:781:A:H2	1:A:1514:C:O4'	1.97	0.48
1:A:977:A:O2'	1:A:979:C:OP2	2.28	0.48
1:A:1014:A:H2'	1:A:1015:A:C8	2.48	0.48
5:B:35:GLU:HA	5:B:40:HIS:HA	1.95	0.48
5:B:141:GLU:O	5:B:145:LEU:HG	2.13	0.48
7:D:52:SER:O	7:D:53:ASP:C	2.52	0.48
10:G:38:LEU:O	10:G:42:ILE:HG13	2.14	0.48
12:I:88:TYR:CG	12:I:89:ASN:N	2.81	0.48
13:J:80:LYS:O	13:J:83:GLU:HB3	2.13	0.48
20:Q:33:GLY:O	20:Q:34:LYS:C	2.51	0.48
1:A:1183:A:O2'	1:A:1184:G:OP1	2.28	0.48
7:D:173:TRP:O	7:D:186:LEU:HG	2.14	0.48
9:F:72:VAL:O	9:F:75:LEU:HB3	2.14	0.48
10:G:15:ASP:HB3	10:G:19:GLY:N	2.27	0.48
10:G:49:ILE:C	10:G:51:GLN:N	2.67	0.48
12:I:4:TYR:CZ	12:I:88:TYR:CD1	3.02	0.48
12:I:66:ARG:CZ	12:I:66:ARG:HB2	2.43	0.48
12:I:97:LYS:HB2	12:I:98:PRO:HD3	1.96	0.48
21:R:47:THR:HG22	21:R:48:GLY:N	2.29	0.48
1:A:413:G:N2	1:A:428:G:H1'	2.29	0.47
1:A:669:U:H2'	1:A:670:G:H8	1.77	0.47
1:A:913:A:O2'	1:A:914:A:P	2.72	0.47
1:A:1288:A:H2'	1:A:1289:A:C8	2.49	0.47
1:A:1320:C:H2'	1:A:1321:C:O4'	2.14	0.47
1:A:1372:U:H2'	1:A:1373:G:C5'	2.44	0.47
5:B:87:ARG:HH12	5:B:233:SER:CB	2.27	0.47
6:C:32:LEU:HD23	6:C:32:LEU:O	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:54:ARG:O	6:C:55:VAL:HG23	2.14	0.47
6:C:57:ILE:HG22	6:C:58:GLU:N	2.28	0.47
6:C:139:GLN:HA	6:C:139:GLN:NE2	2.29	0.47
7:D:148:VAL:CG1	7:D:158:ILE:HD13	2.44	0.47
8:E:80:ILE:CD1	8:E:91:LEU:CB	2.76	0.47
8:E:82:VAL:HG12	8:E:89:ILE:HG22	1.96	0.47
20:Q:67:LYS:O	20:Q:68:ARG:HB3	2.14	0.47
21:R:86:VAL:CG1	21:R:87:ARG:N	2.77	0.47
1:A:222:U:H2'	1:A:223:U:C6	2.49	0.47
1:A:336:C:O2'	1:A:337:C:H5'	2.13	0.47
1:A:943:U:C2'	1:A:944:G:H5'	2.44	0.47
1:A:1276:G:O5'	1:A:1276:G:H8	1.97	0.47
6:C:59:ARG:HD3	6:C:97:LYS:NZ	2.29	0.47
7:D:187:ARG:HE	7:D:187:ARG:HA	1.78	0.47
8:E:102:ALA:HB2	8:E:120:THR:OG1	2.13	0.47
9:F:73:ASN:O	9:F:74:ASP:C	2.51	0.47
10:G:62:PHE:HA	10:G:124:LEU:CD2	2.44	0.47
12:I:65:VAL:CG1	12:I:73:GLN:HB3	2.26	0.47
14:K:19:ALA:HB2	14:K:80:VAL:HG11	1.95	0.47
18:O:87:ILE:HG22	18:O:88:ARG:N	2.29	0.47
22:S:61:TYR:C	22:S:61:TYR:CD2	2.87	0.47
23:T:53:LEU:HD13	23:T:100:ILE:CG2	2.44	0.47
1:A:986:A:H2'	1:A:987:G:C8	2.49	0.47
1:A:1136:U:H5''	1:A:1137:C:OP2	2.13	0.47
5:B:12:GLU:OE1	5:B:15:VAL:N	2.46	0.47
5:B:102:LEU:N	5:B:102:LEU:HD12	2.29	0.47
5:B:142:LEU:HD22	5:B:146:GLN:NE2	2.28	0.47
6:C:47:LEU:CD2	6:C:68:VAL:HG11	2.43	0.47
7:D:19:LEU:HD23	7:D:20:TYR:H	1.78	0.47
8:E:86:ALA:O	8:E:125:SER:N	2.43	0.47
10:G:51:GLN:C	10:G:53:LYS:N	2.67	0.47
12:I:99:LEU:HD22	12:I:99:LEU:N	2.29	0.47
14:K:29:ILE:O	14:K:29:ILE:HG12	2.14	0.47
14:K:33:THR:HG23	14:K:34:ASP:O	2.13	0.47
24:V:6:ARG:O	24:V:12:LYS:HD2	2.14	0.47
1:A:138:G:O2'	1:A:139:G:H5'	2.14	0.47
1:A:477:G:H2'	1:A:478:A:C8	2.48	0.47
1:A:645:C:O2'	1:A:646:U:H5'	2.13	0.47
1:A:737:A:O2'	1:A:738:C:H5'	2.13	0.47
1:A:960:U:O2	1:A:960:U:C2'	2.63	0.47
1:A:992:U:O2'	1:A:993:G:OP2	2.24	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1123:A:H4'	13:J:37:PRO:HD2	1.96	0.47
1:A:1460:A:H2'	1:A:1461:G:O4'	2.14	0.47
5:B:103:THR:O	5:B:103:THR:CG2	2.63	0.47
6:C:54:ARG:HG2	6:C:54:ARG:HH11	1.79	0.47
15:L:24:VAL:HG12	15:L:26:ALA:HB2	1.96	0.47
19:P:34:GLU:HG2	19:P:35:LYS:N	2.27	0.47
20:Q:62:SER:OG	20:Q:72:ARG:HG3	2.15	0.47
22:S:40:ILE:HA	22:S:44:MET:SD	2.54	0.47
1:A:26:A:H61	1:A:558:G:H1'	1.79	0.47
1:A:325:A:H2'	1:A:326:G:O4'	2.14	0.47
1:A:575:G:OP1	1:A:575:G:H4'	2.15	0.47
1:A:939:G:H2'	1:A:940:C:H6	1.80	0.47
1:A:1202:G:H2'	1:A:1203:C:H5'	1.96	0.47
1:A:1249:C:O2'	12:I:73:GLN:NE2	2.48	0.47
1:A:1309:G:N7	16:M:99:ARG:NH2	2.62	0.47
7:D:24:GLU:O	7:D:25:ARG:HB3	2.15	0.47
12:I:97:LYS:N	12:I:98:PRO:CD	2.78	0.47
22:S:45:VAL:C	22:S:47:HIS:H	2.18	0.47
1:A:91:C:O2'	1:A:92:C:H5'	2.15	0.47
1:A:411:A:C6	1:A:429:U:C4	3.03	0.47
1:A:921:U:O2	8:E:19:MET:HB2	2.15	0.47
5:B:16:HIS:NE2	5:B:214:ILE:CG1	2.65	0.47
5:B:30:ARG:HG3	5:B:31:TYR:CE2	2.50	0.47
5:B:61:LEU:HD21	5:B:160:ASP:CB	2.44	0.47
6:C:202:ILE:HG22	6:C:204:LEU:HD21	1.96	0.47
12:I:48:GLU:HA	12:I:48:GLU:OE1	2.14	0.47
16:M:11:ARG:HG2	16:M:12:ASN:N	2.29	0.47
21:R:86:VAL:O	21:R:87:ARG:CB	2.62	0.47
1:A:16:A:O2'	1:A:17:U:H5'	2.15	0.47
1:A:270:A:H2'	1:A:271:C:C6	2.50	0.47
1:A:364:A:H2'	1:A:365:U:O2	2.13	0.47
1:A:539:A:H2'	1:A:540:G:H8	1.80	0.47
1:A:742:G:H5''	18:O:58:MET:CE	2.45	0.47
1:A:991:U:O2	1:A:993:G:H8	1.97	0.47
1:A:1057:G:C5'	6:C:154:SER:HB2	2.43	0.47
1:A:1315:U:H2'	1:A:1316:G:C8	2.50	0.47
1:A:1331:G:O2'	1:A:1332:A:OP2	2.31	0.47
1:A:1402:C:H2'	1:A:1403:C:O4'	2.15	0.47
5:B:17:PHE:HB3	5:B:44:LEU:HD21	1.95	0.47
5:B:44:LEU:O	5:B:45:GLN:C	2.52	0.47
5:B:96:ARG:O	5:B:98:LEU:HD23	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:83:ARG:O	6:C:86:VAL:N	2.47	0.47
6:C:153:VAL:O	6:C:154:SER:C	2.52	0.47
6:C:156:ARG:O	6:C:156:ARG:CD	2.62	0.47
7:D:32:ALA:O	7:D:34:GLU:N	2.48	0.47
7:D:67:ILE:HG22	7:D:68:TYR:N	2.29	0.47
7:D:152:SER:HB3	7:D:155:LEU:HD12	1.97	0.47
8:E:15:ARG:O	8:E:16:THR:HG22	2.14	0.47
8:E:79:GLU:HA	8:E:91:LEU:O	2.14	0.47
8:E:122:GLU:O	8:E:123:LEU:HD23	2.14	0.47
12:I:118:LYS:NZ	12:I:118:LYS:CB	2.77	0.47
23:T:91:LEU:HD12	23:T:91:LEU:H	1.79	0.47
1:A:393:A:C2'	1:A:394:G:H5'	2.45	0.47
1:A:502:G:H2'	1:A:503:C:C6	2.48	0.47
1:A:807:A:H2'	1:A:808:C:C6	2.49	0.47
1:A:991:U:C4	1:A:1212:U:H1'	2.50	0.47
1:A:1271:G:H2'	1:A:1272:G:C8	2.50	0.47
1:A:1327:C:O2'	1:A:1328:C:H5'	2.14	0.47
5:B:139:LYS:O	5:B:139:LYS:HD3	2.15	0.47
5:B:215:LEU:O	5:B:216:SER:C	2.51	0.47
7:D:142:PRO:HA	7:D:185:PHE:HD2	1.79	0.47
13:J:46:ARG:HG2	13:J:46:ARG:HH11	1.80	0.47
14:K:33:THR:OG1	14:K:39:PRO:HA	2.15	0.47
15:L:43:VAL:CG2	15:L:55:VAL:HG21	2.44	0.47
17:N:11:LYS:C	17:N:13:THR:N	2.68	0.47
18:O:21:ASP:OD1	18:O:24:SER:HB2	2.14	0.47
18:O:61:GLY:C	18:O:65:ARG:HH12	2.18	0.47
20:Q:53:LEU:HD12	20:Q:85:VAL:HG21	1.97	0.47
21:R:25:THR:O	21:R:26:LEU:HD13	2.13	0.47
22:S:13:ASP:O	22:S:16:LEU:N	2.48	0.47
23:T:41:ILE:HD13	23:T:87:LYS:HZ2	1.80	0.47
1:A:188:C:O4'	23:T:89:ARG:NH1	2.48	0.47
1:A:376:G:OP2	19:P:67:THR:HG21	2.15	0.47
1:A:857:C:H2'	1:A:858:G:O4'	2.14	0.47
1:A:1191:A:OP2	6:C:3:ASN:OD1	2.33	0.47
1:A:1238:A:OP2	1:A:1335:C:H1'	2.15	0.47
7:D:59:ARG:HH22	7:D:66:ARG:HH12	1.61	0.47
10:G:135:VAL:HG12	10:G:139:GLU:HG3	1.96	0.47
13:J:9:ARG:HA	13:J:16:LEU:HD11	1.97	0.47
13:J:28:ARG:HG2	13:J:28:ARG:HH11	1.80	0.47
14:K:40:ILE:HG23	14:K:75:TYR:CE2	2.50	0.47
16:M:40:ASN:ND2	16:M:42:ALA:H	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:N:18:VAL:O	17:N:20:ALA:N	2.48	0.47
1:A:123:C:OP1	1:A:312:C:H5'	2.14	0.47
1:A:356:A:O2'	1:A:357:G:H5'	2.15	0.47
1:A:439:A:C4	1:A:497:A:C2	3.03	0.47
1:A:731:G:H5'	1:A:766:A:H4'	1.96	0.47
1:A:737:A:H2'	1:A:738:C:C6	2.49	0.47
1:A:781:A:C5	1:A:802:A:C2	3.02	0.47
1:A:1004:A:N6	1:A:1037:C:H42	2.13	0.47
1:A:1235:U:O2'	1:A:1236:A:H5'	2.15	0.47
1:A:1271:G:H2'	1:A:1272:G:H8	1.80	0.47
1:A:1283:G:O2'	1:A:1284:C:H5'	2.15	0.47
1:A:1343:G:H4'	12:I:122:ALA:O	2.14	0.47
5:B:15:VAL:HG22	5:B:209:ARG:HG3	1.97	0.47
11:H:31:PHE:CE1	11:H:35:ILE:HD11	2.50	0.47
11:H:56:LYS:HD2	11:H:56:LYS:N	2.30	0.47
15:L:39:VAL:CG2	15:L:57:LYS:HG2	2.45	0.47
15:L:40:VAL:O	15:L:40:VAL:HG12	2.15	0.47
16:M:19:LEU:HA	16:M:22:ILE:CD1	2.45	0.47
19:P:39:TYR:CZ	19:P:41:PRO:HA	2.50	0.47
21:R:39:VAL:HG13	21:R:40:LEU:N	2.30	0.47
22:S:10:PHE:HE2	22:S:12:ASP:OD1	1.98	0.47
1:A:488:C:H2'	1:A:489:C:C6	2.49	0.46
1:A:780:A:C2	1:A:801:U:C5	3.04	0.46
1:A:831:U:H2'	1:A:832:C:C6	2.50	0.46
1:A:1194:U:O2'	1:A:1195:C:H5'	2.14	0.46
1:A:1424:C:O2'	1:A:1425:U:H5'	2.16	0.46
1:A:1442:G:C6	1:A:1446:A:N6	2.83	0.46
7:D:10:ARG:HG3	7:D:10:ARG:NH1	2.28	0.46
7:D:53:ASP:O	7:D:57:ARG:HD3	2.15	0.46
9:F:36:ARG:HG2	9:F:36:ARG:HH11	1.80	0.46
12:I:111:ARG:HH11	12:I:111:ARG:CG	2.27	0.46
13:J:89:ASP:CG	13:J:90:LEU:N	2.69	0.46
14:K:109:VAL:HG22	21:R:86:VAL:HA	1.97	0.46
1:A:690:G:H2'	1:A:691:G:C8	2.49	0.46
1:A:1121:U:H2'	1:A:1122:U:C6	2.50	0.46
1:A:1338:G:H2'	1:A:1339:A:C8	2.50	0.46
1:A:1411:C:O2'	1:A:1412:C:H5'	2.15	0.46
1:A:1513:A:H2'	1:A:1514:C:H6	1.79	0.46
5:B:15:VAL:CG1	5:B:209:ARG:HB3	2.45	0.46
5:B:20:GLU:O	5:B:39:ILE:HG23	2.16	0.46
7:D:25:ARG:CZ	7:D:30:LYS:HD3	2.45	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:K:48:ILE:H	14:K:48:ILE:HG12	1.45	0.46
18:O:39:LEU:CD2	18:O:56:LEU:HD22	2.46	0.46
18:O:70:LEU:O	18:O:71:GLN:C	2.52	0.46
22:S:33:THR:HG22	22:S:35:SER:N	2.29	0.46
1:A:393:A:C2	1:A:394:G:C8	3.03	0.46
1:A:851:G:H2'	1:A:852:G:H8	1.80	0.46
1:A:988:G:H2'	1:A:989:C:O4'	2.16	0.46
1:A:1026:G:N7	1:A:1027:C:C2	2.83	0.46
1:A:1298:C:C5	10:G:114:ARG:HD3	2.49	0.46
1:A:1372:U:OP1	12:I:71:SER:HB3	2.15	0.46
5:B:187:LEU:HD12	5:B:205:ASP:HA	1.98	0.46
6:C:6:HIS:NE2	6:C:8:ILE:HD12	2.30	0.46
6:C:33:LEU:HD23	6:C:33:LEU:C	2.36	0.46
15:L:117:ARG:HD2	15:L:122:THR:OG1	2.15	0.46
18:O:31:LEU:O	18:O:34:LEU:HB3	2.14	0.46
19:P:75:ARG:O	19:P:78:GLY:N	2.47	0.46
21:R:47:THR:O	21:R:49:LYS:N	2.47	0.46
1:A:256:U:H2'	1:A:257:G:H8	1.81	0.46
1:A:583:A:H2'	1:A:584:G:O4'	2.14	0.46
1:A:960:U:O2	1:A:960:U:H5'	2.15	0.46
1:A:1055:A:C2	1:A:1056:U:H1'	2.50	0.46
1:A:1215:G:C2	1:A:1216:G:C8	3.03	0.46
1:A:1292:U:O2'	1:A:1293:G:H5'	2.15	0.46
1:A:1367:C:H5'	13:J:60:ARG:HH12	1.80	0.46
1:A:1394:A:C6	1:A:1501:C:H4'	2.50	0.46
5:B:167:PRO:O	5:B:171:ALA:N	2.49	0.46
5:B:178:ARG:NH1	5:B:178:ARG:CG	2.71	0.46
12:I:96:LEU:HD12	12:I:96:LEU:N	2.31	0.46
13:J:4:ILE:O	13:J:73:ASP:HA	2.16	0.46
14:K:33:THR:HG23	14:K:34:ASP:N	2.29	0.46
15:L:93:LEU:HB2	15:L:96:VAL:HG21	1.97	0.46
1:A:370:C:H2'	1:A:371:G:H8	1.81	0.46
1:A:489:C:H2'	1:A:490:G:H8	1.81	0.46
1:A:579:G:H5'	1:A:728:A:C1'	2.37	0.46
1:A:767:A:H2'	1:A:768:A:O4'	2.15	0.46
1:A:908:A:H2'	1:A:909:A:C8	2.49	0.46
1:A:1250:A:H4'	12:I:68:GLY:CA	2.45	0.46
1:A:1349:A:P	12:I:118:LYS:NZ	2.88	0.46
1:A:1515:C:O2'	1:A:1516:G:H5'	2.16	0.46
5:B:78:GLN:HB3	5:B:94:ASN:HD21	1.80	0.46
7:D:162:LEU:HD13	7:D:181:MET:CE	2.45	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:F:50:TYR:CE1	21:R:77:GLY:HA2	2.51	0.46
9:F:71:ARG:HA	9:F:74:ASP:OD2	2.14	0.46
10:G:45:ASP:O	10:G:49:ILE:HG13	2.15	0.46
10:G:51:GLN:NE2	10:G:58:PRO:HD3	2.31	0.46
13:J:94:VAL:CG1	13:J:95:GLU:H	2.29	0.46
16:M:26:GLY:C	16:M:28:ALA:N	2.68	0.46
18:O:50:HIS:O	18:O:51:HIS:C	2.54	0.46
21:R:51:LEU:HA	21:R:52:PRO:HD3	1.71	0.46
23:T:91:LEU:C	23:T:93:GLU:H	2.18	0.46
1:A:57:G:H2'	1:A:58:C:C6	2.51	0.46
1:A:109:A:C6	1:A:327:A:C6	3.04	0.46
1:A:328:C:H4'	1:A:329:A:C5'	2.45	0.46
1:A:659:U:O2'	1:A:660:G:H5'	2.16	0.46
1:A:1229:A:C2	1:A:1230:C:C4	3.04	0.46
5:B:127:ILE:C	5:B:129:GLU:H	2.19	0.46
5:B:197:VAL:HB	5:B:200:ILE:CG2	2.35	0.46
7:D:155:LEU:O	7:D:159:ARG:HG2	2.15	0.46
12:I:5:TYR:HD2	12:I:18:PHE:CE2	2.34	0.46
12:I:23:ASN:C	12:I:23:ASN:ND2	2.68	0.46
19:P:45:THR:O	19:P:48:TRP:HD1	1.98	0.46
20:Q:48:GLU:O	20:Q:49:GLU:C	2.53	0.46
23:T:50:GLU:HA	23:T:100:ILE:CG2	2.45	0.46
1:A:216:G:O2'	1:A:217:C:O4'	2.34	0.46
1:A:406:G:H5''	7:D:5:ILE:CG2	2.45	0.46
1:A:730:G:H21	1:A:765:G:H5''	1.80	0.46
1:A:1004:A:C5'	1:A:1024:G:H1	2.27	0.46
1:A:1053:G:O3'	1:A:1054:C:H4'	2.15	0.46
1:A:1125:U:H5''	1:A:1126:U:C5	2.41	0.46
5:B:34:ALA:O	5:B:41:ILE:N	2.49	0.46
5:B:213:LEU:HD23	5:B:213:LEU:C	2.36	0.46
7:D:29:PRO:O	7:D:30:LYS:CG	2.54	0.46
9:F:9:VAL:HB	9:F:87:ARG:HB2	1.98	0.46
10:G:145:ALA:C	10:G:147:ALA:N	2.69	0.46
10:G:151:TYR:C	10:G:153:HIS:H	2.18	0.46
12:I:5:TYR:CD2	12:I:18:PHE:CE2	3.03	0.46
13:J:12:ASP:HB3	13:J:15:THR:CB	2.46	0.46
17:N:44:LEU:HD12	17:N:44:LEU:O	2.16	0.46
1:A:416:G:C5	1:A:417:C:C4	3.04	0.46
1:A:889:A:H61	1:A:907:A:H3'	1.81	0.46
1:A:948:C:OP1	16:M:109:THR:HG22	2.16	0.46
1:A:1367:C:H4'	13:J:48:THR:HG21	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1427:U:H2'	1:A:1428:A:H8	1.81	0.46
5:B:7:VAL:HG23	5:B:7:VAL:O	2.15	0.46
9:F:80:ARG:HG2	9:F:80:ARG:HH11	1.81	0.46
15:L:46:LYS:CG	15:L:47:LYS:N	2.67	0.46
15:L:55:VAL:HG12	15:L:56:ALA:H	1.81	0.46
18:O:3:ILE:HD13	18:O:34:LEU:HD22	1.98	0.46
23:T:53:LEU:HB2	23:T:100:ILE:HG23	1.98	0.46
1:A:254:G:H21	20:Q:16:GLN:HE22	1.63	0.46
1:A:269:C:H2'	1:A:270:A:H8	1.73	0.46
1:A:1053:G:C3'	1:A:1054:C:C5'	2.94	0.46
5:B:123:ALA:N	5:B:127:ILE:HD11	2.30	0.46
10:G:6:ARG:O	10:G:7:ALA:C	2.53	0.46
16:M:39:ILE:CD1	16:M:52:GLU:HB3	2.46	0.46
16:M:40:ASN:HD22	16:M:40:ASN:C	2.19	0.46
19:P:26:ARG:HD3	19:P:31:LYS:N	2.30	0.46
1:A:438:G:O2'	1:A:495:U:O4	2.30	0.46
1:A:1004:A:N1	1:A:1037:C:N4	2.64	0.46
1:A:1162:C:H2'	1:A:1163:C:C6	2.51	0.46
1:A:1373:G:H5''	10:G:36:LYS:CB	2.45	0.46
1:A:1423:G:H2'	1:A:1424:C:H6	1.80	0.46
5:B:59:GLU:O	5:B:62:ALA:N	2.49	0.46
5:B:74:LYS:HD3	5:B:76:GLN:HB3	1.97	0.46
5:B:137:ARG:O	5:B:140:HIS:HB2	2.16	0.46
6:C:34:LEU:HD22	6:C:38:ARG:CZ	2.46	0.46
6:C:54:ARG:HG2	6:C:54:ARG:NH1	2.31	0.46
6:C:147:LYS:HB3	6:C:203:PHE:CD2	2.51	0.46
10:G:31:MET:HG2	10:G:32:ARG:N	2.32	0.46
12:I:5:TYR:C	12:I:84:ALA:HA	2.37	0.46
13:J:5:ARG:HB2	13:J:99:LYS:O	2.15	0.46
15:L:126:LYS:O	15:L:127:GLU:C	2.54	0.46
23:T:10:LEU:O	23:T:13:LEU:HG	2.16	0.46
1:A:192:U:O2'	1:A:193:C:H5'	2.16	0.45
1:A:1227:A:H8	1:A:1227:A:H3'	1.80	0.45
1:A:1305:G:C8	1:A:1305:G:OP2	2.69	0.45
1:A:1360:A:O2'	1:A:1361:G:H5'	2.16	0.45
1:A:1451:A:O2'	1:A:1452:C:OP1	2.26	0.45
9:F:35:ALA:HA	9:F:67:MET:HB3	1.98	0.45
10:G:41:ARG:O	10:G:44:TYR:N	2.49	0.45
16:M:34:LEU:HD23	16:M:39:ILE:HB	1.98	0.45
16:M:65:LYS:HE3	16:M:69:GLU:HG2	1.98	0.45
20:Q:104:LYS:O	20:Q:105:ALA:CB	2.63	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:476:G:O2'	1:A:477:G:H5'	2.16	0.45
1:A:599:C:O2'	1:A:600:C:H5'	2.16	0.45
1:A:660:G:C2	1:A:746:A:C2	3.04	0.45
1:A:1250:A:C5'	12:I:68:GLY:N	2.76	0.45
1:A:1366:C:HO2'	13:J:60:ARG:HH22	1.63	0.45
8:E:71:LEU:CD2	8:E:115:VAL:HG23	2.46	0.45
10:G:49:ILE:C	10:G:51:GLN:H	2.20	0.45
11:H:119:LEU:CD1	11:H:124:ALA:HA	2.40	0.45
12:I:125:TYR:CD2	12:I:125:TYR:N	2.82	0.45
14:K:126:ARG:HB3	14:K:127:LYS:H	1.47	0.45
18:O:39:LEU:HD21	18:O:43:LEU:HD11	1.98	0.45
20:Q:83:ASP:O	20:Q:86:GLU:HB2	2.16	0.45
20:Q:88:TYR:OH	20:Q:92:ARG:NH2	2.49	0.45
21:R:29:PHE:HE1	21:R:31:LEU:HD23	1.80	0.45
22:S:10:PHE:CD2	22:S:10:PHE:C	2.88	0.45
1:A:255:G:H5'	20:Q:16:GLN:O	2.15	0.45
1:A:604:G:O2'	1:A:605:U:H5'	2.16	0.45
1:A:652:U:C5	1:A:752:G:C4	3.04	0.45
1:A:817:C:H1'	1:A:819:A:H5'	1.98	0.45
1:A:1184:G:OP1	1:A:1184:G:H3'	2.16	0.45
7:D:70:ILE:HD12	7:D:100:ARG:HD2	1.99	0.45
10:G:62:PHE:HD1	10:G:124:LEU:HD21	1.81	0.45
13:J:25:GLU:O	13:J:28:ARG:HB2	2.16	0.45
18:O:25:THR:HG21	18:O:70:LEU:HD23	1.98	0.45
23:T:83:ARG:O	23:T:87:LYS:HE2	2.16	0.45
1:A:124:G:C6	1:A:125:U:C4	3.04	0.45
1:A:589:C:O2'	1:A:590:C:H5'	2.16	0.45
1:A:639:G:O2'	1:A:640:A:H5'	2.16	0.45
1:A:766:A:C8	1:A:814:A:C6	3.04	0.45
1:A:788:U:O2'	1:A:789:U:H5'	2.16	0.45
1:A:915:A:H2'	1:A:916:G:C5'	2.46	0.45
1:A:922:G:H5'	8:E:19:MET:O	2.16	0.45
1:A:1234:C:O2'	1:A:1235:U:H5'	2.16	0.45
1:A:1288:A:H2'	1:A:1289:A:H8	1.81	0.45
1:A:1314:C:N3	1:A:1315:U:C4	2.85	0.45
1:A:1512:U:H2'	1:A:1513:A:C8	2.52	0.45
5:B:74:LYS:HD3	5:B:206:ASP:OD1	2.16	0.45
5:B:187:LEU:HA	5:B:201:ILE:HB	1.99	0.45
6:C:130:VAL:CG1	6:C:153:VAL:HG21	2.47	0.45
6:C:134:ILE:O	6:C:138:VAL:HG23	2.17	0.45
8:E:89:ILE:HD13	8:E:90:VAL:H	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:151:TYR:C	10:G:153:HIS:N	2.70	0.45
12:I:32:ASP:O	12:I:35:GLU:HB3	2.17	0.45
12:I:92:TYR:O	12:I:96:LEU:HD13	2.16	0.45
15:L:39:VAL:HG22	15:L:57:LYS:CG	2.47	0.45
16:M:32:GLU:O	16:M:35:GLU:N	2.47	0.45
16:M:80:ARG:C	16:M:82:MET:H	2.19	0.45
18:O:41:GLU:HA	18:O:44:LYS:CG	2.45	0.45
1:A:51:A:H4'	1:A:52:G:OP2	2.15	0.45
1:A:411:A:C4	1:A:413:G:H1'	2.52	0.45
1:A:1225:A:H2'	1:A:1225:A:N3	2.31	0.45
1:A:1234:C:H2'	1:A:1235:U:H6	1.81	0.45
1:A:1384:C:H2'	1:A:1385:G:C8	2.51	0.45
1:A:1390:U:H2'	1:A:1391:U:C6	2.52	0.45
6:C:34:LEU:C	6:C:34:LEU:CD2	2.85	0.45
6:C:154:SER:HB3	6:C:197:GLY:N	2.32	0.45
9:F:21:LEU:O	9:F:24:GLU:HB3	2.16	0.45
9:F:62:TRP:C	9:F:63:TYR:HD2	2.20	0.45
16:M:78:ILE:O	16:M:81:LEU:HD23	2.17	0.45
18:O:39:LEU:HD21	18:O:56:LEU:HD22	1.98	0.45
21:R:38:GLU:OE1	21:R:38:GLU:N	2.34	0.45
23:T:45:GLN:C	23:T:47:GLY:H	2.19	0.45
23:T:56:MET:CE	23:T:88:VAL:HG11	2.46	0.45
1:A:116:A:H2'	1:A:117:G:C8	2.51	0.45
1:A:664:G:H1	1:A:741:G:H1	1.64	0.45
1:A:757:U:O2'	1:A:879:C:H1'	2.16	0.45
1:A:761:G:H5''	20:Q:102:GLY:CA	2.46	0.45
1:A:791:G:C2'	1:A:792:A:H5''	2.46	0.45
1:A:1051:C:C4	1:A:1052:U:C5	3.04	0.45
1:A:1345:U:C4	1:A:1377:A:C2	3.05	0.45
1:A:1479:C:O2'	1:A:1480:G:H5'	2.17	0.45
5:B:112:VAL:HG11	5:B:153:ARG:HA	1.98	0.45
6:C:167:TRP:HB3	6:C:168:ALA:H	1.32	0.45
8:E:79:GLU:O	11:H:104:ARG:NH1	2.50	0.45
20:Q:59:ILE:HA	20:Q:59:ILE:HD13	1.57	0.45
23:T:53:LEU:HD22	23:T:102:GLY:H	1.82	0.45
1:A:941:G:O2'	1:A:942:G:H5'	2.17	0.45
1:A:1124:G:C8	1:A:1145:C:C5	3.05	0.45
6:C:22:TRP:CE3	6:C:32:LEU:HD22	2.51	0.45
10:G:5:ARG:CG	10:G:6:ARG:N	2.73	0.45
14:K:58:PRO:HA	14:K:90:GLY:HA2	1.99	0.45
23:T:42:GLN:O	23:T:43:LEU:C	2.55	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:T:105:SER:O	23:T:106:ALA:C	2.54	0.45
1:A:135:C:C2	19:P:1:MET:HB2	2.52	0.45
1:A:409:G:O2'	1:A:410:G:H5'	2.16	0.45
1:A:523:A:N6	15:L:92:ASP:OD2	2.48	0.45
1:A:555:C:H2'	1:A:556:C:C6	2.51	0.45
1:A:945:G:H2'	1:A:945:G:N3	2.31	0.45
1:A:1066:C:O2'	1:A:1067:A:H5'	2.16	0.45
5:B:103:THR:HA	5:B:180:LEU:HD11	1.99	0.45
6:C:90:GLU:C	6:C:92:ALA:N	2.70	0.45
7:D:5:ILE:HG22	7:D:5:ILE:O	2.15	0.45
8:E:31:LEU:HD22	8:E:43:LEU:CD2	2.46	0.45
9:F:30:LEU:HD23	9:F:75:LEU:HD21	1.97	0.45
11:H:64:LYS:HE3	11:H:79:VAL:HG11	1.98	0.45
12:I:7:THR:O	12:I:15:ALA:O	2.35	0.45
12:I:10:ARG:HG2	12:I:10:ARG:NH1	2.31	0.45
16:M:8:GLU:C	16:M:9:ILE:HG13	2.37	0.45
17:N:45:ARG:HG2	17:N:49:HIS:CD2	2.52	0.45
22:S:41:VAL:HG22	22:S:44:MET:HE1	1.99	0.45
1:A:299:G:H2'	1:A:300:A:C8	2.52	0.45
1:A:509:A:N3	1:A:543:C:O2'	2.42	0.45
1:A:994:A:N7	1:A:1216:G:H4'	2.32	0.45
1:A:1163:C:O2'	1:A:1164:G:H5'	2.17	0.45
1:A:1193:G:N2	1:A:1194:U:C2	2.85	0.45
5:B:68:ILE:H	5:B:90:MET:CE	2.30	0.45
10:G:23:VAL:HG13	10:G:43:PHE:CE2	2.51	0.45
11:H:60:ARG:HG3	11:H:60:ARG:NH1	2.32	0.45
14:K:14:VAL:O	14:K:15:ALA:HB3	2.16	0.45
15:L:89:ARG:HD3	15:L:97:ARG:HA	1.98	0.45
16:M:49:THR:O	16:M:53:VAL:HG23	2.16	0.45
20:Q:59:ILE:HD13	20:Q:73:VAL:HA	1.97	0.45
20:Q:65:ILE:HD11	20:Q:72:ARG:HG2	1.99	0.45
21:R:69:THR:O	21:R:72:ARG:HB2	2.17	0.45
1:A:285:G:O2'	1:A:286:G:H5'	2.17	0.45
1:A:1063:C:H3'	1:A:1064:G:H2'	1.99	0.45
1:A:1190:G:O2'	1:A:1191:A:P	2.74	0.45
1:A:1313:U:H2'	1:A:1314:C:H6	1.81	0.45
1:A:1317:C:H2'	1:A:1318:A:O4'	2.17	0.45
1:A:1323:G:H2'	1:A:1324:A:C8	2.52	0.45
5:B:144:ARG:O	5:B:147:LYS:HB2	2.16	0.45
6:C:11:ARG:HG3	6:C:178:LEU:HD12	2.00	0.45
6:C:61:ALA:O	6:C:62:ASP:C	2.55	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:D:25:ARG:O	7:D:27:TYR:N	2.49	0.45
10:G:16:LEU:H	10:G:16:LEU:HD22	1.82	0.45
