



Full wwPDB EM Validation Report ⓘ

Mar 12, 2026 – 06:19 PM UTC

PDB ID : 8S8E / pdb_00008s8e
EMDB ID : EMD-19802
Title : Structure of a yeast 48S-AUC preinitiation complex in closed conformation (model py48S-AUC-3.1)
Authors : Villamayor-Belinchon, L.; Sharma, P.; Llacer, J.L.; Hussain, T.
Deposited on : 2024-03-06
Resolution : 3.85 Å(reported)

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

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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:

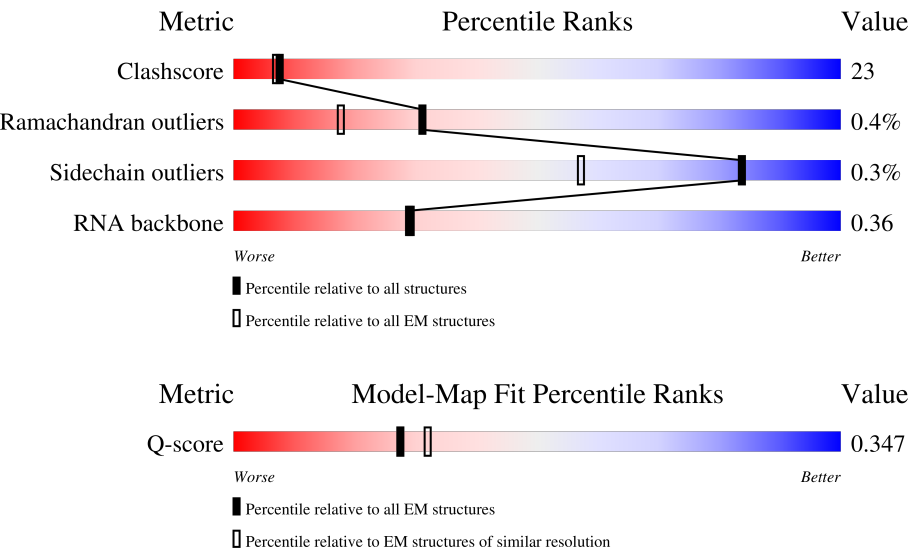
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data 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 3.85 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.



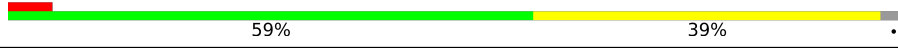
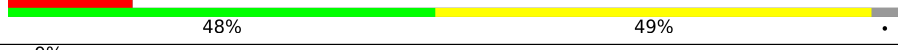
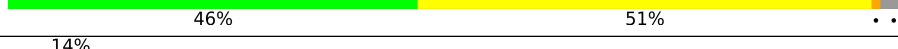
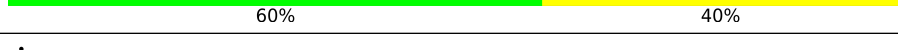
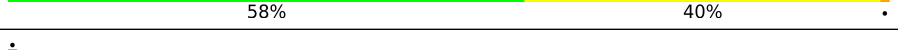
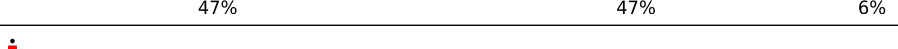
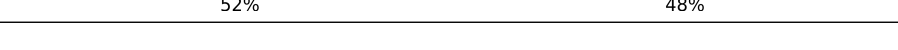
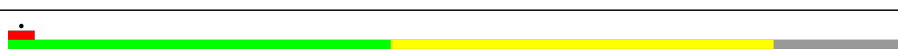
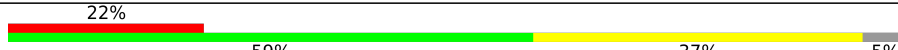
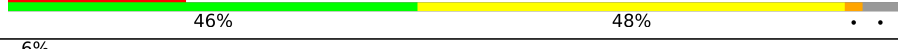
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	8989 (3.35 - 4.35)

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% 19% 57% 24%
2	A	254	6% 43% 43% 14%
3	B	255	9% 49% 38% 12%

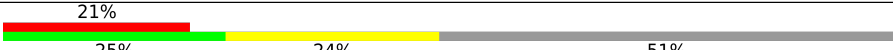
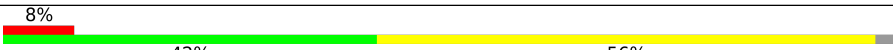
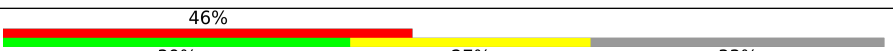
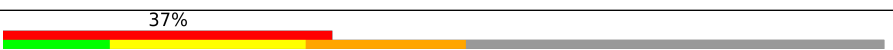
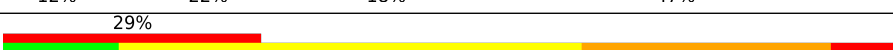
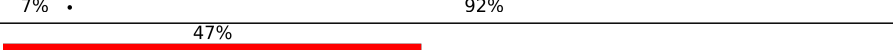
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Mol	Chain	Length	Quality of chain
4	C	259	
5	E	261	
6	G	236	
7	H	190	
8	I	201	
9	J	188	
10	L	156	
11	N	151	
12	O	137	
13	V	87	
14	W	130	
15	X	145	
16	Y	135	
17	a	119	
18	b	82	
19	e	63	
20	h	25	
21	D	237	
22	F	227	
23	K	106	
24	M	134	
25	P	142	
26	Q	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	o	964	
43	p	812	

2 Entry composition

There are 48 unique types of molecules in this entry. The entry contains 94182 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	102	Total	C	N	O	S	0	0
			820	506	158	151	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 3 subunit A.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	o	451	Total	C	N	O	S	0	0
			3683	2366	619	691	7		

- Molecule 43 is a protein called Eukaryotic translation initiation factor 3 subunit C.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	p	544	Total	C	N	O	S	0	0
			4442	2845	736	849	12		

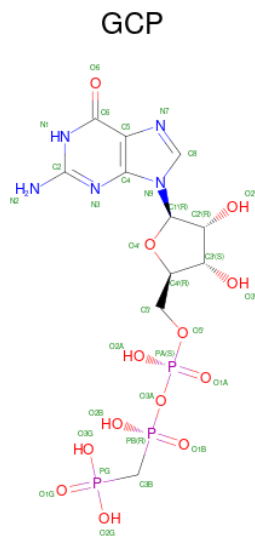
- Molecule 44 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
44	2	113	Total	Mg	0
			113	113	
44	T	1	Total	Mg	0
			1	1	
44	i	1	Total	Mg	0
			1	1	
44	k	1	Total	Mg	0
			1	1	

- Molecule 45 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

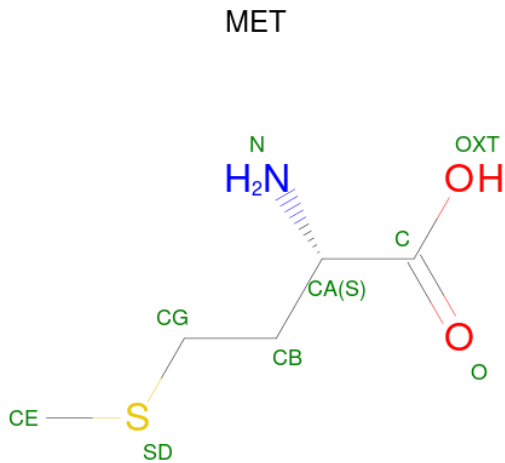
Mol	Chain	Residues	Atoms		AltConf
45	a	1	Total	Zn	0
			1	1	
45	b	1	Total	Zn	0
			1	1	
45	f	1	Total	Zn	0
			1	1	

- 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 METHIONINE (CCD ID: MET) (formula: $\text{C}_5\text{H}_{11}\text{NO}_2\text{S}$) (labeled as "Ligand of Interest" by depositor).



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

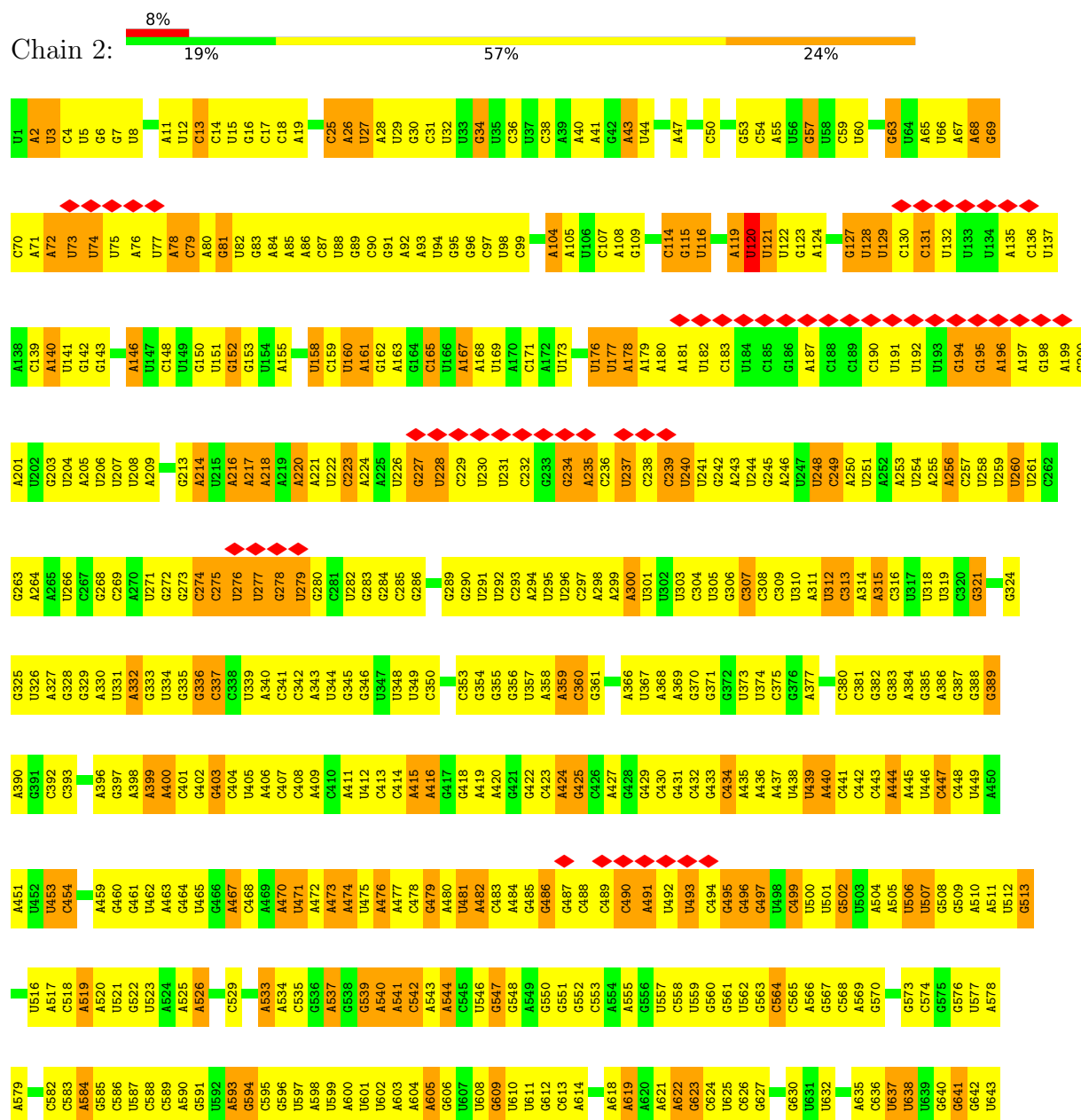
- Molecule 48 is water.

Mol	Chain	Residues	Atoms		AltConf
48	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.

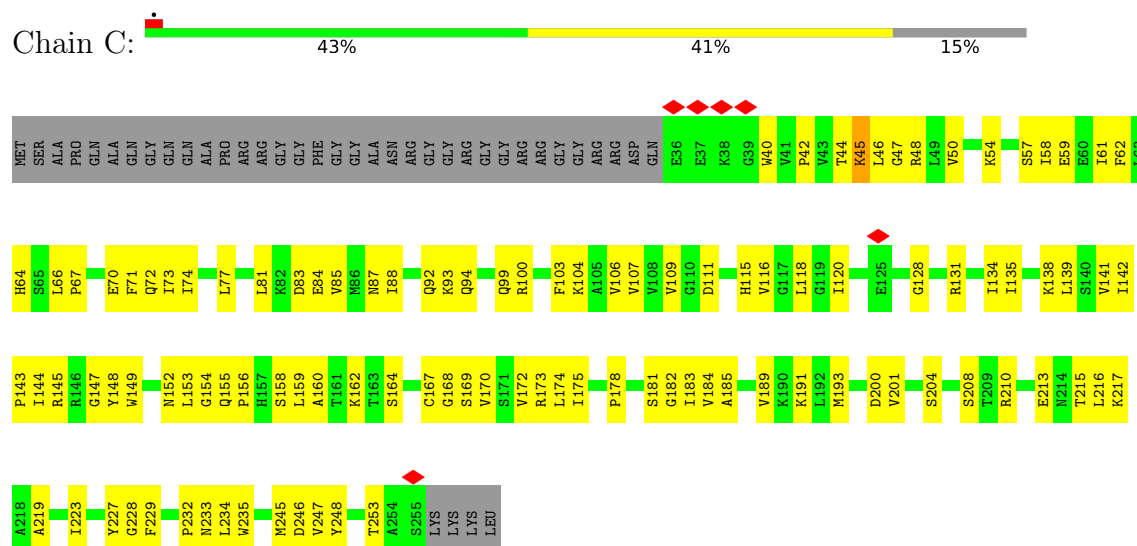
• Molecule 1: 18S ribosomal RNA



U1466	A1467	C1468	A1469	C1470	U1471	C1472	A1473	C1474	U1475	C1476	A1477	C1478	U1479	C1480	A1481	C1482	U1483	C1484	A1485	C1486	U1487	A1488	C1489	U1490	A1491	C1492	U1493	A1494	U1495	C1496	U1497	C1498	U1499	C1500	A1501	C1502	U1503	C1504	U1505	U1508	C1509	U1510	C1511	U1512	A1513	C1514	U1515	C1516	U1517	C1518	U1519	C1520	U1521	A1522	C1523	C1527	C1528																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
G1403	A1404	U1405	C1406	U1407	A1408	C1409	U1410	U1411	U1412	C1413	U1414	C1415	U1416	C1417	C1418	A1422	C1423	U1424	C1425	C1426	U1427	C1428	C1429	U1430	C1431	U1432	C1433	A1434	U1435	C1436	U1437	C1438	C1439	U1440	U1441	A1442	C1443	A1444	U1447	U1448	C1449	U1450	C1451	C1452	U1453	C1454	U1455	C1456	C1457	A1458	C1459	U1460	C1461	U1462	C1463	U1464	C1465																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
G1277	C1278	C1279	U1282	U1283	U1284	C1287	U1288	C1289	C1290	U1291	C1292	C1293	C1296	U1306	U1307	C1308	U1309	U1310	C1311	C1312	C1313	C1314	C1315	C1316	C1317	C1318	C1319	C1320	C1321	C1322	C1323	C1324	C1325	C1326	C1327	C1328	C1329	C1330	C1331	C1332	C1333	C1335	C1336	C1337	C1338	C1339	C1340	C1341	C1342	C1343	C1344	C1345																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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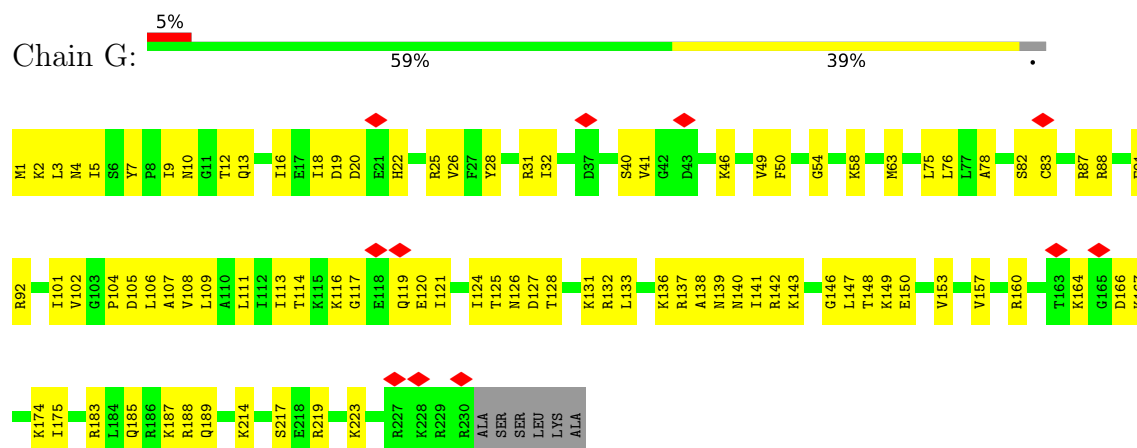
• Molecule 4: Small ribosomal subunit protein uS5



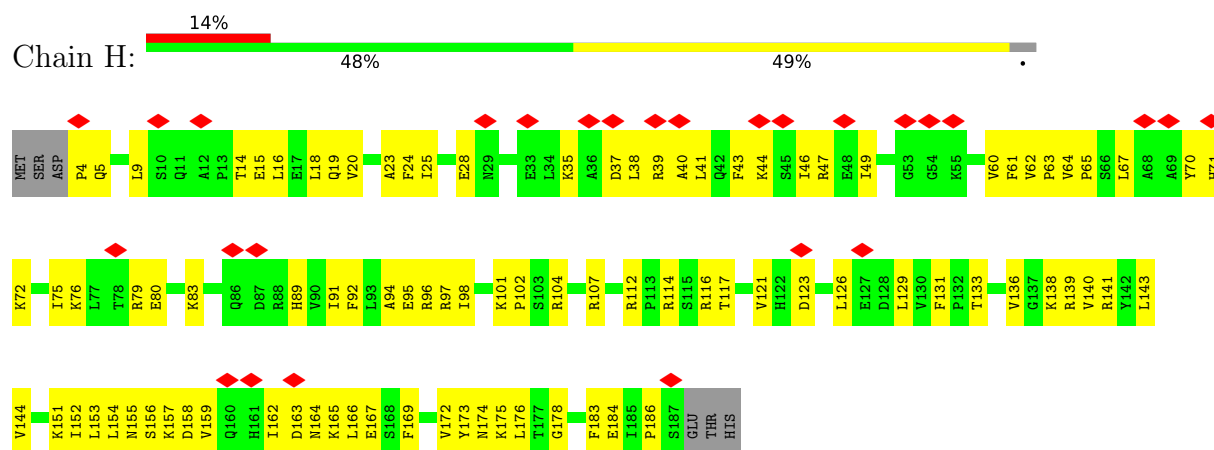
• Molecule 5: 40S ribosomal protein S4



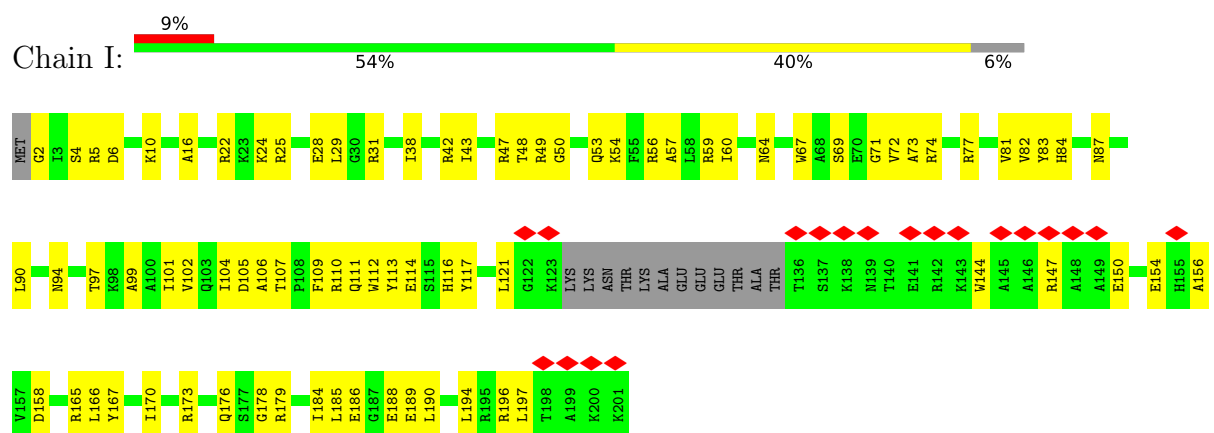
• Molecule 6: Small ribosomal subunit protein eS6



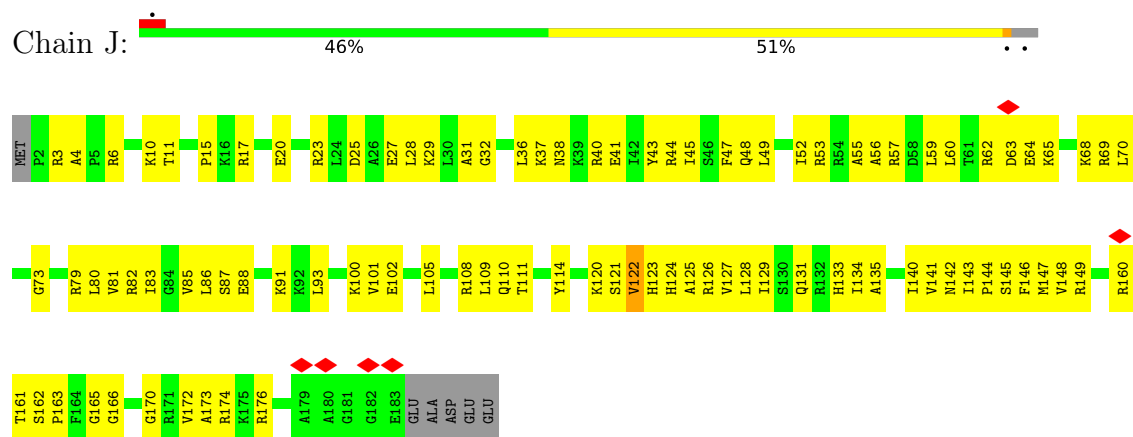
• Molecule 7: 40S ribosomal protein S7



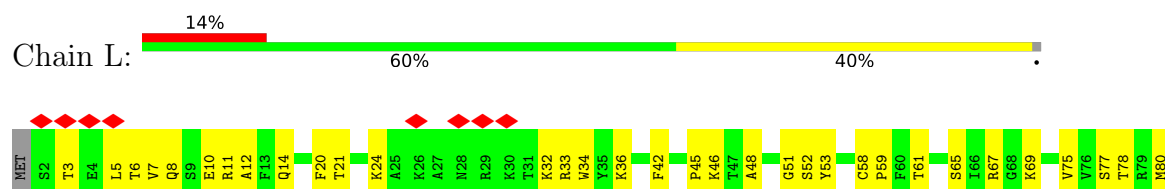
• Molecule 8: 40S ribosomal protein S8



• Molecule 9: KLLA0E23673p

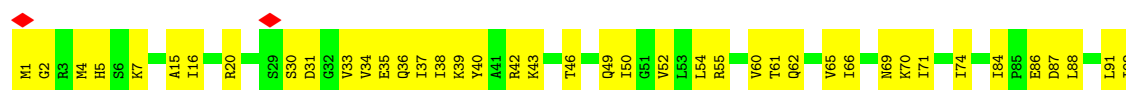


• Molecule 10: KLLA0A10483p

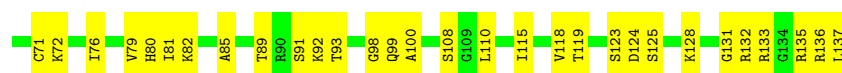




• Molecule 11: KLLA0F18040p



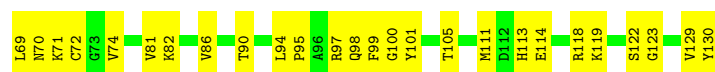
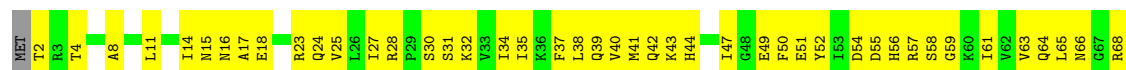
• Molecule 12: Small ribosomal subunit protein uS11



