



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 24, 2026 – 01:45 AM UTC

PDB ID : 2F4V / pdb_00002f4v
Title : 30S ribosome + designer antibiotic
Authors : Murray, J.B.; Meroueh, S.O.; Russell, R.J.; Lentzen, G.; Haddad, J.; Mobashery, S.
Deposited on : 2005-11-24
Resolution : 3.80 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

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>.

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

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

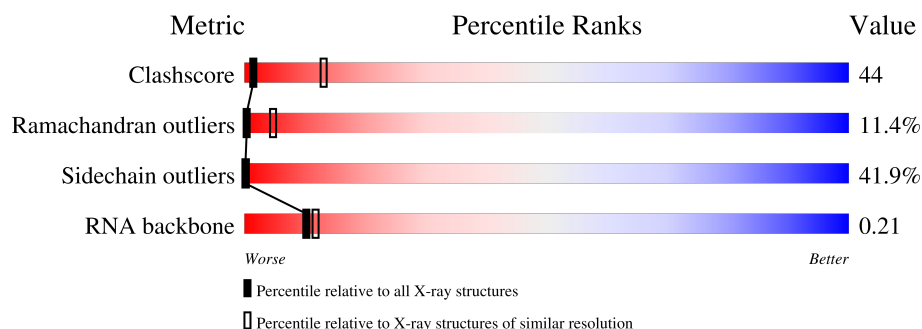
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.80 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	190562	1012 (3.94-3.66)
Ramachandran outliers	187476	1048 (3.96-3.64)
Sidechain outliers	187428	1043 (3.96-3.64)
RNA backbone	3983	1007 (4.50-3.10)

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 ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	1511	14% 41% 34% 11%
2	Z	4	75% 25%
3	B	256	15% 48% 26% • 7%
4	C	239	18% 38% 24% 6% 14%
5	D	209	21% 47% 27% 5%
6	E	162	16% 39% 30% 7% 7%

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Mol	Chain	Length	Quality of chain
7	F	101	
8	G	156	
9	H	138	
10	I	128	
11	J	105	
12	K	129	
13	L	132	
14	M	126	
15	N	61	
16	O	89	
17	P	88	
18	Q	105	
19	R	88	
20	S	93	
21	T	106	

2 Entry composition [i](#)

There are 26 unique types of molecules in this entry. The entry contains 51728 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
1	A	1507	Total	C	N	O	P	22	0	0
			32391	14418	6002	10465	1506			

- Molecule 2 is a RNA chain called 5'-R(P*UP*UP*CP*U)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	Z	4	Total	C	N	O	P	0	0	0
			80	36	9	31	4			

- Molecule 3 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	B	237	Total	C	N	O	S	0	0	0
			1923	1226	344	348	5			

- Molecule 4 is a protein called 30S ribosomal protein S3.

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

- Molecule 5 is a protein called 30S ribosomal protein S4.

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

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	199	GLN	ASN	conflict	UNP P80373
D	201	ASN	GLN	conflict	UNP P80373

- Molecule 6 is a protein called 30S ribosomal protein S5.

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

- Molecule 7 is a protein called 30S ribosomal protein S6.

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

- Molecule 8 is a protein called 30S ribosomal protein S7.

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

- Molecule 9 is a protein called 30S ribosomal protein S8.

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

- Molecule 10 is a protein called 30S ribosomal protein S9.

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

- Molecule 11 is a protein called 30S ribosomal protein S10.

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

- Molecule 12 is a protein called 30S ribosomal protein S11.

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

- Molecule 13 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
13	L	125	Total	C	N	O	S	0	0	0
			975	614	196	164	1			

- Molecule 14 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
14	M	125	Total	C	N	O	S	0	0	0
			997	617	207	171	2			

- Molecule 15 is a protein called 30S ribosomal protein S14.

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

- Molecule 16 is a protein called 30S ribosomal protein S15.

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

- Molecule 17 is a protein called 30S ribosomal protein S16.

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

- Molecule 18 is a protein called 30S ribosomal protein S17.

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

- Molecule 19 is a protein called 30S ribosomal protein S18.

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

- Molecule 20 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
20	S	84	Total	C	N	O	S	0	0	0
			674	430	126	116	2			

- Molecule 21 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
21	T	99	Total	C	N	O	S	0	0	0
			762	469	162	129	2			

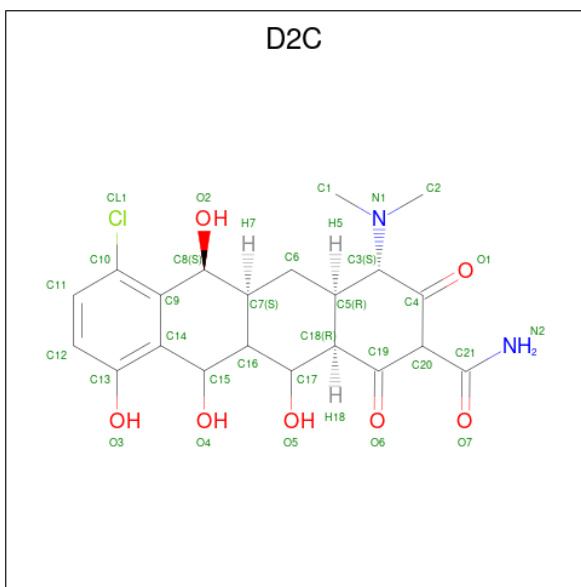
- Molecule 22 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
22	A	98	Total	Mg	0	0
			98	98		
22	Z	1	Total	Mg	0	0
			1	1		
22	D	1	Total	Mg	0	0
			1	1		
22	M	1	Total	Mg	0	0
			1	1		

- Molecule 23 is POTASSIUM ION (CCD ID: K) (formula: K).

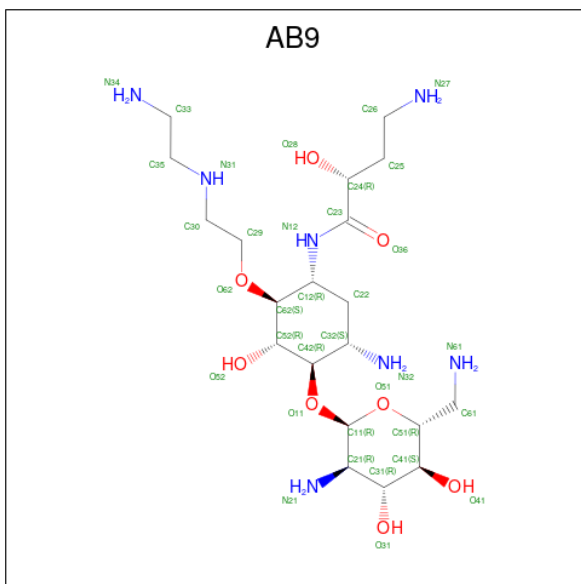
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
23	A	12	Total	K	0	0
			12	12		

- Molecule 24 is (2S,4S,4AR,5AS,6S,11R,11AS,12R,12AR)-7-CHLORO-4-(DIMETHYLAMINO)-6,10,11,12-TETRAHYDROXY-1,3-DIOXO-1,2,3,4,4A,5,5A,6,11,11A,12,12A-DODECAHYDROTETRACENE-2-CARBOXAMIDE (CCD ID: D2C) (formula: C₂₁H₂₅ClN₂O₇).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
24	A	1	Total	C	Cl	N	O	
			31	21	1	2	7	

- Molecule 25 is (2R)-4-AMINO-N-{(1R,2S,3R,4R,5S)-5-AMINO-2-{2-[(2-AMINOETHYL)AMINO]ETHOXY}-4-[(2,6-DIAMINO-2,6-DIDEOXY-ALPHA-D-GLUCOPYRANOSYL)OXY]-3-HYDROXYCYCLOHEXYL}-2-HYDROXYBUTANAMIDE (CCD ID: AB9) (formula: C₂₀H₄₃N₇O₈).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
25	A	1	Total	C	N	O		
			35	20	7	8		

- Molecule 26 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
26	D	1	Total 1	Zn 1	0	0
26	N	1	Total 1	Zn 1	0	0

A1519	G1453	U1390	G1331	G1267	G1207	G1084	U1025	A964	C899	U833	C770	C708
G1520	G1454	U1391	A1532	A1268	C1208	U1085	G1026	A965	A900	C834	G771	G709
G1521	G1455	U1392	A1333	A1269	C1209	U1086	G1027	G966	A901	U835	U772	G710
U1522	G1459	U1393	G1334	C1270	C1210	G1087	C1028	C967	G902	G836	G773	
G1523	A1460	A1394	C1335	G1271	U1211	G1088	C1029	A968	G903	G837	G774	G713
G1524	G1461	A1395	G1336	G1272	U1212	U1089		A969		G838	G775	G714
G1525		A1396	G1337	G1273	A1213	U1090	C1030B	C970	A908	U839	G776	A715
G1526	G1464	C1397	G1338		C1214	U1091	A1030C	G971	A909	C840	G777	A716
G1527	G1465	A1398	A1339	G1276	G1215	A1092	A1030D	C972	C910	U841	G778	G717
U1528	G1466	C1399	A1340	C1277	G1216	A1093	G1031	G973	U911	C848	G779	G718
G1529	G1467	C1400	U1341	U1278	C1217	G1094	G1032	A974	C912	C849	G780	C719
U1530	A1468	G1401	C1342	A1279	G1218	U1095	G1033	A975	A913	U850	A781	G720
A1531		C1402	G1343	A1280	U1219	C1096	G1034	G976	A914	G851	G782	G721
U1532	G1471	C1403	C1344	U1281	G1220	C1097	A1035	A977	A915	G852	C783	A722
A1534	U1472	C1404	U1345	C1282	G1221	G1098	G1036	A978	G916	G853	C784	U723
	A1473	G1405	A1346	G1283	G1222	U1099	C1037	C979	G917	G854	G785	G724
	G1474	U1406	G1347	C1284	G1223	C1100	G1038	G980	A918	G855	G786	G725
		C1407	U1348	A1285	G1224	A1101	C1039	U981	A919	C856	G787	C726
		A1408	A1349	A1286	A1225	A1102	U1040	U982	U920	C857	U788	G727
	C1478	A1409	A1350	A1287	C1226	C1103	A1041	A983	U921	C858	U789	A728
	C1479	G1410	U1351	A1288	C1227	G1104	G1042	C984	G922	A859	A790	A729
	G1480	C1411	C1352	A1289	C1228	A1105	C1043	C985	A923	G860	G791	G730
	U1481	C1412	G1353	G1290	A1229	G1106	A1044	A986	C924	G861	A792	G731
	A1482	A1413	C1354	G1291	C1230	C1107	G1045	G987	G925	C862	U793	C732
	A1483	U1414	G1355	G1231	G1231	G1108	A1046	G988	G926	U863	A794	A733
	C1484		G1356	U1232	U1232	C1109	G1047	C989	C927	A864	C795	G734
	U1485		A1357	G1233	G1234	A1110	G1048	C990	C930	A865	C796	C735
	G1486		C1358	C1297	C1234	A1111	U1049	C991	C931	C866	C797	C736
	G1487		G1359	U1235	U1235	C1112	G1050	U992	C932	G867	A737	C737
	U1488		A1360	A1299	A1236	C1113		G993	C933	C868	G799	C738
	G1489		G1361	G1300	C1237	C1114	G1053	G994	G934	U870	G800	C739
	A1490		C1361A	U1301	A1238	C1115	A1054	U997	A935	U871	A802	G740
	G1491		C1362	U1302	A1239	C1116	A1055	G998	C936	A872	G803	U742
	A1492		A1363	C1303	U1240	C1117	U1056	C999	A937	A873	U804	G743
	A1493		U1364	G1304	G1241	C1118	G1057	U1000	A938	G874	C805	C744
	G1494		G1365	G1305	C1242	C1119	G1058	A1001	G939	C875	C806	C745
	U1495		C1366	A1306	C1243	G1120	G1059	C1007	A946	C882	U813	A753
	A1426		C1367	U1307	G1244	U1121	C1060	G1002	C940	G876	A807	
	A1428		G1368	U1308	A1245	C1122	G1061	G1003	G941	C877	C748	
	G1429		C1369	G1309	C1246	A1123	U1062	G1003A	G942	G878	G809	C749
	C1430		G1370	U1310	U1247	G1124	C1063	A1004	U943	C879	C810	G750
	A1431		G1371	G1311	A1248	U1125	G1064	A1005	G944	C880	C811	U751
	G1432		U1372	G1312	C1249	U1126	U1065	C1006	A945	G881	C812	G752
	A1433		G1373	U1313	A1250	G1127	C1066	C1007	A946	C882	U813	A753
	A1434		A1374	C1314	A1251	C1128	A1067	C1008	G947	C883	A814	C754
	G1435		A1375	U1315	A1252	C1129	G1068	G1009	C948	U884	A815	G755
	U1436		U1376	G1316	G1253	A1130	C1069	G1010	A949	G885	A816	C756
	G1437		A1377	C1317	G1254	G1131	U1070	G1011	U950	G886	C817	U757
	G1438		C1378	A1318	G1255	C1132			G951	G887	G818	G758
	A1439		G1379	A1319	A1256	G1133	U1073	A1014	U952	G888	A819	A759
	C1440		U1380	C1320	U1257	G1134	G1074	A1015	G953	A889	U820	G760
	G1441		C1381	C1321	G1258	U1135	C1075	A1016	G954	G890	G761	
	G1442		C1382	G1322	U1259	U1136	G1076	G1017	U955	A891	C824	G762
	A1443		G1383	C1323	C1260	U1137	G1077	C1018	U956	A892	G763	G763
	A1446		C1384	G1324	A1261	G1138	U1078	G1019	U957	C893	G825	C764
	G1447		G1385	A1324	C1262	G1139	G1079	U1020	A958	G894	G826	G765
	C1448		C1386	C1327	C1263	C1140	A1080	G1021	A959	C895	U827	A766
	C1449		G1387	U1328	G1264	C1141	G1081	G1022	U960	C896	A828	
	U1450		A1388	A1329	G1265	U1205	G1082	U961	C897	G897	A767	A768
	A1451		C1389	U1330	G1266	G1143	U1083	G1024		G898	C832	G769

• Molecule 2: 5'-R(P*UP*UP*CP*U)-3'


Chain Z:

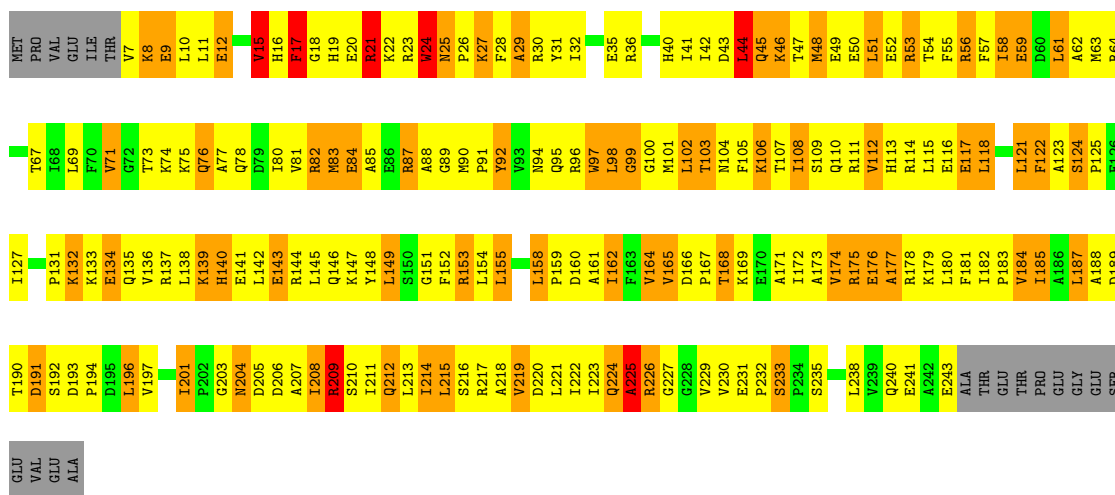
75%

25%

U3
U4
U5
U6

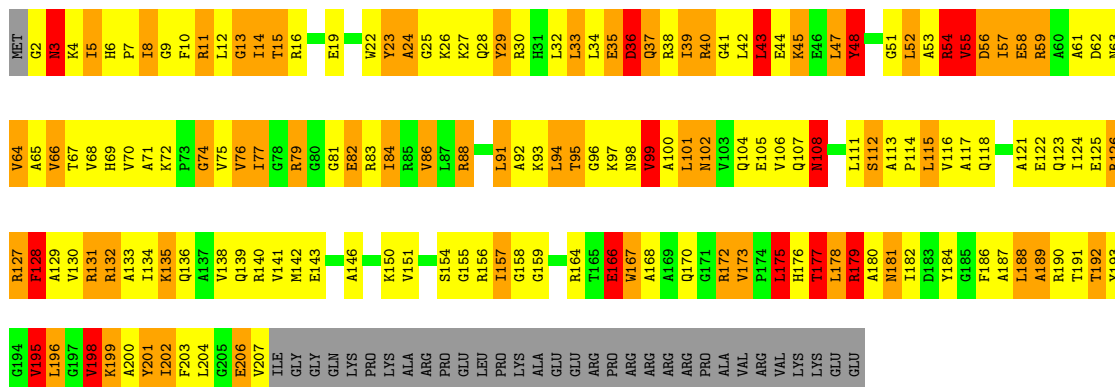
- Molecule 3: 30S ribosomal protein S2

Chain B:  15% 48% 26% 7%



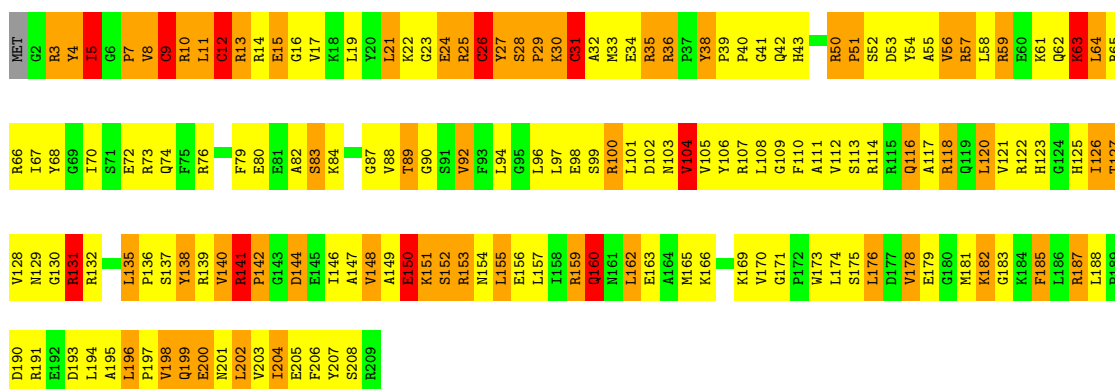
- Molecule 4: 30S ribosomal protein S3

Chain C: 

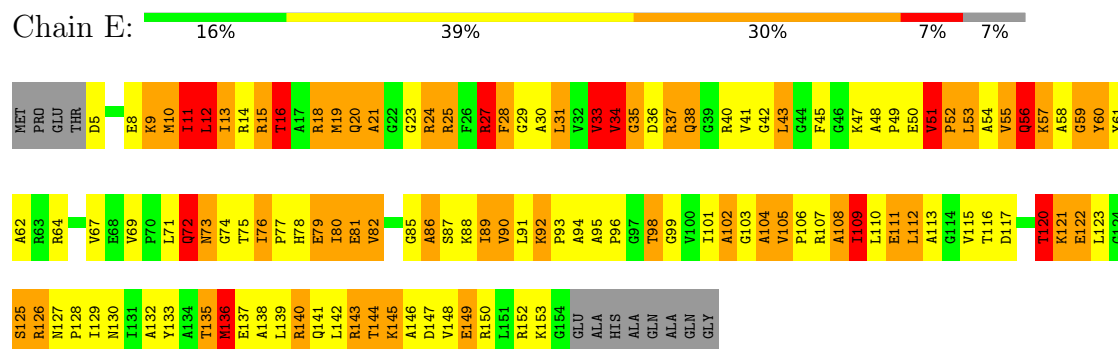


- Molecule 5: 30S ribosomal protein S4

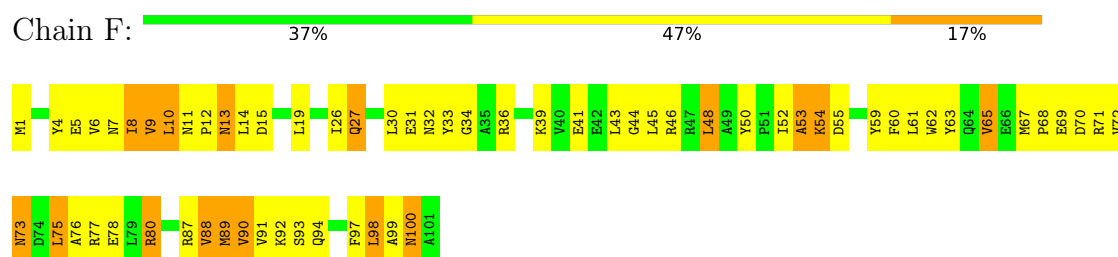
Chain D: 21% 47% 27% 5%



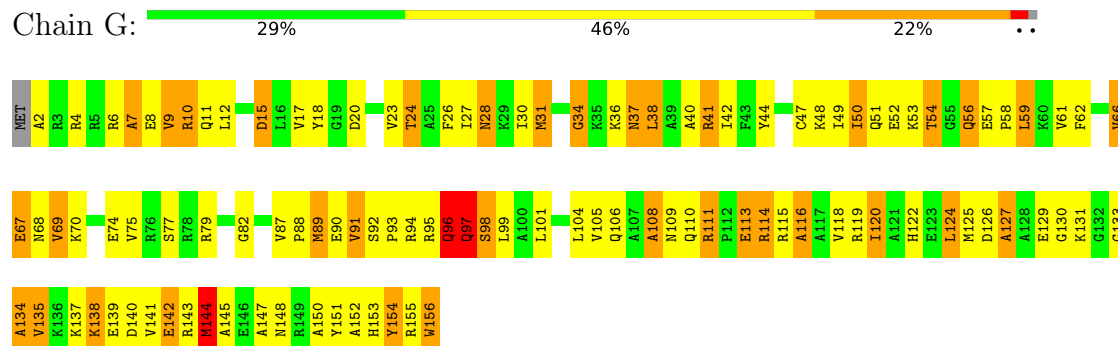
- Molecule 6: 30S ribosomal protein S5



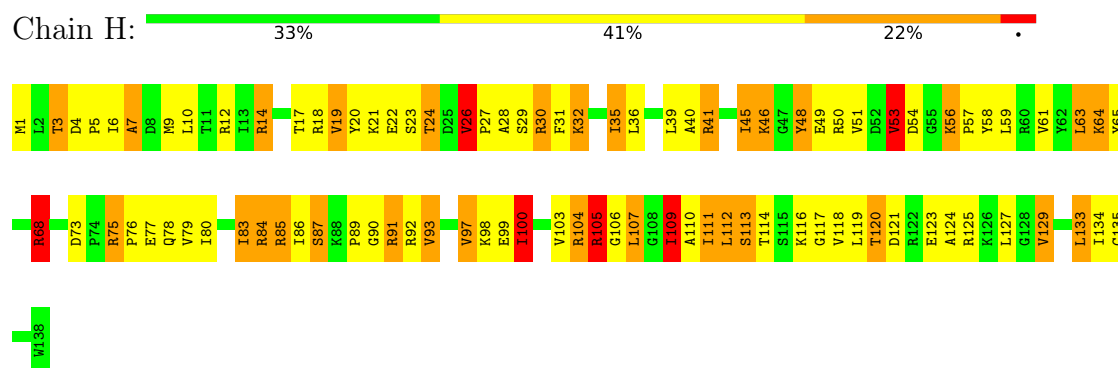
- Molecule 7: 30S ribosomal protein S6




- Molecule 8: 30S ribosomal protein S7

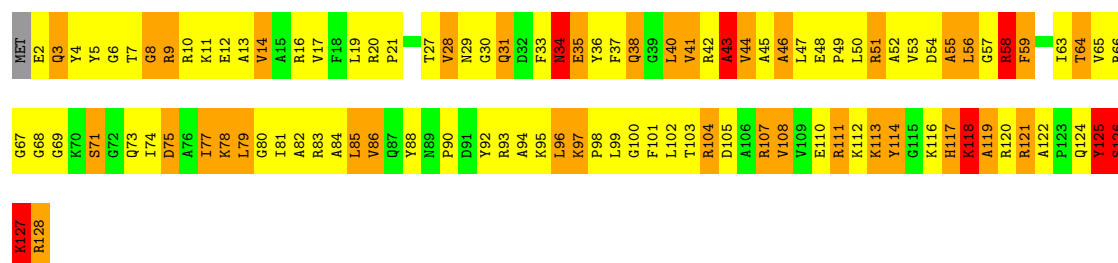


- Molecule 9: 30S ribosomal protein S8



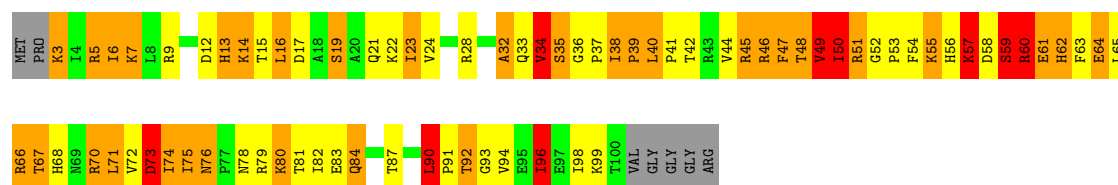
- Molecule 10: 30S ribosomal protein S9

Chain I:  17% 48% 28% 5%



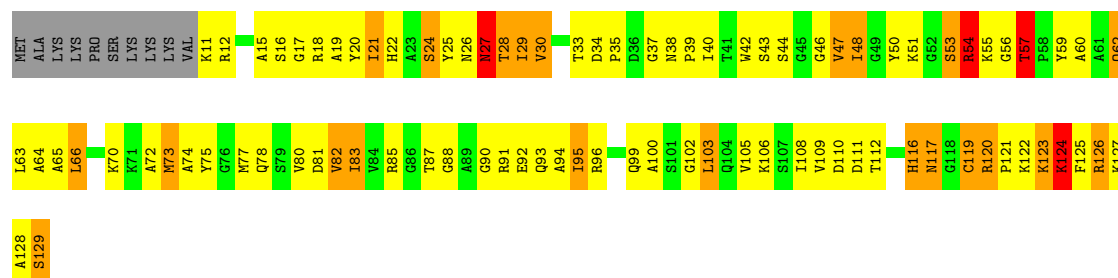
- Molecule 11: 30S ribosomal protein S10

Chain J: 21% 32% 31% 9% 7%

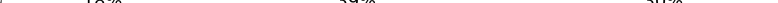


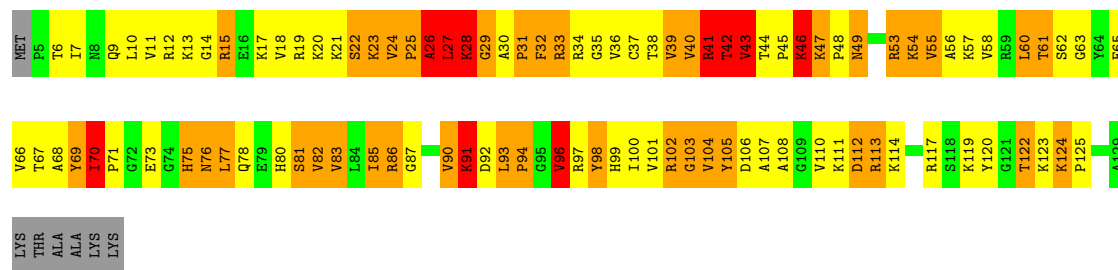
- Molecule 12: 30S ribosomal protein S11

Chain K:  23% 49% 17% 1% 10%



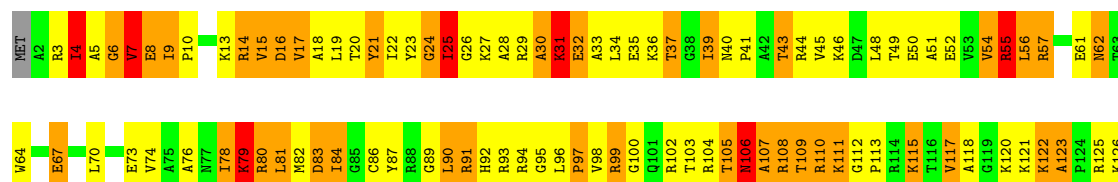
- Molecule 13: 30S ribosomal protein S12

Chain L: 

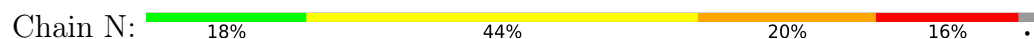


- Molecule 14: 30S ribosomal protein S13

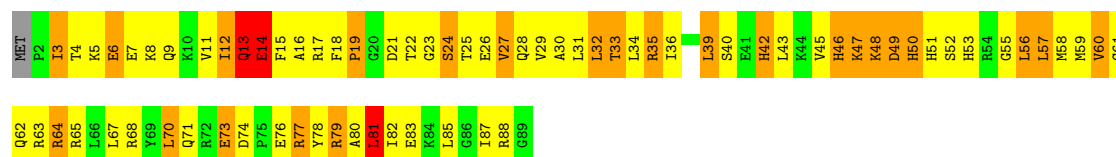
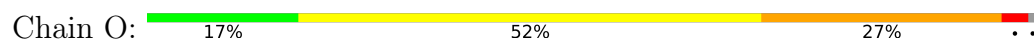
Chain M: 21% 43% 30% 6%



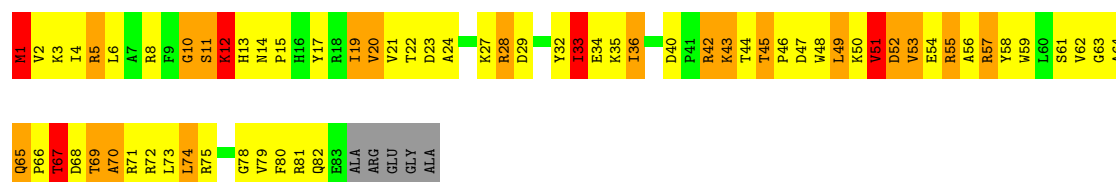
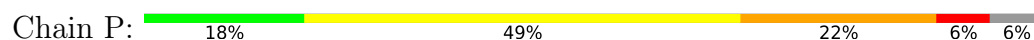
• Molecule 15: 30S ribosomal protein S14



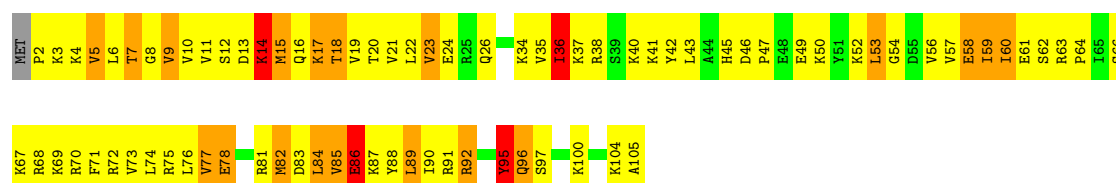
• Molecule 16: 30S ribosomal protein S15



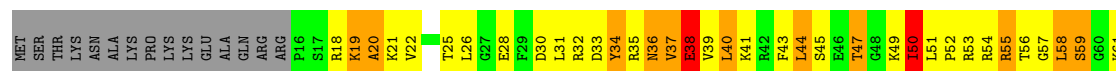
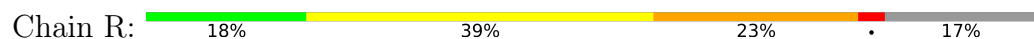
• Molecule 17: 30S ribosomal protein S16



• Molecule 18: 30S ribosomal protein S17



• Molecule 19: 30S ribosomal protein S18

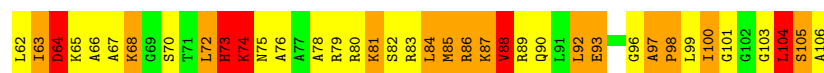
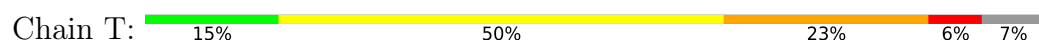




- Molecule 20: 30S ribosomal protein S19



- Molecule 21: 30S ribosomal protein S20



4 Data and refinement statistics

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

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, α , β , γ	403.32Å 403.32Å 176.69Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	30.00 – 3.80	Depositor
% Data completeness (in resolution range)	97.2 (30.00-3.80)	Depositor
R_{merge}	0.16	Depositor
R_{sym}	(Not available)	Depositor
Refinement program	REFMAC 5.1.24	Depositor
R, R_{free}	0.259 , 0.315	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	51728	wwPDB-VP
Average B, all atoms (Å ²)	84.0	wwPDB-VP

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: K, AB9, MG, ZN, D2C

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	1.20	184/36247 (0.5%)	1.31	309/56545 (0.5%)
2	Z	1.68	1/87 (1.1%)	1.41	1/132 (0.8%)
3	B	1.04	3/1958 (0.2%)	0.85	0/2640
4	C	1.14	5/1636 (0.3%)	0.86	1/2205 (0.0%)
5	D	0.99	1/1733 (0.1%)	0.85	0/2318
6	E	1.46	10/1162 (0.9%)	1.02	4/1564 (0.3%)
7	F	0.89	1/856 (0.1%)	0.83	0/1154
8	G	1.08	2/1276 (0.2%)	0.80	0/1709
9	H	1.41	5/1136 (0.4%)	0.98	1/1527 (0.1%)
10	I	0.94	0/1029	0.82	1/1378 (0.1%)
11	J	1.08	1/805 (0.1%)	0.95	1/1082 (0.1%)
12	K	1.22	2/900 (0.2%)	0.89	1/1213 (0.1%)
13	L	1.05	0/991	0.92	1/1327 (0.1%)
14	M	1.05	1/1008 (0.1%)	0.83	0/1347
15	N	1.07	0/501	0.87	0/664
16	O	1.08	0/745	0.78	0/992
17	P	1.39	2/716 (0.3%)	0.93	0/963
18	Q	1.29	4/870 (0.5%)	0.91	0/1159
19	R	1.13	1/603 (0.2%)	0.89	0/799
20	S	0.87	0/689	0.85	0/926
21	T	1.33	1/764 (0.1%)	0.91	2/1006 (0.2%)
All	All	1.18	224/55712 (0.4%)	1.19	322/82650 (0.4%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
3	B	0	2
4	C	0	6

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Mol	Chain	#Chirality outliers	#Planarity outliers
5	D	0	6
6	E	0	5
7	F	0	1
9	H	0	5
10	I	0	4
11	J	0	6
12	K	0	5
13	L	0	8
14	M	0	4
15	N	0	8
17	P	0	4
18	Q	0	1
20	S	0	5
21	T	0	4
All	All	0	74

All (224) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1169	A	O3'-P	28.37	2.03	1.61
1	A	1129	C	C1'-N1	11.33	1.64	1.47
1	A	1346	A	C3'-O3'	9.73	1.57	1.43
1	A	1125	U	C3'-O3'	9.53	1.56	1.42
14	M	7	VAL	CA-CB	9.51	1.67	1.54
1	A	1397	C	C1'-N1	9.31	1.61	1.47
1	A	1224	G	C3'-O3'	9.24	1.57	1.43
8	G	89	MET	SD-CE	9.17	2.02	1.79
1	A	1192	C	C1'-N1	9.12	1.62	1.48
1	A	1533	C	C1'-N1	9.10	1.61	1.47
1	A	723	U	C1'-N1	9.06	1.62	1.48
1	A	1159	U	C1'-N1	9.02	1.60	1.47
1	A	1199	U	C1'-N1	8.88	1.61	1.48
12	K	40	ILE	CA-CB	-8.66	1.45	1.55
1	A	1073	U	C1'-N1	8.56	1.61	1.48
1	A	533	A	C3'-O3'	8.25	1.55	1.43
1	A	458	C	C1'-N1	8.18	1.60	1.48
2	Z	3	U	C1'-N1	8.13	1.60	1.48
1	A	401	C	C1'-N1	8.11	1.60	1.48
9	H	26	VAL	CA-CB	7.86	1.64	1.54
1	A	81	U	O5'-C5'	7.84	1.54	1.42
1	A	1509	C	C3'-O3'	-7.84	1.30	1.42
1	A	1281	U	C1'-N1	7.77	1.60	1.48

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	386	C	C3'-O3'	-7.71	1.30	1.42
1	A	82	U	C1'-N1	7.70	1.59	1.48
1	A	1281	U	C3'-O3'	7.62	1.53	1.42
1	A	1257	U	C1'-N1	7.57	1.58	1.47
1	A	1361(A)	C	C1'-N1	7.57	1.59	1.48
9	H	105	ARG	NE-CZ	7.38	1.41	1.33
1	A	409	G	O5'-C5'	7.34	1.53	1.42
1	A	1398	A	C3'-O3'	-7.33	1.31	1.42
1	A	1125	U	O5'-C5'	7.28	1.53	1.42
1	A	1135	U	C1'-N1	7.21	1.58	1.47
1	A	81	U	C1'-N1	7.12	1.59	1.48
1	A	1117	G	O5'-C5'	-7.09	1.31	1.42
1	A	518	C	C1'-N1	7.08	1.58	1.47
6	E	136	MET	SD-CE	7.05	1.97	1.79
1	A	1129	C	O5'-C5'	7.03	1.53	1.42
1	A	553	A	C3'-O3'	-6.97	1.31	1.42
1	A	60	A	C3'-O3'	6.93	1.53	1.43
1	A	613	C	C1'-N1	6.89	1.58	1.48
1	A	115	G	C3'-O3'	6.86	1.53	1.43
1	A	1504	G	O5'-C5'	-6.82	1.32	1.42
1	A	812	C	C3'-O3'	6.81	1.53	1.43
18	Q	9	VAL	CA-CB	-6.80	1.45	1.54
1	A	1126	U	C1'-N1	6.76	1.58	1.48
1	A	841	U	C1'-N1	6.75	1.57	1.47
1	A	687	A	C3'-O3'	6.73	1.53	1.43
1	A	1495	U	C1'-N1	6.73	1.58	1.48
17	P	1	MET	SD-CE	6.73	1.96	1.79
1	A	334	C	C1'-N1	6.72	1.58	1.48
1	A	371	G	C3'-O3'	-6.71	1.32	1.42
1	A	1090	U	C1'-N1	6.71	1.58	1.48
1	A	1114	C	C1'-N1	6.67	1.58	1.48
1	A	940	C	C3'-O3'	-6.63	1.32	1.42
1	A	7	G	C1'-N9	-6.56	1.37	1.47
3	B	48	MET	SD-CE	6.55	1.96	1.79
1	A	5	U	C1'-N1	6.51	1.58	1.48
1	A	1235	U	C1'-N1	6.51	1.58	1.48
1	A	1082	G	O5'-C5'	-6.50	1.32	1.42
1	A	1465	C	C1'-N1	6.47	1.58	1.48
6	E	10	MET	SD-CE	6.46	1.95	1.79
6	E	28	PHE	CA-C	-6.45	1.44	1.52
1	A	921	U	C3'-O3'	-6.44	1.32	1.42
1	A	1369	C	C3'-O3'	-6.38	1.32	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	378	G	C3'-O3'	-6.37	1.32	1.42
1	A	63	C	O5'-C5'	-6.36	1.32	1.42
18	Q	82	MET	SD-CE	6.35	1.95	1.79
1	A	1195	C	C1'-N1	6.33	1.57	1.48
1	A	374	A	C3'-O3'	-6.31	1.32	1.42
4	C	173	VAL	CA-CB	6.30	1.62	1.54
11	J	59	SER	CA-C	6.29	1.58	1.52
1	A	1302	U	C3'-O3'	6.27	1.52	1.43
1	A	5	U	C3'-O3'	6.26	1.51	1.42
1	A	571	U	C1'-N1	6.26	1.57	1.48
1	A	181	G	C3'-O3'	6.25	1.52	1.43
1	A	393	A	C3'-O3'	-6.22	1.32	1.42
1	A	1074	G	C3'-O3'	-6.20	1.32	1.42
1	A	982	U	C1'-N1	6.19	1.56	1.47
1	A	203	U	C1'-N1	6.18	1.56	1.47
1	A	1266	G	O5'-C5'	6.17	1.51	1.42
1	A	163	C	C1'-N1	6.17	1.57	1.48
1	A	1237	C	C1'-N1	6.13	1.57	1.48
18	Q	10	VAL	CA-CB	-6.10	1.46	1.54
1	A	119	A	C3'-O3'	6.09	1.52	1.43
1	A	1149	C	C3'-O3'	-6.09	1.33	1.42
6	E	34	VAL	CA-CB	-6.07	1.47	1.54
18	Q	36	ILE	CA-CB	-6.04	1.47	1.54
1	A	956	U	C1'-N1	-6.00	1.39	1.48
1	A	149	A	C3'-O3'	-5.98	1.33	1.42
1	A	381	C	C1'-N1	5.97	1.57	1.48
1	A	1247	U	C1'-N1	5.96	1.57	1.48
1	A	1514	C	C3'-O3'	-5.94	1.33	1.42
1	A	232	G	C3'-O3'	-5.93	1.33	1.42
5	D	30	LYS	CA-C	5.92	1.59	1.52
1	A	832	C	C1'-N1	5.92	1.57	1.48
1	A	170	U	C3'-O3'	-5.91	1.33	1.42
1	A	1249	C	C1'-N1	5.88	1.57	1.48
1	A	1433	A	C3'-O3'	-5.84	1.33	1.42
1	A	372	C	C3'-O3'	5.83	1.51	1.43
1	A	513	C	C1'-N1	5.83	1.57	1.48
1	A	1229	A	C3'-O3'	-5.82	1.33	1.42
1	A	1243	C	O5'-C5'	5.82	1.51	1.42
1	A	358	U	C1'-N1	5.80	1.57	1.48
1	A	20	U	C1'-N1	-5.79	1.39	1.48
21	T	28	ALA	CA-CB	-5.78	1.44	1.53
1	A	416	G	O5'-C5'	5.78	1.51	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	240	C	C3'-O3'	-5.77	1.33	1.42
3	B	230	VAL	CA-CB	5.75	1.60	1.53
1	A	739	C	C1'-N1	5.74	1.57	1.48
1	A	1138	G	C3'-O3'	5.74	1.50	1.42
6	E	27	ARG	CA-C	5.74	1.59	1.52
1	A	73	C	C1'-N1	5.74	1.57	1.48
1	A	1119	C	C1'-N1	5.74	1.57	1.48
1	A	461	C	C1'-N1	5.72	1.56	1.47
6	E	109	ILE	CA-C	-5.72	1.46	1.52
1	A	1510	U	C3'-O3'	-5.72	1.33	1.42
1	A	489	C	C1'-N1	5.71	1.57	1.48
1	A	1018	C	C1'-N1	5.71	1.57	1.48
1	A	279	A	O5'-C5'	5.69	1.51	1.42
1	A	1202	G	O5'-C5'	5.69	1.50	1.42
1	A	893	C	C1'-N1	5.68	1.56	1.48
1	A	1327	C	C1'-N1	-5.66	1.40	1.48
1	A	1212	U	C1'-N1	5.66	1.55	1.47
1	A	222	U	C3'-O3'	-5.65	1.33	1.42
1	A	1395	C	C1'-N1	-5.65	1.40	1.48
17	P	33	ILE	CA-CB	-5.64	1.48	1.54
1	A	738	C	O5'-C5'	-5.63	1.34	1.42
1	A	1278	U	C1'-N1	5.62	1.56	1.48
1	A	577	G	C1'-N9	-5.62	1.39	1.48
1	A	375	U	C3'-O3'	-5.62	1.33	1.42
1	A	190	C	C3'-O3'	5.61	1.50	1.42
1	A	840	C	C1'-N1	5.61	1.55	1.47
1	A	385	C	C3'-O3'	-5.61	1.33	1.42
4	C	3	ASN	CA-C	5.60	1.59	1.53
1	A	421	U	C3'-O3'	5.59	1.51	1.43
1	A	1063	C	C3'-O3'	-5.59	1.33	1.42
9	H	48	TYR	CA-C	-5.59	1.45	1.52
1	A	190(H)	G	O5'-C5'	5.58	1.50	1.42
1	A	1367	C	C1'-N1	5.57	1.56	1.48
1	A	999	C	C1'-N1	5.56	1.56	1.48
1	A	924	C	C1'-N1	5.56	1.56	1.48
1	A	1506	U	C1'-N1	5.56	1.55	1.47
1	A	1063	C	C1'-N1	5.55	1.56	1.48
1	A	839	U	C1'-N1	5.54	1.56	1.48
1	A	1498	U	C1'-N1	5.54	1.55	1.47
1	A	1391	U	C1'-N1	-5.51	1.40	1.48
7	F	1	MET	SD-CE	5.50	1.93	1.79
4	C	4	LYS	N-CA	5.50	1.53	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1270	C	O5'-C5'	5.50	1.50	1.42
1	A	1277	C	C1'-N1	5.49	1.56	1.48
1	A	644	G	C3'-O3'	-5.48	1.33	1.42
1	A	1020	U	C1'-N1	5.48	1.56	1.48
1	A	676	A	C3'-O3'	-5.48	1.33	1.42
6	E	102	ALA	CA-C	-5.48	1.45	1.52
1	A	804	U	C1'-N1	5.48	1.56	1.48
1	A	730	G	C3'-O3'	-5.47	1.33	1.42
1	A	405	U	C1'-N1	5.45	1.56	1.48
1	A	444	C	C1'-N1	5.45	1.56	1.48
1	A	1510	U	C1'-N1	-5.44	1.40	1.48
1	A	1067	A	O5'-C5'	5.43	1.51	1.42
1	A	1514	C	C1'-N1	5.43	1.56	1.48
1	A	1372	U	C1'-N1	5.43	1.56	1.48
1	A	1272	G	O5'-C5'	5.43	1.50	1.42
1	A	647	C	C1'-N1	-5.42	1.40	1.48
1	A	336	C	C1'-N1	5.41	1.56	1.48
1	A	328	C	O5'-C5'	-5.41	1.34	1.42
9	H	53	VAL	CA-CB	5.41	1.60	1.53
1	A	884	U	C3'-O3'	-5.39	1.35	1.43
1	A	237	C	C1'-N1	5.38	1.56	1.48
1	A	304	U	C1'-N1	5.38	1.56	1.48
1	A	723	U	O5'-C5'	5.35	1.50	1.42
1	A	1085	U	C3'-O3'	5.34	1.51	1.43
1	A	239	U	C1'-N1	5.33	1.56	1.48
8	G	144	MET	SD-CE	5.33	1.92	1.79
19	R	50	ILE	CA-C	-5.33	1.46	1.52
1	A	914	A	O5'-C5'	-5.32	1.34	1.42
1	A	731	G	C3'-O3'	-5.31	1.34	1.42
1	A	182	U	C1'-N1	5.30	1.56	1.48
1	A	351	G	C3'-O3'	5.30	1.51	1.43
1	A	202	U	C1'-N1	5.29	1.55	1.47
1	A	1062	U	C3'-O3'	-5.28	1.34	1.42
1	A	866	C	C1'-N1	5.26	1.56	1.48
1	A	920	U	C3'-O3'	-5.26	1.34	1.42
1	A	109	A	O5'-C5'	5.26	1.50	1.42
6	E	109	ILE	CA-CB	-5.24	1.48	1.54
1	A	1101	A	C3'-O3'	5.23	1.50	1.43
1	A	1390	U	C1'-N1	5.22	1.56	1.48
1	A	1460	A	C3'-O3'	-5.21	1.34	1.42
1	A	634	C	C3'-O3'	-5.19	1.34	1.42
1	A	666	G	C3'-O3'	-5.19	1.34	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1083	U	C3'-O3'	5.19	1.50	1.42
1	A	1211	U	C1'-N1	5.18	1.56	1.48
1	A	686	U	C1'-N1	-5.17	1.39	1.47
9	H	45	ILE	N-CA	-5.17	1.39	1.46
6	E	33	VAL	CA-C	-5.17	1.46	1.52
1	A	947	G	C3'-O3'	-5.16	1.34	1.42
1	A	1038	C	C1'-N1	5.16	1.56	1.48
1	A	1079	G	C3'-O3'	-5.15	1.34	1.42
1	A	556	C	C3'-O3'	-5.13	1.34	1.42
1	A	376	G	C3'-O3'	-5.13	1.34	1.42
1	A	498	U	C1'-N1	5.12	1.56	1.48
1	A	1196	U	O5'-C5'	5.12	1.50	1.42
1	A	281	G	C3'-O3'	5.11	1.50	1.43
1	A	397	A	C3'-O3'	5.11	1.49	1.42
1	A	815	A	C3'-O3'	-5.10	1.35	1.43
1	A	1358	U	C1'-N1	5.09	1.56	1.48
12	K	54	ARG	NE-CZ	5.09	1.38	1.33
1	A	857	C	C3'-O3'	-5.09	1.34	1.42
1	A	679	C	C1'-N1	-5.08	1.40	1.48
1	A	118	U	C3'-O3'	-5.08	1.34	1.42
4	C	195	VAL	CA-CB	-5.08	1.47	1.54
1	A	743	U	O5'-C5'	5.08	1.50	1.42
4	C	99	VAL	CA-CB	5.08	1.60	1.53
1	A	1070	U	C3'-O3'	5.07	1.49	1.42
6	E	120	THR	CA-C	-5.05	1.46	1.52
1	A	1344	C	C1'-N1	5.04	1.56	1.48
1	A	1380	U	C3'-O3'	5.04	1.50	1.43
1	A	701	C	C3'-O3'	5.04	1.50	1.43
1	A	1109	C	C1'-N1	-5.03	1.41	1.48
3	B	127	ILE	CA-CB	5.03	1.61	1.54
1	A	745	C	C1'-N1	-5.03	1.41	1.48
1	A	1481	U	C1'-N1	5.02	1.55	1.48
1	A	676	A	C1'-N9	-5.02	1.40	1.48

