



Full wwPDB EM Validation Report ⓘ

Mar 28, 2026 – 04:32 AM UTC

PDB ID : 8S8J / pdb_00008s8j
EMDB ID : EMD-19807
Title : Structure of a yeast 48S-AUC preinitiation complex in closed conformation
(model py48S-AUC-eIF5)
Authors : Villamayor-Belinchon, L.; Sharma, P.; Llacer, J.L.; Hussain, T.
Deposited on : 2024-03-06
Resolution : 4.70 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

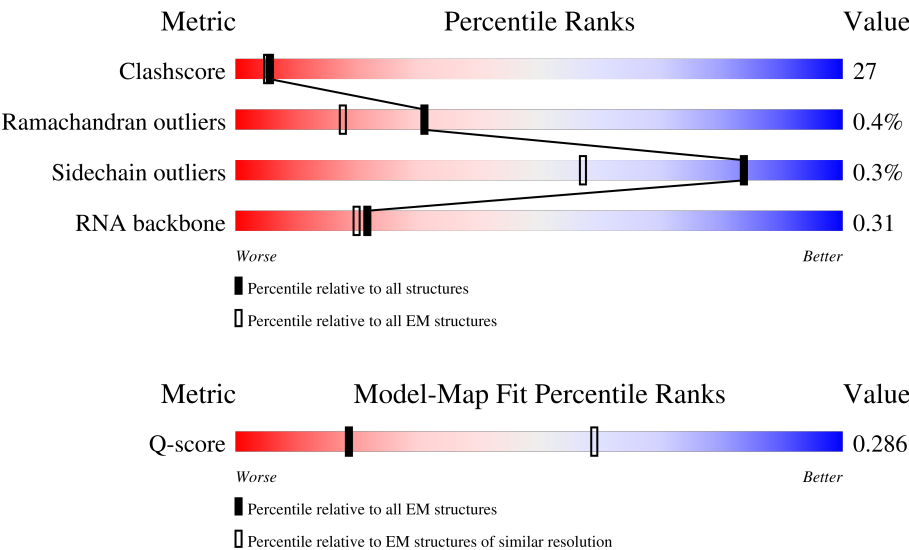
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data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

1 Overall quality at a glance i

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

The reported resolution of this entry is 4.70 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	1989 (4.20 - 5.20)

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

Mol	Chain	Length	Quality of chain
1	2	1798	8% 15% 58% 27%
2	A	254	10% 39% 48% 14%
3	B	255	16% 42% 45% 12%

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Mol	Chain	Length	Quality of chain
4	C	259	
5	E	261	
6	G	236	
7	H	190	
8	I	201	
9	J	188	
10	L	156	
11	N	151	
12	O	137	
13	V	87	
14	W	130	
15	X	145	
16	Y	135	
17	a	119	
18	b	82	
19	e	63	
20	h	25	
21	D	237	
22	F	227	
23	K	106	
24	M	134	
25	P	142	
26	Q	143	
27	R	136	
28	S	146	

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Mol	Chain	Length	Quality of chain
29	T	144	
30	U	117	
31	Z	108	
32	c	67	
33	d	56	
34	f	150	
35	g	326	
36	i	153	
37	3	49	
38	1	75	
39	j	304	
40	k	527	
41	l	285	
42	m	405	

2 Entry composition

There are 47 unique types of molecules in this entry. The entry contains 87114 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
1	2	1798	Total	C	N	O	P	0	0
			38190	17073	6722	12597	1798		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
2	A	219	Total	C	N	O	S	0	0
			1702	1085	299	316	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
3	B	225	Total	C	N	O	S	0	0
			1796	1135	330	328	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
4	C	220	Total	C	N	O	S	0	0
			1648	1053	291	300	4		

- Molecule 5 is a protein called 40S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	260	Total	C	N	O	S	0	0
			2078	1322	393	359	4		

- Molecule 6 is a protein called Small ribosomal subunit protein eS6.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	G	230	Total	C	N	O	S	0	0
			1832	1146	352	330	4		

- Molecule 7 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms				AltConf	Trace
7	H	184	Total	C	N	O	0	0
			1483	950	270	263		

- Molecule 8 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	I	188	Total	C	N	O	S	0	0
			1489	923	300	265	1		

- Molecule 9 is a protein called KLLA0E23673p.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	J	182	Total	C	N	O	S	0	0
			1471	929	287	254	1		

- Molecule 10 is a protein called KLLA0A10483p.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	L	155	Total	C	N	O	S	0	0
			1248	798	237	210	3		

- Molecule 11 is a protein called KLLA0F18040p.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	N	151	Total	C	N	O	S	0	0
			1195	761	224	207	3		

- Molecule 12 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	O	129	Total	C	N	O	S	0	0
			955	585	191	176	3		

- Molecule 13 is a protein called 40S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	V	87	Total	C	N	O	S	0	0
			687	424	126	135	2		

- Molecule 14 is a protein called Small ribosomal subunit protein uS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	W	129	Total	C	N	O	S	0	0
			1021	651	187	180	3		

- Molecule 15 is a protein called KLLA0B11231p.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	X	144	Total	C	N	O	S	0	0
			1119	708	218	191	2		

- Molecule 16 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	Y	134	Total	C	N	O	S	0	0
			1061	665	207	189			

- Molecule 17 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	a	102	Total	C	N	O	S	0	0
			797	492	168	132	5		

- Molecule 18 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	b	81	Total	C	N	O	S	0	0
			609	379	112	113	5		

- Molecule 19 is a protein called 40S ribosomal protein S30.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	e	60	Total	C	N	O	S	0	0
			472	295	96	80	1		

- Molecule 20 is a protein called 40S ribosomal protein L41-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	h	25	Total	C	N	O	S	0	0
			233	142	63	27	1		

- Molecule 21 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	D	227	Total	C	N	O	S	0	0
			1774	1126	320	323	5		

- Molecule 22 is a protein called KLLA0D10659p.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	F	206	Total	C	N	O	S	0	0
			1609	1008	298	300	3		

- Molecule 23 is a protein called KLLA0B08173p.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	K	96	Total	C	N	O	S	0	0
			809	533	129	146	1		

- Molecule 24 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	M	117	Total	C	N	O		0	0
			885	553	161	171			

- Molecule 25 is a protein called KLLA0F07843p.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	P	117	Total	C	N	O	S	0	0
			923	592	165	161	5		

- Molecule 26 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	Q	141	Total	C	N	O		0	0
			1105	709	204	192			

- Molecule 27 is a protein called KLLA0B01474p.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	R	130	Total	C	N	O	S	0	0
			1033	643	194	193	3		

- Molecule 28 is a protein called KLLA0B01562p.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	S	145	Total	C	N	O	S	0	0
			1189	739	239	209	2		

- Molecule 29 is a protein called KLLA0A07194p.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	T	143	Total	C	N	O	S	0	0
			1110	693	210	207			

- Molecule 30 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	U	106	Total	C	N	O	S	0	0
			845	540	152	152	1		

- Molecule 31 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	Z	78	Total	C	N	O	S	0	0
			594	376	111	106	1		

- Molecule 32 is a protein called Small ribosomal subunit protein eS28.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	c	64	Total	C	N	O	S	0	0
			499	308	99	91	1		

- Molecule 33 is a protein called Small ribosomal subunit protein uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	d	55	Total	C	N	O	S	0	0
			461	289	93	78	1		

- Molecule 34 is a protein called Small ribosomal subunit protein eS31.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	f	74	Total	C	N	O	S	0	0
			584	374	111	95	4		

- Molecule 35 is a protein called KLLA0E12277p.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	g	320	Total	C	N	O	S	0	0
			2469	1561	432	471	5		

- Molecule 36 is a protein called Eukaryotic translation initiation factor 1A.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	i	95	Total	C	N	O	S	0	0
			764	474	142	143	5		

- Molecule 37 is a RNA chain called mRNA (5'-R(P*AP*AP*U)-3').

Mol	Chain	Residues	Atoms					AltConf	Trace
37	3	26	Total	C	N	O	P	0	0
			536	242	84	184	26		

- Molecule 38 is a RNA chain called Met-tRNAi.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	1	75	Total	C	N	O	P	0	0
			1639	734	298	531	76		

- Molecule 39 is a protein called Eukaryotic translation initiation factor 2 subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	j	267	Total	C	N	O	S	0	0
			2139	1366	355	407	11		

- Molecule 40 is a protein called Eukaryotic translation initiation factor 2 subunit gamma.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	k	470	Total	C	N	O	S	0	0
			3596	2279	633	666	18		

- Molecule 41 is a protein called Eukaryotic translation initiation factor 2 subunit beta.

Mol	Chain	Residues	Atoms				AltConf	Trace
41	l	23	Total	C	N	O	0	0
			190	124	32	34		

- Molecule 42 is a protein called Eukaryotic translation initiation factor 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	m	143	Total	C	N	O	S	0	0
			1113	710	193	203	7		

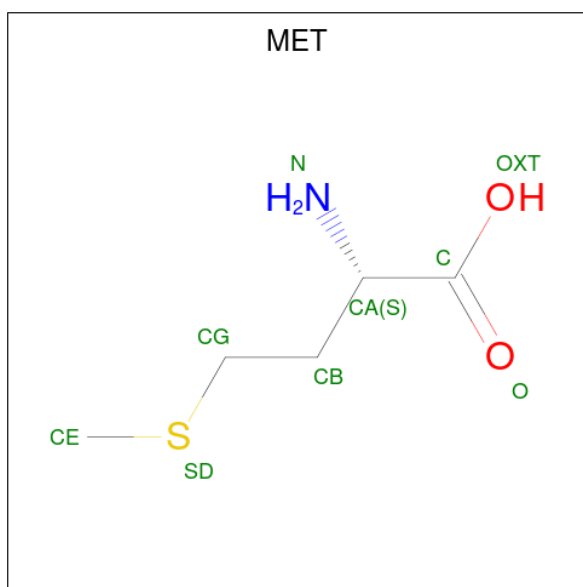
- Molecule 43 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
43	2	111	Total	Mg	0
			111	111	
43	Q	1	Total	Mg	0
			1	1	
43	i	1	Total	Mg	0
			1	1	
43	3	1	Total	Mg	0
			1	1	
43	k	1	Total	Mg	0
			1	1	

- Molecule 44 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

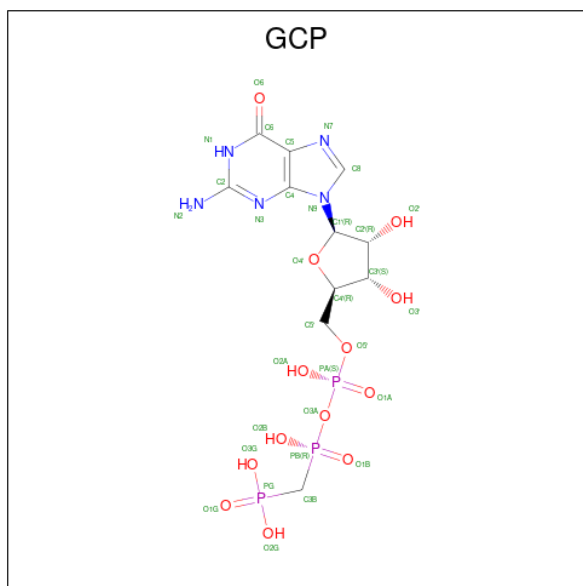
Mol	Chain	Residues	Atoms		AltConf
44	a	1	Total	Zn	0
			1	1	
44	b	1	Total	Zn	0
			1	1	
44	f	1	Total	Zn	0
			1	1	
44	m	1	Total	Zn	0
			1	1	

- Molecule 45 is METHIONINE (CCD ID: MET) (formula: C₅H₁₁NO₂S).



Mol	Chain	Residues	Atoms					AltConf
45	k	1	Total	C	N	O	S	0
			8	5	1	1	1	

- Molecule 46 is PHOSPHOMETHYLPHOSPHONIC ACID GUANYLATE ESTER (CCD ID: GCP) (formula: C₁₁H₁₈N₅O₁₃P₃) (labeled as "Ligand of Interest" by depositor).



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

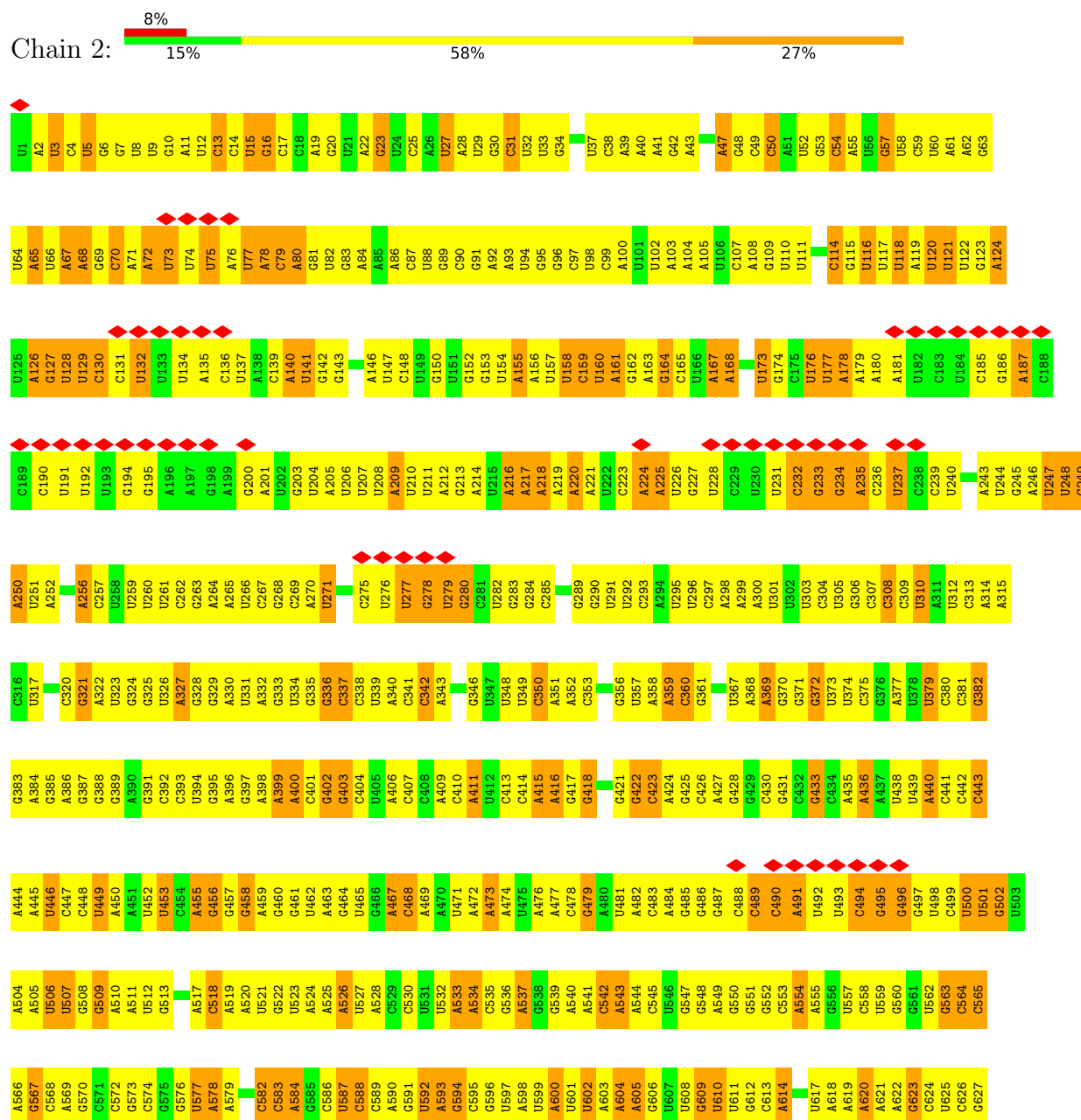
- Molecule 47 is water.

Mol	Chain	Residues	Atoms		AltConf
47	2	3	Total 3	O 3	0

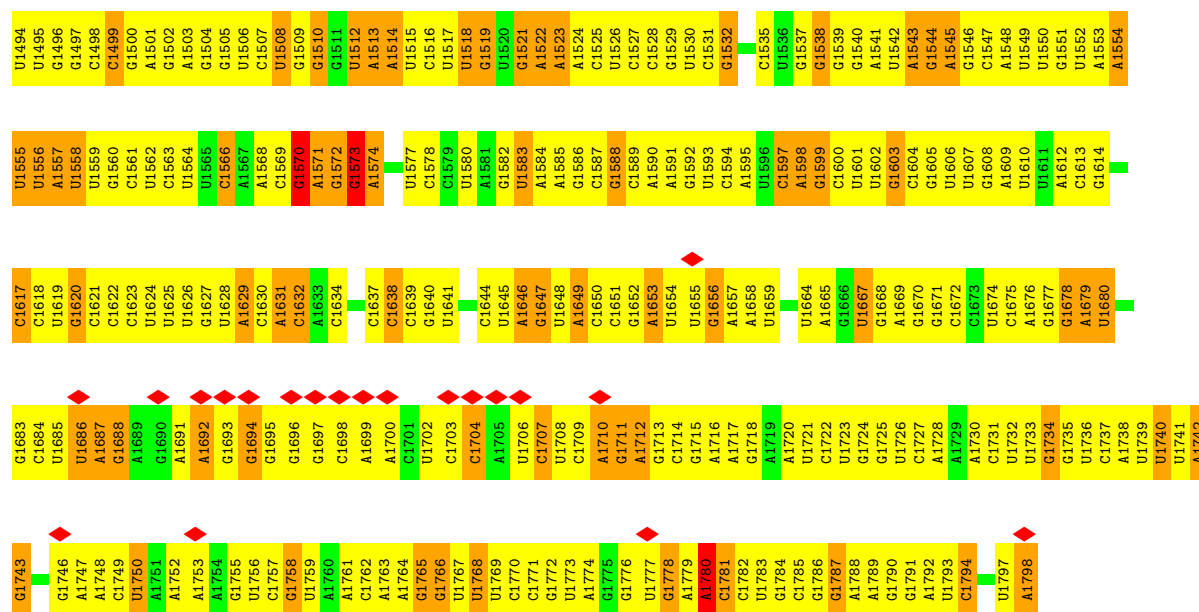
3 Residue-property plots

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 atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

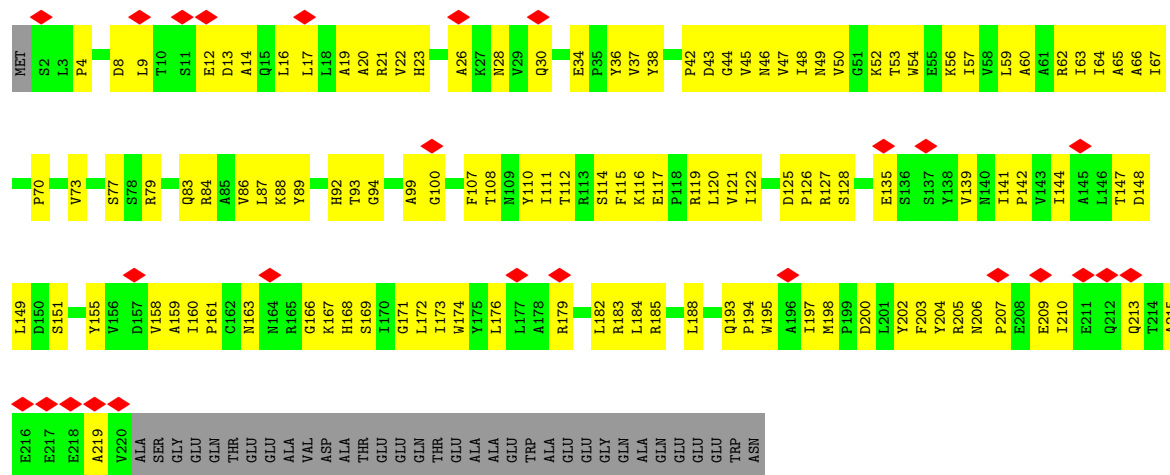
• Molecule 1: 18S ribosomal RNA



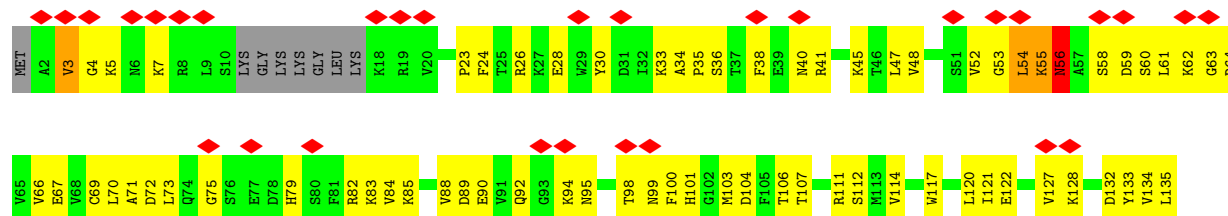
G1433	G1372	G1242	U1181	G1120	U1057	A992	U931	G871	A810	U749	G689	U628
A1434	U1373	A1243	A1182	G1121	C1058	G993	A932	U872	A811	U750	A690	
U1435		G1244	A1183	C1122	U1059	G996	C933	C873	U812	G751	U691	U631
G1436	U1376	C1245	U1184	A1123	U1060	U998	U934	G874	U813	A752	C692	U632
C1437	U1377	U1246	U1185	A1124	A1061	U998	G935	G875	G814	A753	U693	G633
C1438	U1378	G1247	U1186	G1125	U1062	C999	C936	G876	G815	A754	U694	A634
C1439	U1379	U1248	G1187	G1126	A1063	C999	G937	G877	A816	A755	U695	A635
U1440	A1380	U1249	A1188	C1127	U1064	A1000	A938	G878	C817	A756	C696	C636
G1381	G1381	U1250	C1189	G1128		G1001	A939	C879	U818	A757	U697	C637
G1382	G1382	C1251	B8N1190	G1129	A1068		A940	U880	U819	U758	U698	U638
G1443	G1383	U1252		A1130	C1069	C1006	G941	U881	U820	U759	U699	G640
A1444	G1384	G1253	A1193	A1131	C1069	G1007	A942	C882	U821	A760	C700	G641
C1445	C1385	G1254	C1194	A1132	U1070	U1008	A943	U883	G822	G761	U701	G642
	A1386	A1255	A1195	G1133	U1071	C1009	U944	G884	G823	A762	G702	
	C1387	U1256	C1196	U1134	G1072	G1010	U945	U885	U824	G763	G703	U643
	U1388	U1257	G1197	U1135		U1011	U946	A886	U825	G764	G704	U644
U1448	U1389	U1258	G1198	A1136	A1075	G1012	G947	U887	C826	G765	U705	U645
U1450	U1390	G1260	G1200	A1137	C1076	G1013	C948	U888	U827	U766	A706	G646
G1451	C1391	U1261	A1201	A1138	C1077	U1014	C949	C889	A828	U767	A707	G647
G1452	C1392	U1262	U1202	G1139	U1078	C1015	A950	A890	U829	C768	A708	U648
G1453	G1393	G1263	A1203	G1140	U1079	U1016	A951	A891	U830	G769	C708	U649
C1454	U1394	A1264	A1204	A1141	A1080	U1017	G952	U892	U831	A770	C709	G650
G1455	U1395	G1265	C1205	A1142	C1081	A1018	G953	U893	U832	A771	U710	U651
G1456	C1396	U1266	U1206	U1143	G1082	A1019	A954	U894	G833	G772	C709	C652
C1457	U1397	G1267	C1206	U1144	A1083	C1020	C955	U895	U834	C773	U710	C653
A1458	C1397	U1267	A1207	G1145	G1084	C1021	G956	C896	U835	A774	G711	G654
C1459	A1398	U1268	C1208	A1146	A1085	A1022	U957	A897	G836	G775	U712	G655
G1460	U1399	G1269	G1209	C1147	A1086	U1023	U958	G898	G837	G776	A713	U656
C1461	G1400	U1270	A1210	G1148	A1087	A1024	U959	A899	U838	C777	C714	U657
G1462	C1401	G1271	G1211	G1149	U1088	A1025	U960	G900	U839	G778	U715	C658
C1463	C1402	U1271	G1212	A1150	C1089	C1026	C961	U901	U840	A779	C716	G659
G1464	G1403	G1272	U1213	A1151	U1090	C1027	A862	U902	C941	A780	C717	A660
C1465	U1404	C1273	C1214	G1152	A1091	U1028	U963	G903	U842	G782	U718	C661
U1466	U1405	U1274	C1215	C1155	A1092	A1029	U964	A904	A843	A781	U719	U662
A1467	G1406	G1275	A1216	C1156	U1093	U1030	A965	A905	G844	G783	C720	U663
C1468	G1407	C1276	G1217	C1157	U1094	C1032	U967	U907	A846	C785	U721	U664
A1469	A1408	G1277	U1218	C1158	C1095	G1033	C968	U908	C347	G786	G722	A665
C1470	A1409	C1278	C1219	C1159	U1096	G1034	A969	C909	U850	A788	G723	U666
U1471	G1410	C1279	A1220	A1160	U1097	A1035	A970	U910	C851	U789	G724	G667
G1472	U1411		A1221	C1161	G1098		A971	G912	U852	A790	U725	U668
G1473	U1412	C1283	A1222	G1162	G1100	A1038	A972	G913	U853	A791	G726	C669
G1475	G1413	U1284	U1223	A1163	G1101	G1039	A973	A914	A854	A792	C727	G670
C1476	G1414	U1285	A1224	G1164	U1102	G1040	C974	U915	U855	A793	G671	C672
A1477	A1415	U1286	A1225	A1165	U1103	G1041	G975	U917	U856	U794	C673	A674
G1478	G1416	G1287	A1226	C1166	C1104	U1043	A976	U918	A857	A795	A728	C675
C1479	G1417	U1288	G1227	G1167	U1105	U1044	A977	U919	G857	G796	G729	U676
C1480	A1418	U1289	G1228	G1168	G1106	G1045	A978	U920	A858	C797	G730	G677
A1481	A1420	C1290	A1229	G1169	U1107	G1046		U921	U859	A798	G731	A678
C1482	U1421	G1291	U1230	G1170	G1108	G1047	U981	G922	U860	U799	C732	U679
A1483	A1422	U1292	U1231	G1171	G1109	U1048	A862	A923	A861	G800	A733	C680
G1484	A1423	G1293	A1232	C1172	G1110	U1049	G984	G924	U862	G801	A734	U681
A1485	C1424	A1294	C1234	C1173	G1111	G1050	G985	A925	A864	A802	A735	U682
G1486	A1425	C1295	A1235	U1174	A1112	U1051	G986	C926	G865	A803	C736	C683
U1487	G1426	U1297	G1236	G1175	G1113	U1052	A987	U927	G866	U804	A737	A684
A1488	U1427	G1298	U1237	C1176	U1114	G1053	U988	A928	G867	A805	G738	U685
C1489	U1428	U1299	U1238	G1177	A1115	U1054	U989	U929	C369	G808	A739	C686
A1490	C1429	A1299	U1239	C1178	U1116	U1055	G990	A930	C370		G740	U687
G1491	U1430	U1300	U1240	C1179	U1117	U1056	G991	A931	C371	G809	A741	U688
C1492	G1431	U1301	G1241	C1180	G1118	U1056	A991	C930	G870		U742	A688
A1493	U1432	U1302	A1241	U1180	U1119						U743	C689
											U744	C690
											A745	C691
											A746	C692
											C747	C693
											U748	C694

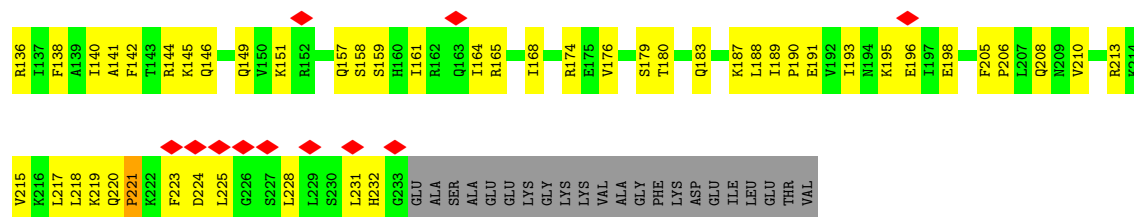


• Molecule 2: Small ribosomal subunit protein uS2

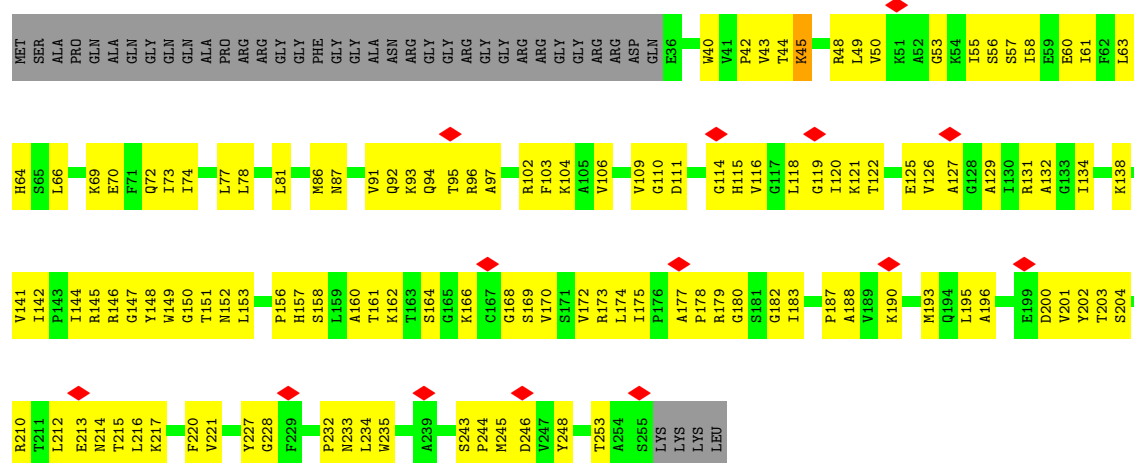


• Molecule 3: Small ribosomal subunit protein eS1

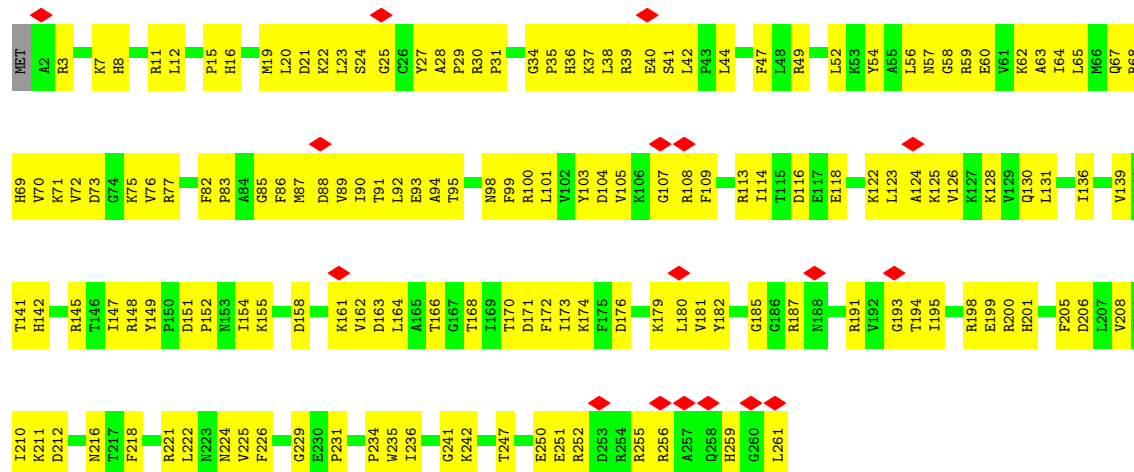




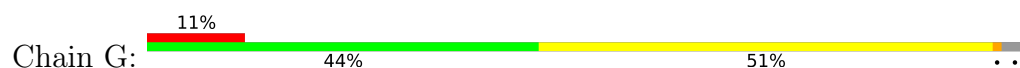
• Molecule 4: Small ribosomal subunit protein uS5

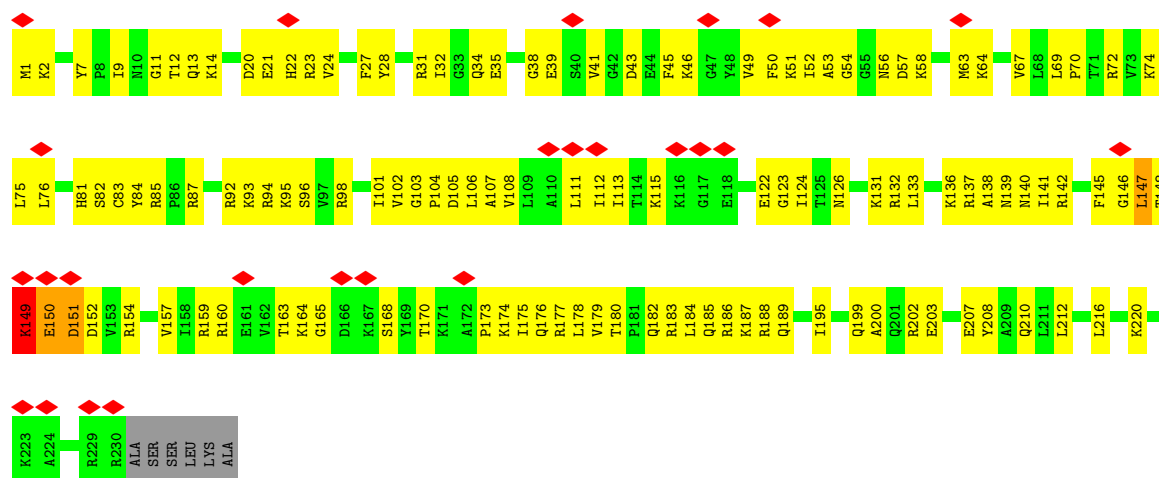


• Molecule 5: 40S ribosomal protein S4

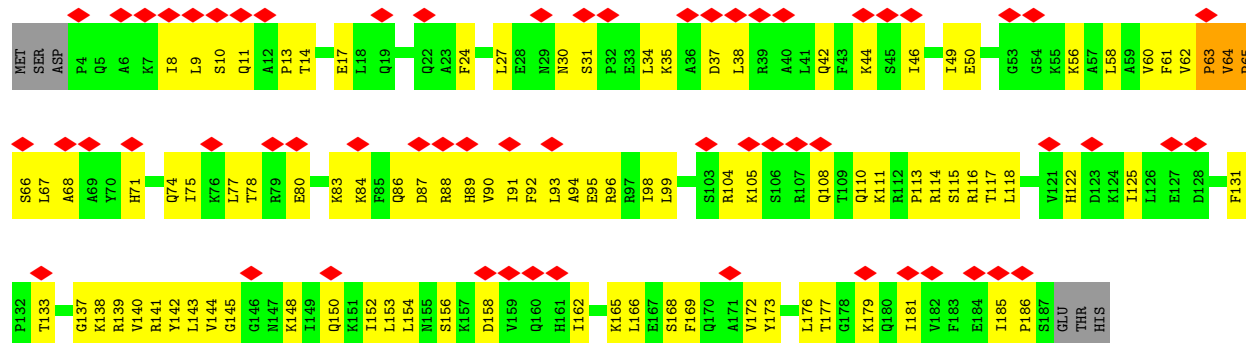


• Molecule 6: Small ribosomal subunit protein eS6

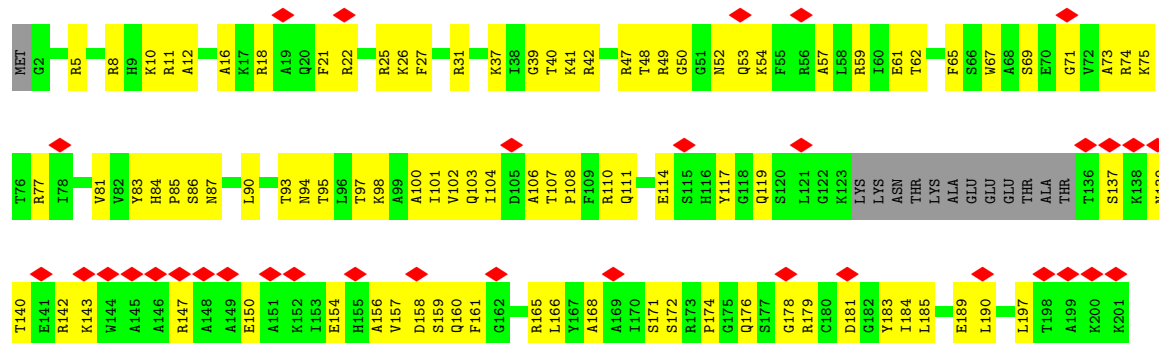




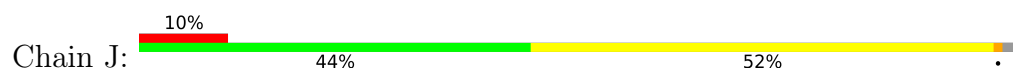
• Molecule 7: 40S ribosomal protein S7

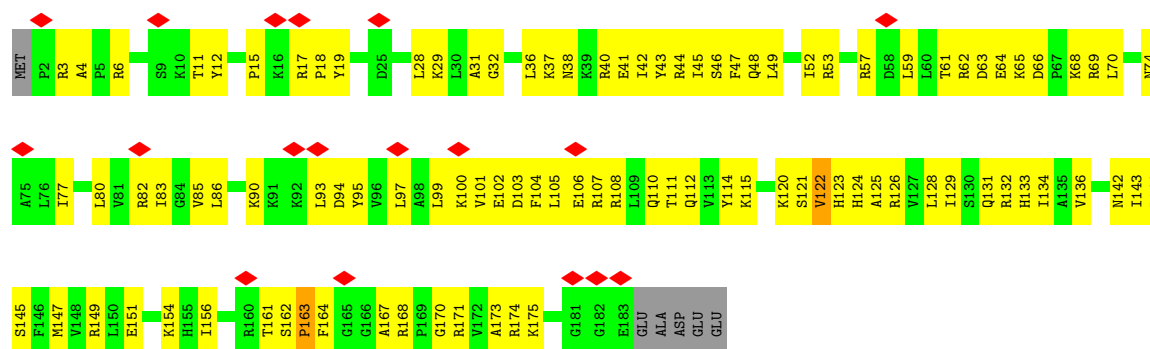


• Molecule 8: 40S ribosomal protein S8

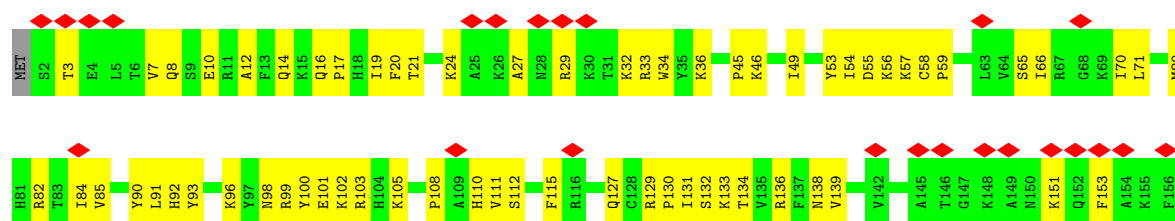


• Molecule 9: KLLA0E23673p

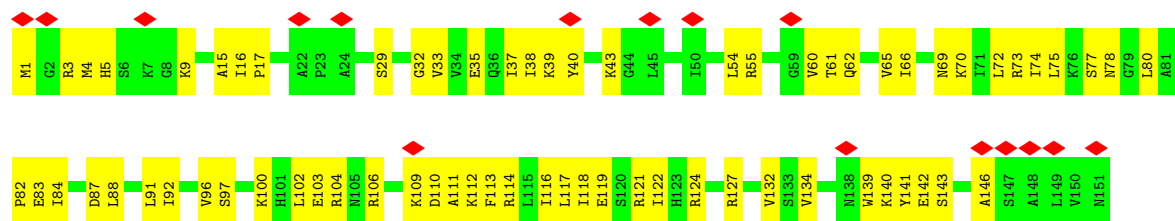




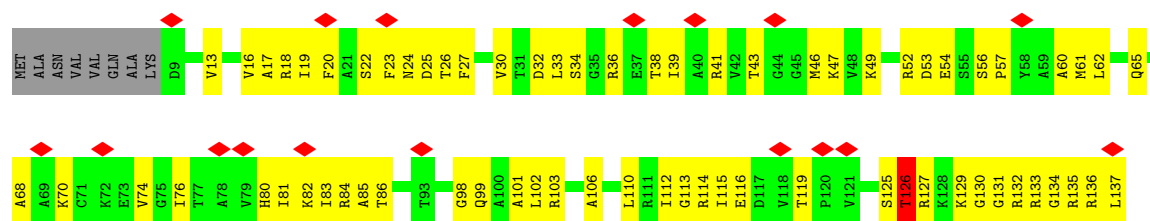
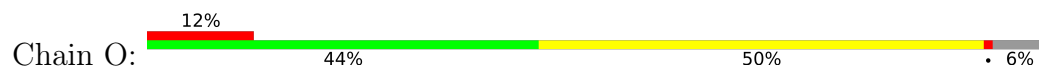
• Molecule 10: KLLA0A10483p



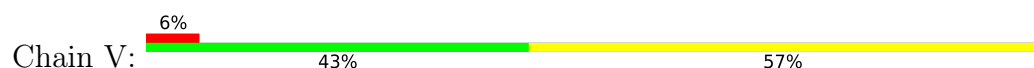
• Molecule 11: KLLA0F18040p

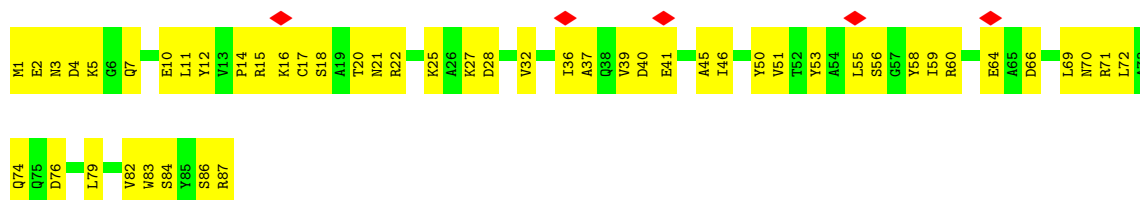


• Molecule 12: Small ribosomal subunit protein uS11

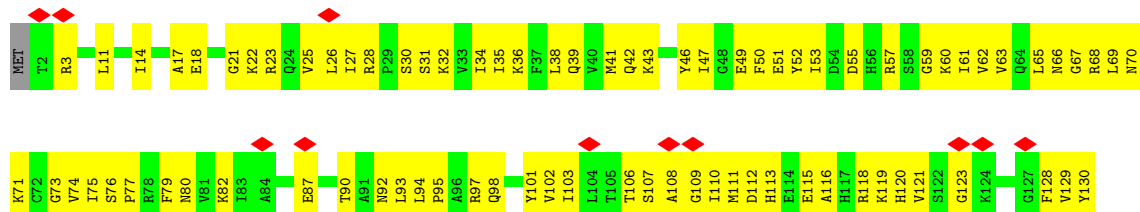


• Molecule 13: 40S ribosomal protein S21

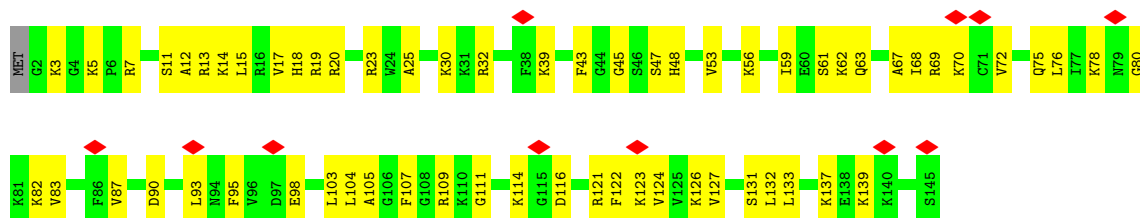




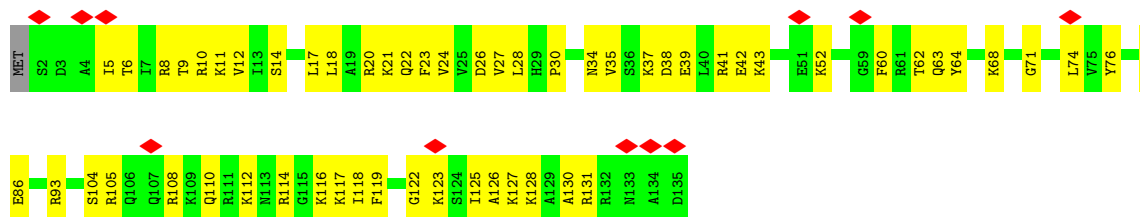
- Molecule 14: Small ribosomal subunit protein uS8



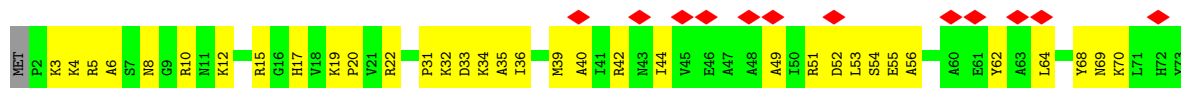
- Molecule 15: KLLA0B11231p

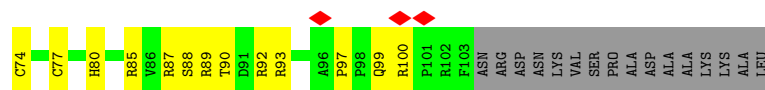


- Molecule 16: 40S ribosomal protein S24

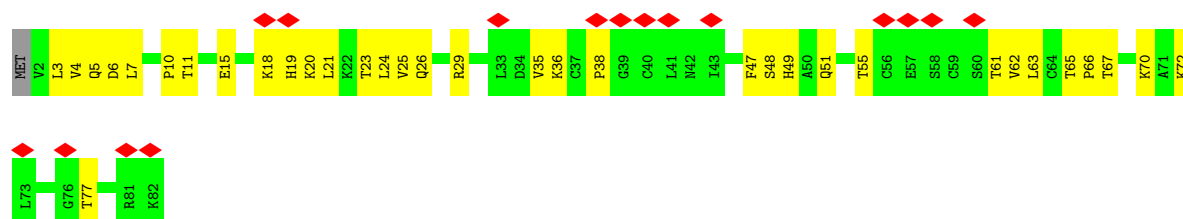


- Molecule 17: 40S ribosomal protein S26

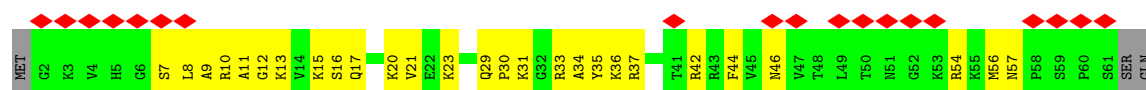




• Molecule 18: 40S ribosomal protein S27



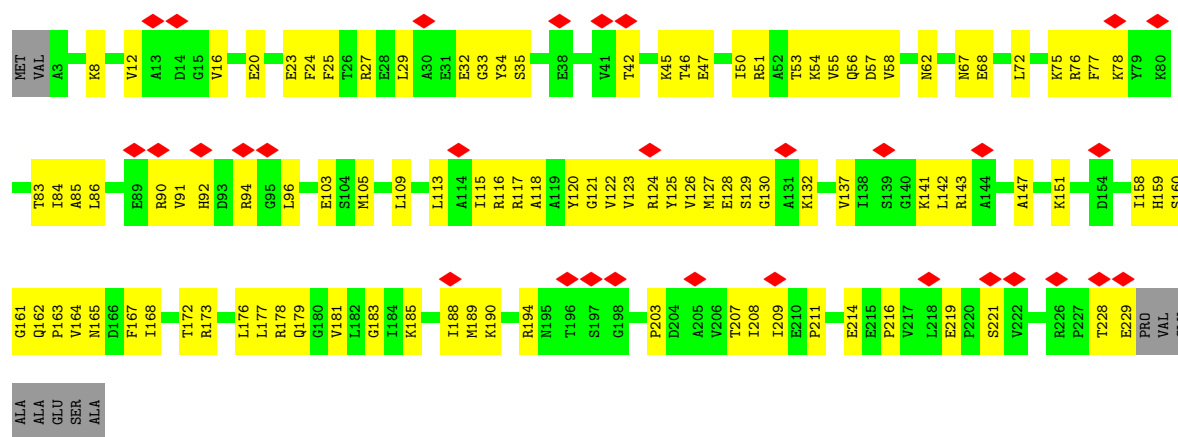
• Molecule 19: 40S ribosomal protein S30



• Molecule 20: 40S ribosomal protein L41-A



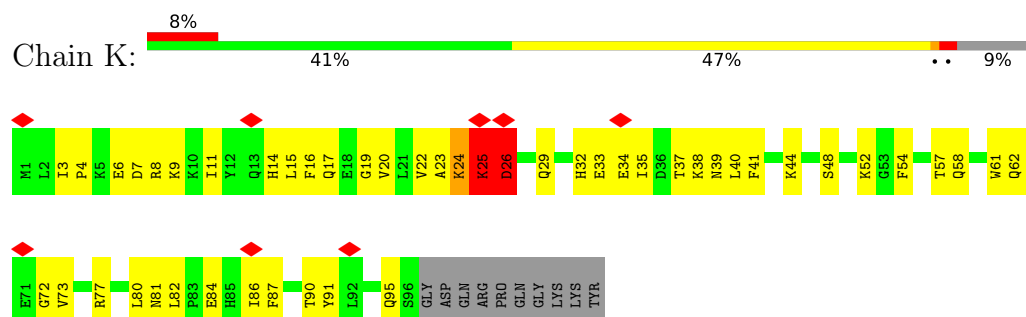
• Molecule 21: 40S ribosomal protein S3



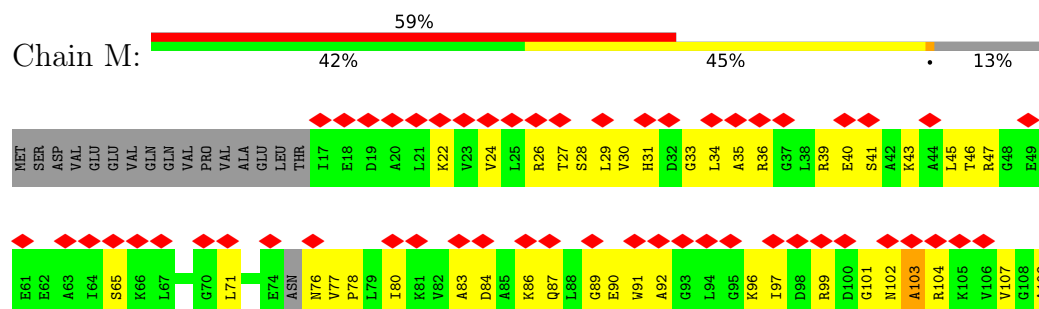
• Molecule 22: KLLA0D10659p



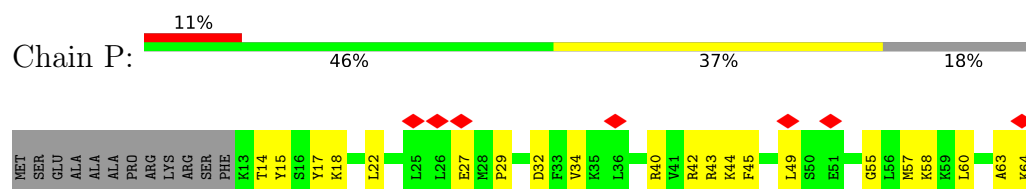
- Molecule 23: KLLA0B08173p

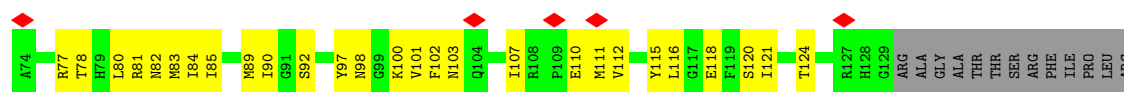


- Molecule 24: 40S ribosomal protein S12

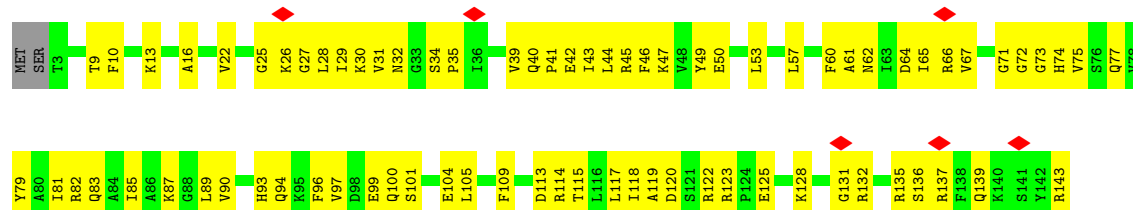


- Molecule 25: KLLA0F07843p

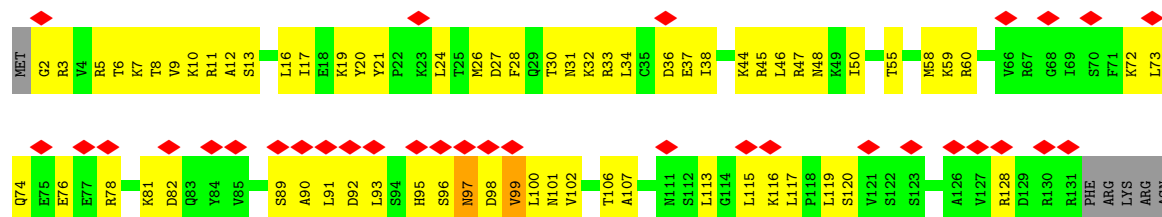




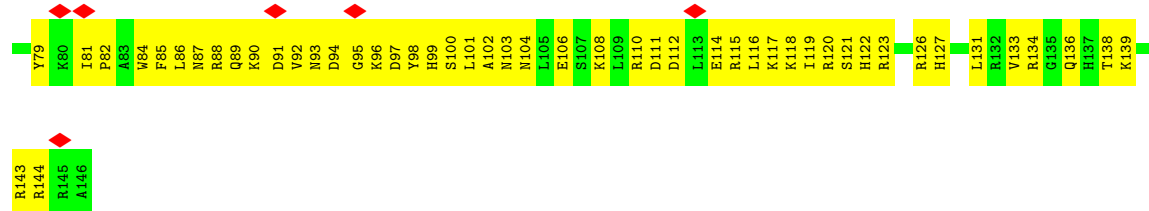
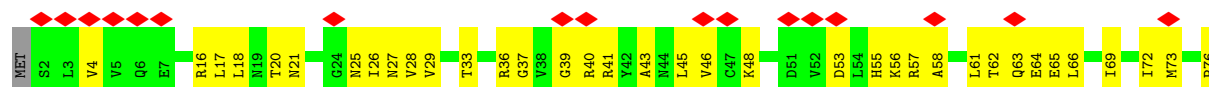
- Molecule 26: Small ribosomal subunit protein uS9



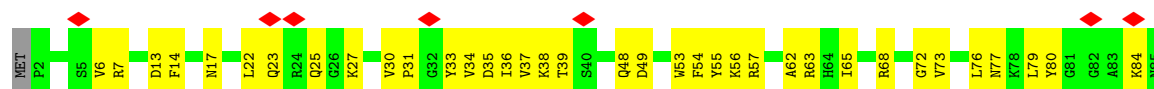
- Molecule 27: KLLA0B01474p

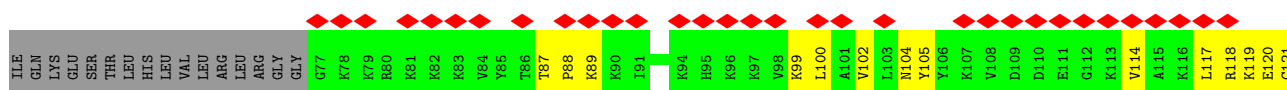


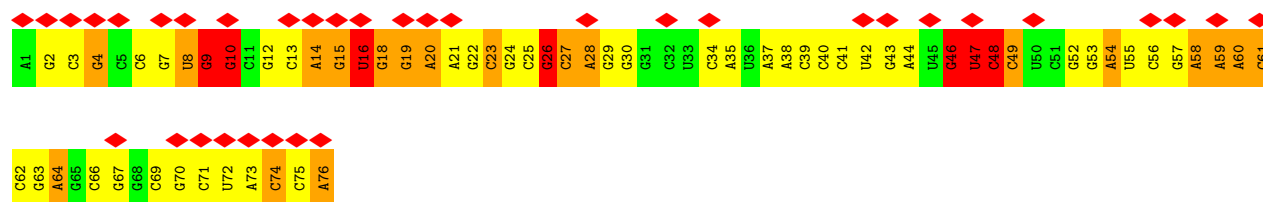
- Molecule 28: KLLA0B01562p



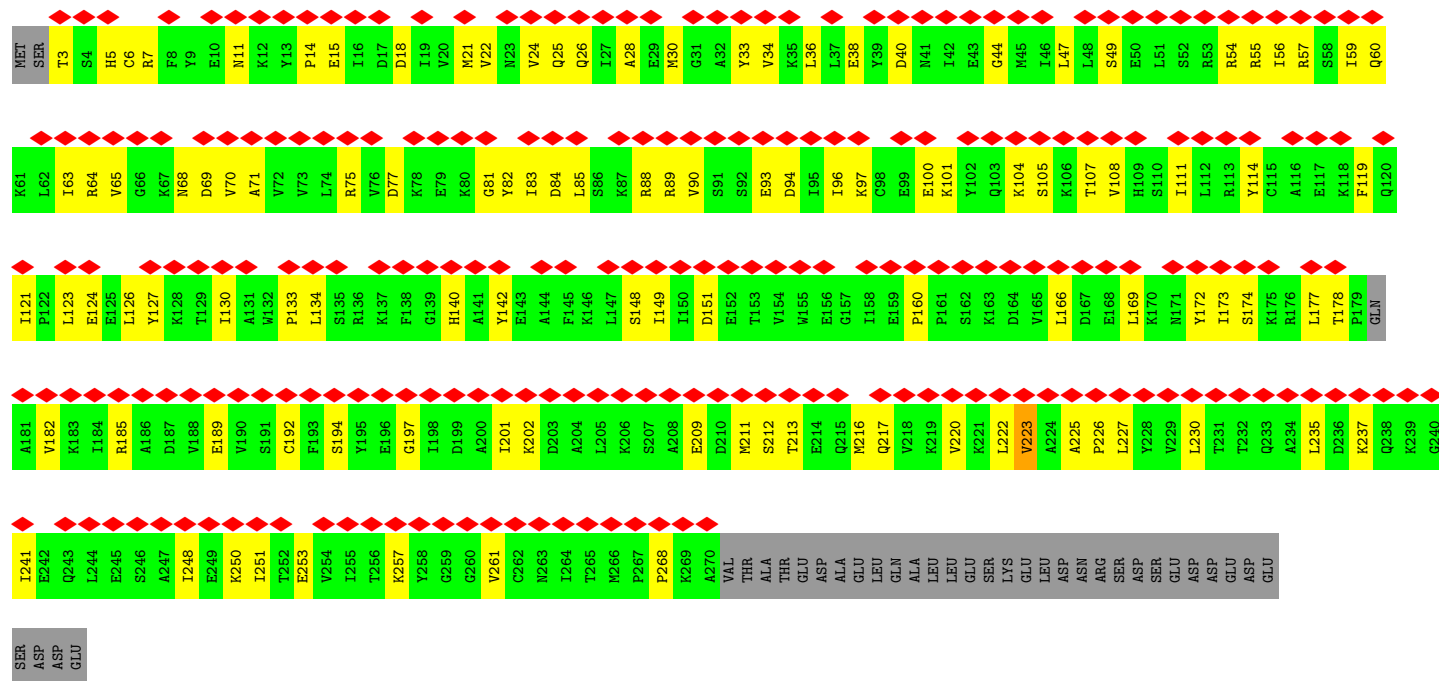
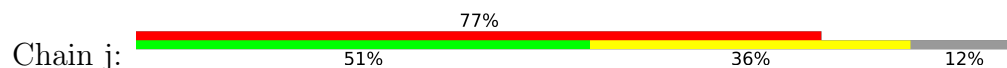
- Molecule 29: KLLA0A07194p



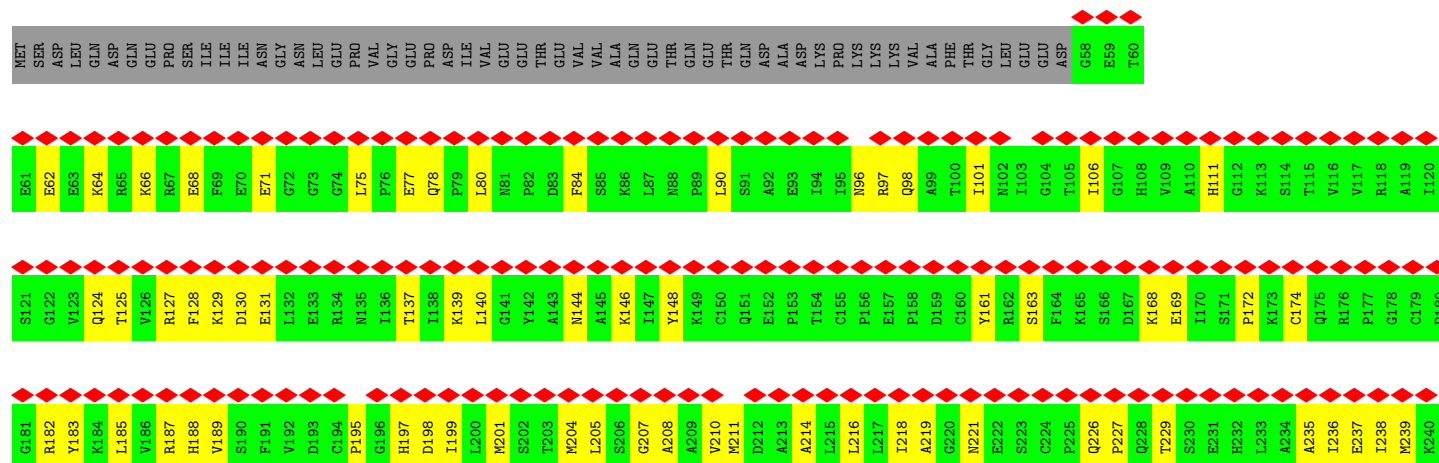
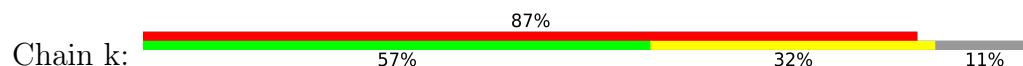


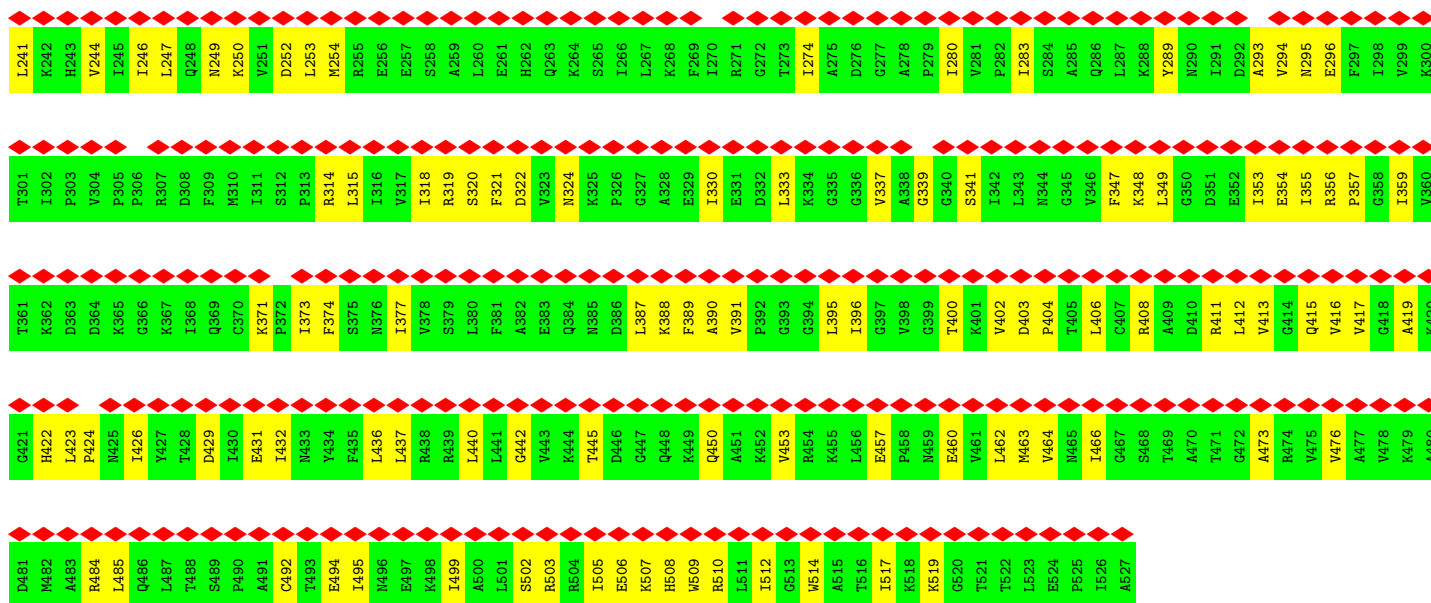


• Molecule 39: Eukaryotic translation initiation factor 2 subunit alpha

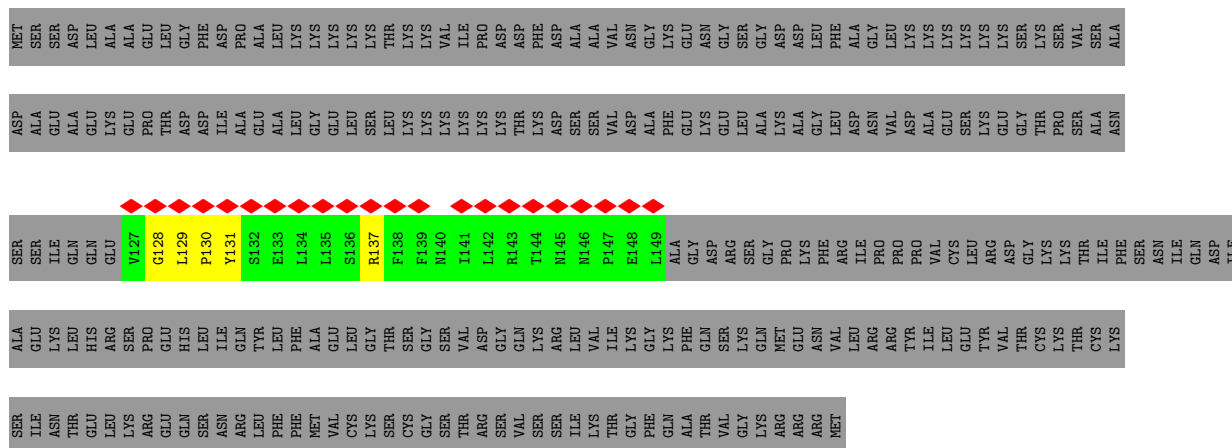


• Molecule 40: Eukaryotic translation initiation factor 2 subunit gamma

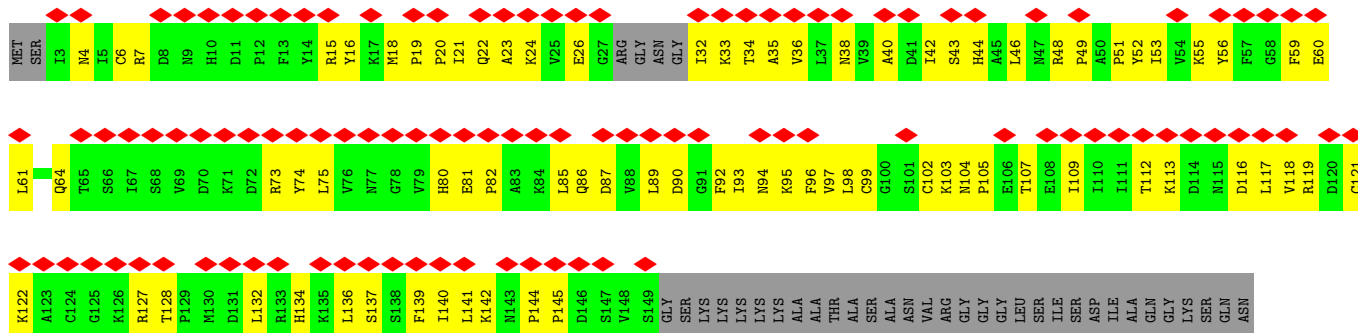




• Molecule 41: Eukaryotic translation initiation factor 2 subunit beta



• Molecule 42: Eukaryotic translation initiation factor 5



[illegible]

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	13862	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	30	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	3500	Depositor
Magnification	59000	Depositor
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	0.399	Depositor
Minimum map value	-0.191	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.023	Depositor
Recommended contour level	0.07	Depositor
Map size (Å)	402.0, 402.0, 402.0	wwPDB
Map dimensions	300, 300, 300	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.34, 1.34, 1.34	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: B8N, 2MG, RIA, H2U, 1MG, ZN, MA6, 1MA, MG, M2G, 5MC, T6A, GCP, PSU, 7MG

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	2	0.20	0/42410	0.35	0/66079
2	A	0.21	0/1742	0.46	0/2383
3	B	0.24	0/1820	0.52	0/2448
4	C	0.22	0/1678	0.49	0/2277
5	E	0.19	0/2122	0.46	0/2861
6	G	0.20	0/1855	0.42	0/2479
7	H	0.24	0/1507	0.52	0/2028
8	I	0.19	0/1515	0.47	0/2029
9	J	0.23	0/1495	0.57	0/2001
10	L	0.22	0/1276	0.45	0/1718
11	N	0.21	0/1218	0.42	0/1638
12	O	0.23	0/966	0.52	1/1297 (0.1%)
13	V	0.23	0/696	0.47	0/938
14	W	0.24	0/1039	0.52	0/1399
15	X	0.22	0/1137	0.49	0/1516
16	Y	0.17	0/1075	0.42	0/1433
17	a	0.26	0/810	0.49	0/1087
18	b	0.19	0/619	0.52	0/837
19	e	0.24	0/480	0.55	0/640
20	h	0.14	0/234	0.38	0/300
21	D	0.19	0/1800	0.47	2/2421 (0.1%)
22	F	0.27	0/1628	0.53	0/2198
23	K	0.27	0/831	0.50	0/1123
24	M	0.16	0/891	0.57	0/1201
25	P	0.21	0/942	0.55	0/1269
26	Q	0.22	0/1125	0.51	0/1510
27	R	0.29	0/1044	0.59	0/1402
28	S	0.18	0/1208	0.51	0/1624
29	T	0.19	0/1129	0.44	0/1520
30	U	0.24	0/857	0.46	0/1158
31	Z	0.17	0/603	0.45	0/814
32	c	0.20	0/501	0.43	0/673

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	d	0.22	0/473	0.48	0/629
34	f	0.13	0/597	0.43	0/795
35	g	0.20	0/2523	0.46	0/3434
36	i	0.18	0/773	0.53	0/1031
37	3	0.14	0/595	0.29	0/920
38	1	0.18	0/1529	0.33	0/2376
39	j	0.18	0/2171	0.48	1/2924 (0.0%)
40	k	0.19	0/3657	0.48	0/4946
41	l	0.16	0/194	0.41	0/263
42	m	0.18	0/1136	0.45	0/1537
All	All	0.20	0/91901	0.42	4/133156 (0.0%)

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
39	j	223	VAL	N-CA-C	-6.31	107.71	113.71
21	D	209	ILE	CA-C-N	5.79	131.95	120.94
21	D	209	ILE	C-N-CA	5.79	131.95	120.94
12	O	126	THR	CB-CA-C	-5.74	109.97	116.63

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	2	38190	0	19208	1809	0
2	A	1702	0	1695	117	0
3	B	1796	0	1874	126	0
4	C	1648	0	1727	128	0
5	E	2078	0	2157	153	0
6	G	1832	0	1919	132	0
7	H	1483	0	1579	99	0
8	I	1489	0	1504	102	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
9	J	1471	0	1554	128	0
10	L	1248	0	1311	85	0
11	N	1195	0	1263	72	0
12	O	955	0	987	81	0
13	V	687	0	682	55	0
14	W	1021	0	1056	107	0
15	X	1119	0	1198	84	0
16	Y	1061	0	1111	64	0
17	a	797	0	835	54	0
18	b	609	0	627	34	0
19	e	472	0	508	45	0
20	h	233	0	284	11	0
21	D	1774	0	1855	95	0
22	F	1609	0	1679	155	0
23	K	809	0	810	65	0
24	M	885	0	917	53	0
25	P	923	0	960	55	0
26	Q	1105	0	1170	85	0
27	R	1033	0	1082	76	0
28	S	1189	0	1211	87	0
29	T	1110	0	1124	73	0
30	U	845	0	913	49	0
31	Z	594	0	590	38	0
32	c	499	0	536	31	0
33	d	461	0	448	41	0
34	f	584	0	601	34	0
35	g	2469	0	2403	165	0
36	i	764	0	763	44	0
37	3	536	0	277	22	0
38	1	1639	0	852	62	0
39	j	2139	0	2205	94	0
40	k	3596	0	3713	122	0
41	l	190	0	191	3	0
42	m	1113	0	1113	69	0
43	2	111	0	0	0	0
43	3	1	0	0	0	0
43	Q	1	0	0	0	0
43	i	1	0	0	0	0
43	k	1	0	0	0	0
44	a	1	0	0	0	0
44	b	1	0	0	0	0
44	f	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
44	m	1	0	0	0	0
45	k	8	0	8	0	0
46	k	32	0	13	0	0
47	2	3	0	0	1	0
All	All	87114	0	68513	4217	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 27.