11:H:85:ARG:CZ	11:H:87:SER:O	2.65	0.45
11:H:119:LEU:HD23	11:H:119:LEU:N	2.32	0.45
13:J:91:PRO:HB2	13:J:94:VAL:HG23	1.99	0.45
19:P:75:ARG:HA	19:P:80:PHE:HD1	1.82	0.45
1:A:514:C:O2'	1:A:515:G:H5'	2.17	0.44
1:A:551:U:H2'	1:A:552:U:C6	2.52	0.44
5:B:7:VAL:C	5:B:8:LYS:HG3	2.38	0.44
5:B:100:GLY:O	5:B:101:MET:C	2.55	0.44
10:G:111:ARG:HB3	10:G:112:PRO:HD2	1.98	0.44
14:K:30:VAL:HG21	14:K:65:ALA:HA	1.98	0.44
1:A:280:C:O2	20:Q:38:ARG:HG3	2.17	0.44
1:A:722:A:H3'	1:A:722:A:N3	2.32	0.44
1:A:968:A:OP2	12:I:128:ARG:NH2	2.50	0.44
1:A:1038:C:C6	1:A:1039:C:H5	2.35	0.44
1:A:1098:C:H2'	1:A:1099:G:O4'	2.16	0.44
1:A:1179:A:H2'	1:A:1180:A:O4'	2.17	0.44
1:A:1284:C:H3'	1:A:1285:A:H8	1.82	0.44
1:A:1372:U:H2'	1:A:1373:G:O4'	2.17	0.44
5:B:44:LEU:HD23	5:B:47:THR:OG1	2.17	0.44
6:C:79:ARG:HG3	6:C:79:ARG:O	2.16	0.44
7:D:149:ALA:O	7:D:152:SER:N	2.50	0.44
8:E:84:PHE:CE2	8:E:133:TYR:HD1	2.35	0.44
8:E:91:LEU:HD23	8:E:120:THR:HG22	2.00	0.44
8:E:101:ILE:HD12	8:E:119:LEU:CD2	2.48	0.44
10:G:37:ASN:HD22	10:G:37:ASN:HA	1.60	0.44
11:H:82:HIS:CG	11:H:83:ILE:N	2.85	0.44
12:I:41:VAL:HG12	12:I:42:ARG:N	2.31	0.44
15:L:91:LYS:HA	15:L:91:LYS:CE	2.33	0.44
17:N:44:LEU:HD12	17:N:44:LEU:C	2.38	0.44
1:A:346:G:C2'	1:A:347:G:H5'	2.47	0.44
1:A:411:A:N3	1:A:413:G:O2'	2.51	0.44
1:A:433:C:O2'	1:A:434:U:H5'	2.18	0.44
1:A:892:A:C2	1:A:907:A:C4	3.06	0.44
1:A:922:G:H2'	1:A:923:A:C8	2.52	0.44
1:A:1130:A:H3'	1:A:1130:A:OP2	2.18	0.44
1:A:1186:G:N2	1:A:1187:G:H1'	2.33	0.44
1:A:1227:A:H3'	1:A:1227:A:C8	2.53	0.44
6:C:35:GLU:OE2	6:C:59:ARG:NH1	2.50	0.44
7:D:108:LEU:HD23	7:D:108:LEU:HA	1.80	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:F:48:LEU:HD13	9:F:52:ILE:HD12	1.99	0.44
9:F:75:LEU:HD11	9:F:79:LEU:HD11	1.98	0.44
10:G:18:TYR:N	10:G:18:TYR:CD1	2.85	0.44
12:I:57:GLY:O	12:I:58:ARG:HG2	2.16	0.44
13:J:9:ARG:C	13:J:16:LEU:HD21	2.37	0.44
13:J:32:ALA:HB2	13:J:76:ASN:HD22	1.82	0.44
13:J:37:PRO:HA	13:J:71:LEU:O	2.17	0.44
13:J:81:THR:C	13:J:83:GLU:N	2.70	0.44
14:K:91:ARG:NH1	21:R:88:LYS:HE3	2.33	0.44
16:M:11:ARG:CG	16:M:12:ASN:H	2.31	0.44
23:T:45:GLN:C	23:T:47:GLY:N	2.71	0.44
1:A:487:A:H2'	1:A:488:C:O4'	2.18	0.44
1:A:745:C:OP1	1:A:851:G:O2'	2.35	0.44
1:A:881:G:OP2	15:L:12:ARG:NH2	2.51	0.44
1:A:942:G:N3	1:A:943:U:C6	2.86	0.44
1:A:1153:C:H2'	1:A:1154:G:C8	2.53	0.44
1:A:1182:G:H4'	1:A:1183:A:C5'	2.47	0.44
1:A:1203:C:OP1	17:N:2:ALA:HB3	2.18	0.44
1:A:1422:G:O2'	1:A:1423:G:H5'	2.18	0.44
5:B:12:GLU:OE1	5:B:12:GLU:O	2.36	0.44
5:B:21:ARG:HG3	5:B:21:ARG:NH1	2.32	0.44
5:B:172:ILE:O	5:B:172:ILE:HG22	2.17	0.44
8:E:62:ALA:C	8:E:64:ARG:H	2.21	0.44
10:G:113:GLU:HG2	10:G:119:ARG:HG2	1.99	0.44
10:G:133:GLY:O	10:G:136:LYS:HB3	2.17	0.44
14:K:114:VAL:O	14:K:114:VAL:HG13	2.18	0.44
15:L:53:ARG:HG2	15:L:69:TYR:HE1	1.83	0.44
16:M:23:TYR:HE2	16:M:70:LEU:HB3	1.83	0.44
24:V:3:LYS:HG2	24:V:14:TRP:CD1	2.53	0.44
1:A:974:A:P	17:N:29:ARG:HH22	2.41	0.44
1:A:1030:C:C2'	1:A:1030(A):G:H5'	2.45	0.44
1:A:1118:C:O5'	1:A:1118:C:H6	2.00	0.44
1:A:1118:C:H1'	1:A:1179:A:C4	2.52	0.44
5:B:80:ILE:H	5:B:80:ILE:HG13	1.66	0.44
5:B:87:ARG:NH1	5:B:87:ARG:HG3	2.33	0.44
5:B:141:GLU:O	5:B:142:LEU:C	2.55	0.44
6:C:110:ASN:HB3	6:C:144:SER:OG	2.17	0.44
7:D:150:GLU:HB3	7:D:153:ARG:NH2	2.32	0.44
8:E:20:GLN:C	8:E:21:ALA:O	2.53	0.44
9:F:28:ARG:NH1	9:F:28:ARG:HB2	2.33	0.44
10:G:115:ARG:HB2	10:G:118:VAL:HG23	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:M:60:VAL:O	16:M:63:THR:HG22	2.17	0.44
17:N:53:LEU:HB3	17:N:56:VAL:CG2	2.48	0.44
20:Q:63:ARG:HG2	20:Q:64:PRO:HD2	1.99	0.44
1:A:116:A:H2'	1:A:117:G:H8	1.83	0.44
1:A:489:C:H2'	1:A:490:G:C8	2.52	0.44
1:A:625:G:H2'	1:A:626:U:H6	1.81	0.44
1:A:757:U:H2'	1:A:758:G:O4'	2.17	0.44
1:A:925:G:C2	1:A:927:G:C8	3.06	0.44
1:A:1138:G:N1	1:A:1140:C:C2	2.86	0.44
1:A:1288:A:O4'	1:A:1353:G:H4'	2.17	0.44
5:B:12:GLU:HA	5:B:12:GLU:OE2	2.18	0.44
5:B:133:LYS:O	5:B:137:ARG:HG3	2.17	0.44
7:D:163:GLU:C	7:D:165:MET:H	2.21	0.44
8:E:11:ILE:HG22	8:E:12:LEU:N	2.31	0.44
11:H:11:THR:C	11:H:13:ILE:N	2.70	0.44
12:I:10:ARG:HG2	12:I:10:ARG:HH11	1.82	0.44
14:K:65:ALA:CB	14:K:97:ALA:HB3	2.47	0.44
16:M:77:ASN:O	16:M:81:LEU:CD2	2.65	0.44
19:P:11:SER:OG	19:P:14:ASN:HB3	2.17	0.44
20:Q:69:LYS:C	20:Q:70:ARG:HD2	2.37	0.44
22:S:5:LEU:O	22:S:6:LYS:CB	2.66	0.44
1:A:49:U:C2	1:A:361:G:N2	2.86	0.44
1:A:55:A:H2'	1:A:56:U:H6	1.83	0.44
1:A:92:C:O2'	1:A:93:G:H5'	2.17	0.44
1:A:1055:A:C6	1:A:1206:G:C5	3.06	0.44
1:A:1067:A:N3	1:A:1068:G:H1'	2.33	0.44
1:A:1439:C:H2'	1:A:1440:C:H6	1.82	0.44
5:B:7:VAL:N	5:B:8:LYS:HE3	2.33	0.44
5:B:162:ILE:H	5:B:185:ILE:CD1	2.31	0.44
5:B:176:GLU:O	5:B:177:ALA:C	2.56	0.44
5:B:221:LEU:HD22	5:B:224:GLN:OE1	2.17	0.44
6:C:8:ILE:CG2	6:C:16:ARG:HG2	2.34	0.44
8:E:30:ALA:O	8:E:45:PHE:HA	2.17	0.44
9:F:45:LEU:HD23	9:F:59:TYR:HD1	1.83	0.44
10:G:106:GLN:O	10:G:110:GLN:HG2	2.18	0.44
11:H:40:ALA:O	11:H:43:GLY:N	2.42	0.44
12:I:7:THR:O	12:I:80:GLY:HA3	2.17	0.44
12:I:93:ARG:NE	12:I:97:LYS:CE	2.81	0.44
15:L:28:LYS:O	15:L:30:ALA:N	2.51	0.44
22:S:45:VAL:CG1	22:S:46:GLY:N	2.80	0.44
1:A:386:C:H2'	1:A:387:U:H5'	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1308:U:H2'	1:A:1309:G:C8	2.52	0.44
1:A:1455:G:O2'	1:A:1459:C:H5'	2.18	0.44
1:A:1521:G:H2'	1:A:1522:U:H6	1.81	0.44
5:B:32:ILE:HD13	5:B:40:HIS:CG	2.52	0.44
8:E:72:GLN:O	8:E:73:ASN:CB	2.63	0.44
8:E:153:LYS:HG2	8:E:154:GLY:N	2.33	0.44
9:F:33:TYR:C	9:F:71:ARG:NH2	2.70	0.44
10:G:8:GLU:OE1	10:G:8:GLU:O	2.36	0.44
12:I:93:ARG:C	12:I:95:LYS:N	2.71	0.44
12:I:105:ASP:OD1	12:I:107:ARG:HG3	2.18	0.44
13:J:22:LYS:O	13:J:24:VAL:N	2.51	0.44
14:K:44:SER:H	14:K:47:VAL:CG2	2.31	0.44
16:M:59:TYR:O	16:M:63:THR:HG22	2.18	0.44
20:Q:22:LEU:HD12	20:Q:23:VAL:N	2.32	0.44
22:S:24:ALA:HB3	22:S:25:LYS:HZ3	1.82	0.44
22:S:35:SER:C	22:S:37:ARG:N	2.69	0.44
22:S:62:ILE:HD12	22:S:63:THR:H	1.81	0.44
22:S:74:PHE:CD1	22:S:74:PHE:N	2.86	0.44
1:A:376:G:C5'	19:P:5:ARG:HD2	2.43	0.44
1:A:447:G:H1'	1:A:487:A:H61	1.82	0.44
1:A:540:G:H2'	1:A:541:G:O4'	2.18	0.44
1:A:811:C:O2'	1:A:901:A:N1	2.50	0.44
1:A:865:A:H5'	1:A:1078:U:O4	2.18	0.44
5:B:61:LEU:HD21	5:B:160:ASP:HB3	2.00	0.44
5:B:144:ARG:HD2	5:B:145:LEU:HD23	2.00	0.44
7:D:162:LEU:O	7:D:165:MET:HB2	2.17	0.44
8:E:8:GLU:HB3	8:E:34:VAL:HG22	2.00	0.44
8:E:44:GLY:CA	8:E:62:ALA:HB2	2.47	0.44
9:F:67:MET:HB2	9:F:68:PRO:CD	2.48	0.44
9:F:91:VAL:CG1	9:F:92:LYS:N	2.81	0.44
12:I:117:HIS:O	12:I:118:LYS:CG	2.66	0.44
13:J:19:SER:O	13:J:20:ALA:C	2.56	0.44
13:J:98:ILE:HG22	13:J:99:LYS:N	2.33	0.44
22:S:5:LEU:C	22:S:6:LYS:HG3	2.38	0.44
1:A:22:G:H2'	1:A:23:C:H6	1.83	0.43
1:A:182:U:OP2	1:A:183:G:C8	2.70	0.43
1:A:376:G:C2	1:A:389:A:C2	3.06	0.43
1:A:390:C:H6	1:A:390:C:O5'	2.01	0.43
1:A:426:G:P	7:D:36:ARG:HH21	2.41	0.43
1:A:537:G:OP1	15:L:113:ARG:NH2	2.51	0.43
1:A:584:G:H2'	1:A:585:G:C8	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1368:G:HO2'	1:A:1369:C:H5'	1.75	0.43
1:A:1371:G:O3'	12:I:69:GLY:HA3	2.18	0.43
6:C:134:ILE:CG2	6:C:151:VAL:HB	2.46	0.43
7:D:78:LEU:HB3	7:D:93:PHE:HE2	1.83	0.43
8:E:115:VAL:HG12	8:E:116:THR:N	2.33	0.43
16:M:22:ILE:N	16:M:22:ILE:HD12	2.33	0.43
1:A:622:A:C8	1:A:623:C:C5	3.06	0.43
1:A:761:G:H1'	20:Q:104:LYS:O	2.18	0.43
1:A:1124:G:H3'	1:A:1145:C:N4	2.22	0.43
1:A:1130:A:OP2	1:A:1131:G:OP2	2.36	0.43
1:A:1262:C:O2'	1:A:1263:C:H5'	2.18	0.43
1:A:1307:U:H2'	1:A:1308:U:C6	2.53	0.43
1:A:1490:C:C2'	1:A:1491:G:H5'	2.48	0.43
5:B:35:GLU:HG2	5:B:40:HIS:CD2	2.53	0.43
5:B:79:ASP:O	5:B:81:VAL:N	2.51	0.43
12:I:118:LYS:HB2	12:I:118:LYS:HZ2	1.83	0.43
13:J:8:LEU:HD22	13:J:94:VAL:HG11	2.00	0.43
13:J:96:ILE:HG22	13:J:97:GLU:H	1.81	0.43
14:K:18:ARG:HB3	14:K:33:THR:HG22	2.01	0.43
14:K:58:PRO:HD3	14:K:89:ALA:HB1	2.00	0.43
15:L:117:ARG:O	15:L:118:SER:C	2.55	0.43
1:A:179:A:O2'	1:A:180:U:H5'	2.19	0.43
1:A:259:G:O2'	1:A:260:G:H5'	2.17	0.43
1:A:346:G:H2'	1:A:347:G:O4'	2.18	0.43
1:A:397:A:H3'	1:A:397:A:N3	2.34	0.43
1:A:598:U:H4'	11:H:94:TYR:CG	2.54	0.43
1:A:803:G:N7	1:A:804:U:C5	2.86	0.43
1:A:1220:G:O2'	1:A:1221:G:H5'	2.18	0.43
1:A:1365:G:O2'	1:A:1366:C:H5'	2.18	0.43
10:G:85:TYR:HD1	10:G:154:TYR:CE1	2.32	0.43
12:I:55:ALA:O	12:I:56:LEU:HB3	2.18	0.43
13:J:53:PRO:O	13:J:54:PHE:O	2.36	0.43
16:M:3:ARG:CG	16:M:9:ILE:HG23	2.42	0.43
17:N:25:VAL:O	17:N:25:VAL:HG22	2.18	0.43
20:Q:68:ARG:HG2	20:Q:68:ARG:NH1	2.33	0.43
21:R:55:ARG:HB3	21:R:55:ARG:CZ	2.49	0.43
22:S:33:THR:CG2	22:S:34:TRP:N	2.80	0.43
23:T:18:GLN:O	23:T:19:SER:C	2.56	0.43
23:T:41:ILE:CD1	23:T:87:LYS:NZ	2.81	0.43
1:A:294:U:H2'	1:A:295:C:H6	1.83	0.43
1:A:613:C:C2	1:A:628:G:N2	2.86	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:760:G:N2	20:Q:104:LYS:N	2.66	0.43
1:A:835:U:OP1	21:R:64:ARG:NH2	2.41	0.43
1:A:984:C:H2'	1:A:985:C:H6	1.83	0.43
1:A:1081:G:OP1	8:E:16:THR:HG23	2.19	0.43
1:A:1221:G:H2'	1:A:1222:G:H5'	2.01	0.43
1:A:1288:A:H1'	1:A:1352:C:O2'	2.17	0.43
1:A:1489:G:O2'	1:A:1490:C:H5'	2.18	0.43
5:B:19:HIS:O	5:B:39:ILE:HG23	2.18	0.43
5:B:105:PHE:O	5:B:107:THR:N	2.51	0.43
5:B:203:GLY:O	5:B:204:ASN:C	2.56	0.43
5:B:207:ALA:O	5:B:211:ILE:HG13	2.19	0.43
6:C:5:ILE:HD13	6:C:10:PHE:CB	2.44	0.43
6:C:155:GLY:O	6:C:156:ARG:CB	2.66	0.43
6:C:188:LEU:HD12	6:C:190:ARG:HG3	1.99	0.43
7:D:177:ASP:OD1	7:D:177:ASP:O	2.36	0.43
8:E:152:ARG:HB3	11:H:43:GLY:O	2.17	0.43
12:I:83:ARG:O	12:I:86:VAL:HB	2.19	0.43
12:I:99:LEU:HB2	12:I:101:PHE:CE1	2.54	0.43
14:K:93:GLN:O	14:K:96:ARG:HB2	2.18	0.43
23:T:36:LEU:HD23	23:T:36:LEU:HA	1.84	0.43
1:A:156:G:O2'	1:A:157:G:H5'	2.18	0.43
1:A:707:C:O2'	1:A:708:C:H5'	2.17	0.43
1:A:1053:G:C5'	1:A:1054:C:H5'	2.48	0.43
5:B:189:ASP:OD1	5:B:205:ASP:OD1	2.35	0.43
8:E:86:ALA:C	8:E:125:SER:HB3	2.39	0.43
11:H:4:ASP:OD2	11:H:7:ALA:CB	2.66	0.43
11:H:35:ILE:O	11:H:39:LEU:HD23	2.18	0.43
1:A:179:A:H2'	1:A:180:U:H6	1.81	0.43
1:A:276:G:O2'	1:A:277:C:H5'	2.18	0.43
1:A:382:A:C2	1:A:383:A:C4	3.07	0.43
1:A:429:U:H1'	1:A:430:A:H5''	2.00	0.43
1:A:772:U:O2'	1:A:773:G:H5'	2.18	0.43
1:A:789:U:O2	1:A:791:G:C8	2.72	0.43
1:A:926:G:H3'	1:A:1505:G:H21	1.84	0.43
1:A:943:U:H2'	1:A:944:G:H5'	2.00	0.43
1:A:974:A:OP2	17:N:29:ARG:NH2	2.52	0.43
1:A:1148:U:H4'	12:I:14:VAL:CG1	2.45	0.43
1:A:1183:A:O2'	1:A:1184:G:P	2.76	0.43
1:A:1368:G:P	12:I:112:LYS:O	2.77	0.43
1:A:1440:C:H2'	1:A:1441:G:O4'	2.19	0.43
6:C:113:ALA:N	6:C:114:PRO:CD	2.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:134:ILE:HD11	6:C:153:VAL:HG23	2.00	0.43
7:D:52:SER:C	7:D:54:TYR:N	2.72	0.43
8:E:76:ILE:HG22	8:E:78:HIS:H	1.82	0.43
8:E:143:ARG:HA	8:E:143:ARG:HD3	1.82	0.43
9:F:63:TYR:N	9:F:63:TYR:CD2	2.85	0.43
10:G:156:TRP:O	10:G:156:TRP:CG	2.71	0.43
12:I:48:GLU:N	12:I:49:PRO:CD	2.81	0.43
12:I:111:ARG:O	12:I:113:LYS:HD2	2.19	0.43
13:J:81:THR:O	13:J:83:GLU:N	2.51	0.43
14:K:86:GLY:H	14:K:112:THR:HG23	1.83	0.43
16:M:110:ARG:CG	16:M:110:ARG:NH1	2.81	0.43
20:Q:48:GLU:O	20:Q:50:LYS:N	2.52	0.43
20:Q:92:ARG:O	20:Q:95:TYR:HB2	2.19	0.43
1:A:113:G:H1'	1:A:354:G:C5'	2.47	0.43
1:A:720:C:H2'	1:A:721:G:C8	2.53	0.43
1:A:946:A:H2'	1:A:947:G:H8	1.75	0.43
1:A:953:G:N7	16:M:104:ARG:NH2	2.63	0.43
1:A:1030(D):A:C2'	1:A:1031:G:H5'	2.47	0.43
1:A:1068:G:N3	1:A:1191:A:C2	2.86	0.43
1:A:1192:C:H2'	1:A:1193:G:O4'	2.19	0.43
1:A:1234:C:H2'	1:A:1235:U:C6	2.53	0.43
1:A:1326:C:H5''	24:V:12:LYS:NZ	2.34	0.43
3:Y:34:G:HO2'	3:Y:35:A:P	2.42	0.43
5:B:55:PHE:HA	5:B:58:ILE:HD12	2.00	0.43
5:B:162:ILE:C	5:B:185:ILE:HD13	2.39	0.43
7:D:36:ARG:N	7:D:37:PRO:CD	2.49	0.43
8:E:127:ASN:O	8:E:128:PRO:C	2.56	0.43
9:F:69:GLU:OE1	9:F:69:GLU:N	2.46	0.43
9:F:74:ASP:OD1	9:F:77:ARG:NH2	2.52	0.43
11:H:35:ILE:HD12	11:H:35:ILE:H	1.84	0.43
12:I:7:THR:HG22	12:I:8:GLY:N	2.33	0.43
15:L:71:PRO:HG2	15:L:102:ARG:HG2	2.01	0.43
17:N:37:PHE:C	17:N:39:LEU:H	2.20	0.43
21:R:24:ALA:O	21:R:26:LEU:N	2.50	0.43
23:T:45:GLN:HA	23:T:91:LEU:HB3	2.00	0.43
24:V:8:THR:HG22	24:V:9:ARG:N	2.33	0.43
1:A:57:G:C5	1:A:58:C:C4	3.07	0.43
1:A:194:C:H2'	1:A:195:A:H5''	2.00	0.43
1:A:513:C:O2'	1:A:514:C:H5'	2.19	0.43
1:A:928:G:O2'	1:A:929:G:H5'	2.18	0.43
1:A:1331:G:O2'	1:A:1332:A:P	2.77	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:82:ARG:O	5:B:86:GLU:HG3	2.18	0.43
5:B:215:LEU:O	5:B:218:ALA:N	2.51	0.43
10:G:5:ARG:CG	10:G:6:ARG:H	2.04	0.43
10:G:37:ASN:C	10:G:39:ALA:N	2.71	0.43
11:H:11:THR:HA	11:H:14:ARG:HH12	1.83	0.43
15:L:24:VAL:O	15:L:24:VAL:HG12	2.18	0.43
15:L:101:VAL:O	15:L:102:ARG:C	2.56	0.43
18:O:88:ARG:HH11	18:O:88:ARG:CA	2.29	0.43
1:A:913:A:H4'	1:A:914:A:O5'	2.19	0.43
1:A:942:G:H2'	1:A:943:U:C6	2.53	0.43
1:A:948:C:H2'	1:A:949:A:H8	1.84	0.43
1:A:1061:G:O4'	13:J:56:HIS:CE1	2.72	0.43
1:A:1190:G:C2'	1:A:1191:A:OP2	2.66	0.43
1:A:1309:G:C6	1:A:1329:A:C2	3.07	0.43
5:B:211:ILE:HG13	5:B:211:ILE:H	1.70	0.43
6:C:56:ASP:O	6:C:57:ILE:HG13	2.17	0.43
6:C:118:GLN:O	6:C:121:ALA:HB3	2.18	0.43
6:C:202:ILE:HG22	6:C:204:LEU:CD2	2.48	0.43
7:D:163:GLU:C	7:D:165:MET:N	2.72	0.43
11:H:6:ILE:HD13	11:H:6:ILE:HA	1.90	0.43
14:K:46:GLY:O	14:K:47:VAL:C	2.56	0.43
14:K:54:ARG:H	14:K:54:ARG:HG2	1.54	0.43
16:M:67:GLU:O	16:M:68:GLY:C	2.57	0.43
20:Q:59:ILE:CG2	20:Q:71:PHE:CD1	3.02	0.43
20:Q:97:SER:HB2	20:Q:103:GLY:HA2	2.01	0.43
22:S:41:VAL:O	22:S:42:PRO:C	2.57	0.43
1:A:934:C:C4	1:A:1345:U:C5	3.07	0.43
1:A:1070:U:H2'	1:A:1071:C:H6	1.84	0.43
1:A:1190:G:HO2'	1:A:1191:A:P	2.42	0.43
1:A:1221:G:O3'	22:S:77:THR:CG2	2.67	0.43
1:A:1345:U:N3	1:A:1377:A:C2	2.87	0.43
5:B:9:GLU:HG2	5:B:10:LEU:H	1.81	0.43
5:B:10:LEU:O	5:B:12:GLU:N	2.46	0.43
5:B:16:HIS:CE1	5:B:213:LEU:HD13	2.53	0.43
6:C:20:SER:HB3	6:C:22:TRP:NE1	2.34	0.43
6:C:97:LYS:HG2	6:C:97:LYS:O	2.19	0.43
6:C:150:LYS:HG3	6:C:169:ALA:HB2	2.01	0.43
7:D:63:LYS:O	7:D:64:LEU:C	2.57	0.43
7:D:68:TYR:HD1	7:D:68:TYR:H	1.67	0.43
7:D:163:GLU:O	7:D:165:MET:N	2.52	0.43
9:F:91:VAL:CG1	9:F:92:LYS:H	2.26	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:122:HIS:O	10:G:123:GLU:C	2.57	0.43
15:L:27:LEU:HD23	15:L:28:LYS:N	2.34	0.43
15:L:85:ILE:HG23	15:L:98:TYR:HB3	2.01	0.43
17:N:18:VAL:C	17:N:20:ALA:H	2.22	0.43
21:R:19:LYS:HD2	21:R:19:LYS:N	2.34	0.43
21:R:40:LEU:C	21:R:42:ARG:H	2.21	0.43
1:A:407:G:H2'	1:A:408:A:C8	2.54	0.42
1:A:943:U:O2'	1:A:944:G:H5'	2.19	0.42
1:A:1051:C:O2'	1:A:1052:U:H5'	2.18	0.42
1:A:1193:G:O2'	1:A:1194:U:H5'	2.19	0.42
1:A:1202:G:H2'	1:A:1203:C:O4'	2.19	0.42
1:A:1286:A:H2'	1:A:1287:A:O3'	2.19	0.42
1:A:1465:C:H2'	1:A:1466:C:O4'	2.19	0.42
5:B:122:PHE:HE2	5:B:139:LYS:HG2	1.83	0.42
8:E:55:VAL:O	8:E:58:ALA:HB3	2.19	0.42
11:H:111:ILE:O	11:H:134:ILE:HB	2.19	0.42
13:J:38:ILE:HA	13:J:39:PRO:HD2	1.73	0.42
13:J:46:ARG:HD3	17:N:61:TRP:CH2	2.54	0.42
18:O:70:LEU:CD1	18:O:78:TYR:HB2	2.33	0.42
18:O:82:ILE:O	18:O:83:GLU:C	2.57	0.42
20:Q:45:HIS:HB2	20:Q:69:LYS:HE2	2.01	0.42
22:S:87:ALA:O	22:S:88:LYS:CB	2.66	0.42
23:T:54:LYS:HA	23:T:57:ARG:NH1	2.32	0.42
1:A:56:U:H2'	1:A:57:G:H8	1.82	0.42
1:A:334:C:O2'	1:A:335:C:H5'	2.19	0.42
1:A:382:A:C2	1:A:383:A:C5	3.07	0.42
1:A:533:A:H2'	1:A:535:A:OP2	2.19	0.42
1:A:533:A:C2	1:A:536:C:C5	3.07	0.42
1:A:594:G:C2'	1:A:595:G:H5'	2.49	0.42
1:A:689:C:OP1	14:K:46:GLY:HA3	2.20	0.42
1:A:942:G:O2'	1:A:943:U:H5'	2.19	0.42
1:A:979:C:O2	17:N:19:ARG:HG2	2.19	0.42
1:A:1289:A:H2'	1:A:1290:G:H5'	2.01	0.42
5:B:61:LEU:HD13	5:B:61:LEU:O	2.19	0.42
5:B:134:GLU:C	5:B:136:VAL:N	2.71	0.42
5:B:143:GLU:O	5:B:147:LYS:HG3	2.18	0.42
7:D:61:LYS:O	7:D:62:GLN:C	2.56	0.42
8:E:78:HIS:ND1	8:E:78:HIS:C	2.71	0.42
8:E:115:VAL:HG13	8:E:116:THR:N	2.34	0.42
9:F:44:GLY:HA2	9:F:59:TYR:HE1	1.77	0.42
10:G:153:HIS:C	10:G:155:ARG:H	2.22	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:H:9:MET:O	11:H:10:LEU:C	2.57	0.42
14:K:66:LEU:O	14:K:67:ASP:C	2.56	0.42
19:P:12:LYS:O	19:P:13:HIS:CB	2.66	0.42
1:A:245:C:O2	1:A:283:C:N3	2.52	0.42
1:A:959:A:C3'	1:A:960:U:H5''	2.47	0.42
1:A:1016:A:C2'	1:A:1017:G:H5'	2.49	0.42
1:A:1054:C:N3	3:Y:34:G:O4'	2.52	0.42
1:A:1069:C:H2'	1:A:1070:U:O5'	2.19	0.42
1:A:1207:G:C5	1:A:1208:C:C5	3.07	0.42
1:A:1345:U:OP1	12:I:120:ARG:NH1	2.52	0.42
5:B:112:VAL:O	5:B:115:LEU:HB3	2.19	0.42
7:D:5:ILE:HA	7:D:115:ARG:NH2	2.33	0.42
8:E:57:LYS:O	8:E:60:TYR:HB3	2.18	0.42
9:F:39:LYS:HG3	9:F:62:TRP:HZ3	1.84	0.42
9:F:78:GLU:HA	9:F:81:ILE:CD1	2.48	0.42
10:G:129:GLU:CB	10:G:131:LYS:HE2	2.49	0.42
11:H:72:PRO:O	11:H:73:ASP:HB3	2.20	0.42
11:H:83:ILE:HB	11:H:137:VAL:HG22	2.01	0.42
16:M:78:ILE:C	16:M:80:ARG:N	2.70	0.42
19:P:51:VAL:O	19:P:52:ASP:HB3	2.19	0.42
22:S:5:LEU:O	22:S:6:LYS:HB2	2.20	0.42
24:V:5:ASP:O	24:V:11:GLY:HA3	2.19	0.42
1:A:33:A:H2'	1:A:34:C:C6	2.54	0.42
1:A:232:G:H1'	1:A:262:A:N1	2.34	0.42
1:A:419:C:O2'	1:A:420:U:H5'	2.18	0.42
1:A:1019:C:H2'	1:A:1020:U:O4'	2.20	0.42
1:A:1194:U:H2'	1:A:1195:C:H6	1.84	0.42
5:B:33:TYR:CB	5:B:41:ILE:O	2.67	0.42
5:B:34:ALA:O	5:B:40:HIS:HA	2.20	0.42
6:C:33:LEU:HD23	6:C:33:LEU:O	2.19	0.42
6:C:59:ARG:HD3	6:C:97:LYS:HZ3	1.85	0.42
6:C:139:GLN:O	6:C:140:ARG:C	2.58	0.42
9:F:19:LEU:C	9:F:19:LEU:CD2	2.87	0.42
11:H:35:ILE:HG22	11:H:39:LEU:HD21	2.01	0.42
12:I:55:ALA:O	12:I:56:LEU:CB	2.67	0.42
14:K:94:ALA:O	14:K:97:ALA:HB3	2.19	0.42
16:M:23:TYR:HB3	16:M:67:GLU:H	1.84	0.42
16:M:84:ILE:O	16:M:86:CYS:N	2.52	0.42
17:N:15:LYS:O	17:N:16:PHE:CG	2.73	0.42
19:P:53:VAL:HG23	19:P:54:GLU:N	2.33	0.42
20:Q:28:PRO:HA	20:Q:35:VAL:HA	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:R:27:GLY:O	21:R:29:PHE:HD2	2.02	0.42
23:T:59:ALA:O	23:T:60:GLU:C	2.57	0.42
1:A:7:G:H5'	1:A:298:A:O4'	2.19	0.42
1:A:55:A:H2'	1:A:56:U:C6	2.54	0.42
1:A:328:C:O2	1:A:328:C:H2'	2.20	0.42
1:A:406:G:H5''	7:D:5:ILE:HG21	2.00	0.42
1:A:573:A:O2'	1:A:574:A:H5'	2.19	0.42
1:A:652:U:O4'	1:A:653:A:H2	2.01	0.42
1:A:781:A:OP1	1:A:1523:G:H5'	2.20	0.42
1:A:973:G:H3'	1:A:974:A:H5''	2.02	0.42
1:A:974:A:OP2	17:N:41:ARG:NH1	2.51	0.42
1:A:1125:U:C5'	1:A:1126:U:H5	2.27	0.42
1:A:1379:G:O2'	1:A:1380:U:H5'	2.20	0.42
7:D:187:ARG:NE	7:D:188:LEU:H	2.18	0.42
10:G:41:ARG:O	10:G:42:ILE:C	2.57	0.42
12:I:3:GLN:HG3	12:I:20:ARG:HG2	2.01	0.42
14:K:69:ALA:C	14:K:73:MET:HG2	2.40	0.42
15:L:41:ARG:CB	15:L:41:ARG:NH1	2.82	0.42
15:L:110:VAL:O	15:L:122:THR:CG2	2.65	0.42
19:P:76:GLN:HE21	19:P:76:GLN:HB2	1.60	0.42
22:S:43:GLU:H	22:S:43:GLU:CD	2.22	0.42
1:A:425:G:C2'	1:A:426:G:H5'	2.50	0.42
1:A:457:C:N3	1:A:476:G:C2	2.87	0.42
1:A:597:G:C4	1:A:644:G:C2	3.08	0.42
1:A:878:G:C5'	11:H:89:PRO:HG2	2.49	0.42
1:A:1252:A:H2'	1:A:1253:G:O4'	2.20	0.42
1:A:1258:G:H1	1:A:1277:C:H42	1.67	0.42
5:B:77:ALA:HA	5:B:80:ILE:HD12	2.02	0.42
5:B:208:ILE:O	5:B:209:ARG:C	2.58	0.42
6:C:11:ARG:O	6:C:14:ILE:O	2.37	0.42
7:D:54:TYR:O	7:D:55:ALA:C	2.58	0.42
16:M:65:LYS:O	16:M:66:LEU:HD23	2.19	0.42
17:N:3:ARG:O	17:N:7:ILE:HG13	2.20	0.42