• Molecule 13: 40S ribosomal protein S21

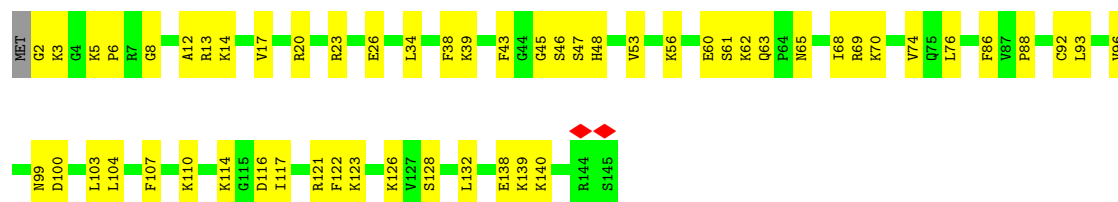


• Molecule 14: Small ribosomal subunit protein uS8

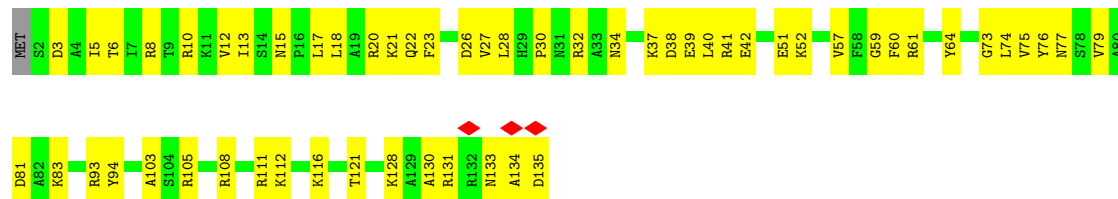


• Molecule 15: KLLA0B11231p

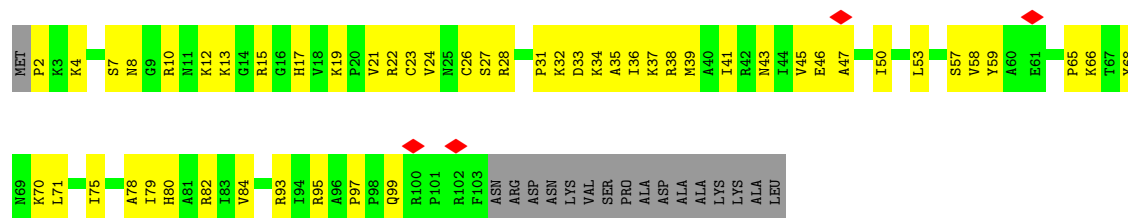




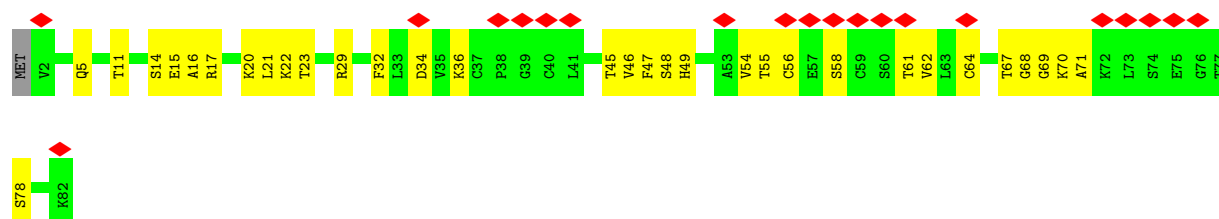
- Molecule 16: 40S ribosomal protein S24



- Molecule 17: 40S ribosomal protein S26



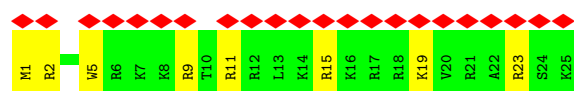
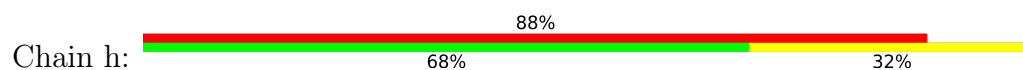
- Molecule 18: 40S ribosomal protein S27



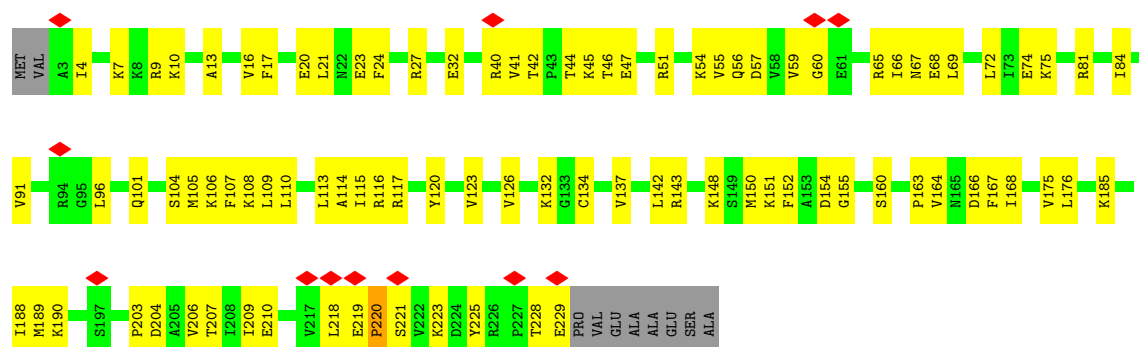
- Molecule 19: 40S ribosomal protein S30



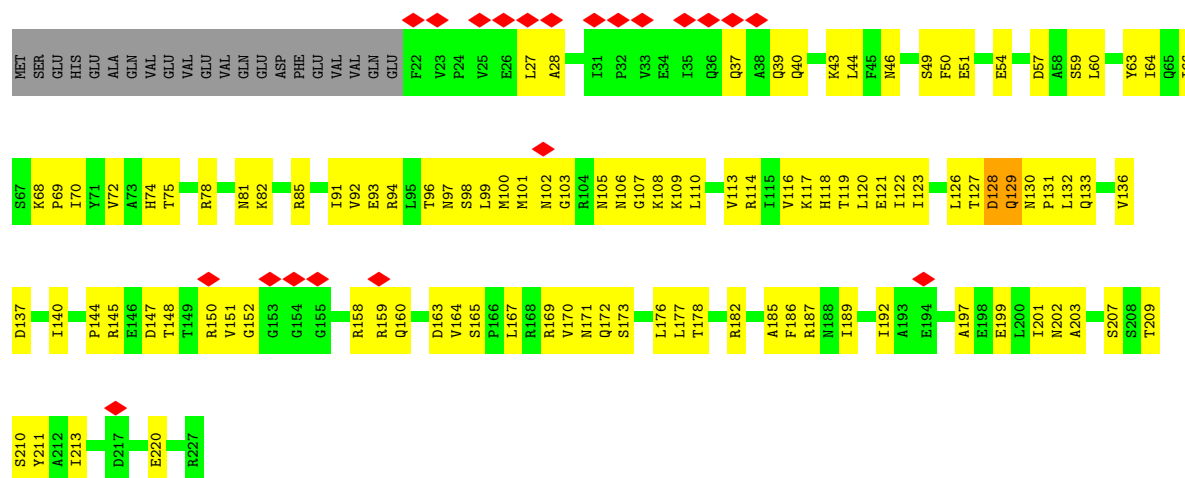
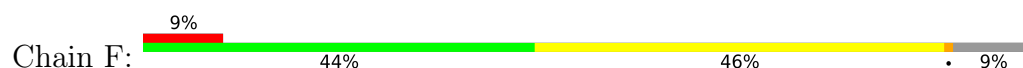
- Molecule 20: 40S ribosomal protein L41-A



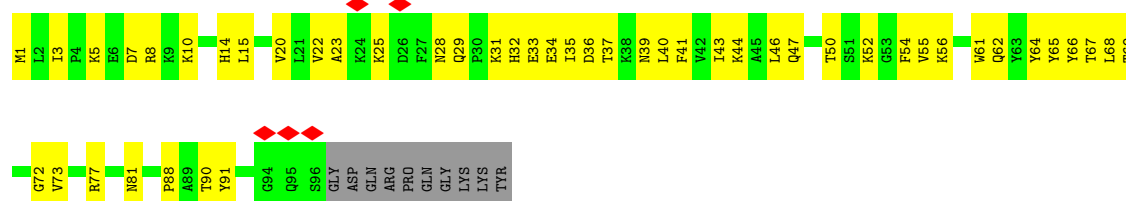
• Molecule 21: 40S ribosomal protein S3



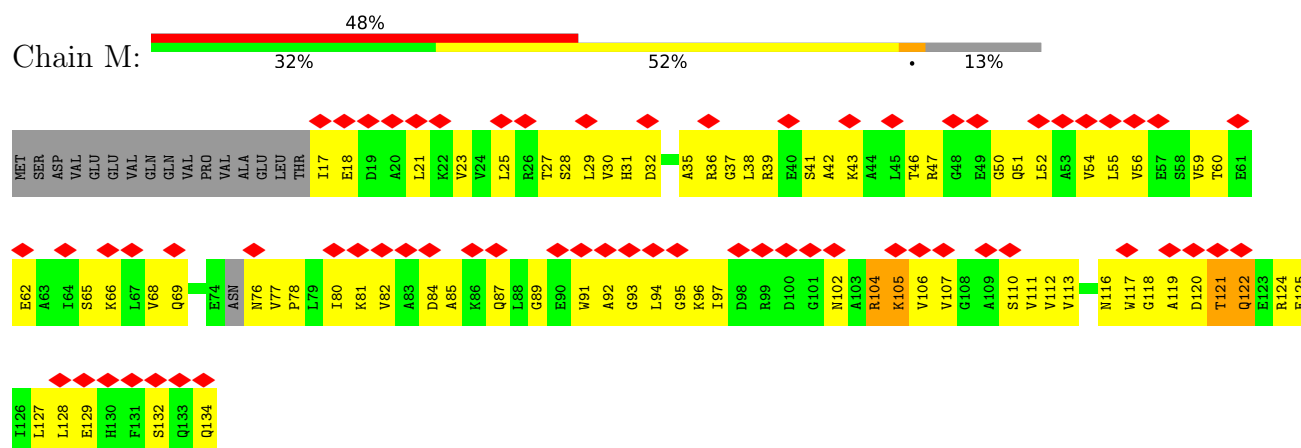
• Molecule 22: KLLA0D10659p



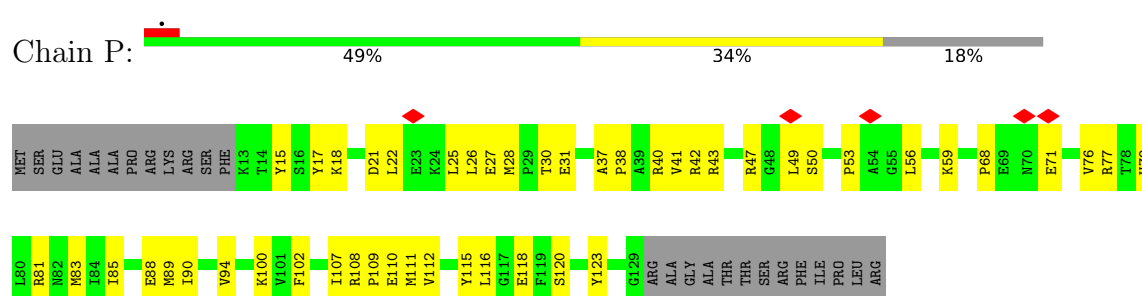
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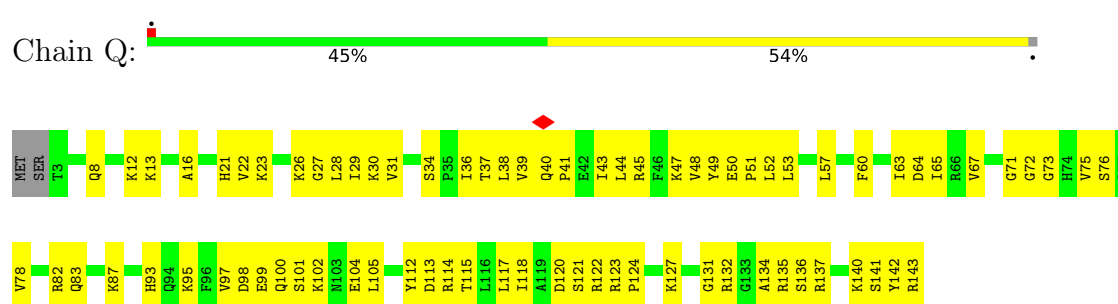
- Molecule 24: 40S ribosomal protein S12



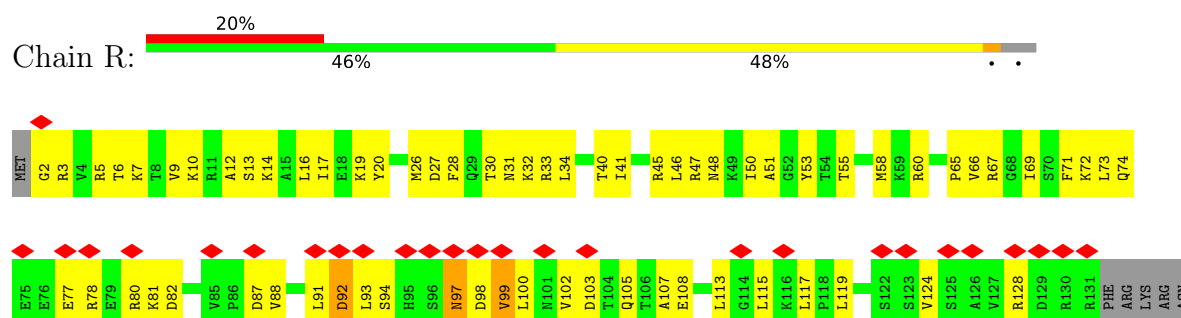
- Molecule 25: KLLA0F07843p



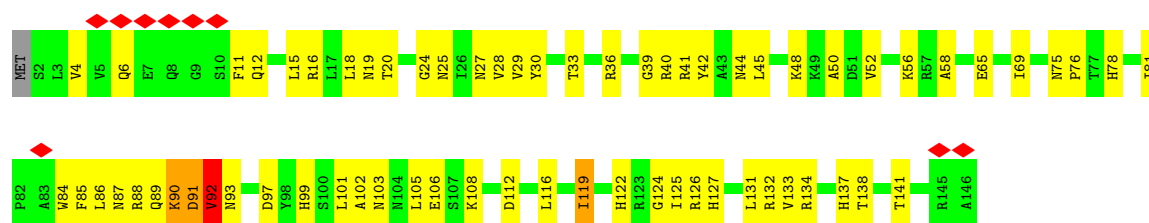
- Molecule 26: Small ribosomal subunit protein uS9



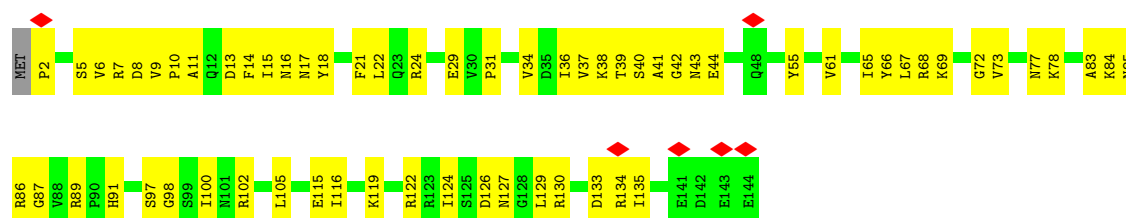
- Molecule 27: KLLA0B01474p



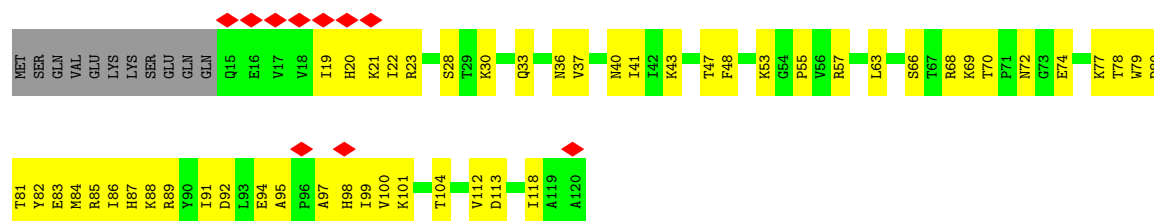
- Molecule 28: KLLA0B01562p



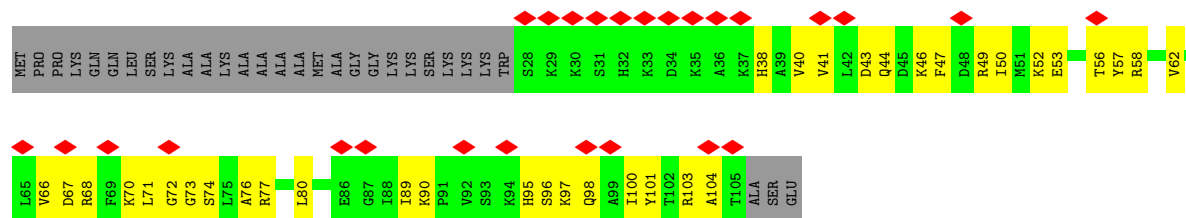
• Molecule 29: KLLA0A07194p



• Molecule 30: Small ribosomal subunit protein uS10



• Molecule 31: 40S ribosomal protein S25



• Molecule 32: Small ribosomal subunit protein eS28



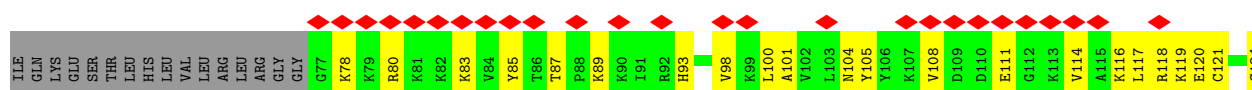
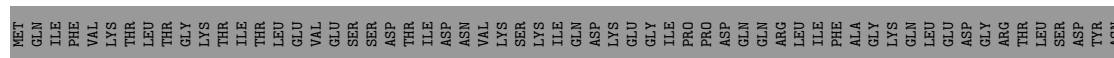
- Molecule 33: Small ribosomal subunit protein uS14

Chain d: 



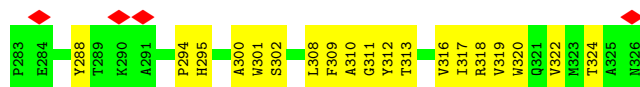
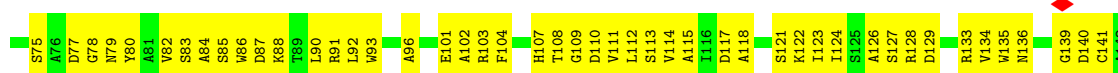
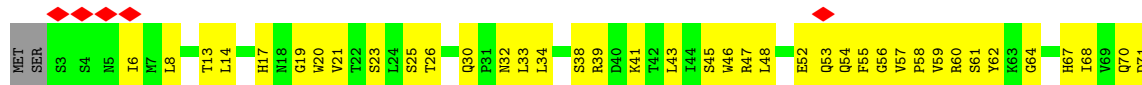
- Molecule 34: Small ribosomal subunit protein eS31

Chain f: 

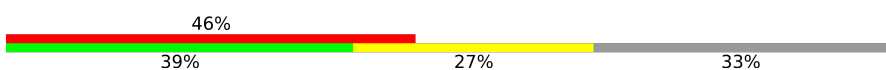


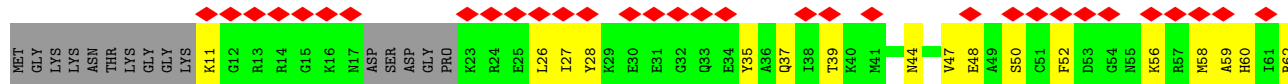
- Molecule 35: KLLA0E12277p

Chain g: 

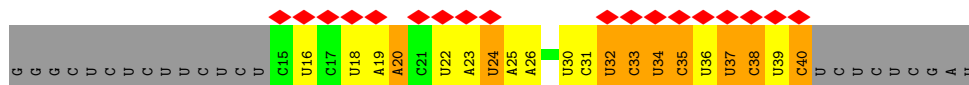
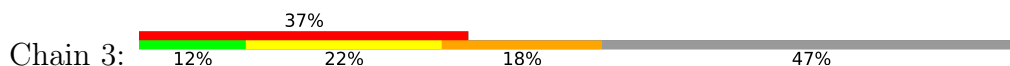


- Molecule 36: Eukaryotic translation initiation factor 1A

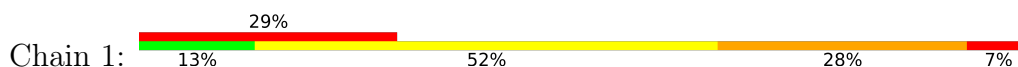
Chain i: 



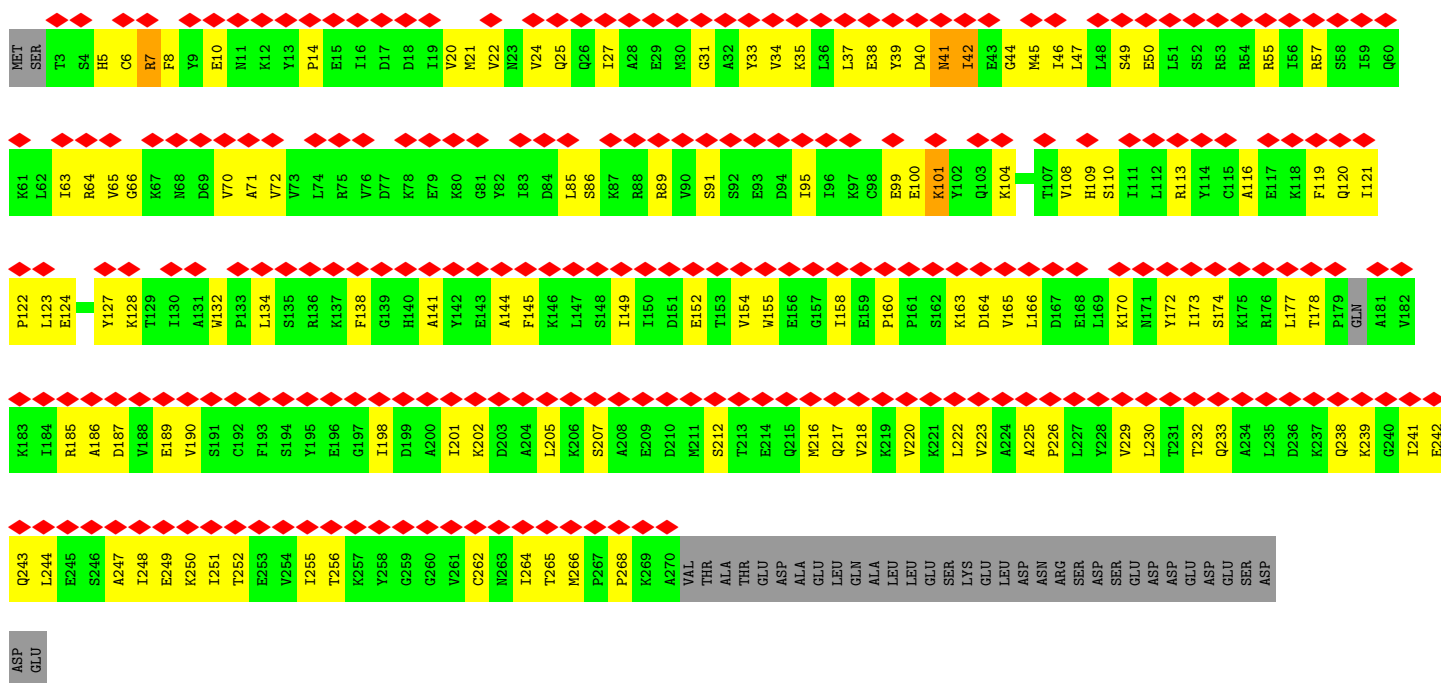
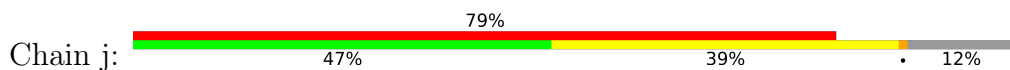
- Molecule 37: mRNA (5'-R(P*AP*AP*U)-3')



