



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 8, 2026 – 03:48 AM UTC

PDB ID : 2UXB / pdb_00002uxb
Title : Crystal structure of an extended tRNA anticodon stem loop in complex with its cognate mRNA GGGU in the context of the *Thermus thermophilus* 30S subunit.
Authors : Dunham, C.M.; Selmer, M.; Phelps, S.S.; Kelley, A.C.; Suzuki, T.; Joseph, S.; Ramakrishnan, V.
Deposited on : 2007-03-28
Resolution : 3.10 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](#) ①) were used in the production of this report:

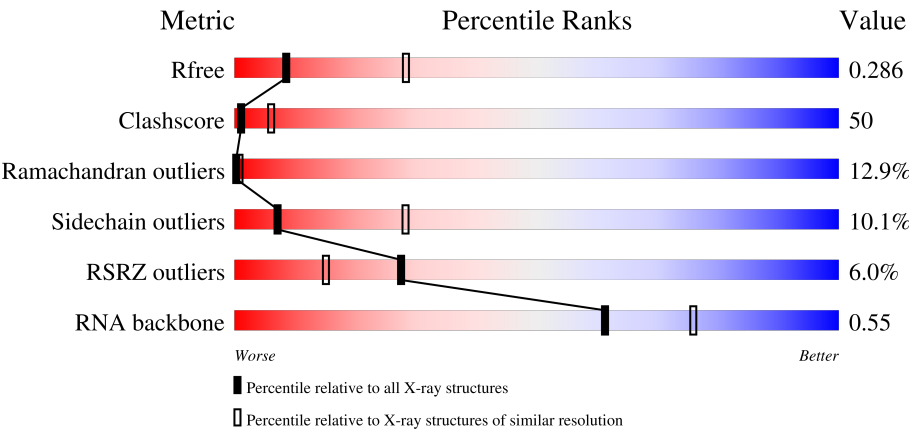
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal 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 i

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 3.10 Å.

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



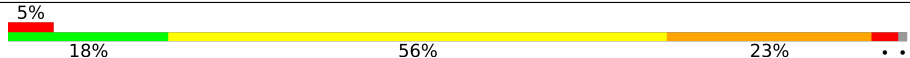
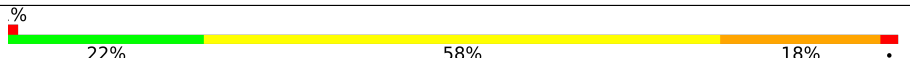
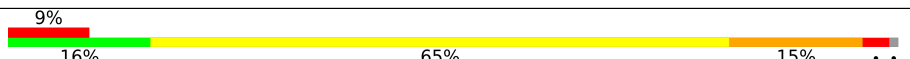
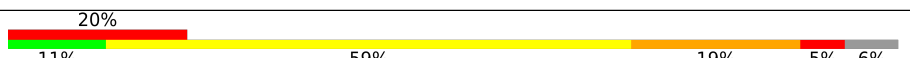
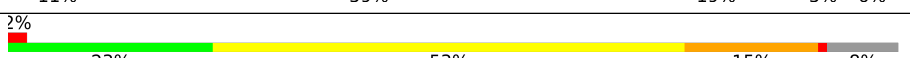
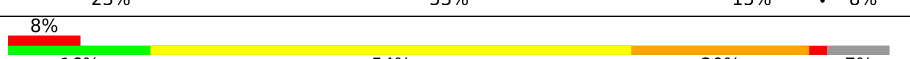
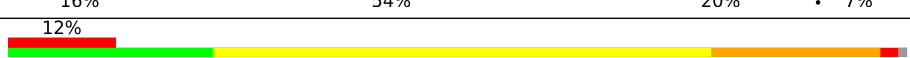
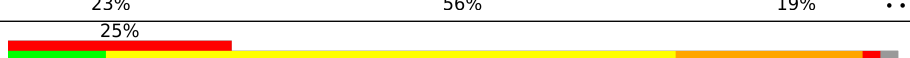
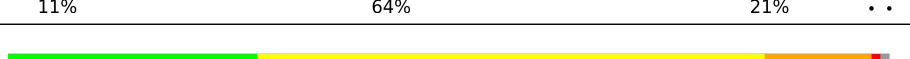
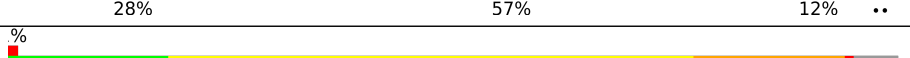
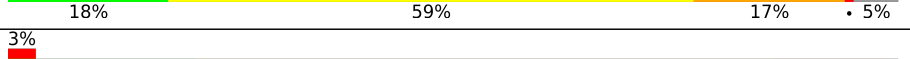
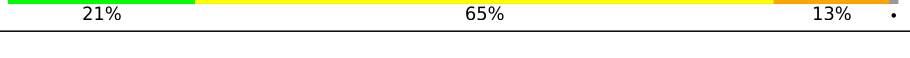
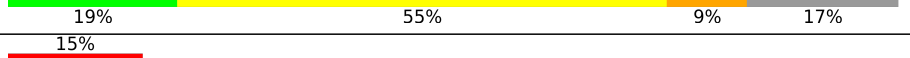
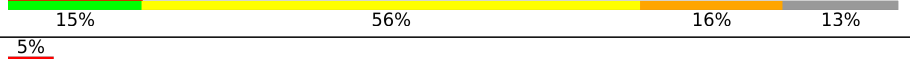
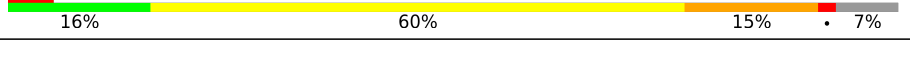
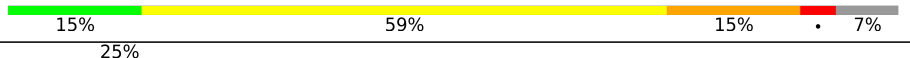
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R _{free}	180053	1456 (3.10-3.10)
Clashscore	190562	1539 (3.10-3.10)
Ramachandran outliers	187476	1467 (3.10-3.10)
Sidechain outliers	187428	1467 (3.10-3.10)
RSRZ outliers	180081	1456 (3.10-3.10)
RNA backbone	3983	1022 (3.32-2.88)

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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1522	4% 19% 66% 12% • •
2	B	256	8% 16% 57% 17% • 8%
3	C	239	8% 18% 47% 19% • 13%
4	D	209	13% 15% 62% 21% •

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Mol	Chain	Length	Quality of chain
5	E	162	
6	F	101	
7	G	156	
8	H	138	
9	I	128	
10	J	105	
11	K	129	
12	L	135	
13	M	126	
14	N	61	
15	O	89	
16	P	88	
17	Q	105	
18	R	88	
19	S	93	
20	T	106	
21	U	27	
22	X	4	
23	Y	18	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	MG	G	3003	-	-	-	X
25	MG	G	3004	-	-	-	X
25	MG	G	3005	-	-	-	X
25	MG	G	3006	-	-	-	X
25	MG	G	3009	-	-	-	X

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	MG	G	3010	-	-	-	X
25	MG	G	3011	-	-	-	X
25	MG	G	3012	-	-	-	X
25	MG	G	3013	-	-	-	X
25	MG	G	3015	-	-	-	X
25	MG	G	3017	-	-	-	X
25	MG	G	3018	-	-	-	X
25	MG	G	3019	-	-	-	X
25	MG	G	3020	-	-	-	X
25	MG	G	3021	-	-	-	X
25	MG	G	3022	-	-	-	X
25	MG	G	3023	-	-	-	X
25	MG	G	3024	-	-	-	X
25	MG	G	3025	-	-	-	X
25	MG	G	3026	-	-	-	X
25	MG	G	3027	-	-	-	X
25	MG	G	3028	-	-	-	X
25	MG	G	3029	-	-	-	X
25	MG	G	3030	-	-	-	X
25	MG	G	3031	-	-	-	X
25	MG	G	3033	-	-	-	X
25	MG	G	3034	-	-	-	X
25	MG	G	3035	-	-	-	X
25	MG	G	3036	-	-	-	X
25	MG	G	3037	-	-	-	X
25	MG	G	3038	-	-	-	X
25	MG	G	3040	-	-	-	X
25	MG	G	3041	-	-	-	X
25	MG	G	3042	-	-	-	X
25	MG	G	3043	-	-	-	X
25	MG	G	3044	-	-	-	X
25	MG	G	3047	-	-	-	X
25	MG	G	3048	-	-	-	X
25	MG	G	3050	-	-	-	X
25	MG	G	3051	-	-	-	X
25	MG	G	3052	-	-	-	X
25	MG	G	3053	-	-	-	X
25	MG	G	3054	-	-	-	X
25	MG	G	3056	-	-	-	X
25	MG	G	3057	-	-	-	X
25	MG	G	3058	-	-	-	X
25	MG	G	3059	-	-	-	X

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	MG	G	3061	-	-	-	X
25	MG	G	3062	-	-	-	X
25	MG	G	3063	-	-	-	X
25	MG	G	3066	-	-	-	X
25	MG	G	3067	-	-	-	X
25	MG	G	3068	-	-	-	X
25	MG	G	3069	-	-	-	X
25	MG	G	3070	-	-	-	X
25	MG	G	3071	-	-	-	X
25	MG	G	3074	-	-	-	X
25	MG	G	3075	-	-	-	X
25	MG	G	3076	-	-	-	X
25	MG	G	3078	-	-	-	X
25	MG	G	3079	-	-	-	X
25	MG	G	3080	-	-	-	X
25	MG	G	3081	-	-	-	X
25	MG	G	3082	-	-	-	X
25	MG	G	3083	-	-	-	X
25	MG	G	3084	-	-	-	X
25	MG	G	3085	-	-	-	X
25	MG	G	3086	-	-	-	X
25	MG	G	3087	-	-	-	X
25	MG	G	3089	-	-	-	X
25	MG	G	3090	-	-	-	X
25	MG	G	3092	-	-	-	X
25	MG	G	3095	-	-	-	X
25	MG	G	3097	-	-	-	X
25	MG	G	3098	-	-	-	X
25	MG	G	3099	-	-	-	X
26	K	G	3134	-	-	-	X
26	K	G	3135	-	-	-	X
26	K	G	3138	-	-	-	X
26	K	G	3141	-	-	-	X

2 Entry composition

There are 27 unique types of molecules in this entry. The entry contains 52165 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	1513	Total	C	N	O	P	0	0	0
			32514	14472	6016	10513	1513			

- Molecule 2 is a protein called RIBOSOMAL PROTEIN S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	235	Total	C	N	O	S	0	0	1
			1901	1213	342	341	5			

- Molecule 3 is a protein called RIBOSOMAL PROTEIN S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	207	Total	C	N	O	S	0	0	1
			1613	1016	315	281	1			

- Molecule 4 is a protein called RIBOSOMAL PROTEIN S4.

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

- Molecule 5 is a protein called RIBOSOMAL PROTEIN S5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	E	151	Total	C	N	O	S	0	0	1
			1147	724	218	201	4			

- Molecule 6 is a protein called RIBOSOMAL PROTEIN S6.

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

- Molecule 7 is a protein called RIBOSOMAL PROTEIN S7.

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

- Molecule 8 is a protein called RIBOSOMAL PROTEIN S8.

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

- Molecule 9 is a protein called RIBOSOMAL PROTEIN S9.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
I	58	ARG	HIS	conflict	UNP P80374

- Molecule 10 is a protein called RIBOSOMAL PROTEIN S10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	J	99	Total	C	N	O	S	0	0	1
			793	498	157	137	1			

- Molecule 11 is a protein called RIBOSOMAL PROTEIN S11.

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

- Molecule 12 is a protein called RIBOSOMAL PROTEIN S12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
12	L	125	Total	C	N	O	S	0	0	1
			971	611	196	163	1			

- Molecule 13 is a protein called RIBOSOMAL PROTEIN S13.

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

- Molecule 14 is a protein called RIBOSOMAL PROTEIN S14.

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

- Molecule 15 is a protein called RIBOSOMAL PROTEIN S15.

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

- Molecule 16 is a protein called RIBOSOMAL PROTEIN S16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
16	P	84	Total	C	N	O	S	0	0	1
			701	443	140	117	1			

- Molecule 17 is a protein called RIBOSOMAL PROTEIN S17.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Q	96	GLN	GLU	conflict	UNP Q5SHP7

- Molecule 18 is a protein called RIBOSOMAL PROTEIN S18.

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

- Molecule 19 is a protein called RIBOSOMAL PROTEIN S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	S	81	Total	C	N	O	S	0	0	1
			648	414	120	112	2			

- Molecule 20 is a protein called RIBOSOMAL PROTEIN S20.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
T	41	VAL	ILE	conflict	UNP P80380

- Molecule 21 is a protein called RIBOSOMAL PROTEIN THX.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
21	U	25	Total	C	N	O	0	0	1
			209	128	51	30			

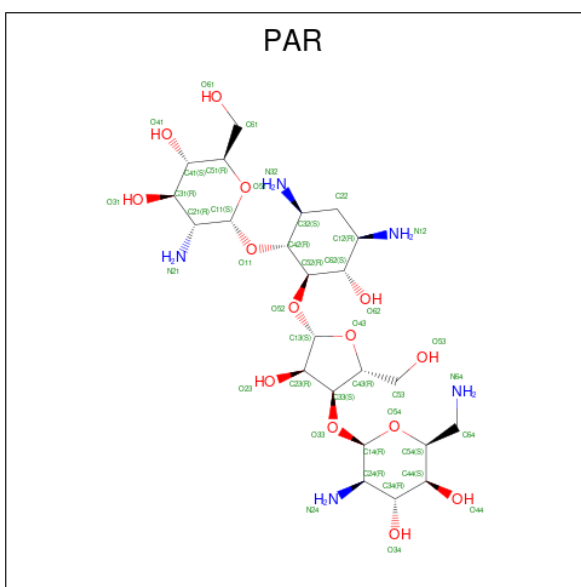
- Molecule 22 is a RNA chain called A-SITE MESSENGER RNA FRAGMENT GGGU.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
22	X	4	Total	C	N	O	P	0	0	0
			86	39	17	27	3			

- Molecule 23 is a RNA chain called ANTICODON STEM-LOOP OF TRANSFER RNA WITH ANTICODON ACCC.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
23	Y	7	Total	C	N	O	P	0	0	0
			143	66	26	45	6			

- Molecule 24 is PAROMOMYCIN (CCD ID: PAR) (formula: C₂₃H₄₅N₅O₁₄).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
24	A	1	Total	C	N	O	0	0
			42	23	5	14		

- Molecule 25 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
25	G	131	Total Mg 131 131	0	0

- Molecule 26 is POTASSIUM ION (CCD ID: K) (formula: K).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
26	G	10	Total K 10 10	0	0

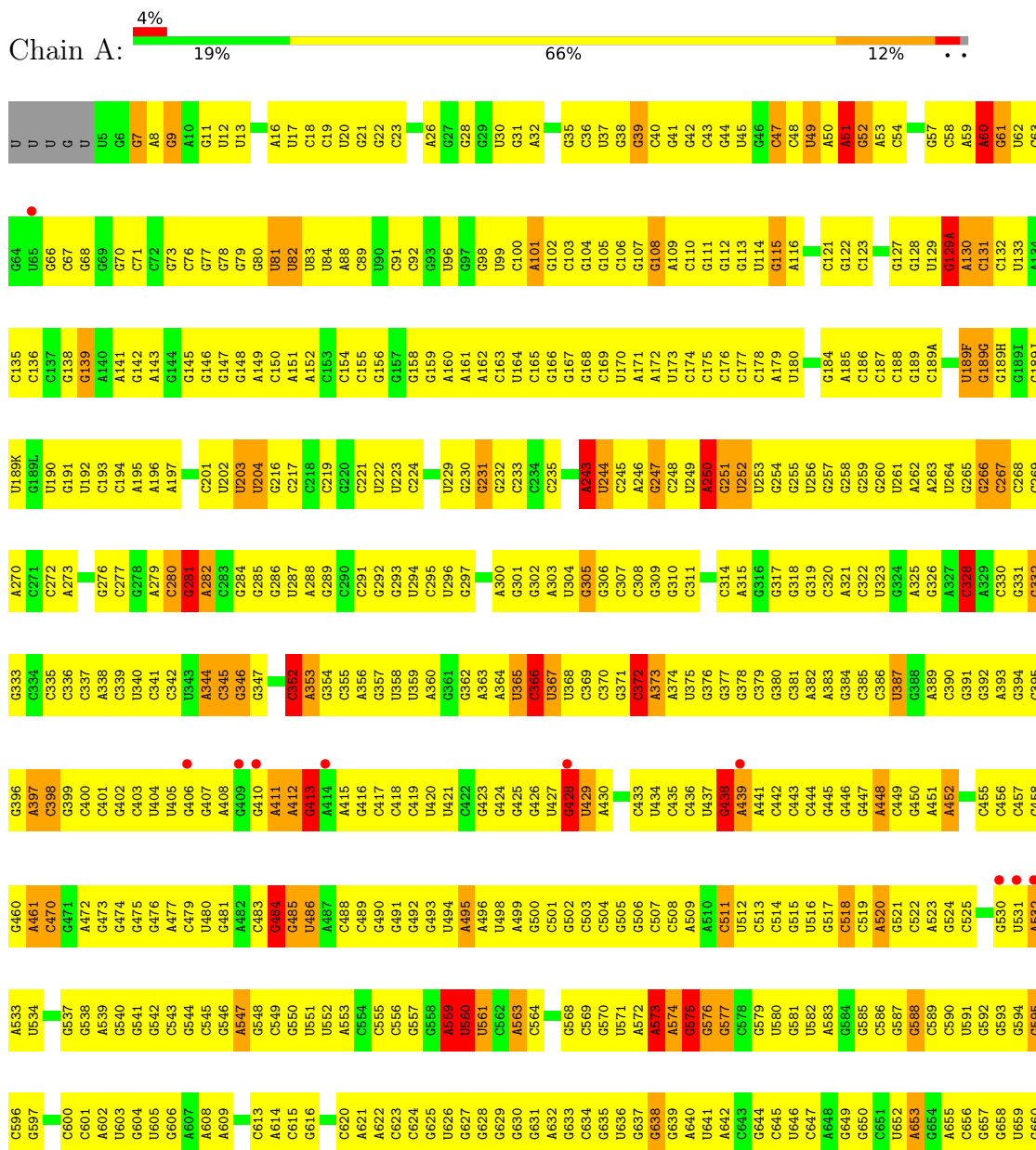
- Molecule 27 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
27	G	2	Total Zn 2 2	0	0

3 Residue-property plots

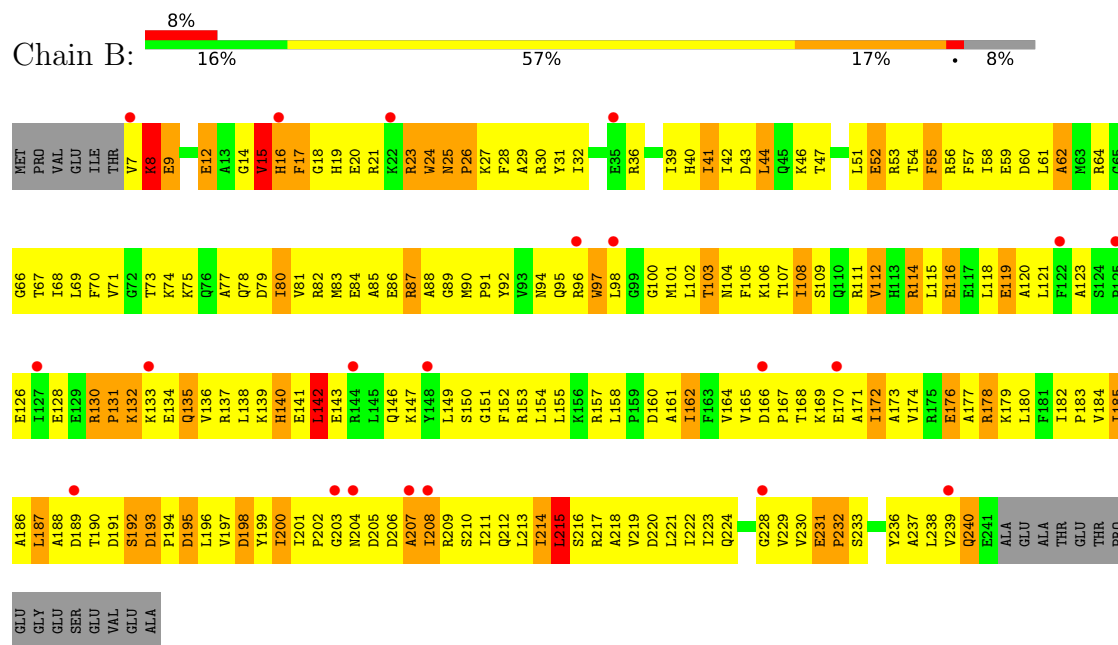
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density.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

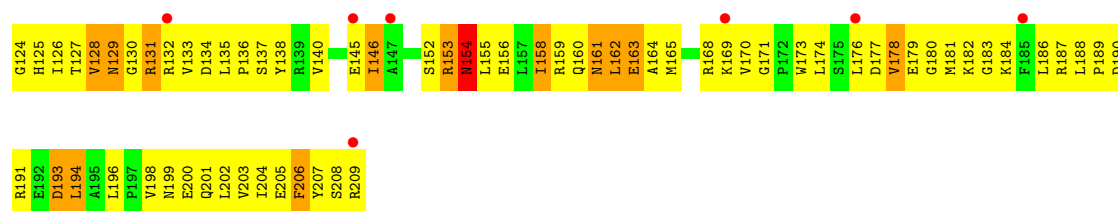
• Molecule 1: 16S RIBOSOMAL RNA



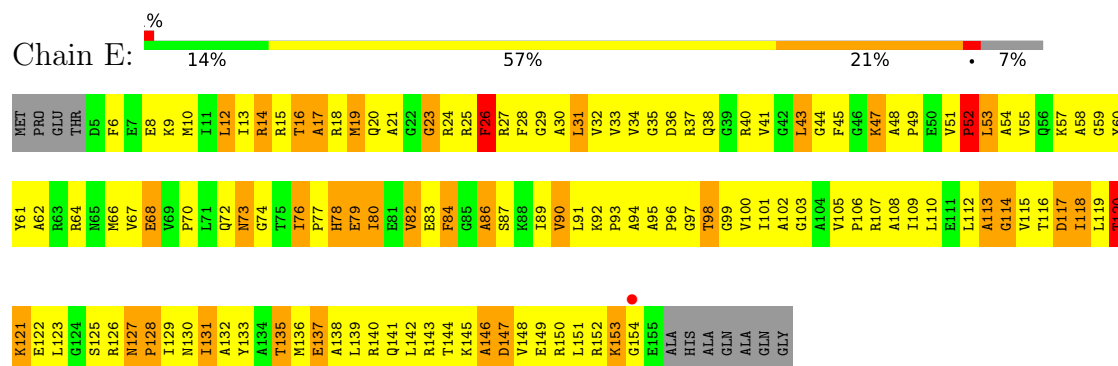
A1500	A1428	G1365	A1180	G1117	A996	C936	G687	A794	G727	G661
C1501	C1429	A1306	G1181	C1118	U997	A937	C688	C795	A728	G662
A1502	C1430	U1307	A1182	C1119	G998	A938	G689	C796		A663
A1503	C1431	U1308	A1183	C1120	A1001	A939		C797	G731	G664
G1504	G1432	U1309	G1184	U1121	G1001A	G941	A872	G798	C732	A665
G1505	A1433	G1310	G1185	U1122	G1002	G942	A873	G799	A733	G666
U1506	A1434	G1311	G1186	A1123	G1003	U943	G874	G800	G734	G667
A1507	G1435	G1312	G1187	G1124	G1004	U944	C877	A801	C735	G668
G1508	U1436	U1313	A1188	U1125	A1005	G945	G878	U802	C736	U669
G1509	A1437	C1314	C1189	C1060	C1006	G946	A879	A807	A737	G670
U1510	A1438	U1315	G1190	U1062	U1007	A947	C880	C808	C738	
G1511	U1439	G1316	A1191	C1063	C1008	G948	G881		G739	G673
U1512	C1440	C1317	C1192	G1064	U1009	C949	C882	C812	U740	G674
A1513	A1441	A1318	G1193	U1065	G1010	A949	C883	U813	G741	A675
C1514	G1442	A1319	U1194	C1066	G1011	U950	G893	U814	G742	A676
C1515	A1443	C1320	C1195	A1067	G1012	G951		A815	U743	U677
G1516	A1442B	C1321	U1196	C1068	U1013	U952	G887	A816	C744	
G1517	C1443	C1322	G1197	C1069	A1014	G953	G888	C817	C745	G682
A1518	C1444		U1198	U1135	A1015	G954		A818	A746	A683
A1519	C1445		U1199	U1136	A1016	U955	A892	C819	C747	A684
G1520	A1446	C1325	C1200	C1137	U1017	U956	C893	A819		G685
A1447	A1447	C1326	A1201	U1072	G1073	U957	G894	U820	G750	U686
C1452	A1452	C1327	G1202	G1074	G1017	U958	G895	G821	U751	A687
G1456	G1456	C1328	C1203	C1075	C1018	A959	C896	G823	G752	G688
G1457	U1391	A1329	C1204	G1076	U1020	U960		A824	A753	G689
G1458	G1392	U1330	U1205	U1077	G1021	U961	C899		G754	G690
G1459	U1393	A1268	U1206	U1078	G1022	A968	A900	A828	G755	G691
A1460		C1270	G1207	G1079	U1023	G963	A901	G829	C756	U692
G1461	A1396	G1271	C1208	U1080	G1024	A964	G902	A964	U757	G693
U1528	A1397	G1272	C1209	G1081	U1025	G965	G903	G830	G758	A694
G1529	A1398	G1273	C1210	A146	U1026	G966	C904	U831	A759	A695
G1530	A1399	U1274	U1211	U1085	G1027	C967	U986	C832	G760	A696
A1531	C1400	A1275	U1212	U1086	C1028	A968	G906	U833	G691	U697
U1532	G1401	C1277	C1213	G1089	C1029	A969	A907	U834	G761	U698
A1534	C1402	U1278	A1214	U1090	C1030	C970	A908	U835	G762	G698
C	C1403	U1341	G1215	U1091	G1030A	G971	A909	G836	C763	
C	C1404	A1279	G1216	A1092	G1030B	C972	C910	G837	G764	G701
U	G1405	U1281	C1217	A1093	G1030C	G973	U911	G838	G765	A702
C	U1406	C1282	C1218	A1094	G1031	A974	C912	U839	A766	G703
C1539	A1407	G1283	U1219	U1095	U1032	A975	A918	C840	A767	A706
U1540	A1408	C1284	G1220	C1096	G1033	G976	A915	U841	A768	C707
U1541	C1409	A1285	A1157	C1097	G1034	A977	A916	C848	C708	G709
U1542	G1410	U1286	U1159	G1099	U1041	A978	G917	C856	G709	G710
C1543	C1411	A1287	G1160	G1100	A1046	C979	G918	C857	G774	G711
U1544	C1412	A1288	C1161	A1101	G1035	C980	A918	U851	G775	G712
	A1413	A1289	C1162	A1102	C1037	U981	A919	G852	G776	A713
	U1414	G1290	G1163	C1103	C1038	U982	U920	G853	A777	G714
	G1415	G1291	C1164	G1104	C1039	A983	U921	G854	G778	G715
	G1416	U1292	C1165	A1105	U1040	C984	G922	G855	C779	G716
	G1417	G1293		G1106	A1041	C985	A923	C856	A781	A715
	A1418	G1294	A1169	C1107	G1042	A986	C924	C857	G782	A716
	U1419	U1295	A1170	C1108	C1043	G987	G925	C858	A783	G717
	C1420	U1358		C1109	A1044	G988	G926	A859	C783	G718
	G1421	C1297	G1173	A1110	C1045	C989	G927	A860	A787	C719
	G1422	A1298	G1174	C1111	A1046	C990	G928	G861	U788	G720
	A1423	A1299	G1175	A1112	G1047	C991	G929	C862	U789	G721
	C1424	G1300	A1176	C1113	G1048	U992		U863	A790	A722
	U1425	U1301	G1177	C1114	U1049	C993	G933	A864	G791	G723
	C1426	A1363A	G1178	C1115	G1050	A994		A865	A792	G724
	U1427	U1364	A1179	C1116	C1051	C995		C866	U793	G725
										G726

● Molecule 2: RIBOSOMAL PROTEIN S2

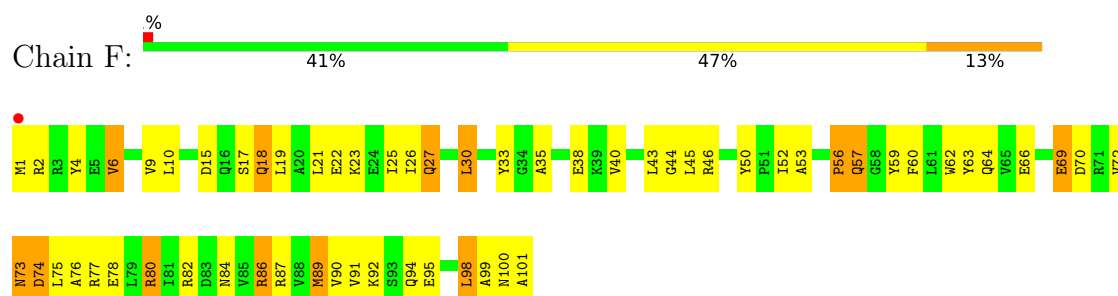




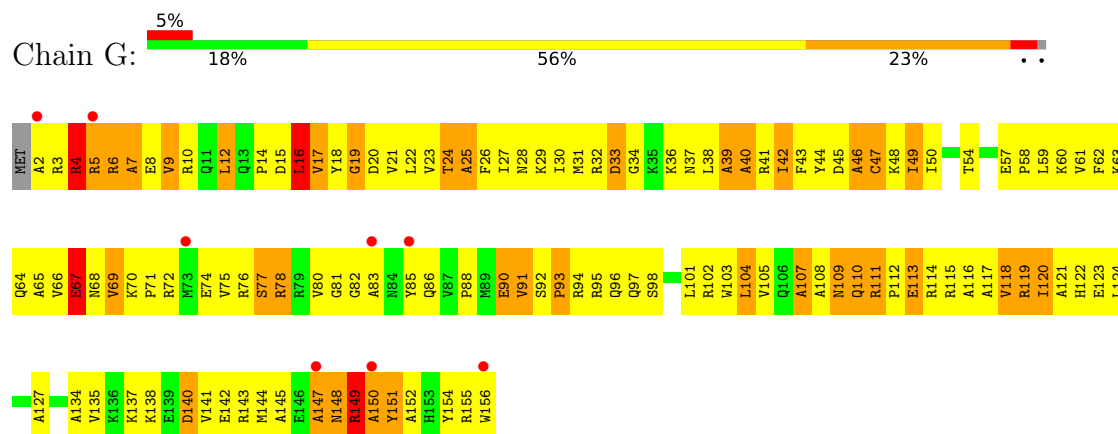
• Molecule 5: RIBOSOMAL PROTEIN S5



• Molecule 6: RIBOSOMAL PROTEIN S6

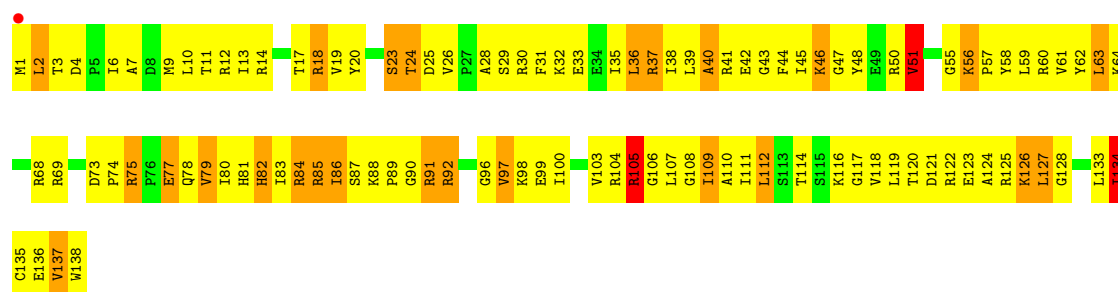


• Molecule 7: RIBOSOMAL PROTEIN S7

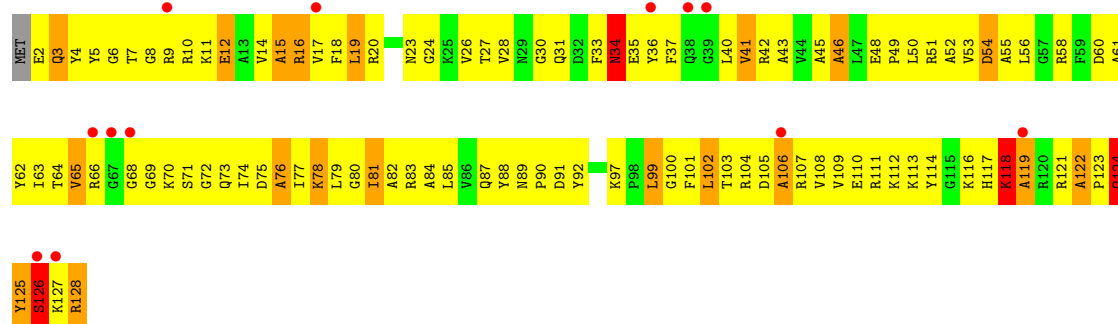
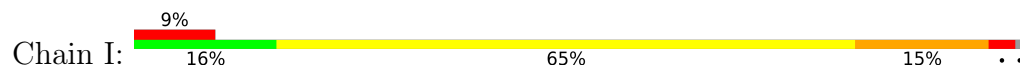


• Molecule 8: RIBOSOMAL PROTEIN S8

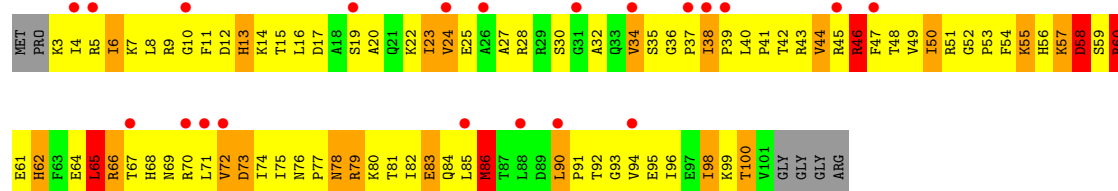
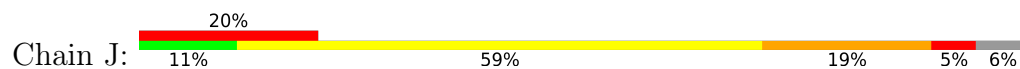




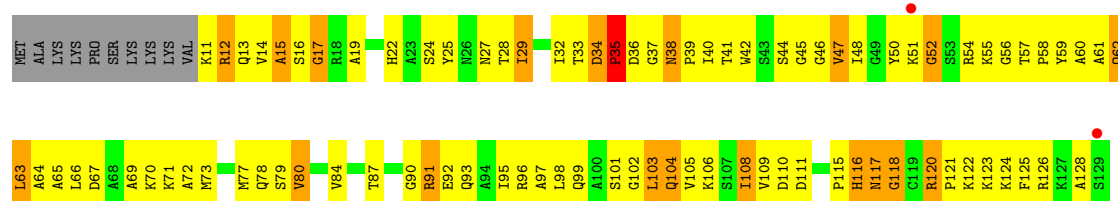
• Molecule 9: RIBOSOMAL PROTEIN S9



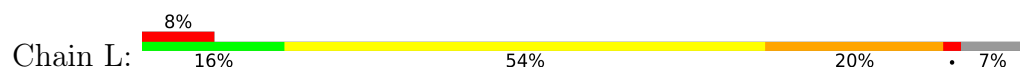
• Molecule 10: RIBOSOMAL PROTEIN S10

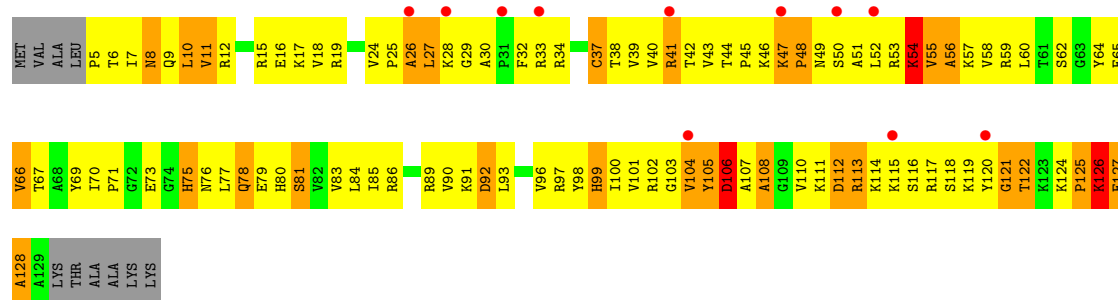


• Molecule 11: RIBOSOMAL PROTEIN S11

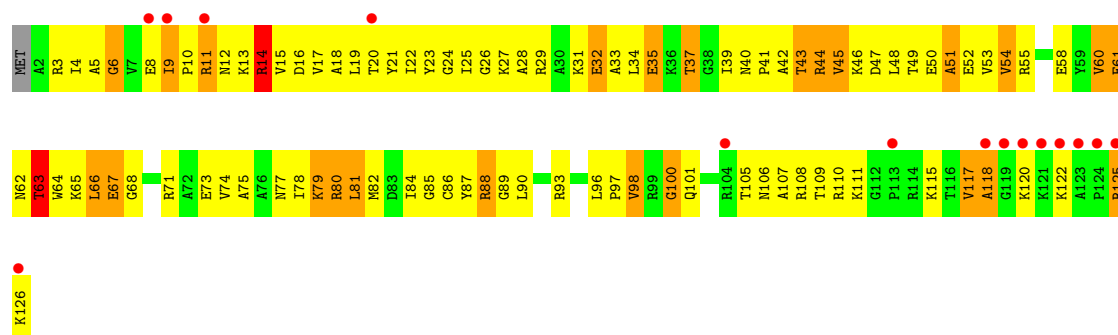


• Molecule 12: RIBOSOMAL PROTEIN S12

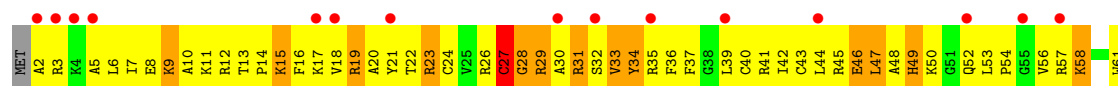
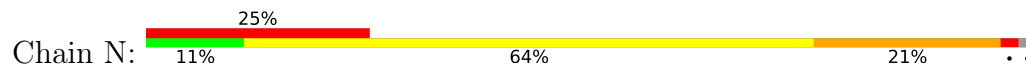




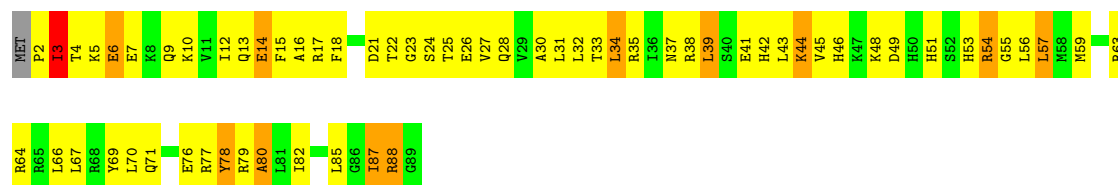
• Molecule 13: RIBOSOMAL PROTEIN S13



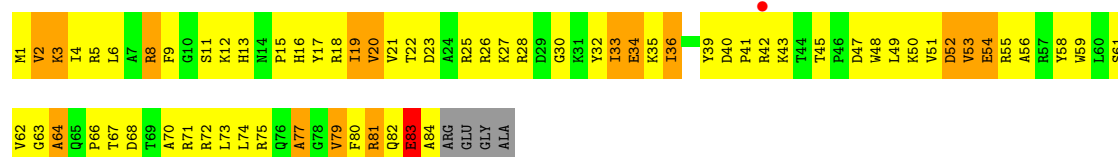
• Molecule 14: RIBOSOMAL PROTEIN S14



• Molecule 15: RIBOSOMAL PROTEIN S15



• Molecule 16: RIBOSOMAL PROTEIN S16



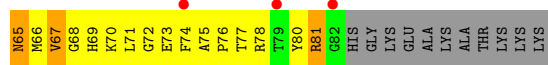
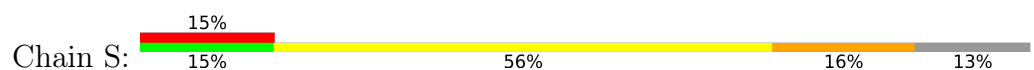
- Molecule 17: RIBOSOMAL PROTEIN S17



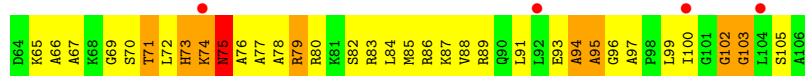
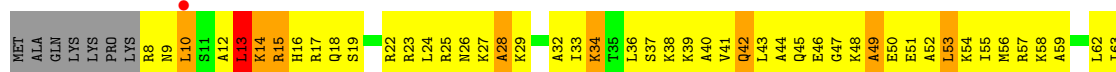
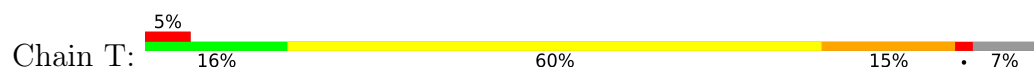
- Molecule 18: RIBOSOMAL PROTEIN S18



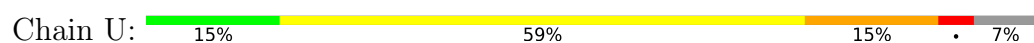
- Molecule 19: RIBOSOMAL PROTEIN S19



- Molecule 20: RIBOSOMAL PROTEIN S20



- Molecule 21: RIBOSOMAL PROTEIN THX



- Molecule 22: A-SITE MESSENGER RNA FRAGMENT GGGU



● Molecule 23: ANTICODON STEM-LOOP OF TRANSFER RNA WITH ANTICODON ACCC



4 Data and refinement statistics

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, α , β , γ	401.95Å 401.95Å 174.09Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	29.88 – 3.10 29.88 – 3.10	Depositor EDS
% Data completeness (in resolution range)	98.1 (29.88-3.10) 98.0 (29.88-3.10)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.74 (at 3.01Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.295 , 0.328 0.239 , 0.286	Depositor DCC
R_{free} test set	13830 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å ²)	67.7	Xtriage
Anisotropy	0.071	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.23 , 70.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.40$, $\langle L^2 \rangle = 0.22$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	52165	wwPDB-VP
Average B, all atoms (Å ²)	77.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.55% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.49	1/36393 (0.0%)	0.74	52/56797 (0.1%)
2	B	0.47	1/1936 (0.1%)	1.02	10/2611 (0.4%)
3	C	0.43	1/1637 (0.1%)	0.97	11/2207 (0.5%)
4	D	0.42	0/1733	1.00	9/2318 (0.4%)
5	E	0.67	1/1163 (0.1%)	1.08	9/1566 (0.6%)
6	F	0.41	0/856	0.92	1/1154 (0.1%)
7	G	0.38	0/1276	0.94	11/1709 (0.6%)
8	H	0.75	0/1136	1.35	16/1527 (1.0%)
9	I	0.43	0/1029	1.08	11/1378 (0.8%)
10	J	0.45	1/806 (0.1%)	1.03	5/1084 (0.5%)
11	K	0.56	0/900	1.10	8/1213 (0.7%)
12	L	0.54	1/987 (0.1%)	1.13	6/1322 (0.5%)
13	M	0.43	0/1008	0.95	5/1347 (0.4%)
14	N	0.40	0/501	0.95	1/664 (0.2%)
15	O	0.54	0/745	0.92	2/992 (0.2%)
16	P	0.65	1/717 (0.1%)	1.13	7/965 (0.7%)
17	Q	0.62	0/870	1.12	4/1159 (0.3%)
18	R	0.49	0/603	1.02	4/799 (0.5%)
19	S	0.43	1/662 (0.2%)	0.97	2/892 (0.2%)
20	T	0.50	0/764	1.09	6/1006 (0.6%)
21	U	0.66	1/213 (0.5%)	1.03	1/279 (0.4%)
22	X	0.41	0/96	0.78	0/149
23	Y	0.52	0/159	0.83	0/245
All	All	0.50	9/56190 (0.0%)	0.85	181/83383 (0.2%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	1	41

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	E	154	GLY	C-N	-5.72	1.25	1.33
3	C	207	VAL	C-N	-5.70	1.25	1.33
12	L	128	ALA	C-N	-5.68	1.25	1.33
16	P	83	GLU	C-N	-5.68	1.25	1.33
2	B	240	GLN	C-N	-5.68	1.25	1.33
10	J	100	THR	C-N	-5.67	1.25	1.33
19	S	81	ARG	C-N	-5.66	1.25	1.33
21	U	25	LYS	C-N	-5.66	1.25	1.33
1	A	1532	U	O3'-P	-5.59	1.52	1.61

All (181) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1532	U	P-O3'-C3'	21.15	151.92	120.20
1	A	1498	U	C2'-C3'-O3'	14.41	131.11	109.50
1	A	115	G	C2'-C3'-O3'	13.15	129.22	109.50
1	A	1532	U	C4'-C3'-O3'	12.96	132.44	113.00
19	S	58	VAL	N-CA-C	11.90	118.86	108.63
1	A	1532	U	OP2-P-O3'	-11.65	73.05	108.00
1	A	366	C	C2'-C3'-O3'	11.41	126.61	109.50
8	H	79	VAL	N-CA-C	-10.62	101.58	111.45
1	A	1380	U	C2'-C3'-O3'	10.49	125.23	109.50
1	A	1346	A	C2'-C3'-O3'	10.43	125.14	109.50
12	L	26	ALA	N-CA-C	-10.33	100.62	113.02
1	A	792	A	C2'-C3'-O3'	10.30	124.94	109.50
1	A	1101	A	C2'-C3'-O3'	9.64	123.95	109.50
8	H	56	LYS	CA-C-N	9.17	130.62	119.98
8	H	56	LYS	C-N-CA	9.17	130.62	119.98
7	G	49	ILE	N-CA-C	-8.80	104.58	113.47
20	T	14	LYS	N-CA-C	-8.57	101.94	111.28
15	O	44	LYS	N-CA-C	-8.53	101.93	111.82
8	H	77	GLU	N-CA-C	-8.52	99.28	110.53
8	H	134	ILE	N-CA-C	8.39	120.19	110.62
20	T	13	LEU	N-CA-C	-8.35	103.07	113.18
4	D	11	LEU	N-CA-C	-8.27	101.81	112.23
1	A	7	G	C2'-C3'-O3'	8.26	121.89	109.50
1	A	687	A	C2'-C3'-O3'	8.17	121.76	109.50
7	G	114	ARG	N-CA-C	8.02	120.93	111.71

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	119	GLU	N-CA-C	-7.88	104.56	114.56
1	A	115	G	C4'-C3'-O3'	7.85	121.17	109.40
1	A	51	A	C2'-C3'-O3'	7.79	121.19	109.50
10	J	52	GLY	CA-C-N	7.77	127.95	119.87
10	J	52	GLY	C-N-CA	7.77	127.95	119.87
4	D	193	ASP	N-CA-C	-7.75	103.08	112.54
9	I	60	ASP	N-CA-C	-7.74	100.11	110.55
7	G	148	ASN	N-CA-C	-7.71	103.93	112.72
1	A	1067	A	C2'-C3'-O3'	7.67	121.01	109.50
4	D	98	GLU	N-CA-C	-7.57	103.63	113.17
1	A	960	U	C2'-C3'-O3'	7.55	120.83	109.50
8	H	100	ILE	CA-C-N	7.47	129.18	119.84
8	H	100	ILE	C-N-CA	7.47	129.18	119.84
1	A	1498	U	C4'-C3'-O3'	7.43	120.54	109.40
1	A	1532	U	OP1-P-O3'	7.22	129.67	108.00
4	D	129	ASN	N-CA-C	-7.20	103.03	112.24
3	C	45	LYS	N-CA-C	-7.09	103.56	111.71
10	J	62	HIS	N-CA-C	7.08	121.57	110.17
1	A	243	A	C2'-C3'-O3'	7.05	120.08	109.50
5	E	86	ALA	N-CA-C	-7.03	104.59	113.02
2	B	112	VAL	N-CA-C	-7.01	103.36	111.00
1	A	60	A	C2'-C3'-O3'	7.00	120.00	109.50
20	T	94	ALA	N-CA-C	-6.98	103.44	113.21
2	B	23	ARG	N-CA-C	-6.89	100.55	111.02
8	H	57	PRO	N-CA-C	6.85	122.05	110.95
8	H	75	ARG	CA-C-N	6.82	127.21	119.92
8	H	75	ARG	C-N-CA	6.82	127.21	119.92
1	A	1285	A	C2'-C3'-O3'	6.81	119.72	109.50
16	P	30	GLY	N-CA-C	6.80	121.24	112.13
5	E	26	PHE	N-CA-C	6.77	120.17	109.81
8	H	2	LEU	N-CA-C	-6.76	102.09	110.41
9	I	87	GLN	N-CA-C	-6.73	105.03	113.18
8	H	19	VAL	N-CA-C	-6.72	105.78	112.17
20	T	75	ASN	N-CA-C	-6.71	104.56	112.89
12	L	54	LYS	N-CA-C	6.71	119.80	107.99
9	I	122	ALA	CA-C-N	6.69	128.20	119.84
9	I	122	ALA	C-N-CA	6.69	128.20	119.84
18	R	46	GLU	N-CA-C	-6.68	104.00	111.28
16	P	27	LYS	N-CA-C	-6.63	101.97	110.19
4	D	162	LEU	N-CA-C	-6.62	105.06	113.01
5	E	120	THR	N-CA-C	6.59	124.84	110.80
8	H	82	HIS	N-CA-C	6.58	121.67	109.56

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	428	G	C2'-C3'-O3'	6.57	119.36	109.50
1	A	1503	A	C4'-C3'-O3'	-6.53	103.20	113.00
3	C	33	LEU	N-CA-C	-6.53	105.85	113.88
11	K	24	SER	N-CA-C	-6.50	99.53	109.41
1	A	1299	A	N9-C1'-C2'	6.43	121.65	112.00
17	Q	9	VAL	N-CA-C	6.41	117.52	108.17
1	A	1504	G	C2'-C3'-O3'	6.39	119.09	109.50
1	A	372	C	C2'-C3'-O3'	6.35	119.03	109.50
1	A	484	G	C2'-C3'-O3'	6.35	119.03	109.50
1	A	1528	U	C2'-C3'-O3'	6.32	118.99	109.50
7	G	110	GLN	N-CA-C	-6.32	105.51	113.72
1	A	559	A	C2'-C3'-O3'	6.31	118.97	109.50
20	T	74	LYS	CB-CA-C	-6.29	108.31	115.79
9	I	99	LEU	N-CA-C	-6.26	105.77	113.41
2	B	192	SER	N-CA-C	6.25	118.39	110.33
18	R	81	PHE	N-CA-C	-6.25	104.36	112.23
1	A	250	A	C2'-C3'-O3'	6.24	118.86	109.50
3	C	6	HIS	CA-C-N	6.24	127.64	119.84
3	C	6	HIS	C-N-CA	6.24	127.64	119.84
16	P	11	SER	N-CA-C	6.22	116.29	108.45
16	P	79	VAL	N-CA-C	-6.22	103.31	111.09
1	A	993	G	N9-C1'-C2'	6.21	123.31	114.00
1	A	413	G	C4'-C3'-O3'	-6.19	103.71	113.00
8	H	28	ALA	N-CA-C	6.17	119.70	109.46
2	B	114	ARG	N-CA-C	-6.16	103.29	111.24
1	A	1346	A	C4'-C3'-O3'	6.12	118.58	109.40
1	A	1532	U	O3'-P-O5'	6.07	113.11	104.00
1	A	812	C	C2'-C3'-O3'	6.05	118.58	109.50
1	A	438	G	C2'-C3'-O3'	6.01	118.52	109.50
1	A	1503	A	N9-C1'-C2'	6.00	121.00	112.00
11	K	25	TYR	N-CA-C	-6.00	105.72	113.16
2	B	140	HIS	N-CA-C	-5.98	104.69	111.14
1	A	975	A	C2'-C3'-O3'	5.97	118.45	109.50
16	P	77	ALA	N-CA-C	-5.96	104.13	113.02
2	B	87	ARG	N-CA-C	-5.96	103.75	111.02
4	D	163	GLU	N-CA-C	-5.95	103.56	111.24
21	U	9	ARG	N-CA-C	-5.94	104.73	111.14
3	C	89	GLU	N-CA-C	-5.92	104.21	112.45
8	H	86	ILE	N-CA-C	5.92	116.30	111.62
7	G	29	LYS	N-CA-C	-5.90	104.75	111.07
12	L	8	ASN	N-CA-C	-5.82	104.12	111.11
3	C	115	LEU	N-CA-C	-5.80	103.79	111.96

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
18	R	51	LEU	CA-C-N	5.77	125.68	119.85
18	R	51	LEU	C-N-CA	5.77	125.68	119.85
1	A	1124	G	N9-C1'-C2'	5.76	120.65	112.00
1	A	1065	U	C2'-C3'-O3'	5.76	118.14	109.50
5	E	76	ILE	CA-C-N	5.74	127.01	119.84
5	E	76	ILE	C-N-CA	5.74	127.01	119.84
1	A	701	C	C2'-C3'-O3'	5.73	118.09	109.50
13	M	66	LEU	N-CA-C	5.70	117.28	109.18
2	B	173	ALA	N-CA-C	-5.66	105.15	112.68
1	A	328	C	N1-C1'-C2'	5.66	122.49	114.00
8	H	37	ARG	N-CA-C	-5.65	105.02	111.07
2	B	120	ALA	N-CA-C	-5.65	104.60	112.45
1	A	1380	U	N1-C1'-C2'	5.64	122.45	114.00
9	I	124	GLN	N-CA-C	5.62	122.78	110.80
13	M	79	LYS	N-CA-C	-5.61	105.05	112.34
10	J	60	ARG	N-CA-C	5.61	122.74	110.80
11	K	102	GLY	N-CA-C	-5.61	107.59	115.32
13	M	122	LYS	N-CA-C	-5.60	106.27	114.39
1	A	1224	G	C2'-C3'-O3'	5.60	117.89	109.50
5	E	23	GLY	N-CA-C	5.56	120.44	111.38
17	Q	104	LYS	CB-CA-C	-5.56	109.67	117.23
16	P	33	ILE	N-CA-C	5.54	120.87	109.34
2	B	126	GLU	N-CA-C	-5.54	105.50	114.09
7	G	111	ARG	CA-C-N	5.53	126.75	119.84
7	G	111	ARG	C-N-CA	5.53	126.75	119.84
9	I	76	ALA	N-CA-C	-5.52	105.26	111.28
19	S	15	LEU	N-CA-C	-5.51	107.10	113.88
5	E	117	ASP	N-CA-C	5.48	117.33	108.34
11	K	91	ARG	N-CA-C	-5.45	104.57	111.11
12	L	99	HIS	N-CA-C	-5.45	103.71	110.41
1	A	1200	C	N1-C1'-C2'	5.44	120.17	112.00
4	D	34	GLU	N-CA-C	-5.44	107.19	113.88
3	C	110	ASN	N-CA-C	-5.44	107.30	114.31
1	A	1305	G	N9-C1'-C2'	5.43	120.14	112.00
7	G	47	CYS	N-CA-C	-5.40	106.37	113.12
4	D	196	LEU	CA-C-N	5.39	126.58	119.84
4	D	196	LEU	C-N-CA	5.39	126.58	119.84
7	G	107	ALA	N-CA-C	-5.38	105.50	111.36
11	K	80	VAL	N-CA-C	5.37	114.94	108.06
20	T	28	ALA	N-CA-C	5.37	116.82	110.97
3	C	88	ARG	N-CA-C	-5.33	106.85	113.19
5	E	113	ALA	N-CA-C	-5.31	105.90	112.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
17	Q	46	ASP	CA-C-N	5.28	124.91	119.05
17	Q	46	ASP	C-N-CA	5.28	124.91	119.05
13	M	98	VAL	N-CA-C	5.26	116.54	112.12
14	N	20	ALA	N-CA-C	5.26	117.32	108.96
15	O	49	ASP	N-CA-C	-5.25	105.58	112.72
1	A	575	G	N9-C1'-C2'	5.25	121.87	114.00
3	C	38	ARG	N-CA-C	-5.22	105.26	111.69
6	F	80	ARG	N-CA-C	5.22	118.91	112.54
1	A	563	A	C4'-C3'-O3'	-5.21	105.19	113.00
9	I	106	ALA	N-CA-C	5.18	118.86	112.54
11	K	34	ASP	CA-C-N	5.17	126.30	119.84
11	K	34	ASP	C-N-CA	5.17	126.30	119.84
9	I	78	LYS	N-CA-C	-5.16	106.24	112.54
3	C	155	GLY	N-CA-C	5.16	118.07	112.29
1	A	281	G	N9-C1'-C2'	5.15	119.73	112.00
16	P	3	LYS	N-CA-C	5.15	116.12	108.86
12	L	92	ASP	N-CA-C	5.13	119.41	113.20
1	A	129(A)	G	C2'-C3'-O3'	5.12	117.18	109.50
12	L	37	CYS	N-CA-C	5.11	117.95	109.46
13	M	51	ALA	N-CA-C	-5.11	105.79	111.36
11	K	17	GLY	N-CA-C	5.10	118.91	110.55
1	A	574	A	C2'-C3'-O3'	-5.07	106.09	113.70
5	E	114	GLY	N-CA-C	-5.07	106.76	115.08
7	G	46	ALA	N-CA-C	-5.07	106.78	112.87
10	J	66	ARG	N-CA-C	5.04	116.61	108.34
9	I	126	SER	N-CA-C	5.03	121.51	110.80
7	G	149	ARG	N-CA-C	-5.01	106.85	112.87
1	A	129(A)	G	C1'-C2'-O2'	-5.01	104.28	111.80
3	C	125	GLU	N-CA-C	-5.01	107.34	113.50
9	I	15	ALA	N-CA-C	5.01	115.59	107.23

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	A	1498	U	C3'

All (41) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1054	C	Sidechain
1	A	108	G	Sidechain
1	A	1139	G	Sidechain

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Mol	Chain	Res	Type	Group
1	A	1205	U	Sidechain
1	A	1238	A	Sidechain
1	A	1281	U	Sidechain
1	A	1287	A	Sidechain
1	A	1292	U	Sidechain
1	A	1329	A	Sidechain
1	A	1341	U	Sidechain
1	A	1348	U	Sidechain
1	A	1351	U	Sidechain
1	A	1361	G	Sidechain
1	A	1380	U	Sidechain
1	A	1457	G	Sidechain
1	A	1519	A	Sidechain
1	A	189(G)	G	Sidechain
1	A	250	A	Sidechain
1	A	280	C	Sidechain
1	A	297	G	Sidechain
1	A	305	G	Sidechain
1	A	352	C	Sidechain
1	A	387	U	Sidechain
1	A	560	U	Sidechain
1	A	573	A	Sidechain
1	A	575	G	Sidechain
1	A	595	G	Sidechain
1	A	638	G	Sidechain
1	A	664	G	Sidechain
1	A	682	G	Sidechain
1	A	740	U	Sidechain
1	A	759	A	Sidechain
1	A	760	G	Sidechain
1	A	815	A	Sidechain
1	A	820	U	Sidechain
1	A	882	C	Sidechain
1	A	914	A	Sidechain
1	A	942	G	Sidechain
1	A	952	U	Sidechain
1	A	982	U	Sidechain
1	A	993	G	Sidechain

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	32514	0	16412	1693	0
2	B	1901	0	1951	338	0
3	C	1613	0	1677	302	0
4	D	1703	0	1764	263	0
5	E	1147	0	1207	175	0
6	F	843	0	857	85	0
7	G	1257	0	1296	182	0
8	H	1116	0	1177	154	0
9	I	1011	0	1043	195	0
10	J	793	0	835	183	0
11	K	885	0	904	137	0
12	L	971	0	1057	181	0
13	M	997	0	1072	129	0
14	N	492	0	531	107	0
15	O	734	0	771	96	0
16	P	701	0	720	103	0
17	Q	857	0	930	117	0
18	R	597	0	666	89	0
19	S	648	0	673	86	0
20	T	762	0	859	111	0
21	U	209	0	221	36	0
22	X	86	0	45	6	0
23	Y	143	0	78	15	0
24	A	42	0	45	2	0
25	G	131	0	0	0	0
26	G	10	0	0	0	0
27	G	2	0	0	0	0
All	All	52165	0	36791	4398	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 50.