17:N:41:ARG:HG3	17:N:42:ILE:N	2.35	0.42
20:Q:3:LYS:HB3	20:Q:60:ILE:CD1	2.49	0.42
22:S:25:LYS:HD2	22:S:25:LYS:H	1.85	0.42
1:A:75:G:H2'	1:A:76:C:H6	1.84	0.42
1:A:200:G:H1	1:A:217:C:H42	1.68	0.42
1:A:229:U:C2'	1:A:230:G:H5'	2.50	0.42
1:A:533:A:O2'	1:A:534:U:OP1	2.34	0.42
1:A:893:C:H2'	1:A:894:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1014:A:H5'	22:S:14:HIS:CD2	2.55	0.42
1:A:1150:U:O2	13:J:39:PRO:CG	2.67	0.42
5:B:21:ARG:NH1	5:B:23:ARG:HG2	2.35	0.42
5:B:92:TYR:CD1	5:B:151:GLY:HA3	2.54	0.42
6:C:52:LEU:HD23	6:C:52:LEU:N	2.26	0.42
6:C:134:ILE:O	6:C:135:LYS:C	2.55	0.42
6:C:174:PRO:HB2	6:C:177:THR:CG2	2.48	0.42
7:D:24:GLU:HG2	7:D:25:ARG:N	2.33	0.42
8:E:131:ILE:O	8:E:134:ALA:HB3	2.19	0.42
10:G:51:GLN:HE21	10:G:58:PRO:HD3	1.84	0.42
10:G:118:VAL:O	10:G:119:ARG:C	2.58	0.42
11:H:4:ASP:CG	11:H:85:ARG:HH12	2.23	0.42
11:H:16:ALA:HB1	11:H:21:LYS:HB2	2.02	0.42
13:J:39:PRO:O	13:J:69:ASN:O	2.38	0.42
15:L:46:LYS:CG	15:L:47:LYS:H	1.95	0.42
1:A:277:C:O2'	1:A:278:G:H5'	2.19	0.42
1:A:408:A:O2'	1:A:409:G:H5'	2.19	0.42
1:A:519:C:H2'	1:A:520:A:O4'	2.19	0.42
1:A:632:A:H2'	1:A:633:G:H5'	2.00	0.42
1:A:644:G:C2'	1:A:645:C:H5'	2.50	0.42
1:A:938:A:C6	1:A:939:G:C5	3.08	0.42
1:A:980:C:H3'	1:A:981:U:H6	1.83	0.42
1:A:1288:A:C6	1:A:1289:A:C5	3.08	0.42
1:A:1347:G:H2'	1:A:1373:G:H1	1.83	0.42
1:A:1451:A:O3'	1:A:1452:C:H6	2.03	0.42
5:B:146:GLN:O	5:B:150:SER:HB3	2.20	0.42
6:C:177:THR:O	6:C:177:THR:CG2	2.67	0.42
7:D:25:ARG:HH21	7:D:30:LYS:HD3	1.79	0.42
9:F:2:ARG:CD	9:F:69:GLU:HG2	2.49	0.42
10:G:43:PHE:CZ	10:G:47:CYS:SG	3.13	0.42
10:G:79:ARG:HD3	10:G:84:ASN:OD1	2.20	0.42
10:G:155:ARG:O	10:G:156:TRP:HB3	2.19	0.42
13:J:28:ARG:HH12	13:J:33:GLN:HG2	1.84	0.42
13:J:96:ILE:CG2	13:J:97:GLU:N	2.83	0.42
14:K:52:GLY:N	14:K:55:LYS:HE3	2.34	0.42
20:Q:79:SER:O	20:Q:80:GLY:C	2.58	0.42
20:Q:97:SER:O	20:Q:99:SER:N	2.51	0.42
21:R:39:VAL:O	21:R:42:ARG:HB2	2.19	0.42
1:A:9:G:C2	1:A:26:A:C2	3.08	0.42
1:A:107:G:O2'	1:A:108:G:H5'	2.20	0.42
1:A:377:G:P	19:P:3:LYS:HZ3	2.43	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:622:A:H2'	1:A:623:C:H5'	2.02	0.42
1:A:689:C:H2'	1:A:690:G:O4'	2.20	0.42
1:A:769:G:H4'	1:A:1513:A:H4'	2.01	0.42
1:A:977:A:H1'	1:A:1223:C:H42	1.85	0.42
1:A:995:C:O2	1:A:995:C:H2'	2.19	0.42
1:A:1298:C:N4	10:G:114:ARG:HD3	2.35	0.42
1:A:1328:C:O2'	1:A:1329:A:H5'	2.19	0.42
6:C:191:THR:HG23	6:C:192:THR:H	1.85	0.42
10:G:21:VAL:CG2	10:G:22:LEU:N	2.82	0.42
11:H:4:ASP:CG	11:H:85:ARG:NH1	2.73	0.42
13:J:9:ARG:HG3	13:J:9:ARG:O	2.20	0.42
13:J:22:LYS:C	13:J:24:VAL:N	2.73	0.42
13:J:60:ARG:HD2	13:J:60:ARG:H	1.84	0.42
15:L:41:ARG:HH12	15:L:57:LYS:HE2	1.85	0.42
15:L:47:LYS:HB2	15:L:48:PRO:CD	2.48	0.42
20:Q:8:GLY:HA3	20:Q:21:VAL:CG1	2.50	0.42
1:A:22:G:C6	1:A:23:C:C4	3.08	0.42
1:A:45:U:H2'	1:A:46:G:H8	1.85	0.42
1:A:340:U:H2'	1:A:341:C:C6	2.55	0.42
1:A:407:G:O2'	7:D:116:GLN:HG3	2.20	0.42
1:A:444:C:O2'	1:A:445:G:H5'	2.20	0.42
1:A:582:U:H1'	20:Q:105:ALA:HA	2.01	0.42
1:A:1029:C:O5'	1:A:1029:C:H6	2.03	0.42
1:A:1053:G:O2'	1:A:1199:U:H5	2.00	0.42
1:A:1121:U:H2'	1:A:1122:U:H6	1.84	0.42
1:A:1127:G:H21	1:A:1147:C:N4	2.18	0.42
1:A:1347:G:HO2'	1:A:1348:U:H5	1.64	0.42
1:A:1375:A:O2'	1:A:1376:U:H5'	2.20	0.42
5:B:53:ARG:CZ	5:B:53:ARG:HB3	2.50	0.42
6:C:66:VAL:O	6:C:66:VAL:HG12	2.19	0.42
6:C:148:GLY:HA3	6:C:172:ARG:O	2.20	0.42
6:C:165:THR:O	6:C:165:THR:HG22	2.19	0.42
9:F:62:TRP:CD1	21:R:35:ARG:NH1	2.87	0.42
10:G:104:LEU:HD23	10:G:104:LEU:HA	1.83	0.42
16:M:37:THR:O	16:M:37:THR:HG22	2.20	0.42
16:M:73:GLU:O	16:M:74:VAL:C	2.57	0.42
17:N:9:LYS:C	17:N:11:LYS:N	2.71	0.42
1:A:151:A:H2'	1:A:152:A:O4'	2.20	0.41
1:A:1027:C:H2'	1:A:1028:C:C6	2.55	0.41
1:A:1039:C:O2'	1:A:1040:U:H5'	2.20	0.41
1:A:1229:A:C2	1:A:1230:C:C5	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1287:A:C6	1:A:1288:A:C6	3.07	0.41
1:A:1309:G:C6	1:A:1329:A:N1	2.88	0.41
4:Z:2:U:H2'	4:Z:3:U:H6	1.84	0.41
5:B:84:GLU:CB	5:B:219:VAL:HG21	2.18	0.41
6:C:40:ARG:HG3	6:C:40:ARG:NH1	2.35	0.41
6:C:125:GLU:OE2	6:C:189:ALA:HA	2.20	0.41
7:D:88:VAL:O	7:D:92:VAL:HG23	2.20	0.41
7:D:170:VAL:HG22	7:D:171:GLY:N	2.34	0.41
20:Q:24:GLU:OE2	20:Q:37:LYS:HD3	2.20	0.41
20:Q:27:PHE:CD1	20:Q:27:PHE:C	2.93	0.41
21:R:53:ARG:C	21:R:55:ARG:H	2.21	0.41
21:R:82:THR:HG23	21:R:82:THR:O	2.20	0.41
23:T:74:LYS:CG	23:T:75:ASN:N	2.55	0.41
1:A:101:A:H2'	1:A:102:G:H8	1.85	0.41
1:A:821:G:O2'	1:A:822:C:H5'	2.20	0.41
1:A:961:U:H2'	1:A:962:C:H5'	2.02	0.41
1:A:1058:G:C6	1:A:1059:C:N3	2.89	0.41
1:A:1168:A:C6	1:A:1169:A:C6	3.08	0.41
1:A:1329:A:H2'	1:A:1330:U:H5'	2.02	0.41
5:B:17:PHE:O	5:B:17:PHE:CD2	2.73	0.41
6:C:155:GLY:HA3	6:C:164:ARG:O	2.21	0.41
7:D:91:SER:O	7:D:92:VAL:C	2.57	0.41
8:E:31:LEU:HD23	8:E:31:LEU:HA	1.52	0.41
13:J:34:VAL:HG12	13:J:35:SER:N	2.34	0.41
13:J:89:ASP:OD1	13:J:90:LEU:N	2.53	0.41
14:K:69:ALA:O	14:K:73:MET:N	2.53	0.41
15:L:43:VAL:HG23	15:L:55:VAL:CG2	2.50	0.41
16:M:8:GLU:HG3	16:M:22:ILE:HG13	2.02	0.41
19:P:67:THR:CG2	19:P:68:ASP:N	2.83	0.41
23:T:50:GLU:HA	23:T:100:ILE:CB	2.49	0.41
23:T:54:LYS:N	23:T:100:ILE:HD13	2.35	0.41
1:A:184:G:C4'	1:A:224:C:H4'	2.49	0.41
1:A:235:C:C5'	20:Q:70:ARG:HG2	2.40	0.41
1:A:429:U:H4'	1:A:430:A:O5'	2.19	0.41
1:A:502:G:OP1	15:L:118:SER:N	2.34	0.41
1:A:665:A:N3	1:A:732:C:H2'	2.36	0.41
1:A:939:G:C6	1:A:940:C:N4	2.87	0.41
1:A:959:A:H2	1:A:1221:G:N3	2.18	0.41
1:A:1032:G:H2'	1:A:1033:G:O4'	2.20	0.41
1:A:1057:G:C2'	1:A:1058:G:H5'	2.50	0.41
1:A:1107:C:H2'	1:A:1108:G:H5'	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1152:A:O2'	1:A:1153:C:H5'	2.19	0.41
1:A:1419:G:H2'	1:A:1420:C:C6	2.55	0.41
1:A:1496:C:H2'	1:A:1497:G:O4'	2.20	0.41
5:B:7:VAL:O	5:B:8:LYS:HG3	2.20	0.41
5:B:16:HIS:O	5:B:17:PHE:HD2	2.03	0.41
5:B:96:ARG:HD2	5:B:97:TRP:N	2.33	0.41
5:B:148:TYR:N	5:B:148:TYR:CD2	2.87	0.41
5:B:178:ARG:O	5:B:179:LYS:C	2.59	0.41
11:H:7:ALA:HB2	11:H:85:ARG:HG3	2.02	0.41
13:J:47:PHE:CE2	17:N:37:PHE:HE1	2.37	0.41
13:J:51:ARG:CB	13:J:59:SER:HB3	2.50	0.41
13:J:60:ARG:O	13:J:61:GLU:CB	2.67	0.41
16:M:19:LEU:CA	16:M:22:ILE:HD13	2.46	0.41
16:M:102:ARG:NH1	16:M:104:ARG:HB3	2.35	0.41
17:N:35:ARG:C	17:N:37:PHE:N	2.73	0.41
18:O:54:ARG:O	18:O:55:GLY:C	2.58	0.41
19:P:45:THR:HB	19:P:46:PRO:HD2	2.01	0.41
1:A:164:U:H2'	1:A:165:C:C6	2.55	0.41
1:A:190:C:H2'	1:A:190(A):C:C6	2.55	0.41
1:A:474:G:H2'	1:A:475:G:C8	2.43	0.41
1:A:786:G:C2	1:A:797:C:C2	3.09	0.41
1:A:960:U:H1'	1:A:1223:C:H5'	2.02	0.41
1:A:1073:U:OP1	8:E:57:LYS:HE2	2.20	0.41
1:A:1220:G:H2'	1:A:1221:G:H8	1.85	0.41
1:A:1226:C:HO2'	1:A:1227:A:C5'	2.33	0.41
1:A:1319:A:OP1	22:S:5:LEU:HD21	2.21	0.41
1:A:1320:C:O2	22:S:72:GLY:HA3	2.21	0.41
1:A:1525:G:O2'	1:A:1526:G:H5'	2.20	0.41
5:B:122:PHE:O	5:B:123:ALA:HB2	2.19	0.41
6:C:6:HIS:HD2	6:C:8:ILE:HB	1.79	0.41
6:C:22:TRP:CZ3	6:C:32:LEU:HD22	2.56	0.41
6:C:111:LEU:HD11	6:C:144:SER:O	2.20	0.41
6:C:167:TRP:O	6:C:168:ALA:CB	2.68	0.41
10:G:43:PHE:CE2	10:G:47:CYS:SG	3.14	0.41
10:G:51:GLN:NE2	10:G:56:GLN:O	2.51	0.41
10:G:66:VAL:O	10:G:70:LYS:HG3	2.21	0.41
10:G:70:LYS:CG	10:G:100:ALA:HB2	2.47	0.41
12:I:114:TYR:CD2	12:I:114:TYR:N	2.86	0.41
15:L:86:ARG:NH1	15:L:86:ARG:CG	2.79	0.41
17:N:12:ARG:O	17:N:14:PRO:HD3	2.20	0.41
20:Q:5:VAL:HG13	20:Q:59:ILE:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Q:45:HIS:O	20:Q:47:PRO:HD3	2.20	0.41
20:Q:48:GLU:C	20:Q:50:LYS:N	2.73	0.41
20:Q:63:ARG:O	20:Q:64:PRO:C	2.58	0.41
22:S:41:VAL:HG22	22:S:44:MET:HE3	2.02	0.41
1:A:37:U:O2'	1:A:38:G:H5'	2.20	0.41
1:A:825:G:O2'	1:A:826:C:H5'	2.21	0.41
1:A:1105:A:H2'	1:A:1106:G:C8	2.55	0.41
1:A:1130:A:P	1:A:1131:G:OP2	2.79	0.41
1:A:1521:G:O2'	1:A:1522:U:H5'	2.21	0.41
5:B:48:MET:O	5:B:51:LEU:HB2	2.21	0.41
6:C:70:VAL:CG1	6:C:71:ALA:N	2.82	0.41
6:C:121:ALA:O	6:C:125:GLU:HG3	2.20	0.41
6:C:180:ALA:CB	6:C:182:ILE:HG13	2.50	0.41
6:C:188:LEU:CD1	6:C:195:VAL:HG13	2.50	0.41
7:D:52:SER:O	7:D:54:TYR:N	2.53	0.41
7:D:112:VAL:HG23	7:D:161:ASN:ND2	2.33	0.41
7:D:162:LEU:HD23	7:D:178:VAL:HG13	2.01	0.41
9:F:9:VAL:HG22	9:F:60:PHE:HD2	1.83	0.41
13:J:55:LYS:O	13:J:56:HIS:HB2	2.20	0.41
13:J:84:GLN:C	13:J:86:MET:H	2.23	0.41
16:M:40:ASN:ND2	16:M:40:ASN:C	2.74	0.41
16:M:80:ARG:C	16:M:82:MET:N	2.74	0.41
21:R:44:LEU:HD23	21:R:49:LYS:C	2.41	0.41
22:S:39:THR:HG23	22:S:68:GLY:O	2.20	0.41
1:A:41:G:H2'	1:A:42:G:C8	2.56	0.41
1:A:186:C:H2'	1:A:187:C:H6	1.83	0.41
1:A:437:U:O2'	7:D:123:HIS:CD2	2.73	0.41
1:A:561:U:O2'	1:A:562:C:P	2.78	0.41
1:A:831:U:O2'	1:A:832:C:H5'	2.20	0.41
1:A:832:C:O2'	1:A:833:U:H5'	2.21	0.41
1:A:914:A:O2'	1:A:915:A:H5'	2.21	0.41
1:A:940:C:H2'	1:A:941:G:C8	2.53	0.41
1:A:970:C:OP1	13:J:57:LYS:HE2	2.20	0.41
1:A:977:A:C8	1:A:1223:C:N3	2.88	0.41
1:A:1057:G:C4'	6:C:154:SER:HB2	2.50	0.41
1:A:1108:G:H4'	1:A:1191:A:O4'	2.20	0.41
1:A:1237:C:H4'	1:A:1334:G:N2	2.35	0.41
1:A:1239:A:C4	1:A:1298:C:N4	2.88	0.41
5:B:23:ARG:NH1	5:B:23:ARG:O	2.54	0.41
5:B:185:ILE:HA	5:B:199:TYR:O	2.21	0.41
6:C:33:LEU:O	6:C:36:ASP:HB3	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:139:GLN:O	6:C:143:GLU:HG3	2.20	0.41
13:J:71:LEU:HD22	13:J:71:LEU:HA	1.88	0.41
13:J:96:ILE:HG22	13:J:98:ILE:HG13	2.02	0.41
15:L:41:ARG:CG	15:L:42:THR:N	2.71	0.41
15:L:120:TYR:O	15:L:122:THR:HG23	2.21	0.41
19:P:21:VAL:O	19:P:22:THR:HB	2.20	0.41
1:A:243:A:C2	1:A:246:A:C8	3.09	0.41
1:A:626:U:O2'	1:A:627:G:H5'	2.21	0.41
1:A:714:G:H2'	1:A:715:A:C8	2.56	0.41
1:A:1226:C:O2'	1:A:1227:A:H5'	2.21	0.41
5:B:16:HIS:O	5:B:17:PHE:CD2	2.74	0.41
5:B:55:PHE:O	5:B:56:ARG:C	2.57	0.41
5:B:105:PHE:O	5:B:106:LYS:C	2.59	0.41
8:E:107:ARG:O	8:E:109:ILE:N	2.53	0.41
10:G:78:ARG:O	10:G:84:ASN:HA	2.20	0.41
11:H:119:LEU:HD12	11:H:124:ALA:N	2.35	0.41
12:I:112:LYS:C	12:I:112:LYS:CD	2.89	0.41
13:J:19:SER:HA	13:J:22:LYS:NZ	2.36	0.41
13:J:90:LEU:N	13:J:91:PRO:HD2	2.11	0.41
1:A:718:G:H5''	1:A:719:C:OP2	2.21	0.41
1:A:925:G:C6	1:A:927:G:N7	2.89	0.41
1:A:936:C:H2'	1:A:937:A:O4'	2.21	0.41
1:A:1015:A:H1'	1:A:1218:C:O2'	2.21	0.41
1:A:1055:A:N6	1:A:1206:G:C5	2.89	0.41
1:A:1057:G:C5	1:A:1204:A:C2	3.09	0.41
1:A:1165:C:C2'	1:A:1166:G:H5'	2.51	0.41
1:A:1250:A:H5'	12:I:68:GLY:O	2.20	0.41
1:A:1349:A:OP1	12:I:120:ARG:HB2	2.20	0.41
1:A:1438:G:H2'	1:A:1439:C:H6	1.83	0.41
1:A:1459:C:O2'	1:A:1460:A:H5'	2.20	0.41
5:B:235:SER:C	5:B:237:ALA:H	2.23	0.41
6:C:81:GLY:HA2	6:C:84:ILE:HG22	2.02	0.41
6:C:173:VAL:N	6:C:174:PRO:CD	2.83	0.41
6:C:191:THR:HG22	6:C:193:TYR:N	2.28	0.41
9:F:82:ARG:HA	9:F:82:ARG:NE	2.33	0.41
13:J:6:ILE:O	13:J:71:LEU:HD22	2.20	0.41
14:K:28:THR:C	14:K:29:ILE:HG22	2.41	0.41
15:L:82:VAL:O	15:L:106:ASP:HB2	2.21	0.41
16:M:22:ILE:HG22	16:M:23:TYR:N	2.36	0.41
1:A:80:G:C3'	1:A:81:U:H5''	2.50	0.41
1:A:169:C:O2'	1:A:170:U:H5'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:184:G:H2'	1:A:185:A:H8	1.86	0.41
1:A:247:G:OP2	20:Q:100:LYS:HG3	2.20	0.41
1:A:293:G:C6	1:A:294:U:C4	3.09	0.41
1:A:687:A:O2'	1:A:688:G:OP2	2.33	0.41
1:A:735:C:O2'	1:A:736:C:H5'	2.21	0.41
1:A:1028:C:N4	1:A:1033:G:N2	2.69	0.41
1:A:1061:G:O2'	1:A:1062:U:H5'	2.21	0.41
1:A:1104:G:P	5:B:111:ARG:HD2	2.60	0.41
1:A:1313:U:O2'	1:A:1314:C:H5'	2.21	0.41
1:A:1318:A:H4'	22:S:10:PHE:CD1	2.56	0.41
1:A:1372:U:H2'	1:A:1373:G:H5'	2.03	0.41
1:A:1373:G:H5''	10:G:36:LYS:HD3	2.03	0.41
5:B:90:MET:HA	5:B:91:PRO:HD3	1.78	0.41
5:B:124:SER:CB	5:B:125:PRO:HD2	2.44	0.41
5:B:135:GLN:O	5:B:135:GLN:HG2	2.21	0.41
7:D:14:ARG:O	7:D:14:ARG:HD3	2.21	0.41
8:E:39:GLY:O	8:E:68:GLU:HA	2.21	0.41
10:G:16:LEU:HD22	10:G:16:LEU:N	2.35	0.41
10:G:146:GLU:CD	10:G:149:ARG:HD3	2.41	0.41
11:H:33:GLU:HA	11:H:36:LEU:HD12	2.03	0.41
11:H:75:ARG:HA	11:H:76:PRO:HD3	1.68	0.41
11:H:104:ARG:HG3	11:H:138:TRP:CD2	2.56	0.41
12:I:48:GLU:HA	12:I:51:ARG:NH1	2.34	0.41
12:I:96:LEU:N	12:I:96:LEU:CD1	2.84	0.41
15:L:41:ARG:HB3	15:L:41:ARG:NH1	2.36	0.41
15:L:87:GLY:H	15:L:98:TYR:HB3	1.86	0.41
16:M:25:ILE:HG23	16:M:29:ARG:HB2	2.02	0.41
16:M:45:VAL:HG13	16:M:48:LEU:HD12	2.02	0.41
17:N:26:ARG:CD	17:N:47:LEU:HD11	2.51	0.41
18:O:6:GLU:O	18:O:7:GLU:C	2.59	0.41
21:R:43:PHE:CD1	21:R:66:LEU:HD11	2.56	0.41
1:A:216:G:HO2'	1:A:217:C:C5'	2.34	0.41
1:A:296:U:H1'	1:A:556:C:H1'	2.03	0.41
1:A:393:A:OP2	19:P:12:LYS:CE	2.67	0.41
1:A:1031:G:H2'	1:A:1032:G:C8	2.48	0.41
1:A:1439:C:H2'	1:A:1440:C:C6	2.56	0.41
5:B:162:ILE:O	5:B:162:ILE:HG22	2.21	0.41
8:E:73:ASN:C	8:E:75:THR:H	2.23	0.41
8:E:102:ALA:CB	8:E:120:THR:OG1	2.69	0.41
9:F:28:ARG:HG2	9:F:32:ASN:OD1	2.21	0.41
10:G:32:ARG:O	10:G:33:ASP:HB2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:H:34:GLU:HA	11:H:34:GLU:OE1	2.21	0.41
11:H:68:ARG:HH11	11:H:68:ARG:HG2	1.85	0.41
12:I:44:VAL:CG1	12:I:51:ARG:NH2	2.83	0.41
12:I:118:LYS:C	12:I:120:ARG:H	2.25	0.41
13:J:24:VAL:HG12	13:J:28:ARG:HE	1.86	0.41
14:K:20:TYR:O	14:K:30:VAL:HA	2.21	0.41
14:K:24:SER:C	14:K:26:ASN:N	2.72	0.41
14:K:86:GLY:H	14:K:112:THR:CG2	2.34	0.41
16:M:37:THR:O	16:M:38:GLY:C	2.60	0.41
16:M:59:TYR:O	16:M:63:THR:CG2	2.69	0.41
16:M:67:GLU:HB3	16:M:68:GLY:H	1.55	0.41
17:N:27:CYS:SG	17:N:29:ARG:CB	3.08	0.41
19:P:28:ARG:NH1	19:P:29:ASP:OD2	2.54	0.41
22:S:19:VAL:HG13	22:S:20:LEU:N	2.36	0.41
22:S:42:PRO:O	22:S:44:MET:N	2.54	0.41
1:A:320:C:H2'	1:A:321:A:C8	2.56	0.40
1:A:328:C:HO2'	1:A:329:A:P	2.44	0.40
1:A:488:C:H2'	1:A:489:C:H6	1.86	0.40
1:A:517:G:H5'	1:A:519:C:C2	2.56	0.40
1:A:824:C:H2'	1:A:825:G:H8	1.86	0.40
1:A:1061:G:C4	1:A:1197:G:N2	2.90	0.40
1:A:1318:A:H4'	22:S:10:PHE:CE1	2.56	0.40
1:A:1373:G:H5''	10:G:36:LYS:HB3	2.02	0.40
5:B:140:HIS:O	5:B:141:GLU:C	2.57	0.40
5:B:187:LEU:HA	5:B:201:ILE:O	2.20	0.40
6:C:34:LEU:HD23	6:C:34:LEU:C	2.41	0.40
7:D:67:ILE:O	7:D:69:GLY:N	2.54	0.40
7:D:174:LEU:HD23	7:D:174:LEU:HA	1.79	0.40
10:G:42:ILE:HG23	10:G:117:ALA:HA	2.02	0.40
11:H:39:LEU:N	11:H:39:LEU:HD22	2.36	0.40
12:I:17:VAL:HG21	12:I:80:GLY:CA	2.39	0.40
13:J:42:THR:HG22	13:J:43:ARG:N	2.36	0.40
15:L:7:ILE:HD13	15:L:7:ILE:HA	1.92	0.40
1:A:148:G:O2'	1:A:149:A:H5'	2.21	0.40
1:A:300:A:H8	1:A:300:A:O5'	2.04	0.40
1:A:434:U:H2'	1:A:435:C:H6	1.85	0.40
1:A:445:G:O2'	1:A:446:G:H5'	2.21	0.40
1:A:448:A:C4	1:A:487:A:C2	3.09	0.40
1:A:488:C:O5'	1:A:488:C:H6	2.03	0.40
1:A:706:A:C5	1:A:707:C:C5	3.09	0.40
1:A:736:C:H2'	1:A:737:A:C8	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:861:G:O2'	1:A:862:C:H5'	2.21	0.40
1:A:1327:C:OP1	24:V:20:LYS:HB3	2.21	0.40
1:A:1343:G:H2'	1:A:1344:C:H6	1.81	0.40
1:A:1403:C:O2'	1:A:1404:C:H5'	2.21	0.40
5:B:69:LEU:C	5:B:69:LEU:CD2	2.90	0.40
5:B:81:VAL:O	5:B:82:ARG:C	2.58	0.40
5:B:189:ASP:O	5:B:191:ASP:N	2.55	0.40
6:C:63:ASN:H	6:C:97:LYS:HE2	1.86	0.40
8:E:51:VAL:CB	8:E:52:PRO:HD3	2.35	0.40
9:F:23:LYS:O	9:F:24:GLU:C	2.58	0.40
10:G:145:ALA:O	10:G:146:GLU:C	2.59	0.40
11:H:80:ILE:HG23	11:H:82:HIS:O	2.22	0.40
13:J:60:ARG:N	13:J:60:ARG:CD	2.79	0.40
14:K:28:THR:HG22	14:K:29:ILE:N	2.35	0.40
17:N:53:LEU:HA	17:N:54:PRO:HD2	1.96	0.40
22:S:16:LEU:HA	22:S:19:VAL:HG12	2.03	0.40
23:T:72:LEU:O	23:T:73:HIS:O	2.39	0.40
1:A:22:G:C5	1:A:23:C:C4	3.09	0.40
1:A:294:U:H2'	1:A:295:C:C6	2.56	0.40
1:A:376:G:O2'	1:A:377:G:H5'	2.21	0.40
1:A:422:C:H4'	1:A:423:G:C4	2.57	0.40
1:A:662:G:H2'	1:A:663:A:C8	2.56	0.40
1:A:1016:A:H2'	1:A:1017:G:C5'	2.51	0.40
1:A:1504:G:OP1	1:A:1507:A:H4'	2.22	0.40
5:B:76:GLN:NE2	5:B:207:ALA:N	2.69	0.40
5:B:124:SER:HB2	5:B:125:PRO:CD	2.45	0.40
6:C:160:ALA:C	6:C:162:GLN:N	2.73	0.40
8:E:71:LEU:HD13	8:E:114:GLY:O	2.21	0.40
8:E:103:GLY:C	8:E:106:PRO:HD2	2.40	0.40
10:G:103:TRP:O	10:G:106:GLN:HB3	2.21	0.40
11:H:63:LEU:H	11:H:63:LEU:CD2	2.28	0.40
11:H:68:ARG:HG2	11:H:68:ARG:NH1	2.36	0.40
12:I:126:SER:O	12:I:127:LYS:C	2.60	0.40
13:J:27:ALA:HA	13:J:30:SER:OG	2.22	0.40
15:L:42:THR:CG2	15:L:52:LEU:HB3	2.51	0.40
17:N:44:LEU:O	17:N:48:ALA:HB2	2.21	0.40
18:O:49:ASP:OD2	18:O:52:SER:HB2	2.21	0.40
21:R:45:SER:C	21:R:47:THR:H	2.25	0.40
21:R:74:ARG:HG2	21:R:80:PRO:O	2.21	0.40
1:A:411:A:C8	1:A:413:G:H1'	2.57	0.40
1:A:482:A:H2'	1:A:483:C:O4'	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:750:G:N2	18:O:23:GLY:HA3	2.36	0.40
1:A:1016:A:H8	1:A:1016:A:O5'	2.04	0.40
1:A:1068:G:N7	1:A:1094:G:C2'	2.83	0.40
1:A:1300:G:H1'	1:A:1301:U:H5	1.86	0.40
1:A:1346:A:N1	1:A:1374:A:H5''	2.36	0.40
5:B:126:GLU:HA	5:B:129:GLU:HB2	2.04	0.40
5:B:140:HIS:O	5:B:143:GLU:CB	2.69	0.40
6:C:76:VAL:O	6:C:83:ARG:HD3	2.22	0.40
8:E:146:ALA:O	8:E:149:GLU:HG2	2.22	0.40
11:H:60:ARG:NH1	11:H:60:ARG:CG	2.84	0.40
13:J:19:SER:HA	13:J:22:LYS:HZ3	1.86	0.40
13:J:30:SER:HG	13:J:81:THR:HA	1.83	0.40
13:J:82:ILE:O	13:J:82:ILE:CG2	2.69	0.40
1:A:252:U:H2'	1:A:253:U:C6	2.55	0.40
1:A:543:C:O2'	1:A:544:G:H5'	2.20	0.40
1:A:686:U:O2'	1:A:687:A:H8	2.03	0.40
1:A:958:A:C2	1:A:959:A:C2	3.10	0.40
1:A:1102:A:H2'	1:A:1103:C:H6	1.85	0.40
1:A:1362:C:H5'	1:A:1363:A:O5'	2.21	0.40
1:A:1385:G:H2'	1:A:1386:G:O4'	2.22	0.40
1:A:1402:C:O2'	1:A:1403:C:H5'	2.21	0.40
5:B:187:LEU:HD22	5:B:201:ILE:O	2.21	0.40
8:E:62:ALA:C	8:E:64:ARG:N	2.74	0.40
8:E:150:ARG:O	8:E:150:ARG:HD3	2.20	0.40
10:G:37:ASN:O	10:G:40:ALA:N	2.55	0.40
14:K:70:LYS:O	14:K:73:MET:HB2	2.22	0.40
14:K:100:ALA:O	14:K:101:SER:C	2.60	0.40
15:L:61:THR:C	15:L:63:GLY:N	2.74	0.40
15:L:88:GLY:N	15:L:98:TYR:HA	2.35	0.40
16:M:79:LYS:HD3	16:M:83:ASP:OD2	2.22	0.40
17:N:22:THR:CB	17:N:33:VAL:HG21	2.52	0.40
17:N:29:ARG:HA	17:N:29:ARG:HD2	1.97	0.40
18:O:81:LEU:HA	18:O:81:LEU:HD23	1.88	0.40
20:Q:19:VAL:HG23	20:Q:44:ALA:HB3	2.03	0.40
21:R:66:LEU:O	21:R:69:THR:N	2.54	0.40
22:S:82:GLY:O	22:S:84:GLY:N	2.49	0.40
23:T:89:ARG:O	23:T:92:LEU:N	2.55	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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	
5	B	232/256 (91%)	143 (62%)	59 (25%)	30 (13%)	0	1
6	C	204/239 (85%)	125 (61%)	49 (24%)	30 (15%)	0	1
7	D	206/209 (99%)	139 (68%)	49 (24%)	18 (9%)	1	5
8	E	148/162 (91%)	114 (77%)	24 (16%)	10 (7%)	1	9
9	F	99/101 (98%)	81 (82%)	17 (17%)	1 (1%)	15	47
10	G	153/156 (98%)	104 (68%)	37 (24%)	12 (8%)	1	7
11	H	136/138 (99%)	112 (82%)	19 (14%)	5 (4%)	3	21
12	I	125/128 (98%)	85 (68%)	25 (20%)	15 (12%)	0	2
13	J	96/105 (91%)	58 (60%)	23 (24%)	15 (16%)	0	1
14	K	117/129 (91%)	84 (72%)	18 (15%)	15 (13%)	0	2
15	L	122/135 (90%)	84 (69%)	24 (20%)	14 (12%)	0	2
16	M	116/126 (92%)	74 (64%)	28 (24%)	14 (12%)	0	2
17	N	58/61 (95%)	38 (66%)	14 (24%)	6 (10%)	0	3
18	O	86/89 (97%)	58 (67%)	23 (27%)	5 (6%)	1	11
19	P	81/88 (92%)	59 (73%)	20 (25%)	2 (2%)	5	28
20	Q	102/105 (97%)	83 (81%)	12 (12%)	7 (7%)	1	9
21	R	71/88 (81%)	50 (70%)	17 (24%)	4 (6%)	2	12
22	S	85/93 (91%)	55 (65%)	17 (20%)	13 (15%)	0	1
23	T	97/106 (92%)	57 (59%)	30 (31%)	10 (10%)	0	3
24	V	22/26 (85%)	16 (73%)	6 (27%)	0	100	100
All	All	2356/2540 (93%)	1619 (69%)	511 (22%)	226 (10%)	0	4