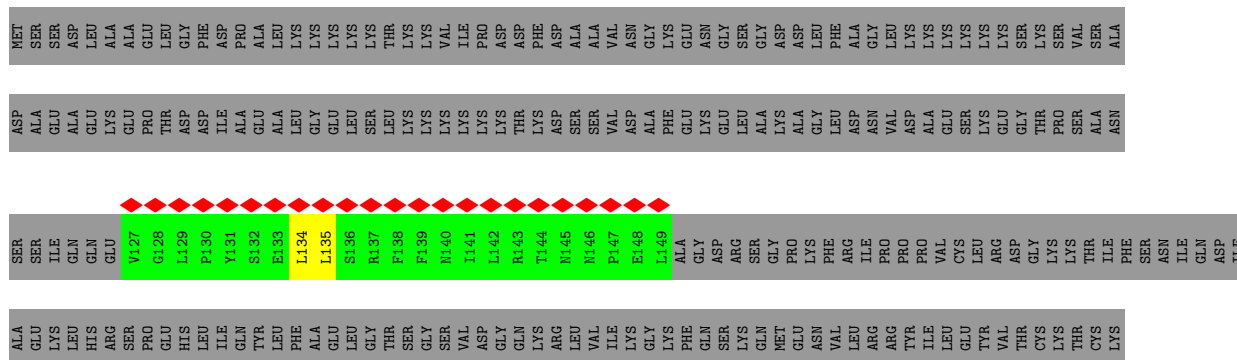
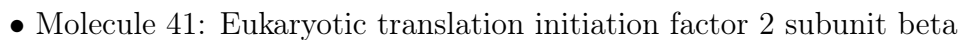
- Molecule 38: Met-tRNAi



- Molecule 39: Eukaryotic translation initiation factor 2 subunit alpha



- Molecule 40: Eukaryotic translation initiation factor 2 subunit gamma



Chain o:







4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	34495	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	0.427	Depositor
Minimum map value	-0.192	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.021	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: GCP, B8N, 2MG, 7MG, 1MG, T6A, ZN, M2G, PSU, 5MC, MG, 1MA, MA6, H2U, RIA

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	0.30	0/42410	0.37	0/66079
2	A	0.29	0/1742	0.53	0/2383
3	B	0.26	0/1820	0.47	0/2448
4	C	0.33	0/1678	0.53	0/2277
5	E	0.31	0/2122	0.52	0/2861
6	G	0.21	0/1855	0.41	0/2479
7	H	0.24	0/1507	0.55	0/2028
8	I	0.26	0/1515	0.44	0/2029
9	J	0.35	0/1495	0.60	0/2001
10	L	0.32	0/1276	0.50	0/1718
11	N	0.28	0/1218	0.50	2/1638 (0.1%)
12	O	0.29	0/966	0.60	0/1297
13	V	0.31	0/696	0.56	0/938
14	W	0.36	0/1039	0.56	0/1399
15	X	0.33	0/1137	0.54	0/1516
16	Y	0.24	0/1075	0.44	0/1433
17	a	0.30	0/810	0.51	0/1087
18	b	0.25	0/619	0.48	0/837
19	e	0.24	0/480	0.49	0/640
20	h	0.20	0/234	0.38	0/300
21	D	0.25	0/1800	0.43	0/2421
22	F	0.32	0/1628	0.51	0/2198
23	K	0.26	0/831	0.50	0/1123
24	M	0.32	0/891	0.61	0/1201
25	P	0.26	0/942	0.60	0/1269
26	Q	0.33	0/1125	0.59	0/1510
27	R	0.34	0/1044	0.61	0/1402
28	S	0.31	0/1208	0.53	1/1624 (0.1%)
29	T	0.27	0/1129	0.43	0/1520
30	U	0.28	0/857	0.50	0/1158
31	Z	0.21	0/603	0.48	0/814
32	c	0.27	0/501	0.50	0/673

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	d	0.29	0/473	0.54	0/629
34	f	0.18	0/597	0.59	0/795
35	g	0.26	0/2523	0.48	0/3434
36	i	0.20	0/828	0.47	0/1099
37	3	0.16	0/595	0.26	0/920
38	1	0.23	0/1529	0.37	0/2376
39	j	0.24	0/2171	0.54	1/2924 (0.0%)
40	k	0.18	0/3657	0.44	0/4946
41	l	0.14	0/194	0.41	0/263
42	o	0.16	0/3755	0.42	0/5074
43	p	0.20	0/4525	0.41	0/6120
All	All	0.28	0/99100	0.44	4/142881 (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	-5.06	108.90	113.71
11	N	141	TYR	CA-C-N	-5.05	115.53	121.90
11	N	141	TYR	C-N-CA	-5.05	115.53	121.90
28	S	119	ILE	N-CA-C	-5.05	104.96	112.04

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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	19212	1533	0
2	A	1702	0	1695	101	0
3	B	1796	0	1874	82	0
4	C	1648	0	1727	126	0
5	E	2078	0	2157	102	0
6	G	1832	0	1919	82	0
7	H	1483	0	1579	77	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
8	I	1489	0	1504	74	0
9	J	1471	0	1554	90	0
10	L	1248	0	1311	51	0
11	N	1195	0	1263	68	0
12	O	955	0	987	70	0
13	V	687	0	682	45	0
14	W	1021	0	1056	68	0
15	X	1119	0	1198	63	0
16	Y	1061	0	1111	56	0
17	a	797	0	835	57	0
18	b	609	0	629	27	0
19	e	472	0	508	29	0
20	h	233	0	284	15	0
21	D	1774	0	1855	79	0
22	F	1609	0	1679	103	0
23	K	809	0	810	48	0
24	M	885	0	917	86	0
25	P	923	0	960	53	0
26	Q	1105	0	1170	81	0
27	R	1033	0	1082	69	0
28	S	1189	0	1211	69	0
29	T	1110	0	1124	74	0
30	U	845	0	913	50	0
31	Z	594	0	590	38	0
32	c	499	0	536	26	0
33	d	461	0	448	32	0
34	f	584	0	601	37	0
35	g	2469	0	2403	171	0
36	i	820	0	826	37	0
37	3	536	0	277	21	0
38	1	1639	0	852	75	0
39	j	2139	0	2205	97	0
40	k	3596	0	3712	113	0
41	l	190	0	191	2	0
42	o	3683	0	3729	128	0
43	p	4442	0	4474	142	0
44	2	113	0	0	0	0
44	T	1	0	0	0	0
44	i	1	0	0	0	0
44	k	1	0	0	0	0
45	a	1	0	0	0	0
45	b	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
45	f	1	0	0	0	0
46	k	32	0	13	1	0
47	k	8	0	8	0	0
48	2	3	0	0	1	0
All	All	94182	0	75671	3840	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 23.