All (4217) 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)
22:F:101:MET:N	22:F:105:ASN:HB2	1.50	1.26
22:F:107:GLY:O	22:F:108:LYS:HG3	1.17	1.25
1:2:1585:A:O2'	22:F:103:GLY:HA3	1.41	1.19
22:F:104:ARG:O	22:F:108:LYS:HE2	1.43	1.16
22:F:107:GLY:O	22:F:108:LYS:CG	1.95	1.15
22:F:101:MET:H	22:F:105:ASN:CB	1.60	1.14
1:2:16:G:N2	1:2:1137:A:H62	1.51	1.08
35:g:43:LEU:HB2	35:g:62:TYR:HB2	1.38	1.05
22:F:104:ARG:HG3	22:F:105:ASN:ND2	1.75	1.01
1:2:1585:A:O2'	22:F:103:GLY:CA	2.09	1.01
22:F:97:ASN:OD1	22:F:100:MET:CE	2.09	1.00
1:2:16:G:H21	1:2:1137:A:N6	1.58	1.00
1:2:886:A:N6	1:2:924:G:H1	1.60	0.99
2:A:200:ASP:HA	2:A:203:PHE:HD2	1.28	0.98
3:B:144:ARG:HB2	3:B:208:GLN:HG3	1.46	0.97
22:F:227:ARG:HB3	32:c:61:ARG:HH22	1.32	0.94
30:U:30:LYS:HB2	30:U:33:GLN:HE22	1.32	0.94
1:2:935:G:N7	17:a:15:ARG:NH1	2.16	0.94
22:F:97:ASN:HA	22:F:100:MET:HE2	1.50	0.93
22:F:102:ASN:OD1	22:F:104:ARG:HG2	1.69	0.91
2:A:176:LEU:HD13	2:A:179:ARG:HE	1.38	0.89
2:A:198:MET:HG3	2:A:200:ASP:H	1.35	0.89
34:f:139:CYS:HB2	34:f:146:PHE:HB3	1.54	0.89
1:2:309:C:H3'	15:X:20:ARG:HH22	1.35	0.88
1:2:859:U:OP2	7:H:114:ARG:NH1	2.07	0.88
42:m:15:ARG:NH2	42:m:102:CYS:O	2.06	0.88
14:W:87:GLU:O	14:W:90:THR:HB	1.74	0.87
22:F:168:ARG:O	22:F:172:GLN:NE2	2.07	0.87
1:2:1293:G:H1	1:2:1302:U:H3	1.23	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:T:84:LYS:HZ1	29:T:93:HIS:HA	1.38	0.87
22:F:97:ASN:OD1	22:F:100:MET:HE3	1.71	0.86
38:1:47:H2U:H5''	38:1:47:H2U:H61	1.56	0.86
11:N:69:ASN:HD21	11:N:73:ARG:HG2	1.40	0.86
1:2:886:A:H61	1:2:924:G:H1	0.88	0.86
6:G:180:THR:HG22	6:G:182:GLN:H	1.41	0.85
22:F:168:ARG:HG3	22:F:172:GLN:HE22	1.41	0.85
1:2:520:A:N3	16:Y:34:ASN:ND2	2.23	0.85
1:2:1786:G:H5''	12:O:132:ARG:HH12	1.40	0.85
35:g:151:TRP:HB2	35:g:179:MET:HE2	1.56	0.85
8:I:67:TRP:O	8:I:71:GLY:HA2	1.76	0.85
10:L:108:PRO:HG2	10:L:134:THR:HB	1.58	0.84
11:N:142:GLU:HG2	11:N:143:SER:H	1.42	0.84
22:F:104:ARG:HG3	22:F:105:ASN:HD22	1.42	0.84
1:2:398:A:H4'	5:E:3:ARG:HG3	1.58	0.84
4:C:63:LEU:HA	13:V:12:TYR:HE2	1.43	0.84
40:k:373:ILE:HD13	40:k:406:LEU:HD11	1.59	0.84
1:2:959:U:H5'	11:N:55:ARG:HD3	1.60	0.83
6:G:163:THR:HG22	6:G:165:GLY:H	1.44	0.83
9:J:38:ASN:HB3	9:J:41:GLU:HG2	1.59	0.83
5:E:72:VAL:HB	5:E:77:ARG:HG3	1.59	0.83
33:d:21:CYS:HA	33:d:30:LEU:HD11	1.58	0.83
31:Z:38:HIS:NE2	31:Z:66:VAL:O	2.10	0.83
1:2:628:U:H3	1:2:969:A:N6	1.77	0.83
1:2:1541:A:N6	1:2:1566:C:O2'	2.12	0.83
1:2:958:U:OP2	18:b:20:LYS:NZ	2.12	0.83
1:2:1338:C:O2'	1:2:1340:A:N7	2.11	0.83
1:2:1554:A:H2'	25:P:40:ARG:HH21	1.43	0.83
1:2:1653:A:N6	1:2:1743:G:O2'	2.12	0.83
14:W:11:LEU:HD21	14:W:74:VAL:HB	1.60	0.83
1:2:1152:G:H5'	17:a:85:ARG:HH12	1.43	0.82
42:m:16:TYR:HD2	42:m:105:PRO:HD2	1.43	0.82
14:W:90:THR:HG23	14:W:94:LEU:HD12	1.61	0.82
38:1:3:C:O2'	39:j:185:ARG:NH1	2.13	0.82
30:U:68:ARG:O	33:d:44:ARG:NH2	2.13	0.82
1:2:65:A:C5	1:2:83:G:N2	2.48	0.82
27:R:115:LEU:HB3	27:R:117:LEU:HD23	1.61	0.82
40:k:499:ILE:HD11	40:k:517:ILE:HG13	1.60	0.81
1:2:299:A:H2'	1:2:300:A:C8	2.15	0.81
1:2:1012:A:H3'	1:2:1013:G:H8	1.43	0.81
7:H:177:THR:HG23	7:H:179:LYS:H	1.46	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:j:25:GLN:HG3	39:j:26:GLN:HG2	1.61	0.81
1:2:642:G:O6	1:2:692:C:N4	2.13	0.81
1:2:895:U:O2	12:O:41:ARG:NH2	2.13	0.81
1:2:521:U:H5''	16:Y:37:LYS:HG3	1.63	0.81
4:C:61:ILE:HA	4:C:66:LEU:HD12	1.62	0.81
22:F:104:ARG:O	22:F:108:LYS:CE	2.29	0.81
35:g:268:LYS:HB3	35:g:277:LEU:HD11	1.61	0.81
1:2:477:A:HO2'	9:J:124:HIS:HD1	1.24	0.81
2:A:120:LEU:HD23	2:A:142:PRO:HG2	1.63	0.81
1:2:543:A:O2'	19:e:31:LYS:NZ	2.14	0.81
1:2:952:G:H2'	1:2:953:G:H8	1.46	0.81
2:A:57:ILE:HD13	2:A:160:ILE:HD13	1.61	0.80
9:J:37:LYS:HB2	19:e:33:ARG:HB3	1.61	0.80
25:P:89:MET:HE1	25:P:107:ILE:HG12	1.63	0.80
15:X:103:LEU:HB2	15:X:126:LYS:HB2	1.64	0.80
22:F:71:TYR:HD2	26:Q:50:GLU:HG2	1.46	0.80
30:U:95:ALA:HB1	30:U:100:VAL:HG21	1.64	0.80
35:g:6:ILE:HG13	35:g:324:THR:HG23	1.64	0.80
1:2:620:A:O2'	1:2:1105:U:O2'	1.99	0.80
5:E:198:ARG:HB2	5:E:200:ARG:HH22	1.47	0.79
1:2:1254:G:N7	24:M:39:ARG:NH2	2.31	0.79
22:F:35:ILE:O	22:F:39:GLN:NE2	2.16	0.79
1:2:7:G:N7	4:C:210:ARG:NH2	2.29	0.79
1:2:65:A:C6	1:2:83:G:N2	2.50	0.79
1:2:384:A:O3'	8:I:22:ARG:NH2	2.16	0.79
1:2:1407:G:N2	1:2:1410:G:OP2	2.15	0.79
14:W:22:LYS:HZ1	18:b:3:LEU:HD22	1.48	0.79
40:k:377:ILE:HA	40:k:400:THR:HG22	1.65	0.79
31:Z:60:VAL:HG13	31:Z:65:LEU:HD11	1.63	0.79
1:2:1097:U:O3'	14:W:71:LYS:NZ	2.15	0.79
21:D:50:ILE:HD11	21:D:86:LEU:HD22	1.64	0.78
1:2:820:U:O4	1:2:850:U:N3	2.16	0.78
40:k:494:GLU:HG2	40:k:495:ILE:HG13	1.64	0.78
1:2:1121:G:N2	1:2:1124:A:OP2	2.16	0.78
39:j:253:GLU:OE2	39:j:257:LYS:NZ	2.17	0.78
11:N:83:GLU:HG2	11:N:84:ILE:HG13	1.66	0.77
33:d:15:GLY:O	33:d:19:ARG:NH1	2.17	0.77
1:2:1021:C:H4'	1:2:1124:A:H61	1.48	0.77
4:C:134:ILE:HG12	4:C:138:LYS:HE2	1.66	0.77
1:2:786:G:OP1	5:E:255:ARG:NH2	2.15	0.77
13:V:3:ASN:HD22	13:V:7:GLN:HB3	1.48	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1160:C:O2'	32:c:22:ARG:NH2	2.18	0.77
7:H:140:VAL:HG12	14:W:52:TYR:HB3	1.67	0.77
9:J:86:LEU:HD11	9:J:90:LYS:HB2	1.67	0.76
35:g:258:TRP:HB3	35:g:269:ILE:HD11	1.66	0.76
1:2:899:A:H3'	1:2:900:G:H21	1.49	0.76
1:2:1578:C:H4'	26:Q:137:ARG:HB2	1.66	0.76
27:R:96:SER:O	27:R:97:ASN:ND2	2.18	0.76
28:S:56:LYS:HZ1	28:S:61:LEU:HB3	1.51	0.76
4:C:40:TRP:NE1	4:C:70:GLU:OE1	2.14	0.76
8:I:42:ARG:HE	8:I:59:ARG:HH12	1.32	0.76
1:2:121:U:H3	1:2:295:U:H3	1.31	0.76
26:Q:10:PHE:H	26:Q:87:LYS:HZ2	1.31	0.76
40:k:289:TYR:OH	41:l:137:ARG:NE	2.17	0.76
40:k:476:VAL:HB	40:k:484:ARG:HG2	1.67	0.76
1:2:882:C:H42	1:2:944:U:H3	1.31	0.76
2:A:112:THR:HG22	2:A:114:SER:H	1.49	0.76
9:J:123:HIS:HB2	19:e:37:ARG:HH12	1.49	0.76
10:L:102:LYS:C	15:X:13:ARG:HH22	1.94	0.76
17:a:10:ARG:HD3	17:a:12:LYS:HE3	1.67	0.76
25:P:18:LYS:HD2	28:S:95:GLY:HA2	1.68	0.76
39:j:212:SER:HB2	39:j:217:GLN:HA	1.65	0.76
38:1:20:A:N6	38:1:57:G:N3	2.34	0.76
1:2:380:C:O2'	1:2:755:A:N1	2.18	0.75
1:2:922:A:H2'	1:2:923:A:C8	2.21	0.75
1:2:1216:A:H4'	23:K:44:LYS:HZ2	1.50	0.75
12:O:20:PHE:HB3	12:O:27:PHE:HB2	1.67	0.75
22:F:168:ARG:HG3	22:F:172:GLN:NE2	2.01	0.75
1:2:250:A:O2'	5:E:130:GLN:NE2	2.19	0.75
1:2:1203:A:H61	33:d:15:GLY:HA3	1.50	0.75
30:U:68:ARG:HA	30:U:79:TRP:CD1	2.22	0.75
1:2:327:A:H2'	1:2:328:G:H8	1.51	0.75
1:2:641:G:N1	1:2:693:U:N3	2.35	0.75
35:g:308:LEU:HB2	35:g:320:TRP:HB2	1.67	0.75
39:j:123:LEU:HA	39:j:126:LEU:HD13	1.67	0.75
42:m:56:TYR:HB2	42:m:136:LEU:HD22	1.67	0.75
1:2:65:A:C6	1:2:83:G:C2	2.75	0.75
1:2:976:A:N7	1:2:1023:U:O4	2.19	0.75
5:E:71:LYS:HB3	5:E:91:THR:HB	1.68	0.75
35:g:269:ILE:HG23	35:g:278:ILE:HG13	1.67	0.75
2:A:167:LYS:HE2	2:A:204:TYR:HB3	1.67	0.75
14:W:17:ALA:HB1	14:W:22:LYS:HB2	1.68	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:g:159:PRO:HG2	35:g:213:PRO:HA	1.69	0.75
35:g:172:ILE:O	35:g:187:SER:HA	1.87	0.75
42:m:112:THR:HG22	42:m:113:LYS:H	1.52	0.75
5:E:24:SER:H	9:J:3:ARG:HH22	1.32	0.74
31:Z:42:LEU:HA	31:Z:46:LYS:HD2	1.69	0.74
38:1:55:U:H4'	39:j:172:TYR:HE2	1.52	0.74
1:2:115:G:H5'	10:L:129:ARG:HD2	1.69	0.74
8:I:104:ILE:O	8:I:165:ARG:HA	1.86	0.74
23:K:58:GLN:HB3	23:K:65:TYR:HB2	1.67	0.74
2:A:36:TYR:HB2	2:A:149:LEU:HD11	1.70	0.74
4:C:182:GLY:N	4:C:200:ASP:OD1	2.17	0.74
1:2:66:U:H3	6:G:173:PRO:HD3	1.51	0.74
1:2:863:U:H3'	14:W:28:ARG:HH22	1.51	0.74
1:2:1456:G:OP1	28:S:139:LYS:NZ	2.19	0.74
1:2:1573:7MG:N2	38:1:42:U:O2'	2.20	0.74
4:C:166:LYS:NZ	4:C:168:GLY:O	2.20	0.74
22:F:101:MET:H	22:F:105:ASN:HB2	0.68	0.74
8:I:22:ARG:HH11	8:I:25:ARG:HH22	1.33	0.74
9:J:70:LEU:O	9:J:74:ASN:ND2	2.21	0.74
1:2:277:U:OP1	1:2:278:G:N2	2.20	0.73
2:A:84:ARG:NH1	2:A:203:PHE:O	2.21	0.73
4:C:147:GLY:N	4:C:158:SER:O	2.17	0.73
10:L:16:GLN:NE2	10:L:32:LYS:O	2.21	0.73
24:M:120:ASP:O	24:M:124:ARG:NH1	2.20	0.73
27:R:26:MET:HE1	27:R:59:LYS:HE3	1.68	0.73
1:2:983:G:H2'	1:2:984:G:H8	1.51	0.73
1:2:1544:G:OP1	28:S:123:ARG:NH1	2.21	0.73
5:E:7:LYS:O	5:E:30:ARG:NE	2.19	0.73
1:2:1292:U:O4	1:2:1321:A:N6	2.19	0.73
34:f:121:CYS:HB3	34:f:128:ILE:HG23	1.68	0.73
3:B:183:GLN:OE1	3:B:187:LYS:NZ	2.19	0.73
8:I:67:TRP:HE1	8:I:69:SER:HB2	1.53	0.73
12:O:17:ALA:N	12:O:80:HIS:O	2.19	0.73
21:D:177:LEU:HD12	21:D:178:ARG:H	1.52	0.73
1:2:867:G:H2'	1:2:868:A:H8	1.54	0.73
1:2:910:U:O2	3:B:5:LYS:NZ	2.21	0.73
1:2:990:G:P	12:O:129:LYS:HG3	2.29	0.73
38:1:19:G:OP2	38:1:57:G:N2	2.22	0.73
1:2:1609:A:O3'	22:F:97:ASN:ND2	2.20	0.73
3:B:217:LEU:HB3	3:B:220:GLN:HE21	1.51	0.73
4:C:58:ILE:HA	4:C:61:ILE:HD12	1.70	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:N:5:HIS:CD2	11:N:117:LEU:HB3	2.23	0.73
42:m:7:ARG:HD2	42:m:98:LEU:HD21	1.70	0.73
21:D:76:ARG:NH1	21:D:76:ARG:O	2.21	0.73
1:2:886:A:N1	1:2:924:G:N2	2.35	0.73
32:c:12:VAL:HG13	32:c:50:GLU:HA	1.69	0.73
1:2:511:A:H5''	9:J:163:PRO:HG2	1.71	0.72
1:2:645:U:H2'	1:2:646:G:H8	1.53	0.72
1:2:58:U:O2'	1:2:450:A:N3	2.21	0.72
16:Y:63:GLN:HG2	16:Y:68:LYS:HG3	1.69	0.72
40:k:357:PRO:HG2	40:k:415:GLN:HE21	1.54	0.72
1:2:19:A:H2'	1:2:20:G:H8	1.53	0.72
6:G:185:GLN:O	6:G:189:GLN:NE2	2.21	0.72
1:2:611:U:OP2	15:X:5:LYS:NZ	2.22	0.72
1:2:1388:U:OP1	27:R:5:ARG:NH1	2.22	0.72
1:2:1391:C:H2'	1:2:1392:G:H8	1.54	0.72
1:2:1493:C:O2'	1:2:1517:U:O2	2.08	0.72
23:K:77:ARG:HD3	23:K:84:GLU:HA	1.71	0.72
1:2:907:U:O2	1:2:1007:G:N2	2.23	0.72
38:1:15:G:O6	38:1:48:5MC:N4	2.22	0.72
1:2:481:U:H3	1:2:504:A:H61	1.37	0.72
1:2:1330:A:H4'	27:R:46:LEU:HD21	1.70	0.72
1:2:1521:G:N7	29:T:68:ARG:NH1	2.38	0.72
10:L:12:ALA:O	10:L:14:GLN:NE2	2.22	0.72
27:R:9:VAL:HG23	27:R:50:ILE:HD13	1.70	0.72
1:2:5:U:H2'	1:2:6:G:H8	1.54	0.72
1:2:142:G:H2'	1:2:143:G:C8	2.25	0.72
4:C:56:SER:N	4:C:60:GLU:OE2	2.23	0.72
15:X:133:LEU:O	15:X:137:LYS:NZ	2.23	0.72
1:2:876:G:O6	1:2:950:A:N1	2.23	0.71
4:C:162:LYS:HA	4:C:174:LEU:O	1.90	0.71
5:E:16:HIS:HB3	5:E:108:ARG:HH21	1.53	0.71
35:g:92:LEU:HB3	35:g:102:ALA:HB3	1.72	0.71
1:2:989:C:H5	1:2:1013:G:H1	1.38	0.71
1:2:1170:A:H2'	1:2:1171:G:C8	2.25	0.71
10:L:16:GLN:HE22	10:L:34:TRP:H	1.37	0.71
31:Z:64:VAL:O	31:Z:68:ARG:NH1	2.22	0.71
42:m:117:LEU:HD21	42:m:140:ILE:HB	1.72	0.71
1:2:718:U:O2'	1:2:720:G:N7	2.23	0.71
1:2:929:A:H5''	17:a:70:LYS:HD3	1.71	0.71
1:2:1481:A:H2'	1:2:1482:G:C8	2.24	0.71
10:L:8:GLN:HE22	10:L:14:GLN:H	1.38	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:F:145:ARG:HA	22:F:169:ARG:HD3	1.70	0.71
28:S:57:ARG:NH2	31:Z:74:SER:OG	2.24	0.71
30:U:69:LYS:O	33:d:44:ARG:NH1	2.23	0.71
1:2:761:G:N2	1:2:762:A:N7	2.38	0.71
1:2:905:A:OP1	12:O:52:ARG:NH2	2.24	0.71
23:K:69:THR:HG23	23:K:72:GLY:H	1.56	0.71
1:2:862:A:N7	1:2:963:U:O4	2.24	0.71
1:2:1108:G:H1	1:2:1135:U:H3	1.36	0.71
25:P:14:THR:HG22	25:P:22:LEU:HD13	1.71	0.71
1:2:652:C:N4	1:2:677:G:O6	2.24	0.71
1:2:1712:A:H2'	1:2:1713:G:C8	2.26	0.71
31:Z:37:LYS:O	31:Z:38:HIS:ND1	2.23	0.71
35:g:112:LEU:HD11	35:g:128:ARG:HG3	1.73	0.71
39:j:216:MET:HE2	39:j:235:LEU:H	1.56	0.71
1:2:1786:G:OP1	12:O:127:ARG:NH2	2.23	0.71
7:H:11:GLN:HE22	7:H:13:PRO:HG3	1.56	0.71
26:Q:83:GLN:HE22	26:Q:119:ALA:HA	1.55	0.71
1:2:1201:A:N6	1:2:1455:C:OP1	2.23	0.71
9:J:29:LYS:HD3	19:e:44:PHE:HD2	1.56	0.71
22:F:101:MET:O	22:F:102:ASN:OD1	2.09	0.70
31:Z:68:ARG:HB2	31:Z:70:LYS:HE2	1.73	0.70
36:i:33:GLN:HB3	36:i:78:LEU:HD11	1.73	0.70
38:1:9:1MG:O5'	38:1:46:7MG:H1'	1.91	0.70
42:m:86:GLN:NE2	42:m:87:ASP:OD1	2.25	0.70
1:2:445:A:N1	1:2:460:G:O2'	2.24	0.70
5:E:180:LEU:HA	5:E:193:GLY:O	1.91	0.70
14:W:27:ILE:HB	14:W:61:ILE:HB	1.72	0.70
1:2:328:G:H2'	1:2:329:G:H8	1.56	0.70
1:2:1737:C:H2'	1:2:1738:A:C8	2.26	0.70
15:X:109:ARG:HG3	15:X:114:LYS:HB2	1.72	0.70
24:M:56:VAL:HG12	24:M:58:SER:H	1.56	0.70
25:P:111:MET:HE1	28:S:119:ILE:HA	1.73	0.70
35:g:52:GLU:HG3	35:g:53:GLN:H	1.56	0.70
42:m:23:ALA:HB1	42:m:34:THR:HB	1.72	0.70
27:R:36:ASP:OD2	27:R:47:ARG:NH1	2.24	0.70
6:G:39:GLU:HA	6:G:46:LYS:HD3	1.73	0.70
9:J:99:LEU:HD11	9:J:104:PHE:HE2	1.55	0.70
16:Y:42:GLU:HG3	16:Y:52:LYS:HD3	1.74	0.70
1:2:990:G:OP1	12:O:129:LYS:HG3	1.92	0.70
1:2:1471:U:C2	22:F:105:ASN:OD1	2.44	0.70
3:B:69:CYS:SG	3:B:70:LEU:N	2.65	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:103:A:H4'	1:2:105:A:C8	2.27	0.70
1:2:406:A:OP1	6:G:74:LYS:NZ	2.24	0.70
1:2:1476:G:O3'	29:T:56:LYS:NZ	2.25	0.70
4:C:63:LEU:HA	13:V:12:TYR:CE2	2.26	0.70
40:k:216:LEU:HD23	40:k:246:ILE:HG12	1.74	0.70
1:2:867:G:OP1	11:N:121:ARG:NH1	2.25	0.70
1:2:887:U:H2'	1:2:888:U:C6	2.26	0.70
6:G:50:PHE:HB3	6:G:111:LEU:HD12	1.74	0.70
31:Z:45:ASP:HB2	31:Z:49:ARG:HH12	1.56	0.70
1:2:641:G:O6	1:2:693:U:O4	2.09	0.69
1:2:1261:U:H2'	1:2:1262:G:H8	1.57	0.69
5:E:60:GLU:OE2	16:Y:20:ARG:NH1	2.24	0.69
8:I:150:GLU:O	10:L:24:LYS:NZ	2.24	0.69
10:L:3:THR:HG21	10:L:7:VAL:HG13	1.74	0.69
16:Y:20:ARG:HB2	16:Y:74:LEU:HD11	1.74	0.69
35:g:267:ILE:HD12	35:g:299:LEU:HD11	1.74	0.69
42:m:134:HIS:O	42:m:137:SER:OG	2.09	0.69
1:2:870:G:H2'	1:2:871:G:C8	2.28	0.69
1:2:874:G:O6	1:2:951:A:N1	2.25	0.69
5:E:11:ARG:NH1	5:E:21:ASP:O	2.25	0.69
8:I:22:ARG:HA	8:I:22:ARG:NE	2.07	0.69
25:P:60:LEU:HD12	25:P:92:SER:HB3	1.75	0.69
1:2:57:G:OP1	16:Y:112:LYS:NZ	2.25	0.69
1:2:645:U:H2'	1:2:646:G:C8	2.27	0.69
3:B:103:MET:HE3	3:B:104:ASP:H	1.55	0.69
39:j:47:LEU:HD23	39:j:49:SER:H	1.56	0.69
7:H:44:LYS:NZ	7:H:95:GLU:OE1	2.25	0.69
6:G:32:ILE:HD12	6:G:54:GLY:H	1.55	0.69
32:c:15:VAL:HA	32:c:28:VAL:HG12	1.73	0.69
1:2:1474:C:H2'	1:2:1475:G:H8	1.56	0.69
1:2:521:U:O2'	16:Y:60:PHE:O	2.10	0.69
1:2:1171:G:OP1	28:S:144:ARG:NH2	2.24	0.69
21:D:132:LYS:HG3	21:D:189:MET:HE1	1.74	0.69
1:2:65:A:C5	1:2:83:G:C2	2.81	0.69
1:2:414:C:O2'	1:2:417:G:O6	2.09	0.69
1:2:1364:C:OP1	26:Q:66:ARG:NH2	2.23	0.69
1:2:1629:A:N1	1:2:1761:A:O2'	2.25	0.69
3:B:180:THR:O	3:B:183:GLN:NE2	2.22	0.69
10:L:99:ARG:HD2	15:X:11:SER:N	2.08	0.69
21:D:137:VAL:HG22	21:D:151:LYS:HG2	1.73	0.69
1:2:592:U:OP2	9:J:40:ARG:NH1	2.26	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:703:G:H3'	1:2:704:C:H3'	1.75	0.69
1:2:1459:C:H5''	28:S:143:ARG:NH1	2.08	0.69
8:I:158:ASP:HA	8:I:161:PHE:HD2	1.56	0.69
13:V:17:CYS:N	13:V:22:ARG:O	2.24	0.69
1:2:789:U:H5	1:2:790:A:C5	2.11	0.69
1:2:938:A:H2'	1:2:939:A:C8	2.27	0.69
1:2:1029:A:OP2	17:a:8:ASN:ND2	2.26	0.69
35:g:267:ILE:HB	35:g:281:LEU:HB2	1.73	0.69
1:2:874:G:OP1	3:B:157:GLN:NE2	2.26	0.68
1:2:1428:U:H1'	30:U:72:ASN:ND2	2.07	0.68
22:F:150:ARG:HH12	32:c:22:ARG:HD3	1.57	0.68
28:S:25:ASN:O	28:S:57:ARG:NH1	2.26	0.68
42:m:46:LEU:HD22	42:m:97:VAL:HG11	1.73	0.68
1:2:204:U:N3	1:2:261:U:O4	2.19	0.68
1:2:631:U:O3'	15:X:11:SER:OG	2.11	0.68
1:2:997:A:H5'	39:j:54:ARG:HH12	1.56	0.68
25:P:15:TYR:HB3	25:P:22:LEU:HD12	1.75	0.68
29:T:89:ARG:HD3	29:T:90:PRO:HD2	1.74	0.68
2:A:198:MET:HE1	27:R:89:SER:HA	1.74	0.68
10:L:132:SER:O	10:L:136:ARG:NH1	2.24	0.68
22:F:54:GLU:HG3	22:F:56:LYS:HE3	1.76	0.68
1:2:1230:U:OP1	1:2:1258:U:O2'	2.12	0.68
6:G:58:LYS:HA	6:G:107:ALA:HB2	1.74	0.68
1:2:16:G:H21	1:2:1137:A:H62	0.75	0.68
12:O:60:ALA:HB1	12:O:101:ALA:HB2	1.74	0.68
26:Q:9:THR:HB	26:Q:87:LYS:HG3	1.75	0.68
5:E:182:TYR:N	5:E:226:PHE:O	2.22	0.68
1:2:1465:C:H1'	1:2:1599:G:H21	1.59	0.68
5:E:104:ASP:HB3	5:E:108:ARG:H	1.59	0.68
7:H:50:GLU:HA	7:H:56:LYS:HD2	1.74	0.68
1:2:107:C:H2'	1:2:108:A:H8	1.58	0.68
1:2:334:U:H4'	10:L:129:ARG:HH21	1.59	0.68
22:F:227:ARG:HB3	32:c:61:ARG:NH2	2.05	0.68
1:2:949:C:O2'	11:N:104:ARG:NH2	2.26	0.68
24:M:126:ILE:O	24:M:130:HIS:ND1	2.24	0.68
1:2:220:A:OP2	1:2:831:U:O2'	2.12	0.68
1:2:917:U:H2'	1:2:918:A:C8	2.29	0.68
4:C:168:GLY:HA3	4:C:214:ASN:HD21	1.58	0.68
22:F:42:ILE:HG12	22:F:71:TYR:HE1	1.59	0.68
39:j:21:MET:HB3	39:j:68:ASN:HD21	1.58	0.68
1:2:121:U:H2'	1:2:122:U:C6	2.29	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:510:A:H5'	9:J:173:ALA:HB2	1.77	0.67
1:2:1143:U:H2'	1:2:1144:U:C6	2.29	0.67
29:T:22:LEU:HA	29:T:25:GLN:HE22	1.58	0.67
1:2:367:U:O4	1:2:368:A:N6	2.27	0.67
1:2:924:G:H2'	1:2:925:A:H8	1.58	0.67
22:F:114:ARG:HD2	22:F:118:HIS:NE2	2.09	0.67
22:F:198:GLU:OE2	22:F:202:ASN:ND2	2.27	0.67
1:2:200:G:H2'	1:2:201:A:C8	2.29	0.67
1:2:519:A:H2'	1:2:520:A:C8	2.29	0.67
1:2:1584:A:C2	22:F:106:ASN:OD1	2.47	0.67
24:M:99:ARG:NH2	24:M:101:GLY:O	2.27	0.67
40:k:148:TYR:HB3	40:k:183:TYR:HB3	1.75	0.67
1:2:867:G:H5''	11:N:91:LEU:HD21	1.76	0.67
1:2:1413:U:OP1	27:R:45:ARG:NH2	2.28	0.67
29:T:77:ASN:HB3	29:T:95:ASP:HB3	1.76	0.67
35:g:117:ASP:OD2	35:g:121:SER:OG	2.12	0.67
1:2:1399:A:P	27:R:60:ARG:HH12	2.17	0.67
28:S:94:ASP:OD2	28:S:96:LYS:NZ	2.26	0.67
38:1:29:G:H2'	38:1:30:G:H8	1.60	0.67
1:2:1798:A:N6	37:3:19:A:O2'	2.27	0.67
15:X:87:VAL:HG22	15:X:124:VAL:HG21	1.76	0.67
22:F:105:ASN:HD22	22:F:105:ASN:N	1.93	0.67
25:P:92:SER:HB2	25:P:107:ILE:HD13	1.76	0.67
1:2:267:C:H3'	6:G:186:ARG:HH22	1.58	0.67
1:2:650:G:O6	1:2:684:A:N6	2.28	0.67
1:2:1212:G:H1	1:2:1448:U:H3	1.42	0.67
1:2:178:A:N1	6:G:202:ARG:NH2	2.43	0.67
1:2:1163:G:H2'	1:2:1164:G:H8	1.60	0.67
3:B:53:GLY:C	3:B:55:LYS:H	2.03	0.67
1:2:105:A:H4'	8:I:18:ARG:NH2	2.10	0.67
1:2:871:G:O6	1:2:954:A:N1	2.28	0.67
1:2:1228:G:OP1	34:f:99:LYS:NZ	2.25	0.67
1:2:1255:A:OP2	24:M:36:ARG:NH2	2.28	0.67
17:a:31:PRO:HG2	17:a:34:LYS:HB3	1.77	0.67
23:K:32:HIS:N	23:K:37:THR:O	2.25	0.67
1:2:490:C:H2'	1:2:491:A:H4'	1.76	0.67
1:2:1592:G:OP2	1:2:1594:C:N4	2.27	0.67
2:A:53:THR:HG22	2:A:161:PRO:HG2	1.76	0.67
4:C:152:ASN:ND2	13:V:2:GLU:O	2.23	0.67
26:Q:143:ARG:NH2	38:1:35:A:OP1	2.27	0.67
28:S:88:ARG:HG2	28:S:91:ASP:HA	1.77	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:327:A:H2'	1:2:328:G:C8	2.28	0.66
40:k:320:SER:HB3	40:k:412:LEU:HB2	1.76	0.66
1:2:54:C:H5'	16:Y:110:GLN:HG2	1.76	0.66
22:F:65:GLN:HB3	22:F:90:PRO:HA	1.76	0.66
1:2:396:A:H4'	8:I:50:GLY:HA2	1.75	0.66
22:F:39:GLN:OE1	22:F:39:GLN:N	2.27	0.66
35:g:14:LEU:HB2	35:g:317:ILE:HB	1.77	0.66
39:j:174:SER:O	39:j:178:THR:OG1	2.14	0.66
1:2:1316:C:OP2	27:R:7:LYS:NZ	2.28	0.66
4:C:63:LEU:O	13:V:15:ARG:NH1	2.28	0.66
13:V:74:GLN:NE2	13:V:83:TRP:O	2.28	0.66
42:m:48:ARG:NH2	42:m:107:THR:OG1	2.27	0.66
1:2:754:A:H5''	1:2:755:A:H5'	1.76	0.66
1:2:928:A:O5'	1:2:930:C:N4	2.28	0.66
1:2:1224:U:H3'	1:2:1225:A:H8	1.61	0.66
5:E:37:LYS:HB2	5:E:40:GLU:HB2	1.77	0.66
8:I:103:GLN:HA	8:I:166:LEU:O	1.95	0.66
15:X:62:LYS:HG3	15:X:63:GLN:H	1.60	0.66
40:k:235:ALA:HA	40:k:238:ILE:HD12	1.78	0.66
10:L:99:ARG:NH1	10:L:100:TYR:O	2.28	0.66
10:L:102:LYS:H	15:X:13:ARG:HH12	1.42	0.66
22:F:161:ALA:HB2	22:F:227:ARG:HA	1.78	0.66
42:m:46:LEU:HD13	42:m:97:VAL:HG21	1.78	0.66
1:2:824:U:H2'	1:2:825:U:C6	2.31	0.66
5:E:125:LYS:H	5:E:142:HIS:CE1	2.14	0.66
10:L:101:GLU:HG2	15:X:13:ARG:CZ	2.25	0.66
26:Q:39:VAL:HG22	26:Q:41:PRO:HD3	1.75	0.66
1:2:883:A:H5'	3:B:136:ARG:HH12	1.61	0.66
4:C:60:GLU:HB2	4:C:63:LEU:HD12	1.77	0.66
28:S:45:LEU:HD11	29:T:36:ILE:HA	1.77	0.66
32:c:31:GLU:HG3	32:c:39:THR:HB	1.78	0.66
1:2:628:U:O4	1:2:969:A:N7	2.29	0.66
1:2:811:A:H5''	10:L:151:LYS:HG2	1.76	0.66
1:2:1626:U:H2'	1:2:1627:G:C8	2.31	0.66
29:T:27:LYS:HE3	29:T:111:LEU:HD12	1.77	0.66
35:g:162:LEU:O	35:g:167:VAL:N	2.29	0.66
1:2:335:G:N3	10:L:133:LYS:NZ	2.44	0.66
1:2:1025:A:H62	1:2:1770:C:H1'	1.61	0.66
1:2:1506:U:H2'	1:2:1507:C:C6	2.31	0.66
1:2:1550:U:OP2	25:P:43:ARG:NH2	2.28	0.66
2:A:155:TYR:HA	13:V:60:ARG:HB3	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:12:ALA:HB2	8:I:18:ARG:HG3	1.78	0.66
10:L:101:GLU:OE2	15:X:13:ARG:NH2	2.29	0.66
14:W:70:ASN:ND2	14:W:130:TYR:O	2.29	0.66
21:D:76:ARG:HG3	21:D:77:PHE:CD1	2.31	0.66
27:R:27:ASP:O	27:R:31:ASN:ND2	2.25	0.66
31:Z:64:VAL:HG12	31:Z:68:ARG:HH12	1.60	0.66
1:2:247:U:H2'	1:2:248:U:H2'	1.78	0.65
1:2:779:A:O3'	1:2:781:A:N6	2.29	0.65
1:2:1297:U:O2'	4:C:217:LYS:NZ	2.27	0.65
2:A:183:ARG:HG2	2:A:188:LEU:HD22	1.78	0.65
18:b:38:PRO:HD3	18:b:77:THR:HA	1.78	0.65
21:D:172:THR:O	21:D:173:ARG:NH1	2.27	0.65
30:U:24:ILE:HB	30:U:91:ILE:HG22	1.79	0.65
1:2:37:U:O2'	1:2:770:A:N1	2.28	0.65
1:2:1522:A:N3	1:2:1588:G:O2'	2.23	0.65
5:E:206:ASP:HB2	5:E:222:LEU:HD11	1.79	0.65
8:I:48:THR:HG21	8:I:54:LYS:HG3	1.78	0.65
1:2:142:G:O6	6:G:177:ARG:NH2	2.30	0.65
1:2:1532:G:N7	31:Z:77:ARG:NH2	2.44	0.65
11:N:142:GLU:HG2	11:N:143:SER:N	2.11	0.65
22:F:147:ASP:OD1	22:F:148:THR:N	2.28	0.65
1:2:628:U:N3	1:2:969:A:N6	2.42	0.65
1:2:990:G:OP1	12:O:129:LYS:CG	2.42	0.65
1:2:1197:G:O3'	33:d:40:ARG:NH2	2.29	0.65
8:I:143:LYS:O	8:I:147:ARG:NH1	2.28	0.65
36:i:41:MET:HA	36:i:47:VAL:HG23	1.78	0.65
2:A:163:ASN:OD1	2:A:169:SER:OG	2.11	0.65
8:I:53:GLN:OE1	8:I:53:GLN:N	2.25	0.65
9:J:105:LEU:HD23	9:J:108:ARG:HH22	1.61	0.65
10:L:102:LYS:O	15:X:13:ARG:NH2	2.28	0.65
26:Q:30:LYS:N	26:Q:65:ILE:O	2.28	0.65
42:m:26:GLU:OE2	42:m:73:ARG:NH2	2.28	0.65
1:2:79:C:OP2	6:G:159:ARG:NH2	2.23	0.65
1:2:931:U:O3'	17:a:32:LYS:NZ	2.30	0.65
6:G:72:ARG:HD2	6:G:98:ARG:HD3	1.79	0.65
35:g:134:VAL:HB	35:g:143:TYR:HB2	1.76	0.65
39:j:222:LEU:HD21	40:k:324:ASN:HB3	1.77	0.65
1:2:530:C:O2	16:Y:62:THR:OG1	2.14	0.65
3:B:5:LYS:HG3	3:B:7:LYS:H	1.61	0.65
8:I:160:GLN:HE22	8:I:190:LEU:HD21	1.61	0.65
27:R:99:VAL:HG12	27:R:120:SER:HB2	1.79	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1097:U:P	4:C:173:ARG:HH12	2.19	0.65
1:2:90:C:H2'	1:2:91:G:C8	2.32	0.65
1:2:384:A:H2'	1:2:385:G:C8	2.31	0.65
1:2:760:A:N1	1:2:789:U:C4	2.64	0.65
1:2:1140:G:H2'	1:2:1141:A:C8	2.31	0.65
1:2:1261:U:H2'	1:2:1262:G:C8	2.32	0.65
1:2:1279:C:H4'	30:U:69:LYS:HG2	1.77	0.65
2:A:200:ASP:HA	2:A:203:PHE:CD2	2.21	0.65
8:I:67:TRP:O	8:I:71:GLY:CA	2.44	0.65
14:W:30:SER:HB2	14:W:61:ILE:HG12	1.77	0.65
22:F:71:TYR:CD2	26:Q:50:GLU:HG2	2.30	0.65
35:g:210:GLN:NE2	35:g:211:PRO:O	2.29	0.65
1:2:589:C:OP1	19:e:42:ARG:NH2	2.30	0.65
1:2:1038:A:O2'	1:2:1039:G:O5'	2.15	0.65
1:2:1639:C:H2'	1:2:1640:G:C8	2.32	0.65
10:L:54:ILE:HG23	10:L:55:ASP:H	1.60	0.65
23:K:3:ILE:O	23:K:8:ARG:NH2	2.30	0.65
26:Q:30:LYS:HZ2	26:Q:35:PRO:HD3	1.61	0.65
1:2:1114:U:H5''	20:h:10:THR:HG21	1.79	0.64
1:2:1563:C:H5''	28:S:41:ARG:HG2	1.78	0.64
5:E:103:TYR:HE1	5:E:109:PHE:HE1	1.44	0.64
17:a:51:ARG:O	17:a:54:SER:OG	2.13	0.64
30:U:33:GLN:OE1	30:U:33:GLN:N	2.26	0.64
35:g:104:PHE:HB3	35:g:135:TRP:CZ3	2.32	0.64
1:2:882:C:N4	1:2:944:U:H3	1.94	0.64
1:2:1591:A:H2'	1:2:1592:G:C8	2.33	0.64
12:O:81:ILE:HD12	12:O:115:ILE:HG12	1.79	0.64
35:g:302:SER:HB3	35:g:307:THR:HB	1.78	0.64
1:2:328:G:H2'	1:2:329:G:C8	2.32	0.64
1:2:1645:U:H2'	1:2:1646:A:C8	2.33	0.64
11:N:62:GLN:HB2	11:N:65:VAL:HB	1.79	0.64
12:O:98:GLY:O	12:O:101:ALA:HB3	1.96	0.64
35:g:109:GLY:O	35:g:127:SER:OG	2.16	0.64
1:2:11:A:O5'	4:C:92:GLN:NE2	2.31	0.64
1:2:1217:G:OP2	23:K:44:LYS:NZ	2.21	0.64
3:B:103:MET:HB3	3:B:215:VAL:HB	1.79	0.64
20:h:23:ARG:HH22	42:m:132:LEU:HD23	1.62	0.64
1:2:748:U:P	14:W:80:ASN:HD21	2.20	0.64
5:E:247:THR:N	5:E:250:GLU:OE2	2.29	0.64
15:X:61:SER:OG	15:X:69:ARG:NH2	2.31	0.64
21:D:54:LYS:HG3	21:D:57:ASP:H	1.62	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:g:246:GLU:HB3	35:g:264:ALA:HB2	1.78	0.64
1:2:853:U:O4	1:2:854:A:N6	2.30	0.64
1:2:1184:U:OP1	36:i:23:LYS:NZ	2.30	0.64
38:1:54:A:H61	38:1:58:1MA:H2'	1.63	0.64
40:k:236:ILE:HG23	40:k:241:LEU:HB2	1.77	0.64
1:2:118:U:OP1	8:I:52:ASN:ND2	2.30	0.64
1:2:1125:G:H2'	1:2:1126:G:H8	1.62	0.64
1:2:1275:U:OP1	21:D:147:ALA:N	2.30	0.64
1:2:1577:U:H2'	1:2:1578:C:C6	2.33	0.64
1:2:1683:G:H2'	1:2:1684:C:C6	2.33	0.64
2:A:205:ARG:NH2	2:A:213:GLN:OE1	2.31	0.64
35:g:39:ARG:HE	35:g:68:ILE:HD11	1.63	0.64
40:k:129:LYS:O	40:k:131:GLU:N	2.30	0.64
1:2:1379:U:H3'	1:2:1380:A:H8	1.63	0.64
1:2:1519:G:O6	29:T:68:ARG:NH1	2.31	0.64
9:J:29:LYS:HD3	19:e:44:PHE:CD2	2.33	0.64
15:X:111:GLY:O	15:X:121:ARG:NH1	2.30	0.64
25:P:118:GLU:OE1	25:P:118:GLU:N	2.31	0.64
1:2:747:C:O3'	14:W:80:ASN:ND2	2.28	0.64
1:2:1474:C:H2'	1:2:1475:G:C8	2.32	0.64
4:C:178:PRO:HD2	4:C:202:TYR:HE1	1.62	0.64
5:E:87:MET:HE1	5:E:123:LEU:HB2	1.79	0.64
6:G:2:LYS:HB2	6:G:108:VAL:HG22	1.79	0.64
6:G:20:ASP:OD2	6:G:22:HIS:ND1	2.31	0.64
7:H:13:PRO:HB2	7:H:14:THR:HG23	1.80	0.64
8:I:90:LEU:HG	8:I:95:THR:HB	1.79	0.64
9:J:49:LEU:HD13	9:J:99:LEU:HD22	1.80	0.64
24:M:50:GLY:HA3	24:M:76:ASN:HB3	1.80	0.64
1:2:917:U:H2'	1:2:918:A:H8	1.61	0.64
1:2:923:A:H2'	1:2:924:G:C8	2.34	0.64
4:C:173:ARG:HB2	4:C:204:SER:HB3	1.80	0.64
10:L:80:MET:HE2	10:L:85:VAL:HG23	1.80	0.64
26:Q:114:ARG:HD2	26:Q:118:ILE:HD13	1.80	0.64
1:2:69:G:OP2	16:Y:123:LYS:NZ	2.31	0.63
1:2:710:U:H2'	1:2:711:G:C5	2.33	0.63
28:S:61:LEU:HD13	28:S:65:GLU:HB3	1.79	0.63
1:2:19:A:H2'	1:2:20:G:C8	2.33	0.63
1:2:488:C:N3	1:2:489:C:N4	2.46	0.63
1:2:1500:G:O6	29:T:102:ARG:NH2	2.30	0.63
5:E:163:ASP:OD2	5:E:166:THR:OG1	2.16	0.63
6:G:175:ILE:HB	6:G:178:LEU:HD12	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:Q:109:PHE:HD2	26:Q:117:LEU:HD11	1.61	0.63
1:2:68:A:OP1	6:G:160:ARG:NH2	2.28	0.63
1:2:446:U:H5''	5:E:49:ARG:HH12	1.63	0.63
1:2:635:A:H5''	14:W:31:SER:HB2	1.80	0.63
4:C:42:PRO:HG2	4:C:48:ARG:HA	1.79	0.63
8:I:37:LYS:H	8:I:59:ARG:H	1.45	0.63
11:N:110:ASP:HB2	11:N:114:ARG:HH12	1.64	0.63
40:k:416:VAL:HG21	40:k:492:CYS:HB2	1.80	0.63
1:2:5:U:H2'	1:2:6:G:C8	2.34	0.63
1:2:250:A:O2'	5:E:131:LEU:O	2.16	0.63
1:2:1712:A:H2'	1:2:1713:G:H8	1.61	0.63
1:2:610:U:OP2	15:X:19:ARG:NH2	2.32	0.63
1:2:725:U:H3'	1:2:726:G:H8	1.64	0.63
1:2:931:U:OP2	3:B:117:TRP:N	2.20	0.63
1:2:1398:A:H2'	1:2:1399:A:C8	2.34	0.63
4:C:110:GLY:HA3	4:C:195:LEU:HB3	1.81	0.63
25:P:85:ILE:HB	25:P:112:VAL:HA	1.79	0.63
1:2:954:A:OP2	11:N:3:ARG:NH2	2.32	0.63
1:2:1006:5MC:O3'	12:O:135:ARG:NH2	2.27	0.63
1:2:1146:A:O2'	1:2:1634:C:OP2	2.16	0.63
36:i:61:ILE:HG23	36:i:65:LEU:HD23	1.81	0.63
1:2:50:C:OP2	1:2:422:G:N2	2.31	0.63
1:2:1070:U:H2'	1:2:1071:C:C6	2.33	0.63
17:a:42:ARG:NH2	37:3:22:U:O2	2.32	0.63
21:D:24:PHE:HE1	23:K:65:TYR:CE2	2.17	0.63
30:U:63:LEU:HD11	33:d:33:LYS:NZ	2.14	0.63
1:2:140:A:H62	6:G:184:LEU:HD23	1.64	0.63
1:2:1218:A:H62	1:2:1263:G:H21	1.47	0.63
6:G:122:GLU:O	6:G:126:ASN:ND2	2.31	0.63
27:R:32:LYS:HE3	27:R:47:ARG:HH12	1.63	0.63
1:2:299:A:H2'	1:2:300:A:H8	1.61	0.63
1:2:384:A:H5''	8:I:22:ARG:CZ	2.28	0.63
1:2:866:G:O6	1:2:961:C:N4	2.32	0.63
6:G:51:LYS:HB3	6:G:112:ILE:HG13	1.80	0.63
7:H:96:ARG:HE	7:H:116:ARG:NH1	1.96	0.63
12:O:26:THR:O	12:O:43:THR:OG1	2.17	0.63
29:T:84:LYS:HE3	29:T:94:VAL:HG12	1.80	0.63
29:T:84:LYS:NZ	29:T:93:HIS:HA	2.14	0.63
1:2:901:G:H22	1:2:905:A:H5''	1.63	0.62
7:H:58:LEU:HB3	7:H:90:VAL:HA	1.81	0.62
7:H:125:ILE:HG23	7:H:173:TYR:HE2	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:186:G:H21	1:2:187:A:H62	1.48	0.62
1:2:397:G:OP2	8:I:47:ARG:NH2	2.31	0.62
1:2:477:A:P	19:e:33:ARG:HH12	2.21	0.62
1:2:778:G:H5'	1:2:780:A:N1	2.14	0.62
1:2:996:G:H1	1:2:1006:5MC:N4	1.97	0.62
1:2:1169:G:N2	1:2:1569:C:O3'	2.33	0.62
10:L:27:ALA:HB1	10:L:29:ARG:HG3	1.81	0.62
14:W:31:SER:H	14:W:34:ILE:HD12	1.62	0.62
40:k:359:ILE:HB	40:k:371:LYS:HB2	1.80	0.62
1:2:678:G:H2'	1:2:679:U:H4'	1.81	0.62
1:2:1559:U:H4'	1:2:1597:C:H4'	1.82	0.62
1:2:1667:U:H3'	1:2:1668:G:H8	1.64	0.62
7:H:46:ILE:HG23	7:H:60:VAL:HA	1.81	0.62
1:2:339:U:H2'	1:2:340:A:H8	1.65	0.62
1:2:385:G:H2'	1:2:386:A:C8	2.35	0.62
1:2:628:U:H3	1:2:969:A:H62	1.44	0.62
1:2:1554:A:OP1	25:P:44:LYS:NZ	2.25	0.62
5:E:75:LYS:HG3	5:E:77:ARG:HH21	1.64	0.62
6:G:69:LEU:O	6:G:98:ARG:NH1	2.30	0.62
22:F:102:ASN:OD1	22:F:104:ARG:N	2.32	0.62
24:M:99:ARG:HH21	24:M:103:ALA:H	1.47	0.62
27:R:44:LYS:O	27:R:47:ARG:HG2	1.98	0.62
1:2:55:A:H3'	1:2:402:G:H22	1.65	0.62
1:2:339:U:H2'	1:2:340:A:C8	2.35	0.62
1:2:513:G:H5'	9:J:132:ARG:HH22	1.65	0.62
1:2:1163:G:O2'	1:2:1610:U:O2	2.18	0.62
2:A:65:ALA:HB1	2:A:184:LEU:HD22	1.80	0.62
10:L:57:LYS:HD3	10:L:131:ILE:HG23	1.82	0.62
38:1:23:C:H2'	38:1:24:G:C8	2.34	0.62
1:2:292:U:H2'	1:2:293:C:C6	2.33	0.62
1:2:1451:G:H2'	1:2:1452:G:H8	1.63	0.62
2:A:125:ASP:HB3	2:A:128:SER:HB3	1.82	0.62
8:I:37:LYS:NZ	8:I:93:THR:O	2.29	0.62
9:J:106:GLU:HA	9:J:111:THR:HG21	1.82	0.62
10:L:91:LEU:HB3	10:L:100:TYR:HB3	1.81	0.62
15:X:67:ALA:HB3	15:X:69:ARG:HH21	1.63	0.62
35:g:117:ASP:HB2	35:g:122:LYS:H	1.62	0.62
39:j:7:ARG:HH21	39:j:11:ASN:HA	1.64	0.62
1:2:65:A:N7	1:2:83:G:N1	2.48	0.62
1:2:306:G:OP2	10:L:105:LYS:NZ	2.32	0.62
3:B:3:VAL:HG22	3:B:4:GLY:H	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:52:VAL:HB	3:B:55:LYS:HD3	1.81	0.62
9:J:29:LYS:O	9:J:32:GLY:N	2.32	0.62
12:O:30:VAL:HG13	12:O:39:ILE:HB	1.81	0.62
1:2:477:A:O2'	9:J:124:HIS:ND1	2.16	0.62
1:2:985:G:H3'	1:2:986:G:H8	1.65	0.62
1:2:1180:U:O2	1:2:1456:G:C2	2.53	0.62
3:B:92:GLN:OE1	3:B:95:ASN:ND2	2.33	0.62
5:E:15:PRO:HG3	5:E:39:ARG:HH21	1.63	0.62
7:H:58:LEU:N	7:H:89:HIS:O	2.33	0.62
9:J:151:GLU:O	9:J:154:LYS:NZ	2.32	0.62
1:2:66:U:OP2	6:G:136:LYS:NZ	2.32	0.62
1:2:878:G:H2'	1:2:879:C:C6	2.35	0.62
5:E:22:LYS:HG3	5:E:23:LEU:HD22	1.81	0.62
25:P:45:PHE:HE1	25:P:49:LEU:HD11	1.64	0.62
39:j:70:VAL:HG21	39:j:90:VAL:HG11	1.82	0.62
40:k:314:ARG:NH2	40:k:315:LEU:O	2.33	0.62
40:k:402:VAL:HG13	40:k:406:LEU:HD13	1.81	0.62
1:2:124:A:O2'	5:E:148:ARG:NH2	2.33	0.62
1:2:251:U:H2'	1:2:252:A:H8	1.63	0.62
1:2:870:G:H2'	1:2:871:G:H8	1.63	0.62
1:2:959:U:O4'	11:N:55:ARG:NH1	2.32	0.62
4:C:106:VAL:HG22	4:C:120:ILE:HG22	1.82	0.62
9:J:108:ARG:HG3	9:J:145:SER:HA	1.80	0.62
1:2:207:U:H2'	1:2:208:U:C6	2.35	0.61
1:2:1556:U:OP1	28:S:122:HIS:ND1	2.33	0.61
5:E:212:ASP:OD1	5:E:216:ASN:N	2.26	0.61
40:k:221:ASN:H	40:k:254:MET:HE1	1.65	0.61
1:2:158:U:C2	16:Y:117:LYS:HA	2.35	0.61
1:2:1217:G:N2	1:2:1441:U:O3'	2.33	0.61
12:O:83:ILE:HD11	17:a:44:ILE:HD11	1.81	0.61
21:D:176:LEU:HG	21:D:181:VAL:HG22	1.82	0.61
26:Q:13:LYS:NZ	26:Q:120:ASP:OD2	2.33	0.61
1:2:484:A:H2'	1:2:485:G:H8	1.63	0.61
1:2:1101:G:OP1	14:W:76:SER:OG	2.12	0.61
1:2:1652:G:H22	1:2:1743:G:H2'	1.65	0.61
1:2:1765:G:H4'	1:2:1766:G:O5'	1.99	0.61
1:2:1798:A:H2'	17:a:100:ARG:HA	1.81	0.61
5:E:63:ALA:O	5:E:67:GLN:NE2	2.33	0.61
9:J:99:LEU:HD11	9:J:104:PHE:CE2	2.34	0.61
12:O:99:GLN:NE2	17:a:44:ILE:O	2.32	0.61
35:g:85:SER:OG	35:g:87:ASP:OD1	2.17	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:m:118:VAL:HG11	42:m:127:ARG:HB3	1.83	0.61
1:2:628:U:OP1	11:N:127:ARG:NH2	2.30	0.61
1:2:924:G:H2'	1:2:925:A:C8	2.35	0.61
1:2:1032:C:H2'	1:2:1033:C:H6	1.65	0.61
1:2:1407:G:N2	1:2:1409:A:H3'	2.15	0.61
2:A:206:ASN:OD1	2:A:207:PRO:HD2	1.99	0.61
4:C:103:PHE:O	4:C:122:THR:HA	2.01	0.61
6:G:12:THR:HG21	6:G:124:ILE:HA	1.83	0.61
42:m:33:LYS:HG3	42:m:75:LEU:HD22	1.82	0.61
1:2:360:C:H2'	1:2:361:G:C8	2.35	0.61
1:2:384:A:OP1	8:I:25:ARG:NH2	2.33	0.61
1:2:479:G:O6	1:2:507:U:O2	2.17	0.61
1:2:522:G:N2	1:2:527:U:OP2	2.32	0.61
1:2:566:A:OP1	15:X:70:LYS:NZ	2.31	0.61
1:2:1190:B8N:N34	38:1:34:C:OP1	2.32	0.61
1:2:1216:A:H4'	23:K:44:LYS:NZ	2.16	0.61
5:E:36:HIS:CG	5:E:85:GLY:HA3	2.35	0.61
1:2:97:C:H2'	1:2:98:U:C6	2.36	0.61
1:2:862:A:H62	1:2:963:U:H3	1.46	0.61
1:2:1391:C:H2'	1:2:1392:G:C8	2.35	0.61
2:A:13:ASP:HA	2:A:16:LEU:HD12	1.83	0.61
2:A:23:HIS:HA	2:A:48:ILE:HB	1.82	0.61
2:A:171:GLY:HA2	2:A:174:TRP:HD1	1.65	0.61
4:C:148:TYR:O	14:W:98:GLN:NE2	2.34	0.61
4:C:162:LYS:HB3	4:C:175:ILE:HA	1.83	0.61
12:O:18:ARG:HA	12:O:82:LYS:HB2	1.82	0.61
13:V:25:LYS:HB2	13:V:28:ASP:HB3	1.80	0.61
22:F:227:ARG:NH1	32:c:58:GLU:OE2	2.34	0.61
30:U:60:THR:OG1	30:U:87:HIS:ND1	2.28	0.61
1:2:342:C:H2'	1:2:343:A:H8	1.64	0.61
1:2:1266:G:H1	1:2:1440:U:H3	1.49	0.61
1:2:1607:U:O2	22:F:107:GLY:HA2	2.00	0.61
1:2:1786:G:OP2	12:O:132:ARG:NH1	2.33	0.61
5:E:241:GLY:H	5:E:242:LYS:HZ3	1.49	0.61
18:b:23:THR:OG1	18:b:25:VAL:O	2.16	0.61
1:2:1219:C:OP1	23:K:52:LYS:NZ	2.34	0.61
1:2:1379:U:H3'	1:2:1380:A:C8	2.35	0.61
1:2:1551:G:N2	1:2:1554:A:OP2	2.33	0.61
3:B:100:PHE:HZ	3:B:103:MET:HB2	1.65	0.61
9:J:170:GLY:H	9:J:174:ARG:HD3	1.65	0.61
10:L:92:HIS:H	10:L:101:GLU:H	1.48	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:Z:90:LYS:HE2	31:Z:104:ALA:HA	1.83	0.61
38:1:3:C:H2'	38:1:4:G:H8	1.66	0.61
1:2:525:A:OP1	16:Y:93:ARG:NE	2.34	0.61
1:2:1114:U:OP2	20:h:14:LYS:NZ	2.28	0.61
1:2:1234:C:N3	34:f:136:ARG:NH2	2.49	0.61
1:2:1737:C:H2'	1:2:1738:A:H8	1.66	0.61
8:I:166:LEU:HD12	8:I:184:ILE:HD11	1.82	0.61
10:L:59:PRO:HD3	10:L:138:ASN:HD21	1.66	0.61
24:M:33:GLY:HA2	24:M:115:LYS:HB2	1.83	0.61
25:P:78:THR:HG22	25:P:80:LEU:H	1.64	0.61
39:j:226:PRO:HG3	40:k:408:ARG:HD3	1.82	0.61
1:2:1345:A:OP2	1:2:1347:A:N6	2.24	0.61
5:E:145:ARG:HG2	5:E:147:ILE:HD11	1.83	0.61
6:G:207:GLU:OE2	6:G:210:GLN:NE2	2.34	0.61
14:W:41:MET:HE3	14:W:46:TYR:HB3	1.81	0.61
27:R:36:ASP:OD1	27:R:47:ARG:HD2	2.01	0.61
28:S:91:ASP:O	28:S:93:ASN:N	2.31	0.61
42:m:98:LEU:HD23	42:m:103:LYS:HB3	1.83	0.61
1:2:1278:C:OP2	21:D:185:LYS:NZ	2.34	0.60
1:2:1749:C:H2'	1:2:1750:U:C6	2.36	0.60
7:H:99:LEU:HD13	7:H:116:ARG:HD2	1.83	0.60
13:V:17:CYS:HB3	13:V:22:ARG:H	1.66	0.60
26:Q:87:LYS:HA	26:Q:90:VAL:HG12	1.83	0.60
34:f:119:LYS:HE3	34:f:137:PHE:HD2	1.65	0.60
42:m:24:LYS:O	42:m:34:THR:HA	2.00	0.60
1:2:1653:A:OP2	1:2:1743:G:N2	2.34	0.60
2:A:42:PRO:O	27:R:128:ARG:NH2	2.30	0.60
4:C:95:THR:OG1	4:C:96:ARG:NH1	2.33	0.60
5:E:208:VAL:HG13	5:E:210:ILE:HD11	1.83	0.60
7:H:38:LEU:HD11	7:H:77:LEU:HD21	1.81	0.60
25:P:98:ASN:HD21	25:P:121:ILE:C	2.08	0.60
28:S:62:THR:OG1	28:S:64:GLU:OE1	2.15	0.60
40:k:205:LEU:HB3	40:k:239:MET:HE1	1.82	0.60
1:2:161:A:H3'	1:2:162:G:H21	1.65	0.60
1:2:340:A:H2'	1:2:341:C:C6	2.37	0.60
1:2:567:G:OP2	15:X:70:LYS:NZ	2.33	0.60
1:2:609:G:O2'	1:2:612:G:O3'	2.19	0.60
1:2:788:A:C2	1:2:789:U:H1'	2.37	0.60
5:E:65:LEU:HD13	5:E:70:VAL:HG21	1.83	0.60
9:J:59:LEU:O	9:J:69:ARG:NH1	2.34	0.60
10:L:92:HIS:HB3	10:L:101:GLU:HB3	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:N:118:ILE:O	11:N:122:ILE:HD12	2.01	0.60
21:D:126:VAL:O	21:D:129:SER:OG	2.13	0.60
27:R:78:ARG:HH21	27:R:81:LYS:HE3	1.64	0.60
1:2:803:A:C5	14:W:107:SER:HA	2.36	0.60
7:H:118:LEU:HG	7:H:122:HIS:CE1	2.37	0.60
22:F:217:ASP:OD2	22:F:221:ARG:NH2	2.35	0.60
22:F:227:ARG:CB	32:c:61:ARG:HH22	2.11	0.60
28:S:41:ARG:NH1	29:T:38:LYS:HD2	2.17	0.60
1:2:1106:G:H2'	1:2:1107:G:N3	2.15	0.60
1:2:1314:U:OP1	1:2:1327:G:N2	2.33	0.60
1:2:1741:U:H2'	1:2:1742:A:C8	2.37	0.60
4:C:63:LEU:O	13:V:12:TYR:OH	2.20	0.60
17:a:12:LYS:HG3	17:a:15:ARG:HB2	1.83	0.60
29:T:84:LYS:HE2	29:T:92:LYS:O	2.02	0.60
38:1:23:C:H2'	38:1:24:G:H8	1.66	0.60
1:2:92:A:OP1	1:2:397:G:N2	2.31	0.60
1:2:295:U:H2'	1:2:296:U:C6	2.37	0.60
1:2:1034:G:OP1	11:N:1:MET:HG2	2.02	0.60
22:F:36:GLN:HE22	26:Q:57:LEU:HD21	1.66	0.60
35:g:229:VAL:O	35:g:238:PHE:N	2.32	0.60
1:2:1427:G:H2'	1:2:1428:U:C6	2.37	0.60
1:2:1784:G:OP2	12:O:136:ARG:NH1	2.31	0.60
9:J:107:ARG:O	9:J:112:GLN:NE2	2.34	0.60
9:J:168:ARG:HG2	9:J:174:ARG:HD2	1.84	0.60
12:O:17:ALA:HB3	12:O:81:ILE:HA	1.82	0.60
27:R:33:ARG:O	27:R:37:GLU:HG2	2.01	0.60
32:c:11:LYS:HE2	32:c:51:GLY:HA2	1.82	0.60
35:g:135:TRP:CD1	35:g:141:CYS:HA	2.37	0.60
1:2:162:G:H2'	1:2:163:A:H8	1.67	0.60
1:2:210:U:H5''	10:L:20:PHE:HB2	1.83	0.60
1:2:653:C:N4	1:2:676:U:O4	2.35	0.60
1:2:1477:A:OP1	29:T:57:ARG:NE	2.32	0.60
4:C:57:SER:HA	4:C:77:LEU:HD12	1.84	0.60
4:C:74:ILE:HD12	4:C:141:VAL:HG11	1.84	0.60
27:R:91:LEU:O	27:R:93:LEU:N	2.35	0.60
35:g:24:LEU:HD23	35:g:36:SER:HB2	1.84	0.60
35:g:201:GLY:HA3	35:g:230:TRP:HZ2	1.66	0.60
39:j:24:VAL:HA	39:j:34:VAL:HG11	1.84	0.60
1:2:1315:G:OP1	27:R:6:THR:OG1	2.13	0.60
1:2:1586:G:H1	1:2:1606:U:H3	1.47	0.60
1:2:1752:A:H2'	36:i:44:ASN:HB3	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:C:64:HIS:HA	13:V:15:ARG:HH22	1.65	0.60
18:b:18:LYS:O	18:b:29:ARG:NH2	2.35	0.60
29:T:25:GLN:HE21	29:T:27:LYS:HG2	1.67	0.60
34:f:124:CYS:HB2	34:f:128:ILE:HG21	1.84	0.60
34:f:136:ARG:HA	34:f:150:LYS:H	1.66	0.60
35:g:154:LYS:HE3	35:g:209:VAL:H	1.67	0.60
38:1:27:C:H2'	38:1:28:A:C8	2.37	0.60
1:2:78:A:OP1	6:G:154:ARG:NH2	2.35	0.60
1:2:1274:A:N3	21:D:141:LYS:NZ	2.47	0.60
1:2:1598:A:H2'	1:2:1599:G:H5''	1.83	0.60
3:B:36:SER:HA	3:B:41:ARG:HE	1.67	0.60
21:D:47:GLU:HG3	21:D:85:ALA:HB3	1.84	0.60
35:g:117:ASP:OD1	35:g:118:ALA:N	2.33	0.60
35:g:174:PHE:CZ	35:g:186:TRP:HB2	2.37	0.60
1:2:548:G:H2'	1:2:549:A:H8	1.66	0.59
1:2:768:C:H1'	9:J:143:ILE:HG21	1.84	0.59
1:2:998:PSU:O2'	1:2:999:C:O4'	2.20	0.59
1:2:1466:U:H1'	29:T:88:VAL:HG13	1.84	0.59
1:2:1486:G:H3'	1:2:1513:A:H61	1.67	0.59
22:F:151:VAL:HG11	32:c:66:LEU:HD22	1.83	0.59
24:M:102:ASN:O	24:M:104:ARG:NE	2.27	0.59
25:P:98:ASN:ND2	25:P:121:ILE:O	2.35	0.59
38:1:52:G:H2'	38:1:53:G:H8	1.67	0.59
1:2:926:C:H2'	1:2:927:U:C6	2.38	0.59
1:2:1140:G:H2'	1:2:1141:A:H8	1.67	0.59
1:2:1150:A:H2'	1:2:1151:A:H8	1.66	0.59
1:2:1170:A:H2'	1:2:1171:G:H8	1.67	0.59
1:2:1380:A:O3'	30:U:89:ARG:NH2	2.34	0.59
1:2:1407:G:H21	1:2:1409:A:H8	1.49	0.59
15:X:103:LEU:HD22	15:X:126:LYS:HD3	1.84	0.59
1:2:332:A:H62	8:I:27:PHE:HB2	1.66	0.59
1:2:426:C:H1'	1:2:458:G:H1'	1.84	0.59
7:H:8:ILE:HG13	7:H:9:LEU:HD12	1.82	0.59
7:H:156:SER:HA	7:H:185:ILE:HD11	1.83	0.59
8:I:83:TYR:HB2	8:I:197:LEU:HD21	1.84	0.59
11:N:16:ILE:HD12	11:N:17:PRO:HD2	1.85	0.59
18:b:36:LYS:O	18:b:77:THR:OG1	2.15	0.59
28:S:16:ARG:NH1	28:S:21:ASN:OD1	2.34	0.59
29:T:37:VAL:HG11	29:T:100:ILE:HD11	1.84	0.59
1:2:96:G:H2'	1:2:97:C:H6	1.67	0.59
5:E:103:TYR:O	5:E:182:TYR:OH	2.21	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:Q:96:PHE:O	35:g:60:ARG:NH2	2.35	0.59
42:m:48:ARG:NH2	42:m:96:PHE:O	2.35	0.59
1:2:31:C:O2'	15:X:139:LYS:NZ	2.32	0.59
1:2:803:A:H1'	14:W:109:GLY:HA2	1.83	0.59
1:2:1159:A:H2'	1:2:1160:C:C6	2.38	0.59
1:2:1455:C:H4'	28:S:139:LYS:HZ2	1.66	0.59
1:2:1537:G:O6	28:S:27:ASN:ND2	2.35	0.59
1:2:1787:G:OP2	12:O:132:ARG:NH2	2.31	0.59
23:K:32:HIS:CD2	23:K:35:ILE:HD12	2.37	0.59
24:M:126:ILE:C	24:M:130:HIS:HD1	2.11	0.59
35:g:88:LYS:HA	35:g:110:ASP:HA	1.85	0.59
1:2:71:A:H3'	1:2:72:A:H5''	1.84	0.59
1:2:257:C:O2	8:I:179:ARG:NH1	2.33	0.59
1:2:801:G:H2'	1:2:802:A:C4	2.38	0.59
1:2:1000:A:OP1	38:1:38:A:O2'	2.19	0.59
1:2:1174:U:H5	1:2:1462:G:H1	1.51	0.59
1:2:1509:G:H2'	1:2:1510:G:C8	2.36	0.59
2:A:148:ASP:OD1	2:A:149:LEU:N	2.35	0.59
2:A:198:MET:HG3	2:A:200:ASP:N	2.14	0.59
4:C:116:VAL:HG22	4:C:144:ILE:HD11	1.84	0.59
11:N:88:LEU:O	11:N:92:ILE:HG12	2.02	0.59
16:Y:118:ILE:HD11	16:Y:125:ILE:HG21	1.83	0.59
25:P:68:PRO:O	25:P:69:GLU:HG3	2.03	0.59
31:Z:54:ALA:HB1	31:Z:89:ILE:HD11	1.85	0.59
31:Z:71:LEU:HD13	31:Z:76:ALA:HA	1.85	0.59
35:g:32:ASN:HA	35:g:48:LEU:HB2	1.82	0.59
1:2:58:U:OP1	1:2:455:A:O2'	2.21	0.59
1:2:433:G:N2	1:2:436:A:OP2	2.31	0.59
1:2:1607:U:O2	22:F:107:GLY:CA	2.51	0.59
9:J:28:LEU:O	19:e:36:LYS:NZ	2.36	0.59
35:g:154:LYS:HE2	35:g:208:VAL:HG23	1.85	0.59
36:i:79:VAL:HG22	36:i:91:VAL:HG22	1.83	0.59
1:2:266:U:OP1	6:G:183:ARG:NE	2.34	0.59
1:2:398:A:P	8:I:49:ARG:HH22	2.25	0.59
1:2:925:A:H2'	1:2:926:C:C6	2.38	0.59
1:2:1236:G:H3'	1:2:1237:A:H8	1.67	0.59
3:B:174:ARG:NH2	3:B:196:GLU:OE1	2.35	0.59
9:J:31:ALA:HA	9:J:36:LEU:HD12	1.82	0.59
11:N:92:ILE:HD12	11:N:141:TYR:CZ	2.38	0.59
22:F:146:GLU:OE2	22:F:227:ARG:NE	2.36	0.59
23:K:19:GLY:HA2	23:K:68:LEU:HD12	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:494:C:H3'	1:2:495:G:C8	2.37	0.59
1:2:511:A:H5''	9:J:163:PRO:CG	2.33	0.59
1:2:590:A:H2'	1:2:591:G:O4'	2.03	0.59
1:2:1040:G:H2'	1:2:1041:G:C8	2.38	0.59
1:2:1601:U:OP1	26:Q:132:ARG:NH2	2.31	0.59
10:L:55:ASP:HA	10:L:82:ARG:HH22	1.68	0.59
16:Y:63:GLN:NE2	16:Y:64:TYR:O	2.35	0.59
19:e:20:LYS:NZ	19:e:21:VAL:O	2.23	0.59
24:M:54:VAL:HB	24:M:112:VAL:HB	1.84	0.59
38:1:29:G:H2'	38:1:30:G:C8	2.37	0.59
1:2:774:A:N6	1:2:785:C:O2	2.34	0.59
2:A:20:ALA:HB1	2:A:169:SER:HA	1.85	0.59
28:S:56:LYS:HZ1	28:S:61:LEU:CB	2.15	0.59
42:m:40:ALA:O	42:m:44:HIS:ND1	2.35	0.59
1:2:371:G:C5	1:2:372:G:H1'	2.38	0.58
1:2:862:A:H4'	14:W:57:ARG:HD3	1.84	0.58
1:2:1267:G:H2'	1:2:1269:G:H8	1.68	0.58
3:B:63:GLY:N	3:B:88:VAL:O	2.33	0.58
4:C:49:LEU:HD11	4:C:248:TYR:HB3	1.84	0.58
5:E:179:LYS:HA	5:E:231:PRO:HD3	1.85	0.58
10:L:33:ARG:NH2	10:L:53:TYR:O	2.36	0.58
16:Y:10:ARG:HB2	16:Y:24:VAL:HG13	1.85	0.58
21:D:25:PHE:HE2	21:D:50:ILE:HG12	1.67	0.58
30:U:68:ARG:HG2	30:U:70:THR:O	2.03	0.58
35:g:181:LYS:NZ	35:g:204:ASN:OD1	2.36	0.58
39:j:124:GLU:OE2	39:j:124:GLU:N	2.29	0.58
1:2:559:U:H2'	1:2:560:G:H8	1.68	0.58
1:2:589:C:H2'	1:2:590:A:C8	2.38	0.58
1:2:874:G:N2	1:2:936:C:O2'	2.30	0.58
3:B:164:ILE:O	3:B:168:ILE:HG12	2.03	0.58
23:K:29:GLN:NE2	23:K:39:ASN:OD1	2.36	0.58
28:S:17:LEU:O	28:S:20:THR:OG1	2.16	0.58
35:g:124:ILE:HG22	35:g:134:VAL:HG22	1.85	0.58
36:i:78:LEU:HD23	36:i:93:HIS:HB3	1.85	0.58
1:2:317:U:O3'	8:I:11:ARG:NH1	2.36	0.58
1:2:904:A:H4'	12:O:52:ARG:HH12	1.68	0.58
1:2:1291:G:H21	2:A:111:ILE:HD11	1.67	0.58
3:B:23:PRO:HA	3:B:26:ARG:CZ	2.33	0.58
9:J:123:HIS:HB2	19:e:37:ARG:HH22	1.68	0.58
12:O:22:SER:H	12:O:26:THR:HG22	1.68	0.58
12:O:53:ASP:HB3	12:O:56:SER:HB3	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:d:22:ARG:HE	33:d:37:ASN:HB2	1.68	0.58
35:g:157:VAL:HG12	35:g:174:PHE:HB3	1.84	0.58
35:g:296:ALA:HB2	35:g:312:TYR:CZ	2.39	0.58
36:i:98:ASP:OD1	36:i:99:GLU:N	2.36	0.58
1:2:970:A:C2	1:2:971:G:H1'	2.38	0.58
1:2:1788:A:H2'	1:2:1789:A:C8	2.38	0.58
2:A:13:ASP:OD2	2:A:179:ARG:NH2	2.35	0.58
6:G:76:LEU:HD11	6:G:92:ARG:HB2	1.85	0.58
12:O:49:LYS:O	39:j:88:ARG:NH1	2.36	0.58
21:D:113:LEU:HD23	21:D:118:ALA:HB2	1.85	0.58
35:g:314:ASP:OD2	35:g:318:ARG:NH1	2.36	0.58
1:2:234:G:H2'	1:2:235:A:C8	2.37	0.58
1:2:326:U:H2'	1:2:327:A:C8	2.38	0.58
1:2:430:C:H2'	1:2:431:G:H8	1.67	0.58
1:2:544:A:O4'	1:2:593:A:N6	2.36	0.58
1:2:1071:C:H2'	1:2:1072:G:C8	2.38	0.58
1:2:1431:G:O2'	1:2:1432:U:O4'	2.09	0.58
1:2:1742:A:H3'	1:2:1743:G:H8	1.68	0.58
1:2:1770:C:O5'	20:h:2:ARG:NH1	2.36	0.58
11:N:15:ALA:HB1	18:b:26:GLN:HB2	1.84	0.58
12:O:32:ASP:OD1	12:O:33:LEU:N	2.35	0.58
12:O:85:ALA:N	12:O:119:THR:OG1	2.35	0.58
17:a:51:ARG:HH22	32:c:37:THR:HB	1.69	0.58
18:b:35:VAL:HG21	18:b:63:LEU:HD21	1.84	0.58
30:U:51:VAL:HG13	30:U:94:GLU:HB2	1.85	0.58
30:U:63:LEU:O	30:U:83:GLU:HA	2.03	0.58
1:2:185:C:OP2	8:I:143:LYS:NZ	2.34	0.58
1:2:1019:A:OP1	11:N:106:ARG:NH2	2.37	0.58
3:B:40:ASN:HB2	3:B:73:LEU:HA	1.84	0.58
12:O:114:ARG:NH2	17:a:62:TYR:OH	2.36	0.58
14:W:11:LEU:HA	14:W:14:ILE:HD12	1.85	0.58
16:Y:60:PHE:CD1	16:Y:71:GLY:HA3	2.39	0.58
21:D:168:ILE:HA	21:D:188:ILE:O	2.02	0.58
25:P:68:PRO:HD2	25:P:71:GLU:HB3	1.85	0.58
29:T:86:ARG:CZ	29:T:89:ARG:HG2	2.34	0.58
35:g:17:HIS:HD2	35:g:317:ILE:HD11	1.67	0.58
1:2:72:A:H2'	6:G:164:LYS:HE2	1.85	0.58
1:2:357:U:H2'	1:2:359:A:C8	2.38	0.58
2:A:155:TYR:O	13:V:60:ARG:NH2	2.37	0.58
2:A:206:ASN:O	2:A:209:GLU:HG3	2.04	0.58
3:B:30:TYR:HD1	3:B:94:LYS:HA	1.67	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:138:PHE:HB2	3:B:213:ARG:HG3	1.86	0.58
4:C:145:ARG:HB2	4:C:227:TYR:CD1	2.39	0.58
5:E:75:LYS:HB2	5:E:77:ARG:HE	1.68	0.58
9:J:62:ARG:NH1	9:J:63:ASP:H	2.02	0.58
10:L:102:LYS:N	15:X:13:ARG:HH12	2.01	0.58
13:V:74:GLN:OE1	13:V:82:VAL:N	2.36	0.58
21:D:35:SER:HB2	21:D:51:ARG:HG3	1.86	0.58
22:F:136:VAL:HA	22:F:139:ILE:HD12	1.86	0.58
39:j:225:ALA:HB1	40:k:404:PRO:HB2	1.85	0.58
42:m:49:PRO:HB2	42:m:51:PRO:HD2	1.84	0.58
1:2:810:A:H2	1:2:813:A:H62	1.51	0.58
1:2:1560:G:OP1	29:T:86:ARG:NH2	2.36	0.58
1:2:1627:G:OP1	17:a:4:LYS:NZ	2.37	0.58
8:I:97:THR:HA	8:I:174:PRO:HG3	1.85	0.58
9:J:110:GLN:HE22	9:J:126:ARG:NH2	2.01	0.58
26:Q:41:PRO:HG2	26:Q:44:LEU:HB2	1.85	0.58
1:2:60:U:N3	1:2:63:G:OP1	2.35	0.58
1:2:810:A:N7	7:H:110:GLN:NE2	2.52	0.58
1:2:958:U:H6	11:N:61:THR:HB	1.67	0.58
1:2:1186:U:O4	1:2:1199:G:N2	2.36	0.58
1:2:1437:C:H2'	1:2:1438:C:C6	2.38	0.58
7:H:152:ILE:HD13	7:H:181:ILE:HG23	1.86	0.58
9:J:142:ASN:ND2	16:Y:64:TYR:OH	2.37	0.58
24:M:34:LEU:HG	24:M:36:ARG:HD2	1.85	0.58
31:Z:91:PRO:HA	31:Z:101:TYR:CD1	2.39	0.58
35:g:62:TYR:HB3	35:g:93:TRP:CZ3	2.39	0.58
39:j:15:GLU:N	39:j:18:ASP:OD2	2.36	0.58
1:2:566:A:O4'	19:e:13:LYS:NZ	2.37	0.58
7:H:162:ILE:HD12	7:H:165:LYS:HD2	1.86	0.58
19:e:13:LYS:HB2	19:e:17:GLN:NE2	2.19	0.58
27:R:46:LEU:O	27:R:50:ILE:HG12	2.03	0.58
27:R:74:GLN:O	27:R:78:ARG:HG2	2.04	0.58
30:U:68:ARG:CZ	30:U:79:TRP:HE1	2.17	0.58
35:g:82:VAL:HB	35:g:114:VAL:HG11	1.85	0.58
42:m:19:PRO:HB2	42:m:38:ASN:HD21	1.69	0.58
1:2:99:C:OP2	1:2:377:A:O2'	2.21	0.57
1:2:262:C:H2'	1:2:263:G:C8	2.39	0.57
1:2:1012:A:H3'	1:2:1013:G:C8	2.34	0.57
1:2:1736:U:H2'	1:2:1737:C:C6	2.39	0.57
1:2:1785:C:OP2	12:O:132:ARG:N	2.36	0.57
5:E:60:GLU:O	5:E:64:ILE:HG12	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:142:ARG:O	6:G:146:GLY:N	2.37	0.57
7:H:56:LYS:HB3	7:H:88:ARG:HE	1.68	0.57
12:O:106:ALA:HB2	17:a:53:LEU:HD13	1.85	0.57
23:K:22:VAL:HG13	23:K:23:ALA:H	1.69	0.57
23:K:37:THR:HB	23:K:41:PHE:CZ	2.39	0.57
26:Q:25:GLY:N	26:Q:62:ASN:O	2.37	0.57
33:d:2:ALA:HA	33:d:7:TRP:HB2	1.86	0.57
42:m:81:GLU:HG2	42:m:82:PRO:HD2	1.86	0.57
1:2:874:G:H21	1:2:936:C:HO2'	1.51	0.57
1:2:1649:A:H2'	1:2:1650:C:H6	1.68	0.57
1:2:1759:U:OP2	37:3:29:A:O2'	2.21	0.57
9:J:123:HIS:HB2	19:e:37:ARG:NH1	2.19	0.57
35:g:151:TRP:HB2	35:g:179:MET:CE	2.31	0.57
1:2:733:A:H2	1:2:736:C:H41	1.52	0.57
1:2:861:A:O2'	1:2:962:A:N1	2.34	0.57
1:2:959:U:OP2	11:N:55:ARG:NH1	2.36	0.57
1:2:1171:G:H21	29:T:88:VAL:HG11	1.70	0.57
1:2:1674:U:N3	1:2:1723:U:O4	2.19	0.57
4:C:232:PRO:HA	4:C:235:TRP:CE2	2.38	0.57
40:k:101:ILE:HB	40:k:189:VAL:HG12	1.86	0.57
40:k:314:ARG:NH1	40:k:494:GLU:OE1	2.37	0.57
40:k:390:ALA:HB1	40:k:396:ILE:HD13	1.85	0.57
1:2:862:A:N6	1:2:963:U:H3	2.01	0.57
1:2:872:U:O2'	1:2:1046:G:OP1	2.21	0.57
1:2:931:U:N3	1:2:943:A:C6	2.73	0.57
1:2:1337:C:OP1	26:Q:123:ARG:NH2	2.35	0.57
34:f:138:TYR:OH	34:f:143:HIS:HB2	2.03	0.57
38:1:9:1MG:OP1	38:1:46:7MG:O2'	2.23	0.57
1:2:521:U:H2'	1:2:522:G:O4'	2.04	0.57
1:2:864:A:OP1	14:W:3:ARG:NH1	2.29	0.57
1:2:969:A:H2'	1:2:970:A:H5'	1.87	0.57
1:2:1167:U:H2'	1:2:1168:G:H8	1.68	0.57
1:2:1256:U:O2'	23:K:8:ARG:NH2	2.37	0.57
1:2:1538:G:OP1	28:S:40:ARG:NH1	2.36	0.57
5:E:42:LEU:HB2	5:E:109:PHE:CE2	2.39	0.57
1:2:11:A:N3	1:2:1299:A:O2'	2.36	0.57
1:2:204:U:C2	1:2:205:A:C8	2.92	0.57
1:2:406:A:H2'	1:2:407:C:C6	2.39	0.57
1:2:565:C:H2'	1:2:566:A:O4'	2.05	0.57
1:2:885:U:H2'	1:2:886:A:C8	2.40	0.57
1:2:1096:U:O2'	4:C:173:ARG:NH1	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1451:G:H2'	1:2:1452:G:C8	2.40	0.57
1:2:1582:G:O2'	1:2:1583:U:OP2	2.22	0.57
3:B:41:ARG:NH2	3:B:232:HIS:HA	2.19	0.57
3:B:71:ALA:O	3:B:75:GLY:N	2.37	0.57
3:B:121:ILE:HB	3:B:141:ALA:HB3	1.86	0.57
11:N:54:LEU:HB3	11:N:60:VAL:HB	1.86	0.57