All (4398) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1539:C:C5	7:G:81:GLY:O	1.88	1.24
1:A:1347:G:N2	1:A:1373:G:H2'	1.58	1.19
1:A:1442(A):G:H5''	1:A:1442(B):A:H5'	1.28	1.15
11:K:48:ILE:HD13	11:K:63:LEU:HB2	1.27	1.15
1:A:1347:G:H22	1:A:1373:G:H2'	1.09	1.15
1:A:403:C:H4'	4:D:122:ARG:HH12	1.12	1.13
1:A:737:A:H1'	6:F:73:ASN:HD21	1.13	1.13
1:A:1064:G:H4'	1:A:1065:U:H5'	1.21	1.12
8:H:11:THR:HG22	8:H:14:ARG:HH12	1.13	1.11
1:A:1148:U:H2'	1:A:1149:C:O4'	1.52	1.10
10:J:81:THR:HA	10:J:84:GLN:HE21	1.11	1.10
2:B:161:ALA:HB1	2:B:185:ILE:HD11	1.26	1.09
2:B:130:ARG:HD3	2:B:131:PRO:HD2	1.26	1.09
21:U:6:ARG:HH21	21:U:15:ARG:HD3	1.15	1.09
11:K:108:ILE:H	11:K:108:ILE:HD12	1.12	1.08
12:L:55:VAL:HG12	12:L:56:ALA:H	1.11	1.07
14:N:9:LYS:HG2	14:N:10:ALA:H	1.16	1.07
12:L:41:ARG:HG2	12:L:42:THR:H	1.12	1.06
4:D:23:GLY:HA3	4:D:112:VAL:HG12	1.39	1.05
3:C:70:VAL:HG12	3:C:72:LYS:H	1.21	1.05
7:G:118:VAL:HG13	7:G:119:ARG:H	1.18	1.05
1:A:138:G:H2'	1:A:139:G:H5''	1.36	1.04
1:A:986:A:H4'	19:S:55:LYS:HD3	1.37	1.04
2:B:91:PRO:HG3	2:B:154:LEU:HB2	1.32	1.04
15:O:87:ILE:HG12	15:O:88:ARG:HG3	1.39	1.04
10:J:44:VAL:HG22	10:J:45:ARG:H	1.21	1.03
9:I:128:ARG:HA	9:I:128:ARG:NH1	1.72	1.03
12:L:83:VAL:HG22	12:L:84:LEU:H	1.24	1.03
17:Q:29:HIS:CD2	17:Q:32:TYR:H	1.77	1.03
16:P:53:VAL:O	16:P:55:ARG:N	1.94	1.01
3:C:188:LEU:HD13	3:C:188:LEU:H	1.24	1.01
1:A:524:G:H2'	1:A:525:C:C6	1.96	1.00
3:C:91:LEU:HD21	3:C:99:VAL:H	1.26	1.00
10:J:50:ILE:H	10:J:50:ILE:HD12	1.21	1.00
4:D:59:ARG:HH12	4:D:62:GLN:HG3	1.24	1.00
1:A:1356:G:H2'	1:A:1357:A:C8	1.97	0.99
7:G:4:ARG:HB3	7:G:4:ARG:HH11	1.27	0.99
5:E:51:VAL:HB	5:E:52:PRO:HD3	1.44	0.99
11:K:121:PRO:HG2	11:K:126:ARG:HG2	1.43	0.98
1:A:1149:C:H2'	1:A:1150:U:C6	1.99	0.98
10:J:6:ILE:HD13	10:J:72:VAL:HB	1.46	0.98
16:P:74:LEU:O	16:P:79:VAL:HG23	1.61	0.98