All (322) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1169	A	P-O3'-C3'	23.55	155.53	120.20
1	A	1525	G	C4'-C3'-C2'	-12.91	89.69	102.60
1	A	1169	A	O3'-P-O5'	-12.22	85.67	104.00
1	A	1380	U	C2'-C3'-O3'	10.47	125.20	109.50
1	A	115	G	C2'-C3'-O3'	10.40	125.10	109.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1346	A	C4'-C3'-O3'	10.09	124.53	109.40
1	A	1025	U	C1'-O4'-C4'	-9.28	100.62	109.90
1	A	1346	A	P-O3'-C3'	9.26	134.09	120.20
1	A	1345	U	C1'-O4'-C4'	-9.25	100.45	109.70
1	A	730	G	C4'-C3'-C2'	-8.73	93.87	102.60
1	A	1522	U	C4'-C3'-C2'	-8.50	94.10	102.60
1	A	1190	G	O4'-C1'-C2'	-8.50	99.10	107.60
1	A	1183	A	C1'-O4'-C4'	-8.43	101.47	109.90
1	A	1524	C	C4'-C3'-C2'	-8.32	94.28	102.60
1	A	1224	G	P-O3'-C3'	8.30	132.65	120.20
1	A	1529	G	C1'-O4'-C4'	-8.23	101.47	109.70
1	A	656	C	C4'-C3'-C2'	-8.20	94.40	102.60
1	A	1065	U	C2'-C3'-O3'	8.09	121.64	109.50
1	A	577	G	C3'-C2'-O2'	8.09	122.83	110.70
1	A	288	A	C4'-C3'-C2'	-7.95	94.66	102.60
1	A	1380	U	P-O3'-C3'	7.84	131.96	120.20
1	A	529	G	C4'-C3'-C2'	-7.82	94.78	102.60
1	A	501	C	P-O3'-C3'	-7.76	108.56	120.20
1	A	686	U	C3'-C2'-C1'	-7.74	93.76	101.50
6	E	12	LEU	N-CA-C	7.71	121.13	109.41
1	A	687	A	C2'-C3'-O3'	7.65	120.98	109.50
1	A	290	C	P-O3'-C3'	-7.60	108.80	120.20
1	A	315	A	C4'-C3'-C2'	-7.57	95.03	102.60
1	A	686	U	C1'-O4'-C4'	-7.52	102.18	109.70
1	A	980	C	C1'-O4'-C4'	-7.49	102.41	109.90
1	A	1050	G	C4'-C3'-C2'	-7.46	95.14	102.60
1	A	1317	C	C1'-O4'-C4'	-7.38	102.52	109.90
1	A	262	A	C4'-C3'-O3'	-7.36	101.95	113.00
1	A	279	A	C4'-C3'-O3'	7.27	120.30	109.40
1	A	130	A	P-O5'-C5'	-7.22	110.07	120.90
1	A	1151	A	C1'-O4'-C4'	-7.17	102.53	109.70
1	A	173	U	C3'-C2'-C1'	-7.09	94.41	101.50
1	A	898	G	C4'-C3'-C2'	-7.09	95.51	102.60
1	A	930	C	O4'-C4'-C3'	-7.07	96.93	104.00
1	A	115	G	P-O3'-C3'	7.07	130.80	120.20
1	A	872	A	C1'-O4'-C4'	-7.06	102.64	109.70
1	A	533	A	C2'-C3'-O3'	7.05	120.08	109.50
1	A	60	A	C2'-C3'-O3'	6.97	119.96	109.50
1	A	484	G	C2'-C3'-O3'	6.96	119.94	109.50
1	A	1509	C	C4'-C3'-O3'	-6.94	102.59	113.00
1	A	781	A	C4'-C3'-C2'	-6.93	95.67	102.60
1	A	1504	G	P-O3'-C3'	6.91	130.57	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
13	L	70	ILE	N-CA-C	6.89	113.83	107.56
1	A	1125	U	P-O3'-C3'	6.88	130.51	120.20
1	A	776	G	O3'-P-O5'	-6.87	93.70	104.00
1	A	917	G	C4'-C3'-O3'	-6.87	102.70	113.00
1	A	1364	U	C2'-C3'-O3'	6.86	119.79	109.50
1	A	533	A	P-O3'-C3'	6.84	130.47	120.20
1	A	246	A	C1'-O4'-C4'	-6.81	102.89	109.70
1	A	48	C	P-O3'-C3'	6.80	130.40	120.20
1	A	328	C	P-O3'-C3'	6.80	130.40	120.20
1	A	108	G	O4'-C4'-C3'	-6.79	97.21	104.00
1	A	914	A	C4'-C3'-O3'	-6.76	102.86	113.00
1	A	222	U	O4'-C4'-C3'	-6.75	97.25	104.00
1	A	1108	G	C4'-C3'-C2'	-6.74	95.86	102.60
1	A	601	C	P-O3'-C3'	-6.73	110.11	120.20
1	A	197	A	P-O3'-C3'	6.71	130.27	120.20
1	A	1498	U	C2'-C3'-O3'	6.70	119.55	109.50
1	A	1347	G	P-O3'-C3'	6.70	130.25	120.20
1	A	608	A	P-O3'-C3'	-6.68	110.18	120.20
1	A	1085	U	P-O3'-C3'	6.67	130.20	120.20
1	A	197	A	C2'-C3'-O3'	6.66	119.49	109.50
1	A	1509	C	O3'-P-O5'	-6.64	94.04	104.00
1	A	288	A	O4'-C1'-C2'	-6.60	101.00	107.60
1	A	266	G	P-O3'-C3'	6.57	130.06	120.20
1	A	879	C	C4'-C3'-C2'	-6.55	96.05	102.60
1	A	1192	C	C2'-C3'-O3'	-6.52	103.92	113.70
1	A	220	G	O4'-C1'-C2'	-6.51	101.09	107.60
1	A	743	U	C3'-C2'-O2'	6.50	120.45	110.70
1	A	452	A	C3'-C2'-C1'	-6.48	95.02	101.50
1	A	1347	G	C2'-C3'-O3'	6.48	119.22	109.50
1	A	279	A	N9-C1'-C2'	-6.45	104.32	114.00
1	A	1393	U	C4'-C3'-O3'	-6.45	103.32	113.00
1	A	391	G	C4'-C3'-O3'	-6.44	103.34	113.00
1	A	702	A	C1'-O4'-C4'	-6.43	103.27	109.70
1	A	542	G	C4'-C3'-C2'	-6.43	96.17	102.60
1	A	401	C	O4'-C1'-C2'	-6.39	101.21	107.60
1	A	279	A	P-O3'-C3'	6.37	129.76	120.20
1	A	1065	U	C1'-O4'-C4'	-6.36	103.34	109.70
1	A	108	G	C4'-C3'-C2'	-6.35	96.25	102.60
1	A	965	A	C4'-C3'-C2'	6.33	108.93	102.60
1	A	408	A	C4'-C3'-C2'	-6.32	96.28	102.60
1	A	1525	G	C1'-O4'-C4'	-6.30	103.60	109.90
1	A	818	G	C4'-C3'-C2'	-6.30	96.30	102.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	883	C	O4'-C1'-C2'	-6.28	101.32	107.60
1	A	1526	G	C4'-C3'-C2'	-6.28	96.32	102.60
1	A	1234	C	O3'-P-O5'	-6.23	94.65	104.00
1	A	372	C	C2'-C3'-O3'	6.22	118.83	109.50
1	A	1520	G	C4'-C3'-O3'	-6.19	103.71	113.00
1	A	1190	G	P-O3'-C3'	6.14	129.41	120.20
1	A	944	G	N9-C1'-C2'	6.14	121.21	112.00
1	A	385	C	C4'-C3'-O3'	-6.14	103.79	113.00
1	A	243	A	P-O3'-C3'	6.13	129.40	120.20
1	A	883	C	C4'-C3'-O3'	-6.12	103.83	113.00
1	A	913	A	P-O3'-C3'	6.10	129.35	120.20
1	A	49	U	C5'-C4'-O4'	6.09	118.24	109.10
1	A	760	G	P-O3'-C3'	-6.09	111.06	120.20
1	A	944	G	C4'-C3'-C2'	-6.09	96.51	102.60
1	A	866	C	C4'-C3'-O3'	-6.07	103.89	113.00
1	A	1190	G	O3'-P-O5'	6.07	113.11	104.00
1	A	877	C	C1'-C2'-O2'	6.06	117.49	108.40
1	A	292	G	C4'-C3'-C2'	-6.05	96.55	102.60
1	A	1048	G	C4'-C3'-C2'	-6.05	96.55	102.60
1	A	687	A	P-O3'-C3'	6.04	129.27	120.20
1	A	346	G	C1'-O4'-C4'	-6.04	103.86	109.90
2	Z	4	U	C3'-C2'-O2'	6.03	119.75	110.70
6	E	94	ALA	N-CA-C	6.03	118.86	109.52
1	A	875	C	C4'-C3'-C2'	-6.02	96.58	102.60
1	A	405	U	P-O3'-C3'	6.00	129.20	120.20
1	A	1190	G	N9-C1'-C2'	5.99	120.99	112.00
1	A	377	G	C2'-C3'-O3'	-5.99	104.71	113.70
1	A	1527	C	C4'-C3'-O3'	-5.99	104.02	113.00
1	A	1401	G	C1'-C2'-O2'	5.98	117.38	108.40
1	A	64	G	C4'-C3'-O3'	5.98	118.37	109.40
1	A	6	G	C4'-C3'-O3'	-5.97	104.04	113.00
1	A	112	G	C4'-C3'-C2'	-5.94	96.66	102.60
1	A	16	A	C1'-C2'-O2'	5.93	117.29	108.40
1	A	824	C	C4'-C3'-C2'	-5.92	96.68	102.60
1	A	142	G	C4'-C3'-C2'	-5.91	96.69	102.60
1	A	1301	U	C2'-C3'-O3'	5.91	118.37	109.50
1	A	568	G	N9-C1'-C2'	5.90	120.86	112.00
1	A	266	G	N9-C1'-C2'	5.89	120.84	112.00
1	A	1067	A	P-O3'-C3'	5.88	129.03	120.20
1	A	1065	U	P-O3'-C3'	5.88	129.02	120.20
1	A	25	C	P-O3'-C3'	-5.87	111.40	120.20
1	A	1331	G	O4'-C1'-C2'	-5.86	99.94	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1301	U	P-O3'-C3'	5.85	128.98	120.20
1	A	509	A	C3'-C2'-C1'	-5.85	95.45	101.30
6	E	23	GLY	N-CA-C	5.84	118.32	110.43
1	A	60	A	P-O3'-C3'	5.83	128.95	120.20
1	A	793	U	C1'-O4'-C4'	-5.83	103.87	109.70
1	A	140	A	C3'-C2'-O2'	5.82	119.44	110.70
1	A	265	G	C4'-C3'-C2'	-5.82	96.78	102.60
1	A	246	A	C1'-C2'-O2'	-5.82	103.07	111.80
1	A	49	U	O5'-C5'-C4'	5.82	120.42	111.70
1	A	914	A	C4'-C3'-C2'	-5.82	96.78	102.60
1	A	575	G	P-O3'-C3'	5.81	128.92	120.20
1	A	1224	G	C4'-C3'-O3'	5.80	118.09	109.40
1	A	770	C	C4'-C3'-C2'	-5.79	96.81	102.60
1	A	939	G	O5'-C5'-C4'	5.79	120.18	111.50
1	A	645	C	C4'-C3'-O3'	-5.79	104.32	113.00
1	A	878	G	P-O3'-C3'	-5.78	111.53	120.20
1	A	943	U	C4'-C3'-O3'	-5.76	104.35	113.00
1	A	1235	U	C3'-C2'-C1'	-5.75	95.56	101.30
1	A	1198	G	C4'-C3'-O3'	-5.74	104.39	113.00
1	A	405	U	C2'-C3'-O3'	5.74	122.30	113.70
1	A	964	A	O4'-C1'-N9	-5.73	99.90	108.50
1	A	867	G	C2'-C3'-O3'	-5.73	105.11	113.70
1	A	914	A	O5'-C5'-C4'	-5.73	102.91	111.50
1	A	865	A	C4'-C3'-O3'	-5.72	104.42	113.00
1	A	190(F)	G	C1'-C2'-O2'	-5.71	103.23	111.80
1	A	911	U	O4'-C4'-C3'	-5.71	98.29	104.00
1	A	1283	G	C4'-C3'-C2'	-5.71	96.89	102.60
1	A	812	C	P-O3'-C3'	5.70	128.75	120.20
1	A	1214	C	C1'-O4'-C4'	-5.70	104.00	109.70
1	A	889	A	O5'-C5'-C4'	-5.69	103.16	111.70
1	A	918	A	C4'-C3'-O3'	-5.69	104.47	113.00
1	A	519	C	C1'-O4'-C4'	-5.68	104.22	109.90
1	A	64	G	O4'-C1'-C2'	5.67	111.47	105.80
1	A	934	C	C1'-O4'-C4'	-5.67	104.03	109.70
1	A	950	U	P-O3'-C3'	-5.67	111.70	120.20
1	A	1369	C	C4'-C3'-O3'	-5.66	104.51	113.00
1	A	888	G	C2'-C3'-O3'	-5.66	105.21	113.70
1	A	861	G	C2'-C3'-O3'	-5.65	105.22	113.70
1	A	1305	G	O4'-C4'-C3'	5.65	109.65	104.00
1	A	739	C	C3'-C2'-C1'	-5.65	95.65	101.30
1	A	918	A	N9-C1'-C2'	5.64	120.46	112.00
1	A	293	G	C2'-C3'-O3'	-5.63	105.26	113.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	220	G	C2'-C3'-O3'	-5.62	105.26	113.70
1	A	947	G	P-O3'-C3'	-5.62	111.77	120.20
1	A	685	G	C3'-C2'-O2'	5.62	119.13	110.70
1	A	661	G	O4'-C1'-C2'	-5.62	101.98	107.60
1	A	119	A	C2'-C3'-O3'	5.61	117.91	109.50
11	J	49	VAL	N-CA-C	5.61	116.59	106.61
1	A	756	C	C2'-C3'-O3'	-5.61	105.29	113.70
1	A	678	U	C4'-C3'-C2'	-5.60	97.00	102.60
1	A	568	G	C4'-C3'-C2'	-5.60	97.00	102.60
1	A	559	A	C1'-O4'-C4'	-5.58	104.12	109.70
1	A	933	G	C3'-C2'-O2'	5.57	119.05	110.70
1	A	1231	G	C4'-C3'-O3'	-5.57	104.65	113.00
1	A	600	C	C2'-C3'-O3'	-5.56	105.35	113.70
1	A	1498	U	P-O3'-C3'	5.56	128.54	120.20
1	A	1364	U	P-O3'-C3'	5.55	128.53	120.20
1	A	511	C	O5'-C5'-C4'	-5.54	103.39	111.70
1	A	1286	A	C4'-C3'-C2'	-5.54	97.06	102.60
9	H	109	ILE	N-CA-C	5.54	116.89	108.80
1	A	1191	A	O4'-C4'-C3'	5.53	109.53	104.00
1	A	1403	C	C4'-C3'-O3'	-5.53	104.71	113.00
1	A	1345	U	O5'-C5'-C4'	-5.52	103.42	111.70
1	A	1076	C	C4'-C3'-O3'	-5.51	104.73	113.00
1	A	993	G	N9-C1'-C2'	5.50	122.24	114.00
1	A	529	G	O4'-C1'-C2'	-5.49	102.11	107.60
1	A	997	U	C4'-C3'-C2'	-5.49	97.11	102.60
1	A	190(H)	G	C4'-C3'-C2'	-5.49	97.11	102.60
1	A	730	G	C4'-C3'-O3'	-5.49	104.77	113.00
1	A	1510	U	C1'-O4'-C4'	-5.49	104.42	109.90
1	A	268	C	C4'-C3'-O3'	-5.46	104.80	113.00
1	A	409	G	C3'-C2'-C1'	5.46	106.76	101.30
1	A	814	A	N9-C1'-C2'	-5.45	103.82	112.00
1	A	1085	U	C4'-C3'-O3'	5.45	117.57	109.40
1	A	169	C	C1'-O4'-C4'	-5.45	104.45	109.90
1	A	10	A	C4'-C3'-C2'	-5.44	97.16	102.60
1	A	1188	A	C4'-C3'-O3'	-5.44	104.85	113.00
1	A	1344	C	C3'-C2'-O2'	5.44	118.86	110.70
1	A	1389	C	C3'-C2'-O2'	5.43	118.84	110.70
1	A	619	U	C5'-C4'-C3'	-5.42	107.87	116.00
1	A	105	G	C4'-C3'-C2'	-5.41	97.19	102.60
1	A	281	G	P-O3'-C3'	5.40	128.31	120.20
1	A	356	A	C4'-C3'-C2'	-5.40	97.20	102.60
1	A	1349	A	P-O3'-C3'	-5.40	112.10	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	867	G	C4'-C3'-C2'	-5.40	97.20	102.60
1	A	1091	U	C4'-C3'-C2'	-5.39	97.21	102.60
1	A	1380	U	C4'-C3'-O3'	-5.39	101.32	109.40
1	A	1144	G	C3'-C2'-C1'	-5.38	95.92	101.30
1	A	1352	C	C2'-C3'-O3'	-5.37	105.64	113.70
1	A	1224	G	C2'-C3'-O3'	5.37	117.55	109.50
1	A	795	C	C1'-C2'-O2'	5.37	116.45	108.40
1	A	236	G	C4'-C3'-O3'	-5.36	104.96	113.00
1	A	1114	C	C3'-C2'-C1'	-5.36	95.94	101.30
1	A	108	G	C1'-O4'-C4'	-5.34	104.56	109.90
1	A	1388	C	C3'-C2'-O2'	5.34	118.71	110.70
1	A	1169	A	OP1-P-O3'	5.34	124.01	108.00
1	A	673	G	C5'-C4'-C3'	-5.33	108.00	116.00
1	A	7	G	N9-C1'-C2'	-5.33	106.01	114.00
1	A	776	G	C3'-C2'-O2'	5.33	118.69	110.70
1	A	1190	G	C4'-C3'-C2'	-5.33	97.27	102.60
1	A	1299	A	C4'-C3'-O3'	-5.32	105.02	113.00
1	A	965	A	P-O3'-C3'	5.32	128.18	120.20
1	A	287	U	C4'-C3'-O3'	-5.31	105.03	113.00
1	A	781	A	C2'-C3'-O3'	-5.30	105.74	113.70
1	A	874	G	C3'-C2'-O2'	5.29	118.64	110.70
1	A	889	A	C3'-C2'-C1'	-5.29	96.21	101.50
1	A	730	G	O4'-C1'-C2'	-5.29	102.31	107.60
1	A	292	G	O4'-C1'-C2'	-5.27	102.33	107.60
1	A	972	C	C4'-C3'-C2'	-5.26	97.34	102.60
1	A	63	C	P-O5'-C5'	-5.26	113.01	120.90
1	A	911	U	C4'-C3'-C2'	-5.26	97.34	102.60
1	A	867	G	O5'-C5'-C4'	-5.25	103.62	111.50
1	A	1514	C	C4'-C3'-O3'	-5.25	105.13	113.00
1	A	1099	G	O4'-C1'-N9	5.24	116.36	108.50
1	A	1107	C	C3'-C2'-C1'	-5.24	96.06	101.30
1	A	1498	U	C4'-C3'-C2'	5.24	107.84	102.60
1	A	1305	G	C4'-C3'-O3'	-5.23	105.15	113.00
1	A	1079	G	N9-C1'-C2'	5.23	119.84	112.00
1	A	1504	G	C2'-C3'-O3'	5.22	117.34	109.50
1	A	503	C	C4'-C3'-O3'	-5.22	105.17	113.00
1	A	674	G	P-O3'-C3'	-5.22	112.37	120.20
1	A	1083	U	N1-C1'-C2'	5.21	119.82	112.00
1	A	703	G	C3'-C2'-O2'	-5.21	106.78	114.60
1	A	1403	C	O3'-P-O5'	-5.20	96.20	104.00
1	A	568	G	O4'-C1'-C2'	-5.20	102.40	107.60
1	A	1139	G	C1'-O4'-C4'	-5.20	104.50	109.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	367	U	C2'-C3'-O3'	5.19	117.29	109.50
1	A	259	G	C4'-C3'-O3'	-5.19	105.22	113.00
1	A	821	G	C4'-C3'-O3'	-5.18	105.22	113.00
1	A	1234	C	C4'-C3'-O3'	-5.18	105.23	113.00
1	A	591	U	C3'-C2'-O2'	5.18	118.47	110.70
1	A	318	G	C4'-C3'-O3'	-5.17	105.24	113.00
1	A	499	A	C3'-C2'-O2'	-5.16	106.86	114.60
1	A	6	G	C5'-C4'-O4'	5.16	117.53	109.80
1	A	24	U	C3'-C2'-O2'	5.15	118.43	110.70
1	A	43	C	C4'-C3'-O3'	-5.15	105.27	113.00
1	A	1248	A	C4'-C3'-C2'	-5.15	97.45	102.60
1	A	484	G	P-O3'-C3'	5.15	127.92	120.20
1	A	351	G	C2'-C3'-O3'	5.15	117.22	109.50
1	A	460	A	N9-C1'-C2'	5.14	119.72	112.00
1	A	658	G	C4'-C3'-O3'	-5.14	105.28	113.00
1	A	1348	U	C3'-C2'-O2'	-5.14	102.98	110.70
1	A	857	C	P-O3'-C3'	-5.14	112.49	120.20
1	A	149	A	P-O3'-C3'	-5.13	112.50	120.20
1	A	319	G	N9-C1'-C2'	5.13	119.70	112.00
1	A	973	G	C3'-C2'-O2'	5.12	118.39	110.70
1	A	252	U	C1'-O4'-C4'	-5.12	104.78	109.90
1	A	261	U	P-O3'-C3'	-5.11	112.53	120.20
1	A	894	G	C2'-C3'-O3'	-5.11	106.03	113.70
1	A	1126	U	C2'-C3'-O3'	-5.11	106.03	113.70
1	A	766	A	C4'-C3'-O3'	-5.10	105.35	113.00
1	A	401	C	C4'-C3'-C2'	-5.09	97.51	102.60
1	A	855	G	O4'-C4'-C3'	-5.09	98.91	104.00
1	A	941	G	C1'-C2'-O2'	5.09	116.04	108.40
1	A	1347	G	O3'-P-O5'	-5.09	96.36	104.00
1	A	119	A	P-O3'-C3'	5.09	127.84	120.20
10	I	101	PHE	N-CA-C	-5.09	106.91	113.02
1	A	5	U	C3'-C2'-C1'	5.09	106.39	101.30
21	T	97	ALA	N-CA-C	5.08	112.70	108.13
1	A	332	G	P-O3'-C3'	5.08	127.82	120.20
1	A	333	G	P-O5'-C5'	-5.08	113.29	120.90
1	A	377	G	C4'-C3'-O3'	-5.07	105.39	113.00
1	A	1065	U	C5'-C4'-O4'	5.07	116.71	109.10
4	C	195	VAL	CB-CA-C	-5.07	102.98	111.29
6	E	111	GLU	N-CA-C	-5.07	105.76	111.28
1	A	17	U	P-O5'-C5'	-5.07	113.30	120.90
1	A	372	C	C5'-C4'-O4'	5.07	116.70	109.10
1	A	278	G	N9-C1'-C2'	5.06	119.59	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	546	G	C4'-C3'-O3'	-5.06	105.41	113.00
1	A	1348	U	P-O5'-C5'	-5.06	113.32	120.90
1	A	217	C	C3'-C2'-C1'	-5.05	96.25	101.30
1	A	248	C	C4'-C3'-C2'	-5.05	97.55	102.60
1	A	566	G	O4'-C1'-N9	-5.05	100.62	108.20
1	A	865	A	N9-C1'-C2'	5.05	119.58	112.00
1	A	54	C	C4'-C3'-C2'	-5.05	97.55	102.60
1	A	676	A	P-O3'-C3'	-5.05	112.63	120.20
1	A	796	C	C4'-C3'-C2'	-5.05	97.55	102.60
1	A	1117	G	C1'-C2'-O2'	5.04	115.97	108.40
1	A	568	G	O5'-C5'-C4'	-5.04	103.93	111.50
1	A	1302	U	P-O3'-C3'	5.04	127.75	120.20
1	A	328	C	C2'-C3'-O3'	5.03	117.05	109.50
21	T	72	LEU	N-CA-C	-5.03	107.69	113.88
1	A	777	A	O5'-C5'-C4'	5.02	119.04	111.50
1	A	941	G	C2'-C3'-O3'	-5.02	106.18	113.70
12	K	21	ILE	N-CA-C	5.02	115.07	107.80
1	A	223	U	C4'-C3'-C2'	-5.01	97.58	102.60
1	A	738	C	C1'-C2'-O2'	5.01	115.92	108.40
1	A	805	C	C4'-C3'-O3'	-5.01	105.48	113.00
1	A	1205	U	C4'-C3'-C2'	-5.01	97.59	102.60
1	A	243	A	C1'-O4'-C4'	-5.01	104.69	109.70
1	A	801	U	P-O5'-C5'	-5.00	113.39	120.90

There are no chirality outliers.

All (74) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
3	B	133	LYS	Peptide
3	B	225	ALA	Peptide
4	C	13	GLY	Peptide
4	C	166	GLU	Peptide
4	C	167	TRP	Peptide
4	C	177	THR	Peptide
4	C	178	LEU	Peptide
4	C	48	TYR	Peptide
5	D	11	LEU	Peptide
5	D	185	PHE	Peptide
5	D	195	ALA	Peptide
5	D	208	SER	Peptide
5	D	28	SER	Peptide
5	D	31	CYS	Peptide

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Mol	Chain	Res	Type	Group
6	E	14	ARG	Peptide
6	E	20	GLN	Peptide
6	E	35	GLY	Peptide
6	E	85	GLY	Peptide
6	E	86	ALA	Peptide
7	F	13	ASN	Peptide
9	H	109	ILE	Peptide
9	H	135	CYS	Peptide
9	H	27	PRO	Peptide
9	H	53	VAL	Peptide
9	H	90	GLY	Peptide
10	I	117	HIS	Peptide
10	I	125	TYR	Peptide
10	I	127	LYS	Peptide
10	I	43	ALA	Peptide
11	J	47	PHE	Peptide
11	J	49	VAL	Peptide
11	J	52	GLY	Peptide
11	J	57	LYS	Peptide
11	J	90	LEU	Peptide
11	J	96	ILE	Peptide
12	K	116	HIS	Peptide
12	K	126	ARG	Peptide
12	K	27	ASN	Peptide
12	K	48	ILE	Peptide
12	K	88	GLY	Peptide
13	L	25	PRO	Peptide
13	L	26	ALA	Peptide
13	L	43	VAL	Peptide
13	L	46	LYS	Peptide
13	L	66	VAL	Peptide
13	L	77	LEU	Peptide
13	L	80	HIS	Peptide
13	L	94	PRO	Peptide
14	M	107	ALA	Peptide
14	M	112	GLY	Peptide
14	M	8	GLU	Peptide
14	M	97	PRO	Peptide
15	N	11	LYS	Peptide
15	N	21	TYR	Peptide
15	N	30	ALA	Peptide
15	N	32	SER	Peptide

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Mol	Chain	Res	Type	Group
15	N	42	ILE	Peptide
15	N	6	LEU	Peptide
15	N	8	GLU	Peptide
15	N	9	LYS	Peptide
17	P	15	PRO	Peptide
17	P	63	GLY	Peptide
17	P	64	ALA	Peptide
17	P	70	ALA	Peptide
18	Q	17	LYS	Peptide
20	S	37	ARG	Peptide
20	S	4	SER	Peptide
20	S	53	ASN	Peptide
20	S	71	LEU	Peptide
20	S	83	HIS	Peptide
21	T	10	LEU	Peptide
21	T	12	ALA	Peptide
21	T	48	LYS	Peptide
21	T	73	HIS	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	32391	0	16359	1896	0
2	Z	80	0	42	4	0
3	B	1923	0	1968	226	0
4	C	1612	0	1677	183	0
5	D	1703	0	1763	209	0
6	E	1146	0	1207	171	0
7	F	843	0	857	61	0
8	G	1257	0	1296	110	0
9	H	1116	0	1177	96	0
10	I	1011	0	1043	127	0
11	J	792	0	835	125	0
12	K	885	0	904	83	0
13	L	975	0	1062	128	0
14	M	997	0	1072	120	0
15	N	492	0	530	88	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
16	O	734	0	771	80	0
17	P	700	0	720	80	0
18	Q	857	0	930	72	0
19	R	597	0	668	68	0
20	S	674	0	699	59	0
21	T	762	0	859	100	0
22	A	98	0	0	0	0
22	D	1	0	0	0	0
22	M	1	0	0	0	0
22	Z	1	0	0	0	0
23	A	12	0	0	0	0
24	A	31	0	19	4	0
25	A	35	0	43	1	0
26	D	1	0	0	0	0
26	N	1	0	0	0	0
All	All	51728	0	36501	3813	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 44.

All (3813) 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)
8:G:89:MET:CE	8:G:89:MET:SD	2.02	1.45
1:A:492:G:H3'	1:A:494:G:OP2	1.29	1.32
6:E:80:ILE:CD1	6:E:91:LEU:HB2	1.62	1.29
1:A:70:G:H3'	1:A:73:C:P	1.72	1.27
15:N:40:CYS:O	15:N:43:CYS:HB2	1.23	1.27
16:O:33:THR:HG23	16:O:63:ARG:NH1	1.51	1.23
1:A:1249:C:O2'	10:I:73:GLN:NE2	1.71	1.22
3:B:162:ILE:O	3:B:185:ILE:HD12	1.42	1.20
4:C:7:PRO:O	4:C:11:ARG:HG2	1.40	1.20
1:A:1491:G:H5'	1:A:1491:G:C8	1.77	1.19
10:I:114:TYR:HD1	11:J:60:ARG:HB2	1.00	1.17
3:B:100:GLY:HA2	3:B:176:GLU:OE2	1.41	1.17
1:A:1169:A:O3'	1:A:1171:G:P	2.03	1.16
21:T:104:LEU:H	21:T:104:LEU:CD2	1.52	1.16
1:A:948:C:OP1	14:M:109:THR:HG22	1.42	1.15
4:C:5:ILE:HD13	4:C:10:PHE:HB2	1.26	1.15
10:I:114:TYR:CD1	11:J:60:ARG:HB2	1.80	1.15
11:J:90:LEU:HB3	11:J:91:PRO:HD3	1.21	1.15

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:L:97:ARG:HB2	13:L:98:TYR:CE1	1.79	1.15
1:A:444:C:H2'	1:A:445:G:H8	1.12	1.14
1:A:1497:G:H2'	1:A:1498:U:H5'	1.27	1.14
21:T:104:LEU:N	21:T:104:LEU:HD23	1.48	1.14
1:A:99:C:H3'	1:A:101:A:P	1.89	1.12
1:A:975:A:H5'	1:A:975:A:H8	1.12	1.12
1:A:1168:A:H2'	1:A:1169:A:C8	1.85	1.12
6:E:51:VAL:HB	6:E:52:PRO:HD3	1.32	1.12
8:G:120:ILE:CD1	8:G:120:ILE:H	1.58	1.11
1:A:373:A:H5'	1:A:373:A:H8	1.14	1.10
1:A:1314:C:OP2	20:S:6:LYS:HG2	1.49	1.10
5:D:26:CYS:HA	5:D:31:CYS:HB2	1.27	1.10
19:R:79:LEU:HD23	19:R:80:PRO:HD2	1.27	1.09
6:E:80:ILE:HD11	6:E:91:LEU:HB2	1.17	1.09
5:D:62:GLN:NE2	5:D:65:ARG:HH12	1.49	1.09
17:P:28:ARG:HG2	17:P:28:ARG:HH11	1.06	1.08
1:A:492:G:H3'	1:A:494:G:P	1.93	1.08
8:G:120:ILE:H	8:G:120:ILE:HD12	0.92	1.07
14:M:34:LEU:HD13	14:M:41:PRO:HA	1.36	1.07
1:A:392:G:H2'	1:A:393:A:C8	1.90	1.07
21:T:56:MET:HE1	21:T:104:LEU:HD21	1.35	1.07
1:A:93:G:H3'	1:A:95:U:P	1.95	1.07
16:O:16:ALA:HB1	16:O:21:ASP:HB3	1.09	1.06
1:A:1399:C:H4'	1:A:1400:C:H5''	1.35	1.06
3:B:77:ALA:HB2	3:B:211:ILE:HD13	1.34	1.06
1:A:1182:G:H4'	1:A:1183:A:O5'	1.54	1.06
3:B:114:ARG:HH11	3:B:118:LEU:HD11	1.21	1.05
1:A:1400:C:H3'	1:A:1401:G:H5'	1.34	1.04
8:G:23:VAL:HG12	8:G:27:ILE:HD11	1.39	1.04
21:T:86:ARG:HH11	21:T:86:ARG:HG3	1.17	1.04
1:A:376:G:H5''	17:P:5:ARG:HG3	1.40	1.04
1:A:538:G:H2'	1:A:539:A:H8	1.20	1.04
21:T:73:HIS:O	21:T:74:LYS:HG2	1.55	1.04
8:G:120:ILE:HD12	8:G:120:ILE:N	1.69	1.03
14:M:96:LEU:HB3	14:M:97:PRO:HD2	1.35	1.03
16:O:16:ALA:CB	16:O:21:ASP:HB3	1.86	1.03
1:A:1250:A:H4'	10:I:68:GLY:H	0.89	1.02
14:M:49:THR:HB	14:M:52:GLU:HG3	1.36	1.02
1:A:350:G:H5'	1:A:350:G:H8	1.25	1.02
6:E:79:GLU:HB3	6:E:92:LYS:HG3	1.40	1.02
1:A:984:C:H2'	1:A:985:C:H6	1.23	1.02