All (3840) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1584:A:H2	22:F:106:ASN:ND2	1.39	1.19
22:F:100:MET:SD	22:F:107:GLY:O	2.08	1.12
1:2:990:G:N2	1:2:1012:A:H62	1.48	1.11
1:2:990:G:H21	1:2:1012:A:N6	1.50	1.09
1:2:1584:A:C2	22:F:106:ASN:ND2	2.22	1.01
7:H:151:LYS:HE2	7:H:184:GLU:HB2	1.47	0.95
2:A:92:HIS:HD1	2:A:202:TYR:HH	0.98	0.94
1:2:275:C:O2	1:2:278:G:N2	2.00	0.93
2:A:20:ALA:HB2	2:A:172:LEU:HD13	1.50	0.93
1:2:485:G:H1	1:2:500:U:H3	0.93	0.91
7:H:101:LYS:HD2	7:H:102:PRO:HD2	1.53	0.91
28:S:41:ARG:HD3	29:T:38:LYS:HZ3	1.36	0.90
6:G:31:ARG:HB3	6:G:101:ILE:HD13	1.52	0.90
24:M:96:LYS:H	24:M:104:ARG:NH2	1.70	0.90
24:M:95:GLY:HA3	24:M:104:ARG:CZ	2.02	0.90
12:O:81:ILE:HG22	12:O:115:ILE:HA	1.54	0.89
12:O:85:ALA:H	12:O:119:THR:HG22	1.36	0.89
1:2:975:G:H1	1:2:1022:A:HO2'	1.18	0.89
26:Q:143:ARG:NH1	38:1:35:A:OP2	2.07	0.88
24:M:96:LYS:H	24:M:104:ARG:HH22	0.89	0.88
42:o:263:VAL:HG12	42:o:267:MET:HE2	1.56	0.88
1:2:566:A:OP1	15:X:70:LYS:NZ	2.08	0.87
14:W:41:MET:HE1	14:W:129:VAL:HG11	1.56	0.87
25:P:123:TYR:OH	28:S:126:ARG:NH2	2.07	0.87
1:2:236:C:H5''	1:2:237:U:H5'	1.57	0.86
1:2:1338:C:O2'	1:2:1340:A:N7	2.07	0.86
1:2:1386:A:H61	1:2:1407:G:H21	1.23	0.86
42:o:264:PHE:HA	42:o:267:MET:HE3	1.57	0.86
24:M:96:LYS:N	24:M:104:ARG:HH22	1.71	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:990:G:H21	1:2:1012:A:H62	0.90	0.86
1:2:1653:A:N6	1:2:1743:G:O2'	2.08	0.86
16:Y:13:ILE:HG12	16:Y:22:GLN:HE21	1.37	0.85
24:M:94:LEU:O	24:M:104:ARG:NH1	2.09	0.85
5:E:179:LYS:HA	5:E:231:PRO:HD3	1.58	0.85
1:2:1787:G:OP2	12:O:132:ARG:NH2	2.10	0.85
1:2:1021:C:H4'	1:2:1124:A:H61	1.43	0.84
30:U:80:ASP:HB2	33:d:54:LYS:HE2	1.58	0.84
26:Q:22:VAL:HG12	26:Q:65:ILE:HG12	1.60	0.84
1:2:28:A:N1	1:2:597:U:C4	2.46	0.83
1:2:310:U:OP2	15:X:20:ARG:NH2	2.11	0.83
1:2:1786:G:H5''	12:O:132:ARG:HH12	1.42	0.83
1:2:1770:C:H3'	20:h:2:ARG:HH21	1.43	0.82
43:p:622:LEU:HB3	43:p:675:VAL:HG11	1.59	0.82
22:F:78:ARG:O	22:F:85:ARG:NH1	2.13	0.82
1:2:1661:G:N2	1:2:1736:U:O2	2.12	0.82
3:B:144:ARG:HB2	3:B:208:GLN:HB3	1.61	0.82
1:2:328:G:H2'	1:2:329:G:H8	1.44	0.82
29:T:86:ARG:HB2	29:T:89:ARG:HB2	1.60	0.82
34:f:117:LEU:HG	34:f:118:ARG:HG3	1.59	0.82
36:i:85:GLN:HB3	36:i:88:GLN:HE21	1.42	0.82
21:D:142:LEU:HD13	21:D:150:MET:HE3	1.62	0.81
1:2:654:G:H1	1:2:676:U:H3	0.82	0.81
1:2:1085:A:H2'	1:2:1086:A:C8	2.16	0.81
9:J:129:ILE:HD13	9:J:134:ILE:HD13	1.60	0.81
1:2:1554:A:H5''	25:P:40:ARG:HH21	1.46	0.81
4:C:228:GLY:HA2	13:V:23:ILE:HD11	1.60	0.81
1:2:865:G:OP1	11:N:1:MET:N	2.11	0.81
9:J:62:ARG:HH22	9:J:68:LYS:HD3	1.46	0.81
1:2:866:G:H5'	11:N:4:MET:HE1	1.63	0.80
36:i:11:LYS:HB2	37:3:33:C:H41	1.47	0.80
1:2:1798:A:N6	37:3:19:A:O2'	2.14	0.80
26:Q:100:GLN:NE2	35:g:58:PRO:O	2.15	0.80
9:J:128:LEU:HB3	9:J:134:ILE:HD11	1.64	0.80
9:J:142:ASN:ND2	16:Y:64:TYR:OH	2.14	0.80
30:U:95:ALA:HB1	30:U:100:VAL:HG21	1.61	0.80
1:2:1481:A:H2'	1:2:1482:G:C8	2.18	0.79
39:j:152:GLU:OE2	39:j:170:LYS:NZ	2.15	0.79
1:2:1541:A:N6	1:2:1566:C:O2	2.13	0.79
1:2:1103:U:OP2	15:X:14:LYS:NZ	2.15	0.79
9:J:23:ARG:NH1	9:J:27:GLU:OE2	2.12	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:520:A:N3	16:Y:34:ASN:ND2	2.29	0.79
10:L:8:GLN:HE22	10:L:14:GLN:H	1.29	0.79
39:j:33:TYR:HB3	39:j:45:MET:HE2	1.63	0.78
30:U:68:ARG:HH12	30:U:77:LYS:HA	1.48	0.78
1:2:1300:U:H5'	4:C:93:LYS:HD3	1.66	0.78
7:H:28:GLU:HB3	7:H:35:LYS:HE3	1.64	0.78
9:J:36:LEU:HD22	9:J:41:GLU:HG2	1.64	0.78
1:2:1408:A:H5''	26:Q:118:ILE:HD11	1.63	0.78
38:1:16:H2U:H2'	38:1:60:A:H1'	1.65	0.78
5:E:91:THR:OG1	5:E:98:ASN:ND2	2.16	0.78
1:2:935:G:N7	17:a:15:ARG:NH1	2.31	0.78
40:k:102:ASN:HD21	40:k:394:GLY:HA2	1.49	0.78
42:o:248:VAL:HG11	42:o:285:ASN:HB3	1.66	0.77
8:I:173:ARG:HH21	8:I:176:GLN:HE21	1.33	0.77
1:2:485:G:N2	1:2:500:U:O2	2.16	0.77
27:R:115:LEU:HB3	27:R:117:LEU:HD23	1.67	0.77
1:2:1033:C:HO2'	14:W:2:THR:N	1.82	0.77
42:o:65:GLY:HA2	42:o:68:LEU:HD12	1.67	0.77
4:C:170:VAL:HG11	4:C:215:THR:HA	1.65	0.77
1:2:1472:G:N7	31:Z:97:LYS:NZ	2.32	0.77
1:2:114:C:N4	1:2:244:U:O2	2.18	0.76
1:2:28:A:N1	1:2:597:U:O4	2.19	0.76
1:2:481:U:H2'	1:2:482:A:H8	1.51	0.76
4:C:61:ILE:HG23	4:C:66:LEU:HB2	1.67	0.76
1:2:1277:G:OP1	21:D:185:LYS:NZ	2.18	0.76
35:g:109:GLY:H	35:g:129:ASP:HB3	1.50	0.76
1:2:635:A:H5''	14:W:31:SER:HB3	1.67	0.76
2:A:52:LYS:NZ	13:V:82:VAL:O	2.18	0.76
9:J:28:LEU:HD11	19:e:39:LEU:HD22	1.66	0.76
1:2:976:A:H62	1:2:1023:U:H3	1.29	0.76
26:Q:143:ARG:HH22	38:1:33:U:H3'	1.49	0.76
1:2:622:A:N6	1:2:969:A:OP1	2.19	0.76
20:h:2:ARG:HD3	20:h:5:TRP:HE1	1.51	0.76
1:2:1443:G:N2	34:f:87:THR:O	2.19	0.75
34:f:142:CYS:HG	34:f:145:THR:HG1	1.30	0.75
1:2:234:G:H2'	1:2:235:A:C8	2.21	0.75
40:k:324:ASN:HD22	40:k:333:LEU:HD11	1.51	0.75
34:f:131:ALA:HB3	34:f:138:TYR:HB3	1.67	0.75
1:2:1217:G:OP2	23:K:44:LYS:NZ	2.20	0.75
14:W:70:ASN:OD1	14:W:71:LYS:N	2.19	0.75
1:2:1197:G:H5''	33:d:40:ARG:HH22	1.52	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1565:U:H4'	28:S:36:ARG:HH21	1.52	0.75
40:k:357:PRO:HG2	40:k:415:GLN:HE21	1.52	0.75
31:Z:38:HIS:HB2	31:Z:72:GLY:HA2	1.68	0.75
30:U:30:LYS:HE2	30:U:33:GLN:H	1.52	0.75
1:2:1742:A:H3'	1:2:1743:G:H8	1.52	0.74
22:F:94:ARG:NH2	22:F:171:ASN:OD1	2.20	0.74
35:g:316:VAL:O	35:g:318:ARG:NH1	2.20	0.74
1:2:1661:G:H1	1:2:1736:U:H3	1.35	0.74
6:G:164:LYS:HD3	6:G:167:LYS:HB2	1.69	0.74
1:2:65:A:C6	1:2:83:G:C2	2.76	0.74
4:C:235:TRP:O	13:V:16:LYS:NZ	2.19	0.74
35:g:249:ALA:H	35:g:262:ALA:HB3	1.50	0.74
31:Z:71:LEU:HD23	31:Z:76:ALA:HA	1.68	0.74
35:g:267:ILE:HB	35:g:281:LEU:HB2	1.68	0.74
1:2:495:G:H2'	1:2:496:G:C8	2.22	0.74
1:2:1182:A:N3	1:2:1209:C:O2'	2.21	0.74
1:2:1247:C:OP2	34:f:93:HIS:ND1	2.18	0.74
5:E:64:ILE:HD11	16:Y:18:LEU:HD22	1.67	0.74
6:G:2:LYS:HB3	6:G:108:VAL:HG22	1.70	0.74
7:H:140:VAL:HB	14:W:52:TYR:HB3	1.70	0.74
43:p:254:PHE:HZ	43:p:295:ALA:HB2	1.53	0.74
31:Z:49:ARG:O	31:Z:53:GLU:HB2	1.87	0.74
35:g:85:SER:OG	35:g:87:ASP:OD1	2.05	0.74
30:U:55:PRO:HA	30:U:91:ILE:HG22	1.70	0.73
1:2:932:A:OP2	17:a:37:LYS:NZ	2.20	0.73
24:M:35:ALA:HB3	24:M:113:VAL:HB	1.70	0.73
34:f:139:CYS:HB2	34:f:146:PHE:HB3	1.70	0.73
35:g:115:ALA:HB1	35:g:157:VAL:HG13	1.69	0.73
35:g:312:TYR:H	35:g:318:ARG:HH12	1.36	0.73
40:k:259:ALA:HB1	41:l:135:LEU:HD11	1.70	0.73
40:k:454:ARG:H	40:k:503:ARG:HH22	1.35	0.73
21:D:209:ILE:O	27:R:20:TYR:OH	2.06	0.73
21:D:221:SER:OG	35:g:200:ILE:O	2.05	0.73
40:k:356:ARG:HG3	40:k:424:PRO:HB2	1.71	0.73
1:2:1356:G:H2'	1:2:1357:G:H8	1.52	0.73
8:I:188:GLU:OE1	8:I:188:GLU:N	2.20	0.73
25:P:17:TYR:CD1	25:P:18:LYS:HG2	2.23	0.73
26:Q:83:GLN:HE22	26:Q:87:LYS:HE3	1.54	0.73
1:2:367:U:HO2'	1:2:602:U:HO2'	1.31	0.73
3:B:126:THR:HG22	3:B:136:ARG:HE	1.53	0.73
33:d:45:GLU:HG2	33:d:46:LYS:HD2	1.71	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1355:U:H3	1:2:1366:G:H1	1.34	0.72
22:F:28:ALA:HB2	26:Q:26:LYS:HG3	1.71	0.72
1:2:929:A:O3'	17:a:70:LYS:NZ	2.22	0.72
1:2:337:C:H1'	8:I:5:ARG:HB2	1.70	0.72
1:2:1757:C:H1'	1:2:1778:G:H22	1.54	0.72
10:L:101:GLU:OE2	15:X:13:ARG:NE	2.22	0.72
11:N:54:LEU:HD12	11:N:60:VAL:HG21	1.72	0.72
1:2:73:U:O2'	1:2:74:U:O4'	2.07	0.72
1:2:1233:A:O2'	34:f:138:TYR:OH	2.06	0.72
22:F:100:MET:HE1	22:F:109:LYS:HG2	1.70	0.72
1:2:521:U:H5''	16:Y:37:LYS:HG3	1.71	0.72
3:B:208:GLN:OE1	3:B:209:ASN:ND2	2.22	0.72
36:i:77:ILE:HG13	36:i:94:LYS:HA	1.72	0.72
39:j:27:ILE:HD11	39:j:63:ILE:HG21	1.70	0.72
1:2:25:C:H5''	1:2:26:A:H5'	1.71	0.72
1:2:949:C:H4'	11:N:104:ARG:HH12	1.53	0.72
25:P:123:TYR:HH	28:S:126:ARG:HH21	1.36	0.72
1:2:657:C:O2	1:2:674:A:N6	2.15	0.72
1:2:1198:G:O2'	1:2:1199:G:OP2	2.07	0.72
1:2:1216:A:N6	23:K:28:ASN:OD1	2.21	0.72
1:2:1399:A:OP1	27:R:60:ARG:NH2	2.22	0.72
1:2:1789:A:OP1	17:a:8:ASN:ND2	2.22	0.72
30:U:68:ARG:HD2	30:U:79:TRP:HE1	1.54	0.72
43:p:265:ARG:HH11	43:p:302:SER:HB2	1.54	0.72
1:2:895:U:O2	12:O:41:ARG:NH1	2.22	0.72
1:2:1198:G:O4'	33:d:40:ARG:NH2	2.23	0.72
37:3:39:U:H2'	37:3:40:C:H4'	1.72	0.72
1:2:357:U:O2'	1:2:359:A:OP1	2.08	0.72
1:2:984:G:H1	1:2:1015:C:H5	1.37	0.72
1:2:396:A:H4'	8:I:50:GLY:HA2	1.71	0.71
1:2:867:G:H2'	1:2:868:A:H8	1.55	0.71
1:2:952:G:H2'	1:2:953:G:H8	1.55	0.71
1:2:1387:C:OP1	27:R:48:ASN:ND2	2.22	0.71
1:2:1581:A:OP1	26:Q:135:ARG:NH2	2.19	0.71
9:J:60:LEU:HD13	9:J:69:ARG:HH21	1.54	0.71
1:2:65:A:H2	1:2:84:A:H62	1.38	0.71
4:C:235:TRP:CZ3	14:W:68:ARG:HB3	2.24	0.71
2:A:119:ARG:NH1	4:C:245:MET:SD	2.63	0.71
2:A:188:LEU:HD12	2:A:189:PRO:HD2	1.71	0.71
4:C:235:TRP:HZ3	14:W:68:ARG:HB3	1.55	0.71
1:2:868:A:H61	1:2:957:U:H5	1.38	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:j:33:TYR:HA	39:j:44:GLY:O	1.90	0.71
1:2:707:A:H61	1:2:730:G:H1	1.39	0.71
1:2:761:G:N2	1:2:762:A:N7	2.39	0.71
14:W:31:SER:H	14:W:34:ILE:HD13	1.54	0.71
24:M:104:ARG:HE	24:M:107:VAL:HG11	1.56	0.71
43:p:718:GLN:NE2	43:p:746:ASP:O	2.22	0.71
1:2:275:C:N3	1:2:278:G:N1	2.38	0.71
1:2:654:G:N2	1:2:676:U:O2	2.16	0.71
11:N:4:MET:HG2	11:N:124:ARG:HH12	1.54	0.71
43:p:362:VAL:HG12	43:p:363:LYS:HG3	1.72	0.71
1:2:1670:G:H2'	1:2:1671:G:H8	1.55	0.71
12:O:24:ASN:HA	12:O:55:SER:HB3	1.72	0.71
1:2:716:C:N4	1:2:722:G:O6	2.23	0.71
1:2:959:U:OP2	11:N:55:ARG:NH1	2.23	0.71
31:Z:68:ARG:HB2	31:Z:70:LYS:HE2	1.71	0.71
4:C:111:ASP:OD2	4:C:115:HIS:ND1	2.23	0.71
1:2:153:G:OP2	16:Y:131:ARG:NH2	2.23	0.70
1:2:883:A:H2'	1:2:884:G:H8	1.55	0.70
1:2:1006:5MC:O3'	12:O:135:ARG:NH1	2.24	0.70
18:b:55:THR:HG22	18:b:62:VAL:HG12	1.70	0.70
26:Q:50:GLU:OE1	26:Q:112:TYR:OH	2.07	0.70
40:k:217:LEU:HD11	40:k:249:ASN:HB2	1.71	0.70
1:2:763:G:OP2	9:J:79:ARG:NH2	2.24	0.70
2:A:55:GLU:HG3	13:V:79:LEU:HD21	1.73	0.70
32:c:35:ASP:OD1	32:c:37:THR:OG1	2.08	0.70
40:k:94:ILE:HG23	40:k:391:VAL:HG21	1.73	0.70
43:p:545:ARG:NH2	43:p:610:GLN:O	2.24	0.70
1:2:142:G:H2'	1:2:143:G:C8	2.26	0.70
1:2:1301:U:H2'	1:2:1302:U:H6	1.57	0.70
1:2:1628:U:HO2'	1:2:1762:C:HO2'	1.40	0.70
10:L:102:LYS:O	15:X:13:ARG:NH2	2.25	0.70
38:1:74:C:H4'	38:1:75:C:H5'	1.73	0.70
40:k:323:VAL:HG11	40:k:334:LYS:HD3	1.74	0.70
40:k:373:ILE:HD13	40:k:406:LEU:HD11	1.74	0.70
1:2:748:U:O2'	14:W:122:SER:O	2.09	0.70
1:2:1203:A:H61	33:d:15:GLY:HA3	1.57	0.70
1:2:1356:G:H2'	1:2:1357:G:C8	2.26	0.70
5:E:79:ASP:HB3	5:E:82:PHE:HB2	1.73	0.70
39:j:7:ARG:NH2	39:j:10:GLU:O	2.25	0.70
42:o:180:SER:OG	42:o:184:LYS:NZ	2.24	0.70
1:2:327:A:H2'	1:2:328:G:H8	1.57	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1656:G:O6	1:2:1741:U:O2	2.10	0.70
6:G:78:ALA:HB2	6:G:92:ARG:HG3	1.73	0.70
22:F:126:LEU:HA	31:Z:58:ARG:HH22	1.56	0.70
40:k:408:ARG:HH21	40:k:411:ARG:HH21	1.38	0.70
1:2:1213:U:HO2'	33:d:2:ALA:N	1.89	0.70
35:g:84:ALA:HB2	35:g:114:VAL:HG23	1.73	0.70
40:k:355:ILE:HD11	40:k:415:GLN:HB3	1.72	0.70
1:2:1689:A:N6	1:2:1708:U:O2	2.16	0.70
3:B:149:GLN:HE21	3:B:151:LYS:HB3	1.57	0.70
2:A:22:VAL:HG12	2:A:169:SER:HB2	1.74	0.70
16:Y:51:GLU:N	16:Y:51:GLU:OE1	2.24	0.70
34:f:118:ARG:O	34:f:119:LYS:HG2	1.91	0.70
27:R:107:ALA:HB1	27:R:119:LEU:HD21	1.72	0.70
1:2:621:A:H4'	1:2:622:A:H5''	1.73	0.70
1:2:1256:U:O2'	23:K:1:MET:O	2.08	0.70
9:J:114:TYR:CG	9:J:122:VAL:HG12	2.26	0.69
15:X:107:PHE:CE2	15:X:114:LYS:HB3	2.27	0.69
24:M:78:PRO:HB2	24:M:128:LEU:HD22	1.73	0.69
42:o:429:MET:HE1	42:o:452:ALA:HB1	1.72	0.69
1:2:1680:U:O4	1:2:1718:G:N2	2.26	0.69
4:C:154:GLY:HA2	13:V:3:ASN:HD21	1.57	0.69
13:V:66:ASP:OD1	13:V:67:ASP:N	2.24	0.69
21:D:51:ARG:HG2	21:D:91:VAL:HG22	1.72	0.69
1:2:1315:G:OP1	27:R:7:LYS:N	2.25	0.69
1:2:1486:G:H3'	1:2:1513:A:H61	1.58	0.69
10:L:7:VAL:HG11	10:L:53:TYR:HA	1.74	0.69
1:2:1544:G:OP1	28:S:127:HIS:NE2	2.19	0.69
1:2:223:C:H2'	1:2:224:A:C8	2.27	0.69
1:2:1170:A:H2'	1:2:1171:G:C8	2.27	0.69
26:Q:39:VAL:O	26:Q:45:ARG:NH2	2.24	0.69
1:2:883:A:H2'	1:2:884:G:C8	2.28	0.69
1:2:1173:C:O2'	1:2:1195:A:N6	2.25	0.69
4:C:59:GLU:OE2	4:C:59:GLU:N	2.24	0.69
9:J:160:ARG:NH1	9:J:166:GLY:O	2.26	0.69
21:D:218:LEU:HG	21:D:221:SER:HB3	1.75	0.69
42:o:484:HIS:H	43:p:735:SER:HB2	1.56	0.69
1:2:789:U:H5	1:2:790:A:C5	2.10	0.69
1:2:890:A:H2'	1:2:891:A:H8	1.56	0.69
1:2:1589:C:H2'	1:2:1590:A:H8	1.58	0.69
30:U:22:ILE:HG21	30:U:100:VAL:HG11	1.74	0.69
1:2:165:C:O2'	6:G:133:LEU:O	2.10	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:157:LYS:HD2	7:H:158:ASP:HB2	1.75	0.69
26:Q:100:GLN:HE21	35:g:58:PRO:HG2	1.55	0.69
32:c:30:VAL:HG11	32:c:54:LEU:HD22	1.75	0.69
1:2:932:A:OP1	3:B:116:LYS:NZ	2.23	0.69
1:2:1793:U:OP2	17:a:4:LYS:NZ	2.25	0.69
5:E:256:ARG:O	5:E:259:HIS:ND1	2.26	0.69
16:Y:3:ASP:OD2	16:Y:32:ARG:NH1	2.25	0.69
1:2:886:A:H2'	1:2:887:U:C6	2.27	0.68
1:2:1386:A:H61	1:2:1407:G:N2	1.92	0.68
1:2:1386:A:N6	1:2:1407:G:H21	1.91	0.68
1:2:1494:U:O2	1:2:1509:G:O6	2.11	0.68
4:C:149:TRP:O	14:W:97:ARG:NH2	2.26	0.68
22:F:78:ARG:NH2	26:Q:121:SER:OG	2.24	0.68
1:2:99:C:OP2	1:2:377:A:O2'	2.11	0.68
1:2:470:A:OP1	9:J:10:LYS:NZ	2.24	0.68
1:2:1496:G:H5''	29:T:72:GLY:HA3	1.75	0.68
9:J:83:ILE:HD11	9:J:147:MET:HG3	1.75	0.68
35:g:256:ARG:HH12	35:g:322:VAL:HG11	1.59	0.68
1:2:882:C:N3	1:2:944:U:O4	2.25	0.68
8:I:57:ALA:HB2	8:I:178:GLY:HA2	1.76	0.68
24:M:120:ASP:O	24:M:124:ARG:NH1	2.26	0.68
25:P:110:GLU:N	25:P:110:GLU:OE2	2.27	0.68
1:2:1591:A:H2'	1:2:1592:G:H8	1.59	0.68
7:H:156:SER:HB2	7:H:186:PRO:HG2	1.74	0.68
1:2:445:A:OP1	5:E:57:ASN:ND2	2.19	0.68
1:2:960:U:H5''	11:N:71:ILE:HD13	1.74	0.68
1:2:1626:U:H2'	1:2:1627:G:C8	2.29	0.68
35:g:210:GLN:NE2	35:g:211:PRO:O	2.26	0.68
8:I:87:ASN:HB3	8:I:90:LEU:HD13	1.75	0.68
26:Q:41:PRO:HG2	26:Q:78:VAL:HG21	1.75	0.68
39:j:207:SER:HB2	39:j:250:LYS:HD3	1.76	0.68
1:2:1522:A:H2'	1:2:1523:A:C8	2.29	0.68
1:2:1788:A:H2'	1:2:1789:A:C8	2.28	0.68
21:D:228:THR:OG1	35:g:195:ILE:O	2.08	0.68
22:F:163:ASP:OD2	32:c:42:ARG:NE	2.21	0.68
22:F:57:ASP:OD2	22:F:59:SER:OG	2.12	0.68
26:Q:30:LYS:NZ	29:T:8:ASP:OD1	2.27	0.68
4:C:147:GLY:N	4:C:158:SER:O	2.27	0.67
43:p:436:ARG:HD3	43:p:486:LEU:HD11	1.76	0.67
2:A:162:CYS:SG	2:A:163:ASN:N	2.68	0.67
25:P:27:GLU:O	25:P:28:MET:HE2	1.95	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:Q:83:GLN:NE2	26:Q:117:LEU:O	2.27	0.67
1:2:68:A:OP1	6:G:160:ARG:NH2	2.27	0.67
8:I:104:ILE:HB	8:I:166:LEU:HB3	1.76	0.67
35:g:149:THR:OG1	35:g:180:ASP:OD1	2.13	0.67
39:j:212:SER:HB2	39:j:217:GLN:HA	1.76	0.67
1:2:1574:A:HO2'	38:1:40:C:HO2'	1.42	0.67
1:2:1601:U:H2'	1:2:1602:U:C6	2.29	0.67
2:A:16:LEU:HG	2:A:172:LEU:HD11	1.74	0.67
5:E:63:ALA:HA	5:E:66:MET:HE2	1.77	0.67
24:M:59:VAL:HG21	24:M:65:SER:HB3	1.77	0.67
35:g:92:LEU:HB3	35:g:102:ALA:HB3	1.76	0.67
39:j:116:ALA:O	39:j:120:GLN:N	2.27	0.67
1:2:1162:A:N3	1:2:1611:U:O2'	2.25	0.67
1:2:1660:G:H2'	1:2:1661:G:H8	1.59	0.67
5:E:57:ASN:N	5:E:60:GLU:OE2	2.27	0.67