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:130:VAL:HG23	3:C:131:ARG:H	1.26	0.97
2:B:84:GLU:HB3	2:B:219:VAL:HG21	1.41	0.97
1:A:365:U:H5'	1:A:366:C:OP1	1.64	0.97
2:B:68:ILE:HB	2:B:90:MET:HE3	1.44	0.97
1:A:1321:C:H3'	1:A:1322:C:H5''	1.47	0.96
1:A:403:C:H4'	4:D:122:ARG:NH1	1.80	0.96
6:F:6:VAL:HG13	6:F:90:VAL:HG22	1.48	0.96
4:D:33:MET:HA	4:D:37:PRO:HB3	1.46	0.96
7:G:70:LYS:HG2	7:G:96:GLN:HG2	1.42	0.96
17:Q:29:HIS:CD2	17:Q:31:LEU:H	1.83	0.96
1:A:1149:C:H2'	1:A:1150:U:H6	1.30	0.96
1:A:1151:A:H5'	10:J:41:PRO:HA	1.47	0.95
4:D:187:ARG:CZ	4:D:188:LEU:HB2	1.97	0.95
12:L:76:ASN:HD21	12:L:108:ALA:HB3	1.32	0.95
15:O:16:ALA:HB1	15:O:21:ASP:HB3	1.45	0.95
2:B:75:LYS:HE2	2:B:96:ARG:HH12	1.30	0.95
4:D:57:ARG:HG2	4:D:202:LEU:HD22	1.48	0.95
14:N:26:ARG:HH22	14:N:47:LEU:HD21	1.29	0.95
1:A:1182:G:H5'	1:A:1184:G:H5'	1.47	0.95
11:K:48:ILE:CD1	11:K:63:LEU:HB2	1.95	0.95
7:G:108:ALA:HB2	7:G:123:GLU:HG2	1.49	0.94
1:A:138:G:C2'	1:A:139:G:H5''	1.97	0.94
13:M:14:ARG:N	13:M:44:ARG:HH21	1.66	0.94
16:P:21:VAL:HG12	16:P:33:ILE:HD11	1.49	0.94
5:E:87:SER:HB3	5:E:131:ILE:HD12	1.46	0.93
11:K:87:THR:HA	11:K:91:ARG:HH21	1.32	0.93
12:L:54:LYS:N	12:L:54:LYS:HZ2	1.65	0.93
1:A:989:C:H42	1:A:1216:G:H1	1.15	0.93
1:A:1369:C:H2'	1:A:1370:G:C8	2.04	0.92
2:B:77:ALA:HA	2:B:80:ILE:HD13	1.51	0.92
3:C:24:ALA:HB2	3:C:32:LEU:HD12	1.49	0.92
12:L:54:LYS:HZ2	12:L:54:LYS:H	0.93	0.92
12:L:54:LYS:H	12:L:54:LYS:NZ	1.65	0.92
12:L:53:ARG:HH12	12:L:92:ASP:HB2	1.32	0.92
1:A:1539:C:C4	7:G:81:GLY:O	2.22	0.91
16:P:20:VAL:HG21	16:P:32:TYR:HB2	1.52	0.91
1:A:1277:C:H2'	1:A:1278:U:H5''	1.53	0.91
1:A:501:C:H2'	1:A:502:G:H8	1.36	0.91
10:J:40:LEU:HD12	10:J:69:ASN:HB2	1.52	0.90
11:K:79:SER:HA	11:K:104:GLN:HB3	1.50	0.90
3:C:79:ARG:HG2	3:C:82:GLU:HG2	1.54	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:S:31:ILE:HG22	19:S:32:LYS:H	1.35	0.90
1:A:192:U:H1'	20:T:103:GLY:HA2	1.53	0.90
15:O:57:LEU:H	15:O:57:LEU:HD12	1.35	0.90
3:C:113:ALA:HB3	3:C:114:PRO:HD3	1.53	0.90
5:E:74:GLY:HA3	5:E:116:THR:HG22	1.53	0.90
1:A:1366:C:H2'	1:A:1367:C:H6	1.34	0.89
2:B:204:ASN:HD22	2:B:205:ASP:H	1.18	0.89
10:J:50:ILE:HB	14:N:41:ARG:NH2	1.87	0.89
12:L:71:PRO:HG2	12:L:102:ARG:HG3	1.52	0.89
2:B:51:LEU:O	2:B:55:PHE:HB2	1.72	0.89
1:A:1190:G:OP1	3:C:4:LYS:HA	1.72	0.89
3:C:6:HIS:NE2	3:C:8:ILE:HB	1.87	0.89
10:J:50:ILE:HB	14:N:41:ARG:HH21	1.36	0.89
8:H:36:LEU:HD23	8:H:36:LEU:H	1.35	0.89
2:B:29:ALA:HA	2:B:32:ILE:HD12	1.53	0.89
5:E:80:ILE:HD11	5:E:91:LEU:HB2	1.51	0.89
1:A:1086:U:H3	1:A:1099:G:H22	0.92	0.89
6:F:26:ILE:O	6:F:30:LEU:HD12	1.73	0.89
2:B:15:VAL:HB	2:B:210:SER:HB3	1.54	0.88
2:B:172:ILE:H	2:B:172:ILE:HD12	1.39	0.88
1:A:1238:A:H5'	1:A:1336:C:H41	1.38	0.88
5:E:80:ILE:HD11	5:E:91:LEU:HD12	1.55	0.88
11:K:110:ASP:HB2	18:R:88:LYS:HD2	1.56	0.88
12:L:6:THR:OG1	12:L:9:GLN:HB2	1.74	0.88
1:A:975:A:H4'	1:A:976:G:H5''	1.54	0.88
14:N:33:VAL:O	14:N:34:TYR:HD1	1.57	0.88
10:J:77:PRO:HB2	10:J:82:ILE:HD13	1.53	0.88
1:A:791:G:H2'	1:A:792:A:H5'	1.56	0.88
14:N:8:GLU:HA	14:N:11:LYS:HD3	1.56	0.88
13:M:14:ARG:H	13:M:44:ARG:HH21	1.21	0.88
12:L:33:ARG:HD3	12:L:62:SER:HB3	1.54	0.87
1:A:1305:G:H22	1:A:1331:G:C2'	1.88	0.87
13:M:40:ASN:HB3	13:M:43:THR:HG23	1.55	0.87
1:A:818:G:O2'	1:A:819:A:H5''	1.73	0.87
8:H:11:THR:HG22	8:H:14:ARG:NH1	1.89	0.87
1:A:129(A):G:O2'	1:A:189(F):U:H2'	1.74	0.87
1:A:1142:G:H2'	1:A:1143:G:O4'	1.74	0.87
1:A:959:A:H3'	1:A:960:U:H5''	1.56	0.87
2:B:44:LEU:H	2:B:44:LEU:HD22	1.40	0.87
2:B:84:GLU:OE1	2:B:216:SER:HA	1.75	0.87
7:G:118:VAL:HG13	7:G:119:ARG:N	1.90	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:55:VAL:HG12	12:L:56:ALA:N	1.88	0.86
1:A:405:U:H3'	1:A:406:G:H5'	1.56	0.86
2:B:17:PHE:HA	2:B:44:LEU:HD11	1.57	0.86
1:A:794:A:H2'	1:A:795:C:C6	2.08	0.86
1:A:1343:G:H2'	1:A:1344:C:H6	1.40	0.86
8:H:10:LEU:HD22	8:H:83:ILE:HD11	1.55	0.86
1:A:1064:G:H4'	1:A:1065:U:C5'	2.05	0.86
15:O:82:ILE:HG23	15:O:87:ILE:HG23	1.57	0.86
3:C:71:ALA:HB2	3:C:106:VAL:HB	1.56	0.86
1:A:673:G:H2'	1:A:674:G:C8	2.10	0.86
1:A:1147:C:H4'	9:I:5:TYR:HE1	1.39	0.85
3:C:57:ILE:HG23	3:C:64:VAL:HG13	1.58	0.85
1:A:265:G:H2'	1:A:267:C:H5	1.41	0.85
8:H:11:THR:CG2	8:H:14:ARG:HH12	1.87	0.85
2:B:80:ILE:HD12	2:B:80:ILE:H	1.42	0.85
10:J:57:LYS:HZ2	10:J:60:ARG:NH1	1.75	0.85
1:A:1366:C:H2'	1:A:1367:C:C6	2.10	0.85
12:L:97:ARG:HG3	12:L:98:TYR:CE1	2.12	0.85
16:P:52:ASP:OD1	16:P:55:ARG:HB2	1.75	0.85
2:B:97:TRP:HZ2	2:B:102:LEU:HD13	1.41	0.85
17:Q:23:VAL:HG12	17:Q:24:GLU:N	1.89	0.85
1:A:1086:U:H3	1:A:1099:G:N2	1.73	0.84
14:N:26:ARG:NH2	14:N:47:LEU:HD21	1.92	0.84
11:K:108:ILE:H	11:K:108:ILE:CD1	1.90	0.84
1:A:1193:G:O2'	1:A:1194:U:H5'	1.76	0.84
9:I:106:ALA:O	9:I:108:VAL:HG23	1.75	0.84
1:A:1343:G:H2'	1:A:1344:C:C6	2.13	0.84
5:E:8:GLU:HB3	5:E:34:VAL:HG12	1.58	0.84
8:H:112:LEU:HD12	8:H:112:LEU:N	1.92	0.84
16:P:4:ILE:HG13	16:P:64:ALA:HB1	1.60	0.84
1:A:19:C:H2'	1:A:20:U:H6	1.43	0.84
2:B:77:ALA:HB2	2:B:211:ILE:HD13	1.57	0.84
9:I:63:ILE:HD11	9:I:81:ILE:HD11	1.59	0.84
1:A:1362:C:C2'	1:A:1363:C:H5''	2.07	0.84
3:C:175:LEU:HD21	3:C:201:TYR:HD2	1.42	0.84
8:H:97:VAL:HG13	8:H:98:LYS:H	1.42	0.84
20:T:49:ALA:HB1	20:T:99:LEU:HD12	1.59	0.84
1:A:923:A:OP1	5:E:21:ALA:HB2	1.77	0.84
1:A:1528:U:O2'	1:A:1529:G:H3'	1.77	0.84
2:B:97:TRP:CZ2	2:B:102:LEU:HD13	2.13	0.84
7:G:116:ALA:HA	7:G:119:ARG:HH21	1.42	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:36:LEU:H	8:H:36:LEU:CD2	1.90	0.84
1:A:933:G:OP1	7:G:4:ARG:HD2	1.77	0.84
17:Q:29:HIS:HD2	17:Q:31:LEU:H	1.20	0.84
1:A:1402:C:H2'	1:A:1403:C:H6	1.41	0.83
18:R:58:LEU:HD23	18:R:62:GLU:HB3	1.60	0.83
12:L:83:VAL:HG11	12:L:100:ILE:HD11	1.59	0.83
1:A:1225:A:H5'	1:A:1226:C:OP2	1.78	0.83
1:A:972:C:O5'	10:J:57:LYS:HD3	1.77	0.83
12:L:47:LYS:HB3	12:L:48:PRO:HD3	1.61	0.83
13:M:25:ILE:HD11	13:M:66:LEU:HD21	1.60	0.83
2:B:102:LEU:HD21	2:B:162:ILE:CD1	2.09	0.83
2:B:204:ASN:ND2	2:B:205:ASP:H	1.75	0.83
2:B:188:ALA:HB1	2:B:192:SER:OG	1.79	0.83
3:C:175:LEU:HD21	3:C:201:TYR:CD2	2.14	0.83
1:A:538:G:H2'	1:A:539:A:H8	1.44	0.83
1:A:1288:A:H2'	1:A:1289:A:H8	1.43	0.83
16:P:19:ILE:HG22	16:P:36:ILE:HG13	1.60	0.83
12:L:41:ARG:CG	12:L:42:THR:H	1.93	0.82
8:H:14:ARG:O	8:H:18:ARG:HD3	1.78	0.82
1:A:542:G:H5'	4:D:41:GLY:HA3	1.60	0.82
1:A:1195:C:H3'	1:A:1196:U:C5'	2.09	0.82
2:B:112:VAL:HG11	2:B:153:ARG:HA	1.59	0.82
10:J:57:LYS:HZ2	10:J:57:LYS:HB2	1.43	0.82
11:K:108:ILE:HD12	11:K:108:ILE:N	1.93	0.82
1:A:101:A:O2'	1:A:102:G:H5'	1.79	0.82
1:A:21:G:H2'	1:A:22:G:C8	2.15	0.82
1:A:911:U:H2'	1:A:912:C:C6	2.14	0.82
17:Q:76:LEU:HD23	17:Q:77:VAL:N	1.94	0.82
3:C:10:PHE:CE2	3:C:178:LEU:HD13	2.15	0.82
3:C:51:GLY:HA3	3:C:70:VAL:HG13	1.61	0.82
1:A:129(A):G:HO2'	1:A:189(F):U:H2'	1.45	0.81
2:B:36:ARG:HB2	2:B:41:ILE:HD11	1.61	0.81
9:I:97:LYS:HA	9:I:102:LEU:HD11	1.62	0.81
11:K:104:GLN:HA	11:K:104:GLN:HE21	1.44	0.81
1:A:792:A:H4'	1:A:793:U:H5''	1.62	0.81
2:B:55:PHE:HD2	2:B:58:ILE:HD12	1.42	0.81
3:C:203:PHE:HD1	3:C:204:LEU:H	1.27	0.81
1:A:52:G:H2'	1:A:53:A:H8	1.46	0.81
8:H:136:GLU:O	8:H:137:VAL:HG23	1.78	0.81
11:K:34:ASP:OD2	11:K:38:ASN:HB2	1.79	0.81
19:S:39:THR:HG22	19:S:40:ILE:H	1.45	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:115:VAL:HG11	5:E:118:ILE:HD11	1.63	0.81
10:J:90:LEU:H	10:J:91:PRO:HD2	1.45	0.81
20:T:67:ALA:HA	20:T:73:HIS:H	1.45	0.81
20:T:57:ARG:HH22	20:T:100:ILE:HD13	1.45	0.81
1:A:519:C:H2'	1:A:520:A:H8	1.46	0.81
3:C:113:ALA:H	3:C:116:VAL:HG23	1.45	0.81
9:I:17:VAL:HG21	9:I:80:GLY:HA3	1.62	0.81
1:A:1002:G:H2'	1:A:1003:G:O4'	1.81	0.81
2:B:7:VAL:HG11	2:B:221:LEU:HD21	1.60	0.81
1:A:913:A:H4'	1:A:914:A:O5'	1.81	0.81
1:A:1123:A:C8	10:J:39:PRO:HD3	2.16	0.81
2:B:90:MET:HE2	2:B:222:ILE:HG21	1.61	0.81
10:J:6:ILE:HD13	10:J:73:ASP:H	1.46	0.81
1:A:357:G:O2'	1:A:358:U:H5'	1.81	0.80
1:A:438:G:H2'	1:A:494:U:O4	1.81	0.80
4:D:35:ARG:O	4:D:36:ARG:HB3	1.80	0.80
4:D:100:ARG:NH1	4:D:137:SER:HA	1.96	0.80
10:J:81:THR:HA	10:J:84:GLN:NE2	1.93	0.80
15:O:17:ARG:NH1	15:O:77:ARG:HD3	1.96	0.80
1:A:1024:G:H2'	1:A:1025:U:H4'	1.64	0.80
1:A:372:C:H1'	1:A:373:A:OP2	1.81	0.80
1:A:1147:C:H4'	9:I:5:TYR:CE1	2.16	0.80
2:B:178:ARG:HB3	2:B:178:ARG:HH11	1.45	0.80
1:A:132:C:O3'	20:T:74:LYS:HE3	1.82	0.80
1:A:521:G:O5'	12:L:73:GLU:HA	1.82	0.80
3:C:19:GLU:HB2	3:C:54:ARG:NH2	1.97	0.80
3:C:202:ILE:O	3:C:203:PHE:HB2	1.80	0.80
5:E:80:ILE:CD1	5:E:91:LEU:HB2	2.11	0.80
1:A:1356:G:H2'	1:A:1357:A:H8	1.45	0.80
1:A:538:G:H2'	1:A:539:A:C8	2.17	0.79
15:O:33:THR:HG22	15:O:37:ASN:HD21	1.46	0.79
22:X:2:G:H1	23:Y:36:C:N4	1.80	0.79
9:I:16:ARG:HB2	9:I:16:ARG:HH11	1.47	0.79
4:D:59:ARG:NH1	4:D:59:ARG:HA	1.97	0.79
11:K:48:ILE:HD11	11:K:64:ALA:N	1.98	0.79
2:B:200:ILE:HG23	2:B:202:PRO:HD3	1.64	0.79
1:A:600:C:OP1	8:H:97:VAL:HG12	1.83	0.79
20:T:53:LEU:N	20:T:53:LEU:HD23	1.96	0.79
3:C:174:PRO:O	3:C:177:THR:HG22	1.83	0.79
4:D:102:ASP:HB3	4:D:136:PRO:HB3	1.63	0.79
1:A:1064:G:C4'	1:A:1065:U:H5'	2.07	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:187:ARG:HD2	4:D:188:LEU:H	1.48	0.79
1:A:706:A:O2'	11:K:29:ILE:HD11	1.83	0.78
1:A:519:C:H2'	1:A:520:A:C8	2.19	0.78
2:B:60:ASP:O	2:B:64:ARG:HB2	1.82	0.78
3:C:41:GLY:O	3:C:45:LYS:HG2	1.83	0.78
5:E:91:LEU:HD23	5:E:120:THR:HG22	1.64	0.78
9:I:108:VAL:HG12	9:I:109:VAL:H	1.46	0.78
1:A:877:C:O2	8:H:3:THR:HG21	1.82	0.78
1:A:1368:G:OP2	9:I:112:LYS:HD3	1.84	0.78
5:E:43:LEU:HD22	5:E:44:GLY:H	1.49	0.78
11:K:120:ARG:HH11	11:K:120:ARG:HG2	1.49	0.78
16:P:20:VAL:HG21	16:P:32:TYR:CB	2.13	0.78
1:A:1288:A:H2'	1:A:1289:A:C8	2.18	0.78
6:F:98:LEU:H	6:F:98:LEU:HD12	1.48	0.78
9:I:79:LEU:HD22	9:I:83:ARG:HD2	1.66	0.78
11:K:78:GLN:O	11:K:103:LEU:HD23	1.82	0.78
1:A:203:U:H5''	1:A:204:U:OP1	1.83	0.78
4:D:24:GLU:C	4:D:26:CYS:H	1.92	0.78
1:A:1005:A:H1'	1:A:1026:G:H22	1.48	0.78
1:A:1103:C:H5''	2:B:98:LEU:HD12	1.63	0.78
1:A:1410:G:H1	1:A:1490:C:H42	1.30	0.78
2:B:54:THR:HG23	2:B:199:TYR:HB3	1.65	0.78
3:C:75:VAL:HG12	3:C:83:ARG:NH1	1.99	0.78
8:H:36:LEU:HD23	8:H:36:LEU:N	1.98	0.78
12:L:41:ARG:HG2	12:L:42:THR:N	1.94	0.78
15:O:26:GLU:OE1	15:O:77:ARG:HD2	1.82	0.78
2:B:204:ASN:ND2	2:B:205:ASP:N	2.31	0.78
3:C:137:ALA:HA	3:C:140:ARG:NH1	1.98	0.77
4:D:131:ARG:HA	4:D:131:ARG:HE	1.48	0.77
16:P:20:VAL:CG2	16:P:32:TYR:HB2	2.12	0.77
1:A:491:G:H2'	1:A:492:G:H8	1.49	0.77
2:B:25:ASN:HD22	2:B:25:ASN:C	1.88	0.77
18:R:53:ARG:HA	18:R:56:THR:OG1	1.83	0.77
1:A:1189:C:P	10:J:51:ARG:HH22	2.07	0.77
3:C:6:HIS:HD2	3:C:8:ILE:H	1.32	0.77
11:K:57:THR:HG23	11:K:60:ALA:H	1.49	0.77
2:B:112:VAL:HG22	2:B:149:LEU:HD13	1.66	0.77
1:A:972:C:O3'	10:J:57:LYS:HD2	1.83	0.77
3:C:130:VAL:HG23	3:C:131:ARG:N	1.99	0.77
5:E:122:GLU:OE1	5:E:131:ILE:HG12	1.84	0.77
7:G:16:LEU:H	7:G:16:LEU:HD22	1.47	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:Y:35:C:H2'	23:Y:36:C:H6	1.49	0.77
8:H:33:GLU:HA	8:H:36:LEU:HD21	1.65	0.77
1:A:149:A:H2'	1:A:150:C:C6	2.20	0.77
7:G:32:ARG:O	7:G:34:GLY:N	2.17	0.77
1:A:438:G:H4'	1:A:439:A:OP1	1.84	0.77
1:A:1311:G:H1	1:A:1326:C:H5	1.33	0.77
5:E:17:ALA:HA	5:E:26:PHE:HB3	1.64	0.77
1:A:924:C:H5'	1:A:1399:C:OP2	1.85	0.77
9:I:26:VAL:HG22	9:I:61:ALA:HB3	1.67	0.77
1:A:394:G:H2'	1:A:395:C:H6	1.48	0.77
10:J:57:LYS:HB2	10:J:57:LYS:NZ	1.98	0.77
14:N:26:ARG:HH22	14:N:47:LEU:CD2	1.98	0.77
10:J:27:ALA:HB2	10:J:85:LEU:HG	1.65	0.76
20:T:59:ALA:O	20:T:63:ILE:HG13	1.85	0.76
1:A:1488:G:O2'	1:A:1489:G:H5'	1.85	0.76
3:C:6:HIS:CD2	3:C:8:ILE:H	2.03	0.76
21:U:6:ARG:HH21	21:U:15:ARG:CD	1.97	0.76
22:X:2:G:H1	23:Y:36:C:H42	1.31	0.76
9:I:48:GLU:N	9:I:49:PRO:HD2	2.00	0.76
1:A:337:C:H2'	1:A:338:A:C8	2.20	0.76
1:A:975:A:H4'	1:A:976:G:C5'	2.15	0.76
9:I:34:ASN:HD22	9:I:34:ASN:N	1.81	0.76
2:B:15:VAL:O	2:B:17:PHE:N	2.17	0.76
3:C:155:GLY:HA3	3:C:196:LEU:HD22	1.66	0.76
7:G:117:ALA:HA	7:G:120:ILE:HD12	1.68	0.76
12:L:53:ARG:NH1	12:L:92:ASP:HB2	2.01	0.76
2:B:112:VAL:CG1	2:B:153:ARG:HA	2.15	0.76
3:C:64:VAL:HB	3:C:99:VAL:HB	1.67	0.76
1:A:191:G:C4	20:T:105:SER:HB3	2.21	0.76
1:A:192:U:C1'	20:T:103:GLY:HA2	2.15	0.76
1:A:580:U:H2'	1:A:581:G:O4'	1.86	0.76
1:A:1494:G:O2'	1:A:1495:U:H5'	1.86	0.76
2:B:102:LEU:HD21	2:B:162:ILE:HD11	1.68	0.76
7:G:118:VAL:CG1	7:G:119:ARG:H	1.96	0.76
10:J:64:GLU:O	10:J:65:LEU:HB3	1.86	0.76
12:L:70:ILE:HA	12:L:100:ILE:HG22	1.68	0.76
1:A:1519:A:H2'	1:A:1520:G:H5'	1.68	0.75
6:F:15:ASP:H	6:F:18:GLN:HE22	1.31	0.75
9:I:55:ALA:HA	9:I:58:ARG:HB2	1.68	0.75
14:N:37:PHE:HB3	14:N:39:LEU:HD12	1.68	0.75
1:A:989:C:N4	1:A:1216:G:H1	1.83	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:38:THR:HG22	12:L:39:VAL:HG23	1.65	0.75
18:R:58:LEU:HB3	18:R:62:GLU:HB2	1.68	0.75
20:T:56:MET:CE	20:T:88:VAL:HG11	2.16	0.75
1:A:250:A:H4'	1:A:251:G:O5'	1.85	0.75
1:A:524:G:H2'	1:A:525:C:H6	1.52	0.75
7:G:115:ARG:HG3	7:G:118:VAL:HG12	1.67	0.75
17:Q:5:VAL:HG13	17:Q:59:ILE:O	1.85	0.75
8:H:36:LEU:HA	8:H:39:LEU:HB2	1.69	0.75
3:C:180:ALA:CB	3:C:182:ILE:HG13	2.17	0.75
13:M:14:ARG:H	13:M:44:ARG:NH2	1.85	0.75
19:S:29:ARG:H	19:S:29:ARG:HD2	1.51	0.75
16:P:55:ARG:O	16:P:58:TYR:N	2.19	0.75
1:A:718:G:H5'	11:K:117:ASN:HD22	1.52	0.74
3:C:130:VAL:HB	3:C:134:ILE:HD11	1.67	0.74
10:J:44:VAL:HG22	10:J:45:ARG:N	2.02	0.74
4:D:3:ARG:CZ	4:D:118:ARG:HH11	2.00	0.74
7:G:50:ILE:O	7:G:54:THR:HG22	1.86	0.74
19:S:40:ILE:HB	19:S:67:VAL:O	1.87	0.74
1:A:404:U:H2'	1:A:405:U:H6	1.52	0.74
1:A:1104:G:H2'	1:A:1105:A:H8	1.51	0.74
3:C:180:ALA:HB1	3:C:182:ILE:HG13	1.68	0.74
9:I:14:VAL:O	9:I:65:VAL:HG23	1.87	0.74
9:I:80:GLY:C	9:I:82:ALA:H	1.96	0.74
12:L:103:GLY:O	12:L:107:ALA:HB3	1.87	0.74
1:A:633:G:H2'	1:A:634:C:C6	2.23	0.74
1:A:1442(A):G:C5'	1:A:1442(B):A:H5'	2.14	0.74
2:B:139:LYS:O	2:B:143:GLU:HG3	1.87	0.74
1:A:1118:C:H5'	9:I:104:ARG:HG3	1.69	0.74
3:C:19:GLU:HG2	3:C:40:ARG:HH21	1.52	0.74
11:K:40:ILE:HG22	11:K:41:THR:HG23	1.69	0.74
14:N:26:ARG:O	14:N:27:CYS:HB3	1.85	0.74
17:Q:70:ARG:HG3	17:Q:70:ARG:HH11	1.52	0.74
9:I:19:LEU:N	9:I:19:LEU:HD23	2.03	0.74
10:J:57:LYS:HZ2	10:J:60:ARG:HH12	1.36	0.74
11:K:121:PRO:HG2	11:K:126:ARG:CG	2.18	0.74
1:A:130:A:O2'	1:A:131:C:H5''	1.87	0.74
1:A:960:U:O2	1:A:960:U:H2'	1.85	0.74
2:B:90:MET:HE2	2:B:222:ILE:CG2	2.17	0.74
2:B:204:ASN:HD22	2:B:205:ASP:N	1.85	0.74
5:E:110:LEU:HD13	5:E:118:ILE:HD12	1.68	0.74
17:Q:29:HIS:HD2	17:Q:32:TYR:H	1.31	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:383:A:H2'	1:A:384:G:H5'	1.70	0.74
1:A:491:G:H2'	1:A:492:G:C8	2.22	0.74
1:A:540:G:H2'	1:A:541:G:C8	2.23	0.74
1:A:1047:G:H2'	1:A:1048:G:H5'	1.70	0.73
5:E:77:PRO:O	5:E:78:HIS:HB3	1.87	0.73
1:A:382:A:H2'	1:A:383:A:C8	2.22	0.73
4:D:47:ARG:HG2	4:D:48:ALA:H	1.53	0.73
1:A:148:G:H2'	1:A:149:A:H8	1.53	0.73
4:D:8:VAL:HG13	4:D:9:CYS:H	1.52	0.73
7:G:16:LEU:HD11	9:I:45:ALA:HB2	1.69	0.73
7:G:120:ILE:O	7:G:124:LEU:HD12	1.88	0.73
1:A:177:C:H2'	1:A:178:C:H6	1.53	0.73
1:A:302:G:H5''	12:L:17:LYS:HE2	1.70	0.73
1:A:314:C:O2'	1:A:315:A:H5'	1.87	0.73
1:A:1362:C:H2'	1:A:1363:C:H5''	1.71	0.73
2:B:185:ILE:N	2:B:185:ILE:HD12	2.03	0.73
1:A:481:G:O2'	1:A:483:C:N4	2.21	0.73
1:A:708:C:H2'	1:A:709:G:H8	1.52	0.73
3:C:10:PHE:O	3:C:178:LEU:HD11	1.89	0.73
1:A:865:A:H5'	1:A:1078:U:O4	1.88	0.73
3:C:2:GLY:O	3:C:3:ASN:O	2.07	0.73
4:D:36:ARG:HG3	4:D:38:TYR:CZ	2.22	0.73
4:D:59:ARG:HH12	4:D:62:GLN:CG	2.01	0.73
4:D:121:VAL:O	4:D:134:ASP:HA	1.89	0.73
7:G:17:VAL:HG12	7:G:18:TYR:HD1	1.52	0.73
7:G:116:ALA:CA	7:G:119:ARG:HH21	2.01	0.73
18:R:39:VAL:O	18:R:42:ARG:HB2	1.89	0.73
1:A:625:G:H2'	1:A:626:U:C6	2.23	0.73
14:N:45:ARG:HH11	14:N:45:ARG:HG3	1.54	0.73
1:A:986:A:C4'	19:S:55:LYS:HD3	2.16	0.73
1:A:1158:C:H5''	2:B:133:LYS:NZ	2.04	0.73
1:A:1370:G:O2'	1:A:1371:G:H5'	1.88	0.73
7:G:115:ARG:O	7:G:118:VAL:HG12	1.88	0.73
2:B:24:TRP:CZ3	2:B:26:PRO:HA	2.24	0.73
12:L:92:ASP:C	12:L:93:LEU:HD23	2.14	0.73
1:A:1024:G:H2'	1:A:1025:U:C4'	2.18	0.72
1:A:957:U:H3	1:A:960:U:C5'	2.01	0.72
1:A:1204:A:H2'	1:A:1205:U:H5'	1.71	0.72
8:H:105:ARG:HG3	8:H:105:ARG:HH11	1.54	0.72
1:A:103:C:OP1	20:T:17:ARG:NH1	2.22	0.72
1:A:922:G:H4'	5:E:20:GLN:HA	1.70	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:16:ARG:NH1	3:C:16:ARG:HB2	2.05	0.72
4:D:8:VAL:CG1	4:D:22:LYS:HE2	2.18	0.72
15:O:55:GLY:O	15:O:59:MET:HG3	1.89	0.72
17:Q:63:ARG:HG2	17:Q:64:PRO:HD2	1.70	0.72
1:A:1287:A:H2'	1:A:1288:A:C8	2.23	0.72
2:B:213:LEU:HD23	2:B:214:ILE:N	2.04	0.72
4:D:126:ILE:HG22	4:D:127:THR:H	1.54	0.72
10:J:9:ARG:HG2	10:J:69:ASN:OD1	1.89	0.72
12:L:28:LYS:C	12:L:30:ALA:H	1.96	0.72
12:L:55:VAL:CG1	12:L:56:ALA:H	1.94	0.72
15:O:31:LEU:HD12	15:O:31:LEU:H	1.54	0.72
21:U:6:ARG:NH2	21:U:15:ARG:HD3	1.98	0.72
16:P:33:ILE:O	16:P:34:GLU:HB2	1.89	0.72
1:A:21:G:H2'	1:A:22:G:H8	1.54	0.72
1:A:1241:G:H2'	1:A:1242:C:C6	2.25	0.72
2:B:178:ARG:HB3	2:B:178:ARG:NH1	2.03	0.72
5:E:32:VAL:HG12	5:E:58:ALA:HB1	1.72	0.72
6:F:74:ASP:O	6:F:77:ARG:HG2	1.89	0.72
10:J:16:LEU:HD21	10:J:94:VAL:CG1	2.20	0.72
11:K:54:ARG:O	11:K:57:THR:HG22	1.89	0.72
14:N:27:CYS:SG	14:N:29:ARG:NH1	2.61	0.72
1:A:435:C:O2'	1:A:436:C:H5'	1.90	0.72
3:C:180:ALA:C	3:C:182:ILE:H	1.96	0.72
17:Q:10:VAL:HG12	17:Q:53:LEU:HD12	1.70	0.72
18:R:53:ARG:HG3	18:R:63:GLN:HG2	1.71	0.72
1:A:337:C:H2'	1:A:338:A:H8	1.55	0.72
1:A:1425:U:H2'	1:A:1426:C:C6	2.24	0.72
3:C:112:SER:OG	3:C:115:LEU:HB2	1.90	0.72
1:A:186:C:H1'	20:T:85:MET:HE1	1.71	0.72
2:B:42:ILE:HD12	2:B:203:GLY:HA2	1.72	0.72
4:D:59:ARG:NH1	4:D:62:GLN:HG3	2.03	0.72
8:H:60:ARG:HD2	8:H:62:TYR:OH	1.90	0.72
9:I:6:GLY:N	9:I:84:ALA:HB2	2.05	0.72
1:A:1392:G:H21	1:A:1502:A:H8	1.36	0.72
1:A:1521:G:H2'	1:A:1522:U:C6	2.24	0.72
3:C:91:LEU:HD23	3:C:91:LEU:O	1.90	0.72
1:A:1151:A:C5'	10:J:41:PRO:HA	2.19	0.71
1:A:1419:G:H2'	1:A:1420:C:C6	2.25	0.71
6:F:1:MET:HB3	6:F:66:GLU:HG2	1.72	0.71
1:A:1321:C:H3'	1:A:1322:C:C5'	2.18	0.71
7:G:50:ILE:HG21	7:G:58:PRO:HA	1.72	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:78:TYR:O	15:O:82:ILE:HD12	1.90	0.71
1:A:100:C:H2'	1:A:101:A:C8	2.25	0.71
1:A:1349:A:P	9:I:118:LYS:HZ1	2.13	0.71
2:B:97:TRP:CH2	2:B:101:MET:HB2	2.25	0.71
1:A:1412:C:H2'	1:A:1413:A:C8	2.24	0.71
2:B:140:HIS:C	2:B:142:LEU:H	1.97	0.71
12:L:119:LYS:O	12:L:120:TYR:HB2	1.90	0.71
13:M:81:LEU:HA	13:M:84:ILE:HD11	1.71	0.71
17:Q:80:GLY:O	17:Q:81:ARG:HB3	1.88	0.71
19:S:52:TYR:HA	19:S:56:GLN:O	1.91	0.71
1:A:393:A:O2'	1:A:394:G:H5'	1.90	0.71
4:D:20:TYR:HA	4:D:26:CYS:SG	2.31	0.71
5:E:43:LEU:HD22	5:E:44:GLY:N	2.04	0.71
12:L:6:THR:H	12:L:9:GLN:HE21	1.38	0.71
1:A:265:G:H2'	1:A:267:C:C5	2.24	0.71
1:A:322:C:O2'	1:A:323:U:H5'	1.91	0.71
1:A:390:C:O3'	16:P:28:ARG:NH2	2.22	0.71
1:A:456:C:H2'	1:A:457:C:C6	2.25	0.71
2:B:75:LYS:CE	2:B:96:ARG:HH12	2.03	0.71
6:F:15:ASP:N	6:F:18:GLN:HE22	1.88	0.71
8:H:83:ILE:HD12	8:H:137:VAL:HG22	1.71	0.71
17:Q:76:LEU:HD23	17:Q:76:LEU:C	2.16	0.71
1:A:179:A:H2'	1:A:180:U:C6	2.26	0.71
1:A:434:U:H2'	1:A:435:C:C6	2.25	0.71
1:A:1024:G:C2'	1:A:1025:U:H4'	2.21	0.71
5:E:51:VAL:HB	5:E:52:PRO:CD	2.20	0.71
12:L:69:TYR:HB2	12:L:96:VAL:HG11	1.73	0.71
12:L:83:VAL:HG22	12:L:84:LEU:N	2.03	0.71
19:S:22:LEU:HD13	19:S:28:LYS:HG2	1.71	0.71
1:A:501:C:H2'	1:A:502:G:C8	2.22	0.71
1:A:1243:C:H2'	1:A:1244:C:C6	2.26	0.71
1:A:1286:A:C8	1:A:1287:A:H4'	2.24	0.71
3:C:3:ASN:O	3:C:4:LYS:HG2	1.90	0.71
9:I:10:ARG:HD3	9:I:105:ASP:HB3	1.73	0.71
9:I:76:ALA:O	9:I:79:LEU:HB2	1.90	0.71
1:A:1104:G:H4'	2:B:111:ARG:CZ	2.20	0.71
2:B:16:HIS:O	2:B:18:GLY:N	2.24	0.71
4:D:57:ARG:NE	4:D:205:GLU:OE2	2.23	0.71
12:L:28:LYS:C	12:L:30:ALA:N	2.47	0.71
1:A:1015:A:H2'	1:A:1016:A:C8	2.25	0.71
1:A:1103:C:C5'	2:B:98:LEU:HD12	2.20	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:188:LEU:H	3:C:188:LEU:CD1	2.01	0.71
7:G:113:GLU:CD	7:G:113:GLU:H	1.99	0.71
1:A:359:U:H2'	1:A:360:A:H8	1.54	0.70
1:A:1068:G:OP2	1:A:1068:G:H8	1.73	0.70
1:A:1118:C:H2'	1:A:1119:C:H6	1.56	0.70
1:A:1493:A:C8	22:X:2:G:H1'	2.25	0.70
11:K:84:VAL:HG21	18:R:88:LYS:HD3	1.72	0.70
1:A:63:C:H42	1:A:104:G:H1	1.39	0.70
1:A:235:C:H5'	17:Q:70:ARG:HD3	1.73	0.70
1:A:667:G:H4'	15:O:51:HIS:ND1	2.05	0.70
1:A:1110:A:H8	1:A:1110:A:O5'	1.74	0.70
1:A:1320:C:H1'	19:S:72:GLY:C	2.16	0.70
14:N:16:PHE:HD1	14:N:19:ARG:HD2	1.56	0.70
1:A:778:G:O2'	1:A:779:C:H5'	1.91	0.70
1:A:1435:G:H2'	1:A:1436:U:C6	2.26	0.70
10:J:49:VAL:CG1	14:N:41:ARG:HB2	2.21	0.70
12:L:6:THR:H	12:L:9:GLN:NE2	1.88	0.70
13:M:44:ARG:O	13:M:46:LYS:N	2.24	0.70
2:B:101:MET:O	2:B:105:PHE:HA	1.91	0.70
10:J:24:VAL:O	10:J:28:ARG:HB2	1.91	0.70
1:A:530:G:H2'	23:Y:36:C:O2'	1.91	0.70
4:D:11:LEU:O	4:D:15:GLU:HB2	1.92	0.70
4:D:161:ASN:HD22	4:D:162:LEU:N	1.89	0.70
20:T:10:LEU:O	20:T:13:LEU:HG	1.91	0.70
1:A:818:G:C2'	1:A:819:A:H5''	2.21	0.70
1:A:1065:U:H4'	1:A:1066:C:O5'	1.91	0.70
1:A:1330:U:H4'	13:M:23:TYR:CE1	2.26	0.70
1:A:1426:C:H2'	1:A:1427:U:C6	2.27	0.70
15:O:54:ARG:HA	15:O:57:LEU:HD13	1.74	0.70
1:A:994:A:N7	1:A:1216:G:H4'	2.07	0.70
4:D:187:ARG:NH1	4:D:188:LEU:HD12	2.06	0.70
7:G:137:LYS:O	7:G:141:VAL:HG23	1.91	0.70
9:I:7:THR:O	9:I:83:ARG:HD3	1.92	0.70
1:A:80:G:H3'	1:A:81:U:H5''	1.74	0.70
1:A:1128:C:H5''	9:I:16:ARG:HH22	1.57	0.70
11:K:90:GLY:O	11:K:93:GLN:HB2	1.91	0.70
17:Q:21:VAL:HG21	17:Q:59:ILE:HG13	1.74	0.70
21:U:9:ARG:NH1	21:U:22:ARG:HA	2.07	0.70
1:A:1499:A:O2'	1:A:1500:A:H5'	1.89	0.70
4:D:23:GLY:HA3	4:D:112:VAL:CG1	2.19	0.70
13:M:49:THR:HG22	13:M:51:ALA:H	1.57	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:267:C:H2'	1:A:268:C:C6	2.27	0.70
1:A:1277:C:H2'	1:A:1278:U:C5'	2.20	0.70
1:A:1430:C:O2'	1:A:1431:C:H5'	1.91	0.70
2:B:69:LEU:HD23	2:B:70:PHE:N	2.06	0.70
5:E:14:ARG:HD3	5:E:29:GLY:HA3	1.74	0.70
9:I:128:ARG:HA	9:I:128:ARG:HH11	1.56	0.70
20:T:55:ILE:HD12	20:T:55:ILE:H	1.57	0.70
2:B:41:ILE:HD12	2:B:41:ILE:N	2.07	0.69
3:C:79:ARG:HG2	3:C:82:GLU:CG	2.22	0.69
1:A:376:G:H5''	16:P:5:ARG:HB2	1.72	0.69
1:A:918:A:H2'	1:A:919:A:C8	2.27	0.69
1:A:946:A:H2'	1:A:947:G:C8	2.27	0.69
2:B:207:ALA:C	2:B:208:ILE:HD12	2.17	0.69
3:C:127:ARG:HD2	3:C:127:ARG:N	2.06	0.69
9:I:43:ALA:N	9:I:74:ILE:HD13	2.07	0.69
9:I:50:LEU:C	9:I:52:ALA:H	1.98	0.69
11:K:33:THR:HG22	11:K:39:PRO:HA	1.75	0.69
14:N:26:ARG:HH12	14:N:47:LEU:HD21	1.55	0.69
1:A:394:G:H2'	1:A:395:C:C6	2.27	0.69
1:A:708:C:H2'	1:A:709:G:C8	2.27	0.69
3:C:27:LYS:HB3	3:C:30:ARG:HH21	1.56	0.69
7:G:116:ALA:O	7:G:120:ILE:HG13	1.92	0.69
1:A:1238:A:C5'	1:A:1336:C:H41	2.05	0.69
1:A:1250:A:H4'	9:I:68:GLY:H	1.57	0.69
13:M:80:ARG:C	13:M:82:MET:H	2.01	0.69
1:A:991:U:O2	1:A:991:U:H2'	1.92	0.69
8:H:38:ILE:O	8:H:42:GLU:HB2	1.93	0.69
9:I:118:LYS:HZ2	9:I:121:ARG:HB2	1.58	0.69
1:A:911:U:H2'	1:A:912:C:H6	1.57	0.69
1:A:1118:C:H1'	1:A:1179:A:C4	2.28	0.69
1:A:1325:C:P	21:U:6:ARG:HH22	2.16	0.69
1:A:1477:C:H2'	1:A:1478:C:C6	2.27	0.69
2:B:12:GLU:OE1	2:B:12:GLU:HA	1.92	0.69
3:C:178:LEU:O	3:C:179:ARG:HB2	1.90	0.69
9:I:33:PHE:C	9:I:35:GLU:H	2.01	0.69
19:S:41:VAL:O	19:S:44:MET:HB3	1.91	0.69
23:Y:35:C:H2'	23:Y:36:C:C6	2.27	0.69
1:A:456:C:H2'	1:A:457:C:H6	1.58	0.69
1:A:666:G:H5'	1:A:726:C:H1'	1.73	0.69
1:A:1343:G:H1'	9:I:121:ARG:HH12	1.57	0.69
1:A:1436:U:H2'	1:A:1437:C:H6	1.57	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:68:ILE:HB	2:B:90:MET:CE	2.22	0.69
2:B:217:ARG:O	2:B:220:ASP:HB2	1.93	0.69
4:D:17:VAL:HG12	4:D:18:LYS:N	2.07	0.69
4:D:57:ARG:HG2	4:D:202:LEU:CD2	2.20	0.69
4:D:162:LEU:HD13	4:D:181:MET:HE2	1.75	0.69
10:J:5:ARG:O	10:J:98:ILE:HG22	1.93	0.69
10:J:46:ARG:HG2	10:J:46:ARG:HH11	1.56	0.69
15:O:33:THR:HG23	15:O:63:ARG:HH12	1.57	0.69
3:C:29:TYR:OH	14:N:54:PRO:HD2	1.93	0.69
3:C:84:ILE:HG12	3:C:88:ARG:HH11	1.58	0.69
6:F:94:GLN:NE2	18:R:32:ARG:HD3	2.07	0.69
16:P:23:ASP:OD1	16:P:25:ARG:HD3	1.93	0.69
1:A:1191:A:H2'	1:A:1192:C:H6	1.58	0.69
1:A:1437:C:H2'	1:A:1438:G:H8	1.58	0.69
2:B:12:GLU:C	2:B:14:GLY:H	2.01	0.69
5:E:15:ARG:NH1	5:E:26:PHE:CE2	2.61	0.69
7:G:38:LEU:O	7:G:42:ILE:HG13	1.93	0.69
13:M:65:LYS:C	13:M:66:LEU:HD12	2.17	0.69
1:A:613:C:O2'	1:A:614:A:H5'	1.92	0.68
2:B:85:ALA:CB	2:B:92:TYR:HB3	2.23	0.68
3:C:116:VAL:O	3:C:120:VAL:HG23	1.93	0.68
4:D:96:LEU:HD13	4:D:96:LEU:H	1.58	0.68
1:A:163:C:O2'	1:A:164:U:H5'	1.94	0.68
2:B:44:LEU:HA	2:B:47:THR:OG1	1.93	0.68
6:F:30:LEU:HB3	6:F:35:ALA:HB3	1.74	0.68
8:H:4:ASP:OD2	8:H:85:ARG:NH1	2.26	0.68
9:I:24:GLY:O	9:I:26:VAL:HG23	1.92	0.68
10:J:6:ILE:HD12	10:J:6:ILE:N	2.08	0.68
1:A:718:G:C5'	11:K:117:ASN:HD22	2.05	0.68
1:A:1504:G:H3'	1:A:1504:G:OP2	1.92	0.68
7:G:14:PRO:O	7:G:20:ASP:N	2.26	0.68
13:M:29:ARG:HB3	13:M:64:TRP:CH2	2.29	0.68
20:T:91:LEU:C	20:T:93:GLU:H	2.00	0.68
1:A:1104:G:H2'	1:A:1105:A:C8	2.28	0.68
1:A:1190:G:OP2	3:C:5:ILE:HG23	1.93	0.68
1:A:1313:U:H5	19:S:4:SER:HB2	1.58	0.68
2:B:77:ALA:CB	2:B:211:ILE:HG21	2.24	0.68
1:A:191:G:H1'	20:T:105:SER:HA	1.74	0.68
1:A:376:G:P	16:P:67:THR:HG21	2.33	0.68
1:A:449:C:H2'	1:A:450:G:O4'	1.94	0.68
1:A:1150:U:O2'	10:J:41:PRO:HD3	1.93	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1305:G:H22	1:A:1331:G:H2'	1.55	0.68
10:J:49:VAL:HG11	14:N:41:ARG:HB2	1.75	0.68
1:A:1262:C:H2'	1:A:1263:C:C6	2.28	0.68
4:D:100:ARG:HB3	4:D:102:ASP:OD1	1.93	0.68
3:C:156:ARG:HA	3:C:163:ALA:HA	1.74	0.68
9:I:108:VAL:HG12	9:I:109:VAL:N	2.08	0.68
12:L:47:LYS:CB	12:L:48:PRO:HD3	2.24	0.68
20:T:55:ILE:HD12	20:T:55:ILE:N	2.09	0.68
1:A:791:G:C2'	1:A:792:A:H5'	2.23	0.68
1:A:1073:U:H2'	1:A:1074:G:C8	2.28	0.68
1:A:1130:A:N6	1:A:1144:G:H21	1.92	0.68
1:A:1349:A:OP1	9:I:118:LYS:NZ	2.26	0.68
11:K:29:ILE:C	11:K:29:ILE:HD12	2.19	0.68
16:P:49:LEU:HD12	16:P:50:LYS:N	2.08	0.68
20:T:37:SER:HB3	20:T:84:LEU:HD23	1.75	0.68
1:A:967:C:H5''	1:A:968:A:H2'	1.75	0.68
1:A:1502:A:H3'	1:A:1503:A:H5''	1.75	0.68
2:B:16:HIS:HA	2:B:204:ASN:CB	2.24	0.68
5:E:12:LEU:CD1	5:E:31:LEU:HB2	2.24	0.68
5:E:36:ASP:O	5:E:37:ARG:HB2	1.93	0.68
10:J:12:ASP:O	10:J:15:THR:HG22	1.93	0.68
10:J:80:LYS:O	10:J:84:GLN:HG3	1.93	0.68
16:P:55:ARG:O	16:P:58:TYR:HB3	1.94	0.68
1:A:979:C:O2	14:N:19:ARG:HG3	1.93	0.68
8:H:45:ILE:O	8:H:45:ILE:HG13	1.93	0.68
1:A:1123:A:H4'	10:J:37:PRO:HD2	1.75	0.67
7:G:26:PHE:CE2	7:G:30:ILE:HD11	2.29	0.67
1:A:952:U:H2'	1:A:953:G:H8	1.57	0.67
3:C:42:LEU:C	3:C:44:GLU:H	2.01	0.67
5:E:128:PRO:O	5:E:129:ILE:C	2.37	0.67
1:A:1014:A:H2'	1:A:1015:A:C8	2.29	0.67
3:C:11:ARG:HG3	3:C:178:LEU:HD12	1.76	0.67
13:M:50:GLU:O	13:M:54:VAL:HG23	1.94	0.67
20:T:57:ARG:NH2	20:T:100:ILE:HD13	2.08	0.67
1:A:107:G:H2'	1:A:108:G:H5'	1.75	0.67
1:A:1391:U:H2'	1:A:1392:G:C8	2.29	0.67
2:B:30:ARG:HD2	2:B:31:TYR:CZ	2.29	0.67
3:C:150:LYS:HE2	3:C:173:VAL:HG11	1.77	0.67
4:D:98:GLU:HG2	4:D:189:PRO:HG3	1.77	0.67
9:I:23:ASN:ND2	9:I:24:GLY:H	1.92	0.67
17:Q:66:SER:O	17:Q:70:ARG:NH1	2.28	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:427:U:OP1	4:D:13:ARG:NH2	2.26	0.67
1:A:539:A:OP1	12:L:114:LYS:HE2	1.95	0.67
1:A:1006:C:H2'	1:A:1007:C:H6	1.59	0.67
1:A:1067:A:N3	1:A:1068:G:H1'	2.09	0.67
14:N:5:ALA:C	14:N:6:LEU:HD22	2.20	0.67
1:A:1030(A):G:N2	1:A:1030(C):G:H3'	2.08	0.67
1:A:1515:C:O2'	1:A:1516:G:H5'	1.93	0.67
2:B:56:ARG:NH1	2:B:56:ARG:HB2	2.10	0.67
7:G:108:ALA:HB2	7:G:123:GLU:CG	2.24	0.67
12:L:58:VAL:O	12:L:65:GLU:HA	1.94	0.67
2:B:91:PRO:CG	2:B:154:LEU:HB2	2.19	0.67
7:G:32:ARG:C	7:G:34:GLY:H	2.03	0.67
12:L:110:VAL:HG23	12:L:120:TYR:O	1.94	0.67
1:A:192:U:H4'	20:T:57:ARG:HD2	1.77	0.67
1:A:986:A:H2'	1:A:987:G:C8	2.30	0.67
1:A:1487:G:O2'	1:A:1488:G:H5'	1.94	0.67
4:D:26:CYS:HA	4:D:31:CYS:HB2	1.75	0.67
10:J:57:LYS:HB2	10:J:60:ARG:NH1	2.10	0.67
1:A:639:G:O2'	1:A:640:A:H5'	1.94	0.67
2:B:167:PRO:HG3	2:B:188:ALA:HB2	1.76	0.67
3:C:29:TYR:O	3:C:33:LEU:HD22	1.93	0.67
3:C:34:LEU:HD23	3:C:34:LEU:O	1.94	0.67
3:C:120:VAL:O	3:C:124:ILE:HG13	1.95	0.67
5:E:34:VAL:HG22	5:E:62:ALA:HB1	1.77	0.67
7:G:26:PHE:HD1	7:G:101:LEU:HD22	1.60	0.67
1:A:255:G:O6	1:A:266:G:O6	2.13	0.67
1:A:735:C:O2'	1:A:736:C:H5'	1.95	0.67
1:A:797:C:O2'	1:A:798:G:H5'	1.95	0.67
1:A:1014:A:C2	1:A:1219:U:H1'	2.30	0.67
1:A:1133:G:H2'	1:A:1134:G:C8	2.30	0.67
1:A:746:A:O2'	1:A:747:C:H5'	1.95	0.66
1:A:954:G:H21	1:A:1227:A:H62	1.43	0.66
1:A:975:A:C4'	1:A:976:G:H5''	2.25	0.66
1:A:1316:G:H4'	14:N:18:VAL:HG11	1.77	0.66
7:G:47:CYS:HA	7:G:50:ILE:HG12	1.75	0.66
16:P:53:VAL:HG23	16:P:54:GLU:N	2.09	0.66
19:S:42:PRO:C	19:S:44:MET:H	2.02	0.66
4:D:8:VAL:HB	4:D:115:ARG:NH1	2.10	0.66
12:L:24:VAL:O	12:L:24:VAL:HG12	1.94	0.66
14:N:47:LEU:HB3	14:N:52:GLN:HB2	1.76	0.66
1:A:22:G:H2'	1:A:23:C:C6	2.30	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:339:C:H2'	1:A:340:U:C6	2.30	0.66
1:A:1006:C:H2'	1:A:1007:C:O4'	1.96	0.66
1:A:1127:G:H21	1:A:1147:C:N4	1.93	0.66
8:H:109:ILE:HG13	8:H:110:ALA:N	2.09	0.66
9:I:99:LEU:HB3	9:I:101:PHE:CE1	2.30	0.66
12:L:90:VAL:HG22	12:L:99:HIS:CE1	2.29	0.66
21:U:9:ARG:HH12	21:U:23:PRO:HD2	1.61	0.66
2:B:107:THR:C	2:B:109:SER:H	2.00	0.66
3:C:2:GLY:C	3:C:3:ASN:HD22	2.02	0.66
7:G:60:LYS:O	7:G:60:LYS:HD3	1.96	0.66
11:K:51:LYS:O	11:K:55:LYS:HG3	1.96	0.66
1:A:620:C:H2'	1:A:621:A:O4'	1.95	0.66
1:A:1057:G:O2'	1:A:1058:G:H5'	1.96	0.66
7:G:70:LYS:CG	7:G:96:GLN:HG2	2.23	0.66
15:O:27:VAL:HG12	15:O:31:LEU:HD11	1.77	0.66
1:A:1357:A:H2'	1:A:1358:U:C6	2.30	0.66
2:B:121:LEU:O	2:B:121:LEU:HD23	1.96	0.66
8:H:91:ARG:HH11	8:H:91:ARG:HG3	1.60	0.66
14:N:26:ARG:NH1	14:N:47:LEU:HD21	2.11	0.66
1:A:547:A:H4'	1:A:548:G:O5'	1.95	0.66
1:A:601:C:O2'	1:A:602:A:H5'	1.96	0.66
1:A:924:C:O2'	1:A:925:G:H5'	1.95	0.66
1:A:927:G:H4'	1:A:1503:A:N7	2.11	0.66
4:D:3:ARG:CZ	4:D:118:ARG:NH1	2.58	0.66
4:D:146:ILE:N	4:D:146:ILE:HD12	2.11	0.66
6:F:91:VAL:HG21	18:R:72:ARG:NH1	2.11	0.66
7:G:93:PRO:HG2	7:G:94:ARG:H	1.59	0.66
1:A:138:G:C3'	1:A:139:G:H5''	2.26	0.66
1:A:1253:G:H5'	10:J:44:VAL:HG12	1.76	0.66
1:A:1397:C:H4'	1:A:1398:A:OP2	1.94	0.66
1:A:1508:G:O2'	1:A:1509:C:H5'	1.95	0.66
5:E:60:TYR:O	5:E:64:ARG:HG2	1.96	0.66
8:H:4:ASP:HB2	8:H:89:PRO:HG2	1.78	0.66
8:H:80:ILE:O	8:H:80:ILE:HG22	1.96	0.66
13:M:10:PRO:O	13:M:11:ARG:HB2	1.94	0.66
1:A:17:U:H2'	1:A:18:C:C6	2.30	0.66
1:A:175:C:H2'	1:A:176:C:H6	1.60	0.66
2:B:108:ILE:O	2:B:108:ILE:HG22	1.94	0.66
3:C:19:GLU:HG2	3:C:40:ARG:NH2	2.11	0.66
7:G:116:ALA:HA	7:G:119:ARG:NH2	2.11	0.66
9:I:75:ASP:O	9:I:78:LYS:HB3	1.96	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:P:21:VAL:HG12	16:P:33:ILE:CD1	2.23	0.66
20:T:71:THR:O	20:T:72:LEU:HD23	1.96	0.66
1:A:154:C:H2'	1:A:155:C:H6	1.59	0.65
1:A:404:U:H2'	1:A:405:U:C6	2.31	0.65
1:A:664:G:OP1	18:R:64:ARG:HD2	1.96	0.65
1:A:707:C:H2'	1:A:708:C:C6	2.30	0.65
1:A:1343:G:O3'	9:I:122:ALA:HB3	1.96	0.65
5:E:51:VAL:O	5:E:54:ALA:HB3	1.96	0.65
5:E:80:ILE:HD11	5:E:91:LEU:CD1	2.25	0.65
8:H:64:LYS:HG3	8:H:79:VAL:HG21	1.77	0.65
12:L:85:ILE:CG2	12:L:98:TYR:HB3	2.27	0.65
18:R:61:LYS:O	18:R:65:ILE:HG13	1.96	0.65
23:Y:36:C:H2'	23:Y:36:C:O2	1.97	0.65
1:A:407:G:O2'	4:D:116:GLN:HG3	1.96	0.65
1:A:1211:U:H1'	1:A:1213:A:C2	2.30	0.65
1:A:1372:U:OP2	9:I:11:LYS:HD2	1.96	0.65
3:C:4:LYS:HB3	3:C:4:LYS:NZ	2.11	0.65
5:E:57:LYS:HG2	5:E:61:TYR:HE2	1.62	0.65
12:L:71:PRO:CG	12:L:102:ARG:HG3	2.26	0.65
1:A:1286:A:H8	1:A:1287:A:H4'	1.61	0.65
3:C:180:ALA:C	3:C:182:ILE:N	2.54	0.65
6:F:23:LYS:O	6:F:27:GLN:HB2	1.96	0.65
13:M:9:ILE:HD12	13:M:9:ILE:N	2.11	0.65
14:N:9:LYS:HG2	14:N:10:ALA:N	1.97	0.65
1:A:109:A:H2'	1:A:326:G:N2	2.11	0.65
1:A:142:G:N3	1:A:196:A:H2	1.94	0.65
1:A:174:C:H2'	1:A:175:C:H6	1.60	0.65
1:A:369:C:H2'	1:A:370:C:H6	1.60	0.65
1:A:410:G:H2'	1:A:429:U:C5	2.32	0.65
1:A:538:G:OP1	12:L:113:ARG:HD3	1.95	0.65
1:A:1178:G:N2	1:A:1180:A:H3'	2.10	0.65
1:A:1495:U:H2'	1:A:1496:C:C6	2.31	0.65
2:B:16:HIS:HA	2:B:204:ASN:HB2	1.76	0.65
2:B:217:ARG:HA	2:B:220:ASP:OD2	1.95	0.65
3:C:126:ARG:C	3:C:127:ARG:HD2	2.21	0.65
1:A:1305:G:OP1	21:U:2:GLY:HA3	1.97	0.65
2:B:116:GLU:O	2:B:119:GLU:HG2	1.96	0.65
4:D:20:TYR:HB3	4:D:26:CYS:HB3	1.79	0.65
13:M:15:VAL:HG12	13:M:19:LEU:HG	1.77	0.65
1:A:76:C:O2'	1:A:77:G:H5'	1.97	0.65
1:A:853:G:O2'	1:A:854:G:H5'	1.96	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1269:A:C2	1:A:1313:U:H1'	2.32	0.65
1:A:1360:A:H2'	1:A:1361:G:O4'	1.96	0.65
4:D:107:ARG:HH21	4:D:114:ARG:NH2	1.95	0.65
7:G:149:ARG:O	7:G:149:ARG:HD2	1.96	0.65
9:I:10:ARG:HD2	9:I:11:LYS:H	1.61	0.65
9:I:17:VAL:CG2	9:I:80:GLY:HA3	2.27	0.65
1:A:254:G:OP1	17:Q:67:LYS:O	2.14	0.65
1:A:1251:A:H4'	9:I:12:GLU:OE2	1.97	0.65
1:A:1349:A:P	9:I:118:LYS:NZ	2.70	0.65
1:A:1470:G:O2'	1:A:1471:G:H5'	1.97	0.65
7:G:69:VAL:HG11	7:G:134:ALA:HB1	1.79	0.65
12:L:18:VAL:HG12	12:L:19:ARG:H	1.61	0.65
19:S:30:LEU:HA	19:S:48:THR:O	1.96	0.65
21:U:9:ARG:HH22	21:U:23:PRO:HD2	1.62	0.65
1:A:112:G:H4'	1:A:389:A:H5''	1.78	0.65
1:A:384:G:H2'	1:A:385:C:C6	2.32	0.65
1:A:657:G:O2'	1:A:658:G:H5'	1.97	0.65
1:A:765:G:H1	1:A:812:C:H2'	1.62	0.65
1:A:997:U:H2'	1:A:998:G:O4'	1.96	0.65
1:A:1047:G:C2'	1:A:1048:G:H5'	2.26	0.65
1:A:1205:U:O2	1:A:1205:U:H2'	1.95	0.65
3:C:27:LYS:HA	3:C:30:ARG:HE	1.60	0.65
3:C:150:LYS:HE2	3:C:173:VAL:CG1	2.26	0.65
9:I:81:ILE:HG22	9:I:81:ILE:O	1.97	0.65
18:R:22:VAL:HG12	18:R:23:LYS:N	2.11	0.65
19:S:12:ASP:HB2	19:S:15:LEU:HD23	1.77	0.65
20:T:56:MET:HE2	20:T:88:VAL:HG11	1.78	0.65
1:A:1271:G:H2'	1:A:1272:G:H5''	1.77	0.65
1:A:1287:A:H2'	1:A:1288:A:H8	1.62	0.65
7:G:39:ALA:O	7:G:40:ALA:C	2.40	0.65
7:G:65:ALA:HB1	7:G:127:ALA:HB3	1.78	0.65
7:G:71:PRO:HD3	7:G:103:TRP:HZ3	1.62	0.65
9:I:128:ARG:HA	9:I:128:ARG:CZ	2.26	0.65
17:Q:23:VAL:CG1	17:Q:24:GLU:N	2.60	0.65
1:A:168:G:O2'	1:A:169:C:H5'	1.96	0.65
1:A:1012:U:H2'	1:A:1013:G:C8	2.32	0.65
1:A:1392:G:O2'	1:A:1502:A:H5''	1.97	0.65
3:C:22:TRP:HB3	3:C:59:ARG:CG	2.27	0.65
10:J:32:ALA:O	10:J:34:VAL:HG23	1.97	0.65
19:S:39:THR:HG22	19:S:40:ILE:N	2.12	0.65
1:A:1118:C:C5'	9:I:104:ARG:HG3	2.27	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1218:C:H2'	1:A:1219:U:C6	2.32	0.64
2:B:15:VAL:HG11	2:B:209:ARG:HB3	1.79	0.64
6:F:101:ALA:HA	18:R:28:GLU:HB3	1.79	0.64
13:M:62:ASN:O	13:M:63:THR:HB	1.98	0.64
18:R:39:VAL:HG13	18:R:40:LEU:N	2.12	0.64
1:A:148:G:H2'	1:A:149:A:C8	2.32	0.64
1:A:149:A:H2'	1:A:150:C:H6	1.59	0.64
1:A:295:C:O2'	1:A:296:U:H5'	1.97	0.64
1:A:933:G:N7	7:G:3:ARG:NH1	2.44	0.64
1:A:1125:U:H5	10:J:73:ASP:OD2	1.79	0.64
1:A:1347:G:H22	1:A:1373:G:C2'	1.99	0.64
12:L:111:LYS:O	12:L:112:ASP:HB3	1.97	0.64
1:A:1306:A:N6	1:A:1331:G:H1'	2.12	0.64
1:A:1425:U:H3	1:A:1475:G:H1	1.45	0.64
3:C:43:LEU:HA	3:C:47:LEU:HD13	1.79	0.64
4:D:131:ARG:HA	4:D:131:ARG:NE	2.12	0.64
4:D:187:ARG:HD2	4:D:188:LEU:N	2.13	0.64
5:E:57:LYS:HG2	5:E:61:TYR:CE2	2.32	0.64
16:P:1:MET:HE1	16:P:3:LYS:HE3	1.78	0.64
16:P:51:VAL:O	16:P:52:ASP:HB3	1.96	0.64
1:A:129(A):G:O2'	1:A:130:A:OP2	2.11	0.64
1:A:953:G:H2'	1:A:954:G:O4'	1.97	0.64
1:A:959:A:C3'	1:A:960:U:H5''	2.25	0.64
3:C:177:THR:HG23	3:C:180:ALA:HB2	1.77	0.64
7:G:57:GLU:O	7:G:61:VAL:HG23	1.97	0.64
11:K:124:LYS:HD3	11:K:125:PHE:HE1	1.62	0.64
13:M:3:ARG:HA	13:M:8:GLU:O	1.96	0.64
1:A:186:C:H2'	1:A:187:C:C6	2.33	0.64
1:A:304:U:H2'	1:A:305:G:C8	2.32	0.64
2:B:142:LEU:O	2:B:146:GLN:HG3	1.98	0.64
6:F:33:TYR:HB2	6:F:75:LEU:HD23	1.80	0.64
8:H:134:ILE:O	8:H:135:CYS:HB3	1.97	0.64
12:L:105:TYR:C	12:L:107:ALA:H	2.05	0.64
14:N:24:CYS:HB2	14:N:40:CYS:HB3	1.79	0.64
1:A:1247:U:O2'	1:A:1248:A:H5'	1.97	0.64
10:J:6:ILE:CD1	10:J:72:VAL:HB	2.25	0.64
1:A:333:G:H4'	20:T:16:HIS:CD2	2.33	0.64
1:A:476:G:H2'	1:A:477:A:C8	2.32	0.64
2:B:61:LEU:HG	2:B:66:GLY:HA3	1.80	0.64
15:O:77:ARG:O	15:O:80:ALA:HB3	1.98	0.64
16:P:82:GLN:O	16:P:84:ALA:N	2.30	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:88:A:H2'	1:A:89:C:O4'	1.97	0.64
1:A:542:G:H2'	1:A:543:C:H6	1.63	0.64
1:A:1305:G:N2	1:A:1331:G:O2'	2.31	0.64
2:B:71:VAL:HG12	2:B:170:GLU:HG2	1.80	0.64
6:F:60:PHE:CZ	18:R:78:LEU:HD21	2.32	0.64
13:M:110:ARG:HH11	13:M:110:ARG:HG3	1.63	0.64
1:A:1060:C:H2'	1:A:1061:G:H8	1.63	0.64
1:A:1123:A:H8	10:J:39:PRO:HD3	1.59	0.64
3:C:155:GLY:CA	3:C:196:LEU:HD22	2.27	0.64
1:A:866:C:H2'	1:A:867:G:O4'	1.97	0.64
1:A:976:G:H5'	1:A:1358:U:O2'	1.98	0.64
1:A:1195:C:H3'	1:A:1196:U:H5'	1.80	0.64
1:A:1291:G:H2'	1:A:1292:U:C6	2.33	0.64
3:C:6:HIS:HD2	3:C:8:ILE:N	1.95	0.64
4:D:64:LEU:HD12	4:D:75:PHE:CE1	2.33	0.64
5:E:91:LEU:HD23	5:E:120:THR:CG2	2.28	0.64
6:F:15:ASP:OD1	6:F:17:SER:HB3	1.98	0.64
10:J:32:ALA:HA	10:J:75:ILE:O	1.97	0.64
17:Q:62:SER:OG	17:Q:72:ARG:HG3	1.98	0.64
19:S:14:HIS:O	19:S:18:LYS:HE3	1.97	0.64
1:A:1127:G:N2	1:A:1146:A:H62	1.95	0.63
1:A:1316:G:H4'	14:N:18:VAL:CG1	2.28	0.63
7:G:12:LEU:H	7:G:12:LEU:HD12	1.64	0.63
13:M:26:GLY:O	13:M:28:ALA:N	2.31	0.63
16:P:8:ARG:HG3	16:P:8:ARG:O	1.97	0.63
17:Q:29:HIS:CD2	17:Q:32:TYR:N	2.60	0.63
18:R:22:VAL:O	18:R:24:ALA:N	2.32	0.63
1:A:445:G:H2'	1:A:446:G:H8	1.63	0.63
3:C:174:PRO:HD2	3:C:203:PHE:HE2	1.63	0.63
4:D:24:GLU:O	4:D:26:CYS:N	2.30	0.63
7:G:17:VAL:HG12	7:G:18:TYR:CD1	2.32	0.63
17:Q:101:ARG:HD3	17:Q:102:GLY:H	1.63	0.63
1:A:434:U:H2'	1:A:435:C:H6	1.63	0.63
1:A:490:G:O2'	1:A:491:G:H5'	1.98	0.63
1:A:627:G:H2'	1:A:628:G:H8	1.62	0.63
1:A:977:A:H2'	1:A:978:A:H5''	1.80	0.63
5:E:101:ILE:O	5:E:120:THR:OG1	2.16	0.63
14:N:23:ARG:NH1	14:N:29:ARG:HA	2.14	0.63
17:Q:12:SER:HB2	17:Q:20:THR:OG1	1.99	0.63
1:A:58:C:O2'	1:A:59:A:H5'	1.99	0.63
1:A:130:A:OP2	1:A:189(F):U:H2'	1.98	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:189(F):U:O2'	17:Q:63:ARG:NH2	2.31	0.63
1:A:417:C:H2'	1:A:418:C:H6	1.64	0.63
1:A:579:G:O2'	15:O:54:ARG:HD2	1.97	0.63
1:A:1103:C:H5''	2:B:98:LEU:CD1	2.28	0.63
1:A:1250:A:H2	1:A:1353:G:H21	1.46	0.63
1:A:1306:A:H62	1:A:1331:G:H1'	1.61	0.63
1:A:1362:C:O2'	1:A:1363:C:H5''	1.97	0.63
2:B:207:ALA:C	2:B:209:ARG:H	2.06	0.63
3:C:113:ALA:HB2	3:C:202:ILE:CD1	2.28	0.63
5:E:80:ILE:HD11	5:E:91:LEU:CB	2.27	0.63
8:H:7:ALA:HB2	8:H:85:ARG:HG3	1.81	0.63
9:I:37:PHE:HB3	9:I:43:ALA:HB2	1.79	0.63
10:J:6:ILE:HD13	10:J:73:ASP:N	2.12	0.63
13:M:55:ARG:NH1	13:M:55:ARG:HB2	2.14	0.63
1:A:369:C:H2'	1:A:370:C:C6	2.33	0.63
1:A:489:C:H2'	1:A:490:G:H8	1.62	0.63
1:A:989:C:H1'	1:A:1016:A:H2	1.63	0.63
2:B:25:ASN:C	2:B:25:ASN:ND2	2.56	0.63
2:B:69:LEU:HD23	2:B:69:LEU:C	2.24	0.63
2:B:101:MET:HG2	2:B:108:ILE:HG21	1.81	0.63
2:B:209:ARG:HH21	2:B:239:VAL:HG11	1.63	0.63
10:J:64:GLU:HG3	10:J:65:LEU:H	1.63	0.63
18:R:33:ASP:OD2	18:R:36:ASN:HB2	1.99	0.63
1:A:1006:C:H2'	1:A:1007:C:C6	2.34	0.63
1:A:1321:C:H5''	13:M:87:TYR:CE2	2.34	0.63
2:B:79:ASP:HA	2:B:82:ARG:HG2	1.80	0.63
2:B:218:ALA:C	2:B:222:ILE:HD12	2.23	0.63
10:J:42:THR:HG23	10:J:67:THR:C	2.24	0.63
12:L:33:ARG:CD	12:L:62:SER:HB3	2.26	0.63
16:P:19:ILE:CG2	16:P:36:ILE:HG13	2.27	0.63
3:C:64:VAL:HB	3:C:99:VAL:CB	2.29	0.63
7:G:4:ARG:HB3	7:G:4:ARG:NH1	2.09	0.63
11:K:44:SER:OG	11:K:45:GLY:N	2.27	0.63
20:T:49:ALA:CB	20:T:99:LEU:HD12	2.29	0.63
1:A:411:A:H1'	1:A:413:G:H1'	1.81	0.63
1:A:955:U:H2'	1:A:956:U:C6	2.33	0.63
4:D:64:LEU:HD12	4:D:75:PHE:HE1	1.63	0.63
8:H:58:TYR:O	8:H:59:LEU:HD23	1.98	0.63
9:I:36:TYR:HD2	9:I:37:PHE:CE2	2.17	0.63
13:M:44:ARG:HG2	13:M:46:LYS:HE3	1.81	0.63
13:M:108:ARG:NH1	13:M:111:LYS:HD3	2.14	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:33:VAL:O	14:N:34:TYR:CD1	2.47	0.63
19:S:80:TYR:CG	19:S:81:ARG:N	2.66	0.63
20:T:51:GLU:O	20:T:55:ILE:HD13	1.99	0.63
20:T:79:ARG:HG2	20:T:83:ARG:HH12	1.64	0.63
1:A:127:G:HO2'	17:Q:2:PRO:N	1.97	0.63
1:A:1069:C:O2'	1:A:1192:C:H1'	1.98	0.63
1:A:1353:G:H2'	1:A:1354:C:C6	2.33	0.63
1:A:1402:C:O2'	1:A:1403:C:H5'	1.99	0.63
4:D:13:ARG:HH21	4:D:40:PRO:HA	1.64	0.63
8:H:92:ARG:HG2	8:H:92:ARG:HH11	1.64	0.63
10:J:50:ILE:HD13	14:N:41:ARG:HE	1.64	0.63
13:M:77:ASN:O	13:M:80:ARG:HB3	1.99	0.63
17:Q:55:ASP:O	17:Q:57:VAL:HG13	1.99	0.63
1:A:951:G:O2'	1:A:952:U:H5'	1.98	0.62
1:A:1040:U:H2'	1:A:1041:A:H8	1.64	0.62
1:A:1329:A:P	13:M:28:ALA:HB3	2.39	0.62
3:C:101:LEU:C	3:C:101:LEU:HD23	2.24	0.62
5:E:41:VAL:O	5:E:67:VAL:HG12	1.98	0.62
7:G:115:ARG:HG3	7:G:118:VAL:CG1	2.29	0.62
10:J:40:LEU:HD13	10:J:41:PRO:CD	2.29	0.62
1:A:256:U:H2'	1:A:257:G:C8	2.35	0.62
1:A:574:A:N3	1:A:883:C:H1'	2.13	0.62
1:A:677:U:H3	1:A:713:G:H22	1.44	0.62
1:A:974:A:C8	14:N:31:ARG:HD3	2.33	0.62
1:A:1113:C:O2'	1:A:1114:C:H5'	1.99	0.62
5:E:18:ARG:HB3	5:E:25:ARG:O	1.99	0.62
6:F:69:GLU:O	6:F:72:VAL:HG23	1.99	0.62
10:J:7:LYS:O	10:J:96:ILE:HG23	1.99	0.62
1:A:436:C:H5''	4:D:156:GLU:OE1	1.99	0.62
1:A:443:C:H2'	1:A:444:C:H6	1.62	0.62
1:A:707:C:H2'	1:A:708:C:H6	1.64	0.62
1:A:1442(A):G:H5''	1:A:1442(B):A:C5'	2.19	0.62
3:C:34:LEU:O	3:C:38:ARG:HG2	1.98	0.62
3:C:195:VAL:O	3:C:196:LEU:HD23	1.98	0.62
4:D:8:VAL:HG13	4:D:9:CYS:N	2.13	0.62
4:D:78:LEU:HA	4:D:81:GLU:HG2	1.81	0.62
4:D:78:LEU:HA	4:D:81:GLU:CG	2.28	0.62
1:A:52:G:H2'	1:A:53:A:C8	2.33	0.62
1:A:384:G:H2'	1:A:385:C:H6	1.63	0.62
2:B:80:ILE:H	2:B:80:ILE:CD1	2.13	0.62
4:D:126:ILE:HG22	4:D:127:THR:N	2.15	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:Q:29:HIS:HD2	17:Q:31:LEU:N	1.95	0.62
1:A:620:C:N1	4:D:135:LEU:HD13	2.14	0.62
1:A:1154:G:O2'	1:A:1155:G:H5'	2.00	0.62
1:A:1190:G:P	3:C:4:LYS:HA	2.40	0.62
1:A:1437:C:H2'	1:A:1438:G:C8	2.34	0.62
2:B:14:GLY:C	2:B:15:VAL:HG22	2.25	0.62
2:B:82:ARG:NH1	2:B:82:ARG:HB2	2.15	0.62
9:I:8:GLY:O	9:I:76:ALA:HB1	2.00	0.62
13:M:8:GLU:C	13:M:9:ILE:HD12	2.25	0.62
13:M:42:ALA:O	13:M:43:THR:C	2.41	0.62
14:N:45:ARG:HG3	14:N:45:ARG:NH1	2.13	0.62
1:A:750:G:H1'	15:O:22:THR:O	2.00	0.62
1:A:943:U:O2'	1:A:944:G:H5'	1.99	0.62
1:A:1497:G:O2'	1:A:1498:U:H5'	2.00	0.62
5:E:40:ARG:HG2	5:E:68:GLU:OE2	1.99	0.62
9:I:125:TYR:CD1	9:I:125:TYR:N	2.68	0.62
19:S:63:THR:HB	19:S:66:MET:HE3	1.81	0.62
20:T:29:LYS:O	20:T:32:ALA:HB3	2.00	0.62
1:A:335:C:H2'	1:A:336:C:H6	1.64	0.62
1:A:436:C:O2'	1:A:437:U:H5'	1.99	0.62
1:A:476:G:H2'	1:A:477:A:H8	1.64	0.62
1:A:524:G:H2'	1:A:525:C:C5	2.34	0.62
1:A:633:G:H2'	1:A:634:C:H6	1.64	0.62
18:R:58:LEU:HD12	18:R:58:LEU:N	2.15	0.62
1:A:723:U:O2	1:A:723:U:H2'	2.00	0.62
1:A:908:A:H2'	1:A:909:A:C8	2.35	0.62
2:B:102:LEU:HD21	2:B:162:ILE:HD12	1.81	0.62
4:D:187:ARG:NH1	4:D:188:LEU:HB2	2.14	0.62
11:K:11:LYS:HB2	11:K:12:ARG:HH21	1.64	0.62
11:K:22:HIS:HB3	11:K:29:ILE:HG13	1.82	0.62
12:L:79:GLU:O	12:L:79:GLU:HG2	2.00	0.62
12:L:85:ILE:HG23	12:L:98:TYR:HB3	1.80	0.62
15:O:71:GLN:HG3	15:O:78:TYR:CE2	2.34	0.62
17:Q:20:THR:HG21	17:Q:41:LYS:HD2	1.82	0.62
1:A:858:G:O2'	1:A:859:A:H5'	2.00	0.62
4:D:162:LEU:O	4:D:162:LEU:HD23	1.99	0.62
4:D:187:ARG:HH12	4:D:188:LEU:HD12	1.65	0.62
12:L:102:ARG:CZ	12:L:110:VAL:HG22	2.29	0.62
1:A:84:U:H2'	1:A:88:A:H8	1.65	0.62
1:A:107:G:C2'	1:A:108:G:H5'	2.29	0.62
1:A:948:C:H3'	13:M:106:ASN:HD22	1.63	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1022:G:H2'	1:A:1023:G:C8	2.35	0.62
1:A:1073:U:H2'	1:A:1074:G:H8	1.65	0.62
1:A:1405:G:O2'	1:A:1519:A:H5'	2.00	0.62
2:B:42:ILE:HG22	2:B:43:ASP:N	2.14	0.62
3:C:27:LYS:HA	3:C:30:ARG:NE	2.15	0.62
3:C:71:ALA:CB	3:C:106:VAL:HB	2.27	0.62
3:C:188:LEU:HD13	3:C:188:LEU:N	2.07	0.62
13:M:25:ILE:HG23	13:M:29:ARG:HB2	1.81	0.62
1:A:436:C:H5''	4:D:156:GLU:CD	2.25	0.61
1:A:505:G:H4'	1:A:534:U:C4	2.34	0.61
1:A:922:G:O2'	1:A:1398:A:N1	2.33	0.61
1:A:1412:C:H2'	1:A:1413:A:H8	1.64	0.61
3:C:24:ALA:HB2	3:C:32:LEU:CD1	2.28	0.61
3:C:136:GLN:O	3:C:139:GLN:HB2	1.99	0.61
6:F:89:MET:HE2	18:R:76:LEU:HG	1.81	0.61
8:H:51:VAL:HG21	8:H:60:ARG:HH21	1.64	0.61
1:A:106:C:O2'	1:A:107:G:H5'	1.99	0.61
1:A:1129:C:H4'	1:A:1130:A:H3'	1.81	0.61
1:A:1321:C:O2'	19:S:77:THR:HG21	2.00	0.61
1:A:1506:U:O2'	1:A:1507:A:H5'	1.99	0.61
4:D:156:GLU:O	4:D:160:GLN:HG3	2.01	0.61
14:N:45:ARG:O	14:N:48:ALA:HB3	2.00	0.61
1:A:521:G:H4'	12:L:73:GLU:HG2	1.82	0.61
1:A:948:C:O2'	1:A:949:A:H5'	2.00	0.61
1:A:1204:A:C2'	1:A:1205:U:H5'	2.30	0.61
3:C:39:ILE:C	3:C:41:GLY:H	2.07	0.61
4:D:24:GLU:C	4:D:26:CYS:N	2.58	0.61
1:A:1260:C:H4'	1:A:1283:G:O2'	2.00	0.61
5:E:105:VAL:HB	5:E:106:PRO:HD3	1.81	0.61
6:F:10:LEU:HD12	6:F:59:TYR:HB3	1.82	0.61
11:K:40:ILE:HG22	11:K:41:THR:N	2.14	0.61
1:A:375:U:H2'	1:A:376:G:H8	1.65	0.61
1:A:828:A:H2'	1:A:829:G:O4'	2.00	0.61
1:A:1268:A:H1'	1:A:1326:C:O2'	2.00	0.61
1:A:1316:G:H2'	1:A:1317:C:H5''	1.82	0.61
1:A:1436:U:H2'	1:A:1437:C:C6	2.35	0.61
12:L:6:THR:N	12:L:9:GLN:HE21	1.98	0.61
17:Q:81:ARG:HG3	17:Q:81:ARG:O	2.00	0.61
1:A:392:G:H2'	1:A:393:A:H8	1.65	0.61
1:A:682:G:O2'	1:A:683:G:H5'	2.00	0.61
2:B:237:ALA:C	2:B:239:VAL:H	2.08	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:8:VAL:O	4:D:10:ARG:N	2.34	0.61
4:D:100:ARG:HH12	4:D:137:SER:HA	1.65	0.61
10:J:61:GLU:OE2	14:N:58:LYS:HE2	2.01	0.61
15:O:6:GLU:H	15:O:6:GLU:CD	2.07	0.61
1:A:132:C:O2'	1:A:133:U:H5'	2.01	0.61
1:A:164:U:O2'	1:A:165:C:H5'	2.01	0.61
1:A:813:U:OP1	1:A:904:C:H5'	2.01	0.61
1:A:989:C:H1'	1:A:1016:A:C2	2.35	0.61
1:A:1112:C:O2	3:C:178:LEU:O	2.19	0.61
1:A:1285:A:O2'	1:A:1286:A:OP2	2.18	0.61
1:A:1353:G:O2'	1:A:1354:C:H5'	2.01	0.61
2:B:80:ILE:HD12	2:B:80:ILE:N	2.14	0.61
4:D:32:ALA:C	4:D:34:GLU:H	2.09	0.61
8:H:97:VAL:HG13	8:H:98:LYS:N	2.12	0.61
12:L:5:PRO:HA	12:L:9:GLN:HE21	1.65	0.61
1:A:412:A:H4'	1:A:413:G:H8	1.66	0.61
2:B:158:LEU:HB3	2:B:182:ILE:HD11	1.81	0.61
4:D:6:GLY:H	4:D:115:ARG:NH2	1.99	0.61
6:F:25:ILE:HD13	6:F:82:ARG:HD2	1.82	0.61
8:H:103:VAL:HG21	8:H:109:ILE:O	2.01	0.61
10:J:65:LEU:HD23	10:J:65:LEU:C	2.25	0.61
16:P:3:LYS:O	16:P:21:VAL:HA	2.01	0.61
16:P:74:LEU:HB3	16:P:79:VAL:HG21	1.81	0.61
1:A:737:A:H1'	6:F:73:ASN:ND2	1.99	0.61
1:A:849:C:O2'	1:A:850:U:H5'	1.99	0.61
1:A:1061:G:H1'	10:J:56:HIS:CE1	2.36	0.61
2:B:7:VAL:CG1	2:B:221:LEU:HD21	2.30	0.61
4:D:190:ASP:H	4:D:193:ASP:HB2	1.65	0.61
5:E:99:GLY:O	5:E:117:ASP:HA	2.00	0.61
7:G:90:GLU:O	7:G:91:VAL:HG23	2.00	0.61
8:H:46:LYS:H	8:H:64:LYS:HD2	1.66	0.61
16:P:53:VAL:C	16:P:55:ARG:H	2.02	0.61
1:A:243:A:C2	1:A:246:A:C8	2.88	0.61
1:A:757:U:H2'	1:A:758:G:O4'	2.00	0.61
2:B:8:LYS:N	2:B:8:LYS:HD2	2.16	0.61
2:B:15:VAL:CB	2:B:210:SER:HB3	2.28	0.61
3:C:187:ALA:HB3	3:C:198:VAL:CG2	2.30	0.61
3:C:188:LEU:O	3:C:188:LEU:HD22	2.01	0.61
1:A:269:C:H2'	1:A:270:A:C8	2.36	0.60
1:A:1123:A:C4'	10:J:37:PRO:HD2	2.30	0.60
3:C:46:GLU:O	3:C:47:LEU:HB2	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:20:TYR:HB3	4:D:26:CYS:CB	2.31	0.60
12:L:40:VAL:O	12:L:40:VAL:HG12	1.99	0.60
17:Q:67:LYS:O	17:Q:68:ARG:HB3	2.01	0.60
1:A:400:C:HO2'	1:A:401:C:H5'	1.65	0.60
1:A:972:C:O3'	10:J:57:LYS:CD	2.49	0.60
1:A:1104:G:H4'	2:B:111:ARG:NE	2.16	0.60
2:B:87:ARG:HH21	2:B:219:VAL:HB	1.66	0.60
3:C:22:TRP:HB3	3:C:59:ARG:HG3	1.83	0.60
4:D:31:CYS:O	4:D:33:MET:N	2.33	0.60
4:D:71:SER:OG	4:D:74:GLN:HG3	2.00	0.60
4:D:162:LEU:HD13	4:D:181:MET:SD	2.40	0.60
11:K:14:VAL:HG21	11:K:40:ILE:CD1	2.31	0.60
16:P:9:PHE:HE2	16:P:18:ARG:HD2	1.66	0.60
16:P:21:VAL:HG21	16:P:59:TRP:CD1	2.36	0.60
1:A:39:G:O2'	1:A:40:C:H5'	2.01	0.60
1:A:411:A:O2'	1:A:412:A:H5'	2.02	0.60
1:A:460:G:H2'	1:A:461:A:H5''	1.81	0.60
1:A:762:C:H5'	17:Q:103:GLY:HA2	1.82	0.60
1:A:1444:C:H2'	1:A:1445:C:H6	1.67	0.60
2:B:109:SER:O	2:B:112:VAL:N	2.34	0.60
2:B:219:VAL:HA	2:B:222:ILE:HD12	1.84	0.60
7:G:18:TYR:OH	7:G:58:PRO:HG3	2.01	0.60
8:H:32:LYS:O	8:H:36:LEU:CD2	2.49	0.60
15:O:39:LEU:O	15:O:42:HIS:HB3	2.01	0.60
17:Q:68:ARG:HG2	17:Q:68:ARG:HH11	1.66	0.60
1:A:19:C:H2'	1:A:20:U:C6	2.32	0.60
1:A:839:U:O2	1:A:839:U:H2'	2.01	0.60
1:A:1063:C:H2'	1:A:1064:G:C8	2.36	0.60
4:D:76:ARG:HD2	4:D:207:TYR:CE2	2.36	0.60
14:N:14:PRO:O	14:N:15:LYS:HB3	2.02	0.60
1:A:244:U:O4	1:A:906:G:H1'	2.02	0.60
1:A:1137:C:H4'	1:A:1138:G:N2	2.15	0.60
3:C:58:GLU:HB2	3:C:65:ALA:HB3	1.83	0.60
3:C:88:ARG:HG2	3:C:88:ARG:O	2.01	0.60
5:E:41:VAL:CG1	5:E:113:ALA:HA	2.32	0.60
6:F:101:ALA:HA	18:R:28:GLU:CB	2.31	0.60
8:H:96:GLY:O	8:H:98:LYS:N	2.34	0.60
10:J:79:ARG:HB2	10:J:80:LYS:NZ	2.17	0.60
14:N:47:LEU:HD23	14:N:47:LEU:N	2.17	0.60
1:A:1095:U:H2'	1:A:1096:C:C6	2.36	0.60
2:B:53:ARG:O	2:B:56:ARG:HB3	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:77:ALA:HB2	2:B:211:ILE:HG21	1.84	0.60
2:B:142:LEU:HD13	2:B:146:GLN:NE2	2.16	0.60
3:C:75:VAL:HG12	3:C:83:ARG:HH12	1.66	0.60
10:J:42:THR:HG21	10:J:66:ARG:HB3	1.82	0.60
10:J:76:ASN:HB3	10:J:78:ASN:ND2	2.16	0.60
1:A:603:U:O2'	1:A:604:G:H5'	2.02	0.60
1:A:956:U:O2'	1:A:957:U:H5'	2.01	0.60
1:A:1333:A:H2'	1:A:1334:G:O4'	2.01	0.60
2:B:130:ARG:HD3	2:B:131:PRO:CD	2.18	0.60
2:B:185:ILE:HD12	2:B:185:ILE:H	1.67	0.60
3:C:131:ARG:O	3:C:134:ILE:HB	2.00	0.60
4:D:93:PHE:O	4:D:97:LEU:HB2	2.00	0.60
14:N:26:ARG:CZ	14:N:47:LEU:HD21	2.31	0.60
16:P:1:MET:HE1	16:P:3:LYS:CE	2.32	0.60
19:S:10:PHE:O	19:S:11:VAL:HG23	2.02	0.60
1:A:974:A:OP1	14:N:31:ARG:HG2	2.01	0.60
1:A:1399:C:C2	1:A:1502:A:N6	2.70	0.60
1:A:1493:A:OP2	24:A:3001:PAR:H51	2.02	0.60
3:C:70:VAL:HG12	3:C:72:LYS:N	2.05	0.60
4:D:101:LEU:HD23	4:D:121:VAL:HG13	1.84	0.60
5:E:87:SER:HB3	5:E:131:ILE:CD1	2.27	0.60
10:J:64:GLU:O	10:J:65:LEU:CB	2.49	0.60
12:L:75:HIS:CE1	12:L:77:LEU:H	2.19	0.60
1:A:1342:C:O2'	9:I:124:GLN:CB	2.50	0.60
7:G:77:SER:O	7:G:78:ARG:HB2	2.02	0.60
9:I:34:ASN:HD22	9:I:34:ASN:H	1.50	0.60
1:A:193:C:H2'	1:A:194:C:H6	1.67	0.60
1:A:400:C:O2'	1:A:401:C:H5'	2.02	0.60
1:A:411:A:C1'	1:A:413:G:H1'	2.32	0.60
1:A:908:A:H2'	1:A:909:A:H8	1.66	0.60
1:A:992:U:H5''	1:A:993:G:OP1	2.01	0.60
3:C:114:PRO:O	3:C:118:GLN:HB2	2.02	0.60
9:I:9:ARG:HG2	9:I:14:VAL:HG12	1.83	0.60
12:L:53:ARG:HH11	12:L:93:LEU:HD21	1.66	0.60
17:Q:48:GLU:C	17:Q:50:LYS:H	2.09	0.60
19:S:51:VAL:O	19:S:58:VAL:HG22	2.02	0.60
20:T:55:ILE:H	20:T:55:ILE:CD1	2.15	0.60
1:A:344:A:OP2	1:A:345:C:H5	1.85	0.59
1:A:542:G:O2'	1:A:543:C:H5'	2.00	0.59
1:A:667:G:C4'	15:O:51:HIS:ND1	2.64	0.59
1:A:832:C:O2'	1:A:833:U:H5'	2.01	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:952:U:H2'	1:A:953:G:C8	2.37	0.59
1:A:1044:A:H2'	1:A:1045:C:O4'	2.02	0.59
1:A:1381:U:O2'	1:A:1382:C:H5'	2.01	0.59
3:C:123:GLN:O	3:C:128:PHE:HB2	2.02	0.59
8:H:85:ARG:NE	8:H:87:SER:O	2.35	0.59
10:J:40:LEU:HD13	10:J:41:PRO:HD2	1.83	0.59
12:L:11:VAL:HG12	12:L:12:ARG:N	2.16	0.59
15:O:45:VAL:HG12	15:O:46:HIS:H	1.66	0.59
19:S:31:ILE:HG22	19:S:32:LYS:N	2.11	0.59
1:A:1125:U:OP2	1:A:1145:C:N4	2.35	0.59
1:A:1134:G:O2'	1:A:1135:U:H5'	2.01	0.59
7:G:62:PHE:C	7:G:64:GLN:H	2.10	0.59
10:J:38:ILE:HG21	10:J:71:LEU:HD12	1.83	0.59
10:J:40:LEU:HD12	10:J:69:ASN:CB	2.29	0.59
10:J:50:ILE:H	10:J:50:ILE:CD1	2.00	0.59
14:N:26:ARG:HH12	14:N:47:LEU:CD2	2.14	0.59
17:Q:87:LYS:O	17:Q:91:ARG:HB2	2.02	0.59
20:T:73:HIS:O	20:T:76:ALA:HB3	2.03	0.59
1:A:537:G:H2'	1:A:538:G:C8	2.37	0.59
1:A:1191:A:H2'	1:A:1192:C:C6	2.36	0.59
2:B:91:PRO:HG3	2:B:154:LEU:CB	2.21	0.59
3:C:111:LEU:N	3:C:111:LEU:HD23	2.17	0.59
8:H:46:LYS:HG3	8:H:64:LYS:HB3	1.84	0.59
8:H:121:ASP:HB2	8:H:125:ARG:NH2	2.17	0.59
13:M:25:ILE:CD1	13:M:66:LEU:HD21	2.32	0.59
1:A:328:C:O2	1:A:328:C:H2'	2.01	0.59
1:A:627:G:H2'	1:A:628:G:C8	2.37	0.59
1:A:838:G:H2'	1:A:839:U:H5''	1.84	0.59
1:A:1293:G:H2'	1:A:1294:G:C8	2.37	0.59
1:A:1298:C:H4'	1:A:1299:A:O5'	2.03	0.59
2:B:142:LEU:HD13	2:B:146:GLN:HE21	1.68	0.59
8:H:45:ILE:O	8:H:46:LYS:C	2.46	0.59
10:J:16:LEU:HD21	10:J:94:VAL:HG11	1.83	0.59
1:A:287:U:O2'	1:A:288:A:H5'	2.03	0.59
1:A:479:C:O2'	1:A:480:U:H5'	2.03	0.59
1:A:939:G:H2'	1:A:940:C:C6	2.38	0.59
1:A:1126:U:H2'	1:A:1127:G:C8	2.38	0.59
1:A:1205:U:H2'	1:A:1206:G:C8	2.37	0.59
1:A:1402:C:H2'	1:A:1403:C:C6	2.31	0.59
8:H:136:GLU:O	8:H:137:VAL:CG2	2.49	0.59
10:J:83:GLU:HA	10:J:86:MET:SD	2.43	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:175:C:O2'	1:A:176:C:H5'	2.03	0.59
1:A:882:C:O2'	1:A:883:C:H5'	2.03	0.59
1:A:1107:C:H2'	1:A:1108:G:H5'	1.84	0.59
1:A:1231:G:H4'	9:I:126:SER:HB3	1.84	0.59
3:C:139:GLN:HA	3:C:139:GLN:HE21	1.67	0.59
4:D:161:ASN:HD22	4:D:162:LEU:H	1.47	0.59
7:G:118:VAL:O	7:G:119:ARG:C	2.46	0.59
8:H:91:ARG:HG3	8:H:91:ARG:NH1	2.18	0.59
11:K:91:ARG:O	11:K:95:ILE:HG13	2.02	0.59
16:P:81:ARG:HG3	16:P:83:GLU:HG2	1.83	0.59
19:S:69:HIS:HB3	19:S:74:PHE:HE1	1.65	0.59
1:A:22:G:H2'	1:A:23:C:H6	1.66	0.59
1:A:1013:G:N2	1:A:1015:A:H3'	2.18	0.59
1:A:1256:A:H5'	1:A:1258:G:H1'	1.83	0.59
2:B:115:LEU:HD23	2:B:153:ARG:NH1	2.18	0.59
4:D:104:VAL:HG21	4:D:140:VAL:HG21	1.84	0.59
4:D:134:ASP:O	4:D:136:PRO:HD3	2.02	0.59
10:J:7:LYS:HE3	10:J:9:ARG:NH2	2.17	0.59
20:T:82:SER:O	20:T:86:ARG:HG3	2.01	0.59
1:A:300:A:H2'	1:A:301:G:O4'	2.03	0.59
1:A:1001:A:H2	1:A:1001(A):G:N7	2.00	0.59
1:A:1007:C:H42	1:A:1022:G:H22	1.49	0.59
2:B:92:TYR:O	2:B:151:GLY:O	2.20	0.59
2:B:186:ALA:HB3	2:B:197:VAL:HG11	1.85	0.59
3:C:91:LEU:HD21	3:C:99:VAL:N	2.08	0.59
17:Q:68:ARG:O	17:Q:69:LYS:HB2	2.03	0.59
1:A:154:C:H2'	1:A:155:C:C6	2.36	0.59
1:A:1120:G:H2'	1:A:1121:U:C6	2.37	0.59
2:B:61:LEU:HD21	2:B:160:ASP:HB2	1.85	0.59
4:D:90:GLY:CA	4:D:204:ILE:HD11	2.32	0.59
9:I:102:LEU:H	9:I:102:LEU:HD12	1.68	0.59
10:J:50:ILE:HA	10:J:60:ARG:HA	1.85	0.59
13:M:4:ILE:HG22	13:M:5:ALA:N	2.17	0.59
13:M:90:LEU:HA	13:M:93:ARG:HG3	1.85	0.59
2:B:114:ARG:O	2:B:115:LEU:C	2.46	0.59
3:C:139:GLN:O	3:C:143:GLU:N	2.34	0.59
8:H:63:LEU:HD22	8:H:63:LEU:H	1.68	0.59
8:H:116:LYS:HD3	8:H:127:LEU:HD12	1.84	0.59
10:J:77:PRO:HA	10:J:82:ILE:HG23	1.85	0.59
13:M:97:PRO:HB2	13:M:101:GLN:OE1	2.03	0.59
1:A:131:C:H2'	1:A:132:C:C6	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:592:G:O2'	1:A:593:G:H5'	2.02	0.58
1:A:926:G:O6	1:A:1542:U:OP2	2.21	0.58
1:A:1016:A:H2'	1:A:1017:G:O4'	2.03	0.58
1:A:1123:A:H1'	10:J:37:PRO:HG2	1.85	0.58
5:E:77:PRO:O	5:E:78:HIS:CB	2.52	0.58
5:E:79:GLU:CD	5:E:79:GLU:H	2.11	0.58
5:E:152:ARG:HG2	8:H:43:GLY:C	2.28	0.58
6:F:21:LEU:O	6:F:25:ILE:HG13	2.03	0.58
18:R:55:ARG:NH1	18:R:55:ARG:HB3	2.18	0.58
1:A:179:A:H2'	1:A:180:U:H6	1.65	0.58
1:A:376:G:OP2	16:P:67:THR:HG21	2.03	0.58
1:A:377:G:C2	1:A:387:U:O2	2.57	0.58
1:A:1407:C:O2'	1:A:1408:A:H5'	2.03	0.58
1:A:1510:U:H2'	1:A:1511:G:C8	2.38	0.58
3:C:83:ARG:C	3:C:85:ARG:H	2.11	0.58
5:E:35:GLY:HA3	5:E:41:VAL:HG12	1.85	0.58
7:G:113:GLU:HB2	7:G:118:VAL:CG1	2.33	0.58
12:L:83:VAL:HG21	12:L:100:ILE:HD11	1.83	0.58
12:L:115:LYS:O	12:L:117:ARG:N	2.36	0.58
20:T:43:LEU:HD12	20:T:52:ALA:HA	1.85	0.58
20:T:84:LEU:O	20:T:88:VAL:HG23	2.02	0.58
1:A:389:A:H2'	1:A:390:C:O4'	2.03	0.58
1:A:701:C:OP1	1:A:703:G:H5'	2.03	0.58
1:A:1002:G:N3	1:A:1003:G:H1'	2.18	0.58
1:A:1228:C:H2'	1:A:1229:A:H8	1.68	0.58
1:A:1257:U:H5'	1:A:1258:G:OP1	2.03	0.58
2:B:32:ILE:HG21	2:B:40:HIS:HD2	1.68	0.58
15:O:88:ARG:HB3	15:O:88:ARG:HH11	1.69	0.58
19:S:30:LEU:HD23	19:S:30:LEU:C	2.28	0.58
19:S:69:HIS:HB3	19:S:73:GLU:OE1	2.02	0.58
1:A:132:C:H2'	1:A:133:U:H6	1.68	0.58
1:A:382:A:C2	1:A:383:A:C4	2.91	0.58
1:A:664:G:H22	1:A:741:G:H1	1.49	0.58
2:B:198:ASP:OD1	2:B:198:ASP:N	2.37	0.58
3:C:59:ARG:H	10:J:92:THR:CG2	2.17	0.58
5:E:94:ALA:HB1	5:E:98:THR:HG21	1.86	0.58
7:G:77:SER:HA	7:G:85:TYR:O	2.03	0.58
10:J:59:SER:O	10:J:60:ARG:HB2	2.03	0.58
12:L:97:ARG:HG3	12:L:98:TYR:CD1	2.38	0.58
12:L:104:VAL:O	12:L:105:TYR:HB2	2.03	0.58
14:N:32:SER:OG	14:N:41:ARG:HG2	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:U:2:GLY:O	21:U:4:GLY:N	2.36	0.58
1:A:1182:G:H5'	1:A:1184:G:C5'	2.29	0.58
1:A:1316:G:N2	1:A:1318:A:H3'	2.19	0.58
3:C:113:ALA:HA	3:C:116:VAL:HB	1.86	0.58
4:D:162:LEU:HD13	4:D:181:MET:CE	2.33	0.58
5:E:48:ALA:HB1	5:E:49:PRO:CD	2.34	0.58
10:J:50:ILE:HD12	10:J:50:ILE:N	2.06	0.58
14:N:53:LEU:HB3	14:N:56:VAL:HG21	1.86	0.58
17:Q:29:HIS:HD2	17:Q:32:TYR:N	1.99	0.58
1:A:397:A:H5'	1:A:398:C:OP1	2.03	0.58
1:A:1077:G:N2	1:A:1079:G:H3'	2.18	0.58
2:B:177:ALA:O	2:B:180:LEU:N	2.30	0.58
3:C:10:PHE:CZ	3:C:178:LEU:HD13	2.38	0.58
6:F:50:TYR:CE2	18:R:77:GLY:HA2	2.39	0.58
6:F:98:LEU:HD12	6:F:98:LEU:N	2.18	0.58
7:G:75:VAL:HB	7:G:86:GLN:HB3	1.86	0.58
14:N:37:PHE:O	14:N:39:LEU:HG	2.04	0.58
1:A:392:G:H2'	1:A:393:A:C8	2.38	0.58
1:A:626:U:O2'	1:A:627:G:H5'	2.03	0.58
1:A:957:U:H2'	1:A:959:A:OP2	2.02	0.58
2:B:214:ILE:O	2:B:215:LEU:C	2.45	0.58
3:C:29:TYR:C	3:C:31:HIS:H	2.12	0.58
6:F:18:GLN:HE21	6:F:19:LEU:H	1.50	0.58
6:F:91:VAL:O	6:F:91:VAL:HG13	2.04	0.58
10:J:60:ARG:O	10:J:61:GLU:HB3	2.04	0.58
11:K:34:ASP:O	11:K:36:ASP:N	2.37	0.58
12:L:60:LEU:HD23	12:L:64:TYR:C	2.29	0.58
18:R:88:LYS:OXT	18:R:88:LYS:HG2	2.02	0.58
20:T:45:GLN:C	20:T:47:GLY:H	2.12	0.58
1:A:35:G:H21	12:L:118:SER:HB3	1.68	0.58
1:A:1115:C:O2'	1:A:1116:C:H5'	2.04	0.58
1:A:1311:G:O6	19:S:2:PRO:HB2	2.04	0.58
3:C:51:GLY:O	3:C:52:LEU:HB3	2.04	0.58
4:D:154:ASN:HD22	4:D:155:LEU:N	2.01	0.58
6:F:19:LEU:C	6:F:19:LEU:HD23	2.28	0.58
7:G:138:LYS:HD3	7:G:138:LYS:C	2.29	0.58
10:J:7:LYS:C	10:J:8:LEU:HD12	2.28	0.58
11:K:48:ILE:HD11	11:K:63:LEU:C	2.29	0.58
13:M:107:ALA:O	13:M:111:LYS:HB2	2.03	0.58
20:T:96:GLY:O	20:T:97:ALA:HB3	2.03	0.58
1:A:455:C:H42	1:A:476:G:H1	1.50	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1293:G:H2'	1:A:1294:G:H8	1.68	0.58
1:A:1347:G:C8	9:I:107:ARG:HB3	2.38	0.58
1:A:1520:G:O2'	1:A:1521:G:H5'	2.04	0.58
4:D:177:ASP:OD1	4:D:179:GLU:HG2	2.04	0.58
7:G:70:LYS:HE2	7:G:96:GLN:OE1	2.03	0.58
10:J:40:LEU:HD22	10:J:41:PRO:HD2	1.85	0.58
12:L:25:PRO:C	12:L:27:LEU:H	2.11	0.58
21:U:5:ASP:O	21:U:11:GLY:HA3	2.04	0.58
1:A:335:C:H2'	1:A:336:C:C6	2.39	0.58
1:A:429:U:H2'	4:D:25:ARG:NH1	2.18	0.58
1:A:1055:A:C2	1:A:1056:U:H1'	2.39	0.58
1:A:1392:G:N2	1:A:1502:A:H8	2.01	0.58
2:B:18:GLY:HA3	2:B:41:ILE:HA	1.86	0.58
2:B:187:LEU:HD11	2:B:204:ASN:O	2.03	0.58
3:C:33:LEU:HD23	3:C:34:LEU:H	1.68	0.58
5:E:92:LYS:HB3	5:E:119:LEU:HB2	1.85	0.58
9:I:33:PHE:C	9:I:35:GLU:N	2.61	0.58
10:J:8:LEU:HD12	10:J:8:LEU:N	2.19	0.58
14:N:29:ARG:HH12	14:N:40:CYS:CB	2.17	0.58
1:A:80:G:C3'	1:A:81:U:H5''	2.33	0.57
1:A:99:U:H2'	1:A:100:C:C6	2.39	0.57
1:A:279:A:H5'	1:A:281:G:O4'	2.03	0.57
1:A:1276:G:C2'	1:A:1277:C:H5'	2.34	0.57
1:A:1305:G:H5'	21:U:4:GLY:HA3	1.85	0.57
3:C:179:ARG:O	3:C:179:ARG:HG2	2.04	0.57
4:D:59:ARG:HA	4:D:59:ARG:CZ	2.33	0.57
4:D:80:GLU:O	4:D:84:LYS:HG3	2.04	0.57
5:E:115:VAL:HG11	5:E:118:ILE:CD1	2.33	0.57
8:H:104:ARG:O	8:H:106:GLY:N	2.37	0.57
10:J:57:LYS:HB2	10:J:60:ARG:HH12	1.68	0.57
12:L:117:ARG:HD2	12:L:122:THR:O	2.03	0.57
19:S:11:VAL:HG13	19:S:15:LEU:HD21	1.85	0.57
1:A:164:U:H2'	1:A:165:C:H6	1.68	0.57
1:A:1205:U:H4'	3:C:195:VAL:HG21	1.86	0.57
1:A:1497:G:C2'	1:A:1498:U:H5'	2.34	0.57
2:B:106:LYS:O	2:B:109:SER:HB2	2.05	0.57
3:C:128:PHE:HD2	3:C:133:ALA:HB2	1.68	0.57
3:C:139:GLN:HE21	3:C:139:GLN:CA	2.17	0.57
8:H:112:LEU:N	8:H:112:LEU:CD1	2.67	0.57
16:P:12:LYS:O	16:P:13:HIS:HB2	2.03	0.57
19:S:36:ARG:HB2	19:S:72:GLY:CA	2.33	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:113:G:H2'	1:A:114:U:C6	2.39	0.57
1:A:781:A:H2'	1:A:782:A:H5'	1.87	0.57
2:B:52:GLU:CG	2:B:56:ARG:HH22	2.17	0.57
5:E:144:THR:O	5:E:145:LYS:C	2.48	0.57
13:M:16:ASP:OD1	13:M:17:VAL:HG23	2.04	0.57
15:O:41:GLU:HA	15:O:44:LYS:CG	2.34	0.57
17:Q:23:VAL:O	17:Q:24:GLU:HB3	2.04	0.57
1:A:919:A:O2'	1:A:920:U:H5'	2.05	0.57
1:A:1119:C:O2'	1:A:1120:G:H5'	2.04	0.57
3:C:39:ILE:C	3:C:41:GLY:N	2.60	0.57
3:C:139:GLN:HA	3:C:139:GLN:NE2	2.19	0.57
4:D:101:LEU:HD23	4:D:121:VAL:CG1	2.34	0.57
17:Q:22:LEU:HD13	17:Q:23:VAL:N	2.19	0.57
19:S:38:SER:OG	19:S:71:LEU:HD12	2.04	0.57
1:A:1342:C:O2'	1:A:1343:G:H5'	2.04	0.57
3:C:177:THR:HG23	3:C:177:THR:O	2.03	0.57
4:D:114:ARG:HH11	4:D:114:ARG:HB2	1.69	0.57
4:D:190:ASP:N	4:D:193:ASP:HB2	2.20	0.57
12:L:76:ASN:ND2	12:L:108:ALA:HB3	2.11	0.57
15:O:4:THR:OG1	15:O:6:GLU:HG2	2.04	0.57
17:Q:12:SER:HB2	17:Q:20:THR:CB	2.33	0.57
1:A:539:A:H2'	1:A:540:G:C8	2.40	0.57
1:A:1151:A:O2'	1:A:1152:A:H5''	2.04	0.57
1:A:1277:C:C2'	1:A:1278:U:H5''	2.32	0.57
2:B:115:LEU:HD11	2:B:146:GLN:HG2	1.86	0.57
3:C:6:HIS:CD2	3:C:8:ILE:HB	2.39	0.57
3:C:128:PHE:CD2	3:C:133:ALA:HB2	2.40	0.57
5:E:13:ILE:HA	5:E:29:GLY:O	2.05	0.57
5:E:74:GLY:CA	5:E:116:THR:HG22	2.30	0.57
9:I:8:GLY:HA2	9:I:79:LEU:CD1	2.35	0.57
9:I:17:VAL:HG13	9:I:63:ILE:HG12	1.86	0.57
17:Q:74:LEU:C	17:Q:74:LEU:HD13	2.29	0.57
1:A:264:U:O2'	17:Q:64:PRO:HB2	2.04	0.57
1:A:445:G:H2'	1:A:446:G:C8	2.39	0.57
1:A:481:G:HO2'	1:A:483:C:N4	2.00	0.57
1:A:582:U:OP1	15:O:64:ARG:NH2	2.38	0.57
1:A:962:C:H2'	1:A:963:G:O4'	2.04	0.57
1:A:1230:C:O2'	13:M:126:LYS:HE2	2.05	0.57
1:A:1277:C:H6	1:A:1278:U:H5'	1.70	0.57
1:A:1371:G:O2'	1:A:1372:U:H5'	2.05	0.57
1:A:1521:G:H2'	1:A:1522:U:H6	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:212:GLN:O	2:B:213:LEU:C	2.48	0.57
3:C:35:GLU:O	3:C:38:ARG:N	2.37	0.57
5:E:36:ASP:OD2	5:E:40:ARG:HD3	2.04	0.57
8:H:14:ARG:HB3	8:H:14:ARG:HH11	1.69	0.57
9:I:48:GLU:H	9:I:49:PRO:HD2	1.69	0.57
10:J:13:HIS:CD2	10:J:13:HIS:C	2.82	0.57
10:J:50:ILE:CB	14:N:41:ARG:HH21	2.14	0.57
11:K:126:ARG:C	11:K:128:ALA:N	2.61	0.57
15:O:71:GLN:HB2	15:O:78:TYR:CD1	2.39	0.57
1:A:247:G:OP2	17:Q:100:LYS:HG3	2.04	0.57
1:A:253:U:H2'	1:A:254:G:C8	2.40	0.57
1:A:253:U:H2'	1:A:254:G:H8	1.68	0.57
1:A:281:G:O2'	1:A:282:A:P	2.62	0.57
1:A:291:C:O2'	1:A:292:G:H5'	2.05	0.57
1:A:545:C:O2'	1:A:546:G:H5'	2.05	0.57
1:A:980:C:H2'	1:A:981:U:O4'	2.05	0.57
1:A:1307:U:H2'	1:A:1308:U:C6	2.40	0.57
4:D:91:SER:OG	4:D:92:VAL:N	2.37	0.57
4:D:127:THR:O	4:D:128:VAL:HG23	2.04	0.57
10:J:35:SER:HB2	10:J:73:ASP:HB2	1.87	0.57
14:N:10:ALA:C	14:N:12:ARG:H	2.11	0.57
15:O:78:TYR:CD1	15:O:82:ILE:HD11	2.39	0.57
1:A:21:G:C2	1:A:22:G:C5	2.93	0.57
1:A:185:A:H2'	1:A:186:C:H6	1.69	0.57
1:A:1231:G:H4'	9:I:126:SER:CB	2.35	0.57
3:C:203:PHE:HD1	3:C:204:LEU:N	2.01	0.57
4:D:145:GLU:C	4:D:146:ILE:HD12	2.29	0.57
8:H:55:GLY:O	8:H:56:LYS:HD2	2.05	0.57
13:M:40:ASN:HD22	13:M:41:PRO:HD2	1.70	0.57
14:N:47:LEU:HA	14:N:50:LYS:HB3	1.86	0.57
17:Q:23:VAL:HG12	17:Q:24:GLU:H	1.68	0.57
2:B:91:PRO:HG2	2:B:155:LEU:HD23	1.86	0.57
4:D:83:SER:HA	4:D:89:THR:CG2	2.34	0.57
9:I:34:ASN:N	9:I:34:ASN:ND2	2.52	0.57
11:K:50:TYR:HB3	11:K:54:ARG:HB2	1.86	0.57
15:O:4:THR:HB	15:O:6:GLU:OE2	2.04	0.57
16:P:8:ARG:HB3	16:P:28:ARG:NH1	2.19	0.57
19:S:5:LEU:O	19:S:6:LYS:HB2	2.04	0.57
1:A:91:C:H2'	1:A:92:C:H6	1.69	0.56
1:A:246:A:N6	1:A:281:G:H1'	2.20	0.56
1:A:1151:A:H5'	10:J:41:PRO:CA	2.28	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1311:G:N1	1:A:1326:C:H5	2.02	0.56
1:A:1354:C:H2'	1:A:1355:G:H8	1.69	0.56
4:D:202:LEU:HD23	4:D:205:GLU:OE2	2.04	0.56
7:G:42:ILE:HG22	7:G:120:ILE:CD1	2.34	0.56
15:O:57:LEU:H	15:O:57:LEU:CD1	2.14	0.56
16:P:53:VAL:C	16:P:55:ARG:N	2.59	0.56
1:A:1030(C):G:H2'	1:A:1030(D):A:C8	2.40	0.56