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1168:A:H2'	1:A:1169:A:H8	1.26	1.01
1:A:1250:A:H4'	10:I:68:GLY:N	1.74	1.01
6:E:51:VAL:HB	6:E:52:PRO:CD	1.90	1.01
1:A:1249:C:HO2'	10:I:73:GLN:NE2	1.50	1.00
13:L:6:THR:OG1	13:L:9:GLN:HG3	1.61	1.00
5:D:62:GLN:NE2	5:D:65:ARG:NH1	2.07	1.00
6:E:48:ALA:HB1	6:E:49:PRO:HD2	1.40	1.00
3:B:114:ARG:NH1	3:B:118:LEU:HD11	1.77	0.99
1:A:1077:G:N2	1:A:1080:A:OP2	1.96	0.99
1:A:1347:G:H22	1:A:1373:G:H2'	1.23	0.99
3:B:9:GLU:HG3	3:B:217:ARG:NH1	1.79	0.98
1:A:353:A:H5'	1:A:353:A:C8	1.96	0.98
1:A:444:C:H2'	1:A:445:G:C8	1.98	0.98
1:A:838:G:H2'	1:A:839:U:H5''	1.43	0.98
5:D:19:LEU:HD21	5:D:67:ILE:HG12	1.46	0.98
1:A:1497:G:C2'	1:A:1498:U:H5'	1.94	0.98
4:C:131:ARG:HG3	4:C:135:LYS:HE2	1.45	0.98
1:A:373:A:H5'	1:A:373:A:C8	1.98	0.98
12:K:54:ARG:O	12:K:57:THR:CG2	2.12	0.98
1:A:1060:C:O2'	1:A:1061:G:H5'	1.63	0.97
1:A:975:A:H5'	1:A:975:A:C8	1.98	0.97
1:A:1103:C:OP1	3:B:96:ARG:NH2	1.98	0.97
1:A:795:C:H5''	1:A:796:C:OP2	1.65	0.97
1:A:1263:C:H42	1:A:1272:G:H1	1.07	0.97
4:C:23:TYR:O	4:C:24:ALA:O	1.80	0.97
1:A:954:G:H21	1:A:1227:A:H62	1.12	0.97
19:R:78:LEU:HD12	19:R:78:LEU:N	1.77	0.97
1:A:353:A:C5'	1:A:353:A:H8	1.77	0.96
21:T:73:HIS:C	21:T:74:LYS:HG2	1.89	0.96
1:A:721:G:H4'	1:A:722:A:O5'	1.62	0.96
1:A:463:A:O3'	1:A:474:G:OP2	1.83	0.96
11:J:49:VAL:HA	11:J:50:ILE:HD12	1.48	0.96
6:E:80:ILE:HD11	6:E:91:LEU:CB	1.96	0.95
18:Q:66:SER:OG	18:Q:69:LYS:HB2	1.64	0.95
3:B:91:PRO:HG2	3:B:155:LEU:HD23	1.43	0.95
6:E:103:GLY:O	6:E:106:PRO:HD2	1.65	0.95
5:D:111:ALA:HB1	5:D:116:GLN:OE1	1.66	0.95
1:A:1356:G:H2'	1:A:1357:A:C8	2.01	0.95
3:B:118:LEU:HB3	3:B:142:LEU:HD12	1.48	0.95
1:A:152:A:N6	1:A:170:U:O2	2.01	0.94
1:A:1028:C:N4	1:A:1034:G:H1	1.63	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1194:U:H2'	1:A:1195:C:H6	1.31	0.94
1:A:1435:G:H2'	1:A:1436:U:C6	2.02	0.94
1:A:382:A:H2'	1:A:383:A:H8	1.33	0.94
1:A:1152:A:H5'	11:J:13:HIS:HD2	1.32	0.93
1:A:154:C:O2	1:A:167:G:N2	1.99	0.93
14:M:78:ILE:HG22	14:M:79:LYS:H	1.34	0.93
3:B:44:LEU:HA	3:B:47:THR:OG1	1.68	0.93
1:A:382:A:H2'	1:A:383:A:C8	2.03	0.93
11:J:12:ASP:HB3	11:J:15:THR:HG22	1.51	0.93
1:A:1152:A:H5'	11:J:13:HIS:CD2	2.03	0.93
1:A:1391:U:H2'	1:A:1392:G:C8	2.04	0.93
1:A:1250:A:C4'	10:I:68:GLY:H	1.81	0.93
5:D:57:ARG:NH2	5:D:205:GLU:OE2	2.01	0.92
1:A:392:G:H2'	1:A:393:A:H8	1.20	0.92
10:I:125:TYR:H	10:I:125:TYR:HD2	1.07	0.92
1:A:538:G:H2'	1:A:539:A:C8	2.04	0.92
1:A:1010:G:H22	1:A:1020:U:H1'	1.34	0.92
1:A:1209:C:O2	1:A:1209:C:H2'	1.68	0.92
5:D:141:ARG:HB3	5:D:142:PRO:CD	1.99	0.92
12:K:19:ALA:HB2	12:K:80:VAL:HG11	1.52	0.92
1:A:1347:G:N2	1:A:1373:G:H2'	1.84	0.92
1:A:1364:U:O2'	1:A:1365:G:H5'	1.70	0.92
4:C:71:ALA:HA	4:C:106:VAL:HB	1.52	0.92
10:I:114:TYR:HD1	11:J:60:ARG:CB	1.82	0.92
1:A:797:C:OP1	12:K:124:LYS:HE2	1.69	0.91
14:M:90:LEU:HD23	14:M:93:ARG:HH12	1.32	0.91
1:A:536:C:H2'	1:A:537:G:C8	2.05	0.91
1:A:1343:G:H2'	1:A:1344:C:C6	2.05	0.91
12:K:43:SER:HA	12:K:47:VAL:HG21	1.49	0.91
1:A:420:U:H1'	1:A:424:G:N2	1.85	0.91
14:M:17:VAL:O	14:M:20:THR:HB	1.70	0.91
16:O:33:THR:HG23	16:O:63:ARG:HH11	1.17	0.91
1:A:436:C:H2'	1:A:437:U:H6	1.35	0.91
15:N:40:CYS:O	15:N:43:CYS:CB	2.16	0.91
1:A:669:U:H2'	1:A:670:G:C8	2.05	0.91
1:A:1028:C:H42	1:A:1034:G:H1	0.91	0.91
13:L:102:ARG:HH12	13:L:110:VAL:HA	1.34	0.91
18:Q:86:GLU:O	18:Q:90:ILE:HG13	1.68	0.91
1:A:1203:C:H2'	1:A:1204:A:O4'	1.69	0.91
5:D:61:LYS:CE	5:D:62:GLN:HE21	1.83	0.91
11:J:90:LEU:CB	11:J:91:PRO:HD3	2.00	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:L:97:ARG:HB2	13:L:98:TYR:CD1	2.05	0.91
17:P:19:ILE:HG22	17:P:36:ILE:HG13	1.52	0.91
1:A:447:G:H2'	1:A:485:G:H22	1.32	0.91
11:J:90:LEU:HB3	11:J:91:PRO:CD	2.00	0.91
11:J:56:HIS:O	11:J:58:ASP:N	2.02	0.90
1:A:500:G:N2	1:A:546:G:H1'	1.85	0.90
1:A:1491:G:C8	1:A:1491:G:C5'	2.54	0.90
13:L:81:SER:O	13:L:106:ASP:HB2	1.70	0.90
15:N:12:ARG:C	15:N:14:PRO:HD3	1.95	0.90
4:C:126:ARG:O	4:C:127:ARG:HB2	1.70	0.90
16:O:16:ALA:HB1	16:O:21:ASP:CB	2.00	0.90
1:A:1356:G:H2'	1:A:1357:A:H8	1.33	0.90
1:A:707:C:H4'	12:K:20:TYR:CD2	2.05	0.90
1:A:1003(A):G:H2'	1:A:1004:A:H4'	1.53	0.89
1:A:1491:G:H5'	1:A:1491:G:H8	1.34	0.89
10:I:8:GLY:HA2	10:I:79:LEU:HB3	1.53	0.89
1:A:1047:G:C2'	1:A:1048:G:H5'	2.01	0.89
1:A:622:A:N7	1:A:623:C:C6	2.40	0.89
4:C:7:PRO:O	4:C:11:ARG:CG	2.20	0.89
5:D:62:GLN:HE22	5:D:65:ARG:NH1	1.65	0.89
5:D:117:ALA:O	5:D:121:VAL:HG23	1.72	0.89
1:A:581:G:N2	1:A:759:A:OP2	2.05	0.89
1:A:792:A:H4'	1:A:793:U:H5''	1.52	0.89
1:A:1305:G:HO2'	1:A:1306:A:H8	0.94	0.89
4:C:6:HIS:NE2	4:C:8:ILE:HB	1.88	0.89
12:K:54:ARG:O	12:K:57:THR:HG23	1.72	0.89
1:A:519:C:H2'	1:A:520:A:C8	2.08	0.89
4:C:11:ARG:NH1	4:C:178:LEU:HA	1.88	0.89
1:A:353:A:C8	1:A:353:A:C5'	2.55	0.88
1:A:539:A:H2'	1:A:540:G:H8	1.37	0.88
1:A:1455:G:O3'	1:A:1459:C:P	2.31	0.88
17:P:67:THR:HG22	17:P:68:ASP:N	1.88	0.88
1:A:328:C:O2	1:A:328:C:H2'	1.72	0.88
3:B:101:MET:HA	3:B:108:ILE:HD12	1.56	0.88
17:P:57:ARG:HG3	17:P:57:ARG:HH11	1.35	0.88
1:A:1315:U:OP2	20:S:6:LYS:NZ	2.06	0.88
4:C:54:ARG:O	4:C:55:VAL:HG23	1.73	0.88
3:B:84:GLU:HG3	3:B:219:VAL:HG21	1.55	0.88
5:D:63:LYS:HD3	5:D:198:VAL:HG23	1.53	0.88
1:A:492:G:C3'	1:A:494:G:P	2.61	0.88
10:I:48:GLU:N	10:I:49:PRO:HD2	1.89	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:M:81:LEU:H	14:M:81:LEU:CD2	1.86	0.88
21:T:104:LEU:H	21:T:104:LEU:HD23	0.73	0.87
1:A:350:G:H8	1:A:350:G:C5'	1.86	0.87
1:A:407:G:O2'	5:D:116:GLN:HG2	1.74	0.87
5:D:64:LEU:HD11	5:D:97:LEU:CD1	2.04	0.87
6:E:135:THR:O	6:E:138:ALA:HB3	1.74	0.87
11:J:37:PRO:HA	11:J:72:VAL:HG22	1.54	0.87
11:J:47:PHE:HD2	15:N:34:TYR:CE2	1.93	0.87
1:A:992:U:OP2	1:A:992:U:H6	1.58	0.87
4:C:8:ILE:HG22	4:C:9:GLY:N	1.89	0.87
4:C:11:ARG:HH12	4:C:178:LEU:HA	1.37	0.87
13:L:86:ARG:HH11	13:L:86:ARG:HG2	1.38	0.87
16:O:70:LEU:HD12	16:O:78:TYR:HB2	1.55	0.87
10:I:47:LEU:C	10:I:49:PRO:HD2	1.99	0.86
18:Q:12:SER:HB3	18:Q:20:THR:OG1	1.75	0.86
1:A:1323:G:H2'	1:A:1324:A:C8	2.10	0.86
13:L:75:HIS:CD2	13:L:77:LEU:H	1.93	0.86
1:A:1194:U:H2'	1:A:1195:C:C6	2.10	0.86
1:A:1400:C:H3'	1:A:1401:G:C5'	2.04	0.86
13:L:98:TYR:CD1	13:L:98:TYR:N	2.43	0.86
15:N:26:ARG:NH2	15:N:47:LEU:HD21	1.89	0.86
17:P:28:ARG:HG2	17:P:28:ARG:NH1	1.86	0.86
1:A:1366:C:H2'	1:A:1367:C:H6	1.40	0.86
8:G:38:LEU:O	8:G:42:ILE:HG13	1.75	0.86
17:P:67:THR:CG2	17:P:68:ASP:N	2.38	0.86
1:A:1152:A:C5'	11:J:13:HIS:HD2	1.88	0.86
1:A:1250:A:H2'	1:A:1251:A:C8	2.10	0.86
1:A:376:G:H2'	1:A:377:G:H8	1.37	0.86
1:A:1047:G:H2'	1:A:1048:G:H5'	1.56	0.86
7:F:80:ARG:HG3	7:F:88:VAL:HG21	1.56	0.86
1:A:1366:C:H2'	1:A:1367:C:C6	2.11	0.86
4:C:112:SER:O	4:C:115:LEU:HD12	1.75	0.86
14:M:45:VAL:O	14:M:48:LEU:HB2	1.74	0.86
1:A:335:C:H2'	1:A:336:C:H6	1.40	0.86
4:C:8:ILE:HG22	4:C:9:GLY:H	1.39	0.86
12:K:73:MET:HE1	12:K:102:GLY:HA3	1.55	0.86
21:T:67:ALA:O	21:T:73:HIS:CE1	2.28	0.86
1:A:1195:C:H3'	1:A:1196:U:H5''	1.57	0.86
1:A:1502:A:H2	1:A:1505:G:H1	1.22	0.85
8:G:111:ARG:NH1	8:G:122:HIS:HB3	1.90	0.85
1:A:99:C:C3'	1:A:101:A:P	2.63	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1057:G:H2'	1:A:1058:G:C8	2.11	0.85
1:A:1091:U:O2	1:A:1093:A:H8	1.58	0.85
6:E:59:GLY:O	6:E:62:ALA:HB3	1.77	0.85
1:A:353:A:H5'	1:A:353:A:H8	1.36	0.85
1:A:560:U:H5'	1:A:566:G:N2	1.92	0.85
8:G:116:ALA:HA	8:G:119:ARG:NH2	1.91	0.85
13:L:28:LYS:C	13:L:30:ALA:H	1.84	0.85
1:A:254:G:OP1	18:Q:67:LYS:O	1.94	0.85
3:B:61:LEU:HD11	3:B:160:ASP:HB2	1.58	0.85
19:R:86:VAL:O	19:R:87:ARG:HB2	1.77	0.85
21:T:86:ARG:HG3	21:T:86:ARG:NH1	1.83	0.85
3:B:87:ARG:NH1	3:B:233:SER:HB3	1.92	0.85
1:A:393:A:H2'	1:A:394:G:H8	1.42	0.85
1:A:979:C:C5	1:A:980:C:C6	2.65	0.85
1:A:1369:C:H2'	1:A:1370:G:C8	2.12	0.85
6:E:36:ASP:O	6:E:37:ARG:HB2	1.75	0.85
1:A:1286:A:H8	1:A:1287:A:H4'	1.42	0.84
3:B:25:ASN:HD22	3:B:25:ASN:C	1.84	0.84
1:A:984:C:H2'	1:A:985:C:C6	2.12	0.84
19:R:76:LEU:HB2	19:R:78:LEU:CD1	2.07	0.84
21:T:13:LEU:HD22	21:T:14:LYS:N	1.91	0.84
1:A:1221:G:O3'	20:S:77:THR:HG21	1.76	0.84
12:K:123:LYS:O	12:K:125:PHE:N	2.10	0.84
1:A:539:A:H2'	1:A:540:G:C8	2.12	0.84
9:H:97:VAL:HA	9:H:100:ILE:HD12	1.60	0.84
1:A:518:C:H5''	1:A:519:C:C6	2.13	0.84
1:A:707:C:H5''	12:K:20:TYR:HD2	1.42	0.84
1:A:1490:C:C3'	1:A:1491:G:H5''	2.07	0.84
1:A:359:U:H2'	1:A:360:A:H8	1.43	0.84
1:A:644:G:C5	1:A:645:C:C5	2.66	0.84
5:D:8:VAL:C	5:D:10:ARG:H	1.82	0.84
1:A:503:C:H2'	1:A:504:C:H5'	1.60	0.84
1:A:804:U:H5''	1:A:805:C:OP2	1.77	0.83
1:A:1491:G:C5'	1:A:1491:G:H8	1.89	0.83
13:L:27:LEU:O	13:L:29:GLY:N	2.10	0.83
14:M:78:ILE:CG2	14:M:79:LYS:H	1.91	0.83
9:H:9:MET:HG3	9:H:26:VAL:HG11	1.61	0.83
16:O:26:GLU:HA	16:O:81:LEU:HD11	1.60	0.83
1:A:350:G:H5'	1:A:350:G:C8	2.14	0.83
3:B:26:PRO:O	3:B:29:ALA:HB2	1.79	0.83
6:E:13:ILE:H	6:E:13:ILE:HD12	1.43	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:E:80:ILE:HD12	6:E:80:ILE:H	1.42	0.83
12:K:80:VAL:HG21	12:K:103:LEU:HD13	1.58	0.83
18:Q:90:ILE:C	18:Q:92:ARG:H	1.86	0.83
1:A:670:G:H1	1:A:736:C:H42	1.23	0.83
1:A:1154:G:H2'	1:A:1155:G:H8	1.44	0.83
8:G:26:PHE:CE2	8:G:30:ILE:HD11	2.12	0.83
21:T:56:MET:HE1	21:T:104:LEU:CD2	2.08	0.83
1:A:923:A:H1'	1:A:1398:A:C2	2.14	0.83
3:B:184:VAL:HG12	3:B:197:VAL:HG13	1.58	0.83
14:M:37:THR:HG21	14:M:55:ARG:O	1.79	0.83
20:S:42:PRO:O	20:S:45:VAL:HG23	1.78	0.82
1:A:459:G:H5''	1:A:460:A:OP2	1.79	0.82
8:G:15:ASP:OD1	8:G:18:TYR:N	2.11	0.82
13:L:75:HIS:CD2	13:L:76:ASN:N	2.47	0.82
18:Q:58:GLU:O	18:Q:59:ILE:HD13	1.78	0.82
1:A:260:G:OP2	21:T:83:ARG:NH1	2.12	0.82
1:A:1053:G:N7	1:A:1200:C:H5''	1.95	0.82
1:A:1285:A:OP1	1:A:1285:A:C8	2.33	0.82
1:A:1179:A:O3'	10:I:103:THR:HG23	1.80	0.82
10:I:125:TYR:HD2	10:I:125:TYR:N	1.76	0.82
11:J:62:HIS:HB3	15:N:59:ALA:HB3	1.61	0.82
1:A:1091:U:O2	1:A:1093:A:C8	2.32	0.82
13:L:86:ARG:HH22	13:L:99:HIS:CD2	1.97	0.82
1:A:35:G:H2'	1:A:36:C:C6	2.15	0.82
6:E:80:ILE:CD1	6:E:91:LEU:CB	2.53	0.81
1:A:480:U:H2'	1:A:481:G:OP2	1.81	0.81
1:A:1298:C:H4'	1:A:1299:A:O4'	1.79	0.81
1:A:965:A:H4'	1:A:966:G:O5'	1.81	0.81
1:A:496:A:H4'	1:A:497:A:OP1	1.80	0.81
1:A:21:G:H2'	1:A:22:G:C8	2.16	0.81
1:A:1226:C:H2'	14:M:103:THR:OG1	1.80	0.81
6:E:30:ALA:O	6:E:45:PHE:HD1	1.62	0.81
6:E:107:ARG:HG2	6:E:111:GLU:HG3	1.61	0.81
8:G:111:ARG:HH12	8:G:122:HIS:HB3	1.45	0.81
4:C:129:ALA:HB3	4:C:132:ARG:HB2	1.61	0.81
14:M:78:ILE:CG2	14:M:79:LYS:N	2.43	0.81
1:A:1255:G:H2'	1:A:1279:A:N6	1.96	0.81
1:A:1403:C:O2	1:A:1403:C:H2'	1.79	0.81
1:A:337:C:H2'	1:A:338:A:H8	1.46	0.81
1:A:850:U:H3'	1:A:850:U:H6	1.46	0.80
1:A:129(A):G:O2'	1:A:190(E):U:H2'	1.81	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:254:G:H2'	1:A:255:G:H8	1.44	0.80
3:B:98:LEU:O	3:B:100:GLY:N	2.15	0.80
5:D:13:ARG:HD3	5:D:38:TYR:O	1.81	0.80
15:N:53:LEU:HD12	15:N:56:VAL:HG21	1.63	0.80
1:A:989:C:HO2'	1:A:1017:G:HO2'	1.24	0.80
4:C:52:LEU:N	4:C:52:LEU:HD23	1.96	0.80
5:D:11:LEU:C	5:D:13:ARG:N	2.38	0.80
19:R:66:LEU:O	19:R:69:THR:N	2.14	0.80
1:A:1361(A):C:H2'	1:A:1362:C:H5''	1.62	0.80
3:B:111:ARG:HB3	3:B:149:LEU:HD11	1.62	0.80
6:E:116:THR:HG23	6:E:117:ASP:OD2	1.81	0.80
13:L:98:TYR:N	13:L:98:TYR:HD1	1.78	0.80
1:A:579:G:H5'	1:A:728:A:H1'	1.62	0.80
1:A:1111:A:N1	4:C:177:THR:OG1	2.14	0.80
4:C:118:GLN:O	4:C:121:ALA:HB3	1.82	0.80
13:L:87:GLY:H	13:L:98:TYR:HB3	1.46	0.80
8:G:56:GLN:HE21	8:G:56:GLN:H	1.29	0.80
1:A:37:U:O2'	1:A:500:G:H4'	1.81	0.79
1:A:93:G:C3'	1:A:95:U:P	2.69	0.79
1:A:262:A:C6	1:A:263:A:C6	2.70	0.79
1:A:384:G:H2'	1:A:385:C:C6	2.18	0.79
11:J:61:GLU:OE1	15:N:45:ARG:HD2	1.82	0.79
13:L:45:PRO:HG3	13:L:53:ARG:HD2	1.63	0.79
14:M:78:ILE:O	14:M:81:LEU:HD23	1.81	0.79
1:A:838:G:C2'	1:A:839:U:H5''	2.12	0.79
1:A:1255:G:H2'	1:A:1279:A:H62	1.47	0.79
7:F:9:VAL:HG23	7:F:87:ARG:HB2	1.63	0.79
16:O:46:HIS:C	16:O:48:LYS:H	1.90	0.79
1:A:653:A:OP1	9:H:56:LYS:HE2	1.83	0.79
4:C:52:LEU:HD23	4:C:52:LEU:H	1.44	0.79
1:A:954:G:H21	1:A:1227:A:N6	1.79	0.79
1:A:378:G:C2	1:A:386:C:O2	2.35	0.79
1:A:707:C:H4'	12:K:20:TYR:CE2	2.17	0.79
3:B:162:ILE:O	3:B:185:ILE:CD1	2.28	0.79
1:A:1314:C:N4	20:S:4:SER:OG	2.15	0.79
4:C:8:ILE:CG2	4:C:9:GLY:N	2.46	0.79
4:C:131:ARG:HG3	4:C:135:LYS:CE	2.11	0.79
1:A:1201:A:H4'	1:A:1202:G:O5'	1.83	0.79
21:T:74:LYS:HG3	21:T:75:ASN:H	1.48	0.79
1:A:436:C:H2'	1:A:437:U:C6	2.17	0.79
1:A:379:C:O2'	1:A:380:G:H5'	1.82	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:658:G:C2	1:A:749:C:N3	2.51	0.78
1:A:1360:A:H2'	1:A:1361:G:O4'	1.81	0.78
3:B:92:TYR:CD1	3:B:151:GLY:HA3	2.18	0.78
16:O:3:ILE:HG21	16:O:34:LEU:HD11	1.63	0.78
1:A:450:G:OP1	17:P:43:LYS:NZ	2.17	0.78
1:A:946:A:H2'	1:A:947:G:C8	2.18	0.78
1:A:1060:C:C5	4:C:2:GLY:HA2	2.18	0.78
1:A:1131:G:H22	1:A:1143:G:H21	1.30	0.78
1:A:1435:G:H2'	1:A:1436:U:H6	1.44	0.78
7:F:80:ARG:CG	7:F:88:VAL:HG21	2.13	0.78
9:H:112:LEU:N	9:H:112:LEU:CD2	2.45	0.78
1:A:463:A:C3'	1:A:474:G:OP2	2.30	0.78
5:D:162:LEU:HD21	5:D:178:VAL:HG12	1.63	0.78
6:E:80:ILE:CG2	9:H:104:ARG:HH22	1.96	0.78
11:J:63:PHE:HE1	15:N:45:ARG:HG3	1.49	0.78
1:A:263:A:O2'	1:A:264:U:H5'	1.83	0.78
1:A:422:C:O2	1:A:423:G:N2	2.16	0.78
1:A:1103:C:H5'	3:B:98:LEU:HD23	1.64	0.78
1:A:706:A:H5''	1:A:707:C:OP2	1.84	0.78
1:A:1235:U:C6	1:A:1235:U:H3'	2.19	0.78
5:D:128:VAL:HG12	5:D:129:ASN:ND2	1.98	0.78
6:E:137:GLU:O	6:E:141:GLN:HG3	1.84	0.78
20:S:72:GLY:C	20:S:74:PHE:H	1.88	0.78
1:A:106:C:H2'	1:A:107:G:H8	1.49	0.78
1:A:199:G:H2'	1:A:200:G:H5'	1.66	0.78
6:E:98:THR:HB	6:E:117:ASP:HB3	1.66	0.78
8:G:69:VAL:HG21	8:G:104:LEU:HD21	1.64	0.78
11:J:63:PHE:CE1	15:N:45:ARG:HG3	2.17	0.78
13:L:47:LYS:HB3	13:L:48:PRO:HD3	1.65	0.78
1:A:676:A:H2'	1:A:677:U:C6	2.19	0.78
1:A:736:C:OP1	19:R:68:LYS:HE2	1.83	0.78
1:A:1285:A:OP1	1:A:1285:A:H8	1.66	0.78
3:B:180:LEU:O	3:B:181:PHE:HB2	1.83	0.78
3:B:219:VAL:HA	3:B:222:ILE:HD12	1.66	0.78
4:C:166:GLU:HA	4:C:166:GLU:OE2	1.83	0.78
11:J:49:VAL:O	11:J:60:ARG:O	2.02	0.78
13:L:97:ARG:HB2	13:L:98:TYR:HE1	1.47	0.78
1:A:409:G:H2'	1:A:410:G:C8	2.19	0.78
1:A:818:G:C3'	1:A:819:A:H5'	2.14	0.78
5:D:25:ARG:C	5:D:27:TYR:H	1.92	0.78
13:L:55:VAL:HG12	13:L:56:ALA:N	1.97	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:252:U:H2'	1:A:253:U:C6	2.19	0.78
1:A:1270:C:HO2'	1:A:1313:U:HO2'	1.25	0.78
5:D:62:GLN:HE22	5:D:65:ARG:HH12	1.19	0.78
1:A:783:C:H2'	1:A:784:C:H5'	1.66	0.77
1:A:854:G:H3'	1:A:871:U:O4	1.82	0.77
12:K:30:VAL:HG21	12:K:65:ALA:HA	1.66	0.77
13:L:81:SER:O	13:L:106:ASP:CB	2.32	0.77
1:A:10:A:OP2	6:E:126:ARG:HG3	1.82	0.77
11:J:48:THR:HG22	11:J:62:HIS:NE2	1.99	0.77
11:J:76:ASN:HB3	11:J:78:ASN:ND2	1.98	0.77
1:A:826:C:H2'	1:A:827:U:H6	1.50	0.77
6:E:15:ARG:HH11	6:E:15:ARG:CG	1.97	0.77
1:A:622:A:N7	1:A:623:C:C5	2.53	0.77
1:A:850:U:H3'	1:A:850:U:C6	2.18	0.77
15:N:40:CYS:C	15:N:43:CYS:HB2	2.08	0.77
19:R:78:LEU:N	19:R:78:LEU:CD1	2.47	0.77
1:A:190(L):U:O2	21:T:105:SER:HB2	1.82	0.77
3:B:187:LEU:HD23	3:B:201:ILE:CG2	2.14	0.77
1:A:949:A:C2	1:A:1233:G:N3	2.53	0.77
13:L:86:ARG:HG2	13:L:86:ARG:NH1	1.95	0.77
14:M:90:LEU:HD23	14:M:93:ARG:NH1	1.99	0.77
1:A:1454:G:O2'	1:A:1455:G:H5'	1.85	0.77
3:B:26:PRO:O	3:B:29:ALA:CB	2.32	0.77
17:P:50:LYS:C	17:P:51:VAL:HG22	2.09	0.77
21:T:86:ARG:HH11	21:T:86:ARG:CG	1.96	0.77
1:A:1523:G:H2'	1:A:1524:C:H6	1.50	0.77
4:C:187:ALA:O	4:C:198:VAL:HG23	1.84	0.77
1:A:447:G:H2'	1:A:485:G:N2	2.00	0.77
19:R:78:LEU:HD12	19:R:78:LEU:H	1.49	0.77
1:A:942:G:N3	1:A:943:U:C6	2.52	0.76
10:I:128:ARG:O	10:I:128:ARG:HG2	1.83	0.76
1:A:362:G:N2	1:A:365:U:OP2	2.17	0.76
1:A:437:U:HO2'	5:D:125:HIS:HE2	0.78	0.76
3:B:118:LEU:HB3	3:B:142:LEU:CD1	2.15	0.76
4:C:33:LEU:HD11	15:N:53:LEU:HB3	1.67	0.76
5:D:64:LEU:HD23	5:D:198:VAL:HG11	1.65	0.76
1:A:438:G:H4'	1:A:439:A:OP1	1.85	0.76
5:D:83:SER:HA	5:D:89:THR:HG23	1.68	0.76
1:A:1112:C:O2	4:C:179:ARG:HB2	1.86	0.76
4:C:155:GLY:HA3	4:C:196:LEU:HB3	1.67	0.76
4:C:178:LEU:O	4:C:179:ARG:HB2	1.86	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:E:72:GLN:O	6:E:73:ASN:HB3	1.86	0.76
1:A:401:C:C6	1:A:401:C:H3'	2.21	0.76
5:D:128:VAL:HG12	5:D:129:ASN:HD22	1.49	0.76
1:A:1511:G:H2'	1:A:1512:U:O4'	1.85	0.76
6:E:144:THR:H	6:E:147:ASP:HB2	1.50	0.76
1:A:1063:C:H3'	1:A:1064:G:H2'	1.68	0.75
5:D:61:LYS:HE2	5:D:62:GLN:HE21	1.49	0.75
1:A:942:G:C4	1:A:943:U:C5	2.74	0.75
5:D:83:SER:HA	5:D:89:THR:CG2	2.15	0.75
6:E:36:ASP:OD1	6:E:37:ARG:N	2.19	0.75
7:F:62:TRP:C	7:F:63:TYR:HD2	1.94	0.75
13:L:31:PRO:HB2	13:L:32:PHE:CD2	2.22	0.75
14:M:113:PRO:O	14:M:115:LYS:NZ	2.18	0.75
1:A:254:G:H2'	1:A:255:G:C8	2.21	0.75
1:A:1281:U:H5'	1:A:1282:C:H5	1.51	0.75
7:F:100:ASN:O	19:R:28:GLU:HB3	1.87	0.75
17:P:57:ARG:HG3	17:P:57:ARG:NH1	1.98	0.75
1:A:1443:G:H4'	1:A:1446:A:P	2.26	0.75
10:I:125:TYR:N	10:I:125:TYR:CD2	2.49	0.75
5:D:67:ILE:HG22	5:D:68:TYR:CD1	2.21	0.75
6:E:74:GLY:HA3	6:E:116:THR:HG22	1.67	0.75
18:Q:66:SER:O	18:Q:70:ARG:NH1	2.20	0.75
5:D:63:LYS:CD	5:D:198:VAL:HG23	2.17	0.75
1:A:359:U:H2'	1:A:360:A:C8	2.21	0.75
4:C:10:PHE:CE2	4:C:178:LEU:HD13	2.22	0.75
6:E:80:ILE:HG22	9:H:104:ARG:HH22	1.50	0.75
9:H:59:LEU:O	9:H:61:VAL:HG23	1.87	0.75
4:C:191:THR:HG22	4:C:192:THR:H	1.52	0.75
9:H:112:LEU:N	9:H:112:LEU:HD23	2.01	0.75
15:N:26:ARG:HH22	15:N:47:LEU:HD21	1.50	0.75
1:A:1221:G:O4'	20:S:54:GLY:HA3	1.87	0.74
7:F:76:ALA:O	7:F:78:GLU:N	2.20	0.74
13:L:75:HIS:HD2	13:L:77:LEU:H	1.33	0.74
15:N:36:PHE:O	15:N:36:PHE:CD1	2.40	0.74
1:A:540:G:H2'	1:A:541:G:O4'	1.87	0.74
1:A:948:C:H42	1:A:1233:G:H1	1.33	0.74
1:A:987:G:H1	1:A:1218:C:H42	1.35	0.74
3:B:225:ALA:O	3:B:226:ARG:HB2	1.86	0.74
4:C:129:ALA:HB3	4:C:132:ARG:CB	2.16	0.74
5:D:5:ILE:HG22	5:D:5:ILE:O	1.86	0.74
9:H:112:LEU:HD23	9:H:112:LEU:H	1.51	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:767:A:H2'	1:A:768:A:C8	2.21	0.74
1:A:959:A:H3'	1:A:960:U:H5''	1.69	0.74
5:D:41:GLY:O	5:D:43:HIS:N	2.19	0.74
14:M:81:LEU:H	14:M:81:LEU:HD22	1.51	0.74
5:D:21:LEU:HD11	5:D:26:CYS:SG	2.28	0.74
6:E:33:VAL:HA	6:E:42:GLY:O	1.87	0.74
1:A:1240:U:H4'	8:G:38:LEU:HD11	1.68	0.74
1:A:1499:A:C2'	1:A:1500:A:H5'	2.18	0.74
5:D:11:LEU:C	5:D:13:ARG:H	1.96	0.74
1:A:1116:C:H2'	1:A:1117:G:H5''	1.69	0.74
1:A:1124:G:O2'	1:A:1145:C:N4	2.21	0.74
15:N:23:ARG:HD3	15:N:29:ARG:O	1.88	0.74
1:A:1112:C:O2	4:C:179:ARG:CB	2.35	0.74
19:R:76:LEU:HB2	19:R:78:LEU:HD11	1.70	0.74
1:A:707:C:H5''	12:K:20:TYR:CD2	2.23	0.74
1:A:1526:G:C2'	1:A:1527:C:H5'	2.17	0.74
4:C:107:GLN:O	4:C:108:ASN:HB3	1.86	0.74
5:D:150:GLU:HA	5:D:153:ARG:HB2	1.70	0.74
13:L:27:LEU:C	13:L:29:GLY:H	1.91	0.74
1:A:376:G:H2'	1:A:377:G:C8	2.22	0.73
1:A:570:G:N3	1:A:571:U:C5	2.56	0.73
4:C:29:TYR:OH	15:N:54:PRO:HD2	1.86	0.73
9:H:73:ASP:OD2	9:H:75:ARG:NE	2.20	0.73
1:A:976:G:H4'	1:A:977:A:OP1	1.86	0.73
3:B:178:ARG:HH22	9:H:68:ARG:NH2	1.85	0.73
15:N:41:ARG:HG3	15:N:42:ILE:H	1.53	0.73
1:A:959:A:C2	1:A:1222:G:O4'	2.40	0.73
6:E:15:ARG:HH11	6:E:15:ARG:HG2	1.52	0.73
13:L:86:ARG:NH2	13:L:99:HIS:CD2	2.56	0.73
1:A:335:C:H2'	1:A:336:C:C6	2.23	0.73
6:E:34:VAL:HG23	6:E:42:GLY:HA3	1.68	0.73
9:H:111:ILE:HG22	9:H:134:ILE:HB	1.70	0.73
1:A:1276:G:O5'	1:A:1276:G:H8	1.71	0.73
1:A:1296:C:H4'	1:A:1302:U:H5	1.51	0.73
5:D:21:LEU:HD12	5:D:22:LYS:H	1.53	0.73
12:K:24:SER:C	12:K:26:ASN:H	1.97	0.73
1:A:35:G:H2'	1:A:36:C:H6	1.52	0.73
1:A:515:G:C5	1:A:516:U:C5	2.77	0.73
1:A:564:C:O2	1:A:564:C:H2'	1.88	0.73
1:A:833:U:O2	1:A:854:G:C2	2.42	0.73
10:I:128:ARG:O	10:I:128:ARG:CG	2.36	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:P:21:VAL:HG21	17:P:59:TRP:CD1	2.24	0.73
1:A:97:G:H5''	1:A:98:U:OP2	1.89	0.73
1:A:481:G:O2'	1:A:483:C:N4	2.21	0.73
1:A:731:G:OP1	1:A:766:A:H1'	1.89	0.73
4:C:195:VAL:O	4:C:196:LEU:HD23	1.87	0.73
16:O:78:TYR:CE1	16:O:82:ILE:HD11	2.24	0.73
1:A:503:C:C2'	1:A:504:C:H5'	2.18	0.73
4:C:150:LYS:HG2	4:C:151:VAL:N	2.04	0.73
6:E:81:GLU:HG3	6:E:90:VAL:HG13	1.69	0.73
1:A:622:A:C8	1:A:623:C:C6	2.77	0.73
1:A:1305:G:H2'	1:A:1331:G:N2	2.03	0.73
1:A:1343:G:H4'	10:I:122:ALA:HB3	1.71	0.73
3:B:55:PHE:HA	3:B:58:ILE:HG13	1.71	0.73
5:D:79:PHE:O	5:D:82:ALA:N	2.22	0.73
1:A:401:C:H3'	1:A:401:C:H6	1.54	0.73
1:A:839:U:O2	1:A:839:U:H2'	1.87	0.72
1:A:84:U:H3'	1:A:88:A:P	2.29	0.72
17:P:67:THR:CG2	17:P:68:ASP:H	2.00	0.72
1:A:854:G:C2	1:A:855:G:C8	2.77	0.72
4:C:91:LEU:HD11	4:C:99:VAL:HG22	1.70	0.72
21:T:64:ASP:O	21:T:67:ALA:HB3	1.89	0.72
1:A:377:G:C2	1:A:387:U:O2	2.43	0.72
1:A:1228:C:OP1	14:M:115:LYS:HG2	1.89	0.72
4:C:6:HIS:HD2	4:C:8:ILE:H	1.37	0.72
11:J:15:THR:O	11:J:19:SER:HB3	1.89	0.72
14:M:49:THR:HG22	14:M:51:ALA:H	1.53	0.72
15:N:41:ARG:HG3	15:N:42:ILE:N	2.04	0.72
1:A:509:A:C8	1:A:509:A:H3'	2.24	0.72
1:A:794:A:H2'	1:A:795:C:H6	1.55	0.72
20:S:71:LEU:HD22	20:S:72:GLY:H	1.55	0.72
1:A:266:G:C5'	1:A:266:G:C8	2.72	0.72
1:A:794:A:H2'	1:A:795:C:C6	2.25	0.72
4:C:55:VAL:O	4:C:55:VAL:HG12	1.88	0.72
9:H:119:LEU:HB3	9:H:123:GLU:HB3	1.70	0.72
1:A:157:G:C2	1:A:158:G:C8	2.77	0.72
1:A:356:A:H2'	1:A:357:G:H5'	1.71	0.72
1:A:458:C:C2	1:A:459:G:C8	2.78	0.72
11:J:76:ASN:HB3	11:J:78:ASN:HD21	1.54	0.72
14:M:96:LEU:HB3	14:M:97:PRO:CD	2.17	0.72
15:N:37:PHE:HE2	15:N:53:LEU:HD13	1.55	0.72
5:D:26:CYS:HA	5:D:31:CYS:CB	2.16	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:E:139:LEU:O	6:E:141:GLN:N	2.21	0.72
6:E:152:ARG:O	9:H:64:LYS:NZ	2.23	0.72
1:A:353:A:H8	1:A:353:A:H5''	1.55	0.71
1:A:1346:A:C8	1:A:1348:U:C2	2.78	0.71
3:B:187:LEU:HD23	3:B:201:ILE:HG22	1.72	0.71
1:A:99:C:H2'	1:A:101:A:C8	2.26	0.71
1:A:602:A:C2	1:A:637:G:C2	2.78	0.71
3:B:208:ILE:HA	3:B:211:ILE:HD12	1.72	0.71
19:R:59:SER:HB3	19:R:62:GLU:OE1	1.90	0.71
1:A:625:G:H2'	1:A:626:U:C6	2.25	0.71
6:E:27:ARG:HG3	6:E:28:PHE:N	2.04	0.71
1:A:185:A:H5''	1:A:186:C:OP2	1.90	0.71
1:A:350:G:C5'	1:A:350:G:C8	2.71	0.71
1:A:639:G:C2'	1:A:640:A:H5'	2.21	0.71
1:A:1064:G:H5'	1:A:1066:C:O4'	1.91	0.71
1:A:526:C:OP2	13:L:91:LYS:NZ	2.17	0.71
1:A:1113:C:H42	1:A:1187:G:H1	1.36	0.71
1:A:1264:C:H2'	1:A:1265:G:H8	1.54	0.71
1:A:1286:A:C8	1:A:1287:A:H4'	2.25	0.71
10:I:9:ARG:HG3	10:I:14:VAL:HG12	1.70	0.71
18:Q:95:TYR:O	18:Q:97:SER:N	2.24	0.71
1:A:90:U:H3'	1:A:90:U:C6	2.26	0.71
1:A:977:A:O2'	1:A:978:A:H5''	1.89	0.71
1:A:1234:C:C2'	1:A:1235:U:H5'	2.20	0.71
1:A:1314:C:OP2	20:S:6:LYS:CG	2.34	0.71
1:A:5:U:O2	1:A:5:U:H2'	1.90	0.71
1:A:882:C:O2'	1:A:883:C:H5'	1.90	0.71
1:A:922:G:N3	1:A:1396:A:C2	2.58	0.71
1:A:1361:G:C2'	1:A:1361(A):C:H5'	2.21	0.71
10:I:43:ALA:O	10:I:45:ALA:N	2.23	0.71
11:J:5:ARG:HA	11:J:73:ASP:OD1	1.91	0.71
1:A:480:U:C2'	1:A:481:G:OP2	2.37	0.71
6:E:142:LEU:O	6:E:143:ARG:HG2	1.91	0.71
13:L:102:ARG:NH1	13:L:110:VAL:HA	2.04	0.71
19:R:33:ASP:O	19:R:35:ARG:N	2.22	0.71
1:A:707:C:C5'	12:K:20:TYR:HD2	2.04	0.71
1:A:931:C:O2	1:A:1386:G:N2	2.18	0.71
1:A:1235:U:H2'	1:A:1236:A:O5'	1.90	0.71
1:A:734:G:H2'	1:A:735:C:C6	2.26	0.71
1:A:922:G:N2	1:A:1396:A:C4	2.59	0.71
11:J:56:HIS:C	11:J:58:ASP:H	1.97	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:N:12:ARG:O	15:N:14:PRO:HD3	1.90	0.71
7:F:50:TYR:HE1	19:R:77:GLY:HA2	1.56	0.70
18:Q:4:LYS:H	18:Q:61:GLU:HB2	1.56	0.70
20:S:72:GLY:O	20:S:74:PHE:N	2.24	0.70
21:T:49:ALA:O	21:T:53:LEU:HD12	1.90	0.70
1:A:18:C:O2'	1:A:19:C:H5'	1.91	0.70
1:A:872:A:O2'	1:A:873:A:H3'	1.91	0.70
1:A:1454:G:C2'	1:A:1455:G:H5'	2.20	0.70
21:T:75:ASN:O	21:T:78:ALA:N	2.24	0.70
1:A:1364:U:O2'	1:A:1365:G:C5'	2.38	0.70
14:M:34:LEU:CD1	14:M:41:PRO:HA	2.18	0.70
1:A:111:G:H5''	1:A:112:G:OP2	1.91	0.70
1:A:247:G:O6	1:A:278:G:C6	2.44	0.70
1:A:1009:G:N3	1:A:1009:G:H2'	2.07	0.70
11:J:16:LEU:HD22	11:J:94:VAL:HG13	1.74	0.70
1:A:1126:U:C2	1:A:1127:G:N7	2.60	0.70
1:A:1379:G:O6	8:G:2:ALA:HB3	1.91	0.70
5:D:149:ALA:C	5:D:151:LYS:H	2.00	0.70
15:N:21:TYR:HE2	15:N:23:ARG:NE	1.90	0.70
3:B:176:GLU:O	3:B:177:ALA:C	2.35	0.70
4:C:180:ALA:HB1	4:C:182:ILE:CD1	2.22	0.70
13:L:43:VAL:HG13	13:L:44:THR:H	1.57	0.70
14:M:49:THR:CB	14:M:52:GLU:HG3	2.16	0.70
20:S:53:ASN:HB2	20:S:56:GLN:H	1.55	0.70
1:A:266:G:C8	1:A:266:G:H5''	2.27	0.70
3:B:12:GLU:OE1	3:B:12:GLU:HA	1.89	0.70
7:F:62:TRP:O	7:F:63:TYR:HD2	1.75	0.70
14:M:5:ALA:HB3	14:M:8:GLU:HB2	1.72	0.70
1:A:88:A:H2'	1:A:89:C:O4'	1.91	0.70
1:A:90:U:H3'	1:A:90:U:H6	1.56	0.70
1:A:358:U:H2'	1:A:359:U:C6	2.27	0.70
1:A:1064:G:H4'	1:A:1065:U:H5'	1.73	0.70
1:A:1102:A:H2'	1:A:1103:C:C6	2.26	0.70
1:A:1258:G:OP2	1:A:1258:G:H8	1.74	0.70
11:J:16:LEU:HD12	11:J:70:ARG:HG3	1.74	0.70
1:A:492:G:O3'	1:A:494:G:P	2.50	0.70
1:A:781:A:C5	1:A:802:A:C2	2.79	0.70
1:A:1264:C:H2'	1:A:1265:G:C8	2.27	0.70
15:N:24:CYS:HB3	15:N:28:GLY:N	2.07	0.70
1:A:518:C:H5''	1:A:519:C:H6	1.55	0.69
1:A:1126:U:OP2	1:A:1281:U:O2	2.10	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1281:U:H5'	1:A:1282:C:C5	2.27	0.69
1:A:437:U:O2'	5:D:125:HIS:NE2	2.08	0.69
1:A:568:G:H2'	1:A:569:C:H5'	1.73	0.69
1:A:976:G:C4'	1:A:977:A:OP1	2.40	0.69
9:H:10:LEU:HB3	9:H:83:ILE:HD11	1.74	0.69
21:T:13:LEU:C	21:T:13:LEU:CD2	2.66	0.69
1:A:657:G:H2'	1:A:658:G:H8	1.57	0.69
4:C:39:ILE:O	4:C:43:LEU:HB2	1.92	0.69
8:G:116:ALA:O	8:G:120:ILE:HD13	1.92	0.69
21:T:13:LEU:HD22	21:T:13:LEU:C	2.16	0.69
1:A:451:A:O5'	1:A:451:A:H8	1.75	0.69
1:A:838:G:H1	1:A:848:C:H42	1.41	0.69
1:A:914:A:C2	1:A:915:A:C4	2.81	0.69
1:A:1139:G:H4'	1:A:1140:C:H5''	1.73	0.69
4:C:6:HIS:CD2	4:C:8:ILE:H	2.10	0.69
10:I:111:ARG:HH11	10:I:111:ARG:CG	2.06	0.69
20:S:78:ARG:H	20:S:78:ARG:HD2	1.57	0.69
9:H:30:ARG:HG2	9:H:30:ARG:HH11	1.56	0.69
1:A:63:C:H5'	1:A:64:G:OP2	1.93	0.69
1:A:674:G:H2'	1:A:675:A:H8	1.58	0.69
1:A:880:C:H2'	1:A:881:G:H8	1.56	0.69
1:A:1158:C:C5	1:A:1160:G:H1'	2.27	0.69
3:B:182:ILE:HG23	3:B:183:PRO:HD2	1.75	0.69
5:D:204:ILE:HG22	5:D:205:GLU:N	2.07	0.69
8:G:91:VAL:HG12	8:G:96:GLN:NE2	2.08	0.69
17:P:74:LEU:O	17:P:79:VAL:HG23	1.91	0.69
3:B:9:GLU:HG3	3:B:217:ARG:HH12	1.55	0.69
5:D:149:ALA:O	5:D:151:LYS:N	2.25	0.69
9:H:103:VAL:HG21	9:H:109:ILE:C	2.18	0.69
11:J:38:ILE:HB	11:J:71:LEU:HB3	1.73	0.69
17:P:74:LEU:HD13	17:P:79:VAL:HG11	1.75	0.69
18:Q:40:LYS:HD3	18:Q:42:TYR:CZ	2.28	0.69
1:A:501:C:H2'	1:A:502:G:H8	1.56	0.69
1:A:1040:U:H2'	1:A:1041:A:C8	2.28	0.69
1:A:1157:A:H4'	1:A:1158:C:O5'	1.93	0.69
3:B:88:ALA:O	3:B:90:MET:N	2.25	0.69
3:B:102:LEU:N	3:B:102:LEU:CD1	2.55	0.69
4:C:35:GLU:HG2	4:C:59:ARG:HH12	1.58	0.69
6:E:43:LEU:HB2	6:E:136:MET:HE2	1.75	0.69
13:L:32:PHE:HB3	13:L:85:ILE:O	1.93	0.69
18:Q:75:ARG:HH12	18:Q:77:VAL:HG13	1.56	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:149:A:C2	1:A:150:C:C2	2.80	0.69
1:A:736:C:H2'	1:A:737:A:C8	2.28	0.69
1:A:1226:C:H4'	1:A:1227:A:OP1	1.91	0.69
10:I:113:LYS:N	10:I:113:LYS:HD2	2.08	0.69
1:A:200:G:C5'	1:A:200:G:H8	2.06	0.69
1:A:680:C:H42	1:A:710:G:H1	1.40	0.69
4:C:180:ALA:HB1	4:C:182:ILE:HD11	1.75	0.69
1:A:45:U:H3	1:A:396:G:H1	1.41	0.68
8:G:67:GLU:HG3	8:G:67:GLU:O	1.92	0.68
17:P:5:ARG:HG2	17:P:6:LEU:N	2.04	0.68
20:S:83:HIS:N	20:S:83:HIS:CD2	2.61	0.68
1:A:250:A:H4'	1:A:251:G:O5'	1.93	0.68
1:A:1502:A:H2	1:A:1505:G:N1	1.89	0.68
6:E:19:MET:HE1	6:E:24:ARG:HH11	1.59	0.68
11:J:46:ARG:HG2	11:J:46:ARG:NH1	2.08	0.68
1:A:337:C:H2'	1:A:338:A:C8	2.28	0.68
1:A:1152:A:C4'	11:J:13:HIS:HD2	2.06	0.68
1:A:1227:A:H2'	1:A:1228:C:O5'	1.92	0.68
1:A:1347:G:H3'	10:I:108:VAL:O	1.94	0.68
1:A:1508:G:H2'	1:A:1509:C:C6	2.28	0.68
3:B:101:MET:HG2	3:B:108:ILE:HD12	1.74	0.68
5:D:64:LEU:HD21	5:D:94:LEU:HD21	1.75	0.68
6:E:71:LEU:HD21	6:E:115:VAL:HG22	1.75	0.68
8:G:155:ARG:O	8:G:156:TRP:HB2	1.92	0.68
1:A:463:A:H3'	1:A:474:G:OP2	1.93	0.68
1:A:502:G:H2'	1:A:503:C:C6	2.28	0.68
1:A:979:C:H5	1:A:980:C:C5	2.11	0.68
1:A:1231:G:H2'	1:A:1232:U:C6	2.27	0.68
4:C:5:ILE:HD13	4:C:10:PHE:CB	2.15	0.68
6:E:18:ARG:NH2	6:E:25:ARG:HG2	2.08	0.68
21:T:65:LYS:O	21:T:68:LYS:HB2	1.93	0.68
1:A:1154:G:H2'	1:A:1155:G:C8	2.27	0.68
16:O:78:TYR:CZ	16:O:82:ILE:HD11	2.28	0.68
1:A:1350:A:C6	1:A:1351:U:N3	2.62	0.68
5:D:23:GLY:O	5:D:27:TYR:HB2	1.94	0.68
13:L:102:ARG:NH2	13:L:108:ALA:O	2.27	0.68
21:T:33:ILE:O	21:T:34:LYS:C	2.36	0.68
1:A:116:A:H2'	1:A:117:G:C8	2.29	0.68
1:A:491:G:C4	1:A:492:G:C8	2.82	0.68
1:A:536:C:H2'	1:A:537:G:H8	1.57	0.68
1:A:1138:G:N2	1:A:1140:C:O2	2.26	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1235:U:H3'	1:A:1235:U:H6	1.57	0.68
16:O:26:GLU:OE1	16:O:77:ARG:HD2	1.93	0.68
21:T:79:ARG:HE	21:T:83:ARG:HH22	1.39	0.68
1:A:706:A:H1'	12:K:29:ILE:HD11	1.75	0.68
1:A:1066:C:H2'	1:A:1067:A:H5'	1.75	0.68
1:A:1526:G:O2'	1:A:1527:C:H5'	1.94	0.68
3:B:84:GLU:HG3	3:B:219:VAL:CG2	2.24	0.68
5:D:64:LEU:HD11	5:D:97:LEU:HD13	1.74	0.68
1:A:960:U:H1'	1:A:1223:C:H5'	1.76	0.68
1:A:1010:G:H2'	1:A:1011:G:C8	2.29	0.68
1:A:1314:C:N3	1:A:1315:U:C5	2.62	0.68
7:F:50:TYR:HE1	19:R:77:GLY:CA	2.07	0.68
15:N:21:TYR:HE2	15:N:23:ARG:HE	1.41	0.68
1:A:575:G:OP1	1:A:575:G:H4'	1.94	0.68
1:A:657:G:H4'	16:O:28:GLN:HG2	1.76	0.68
10:I:95:LYS:O	10:I:96:LEU:HD12	1.93	0.68
7:F:76:ALA:C	7:F:78:GLU:H	1.99	0.67
8:G:23:VAL:O	8:G:27:ILE:HG13	1.93	0.67
10:I:114:TYR:CE1	11:J:59:SER:O	2.47	0.67
1:A:1048:G:H5''	15:N:3:ARG:HG3	1.74	0.67
1:A:1197:G:H5''	24:A:1636:D2C:O5	1.92	0.67
1:A:1288:A:C5	1:A:1289:A:N7	2.62	0.67
8:G:26:PHE:O	8:G:30:ILE:HD12	1.95	0.67
1:A:1015:A:H2'	1:A:1016:A:C8	2.29	0.67
1:A:1342:C:O3'	10:I:125:TYR:HE2	1.75	0.67
1:A:1377:A:H3'	1:A:1377:A:C8	2.28	0.67
1:A:376:G:N3	1:A:389:A:C2	2.62	0.67
6:E:72:GLN:O	6:E:73:ASN:CB	2.42	0.67
6:E:74:GLY:CA	6:E:116:THR:HG22	2.24	0.67
10:I:33:PHE:C	10:I:35:GLU:H	2.03	0.67
14:M:30:ALA:O	14:M:33:ALA:N	2.27	0.67
15:N:4:LYS:C	15:N:6:LEU:H	2.01	0.67
1:A:439:A:N6	1:A:497:A:H1'	2.08	0.67
1:A:767:A:H2'	1:A:768:A:H8	1.58	0.67
1:A:914:A:N1	1:A:915:A:C4	2.62	0.67
5:D:15:GLU:HG2	5:D:63:LYS:HG3	1.77	0.67
19:R:50:ILE:HG12	19:R:70:ILE:HD13	1.76	0.67
21:T:87:LYS:O	21:T:88:VAL:C	2.38	0.67
1:A:95:U:H2'	1:A:96:G:C8	2.30	0.67
1:A:1055:A:C8	1:A:1206:G:N2	2.63	0.67
6:E:80:ILE:HD13	6:E:91:LEU:HB2	1.71	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:J:12:ASP:HB3	11:J:15:THR:CG2	2.24	0.67
12:K:54:ARG:O	12:K:57:THR:HG22	1.94	0.67
19:R:78:LEU:CD1	19:R:78:LEU:H	2.07	0.67
1:A:976:G:H8	1:A:1358:U:HO2'	1.42	0.67
1:A:1130:A:OP2	1:A:1131:G:OP2	2.13	0.67
19:R:67:ALA:O	19:R:71:LYS:HG3	1.94	0.67
1:A:1229:A:C2	1:A:1230:C:C5	2.83	0.67
1:A:1455:G:H3'	1:A:1459:C:OP2	1.95	0.67
5:D:9:CYS:HA	5:D:12:CYS:HB2	1.77	0.67
8:G:15:ASP:OD2	8:G:44:TYR:OH	2.13	0.67
10:I:50:LEU:HB3	10:I:55:ALA:HB3	1.76	0.67
15:N:24:CYS:HB3	15:N:28:GLY:CA	2.25	0.67
1:A:418:C:O2	1:A:425:G:N2	2.23	0.67
1:A:1228:C:H6	1:A:1228:C:H5''	1.58	0.67
1:A:1285:A:H4'	1:A:1286:A:O5'	1.95	0.67
3:B:42:ILE:HD12	3:B:203:GLY:HA2	1.77	0.67
10:I:8:GLY:CA	10:I:79:LEU:HB3	2.23	0.67
10:I:71:SER:HA	10:I:74:ILE:HD12	1.76	0.67
17:P:51:VAL:O	17:P:52:ASP:C	2.37	0.67
21:T:73:HIS:O	21:T:74:LYS:CG	2.40	0.67
1:A:639:G:H2'	1:A:640:A:H5'	1.76	0.67
1:A:707:C:H2'	1:A:708:C:C6	2.30	0.67
1:A:707:C:O3'	12:K:20:TYR:HE2	1.78	0.67
1:A:1525:G:C8	1:A:1525:G:H3'	2.29	0.67
4:C:66:VAL:O	4:C:68:VAL:N	2.28	0.67
5:D:138:TYR:C	5:D:138:TYR:CD2	2.73	0.67
19:R:55:ARG:HB3	19:R:55:ARG:CZ	2.25	0.67
1:A:275:G:H5''	1:A:275:G:C8	2.29	0.66
4:C:129:ALA:CB	4:C:132:ARG:HB2	2.25	0.66
7:F:7:ASN:O	7:F:88:VAL:HA	1.96	0.66
10:I:34:ASN:HD22	10:I:34:ASN:H	1.42	0.66
12:K:33:THR:OG1	12:K:38:ASN:C	2.38	0.66
13:L:117:ARG:HG2	13:L:122:THR:O	1.96	0.66
1:A:109:A:C4	1:A:327:A:C2	2.83	0.66
1:A:854:G:N1	1:A:855:G:N7	2.43	0.66
1:A:923:A:C1'	1:A:1398:A:C2	2.78	0.66
3:B:97:TRP:HZ2	3:B:102:LEU:HD13	1.60	0.66
4:C:91:LEU:HD21	4:C:99:VAL:HG13	1.77	0.66
19:R:66:LEU:HG	19:R:70:ILE:CD1	2.24	0.66
1:A:358:U:H2'	1:A:359:U:H6	1.59	0.66
1:A:1227:A:OP1	20:S:80:TYR:OH	2.10	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1403:C:O2	1:A:1403:C:C2'	2.42	0.66
11:J:47:PHE:HD2	15:N:34:TYR:HE2	1.39	0.66
1:A:976:G:C5'	1:A:977:A:OP1	2.44	0.66
5:D:141:ARG:HB3	5:D:142:PRO:HD2	1.76	0.66
13:L:53:ARG:NH1	13:L:92:ASP:OD2	2.28	0.66
14:M:5:ALA:O	14:M:6:GLY:C	2.37	0.66
1:A:1152:A:C5'	11:J:13:HIS:CD2	2.72	0.66
1:A:1187:G:H2'	1:A:1188:A:H8	1.61	0.66
3:B:48:MET:HA	3:B:51:LEU:HD12	1.78	0.66
5:D:149:ALA:C	5:D:151:LYS:N	2.53	0.66
18:Q:95:TYR:C	18:Q:97:SER:H	2.03	0.66
1:A:1081:G:OP1	6:E:16:THR:OG1	2.14	0.66
3:B:161:ALA:HB1	3:B:185:ILE:HD11	1.75	0.66
13:L:28:LYS:C	13:L:30:ALA:N	2.52	0.66
13:L:28:LYS:O	13:L:30:ALA:N	2.29	0.66
1:A:499:A:C4'	1:A:500:G:H5'	2.26	0.66
1:A:803:G:C5	1:A:804:U:C5	2.84	0.66
1:A:923:A:H1'	1:A:1398:A:N3	2.10	0.66
4:C:139:GLN:O	4:C:143:GLU:N	2.28	0.66
6:E:67:VAL:HG13	6:E:67:VAL:O	1.95	0.66
1:A:459:G:H3'	1:A:460:A:H5'	1.78	0.66
3:B:87:ARG:HH21	3:B:219:VAL:HB	1.61	0.66
3:B:167:PRO:HG3	3:B:188:ALA:HB2	1.78	0.66
12:K:33:THR:HG1	12:K:38:ASN:C	2.02	0.66
13:L:111:LYS:O	13:L:112:ASP:HB2	1.96	0.66
20:S:72:GLY:C	20:S:74:PHE:N	2.54	0.66
1:A:91:C:H2'	1:A:92:C:H6	1.59	0.66
1:A:676:A:H2'	1:A:677:U:H6	1.59	0.66
1:A:1015:A:H2'	1:A:1016:A:H8	1.60	0.66
1:A:1047:G:H8	1:A:1047:G:O5'	1.77	0.66
1:A:1055:A:N7	1:A:1206:G:N1	2.44	0.66
1:A:836:G:C6	1:A:851:G:C6	2.84	0.66
4:C:6:HIS:NE2	4:C:8:ILE:CB	2.59	0.66
5:D:79:PHE:CD1	5:D:207:TYR:HD1	2.14	0.66
6:E:51:VAL:O	6:E:54:ALA:HB3	1.96	0.66
1:A:448:A:C5	1:A:487:A:C2	2.84	0.65
13:L:41:ARG:HD2	13:L:42:THR:H	1.61	0.65
1:A:95:U:H2'	1:A:96:G:H8	1.61	0.65
1:A:942:G:H2'	1:A:943:U:C6	2.31	0.65
1:A:1189:C:H5''	1:A:1190:G:OP2	1.95	0.65
3:B:182:ILE:CG2	3:B:183:PRO:HD2	2.26	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1003(A):G:H2'	1:A:1004:A:C4'	2.24	0.65
1:A:1288:A:N7	1:A:1289:A:N7	2.43	0.65
1:A:1366:C:C2	1:A:1367:C:C5	2.84	0.65
10:I:82:ALA:O	10:I:86:VAL:HG23	1.96	0.65
12:K:33:THR:CG2	12:K:37:GLY:HA2	2.26	0.65
1:A:715:A:H8	1:A:715:A:O5'	1.80	0.65
1:A:948:C:OP1	14:M:109:THR:CG2	2.34	0.65
1:A:987:G:O5'	1:A:987:G:H8	1.79	0.65
1:A:1314:C:C2	1:A:1315:U:C5	2.84	0.65
1:A:1347:G:O2'	1:A:1348:U:OP2	2.14	0.65
3:B:117:GLU:O	3:B:121:LEU:HB2	1.97	0.65
6:E:80:ILE:HG23	9:H:104:ARG:NH2	2.10	0.65
6:E:139:LEU:C	6:E:141:GLN:H	2.02	0.65
1:A:1381:U:C4	1:A:1382:C:C5	2.85	0.65
4:C:15:THR:HG21	4:C:179:ARG:HA	1.78	0.65
8:G:92:SER:HB2	8:G:93:PRO:HD2	1.78	0.65
9:H:119:LEU:HD13	9:H:124:ALA:HA	1.76	0.65
10:I:28:VAL:HA	10:I:63:ILE:O	1.97	0.65
10:I:50:LEU:HD11	10:I:81:ILE:HG21	1.78	0.65
19:R:66:LEU:HG	19:R:70:ILE:HD12	1.77	0.65
1:A:291:C:O2'	1:A:292:G:H5'	1.96	0.65
1:A:382:A:C2	1:A:383:A:C4	2.84	0.65
1:A:1392:G:H2'	1:A:1393:U:H6	1.62	0.65
6:E:34:VAL:HG22	6:E:62:ALA:HB1	1.78	0.65
17:P:28:ARG:HH11	17:P:28:ARG:CG	1.96	0.65
1:A:983:A:H3'	1:A:983:A:N3	2.11	0.65
1:A:1350:A:C2	1:A:1351:U:O2	2.50	0.65
1:A:1438:G:H2'	1:A:1439:C:C6	2.31	0.65
8:G:15:ASP:HB3	8:G:20:ASP:H	1.61	0.65
17:P:57:ARG:HH11	17:P:57:ARG:CG	2.07	0.65
21:T:43:LEU:HD12	21:T:52:ALA:HA	1.78	0.65
1:A:861:G:H2'	1:A:862:C:H6	1.62	0.65
1:A:1158:C:H5	1:A:1160:G:H1'	1.61	0.65
1:A:1182:G:C4'	1:A:1183:A:O5'	2.37	0.65
4:C:191:THR:HG21	4:C:193:TYR:CZ	2.32	0.65
1:A:62:U:H2'	1:A:63:C:C6	2.32	0.65
1:A:200:G:H2'	1:A:201:C:O4'	1.97	0.65
3:B:25:ASN:HD21	3:B:27:LYS:HB2	1.60	0.65
3:B:111:ARG:CB	3:B:149:LEU:HD11	2.27	0.65
3:B:217:ARG:O	3:B:220:ASP:HB2	1.96	0.65
4:C:91:LEU:HD23	4:C:92:ALA:N	2.11	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:L:67:THR:HG23	13:L:67:THR:O	1.97	0.65
1:A:1056:U:O2'	1:A:1057:G:H5'	1.97	0.64
5:D:21:LEU:CD1	5:D:22:LYS:H	2.10	0.64
9:H:19:VAL:HG23	9:H:19:VAL:O	1.96	0.64
13:L:81:SER:O	13:L:106:ASP:CG	2.39	0.64
1:A:62:U:H2'	1:A:63:C:H6	1.61	0.64
1:A:669:U:H2'	1:A:670:G:H8	1.56	0.64
1:A:753:A:H4'	1:A:754:C:O5'	1.97	0.64
7:F:44:GLY:HA2	7:F:60:PHE:H	1.63	0.64
20:S:41:VAL:HG12	20:S:42:PRO:HD2	1.78	0.64
21:T:82:SER:O	21:T:86:ARG:HB2	1.97	0.64
1:A:373:A:C8	1:A:373:A:C5'	2.78	0.64
1:A:623:C:O2	1:A:623:C:H2'	1.98	0.64
1:A:1399:C:H4'	1:A:1400:C:C5'	2.21	0.64
3:B:17:PHE:HD1	3:B:18:GLY:H	1.44	0.64
7:F:9:VAL:CG2	7:F:87:ARG:HB2	2.26	0.64
20:S:72:GLY:O	20:S:74:PHE:HD1	1.79	0.64
1:A:522:C:OP2	13:L:69:TYR:OH	2.12	0.64
1:A:1063:C:OP2	1:A:1064:G:O2'	2.14	0.64
1:A:1187:G:H2'	1:A:1188:A:C8	2.33	0.64
4:C:6:HIS:CD2	4:C:6:HIS:C	2.73	0.64
6:E:90:VAL:O	6:E:120:THR:HA	1.97	0.64
6:E:103:GLY:O	6:E:106:PRO:CD	2.43	0.64
11:J:46:ARG:HG2	11:J:46:ARG:HH11	1.61	0.64
15:N:32:SER:HB2	15:N:41:ARG:HB3	1.78	0.64
1:A:779:C:H2'	1:A:780:A:O4'	1.96	0.64
1:A:864:A:H2'	1:A:865:A:C8	2.31	0.64
1:A:1074:G:O2'	3:B:103:THR:HG22	1.96	0.64
1:A:1169:A:HO3'	1:A:1171:G:P	2.19	0.64
1:A:1316:G:O2'	1:A:1318:A:N7	2.26	0.64
8:G:23:VAL:HG12	8:G:27:ILE:CD1	2.23	0.64
11:J:16:LEU:CD2	11:J:94:VAL:HG13	2.28	0.64
15:N:36:PHE:O	15:N:36:PHE:HD1	1.79	0.64
16:O:76:GLU:O	16:O:78:TYR:N	2.31	0.64
1:A:705:U:H3'	1:A:706:A:H8	1.63	0.64
1:A:1092:A:C5'	1:A:1092:A:H8	2.10	0.64
1:A:1100:C:O5'	1:A:1100:C:H6	1.80	0.64
1:A:1161:C:H2'	1:A:1162:C:C6	2.33	0.64
9:H:6:ILE:O	9:H:7:ALA:C	2.41	0.64
19:R:79:LEU:HD23	19:R:80:PRO:CD	2.15	0.64
1:A:109:A:C6	1:A:326:G:C6	2.86	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:895:G:H2'	1:A:896:C:H6	1.62	0.64
1:A:960:U:H5'	1:A:960:U:O2	1.97	0.64
1:A:1119:C:H3'	1:A:1119:C:C6	2.33	0.64
19:R:33:ASP:C	19:R:35:ARG:H	2.06	0.64
3:B:101:MET:CA	3:B:108:ILE:HD12	2.27	0.64
6:E:51:VAL:CB	6:E:52:PRO:CD	2.69	0.64
14:M:22:ILE:HB	14:M:25:ILE:HD12	1.80	0.64
1:A:1055:A:C8	1:A:1206:G:C2	2.85	0.64
1:A:1066:C:O2'	1:A:1067:A:H5''	1.98	0.64
3:B:102:LEU:HD13	3:B:102:LEU:H	1.62	0.64
5:D:79:PHE:CD1	5:D:207:TYR:CD1	2.86	0.64
14:M:40:ASN:ND2	14:M:41:PRO:HD2	2.12	0.64
20:S:39:THR:HG22	20:S:40:ILE:H	1.61	0.64
1:A:113:G:H1	1:A:314:C:H42	1.44	0.64
1:A:390:C:H2'	1:A:391:G:C8	2.33	0.64
1:A:401:C:OP2	5:D:73:ARG:NH2	2.31	0.64
1:A:750:G:N3	16:O:23:GLY:HA3	2.13	0.64
1:A:1328:C:H2'	1:A:1329:A:O4'	1.97	0.64
1:A:1499:A:H2'	1:A:1500:A:H5'	1.78	0.64
12:K:34:ASP:HB2	12:K:35:PRO:CD	2.28	0.64
20:S:39:THR:HG22	20:S:40:ILE:N	2.13	0.64
1:A:409:G:H2'	1:A:410:G:H8	1.62	0.63
1:A:528:C:H41	13:L:49:ASN:HD21	1.44	0.63
1:A:942:G:N3	1:A:943:U:C5	2.66	0.63
1:A:1438:G:H2'	1:A:1439:C:H6	1.63	0.63
1:A:1513:A:H2'	1:A:1514:C:C6	2.33	0.63
6:E:19:MET:CE	6:E:24:ARG:HH11	2.11	0.63
18:Q:85:VAL:O	18:Q:86:GLU:C	2.41	0.63
1:A:55:A:H2'	1:A:56:U:C6	2.32	0.63
1:A:253:U:H2'	1:A:254:G:C8	2.33	0.63
1:A:522:C:H2'	1:A:523:A:O4'	1.99	0.63
1:A:529:G:H3'	1:A:529:G:C8	2.33	0.63
1:A:580:U:H4'	16:O:57:LEU:HD23	1.80	0.63
1:A:942:G:H2'	1:A:943:U:H6	1.63	0.63
1:A:1234:C:H2'	1:A:1235:U:H5'	1.80	0.63
3:B:114:ARG:HD3	3:B:141:GLU:OE1	1.99	0.63
3:B:218:ALA:O	3:B:222:ILE:HG13	1.98	0.63
8:G:116:ALA:O	8:G:120:ILE:CD1	2.46	0.63
1:A:176:C:H2'	1:A:176:C:O2	1.98	0.63
1:A:384:G:H2'	1:A:385:C:H6	1.60	0.63
1:A:656:C:H3'	1:A:656:C:C6	2.33	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:C:11:ARG:HB2	4:C:15:THR:OG1	1.98	0.63
4:C:123:GLN:NE2	4:C:140:ARG:HH22	1.96	0.63
16:O:56:LEU:HD23	16:O:57:LEU:N	2.13	0.63
1:A:1103:C:C5'	3:B:98:LEU:CD2	2.76	0.63
6:E:80:ILE:HD12	6:E:80:ILE:N	2.09	0.63
18:Q:13:ASP:C	18:Q:15:MET:H	2.07	0.63
1:A:1367:C:O2	1:A:1368:G:C8	2.52	0.63
4:C:88:ARG:HG2	4:C:91:LEU:HD22	1.81	0.63
8:G:18:TYR:CD2	8:G:59:LEU:HD13	2.33	0.63
1:A:549:C:H2'	1:A:550:G:H8	1.64	0.63
1:A:818:G:H3'	1:A:819:A:H5'	1.78	0.63
1:A:858:G:O2'	1:A:859:A:H5'	1.99	0.63
1:A:985:C:O2	1:A:985:C:H2'	1.99	0.63
6:E:13:ILE:HD12	6:E:13:ILE:N	2.10	0.63
1:A:355:C:H5''	1:A:389:A:OP2	1.99	0.63
1:A:879:C:O2'	1:A:880:C:H5'	1.98	0.63
14:M:89:GLY:O	14:M:92:HIS:N	2.23	0.63
16:O:78:TYR:O	16:O:80:ALA:N	2.32	0.63
1:A:826:C:H2'	1:A:827:U:C6	2.32	0.63
1:A:1459:C:H2'	1:A:1460:A:H8	1.64	0.63
3:B:25:ASN:ND2	3:B:27:LYS:HB2	2.13	0.63
3:B:118:LEU:CB	3:B:142:LEU:HD12	2.24	0.63
13:L:31:PRO:HB2	13:L:32:PHE:CE2	2.33	0.63
18:Q:40:LYS:HD3	18:Q:42:TYR:OH	1.98	0.63
1:A:839:U:H5'	1:A:840:C:H5	1.64	0.63
1:A:1068:G:N7	1:A:1094:G:C8	2.67	0.63
1:A:1391:U:H2'	1:A:1392:G:H8	1.60	0.63
4:C:188:LEU:O	4:C:189:ALA:CB	2.46	0.63
6:E:48:ALA:CB	6:E:49:PRO:HD2	2.23	0.63
17:P:67:THR:HG23	17:P:68:ASP:H	1.62	0.63
20:S:78:ARG:CG	20:S:78:ARG:HH11	2.12	0.63
1:A:497:A:N3	1:A:497:A:H2'	2.14	0.62
1:A:1305:G:H2'	1:A:1331:G:H22	1.63	0.62
3:B:25:ASN:ND2	3:B:27:LYS:H	1.97	0.62
8:G:68:ASN:O	8:G:138:LYS:HE2	1.99	0.62
1:A:1235:U:C2'	1:A:1236:A:O5'	2.46	0.62
1:A:1263:C:O2	1:A:1263:C:H2'	1.97	0.62
1:A:1526:G:H2'	1:A:1527:C:H5'	1.81	0.62
1:A:1067:A:O2'	1:A:1093:A:O3'	2.14	0.62
1:A:1406:U:H2'	1:A:1407:C:H6	1.63	0.62
4:C:123:GLN:HE22	4:C:140:ARG:HH22	1.45	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:734:G:H2'	1:A:735:C:H6	1.63	0.62
1:A:781:A:H2'	1:A:781:A:N3	2.14	0.62
1:A:1053:G:O2'	1:A:1054:C:OP2	2.18	0.62
1:A:1247:U:C6	1:A:1247:U:H3'	2.35	0.62
1:A:1503:A:C8	1:A:1531:A:N3	2.68	0.62
5:D:21:LEU:CD1	5:D:26:CYS:SG	2.87	0.62
17:P:34:GLU:OE1	17:P:55:ARG:NH1	2.31	0.62
20:S:9:VAL:HG12	20:S:10:PHE:H	1.63	0.62
1:A:235:C:O2'	1:A:236:G:H5'	1.98	0.62
1:A:268:C:H2'	1:A:269:C:H6	1.64	0.62
1:A:1399:C:C4'	1:A:1400:C:H5''	2.22	0.62
5:D:10:ARG:O	5:D:10:ARG:HG2	1.99	0.62
6:E:20:GLN:O	6:E:21:ALA:C	2.42	0.62
8:G:23:VAL:CG1	8:G:27:ILE:HD11	2.24	0.62
10:I:9:ARG:HG3	10:I:14:VAL:CG1	2.28	0.62
1:A:245:C:O2	1:A:283:C:N3	2.32	0.62
1:A:644:G:C6	1:A:645:C:C5	2.87	0.62
9:H:103:VAL:O	9:H:104:ARG:HB2	1.98	0.62
14:M:81:LEU:CD2	14:M:81:LEU:N	2.57	0.62
16:O:76:GLU:O	16:O:77:ARG:C	2.42	0.62
1:A:1055:A:C2	1:A:1056:U:H1'	2.34	0.62
1:A:1279:A:H4'	1:A:1280:A:OP1	1.99	0.62
1:A:1305:G:C8	1:A:1305:G:OP2	2.53	0.62
5:D:32:ALA:O	5:D:36:ARG:N	2.32	0.62
11:J:47:PHE:CD2	15:N:34:TYR:CE2	2.83	0.62
14:M:81:LEU:H	14:M:81:LEU:HD23	1.64	0.62
1:A:42:G:C2	1:A:401:C:O2	2.53	0.62
1:A:983:A:OP1	15:N:3:ARG:NH2	2.33	0.62
1:A:1229:A:C2	1:A:1230:C:C4	2.88	0.62
5:D:7:PRO:O	5:D:10:ARG:HB3	1.98	0.62
6:E:142:LEU:C	6:E:143:ARG:HG2	2.25	0.62
13:L:40:VAL:O	13:L:40:VAL:HG12	1.99	0.62
18:Q:9:VAL:HG21	18:Q:84:LEU:HD13	1.80	0.62
1:A:314:C:H2'	1:A:315:A:H5'	1.82	0.62
1:A:670:G:H1	1:A:736:C:N4	1.96	0.62
1:A:1167:A:H8	1:A:1167:A:O5'	1.83	0.62
5:D:8:VAL:C	5:D:10:ARG:N	2.52	0.62
6:E:137:GLU:HG2	6:E:140:ARG:HH11	1.65	0.62
8:G:108:ALA:O	8:G:110:GLN:N	2.32	0.62
9:H:117:GLY:O	9:H:119:LEU:HG	1.99	0.62
10:I:111:ARG:HH11	10:I:111:ARG:HG3	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:K:33:THR:HG21	12:K:37:GLY:HA2	1.81	0.62
16:O:4:THR:N	16:O:7:GLU:OE2	2.27	0.62
19:R:39:VAL:HG13	19:R:40:LEU:HD23	1.80	0.62
1:A:925:G:H1	1:A:1391:U:H3	1.46	0.62
3:B:25:ASN:HD22	3:B:27:LYS:H	1.47	0.62
13:L:75:HIS:HD2	13:L:77:LEU:N	1.98	0.62
14:M:81:LEU:HA	14:M:84:ILE:HG12	1.81	0.62
15:N:37:PHE:CE2	15:N:53:LEU:HD13	2.33	0.62
17:P:6:LEU:HD23	17:P:17:TYR:CG	2.34	0.62
21:T:89:ARG:HH22	21:T:106:ALA:HB2	1.65	0.62
1:A:256:U:O2'	1:A:257:G:H5'	2.00	0.61
1:A:499:A:H4'	1:A:500:G:H5'	1.82	0.61
1:A:653:A:H2'	1:A:653:A:N3	2.15	0.61
1:A:662:G:O2'	1:A:836:G:H5''	2.00	0.61
6:E:27:ARG:HG3	6:E:28:PHE:H	1.62	0.61
21:T:74:LYS:CG	21:T:75:ASN:H	2.06	0.61
1:A:299:G:H2'	1:A:300:A:C8	2.35	0.61
1:A:975:A:C8	1:A:975:A:C5'	2.80	0.61
1:A:1249:C:C6	1:A:1249:C:H3'	2.35	0.61
7:F:50:TYR:CE1	19:R:77:GLY:HA3	2.35	0.61
17:P:50:LYS:C	17:P:51:VAL:CG2	2.73	0.61
17:P:57:ARG:NH1	17:P:79:VAL:O	2.33	0.61
18:Q:83:ASP:OD1	18:Q:84:LEU:N	2.33	0.61
1:A:96:G:H5''	1:A:97:G:OP2	2.00	0.61
1:A:149:A:C2	1:A:150:C:N3	2.68	0.61
1:A:1377:A:C8	1:A:1377:A:C3'	2.83	0.61
1:A:1508:G:H2'	1:A:1509:C:H6	1.65	0.61
1:A:1057:G:C5	1:A:1204:A:C2	2.88	0.61
1:A:1147:C:H4'	10:I:5:TYR:CE1	2.35	0.61
1:A:1316:G:N1	1:A:1319:A:OP2	2.31	0.61
1:A:1455:G:C3'	1:A:1459:C:OP2	2.48	0.61
1:A:1521:G:C2	1:A:1522:U:C2	2.89	0.61
13:L:22:SER:OG	13:L:23:LYS:N	2.34	0.61
14:M:32:GLU:O	14:M:35:GLU:HB3	2.00	0.61
1:A:988:G:N2	1:A:1218:C:C2	2.68	0.61
3:B:16:HIS:HB2	3:B:210:SER:HB3	1.83	0.61
3:B:100:GLY:CA	3:B:176:GLU:OE2	2.33	0.61
3:B:162:ILE:C	3:B:185:ILE:HD12	2.24	0.61
15:N:27:CYS:SG	15:N:29:ARG:HG3	2.41	0.61
18:Q:74:LEU:HD23	18:Q:74:LEU:C	2.26	0.61
19:R:36:ASN:HB3	19:R:39:VAL:HG12	1.80	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:262:A:C6	1:A:263:A:N6	2.69	0.61
1:A:689:C:P	12:K:46:GLY:HA3	2.41	0.61
1:A:1092:A:H8	1:A:1092:A:O5'	1.83	0.61
10:I:79:LEU:HD23	10:I:83:ARG:HD2	1.82	0.61
19:R:87:ARG:HB3	19:R:87:ARG:HH11	1.64	0.61
1:A:193:C:H1'	21:T:60:GLU:OE1	2.00	0.61
1:A:657:G:H2'	1:A:658:G:C8	2.36	0.61
1:A:666:G:H5'	1:A:726:C:H1'	1.83	0.61
1:A:801:U:O2'	1:A:802:A:H5'	2.01	0.61
1:A:979:C:C5	1:A:980:C:C5	2.86	0.61
1:A:1103:C:H5''	3:B:98:LEU:HD21	1.81	0.61
1:A:1142:G:H2'	1:A:1142:G:N3	2.14	0.61
1:A:1345:U:C2	1:A:1377:A:N1	2.69	0.61
3:B:51:LEU:O	3:B:55:PHE:HD1	1.84	0.61
3:B:223:ILE:HD12	3:B:226:ARG:HH11	1.64	0.61
11:J:49:VAL:CA	11:J:50:ILE:HD12	2.28	0.61
1:A:298:A:H5''	1:A:299:G:OP2	2.00	0.61
1:A:677:U:H3	1:A:713:G:H22	1.48	0.61
1:A:1161:C:H2'	1:A:1162:C:C5	2.35	0.61
1:A:1429:C:H42	1:A:1471:G:H1	1.48	0.61
1:A:1496:C:N4	25:A:1637:AB9:O28	2.33	0.61
6:E:80:ILE:CG2	9:H:104:ARG:NH2	2.62	0.61
10:I:48:GLU:N	10:I:49:PRO:CD	2.63	0.61
10:I:86:VAL:HG13	10:I:92:TYR:HB2	1.81	0.61
19:R:19:LYS:O	19:R:20:ALA:CB	2.48	0.61
19:R:59:SER:HB3	19:R:62:GLU:CD	2.26	0.61
1:A:325:A:H2'	1:A:326:G:C8	2.36	0.61
1:A:501:C:H2'	1:A:502:G:C8	2.35	0.61
1:A:502:G:H2'	1:A:503:C:H6	1.65	0.61
1:A:850:U:C6	1:A:850:U:C3'	2.82	0.61
1:A:977:A:H2'	1:A:978:A:C5'	2.30	0.61
1:A:1372:U:H2'	1:A:1373:G:O4'	2.00	0.61
1:A:1495:U:C2	1:A:1496:C:C5	2.88	0.61
4:C:131:ARG:O	4:C:132:ARG:C	2.43	0.61
1:A:148:G:H2'	1:A:149:A:H8	1.66	0.61
1:A:614:A:C2	1:A:627:G:C2	2.88	0.61
1:A:818:G:O2'	1:A:819:A:C5'	2.49	0.61
1:A:854:G:C6	1:A:855:G:N7	2.69	0.61
1:A:1075:C:C2'	1:A:1076:C:H5'	2.30	0.61
1:A:1203:C:O5'	1:A:1203:C:H6	1.83	0.61
1:A:1208:C:C4	1:A:1209:C:H5	2.19	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:D:67:ILE:HG22	5:D:68:TYR:HD1	1.65	0.61
13:L:39:VAL:O	13:L:41:ARG:N	2.32	0.61
18:Q:82:MET:HA	18:Q:85:VAL:HG23	1.82	0.61
1:A:264:U:H4'	18:Q:63:ARG:HD3	1.83	0.60
1:A:394:G:H2'	1:A:395:C:H6	1.66	0.60
1:A:659:U:OP2	16:O:8:LYS:HE2	2.01	0.60
1:A:803:G:H8	1:A:803:G:O5'	1.84	0.60
1:A:1113:C:N4	1:A:1187:G:H1	1.97	0.60
1:A:1160:G:H2'	1:A:1161:C:O5'	2.00	0.60
1:A:1333:A:H2'	1:A:1334:G:O4'	2.01	0.60
1:A:1495:U:H2'	1:A:1496:C:H6	1.65	0.60
3:B:97:TRP:HH2	3:B:176:GLU:CD	2.09	0.60
3:B:212:GLN:O	3:B:213:LEU:C	2.43	0.60
8:G:108:ALA:C	8:G:110:GLN:H	2.09	0.60
10:I:57:GLY:O	10:I:58:ARG:CG	2.49	0.60
13:L:55:VAL:CG1	13:L:56:ALA:N	2.63	0.60
1:A:256:U:C2'	1:A:257:G:H5'	2.31	0.60
1:A:459:G:H3'	1:A:460:A:C5'	2.31	0.60
1:A:507:C:H2'	1:A:508:C:C5	2.36	0.60
1:A:537:G:H2'	1:A:538:G:H8	1.65	0.60
1:A:549:C:H2'	1:A:550:G:C8	2.35	0.60
1:A:620:C:H2'	1:A:621:A:O4'	2.00	0.60
1:A:803:G:H2'	1:A:804:U:O4'	2.00	0.60
1:A:922:G:C2	1:A:1396:A:C2	2.89	0.60
1:A:1361(A):C:C2'	1:A:1362:C:H5''	2.31	0.60
1:A:1525:G:OP2	12:K:120:ARG:NH2	2.34	0.60
3:B:28:PHE:O	3:B:30:ARG:N	2.35	0.60
4:C:128:PHE:HE2	4:C:132:ARG:HH11	1.48	0.60
6:E:141:GLN:O	6:E:143:ARG:NH1	2.34	0.60
8:G:66:VAL:HG12	8:G:67:GLU:N	2.15	0.60
10:I:118:LYS:O	10:I:119:ALA:HB3	2.01	0.60
11:J:47:PHE:CD2	15:N:34:TYR:HE2	2.19	0.60
1:A:357:G:H2'	1:A:358:U:H6	1.66	0.60
4:C:39:ILE:C	4:C:41:GLY:H	2.09	0.60
1:A:308:C:H2'	1:A:309:G:H8	1.65	0.60
1:A:627:G:H2'	1:A:628:G:H8	1.65	0.60
1:A:1151:A:O2'	1:A:1152:A:O5'	2.17	0.60
1:A:1343:G:H2'	1:A:1344:C:H6	1.61	0.60
2:Z:4:U:H2'	2:Z:5:C:C6	2.36	0.60
14:M:8:GLU:C	14:M:9:ILE:HG13	2.25	0.60
16:O:3:ILE:HG21	16:O:34:LEU:CD1	2.32	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:O:39:LEU:CD1	16:O:56:LEU:HB2	2.31	0.60
17:P:75:ARG:O	17:P:78:GLY:N	2.28	0.60
21:T:63:ILE:O	21:T:65:LYS:N	2.35	0.60
1:A:410:G:H5'	5:D:30:LYS:NZ	2.16	0.60
1:A:959:A:N1	1:A:1222:G:C4'	2.65	0.60
1:A:964:A:H5''	1:A:965:A:OP2	2.01	0.60
1:A:1116:C:C2'	1:A:1117:G:H5''	2.31	0.60
1:A:1498:U:O2'	1:A:1499:A:OP2	2.18	0.60
3:B:168:THR:HG21	3:B:191:ASP:O	2.02	0.60
5:D:5:ILE:O	5:D:5:ILE:CG2	2.49	0.60
10:I:50:LEU:CD1	10:I:81:ILE:HG21	2.32	0.60
16:O:32:LEU:HD12	16:O:63:ARG:HB2	1.81	0.60
17:P:78:GLY:C	17:P:80:PHE:H	2.09	0.60
1:A:865:A:O2'	1:A:866:C:H5'	2.01	0.60
4:C:111:LEU:HD21	4:C:146:ALA:H	1.66	0.60
6:E:102:ALA:HB2	6:E:120:THR:OG1	2.01	0.60
8:G:137:LYS:HA	8:G:140:ASP:HB2	1.84	0.60
16:O:78:TYR:O	16:O:79:ARG:C	2.44	0.60
1:A:190(L):U:C2	21:T:105:SER:HB2	2.37	0.60
1:A:1262:C:O2'	1:A:1263:C:O5'	2.19	0.60
1:A:1296:C:H4'	1:A:1302:U:C5	2.36	0.60
1:A:1497:G:C2'	1:A:1498:U:C5'	2.74	0.60
5:D:65:ARG:O	5:D:66:ARG:C	2.43	0.60
5:D:92:VAL:HG12	5:D:96:LEU:HD13	1.83	0.60
6:E:91:LEU:HD23	6:E:120:THR:HG23	1.84	0.60
8:G:120:ILE:O	8:G:124:LEU:HD12	2.01	0.60
11:J:79:ARG:HD3	11:J:82:ILE:HD12	1.82	0.60
18:Q:58:GLU:C	18:Q:59:ILE:HD13	2.27	0.60
1:A:543:C:O2'	1:A:544:G:H5'	2.01	0.60
1:A:789:U:O2	1:A:791:G:C8	2.54	0.60
1:A:807:A:H2'	1:A:808:C:C6	2.37	0.60
1:A:945:G:C2	1:A:946:A:C8	2.89	0.60
1:A:1262:C:O2'	1:A:1263:C:H6	1.85	0.60
1:A:1392:G:N2	1:A:1502:A:H8	2.00	0.60
3:B:77:ALA:CB	3:B:211:ILE:HD13	2.21	0.60
3:B:114:ARG:HH11	3:B:118:LEU:CD1	2.04	0.60
4:C:113:ALA:N	4:C:114:PRO:CD	2.64	0.60
6:E:15:ARG:CG	6:E:15:ARG:NH1	2.59	0.60
1:A:393:A:N3	1:A:394:G:C8	2.70	0.60
1:A:491:G:H2'	1:A:492:G:O4'	2.01	0.60
1:A:737:A:H1'	7:F:73:ASN:ND2	2.17	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:981:U:H5''	1:A:982:U:O5'	2.01	0.60
1:A:1101:A:H4'	1:A:1102:A:O5'	2.01	0.60
1:A:1230:C:O2'	1:A:1231:G:H5'	2.02	0.60
4:C:113:ALA:N	4:C:114:PRO:HD3	2.17	0.60
14:M:19:LEU:O	14:M:22:ILE:HD12	2.01	0.60
1:A:181:G:H4'	1:A:182:U:H5'	1.84	0.60
1:A:201:C:N4	1:A:203:U:C2	2.70	0.60
1:A:322:C:H4'	21:T:23:ARG:HD2	1.83	0.60
1:A:882:C:C2'	1:A:883:C:H5'	2.32	0.60
1:A:916:G:H2'	1:A:917:G:H8	1.66	0.60
1:A:932:C:H6	1:A:932:C:H5''	1.66	0.60
1:A:1229:A:H2'	1:A:1230:C:C6	2.37	0.60
3:B:75:LYS:HA	3:B:78:GLN:HB2	1.83	0.60
3:B:97:TRP:CZ2	3:B:102:LEU:HD13	2.36	0.60
6:E:58:ALA:O	6:E:59:GLY:C	2.45	0.60
8:G:15:ASP:CG	8:G:17:VAL:H	2.09	0.60
13:L:75:HIS:HD2	13:L:76:ASN:N	1.96	0.60
1:A:283:C:C2	1:A:284:G:C8	2.90	0.59
1:A:818:G:O2'	1:A:819:A:H5'	2.01	0.59
1:A:1225:A:H2'	1:A:1225:A:N3	2.16	0.59
7:F:62:TRP:C	7:F:63:TYR:CD2	2.77	0.59
9:H:104:ARG:O	9:H:106:GLY:N	2.35	0.59
10:I:50:LEU:HD11	10:I:81:ILE:CG2	2.32	0.59
1:A:52:G:O2'	1:A:53:A:H5'	2.01	0.59
1:A:200:G:C5'	1:A:200:G:C8	2.85	0.59
1:A:1179:A:H2'	1:A:1180:A:O4'	2.02	0.59
3:B:105:PHE:C	3:B:105:PHE:CD2	2.78	0.59
12:K:123:LYS:C	12:K:125:PHE:H	2.10	0.59
1:A:136:C:H42	1:A:227:G:H1	1.50	0.59
1:A:390:C:H2'	1:A:391:G:H8	1.66	0.59
1:A:543:C:C2'	1:A:544:G:H5'	2.32	0.59
1:A:1068:G:N3	1:A:1191:A:C2	2.70	0.59
1:A:1282:C:O2	1:A:1282:C:H2'	2.02	0.59
1:A:1507:A:H2'	1:A:1508:G:C8	2.36	0.59
4:C:35:GLU:OE1	4:C:95:THR:HG21	2.01	0.59
4:C:52:LEU:N	4:C:52:LEU:CD2	2.63	0.59
5:D:11:LEU:HA	5:D:14:ARG:H	1.67	0.59
6:E:76:ILE:HG22	6:E:93:PRO:HG3	1.84	0.59
8:G:47:CYS:O	8:G:50:ILE:HG22	2.03	0.59
15:N:24:CYS:HB3	15:N:28:GLY:H	1.65	0.59
1:A:22:G:H2'	1:A:23:C:C6	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:192:U:H4'	21:T:103:GLY:H	1.66	0.59
1:A:286:G:C5	1:A:287:U:C5	2.90	0.59
1:A:314:C:C2'	1:A:315:A:H5'	2.31	0.59
1:A:878:G:H5'	9:H:89:PRO:HG2	1.84	0.59
1:A:1377:A:H3'	1:A:1377:A:H8	1.64	0.59
6:E:48:ALA:HB1	6:E:49:PRO:CD	2.25	0.59
8:G:24:THR:O	8:G:28:ASN:ND2	2.36	0.59
13:L:45:PRO:HG3	13:L:53:ARG:CD	2.32	0.59
15:N:6:LEU:HD23	15:N:21:TYR:OH	2.02	0.59
1:A:938:A:H1'	1:A:1376:U:O2'	2.02	0.59
1:A:977:A:C2'	1:A:978:A:C5'	2.80	0.59
1:A:1121:U:H2'	1:A:1122:U:C6	2.37	0.59
1:A:1513:A:N1	1:A:1523:G:C6	2.70	0.59
5:D:8:VAL:O	5:D:10:ARG:N	2.36	0.59
9:H:85:ARG:HD3	9:H:87:SER:O	2.01	0.59
9:H:104:ARG:O	9:H:105:ARG:C	2.45	0.59
1:A:181:G:H4'	1:A:182:U:C5'	2.32	0.59
1:A:362:G:C8	1:A:362:G:H3'	2.37	0.59
1:A:448:A:C4	1:A:487:A:C2	2.90	0.59
1:A:1152:A:O3'	11:J:13:HIS:NE2	2.36	0.59
1:A:1158:C:C5	1:A:1160:G:C1'	2.84	0.59
1:A:1316:G:H4'	15:N:18:VAL:HG11	1.84	0.59
7:F:8:ILE:HD12	7:F:61:LEU:HB3	1.85	0.59
1:A:836:G:C5	1:A:851:G:C6	2.91	0.59
1:A:1269:A:N1	1:A:1312:G:O2'	2.35	0.59
1:A:1366:C:H5''	1:A:1367:C:OP2	2.03	0.59
5:D:64:LEU:O	5:D:64:LEU:HD13	2.03	0.59
6:E:11:ILE:CG1	6:E:31:LEU:HB3	2.33	0.59
10:I:34:ASN:H	10:I:34:ASN:ND2	2.00	0.59
11:J:50:ILE:H	11:J:60:ARG:HD2	1.66	0.59
12:K:24:SER:O	12:K:26:ASN:N	2.36	0.59
1:A:570:G:C4	1:A:571:U:C5	2.91	0.59
1:A:972:C:O2'	11:J:57:LYS:HB3	2.02	0.59
1:A:1157:A:O4'	1:A:1158:C:O2	2.20	0.59
1:A:1495:U:H2'	1:A:1496:C:C6	2.38	0.59
11:J:45:ARG:O	11:J:64:GLU:HA	2.02	0.59
12:K:119:CYS:O	12:K:121:PRO:HD3	2.02	0.59
14:M:87:TYR:HA	14:M:90:LEU:HD12	1.85	0.59
16:O:74:ASP:O	16:O:76:GLU:N	2.36	0.59
1:A:253:U:H2'	1:A:254:G:H8	1.68	0.59
1:A:1258:G:OP2	1:A:1258:G:C8	2.56	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1259:C:O2'	1:A:1284:C:H1'	2.02	0.59
1:A:1455:G:O3'	1:A:1459:C:OP2	2.19	0.59
1:A:1490:C:C2'	1:A:1491:G:H5''	2.32	0.59
5:D:99:SER:O	5:D:140:VAL:HG23	2.02	0.59
11:J:7:LYS:HG3	11:J:71:LEU:CD2	2.33	0.59
1:A:45:U:H2'	1:A:46:G:C8	2.37	0.59
1:A:300:A:H8	1:A:300:A:O5'	1.85	0.59
1:A:767:A:H2'	1:A:768:A:O4'	2.03	0.59
1:A:806:C:O2'	1:A:807:A:H5'	2.03	0.59
3:B:193:ASP:HB3	3:B:196:LEU:HD11	1.85	0.59
8:G:124:LEU:O	8:G:127:ALA:HB3	2.02	0.59
10:I:111:ARG:HG3	10:I:111:ARG:NH1	2.17	0.59
13:L:61:THR:C	13:L:63:GLY:H	2.10	0.59
1:A:356:A:C2'	1:A:357:G:H5'	2.32	0.58
1:A:394:G:H2'	1:A:395:C:C6	2.38	0.58
1:A:583:A:H5''	1:A:584:G:OP2	2.02	0.58
1:A:1055:A:C2	1:A:1056:U:C1'	2.85	0.58
1:A:1057:G:H2'	1:A:1058:G:H8	1.66	0.58
4:C:35:GLU:O	4:C:36:ASP:C	2.46	0.58
20:S:11:VAL:HG12	20:S:12:ASP:O	2.03	0.58
1:A:65:U:C5	1:A:381:C:C4	2.91	0.58
1:A:883:C:C2'	1:A:884:U:O5'	2.51	0.58
1:A:1063:C:H2'	1:A:1064:G:C8	2.37	0.58
1:A:1490:C:H5''	1:A:1491:G:OP2	2.03	0.58
1:A:1523:G:C5	1:A:1524:C:C5	2.91	0.58
3:B:25:ASN:C	3:B:25:ASN:ND2	2.56	0.58
3:B:92:TYR:CE1	3:B:151:GLY:HA3	2.38	0.58
5:D:63:LYS:HE2	5:D:197:PRO:O	2.04	0.58
6:E:30:ALA:O	6:E:45:PHE:CD1	2.51	0.58
14:M:78:ILE:HG23	14:M:79:LYS:N	2.17	0.58
17:P:21:VAL:HG21	17:P:59:TRP:NE1	2.19	0.58
18:Q:62:SER:OG	18:Q:72:ARG:HG3	2.03	0.58
1:A:1251:A:H4'	10:I:12:GLU:OE1	2.03	0.58
1:A:1266:G:H21	1:A:1270:C:H42	1.50	0.58
4:C:141:VAL:O	4:C:146:ALA:HB2	2.03	0.58
5:D:170:VAL:CG2	5:D:174:LEU:HB2	2.34	0.58
9:H:30:ARG:HG2	9:H:30:ARG:NH1	2.16	0.58
1:A:577:G:H1'	1:A:816:A:N3	2.18	0.58
1:A:604:G:C5	1:A:605:U:C5	2.91	0.58
1:A:1078:U:H5''	1:A:1079:G:OP2	2.04	0.58
5:D:22:LYS:O	5:D:26:CYS:HB2	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:E:34:VAL:CG2	6:E:62:ALA:HB1	2.33	0.58
14:M:91:ARG:O	14:M:95:GLY:N	2.32	0.58
14:M:91:ARG:NH1	14:M:96:LEU:HD13	2.19	0.58
1:A:1304:G:H1'	1:A:1333:A:H61	1.67	0.58
1:A:1361:G:H2'	1:A:1361(A):C:H5'	1.84	0.58
1:A:1507:A:H2'	1:A:1508:G:H8	1.69	0.58
4:C:191:THR:HG22	4:C:192:THR:N	2.16	0.58
7:F:50:TYR:CE1	19:R:77:GLY:CA	2.86	0.58
1:A:411:A:C8	1:A:413:G:C8	2.92	0.58
1:A:533:A:C5	1:A:536:C:C4	2.92	0.58
1:A:948:C:N3	1:A:1233:G:N2	2.44	0.58
3:B:24:TRP:CD1	3:B:24:TRP:C	2.82	0.58
4:C:72:LYS:O	4:C:74:GLY:N	2.37	0.58
4:C:126:ARG:O	4:C:127:ARG:CB	2.44	0.58
19:R:43:PHE:C	19:R:51:LEU:HD12	2.28	0.58
1:A:407:G:O2'	5:D:116:GLN:CG	2.49	0.58
1:A:580:U:H2'	1:A:581:G:O4'	2.03	0.58
1:A:730:G:N2	1:A:765:G:H5''	2.19	0.58
1:A:1152:A:OP1	11:J:68:HIS:CE1	2.57	0.58
1:A:1255:G:C2'	1:A:1279:A:N6	2.67	0.58
7:F:6:VAL:HG12	7:F:7:ASN:N	2.19	0.58
10:I:13:ALA:HB2	10:I:67:GLY:O	2.02	0.58
12:K:80:VAL:CG2	12:K:103:LEU:HD13	2.33	0.58
14:M:96:LEU:CB	14:M:97:PRO:HD2	2.21	0.58
16:O:13:GLN:O	16:O:15:PHE:N	2.37	0.58
6:E:105:VAL:CG1	6:E:132:ALA:HB2	2.33	0.58
12:K:128:ALA:O	12:K:129:SER:HB2	2.03	0.58
14:M:105:THR:O	14:M:107:ALA:N	2.37	0.58
17:P:4:ILE:HA	17:P:20:VAL:O	2.04	0.58
1:A:376:G:C2	1:A:389:A:N1	2.72	0.58
1:A:378:G:H2'	1:A:379:C:C6	2.39	0.58
1:A:1299:A:C5	1:A:1301:U:O2	2.57	0.58
3:B:102:LEU:CD1	3:B:102:LEU:H	2.16	0.58
5:D:21:LEU:O	5:D:113:SER:HB2	2.04	0.58
5:D:103:ASN:O	5:D:105:VAL:N	2.37	0.58
5:D:104:VAL:CG2	5:D:185:PHE:HD1	2.17	0.58
1:A:437:U:H2'	5:D:123:HIS:HD2	1.69	0.58
1:A:877:C:O2'	9:H:3:THR:HB	2.04	0.58
1:A:981:U:O5'	1:A:981:U:H6	1.87	0.58
3:B:219:VAL:HA	3:B:222:ILE:CD1	2.34	0.58
4:C:6:HIS:NE2	4:C:8:ILE:CG2	2.67	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:D:61:LYS:CE	5:D:62:GLN:NE2	2.62	0.58
11:J:47:PHE:HD2	15:N:34:TYR:CD2	2.21	0.58
13:L:53:ARG:HD3	13:L:93:LEU:HD21	1.85	0.58
1:A:401:C:C6	1:A:401:C:C3'	2.86	0.57
1:A:883:C:H2'	1:A:884:U:O5'	2.03	0.57
1:A:960:U:O2	1:A:960:U:H2'	2.04	0.57
1:A:1103:C:H5'	3:B:98:LEU:CD2	2.34	0.57
1:A:1141:C:O2'	1:A:1142:G:O4'	2.20	0.57
1:A:1189:C:P	11:J:51:ARG:HH22	2.27	0.57
1:A:1270:C:O2'	1:A:1313:U:O2'	2.06	0.57
1:A:1402:C:O2	1:A:1500:A:N1	2.37	0.57
4:C:193:TYR:HE1	4:C:196:LEU:HD21	1.68	0.57
5:D:58:LEU:HD23	5:D:58:LEU:C	2.29	0.57
5:D:62:GLN:O	5:D:66:ARG:HB2	2.03	0.57
13:L:43:VAL:HG22	13:L:44:THR:HG23	1.86	0.57
20:S:62:ILE:HG23	20:S:62:ILE:O	2.02	0.57
21:T:41:VAL:O	21:T:43:LEU:N	2.36	0.57
21:T:56:MET:O	21:T:59:ALA:HB3	2.04	0.57
1:A:685:G:N2	1:A:686:U:C4	2.72	0.57
1:A:1259:C:O2	1:A:1283:G:H1'	2.03	0.57
1:A:1366:C:O2'	11:J:60:ARG:NH2	2.37	0.57
3:B:166:ASP:CG	3:B:205:ASP:HB2	2.29	0.57
5:D:79:PHE:O	5:D:80:GLU:C	2.46	0.57
14:M:90:LEU:O	14:M:93:ARG:N	2.37	0.57
16:O:33:THR:CG2	16:O:63:ARG:NH1	2.47	0.57
1:A:99:C:O3'	1:A:101:A:P	2.63	0.57
1:A:390:C:O3'	17:P:28:ARG:NH2	2.37	0.57
1:A:1103:C:C5'	3:B:98:LEU:HD23	2.33	0.57
1:A:1435:G:H2'	1:A:1436:U:C5	2.38	0.57
4:C:68:VAL:HG12	4:C:70:VAL:CG2	2.34	0.57
6:E:139:LEU:C	6:E:141:GLN:N	2.59	0.57
11:J:46:ARG:HH12	11:J:64:GLU:HB3	1.69	0.57
19:R:45:SER:HB2	19:R:49:LYS:HB2	1.85	0.57
1:A:42:G:H1	1:A:400:C:H42	1.52	0.57
1:A:743:U:H2'	1:A:744:C:C6	2.39	0.57
1:A:1316:G:N2	1:A:1318:A:H3'	2.19	0.57
1:A:1392:G:H2'	1:A:1393:U:C6	2.39	0.57
8:G:92:SER:O	8:G:93:PRO:C	2.48	0.57
1:A:781:A:H5'	1:A:782:A:OP2	2.05	0.57
4:C:173:VAL:O	4:C:173:VAL:HG12	2.05	0.57
16:O:33:THR:HG23	16:O:63:ARG:HH12	1.60	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:175:C:C2	1:A:176:C:C6	2.92	0.57
1:A:1145:C:H4'	1:A:1146:A:O5'	2.04	0.57
1:A:1157:A:O4'	1:A:1158:C:C2	2.58	0.57
1:A:1365:G:C5	1:A:1366:C:C4	2.92	0.57
6:E:89:ILE:HD12	6:E:121:LYS:O	2.05	0.57
1:A:653:A:H5''	9:H:56:LYS:HD3	1.85	0.57
1:A:1060:C:O2'	1:A:1061:G:C5'	2.45	0.57
1:A:1232:U:H2'	1:A:1233:G:H8	1.70	0.57
5:D:138:TYR:C	5:D:138:TYR:HD2	2.12	0.57
6:E:11:ILE:HG13	6:E:31:LEU:HD13	1.87	0.57
8:G:96:GLN:O	8:G:97:GLN:C	2.47	0.57
9:H:17:THR:HB	9:H:78:GLN:HE22	1.70	0.57
1:A:93:G:H3'	1:A:95:U:OP2	2.04	0.57
1:A:254:G:H4'	18:Q:18:THR:HG21	1.86	0.57
1:A:564:C:O2	1:A:564:C:C2'	2.48	0.57
1:A:1518:A:H2'	1:A:1519:A:C8	2.40	0.57
3:B:208:ILE:O	3:B:210:SER:N	2.38	0.57
4:C:56:ASP:N	4:C:56:ASP:OD1	2.37	0.57
5:D:25:ARG:C	5:D:27:TYR:N	2.62	0.57
5:D:199:GLN:HA	5:D:199:GLN:NE2	2.19	0.57
8:G:120:ILE:CD1	8:G:120:ILE:N	2.36	0.57
1:A:17:U:H1'	1:A:1080:A:H1'	1.87	0.57
1:A:157:G:N3	1:A:158:G:C8	2.73	0.57
1:A:315:A:H2'	1:A:315:A:O5'	2.05	0.57
1:A:627:G:H2'	1:A:628:G:C8	2.39	0.57
1:A:1153:C:P	11:J:13:HIS:HE2	2.28	0.57
1:A:1195:C:H3'	1:A:1196:U:C5'	2.31	0.57
1:A:1231:G:H2'	1:A:1232:U:H6	1.67	0.57
1:A:1259:C:H42	1:A:1276:G:H1	1.52	0.57
1:A:1349:A:H2'	1:A:1350:A:C8	2.40	0.57
4:C:8:ILE:HG12	4:C:16:ARG:HG2	1.87	0.57
9:H:31:PHE:O	9:H:32:LYS:C	2.48	0.57
11:J:38:ILE:HB	11:J:72:VAL:H	1.69	0.57
16:O:29:VAL:HG11	16:O:67:LEU:HD21	1.87	0.57
1:A:153:C:H42	1:A:168:G:H1	1.53	0.57
1:A:313:A:H2'	1:A:314:C:C6	2.39	0.57
1:A:338:A:C2	1:A:339:C:C2	2.93	0.57
1:A:448:A:C6	1:A:487:A:N3	2.73	0.57
1:A:506:G:C6	1:A:507:C:C4	2.93	0.57
1:A:1099:G:H2'	1:A:1100:C:C6	2.40	0.57
3:B:180:LEU:HB2	3:B:182:ILE:HD12	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:225:ALA:O	3:B:226:ARG:CB	2.53	0.57
5:D:108:LEU:HG	5:D:174:LEU:HD22	1.87	0.57
6:E:137:GLU:HG2	6:E:140:ARG:NH1	2.20	0.57
13:L:55:VAL:HG12	13:L:56:ALA:H	1.68	0.57
19:R:58:LEU:HD13	19:R:62:GLU:HB2	1.87	0.57
1:A:369:C:N3	1:A:370:C:C5	2.73	0.56
1:A:520:A:H5''	1:A:521:G:OP2	2.05	0.56
1:A:1010:G:N1	1:A:1020:U:O2	2.38	0.56
4:C:173:VAL:O	4:C:175:LEU:N	2.34	0.56
7:F:53:ALA:C	7:F:54:LYS:HG2	2.28	0.56
11:J:76:ASN:CB	11:J:78:ASN:ND2	2.67	0.56
17:P:6:LEU:HD23	17:P:17:TYR:CD2	2.39	0.56
1:A:124:G:H2'	1:A:125:U:C6	2.39	0.56
1:A:397:A:H3'	1:A:397:A:N3	2.20	0.56
1:A:705:U:H5''	1:A:706:A:OP2	2.05	0.56
1:A:814:A:N7	1:A:816:A:C4	2.73	0.56
1:A:914:A:C2	1:A:915:A:N9	2.73	0.56
1:A:941:G:N1	1:A:942:G:C8	2.73	0.56
5:D:162:LEU:CD2	5:D:178:VAL:HG12	2.32	0.56
10:I:47:LEU:C	10:I:49:PRO:CD	2.74	0.56
20:S:78:ARG:HH11	20:S:78:ARG:HB3	1.70	0.56
1:A:119:A:H5''	1:A:120:A:H5'	1.86	0.56
1:A:524:G:H2'	1:A:525:C:C6	2.40	0.56
1:A:736:C:H2'	1:A:737:A:H8	1.68	0.56
1:A:946:A:C2	1:A:947:G:C5	2.93	0.56
1:A:1184:G:O2'	1:A:1185:G:H5'	2.05	0.56
1:A:1323:G:H2'	1:A:1324:A:H8	1.65	0.56
1:A:1348:U:C2	1:A:1349:A:C8	2.93	0.56
3:B:78:GLN:O	3:B:94:ASN:OD1	2.24	0.56
5:D:26:CYS:CA	5:D:31:CYS:HB2	2.17	0.56
5:D:199:GLN:HE21	5:D:199:GLN:C	2.13	0.56
6:E:15:ARG:O	6:E:16:THR:C	2.48	0.56
6:E:77:PRO:HB2	6:E:78:HIS:HD2	1.71	0.56
15:N:26:ARG:HH22	15:N:47:LEU:CD2	2.18	0.56
20:S:78:ARG:HH11	20:S:78:ARG:CB	2.18	0.56
1:A:243:A:C2	1:A:246:A:C8	2.93	0.56
1:A:455:C:H42	1:A:477:G:H1	1.52	0.56
1:A:533:A:O2'	1:A:534:U:H5''	2.05	0.56
1:A:1066:C:C2'	1:A:1067:A:H5'	2.35	0.56
1:A:1305:G:OP2	1:A:1305:G:H8	1.87	0.56
5:D:199:GLN:HG3	5:D:202:LEU:HB2	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:H:56:LYS:O	9:H:58:TYR:HD1	1.88	0.56
14:M:49:THR:C	14:M:51:ALA:H	2.13	0.56
1:A:166:G:H2'	1:A:167:G:O5'	2.06	0.56
1:A:328:C:H4'	1:A:329:A:C5'	2.35	0.56
1:A:502:G:C2	1:A:503:C:C2	2.93	0.56
1:A:570:G:C2	1:A:571:U:C5	2.94	0.56
1:A:959:A:N1	1:A:1222:G:H4'	2.19	0.56
1:A:1511:G:C6	1:A:1512:U:N3	2.74	0.56
3:B:213:LEU:O	3:B:217:ARG:HG2	2.05	0.56
6:E:144:THR:O	6:E:145:LYS:C	2.47	0.56
10:I:6:GLY:N	10:I:84:ALA:HB2	2.20	0.56
1:A:279:A:OP2	18:Q:95:TYR:OH	2.22	0.56
1:A:1348:U:H6	1:A:1348:U:H5'	1.71	0.56
5:D:150:GLU:HA	5:D:153:ARG:CB	2.34	0.56
7:F:99:ALA:O	7:F:100:ASN:HB2	2.04	0.56
16:O:36:ILE:HG13	16:O:59:MET:HE2	1.88	0.56
18:Q:5:VAL:HA	18:Q:59:ILE:O	2.05	0.56
1:A:426:G:H2'	1:A:427:U:O4'	2.06	0.56
1:A:865:A:C2'	1:A:866:C:H5'	2.35	0.56
1:A:1025:U:OP1	1:A:1025:U:H4'	2.03	0.56
1:A:1139:G:H4'	1:A:1140:C:C5'	2.35	0.56
1:A:1206:G:C4	1:A:1207:G:C8	2.94	0.56
3:B:223:ILE:HG23	3:B:224:GLN:N	2.20	0.56
9:H:104:ARG:C	9:H:106:GLY:N	2.63	0.56
12:K:122:LYS:O	12:K:123:LYS:C	2.48	0.56
21:T:14:LYS:O	21:T:17:ARG:HB2	2.06	0.56
21:T:75:ASN:O	21:T:76:ALA:C	2.47	0.56
1:A:55:A:H2'	1:A:56:U:H6	1.70	0.56
1:A:168:G:O2'	1:A:169:C:H5'	2.05	0.56
1:A:696:A:O5'	1:A:696:A:H8	1.89	0.56
1:A:1190:G:O2'	1:A:1191:A:O5'	2.17	0.56
1:A:1499:A:O2'	1:A:1500:A:H5'	2.06	0.56
3:B:85:ALA:O	3:B:88:ALA:O	2.23	0.56
5:D:13:ARG:CD	5:D:38:TYR:O	2.51	0.56
1:A:665:A:H2'	1:A:732:C:O2	2.06	0.56
1:A:858:G:N2	1:A:870:U:OP2	2.35	0.56
1:A:949:A:H1'	1:A:1364:U:H3	1.70	0.56
1:A:1017:G:H8	1:A:1017:G:O5'	1.89	0.56
5:D:41:GLY:C	5:D:43:HIS:H	2.14	0.56
7:F:76:ALA:C	7:F:78:GLU:N	2.64	0.56
9:H:14:ARG:HB3	9:H:14:ARG:NH1	2.20	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:40:C:H5''	1:A:41:G:OP2	2.06	0.56
1:A:200:G:H5'	1:A:200:G:C8	2.41	0.56
1:A:690:G:H2'	1:A:691:G:O4'	2.05	0.56
1:A:1148:U:OP1	10:I:7:THR:HG21	2.06	0.56
1:A:1235:U:C6	1:A:1235:U:C3'	2.87	0.56
3:B:44:LEU:O	3:B:47:THR:HB	2.05	0.56
14:M:108:ARG:O	14:M:109:THR:C	2.48	0.56
16:O:46:HIS:C	16:O:48:LYS:N	2.58	0.56
16:O:74:ASP:C	16:O:76:GLU:H	2.13	0.56
21:T:29:LYS:O	21:T:32:ALA:HB3	2.06	0.56
1:A:148:G:N3	1:A:149:A:C8	2.75	0.55
1:A:160:A:C6	1:A:346:G:O6	2.60	0.55
1:A:267:C:C2'	1:A:268:C:H5'	2.36	0.55
1:A:408:A:H3'	1:A:408:A:C8	2.41	0.55
1:A:1218:C:H2'	1:A:1219:U:C6	2.40	0.55
5:D:206:PHE:CD1	5:D:206:PHE:O	2.59	0.55
6:E:35:GLY:N	6:E:112:LEU:HD13	2.21	0.55
7:F:97:PHE:CB	19:R:32:ARG:HH21	2.19	0.55
10:I:79:LEU:O	10:I:80:GLY:C	2.49	0.55
1:A:193:C:C2	1:A:194:C:C5	2.93	0.55
1:A:375:U:H2'	1:A:376:G:C8	2.41	0.55
1:A:646:U:H2'	1:A:647:C:C6	2.41	0.55
1:A:1103:C:H5''	3:B:98:LEU:CD2	2.36	0.55
3:B:104:ASN:OD1	3:B:107:THR:OG1	2.24	0.55
5:D:120:LEU:HD23	5:D:125:HIS:HB2	1.87	0.55
6:E:13:ILE:CD1	6:E:13:ILE:O	2.54	0.55
8:G:115:ARG:HB3	8:G:118:VAL:HG23	1.86	0.55
9:H:20:TYR:HD1	9:H:65:TYR:CE2	2.24	0.55
9:H:86:ILE:HG21	9:H:133:LEU:HB3	1.88	0.55
12:K:33:THR:OG1	12:K:37:GLY:C	2.49	0.55
1:A:60:A:H5'	1:A:60:A:C8	2.41	0.55
1:A:252:U:H2'	1:A:253:U:C5	2.41	0.55
1:A:346:G:H2'	1:A:347:G:O4'	2.06	0.55
1:A:500:G:H22	1:A:546:G:H1'	1.66	0.55
1:A:706:A:C5	1:A:707:C:C5	2.94	0.55
1:A:1350:A:C2	1:A:1351:U:C2	2.93	0.55
11:J:63:PHE:HD2	15:N:57:ARG:O	1.90	0.55
17:P:1:MET:HE3	17:P:3:LYS:HD2	1.88	0.55
1:A:281:G:O2'	1:A:282:A:OP2	2.18	0.55
1:A:761:G:H2'	1:A:762:C:C6	2.42	0.55
1:A:836:G:C6	1:A:851:G:C5	2.95	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:959:A:C3'	1:A:960:U:H5''	2.37	0.55
1:A:1088:G:H8	1:A:1088:G:O5'	1.89	0.55
1:A:1229:A:H2'	1:A:1230:C:H6	1.72	0.55
1:A:1240:U:H3	8:G:30:ILE:CG2	2.19	0.55
1:A:1346:A:O4'	1:A:1348:U:C6	2.59	0.55
1:A:1385:G:H2'	1:A:1386:G:O4'	2.06	0.55
3:B:166:ASP:OD1	3:B:205:ASP:HB2	2.05	0.55
8:G:37:ASN:HD21	10:I:41:VAL:HG23	1.70	0.55
11:J:78:ASN:O	11:J:80:LYS:N	2.39	0.55
14:M:122:LYS:O	14:M:123:ALA:HB2	2.06	0.55
18:Q:9:VAL:O	18:Q:11:VAL:HG13	2.05	0.55
18:Q:59:ILE:HG23	18:Q:71:PHE:HB3	1.89	0.55
1:A:590:C:OP1	9:H:30:ARG:N	2.36	0.55
1:A:668:G:O2'	16:O:46:HIS:HB3	2.07	0.55
1:A:937:A:H5''	1:A:938:A:OP2	2.07	0.55
3:B:208:ILE:O	3:B:209:ARG:C	2.49	0.55
7:F:5:GLU:HG2	7:F:62:TRP:CZ2	2.41	0.55
13:L:35:GLY:O	13:L:83:VAL:HG12	2.07	0.55
13:L:102:ARG:HH11	13:L:110:VAL:HG22	1.72	0.55
14:M:10:PRO:HB2	14:M:18:ALA:HB1	1.88	0.55
16:O:78:TYR:C	16:O:80:ALA:N	2.64	0.55
1:A:434:U:H2'	1:A:435:C:C6	2.42	0.55
10:I:46:ALA:HB2	10:I:74:ILE:HG23	1.89	0.55
13:L:69:TYR:C	13:L:69:TYR:CD2	2.85	0.55
13:L:87:GLY:N	13:L:98:TYR:HB3	2.17	0.55
15:N:4:LYS:C	15:N:6:LEU:N	2.62	0.55
1:A:200:G:C8	1:A:200:G:H3'	2.41	0.55
1:A:261:U:O2	1:A:263:A:C8	2.60	0.55
1:A:949:A:C2	1:A:1233:G:C4	2.94	0.55
1:A:1352:C:H2'	1:A:1353:G:C8	2.41	0.55
4:C:14:ILE:O	4:C:14:ILE:HG22	2.06	0.55
6:E:47:LYS:O	6:E:48:ALA:HB2	2.07	0.55
10:I:7:THR:O	10:I:7:THR:HG22	2.06	0.55
11:J:61:GLU:HG2	11:J:62:HIS:H	1.71	0.55
1:A:200:G:C8	1:A:200:G:C3'	2.89	0.55
1:A:1124:G:H21	1:A:1126:U:H3	1.53	0.55
1:A:1237:C:O2	1:A:1334:G:O2'	2.24	0.55
3:B:51:LEU:HD23	3:B:55:PHE:CE1	2.42	0.55
5:D:64:LEU:HD11	5:D:97:LEU:HD11	1.85	0.55
5:D:190:ASP:O	5:D:193:ASP:N	2.40	0.55
18:Q:12:SER:HB3	18:Q:20:THR:CB	2.37	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:181:G:N1	1:A:195:A:C8	2.75	0.55
1:A:636:U:H5''	1:A:637:G:OP2	2.07	0.55
1:A:668:G:H8	1:A:668:G:O5'	1.90	0.55
1:A:1472:U:O5'	1:A:1472:U:H6	1.90	0.55
3:B:30:ARG:HG3	3:B:31:TYR:CD2	2.42	0.55
10:I:41:VAL:O	10:I:44:VAL:HG21	2.07	0.55
15:N:29:ARG:HB2	15:N:40:CYS:HB3	1.89	0.55
1:A:552:U:H2'	1:A:553:A:O4'	2.07	0.55
1:A:645:C:H2'	1:A:645:C:O2	2.05	0.55
1:A:915:A:N7	1:A:916:G:C8	2.75	0.55
1:A:1521:G:N1	1:A:1522:U:C2	2.75	0.55
12:K:53:SER:O	12:K:55:LYS:N	2.40	0.55
21:T:74:LYS:CG	21:T:75:ASN:N	2.70	0.55
1:A:79:G:H2'	1:A:79:G:N3	2.22	0.54
1:A:570:G:C2	1:A:571:U:C4	2.95	0.54
1:A:977:A:O2'	1:A:978:A:C5'	2.54	0.54
1:A:1107:C:H3'	1:A:1107:C:C6	2.41	0.54
1:A:1443:G:O5'	1:A:1443:G:H8	1.90	0.54
3:B:82:ARG:HA	3:B:92:TYR:CD2	2.42	0.54
3:B:173:ALA:O	3:B:176:GLU:HB2	2.07	0.54
3:B:174:VAL:O	3:B:176:GLU:N	2.40	0.54
5:D:127:THR:HG23	5:D:147:ALA:HB3	1.88	0.54
8:G:37:ASN:ND2	10:I:41:VAL:HG23	2.21	0.54
9:H:6:ILE:O	9:H:10:LEU:HG	2.06	0.54
1:A:913:A:O2'	1:A:914:A:OP2	2.22	0.54
4:C:156:ARG:N	4:C:196:LEU:HD22	2.22	0.54
7:F:63:TYR:O	7:F:65:VAL:HG13	2.07	0.54
9:H:86:ILE:HG22	9:H:87:SER:N	2.21	0.54
11:J:16:LEU:HD22	11:J:94:VAL:CG1	2.37	0.54
11:J:51:ARG:HG2	15:N:45:ARG:NH1	2.23	0.54
13:L:41:ARG:HD2	13:L:42:THR:O	2.07	0.54
19:R:66:LEU:O	19:R:67:ALA:C	2.50	0.54
21:T:41:VAL:O	21:T:44:ALA:N	2.40	0.54
1:A:296:U:O2'	1:A:297:G:H5'	2.07	0.54
1:A:437:U:H2'	1:A:437:U:O2	2.07	0.54
1:A:658:G:H2'	1:A:659:U:C6	2.42	0.54
1:A:922:G:C6	1:A:923:A:C6	2.96	0.54
1:A:1053:G:HO2'	1:A:1054:C:P	2.30	0.54
1:A:1055:A:N7	1:A:1206:G:C2	2.75	0.54
1:A:1112:C:O2	4:C:179:ARG:HB3	2.07	0.54
1:A:1129:C:P	1:A:1130:A:H8	2.30	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:E:91:LEU:HD23	6:E:120:THR:CG2	2.37	0.54
9:H:63:LEU:HD22	9:H:63:LEU:H	1.72	0.54
11:J:12:ASP:CG	11:J:14:LYS:H	2.15	0.54
11:J:50:ILE:N	11:J:60:ARG:HA	2.23	0.54
14:M:15:VAL:HG23	14:M:41:PRO:O	2.08	0.54
1:A:247:G:C6	1:A:278:G:C2	2.96	0.54
1:A:260:G:H2'	1:A:261:U:C6	2.42	0.54
1:A:353:A:C2'	1:A:354:G:OP2	2.55	0.54
1:A:602:A:N3	1:A:637:G:C2	2.76	0.54
1:A:776:G:N2	1:A:802:A:OP2	2.31	0.54
1:A:978:A:O2'	1:A:1322:C:N3	2.33	0.54
1:A:992:U:OP2	1:A:992:U:C6	2.49	0.54
1:A:1092:A:C5'	1:A:1092:A:C8	2.90	0.54
5:D:59:ARG:NE	5:D:59:ARG:HA	2.22	0.54
5:D:159:ARG:O	5:D:160:GLN:C	2.50	0.54
7:F:48:LEU:HD13	7:F:52:ILE:HD12	1.89	0.54
8:G:56:GLN:HE21	8:G:56:GLN:N	2.01	0.54
14:M:81:LEU:HD23	14:M:81:LEU:N	2.20	0.54
1:A:977:A:C2'	1:A:978:A:H5''	2.37	0.54
1:A:1525:G:C8	1:A:1525:G:C3'	2.90	0.54
1:A:1530:G:H4'	1:A:1530:G:OP1	2.07	0.54
3:B:187:LEU:CD2	3:B:201:ILE:HG22	2.38	0.54
6:E:11:ILE:HG12	6:E:31:LEU:HB3	1.89	0.54
11:J:53:PRO:HA	15:N:41:ARG:HH21	1.72	0.54
21:T:33:ILE:HD12	21:T:33:ILE:H	1.72	0.54
1:A:292:G:H8	1:A:292:G:O5'	1.91	0.54
1:A:486:U:H2'	1:A:486:U:O2	2.07	0.54
1:A:705:U:H3'	1:A:706:A:C8	2.43	0.54
1:A:707:C:C4'	12:K:20:TYR:CD2	2.86	0.54
1:A:976:G:H5'	1:A:977:A:OP1	2.06	0.54
1:A:990:C:N3	1:A:1216:G:C2	2.75	0.54
1:A:1150:U:O2	1:A:1150:U:H2'	2.07	0.54
1:A:1227:A:C2'	1:A:1228:C:O5'	2.56	0.54
3:B:16:HIS:CD2	3:B:204:ASN:HB2	2.42	0.54
6:E:79:GLU:O	9:H:104:ARG:NH1	2.41	0.54
7:F:9:VAL:HG13	7:F:60:PHE:CD2	2.43	0.54
10:I:8:GLY:HA2	10:I:79:LEU:HD22	1.90	0.54
12:K:94:ALA:O	12:K:95:ILE:C	2.51	0.54
1:A:255:G:H2'	1:A:256:U:C6	2.42	0.54
1:A:357:G:C2	1:A:358:U:C4	2.96	0.54
1:A:1228:C:H2'	1:A:1229:A:H8	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:C:42:LEU:O	4:C:43:LEU:C	2.50	0.54
7:F:94:GLN:HB2	19:R:32:ARG:HD3	1.89	0.54
11:J:38:ILE:HG22	11:J:71:LEU:HB2	1.88	0.54
13:L:25:PRO:C	13:L:27:LEU:N	2.63	0.54
13:L:76:ASN:HD21	13:L:107:ALA:HA	1.73	0.54
14:M:19:LEU:O	14:M:22:ILE:CD1	2.56	0.54
14:M:73:GLU:O	14:M:76:ALA:HB3	2.07	0.54
17:P:43:LYS:HB3	17:P:48:TRP:CG	2.43	0.54
18:Q:83:ASP:O	18:Q:86:GLU:HB2	2.07	0.54
5:D:36:ARG:HB2	5:D:38:TYR:CE1	2.42	0.54
10:I:97:LYS:O	10:I:100:GLY:N	2.41	0.54
14:M:30:ALA:O	14:M:31:LYS:C	2.48	0.54
20:S:5:LEU:O	20:S:6:LYS:CB	2.55	0.54
1:A:941:G:C2	1:A:942:G:C8	2.95	0.54
3:B:132:LYS:HA	3:B:135:GLN:HB2	1.89	0.54
4:C:122:GLU:O	4:C:125:GLU:N	2.39	0.54
6:E:75:THR:HG23	6:E:76:ILE:N	2.22	0.54
17:P:78:GLY:C	17:P:80:PHE:N	2.64	0.54
21:T:41:VAL:C	21:T:43:LEU:N	2.63	0.54
1:A:193:C:H2'	1:A:194:C:H6	1.71	0.54
1:A:395:C:O2	1:A:395:C:H2'	2.06	0.54
1:A:663:A:H2'	1:A:664:G:O4'	2.08	0.54
1:A:691:G:C8	1:A:691:G:H3'	2.43	0.54
1:A:740:U:H6	1:A:740:U:H5''	1.73	0.54
1:A:854:G:N1	1:A:855:G:C8	2.76	0.54
1:A:939:G:C6	1:A:940:C:N4	2.76	0.54
1:A:1055:A:C6	1:A:1056:U:C6	2.96	0.54
1:A:1230:C:O2	1:A:1230:C:H2'	2.07	0.54
1:A:1366:C:C2'	1:A:1367:C:C6	2.90	0.54
1:A:1496:C:H2'	1:A:1497:G:C8	2.43	0.54
3:B:215:LEU:O	3:B:218:ALA:HB3	2.08	0.54
4:C:115:LEU:O	4:C:116:VAL:C	2.50	0.54
7:F:8:ILE:HB	7:F:61:LEU:HB2	1.90	0.54
10:I:19:LEU:HD22	10:I:59:PHE:CD2	2.42	0.54
11:J:56:HIS:C	11:J:58:ASP:N	2.58	0.54
12:K:123:LYS:C	12:K:125:PHE:N	2.66	0.54
13:L:45:PRO:HB3	13:L:92:ASP:HB3	1.90	0.54
16:O:13:GLN:O	16:O:14:GLU:C	2.51	0.54
21:T:92:LEU:O	21:T:93:GLU:C	2.51	0.54
1:A:20:U:H1'	1:A:916:G:N2	2.22	0.53
1:A:369:C:C2	1:A:370:C:C5	2.96	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:440:A:O3'	1:A:442:C:P	2.65	0.53
1:A:444:C:N3	1:A:491:G:C2	2.76	0.53
1:A:622:A:C8	1:A:623:C:C5	2.96	0.53
1:A:795:C:C5'	1:A:796:C:OP2	2.48	0.53
1:A:869:G:H5''	1:A:870:U:OP1	2.07	0.53
1:A:1236:A:H4'	1:A:1304:G:H4'	1.90	0.53
1:A:1255:G:H3'	1:A:1279:A:H61	1.72	0.53
1:A:1306:A:C4	1:A:1307:U:C6	2.96	0.53
1:A:1413:A:H2	1:A:1487:G:H22	1.56	0.53
1:A:1473:A:H2'	1:A:1474:G:O4'	2.08	0.53
4:C:131:ARG:O	4:C:134:ILE:HD12	2.07	0.53
11:J:39:PRO:HA	11:J:70:ARG:NH2	2.23	0.53
18:Q:53:LEU:HG	18:Q:54:GLY:N	2.23	0.53
1:A:14:U:O2	1:A:17:U:H5	1.90	0.53
1:A:275:G:H5''	1:A:275:G:H8	1.71	0.53
1:A:515:G:C4	1:A:516:U:C6	2.96	0.53
1:A:570:G:H1'	1:A:820:U:C4	2.44	0.53
1:A:751:U:H1'	16:O:23:GLY:O	2.07	0.53
1:A:958:A:C6	20:S:55:LYS:HB2	2.42	0.53
1:A:1186:G:H5''	1:A:1187:G:OP2	2.08	0.53
1:A:1205:U:H1'	4:C:195:VAL:HG22	1.89	0.53
1:A:1213:A:C2	1:A:1215:G:C8	2.96	0.53
13:L:6:THR:O	13:L:7:ILE:C	2.50	0.53
19:R:58:LEU:HD13	19:R:62:GLU:CB	2.38	0.53
21:T:74:LYS:HG3	21:T:75:ASN:N	2.21	0.53
1:A:90:U:C6	1:A:90:U:C3'	2.91	0.53
1:A:376:G:C2	1:A:389:A:C2	2.96	0.53
1:A:726:C:H2'	1:A:727:G:H8	1.72	0.53
1:A:1202:G:H8	1:A:1202:G:OP1	1.91	0.53
1:A:1208:C:H2'	1:A:1209:C:H6	1.73	0.53
5:D:116:GLN:O	5:D:120:LEU:HB2	2.08	0.53
6:E:41:VAL:HG22	6:E:113:ALA:HA	1.91	0.53
14:M:16:ASP:N	14:M:16:ASP:OD1	2.40	0.53
1:A:1347:G:C5	10:I:107:ARG:NH1	2.76	0.53
5:D:32:ALA:C	5:D:34:GLU:N	2.64	0.53
6:E:80:ILE:HA	9:H:104:ARG:HH12	1.74	0.53
8:G:56:GLN:H	8:G:56:GLN:NE2	2.02	0.53
10:I:3:GLN:HG3	10:I:20:ARG:HE	1.73	0.53
12:K:73:MET:CE	12:K:102:GLY:HA3	2.32	0.53
14:M:15:VAL:O	14:M:19:LEU:HG	2.09	0.53
14:M:30:ALA:O	14:M:32:GLU:N	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:M:49:THR:C	14:M:51:ALA:N	2.67	0.53
16:O:11:VAL:O	16:O:12:ILE:C	2.51	0.53
17:P:10:GLY:HA3	17:P:14:ASN:O	2.09	0.53
20:S:51:VAL:HG23	20:S:60:VAL:HG23	1.90	0.53
1:A:1075:C:H2'	1:A:1076:C:H5'	1.89	0.53
5:D:79:PHE:C	5:D:79:PHE:CD2	2.86	0.53
7:F:6:VAL:HB	7:F:63:TYR:HB2	1.89	0.53
7:F:87:ARG:HD2	19:R:76:LEU:HA	1.91	0.53
9:H:87:SER:HB2	9:H:133:LEU:O	2.08	0.53
9:H:116:LYS:HD2	9:H:129:VAL:HG21	1.89	0.53
15:N:44:LEU:C	15:N:44:LEU:HD12	2.33	0.53
1:A:408:A:H5'	5:D:116:GLN:HG3	1.90	0.53
1:A:652:U:C5	1:A:752:G:C4	2.97	0.53
1:A:880:C:H2'	1:A:881:G:C8	2.41	0.53
1:A:1345:U:C4	1:A:1377:A:C2	2.97	0.53
1:A:1523:G:H2'	1:A:1524:C:C6	2.37	0.53
3:B:58:ILE:O	3:B:59:GLU:C	2.51	0.53
3:B:92:TYR:CD1	3:B:92:TYR:C	2.86	0.53
4:C:180:ALA:CB	4:C:182:ILE:CD1	2.86	0.53
5:D:120:LEU:HD22	5:D:126:ILE:HD11	1.90	0.53
8:G:41:ARG:O	8:G:44:TYR:N	2.41	0.53
9:H:103:VAL:HG21	9:H:109:ILE:O	2.08	0.53
11:J:12:ASP:OD2	11:J:15:THR:N	2.36	0.53
12:K:44:SER:H	12:K:47:VAL:HB	1.74	0.53
13:L:43:VAL:HG13	13:L:44:THR:N	2.20	0.53
21:T:78:ALA:O	21:T:79:ARG:C	2.51	0.53
1:A:130:A:O2'	1:A:131:C:O5'	2.24	0.53
1:A:427:U:H4'	1:A:541:G:H5''	1.89	0.53
1:A:1075:C:H5'	3:B:103:THR:HG21	1.90	0.53
1:A:1152:A:P	11:J:68:HIS:CE1	3.02	0.53
1:A:1216:G:C2	1:A:1217:C:C4	2.97	0.53
3:B:71:VAL:O	3:B:165:VAL:HG22	2.09	0.53
4:C:101:LEU:HD23	4:C:102:ASN:H	1.72	0.53
5:D:79:PHE:C	5:D:79:PHE:HD2	2.16	0.53
6:E:91:LEU:CD2	6:E:120:THR:HG23	2.39	0.53
8:G:91:VAL:HG12	8:G:96:GLN:HE21	1.73	0.53
17:P:11:SER:O	17:P:12:LYS:C	2.52	0.53
17:P:52:ASP:C	17:P:52:ASP:OD2	2.51	0.53
1:A:378:G:C6	1:A:379:C:N4	2.77	0.53
1:A:781:A:C4	1:A:802:A:C2	2.96	0.53
1:A:899:C:O5'	1:A:899:C:H6	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1151:A:H5'	11:J:41:PRO:HA	1.90	0.53
1:A:1152:A:H4'	11:J:13:HIS:HD2	1.73	0.53
1:A:1288:A:N3	1:A:1353:G:H1'	2.23	0.53
4:C:39:ILE:C	4:C:41:GLY:N	2.65	0.53
5:D:59:ARG:HA	5:D:59:ARG:HE	1.73	0.53
6:E:59:GLY:O	6:E:62:ALA:CB	2.54	0.53
6:E:107:ARG:C	6:E:109:ILE:H	2.17	0.53
8:G:120:ILE:HG22	8:G:124:LEU:HD12	1.91	0.53
9:H:29:SER:HB3	9:H:32:LYS:HB2	1.90	0.53
9:H:87:SER:HA	9:H:93:VAL:HG23	1.89	0.53
10:I:64:THR:HG23	10:I:65:VAL:N	2.24	0.53
14:M:23:TYR:HB2	14:M:67:GLU:OE2	2.09	0.53
14:M:74:VAL:C	14:M:76:ALA:H	2.16	0.53
15:N:21:TYR:C	15:N:21:TYR:CD2	2.87	0.53
1:A:19:C:H2'	1:A:20:U:H6	1.73	0.53
1:A:1003(A):G:C2'	1:A:1004:A:H4'	2.32	0.53
1:A:1063:C:H2'	1:A:1064:G:H8	1.74	0.53
1:A:1096:C:C4	1:A:1097:C:C5	2.97	0.53
3:B:51:LEU:HD23	3:B:55:PHE:HE1	1.72	0.53
4:C:3:ASN:ND2	4:C:3:ASN:H	2.06	0.53
5:D:67:ILE:CG2	5:D:68:TYR:CD1	2.91	0.53
5:D:128:VAL:O	5:D:129:ASN:HB2	2.08	0.53
6:E:91:LEU:CD2	6:E:120:THR:CG2	2.86	0.53
8:G:28:ASN:ND2	8:G:28:ASN:H	2.06	0.53
17:P:21:VAL:HG12	17:P:33:ILE:HD12	1.90	0.53
1:A:414:A:H2'	1:A:415:A:O4'	2.09	0.53
1:A:642:A:N3	9:H:113:SER:OG	2.41	0.53
1:A:1003(A):G:N2	1:A:1039:C:C2	2.77	0.53
1:A:1056:U:O2	1:A:1057:G:C8	2.62	0.53
3:B:167:PRO:HG2	3:B:192:SER:HB2	1.90	0.53
12:K:24:SER:C	12:K:26:ASN:N	2.62	0.53
13:L:61:THR:O	13:L:63:GLY:N	2.42	0.53
1:A:66:G:C6	1:A:67:C:C5	2.98	0.52
1:A:915:A:H2'	1:A:916:G:H5'	1.91	0.52
1:A:959:A:C2	1:A:1222:G:C4'	2.92	0.52
5:D:24:GLU:O	5:D:27:TYR:HB3	2.09	0.52
5:D:62:GLN:CD	5:D:65:ARG:HH12	2.16	0.52
6:E:13:ILE:HA	6:E:29:GLY:O	2.08	0.52
10:I:111:ARG:HH11	10:I:111:ARG:CB	2.21	0.52
11:J:49:VAL:HG13	15:N:41:ARG:HD2	1.90	0.52
12:K:19:ALA:CB	12:K:80:VAL:HG11	2.30	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:S:52:TYR:CD1	20:S:56:GLN:O	2.62	0.52
1:A:19:C:C2	1:A:20:U:C6	2.98	0.52
1:A:453:A:C2	1:A:454:C:C2	2.96	0.52
1:A:826:C:C2	1:A:827:U:C5	2.97	0.52
1:A:1266:G:N2	1:A:1270:C:H42	2.07	0.52
1:A:1346:A:C8	1:A:1348:U:N3	2.78	0.52
3:B:101:MET:CG	3:B:108:ILE:HD12	2.38	0.52
3:B:189:ASP:OD1	3:B:205:ASP:HB3	2.09	0.52
9:H:14:ARG:HH11	9:H:14:ARG:CG	2.21	0.52
10:I:93:ARG:O	10:I:94:ALA:C	2.51	0.52
11:J:12:ASP:OD1	11:J:13:HIS:N	2.43	0.52
18:Q:90:ILE:C	18:Q:92:ARG:N	2.53	0.52
1:A:171:A:H2'	1:A:172:A:O4'	2.09	0.52
1:A:247:G:H4'	1:A:247:G:OP1	2.09	0.52
1:A:933:G:H5''	1:A:934:C:OP2	2.10	0.52
1:A:1438:G:C2	1:A:1464:G:C2	2.97	0.52
3:B:101:MET:HG2	3:B:108:ILE:CD1	2.38	0.52
3:B:105:PHE:O	3:B:106:LYS:C	2.52	0.52
8:G:105:VAL:O	8:G:108:ALA:HB3	2.09	0.52
17:P:4:ILE:O	17:P:5:ARG:HB3	2.08	0.52
1:A:78:G:N2	1:A:79:G:H1'	2.24	0.52
1:A:152:A:C6	1:A:170:U:O2	2.63	0.52
1:A:451:A:O5'	1:A:451:A:C8	2.60	0.52
1:A:837:G:C2	1:A:850:U:O2	2.62	0.52
1:A:865:A:H2'	1:A:866:C:C6	2.44	0.52
1:A:924:C:H5'	1:A:1399:C:OP2	2.10	0.52
1:A:1394:A:C5	1:A:1501:C:H4'	2.44	0.52
4:C:131:ARG:HG3	4:C:135:LYS:NZ	2.24	0.52
4:C:199:LYS:HB3	4:C:201:TYR:HE1	1.75	0.52
5:D:199:GLN:HE21	5:D:199:GLN:CA	2.22	0.52
9:H:40:ALA:O	9:H:41:ARG:C	2.50	0.52
10:I:45:ALA:C	10:I:47:LEU:H	2.17	0.52
10:I:50:LEU:HD23	10:I:56:LEU:H	1.74	0.52
13:L:86:ARG:HH11	13:L:86:ARG:CG	2.12	0.52
21:T:72:LEU:HB3	21:T:76:ALA:HB3	1.90	0.52
1:A:166:G:C2	1:A:167:G:C8	2.98	0.52
1:A:166:G:C2'	1:A:167:G:O5'	2.58	0.52
1:A:374:A:C5	1:A:375:U:C5	2.98	0.52
1:A:393:A:C2	1:A:394:G:C8	2.97	0.52
1:A:640:A:C2'	1:A:641:U:H5'	2.39	0.52
1:A:1149:C:H5''	1:A:1150:U:OP2	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:C:83:ARG:HG2	4:C:86:VAL:HG12	1.91	0.52
5:D:190:ASP:O	5:D:191:ARG:C	2.52	0.52
14:M:10:PRO:HB3	14:M:21:TYR:HD1	1.74	0.52
14:M:109:THR:HG23	14:M:110:ARG:N	2.24	0.52
15:N:53:LEU:CD1	15:N:56:VAL:HG21	2.38	0.52
19:R:55:ARG:HB3	19:R:55:ARG:NH1	2.25	0.52
20:S:52:TYR:HA	20:S:56:GLN:O	2.10	0.52
1:A:53:A:H61	1:A:358:U:H3	1.58	0.52
1:A:223:U:H5'	21:T:68:LYS:NZ	2.25	0.52
1:A:255:G:O2'	1:A:256:U:H5'	2.09	0.52
1:A:818:G:N2	1:A:820:U:C2	2.77	0.52
1:A:1096:C:N3	1:A:1097:C:C5	2.78	0.52
1:A:1144:G:C8	1:A:1144:G:H3'	2.44	0.52
1:A:1502:A:C2'	1:A:1502:A:N3	2.72	0.52
4:C:201:TYR:C	4:C:202:ILE:HG13	2.33	0.52
6:E:30:ALA:O	6:E:45:PHE:HA	2.09	0.52
11:J:32:ALA:HB2	11:J:76:ASN:HD22	1.75	0.52
14:M:98:VAL:C	14:M:100:GLY:H	2.17	0.52
15:N:24:CYS:CB	15:N:29:ARG:H	2.23	0.52
15:N:54:PRO:C	15:N:56:VAL:H	2.18	0.52
16:O:52:SER:O	16:O:53:HIS:C	2.52	0.52
1:A:116:A:H2'	1:A:117:G:H8	1.75	0.52
1:A:256:U:H2'	1:A:257:G:H5'	1.91	0.52
1:A:978:A:C4	1:A:1319:A:C2	2.97	0.52
1:A:1010:G:H2'	1:A:1011:G:H8	1.72	0.52