1:2:476:A:OP2	19:e:28:LYS:NZ	2.28	0.67
1:2:1485:A:OP1	33:d:34:TYR:OH	2.12	0.67
2:A:163:ASN:O	2:A:169:SER:OG	2.13	0.67
9:J:82:ARG:HH21	9:J:149:ARG:CZ	2.08	0.67
24:M:104:ARG:NE	24:M:107:VAL:HG11	2.10	0.67
26:Q:98:ASP:OD1	26:Q:99:GLU:N	2.27	0.67
28:S:25:ASN:HB2	31:Z:40:VAL:HG21	1.76	0.67
43:p:735:SER:OG	43:p:776:PHE:O	2.11	0.67
1:2:885:U:OP1	3:B:214:LYS:NZ	2.28	0.67
1:2:1080:A:N6	1:2:1090:A:N7	2.43	0.67
9:J:37:LYS:HE3	9:J:38:ASN:HD21	1.60	0.67
43:p:440:ILE:HG23	43:p:448:ILE:HG12	1.76	0.67
1:2:1124:A:O3'	20:h:15:ARG:NH2	2.26	0.67
1:2:1590:A:H2'	1:2:1591:A:C8	2.29	0.67
9:J:48:GLN:O	9:J:52:ILE:HG12	1.95	0.67
9:J:59:LEU:HD12	9:J:69:ARG:HA	1.77	0.67
40:k:314:ARG:HD2	40:k:344:ASN:HD21	1.60	0.67
43:p:597:SER:HA	43:p:600:GLU:HB2	1.77	0.67
1:2:742:U:O2	7:H:107:ARG:NH2	2.28	0.67
1:2:751:G:H2'	1:2:752:A:H8	1.60	0.67
35:g:90:LEU:HB2	35:g:104:PHE:HB2	1.76	0.67
10:L:77:SER:HB3	10:L:85:VAL:HB	1.76	0.67
29:T:42:GLY:HA2	29:T:84:LYS:HD2	1.77	0.67
1:2:678:G:H2'	1:2:679:U:H4'	1.76	0.66
1:2:1323:G:O3'	2:A:113:ARG:NH2	2.27	0.66
16:Y:13:ILE:CG1	16:Y:22:GLN:HE21	2.07	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:339:U:H2'	1:2:340:A:H8	1.60	0.66
1:2:645:U:H2'	1:2:646:G:H8	1.60	0.66
1:2:1069:C:H4'	18:b:17:ARG:NH1	2.10	0.66
6:G:219:ARG:HH22	6:G:223:LYS:HD3	1.60	0.66
9:J:41:GLU:OE2	9:J:44:ARG:NH2	2.28	0.66
9:J:100:LYS:O	9:J:102:GLU:N	2.29	0.66
10:L:67:ARG:HH12	10:L:129:ARG:HB2	1.60	0.66
11:N:86:GLU:N	11:N:86:GLU:OE2	2.28	0.66
22:F:186:PHE:HD1	22:F:187:ARG:HG2	1.61	0.66
28:S:56:LYS:NZ	28:S:65:GLU:OE1	2.28	0.66
35:g:179:MET:HG3	35:g:205:TYR:CD1	2.30	0.66
1:2:590:A:H2'	1:2:591:G:H8	1.61	0.66
1:2:1161:C:H4'	32:c:22:ARG:HD3	1.77	0.66
1:2:1345:A:OP2	1:2:1347:A:N6	2.28	0.66
1:2:1589:C:H2'	1:2:1590:A:C8	2.30	0.66
1:2:1598:A:H2'	1:2:1599:G:H5''	1.76	0.66
1:2:3:U:O2'	9:J:17:ARG:NH2	2.22	0.66
1:2:28:A:C6	1:2:597:U:O4	2.49	0.66
1:2:966:A:H2'	1:2:967:U:C6	2.31	0.66
1:2:1069:C:H4'	18:b:17:ARG:HH12	1.61	0.66
1:2:1412:U:OP2	27:R:2:GLY:N	2.28	0.66
8:I:81:VAL:HA	8:I:102:VAL:HG12	1.77	0.66
39:j:72:VAL:HG13	39:j:86:SER:HB3	1.78	0.66
43:p:619:VAL:HG21	43:p:697:ILE:HG21	1.77	0.66
1:2:1617:C:O2	32:c:22:ARG:NH2	2.28	0.66
21:D:229:GLU:O	35:g:171:ARG:NH2	2.28	0.66
22:F:60:LEU:HD12	22:F:140:ILE:HD12	1.77	0.66
38:1:15:G:N2	38:1:22:G:N3	2.43	0.66
40:k:249:ASN:HB3	40:k:250:LYS:HD2	1.75	0.66
1:2:399:A:H5''	8:I:25:ARG:HA	1.76	0.66
1:2:700:C:O2'	1:2:701:U:OP1	2.14	0.66
1:2:917:U:H2'	1:2:918:A:C8	2.31	0.66
1:2:1710:A:H2'	1:2:1711:G:H4'	1.77	0.66
3:B:103:MET:HB3	3:B:215:VAL:HB	1.77	0.66
22:F:178:THR:OG1	22:F:182:ARG:NH2	2.29	0.66
26:Q:8:GLN:OE1	26:Q:21:HIS:NE2	2.28	0.66
1:2:829:U:H2'	1:2:830:U:C6	2.31	0.66
1:2:1289:PSU:H2'	1:2:1290:G:C8	2.30	0.66
1:2:590:A:H2'	1:2:591:G:C8	2.31	0.66
8:I:173:ARG:HE	8:I:176:GLN:HG3	1.60	0.66
8:I:185:LEU:HD12	8:I:189:GLU:HB3	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:65:A:C6	1:2:83:G:N2	2.64	0.66
1:2:108:A:H2'	1:2:109:G:C8	2.31	0.66
1:2:1085:A:O2'	1:2:1297:U:O4	2.13	0.66
1:2:1219:C:H2'	1:2:1220:A:H8	1.61	0.66
1:2:1645:U:H2'	1:2:1646:A:C8	2.31	0.66
5:E:31:PRO:HB3	5:E:83:PRO:HB3	1.78	0.66
43:p:467:PHE:CE2	43:p:469:SER:HB2	2.31	0.66
40:k:313:PRO:HA	40:k:345:GLY:HA3	1.77	0.65
1:2:1764:A:N1	17:a:80:HIS:ND1	2.35	0.65
15:X:14:LYS:HA	15:X:17:VAL:HG22	1.77	0.65
39:j:244:LEU:HD22	39:j:268:PRO:HD3	1.78	0.65
1:2:1551:G:N7	25:P:47:ARG:NH1	2.45	0.65
24:M:84:ASP:OD1	24:M:87:GLN:NE2	2.29	0.65
43:p:490:LEU:HD21	43:p:498:VAL:HG12	1.77	0.65
1:2:328:G:H2'	1:2:329:G:C8	2.29	0.65
1:2:1632:C:H1'	37:3:35:C:H5	1.60	0.65
5:E:122:LYS:HB2	5:E:164:LEU:HD11	1.77	0.65
11:N:105:ASN:O	11:N:105:ASN:ND2	2.29	0.65
15:X:107:PHE:HD1	15:X:123:LYS:HG3	1.62	0.65
1:2:481:U:H2'	1:2:482:A:C8	2.32	0.65
1:2:801:G:H2'	1:2:802:A:C4	2.31	0.65
1:2:965:A:P	11:N:124:ARG:HD3	2.36	0.65
1:2:1582:G:H22	1:2:1608:G:H3'	1.62	0.65
9:J:88:GLU:OE2	9:J:88:GLU:N	2.29	0.65
22:F:123:ILE:HB	22:F:131:PRO:HB3	1.79	0.65
38:1:33:U:N3	38:1:36:U:OP2	2.26	0.65
1:2:1340:A:O2'	35:g:103:ARG:NH1	2.30	0.65
1:2:1431:G:N3	33:d:41:GLN:NE2	2.45	0.65
40:k:359:ILE:HB	40:k:371:LYS:HB2	1.78	0.65
43:p:626:LEU:HD11	43:p:675:VAL:HG13	1.79	0.65
1:2:160:U:O2'	1:2:161:A:OP2	2.15	0.65
5:E:158:ASP:OD1	5:E:174:LYS:HA	1.96	0.65
5:E:80:THR:HG23	5:E:81:THR:HG23	1.78	0.65
35:g:45:SER:O	35:g:59:VAL:N	2.29	0.65
1:2:78:A:H2'	1:2:79:C:C6	2.32	0.65
1:2:1592:G:OP2	1:2:1594:C:N4	2.30	0.65
20:h:2:ARG:HD3	20:h:5:TRP:NE1	2.11	0.65
38:1:53:G:H2'	38:1:54:A:C8	2.32	0.65
39:j:24:VAL:HG13	39:j:65:VAL:HA	1.79	0.65
1:2:272:G:O6	1:2:282:U:O2	2.15	0.64
1:2:1108:G:H1	1:2:1135:U:H3	1.44	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:F:97:ASN:OD1	22:F:109:LYS:HE3	1.96	0.64
28:S:88:ARG:HD2	28:S:108:LYS:HD3	1.78	0.64
35:g:210:GLN:HE22	35:g:252:PHE:HB2	1.62	0.64
1:2:223:C:H2'	1:2:224:A:H8	1.61	0.64
6:G:58:LYS:HA	6:G:107:ALA:HB2	1.79	0.64
42:o:69:LYS:HG2	42:o:168:LEU:HD12	1.78	0.64
22:F:54:GLU:N	22:F:133:GLN:OE1	2.22	0.64
1:2:55:A:H3'	1:2:402:G:H22	1.62	0.64
7:H:62:VAL:HG12	7:H:64:VAL:H	1.62	0.64
1:2:404:C:O2'	6:G:92:ARG:O	2.14	0.64
1:2:1240:G:H2'	1:2:1241:A:C8	2.32	0.64
1:2:1626:U:H2'	1:2:1627:G:H8	1.63	0.64
4:C:143:PRO:HG3	13:V:12:TYR:OH	1.97	0.64
8:I:67:TRP:O	8:I:71:GLY:N	2.30	0.64
8:I:67:TRP:O	8:I:71:GLY:CA	2.45	0.64
14:W:27:ILE:HB	14:W:61:ILE:HB	1.79	0.64
22:F:27:LEU:HD22	26:Q:27:GLY:HA3	1.78	0.64
42:o:39:ARG:HA	42:o:42:TRP:HD1	1.63	0.64
43:p:276:ILE:HG23	43:p:299:LEU:HD11	1.80	0.64
1:2:778:G:H3'	1:2:780:A:H2	1.62	0.64
1:2:886:A:H2'	1:2:887:U:H6	1.61	0.64
1:2:1038:A:O2'	1:2:1039:G:O5'	2.16	0.64
2:A:119:ARG:NH2	4:C:246:ASP:HA	2.12	0.64
4:C:182:GLY:N	4:C:200:ASP:OD1	2.29	0.64
5:E:55:ALA:HB1	5:E:60:GLU:HG2	1.78	0.64
5:E:71:LYS:HB3	5:E:91:THR:HB	1.79	0.64
10:L:33:ARG:NH1	10:L:51:GLY:O	2.31	0.64
12:O:99:GLN:NE2	17:a:46:GLU:OE1	2.25	0.64
26:Q:47:LYS:HB3	26:Q:82:ARG:HD2	1.80	0.64
35:g:14:LEU:HB2	35:g:317:ILE:HB	1.79	0.64
1:2:55:A:OP1	16:Y:112:LYS:NZ	2.26	0.64
1:2:643:U:H2'	1:2:644:C:C6	2.33	0.64
1:2:1720:A:H5''	6:G:75:LEU:HD11	1.79	0.64
4:C:44:THR:O	4:C:47:GLY:N	2.27	0.64
14:W:24:GLN:N	14:W:24:GLN:OE1	2.31	0.64
30:U:82:TYR:HB3	33:d:52:PHE:HB3	1.80	0.64
42:o:275:LYS:HB2	42:o:278:THR:HG22	1.78	0.64
1:2:651:U:H5''	1:2:652:C:H5	1.61	0.64
1:2:1464:G:O2'	1:2:1600:C:OP1	2.16	0.64
7:H:143:LEU:O	14:W:42:GLN:NE2	2.31	0.64
25:P:111:MET:HE2	28:S:119:ILE:HD12	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:p:600:GLU:HG2	43:p:603:ARG:HH12	1.61	0.64
1:2:31:C:O2'	1:2:546:U:OP1	2.16	0.64
24:M:94:LEU:O	24:M:104:ARG:CZ	2.46	0.64
1:2:72:A:N3	1:2:73:U:N3	2.46	0.64
1:2:1472:G:H2'	1:2:1473:A:C8	2.33	0.64
8:I:67:TRP:O	8:I:71:GLY:HA2	1.98	0.64
39:j:198:ILE:HG22	39:j:202:LYS:HE3	1.80	0.64
40:k:355:ILE:HG22	40:k:373:ILE:HB	1.80	0.64
1:2:148:C:OP1	16:Y:121:THR:OG1	2.11	0.63
1:2:371:G:H1'	1:2:611:U:H3	1.62	0.63
1:2:848:C:H2'	1:2:849:A:H8	1.63	0.63
1:2:1131:A:H2'	1:2:1132:A:H8	1.62	0.63
8:I:83:TYR:HD2	8:I:101:ILE:HD13	1.63	0.63
29:T:89:ARG:HA	29:T:89:ARG:NE	2.12	0.63
31:Z:56:THR:N	31:Z:103:ARG:HH12	1.95	0.63
35:g:160:LYS:NZ	35:g:171:ARG:O	2.31	0.63
40:k:129:LYS:O	40:k:131:GLU:N	2.31	0.63
1:2:274:C:O2'	1:2:276:U:O4	2.15	0.63
1:2:653:C:N4	1:2:677:G:O6	2.30	0.63
1:2:1246:U:H5''	34:f:93:HIS:HB2	1.80	0.63
21:D:164:VAL:HA	21:D:168:ILE:HD13	1.80	0.63
28:S:41:ARG:HD3	29:T:38:LYS:NZ	2.12	0.63
35:g:43:LEU:HD11	35:g:83:SER:HB3	1.79	0.63
1:2:1159:A:H2'	1:2:1160:C:C6	2.33	0.63
26:Q:52:LEU:HD22	26:Q:60:PHE:CZ	2.33	0.63
1:2:475:U:OP1	19:e:33:ARG:NH2	2.32	0.63
9:J:123:HIS:CE1	19:e:37:ARG:HD3	2.32	0.63
19:e:30:PRO:HB2	19:e:34:ALA:HB1	1.80	0.63
1:2:1586:G:H1	1:2:1606:U:H3	1.45	0.63
1:2:1592:G:H5'	33:d:33:LYS:HE2	1.81	0.63
5:E:180:LEU:HG	5:E:231:PRO:HA	1.80	0.63
6:G:49:VAL:HG13	6:G:114:THR:HB	1.81	0.63
24:M:104:ARG:NH2	24:M:104:ARG:HG2	2.13	0.63
43:p:626:LEU:HD22	43:p:679:ALA:HB2	1.79	0.63
43:p:750:ASN:ND2	43:p:754:GLU:OE2	2.31	0.63
1:2:121:U:H2'	1:2:122:U:C6	2.33	0.63
1:2:893:U:H2'	1:2:894:G:C8	2.34	0.63
1:2:1388:U:H5'	27:R:3:ARG:HD3	1.81	0.63
15:X:53:VAL:HG12	15:X:100:ASP:H	1.63	0.63
21:D:225:TYR:HB2	35:g:197:ALA:HA	1.81	0.63
35:g:115:ALA:HB3	35:g:124:ILE:HB	1.78	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:824:U:H2'	1:2:825:U:C6	2.34	0.63
8:I:117:TYR:OH	8:I:150:GLU:OE1	2.17	0.63
35:g:52:GLU:HG3	35:g:53:GLN:H	1.64	0.63
1:2:14:C:OP1	4:C:169:SER:N	2.22	0.63
1:2:533:A:H3'	1:2:534:A:H8	1.62	0.63
1:2:1198:G:N2	33:d:30:LEU:O	2.32	0.63
25:P:85:ILE:HD13	25:P:111:MET:HB3	1.80	0.63
27:R:91:LEU:O	27:R:93:LEU:N	2.32	0.63
1:2:277:U:O2	1:2:278:G:N2	2.32	0.62
1:2:521:U:O2'	16:Y:60:PHE:O	2.17	0.62
1:2:1145:G:H2'	1:2:1146:A:C8	2.34	0.62
4:C:178:PRO:HG3	9:J:57:ARG:HE	1.63	0.62
6:G:102:VAL:HG13	6:G:106:LEU:HD12	1.81	0.62
39:j:100:GLU:HB3	39:j:104:LYS:NZ	2.14	0.62
40:k:342:ILE:O	40:k:393:GLY:N	2.32	0.62
6:G:126:ASN:OD1	6:G:127:ASP:N	2.33	0.62
9:J:23:ARG:O	9:J:27:GLU:HG3	1.99	0.62
11:N:36:GLN:HA	11:N:39:LYS:HG2	1.82	0.62
35:g:179:MET:HA	35:g:205:TYR:HB2	1.81	0.62
32:c:31:GLU:OE2	32:c:36:THR:HA	1.98	0.62
43:p:723:LYS:HE3	43:p:759:VAL:HG22	1.81	0.62
24:M:17:ILE:HG12	24:M:18:GLU:HG3	1.80	0.62
26:Q:123:ARG:HD3	26:Q:124:PRO:HD2	1.81	0.62
28:S:126:ARG:HD2	28:S:131:LEU:HB2	1.81	0.62
1:2:642:G:O6	1:2:692:C:N4	2.32	0.62
26:Q:99:GLU:OE2	35:g:61:SER:N	2.32	0.62
28:S:116:LEU:O	28:S:119:ILE:HG22	1.99	0.62
29:T:13:ASP:HA	29:T:16:ASN:ND2	2.14	0.62
43:p:265:ARG:NH1	43:p:298:THR:O	2.33	0.62
1:2:403:G:H2'	1:2:404:C:H6	1.63	0.62
8:I:77:ARG:HB3	8:I:105:ASP:HB2	1.80	0.62
29:T:61:VAL:O	29:T:65:ILE:HG12	1.99	0.62
35:g:213:PRO:HD3	35:g:252:PHE:HB3	1.82	0.62
35:g:228:TYR:HB3	35:g:230:TRP:NE1	2.15	0.62
40:k:247:LEU:HD13	40:k:283:ILE:HD13	1.82	0.62
1:2:214:A:H62	1:2:241:U:H3'	1.63	0.62
1:2:339:U:H2'	1:2:340:A:C8	2.35	0.62
1:2:1025:A:N7	1:2:1770:C:O2'	2.30	0.62
1:2:1240:G:P	25:P:77:ARG:HH12	2.22	0.62
1:2:1739:U:H2'	1:2:1740:U:C6	2.35	0.62
21:D:44:THR:HG22	21:D:45:LYS:HG3	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:S:30:TYR:O	28:S:33:THR:OG1	2.16	0.62
30:U:53:LYS:HB2	30:U:92:ASP:OD1	2.00	0.62
38:1:63:G:N2	38:1:64:RIA:O1X	2.32	0.62
39:j:244:LEU:HD13	39:j:268:PRO:HB3	1.82	0.62
43:p:559:LEU:HB3	43:p:562:GLU:HB3	1.80	0.62
1:2:1241:A:OP1	25:P:59:LYS:NZ	2.26	0.62
1:2:1519:G:O2'	1:2:1521:G:OP2	2.18	0.62
1:2:1641:U:OP1	20:h:9:ARG:NH2	2.29	0.62
1:2:1647:G:H2'	1:2:1648:U:C6	2.35	0.62
2:A:43:ASP:O	27:R:128:ARG:NH1	2.29	0.62
2:A:120:LEU:HD21	2:A:144:ILE:HD13	1.82	0.62
3:B:77:GLU:OE2	3:B:77:GLU:N	2.27	0.62
13:V:68:SER:O	13:V:71:ARG:HB2	1.99	0.62
19:e:20:LYS:NZ	19:e:22:GLU:OE2	2.32	0.62
1:2:27:U:H2'	1:2:28:A:H8	1.64	0.62
1:2:1754:A:OP2	36:i:66:ARG:NH1	2.33	0.62
24:M:50:GLY:O	24:M:76:ASN:ND2	2.31	0.62
28:S:52:VAL:HG11	28:S:69:ILE:HD11	1.81	0.62
1:2:327:A:H2'	1:2:328:G:C8	2.34	0.62
1:2:1645:U:H2'	1:2:1646:A:H8	1.65	0.62
28:S:88:ARG:NH2	28:S:112:ASP:OD2	2.31	0.62
1:2:601:U:H2'	1:2:602:U:C6	2.34	0.61
1:2:1584:A:H2	22:F:106:ASN:HD21	0.68	0.61
5:E:50:ASN:O	5:E:53:LYS:NZ	2.29	0.61
13:V:74:GLN:NE2	13:V:83:TRP:H	1.98	0.61
22:F:126:LEU:HA	31:Z:58:ARG:NH2	2.15	0.61
1:2:1380:A:HO2'	1:2:1381:G:H8	1.49	0.61
38:1:9:IMG:H4'	38:1:45:U:H2'	1.82	0.61
1:2:642:G:H2'	1:2:643:U:H6	1.64	0.61
1:2:1000:A:OP1	38:1:38:A:O2'	2.17	0.61
1:2:1386:A:N6	1:2:1409:A:N7	2.48	0.61
1:2:1504:G:H2'	1:2:1505:G:C8	2.34	0.61
3:B:104:ASP:OD1	3:B:105:PHE:N	2.33	0.61
4:C:193:MET:HE1	4:C:223:ILE:HD12	1.82	0.61
27:R:74:GLN:HA	27:R:77:GLU:CD	2.26	0.61
38:1:57:G:O6	39:j:172:TYR:OH	2.17	0.61
38:1:62:C:H2'	38:1:63:G:H8	1.64	0.61
43:p:628:ILE:HG23	43:p:629:GLU:HG3	1.81	0.61
1:2:229:C:H2'	1:2:230:U:O4'	2.00	0.61
1:2:1166:G:OP1	22:F:103:GLY:HA3	2.00	0.61
4:C:148:TYR:O	14:W:98:GLN:NE2	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:S:41:ARG:NH1	29:T:38:LYS:HE2	2.14	0.61
28:S:45:LEU:HD23	28:S:48:LYS:HD2	1.82	0.61
29:T:67:LEU:HB3	29:T:68:ARG:HE	1.65	0.61
32:c:15:VAL:HA	32:c:28:VAL:HG12	1.82	0.61
43:p:523:LEU:HD11	43:p:550:LEU:HD22	1.82	0.61
43:p:627:LEU:HD22	43:p:716:ARG:HG2	1.82	0.61
1:2:142:G:H2'	1:2:143:G:H8	1.63	0.61
1:2:609:G:HO2'	1:2:612:G:HO2'	1.46	0.61
1:2:1426:2MG:N2	30:U:74:GLU:OE1	2.34	0.61
1:2:1593:U:O4	48:2:2001:HOH:O	2.14	0.61
5:E:104:ASP:OD2	5:E:108:ARG:NH2	2.33	0.61
7:H:37:ASP:OD2	7:H:72:LYS:NZ	2.33	0.61
9:J:38:ASN:HB2	9:J:40:ARG:HG2	1.82	0.61
11:N:88:LEU:O	11:N:92:ILE:HD12	2.01	0.61
15:X:74:VAL:HG11	15:X:104:LEU:HD11	1.80	0.61
24:M:104:ARG:HD2	24:M:107:VAL:CG1	2.31	0.61
39:j:174:SER:O	39:j:178:THR:OG1	2.18	0.61
40:k:140:LEU:O	40:k:319:ARG:NH1	2.34	0.61
1:2:862:A:H4'	14:W:57:ARG:HD3	1.81	0.61
2:A:84:ARG:HG2	2:A:88:LYS:HE2	1.82	0.61
35:g:86:TRP:HA	35:g:110:ASP:HB2	1.81	0.61
40:k:204:MET:HE3	40:k:232:HIS:HD1	1.63	0.61
43:p:587:ARG:O	43:p:587:ARG:NH1	2.28	0.61
3:B:143:THR:HB	3:B:205:PHE:HE2	1.66	0.61
9:J:121:SER:O	9:J:124:HIS:N	2.31	0.61
25:P:118:GLU:OE1	25:P:118:GLU:HA	2.01	0.61
27:R:71:PHE:CE1	27:R:74:GLN:HG3	2.36	0.61
1:2:165:C:O2	6:G:132:ARG:NE	2.34	0.61
1:2:625:U:H2'	1:2:626:C:H6	1.65	0.61
1:2:627:G:N1	1:2:969:A:OP2	2.28	0.61
24:M:29:LEU:HD11	24:M:93:GLY:HA3	1.82	0.61
26:Q:45:ARG:O	26:Q:48:VAL:HG22	2.00	0.61
35:g:157:VAL:HA	35:g:174:PHE:HB3	1.83	0.61
35:g:312:TYR:N	35:g:318:ARG:HH12	1.98	0.61
1:2:31:C:OP1	15:X:140:LYS:NZ	2.33	0.61
1:2:329:G:OP2	8:I:173:ARG:NH1	2.34	0.61
1:2:367:U:O4	1:2:368:A:N6	2.34	0.61
1:2:890:A:H2'	1:2:891:A:C8	2.36	0.61
1:2:1125:G:H5'	20:h:11:ARG:HE	1.64	0.61
1:2:1302:U:O2'	1:2:1321:A:OP2	2.19	0.61
1:2:1738:A:H2'	1:2:1739:U:C6	2.36	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:189:PRO:O	13:V:44:ARG:NH1	2.34	0.61
10:L:97:TYR:O	10:L:99:ARG:HG2	2.01	0.61
21:D:32:GLU:OE2	21:D:65:ARG:NH1	2.34	0.61
27:R:33:ARG:NH1	35:g:110:ASP:OD2	2.34	0.61
43:p:467:PHE:HE2	43:p:469:SER:HB2	1.63	0.61
1:2:143:G:OP1	6:G:143:LYS:NZ	2.23	0.61
1:2:738:G:N1	1:2:739:G:O6	2.33	0.61
2:A:74:VAL:HG22	2:A:96:THR:HB	1.83	0.61
12:O:61:MET:SD	12:O:100:ALA:HB1	2.40	0.61
19:e:49:LEU:O	19:e:54:ARG:NH2	2.34	0.61
33:d:41:GLN:HA	33:d:44:ARG:HB2	1.83	0.61
38:1:23:C:N4	38:1:24:G:O6	2.33	0.61
1:2:712:U:O4	1:2:713:A:N6	2.33	0.60
1:2:1165:A:H5''	22:F:103:GLY:CA	2.31	0.60
1:2:1732:U:H2'	1:2:1733:U:C6	2.36	0.60
2:A:26:ALA:HB2	2:A:48:ILE:HD11	1.83	0.60
11:N:33:VAL:O	11:N:37:ILE:HG12	2.00	0.60
12:O:22:SER:OG	12:O:24:ASN:O	2.19	0.60
35:g:113:SER:HB3	35:g:126:ALA:HB3	1.82	0.60
39:j:47:LEU:HD23	39:j:49:SER:H	1.66	0.60
42:o:311:SER:HA	42:o:321:PHE:HZ	1.65	0.60
1:2:1204:C:H3'	1:2:1205:U:C5	2.37	0.60