1:A:1339:A:H2'	1:A:1340:A:O4'	2.06	0.56
4:D:20:TYR:O	4:D:26:CYS:SG	2.62	0.56
4:D:209:ARG:HG2	4:D:209:ARG:HH11	1.70	0.56
5:E:36:ASP:OD2	5:E:40:ARG:HB2	2.04	0.56
9:I:85:LEU:HD12	9:I:85:LEU:O	2.04	0.56
18:R:39:VAL:CG1	18:R:40:LEU:N	2.68	0.56
1:A:13:U:C5	1:A:916:G:O6	2.59	0.56
1:A:332:G:H2'	1:A:333:G:H8	1.70	0.56
1:A:590:C:O2'	1:A:591:U:H5'	2.05	0.56
1:A:669:U:H2'	1:A:670:G:C8	2.40	0.56
1:A:946:A:H2'	1:A:947:G:H8	1.68	0.56
1:A:994:A:H2'	1:A:994:A:N3	2.19	0.56
1:A:1203:C:O2'	1:A:1204:A:H5'	2.06	0.56
1:A:1253:G:OP1	10:J:44:VAL:HG11	2.05	0.56
1:A:1272:G:H2'	1:A:1273:G:O4'	2.04	0.56
1:A:1413:A:H2	1:A:1487:G:H22	1.53	0.56
2:B:98:LEU:HB2	2:B:101:MET:HG3	1.86	0.56
3:C:50:ALA:O	3:C:72:LYS:HB2	2.05	0.56
3:C:92:ALA:C	3:C:94:LEU:H	2.11	0.56
3:C:113:ALA:HB2	3:C:202:ILE:HD11	1.88	0.56
4:D:176:LEU:HA	4:D:183:GLY:HA2	1.86	0.56
5:E:72:GLN:O	5:E:73:ASN:HB3	2.04	0.56
5:E:83:GLU:O	5:E:87:SER:O	2.24	0.56
9:I:20:ARG:HD2	9:I:20:ARG:N	2.20	0.56
9:I:36:TYR:CD2	9:I:37:PHE:CE2	2.93	0.56
10:J:3:LYS:HG2	10:J:75:ILE:HG23	1.86	0.56
11:K:34:ASP:HB2	11:K:35:PRO:HD2	1.88	0.56
11:K:120:ARG:HG2	11:K:120:ARG:NH1	2.17	0.56
12:L:89:ARG:HH22	12:L:97:ARG:HH11	1.53	0.56
13:M:11:ARG:O	13:M:12:ASN:HB2	2.04	0.56
17:Q:27:PHE:CE1	17:Q:36:ILE:HD11	2.41	0.56
23:Y:36:C:O2	23:Y:36:C:C2'	2.54	0.56
1:A:258:G:H2'	1:A:259:G:H8	1.71	0.56
1:A:461:A:O2'	1:A:470:C:H5'	2.04	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:477:A:O2'	1:A:479:C:H5'	2.06	0.56
1:A:1150:U:O2	1:A:1150:U:H2'	2.06	0.56
1:A:1158:C:H5''	2:B:133:LYS:HZ3	1.71	0.56
1:A:1237:C:H3'	1:A:1238:A:H5'	1.86	0.56
1:A:1481:U:O2'	1:A:1482:G:H5'	2.05	0.56
3:C:9:GLY:HA3	14:N:49:HIS:CB	2.34	0.56
5:E:144:THR:HG22	5:E:145:LYS:N	2.20	0.56
9:I:79:LEU:C	9:I:83:ARG:HG3	2.31	0.56
13:M:125:ARG:HD2	13:M:125:ARG:C	2.29	0.56
1:A:1189:C:H5''	3:C:5:ILE:HG21	1.87	0.56
2:B:215:LEU:O	2:B:218:ALA:HB3	2.06	0.56
3:C:22:TRP:HB3	3:C:59:ARG:HB2	1.88	0.56
6:F:76:ALA:O	6:F:80:ARG:HG3	2.04	0.56
6:F:80:ARG:HG2	6:F:80:ARG:HH11	1.70	0.56
9:I:5:TYR:HA	9:I:17:VAL:O	2.05	0.56
9:I:55:ALA:CA	9:I:58:ARG:HB2	2.34	0.56
10:J:4:ILE:HD11	10:J:74:ILE:HD12	1.86	0.56
12:L:26:ALA:O	12:L:27:LEU:O	2.23	0.56
13:M:84:ILE:C	13:M:86:CYS:H	2.14	0.56
14:N:42:ILE:O	14:N:45:ARG:HB3	2.06	0.56
17:Q:74:LEU:CD1	17:Q:75:ARG:HD3	2.35	0.56
1:A:1143:G:H2'	1:A:1144:G:C8	2.41	0.56
1:A:1173:G:H2'	1:A:1174:G:O4'	2.05	0.56
1:A:1427:U:H2'	1:A:1428:A:H8	1.70	0.56
2:B:69:LEU:HD12	2:B:155:LEU:HD11	1.87	0.56
3:C:6:HIS:CD2	3:C:6:HIS:C	2.83	0.56
4:D:108:LEU:HD12	4:D:176:LEU:HD13	1.86	0.56
5:E:107:ARG:HG2	5:E:108:ALA:N	2.20	0.56
10:J:61:GLU:OE1	14:N:45:ARG:NH1	2.37	0.56
13:M:22:ILE:HG21	13:M:66:LEU:HD23	1.87	0.56
14:N:37:PHE:HB3	14:N:39:LEU:CD1	2.35	0.56
15:O:2:PRO:O	15:O:3:ILE:HG23	2.06	0.56
18:R:53:ARG:C	18:R:55:ARG:H	2.14	0.56
1:A:736:C:H2'	1:A:737:A:C8	2.40	0.56
1:A:812:C:O2'	1:A:813:U:OP2	2.23	0.56
4:D:90:GLY:N	4:D:204:ILE:HD11	2.21	0.56
9:I:10:ARG:O	9:I:11:LYS:C	2.47	0.56
9:I:28:VAL:HG21	9:I:33:PHE:HD1	1.69	0.56
9:I:80:GLY:O	9:I:82:ALA:N	2.38	0.56
11:K:17:GLY:O	11:K:80:VAL:HA	2.05	0.56
12:L:18:VAL:HG12	12:L:19:ARG:N	2.19	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:78:TYR:O	15:O:79:ARG:C	2.48	0.56
1:A:1329:A:O2'	1:A:1330:U:H5'	2.06	0.56
1:A:1493:A:H8	22:X:2:G:H1'	1.71	0.56
2:B:8:LYS:O	2:B:9:GLU:HB2	2.06	0.56
2:B:82:ARG:NH1	2:B:92:TYR:OH	2.37	0.56
4:D:36:ARG:HG3	4:D:38:TYR:CE1	2.40	0.56
5:E:79:GLU:HB3	5:E:91:LEU:O	2.06	0.56
5:E:131:ILE:HG22	5:E:132:ALA:N	2.19	0.56
7:G:21:VAL:HG23	7:G:22:LEU:N	2.21	0.56
7:G:45:ASP:O	7:G:49:ILE:HG13	2.06	0.56
7:G:115:ARG:O	7:G:118:VAL:CG1	2.53	0.56
9:I:66:ARG:HH11	9:I:66:ARG:HG3	1.71	0.56
1:A:235:C:C5'	17:Q:70:ARG:HD3	2.34	0.56
1:A:272:C:O2'	1:A:273:A:H5'	2.06	0.56
1:A:540:G:H2'	1:A:541:G:H8	1.64	0.56
1:A:1195:C:H3'	1:A:1196:U:H5''	1.85	0.56
2:B:219:VAL:HA	2:B:222:ILE:HB	1.88	0.56
3:C:156:ARG:HH21	3:C:161:GLU:HA	1.70	0.56
7:G:92:SER:O	7:G:96:GLN:HB2	2.06	0.56
8:H:33:GLU:CA	8:H:36:LEU:HD21	2.35	0.56
9:I:48:GLU:N	9:I:49:PRO:CD	2.68	0.56
11:K:17:GLY:HA3	11:K:77:MET:HE1	1.88	0.56
11:K:41:THR:HG21	11:K:71:LYS:HB3	1.88	0.56
12:L:28:LYS:O	12:L:30:ALA:N	2.39	0.56
12:L:78:GLN:NE2	12:L:78:GLN:H	2.03	0.56
18:R:34:TYR:H	18:R:34:TYR:HD2	1.53	0.56
20:T:58:LYS:O	20:T:59:ALA:C	2.49	0.56
1:A:426:G:P	4:D:36:ARG:HH21	2.29	0.56
1:A:514:C:O2'	1:A:515:G:H5'	2.06	0.56
1:A:522:C:H41	12:L:53:ARG:NH2	2.03	0.56
1:A:586:C:O2'	1:A:587:G:H5'	2.05	0.56
1:A:973:G:H3'	1:A:974:A:H5''	1.87	0.56
1:A:1014:A:H2	1:A:1219:U:H1'	1.68	0.56
1:A:1429:C:H2'	1:A:1430:C:C6	2.41	0.56
5:E:101:ILE:HB	5:E:119:LEU:HD23	1.88	0.56
8:H:123:GLU:O	8:H:127:LEU:HD23	2.05	0.56
10:J:38:ILE:HB	10:J:71:LEU:HB2	1.87	0.56
15:O:33:THR:HG23	15:O:63:ARG:NH1	2.20	0.56
15:O:39:LEU:HD13	15:O:56:LEU:HD13	1.88	0.56
15:O:71:GLN:HB2	15:O:78:TYR:CE1	2.40	0.56
16:P:33:ILE:O	16:P:34:GLU:CB	2.54	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:43:C:H5'	16:P:12:LYS:HB3	1.88	0.55
1:A:344:A:H4'	1:A:345:C:OP1	2.06	0.55
1:A:437:U:H2'	1:A:438:G:O4'	2.05	0.55
1:A:879:C:H3'	1:A:879:C:C6	2.41	0.55
1:A:882:C:H2'	1:A:883:C:H6	1.71	0.55
1:A:1161:C:H2'	1:A:1162:C:C6	2.41	0.55
1:A:1369:C:H2'	1:A:1370:G:H8	1.69	0.55
2:B:12:GLU:C	2:B:14:GLY:N	2.65	0.55
11:K:33:THR:HB	11:K:38:ASN:O	2.07	0.55
13:M:88:ARG:HG3	13:M:98:VAL:CG1	2.35	0.55
16:P:39:TYR:O	16:P:41:PRO:HD3	2.07	0.55
1:A:765:G:N2	1:A:812:C:O2'	2.39	0.55
1:A:1242:C:O2'	1:A:1243:C:H5'	2.06	0.55
1:A:1350:A:H2'	1:A:1351:U:H6	1.71	0.55
1:A:1514:C:H2'	1:A:1515:C:H6	1.71	0.55
2:B:15:VAL:HG21	2:B:210:SER:HA	1.88	0.55
3:C:64:VAL:HG12	3:C:65:ALA:N	2.20	0.55
4:D:152:SER:O	4:D:154:ASN:N	2.34	0.55
5:E:86:ALA:HB3	5:E:125:SER:HB3	1.86	0.55
7:G:113:GLU:HB2	7:G:118:VAL:HG11	1.88	0.55
15:O:82:ILE:HD12	15:O:82:ILE:H	1.71	0.55
17:Q:97:SER:O	17:Q:98:LEU:HD23	2.06	0.55
18:R:53:ARG:C	18:R:55:ARG:N	2.64	0.55
19:S:16:LEU:HG	19:S:20:LEU:HD23	1.88	0.55
1:A:443:C:H2'	1:A:444:C:C6	2.41	0.55
1:A:644:G:C5	1:A:645:C:C5	2.94	0.55
1:A:686:U:HO2'	1:A:687:A:H8	1.52	0.55
1:A:1161:C:H2'	1:A:1162:C:H6	1.70	0.55
1:A:1355:G:H2'	1:A:1356:G:C8	2.41	0.55
2:B:24:TRP:CZ2	2:B:26:PRO:HG3	2.41	0.55
3:C:112:SER:O	3:C:113:ALA:HB3	2.05	0.55
4:D:17:VAL:HG12	4:D:18:LYS:H	1.69	0.55
4:D:32:ALA:C	4:D:34:GLU:N	2.62	0.55
5:E:105:VAL:O	5:E:106:PRO:C	2.49	0.55
11:K:126:ARG:C	11:K:128:ALA:H	2.14	0.55
18:R:21:LYS:H	18:R:21:LYS:HD2	1.69	0.55
1:A:264:U:O2'	1:A:265:G:H5'	2.05	0.55
1:A:372:C:H4'	1:A:373:A:O5'	2.04	0.55
1:A:660:G:OP1	15:O:5:LYS:HD3	2.07	0.55
1:A:1149:C:H2'	1:A:1150:U:C5	2.41	0.55
1:A:1227:A:OP2	13:M:111:LYS:HE3	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:59:ARG:H	10:J:92:THR:HG23	1.70	0.55
3:C:67:THR:O	3:C:67:THR:HG22	2.07	0.55
3:C:67:THR:O	3:C:69:HIS:N	2.39	0.55
3:C:87:LEU:HA	3:C:90:GLU:HG2	1.88	0.55
4:D:3:ARG:HH12	4:D:70:ILE:HG13	1.71	0.55
7:G:92:SER:HB2	7:G:93:PRO:HD2	1.88	0.55
8:H:118:VAL:C	8:H:119:LEU:HD23	2.31	0.55
9:I:9:ARG:N	9:I:79:LEU:HD12	2.21	0.55
11:K:91:ARG:NH1	18:R:88:LYS:HE2	2.22	0.55
11:K:103:LEU:HD23	11:K:104:GLN:H	1.72	0.55
13:M:24:GLY:O	13:M:29:ARG:NH1	2.38	0.55
16:P:18:ARG:HG3	16:P:35:LYS:HE3	1.89	0.55
1:A:9:G:OP1	5:E:122:GLU:HG3	2.07	0.55
1:A:170:U:O2'	1:A:171:A:H5'	2.07	0.55
1:A:624:C:O2'	1:A:625:G:H5'	2.06	0.55
1:A:895:G:H2'	1:A:896:C:C6	2.42	0.55
1:A:918:A:H2'	1:A:919:A:H8	1.69	0.55
1:A:955:U:H3	1:A:1225:A:H61	1.55	0.55
1:A:1127:G:N2	1:A:1147:C:N4	2.54	0.55
1:A:1131:G:H2'	1:A:1132:C:C6	2.40	0.55
1:A:1268:A:O2'	21:U:19:GLY:HA2	2.07	0.55
3:C:19:GLU:HB2	3:C:54:ARG:HH21	1.72	0.55
3:C:195:VAL:C	3:C:196:LEU:HD23	2.30	0.55
14:N:29:ARG:C	14:N:31:ARG:H	2.15	0.55
16:P:28:ARG:HG2	16:P:28:ARG:HH11	1.70	0.55
1:A:62:U:H3	1:A:105:G:H1	1.53	0.55
1:A:130:A:C8	17:Q:63:ARG:HG3	2.42	0.55
1:A:1117:G:H21	1:A:1180:A:H1'	1.71	0.55
2:B:165:VAL:O	2:B:187:LEU:O	2.25	0.55
3:C:16:ARG:HB2	3:C:16:ARG:HH11	1.69	0.55
7:G:16:LEU:HD22	7:G:16:LEU:N	2.20	0.55
7:G:69:VAL:HG22	7:G:135:VAL:CG2	2.36	0.55
7:G:74:GLU:O	7:G:88:PRO:HA	2.07	0.55
10:J:49:VAL:O	10:J:60:ARG:O	2.23	0.55
12:L:117:ARG:O	12:L:118:SER:C	2.49	0.55
21:U:9:ARG:HH12	21:U:23:PRO:CD	2.19	0.55
1:A:112:G:O2'	1:A:113:G:H5'	2.07	0.55
1:A:176:C:O2'	1:A:177:C:H5'	2.07	0.55
1:A:284:G:H2'	1:A:285:G:H8	1.71	0.55
1:A:424:G:O2'	1:A:425:G:H5'	2.06	0.55
1:A:657:G:H4'	15:O:28:GLN:HG2	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1073:U:H3	1:A:1102:A:H61	1.55	0.55
1:A:1342:C:O2'	9:I:124:GLN:HB2	2.06	0.55
2:B:55:PHE:CD2	2:B:58:ILE:HD12	2.33	0.55
2:B:97:TRP:CZ2	2:B:101:MET:HB2	2.41	0.55
2:B:140:HIS:C	2:B:142:LEU:N	2.64	0.55
2:B:219:VAL:O	2:B:223:ILE:HG22	2.06	0.55
3:C:118:GLN:O	3:C:121:ALA:HB3	2.06	0.55
4:D:190:ASP:O	4:D:194:LEU:HD22	2.06	0.55
5:E:91:LEU:HD21	5:E:110:LEU:HD11	1.88	0.55
8:H:119:LEU:HD11	8:H:124:ALA:HA	1.89	0.55
11:K:27:ASN:CG	11:K:28:THR:N	2.65	0.55
11:K:111:ASP:CG	11:K:111:ASP:O	2.49	0.55
12:L:5:PRO:HA	12:L:9:GLN:NE2	2.21	0.55
1:A:1476:G:O2'	1:A:1477:C:H5'	2.07	0.55
3:C:84:ILE:O	3:C:88:ARG:HD3	2.07	0.55
8:H:85:ARG:HD3	8:H:86:ILE:N	2.21	0.55
9:I:113:LYS:N	9:I:113:LYS:HD2	2.22	0.55
10:J:44:VAL:CG2	10:J:45:ARG:H	2.05	0.55
1:A:818:G:C3'	1:A:819:A:H5''	2.36	0.55
1:A:986:A:H4'	19:S:55:LYS:CD	2.25	0.55
1:A:1314:C:O2'	1:A:1315:U:H5'	2.06	0.55
2:B:95:GLN:O	2:B:96:ARG:HD2	2.05	0.55
3:C:202:ILE:HG22	3:C:203:PHE:N	2.21	0.55
5:E:41:VAL:HG13	5:E:113:ALA:HA	1.88	0.55
5:E:80:ILE:CD1	5:E:91:LEU:HD12	2.31	0.55
8:H:6:ILE:O	8:H:10:LEU:HG	2.07	0.55
8:H:11:THR:O	8:H:12:ARG:C	2.48	0.55
8:H:96:GLY:O	8:H:97:VAL:C	2.49	0.55
17:Q:44:ALA:HA	17:Q:71:PHE:O	2.07	0.55
1:A:128:G:O2'	17:Q:3:LYS:HE3	2.06	0.55
1:A:676:A:H1'	11:K:115:PRO:HB3	1.89	0.55
1:A:1040:U:H2'	1:A:1041:A:C8	2.42	0.55
1:A:1148:U:O2'	9:I:14:VAL:HG21	2.07	0.55
1:A:1157:A:H4'	1:A:1158:C:O5'	2.07	0.55
1:A:1415:G:C4	1:A:1416:G:C8	2.95	0.55
2:B:91:PRO:HG2	2:B:155:LEU:CD2	2.37	0.55
2:B:137:ARG:HG3	2:B:138:LEU:N	2.22	0.55
9:I:10:ARG:HD2	9:I:11:LYS:N	2.22	0.55
12:L:48:PRO:C	12:L:49:ASN:HD22	2.14	0.55
23:Y:35:C:C5	23:Y:36:C:H5	2.25	0.55
1:A:376:G:O2'	1:A:377:G:H5'	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:961:U:C2'	1:A:962:C:H5'	2.38	0.54
1:A:1103:C:H2'	1:A:1104:G:O4'	2.07	0.54
1:A:1250:A:H2'	1:A:1251:A:C8	2.42	0.54
1:A:1351:U:O2'	1:A:1352:C:H5'	2.07	0.54
2:B:105:PHE:O	2:B:106:LYS:C	2.49	0.54
4:D:17:VAL:CG1	4:D:18:LYS:N	2.71	0.54
4:D:119:GLN:HG3	4:D:123:HIS:CE1	2.42	0.54
8:H:82:HIS:CG	8:H:82:HIS:O	2.56	0.54
12:L:119:LYS:O	12:L:120:TYR:CB	2.54	0.54
18:R:44:LEU:HD22	18:R:48:GLY:O	2.07	0.54
19:S:40:ILE:HG23	19:S:44:MET:SD	2.47	0.54
1:A:103:C:P	20:T:17:ARG:NH1	2.80	0.54
1:A:222:U:H2'	1:A:223:U:C6	2.42	0.54
1:A:269:C:H2'	1:A:270:A:H8	1.71	0.54
1:A:383:A:H2'	1:A:384:G:C5'	2.36	0.54
1:A:652:U:O4	1:A:752:G:O2'	2.20	0.54
1:A:812:C:O2'	1:A:813:U:P	2.65	0.54
1:A:1150:U:O3'	10:J:41:PRO:HB3	2.07	0.54
1:A:1204:A:C6	1:A:1205:U:H6	2.26	0.54
3:C:113:ALA:HB3	3:C:114:PRO:CD	2.33	0.54
3:C:117:ALA:HB1	3:C:198:VAL:HG23	1.89	0.54
5:E:99:GLY:H	5:E:117:ASP:CG	2.14	0.54
8:H:78:GLN:O	8:H:81:HIS:CD2	2.60	0.54
9:I:5:TYR:HE2	9:I:16:ARG:HA	1.71	0.54
12:L:38:THR:HG22	12:L:39:VAL:CG2	2.37	0.54
13:M:78:ILE:HA	13:M:81:LEU:HD21	1.90	0.54
15:O:41:GLU:CD	15:O:44:LYS:HG3	2.32	0.54
16:P:55:ARG:O	16:P:56:ALA:C	2.50	0.54
17:Q:63:ARG:O	17:Q:65:ILE:HG13	2.08	0.54
1:A:174:C:H2'	1:A:175:C:C6	2.42	0.54
1:A:442:C:H2'	1:A:443:C:C6	2.43	0.54
1:A:697:U:H2'	1:A:698:G:H5'	1.88	0.54
1:A:1219:U:H2'	1:A:1220:G:H8	1.71	0.54
1:A:1313:U:C5	19:S:4:SER:HB2	2.42	0.54
10:J:8:LEU:CD2	10:J:20:ALA:HB2	2.38	0.54
14:N:33:VAL:HA	14:N:40:CYS:HA	1.90	0.54
17:Q:80:GLY:O	17:Q:81:ARG:CB	2.55	0.54
1:A:167:G:H2'	1:A:168:G:H8	1.71	0.54
1:A:952:U:H1'	13:M:126:LYS:O	2.06	0.54
1:A:1351:U:H4'	7:G:33:ASP:CG	2.31	0.54
2:B:52:GLU:HG2	2:B:56:ARG:HH12	1.71	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:58:GLU:HB3	10:J:92:THR:HG21	1.88	0.54
8:H:96:GLY:H	8:H:99:GLU:HG3	1.72	0.54
9:I:125:TYR:H	9:I:125:TYR:HD1	1.56	0.54
13:M:10:PRO:HB2	13:M:18:ALA:HB1	1.89	0.54
1:A:73:G:O2'	1:A:76:C:H5'	2.07	0.54
1:A:277:C:H5''	17:Q:68:ARG:NH2	2.23	0.54
1:A:628:G:O2'	1:A:629:G:H5'	2.07	0.54
1:A:1001(A):G:C2	1:A:1002:G:H1'	2.42	0.54
1:A:1037:C:H2'	1:A:1038:C:H6	1.71	0.54
1:A:1271:G:C2'	1:A:1272:G:H5''	2.36	0.54
7:G:116:ALA:CB	7:G:119:ARG:HH21	2.19	0.54
8:H:84:ARG:O	8:H:135:CYS:HB2	2.08	0.54
10:J:49:VAL:HG11	14:N:41:ARG:O	2.06	0.54
12:L:27:LEU:C	12:L:29:GLY:H	2.15	0.54
12:L:47:LYS:HB3	12:L:48:PRO:CD	2.34	0.54
18:R:47:THR:C	18:R:49:LYS:H	2.16	0.54
1:A:80:G:H3'	1:A:81:U:C5'	2.38	0.54
1:A:403:C:O2'	1:A:404:U:H5'	2.08	0.54
1:A:961:U:O2'	1:A:962:C:H5'	2.07	0.54
1:A:1021:G:H2'	1:A:1022:G:C8	2.43	0.54
1:A:1085:U:H3'	1:A:1086:U:H5	1.73	0.54
3:C:33:LEU:HD23	3:C:34:LEU:N	2.22	0.54
6:F:22:GLU:OE1	6:F:22:GLU:HA	2.08	0.54
12:L:89:ARG:HA	12:L:97:ARG:HA	1.88	0.54
17:Q:10:VAL:CG1	17:Q:53:LEU:HA	2.37	0.54
18:R:29:PHE:HE1	18:R:31:LEU:CD2	2.20	0.54
1:A:381:C:O2'	1:A:382:A:H5'	2.08	0.54
1:A:692:U:H1'	1:A:695:A:N7	2.22	0.54
1:A:714:G:H2'	1:A:715:A:C8	2.43	0.54
1:A:1203:C:H2'	1:A:1204:A:O4'	2.08	0.54
1:A:1249:C:C6	1:A:1249:C:H3'	2.42	0.54
1:A:1308:U:OP1	13:M:98:VAL:HG23	2.07	0.54
1:A:1410:G:H1	1:A:1490:C:N4	2.04	0.54
2:B:84:GLU:HB3	2:B:219:VAL:CG2	2.28	0.54
2:B:142:LEU:O	2:B:142:LEU:HD22	2.07	0.54
3:C:10:PHE:CD2	3:C:178:LEU:HD13	2.43	0.54
6:F:30:LEU:HB3	6:F:35:ALA:CB	2.38	0.54
8:H:118:VAL:O	8:H:119:LEU:HB3	2.08	0.54
12:L:10:LEU:HD22	17:Q:32:TYR:CZ	2.43	0.54
12:L:60:LEU:H	12:L:60:LEU:HD22	1.73	0.54
18:R:40:LEU:O	18:R:41:LYS:C	2.51	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:21:G:C2	1:A:22:G:C6	2.96	0.54
1:A:54:C:H2'	1:A:352:C:H41	1.72	0.54
1:A:191:G:N3	20:T:105:SER:HB3	2.22	0.54
1:A:646:U:H2'	1:A:647:C:C6	2.42	0.54
1:A:986:A:H2'	1:A:987:G:H8	1.71	0.54
1:A:1343:G:H1'	9:I:121:ARG:NH1	2.21	0.54
2:B:96:ARG:O	2:B:98:LEU:HD22	2.07	0.54
3:C:23:TYR:CD2	10:J:10:GLY:HA2	2.42	0.54
5:E:76:ILE:HG23	5:E:142:LEU:HD13	1.89	0.54
5:E:149:GLU:O	5:E:153:LYS:HG3	2.07	0.54
7:G:68:ASN:C	7:G:70:LYS:H	2.15	0.54
8:H:68:ARG:HG2	8:H:68:ARG:HH11	1.73	0.54
9:I:15:ALA:CB	9:I:65:VAL:HB	2.38	0.54
12:L:5:PRO:CA	12:L:9:GLN:HE21	2.20	0.54
12:L:45:PRO:HG3	12:L:53:ARG:HD2	1.90	0.54
21:U:9:ARG:NH1	21:U:23:PRO:HD2	2.23	0.54
1:A:84:U:H2'	1:A:88:A:C8	2.43	0.54
1:A:513:C:H2'	1:A:514:C:C6	2.42	0.54
1:A:659:U:H2'	1:A:660:G:C8	2.43	0.54
1:A:744:C:H2'	1:A:745:C:C6	2.43	0.54
1:A:1022:G:H2'	1:A:1023:G:H8	1.72	0.54
1:A:1149:C:C2'	1:A:1150:U:H6	2.14	0.54
1:A:1270:C:OP2	21:U:24:ARG:NH2	2.40	0.54
2:B:214:ILE:HG22	2:B:215:LEU:N	2.23	0.54
4:D:4:TYR:O	4:D:5:ILE:HB	2.06	0.54
6:F:99:ALA:HB1	18:R:62:GLU:OE2	2.07	0.54
9:I:19:LEU:N	9:I:19:LEU:CD2	2.69	0.54
10:J:14:LYS:HA	10:J:17:ASP:OD2	2.07	0.54
11:K:105:VAL:O	11:K:105:VAL:HG13	2.07	0.54
17:Q:70:ARG:HG3	17:Q:70:ARG:NH1	2.20	0.54
19:S:77:THR:O	19:S:78:ARG:HG3	2.07	0.54
23:Y:35:C:C4	23:Y:36:C:H5	2.26	0.54
1:A:106:C:HO2'	1:A:107:G:H5'	1.73	0.54
1:A:328:C:O2	1:A:328:C:C2'	2.56	0.54
1:A:390:C:H2'	1:A:391:G:C8	2.43	0.54
1:A:1249:C:H3'	1:A:1249:C:H6	1.73	0.54
2:B:30:ARG:HG3	2:B:31:TYR:N	2.22	0.54
2:B:108:ILE:O	2:B:108:ILE:CG2	2.55	0.54
2:B:137:ARG:C	2:B:139:LYS:H	2.15	0.54
3:C:16:ARG:HH11	3:C:16:ARG:CB	2.20	0.54
3:C:27:LYS:HB3	3:C:30:ARG:NH2	2.23	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:27:LYS:CB	3:C:30:ARG:HH21	2.21	0.54
7:G:95:ARG:O	7:G:96:GLN:C	2.50	0.54
9:I:9:ARG:H	9:I:79:LEU:HD12	1.71	0.54
9:I:49:PRO:HB3	9:I:82:ALA:HB2	1.90	0.54
12:L:53:ARG:HD2	12:L:93:LEU:HD21	1.90	0.54
14:N:43:CYS:HA	14:N:46:GLU:HG3	1.90	0.54
15:O:66:LEU:O	15:O:67:LEU:C	2.51	0.54
16:P:67:THR:O	16:P:68:ASP:C	2.50	0.54
18:R:36:ASN:O	18:R:39:VAL:HG12	2.08	0.54
1:A:321:A:H2	1:A:332:G:H22	1.55	0.53
1:A:382:A:H2'	1:A:383:A:H8	1.73	0.53
1:A:473:G:O2'	1:A:474:G:H5'	2.09	0.53
1:A:629:G:O2'	1:A:630:G:H5'	2.07	0.53
1:A:707:C:C2	1:A:708:C:C5	2.96	0.53
1:A:877:C:H1'	8:H:3:THR:CG2	2.37	0.53
1:A:938:A:H5'	7:G:76:ARG:HH22	1.72	0.53
1:A:1288:A:H1'	1:A:1352:C:O2'	2.08	0.53
1:A:1349:A:H2'	1:A:1350:A:H8	1.73	0.53
2:B:71:VAL:O	2:B:165:VAL:HG23	2.07	0.53
2:B:88:ALA:O	2:B:90:MET:N	2.41	0.53
3:C:85:ARG:O	3:C:89:GLU:HB2	2.07	0.53
4:D:22:LYS:HG3	4:D:26:CYS:SG	2.48	0.53
4:D:95:GLY:O	4:D:97:LEU:N	2.40	0.53
6:F:69:GLU:HA	6:F:72:VAL:HG23	1.90	0.53
10:J:57:LYS:NZ	10:J:57:LYS:CB	2.69	0.53
13:M:80:ARG:O	13:M:82:MET:N	2.41	0.53
15:O:9:GLN:OE1	15:O:9:GLN:HA	2.08	0.53
20:T:91:LEU:C	20:T:93:GLU:N	2.66	0.53
1:A:171:A:O2'	1:A:172:A:H5'	2.08	0.53
1:A:625:G:H2'	1:A:626:U:H6	1.72	0.53
1:A:691:G:O2'	1:A:797:C:H4'	2.08	0.53
1:A:947:G:H2'	1:A:948:C:C6	2.44	0.53
1:A:1063:C:OP2	1:A:1064:G:O2'	2.26	0.53
1:A:1225:A:H2'	1:A:1225:A:N3	2.22	0.53
1:A:1305:G:C5'	21:U:4:GLY:C	2.81	0.53
2:B:137:ARG:HG3	2:B:138:LEU:H	1.72	0.53
3:C:71:ALA:CB	3:C:109:PRO:HB3	2.39	0.53
3:C:73:PRO:O	3:C:76:VAL:HB	2.09	0.53
3:C:178:LEU:O	3:C:179:ARG:CB	2.56	0.53
19:S:5:LEU:O	19:S:6:LYS:CB	2.57	0.53
1:A:319:G:O2'	1:A:320:C:H5'	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:375:U:H2'	1:A:376:G:C8	2.43	0.53
1:A:514:C:H2'	1:A:515:G:H8	1.73	0.53
1:A:1205:U:O2	1:A:1205:U:C2'	2.56	0.53
3:C:94:LEU:O	3:C:94:LEU:HD13	2.08	0.53
10:J:24:VAL:O	10:J:24:VAL:HG12	2.07	0.53
10:J:80:LYS:H	10:J:80:LYS:HE2	1.73	0.53
17:Q:48:GLU:C	17:Q:50:LYS:N	2.66	0.53
18:R:59:SER:O	18:R:60:ALA:C	2.51	0.53
20:T:56:MET:HE2	20:T:88:VAL:HG21	1.91	0.53
21:U:9:ARG:NH2	21:U:23:PRO:HD2	2.24	0.53
22:X:2:G:N1	23:Y:36:C:N4	2.51	0.53
1:A:559:A:H4'	1:A:560:U:O5'	2.09	0.53
1:A:955:U:H2'	1:A:956:U:H6	1.71	0.53
1:A:1243:C:H2'	1:A:1244:C:H6	1.71	0.53
1:A:1376:U:H2'	1:A:1377:A:C8	2.43	0.53
2:B:44:LEU:HD22	2:B:44:LEU:N	2.17	0.53
6:F:10:LEU:HD11	6:F:59:TYR:HD2	1.74	0.53
7:G:111:ARG:HG3	7:G:119:ARG:HG2	1.89	0.53
8:H:41:ARG:NH2	8:H:123:GLU:OE2	2.42	0.53
10:J:50:ILE:HD13	14:N:41:ARG:NE	2.23	0.53
17:Q:86:GLU:C	17:Q:88:TYR:N	2.65	0.53
20:T:29:LYS:O	20:T:33:ILE:HG13	2.08	0.53
21:U:5:ASP:HB3	21:U:8:THR:OG1	2.08	0.53
1:A:61:G:H2'	1:A:62:U:O4'	2.08	0.53
1:A:532:A:H3'	1:A:532:A:N3	2.23	0.53
1:A:949:A:H2'	1:A:950:U:O4'	2.09	0.53
1:A:1031:G:H2'	1:A:1032:G:C8	2.44	0.53
6:F:62:TRP:C	6:F:63:TYR:CD1	2.87	0.53
9:I:9:ARG:H	9:I:79:LEU:CD1	2.20	0.53
9:I:63:ILE:CD1	9:I:81:ILE:HD11	2.35	0.53
10:J:46:ARG:HG2	10:J:46:ARG:NH1	2.21	0.53
1:A:322:C:C2'	1:A:323:U:H5'	2.38	0.53
1:A:744:C:H2'	1:A:745:C:H6	1.73	0.53
1:A:778:G:C5	1:A:779:C:C5	2.96	0.53
1:A:1009:G:N3	1:A:1009:G:H2'	2.22	0.53
2:B:28:PHE:CD2	2:B:190:THR:HA	2.44	0.53
3:C:9:GLY:HA2	3:C:12:LEU:HG	1.89	0.53
3:C:14:ILE:HG22	3:C:15:THR:H	1.74	0.53
9:I:100:GLY:C	9:I:102:LEU:H	2.15	0.53
11:K:84:VAL:CG2	11:K:110:ASP:HA	2.39	0.53
20:T:33:ILE:HD13	20:T:63:ILE:HA	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:147:G:O2'	1:A:148:G:H5'	2.09	0.53
1:A:964:A:O2'	10:J:55:LYS:NZ	2.34	0.53
1:A:988:G:H2'	1:A:989:C:O4'	2.08	0.53
1:A:1091:U:O2	1:A:1093:A:C8	2.62	0.53
1:A:1251:A:H2'	1:A:1252:A:C8	2.44	0.53
1:A:1372:U:O2'	1:A:1373:G:H5'	2.09	0.53
3:C:84:ILE:HG12	3:C:84:ILE:O	2.09	0.53
4:D:82:ALA:O	4:D:83:SER:C	2.52	0.53
7:G:26:PHE:CD1	7:G:101:LEU:HD22	2.41	0.53
8:H:11:THR:CB	8:H:14:ARG:HH12	2.22	0.53
10:J:23:ILE:O	10:J:23:ILE:HG22	2.09	0.53
11:K:19:ALA:HB2	11:K:80:VAL:HG11	1.90	0.53
13:M:78:ILE:HA	13:M:81:LEU:CD2	2.39	0.53
14:N:15:LYS:HG2	14:N:15:LYS:O	2.08	0.53
17:Q:5:VAL:HA	17:Q:59:ILE:O	2.08	0.53
17:Q:90:ILE:O	17:Q:91:ARG:C	2.51	0.53
1:A:35:G:H2'	1:A:36:C:C6	2.44	0.53
1:A:555:C:H2'	1:A:556:C:C6	2.43	0.53
1:A:579:G:H5'	1:A:728:A:H1'	1.90	0.53
1:A:1255:G:O2'	1:A:1258:G:H1'	2.09	0.53
1:A:1283:G:O2'	1:A:1284:C:H5'	2.09	0.53
1:A:1435:G:H2'	1:A:1436:U:H6	1.72	0.53
2:B:14:GLY:O	2:B:15:VAL:HG13	2.09	0.53
2:B:25:ASN:O	2:B:27:LYS:N	2.42	0.53
3:C:70:VAL:CA	3:C:106:VAL:HG23	2.39	0.53
4:D:8:VAL:O	4:D:11:LEU:HG	2.09	0.53
7:G:47:CYS:C	7:G:49:ILE:H	2.17	0.53
11:K:54:ARG:HB3	11:K:54:ARG:NH1	2.24	0.53
14:N:26:ARG:NH1	14:N:47:LEU:HD11	2.24	0.53
20:T:94:ALA:O	20:T:95:ALA:HB3	2.08	0.53
1:A:397:A:C6	1:A:548:G:N7	2.76	0.53
1:A:418:C:H2'	1:A:419:C:H6	1.74	0.53
1:A:840:C:H4'	1:A:848:C:N3	2.24	0.53
1:A:1522:U:O2'	1:A:1523:G:H5'	2.09	0.53
2:B:19:HIS:ND1	2:B:204:ASN:HB2	2.23	0.53
2:B:131:PRO:C	2:B:133:LYS:H	2.16	0.53
3:C:24:ALA:HB1	3:C:28:GLN:HB2	1.91	0.53
3:C:51:GLY:CA	3:C:70:VAL:HG13	2.38	0.53
4:D:63:LYS:HD2	4:D:198:VAL:HG22	1.90	0.53
4:D:108:LEU:HD22	4:D:174:LEU:HD13	1.90	0.53
6:F:30:LEU:HD23	6:F:35:ALA:HB1	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:52:ILE:O	6:F:53:ALA:HB3	2.08	0.53
11:K:14:VAL:O	11:K:15:ALA:HB3	2.09	0.53
17:Q:94:ASN:O	17:Q:97:SER:N	2.41	0.53
1:A:9:G:OP2	5:E:121:LYS:NZ	2.41	0.53
1:A:135:C:H5'	1:A:136:C:OP2	2.09	0.53
1:A:189(J):G:O2'	1:A:189(K):U:H5'	2.08	0.53
1:A:377:G:OP1	16:P:3:LYS:NZ	2.42	0.53
1:A:448:A:O2'	1:A:449:C:H5'	2.08	0.53
1:A:868:C:H2'	1:A:869:G:O4'	2.09	0.53
1:A:877:C:O2'	8:H:3:THR:HG23	2.09	0.53
1:A:1207:G:H2'	1:A:1208:C:C6	2.45	0.53
1:A:1346:A:C8	1:A:1348:U:C2	2.97	0.53
3:C:190:ARG:CB	3:C:190:ARG:HH11	2.22	0.53
5:E:80:ILE:HD13	5:E:138:ALA:HB1	1.89	0.53
7:G:144:MET:O	7:G:147:ALA:HB3	2.09	0.53
8:H:1:MET:HG2	8:H:2:LEU:O	2.09	0.53
9:I:33:PHE:O	9:I:35:GLU:N	2.41	0.53
9:I:79:LEU:O	9:I:83:ARG:HG3	2.08	0.53
11:K:51:LYS:O	11:K:52:GLY:O	2.27	0.53
1:A:110:C:C4	1:A:111:G:C5	2.97	0.52
1:A:243:A:H5'	1:A:245:C:OP1	2.08	0.52
2:B:44:LEU:O	2:B:47:THR:N	2.42	0.52
2:B:75:LYS:HE2	2:B:96:ARG:NH1	2.10	0.52
2:B:101:MET:HE2	2:B:152:PHE:CD1	2.44	0.52
3:C:201:TYR:N	3:C:201:TYR:CD1	2.77	0.52
5:E:118:ILE:HG22	5:E:119:LEU:H	1.73	0.52
6:F:22:GLU:OE2	6:F:84:ASN:ND2	2.39	0.52
9:I:113:LYS:HD2	9:I:113:LYS:H	1.74	0.52
16:P:67:THR:O	16:P:71:ARG:N	2.37	0.52
20:T:75:ASN:O	20:T:76:ALA:C	2.52	0.52
1:A:229:U:O2'	1:A:230:G:H5'	2.08	0.52
1:A:346:G:H2'	1:A:347:G:O4'	2.10	0.52
1:A:475:G:O2'	1:A:476:G:H5'	2.10	0.52
1:A:1253:G:H5'	10:J:44:VAL:CG1	2.38	0.52
1:A:1268:A:H2'	1:A:1269:A:C8	2.44	0.52
1:A:1408:A:O2'	1:A:1409:C:H5'	2.09	0.52
1:A:1416:G:N2	1:A:1417:G:H1'	2.25	0.52
2:B:69:LEU:C	2:B:69:LEU:CD2	2.82	0.52
5:E:13:ILE:HG13	5:E:13:ILE:O	2.08	0.52
10:J:4:ILE:CG1	10:J:74:ILE:HB	2.39	0.52
10:J:54:PHE:HD2	10:J:55:LYS:HG2	1.73	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:55:VAL:O	12:L:56:ALA:HB2	2.09	0.52
16:P:53:VAL:HG23	16:P:54:GLU:H	1.71	0.52
17:Q:59:ILE:HG23	17:Q:71:PHE:HB3	1.91	0.52
17:Q:76:LEU:HD23	17:Q:77:VAL:C	2.34	0.52
1:A:433:C:H2'	1:A:434:U:C6	2.44	0.52
1:A:767:A:H2'	1:A:768:A:O4'	2.10	0.52
1:A:1212:U:H5'	1:A:1213:A:OP1	2.09	0.52
1:A:1325:C:O3'	21:U:17:THR:HG21	2.09	0.52
1:A:1399:C:O2	1:A:1401:G:C5	2.62	0.52
1:A:1403:C:H1'	1:A:1500:A:N1	2.24	0.52
2:B:101:MET:O	2:B:105:PHE:CA	2.57	0.52
3:C:7:PRO:HA	3:C:11:ARG:HH21	1.75	0.52
4:D:22:LYS:HB2	4:D:26:CYS:SG	2.49	0.52
5:E:110:LEU:HD21	5:E:139:LEU:HD21	1.91	0.52
10:J:3:LYS:HA	10:J:75:ILE:HA	1.90	0.52
12:L:27:LEU:C	12:L:29:GLY:N	2.66	0.52
12:L:54:LYS:HG2	12:L:75:HIS:CD2	2.44	0.52
13:M:84:ILE:O	13:M:86:CYS:N	2.37	0.52
1:A:112:G:C2	1:A:113:G:C8	2.97	0.52
1:A:417:C:H2'	1:A:418:C:C6	2.42	0.52
1:A:573:A:C2	1:A:574:A:C2	2.97	0.52
1:A:1189:C:OP1	10:J:51:ARG:NH2	2.38	0.52
1:A:1288:A:C2	1:A:1289:A:C4	2.97	0.52
1:A:1367:C:C2	1:A:1368:G:C8	2.98	0.52
1:A:1392:G:O2'	1:A:1393:U:H5'	2.10	0.52
2:B:206:ASP:C	2:B:208:ILE:H	2.18	0.52
3:C:92:ALA:HA	3:C:95:THR:O	2.10	0.52
4:D:200:GLU:CD	4:D:200:GLU:H	2.16	0.52
8:H:104:ARG:O	8:H:105:ARG:C	2.53	0.52
9:I:64:THR:HG23	9:I:66:ARG:HH21	1.74	0.52
11:K:48:ILE:HG21	11:K:63:LEU:HD12	1.91	0.52
12:L:53:ARG:HA	12:L:54:LYS:HZ2	1.75	0.52
18:R:53:ARG:CG	18:R:63:GLN:HG2	2.38	0.52
1:A:67:C:O2'	1:A:171:A:H1'	2.10	0.52
1:A:112:G:H5'	1:A:389:A:H4'	1.91	0.52
1:A:518:C:H5''	1:A:519:C:C5	2.44	0.52
1:A:1439:C:O2'	1:A:1440:C:H5'	2.09	0.52
2:B:56:ARG:HB2	2:B:56:ARG:CZ	2.40	0.52
4:D:35:ARG:O	4:D:36:ARG:CB	2.55	0.52
4:D:154:ASN:HD22	4:D:154:ASN:N	2.08	0.52
5:E:112:LEU:C	5:E:114:GLY:N	2.64	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:33:TYR:HD1	6:F:75:LEU:CD2	2.22	0.52
10:J:44:VAL:O	10:J:45:ARG:HG2	2.10	0.52
14:N:29:ARG:NH2	14:N:40:CYS:HB2	2.25	0.52
15:O:4:THR:O	15:O:5:LYS:C	2.53	0.52
18:R:32:ARG:HA	18:R:69:THR:HG21	1.92	0.52
1:A:397:A:H3'	1:A:397:A:N3	2.24	0.52
1:A:479:C:C2'	1:A:480:U:H5'	2.39	0.52
1:A:721:G:C6	1:A:733:A:C2	2.97	0.52
1:A:781:A:H2	1:A:1514:C:O4'	1.93	0.52
1:A:984:C:H2'	1:A:985:C:H6	1.74	0.52
1:A:1047:G:O2'	1:A:1048:G:H5'	2.10	0.52
1:A:1052:U:H2'	1:A:1200:C:H41	1.74	0.52
1:A:1305:G:OP1	21:U:2:GLY:CA	2.57	0.52
2:B:107:THR:O	2:B:109:SER:N	2.43	0.52
2:B:209:ARG:HE	2:B:239:VAL:CG1	2.22	0.52
5:E:74:GLY:HA3	5:E:116:THR:CG2	2.31	0.52
8:H:9:MET:O	8:H:10:LEU:C	2.50	0.52
9:I:125:TYR:N	9:I:125:TYR:HD1	2.07	0.52
11:K:69:ALA:O	11:K:72:ALA:HB3	2.09	0.52
1:A:16:A:C2	1:A:920:U:O2	2.62	0.52
1:A:264:U:C2'	1:A:265:G:H5'	2.39	0.52
1:A:507:C:H2'	1:A:508:C:C5	2.45	0.52
1:A:880:C:C6	1:A:880:C:H3'	2.45	0.52
2:B:139:LYS:HD3	2:B:143:GLU:HG3	1.91	0.52
3:C:90:GLU:C	3:C:92:ALA:N	2.67	0.52
3:C:127:ARG:HG2	3:C:127:ARG:HH11	1.74	0.52
3:C:177:THR:CG2	3:C:180:ALA:HB2	2.40	0.52
4:D:20:TYR:CA	4:D:26:CYS:SG	2.97	0.52
4:D:68:TYR:O	4:D:69:GLY:C	2.52	0.52
6:F:4:TYR:HA	6:F:92:LYS:HA	1.91	0.52
9:I:64:THR:CG2	9:I:66:ARG:HH21	2.22	0.52
10:J:6:ILE:HG22	10:J:8:LEU:HD11	1.91	0.52
10:J:47:PHE:HD2	14:N:34:TYR:HE2	1.57	0.52
11:K:92:GLU:OE2	11:K:95:ILE:HD12	2.10	0.52
14:N:8:GLU:CA	14:N:11:LYS:HD3	2.34	0.52
16:P:20:VAL:HG21	16:P:32:TYR:CG	2.45	0.52
1:A:37:U:O2'	1:A:38:G:H5'	2.10	0.52
1:A:925:G:C6	1:A:927:G:N7	2.78	0.52
1:A:977:A:O2'	1:A:979:C:OP2	2.25	0.52
1:A:1123:A:H4'	10:J:36:GLY:HA3	1.92	0.52
1:A:1355:G:H2'	1:A:1356:G:H8	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:36:ARG:HB2	2:B:41:ILE:CD1	2.36	0.52
2:B:91:PRO:CB	2:B:155:LEU:HG	2.40	0.52
4:D:158:ILE:HG22	4:D:159:ARG:N	2.24	0.52
5:E:16:THR:HG23	5:E:17:ALA:N	2.24	0.52
8:H:108:GLY:HA3	8:H:138:TRP:HB3	1.91	0.52
10:J:57:LYS:HG3	10:J:57:LYS:O	2.09	0.52
16:P:18:ARG:HD3	16:P:35:LYS:HD2	1.91	0.52
18:R:47:THR:HA	18:R:83:GLU:HB2	1.92	0.52
1:A:184:G:C4'	1:A:224:C:H4'	2.39	0.52
1:A:258:G:H2'	1:A:259:G:C8	2.43	0.52
1:A:279:A:OP1	1:A:280:C:O2'	2.23	0.52
1:A:879:C:C6	1:A:879:C:C3'	2.93	0.52
1:A:1219:U:OP1	14:N:19:ARG:NH2	2.43	0.52
1:A:1250:A:H4'	9:I:68:GLY:N	2.25	0.52
3:C:180:ALA:HB3	3:C:182:ILE:HG13	1.91	0.52
8:H:46:LYS:N	8:H:64:LYS:HD2	2.24	0.52
11:K:14:VAL:HG12	11:K:16:SER:O	2.10	0.52
11:K:48:ILE:HD11	11:K:64:ALA:CA	2.40	0.52
11:K:65:ALA:HB1	11:K:98:LEU:CD2	2.40	0.52
11:K:87:THR:HA	11:K:91:ARG:NH2	2.14	0.52
12:L:115:LYS:O	12:L:117:ARG:HG3	2.10	0.52
17:Q:65:ILE:O	17:Q:65:ILE:HG22	2.10	0.52
18:R:55:ARG:CA	18:R:55:ARG:HH11	2.23	0.52
1:A:1118:C:H2'	1:A:1119:C:C6	2.41	0.52
1:A:1158:C:H5''	2:B:133:LYS:HZ1	1.73	0.52
1:A:1368:G:H5''	9:I:112:LYS:HB3	1.90	0.52
2:B:194:PRO:O	2:B:196:LEU:N	2.43	0.52
2:B:209:ARG:NH2	2:B:239:VAL:HG11	2.24	0.52
4:D:31:CYS:C	4:D:33:MET:H	2.16	0.52
11:K:122:LYS:O	11:K:123:LYS:C	2.51	0.52
12:L:92:ASP:O	12:L:93:LEU:HD23	2.09	0.52
13:M:80:ARG:C	13:M:82:MET:N	2.67	0.52
19:S:30:LEU:O	19:S:31:ILE:HD13	2.10	0.52
21:U:6:ARG:NH2	21:U:15:ARG:NH1	2.58	0.52
1:A:189:G:H1	1:A:189(K):U:H3	1.59	0.51
1:A:232:G:H2'	1:A:233:C:H6	1.74	0.51
1:A:339:C:H2'	1:A:340:U:H6	1.74	0.51
1:A:1305:G:N2	1:A:1331:G:C2'	2.64	0.51
1:A:1374:A:O2'	1:A:1375:A:H5'	2.10	0.51
1:A:1447:A:O2'	1:A:1452:C:OP1	2.28	0.51
2:B:143:GLU:O	2:B:147:LYS:HG3	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:143:GLU:C	3:C:145:GLY:H	2.17	0.51
7:G:25:ALA:O	7:G:26:PHE:C	2.52	0.51
9:I:37:PHE:CE1	9:I:74:ILE:HG12	2.45	0.51
15:O:13:GLN:C	15:O:15:PHE:H	2.17	0.51
17:Q:10:VAL:HG11	17:Q:53:LEU:HA	1.91	0.51
19:S:33:THR:HB	19:S:51:VAL:HA	1.91	0.51
1:A:373:A:O2'	1:A:374:A:H5'	2.10	0.51
1:A:378:G:C2	1:A:386:C:O2	2.63	0.51
1:A:1343:G:H4'	9:I:122:ALA:O	2.09	0.51
1:A:1374:A:C4	1:A:1375:A:C8	2.98	0.51
3:C:57:ILE:HG23	3:C:64:VAL:CG1	2.37	0.51
3:C:112:SER:O	3:C:113:ALA:CB	2.57	0.51
3:C:181:ASN:O	3:C:182:ILE:C	2.53	0.51
7:G:23:VAL:O	7:G:27:ILE:HG13	2.10	0.51
8:H:69:ARG:NH2	8:H:75:ARG:O	2.43	0.51
9:I:127:LYS:O	9:I:128:ARG:HB2	2.11	0.51
13:M:100:GLY:C	13:M:101:GLN:HG3	2.36	0.51
1:A:308:C:H2'	1:A:309:G:C8	2.46	0.51
1:A:807:A:O2'	1:A:808:C:H5'	2.10	0.51
1:A:1219:U:H2'	1:A:1220:G:C8	2.45	0.51
1:A:1240:U:OP1	7:G:119:ARG:NH2	2.43	0.51
3:C:150:LYS:HG2	3:C:173:VAL:HG21	1.92	0.51
5:E:16:THR:O	5:E:17:ALA:HB2	2.10	0.51
5:E:68:GLU:O	5:E:70:PRO:HD3	2.10	0.51
12:L:69:TYR:HB2	12:L:96:VAL:CG1	2.39	0.51
13:M:78:ILE:C	13:M:80:ARG:N	2.63	0.51
16:P:63:GLY:O	16:P:64:ALA:C	2.53	0.51
19:S:12:ASP:O	19:S:15:LEU:HG	2.10	0.51
1:A:1028:C:H1'	1:A:1034:G:N2	2.25	0.51
1:A:1066:C:O2'	1:A:1067:A:H5'	2.09	0.51
2:B:44:LEU:H	2:B:44:LEU:CD2	2.17	0.51
3:C:71:ALA:HB2	3:C:106:VAL:CB	2.34	0.51
7:G:111:ARG:HB2	7:G:113:GLU:OE2	2.10	0.51
9:I:7:THR:HG21	9:I:9:ARG:NH1	2.25	0.51
9:I:10:ARG:CD	9:I:105:ASP:HB3	2.39	0.51
12:L:71:PRO:HD2	12:L:100:ILE:HG22	1.92	0.51
15:O:17:ARG:CZ	15:O:77:ARG:HH11	2.24	0.51
15:O:31:LEU:O	15:O:32:LEU:C	2.54	0.51
19:S:4:SER:C	19:S:5:LEU:HD23	2.36	0.51
19:S:77:THR:C	19:S:78:ARG:HG3	2.35	0.51
1:A:16:A:C2'	1:A:17:U:H5'	2.41	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:262:A:H5'	20:T:74:LYS:HG3	1.92	0.51
1:A:371:G:O2'	1:A:372:C:H5'	2.11	0.51
1:A:542:G:C5'	4:D:41:GLY:HA3	2.36	0.51
1:A:769:G:H4'	1:A:1513:A:H4'	1.93	0.51
1:A:1256:A:H5'	1:A:1258:G:C1'	2.41	0.51
1:A:1417:G:H2'	1:A:1482:G:N2	2.25	0.51
2:B:42:ILE:CD1	2:B:203:GLY:HA2	2.40	0.51
2:B:162:ILE:H	2:B:185:ILE:CD1	2.24	0.51
2:B:236:TYR:O	2:B:239:VAL:HG23	2.09	0.51
3:C:39:ILE:O	3:C:41:GLY:N	2.43	0.51
4:D:88:VAL:HG12	4:D:91:SER:H	1.76	0.51
4:D:205:GLU:O	4:D:206:PHE:C	2.53	0.51
6:F:4:TYR:CE1	6:F:92:LYS:HB3	2.46	0.51
7:G:16:LEU:H	7:G:16:LEU:CD2	2.18	0.51
8:H:44:PHE:C	8:H:45:ILE:HG23	2.36	0.51
9:I:8:GLY:O	9:I:15:ALA:N	2.43	0.51
9:I:89:ASN:ND2	9:I:92:TYR:CE2	2.74	0.51
11:K:11:LYS:HB2	11:K:12:ARG:NH2	2.25	0.51
12:L:81:SER:HA	12:L:106:ASP:OD1	2.11	0.51
15:O:27:VAL:O	15:O:31:LEU:HD12	2.10	0.51
18:R:57:GLY:C	18:R:58:LEU:HD12	2.36	0.51
1:A:254:G:O2'	1:A:255:G:H5'	2.10	0.51
1:A:716:A:H1'	11:K:118:GLY:HA2	1.91	0.51
1:A:974:A:OP1	1:A:974:A:H8	1.94	0.51
1:A:1085:U:H3'	1:A:1086:U:C5	2.46	0.51
1:A:1141:C:O2'	1:A:1142:G:H5'	2.10	0.51
1:A:1237:C:H4'	1:A:1334:G:N2	2.26	0.51
1:A:1320:C:O2'	1:A:1321:C:H5'	2.10	0.51
3:C:42:LEU:C	3:C:44:GLU:N	2.68	0.51
4:D:200:GLU:O	4:D:203:VAL:N	2.43	0.51
7:G:3:ARG:O	7:G:4:ARG:CG	2.58	0.51
9:I:110:GLU:HG2	9:I:113:LYS:NZ	2.24	0.51
11:K:62:GLN:O	11:K:63:LEU:C	2.52	0.51
11:K:116:HIS:N	11:K:116:HIS:ND1	2.57	0.51
12:L:53:ARG:HH12	12:L:92:ASP:CB	2.15	0.51
13:M:40:ASN:HD22	13:M:41:PRO:CD	2.24	0.51
14:N:14:PRO:O	14:N:15:LYS:CB	2.59	0.51
15:O:18:PHE:C	15:O:18:PHE:CD1	2.89	0.51
1:A:817:C:H1'	1:A:819:A:H5'	1.92	0.51
1:A:892:A:O2'	1:A:893:C:H5'	2.11	0.51
1:A:975:A:C5'	1:A:976:G:H5''	2.40	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1020:U:H2'	1:A:1021:G:H8	1.76	0.51
1:A:1427:U:H2'	1:A:1428:A:C8	2.46	0.51
4:D:31:CYS:O	4:D:31:CYS:SG	2.68	0.51
8:H:63:LEU:HD22	8:H:63:LEU:N	2.26	0.51
10:J:16:LEU:HD21	10:J:94:VAL:HG13	1.92	0.51
11:K:14:VAL:HG21	11:K:40:ILE:HD13	1.92	0.51
11:K:46:GLY:O	11:K:47:VAL:C	2.53	0.51
12:L:47:LYS:CB	12:L:48:PRO:CD	2.89	0.51
18:R:56:THR:HB	18:R:58:LEU:HD13	1.93	0.51
1:A:9:G:C2	1:A:26:A:N1	2.79	0.51
1:A:256:U:H2'	1:A:257:G:H8	1.76	0.51
1:A:376:G:H2'	1:A:377:G:H8	1.75	0.51
1:A:419:C:H2'	1:A:420:U:O4'	2.10	0.51
1:A:457:C:H2'	1:A:458:C:H6	1.76	0.51
1:A:1342:C:H2'	1:A:1343:G:C8	2.46	0.51
1:A:1382:C:H2'	1:A:1383:C:H6	1.75	0.51
2:B:36:ARG:HD2	2:B:41:ILE:HG12	1.92	0.51
2:B:71:VAL:CG1	2:B:170:GLU:HG2	2.40	0.51
2:B:230:VAL:HG12	2:B:231:GLU:N	2.26	0.51
3:C:136:GLN:O	3:C:140:ARG:HG3	2.10	0.51
3:C:137:ALA:HA	3:C:140:ARG:HH11	1.73	0.51
10:J:45:ARG:HG3	10:J:65:LEU:HD22	1.92	0.51
12:L:41:ARG:CG	12:L:42:THR:N	2.65	0.51
16:P:66:PRO:CG	16:P:71:ARG:HG3	2.41	0.51
19:S:58:VAL:O	19:S:60:VAL:HG23	2.11	0.51
1:A:308:C:H2'	1:A:309:G:H8	1.76	0.51
1:A:608:A:H2'	1:A:609:A:O4'	2.10	0.51
1:A:970:C:O2	13:M:126:LYS:HG2	2.11	0.51
1:A:1204:A:C6	1:A:1205:U:C6	2.99	0.51
1:A:1397:C:O2'	1:A:1398:A:P	2.69	0.51
2:B:74:LYS:HE3	2:B:205:ASP:O	2.10	0.51
3:C:117:ALA:O	3:C:118:GLN:C	2.54	0.51
4:D:103:ASN:O	4:D:104:VAL:C	2.54	0.51
4:D:199:ASN:O	4:D:202:LEU:HB2	2.11	0.51
7:G:36:LYS:O	7:G:39:ALA:HB3	2.11	0.51
9:I:28:VAL:C	9:I:30:GLY:N	2.68	0.51
9:I:58:ARG:HB3	9:I:58:ARG:CZ	2.41	0.51
9:I:118:LYS:O	9:I:119:ALA:HB3	2.11	0.51
20:T:48:LYS:O	20:T:49:ALA:O	2.29	0.51
1:A:507:C:OP2	1:A:508:C:O2'	2.24	0.51
1:A:750:G:N3	15:O:23:GLY:HA3	2.26	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:991:U:H5	1:A:1212:U:HO2'	1.59	0.51
1:A:1259:C:O5'	1:A:1259:C:H6	1.94	0.51
2:B:200:ILE:CG2	2:B:202:PRO:HD3	2.39	0.51
4:D:187:ARG:CD	4:D:188:LEU:N	2.74	0.51
5:E:139:LEU:O	5:E:141:GLN:N	2.43	0.51
6:F:40:VAL:HG23	6:F:62:TRP:O	2.10	0.51
6:F:100:ASN:HD22	18:R:23:LYS:HG2	1.75	0.51
8:H:88:LYS:C	8:H:90:GLY:H	2.18	0.51
9:I:97:LYS:O	9:I:100:GLY:N	2.44	0.51
15:O:27:VAL:O	15:O:28:GLN:C	2.53	0.51
1:A:146:G:O2'	1:A:147:G:H5'	2.11	0.50
1:A:149:A:O2'	1:A:150:C:H5'	2.11	0.50
1:A:625:G:H4'	16:P:16:HIS:CD2	2.46	0.50
1:A:653:A:O5'	8:H:56:LYS:NZ	2.44	0.50
1:A:965:A:C2	1:A:969:A:C2	2.99	0.50
1:A:1436:U:O2'	1:A:1437:C:H5'	2.12	0.50
2:B:97:TRP:CE3	2:B:98:LEU:O	2.64	0.50
4:D:180:GLY:O	4:D:182:LYS:HG3	2.11	0.50
5:E:97:GLY:O	5:E:98:THR:C	2.54	0.50
5:E:107:ARG:O	5:E:110:LEU:N	2.43	0.50
9:I:69:GLY:C	9:I:73:GLN:HG3	2.36	0.50
12:L:40:VAL:HG21	12:L:77:LEU:O	2.11	0.50
12:L:54:LYS:N	12:L:54:LYS:NZ	2.40	0.50
15:O:27:VAL:HG12	15:O:31:LEU:CD1	2.41	0.50
15:O:78:TYR:CE1	15:O:82:ILE:HD11	2.47	0.50
1:A:265:G:O2'	1:A:266:G:H5'	2.11	0.50
1:A:423:G:H2'	1:A:424:G:O4'	2.12	0.50
1:A:455:C:N4	1:A:476:G:H1	2.09	0.50
1:A:687:A:O2'	1:A:688:G:OP2	2.25	0.50
1:A:691:G:H2'	1:A:692:U:C6	2.46	0.50
1:A:1054:C:N4	23:Y:35:C:O4'	2.44	0.50
1:A:1227:A:H1'	13:M:117:VAL:HG21	1.93	0.50
1:A:1405:G:H2'	1:A:1406:U:H6	1.76	0.50
3:C:66:VAL:CG1	3:C:68:VAL:HG23	2.41	0.50
7:G:17:VAL:HB	7:G:44:TYR:CZ	2.46	0.50
7:G:18:TYR:O	7:G:19:GLY:C	2.54	0.50
8:H:20:TYR:HE2	8:H:75:ARG:HD2	1.76	0.50
12:L:54:LYS:HG2	12:L:75:HIS:HD2	1.77	0.50
13:M:23:TYR:CE2	13:M:71:ARG:HG2	2.46	0.50
14:N:27:CYS:SG	14:N:28:GLY:N	2.84	0.50
18:R:79:LEU:CD2	18:R:80:PRO:HD2	2.41	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:16:HIS:O	20:T:17:ARG:C	2.53	0.50
1:A:276:G:O2'	1:A:277:C:H5'	2.11	0.50
1:A:543:C:O2'	1:A:544:G:H5'	2.10	0.50
1:A:1028:C:H1'	1:A:1034:G:H22	1.75	0.50
1:A:1178:G:H22	1:A:1180:A:H3'	1.74	0.50
1:A:1504:G:O2'	1:A:1505:G:OP2	2.27	0.50
2:B:56:ARG:O	2:B:57:PHE:C	2.54	0.50
2:B:134:GLU:C	2:B:136:VAL:H	2.19	0.50
2:B:185:ILE:HA	2:B:199:TYR:O	2.12	0.50
2:B:207:ALA:O	2:B:209:ARG:N	2.43	0.50
4:D:162:LEU:HD23	4:D:178:VAL:HG13	1.93	0.50
5:E:31:LEU:HD22	5:E:43:LEU:HD21	1.94	0.50
6:F:26:ILE:C	6:F:30:LEU:HD12	2.36	0.50
7:G:47:CYS:SG	7:G:58:PRO:HB2	2.52	0.50
12:L:97:ARG:C	12:L:98:TYR:CD1	2.89	0.50
13:M:34:LEU:CD1	13:M:41:PRO:HA	2.41	0.50
18:R:37:VAL:HG12	18:R:41:LYS:HE3	1.93	0.50
1:A:60:A:H1'	1:A:61:G:OP2	2.12	0.50
1:A:782:A:C6	1:A:801:U:C2	2.99	0.50
1:A:1525:G:O2'	1:A:1526:G:H5'	2.11	0.50
2:B:78:GLN:O	2:B:94:ASN:HB2	2.12	0.50
3:C:90:GLU:C	3:C:92:ALA:H	2.18	0.50
6:F:82:ARG:NE	6:F:82:ARG:HA	2.26	0.50
7:G:9:VAL:O	7:G:10:ARG:C	2.54	0.50
7:G:24:THR:O	7:G:28:ASN:ND2	2.45	0.50
8:H:74:PRO:O	8:H:75:ARG:C	2.53	0.50
9:I:89:ASN:HB3	9:I:92:TYR:CE1	2.46	0.50
9:I:111:ARG:O	9:I:113:LYS:HD2	2.10	0.50
12:L:89:ARG:HD3	12:L:97:ARG:CB	2.42	0.50
13:M:81:LEU:HA	13:M:84:ILE:CD1	2.39	0.50
15:O:41:GLU:HA	15:O:44:LYS:HG2	1.93	0.50
16:P:52:ASP:OD1	16:P:52:ASP:O	2.29	0.50
20:T:40:ALA:HB2	20:T:55:ILE:CG2	2.42	0.50
1:A:267:C:H2'	1:A:268:C:H6	1.76	0.50
1:A:389:A:H2'	1:A:390:C:C5'	2.41	0.50
1:A:707:C:O2'	1:A:708:C:H5'	2.11	0.50
3:C:21:ARG:O	10:J:93:GLY:HA3	2.11	0.50
4:D:8:VAL:HG11	4:D:22:LYS:HE2	1.89	0.50
4:D:158:ILE:HG22	4:D:181:MET:HE1	1.92	0.50
5:E:127:ASN:O	5:E:128:PRO:C	2.54	0.50
6:F:27:GLN:HA	6:F:30:LEU:HD13	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:41:ARG:O	7:G:42:ILE:C	2.53	0.50
8:H:103:VAL:HG12	8:H:108:GLY:HA3	1.93	0.50
12:L:70:ILE:HD13	12:L:77:LEU:HD12	1.93	0.50
13:M:44:ARG:O	13:M:46:LYS:HG2	2.12	0.50
17:Q:45:HIS:N	17:Q:71:PHE:O	2.43	0.50
20:T:94:ALA:O	20:T:95:ALA:CB	2.59	0.50
1:A:77:G:O2'	1:A:78:G:H5'	2.11	0.50
1:A:792:A:H4'	1:A:793:U:C5'	2.36	0.50
1:A:1288:A:C4	1:A:1289:A:C8	3.00	0.50
2:B:162:ILE:O	2:B:162:ILE:HG22	2.11	0.50
3:C:112:SER:OG	3:C:113:ALA:N	2.43	0.50
4:D:2:GLY:O	4:D:3:ARG:HB2	2.11	0.50
4:D:6:GLY:H	4:D:115:ARG:HH22	1.60	0.50
4:D:8:VAL:HG21	4:D:21:LEU:HB2	1.94	0.50
5:E:12:LEU:HD13	5:E:31:LEU:HB2	1.91	0.50
6:F:56:PRO:O	6:F:57:GLN:HB2	2.11	0.50
7:G:37:ASN:O	7:G:38:LEU:C	2.54	0.50
7:G:111:ARG:HB2	7:G:112:PRO:HD2	1.93	0.50
9:I:53:VAL:HG11	9:I:92:TYR:CZ	2.47	0.50
11:K:58:PRO:O	11:K:61:ALA:HB3	2.12	0.50
15:O:4:THR:OG1	15:O:7:GLU:HG3	2.12	0.50
16:P:21:VAL:O	16:P:33:ILE:HG12	2.12	0.50
1:A:113:G:H2'	1:A:114:U:H6	1.76	0.50
1:A:488:C:O2'	1:A:489:C:H5'	2.12	0.50
1:A:839:U:O2	1:A:839:U:C2'	2.59	0.50
1:A:1030:C:H2'	1:A:1030(A):G:H8	1.76	0.50
1:A:1152:A:O3'	10:J:13:HIS:NE2	2.41	0.50
1:A:1263:C:H2'	1:A:1264:C:C6	2.47	0.50
1:A:1447:A:H4'	1:A:1452:C:OP2	2.11	0.50
1:A:1483:A:H2'	1:A:1484:C:O4'	2.11	0.50
2:B:16:HIS:O	2:B:17:PHE:C	2.53	0.50
2:B:21:ARG:HH11	2:B:21:ARG:HG3	1.77	0.50
3:C:19:GLU:O	3:C:40:ARG:NH2	2.45	0.50
5:E:6:PHE:CE1	5:E:66:MET:HE3	2.46	0.50
5:E:40:ARG:NH1	5:E:68:GLU:OE2	2.45	0.50
8:H:25:ASP:OD1	8:H:25:ASP:N	2.43	0.50
9:I:27:THR:HG1	9:I:62:TYR:HD1	1.58	0.50
16:P:42:ARG:O	16:P:43:LYS:C	2.55	0.50
19:S:78:ARG:HG2	19:S:78:ARG:HH11	1.76	0.50
1:A:16:A:H2'	1:A:17:U:H5'	1.93	0.50
1:A:446:G:C2	1:A:447:G:H1'	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:49:VAL:HG13	14:N:41:ARG:HB2	1.90	0.50
11:K:59:TYR:O	11:K:62:GLN:N	2.45	0.50
1:A:429:U:H4'	1:A:430:A:O5'	2.11	0.50
1:A:974:A:OP2	14:N:41:ARG:HD3	2.11	0.50
1:A:1033:G:H2'	1:A:1034:G:O4'	2.11	0.50
1:A:1206:G:H2'	1:A:1207:G:O4'	2.12	0.50
2:B:107:THR:C	2:B:109:SER:N	2.63	0.50
3:C:11:ARG:O	3:C:13:GLY:N	2.45	0.50
5:E:135:THR:HG22	5:E:136:MET:N	2.27	0.50
7:G:46:ALA:O	7:G:50:ILE:HG12	2.12	0.50
10:J:20:ALA:O	10:J:24:VAL:HG23	2.11	0.50
10:J:40:LEU:HB3	10:J:69:ASN:C	2.37	0.50
10:J:42:THR:HG23	10:J:68:HIS:HA	1.92	0.50
12:L:85:ILE:HG21	12:L:98:TYR:CD2	2.47	0.50
1:A:405:U:H5''	1:A:495:A:H2	1.77	0.49
1:A:439:A:H2'	1:A:441:A:H5'	1.93	0.49
1:A:686:U:O2'	1:A:687:A:H8	1.95	0.49
1:A:978:A:H5'	1:A:1363:C:N4	2.27	0.49
1:A:1152:A:H5'	10:J:13:HIS:NE2	2.26	0.49
1:A:1250:A:H2	1:A:1353:G:N2	2.09	0.49
1:A:1326:C:OP1	21:U:12:LYS:NZ	2.45	0.49
1:A:1542:U:H2'	1:A:1543:C:O4'	2.11	0.49
4:D:17:VAL:CG1	4:D:18:LYS:H	2.24	0.49
4:D:153:ARG:HG2	4:D:153:ARG:O	2.12	0.49
8:H:24:THR:HG23	8:H:24:THR:O	2.11	0.49
10:J:30:SER:HB3	10:J:84:GLN:HE22	1.77	0.49
10:J:42:THR:HG22	10:J:43:ARG:N	2.27	0.49
12:L:34:ARG:HB2	12:L:83:VAL:O	2.12	0.49
15:O:53:HIS:O	15:O:57:LEU:HD12	2.12	0.49
15:O:88:ARG:CB	15:O:88:ARG:NH1	2.75	0.49
1:A:47:C:O2	1:A:49:U:C5	2.65	0.49
1:A:129:U:H5''	17:Q:3:LYS:HZ1	1.77	0.49
1:A:691:G:H2'	1:A:692:U:H6	1.76	0.49
1:A:818:G:C3'	1:A:819:A:C5'	2.90	0.49
1:A:862:C:H2'	1:A:863:U:H6	1.77	0.49
1:A:1111:A:H2'	1:A:1112:C:C6	2.47	0.49
2:B:87:ARG:NH1	2:B:233:SER:HB2	2.28	0.49
3:C:64:VAL:CG1	3:C:65:ALA:N	2.76	0.49
3:C:167:TRP:O	3:C:168:ALA:HB2	2.11	0.49
4:D:63:LYS:O	4:D:64:LEU:C	2.55	0.49
4:D:170:VAL:HG12	4:D:171:GLY:N	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:100:VAL:HG12	5:E:107:ARG:HE	1.77	0.49
5:E:115:VAL:HG11	5:E:118:ILE:CG1	2.41	0.49
9:I:50:LEU:O	9:I:52:ALA:N	2.41	0.49
11:K:22:HIS:CD2	11:K:22:HIS:O	2.66	0.49
11:K:79:SER:CA	11:K:104:GLN:HB3	2.34	0.49
1:A:219:C:O2'	1:A:381:C:H5'	2.12	0.49
1:A:406:G:H5''	4:D:5:ILE:HG21	1.92	0.49
1:A:460:G:H3'	1:A:461:A:C5'	2.42	0.49
1:A:921:U:O2'	5:E:19:MET:O	2.27	0.49
1:A:1205:U:H2'	1:A:1206:G:H8	1.77	0.49
1:A:1390:U:H2'	1:A:1391:U:H6	1.78	0.49
1:A:1497:G:H2'	1:A:1498:U:H5'	1.94	0.49
2:B:139:LYS:O	2:B:143:GLU:N	2.45	0.49
3:C:113:ALA:C	3:C:115:LEU:N	2.66	0.49
4:D:77:ASN:O	4:D:81:GLU:HG2	2.13	0.49
4:D:99:SER:O	4:D:140:VAL:HG23	2.12	0.49
4:D:190:ASP:O	4:D:193:ASP:N	2.42	0.49
7:G:15:ASP:O	7:G:19:GLY:HA2	2.11	0.49
9:I:11:LYS:O	9:I:11:LYS:HG2	2.11	0.49
15:O:12:ILE:O	15:O:13:GLN:C	2.55	0.49
16:P:13:HIS:C	16:P:15:PRO:HD3	2.37	0.49
1:A:57:G:C2	1:A:58:C:O2	2.65	0.49
1:A:186:C:C2	1:A:187:C:C5	3.00	0.49
1:A:386:C:C2'	1:A:387:U:H5'	2.42	0.49
1:A:1121:U:O2'	1:A:1122:U:H5'	2.12	0.49
1:A:1243:C:OP2	21:U:10:ARG:NH2	2.46	0.49
1:A:1475:G:H2'	1:A:1476:G:H8	1.78	0.49
7:G:112:PRO:O	7:G:113:GLU:C	2.55	0.49
8:H:31:PHE:HZ	8:H:134:ILE:HD11	1.77	0.49
9:I:108:VAL:CG1	9:I:109:VAL:H	2.23	0.49
13:M:64:TRP:HB2	13:M:66:LEU:HD11	1.95	0.49
14:N:36:PHE:O	14:N:36:PHE:CD1	2.66	0.49
14:N:52:GLN:O	14:N:53:LEU:HD23	2.13	0.49
16:P:81:ARG:HG3	16:P:83:GLU:CG	2.42	0.49
20:T:37:SER:HB3	20:T:84:LEU:CD2	2.43	0.49
1:A:285:G:O2'	1:A:286:G:H5'	2.12	0.49
1:A:389:A:H2'	1:A:390:C:H5'	1.94	0.49
1:A:408:A:H5'	4:D:116:GLN:HB2	1.93	0.49
1:A:913:A:O2'	1:A:914:A:P	2.70	0.49
1:A:1305:G:H8	1:A:1305:G:OP2	1.95	0.49
1:A:1326:C:O2'	1:A:1327:C:H5'	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1342:C:H2'	1:A:1343:G:H8	1.75	0.49
1:A:1382:C:O2'	1:A:1383:C:H5'	2.13	0.49
1:A:1415:G:H2'	1:A:1416:G:H8	1.76	0.49
3:C:7:PRO:O	3:C:11:ARG:HB2	2.12	0.49
3:C:71:ALA:CA	3:C:106:VAL:HB	2.41	0.49
5:E:91:LEU:CD2	5:E:110:LEU:HD11	2.43	0.49
7:G:25:ALA:O	7:G:28:ASN:N	2.45	0.49
8:H:17:THR:C	8:H:78:GLN:HE22	2.18	0.49
9:I:34:ASN:H	9:I:34:ASN:ND2	2.09	0.49
10:J:92:THR:HG22	10:J:93:GLY:N	2.28	0.49
1:A:63:C:N4	1:A:104:G:H1	2.08	0.49
1:A:255:G:H1'	17:Q:16:GLN:NE2	2.28	0.49
1:A:637:G:H2'	1:A:638:G:H8	1.77	0.49
1:A:920:U:H2'	1:A:921:U:C6	2.48	0.49
1:A:1125:U:H5''	1:A:1126:U:H5	1.77	0.49
1:A:1150:U:O2'	10:J:41:PRO:CD	2.59	0.49
1:A:1228:C:OP1	13:M:115:LYS:HB2	2.11	0.49
1:A:1251:A:H1'	1:A:1369:C:O2'	2.13	0.49
1:A:1296:C:H4'	1:A:1302:U:C4	2.47	0.49
1:A:1479:C:O2'	1:A:1480:G:H5'	2.11	0.49
2:B:41:ILE:N	2:B:41:ILE:CD1	2.73	0.49
5:E:31:LEU:HD23	5:E:45:PHE:HA	1.95	0.49
5:E:103:GLY:C	5:E:106:PRO:HD2	2.37	0.49
7:G:47:CYS:HA	7:G:50:ILE:CG1	2.43	0.49
10:J:32:ALA:HB2	10:J:81:THR:HG21	1.94	0.49
12:L:54:LYS:HB3	12:L:70:ILE:HD12	1.94	0.49
12:L:89:ARG:HD3	12:L:97:ARG:HB3	1.94	0.49
12:L:89:ARG:CZ	12:L:97:ARG:HD2	2.42	0.49
16:P:52:ASP:OD1	16:P:52:ASP:C	2.55	0.49
17:Q:95:TYR:HD1	17:Q:95:TYR:H	1.61	0.49
18:R:55:ARG:HH11	18:R:55:ARG:HA	1.78	0.49
1:A:52:G:O2'	1:A:53:A:H5'	2.12	0.49
1:A:62:U:H4'	1:A:378:G:N2	2.27	0.49
1:A:158:G:O2'	1:A:159:G:H5'	2.12	0.49
1:A:216:G:H2'	1:A:217:C:C6	2.47	0.49
1:A:232:G:H1'	1:A:262:A:N1	2.27	0.49
1:A:314:C:C2'	1:A:315:A:H5'	2.42	0.49
1:A:386:C:O2'	1:A:387:U:H5'	2.13	0.49
1:A:642:A:N9	8:H:114:THR:O	2.45	0.49
1:A:684:A:O2'	1:A:685:G:H5'	2.13	0.49
1:A:949:A:C2	1:A:1233:G:N3	2.80	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:968:A:H4'	1:A:969:A:OP2	2.12	0.49
1:A:1418:A:N6	1:A:1482:G:O2'	2.46	0.49
1:A:1503:A:C2	1:A:1531:A:H2	2.31	0.49
2:B:209:ARG:HE	2:B:239:VAL:HG11	1.77	0.49
4:D:64:LEU:O	4:D:64:LEU:HD13	2.13	0.49
4:D:132:ARG:O	4:D:133:VAL:HG23	2.13	0.49
6:F:15:ASP:H	6:F:18:GLN:NE2	2.04	0.49
8:H:82:HIS:ND1	8:H:138:TRP:CE2	2.80	0.49
9:I:79:LEU:O	9:I:83:ARG:N	2.45	0.49
9:I:110:GLU:HG2	9:I:113:LYS:HZ2	1.76	0.49
11:K:40:ILE:CG2	11:K:41:THR:HG23	2.40	0.49
11:K:58:PRO:HB2	11:K:93:GLN:HG3	1.95	0.49
18:R:62:GLU:C	18:R:64:ARG:H	2.21	0.49
23:Y:35:C:H2'	23:Y:36:C:O4'	2.13	0.49
1:A:479:C:H2'	1:A:480:U:O4'	2.13	0.49
1:A:1110:A:H2'	1:A:1111:A:H5'	1.95	0.49
1:A:1111:A:H2'	1:A:1112:C:H6	1.77	0.49
1:A:1113:C:O5'	1:A:1113:C:H6	1.95	0.49
1:A:1353:G:H2'	1:A:1354:C:H6	1.77	0.49
2:B:40:HIS:HB3	2:B:190:THR:HG21	1.94	0.49
2:B:189:ASP:CG	2:B:205:ASP:OD1	2.56	0.49
8:H:17:THR:O	8:H:78:GLN:NE2	2.39	0.49
14:N:40:CYS:SG	14:N:42:ILE:HG22	2.53	0.49
16:P:20:VAL:HG22	16:P:21:VAL:N	2.28	0.49
20:T:51:GLU:O	20:T:55:ILE:CD1	2.61	0.49
20:T:75:ASN:N	20:T:75:ASN:OD1	2.46	0.49
1:A:145:G:O2'	1:A:146:G:H5'	2.12	0.49
1:A:1276:G:O2'	1:A:1277:C:H5'	2.13	0.49
1:A:1390:U:H2'	1:A:1391:U:C6	2.47	0.49
1:A:1442:G:H21	1:A:1442(B):A:H5''	1.76	0.49
1:A:1442:G:N3	1:A:1442:G:H2'	2.28	0.49
2:B:77:ALA:HB1	2:B:211:ILE:HG21	1.95	0.49
4:D:79:PHE:HE1	4:D:204:ILE:HG12	1.77	0.49
7:G:72:ARG:HG2	7:G:72:ARG:HH11	1.78	0.49
8:H:126:LYS:C	8:H:128:GLY:H	2.19	0.49
9:I:5:TYR:C	9:I:84:ALA:HB2	2.37	0.49
9:I:8:GLY:HA2	9:I:79:LEU:HD13	1.95	0.49
9:I:10:ARG:HH21	9:I:11:LYS:HE3	1.77	0.49
12:L:38:THR:HG22	12:L:39:VAL:N	2.27	0.49
12:L:83:VAL:CG1	12:L:100:ILE:HD11	2.39	0.49
13:M:55:ARG:CB	13:M:55:ARG:HH11	2.26	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:41:GLU:HA	15:O:44:LYS:HG3	1.94	0.49
16:P:39:TYR:CD2	16:P:73:LEU:HD11	2.48	0.49
1:A:751:U:H1'	15:O:23:GLY:O	2.13	0.49
1:A:973:G:P	10:J:57:LYS:HD2	2.52	0.49
1:A:1090:U:O2'	1:A:1091:U:H5'	2.13	0.49
1:A:1164:G:O2'	1:A:1165:C:H5'	2.12	0.49
1:A:1269:A:H2'	1:A:1270:C:H5'	1.94	0.49
2:B:16:HIS:NE2	2:B:214:ILE:HD11	2.28	0.49
3:C:190:ARG:HH11	3:C:190:ARG:HB3	1.77	0.49
4:D:78:LEU:HB3	4:D:93:PHE:HE2	1.78	0.49
7:G:69:VAL:HG12	7:G:69:VAL:O	2.12	0.49
8:H:39:LEU:HB3	8:H:45:ILE:HG12	1.95	0.49
9:I:42:ARG:O	9:I:43:ALA:C	2.56	0.49
11:K:56:GLY:O	11:K:57:THR:C	2.55	0.49
13:M:17:VAL:O	13:M:18:ALA:C	2.55	0.49
18:R:66:LEU:O	18:R:67:ALA:C	2.56	0.49
1:A:108:G:C6	20:T:15:ARG:HG2	2.47	0.48
1:A:538:G:O3'	12:L:114:LYS:HD3	2.13	0.48
1:A:600:C:O2'	1:A:601:C:H5'	2.12	0.48
1:A:780:A:O2'	1:A:781:A:H5''	2.13	0.48
1:A:1021:G:H2'	1:A:1022:G:H8	1.78	0.48
1:A:1069:C:O3'	5:E:25:ARG:NH1	2.46	0.48
1:A:1368:G:OP1	9:I:111:ARG:NH2	2.45	0.48
2:B:160:ASP:O	2:B:161:ALA:HB2	2.12	0.48
2:B:177:ALA:O	2:B:178:ARG:C	2.56	0.48
2:B:219:VAL:CA	2:B:222:ILE:HD12	2.43	0.48
3:C:88:ARG:O	3:C:91:LEU:HB3	2.13	0.48
3:C:152:ILE:CG2	3:C:153:VAL:N	2.76	0.48
4:D:17:VAL:O	4:D:33:MET:HE2	2.13	0.48
4:D:190:ASP:O	4:D:193:ASP:HB2	2.13	0.48
6:F:33:TYR:CD1	6:F:75:LEU:HA	2.48	0.48
11:K:33:THR:CG2	11:K:39:PRO:HA	2.43	0.48
18:R:53:ARG:O	18:R:55:ARG:N	2.46	0.48
1:A:161:A:C8	1:A:162:A:N7	2.81	0.48
1:A:166:G:O2'	1:A:167:G:H5'	2.12	0.48
1:A:293:G:O2'	1:A:294:U:H5'	2.13	0.48
1:A:975:A:C8	1:A:975:A:H5'	2.48	0.48
1:A:1006:C:O2'	1:A:1007:C:H5'	2.13	0.48
1:A:1124:G:H5'	10:J:35:SER:C	2.38	0.48
1:A:1157:A:N6	1:A:1178:G:H1'	2.29	0.48
1:A:1272:G:H5'	1:A:1272:G:H8	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1380:U:O2'	1:A:1381:U:OP2	2.23	0.48
1:A:1480:G:H2'	1:A:1481:U:C6	2.48	0.48
1:A:1516:G:H2'	1:A:1518:A:OP2	2.13	0.48
2:B:59:GLU:O	2:B:62:ALA:HB3	2.13	0.48
3:C:87:LEU:C	3:C:89:GLU:H	2.22	0.48
4:D:60:GLU:O	4:D:63:LYS:HB3	2.13	0.48
4:D:64:LEU:HD23	4:D:198:VAL:HG11	1.95	0.48
10:J:78:ASN:O	10:J:80:LYS:N	2.46	0.48
12:L:53:ARG:HA	12:L:54:LYS:NZ	2.28	0.48
13:M:110:ARG:HG3	13:M:110:ARG:NH1	2.28	0.48
14:N:43:CYS:HA	14:N:46:GLU:CG	2.43	0.48
15:O:76:GLU:O	15:O:77:ARG:C	2.55	0.48
17:Q:23:VAL:O	17:Q:24:GLU:CB	2.60	0.48
17:Q:58:GLU:HB2	17:Q:75:ARG:HG2	1.95	0.48
20:T:39:LYS:O	20:T:43:LEU:HG	2.13	0.48
1:A:485:G:O2'	1:A:486:U:P	2.71	0.48
1:A:1149:C:OP1	9:I:9:ARG:HD3	2.13	0.48
1:A:1155:G:O2'	1:A:1156:G:H5'	2.14	0.48
1:A:1169:A:H2'	1:A:1170:A:C8	2.48	0.48
1:A:1268:A:H4'	21:U:19:GLY:C	2.38	0.48
1:A:1276:G:N3	1:A:1282:C:H1'	2.28	0.48
1:A:1373:G:H5''	7:G:36:LYS:HB2	1.94	0.48
2:B:77:ALA:HB2	2:B:211:ILE:CD1	2.37	0.48
3:C:17:ASP:HB3	3:C:21:ARG:NH2	2.27	0.48
3:C:33:LEU:C	3:C:35:GLU:N	2.70	0.48
3:C:110:ASN:C	3:C:111:LEU:HD23	2.38	0.48
4:D:110:PHE:N	4:D:110:PHE:CD2	2.79	0.48
8:H:82:HIS:ND1	8:H:138:TRP:NE1	2.61	0.48
8:H:92:ARG:HH11	8:H:92:ARG:CG	2.26	0.48
8:H:105:ARG:HH11	8:H:105:ARG:CG	2.24	0.48
12:L:105:TYR:C	12:L:107:ALA:N	2.71	0.48
15:O:9:GLN:O	15:O:10:LYS:C	2.56	0.48
17:Q:85:VAL:HG12	17:Q:89:LEU:HG	1.96	0.48
18:R:22:VAL:O	18:R:23:LYS:C	2.56	0.48
20:T:13:LEU:HD12	20:T:14:LYS:N	2.28	0.48
1:A:383:A:C2'	1:A:384:G:H5'	2.40	0.48
1:A:1057:G:C2'	1:A:1058:G:H5'	2.43	0.48
1:A:1134:G:C2'	1:A:1135:U:H5'	2.43	0.48
1:A:1187:G:H1'	14:N:61:TRP:OXT	2.13	0.48
1:A:1305:G:H5''	21:U:4:GLY:C	2.39	0.48
1:A:1318:A:C2	19:S:37:ARG:NH2	2.81	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1406:U:O2'	1:A:1407:C:H5'	2.13	0.48
2:B:121:LEU:HD23	2:B:121:LEU:C	2.38	0.48
3:C:58:GLU:O	3:C:64:VAL:HA	2.13	0.48
10:J:3:LYS:N	10:J:77:PRO:HD3	2.28	0.48
10:J:16:LEU:HA	10:J:19:SER:HB3	1.95	0.48
13:M:49:THR:HB	13:M:52:GLU:OE1	2.14	0.48
13:M:79:LYS:O	13:M:79:LYS:HD3	2.12	0.48
16:P:66:PRO:HG2	16:P:71:ARG:NH1	2.28	0.48
19:S:30:LEU:HD23	19:S:31:ILE:N	2.28	0.48
19:S:31:ILE:O	19:S:50:ALA:HB3	2.13	0.48
20:T:40:ALA:HB2	20:T:55:ILE:HG22	1.95	0.48
20:T:79:ARG:O	20:T:80:ARG:C	2.57	0.48
1:A:16:A:N1	1:A:919:A:H2	2.10	0.48
1:A:129:U:O2'	1:A:130:A:H2'	2.13	0.48
1:A:880:C:C6	1:A:880:C:C3'	2.96	0.48
1:A:913:A:H1'	1:A:914:A:O4'	2.13	0.48
1:A:1211:U:H5'	1:A:1212:U:OP1	2.14	0.48
1:A:1366:C:C6	1:A:1367:C:H5	2.31	0.48
2:B:96:ARG:O	2:B:98:LEU:CD2	2.61	0.48
4:D:83:SER:HA	4:D:89:THR:HG21	1.94	0.48
10:J:5:ARG:C	10:J:6:ILE:HD12	2.37	0.48
11:K:104:GLN:HA	11:K:104:GLN:NE2	2.18	0.48
13:M:81:LEU:N	13:M:81:LEU:HD23	2.29	0.48
1:A:333:G:H4'	20:T:16:HIS:NE2	2.28	0.48
1:A:513:C:H2'	1:A:514:C:H6	1.79	0.48
1:A:789:U:H2'	1:A:791:G:OP2	2.14	0.48
1:A:975:A:H5'	1:A:975:A:H8	1.77	0.48
1:A:1053:G:O2'	1:A:1199:U:H5	1.96	0.48
1:A:1065:U:O2'	1:A:1066:C:OP2	2.31	0.48
2:B:74:LYS:HE2	2:B:166:ASP:HB2	1.95	0.48
4:D:57:ARG:HE	4:D:205:GLU:CD	2.21	0.48
7:G:46:ALA:CB	7:G:117:ALA:O	2.62	0.48
1:A:295:C:H2'	1:A:296:U:O4'	2.12	0.48
1:A:742:G:P	15:O:35:ARG:HH22	2.35	0.48
1:A:1276:G:H2'	1:A:1277:C:H5'	1.95	0.48
3:C:164:ARG:NH1	3:C:166:GLU:OE1	2.43	0.48
5:E:32:VAL:HG12	5:E:58:ALA:CB	2.42	0.48
9:I:116:LYS:HA	9:I:123:PRO:HD3	1.96	0.48
10:J:42:THR:HG23	10:J:67:THR:O	2.12	0.48
11:K:50:TYR:HE2	11:K:54:ARG:NH2	2.12	0.48
11:K:69:ALA:O	11:K:73:MET:HG2	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:R:26:LEU:HD23	18:R:29:PHE:CE2	2.48	0.48
18:R:39:VAL:CG1	18:R:40:LEU:H	2.26	0.48
20:T:50:GLU:CG	20:T:100:ILE:HB	2.43	0.48
1:A:537:G:H2'	1:A:538:G:H8	1.79	0.48
1:A:706:A:C5	1:A:707:C:C5	3.02	0.48
1:A:736:C:H2'	1:A:737:A:H8	1.78	0.48
1:A:1095:U:H2'	1:A:1096:C:O4'	2.14	0.48
1:A:1253:G:N1	1:A:1285:A:N6	2.62	0.48
1:A:1402:C:H2'	1:A:1403:C:O4'	2.14	0.48
2:B:54:THR:HG23	2:B:199:TYR:CB	2.38	0.48
3:C:91:LEU:HD23	3:C:91:LEU:C	2.38	0.48
3:C:91:LEU:HG	3:C:99:VAL:HG22	1.94	0.48
11:K:91:ARG:CZ	18:R:88:LYS:NZ	2.77	0.48
13:M:34:LEU:C	13:M:37:THR:HG22	2.39	0.48
1:A:166:G:H2'	1:A:167:G:H8	1.79	0.48
1:A:1086:U:O5'	1:A:1086:U:C6	2.66	0.48
1:A:1185:G:O2'	1:A:1186:G:H5'	2.13	0.48
1:A:1269:A:H5'	21:U:19:GLY:HA2	1.96	0.48
2:B:221:LEU:HA	2:B:224:GLN:HB3	1.95	0.48
3:C:19:GLU:HB2	3:C:54:ARG:HH22	1.78	0.48
3:C:147:LYS:HD2	3:C:204:LEU:O	2.14	0.48
4:D:96:LEU:HD23	4:D:96:LEU:O	2.14	0.48
7:G:145:ALA:O	7:G:149:ARG:HB2	2.13	0.48
8:H:36:LEU:HD12	8:H:61:VAL:HG22	1.95	0.48
9:I:53:VAL:O	9:I:54:ASP:HB2	2.13	0.48
9:I:89:ASN:C	9:I:91:ASP:H	2.22	0.48
10:J:6:ILE:CD1	10:J:73:ASP:H	2.20	0.48
13:M:67:GLU:O	13:M:68:GLY:C	2.55	0.48
1:A:17:U:H4'	1:A:1080:A:O4'	2.14	0.48
1:A:43:C:OP1	16:P:13:HIS:HD2	1.97	0.48
1:A:281:G:O2'	1:A:282:A:OP2	2.30	0.48
1:A:620:C:C2	4:D:135:LEU:HD13	2.49	0.48
1:A:1123:A:H2'	1:A:1124:G:O4'	2.14	0.48
5:E:31:LEU:HD23	5:E:44:GLY:O	2.14	0.48
5:E:76:ILE:HG23	5:E:142:LEU:CD1	2.44	0.48
5:E:79:GLU:HG3	5:E:93:PRO:HD2	1.96	0.48
6:F:10:LEU:HD11	6:F:59:TYR:CD2	2.49	0.48
8:H:104:ARG:C	8:H:106:GLY:N	2.71	0.48
9:I:9:ARG:CG	9:I:14:VAL:HG12	2.43	0.48
9:I:103:THR:O	9:I:104:ARG:C	2.57	0.48
11:K:67:ASP:OD2	11:K:71:LYS:HE3	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:8:GLU:HG3	13:M:22:ILE:HG23	1.95	0.48
16:P:75:ARG:C	16:P:77:ALA:H	2.21	0.48
20:T:50:GLU:O	20:T:51:GLU:C	2.57	0.48
1:A:631:G:H2'	1:A:632:A:C8	2.49	0.47
1:A:740:U:O2'	1:A:741:G:H5'	2.14	0.47
1:A:899:C:O5'	1:A:899:C:H6	1.97	0.47
1:A:955:U:OP1	13:M:120:LYS:HD3	2.13	0.47
1:A:980:C:O2'	14:N:21:TYR:CE1	2.67	0.47
1:A:1039:C:H2'	1:A:1040:U:C6	2.49	0.47
1:A:1152:A:O2'	1:A:1153:C:H5'	2.14	0.47
1:A:1200:C:O2	1:A:1205:U:C5	2.66	0.47
1:A:1343:G:H4'	9:I:122:ALA:HB3	1.96	0.47
2:B:15:VAL:CG1	2:B:209:ARG:HB3	2.44	0.47
2:B:53:ARG:HA	2:B:56:ARG:NH1	2.29	0.47
2:B:207:ALA:C	2:B:209:ARG:N	2.72	0.47
3:C:11:ARG:O	3:C:12:LEU:C	2.57	0.47
3:C:113:ALA:N	3:C:116:VAL:HG23	2.19	0.47
6:F:45:LEU:HD23	6:F:59:TYR:HD1	1.79	0.47
6:F:62:TRP:CE2	18:R:35:ARG:NH2	2.82	0.47
7:G:148:ASN:C	7:G:150:ALA:H	2.22	0.47
8:H:29:SER:O	8:H:30:ARG:C	2.56	0.47
9:I:7:THR:HG21	9:I:9:ARG:HH12	1.79	0.47
9:I:70:LYS:O	9:I:74:ILE:HG13	2.14	0.47
9:I:85:LEU:O	9:I:92:TYR:HD1	1.96	0.47
10:J:15:THR:HG23	10:J:16:LEU:N	2.27	0.47
10:J:22:LYS:C	10:J:24:VAL:H	2.22	0.47
11:K:19:ALA:CB	11:K:80:VAL:HG11	2.44	0.47
11:K:79:SER:HB2	11:K:106:LYS:HE3	1.96	0.47
13:M:74:VAL:O	13:M:77:ASN:HB3	2.14	0.47
16:P:19:ILE:O	16:P:20:VAL:HB	2.14	0.47
1:A:359:U:H2'	1:A:360:A:C8	2.43	0.47
1:A:375:U:H4'	16:P:17:TYR:CE2	2.49	0.47
1:A:724:G:O2'	1:A:725:G:H5'	2.14	0.47
1:A:781:A:H2	1:A:1514:C:C4'	2.27	0.47
1:A:840:C:H4'	1:A:848:C:C2	2.49	0.47
1:A:860:A:H2'	1:A:861:G:O4'	2.14	0.47
1:A:862:C:C4	1:A:863:U:C5	3.03	0.47
1:A:866:C:C5	1:A:867:G:H1'	2.48	0.47
1:A:1117:G:N2	1:A:1180:A:H1'	2.28	0.47
1:A:1277:C:H1'	1:A:1282:C:C2	2.49	0.47
8:H:13:ILE:O	8:H:14:ARG:C	2.57	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:Q:76:LEU:C	17:Q:76:LEU:CD2	2.86	0.47
19:S:16:LEU:HA	19:S:19:VAL:HG12	1.96	0.47
19:S:33:THR:HG22	19:S:34:TRP:N	2.29	0.47
19:S:64:GLU:O	19:S:67:VAL:HG23	2.14	0.47
1:A:79:G:H2'	1:A:79:G:N3	2.29	0.47
1:A:321:A:O2'	1:A:322:C:H5'	2.14	0.47
1:A:474:G:O2'	1:A:475:G:H5'	2.15	0.47
1:A:542:G:H2'	1:A:543:C:C6	2.45	0.47
1:A:1063:C:H3'	1:A:1064:G:H2'	1.95	0.47
1:A:1269:A:C2'	1:A:1270:C:H5'	2.45	0.47
1:A:1316:G:C2'	1:A:1317:C:H5''	2.44	0.47
1:A:1514:C:H2'	1:A:1515:C:C6	2.49	0.47
2:B:23:ARG:O	2:B:24:TRP:O	2.31	0.47
3:C:101:LEU:C	3:C:101:LEU:CD2	2.88	0.47
4:D:13:ARG:NH2	4:D:40:PRO:HA	2.29	0.47
4:D:79:PHE:CZ	4:D:204:ILE:HA	2.49	0.47
7:G:12:LEU:HD12	7:G:12:LEU:N	2.28	0.47
8:H:37:ARG:O	8:H:41:ARG:HB2	2.15	0.47
10:J:25:GLU:C	10:J:27:ALA:H	2.22	0.47
10:J:40:LEU:HB3	10:J:69:ASN:O	2.15	0.47
10:J:49:VAL:HG12	10:J:50:ILE:N	2.28	0.47
13:M:29:ARG:C	13:M:31:LYS:N	2.69	0.47
19:S:64:GLU:O	19:S:65:ASN:C	2.57	0.47
1:A:203:U:H4'	1:A:204:U:O5'	2.14	0.47
1:A:538:G:P	12:L:115:LYS:HG3	2.54	0.47
1:A:659:U:H2'	1:A:660:G:H8	1.79	0.47
1:A:939:G:H2'	1:A:940:C:H6	1.78	0.47
1:A:1021:G:N2	1:A:1022:G:H1'	2.29	0.47
1:A:1072:G:H2'	1:A:1073:U:C6	2.49	0.47
1:A:1126:U:P	1:A:1126:U:H6	2.38	0.47
2:B:139:LYS:CD	2:B:143:GLU:HG3	2.45	0.47
2:B:187:LEU:HD23	2:B:201:ILE:O	2.14	0.47
4:D:13:ARG:HD2	4:D:38:TYR:O	2.14	0.47
5:E:146:ALA:O	5:E:149:GLU:HG2	2.14	0.47
7:G:21:VAL:O	7:G:22:LEU:C	2.58	0.47
9:I:49:PRO:HG2	9:I:81:ILE:HG22	1.94	0.47
10:J:27:ALA:HB2	10:J:85:LEU:CG	2.38	0.47
11:K:124:LYS:CD	11:K:125:PHE:HE1	2.26	0.47
13:M:90:LEU:HA	13:M:93:ARG:CD	2.43	0.47
1:A:412:A:H4'	1:A:413:G:C8	2.48	0.47
1:A:807:A:H2'	1:A:808:C:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:938:A:H8	1:A:938:A:O5'	1.97	0.47
1:A:1047:G:H2'	1:A:1048:G:C5'	2.42	0.47
1:A:1223:C:OP1	1:A:1224:G:H3'	2.15	0.47
1:A:1317:C:N4	14:N:19:ARG:HH12	2.12	0.47
2:B:219:VAL:N	2:B:222:ILE:HD12	2.30	0.47
3:C:207:VAL:HG12	3:C:208:ILE:N	2.30	0.47
6:F:15:ASP:O	6:F:18:GLN:NE2	2.47	0.47
7:G:26:PHE:HB2	7:G:62:PHE:HZ	1.80	0.47
8:H:117:GLY:O	8:H:119:LEU:HD23	2.13	0.47
11:K:37:GLY:O	11:K:38:ASN:O	2.32	0.47
12:L:38:THR:HB	12:L:57:LYS:HB2	1.95	0.47
15:O:17:ARG:NE	15:O:77:ARG:HH11	2.11	0.47
16:P:49:LEU:HD11	16:P:51:VAL:HG23	1.95	0.47
1:A:39:G:O6	1:A:547:A:H2'	2.15	0.47
1:A:175:C:C2	1:A:176:C:C5	3.02	0.47
1:A:419:C:OP1	1:A:513:C:H1'	2.15	0.47
1:A:552:U:O2'	1:A:553:A:H5'	2.15	0.47
1:A:960:U:H1'	1:A:1223:C:H5'	1.95	0.47
1:A:978:A:O2'	1:A:979:C:H5'	2.15	0.47
1:A:1320:C:C2'	1:A:1321:C:H5'	2.44	0.47
1:A:1489:G:H2'	1:A:1490:C:O4'	2.14	0.47
2:B:12:GLU:OE2	2:B:213:LEU:HD11	2.14	0.47
2:B:161:ALA:HB1	2:B:185:ILE:CD1	2.18	0.47
2:B:184:VAL:HG12	2:B:197:VAL:HG13	1.96	0.47
4:D:79:PHE:CE1	4:D:204:ILE:HA	2.50	0.47
4:D:132:ARG:HH11	4:D:132:ARG:HG3	1.79	0.47
5:E:24:ARG:HG3	5:E:24:ARG:O	2.15	0.47
5:E:28:PHE:O	5:E:47:LYS:HA	2.14	0.47
6:F:18:GLN:NE2	6:F:18:GLN:H	2.13	0.47
6:F:100:ASN:HB2	18:R:23:LYS:HE3	1.96	0.47
7:G:69:VAL:HG22	7:G:135:VAL:HG22	1.95	0.47
8:H:119:LEU:HD12	8:H:123:GLU:C	2.40	0.47
9:I:7:THR:O	9:I:83:ARG:CD	2.62	0.47
9:I:99:LEU:HB3	9:I:101:PHE:CD1	2.49	0.47
11:K:14:VAL:HG21	11:K:40:ILE:HD11	1.95	0.47
12:L:8:ASN:O	12:L:11:VAL:HB	2.15	0.47
13:M:87:TYR:C	13:M:89:GLY:H	2.23	0.47
17:Q:12:SER:HB2	17:Q:20:THR:HB	1.95	0.47
20:T:70:SER:HA	20:T:73:HIS:CD2	2.48	0.47
1:A:179:A:O2'	1:A:180:U:H5'	2.15	0.47
1:A:193:C:H2'	1:A:194:C:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:448:A:OP2	1:A:485:G:N2	2.46	0.47
1:A:602:A:C6	1:A:637:G:C6	3.02	0.47
1:A:655:A:C2	1:A:656:C:C2	3.03	0.47
1:A:936:C:H2'	1:A:937:A:O4'	2.15	0.47
1:A:1072:G:O6	1:A:1102:A:N6	2.47	0.47
1:A:1311:G:H22	1:A:1326:C:H5	1.60	0.47
1:A:1320:C:H1'	19:S:73:GLU:N	2.29	0.47
1:A:1403:C:O2'	1:A:1404:C:H5'	2.14	0.47
1:A:1502:A:C2	1:A:1504:G:C4	3.01	0.47
2:B:178:ARG:O	2:B:179:LYS:C	2.58	0.47
2:B:195:ASP:O	8:H:74:PRO:HG3	2.14	0.47
2:B:240:GLN:CD	2:B:240:GLN:N	2.72	0.47
4:D:58:LEU:O	4:D:61:LYS:N	2.47	0.47
4:D:76:ARG:HD2	4:D:207:TYR:HE2	1.77	0.47
5:E:147:ASP:OD1	5:E:147:ASP:N	2.43	0.47
6:F:100:ASN:HD22	18:R:23:LYS:CG	2.28	0.47
7:G:25:ALA:HA	7:G:28:ASN:HD22	1.80	0.47
7:G:72:ARG:HG2	7:G:72:ARG:NH1	2.29	0.47
8:H:4:ASP:HB2	8:H:89:PRO:CG	2.44	0.47
8:H:20:TYR:CE2	8:H:75:ARG:HB3	2.50	0.47
11:K:27:ASN:CG	11:K:28:THR:H	2.23	0.47
11:K:108:ILE:O	18:R:87:ARG:HA	2.14	0.47
12:L:46:LYS:HE2	12:L:47:LYS:HB2	1.97	0.47
14:N:10:ALA:C	14:N:12:ARG:N	2.72	0.47
15:O:88:ARG:HB3	15:O:88:ARG:NH1	2.30	0.47
16:P:67:THR:O	16:P:70:ALA:N	2.48	0.47
17:Q:17:LYS:O	17:Q:45:HIS:HD2	1.98	0.47
18:R:62:GLU:C	18:R:64:ARG:N	2.71	0.47
19:S:40:ILE:HG21	19:S:62:ILE:HD11	1.97	0.47
20:T:63:ILE:O	20:T:66:ALA:HB3	2.13	0.47
20:T:77:ALA:O	20:T:78:ALA:C	2.58	0.47
1:A:303:A:O2'	1:A:304:U:H5'	2.14	0.47
1:A:429:U:H2'	4:D:25:ARG:CZ	2.45	0.47
1:A:593:G:O2'	1:A:594:G:H5'	2.15	0.47
1:A:914:A:H2'	1:A:915:A:H8	1.80	0.47
1:A:1048:G:O4'	1:A:1215:G:H4'	2.15	0.47
1:A:1049:U:H5	1:A:1203:C:OP1	1.98	0.47
1:A:1347:G:H3'	9:I:108:VAL:O	2.15	0.47
1:A:1347:G:H8	9:I:107:ARG:HB3	1.80	0.47
1:A:1518:A:H2'	1:A:1519:A:C8	2.50	0.47
3:C:7:PRO:HG2	3:C:184:TYR:HB2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:132:ARG:HB2	3:C:136:GLN:NE2	2.30	0.47
4:D:3:ARG:O	4:D:4:TYR:HB3	2.13	0.47
4:D:35:ARG:O	4:D:35:ARG:HG2	2.15	0.47
4:D:52:SER:O	4:D:56:VAL:HG23	2.14	0.47
4:D:106:TYR:CD2	4:D:106:TYR:C	2.92	0.47
4:D:200:GLU:CD	4:D:200:GLU:N	2.73	0.47
8:H:6:ILE:HB	8:H:85:ARG:HH12	1.78	0.47
8:H:96:GLY:H	8:H:99:GLU:CG	2.27	0.47
9:I:40:LEU:CD1	9:I:70:LYS:HG2	2.45	0.47
9:I:117:HIS:HB2	9:I:121:ARG:HD2	1.96	0.47
11:K:33:THR:HB	11:K:37:GLY:O	2.15	0.47
13:M:90:LEU:CA	13:M:93:ARG:HG3	2.45	0.47
14:N:14:PRO:HG2	14:N:16:PHE:O	2.15	0.47
18:R:36:ASN:HB3	18:R:39:VAL:HG12	1.97	0.47
1:A:332:G:O2'	1:A:333:G:H5'	2.14	0.47
1:A:372:C:C1'	1:A:373:A:OP2	2.58	0.47
1:A:413:G:H2'	1:A:413:G:N3	2.29	0.47
1:A:436:C:H5''	4:D:156:GLU:OE2	2.15	0.47
1:A:1061:G:C1'	10:J:56:HIS:CE1	2.98	0.47
1:A:1269:A:C2	1:A:1313:U:C1'	2.98	0.47
2:B:55:PHE:HE2	2:B:218:ALA:HA	1.79	0.47
3:C:203:PHE:CD1	3:C:204:LEU:N	2.76	0.47
5:E:18:ARG:NH2	5:E:25:ARG:HB2	2.29	0.47
11:K:32:ILE:CG2	11:K:77:MET:HE2	2.45	0.47
11:K:80:VAL:HG23	11:K:103:LEU:HD22	1.96	0.47
13:M:96:LEU:HB3	13:M:97:PRO:HD2	1.97	0.47
20:T:45:GLN:C	20:T:47:GLY:N	2.69	0.47
1:A:151:A:H2'	1:A:152:A:O4'	2.15	0.47
1:A:167:G:H2'	1:A:168:G:C8	2.50	0.47
1:A:484:G:H4'	1:A:485:G:O5'	2.15	0.47
1:A:516:U:C4	1:A:517:G:O6	2.67	0.47
1:A:655:A:H2'	1:A:656:C:C6	2.50	0.47
1:A:833:U:H2'	1:A:834:C:C6	2.50	0.47
1:A:848:C:O2'	1:A:849:C:H5'	2.15	0.47
1:A:1130:A:H4'	9:I:3:GLN:OE1	2.14	0.47
1:A:1221:G:H4'	19:S:53:ASN:O	2.15	0.47
1:A:1381:U:C6	7:G:156:TRP:HZ2	2.33	0.47
2:B:19:HIS:CE1	2:B:204:ASN:HB2	2.50	0.47
2:B:42:ILE:CG2	2:B:43:ASP:N	2.77	0.47
2:B:61:LEU:HD21	2:B:160:ASP:CB	2.45	0.47
4:D:31:CYS:C	4:D:33:MET:N	2.73	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:36:ARG:O	4:D:36:ARG:HG2	2.15	0.47
4:D:190:ASP:HB3	4:D:193:ASP:OD2	2.15	0.47
5:E:37:ARG:HA	5:E:114:GLY:CA	2.45	0.47
7:G:45:ASP:C	7:G:47:CYS:H	2.22	0.47
8:H:39:LEU:O	8:H:40:ALA:C	2.57	0.47
9:I:4:TYR:CZ	9:I:88:TYR:HD1	2.33	0.47
9:I:18:PHE:CD1	9:I:62:TYR:HD2	2.33	0.47
11:K:84:VAL:HG23	11:K:110:ASP:HA	1.97	0.47
11:K:99:GLN:HG2	11:K:105:VAL:HG11	1.95	0.47
13:M:78:ILE:O	13:M:81:LEU:HD23	2.15	0.47
16:P:48:TRP:CD1	16:P:48:TRP:H	2.33	0.47
19:S:11:VAL:CG1	19:S:15:LEU:HD11	2.45	0.47
20:T:33:ILE:CD1	20:T:63:ILE:HA	2.45	0.47
20:T:42:GLN:O	20:T:46:GLU:HG3	2.15	0.47
1:A:135:C:O2	16:P:1:MET:HB2	2.15	0.46
1:A:518:C:H5'	1:A:530:G:O4'	2.15	0.46
1:A:726:C:O2'	1:A:727:G:H5'	2.15	0.46
1:A:1125:U:H5''	1:A:1126:U:C5	2.48	0.46
1:A:1201:A:H5'	1:A:1203:C:OP2	2.15	0.46
1:A:1315:U:H2'	1:A:1316:G:O4'	2.15	0.46
1:A:1407:C:H2'	1:A:1408:A:H8	1.80	0.46
2:B:82:ARG:O	2:B:86:GLU:HG3	2.16	0.46
2:B:167:PRO:O	2:B:171:ALA:HB2	2.15	0.46
4:D:112:VAL:HG23	4:D:116:GLN:OE1	2.15	0.46
4:D:125:HIS:O	4:D:126:ILE:HD13	2.15	0.46
4:D:179:GLU:OE1	4:D:179:GLU:N	2.38	0.46
7:G:28:ASN:O	7:G:31:MET:HB3	2.15	0.46
11:K:11:LYS:N	11:K:12:ARG:CZ	2.78	0.46
18:R:47:THR:O	18:R:49:LYS:N	2.47	0.46
1:A:261:U:O2	1:A:263:A:C8	2.68	0.46
1:A:928:G:O2'	1:A:929:G:H5'	2.14	0.46
1:A:1054:C:C6	1:A:1054:C:H5''	2.50	0.46
1:A:1095:U:P	1:A:1108:G:H1	2.38	0.46
1:A:1175:G:H2'	1:A:1176:A:C8	2.51	0.46