14:W:18:GLU:HG3	14:W:69:LEU:HD22	1.87	0.57
17:a:88:SER:O	17:a:92:ARG:N	2.37	0.57
19:e:7:SER:HA	36:i:33:GLN:HE22	1.70	0.57
22:F:145:ARG:HD2	32:c:57:MET:HE3	1.86	0.57
1:2:65:A:H2	1:2:84:A:H62	1.53	0.57
1:2:88:U:C2	1:2:89:G:C8	2.93	0.57
1:2:164:G:H2'	1:2:165:C:H6	1.70	0.57
1:2:817:C:H2'	1:2:818:G:C8	2.40	0.57
5:E:128:LYS:HG2	5:E:130:GLN:HB2	1.86	0.57
14:W:98:GLN:OE1	14:W:98:GLN:N	2.38	0.57
15:X:17:VAL:HA	15:X:20:ARG:HB3	1.86	0.57
17:a:74:CYS:SG	17:a:77:CYS:N	2.63	0.57
23:K:4:PRO:HB2	23:K:6:GLU:CD	2.29	0.57
26:Q:82:ARG:NH2	26:Q:113:ASP:OD2	2.36	0.57
36:i:62:ARG:HG2	36:i:63:GLY:N	2.20	0.57
1:2:395:G:N2	1:2:397:G:H3'	2.20	0.57
1:2:649:U:O2'	1:2:650:G:OP1	2.17	0.57
1:2:664:U:H2'	1:2:665:A:C8	2.39	0.57
1:2:946:U:H2'	1:2:947:G:H8	1.70	0.57
1:2:1459:C:H5''	28:S:143:ARG:HH12	1.69	0.57
1:2:1482:G:H22	1:2:1589:C:H1'	1.69	0.57
3:B:36:SER:N	3:B:231:LEU:O	2.37	0.57
7:H:78:THR:HG22	7:H:92:PHE:CE2	2.40	0.57
9:J:106:GLU:OE2	9:J:107:ARG:NH2	2.38	0.57
16:Y:6:THR:HB	16:Y:28:LEU:HB3	1.86	0.57
28:S:117:LYS:O	28:S:120:ARG:NH1	2.38	0.57
35:g:182:ILE:HB	35:g:184:ARG:HH21	1.68	0.57
42:m:121:CYS:SG	42:m:122:LYS:N	2.78	0.57
1:2:387:G:OP2	1:2:422:G:O2'	2.23	0.57
1:2:1101:G:H2'	1:2:1102:U:O4'	2.05	0.57
17:a:51:ARG:NH1	32:c:37:THR:O	2.34	0.57
27:R:90:ALA:HA	27:R:95:HIS:CD2	2.40	0.57
37:3:26:A:H2'	37:3:27:A:H8	1.69	0.57
1:2:811:A:N6	1:2:857:G:H2'	2.20	0.57
1:2:1584:A:H2	22:F:106:ASN:OD1	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:85:VAL:HG21	9:J:104:PHE:CE1	2.40	0.57
10:L:56:LYS:HG3	10:L:57:LYS:HG3	1.87	0.57
17:a:39:MET:HE1	17:a:70:LYS:HG3	1.85	0.57
21:D:51:ARG:HH22	21:D:92:HIS:H	1.53	0.57
27:R:97:ASN:ND2	27:R:97:ASN:O	2.38	0.57
36:i:57:ARG:NH1	36:i:86:ASP:OD1	2.37	0.57
1:2:50:C:H41	1:2:423:C:H2'	1.70	0.56
1:2:219:A:H2'	1:2:220:A:H5''	1.87	0.56
1:2:223:C:H2'	1:2:224:A:C8	2.40	0.56
1:2:306:G:OP1	10:L:103:ARG:NH1	2.38	0.56
1:2:760:A:H3'	1:2:761:G:H8	1.70	0.56
1:2:981:U:H3'	1:2:982:A:H8	1.70	0.56
1:2:1171:G:N2	29:T:88:VAL:HG11	2.20	0.56
1:2:1768:U:H2'	1:2:1769:U:H6	1.69	0.56
29:T:13:ASP:OD1	29:T:14:PHE:N	2.36	0.56
35:g:184:ARG:HB2	35:g:186:TRP:NE1	2.20	0.56
36:i:51:CYS:HB2	36:i:55:ASN:HB2	1.87	0.56
1:2:127:G:O6	6:G:202:ARG:NH2	2.36	0.56
1:2:450:A:N6	1:2:452:U:O2	2.38	0.56
1:2:653:C:H2'	1:2:654:G:C8	2.41	0.56
4:C:87:ASN:ND2	4:C:212:LEU:HB3	2.20	0.56
9:J:114:TYR:HE2	9:J:121:SER:H	1.52	0.56
21:D:96:LEU:HD23	21:D:190:LYS:HD2	1.87	0.56
38:1:6:C:H2'	38:1:7:G:C8	2.41	0.56
42:m:109:ILE:HG21	42:m:140:ILE:HG21	1.86	0.56
42:m:119:ARG:HB2	42:m:128:THR:HB	1.87	0.56
1:2:983:G:H2'	1:2:984:G:C8	2.37	0.56
1:2:1023:U:H3'	1:2:1024:A:H5''	1.87	0.56
1:2:1150:A:H2'	1:2:1151:A:C8	2.40	0.56
1:2:1632:C:H1'	37:3:35:C:C5	2.40	0.56
2:A:52:LYS:O	2:A:56:LYS:HG2	2.06	0.56
4:C:78:LEU:HD23	4:C:81:LEU:HD21	1.87	0.56
5:E:37:LYS:HA	5:E:37:LYS:HE3	1.87	0.56
5:E:57:ASN:OD1	5:E:58:GLY:N	2.39	0.56
7:H:24:PHE:HE1	7:H:38:LEU:HD12	1.70	0.56
7:H:99:LEU:HB2	7:H:116:ARG:HB3	1.87	0.56
7:H:139:ARG:HD3	7:H:153:LEU:HD23	1.88	0.56
9:J:85:VAL:HA	9:J:107:ARG:HH12	1.70	0.56
21:D:68:GLU:HG2	23:K:90:THR:HB	1.86	0.56
21:D:228:THR:HG22	21:D:229:GLU:H	1.70	0.56
32:c:65:ARG:HB2	37:3:23:A:N1	2.21	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:g:90:LEU:HD12	35:g:135:TRP:CZ3	2.40	0.56
36:i:84:PHE:CD2	36:i:85:GLN:HG2	2.41	0.56
38:1:16:H2U:O3'	38:1:18:G:O5'	2.24	0.56
40:k:227:PRO:HB2	40:k:442:GLY:HA2	1.86	0.56
40:k:356:ARG:NH2	40:k:423:LEU:HA	2.19	0.56
1:2:30:G:H2'	1:2:31:C:C6	2.41	0.56
1:2:522:G:H1'	1:2:528:A:H61	1.70	0.56
1:2:789:U:O4	1:2:790:A:N6	2.38	0.56
1:2:1077:C:O3'	17:a:93:ARG:NH2	2.34	0.56
1:2:1385:G:N7	27:R:44:LYS:NZ	2.51	0.56
1:2:1656:G:O6	1:2:1741:U:O2	2.23	0.56
3:B:59:ASP:OD1	3:B:60:SER:N	2.39	0.56
7:H:14:THR:O	7:H:17:GLU:HG2	2.04	0.56
7:H:56:LYS:HB3	7:H:88:ARG:NE	2.20	0.56
9:J:45:ILE:HD11	9:J:104:PHE:HB2	1.87	0.56
15:X:90:ASP:CG	19:e:12:GLY:HA2	2.31	0.56
21:D:51:ARG:NH2	21:D:92:HIS:H	2.03	0.56
36:i:84:PHE:HD2	36:i:85:GLN:HG2	1.69	0.56
1:2:291:U:H2'	1:2:292:U:C6	2.41	0.56
1:2:448:C:H2'	1:2:449:U:C6	2.40	0.56
1:2:1025:A:O4'	1:2:1027:C:N4	2.39	0.56
1:2:1431:G:H2'	1:2:1432:U:C6	2.41	0.56
1:2:1499:C:H41	29:T:102:ARG:HH12	1.52	0.56
1:2:1720:A:H5''	6:G:75:LEU:HD11	1.86	0.56
2:A:84:ARG:NH2	27:R:82:ASP:OD1	2.38	0.56
10:L:45:PRO:HG2	10:L:115:PHE:CE1	2.41	0.56
12:O:49:LYS:HA	39:j:89:ARG:NH2	2.20	0.56
1:2:446:U:O2'	5:E:27:TYR:O	2.23	0.56
3:B:55:LYS:O	3:B:56:ASN:C	2.48	0.56
3:B:89:ASP:HB3	3:B:223:PHE:HE1	1.70	0.56
3:B:144:ARG:CZ	3:B:206:PRO:HB3	2.35	0.56
4:C:131:ARG:O	4:C:134:ILE:HG22	2.06	0.56
5:E:124:ALA:HA	5:E:142:HIS:HE1	1.70	0.56
11:N:110:ASP:HB2	11:N:114:ARG:NH1	2.20	0.56
14:W:112:ASP:OD1	14:W:115:GLU:N	2.34	0.56
21:D:214:GLU:OE1	21:D:214:GLU:N	2.38	0.56
29:T:127:ASN:OD1	29:T:128:GLY:N	2.37	0.56
39:j:202:LYS:HE2	40:k:333:LEU:HD21	1.88	0.56
40:k:237:GLU:HB3	40:k:274:ILE:HD12	1.88	0.56
1:2:369:A:H3'	1:2:370:G:H8	1.71	0.56
1:2:709:C:H2'	1:2:710:U:H4'	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:860:U:H2'	1:2:861:A:C4	2.40	0.56
1:2:933:C:N4	1:2:1076:C:O3'	2.39	0.56
1:2:978:A:OP1	1:2:1014:U:H5''	2.06	0.56
1:2:1285:U:H3'	1:2:1286:A:C8	2.41	0.56
6:G:38:GLY:HA2	6:G:41:VAL:HG12	1.88	0.56
23:K:81:ASN:HD22	24:M:30:VAL:HG11	1.70	0.56
42:m:61:LEU:HD21	42:m:80:HIS:NE2	2.21	0.56
42:m:112:THR:HG22	42:m:113:LYS:N	2.21	0.56
1:2:153:G:OP2	16:Y:131:ARG:NH1	2.38	0.56
1:2:305:U:OP1	10:L:105:LYS:HG3	2.06	0.56
1:2:602:U:H2'	1:2:603:A:C8	2.41	0.56
1:2:1114:U:H2'	1:2:1115:A:H8	1.71	0.56
3:B:64:ARG:HB3	12:O:36:ARG:HH21	1.70	0.56
3:B:112:SER:HA	17:a:68:TYR:HE2	1.70	0.56
4:C:149:TRP:CD1	14:W:97:ARG:HH22	2.24	0.56
11:N:139:TRP:CH2	11:N:141:TYR:HB2	2.40	0.56
16:Y:112:LYS:HD2	16:Y:116:LYS:HE2	1.88	0.56
35:g:92:LEU:HB2	35:g:104:PHE:HE2	1.71	0.56
39:j:56:ILE:HD11	39:j:59:ILE:HG22	1.88	0.56
39:j:241:ILE:HG13	39:j:268:PRO:HG2	1.88	0.56
42:m:18:MET:HE1	42:m:93:ILE:HG21	1.87	0.56
1:2:165:C:O2'	6:G:133:LEU:O	2.18	0.56
1:2:771:A:H3'	1:2:772:G:H8	1.70	0.56
1:2:890:A:H2'	1:2:891:A:H8	1.70	0.56
1:2:1339:U:O4	26:Q:87:LYS:NZ	2.39	0.56
1:2:1398:A:O3'	27:R:60:ARG:NH2	2.36	0.56
1:2:1464:G:O2'	1:2:1600:C:OP1	2.24	0.56
1:2:1658:A:H2'	1:2:1659:U:C6	2.41	0.56
3:B:146:GLN:H	3:B:149:GLN:NE2	2.04	0.56
9:J:80:LEU:HA	9:J:83:ILE:HG22	1.87	0.56
24:M:57:GLU:N	24:M:57:GLU:OE1	2.39	0.56
39:j:71:ALA:HB1	39:j:85:LEU:HD21	1.88	0.56
39:j:123:LEU:HD21	39:j:127:TYR:HE2	1.70	0.56
1:2:92:A:H5''	1:2:93:A:H5''	1.88	0.56
1:2:701:U:H3	1:2:737:A:H2	1.53	0.56
1:2:799:U:H2'	1:2:800:G:C8	2.41	0.56
1:2:838:U:H2'	1:2:839:U:C6	2.41	0.56
1:2:1145:G:H2'	1:2:1146:A:C8	2.41	0.56
1:2:1210:A:N3	25:P:97:TYR:OH	2.30	0.56
1:2:1402:C:H2'	1:2:1403:G:H8	1.71	0.56
1:2:1434:A:OP2	21:D:27:ARG:NH2	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1546:G:H2'	1:2:1547:C:H6	1.71	0.56
4:C:64:HIS:HD2	4:C:244:PRO:HD3	1.70	0.56
4:C:64:HIS:CD2	4:C:243:SER:HA	2.40	0.56
6:G:58:LYS:NZ	6:G:104:PRO:O	2.39	0.56
24:M:46:THR:HB	34:f:127:GLY:HA3	1.88	0.56
27:R:116:LYS:HD2	27:R:117:LEU:N	2.21	0.56
1:2:305:U:H2'	1:2:306:G:C8	2.41	0.55
1:2:1023:U:O5'	1:2:1026:A:N6	2.39	0.55
1:2:1388:U:OP2	27:R:3:ARG:NH2	2.39	0.55
9:J:100:LYS:O	9:J:102:GLU:N	2.39	0.55
11:N:141:TYR:CE1	11:N:146:ALA:HB2	2.41	0.55
32:c:62:GLU:N	32:c:62:GLU:OE2	2.39	0.55
35:g:112:LEU:HD22	35:g:153:THR:HA	1.88	0.55
1:2:675:C:H2'	1:2:676:U:C6	2.40	0.55
1:2:798:A:H5'	5:E:201:HIS:ND1	2.21	0.55
1:2:843:A:H2'	1:2:844:G:C8	2.41	0.55
1:2:1071:C:H2'	1:2:1072:G:H8	1.71	0.55
1:2:1077:C:H2'	1:2:1078:U:C6	2.40	0.55
1:2:1207:A:O2'	1:2:1269:G:OP2	2.22	0.55
2:A:195:TRP:NE1	2:A:197:ILE:HD12	2.21	0.55
3:B:99:ASN:OD1	3:B:100:PHE:N	2.39	0.55
3:B:135:LEU:HD21	3:B:217:LEU:HD13	1.87	0.55
6:G:7:TYR:HD1	6:G:113:ILE:HG23	1.70	0.55
9:J:108:ARG:O	9:J:111:THR:OG1	2.18	0.55
22:F:78:ARG:O	22:F:85:ARG:NH1	2.39	0.55
35:g:270:TYR:HA	35:g:277:LEU:HA	1.88	0.55
1:2:1032:C:H2'	1:2:1033:C:C6	2.41	0.55
1:2:1293:G:H21	1:2:1320:A:H8	1.54	0.55
1:2:1356:G:H2'	1:2:1357:G:H8	1.71	0.55
26:Q:81:ILE:O	26:Q:85:ILE:HD12	2.06	0.55
28:S:86:LEU:HD22	28:S:99:HIS:HB2	1.88	0.55
29:T:117:SER:H	29:T:122:ARG:HA	1.72	0.55
1:2:107:C:H2'	1:2:108:A:C8	2.39	0.55
1:2:1299:A:H5''	4:C:91:VAL:HG11	1.88	0.55
1:2:1315:G:H2'	1:2:1316:C:H6	1.71	0.55
1:2:1450:U:H2'	1:2:1451:G:C8	2.41	0.55
1:2:1457:C:H5''	28:S:138:THR:HG21	1.89	0.55
6:G:137:ARG:HG2	6:G:140:ASN:H	1.71	0.55
21:D:53:THR:HA	21:D:91:VAL:HG23	1.89	0.55
26:Q:31:VAL:N	26:Q:34:SER:O	2.26	0.55
1:2:96:G:H21	1:2:425:G:H5'	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:279:U:H4'	1:2:280:G:O5'	2.05	0.55
1:2:334:U:O2'	10:L:130:PRO:O	2.24	0.55
1:2:518:C:N4	1:2:532:U:O2'	2.39	0.55
1:2:677:G:H2'	1:2:678:G:C8	2.42	0.55
1:2:700:C:O2'	1:2:701:U:OP1	2.22	0.55
1:2:798:A:H2'	1:2:799:U:O4'	2.07	0.55
9:J:128:LEU:O	9:J:133:HIS:HB2	2.06	0.55
31:Z:39:ALA:O	31:Z:72:GLY:N	2.40	0.55
31:Z:45:ASP:HB2	31:Z:49:ARG:NH1	2.21	0.55
36:i:42:LEU:HD23	36:i:46:ARG:HB2	1.87	0.55
38:1:42:U:H2'	38:1:43:G:C8	2.42	0.55
42:m:98:LEU:HA	42:m:104:ASN:O	2.07	0.55
1:2:427:A:H3'	1:2:428:G:H8	1.71	0.55
1:2:817:C:H2'	1:2:818:G:H8	1.72	0.55
1:2:871:G:H1	1:2:954:A:H2	1.55	0.55
1:2:897:A:N1	1:2:910:U:O2'	2.31	0.55
1:2:1440:U:O4'	1:2:1445:C:N4	2.40	0.55
4:C:149:TRP:NE1	14:W:97:ARG:HH22	2.05	0.55
4:C:188:ALA:HB1	4:C:216:LEU:HD21	1.89	0.55
6:G:207:GLU:O	6:G:210:GLN:HG3	2.06	0.55
13:V:36:ILE:HB	13:V:51:VAL:HG23	1.88	0.55
22:F:65:GLN:HE22	22:F:68:LYS:HB2	1.72	0.55
40:k:353:ILE:HG12	40:k:417:VAL:HG12	1.88	0.55
1:2:220:A:H2'	1:2:221:A:C8	2.42	0.55
1:2:471:U:H2'	1:2:472:A:C8	2.41	0.55
1:2:478:C:H4'	9:J:120:LYS:HE3	1.89	0.55
1:2:854:A:O2'	1:2:856:U:O5'	2.22	0.55
1:2:946:U:H2'	1:2:947:G:C8	2.41	0.55
1:2:967:U:H2'	1:2:968:C:O4'	2.07	0.55
1:2:1525:C:H2'	1:2:1526:U:H6	1.71	0.55
1:2:1546:G:H2'	1:2:1547:C:C6	2.41	0.55
1:2:1548:A:OP2	25:P:42:ARG:NH2	2.38	0.55
1:2:1646:A:H2'	1:2:1647:G:C8	2.41	0.55
12:O:49:LYS:HA	39:j:89:ARG:HH21	1.71	0.55
22:F:54:GLU:N	22:F:133:GLN:OE1	2.38	0.55
39:j:194:SER:N	40:k:403:ASP:OD2	2.39	0.55
1:2:433:G:N2	1:2:435:A:H3'	2.21	0.55
1:2:476:A:O2'	19:e:33:ARG:NH2	2.40	0.55
1:2:897:A:H4'	12:O:46:MET:SD	2.47	0.55
1:2:997:A:O3'	39:j:54:ARG:NH1	2.40	0.55
1:2:1147:C:H2'	1:2:1148:G:H8	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1487:U:H5'	1:2:1492:C:H1'	1.89	0.55
1:2:1591:A:H2'	1:2:1592:G:H8	1.70	0.55
7:H:62:VAL:C	7:H:64:VAL:H	2.14	0.55
8:I:172:SER:HB3	8:I:181:ASP:HB3	1.89	0.55
35:g:283:PRO:HG3	35:g:320:TRP:CH2	2.42	0.55
38:1:3:C:H2'	38:1:4:G:C8	2.41	0.55
42:m:90:ASP:HA	42:m:93:ILE:HG12	1.88	0.55
1:2:163:A:H2'	1:2:164:G:H8	1.71	0.55
1:2:414:C:H2'	1:2:416:A:C5	2.42	0.55
1:2:752:A:N6	1:2:753:A:N1	2.54	0.55
1:2:1315:G:H2'	1:2:1316:C:C6	2.42	0.55
1:2:1416:G:O5'	26:Q:128:LYS:HE2	2.06	0.55
1:2:1470:C:O2	1:2:1532:G:N2	2.40	0.55
1:2:1739:U:H2'	1:2:1740:U:C6	2.41	0.55
3:B:62:LYS:HA	3:B:88:VAL:HG12	1.89	0.55
11:N:16:ILE:HG22	14:W:57:ARG:HH21	1.72	0.55
13:V:12:TYR:CE1	13:V:14:PRO:HA	2.41	0.55
21:D:163:PRO:HG3	21:D:203:PRO:HG2	1.89	0.55
27:R:72:LYS:HG3	27:R:73:LEU:HD12	1.88	0.55
40:k:445:THR:HG21	40:k:450:GLN:HA	1.89	0.55
1:2:554:A:O2'	1:2:555:A:O4'	2.14	0.55
1:2:1083:A:H2'	1:2:1084:G:C8	2.42	0.55
1:2:1498:C:OP1	29:T:122:ARG:NH2	2.40	0.55
1:2:1755:G:H4'	36:i:41:MET:HE1	1.88	0.55
5:E:68:ARG:HG2	5:E:76:VAL:HG11	1.87	0.55
7:H:49:ILE:HG21	7:H:172:VAL:HG12	1.89	0.55
9:J:59:LEU:HD22	9:J:69:ARG:HD2	1.89	0.55
9:J:94:ASP:OD1	9:J:95:TYR:N	2.40	0.55
23:K:15:LEU:HD21	23:K:68:LEU:HD21	1.89	0.55
26:Q:44:LEU:HD22	26:Q:47:LYS:HG3	1.89	0.55
1:2:142:G:H2'	1:2:143:G:H8	1.71	0.54
1:2:905:A:P	12:O:52:ARG:HH22	2.29	0.54
1:2:1091:A:C6	1:2:1093:G:C4	2.95	0.54
1:2:1557:A:C8	28:S:134:ARG:HB3	2.42	0.54
13:V:1:MET:HG3	13:V:10:GLU:HG3	1.89	0.54
26:Q:83:GLN:NE2	26:Q:115:THR:O	2.28	0.54
28:S:103:ASN:O	28:S:106:GLU:HG3	2.07	0.54
40:k:246:ILE:HB	40:k:280:ILE:HG12	1.89	0.54
40:k:508:HIS:HB2	40:k:510:ARG:HH12	1.71	0.54
1:2:692:C:H2'	1:2:693:U:O4'	2.06	0.54
1:2:1353:G:C5	1:2:1370:G:C6	2.94	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1621:C:H2'	1:2:1622:C:H6	1.72	0.54
4:C:170:VAL:HG11	4:C:215:THR:HA	1.89	0.54
12:O:47:LYS:NZ	12:O:62:LEU:O	2.37	0.54
22:F:143:GLY:O	22:F:169:ARG:NH2	2.40	0.54
24:M:35:ALA:HB3	24:M:113:VAL:HB	1.89	0.54
35:g:104:PHE:CE1	35:g:139:GLY:HA2	2.42	0.54
40:k:341:SER:HB3	40:k:395:LEU:HD23	1.89	0.54
1:2:27:U:H2'	1:2:28:A:C8	2.42	0.54
1:2:94:U:H2'	1:2:95:G:O4'	2.08	0.54
1:2:314:A:N1	1:2:348:U:O2'	2.38	0.54
1:2:1297:U:HO2'	4:C:217:LYS:HZ2	1.51	0.54
1:2:1300:U:H5'	4:C:93:LYS:HE2	1.88	0.54
1:2:1651:C:H2'	1:2:1652:G:O4'	2.06	0.54
6:G:7:TYR:CZ	6:G:9:ILE:HB	2.43	0.54
14:W:17:ALA:O	14:W:21:GLY:N	2.40	0.54
14:W:55:ASP:OD2	18:b:26:GLN:NE2	2.40	0.54
26:Q:71:GLY:O	26:Q:77:GLN:NE2	2.34	0.54
31:Z:45:ASP:OD1	31:Z:46:LYS:N	2.40	0.54
38:1:66:C:H2'	38:1:67:G:C8	2.42	0.54
40:k:440:LEU:HD11	40:k:505:ILE:HD13	1.88	0.54
1:2:423:C:O2'	1:2:425:G:OP1	2.24	0.54
1:2:601:U:H2'	1:2:602:U:C6	2.43	0.54
1:2:751:G:H2'	1:2:752:A:C8	2.42	0.54
1:2:801:G:OP2	7:H:105:LYS:NZ	2.22	0.54
1:2:1151:A:O2'	17:a:85:ARG:NH2	2.40	0.54
1:2:1544:G:OP2	28:S:134:ARG:NH2	2.34	0.54
5:E:64:ILE:HD12	16:Y:17:LEU:HD22	1.89	0.54
13:V:21:ASN:ND2	14:W:66:ASN:O	2.40	0.54
17:a:88:SER:O	17:a:92:ARG:HG3	2.06	0.54
21:D:51:ARG:CZ	21:D:91:VAL:HA	2.38	0.54
26:Q:93:HIS:HA	26:Q:97:VAL:HB	1.89	0.54
27:R:101:ASN:HA	27:R:120:SER:HB3	1.88	0.54
42:m:97:VAL:O	42:m:107:THR:OG1	2.20	0.54
1:2:90:C:H2'	1:2:91:G:H8	1.73	0.54
1:2:225:A:N6	1:2:833:G:O6	2.40	0.54
1:2:446:U:H5''	5:E:49:ARG:NH1	2.23	0.54
1:2:873:C:O5'	3:B:157:GLN:NE2	2.39	0.54
1:2:1163:G:H2'	1:2:1164:G:C8	2.41	0.54
1:2:1402:C:H2'	1:2:1403:G:C8	2.43	0.54
1:2:1566:C:OP1	28:S:36:ARG:NH1	2.41	0.54
1:2:1622:C:H2'	1:2:1623:C:H6	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1628:U:HO2'	1:2:1762:C:HO2'	1.48	0.54
1:2:1631:A:N3	4:C:94:GLN:NE2	2.55	0.54
6:G:76:LEU:HB2	6:G:94:ARG:HE	1.71	0.54
6:G:159:ARG:HD2	6:G:170:THR:CG2	2.38	0.54
11:N:32:GLY:O	11:N:35:GLU:HG2	2.08	0.54
21:D:221:SER:HB2	35:g:200:ILE:HG23	1.89	0.54
28:S:18:LEU:O	28:S:20:THR:HG23	2.08	0.54
40:k:436:LEU:HD23	40:k:437:LEU:O	2.07	0.54
1:2:251:U:H2'	1:2:252:A:C8	2.42	0.54
1:2:553:C:H1'	1:2:554:A:N7	2.22	0.54
1:2:858:A:N7	11:N:73:ARG:NH1	2.55	0.54
1:2:1182:A:C4	25:P:100:LYS:HE3	2.42	0.54
1:2:1472:G:H2'	1:2:1473:A:C8	2.42	0.54
4:C:142:ILE:HD12	4:C:220:PHE:CE1	2.43	0.54
9:J:41:GLU:OE2	9:J:44:ARG:NH2	2.41	0.54
9:J:107:ARG:C	9:J:112:GLN:HE22	2.14	0.54
21:D:121:GLY:HA2	21:D:124:ARG:NE	2.22	0.54
35:g:48:LEU:HG	35:g:55:PHE:CE2	2.43	0.54
1:2:10:G:O6	1:2:1143:U:O2	2.26	0.54
1:2:163:A:H2'	1:2:164:G:C8	2.43	0.54
1:2:322:A:OP2	8:I:10:LYS:NZ	2.34	0.54
1:2:1029:A:OP1	17:a:3:LYS:NZ	2.41	0.54
1:2:1381:G:H4'	30:U:35:GLU:OE1	2.08	0.54
1:2:1472:G:H2'	1:2:1473:A:H8	1.72	0.54
1:2:1526:U:H2'	1:2:1527:C:C6	2.43	0.54
1:2:1582:G:O2'	1:2:1608:G:O6	2.26	0.54
8:I:57:ALA:HB2	8:I:178:GLY:HA2	1.90	0.54
15:X:83:VAL:HG11	15:X:122:PHE:HE2	1.71	0.54
16:Y:18:LEU:HD13	16:Y:20:ARG:CZ	2.38	0.54
22:F:97:ASN:HA	22:F:100:MET:CE	2.31	0.54
28:S:90:LYS:N	28:S:97:ASP:OD1	2.40	0.54
35:g:132:ILE:HB	35:g:145:LEU:HB2	1.89	0.54
35:g:161:ASN:OD1	35:g:162:LEU:N	2.35	0.54
1:2:160:U:O2'	1:2:161:A:OP2	2.26	0.54
1:2:360:C:H2'	1:2:361:G:H8	1.72	0.54
1:2:447:C:H2'	1:2:448:C:H6	1.73	0.54
1:2:592:U:H4'	1:2:594:G:H4'	1.89	0.54
1:2:681:U:O2'	1:2:682:U:O4'	2.26	0.54
1:2:1431:G:N2	33:d:41:GLN:HB2	2.23	0.54
1:2:1793:U:H3'	17:a:5:ARG:HH21	1.71	0.54
3:B:30:TYR:CD1	3:B:94:LYS:HA	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:114:VAL:HA	3:B:142:PHE:CE2	2.43	0.54
9:J:100:LYS:O	9:J:102:GLU:HG2	2.08	0.54
18:b:48:SER:OG	18:b:49:HIS:ND1	2.40	0.54
28:S:126:ARG:HD2	28:S:131:LEU:HB2	1.90	0.54
35:g:90:LEU:HD11	35:g:125:SER:HB2	1.90	0.54
40:k:80:LEU:HD23	40:k:388:LYS:HD2	1.90	0.54
1:2:140:A:H2	1:2:265:A:H4'	1.73	0.54
1:2:1182:A:C6	25:P:100:LYS:HG2	2.42	0.54
1:2:1240:G:H3'	1:2:1241:A:C8	2.43	0.54
1:2:1657:A:H2'	1:2:1658:A:C8	2.43	0.54
2:A:8:ASP:OD1	2:A:9:LEU:N	2.39	0.54
4:C:121:LYS:HG2	4:C:132:ALA:HB1	1.89	0.54
23:K:32:HIS:HD2	23:K:35:ILE:HD12	1.73	0.54
35:g:14:LEU:HD23	35:g:46:TRP:CE2	2.42	0.54
38:1:74:C:O2'	38:1:75:C:OP2	2.24	0.54
1:2:119:A:H3'	1:2:120:PSU:H6	1.72	0.54
1:2:552:G:N2	1:2:570:G:N7	2.56	0.54
1:2:583:C:H2'	1:2:584:A:H8	1.72	0.54
1:2:809:G:C2	7:H:111:LYS:HB2	2.43	0.54
1:2:1043:U:H2'	1:2:1044:C:C6	2.43	0.54
1:2:1123:A:H2'	1:2:1124:A:C8	2.42	0.54
1:2:1356:G:H2'	1:2:1357:G:C8	2.43	0.54
1:2:1522:A:H2'	1:2:1523:A:C8	2.43	0.54
1:2:1526:U:H2'	1:2:1527:C:H6	1.71	0.54
2:A:77:SER:O	2:A:100:GLY:N	2.39	0.54
5:E:8:HIS:O	5:E:30:ARG:NH2	2.41	0.54
9:J:145:SER:C	9:J:147:MET:H	2.16	0.54
17:a:40:ALA:HB3	17:a:69:ASN:OD1	2.08	0.54
19:e:56:MET:HG3	19:e:57:ASN:H	1.72	0.54
25:P:103:ASN:HD22	25:P:120:SER:HA	1.73	0.54
27:R:27:ASP:OD2	27:R:30:THR:N	2.31	0.54
34:f:131:ALA:N	34:f:138:TYR:O	2.35	0.54
1:2:243:A:H2'	1:2:244:U:C6	2.42	0.53
1:2:341:C:H2'	1:2:342:C:O4'	2.08	0.53
1:2:477:A:H2	1:2:509:G:H22	1.54	0.53
1:2:523:U:O2'	1:2:526:A:N7	2.38	0.53
1:2:610:U:H5	10:L:96:LYS:HZ3	1.55	0.53
1:2:1501:A:H2'	1:2:1502:G:C8	2.44	0.53
1:2:1671:G:O6	1:2:1726:U:O2	2.26	0.53
4:C:49:LEU:O	4:C:53:GLY:N	2.41	0.53
5:E:241:GLY:H	5:E:242:LYS:NZ	2.05	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:50:PHE:HE1	6:G:113:ILE:HB	1.73	0.53
13:V:86:SER:HB2	18:b:6:ASP:HB2	1.89	0.53
14:W:26:LEU:HD13	14:W:62:VAL:HG22	1.91	0.53
19:e:29:GLN:HE22	19:e:35:TYR:HD1	1.54	0.53
22:F:39:GLN:H	22:F:39:GLN:CD	2.16	0.53
30:U:63:LEU:HD11	33:d:33:LYS:HZ1	1.72	0.53
39:j:160:PRO:HG3	39:j:166:LEU:HD11	1.89	0.53
1:2:159:C:O3'	6:G:95:LYS:NZ	2.42	0.53
1:2:586:C:OP2	19:e:23:LYS:NZ	2.40	0.53
1:2:947:G:H2'	1:2:948:C:C6	2.43	0.53
1:2:1086:A:H2'	1:2:1087:A:C8	2.43	0.53
1:2:1131:A:H2'	1:2:1132:A:H8	1.72	0.53
1:2:1178:G:H2'	1:2:1179:C:C6	2.43	0.53
1:2:1329:G:C2	1:2:1330:A:H1'	2.43	0.53
19:e:54:ARG:HE	19:e:56:MET:H	1.57	0.53
21:D:46:THR:N	21:D:83:THR:O	2.31	0.53
22:F:78:ARG:HB3	22:F:81:ASN:OD1	2.07	0.53
22:F:102:ASN:CG	22:F:104:ARG:HG2	2.33	0.53
35:g:11:ARG:HE	35:g:55:PHE:HD1	1.56	0.53
1:2:142:G:P	6:G:139:ASN:HD22	2.31	0.53
1:2:445:A:OP1	5:E:59:ARG:NE	2.41	0.53
1:2:1047:G:H2'	1:2:1048:U:H6	1.73	0.53
2:A:65:ALA:HA	2:A:185:ARG:HH22	1.73	0.53
5:E:89:VAL:HG11	5:E:164:LEU:HD21	1.89	0.53
8:I:104:ILE:HG22	8:I:106:ALA:H	1.73	0.53
25:P:85:ILE:HG22	25:P:112:VAL:HG22	1.91	0.53
38:1:64:RIA:H2A	38:1:64:RIA:N3	2.23	0.53
40:k:125:THR:HG23	40:k:127:ARG:HG3	1.91	0.53
1:2:38:C:H2'	1:2:39:A:C8	2.44	0.53
1:2:131:C:H4'	1:2:132:U:H4'	1.90	0.53
1:2:565:C:H4'	36:i:62:ARG:HH12	1.72	0.53
1:2:679:U:H3'	1:2:680:U:H5''	1.90	0.53
1:2:700:C:HO2'	1:2:701:U:P	2.31	0.53
1:2:876:G:H1	1:2:950:A:H2	1.56	0.53
1:2:978:A:N3	1:2:1773:U:O2'	2.41	0.53
1:2:1077:C:H2'	1:2:1078:U:H6	1.74	0.53
1:2:1475:G:O2'	29:T:48:GLN:N	2.41	0.53
3:B:144:ARG:HD3	3:B:208:GLN:HG3	1.90	0.53
6:G:145:PHE:HB3	6:G:147:LEU:HD13	1.90	0.53
9:J:46:SER:O	9:J:49:LEU:HB3	2.08	0.53
22:F:129:GLN:O	22:F:130:ASN:C	2.51	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:U:44:ASN:O	30:U:47:THR:OG1	2.23	0.53
35:g:153:THR:HG22	35:g:178:GLY:HA2	1.90	0.53
40:k:319:ARG:O	40:k:339:GLY:N	2.40	0.53
1:2:69:G:H2'	1:2:70:C:C6	2.44	0.53
1:2:450:A:N7	1:2:452:U:N3	2.56	0.53
1:2:583:C:H2'	1:2:584:A:C8	2.43	0.53
1:2:797:C:H2'	1:2:798:A:C8	2.44	0.53
1:2:1264:G:H2'	1:2:1265:U:C6	2.44	0.53
1:2:1781:C:H2'	1:2:1782:C:C6	2.44	0.53
4:C:174:LEU:HD13	4:C:203:THR:HG22	1.90	0.53
12:O:22:SER:OG	12:O:23:PHE:N	2.40	0.53
1:2:398:A:OP2	8:I:49:ARG:NH1	2.38	0.53
1:2:765:G:N2	1:2:768:C:O3'	2.42	0.53
1:2:815:G:H22	1:2:854:A:H2	1.56	0.53
1:2:1210:A:H2'	1:2:1211:G:O4'	2.08	0.53
1:2:1212:G:O3'	1:2:1243:A:N6	2.41	0.53
1:2:1532:G:O2'	31:Z:72:GLY:O	2.25	0.53
5:E:15:PRO:HG3	5:E:39:ARG:HE	1.73	0.53
6:G:12:THR:HB	6:G:124:ILE:HG13	1.90	0.53
6:G:13:GLN:N	6:G:13:GLN:OE1	2.42	0.53
11:N:5:HIS:HD2	11:N:117:LEU:HB3	1.73	0.53
26:Q:28:LEU:HB2	26:Q:64:ASP:HB2	1.90	0.53
32:c:16:LEU:HD11	32:c:29:ARG:HB2	1.90	0.53
35:g:69:VAL:HA	35:g:85:SER:HA	1.91	0.53
39:j:28:ALA:H	39:j:33:TYR:HE1	1.56	0.53
1:2:29:U:H2'	1:2:30:G:C8	2.43	0.53
1:2:156:A:H2	1:2:418:G:H21	1.56	0.53
1:2:164:G:H2'	1:2:165:C:C6	2.43	0.53
1:2:167:A:O2'	6:G:176:GLN:NE2	2.28	0.53
1:2:267:C:OP2	6:G:186:ARG:NH1	2.41	0.53
1:2:617:U:O4	1:2:1085:A:N6	2.42	0.53
1:2:1390:U:H2'	1:2:1391:C:C6	2.43	0.53
1:2:1603:G:O2'	30:U:64:LYS:NZ	2.27	0.53
2:A:49:ASN:O	2:A:53:THR:HG23	2.08	0.53
3:B:132:ASP:HB3	3:B:221:PRO:HB3	1.89	0.53
11:N:69:ASN:OD1	11:N:70:LYS:N	2.40	0.53
16:Y:18:LEU:HB2	16:Y:20:ARG:HG2	1.91	0.53
25:P:17:TYR:CE2	25:P:18:LYS:HG2	2.44	0.53
40:k:355:ILE:HB	40:k:373:ILE:HB	1.91	0.53
1:2:353:C:H5''	8:I:16:ALA:HB2	1.89	0.53
1:2:883:A:H5'	3:B:136:ARG:NH1	2.24	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1353:G:O6	1:2:1368:U:O2	2.26	0.53
1:2:1480:C:O2'	26:Q:73:GLY:O	2.26	0.53
1:2:1713:G:H2'	1:2:1714:C:O4'	2.09	0.53
1:2:1786:G:H3'	12:O:132:ARG:HH22	1.72	0.53
3:B:144:ARG:HB3	3:B:206:PRO:HB2	1.91	0.53
8:I:154:GLU:HB3	8:I:157:VAL:HG23	1.89	0.53
8:I:160:GLN:HB2	8:I:165:ARG:O	2.08	0.53
10:L:7:VAL:HG21	10:L:53:TYR:HA	1.90	0.53
22:F:47:LYS:HG3	22:F:48:TRP:CE2	2.44	0.53
40:k:199:ILE:HD13	40:k:508:HIS:ND1	2.24	0.53
40:k:462:LEU:HD22	40:k:503:ARG:HG2	1.90	0.53
1:2:159:C:H5''	6:G:87:ARG:HH22	1.73	0.53
1:2:864:A:P	14:W:3:ARG:HH12	2.31	0.53
1:2:1601:U:H2'	1:2:1602:U:C6	2.43	0.53
7:H:78:THR:HG22	7:H:92:PHE:HE2	1.74	0.53
11:N:40:TYR:HA	11:N:43:LYS:HD3	1.90	0.53
17:a:62:TYR:HD2	17:a:64:LEU:H	1.57	0.53
21:D:121:GLY:O	21:D:124:ARG:HG2	2.09	0.53
22:F:56:LYS:HB2	22:F:140:ILE:HD13	1.89	0.53
26:Q:32:ASN:N	26:Q:67:VAL:O	2.41	0.53
35:g:231:ASN:N	35:g:236:SER:O	2.35	0.53
40:k:216:LEU:HD21	40:k:218:ILE:HD11	1.90	0.53
40:k:238:ILE:HG23	40:k:514:TRP:HB3	1.89	0.53
1:2:3:U:O2'	9:J:17:ARG:NH2	2.42	0.53
1:2:559:U:H2'	1:2:560:G:C8	2.44	0.53
1:2:617:U:H4'	1:2:1029:A:N7	2.24	0.53
1:2:952:G:H2'	1:2:953:G:C8	2.35	0.53
1:2:1220:A:H2'	1:2:1221:C:C6	2.44	0.53
1:2:1383:G:H2'	1:2:1384:G:C8	2.44	0.53
1:2:1469:A:P	22:F:187:ARG:HH21	2.32	0.53
7:H:9:LEU:O	7:H:10:SER:OG	2.26	0.53
9:J:45:ILE:HD11	9:J:104:PHE:CB	2.39	0.53
10:L:90:TYR:O	10:L:102:LYS:HA	2.09	0.53
12:O:57:PRO:O	12:O:61:MET:HG3	2.08	0.53
16:Y:37:LYS:HG2	16:Y:60:PHE:CD2	2.44	0.53
19:e:8:LEU:HD21	36:i:62:ARG:NH2	2.24	0.53
21:D:96:LEU:HD11	21:D:194:ARG:HH21	1.74	0.53
35:g:179:MET:HG3	35:g:205:TYR:CG	2.44	0.53
1:2:1652:G:N2	1:2:1743:G:H2'	2.23	0.52
3:B:128:LYS:HG3	3:B:134:VAL:HG22	1.91	0.52
4:C:57:SER:H	4:C:60:GLU:CD	2.16	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:e:10:ARG:O	19:e:10:ARG:HG2	2.09	0.52
22:F:123:ILE:HB	22:F:131:PRO:HB3	1.91	0.52
22:F:167:LEU:HG	22:F:171:ASN:HD21	1.74	0.52
33:d:36:LEU:HB3	33:d:38:ILE:HG22	1.90	0.52
35:g:107:HIS:HD1	35:g:129:ASP:CG	2.16	0.52
40:k:172:PRO:HG2	40:k:183:TYR:HD2	1.73	0.52
1:2:1202:A:C2	1:2:1554:A:C4	2.97	0.52
5:E:104:ASP:OD1	5:E:105:VAL:N	2.41	0.52
8:I:8:ARG:NH2	8:I:18:ARG:HH12	2.07	0.52
12:O:84:ARG:HD2	12:O:85:ALA:C	2.33	0.52
1:2:29:U:H2'	1:2:30:G:H8	1.74	0.52
1:2:179:A:H2'	1:2:180:A:O4'	2.08	0.52
1:2:513:G:P	9:J:132:ARG:HH12	2.32	0.52
1:2:775:G:H2'	1:2:776:G:H8	1.73	0.52
1:2:779:A:O2'	1:2:780:A:O4'	2.27	0.52
1:2:1217:G:H22	1:2:1442:A:P	2.31	0.52
1:2:1350:G:H2'	1:2:1351:U:H6	1.74	0.52
1:2:1771:C:H2'	1:2:1772:G:H8	1.73	0.52
4:C:142:ILE:HD11	13:V:27:LYS:HD3	1.90	0.52
6:G:72:ARG:NH2	6:G:96:SER:OG	2.42	0.52
8:I:37:LYS:C	8:I:59:ARG:HA	2.34	0.52
8:I:171:SER:HB3	8:I:183:TYR:CE1	2.44	0.52
23:K:37:THR:HB	23:K:41:PHE:HZ	1.74	0.52
25:P:101:VAL:HG22	25:P:102:PHE:H	1.73	0.52
27:R:28:PHE:HA	27:R:55:THR:HG21	1.91	0.52
42:m:61:LEU:HD11	42:m:80:HIS:CE1	2.44	0.52
1:2:891:A:H2'	1:2:892:U:C6	2.45	0.52
1:2:1645:U:H2'	1:2:1646:A:H8	1.73	0.52
2:A:9:LEU:HA	2:A:54:TRP:CZ3	2.44	0.52
4:C:147:GLY:HA3	4:C:160:ALA:HA	1.91	0.52
6:G:67:VAL:HG12	6:G:69:LEU:HB2	1.91	0.52
16:Y:122:GLY:HA2	16:Y:125:ILE:HG12	1.92	0.52
22:F:74:HIS:ND1	26:Q:79:TYR:OH	2.37	0.52
33:d:21:CYS:C	33:d:23:ILE:H	2.15	0.52
1:2:82:U:H2'	1:2:83:G:O4'	2.10	0.52
1:2:331:U:N3	1:2:334:U:OP2	2.28	0.52
1:2:444:A:H61	1:2:460:G:N2	2.08	0.52
1:2:902:U:O4	12:O:24:ASN:ND2	2.41	0.52
1:2:1086:A:H2'	1:2:1087:A:H8	1.73	0.52
1:2:1350:G:H2'	1:2:1351:U:C6	2.44	0.52
1:2:1554:A:P	25:P:40:ARG:HH22	2.33	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:41:ARG:HH22	3:B:232:HIS:HA	1.75	0.52
3:B:187:LYS:C	3:B:190:PRO:HD2	2.35	0.52
5:E:42:LEU:HD21	5:E:47:PHE:HB2	1.90	0.52
21:D:96:LEU:HD11	21:D:194:ARG:NH2	2.24	0.52
21:D:130:GLY:HA3	21:D:194:ARG:HH12	1.74	0.52
32:c:9:LEU:HD11	32:c:33:LEU:HD23	1.91	0.52
34:f:102:VAL:HA	34:f:105:TYR:CD2	2.44	0.52
35:g:70:GLN:OE1	35:g:86:TRP:NE1	2.32	0.52
40:k:146:LYS:NZ	40:k:168:LYS:O	2.42	0.52
40:k:219:ALA:HB1	40:k:250:LYS:HD2	1.91	0.52
42:m:43:SER:OG	42:m:48:ARG:O	2.18	0.52
1:2:338:C:H2'	1:2:339:U:C6	2.45	0.52
1:2:1287:G:N2	1:2:1327:G:H1'	2.24	0.52
1:2:1692:A:O2'	1:2:1694:G:OP2	2.27	0.52
21:D:164:VAL:HG23	21:D:168:ILE:HB	1.92	0.52
27:R:44:LYS:HA	27:R:47:ARG:HG2	1.92	0.52
28:S:84:TRP:H	28:S:84:TRP:CD1	2.28	0.52
35:g:283:PRO:HG3	35:g:320:TRP:HH2	1.74	0.52
1:2:200:G:H2'	1:2:201:A:H8	1.75	0.52
1:2:379:U:H5'	1:2:380:C:H5	1.74	0.52
1:2:639:U:H2'	1:2:640:G:C8	2.44	0.52
1:2:790:A:C5	1:2:791:U:C4	2.98	0.52
1:2:878:G:H2'	1:2:879:C:H6	1.75	0.52
1:2:1097:U:H1'	14:W:71:LYS:HD2	1.92	0.52
1:2:1297:U:HO2'	4:C:217:LYS:NZ	2.07	0.52
1:2:1423:A:H2'	1:2:1424:C:C6	2.45	0.52
1:2:1427:G:H2'	1:2:1428:U:H6	1.74	0.52
1:2:1580:U:H3'	26:Q:135:ARG:HH22	1.74	0.52
1:2:1717:A:H2'	1:2:1718:G:O4'	2.10	0.52
9:J:40:ARG:HA	9:J:43:TYR:HB2	1.91	0.52
16:Y:76:TYR:OH	16:Y:86:GLU:OE1	2.25	0.52
19:e:8:LEU:HD21	36:i:62:ARG:CZ	2.40	0.52
21:D:96:LEU:HD21	21:D:194:ARG:HH21	1.73	0.52
29:T:84:LYS:NZ	29:T:94:VAL:H	2.07	0.52
35:g:171:ARG:NH2	35:g:189:ASN:OD1	2.43	0.52
39:j:5:HIS:NE2	39:j:123:LEU:HB3	2.25	0.52
39:j:220:VAL:HG12	39:j:230:LEU:HD22	1.91	0.52
1:2:174:G:H1	1:2:265:A:P	2.32	0.52
1:2:212:A:H2'	1:2:213:G:O4'	2.10	0.52
1:2:1480:C:P	1:2:1519:G:H22	2.32	0.52
1:2:1542:U:H2'	1:2:1543:A:C8	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:176:LEU:O	2:A:179:ARG:HG2	2.09	0.52
8:I:37:LYS:NZ	8:I:95:THR:OG1	2.38	0.52
26:Q:101:SER:O	26:Q:105:LEU:HD23	2.08	0.52
34:f:125:GLY:O	34:f:128:ILE:HG22	2.10	0.52
40:k:197:HIS:CD2	40:k:198:ASP:H	2.27	0.52
1:2:385:G:P	8:I:22:ARG:HH22	2.31	0.52
1:2:670:G:O2'	1:2:671:C:OP1	2.22	0.52
1:2:809:G:C5	7:H:111:LYS:HD2	2.45	0.52
1:2:899:A:H5''	1:2:900:G:H21	1.74	0.52
1:2:1329:G:H3'	1:2:1330:A:H8	1.74	0.52
1:2:1522:A:O3'	29:T:93:HIS:ND1	2.43	0.52
1:2:1531:C:OP2	31:Z:77:ARG:NH2	2.22	0.52
1:2:1684:C:H2'	1:2:1685:U:O4'	2.10	0.52
3:B:135:LEU:HD23	3:B:217:LEU:HA	1.92	0.52
4:C:157:HIS:HD2	4:C:200:ASP:HB2	1.74	0.52
6:G:21:GLU:OE1	6:G:21:GLU:N	2.37	0.52
8:I:117:TYR:HB3	8:I:119:GLN:OE1	2.10	0.52
10:L:101:GLU:HG2	15:X:13:ARG:NH1	2.24	0.52
12:O:99:GLN:O	12:O:102:LEU:HG	2.10	0.52
28:S:53:ASP:OD1	28:S:56:LYS:N	2.43	0.52
35:g:22:THR:OG1	35:g:37:GLY:O	2.27	0.52
40:k:226:GLN:O	40:k:229:THR:OG1	2.28	0.52
1:2:176:U:H3'	1:2:177:U:H2'	1.91	0.52
1:2:447:C:H2'	1:2:448:C:C6	2.45	0.52
1:2:747:C:H2'	1:2:748:U:O4'	2.10	0.52
1:2:758:U:OP1	5:E:22:LYS:NZ	2.43	0.52
1:2:867:G:C5'	11:N:91:LEU:HD21	2.40	0.52
1:2:992:A:C2	1:2:993:G:H1'	2.45	0.52
2:A:59:LEU:HD23	2:A:158:VAL:HG11	1.92	0.52
7:H:62:VAL:HG12	7:H:65:PRO:HD3	1.92	0.52
8:I:157:VAL:HA	8:I:160:GLN:NE2	2.25	0.52
12:O:19:ILE:HB	12:O:83:ILE:HA	1.91	0.52
26:Q:29:ILE:HG13	26:Q:29:ILE:O	2.10	0.52
40:k:431:GLU:HB3	40:k:519:LYS:HB2	1.92	0.52
1:2:115:G:OP2	10:L:65:SER:OG	2.28	0.51
1:2:178:A:H2'	1:2:179:A:O4'	2.10	0.51
1:2:638:U:H6	7:H:118:LEU:HB2	1.75	0.51
1:2:756:A:H3'	1:2:757:A:H8	1.75	0.51
1:2:933:C:C4	1:2:1076:C:H4'	2.46	0.51
1:2:1214:C:O4'	33:d:2:ALA:N	2.42	0.51
1:2:1226:A:N1	24:M:36:ARG:NE	2.58	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1342:U:H2'	1:2:1343:A:C8	2.45	0.51
1:2:1478:G:N7	1:2:1479:C:N4	2.57	0.51
1:2:1601:U:HO2'	30:U:79:TRP:HH2	1.57	0.51
1:2:1647:G:H2'	1:2:1648:U:C6	2.45	0.51
3:B:35:PRO:HB3	3:B:231:LEU:HB3	1.93	0.51
6:G:41:VAL:HG13	6:G:45:PHE:CD2	2.45	0.51
6:G:131:LYS:NZ	6:G:133:LEU:O	2.34	0.51
8:I:108:PRO:HA	8:I:111:GLN:NE2	2.25	0.51
24:M:86:LYS:HD2	24:M:107:VAL:O	2.10	0.51
26:Q:25:GLY:C	26:Q:26:LYS:HD3	2.35	0.51
35:g:86:TRP:HH2	35:g:128:ARG:HH21	1.58	0.51
36:i:76:ILE:HG23	36:i:95:TYR:HB2	1.92	0.51
38:1:8:U:H3	38:1:13:C:N4	2.08	0.51
1:2:14:C:H2'	1:2:15:U:C6	2.45	0.51
1:2:488:C:N4	1:2:489:C:H41	2.08	0.51
1:2:536:G:H2'	9:J:171:ARG:HH21	1.74	0.51
1:2:865:G:P	11:N:1:MET:H2	2.33	0.51
1:2:888:U:H2'	1:2:889:C:H6	1.74	0.51
1:2:1252:U:H5''	34:f:128:ILE:HD11	1.91	0.51
1:2:1431:G:C2	33:d:41:GLN:HB2	2.44	0.51
1:2:1499:C:H41	29:T:102:ARG:NH1	2.07	0.51
2:A:207:PRO:HA	2:A:210:ILE:HB	1.91	0.51
22:F:104:ARG:C	22:F:105:ASN:HD22	2.18	0.51
28:S:72:ILE:HA	28:S:79:TYR:CE2	2.46	0.51
35:g:109:GLY:H	35:g:129:ASP:HB3	1.75	0.51
1:2:328:G:OP1	8:I:98:LYS:HE2	2.10	0.51
1:2:453:U:H5'	5:E:62:LYS:HE3	1.91	0.51
1:2:512:U:H1'	9:J:131:GLN:NE2	2.25	0.51
1:2:537:A:H5'	1:2:542:C:H41	1.76	0.51
1:2:810:A:C5	7:H:110:GLN:NE2	2.78	0.51
1:2:1259:U:O2'	1:2:1260:G:H8	1.93	0.51
1:2:1298:G:H2'	1:2:1299:A:C8	2.45	0.51
1:2:1331:C:H2'	1:2:1332:C:C6	2.45	0.51
1:2:1388:U:H5''	27:R:3:ARG:CZ	2.40	0.51
1:2:1495:U:C2	1:2:1496:G:C8	2.99	0.51
1:2:1669:A:H3'	1:2:1670:G:H8	1.75	0.51
3:B:193:ILE:O	3:B:196:GLU:HG2	2.09	0.51
5:E:57:ASN:HD21	5:E:59:ARG:HE	1.57	0.51
5:E:198:ARG:HE	5:E:200:ARG:NH1	2.08	0.51
6:G:1:MET:HE1	6:G:24:VAL:HG21	1.93	0.51
6:G:31:ARG:CZ	6:G:34:GLN:HE22	2.23	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:96:ARG:NH2	7:H:115:SER:O	2.43	0.51
1:2:55:A:H2'	1:2:402:G:H1	1.76	0.51
1:2:92:A:OP2	1:2:397:G:N1	2.25	0.51
1:2:108:A:H2'	1:2:109:G:C8	2.45	0.51
1:2:141:U:P	6:G:139:ASN:HD21	2.33	0.51
1:2:552:G:H2'	1:2:553:C:C5	2.45	0.51
1:2:637:U:OP2	14:W:32:LYS:HD2	2.09	0.51
1:2:745:U:O4	7:H:104:ARG:NH1	2.44	0.51
1:2:871:G:H2'	1:2:872:U:O4'	2.10	0.51
1:2:1329:G:H2'	1:2:1330:A:O4'	2.10	0.51
3:B:228:LEU:HD13	3:B:231:LEU:HD12	1.93	0.51
8:I:157:VAL:HG12	8:I:161:PHE:CE2	2.45	0.51
21:D:120:TYR:HA	21:D:123:VAL:HG12	1.93	0.51
36:i:55:ASN:HB3	36:i:57:ARG:HG3	1.90	0.51
1:2:71:A:C5	6:G:164:LYS:HE3	2.45	0.51
1:2:752:A:H2	1:2:796:G:H22	1.59	0.51
1:2:1430:U:H4'	1:2:1431:G:O5'	2.10	0.51
4:C:157:HIS:CD2	4:C:200:ASP:HB2	2.46	0.51
8:I:102:VAL:HG22	8:I:103:GLN:H	1.74	0.51
9:J:86:LEU:HD11	9:J:90:LYS:HD2	1.93	0.51
10:L:99:ARG:HD2	15:X:11:SER:H	1.76	0.51
20:h:16:LYS:O	20:h:19:LYS:HG3	2.09	0.51
24:M:31:HIS:HB3	24:M:116:ASN:HD22	1.76	0.51
30:U:109:GLU:HG3	30:U:110:PRO:HD2	1.91	0.51
35:g:152:VAL:HA	35:g:178:GLY:HA3	1.92	0.51
36:i:33:GLN:OE1	36:i:33:GLN:N	2.44	0.51
39:j:93:GLU:HA	39:j:96:ILE:HD12	1.93	0.51
1:2:92:A:P	1:2:397:G:H22	2.33	0.51
1:2:752:A:C6	1:2:753:A:N1	2.79	0.51
1:2:801:G:N2	14:W:107:SER:OG	2.43	0.51
1:2:991:A:OP2	1:2:1010:G:N1	2.31	0.51
9:J:41:GLU:OE1	9:J:44:ARG:NH1	2.44	0.51
20:h:4:LYS:HD3	20:h:5:TRP:CH2	2.46	0.51
40:k:314:ARG:HH21	40:k:417:VAL:H	1.58	0.51
1:2:208:U:N3	1:2:209:A:N7	2.59	0.51
1:2:456:G:H2'	1:2:457:G:H8	1.76	0.51
1:2:500:U:H2'	1:2:501:U:C6	2.46	0.51
1:2:583:C:O3'	19:e:15:LYS:HD3	2.11	0.51
1:2:1571:A:H4'	1:2:1572:G:O5'	2.10	0.51
3:B:53:GLY:C	3:B:55:LYS:N	2.69	0.51
4:C:162:LYS:NZ	14:W:94:LEU:O	2.36	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:8:ARG:HH21	8:I:18:ARG:HH12	1.59	0.51
10:L:8:GLN:NE2	10:L:14:GLN:OE1	2.43	0.51
10:L:93:TYR:OH	10:L:98:ASN:ND2	2.39	0.51
22:F:58:ALA:O	22:F:61:VAL:HG12	2.10	0.51
30:U:65:ILE:HG22	33:d:33:LYS:HE3	1.93	0.51
35:g:19:GLY:HA3	35:g:39:ARG:HB3	1.92	0.51
35:g:239:MET:HE1	35:g:241:PHE:CZ	2.46	0.51
1:2:97:C:H2'	1:2:98:U:H6	1.75	0.51
1:2:267:C:H5''	6:G:186:ARG:HH12	1.75	0.51
1:2:594:G:H2'	1:2:595:C:C6	2.46	0.51
1:2:860:U:H2'	1:2:861:A:N3	2.25	0.51
1:2:1167:U:H2'	1:2:1168:G:C8	2.45	0.51
2:A:54:TRP:HD1	2:A:57:ILE:HB	1.74	0.51
5:E:23:LEU:HD12	9:J:3:ARG:NH2	2.26	0.51
8:I:39:GLY:H	8:I:61:GLU:HG3	1.74	0.51
14:W:25:VAL:CG2	14:W:63:VAL:HB	2.41	0.51
16:Y:41:ARG:HB3	16:Y:52:LYS:HZ2	1.76	0.51
28:S:18:LEU:HD22	28:S:101:LEU:HD23	1.92	0.51
31:Z:79:ALA:O	31:Z:83:LEU:HG	2.11	0.51
35:g:71:ASP:HB3	35:g:84:ALA:HB3	1.92	0.51
40:k:506:GLU:O	40:k:508:HIS:N	2.42	0.51
1:2:110:U:OP1	1:2:753:A:O2'	2.24	0.51
1:2:167:A:H2'	1:2:168:A:C8	2.46	0.51
1:2:641:G:N2	1:2:693:U:O2	2.44	0.51
1:2:877:G:H2'	1:2:878:G:H8	1.76	0.51
1:2:929:A:H5''	17:a:70:LYS:CD	2.41	0.51
2:A:8:ASP:C	2:A:54:TRP:HZ3	2.18	0.51
2:A:83:GLN:O	2:A:87:LEU:HG	2.10	0.51
5:E:151:ASP:HB3	5:E:154:ILE:HD13	1.93	0.51
6:G:50:PHE:CE1	6:G:113:ILE:HB	2.44	0.51
11:N:110:ASP:CB	11:N:114:ARG:HH12	2.23	0.51
12:O:13:VAL:HG12	12:O:76:ILE:HD13	1.92	0.51
16:Y:39:GLU:OE2	16:Y:43:LYS:NZ	2.41	0.51
18:b:10:PRO:HG2	18:b:24:LEU:HD11	1.92	0.51
40:k:221:ASN:N	40:k:254:MET:HE1	2.26	0.51
1:2:785:C:H2'	1:2:786:G:O4'	2.11	0.51
1:2:883:A:H5'	3:B:136:ARG:HH22	1.76	0.51
1:2:977:A:H2'	1:2:978:A:O4'	2.11	0.51
1:2:1543:A:H5''	28:S:133:VAL:HG22	1.92	0.51
5:E:103:TYR:HE1	5:E:109:PHE:CE1	2.28	0.51
6:G:85:ARG:HH21	6:G:87:ARG:HE	1.59	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:53:ARG:HG3	9:J:97:LEU:HD23	1.93	0.51
15:X:53:VAL:HG22	15:X:72:VAL:HG11	1.93	0.51
16:Y:5:ILE:H	16:Y:5:ILE:HD12	1.76	0.51
24:M:104:ARG:HG2	24:M:107:VAL:HB	1.93	0.51
38:l:66:C:H2'	38:l:67:G:H8	1.76	0.51
42:m:16:TYR:CD2	42:m:105:PRO:HD2	2.33	0.51
1:2:71:A:H1'	1:2:81:G:N2	2.26	0.50
1:2:598:A:N3	15:X:47:SER:OG	2.30	0.50
1:2:801:G:N2	14:W:107:SER:HG	2.09	0.50
1:2:934:U:H3'	17:a:15:ARG:HH22	1.76	0.50
1:2:1212:G:H2'	1:2:1213:U:O4'	2.11	0.50
1:2:1525:C:H2'	1:2:1526:U:C6	2.46	0.50
1:2:1532:G:OP2	31:Z:74:SER:HB3	2.11	0.50
1:2:1649:A:H2'	1:2:1650:C:C6	2.45	0.50
5:E:163:ASP:OD2	5:E:168:THR:OG1	2.26	0.50
7:H:138:LYS:HD2	7:H:139:ARG:N	2.26	0.50
14:W:65:LEU:HG	14:W:67:GLY:H	1.76	0.50
21:D:161:GLY:O	21:D:164:VAL:HG12	2.11	0.50
28:S:28:VAL:HG22	28:S:58:ALA:HA	1.92	0.50
28:S:112:ASP:HA	28:S:115:ARG:HG2	1.92	0.50
35:g:91:ARG:HD3	35:g:103:ARG:HA	1.93	0.50
40:k:139:LYS:HE2	40:k:319:ARG:HD2	1.92	0.50
1:2:30:G:H5''	15:X:131:SER:OG	2.11	0.50
1:2:392:C:H4'	1:2:1672:C:H5'	1.93	0.50
1:2:881:U:H2'	1:2:882:C:H6	1.77	0.50
1:2:1647:G:H2'	1:2:1648:U:H6	1.76	0.50
3:B:98:THR:H	3:B:232:HIS:CE1	2.29	0.50
5:E:180:LEU:HG	5:E:231:PRO:HA	1.92	0.50
6:G:32:ILE:HG23	6:G:53:ALA:HA	1.92	0.50
6:G:150:GLU:C	6:G:152:ASP:H	2.19	0.50
22:F:199:GLU:OE2	22:F:211:TYR:N	2.44	0.50
23:K:54:PHE:HB3	23:K:72:GLY:HA2	1.92	0.50
23:K:77:ARG:HD3	23:K:84:GLU:HG3	1.93	0.50
1:2:399:A:C5	8:I:26:LYS:HD2	2.45	0.50
1:2:460:G:H2'	1:2:461:G:C8	2.47	0.50
1:2:555:A:N3	1:2:589:C:H1'	2.26	0.50
1:2:701:U:H1'	1:2:738:G:N2	2.26	0.50
1:2:855:A:O2'	1:2:856:U:H5'	2.12	0.50
1:2:991:A:N6	1:2:1012:A:H1'	2.26	0.50
1:2:1012:A:C2	1:2:1013:G:H1'	2.46	0.50
1:2:1198:G:H2'	1:2:1198:G:N3	2.25	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1267:G:H2'	1:2:1269:G:C8	2.46	0.50
1:2:1386:A:OP2	27:R:32:LYS:NZ	2.44	0.50
1:2:1412:U:OP1	27:R:2:GLY:N	2.44	0.50
1:2:1771:C:H2'	1:2:1772:G:C8	2.46	0.50
2:A:92:HIS:CE1	2:A:202:TYR:HH	2.23	0.50
2:A:182:LEU:HD12	2:A:195:TRP:HH2	1.75	0.50
3:B:157:GLN:HE22	3:B:159:SER:HB3	1.77	0.50
4:C:63:LEU:C	13:V:15:ARG:HH12	2.20	0.50
4:C:174:LEU:HD11	4:C:193:MET:HE3	1.92	0.50
5:E:171:ASP:CG	5:E:172:PHE:H	2.18	0.50
8:I:67:TRP:HH2	8:I:161:PHE:HZ	1.59	0.50
10:L:17:PRO:O	10:L:19:ILE:HD12	2.11	0.50
10:L:99:ARG:HE	15:X:12:ALA:HB3	1.76	0.50
14:W:106:THR:HG23	14:W:108:ALA:H	1.75	0.50
21:D:51:ARG:HH12	21:D:92:HIS:CD2	2.30	0.50
35:g:189:ASN:HB2	35:g:192:SER:HA	1.94	0.50
39:j:169:LEU:O	39:j:173:ILE:HG12	2.12	0.50
40:k:503:ARG:HG3	40:k:512:ILE:HD13	1.91	0.50
1:2:544:A:H1'	1:2:545:C:C6	2.46	0.50
1:2:625:U:H2'	1:2:626:C:H6	1.77	0.50
1:2:1099:G:O2'	14:W:74:VAL:O	2.26	0.50
1:2:1272:G:H4'	1:2:1273:C:H3'	1.93	0.50
1:2:1528:C:H2'	1:2:1529:G:H8	1.77	0.50
1:2:1704:C:O2'	1:2:1706:U:O5'	2.21	0.50
2:A:215:ALA:O	2:A:219:ALA:HB2	2.12	0.50
3:B:23:PRO:O	3:B:26:ARG:HG2	2.11	0.50
5:E:69:HIS:HD2	5:E:94:ALA:HB2	1.77	0.50
6:G:14:LYS:NZ	6:G:123:GLY:H	2.10	0.50
8:I:156:ALA:O	8:I:159:SER:OG	2.17	0.50
23:K:33:GLU:OE1	23:K:34:GLU:HG2	2.12	0.50
23:K:82:LEU:HD23	23:K:86:ILE:HG21	1.94	0.50
35:g:296:ALA:HB2	35:g:312:TYR:CE1	2.47	0.50
38:1:27:C:H2'	38:1:28:A:H8	1.77	0.50
42:m:42:ILE:O	42:m:46:LEU:HG	2.11	0.50
1:2:548:G:H2'	1:2:549:A:C8	2.46	0.50
1:2:589:C:H2'	1:2:590:A:H8	1.76	0.50
1:2:824:U:O2'	1:2:825:U:O4'	2.14	0.50
1:2:931:U:C2	1:2:943:A:N6	2.80	0.50
1:2:1076:C:H2'	1:2:1077:C:H6	1.76	0.50
1:2:1182:A:N3	1:2:1209:C:O2'	2.44	0.50
2:A:79:ARG:O	2:A:83:GLN:NE2	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:48:VAL:HG21	3:B:61:LEU:HD11	1.93	0.50
4:C:111:ASP:OD1	4:C:115:HIS:N	2.43	0.50
4:C:126:VAL:HG21	37:3:39:U:C5	2.47	0.50
5:E:171:ASP:OD1	5:E:172:PHE:N	2.38	0.50
8:I:106:ALA:HB2	8:I:166:LEU:HD23	1.94	0.50
9:J:42:ILE:HA	9:J:45:ILE:HG22	1.94	0.50
9:J:123:HIS:CB	19:e:37:ARG:HH12	2.22	0.50
10:L:99:ARG:NE	15:X:12:ALA:HB3	2.26	0.50
15:X:14:LYS:O	15:X:18:HIS:HB2	2.12	0.50
22:F:167:LEU:O	22:F:171:ASN:ND2	2.45	0.50
23:K:62:GLN:HE22	33:d:22:ARG:C	2.19	0.50
27:R:33:ARG:NH2	35:g:128:ARG:HB3	2.25	0.50
29:T:100:ILE:O	29:T:104:VAL:HG23	2.12	0.50
35:g:44:ILE:HB	35:g:46:TRP:CH2	2.46	0.50
40:k:432:ILE:HD13	40:k:485:LEU:HD11	1.94	0.50
42:m:64:GLN:OE1	42:m:64:GLN:N	2.44	0.50
1:2:48:G:H2'	1:2:49:C:C6	2.47	0.50
1:2:65:A:N6	1:2:83:G:C2	2.79	0.50
1:2:444:A:N6	1:2:461:G:N3	2.60	0.50
1:2:599:U:O2'	15:X:45:GLY:O	2.30	0.50
1:2:896:C:O2'	1:2:913:G:N2	2.44	0.50
1:2:1114:U:H2'	1:2:1115:A:C8	2.47	0.50
1:2:1405:U:C2	1:2:1406:G:C8	3.00	0.50
1:2:1487:U:H2'	1:2:1512:U:O4	2.11	0.50
1:2:1524:A:H61	26:Q:74:HIS:CD2	2.30	0.50
1:2:1671:G:O6	1:2:1726:U:C2	2.64	0.50
1:2:1741:U:H2'	1:2:1742:A:H8	1.76	0.50
10:L:49:ILE:H	10:L:49:ILE:HD12	1.76	0.50
22:F:45:PHE:HE2	22:F:120:LEU:HD12	1.75	0.50
22:F:176:LEU:HA	22:F:179:ILE:HG22	1.93	0.50
22:F:176:LEU:HB3	22:F:212:ALA:HA	1.94	0.50
23:K:87:PHE:HB3	23:K:91:TYR:HB2	1.94	0.50
24:M:28:SER:HB2	24:M:33:GLY:C	2.36	0.50
40:k:216:LEU:O	40:k:247:LEU:N	2.42	0.50
42:m:52:TYR:CE2	42:m:140:ILE:HG12	2.47	0.50
1:2:93:A:O3'	5:E:3:ARG:NH1	2.45	0.50
1:2:333:G:OP1	8:I:54:LYS:NZ	2.38	0.50
1:2:577:U:H4'	1:2:578:A:OP1	2.11	0.50
1:2:988:U:H1'	12:O:126:THR:CG2	2.42	0.50
1:2:1290:G:H1	1:2:1323:G:H22	1.58	0.50
1:2:1293:G:N2	1:2:1302:U:O2	2.29	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1467:A:H2'	1:2:1468:C:C6	2.46	0.50
1:2:1607:U:H2'	1:2:1608:G:O4'	2.12	0.50
5:E:206:ASP:HB2	5:E:222:LEU:CD1	2.41	0.50
5:E:251:GLU:O	5:E:255:ARG:HG2	2.11	0.50
8:I:185:LEU:HD11	8:I:189:GLU:HB3	1.93	0.50
14:W:41:MET:HE2	14:W:69:LEU:HD12	1.92	0.50
21:D:162:GLN:N	21:D:163:PRO:HD2	2.27	0.50
22:F:96:THR:HG22	22:F:116:VAL:HG11	1.93	0.50
22:F:191:THR:N	22:F:194:GLU:OE1	2.40	0.50
28:S:86:LEU:HB2	28:S:89:GLN:OE1	2.11	0.50
35:g:160:LYS:NZ	35:g:163:GLU:H	2.10	0.50
40:k:144:ASN:HB3	40:k:188:HIS:CE1	2.46	0.50
42:m:95:LYS:O	42:m:119:ARG:NH1	2.45	0.50
1:2:5:U:O2'	1:2:552:G:H4'	2.12	0.50
1:2:96:G:H2'	1:2:97:C:C6	2.47	0.50
1:2:566:A:O2'	15:X:90:ASP:OD1	2.26	0.50
1:2:609:G:O4'	1:2:612:G:N2	2.39	0.50
1:2:1089:C:H2'	1:2:1090:A:H5''	1.93	0.50
1:2:1233:A:H3'	1:2:1244:G:H2'	1.94	0.50
2:A:107:PHE:HE1	2:A:116:LYS:HB2	1.77	0.50
12:O:84:ARG:HH11	12:O:86:THR:N	2.10	0.50
24:M:56:VAL:HG13	24:M:83:ALA:HA	1.93	0.50
26:Q:49:TYR:HB3	26:Q:53:LEU:HD23	1.92	0.50
29:T:116:ILE:HD13	29:T:122:ARG:HG3	1.92	0.50
35:g:68:ILE:O	35:g:86:TRP:N	2.45	0.50
42:m:109:ILE:HD13	42:m:140:ILE:HD13	1.92	0.50
1:2:40:A:H3'	1:2:41:A:H8	1.77	0.50
1:2:155:A:H2'	1:2:156:A:C8	2.47	0.50
1:2:387:G:C6	1:2:409:A:C6	3.00	0.50
1:2:592:U:H3'	9:J:40:ARG:NH2	2.26	0.50
1:2:911:U:OP1	1:2:912:G:O2'	2.29	0.50
1:2:925:A:OP1	1:2:1015:C:O2'	2.21	0.50
1:2:953:G:H2'	1:2:954:A:C8	2.47	0.50
1:2:990:G:OP1	12:O:130:GLY:N	2.44	0.50
1:2:1038:A:O2'	1:2:1039:G:H8	1.94	0.50
1:2:1243:A:O2'	1:2:1244:G:O5'	2.30	0.50
5:E:69:HIS:CD2	5:E:94:ALA:HB2	2.46	0.50
7:H:64:VAL:N	7:H:65:PRO:HD3	2.27	0.50
10:L:110:HIS:O	10:L:139:VAL:HG22	2.12	0.50
11:N:37:ILE:HG12	11:N:54:LEU:HD11	1.94	0.50
15:X:12:ALA:HB1	15:X:15:LEU:HB3	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:F:43:LYS:HD3	22:F:47:LYS:HA	1.93	0.50
22:F:57:ASP:HB3	22:F:60:LEU:HB2	1.94	0.50
31:Z:43:ASP:OD1	31:Z:44:GLN:N	2.45	0.50
33:d:16:LYS:HE2	33:d:27:HIS:O	2.12	0.50
35:g:262:ALA:HA	35:g:267:ILE:HD13	1.94	0.50
40:k:356:ARG:NH2	40:k:422:HIS:O	2.45	0.50
1:2:78:A:H4'	6:G:157:VAL:HG11	1.94	0.49
1:2:204:U:H3'	1:2:205:A:H8	1.77	0.49
1:2:304:C:H2'	1:2:305:U:C6	2.47	0.49
1:2:989:C:H2'	1:2:990:G:O4'	2.12	0.49
1:2:1044:C:H2'	1:2:1045:G:C8	2.46	0.49
1:2:1390:U:H2'	1:2:1391:C:H6	1.76	0.49
2:A:139:VAL:HG13	2:A:141:ILE:HD11	1.93	0.49
4:C:72:GLN:OE1	4:C:72:GLN:N	2.29	0.49
6:G:159:ARG:HD2	6:G:170:THR:HG22	1.94	0.49
7:H:71:HIS:HA	7:H:74:GLN:HB2	1.94	0.49
9:J:83:ILE:HD12	9:J:149:ARG:HA	1.94	0.49
13:V:66:ASP:O	13:V:70:ASN:ND2	2.45	0.49
14:W:11:LEU:HD13	14:W:73:GLY:HA2	1.93	0.49
14:W:103:ILE:HD11	14:W:129:VAL:HG12	1.94	0.49
14:W:106:THR:HA	14:W:123:GLY:HA3	1.93	0.49
18:b:48:SER:OG	18:b:49:HIS:N	2.44	0.49
26:Q:27:GLY:N	26:Q:61:ALA:O	2.45	0.49
29:T:62:ALA:O	29:T:65:ILE:HG22	2.11	0.49
29:T:76:LEU:HD22	29:T:80:TYR:HE1	1.77	0.49
38:1:59:A:O2'	38:1:60:A:O4'	2.29	0.49
1:2:120:PSU:H2'	1:2:121:U:H5'	1.93	0.49
1:2:334:U:H2'	1:2:335:G:O4'	2.11	0.49
1:2:1386:A:H4'	1:2:1387:C:O4'	2.12	0.49
1:2:1414:G:C2	1:2:1415:A:C4	3.00	0.49
1:2:1423:A:O2'	1:2:1424:C:H5'	2.12	0.49
1:2:1428:U:H1'	30:U:72:ASN:HD22	1.76	0.49
1:2:1598:A:C6	1:2:1600:C:N3	2.80	0.49
5:E:16:HIS:O	5:E:108:ARG:NE	2.45	0.49
5:E:191:ARG:HD3	5:E:218:PHE:CZ	2.48	0.49
23:K:23:ALA:O	23:K:64:TYR:HB2	2.12	0.49
35:g:36:SER:HA	35:g:72:VAL:HG11	1.93	0.49
35:g:187:SER:OG	35:g:196:GLU:OE2	2.24	0.49
1:2:162:G:H2'	1:2:163:A:C8	2.47	0.49
1:2:369:A:H3'	1:2:370:G:C8	2.46	0.49
1:2:537:A:OP1	9:J:175:LYS:NZ	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1117:G:H2'	1:2:1118:G:O4'	2.12	0.49
1:2:1331:C:H2'	1:2:1332:C:H6	1.78	0.49
1:2:1593:U:O4	47:2:2001:HOH:O	2.19	0.49
6:G:132:ARG:HD2	6:G:133:LEU:HB2	1.95	0.49
6:G:149:LYS:C	6:G:151:ASP:H	2.21	0.49
6:G:216:LEU:O	6:G:220:LYS:HG3	2.11	0.49
8:I:67:TRP:CH2	8:I:161:PHE:HZ	2.31	0.49
8:I:85:PRO:HB3	10:L:12:ALA:HB2	1.94	0.49
11:N:87:ASP:O	11:N:91:LEU:HD23	2.12	0.49
13:V:87:ARG:O	18:b:11:THR:OG1	2.25	0.49
17:a:87:ARG:NH2	17:a:92:ARG:O	2.45	0.49
22:F:34:GLU:HG2	22:F:35:ILE:HG13	1.93	0.49
26:Q:122:ARG:O	26:Q:123:ARG:HD2	2.13	0.49
1:2:628:U:OP2	1:2:968:C:N4	2.46	0.49
1:2:936:C:H2'	1:2:937:G:H8	1.78	0.49
1:2:1356:G:O2'	29:T:126:ASP:OD1	2.21	0.49
1:2:1403:G:H2'	1:2:1404:A:H8	1.76	0.49
1:2:1756:U:H2'	1:2:1757:C:C6	2.47	0.49
2:A:84:ARG:HB3	2:A:88:LYS:HZ1	1.77	0.49
3:B:157:GLN:NE2	3:B:159:SER:H	2.10	0.49
5:E:98:ASN:HB2	5:E:114:ILE:O	2.12	0.49
6:G:103:GLY:H	6:G:106:LEU:HD13	1.78	0.49
12:O:68:ALA:HA	12:O:110:LEU:HD11	1.93	0.49
14:W:111:MET:HE1	14:W:119:LYS:HD2	1.94	0.49
26:Q:31:VAL:HA	26:Q:67:VAL:HB	1.94	0.49
35:g:226:GLN:HB3	35:g:228:TYR:CE2	2.47	0.49
1:2:627:G:C6	1:2:968:C:H6	2.30	0.49
1:2:734:A:H2'	1:2:735:C:C6	2.48	0.49
1:2:1198:G:H4'	1:2:1199:G:O5'	2.12	0.49
1:2:1315:G:H5''	27:R:7:LYS:HE2	1.94	0.49
1:2:1776:G:N2	1:2:1782:C:C2	2.81	0.49
4:C:146:ARG:HH22	13:V:11:LEU:HD23	1.76	0.49
5:E:77:ARG:HD2	5:E:82:PHE:CE2	2.48	0.49
6:G:49:VAL:O	6:G:113:ILE:HD12	2.11	0.49
7:H:144:VAL:HG13	14:W:49:GLU:OE2	2.11	0.49
9:J:108:ARG:O	9:J:112:GLN:NE2	2.45	0.49
11:N:97:SER:O	11:N:100:LYS:HG2	2.12	0.49
22:F:83:ARG:HG2	22:F:84:PHE:CD2	2.48	0.49
26:Q:99:GLU:HB2	35:g:60:ARG:HA	1.94	0.49
28:S:53:ASP:HB3	28:S:56:LYS:HD2	1.94	0.49
35:g:90:LEU:HB2	35:g:104:PHE:HB2	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:i:62:ARG:HG2	36:i:63:GLY:H	1.77	0.49
1:2:248:U:H3'	1:2:249:C:H5'	1.95	0.49
1:2:433:G:H5'	15:X:78:LYS:HB3	1.93	0.49
1:2:565:C:H5'	36:i:62:ARG:HH12	1.78	0.49
1:2:928:A:P	1:2:930:C:H42	2.35	0.49
1:2:1497:G:H1	1:2:1506:U:H3	1.59	0.49
1:2:1627:G:H2'	1:2:1628:U:C6	2.48	0.49
4:C:43:VAL:N	4:C:70:GLU:OE2	2.45	0.49
8:I:81:VAL:HG12	8:I:94:ASN:HA	1.94	0.49
9:J:129:ILE:HG21	9:J:144:PRO:HA	1.94	0.49
10:L:80:MET:N	10:L:80:MET:SD	2.83	0.49
11:N:132:VAL:HG23	11:N:134:VAL:HG23	1.93	0.49
35:g:71:ASP:HB2	35:g:112:LEU:O	2.13	0.49
38:l:75:C:H5''	38:l:76:A:H5''	1.94	0.49
39:j:94:ASP:O	39:j:97:LYS:HG2	2.12	0.49
1:2:467:A:N1	1:2:593:A:O2'	2.42	0.49
1:2:513:G:C5'	9:J:132:ARG:HH22	2.25	0.49
1:2:738:G:H2'	1:2:739:G:O4'	2.13	0.49
1:2:1198:G:N2	33:d:29:GLY:O	2.45	0.49
1:2:1262:G:H2'	1:2:1263:G:O4'	2.13	0.49
1:2:1381:G:O4'	30:U:89:ARG:NH2	2.37	0.49
3:B:158:SER:HA	3:B:161:ILE:HD12	1.95	0.49
5:E:176:ASP:H	5:E:179:LYS:NZ	2.10	0.49
5:E:181:VAL:HG11	5:E:195:ILE:HG13	1.93	0.49
8:I:40:THR:O	8:I:59:ARG:NH2	2.45	0.49
22:F:127:THR:O	22:F:128:ASP:C	2.56	0.49
27:R:96:SER:C	27:R:97:ASN:HD22	2.20	0.49
30:U:84:MET:HE2	33:d:52:PHE:CD1	2.47	0.49
39:j:148:SER:HA	39:j:151:ASP:O	2.13	0.49
1:2:476:A:H2'	1:2:477:A:C8	2.47	0.49
1:2:803:A:N7	14:W:107:SER:HA	2.28	0.49
1:2:1219:C:H2'	1:2:1220:A:H8	1.77	0.49
1:2:1287:G:C2	1:2:1327:G:H1'	2.47	0.49
1:2:1357:G:H5'	29:T:126:ASP:OD1	2.12	0.49
1:2:1548:A:C6	1:2:1560:G:C6	3.01	0.49
5:E:136:ILE:HG21	5:E:148:ARG:HD3	1.95	0.49
6:G:7:TYR:O	6:G:11:GLY:N	2.45	0.49
7:H:27:LEU:HD12	7:H:84:LYS:NZ	2.28	0.49
7:H:125:ILE:HG23	7:H:173:TYR:CE2	2.46	0.49
21:D:32:GLU:N	21:D:32:GLU:OE1	2.45	0.49
24:M:102:ASN:O	24:M:104:ARG:N	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:S:43:ALA:HA	28:S:46:VAL:HG12	1.94	0.49
34:f:105:TYR:HB3	34:f:129:PHE:HE2	1.78	0.49
40:k:98:GLN:NE2	40:k:396:ILE:HD11	2.28	0.49
40:k:161:TYR:CD1	40:k:296:GLU:HB3	2.48	0.49
40:k:356:ARG:HB2	40:k:416:VAL:HG23	1.95	0.49
1:2:430:C:H2'	1:2:431:G:C8	2.46	0.49
1:2:485:G:H1	1:2:500:U:H3	1.61	0.49
1:2:520:A:H2'	1:2:521:U:C6	2.47	0.49
1:2:1233:A:HO2'	34:f:143:HIS:CE1	2.30	0.49