1:2:1670:G:H2'	1:2:1671:G:C8	2.36	0.60
14:W:11:LEU:HD12	14:W:72:CYS:HB3	1.83	0.60
17:a:36:ILE:HG21	17:a:78:ALA:HB2	1.81	0.60
4:C:81:LEU:HD12	4:C:109:VAL:HG22	1.82	0.60
26:Q:31:VAL:HG12	26:Q:67:VAL:HB	1.83	0.60
35:g:207:ASN:ND2	35:g:247:VAL:O	2.34	0.60
1:2:1514:A:OP2	30:U:88:LYS:NZ	2.32	0.60
3:B:164:ILE:HD13	3:B:207:LEU:HD11	1.83	0.60
7:H:76:LYS:O	7:H:80:GLU:HG2	2.01	0.60
21:D:59:VAL:HG22	21:D:66:ILE:HD11	1.83	0.60
1:2:650:G:O6	1:2:684:A:N6	2.34	0.60
1:2:1551:G:N7	25:P:43:ARG:NH2	2.44	0.60
39:j:238:GLN:HG3	39:j:239:LYS:HD3	1.83	0.60
1:2:1289:PSU:OP1	4:C:100:ARG:NH2	2.27	0.60
22:F:50:PHE:CE2	22:F:69:PRO:HA	2.36	0.60
24:M:104:ARG:HH21	24:M:104:ARG:CG	2.14	0.60
29:T:84:LYS:HB2	29:T:86:ARG:HG2	1.83	0.60
1:2:299:A:H2'	1:2:300:A:C8	2.36	0.60
1:2:471:U:H2'	1:2:472:A:C8	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:925:A:H2'	1:2:926:C:C6	2.36	0.60
1:2:1076:C:OP1	17:a:13:LYS:NZ	2.35	0.60
1:2:1143:U:H2'	1:2:1144:U:C6	2.37	0.60
1:2:1580:U:H5''	26:Q:135:ARG:HH21	1.67	0.60
2:A:43:ASP:HB2	27:R:124:VAL:HG11	1.84	0.60
2:A:131:GLN:NE2	2:A:135:GLU:OE2	2.35	0.60
35:g:117:ASP:OD2	35:g:121:SER:OG	2.17	0.60
43:p:410:ARG:HG3	43:p:459:ILE:HG12	1.82	0.60
1:2:176:U:H2'	1:2:177:U:H2'	1.82	0.60
1:2:305:U:OP2	10:L:105:LYS:NZ	2.34	0.60
9:J:20:GLU:OE2	9:J:23:ARG:NE	2.28	0.60
39:j:149:ILE:HD11	39:j:177:LEU:HB3	1.83	0.60
40:k:99:ALA:HA	40:k:188:HIS:HB3	1.83	0.60
40:k:320:SER:HB3	40:k:412:LEU:HB2	1.84	0.60
1:2:13:C:H1'	1:2:1298:G:H21	1.66	0.60
1:2:885:U:H2'	1:2:886:A:C8	2.37	0.60
1:2:1415:A:H2'	1:2:1416:G:O4'	2.01	0.60
1:2:1532:G:N7	31:Z:77:ARG:NH2	2.50	0.60
2:A:78:SER:O	2:A:83:GLN:NE2	2.34	0.60
3:B:2:ALA:HB3	39:j:89:ARG:HH22	1.66	0.60
4:C:83:ASP:OD1	4:C:84:GLU:N	2.35	0.60
11:N:69:ASN:HB3	11:N:74:ILE:HD11	1.83	0.60
35:g:128:ARG:HD3	35:g:151:TRP:CE3	2.36	0.60
40:k:111:HIS:NE2	40:k:222:GLU:OE1	2.29	0.60
43:p:597:SER:HB2	43:p:601:ARG:HG3	1.83	0.60
1:2:709:C:H2'	1:2:710:U:H4'	1.83	0.60
1:2:1381:G:OP1	30:U:87:HIS:ND1	2.35	0.60
2:A:15:GLN:HB2	27:R:117:LEU:HD11	1.83	0.60
2:A:60:ALA:O	2:A:64:ILE:HG12	2.01	0.60
5:E:161:LYS:HB3	5:E:170:THR:HB	1.83	0.60
9:J:123:HIS:ND1	19:e:37:ARG:HD3	2.17	0.60
9:J:141:VAL:HG12	9:J:143:ILE:H	1.67	0.60
12:O:19:ILE:CD1	12:O:81:ILE:HD11	2.31	0.60
15:X:103:LEU:HB3	15:X:126:LYS:HB2	1.84	0.60
22:F:50:PHE:HE2	22:F:70:ILE:H	1.50	0.60
24:M:121:THR:O	24:M:124:ARG:NH1	2.35	0.60
1:2:5:U:H2'	1:2:6:G:H8	1.66	0.59
1:2:589:C:H5'	19:e:56:MET:HE1	1.83	0.59
1:2:883:A:O2'	3:B:124:ASN:ND2	2.35	0.59
15:X:107:PHE:CZ	15:X:114:LYS:HE3	2.37	0.59
21:D:24:PHE:HE2	23:K:65:TYR:CD2	2.20	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:P:108:ARG:HG2	25:P:109:PRO:HD2	1.84	0.59
38:1:19:G:N2	38:1:20:A:H61	2.00	0.59
40:k:103:ILE:HG12	40:k:213:ALA:HB3	1.83	0.59
1:2:537:A:H5'	1:2:542:C:H41	1.67	0.59
1:2:865:G:H2'	1:2:866:G:H8	1.67	0.59
1:2:1357:G:H1'	29:T:129:LEU:HD22	1.84	0.59
1:2:1357:G:H4'	29:T:130:ARG:HB2	1.83	0.59
1:2:1590:A:H2'	1:2:1591:A:H8	1.66	0.59
3:B:144:ARG:HB3	3:B:206:PRO:HB2	1.84	0.59
14:W:11:LEU:HD11	14:W:37:PHE:HE2	1.65	0.59
21:D:109:LEU:HD11	21:D:115:ILE:HG22	1.84	0.59
1:2:403:G:H2'	1:2:404:C:C6	2.36	0.59
3:B:51:SER:OG	3:B:56:ASN:OD1	2.19	0.59
1:2:129:U:OP1	1:2:131:C:N4	2.35	0.59
1:2:717:C:O2	1:2:720:G:O6	2.20	0.59
1:2:976:A:N6	1:2:1023:U:C2	2.71	0.59
1:2:979:G:OP2	1:2:1013:G:O2'	2.21	0.59
1:2:1500:G:N2	1:2:1503:A:OP2	2.35	0.59
5:E:36:HIS:CG	5:E:85:GLY:HA3	2.37	0.59
6:G:63:MET:HE1	6:G:106:LEU:HD13	1.84	0.59
17:a:24:VAL:HG21	17:a:71:LEU:HD22	1.84	0.59
1:2:57:G:OP2	16:Y:116:LYS:NZ	2.29	0.59
1:2:649:U:O2'	1:2:650:G:OP1	2.20	0.59
6:G:136:LYS:NZ	6:G:174:LYS:O	2.36	0.59
25:P:15:TYR:HB3	25:P:22:LEU:HD12	1.85	0.59
1:2:181:A:H2'	1:2:182:U:C6	2.38	0.59
1:2:738:G:H2'	1:2:739:G:C8	2.38	0.59
1:2:760:A:N1	1:2:789:U:C4	2.70	0.59
21:D:143:ARG:NH2	37:3:38:C:O2	2.35	0.59
24:M:47:ARG:NE	34:f:126:PRO:O	2.35	0.59
25:P:90:ILE:HD12	25:P:109:PRO:HA	1.84	0.59
1:2:703:G:H3'	1:2:704:C:H3'	1.84	0.59
1:2:1649:A:H2'	1:2:1650:C:H6	1.66	0.59
4:C:162:LYS:HE2	14:W:95:PRO:HA	1.84	0.59
14:W:34:ILE:HD12	14:W:34:ILE:H	1.67	0.59
28:S:45:LEU:HD11	29:T:36:ILE:HG23	1.84	0.59
40:k:71:GLU:O	40:k:182:ARG:NH1	2.24	0.59
42:o:35:ILE:HG13	42:o:36:THR:HG23	1.84	0.59
42:o:290:PHE:HB3	42:o:299:HIS:HB2	1.85	0.59
1:2:891:A:H2'	1:2:892:U:C6	2.38	0.59
1:2:1239:U:O2'	1:2:1243:A:N1	2.32	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1652:G:O2'	1:2:1744:A:N6	2.32	0.59
6:G:88:ARG:N	6:G:91:GLU:OE2	2.33	0.59
12:O:99:GLN:HE22	17:a:45:VAL:HA	1.68	0.59
21:D:120:TYR:HA	21:D:123:VAL:HG12	1.84	0.59
22:F:128:ASP:O	22:F:129:GLN:C	2.46	0.59
36:i:50:SER:HB2	36:i:56:LYS:HZ2	1.68	0.59
42:o:187:MET:HE2	42:o:246:VAL:HB	1.85	0.59
42:o:201:ARG:NH1	42:o:204:GLU:OE2	2.36	0.59
43:p:425:LEU:O	43:p:429:LEU:HB2	2.02	0.59
1:2:357:U:H2'	1:2:359:A:C8	2.38	0.59
1:2:1381:G:H2'	1:2:1382:A:C8	2.38	0.59
1:2:1781:C:H2'	1:2:1782:C:C6	2.38	0.59
9:J:145:SER:C	9:J:147:MET:H	2.10	0.59
27:R:14:LYS:HG3	27:R:69:ILE:HG22	1.84	0.59
35:g:107:HIS:ND1	35:g:129:ASP:OD2	2.29	0.59
40:k:97:ARG:HB3	40:k:387:LEU:HD21	1.83	0.59
1:2:447:C:OP1	5:E:49:ARG:NH2	2.31	0.59
1:2:842:U:O4	1:2:843:A:N6	2.36	0.59
1:2:1555:U:H1'	25:P:118:GLU:OE2	2.03	0.59
24:M:104:ARG:HG2	24:M:104:ARG:HH21	1.68	0.59
27:R:13:SER:O	27:R:17:ILE:HD12	2.03	0.59
42:o:363:ARG:HH12	42:o:427:VAL:HG11	1.68	0.59
1:2:14:C:OP2	4:C:208:SER:OG	2.21	0.58
1:2:392:C:OP1	8:I:2:GLY:N	2.36	0.58
1:2:1584:A:H5''	26:Q:136:SER:HB2	1.84	0.58
3:B:29:TRP:HB3	3:B:45:LYS:HE3	1.84	0.58
4:C:232:PRO:O	4:C:234:LEU:N	2.36	0.58
7:H:91:ILE:HG12	7:H:129:LEU:HD12	1.85	0.58
11:N:87:ASP:OD1	11:N:88:LEU:N	2.36	0.58
24:M:95:GLY:HA3	24:M:104:ARG:NH1	2.18	0.58
1:2:330:A:OP1	8:I:56:ARG:NH1	2.36	0.58
1:2:791:U:H2'	1:2:792:A:C4	2.37	0.58
1:2:887:U:H2'	1:2:888:U:C6	2.38	0.58
1:2:894:G:H4'	12:O:37:GLU:OE2	2.03	0.58
1:2:1405:U:H2'	1:2:1406:G:C8	2.38	0.58
3:B:176:VAL:HG22	3:B:184:LEU:HD11	1.84	0.58
11:N:136:PRO:HG2	11:N:139:TRP:HB2	1.85	0.58
28:S:102:ALA:O	28:S:105:LEU:HB3	2.03	0.58
40:k:142:TYR:HE1	40:k:190:SER:HB2	1.68	0.58
1:2:15:U:O2'	1:2:619:A:N6	2.35	0.58
1:2:1775:G:H2'	1:2:1776:G:C8	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:Q:8:GLN:HB3	26:Q:21:HIS:CD2	2.38	0.58
27:R:31:ASN:HD22	27:R:55:THR:HG22	1.67	0.58
1:2:78:A:H2'	1:2:79:C:H6	1.67	0.58
1:2:161:A:H3'	1:2:162:G:H21	1.68	0.58
1:2:653:C:H2'	1:2:654:G:C8	2.37	0.58
1:2:917:U:O2'	12:O:35:GLY:O	2.21	0.58
2:A:180:GLU:CD	2:A:191:ARG:HH22	2.12	0.58
4:C:128:GLY:HA2	4:C:131:ARG:NH1	2.18	0.58
7:H:75:ILE:HG23	7:H:76:LYS:HD3	1.85	0.58
10:L:96:LYS:HD3	10:L:97:TYR:CE1	2.38	0.58
24:M:95:GLY:HA3	24:M:104:ARG:NH2	2.17	0.58
36:i:98:ASP:OD1	36:i:99:GLU:N	2.35	0.58
1:2:108:A:H2'	1:2:109:G:H8	1.67	0.58
1:2:256:A:N3	8:I:64:ASN:ND2	2.50	0.58
1:2:685:A:H2'	1:2:686:C:C6	2.37	0.58
1:2:1255:A:OP1	23:K:5:LYS:NZ	2.33	0.58
1:2:1469:A:OP1	22:F:187:ARG:NH2	2.32	0.58
22:F:167:LEU:O	22:F:171:ASN:ND2	2.36	0.58
26:Q:13:LYS:HG2	26:Q:76:SER:HA	1.85	0.58
28:S:126:ARG:HG2	28:S:133:VAL:HA	1.86	0.58
40:k:320:SER:HB2	40:k:407:CYS:HA	1.86	0.58
42:o:79:ILE:HG12	42:o:85:GLY:HA3	1.85	0.58
1:2:1159:A:H2'	1:2:1160:C:H6	1.68	0.58
1:2:1427:G:H2'	1:2:1428:U:H6	1.69	0.58
7:H:49:ILE:HG13	7:H:172:VAL:HG23	1.84	0.58
29:T:130:ARG:O	29:T:134:ARG:HG2	2.04	0.58
35:g:30:GLN:OE1	35:g:33:LEU:N	2.36	0.58
35:g:60:ARG:NE	35:g:96:ALA:O	2.36	0.58
35:g:109:GLY:O	35:g:127:SER:OG	2.21	0.58
35:g:248:PHE:HE2	35:g:264:ALA:HA	1.68	0.58
1:2:922:A:H2'	1:2:923:A:C8	2.38	0.58
1:2:990:G:N2	1:2:1012:A:N6	2.24	0.58
1:2:1531:C:OP2	31:Z:77:ARG:NE	2.35	0.58
1:2:1639:C:H1'	1:2:1760:A:C6	2.38	0.58
1:2:1737:C:H2'	1:2:1738:A:H8	1.67	0.58
2:A:176:LEU:O	2:A:180:GLU:HG2	2.03	0.58
9:J:15:PRO:HD3	9:J:43:TYR:CE1	2.38	0.58
33:d:47:ALA:HB1	33:d:52:PHE:HB2	1.86	0.58
1:2:788:A:C2	1:2:789:U:H1'	2.39	0.58
1:2:966:A:OP1	11:N:4:MET:HG3	2.04	0.58
1:2:1591:A:H2'	1:2:1592:G:C8	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1660:G:H2'	1:2:1661:G:C8	2.39	0.58
2:A:53:THR:HG22	2:A:161:PRO:HG2	1.85	0.58
11:N:146:ALA:O	11:N:150:VAL:HG23	2.04	0.58
12:O:42:VAL:HG13	12:O:46:MET:HG3	1.86	0.58
14:W:114:GLU:O	14:W:118:ARG:HG2	2.03	0.58
21:D:17:PHE:O	21:D:20:GLU:HB2	2.04	0.58
39:j:163:LYS:HD2	39:j:166:LEU:HD12	1.85	0.58
1:2:107:C:H2'	1:2:108:A:H8	1.67	0.58
1:2:162:G:OP2	1:2:162:G:N2	2.35	0.58
1:2:642:G:H2'	1:2:643:U:C6	2.38	0.58
1:2:654:G:O6	1:2:676:U:O4	2.22	0.58
1:2:841:C:H2'	1:2:842:U:C6	2.38	0.58
1:2:926:C:O2'	12:O:124:ASP:OD2	2.21	0.58
1:2:1778:G:H2'	1:2:1779:A:C8	2.39	0.58
13:V:71:ARG:HG2	13:V:83:TRP:CE2	2.39	0.58
17:a:97:PRO:O	17:a:99:GLN:N	2.35	0.58
26:Q:60:PHE:HA	26:Q:63:ILE:HD13	1.86	0.58
30:U:92:ASP:OD1	30:U:92:ASP:N	2.37	0.58
43:p:417:ALA:HA	43:p:464:LYS:HD2	1.85	0.58
1:2:460:G:H2'	1:2:461:G:H8	1.69	0.58
3:B:41:ARG:HH21	3:B:232:HIS:CD2	2.21	0.58
5:E:36:HIS:CD2	5:E:85:GLY:HA3	2.39	0.58
7:H:4:PRO:HG2	7:H:25:ILE:HG12	1.85	0.58
16:Y:128:LYS:HD2	16:Y:131:ARG:HH12	1.69	0.58
34:f:120:GLU:OE2	34:f:128:ILE:N	2.37	0.58
35:g:184:ARG:NE	35:g:198:ASP:OD1	2.28	0.58
1:2:321:G:O2'	8:I:10:LYS:NZ	2.37	0.57
1:2:544:A:H2'	19:e:31:LYS:HD2	1.85	0.57
1:2:1219:C:H5''	23:K:52:LYS:NZ	2.19	0.57
3:B:3:VAL:HG13	3:B:4:GLY:H	1.69	0.57
11:N:119:GLU:HA	11:N:122:ILE:HG22	1.85	0.57
12:O:50:ALA:HB1	12:O:52:ARG:HG2	1.86	0.57
13:V:7:GLN:OE1	13:V:7:GLN:N	2.36	0.57
19:e:34:ALA:O	19:e:37:ARG:HB2	2.04	0.57
25:P:107:ILE:HA	25:P:111:MET:HG3	1.86	0.57
39:j:190:VAL:HB	39:j:226:PRO:HA	1.86	0.57
42:o:445:GLN:N	42:o:487:ALA:O	2.36	0.57
1:2:26:A:H2'	1:2:27:U:C6	2.40	0.57
1:2:213:G:N2	1:2:251:U:O4	2.37	0.57
1:2:248:U:H3'	1:2:249:C:H5'	1.86	0.57
1:2:291:U:H2'	1:2:292:U:C6	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:938:A:H2'	1:2:939:A:C8	2.39	0.57
1:2:1134:U:H2'	1:2:1135:U:C6	2.39	0.57
5:E:57:ASN:OD1	5:E:58:GLY:N	2.37	0.57
16:Y:41:ARG:NH1	16:Y:52:LYS:O	2.37	0.57
22:F:203:ALA:HA	22:F:213:ILE:HD11	1.86	0.57
25:P:22:LEU:O	25:P:26:LEU:HG	2.04	0.57
29:T:22:LEU:HB3	29:T:55:TYR:HD2	1.69	0.57
35:g:8:LEU:HD13	35:g:320:TRP:HB3	1.85	0.57
35:g:210:GLN:OE1	35:g:252:PHE:N	2.37	0.57
39:j:6:CYS:SG	39:j:124:GLU:HA	2.44	0.57
42:o:307:TYR:HB2	42:o:328:ILE:HD11	1.85	0.57
1:2:43:A:O2'	1:2:99:C:OP1	2.22	0.57
1:2:627:G:OP1	11:N:120:SER:OG	2.22	0.57
1:2:938:A:O3'	11:N:7:LYS:NZ	2.38	0.57
12:O:19:ILE:HD12	12:O:81:ILE:HD11	1.86	0.57
15:X:76:LEU:HD21	15:X:104:LEU:HD12	1.86	0.57
23:K:32:HIS:CD2	23:K:35:ILE:HD12	2.40	0.57
28:S:87:ASN:OD1	28:S:99:HIS:NE2	2.37	0.57
40:k:356:ARG:HE	40:k:424:PRO:HD2	1.68	0.57
1:2:720:G:N2	1:2:720:G:OP2	2.38	0.57
1:2:893:U:H2'	1:2:894:G:H8	1.69	0.57
4:C:42:PRO:HB2	4:C:48:ARG:HG2	1.86	0.57
14:W:101:TYR:HA	14:W:113:HIS:CE1	2.40	0.57
42:o:287:VAL:HG21	42:o:303:TRP:HE3	1.69	0.57
43:p:402:GLN:NE2	43:p:406:ASN:OD1	2.32	0.57
1:2:883:A:H5''	3:B:136:ARG:CZ	2.35	0.57
1:2:1201:A:N6	1:2:1455:C:O2	2.37	0.57
5:E:173:ILE:HD11	5:E:235:TRP:CE2	2.40	0.57
8:I:104:ILE:HG22	8:I:106:ALA:H	1.70	0.57
15:X:34:LEU:O	15:X:39:LYS:NZ	2.38	0.57
15:X:103:LEU:HD13	15:X:126:LYS:HD3	1.86	0.57
35:g:128:ARG:HD3	35:g:151:TRP:CD2	2.39	0.57
38:1:19:G:H21	38:1:20:A:H61	1.52	0.57
43:p:385:LEU:HD22	43:p:605:CYS:HB3	1.87	0.57
1:2:242:G:H2'	1:2:243:A:H8	1.69	0.57
1:2:493:U:H2'	1:2:494:C:H4'	1.87	0.57
1:2:603:A:H2'	1:2:604:A:O4'	2.04	0.57
1:2:771:A:O2'	9:J:6:ARG:NH2	2.26	0.57
1:2:1096:U:O2'	4:C:173:ARG:NE	2.37	0.57
1:2:1599:G:N3	29:T:89:ARG:NH2	2.52	0.57
2:A:144:ILE:HG13	2:A:158:VAL:HB	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:19:MET:HG3	5:E:19:MET:O	2.03	0.57
11:N:84:ILE:HD11	11:N:149:LEU:HD22	1.87	0.57
23:K:15:LEU:HD21	23:K:68:LEU:HD21	1.86	0.57
24:M:56:VAL:HG11	24:M:85:ALA:HB2	1.86	0.57
27:R:28:PHE:HA	27:R:55:THR:HG21	1.85	0.57
43:p:307:SER:HB2	43:p:313:GLN:HG2	1.87	0.57
1:2:332:A:H2'	1:2:333:G:C8	2.39	0.57
1:2:406:A:H2'	1:2:407:C:C6	2.40	0.57
1:2:1427:G:H2'	1:2:1428:U:C6	2.40	0.57
1:2:1651:C:H2'	1:2:1652:G:O4'	2.04	0.57
9:J:3:ARG:HD2	9:J:4:ALA:N	2.20	0.57
10:L:8:GLN:NE2	10:L:14:GLN:OE1	2.38	0.57
42:o:101:GLU:OE1	42:o:162:TYR:OH	2.22	0.57
42:o:231:ASP:OD2	42:o:235:ARG:NH2	2.38	0.57
1:2:36:C:H42	1:2:471:U:H3	1.52	0.57
1:2:235:A:H2'	1:2:236:C:O4'	2.04	0.57
1:2:296:U:H2'	1:2:297:C:C6	2.39	0.57
1:2:1292:U:H1'	2:A:111:ILE:HD12	1.87	0.57
1:2:1746:G:H2'	1:2:1747:A:C8	2.40	0.57
3:B:27:LYS:HG2	3:B:49:ASN:HA	1.87	0.57
4:C:233:ASN:HB2	13:V:1:MET:HE1	1.86	0.57
11:N:40:TYR:HA	11:N:43:LYS:HD2	1.86	0.57
11:N:70:LYS:O	11:N:74:ILE:HG12	2.04	0.57
23:K:25:LYS:HE2	23:K:64:TYR:HE2	1.70	0.57
40:k:497:GLU:O	40:k:499:ILE:HG13	2.05	0.57
42:o:39:ARG:HA	42:o:42:TRP:CD1	2.39	0.57
1:2:1017:U:H2'	1:2:1018:A:C8	2.39	0.57
1:2:1253:U:OP2	24:M:39:ARG:NH2	2.32	0.57
2:A:154:GLU:N	2:A:154:GLU:OE2	2.38	0.57
12:O:16:VAL:HG12	12:O:80:HIS:HB2	1.85	0.57
21:D:143:ARG:NH1	37:3:39:U:O2	2.37	0.57
22:F:136:VAL:O	22:F:140:ILE:HG12	2.05	0.57
40:k:106:ILE:HD13	40:k:236:ILE:HD12	1.87	0.57
40:k:495:ILE:HG23	40:k:496:ASN:H	1.69	0.57
42:o:89:VAL:HA	42:o:92:VAL:HG22	1.87	0.57
1:2:594:G:H2'	1:2:595:C:C6	2.40	0.56
1:2:638:U:OP1	7:H:112:ARG:NH2	2.20	0.56
1:2:863:U:O5'	14:W:28:ARG:NH2	2.38	0.56
1:2:1582:G:O2'	1:2:1608:G:O6	2.15	0.56
1:2:1599:G:C2	29:T:89:ARG:NH2	2.73	0.56
12:O:58:TYR:HA	12:O:61:MET:HE2	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:Y:103:ALA:O	16:Y:108:ARG:NH1	2.38	0.56
22:F:163:ASP:HB2	32:c:43:ASN:O	2.05	0.56
43:p:553:SER:HA	43:p:556:LYS:HE2	1.87	0.56
1:2:12:U:H2'	1:2:13:C:C6	2.40	0.56
1:2:129:U:H5'	1:2:263:G:H22	1.70	0.56
1:2:779:A:H1'	1:2:781:A:N6	2.20	0.56
7:H:123:ASP:OD1	7:H:138:LYS:NZ	2.39	0.56
7:H:133:THR:HG21	7:H:159:VAL:HA	1.87	0.56
8:I:74:ARG:HB2	8:I:109:PHE:HE1	1.69	0.56
12:O:99:GLN:NE2	17:a:45:VAL:HA	2.21	0.56
1:2:333:G:O6	8:I:5:ARG:NH2	2.39	0.56
1:2:870:G:H2'	1:2:871:G:C8	2.40	0.56
1:2:1349:G:H2'	1:2:1350:G:H8	1.71	0.56
1:2:1523:A:N3	1:2:1587:C:O2'	2.36	0.56
1:2:1676:A:OP1	8:I:59:ARG:NH2	2.34	0.56
4:C:57:SER:HA	4:C:77:LEU:HD22	1.88	0.56
10:L:80:MET:HE3	10:L:83:THR:HB	1.87	0.56
40:k:333:LEU:HD12	40:k:334:LYS:H	1.71	0.56
42:o:75:TYR:HA	42:o:78:LEU:HD12	1.86	0.56
42:o:167:ASP:HA	42:o:209:HIS:HE2	1.70	0.56
43:p:748:PRO:O	43:p:752:VAL:HG23	2.04	0.56
1:2:7:G:N7	4:C:210:ARG:NH1	2.46	0.56
1:2:151:U:O2'	6:G:4:ASN:OD1	2.20	0.56
1:2:1448:U:H2'	1:2:1449:C:C6	2.40	0.56
2:A:50:VAL:O	2:A:53:THR:OG1	2.14	0.56
6:G:138:ALA:HA	6:G:141:ILE:HD12	1.88	0.56
9:J:60:LEU:HD13	9:J:69:ARG:NH2	2.19	0.56
16:Y:12:VAL:HA	16:Y:22:GLN:O	2.06	0.56
35:g:268:LYS:HD2	35:g:270:TYR:HE1	1.70	0.56