1:A:1296:C:H5'	1:A:1302:U:O4	2.15	0.46
2:B:30:ARG:CG	2:B:31:TYR:N	2.78	0.46
2:B:97:TRP:HZ2	2:B:102:LEU:CD1	2.19	0.46
3:C:67:THR:O	3:C:68:VAL:C	2.58	0.46
4:D:146:ILE:N	4:D:146:ILE:CD1	2.77	0.46
11:K:33:THR:HB	11:K:38:ASN:C	2.41	0.46
15:O:39:LEU:HD12	15:O:59:MET:HE2	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:Q:74:LEU:HD13	17:Q:75:ARG:HB3	1.97	0.46
19:S:15:LEU:C	19:S:15:LEU:HD12	2.40	0.46
20:T:12:ALA:O	20:T:15:ARG:HB2	2.16	0.46
20:T:53:LEU:HD12	20:T:100:ILE:CG2	2.45	0.46
1:A:36:C:C4	1:A:37:U:C4	3.03	0.46
1:A:141:A:O2'	1:A:142:G:H5'	2.16	0.46
1:A:820:U:H4'	1:A:821:G:OP2	2.15	0.46
1:A:1277:C:C2'	1:A:1278:U:C5'	2.91	0.46
1:A:1375:A:H2'	1:A:1376:U:C6	2.50	0.46
1:A:1392:G:H2'	1:A:1393:U:H6	1.80	0.46
2:B:169:LYS:HD3	2:B:170:GLU:OE2	2.16	0.46
2:B:170:GLU:C	2:B:172:ILE:HD12	2.41	0.46
3:C:22:TRP:HB3	3:C:59:ARG:CB	2.45	0.46
4:D:83:SER:HA	4:D:89:THR:OG1	2.15	0.46
5:E:33:VAL:HG11	5:E:109:ILE:HG12	1.97	0.46
5:E:57:LYS:O	5:E:61:TYR:CD2	2.68	0.46
6:F:91:VAL:HG21	18:R:72:ARG:CZ	2.45	0.46
7:G:71:PRO:HD3	7:G:103:TRP:CZ3	2.46	0.46
7:G:148:ASN:C	7:G:150:ALA:N	2.73	0.46
12:L:46:LYS:HE2	12:L:47:LYS:CB	2.46	0.46
16:P:58:TYR:O	16:P:61:SER:OG	2.27	0.46
17:Q:33:GLY:O	17:Q:34:LYS:C	2.57	0.46
19:S:50:ALA:HA	19:S:58:VAL:O	2.15	0.46
1:A:164:U:H2'	1:A:165:C:C6	2.50	0.46
1:A:336:C:H2'	1:A:337:C:H6	1.80	0.46
1:A:499:A:H4'	1:A:500:G:OP1	2.15	0.46
1:A:499:A:H4'	1:A:500:G:H5'	1.97	0.46
1:A:737:A:H2'	1:A:738:C:C6	2.51	0.46
1:A:740:U:C4'	15:O:42:HIS:CD2	2.99	0.46
1:A:865:A:O2'	1:A:866:C:H5'	2.15	0.46
1:A:872:A:C8	1:A:874:G:C8	3.03	0.46
1:A:957:U:H3	1:A:960:U:H5''	1.77	0.46
1:A:1220:G:H21	19:S:54:GLY:CA	2.28	0.46
1:A:1415:G:C5	1:A:1416:G:N7	2.83	0.46
2:B:73:THR:HG23	2:B:95:GLN:O	2.16	0.46
2:B:98:LEU:HB2	2:B:101:MET:CG	2.46	0.46
3:C:59:ARG:O	10:J:92:THR:HG23	2.16	0.46
3:C:101:LEU:HD23	3:C:102:ASN:O	2.15	0.46
3:C:204:LEU:CD2	3:C:205:GLY:N	2.78	0.46
5:E:127:ASN:O	5:E:130:ASN:N	2.46	0.46
8:H:107:LEU:HD23	8:H:107:LEU:N	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:74:VAL:HA	13:M:77:ASN:HB3	1.96	0.46
18:R:40:LEU:O	18:R:42:ARG:N	2.49	0.46
1:A:80:G:C2'	1:A:81:U:H5''	2.46	0.46
1:A:341:C:H2'	1:A:342:C:C6	2.51	0.46
1:A:546:G:OP1	4:D:73:ARG:HD3	2.16	0.46
1:A:596:C:O2'	1:A:597:G:H5'	2.15	0.46
1:A:640:A:O2'	1:A:641:U:H5'	2.15	0.46
2:B:16:HIS:HA	2:B:204:ASN:HB3	1.98	0.46
3:C:184:TYR:CG	3:C:185:GLY:N	2.83	0.46
4:D:156:GLU:C	4:D:160:GLN:HE21	2.24	0.46
8:H:78:GLN:O	8:H:81:HIS:NE2	2.48	0.46
13:M:52:GLU:O	13:M:53:VAL:C	2.57	0.46
16:P:41:PRO:O	16:P:43:LYS:HG3	2.16	0.46
20:T:53:LEU:O	20:T:54:LYS:C	2.58	0.46
1:A:232:G:H2'	1:A:233:C:C6	2.51	0.46
1:A:304:U:O2'	1:A:305:G:H5'	2.15	0.46
1:A:490:G:C2	1:A:491:G:C8	3.03	0.46
1:A:669:U:H2'	1:A:670:G:H8	1.79	0.46
1:A:860:A:C2	1:A:861:G:H1'	2.51	0.46
1:A:887:G:C2'	1:A:888:G:H5'	2.46	0.46
1:A:1006:C:N4	1:A:1024:G:N2	2.64	0.46
1:A:1138:G:C6	1:A:1140:C:H1'	2.50	0.46
1:A:1340:A:O2'	1:A:1341:U:H5'	2.15	0.46
2:B:58:ILE:O	2:B:59:GLU:C	2.58	0.46
2:B:73:THR:O	2:B:73:THR:HG22	2.14	0.46
2:B:168:THR:OG1	2:B:192:SER:HB3	2.16	0.46
3:C:113:ALA:HB2	3:C:202:ILE:HD12	1.98	0.46
3:C:188:LEU:CD1	3:C:188:LEU:N	2.74	0.46
7:G:152:ALA:C	7:G:154:TYR:H	2.23	0.46
13:M:40:ASN:HB3	13:M:43:THR:CG2	2.38	0.46
14:N:22:THR:O	14:N:23:ARG:HB2	2.15	0.46
14:N:44:LEU:O	14:N:45:ARG:C	2.58	0.46
14:N:57:ARG:CG	14:N:58:LYS:N	2.78	0.46
1:A:19:C:OP1	5:E:125:SER:HB2	2.15	0.46
1:A:427:U:H5'	4:D:41:GLY:HA2	1.96	0.46
1:A:458:C:H2'	1:A:460:G:C8	2.51	0.46
1:A:501:C:O2'	1:A:502:G:H5'	2.15	0.46
1:A:546:G:P	4:D:72:GLU:HB3	2.56	0.46
1:A:762:C:H5'	17:Q:104:LYS:N	2.31	0.46
1:A:1299:A:C5	1:A:1301:U:O2	2.69	0.46
1:A:1345:U:C4	1:A:1377:A:N3	2.84	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1508:G:H2'	1:A:1509:C:H6	1.81	0.46
2:B:15:VAL:HG21	2:B:210:SER:CA	2.45	0.46
2:B:18:GLY:CA	2:B:41:ILE:HA	2.45	0.46
2:B:61:LEU:HD11	2:B:160:ASP:HB3	1.98	0.46
2:B:79:ASP:C	2:B:81:VAL:N	2.72	0.46
2:B:172:ILE:H	2:B:172:ILE:CD1	2.09	0.46
3:C:29:TYR:HE1	10:J:11:PHE:CE1	2.34	0.46
3:C:66:VAL:HG12	3:C:68:VAL:HG23	1.97	0.46
3:C:137:ALA:CA	3:C:140:ARG:NH1	2.75	0.46
9:I:5:TYR:CE2	9:I:16:ARG:HA	2.51	0.46
10:J:48:THR:OG1	10:J:62:HIS:CE1	2.69	0.46
10:J:76:ASN:C	10:J:78:ASN:H	2.24	0.46
10:J:77:PRO:O	10:J:82:ILE:HG12	2.16	0.46
12:L:101:VAL:C	12:L:103:GLY:H	2.24	0.46
13:M:39:ILE:HG12	13:M:52:GLU:HG3	1.97	0.46
14:N:29:ARG:NH1	14:N:40:CYS:CB	2.78	0.46
17:Q:94:ASN:O	17:Q:95:TYR:C	2.59	0.46
1:A:310:G:H2'	1:A:311:C:C6	2.50	0.46
1:A:406:G:H5''	4:D:5:ILE:CG2	2.46	0.46
1:A:568:G:C6	1:A:569:C:N4	2.84	0.46
1:A:663:A:O2'	1:A:664:G:H5'	2.16	0.46
1:A:1137:C:H4'	1:A:1138:G:C2	2.51	0.46
2:B:9:GLU:OE1	2:B:9:GLU:HA	2.15	0.46
2:B:21:ARG:HH22	2:B:23:ARG:HH21	1.64	0.46
4:D:170:VAL:HG12	4:D:174:LEU:HB2	1.97	0.46
5:E:10:MET:HA	5:E:32:VAL:HG23	1.97	0.46
5:E:41:VAL:HG11	5:E:113:ALA:N	2.30	0.46
7:G:46:ALA:HB2	7:G:117:ALA:HA	1.98	0.46
7:G:69:VAL:C	7:G:138:LYS:HG3	2.41	0.46
8:H:14:ARG:NH1	8:H:14:ARG:CB	2.79	0.46
10:J:64:GLU:OE2	10:J:66:ARG:HD2	2.16	0.46
11:K:50:TYR:HE2	11:K:54:ARG:HH22	1.63	0.46
17:Q:26:GLN:HA	17:Q:37:LYS:HA	1.98	0.46
19:S:67:VAL:C	19:S:69:HIS:H	2.24	0.46
20:T:49:ALA:HB1	20:T:99:LEU:CD1	2.36	0.46
1:A:106:C:O2	1:A:379:C:H4'	2.16	0.46
1:A:302:G:H8	1:A:302:G:O5'	1.99	0.46
1:A:600:C:C2	1:A:639:G:C2	3.03	0.46
1:A:778:G:C4	1:A:779:C:C6	3.04	0.46
1:A:961:U:OP1	1:A:1223:C:H4'	2.15	0.46
1:A:1245:A:H2'	1:A:1246:C:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1513:A:H2'	1:A:1514:C:C6	2.50	0.46
2:B:56:ARG:NH1	2:B:56:ARG:CB	2.79	0.46
3:C:17:ASP:CB	3:C:21:ARG:HH22	2.29	0.46
3:C:39:ILE:HG22	3:C:40:ARG:N	2.31	0.46
3:C:91:LEU:CG	3:C:99:VAL:HG22	2.46	0.46
3:C:95:THR:O	3:C:97:LYS:N	2.49	0.46
4:D:54:TYR:O	4:D:55:ALA:C	2.59	0.46
4:D:111:ALA:HB2	4:D:120:LEU:CD1	2.46	0.46
8:H:86:ILE:HD11	8:H:136:GLU:HG3	1.98	0.46
9:I:43:ALA:CA	9:I:74:ILE:HD13	2.45	0.46
9:I:79:LEU:HD22	9:I:83:ARG:CD	2.42	0.46
10:J:8:LEU:O	10:J:69:ASN:HA	2.16	0.46
12:L:43:VAL:HG12	12:L:44:THR:N	2.31	0.46
13:M:25:ILE:HD11	13:M:60:VAL:HG13	1.98	0.46
15:O:32:LEU:O	15:O:33:THR:C	2.58	0.46
15:O:54:ARG:O	15:O:55:GLY:C	2.59	0.46
17:Q:69:LYS:C	17:Q:70:ARG:HG3	2.41	0.46
18:R:36:ASN:O	18:R:37:VAL:C	2.59	0.46
19:S:42:PRO:O	19:S:44:MET:N	2.44	0.46
1:A:370:C:O2'	1:A:371:G:H5'	2.15	0.46
1:A:378:G:C6	1:A:379:C:C4	3.05	0.46
1:A:740:U:H4'	15:O:42:HIS:CD2	2.51	0.46
1:A:1459:C:O2'	1:A:1460:A:H5'	2.16	0.46
3:C:202:ILE:HG22	3:C:203:PHE:H	1.81	0.46
4:D:28:SER:O	4:D:30:LYS:N	2.49	0.46
4:D:52:SER:O	4:D:55:ALA:N	2.49	0.46
4:D:104:VAL:O	4:D:105:VAL:C	2.59	0.46
6:F:22:GLU:OE1	6:F:82:ARG:HD3	2.16	0.46
9:I:66:ARG:HG3	9:I:66:ARG:NH1	2.30	0.46
10:J:8:LEU:HA	10:J:96:ILE:HG12	1.98	0.46
1:A:105:G:H2'	1:A:106:C:C6	2.51	0.45
1:A:306:G:H2'	1:A:307:C:H6	1.80	0.45
1:A:333:G:C4'	20:T:16:HIS:CD2	2.99	0.45
1:A:457:C:O2'	1:A:458:C:H5'	2.15	0.45
1:A:674:G:H2'	1:A:675:A:C8	2.50	0.45
1:A:762:C:C5'	17:Q:103:GLY:HA2	2.46	0.45
1:A:1189:C:P	10:J:51:ARG:NH2	2.84	0.45
1:A:1190:G:OP1	3:C:5:ILE:HG13	2.16	0.45
1:A:1249:C:C6	1:A:1249:C:C3'	2.98	0.45
1:A:1502:A:H4'	1:A:1503:A:OP2	2.16	0.45
2:B:87:ARG:HB2	2:B:219:VAL:HG11	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:102:LEU:CD1	2:B:102:LEU:N	2.79	0.45
2:B:157:ARG:O	2:B:158:LEU:C	2.59	0.45
2:B:182:ILE:O	2:B:183:PRO:C	2.59	0.45
3:C:184:TYR:CD2	3:C:185:GLY:N	2.84	0.45
4:D:87:GLY:O	4:D:89:THR:N	2.49	0.45
4:D:173:TRP:HB2	4:D:187:ARG:O	2.16	0.45
9:I:66:ARG:HD2	9:I:66:ARG:N	2.31	0.45
11:K:79:SER:CB	11:K:106:LYS:HE3	2.46	0.45
13:M:35:GLU:O	13:M:37:THR:N	2.45	0.45
15:O:45:VAL:HG12	15:O:46:HIS:N	2.31	0.45
17:Q:29:HIS:CD2	17:Q:31:LEU:N	2.66	0.45
20:T:41:VAL:C	20:T:43:LEU:N	2.72	0.45
1:A:369:C:C2	1:A:370:C:C5	3.05	0.45
1:A:473:G:C2	1:A:474:G:C8	3.04	0.45
1:A:521:G:OP1	12:L:73:GLU:O	2.34	0.45
1:A:551:U:O2'	1:A:552:U:H5'	2.16	0.45
1:A:601:C:N3	1:A:638:G:C2	2.85	0.45
1:A:620:C:C1'	4:D:135:LEU:HD13	2.46	0.45
1:A:677:U:O2	1:A:777:A:O2'	2.28	0.45
1:A:991:U:O4	1:A:1212:U:H4'	2.17	0.45
1:A:1116:C:O2'	1:A:1117:G:H5'	2.15	0.45
1:A:1124:G:C5	1:A:1145:C:H2'	2.52	0.45
1:A:1192:C:O2	1:A:1192:C:H2'	2.16	0.45
1:A:1328:C:O2'	1:A:1329:A:H5'	2.15	0.45
1:A:1351:U:H4'	7:G:33:ASP:OD1	2.16	0.45
3:C:42:LEU:O	3:C:44:GLU:N	2.48	0.45
3:C:115:LEU:O	3:C:116:VAL:C	2.58	0.45
4:D:206:PHE:HD2	4:D:207:TYR:CD1	2.34	0.45
5:E:112:LEU:C	5:E:114:GLY:H	2.23	0.45
7:G:44:TYR:O	7:G:48:LYS:HG3	2.17	0.45
7:G:155:ARG:HB2	7:G:156:TRP:H	1.61	0.45
8:H:40:ALA:O	8:H:43:GLY:N	2.36	0.45
9:I:118:LYS:NZ	9:I:121:ARG:HB2	2.28	0.45
10:J:49:VAL:O	10:J:60:ARG:HA	2.15	0.45
11:K:42:TRP:CZ3	11:K:47:VAL:HG21	2.51	0.45
11:K:67:ASP:O	11:K:71:LYS:HG3	2.16	0.45
11:K:109:VAL:HG22	18:R:86:VAL:HA	1.97	0.45
12:L:39:VAL:HG12	12:L:40:VAL:N	2.31	0.45
12:L:70:ILE:CD1	12:L:77:LEU:HD12	2.46	0.45
20:T:50:GLU:HB3	20:T:100:ILE:HB	1.97	0.45
20:T:57:ARG:HG2	20:T:57:ARG:HH11	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:80:G:H2'	1:A:81:U:H5''	1.97	0.45
1:A:129(A):G:N3	1:A:189(F):U:H5'	2.31	0.45
1:A:267:C:OP1	17:Q:67:LYS:HB2	2.16	0.45
1:A:390:C:H2'	1:A:391:G:H8	1.79	0.45
1:A:406:G:O2'	1:A:407:G:H5'	2.16	0.45
1:A:411:A:C2'	1:A:412:A:H5'	2.45	0.45
1:A:509:A:O5'	1:A:509:A:H8	1.99	0.45
1:A:523:A:H61	12:L:53:ARG:NH1	2.14	0.45
1:A:634:C:O2'	1:A:635:G:H5'	2.15	0.45
1:A:686:U:O4	1:A:703:G:H1'	2.17	0.45
1:A:718:G:H4'	11:K:117:ASN:ND2	2.31	0.45
1:A:838:G:C2'	1:A:839:U:H5''	2.47	0.45
1:A:1018:C:O5'	1:A:1018:C:H6	1.99	0.45
1:A:1067:A:H1'	1:A:1068:G:OP2	2.16	0.45
2:B:91:PRO:HG2	2:B:155:LEU:HG	1.99	0.45
2:B:116:GLU:HA	2:B:119:GLU:OE2	2.16	0.45
3:C:6:HIS:CD2	3:C:8:ILE:N	2.76	0.45
3:C:59:ARG:N	10:J:92:THR:HG23	2.31	0.45
3:C:87:LEU:C	3:C:89:GLU:N	2.74	0.45
5:E:87:SER:OG	5:E:130:ASN:HB3	2.15	0.45
6:F:22:GLU:OE1	6:F:25:ILE:HD12	2.16	0.45
7:G:42:ILE:CG2	7:G:120:ILE:HD11	2.45	0.45
8:H:105:ARG:HG3	8:H:105:ARG:NH1	2.28	0.45
10:J:8:LEU:HD13	10:J:70:ARG:O	2.16	0.45
11:K:62:GLN:O	11:K:65:ALA:N	2.48	0.45
12:L:78:GLN:C	12:L:80:HIS:H	2.24	0.45
14:N:7:ILE:O	14:N:7:ILE:HG22	2.17	0.45
17:Q:4:LYS:O	17:Q:60:ILE:HA	2.16	0.45
18:R:73:ALA:HB3	18:R:79:LEU:HD12	1.97	0.45
1:A:57:G:C6	1:A:58:C:N3	2.84	0.45
1:A:67:C:H2'	1:A:68:G:C8	2.50	0.45
1:A:70:G:H2'	1:A:71:C:C6	2.52	0.45
1:A:132:C:H5'	1:A:262:A:H1'	1.98	0.45
1:A:344:A:OP2	1:A:345:C:C5	2.68	0.45
1:A:452:A:H1'	16:P:72:ARG:NH1	2.31	0.45
1:A:505:G:H4'	1:A:534:U:N3	2.32	0.45
1:A:796:C:H2'	1:A:797:C:H6	1.81	0.45
1:A:1128:C:C2	1:A:1144:G:N2	2.84	0.45
1:A:1305:G:H5'	21:U:4:GLY:C	2.41	0.45
3:C:70:VAL:C	3:C:106:VAL:HG23	2.41	0.45
3:C:89:GLU:C	3:C:91:LEU:N	2.74	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:126:LYS:C	8:H:128:GLY:N	2.75	0.45
12:L:10:LEU:HD21	12:L:15:ARG:HE	1.81	0.45
12:L:29:GLY:O	12:L:30:ALA:C	2.59	0.45
12:L:106:ASP:N	12:L:106:ASP:OD2	2.47	0.45
1:A:143:A:C2	1:A:221:C:O2	2.69	0.45
1:A:1015:A:C6	1:A:1016:A:C6	3.04	0.45
2:B:171:ALA:HA	2:B:174:VAL:HB	1.99	0.45
2:B:211:ILE:O	2:B:215:LEU:HB2	2.16	0.45
4:D:3:ARG:NH1	4:D:70:ILE:HG13	2.32	0.45
4:D:153:ARG:O	4:D:154:ASN:HB3	2.17	0.45
5:E:60:TYR:HE2	5:E:64:ARG:NE	2.15	0.45
5:E:103:GLY:O	5:E:106:PRO:HD2	2.16	0.45
6:F:2:ARG:NE	6:F:69:GLU:HG2	2.32	0.45
7:G:18:TYR:O	7:G:20:ASP:N	2.50	0.45
7:G:103:TRP:O	7:G:104:LEU:C	2.58	0.45
8:H:36:LEU:CA	8:H:39:LEU:HB2	2.45	0.45
8:H:89:PRO:HA	8:H:92:ARG:NH1	2.31	0.45
9:I:69:GLY:O	9:I:73:GLN:HG3	2.17	0.45
12:L:45:PRO:HD2	12:L:51:ALA:H	1.82	0.45
12:L:75:HIS:ND1	12:L:76:ASN:N	2.65	0.45
13:M:15:VAL:HB	13:M:34:LEU:HD11	1.99	0.45
13:M:73:GLU:O	13:M:77:ASN:HB2	2.17	0.45
15:O:85:LEU:HB2	15:O:87:ILE:HG22	1.97	0.45
17:Q:62:SER:CB	17:Q:72:ARG:HG3	2.46	0.45
20:T:14:LYS:O	20:T:18:GLN:HG3	2.17	0.45
1:A:190:U:O2	20:T:105:SER:HB2	2.16	0.45
1:A:376:G:OP1	16:P:67:THR:HG21	2.15	0.45
1:A:594:G:C2'	1:A:595:G:H5'	2.46	0.45
1:A:976:G:C8	1:A:1358:U:O2	2.69	0.45
1:A:1056:U:H5'	3:C:163:ALA:CB	2.47	0.45
1:A:1113:C:H4'	3:C:14:ILE:HD11	1.98	0.45
1:A:1431:C:C2'	1:A:1432:G:H5'	2.46	0.45
1:A:1493:A:H5''	1:A:1494:G:OP1	2.16	0.45
1:A:1495:U:H2'	1:A:1496:C:H6	1.80	0.45
2:B:100:GLY:HA2	2:B:176:GLU:OE2	2.17	0.45
2:B:162:ILE:CG2	2:B:164:VAL:HG23	2.47	0.45
3:C:3:ASN:C	3:C:4:LYS:HG2	2.40	0.45
3:C:190:ARG:HB3	3:C:190:ARG:NH1	2.32	0.45
4:D:160:GLN:O	4:D:163:GLU:HB3	2.16	0.45
5:E:51:VAL:CB	5:E:52:PRO:HD3	2.31	0.45
6:F:100:ASN:ND2	18:R:23:LYS:HG2	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:108:ALA:HB2	7:G:123:GLU:CB	2.46	0.45
8:H:25:ASP:OD1	8:H:60:ARG:NH1	2.50	0.45
8:H:111:ILE:C	8:H:112:LEU:HD12	2.42	0.45
8:H:136:GLU:C	8:H:137:VAL:HG23	2.41	0.45
11:K:51:LYS:HB3	11:K:52:GLY:H	1.70	0.45
12:L:97:ARG:HG3	12:L:98:TYR:HE1	1.75	0.45
15:O:24:SER:O	15:O:25:THR:C	2.58	0.45
16:P:49:LEU:HD12	16:P:50:LYS:H	1.78	0.45
1:A:161:A:H2'	1:A:162:A:C8	2.52	0.45
1:A:188:C:O2'	1:A:189:G:H5'	2.17	0.45
1:A:376:G:C2	1:A:389:A:C2	3.04	0.45
1:A:451:A:H1'	1:A:452:A:C8	2.52	0.45
1:A:661:G:H2'	1:A:662:G:H5'	1.99	0.45
1:A:960:U:O2	1:A:960:U:C2'	2.60	0.45
1:A:991:U:C5	1:A:1212:U:H4'	2.52	0.45
1:A:993:G:N2	1:A:996:A:N6	2.65	0.45
1:A:1038:C:O2'	1:A:1039:C:H5'	2.16	0.45
1:A:1089:G:C5	1:A:1090:U:C5	3.04	0.45
2:B:25:ASN:ND2	2:B:27:LYS:H	2.15	0.45
3:C:7:PRO:CA	3:C:11:ARG:HH21	2.30	0.45
3:C:35:GLU:HA	3:C:38:ARG:HG2	1.98	0.45
3:C:120:VAL:HG12	3:C:124:ILE:HD11	1.98	0.45
5:E:139:LEU:C	5:E:141:GLN:N	2.74	0.45
5:E:144:THR:HB	5:E:147:ASP:OD1	2.17	0.45
6:F:18:GLN:O	6:F:21:LEU:HB3	2.17	0.45
7:G:8:GLU:O	7:G:10:ARG:N	2.50	0.45
7:G:17:VAL:C	7:G:19:GLY:H	2.25	0.45
7:G:39:ALA:O	7:G:41:ARG:N	2.48	0.45
7:G:145:ALA:O	7:G:147:ALA:N	2.47	0.45
9:I:80:GLY:C	9:I:82:ALA:N	2.60	0.45
10:J:80:LYS:H	10:J:80:LYS:CE	2.29	0.45
11:K:92:GLU:O	11:K:96:ARG:HG3	2.17	0.45
13:M:16:ASP:OD1	13:M:17:VAL:N	2.49	0.45
14:N:8:GLU:O	14:N:8:GLU:HG3	2.16	0.45
16:P:20:VAL:CG2	16:P:21:VAL:N	2.80	0.45
16:P:66:PRO:HG2	16:P:71:ARG:HG3	1.98	0.45
17:Q:15:MET:HE3	17:Q:18:THR:HB	1.99	0.45
1:A:399:G:O2'	1:A:400:C:H5'	2.16	0.45
1:A:410:G:C2	1:A:429:U:C2	3.04	0.45
1:A:502:G:C2	1:A:503:C:C2	3.05	0.45
1:A:547:A:OP2	4:D:2:GLY:HA2	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:977:A:C2'	1:A:978:A:H5''	2.47	0.45
1:A:1128:C:C5'	9:I:16:ARG:HH22	2.26	0.45
1:A:1182:G:C5'	1:A:1184:G:H5'	2.32	0.45
1:A:1321:C:C5	1:A:1322:C:C2	3.04	0.45
2:B:8:LYS:O	2:B:9:GLU:CB	2.65	0.45
5:E:72:GLN:O	5:E:73:ASN:CB	2.65	0.45
8:H:119:LEU:HD12	8:H:124:ALA:N	2.32	0.45
10:J:56:HIS:O	10:J:58:ASP:N	2.50	0.45
12:L:7:ILE:O	12:L:8:ASN:C	2.60	0.45
13:M:54:VAL:O	13:M:58:GLU:HG2	2.16	0.45
14:N:45:ARG:HG2	14:N:49:HIS:NE2	2.32	0.45
16:P:28:ARG:NH1	16:P:28:ARG:HG2	2.32	0.45
17:Q:9:VAL:CG2	17:Q:56:VAL:HG22	2.46	0.45
17:Q:85:VAL:O	17:Q:88:TYR:HB3	2.16	0.45
20:T:16:HIS:C	20:T:16:HIS:ND1	2.74	0.45
1:A:355:C:C4	1:A:356:A:N7	2.85	0.45
1:A:511:C:H1'	4:D:43:HIS:NE2	2.32	0.45
1:A:514:C:C2	1:A:538:G:N2	2.85	0.45
1:A:660:G:C2	1:A:746:A:C2	3.05	0.45
1:A:830:G:O2'	1:A:831:U:H5'	2.17	0.45
1:A:1259:C:O2'	1:A:1284:C:H1'	2.16	0.45
1:A:1305:G:O2'	1:A:1306:A:H8	2.00	0.45
1:A:1347:G:C5	9:I:107:ARG:NH1	2.84	0.45
1:A:1513:A:C2	1:A:1523:G:C6	3.04	0.45
1:A:1518:A:N1	1:A:1519:A:C6	2.84	0.45
1:A:1542:U:O2'	1:A:1543:C:H5'	2.17	0.45
2:B:16:HIS:NE2	2:B:214:ILE:CD1	2.79	0.45
2:B:53:ARG:NH1	2:B:199:TYR:CD2	2.84	0.45
2:B:55:PHE:CE2	2:B:218:ALA:HA	2.52	0.45
2:B:178:ARG:C	2:B:180:LEU:N	2.73	0.45
5:E:12:LEU:HD22	5:E:12:LEU:C	2.41	0.45
7:G:42:ILE:HG22	7:G:120:ILE:HD11	1.98	0.45
9:I:45:ALA:O	9:I:48:GLU:N	2.50	0.45
12:L:43:VAL:CG1	12:L:44:THR:N	2.80	0.45
12:L:78:GLN:H	12:L:78:GLN:CD	2.23	0.45
20:T:48:LYS:HB3	20:T:51:GLU:HB2	1.99	0.45
23:Y:35:C:H2'	23:Y:36:C:C1'	2.47	0.45
1:A:154:C:O5'	1:A:154:C:H6	2.00	0.45
1:A:389:A:C2'	1:A:390:C:H5'	2.47	0.45
1:A:524:G:C4	1:A:525:C:C5	3.05	0.45
1:A:823:G:O2'	1:A:824:C:H5'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1065:U:C5	1:A:1190:G:N3	2.85	0.45
1:A:1260:C:OP1	1:A:1284:C:O2'	2.32	0.45
1:A:1273:G:H2'	1:A:1274:G:O4'	2.16	0.45
1:A:1305:G:H5'	21:U:4:GLY:CA	2.47	0.45
1:A:1379:G:O6	7:G:2:ALA:HB3	2.17	0.45
2:B:88:ALA:O	2:B:90:MET:HG2	2.17	0.45
3:C:5:ILE:CD1	3:C:6:HIS:N	2.80	0.45
3:C:103:VAL:O	3:C:103:VAL:HG12	2.17	0.45
3:C:142:MET:O	3:C:142:MET:HE3	2.17	0.45
4:D:32:ALA:HB1	4:D:36:ARG:O	2.16	0.45
5:E:52:PRO:O	5:E:54:ALA:N	2.49	0.45
6:F:80:ARG:HG2	6:F:80:ARG:NH1	2.32	0.45
7:G:105:VAL:O	7:G:109:ASN:HB2	2.17	0.45
8:H:138:TRP:HE3	8:H:138:TRP:OXT	1.99	0.45
9:I:97:LYS:C	9:I:99:LEU:H	2.25	0.45
10:J:38:ILE:CB	10:J:71:LEU:HB2	2.46	0.45
12:L:70:ILE:HA	12:L:100:ILE:CG2	2.42	0.45
16:P:39:TYR:CD1	16:P:39:TYR:C	2.93	0.45
17:Q:93:GLN:O	17:Q:94:ASN:C	2.60	0.45
19:S:11:VAL:HA	19:S:38:SER:HB2	1.99	0.45
20:T:79:ARG:HG2	20:T:83:ARG:NH1	2.31	0.45
1:A:28:G:O2'	1:A:296:U:OP1	2.34	0.44
1:A:53:A:H2'	1:A:54:C:O5'	2.16	0.44
1:A:385:C:O2'	1:A:386:C:H5'	2.17	0.44
1:A:576:G:H3'	1:A:577:G:H5''	1.98	0.44
1:A:781:A:C5	1:A:802:A:C2	3.05	0.44
1:A:1183:A:O2'	1:A:1184:G:P	2.75	0.44
1:A:1472:U:O2'	1:A:1473:A:H5'	2.17	0.44
2:B:53:ARG:NH1	2:B:199:TYR:HD2	2.16	0.44
2:B:85:ALA:HB1	2:B:92:TYR:HB3	1.99	0.44
4:D:78:LEU:HD22	4:D:96:LEU:HD23	1.99	0.44
4:D:176:LEU:HG	4:D:178:VAL:HG23	1.98	0.44
5:E:15:ARG:O	5:E:16:THR:HG22	2.17	0.44
5:E:31:LEU:HD22	5:E:43:LEU:CD2	2.47	0.44
7:G:40:ALA:O	7:G:43:PHE:HB3	2.17	0.44
8:H:68:ARG:HG2	8:H:68:ARG:NH1	2.31	0.44
9:I:5:TYR:OH	9:I:16:ARG:HG3	2.17	0.44
9:I:46:ALA:HB1	9:I:77:ILE:HG22	1.99	0.44
14:N:13:THR:N	14:N:14:PRO:CD	2.80	0.44
19:S:52:TYR:OH	19:S:55:LYS:HA	2.17	0.44
19:S:62:ILE:HD12	19:S:66:MET:SD	2.56	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:325:A:H2'	1:A:326:G:O4'	2.17	0.44
1:A:1326:C:P	21:U:12:LYS:HZ2	2.40	0.44
1:A:1331:G:C2'	1:A:1332:A:OP2	2.65	0.44
1:A:1446:U:H2'	1:A:1452:C:C5	2.53	0.44
1:A:1477:C:H2'	1:A:1478:C:H6	1.76	0.44
3:C:153:VAL:HG22	3:C:198:VAL:HG12	1.99	0.44
4:D:29:PRO:O	4:D:30:LYS:HG2	2.17	0.44
4:D:154:ASN:N	4:D:154:ASN:ND2	2.63	0.44
5:E:152:ARG:HG2	8:H:43:GLY:O	2.17	0.44
7:G:3:ARG:O	7:G:4:ARG:HG2	2.17	0.44
7:G:4:ARG:HH11	7:G:4:ARG:CB	2.13	0.44
8:H:45:ILE:O	8:H:47:GLY:N	2.51	0.44
10:J:30:SER:HB2	10:J:81:THR:OG1	2.18	0.44
10:J:77:PRO:O	10:J:79:ARG:N	2.50	0.44
11:K:59:TYR:O	11:K:62:GLN:HB3	2.17	0.44
12:L:112:ASP:O	12:L:113:ARG:O	2.36	0.44
15:O:76:GLU:C	15:O:78:TYR:N	2.72	0.44
15:O:87:ILE:O	15:O:88:ARG:HB2	2.17	0.44
18:R:62:GLU:O	18:R:64:ARG:N	2.50	0.44
20:T:43:LEU:O	20:T:44:ALA:C	2.61	0.44
1:A:185:A:H2'	1:A:186:C:C6	2.50	0.44
1:A:391:G:C6	1:A:392:G:C5	3.06	0.44
1:A:485:G:O2'	1:A:486:U:OP2	2.35	0.44
1:A:706:A:C4'	11:K:29:ILE:HG12	2.47	0.44
1:A:731:G:OP1	1:A:766:A:H1'	2.17	0.44
1:A:939:G:H5''	7:G:102:ARG:NH2	2.32	0.44
1:A:1055:A:H2'	1:A:1056:U:O5'	2.17	0.44
1:A:1080:A:N7	1:A:1081:G:H1'	2.32	0.44
1:A:1308:U:O2'	1:A:1309:G:H5'	2.18	0.44
1:A:1405:G:P	24:A:3001:PAR:O34	2.75	0.44
6:F:62:TRP:C	6:F:63:TYR:HD1	2.26	0.44
7:G:45:ASP:C	7:G:47:CYS:N	2.73	0.44
7:G:65:ALA:O	7:G:69:VAL:HG23	2.17	0.44
7:G:137:LYS:HA	7:G:140:ASP:HB2	1.99	0.44
8:H:10:LEU:HD12	8:H:85:ARG:HG2	1.99	0.44
9:I:10:ARG:CD	9:I:11:LYS:N	2.80	0.44
14:N:2:ALA:O	14:N:3:ARG:HG3	2.18	0.44
18:R:34:TYR:CD2	18:R:34:TYR:N	2.76	0.44
19:S:45:VAL:HG21	19:S:64:GLU:OE1	2.17	0.44
1:A:279:A:H4'	1:A:281:G:C8	2.52	0.44
1:A:423:G:H2'	1:A:424:G:C5'	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:636:U:H5''	17:Q:2:PRO:HG2	2.00	0.44
1:A:1043:C:O2'	1:A:1044:A:H5'	2.17	0.44
2:B:59:GLU:O	2:B:62:ALA:N	2.51	0.44
3:C:115:LEU:C	3:C:117:ALA:N	2.73	0.44
4:D:73:ARG:O	4:D:77:ASN:ND2	2.50	0.44
4:D:91:SER:O	4:D:94:LEU:N	2.50	0.44
4:D:201:GLN:OE1	4:D:201:GLN:HA	2.17	0.44
5:E:48:ALA:HB1	5:E:49:PRO:HD2	1.99	0.44
8:H:23:SER:O	8:H:24:THR:HB	2.17	0.44
8:H:111:ILE:HB	8:H:134:ILE:HG22	1.98	0.44
10:J:53:PRO:HB3	14:N:42:ILE:HD12	1.99	0.44
16:P:55:ARG:NE	16:P:55:ARG:HA	2.33	0.44
20:T:48:LYS:O	20:T:49:ALA:C	2.60	0.44
1:A:555:C:H2'	1:A:556:C:H6	1.82	0.44
1:A:622:A:C8	1:A:623:C:C5	3.06	0.44
1:A:750:G:H1'	15:O:22:THR:C	2.43	0.44
1:A:895:G:H2'	1:A:896:C:H6	1.83	0.44
1:A:1277:C:H1'	1:A:1282:C:O2	2.18	0.44
1:A:1528:U:O2'	1:A:1529:G:P	2.76	0.44
2:B:14:GLY:O	2:B:15:VAL:HG22	2.17	0.44
2:B:82:ARG:HB2	2:B:82:ARG:HH11	1.80	0.44
2:B:97:TRP:CZ3	2:B:176:GLU:OE2	2.71	0.44
3:C:83:ARG:C	3:C:85:ARG:N	2.75	0.44
3:C:96:GLY:O	3:C:97:LYS:HD3	2.17	0.44
4:D:7:PRO:O	4:D:10:ARG:HB3	2.18	0.44
4:D:10:ARG:NH1	4:D:40:PRO:HB2	2.33	0.44
4:D:20:TYR:C	4:D:26:CYS:SG	3.01	0.44
4:D:111:ALA:HB2	4:D:120:LEU:HD12	1.99	0.44
4:D:119:GLN:HG3	4:D:123:HIS:ND1	2.32	0.44
6:F:33:TYR:CB	6:F:75:LEU:HD23	2.46	0.44
7:G:5:ARG:O	7:G:6:ARG:HB2	2.18	0.44
10:J:38:ILE:CG2	10:J:71:LEU:HB2	2.47	0.44
10:J:48:THR:HG1	10:J:62:HIS:CE1	2.35	0.44
10:J:79:ARG:HG2	10:J:79:ARG:HH11	1.83	0.44
12:L:81:SER:HB2	12:L:106:ASP:HB2	1.98	0.44
14:N:2:ALA:C	14:N:3:ARG:HG3	2.43	0.44
21:U:18:TYR:CE2	21:U:22:ARG:CZ	3.01	0.44
1:A:156:G:C6	1:A:166:G:C6	3.05	0.44
1:A:818:G:H3'	1:A:819:A:C5'	2.48	0.44
1:A:950:U:H2'	1:A:951:G:C8	2.53	0.44
2:B:52:GLU:O	2:B:53:ARG:C	2.61	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:130:ARG:O	2:B:131:PRO:C	2.60	0.44
3:C:22:TRP:CE3	3:C:22:TRP:O	2.70	0.44
5:E:20:GLN:HE22	5:E:21:ALA:HB3	1.82	0.44
5:E:41:VAL:HG11	5:E:113:ALA:HA	2.00	0.44
5:E:60:TYR:CD2	5:E:60:TYR:C	2.96	0.44
5:E:100:VAL:HG12	5:E:100:VAL:O	2.17	0.44
6:F:44:GLY:HA2	6:F:59:TYR:CE1	2.53	0.44
7:G:107:ALA:C	7:G:109:ASN:H	2.25	0.44
9:I:10:ARG:C	9:I:12:GLU:N	2.73	0.44
17:Q:59:ILE:HG22	17:Q:71:PHE:CD1	2.52	0.44
1:A:44:G:H2'	1:A:45:U:O4'	2.18	0.44
1:A:375:U:C2	1:A:376:G:C8	3.06	0.44
1:A:376:G:O3'	16:P:5:ARG:HD2	2.18	0.44
1:A:673:G:O3'	6:F:87:ARG:NH2	2.51	0.44
1:A:877:C:O2'	1:A:878:G:H5'	2.17	0.44
1:A:924:C:C5'	1:A:1399:C:OP2	2.62	0.44
1:A:991:U:O2'	1:A:993:G:H1'	2.18	0.44
1:A:992:U:H4'	1:A:993:G:O5'	2.16	0.44
1:A:1057:G:H2'	1:A:1058:G:O4'	2.17	0.44
1:A:1058:G:H2'	1:A:1059:C:C6	2.52	0.44
1:A:1268:A:H4'	21:U:19:GLY:O	2.18	0.44
1:A:1320:C:C2	19:S:72:GLY:HA3	2.53	0.44
2:B:139:LYS:O	2:B:139:LYS:HD3	2.18	0.44
4:D:8:VAL:CG1	4:D:9:CYS:H	2.28	0.44
5:E:131:ILE:O	5:E:132:ALA:C	2.60	0.44
6:F:86:ARG:O	6:F:87:ARG:HG2	2.18	0.44
7:G:20:ASP:OD1	7:G:22:LEU:HB3	2.18	0.44
7:G:39:ALA:O	7:G:42:ILE:N	2.51	0.44
8:H:31:PHE:O	8:H:32:LYS:C	2.61	0.44
9:I:97:LYS:C	9:I:99:LEU:N	2.75	0.44
10:J:57:LYS:HZ2	10:J:60:ARG:CZ	2.30	0.44
12:L:60:LEU:HD21	12:L:66:VAL:HG22	2.00	0.44
12:L:83:VAL:HG11	12:L:100:ILE:CD1	2.39	0.44
13:M:88:ARG:HG3	13:M:98:VAL:HG12	2.00	0.44
18:R:47:THR:C	18:R:49:LYS:N	2.75	0.44
20:T:78:ALA:O	20:T:79:ARG:C	2.60	0.44
20:T:102:GLY:O	20:T:103:GLY:C	2.60	0.44
1:A:175:C:H2'	1:A:176:C:C6	2.48	0.44
1:A:330:C:H2'	1:A:331:G:H5'	1.98	0.44
1:A:594:G:H2'	1:A:595:G:H5'	1.99	0.44
1:A:674:G:H2'	1:A:675:A:H8	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:742:G:OP2	15:O:35:ARG:NH2	2.46	0.44
1:A:794:A:C5	1:A:795:C:C4	3.06	0.44
1:A:952:U:O2'	1:A:953:G:H5'	2.18	0.44
1:A:1031:G:H2'	1:A:1032:G:H8	1.82	0.44
1:A:1176:A:H2'	1:A:1177:G:C8	2.53	0.44
1:A:1241:G:C6	1:A:1242:C:N4	2.85	0.44
1:A:1370:G:C2	1:A:1371:G:N7	2.86	0.44
1:A:1385:G:O2'	1:A:1386:G:H5'	2.18	0.44
1:A:1413:A:O2'	1:A:1414:U:H5'	2.18	0.44
1:A:1434:A:O2'	1:A:1435:G:H5'	2.18	0.44
1:A:1461:G:H2'	1:A:1462:G:H8	1.82	0.44
2:B:103:THR:HA	2:B:180:LEU:HD11	1.99	0.44
4:D:173:TRP:C	4:D:186:LEU:HD12	2.42	0.44
5:E:52:PRO:C	5:E:54:ALA:N	2.76	0.44
5:E:80:ILE:HD12	5:E:80:ILE:O	2.17	0.44
7:G:47:CYS:O	7:G:50:ILE:HB	2.18	0.44
13:M:45:VAL:O	13:M:48:LEU:HB2	2.18	0.44
14:N:18:VAL:HG23	14:N:19:ARG:N	2.33	0.44
16:P:40:ASP:HB3	16:P:48:TRP:HB2	1.99	0.44
16:P:80:PHE:O	16:P:81:ARG:C	2.60	0.44
18:R:38:GLU:OE1	18:R:38:GLU:HA	2.18	0.44
20:T:77:ALA:O	20:T:80:ARG:HB2	2.17	0.44
20:T:83:ARG:HG3	20:T:83:ARG:HH11	1.82	0.44
1:A:684:A:H1'	11:K:39:PRO:HD2	2.00	0.44
1:A:815:A:N3	1:A:1527:C:O2'	2.51	0.44
1:A:1502:A:C3'	1:A:1503:A:H5''	2.43	0.44
3:C:183:ASP:O	3:C:201:TYR:HA	2.18	0.44
4:D:10:ARG:HG2	4:D:10:ARG:HH11	1.83	0.44
4:D:128:VAL:C	4:D:130:GLY:N	2.75	0.44
5:E:139:LEU:C	5:E:141:GLN:H	2.25	0.44
7:G:20:ASP:OD1	7:G:22:LEU:N	2.51	0.44
7:G:22:LEU:O	7:G:25:ALA:HB3	2.17	0.44
7:G:120:ILE:C	7:G:124:LEU:HD12	2.41	0.44
9:I:63:ILE:HD13	9:I:77:ILE:HG23	1.99	0.44
9:I:113:LYS:H	9:I:113:LYS:CD	2.30	0.44
10:J:75:ILE:HG22	10:J:76:ASN:ND2	2.32	0.44
12:L:126:LYS:HD2	12:L:127:GLU:N	2.33	0.44
12:L:127:GLU:HG3	12:L:127:GLU:O	2.17	0.44
17:Q:22:LEU:HD13	17:Q:22:LEU:C	2.43	0.44
19:S:45:VAL:HG12	19:S:46:GLY:N	2.33	0.44
1:A:719:C:O2	18:R:50:ILE:HG13	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:762:C:H2'	1:A:763:G:C8	2.53	0.43
1:A:901:A:C5	1:A:902:G:H1'	2.53	0.43
1:A:922:G:C2	1:A:1396:A:C6	3.06	0.43
2:B:15:VAL:HB	2:B:16:HIS:H	1.63	0.43
2:B:52:GLU:HG2	2:B:56:ARG:HH22	1.83	0.43
2:B:131:PRO:C	2:B:133:LYS:N	2.76	0.43
2:B:142:LEU:HD13	2:B:142:LEU:C	2.42	0.43
3:C:21:ARG:HB2	3:C:58:GLU:HA	1.99	0.43
4:D:170:VAL:CG1	4:D:171:GLY:N	2.80	0.43
7:G:66:VAL:O	7:G:67:GLU:C	2.61	0.43
8:H:40:ALA:O	8:H:41:ARG:C	2.61	0.43
11:K:80:VAL:N	11:K:104:GLN:O	2.51	0.43
11:K:92:GLU:HA	11:K:95:ILE:HD12	2.00	0.43
12:L:124:LYS:HG3	12:L:125:PRO:HD2	1.99	0.43
12:L:126:LYS:O	12:L:127:GLU:C	2.60	0.43
13:M:84:ILE:C	13:M:86:CYS:N	2.76	0.43
14:N:36:PHE:CD1	14:N:36:PHE:C	2.95	0.43
16:P:22:THR:O	16:P:23:ASP:C	2.61	0.43
1:A:248:C:C2'	1:A:249:U:H5'	2.48	0.43
1:A:377:G:OP1	16:P:3:LYS:HD2	2.17	0.43
1:A:393:A:C2	1:A:394:G:C8	3.05	0.43
1:A:506:G:C5	1:A:507:C:C4	3.07	0.43
1:A:761:G:H21	17:Q:105:ALA:HB2	1.84	0.43
1:A:778:G:C2'	1:A:779:C:H5'	2.47	0.43
1:A:1038:C:H2'	1:A:1039:C:C6	2.53	0.43
1:A:1226:C:H4'	19:S:80:TYR:CZ	2.53	0.43
3:C:29:TYR:O	3:C:31:HIS:N	2.51	0.43
3:C:130:VAL:CG2	3:C:131:ARG:H	1.98	0.43
3:C:134:ILE:HG22	3:C:168:ALA:CB	2.48	0.43
3:C:174:PRO:HD2	3:C:203:PHE:CE2	2.49	0.43
3:C:180:ALA:O	3:C:182:ILE:N	2.51	0.43
5:E:73:ASN:C	5:E:73:ASN:HD22	2.25	0.43
11:K:63:LEU:O	11:K:67:ASP:N	2.38	0.43
18:R:21:LYS:H	18:R:21:LYS:CD	2.29	0.43
19:S:31:ILE:CG2	19:S:32:LYS:H	2.17	0.43
19:S:61:TYR:C	19:S:61:TYR:CD2	2.96	0.43
20:T:34:LYS:O	20:T:37:SER:N	2.51	0.43
1:A:131:C:H2'	1:A:132:C:H6	1.81	0.43
1:A:362:G:H2'	1:A:364:A:OP2	2.19	0.43
1:A:405:U:C3'	1:A:406:G:H5'	2.39	0.43
1:A:570:G:H2'	1:A:571:U:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:687:A:H4'	1:A:688:G:O5'	2.17	0.43
1:A:1191:A:C4	1:A:1192:C:C5	3.06	0.43
1:A:1262:C:O2'	1:A:1263:C:H5'	2.19	0.43
2:B:193:ASP:HA	2:B:194:PRO:HD2	1.79	0.43
3:C:113:ALA:C	3:C:115:LEU:H	2.23	0.43
3:C:121:ALA:O	3:C:122:GLU:C	2.62	0.43
4:D:52:SER:O	4:D:53:ASP:C	2.61	0.43
4:D:101:LEU:O	4:D:105:VAL:HG23	2.19	0.43
5:E:19:MET:HE1	5:E:24:ARG:NH2	2.33	0.43
7:G:120:ILE:HG22	7:G:124:LEU:HD11	2.00	0.43
8:H:31:PHE:C	8:H:31:PHE:CD1	2.96	0.43
9:I:100:GLY:C	9:I:102:LEU:N	2.75	0.43
12:L:55:VAL:CG1	12:L:56:ALA:N	2.61	0.43
12:L:71:PRO:HG2	12:L:102:ARG:CG	2.35	0.43
14:N:43:CYS:O	14:N:46:GLU:HB2	2.19	0.43
17:Q:66:SER:HB3	17:Q:69:LYS:HB3	2.00	0.43
18:R:36:ASN:CG	18:R:39:VAL:HG12	2.43	0.43
19:S:39:THR:CG2	19:S:40:ILE:H	2.24	0.43
20:T:26:ASN:O	20:T:27:LYS:C	2.61	0.43
20:T:53:LEU:HD23	20:T:53:LEU:H	1.76	0.43
1:A:160:A:H2'	1:A:161:A:O4'	2.18	0.43
1:A:315:A:O4'	1:A:353:A:C2	2.71	0.43
1:A:356:A:O2'	1:A:357:G:H5'	2.19	0.43
1:A:718:G:C4'	11:K:117:ASN:HD22	2.30	0.43
1:A:782:A:H2'	1:A:783:C:H5'	2.00	0.43
1:A:1030:C:H2'	1:A:1030(A):G:C8	2.53	0.43
1:A:1189:C:H5''	3:C:5:ILE:CG2	2.47	0.43
1:A:1372:U:OP1	9:I:71:SER:CB	2.66	0.43
2:B:186:ALA:O	2:B:201:ILE:N	2.47	0.43
3:C:167:TRP:O	3:C:168:ALA:CB	2.66	0.43
5:E:102:ALA:HB2	5:E:120:THR:OG1	2.18	0.43
5:E:147:ASP:O	5:E:151:LEU:HB2	2.19	0.43
7:G:46:ALA:HB2	7:G:117:ALA:O	2.18	0.43
7:G:68:ASN:O	7:G:138:LYS:HE3	2.18	0.43
8:H:4:ASP:OD2	8:H:7:ALA:HB2	2.18	0.43
9:I:37:PHE:HD1	9:I:43:ALA:HB1	1.83	0.43
9:I:49:PRO:CB	9:I:82:ALA:HB2	2.47	0.43
12:L:42:THR:HA	12:L:53:ARG:O	2.18	0.43
14:N:17:LYS:O	14:N:18:VAL:C	2.60	0.43
17:Q:21:VAL:HG23	17:Q:21:VAL:O	2.17	0.43
17:Q:36:ILE:H	17:Q:36:ILE:HG12	1.61	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:R:58:LEU:N	18:R:58:LEU:CD1	2.81	0.43
19:S:63:THR:CB	19:S:66:MET:HE3	2.47	0.43
21:U:9:ARG:CZ	21:U:22:ARG:HA	2.48	0.43
1:A:485:G:C2'	1:A:486:U:OP2	2.67	0.43
1:A:659:U:O2'	1:A:660:G:H5'	2.18	0.43
1:A:673:G:N2	1:A:674:G:C2	2.87	0.43
1:A:830:G:N2	1:A:857:C:C2	2.87	0.43
1:A:1004:A:H5''	1:A:1025:U:N3	2.32	0.43
1:A:1095:U:H5''	1:A:1109:C:O2	2.18	0.43
1:A:1124:G:N7	1:A:1145:C:H2'	2.33	0.43
2:B:140:HIS:HB2	2:B:141:GLU:OE1	2.19	0.43
2:B:196:LEU:HD23	2:B:196:LEU:HA	1.68	0.43
2:B:206:ASP:O	2:B:211:ILE:HG13	2.18	0.43
2:B:210:SER:O	2:B:211:ILE:C	2.62	0.43
3:C:15:THR:O	3:C:16:ARG:HB3	2.18	0.43
4:D:110:PHE:N	4:D:110:PHE:HD2	2.16	0.43
4:D:165:MET:SD	4:D:168:ARG:HD3	2.58	0.43
5:E:149:GLU:HG3	5:E:150:ARG:N	2.34	0.43
7:G:31:MET:HG3	7:G:32:ARG:N	2.33	0.43
7:G:116:ALA:CA	7:G:119:ARG:NH2	2.73	0.43
7:G:141:VAL:O	7:G:142:GLU:C	2.61	0.43
9:I:37:PHE:CB	9:I:43:ALA:HB2	2.44	0.43
10:J:4:ILE:HG22	10:J:100:THR:HA	2.00	0.43
11:K:65:ALA:HB1	11:K:98:LEU:HD21	2.00	0.43
11:K:93:GLN:O	11:K:97:ALA:N	2.48	0.43
12:L:83:VAL:HG13	12:L:84:LEU:N	2.32	0.43
13:M:10:PRO:CB	13:M:18:ALA:HB1	2.49	0.43
16:P:40:ASP:HB3	16:P:48:TRP:CB	2.48	0.43
20:T:25:ARG:O	20:T:28:ALA:HB3	2.18	0.43
1:A:411:A:N9	1:A:413:G:H1'	2.32	0.43
1:A:831:U:O2'	1:A:832:C:H5'	2.18	0.43
1:A:866:C:C2'	1:A:867:G:O5'	2.67	0.43
1:A:1005:A:H62	1:A:1024:G:H1'	1.84	0.43
1:A:1249:C:O2'	9:I:73:GLN:NE2	2.52	0.43
4:D:29:PRO:C	4:D:30:LYS:HG2	2.44	0.43
8:H:124:ALA:O	8:H:128:GLY:N	2.51	0.43
11:K:54:ARG:HA	11:K:54:ARG:HH11	1.83	0.43
13:M:34:LEU:HA	13:M:37:THR:CG2	2.49	0.43
14:N:9:LYS:CG	14:N:10:ALA:H	1.98	0.43
14:N:53:LEU:CB	14:N:56:VAL:HG21	2.48	0.43
16:P:43:LYS:HA	16:P:48:TRP:HB3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:Q:24:GLU:HA	17:Q:39:SER:HA	2.01	0.43
20:T:70:SER:HA	20:T:73:HIS:HD2	1.84	0.43
20:T:82:SER:O	20:T:83:ARG:C	2.59	0.43
1:A:11:G:C6	1:A:12:U:N3	2.86	0.43
1:A:106:C:C2'	1:A:107:G:H5'	2.48	0.43
1:A:279:A:H5''	1:A:280:C:H3'	2.00	0.43
1:A:442:C:O5'	1:A:442:C:H6	2.01	0.43
1:A:585:G:N3	1:A:879:C:H4'	2.33	0.43
1:A:604:G:O2'	1:A:605:U:H5'	2.17	0.43
1:A:746:A:C2'	1:A:747:C:H5'	2.48	0.43
1:A:838:G:N2	1:A:849:C:C2	2.86	0.43
1:A:914:A:C4	1:A:915:A:C8	3.07	0.43
1:A:1024:G:H2'	1:A:1025:U:O4'	2.18	0.43
1:A:1330:U:H2'	1:A:1331:G:H5'	2.01	0.43
1:A:1368:G:H5'	9:I:112:LYS:O	2.18	0.43
1:A:1397:C:HO2'	1:A:1398:A:P	2.41	0.43
2:B:223:ILE:HG23	2:B:224:GLN:N	2.33	0.43
2:B:237:ALA:C	2:B:239:VAL:N	2.72	0.43
3:C:14:ILE:HG22	3:C:15:THR:N	2.32	0.43
3:C:147:LYS:HG2	3:C:147:LYS:O	2.18	0.43
6:F:45:LEU:O	6:F:46:ARG:HG3	2.19	0.43
7:G:97:GLN:O	7:G:98:SER:C	2.60	0.43
9:I:99:LEU:N	9:I:99:LEU:HD22	2.34	0.43
10:J:13:HIS:CD2	10:J:17:ASP:OD2	2.72	0.43
10:J:78:ASN:HB2	10:J:81:THR:OG1	2.19	0.43
11:K:66:LEU:O	11:K:69:ALA:N	2.48	0.43
11:K:125:PHE:N	11:K:125:PHE:CD1	2.86	0.43
12:L:7:ILE:HG21	17:Q:34:LYS:HB2	2.00	0.43
12:L:71:PRO:HD2	12:L:100:ILE:CG2	2.48	0.43
14:N:23:ARG:HA	14:N:29:ARG:H	1.84	0.43
15:O:15:PHE:O	15:O:16:ALA:C	2.60	0.43
16:P:32:TYR:CD2	16:P:32:TYR:O	2.72	0.43
16:P:53:VAL:CG2	16:P:54:GLU:N	2.77	0.43
17:Q:86:GLU:C	17:Q:88:TYR:H	2.26	0.43
18:R:79:LEU:HD23	18:R:80:PRO:HD2	1.99	0.43
19:S:81:ARG:HH11	19:S:81:ARG:HG2	1.84	0.43
1:A:9:G:C8	5:E:126:ARG:NH1	2.83	0.43
1:A:277:C:H5''	17:Q:68:ARG:HH22	1.82	0.43
1:A:577:G:H1'	1:A:816:A:C4	2.54	0.43
1:A:781:A:C8	1:A:802:A:C2	3.07	0.43
1:A:1382:C:H2'	1:A:1383:C:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:108:ILE:HD13	2:B:108:ILE:HA	1.90	0.43
3:C:10:PHE:CZ	3:C:178:LEU:HD22	2.54	0.43
3:C:186:PHE:CG	3:C:187:ALA:N	2.86	0.43
4:D:179:GLU:HG2	4:D:180:GLY:H	1.84	0.43
5:E:78:HIS:ND1	5:E:78:HIS:C	2.77	0.43
5:E:122:GLU:O	5:E:123:LEU:HD23	2.19	0.43
7:G:151:TYR:HD1	7:G:151:TYR:O	2.01	0.43
11:K:48:ILE:CD1	11:K:64:ALA:N	2.74	0.43
11:K:60:ALA:O	11:K:61:ALA:C	2.61	0.43
11:K:101:SER:OG	11:K:103:LEU:HB2	2.18	0.43
12:L:7:ILE:HD13	12:L:7:ILE:HA	1.90	0.43
13:M:5:ALA:O	13:M:6:GLY:C	2.61	0.43
17:Q:9:VAL:O	17:Q:11:VAL:HG13	2.19	0.43
17:Q:66:SER:HB3	17:Q:69:LYS:HD3	2.01	0.43
20:T:53:LEU:N	20:T:53:LEU:CD2	2.68	0.43
1:A:16:A:O2'	1:A:17:U:H5'	2.19	0.43
1:A:91:C:H2'	1:A:92:C:C6	2.52	0.43
1:A:604:G:C5	1:A:605:U:C5	3.07	0.43
1:A:838:G:C2	1:A:849:C:N3	2.87	0.43
1:A:927:G:H2'	1:A:928:G:H8	1.83	0.43
1:A:1054:C:C4	23:Y:35:C:O4'	2.72	0.43
1:A:1075:C:H5''	2:B:179:LYS:HZ2	1.84	0.43
1:A:1148:U:C2	1:A:1149:C:H1'	2.53	0.43
2:B:25:ASN:HD22	2:B:26:PRO:N	2.16	0.43
2:B:204:ASN:ND2	2:B:206:ASP:H	2.16	0.43
4:D:52:SER:O	4:D:54:TYR:N	2.52	0.43
4:D:107:ARG:HH21	4:D:114:ARG:HH22	1.65	0.43
5:E:89:ILE:HG13	5:E:90:VAL:N	2.32	0.43
5:E:127:ASN:ND2	5:E:127:ASN:C	2.75	0.43
6:F:82:ARG:HA	6:F:82:ARG:HE	1.84	0.43
7:G:62:PHE:O	7:G:66:VAL:HG23	2.19	0.43
8:H:14:ARG:HH11	8:H:14:ARG:CB	2.31	0.43
8:H:48:TYR:CD1	8:H:48:TYR:C	2.94	0.43
11:K:110:ASP:OD1	11:K:110:ASP:C	2.60	0.43
12:L:80:HIS:O	12:L:81:SER:C	2.61	0.43
12:L:83:VAL:HG21	12:L:100:ILE:CD1	2.47	0.43
13:M:31:LYS:O	13:M:32:GLU:C	2.62	0.43
13:M:45:VAL:C	13:M:47:ASP:N	2.74	0.43
13:M:106:ASN:O	13:M:108:ARG:HD2	2.19	0.43
20:T:54:LYS:HB2	20:T:55:ILE:HD12	2.01	0.43
1:A:81:U:C6	1:A:83:U:OP2	2.72	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:174:C:O5'	1:A:174:C:H6	2.01	0.43
1:A:781:A:C2	1:A:1514:C:O4'	2.71	0.43
1:A:943:U:C2'	1:A:944:G:H5'	2.49	0.43
1:A:979:C:O2	14:N:19:ARG:NH1	2.52	0.43
1:A:1202:G:H2'	1:A:1203:C:C6	2.54	0.43
1:A:1318:A:H4'	19:S:10:PHE:CE2	2.53	0.43
1:A:1363(A):A:H4'	1:A:1364:U:H2'	2.01	0.43
1:A:1367:C:P	9:I:112:LYS:NZ	2.92	0.43
2:B:97:TRP:HZ3	2:B:176:GLU:OE2	2.01	0.43
3:C:134:ILE:O	3:C:137:ALA:HB3	2.18	0.43
5:E:20:GLN:O	5:E:21:ALA:C	2.60	0.43
6:F:30:LEU:C	6:F:35:ALA:HB3	2.43	0.43
8:H:4:ASP:OD2	8:H:7:ALA:CB	2.67	0.43
8:H:6:ILE:HD12	8:H:35:ILE:CD1	2.49	0.43
9:I:8:GLY:C	9:I:76:ALA:HB1	2.44	0.43
9:I:9:ARG:HD3	9:I:14:VAL:HG12	2.01	0.43
10:J:99:LYS:O	10:J:99:LYS:HG2	2.19	0.43
11:K:48:ILE:HD11	11:K:64:ALA:HA	2.00	0.43
12:L:58:VAL:HG12	12:L:59:ARG:N	2.33	0.43
13:M:55:ARG:NH1	13:M:55:ARG:CB	2.80	0.43
15:O:24:SER:OG	15:O:27:VAL:HG23	2.19	0.43
15:O:45:VAL:O	15:O:46:HIS:C	2.62	0.43
18:R:55:ARG:O	18:R:56:THR:C	2.61	0.43
18:R:62:GLU:O	18:R:65:ILE:N	2.48	0.43
1:A:364:A:C2	1:A:365:U:O4	2.72	0.42
1:A:394:G:C4	1:A:395:C:C5	3.06	0.42
1:A:551:U:H2'	1:A:552:U:C6	2.54	0.42
1:A:563:A:H2	12:L:15:ARG:NH1	2.17	0.42
1:A:1161:C:C2	1:A:1162:C:C5	3.07	0.42
7:G:23:VAL:HG23	7:G:24:THR:N	2.35	0.42
11:K:93:GLN:O	11:K:96:ARG:HB2	2.19	0.42
15:O:21:ASP:OD1	15:O:24:SER:HB3	2.18	0.42
16:P:39:TYR:CE1	16:P:41:PRO:HA	2.54	0.42
1:A:39:G:C2	1:A:40:C:C6	3.06	0.42
1:A:66:G:O4'	1:A:173:U:C4	2.72	0.42
1:A:279:A:OP2	17:Q:95:TYR:OH	2.24	0.42
1:A:688:G:O2'	1:A:689:C:H5'	2.18	0.42
1:A:841:U:H5'	1:A:848:C:O4'	2.19	0.42
1:A:922:G:H2'	1:A:923:A:C8	2.53	0.42
1:A:981:U:O4	1:A:1222:G:O6	2.37	0.42
1:A:1420:C:O2'	1:A:1421:G:H5'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1423:G:O2'	1:A:1424:C:H5'	2.18	0.42
2:B:102:LEU:N	2:B:102:LEU:HD12	2.34	0.42
2:B:230:VAL:CG1	2:B:231:GLU:N	2.82	0.42
6:F:9:VAL:HG22	6:F:60:PHE:CD2	2.55	0.42
6:F:86:ARG:H	6:F:86:ARG:HG2	1.62	0.42
7:G:93:PRO:HG2	7:G:94:ARG:N	2.32	0.42
10:J:37:PRO:O	10:J:38:ILE:HB	2.18	0.42
11:K:97:ALA:O	11:K:98:LEU:C	2.62	0.42
12:L:126:LYS:O	12:L:128:ALA:N	2.53	0.42
13:M:117:VAL:HG12	13:M:118:ALA:N	2.34	0.42
13:M:125:ARG:HD2	13:M:125:ARG:O	2.18	0.42
15:O:17:ARG:O	15:O:18:PHE:HB3	2.19	0.42
15:O:43:LEU:HD11	15:O:53:HIS:HA	2.01	0.42
16:P:34:GLU:OE2	16:P:55:ARG:HD3	2.19	0.42
19:S:81:ARG:HG2	19:S:81:ARG:O	2.20	0.42
1:A:35:G:H21	12:L:118:SER:CB	2.32	0.42
1:A:366:C:O2'	1:A:367:U:H5''	2.18	0.42
1:A:518:C:H4'	1:A:519:C:H6	1.84	0.42
1:A:1002:G:H2'	1:A:1003:G:C1'	2.48	0.42
1:A:1037:C:H2'	1:A:1038:C:C6	2.53	0.42
1:A:1065:U:H5	1:A:1190:G:N3	2.18	0.42
1:A:1211:U:H1'	1:A:1213:A:N3	2.33	0.42
1:A:1237:C:C4'	1:A:1334:G:N2	2.83	0.42
1:A:1250:A:C2	1:A:1287:A:C2	3.06	0.42
2:B:205:ASP:N	2:B:205:ASP:OD1	2.52	0.42
2:B:219:VAL:O	2:B:220:ASP:C	2.61	0.42
3:C:3:ASN:HD22	3:C:3:ASN:N	2.15	0.42
3:C:204:LEU:HD22	3:C:205:GLY:N	2.34	0.42
4:D:55:ALA:O	4:D:58:LEU:HB3	2.19	0.42
5:E:138:ALA:O	5:E:139:LEU:C	2.61	0.42
7:G:17:VAL:CG1	7:G:18:TYR:HD1	2.28	0.42
8:H:4:ASP:CG	8:H:85:ARG:NH1	2.78	0.42
10:J:24:VAL:O	10:J:24:VAL:CG1	2.67	0.42
11:K:33:THR:CB	11:K:39:PRO:HA	2.49	0.42
12:L:111:LYS:O	12:L:112:ASP:CB	2.67	0.42
13:M:86:CYS:O	13:M:87:TYR:C	2.61	0.42
13:M:97:PRO:HA	13:M:110:ARG:HD3	2.01	0.42
16:P:26:ARG:HA	16:P:26:ARG:HD3	1.92	0.42
21:U:13:ILE:O	21:U:16:GLY:N	2.51	0.42
1:A:504:C:C2	1:A:542:G:N2	2.87	0.42
1:A:743:U:H2'	1:A:744:C:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:795:C:H5''	1:A:796:C:OP2	2.19	0.42
1:A:887:G:H2'	1:A:888:G:H5'	2.01	0.42
1:A:1095:U:OP1	1:A:1108:G:N2	2.52	0.42
1:A:1131:G:H1	1:A:1143:G:H21	1.66	0.42
1:A:1148:U:C4	1:A:1149:C:C2	3.07	0.42
1:A:1354:C:H2'	1:A:1355:G:C8	2.51	0.42
3:C:174:PRO:HG2	3:C:177:THR:CG2	2.49	0.42
4:D:21:LEU:O	4:D:22:LYS:HG2	2.20	0.42
4:D:114:ARG:HB2	4:D:114:ARG:NH1	2.32	0.42
7:G:43:PHE:C	7:G:45:ASP:N	2.77	0.42
8:H:14:ARG:HG2	8:H:18:ARG:HE	1.84	0.42
10:J:9:ARG:HG2	10:J:9:ARG:HH11	1.84	0.42
10:J:12:ASP:HB3	10:J:15:THR:CG2	2.50	0.42
13:M:78:ILE:C	13:M:80:ARG:H	2.27	0.42
17:Q:17:LYS:HA	17:Q:46:ASP:O	2.19	0.42
17:Q:70:ARG:NH1	17:Q:70:ARG:CG	2.82	0.42
19:S:15:LEU:O	19:S:19:VAL:HG12	2.19	0.42
20:T:36:LEU:HD22	20:T:55:ILE:HG23	2.01	0.42
1:A:50:A:H4'	1:A:51:A:O3'	2.20	0.42
1:A:281:G:O2'	1:A:282:A:H8	2.03	0.42
1:A:353:A:H5'	1:A:353:A:C8	2.54	0.42
1:A:451:A:C5	1:A:481:G:C5	3.08	0.42
1:A:456:C:C4	1:A:457:C:N4	2.88	0.42
1:A:520:A:OP1	12:L:52:LEU:HD12	2.19	0.42
2:B:206:ASP:O	2:B:208:ILE:N	2.52	0.42
3:C:43:LEU:N	3:C:43:LEU:HD12	2.34	0.42
3:C:83:ARG:O	3:C:85:ARG:N	2.47	0.42
4:D:128:VAL:O	4:D:129:ASN:HB2	2.20	0.42
5:E:80:ILE:HD11	5:E:91:LEU:CG	2.49	0.42
5:E:148:VAL:HG13	5:E:152:ARG:NH2	2.35	0.42
7:G:14:PRO:O	7:G:15:ASP:HB3	2.19	0.42
11:K:48:ILE:HG21	11:K:63:LEU:CD1	2.48	0.42
11:K:50:TYR:CE2	11:K:54:ARG:NH2	2.88	0.42
11:K:90:GLY:O	11:K:91:ARG:C	2.60	0.42
12:L:125:PRO:C	12:L:126:LYS:HG3	2.45	0.42
13:M:74:VAL:HG23	13:M:75:ALA:N	2.34	0.42
13:M:81:LEU:CD2	13:M:81:LEU:H	2.33	0.42
16:P:4:ILE:CG1	16:P:64:ALA:HB1	2.42	0.42
18:R:51:LEU:O	18:R:56:THR:HG23	2.20	0.42
1:A:61:G:OP2	1:A:61:G:O4'	2.37	0.42
1:A:250:A:O5'	1:A:250:A:H8	2.03	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:356:A:H1'	1:A:368:U:O2'	2.20	0.42
1:A:411:A:C4	1:A:413:G:H1'	2.55	0.42
1:A:1020:U:H2'	1:A:1021:G:C8	2.55	0.42
1:A:1027:C:H2'	1:A:1028:C:C6	2.54	0.42
1:A:1086:U:O5'	1:A:1086:U:H6	2.01	0.42
1:A:1150:U:O2	1:A:1150:U:C2'	2.67	0.42
1:A:1263:C:H2'	1:A:1264:C:H6	1.84	0.42
1:A:1288:A:H1'	1:A:1352:C:HO2'	1.84	0.42
1:A:1308:U:OP1	13:M:98:VAL:N	2.52	0.42
2:B:15:VAL:HG23	2:B:16:HIS:HD1	1.83	0.42
2:B:55:PHE:HA	2:B:58:ILE:HD12	2.01	0.42
3:C:9:GLY:HA3	14:N:49:HIS:CA	2.50	0.42
3:C:156:ARG:N	3:C:196:LEU:HD22	2.33	0.42
4:D:153:ARG:HH12	4:D:181:MET:HB2	1.84	0.42
4:D:163:GLU:C	4:D:165:MET:N	2.77	0.42
6:F:89:MET:HE1	18:R:72:ARG:HB3	2.01	0.42
9:I:81:ILE:O	9:I:81:ILE:CG2	2.67	0.42
12:L:37:CYS:HB3	12:L:80:HIS:O	2.20	0.42
13:M:22:ILE:CG2	13:M:66:LEU:HD23	2.50	0.42
15:O:27:VAL:O	15:O:30:ALA:HB3	2.19	0.42
15:O:27:VAL:O	15:O:30:ALA:N	2.52	0.42
19:S:78:ARG:HG2	19:S:78:ARG:NH1	2.34	0.42
1:A:190:U:C2	20:T:105:SER:HB2	2.55	0.42
1:A:293:G:H4'	1:A:609:A:N1	2.34	0.42
1:A:390:C:H6	1:A:390:C:O5'	2.03	0.42
1:A:778:G:C6	1:A:779:C:C4	3.08	0.42
1:A:913:A:HO2'	1:A:914:A:P	2.43	0.42
1:A:1064:G:C2	1:A:1066:C:N4	2.87	0.42
1:A:1115:C:C2'	1:A:1116:C:H5'	2.49	0.42
1:A:1152:A:C4'	10:J:13:HIS:HE2	2.33	0.42
1:A:1196:U:OP1	1:A:1197:G:H5'	2.20	0.42
1:A:1350:A:H2'	1:A:1351:U:C6	2.51	0.42
1:A:1431:C:C2	1:A:1470:G:N2	2.88	0.42
1:A:1539:C:N4	7:G:82:GLY:HA2	2.35	0.42
4:D:64:LEU:C	4:D:64:LEU:HD13	2.45	0.42
4:D:81:GLU:HA	4:D:84:LYS:HE2	2.02	0.42
4:D:179:GLU:H	4:D:179:GLU:CD	2.26	0.42
6:F:38:GLU:HB2	6:F:64:GLN:O	2.19	0.42
13:M:81:LEU:HD23	13:M:81:LEU:H	1.85	0.42
14:N:29:ARG:CZ	14:N:40:CYS:HB2	2.49	0.42
15:O:57:LEU:HD12	15:O:57:LEU:N	2.16	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:Q:50:LYS:HD2	17:Q:51:TYR:CE1	2.55	0.42
17:Q:63:ARG:HG2	17:Q:64:PRO:CD	2.43	0.42
1:A:17:U:C4'	1:A:1080:A:O4'	2.68	0.42
1:A:280:C:H4'	1:A:281:G:OP2	2.20	0.42
1:A:284:G:C4	1:A:285:G:C8	3.07	0.42
1:A:391:G:C6	1:A:392:G:N7	2.88	0.42
1:A:411:A:H2'	1:A:413:G:C8	2.55	0.42
1:A:956:U:C2'	1:A:957:U:H5'	2.50	0.42
1:A:994:A:OP1	1:A:994:A:C8	2.73	0.42
1:A:1205:U:H4'	3:C:195:VAL:CG2	2.49	0.42
1:A:1256:A:O3'	1:A:1257:U:H4'	2.20	0.42
1:A:1285:A:H8	1:A:1285:A:OP1	2.02	0.42
2:B:16:HIS:CE1	2:B:210:SER:HB2	2.55	0.42
2:B:17:PHE:CD1	2:B:18:GLY:N	2.87	0.42
2:B:128:GLU:CD	2:B:128:GLU:N	2.77	0.42
3:C:9:GLY:HA3	14:N:49:HIS:HB2	2.00	0.42
3:C:11:ARG:NH1	3:C:177:THR:O	2.53	0.42
6:F:62:TRP:O	6:F:63:TYR:CD1	2.73	0.42
8:H:119:LEU:CD1	8:H:124:ALA:HA	2.50	0.42
9:I:42:ARG:NH2	9:I:75:ASP:OD2	2.52	0.42
12:L:37:CYS:SG	12:L:56:ALA:HB1	2.60	0.42
13:M:11:ARG:HG3	13:M:12:ASN:N	2.35	0.42
14:N:29:ARG:O	14:N:31:ARG:N	2.53	0.42
14:N:53:LEU:HB3	14:N:56:VAL:CG2	2.50	0.42
14:N:58:LYS:HZ2	14:N:58:LYS:HB3	1.85	0.42
15:O:33:THR:HG22	15:O:37:ASN:ND2	2.24	0.42
16:P:6:LEU:HD12	16:P:6:LEU:N	2.34	0.42
16:P:55:ARG:O	16:P:58:TYR:CB	2.65	0.42
19:S:11:VAL:HG13	19:S:15:LEU:HD11	2.01	0.42
20:T:50:GLU:HG2	20:T:100:ILE:HB	2.00	0.42
23:Y:36:C:N3	23:Y:37:C:C6	2.88	0.42
1:A:18:C:O2'	1:A:19:C:H5'	2.19	0.42
1:A:122:G:C2	1:A:123:C:C2	3.08	0.42
1:A:160:A:C6	1:A:161:A:C2	3.08	0.42
1:A:317:G:C6	1:A:318:G:N7	2.88	0.42
1:A:401:C:H2'	1:A:402:G:H8	1.85	0.42
1:A:512:U:C2	1:A:540:G:N2	2.88	0.42
1:A:913:A:C4'	1:A:914:A:O5'	2.61	0.42
1:A:1090:U:N3	1:A:1091:U:C5	2.88	0.42
2:B:67:THR:HG22	2:B:68:ILE:N	2.34	0.42
2:B:91:PRO:HG2	2:B:155:LEU:CG	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:132:LYS:HG2	2:B:135:GLN:NE2	2.35	0.42
2:B:167:PRO:HG2	2:B:192:SER:CB	2.50	0.42
3:C:6:HIS:HA	3:C:7:PRO:HD2	1.74	0.42
3:C:139:GLN:O	3:C:140:ARG:C	2.63	0.42
3:C:164:ARG:HH12	3:C:166:GLU:CD	2.27	0.42
3:C:183:ASP:OD2	3:C:184:TYR:N	2.53	0.42
5:E:41:VAL:HG11	5:E:113:ALA:CA	2.50	0.42
5:E:80:ILE:HD12	5:E:91:LEU:HB2	2.00	0.42
7:G:120:ILE:O	7:G:121:ALA:C	2.63	0.42
9:I:50:LEU:C	9:I:52:ALA:N	2.66	0.42
10:J:46:ARG:NE	14:N:61:TRP:CH2	2.88	0.42
11:K:58:PRO:HA	11:K:90:GLY:HA3	2.02	0.42
17:Q:27:PHE:HB2	17:Q:28:PRO:HD2	2.01	0.42
18:R:43:PHE:C	18:R:51:LEU:HD12	2.44	0.42
1:A:259:G:O2'	1:A:260:G:H5'	2.20	0.42
1:A:281:G:HO2'	1:A:282:A:P	2.38	0.42
1:A:649:G:O2'	1:A:650:G:H5'	2.20	0.42
1:A:799:G:O2'	1:A:800:G:H5'	2.20	0.42
1:A:939:G:O3'	7:G:102:ARG:NH2	2.53	0.42
1:A:1197:G:OP1	1:A:1198:G:OP2	2.38	0.42
2:B:18:GLY:C	2:B:19:HIS:ND1	2.78	0.42
2:B:150:SER:OG	2:B:151:GLY:N	2.51	0.42
2:B:194:PRO:C	2:B:196:LEU:N	2.78	0.42
3:C:46:GLU:C	3:C:47:LEU:HD12	2.45	0.42
4:D:78:LEU:CA	4:D:81:GLU:HG2	2.47	0.42
4:D:162:LEU:HB3	4:D:181:MET:HE2	2.01	0.42
4:D:177:ASP:OD1	4:D:177:ASP:O	2.38	0.42
4:D:205:GLU:O	4:D:207:TYR:N	2.53	0.42
7:G:23:VAL:O	7:G:24:THR:C	2.63	0.42
7:G:49:ILE:HG22	7:G:49:ILE:O	2.20	0.42
7:G:104:LEU:HD23	7:G:104:LEU:HA	1.82	0.42
8:H:50:ARG:C	8:H:51:VAL:HG12	2.45	0.42
8:H:122:ARG:HG2	8:H:122:ARG:HH11	1.84	0.42
11:K:70:LYS:C	11:K:72:ALA:N	2.75	0.42
12:L:46:LYS:HG2	12:L:92:ASP:O	2.20	0.42
12:L:71:PRO:O	12:L:102:ARG:HD2	2.20	0.42
14:N:58:LYS:HB3	14:N:58:LYS:NZ	2.35	0.42
17:Q:52:LYS:O	17:Q:55:ASP:CG	2.63	0.42
1:A:81:U:O2'	1:A:82:U:OP1	2.35	0.41
1:A:103:C:O2'	1:A:172:A:N1	2.50	0.41
1:A:169:C:O2'	1:A:170:U:H5'	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:231:G:C2	1:A:232:G:C8	3.08	0.41
1:A:264:U:H2'	1:A:265:G:C5'	2.50	0.41
1:A:377:G:P	16:P:3:LYS:HZ2	2.43	0.41
1:A:582:U:H2'	1:A:583:A:O4'	2.20	0.41
1:A:1191:A:C4	1:A:1192:C:H5	2.38	0.41
1:A:1405:G:O2'	1:A:1406:U:H5'	2.19	0.41
2:B:56:ARG:CB	2:B:56:ARG:HH11	2.33	0.41
2:B:92:TYR:N	2:B:151:GLY:O	2.54	0.41
2:B:137:ARG:C	2:B:139:LYS:N	2.75	0.41
3:C:48:TYR:CD1	3:C:48:TYR:C	2.98	0.41
3:C:91:LEU:HD11	3:C:99:VAL:O	2.20	0.41
4:D:138:TYR:C	4:D:138:TYR:CD2	2.98	0.41
4:D:200:GLU:C	4:D:202:LEU:N	2.78	0.41
5:E:12:LEU:O	5:E:30:ALA:HA	2.20	0.41
5:E:27:ARG:HH11	5:E:47:LYS:HZ1	1.68	0.41
5:E:36:ASP:OD1	5:E:38:GLN:N	2.39	0.41
5:E:53:LEU:O	5:E:57:LYS:HB2	2.20	0.41
5:E:127:ASN:HA	5:E:128:PRO:HD2	1.90	0.41
6:F:33:TYR:HD1	6:F:75:LEU:HD22	1.84	0.41
13:M:100:GLY:O	13:M:101:GLN:HG3	2.19	0.41
14:N:57:ARG:CG	14:N:58:LYS:H	2.33	0.41
15:O:2:PRO:C	15:O:3:ILE:HG12	2.45	0.41
15:O:12:ILE:O	15:O:15:PHE:N	2.50	0.41
15:O:69:TYR:O	15:O:70:LEU:C	2.62	0.41
20:T:50:GLU:HA	20:T:100:ILE:HG22	2.01	0.41
1:A:20:U:C2	1:A:21:G:C8	3.07	0.41
1:A:58:C:H6	1:A:58:C:H3'	1.85	0.41
1:A:243:A:H4'	1:A:244:U:O5'	2.19	0.41
1:A:358:U:O2'	1:A:359:U:H5'	2.20	0.41
1:A:623:C:O5'	1:A:623:C:H6	2.03	0.41
1:A:836:G:C6	1:A:851:G:C6	3.08	0.41
1:A:1331:G:O2'	1:A:1332:A:H8	2.02	0.41
1:A:1379:G:O2'	1:A:1380:U:H5'	2.20	0.41
1:A:1385:G:C2'	1:A:1386:G:H5'	2.50	0.41
1:A:1508:G:C5	1:A:1509:C:C5	3.08	0.41
3:C:2:GLY:C	3:C:3:ASN:ND2	2.75	0.41
3:C:201:TYR:N	3:C:201:TYR:HD1	2.18	0.41
4:D:117:ALA:O	4:D:121:VAL:HG23	2.20	0.41
5:E:120:THR:O	5:E:121:LYS:CB	2.68	0.41
6:F:25:ILE:CD1	6:F:82:ARG:HD2	2.48	0.41
7:G:93:PRO:CG	7:G:94:ARG:H	2.31	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:105:ARG:CG	8:H:105:ARG:NH1	2.81	0.41
9:I:97:LYS:HD3	9:I:102:LEU:HD11	2.02	0.41
10:J:51:ARG:CZ	10:J:61:GLU:HB2	2.50	0.41
12:L:43:VAL:O	12:L:45:PRO:HD3	2.19	0.41
15:O:53:HIS:O	15:O:57:LEU:CD1	2.69	0.41
17:Q:4:LYS:HE3	17:Q:6:LEU:HD21	2.01	0.41
20:T:45:GLN:HG2	20:T:91:LEU:HD23	2.02	0.41
20:T:72:LEU:O	20:T:73:HIS:O	2.39	0.41
20:T:87:LYS:O	20:T:88:VAL:C	2.62	0.41
1:A:41:G:O2'	1:A:42:G:H5'	2.20	0.41
1:A:396:G:O2'	1:A:398:C:OP1	2.31	0.41
1:A:489:C:H2'	1:A:490:G:C8	2.50	0.41
1:A:556:C:O2'	1:A:557:G:H5'	2.20	0.41
1:A:639:G:H2'	1:A:640:A:H8	1.86	0.41
1:A:745:C:O2'	1:A:746:A:H5'	2.20	0.41
1:A:866:C:C4	1:A:867:G:H1'	2.55	0.41
1:A:944:G:N2	1:A:1338:G:C8	2.87	0.41
1:A:1075:C:H5''	2:B:179:LYS:NZ	2.35	0.41
1:A:1372:U:OP1	9:I:71:SER:N	2.50	0.41
2:B:100:GLY:O	2:B:104:ASN:N	2.47	0.41
3:C:9:GLY:C	3:C:11:ARG:N	2.77	0.41
3:C:22:TRP:CH2	3:C:32:LEU:HB2	2.54	0.41
3:C:130:VAL:O	3:C:131:ARG:C	2.62	0.41
5:E:47:LYS:HE3	5:E:47:LYS:HB2	1.75	0.41
7:G:62:PHE:C	7:G:64:GLN:N	2.76	0.41
9:I:40:LEU:O	9:I:41:VAL:C	2.63	0.41
9:I:109:VAL:HG23	9:I:109:VAL:O	2.20	0.41
12:L:26:ALA:O	12:L:33:ARG:HD2	2.20	0.41
12:L:121:GLY:O	12:L:122:THR:HB	2.20	0.41
13:M:89:GLY:O	13:M:93:ARG:HG3	2.19	0.41
15:O:48:LYS:HE3	15:O:48:LYS:HB2	1.87	0.41
15:O:53:HIS:O	15:O:54:ARG:C	2.63	0.41
19:S:64:GLU:O	19:S:66:MET:N	2.53	0.41
20:T:36:LEU:O	20:T:39:LYS:HB3	2.20	0.41
1:A:186:C:H2'	1:A:187:C:H6	1.84	0.41
1:A:294:U:H2'	1:A:295:C:C6	2.55	0.41
1:A:363:A:N6	1:A:364:A:C6	2.88	0.41
1:A:490:G:C6	1:A:491:G:N7	2.88	0.41
1:A:1002:G:C4	1:A:1003:G:H1'	2.55	0.41
1:A:1005:A:C4	1:A:1026:G:N2	2.88	0.41
1:A:1145:C:O2'	1:A:1146:A:P	2.78	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1408:A:C6	1:A:1494:G:C6	3.09	0.41
2:B:136:VAL:O	2:B:139:LYS:HB3	2.20	0.41
2:B:213:LEU:HD23	2:B:213:LEU:C	2.45	0.41
3:C:16:ARG:HH11	3:C:16:ARG:CA	2.33	0.41
4:D:55:ALA:O	4:D:56:VAL:C	2.64	0.41
5:E:136:MET:O	5:E:137:GLU:C	2.62	0.41
11:K:52:GLY:C	11:K:54:ARG:N	2.77	0.41
11:K:79:SER:OG	11:K:106:LYS:HE3	2.20	0.41
13:M:20:THR:C	13:M:22:ILE:H	2.28	0.41
13:M:29:ARG:C	13:M:31:LYS:H	2.27	0.41
13:M:35:GLU:C	13:M:37:THR:H	2.27	0.41
14:N:35:ARG:C	14:N:37:PHE:N	2.77	0.41
14:N:42:ILE:O	14:N:46:GLU:HG2	2.20	0.41
15:O:13:GLN:O	15:O:15:PHE:N	2.52	0.41
15:O:46:HIS:C	15:O:48:LYS:N	2.76	0.41
20:T:53:LEU:HD12	20:T:100:ILE:HG23	2.02	0.41
1:A:139:G:H5'	1:A:139:G:H8	1.85	0.41
1:A:142:G:O2'	1:A:196:A:N1	2.48	0.41
1:A:261:U:OP2	20:T:79:ARG:NH2	2.54	0.41
1:A:353:A:H5'	1:A:353:A:H8	1.86	0.41
1:A:458:C:H2'	1:A:460:G:H8	1.85	0.41
1:A:460:G:H1'	1:A:472:A:H61	1.84	0.41
1:A:511:C:O3'	4:D:43:HIS:CE1	2.73	0.41
1:A:544:G:OP1	4:D:62:GLN:OE1	2.39	0.41
1:A:694:A:H2'	1:A:695:A:O4'	2.21	0.41
1:A:986:A:H1'	19:S:54:GLY:O	2.20	0.41
1:A:1054:C:H3'	1:A:1054:C:H6	1.84	0.41
1:A:1060:C:O2'	1:A:1061:G:H5'	2.20	0.41
1:A:1433:A:O2'	1:A:1434:A:H5'	2.20	0.41
1:A:1492:A:N3	22:X:2:G:O2'	2.43	0.41
2:B:59:GLU:O	2:B:60:ASP:C	2.63	0.41
4:D:20:TYR:CB	4:D:26:CYS:HB3	2.50	0.41
4:D:58:LEU:O	4:D:59:ARG:C	2.62	0.41
6:F:91:VAL:HG21	18:R:72:ARG:HH12	1.85	0.41
12:L:51:ALA:C	12:L:52:LEU:HD23	2.45	0.41
12:L:80:HIS:O	12:L:81:SER:O	2.38	0.41
13:M:105:THR:O	13:M:106:ASN:C	2.62	0.41
18:R:55:ARG:NH1	18:R:55:ARG:CB	2.82	0.41
1:A:131:C:O2'	1:A:262:A:H1'	2.20	0.41
1:A:359:U:O2'	1:A:360:A:H5'	2.20	0.41
1:A:521:G:H4'	12:L:73:GLU:CG	2.47	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:588:G:C6	1:A:589:C:N4	2.89	0.41
1:A:1125:U:C5	10:J:73:ASP:OD2	2.68	0.41
1:A:1183:A:O2'	1:A:1184:G:OP1	2.34	0.41
1:A:1368:G:OP2	9:I:112:LYS:CD	2.63	0.41
2:B:43:ASP:OD1	2:B:46:LYS:HE3	2.21	0.41
3:C:113:ALA:CB	3:C:114:PRO:HD3	2.39	0.41
3:C:127:ARG:O	3:C:128:PHE:HB2	2.20	0.41
3:C:130:VAL:HB	3:C:134:ILE:CD1	2.43	0.41
3:C:130:VAL:O	3:C:132:ARG:N	2.53	0.41
3:C:132:ARG:O	3:C:133:ALA:C	2.63	0.41
5:E:152:ARG:HG2	8:H:43:GLY:HA3	2.03	0.41
7:G:22:LEU:HG	7:G:62:PHE:CE2	2.55	0.41
8:H:36:LEU:CD2	8:H:36:LEU:N	2.61	0.41
10:J:92:THR:C	10:J:94:VAL:H	2.28	0.41
12:L:32:PHE:CE1	12:L:86:ARG:HB2	2.55	0.41
12:L:47:LYS:CG	12:L:48:PRO:HD3	2.50	0.41
13:M:55:ARG:HB2	13:M:55:ARG:HH11	1.86	0.41
13:M:81:LEU:HA	13:M:84:ILE:CG1	2.51	0.41
14:N:14:PRO:HG2	14:N:16:PHE:H	1.86	0.41
16:P:4:ILE:HG21	16:P:74:LEU:HD11	2.01	0.41
17:Q:4:LYS:HE3	17:Q:6:LEU:CD2	2.50	0.41
17:Q:95:TYR:HD1	17:Q:95:TYR:N	2.19	0.41
17:Q:97:SER:C	17:Q:98:LEU:HD23	2.45	0.41
18:R:86:VAL:O	18:R:87:ARG:HB3	2.21	0.41
1:A:53:A:C2'	1:A:54:C:O5'	2.68	0.41
1:A:415:A:H2'	1:A:416:G:C8	2.56	0.41
1:A:419:C:H1'	1:A:425:G:N2	2.36	0.41
1:A:504:C:C2	1:A:542:G:C2	3.08	0.41
1:A:577:G:H1'	1:A:816:A:N3	2.36	0.41
1:A:615:C:H2'	1:A:616:G:O5'	2.21	0.41
1:A:761:G:N2	17:Q:105:ALA:HB2	2.36	0.41
1:A:837:G:O2'	1:A:838:G:H5'	2.20	0.41
1:A:1231:G:O2'	1:A:1232:U:H5'	2.20	0.41
1:A:1364:U:O2'	1:A:1365:G:H5'	2.20	0.41
1:A:1373:G:H8	1:A:1373:G:O5'	2.04	0.41
1:A:1402:C:C5	1:A:1403:C:C5	3.09	0.41
1:A:1444:C:C4	1:A:1445:C:C5	3.09	0.41
3:C:35:GLU:CD	3:C:59:ARG:HH22	2.27	0.41
4:D:52:SER:C	4:D:54:TYR:N	2.77	0.41
5:E:13:ILE:HG22	5:E:30:ALA:HB2	2.03	0.41
7:G:141:VAL:C	7:G:143:ARG:N	2.76	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:6:ILE:HB	8:H:85:ARG:NH1	2.36	0.41
9:I:26:VAL:HG13	9:I:61:ALA:HB3	2.02	0.41
13:M:21:TYR:N	13:M:21:TYR:CD1	2.89	0.41
16:P:1:MET:CE	16:P:3:LYS:HE3	2.47	0.41
16:P:49:LEU:HD11	16:P:51:VAL:CG2	2.50	0.41
19:S:63:THR:O	19:S:66:MET:HG2	2.21	0.41
20:T:10:LEU:HD12	20:T:12:ALA:HB3	2.03	0.41
20:T:23:ARG:O	20:T:24:LEU:C	2.63	0.41
21:U:13:ILE:O	21:U:14:TRP:C	2.61	0.41
1:A:57:G:C5	1:A:58:C:N3	2.89	0.41
1:A:129(A):G:C2	1:A:189(F):U:H5'	2.56	0.41
1:A:321:A:HO2'	1:A:322:C:H5'	1.84	0.41
1:A:380:G:C2	1:A:384:G:C6	3.09	0.41
1:A:500:G:C6	1:A:501:C:C4	3.09	0.41
1:A:725:G:O2'	1:A:726:C:H5'	2.20	0.41
1:A:916:G:C2	1:A:917:G:N7	2.89	0.41
1:A:1183:A:C2'	1:A:1184:G:OP1	2.69	0.41
1:A:1223:C:P	19:S:78:ARG:HH12	2.44	0.41
1:A:1447:A:H5''	1:A:1452:C:C5	2.56	0.41
2:B:53:ARG:HH12	2:B:199:TYR:HA	1.86	0.41
2:B:114:ARG:HE	2:B:118:LEU:HD11	1.85	0.41
2:B:132:LYS:HA	2:B:135:GLN:NE2	2.35	0.41
2:B:209:ARG:HH21	2:B:239:VAL:CG1	2.30	0.41
3:C:26:LYS:HE3	10:J:45:ARG:NH2	2.36	0.41
4:D:8:VAL:CG1	4:D:9:CYS:N	2.84	0.41
5:E:137:GLU:OE1	5:E:141:GLN:OE1	2.39	0.41
8:H:51:VAL:O	8:H:51:VAL:HG22	2.20	0.41
10:J:80:LYS:N	10:J:80:LYS:HD3	2.36	0.41
10:J:90:LEU:N	10:J:91:PRO:HD2	2.23	0.41
11:K:108:ILE:HB	18:R:88:LYS:H	1.85	0.41
12:L:55:VAL:CG1	12:L:67:THR:HB	2.51	0.41
15:O:34:LEU:HD22	15:O:34:LEU:C	2.46	0.41
16:P:19:ILE:CG2	16:P:20:VAL:N	2.84	0.41
19:S:75:ALA:HA	19:S:76:PRO:HD2	1.90	0.41
1:A:59:A:H3'	1:A:331:G:H22	1.86	0.41
1:A:187:C:O2'	20:T:89:ARG:NH1	2.44	0.41
1:A:376:G:N3	1:A:389:A:C2	2.89	0.41
1:A:398:C:O2'	1:A:399:G:H5'	2.20	0.41
1:A:519:C:C2'	1:A:520:A:O5'	2.68	0.41
1:A:676:A:C1'	11:K:115:PRO:HB3	2.51	0.41
1:A:706:A:O4'	11:K:29:ILE:HG12	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:711:G:H2'	1:A:712:A:C8	2.56	0.41
1:A:743:U:H2'	1:A:744:C:H6	1.85	0.41
1:A:753:A:C2	8:H:1:MET:HE2	2.55	0.41
1:A:861:G:O2'	1:A:862:C:H5'	2.21	0.41
1:A:864:A:C6	1:A:865:A:N1	2.89	0.41
1:A:914:A:C6	1:A:915:A:C5	3.09	0.41
1:A:916:G:C2	1:A:917:G:C8	3.08	0.41
1:A:967:C:H3'	1:A:968:A:C8	2.55	0.41
1:A:1115:C:H1'	14:N:61:TRP:HB2	2.03	0.41
1:A:1128:C:C5'	9:I:16:ARG:NH2	2.84	0.41
1:A:1130:A:H61	1:A:1144:G:H21	1.67	0.41
1:A:1276:G:H21	1:A:1282:C:C2'	2.34	0.41
1:A:1314:C:OP2	19:S:6:LYS:HD2	2.21	0.41
1:A:1425:U:H2'	1:A:1426:C:H6	1.78	0.41
2:B:20:GLU:O	2:B:39:ILE:HG23	2.20	0.41
2:B:81:VAL:C	2:B:83:MET:N	2.79	0.41
2:B:103:THR:OG1	2:B:176:GLU:HG2	2.20	0.41
2:B:230:VAL:HG12	2:B:231:GLU:O	2.21	0.41
3:C:66:VAL:HG12	3:C:68:VAL:H	1.85	0.41
3:C:101:LEU:HD23	3:C:102:ASN:N	2.36	0.41
4:D:3:ARG:NE	4:D:118:ARG:HH11	2.18	0.41
4:D:19:LEU:HD22	4:D:67:ILE:HG12	2.03	0.41
4:D:55:ALA:O	4:D:58:LEU:N	2.54	0.41
4:D:70:ILE:HD12	4:D:100:ARG:NE	2.35	0.41
5:E:9:LYS:O	5:E:33:VAL:HG22	2.21	0.41
5:E:80:ILE:CD1	5:E:138:ALA:HB1	2.50	0.41
5:E:102:ALA:HB1	5:E:106:PRO:HB2	2.03	0.41
5:E:120:THR:O	5:E:121:LYS:HB3	2.20	0.41
5:E:143:ARG:NH1	8:H:77:GLU:CD	2.79	0.41
7:G:110:GLN:OE1	7:G:110:GLN:HA	2.21	0.41
7:G:120:ILE:HG13	7:G:120:ILE:H	1.48	0.41
9:I:2:GLU:O	9:I:3:GLN:HG2	2.21	0.41
11:K:115:PRO:C	11:K:117:ASN:H	2.28	0.41
12:L:16:GLU:C	12:L:17:LYS:O	2.64	0.41
12:L:27:LEU:HD23	12:L:33:ARG:NH1	2.36	0.41
12:L:50:SER:O	12:L:51:ALA:HB2	2.21	0.41
12:L:60:LEU:HD22	12:L:60:LEU:N	2.34	0.41
13:M:13:LYS:O	13:M:14:ARG:C	2.64	0.41
13:M:48:LEU:HD23	13:M:48:LEU:HA	1.97	0.41
13:M:79:LYS:HD3	13:M:79:LYS:C	2.46	0.41
14:N:57:ARG:HG2	14:N:58:LYS:N	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:P:2:VAL:HG13	16:P:64:ALA:H	1.86	0.41
18:R:29:PHE:HE1	18:R:31:LEU:HD23	1.84	0.41
19:S:65:ASN:OD1	19:S:66:MET:N	2.54	0.41
20:T:37:SER:O	20:T:38:LYS:C	2.64	0.41
20:T:69:GLY:O	20:T:73:HIS:CD2	2.74	0.41
1:A:184:G:O4'	1:A:224:C:H4'	2.21	0.41
1:A:264:U:H2'	1:A:265:G:H5'	2.01	0.41
1:A:503:C:H2'	1:A:504:C:C6	2.56	0.41
1:A:515:G:C5	1:A:516:U:C5	3.09	0.41
1:A:855:G:C6	1:A:856:C:C4	3.09	0.41
1:A:1118:C:O2	1:A:1179:A:C6	2.74	0.41
1:A:1184:G:H2'	1:A:1185:G:H8	1.85	0.41
1:A:1392:G:C5	1:A:1393:U:C5	3.09	0.41
1:A:1431:C:C2	1:A:1470:G:C2	3.09	0.41
1:A:1471:G:H2'	1:A:1472:U:C6	2.57	0.41
2:B:132:LYS:HG2	2:B:135:GLN:CD	2.46	0.41
3:C:5:ILE:HD13	3:C:6:HIS:N	2.35	0.41
4:D:15:GLU:OE1	4:D:59:ARG:NH2	2.54	0.41
5:E:58:ALA:O	5:E:61:TYR:N	2.54	0.41
5:E:76:ILE:CG2	5:E:77:PRO:HD2	2.51	0.41
5:E:84:PHE:CE2	5:E:133:TYR:HB2	2.56	0.41
6:F:77:ARG:CG	6:F:78:GLU:N	2.83	0.41
7:G:6:ARG:O	7:G:7:ALA:O	2.39	0.41
7:G:26:PHE:O	7:G:27:ILE:C	2.64	0.41
7:G:111:ARG:NH1	7:G:122:HIS:HB3	2.36	0.41
8:H:11:THR:HG22	8:H:14:ARG:HH22	1.86	0.41
8:H:88:LYS:C	8:H:90:GLY:N	2.78	0.41
8:H:117:GLY:O	8:H:119:LEU:CD2	2.69	0.41
8:H:134:ILE:HG22	8:H:135:CYS:N	2.35	0.41
10:J:35:SER:CB	10:J:73:ASP:HB2	2.50	0.41
12:L:26:ALA:C	12:L:27:LEU:O	2.63	0.41
13:M:90:LEU:HA	13:M:93:ARG:CG	2.49	0.41
17:Q:98:LEU:O	17:Q:99:SER:HB3	2.21	0.41
18:R:55:ARG:HB3	18:R:55:ARG:CZ	2.50	0.41
20:T:72:LEU:O	20:T:73:HIS:C	2.63	0.41
1:A:81:U:H4'	1:A:81:U:OP1	2.21	0.40
1:A:147:G:C2	1:A:148:G:C8	3.09	0.40
1:A:428:G:H1'	1:A:429:U:OP2	2.20	0.40
1:A:552:U:H4'	12:L:86:ARG:O	2.21	0.40
1:A:570:G:C6	1:A:873:A:C2	3.09	0.40
1:A:661:G:C2'	1:A:662:G:H5'	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:791:G:C2'	1:A:792:A:C5'	2.95	0.40
1:A:1005:A:H2'	1:A:1006:C:O4'	2.21	0.40
1:A:1029:C:H1'	1:A:1033:G:N2	2.35	0.40
1:A:1042:G:H2'	1:A:1043:C:C6	2.55	0.40
1:A:1075:C:H5'	2:B:103:THR:HG21	2.03	0.40
1:A:1367:C:H2'	1:A:1368:G:O5'	2.20	0.40
2:B:42:ILE:HD12	2:B:203:GLY:CA	2.48	0.40
2:B:115:LEU:O	2:B:119:GLU:HB3	2.20	0.40
3:C:5:ILE:HB	3:C:6:HIS:H	1.49	0.40
3:C:24:ALA:HB1	3:C:28:GLN:CB	2.50	0.40
4:D:49:ARG:O	4:D:50:ARG:C	2.63	0.40
4:D:88:VAL:O	4:D:92:VAL:HG23	2.21	0.40
4:D:190:ASP:O	4:D:191:ARG:C	2.64	0.40
5:E:82:VAL:HG21	5:E:138:ALA:N	2.36	0.40
5:E:118:ILE:HG22	5:E:119:LEU:N	2.34	0.40
8:H:14:ARG:NH1	8:H:14:ARG:HB3	2.36	0.40
8:H:44:PHE:O	8:H:45:ILE:CG2	2.69	0.40
9:I:66:ARG:O	9:I:66:ARG:HG2	2.20	0.40
13:M:33:ALA:C	13:M:35:GLU:N	2.79	0.40
16:P:5:ARG:C	16:P:6:LEU:HD12	2.46	0.40
1:A:17:U:O4'	1:A:1080:A:H1'	2.21	0.40
1:A:81:U:HO2'	1:A:82:U:P	2.44	0.40
1:A:189:G:O2'	1:A:189(A):C:H5'	2.20	0.40
1:A:438:G:OP1	4:D:125:HIS:HE1	2.04	0.40
1:A:490:G:C2'	1:A:491:G:H5'	2.51	0.40
1:A:865:A:C5	1:A:866:C:C4	3.09	0.40
1:A:923:A:O4'	1:A:1398:A:C2	2.75	0.40
1:A:1011:G:O2'	1:A:1012:U:H5'	2.22	0.40
1:A:1015:A:H2'	1:A:1016:A:H8	1.82	0.40
1:A:1030:C:O2'	1:A:1030(A):G:H5'	2.20	0.40
1:A:1150:U:O3'	10:J:41:PRO:HA	2.21	0.40
1:A:1190:G:OP1	3:C:5:ILE:N	2.54	0.40
1:A:1352:C:H2'	1:A:1353:G:C8	2.56	0.40
2:B:142:LEU:CD1	2:B:146:GLN:NE2	2.82	0.40
3:C:71:ALA:N	3:C:106:VAL:HB	2.36	0.40
4:D:184:LYS:HE3	4:D:184:LYS:HB2	1.86	0.40
9:I:49:PRO:O	9:I:52:ALA:HB3	2.22	0.40
9:I:55:ALA:O	9:I:56:LEU:HB3	2.21	0.40
12:L:7:ILE:O	12:L:11:VAL:N	2.48	0.40
13:M:60:VAL:HG12	13:M:61:GLU:N	2.35	0.40
16:P:45:THR:C	16:P:47:ASP:H	2.29	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:R:53:ARG:HD3	18:R:63:GLN:HB2	2.02	0.40
1:A:98:G:C2'	1:A:99:U:H5'	2.51	0.40
1:A:106:C:C2	1:A:107:G:C8	3.09	0.40
1:A:247:G:OP2	17:Q:99:SER:HB2	2.21	0.40
1:A:250:A:C4'	1:A:251:G:O5'	2.65	0.40
1:A:251:G:H4'	1:A:252:U:OP1	2.19	0.40
1:A:281:G:O2'	1:A:282:A:C8	2.74	0.40
1:A:549:C:C2	1:A:550:G:C8	3.09	0.40
1:A:575:G:H4'	1:A:575:G:OP1	2.21	0.40
1:A:644:G:C4	1:A:645:C:C6	3.09	0.40
1:A:686:U:C2	1:A:687:A:N7	2.90	0.40
1:A:1288:A:C2	1:A:1289:A:C5	3.09	0.40
1:A:1326:C:P	21:U:12:LYS:NZ	2.94	0.40
3:C:3:ASN:N	3:C:3:ASN:ND2	2.69	0.40
3:C:16:ARG:HH11	3:C:16:ARG:HA	1.86	0.40
3:C:177:THR:O	3:C:177:THR:CG2	2.68	0.40
4:D:122:ARG:C	4:D:124:GLY:H	2.30	0.40
5:E:37:ARG:HG2	5:E:37:ARG:HH11	1.86	0.40
5:E:95:ALA:HB1	5:E:96:PRO:HD2	2.02	0.40
5:E:144:THR:C	5:E:146:ALA:N	2.76	0.40
7:G:41:ARG:O	7:G:43:PHE:N	2.55	0.40
7:G:70:LYS:HE2	7:G:96:GLN:CD	2.46	0.40
7:G:71:PRO:O	7:G:96:GLN:HG3	2.21	0.40
7:G:143:ARG:O	7:G:144:MET:C	2.62	0.40
8:H:51:VAL:HG11	8:H:60:ARG:HB2	2.02	0.40
9:I:28:VAL:C	9:I:30:GLY:H	2.29	0.40
9:I:79:LEU:O	9:I:82:ALA:HB3	2.20	0.40
12:L:89:ARG:NH1	12:L:97:ARG:HD3	2.37	0.40
14:N:47:LEU:HB2	14:N:53:LEU:HG	2.04	0.40
16:P:12:LYS:O	16:P:13:HIS:CB	2.69	0.40
20:T:22:ARG:O	20:T:23:ARG:C	2.63	0.40
20:T:86:ARG:O	20:T:89:ARG:N	2.54	0.40
21:U:6:ARG:NH2	21:U:15:ARG:HH11	2.18	0.40
1:A:104:G:H4'	1:A:174:C:O4'	2.21	0.40
1:A:186:C:H2'	1:A:187:C:C5	2.56	0.40
1:A:559:A:H5'	1:A:561:U:OP1	2.20	0.40
1:A:564:C:OP1	12:L:15:ARG:NE	2.55	0.40
1:A:774:G:O2'	1:A:775:G:H5'	2.21	0.40
1:A:1124:G:H3'	1:A:1145:C:H41	1.86	0.40
1:A:1220:G:OP1	19:S:37:ARG:NH1	2.54	0.40
1:A:1229:A:C2	1:A:1230:C:C4	3.09	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:19:HIS:O	2:B:20:GLU:HB2	2.21	0.40
2:B:114:ARG:HE	2:B:118:LEU:CD1	2.35	0.40
2:B:118:LEU:O	2:B:142:LEU:HG	2.21	0.40
4:D:59:ARG:HH12	4:D:62:GLN:CB	2.34	0.40
4:D:67:ILE:C	4:D:69:GLY:H	2.29	0.40
4:D:163:GLU:O	4:D:165:MET:N	2.54	0.40
6:F:18:GLN:HE21	6:F:18:GLN:N	2.19	0.40
6:F:74:ASP:OD1	6:F:77:ARG:HD3	2.20	0.40
6:F:101:ALA:HA	18:R:28:GLU:HB2	2.02	0.40
7:G:17:VAL:HG12	7:G:18:TYR:N	2.36	0.40
7:G:90:GLU:O	7:G:91:VAL:CG2	2.68	0.40
9:I:72:GLY:O	9:I:76:ALA:N	2.46	0.40
10:J:30:SER:OG	10:J:81:THR:HG23	2.21	0.40
10:J:44:VAL:HG13	10:J:45:ARG:N	2.35	0.40
11:K:72:ALA:HB1	11:K:77:MET:HG3	2.04	0.40
12:L:102:ARG:HE	12:L:102:ARG:HB3	1.59	0.40
12:L:112:ASP:CG	12:L:113:ARG:N	2.79	0.40
13:M:66:LEU:HD12	13:M:66:LEU:N	2.36	0.40
15:O:33:THR:O	15:O:34:LEU:C	2.62	0.40
16:P:20:VAL:HG22	16:P:21:VAL:O	2.21	0.40
17:Q:90:ILE:O	17:Q:93:GLN:N	2.55	0.40
18:R:83:GLU:HA	18:R:83:GLU:OE1	2.21	0.40
19:S:7:LYS:HE3	19:S:7:LYS:HB3	1.95	0.40
1:A:333:G:H4'	20:T:16:HIS:HE2	1.87	0.40
1:A:492:G:O2'	1:A:493:G:H5'	2.21	0.40
1:A:606:G:H8	1:A:606:G:O5'	2.05	0.40
1:A:685:G:C2	1:A:686:U:C4	3.10	0.40
1:A:861:G:O5'	1:A:861:G:H8	2.04	0.40
1:A:880:C:H3'	1:A:880:C:H6	1.84	0.40
1:A:1072:G:H2'	1:A:1073:U:O4'	2.21	0.40
1:A:1080:A:C8	1:A:1081:G:H1'	2.57	0.40
1:A:1129:C:O5'	1:A:1130:A:H5'	2.21	0.40
1:A:1220:G:H21	19:S:54:GLY:HA2	1.87	0.40
1:A:1365:G:C2'	1:A:1366:C:H5'	2.51	0.40
1:A:1368:G:C5'	9:I:112:LYS:O	2.69	0.40
1:A:1460:A:H2'	1:A:1461:G:O4'	2.22	0.40
1:A:1500:A:O2'	1:A:1501:C:H5'	2.22	0.40
2:B:71:VAL:HB	2:B:164:VAL:HG22	2.04	0.40
3:C:34:LEU:HD23	3:C:34:LEU:C	2.46	0.40
5:E:20:GLN:O	5:E:23:GLY:O	2.39	0.40
5:E:58:ALA:O	5:E:59:GLY:C	2.65	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:69:GLU:HA	6:F:72:VAL:CG2	2.52	0.40
7:G:31:MET:CG	7:G:32:ARG:N	2.84	0.40
7:G:138:LYS:HD3	7:G:138:LYS:O	2.21	0.40
8:H:105:ARG:HD2	8:H:105:ARG:HA	1.96	0.40
9:I:89:ASN:C	9:I:91:ASP:N	2.80	0.40
13:M:54:VAL:HG12	13:M:55:ARG:N	2.36	0.40
14:N:40:CYS:SG	14:N:43:CYS:SG	3.13	0.40
15:O:32:LEU:HD23	15:O:32:LEU:HA	1.80	0.40
16:P:21:VAL:HG12	16:P:33:ILE:CG1	2.51	0.40
17:Q:95:TYR:N	17:Q:95:TYR:CD1	2.88	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	
2	B	233/256 (91%)	134 (58%)	72 (31%)	27 (12%)	0	1
3	C	205/239 (86%)	116 (57%)	42 (20%)	47 (23%)	0	0
4	D	206/209 (99%)	125 (61%)	47 (23%)	34 (16%)	0	0
5	E	149/162 (92%)	109 (73%)	25 (17%)	15 (10%)	0	3
6	F	99/101 (98%)	72 (73%)	24 (24%)	3 (3%)	3	19
7	G	153/156 (98%)	78 (51%)	44 (29%)	31 (20%)	0	0
8	H	136/138 (99%)	105 (77%)	23 (17%)	8 (6%)	1	8
9	I	125/128 (98%)	80 (64%)	34 (27%)	11 (9%)	0	3
10	J	97/105 (92%)	56 (58%)	24 (25%)	17 (18%)	0	0
11	K	117/129 (91%)	83 (71%)	25 (21%)	9 (8%)	1	4
12	L	123/135 (91%)	70 (57%)	33 (27%)	20 (16%)	0	0
13	M	123/126 (98%)	74 (60%)	29 (24%)	20 (16%)	0	0