1:A:1123:A:O3'	11:J:36:GLY:HA3	2.09	0.52
1:A:1129:C:H4'	1:A:1130:A:OP2	2.09	0.52
1:A:1402:C:H2'	1:A:1403:C:H6	1.75	0.52
3:B:106:LYS:O	3:B:109:SER:OG	2.28	0.52
10:I:11:LYS:N	10:I:104:ARG:HH21	2.08	0.52
10:I:114:TYR:CE1	11:J:60:ARG:HB2	2.42	0.52
19:R:37:VAL:O	19:R:39:VAL:N	2.43	0.52
1:A:819:A:H4'	1:A:820:U:OP2	2.10	0.52
1:A:1095:U:H2'	1:A:1096:C:C6	2.45	0.52
1:A:1430:C:C2	1:A:1471:G:N2	2.78	0.52
3:B:102:LEU:N	3:B:102:LEU:HD12	2.24	0.52
12:K:46:GLY:O	12:K:47:VAL:C	2.53	0.52
1:A:403:C:H2'	1:A:404:U:H6	1.74	0.52
1:A:781:A:C8	1:A:802:A:C2	2.98	0.52
1:A:1107:C:C4	1:A:1108:G:C8	2.98	0.52
1:A:1366:C:C2'	1:A:1367:C:H6	2.16	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:102:LEU:HB2	3:B:176:GLU:OE1	2.10	0.52
3:B:180:LEU:HB2	3:B:182:ILE:CD1	2.39	0.52
10:I:33:PHE:C	10:I:35:GLU:N	2.68	0.52
10:I:118:LYS:O	10:I:119:ALA:CB	2.58	0.52
13:L:53:ARG:HD3	13:L:93:LEU:CD2	2.39	0.52
18:Q:7:THR:O	18:Q:23:VAL:HG23	2.10	0.52
18:Q:78:GLU:OE1	18:Q:81:ARG:HD3	2.09	0.52
1:A:103:C:O2'	1:A:172:A:N1	2.43	0.52
1:A:397:A:C6	1:A:548:G:N7	2.78	0.52
1:A:437:U:H3	1:A:496:A:H62	1.58	0.52
1:A:664:G:H22	1:A:741:G:H1	1.57	0.52
4:C:131:ARG:CG	4:C:135:LYS:NZ	2.73	0.52
6:E:60:TYR:CD2	6:E:60:TYR:C	2.87	0.52
6:E:144:THR:O	6:E:147:ASP:N	2.43	0.52
12:K:62:GLN:O	12:K:63:LEU:C	2.52	0.52
13:L:40:VAL:HG21	13:L:77:LEU:C	2.35	0.52
13:L:56:ALA:HB2	13:L:70:ILE:HD11	1.92	0.52
13:L:97:ARG:C	13:L:98:TYR:CD1	2.86	0.52
14:M:5:ALA:CB	14:M:22:ILE:HG21	2.40	0.52
17:P:66:PRO:C	17:P:67:THR:O	2.51	0.52
1:A:54:C:H42	1:A:357:G:H1	1.58	0.51
1:A:937:A:N6	1:A:1345:U:O4	2.43	0.51
2:Z:4:U:H2'	2:Z:5:C:H6	1.75	0.51
3:B:76:GLN:NE2	3:B:207:ALA:H	2.07	0.51
8:G:27:ILE:CG2	8:G:40:ALA:HA	2.40	0.51
3:B:107:THR:C	3:B:109:SER:N	2.67	0.51
5:D:3:ARG:HG2	5:D:118:ARG:CZ	2.40	0.51
9:H:48:TYR:CD1	9:H:48:TYR:C	2.88	0.51
11:J:3:LYS:N	11:J:75:ILE:HA	2.25	0.51
18:Q:62:SER:CB	18:Q:72:ARG:HG3	2.40	0.51
1:A:590:C:N3	1:A:650:G:C2	2.78	0.51
1:A:691:G:O2'	1:A:797:C:H4'	2.10	0.51
1:A:786:G:C2	1:A:797:C:C2	2.99	0.51
1:A:989:C:O2'	1:A:990:C:H5'	2.11	0.51
1:A:1137:C:H4'	1:A:1138:G:N2	2.26	0.51
1:A:1247:U:H3'	1:A:1247:U:H6	1.76	0.51
3:B:167:PRO:HG3	3:B:188:ALA:CB	2.40	0.51
4:C:139:GLN:O	4:C:140:ARG:C	2.53	0.51
5:D:87:GLY:O	5:D:88:VAL:C	2.54	0.51
5:D:103:ASN:C	5:D:105:VAL:H	2.19	0.51
9:H:24:THR:HG22	9:H:63:LEU:HD21	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:J:7:LYS:O	11:J:96:ILE:HA	2.11	0.51
17:P:74:LEU:N	17:P:74:LEU:HD23	2.24	0.51
20:S:71:LEU:HD22	20:S:72:GLY:N	2.24	0.51
1:A:69:G:H2'	1:A:70:G:H8	1.76	0.51
1:A:615:C:C6	1:A:615:C:H3'	2.45	0.51
1:A:714:G:H2'	1:A:715:A:C8	2.45	0.51
1:A:1056:U:O2	1:A:1056:U:H2'	2.10	0.51
1:A:1192:C:H2'	1:A:1193:G:O4'	2.09	0.51
1:A:1435:G:C4	1:A:1436:U:C5	2.98	0.51
3:B:44:LEU:O	3:B:47:THR:CB	2.58	0.51
4:C:19:GLU:HB3	4:C:40:ARG:HH22	1.75	0.51
9:H:41:ARG:HB2	9:H:41:ARG:CZ	2.40	0.51
9:H:121:ASP:O	9:H:125:ARG:HB2	2.11	0.51
10:I:30:GLY:C	10:I:31:GLN:HG2	2.35	0.51
20:S:5:LEU:O	20:S:6:LYS:HB2	2.09	0.51
1:A:9:G:OP2	6:E:121:LYS:NZ	2.38	0.51
1:A:115:G:H1'	1:A:116:A:N7	2.25	0.51
1:A:362:G:OP1	13:L:61:THR:HG22	2.10	0.51
1:A:416:G:H2'	1:A:417:C:O4'	2.10	0.51
1:A:533:A:O2'	1:A:535:A:OP2	2.27	0.51
1:A:592:G:C2	1:A:648:A:C2	2.98	0.51
1:A:656:C:C6	1:A:656:C:C3'	2.94	0.51
4:C:53:ALA:O	4:C:54:ARG:HB2	2.09	0.51
5:D:101:LEU:C	5:D:103:ASN:N	2.68	0.51
6:E:50:GLU:O	6:E:51:VAL:C	2.52	0.51
6:E:51:VAL:O	6:E:54:ALA:N	2.38	0.51
9:H:4:ASP:OD2	9:H:85:ARG:NH1	2.44	0.51
11:J:44:VAL:HG22	11:J:66:ARG:HB3	1.93	0.51
13:L:93:LEU:O	13:L:96:VAL:CG2	2.58	0.51
20:S:83:HIS:N	20:S:83:HIS:HD2	2.07	0.51
1:A:141:A:H1'	1:A:182:U:O2	2.11	0.51
1:A:223:U:H5'	21:T:68:LYS:HZ1	1.75	0.51
1:A:437:U:H5'	5:D:155:LEU:HD11	1.91	0.51
1:A:488:C:O5'	1:A:488:C:H6	1.93	0.51
1:A:1208:C:N3	1:A:1209:C:C5	2.79	0.51
8:G:119:ARG:O	8:G:120:ILE:C	2.54	0.51
15:N:32:SER:CB	15:N:41:ARG:HB3	2.40	0.51
19:R:47:THR:HG22	19:R:83:GLU:O	2.11	0.51
1:A:511:C:C4	1:A:512:U:O4	2.63	0.51
1:A:965:A:C2	1:A:969:A:C2	2.98	0.51
1:A:972:C:H4'	11:J:57:LYS:HB3	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1184:G:H2'	1:A:1185:G:H8	1.75	0.51
1:A:1229:A:N3	1:A:1230:C:C5	2.79	0.51
4:C:23:TYR:HD2	11:J:94:VAL:N	2.09	0.51
5:D:103:ASN:C	5:D:105:VAL:N	2.69	0.51
8:G:61:VAL:O	8:G:62:PHE:C	2.54	0.51
9:H:56:LYS:O	9:H:58:TYR:CD1	2.64	0.51
10:I:4:TYR:CD1	10:I:88:TYR:HB2	2.46	0.51
14:M:22:ILE:HB	14:M:25:ILE:CD1	2.40	0.51
16:O:77:ARG:O	16:O:80:ALA:HB3	2.11	0.51
1:A:328:C:O2	1:A:328:C:C2'	2.46	0.51
1:A:644:G:C5	1:A:645:C:C6	2.98	0.51
1:A:864:A:H3'	1:A:865:A:H8	1.76	0.51
1:A:925:G:O4'	1:A:1502:A:C5	2.64	0.51
1:A:1073:U:H3	1:A:1102:A:H61	1.58	0.51
1:A:1160:G:C2'	1:A:1161:C:O5'	2.57	0.51
1:A:1400:C:C3'	1:A:1401:G:C5'	2.82	0.51
3:B:139:LYS:O	3:B:143:GLU:HB2	2.11	0.51
9:H:104:ARG:C	9:H:106:GLY:H	2.19	0.51
10:I:21:PRO:HA	10:I:59:PHE:HA	1.92	0.51
12:K:90:GLY:O	12:K:91:ARG:C	2.52	0.51
19:R:73:ALA:O	19:R:74:ARG:C	2.53	0.51
21:T:34:LYS:HB3	21:T:38:LYS:NZ	2.26	0.51
1:A:404:U:O2'	1:A:405:U:H5'	2.11	0.51
1:A:428:G:C2	1:A:430:A:N6	2.79	0.51
1:A:922:G:H4'	6:E:20:GLN:HA	1.93	0.51
1:A:1014:A:H3'	1:A:1015:A:C8	2.45	0.51
1:A:1449:C:O2	1:A:1449:C:H2'	2.09	0.51
3:B:211:ILE:O	3:B:215:LEU:HB2	2.11	0.51
3:B:223:ILE:HG23	3:B:224:GLN:H	1.74	0.51
5:D:24:GLU:O	5:D:27:TYR:CB	2.59	0.51
13:L:35:GLY:HA3	13:L:58:VAL:HG11	1.93	0.51
14:M:14:ARG:HG2	14:M:14:ARG:HH11	1.76	0.51
1:A:570:G:O6	1:A:873:A:C2	2.64	0.51
4:C:22:TRP:N	4:C:22:TRP:CD1	2.71	0.51
5:D:185:PHE:C	5:D:185:PHE:CD2	2.89	0.51
8:G:135:VAL:O	8:G:139:GLU:HG3	2.10	0.51
14:M:17:VAL:O	14:M:20:THR:CB	2.51	0.51
14:M:23:TYR:HB3	14:M:67:GLU:H	1.74	0.51
17:P:5:ARG:CG	17:P:6:LEU:N	2.73	0.51
1:A:109:A:C6	1:A:327:A:C6	2.99	0.50
1:A:174:C:O2'	1:A:175:C:H5'	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:273:A:N6	1:A:274:A:C6	2.79	0.50
1:A:321:A:C2	1:A:333:G:C2	2.98	0.50
1:A:783:C:C2'	1:A:784:C:H5'	2.40	0.50
1:A:976:G:H2'	1:A:1361(A):C:H42	1.74	0.50
7:F:44:GLY:HA2	7:F:60:PHE:N	2.25	0.50
13:L:55:VAL:CG1	13:L:56:ALA:H	2.23	0.50
17:P:21:VAL:CG1	17:P:33:ILE:HD12	2.40	0.50
1:A:167:G:H2'	1:A:168:G:H8	1.76	0.50
1:A:640:A:H2'	1:A:641:U:H5'	1.92	0.50
1:A:803:G:C6	1:A:804:U:C4	2.99	0.50
1:A:1237:C:H4'	1:A:1334:G:N2	2.25	0.50
1:A:1286:A:H2'	1:A:1287:A:H4'	1.92	0.50
1:A:1346:A:C5	8:G:10:ARG:NH2	2.79	0.50
1:A:1355:G:C2'	1:A:1356:G:H5'	2.40	0.50
1:A:1371:G:OP1	10:I:11:LYS:O	2.28	0.50
1:A:1428:A:H2'	1:A:1429:C:C6	2.46	0.50
3:B:178:ARG:HH22	9:H:68:ARG:HH21	1.57	0.50
4:C:122:GLU:O	4:C:123:GLN:C	2.53	0.50
1:A:1066:C:C2'	1:A:1067:A:C5'	2.90	0.50
1:A:1227:A:C2	20:S:83:HIS:HB2	2.46	0.50
1:A:1365:G:C5	1:A:1366:C:C5	2.99	0.50
1:A:1406:U:H2'	1:A:1407:C:C6	2.45	0.50
1:A:1507:A:H5''	1:A:1507:A:H8	1.76	0.50
5:D:62:GLN:O	5:D:66:ARG:HD3	2.11	0.50
6:E:13:ILE:O	6:E:13:ILE:HD13	2.11	0.50
1:A:382:A:N3	1:A:383:A:C8	2.79	0.50
1:A:429:U:C4	1:A:431:A:N6	2.76	0.50
1:A:505:G:H5''	1:A:506:G:OP2	2.11	0.50
1:A:509:A:C8	1:A:509:A:C3'	2.93	0.50
1:A:793:U:O4	1:A:1517:G:H5''	2.12	0.50
1:A:976:G:N7	1:A:1358:U:C2	2.79	0.50
1:A:1118:C:H1'	1:A:1179:A:C4	2.47	0.50
3:B:112:VAL:HG12	3:B:153:ARG:HG2	1.91	0.50
20:S:17:GLU:O	20:S:21:GLU:HB2	2.12	0.50
1:A:20:U:O2	1:A:20:U:H2'	2.12	0.50
1:A:644:G:C4	1:A:645:C:C6	2.99	0.50
1:A:762:C:O5'	1:A:762:C:H6	1.94	0.50
1:A:977:A:H2'	1:A:978:A:H5'	1.93	0.50
1:A:1048:G:C8	1:A:1048:G:H3'	2.46	0.50
5:D:54:TYR:O	5:D:55:ALA:C	2.54	0.50
6:E:28:PHE:O	6:E:47:LYS:HA	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:I:45:ALA:C	10:I:47:LEU:N	2.69	0.50
14:M:89:GLY:O	14:M:90:LEU:C	2.54	0.50
18:Q:4:LYS:H	18:Q:61:GLU:CB	2.21	0.50
1:A:37:U:N3	1:A:38:G:C8	2.80	0.50
1:A:463:A:O3'	1:A:474:G:P	2.68	0.50
1:A:512:U:H2'	1:A:513:C:C6	2.46	0.50
1:A:1125:U:H3	11:J:5:ARG:HE	1.59	0.50
3:B:178:ARG:C	3:B:180:LEU:N	2.69	0.50
6:E:67:VAL:O	6:E:67:VAL:CG1	2.58	0.50
13:L:75:HIS:CD2	13:L:76:ASN:H	2.27	0.50
19:R:36:ASN:O	19:R:39:VAL:HG12	2.12	0.50
1:A:109:A:H3'	1:A:110:C:H5'	1.93	0.50
1:A:362:G:C8	1:A:362:G:C3'	2.94	0.50
1:A:426:G:P	5:D:36:ARG:HH21	2.33	0.50
1:A:992:U:H4'	1:A:993:G:O5'	2.11	0.50
1:A:1249:C:C6	1:A:1249:C:C3'	2.94	0.50
3:B:219:VAL:O	3:B:220:ASP:C	2.55	0.50
4:C:115:LEU:O	4:C:118:GLN:N	2.44	0.50
6:E:33:VAL:HG11	6:E:109:ILE:HG12	1.93	0.50
8:G:26:PHE:CD2	8:G:30:ILE:HD11	2.47	0.50
14:M:14:ARG:HB3	14:M:16:ASP:OD1	2.12	0.50
14:M:109:THR:HG23	14:M:110:ARG:H	1.76	0.50
1:A:437:U:H3'	1:A:438:G:H8	1.76	0.50
1:A:888:G:H8	1:A:888:G:O5'	1.93	0.50
1:A:1065:U:C5	1:A:1190:G:C4	3.00	0.50
1:A:1513:A:C6	1:A:1523:G:C6	3.00	0.50
3:B:102:LEU:O	3:B:105:PHE:HB2	2.12	0.50
4:C:19:GLU:HB3	4:C:40:ARG:NH2	2.27	0.50
4:C:123:GLN:HE22	4:C:140:ARG:NH2	2.08	0.50
5:D:199:GLN:NE2	5:D:199:GLN:CA	2.75	0.50
6:E:101:ILE:O	6:E:120:THR:OG1	2.28	0.50
6:E:107:ARG:O	6:E:109:ILE:N	2.45	0.50
11:J:32:ALA:HB2	11:J:76:ASN:ND2	2.27	0.50
13:L:102:ARG:NH1	13:L:110:VAL:CA	2.74	0.50
16:O:39:LEU:HD13	16:O:56:LEU:HB2	1.93	0.50
1:A:664:G:H1	1:A:741:G:H1	1.59	0.50
1:A:986:A:C2	1:A:1220:G:C2	3.00	0.50
1:A:1168:A:C6	1:A:1169:A:C6	3.00	0.50
1:A:1342:C:O2'	10:I:124:GLN:HB2	2.12	0.50
1:A:1368:G:C2	1:A:1369:C:C6	2.99	0.50
3:B:19:HIS:HB2	3:B:204:ASN:CG	2.37	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:E:148:VAL:HG21	9:H:107:LEU:HD13	1.94	0.50
7:F:33:TYR:HD2	7:F:71:ARG:HD2	1.76	0.50
10:I:120:ARG:O	10:I:121:ARG:C	2.55	0.50
11:J:17:ASP:O	11:J:21:GLN:HB2	2.12	0.50
12:K:111:ASP:O	12:K:112:THR:C	2.55	0.50
13:L:35:GLY:HA3	13:L:58:VAL:CG1	2.42	0.50
1:A:18:C:C2'	1:A:19:C:H5'	2.42	0.49
1:A:129(A):G:H4'	1:A:130:A:OP2	2.12	0.49
1:A:358:U:C2	1:A:359:U:C5	2.99	0.49
1:A:374:A:H5''	1:A:375:U:OP2	2.12	0.49
1:A:1053:G:C4	1:A:1199:U:C5	3.00	0.49
3:B:174:VAL:C	3:B:176:GLU:N	2.70	0.49
3:B:185:ILE:HD12	3:B:185:ILE:H	1.77	0.49
4:C:54:ARG:O	4:C:55:VAL:CG2	2.55	0.49
7:F:26:ILE:HG21	7:F:63:TYR:HE1	1.76	0.49
8:G:108:ALA:C	8:G:110:GLN:N	2.69	0.49
12:K:53:SER:C	12:K:55:LYS:H	2.19	0.49
12:K:73:MET:C	12:K:75:TYR:H	2.20	0.49
15:N:24:CYS:HB3	15:N:29:ARG:H	1.77	0.49
18:Q:60:ILE:C	18:Q:71:PHE:HD1	2.20	0.49
18:Q:82:MET:HA	18:Q:85:VAL:CG2	2.42	0.49
21:T:41:VAL:C	21:T:43:LEU:H	2.18	0.49
1:A:13:U:O2	1:A:914:A:H3'	2.11	0.49
1:A:84:U:H5''	1:A:88:A:OP2	2.12	0.49
1:A:109:A:N6	1:A:326:G:C6	2.80	0.49
1:A:167:G:H2'	1:A:168:G:C8	2.48	0.49
1:A:288:A:C2'	1:A:289:G:O5'	2.61	0.49
1:A:357:G:H2'	1:A:358:U:C6	2.47	0.49
1:A:577:G:H1'	1:A:816:A:C2	2.46	0.49
1:A:673:G:H5''	1:A:674:G:OP2	2.11	0.49
1:A:691:G:C8	1:A:691:G:C3'	2.94	0.49
1:A:738:C:OP2	7:F:92:LYS:HE2	2.12	0.49
1:A:1226:C:C4	14:M:104:ARG:HG3	2.47	0.49
1:A:1378:C:H3'	1:A:1379:G:H5''	1.93	0.49
1:A:1413:A:C2	1:A:1414:U:C2	3.01	0.49
1:A:1502:A:H5'	1:A:1504:G:N7	2.27	0.49
12:K:22:HIS:HA	12:K:85:ARG:O	2.11	0.49
20:S:9:VAL:HG12	20:S:10:PHE:N	2.26	0.49
1:A:69:G:H2'	1:A:70:G:C8	2.47	0.49
1:A:502:G:C6	1:A:544:G:N1	2.80	0.49
1:A:546:G:OP1	5:D:73:ARG:HB2	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:577:G:H1'	1:A:816:A:C4	2.48	0.49
1:A:942:G:C2	1:A:943:U:C6	3.00	0.49
1:A:977:A:H2'	1:A:978:A:H5''	1.93	0.49
1:A:1082:G:H5''	1:A:1083:U:OP2	2.13	0.49
1:A:1120:G:N2	1:A:1153:C:O2	2.43	0.49
1:A:1226:C:N4	14:M:104:ARG:HG3	2.27	0.49
1:A:1372:U:O2'	1:A:1373:G:H5'	2.12	0.49
1:A:1437:C:H2'	1:A:1438:G:C8	2.47	0.49
3:B:77:ALA:HB2	3:B:211:ILE:CD1	2.24	0.49
4:C:141:VAL:HG11	4:C:202:ILE:HG12	1.94	0.49
5:D:55:ALA:O	5:D:59:ARG:HG2	2.12	0.49
6:E:15:ARG:O	6:E:16:THR:O	2.30	0.49
10:I:33:PHE:CE1	10:I:37:PHE:CE1	3.01	0.49
15:N:36:PHE:CD1	15:N:36:PHE:C	2.90	0.49
19:R:32:ARG:O	19:R:34:TYR:N	2.44	0.49
1:A:529:G:C8	1:A:529:G:C3'	2.94	0.49
1:A:651:C:C2'	1:A:652:U:H5'	2.42	0.49
1:A:957:U:O2	1:A:960:U:C2	2.65	0.49
1:A:1068:G:N7	1:A:1094:G:H8	2.09	0.49
1:A:1102:A:H1'	3:B:99:GLY:HA3	1.94	0.49
1:A:1201:A:HO2'	1:A:1202:G:P	2.34	0.49
5:D:106:TYR:C	5:D:106:TYR:CD2	2.90	0.49
5:D:152:SER:O	5:D:155:LEU:HB2	2.11	0.49
13:L:67:THR:O	13:L:67:THR:CG2	2.60	0.49
16:O:60:VAL:HG12	16:O:61:GLY:N	2.27	0.49
17:P:75:ARG:HA	17:P:80:PHE:HD1	1.76	0.49
19:R:36:ASN:O	19:R:37:VAL:C	2.53	0.49
21:T:60:GLU:O	21:T:61:SER:C	2.54	0.49
1:A:287:U:O2'	1:A:288:A:H5'	2.12	0.49
1:A:292:G:C3'	1:A:292:G:C8	2.95	0.49
1:A:357:G:C2	1:A:358:U:C5	3.00	0.49
1:A:939:G:P	8:G:95:ARG:HH12	2.36	0.49
1:A:959:A:H5''	1:A:960:U:OP2	2.13	0.49
1:A:991:U:C6	1:A:1212:U:C2	3.01	0.49
1:A:1003(A):G:C4	1:A:1004:A:H1'	2.47	0.49
1:A:1119:C:C6	1:A:1119:C:C3'	2.94	0.49
1:A:1121:U:H2'	1:A:1122:U:H6	1.75	0.49
1:A:1144:G:H2'	1:A:1145:C:H5'	1.95	0.49
1:A:1240:U:N3	8:G:30:ILE:HG23	2.27	0.49
1:A:1395:C:H6	1:A:1395:C:O5'	1.95	0.49
1:A:1402:C:H2'	1:A:1403:C:C6	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1502:A:N3	1:A:1502:A:H2'	2.28	0.49
3:B:71:VAL:HG23	3:B:164:VAL:HA	1.94	0.49
7:F:80:ARG:CG	7:F:88:VAL:CG2	2.89	0.49
10:I:4:TYR:CG	10:I:88:TYR:HB2	2.48	0.49
13:L:104:VAL:O	13:L:105:TYR:HB2	2.13	0.49
17:P:11:SER:O	17:P:14:ASN:N	2.36	0.49
1:A:251:G:H4'	1:A:252:U:O5'	2.12	0.49
1:A:268:C:H2'	1:A:269:C:C6	2.44	0.49
1:A:429:U:O4	1:A:431:A:N6	2.46	0.49
1:A:946:A:N1	1:A:947:G:C6	2.81	0.49
1:A:969:A:H61	14:M:126:LYS:CB	2.25	0.49
1:A:982:U:H4'	1:A:983:A:O5'	2.12	0.49
1:A:1348:U:H4'	10:I:120:ARG:HG3	1.93	0.49
3:B:166:ASP:OD1	3:B:205:ASP:CB	2.61	0.49
3:B:178:ARG:C	3:B:180:LEU:H	2.19	0.49
5:D:88:VAL:O	5:D:92:VAL:HG23	2.12	0.49
10:I:40:LEU:C	10:I:42:ARG:H	2.21	0.49
1:A:709:G:H2'	1:A:710:G:H8	1.77	0.49
1:A:945:G:C8	1:A:1337:G:H1'	2.48	0.49
1:A:1069:C:O3'	6:E:25:ARG:NH2	2.45	0.49
1:A:1131:G:H22	1:A:1143:G:N2	2.04	0.49
1:A:1142:G:H5''	1:A:1143:G:OP2	2.11	0.49
5:D:30:LYS:HA	5:D:35:ARG:HE	1.78	0.49
5:D:141:ARG:HB3	5:D:142:PRO:HD3	1.90	0.49
6:E:148:VAL:O	6:E:149:GLU:C	2.55	0.49
14:M:22:ILE:HG22	14:M:23:TYR:N	2.27	0.49
17:P:43:LYS:HA	17:P:48:TRP:CB	2.41	0.49
19:R:86:VAL:O	19:R:87:ARG:CB	2.56	0.49
1:A:192:U:C4'	21:T:103:GLY:H	2.26	0.49
1:A:617:G:O6	1:A:623:C:N4	2.44	0.49
1:A:722:A:H5''	1:A:722:A:N3	2.27	0.49
1:A:812:C:OP1	1:A:903:G:H1'	2.13	0.49
1:A:1097:C:O2	1:A:1097:C:H2'	2.12	0.49
1:A:1191:A:O2'	1:A:1192:C:H5'	2.13	0.49
1:A:1370:G:H2'	1:A:1371:G:H8	1.78	0.49
5:D:150:GLU:CA	5:D:153:ARG:HB2	2.40	0.49
8:G:137:LYS:O	8:G:141:VAL:HG23	2.13	0.49
9:H:89:PRO:HA	9:H:92:ARG:NH1	2.28	0.49
11:J:76:ASN:CB	11:J:78:ASN:HD21	2.22	0.49
12:K:70:LYS:O	12:K:73:MET:HB2	2.13	0.49
14:M:44:ARG:O	14:M:45:VAL:C	2.54	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:149:A:C2	1:A:150:C:C4	3.01	0.49
1:A:656:C:H2'	1:A:657:G:O5'	2.13	0.49
1:A:1247:U:O2	1:A:1291:G:C2	2.65	0.49
1:A:1291:G:H4'	10:I:38:GLN:O	2.12	0.49
1:A:1365:G:C6	1:A:1366:C:C4	3.00	0.49
1:A:1422:G:H8	1:A:1422:G:O5'	1.96	0.49
3:B:92:TYR:C	3:B:92:TYR:HD1	2.21	0.49
7:F:7:ASN:HA	7:F:61:LEU:O	2.12	0.49
8:G:67:GLU:HA	8:G:70:LYS:HE3	1.95	0.49
9:H:4:ASP:O	9:H:7:ALA:HB3	2.13	0.49
12:K:82:VAL:HG12	12:K:108:ILE:HG23	1.95	0.49
14:M:39:ILE:HG21	14:M:48:LEU:HD21	1.95	0.49
18:Q:75:ARG:HH11	18:Q:75:ARG:HG3	1.77	0.49
21:T:19:SER:O	21:T:20:LEU:C	2.56	0.49
21:T:54:LYS:HA	21:T:57:ARG:HH12	1.78	0.49
1:A:107:G:N2	1:A:108:G:H1'	2.28	0.49
1:A:129(A):G:C2	1:A:190(E):U:H5''	2.47	0.49
1:A:570:G:C6	1:A:873:A:C2	3.00	0.49
1:A:623:C:C2	1:A:624:C:C6	3.01	0.49
1:A:961:U:OP1	1:A:1223:C:O2'	2.23	0.49
1:A:1010:G:N2	1:A:1020:U:H1'	2.16	0.49
1:A:1081:G:P	6:E:16:THR:OG1	2.71	0.49
1:A:1104:G:H4'	3:B:111:ARG:NH2	2.28	0.49
1:A:1142:G:C2	1:A:1143:G:H1'	2.47	0.49
1:A:1209:C:O2	1:A:1209:C:C2'	2.45	0.49
1:A:1239:A:C4	1:A:1298:C:N4	2.81	0.49
1:A:1250:A:N6	1:A:1354:C:O4'	2.38	0.49
1:A:1523:G:C4	1:A:1524:C:C5	3.00	0.49
24:A:1636:D2C:H11A	24:A:1636:D2C:H18	1.95	0.49
3:B:59:GLU:O	3:B:62:ALA:HB3	2.13	0.49
3:B:109:SER:O	3:B:112:VAL:HG23	2.13	0.49
4:C:35:GLU:O	4:C:37:GLN:N	2.46	0.49
5:D:120:LEU:HD22	5:D:126:ILE:CD1	2.43	0.49
13:L:86:ARG:NH2	13:L:99:HIS:HD2	2.07	0.49
13:L:98:TYR:HD1	13:L:98:TYR:H	1.59	0.49
21:T:56:MET:CE	21:T:104:LEU:HD21	2.26	0.49
1:A:290:C:C5	1:A:291:C:H5	2.31	0.48
1:A:1184:G:H8	1:A:1184:G:O5'	1.95	0.48
1:A:1394:A:N7	1:A:1501:C:H4'	2.28	0.48
1:A:1399:C:C2	1:A:1401:G:C5	3.01	0.48
1:A:1486:G:H2'	1:A:1487:G:O4'	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:46:LYS:O	3:B:47:THR:C	2.56	0.48
4:C:6:HIS:HD2	4:C:6:HIS:C	2.19	0.48
5:D:11:LEU:O	5:D:12:CYS:C	2.56	0.48
5:D:196:LEU:HD23	5:D:197:PRO:HD2	1.95	0.48
6:E:102:ALA:HB1	6:E:106:PRO:HG2	1.94	0.48
7:F:5:GLU:O	7:F:90:VAL:HA	2.13	0.48
17:P:53:VAL:O	17:P:54:GLU:C	2.56	0.48
18:Q:75:ARG:NH1	18:Q:77:VAL:HG13	2.26	0.48
1:A:1065:U:H4'	1:A:1066:C:H5'	1.95	0.48
1:A:1074:G:C6	1:A:1075:C:C4	3.01	0.48
1:A:1167:A:O5'	1:A:1167:A:C8	2.63	0.48
4:C:95:THR:HG22	4:C:97:LYS:HE3	1.94	0.48
6:E:86:ALA:O	6:E:125:SER:N	2.43	0.48
8:G:115:ARG:O	8:G:116:ALA:C	2.56	0.48
11:J:61:GLU:HG2	11:J:62:HIS:N	2.28	0.48
16:O:42:HIS:CD2	16:O:42:HIS:C	2.91	0.48
1:A:53:A:C6	1:A:54:C:C2	3.02	0.48
1:A:264:U:H3'	1:A:264:U:C6	2.49	0.48
1:A:601:C:C2	1:A:638:G:N2	2.81	0.48
1:A:1249:C:O5'	1:A:1249:C:H6	1.96	0.48
1:A:1333:A:H2'	1:A:1334:G:H8	1.78	0.48
1:A:1377:A:C2'	1:A:1378:C:OP2	2.61	0.48
1:A:1513:A:H2'	1:A:1514:C:H6	1.77	0.48
4:C:172:ARG:HB2	4:C:203:PHE:CE2	2.49	0.48
5:D:130:GLY:O	5:D:131:ARG:C	2.55	0.48
10:I:10:ARG:HG3	10:I:11:LYS:HB2	1.94	0.48
18:Q:22:LEU:HD13	18:Q:41:LYS:HG2	1.95	0.48
21:T:72:LEU:HB3	21:T:76:ALA:CB	2.43	0.48
1:A:200:G:C8	1:A:200:G:C4'	2.97	0.48
1:A:252:U:H2'	1:A:253:U:H6	1.73	0.48
1:A:255:G:O6	1:A:266:G:O6	2.32	0.48
1:A:410:G:H5'	5:D:30:LYS:HZ3	1.78	0.48
1:A:420:U:O2	1:A:424:G:C2	2.67	0.48
1:A:481:G:HO2'	1:A:483:C:N4	2.10	0.48
1:A:991:U:C5	1:A:1212:U:H1'	2.49	0.48
1:A:1208:C:C2	1:A:1209:C:C6	3.01	0.48
14:M:5:ALA:CB	14:M:22:ILE:HG12	2.43	0.48
14:M:48:LEU:HD22	14:M:52:GLU:HB2	1.95	0.48
1:A:1279:A:O2'	1:A:1281:U:OP2	2.22	0.48
1:A:1432:G:C8	1:A:1432:G:H3'	2.49	0.48
24:A:1636:D2C:O5	24:A:1636:D2C:O4	2.31	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:D:148:VAL:CG2	5:D:181:MET:HB3	2.43	0.48
14:M:24:GLY:O	14:M:25:ILE:C	2.56	0.48
16:O:28:GLN:C	16:O:30:ALA:N	2.68	0.48
16:O:39:LEU:HD12	16:O:56:LEU:HB2	1.95	0.48
1:A:106:C:O2'	1:A:107:G:H5'	2.14	0.48
1:A:176:C:O2	1:A:176:C:C2'	2.62	0.48
1:A:354:G:C6	1:A:355:C:C4	3.02	0.48
1:A:771:G:O2'	1:A:772:U:H5'	2.14	0.48
1:A:858:G:H8	1:A:858:G:O5'	1.97	0.48
1:A:976:G:C8	1:A:1358:U:O2	2.67	0.48
1:A:1081:G:P	6:E:16:THR:HG1	2.36	0.48
1:A:1117:G:O3'	10:I:104:ARG:HD2	2.13	0.48
1:A:1166:G:C8	1:A:1166:G:H3'	2.48	0.48
1:A:1240:U:H1'	8:G:38:LEU:HD21	1.95	0.48
1:A:1381:U:C2	1:A:1382:C:C6	3.02	0.48
4:C:6:HIS:CD2	4:C:8:ILE:N	2.79	0.48
5:D:61:LYS:HE2	5:D:62:GLN:NE2	2.25	0.48
9:H:30:ARG:O	9:H:31:PHE:C	2.56	0.48
11:J:38:ILE:CB	11:J:71:LEU:HB3	2.42	0.48
12:K:123:LYS:O	12:K:124:LYS:C	2.56	0.48
21:T:63:ILE:O	21:T:66:ALA:N	2.45	0.48
1:A:157:G:C6	1:A:158:G:N7	2.82	0.48
1:A:506:G:C5	1:A:507:C:C4	3.02	0.48
1:A:570:G:H2'	1:A:571:U:C6	2.49	0.48
1:A:647:C:N4	1:A:648:A:N6	2.62	0.48
1:A:1086:U:H3	1:A:1099:G:H22	1.60	0.48
1:A:1163:C:H42	1:A:1173:G:H1	1.60	0.48
1:A:1241:G:C6	1:A:1242:C:N4	2.81	0.48
1:A:1345:U:C2	1:A:1377:A:C2	3.02	0.48
1:A:1348:U:C6	1:A:1348:U:C5'	2.97	0.48
1:A:1363:A:C4	1:A:1365:G:C6	3.02	0.48
1:A:1453:G:N2	1:A:1454:G:C5	2.81	0.48
5:D:105:VAL:HG13	5:D:110:PHE:HB2	1.95	0.48
6:E:99:GLY:O	6:E:117:ASP:HA	2.13	0.48
7:F:98:LEU:HB3	19:R:30:ASP:HA	1.96	0.48
10:I:65:VAL:HG22	10:I:66:ARG:N	2.29	0.48
10:I:97:LYS:N	10:I:98:PRO:HD2	2.27	0.48
11:J:56:HIS:O	11:J:57:LYS:C	2.55	0.48
13:L:90:VAL:O	13:L:92:ASP:N	2.46	0.48
13:L:100:ILE:HG22	13:L:101:VAL:N	2.28	0.48
1:A:128:G:H5'	18:Q:2:PRO:HA	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:132:C:O2'	1:A:133:U:H5'	2.14	0.48
1:A:581:G:O6	1:A:758:G:C8	2.67	0.48
1:A:652:U:O4	1:A:752:G:O2'	2.21	0.48
1:A:1128:C:N3	1:A:1144:G:N2	2.62	0.48
1:A:1208:C:C2	1:A:1209:C:C5	3.02	0.48
1:A:1216:G:H5''	15:N:5:ALA:HB2	1.95	0.48
1:A:1283:G:H2'	1:A:1284:C:O4'	2.14	0.48
24:A:1636:D2C:H5	24:A:1636:D2C:H13	1.51	0.48
3:B:92:TYR:CE1	3:B:151:GLY:CA	2.97	0.48
3:B:134:GLU:O	3:B:138:LEU:HG	2.14	0.48
3:B:145:LEU:O	3:B:149:LEU:HB2	2.14	0.48
6:E:82:VAL:HG12	6:E:89:ILE:HG22	1.95	0.48
8:G:92:SER:CB	8:G:93:PRO:HD2	2.44	0.48
8:G:108:ALA:O	8:G:111:ARG:N	2.42	0.48
10:I:11:LYS:H	10:I:104:ARG:HH21	1.62	0.48
10:I:49:PRO:HB3	10:I:82:ALA:HB2	1.95	0.48
11:J:38:ILE:CG2	11:J:71:LEU:CB	2.92	0.48
11:J:46:ARG:HH11	11:J:46:ARG:CG	2.24	0.48
12:K:64:ALA:O	12:K:65:ALA:C	2.55	0.48
21:T:29:LYS:O	21:T:33:ILE:HD12	2.14	0.48
1:A:142:G:O2'	1:A:195:A:N6	2.47	0.48
1:A:153:C:N4	1:A:168:G:H1	2.11	0.48
1:A:286:G:C6	1:A:287:U:C4	3.01	0.48
1:A:786:G:C6	1:A:787:A:C5	3.02	0.48
1:A:1097:C:O2'	1:A:1168:A:N3	2.44	0.48
1:A:1106:G:O2'	1:A:1107:C:H5'	2.14	0.48
3:B:24:TRP:CD1	3:B:25:ASN:N	2.82	0.48
3:B:54:THR:O	3:B:57:PHE:HB3	2.13	0.48
4:C:55:VAL:O	4:C:55:VAL:CG1	2.59	0.48
8:G:91:VAL:CG1	8:G:96:GLN:HE21	2.27	0.48
10:I:82:ALA:O	10:I:86:VAL:CG2	2.60	0.48
16:O:74:ASP:C	16:O:76:GLU:N	2.69	0.48
1:A:197:A:H4'	1:A:198:G:O5'	2.13	0.48
1:A:512:U:H2'	1:A:513:C:H6	1.79	0.48
1:A:1003(A):G:C2	1:A:1004:A:H1'	2.49	0.48
1:A:1416:G:H2'	1:A:1417:G:H5'	1.95	0.48
3:B:83:MET:HE1	3:B:235:SER:HA	1.96	0.48
10:I:86:VAL:HG12	10:I:90:PRO:HA	1.96	0.48
11:J:24:VAL:HG21	11:J:37:PRO:HD3	1.94	0.48
16:O:28:GLN:O	16:O:30:ALA:N	2.46	0.48
1:A:252:U:C4	1:A:253:U:O4	2.67	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:319:G:N2	1:A:334:C:O2	2.40	0.47
1:A:838:G:H1	1:A:848:C:N4	2.08	0.47
1:A:1101:A:C4'	1:A:1102:A:O5'	2.62	0.47
6:E:55:VAL:O	6:E:56:GLN:C	2.56	0.47
6:E:107:ARG:C	6:E:109:ILE:N	2.71	0.47
6:E:108:ALA:HA	6:E:111:GLU:HB2	1.96	0.47
11:J:81:THR:O	11:J:84:GLN:N	2.35	0.47
12:K:16:SER:O	12:K:35:PRO:HG3	2.14	0.47
20:S:78:ARG:HD2	20:S:78:ARG:N	2.26	0.47
21:T:84:LEU:O	21:T:87:LYS:N	2.47	0.47
1:A:285:G:H2'	1:A:285:G:N3	2.29	0.47
1:A:404:U:H2'	1:A:405:U:H6	1.79	0.47
1:A:420:U:H1'	1:A:424:G:H22	1.71	0.47
1:A:477:G:C2	1:A:478:A:C5	3.02	0.47
1:A:719:C:H42	19:R:74:ARG:HH12	1.61	0.47
1:A:950:U:C5	14:M:102:ARG:NH1	2.82	0.47
1:A:1060:C:O2	1:A:1198:G:C2	2.67	0.47
1:A:1095:U:P	1:A:1108:G:H1	2.37	0.47
1:A:1288:A:C8	1:A:1289:A:C8	3.02	0.47
1:A:1443:G:H5'	1:A:1446:A:H3'	1.94	0.47
1:A:1525:G:P	12:K:120:ARG:HH21	2.37	0.47
4:C:11:ARG:HH12	4:C:178:LEU:CA	2.17	0.47
5:D:30:LYS:HD3	5:D:35:ARG:HH21	1.78	0.47
7:F:44:GLY:HA3	7:F:59:TYR:CE1	2.49	0.47
8:G:154:TYR:N	8:G:154:TYR:CD2	2.82	0.47
16:O:76:GLU:C	16:O:78:TYR:N	2.72	0.47
20:S:52:TYR:HD1	20:S:56:GLN:O	1.97	0.47
1:A:78:G:C2	1:A:79:G:C8	3.02	0.47
1:A:935:A:C2'	1:A:936:C:O5'	2.61	0.47
1:A:964:A:O2'	11:J:55:LYS:HD2	2.14	0.47
1:A:1148:U:H2'	1:A:1149:C:O4'	2.13	0.47
4:C:58:GLU:HG2	11:J:92:THR:CB	2.45	0.47
6:E:11:ILE:HG13	6:E:31:LEU:HB3	1.96	0.47
7:F:67:MET:HB2	7:F:68:PRO:CD	2.44	0.47
8:G:154:TYR:N	8:G:154:TYR:HD2	2.12	0.47
10:I:113:LYS:N	10:I:113:LYS:CD	2.77	0.47
19:R:66:LEU:HG	19:R:70:ILE:HD11	1.96	0.47
21:T:63:ILE:C	21:T:65:LYS:N	2.69	0.47
1:A:235:C:H5'	18:Q:70:ARG:HD3	1.96	0.47
1:A:392:G:C2	1:A:393:A:C5	3.02	0.47
1:A:568:G:C2'	1:A:569:C:H5'	2.42	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:582:U:H5''	16:O:64:ARG:HH22	1.78	0.47
1:A:640:A:C6	1:A:641:U:C4	3.02	0.47
1:A:726:C:H2'	1:A:727:G:C8	2.49	0.47
1:A:978:A:C6	1:A:1318:A:C6	3.03	0.47
1:A:1053:G:O2'	1:A:1054:C:P	2.72	0.47
1:A:1112:C:N3	4:C:178:LEU:HB3	2.29	0.47
1:A:1114:C:H1'	15:N:60:SER:HB3	1.97	0.47
1:A:1197:G:C2'	1:A:1198:G:H5'	2.44	0.47
3:B:52:GLU:O	3:B:54:THR:N	2.48	0.47
4:C:10:PHE:CZ	4:C:178:LEU:HD13	2.50	0.47
12:K:33:THR:HG23	12:K:37:GLY:HA2	1.96	0.47
12:K:53:SER:C	12:K:55:LYS:N	2.73	0.47
21:T:13:LEU:O	21:T:15:ARG:N	2.47	0.47
1:A:160:A:H1'	1:A:344:A:N7	2.29	0.47
1:A:237:C:H5''	1:A:238:G:OP2	2.15	0.47
1:A:1205:U:H1'	4:C:195:VAL:CG2	2.44	0.47
1:A:1345:U:N3	1:A:1377:A:C2	2.82	0.47
14:M:96:LEU:O	14:M:110:ARG:NH1	2.44	0.47
17:P:75:ARG:HA	17:P:80:PHE:CD1	2.49	0.47
18:Q:67:LYS:O	18:Q:68:ARG:HB2	2.14	0.47
1:A:52:G:C2'	1:A:53:A:H5'	2.45	0.47
1:A:809:G:C6	1:A:810:C:C5	3.03	0.47
1:A:836:G:H2'	1:A:837:G:H8	1.80	0.47
1:A:840:C:O5'	1:A:840:C:H6	1.98	0.47
1:A:914:A:C2	1:A:915:A:C1'	2.98	0.47
1:A:939:G:C6	1:A:940:C:C4	3.02	0.47
1:A:1066:C:O2'	1:A:1067:A:C5'	2.61	0.47
1:A:1121:U:O2'	1:A:1122:U:O5'	2.28	0.47
4:C:6:HIS:HD2	4:C:8:ILE:N	2.07	0.47
4:C:113:ALA:O	4:C:116:VAL:N	2.48	0.47
5:D:29:PRO:O	5:D:30:LYS:HG2	2.15	0.47
8:G:24:THR:HA	8:G:27:ILE:HD12	1.97	0.47
8:G:62:PHE:C	8:G:62:PHE:CD2	2.93	0.47
9:H:14:ARG:NH1	9:H:14:ARG:CB	2.78	0.47
10:I:114:TYR:HE1	11:J:59:SER:O	1.96	0.47
11:J:6:ILE:HD11	11:J:73:ASP:H	1.79	0.47
1:A:150:C:C2'	1:A:151:A:O5'	2.63	0.47
1:A:193:C:H2'	1:A:194:C:C6	2.49	0.47
1:A:226:G:C2	1:A:227:G:C8	3.02	0.47
1:A:247:G:C6	1:A:278:G:N1	2.82	0.47
1:A:313:A:H2'	1:A:314:C:H6	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:354:G:H2'	1:A:354:G:N3	2.29	0.47
1:A:393:A:H2'	1:A:394:G:C8	2.34	0.47
1:A:408:A:C6	1:A:409:G:N7	2.82	0.47
1:A:675:A:H1'	12:K:116:HIS:CD2	2.50	0.47
1:A:718:G:N7	1:A:719:C:C5	2.83	0.47
1:A:754:C:O2	1:A:754:C:H3'	2.14	0.47
1:A:862:C:O2	1:A:862:C:H2'	2.14	0.47
1:A:895:G:H2'	1:A:896:C:C6	2.48	0.47
1:A:951:G:H2'	1:A:952:U:O4'	2.15	0.47
1:A:1103:C:P	3:B:96:ARG:HH22	2.38	0.47
1:A:1131:G:H2'	1:A:1132:C:C6	2.50	0.47
1:A:1262:C:O2'	1:A:1263:C:O4'	2.32	0.47
1:A:1366:C:C4	1:A:1367:C:N4	2.83	0.47
1:A:1454:G:H2'	1:A:1455:G:H5'	1.96	0.47
3:B:15:VAL:HG12	3:B:209:ARG:HB3	1.97	0.47
3:B:52:GLU:O	3:B:53:ARG:C	2.58	0.47
3:B:52:GLU:C	3:B:54:THR:N	2.71	0.47
3:B:171:ALA:O	3:B:175:ARG:HB2	2.15	0.47
3:B:214:ILE:O	3:B:215:LEU:C	2.56	0.47
4:C:68:VAL:HG12	4:C:70:VAL:HG23	1.97	0.47
4:C:139:GLN:O	4:C:142:MET:N	2.48	0.47
4:C:182:ILE:HA	4:C:202:ILE:O	2.15	0.47
5:D:141:ARG:CB	5:D:142:PRO:CD	2.77	0.47
5:D:199:GLN:HA	5:D:199:GLN:HE21	1.79	0.47
6:E:36:ASP:OD1	6:E:36:ASP:C	2.58	0.47
13:L:61:THR:C	13:L:63:GLY:N	2.73	0.47
13:L:77:LEU:HD21	13:L:107:ALA:N	2.30	0.47
14:M:84:ILE:HD11	14:M:86:CYS:HB2	1.96	0.47
19:R:22:VAL:O	19:R:22:VAL:HG12	2.14	0.47
19:R:69:THR:O	19:R:70:ILE:C	2.56	0.47
21:T:63:ILE:O	21:T:64:ASP:C	2.56	0.47
1:A:1113:C:OP2	1:A:1113:C:H6	1.98	0.47
1:A:1208:C:N3	1:A:1209:C:H5	2.11	0.47
1:A:1346:A:C4	8:G:10:ARG:NH2	2.83	0.47
6:E:55:VAL:O	6:E:58:ALA:HB3	2.15	0.47
9:H:28:ALA:HA	9:H:59:LEU:HD12	1.97	0.47
13:L:75:HIS:HD2	13:L:76:ASN:H	1.61	0.47
13:L:93:LEU:HD12	13:L:96:VAL:HG21	1.96	0.47
17:P:43:LYS:HA	17:P:48:TRP:HB3	1.96	0.47
21:T:44:ALA:O	21:T:46:GLU:N	2.47	0.47
1:A:243:A:C2	1:A:245:C:C2	3.03	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:604:G:C6	1:A:605:U:C4	3.02	0.47
1:A:765:G:N2	1:A:812:C:HO2'	2.13	0.47
1:A:1100:C:O2'	1:A:1102:A:OP1	2.30	0.47
5:D:83:SER:HA	5:D:89:THR:HG21	1.94	0.47
6:E:52:PRO:C	6:E:54:ALA:N	2.72	0.47
8:G:88:PRO:HG2	8:G:152:ALA:HB2	1.97	0.47
8:G:141:VAL:O	8:G:144:MET:N	2.47	0.47
9:H:35:ILE:O	9:H:36:LEU:C	2.58	0.47
9:H:64:LYS:HG2	9:H:79:VAL:HG21	1.97	0.47
10:I:114:TYR:CD2	10:I:114:TYR:N	2.82	0.47
17:P:49:LEU:HD11	17:P:73:LEU:HB3	1.96	0.47
19:R:33:ASP:C	19:R:35:ARG:N	2.65	0.47
1:A:262:A:N1	1:A:263:A:C6	2.83	0.47
1:A:437:U:HO2'	5:D:125:HIS:CE1	2.26	0.47
1:A:504:C:C2	1:A:542:G:N2	2.83	0.47
1:A:616:G:C2	1:A:617:G:N7	2.83	0.47
1:A:850:U:H6	1:A:850:U:C3'	2.21	0.47
1:A:864:A:H3'	1:A:865:A:C8	2.49	0.47
1:A:988:G:N2	1:A:1218:C:O2	2.48	0.47
1:A:994:A:H61	1:A:1046:A:H2	1.62	0.47
1:A:1238:A:C4	1:A:1303:C:O2'	2.66	0.47
3:B:28:PHE:O	3:B:29:ALA:C	2.57	0.47
5:D:31:CYS:O	5:D:33:MET:N	2.45	0.47
6:E:129:ILE:H	6:E:129:ILE:HD12	1.80	0.47
11:J:47:PHE:CD2	15:N:34:TYR:CD2	3.01	0.47
12:K:27:ASN:O	12:K:56:GLY:HA2	2.14	0.47
14:M:74:VAL:C	14:M:76:ALA:N	2.72	0.47
1:A:488:C:H3'	1:A:488:C:C6	2.49	0.46
1:A:491:G:C5	1:A:492:G:N7	2.83	0.46
1:A:818:G:C2'	1:A:819:A:H5'	2.44	0.46
1:A:838:G:C3'	1:A:839:U:H5''	2.45	0.46
1:A:925:G:C2	1:A:927:G:C8	3.03	0.46
1:A:932:C:H42	1:A:1385:G:H1	1.61	0.46
1:A:955:U:H2'	1:A:956:U:C6	2.49	0.46
1:A:1014:A:H2'	1:A:1015:A:C8	2.50	0.46
3:B:182:ILE:CG2	3:B:183:PRO:CD	2.92	0.46
4:C:45:LYS:HE2	4:C:45:LYS:HB3	1.64	0.46
5:D:14:ARG:HD3	5:D:14:ARG:C	2.40	0.46
5:D:104:VAL:HG23	5:D:185:PHE:HD1	1.80	0.46
8:G:145:ALA:C	8:G:147:ALA:H	2.22	0.46
10:I:36:TYR:CD2	10:I:37:PHE:CE2	3.02	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:I:81:ILE:O	10:I:85:LEU:HD12	2.15	0.46
11:J:47:PHE:N	11:J:63:PHE:O	2.48	0.46
14:M:79:LYS:O	14:M:83:ASP:HB2	2.15	0.46
14:M:82:MET:O	14:M:93:ARG:NH2	2.47	0.46
1:A:231:G:H2'	1:A:231:G:N3	2.28	0.46
1:A:290:C:C4	1:A:291:C:C5	3.03	0.46
1:A:413:G:N2	1:A:428:G:O2'	2.49	0.46
1:A:434:U:H2'	1:A:435:C:C1'	2.46	0.46
1:A:451:A:C5	1:A:481:G:C6	3.04	0.46
1:A:564:C:C4	1:A:565:U:C4	3.02	0.46
1:A:794:A:C4	1:A:795:C:C5	3.03	0.46
1:A:921:U:O2	6:E:19:MET:HB2	2.15	0.46
1:A:1003:G:N2	1:A:1039:C:N3	2.63	0.46
3:B:138:LEU:C	3:B:140:HIS:N	2.73	0.46
3:B:180:LEU:CB	3:B:182:ILE:HD12	2.45	0.46
4:C:157:ILE:O	4:C:158:GLY:C	2.58	0.46
5:D:57:ARG:HE	5:D:205:GLU:HB3	1.81	0.46
8:G:6:ARG:O	8:G:7:ALA:O	2.33	0.46
10:I:50:LEU:CD1	10:I:81:ILE:CG2	2.92	0.46
12:K:82:VAL:CG1	12:K:83:ILE:N	2.75	0.46
1:A:165:C:H2'	1:A:166:G:H8	1.79	0.46
1:A:200:G:C2'	1:A:201:C:O5'	2.63	0.46
1:A:427:U:O2'	1:A:541:G:OP1	2.33	0.46
1:A:588:G:C8	1:A:753:A:C2	3.03	0.46
1:A:597:G:C4	1:A:644:G:C2	3.03	0.46
1:A:978:A:H1'	1:A:1322:C:O2	2.15	0.46
1:A:1057:G:O2'	1:A:1058:G:H5'	2.16	0.46
1:A:1102:A:H2'	1:A:1103:C:H6	1.75	0.46
1:A:1232:U:H2'	1:A:1233:G:C8	2.50	0.46
5:D:128:VAL:HG22	5:D:146:ILE:HG13	1.97	0.46
7:F:30:LEU:HD23	7:F:75:LEU:HD11	1.97	0.46
7:F:97:PHE:HB3	19:R:32:ARG:HH21	1.79	0.46
8:G:95:ARG:HG3	8:G:99:LEU:HD12	1.96	0.46
9:H:99:GLU:O	9:H:100:ILE:C	2.58	0.46
11:J:38:ILE:CG2	11:J:71:LEU:HB3	2.45	0.46
13:L:100:ILE:CG2	13:L:101:VAL:N	2.78	0.46
14:M:8:GLU:HA	14:M:9:ILE:HG13	1.98	0.46
21:T:97:ALA:HB1	21:T:98:PRO:HD3	1.97	0.46
1:A:37:U:HO2'	1:A:500:G:H4'	1.78	0.46
1:A:106:C:C2	1:A:107:G:C8	3.04	0.46
1:A:264:U:C6	1:A:264:U:C3'	2.99	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:855:G:H2'	1:A:856:C:C6	2.51	0.46
1:A:880:C:C3'	1:A:880:C:C6	2.99	0.46
1:A:1003:G:C8	1:A:1003:G:O5'	2.68	0.46
1:A:1490:C:H2'	1:A:1491:G:H5''	1.98	0.46
3:B:108:ILE:HG22	3:B:152:PHE:CE2	2.51	0.46
3:B:111:ARG:HB3	3:B:149:LEU:CD1	2.37	0.46
4:C:23:TYR:HB3	11:J:93:GLY:C	2.40	0.46
4:C:122:GLU:HA	4:C:125:GLU:HB2	1.97	0.46
5:D:4:TYR:O	5:D:5:ILE:HB	2.14	0.46
5:D:50:ARG:O	5:D:51:PRO:C	2.59	0.46
9:H:119:LEU:HD13	9:H:124:ALA:CA	2.45	0.46
11:J:64:GLU:H	11:J:64:GLU:HG3	1.60	0.46
12:K:17:GLY:HA3	12:K:77:MET:HE1	1.98	0.46
14:M:102:ARG:NH1	14:M:105:THR:OG1	2.49	0.46
17:P:6:LEU:HD23	17:P:17:TYR:CB	2.45	0.46
1:A:157:G:C4	1:A:158:G:C8	3.03	0.46
1:A:382:A:C2	1:A:383:A:C5	3.04	0.46
1:A:394:G:H2'	1:A:394:G:N3	2.30	0.46
1:A:537:G:H2'	1:A:538:G:C8	2.47	0.46
1:A:696:A:H2'	1:A:697:U:O4'	2.16	0.46
1:A:1065:U:H5	1:A:1190:G:C4	2.34	0.46
1:A:1090:U:H2'	1:A:1091:U:H6	1.80	0.46
1:A:1152:A:C4'	11:J:13:HIS:CD2	2.95	0.46
1:A:1154:G:N3	1:A:1155:G:C8	2.84	0.46
1:A:1250:A:C6	1:A:1287:A:C2	3.03	0.46
1:A:1295:G:O2'	1:A:1302:U:O4	2.23	0.46
4:C:193:TYR:CE1	4:C:196:LEU:HD21	2.49	0.46
6:E:71:LEU:HD21	6:E:115:VAL:CG2	2.43	0.46
6:E:105:VAL:HG11	6:E:132:ALA:HB2	1.97	0.46
8:G:111:ARG:NH1	8:G:122:HIS:CB	2.73	0.46
13:L:23:LYS:C	13:L:24:VAL:CG2	2.88	0.46
17:P:74:LEU:HD13	17:P:79:VAL:HG21	1.96	0.46
18:Q:86:GLU:O	18:Q:89:LEU:HB2	2.15	0.46
20:S:78:ARG:HH11	20:S:78:ARG:HG3	1.80	0.46
1:A:46:G:C2	1:A:396:G:C2	3.03	0.46
1:A:193:C:C1'	21:T:60:GLU:OE1	2.64	0.46
1:A:664:G:H22	1:A:741:G:H22	1.63	0.46
1:A:1240:U:C4'	8:G:38:LEU:HD11	2.42	0.46
1:A:1347:G:C8	10:I:107:ARG:HB3	2.51	0.46
1:A:1367:C:C2	1:A:1368:G:C8	3.03	0.46
3:B:50:GLU:O	3:B:51:LEU:C	2.58	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:55:PHE:HA	3:B:58:ILE:CG1	2.43	0.46
6:E:9:LYS:HB3	6:E:33:VAL:HG23	1.96	0.46
6:E:15:ARG:NH1	6:E:15:ARG:HG3	2.28	0.46
6:E:41:VAL:O	6:E:67:VAL:HG12	2.16	0.46
8:G:138:LYS:C	8:G:140:ASP:H	2.23	0.46
14:M:107:ALA:CB	14:M:111:LYS:HG3	2.46	0.46
19:R:37:VAL:O	19:R:38:GLU:C	2.58	0.46
20:S:80:TYR:CZ	20:S:82:GLY:HA2	2.50	0.46
1:A:113:G:H1	1:A:314:C:N4	2.12	0.46
1:A:266:G:H5'	1:A:266:G:H8	1.81	0.46
1:A:738:C:OP1	7:F:92:LYS:HD3	2.16	0.46
1:A:879:C:C2'	1:A:880:C:H5'	2.45	0.46
1:A:976:G:O2'	1:A:977:A:H5'	2.15	0.46
1:A:1003:G:O5'	1:A:1003:G:H8	1.98	0.46
1:A:1271:G:H5'	1:A:1314:C:H5''	1.98	0.46
1:A:1500:A:C2'	1:A:1501:C:H5'	2.45	0.46
3:B:112:VAL:HG11	3:B:153:ARG:HA	1.97	0.46
11:J:23:ILE:O	11:J:23:ILE:CG2	2.63	0.46
14:M:14:ARG:HG2	14:M:14:ARG:NH1	2.29	0.46
14:M:122:LYS:O	14:M:123:ALA:CB	2.63	0.46
17:P:48:TRP:CD1	17:P:48:TRP:H	2.34	0.46
20:S:78:ARG:HG3	20:S:78:ARG:NH1	2.31	0.46
1:A:392:G:C4	1:A:393:A:N7	2.83	0.46
1:A:507:C:H2'	1:A:508:C:H5	1.81	0.46
1:A:691:G:H8	1:A:691:G:O5'	1.98	0.46
1:A:838:G:N2	1:A:849:C:C2	2.84	0.46
1:A:956:U:C2	1:A:1225:A:C2	3.04	0.46
1:A:980:C:H3'	1:A:981:U:C6	2.51	0.46
1:A:1121:U:O4	1:A:1152:A:N1	2.49	0.46
1:A:1314:C:C2	1:A:1315:U:C6	3.04	0.46
4:C:47:LEU:O	4:C:48:TYR:C	2.58	0.46
5:D:141:ARG:CB	5:D:142:PRO:HD3	2.46	0.46
15:N:23:ARG:HD3	15:N:23:ARG:HA	1.51	0.46
16:O:27:VAL:O	16:O:30:ALA:HB3	2.15	0.46
17:P:22:THR:HG23	17:P:23:ASP:O	2.16	0.46
18:Q:68:ARG:N	18:Q:70:ARG:HH12	2.14	0.46
1:A:575:G:C5	1:A:881:G:C2	3.04	0.46
1:A:731:G:OP1	1:A:766:A:C1'	2.59	0.46
1:A:791:G:C6	1:A:792:A:N7	2.84	0.46
1:A:946:A:C2	1:A:1236:A:C2	3.04	0.46
1:A:959:A:H2	1:A:1222:G:O4'	1.94	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1381:U:N3	1:A:1382:C:C5	2.83	0.46
1:A:1507:A:H8	1:A:1507:A:C5'	2.29	0.46
3:B:87:ARG:CZ	3:B:233:SER:HB3	2.45	0.46
3:B:158:LEU:HD23	3:B:159:PRO:HD2	1.97	0.46
3:B:207:ALA:O	3:B:208:ILE:C	2.58	0.46
5:D:52:SER:O	5:D:55:ALA:N	2.48	0.46
5:D:109:GLY:O	5:D:110:PHE:C	2.59	0.46
6:E:51:VAL:O	6:E:54:ALA:CB	2.62	0.46
8:G:50:ILE:HG21	8:G:58:PRO:HA	1.98	0.46
13:L:46:LYS:CG	13:L:47:LYS:H	2.29	0.46
13:L:102:ARG:HH12	13:L:110:VAL:CA	2.18	0.46
14:M:29:ARG:HD3	14:M:64:TRP:CE2	2.51	0.46
16:O:6:GLU:O	16:O:7:GLU:C	2.57	0.46
19:R:66:LEU:HD12	19:R:66:LEU:HA	1.75	0.46
20:S:78:ARG:CG	20:S:78:ARG:NH1	2.76	0.46
20:S:83:HIS:CD2	20:S:83:HIS:H	2.34	0.46
1:A:91:C:H2'	1:A:92:C:O5'	2.16	0.46
1:A:175:C:N3	1:A:176:C:C5	2.84	0.46
1:A:223:U:H5''	21:T:68:LYS:HZ2	1.80	0.46
1:A:259:G:H2'	1:A:260:G:O4'	2.15	0.46
1:A:519:C:H2'	1:A:520:A:H8	1.69	0.46
1:A:625:G:C6	1:A:626:U:C4	3.04	0.46
1:A:722:A:O2'	1:A:723:U:C2	2.69	0.46
1:A:941:G:C6	1:A:942:G:N7	2.84	0.46
1:A:959:A:C2	1:A:1222:G:C1'	2.99	0.46
1:A:1112:C:N3	4:C:178:LEU:N	2.63	0.46
1:A:1240:U:H3	8:G:30:ILE:HG22	1.81	0.46
1:A:1306:A:C5	1:A:1307:U:C5	3.03	0.46
4:C:133:ALA:O	4:C:134:ILE:C	2.59	0.46
4:C:167:TRP:O	4:C:168:ALA:HB2	2.16	0.46
6:E:69:VAL:O	6:E:69:VAL:HG12	2.16	0.46
7:F:7:ASN:HD21	19:R:34:TYR:HE1	1.62	0.46
9:H:14:ARG:HH11	9:H:14:ARG:HG2	1.81	0.46
10:I:50:LEU:O	10:I:52:ALA:N	2.48	0.46
11:J:33:GLN:C	11:J:34:VAL:HG23	2.41	0.46
13:L:10:LEU:HD23	13:L:10:LEU:HA	1.70	0.46
17:P:45:THR:C	17:P:47:ASP:H	2.23	0.46
20:S:17:GLU:HA	20:S:20:LEU:HD23	1.98	0.46
1:A:64:G:H4'	1:A:65:U:O5'	2.15	0.45
1:A:160:A:C5	1:A:346:G:O6	2.69	0.45
1:A:257:G:H8	1:A:257:G:O5'	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:266:G:C5'	1:A:266:G:H8	2.26	0.45
1:A:367:U:O2	1:A:369:C:C6	2.69	0.45
1:A:401:C:O2'	1:A:621:A:N3	2.49	0.45
1:A:444:C:C2'	1:A:445:G:H8	2.03	0.45
1:A:639:G:O2'	1:A:640:A:H5'	2.17	0.45
1:A:643:C:C3'	1:A:643:C:C6	2.99	0.45
1:A:705:U:O2	1:A:705:U:H2'	2.16	0.45
1:A:1030(D):A:H5''	1:A:1031:G:OP2	2.16	0.45
1:A:1105:A:H2'	1:A:1106:G:H8	1.80	0.45
1:A:1125:U:O4	11:J:5:ARG:HG3	2.15	0.45
1:A:1265:G:C4	1:A:1271:G:N2	2.84	0.45
4:C:181:ASN:C	4:C:182:ILE:HG13	2.40	0.45
10:I:19:LEU:HD23	10:I:19:LEU:HA	1.79	0.45
15:N:44:LEU:C	15:N:44:LEU:CD1	2.89	0.45
17:P:19:ILE:CG2	17:P:36:ILE:HG13	2.35	0.45
17:P:70:ALA:C	17:P:72:ARG:N	2.74	0.45
21:T:13:LEU:O	21:T:14:LYS:C	2.58	0.45
21:T:44:ALA:C	21:T:46:GLU:N	2.73	0.45
1:A:106:C:H2'	1:A:107:G:C8	2.39	0.45
1:A:256:U:H2'	1:A:257:G:C5'	2.46	0.45
1:A:292:G:C8	1:A:292:G:H3'	2.51	0.45
1:A:623:C:O2	1:A:623:C:C2'	2.60	0.45
1:A:749:C:H2'	1:A:750:G:H8	1.80	0.45
1:A:914:A:N1	1:A:915:A:N3	2.65	0.45
1:A:926:G:H22	2:Z:4:U:P	2.38	0.45
1:A:1153:C:H2'	1:A:1154:G:O4'	2.16	0.45
1:A:1228:C:H2'	1:A:1229:A:C8	2.51	0.45
1:A:1296:C:C4'	1:A:1302:U:C5	2.98	0.45
1:A:1327:C:O2'	1:A:1328:C:H5'	2.17	0.45
1:A:1459:C:H2'	1:A:1460:A:C8	2.47	0.45
1:A:1510:U:O2	1:A:1510:U:H2'	2.16	0.45
3:B:162:ILE:CG2	3:B:184:VAL:HG22	2.46	0.45
6:E:107:ARG:O	6:E:110:LEU:N	2.49	0.45
9:H:120:THR:HG23	9:H:123:GLU:CD	2.40	0.45
15:N:21:TYR:CE2	15:N:23:ARG:NE	2.73	0.45
17:P:4:ILE:O	17:P:66:PRO:HA	2.16	0.45
19:R:87:ARG:HH11	19:R:87:ARG:CB	2.29	0.45
21:T:16:HIS:O	21:T:17:ARG:C	2.59	0.45
1:A:504:C:C2	1:A:542:G:C2	3.04	0.45
1:A:521:G:OP2	13:L:54:LYS:NZ	2.34	0.45
1:A:781:A:C2	1:A:1514:C:H1'	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:803:G:C4	1:A:804:U:C6	3.04	0.45
1:A:880:C:H3'	1:A:880:C:H6	1.81	0.45
1:A:922:G:H2'	1:A:923:A:O4'	2.16	0.45
1:A:1123:A:C2	1:A:1151:A:N1	2.84	0.45
1:A:1185:G:H2'	1:A:1186:G:H8	1.82	0.45
1:A:1350:A:H8	1:A:1350:A:O5'	2.00	0.45
5:D:125:HIS:C	5:D:126:ILE:HD13	2.41	0.45
8:G:37:ASN:O	8:G:38:LEU:C	2.60	0.45
10:I:79:LEU:O	10:I:82:ALA:N	2.49	0.45
15:N:4:LYS:O	15:N:6:LEU:N	2.49	0.45
18:Q:22:LEU:HD12	18:Q:22:LEU:HA	1.57	0.45
1:A:157:G:N1	1:A:158:G:N7	2.64	0.45
1:A:184:G:H2'	1:A:185:A:C8	2.51	0.45
1:A:417:C:H5''	1:A:418:C:OP2	2.17	0.45
1:A:462:G:C2	1:A:463:A:C4	3.04	0.45
1:A:513:C:H5''	1:A:514:C:OP2	2.17	0.45
1:A:515:G:C6	1:A:516:U:C5	3.05	0.45
1:A:615:C:C6	1:A:615:C:C3'	3.00	0.45
1:A:672:U:H4'	7:F:80:ARG:NH1	2.30	0.45
1:A:935:A:H2'	1:A:936:C:O5'	2.17	0.45
1:A:1152:A:O3'	11:J:13:HIS:CD2	2.69	0.45
1:A:1240:U:N3	8:G:30:ILE:CG2	2.79	0.45
1:A:1393:U:O2'	1:A:1501:C:O2'	2.34	0.45
3:B:100:GLY:O	3:B:104:ASN:N	2.49	0.45
4:C:52:LEU:C	4:C:54:ARG:H	2.23	0.45
4:C:178:LEU:O	4:C:178:LEU:HG	2.16	0.45
8:G:26:PHE:HA	8:G:101:LEU:HD22	1.97	0.45
8:G:122:HIS:HA	8:G:125:MET:HE2	1.97	0.45
10:I:71:SER:CA	10:I:74:ILE:HD12	2.44	0.45
10:I:114:TYR:C	10:I:116:LYS:H	2.24	0.45
13:L:75:HIS:CD2	13:L:75:HIS:C	2.95	0.45
15:N:9:LYS:C	15:N:11:LYS:N	2.75	0.45
1:A:59:A:H2'	1:A:59:A:N3	2.31	0.45
1:A:125:U:H2'	1:A:126:G:C8	2.51	0.45
1:A:160:A:H2'	1:A:161:A:O4'	2.15	0.45
1:A:299:G:H8	1:A:299:G:O5'	2.00	0.45
1:A:414:A:C2	1:A:415:A:C4	3.05	0.45
1:A:618:C:N3	1:A:622:A:N6	2.65	0.45
1:A:818:G:O2'	1:A:819:A:H5''	2.16	0.45
1:A:1061:G:C6	1:A:1062:U:N3	2.85	0.45
1:A:1107:C:C6	1:A:1107:C:C3'	2.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1460:A:C2	1:A:1461:G:H1'	2.52	0.45
19:R:56:THR:O	19:R:57:GLY:C	2.59	0.45
1:A:41:G:H2'	1:A:42:G:C8	2.52	0.45
1:A:44:G:N2	1:A:45:U:H1'	2.31	0.45
1:A:293:G:C6	1:A:294:U:C4	3.04	0.45
1:A:372:C:H4'	1:A:373:A:O5'	2.16	0.45
1:A:1074:G:O3'	3:B:103:THR:CG2	2.64	0.45
1:A:1123:A:N3	11:J:39:PRO:HG3	2.32	0.45
1:A:1419:G:O6	1:A:1482:G:N2	2.49	0.45
3:B:71:VAL:O	3:B:165:VAL:CG2	2.64	0.45
3:B:174:VAL:C	3:B:176:GLU:H	2.24	0.45
4:C:186:PHE:CE1	4:C:187:ALA:O	2.70	0.45
6:E:128:PRO:O	6:E:129:ILE:C	2.60	0.45
6:E:136:MET:C	6:E:138:ALA:N	2.74	0.45
8:G:31:MET:SD	8:G:34:GLY:HA2	2.57	0.45
10:I:77:ILE:HG23	10:I:81:ILE:CD1	2.46	0.45
14:M:15:VAL:HB	14:M:34:LEU:HD11	1.99	0.45
1:A:42:G:H1	1:A:400:C:N4	2.14	0.45
1:A:781:A:N7	1:A:802:A:C2	2.85	0.45
1:A:880:C:C6	1:A:880:C:H3'	2.51	0.45
1:A:894:G:H2'	1:A:895:G:H8	1.80	0.45
1:A:1167:A:C6	1:A:1168:A:C6	3.04	0.45
1:A:1229:A:H5''	1:A:1230:C:OP2	2.17	0.45
1:A:1298:C:H2'	8:G:114:ARG:NH1	2.32	0.45
3:B:105:PHE:O	3:B:107:THR:N	2.50	0.45
4:C:22:TRP:CH2	4:C:32:LEU:O	2.70	0.45
4:C:57:ILE:CG2	4:C:58:GLU:N	2.79	0.45
4:C:138:VAL:O	4:C:142:MET:N	2.46	0.45
6:E:52:PRO:O	6:E:53:LEU:C	2.60	0.45
7:F:30:LEU:O	7:F:34:GLY:N	2.50	0.45
8:G:6:ARG:O	8:G:6:ARG:HG2	2.16	0.45
13:L:75:HIS:CD2	13:L:77:LEU:N	2.72	0.45
14:M:49:THR:HG22	14:M:51:ALA:N	2.27	0.45
15:N:43:CYS:O	15:N:44:LEU:C	2.60	0.45
16:O:3:ILE:CG2	16:O:34:LEU:HD11	2.40	0.45
1:A:56:U:H2'	1:A:57:G:C8	2.52	0.45
1:A:109:A:C3'	1:A:110:C:H5'	2.47	0.45
1:A:122:G:N2	1:A:123:C:H1'	2.32	0.45
1:A:408:A:C8	1:A:408:A:C3'	2.99	0.45
1:A:560:U:C5'	1:A:566:G:N2	2.73	0.45
1:A:684:A:H2'	1:A:685:G:O5'	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:989:C:O2	1:A:1217:C:N3	2.50	0.45
5:D:111:ALA:HB1	5:D:116:GLN:HB3	1.99	0.45
7:F:11:ASN:C	7:F:11:ASN:OD1	2.59	0.45
9:H:9:MET:HG3	9:H:26:VAL:HG21	1.99	0.45
14:M:8:GLU:CA	14:M:9:ILE:HG13	2.46	0.45
16:O:28:GLN:O	16:O:29:VAL:C	2.60	0.45
16:O:63:ARG:O	16:O:64:ARG:C	2.58	0.45
18:Q:45:HIS:HA	18:Q:69:LYS:CE	2.47	0.45
21:T:67:ALA:O	21:T:73:HIS:ND1	2.47	0.45
1:A:505:G:C6	1:A:506:G:O6	2.70	0.45
1:A:878:G:H1'	9:H:3:THR:HG21	1.98	0.45
1:A:943:U:C2	1:A:944:G:C8	3.05	0.45
1:A:955:U:H2'	1:A:956:U:H6	1.82	0.45
1:A:991:U:H3	1:A:1215:G:H1	1.64	0.45
1:A:1057:G:C4	1:A:1204:A:C2	3.04	0.45
1:A:1365:G:H2'	1:A:1366:C:C6	2.52	0.45
1:A:1365:G:H2'	1:A:1366:C:H6	1.82	0.45
3:B:9:GLU:HG3	3:B:217:ARG:CZ	2.44	0.45
3:B:187:LEU:HA	3:B:201:ILE:HB	1.98	0.45
8:G:115:ARG:HB3	8:G:118:VAL:CG2	2.47	0.45
13:L:10:LEU:HD21	13:L:15:ARG:HD3	1.99	0.45
14:M:74:VAL:O	14:M:76:ALA:N	2.50	0.45
15:N:36:PHE:CD1	15:N:37:PHE:CE1	3.05	0.45
18:Q:56:VAL:HG12	18:Q:77:VAL:HG23	1.99	0.45
1:A:129(A):G:N2	1:A:190(E):U:H5''	2.32	0.45
1:A:160:A:C6	1:A:161:A:C2	3.05	0.45
1:A:247:G:C5	1:A:278:G:C2	3.05	0.45
1:A:324:G:H8	1:A:324:G:O5'	2.00	0.45
1:A:491:G:H2'	1:A:492:G:H8	1.82	0.45
1:A:720:C:O5'	1:A:720:C:H6	2.00	0.45
1:A:1047:G:C3'	1:A:1048:G:H5'	2.42	0.45
1:A:1416:G:C6	1:A:1417:G:C5	3.05	0.45
3:B:71:VAL:HG23	3:B:164:VAL:HG13	1.97	0.45
3:B:162:ILE:HG22	3:B:184:VAL:HA	1.99	0.45
4:C:88:ARG:HG2	4:C:91:LEU:CD2	2.47	0.45
5:D:165:MET:HG2	5:D:176:LEU:HD21	1.98	0.45
6:E:144:THR:C	6:E:146:ALA:N	2.72	0.45
10:I:6:GLY:HA3	10:I:83:ARG:HB3	1.98	0.45
10:I:47:LEU:CA	10:I:49:PRO:HD2	2.46	0.45
20:S:40:ILE:HG12	20:S:62:ILE:HD11	1.99	0.45
21:T:89:ARG:HH12	21:T:106:ALA:HB2	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:38:G:H22	1:A:397:A:H5''	1.82	0.44
1:A:373:A:H2'	1:A:374:A:H8	1.82	0.44
1:A:615:C:H3'	1:A:615:C:H6	1.82	0.44
1:A:925:G:C6	1:A:927:G:N7	2.85	0.44
1:A:975:A:H4'	1:A:976:G:O5'	2.16	0.44
1:A:1060:C:C2	1:A:1198:G:C2	3.06	0.44
1:A:1092:A:C8	1:A:1092:A:H5'	2.52	0.44
1:A:1105:A:H2'	1:A:1106:G:C8	2.52	0.44
1:A:1119:C:H3'	1:A:1119:C:H6	1.79	0.44
1:A:1303:C:O2	1:A:1303:C:H2'	2.15	0.44
1:A:1453:G:H2'	1:A:1454:G:O4'	2.17	0.44
1:A:1511:G:C6	1:A:1512:U:C2	3.05	0.44
3:B:167:PRO:HG2	3:B:192:SER:CB	2.47	0.44
6:E:57:LYS:O	6:E:58:ALA:C	2.60	0.44
9:H:109:ILE:HD12	9:H:110:ALA:C	2.41	0.44
13:L:43:VAL:HG12	13:L:55:VAL:HG21	1.98	0.44
14:M:52:GLU:O	14:M:56:LEU:HB2	2.17	0.44
15:N:11:LYS:C	15:N:13:THR:H	2.25	0.44
15:N:14:PRO:O	15:N:15:LYS:C	2.59	0.44
16:O:24:SER:HB3	16:O:27:VAL:H	1.81	0.44
16:O:49:ASP:O	16:O:51:HIS:N	2.49	0.44
20:S:77:THR:O	20:S:78:ARG:C	2.60	0.44
1:A:689:C:H4'	1:A:705:U:O2'	2.18	0.44
3:B:19:HIS:HB2	3:B:204:ASN:OD1	2.17	0.44
3:B:91:PRO:HG2	3:B:155:LEU:CD2	2.32	0.44
3:B:97:TRP:CH2	3:B:176:GLU:CD	2.94	0.44
5:D:3:ARG:HA	5:D:3:ARG:HD3	1.58	0.44
5:D:152:SER:O	5:D:153:ARG:C	2.61	0.44
15:N:12:ARG:H	15:N:12:ARG:HG3	1.53	0.44
16:O:28:GLN:C	16:O:30:ALA:H	2.25	0.44
17:P:23:ASP:O	17:P:24:ALA:C	2.60	0.44
20:S:21:GLU:C	20:S:23:ASN:H	2.26	0.44
1:A:285:G:C2	1:A:286:G:C8	3.06	0.44
1:A:543:C:H2'	1:A:544:G:H5'	2.00	0.44
1:A:1186:G:C2	1:A:1187:G:C8	3.06	0.44
1:A:1247:U:C6	1:A:1247:U:C3'	2.99	0.44
1:A:1265:G:H5''	1:A:1266:G:OP2	2.17	0.44
1:A:1333:A:H2'	1:A:1334:G:C8	2.53	0.44
1:A:1401:G:OP2	2:Z:6:U:H3'	2.17	0.44
3:B:162:ILE:HG21	3:B:184:VAL:HG22	1.98	0.44
3:B:223:ILE:CG2	3:B:224:GLN:H	2.31	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:C:29:TYR:CE2	4:C:33:LEU:HD12	2.52	0.44
5:D:64:LEU:CD1	5:D:97:LEU:HD11	2.47	0.44
6:E:54:ALA:O	6:E:55:VAL:C	2.60	0.44
12:K:42:TRP:CZ3	12:K:47:VAL:HG23	2.53	0.44
14:M:13:LYS:O	14:M:14:ARG:C	2.60	0.44
15:N:24:CYS:SG	15:N:27:CYS:SG	3.15	0.44
19:R:22:VAL:HB	19:R:56:THR:HA	1.99	0.44
19:R:76:LEU:HD12	19:R:78:LEU:HD13	2.00	0.44
1:A:291:C:O2	1:A:291:C:H2'	2.16	0.44
1:A:392:G:C6	1:A:393:A:N6	2.85	0.44
1:A:443:C:H2'	1:A:444:C:C6	2.52	0.44
1:A:452:A:H1'	1:A:453:A:C8	2.51	0.44
1:A:797:C:OP1	12:K:124:LYS:HG3	2.17	0.44
1:A:942:G:C6	1:A:1342:C:C4	3.05	0.44
1:A:976:G:H8	1:A:1358:U:O2'	1.97	0.44
1:A:1229:A:C4	1:A:1230:C:C5	3.06	0.44
1:A:1365:G:C6	1:A:1366:C:N3	2.85	0.44
1:A:1443:G:C4'	1:A:1446:A:P	3.01	0.44
4:C:128:PHE:HE2	4:C:132:ARG:NH1	2.15	0.44
4:C:188:LEU:O	4:C:189:ALA:HB3	2.16	0.44
5:D:97:LEU:O	5:D:100:ARG:HB2	2.17	0.44
9:H:58:TYR:O	9:H:59:LEU:HG	2.18	0.44
9:H:112:LEU:N	9:H:112:LEU:HD22	2.32	0.44
11:J:56:HIS:O	11:J:59:SER:OG	2.35	0.44
12:K:33:THR:OG1	12:K:38:ASN:N	2.50	0.44
13:L:71:PRO:HG2	13:L:102:ARG:HG3	2.00	0.44
14:M:14:ARG:NH1	14:M:16:ASP:OD2	2.51	0.44
14:M:19:LEU:HB3	14:M:25:ILE:HG21	1.99	0.44
18:Q:19:VAL:HG23	18:Q:21:VAL:HG23	2.00	0.44
19:R:74:ARG:HD3	19:R:80:PRO:O	2.17	0.44
1:A:186:C:C2	1:A:187:C:C5	3.05	0.44
1:A:243:A:N7	1:A:281:G:C2	2.85	0.44
1:A:348:G:H2'	1:A:349:A:H8	1.83	0.44
1:A:707:C:C4'	12:K:20:TYR:HD2	2.29	0.44
1:A:784:C:H3'	1:A:784:C:C6	2.53	0.44
1:A:939:G:H2'	1:A:940:C:C6	2.51	0.44
1:A:1115:C:O2'	1:A:1116:C:H5'	2.16	0.44
1:A:1435:G:C6	1:A:1436:U:O4	2.70	0.44
1:A:1454:G:O5'	1:A:1454:G:H8	2.01	0.44
3:B:12:GLU:HG3	3:B:213:LEU:HD13	2.00	0.44
3:B:15:VAL:HG13	3:B:209:ARG:HH11	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:C:15:THR:HG21	4:C:179:ARG:CA	2.45	0.44
4:C:22:TRP:HH2	4:C:32:LEU:O	2.00	0.44
4:C:72:LYS:C	4:C:74:GLY:N	2.76	0.44
5:D:101:LEU:C	5:D:103:ASN:H	2.25	0.44
6:E:126:ARG:HD3	6:E:126:ARG:HA	1.53	0.44
8:G:67:GLU:O	8:G:67:GLU:CG	2.62	0.44
10:I:42:ARG:O	10:I:43:ALA:C	2.59	0.44
10:I:111:ARG:NH1	15:N:61:TRP:OXT	2.50	0.44
12:K:38:ASN:O	12:K:39:PRO:C	2.61	0.44
13:L:71:PRO:HB2	13:L:120:TYR:HE2	1.82	0.44
14:M:20:THR:C	14:M:22:ILE:H	2.25	0.44
17:P:42:ARG:NH1	17:P:42:ARG:HB3	2.32	0.44
18:Q:8:GLY:O	18:Q:56:VAL:HA	2.18	0.44
1:A:267:C:H2'	1:A:268:C:H5'	1.98	0.44
1:A:285:G:N2	1:A:286:G:H1'	2.33	0.44
1:A:290:C:H2'	1:A:291:C:O4'	2.18	0.44
1:A:426:G:OP1	5:D:36:ARG:NH2	2.34	0.44
1:A:560:U:H5'	1:A:566:G:H21	1.75	0.44
1:A:668:G:H4'	16:O:48:LYS:HB3	1.99	0.44
1:A:950:U:O5'	1:A:950:U:H6	2.01	0.44
1:A:1114:C:C4	1:A:1115:C:H5	2.36	0.44
1:A:1130:A:N3	1:A:1130:A:H2'	2.33	0.44
1:A:1208:C:H2'	1:A:1209:C:C6	2.53	0.44
1:A:1355:G:H2'	1:A:1356:G:H5'	1.99	0.44
3:B:44:LEU:H	3:B:44:LEU:HG	1.40	0.44
3:B:122:PHE:O	3:B:125:PRO:HD2	2.17	0.44
5:D:38:TYR:HB2	5:D:39:PRO:HD2	2.00	0.44
5:D:63:LYS:O	5:D:64:LEU:C	2.61	0.44
5:D:89:THR:O	5:D:90:GLY:C	2.60	0.44
5:D:111:ALA:HB2	5:D:120:LEU:CD1	2.47	0.44
6:E:143:ARG:HH11	6:E:143:ARG:CG	2.31	0.44
8:G:133:GLY:O	8:G:134:ALA:C	2.60	0.44
11:J:35:SER:OG	11:J:73:ASP:O	2.33	0.44
15:N:47:LEU:O	15:N:50:LYS:N	2.51	0.44
17:P:28:ARG:HG3	17:P:29:ASP:OD2	2.17	0.44
17:P:58:TYR:O	17:P:61:SER:N	2.50	0.44
17:P:65:GLN:HA	17:P:66:PRO:HD2	1.63	0.44
1:A:290:C:C5	1:A:291:C:C5	3.06	0.44
1:A:355:C:H2'	1:A:356:A:O4'	2.18	0.44
1:A:606:G:H5''	1:A:607:A:H5'	1.98	0.44
1:A:686:U:O4	1:A:703:G:O2'	2.29	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:789:U:O2	1:A:791:G:N7	2.51	0.44
1:A:858:G:H1	1:A:869:G:H3'	1.82	0.44
1:A:1061:G:C6	1:A:1197:G:C6	3.06	0.44
1:A:1064:G:C2	1:A:1066:C:N4	2.86	0.44
1:A:1126:U:P	1:A:1281:U:O2	2.76	0.44
1:A:1240:U:H3	8:G:30:ILE:HG23	1.82	0.44
1:A:1287:A:C6	1:A:1288:A:C6	3.06	0.44
1:A:1324:A:H1'	1:A:1361(A):C:H4'	2.00	0.44
1:A:1525:G:H2'	1:A:1526:G:O5'	2.16	0.44
5:D:67:ILE:CG2	5:D:68:TYR:HD1	2.27	0.44
6:E:138:ALA:O	6:E:141:GLN:HB2	2.18	0.44
8:G:127:ALA:O	8:G:130:GLY:N	2.51	0.44
9:H:4:ASP:HA	9:H:5:PRO:HD2	1.90	0.44
13:L:85:ILE:HG23	13:L:86:ARG:N	2.33	0.44
14:M:20:THR:O	14:M:22:ILE:N	2.51	0.44
14:M:78:ILE:C	14:M:80:ARG:N	2.74	0.44
17:P:21:VAL:O	17:P:32:TYR:HB2	2.17	0.44
18:Q:11:VAL:HB	18:Q:88:TYR:CD2	2.52	0.44
1:A:19:C:C2	1:A:20:U:C5	3.06	0.44
1:A:349:A:H2'	1:A:350:G:H5''	2.00	0.44
1:A:454:C:H5''	1:A:455:C:OP2	2.17	0.44
1:A:781:A:C4	1:A:802:A:H2	2.36	0.44
1:A:913:A:H1'	1:A:914:A:O4'	2.17	0.44
1:A:1056:U:O4	1:A:1200:C:N3	2.51	0.44
1:A:1246:C:H42	1:A:1291:G:H1	1.65	0.44
3:B:118:LEU:CD2	3:B:142:LEU:HB2	2.47	0.44
3:B:139:LYS:HB2	3:B:139:LYS:HE3	1.85	0.44
4:C:133:ALA:O	4:C:136:GLN:N	2.51	0.44
4:C:184:TYR:C	4:C:184:TYR:CD2	2.95	0.44
6:E:102:ALA:CB	6:E:120:THR:OG1	2.65	0.44
13:L:97:ARG:CB	13:L:98:TYR:CD1	2.91	0.44
18:Q:36:ILE:H	18:Q:36:ILE:HG13	1.46	0.44
1:A:106:C:O2	1:A:379:C:H4'	2.18	0.44
1:A:157:G:C2	1:A:158:G:N7	2.86	0.44
1:A:199:G:H2'	1:A:200:G:C5'	2.43	0.44
1:A:564:C:H5''	1:A:565:U:OP2	2.17	0.44
1:A:592:G:C2'	1:A:593:G:H5'	2.47	0.44
1:A:643:C:C6	1:A:643:C:H3'	2.52	0.44
1:A:784:C:C6	1:A:784:C:C3'	3.00	0.44
1:A:922:G:N2	1:A:1396:A:C5	2.86	0.44
1:A:1096:C:C2	1:A:1097:C:C5	3.06	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1185:G:N3	1:A:1186:G:C8	2.86	0.44
1:A:1281:U:H3'	1:A:1281:U:H6	1.83	0.44
5:D:11:LEU:O	5:D:13:ARG:N	2.51	0.44
6:E:92:LYS:HA	6:E:93:PRO:HD3	1.82	0.44
15:N:9:LYS:C	15:N:11:LYS:H	2.24	0.44
15:N:60:SER:O	15:N:61:TRP:HB3	2.18	0.44
17:P:74:LEU:O	17:P:79:VAL:CG2	2.65	0.44
20:S:58:VAL:HG12	20:S:59:PRO:HD2	2.00	0.44
1:A:286:G:C5	1:A:287:U:C4	3.05	0.43
1:A:288:A:H2'	1:A:289:G:H4'	1.99	0.43
1:A:622:A:C8	1:A:622:A:H3'	2.53	0.43
1:A:642:A:C2'	1:A:643:C:H5'	2.48	0.43
1:A:766:A:C8	1:A:814:A:C6	3.06	0.43
1:A:881:G:C2	1:A:882:C:C2	3.06	0.43
1:A:949:A:H1'	1:A:1364:U:N3	2.31	0.43
1:A:969:A:H61	14:M:126:LYS:HB2	1.83	0.43
1:A:1144:G:H8	1:A:1144:G:O5'	2.01	0.43
1:A:1363:A:H1'	1:A:1365:G:N7	2.33	0.43
1:A:1399:C:C2	1:A:1502:A:N6	2.86	0.43
1:A:1437:C:H2'	1:A:1438:G:H8	1.83	0.43
5:D:109:GLY:O	5:D:111:ALA:N	2.51	0.43
6:E:89:ILE:HD12	6:E:89:ILE:HA	1.77	0.43
9:H:91:ARG:HG3	13:L:7:ILE:HG13	1.98	0.43
12:K:29:ILE:HB	12:K:44:SER:HB2	2.00	0.43
13:L:77:LEU:HD11	13:L:107:ALA:HB2	2.00	0.43
16:O:33:THR:CG2	16:O:63:ARG:HH11	2.07	0.43
17:P:42:ARG:HB3	17:P:42:ARG:HH11	1.82	0.43
18:Q:63:ARG:HA	18:Q:64:PRO:HD2	1.72	0.43
18:Q:90:ILE:O	18:Q:92:ARG:N	2.51	0.43
1:A:194:C:O2'	21:T:68:LYS:HD3	2.18	0.43
1:A:351:G:O5'	1:A:351:G:H8	2.01	0.43
1:A:686:U:C2	1:A:687:A:N7	2.86	0.43
1:A:688:G:C6	1:A:700:G:C2	3.06	0.43
1:A:778:G:H8	1:A:778:G:O5'	2.01	0.43
1:A:990:C:C4	1:A:1216:G:N2	2.86	0.43
1:A:1197:G:H2'	1:A:1198:G:H5'	2.00	0.43
4:C:8:ILE:O	4:C:12:LEU:N	2.51	0.43
4:C:40:ARG:O	4:C:44:GLU:HB2	2.18	0.43
5:D:64:LEU:CD2	5:D:198:VAL:HG11	2.41	0.43
5:D:76:ARG:O	5:D:79:PHE:HB3	2.17	0.43
5:D:120:LEU:CD2	5:D:126:ILE:HD11	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:D:126:ILE:HD13	5:D:126:ILE:N	2.33	0.43
10:I:126:SER:HB2	10:I:127:LYS:H	1.57	0.43
12:K:62:GLN:CG	12:K:63:LEU:N	2.82	0.43
13:L:27:LEU:C	13:L:29:GLY:N	2.57	0.43
13:L:40:VAL:HG21	13:L:78:GLN:N	2.33	0.43
14:M:15:VAL:HG22	14:M:43:THR:O	2.17	0.43
14:M:117:VAL:HG12	14:M:118:ALA:H	1.82	0.43
1:A:143:A:C2	1:A:221:C:O2	2.71	0.43
1:A:219:C:C4	1:A:220:G:C8	3.07	0.43
1:A:410:G:H5'	5:D:30:LYS:HZ2	1.83	0.43
1:A:477:G:H5''	1:A:478:A:P	2.59	0.43
1:A:568:G:C6	1:A:569:C:N4	2.86	0.43
1:A:991:U:H6	1:A:1212:U:C2	2.36	0.43
3:B:73:THR:HG23	3:B:95:GLN:O	2.18	0.43
4:C:94:LEU:HD12	4:C:95:THR:OG1	2.17	0.43
4:C:159:GLY:HA2	4:C:193:TYR:CD2	2.53	0.43
10:I:100:GLY:C	10:I:102:LEU:H	2.26	0.43
13:L:93:LEU:O	13:L:96:VAL:HG23	2.17	0.43
14:M:56:LEU:O	14:M:57:ARG:C	2.60	0.43
15:N:24:CYS:HB3	15:N:28:GLY:HA2	2.00	0.43
16:O:52:SER:O	16:O:55:GLY:N	2.51	0.43
1:A:784:C:H2'	1:A:785:G:O4'	2.18	0.43
1:A:1281:U:H3'	1:A:1281:U:C6	2.53	0.43
1:A:1483:A:H2'	1:A:1484:C:O4'	2.17	0.43
3:B:124:SER:H	3:B:125:PRO:CD	2.31	0.43
3:B:193:ASP:HA	3:B:194:PRO:HD2	1.88	0.43
4:C:23:TYR:C	4:C:24:ALA:O	2.59	0.43
4:C:32:LEU:O	4:C:35:GLU:HB3	2.18	0.43
4:C:117:ALA:O	4:C:118:GLN:C	2.61	0.43
5:D:113:SER:OG	5:D:116:GLN:HB2	2.18	0.43
6:E:34:VAL:HG23	6:E:42:GLY:CA	2.44	0.43
6:E:82:VAL:O	6:E:88:LYS:HA	2.18	0.43
10:I:111:ARG:HD2	10:I:112:LYS:C	2.43	0.43
11:J:9:ARG:O	11:J:9:ARG:CG	2.65	0.43
12:K:59:TYR:O	12:K:62:GLN:HB3	2.19	0.43
14:M:26:GLY:O	14:M:28:ALA:N	2.41	0.43
18:Q:17:LYS:C	18:Q:18:THR:OG1	2.62	0.43
1:A:189:G:H1	1:A:190(J):U:H3	1.66	0.43
1:A:316:G:N2	1:A:338:A:C4	2.86	0.43
1:A:436:C:C2	1:A:437:U:C5	3.06	0.43
1:A:560:U:H4'	1:A:561:U:H5''	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:674:G:N2	1:A:717:C:O2	2.51	0.43
1:A:994:A:N7	1:A:1216:G:H4'	2.33	0.43
1:A:1056:U:O4	1:A:1200:C:C2	2.71	0.43
1:A:1085:U:H5'	1:A:1094:G:N2	2.34	0.43
1:A:1504:G:O2'	1:A:1505:G:OP2	2.32	0.43
3:B:134:GLU:HA	3:B:137:ARG:HB3	1.99	0.43
3:B:223:ILE:CG2	3:B:224:GLN:N	2.82	0.43
4:C:6:HIS:HD2	4:C:7:PRO:N	2.16	0.43
4:C:57:ILE:HG23	4:C:58:GLU:N	2.34	0.43
4:C:141:VAL:O	4:C:146:ALA:CB	2.66	0.43
5:D:8:VAL:HB	5:D:21:LEU:HD22	2.00	0.43
5:D:56:VAL:O	5:D:57:ARG:C	2.62	0.43
8:G:111:ARG:HB3	8:G:113:GLU:HG2	2.01	0.43
11:J:38:ILE:HG22	11:J:71:LEU:CB	2.49	0.43
13:L:47:LYS:HB3	13:L:48:PRO:CD	2.44	0.43
13:L:101:VAL:O	13:L:103:GLY:N	2.51	0.43
15:N:24:CYS:HB3	15:N:29:ARG:N	2.34	0.43
16:O:48:LYS:O	16:O:50:HIS:N	2.44	0.43
18:Q:13:ASP:O	18:Q:15:MET:N	2.51	0.43
18:Q:18:THR:HG23	18:Q:69:LYS:HE3	2.00	0.43
18:Q:56:VAL:O	18:Q:77:VAL:HG23	2.18	0.43
21:T:65:LYS:O	21:T:68:LYS:N	2.40	0.43
1:A:70:G:H5''	1:A:73:C:P	2.59	0.43
1:A:166:G:N3	1:A:167:G:C8	2.87	0.43
1:A:262:A:N6	1:A:263:A:N6	2.67	0.43
1:A:337:C:C2	1:A:338:A:N7	2.87	0.43
1:A:642:A:C6	1:A:643:C:N3	2.87	0.43
1:A:824:C:C3'	1:A:824:C:C6	3.01	0.43
1:A:913:A:HO2'	1:A:914:A:P	2.41	0.43
1:A:941:G:C6	1:A:942:G:C8	3.07	0.43
1:A:992:U:OP2	1:A:992:U:O4'	2.37	0.43
1:A:1185:G:C2	1:A:1186:G:C8	3.06	0.43
1:A:1490:C:H3'	1:A:1491:G:H5''	1.95	0.43
1:A:1512:U:H2'	1:A:1513:A:C8	2.54	0.43
3:B:178:ARG:HH22	9:H:68:ARG:HH22	1.64	0.43
4:C:121:ALA:O	4:C:122:GLU:C	2.62	0.43
5:D:68:TYR:OH	5:D:98:GLU:OE1	2.17	0.43
7:F:72:VAL:O	7:F:73:ASN:C	2.61	0.43
9:H:53:VAL:O	9:H:53:VAL:CG1	2.67	0.43
10:I:75:ASP:O	10:I:78:LYS:HB3	2.19	0.43
10:I:92:TYR:O	10:I:96:LEU:HB2	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:J:19:SER:HB2	11:J:91:PRO:CD	2.48	0.43
14:M:98:VAL:C	14:M:100:GLY:N	2.76	0.43
17:P:20:VAL:HG13	17:P:21:VAL:O	2.19	0.43
17:P:42:ARG:O	17:P:43:LYS:C	2.61	0.43
17:P:67:THR:HB	17:P:70:ALA:HB2	2.01	0.43
20:S:51:VAL:O	20:S:58:VAL:HG23	2.18	0.43
21:T:22:ARG:O	21:T:25:ARG:N	2.52	0.43
1:A:13:U:C5	1:A:916:G:O6	2.72	0.43
1:A:80:G:H2'	1:A:81:U:H5'	2.01	0.43
1:A:223:U:C5'	21:T:68:LYS:HZ2	2.32	0.43
1:A:463:A:P	17:P:75:ARG:HH12	2.41	0.43
1:A:506:G:C6	1:A:507:C:N4	2.87	0.43
1:A:625:G:C6	1:A:626:U:O4	2.72	0.43
1:A:647:C:H42	1:A:648:A:N6	2.17	0.43
1:A:942:G:C2	1:A:943:U:C5	3.07	0.43
1:A:953:G:H2'	1:A:954:G:O4'	2.19	0.43
1:A:1206:G:C6	1:A:1207:G:C5	3.07	0.43
1:A:1309:G:C6	1:A:1329:A:C2	3.06	0.43
1:A:1343:G:C6	1:A:1344:C:N4	2.87	0.43
1:A:1478:C:O5'	1:A:1478:C:H6	2.01	0.43
4:C:76:VAL:O	4:C:83:ARG:HD2	2.18	0.43
5:D:203:VAL:O	5:D:204:ILE:C	2.62	0.43
9:H:35:ILE:H	9:H:35:ILE:HG13	1.44	0.43
10:I:17:VAL:HG11	10:I:81:ILE:HA	2.00	0.43
11:J:90:LEU:CB	11:J:91:PRO:CD	2.76	0.43
12:K:72:ALA:HB1	12:K:77:MET:HG3	1.99	0.43
13:L:46:LYS:HD2	13:L:47:LYS:H	1.84	0.43
14:M:5:ALA:HB2	14:M:22:ILE:HG12	2.01	0.43
16:O:15:PHE:O	16:O:16:ALA:C	2.62	0.43
18:Q:13:ASP:C	18:Q:15:MET:N	2.73	0.43
18:Q:16:GLN:O	18:Q:18:THR:OG1	2.18	0.43
21:T:14:LYS:HG2	21:T:18:GLN:HE22	1.82	0.43
1:A:368:U:O2'	1:A:369:C:P	2.76	0.43
1:A:380:G:C2	1:A:384:G:C6	3.06	0.43
1:A:451:A:C6	1:A:481:G:C5	3.07	0.43
1:A:1183:A:O2'	1:A:1184:G:OP1	2.29	0.43
1:A:1410:G:C2'	1:A:1411:C:O5'	2.67	0.43
1:A:1471:G:H8	1:A:1471:G:O5'	2.02	0.43
3:B:100:GLY:O	3:B:101:MET:C	2.62	0.43
3:B:103:THR:HA	3:B:180:LEU:HD11	2.00	0.43
4:C:61:ALA:O	4:C:62:ASP:C	2.61	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:C:77:ILE:HA	4:C:84:ILE:HG22	2.00	0.43
5:D:104:VAL:HG23	5:D:185:PHE:CD1	2.54	0.43
6:E:9:LYS:O	6:E:33:VAL:N	2.39	0.43
8:G:153:HIS:CE1	8:G:154:TYR:HE2	2.36	0.43
10:I:33:PHE:CE1	10:I:37:PHE:HE1	2.37	0.43
10:I:97:LYS:O	10:I:98:PRO:C	2.62	0.43
20:S:5:LEU:O	20:S:6:LYS:HG3	2.18	0.43
1:A:118:U:C5	1:A:288:A:C6	3.07	0.43
1:A:132:C:C2'	1:A:133:U:H5'	2.49	0.43
1:A:193:C:O2	1:A:194:C:C6	2.72	0.43
1:A:289:G:C6	1:A:290:C:N4	2.87	0.43
1:A:313:A:H2'	1:A:314:C:O4'	2.18	0.43
1:A:362:G:O3'	13:L:33:ARG:NH1	2.52	0.43
1:A:376:G:C4	1:A:389:A:C2	3.07	0.43
1:A:378:G:C6	1:A:379:C:C4	3.06	0.43
1:A:487:A:H2'	1:A:488:C:O4'	2.18	0.43
1:A:540:G:C2'	1:A:541:G:O4'	2.64	0.43
1:A:578:C:H2'	1:A:579:G:O4'	2.19	0.43
1:A:689:C:OP1	12:K:44:SER:OG	2.25	0.43
1:A:987:G:H1	1:A:1218:C:N4	2.10	0.43
1:A:1114:C:O5'	1:A:1114:C:H6	2.01	0.43
1:A:1187:G:C2	1:A:1188:A:C4	3.07	0.43
1:A:1348:U:H6	1:A:1348:U:C5'	2.31	0.43
1:A:1369:C:O2'	1:A:1370:G:O4'	2.33	0.43
1:A:1515:C:H2'	1:A:1516:G:C8	2.54	0.43
4:C:64:VAL:HG12	4:C:65:ALA:H	1.84	0.43
5:D:14:ARG:C	5:D:16:GLY:N	2.76	0.43
5:D:64:LEU:HD21	5:D:94:LEU:CD2	2.48	0.43
6:E:79:GLU:O	9:H:104:ARG:CZ	2.67	0.43
6:E:130:ASN:HA	6:E:133:TYR:HB2	2.00	0.43
7:F:11:ASN:HA	7:F:12:PRO:HD2	1.78	0.43
13:L:68:ALA:HB3	13:L:100:ILE:HD11	2.00	0.43
17:P:57:ARG:O	17:P:58:TYR:C	2.60	0.43
17:P:67:THR:HG22	17:P:69:THR:N	2.34	0.43
17:P:74:LEU:CD1	17:P:79:VAL:HG11	2.46	0.43
21:T:22:ARG:O	21:T:23:ARG:C	2.62	0.43
21:T:68:LYS:HD2	21:T:68:LYS:HA	1.72	0.43
21:T:93:GLU:O	21:T:96:GLY:N	2.43	0.43
1:A:21:G:C2	1:A:22:G:C6	3.07	0.43
1:A:136:C:O2'	17:P:65:GLN:OE1	2.35	0.43
1:A:504:C:N3	1:A:542:G:C2	2.86	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:984:C:C2	1:A:985:C:C5	3.07	0.43
1:A:1005:A:C4	1:A:1026:G:N2	2.86	0.43
1:A:1255:G:C3'	1:A:1279:A:H61	2.31	0.43
1:A:1418:A:N6	1:A:1419:G:C2	2.87	0.43
1:A:1509:C:C5'	1:A:1510:U:OP2	2.67	0.43
3:B:138:LEU:C	3:B:140:HIS:H	2.26	0.43
4:C:66:VAL:O	4:C:66:VAL:HG12	2.19	0.43
5:D:61:LYS:NZ	5:D:62:GLN:NE2	2.67	0.43
9:H:75:ARG:HA	9:H:76:PRO:HD3	1.92	0.43
11:J:60:ARG:HD2	11:J:60:ARG:HA	1.74	0.43
14:M:91:ARG:O	14:M:95:GLY:CA	2.66	0.43
14:M:125:ARG:HD2	14:M:126:LYS:H	1.84	0.43
18:Q:95:TYR:C	18:Q:97:SER:N	2.71	0.43
1:A:192:U:C4	1:A:193:C:C5	3.07	0.42
1:A:376:G:C2	1:A:389:A:C6	3.07	0.42
1:A:426:G:P	5:D:36:ARG:NH2	2.92	0.42
1:A:459:G:C6	1:A:461:C:OP2	2.72	0.42
1:A:767:A:O2'	1:A:768:A:H5'	2.19	0.42
1:A:919:A:O2'	1:A:1080:A:N1	2.48	0.42
1:A:1092:A:H8	1:A:1092:A:H5'	1.84	0.42
1:A:1162:C:O2	1:A:1162:C:H2'	2.17	0.42
3:B:215:LEU:HD23	3:B:215:LEU:HA	1.93	0.42
4:C:36:ASP:HB3	4:C:40:ARG:NH1	2.34	0.42
6:E:18:ARG:HE	6:E:25:ARG:HB3	1.84	0.42
6:E:103:GLY:O	6:E:104:ALA:C	2.62	0.42
7:F:97:PHE:HB2	19:R:32:ARG:HH21	1.82	0.42
8:G:151:TYR:OH	12:K:54:ARG:HD3	2.18	0.42
12:K:34:ASP:HB2	12:K:35:PRO:HD2	1.99	0.42
16:O:3:ILE:HA	16:O:7:GLU:OE2	2.19	0.42
1:A:374:A:C6	1:A:375:U:C4	3.08	0.42
1:A:1114:C:H1'	15:N:60:SER:CB	2.49	0.42
1:A:1151:A:H5''	11:J:42:THR:OG1	2.19	0.42
1:A:1320:C:H2'	1:A:1321:C:O4'	2.19	0.42
1:A:1431:C:H2'	1:A:1432:G:H5'	2.00	0.42
3:B:15:VAL:CG1	3:B:209:ARG:HH11	2.31	0.42
3:B:43:ASP:O	3:B:44:LEU:C	2.62	0.42
4:C:6:HIS:CD2	4:C:8:ILE:HB	2.53	0.42
8:G:74:GLU:HA	8:G:141:VAL:HG12	2.01	0.42
12:K:99:GLN:HA	12:K:105:VAL:HG21	2.01	0.42
12:K:103:LEU:H	12:K:103:LEU:HG	1.58	0.42
13:L:124:LYS:HA	13:L:125:PRO:HD3	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:O:13:GLN:C	16:O:15:PHE:N	2.77	0.42
16:O:78:TYR:O	16:O:82:ILE:HD12	2.18	0.42
18:Q:17:LYS:HB3	18:Q:46:ASP:O	2.19	0.42
20:S:15:LEU:O	20:S:16:LEU:C	2.62	0.42
1:A:694:A:N6	1:A:787:A:O2'	2.49	0.42
1:A:853:G:C2'	1:A:854:G:O5'	2.67	0.42
1:A:922:G:H2'	1:A:923:A:C8	2.54	0.42
1:A:1151:A:HO2'	1:A:1152:A:P	2.43	0.42
1:A:1250:A:H8	1:A:1250:A:H5''	1.83	0.42
1:A:1377:A:H2'	1:A:1378:C:OP2	2.18	0.42
3:B:16:HIS:CE1	3:B:203:GLY:HA3	2.54	0.42
6:E:129:ILE:HD12	6:E:129:ILE:N	2.34	0.42
8:G:147:ALA:C	8:G:148:ASN:HD22	2.26	0.42
13:L:86:ARG:O	13:L:86:ARG:HG3	2.18	0.42
16:O:78:TYR:CD1	16:O:82:ILE:HD11	2.55	0.42
18:Q:14:LYS:H	18:Q:14:LYS:HG3	1.55	0.42
18:Q:20:THR:HG23	18:Q:43:LEU:CD2	2.49	0.42
19:R:58:LEU:HD23	19:R:58:LEU:HA	1.78	0.42
20:S:14:HIS:O	20:S:18:LYS:HB2	2.20	0.42
1:A:178:C:C2'	1:A:179:A:O5'	2.68	0.42
1:A:708:C:OP1	12:K:85:ARG:NH2	2.49	0.42
1:A:990:C:C4	1:A:1216:G:C2	3.07	0.42
1:A:1202:G:C4	15:N:42:ILE:HD12	2.54	0.42
1:A:1206:G:C5	1:A:1207:G:N7	2.87	0.42
1:A:1288:A:H2	1:A:1370:G:H21	1.66	0.42
1:A:1289:A:H5'	1:A:1290:G:OP2	2.18	0.42
1:A:1401:G:C2	1:A:1402:C:H1'	2.54	0.42
1:A:1479:C:O5'	1:A:1479:C:H6	2.01	0.42
4:C:33:LEU:C	4:C:35:GLU:N	2.77	0.42
5:D:64:LEU:O	5:D:67:ILE:HB	2.20	0.42
10:I:77:ILE:HG22	10:I:78:LYS:N	2.33	0.42
16:O:27:VAL:O	16:O:31:LEU:HD12	2.19	0.42
17:P:42:ARG:H	17:P:42:ARG:HG2	1.49	0.42
18:Q:58:GLU:HG3	18:Q:75:ARG:HG2	2.01	0.42
1:A:5:U:O2	1:A:5:U:C2'	2.64	0.42
1:A:579:G:N2	1:A:763:G:C4	2.87	0.42
1:A:642:A:H2'	1:A:643:C:H5'	2.02	0.42
1:A:1064:G:N2	1:A:1190:G:H2'	2.35	0.42
1:A:1099:G:C5	1:A:1100:C:C4	3.07	0.42
1:A:1241:G:H2'	1:A:1242:C:C6	2.55	0.42
1:A:1309:G:C5	1:A:1329:A:C2	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1368:G:C2'	1:A:1369:C:H5'	2.49	0.42
1:A:1425:U:H3	1:A:1475:G:H1	1.67	0.42
3:B:84:GLU:CG	3:B:216:SER:HA	2.50	0.42
3:B:105:PHE:C	3:B:107:THR:N	2.78	0.42
3:B:187:LEU:HD13	3:B:204:ASN:O	2.19	0.42
3:B:189:ASP:HB3	3:B:205:ASP:H	1.84	0.42
6:E:105:VAL:HG12	6:E:132:ALA:HB2	2.01	0.42
8:G:148:ASN:C	8:G:150:ALA:H	2.26	0.42
9:H:46:LYS:HG3	9:H:64:LYS:HB2	2.00	0.42
9:H:84:ARG:HB3	9:H:84:ARG:HH11	1.84	0.42
10:I:43:ALA:O	10:I:46:ALA:N	2.51	0.42
13:L:69:TYR:HE2	13:L:71:PRO:HA	1.82	0.42
16:O:35:ARG:HB3	16:O:59:MET:CE	2.50	0.42
20:S:13:ASP:HA	20:S:16:LEU:HB3	2.02	0.42
1:A:282:A:C4	1:A:283:C:C6	3.07	0.42
1:A:286:G:C4	1:A:287:U:C6	3.07	0.42
1:A:709:G:C4	1:A:710:G:C8	3.08	0.42
1:A:1111:A:H2'	1:A:1112:C:O5'	2.20	0.42
1:A:1132:C:H2'	1:A:1133:G:H8	1.84	0.42
1:A:1257:U:H4'	1:A:1258:G:OP2	2.19	0.42
1:A:1266:G:H21	1:A:1270:C:N4	2.16	0.42
1:A:1439:C:O2	1:A:1439:C:H2'	2.20	0.42
3:B:21:ARG:H	3:B:21:ARG:HG3	1.66	0.42
3:B:85:ALA:CB	3:B:92:TYR:HB3	2.49	0.42
5:D:25:ARG:HE	5:D:30:LYS:HB3	1.84	0.42
7:F:7:ASN:HB2	7:F:89:MET:HB3	2.02	0.42
7:F:27:GLN:O	7:F:31:GLU:HG2	2.18	0.42
21:T:81:LYS:HB3	21:T:81:LYS:HE2	1.48	0.42
1:A:223:U:C5'	21:T:68:LYS:NZ	2.83	0.42
1:A:404:U:H2'	1:A:405:U:C6	2.54	0.42
1:A:426:G:OP1	5:D:38:TYR:OH	2.22	0.42
1:A:824:C:C6	1:A:824:C:H3'	2.54	0.42
1:A:1005:A:H1'	1:A:1036:G:H22	1.83	0.42
1:A:1022:G:H2'	1:A:1023:G:C8	2.55	0.42
1:A:1454:G:H2'	1:A:1455:G:H8	1.84	0.42
1:A:1455:G:C3'	1:A:1459:C:P	3.08	0.42
3:B:108:ILE:O	3:B:108:ILE:CG2	2.68	0.42
3:B:166:ASP:HA	3:B:167:PRO:HD2	1.95	0.42
4:C:66:VAL:HG12	4:C:68:VAL:HG23	2.01	0.42
4:C:86:VAL:O	4:C:86:VAL:HG13	2.18	0.42
4:C:172:ARG:H	4:C:172:ARG:HG2	1.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:D:173:TRP:HB2	5:D:187:ARG:O	2.19	0.42
8:G:97:GLN:O	8:G:98:SER:C	2.63	0.42
10:I:57:GLY:O	10:I:58:ARG:HG2	2.19	0.42
18:Q:60:ILE:HG13	18:Q:61:GLU:N	2.34	0.42
1:A:150:C:H2'	1:A:151:A:O5'	2.18	0.42
1:A:199:G:C2'	1:A:200:G:H5'	2.45	0.42
1:A:395:C:O2	1:A:395:C:C2'	2.66	0.42
1:A:529:G:O2'	1:A:533:A:C6	2.72	0.42
1:A:582:U:O2	1:A:582:U:H2'	2.19	0.42
1:A:597:G:N7	1:A:598:U:C5	2.88	0.42
1:A:1056:U:O2	1:A:1056:U:C2'	2.67	0.42
1:A:1233:G:N2	1:A:1234:C:C2	2.87	0.42
1:A:1260:C:O5'	1:A:1284:C:H4'	2.20	0.42
1:A:1368:G:O2'	1:A:1369:C:H5'	2.19	0.42
1:A:1525:G:H2'	1:A:1526:G:C5'	2.49	0.42
3:B:114:ARG:NH1	3:B:118:LEU:CD1	2.67	0.42
6:E:139:LEU:O	6:E:140:ARG:C	2.63	0.42
9:H:10:LEU:HB3	9:H:83:ILE:CD1	2.45	0.42
9:H:92:ARG:C	9:H:93:VAL:CG2	2.92	0.42
13:L:15:ARG:HD2	13:L:15:ARG:HA	1.90	0.42
14:M:18:ALA:O	14:M:21:TYR:N	2.40	0.42
14:M:57:ARG:O	14:M:61:GLU:HB2	2.19	0.42
15:N:46:GLU:O	15:N:49:HIS:HB2	2.20	0.42
20:S:80:TYR:OH	20:S:82:GLY:HA2	2.19	0.42
1:A:255:G:H1'	18:Q:16:GLN:NE2	2.35	0.42
1:A:482:A:H2'	1:A:483:C:O4'	2.19	0.42
1:A:978:A:C5	1:A:1319:A:C2	3.08	0.42
1:A:991:U:C6	1:A:1212:U:O2	2.72	0.42
1:A:1152:A:OP1	11:J:68:HIS:ND1	2.53	0.42
4:C:35:GLU:HB3	4:C:36:ASP:H	1.70	0.42
4:C:36:ASP:OD2	4:C:36:ASP:N	2.37	0.42
5:D:13:ARG:HB3	5:D:40:PRO:HD3	2.02	0.42
5:D:79:PHE:CE1	5:D:207:TYR:CD1	3.07	0.42
6:E:71:LEU:CD2	6:E:115:VAL:HG22	2.48	0.42
13:L:119:LYS:O	13:L:120:TYR:HB2	2.20	0.42
16:O:49:ASP:C	16:O:51:HIS:H	2.27	0.42
17:P:55:ARG:O	17:P:56:ALA:C	2.63	0.42
20:S:14:HIS:ND1	20:S:14:HIS:N	2.68	0.42
21:T:30:LYS:C	21:T:32:ALA:N	2.75	0.42
21:T:70:SER:O	21:T:70:SER:OG	2.30	0.42
21:T:74:LYS:HB2	21:T:74:LYS:HE3	1.92	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:T:88:VAL:O	21:T:90:GLN:N	2.53	0.42
1:A:131:C:H2'	1:A:132:C:C6	2.54	0.42
1:A:193:C:O3'	21:T:61:SER:HB2	2.20	0.42
1:A:690:G:N2	1:A:698:G:C6	2.88	0.42
1:A:864:A:C6	1:A:865:A:C6	3.08	0.42
1:A:896:C:O2	1:A:896:C:H2'	2.20	0.42
1:A:918:A:H2'	1:A:919:A:C8	2.55	0.42
1:A:1124:G:C2'	1:A:1145:C:H41	2.33	0.42
1:A:1141:C:C2	1:A:1142:G:C8	3.07	0.42
1:A:1230:C:O2	1:A:1230:C:C2'	2.68	0.42
1:A:1237:C:C4'	1:A:1334:G:H21	2.32	0.42
1:A:1510:U:O2	1:A:1510:U:C2'	2.62	0.42
4:C:191:THR:HG21	4:C:193:TYR:CE1	2.55	0.42
6:E:48:ALA:O	6:E:49:PRO:C	2.63	0.42
6:E:87:SER:OG	6:E:130:ASN:HB2	2.20	0.42
7:F:4:TYR:HA	7:F:91:VAL:O	2.19	0.42
8:G:87:VAL:HA	8:G:88:PRO:HD3	1.80	0.42
11:J:46:ARG:NH1	11:J:64:GLU:HB3	2.32	0.42
13:L:10:LEU:O	13:L:14:GLY:HA2	2.20	0.42
13:L:55:VAL:O	13:L:70:ILE:HD12	2.20	0.42
14:M:105:THR:O	14:M:106:ASN:C	2.63	0.42
21:T:54:LYS:HA	21:T:57:ARG:NH1	2.34	0.42
1:A:130:A:H5'	18:Q:63:ARG:HE	1.85	0.41
1:A:320:C:O2'	1:A:321:A:O4'	2.34	0.41
1:A:354:G:N1	1:A:355:C:C4	2.88	0.41
1:A:516:U:C4	1:A:517:G:C6	3.08	0.41
1:A:674:G:OP1	7:F:87:ARG:NH2	2.53	0.41
1:A:761:G:H2'	1:A:762:C:H6	1.83	0.41
1:A:861:G:C4	1:A:862:C:C6	3.08	0.41
1:A:949:A:N1	1:A:1233:G:C4	2.88	0.41
1:A:989:C:O2'	1:A:1017:G:O2'	2.08	0.41
1:A:1124:G:H2'	1:A:1145:C:C5	2.54	0.41
1:A:1152:A:H4'	11:J:13:HIS:CD2	2.54	0.41
1:A:1233:G:C8	1:A:1233:G:H5''	2.55	0.41
1:A:1368:G:H5''	10:I:112:LYS:O	2.20	0.41
3:B:43:ASP:O	3:B:45:GLN:N	2.53	0.41
3:B:81:VAL:O	3:B:82:ARG:C	2.62	0.41
5:D:98:GLU:OE2	5:D:107:ARG:NE	2.44	0.41
5:D:121:VAL:HA	5:D:126:ILE:HG12	2.00	0.41
11:J:79:ARG:HH11	11:J:82:ILE:HD12	1.84	0.41
12:K:50:TYR:CD2	12:K:54:ARG:HB2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:M:76:ALA:C	14:M:78:ILE:H	2.27	0.41
16:O:33:THR:OG1	16:O:63:ARG:HD2	2.19	0.41
21:T:44:ALA:O	21:T:45:GLN:C	2.62	0.41
21:T:104:LEU:CD2	21:T:104:LEU:N	2.26	0.41
1:A:45:U:O2	1:A:396:G:N2	2.41	0.41
1:A:109:A:H4'	1:A:110:C:OP2	2.20	0.41
1:A:433:C:H2'	1:A:434:U:C6	2.56	0.41
1:A:490:G:O2'	1:A:491:G:H5'	2.20	0.41
1:A:512:U:C3'	1:A:512:U:C6	3.03	0.41
1:A:545:C:H2'	1:A:546:G:O4'	2.20	0.41
1:A:705:U:C4	1:A:706:A:C5	3.08	0.41
1:A:1014:A:C3'	1:A:1015:A:C8	3.03	0.41
1:A:1084:G:C5	1:A:1085:U:C4	3.07	0.41
1:A:1161:C:H2'	1:A:1162:C:H6	1.80	0.41
4:C:58:GLU:HG2	11:J:92:THR:HB	2.02	0.41
5:D:144:ASP:N	5:D:144:ASP:OD1	2.53	0.41
6:E:95:ALA:O	6:E:96:PRO:C	2.62	0.41
6:E:127:ASN:OD1	6:E:129:ILE:HB	2.21	0.41
7:F:69:GLU:HA	7:F:72:VAL:HG23	2.02	0.41
8:G:41:ARG:O	8:G:42:ILE:C	2.63	0.41
8:G:113:GLU:HG2	8:G:113:GLU:H	1.64	0.41
11:J:9:ARG:O	11:J:9:ARG:HG3	2.18	0.41
17:P:33:ILE:H	17:P:33:ILE:HG13	1.62	0.41
18:Q:26:GLN:HE21	18:Q:37:LYS:HE2	1.85	0.41
20:S:39:THR:CG2	20:S:40:ILE:N	2.83	0.41
1:A:117:G:H8	1:A:117:G:O5'	2.02	0.41
1:A:1004:A:H5''	1:A:1025:U:C4	2.55	0.41
1:A:1131:G:O6	1:A:1139:G:O6	2.38	0.41
1:A:1358:U:OP1	15:N:35:ARG:HB2	2.20	0.41
1:A:1412:C:C2	1:A:1489:G:N2	2.88	0.41
3:B:107:THR:C	3:B:109:SER:H	2.28	0.41
5:D:152:SER:O	5:D:154:ASN:N	2.54	0.41
7:F:12:PRO:C	7:F:14:LEU:H	2.27	0.41
11:J:9:ARG:HB3	11:J:9:ARG:NH1	2.35	0.41
11:J:67:THR:O	11:J:67:THR:HG22	2.21	0.41
13:L:24:VAL:O	13:L:26:ALA:N	2.54	0.41
14:M:22:ILE:CB	14:M:25:ILE:HD12	2.48	0.41
16:O:39:LEU:HA	16:O:39:LEU:HD23	1.73	0.41
16:O:73:GLU:OE2	16:O:73:GLU:HA	2.14	0.41
19:R:44:LEU:N	19:R:51:LEU:HD12	2.34	0.41
1:A:62:U:C2	1:A:63:C:C5	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:106:C:HO2'	1:A:107:G:H5'	1.85	0.41
1:A:149:A:H2	1:A:150:C:C2	2.35	0.41
1:A:192:U:H2'	1:A:193:C:H6	1.85	0.41
1:A:204:U:H4'	1:A:216:G:P	2.61	0.41
1:A:262:A:N1	1:A:263:A:N1	2.67	0.41
1:A:411:A:C2	1:A:413:G:H1'	2.55	0.41
1:A:418:C:H2'	1:A:419:C:C6	2.55	0.41
1:A:426:G:C2	1:A:427:U:C2	3.08	0.41
1:A:512:U:C6	1:A:512:U:H3'	2.56	0.41
1:A:622:A:C8	1:A:622:A:C3'	3.04	0.41
1:A:940:C:H2'	1:A:941:G:C8	2.55	0.41
1:A:1125:U:O4	11:J:73:ASP:OD2	2.38	0.41
1:A:1521:G:C2'	1:A:1522:U:O5'	2.68	0.41
3:B:118:LEU:HD22	3:B:142:LEU:HB2	2.01	0.41
4:C:6:HIS:NE2	4:C:8:ILE:HG22	2.35	0.41
4:C:131:ARG:HG2	4:C:135:LYS:NZ	2.36	0.41
5:D:68:TYR:CE2	5:D:97:LEU:HB3	2.56	0.41
5:D:170:VAL:O	5:D:171:GLY:C	2.62	0.41
8:G:120:ILE:HG22	8:G:124:LEU:CD1	2.51	0.41
9:H:9:MET:O	9:H:10:LEU:C	2.63	0.41
10:I:46:ALA:HA	10:I:78:LYS:HB2	2.03	0.41
10:I:46:ALA:HB1	10:I:77:ILE:CG2	2.51	0.41
15:N:21:TYR:CD2	15:N:21:TYR:O	2.73	0.41
16:O:58:MET:O	16:O:62:GLN:N	2.44	0.41
21:T:29:LYS:O	21:T:33:ILE:CD1	2.69	0.41
21:T:39:LYS:HG2	21:T:55:ILE:HD12	2.03	0.41
21:T:84:LEU:HD23	21:T:84:LEU:HA	1.87	0.41
1:A:253:U:C2	1:A:254:G:C8	3.08	0.41
1:A:457:C:C4	1:A:458:C:C5	3.09	0.41
1:A:625:G:H2'	1:A:626:U:H6	1.82	0.41
1:A:633:G:H5''	1:A:634:C:OP2	2.20	0.41
1:A:1227:A:C3'	1:A:1227:A:C8	3.04	0.41
1:A:1240:U:OP1	8:G:119:ARG:NH2	2.48	0.41
1:A:1299:A:C5	1:A:1301:U:C2	3.08	0.41
1:A:1346:A:H61	1:A:1374:A:H3'	1.85	0.41
1:A:1347:G:C2	1:A:1373:G:C4	3.08	0.41
1:A:1500:A:H2'	1:A:1501:C:H5'	2.02	0.41
3:B:109:SER:C	3:B:111:ARG:N	2.76	0.41
4:C:38:ARG:O	4:C:41:GLY:HA3	2.20	0.41
4:C:79:ARG:O	4:C:82:GLU:HG2	2.21	0.41
4:C:132:ARG:O	4:C:133:ALA:C	2.61	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:D:57:ARG:HA	5:D:202:LEU:HD23	2.02	0.41
7:F:10:LEU:HD12	7:F:59:TYR:HB3	2.03	0.41
12:K:59:TYR:O	12:K:60:ALA:C	2.64	0.41
13:L:93:LEU:N	13:L:93:LEU:HD23	2.35	0.41
13:L:102:ARG:NH2	13:L:108:ALA:C	2.77	0.41
14:M:4:ILE:HB	14:M:5:ALA:H	1.53	0.41
16:O:18:PHE:O	16:O:19:PRO:C	2.63	0.41
18:Q:104:LYS:HG3	18:Q:105:ALA:N	2.36	0.41
1:A:7:G:H5'	1:A:298:A:O4'	2.21	0.41
1:A:91:C:C2'	1:A:92:C:O5'	2.68	0.41
1:A:142:G:N3	1:A:196:A:H2	2.18	0.41
1:A:267:C:O2'	1:A:268:C:H5'	2.20	0.41
1:A:373:A:C2	1:A:482:A:C6	3.08	0.41
1:A:407:G:C6	1:A:408:A:C6	3.08	0.41
1:A:568:G:N3	1:A:574:A:H2	2.19	0.41
1:A:645:C:O2	1:A:645:C:C2'	2.69	0.41
1:A:757:U:H2'	1:A:758:G:O4'	2.19	0.41
1:A:856:C:H5''	1:A:857:C:OP2	2.21	0.41
1:A:908:A:C2'	1:A:909:A:H5'	2.51	0.41
1:A:951:G:C6	1:A:952:U:C5	3.09	0.41
1:A:974:A:H8	1:A:974:A:OP1	2.03	0.41
1:A:1131:G:N2	1:A:1143:G:H21	2.07	0.41
1:A:1332:A:C2	1:A:1333:A:C4	3.08	0.41
4:C:42:LEU:O	4:C:44:GLU:N	2.54	0.41
5:D:135:LEU:HA	5:D:136:PRO:HD3	1.95	0.41
6:E:52:PRO:O	6:E:54:ALA:N	2.54	0.41
8:G:127:ALA:O	8:G:129:GLU:N	2.54	0.41
9:H:56:LYS:HA	9:H:57:PRO:HD2	1.85	0.41
16:O:9:GLN:C	16:O:11:VAL:N	2.78	0.41
19:R:51:LEU:HA	19:R:52:PRO:HD3	1.84	0.41
20:S:75:ALA:HA	20:S:76:PRO:HD3	1.90	0.41
1:A:36:C:C4	1:A:37:U:C5	3.09	0.41
1:A:333:G:H2'	1:A:334:C:C6	2.56	0.41
1:A:440:A:H5''	1:A:442:C:C5	2.56	0.41
1:A:496:A:C4'	1:A:497:A:OP1	2.58	0.41
1:A:503:C:C2'	1:A:504:C:C5'	2.95	0.41
1:A:563:A:HO2'	1:A:566:G:HO2'	1.44	0.41
1:A:692:U:O2	1:A:694:A:C8	2.74	0.41
1:A:749:C:OP2	1:A:750:G:OP2	2.39	0.41
1:A:1103:C:H2'	1:A:1104:G:O4'	2.21	0.41
1:A:1114:C:C4	1:A:1115:C:C5	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1176:A:H2'	1:A:1177:G:O4'	2.21	0.41
1:A:1314:C:C4	1:A:1315:U:C5	3.09	0.41
1:A:1371:G:O3'	10:I:69:GLY:HA3	2.20	0.41
3:B:12:GLU:HG3	3:B:213:LEU:CD1	2.51	0.41
3:B:103:THR:HB	3:B:176:GLU:OE2	2.20	0.41
3:B:222:ILE:HG13	3:B:222:ILE:H	1.71	0.41
6:E:12:LEU:CD1	6:E:12:LEU:C	2.93	0.41
6:E:89:ILE:HD13	6:E:122:GLU:HG3	2.01	0.41
6:E:127:ASN:HA	6:E:128:PRO:HD3	1.76	0.41
8:G:54:THR:HB	8:G:56:GLN:NE2	2.36	0.41
10:I:10:ARG:O	10:I:11:LYS:C	2.64	0.41
11:J:63:PHE:CZ	15:N:45:ARG:HG3	2.56	0.41
12:K:110:ASP:HB2	19:R:88:LYS:HG3	2.02	0.41
20:S:77:THR:HB	20:S:78:ARG:HD2	2.02	0.41
1:A:8:A:N6	5:D:205:GLU:O	2.54	0.41
1:A:19:C:H2'	1:A:20:U:O5'	2.21	0.41
1:A:77:G:H2'	1:A:78:G:H8	1.86	0.41
1:A:190(A):C:O5'	1:A:190(A):C:H6	2.04	0.41
1:A:191:G:H1'	21:T:105:SER:HB3	2.02	0.41
1:A:282:A:C5	1:A:283:C:C5	3.08	0.41
1:A:351:G:O5'	1:A:351:G:C8	2.74	0.41
1:A:406:G:H1'	1:A:496:A:N1	2.36	0.41
1:A:477:G:H5''	1:A:478:A:OP2	2.21	0.41
1:A:592:G:C6	1:A:593:G:N7	2.89	0.41
1:A:633:G:C6	1:A:634:C:C4	3.09	0.41
1:A:885:G:C2	1:A:913:A:N1	2.89	0.41
1:A:945:G:C6	1:A:1337:G:C5	3.08	0.41
1:A:1107:C:N4	1:A:1108:G:N7	2.69	0.41
1:A:1117:G:H4'	10:I:104:ARG:NH1	2.36	0.41
1:A:1349:A:C6	1:A:1374:A:C8	3.08	0.41
1:A:1432:G:C8	1:A:1432:G:C3'	3.03	0.41
4:C:28:GLN:O	4:C:29:TYR:C	2.63	0.41
4:C:64:VAL:HG12	4:C:65:ALA:N	2.35	0.41
5:D:94:LEU:HD23	5:D:97:LEU:HD12	2.02	0.41
6:E:54:ALA:O	6:E:57:LYS:N	2.53	0.41
12:K:33:THR:HG23	12:K:34:ASP:O	2.20	0.41
13:L:60:LEU:HD13	13:L:60:LEU:HA	1.92	0.41
14:M:4:ILE:H	14:M:4:ILE:HG13	1.56	0.41
14:M:54:VAL:C	14:M:56:LEU:N	2.79	0.41
15:N:24:CYS:SG	15:N:39:LEU:HA	2.61	0.41
15:N:39:LEU:HB2	15:N:43:CYS:HB3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:T:50:GLU:HB2	21:T:100:ILE:HD13	2.03	0.41
1:A:152:A:H3'	1:A:153:C:H6	1.86	0.41
1:A:165:C:H2'	1:A:166:G:C8	2.55	0.41
1:A:320:C:HO2'	1:A:321:A:C4'	2.33	0.41
1:A:361:G:O6	1:A:362:G:N1	2.54	0.41
1:A:444:C:N4	1:A:491:G:H1	2.18	0.41
1:A:506:G:O6	1:A:507:C:N4	2.53	0.41
1:A:575:G:O2'	1:A:821:G:H5'	2.20	0.41
1:A:671:G:N3	1:A:671:G:H2'	2.35	0.41
1:A:707:C:C5'	12:K:20:TYR:CD2	2.90	0.41
1:A:981:U:H5'	15:N:21:TYR:CE1	2.55	0.41
1:A:1181:G:H4'	1:A:1182:G:OP1	2.21	0.41
1:A:1255:G:C6	1:A:1279:A:C8	3.09	0.41
1:A:1266:G:H3'	1:A:1266:G:C8	2.54	0.41
1:A:1440:C:O2	1:A:1440:C:H2'	2.20	0.41
1:A:1454:G:C2	1:A:1455:G:C5	3.09	0.41
1:A:1459:C:C2	1:A:1460:A:C8	3.09	0.41
3:B:108:ILE:HG22	3:B:108:ILE:O	2.21	0.41
3:B:196:LEU:H	3:B:196:LEU:HG	1.74	0.41
6:E:112:LEU:HD23	6:E:112:LEU:HA	1.67	0.41
7:F:97:PHE:HB3	19:R:32:ARG:NH2	2.36	0.41
9:H:10:LEU:CB	9:H:83:ILE:HD11	2.47	0.41
9:H:36:LEU:HA	9:H:39:LEU:HD23	2.02	0.41
13:L:7:ILE:O	13:L:11:VAL:HG23	2.20	0.41
13:L:32:PHE:CD2	13:L:32:PHE:N	2.89	0.41
13:L:102:ARG:NH1	13:L:110:VAL:HG22	2.34	0.41
15:N:11:LYS:HG2	15:N:13:THR:HB	2.02	0.41
15:N:60:SER:C	15:N:61:TRP:HE3	2.29	0.41
17:P:74:LEU:HD22	17:P:74:LEU:HA	1.44	0.41
19:R:22:VAL:O	19:R:22:VAL:CG1	2.69	0.41
20:S:50:ALA:HA	20:S:58:VAL:O	2.21	0.41
21:T:13:LEU:CD2	21:T:14:LYS:N	2.72	0.41
21:T:33:ILE:HD12	21:T:33:ILE:N	2.34	0.41
1:A:28:G:O2'	1:A:296:U:H5''	2.21	0.41
1:A:160:A:N6	1:A:161:A:C2	2.89	0.41
1:A:191:G:C1'	21:T:105:SER:HB3	2.51	0.41
1:A:247:G:C6	1:A:278:G:C6	3.08	0.41
1:A:375:U:H2'	1:A:376:G:H8	1.83	0.41
1:A:401:C:H2'	1:A:402:G:C8	2.56	0.41
1:A:833:U:H2'	1:A:834:C:C6	2.56	0.41
1:A:836:G:N1	1:A:851:G:C5	2.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:949:A:C2	1:A:1233:G:C2	3.07	0.41
5:D:59:ARG:NE	5:D:59:ARG:CA	2.82	0.41
6:E:34:VAL:O	6:E:42:GLY:N	2.42	0.41
10:I:4:TYR:CE1	10:I:88:TYR:HB2	2.57	0.41
12:K:63:LEU:O	12:K:66:LEU:N	2.54	0.41
13:L:76:ASN:ND2	13:L:106:ASP:O	2.54	0.41
16:O:31:LEU:O	16:O:34:LEU:HB3	2.20	0.41
18:Q:2:PRO:O	18:Q:3:LYS:C	2.64	0.41
1:A:93:G:O3'	1:A:95:U:P	2.78	0.40
1:A:175:C:O5'	1:A:175:C:H6	2.04	0.40
1:A:287:U:H2'	1:A:288:A:O5'	2.21	0.40
1:A:354:G:C6	1:A:355:C:N4	2.89	0.40
1:A:486:U:O2	1:A:486:U:C2'	2.69	0.40
1:A:730:G:N3	1:A:765:G:H4'	2.37	0.40
1:A:945:G:C6	1:A:1337:G:C4	3.09	0.40
1:A:1048:G:C8	1:A:1048:G:C3'	3.04	0.40
1:A:1088:G:O5'	1:A:1088:G:C8	2.73	0.40
1:A:1126:U:H2'	1:A:1127:G:N7	2.36	0.40
1:A:1221:G:C6	1:A:1222:G:N7	2.89	0.40
1:A:1357:A:C6	1:A:1358:U:C4	3.09	0.40
1:A:1361:G:C3'	1:A:1361(A):C:H5'	2.50	0.40
1:A:1520:G:H2'	1:A:1521:G:H8	1.85	0.40
3:B:96:ARG:O	3:B:98:LEU:HD12	2.21	0.40
5:D:200:GLU:HA	5:D:203:VAL:HG23	2.02	0.40
11:J:6:ILE:O	11:J:71:LEU:O	2.39	0.40
12:K:82:VAL:HG13	12:K:83:ILE:N	2.35	0.40
13:L:117:ARG:NH2	13:L:124:LYS:HD3	2.36	0.40
14:M:62:ASN:HD22	14:M:62:ASN:HA	1.74	0.40
15:N:2:ALA:C	15:N:3:ARG:O	2.64	0.40
15:N:42:ILE:HB	15:N:43:CYS:H	1.75	0.40
16:O:39:LEU:O	16:O:40:SER:C	2.63	0.40
1:A:190(H):G:H2'	1:A:190(I):G:O5'	2.21	0.40
1:A:262:A:H2'	1:A:263:A:C8	2.56	0.40
1:A:401:C:H6	1:A:401:C:C3'	2.26	0.40
1:A:753:A:C2	9:H:1:MET:HE2	2.57	0.40
1:A:815:A:O2'	1:A:1527:C:O4'	2.39	0.40
1:A:818:G:C3'	1:A:819:A:C5'	2.91	0.40
1:A:1055:A:C6	1:A:1056:U:C5	3.09	0.40
1:A:1335:C:H2'	1:A:1335:C:O5'	2.21	0.40
1:A:1509:C:H5'	1:A:1510:U:OP2	2.20	0.40
4:C:180:ALA:HB1	4:C:182:ILE:CG1	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:D:140:VAL:HG11	5:D:146:ILE:HD11	2.03	0.40
6:E:11:ILE:HG12	6:E:11:ILE:H	1.48	0.40
6:E:36:ASP:OD2	6:E:40:ARG:HB2	2.21	0.40
7:F:7:ASN:HB2	7:F:89:MET:O	2.22	0.40
8:G:141:VAL:O	8:G:142:GLU:C	2.63	0.40
11:J:6:ILE:HD12	11:J:71:LEU:O	2.22	0.40
12:K:56:GLY:O	12:K:57:THR:C	2.64	0.40
13:L:93:LEU:HA	13:L:94:PRO:HD3	1.82	0.40
17:P:34:GLU:CD	17:P:55:ARG:HH11	2.29	0.40
17:P:40:ASP:OD2	17:P:42:ARG:HG2	2.21	0.40
17:P:43:LYS:HB3	17:P:48:TRP:CD1	2.56	0.40
1:A:378:G:C2	1:A:386:C:C2	3.07	0.40
1:A:477:G:C2	1:A:478:A:N7	2.90	0.40
1:A:536:C:C2	1:A:537:G:N7	2.90	0.40
1:A:764:C:N4	1:A:765:G:C6	2.89	0.40
1:A:802:A:C8	1:A:802:A:H3'	2.57	0.40
1:A:1057:G:C5	1:A:1204:A:N1	2.89	0.40
1:A:1332:A:C2	1:A:1333:A:C5	3.09	0.40
1:A:1347:G:C4	10:I:107:ARG:NH1	2.89	0.40
5:D:32:ALA:C	5:D:34:GLU:H	2.28	0.40
5:D:97:LEU:HD23	5:D:97:LEU:HA	1.75	0.40
5:D:182:LYS:HB3	5:D:183:GLY:H	1.52	0.40
6:E:91:LEU:HD21	6:E:120:THR:CG2	2.50	0.40
6:E:138:ALA:O	6:E:139:LEU:C	2.60	0.40
11:J:74:ILE:H	11:J:74:ILE:HG13	1.57	0.40
13:L:21:LYS:HA	13:L:21:LYS:HD2	1.80	0.40
13:L:24:VAL:C	13:L:26:ALA:H	2.28	0.40
14:M:5:ALA:HB2	14:M:22:ILE:HG21	2.03	0.40
14:M:78:ILE:O	14:M:79:LYS:C	2.64	0.40
15:N:23:ARG:CD	15:N:29:ARG:O	2.62	0.40
16:O:6:GLU:HG2	16:O:7:GLU:H	1.85	0.40
17:P:45:THR:C	17:P:47:ASP:N	2.79	0.40
19:R:77:GLY:C	19:R:78:LEU:HD12	2.39	0.40
21:T:88:VAL:O	21:T:89:ARG:C	2.65	0.40
1:A:241:C:O2'	1:A:242:C:H5'	2.22	0.40
1:A:440:A:C3'	1:A:442:C:P	3.09	0.40
1:A:518:C:OP2	1:A:530:G:H4'	2.21	0.40
1:A:658:G:N2	1:A:749:C:N3	2.68	0.40
1:A:671:G:C2	1:A:672:U:H1'	2.55	0.40
1:A:684:A:C2	12:K:39:PRO:HG2	2.57	0.40
1:A:918:A:H2'	1:A:919:A:O4'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1120:G:C2	1:A:1121:U:C4	3.10	0.40
1:A:1120:G:O5'	1:A:1120:G:H8	2.05	0.40
1:A:1466:C:H2'	1:A:1467:G:H5'	2.03	0.40
1:A:1503:A:OP1	1:A:1531:A:O2'	2.39	0.40
7:F:26:ILE:HG21	7:F:63:TYR:CE1	2.55	0.40
9:H:92:ARG:HD2	9:H:92:ARG:HA	1.78	0.40
9:H:114:THR:C	9:H:116:LYS:N	2.78	0.40
13:L:55:VAL:O	13:L:70:ILE:CD1	2.70	0.40
16:O:49:ASP:C	16:O:51:HIS:N	2.79	0.40
18:Q:75:ARG:HG3	18:Q:75:ARG:NH1	2.36	0.40
21:T:13:LEU:C	21:T:15:ARG:N	2.80	0.40
1:A:27:G:H2'	1:A:28:G:H8	1.86	0.40
1:A:142:G:C2	1:A:222:U:C2	3.10	0.40
1:A:179:A:H5''	1:A:180:U:OP2	2.21	0.40
1:A:420:U:C2	1:A:424:G:N1	2.89	0.40
1:A:422:C:O2'	1:A:423:G:P	2.79	0.40
1:A:987:G:O5'	1:A:987:G:C8	2.68	0.40
5:D:61:LYS:HE3	5:D:62:GLN:HE21	1.77	0.40
5:D:98:GLU:CD	5:D:103:ASN:HD21	2.25	0.40
6:E:61:TYR:O	6:E:62:ALA:C	2.64	0.40
9:H:85:ARG:CD	9:H:87:SER:O	2.67	0.40
15:N:61:TRP:N	15:N:61:TRP:CE3	2.90	0.40
16:O:25:THR:O	16:O:26:GLU:C	2.64	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
3	B	235/256 (92%)	153 (65%)	48 (20%)	34 (14%)	0 2
4	C	204/239 (85%)	120 (59%)	51 (25%)	33 (16%)	0 2