40:k:493:THR:HA	40:k:497:GLU:OE1	2.04	0.56
43:p:500:LYS:HD2	43:p:539:LEU:HD23	1.86	0.56
1:2:613:C:OP1	15:X:3:LYS:NZ	2.28	0.56
1:2:686:C:O2'	1:2:687:C:O4'	2.16	0.56
1:2:1279:C:H4'	30:U:69:LYS:HB3	1.87	0.56
1:2:1326:C:H2'	1:2:1327:G:H8	1.70	0.56
1:2:1771:C:H2'	1:2:1772:G:H8	1.71	0.56
26:Q:28:LEU:HB3	26:Q:64:ASP:HB2	1.87	0.56
28:S:75:ASN:HD21	28:S:78:HIS:CE1	2.23	0.56
28:S:101:LEU:O	28:S:105:LEU:N	2.35	0.56
29:T:105:LEU:HD12	29:T:122:ARG:HG2	1.87	0.56
35:g:39:ARG:HD3	35:g:68:ILE:HG23	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:g:88:LYS:HZ3	35:g:109:GLY:C	2.14	0.56
1:2:129:U:O4'	1:2:263:G:N1	2.38	0.56
1:2:256:A:H1'	8:I:73:ALA:HB3	1.87	0.56
1:2:645:U:H2'	1:2:646:G:C8	2.41	0.56
1:2:751:G:H2'	1:2:752:A:C8	2.40	0.56
1:2:1385:G:H21	1:2:1409:A:H2	1.52	0.56
1:2:1511:G:O2'	1:2:1513:A:N3	2.37	0.56
11:N:35:GLU:HA	11:N:38:ILE:HG12	1.86	0.56
12:O:17:ALA:HA	12:O:30:VAL:HG22	1.88	0.56
24:M:54:VAL:HB	24:M:112:VAL:HG22	1.88	0.56
28:S:87:ASN:H	28:S:99:HIS:CD2	2.23	0.56
29:T:6:VAL:HB	29:T:66:TYR:CE1	2.41	0.56
29:T:86:ARG:CB	29:T:89:ARG:HB2	2.32	0.56
30:U:20:HIS:NE2	30:U:97:ALA:HB2	2.20	0.56
39:j:31:GLY:HA3	39:j:46:ILE:O	2.05	0.56
40:k:148:TYR:HB3	40:k:183:TYR:HB3	1.87	0.56
42:o:167:ASP:OD1	42:o:209:HIS:NE2	2.38	0.56
1:2:434:C:N4	15:X:46:SER:OG	2.38	0.56
5:E:122:LYS:HD2	5:E:164:LEU:HD21	1.87	0.56
5:E:161:LYS:O	5:E:170:THR:N	2.32	0.56
21:D:123:VAL:HG23	21:D:134:CYS:HB3	1.88	0.56
31:Z:43:ASP:H	31:Z:46:LYS:HB3	1.70	0.56
35:g:153:THR:H	35:g:178:GLY:HA2	1.71	0.56
38:1:9:1MG:O2'	38:1:45:U:O2	2.24	0.56
1:2:1058:C:C4	43:p:311:SER:HB3	2.41	0.56
2:A:25:GLY:HA2	2:A:45:VAL:HG13	1.86	0.56
2:A:77:SER:HB2	2:A:86:VAL:HG21	1.87	0.56
12:O:131:GLY:O	17:a:22:ARG:NH2	2.39	0.56
21:D:46:THR:HB	21:D:84:ILE:HG12	1.88	0.56
38:1:11:C:H2'	38:1:12:G:C8	2.41	0.56
42:o:76:LYS:HD2	42:o:89:VAL:HG21	1.88	0.56
43:p:768:LYS:HB2	43:p:777:VAL:HB	1.87	0.56
1:2:15:U:H2'	1:2:16:G:O4'	2.05	0.56
1:2:268:G:H2'	1:2:269:C:C6	2.41	0.56
1:2:296:U:H2'	1:2:297:C:H6	1.71	0.56
1:2:406:A:H2'	1:2:407:C:H6	1.70	0.56
1:2:780:A:O5'	1:2:781:A:N6	2.39	0.56
1:2:1457:C:H5''	28:S:138:THR:HG21	1.88	0.56
1:2:1532:G:OP2	31:Z:74:SER:HB3	2.06	0.56
3:B:45:LYS:HB2	12:O:13:VAL:HG23	1.88	0.56
6:G:2:LYS:O	6:G:108:VAL:HA	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:D:163:PRO:HA	21:D:166:ASP:HB2	1.88	0.56
36:i:37:GLN:OE1	36:i:75:ASP:N	2.39	0.56
42:o:303:TRP:CD1	42:o:328:ILE:HG12	2.41	0.56
43:p:389:PRO:HB3	43:p:608:TYR:CG	2.41	0.56
1:2:1096:U:H1'	4:C:173:ARG:HH21	1.71	0.56
1:2:1157:C:O2'	1:2:1579:C:OP2	2.24	0.56
1:2:1296:G:H5'	1:2:1297:U:OP2	2.06	0.56
1:2:1353:G:O6	1:2:1368:U:O2	2.23	0.56
1:2:1527:C:H2'	1:2:1528:C:C6	2.40	0.56
1:2:1792:A:OP2	17:a:4:LYS:NZ	2.32	0.56
25:P:81:ARG:NH1	25:P:120:SER:OG	2.39	0.56
35:g:117:ASP:OD1	35:g:118:ALA:N	2.38	0.56
35:g:157:VAL:HA	35:g:174:PHE:CB	2.35	0.56
39:j:7:ARG:HB3	39:j:40:ASP:OD1	2.06	0.56
42:o:40:ILE:HB	42:o:78:LEU:HD13	1.88	0.56
42:o:244:VAL:HG12	42:o:285:ASN:HD22	1.70	0.56
1:2:331:U:H5	8:I:176:GLN:HE22	1.53	0.55
1:2:829:U:H2'	1:2:830:U:H6	1.71	0.55
1:2:1066:C:H5''	3:B:150:VAL:HG12	1.86	0.55
1:2:1096:U:O3'	4:C:173:ARG:NH2	2.39	0.55
1:2:1531:C:H4'	1:2:1537:G:O6	2.06	0.55
2:A:30:GLN:NE2	2:A:31:VAL:O	2.35	0.55
11:N:117:LEU:O	11:N:121:ARG:HG3	2.06	0.55
1:2:803:A:N3	14:W:105:THR:OG1	2.34	0.55
1:2:1315:G:OP1	27:R:6:THR:OG1	2.23	0.55
1:2:1582:G:N2	1:2:1609:A:OP2	2.37	0.55
15:X:60:GLU:OE2	36:i:60:HIS:ND1	2.28	0.55
23:K:81:ASN:ND2	24:M:30:VAL:HG13	2.22	0.55
26:Q:41:PRO:C	26:Q:43:ILE:H	2.14	0.55
35:g:227:ILE:HD11	35:g:243:ALA:HB2	1.89	0.55
42:o:166:LEU:HD21	42:o:206:LEU:HD22	1.87	0.55
42:o:401:LYS:NZ	42:o:451:LEU:O	2.36	0.55
1:2:284:G:OP2	6:G:189:GLN:NE2	2.28	0.55
1:2:405:U:H2'	1:2:406:A:H8	1.70	0.55
1:2:512:U:H2'	1:2:513:G:C8	2.41	0.55
1:2:559:U:H2'	1:2:560:G:H8	1.71	0.55
1:2:780:A:N7	16:Y:8:ARG:NH2	2.54	0.55
1:2:796:G:O2'	10:L:69:LYS:NZ	2.39	0.55
1:2:958:U:H6	11:N:61:THR:HB	1.71	0.55
2:A:6:THR:HB	2:A:191:ARG:HD3	1.87	0.55
2:A:92:HIS:ND1	2:A:202:TYR:OH	2.11	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:C:40:TRP:NE1	4:C:42:PRO:HA	2.21	0.55
4:C:128:GLY:HA2	4:C:131:ARG:HH11	1.71	0.55
6:G:58:LYS:HE3	6:G:105:ASP:HA	1.88	0.55
15:X:56:LYS:HE2	15:X:96:VAL:HB	1.87	0.55
22:F:78:ARG:HH22	26:Q:121:SER:HG	1.52	0.55
30:U:68:ARG:HA	30:U:79:TRP:CD1	2.42	0.55
40:k:307:ARG:CZ	40:k:392:PRO:HG2	2.36	0.55
43:p:393:ASP:HA	43:p:396:ILE:HG12	1.87	0.55
1:2:90:C:H2'	1:2:91:G:C8	2.42	0.55
1:2:123:G:O2'	5:E:146:THR:N	2.38	0.55
1:2:127:G:O2'	1:2:178:A:N7	2.35	0.55
1:2:350:C:O2'	10:L:104:HIS:NE2	2.36	0.55
1:2:824:U:H2'	1:2:825:U:H6	1.70	0.55
1:2:1208:C:N3	1:2:1453:G:N2	2.54	0.55
5:E:11:ARG:HA	5:E:28:ALA:HB2	1.88	0.55
5:E:63:ALA:O	5:E:67:GLN:HG2	2.07	0.55
15:X:6:PRO:HG3	15:X:14:LYS:HE2	1.88	0.55
42:o:175:LEU:HB3	42:o:178:THR:OG1	2.07	0.55
43:p:314:PRO:HB2	43:p:317:GLN:HB2	1.89	0.55
1:2:899:A:H3'	1:2:900:G:H21	1.71	0.55
1:2:994:A:H2'	1:2:995:U:O4'	2.06	0.55
1:2:1315:G:P	27:R:6:THR:HG1	2.29	0.55
1:2:1357:G:H2'	1:2:1358:C:H6	1.71	0.55
1:2:1472:G:H2'	1:2:1473:A:H8	1.70	0.55
1:2:1604:C:H2'	1:2:1605:G:C8	2.41	0.55
4:C:247:VAL:HG13	4:C:248:TYR:CD1	2.41	0.55
8:I:144:TRP:HA	8:I:147:ARG:HD2	1.87	0.55
11:N:61:THR:OG1	11:N:62:GLN:N	2.40	0.55
18:b:5:GLN:N	18:b:5:GLN:OE1	2.39	0.55
38:1:18:G:O6	39:j:110:SER:OG	2.18	0.55
43:p:510:THR:HG23	43:p:514:LYS:HB2	1.88	0.55
43:p:577:ARG:HH21	43:p:583:GLN:HA	1.71	0.55
43:p:640:ILE:HG21	43:p:763:LEU:HD23	1.88	0.55
1:2:790:A:H2'	1:2:791:U:C6	2.41	0.55
1:2:815:G:H2'	1:2:816:A:H8	1.72	0.55
1:2:1635:C:O2	36:i:11:LYS:NZ	2.32	0.55
1:2:1683:G:H2'	1:2:1684:C:C6	2.42	0.55
3:B:127:VAL:HG21	3:B:176:VAL:HG21	1.88	0.55
15:X:3:LYS:O	15:X:5:LYS:N	2.33	0.55
19:e:43:ARG:NH1	19:e:56:MET:HE3	2.21	0.55
30:U:22:ILE:HD12	30:U:118:ILE:HA	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:k:71:GLU:HB3	40:k:182:ARG:HH22	1.72	0.55
43:p:693:TYR:O	43:p:697:ILE:N	2.34	0.55
1:2:405:U:H2'	1:2:406:A:C8	2.42	0.55
1:2:976:A:N6	1:2:1023:U:H3	2.01	0.55
10:L:10:GLU:HG3	10:L:14:GLN:HE22	1.71	0.55
21:D:59:VAL:HA	21:D:66:ILE:HG13	1.87	0.55
35:g:13:THR:HG22	35:g:318:ARG:HG3	1.88	0.55
40:k:213:ALA:HB1	40:k:302:ILE:HD13	1.89	0.55
1:2:891:A:H2'	1:2:892:U:H6	1.72	0.55
1:2:1357:G:H2'	1:2:1358:C:C6	2.42	0.55
22:F:114:ARG:HE	31:Z:95:HIS:CE1	2.24	0.55
35:g:77:ASP:OD2	35:g:79:ASN:ND2	2.40	0.55
38:1:52:G:H2'	38:1:53:G:H8	1.72	0.55
1:2:1131:A:H2'	1:2:1132:A:C8	2.40	0.55
1:2:1152:G:OP1	17:a:82:ARG:NH2	2.40	0.55
1:2:1650:C:H2'	1:2:1651:C:C6	2.41	0.55
1:2:1657:A:H2'	1:2:1658:A:H8	1.72	0.55
2:A:64:ILE:HD12	2:A:73:VAL:HG21	1.87	0.55
3:B:32:ILE:HB	3:B:43:VAL:HB	1.89	0.55
7:H:15:GLU:O	7:H:18:LEU:HB2	2.06	0.55
8:I:74:ARG:HB2	8:I:109:PHE:CE1	2.41	0.55
10:L:81:HIS:CE1	10:L:82:ARG:HG3	2.41	0.55
42:o:238:ASP:OD1	42:o:275:LYS:NZ	2.39	0.55
1:2:88:U:C2	1:2:89:G:C8	2.95	0.55
1:2:162:G:H8	6:G:13:GLN:HE22	1.55	0.55
1:2:168:A:P	6:G:137:ARG:HH21	2.30	0.55
1:2:855:A:N6	7:H:96:ARG:HB3	2.22	0.55
1:2:967:U:H2'	1:2:968:C:O4'	2.07	0.55
1:2:1316:C:O2'	1:2:1398:A:N3	2.32	0.55
4:C:106:VAL:HG12	4:C:120:ILE:HD12	1.88	0.55
43:p:261:ILE:HD13	43:p:279:LEU:HG	1.89	0.55
1:2:78:A:H2	6:G:174:LYS:HG3	1.73	0.54
1:2:1317:G:H5'	27:R:67:ARG:HH21	1.72	0.54
1:2:1340:A:O3'	35:g:103:ARG:NH2	2.40	0.54
2:A:88:LYS:HE3	2:A:201:LEU:O	2.07	0.54
4:C:145:ARG:HD2	4:C:227:TYR:CD1	2.42	0.54
9:J:3:ARG:HD2	9:J:4:ALA:H	1.72	0.54
21:D:108:LYS:HB3	21:D:113:LEU:HD22	1.89	0.54
36:i:39:THR:HB	36:i:48:GLU:OE2	2.07	0.54
38:1:14:A:H2'	38:1:15:G:C4	2.42	0.54
39:j:198:ILE:HG12	40:k:335:GLY:HA2	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:517:A:O2'	1:2:533:A:N6	2.40	0.54
1:2:1157:C:H42	1:2:1162:A:H61	1.55	0.54
1:2:1226:A:H5''	1:2:1228:G:H5'	1.89	0.54
1:2:1455:C:H4'	28:S:137:HIS:CD2	2.42	0.54
1:2:1564:U:H5''	28:S:39:GLY:H	1.72	0.54
1:2:1786:G:OP2	12:O:132:ARG:NH1	2.40	0.54
2:A:21:ARG:HB3	2:A:24:LEU:HB2	1.87	0.54
2:A:36:TYR:CD1	2:A:52:LYS:HE3	2.43	0.54
3:B:135:LEU:HD23	3:B:217:LEU:HA	1.89	0.54
5:E:130:GLN:HB3	5:E:138:TYR:CZ	2.42	0.54
16:Y:28:LEU:HD23	16:Y:30:PRO:HD3	1.88	0.54
22:F:92:VAL:O	22:F:96:THR:HG23	2.06	0.54
35:g:196:GLU:OE1	35:g:197:ALA:N	2.40	0.54
42:o:337:LEU:HD23	42:o:363:ARG:HD3	1.88	0.54
1:2:71:A:H2'	1:2:72:A:C4	2.42	0.54
1:2:463:A:C2	1:2:464:G:C8	2.95	0.54
1:2:1187:G:O2'	1:2:1428:U:OP1	2.25	0.54
1:2:1241:A:OP2	1:2:1241:A:H8	1.90	0.54
1:2:1343:A:H2'	1:2:1344:A:C8	2.43	0.54
1:2:1574:A:O2'	38:l:40:C:O2'	2.18	0.54
1:2:1617:C:H2'	1:2:1618:C:H6	1.72	0.54
9:J:170:GLY:HA2	9:J:174:ARG:HH11	1.73	0.54
24:M:80:ILE:HG22	24:M:82:VAL:HG23	1.88	0.54
24:M:128:LEU:O	24:M:132:SER:OG	2.22	0.54
35:g:84:ALA:HA	35:g:90:LEU:HD13	1.89	0.54
1:2:975:G:N1	1:2:1022:A:O2'	2.29	0.54
1:2:1450:U:OP1	33:d:10:HIS:ND1	2.37	0.54
5:E:182:TYR:HD1	5:E:192:VAL:HG22	1.72	0.54
42:o:449:TYR:O	42:o:453:THR:OG1	2.25	0.54
43:p:406:ASN:HD22	43:p:455:ALA:HB2	1.72	0.54
1:2:116:U:O2'	1:2:332:A:N3	2.37	0.54
1:2:717:C:O2	1:2:720:G:C6	2.60	0.54
1:2:789:U:H4'	5:E:248:ILE:HD11	1.88	0.54
4:C:40:TRP:CD1	4:C:40:TRP:O	2.60	0.54
4:C:118:LEU:HD11	4:C:216:LEU:HB3	1.88	0.54
8:I:107:THR:O	8:I:111:GLN:NE2	2.40	0.54
12:O:13:VAL:HG13	12:O:76:ILE:HA	1.90	0.54
23:K:14:HIS:NE2	23:K:34:GLU:OE1	2.41	0.54
23:K:88:PRO:HD2	23:K:91:TYR:HD2	1.72	0.54
24:M:38:LEU:O	24:M:41:SER:OG	2.21	0.54
24:M:55:LEU:HD21	24:M:81:LYS:HZ2	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:M:95:GLY:CA	24:M:104:ARG:NH1	2.70	0.54
27:R:93:LEU:O	27:R:98:ASP:HA	2.08	0.54
29:T:42:GLY:HA2	29:T:84:LYS:CD	2.37	0.54
35:g:48:LEU:HA	35:g:56:GLY:HA2	1.89	0.54
40:k:95:ILE:HG12	40:k:187:ARG:HA	1.90	0.54
40:k:238:ILE:HG23	40:k:514:TRP:HB3	1.90	0.54
1:2:245:G:H2'	1:2:246:A:C8	2.42	0.54
4:C:64:HIS:HA	13:V:15:ARG:NH1	2.22	0.54
9:J:120:LYS:O	9:J:121:SER:HB3	2.07	0.54
14:W:35:ILE:HG22	14:W:39:GLN:OE1	2.08	0.54
29:T:83:ALA:HB1	29:T:91:HIS:HB3	1.89	0.54
35:g:158:ALA:H	35:g:174:PHE:HA	1.72	0.54
35:g:185:SER:OG	35:g:196:GLU:OE2	2.14	0.54
39:j:24:VAL:HG23	39:j:34:VAL:HG11	1.90	0.54
1:2:249:C:H2'	1:2:250:A:H8	1.73	0.54
1:2:253:A:H2'	1:2:254:U:C6	2.42	0.54
1:2:748:U:C2	1:2:801:G:N1	2.75	0.54
1:2:780:A:H4'	1:2:781:A:C5	2.42	0.54
1:2:808:G:H5''	10:L:148:LYS:HE3	1.89	0.54
1:2:878:G:H2'	1:2:879:C:C6	2.42	0.54
1:2:1314:U:OP1	1:2:1327:G:N2	2.40	0.54
1:2:1319:U:O2'	1:2:1321:A:OP1	2.24	0.54
1:2:1405:U:H2'	1:2:1406:G:H8	1.72	0.54
1:2:1527:C:H2'	1:2:1528:C:H6	1.73	0.54
4:C:85:VAL:HA	4:C:107:VAL:HG23	1.89	0.54
24:M:27:THR:HG21	24:M:119:ALA:HB3	1.89	0.54
24:M:129:GLU:O	24:M:134:GLN:N	2.41	0.54
26:Q:131:GLY:HA3	26:Q:136:SER:O	2.08	0.54
29:T:84:LYS:O	29:T:91:HIS:ND1	2.36	0.54
1:2:197:A:H3'	1:2:198:G:H8	1.73	0.54
1:2:926:C:H2'	1:2:927:U:C6	2.43	0.54
1:2:1391:C:H2'	1:2:1392:G:H8	1.72	0.54
1:2:1559:U:H2'	1:2:1560:G:H8	1.72	0.54
25:P:17:TYR:HD1	25:P:18:LYS:HG2	1.68	0.54
35:g:123:ILE:HB	35:g:135:TRP:HB2	1.89	0.54
35:g:212:SER:OG	35:g:214:ASP:OD1	2.16	0.54
39:j:14:PRO:HA	39:j:39:TYR:CE2	2.43	0.54
39:j:145:PHE:HB3	39:j:173:ILE:HD11	1.89	0.54
39:j:247:ALA:O	39:j:251:ILE:HG12	2.08	0.54
1:2:396:A:H2'	1:2:397:G:O4'	2.07	0.54
1:2:1657:A:H2'	1:2:1658:A:C8	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1783:U:P	12:O:133:ARG:HH22	2.31	0.54
3:B:61:LEU:HD13	3:B:64:ARG:HH11	1.73	0.54
4:C:54:LYS:HB3	4:C:248:TYR:CD2	2.42	0.54
9:J:63:ASP:OD1	9:J:64:GLU:N	2.39	0.54
14:W:54:ASP:OD1	14:W:55:ASP:N	2.41	0.54
36:i:50:SER:HB2	36:i:56:LYS:NZ	2.22	0.54
40:k:315:LEU:HB3	40:k:417:VAL:HB	1.90	0.54
1:2:292:U:H2'	1:2:293:C:C6	2.42	0.54
1:2:340:A:H2'	1:2:341:C:C6	2.44	0.54
1:2:760:A:H1'	1:2:790:A:H2	1.73	0.54
1:2:938:A:H2'	1:2:939:A:H8	1.72	0.54
4:C:185:ALA:HB1	4:C:189:VAL:HG13	1.89	0.54
7:H:139:ARG:HB3	14:W:51:GLU:OE2	2.08	0.54
24:M:21:LEU:HD23	24:M:91:TRP:HH2	1.73	0.54
31:Z:95:HIS:HB3	31:Z:98:GLN:NE2	2.23	0.54
42:o:111:ALA:HB2	42:o:151:ILE:HG12	1.89	0.54
43:p:405:TYR:HA	43:p:408:ILE:HD12	1.89	0.54
1:2:165:C:H4'	6:G:131:LYS:HE2	1.89	0.53
1:2:380:C:O2'	1:2:755:A:N1	2.40	0.53
1:2:506:U:H5	1:2:507:U:C2	2.25	0.53
1:2:912:G:H5'	1:2:913:G:C8	2.43	0.53
1:2:1328:A:OP2	21:D:160:SER:OG	2.21	0.53
1:2:1502:G:H2'	1:2:1503:A:C8	2.42	0.53
1:2:1650:C:H2'	1:2:1651:C:H6	1.72	0.53
2:A:9:LEU:HD23	27:R:113:LEU:HD21	1.89	0.53
2:A:55:GLU:HA	2:A:58:VAL:HG12	1.90	0.53
4:C:70:GLU:CD	4:C:72:GLN:H	2.16	0.53
9:J:170:GLY:H	9:J:174:ARG:HD3	1.74	0.53
16:Y:8:ARG:HB2	16:Y:26:ASP:OD1	2.08	0.53
21:D:106:LYS:O	21:D:110:LEU:HG	2.08	0.53
24:M:121:THR:O	24:M:122:GLN:HB2	2.08	0.53
29:T:18:TYR:HD1	29:T:135:ILE:HG13	1.72	0.53
35:g:202:HIS:NE2	35:g:220:SER:OG	2.38	0.53
1:2:216:A:O2'	1:2:217:A:OP1	2.25	0.53
1:2:1555:U:C1'	25:P:118:GLU:OE2	2.56	0.53
1:2:1771:C:H2'	1:2:1772:G:C8	2.44	0.53
3:B:129:THR:OG1	3:B:133:TYR:N	2.42	0.53
9:J:28:LEU:HD11	19:e:39:LEU:CD2	2.37	0.53
9:J:41:GLU:O	9:J:45:ILE:HD12	2.07	0.53
39:j:134:LEU:HD22	39:j:144:ALA:HB1	1.90	0.53
1:2:78:A:O2'	1:2:79:C:OP1	2.23	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:785:C:O3'	5:E:255:ARG:NH1	2.41	0.53
1:2:1234:C:C2	1:2:1235:A:C8	2.97	0.53
22:F:145:ARG:NH2	22:F:220:GLU:OE2	2.40	0.53
36:i:62:ARG:HE	36:i:63:GLY:H	1.56	0.53
38:1:3:C:O3'	39:j:185:ARG:NH1	2.42	0.53
38:1:29:G:H2'	38:1:30:G:H8	1.72	0.53
1:2:350:C:O4'	15:X:13:ARG:NH1	2.41	0.53
1:2:550:G:H2'	1:2:551:G:H8	1.74	0.53
1:2:559:U:H2'	1:2:560:G:C8	2.43	0.53
1:2:789:U:H5	1:2:790:A:C6	2.26	0.53
1:2:946:U:H2'	1:2:947:G:C8	2.43	0.53
10:L:42:PHE:HD2	10:L:140:LEU:HD23	1.73	0.53
11:N:5:HIS:HB3	11:N:117:LEU:HD13	1.90	0.53
11:N:122:ILE:HD13	11:N:141:TYR:CE2	2.44	0.53
18:b:11:THR:O	18:b:15:GLU:N	2.36	0.53
18:b:32:PHE:HE1	18:b:47:PHE:HD1	1.57	0.53
19:e:43:ARG:HH12	19:e:56:MET:HE3	1.73	0.53
22:F:118:HIS:O	22:F:122:ILE:HG12	2.08	0.53
23:K:25:LYS:HE2	23:K:64:TYR:CE2	2.43	0.53
26:Q:44:LEU:HD11	26:Q:75:VAL:HG23	1.90	0.53
29:T:11:ALA:O	29:T:15:ILE:HD12	2.08	0.53
29:T:65:ILE:HB	29:T:124:ILE:HD11	1.90	0.53
42:o:257:TYR:CD1	42:o:289:VAL:HG11	2.43	0.53
43:p:324:ASP:HA	43:p:327:LYS:HB2	1.91	0.53
1:2:490:C:H2'	1:2:491:A:H4'	1.90	0.53
1:2:1139:G:C2	1:2:1140:G:C8	2.97	0.53
4:C:54:LYS:HB3	4:C:248:TYR:HD2	1.73	0.53
4:C:154:GLY:HA2	13:V:3:ASN:ND2	2.24	0.53
5:E:45:ILE:HD12	5:E:61:VAL:HG11	1.90	0.53
7:H:67:LEU:HG	7:H:71:HIS:CD2	2.44	0.53
30:U:40:ASN:O	30:U:43:LYS:HG2	2.08	0.53
35:g:176:SER:OG	35:g:184:ARG:O	2.16	0.53
38:1:10:2MG:C2	38:1:26:M2G:H1'	2.44	0.53
40:k:208:ALA:HA	40:k:211:MET:HG3	1.91	0.53
40:k:242:LYS:HE3	40:k:274:ILE:HG21	1.90	0.53
1:2:1600:C:H2'	1:2:1601:U:O4'	2.09	0.53