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
14	N	58/61 (95%)	31 (53%)	18 (31%)	9 (16%)	0	0
15	O	86/89 (97%)	43 (50%)	38 (44%)	5 (6%)	1	8
16	P	82/88 (93%)	52 (63%)	22 (27%)	8 (10%)	0	3
17	Q	102/105 (97%)	70 (69%)	26 (26%)	6 (6%)	1	8
18	R	71/88 (81%)	47 (66%)	15 (21%)	9 (13%)	0	1
19	S	79/93 (85%)	47 (60%)	17 (22%)	15 (19%)	0	0
20	T	97/106 (92%)	52 (54%)	37 (38%)	8 (8%)	0	4
21	U	23/27 (85%)	17 (74%)	3 (13%)	3 (13%)	0	1
All	All	2364/2541 (93%)	1461 (62%)	598 (25%)	305 (13%)	0	1

All (305) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	9	GLU
2	B	15	VAL
2	B	16	HIS
2	B	17	PHE
2	B	24	TRP
2	B	214	ILE
3	C	3	ASN
3	C	14	ILE
3	C	56	ASP
3	C	68	VAL
3	C	77	ILE
3	C	113	ALA
3	C	128	PHE
3	C	131	ARG
3	C	146	ALA
3	C	168	ALA
3	C	179	ARG
3	C	204	LEU
4	D	25	ARG
4	D	47	ARG
4	D	88	VAL
4	D	154	ASN
5	E	78	HIS
5	E	153	LYS
7	G	4	ARG
7	G	6	ARG