1:2:1343:A:H2'	1:2:1344:A:C8	2.47	0.49
1:2:1364:C:H2'	1:2:1365:C:C6	2.47	0.49
1:2:1394:U:O2	1:2:1400:G:O6	2.31	0.49
1:2:1746:G:H2'	1:2:1747:A:C8	2.48	0.49
9:J:163:PRO:O	9:J:164:PHE:HB2	2.12	0.49
22:F:137:ASP:HA	22:F:140:ILE:HG12	1.94	0.49
27:R:96:SER:C	27:R:97:ASN:ND2	2.70	0.49
39:j:24:VAL:HB	39:j:65:VAL:HA	1.94	0.49
39:j:68:ASN:OD1	39:j:69:ASP:N	2.46	0.49
42:m:117:LEU:HD22	42:m:141:LEU:HG	1.94	0.49
1:2:7:G:H2'	1:2:8:U:H5''	1.95	0.49
1:2:127:G:O6	6:G:199:GLN:NE2	2.45	0.49
1:2:749:U:H2'	1:2:750:U:C6	2.47	0.49
1:2:809:G:H21	7:H:108:GLN:HG3	1.78	0.49
1:2:1125:G:H2'	1:2:1126:G:C8	2.46	0.49
1:2:1443:G:N2	34:f:88:PRO:O	2.46	0.49
2:A:50:VAL:O	2:A:53:THR:OG1	2.18	0.49
4:C:81:LEU:HB3	4:C:109:VAL:HG21	1.95	0.49
5:E:100:ARG:CZ	5:E:236:ILE:HD11	2.43	0.49
8:I:160:GLN:HG3	8:I:166:LEU:HD13	1.93	0.49
13:V:17:CYS:SG	13:V:20:THR:HG22	2.53	0.49
17:a:51:ARG:HH12	32:c:37:THR:C	2.21	0.49
18:b:67:THR:OG1	18:b:70:LYS:O	2.29	0.49
26:Q:25:GLY:HA3	26:Q:64:ASP:HB3	1.94	0.49
35:g:260:THR:HB	35:g:269:ILE:HD13	1.93	0.49
40:k:98:GLN:HE22	40:k:391:VAL:H	1.59	0.49
1:2:777:C:O2'	5:E:261:LEU:O	2.21	0.48
1:2:874:G:P	3:B:157:GLN:HE21	2.36	0.48
1:2:1078:U:P	17:a:93:ARG:HH22	2.36	0.48
1:2:1137:A:H2'	1:2:1138:A:H8	1.78	0.48
1:2:1214:C:H2'	1:2:1215:C:C6	2.48	0.48
3:B:53:GLY:O	3:B:54:LEU:HB2	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:70:LEU:HD12	3:B:82:ARG:HB3	1.93	0.48
3:B:107:THR:O	3:B:111:ARG:HD3	2.14	0.48
4:C:64:HIS:CD2	4:C:244:PRO:HD3	2.48	0.48
5:E:57:ASN:ND2	5:E:59:ARG:HE	2.10	0.48
6:G:64:LYS:HE3	6:G:82:SER:H	1.77	0.48
7:H:173:TYR:HA	7:H:176:LEU:HD12	1.94	0.48
9:J:38:ASN:OD1	9:J:40:ARG:HB2	2.12	0.48
18:b:48:SER:HG	18:b:49:HIS:N	2.11	0.48
19:e:13:LYS:HA	19:e:16:SER:HB2	1.93	0.48
22:F:107:GLY:C	22:F:108:LYS:CG	2.82	0.48
24:M:87:GLN:O	24:M:90:GLU:HG3	2.13	0.48
1:2:70:C:H2'	1:2:71:A:O4'	2.13	0.48
1:2:218:A:C6	1:2:842:U:H1'	2.48	0.48
1:2:442:C:H3'	16:Y:105:ARG:HD2	1.95	0.48
1:2:764:U:OP2	9:J:82:ARG:NH1	2.46	0.48
1:2:977:A:C4	1:2:978:A:C8	3.01	0.48
1:2:1240:G:H3'	1:2:1241:A:H8	1.78	0.48
1:2:1461:C:H2'	1:2:1462:G:H8	1.78	0.48
1:2:1679:A:H2	1:2:1718:G:H21	1.59	0.48
5:E:136:ILE:HG23	5:E:149:TYR:CE1	2.48	0.48
10:L:55:ASP:OD2	10:L:112:SER:HA	2.13	0.48
10:L:59:PRO:CD	10:L:138:ASN:HD21	2.25	0.48
10:L:99:ARG:HG2	10:L:100:TYR:N	2.28	0.48
11:N:69:ASN:ND2	11:N:73:ARG:HG2	2.19	0.48
22:F:59:SER:HB2	32:c:55:VAL:HG13	1.94	0.48
23:K:61:TRP:CD1	33:d:23:ILE:HG23	2.48	0.48
28:S:63:GLN:HA	28:S:66:LEU:HD12	1.94	0.48
35:g:63:LYS:O	35:g:93:TRP:HH2	1.97	0.48
35:g:84:ALA:HA	35:g:90:LEU:HD23	1.95	0.48
1:2:497:G:O2'	1:2:500:U:O4	2.25	0.48
1:2:611:U:H4'	1:2:1099:G:O6	2.12	0.48
1:2:780:A:C8	16:Y:8:ARG:HD3	2.48	0.48
1:2:786:G:C6	1:2:787:A:C6	3.01	0.48
1:2:812:U:C4	10:L:153:PHE:HB2	2.49	0.48
1:2:843:A:H2'	1:2:844:G:H8	1.78	0.48
1:2:1523:A:N3	1:2:1587:C:O2'	2.45	0.48
1:2:1537:G:H4'	28:S:40:ARG:CZ	2.44	0.48
1:2:1770:C:H3'	20:h:2:ARG:HH12	1.78	0.48
1:2:1784:G:H2'	1:2:1785:C:C6	2.48	0.48
3:B:224:ASP:O	3:B:228:LEU:HD23	2.13	0.48
5:E:199:GLU:OE1	5:E:199:GLU:N	2.42	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:D:109:LEU:HD22	21:D:115:ILE:HG22	1.95	0.48
22:F:154:GLY:HA3	37:3:26:A:C6	2.48	0.48
35:g:135:TRP:NE1	35:g:141:CYS:SG	2.86	0.48
35:g:160:LYS:HZ1	35:g:163:GLU:H	1.60	0.48
39:j:6:CYS:SG	39:j:124:GLU:HA	2.52	0.48
40:k:195:PRO:C	40:k:204:MET:HE2	2.38	0.48
40:k:356:ARG:HG3	40:k:424:PRO:HB2	1.94	0.48
1:2:67:A:H2'	1:2:69:G:H8	1.78	0.48
1:2:91:G:H2'	1:2:92:A:O4'	2.14	0.48
1:2:631:U:H2'	1:2:632:U:H6	1.78	0.48
1:2:743:U:C4	1:2:808:G:N1	2.81	0.48
1:2:765:G:O6	9:J:149:ARG:HG2	2.14	0.48
1:2:1459:C:H3'	28:S:143:ARG:NH2	2.28	0.48
1:2:1768:U:H2'	1:2:1769:U:C6	2.47	0.48
3:B:111:ARG:HB3	17:a:68:TYR:CD2	2.48	0.48
3:B:193:ILE:H	3:B:193:ILE:HD12	1.79	0.48
7:H:49:ILE:HG21	7:H:172:VAL:HA	1.95	0.48
8:I:106:ALA:O	8:I:110:ARG:HB2	2.14	0.48
15:X:93:LEU:HB3	19:e:11:ALA:HB2	1.96	0.48
21:D:94:ARG:HG3	21:D:125:TYR:OH	2.14	0.48
21:D:124:ARG:O	21:D:128:GLU:HG3	2.13	0.48
21:D:211:PRO:HB3	27:R:20:TYR:CZ	2.49	0.48
22:F:185:ALA:HB1	22:F:192:ILE:HG13	1.96	0.48
24:M:71:LEU:HA	34:f:114:VAL:HG11	1.96	0.48
36:i:27:ILE:O	36:i:95:TYR:OH	2.32	0.48
42:m:53:ILE:HG23	42:m:89:LEU:HD13	1.95	0.48
1:2:330:A:H2'	1:2:331:U:C6	2.49	0.48
1:2:337:C:O2'	8:I:5:ARG:HA	2.14	0.48
1:2:349:U:OP1	1:2:350:C:O2'	2.24	0.48
1:2:484:A:H2'	1:2:485:G:C8	2.46	0.48
1:2:502:G:O2'	19:e:46:ASN:ND2	2.47	0.48
1:2:513:G:OP1	9:J:132:ARG:NH1	2.46	0.48
1:2:610:U:O5'	15:X:5:LYS:NZ	2.35	0.48
1:2:1469:A:H5'	22:F:187:ARG:HB3	1.96	0.48
1:2:1650:C:H2'	1:2:1651:C:H6	1.78	0.48
1:2:1779:A:H2'	1:2:1780:MA6:O4'	2.13	0.48
2:A:66:ALA:HA	13:V:37:ALA:HB2	1.96	0.48
5:E:67:GLN:HG3	5:E:69:HIS:CE1	2.49	0.48
6:G:178:LEU:HD23	6:G:179:VAL:C	2.39	0.48
13:V:55:LEU:HB3	13:V:59:ILE:HD11	1.95	0.48
13:V:84:SER:OG	13:V:86:SER:O	2.21	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:W:14:ILE:HA	14:W:25:VAL:HG11	1.94	0.48
22:F:86:LYS:HE3	22:F:94:ARG:CZ	2.44	0.48
30:U:82:TYR:HB2	33:d:52:PHE:CE2	2.49	0.48
38:1:2:G:H2'	38:1:3:C:H6	1.79	0.48
38:1:38:A:H2'	38:1:39:C:O4'	2.13	0.48
39:j:77:ASP:OD1	39:j:81:GLY:N	2.37	0.48
39:j:123:LEU:HD21	39:j:127:TYR:CE2	2.48	0.48
42:m:55:LYS:HG3	42:m:59:PHE:CE2	2.49	0.48
1:2:373:U:H2'	1:2:374:U:C6	2.49	0.48
1:2:508:G:H2'	1:2:509:G:C8	2.48	0.48
1:2:548:G:H1	1:2:588:C:H5	1.62	0.48
1:2:739:G:H2'	1:2:740:A:O4'	2.13	0.48
1:2:1523:A:H3'	1:2:1524:A:H8	1.79	0.48
1:2:1527:C:H2'	1:2:1528:C:C6	2.48	0.48
1:2:1721:U:H2'	1:2:1722:C:O4'	2.14	0.48
1:2:1788:A:P	17:a:10:ARG:HH22	2.36	0.48
1:2:1798:A:N6	37:3:19:A:HO2'	2.11	0.48
2:A:9:LEU:HD13	2:A:54:TRP:CE3	2.49	0.48
2:A:166:GLY:C	2:A:168:HIS:H	2.21	0.48
4:C:157:HIS:CG	4:C:158:SER:N	2.80	0.48
5:E:99:PHE:HE1	5:E:113:ARG:HG2	1.78	0.48
5:E:139:VAL:O	5:E:147:ILE:N	2.32	0.48
6:G:52:ILE:HA	6:G:111:LEU:HD13	1.95	0.48
9:J:162:SER:O	9:J:162:SER:OG	2.31	0.48
13:V:55:LEU:HD23	13:V:59:ILE:HD11	1.96	0.48
15:X:43:PHE:HB2	15:X:122:PHE:CZ	2.48	0.48
16:Y:27:VAL:HG21	16:Y:35:VAL:HG11	1.95	0.48
21:D:163:PRO:O	21:D:167:PHE:N	2.47	0.48
23:K:63:TYR:HB2	23:K:65:TYR:CE2	2.49	0.48
31:Z:43:ASP:HB3	31:Z:46:LYS:HG2	1.94	0.48
39:j:25:GLN:HG2	39:j:34:VAL:HA	1.95	0.48
40:k:106:ILE:HD13	40:k:236:ILE:HD12	1.95	0.48
1:2:7:G:O6	4:C:210:ARG:NH2	2.47	0.48
2:A:56:LYS:HZ1	2:A:158:VAL:HG13	1.78	0.48
3:B:127:VAL:HG11	3:B:176:VAL:HG21	1.95	0.48
3:B:193:ILE:HA	3:B:196:GLU:OE2	2.13	0.48
6:G:64:LYS:NZ	6:G:81:HIS:HB3	2.29	0.48
7:H:66:SER:C	7:H:68:ALA:N	2.71	0.48
7:H:138:LYS:HE3	7:H:150:GLN:HB3	1.95	0.48
9:J:63:ASP:OD1	9:J:64:GLU:N	2.46	0.48
9:J:170:GLY:N	9:J:174:ARG:HD3	2.27	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:L:54:ILE:HG23	10:L:55:ASP:N	2.28	0.48
10:L:57:LYS:HD3	10:L:131:ILE:CG2	2.43	0.48
22:F:44:LEU:HD21	22:F:92:VAL:HG21	1.96	0.48
22:F:219:LEU:HA	22:F:222:VAL:HG12	1.96	0.48
25:P:34:VAL:HG22	25:P:45:PHE:CD2	2.48	0.48
28:S:36:ARG:HD2	28:S:37:GLY:H	1.77	0.48
28:S:64:GLU:OE1	28:S:64:GLU:N	2.45	0.48
28:S:90:LYS:H	28:S:97:ASP:HA	1.78	0.48
35:g:11:ARG:HH12	35:g:53:GLN:HA	1.78	0.48
35:g:216:SER:O	35:g:232:LEU:N	2.39	0.48
35:g:230:TRP:HA	35:g:237:ALA:HA	1.95	0.48
40:k:98:GLN:NE2	40:k:391:VAL:H	2.12	0.48
1:2:116:U:O2'	1:2:332:A:N3	2.45	0.48
1:2:687:C:OP1	14:W:119:LYS:HG3	2.14	0.48
1:2:936:C:H2'	1:2:937:G:C8	2.48	0.48
1:2:1475:G:C6	1:2:1529:G:N1	2.82	0.48
1:2:1501:A:C6	1:2:1502:G:C6	3.01	0.48
1:2:1561:C:H2'	1:2:1562:U:C6	2.49	0.48
1:2:1562:U:H2'	1:2:1563:C:C6	2.49	0.48
3:B:144:ARG:CB	3:B:208:GLN:HG3	2.32	0.48
6:G:75:LEU:C	6:G:94:ARG:HD3	2.39	0.48
9:J:57:ARG:O	9:J:61:THR:HG23	2.13	0.48
24:M:90:GLU:OE2	24:M:91:TRP:HD1	1.96	0.48
29:T:105:LEU:HB3	29:T:122:ARG:NH1	2.29	0.48
31:Z:60:VAL:HB	31:Z:101:TYR:HB2	1.94	0.48
40:k:78:GLN:OE1	40:k:387:LEU:HB2	2.13	0.48
1:2:81:G:H2'	1:2:82:U:O4'	2.14	0.48
1:2:330:A:P	8:I:176:GLN:HE22	2.37	0.48
1:2:501:U:H2'	1:2:502:G:C8	2.49	0.48
1:2:586:C:H2'	1:2:587:U:H6	1.78	0.48
1:2:623:G:H2'	1:2:624:C:C6	2.49	0.48
1:2:674:A:H2'	1:2:674:A:N3	2.29	0.48
1:2:711:G:N2	1:2:727:C:O2	2.47	0.48
1:2:1229:A:O2'	1:2:1258:U:O2	2.27	0.48
1:2:1617:C:H2'	1:2:1618:C:H6	1.79	0.48
2:A:26:ALA:H	2:A:45:VAL:HG13	1.78	0.48
3:B:103:MET:HE3	3:B:104:ASP:N	2.27	0.48
9:J:77:ILE:HA	9:J:80:LEU:HG	1.96	0.48
21:D:72:LEU:HD13	23:K:20:VAL:HB	1.96	0.48
22:F:144:PRO:HG3	22:F:216:LYS:HA	1.95	0.48
23:K:15:LEU:HG	23:K:68:LEU:HD11	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:R:107:ALA:HA	27:R:119:LEU:HD11	1.95	0.48
34:f:118:ARG:O	34:f:119:LYS:HB2	2.14	0.48
36:i:45:GLY:O	36:i:61:ILE:N	2.43	0.48
40:k:146:LYS:HD3	40:k:185:LEU:HD22	1.95	0.48
1:2:371:G:H1'	1:2:611:U:H3	1.79	0.48
1:2:521:U:H5''	16:Y:37:LYS:CG	2.41	0.48
1:2:757:A:P	5:E:16:HIS:HE2	2.36	0.48
1:2:899:A:H5''	1:2:900:G:N2	2.28	0.48
1:2:1022:A:H5''	1:2:1126:G:H1'	1.95	0.48
1:2:1107:G:H2'	15:X:25:ALA:HB1	1.94	0.48
1:2:1187:G:O2'	1:2:1428:U:OP1	2.19	0.48
1:2:1707:C:H5	1:2:1708:U:N3	2.12	0.48
4:C:187:PRO:O	4:C:190:LYS:HG2	2.14	0.48
12:O:81:ILE:O	12:O:116:GLU:N	2.42	0.48
25:P:81:ARG:O	25:P:116:LEU:N	2.47	0.48
28:S:134:ARG:HB2	28:S:136:GLN:HE22	1.79	0.48
34:f:105:TYR:HB3	34:f:129:PHE:CE2	2.49	0.48
1:2:266:U:P	6:G:183:ARG:HH21	2.37	0.47
1:2:588:C:O2'	19:e:57:ASN:OD1	2.31	0.47
1:2:1104:C:OP1	15:X:14:LYS:NZ	2.45	0.47
1:2:1106:G:H2'	1:2:1107:G:C2	2.49	0.47
1:2:1327:G:OP1	21:D:159:HIS:N	2.28	0.47
1:2:1329:G:N2	27:R:8:THR:HG21	2.28	0.47
1:2:1450:U:H2'	1:2:1451:G:H8	1.79	0.47
1:2:1459:C:H2'	1:2:1460:G:C8	2.49	0.47
4:C:235:TRP:O	13:V:16:LYS:NZ	2.47	0.47
5:E:101:LEU:HD12	5:E:109:PHE:HB3	1.97	0.47
7:H:96:ARG:HE	7:H:116:ARG:CZ	2.26	0.47
16:Y:125:ILE:HG13	16:Y:126:ALA:N	2.28	0.47
23:K:16:PHE:HE1	23:K:73:VAL:HG13	1.78	0.47
24:M:102:ASN:HA	24:M:104:ARG:HH21	1.79	0.47
25:P:55:GLY:HA2	25:P:58:LYS:HG2	1.96	0.47
35:g:181:LYS:NZ	35:g:204:ASN:HA	2.28	0.47
35:g:184:ARG:HB2	35:g:186:TRP:HE1	1.79	0.47
38:1:58:1MA:O2'	38:1:61:C:N4	2.45	0.47
38:1:69:C:H2'	38:1:70:G:C8	2.49	0.47
1:2:10:G:H8	1:2:1631:A:O2'	1.96	0.47
1:2:284:G:H2'	1:2:285:C:C6	2.48	0.47
1:2:703:G:C2	1:2:736:C:C2	3.01	0.47
1:2:833:G:H2'	1:2:834:U:C6	2.50	0.47
1:2:864:A:H2'	1:2:865:G:O4'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1099:G:O4'	15:X:7:ARG:NH2	2.47	0.47
1:2:1640:G:N2	1:2:1778:G:H22	2.11	0.47
2:A:14:ALA:HB3	27:R:117:LEU:HD11	1.96	0.47
3:B:66:VAL:O	3:B:85:LYS:HA	2.15	0.47
5:E:94:ALA:O	5:E:95:THR:OG1	2.30	0.47
6:G:195:ILE:O	6:G:199:GLN:HG2	2.14	0.47
7:H:75:ILE:O	7:H:78:THR:OG1	2.25	0.47
8:I:42:ARG:NE	8:I:59:ARG:HH12	2.07	0.47
11:N:16:ILE:HG22	14:W:57:ARG:NH2	2.29	0.47
11:N:35:GLU:HA	11:N:38:ILE:HG12	1.96	0.47
22:F:73:ALA:HB1	22:F:96:THR:HG21	1.95	0.47
28:S:115:ARG:O	28:S:119:ILE:HG12	2.14	0.47
39:j:222:LEU:HD12	40:k:330:ILE:HG12	1.95	0.47
40:k:508:HIS:HB2	40:k:510:ARG:NH1	2.29	0.47
1:2:107:C:H5''	1:2:382:G:O2'	2.13	0.47
1:2:787:A:C4	5:E:19:MET:HE3	2.49	0.47
1:2:808:G:H2'	1:2:809:G:C8	2.49	0.47
1:2:1180:U:C2	1:2:1456:G:N1	2.82	0.47
3:B:179:SER:OG	3:B:180:THR:N	2.47	0.47
4:C:235:TRP:CZ2	14:W:68:ARG:HB3	2.49	0.47
15:X:107:PHE:HA	15:X:123:LYS:HG3	1.97	0.47
21:D:23:GLU:O	21:D:27:ARG:HG2	2.14	0.47
21:D:25:PHE:O	21:D:29:LEU:HB2	2.14	0.47
27:R:13:SER:O	27:R:17:ILE:HG12	2.13	0.47
30:U:84:MET:HE2	33:d:52:PHE:HD1	1.80	0.47
40:k:174:CYS:HA	40:k:183:TYR:CZ	2.49	0.47
1:2:186:G:N2	1:2:187:A:H62	2.13	0.47
1:2:278:G:C6	1:2:280:G:C6	3.02	0.47
1:2:447:C:H5'	5:E:29:PRO:HG3	1.96	0.47
1:2:890:A:H2'	1:2:891:A:C8	2.49	0.47
1:2:956:G:H2'	1:2:957:U:C2	2.50	0.47
1:2:997:A:C5	1:2:998:PSU:C2	3.02	0.47
1:2:1096:U:O3'	4:C:173:ARG:NH1	2.40	0.47
1:2:1149:G:C6	1:2:1766:G:C6	3.03	0.47
1:2:1387:C:H6	27:R:28:PHE:CZ	2.32	0.47
1:2:1471:U:O2'	1:2:1472:G:H5'	2.15	0.47
1:2:1480:C:H2'	1:2:1481:A:H5''	1.96	0.47
1:2:1489:C:H4'	1:2:1490:A:H5''	1.96	0.47
2:A:70:PRO:HB3	2:A:94:GLY:HA3	1.96	0.47
4:C:178:PRO:HG3	9:J:57:ARG:HD3	1.97	0.47
5:E:161:LYS:HE2	5:E:170:THR:HG21	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:142:TYR:HE1	7:H:148:LYS:HG3	1.80	0.47
9:J:42:ILE:H	9:J:42:ILE:HD12	1.80	0.47
26:Q:46:PHE:O	26:Q:50:GLU:HG3	2.14	0.47
28:S:53:ASP:OD1	28:S:55:HIS:N	2.47	0.47
28:S:112:ASP:O	28:S:116:LEU:HG	2.14	0.47
33:d:21:CYS:HB3	33:d:24:SER:H	1.77	0.47
35:g:7:MET:HE1	35:g:9:VAL:HG22	1.95	0.47
1:2:440:A:H2'	1:2:441:C:C6	2.49	0.47
1:2:476:A:OP1	19:e:31:LYS:N	2.46	0.47
1:2:693:U:H5'	1:2:695:U:H5''	1.97	0.47
1:2:861:A:N1	1:2:962:A:O2'	2.36	0.47
1:2:1147:C:H2'	1:2:1148:G:C8	2.49	0.47
1:2:1294:G:H2'	1:2:1295:A:H8	1.79	0.47
1:2:1521:G:OP2	1:2:1521:G:N2	2.37	0.47
2:A:183:ARG:NH2	2:A:193:GLN:O	2.47	0.47
3:B:24:PHE:CZ	12:O:39:ILE:HD12	2.50	0.47
3:B:98:THR:O	3:B:232:HIS:NE2	2.33	0.47
6:G:175:ILE:HD12	6:G:175:ILE:H	1.80	0.47
7:H:139:ARG:HG3	14:W:53:ILE:HD13	1.95	0.47
8:I:73:ALA:O	8:I:74:ARG:NE	2.47	0.47
11:N:139:TRP:C	11:N:140:LYS:HD2	2.40	0.47
24:M:78:PRO:HB3	24:M:128:LEU:HG	1.95	0.47
35:g:219:ALA:HB2	35:g:229:VAL:HG22	1.96	0.47
35:g:270:TYR:CE1	35:g:277:LEU:HD12	2.49	0.47
38:l:14:A:H2'	38:l:15:G:C4	2.48	0.47
40:k:71:GLU:O	40:k:182:ARG:NH1	2.42	0.47
1:2:330:A:H4'	8:I:31:ARG:O	2.14	0.47
1:2:477:A:H5'	19:e:33:ARG:NH1	2.29	0.47
1:2:627:G:OP1	11:N:124:ARG:NE	2.43	0.47
1:2:639:U:O2	7:H:179:LYS:NZ	2.48	0.47
1:2:653:C:H2'	1:2:654:G:H8	1.77	0.47
1:2:755:A:C2	1:2:756:A:H1'	2.49	0.47
1:2:862:A:O5'	14:W:57:ARG:NH1	2.47	0.47
1:2:885:U:H3'	1:2:886:A:H8	1.80	0.47
1:2:1234:C:H5'	34:f:143:HIS:CE1	2.50	0.47
1:2:1293:G:H2'	1:2:1294:G:H8	1.80	0.47
1:2:1455:C:H4'	28:S:139:LYS:NZ	2.30	0.47
1:2:1580:U:H3'	26:Q:135:ARG:NH2	2.30	0.47
1:2:1674:U:H2'	1:2:1675:C:C6	2.50	0.47
3:B:195:LYS:HA	3:B:198:GLU:CD	2.39	0.47
4:C:95:THR:HG23	4:C:97:ALA:H	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:37:LYS:O	5:E:41:SER:N	2.48	0.47
7:H:61:PHE:HB3	7:H:95:GLU:HB2	1.96	0.47
9:J:12:TYR:HB2	9:J:43:TYR:HB3	1.96	0.47
15:X:90:ASP:OD1	19:e:12:GLY:HA2	2.14	0.47
16:Y:38:ASP:OD1	16:Y:39:GLU:N	2.48	0.47
19:e:33:ARG:HD2	19:e:34:ALA:N	2.29	0.47
21:D:76:ARG:HG3	21:D:77:PHE:CE1	2.50	0.47
21:D:76:ARG:NE	23:K:63:TYR:CE2	2.83	0.47
21:D:211:PRO:HG3	27:R:19:LYS:O	2.15	0.47
22:F:92:VAL:O	22:F:96:THR:HG23	2.15	0.47
27:R:10:LYS:O	27:R:13:SER:OG	2.27	0.47
28:S:29:VAL:O	28:S:33:THR:HG23	2.14	0.47
39:j:149:ILE:HD11	39:j:177:LEU:HB3	1.97	0.47
1:2:30:G:C6	1:2:596:G:C6	3.02	0.47
1:2:167:A:H4'	6:G:176:GLN:OE1	2.13	0.47
1:2:173:U:H2'	1:2:174:G:O4'	2.15	0.47
1:2:236:C:H4'	1:2:237:U:C6	2.49	0.47
1:2:367:U:O2	1:2:372:G:O6	2.33	0.47
1:2:391:G:OP1	1:2:1727:C:O2'	2.32	0.47
1:2:511:A:H2'	1:2:512:U:C6	2.50	0.47
1:2:519:A:H2'	1:2:520:A:H8	1.79	0.47
1:2:631:U:H2'	1:2:632:U:C6	2.49	0.47
1:2:778:G:H2'	1:2:779:A:C8	2.50	0.47
1:2:789:U:C5	1:2:790:A:N7	2.83	0.47
1:2:825:U:H2'	1:2:826:C:H4'	1.97	0.47
1:2:1134:U:H2'	1:2:1135:U:C6	2.48	0.47
1:2:1218:A:H62	1:2:1263:G:N2	2.12	0.47
1:2:1335:A:H2'	1:2:1336:A:O4'	2.14	0.47
1:2:1465:C:H2'	1:2:1466:U:C6	2.50	0.47
1:2:1505:G:H2'	1:2:1506:U:H6	1.79	0.47
1:2:1622:C:H2'	1:2:1623:C:C6	2.49	0.47
2:A:60:ALA:O	2:A:64:ILE:HD12	2.15	0.47
2:A:92:HIS:ND1	2:A:202:TYR:OH	2.29	0.47
2:A:139:VAL:HG13	2:A:141:ILE:CD1	2.44	0.47
3:B:205:PHE:CG	3:B:206:PRO:HD2	2.50	0.47
5:E:86:PHE:CE2	5:E:87:MET:HG2	2.49	0.47
5:E:198:ARG:O	5:E:200:ARG:NH1	2.48	0.47
6:G:24:VAL:HG13	6:G:28:TYR:HE1	1.80	0.47
6:G:142:ARG:HD2	6:G:149:LYS:HA	1.97	0.47
7:H:138:LYS:HD2	7:H:139:ARG:H	1.79	0.47
10:L:8:GLN:HE22	10:L:14:GLN:N	2.09	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:O:16:VAL:HG22	12:O:18:ARG:HG3	1.97	0.47
15:X:48:HIS:CD2	15:X:105:ALA:HB2	2.50	0.47
15:X:83:VAL:HG11	15:X:122:PHE:CE2	2.49	0.47
17:a:89:ARG:HG3	17:a:90:THR:N	2.29	0.47
17:a:97:PRO:O	17:a:99:GLN:N	2.47	0.47
22:F:100:MET:HA	22:F:105:ASN:HB3	1.96	0.47
22:F:145:ARG:NH1	22:F:220:GLU:OE2	2.48	0.47
22:F:224:LYS:HA	22:F:227:ARG:NE	2.29	0.47
24:M:26:ARG:NH1	24:M:91:TRP:O	2.42	0.47
24:M:55:LEU:HD12	24:M:65:SER:HA	1.96	0.47
28:S:101:LEU:H	28:S:104:ASN:HB3	1.79	0.47
40:k:349:LEU:HG	40:k:388:LYS:HA	1.95	0.47
1:2:8:U:O2	1:2:1137:A:H3'	2.15	0.47
1:2:38:C:H2'	1:2:39:A:H8	1.78	0.47
1:2:721:U:H4'	1:2:722:G:C8	2.50	0.47
1:2:749:U:OP2	14:W:82:LYS:NZ	2.48	0.47
1:2:759:U:C2	1:2:760:A:C8	3.03	0.47
1:2:775:G:H2'	1:2:776:G:C8	2.48	0.47
1:2:900:G:C6	1:2:901:G:C6	3.03	0.47
1:2:945:U:O3'	3:B:165:ARG:NE	2.48	0.47
1:2:1203:A:C2	1:2:1204:C:H1'	2.50	0.47
1:2:1676:A:H2'	1:2:1677:G:O4'	2.15	0.47
3:B:36:SER:N	3:B:41:ARG:HH21	2.13	0.47
5:E:198:ARG:HG3	5:E:200:ARG:HH12	1.80	0.47
5:E:256:ARG:HA	5:E:259:HIS:HE1	1.80	0.47
6:G:7:TYR:CE2	6:G:9:ILE:HB	2.49	0.47
9:J:103:ASP:O	9:J:106:GLU:HG3	2.14	0.47
22:F:101:MET:O	22:F:102:ASN:CG	2.57	0.47
23:K:54:PHE:HB3	23:K:72:GLY:CA	2.44	0.47
30:U:65:ILE:HG12	33:d:52:PHE:CE2	2.50	0.47
33:d:53:TYR:HB2	33:d:55:TYR:HE1	1.80	0.47
35:g:182:ILE:HD11	35:g:200:ILE:HD12	1.96	0.47
39:j:30:MET:SD	39:j:30:MET:N	2.79	0.47
42:m:56:TYR:CD2	42:m:92:PHE:HB2	2.50	0.47
42:m:96:PHE:CZ	42:m:136:LEU:HD23	2.49	0.47
1:2:609:G:N2	15:X:19:ARG:HH12	2.13	0.47
1:2:771:A:O2'	9:J:6:ARG:NH2	2.48	0.47
1:2:904:A:C5'	12:O:52:ARG:HH12	2.27	0.47
1:2:999:C:H2'	1:2:1001:G:OP2	2.15	0.47
1:2:1017:U:H2'	1:2:1018:A:C8	2.50	0.47
1:2:1076:C:H2'	1:2:1077:C:C6	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1628:U:H2'	1:2:1630:C:C5	2.50	0.47
1:2:1758:G:C6	1:2:1759:U:C4	3.03	0.47
2:A:12:GLU:OE1	2:A:194:PRO:HG3	2.13	0.47
2:A:59:LEU:HD13	13:V:79:LEU:HD21	1.97	0.47
3:B:72:ASP:OD1	3:B:73:LEU:N	2.47	0.47
14:W:41:MET:CE	14:W:46:TYR:HB3	2.45	0.47
22:F:119:THR:O	22:F:123:ILE:HG12	2.15	0.47
22:F:179:ILE:HA	22:F:182:ARG:HE	1.79	0.47
28:S:111:ASP:HA	28:S:114:GLU:CD	2.40	0.47
34:f:102:VAL:HA	34:f:105:TYR:HD2	1.79	0.47
39:j:77:ASP:HB3	39:j:82:TYR:N	2.30	0.47
42:m:48:ARG:NH1	42:m:96:PHE:HB3	2.30	0.47
1:2:159:C:C5'	6:G:87:ARG:HH22	2.27	0.47
1:2:494:C:H5''	1:2:495:G:N7	2.30	0.47
1:2:642:G:C6	1:2:692:C:N4	2.83	0.47
1:2:802:A:O2'	7:H:104:ARG:HD3	2.15	0.47
1:2:904:A:H4'	12:O:52:ARG:NH1	2.29	0.47
1:2:934:U:H3'	17:a:15:ARG:NH2	2.29	0.47
1:2:1097:U:OP1	1:2:1097:U:H2'	2.15	0.47
1:2:1142:A:O2'	1:2:1299:A:N1	2.48	0.47
1:2:1435:U:H2'	1:2:1436:G:H8	1.80	0.47
2:A:17:LEU:HG	2:A:22:VAL:HG21	1.97	0.47
3:B:34:ALA:O	3:B:41:ARG:NH2	2.48	0.47
3:B:146:GLN:NE2	3:B:206:PRO:HG3	2.30	0.47
7:H:71:HIS:HB3	7:H:131:PHE:CZ	2.49	0.47
8:I:67:TRP:NE1	8:I:69:SER:HB2	2.25	0.47
9:J:114:TYR:CG	9:J:122:VAL:HG12	2.50	0.47
11:N:113:PHE:CE2	11:N:117:LEU:HD11	2.49	0.47
14:W:41:MET:CE	14:W:69:LEU:HD12	2.45	0.47
21:D:164:VAL:HG13	21:D:165:ASN:H	1.80	0.47
22:F:102:ASN:OD1	22:F:104:ARG:CG	2.54	0.47
28:S:4:VAL:O	31:Z:42:LEU:HD11	2.14	0.47
29:T:6:VAL:HG22	29:T:136:ALA:HB2	1.96	0.47
38:l:75:C:H4'	40:k:322:ASP:O	2.15	0.47
39:j:38:GLU:OE2	39:j:105:SER:OG	2.33	0.47
1:2:119:A:OP2	1:2:120:PSU:N1	2.43	0.46
1:2:568:C:C4	1:2:569:A:C5	3.03	0.46
1:2:877:G:H2'	1:2:878:G:C8	2.50	0.46
1:2:945:U:H5''	3:B:165:ARG:CZ	2.45	0.46
1:2:949:C:H1'	11:N:104:ARG:HH22	1.80	0.46
1:2:1047:G:H2'	1:2:1048:U:C6	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1070:U:H2'	1:2:1071:C:H6	1.79	0.46
1:2:1502:G:H2'	1:2:1503:A:N9	2.30	0.46
1:2:1772:G:H2'	1:2:1773:U:C6	2.50	0.46
5:E:114:ILE:HG23	5:E:118:GLU:HG2	1.97	0.46
6:G:43:ASP:HA	6:G:46:LYS:HG2	1.96	0.46
7:H:74:GLN:O	7:H:78:THR:HG23	2.14	0.46
7:H:114:ARG:HG2	7:H:114:ARG:HH11	1.80	0.46
10:L:46:LYS:O	10:L:46:LYS:NZ	2.33	0.46
35:g:52:GLU:HB3	35:g:54:GLN:HE22	1.80	0.46
42:m:117:LEU:HD11	42:m:140:ILE:HG22	1.97	0.46
1:2:29:U:O3'	15:X:126:LYS:NZ	2.38	0.46
1:2:148:C:O2	6:G:132:ARG:NH2	2.48	0.46
1:2:243:A:OP1	5:E:155:LYS:HE2	2.16	0.46
1:2:325:G:H2'	1:2:326:U:C6	2.49	0.46
1:2:404:C:O3'	6:G:93:LYS:NZ	2.40	0.46
1:2:673:C:O2'	1:2:675:C:N4	2.49	0.46
1:2:680:U:O5'	1:2:681:U:H5'	2.16	0.46
1:2:881:U:H2'	1:2:882:C:C6	2.50	0.46
1:2:1169:G:C6	1:2:1572:G:C6	3.04	0.46
1:2:1519:G:O2'	1:2:1521:G:N2	2.48	0.46
1:2:1555:U:O2'	1:2:1556:U:H2'	2.15	0.46
1:2:1592:G:H2'	1:2:1593:U:O4'	2.16	0.46
1:2:1783:U:P	12:O:133:ARG:HH22	2.38	0.46
6:G:102:VAL:HG13	6:G:106:LEU:HD22	1.98	0.46
11:N:119:GLU:HA	11:N:122:ILE:HD13	1.97	0.46
18:b:7:LEU:HA	18:b:10:PRO:HG3	1.98	0.46
22:F:135:VAL:O	22:F:139:ILE:HG13	2.15	0.46
22:F:168:ARG:CG	22:F:172:GLN:HE22	2.19	0.46
23:K:26:ASP:O	23:K:29:GLN:HG2	2.15	0.46
28:S:48:LYS:HG2	29:T:35:ASP:OD2	2.15	0.46
32:c:64:ARG:NH1	37:3:23:A:N3	2.62	0.46
34:f:120:GLU:OE2	34:f:127:GLY:N	2.49	0.46
39:j:28:ALA:N	39:j:33:TYR:HE1	2.13	0.46
39:j:96:ILE:HG22	39:j:100:GLU:OE2	2.15	0.46
39:j:222:LEU:HB2	40:k:330:ILE:CG1	2.45	0.46
1:2:122:U:H4'	5:E:77:ARG:HH12	1.80	0.46
1:2:245:G:H22	10:L:66:ILE:HG23	1.80	0.46
1:2:338:C:H2'	1:2:339:U:H6	1.79	0.46
1:2:358:A:N6	15:X:39:LYS:HD3	2.30	0.46
1:2:381:C:C2	1:2:382:G:C8	3.02	0.46
1:2:599:U:O4	1:2:600:A:N6	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:825:U:H3	1:2:846:A:H2	1.63	0.46
1:2:888:U:H2'	1:2:889:C:C6	2.49	0.46
1:2:1053:U:H2'	1:2:1054:U:C6	2.50	0.46
1:2:1078:U:P	17:a:93:ARG:NH2	2.88	0.46
1:2:1160:C:H2'	1:2:1161:C:C6	2.51	0.46
1:2:1316:C:P	27:R:7:LYS:HZ1	2.38	0.46
1:2:1521:G:C5	29:T:68:ARG:NH1	2.84	0.46
1:2:1528:C:H2'	1:2:1529:G:C8	2.50	0.46
1:2:1554:A:C2	1:2:1558:U:H1'	2.51	0.46
1:2:1734:G:H2'	1:2:1735:G:H8	1.81	0.46
2:A:119:ARG:HH12	4:C:246:ASP:N	2.13	0.46
3:B:70:LEU:HD21	3:B:84:VAL:HB	1.96	0.46
3:B:111:ARG:HB3	17:a:68:TYR:HD2	1.80	0.46
6:G:49:VAL:HG12	6:G:115:LYS:HB2	1.97	0.46
12:O:133:ARG:HB2	12:O:136:ARG:HH21	1.80	0.46
13:V:56:SER:O	13:V:59:ILE:HG12	2.14	0.46
14:W:35:ILE:CG2	14:W:39:GLN:HE22	2.28	0.46
14:W:102:VAL:H	14:W:113:HIS:CD2	2.32	0.46
16:Y:22:GLN:HB3	16:Y:74:LEU:HD13	1.98	0.46
21:D:45:LYS:HB2	21:D:47:GLU:OE2	2.15	0.46
26:Q:40:GLN:N	26:Q:41:PRO:HD3	2.30	0.46
26:Q:125:GLU:N	26:Q:125:GLU:OE1	2.48	0.46
28:S:76:PRO:HA	28:S:79:TYR:HD2	1.80	0.46
32:c:17:GLY:O	32:c:26:THR:OG1	2.29	0.46
35:g:205:TYR:CZ	35:g:223:LYS:HD3	2.50	0.46
40:k:318:ILE:O	40:k:413:VAL:HA	2.14	0.46
1:2:332:A:C8	8:I:49:ARG:HG3	2.50	0.46
1:2:463:A:C2	1:2:464:G:C8	3.04	0.46
1:2:750:U:H2'	1:2:751:G:C8	2.50	0.46
1:2:945:U:H2'	1:2:946:U:C6	2.49	0.46
1:2:989:C:H5	1:2:1013:G:N1	2.10	0.46
1:2:1479:C:OP1	29:T:63:ARG:NH1	2.33	0.46
1:2:1599:G:C5	29:T:89:ARG:NH1	2.84	0.46
1:2:1647:G:N2	1:2:1750:U:O2	2.49	0.46
1:2:1710:A:H3'	1:2:1711:G:H4'	1.97	0.46
3:B:120:LEU:HD21	3:B:122:GLU:HG2	1.97	0.46
5:E:179:LYS:HG3	5:E:229:GLY:O	2.14	0.46
7:H:58:LEU:O	7:H:91:ILE:N	2.46	0.46
9:J:48:GLN:O	9:J:52:ILE:HG12	2.15	0.46
12:O:27:PHE:HA	12:O:43:THR:OG1	2.15	0.46
29:T:22:LEU:O	29:T:25:GLN:NE2	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:T:23:GLN:HA	29:T:55:TYR:CD2	2.50	0.46
29:T:54:PHE:HE1	29:T:104:VAL:HG22	1.79	0.46
35:g:202:HIS:HE2	35:g:220:SER:HG	1.62	0.46
1:2:565:C:C5'	36:i:62:ARG:HH12	2.29	0.46
1:2:613:C:H2'	1:2:614:A:C8	2.51	0.46
1:2:624:C:H2'	1:2:625:U:C6	2.50	0.46
1:2:779:A:O2'	1:2:781:A:N7	2.36	0.46
1:2:1021:C:H3'	1:2:1022:A:C8	2.51	0.46
1:2:1320:A:H4'	1:2:1321:A:OP1	2.14	0.46
1:2:1386:A:C6	1:2:1409:A:N7	2.84	0.46
1:2:1437:C:H2'	1:2:1438:C:H6	1.78	0.46
1:2:1564:U:H5''	28:S:39:GLY:H	1.80	0.46
1:2:1628:U:O2'	1:2:1762:C:O2'	2.23	0.46
1:2:1671:G:OP1	6:G:94:ARG:NH2	2.47	0.46
5:E:57:ASN:HD21	5:E:59:ARG:HH21	1.64	0.46
21:D:173:ARG:HD3	21:D:173:ARG:HA	1.73	0.46
24:M:51:GLN:HB3	24:M:117:TRP:CE3	2.51	0.46
24:M:96:LYS:O	24:M:103:ALA:HB3	2.15	0.46
28:S:87:ASN:H	28:S:99:HIS:CD2	2.33	0.46
29:T:25:GLN:HE21	29:T:27:LYS:CG	2.29	0.46
29:T:49:ASP:OD2	29:T:53:TRP:N	2.49	0.46
30:U:43:LYS:O	30:U:47:THR:HG23	2.15	0.46
30:U:67:THR:HG23	33:d:40:ARG:HB2	1.98	0.46
30:U:84:MET:HG2	33:d:52:PHE:CD1	2.51	0.46
38:l:55:U:H4'	39:j:172:TYR:CE2	2.40	0.46
1:2:10:G:C6	1:2:11:A:C5	3.04	0.46
1:2:47:A:H61	1:2:385:G:H1'	1.81	0.46
1:2:395:G:H22	1:2:398:A:P	2.39	0.46
1:2:929:A:OP2	1:2:931:U:O2'	2.33	0.46
1:2:1220:A:H2'	1:2:1221:C:H6	1.80	0.46
1:2:1238:U:H2'	1:2:1239:U:C6	2.50	0.46
1:2:1403:G:H2'	1:2:1404:A:C8	2.50	0.46
1:2:1527:C:H2'	1:2:1528:C:H6	1.80	0.46
4:C:50:VAL:HG21	4:C:73:ILE:HG12	1.98	0.46
6:G:69:LEU:HG	6:G:70:PRO:HD2	1.96	0.46
15:X:111:GLY:C	15:X:121:ARG:HH11	2.24	0.46
19:e:56:MET:HG3	19:e:57:ASN:N	2.30	0.46
21:D:46:THR:HB	21:D:84:ILE:HG12	1.98	0.46
29:T:31:PRO:O	29:T:34:VAL:HG22	2.16	0.46
35:g:91:ARG:HB3	35:g:93:TRP:HE1	1.79	0.46
35:g:181:LYS:HZ2	35:g:204:ASN:HA	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:j:119:PHE:HB3	39:j:121:ILE:HD12	1.96	0.46
1:2:60:U:H3	1:2:63:G:P	2.38	0.46
1:2:278:G:N1	1:2:280:G:C6	2.84	0.46
1:2:530:C:O2'	16:Y:64:TYR:HA	2.16	0.46
1:2:686:C:H4'	14:W:118:ARG:NH2	2.31	0.46
1:2:1070:U:H1'	18:b:19:HIS:CE1	2.51	0.46
1:2:1315:G:HO2'	1:2:1399:A:HO2'	1.61	0.46
4:C:131:ARG:HA	4:C:134:ILE:HG22	1.97	0.46
7:H:140:VAL:CG1	14:W:52:TYR:HB3	2.44	0.46
21:D:67:ASN:ND2	23:K:90:THR:O	2.48	0.46
21:D:105:MET:HA	21:D:105:MET:HE3	1.97	0.46
21:D:105:MET:SD	21:D:122:VAL:HG21	2.56	0.46
22:F:42:ILE:HG21	22:F:69:PRO:HB2	1.98	0.46
23:K:57:THR:HA	23:K:65:TYR:O	2.16	0.46
26:Q:41:PRO:C	26:Q:43:ILE:H	2.23	0.46
27:R:116:LYS:HD2	27:R:117:LEU:H	1.81	0.46
33:d:43:PHE:HZ	33:d:52:PHE:CD2	2.34	0.46
39:j:44:GLY:HA3	39:j:83:ILE:HB	1.96	0.46
1:2:53:G:O3'	16:Y:110:GLN:NE2	2.49	0.46
1:2:358:A:H62	15:X:39:LYS:HD3	1.81	0.46
1:2:894:G:O2'	12:O:38:THR:N	2.36	0.46
1:2:901:G:H2'	1:2:902:U:C6	2.51	0.46
1:2:1159:A:H2'	1:2:1160:C:H6	1.78	0.46
1:2:1297:U:H2'	1:2:1298:G:O4'	2.16	0.46
1:2:1300:U:H2'	1:2:1301:U:O4'	2.16	0.46
1:2:1418:C:O2	21:D:160:SER:OG	2.34	0.46
1:2:1711:G:H3'	1:2:1712:A:C8	2.51	0.46
1:2:1731:C:H2'	1:2:1732:U:H6	1.81	0.46
7:H:46:ILE:HD12	7:H:60:VAL:HA	1.96	0.46
21:D:116:ARG:NH2	37:3:39:U:H3	2.14	0.46
21:D:124:ARG:HA	21:D:127:MET:HG3	1.98	0.46
24:M:43:LYS:O	24:M:46:THR:OG1	2.30	0.46
29:T:84:LYS:HZ2	29:T:94:VAL:H	1.62	0.46
30:U:68:ARG:NE	30:U:79:TRP:HE1	2.13	0.46
35:g:39:ARG:HG3	35:g:68:ILE:HG12	1.97	0.46
38:1:10:2MG:C2	38:1:26:M2G:H1'	2.50	0.46
39:j:104:LYS:HE2	39:j:140:HIS:CD2	2.51	0.46
42:m:22:GLN:O	42:m:36:VAL:HG13	2.16	0.46
1:2:14:C:H5'	4:C:169:SER:OG	2.16	0.46
1:2:203:G:C2	1:2:204:U:H1'	2.51	0.46
1:2:248:U:H5	10:L:34:TRP:CE2	2.33	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:586:C:H2'	1:2:587:U:C6	2.51	0.46
1:2:775:G:C6	1:2:785:C:N4	2.84	0.46
1:2:857:G:H4'	7:H:113:PRO:HG2	1.96	0.46
1:2:863:U:H3'	14:W:28:ARG:NH2	2.27	0.46
1:2:1240:G:O4'	25:P:77:ARG:NH2	2.43	0.46
1:2:1393:G:C5	1:2:1394:U:C4	3.03	0.46
1:2:1459:C:H2'	1:2:1460:G:H8	1.81	0.46
1:2:1531:C:H4'	1:2:1537:G:C6	2.51	0.46
1:2:1794:C:H5	17:a:6:ALA:H	1.64	0.46
2:A:54:TRP:CD1	2:A:57:ILE:HB	2.50	0.46
3:B:133:TYR:HA	3:B:219:LYS:O	2.16	0.46
3:B:205:PHE:CD1	3:B:206:PRO:HD2	2.51	0.46
10:L:111:VAL:HG12	10:L:139:VAL:HG21	1.97	0.46
11:N:83:GLU:OE1	11:N:83:GLU:N	2.41	0.46
21:D:219:GLU:O	35:g:201:GLY:HA2	2.16	0.46
22:F:27:LEU:HB2	22:F:30:THR:HG22	1.98	0.46
24:M:97:ILE:HD12	24:M:102:ASN:H	1.80	0.46
25:P:115:TYR:HB2	25:P:118:GLU:OE1	2.16	0.46
35:g:186:TRP:HA	35:g:196:GLU:OE1	2.16	0.46
35:g:245:ASP:HB2	35:g:263:THR:HB	1.97	0.46
38:1:72:U:O2'	39:j:223:VAL:HG12	2.16	0.46
42:m:6:CYS:HA	42:m:18:MET:HB3	1.98	0.46
1:2:321:G:N1	1:2:336:G:C5	2.84	0.46
1:2:551:G:C6	1:2:552:G:C6	3.04	0.46
1:2:608:U:H4'	1:2:609:G:O5'	2.16	0.46
1:2:756:A:H3'	1:2:757:A:C8	2.50	0.46
1:2:1396:U:H3'	1:2:1397:C:H5'	1.97	0.46
2:A:65:ALA:CB	2:A:184:LEU:HD22	2.46	0.46
2:A:184:LEU:HD23	13:V:45:ALA:HB2	1.98	0.46
14:W:38:LEU:HB3	14:W:50:PHE:CE1	2.51	0.46
15:X:56:LYS:HE2	15:X:93:LEU:HG	1.98	0.46
15:X:104:LEU:HD23	15:X:124:VAL:HA	1.98	0.46
22:F:122:ILE:HG23	31:Z:59:TYR:CE1	2.50	0.46
24:M:126:ILE:HG13	24:M:127:LEU:N	2.31	0.46
26:Q:16:ALA:HB2	26:Q:72:GLY:HA3	1.96	0.46
38:1:48:5MC:H2'	38:1:59:A:H1'	1.97	0.46
40:k:128:PHE:CE2	40:k:139:LYS:HD3	2.51	0.46
1:2:387:G:O6	1:2:409:A:N6	2.49	0.45
1:2:760:A:C5	1:2:761:G:C5	3.03	0.45
1:2:822:G:N1	1:2:823:G:N7	2.65	0.45
1:2:822:G:C6	1:2:823:G:N7	2.84	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:990:G:OP1	12:O:129:LYS:HG2	2.13	0.45
1:2:1526:U:O2'	26:Q:42:GLU:OE1	2.34	0.45
1:2:1784:G:H2'	1:2:1785:C:H6	1.80	0.45
2:A:121:VAL:HG13	2:A:141:ILE:HG21	1.98	0.45
4:C:148:TYR:OH	4:C:153:LEU:O	2.16	0.45
4:C:183:ILE:HD12	4:C:201:VAL:HG12	1.98	0.45
4:C:235:TRP:CZ3	14:W:68:ARG:HD3	2.51	0.45
13:V:22:ARG:HH22	13:V:58:TYR:HB2	1.81	0.45
13:V:40:ASP:HB3	13:V:46:ILE:HD11	1.98	0.45
16:Y:127:LYS:O	16:Y:130:ALA:HB3	2.17	0.45
36:i:29:LYS:HB3	36:i:35:TYR:CZ	2.51	0.45
38:1:26:M2G:H3'	38:1:27:C:H6	1.81	0.45
40:k:283:ILE:HD12	40:k:294:VAL:HG21	1.97	0.45
42:m:35:ALA:HA	42:m:74:TYR:O	2.16	0.45
1:2:161:A:H3'	1:2:162:G:N2	2.29	0.45
1:2:232:C:OP2	1:2:233:G:N1	2.50	0.45
1:2:641:G:C6	1:2:693:U:N3	2.79	0.45
1:2:698:U:H2'	1:2:699:U:C6	2.51	0.45
1:2:1274:A:N1	1:2:1436:G:C4	2.85	0.45
1:2:1469:A:H2	1:2:1472:G:N3	2.14	0.45
1:2:1471:U:O4	22:F:182:ARG:HG2	2.15	0.45
5:E:12:LEU:HD21	9:J:4:ALA:HB2	1.98	0.45
5:E:73:ASP:OD2	5:E:122:LYS:NZ	2.42	0.45
6:G:138:ALA:HA	6:G:141:ILE:HD12	1.98	0.45
10:L:91:LEU:HD12	10:L:100:TYR:HB3	1.99	0.45
12:O:131:GLY:O	17:a:22:ARG:NH2	2.45	0.45
14:W:28:ARG:HD2	14:W:60:LYS:HD2	1.99	0.45
15:X:61:SER:HB3	15:X:116:ASP:HB2	1.98	0.45
17:a:15:ARG:O	17:a:17:HIS:N	2.45	0.45
21:D:228:THR:HG22	21:D:229:GLU:N	2.30	0.45
22:F:43:LYS:HA	22:F:49:SER:HA	1.98	0.45
26:Q:77:GLN:O	26:Q:81:ILE:HG13	2.17	0.45
34:f:131:ALA:HB3	34:f:138:TYR:HB3	1.97	0.45
35:g:32:ASN:O	35:g:47:ARG:HA	2.16	0.45
36:i:24:ARG:HH12	36:i:93:HIS:CE1	2.35	0.45
36:i:42:LEU:HB3	36:i:47:VAL:HA	1.97	0.45
38:1:53:G:C4	38:1:54:A:C8	3.05	0.45
42:m:52:TYR:CZ	42:m:140:ILE:HG23	2.51	0.45
42:m:116:ASP:O	42:m:118:VAL:HG23	2.16	0.45
1:2:443:C:H6	16:Y:105:ARG:HH22	1.64	0.45
1:2:517:A:C2'	1:2:518:C:H5''	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:638:U:C6	7:H:118:LEU:HB2	2.51	0.45
1:2:793:U:H3'	1:2:794:U:H5'	1.98	0.45
1:2:1043:U:OP1	3:B:151:LYS:HD2	2.16	0.45
1:2:1121:G:H2'	1:2:1123:A:OP2	2.17	0.45
1:2:1496:G:H5''	29:T:72:GLY:HA3	1.99	0.45
1:2:1638:C:N4	37:3:31:C:OP1	2.49	0.45
1:2:1782:C:H2'	1:2:1783:U:O4'	2.15	0.45
3:B:3:VAL:HG13	39:j:89:ARG:HD2	1.98	0.45
3:B:79:HIS:CE1	3:B:189:ILE:HG23	2.51	0.45
4:C:50:VAL:HG21	4:C:73:ILE:HG23	1.97	0.45
4:C:74:ILE:HG12	4:C:81:LEU:HD11	1.99	0.45
6:G:2:LYS:O	6:G:108:VAL:HA	2.16	0.45
11:N:109:LYS:O	11:N:112:LYS:HB3	2.16	0.45
13:V:4:ASP:OD1	13:V:5:LYS:HG2	2.15	0.45
16:Y:28:LEU:HD23	16:Y:30:PRO:HD3	1.96	0.45
24:M:24:VAL:HA	24:M:27:THR:HG22	1.98	0.45
25:P:29:PRO:HG2	25:P:32:ASP:OD1	2.15	0.45
25:P:77:ARG:HD2	25:P:102:PHE:CZ	2.51	0.45
29:T:33:TYR:HD2	29:T:37:VAL:HG21	1.82	0.45
34:f:140:GLY:HA2	34:f:143:HIS:HB3	1.97	0.45
1:2:791:U:H2'	1:2:792:A:C4	2.51	0.45
1:2:804:U:O4	1:2:805:A:N6	2.48	0.45
1:2:1197:G:C6	1:2:1199:G:C6	3.04	0.45
1:2:1497:G:OP2	29:T:73:VAL:HG22	2.16	0.45
1:2:1624:U:H2'	1:2:1625:U:H6	1.81	0.45
2:A:63:ILE:HG21	2:A:144:ILE:HD11	1.98	0.45
2:A:79:ARG:C	2:A:83:GLN:HE22	2.25	0.45
2:A:148:ASP:O	2:A:151:SER:OG	2.33	0.45
9:J:136:VAL:HG22	9:J:156:ILE:CD1	2.47	0.45
14:W:36:LYS:HA	14:W:39:GLN:OE1	2.16	0.45
21:D:115:ILE:HD12	21:D:142:LEU:HD23	1.98	0.45
22:F:34:GLU:HG2	22:F:35:ILE:N	2.32	0.45
27:R:12:ALA:O	27:R:16:LEU:HD23	2.17	0.45
1:2:116:U:H2'	1:2:117:U:C6	2.51	0.45
1:2:140:A:C6	6:G:183:ARG:HG2	2.50	0.45
1:2:323:U:N3	1:2:324:G:N7	2.64	0.45
1:2:400:A:O2'	1:2:403:G:N7	2.38	0.45
1:2:845:G:H2'	1:2:846:A:O4'	2.15	0.45
1:2:865:G:C6	1:2:866:G:N7	2.85	0.45
1:2:931:U:C4	1:2:943:A:N1	2.84	0.45
1:2:1144:U:H4'	4:C:93:LYS:HZ2	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1171:G:H2'	1:2:1172:C:C6	2.52	0.45
4:C:162:LYS:NZ	14:W:95:PRO:C	2.75	0.45
5:E:72:VAL:N	5:E:75:LYS:O	2.49	0.45
9:J:120:LYS:O	9:J:121:SER:OG	2.34	0.45
13:V:69:LEU:HD23	13:V:69:LEU:HA	1.73	0.45
14:W:101:TYR:HA	14:W:113:HIS:CD2	2.52	0.45
21:D:29:LEU:HB2	21:D:34:TYR:HB2	1.98	0.45
21:D:164:VAL:HG13	21:D:165:ASN:N	2.32	0.45
22:F:138:ALA:HB1	22:F:203:ALA:HB3	1.98	0.45
23:K:14:HIS:HA	23:K:17:GLN:HG2	1.98	0.45
24:M:97:ILE:O	24:M:99:ARG:N	2.50	0.45
27:R:73:LEU:O	27:R:76:GLU:HG3	2.17	0.45
38:l:42:U:OP1	39:j:60:GLN:HG2	2.17	0.45
40:k:111:HIS:CD2	40:k:249:ASN:HD22	2.35	0.45
1:2:394:U:H2'	1:2:395:G:O4'	2.17	0.45
1:2:646:G:C6	1:2:647:G:C5	3.05	0.45
1:2:768:C:H2'	1:2:769:A:O4'	2.16	0.45
1:2:1219:C:H2'	1:2:1220:A:C8	2.50	0.45
1:2:1357:G:H2'	1:2:1358:C:H6	1.82	0.45
1:2:1381:G:H2'	1:2:1382:A:C8	2.51	0.45
1:2:1475:G:H1'	29:T:48:GLN:HB2	1.97	0.45
1:2:1527:C:C2	1:2:1528:C:C5	3.05	0.45
1:2:1552:U:H2'	1:2:1553:A:O4'	2.16	0.45
1:2:1561:C:H2'	1:2:1562:U:H6	1.82	0.45
1:2:1757:C:C2	1:2:1758:G:C8	3.05	0.45
2:A:37:VAL:HG12	2:A:46:ASN:HB3	1.99	0.45
3:B:67:GLU:HG2	3:B:85:LYS:HB3	1.98	0.45
3:B:103:MET:HG2	3:B:188:LEU:HD11	1.98	0.45
4:C:48:ARG:HE	4:C:253:THR:H	1.63	0.45
5:E:24:SER:N	9:J:3:ARG:HH12	2.15	0.45
8:I:84:HIS:CD2	8:I:90:LEU:HD22	2.51	0.45
12:O:80:HIS:HA	12:O:113:GLY:O	2.17	0.45
13:V:22:ARG:NH2	13:V:58:TYR:HB2	2.32	0.45
13:V:53:TYR:OH	13:V:76:ASP:OD2	2.15	0.45
21:D:20:GLU:HB2	23:K:61:TRP:CZ3	2.52	0.45
23:K:24:LYS:HE3	23:K:24:LYS:HB3	1.54	0.45
25:P:27:GLU:O	25:P:27:GLU:HG2	2.16	0.45
26:Q:28:LEU:O	26:Q:65:ILE:N	2.38	0.45
26:Q:60:PHE:CD2	26:Q:89:LEU:HD21	2.52	0.45
29:T:31:PRO:HG2	29:T:34:VAL:HG13	1.97	0.45
31:Z:89:ILE:HG23	31:Z:103:ARG:HA	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:g:91:ARG:NE	35:g:103:ARG:HG3	2.32	0.45
1:2:410:C:H2'	1:2:411:A:O4'	2.16	0.45
1:2:703:G:H2'	1:2:704:C:H2'	1.99	0.45
1:2:707:A:H61	1:2:730:G:H1	1.64	0.45
1:2:826:C:O2'	1:2:827:U:O5'	2.31	0.45
1:2:914:A:H3'	1:2:915:U:C5	2.51	0.45
1:2:947:G:H2'	1:2:948:C:H6	1.79	0.45
1:2:1024:A:H2'	1:2:1026:A:OP1	2.17	0.45
1:2:1178:G:H2'	1:2:1179:C:H6	1.82	0.45
1:2:1199:G:H3'	1:2:1199:G:P	2.57	0.45
1:2:1334:U:H3	1:2:1414:G:H1	1.64	0.45
1:2:1501:A:H8	1:2:1501:A:OP1	1.99	0.45
1:2:1781:C:H2'	1:2:1782:C:H6	1.82	0.45
3:B:127:VAL:HG13	3:B:176:VAL:HG11	1.98	0.45
4:C:150:GLY:O	4:C:151:THR:OG1	2.33	0.45
5:E:162:VAL:HG22	5:E:164:LEU:H	1.82	0.45
5:E:173:ILE:HD11	5:E:235:TRP:CE2	2.51	0.45
8:I:84:HIS:CE1	8:I:90:LEU:HD13	2.51	0.45
18:b:51:GLN:O	18:b:66:PRO:HB3	2.16	0.45
19:e:29:GLN:NE2	19:e:35:TYR:HD1	2.14	0.45
22:F:107:GLY:O	22:F:108:LYS:CB	2.61	0.45
22:F:109:LYS:O	22:F:113:VAL:HG23	2.17	0.45
23:K:15:LEU:O	23:K:19:GLY:N	2.48	0.45
26:Q:99:GLU:HG3	35:g:61:SER:HB3	1.98	0.45
27:R:21:TYR:HA	27:R:24:LEU:HD12	1.99	0.45
33:d:27:HIS:O	33:d:30:LEU:HD23	2.17	0.45
36:i:36:ALA:C	36:i:77:ILE:HG22	2.42	0.45
40:k:252:ASP:OD1	40:k:253:LEU:N	2.50	0.45
1:2:270:A:C6	1:2:271:U:H1'	2.51	0.45
1:2:487:G:C6	1:2:488:C:H1'	2.52	0.45
1:2:834:U:H2'	1:2:835:U:C6	2.51	0.45
1:2:973:A:H2'	1:2:974:C:C6	2.51	0.45
1:2:1234:C:C2	1:2:1235:A:C8	3.05	0.45
1:2:1334:U:N3	1:2:1335:A:N7	2.64	0.45
1:2:1481:A:O2'	1:2:1482:G:O5'	2.30	0.45
1:2:1605:G:H2'	1:2:1606:U:C6	2.52	0.45
1:2:1679:A:O3'	6:G:31:ARG:NH2	2.47	0.45
3:B:56:ASN:O	3:B:58:SER:N	2.49	0.45
3:B:71:ALA:N	3:B:79:HIS:O	2.50	0.45
5:E:205:PHE:HD1	5:E:221:ARG:HD2	1.82	0.45
7:H:93:LEU:HD22	7:H:125:ILE:HD11	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:84:HIS:HD2	8:I:100:ALA:HB2	1.81	0.45
9:J:170:GLY:HA2	9:J:174:ARG:NH1	2.31	0.45
20:h:2:ARG:HB2	20:h:5:TRP:CD1	2.52	0.45
25:P:118:GLU:O	28:S:121:SER:HA	2.17	0.45
26:Q:131:GLY:HA3	26:Q:136:SER:O	2.17	0.45
27:R:33:ARG:NE	27:R:37:GLU:OE1	2.50	0.45
28:S:72:ILE:HG12	28:S:79:TYR:CD1	2.52	0.45
35:g:40:ASP:O	35:g:42:THR:HG23	2.17	0.45
35:g:106:GLY:O	35:g:133:ARG:NH2	2.49	0.45
35:g:111:VAL:C	35:g:112:LEU:HD12	2.41	0.45
35:g:154:LYS:HD3	35:g:208:VAL:HA	1.99	0.45
39:j:59:ILE:HG13	39:j:60:GLN:N	2.32	0.45
40:k:201:MET:O	40:k:205:LEU:HG	2.17	0.45
40:k:402:VAL:HG11	40:k:406:LEU:HD22	1.99	0.45
40:k:464:VAL:HG11	40:k:485:LEU:HD13	1.99	0.45
1:2:342:C:C2	1:2:343:A:C8	3.05	0.45
1:2:393:C:H4'	6:G:92:ARG:HH22	1.82	0.45
1:2:882:C:C2	1:2:945:U:C2	3.05	0.45
1:2:1085:A:H8	1:2:1085:A:OP1	2.00	0.45
1:2:1270:G:H2'	1:2:1271:U:C6	2.52	0.45
1:2:1328:A:OP1	1:2:1419:A:O2'	2.26	0.45
1:2:1562:U:H2'	1:2:1563:C:H6	1.81	0.45
1:2:1733:U:H2'	1:2:1734:G:C8	2.51	0.45
1:2:1756:U:H2'	1:2:1757:C:H6	1.82	0.45
2:A:38:TYR:O	2:A:47:VAL:HB	2.17	0.45
2:A:195:TRP:HE1	2:A:197:ILE:HD12	1.81	0.45
5:E:36:HIS:NE2	5:E:88:ASP:OD2	2.50	0.45
5:E:163:ASP:OD1	5:E:168:THR:N	2.45	0.45
5:E:208:VAL:HG11	5:E:225:VAL:HG21	1.99	0.45
7:H:133:THR:OG1	7:H:158:ASP:O	2.35	0.45
15:X:3:LYS:HD2	15:X:7:ARG:NH2	2.32	0.45
17:a:19:LYS:HD3	17:a:20:PRO:HD2	1.99	0.45
22:F:23:VAL:HB	22:F:37:GLN:O	2.17	0.45
25:P:81:ARG:O	25:P:115:TYR:HB3	2.17	0.45
26:Q:93:HIS:CD2	26:Q:105:LEU:HG	2.51	0.45
27:R:102:VAL:HB	27:R:106:THR:OG1	2.17	0.45
39:j:14:PRO:HD2	39:j:83:ILE:HD11	1.98	0.45
40:k:84:PHE:HE1	40:k:389:PHE:CD2	2.34	0.45
40:k:314:ARG:NE	40:k:417:VAL:O	2.31	0.45
1:2:32:U:N3	1:2:594:G:N1	2.65	0.45
1:2:203:G:N3	1:2:204:U:H1'	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:391:G:H2'	1:2:392:C:O4'	2.16	0.45
1:2:564:C:C5'	36:i:64:LYS:HZ1	2.28	0.45
1:2:1034:G:H2'	1:2:1035:A:C8	2.52	0.45
1:2:1051:U:O2'	1:2:1052:G:OP1	2.34	0.45
1:2:1097:U:OP2	4:C:173:ARG:NH1	2.50	0.45
1:2:1210:A:H5'	25:P:100:LYS:HE2	1.98	0.45
1:2:1298:G:O3'	4:C:104:LYS:NZ	2.50	0.45
1:2:1429:C:H6	1:2:1429:C:H5'	1.82	0.45
1:2:1497:G:C5	1:2:1498:C:C5	3.05	0.45
1:2:1644:C:H1'	36:i:42:LEU:HD11	1.99	0.45
1:2:1794:C:OP1	17:a:87:ARG:NH2	2.42	0.45
5:E:126:VAL:HA	5:E:141:THR:HA	1.99	0.45
9:J:114:TYR:CD2	9:J:122:VAL:HG12	2.52	0.45
14:W:25:VAL:HG23	14:W:63:VAL:HB	1.97	0.45
14:W:42:GLN:NE2	14:W:49:GLU:HA	2.32	0.45
14:W:106:THR:HG23	14:W:108:ALA:N	2.32	0.45
22:F:202:ASN:HA	22:F:205:LYS:NZ	2.32	0.45
33:d:21:CYS:HB3	33:d:25:GLY:N	2.32	0.45
36:i:80:SER:HB3	36:i:90:ASP:OD1	2.18	0.45
39:j:209:GLU:HG3	39:j:220:VAL:HG22	1.99	0.45
40:k:75:LEU:HD23	40:k:96:ASN:HD21	1.82	0.45
1:2:122:U:H4'	5:E:77:ARG:NH1	2.33	0.44
1:2:512:U:H2'	1:2:513:G:C8	2.52	0.44
1:2:598:A:H2'	1:2:599:U:C6	2.52	0.44
1:2:751:G:C2	1:2:798:A:C2	3.05	0.44
1:2:895:U:O4'	12:O:38:THR:OG1	2.35	0.44
1:2:1131:A:H2'	1:2:1132:A:C8	2.51	0.44
1:2:1253:U:H2'	1:2:1254:G:C8	2.52	0.44
1:2:1479:C:P	29:T:63:ARG:HH12	2.40	0.44
1:2:1730:A:H2'	1:2:1731:C:C6	2.52	0.44
2:A:207:PRO:HA	2:A:210:ILE:HD12	1.99	0.44
4:C:81:LEU:HB3	4:C:109:VAL:CG2	2.47	0.44
9:J:111:THR:O	9:J:115:LYS:HG2	2.17	0.44
12:O:70:LYS:HD2	12:O:70:LYS:HA	1.67	0.44
22:F:71:TYR:HB3	26:Q:46:PHE:CE2	2.52	0.44
26:Q:28:LEU:HB2	26:Q:64:ASP:CB	2.47	0.44
29:T:38:LYS:O	29:T:39:THR:OG1	2.34	0.44
29:T:97:SER:OG	29:T:100:ILE:HD13	2.17	0.44
30:U:37:VAL:O	30:U:41:ILE:HG13	2.17	0.44
40:k:357:PRO:HG2	40:k:415:GLN:NE2	2.29	0.44
42:m:4:ASN:OD1	42:m:20:PRO:HG3	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:m:92:PHE:O	42:m:96:PHE:HB2	2.16	0.44
1:2:88:U:H2'	1:2:89:G:H8	1.83	0.44
1:2:409:A:H2'	1:2:410:C:H6	1.83	0.44
1:2:725:U:H3'	1:2:726:G:C8	2.49	0.44
1:2:772:G:H5'	9:J:6:ARG:HH22	1.82	0.44
1:2:997:A:H5'	39:j:54:ARG:NH1	2.29	0.44
1:2:1041:G:C4	1:2:1042:A:C8	3.05	0.44
1:2:1460:G:N7	28:S:143:ARG:NH2	2.62	0.44
1:2:1469:A:H2'	1:2:1469:A:N3	2.32	0.44
1:2:1776:G:H2'	1:2:1777:U:C6	2.52	0.44
1:2:1798:A:H62	37:3:19:A:HO2'	1.60	0.44
2:A:83:GLN:HG2	2:A:99:ALA:HB1	1.98	0.44
3:B:225:LEU:H	3:B:225:LEU:HD12	1.83	0.44
4:C:60:GLU:HA	4:C:63:LEU:HG	1.98	0.44
6:G:56:ASN:OD1	6:G:108:VAL:HB	2.16	0.44
7:H:162:ILE:HG21	7:H:169:PHE:CE2	2.52	0.44
8:I:62:THR:HG21	8:I:75:LYS:NZ	2.32	0.44
9:J:62:ARG:HH21	9:J:66:ASP:HB2	1.83	0.44
10:L:136:ARG:HH11	10:L:136:ARG:HG3	1.83	0.44
14:W:23:ARG:O	14:W:65:LEU:N	2.41	0.44
16:Y:14:SER:HB3	16:Y:21:LYS:HG2	1.99	0.44
17:a:80:HIS:CE1	37:3:25:A:C5	3.05	0.44
23:K:84:GLU:N	23:K:84:GLU:OE1	2.51	0.44
27:R:44:LYS:O	27:R:48:ASN:ND2	2.51	0.44
32:c:9:LEU:HD21	32:c:33:LEU:HB3	1.98	0.44
35:g:18:ASN:H	35:g:40:ASP:HB2	1.83	0.44
35:g:304:ASP:OD1	35:g:305:GLY:N	2.50	0.44
39:j:107:THR:HG21	39:j:142:TYR:HE1	1.83	0.44
40:k:353:ILE:HG13	40:k:419:ALA:HA	1.99	0.44
1:2:57:G:H2'	1:2:58:U:O4'	2.18	0.44
1:2:65:A:O2'	1:2:66:U:H5''	2.18	0.44
1:2:246:A:O2'	10:L:36:LYS:HD3	2.16	0.44
1:2:309:C:O3'	15:X:20:ARG:NH1	2.42	0.44
1:2:393:C:H42	1:2:400:A:H62	1.65	0.44
1:2:573:G:C2	1:2:574:C:C5	3.05	0.44
1:2:989:C:C4	1:2:990:G:C5	3.06	0.44
1:2:1141:A:H2'	1:2:1142:A:O4'	2.17	0.44
1:2:1408:A:H1'	1:2:1409:A:H5'	2.00	0.44
1:2:1500:G:N2	1:2:1503:A:OP2	2.39	0.44
1:2:1619:U:C4	1:2:1620:G:N7	2.85	0.44
2:A:30:GLN:OE1	2:A:149:LEU:HB3	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:58:SER:O	3:B:62:LYS:HG2	2.18	0.44
3:B:144:ARG:HB3	3:B:206:PRO:CB	2.46	0.44
5:E:72:VAL:HG22	5:E:90:ILE:HD13	2.00	0.44
6:G:163:THR:HA	6:G:168:SER:HA	1.99	0.44
8:I:111:GLN:HA	8:I:114:GLU:OE1	2.18	0.44
9:J:86:LEU:HD21	9:J:90:LYS:O	2.17	0.44
10:L:101:GLU:OE2	10:L:103:ARG:HB3	2.18	0.44
15:X:127:VAL:HG21	15:X:132:LEU:HD13	2.00	0.44
21:D:190:LYS:NZ	21:D:194:ARG:HG3	2.32	0.44
27:R:28:PHE:O	27:R:32:LYS:HB2	2.17	0.44
29:T:86:ARG:HB2	29:T:89:ARG:CB	2.47	0.44
34:f:104:ASN:O	34:f:117:LEU:HD22	2.18	0.44
1:2:73:U:O2'	1:2:75:U:OP1	2.35	0.44
1:2:158:U:OP2	16:Y:117:LYS:HE2	2.17	0.44
1:2:449:U:H2'	1:2:450:A:C8	2.52	0.44
1:2:644:C:H2'	1:2:645:U:C6	2.52	0.44
1:2:808:G:H2'	1:2:809:G:N9	2.33	0.44
1:2:975:G:H1	1:2:1022:A:HO2'	1.62	0.44
1:2:1137:A:H2'	1:2:1138:A:C8	2.53	0.44
1:2:1181:U:H4'	25:P:124:THR:HG21	1.99	0.44
1:2:1318:A:H2'	1:2:1319:U:O4'	2.17	0.44
1:2:1517:U:H2'	1:2:1518:U:C5	2.53	0.44
3:B:33:LYS:O	3:B:232:HIS:HE1	2.00	0.44
4:C:55:ILE:HG13	4:C:60:GLU:OE2	2.17	0.44
13:V:37:ALA:HA	13:V:50:TYR:HB2	1.99	0.44
14:W:116:ALA:HB1	14:W:121:VAL:O	2.18	0.44
16:Y:60:PHE:HD1	16:Y:71:GLY:HA3	1.82	0.44
18:b:3:LEU:O	18:b:4:VAL:HG23	2.17	0.44
18:b:65:THR:N	18:b:72:LYS:O	2.31	0.44
20:h:1:MET:HG2	20:h:6:ARG:NH2	2.33	0.44
22:F:68:LYS:HA	22:F:68:LYS:HD2	1.74	0.44
22:F:142:SER:O	22:F:144:PRO:HD3	2.18	0.44
22:F:170:VAL:O	22:F:174:ILE:HG12	2.18	0.44
25:P:44:LYS:NZ	25:P:82:ASN:OD1	2.51	0.44
28:S:96:LYS:NZ	28:S:98:TYR:OH	2.47	0.44
31:Z:55:PRO:O	31:Z:56:THR:OG1	2.32	0.44
40:k:207:GLY:HA2	40:k:210:VAL:HG12	2.00	0.44
40:k:315:LEU:HB3	40:k:417:VAL:HB	1.99	0.44
40:k:457:GLU:HB2	40:k:460:GLU:OE1	2.18	0.44
1:2:77:U:O2'	1:2:78:A:OP2	2.33	0.44
1:2:93:A:H8	1:2:398:A:H5'	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:752:A:P	5:E:187:ARG:HD3	2.58	0.44
1:2:1017:U:H2'	1:2:1018:A:H8	1.83	0.44
1:2:1119:U:H2'	1:2:1120:C:C6	2.52	0.44
1:2:1127:C:H2'	1:2:1128:U:O4'	2.18	0.44
1:2:1228:G:H1	24:M:40:GLU:CD	2.23	0.44
1:2:1275:U:H5'	21:D:147:ALA:HB2	1.99	0.44
1:2:1371:A:H2'	1:2:1372:C:C6	2.53	0.44
1:2:1372:C:H2'	1:2:1373:U:O4'	2.17	0.44
1:2:1731:C:H2'	1:2:1732:U:C6	2.53	0.44
2:A:127:ARG:NH2	2:A:128:SER:HA	2.32	0.44
3:B:85:LYS:HG3	3:B:101:HIS:HB3	2.00	0.44
3:B:144:ARG:HD3	3:B:208:GLN:CG	2.47	0.44
5:E:31:PRO:HD2	5:E:38:LEU:HG	1.99	0.44
5:E:36:HIS:ND1	5:E:85:GLY:HA3	2.32	0.44
5:E:67:GLN:HG3	5:E:69:HIS:ND1	2.32	0.44
15:X:48:HIS:NE2	15:X:105:ALA:HB2	2.33	0.44
30:U:100:VAL:HA	30:U:103:ILE:HD12	1.99	0.44
31:Z:54:ALA:HB3	31:Z:55:PRO:HD3	1.98	0.44
34:f:140:GLY:N	34:f:143:HIS:HA	2.32	0.44
38:1:20:A:O4'	38:1:60:A:N6	2.51	0.44
39:j:192:CYS:HA	39:j:261:VAL:H	1.81	0.44
40:k:347:PHE:CE2	40:k:419:ALA:HB2	2.53	0.44
42:m:112:THR:OG1	42:m:127:ARG:NH1	2.49	0.44
1:2:639:U:O2'	1:2:640:G:O4'	2.18	0.44
1:2:1524:A:H2'	1:2:1525:C:H5'	2.00	0.44
1:2:1531:C:H4'	1:2:1537:G:O6	2.18	0.44
1:2:1683:G:H2'	1:2:1684:C:H6	1.82	0.44
3:B:144:ARG:NE	3:B:206:PRO:HB3	2.32	0.44
8:I:101:ILE:HD12	8:I:168:ALA:C	2.43	0.44
11:N:74:ILE:O	11:N:77:SER:OG	2.18	0.44
12:O:61:MET:O	12:O:65:GLN:HG3	2.17	0.44
15:X:95:PHE:HD2	15:X:132:LEU:HD11	1.82	0.44
19:e:30:PRO:HB2	19:e:34:ALA:HB3	1.99	0.44
21:D:33:GLY:HA2	21:D:103:GLU:OE1	2.18	0.44
23:K:38:LYS:HB2	23:K:41:PHE:HE1	1.83	0.44
1:2:32:U:C2	1:2:594:G:N1	2.86	0.44
1:2:66:U:H6	6:G:160:ARG:HE	1.62	0.44
1:2:329:G:H2'	1:2:330:A:H8	1.83	0.44
1:2:380:C:H1'	1:2:755:A:H61	1.83	0.44
1:2:472:A:H2'	1:2:473:A:O4'	2.18	0.44
1:2:628:U:C2	1:2:969:A:N6	2.85	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:646:G:C5	1:2:647:G:C8	3.06	0.44
1:2:1063:G:C6	1:2:1064:A:C5	3.06	0.44
1:2:1228:G:N1	24:M:40:GLU:OE2	2.30	0.44
1:2:1407:G:H22	1:2:1409:A:H3'	1.83	0.44
1:2:1443:G:N2	34:f:87:THR:O	2.51	0.44
1:2:1443:G:O5'	34:f:89:LYS:NZ	2.50	0.44
1:2:1607:U:H5''	26:Q:75:VAL:HG22	1.99	0.44
1:2:1716:A:H2'	1:2:1717:A:C8	2.53	0.44
1:2:1794:C:C4	17:a:93:ARG:HG3	2.53	0.44
2:A:28:ASN:HA	2:A:44:GLY:O	2.18	0.44
5:E:73:ASP:OD1	5:E:89:VAL:N	2.50	0.44
9:J:36:LEU:HD23	9:J:126:ARG:NH2	2.33	0.44
10:L:3:THR:HB	10:L:7:VAL:HG22	1.99	0.44
15:X:67:ALA:HB3	15:X:69:ARG:NH2	2.31	0.44
21:D:141:LYS:HB2	21:D:179:GLN:OE1	2.17	0.44
22:F:121:GLU:O	22:F:125:VAL:HG23	2.17	0.44
25:P:83:MET:O	25:P:116:LEU:HG	2.18	0.44
25:P:101:VAL:HG22	25:P:102:PHE:N	2.32	0.44
26:Q:31:VAL:O	26:Q:34:SER:N	2.49	0.44
26:Q:53:LEU:HD13	26:Q:53:LEU:HA	1.75	0.44
26:Q:113:ASP:OD1	26:Q:115:THR:OG1	2.36	0.44
31:Z:82:HIS:O	31:Z:85:ASN:ND2	2.48	0.44
35:g:19:GLY:N	35:g:315:ASN:OD1	2.51	0.44
35:g:283:PRO:HG2	35:g:318:ARG:HH21	1.82	0.44
36:i:67:LYS:HD2	37:3:33:C:O3'	2.18	0.44
38:1:2:G:H2'	38:1:3:C:C6	2.52	0.44
38:1:23:C:H4'	39:j:64:ARG:NH2	2.32	0.44
38:1:42:U:H2'	38:1:43:G:H8	1.80	0.44
1:2:180:A:H2'	1:2:181:A:C8	2.52	0.44
1:2:243:A:H2'	1:2:244:U:H6	1.83	0.44
1:2:415:A:H5''	1:2:416:A:C8	2.53	0.44
1:2:554:A:H1'	1:2:589:C:O2'	2.18	0.44
1:2:751:G:H2'	1:2:752:A:H8	1.82	0.44
1:2:752:A:C6	1:2:753:A:C2	3.06	0.44
1:2:772:G:H2'	1:2:773:C:C6	2.53	0.44
1:2:865:G:OP1	11:N:1:MET:N	2.30	0.44
1:2:895:U:H1'	12:O:41:ARG:NH2	2.33	0.44
1:2:1424:C:H3'	1:2:1425:A:H4'	1.98	0.44
1:2:1471:U:C5	22:F:192:ILE:HG12	2.53	0.44
1:2:1664:U:H2'	1:2:1665:A:O4'	2.18	0.44
4:C:125:GLU:O	4:C:129:ALA:N	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:69:HIS:HA	5:E:93:GLU:HB2	1.99	0.44
9:J:90:LYS:HB3	9:J:95:TYR:CD2	2.53	0.44
11:N:78:ASN:ND2	11:N:80:LEU:HD12	2.33	0.44
16:Y:8:ARG:HG2	16:Y:9:THR:H	1.82	0.44
16:Y:10:ARG:NE	16:Y:26:ASP:OD2	2.43	0.44
24:M:89:GLY:HA2	24:M:92:ALA:HB3	1.98	0.44
28:S:110:ARG:O	28:S:114:GLU:OE1	2.36	0.44
34:f:119:LYS:HE3	34:f:137:PHE:CD2	2.51	0.44
36:i:87:ASP:OD1	36:i:88:GLN:N	2.50	0.44
1:2:22:A:H2'	1:2:23:G:O4'	2.17	0.44
1:2:223:C:H2'	1:2:224:A:H8	1.82	0.44
1:2:329:G:H2'	1:2:330:A:C8	2.53	0.44