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	D	206/209 (99%)	145 (70%)	37 (18%)	24 (12%)	0	4
6	E	148/162 (91%)	110 (74%)	24 (16%)	14 (10%)	0	8
7	F	99/101 (98%)	76 (77%)	17 (17%)	6 (6%)	1	14
8	G	153/156 (98%)	103 (67%)	36 (24%)	14 (9%)	0	8
9	H	136/138 (99%)	103 (76%)	26 (19%)	7 (5%)	1	17
10	I	125/128 (98%)	79 (63%)	33 (26%)	13 (10%)	0	6
11	J	96/105 (91%)	63 (66%)	20 (21%)	13 (14%)	0	3
12	K	117/129 (91%)	79 (68%)	25 (21%)	13 (11%)	0	5
13	L	123/132 (93%)	76 (62%)	29 (24%)	18 (15%)	0	2
14	M	123/126 (98%)	75 (61%)	31 (25%)	17 (14%)	0	3
15	N	58/61 (95%)	43 (74%)	8 (14%)	7 (12%)	0	4
16	O	86/89 (97%)	56 (65%)	22 (26%)	8 (9%)	0	8
17	P	81/88 (92%)	55 (68%)	17 (21%)	9 (11%)	0	5
18	Q	102/105 (97%)	73 (72%)	21 (21%)	8 (8%)	1	11
19	R	71/88 (81%)	50 (70%)	14 (20%)	7 (10%)	0	7
20	S	82/93 (88%)	58 (71%)	17 (21%)	7 (8%)	0	9
21	T	97/106 (92%)	60 (62%)	21 (22%)	16 (16%)	0	2
All	All	2342/2511 (93%)	1577 (67%)	497 (21%)	268 (11%)	0	5