All (226) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
5	B	16	HIS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	B	17	PHE
5	B	20	GLU
5	B	21	ARG
5	B	24	TRP
5	B	39	ILE
5	B	123	ALA
5	B	190	THR
5	B	229	VAL
6	C	15	THR
6	C	16	ARG
6	C	47	LEU
6	C	55	VAL
6	C	79	ARG
6	C	101	LEU
6	C	156	ARG
6	C	179	ARG
6	C	189	ALA
7	D	29	PRO
7	D	36	ARG
8	E	78	HIS
10	G	52	GLU
10	G	155	ARG
11	H	83	ILE
11	H	91	ARG
11	H	134	ILE
12	I	31	GLN
12	I	41	VAL
12	I	121	ARG
12	I	127	LYS
13	J	19	SER
13	J	34	VAL
13	J	54	PHE
13	J	57	LYS
13	J	90	LEU
14	K	50	TYR
14	K	57	THR
14	K	101	SER
14	K	126	ARG
15	L	47	LYS
15	L	73	GLU
15	L	116	SER
15	L	127	GLU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
16	M	14	ARG
16	M	63	THR
16	M	67	GLU
16	M	86	CYS
17	N	19	ARG
17	N	22	THR
18	O	49	ASP
18	O	73	GLU
20	Q	68	ARG
20	Q	80	GLY
20	Q	96	GLN
20	Q	97	SER
21	R	87	ARG
22	S	42	PRO
22	S	86	GLU
23	T	73	HIS
23	T	97	ALA
5	B	8	LYS
5	B	54	THR
5	B	83	MET
5	B	165	VAL
5	B	179	LYS
5	B	204	ASN
5	B	207	ALA
5	B	224	GLN
6	C	29	TYR
6	C	51	GLY
6	C	62	ASP
6	C	154	SER
6	C	161	GLU
6	C	171	GLY
6	C	188	LEU
6	C	205	GLY
7	D	10	ARG
7	D	63	LYS
7	D	68	TYR
7	D	124	GLY
7	D	175	SER
7	D	179	GLU
8	E	11	ILE
8	E	146	ALA
10	G	4	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
10	G	7	ALA
10	G	112	PRO
10	G	146	GLU
12	I	42	ARG
12	I	43	ALA
12	I	46	ALA
12	I	55	ALA
12	I	60	ASP
12	I	88	TYR
12	I	94	ALA
13	J	32	ALA
14	K	12	ARG
14	K	47	VAL
14	K	75	TYR
14	K	127	LYS
15	L	41	ARG
15	L	92	ASP
15	L	102	ARG
16	M	4	ILE
16	M	27	LYS
16	M	38	GLY
16	M	106	ASN
17	N	36	PHE
20	Q	98	LEU
21	R	41	LYS
22	S	5	LEU
22	S	6	LYS
22	S	17	GLU
22	S	32	LYS
22	S	43	GLU
23	T	11	SER
23	T	87	LYS
23	T	88	VAL
23	T	94	ALA
5	B	15	VAL
5	B	52	GLU
5	B	101	MET
5	B	178	ARG
6	C	4	LYS
6	C	167	TRP
7	D	9	CYS
7	D	30	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
7	D	125	HIS
7	D	153	ARG
7	D	159	ARG
8	E	15	ARG
8	E	108	ALA
10	G	14	PRO
10	G	149	ARG
10	G	150	ALA
13	J	20	ALA
13	J	26	ALA
14	K	13	GLN
14	K	27	ASN
14	K	128	ALA
15	L	51	ALA
15	L	87	GLY
15	L	115	LYS
16	M	85	GLY
17	N	37	PHE
18	O	86	GLY
19	P	43	LYS
20	Q	49	GLU
20	Q	103	GLY
22	S	30	LEU
22	S	82	GLY
22	S	87	ALA
5	B	80	ILE
5	B	215	LEU
5	B	225	ALA
6	C	53	ALA
6	C	68	VAL
6	C	133	ALA
6	C	168	ALA
7	D	4	TYR
8	E	16	THR
8	E	74	GLY
8	E	107	ARG
9	F	70	ASP
10	G	41	ARG
10	G	117	ALA
12	I	34	ASN
12	I	44	VAL
12	I	101	PHE