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Mol	Chain	Res	Type
7	G	7	ALA
7	G	9	VAL
7	G	16	LEU
7	G	17	VAL
7	G	19	GLY
7	G	33	ASP
7	G	39	ALA
8	H	46	LYS
8	H	51	VAL
8	H	97	VAL
8	H	105	ARG
9	I	124	GLN
9	I	126	SER
10	J	58	ASP
10	J	78	ASN
10	J	79	ARG
11	K	35	PRO
11	K	52	GLY
12	L	27	LEU
12	L	47	LYS
12	L	56	ALA
12	L	113	ARG
12	L	116	SER
12	L	122	THR
12	L	125	PRO
12	L	126	LYS
12	L	127	GLU
13	M	27	LYS
13	M	45	VAL
13	M	63	THR
13	M	81	LEU
14	N	9	LYS
14	N	33	VAL
15	O	3	ILE
16	P	34	GLU
16	P	53	VAL
16	P	54	GLU
16	P	64	ALA
16	P	83	GLU
17	Q	69	LYS
17	Q	81	ARG
17	Q	99	SER

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Mol	Chain	Res	Type
18	R	21	LYS
18	R	22	VAL
18	R	23	LYS
19	S	6	LYS
19	S	47	HIS
20	T	49	ALA
20	T	95	ALA
21	U	3	LYS
2	B	52	GLU
2	B	89	GLY
2	B	135	GLN
2	B	191	ASP
2	B	195	ASP
2	B	208	ILE
2	B	215	LEU
3	C	4	LYS
3	C	12	LEU
3	C	30	ARG
3	C	39	ILE
3	C	61	ALA
3	C	84	ILE
3	C	127	ARG
3	C	130	VAL
3	C	157	ILE
3	C	202	ILE
3	C	203	PHE
4	D	29	PRO
4	D	42	GLN
4	D	43	HIS
4	D	44	GLY
4	D	95	GLY
4	D	153	ARG
4	D	169	LYS
5	E	73	ASN
5	E	84	PHE
5	E	140	ARG
5	E	146	ALA
6	F	70	ASP
7	G	40	ALA
7	G	78	ARG
7	G	90	GLU
7	G	109	ASN