1:2:684:A:H2'	1:2:685:A:O4'	2.18	0.44
1:2:763:G:H2'	1:2:764:U:C6	2.53	0.44
1:2:785:C:O3'	5:E:255:ARG:NH1	2.44	0.44
1:2:811:A:H62	1:2:857:G:H2'	1.81	0.44
1:2:900:G:H2'	1:2:901:G:C8	2.53	0.44
1:2:996:G:H1	1:2:1006:5MC:HN41	1.65	0.44
1:2:1461:C:H2'	1:2:1462:G:C8	2.53	0.44
2:A:67:ILE:HD12	2:A:67:ILE:H	1.83	0.44
5:E:35:PRO:HB2	5:E:36:HIS:CD2	2.52	0.44
7:H:145:GLY:O	14:W:43:LYS:NZ	2.51	0.44
8:I:137:SER:O	8:I:140:THR:OG1	2.32	0.44
12:O:34:SER:HB2	12:O:36:ARG:HG3	1.99	0.44
14:W:60:LYS:HB2	14:W:60:LYS:HE2	1.84	0.44
16:Y:125:ILE:O	16:Y:128:LYS:HB3	2.18	0.44
18:b:15:GLU:O	18:b:29:ARG:NH2	2.51	0.44
22:F:130:ASN:OD1	22:F:131:PRO:HD2	2.18	0.44
40:k:62:GLU:O	40:k:66:LYS:HG3	2.18	0.44
40:k:64:LYS:O	40:k:68:GLU:OE1	2.36	0.44
40:k:148:TYR:OH	40:k:169:GLU:O	2.30	0.44
40:k:214:ALA:HB3	40:k:244:VAL:HG22	1.99	0.44
1:2:208:U:C2	1:2:209:A:C8	3.06	0.43
1:2:550:G:H2'	1:2:551:G:H8	1.82	0.43
1:2:566:A:OP1	15:X:68:ILE:HG13	2.18	0.43
1:2:623:G:H2'	1:2:624:C:H6	1.82	0.43
1:2:871:G:H22	1:2:1046:G:H4'	1.83	0.43
1:2:958:U:HO2'	18:b:47:PHE:HE2	1.65	0.43
1:2:985:G:C2'	1:2:986:G:H5'	2.47	0.43
1:2:1146:A:H2'	1:2:1147:C:C6	2.53	0.43
1:2:1221:C:H2'	1:2:1222:A:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1415:A:H2'	1:2:1416:G:O4'	2.18	0.43
1:2:1526:U:C2	1:2:1527:C:C5	3.06	0.43
1:2:1613:C:OP1	32:c:47:PRO:HB3	2.18	0.43
1:2:1657:A:H2'	1:2:1658:A:H8	1.83	0.43
2:A:9:LEU:HA	2:A:54:TRP:HZ3	1.83	0.43
2:A:139:VAL:O	2:A:139:VAL:HG22	2.18	0.43
7:H:142:TYR:HD2	14:W:50:PHE:CZ	2.36	0.43
8:I:37:LYS:HD3	8:I:37:LYS:HA	1.81	0.43
11:N:100:LYS:O	11:N:103:GLU:HG2	2.17	0.43
13:V:71:ARG:CZ	18:b:4:VAL:HG23	2.48	0.43
14:W:22:LYS:NZ	18:b:3:LEU:HD22	2.27	0.43
14:W:47:ILE:HD12	14:W:47:ILE:HA	1.87	0.43
15:X:70:LYS:N	15:X:70:LYS:HD2	2.33	0.43
15:X:76:LEU:O	15:X:80:GLY:N	2.40	0.43
21:D:42:THR:OG1	21:D:45:LYS:O	2.35	0.43
24:M:47:ARG:NH2	34:f:125:GLY:HA3	2.33	0.43
35:g:207:ASN:ND2	35:g:248:PHE:HA	2.32	0.43
39:j:21:MET:HB3	39:j:68:ASN:ND2	2.30	0.43
1:2:82:U:C4	1:2:83:G:C5	3.05	0.43
1:2:303:U:H2'	1:2:304:C:C6	2.51	0.43
1:2:321:G:H8	1:2:321:G:OP2	2.01	0.43
1:2:334:U:C4	1:2:335:G:C5	3.06	0.43
1:2:533:A:N3	1:2:533:A:H2'	2.32	0.43
1:2:789:U:C5	1:2:790:A:C5	2.99	0.43
1:2:1328:A:H2'	1:2:1329:G:C8	2.53	0.43
1:2:1631:A:H4'	1:2:1632:C:H5''	1.99	0.43
2:A:53:THR:O	2:A:57:ILE:HG12	2.18	0.43
4:C:106:VAL:HG21	4:C:213:GLU:HB3	1.98	0.43
4:C:180:GLY:N	4:C:200:ASP:OD2	2.50	0.43
5:E:11:ARG:HA	5:E:28:ALA:HB2	2.00	0.43
10:L:92:HIS:CG	10:L:103:ARG:HH22	2.37	0.43
11:N:141:TYR:HE1	11:N:146:ALA:HB2	1.82	0.43
19:e:13:LYS:HB2	19:e:17:GLN:CD	2.44	0.43
22:F:26:GLU:C	22:F:27:LEU:HD12	2.44	0.43
22:F:55:VAL:HG11	22:F:61:VAL:HG23	2.00	0.43
22:F:148:THR:HB	22:F:159:ARG:HB3	1.99	0.43
23:K:22:VAL:HG13	23:K:32:HIS:HE1	1.83	0.43
24:M:102:ASN:C	24:M:104:ARG:HE	2.22	0.43
28:S:127:HIS:CE1	28:S:133:VAL:HG11	2.52	0.43
35:g:115:ALA:HB3	35:g:124:ILE:HG13	2.00	0.43
38:1:52:G:H2'	38:1:53:G:C8	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:j:130:ILE:O	39:j:133:PRO:HD2	2.18	0.43
40:k:195:PRO:O	40:k:204:MET:HE2	2.18	0.43
42:m:26:GLU:O	42:m:32:ILE:HA	2.17	0.43
1:2:9:U:O2	1:2:11:A:H5''	2.18	0.43
1:2:52:U:O4	1:2:423:C:N4	2.51	0.43
1:2:435:A:O5'	1:2:435:A:H8	2.01	0.43
1:2:588:C:H5'	19:e:42:ARG:HH22	1.83	0.43
1:2:660:A:H5''	1:2:661:C:H3'	2.00	0.43
1:2:708:C:O2	1:2:731:C:N4	2.52	0.43
1:2:932:A:H61	1:2:943:A:H61	1.65	0.43
1:2:984:G:N2	1:2:985:G:H1'	2.33	0.43
1:2:1460:G:H2'	1:2:1461:C:H6	1.83	0.43
1:2:1583:U:N3	1:2:1609:A:N7	2.66	0.43
1:2:1599:G:N7	29:T:89:ARG:NH1	2.66	0.43
1:2:1771:C:OP1	20:h:3:ALA:HB3	2.19	0.43
8:I:139:ASN:CG	8:I:142:ARG:HH21	2.26	0.43
9:J:123:HIS:CB	19:e:37:ARG:HH22	2.30	0.43
11:N:110:ASP:CG	11:N:114:ARG:HH12	2.26	0.43
16:Y:10:ARG:HB2	16:Y:24:VAL:CG1	2.48	0.43
21:D:62:ASN:C	23:K:95:GLN:HE22	2.26	0.43
22:F:86:LYS:HE3	22:F:94:ARG:NE	2.32	0.43
23:K:6:GLU:OE2	23:K:6:GLU:N	2.32	0.43
24:M:52:LEU:HD21	24:M:80:ILE:HD12	2.01	0.43
35:g:40:ASP:HB3	35:g:42:THR:OG1	2.19	0.43
40:k:473:ALA:HB1	40:k:485:LEU:HB3	2.00	0.43
42:m:24:LYS:HE3	42:m:35:ALA:HB3	2.00	0.43
1:2:7:G:H4'	1:2:572:C:H4'	2.00	0.43
1:2:27:U:H2'	1:2:28:A:H8	1.83	0.43
1:2:72:A:H1'	1:2:73:U:C6	2.53	0.43
1:2:129:U:H5'	1:2:263:G:H22	1.82	0.43
1:2:157:U:O2'	1:2:159:C:H5'	2.19	0.43
1:2:520:A:H2'	1:2:521:U:H6	1.82	0.43
1:2:624:C:O2'	1:2:938:A:H1'	2.19	0.43
1:2:744:U:H2'	1:2:745:U:O4'	2.17	0.43
1:2:907:U:O2	1:2:1008:U:H1'	2.19	0.43
1:2:914:A:N3	1:2:914:A:H2'	2.32	0.43
1:2:1530:U:H2'	1:2:1531:C:C6	2.52	0.43
4:C:60:GLU:O	4:C:63:LEU:HB2	2.17	0.43
6:G:200:ALA:O	6:G:203:GLU:HG3	2.17	0.43
8:I:21:PHE:CD2	8:I:22:ARG:HG2	2.53	0.43
9:J:66:ASP:OD1	9:J:68:LYS:N	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:N:100:LYS:HA	11:N:103:GLU:CD	2.44	0.43
14:W:120:HIS:ND1	14:W:120:HIS:O	2.51	0.43
22:F:65:GLN:HE21	22:F:88:GLN:NE2	2.15	0.43
22:F:196:LEU:O	22:F:200:LEU:HG	2.18	0.43
26:Q:114:ARG:CD	26:Q:118:ILE:HD13	2.47	0.43
31:Z:60:VAL:O	31:Z:100:ILE:HA	2.18	0.43
37:3:28:A:H5''	37:3:29:A:H5'	2.00	0.43
1:2:582:C:H2'	1:2:582:C:O2	2.17	0.43
1:2:819:U:H2'	1:2:820:U:H4'	2.01	0.43
1:2:846:A:O5'	1:2:846:A:H8	2.02	0.43
1:2:1506:U:H2'	1:2:1507:C:H6	1.81	0.43
1:2:1680:U:O4	1:2:1718:G:N2	2.52	0.43
1:2:1717:A:H3'	1:2:1718:G:H8	1.83	0.43
2:A:77:SER:HB2	2:A:86:VAL:HG21	2.01	0.43
4:C:102:ARG:NH2	4:C:122:THR:OG1	2.47	0.43
9:J:114:TYR:HE2	9:J:121:SER:N	2.16	0.43
10:L:55:ASP:CG	10:L:110:HIS:HE2	2.26	0.43
19:e:54:ARG:HE	19:e:56:MET:N	2.17	0.43
23:K:7:ASP:O	23:K:11:ILE:HG12	2.18	0.43
26:Q:42:GLU:HA	26:Q:45:ARG:NE	2.33	0.43
26:Q:47:LYS:HD2	26:Q:50:GLU:CD	2.43	0.43
27:R:58:MET:HE3	27:R:58:MET:O	2.18	0.43
28:S:36:ARG:HB3	28:S:102:ALA:HA	1.99	0.43
35:g:314:ASP:O	35:g:316:VAL:HG23	2.19	0.43
39:j:26:GLN:HG3	39:j:33:TYR:CE2	2.54	0.43
40:k:348:LYS:HA	40:k:389:PHE:HA	2.00	0.43
41:l:128:GLY:O	41:l:131:TYR:HB3	2.18	0.43
1:2:79:C:H3'	1:2:80:A:H8	1.83	0.43
1:2:398:A:P	8:I:49:ARG:HH12	2.41	0.43
1:2:818:G:C4	1:2:852:G:N2	2.87	0.43
1:2:836:G:N1	1:2:837:G:O6	2.51	0.43
1:2:909:C:H2'	1:2:910:U:C6	2.54	0.43
1:2:938:A:H2'	1:2:939:A:H8	1.78	0.43
1:2:968:C:H4'	1:2:1103:U:O2'	2.18	0.43
1:2:1280:G:H4'	30:U:76:SER:H	1.83	0.43
1:2:1289:PSU:H2'	1:2:1290:G:C8	2.53	0.43
1:2:1392:G:C4	1:2:1393:G:C8	3.06	0.43
1:2:1481:A:P	26:Q:71:GLY:H	2.41	0.43
1:2:1483:C:N3	1:2:1590:A:H1'	2.34	0.43
1:2:1621:C:H2'	1:2:1622:C:C6	2.53	0.43
1:2:1748:A:O2'	1:2:1749:C:H5'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:55:LYS:HE2	3:B:55:LYS:HB2	1.47	0.43
3:B:114:VAL:HA	3:B:142:PHE:HE2	1.84	0.43
4:C:177:ALA:HB3	4:C:200:ASP:HB3	1.99	0.43
5:E:44:LEU:HD23	5:E:82:PHE:HB3	2.00	0.43
7:H:30:ASN:O	7:H:34:LEU:HB3	2.19	0.43
8:I:86:SER:OG	8:I:87:ASN:N	2.52	0.43
8:I:171:SER:HB3	8:I:183:TYR:CD1	2.54	0.43
9:J:18:PRO:HB2	9:J:19:TYR:HD1	1.84	0.43
10:L:70:ILE:C	10:L:71:LEU:HD12	2.44	0.43
10:L:93:TYR:HA	10:L:99:ARG:O	2.18	0.43
11:N:55:ARG:NH2	18:b:51:GLN:OE1	2.52	0.43
11:N:114:ARG:O	11:N:118:ILE:HG12	2.19	0.43
13:V:32:VAL:HB	13:V:60:ARG:HD2	2.00	0.43
24:M:35:ALA:O	24:M:41:SER:OG	2.21	0.43
31:Z:89:ILE:HG22	31:Z:101:TYR:HB3	1.99	0.43
33:d:40:ARG:O	33:d:43:PHE:HB3	2.18	0.43
35:g:32:ASN:C	35:g:48:LEU:HD13	2.44	0.43
37:3:26:A:H2'	37:3:27:A:C8	2.52	0.43
40:k:463:MET:HB2	40:k:502:SER:OG	2.18	0.43
1:2:415:A:H5''	1:2:416:A:N7	2.34	0.43
1:2:522:G:H1'	1:2:528:A:N6	2.32	0.43
1:2:1088:U:O2'	1:2:1092:A:N1	2.41	0.43
1:2:1144:U:C4	1:2:1145:G:N7	2.87	0.43
1:2:1365:C:H4'	29:T:7:ARG:HD2	2.01	0.43
1:2:1453:G:H2'	1:2:1454:C:O2	2.18	0.43
1:2:1474:C:C2	1:2:1475:G:N7	2.86	0.43
2:A:54:TRP:CD1	2:A:54:TRP:O	2.72	0.43
2:A:126:PRO:HG2	2:A:147:THR:HG22	1.99	0.43
2:A:147:THR:OG1	2:A:159:ALA:HB1	2.19	0.43
6:G:208:TYR:CE2	6:G:212:LEU:HD11	2.53	0.43
7:H:37:ASP:OD1	7:H:37:ASP:N	2.49	0.43
7:H:63:PRO:HB2	7:H:65:PRO:HG3	2.00	0.43
11:N:1:MET:HB2	11:N:9:LYS:HA	2.00	0.43
11:N:29:SER:O	11:N:33:VAL:HG23	2.19	0.43
13:V:71:ARG:HH22	18:b:3:LEU:CB	2.32	0.43
14:W:57:ARG:NE	18:b:26:GLN:HE22	2.17	0.43
16:Y:114:ARG:O	16:Y:117:LYS:HB3	2.18	0.43
22:F:97:ASN:OD1	22:F:100:MET:HE1	2.06	0.43
22:F:166:PRO:HD3	32:c:54:LEU:HD11	2.00	0.43
23:K:32:HIS:CG	23:K:33:GLU:N	2.86	0.43
24:M:26:ARG:HA	24:M:29:LEU:HD12	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:Q:44:LEU:O	26:Q:47:LYS:HB2	2.18	0.43
29:T:100:ILE:H	29:T:100:ILE:HD12	1.83	0.43
31:Z:64:VAL:CG1	31:Z:68:ARG:HH12	2.31	0.43
35:g:107:HIS:ND1	35:g:129:ASP:OD2	2.33	0.43
42:m:93:ILE:HG13	42:m:94:ASN:N	2.34	0.43
1:2:310:U:P	15:X:20:ARG:NH1	2.92	0.43
1:2:323:U:C2	1:2:324:G:C8	3.06	0.43
1:2:370:G:H2'	1:2:371:G:O4'	2.19	0.43
1:2:506:U:H3'	1:2:507:U:H5''	2.01	0.43
1:2:624:C:H2'	1:2:625:U:H6	1.83	0.43
1:2:700:C:N4	1:2:737:A:N1	2.66	0.43
1:2:1144:U:N3	1:2:1145:G:N7	2.67	0.43
1:2:1219:C:OP1	23:K:48:SER:HB2	2.19	0.43
1:2:1255:A:H4'	1:2:1256:U:O5'	2.19	0.43
1:2:1607:U:O2	22:F:107:GLY:HA3	2.17	0.43
2:A:54:TRP:O	2:A:57:ILE:HB	2.18	0.43
2:A:195:TRP:CE2	2:A:197:ILE:HD12	2.54	0.43
2:A:200:ASP:OD1	2:A:203:PHE:HB2	2.19	0.43
5:E:229:GLY:HA3	5:E:234:PRO:HA	2.01	0.43
6:G:70:PRO:HD3	6:G:101:ILE:HD12	2.00	0.43
15:X:59:ILE:O	15:X:68:ILE:HA	2.19	0.43
15:X:69:ARG:HH12	15:X:116:ASP:CG	2.25	0.43
15:X:127:VAL:HG22	15:X:132:LEU:HB2	2.01	0.43
22:F:71:TYR:HB3	26:Q:46:PHE:CD2	2.53	0.43
24:M:77:VAL:N	24:M:78:PRO:HD2	2.34	0.43
25:P:110:GLU:HG3	28:S:118:LYS:HE2	1.99	0.43
28:S:82:PRO:HB2	28:S:84:TRP:CD1	2.54	0.43
30:U:78:THR:O	30:U:79:TRP:HD1	2.02	0.43
31:Z:62:VAL:O	31:Z:66:VAL:HG23	2.19	0.43
35:g:126:ALA:HB2	35:g:155:VAL:HG23	2.00	0.43
40:k:321:PHE:N	40:k:337:VAL:O	2.42	0.43
1:2:12:U:H2'	1:2:13:C:C6	2.53	0.43
1:2:47:A:N6	1:2:385:G:H1'	2.34	0.43
1:2:65:A:N1	1:2:84:A:N7	2.66	0.43
1:2:140:A:H61	6:G:187:LYS:HB2	1.83	0.43
1:2:173:U:H3'	1:2:174:G:H8	1.84	0.43
1:2:328:G:H5''	8:I:98:LYS:HB3	2.00	0.43
1:2:468:C:H2'	1:2:469:A:O4'	2.19	0.43
1:2:543:A:HO2'	19:e:31:LYS:NZ	2.15	0.43
1:2:760:A:C6	1:2:761:G:C4	3.07	0.43
1:2:786:G:H2'	1:2:787:A:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:873:C:OP1	3:B:159:SER:OG	2.36	0.43
1:2:874:G:N2	1:2:936:C:HO2'	2.14	0.43
1:2:1201:A:N6	1:2:1454:C:H2'	2.34	0.43
1:2:1205:U:OP1	33:d:12:ARG:NH2	2.52	0.43
1:2:1406:G:H2'	1:2:1407:G:C8	2.54	0.43
1:2:1601:U:P	26:Q:132:ARG:HH22	2.41	0.43
3:B:67:GLU:OE2	3:B:85:LYS:HE3	2.18	0.43
3:B:83:LYS:HD3	3:B:106:THR:HG22	2.01	0.43
3:B:187:LYS:HG3	3:B:193:ILE:HD11	1.99	0.43
4:C:118:LEU:HD12	4:C:119:GLY:N	2.33	0.43
7:H:64:VAL:HG22	7:H:94:ALA:HB1	2.00	0.43
9:J:163:PRO:HD3	9:J:167:ALA:HB3	2.01	0.43
10:L:10:GLU:OE2	10:L:14:GLN:NE2	2.50	0.43
12:O:137:LEU:HD21	37:3:25:A:H2'	2.01	0.43
21:D:8:LYS:O	21:D:12:VAL:HG23	2.18	0.43
21:D:117:ARG:NH2	37:3:40:C:O2	2.50	0.43
22:F:53:VAL:HG11	22:F:132:LEU:HB3	2.00	0.43
27:R:113:LEU:HD13	27:R:115:LEU:HD12	1.99	0.43
30:U:21:LYS:HB3	30:U:94:GLU:OE2	2.18	0.43
33:d:54:LYS:HG3	33:d:54:LYS:O	2.18	0.43
35:g:10:LEU:HD13	35:g:320:TRP:CH2	2.54	0.43
35:g:104:PHE:HE1	35:g:139:GLY:HA2	1.82	0.43
40:k:356:ARG:HE	40:k:424:PRO:HD2	1.83	0.43
1:2:97:C:C2	1:2:98:U:C5	3.07	0.43
1:2:103:A:C5	1:2:308:C:C4	3.07	0.43
1:2:269:C:C2	1:2:270:A:C8	3.07	0.43
1:2:372:G:N3	1:2:372:G:H2'	2.34	0.43
1:2:478:C:OP1	9:J:121:SER:OG	2.37	0.43
1:2:566:A:H5''	15:X:70:LYS:NZ	2.34	0.43
1:2:690:A:H2'	1:2:691:U:O4'	2.19	0.43
1:2:781:A:H4'	1:2:782:G:OP1	2.19	0.43
1:2:846:A:H2'	1:2:847:C:C2	2.53	0.43
1:2:1043:U:H2'	1:2:1044:C:H6	1.83	0.43
1:2:1322:C:H2'	1:2:1323:G:C8	2.54	0.43
1:2:1513:A:O2'	1:2:1514:A:OP1	2.33	0.43
1:2:1519:G:C6	29:T:68:ARG:NH1	2.86	0.43
1:2:1550:U:H2'	1:2:1551:G:O4'	2.19	0.43
2:A:172:LEU:O	2:A:176:LEU:HD23	2.19	0.43
7:H:141:ARG:NH1	7:H:143:LEU:HD21	2.33	0.43
11:N:92:ILE:O	11:N:96:VAL:HG23	2.19	0.43
13:V:87:ARG:HH11	13:V:87:ARG:HB2	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:b:48:SER:HG	18:b:49:HIS:CG	2.37	0.43
22:F:120:LEU:HD22	22:F:131:PRO:HB2	2.00	0.43
28:S:92:VAL:HG13	28:S:92:VAL:O	2.19	0.43
30:U:48:PHE:HD2	30:U:99:ILE:HD12	1.84	0.43
32:c:27:GLN:HA	32:c:43:ASN:HA	2.01	0.43
34:f:142:CYS:O	34:f:145:THR:OG1	2.31	0.43
35:g:39:ARG:HE	35:g:68:ILE:CD1	2.30	0.43
38:l:63:G:C6	38:l:64:RIA:C6	3.07	0.43
39:j:248:ILE:O	39:j:251:ILE:HG22	2.19	0.43
42:m:56:TYR:OH	42:m:60:GLU:OE2	2.33	0.43
1:2:250:A:H2'	1:2:251:U:O4'	2.19	0.42
1:2:625:U:H2'	1:2:626:C:C6	2.54	0.42
1:2:644:C:C2	1:2:690:A:C2	3.08	0.42
1:2:675:C:H2'	1:2:676:U:H6	1.84	0.42
1:2:751:G:C6	1:2:798:A:N1	2.87	0.42
1:2:803:A:C8	14:W:107:SER:HA	2.54	0.42
1:2:976:A:N7	1:2:1023:U:C4	2.86	0.42
1:2:1034:G:OP2	11:N:9:LYS:NZ	2.49	0.42
1:2:1096:U:H1'	4:C:173:ARG:NH2	2.34	0.42
1:2:1226:A:O2'	24:M:109:ALA:HA	2.19	0.42
1:2:1467:A:H2'	1:2:1468:C:H6	1.83	0.42
1:2:1505:G:H2'	1:2:1506:U:C6	2.54	0.42
1:2:1583:U:H5'	26:Q:125:GLU:OE2	2.19	0.42
3:B:45:LYS:HA	3:B:45:LYS:HD3	1.88	0.42
5:E:19:MET:HG3	5:E:19:MET:O	2.19	0.42
5:E:104:ASP:HB3	5:E:107:GLY:H	1.84	0.42
9:J:59:LEU:O	9:J:69:ARG:HD3	2.19	0.42
10:L:8:GLN:NE2	10:L:14:GLN:H	2.10	0.42
11:N:69:ASN:HB3	11:N:74:ILE:HD11	2.01	0.42
14:W:18:GLU:HG2	14:W:65:LEU:HD21	2.01	0.42
14:W:50:PHE:CB	14:W:63:VAL:HA	2.49	0.42
18:b:55:THR:HB	18:b:61:THR:H	1.84	0.42
22:F:190:LYS:NZ	22:F:195:THR:HG22	2.33	0.42
26:Q:100:GLN:O	26:Q:104:GLU:OE1	2.37	0.42
29:T:54:PHE:CE1	29:T:104:VAL:HG22	2.53	0.42
34:f:120:GLU:CD	34:f:127:GLY:H	2.27	0.42
38:l:39:C:H2'	38:l:40:C:H6	1.83	0.42
1:2:71:A:H3'	1:2:72:A:C5'	2.47	0.42
1:2:207:U:H1'	8:I:179:ARG:NH2	2.34	0.42
1:2:608:U:H1'	15:X:19:ARG:NH1	2.35	0.42
1:2:610:U:H2'	1:2:611:U:C6	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:989:C:O3'	12:O:129:LYS:HA	2.19	0.42
1:2:1175:G:H1'	1:2:1194:C:O2'	2.19	0.42
1:2:1460:G:H2'	1:2:1461:C:C6	2.53	0.42
1:2:1463:C:OP1	26:Q:139:GLN:NE2	2.52	0.42
1:2:1538:G:P	28:S:40:ARG:HH12	2.41	0.42
1:2:1590:A:H2'	1:2:1591:A:C8	2.54	0.42
1:2:1604:C:H2'	1:2:1605:G:C8	2.54	0.42
3:B:38:PHE:CD2	3:B:73:LEU:HD13	2.54	0.42
3:B:90:GLU:OE1	3:B:92:GLN:HG3	2.19	0.42
4:C:179:ARG:O	9:J:97:LEU:HB3	2.19	0.42
7:H:50:GLU:OE1	7:H:50:GLU:N	2.47	0.42
7:H:87:ASP:O	7:H:88:ARG:NH2	2.52	0.42
10:L:133:LYS:O	10:L:136:ARG:NH2	2.52	0.42
14:W:77:PRO:HB2	14:W:79:PHE:CE1	2.53	0.42
21:D:78:LYS:HE3	23:K:33:GLU:OE2	2.19	0.42
22:F:145:ARG:HH12	22:F:216:LYS:NZ	2.17	0.42
23:K:22:VAL:HG13	23:K:23:ALA:N	2.33	0.42
30:U:84:MET:HE2	33:d:52:PHE:HB2	2.00	0.42
33:d:21:CYS:HB3	33:d:25:GLY:H	1.84	0.42
35:g:188:LEU:HA	35:g:193:TYR:HA	2.01	0.42
35:g:274:ASN:HB3	35:g:276:VAL:HG22	2.01	0.42
36:i:29:LYS:HB2	36:i:33:GLN:O	2.18	0.42
38:1:12:G:H2'	38:1:13:C:C6	2.53	0.42
38:1:52:G:N2	38:1:64:RIA:O2X	2.52	0.42
39:j:211:MET:HB2	39:j:250:LYS:HZ1	1.82	0.42
40:k:440:LEU:HG	40:k:453:VAL:HG22	2.00	0.42
1:2:12:U:H1'	1:2:1299:A:H1'	2.01	0.42
1:2:562:U:H3'	1:2:563:G:H8	1.83	0.42
1:2:601:U:OP1	15:X:32:ARG:HD3	2.19	0.42
1:2:1046:G:H2'	1:2:1047:G:C8	2.53	0.42
1:2:1145:G:C6	1:2:1146:A:C6	3.07	0.42
2:A:20:ALA:O	2:A:169:SER:HB3	2.19	0.42
2:A:34:GLU:HB2	2:A:149:LEU:HG	2.01	0.42
2:A:65:ALA:HA	2:A:185:ARG:NH2	2.34	0.42
2:A:179:ARG:HA	2:A:195:TRP:HZ3	1.82	0.42
3:B:24:PHE:HZ	12:O:39:ILE:HD12	1.83	0.42
3:B:101:HIS:C	3:B:217:LEU:HD23	2.44	0.42
5:E:19:MET:SD	5:E:108:ARG:NH1	2.93	0.42
8:I:65:PHE:O	8:I:73:ALA:HA	2.19	0.42
14:W:102:VAL:N	14:W:113:HIS:HD2	2.16	0.42
15:X:53:VAL:HG12	15:X:98:GLU:OE1	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:b:55:THR:HG22	18:b:62:VAL:HA	2.00	0.42
21:D:54:LYS:NZ	21:D:56:GLN:HB3	2.34	0.42
25:P:64:LYS:HA	25:P:73:PRO:HG3	2.00	0.42
29:T:17:ASN:C	29:T:17:ASN:HD22	2.27	0.42
36:i:36:ALA:O	36:i:77:ILE:HG22	2.19	0.42
39:j:55:ARG:HH12	39:j:57:ARG:HD3	1.83	0.42
1:2:335:G:H4'	10:L:131:ILE:O	2.19	0.42
1:2:473:A:C5'	9:J:144:PRO:HG2	2.50	0.42
1:2:627:G:C6	1:2:968:C:C6	3.07	0.42
1:2:641:G:O6	1:2:693:U:C4	2.73	0.42
1:2:751:G:C2	1:2:752:A:C4	3.06	0.42
1:2:1023:U:H5	1:2:1026:A:C4	2.37	0.42
1:2:1097:U:H1'	14:W:71:LYS:CD	2.48	0.42
1:2:1314:U:H2'	1:2:1315:G:O4'	2.19	0.42
4:C:64:HIS:HA	13:V:15:ARG:HH12	1.83	0.42
9:J:123:HIS:NE2	19:e:33:ARG:HD3	2.35	0.42
13:V:4:ASP:OD1	13:V:5:LYS:N	2.52	0.42
14:W:61:ILE:HG22	14:W:63:VAL:HG23	2.01	0.42
17:a:35:ALA:O	17:a:36:ILE:C	2.62	0.42
22:F:45:PHE:CE2	22:F:120:LEU:HD12	2.54	0.42
22:F:65:GLN:HG3	22:F:88:GLN:C	2.44	0.42
22:F:132:LEU:O	22:F:135:VAL:HG12	2.20	0.42
29:T:30:VAL:HA	29:T:54:PHE:CE2	2.54	0.42
30:U:44:ASN:HD21	30:U:103:ILE:HG12	1.84	0.42
39:j:71:ALA:CB	39:j:85:LEU:HD21	2.49	0.42
40:k:163:SER:HB3	40:k:295:ASN:OD1	2.19	0.42
1:2:611:U:H3'	1:2:612:G:H2'	2.02	0.42
1:2:613:C:H2'	1:2:614:A:H8	1.82	0.42
1:2:643:U:H2'	1:2:644:C:C6	2.54	0.42
1:2:647:G:H5'	1:2:648:U:OP2	2.19	0.42
1:2:751:G:C6	1:2:752:A:C6	3.08	0.42
1:2:903:G:C8	37:3:26:A:H5'	2.54	0.42
1:2:1680:U:P	6:G:31:ARG:HH22	2.42	0.42
1:2:1772:G:H2'	1:2:1773:U:H6	1.85	0.42
2:A:4:PRO:HB3	13:V:41:GLU:OE1	2.20	0.42
2:A:168:HIS:HA	2:A:203:PHE:CD1	2.54	0.42
4:C:66:LEU:HD22	4:C:245:MET:HE1	2.01	0.42
4:C:121:LYS:HD2	4:C:121:LYS:HA	1.84	0.42
5:E:11:ARG:NH1	5:E:20:LEU:HB3	2.35	0.42
6:G:74:LYS:O	6:G:94:ARG:HD2	2.18	0.42
7:H:11:GLN:CD	7:H:13:PRO:HD3	2.44	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:137:GLY:HA3	7:H:139:ARG:NH1	2.35	0.42
9:J:15:PRO:HD3	9:J:43:TYR:CE1	2.55	0.42
10:L:21:THR:HA	10:L:32:LYS:HZ3	1.84	0.42
15:X:67:ALA:O	15:X:69:ARG:NE	2.48	0.42
26:Q:94:GLN:NE2	35:g:61:SER:OG	2.37	0.42
31:Z:74:SER:HA	31:Z:77:ARG:NH2	2.34	0.42
35:g:90:LEU:HD12	35:g:135:TRP:HZ3	1.84	0.42
40:k:319:ARG:NH2	40:k:395:LEU:HD13	2.34	0.42
1:2:96:G:N2	1:2:425:G:H5'	2.34	0.42
1:2:392:C:O2'	6:G:92:ARG:NH1	2.53	0.42
1:2:444:A:N6	1:2:461:G:H1'	2.34	0.42
1:2:447:C:OP1	5:E:49:ARG:NH2	2.53	0.42
1:2:688:G:C6	1:2:689:G:C5	3.08	0.42
1:2:780:A:H62	16:Y:10:ARG:CZ	2.31	0.42
1:2:866:G:H5'	11:N:4:MET:HE1	2.01	0.42
1:2:1077:C:C2	1:2:1078:U:C5	3.07	0.42
1:2:1252:U:H2'	1:2:1253:U:H6	1.85	0.42
1:2:1440:U:H2'	1:2:1441:U:C6	2.54	0.42
1:2:1514:A:O2'	1:2:1515:U:H5'	2.20	0.42
1:2:1652:G:C6	1:2:1743:G:C6	3.08	0.42
2:A:19:ALA:HB1	27:R:91:LEU:HB3	2.01	0.42
2:A:62:ARG:NH2	13:V:39:VAL:H	2.17	0.42
5:E:52:LEU:HB3	5:E:54:TYR:CE2	2.54	0.42
6:G:24:VAL:HG23	6:G:27:PHE:HD2	1.84	0.42
7:H:67:LEU:HG	7:H:71:HIS:CD2	2.55	0.42
12:O:16:VAL:HA	12:O:80:HIS:H	1.85	0.42
12:O:70:LYS:O	12:O:74:VAL:HG13	2.19	0.42
14:W:75:ILE:HD13	14:W:75:ILE:HA	1.96	0.42
14:W:110:ILE:C	14:W:111:MET:HG3	2.43	0.42
21:D:214:GLU:HG2	21:D:216:PRO:HD3	2.01	0.42
22:F:59:SER:CB	32:c:55:VAL:HG13	2.49	0.42
23:K:38:LYS:HB2	23:K:41:PHE:CE1	2.54	0.42
26:Q:22:VAL:HG12	26:Q:65:ILE:CG1	2.50	0.42
27:R:33:ARG:CZ	35:g:128:ARG:HD3	2.50	0.42
27:R:36:ASP:CG	27:R:47:ARG:HD2	2.44	0.42
32:c:12:VAL:HB	32:c:30:VAL:HG12	2.02	0.42
36:i:110:PRO:HB2	36:i:112:ASN:ND2	2.34	0.42
39:j:108:VAL:HA	39:j:111:ILE:HG22	2.02	0.42
40:k:127:ARG:HA	40:k:137:THR:HG21	2.02	0.42
42:m:21:ILE:HG21	42:m:42:ILE:HD13	2.01	0.42
42:m:42:ILE:HD11	42:m:53:ILE:HG21	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:m:42:ILE:HG13	42:m:43:SER:N	2.34	0.42
1:2:48:G:H2'	1:2:49:C:H6	1.83	0.42
1:2:694:U:H2'	7:H:98:ILE:HG22	2.02	0.42
1:2:750:U:H2'	1:2:751:G:H8	1.84	0.42
1:2:797:C:H2'	1:2:798:A:H8	1.84	0.42
1:2:835:U:H2'	1:2:836:G:C8	2.54	0.42
1:2:1125:G:H5'	20:h:11:ARG:HD2	2.02	0.42
1:2:1280:G:N1	1:2:1426:2MG:C6	2.88	0.42
1:2:1470:C:H4'	1:2:1471:U:O5'	2.18	0.42
1:2:1525:C:H5''	22:F:108:LYS:HG2	2.02	0.42
1:2:1585:A:H2'	1:2:1586:G:H8	1.84	0.42
1:2:1773:U:H2'	1:2:1774:A:C8	2.55	0.42
2:A:198:MET:HE2	2:A:200:ASP:HB2	2.02	0.42
4:C:149:TRP:HB2	4:C:177:ALA:O	2.20	0.42
4:C:164:SER:HA	4:C:172:VAL:O	2.20	0.42
7:H:165:LYS:HB2	7:H:169:PHE:CZ	2.55	0.42
8:I:22:ARG:NE	8:I:22:ARG:CA	2.79	0.42
11:N:54:LEU:HB3	11:N:60:VAL:CB	2.48	0.42
12:O:134:GLY:O	12:O:136:ARG:HG3	2.19	0.42
21:D:29:LEU:HD22	21:D:58:VAL:HG22	2.02	0.42
22:F:154:GLY:HA3	37:3:26:A:N6	2.34	0.42
23:K:14:HIS:CD2	23:K:17:GLN:HE21	2.38	0.42
26:Q:22:VAL:HG12	26:Q:65:ILE:HG13	2.02	0.42
26:Q:30:LYS:HB2	26:Q:66:ARG:HA	2.02	0.42
26:Q:47:LYS:O	26:Q:50:GLU:HB2	2.19	0.42
27:R:3:ARG:H	27:R:3:ARG:HG3	1.59	0.42
35:g:91:ARG:CG	35:g:93:TRP:HE1	2.32	0.42
39:j:189:GLU:HG2	39:j:227:LEU:HD22	2.02	0.42
40:k:314:ARG:HG3	40:k:494:GLU:OE2	2.20	0.42
1:2:32:U:H3'	1:2:33:U:C6	2.55	0.42
1:2:235:A:H8	1:2:235:A:O5'	2.03	0.42
1:2:296:U:H2'	1:2:297:C:C6	2.55	0.42
1:2:563:G:N1	1:2:579:A:OP2	2.50	0.42
1:2:582:C:C2	1:2:583:C:C5	3.08	0.42
1:2:605:A:H4'	1:2:606:G:H3'	2.01	0.42
1:2:1226:A:N6	1:2:1255:A:H2'	2.35	0.42
1:2:1259:U:HO2'	1:2:1260:G:H8	1.67	0.42
1:2:1450:U:OP1	33:d:10:HIS:ND1	2.53	0.42
1:2:1645:U:C4	1:2:1752:A:H2	2.38	0.42
2:A:21:ARG:O	2:A:163:ASN:ND2	2.53	0.42
2:A:64:ILE:HG23	2:A:73:VAL:HG21	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:64:ARG:CB	12:O:36:ARG:HH21	2.32	0.42
3:B:195:LYS:HA	3:B:198:GLU:OE2	2.20	0.42
4:C:125:GLU:OE2	4:C:127:ALA:HB3	2.20	0.42
4:C:149:TRP:CG	4:C:178:PRO:HA	2.55	0.42
6:G:149:LYS:C	6:G:151:ASP:N	2.78	0.42
7:H:142:TYR:CE1	7:H:148:LYS:HG3	2.54	0.42
7:H:154:LEU:O	7:H:186:PRO:HD2	2.20	0.42
8:I:107:THR:O	8:I:110:ARG:N	2.53	0.42
9:J:36:LEU:HD23	9:J:126:ARG:HH21	1.84	0.42
9:J:123:HIS:HB2	19:e:37:ARG:NH2	2.32	0.42
22:F:27:LEU:HD22	22:F:30:THR:HA	2.00	0.42
23:K:61:TRP:CE2	33:d:23:ILE:HD12	2.54	0.42
38:l:56:C:H5	39:j:114:TYR:HD1	1.65	0.42
39:j:3:THR:O	39:j:123:LEU:HD13	2.20	0.42
39:j:22:VAL:HG12	39:j:36:LEU:HG	2.02	0.42
39:j:225:ALA:HB3	39:j:226:PRO:HD3	2.02	0.42
1:2:61:A:H62	1:2:62:A:N6	2.18	0.42
1:2:322:A:H5'	8:I:10:LYS:NZ	2.35	0.42
1:2:525:A:P	16:Y:93:ARG:HH21	2.42	0.42
1:2:554:A:H2'	1:2:555:A:C8	2.55	0.42
1:2:937:G:N1	1:2:941:G:C6	2.88	0.42
1:2:960:U:C2	1:2:961:C:H5	2.37	0.42
1:2:997:A:C6	1:2:1006:5MC:N3	2.88	0.42
1:2:1130:A:O3'	15:X:30:LYS:NZ	2.48	0.42
1:2:1219:C:H5''	23:K:52:LYS:HD2	2.01	0.42
1:2:1508:U:C2	1:2:1509:G:C8	3.08	0.42
1:2:1544:G:OP1	28:S:127:HIS:CE1	2.73	0.42
1:2:1640:G:H2'	1:2:1641:U:C6	2.55	0.42
2:A:43:ASP:O	27:R:128:ARG:NE	2.53	0.42
4:C:228:GLY:HA3	13:V:25:LYS:NZ	2.35	0.42
21:D:207:THR:C	21:D:208:ILE:HD13	2.45	0.42
22:F:45:PHE:C	22:F:47:LYS:H	2.27	0.42
22:F:64:ILE:HG22	22:F:66:ILE:HG23	2.02	0.42
22:F:150:ARG:NH1	32:c:22:ARG:HD3	2.29	0.42
25:P:77:ARG:HD2	25:P:102:PHE:CE1	2.54	0.42
28:S:87:ASN:HB3	28:S:100:SER:H	1.84	0.42
30:U:44:ASN:ND2	30:U:103:ILE:HG12	2.35	0.42
30:U:58:LEU:HB3	30:U:89:ARG:H	1.85	0.42
35:g:39:ARG:C	35:g:41:LYS:H	2.28	0.42
35:g:52:GLU:HB3	35:g:54:GLN:OE1	2.20	0.42
36:i:36:ALA:O	36:i:76:ILE:HD12	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:k:90:LEU:HD21	40:k:187:ARG:CZ	2.50	0.42
40:k:466:ILE:HG12	40:k:499:ILE:HG12	2.02	0.42
42:m:136:LEU:HD12	42:m:139:PHE:HB3	2.02	0.42
42:m:142:LYS:HB2	42:m:142:LYS:HE2	1.87	0.42
42:m:144:PRO:HA	42:m:145:PRO:HD3	1.93	0.42
1:2:32:U:N3	1:2:594:G:C6	2.88	0.42
1:2:86:A:H5''	16:Y:119:PHE:CZ	2.54	0.42
1:2:152:G:H2'	1:2:153:G:H8	1.84	0.42
1:2:798:A:H5'	5:E:201:HIS:CE1	2.55	0.42
1:2:831:U:H3'	1:2:832:U:H5''	2.02	0.42
1:2:876:G:C6	1:2:950:A:N1	2.87	0.42
1:2:925:A:H2	12:O:125:SER:HB2	1.85	0.42
1:2:1216:A:O4'	23:K:40:LEU:HD11	2.20	0.42
1:2:1274:A:C2	1:2:1436:G:C4	3.08	0.42
1:2:1301:U:H2'	1:2:1302:U:C6	2.55	0.42
1:2:1391:C:OP2	27:R:59:LYS:NZ	2.47	0.42
1:2:1549:U:H3'	25:P:43:ARG:HH22	1.85	0.42
1:2:1687:A:H2'	1:2:1688:G:N7	2.35	0.42
1:2:1787:G:H5'	1:2:1788:A:OP2	2.20	0.42
4:C:86:MET:HG2	4:C:106:VAL:HG12	2.02	0.42
5:E:19:MET:SD	5:E:108:ARG:CZ	3.07	0.42
6:G:142:ARG:CD	6:G:149:LYS:HA	2.50	0.42
14:W:116:ALA:O	14:W:120:HIS:N	2.52	0.42
18:b:5:GLN:HB2	18:b:7:LEU:HG	2.02	0.42
22:F:42:ILE:HG12	22:F:71:TYR:CE1	2.48	0.42
22:F:165:SER:O	22:F:169:ARG:HG2	2.20	0.42
23:K:9:LYS:NZ	23:K:80:LEU:HA	2.34	0.42
24:M:22:LYS:O	24:M:26:ARG:HG2	2.20	0.42
26:Q:82:ARG:HH22	26:Q:113:ASP:CG	2.28	0.42
27:R:34:LEU:HD12	27:R:38:ILE:HG13	2.02	0.42
28:S:104:ASN:HD21	28:S:108:LYS:HE2	1.85	0.42
29:T:31:PRO:HB2	29:T:33:TYR:CE1	2.55	0.42
30:U:29:THR:OG1	30:U:30:LYS:HD3	2.20	0.42
35:g:25:SER:HB2	35:g:72:VAL:HG13	2.02	0.42
35:g:324:THR:O	35:g:326:ASN:N	2.52	0.42
39:j:24:VAL:HG11	39:j:63:ILE:HG13	2.02	0.42
42:m:99:CYS:HB3	42:m:107:THR:HG21	2.01	0.42
1:2:337:C:H2'	1:2:338:C:C6	2.55	0.41
1:2:495:G:H2'	1:2:496:G:N7	2.35	0.41
1:2:566:A:H5''	15:X:70:LYS:HZ3	1.85	0.41
1:2:636:C:OP1	14:W:32:LYS:HG3	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:638:U:O4'	7:H:118:LEU:HD13	2.19	0.41
1:2:745:U:H3'	1:2:746:A:C8	2.55	0.41
1:2:1408:A:O2'	1:2:1409:A:C8	2.69	0.41
1:2:1502:G:H2'	1:2:1503:A:C8	2.55	0.41
1:2:1528:C:C2	1:2:1529:G:C8	3.07	0.41
1:2:1555:U:HO2'	1:2:1556:U:H2'	1.84	0.41
1:2:1678:G:N2	1:2:1718:G:H2'	2.35	0.41
1:2:1746:G:H2'	1:2:1747:A:H8	1.83	0.41
3:B:28:GLU:O	3:B:47:LEU:HA	2.20	0.41
4:C:44:THR:HG21	4:C:69:LYS:HE2	2.02	0.41
7:H:62:VAL:C	7:H:64:VAL:N	2.78	0.41
8:I:154:GLU:OE1	8:I:156:ALA:HB3	2.19	0.41
9:J:62:ARG:O	9:J:69:ARG:NH1	2.53	0.41
16:Y:12:VAL:HG12	16:Y:23:PHE:HB3	2.02	0.41
16:Y:110:GLN:HB3	16:Y:114:ARG:HH12	1.85	0.41
21:D:16:VAL:HG11	33:d:22:ARG:HH12	1.85	0.41
21:D:208:ILE:HD12	27:R:16:LEU:CD2	2.49	0.41
22:F:222:VAL:O	22:F:225:SER:OG	2.27	0.41
23:K:25:LYS:O	23:K:26:ASP:C	2.63	0.41
25:P:84:ILE:HG13	25:P:115:TYR:HD1	1.84	0.41
35:g:231:ASN:HB3	35:g:236:SER:OG	2.20	0.41
38:1:24:G:H2'	38:1:25:C:O4'	2.21	0.41
39:j:211:MET:HB2	39:j:250:LYS:NZ	2.35	0.41
1:2:86:A:H5''	16:Y:119:PHE:CE1	2.55	0.41
1:2:127:G:H1'	1:2:177:U:O2	2.21	0.41
1:2:165:C:H4'	6:G:131:LYS:HE2	2.02	0.41
1:2:340:A:C6	1:2:341:C:N4	2.88	0.41
1:2:649:U:HO2'	1:2:650:G:P	2.39	0.41
1:2:735:C:O2'	1:2:736:C:O5'	2.35	0.41
1:2:770:A:N7	1:2:771:A:H1'	2.35	0.41
1:2:864:A:OP1	14:W:28:ARG:NH2	2.53	0.41
1:2:997:A:H5'	39:j:54:ARG:HH22	1.84	0.41
1:2:1174:U:H4'	1:2:1195:A:N1	2.34	0.41
1:2:1235:A:N6	1:2:1244:G:C6	2.88	0.41
1:2:1279:C:O3'	30:U:69:LYS:HE3	2.20	0.41
1:2:1421:U:C4	1:2:1422:A:C5	3.08	0.41
1:2:1553:A:O3'	25:P:82:ASN:ND2	2.53	0.41
1:2:1564:U:H5''	28:S:39:GLY:N	2.35	0.41
1:2:1568:A:H2'	1:2:1569:C:O4'	2.19	0.41
1:2:1645:U:O4	1:2:1752:A:H2	2.03	0.41
2:A:64:ILE:HA	2:A:120:LEU:CD1	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:70:LEU:CB	3:B:79:HIS:HB3	2.50	0.41
3:B:120:LEU:CD2	3:B:122:GLU:HG2	2.50	0.41
4:C:233:ASN:OD1	4:C:234:LEU:N	2.53	0.41
5:E:11:ARG:HD2	5:E:25:GLY:O	2.20	0.41
5:E:158:ASP:CG	5:E:174:LYS:HD2	2.44	0.41
6:G:14:LYS:HZ1	6:G:123:GLY:H	1.68	0.41
6:G:63:MET:HG3	6:G:98:ARG:O	2.20	0.41
6:G:84:TYR:CG	6:G:85:ARG:N	2.87	0.41
7:H:166:LEU:HA	7:H:169:PHE:CD2	2.55	0.41
9:J:69:ARG:HH21	9:J:93:LEU:HD23	1.84	0.41
15:X:68:ILE:HG13	15:X:68:ILE:O	2.20	0.41
21:D:91:VAL:HG11	21:D:94:ARG:HA	2.02	0.41
22:F:150:ARG:HH22	32:c:22:ARG:HD3	1.84	0.41
24:M:45:LEU:O	24:M:76:ASN:ND2	2.54	0.41
25:P:80:LEU:HG	25:P:83:MET:HB2	2.02	0.41
27:R:7:LYS:HB3	27:R:11:ARG:NH2	2.35	0.41
31:Z:45:ASP:O	31:Z:48:ASP:HB2	2.19	0.41
38:l:23:C:H4'	39:j:64:ARG:HH22	1.85	0.41
40:k:208:ALA:HA	40:k:211:MET:SD	2.60	0.41
40:k:354:GLU:HA	40:k:374:PHE:HA	2.02	0.41
40:k:426:ILE:HG12	40:k:492:CYS:SG	2.60	0.41
40:k:429:ASP:HB3	40:k:484:ARG:NH1	2.35	0.41
1:2:305:U:H2'	1:2:306:G:H8	1.86	0.41
1:2:322:A:OP2	8:I:11:ARG:HB2	2.20	0.41
1:2:384:A:H2'	1:2:385:G:H8	1.84	0.41
1:2:536:G:H2'	9:J:171:ARG:NH2	2.34	0.41
1:2:1141:A:H2'	1:2:1142:A:C8	2.54	0.41
1:2:1203:A:H3'	1:2:1204:C:H6	1.85	0.41
1:2:1227:G:O2'	34:f:100:LEU:HG	2.20	0.41
1:2:1249:U:H5'	1:2:1250:U:OP2	2.19	0.41
1:2:1276:G:O3'	21:D:183:GLY:HA3	2.20	0.41
1:2:1358:C:C2	1:2:1359:A:C8	3.08	0.41
1:2:1378:U:H2'	1:2:1379:U:C6	2.55	0.41
1:2:1380:A:H1'	30:U:89:ARG:HH21	1.85	0.41
1:2:1396:U:C3'	1:2:1397:C:H5'	2.50	0.41
1:2:1497:G:H5''	29:T:122:ARG:HE	1.85	0.41
1:2:1573:7MG:HM72	1:2:1574:A:N6	2.35	0.41
1:2:1589:C:H2'	1:2:1590:A:C8	2.56	0.41
1:2:1670:G:H2'	1:2:1671:G:H8	1.86	0.41
1:2:1735:G:C5	1:2:1736:U:C4	3.09	0.41
2:A:89:TYR:O	2:A:93:THR:N	2.49	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:176:LEU:HD13	2:A:179:ARG:NE	2.20	0.41
4:C:145:ARG:HB2	4:C:227:TYR:CE1	2.56	0.41
5:E:141:THR:OG1	5:E:142:HIS:N	2.53	0.41
6:G:57:ASP:OD1	6:G:58:LYS:N	2.53	0.41
7:H:168:SER:O	7:H:172:VAL:HG22	2.21	0.41
8:I:102:VAL:HG22	8:I:103:GLN:N	2.34	0.41
9:J:121:SER:OG	9:J:121:SER:O	2.38	0.41
10:L:133:LYS:C	10:L:136:ARG:HH12	2.28	0.41
11:N:102:LEU:HD11	11:N:111:ALA:HB1	2.02	0.41
16:Y:118:ILE:HD12	16:Y:119:PHE:H	1.85	0.41
22:F:79:TYR:HD2	22:F:89:CYS:HB2	1.85	0.41
27:R:28:PHE:CE2	27:R:32:LYS:HD3	2.56	0.41
28:S:112:ASP:O	28:S:115:ARG:HG2	2.20	0.41
35:g:109:GLY:HA3	35:g:128:ARG:C	2.45	0.41
35:g:302:SER:OG	35:g:306:GLN:N	2.50	0.41
38:l:7:G:OP1	38:l:14:A:N6	2.53	0.41
39:j:213:THR:OG1	39:j:216:MET:HB2	2.20	0.41
42:m:82:PRO:HA	42:m:85:LEU:HD21	2.02	0.41
1:2:28:A:N1	1:2:597:U:H5	2.18	0.41
1:2:71:A:C6	6:G:164:LYS:HE3	2.56	0.41
1:2:168:A:P	6:G:137:ARG:HH21	2.44	0.41
1:2:270:A:H61	6:G:185:GLN:HE22	1.67	0.41
1:2:284:G:H2'	1:2:285:C:H6	1.84	0.41
1:2:413:C:H2'	1:2:414:C:O4'	2.20	0.41
1:2:846:A:H2'	1:2:847:C:N1	2.35	0.41
1:2:998:PSU:OP2	1:2:998:PSU:H6	2.03	0.41
1:2:1009:C:H2'	1:2:1010:G:O4'	2.20	0.41
1:2:1031:G:H2'	1:2:1032:C:H6	1.84	0.41
1:2:1080:A:N6	1:2:1090:A:N7	2.69	0.41
1:2:1343:A:H4'	1:2:1344:A:OP1	2.21	0.41
1:2:1738:A:H2'	1:2:1739:U:C6	2.56	0.41
5:E:185:GLY:HA3	5:E:224:ASN:ND2	2.36	0.41
5:E:252:ARG:O	5:E:256:ARG:HG3	2.21	0.41
6:G:149:LYS:O	6:G:151:ASP:N	2.54	0.41
7:H:114:ARG:HA	7:H:117:THR:HG23	2.02	0.41
9:J:11:THR:O	9:J:47:PHE:HD2	2.03	0.41
9:J:40:ARG:N	9:J:40:ARG:HD3	2.35	0.41
9:J:83:ILE:CD1	9:J:147:MET:HG3	2.50	0.41
9:J:161:THR:OG1	9:J:162:SER:N	2.52	0.41
12:O:112:ILE:HG12	17:a:56:ALA:O	2.20	0.41
15:X:23:ARG:HA	15:X:23:ARG:HD2	1.81	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:g:302:SER:OG	35:g:307:THR:N	2.53	0.41
1:2:321:G:OP1	1:2:321:G:H2'	2.20	0.41
1:2:563:G:H4'	1:2:564:C:OP1	2.19	0.41
1:2:1034:G:C6	1:2:1035:A:N6	2.89	0.41
1:2:1177:G:H5'	1:2:1189:C:H42	1.84	0.41
1:2:1678:G:OP2	1:2:1678:G:H2'	2.21	0.41
1:2:1723:U:C2	1:2:1724:G:C8	3.07	0.41
4:C:114:GLY:N	4:C:196:ALA:O	2.50	0.41
5:E:40:GLU:OE1	5:E:103:TYR:OH	2.27	0.41
5:E:92:LEU:HD12	5:E:92:LEU:HA	1.82	0.41
5:E:151:ASP:HB3	5:E:154:ILE:CD1	2.51	0.41
5:E:152:PRO:O	5:E:155:LYS:NZ	2.47	0.41
7:H:8:ILE:HA	7:H:42:GLN:HG3	2.01	0.41
7:H:141:ARG:HB3	14:W:51:GLU:OE2	2.20	0.41
15:X:75:GLN:HG3	15:X:82:LYS:HG2	2.01	0.41
21:D:208:ILE:HD12	27:R:16:LEU:HD21	2.02	0.41
23:K:4:PRO:HB2	23:K:6:GLU:OE2	2.19	0.41
24:M:84:ASP:HB2	24:M:87:GLN:HB3	2.01	0.41
28:S:69:ILE:O	28:S:73:MET:HG3	2.20	0.41
36:i:85:GLN:OE1	36:i:85:GLN:HA	2.20	0.41
36:i:109:LEU:H	36:i:109:LEU:HD23	1.85	0.41
39:j:101:LYS:HB3	39:j:101:LYS:HE2	1.77	0.41
42:m:24:LYS:HG3	42:m:35:ALA:HB3	2.01	0.41
1:2:6:G:C5	4:C:210:ARG:NH2	2.86	0.41
1:2:128:U:H4'	1:2:130:C:C5	2.55	0.41
1:2:249:C:C2	1:2:250:A:C8	3.09	0.41
1:2:332:A:OP1	8:I:31:ARG:NH2	2.37	0.41
1:2:383:G:H2'	1:2:384:A:H8	1.85	0.41
1:2:462:U:H2'	1:2:463:A:H8	1.85	0.41
1:2:1140:G:C2	1:2:1141:A:C4	3.09	0.41
1:2:1171:G:H2'	1:2:1172:C:H6	1.84	0.41
1:2:1296:G:H5'	1:2:1297:U:OP2	2.21	0.41
1:2:1337:C:H2'	1:2:1338:C:C6	2.56	0.41
1:2:1351:U:H2'	1:2:1352:U:O4'	2.20	0.41
1:2:1376:U:H2'	1:2:1377:C:C6	2.55	0.41
1:2:1502:G:H2'	1:2:1503:A:C4	2.56	0.41
1:2:1772:G:H2'	1:2:1773:U:O4'	2.20	0.41
2:A:110:TYR:HA	2:A:115:PHE:CD1	2.55	0.41
6:G:35:GLU:OE1	6:G:35:GLU:N	2.53	0.41
8:I:41:LYS:N	8:I:61:GLU:OE2	2.54	0.41
12:O:103:ARG:HD2	17:a:49:ALA:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:V:66:ASP:OD1	13:V:66:ASP:N	2.53	0.41
17:a:52:ASP:HA	17:a:55:GLU:OE2	2.20	0.41
21:D:55:VAL:HG12	21:D:90:ARG:HG3	2.02	0.41
22:F:166:PRO:O	22:F:169:ARG:HB2	2.20	0.41
22:F:186:PHE:CE2	22:F:187:ARG:HG2	2.56	0.41
33:d:46:LYS:O	33:d:50:ILE:HG13	2.21	0.41
38:1:20:A:N3	38:1:20:A:H2'	2.36	0.41
39:j:220:VAL:HG23	39:j:220:VAL:O	2.21	0.41
40:k:406:LEU:HG	40:k:411:ARG:NH2	2.36	0.41
1:2:268:G:H2'	1:2:269:C:C6	2.55	0.41
1:2:283:G:O6	6:G:188:ARG:NH1	2.33	0.41
1:2:337:C:OP2	10:L:133:LYS:HG3	2.21	0.41
1:2:533:A:H5'	1:2:534:A:OP2	2.20	0.41
1:2:1145:G:C6	1:2:1631:A:N6	2.88	0.41
1:2:1521:G:O2'	29:T:79:LEU:HD22	2.21	0.41
1:2:1525:C:OP1	22:F:108:LYS:HD3	2.20	0.41
1:2:1710:A:C5	1:2:1711:G:H1'	2.55	0.41
1:2:1786:G:H3'	12:O:132:ARG:NH2	2.34	0.41
4:C:126:VAL:HG21	37:3:39:U:H5	1.84	0.41
5:E:124:ALA:HB1	5:E:141:THR:OG1	2.20	0.41
6:G:180:THR:HG22	6:G:182:GLN:N	2.20	0.41
9:J:62:ARG:CZ	9:J:63:ASP:H	2.33	0.41
9:J:99:LEU:HD21	9:J:104:PHE:CE2	2.56	0.41
9:J:136:VAL:HG22	9:J:156:ILE:HD12	2.03	0.41
11:N:113:PHE:O	11:N:116:ILE:HG22	2.21	0.41
14:W:73:GLY:HA3	14:W:128:PHE:CZ	2.55	0.41
15:X:43:PHE:O	15:X:45:GLY:N	2.50	0.41
16:Y:20:ARG:HD3	16:Y:74:LEU:HD11	2.03	0.41
18:b:20:LYS:HG2	18:b:21:LEU:HG	2.01	0.41
21:D:23:GLU:OE1	23:K:61:TRP:NE1	2.53	0.41
22:F:45:PHE:O	22:F:47:LYS:HG2	2.21	0.41
27:R:27:ASP:HB3	27:R:30:THR:OG1	2.21	0.41
28:S:84:TRP:O	28:S:85:PHE:HB2	2.20	0.41
30:U:100:VAL:HA	30:U:103:ILE:HB	2.02	0.41
31:Z:88:ILE:HG22	31:Z:89:ILE:HG13	2.02	0.41
35:g:204:ASN:ND2	35:g:223:LYS:HE3	2.36	0.41
40:k:140:LEU:HD11	40:k:318:ILE:HG21	2.02	0.41
1:2:87:C:C2	1:2:88:U:C6	3.08	0.41
1:2:97:C:H1'	1:2:425:G:C5'	2.51	0.41
1:2:788:A:H3'	1:2:789:U:O2	2.20	0.41
1:2:894:G:C5	1:2:895:U:N3	2.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1015:C:C4	1:2:1016:U:C2	3.09	0.41
1:2:1015:C:C5	1:2:1016:U:H1'	2.56	0.41
1:2:1062:U:H3'	1:2:1063:G:H8	1.86	0.41
1:2:1146:A:H2'	1:2:1147:C:O4'	2.20	0.41
1:2:1277:G:H2'	1:2:1278:C:C6	2.56	0.41
1:2:1327:G:P	21:D:158:ILE:HD12	2.61	0.41
1:2:1570:2MG:H5'	1:2:1572:G:H21	1.84	0.41
1:2:1601:U:P	26:Q:132:ARG:HH12	2.42	0.41
1:2:1723:U:H2'	1:2:1724:G:O4'	2.21	0.41
3:B:218:LEU:O	3:B:219:LYS:HD2	2.19	0.41
7:H:173:TYR:HA	7:H:176:LEU:HB2	2.03	0.41
9:J:122:VAL:O	9:J:125:ALA:HB3	2.21	0.41
10:L:55:ASP:OD1	10:L:58:CYS:N	2.54	0.41
10:L:66:ILE:HG13	10:L:127:GLN:O	2.20	0.41
10:L:84:ILE:HG13	10:L:85:VAL:N	2.36	0.41
13:V:18:SER:O	13:V:72:LEU:HD21	2.21	0.41
13:V:64:GLU:OE1	13:V:64:GLU:N	2.53	0.41
16:Y:27:VAL:HG11	16:Y:35:VAL:HG11	2.02	0.41
21:D:142:LEU:O	21:D:143:ARG:HG2	2.21	0.41
23:K:73:VAL:HG21	23:K:91:TYR:CE1	2.56	0.41
24:M:99:ARG:HH21	24:M:103:ALA:N	2.16	0.41
25:P:111:MET:HE2	25:P:111:MET:HA	2.02	0.41
26:Q:109:PHE:CD2	26:Q:117:LEU:HD11	2.49	0.41
27:R:97:ASN:HD22	27:R:97:ASN:C	2.26	0.41
30:U:103:ILE:O	30:U:106:ILE:HG12	2.20	0.41
35:g:52:GLU:HG3	35:g:53:GLN:N	2.30	0.41
35:g:116:ILE:HD12	35:g:123:ILE:HG13	2.03	0.41
35:g:260:THR:HB	35:g:269:ILE:CD1	2.51	0.41
36:i:77:ILE:HD11	36:i:91:VAL:HG11	2.02	0.41
39:j:22:VAL:HG22	39:j:71:ALA:HB2	2.02	0.41
1:2:40:A:H3'	1:2:41:A:C8	2.55	0.41
1:2:120:PSU:C2'	1:2:121:U:H5'	2.50	0.41
1:2:178:A:N6	6:G:202:ARG:HH22	2.18	0.41
1:2:256:A:P	8:I:74:ARG:HH22	2.43	0.41
1:2:409:A:H2'	1:2:410:C:C6	2.56	0.41
1:2:533:A:C4	1:2:534:A:C8	3.08	0.41
1:2:657:C:H2'	1:2:658:C:C6	2.56	0.41
1:2:772:G:H5'	9:J:6:ARG:NH2	2.36	0.41
1:2:870:G:N1	1:2:956:G:C6	2.89	0.41
1:2:916:U:H5'	12:O:20:PHE:CZ	2.56	0.41
1:2:932:A:C6	1:2:934:U:N3	2.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1034:G:C5	1:2:1100:G:C6	3.09	0.41
1:2:1049:G:O6	1:2:1068:A:N6	2.54	0.41
1:2:1112:A:OP1	1:2:1114:U:H1'	2.21	0.41
1:2:1165:A:H2'	1:2:1166:G:O4'	2.21	0.41
1:2:1186:U:H2'	1:2:1187:G:C8	2.56	0.41
1:2:1294:G:H1'	1:2:1320:A:N7	2.36	0.41
1:2:1333:U:H2'	1:2:1334:U:H6	1.85	0.41
1:2:1433:G:H5'	1:2:1435:U:OP2	2.20	0.41
1:2:1439:C:H2'	1:2:1440:U:C6	2.56	0.41
1:2:1481:A:O2'	1:2:1482:G:O4'	2.34	0.41
1:2:1502:G:HO2'	1:2:1561:C:H4'	1.86	0.41
2:A:84:ARG:HA	2:A:87:LEU:HD12	2.03	0.41
3:B:145:LYS:HG3	3:B:149:GLN:OE1	2.20	0.41
4:C:217:LYS:O	4:C:221:VAL:HG22	2.21	0.41
5:E:181:VAL:HG21	5:E:195:ILE:HD11	2.02	0.41
6:G:20:ASP:OD2	6:G:22:HIS:N	2.53	0.41
6:G:147:LEU:HD12	6:G:147:LEU:HA	1.79	0.41
7:H:31:SER:HA	7:H:35:LYS:HB2	2.02	0.41
8:I:77:ARG:NH1	8:I:165:ARG:HH12	2.18	0.41
9:J:42:ILE:O	9:J:45:ILE:HG22	2.21	0.41
14:W:102:VAL:H	14:W:113:HIS:HD2	1.69	0.41
15:X:56:LYS:O	36:i:85:GLN:NE2	2.38	0.41
16:Y:37:LYS:HG2	16:Y:60:PHE:CE2	2.56	0.41
17:a:33:ASP:OD1	17:a:33:ASP:N	2.43	0.41
21:D:75:LYS:HE3	23:K:34:GLU:OE2	2.21	0.41
22:F:114:ARG:HH12	22:F:117:LYS:NZ	2.17	0.41
27:R:37:GLU:OE2	35:g:151:TRP:CZ2	2.74	0.41
28:S:76:PRO:O	28:S:81:ILE:HG22	2.21	0.41
28:S:139:LYS:HE2	28:S:139:LYS:HB2	1.93	0.41
30:U:57:ARG:HA	30:U:89:ARG:HG2	2.03	0.41
35:g:182:ILE:CG2	35:g:184:ARG:HE	2.34	0.41
35:g:185:SER:O	35:g:196:GLU:HB2	2.21	0.41
38:1:28:A:C4	38:1:43:G:N2	2.89	0.41
39:j:25:GLN:H	39:j:34:VAL:HG12	1.86	0.41
39:j:77:ASP:HB3	39:j:82:TYR:H	1.86	0.41
39:j:130:ILE:O	39:j:134:LEU:HD13	2.20	0.41
40:k:78:GLN:HG3	40:k:97:ARG:HD2	2.02	0.41
40:k:509:TRP:O	40:k:510:ARG:NE	2.53	0.41
1:2:10:G:O6	1:2:1143:U:C2	2.73	0.41
1:2:732:G:H2'	1:2:733:A:C4	2.56	0.41
1:2:801:G:O2'	14:W:107:SER:HB3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1350:G:N2	1:2:1373:U:H1'	2.36	0.41
1:2:1538:G:C5	1:2:1539:G:C5	3.09	0.41
1:2:1545:A:O2'	28:S:89:GLN:O	2.39	0.41
1:2:1582:G:N2	1:2:1608:G:H2'	2.36	0.41
1:2:1686:U:O2'	1:2:1687:A:H3'	2.21	0.41
2:A:168:HIS:HA	2:A:203:PHE:HD1	1.85	0.41
3:B:7:LYS:HD2	3:B:7:LYS:HA	1.93	0.41
4:C:48:ARG:NE	4:C:253:THR:H	2.19	0.41
5:E:34:GLY:HA3	5:E:83:PRO:HG2	2.02	0.41
5:E:179:LYS:HB2	5:E:179:LYS:HE3	1.80	0.41
6:G:178:LEU:HD22	6:G:180:THR:OG1	2.21	0.41
7:H:86:GLN:O	7:H:88:ARG:HG2	2.21	0.41
8:I:77:ARG:HH12	8:I:165:ARG:HH12	1.69	0.41
25:P:90:ILE:HD11	25:P:112:VAL:CG2	2.51	0.41
26:Q:47:LYS:HB3	26:Q:82:ARG:HD2	2.03	0.41
35:g:208:VAL:HB	35:g:248:PHE:O	2.21	0.41
35:g:227:ILE:HB	35:g:241:PHE:HB2	2.03	0.41
39:j:182:VAL:HB	39:j:237:LYS:HD2	2.03	0.41
40:k:77:GLU:HA	40:k:97:ARG:CZ	2.51	0.41
40:k:124:GLN:HE21	40:k:127:ARG:HH21	1.69	0.41
41:l:129:LEU:N	41:l:130:PRO:HD2	2.36	0.41
42:m:7:ARG:NH2	42:m:15:ARG:HD3	2.36	0.41
1:2:210:U:H2'	1:2:211:U:C6	2.56	0.40
1:2:303:U:H2'	1:2:304:C:H6	1.84	0.40
1:2:332:A:H2'	1:2:333:G:C8	2.56	0.40
1:2:374:U:H2'	1:2:375:C:C6	2.56	0.40
1:2:683:C:N4	1:2:684:A:H62	2.18	0.40
1:2:745:U:H3'	1:2:746:A:H8	1.87	0.40
1:2:793:U:H3'	1:2:794:U:C5'	2.51	0.40
1:2:799:U:H2'	1:2:800:G:N7	2.36	0.40
1:2:841:C:H2'	1:2:842:U:C6	2.56	0.40
1:2:870:G:C2	1:2:871:G:C5	3.09	0.40
1:2:1044:C:H2'	1:2:1045:G:H8	1.85	0.40
1:2:1585:A:H2'	1:2:1586:G:C8	2.57	0.40
2:A:57:ILE:HD11	2:A:173:ILE:HG23	2.03	0.40
2:A:108:THR:HG23	2:A:135:GLU:OE1	2.20	0.40
2:A:122:ILE:HA	2:A:144:ILE:O	2.21	0.40
3:B:190:PRO:C	3:B:191:GLU:OE1	2.64	0.40
4:C:148:TYR:CE2	4:C:156:PRO:HB3	2.56	0.40
7:H:80:GLU:HA	7:H:83:LYS:HD2	2.03	0.40
7:H:96:ARG:HA	7:H:96:ARG:HD2	1.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:V:87:ARG:HB2	13:V:87:ARG:NH1	2.37	0.40
14:W:57:ARG:CZ	18:b:26:GLN:HE22	2.34	0.40
23:K:3:ILE:HG13	23:K:41:PHE:HB2	2.03	0.40
25:P:77:ARG:HH11	25:P:77:ARG:HG2	1.86	0.40
25:P:85:ILE:O	25:P:112:VAL:HG13	2.21	0.40
26:Q:47:LYS:HE3	26:Q:82:ARG:HD2	2.03	0.40
31:Z:52:LYS:O	31:Z:55:PRO:HD2	2.20	0.40
40:k:293:ALA:O	40:k:296:GLU:HG3	2.21	0.40
1:2:123:G:OP1	5:E:77:ARG:NH2	2.54	0.40
1:2:445:A:H5''	5:E:57:ASN:ND2	2.36	0.40
1:2:626:C:H2'	1:2:627:G:O4'	2.21	0.40
1:2:646:G:C6	1:2:688:G:C6	3.10	0.40
1:2:777:C:H41	16:Y:11:LYS:NZ	2.19	0.40
1:2:1079:U:O2'	1:2:1080:A:H5'	2.22	0.40
1:2:1206:C:H5'	1:2:1207:A:C8	2.56	0.40
1:2:1234:C:H5'	34:f:143:HIS:ND1	2.37	0.40
1:2:1235:A:H2'	1:2:1236:G:C8	2.57	0.40
1:2:1274:A:H2	1:2:1436:G:H1'	1.85	0.40
1:2:1420:A:H4'	21:D:159:HIS:CD2	2.55	0.40
1:2:1495:U:H2'	1:2:1496:G:H8	1.86	0.40
2:A:117:GLU:OE1	4:C:45:LYS:HG3	2.21	0.40
4:C:162:LYS:HZ3	14:W:95:PRO:C	2.28	0.40
4:C:220:PHE:CD1	4:C:220:PHE:C	3.00	0.40
5:E:98:ASN:ND2	5:E:116:ASP:HA	2.36	0.40
7:H:122:HIS:HA	7:H:125:ILE:HG22	2.03	0.40
8:I:104:ILE:HB	8:I:166:LEU:HB2	2.03	0.40
9:J:65:LYS:HA	9:J:70:LEU:HD21	2.03	0.40
12:O:25:ASP:HA	12:O:54:GLU:O	2.20	0.40
13:V:32:VAL:HG13	13:V:55:LEU:HB2	2.03	0.40
13:V:74:GLN:OE1	13:V:83:TRP:N	2.38	0.40
25:P:63:ALA:C	25:P:73:PRO:HB3	2.47	0.40
29:T:14:PHE:CE1	29:T:135:ILE:HG23	2.57	0.40
29:T:34:VAL:O	29:T:36:ILE:HD12	2.22	0.40
32:c:42:ARG:NH1	32:c:61:ARG:HB2	2.36	0.40
35:g:39:ARG:HA	35:g:68:ILE:HG23	2.02	0.40
35:g:321:GLN:HB3	35:g:323:MET:HE3	2.01	0.40
38:1:62:C:H2'	38:1:63:G:O4'	2.21	0.40
39:j:36:LEU:HB2	39:j:40:ASP:O	2.21	0.40
39:j:197:GLY:O	39:j:201:ILE:N	2.47	0.40
1:2:205:A:C6	1:2:206:U:C4	3.09	0.40
1:2:374:U:H5''	15:X:32:ARG:NH1	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:477:A:H5'	19:e:33:ARG:NH2	2.37	0.40
1:2:863:U:C4	14:W:28:ARG:HD3	2.56	0.40
1:2:988:U:H1'	12:O:126:THR:HG22	2.02	0.40
1:2:1034:G:H2'	1:2:1035:A:H8	1.87	0.40
1:2:1034:G:O6	1:2:1035:A:N6	2.53	0.40
1:2:1090:A:H4'	1:2:1091:A:O4'	2.22	0.40
1:2:1108:G:H2'	1:2:1109:G:H8	1.87	0.40
1:2:1187:G:C6	1:2:1197:G:C6	3.09	0.40
1:2:1231:U:H2'	1:2:1232:G:O4'	2.20	0.40
1:2:1406:G:H2'	1:2:1407:G:H8	1.86	0.40
1:2:1588:G:OP1	29:T:91:HIS:HB2	2.21	0.40
1:2:1776:G:C2	1:2:1777:U:C2	3.09	0.40
2:A:88:LYS:HE2	2:A:88:LYS:HB2	1.87	0.40
3:B:140:ILE:O	3:B:210:VAL:HA	2.21	0.40
4:C:161:THR:HG23	14:W:95:PRO:HB2	2.03	0.40
5:E:194:THR:HG22	5:E:211:LYS:O	2.21	0.40
6:G:20:ASP:HB3	6:G:23:ARG:HB2	2.03	0.40
8:I:26:LYS:HD2	8:I:26:LYS:HA	1.88	0.40
10:L:45:PRO:HG2	10:L:115:PHE:CZ	2.56	0.40
11:N:33:VAL:HG21	11:N:66:ILE:HG21	2.03	0.40
11:N:75:LEU:HD21	11:N:82:PRO:HD3	2.03	0.40
14:W:69:LEU:HD23	14:W:70:ASN:C	2.46	0.40
14:W:77:PRO:O	14:W:79:PHE:N	2.54	0.40
16:Y:18:LEU:HA	16:Y:85:PHE:HE2	1.86	0.40
16:Y:34:ASN:OD1	16:Y:34:ASN:N	2.53	0.40
16:Y:104:SER:C	16:Y:108:ARG:HE	2.30	0.40
17:a:39:MET:CE	17:a:70:LYS:HG3	2.51	0.40
25:P:57:MET:HE3	25:P:57:MET:HB3	1.86	0.40
35:g:8:LEU:HD13	35:g:320:TRP:HB3	2.04	0.40
35:g:225:GLY:O	35:g:242:ASP:HA	2.21	0.40
38:1:25:C:H2'	38:1:26:M2G:O4'	2.21	0.40
39:j:75:ARG:HB3	39:j:84:ASP:OD2	2.21	0.40
1:2:161:A:OP1	6:G:83:CYS:N	2.55	0.40
1:2:216:A:O2'	1:2:217:A:OP1	2.31	0.40
1:2:309:C:O5'	15:X:20:ARG:NH2	2.55	0.40
1:2:411:A:C8	1:2:421:G:C2	3.10	0.40
1:2:517:A:H2'	1:2:518:C:H5''	2.04	0.40
1:2:524:A:H2'	1:2:525:A:O4'	2.21	0.40
1:2:566:A:H5'	19:e:9:ALA:HA	2.04	0.40
1:2:603:A:H2'	1:2:604:A:O4'	2.20	0.40
1:2:634:A:H2'	1:2:635:A:C8	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:898:G:C4	1:2:899:A:C8	3.09	0.40
1:2:985:G:H3'	1:2:986:G:C8	2.53	0.40
1:2:1049:G:C6	1:2:1068:A:C6	3.09	0.40
1:2:1252:U:H2'	1:2:1253:U:C6	2.56	0.40
1:2:1471:U:H5	22:F:192:ILE:HG21	1.86	0.40
1:2:1521:G:C8	29:T:79:LEU:HD21	2.57	0.40
1:2:1527:C:H5'	26:Q:42:GLU:CD	2.46	0.40
1:2:1658:A:H2'	1:2:1659:U:H6	1.85	0.40
1:2:1783:U:OP1	12:O:136:ARG:NH1	2.53	0.40
5:E:56:LEU:H	5:E:60:GLU:CD	2.29	0.40
5:E:198:ARG:HE	5:E:200:ARG:CZ	2.34	0.40
6:G:136:LYS:NZ	6:G:174:LYS:H	2.19	0.40
10:L:16:GLN:NE2	10:L:34:TRP:H	2.11	0.40
22:F:70:ILE:HD12	22:F:90:PRO:HG2	2.03	0.40
24:M:99:ARG:NH2	24:M:103:ALA:H	2.16	0.40
28:S:18:LEU:CD2	28:S:101:LEU:HB3	2.51	0.40
28:S:26:ILE:HG13	28:S:27:ASN:N	2.35	0.40
33:d:21:CYS:C	33:d:23:ILE:N	2.80	0.40
35:g:260:THR:HA	35:g:268:LYS:O	2.22	0.40
35:g:270:TYR:CZ	35:g:277:LEU:HD12	2.56	0.40
35:g:300:ALA:HB3	35:g:309:PHE:HB2	2.02	0.40
39:j:18:ASP:OD1	39:j:18:ASP:N	2.49	0.40
1:2:114:C:C4	1:2:246:A:C5	3.09	0.40
1:2:116:U:H1'	1:2:333:G:H21	1.86	0.40
1:2:126:A:O2'	1:2:127:G:H5'	2.21	0.40
1:2:153:G:H2'	1:2:154:U:C6	2.56	0.40
1:2:208:U:H2'	1:2:209:A:O4'	2.22	0.40
1:2:210:U:H5''	10:L:20:PHE:CB	2.48	0.40
1:2:245:G:C6	1:2:246:A:C5	3.09	0.40
1:2:309:C:C2	1:2:356:G:C2	3.10	0.40
1:2:701:U:C4	1:2:702:G:N7	2.89	0.40
1:2:708:C:C2	1:2:710:U:H5	2.39	0.40
1:2:790:A:H2'	1:2:791:U:C6	2.57	0.40
1:2:861:A:H4'	14:W:57:ARG:NE	2.36	0.40
1:2:883:A:H5'	3:B:136:ARG:NH2	2.35	0.40
1:2:961:C:H5'	11:N:72:LEU:HD23	2.04	0.40
4:C:145:ARG:NH1	4:C:234:LEU:HD22	2.36	0.40
6:G:58:LYS:HG2	6:G:105:ASP:C	2.46	0.40
7:H:122:HIS:O	7:H:125:ILE:HG22	2.22	0.40
9:J:65:LYS:HD3	9:J:70:LEU:HD21	2.04	0.40
11:N:35:GLU:O	11:N:39:LYS:HG2	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:W:52:TYR:CE1	14:W:59:GLY:HA3	2.57	0.40
14:W:92:ASN:C	14:W:93:LEU:HD22	2.47	0.40
15:X:3:LYS:HD2	15:X:7:ARG:HH21	1.86	0.40
22:F:65:GLN:NE2	22:F:68:LYS:HB2	2.36	0.40
27:R:7:LYS:HB3	27:R:11:ARG:HH21	1.86	0.40
35:g:60:ARG:HA	35:g:60:ARG:HD3	1.85	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 PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	A	217/254 (85%)	192 (88%)	25 (12%)	0	100	100
3	B	221/255 (87%)	193 (87%)	25 (11%)	3 (1%)	9	39
4	C	218/259 (84%)	194 (89%)	23 (11%)	1 (0%)	24	63
5	E	258/261 (99%)	233 (90%)	25 (10%)	0	100	100
6	G	228/236 (97%)	216 (95%)	9 (4%)	3 (1%)	9	41
7	H	182/190 (96%)	154 (85%)	26 (14%)	2 (1%)	11	45
8	I	184/201 (92%)	161 (88%)	23 (12%)	0	100	100
9	J	180/188 (96%)	146 (81%)	30 (17%)	4 (2%)	5	28
10	L	153/156 (98%)	136 (89%)	17 (11%)	0	100	100
11	N	149/151 (99%)	139 (93%)	10 (7%)	0	100	100
12	O	127/137 (93%)	108 (85%)	19 (15%)	0	100	100
13	V	85/87 (98%)	78 (92%)	7 (8%)	0	100	100
14	W	127/130 (98%)	112 (88%)	15 (12%)	0	100	100
15	X	142/145 (98%)	117 (82%)	25 (18%)	0	100	100
16	Y	132/135 (98%)	123 (93%)	9 (7%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
17	a	100/119 (84%)	80 (80%)	20 (20%)	0	100	100
18	b	79/82 (96%)	67 (85%)	12 (15%)	0	100	100
19	e	58/63 (92%)	48 (83%)	10 (17%)	0	100	100
20	h	23/25 (92%)	23 (100%)	0	0	100	100
21	D	225/237 (95%)	214 (95%)	11 (5%)	0	100	100
22	F	204/227 (90%)	177 (87%)	23 (11%)	4 (2%)	6	31
23	K	94/106 (89%)	83 (88%)	9 (10%)	2 (2%)	5	29
24	M	113/134 (84%)	94 (83%)	18 (16%)	1 (1%)	14	49
25	P	115/142 (81%)	97 (84%)	18 (16%)	0	100	100
26	Q	139/143 (97%)	121 (87%)	18 (13%)	0	100	100
27	R	128/136 (94%)	104 (81%)	21 (16%)	3 (2%)	5	28
28	S	143/146 (98%)	124 (87%)	19 (13%)	0	100	100
29	T	141/144 (98%)	128 (91%)	13 (9%)	0	100	100
30	U	104/117 (89%)	93 (89%)	11 (11%)	0	100	100
31	Z	76/108 (70%)	65 (86%)	11 (14%)	0	100	100
32	c	62/67 (92%)	56 (90%)	6 (10%)	0	100	100
33	d	53/56 (95%)	49 (92%)	4 (8%)	0	100	100
34	f	72/150 (48%)	56 (78%)	16 (22%)	0	100	100
35	g	314/326 (96%)	276 (88%)	38 (12%)	0	100	100
36	i	93/153 (61%)	83 (89%)	10 (11%)	0	100	100
39	j	263/304 (86%)	242 (92%)	21 (8%)	0	100	100
40	k	468/527 (89%)	423 (90%)	43 (9%)	2 (0%)	30	67
41	l	21/285 (7%)	20 (95%)	1 (5%)	0	100	100
42	m	139/405 (34%)	119 (86%)	20 (14%)	0	100	100
All	All	5830/6987 (83%)	5144 (88%)	661 (11%)	25 (0%)	31	67