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
13	J	39	PRO
13	J	40	LEU
13	J	65	LEU
13	J	82	ILE
14	K	15	ALA
15	L	28	LYS
16	M	28	ALA
16	M	75	ALA
17	N	32	SER
18	O	82	ILE
19	P	10	GLY
23	T	103	GLY
5	B	131	PRO
5	B	143	GLU
6	C	61	ALA
6	C	67	THR
7	D	164	ALA
8	E	60	TYR
8	E	73	ASN
11	H	24	THR
12	I	58	ARG
13	J	23	ILE
13	J	61	GLU
13	J	73	ASP
14	K	102	GLY
14	K	117	ASN
15	L	91	LYS
15	L	121	GLY
16	M	7	VAL
17	N	23	ARG
18	O	46	HIS
21	R	45	SER
22	S	46	GLY
23	T	9	ASN
23	T	74	LYS
5	B	208	ILE
10	G	42	ILE
11	H	105	ARG
15	L	30	ALA
16	M	3	ARG
16	M	74	VAL
23	T	89	ARG

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Mol	Chain	Res	Type
6	C	108	ASN
21	R	37	VAL
22	S	45	VAL
6	C	157	ILE
6	C	174	PRO
7	D	5	ILE
7	D	56	VAL
22	S	9	VAL
5	B	42	ILE
5	B	162	ILE
14	K	29	ILE
6	C	66	VAL
7	D	67	ILE
5	B	18	GLY
6	C	39	ILE