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Mol	Chain	Res	Type
8	H	24	THR
9	I	81	ILE
9	I	118	LYS
10	J	34	VAL
10	J	44	VAL
10	J	46	ARG
10	J	65	LEU
10	J	83	GLU
11	K	62	GLN
11	K	117	ASN
12	L	41	ARG
12	L	81	SER
12	L	121	GLY
13	M	6	GLY
13	M	43	THR
13	M	67	GLU
13	M	80	ARG
13	M	100	GLY
13	M	118	ALA
14	N	27	CYS
14	N	28	GLY
14	N	30	ALA
15	O	78	TYR
16	P	81	ARG
17	Q	80	GLY
18	R	37	VAL
19	S	3	ARG
19	S	28	LYS
19	S	65	ASN
19	S	67	VAL
20	T	73	HIS
20	T	102	GLY
21	U	17	THR
2	B	26	PRO
2	B	62	ALA
2	B	108	ILE
2	B	130	ARG
2	B	207	ALA
2	B	229	VAL
2	B	238	LEU
3	C	16	ARG
3	C	43	LEU

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Mol	Chain	Res	Type
3	C	47	LEU
3	C	81	GLY
3	C	96	GLY
3	C	98	ASN
3	C	144	SER
4	D	4	TYR
4	D	9	CYS
4	D	10	ARG
4	D	20	TYR
4	D	36	ARG
4	D	39	PRO
4	D	97	LEU
4	D	208	SER
5	E	17	ALA
5	E	52	PRO
5	E	53	LEU
7	G	5	ARG
7	G	67	GLU
9	I	31	GLN
9	I	34	ASN
9	I	51	ARG
9	I	54	ASP
9	I	119	ALA
10	J	55	LYS
10	J	60	ARG
10	J	86	MET
10	J	90	LEU
11	K	13	GLN
11	K	38	ASN
12	L	11	VAL
12	L	91	LYS
12	L	105	TYR
12	L	108	ALA
12	L	112	ASP
13	M	14	ARG
13	M	37	THR
13	M	44	ARG
13	M	61	GLU
14	N	46	GLU
15	O	14	GLU
15	O	80	ALA
17	Q	66	SER

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Mol	Chain	Res	Type
18	R	41	LYS
18	R	48	GLY
19	S	29	ARG
19	S	43	GLU
20	T	34	LYS
21	U	25	LYS
2	B	8	LYS
2	B	132	LYS
3	C	5	ILE
3	C	24	ALA
3	C	26	LYS
3	C	40	ARG
3	C	93	LYS
3	C	103	VAL
3	C	123	GLN
4	D	63	LYS
4	D	83	SER
4	D	164	ALA
4	D	178	VAL
4	D	206	PHE
7	G	59	LEU
7	G	77	SER
7	G	147	ALA
7	G	150	ALA
8	H	40	ALA
9	I	46	ALA
10	J	23	ILE
10	J	38	ILE
11	K	15	ALA
11	K	118	GLY
12	L	106	ASP
13	M	11	ARG
13	M	88	ARG
14	N	23	ARG
18	R	20	ALA
18	R	54	ARG
18	R	63	GLN
19	S	11	VAL
19	S	30	LEU
19	S	55	LYS
19	S	64	GLU
20	T	9	ASN

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Mol	Chain	Res	Type
20	T	103	GLY
2	B	142	LEU
2	B	232	PRO
3	C	48	TYR
3	C	51	GLY
3	C	76	VAL
3	C	122	GLU
3	C	167	TRP
4	D	5	ILE
4	D	7	PRO
4	D	24	GLU
4	D	31	CYS
4	D	53	ASP
4	D	128	VAL
4	D	158	ILE
5	E	16	THR
5	E	121	LYS
6	F	57	GLN
7	G	25	ALA
7	G	42	ILE
7	G	63	LYS
7	G	69	VAL
7	G	83	ALA
7	G	104	LEU
10	J	24	VAL
10	J	72	VAL
10	J	73	ASP
14	N	29	ARG
15	O	88	ARG
17	Q	64	PRO
2	B	123	ALA
3	C	129	ALA
4	D	92	VAL
5	E	98	THR
7	G	93	PRO
7	G	119	ARG
8	H	73	ASP
13	M	85	GLY
14	N	15	LYS
16	P	36	ILE
19	S	8	GLY
20	T	79	ARG

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Mol	Chain	Res	Type
2	B	131	PRO
3	C	207	VAL
7	G	91	VAL
7	G	118	VAL
8	H	137	VAL
11	K	47	VAL
19	S	68	GLY
3	C	86	VAL
3	C	182	ILE
6	F	56	PRO
7	G	120	ILE
12	L	104	VAL
13	M	60	VAL
2	B	228	GLY
3	C	109	PRO
4	D	56	VAL
4	D	104	VAL
5	E	55	VAL
5	E	127	ASN
5	E	128	PRO
12	L	55	VAL
13	M	54	VAL
13	M	117	VAL
9	I	90	PRO
16	P	20	VAL
19	S	9	VAL
7	G	80	VAL

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	
2	B	202/220 (92%)	178 (88%)	24 (12%)	5	21
3	C	160/188 (85%)	147 (92%)	13 (8%)	11	36
4	D	180/181 (99%)	165 (92%)	15 (8%)	10	35

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	E	115/123 (94%)	96 (84%)	19 (16%)	2	11
6	F	90/90 (100%)	78 (87%)	12 (13%)	4	17
7	G	126/127 (99%)	117 (93%)	9 (7%)	13	41
8	H	119/119 (100%)	101 (85%)	18 (15%)	3	13
9	I	98/99 (99%)	86 (88%)	12 (12%)	5	20
10	J	87/92 (95%)	77 (88%)	10 (12%)	5	23
11	K	90/99 (91%)	81 (90%)	9 (10%)	7	29
12	L	104/111 (94%)	96 (92%)	8 (8%)	12	38
13	M	100/101 (99%)	93 (93%)	7 (7%)	14	41
14	N	49/50 (98%)	42 (86%)	7 (14%)	3	14
15	O	79/80 (99%)	70 (89%)	9 (11%)	5	23
16	P	72/74 (97%)	67 (93%)	5 (7%)	14	41
17	Q	96/97 (99%)	89 (93%)	7 (7%)	13	40
18	R	64/77 (83%)	64 (100%)	0	100	100
19	S	71/80 (89%)	67 (94%)	4 (6%)	19	49
20	T	76/82 (93%)	65 (86%)	11 (14%)	3	14
21	U	19/22 (86%)	16 (84%)	3 (16%)	2	12
All	All	1997/2112 (95%)	1795 (90%)	202 (10%)	7	28

All (202) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	8	LYS
2	B	12	GLU
2	B	15	VAL
2	B	25	ASN
2	B	41	ILE
2	B	44	LEU
2	B	55	PHE
2	B	80	ILE
2	B	97	TRP
2	B	103	THR
2	B	116	GLU
2	B	142	LEU
2	B	162	ILE
2	B	172	ILE

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Mol	Chain	Res	Type
2	B	176	GLU
2	B	178	ARG
2	B	185	ILE
2	B	187	LEU
2	B	193	ASP
2	B	198	ASP
2	B	200	ILE
2	B	215	LEU
2	B	231	GLU
2	B	232	PRO
3	C	3	ASN
3	C	4	LYS
3	C	5	ILE
3	C	15	THR
3	C	16	ARG
3	C	37	GLN
3	C	111	LEU
3	C	139	GLN
3	C	162	GLN
3	C	167	TRP
3	C	188	LEU
3	C	190	ARG
3	C	201	TYR
4	D	10	ARG
4	D	20	TYR
4	D	64	LEU
4	D	91	SER
4	D	96	LEU
4	D	106	TYR
4	D	108	LEU
4	D	114	ARG
4	D	118	ARG
4	D	122	ARG
4	D	131	ARG
4	D	146	ILE
4	D	154	ASN
4	D	161	ASN
4	D	194	LEU
5	E	12	LEU
5	E	14	ARG
5	E	19	MET
5	E	26	PHE

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Mol	Chain	Res	Type
5	E	31	LEU
5	E	43	LEU
5	E	47	LYS
5	E	52	PRO
5	E	68	GLU
5	E	79	GLU
5	E	80	ILE
5	E	82	VAL
5	E	90	VAL
5	E	118	ILE
5	E	120	THR
5	E	131	ILE
5	E	135	THR
5	E	137	GLU
5	E	147	ASP
6	F	6	VAL
6	F	18	GLN
6	F	27	GLN
6	F	30	LEU
6	F	43	LEU
6	F	69	GLU
6	F	73	ASN
6	F	74	ASP
6	F	86	ARG
6	F	89	MET
6	F	95	GLU
6	F	98	LEU
7	G	4	ARG
7	G	12	LEU
7	G	16	LEU
7	G	24	THR
7	G	67	GLU
7	G	113	GLU
7	G	140	ASP
7	G	149	ARG
7	G	151	TYR
8	H	18	ARG
8	H	23	SER
8	H	26	VAL
8	H	36	LEU
8	H	51	VAL
8	H	63	LEU

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Mol	Chain	Res	Type
8	H	84	ARG
8	H	85	ARG
8	H	91	ARG
8	H	92	ARG
8	H	105	ARG
8	H	109	ILE
8	H	112	LEU
8	H	120	THR
8	H	126	LYS
8	H	127	LEU
8	H	133	LEU
8	H	134	ILE
9	I	3	GLN
9	I	12	GLU
9	I	16	ARG
9	I	19	LEU
9	I	34	ASN
9	I	41	VAL
9	I	65	VAL
9	I	102	LEU
9	I	114	TYR
9	I	118	LYS
9	I	125	TYR
9	I	128	ARG
10	J	6	ILE
10	J	13	HIS
10	J	46	ARG
10	J	50	ILE
10	J	57	LYS
10	J	58	ASP
10	J	65	LEU
10	J	86	MET
10	J	95	GLU
10	J	98	ILE
11	K	12	ARG
11	K	29	ILE
11	K	35	PRO
11	K	63	LEU
11	K	103	LEU
11	K	104	GLN
11	K	108	ILE
11	K	116	HIS

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Mol	Chain	Res	Type
11	K	120	ARG
12	L	10	LEU
12	L	48	PRO
12	L	54	LYS
12	L	66	VAL
12	L	75	HIS
12	L	78	GLN
12	L	106	ASP
12	L	126	LYS
13	M	9	ILE
13	M	14	ARG
13	M	32	GLU
13	M	35	GLU
13	M	63	THR
13	M	109	THR
13	M	125	ARG
14	N	19	ARG
14	N	27	CYS
14	N	31	ARG
14	N	34	TYR
14	N	47	LEU
14	N	49	HIS
14	N	58	LYS
15	O	3	ILE
15	O	6	GLU
15	O	14	GLU
15	O	34	LEU
15	O	38	ARG
15	O	39	LEU
15	O	54	ARG
15	O	57	LEU
15	O	87	ILE
16	P	2	VAL
16	P	8	ARG
16	P	19	ILE
16	P	52	ASP
16	P	62	VAL
17	Q	7	THR
17	Q	23	VAL
17	Q	28	PRO
17	Q	38	ARG
17	Q	57	VAL

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Mol	Chain	Res	Type
17	Q	98	LEU
17	Q	101	ARG
19	S	32	LYS
19	S	34	TRP
19	S	47	HIS
19	S	70	LYS
20	T	8	ARG
20	T	10	LEU
20	T	13	LEU
20	T	15	ARG
20	T	19	SER
20	T	42	GLN
20	T	53	LEU
20	T	62	LEU
20	T	65	LYS
20	T	71	THR
20	T	75	ASN
21	U	8	THR
21	U	13	ILE
21	U	17	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (68) such sidechains are listed below:

Mol	Chain	Res	Type
2	B	25	ASN
2	B	40	HIS
2	B	78	GLN
2	B	146	GLN
2	B	204	ASN
2	B	212	GLN
3	C	3	ASN
3	C	6	HIS
3	C	69	HIS
3	C	118	GLN
3	C	123	GLN
3	C	136	GLN
3	C	139	GLN
4	D	42	GLN
4	D	45	GLN
4	D	62	GLN
4	D	77	ASN
4	D	154	ASN

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Mol	Chain	Res	Type
4	D	160	GLN
4	D	161	ASN
5	E	20	GLN
5	E	38	GLN
5	E	73	ASN
5	E	127	ASN
6	F	13	ASN
6	F	18	GLN
6	F	32	ASN
6	F	73	ASN
6	F	94	GLN
6	F	100	ASN
7	G	37	ASN
7	G	68	ASN
7	G	86	GLN
8	H	70	GLN
9	I	23	ASN
9	I	29	ASN
9	I	34	ASN
9	I	73	GLN
10	J	56	HIS
10	J	76	ASN
10	J	78	ASN
10	J	84	GLN
11	K	22	HIS
11	K	62	GLN
11	K	99	GLN
11	K	104	GLN
11	K	117	ASN
12	L	9	GLN
12	L	76	ASN
12	L	78	GLN
12	L	80	HIS
12	L	99	HIS
13	M	40	ASN
13	M	62	ASN
15	O	13	GLN
15	O	37	ASN
15	O	42	HIS
16	P	13	HIS
16	P	16	HIS
16	P	65	GLN

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Mol	Chain	Res	Type
17	Q	16	GLN
17	Q	29	HIS
17	Q	45	HIS
17	Q	94	ASN
18	R	36	ASN
20	T	18	GLN
20	T	42	GLN
20	T	90	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1512/1522 (99%)	221 (14%)	50 (3%)
22	X	3/4 (75%)	1 (33%)	0
23	Y	6/18 (33%)	1 (16%)	0
All	All	1521/1544 (98%)	223 (14%)	50 (3%)

All (223) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	8	A
1	A	9	G
1	A	31	G
1	A	32	A
1	A	39	G
1	A	47	C
1	A	48	C
1	A	49	U
1	A	51	A
1	A	52	G
1	A	60	A
1	A	61	G
1	A	81	U
1	A	82	U
1	A	96	U
1	A	101	A
1	A	116	A
1	A	121	C
1	A	129(A)	G
1	A	130	A
1	A	131	C

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Mol	Chain	Res	Type
1	A	139	G
1	A	189(F)	U
1	A	189(G)	G
1	A	189(H)	G
1	A	195	A
1	A	197	A
1	A	201	C
1	A	202	U
1	A	204	U
1	A	231	G
1	A	244	U
1	A	247	G
1	A	251	G
1	A	252	U
1	A	266	G
1	A	267	C
1	A	282	A
1	A	289	G
1	A	328	C
1	A	332	G
1	A	344	A
1	A	345	C
1	A	346	G
1	A	352	C
1	A	353	A
1	A	354	G
1	A	365	U
1	A	366	C
1	A	367	U
1	A	372	C
1	A	373	A
1	A	397	A
1	A	398	C
1	A	411	A
1	A	412	A
1	A	413	G
1	A	421	U
1	A	429	U
1	A	439	A
1	A	448	A
1	A	452	A
1	A	461	A

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Mol	Chain	Res	Type
1	A	470	C
1	A	484	G
1	A	485	G
1	A	486	U
1	A	496	A
1	A	498	U
1	A	511	C
1	A	518	C
1	A	520	A
1	A	531	U
1	A	532	A
1	A	533	A
1	A	547	A
1	A	559	A
1	A	560	U
1	A	561	U
1	A	572	A
1	A	573	A
1	A	576	G
1	A	577	G
1	A	588	G
1	A	653	A
1	A	665	A
1	A	686	U
1	A	687	A
1	A	688	G
1	A	702	A
1	A	703	G
1	A	723	U
1	A	733	A
1	A	755	G
1	A	777	A
1	A	780	A
1	A	781	A
1	A	787	A
1	A	792	A
1	A	793	U
1	A	813	U
1	A	815	A
1	A	817	C
1	A	818	G
1	A	819	A

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Mol	Chain	Res	Type
1	A	828	A
1	A	839	U
1	A	840	C
1	A	841	U
1	A	859	A
1	A	914	A
1	A	926	G
1	A	927	G
1	A	934	C
1	A	935	A
1	A	945	G
1	A	960	U
1	A	961	U
1	A	969	A
1	A	971	G
1	A	974	A
1	A	975	A
1	A	976	G
1	A	977	A
1	A	992	U
1	A	993	G
1	A	994	A
1	A	998	G
1	A	1001	A
1	A	1001(A)	G
1	A	1003	G
1	A	1005	A
1	A	1009	G
1	A	1010	G
1	A	1023	G
1	A	1024	G
1	A	1025	U
1	A	1026	G
1	A	1027	C
1	A	1049	U
1	A	1050	G
1	A	1054	C
1	A	1065	U
1	A	1066	C
1	A	1068	G
1	A	1094	G
1	A	1095	U

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Mol	Chain	Res	Type
1	A	1101	A
1	A	1102	A
1	A	1124	G
1	A	1125	U
1	A	1126	U
1	A	1129	C
1	A	1130	A
1	A	1131	G
1	A	1136	U
1	A	1137	C
1	A	1138	G
1	A	1139	G
1	A	1140	C
1	A	1146	A
1	A	1152	A
1	A	1159	U
1	A	1183	A
1	A	1184	G
1	A	1196	U
1	A	1197	G
1	A	1200	C
1	A	1201	A
1	A	1211	U
1	A	1212	U
1	A	1213	A
1	A	1224	G
1	A	1225	A
1	A	1226	C
1	A	1227	A
1	A	1241	G
1	A	1250	A
1	A	1256	A
1	A	1257	U
1	A	1258	G
1	A	1272	G
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	1300	G

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Mol	Chain	Res	Type
1	A	1302	U
1	A	1305	G
1	A	1317	C
1	A	1332	A
1	A	1338	G
1	A	1347	G
1	A	1360	A
1	A	1363	C
1	A	1363(A)	A
1	A	1379	G
1	A	1381	U
1	A	1398	A
1	A	1401	G
1	A	1442	G
1	A	1442(B)	A
1	A	1443	G
1	A	1452	C
1	A	1457	G
1	A	1492	A
1	A	1493	A
1	A	1499	A
1	A	1503	A
1	A	1504	G
1	A	1505	G
1	A	1506	U
1	A	1517	G
1	A	1520	G
1	A	1529	G
1	A	1530	G
1	A	1533	C
1	A	1534	A
1	A	1539	C
22	X	4	U
23	Y	39	A

All (50) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	7	G
1	A	30	U
1	A	51	A
1	A	60	A

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Mol	Chain	Res	Type
1	A	81	U
1	A	115	G
1	A	129(A)	G
1	A	203	U
1	A	243	A
1	A	250	A
1	A	251	G
1	A	281	G
1	A	344	A
1	A	353	A
1	A	366	C
1	A	372	C
1	A	428	G
1	A	438	G
1	A	484	G
1	A	485	G
1	A	495	A
1	A	559	A
1	A	687	A
1	A	701	C
1	A	792	A
1	A	812	C
1	A	913	A
1	A	960	U
1	A	975	A
1	A	992	U
1	A	993	G
1	A	1065	U
1	A	1067	A
1	A	1101	A
1	A	1145	C
1	A	1183	A
1	A	1196	U
1	A	1211	U
1	A	1224	G
1	A	1285	A
1	A	1331	G
1	A	1346	A
1	A	1380	U
1	A	1397	C
1	A	1447	A
1	A	1492	A

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Mol	Chain	Res	Type
1	A	1498	U
1	A	1504	G
1	A	1528	U
1	A	1532	U

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 144 ligands modelled in this entry, 143 are monoatomic - leaving 1 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	$\# Z > 2$
24	PAR	A	3001	-	44,45,45	1.40	6 (13%)	63,67,67	1.10	6 (9%)

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
24	PAR	A	3001	-	-	3/18/94/94	0/4/4/4

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	A	3001	PAR	O54-C14	3.22	1.50	1.41
24	A	3001	PAR	C34-C24	3.09	1.57	1.53
24	A	3001	PAR	C52-C42	3.04	1.58	1.52
24	A	3001	PAR	C31-C21	2.44	1.56	1.53
24	A	3001	PAR	C11-C21	2.41	1.57	1.52
24	A	3001	PAR	O51-C11	2.01	1.47	1.41

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	A	3001	PAR	O54-C54-C64	3.52	112.83	106.07
24	A	3001	PAR	C14-O54-C54	2.99	119.56	113.72
24	A	3001	PAR	O52-C13-O43	-2.54	108.77	111.37
24	A	3001	PAR	O11-C11-C21	2.28	111.81	108.08
24	A	3001	PAR	C11-O51-C51	2.15	117.91	113.72
24	A	3001	PAR	O33-C14-C24	2.00	111.35	108.08

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
24	A	3001	PAR	C52-C42-O11-C11
24	A	3001	PAR	C24-C14-O33-C33
24	A	3001	PAR	C43-C33-O33-C14

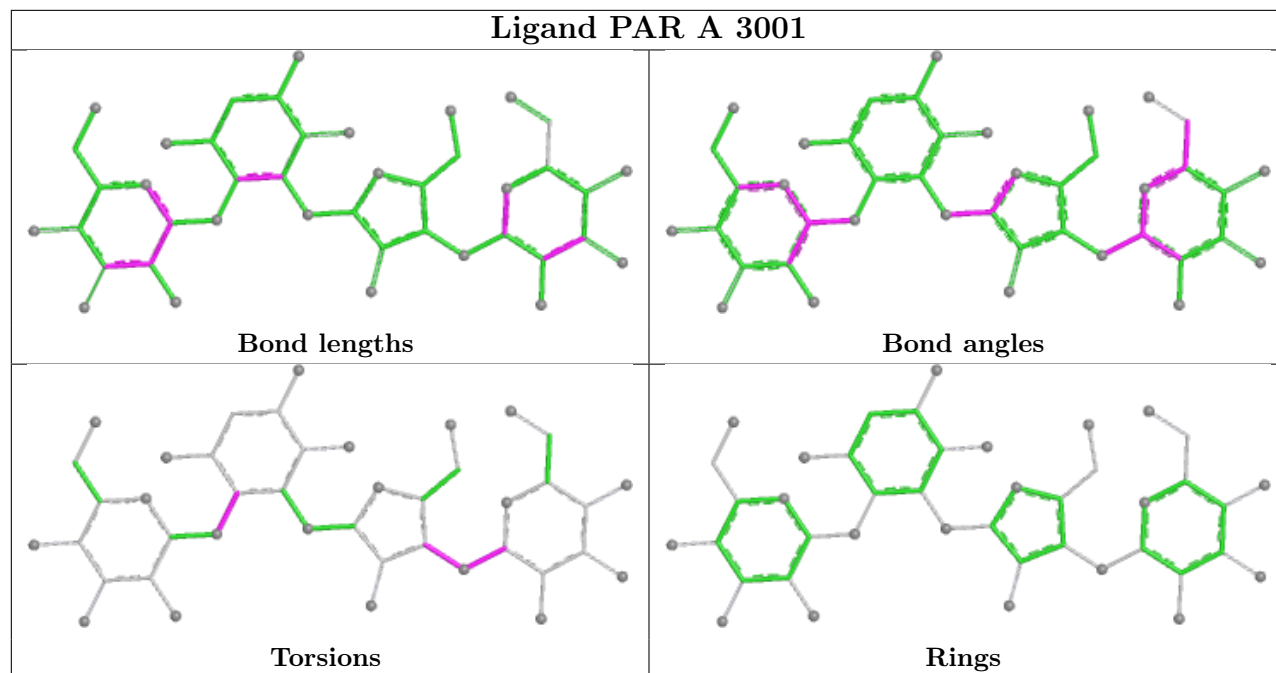
There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
24	A	3001	PAR	2	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](#)

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	1513/1522 (99%)	0.11	60 (3%) 42 23	18, 65, 147, 201	0
2	B	235/256 (91%)	0.44	21 (8%) 15 8	27, 82, 159, 197	0
3	C	207/239 (86%)	0.57	18 (8%) 16 9	41, 101, 167, 197	0
4	D	208/209 (99%)	0.53	27 (12%) 7 4	28, 78, 139, 160	0
5	E	151/162 (93%)	-0.24	1 (0%) 84 68	14, 46, 91, 164	0
6	F	101/101 (100%)	0.10	1 (0%) 79 61	42, 83, 133, 151	0
7	G	155/156 (99%)	0.34	8 (5%) 33 17	36, 97, 162, 197	0
8	H	138/138 (100%)	-0.51	1 (0%) 84 68	9, 35, 83, 108	0
9	I	127/128 (99%)	0.65	12 (9%) 14 8	23, 98, 159, 190	0
10	J	99/105 (94%)	1.18	21 (21%) 2 1	41, 139, 192, 197	0
11	K	119/129 (92%)	-0.05	2 (1%) 69 48	19, 64, 129, 178	0
12	L	125/135 (92%)	0.38	11 (8%) 15 9	5, 75, 133, 187	0
13	M	125/126 (99%)	0.59	15 (12%) 9 5	36, 86, 165, 197	0
14	N	60/61 (98%)	1.29	15 (25%) 2 1	42, 92, 187, 193	0
15	O	88/89 (98%)	-0.34	0 100 100	21, 55, 102, 154	0
16	P	84/88 (95%)	-0.16	1 (1%) 76 58	24, 48, 91, 140	0
17	Q	104/105 (99%)	-0.07	3 (2%) 53 32	17, 49, 117, 197	0
18	R	73/88 (82%)	-0.21	0 100 100	29, 64, 142, 187	0
19	S	81/93 (87%)	1.25	14 (17%) 4 2	84, 133, 174, 197	0
20	T	99/106 (93%)	0.20	5 (5%) 33 18	33, 63, 121, 151	0
21	U	25/27 (92%)	0.37	0 100 100	47, 69, 115, 123	0
22	X	4/4 (100%)	0.88	1 (25%) 2 1	87, 92, 100, 115	0
23	Y	7/18 (38%)	0.58	0 100 100	88, 120, 170, 196	0
All	All	3928/4085 (96%)	0.23	237 (6%) 27 15	5, 72, 157, 201	0

All (237) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
19	S	82	GLY	13.2
13	M	124	PRO	8.6
14	N	30	ALA	8.6
4	D	2	GLY	7.9
14	N	2	ALA	6.9
1	A	1533	C	6.9
4	D	21	LEU	6.7
13	M	123	ALA	6.3
14	N	4	LYS	5.8
9	I	67	GLY	5.7
1	A	1200	C	5.3
4	D	25	ARG	5.0
1	A	1534	A	4.9
19	S	37	ARG	4.6
14	N	3	ARG	4.6
4	D	145	GLU	4.4
1	A	992	U	4.4
17	Q	105	ALA	4.2
1	A	1442(A)	G	4.2
4	D	31	CYS	4.2
4	D	26	CYS	4.1
13	M	8	GLU	4.1
2	B	207	ALA	4.1
1	A	1129	C	4.0
12	L	104	VAL	4.0
1	A	1018	C	4.0
13	M	120	LYS	4.0
13	M	121	LYS	3.9
19	S	33	THR	3.9
19	S	79	THR	3.9
2	B	127	ILE	3.9
4	D	19	LEU	3.9
2	B	35	GLU	3.8
3	C	39	ILE	3.8
13	M	126	LYS	3.8
9	I	127	LYS	3.7
13	M	119	GLY	3.7
7	G	73	MET	3.7
19	S	3	ARG	3.6
11	K	51	LYS	3.6
13	M	122	LYS	3.6
12	L	33	ARG	3.6

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Mol	Chain	Res	Type	RSRZ
14	N	5	ALA	3.6
2	B	208	ILE	3.6
2	B	16	HIS	3.5
4	D	3	ARG	3.5
4	D	20	TYR	3.5
5	E	154	GLY	3.5
7	G	85	TYR	3.5
1	A	1540	U	3.5
19	S	52	TYR	3.5
1	A	1004	A	3.5
4	D	209	ARG	3.4
19	S	34	TRP	3.4
1	A	1442	G	3.4
1	A	993	G	3.4
1	A	1026	G	3.4
1	A	1125	U	3.3
10	J	10	GLY	3.3
14	N	17	LYS	3.3
3	C	51	GLY	3.3
4	D	93	PHE	3.3
12	L	115	LYS	3.3
7	G	147	ALA	3.2
1	A	1124	G	3.2
1	A	1035	A	3.2
1	A	1128	C	3.2
10	J	26	ALA	3.2
4	D	23	GLY	3.2
3	C	52	LEU	3.2
10	J	45	ARG	3.2
4	D	22	LYS	3.2
9	I	38	GLN	3.2
3	C	87	LEU	3.1
13	M	125	ARG	3.1
1	A	985	C	3.1
2	B	239	VAL	3.1
10	J	88	LEU	3.0
1	A	1017	G	3.0
1	A	1050	G	3.0
1	A	1024	G	3.0
11	K	129	SER	3.0
2	B	148	TYR	3.0
20	T	74	LYS	3.0

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Mol	Chain	Res	Type	RSRZ
2	B	7	VAL	3.0
14	N	55	GLY	3.0
1	A	532	A	2.9
14	N	35	ARG	2.9
19	S	5	LEU	2.9
1	A	1282	C	2.9
14	N	21	TYR	2.9
10	J	94	VAL	2.8
9	I	17	VAL	2.8
3	C	129	ALA	2.8
13	M	20	THR	2.8
19	S	6	LYS	2.8
1	A	1005	A	2.8
10	J	47	PHE	2.8
12	L	47	LYS	2.8
2	B	204	ASN	2.7
10	J	72	VAL	2.7
10	J	39	PRO	2.7
19	S	2	PRO	2.7
10	J	4	ILE	2.7
3	C	181	ASN	2.7
1	A	410	G	2.7
10	J	37	PRO	2.7
3	C	60	ALA	2.7
1	A	1541	U	2.7
19	S	18	LYS	2.6
10	J	85	LEU	2.6
19	S	31	ILE	2.6
1	A	531	U	2.6
1	A	1281	U	2.6
3	C	97	LYS	2.6
7	G	150	ALA	2.6
12	L	26	ALA	2.6
20	T	92	LEU	2.6
1	A	1019	C	2.6
13	M	113	PRO	2.6
3	C	188	LEU	2.6
3	C	4	LYS	2.6
4	D	147	ALA	2.6
4	D	33	MET	2.6
22	X	1	G	2.6
1	A	414	A	2.6

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Mol	Chain	Res	Type	RSRZ
3	C	62	ASP	2.6
9	I	66	ARG	2.6
19	S	74	PHE	2.5
10	J	19	SER	2.5
3	C	204	LEU	2.5
4	D	118	ARG	2.5
17	Q	99	SER	2.5
1	A	991	U	2.5
1	A	1052	U	2.5
7	G	5	ARG	2.5
14	N	44	LEU	2.5
19	S	35	SER	2.5
10	J	71	LEU	2.5
1	A	994	A	2.5
9	I	126	SER	2.4
3	C	161	GLU	2.4
13	M	104	ARG	2.4
6	F	1	MET	2.4
4	D	9	CYS	2.4
9	I	9	ARG	2.4
2	B	98	LEU	2.4
7	G	156	TRP	2.4
1	A	1147	C	2.4
1	A	1539	C	2.4
2	B	189	ASP	2.4
10	J	5	ARG	2.4
1	A	1136	U	2.4
1	A	530	G	2.4
1	A	1134	G	2.4
3	C	68	VAL	2.4
10	J	34	VAL	2.4
4	D	176	LEU	2.4
12	L	50	SER	2.4
9	I	39	GLY	2.3
2	B	22	LYS	2.3
14	N	57	ARG	2.3
1	A	409	G	2.3
1	A	1255	G	2.3
4	D	42	GLN	2.3
4	D	30	LYS	2.3
1	A	1209	C	2.3
10	J	24	VAL	2.3

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Mol	Chain	Res	Type	RSRZ
2	B	228	GLY	2.3
17	Q	102	GLY	2.3
7	G	2	ALA	2.3
1	A	65	U	2.3
4	D	169	LYS	2.3
13	M	9	ILE	2.3
2	B	96	ARG	2.3
9	I	68	GLY	2.3
9	I	119	ALA	2.3
2	B	166	ASP	2.3
7	G	83	ALA	2.2
1	A	1146	A	2.2
3	C	63	ASN	2.2
4	D	29	PRO	2.2
10	J	90	LEU	2.2
14	N	39	LEU	2.2
1	A	723	U	2.2
4	D	13	ARG	2.2
10	J	70	ARG	2.2
3	C	207	VAL	2.2
1	A	1163	C	2.2
13	M	118	ALA	2.2
12	L	28	LYS	2.2
10	J	38	ILE	2.2
3	C	110	ASN	2.2
1	A	439	A	2.2
1	A	1013	G	2.2
2	B	203	GLY	2.2
4	D	35	ARG	2.2
4	D	132	ARG	2.2
14	N	52	GLN	2.2
2	B	125	PRO	2.2
1	A	1003	G	2.2
1	A	1133	G	2.2
9	I	36	TYR	2.1
20	T	100	ILE	2.1
12	L	52	LEU	2.1
1	A	1126	U	2.1
1	A	1531	A	2.1
12	L	120	TYR	2.1
1	A	406	G	2.1
1	A	1224	G	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	1283	G	2.1
13	M	11	ARG	2.1
10	J	31	GLY	2.1
10	J	67	THR	2.1
20	T	10	LEU	2.1
2	B	144	ARG	2.1
3	C	119	ARG	2.1
12	L	31	PRO	2.1
2	B	122	PHE	2.1
1	A	1137	C	2.1
1	A	1277	C	2.1
2	B	133	LYS	2.1
16	P	42	ARG	2.1
4	D	185	PHE	2.1
12	L	41	ARG	2.1
1	A	428	G	2.1
9	I	106	ALA	2.1
14	N	18	VAL	2.0
14	N	32	SER	2.0
8	H	1	MET	2.0
1	A	1001	A	2.0
1	A	1216	G	2.0
4	D	96	LEU	2.0
20	T	104	LEU	2.0
1	A	1442(B)	A	2.0
2	B	170	GLU	2.0
1	A	1054	C	2.0

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum,

median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
25	MG	G	3083	1/1	0.01	1.23	162,162,162,162	0
25	MG	G	3027	1/1	0.05	0.72	89,89,89,89	0
25	MG	G	3025	1/1	0.11	1.85	113,113,113,113	0
25	MG	G	3044	1/1	0.12	1.02	109,109,109,109	0
25	MG	G	3082	1/1	0.18	0.43	121,121,121,121	0
25	MG	G	3079	1/1	0.19	0.89	128,128,128,128	0
25	MG	G	3076	1/1	0.21	0.94	143,143,143,143	0
25	MG	G	3056	1/1	0.21	2.17	113,113,113,113	0
25	MG	G	3038	1/1	0.27	1.20	99,99,99,99	0
25	MG	G	3034	1/1	0.28	0.53	103,103,103,103	0
25	MG	G	3018	1/1	0.32	0.71	96,96,96,96	0
25	MG	G	3066	1/1	0.34	0.54	102,102,102,102	0
25	MG	G	3052	1/1	0.36	1.19	99,99,99,99	0
25	MG	G	3068	1/1	0.36	1.22	102,102,102,102	0
25	MG	G	3061	1/1	0.37	2.20	124,124,124,124	0
25	MG	G	3022	1/1	0.41	1.53	126,126,126,126	0
25	MG	G	3040	1/1	0.41	1.48	121,121,121,121	0
25	MG	G	3098	1/1	0.42	0.45	81,81,81,81	0
25	MG	G	3005	1/1	0.44	1.01	95,95,95,95	0
25	MG	G	3058	1/1	0.47	0.85	89,89,89,89	0
25	MG	G	3009	1/1	0.49	1.16	90,90,90,90	0
25	MG	G	3078	1/1	0.50	0.67	118,118,118,118	0
25	MG	G	3003	1/1	0.51	1.38	102,102,102,102	0
25	MG	G	3043	1/1	0.52	0.66	105,105,105,105	0
25	MG	G	3090	1/1	0.52	1.14	123,123,123,123	0
25	MG	G	3031	1/1	0.52	1.29	82,82,82,82	0
26	K	G	3142	1/1	0.52	0.27	156,156,156,156	0
25	MG	G	3089	1/1	0.53	0.69	106,106,106,106	0
25	MG	G	3099	1/1	0.54	0.62	102,102,102,102	0
25	MG	G	3092	1/1	0.55	0.68	97,97,97,97	0
25	MG	G	3020	1/1	0.55	1.27	115,115,115,115	0
25	MG	G	3075	1/1	0.56	1.24	134,134,134,134	0
25	MG	G	3122	1/1	0.57	0.34	77,77,77,77	0
25	MG	G	3010	1/1	0.58	1.38	103,103,103,103	0
25	MG	G	3012	1/1	0.58	1.50	101,101,101,101	0
25	MG	G	3057	1/1	0.59	0.87	86,86,86,86	0
25	MG	G	3048	1/1	0.59	1.37	100,100,100,100	0
25	MG	G	3019	1/1	0.60	0.57	92,92,92,92	0
25	MG	G	3035	1/1	0.60	1.14	103,103,103,103	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
25	MG	G	3017	1/1	0.60	0.77	110,110,110,110	0
25	MG	G	3042	1/1	0.61	1.03	103,103,103,103	0
25	MG	G	3030	1/1	0.61	0.59	83,83,83,83	0
25	MG	G	3059	1/1	0.63	0.77	93,93,93,93	0
25	MG	G	3037	1/1	0.64	0.64	90,90,90,90	0
25	MG	G	3053	1/1	0.64	1.46	96,96,96,96	0
26	K	G	3138	1/1	0.65	0.47	146,146,146,146	0
25	MG	G	3084	1/1	0.65	0.75	97,97,97,97	0
25	MG	G	3036	1/1	0.66	1.52	96,96,96,96	0
25	MG	G	3028	1/1	0.66	0.69	90,90,90,90	0
25	MG	G	3118	1/1	0.67	0.22	46,46,46,46	0
25	MG	G	3081	1/1	0.67	1.15	110,110,110,110	0
25	MG	G	3004	1/1	0.67	0.48	89,89,89,89	0
26	K	G	3141	1/1	0.67	0.57	145,145,145,145	0
25	MG	G	3080	1/1	0.67	0.58	108,108,108,108	0
25	MG	G	3033	1/1	0.68	0.67	84,84,84,84	0
25	MG	G	3013	1/1	0.68	0.59	103,103,103,103	0
25	MG	G	3015	1/1	0.68	0.90	87,87,87,87	0
26	K	G	3140	1/1	0.69	0.34	161,161,161,161	0
25	MG	G	3041	1/1	0.71	1.45	116,116,116,116	0
25	MG	G	3067	1/1	0.71	1.67	102,102,102,102	0
25	MG	G	3024	1/1	0.71	0.80	102,102,102,102	0
25	MG	G	3070	1/1	0.71	1.17	106,106,106,106	0
25	MG	G	3054	1/1	0.72	0.65	95,95,95,95	0
25	MG	G	3047	1/1	0.72	1.08	87,87,87,87	0
25	MG	G	3096	1/1	0.72	0.19	43,43,43,43	0
25	MG	G	3097	1/1	0.72	0.58	100,100,100,100	0
26	K	G	3137	1/1	0.73	0.26	123,123,123,123	0
25	MG	G	3021	1/1	0.73	0.68	108,108,108,108	0
25	MG	G	3071	1/1	0.73	0.74	89,89,89,89	0
25	MG	G	3006	1/1	0.73	0.80	92,92,92,92	0
25	MG	G	3069	1/1	0.73	0.76	97,97,97,97	0
26	K	G	3135	1/1	0.74	0.58	135,135,135,135	0
26	K	G	3133	1/1	0.74	0.30	107,107,107,107	0
25	MG	G	3029	1/1	0.75	0.81	112,112,112,112	0
25	MG	G	3011	1/1	0.75	0.63	106,106,106,106	0
25	MG	G	3023	1/1	0.75	0.80	91,91,91,91	0
25	MG	G	3087	1/1	0.75	0.69	102,102,102,102	0
25	MG	G	3062	1/1	0.75	1.07	114,114,114,114	0
25	MG	G	3110	1/1	0.76	0.19	44,44,44,44	0
25	MG	G	3074	1/1	0.76	0.92	112,112,112,112	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
26	K	G	3134	1/1	0.76	0.64	131,131,131,131	0
25	MG	G	3086	1/1	0.77	0.59	102,102,102,102	0
25	MG	G	3063	1/1	0.78	0.97	96,96,96,96	0
25	MG	G	3026	1/1	0.79	0.73	108,108,108,108	0
25	MG	G	3051	1/1	0.79	0.46	80,80,80,80	0
25	MG	G	3095	1/1	0.79	0.49	74,74,74,74	0
25	MG	G	3085	1/1	0.79	1.18	116,116,116,116	0
25	MG	G	3113	1/1	0.79	0.16	31,31,31,31	0
25	MG	G	3050	1/1	0.80	0.96	97,97,97,97	0
25	MG	G	3102	1/1	0.80	0.10	53,53,53,53	0
25	MG	G	3039	1/1	0.81	0.97	96,96,96,96	0
25	MG	G	3117	1/1	0.81	0.26	53,53,53,53	0
25	MG	G	3032	1/1	0.82	0.82	107,107,107,107	0
25	MG	G	3073	1/1	0.83	0.30	93,93,93,93	0
25	MG	G	3055	1/1	0.83	1.07	91,91,91,91	0
25	MG	G	3108	1/1	0.84	0.45	58,58,58,58	0
25	MG	G	3045	1/1	0.84	1.08	87,87,87,87	0
25	MG	G	3007	1/1	0.84	1.20	89,89,89,89	0
25	MG	G	3100	1/1	0.84	0.59	45,45,45,45	0
25	MG	G	3016	1/1	0.84	0.71	93,93,93,93	0
25	MG	G	3104	1/1	0.84	0.70	47,47,47,47	0
25	MG	G	3123	1/1	0.84	0.18	35,35,35,35	0
25	MG	G	3130	1/1	0.84	0.27	47,47,47,47	0
26	K	G	3139	1/1	0.85	0.49	150,150,150,150	0
25	MG	G	3088	1/1	0.85	1.07	113,113,113,113	0
25	MG	G	3116	1/1	0.85	0.14	43,43,43,43	0
25	MG	G	3072	1/1	0.85	0.32	61,61,61,61	0
25	MG	G	3014	1/1	0.86	0.87	101,101,101,101	0
25	MG	G	3077	1/1	0.86	0.86	103,103,103,103	0
25	MG	G	3121	1/1	0.86	0.22	56,56,56,56	0
25	MG	G	3094	1/1	0.87	0.27	49,49,49,49	0
25	MG	G	3064	1/1	0.88	0.89	83,83,83,83	0
25	MG	G	3049	1/1	0.88	0.48	78,78,78,78	0
25	MG	G	3132	1/1	0.88	0.54	51,51,51,51	0
25	MG	G	3091	1/1	0.88	1.07	110,110,110,110	0
25	MG	G	3008	1/1	0.89	1.42	100,100,100,100	0
25	MG	G	3120	1/1	0.89	0.17	59,59,59,59	0
25	MG	G	3119	1/1	0.90	0.20	47,47,47,47	0
26	K	G	3136	1/1	0.90	0.43	105,105,105,105	0
25	MG	G	3046	1/1	0.90	0.58	77,77,77,77	0
25	MG	G	3101	1/1	0.90	0.42	56,56,56,56	0
25	MG	G	3103	1/1	0.91	0.44	52,52,52,52	0

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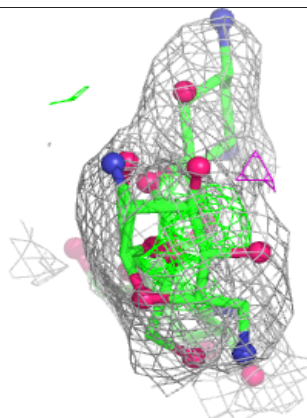
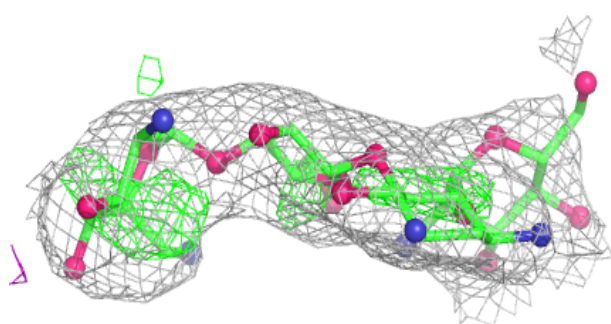
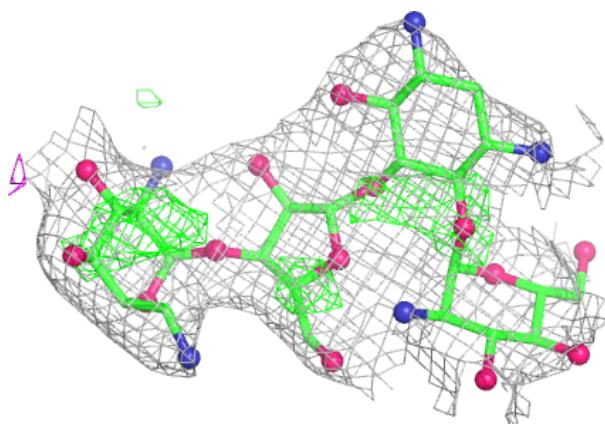
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
25	MG	G	3125	1/1	0.91	0.19	60,60,60,60	0
25	MG	G	3129	1/1	0.91	0.11	48,48,48,48	0
25	MG	G	3114	1/1	0.91	0.06	38,38,38,38	0
25	MG	G	3106	1/1	0.91	0.14	39,39,39,39	0
25	MG	G	3002	1/1	0.92	0.20	79,79,79,79	0
25	MG	G	3128	1/1	0.92	0.28	58,58,58,58	0
25	MG	G	3112	1/1	0.92	0.28	51,51,51,51	0
25	MG	G	3065	1/1	0.92	1.13	87,87,87,87	0
25	MG	G	3109	1/1	0.92	0.48	57,57,57,57	0
27	ZN	G	3143	1/1	0.92	0.37	118,118,118,118	0
25	MG	G	3093	1/1	0.93	0.61	71,71,71,71	0
24	PAR	A	3001	42/42	0.93	0.16	67,70,81,87	0
25	MG	G	3111	1/1	0.93	0.16	54,54,54,54	0
25	MG	G	3115	1/1	0.94	0.08	49,49,49,49	0
25	MG	G	3127	1/1	0.95	0.20	49,49,49,49	0
25	MG	G	3107	1/1	0.95	0.28	59,59,59,59	0
25	MG	G	3060	1/1	0.95	0.61	91,91,91,91	0
25	MG	G	3126	1/1	0.95	0.06	45,45,45,45	0
25	MG	G	3124	1/1	0.96	0.10	35,35,35,35	0
25	MG	G	3131	1/1	0.97	0.14	30,30,30,30	0
25	MG	G	3105	1/1	0.98	0.12	44,44,44,44	0
27	ZN	G	3144	1/1	0.99	0.12	97,97,97,97	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around PAR A 3001:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



6.5 Other polymers [i](#)

There are no such residues in this entry.