All (268) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	B	17	PHE
3	B	29	ALA
3	B	99	GLY
3	B	106	LYS
3	B	131	PRO
3	B	134	GLU
3	B	175	ARG
3	B	209	ARG
3	B	226	ARG
4	C	24	ALA
4	C	35	GLU
4	C	43	LEU
4	C	54	ARG
4	C	55	VAL

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Mol	Chain	Res	Type
4	C	67	THR
4	C	127	ARG
4	C	132	ARG
4	C	179	ARG
4	C	189	ALA
5	D	9	CYS
5	D	12	CYS
5	D	29	PRO
5	D	104	VAL
5	D	141	ARG
5	D	153	ARG
5	D	160	GLN
6	E	16	THR
6	E	37	ARG
6	E	38	GLN
6	E	72	GLN
6	E	73	ASN
7	F	77	ARG
7	F	100	ASN
8	G	7	ALA
8	G	108	ALA
9	H	105	ARG
10	I	43	ALA
10	I	44	VAL
10	I	55	ALA
10	I	58	ARG
10	I	118	LYS
10	I	119	ALA
11	J	32	ALA
11	J	34	VAL
11	J	50	ILE
11	J	54	PHE
11	J	57	LYS
12	K	100	ALA
12	K	124	LYS
13	L	27	LEU
13	L	28	LYS
13	L	40	VAL
13	L	41	ARG
13	L	96	VAL
14	M	4	ILE
14	M	7	VAL