### 5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
5	B	202/220 (92%)	177 (88%)	25 (12%)	4 19
6	C	160/188 (85%)	143 (89%)	17 (11%)	6 25
7	D	180/181 (99%)	161 (89%)	19 (11%)	6 25
8	E	115/123 (94%)	100 (87%)	15 (13%)	4 18
9	F	90/90 (100%)	88 (98%)	2 (2%)	52 76
10	G	126/127 (99%)	119 (94%)	7 (6%)	21 53
11	H	119/119 (100%)	103 (87%)	16 (13%)	4 17
12	I	98/99 (99%)	89 (91%)	9 (9%)	9 32
13	J	87/92 (95%)	78 (90%)	9 (10%)	7 27
14	K	90/99 (91%)	77 (86%)	13 (14%)	3 15
15	L	104/111 (94%)	96 (92%)	8 (8%)	13 40
16	M	94/101 (93%)	82 (87%)	12 (13%)	4 18

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
17	N	49/50 (98%)	44 (90%)	5 (10%)	7	27
18	O	79/80 (99%)	70 (89%)	9 (11%)	5	22
19	P	72/74 (97%)	68 (94%)	4 (6%)	21	53
20	Q	96/97 (99%)	88 (92%)	8 (8%)	11	37
21	R	64/77 (83%)	60 (94%)	4 (6%)	18	48
22	S	75/80 (94%)	62 (83%)	13 (17%)	2	9
23	T	76/82 (93%)	69 (91%)	7 (9%)	9	32
24	V	19/21 (90%)	18 (95%)	1 (5%)	22	54
All	All	1995/2111 (94%)	1792 (90%)	203 (10%)	7	27