All (25) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
7	H	65	PRO
22	F	108	LYS
24	M	103	ALA
27	R	92	ASP
27	R	98	ASP

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Mol	Chain	Res	Type
3	B	3	VAL
6	G	149	LYS
6	G	150	GLU
9	J	101	VAL
22	F	37	GLN
23	K	25	LYS
23	K	26	ASP
3	B	56	ASN
3	B	221	PRO
6	G	151	ASP
22	F	128	ASP
40	k	130	ASP
9	J	163	PRO
22	F	129	GLN
4	C	45	LYS
27	R	99	VAL
40	k	507	LYS
7	H	63	PRO
9	J	122	VAL
9	J	134	ILE

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	A	180/211 (85%)	180 (100%)	0	100	100
3	B	202/228 (89%)	199 (98%)	3 (2%)	57	71
4	C	177/203 (87%)	177 (100%)	0	100	100
5	E	223/224 (100%)	223 (100%)	0	100	100
6	G	192/200 (96%)	189 (98%)	3 (2%)	55	69
7	H	164/170 (96%)	163 (99%)	1 (1%)	78	81
8	I	147/159 (92%)	147 (100%)	0	100	100
9	J	153/158 (97%)	153 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
10	L	136/137 (99%)	136 (100%)	0	100	100
11	N	128/128 (100%)	128 (100%)	0	100	100
12	O	97/104 (93%)	96 (99%)	1 (1%)	68	76
13	V	73/73 (100%)	73 (100%)	0	100	100
14	W	110/111 (99%)	110 (100%)	0	100	100
15	X	119/120 (99%)	119 (100%)	0	100	100
16	Y	108/109 (99%)	108 (100%)	0	100	100
17	a	83/100 (83%)	83 (100%)	0	100	100
18	b	71/72 (99%)	71 (100%)	0	100	100
19	e	51/55 (93%)	51 (100%)	0	100	100
20	h	23/23 (100%)	23 (100%)	0	100	100
21	D	188/196 (96%)	188 (100%)	0	100	100
22	F	174/194 (90%)	171 (98%)	3 (2%)	53	68
23	K	88/96 (92%)	85 (97%)	3 (3%)	32	55
24	M	93/109 (85%)	93 (100%)	0	100	100
25	P	99/119 (83%)	99 (100%)	0	100	100
26	Q	117/119 (98%)	117 (100%)	0	100	100
27	R	116/124 (94%)	114 (98%)	2 (2%)	53	68
28	S	127/129 (98%)	127 (100%)	0	100	100
29	T	117/118 (99%)	117 (100%)	0	100	100
30	U	96/107 (90%)	96 (100%)	0	100	100
31	Z	59/88 (67%)	59 (100%)	0	100	100
32	c	55/59 (93%)	55 (100%)	0	100	100
33	d	47/48 (98%)	47 (100%)	0	100	100
34	f	60/133 (45%)	60 (100%)	0	100	100
35	g	264/272 (97%)	264 (100%)	0	100	100
36	i	80/130 (62%)	80 (100%)	0	100	100
39	j	239/274 (87%)	239 (100%)	0	100	100
40	k	393/449 (88%)	393 (100%)	0	100	100
41	l	22/246 (9%)	22 (100%)	0	100	100
42	m	123/352 (35%)	123 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	4994/5947 (84%)	4978 (100%)	16 (0%)	84 84