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Mol	Chain	Res	Type
14	M	106	ASN
14	M	123	ALA
15	N	3	ARG
15	N	42	ILE
15	N	43	CYS
17	P	51	VAL
17	P	52	ASP
17	P	67	THR
17	P	71	ARG
18	Q	14	LYS
18	Q	95	TYR
19	R	20	ALA
19	R	37	VAL
19	R	74	ARG
19	R	87	ARG
20	S	6	LYS
20	S	9	VAL
21	T	14	LYS
21	T	73	HIS
21	T	92	LEU
3	B	44	LEU
3	B	89	GLY
3	B	177	ALA
3	B	191	ASP
3	B	204	ASN
3	B	208	ILE
3	B	212	GLN
3	B	225	ALA
4	C	13	GLY
4	C	74	GLY
4	C	96	GLY
4	C	98	ASN
4	C	100	ALA
4	C	128	PHE
4	C	181	ASN
4	C	195	VAL
4	C	206	GLU
5	D	26	CYS
5	D	42	GLN
5	D	118	ARG
5	D	150	GLU
5	D	176	LEU

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Mol	Chain	Res	Type
6	E	59	GLY
6	E	108	ALA
6	E	140	ARG
7	F	27	GLN
7	F	45	LEU
8	G	134	ALA
9	H	7	ALA
9	H	54	ASP
10	I	8	GLY
10	I	46	ALA
11	J	73	ASP
12	K	47	VAL
12	K	95	ILE
12	K	117	ASN
13	L	26	ALA
13	L	42	THR
13	L	91	LYS
13	L	103	GLY
13	L	112	ASP
14	M	30	ALA
14	M	31	LYS
14	M	55	ARG
15	N	13	THR
15	N	23	ARG
16	O	47	LYS
16	O	77	ARG
16	O	81	LEU
17	P	13	HIS
18	Q	49	GLU
20	S	27	GLU
20	S	73	GLU
21	T	13	LEU
21	T	88	VAL
21	T	93	GLU
3	B	59	GLU
3	B	123	ALA
3	B	124	SER
3	B	232	PRO
4	C	47	LEU
4	C	200	ALA
5	D	7	PRO
5	D	63	LYS

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Mol	Chain	Res	Type
5	D	102	ASP
5	D	131	ARG
5	D	142	PRO
6	E	21	ALA
6	E	56	GLN
7	F	13	ASN
7	F	53	ALA
8	G	82	GLY
8	G	97	GLN
8	G	109	ASN
9	H	23	SER
9	H	68	ARG
10	I	34	ASN
11	J	39	PRO
11	J	60	ARG
12	K	12	ARG
12	K	25	TYR
12	K	74	ALA
13	L	29	GLY
13	L	31	PRO
13	L	62	SER
13	L	105	TYR
13	L	113	ARG
14	M	6	GLY
14	M	50	GLU
14	M	90	LEU
14	M	99	ARG
14	M	109	THR
15	N	5	ALA
15	N	44	LEU
16	O	79	ARG
17	P	46	PRO
18	Q	91	ARG
18	Q	96	GLN
19	R	38	GLU
19	R	67	ALA
20	S	77	THR
21	T	42	GLN
21	T	64	ASP
21	T	84	LEU
21	T	85	MET
21	T	104	LEU