All (203) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
5	B	8	LYS
5	B	12	GLU
5	B	15	VAL
5	B	17	PHE
5	B	21	ARG
5	B	23	ARG
5	B	24	TRP
5	B	25	ASN
5	B	76	GLN
5	B	82	ARG
5	B	87	ARG
5	B	98	LEU
5	B	113	HIS
5	B	114	ARG
5	B	139	LYS
5	B	144	ARG
5	B	146	GLN
5	B	162	ILE
5	B	170	GLU
5	B	178	ARG
5	B	185	ILE
5	B	197	VAL
5	B	221	LEU
5	B	231	GLU
5	B	236	TYR
6	C	3	ASN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
6	C	23	TYR
6	C	29	TYR
6	C	34	LEU
6	C	52	LEU
6	C	90	GLU
6	C	91	LEU
6	C	107	GLN
6	C	139	GLN
6	C	142	MET
6	C	156	ARG
6	C	165	THR
6	C	167	TRP
6	C	179	ARG
6	C	188	LEU
6	C	196	LEU
6	C	204	LEU
7	D	3	ARG
7	D	8	VAL
7	D	9	CYS
7	D	10	ARG
7	D	12	CYS
7	D	19	LEU
7	D	26	CYS
7	D	29	PRO
7	D	34	GLU
7	D	35	ARG
7	D	78	LEU
7	D	122	ARG
7	D	157	LEU
7	D	175	SER
7	D	176	LEU
7	D	177	ASP
7	D	186	LEU
7	D	192	GLU
7	D	199	ASN
8	E	12	LEU
8	E	15	ARG
8	E	16	THR
8	E	31	LEU
8	E	38	GLN
8	E	41	VAL
8	E	43	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
8	E	75	THR
8	E	79	GLU
8	E	80	ILE
8	E	82	VAL
8	E	89	ILE
8	E	118	ILE
8	E	147	ASP
8	E	150	ARG
9	F	10	LEU
9	F	86	ARG
10	G	8	GLU
10	G	12	LEU
10	G	37	ASN
10	G	96	GLN
10	G	124	LEU
10	G	126	ASP
10	G	138	LYS
11	H	24	THR
11	H	25	ASP
11	H	26	VAL
11	H	52	ASP
11	H	63	LEU
11	H	84	ARG
11	H	85	ARG
11	H	88	LYS
11	H	91	ARG
11	H	105	ARG
11	H	112	LEU
11	H	119	LEU
11	H	127	LEU
11	H	133	LEU
11	H	135	CYS
11	H	136	GLU
12	I	3	GLN
12	I	23	ASN
12	I	38	GLN
12	I	56	LEU
12	I	75	ASP
12	I	104	ARG
12	I	111	ARG
12	I	114	TYR
12	I	121	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
13	J	29	ARG
13	J	38	ILE
13	J	45	ARG
13	J	49	VAL
13	J	60	ARG
13	J	71	LEU
13	J	73	ASP
13	J	79	ARG
13	J	95	GLU
14	K	24	SER
14	K	29	ILE
14	K	30	VAL
14	K	33	THR
14	K	34	ASP
14	K	48	ILE
14	K	51	LYS
14	K	54	ARG
14	K	57	THR
14	K	84	VAL
14	K	93	GLN
14	K	125	PHE
14	K	126	ARG
15	L	48	PRO
15	L	49	ASN
15	L	53	ARG
15	L	55	VAL
15	L	91	LYS
15	L	93	LEU
15	L	98	TYR
15	L	113	ARG
16	M	9	ILE
16	M	16	ASP
16	M	40	ASN
16	M	44	ARG
16	M	46	LYS
16	M	56	LEU
16	M	70	LEU
16	M	81	LEU
16	M	102	ARG
16	M	103	THR
16	M	110	ARG
16	M	117	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
17	N	3	ARG
17	N	22	THR
17	N	33	VAL
17	N	41	ARG
17	N	44	LEU
18	O	4	THR
18	O	7	GLU
18	O	10	LYS
18	O	46	HIS
18	O	65	ARG
18	O	70	LEU
18	O	71	GLN
18	O	81	LEU
18	O	83	GLU
19	P	8	ARG
19	P	28	ARG
19	P	29	ASP
19	P	62	VAL
20	Q	19	VAL
20	Q	38	ARG
20	Q	53	LEU
20	Q	59	ILE
20	Q	60	ILE
20	Q	74	LEU
20	Q	78	GLU
20	Q	98	LEU
21	R	26	LEU
21	R	36	ASN
21	R	58	LEU
21	R	66	LEU
22	S	7	LYS
22	S	13	ASP
22	S	20	LEU
22	S	25	LYS
22	S	30	LEU
22	S	32	LYS
22	S	36	ARG
22	S	42	PRO
22	S	61	TYR
22	S	62	ILE
22	S	80	TYR
22	S	85	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
22	S	86	GLU
23	T	10	LEU
23	T	13	LEU
23	T	29	LYS
23	T	42	GLN
23	T	62	LEU
23	T	74	LYS
23	T	84	LEU
24	V	7	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (56) such sidechains are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	B	25	ASN
5	B	40	HIS
5	B	76	GLN
5	B	146	GLN
5	B	240	GLN
6	C	3	ASN
6	C	6	HIS
6	C	98	ASN
6	C	107	GLN
6	C	108	ASN
6	C	110	ASN
6	C	123	GLN
6	C	139	GLN
7	D	62	GLN
7	D	74	GLN
7	D	123	HIS
7	D	129	ASN
7	D	199	ASN
8	E	20	GLN
8	E	73	ASN
9	F	7	ASN
9	F	13	ASN
9	F	18	GLN
9	F	57	GLN
9	F	64	GLN
9	F	94	GLN
9	F	100	ASN
10	G	28	ASN
10	G	51	GLN

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Mol	Chain	Res	Type
10	G	96	GLN
10	G	106	GLN
11	H	82	HIS
12	I	23	ASN
12	I	29	ASN
12	I	73	GLN
12	I	89	ASN
13	J	76	ASN
13	J	84	GLN
14	K	22	HIS
14	K	38	ASN
14	K	78	GLN
14	K	117	ASN
15	L	49	ASN
15	L	75	HIS
16	M	40	ASN
16	M	62	ASN
18	O	13	GLN
18	O	37	ASN
19	P	76	GLN
20	Q	16	GLN
21	R	36	ASN
22	S	14	HIS
22	S	23	ASN
22	S	53	ASN
22	S	56	GLN
22	S	69	HIS

### 5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1506/1522 (98%)	201 (13%)	70 (4%)
2	X	5/6 (83%)	0	0
3	Y	10/15 (66%)	2 (20%)	1 (10%)
4	Z	3/4 (75%)	1 (33%)	0
All	All	1524/1547 (98%)	204 (13%)	71 (4%)

All (204) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	8	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	9	G
1	A	31	G
1	A	32	A
1	A	39	G
1	A	47	C
1	A	49	U
1	A	50	A
1	A	51	A
1	A	52	G
1	A	60	A
1	A	61	G
1	A	81	U
1	A	82	U
1	A	116	A
1	A	120	A
1	A	121	C
1	A	130	A
1	A	131	C
1	A	163	C
1	A	182	U
1	A	190(D)	U
1	A	190(E)	U
1	A	190(F)	G
1	A	195	A
1	A	197	A
1	A	198	G
1	A	201	C
1	A	203	U
1	A	204	U
1	A	216	G
1	A	244	U
1	A	247	G
1	A	251	G
1	A	252	U
1	A	266	G
1	A	267	C
1	A	280	C
1	A	282	A
1	A	289	G
1	A	301	G
1	A	321	A
1	A	328	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	329	A
1	A	330	C
1	A	332	G
1	A	344	A
1	A	345	C
1	A	352	C
1	A	353	A
1	A	354	G
1	A	367	U
1	A	373	A
1	A	397	A
1	A	398	C
1	A	412	A
1	A	413	G
1	A	421	U
1	A	423	G
1	A	429	U
1	A	430	A
1	A	439	A
1	A	452	A
1	A	461	C
1	A	484	G
1	A	485	G
1	A	497	A
1	A	498	U
1	A	509	A
1	A	510	A
1	A	511	C
1	A	518	C
1	A	519	C
1	A	527	G
1	A	533	A
1	A	534	U
1	A	547	A
1	A	559	A
1	A	560	U
1	A	561	U
1	A	562	C
1	A	572	A
1	A	573	A
1	A	575	G
1	A	576	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	577	G
1	A	653	A
1	A	665	A
1	A	688	G
1	A	701	C
1	A	703	G
1	A	718	G
1	A	721	G
1	A	723	U
1	A	731	G
1	A	749	C
1	A	755	G
1	A	777	A
1	A	793	U
1	A	794	A
1	A	812	C
1	A	813	U
1	A	817	C
1	A	818	G
1	A	819	A
1	A	828	A
1	A	839	U
1	A	840	C
1	A	841	U
1	A	848	C
1	A	874	G
1	A	876	G
1	A	902	G
1	A	913	A
1	A	914	A
1	A	926	G
1	A	927	G
1	A	934	C
1	A	935	A
1	A	960	U
1	A	961	U
1	A	966	G
1	A	969	A
1	A	974	A
1	A	975	A
1	A	976	G
1	A	977	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	991	U
1	A	993	G
1	A	994	A
1	A	1005	A
1	A	1030(B)	C
1	A	1045	C
1	A	1050	G
1	A	1054	C
1	A	1055	A
1	A	1065	U
1	A	1066	C
1	A	1068	G
1	A	1094	G
1	A	1095	U
1	A	1101	A
1	A	1102	A
1	A	1117	G
1	A	1124	G
1	A	1125	U
1	A	1129	C
1	A	1130	A
1	A	1131	G
1	A	1137	C
1	A	1138	G
1	A	1139	G
1	A	1145	C
1	A	1152	A
1	A	1157	A
1	A	1159	U
1	A	1183	A
1	A	1184	G
1	A	1191	A
1	A	1196	U
1	A	1197	G
1	A	1202	G
1	A	1212	U
1	A	1215	G
1	A	1224	G
1	A	1225	A
1	A	1226	C
1	A	1227	A
1	A	1238	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	1256	A
1	A	1257	U
1	A	1258	G
1	A	1280	A
1	A	1281	U
1	A	1282	C
1	A	1286	A
1	A	1287	A
1	A	1300	G
1	A	1301	U
1	A	1302	U
1	A	1320	C
1	A	1332	A
1	A	1347	G
1	A	1348	U
1	A	1363	A
1	A	1381	U
1	A	1397	C
1	A	1443	G
1	A	1446	A
1	A	1452	C
1	A	1492	A
1	A	1499	A
1	A	1502	A
1	A	1503	A
1	A	1504	G
1	A	1506	U
1	A	1517	G
1	A	1519	A
1	A	1520	G
1	A	1529	G
1	A	1530	G
3	Y	34	G
3	Y	35	A
4	Z	2	U

All (71) RNA pucker outliers are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	7	G
1	A	30	U
1	A	48	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	51	A
1	A	60	A
1	A	115	G
1	A	119	A
1	A	129(A)	G
1	A	181	G
1	A	197	A
1	A	203	U
1	A	243	A
1	A	250	A
1	A	251	G
1	A	266	G
1	A	279	A
1	A	281	G
1	A	328	C
1	A	329	A
1	A	344	A
1	A	351	G
1	A	353	A
1	A	366	C
1	A	372	C
1	A	428	G
1	A	429	U
1	A	438	G
1	A	484	G
1	A	496	A
1	A	509	A
1	A	518	C
1	A	533	A
1	A	559	A
1	A	560	U
1	A	575	G
1	A	687	A
1	A	748	C
1	A	792	A
1	A	812	C
1	A	819	A
1	A	913	A
1	A	960	U
1	A	965	A
1	A	975	A
1	A	976	G

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Mol	Chain	Res	Type
1	A	992	U
1	A	993	G
1	A	1049	U
1	A	1065	U
1	A	1067	A
1	A	1101	A
1	A	1182	G
1	A	1183	A
1	A	1190	G
1	A	1196	U
1	A	1201	A
1	A	1214	C
1	A	1224	G
1	A	1226	C
1	A	1281	U
1	A	1285	A
1	A	1300	G
1	A	1319	A
1	A	1331	G
1	A	1346	A
1	A	1347	G
1	A	1380	U
1	A	1451	A
1	A	1498	U
1	A	1502	A
3	Y	34	G

#### 5.4 Non-standard residues in protein, DNA, RNA chains [\(i\)](#)

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

#### 5.5 Carbohydrates [\(i\)](#)

There are no monosaccharides in this entry.

#### 5.6 Ligand geometry [\(i\)](#)

Of 122 ligands modelled in this entry, 122 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

## 6 Fit of model and data [i](#)

### 6.1 Protein, DNA and RNA chains [i](#)

In the following table, the column labelled '#RSRZ > 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q < 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
1	A	1507/1522 (99%)	0.54	52 (3%) 44 42	16, 53, 140, 201	0
2	X	6/6 (100%)	4.90	4 (66%) 0 0	59, 71, 178, 201	0
3	Y	11/15 (73%)	1.54	3 (27%) 0 0	66, 90, 182, 190	0
4	Z	4/4 (100%)	1.33	1 (25%) 0 0	71, 77, 89, 119	0
5	B	234/256 (91%)	0.27	15 (6%) 19 20	19, 87, 173, 201	0
6	C	206/239 (86%)	0.11	7 (3%) 45 43	22, 80, 160, 201	0
7	D	208/209 (99%)	0.50	17 (8%) 11 11	17, 60, 145, 180	0
8	E	150/162 (92%)	0.59	13 (8%) 10 10	17, 48, 107, 201	0
9	F	101/101 (100%)	0.06	2 (1%) 65 64	35, 88, 148, 185	0
10	G	155/156 (99%)	-0.05	3 (1%) 66 65	27, 70, 150, 201	0
11	H	138/138 (100%)	0.32	3 (2%) 62 60	5, 39, 108, 136	0
12	I	127/128 (99%)	0.44	10 (7%) 12 12	19, 82, 144, 184	0
13	J	98/105 (93%)	0.49	14 (14%) 2 2	30, 107, 188, 201	0
14	K	119/129 (92%)	0.56	7 (5%) 22 23	12, 54, 130, 201	0
15	L	124/135 (91%)	0.72	17 (13%) 3 2	16, 57, 144, 187	0
16	M	118/126 (93%)	0.55	9 (7%) 13 14	32, 70, 144, 170	0
17	N	60/61 (98%)	1.88	28 (46%) 0 0	39, 70, 140, 201	0
18	O	88/89 (98%)	0.38	3 (3%) 45 43	7, 56, 145, 201	0
19	P	83/88 (94%)	0.92	14 (16%) 1 1	10, 41, 101, 150	0
20	Q	104/105 (99%)	0.94	15 (14%) 2 2	10, 43, 157, 201	0
21	R	73/88 (82%)	0.48	3 (4%) 37 36	32, 66, 166, 201	0
22	S	87/93 (93%)	0.95	18 (20%) 1 0	54, 99, 176, 201	0
23	T	99/106 (93%)	0.89	13 (13%) 3 3	15, 50, 123, 156	0
24	V	24/26 (92%)	1.63	8 (33%) 0 0	26, 59, 128, 179	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
All	All	3924/4087 (96%)	0.53	279 (7%) 16 17	5, 60, 152, 201	0