All (16) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	B	54	LEU
3	B	55	LYS
3	B	56	ASN
6	G	147	LEU
6	G	148	THR
6	G	149	LYS
7	H	64	VAL
12	O	126	THR
22	F	37	GLN
22	F	105	ASN
22	F	126	LEU
23	K	24	LYS
23	K	25	LYS
23	K	26	ASP
27	R	97	ASN
27	R	100	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (60) such sidechains are listed below:

Mol	Chain	Res	Type
2	A	46	ASN
3	B	6	ASN
3	B	42	ASN
3	B	149	GLN
3	B	157	GLN
3	B	160	HIS
3	B	220	GLN
4	C	64	HIS
4	C	92	GLN
5	E	67	GLN
6	G	176	GLN
6	G	189	GLN
7	H	110	GLN
8	I	9	HIS
8	I	160	GLN
9	J	142	ASN

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Mol	Chain	Res	Type
10	L	8	GLN
10	L	16	GLN
10	L	138	ASN
13	V	3	ASN
13	V	29	HIS
14	W	56	HIS
14	W	113	HIS
15	X	18	HIS
15	X	65	ASN
16	Y	110	GLN
17	a	80	HIS
19	e	46	ASN
21	D	159	HIS
22	F	88	GLN
22	F	105	ASN
22	F	106	ASN
22	F	172	GLN
23	K	17	GLN
23	K	29	GLN
23	K	32	HIS
23	K	81	ASN
25	P	98	ASN
26	Q	21	HIS
26	Q	40	GLN
26	Q	83	GLN
26	Q	93	HIS
27	R	97	ASN
28	S	99	HIS
28	S	127	HIS
29	T	17	ASN
29	T	25	GLN
29	T	93	HIS
30	U	44	ASN
31	Z	98	GLN
35	g	203	ASN
36	i	33	GLN
39	j	238	GLN
40	k	111	HIS
40	k	144	ASN
40	k	228	GLN
40	k	433	ASN
40	k	465	ASN

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Mol	Chain	Res	Type
42	m	94	ASN
42	m	134	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	2	1797/1798 (99%)	676 (37%)	26 (1%)
37	3	25/49 (51%)	16 (64%)	1 (4%)
38	1	72/75 (96%)	30 (41%)	1 (1%)
All	All	1894/1922 (98%)	722 (38%)	28 (1%)

All (722) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	2	2	A
1	2	3	U
1	2	4	C
1	2	5	U
1	2	13	C
1	2	15	U
1	2	16	G
1	2	17	C
1	2	23	G
1	2	25	C
1	2	27	U
1	2	31	C
1	2	34	G
1	2	42	G
1	2	43	A
1	2	47	A
1	2	50	C
1	2	54	C
1	2	57	G
1	2	59	C
1	2	64	U
1	2	65	A
1	2	67	A
1	2	68	A
1	2	70	C
1	2	72	A
1	2	73	U

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Mol	Chain	Res	Type
1	2	74	U
1	2	75	U
1	2	77	U
1	2	78	A
1	2	79	C
1	2	80	A
1	2	100	A
1	2	102	U
1	2	104	A
1	2	111	U
1	2	114	C
1	2	116	U
1	2	118	U
1	2	121	U
1	2	124	A
1	2	126	A
1	2	127	G
1	2	128	U
1	2	129	U
1	2	130	C
1	2	132	U
1	2	134	U
1	2	135	A
1	2	136	C
1	2	137	U
1	2	139	C
1	2	140	A
1	2	141	U
1	2	146	A
1	2	147	U
1	2	150	G
1	2	155	A
1	2	158	U
1	2	159	C
1	2	160	U
1	2	161	A
1	2	164	G
1	2	167	A
1	2	168	A
1	2	173	U
1	2	176	U
1	2	177	U

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Mol	Chain	Res	Type
1	2	178	A
1	2	187	A
1	2	190	C
1	2	191	U
1	2	192	U
1	2	194	G
1	2	195	G
1	2	209	A
1	2	214	A
1	2	217	A
1	2	218	A
1	2	220	A
1	2	224	A
1	2	225	A
1	2	226	U
1	2	227	G
1	2	228	U
1	2	231	U
1	2	232	C
1	2	233	G
1	2	234	G
1	2	235	A
1	2	237	U
1	2	239	C
1	2	240	U
1	2	247	U
1	2	248	U
1	2	249	C
1	2	250	A
1	2	256	A
1	2	259	U
1	2	260	U
1	2	264	A
1	2	271	U
1	2	275	C
1	2	276	U
1	2	278	G
1	2	280	G
1	2	282	U
1	2	289	G
1	2	290	G
1	2	298	A

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Mol	Chain	Res	Type
1	2	301	U
1	2	307	C
1	2	308	C
1	2	310	U
1	2	312	U
1	2	313	C
1	2	315	A
1	2	320	C
1	2	321	G
1	2	327	A
1	2	336	G
1	2	337	C
1	2	342	C
1	2	346	G
1	2	350	C
1	2	351	A
1	2	352	A
1	2	359	A
1	2	360	C
1	2	369	A
1	2	372	G
1	2	379	U
1	2	382	G
1	2	388	G
1	2	389	G
1	2	399	A
1	2	400	A
1	2	401	C
1	2	402	G
1	2	403	G
1	2	411	A
1	2	415	A
1	2	416	A
1	2	418	G
1	2	422	G
1	2	423	C
1	2	424	A
1	2	433	G
1	2	436	A
1	2	438	U
1	2	439	U
1	2	440	A

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Mol	Chain	Res	Type
1	2	443	C
1	2	446	U
1	2	449	U
1	2	453	U
1	2	455	A
1	2	456	G
1	2	458	G
1	2	459	A
1	2	467	A
1	2	468	C
1	2	473	A
1	2	474	A
1	2	479	G
1	2	482	A
1	2	483	C
1	2	486	G
1	2	489	C
1	2	490	C
1	2	491	A
1	2	492	U
1	2	493	U
1	2	494	C
1	2	495	G
1	2	496	G
1	2	498	U
1	2	499	C
1	2	500	U
1	2	501	U
1	2	502	G
1	2	505	A
1	2	506	U
1	2	507	U
1	2	509	G
1	2	518	C
1	2	526	A
1	2	533	A
1	2	534	A
1	2	535	C
1	2	537	A
1	2	539	G
1	2	540	A
1	2	541	A

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Mol	Chain	Res	Type
1	2	542	C
1	2	543	A
1	2	547	G
1	2	554	A
1	2	557	U
1	2	558	C
1	2	563	G
1	2	564	C
1	2	565	C
1	2	567	G
1	2	576	G
1	2	577	U
1	2	578	A
1	2	582	C
1	2	583	C
1	2	584	A
1	2	587	U
1	2	588	C
1	2	592	U
1	2	593	A
1	2	594	G
1	2	600	A
1	2	602	U
1	2	604	A
1	2	605	A
1	2	609	G
1	2	610	U
1	2	614	A
1	2	618	A
1	2	619	A
1	2	620	A
1	2	621	A
1	2	622	A
1	2	623	G
1	2	633	G
1	2	634	A
1	2	638	U
1	2	641	G
1	2	642	G
1	2	647	G
1	2	648	U
1	2	650	G

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Mol	Chain	Res	Type
1	2	651	U
1	2	652	C
1	2	653	C
1	2	657	C
1	2	659	G
1	2	662	U
1	2	663	U
1	2	664	U
1	2	667	G
1	2	671	C
1	2	672	G
1	2	673	C
1	2	675	C
1	2	677	G
1	2	679	U
1	2	680	U
1	2	681	U
1	2	683	C
1	2	684	A
1	2	685	A
1	2	686	C
1	2	688	G
1	2	691	U
1	2	692	C
1	2	693	U
1	2	694	U
1	2	695	U
1	2	696	C
1	2	697	C
1	2	701	U
1	2	702	G
1	2	704	C
1	2	707	A
1	2	709	C
1	2	710	U
1	2	711	G
1	2	712	U
1	2	713	A
1	2	714	C
1	2	717	C
1	2	718	U
1	2	719	U

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Mol	Chain	Res	Type
1	2	720	G
1	2	721	U
1	2	722	G
1	2	725	U
1	2	727	C
1	2	732	G
1	2	733	A
1	2	734	A
1	2	736	C
1	2	738	G
1	2	741	C
1	2	742	U
1	2	745	U
1	2	753	A
1	2	756	A
1	2	761	G
1	2	765	G
1	2	766	PSU
1	2	771	A
1	2	774	A
1	2	778	G
1	2	779	A
1	2	780	A
1	2	781	A
1	2	782	G
1	2	783	C
1	2	786	G
1	2	787	A
1	2	788	A
1	2	789	U
1	2	790	A
1	2	792	A
1	2	793	U
1	2	794	U
1	2	802	A
1	2	809	G
1	2	811	A
1	2	812	U
1	2	813	A
1	2	814	G
1	2	817	C
1	2	819	U

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Mol	Chain	Res	Type
1	2	820	U
1	2	821	U
1	2	822	G
1	2	823	G
1	2	824	U
1	2	826	C
1	2	827	U
1	2	828	A
1	2	829	U
1	2	832	U
1	2	833	G
1	2	836	G
1	2	837	G
1	2	840	U
1	2	845	G
1	2	855	A
1	2	856	U
1	2	858	A
1	2	859	U
1	2	860	U
1	2	861	A
1	2	862	A
1	2	863	U
1	2	869	C
1	2	873	C
1	2	874	G
1	2	876	G
1	2	881	U
1	2	883	A
1	2	884	G
1	2	885	U
1	2	895	U
1	2	896	C
1	2	897	A
1	2	898	G
1	2	904	A
1	2	905	A
1	2	910	U
1	2	911	U
1	2	912	G
1	2	913	G
1	2	915	U

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Mol	Chain	Res	Type
1	2	917	U
1	2	918	A
1	2	919	U
1	2	920	U
1	2	929	A
1	2	932	A
1	2	934	U
1	2	941	G
1	2	950	A
1	2	958	U
1	2	959	U
1	2	962	A
1	2	965	A
1	2	969	A
1	2	970	A
1	2	972	A
1	2	973	A
1	2	974	C
1	2	981	U
1	2	982	A
1	2	986	G
1	2	987	A
1	2	991	A
1	2	993	G
1	2	998	PSU
1	2	1009	C
1	2	1011	U
1	2	1016	U
1	2	1017	U
1	2	1022	A
1	2	1023	U
1	2	1024	A
1	2	1025	A
1	2	1026	A
1	2	1027	C
1	2	1028	U
1	2	1030	U
1	2	1031	G
1	2	1034	G
1	2	1038	A
1	2	1039	G
1	2	1041	G

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Mol	Chain	Res	Type
1	2	1042	A
1	2	1048	U
1	2	1049	G
1	2	1050	G
1	2	1051	U
1	2	1052	G
1	2	1055	U
1	2	1056	U
1	2	1057	U
1	2	1058	C
1	2	1059	U
1	2	1060	U
1	2	1062	U
1	2	1075	A
1	2	1081	C
1	2	1083	A
1	2	1086	A
1	2	1091	A
1	2	1092	A
1	2	1095	C
1	2	1096	U
1	2	1097	U
1	2	1099	G
1	2	1100	G
1	2	1103	U
1	2	1106	G
1	2	1110	G
1	2	1112	A
1	2	1113	G
1	2	1114	U
1	2	1118	G
1	2	1134	U
1	2	1137	A
1	2	1149	G
1	2	1150	A
1	2	1155	C
1	2	1156	A
1	2	1157	C
1	2	1158	C
1	2	1163	G
1	2	1166	G
1	2	1182	A

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Mol	Chain	Res	Type
1	2	1183	A
1	2	1184	U
1	2	1185	U
1	2	1186	U
1	2	1187	G
1	2	1189	C
1	2	1190	B8N
1	2	1193	A
1	2	1195	A
1	2	1197	G
1	2	1198	G
1	2	1199	G
1	2	1201	A
1	2	1205	U
1	2	1207	A
1	2	1211	G
1	2	1213	U
1	2	1216	A
1	2	1217	G
1	2	1224	U
1	2	1225	A
1	2	1227	G
1	2	1228	G
1	2	1230	U
1	2	1236	G
1	2	1237	A
1	2	1240	G
1	2	1241	A
1	2	1243	A
1	2	1244	G
1	2	1245	C
1	2	1247	C
1	2	1248	U
1	2	1249	U
1	2	1250	U
1	2	1254	G
1	2	1255	A
1	2	1256	U
1	2	1257	U
1	2	1258	U
1	2	1259	U
1	2	1260	G

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Mol	Chain	Res	Type
1	2	1265	U
1	2	1268	U
1	2	1269	G
1	2	1272	G
1	2	1279	C
1	2	1283	C
1	2	1284	U
1	2	1286	A
1	2	1289	PSU
1	2	1292	U
1	2	1298	G
1	2	1300	U
1	2	1305	C
1	2	1306	U
1	2	1313	U
1	2	1317	G
1	2	1320	A
1	2	1321	A
1	2	1323	G
1	2	1324	A
1	2	1331	C
1	2	1336	A
1	2	1337	C
1	2	1339	U
1	2	1343	A
1	2	1344	A
1	2	1345	A
1	2	1347	A
1	2	1353	G
1	2	1359	A
1	2	1360	C
1	2	1361	U
1	2	1362	U
1	2	1363	G
1	2	1364	C
1	2	1366	G
1	2	1370	G
1	2	1380	A
1	2	1383	G
1	2	1388	U
1	2	1389	A
1	2	1390	U

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Mol	Chain	Res	Type
1	2	1396	U
1	2	1397	C
1	2	1400	G
1	2	1401	C
1	2	1407	G
1	2	1408	A
1	2	1409	A
1	2	1411	U
1	2	1413	U
1	2	1414	G
1	2	1416	G
1	2	1418	C
1	2	1419	A
1	2	1423	A
1	2	1424	C
1	2	1425	A
1	2	1426	2MG
1	2	1430	U
1	2	1431	G
1	2	1433	G
1	2	1434	A
1	2	1442	A
1	2	1443	G
1	2	1444	A
1	2	1456	G
1	2	1457	C
1	2	1458	A
1	2	1464	G
1	2	1469	A
1	2	1470	C
1	2	1471	U
1	2	1475	G
1	2	1476	G
1	2	1477	A
1	2	1479	C
1	2	1481	A
1	2	1482	G
1	2	1484	G
1	2	1488	A
1	2	1489	C
1	2	1490	A
1	2	1491	A

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Mol	Chain	Res	Type
1	2	1494	U
1	2	1499	C
1	2	1504	G
1	2	1508	U
1	2	1510	G
1	2	1512	U
1	2	1514	A
1	2	1516	C
1	2	1518	U
1	2	1519	G
1	2	1521	G
1	2	1522	A
1	2	1523	A
1	2	1532	G
1	2	1535	C
1	2	1538	G
1	2	1540	G
1	2	1543	A
1	2	1544	G
1	2	1545	A
1	2	1554	A
1	2	1555	U
1	2	1556	U
1	2	1557	A
1	2	1558	U
1	2	1566	C
1	2	1570	2MG
1	2	1571	A
1	2	1572	G
1	2	1573	7MG
1	2	1574	A
1	2	1583	U
1	2	1588	G
1	2	1595	A
1	2	1597	C
1	2	1598	A
1	2	1599	G
1	2	1603	G
1	2	1612	A
1	2	1614	G
1	2	1617	C
1	2	1620	G

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Mol	Chain	Res	Type
1	2	1629	A
1	2	1631	A
1	2	1632	C
1	2	1638	C
1	2	1646	A
1	2	1647	G
1	2	1649	A
1	2	1653	A
1	2	1654	U
1	2	1655	U
1	2	1656	G
1	2	1667	U
1	2	1678	G
1	2	1679	A
1	2	1680	U
1	2	1686	U
1	2	1687	A
1	2	1688	G
1	2	1691	A
1	2	1692	A
1	2	1693	G
1	2	1694	G
1	2	1695	G
1	2	1696	G
1	2	1697	G
1	2	1698	C
1	2	1699	A
1	2	1700	A
1	2	1702	U
1	2	1703	C
1	2	1704	C
1	2	1707	C
1	2	1709	C
1	2	1710	A
1	2	1711	G
1	2	1712	A
1	2	1715	G
1	2	1725	G
1	2	1728	A
1	2	1734	G
1	2	1740	U
1	2	1742	A

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Mol	Chain	Res	Type
1	2	1743	G
1	2	1750	U
1	2	1753	A
1	2	1758	G
1	2	1763	A
1	2	1764	A
1	2	1766	G
1	2	1767	U
1	2	1768	U
1	2	1778	G
1	2	1780	MA6
1	2	1781	C
1	2	1787	G
1	2	1790	G
1	2	1791	G
1	2	1792	A
1	2	1794	C
1	2	1797	U
1	2	1798	A
37	3	16	U
37	3	18	U
37	3	20	A
37	3	22	U
37	3	23	A
37	3	24	U
37	3	25	A
37	3	26	A
37	3	29	A
37	3	33	C
37	3	35	C
37	3	36	U
37	3	37	U
37	3	38	C
37	3	39	U
37	3	40	C
38	1	4	G
38	1	8	U
38	1	9	1MG
38	1	10	2MG
38	1	14	A
38	1	15	G
38	1	16	H2U

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Mol	Chain	Res	Type
38	1	18	G
38	1	19	G
38	1	20	A
38	1	21	A
38	1	22	G
38	1	23	C
38	1	26	M2G
38	1	27	C
38	1	28	A
38	1	41	C
38	1	44	A
38	1	46	7MG
38	1	47	H2U
38	1	48	5MC
38	1	49	5MC
38	1	54	A
38	1	59	A
38	1	60	A
38	1	61	C
38	1	71	C
38	1	73	A
38	1	74	C
38	1	76	A

All (28) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	2	74	U
1	2	76	A
1	2	78	A
1	2	216	A
1	2	226	U
1	2	277	U
1	2	279	U
1	2	542	C
1	2	563	G
1	2	649	U
1	2	670	G
1	2	695	U
1	2	700	C
1	2	781	A
1	2	828	A

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Mol	Chain	Res	Type
1	2	1198	G
1	2	1206	C
1	2	1320	A
1	2	1343	A
1	2	1430	U
1	2	1470	C
1	2	1513	A
1	2	1571	A
1	2	1573	7MG
1	2	1765	G
1	2	1791	G
37	3	17	C
38	1	47	H2U

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

23 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
38	RIA	1	64	38	35,38,39	4.61	14 (40%)	50,57,60	2.12	13 (26%)
38	1MG	1	9	38	23,26,27	3.33	7 (30%)	33,39,42	2.33	8 (24%)
1	5MC	2	1006	1	19,22,23	3.68	8 (42%)	26,32,35	1.02	2 (7%)
1	PSU	2	465	1,43	18,21,22	4.36	7 (38%)	21,30,33	1.75	4 (19%)
38	H2U	1	16	38	18,21,22	3.15	4 (22%)	19,30,33	1.46	4 (21%)
38	5MC	1	48	38	19,22,23	3.87	8 (42%)	26,32,35	1.02	1 (3%)
38	1MA	1	58	38	21,25,26	3.14	6 (28%)	30,37,40	2.38	8 (26%)
38	H2U	1	47	38	18,21,22	3.20	4 (22%)	19,30,33	1.38	4 (21%)
1	5MC	2	1637	1	19,22,23	3.78	8 (42%)	26,32,35	1.10	3 (11%)
38	7MG	1	46	38	23,26,27	3.57	10 (43%)	27,39,42	2.16	9 (33%)
1	PSU	2	766	1	18,21,22	4.42	8 (44%)	21,30,33	2.02	6 (28%)
38	5MC	1	49	38	19,22,23	3.89	8 (42%)	26,32,35	1.33	4 (15%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
38	T6A	1	37	38	31,34,35	1.76	7 (22%)	43,49,52	2.09	11 (25%)
38	M2G	1	26	38	24,27,28	2.71	8 (33%)	33,40,43	1.78	8 (24%)
1	PSU	2	120	1	18,21,22	4.38	7 (38%)	21,30,33	2.04	5 (23%)
1	7MG	2	1573	1	23,26,27	3.52	10 (43%)	27,39,42	2.25	9 (33%)
1	PSU	2	998	1	18,21,22	4.36	8 (44%)	21,30,33	2.02	5 (23%)
1	2MG	2	1570	1	23,26,27	2.89	8 (34%)	33,38,41	2.21	11 (33%)
1	PSU	2	1289	1	18,21,22	4.45	8 (44%)	21,30,33	1.78	4 (19%)
1	MA6	2	1780	1	23,26,27	1.37	4 (17%)	33,38,41	3.29	12 (36%)
38	2MG	1	10	38	23,26,27	2.93	8 (34%)	33,38,41	2.30	10 (30%)
1	B8N	2	1190	1	25,29,30	3.35	9 (36%)	28,42,45	2.06	9 (32%)
1	2MG	2	1426	1,43	23,26,27	2.81	9 (39%)	33,38,41	2.17	11 (33%)

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
38	RIA	1	64	38	-	8/17/51/52	0/4/4/4
38	1MG	1	9	38	-	2/7/25/26	0/3/3/3
1	5MC	2	1006	1	-	0/7/25/26	0/2/2/2
1	PSU	2	465	1,43	-	4/7/25/26	0/2/2/2
38	H2U	1	16	38	-	5/7/38/39	0/2/2/2
38	5MC	1	48	38	-	3/7/25/26	0/2/2/2
38	1MA	1	58	38	-	0/7/25/26	0/3/3/3
38	H2U	1	47	38	-	4/7/38/39	0/2/2/2
1	5MC	2	1637	1	-	2/7/25/26	0/2/2/2
38	7MG	1	46	38	-	1/7/37/38	0/3/3/3
1	PSU	2	766	1	-	0/7/25/26	0/2/2/2
38	5MC	1	49	38	-	5/7/25/26	0/2/2/2
38	T6A	1	37	38	-	7/23/41/42	0/3/3/3
38	M2G	1	26	38	-	2/11/29/30	0/3/3/3
1	PSU	2	120	1	-	0/7/25/26	0/2/2/2
1	7MG	2	1573	1	-	3/7/37/38	0/3/3/3
1	PSU	2	998	1	-	3/7/25/26	0/2/2/2
1	2MG	2	1570	1	-	2/9/27/28	0/3/3/3
1	PSU	2	1289	1	-	4/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	MA6	2	1780	1	-	2/11/29/30	0/3/3/3
38	2MG	1	10	38	-	3/9/27/28	0/3/3/3
1	B8N	2	1190	1	-	4/16/34/35	0/2/2/2
1	2MG	2	1426	1,43	-	1/9/27/28	0/3/3/3

All (178) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
38	1	64	RIA	C1'-C2'	-16.01	1.32	1.52
1	2	1289	PSU	C6-C5	11.93	1.48	1.35
1	2	465	PSU	C6-C5	11.64	1.48	1.35
1	2	766	PSU	C6-C5	11.57	1.48	1.35
1	2	120	PSU	C6-C5	11.53	1.48	1.35
1	2	998	PSU	C6-C5	11.29	1.47	1.35
38	1	64	RIA	O1'-C1'	11.10	1.61	1.41
38	1	47	H2U	C2-N1	9.97	1.49	1.35
1	2	766	PSU	C2-N1	9.91	1.49	1.36
1	2	120	PSU	C2-N1	9.88	1.49	1.36
1	2	1289	PSU	C2-N1	9.81	1.49	1.36
38	1	16	H2U	C2-N1	9.79	1.49	1.35
38	1	58	1MA	C2-N3	9.73	1.48	1.30
1	2	998	PSU	C2-N1	9.68	1.49	1.36
1	2	465	PSU	C2-N1	9.57	1.49	1.36
38	1	64	RIA	C2A-C1A	-9.31	1.30	1.53
38	1	64	RIA	O4'-C1A	9.26	1.63	1.42
38	1	9	1MG	C2-N2	9.22	1.50	1.34
38	1	48	5MC	C6-C5	9.17	1.49	1.34
38	1	49	5MC	C6-C5	9.12	1.49	1.34
1	2	1637	5MC	C6-C5	9.04	1.49	1.34
1	2	1006	5MC	C6-C5	8.66	1.48	1.34
38	1	46	7MG	C8-N9	8.45	1.51	1.45
1	2	1190	B8N	C6-N1	8.38	1.56	1.36
1	2	1573	7MG	C8-N9	8.31	1.51	1.45
1	2	1190	B8N	C4-N3	-7.74	1.26	1.40
38	1	10	2MG	C2-N3	7.67	1.46	1.32
1	2	1570	2MG	C2-N3	7.65	1.46	1.32
1	2	766	PSU	C2-N3	7.60	1.50	1.37
1	2	998	PSU	C2-N3	7.57	1.49	1.37
1	2	120	PSU	C2-N3	7.50	1.49	1.37
1	2	1289	PSU	C2-N3	7.47	1.49	1.37
1	2	465	PSU	C2-N3	7.36	1.49	1.37
1	2	1190	B8N	C4-C5	7.31	1.64	1.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	2	1426	2MG	C2-N3	7.31	1.45	1.32
38	1	58	1MA	C4-N3	7.10	1.50	1.35
38	1	9	1MG	C2-N3	7.00	1.44	1.33
38	1	49	5MC	C4-N3	6.97	1.45	1.34
38	1	46	7MG	C5-N7	6.94	1.44	1.35
38	1	48	5MC	C4-N3	6.93	1.45	1.34
38	1	26	M2G	C4-N3	6.90	1.50	1.34
38	1	10	2MG	C4-N3	6.85	1.49	1.34
1	2	1006	5MC	C4-N3	6.83	1.45	1.34
38	1	47	H2U	C2-N3	6.71	1.49	1.38
38	1	48	5MC	C5-C4	6.71	1.49	1.44
38	1	26	M2G	C2-N2	6.64	1.47	1.35
1	2	1637	5MC	C4-N3	6.60	1.44	1.34
1	2	1570	2MG	C4-N3	6.60	1.49	1.34
38	1	9	1MG	C4-N3	6.59	1.49	1.34
38	1	16	H2U	C2-N3	6.58	1.49	1.38
1	2	1573	7MG	C5-N7	6.56	1.43	1.35
1	2	1637	5MC	C5-C4	6.49	1.49	1.44
38	1	64	RIA	O1'-C4'	-6.49	1.30	1.45
38	1	49	5MC	C2-N3	6.45	1.49	1.36
38	1	49	5MC	C5-C4	6.36	1.48	1.44
1	2	1426	2MG	C4-N3	6.29	1.48	1.34
38	1	48	5MC	C2-N3	6.27	1.48	1.36
1	2	1637	5MC	C2-N3	6.19	1.48	1.36
38	1	26	M2G	C2-N3	6.12	1.47	1.32
1	2	1006	5MC	C2-N3	6.03	1.48	1.36
1	2	1573	7MG	C2-N3	6.01	1.47	1.33
38	1	64	RIA	O4'-C4A	-5.99	1.31	1.45
38	1	46	7MG	C2-N3	5.96	1.47	1.33
38	1	64	RIA	C6-N6	5.94	1.49	1.34
38	1	10	2MG	C2-N2	5.89	1.45	1.33
1	2	1573	7MG	C4-N3	5.84	1.47	1.34
38	1	46	7MG	C4-N3	5.81	1.47	1.34
1	2	1006	5MC	C5-C4	5.79	1.48	1.44
1	2	1190	B8N	C2-N1	5.78	1.56	1.39
1	2	1570	2MG	C2-N2	5.77	1.45	1.33
38	1	9	1MG	C2-N1	5.50	1.47	1.37
1	2	1426	2MG	C2-N2	5.38	1.44	1.33
1	2	1289	PSU	C6-N1	5.25	1.44	1.36
1	2	766	PSU	C6-N1	5.22	1.44	1.36
1	2	465	PSU	C6-N1	5.22	1.44	1.36
1	2	120	PSU	C6-N1	5.21	1.44	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	2	1573	7MG	C4-N9	5.17	1.44	1.37
1	2	998	PSU	C6-N1	5.11	1.44	1.36
38	1	16	H2U	C4-N3	5.09	1.46	1.37
38	1	47	H2U	C4-N3	5.07	1.46	1.37
38	1	46	7MG	C2-N2	5.05	1.46	1.34
38	1	37	T6A	C10-N6	4.99	1.48	1.37
38	1	10	2MG	C2-N1	4.99	1.44	1.36
38	1	58	1MA	C2-N1	4.95	1.46	1.35
1	2	1190	B8N	C6-C5	4.93	1.42	1.35
38	1	46	7MG	C4-N9	4.92	1.43	1.37
38	1	37	T6A	C10-N11	4.92	1.49	1.35
1	2	1573	7MG	C2-N2	4.89	1.45	1.34
1	2	1426	2MG	C2-N1	4.83	1.44	1.36
1	2	1570	2MG	C2-N1	4.81	1.44	1.36
38	1	49	5MC	C2-N1	4.79	1.50	1.40
38	1	49	5MC	C6-N1	4.67	1.46	1.38
38	1	48	5MC	C6-N1	4.54	1.45	1.38
38	1	49	5MC	C4-N4	4.50	1.45	1.34
1	2	1006	5MC	C6-N1	4.47	1.45	1.38
1	2	1190	B8N	C1'-C5	-4.46	1.40	1.50
1	2	1637	5MC	C4-N4	4.38	1.45	1.34
38	1	48	5MC	C2-N1	4.37	1.49	1.40
1	2	1006	5MC	C4-N4	4.35	1.45	1.34
38	1	48	5MC	C4-N4	4.34	1.45	1.34
1	2	1637	5MC	C2-N1	4.32	1.49	1.40
1	2	1637	5MC	C6-N1	4.25	1.45	1.38
1	2	1006	5MC	C2-N1	4.02	1.48	1.40
38	1	58	1MA	C5-C6	3.97	1.54	1.43
38	1	46	7MG	C2-N1	3.91	1.47	1.37
1	2	465	PSU	C4-N3	3.87	1.46	1.38
1	2	1289	PSU	C4-N3	3.84	1.46	1.38
1	2	766	PSU	C4-N3	3.78	1.45	1.38
38	1	9	1MG	O6-C6	-3.75	1.15	1.23
1	2	1780	MA6	C6-N6	3.73	1.47	1.36
1	2	1573	7MG	C2-N1	3.70	1.46	1.37
1	2	998	PSU	C4-N3	3.68	1.45	1.38
38	1	26	M2G	C2-N1	3.63	1.45	1.36
1	2	120	PSU	C4-N3	3.61	1.45	1.38
38	1	46	7MG	C5-C6	3.56	1.52	1.43
1	2	1573	7MG	C5-C6	3.53	1.52	1.43
38	1	9	1MG	C5-C6	3.42	1.54	1.45
38	1	46	7MG	C6-N1	3.28	1.45	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
38	1	9	1MG	C5-N7	-3.28	1.32	1.39
1	2	1426	2MG	C5-N7	-3.17	1.32	1.39
38	1	64	RIA	O3A-C3A	-3.11	1.35	1.43
38	1	58	1MA	C5-N7	-3.09	1.32	1.39
38	1	64	RIA	O2'-C2'	3.07	1.50	1.43
1	2	1573	7MG	C6-N1	3.07	1.44	1.38
1	2	1570	2MG	C5-N7	-3.00	1.33	1.39
38	1	10	2MG	C5-N7	-3.00	1.33	1.39
38	1	64	RIA	C5-N7	-3.00	1.33	1.39
1	2	1006	5MC	O2-C2	-2.96	1.18	1.23
1	2	1637	5MC	O2-C2	-2.93	1.18	1.23
38	1	64	RIA	O2A-C2A	2.89	1.51	1.43
1	2	1780	MA6	C5-C4	-2.89	1.33	1.39
1	2	998	PSU	O4'-C1'	-2.82	1.39	1.43
38	1	48	5MC	O2-C2	-2.78	1.18	1.23
38	1	26	M2G	C5-N7	-2.77	1.33	1.39
38	1	26	M2G	C6-N1	2.76	1.44	1.38
38	1	49	5MC	O2-C2	-2.68	1.18	1.23
1	2	1573	7MG	O6-C6	-2.68	1.18	1.23
38	1	37	T6A	C5-N7	-2.63	1.34	1.39
1	2	120	PSU	O4-C4	-2.63	1.18	1.23
1	2	998	PSU	O4-C4	-2.62	1.18	1.23
1	2	1426	2MG	O6-C6	-2.57	1.18	1.23
38	1	10	2MG	C5-C6	2.55	1.53	1.44
1	2	766	PSU	O4-C4	-2.54	1.18	1.23
38	1	26	M2G	C5-C6	2.54	1.53	1.44
38	1	46	7MG	O6-C6	-2.54	1.18	1.23
1	2	1289	PSU	O4-C4	-2.52	1.18	1.23
1	2	465	PSU	O4-C4	-2.52	1.18	1.23
38	1	47	H2U	O2-C2	-2.50	1.18	1.23
1	2	1780	MA6	C5-N7	-2.49	1.34	1.39
38	1	16	H2U	O2-C2	-2.48	1.18	1.23
1	2	1570	2MG	O6-C6	-2.48	1.18	1.23
38	1	37	T6A	ODA-C13	2.46	1.29	1.22
1	2	1570	2MG	C5-C6	2.45	1.53	1.44
38	1	26	M2G	O6-C6	-2.45	1.18	1.23
38	1	10	2MG	O6-C6	-2.41	1.19	1.23
1	2	1426	2MG	C5-C6	2.35	1.53	1.44
38	1	64	RIA	O3'-C3'	-2.34	1.37	1.43
38	1	10	2MG	C6-N1	2.33	1.43	1.38
1	2	766	PSU	O4'-C1'	-2.30	1.40	1.43
38	1	37	T6A	C2-N1	2.27	1.38	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	2	1570	2MG	C6-N1	2.27	1.43	1.38
1	2	465	PSU	O2-C2	-2.25	1.18	1.23
1	2	1426	2MG	C4-N9	-2.24	1.32	1.38
1	2	120	PSU	O2-C2	-2.20	1.18	1.23
1	2	766	PSU	O2-C2	-2.20	1.18	1.23
1	2	1426	2MG	C6-N1	2.20	1.43	1.38
38	1	58	1MA	CM1-N1	-2.19	1.42	1.46
1	2	1289	PSU	O2-C2	-2.19	1.18	1.23
38	1	64	RIA	P'-O5'	2.19	1.67	1.60
38	1	37	T6A	C5-C4	-2.19	1.35	1.39
38	1	64	RIA	C2-N1	2.19	1.37	1.33
1	2	998	PSU	O2-C2	-2.13	1.18	1.23
1	2	1780	MA6	C8-N9	-2.10	1.34	1.37
1	2	1190	B8N	O4'-C1'	-2.08	1.41	1.43
38	1	37	T6A	C6-N6	2.07	1.43	1.39
1	2	1289	PSU	C4-C5	2.07	1.50	1.44
1	2	1190	B8N	O4-C4	-2.03	1.18	1.23
1	2	1190	B8N	O2-C2	-2.02	1.18	1.22