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Mol	Chain	Res	Type
3	B	20	GLU
3	B	21	ARG
3	B	24	TRP
3	B	139	LYS
3	B	227	GLY
4	C	25	GLY
4	C	29	TYR
4	C	40	ARG
4	C	108	ASN
4	C	198	VAL
5	D	5	ILE
5	D	31	CYS
5	D	51	PRO
5	D	159	ARG
5	D	182	LYS
6	E	11	ILE
8	G	59	LEU
8	G	116	ALA
10	I	51	ARG
10	I	126	SER
11	J	40	LEU
11	J	55	LYS
12	K	28	THR
13	L	82	VAL
14	M	21	TYR
16	O	14	GLU
16	O	49	ASP
17	P	69	THR
18	Q	18	THR
19	R	34	TYR
20	S	30	LEU
21	T	74	LYS
3	B	41	ILE
3	B	56	ARG
3	B	122	PHE
3	B	143	GLU
4	C	36	ASP
5	D	4	TYR
6	E	104	ALA
6	E	136	MET
8	G	41	ARG
8	G	96	GLN

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Mol	Chain	Res	Type
8	G	127	ALA
10	I	56	LEU
10	I	71	SER
11	J	61	GLU
11	J	90	LEU
12	K	126	ARG
14	M	79	LYS
14	M	80	ARG
16	O	13	GLN
17	P	10	GLY
21	T	63	ILE
3	B	8	LYS
4	C	51	GLY
4	C	175	LEU
9	H	80	ILE
12	K	15	ALA
13	L	43	VAL
17	P	12	LYS
18	Q	86	GLU
4	C	39	ILE
8	G	9	VAL
13	L	55	VAL
14	M	25	ILE
16	O	19	PRO
18	Q	47	PRO
20	S	42	PRO
21	T	98	PRO
3	B	174	VAL
3	B	214	ILE
4	C	14	ILE
4	C	66	VAL
5	D	56	VAL
8	G	111	ARG
12	K	57	THR
12	K	120	ARG
4	C	81	GLY
8	G	34	GLY
9	H	100	ILE
21	T	33	ILE
6	E	51	VAL
11	J	76	ASN
14	M	24	GLY

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Mol	Chain	Res	Type
3	B	15	VAL
21	T	101	GLY

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	
3	B	204/220 (93%)	112 (55%)	92 (45%)	0	0
4	C	160/188 (85%)	86 (54%)	74 (46%)	0	0
5	D	180/181 (99%)	106 (59%)	74 (41%)	0	0
6	E	115/123 (94%)	62 (54%)	53 (46%)	0	0
7	F	90/90 (100%)	66 (73%)	24 (27%)	0	3
8	G	126/127 (99%)	78 (62%)	48 (38%)	0	0
9	H	119/119 (100%)	73 (61%)	46 (39%)	0	0
10	I	98/99 (99%)	54 (55%)	44 (45%)	0	0
11	J	87/92 (95%)	46 (53%)	41 (47%)	0	0
12	K	90/99 (91%)	57 (63%)	33 (37%)	0	0
13	L	104/109 (95%)	51 (49%)	53 (51%)	0	0
14	M	100/101 (99%)	58 (58%)	42 (42%)	0	0
15	N	49/50 (98%)	24 (49%)	25 (51%)	0	0
16	O	79/80 (99%)	44 (56%)	35 (44%)	0	0
17	P	72/74 (97%)	44 (61%)	28 (39%)	0	0
18	Q	96/97 (99%)	65 (68%)	31 (32%)	0	1
19	R	64/77 (83%)	34 (53%)	30 (47%)	0	0
20	S	73/80 (91%)	44 (60%)	29 (40%)	0	0
21	T	76/82 (93%)	47 (62%)	29 (38%)	0	0
All	All	1982/2088 (95%)	1151 (58%)	831 (42%)	0	0

All (831) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	B	7	VAL
3	B	8	LYS
3	B	9	GLU
3	B	10	LEU
3	B	11	LEU
3	B	12	GLU
3	B	15	VAL
3	B	17	PHE
3	B	21	ARG
3	B	22	LYS
3	B	23	ARG
3	B	24	TRP
3	B	25	ASN
3	B	27	LYS
3	B	32	ILE
3	B	35	GLU
3	B	36	ARG
3	B	40	HIS
3	B	44	LEU
3	B	45	GLN
3	B	46	LYS
3	B	49	GLU
3	B	51	LEU
3	B	53	ARG
3	B	56	ARG
3	B	58	ILE
3	B	61	LEU
3	B	63	MET
3	B	64	ARG
3	B	67	THR
3	B	69	LEU
3	B	71	VAL
3	B	74	LYS
3	B	76	GLN
3	B	80	ILE
3	B	82	ARG
3	B	83	MET
3	B	84	GLU
3	B	87	ARG
3	B	92	TYR
3	B	97	TRP
3	B	98	LEU
3	B	102	LEU

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Mol	Chain	Res	Type
3	B	103	THR
3	B	108	ILE
3	B	110	GLN
3	B	112	VAL
3	B	113	HIS
3	B	115	LEU
3	B	116	GLU
3	B	117	GLU
3	B	118	LEU
3	B	121	LEU
3	B	132	LYS
3	B	136	VAL
3	B	140	HIS
3	B	144	ARG
3	B	146	GLN
3	B	147	LYS
3	B	148	TYR
3	B	149	LEU
3	B	153	ARG
3	B	154	LEU
3	B	155	LEU
3	B	158	LEU
3	B	162	ILE
3	B	164	VAL
3	B	165	VAL
3	B	168	THR
3	B	169	LYS
3	B	172	ILE
3	B	176	GLU
3	B	179	LYS
3	B	184	VAL
3	B	185	ILE
3	B	187	LEU
3	B	190	THR
3	B	196	LEU
3	B	201	ILE
3	B	206	ASP
3	B	209	ARG
3	B	215	LEU
3	B	219	VAL
3	B	221	LEU
3	B	224	GLN

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Mol	Chain	Res	Type
3	B	229	VAL
3	B	231	GLU
3	B	233	SER
3	B	238	LEU
3	B	240	GLN
3	B	241	GLU
3	B	243	GLU
4	C	3	ASN
4	C	5	ILE
4	C	8	ILE
4	C	11	ARG
4	C	15	THR
4	C	23	TYR
4	C	26	LYS
4	C	27	LYS
4	C	30	ARG
4	C	33	LEU
4	C	34	LEU
4	C	36	ASP
4	C	37	GLN
4	C	43	LEU
4	C	45	LYS
4	C	48	TYR
4	C	52	LEU
4	C	54	ARG
4	C	55	VAL
4	C	56	ASP
4	C	57	ILE
4	C	58	GLU
4	C	59	ARG
4	C	63	ASN
4	C	64	VAL
4	C	69	HIS
4	C	75	VAL
4	C	76	VAL
4	C	77	ILE
4	C	79	ARG
4	C	82	GLU
4	C	84	ILE
4	C	86	VAL
4	C	88	ARG
4	C	91	LEU

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Mol	Chain	Res	Type
4	C	93	LYS
4	C	94	LEU
4	C	95	THR
4	C	99	VAL
4	C	101	LEU
4	C	102	ASN
4	C	104	GLN
4	C	105	GLU
4	C	108	ASN
4	C	112	SER
4	C	115	LEU
4	C	124	ILE
4	C	126	ARG
4	C	128	PHE
4	C	130	VAL
4	C	131	ARG
4	C	135	LYS
4	C	154	SER
4	C	157	ILE
4	C	164	ARG
4	C	166	GLU
4	C	170	GLN
4	C	172	ARG
4	C	175	LEU
4	C	176	HIS
4	C	177	THR
4	C	179	ARG
4	C	188	LEU
4	C	190	ARG
4	C	192	THR
4	C	195	VAL
4	C	196	LEU
4	C	198	VAL
4	C	199	LYS
4	C	201	TYR
4	C	202	ILE
4	C	204	LEU
4	C	206	GLU
4	C	207	VAL
5	D	3	ARG
5	D	5	ILE
5	D	8	VAL

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Mol	Chain	Res	Type
5	D	9	CYS
5	D	10	ARG
5	D	12	CYS
5	D	13	ARG
5	D	15	GLU
5	D	17	VAL
5	D	21	LEU
5	D	24	GLU
5	D	25	ARG
5	D	26	CYS
5	D	27	TYR
5	D	28	SER
5	D	35	ARG
5	D	36	ARG
5	D	38	TYR
5	D	50	ARG
5	D	53	ASP
5	D	57	ARG
5	D	59	ARG
5	D	63	LYS
5	D	64	LEU
5	D	70	ILE
5	D	72	GLU
5	D	74	GLN
5	D	83	SER
5	D	84	LYS
5	D	89	THR
5	D	92	VAL
5	D	100	ARG
5	D	104	VAL
5	D	112	VAL
5	D	114	ARG
5	D	116	GLN
5	D	120	LEU
5	D	122	ARG
5	D	126	ILE
5	D	127	THR
5	D	131	ARG
5	D	132	ARG
5	D	135	LEU
5	D	137	SER
5	D	138	TYR

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Mol	Chain	Res	Type
5	D	139	ARG
5	D	140	VAL
5	D	141	ARG
5	D	144	ASP
5	D	148	VAL
5	D	150	GLU
5	D	151	LYS
5	D	152	SER
5	D	155	LEU
5	D	156	GLU
5	D	157	LEU
5	D	160	GLN
5	D	162	LEU
5	D	163	GLU
5	D	166	LYS
5	D	169	LYS
5	D	175	SER
5	D	178	VAL
5	D	179	GLU
5	D	187	ARG
5	D	188	LEU
5	D	194	LEU
5	D	196	LEU
5	D	198	VAL
5	D	199	GLN
5	D	200	GLU
5	D	201	ASN
5	D	202	LEU
5	D	204	ILE
6	E	5	ASP
6	E	8	GLU
6	E	9	LYS
6	E	10	MET
6	E	11	ILE
6	E	12	LEU
6	E	13	ILE
6	E	15	ARG
6	E	16	THR
6	E	18	ARG
6	E	19	MET
6	E	24	ARG
6	E	25	ARG

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Mol	Chain	Res	Type
6	E	27	ARG
6	E	31	LEU
6	E	33	VAL
6	E	34	VAL
6	E	38	GLN
6	E	43	LEU
6	E	51	VAL
6	E	52	PRO
6	E	53	LEU
6	E	55	VAL
6	E	56	GLN
6	E	57	LYS
6	E	60	TYR
6	E	64	ARG
6	E	72	GLN
6	E	76	ILE
6	E	79	GLU
6	E	80	ILE
6	E	81	GLU
6	E	82	VAL
6	E	89	ILE
6	E	90	VAL
6	E	92	LYS
6	E	98	THR
6	E	105	VAL
6	E	109	ILE
6	E	112	LEU
6	E	120	THR
6	E	121	LYS
6	E	122	GLU
6	E	123	LEU
6	E	125	SER
6	E	126	ARG
6	E	135	THR
6	E	143	ARG
6	E	144	THR
6	E	145	LYS
6	E	149	GLU
6	E	150	ARG
6	E	153	LYS
7	F	8	ILE
7	F	9	VAL

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Mol	Chain	Res	Type
7	F	10	LEU
7	F	15	ASP
7	F	19	LEU
7	F	32	ASN
7	F	36	ARG
7	F	39	LYS
7	F	41	GLU
7	F	43	LEU
7	F	46	ARG
7	F	48	LEU
7	F	54	LYS
7	F	55	ASP
7	F	65	VAL
7	F	70	ASP
7	F	73	ASN
7	F	75	LEU
7	F	80	ARG
7	F	88	VAL
7	F	89	MET
7	F	90	VAL
7	F	93	SER
7	F	98	LEU
8	G	4	ARG
8	G	8	GLU
8	G	9	VAL
8	G	10	ARG
8	G	11	GLN
8	G	12	LEU
8	G	15	ASP
8	G	24	THR
8	G	28	ASN
8	G	31	MET
8	G	36	LYS
8	G	37	ASN
8	G	38	LEU
8	G	48	LYS
8	G	49	ILE
8	G	50	ILE
8	G	51	GLN
8	G	52	GLU
8	G	53	LYS
8	G	54	THR

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Mol	Chain	Res	Type
8	G	56	GLN
8	G	57	GLU
8	G	66	VAL
8	G	67	GLU
8	G	69	VAL
8	G	75	VAL
8	G	77	SER
8	G	79	ARG
8	G	90	GLU
8	G	91	VAL
8	G	94	ARG
8	G	96	GLN
8	G	97	GLN
8	G	98	SER
8	G	106	GLN
8	G	113	GLU
8	G	114	ARG
8	G	120	ILE
8	G	124	LEU
8	G	126	ASP
8	G	131	LYS
8	G	135	VAL
8	G	138	LYS
8	G	142	GLU
8	G	143	ARG
8	G	144	MET
8	G	154	TYR
8	G	156	TRP
9	H	3	THR
9	H	12	ARG
9	H	14	ARG
9	H	18	ARG
9	H	19	VAL
9	H	21	LYS
9	H	22	GLU
9	H	24	THR
9	H	26	VAL
9	H	30	ARG
9	H	32	LYS
9	H	35	ILE
9	H	41	ARG
9	H	45	ILE

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Mol	Chain	Res	Type
9	H	46	LYS
9	H	49	GLU
9	H	50	ARG
9	H	51	VAL
9	H	53	VAL
9	H	56	LYS
9	H	63	LEU
9	H	64	LYS
9	H	68	ARG
9	H	75	ARG
9	H	77	GLU
9	H	83	ILE
9	H	84	ARG
9	H	85	ARG
9	H	87	SER
9	H	91	ARG
9	H	93	VAL
9	H	97	VAL
9	H	98	LYS
9	H	100	ILE
9	H	104	ARG
9	H	105	ARG
9	H	107	LEU
9	H	109	ILE
9	H	111	ILE
9	H	112	LEU
9	H	113	SER
9	H	118	VAL
9	H	120	THR
9	H	127	LEU
9	H	129	VAL
9	H	133	LEU
10	I	2	GLU
10	I	3	GLN
10	I	9	ARG
10	I	14	VAL
10	I	16	ARG
10	I	27	THR
10	I	28	VAL
10	I	29	ASN
10	I	31	GLN
10	I	34	ASN

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Mol	Chain	Res	Type
10	I	35	GLU
10	I	38	GLN
10	I	40	LEU
10	I	41	VAL
10	I	51	ARG
10	I	53	VAL
10	I	54	ASP
10	I	58	ARG
10	I	59	PHE
10	I	64	THR
10	I	75	ASP
10	I	77	ILE
10	I	78	LYS
10	I	79	LEU
10	I	85	LEU
10	I	86	VAL
10	I	96	LEU
10	I	97	LYS
10	I	99	LEU
10	I	104	ARG
10	I	105	ASP
10	I	107	ARG
10	I	108	VAL
10	I	110	GLU
10	I	111	ARG
10	I	113	LYS
10	I	114	TYR
10	I	117	HIS
10	I	118	LYS
10	I	121	ARG
10	I	125	TYR
10	I	126	SER
10	I	127	LYS
10	I	128	ARG
11	J	3	LYS
11	J	5	ARG
11	J	6	ILE
11	J	7	LYS
11	J	13	HIS
11	J	14	LYS
11	J	16	LEU
11	J	19	SER

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Mol	Chain	Res	Type
11	J	22	LYS
11	J	23	ILE
11	J	28	ARG
11	J	34	VAL
11	J	35	SER
11	J	38	ILE
11	J	40	LEU
11	J	45	ARG
11	J	46	ARG
11	J	48	THR
11	J	50	ILE
11	J	51	ARG
11	J	57	LYS
11	J	59	SER
11	J	60	ARG
11	J	62	HIS
11	J	64	GLU
11	J	65	LEU
11	J	66	ARG
11	J	67	THR
11	J	70	ARG
11	J	71	LEU
11	J	73	ASP
11	J	74	ILE
11	J	75	ILE
11	J	80	LYS
11	J	83	GLU
11	J	84	GLN
11	J	87	THR
11	J	92	THR
11	J	96	ILE
11	J	98	ILE
11	J	99	LYS
12	K	11	LYS
12	K	18	ARG
12	K	21	ILE
12	K	24	SER
12	K	27	ASN
12	K	28	THR
12	K	29	ILE
12	K	30	VAL
12	K	48	ILE

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Mol	Chain	Res	Type
12	K	51	LYS
12	K	53	SER
12	K	54	ARG
12	K	57	THR
12	K	62	GLN
12	K	66	LEU
12	K	73	MET
12	K	78	GLN
12	K	81	ASP
12	K	82	VAL
12	K	83	ILE
12	K	87	THR
12	K	92	GLU
12	K	93	GLN
12	K	96	ARG
12	K	103	LEU
12	K	106	LYS
12	K	109	VAL
12	K	117	ASN
12	K	119	CYS
12	K	123	LYS
12	K	124	LYS
12	K	127	LYS
12	K	129	SER
13	L	12	ARG
13	L	13	LYS
13	L	15	ARG
13	L	17	LYS
13	L	18	VAL
13	L	19	ARG
13	L	20	LYS
13	L	22	SER
13	L	23	LYS
13	L	24	VAL
13	L	27	LEU
13	L	28	LYS
13	L	32	PHE
13	L	33	ARG
13	L	34	ARG
13	L	36	VAL
13	L	37	CYS
13	L	38	THR

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Mol	Chain	Res	Type
13	L	39	VAL
13	L	41	ARG
13	L	42	THR
13	L	43	VAL
13	L	46	LYS
13	L	47	LYS
13	L	49	ASN
13	L	53	ARG
13	L	54	LYS
13	L	57	LYS
13	L	60	LEU
13	L	61	THR
13	L	65	GLU
13	L	69	TYR
13	L	70	ILE
13	L	73	GLU
13	L	75	HIS
13	L	76	ASN
13	L	81	SER
13	L	82	VAL
13	L	83	VAL
13	L	85	ILE
13	L	86	ARG
13	L	90	VAL
13	L	91	LYS
13	L	93	LEU
13	L	96	VAL
13	L	98	TYR
13	L	102	ARG
13	L	104	VAL
13	L	113	ARG
13	L	114	LYS
13	L	122	THR
13	L	123	LYS
13	L	124	LYS
14	M	3	ARG
14	M	4	ILE
14	M	7	VAL
14	M	9	ILE
14	M	14	ARG
14	M	15	VAL
14	M	16	ASP

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Mol	Chain	Res	Type
14	M	17	VAL
14	M	25	ILE
14	M	27	LYS
14	M	31	LYS
14	M	32	GLU
14	M	36	LYS
14	M	37	THR
14	M	39	ILE
14	M	43	THR
14	M	46	LYS
14	M	54	VAL
14	M	55	ARG
14	M	56	LEU
14	M	57	ARG
14	M	62	ASN
14	M	67	GLU
14	M	70	LEU
14	M	78	ILE
14	M	79	LYS
14	M	81	LEU
14	M	83	ASP
14	M	84	ILE
14	M	91	ARG
14	M	94	ARG
14	M	99	ARG
14	M	105	THR
14	M	106	ASN
14	M	108	ARG
14	M	110	ARG
14	M	111	LYS
14	M	115	LYS
14	M	117	VAL
14	M	120	LYS
14	M	121	LYS
14	M	122	LYS
15	N	3	ARG
15	N	4	LYS
15	N	6	LEU
15	N	7	ILE
15	N	9	LYS
15	N	11	LYS
15	N	12	ARG

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Mol	Chain	Res	Type
15	N	13	THR
15	N	15	LYS
15	N	17	LYS
15	N	21	TYR
15	N	23	ARG
15	N	25	VAL
15	N	26	ARG
15	N	31	ARG
15	N	32	SER
15	N	35	ARG
15	N	39	LEU
15	N	42	ILE
15	N	44	LEU
15	N	50	LYS
15	N	53	LEU
15	N	58	LYS
15	N	60	SER
15	N	61	TRP
16	O	3	ILE
16	O	5	LYS
16	O	6	GLU
16	O	12	ILE
16	O	13	GLN
16	O	14	GLU
16	O	17	ARG
16	O	22	THR
16	O	24	SER
16	O	27	VAL
16	O	32	LEU
16	O	33	THR
16	O	35	ARG
16	O	39	LEU
16	O	42	HIS
16	O	43	LEU
16	O	45	VAL
16	O	46	HIS
16	O	47	LYS
16	O	48	LYS
16	O	50	HIS
16	O	56	LEU
16	O	57	LEU
16	O	60	VAL

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Mol	Chain	Res	Type
16	O	64	ARG
16	O	65	ARG
16	O	68	ARG
16	O	70	LEU
16	O	71	GLN
16	O	73	GLU
16	O	81	LEU
16	O	83	GLU
16	O	85	LEU
16	O	87	ILE
16	O	88	ARG
17	P	1	MET
17	P	2	VAL
17	P	5	ARG
17	P	8	ARG
17	P	11	SER
17	P	12	LYS
17	P	19	ILE
17	P	20	VAL
17	P	27	LYS
17	P	28	ARG
17	P	33	ILE
17	P	35	LYS
17	P	36	ILE
17	P	42	ARG
17	P	43	LYS
17	P	44	THR
17	P	45	THR
17	P	49	LEU
17	P	51	VAL
17	P	53	VAL
17	P	55	ARG
17	P	57	ARG
17	P	62	VAL
17	P	65	GLN
17	P	67	THR
17	P	74	LEU
17	P	81	ARG
17	P	82	GLN
18	Q	5	VAL
18	Q	6	LEU
18	Q	7	THR

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Mol	Chain	Res	Type
18	Q	14	LYS
18	Q	15	MET
18	Q	23	VAL
18	Q	24	GLU
18	Q	34	LYS
18	Q	35	VAL
18	Q	36	ILE
18	Q	38	ARG
18	Q	50	LYS
18	Q	52	LYS
18	Q	53	LEU
18	Q	57	VAL
18	Q	58	GLU
18	Q	59	ILE
18	Q	60	ILE
18	Q	73	VAL
18	Q	76	LEU
18	Q	77	VAL
18	Q	78	GLU
18	Q	84	LEU
18	Q	85	VAL
18	Q	86	GLU
18	Q	87	LYS
18	Q	89	LEU
18	Q	92	ARG
18	Q	95	TYR
18	Q	96	GLN
18	Q	100	LYS
19	R	18	ARG
19	R	19	LYS
19	R	21	LYS
19	R	25	THR
19	R	26	LEU
19	R	31	LEU
19	R	36	ASN
19	R	38	GLU
19	R	40	LEU
19	R	41	LYS
19	R	44	LEU
19	R	47	THR
19	R	50	ILE
19	R	53	ARG

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Mol	Chain	Res	Type
19	R	54	ARG
19	R	55	ARG
19	R	58	LEU
19	R	59	SER
19	R	61	LYS
19	R	69	THR
19	R	70	ILE
19	R	75	ILE
19	R	76	LEU
19	R	78	LEU
19	R	79	LEU
19	R	82	THR
19	R	84	LYS
19	R	86	VAL
19	R	87	ARG
19	R	88	LYS
20	S	5	LEU
20	S	9	VAL
20	S	13	ASP
20	S	14	HIS
20	S	15	LEU
20	S	20	LEU
20	S	21	GLU
20	S	27	GLU
20	S	28	LYS
20	S	29	ARG
20	S	32	LYS
20	S	33	THR
20	S	37	ARG
20	S	38	SER
20	S	41	VAL
20	S	43	GLU
20	S	44	MET
20	S	51	VAL
20	S	52	TYR
20	S	58	VAL
20	S	63	THR
20	S	64	GLU
20	S	65	ASN
20	S	70	LYS
20	S	71	LEU
20	S	78	ARG

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Mol	Chain	Res	Type
20	S	79	THR
20	S	81	ARG
20	S	83	HIS
21	T	10	LEU
21	T	11	SER
21	T	13	LEU
21	T	18	GLN
21	T	19	SER
21	T	21	LYS
21	T	24	LEU
21	T	29	LYS
21	T	30	LYS
21	T	36	LEU
21	T	37	SER
21	T	43	LEU
21	T	55	ILE
21	T	57	ARG
21	T	58	LYS
21	T	62	LEU
21	T	64	ASP
21	T	68	LYS
21	T	74	LYS
21	T	80	ARG
21	T	81	LYS
21	T	85	MET
21	T	86	ARG
21	T	87	LYS
21	T	88	VAL
21	T	99	LEU
21	T	100	ILE
21	T	104	LEU
21	T	105	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (48) such sidechains are listed below:

Mol	Chain	Res	Type
3	B	25	ASN
3	B	94	ASN
3	B	135	GLN
4	C	3	ASN
4	C	6	HIS
4	C	123	GLN

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Mol	Chain	Res	Type
4	C	176	HIS
5	D	62	GLN
5	D	123	HIS
5	D	129	ASN
5	D	199	GLN
7	F	7	ASN
7	F	18	GLN
7	F	27	GLN
7	F	32	ASN
7	F	73	ASN
7	F	100	ASN
8	G	37	ASN
8	G	56	GLN
8	G	96	GLN
8	G	106	GLN
8	G	148	ASN
9	H	78	GLN
10	I	34	ASN
10	I	73	GLN
11	J	13	HIS
11	J	68	HIS
11	J	76	ASN
11	J	78	ASN
11	J	84	GLN
12	K	27	ASN
12	K	116	HIS
13	L	49	ASN
13	L	75	HIS
13	L	76	ASN
13	L	99	HIS
14	M	40	ASN
14	M	62	ASN
16	O	13	GLN
16	O	37	ASN
18	Q	16	GLN
18	Q	26	GLN
18	Q	96	GLN
20	S	53	ASN
20	S	83	HIS
21	T	18	GLN
21	T	73	HIS
21	T	75	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1504/1511 (99%)	671 (44%)	162 (10%)
2	Z	3/4 (75%)	0	0
All	All	1507/1515 (99%)	671 (44%)	162 (10%)

All (671) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	6	G
1	A	8	A
1	A	9	G
1	A	13	U
1	A	16	A
1	A	17	U
1	A	18	C
1	A	20	U
1	A	25	C
1	A	31	G
1	A	32	A
1	A	36	C
1	A	37	U
1	A	38	G
1	A	39	G
1	A	40	C
1	A	44	G
1	A	47	C
1	A	48	C
1	A	49	U
1	A	50	A
1	A	51	A
1	A	52	G
1	A	54	C
1	A	55	A
1	A	56	U
1	A	59	A
1	A	60	A
1	A	61	G
1	A	63	C
1	A	64	G
1	A	65	U
1	A	66	G
1	A	67	C

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Mol	Chain	Res	Type
1	A	70	G
1	A	73	C
1	A	75	G
1	A	78	G
1	A	81	U
1	A	82	U
1	A	84	U
1	A	92	C
1	A	95	U
1	A	96	G
1	A	97	G
1	A	101	A
1	A	109	A
1	A	110	C
1	A	111	G
1	A	116	A
1	A	120	A
1	A	121	C
1	A	126	G
1	A	129(A)	G
1	A	130	A
1	A	131	C
1	A	145	G
1	A	149	A
1	A	150	C
1	A	151	A
1	A	152	A
1	A	153	C
1	A	154	C
1	A	156	G
1	A	160	A
1	A	162	A
1	A	163	C
1	A	167	G
1	A	169	C
1	A	170	U
1	A	179	A
1	A	182	U
1	A	183	G
1	A	185	A
1	A	187	C
1	A	190(E)	U

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Mol	Chain	Res	Type
1	A	190(G)	G
1	A	190(L)	U
1	A	195	A
1	A	197	A
1	A	198	G
1	A	200	G
1	A	201	C
1	A	202	U
1	A	203	U
1	A	204	U
1	A	216	G
1	A	217	C
1	A	220	G
1	A	221	C
1	A	222	U
1	A	226	G
1	A	231	G
1	A	236	G
1	A	237	C
1	A	240	C
1	A	244	U
1	A	245	C
1	A	246	A
1	A	247	G
1	A	250	A
1	A	251	G
1	A	252	U
1	A	258	G
1	A	263	A
1	A	264	U
1	A	265	G
1	A	266	G
1	A	267	C
1	A	268	C
1	A	269	C
1	A	271	C
1	A	275	G
1	A	279	A
1	A	280	C
1	A	281	G
1	A	282	A
1	A	283	C

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Mol	Chain	Res	Type
1	A	285	G
1	A	288	A
1	A	289	G
1	A	290	C
1	A	293	G
1	A	294	U
1	A	298	A
1	A	311	C
1	A	315	A
1	A	316	G
1	A	317	G
1	A	318	G
1	A	321	A
1	A	325	A
1	A	326	G
1	A	327	A
1	A	328	C
1	A	329	A
1	A	330	C
1	A	332	G
1	A	333	G
1	A	336	C
1	A	344	A
1	A	345	C
1	A	346	G
1	A	347	G
1	A	350	G
1	A	351	G
1	A	352	C
1	A	353	A
1	A	354	G
1	A	355	C
1	A	365	U
1	A	367	U
1	A	368	U
1	A	372	C
1	A	373	A
1	A	374	A
1	A	384	G
1	A	390	C
1	A	391	G
1	A	393	A

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Mol	Chain	Res	Type
1	A	397	A
1	A	398	C
1	A	400	C
1	A	406	G
1	A	409	G
1	A	410	G
1	A	411	A
1	A	412	A
1	A	413	G
1	A	414	A
1	A	415	A
1	A	417	C
1	A	421	U
1	A	422	C
1	A	423	G
1	A	424	G
1	A	426	G
1	A	429	U
1	A	430	A
1	A	433	C
1	A	435	C
1	A	437	U
1	A	439	A
1	A	443	C
1	A	445	G
1	A	452	A
1	A	453	A
1	A	454	C
1	A	459	G
1	A	460	A
1	A	461	C
1	A	462	G
1	A	476	G
1	A	480	U
1	A	481	G
1	A	482	A
1	A	484	G
1	A	485	G
1	A	487	A
1	A	490	G
1	A	494	G
1	A	496	A

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Mol	Chain	Res	Type
1	A	497	A
1	A	498	U
1	A	500	G
1	A	502	G
1	A	504	C
1	A	505	G
1	A	506	G
1	A	508	C
1	A	509	A
1	A	510	A
1	A	511	C
1	A	513	C
1	A	517	G
1	A	518	C
1	A	519	C
1	A	520	A
1	A	521	G
1	A	527	G
1	A	529	G
1	A	531	U
1	A	532	A
1	A	533	A
1	A	534	U
1	A	535	A
1	A	536	C
1	A	537	G
1	A	545	C
1	A	547	A
1	A	550	G
1	A	555	C
1	A	556	C
1	A	559	A
1	A	560	U
1	A	561	U
1	A	562	C
1	A	564	C
1	A	567	G
1	A	570	G
1	A	572	A
1	A	573	A
1	A	575	G
1	A	576	G

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Mol	Chain	Res	Type
1	A	577	G
1	A	582	U
1	A	583	A
1	A	593	G
1	A	594	G
1	A	596	C
1	A	607	A
1	A	617	G
1	A	619	U
1	A	620	C
1	A	623	C
1	A	624	C
1	A	633	G
1	A	636	U
1	A	640	A
1	A	650	G
1	A	651	C
1	A	653	A
1	A	654	G
1	A	655	A
1	A	657	G
1	A	661	G
1	A	665	A
1	A	670	G
1	A	671	G
1	A	673	G
1	A	675	A
1	A	681	C
1	A	683	G
1	A	685	G
1	A	686	U
1	A	688	G
1	A	693	G
1	A	695	A
1	A	696	A
1	A	700	G
1	A	701	C
1	A	702	A
1	A	703	G
1	A	704	A
1	A	705	U
1	A	707	C

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Mol	Chain	Res	Type
1	A	715	A
1	A	718	G
1	A	721	G
1	A	722	A
1	A	723	U
1	A	724	G
1	A	725	G
1	A	726	C
1	A	731	G
1	A	734	G
1	A	735	C
1	A	736	C
1	A	748	C
1	A	749	C
1	A	752	G
1	A	754	C
1	A	755	G
1	A	759	A
1	A	762	C
1	A	764	C
1	A	767	A
1	A	773	G
1	A	774	G
1	A	777	A
1	A	779	C
1	A	781	A
1	A	784	C
1	A	785	G
1	A	787	A
1	A	789	U
1	A	792	A
1	A	793	U
1	A	794	A
1	A	795	C
1	A	799	G
1	A	801	U
1	A	803	G
1	A	804	U
1	A	805	C
1	A	809	G
1	A	810	C
1	A	813	U

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Mol	Chain	Res	Type
1	A	815	A
1	A	817	C
1	A	818	G
1	A	819	A
1	A	821	G
1	A	825	G
1	A	828	A
1	A	833	U
1	A	837	G
1	A	839	U
1	A	840	C
1	A	841	U
1	A	854	G
1	A	856	C
1	A	857	C
1	A	858	G
1	A	859	A
1	A	866	C
1	A	869	G
1	A	870	U
1	A	872	A
1	A	873	A
1	A	874	G
1	A	876	G
1	A	877	C
1	A	881	G
1	A	883	C
1	A	884	U
1	A	886	G
1	A	888	G
1	A	889	A
1	A	891	U
1	A	900	A
1	A	902	G
1	A	908	A
1	A	910	C
1	A	913	A
1	A	914	A
1	A	917	G
1	A	919	A
1	A	921	U
1	A	926	G

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Mol	Chain	Res	Type
1	A	927	G
1	A	932	C
1	A	933	G
1	A	934	C
1	A	935	A
1	A	937	A
1	A	938	A
1	A	939	G
1	A	942	G
1	A	943	U
1	A	945	G
1	A	948	C
1	A	954	G
1	A	960	U
1	A	961	U
1	A	964	A
1	A	965	A
1	A	966	G
1	A	967	C
1	A	969	A
1	A	971	G
1	A	972	C
1	A	974	A
1	A	975	A
1	A	976	G
1	A	977	A
1	A	978	A
1	A	979	C
1	A	981	U
1	A	983	A
1	A	984	C
1	A	987	G
1	A	989	C
1	A	991	U
1	A	992	U
1	A	993	G
1	A	994	A
1	A	1000	U
1	A	1002	G
1	A	1004	A
1	A	1005	A
1	A	1006	C

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Mol	Chain	Res	Type
1	A	1008	C
1	A	1009	G
1	A	1010	G
1	A	1011	G
1	A	1017	G
1	A	1021	G
1	A	1022	G
1	A	1023	G
1	A	1024	G
1	A	1025	U
1	A	1026	G
1	A	1027	C
1	A	1028	C
1	A	1029	C
1	A	1030(B)	C
1	A	1030(C)	G
1	A	1031	G
1	A	1032	G
1	A	1033	G
1	A	1034	G
1	A	1035	A
1	A	1037	C
1	A	1038	C
1	A	1042	G
1	A	1043	C
1	A	1044	A
1	A	1045	C
1	A	1046	A
1	A	1048	G
1	A	1049	U
1	A	1050	G
1	A	1053	G
1	A	1054	C
1	A	1057	G
1	A	1062	U
1	A	1064	G
1	A	1065	U
1	A	1066	C
1	A	1067	A
1	A	1068	G
1	A	1070	U
1	A	1076	C

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Mol	Chain	Res	Type
1	A	1077	G
1	A	1078	U
1	A	1082	G
1	A	1085	U
1	A	1086	U
1	A	1092	A
1	A	1093	A
1	A	1094	G
1	A	1095	U
1	A	1096	C
1	A	1097	C
1	A	1099	G
1	A	1101	A
1	A	1102	A
1	A	1106	G
1	A	1108	G
1	A	1109	C
1	A	1110	A
1	A	1113	C
1	A	1117	G
1	A	1118	C
1	A	1122	U
1	A	1124	G
1	A	1125	U
1	A	1126	U
1	A	1127	G
1	A	1128	C
1	A	1129	C
1	A	1130	A
1	A	1131	G
1	A	1134	G
1	A	1136	U
1	A	1137	C
1	A	1138	G
1	A	1139	G
1	A	1140	C
1	A	1141	C
1	A	1142	G
1	A	1144	G
1	A	1145	C
1	A	1146	A
1	A	1148	U

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Mol	Chain	Res	Type
1	A	1151	A
1	A	1152	A
1	A	1153	C
1	A	1158	C
1	A	1159	U
1	A	1160	G
1	A	1161	C
1	A	1162	C
1	A	1171	G
1	A	1176	A
1	A	1182	G
1	A	1183	A
1	A	1184	G
1	A	1186	G
1	A	1187	G
1	A	1188	A
1	A	1190	G
1	A	1191	A
1	A	1192	C
1	A	1193	G
1	A	1196	U
1	A	1197	G
1	A	1198	G
1	A	1200	C
1	A	1201	A
1	A	1202	G
1	A	1206	G
1	A	1209	C
1	A	1210	C
1	A	1211	U
1	A	1212	U
1	A	1213	A
1	A	1214	C
1	A	1215	G
1	A	1218	C
1	A	1219	U
1	A	1224	G
1	A	1225	A
1	A	1226	C
1	A	1227	A
1	A	1228	C
1	A	1229	A

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Mol	Chain	Res	Type
1	A	1233	G
1	A	1234	C
1	A	1235	U
1	A	1236	A
1	A	1238	A
1	A	1240	U
1	A	1241	G
1	A	1245	A
1	A	1250	A
1	A	1251	A
1	A	1253	G
1	A	1256	A
1	A	1257	U
1	A	1258	G
1	A	1260	C
1	A	1263	C
1	A	1265	G
1	A	1268	A
1	A	1269	A
1	A	1270	C
1	A	1273	G
1	A	1278	U
1	A	1279	A
1	A	1280	A
1	A	1281	U
1	A	1282	C
1	A	1285	A
1	A	1286	A
1	A	1287	A
1	A	1290	G
1	A	1291	G
1	A	1297	C
1	A	1300	G
1	A	1302	U
1	A	1305	G
1	A	1311	G
1	A	1312	G
1	A	1316	G
1	A	1317	C
1	A	1319	A
1	A	1320	C
1	A	1322	C

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Mol	Chain	Res	Type
1	A	1323	G
1	A	1327	C
1	A	1328	C
1	A	1332	A
1	A	1337	G
1	A	1338	G
1	A	1340	A
1	A	1344	C
1	A	1345	U
1	A	1346	A
1	A	1347	G
1	A	1348	U
1	A	1349	A
1	A	1353	G
1	A	1354	C
1	A	1355	G
1	A	1360	A
1	A	1361(A)	C
1	A	1362	C
1	A	1363	A
1	A	1364	U
1	A	1365	G
1	A	1366	C
1	A	1368	G
1	A	1370	G
1	A	1371	G
1	A	1372	U
1	A	1379	G
1	A	1380	U
1	A	1381	U
1	A	1384	C
1	A	1386	G
1	A	1396	A
1	A	1397	C
1	A	1398	A
1	A	1400	C
1	A	1401	G
1	A	1402	C
1	A	1403	C
1	A	1404	C
1	A	1407	C
1	A	1408	A

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Mol	Chain	Res	Type
1	A	1409	C
1	A	1410	G
1	A	1417	G
1	A	1418	A
1	A	1419	G
1	A	1423	G
1	A	1427	U
1	A	1437	C
1	A	1440	C
1	A	1442	G
1	A	1446	A
1	A	1447	G
1	A	1450	U
1	A	1451	A
1	A	1452	C
1	A	1453	G
1	A	1454	G
1	A	1460	A
1	A	1468	A
1	A	1472	U
1	A	1478	C
1	A	1483	A
1	A	1487	G
1	A	1490	C
1	A	1491	G
1	A	1492	A
1	A	1494	G
1	A	1497	G
1	A	1498	U
1	A	1499	A
1	A	1503	A
1	A	1504	G
1	A	1505	G
1	A	1506	U
1	A	1507	A
1	A	1509	C
1	A	1510	U
1	A	1514	C
1	A	1517	G
1	A	1519	A
1	A	1520	G
1	A	1522	U

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Mol	Chain	Res	Type
1	A	1525	G
1	A	1526	G
1	A	1527	C
1	A	1528	U
1	A	1529	G
1	A	1530	G
1	A	1533	C

All (162) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	7	G
1	A	30	U
1	A	48	C
1	A	51	A
1	A	60	A
1	A	64	G
1	A	115	G
1	A	119	A
1	A	129(A)	G
1	A	151	A
1	A	181	G
1	A	197	A
1	A	202	U
1	A	203	U
1	A	243	A
1	A	244	U
1	A	246	A
1	A	250	A
1	A	251	G
1	A	266	G
1	A	275	G
1	A	279	A
1	A	281	G
1	A	288	A
1	A	293	G
1	A	315	A
1	A	328	C
1	A	329	A
1	A	345	C
1	A	350	G
1	A	351	G

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Mol	Chain	Res	Type
1	A	353	A
1	A	367	U
1	A	372	C
1	A	373	A
1	A	405	U
1	A	409	G
1	A	410	G
1	A	412	A
1	A	421	U
1	A	428	G
1	A	429	U
1	A	438	G
1	A	453	A
1	A	460	A
1	A	461	C
1	A	481	G
1	A	484	G
1	A	485	G
1	A	496	A
1	A	497	A
1	A	499	A
1	A	504	C
1	A	509	A
1	A	518	C
1	A	531	U
1	A	533	A
1	A	535	A
1	A	536	C
1	A	559	A
1	A	560	U
1	A	575	G
1	A	576	G
1	A	619	U
1	A	650	G
1	A	652	U
1	A	653	A
1	A	656	C
1	A	687	A
1	A	701	C
1	A	702	A
1	A	703	G
1	A	721	G

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Mol	Chain	Res	Type
1	A	722	A
1	A	734	G
1	A	793	U
1	A	812	C
1	A	817	C
1	A	818	G
1	A	872	A
1	A	873	A
1	A	913	A
1	A	934	C
1	A	960	U
1	A	965	A
1	A	971	G
1	A	974	A
1	A	975	A
1	A	976	G
1	A	980	C
1	A	992	U
1	A	993	G
1	A	1024	G
1	A	1027	C
1	A	1049	U
1	A	1053	G
1	A	1064	G
1	A	1065	U
1	A	1066	C
1	A	1067	A
1	A	1085	U
1	A	1092	A
1	A	1101	A
1	A	1108	G
1	A	1117	G
1	A	1124	G
1	A	1126	U
1	A	1129	C
1	A	1139	G
1	A	1145	C
1	A	1151	A
1	A	1159	U
1	A	1182	G
1	A	1187	G
1	A	1190	G

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Mol	Chain	Res	Type
1	A	1192	C
1	A	1196	U
1	A	1200	C
1	A	1201	A
1	A	1212	U
1	A	1213	A
1	A	1214	C
1	A	1224	G
1	A	1225	A
1	A	1233	G
1	A	1235	U
1	A	1240	U
1	A	1256	A
1	A	1257	U
1	A	1262	C
1	A	1263	C
1	A	1278	U
1	A	1279	A
1	A	1280	A
1	A	1281	U
1	A	1285	A
1	A	1297	C
1	A	1301	U
1	A	1317	C
1	A	1319	A
1	A	1320	C
1	A	1322	C
1	A	1331	G
1	A	1337	G
1	A	1345	U
1	A	1346	A
1	A	1347	G
1	A	1348	U
1	A	1364	U
1	A	1380	U
1	A	1396	A
1	A	1417	G
1	A	1451	A
1	A	1491	G
1	A	1498	U
1	A	1504	G
1	A	1505	G

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Mol	Chain	Res	Type
1	A	1506	U
1	A	1507	A
1	A	1509	C
1	A	1525	G
1	A	1529	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 oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 117 ligands modelled in this entry, 115 are monoatomic - leaving 2 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
25	AB9	A	1637	-	35,36,36	2.20	3 (8%)	43,49,49	1.65	3 (6%)
24	D2C	A	1636	22	31,34,34	4.34	11 (35%)	37,54,54	2.47	16 (43%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	AB9	A	1637	-	-	11/24/64/64	0/2/2/2
24	D2C	A	1636	22	-	6/6/64/64	0/4/4/4

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	A	1636	D2C	C16-C15	-15.94	1.40	1.53
24	A	1636	D2C	C16-C17	-12.35	1.37	1.53
25	A	1637	AB9	O36-C23	10.63	1.43	1.23
24	A	1636	D2C	C18-C5	-7.06	1.44	1.54
24	A	1636	D2C	C14-C15	-6.64	1.43	1.52
25	A	1637	AB9	C23-N12	6.25	1.47	1.34
24	A	1636	D2C	C20-C21	4.37	1.62	1.53
25	A	1637	AB9	C24-C23	2.77	1.55	1.52
24	A	1636	D2C	O2-C8	2.76	1.48	1.42
24	A	1636	D2C	C6-C5	-2.57	1.49	1.53
24	A	1636	D2C	O5-C17	-2.48	1.36	1.43
24	A	1636	D2C	C9-C8	2.21	1.54	1.52
24	A	1636	D2C	C21-N2	2.03	1.37	1.32
24	A	1636	D2C	O4-C15	-2.02	1.38	1.42

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	A	1637	AB9	O36-C23-N12	-7.27	109.94	122.96
25	A	1637	AB9	O36-C23-C24	-6.29	111.32	120.61
24	A	1636	D2C	O5-C17-C18	5.18	121.55	109.80
24	A	1636	D2C	O4-C15-C14	5.09	122.53	110.56
24	A	1636	D2C	C18-C17-C16	4.88	118.55	110.45
24	A	1636	D2C	C7-C16-C17	4.55	121.75	111.30
24	A	1636	D2C	C7-C16-C15	4.07	118.89	110.87
24	A	1636	D2C	O4-C15-C16	3.83	118.30	110.83
24	A	1636	D2C	O6-C19-C18	-3.77	115.72	122.57
24	A	1636	D2C	C3-C4-C20	3.74	121.89	113.71
24	A	1636	D2C	O5-C17-C16	3.43	119.43	111.25
24	A	1636	D2C	C7-C6-C5	-2.79	105.77	110.23
24	A	1636	D2C	O1-C4-C20	-2.73	118.14	121.97
25	A	1637	AB9	O51-C51-C61	2.67	111.20	106.07
24	A	1636	D2C	C2-N1-C3	-2.66	108.04	114.10
24	A	1636	D2C	C11-C10-C9	-2.42	119.17	122.38
24	A	1636	D2C	C6-C5-C3	2.29	117.12	113.54
24	A	1636	D2C	C1-N1-C3	-2.09	109.35	114.10
24	A	1636	D2C	C5-C18-C19	2.02	116.77	109.64

There are no chirality outliers.

All (17) torsion outliers are listed below:

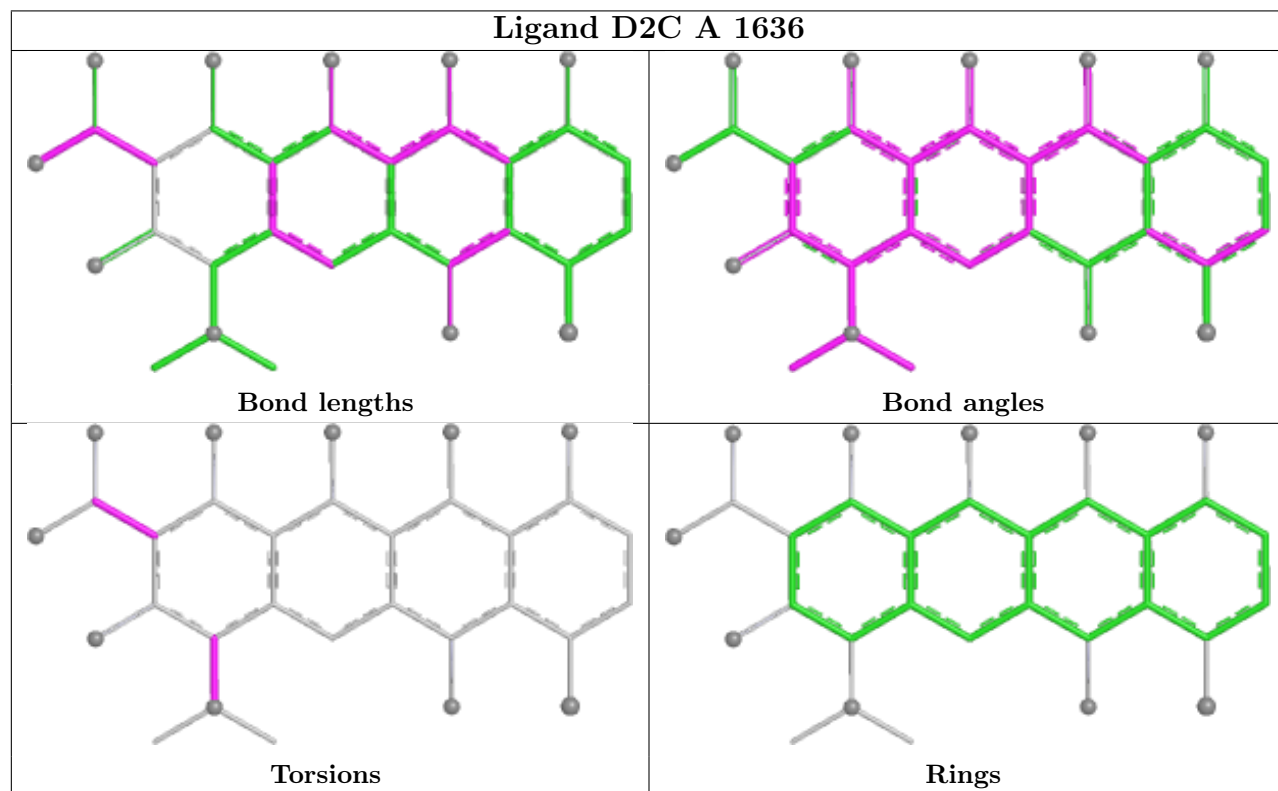
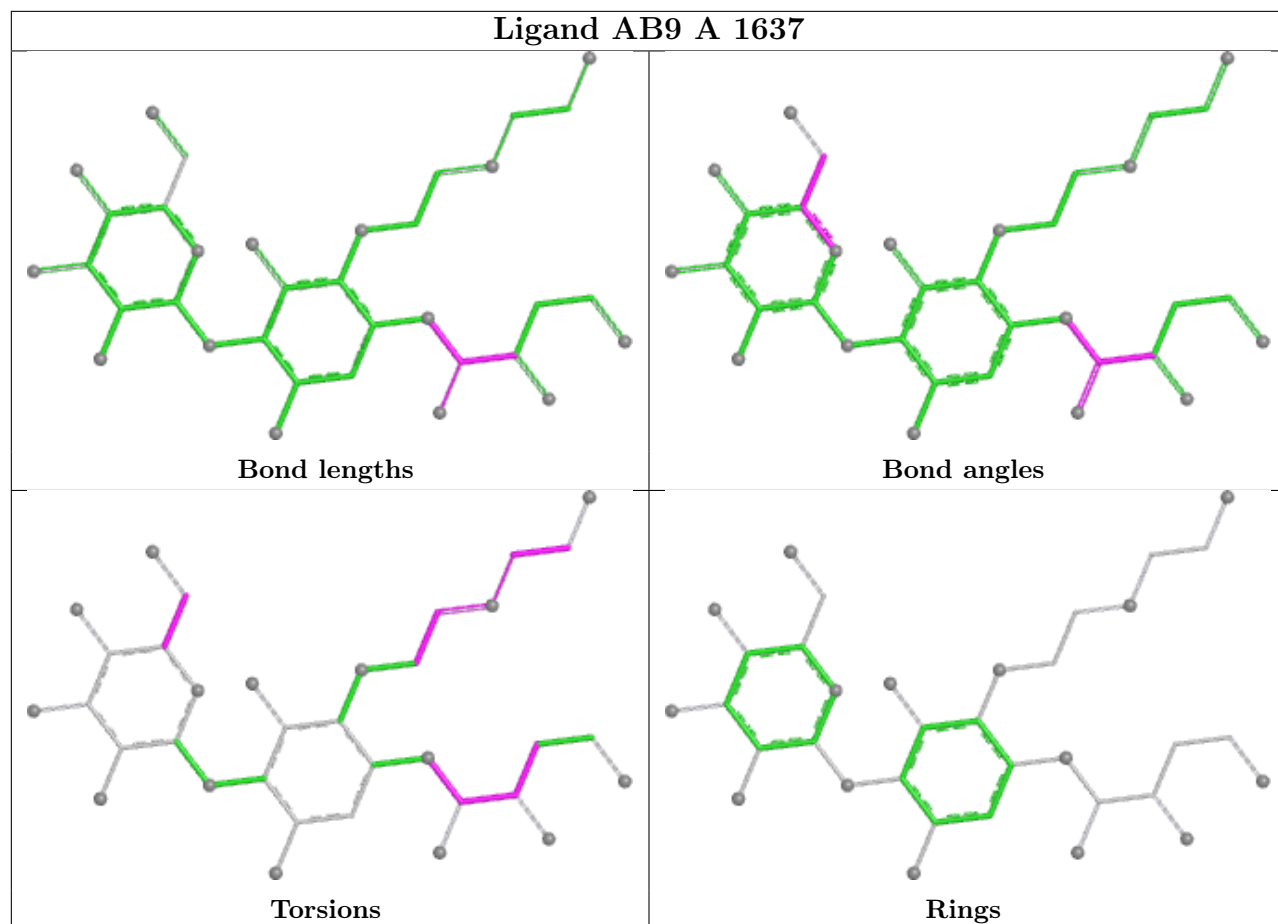
Mol	Chain	Res	Type	Atoms
24	A	1636	D2C	C4-C3-N1-C1
24	A	1636	D2C	C5-C3-N1-C1
24	A	1636	D2C	C4-C3-N1-C2
24	A	1636	D2C	C4-C20-C21-O7
24	A	1636	D2C	C19-C20-C21-O7
25	A	1637	AB9	N12-C23-C24-C25
25	A	1637	AB9	N12-C23-C24-O28
25	A	1637	AB9	O28-C24-C25-C26
25	A	1637	AB9	N34-C33-C35-N31
25	A	1637	AB9	C41-C51-C61-N61
25	A	1637	AB9	O51-C51-C61-N61
25	A	1637	AB9	O36-C23-N12-C12
25	A	1637	AB9	C29-C30-N31-C35
25	A	1637	AB9	C23-C24-C25-C26
24	A	1636	D2C	C5-C3-N1-C2
25	A	1637	AB9	C33-C35-N31-C30
25	A	1637	AB9	O62-C29-C30-N31

There are no ring outliers.

2 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
25	A	1637	AB9	1	0
24	A	1636	D2C	4	0

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



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	A	13

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	841:U	O3'	848:C	P	5.02
1	A	84:U	O3'	88:A	P	3.79
1	A	1533:C	O3'	1534:A	P	3.45
1	A	70:G	O3'	73:C	P	3.36
1	A	204:U	O3'	216:G	P	3.36
1	A	1443:G	O3'	1446:A	P	2.95
1	A	93:G	O3'	95:U	P	2.78
1	A	463:A	O3'	474:G	P	2.68
1	A	440:A	O3'	442:C	P	2.65
1	A	99:C	O3'	101:A	P	2.63
1	A	492:G	O3'	494:G	P	2.50
1	A	1455:G	O3'	1459:C	P	2.31
1	A	1169:A	O3'	1171:G	P	2.03

6 Fit of model and data

6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.