All (279) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
14	K	129	SER	24.9
14	K	128	ALA	18.0
2	X	2	U	13.2
18	O	89	GLY	11.3
22	S	3	ARG	10.6
20	Q	102	GLY	10.0
21	R	17	SER	8.8
17	N	30	ALA	7.9
7	D	209	ARG	7.5
20	Q	103	GLY	6.8
20	Q	104	LYS	6.6
2	X	1	C	6.2
20	Q	105	ALA	6.1
17	N	6	LEU	6.0
24	V	2	GLY	5.9
23	T	9	ASN	5.6
20	Q	101	ARG	5.3
13	J	45	ARG	5.0
12	I	128	ARG	5.0
2	X	3	U	4.8
22	S	39	THR	4.8
23	T	8	ARG	4.8
14	K	127	LYS	4.8
17	N	61	TRP	4.7
3	Y	32	U	4.7
7	D	35	ARG	4.7
22	S	86	GLU	4.6
22	S	35	SER	4.5
1	A	82	U	4.5
24	V	6	ARG	4.4
5	B	148	TYR	4.4
17	N	29	ARG	4.3
17	N	34	TYR	4.2
11	H	1	MET	4.1
17	N	3	ARG	4.1
22	S	38	SER	4.1
17	N	12	ARG	4.1

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Mol	Chain	Res	Type	RSRZ
15	L	31	PRO	4.0
5	B	16	HIS	4.0
22	S	70	LYS	4.0
1	A	202	U	4.0
15	L	19	ARG	4.0
22	S	87	ALA	3.9
1	A	81	U	3.8
16	M	104	ARG	3.8
16	M	102	ARG	3.8
8	E	119	LEU	3.7
13	J	47	PHE	3.7
7	D	23	GLY	3.7
12	I	114	TYR	3.6
16	M	106	ASN	3.6
12	I	70	LYS	3.6
11	H	3	THR	3.5
17	N	60	SER	3.5
12	I	106	ALA	3.5
18	O	88	ARG	3.5
6	C	161	GLU	3.5
1	A	978	A	3.5
14	K	126	ARG	3.4
22	S	37	ARG	3.4
22	S	10	PHE	3.4
23	T	14	LYS	3.3
1	A	532	A	3.3
1	A	390	C	3.3
8	E	81	GLU	3.3
12	I	119	ALA	3.2
1	A	378	G	3.2
1	A	1361(A)	C	3.2
1	A	1534	A	3.2
20	Q	68	ARG	3.2
13	J	65	LEU	3.2
15	L	32	PHE	3.2
12	I	105	ASP	3.2
17	N	39	LEU	3.2
23	T	56	MET	3.2
23	T	85	MET	3.2
23	T	70	SER	3.1
1	A	61	G	3.1
17	N	18	VAL	3.1

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
6	C	26	LYS	3.1
23	T	10	LEU	3.1
1	A	389	A	3.1
7	D	116	GLN	3.1
24	V	5	ASP	3.1
7	D	110	PHE	3.1
11	H	2	LEU	3.1
7	D	125	HIS	3.1
17	N	35	ARG	3.1
5	B	133	LYS	3.0
12	I	102	LEU	3.0
1	A	977	A	3.0
15	L	13	LYS	3.0
7	D	158	ILE	3.0
3	Y	31	A	3.0
22	S	15	LEU	3.0
17	N	23	ARG	3.0
20	Q	39	SER	3.0
15	L	18	VAL	3.0
24	V	10	ARG	3.0
7	D	112	VAL	2.9
24	V	24	ARG	2.9
1	A	1129	C	2.9
7	D	74	GLN	2.9
19	P	29	ASP	2.9
1	A	112	G	2.9
19	P	8	ARG	2.9
16	M	27	LYS	2.9
20	Q	23	VAL	2.9
24	V	3	LYS	2.9
17	N	2	ALA	2.9
6	C	124	ILE	2.9
13	J	59	SER	2.9
19	P	41	PRO	2.8
17	N	37	PHE	2.8
21	R	16	PRO	2.8
19	P	83	GLU	2.8
1	A	982	U	2.8
23	T	104	LEU	2.8
5	B	163	PHE	2.8
8	E	130	ASN	2.8
17	N	44	LEU	2.8

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
5	B	93	VAL	2.8
1	A	524	G	2.8
1	A	60	A	2.8
1	A	979	C	2.8
1	A	981	U	2.7
15	L	99	HIS	2.7
17	N	19	ARG	2.7
20	Q	41	LYS	2.7
17	N	33	VAL	2.7
1	A	878	G	2.7
19	P	30	GLY	2.7
1	A	1296	C	2.7
3	Y	40	C	2.7
20	Q	91	ARG	2.7
20	Q	88	TYR	2.6
17	N	38	GLY	2.6
5	B	69	LEU	2.6
1	A	1224	G	2.6
17	N	8	GLU	2.6
22	S	12	ASP	2.6
10	G	85	TYR	2.6
12	I	111	ARG	2.6
1	A	733	A	2.6
1	A	1237	C	2.6
1	A	388	G	2.6
5	B	108	ILE	2.6
5	B	162	ILE	2.6
19	P	39	TYR	2.6
15	L	28	LYS	2.5
1	A	818	G	2.5
16	M	88	ARG	2.5
1	A	1318	A	2.5
20	Q	22	LEU	2.5
16	M	11	ARG	2.5
12	I	113	LYS	2.5
1	A	1361	G	2.5
17	N	25	VAL	2.5
7	D	120	LEU	2.5
17	N	21	TYR	2.5
13	J	54	PHE	2.5
13	J	44	VAL	2.5
13	J	60	ARG	2.5

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	170	U	2.5
8	E	125	SER	2.5
1	A	376	G	2.5
16	M	43	THR	2.5
19	P	28	ARG	2.5
1	A	279	A	2.5
1	A	814	A	2.5
2	X	6	U	2.5
19	P	27	LYS	2.5
7	D	111	ALA	2.4
13	J	43	ARG	2.4
15	L	127	GLU	2.4
1	A	1236	A	2.4
23	T	68	LYS	2.4
19	P	1	MET	2.4
1	A	1360	A	2.4
8	E	19	MET	2.4
1	A	331	G	2.4
22	S	4	SER	2.4
6	C	195	VAL	2.4
16	M	13	LYS	2.4
22	S	69	HIS	2.4
8	E	87	SER	2.4
9	F	89	MET	2.4
19	P	12	LYS	2.4
22	S	2	PRO	2.4
15	L	33	ARG	2.3
8	E	92	LYS	2.3
17	N	32	SER	2.3
15	L	86	ARG	2.3
10	G	33	ASP	2.3
15	L	89	ARG	2.3
14	K	42	TRP	2.3
17	N	15	LYS	2.3
13	J	63	PHE	2.3
15	L	96	VAL	2.3
1	A	152	A	2.3
5	B	149	LEU	2.3
5	B	218	ALA	2.3
17	N	56	VAL	2.3
19	P	7	ALA	2.3
8	E	20	GLN	2.3

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
22	S	11	VAL	2.3
15	L	71	PRO	2.3
1	A	1190	G	2.3
6	C	188	LEU	2.3
12	I	9	ARG	2.3
1	A	326	G	2.2
1	A	18	C	2.2
20	Q	98	LEU	2.2
4	Z	4	U	2.2
13	J	46	ARG	2.2
1	A	461	C	2.2
7	D	4	TYR	2.2
1	A	377	G	2.2
8	E	77	PRO	2.2
9	F	63	TYR	2.2
15	L	72	GLY	2.2
24	V	18	TYR	2.2
22	S	5	LEU	2.2
5	B	134	GLU	2.2
1	A	42	G	2.2
8	E	123	LEU	2.2
17	N	16	PHE	2.2
21	R	48	GLY	2.2
15	L	69	TYR	2.2
13	J	6	ILE	2.2
1	A	16	A	2.2
23	T	17	ARG	2.2
13	J	64	GLU	2.2
19	P	6	LEU	2.2
1	A	1398	A	2.2
7	D	157	LEU	2.2
1	A	111	G	2.2
7	D	162	LEU	2.1
16	M	19	LEU	2.1
23	T	36	LEU	2.1
15	L	9	GLN	2.1
15	L	20	LYS	2.1
20	Q	43	LEU	2.1
14	K	32	ILE	2.1
18	O	87	ILE	2.1
8	E	17	ALA	2.1
1	A	1319	A	2.1

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Mol	Chain	Res	Type	RSRZ
5	B	96	ARG	2.1
10	G	5	ARG	2.1
8	E	76	ILE	2.1
14	K	122	LYS	2.1
23	T	84	LEU	2.1
7	D	73	ARG	2.1
1	A	373	A	2.1
5	B	144	ARG	2.1
17	N	31	ARG	2.1
6	C	193	TYR	2.1
5	B	172	ILE	2.1
8	E	121	LYS	2.1
1	A	915	A	2.1
7	D	33	MET	2.1
19	P	22	THR	2.1
1	A	108	G	2.1
6	C	190	ARG	2.1
23	T	23	ARG	2.1
17	N	22	THR	2.1
22	S	41	VAL	2.1
1	A	1477	C	2.1
13	J	57	LYS	2.0
24	V	9	ARG	2.0
22	S	40	ILE	2.0
13	J	55	LYS	2.0
17	N	36	PHE	2.0
20	Q	100	LYS	2.0
5	B	70	PHE	2.0
1	A	88	A	2.0
19	P	13	HIS	2.0
1	A	281	G	2.0
7	D	148	VAL	2.0

## 6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

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

## 6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 6.4 Ligands i

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
25	MG	A	1640	1/1	0.48	0.28	27,27,27,27	1
25	MG	A	1579	1/1	0.54	0.31	27,27,27,27	1
25	MG	A	1655	1/1	0.56	0.26	27,27,27,27	1
25	MG	A	1651	1/1	0.61	0.12	27,27,27,27	0
25	MG	A	1641	1/1	0.66	0.28	27,27,27,27	1
25	MG	A	1607	1/1	0.70	0.23	27,27,27,27	1
25	MG	A	1624	1/1	0.70	0.28	27,27,27,27	1
25	MG	A	1628	1/1	0.72	0.56	27,27,27,27	1
25	MG	A	1636	1/1	0.74	0.15	27,27,27,27	1
25	MG	A	1656	1/1	0.76	0.17	27,27,27,27	0
25	MG	A	1547	1/1	0.77	0.15	27,27,27,27	0
25	MG	A	1620	1/1	0.77	0.33	27,27,27,27	1
25	MG	A	1637	1/1	0.77	0.12	27,27,27,27	1
25	MG	A	1606	1/1	0.77	0.23	27,27,27,27	1
25	MG	A	1622	1/1	0.78	0.33	27,27,27,27	0
25	MG	A	87	1/1	0.82	0.41	27,27,27,27	1
25	MG	A	214	1/1	0.83	0.19	27,27,27,27	1
25	MG	A	1626	1/1	0.83	0.14	27,27,27,27	1
25	MG	A	1558	1/1	0.84	0.21	27,27,27,27	0
25	MG	A	1584	1/1	0.85	0.24	27,27,27,27	0
25	MG	A	1654	1/1	0.85	0.06	27,27,27,27	1
25	MG	D	215	1/1	0.85	0.13	27,27,27,27	0
25	MG	A	1556	1/1	0.86	0.43	27,27,27,27	0
25	MG	A	1562	1/1	0.86	0.14	27,27,27,27	1
25	MG	A	1612	1/1	0.87	0.35	27,27,27,27	0
25	MG	A	1653	1/1	0.87	0.18	27,27,27,27	1
25	MG	A	1623	1/1	0.87	0.14	27,27,27,27	0
25	MG	A	210	1/1	0.87	0.14	27,27,27,27	1
25	MG	A	1625	1/1	0.87	0.21	27,27,27,27	0
25	MG	A	1621	1/1	0.87	0.22	27,27,27,27	0
25	MG	A	1618	1/1	0.88	0.15	27,27,27,27	1
25	MG	A	1605	1/1	0.88	0.11	27,27,27,27	0
25	MG	A	1639	1/1	0.88	0.27	27,27,27,27	1
25	MG	A	1627	1/1	0.88	0.16	27,27,27,27	0
25	MG	A	211	1/1	0.88	0.29	27,27,27,27	0
25	MG	A	1647	1/1	0.88	0.15	27,27,27,27	0
25	MG	A	1561	1/1	0.89	0.28	27,27,27,27	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
25	MG	A	1649	1/1	0.89	0.15	27,27,27,27	1
25	MG	A	1590	1/1	0.89	0.20	27,27,27,27	0
25	MG	A	1652	1/1	0.89	0.09	27,27,27,27	0
25	MG	A	1638	1/1	0.89	0.18	27,27,27,27	0
25	MG	A	1548	1/1	0.89	0.32	27,27,27,27	1
25	MG	A	1615	1/1	0.89	0.25	27,27,27,27	0
25	MG	A	1616	1/1	0.89	0.10	27,27,27,27	0
25	MG	A	1644	1/1	0.89	0.25	27,27,27,27	1
25	MG	A	1650	1/1	0.90	0.26	27,27,27,27	1
25	MG	A	1645	1/1	0.90	0.18	27,27,27,27	0
25	MG	A	1643	1/1	0.90	0.16	27,27,27,27	1
25	MG	A	1570	1/1	0.90	0.31	27,27,27,27	0
25	MG	A	1585	1/1	0.91	0.33	27,27,27,27	0
25	MG	A	1569	1/1	0.91	0.34	27,27,27,27	0
25	MG	A	1603	1/1	0.91	0.24	27,27,27,27	0
25	MG	A	1594	1/1	0.91	0.23	27,27,27,27	0
25	MG	A	1634	1/1	0.91	0.14	27,27,27,27	0
25	MG	A	1577	1/1	0.91	0.14	27,27,27,27	0
25	MG	A	1610	1/1	0.92	0.28	27,27,27,27	1
25	MG	A	1575	1/1	0.92	0.32	27,27,27,27	0
25	MG	A	1629	1/1	0.92	0.13	27,27,27,27	0
25	MG	A	1595	1/1	0.92	0.06	27,27,27,27	0
25	MG	A	1635	1/1	0.92	0.15	27,27,27,27	0
25	MG	A	1545	1/1	0.92	0.09	27,27,27,27	0
25	MG	A	1573	1/1	0.93	0.26	27,27,27,27	0
25	MG	A	1646	1/1	0.93	0.75	27,27,27,27	0
25	MG	A	1564	1/1	0.93	0.13	27,27,27,27	0
25	MG	A	1613	1/1	0.93	0.33	27,27,27,27	0
25	MG	A	1608	1/1	0.93	0.09	27,27,27,27	0
25	MG	A	1633	1/1	0.93	0.32	27,27,27,27	0
25	MG	A	1574	1/1	0.94	0.28	27,27,27,27	0
25	MG	A	1588	1/1	0.94	0.17	27,27,27,27	0
25	MG	A	1631	1/1	0.94	0.31	27,27,27,27	0
25	MG	A	1602	1/1	0.94	0.16	27,27,27,27	0
25	MG	A	1619	1/1	0.94	0.27	27,27,27,27	0
25	MG	A	1589	1/1	0.94	0.28	27,27,27,27	0
25	MG	A	1563	1/1	0.94	0.20	27,27,27,27	0
25	MG	A	1592	1/1	0.94	0.38	27,27,27,27	0
25	MG	A	1559	1/1	0.94	0.26	27,27,27,27	0
25	MG	A	1566	1/1	0.94	0.19	27,27,27,27	0
25	MG	A	1597	1/1	0.94	0.20	27,27,27,27	0
25	MG	A	1599	1/1	0.94	0.18	27,27,27,27	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
25	MG	A	1567	1/1	0.94	0.21	27,27,27,27	1
25	MG	A	1581	1/1	0.95	0.16	27,27,27,27	0
25	MG	A	86	1/1	0.95	0.27	27,27,27,27	0
25	MG	A	1596	1/1	0.95	0.40	27,27,27,27	0
25	MG	A	1551	1/1	0.95	0.28	27,27,27,27	0
25	MG	A	1587	1/1	0.95	0.19	27,27,27,27	0
25	MG	A	1576	1/1	0.95	0.16	27,27,27,27	0
25	MG	A	1571	1/1	0.95	0.26	27,27,27,27	0
25	MG	A	1565	1/1	0.95	0.36	27,27,27,27	0
25	MG	A	1580	1/1	0.95	0.23	27,27,27,27	0
25	MG	A	1642	1/1	0.95	0.23	27,27,27,27	1
25	MG	A	1593	1/1	0.95	0.23	27,27,27,27	0
25	MG	A	1604	1/1	0.95	0.10	27,27,27,27	0
25	MG	H	213	1/1	0.95	0.15	27,27,27,27	0
25	MG	A	1582	1/1	0.96	0.17	27,27,27,27	0
25	MG	A	1611	1/1	0.96	0.16	27,27,27,27	0
25	MG	A	71	1/1	0.96	0.37	27,27,27,27	0
25	MG	A	1568	1/1	0.96	0.30	27,27,27,27	0
25	MG	A	1552	1/1	0.96	0.34	27,27,27,27	0
25	MG	A	1549	1/1	0.96	0.33	27,27,27,27	0
25	MG	A	1617	1/1	0.96	0.22	27,27,27,27	0
25	MG	A	1560	1/1	0.96	0.27	27,27,27,27	0
25	MG	A	1609	1/1	0.96	0.24	27,27,27,27	0
25	MG	A	1591	1/1	0.97	0.33	27,27,27,27	0
25	MG	A	1550	1/1	0.97	0.34	27,27,27,27	0
25	MG	A	1586	1/1	0.97	0.16	27,27,27,27	0
25	MG	A	1553	1/1	0.97	0.38	27,27,27,27	0
25	MG	A	1601	1/1	0.97	0.20	27,27,27,27	0
25	MG	A	1578	1/1	0.97	0.24	27,27,27,27	0
25	MG	A	1583	1/1	0.97	0.16	27,27,27,27	0
25	MG	A	1572	1/1	0.97	0.10	27,27,27,27	0
25	MG	A	1614	1/1	0.97	0.20	27,27,27,27	0
25	MG	A	1598	1/1	0.97	0.17	27,27,27,27	0
25	MG	A	1600	1/1	0.98	0.06	27,27,27,27	0
25	MG	A	1555	1/1	0.98	0.26	27,27,27,27	0
25	MG	A	1546	1/1	0.98	0.32	27,27,27,27	0
25	MG	A	1630	1/1	0.98	0.31	27,27,27,27	0
25	MG	A	1557	1/1	0.98	0.26	27,27,27,27	0
25	MG	A	1554	1/1	0.98	0.23	27,27,27,27	0
26	ZN	D	506	1/1	0.98	0.34	27,27,27,27	0
25	MG	A	1648	1/1	0.99	0.08	27,27,27,27	0
25	MG	A	1632	1/1	0.99	0.32	27,27,27,27	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
26	ZN	N	507	1/1	0.99	0.14	27,27,27,27	1

## 6.5 Other polymers [i](#)

There are no such residues in this entry.