All (161) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	2	1780	MA6	N1-C6-N6	-12.09	102.13	116.86
1	2	1780	MA6	C5-C6-N6	7.78	137.65	125.33
38	1	10	2MG	C2-N3-C4	6.98	120.73	112.00
38	1	58	1MA	C1'-N9-C8	-6.70	107.70	126.73
38	1	9	1MG	C1'-N9-C4	-6.67	106.78	126.49
1	2	1570	2MG	C2-N3-C4	6.51	120.14	112.00
38	1	9	1MG	C1'-N9-C8	6.26	144.51	126.73
38	1	10	2MG	C5-C4-N3	-5.92	118.97	128.39
38	1	64	RIA	C5-C4-N3	-5.88	118.62	126.72
1	2	1426	2MG	C2-N3-C4	5.88	119.35	112.00
38	1	64	RIA	N3-C2-N1	-5.75	119.87	128.58
38	1	58	1MA	C1'-N9-C4	5.73	143.41	126.49
1	2	1780	MA6	N1-C2-N3	-5.69	119.98	128.58
38	1	37	T6A	N3-C2-N1	-5.66	120.02	128.58
38	1	26	M2G	C5-C4-N3	-5.44	119.74	128.39
1	2	1570	2MG	C5-C4-N3	-5.35	119.88	128.39
1	2	1190	B8N	C5-C4-N3	5.33	125.84	116.15
1	2	1573	7MG	C5-C6-N1	5.24	120.16	110.94
38	1	9	1MG	C5-C4-N3	-5.17	120.16	128.39
1	2	1780	MA6	C5-C4-N3	-5.16	119.61	126.72

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
38	1	37	T6A	C5-C4-N3	-5.15	119.62	126.72
1	2	1426	2MG	C5-C4-N3	-5.14	120.21	128.39
38	1	58	1MA	N1-C2-N3	-5.13	119.90	126.00
38	1	46	7MG	C5-C6-N1	5.00	119.74	110.94
1	2	120	PSU	C4-N3-C2	-4.93	119.57	126.37
1	2	766	PSU	C4-N3-C2	-4.85	119.69	126.37
38	1	37	T6A	N6-C10-N11	4.80	120.37	113.77
1	2	1190	B8N	C4-N3-C2	-4.75	119.77	125.62
38	1	58	1MA	C5-C4-N3	-4.73	120.31	127.27
1	2	998	PSU	C4-N3-C2	-4.73	119.86	126.37
38	1	64	RIA	N6-C6-N1	-4.69	107.94	118.38
1	2	120	PSU	N1-C2-N3	4.61	120.03	115.17
1	2	1573	7MG	C2-N3-C4	4.59	120.20	112.30
38	1	46	7MG	C2-N3-C4	4.53	120.10	112.30
1	2	1426	2MG	C2-N1-C6	-4.52	119.08	124.55
1	2	465	PSU	C4-N3-C2	-4.47	120.22	126.37
1	2	1573	7MG	C5-C4-N3	-4.44	119.79	128.13
1	2	998	PSU	N1-C2-N3	4.41	119.82	115.17
1	2	766	PSU	N1-C2-N3	4.40	119.80	115.17
1	2	1289	PSU	C4-N3-C2	-4.33	120.40	126.37
38	1	37	T6A	C4-C5-C6	4.27	120.33	116.78
38	1	26	M2G	C2-N3-C4	4.26	120.39	112.51
1	2	1570	2MG	C2-N1-C6	-4.25	119.41	124.55
38	1	10	2MG	C2-N1-C6	-4.24	119.42	124.55
38	1	37	T6A	N9-C8-N7	-4.17	108.01	113.94
1	2	1289	PSU	N1-C2-N3	4.15	119.54	115.17
38	1	46	7MG	C5-C4-N3	-4.12	120.40	128.13
1	2	1780	MA6	N9-C8-N7	-4.11	108.10	113.94
38	1	64	RIA	N3-C4-N9	4.09	134.12	127.17
1	2	465	PSU	N1-C2-N3	3.99	119.38	115.17
1	2	1780	MA6	C4-C5-C6	3.98	120.02	115.91
1	2	1573	7MG	C4-C5-N7	3.89	109.97	105.38
38	1	46	7MG	C4-C5-N7	3.76	109.82	105.38
38	1	64	RIA	C2-N3-C4	3.75	120.99	111.83
38	1	58	1MA	C2-N3-C4	3.75	119.88	112.53
38	1	10	2MG	N9-C4-N3	3.69	133.33	125.95
38	1	64	RIA	C1'-C2'-C3'	3.68	106.87	102.29
1	2	1190	B8N	C1'-C5-C4	3.68	123.19	117.61
38	1	10	2MG	N1-C2-N2	3.63	120.27	116.56
38	1	64	RIA	N9-C8-N7	-3.63	108.79	113.94
38	1	9	1MG	C2-N3-C4	3.61	120.11	111.98
1	2	998	PSU	C6-N1-C2	-3.58	119.37	122.69

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	2	1780	MA6	C2-N3-C4	3.46	120.29	111.83
38	1	26	M2G	N9-C4-N3	3.43	132.81	125.95
38	1	64	RIA	C1'-O2A-C2A	-3.42	109.86	117.98
38	1	37	T6A	C2-N3-C4	3.42	120.18	111.83
1	2	1190	B8N	N3-C2-N1	3.40	120.88	116.72
38	1	64	RIA	C5-C6-N6	3.34	131.56	123.29
38	1	9	1MG	N9-C4-N3	3.33	132.62	125.95
1	2	1426	2MG	N1-C2-N2	3.32	119.95	116.56
1	2	1780	MA6	C2-N1-C6	3.29	119.88	111.83
1	2	1289	PSU	C6-N1-C2	-3.29	119.64	122.69
1	2	120	PSU	C6-N1-C2	-3.28	119.64	122.69
1	2	766	PSU	C6-C5-C4	3.27	120.38	118.17
38	1	47	H2U	N3-C2-N1	3.26	119.92	116.65
1	2	1780	MA6	N3-C4-N9	3.23	132.67	127.17
38	1	9	1MG	N9-C8-N7	-3.23	107.42	113.40
38	1	58	1MA	N9-C8-N7	-3.22	107.43	113.40
1	2	1570	2MG	N9-C4-N3	3.22	132.38	125.95
1	2	120	PSU	C6-C5-C4	3.20	120.34	118.17
38	1	48	5MC	C5-C6-N1	-3.19	119.85	123.31
38	1	16	H2U	N3-C2-N1	3.18	119.84	116.65
38	1	46	7MG	C5-C4-N9	3.17	110.40	106.33
38	1	47	H2U	C5-C6-N1	3.17	121.11	111.52
1	2	1573	7MG	C2-N1-C6	-3.13	119.44	125.11
1	2	1573	7MG	C5-C4-N9	3.12	110.33	106.33
1	2	1637	5MC	C5-C6-N1	-3.09	119.96	123.31
1	2	1570	2MG	N1-C2-N2	3.06	119.68	116.56
1	2	465	PSU	C6-N1-C2	-3.03	119.88	122.69
38	1	37	T6A	N3-C4-N9	3.02	132.31	127.17
1	2	766	PSU	C6-N1-C2	-3.02	119.89	122.69
1	2	1573	7MG	N9-C4-N3	3.01	129.87	125.46
38	1	37	T6A	C5-N7-C8	2.99	108.15	103.45
38	1	16	H2U	C5-C4-N3	2.98	119.86	116.69
1	2	1190	B8N	O4-C4-N3	-2.93	115.23	119.99
1	2	1570	2MG	N9-C8-N7	-2.91	108.00	113.40
38	1	49	5MC	C1'-N1-C6	-2.90	116.37	121.15
38	1	9	1MG	C5-C6-N1	2.90	120.37	115.02
38	1	49	5MC	C1'-N1-C2	2.88	124.80	118.44
38	1	16	H2U	C5-C6-N1	2.88	120.23	111.52
38	1	26	M2G	N9-C8-N7	-2.87	108.07	113.40
38	1	26	M2G	O6-C6-C5	-2.86	118.98	126.53
1	2	1573	7MG	O6-C6-C5	-2.84	120.65	127.62
1	2	1780	MA6	C5-N7-C8	2.84	107.91	103.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
38	1	46	7MG	O6-C6-C5	-2.80	120.75	127.62
38	1	46	7MG	C2-N1-C6	-2.79	120.06	125.11
1	2	1426	2MG	N9-C4-N3	2.77	131.49	125.95
1	2	998	PSU	C6-C5-C4	2.76	120.04	118.17
38	1	64	RIA	O1'-C1'-C2'	2.76	108.48	104.98
38	1	10	2MG	N9-C8-N7	-2.72	108.35	113.40
38	1	26	M2G	C5-C6-N1	2.72	120.18	113.25
1	2	766	PSU	O2-C2-N1	-2.72	119.99	122.79
38	1	64	RIA	C5-N7-C8	2.70	107.69	103.45
1	2	1570	2MG	C5-C6-N1	2.70	120.11	113.25
38	1	37	T6A	O10-C10-N6	-2.69	118.87	123.64
1	2	1426	2MG	CM2-N2-C2	-2.67	117.92	123.65
38	1	10	2MG	C5-C6-N1	2.65	119.99	113.25
1	2	998	PSU	O2-C2-N1	-2.64	120.06	122.79
1	2	120	PSU	O2-C2-N1	-2.59	120.11	122.79
1	2	1570	2MG	O6-C6-C5	-2.56	119.79	126.53
38	1	46	7MG	N9-C4-N3	2.55	129.19	125.46
1	2	465	PSU	O2-C2-N1	-2.53	120.18	122.79
38	1	49	5MC	O2-C2-N3	-2.53	118.35	122.33
1	2	1426	2MG	O6-C6-C5	-2.52	119.87	126.53
1	2	1426	2MG	C5-C6-N1	2.52	119.66	113.25
1	2	1637	5MC	CM5-C5-C6	-2.50	119.47	122.85
1	2	1426	2MG	N9-C8-N7	-2.48	108.80	113.40
38	1	58	1MA	N9-C4-N3	2.47	132.54	126.90
38	1	47	H2U	C5-C4-N3	2.44	119.28	116.69
1	2	1289	PSU	O2-C2-N1	-2.44	120.27	122.79
38	1	10	2MG	O6-C6-C5	-2.44	120.10	126.53
38	1	16	H2U	O2-C2-N1	-2.42	120.19	123.10
1	2	1190	B8N	O4'-C1'-C2'	2.37	108.43	105.15
38	1	64	RIA	C6-C5-C4	2.32	120.34	117.18
1	2	1426	2MG	C1'-N9-C4	-2.31	119.66	126.49
38	1	37	T6A	C4-C5-N7	-2.29	107.97	110.58
1	2	1573	7MG	N9-C8-N7	2.25	106.56	103.37
38	1	9	1MG	C8-N7-C5	2.25	108.26	104.26
1	2	1006	5MC	C5-C4-N3	-2.24	119.46	121.75
38	1	49	5MC	C5-C4-N3	-2.22	119.48	121.75
38	1	10	2MG	C8-N7-C5	2.22	108.21	104.26
38	1	58	1MA	C8-N7-C5	2.20	108.18	104.26
38	1	47	H2U	O2-C2-N1	-2.19	120.47	123.10
1	2	1190	B8N	C31-N3-C2	2.19	120.87	117.64
38	1	46	7MG	N9-C8-N7	2.16	106.43	103.37
1	2	1780	MA6	C4-N9-C8	2.14	107.99	105.74

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	2	1426	2MG	C1'-N9-C8	2.14	132.80	126.73
38	1	10	2MG	N1-C2-N3	-2.13	120.09	123.68
1	2	1570	2MG	C1'-N9-C4	-2.13	120.20	126.49
1	2	1190	B8N	O4-C4-C5	-2.11	118.93	122.58
1	2	1190	B8N	C32-C31-N3	2.10	115.82	112.16
1	2	1570	2MG	C8-N7-C5	2.09	107.99	104.26
38	1	64	RIA	C3A-C2A-C1A	2.08	106.78	102.81
1	2	1006	5MC	C5-C6-N1	-2.08	121.06	123.31
38	1	37	T6A	C5-C4-N9	2.07	108.06	105.81
1	2	1570	2MG	N1-C2-N3	-2.06	120.21	123.68
1	2	766	PSU	O4'-C1'-C2'	2.04	107.97	105.15
38	1	26	M2G	C8-N7-C5	2.03	107.88	104.26
1	2	1780	MA6	C4-C5-N7	-2.02	108.28	110.58
38	1	26	M2G	C1'-N9-C8	-2.02	121.00	126.73
1	2	1637	5MC	C5-C4-N3	-2.01	119.69	121.75

There are no chirality outliers.

All (65) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	2	465	PSU	C2'-C1'-C5-C4
1	2	465	PSU	O4'-C4'-C5'-O5'
1	2	998	PSU	O4'-C4'-C5'-O5'
1	2	1190	B8N	O4'-C4'-C5'-O5'
1	2	1289	PSU	C2'-C1'-C5-C4
1	2	1289	PSU	C2'-C1'-C5-C6
1	2	1289	PSU	C3'-C4'-C5'-O5'
1	2	1289	PSU	O4'-C4'-C5'-O5'
1	2	1780	MA6	O4'-C4'-C5'-O5'
38	1	9	1MG	O4'-C4'-C5'-O5'
38	1	16	H2U	C4'-C5'-O5'-P
38	1	37	T6A	C13-C12-C14-O14
38	1	37	T6A	C13-C12-C14-C15
38	1	49	5MC	O4'-C4'-C5'-O5'
38	1	37	T6A	C13-C12-N11-C10
1	2	1190	B8N	C3'-C4'-C5'-O5'
1	2	1570	2MG	O4'-C4'-C5'-O5'
1	2	1570	2MG	C3'-C4'-C5'-O5'
1	2	1573	7MG	O4'-C4'-C5'-O5'
38	1	9	1MG	C3'-C4'-C5'-O5'
38	1	16	H2U	C3'-C4'-C5'-O5'
38	1	26	M2G	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
38	1	26	M2G	C3'-C4'-C5'-O5'
38	1	49	5MC	C3'-C4'-C5'-O5'
38	1	64	RIA	O4'-C4A-C5A-O5A
38	1	64	RIA	C3A-C4A-C5A-O5A
1	2	1573	7MG	C3'-C4'-C5'-O5'
38	1	16	H2U	O4'-C4'-C5'-O5'
1	2	465	PSU	C3'-C4'-C5'-O5'
1	2	998	PSU	C3'-C4'-C5'-O5'
1	2	1637	5MC	O4'-C4'-C5'-O5'
38	1	48	5MC	C3'-C4'-C5'-O5'
38	1	37	T6A	N11-C12-C14-C15
1	2	1780	MA6	C3'-C4'-C5'-O5'
38	1	48	5MC	O4'-C4'-C5'-O5'
38	1	64	RIA	O1'-C4'-C5'-O5'
38	1	64	RIA	C3'-C4'-C5'-O5'
38	1	47	H2U	C3'-C4'-C5'-O5'
38	1	64	RIA	C4A-C5A-O5A-P
38	1	46	7MG	C4'-C5'-O5'-P
38	1	37	T6A	N11-C12-C14-O14
38	1	10	2MG	O4'-C4'-C5'-O5'
38	1	48	5MC	C4'-C5'-O5'-P
38	1	37	T6A	C14-C12-N11-C10
38	1	64	RIA	C2A-C1A-N9-C4
38	1	64	RIA	C2A-C1A-N9-C8
1	2	998	PSU	C4'-C5'-O5'-P
38	1	47	H2U	C4'-C5'-O5'-P
1	2	1190	B8N	O4'-C1'-C5-C4
1	2	1573	7MG	C2'-C1'-N9-C8
38	1	16	H2U	C2'-C1'-N1-C6
38	1	49	5MC	C2'-C1'-N1-C6
38	1	49	5MC	C4'-C5'-O5'-P
1	2	1637	5MC	C3'-C4'-C5'-O5'
38	1	49	5MC	C2'-C1'-N1-C2
1	2	1426	2MG	C4'-C5'-O5'-P
38	1	10	2MG	C4'-C5'-O5'-P
38	1	47	H2U	C2'-C1'-N1-C6
38	1	37	T6A	C5-C6-N6-C10
1	2	1190	B8N	O4'-C1'-C5-C6
1	2	465	PSU	C2'-C1'-C5-C6
38	1	10	2MG	C3'-C4'-C5'-O5'
38	1	16	H2U	O4'-C1'-N1-C2
38	1	64	RIA	C3A-C2A-O2A-C1'

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Mol	Chain	Res	Type	Atoms
38	1	47	H2U	O4'-C4'-C5'-O5'

There are no ring outliers.

18 monomers are involved in 32 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
38	1	64	RIA	3	0
38	1	9	1MG	2	0
1	2	1006	5MC	4	0
38	1	16	H2U	1	0
38	1	48	5MC	2	0
38	1	58	1MA	2	0
38	1	47	H2U	1	0
38	1	46	7MG	2	0
38	1	26	M2G	3	0
1	2	120	PSU	4	0
1	2	1573	7MG	2	0
1	2	998	PSU	3	0
1	2	1570	2MG	1	0
1	2	1289	PSU	1	0
1	2	1780	MA6	1	0
38	1	10	2MG	1	0
1	2	1190	B8N	1	0
1	2	1426	2MG	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 121 ligands modelled in this entry, 119 are monoatomic - leaving 2 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
46	GCP	k	602	-	32,34,34	3.19	12 (37%)	49,54,54	1.67	9 (18%)
45	MET	k	601	-	6,7,8	0.48	0	2,7,9	0.39	0

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
46	GCP	k	602	-	-	0/19/38/38	0/3/3/3
45	MET	k	601	-	-	1/5/6/8	-

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
46	k	602	GCP	O4'-C1'	8.68	1.62	1.42
46	k	602	GCP	C2'-C1'	-7.17	1.30	1.53
46	k	602	GCP	O4'-C4'	-6.32	1.30	1.45
46	k	602	GCP	PB-O3A	6.18	1.65	1.58
46	k	602	GCP	PA-O3A	5.33	1.65	1.59
46	k	602	GCP	C2-N2	4.90	1.45	1.34
46	k	602	GCP	C6-N1	-3.29	1.32	1.38
46	k	602	GCP	O2'-C2'	2.79	1.49	1.43
46	k	602	GCP	O6-C6	-2.72	1.18	1.23
46	k	602	GCP	O3'-C3'	-2.71	1.36	1.43
46	k	602	GCP	C5-N7	-2.32	1.34	1.39
46	k	602	GCP	PB-O2B	-2.05	1.51	1.56

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	k	602	GCP	C5-C4-N3	-5.28	119.99	128.39
46	k	602	GCP	C2-N3-C4	4.56	120.15	112.30
46	k	602	GCP	N9-C4-N3	3.00	131.95	125.95
46	k	602	GCP	N9-C8-N7	-2.99	107.86	113.40
46	k	602	GCP	C2-N1-C6	-2.88	119.88	125.11
46	k	602	GCP	C5-C6-N1	2.76	120.27	113.25
46	k	602	GCP	PB-O3A-PA	-2.68	123.62	132.37
46	k	602	GCP	O6-C6-C5	-2.49	119.96	126.53
46	k	602	GCP	C8-N7-C5	2.17	108.12	104.26

There are no chirality outliers.

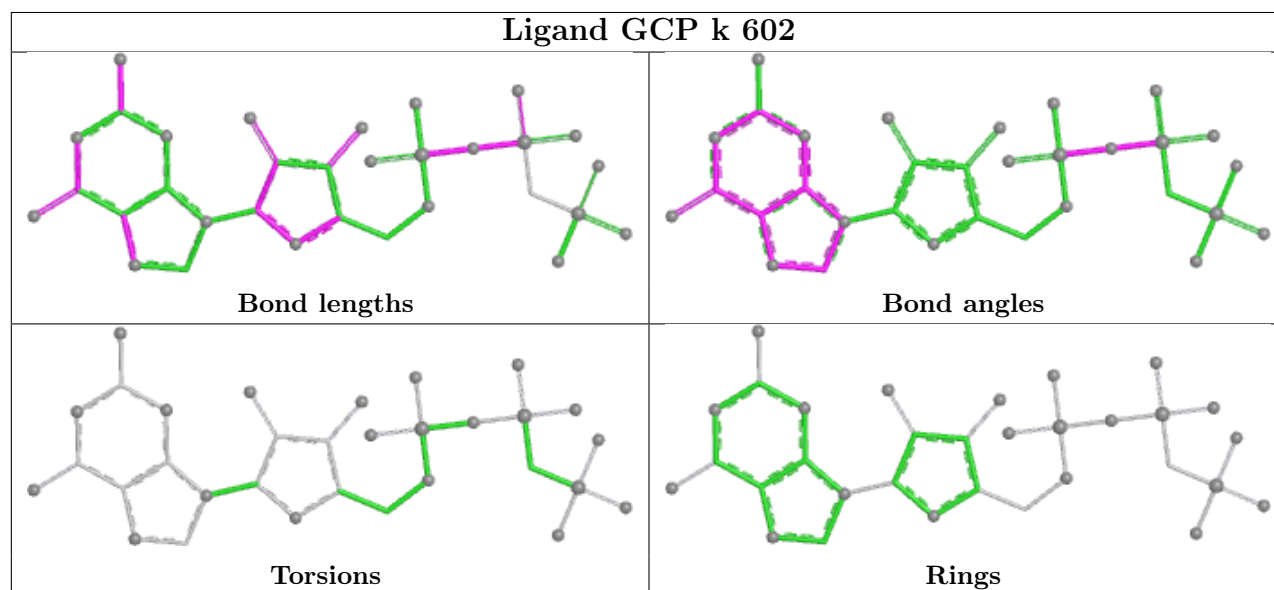
All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
45	k	601	MET	CA-CB-CG-SD

There are no ring outliers.

No monomer is involved in short contacts.

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



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
38	1	3

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	1	64:RIA	O3'	65:G	P	9.98
1	1	63:G	O3'	64:RIA	P	4.41
1	1	16:H2U	O3'	18:G	P	3.33

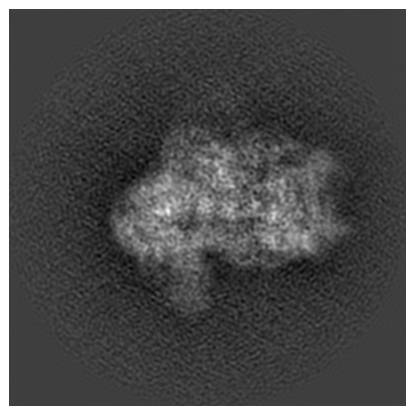
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-19807. These allow visual inspection of the internal detail of the map and identification of artifacts.

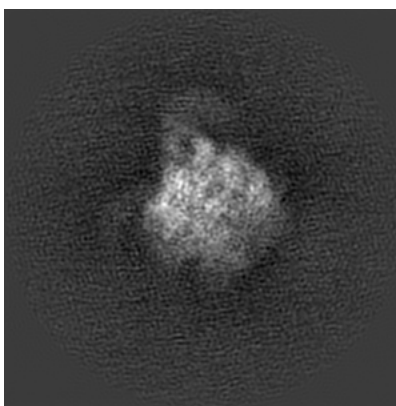
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

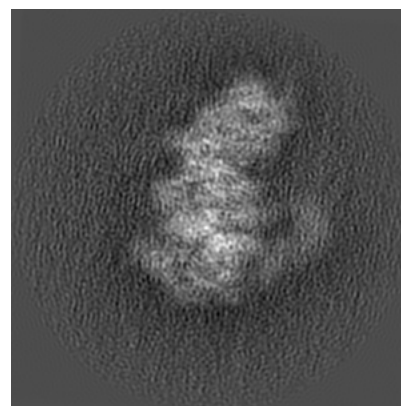
6.1.1 Primary map



X

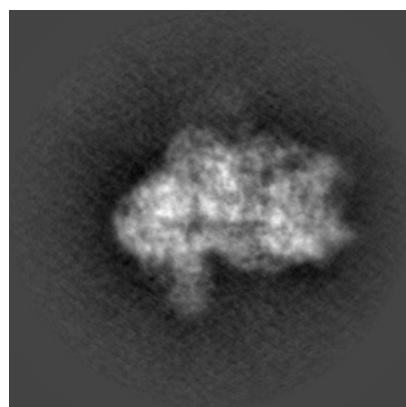


Y

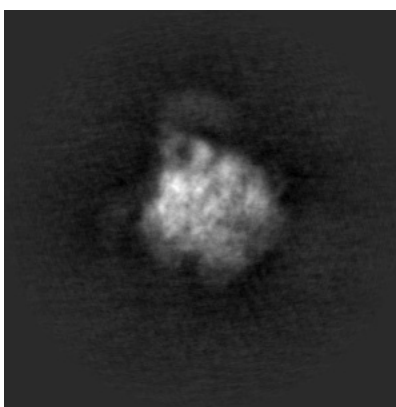


Z

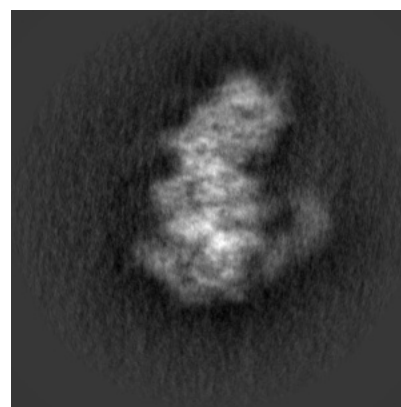
6.1.2 Raw map



X



Y

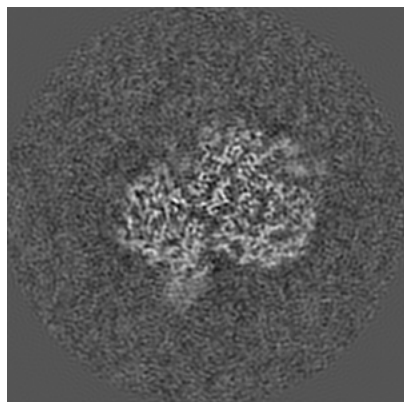


Z

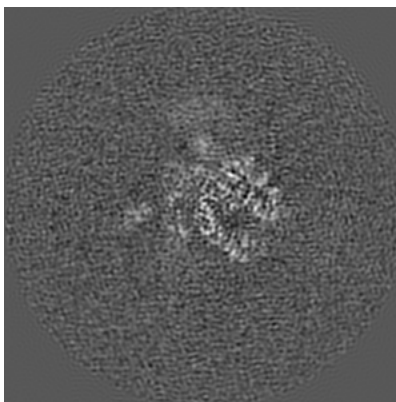
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

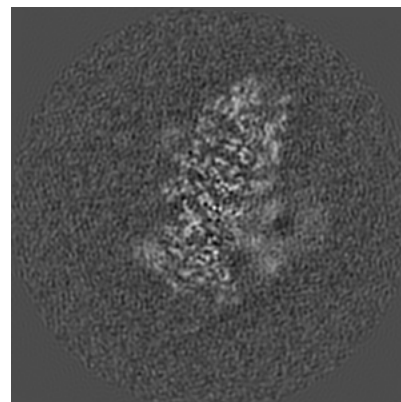
6.2.1 Primary map



X Index: 150

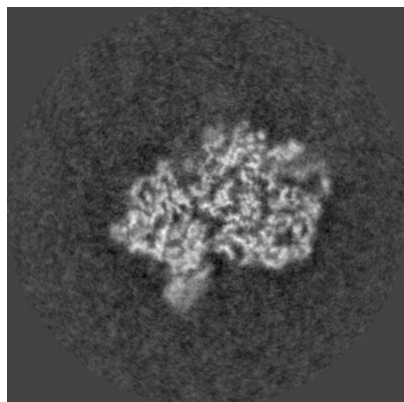


Y Index: 150

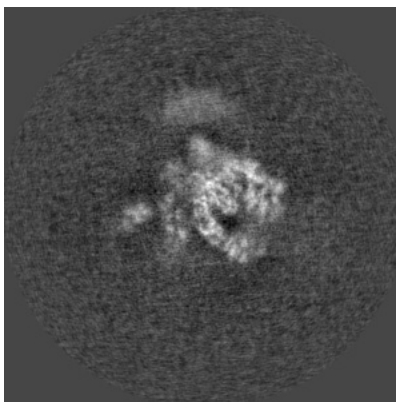


Z Index: 150

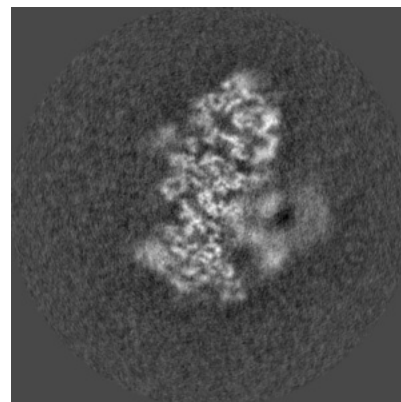
6.2.2 Raw map



X Index: 150



Y Index: 150

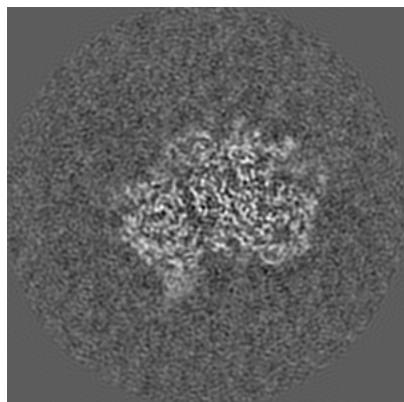


Z Index: 150

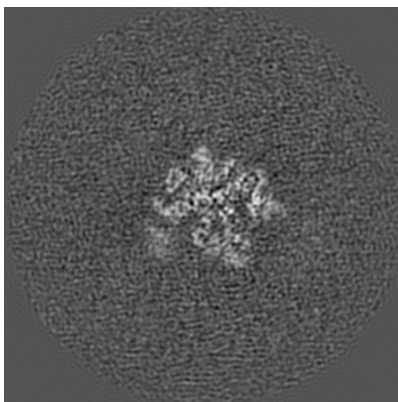
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

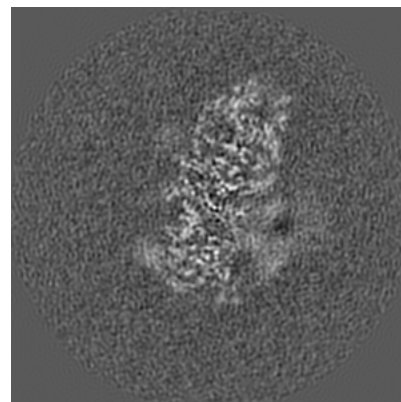
6.3.1 Primary map



X Index: 154

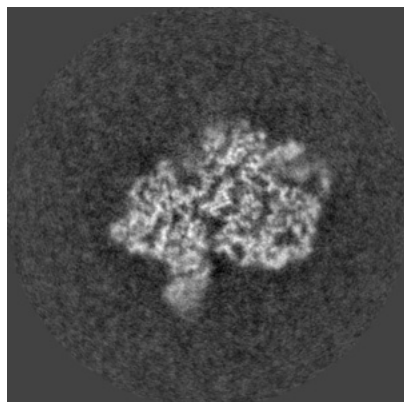


Y Index: 167

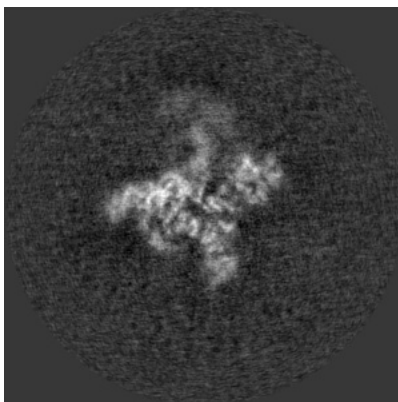


Z Index: 149

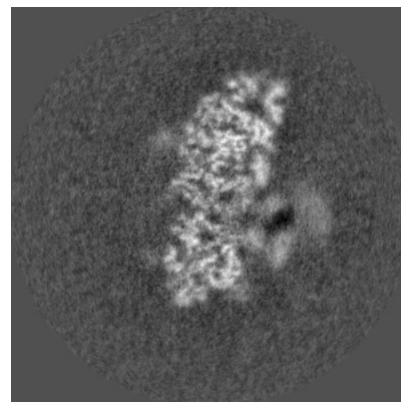
6.3.2 Raw map



X Index: 149



Y Index: 125

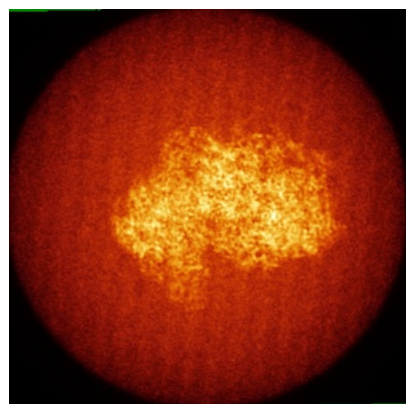


Z Index: 143

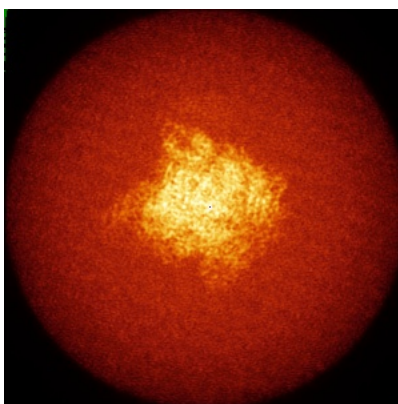
The images above show the largest variance slices of the map in three orthogonal directions.

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

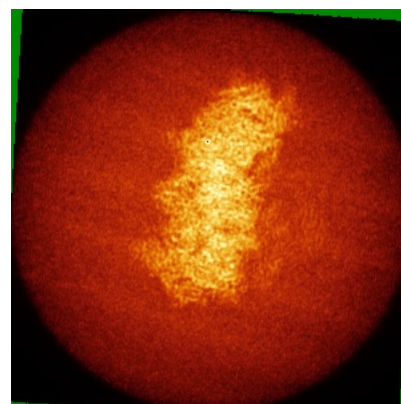
6.4.1 Primary map



X

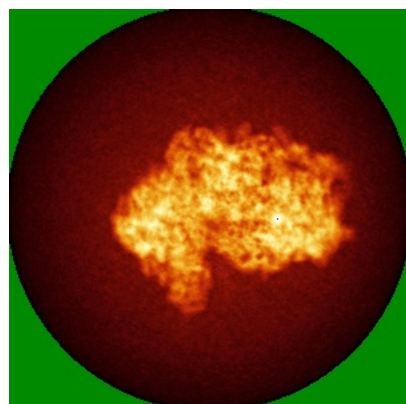


Y

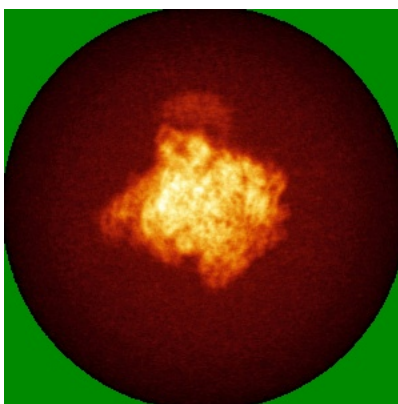


Z

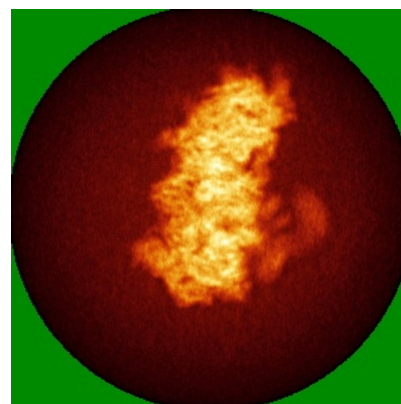
6.4.2 Raw map



X



Y

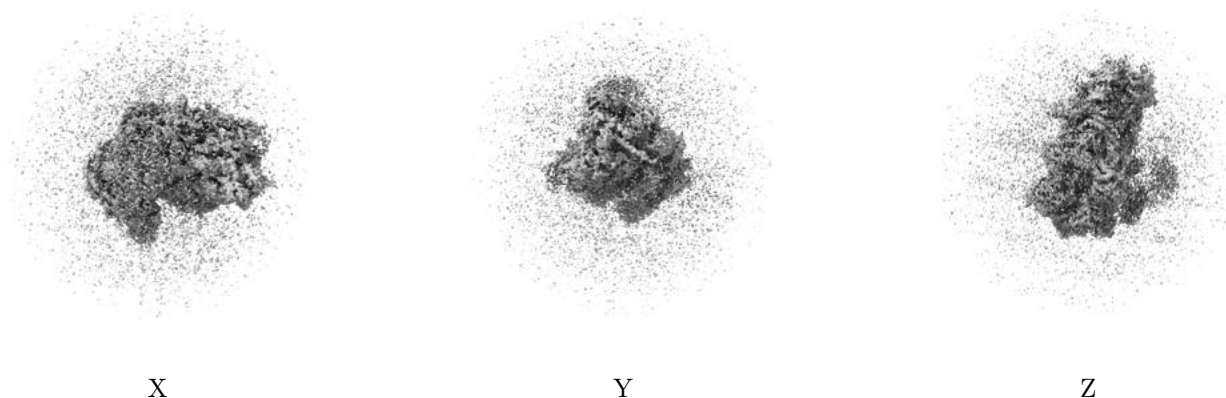


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.07. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

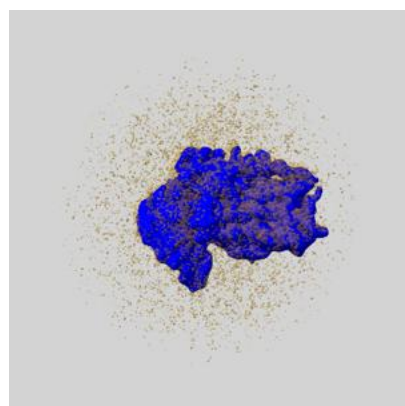
6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

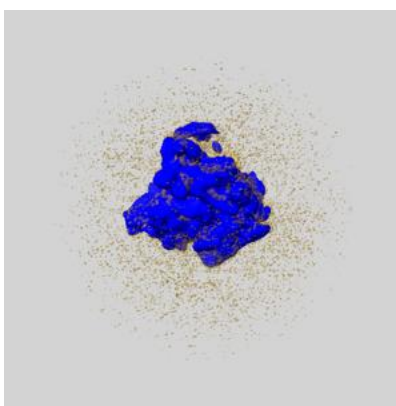
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

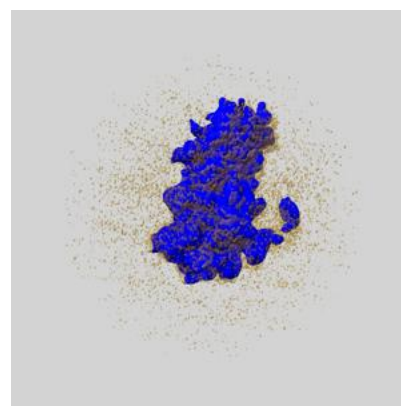
6.6.1 emd_19807_msk_1.map [i](#)



X



Y

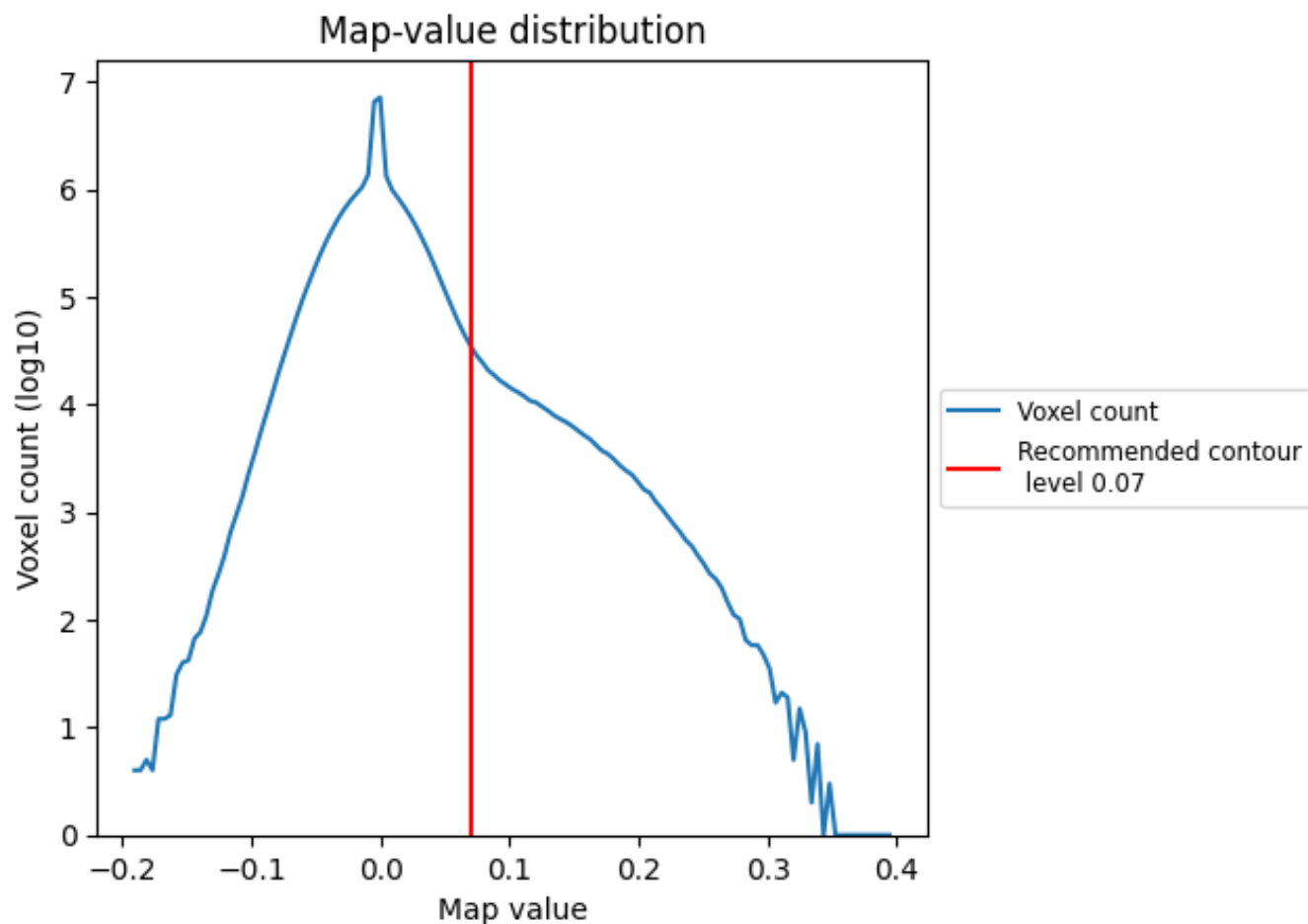


Z

7 Map analysis [i](#)

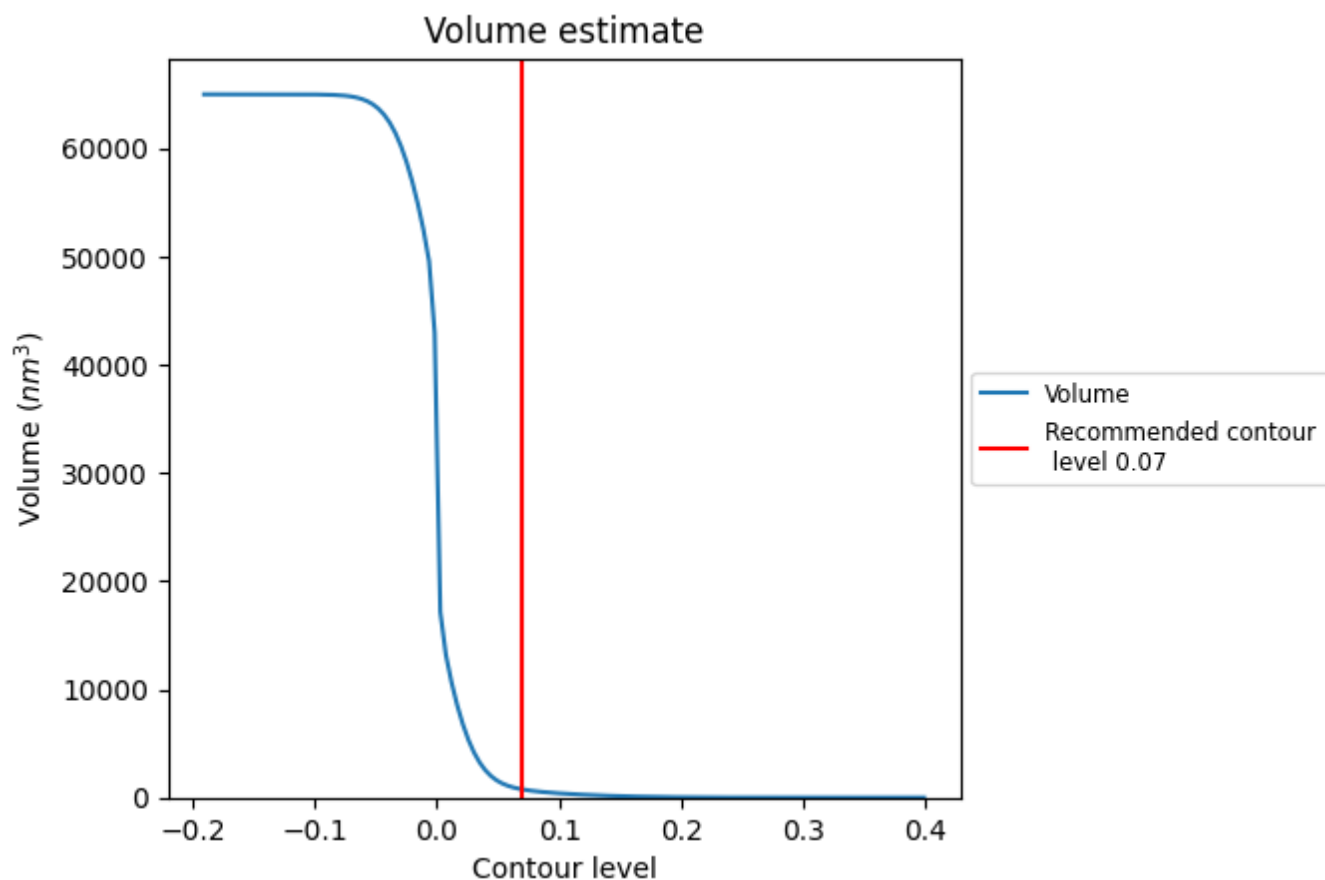
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

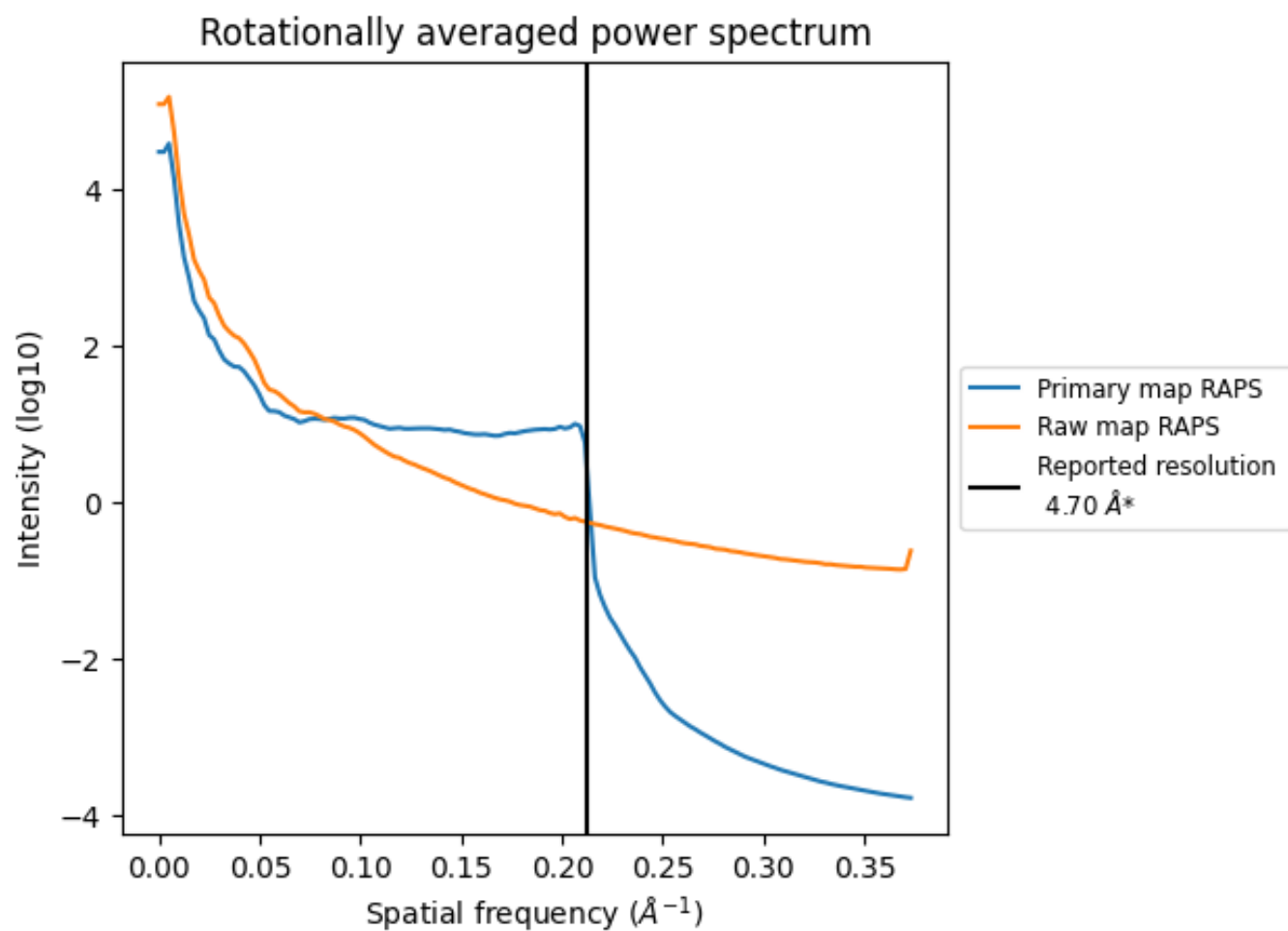
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 756 nm³; this corresponds to an approximate mass of 683 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

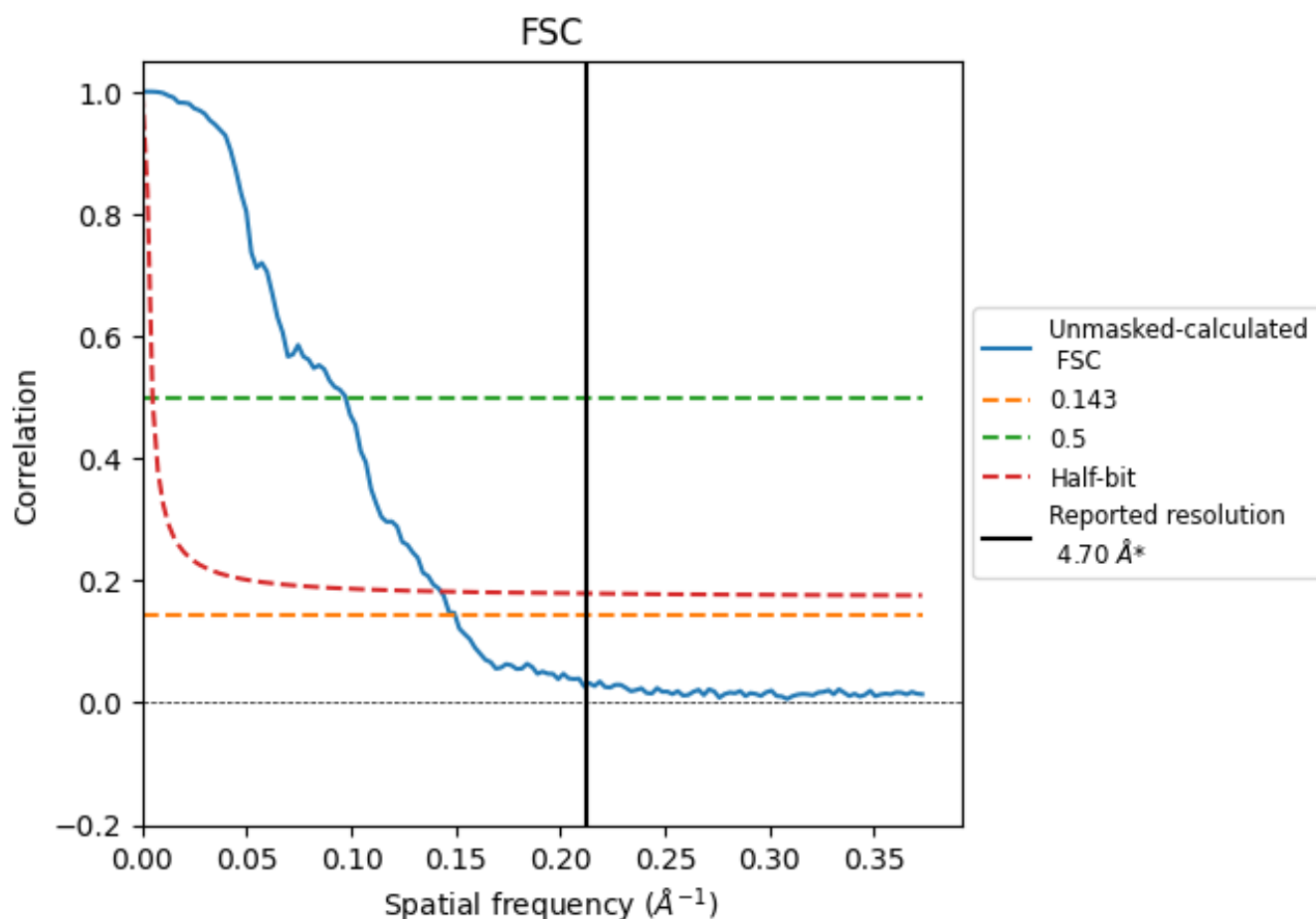


*Reported resolution corresponds to spatial frequency of 0.213 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.213 Å⁻¹

8.2 Resolution estimates [i](#)

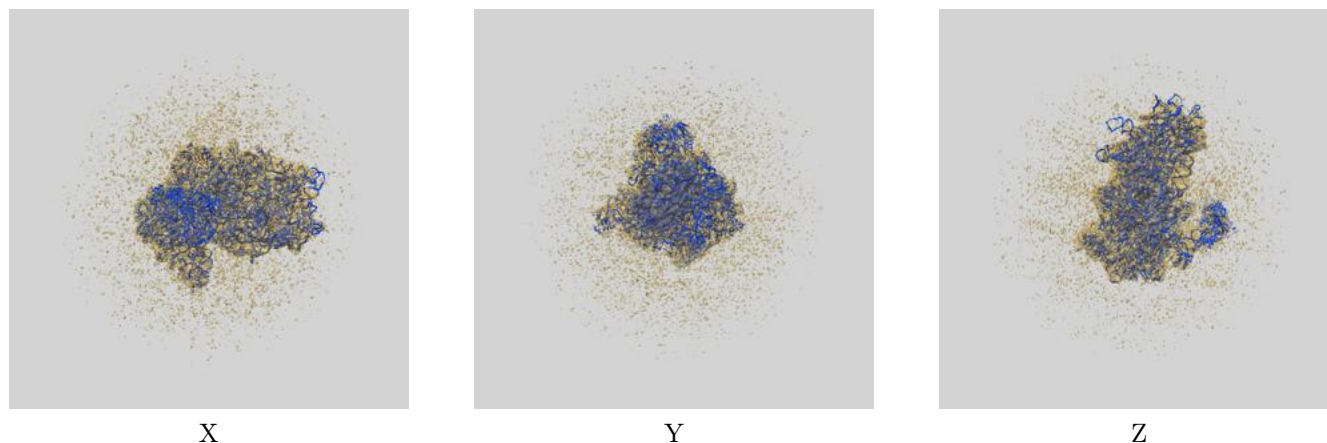
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.70	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	6.68	10.29	7.00

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 6.68 differs from the reported value 4.7 by more than 10 %

9 Map-model fit [i](#)

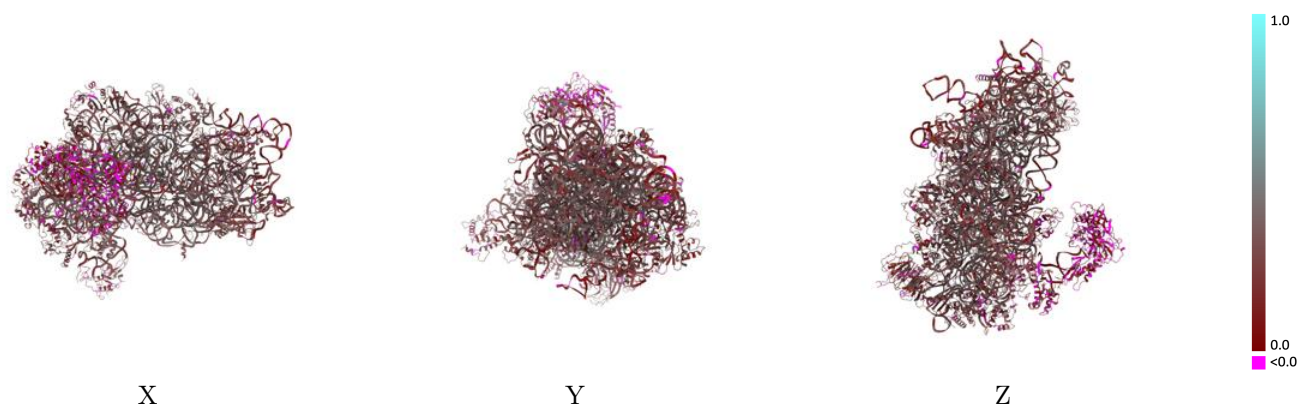
This section contains information regarding the fit between EMDB map EMD-19807 and PDB model 8S8J. Per-residue inclusion information can be found in section [3](#) on page [14](#).

9.1 Map-model overlay [i](#)



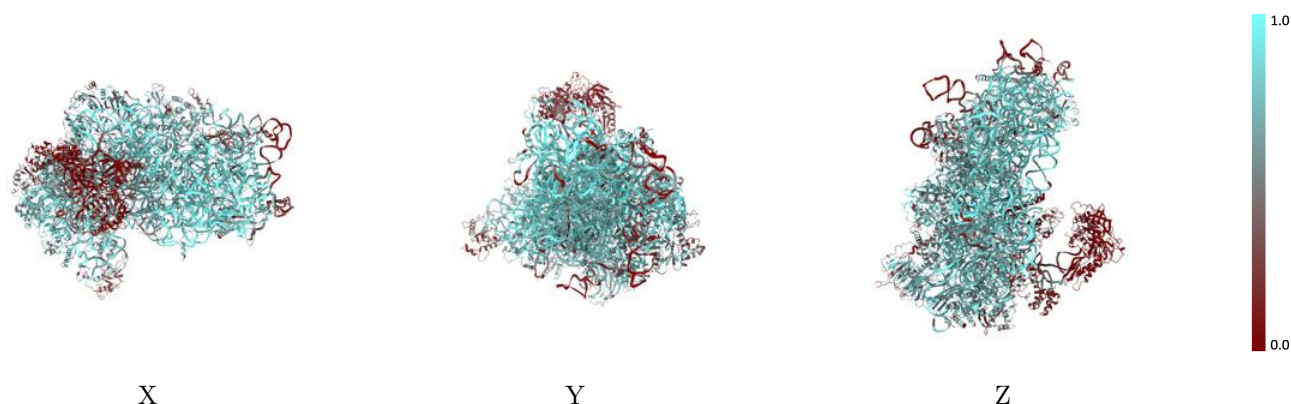
The images above show the 3D surface view of the map at the recommended contour level 0.07 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



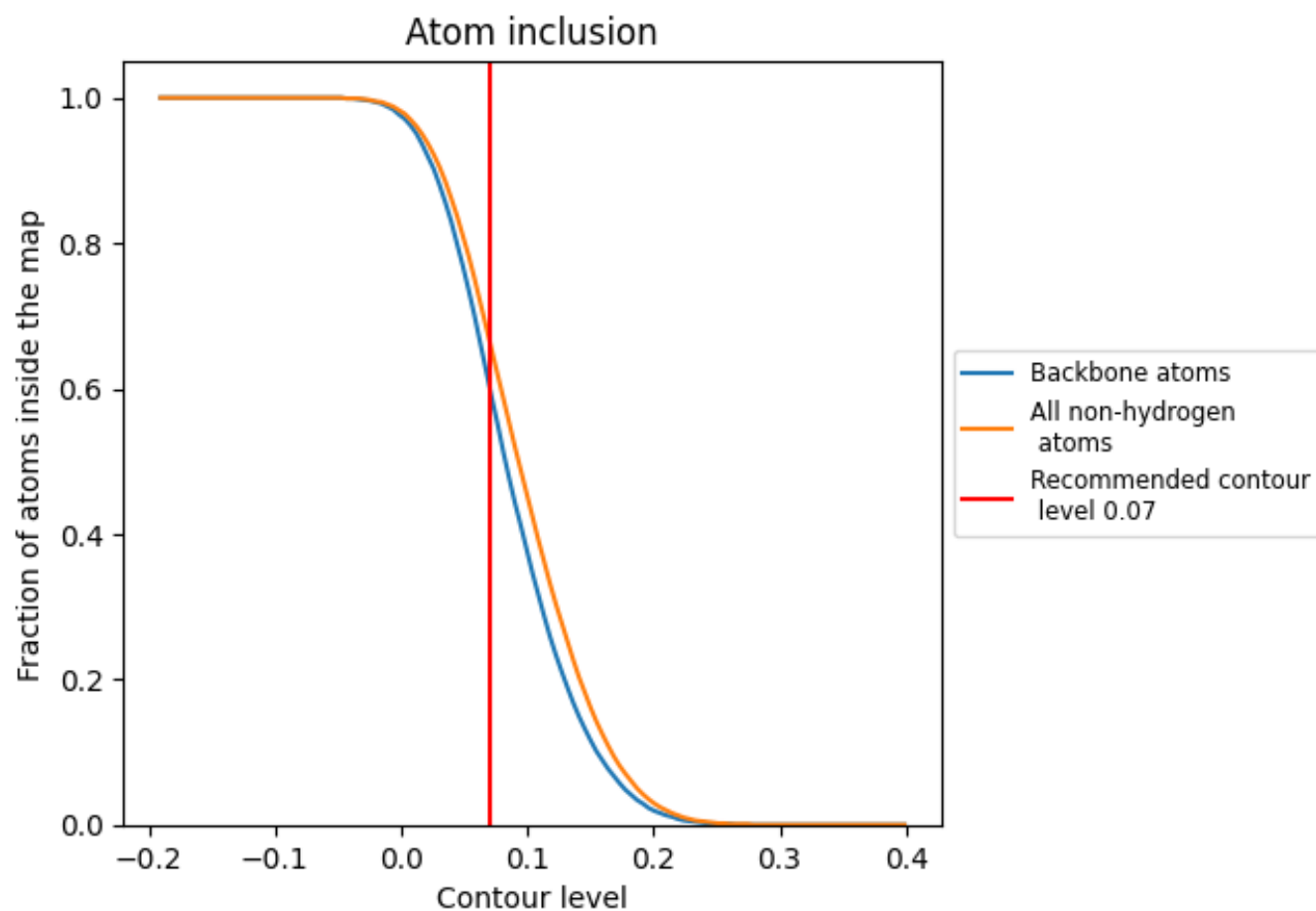
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.07).

9.4 Atom inclusion [i](#)



At the recommended contour level, 60% of all backbone atoms, 67% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.07) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6670	 0.2860
1	 0.4260	 0.1860
2	 0.8270	 0.3100
3	 0.3390	 0.2960
A	 0.6820	 0.3010
B	 0.6330	 0.2720
C	 0.7150	 0.3430
D	 0.6510	 0.3170
E	 0.7210	 0.3290
F	 0.6500	 0.2940
G	 0.6970	 0.2800
H	 0.5190	 0.2870
I	 0.6620	 0.3110
J	 0.6820	 0.3110
K	 0.6530	 0.2680
L	 0.6300	 0.3290
M	 0.2510	 0.2140
N	 0.6900	 0.3140
O	 0.6670	 0.2990
P	 0.6890	 0.2790
Q	 0.7010	 0.2920
R	 0.5710	 0.2870
S	 0.6930	 0.2780
T	 0.7190	 0.2830
U	 0.5770	 0.2990
V	 0.7410	 0.3230
W	 0.6640	 0.3380
X	 0.7020	 0.3580
Y	 0.7160	 0.3100
Z	 0.3710	 0.2090
a	 0.6650	 0.3510
b	 0.6250	 0.3160
c	 0.5870	 0.3320
d	 0.7380	 0.3290
e	 0.5330	 0.3060



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Chain	Atom inclusion	Q-score
f	 0.3860	 0.2220
g	 0.6340	 0.2660
h	 0.1410	 0.2260
i	 0.2530	 0.2790
j	 0.1440	 0.1360
k	 0.0590	 0.0730
l	 0.0430	 0.0560
m	 0.2370	 0.1590