5:E:88:ASP:HA	5:E:122:LYS:HE3	1.91	0.53
7:H:172:VAL:O	7:H:176:LEU:HD23	2.09	0.53
12:O:91:SER:O	12:O:93:THR:N	2.42	0.53
22:F:199:GLU:OE2	22:F:211:TYR:N	2.42	0.53
29:T:73:VAL:HG21	29:T:102:ARG:HG3	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:g:23:SER:OG	35:g:71:ASP:HA	2.07	0.53
35:g:161:ASN:HD22	35:g:214:ASP:HB2	1.74	0.53
38:1:23:C:H4'	39:j:64:ARG:HH22	1.73	0.53
38:1:47:H2U:H5''	38:1:47:H2U:H61	1.88	0.53
1:2:309:C:N3	1:2:356:G:N1	2.57	0.53
1:2:690:A:H2'	1:2:691:U:O4'	2.09	0.53
1:2:1086:A:H2'	1:2:1087:A:C8	2.43	0.53
1:2:1321:A:H2'	1:2:1322:C:C6	2.43	0.53
1:2:1490:A:O2'	1:2:1491:A:O4'	2.27	0.53
1:2:1631:A:H4'	1:2:1632:C:H5''	1.91	0.53
4:C:40:TRP:HE1	4:C:42:PRO:HA	1.73	0.53
4:C:152:ASN:O	4:C:153:LEU:HD22	2.09	0.53
17:a:36:ILE:HG21	17:a:78:ALA:CB	2.39	0.53
23:K:55:VAL:HG22	23:K:68:LEU:HD23	1.90	0.53
39:j:24:VAL:O	39:j:66:GLY:N	2.35	0.53
1:2:761:G:H1'	1:2:788:A:N6	2.24	0.53
1:2:1040:G:H2'	1:2:1041:G:C8	2.44	0.53
1:2:1224:U:H3'	1:2:1225:A:H8	1.73	0.53
4:C:153:LEU:HA	13:V:4:ASP:OD2	2.09	0.53
13:V:30:SER:O	13:V:60:ARG:NH1	2.39	0.53
19:e:29:GLN:O	19:e:31:LYS:HG3	2.09	0.53
22:F:40:GLN:OE1	22:F:40:GLN:N	2.41	0.53
35:g:70:GLN:HB2	35:g:86:TRP:HE1	1.74	0.53
1:2:460:G:H2'	1:2:461:G:C8	2.44	0.53
1:2:811:A:H62	1:2:857:G:H2'	1.73	0.53
1:2:1577:U:H2'	1:2:1578:C:C6	2.44	0.53
1:2:1640:G:OP1	20:h:1:MET:HG2	2.09	0.53
2:A:76:ILE:HD13	2:A:121:VAL:HG13	1.90	0.53
2:A:131:GLN:O	2:A:135:GLU:HG2	2.08	0.53
4:C:84:GLU:OE1	4:C:191:LYS:HD3	2.09	0.53
10:L:10:GLU:OE1	10:L:11:ARG:N	2.42	0.53
12:O:25:ASP:OD1	12:O:45:GLY:N	2.42	0.53
13:V:53:TYR:CZ	13:V:72:LEU:HB3	2.44	0.53
16:Y:57:VAL:N	16:Y:94:TYR:OH	2.42	0.53
23:K:7:ASP:HA	23:K:10:LYS:HE2	1.90	0.53
23:K:10:LYS:HE3	23:K:37:THR:HG22	1.91	0.53
27:R:71:PHE:CE2	27:R:73:LEU:HB2	2.44	0.53
28:S:86:LEU:HD12	28:S:97:ASP:HB3	1.90	0.53
33:d:21:CYS:HB3	33:d:25:GLY:H	1.74	0.53
38:1:43:G:H2'	38:1:44:A:C8	2.44	0.53
39:j:189:GLU:HB2	39:j:265:THR:HG23	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:o:187:MET:HE3	42:o:190:CYS:HB3	1.91	0.53
42:o:191:LEU:HD13	42:o:246:VAL:HG13	1.90	0.53
43:p:491:SER:HA	43:p:499:GLN:HG2	1.90	0.53
1:2:107:C:H2'	1:2:108:A:C8	2.44	0.53
1:2:399:A:H4'	1:2:400:A:H5''	1.90	0.53
1:2:564:C:OP2	36:i:64:LYS:HD3	2.09	0.53
1:2:826:C:O2'	1:2:827:U:O5'	2.26	0.53
1:2:1056:U:O2	1:2:1057:U:O2'	2.19	0.53
1:2:1150:A:H2'	1:2:1151:A:H8	1.74	0.53
2:A:26:ALA:HB1	2:A:149:LEU:HB2	1.91	0.53
4:C:40:TRP:CD2	4:C:72:GLN:NE2	2.77	0.53
8:I:109:PHE:CE2	8:I:184:ILE:HD11	2.44	0.53
15:X:138:GLU:OE1	15:X:138:GLU:N	2.42	0.53
20:h:2:ARG:HB2	20:h:5:TRP:CD1	2.43	0.53
25:P:49:LEU:HD21	25:P:53:PRO:HB2	1.91	0.53
35:g:21:VAL:HG11	35:g:317:ILE:HG12	1.91	0.53
1:2:57:G:C4	1:2:91:G:N2	2.78	0.52
1:2:588:C:H4'	19:e:57:ASN:HB2	1.90	0.52
1:2:632:U:H5'	15:X:8:GLY:HA3	1.91	0.52
1:2:1125:G:H5'	20:h:11:ARG:NE	2.23	0.52
1:2:1533:U:H5'	1:2:1534:G:C8	2.44	0.52
1:2:1578:C:H4'	26:Q:137:ARG:HB2	1.90	0.52
3:B:105:PHE:CZ	3:B:211:HIS:HB3	2.45	0.52
7:H:46:ILE:HG12	7:H:60:VAL:HA	1.90	0.52
8:I:81:VAL:HG12	8:I:94:ASN:OD1	2.09	0.52
8:I:150:GLU:HG2	10:L:24:LYS:HE2	1.90	0.52
22:F:101:MET:HB2	22:F:182:ARG:CZ	2.39	0.52
22:F:116:VAL:O	22:F:120:LEU:HG	2.08	0.52
25:P:68:PRO:HD2	25:P:71:GLU:OE2	2.08	0.52
25:P:115:TYR:HB2	25:P:118:GLU:HG2	1.89	0.52
26:Q:30:LYS:HD2	26:Q:34:SER:C	2.34	0.52
28:S:36:ARG:HD3	28:S:106:GLU:OE2	2.10	0.52
30:U:68:ARG:CD	30:U:79:TRP:HE1	2.21	0.52
35:g:20:TRP:NE1	35:g:313:THR:HB	2.24	0.52
1:2:86:A:H2'	1:2:87:C:H6	1.75	0.52
1:2:195:G:O2'	1:2:196:A:OP2	2.25	0.52
1:2:437:A:H1'	1:2:464:G:H22	1.75	0.52
2:A:11:SER:HA	27:R:115:LEU:HD23	1.90	0.52
5:E:73:ASP:HB3	5:E:164:LEU:HD22	1.91	0.52
6:G:219:ARG:HH12	6:G:223:LYS:HD3	1.75	0.52
15:X:107:PHE:CD1	15:X:123:LYS:HG3	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:F:60:LEU:HD21	22:F:169:ARG:HH11	1.73	0.52
28:S:89:GLN:O	28:S:90:LYS:HB3	2.08	0.52
1:2:884:G:N2	12:O:123:SER:OG	2.42	0.52
1:2:1046:G:H2'	1:2:1047:G:C8	2.45	0.52
1:2:1711:G:H3'	1:2:1712:A:H8	1.75	0.52
14:W:14:ILE:HD11	14:W:63:VAL:HG11	1.91	0.52
26:Q:39:VAL:HG11	26:Q:48:VAL:HG11	1.91	0.52
27:R:65:PRO:HB3	27:R:74:GLN:HE22	1.74	0.52
30:U:57:ARG:HG3	30:U:89:ARG:NE	2.24	0.52
30:U:98:HIS:CE1	30:U:99:ILE:HG23	2.43	0.52
1:2:67:A:O2'	1:2:69:G:OP1	2.16	0.52
1:2:608:U:O2'	15:X:23:ARG:HD3	2.10	0.52
1:2:865:G:H2'	1:2:866:G:C8	2.44	0.52
1:2:1165:A:H5''	22:F:103:GLY:HA2	1.89	0.52
1:2:1682:U:O2	1:2:1715:G:O6	2.28	0.52
1:2:1783:U:OP2	12:O:133:ARG:NH2	2.34	0.52
4:C:145:ARG:HD2	4:C:227:TYR:HD1	1.74	0.52
24:M:104:ARG:CD	24:M:107:VAL:HG11	2.39	0.52
1:2:161:A:H3'	1:2:162:G:N2	2.25	0.52
1:2:366:A:H2'	1:2:367:U:O4'	2.09	0.52
1:2:1321:A:H2'	1:2:1322:C:H6	1.75	0.52
1:2:1481:A:C6	1:2:1482:G:C6	2.98	0.52
1:2:1649:A:H2'	1:2:1650:C:C6	2.43	0.52
1:2:1717:A:H2'	1:2:1718:G:O4'	2.10	0.52
5:E:18:TRP:HH2	5:E:31:PRO:HD3	1.74	0.52
6:G:185:GLN:HA	6:G:188:ARG:NH1	2.25	0.52
21:D:114:ALA:HB3	21:D:117:ARG:HB3	1.90	0.52
43:p:545:ARG:HH11	43:p:606:LEU:HD13	1.74	0.52
43:p:622:LEU:O	43:p:626:LEU:HG	2.09	0.52
1:2:66:U:H6	6:G:160:ARG:HE	1.58	0.52
1:2:181:A:H2'	1:2:182:U:H6	1.74	0.52
1:2:273:G:H2'	1:2:274:C:C6	2.45	0.52
1:2:1437:C:H2'	1:2:1438:C:H6	1.74	0.52
1:2:1588:G:OP1	29:T:91:HIS:HB2	2.09	0.52
1:2:1709:C:H2'	1:2:1710:A:H5'	1.92	0.52
4:C:155:GLN:HG3	4:C:155:GLN:O	2.10	0.52
5:E:41:SER:OG	5:E:42:LEU:N	2.41	0.52
8:I:4:SER:HB3	8:I:24:LYS:HD2	1.90	0.52
16:Y:108:ARG:HG2	16:Y:111:ARG:HH22	1.74	0.52
43:p:254:PHE:CZ	43:p:295:ALA:HB2	2.39	0.52
43:p:254:PHE:HD1	43:p:282:LEU:HD22	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:292:U:H2'	1:2:293:C:H6	1.74	0.52
1:2:1435:U:H4'	21:D:176:LEU:HD11	1.91	0.52
1:2:1736:U:H2'	1:2:1737:C:C6	2.45	0.52
1:2:1750:U:O4	1:2:1751:A:N6	2.43	0.52
3:B:133:TYR:HE1	3:B:221:PRO:HD2	1.73	0.52
5:E:161:LYS:HB3	5:E:171:ASP:H	1.74	0.52
10:L:10:GLU:CD	10:L:12:ALA:H	2.18	0.52
14:W:30:SER:OG	14:W:58:SER:O	2.28	0.52
37:3:37:U:H2'	37:3:38:C:O4'	2.09	0.52
42:o:330:LEU:HD11	42:o:419:GLN:HB2	1.92	0.52
1:2:29:U:O3'	15:X:126:LYS:NZ	2.33	0.52
1:2:84:A:H3'	1:2:85:A:H8	1.74	0.52
1:2:168:A:OP2	6:G:137:ARG:NH2	2.40	0.52
1:2:585:G:H2'	1:2:586:C:C6	2.45	0.52
1:2:863:U:H3'	14:W:28:ARG:NH2	2.25	0.52
1:2:1125:G:P	20:h:15:ARG:HH21	2.32	0.52
1:2:1381:G:H2'	1:2:1382:A:H8	1.73	0.52
1:2:1455:C:O2'	1:2:1456:G:H5'	2.10	0.52
1:2:1785:C:H2'	1:2:1786:G:H8	1.74	0.52
2:A:107:PHE:HB2	2:A:135:GLU:HB3	1.90	0.52
2:A:158:VAL:HG22	13:V:69:LEU:HD23	1.92	0.52
15:X:68:ILE:HG12	36:i:62:ARG:HH12	1.75	0.52
16:Y:21:LYS:HB2	16:Y:75:VAL:HG23	1.91	0.52
22:F:119:THR:O	22:F:123:ILE:HG12	2.09	0.52
24:M:104:ARG:CD	24:M:107:VAL:CG1	2.88	0.52
27:R:72:LYS:HE3	27:R:73:LEU:HD22	1.92	0.52
29:T:77:ASN:HD21	29:T:98:GLY:HA2	1.75	0.52
35:g:210:GLN:HB3	35:g:250:LEU:HD12	1.92	0.52
39:j:71:ALA:HB1	39:j:85:LEU:HD21	1.91	0.52
1:2:161:A:H2'	1:2:162:G:N3	2.25	0.52
1:2:248:U:OP1	10:L:34:TRP:NE1	2.42	0.52
1:2:297:C:H5''	5:E:38:LEU:HD23	1.92	0.52
1:2:497:G:O2'	1:2:500:U:O4	2.27	0.52
1:2:1035:A:H2'	1:2:1036:C:C6	2.45	0.52
2:A:148:ASP:OD1	2:A:149:LEU:N	2.43	0.52
6:G:147:LEU:HD23	6:G:153:VAL:HG23	1.92	0.52
10:L:123:VAL:HG11	10:L:139:VAL:HG22	1.91	0.52
22:F:207:SER:OG	22:F:209:THR:OG1	2.25	0.52
26:Q:113:ASP:OD1	26:Q:115:THR:HG22	2.10	0.52
29:T:85:ASN:O	29:T:87:GLY:N	2.43	0.52
30:U:47:THR:HG23	30:U:48:PHE:HD1	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:Z:49:ARG:O	31:Z:53:GLU:CB	2.56	0.52
31:Z:49:ARG:HD2	31:Z:52:LYS:HE3	1.92	0.52
1:2:497:G:H1'	1:2:499:C:H41	1.74	0.52
1:2:1102:U:H2'	1:2:1103:U:C6	2.45	0.52
1:2:1111:G:H3'	1:2:1112:A:H8	1.75	0.52
1:2:1169:G:N1	1:2:1572:G:C2	2.78	0.52
1:2:1195:A:H4'	1:2:1196:C:H5''	1.92	0.52
1:2:1253:U:H2'	1:2:1254:G:C8	2.44	0.52
1:2:1546:G:H2'	1:2:1547:C:C6	2.45	0.52
7:H:25:ILE:HA	7:H:28:GLU:CD	2.35	0.52
35:g:19:GLY:HA3	35:g:39:ARG:HB2	1.92	0.52
39:j:22:VAL:HG13	39:j:35:LYS:O	2.10	0.52
42:o:241:PHE:CZ	42:o:274:PRO:HB3	2.45	0.52
42:o:296:PRO:HB2	42:o:335:THR:HG23	1.92	0.52
43:p:566:ILE:HG22	43:p:567:LEU:HD22	1.92	0.52
1:2:477:A:H5''	19:e:37:ARG:NH2	2.25	0.51
1:2:523:U:O2'	1:2:525:A:N7	2.41	0.51
1:2:562:U:H3'	1:2:563:G:H8	1.75	0.51
1:2:706:A:C6	1:2:707:A:H1'	2.44	0.51
1:2:761:G:H1'	1:2:788:A:H61	1.74	0.51
1:2:1522:A:N3	1:2:1588:G:O2'	2.40	0.51
1:2:1546:G:OP1	25:P:38:PRO:HG3	2.10	0.51
3:B:6:ASN:OD1	39:j:91:SER:OG	2.28	0.51
4:C:40:TRP:CH2	4:C:70:GLU:HG3	2.45	0.51
5:E:163:ASP:CG	5:E:168:THR:H	2.18	0.51
7:H:79:ARG:O	7:H:83:LYS:HG2	2.10	0.51
22:F:151:VAL:HG22	32:c:66:LEU:HD21	1.91	0.51
24:M:66:LYS:HZ2	34:f:111:GLU:HG3	1.75	0.51
26:Q:23:LYS:HB2	26:Q:64:ASP:OD2	2.10	0.51
34:f:119:LYS:HB3	34:f:130:LEU:HD12	1.92	0.51
39:j:220:VAL:HG22	39:j:230:LEU:HG	1.92	0.51
39:j:252:THR:HA	39:j:255:ILE:HG12	1.91	0.51
43:p:426:GLU:O	43:p:430:THR:HG23	2.10	0.51
1:2:1301:U:H2'	1:2:1302:U:C6	2.43	0.51
1:2:1371:A:H2'	1:2:1372:C:C6	2.46	0.51
1:2:1480:C:O2'	26:Q:72:GLY:O	2.18	0.51
1:2:1765:G:H4'	1:2:1766:G:O5'	2.10	0.51
10:L:115:PHE:HD2	10:L:142:VAL:HG23	1.75	0.51
21:D:56:GLN:O	21:D:60:GLY:N	2.40	0.51
21:D:142:LEU:HD12	21:D:148:LYS:HB3	1.92	0.51
24:M:66:LYS:HE3	34:f:108:VAL:HG11	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:R:9:VAL:HG23	27:R:50:ILE:HD13	1.92	0.51
34:f:104:ASN:O	34:f:118:ARG:NH2	2.44	0.51
35:g:64:GLY:O	35:g:91:ARG:NH1	2.43	0.51
39:j:123:LEU:HB3	39:j:127:TYR:HE2	1.74	0.51
42:o:94:ARG:HH12	42:o:177:ILE:HG22	1.75	0.51
1:2:303:U:H2'	1:2:304:C:C6	2.45	0.51
1:2:574:C:H41	15:X:65:ASN:ND2	2.08	0.51
1:2:1124:A:O2'	20:h:11:ARG:NH2	2.43	0.51
2:A:198:MET:HE1	27:R:87:ASP:O	2.11	0.51
2:A:207:PRO:O	2:A:210:ILE:HG22	2.10	0.51
4:C:61:ILE:HA	4:C:66:LEU:HD23	1.93	0.51
5:E:11:ARG:NH1	5:E:21:ASP:O	2.38	0.51
8:I:82:VAL:HG22	8:I:197:LEU:HD11	1.93	0.51
14:W:41:MET:HE1	14:W:129:VAL:CG1	2.34	0.51
22:F:72:VAL:HG23	22:F:74:HIS:H	1.74	0.51
31:Z:67:ASP:OD2	31:Z:68:ARG:NH1	2.44	0.51
38:1:13:C:C4	38:1:14:A:H2	2.28	0.51
38:1:35:A:H2'	38:1:36:U:C6	2.44	0.51
1:2:5:U:H2'	1:2:6:G:C8	2.46	0.51
1:2:242:G:H2'	1:2:243:A:C8	2.46	0.51
1:2:373:U:H2'	1:2:374:U:C6	2.45	0.51
1:2:643:U:H2'	1:2:644:C:H6	1.74	0.51
3:B:31:ASP:O	3:B:96:LEU:HG	2.10	0.51
9:J:56:ALA:O	9:J:60:LEU:HD23	2.09	0.51
12:O:43:THR:H	12:O:46:MET:HG2	1.76	0.51
18:b:46:VAL:HG12	18:b:54:VAL:HG21	1.92	0.51
42:o:252:LEU:HD13	42:o:255:GLU:HG3	1.92	0.51
1:2:97:C:H2'	1:2:98:U:H6	1.76	0.51
1:2:353:C:H5''	8:I:16:ALA:HB2	1.92	0.51
1:2:1063:G:O2'	3:B:204:ILE:O	2.25	0.51
1:2:1103:U:C5'	15:X:14:LYS:HZ3	2.24	0.51
1:2:1145:G:C2	1:2:1146:A:C4	2.99	0.51
1:2:1548:A:H2'	1:2:1549:U:H6	1.75	0.51
1:2:1652:G:C5	1:2:1743:G:C2	2.98	0.51
5:E:38:LEU:HD12	5:E:39:ARG:HD2	1.92	0.51
7:H:141:ARG:HD3	14:W:49:GLU:OE2	2.11	0.51
18:b:56:CYS:SG	18:b:58:SER:OG	2.54	0.51
22:F:202:ASN:HB2	22:F:210:SER:HB2	1.91	0.51
38:1:22:G:H2'	38:1:23:C:C6	2.46	0.51
40:k:207:GLY:O	40:k:211:MET:HG3	2.11	0.51
40:k:216:LEU:HD11	40:k:229:THR:HB	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:o:327:THR:HG23	42:o:419:GLN:HG3	1.91	0.51
43:p:296:TYR:O	43:p:300:ILE:HG12	2.10	0.51
1:2:293:C:C2	1:2:294:A:C8	2.99	0.51
1:2:326:U:O4	1:2:327:A:N6	2.43	0.51
1:2:598:A:H2'	1:2:599:U:C6	2.46	0.51
1:2:598:A:N3	15:X:47:SER:OG	2.38	0.51
1:2:701:U:O2	1:2:738:G:N2	2.43	0.51
1:2:1219:C:H2'	1:2:1220:A:C8	2.45	0.51
1:2:1287:G:OP1	1:2:1622:C:O2'	2.29	0.51
1:2:1685:U:N3	1:2:1711:G:O6	2.40	0.51
22:F:50:PHE:CD2	22:F:69:PRO:HA	2.45	0.51
35:g:140:ASP:OD1	35:g:141:CYS:N	2.44	0.51
35:g:214:ASP:OD1	35:g:215:GLY:N	2.44	0.51
40:k:204:MET:SD	40:k:205:LEU:HG	2.50	0.51
1:2:251:U:H1'	5:E:131:LEU:HD23	1.93	0.51
1:2:471:U:OP1	9:J:11:THR:HG22	2.10	0.51
1:2:1413:U:OP1	27:R:45:ARG:NH2	2.43	0.51
2:A:53:THR:O	2:A:57:ILE:HG13	2.11	0.51
7:H:153:LEU:HD13	7:H:184:GLU:CD	2.35	0.51
11:N:92:ILE:HG13	11:N:122:ILE:HD11	1.93	0.51
12:O:137:LEU:HD11	37:3:25:A:C6	2.46	0.51
23:K:29:GLN:HE21	23:K:39:ASN:HB2	1.75	0.51
35:g:88:LYS:HZ1	35:g:108:THR:C	2.19	0.51
38:1:36:U:H2'	38:1:37:T6A:C8	2.46	0.51
40:k:355:ILE:HG12	40:k:357:PRO:HD2	1.93	0.51
1:2:97:C:H2'	1:2:98:U:C6	2.46	0.51
1:2:997:A:N6	1:2:1003:U:OP2	2.43	0.51
1:2:1182:A:C5	25:P:100:LYS:HG3	2.46	0.51
1:2:1238:U:H2'	1:2:1239:U:C6	2.45	0.51
1:2:1548:A:H2'	1:2:1549:U:C6	2.45	0.51
1:2:1622:C:H2'	1:2:1623:C:C6	2.45	0.51
6:G:124:ILE:HG13	6:G:125:THR:N	2.26	0.51
11:N:52:VAL:HG23	11:N:55:ARG:NH2	2.26	0.51
24:M:23:VAL:O	24:M:27:THR:HG23	2.11	0.51
35:g:312:TYR:CD2	35:g:318:ARG:CZ	2.94	0.51
39:j:14:PRO:HA	39:j:39:TYR:HE2	1.76	0.51
1:2:520:A:H2'	1:2:521:U:C6	2.46	0.51
1:2:1723:U:H2'	1:2:1724:G:C8	2.46	0.51
8:I:106:ALA:HB2	8:I:166:LEU:HB2	1.93	0.51
8:I:113:TYR:O	8:I:117:TYR:HB2	2.11	0.51
10:L:21:THR:HA	10:L:32:LYS:NZ	2.26	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:X:56:LYS:HB3	15:X:93:LEU:HD11	1.92	0.51
30:U:57:ARG:HA	30:U:89:ARG:HG2	1.92	0.51
36:i:67:LYS:HE3	37:3:33:C:H4'	1.93	0.51
39:j:201:ILE:O	39:j:205:LEU:HD23	2.11	0.51
1:2:597:U:O4	1:2:598:A:C6	2.64	0.51
1:2:1297:U:H2'	1:2:1298:G:O4'	2.11	0.51
1:2:1437:C:H2'	1:2:1438:C:C6	2.46	0.51
1:2:1481:A:H4'	26:Q:71:GLY:HA2	1.93	0.51
1:2:1784:G:H2'	1:2:1785:C:C6	2.45	0.51
4:C:106:VAL:HG23	4:C:106:VAL:O	2.11	0.51
5:E:87:MET:HE1	5:E:123:LEU:O	2.11	0.51
5:E:175:PHE:HE1	5:E:195:ILE:HD13	1.76	0.51
9:J:108:ARG:HH21	9:J:145:SER:N	2.09	0.51
15:X:26:GLU:OE1	15:X:26:GLU:N	2.43	0.51
16:Y:13:ILE:HG12	16:Y:22:GLN:NE2	2.16	0.51
19:e:39:LEU:HD21	19:e:43:ARG:NE	2.25	0.51
26:Q:16:ALA:HB2	26:Q:72:GLY:HA3	1.93	0.51
26:Q:40:GLN:O	26:Q:41:PRO:C	2.54	0.51
28:S:12:GLN:HG2	28:S:15:LEU:HG	1.91	0.51
28:S:50:ALA:C	28:S:52:VAL:H	2.19	0.51
32:c:61:ARG:HG2	32:c:61:ARG:HH11	1.75	0.51
33:d:46:LYS:O	33:d:50:ILE:HG12	2.11	0.51
38:1:71:C:H2'	38:1:72:U:C6	2.46	0.51
40:k:354:GLU:OE2	40:k:356:ARG:NH2	2.44	0.51
1:2:273:G:H2'	1:2:274:C:H6	1.76	0.50
1:2:332:A:OP1	8:I:48:THR:OG1	2.28	0.50
1:2:373:U:H2'	1:2:374:U:H6	1.76	0.50
1:2:1144:U:H2'	1:2:1145:G:H8	1.76	0.50
1:2:1367:G:H5''	29:T:69:LYS:HG2	1.93	0.50
1:2:1496:G:H2'	1:2:1497:G:H8	1.77	0.50
4:C:40:TRP:CD1	4:C:40:TRP:C	2.88	0.50
38:1:21:A:O2'	38:1:46:7MG:O6	2.23	0.50
42:o:331:SER:O	42:o:334:SER:OG	2.28	0.50
1:2:198:G:H2'	1:2:199:A:H8	1.76	0.50
1:2:260:U:H1'	1:2:261:U:H5	1.75	0.50
1:2:914:A:H3'	1:2:915:U:C6	2.46	0.50
1:2:1078:U:P	17:a:93:ARG:HH22	2.35	0.50
1:2:1132:A:N3	1:2:1648:U:O2'	2.41	0.50
1:2:1584:A:C2	22:F:106:ASN:CG	2.86	0.50
2:A:52:LYS:HA	2:A:55:GLU:CD	2.36	0.50
22:F:172:GLN:HG3	22:F:176:LEU:HD13	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:K:43:ILE:HG22	23:K:47:GLN:OE1	2.11	0.50
26:Q:143:ARG:NH2	38:1:34:C:OP2	2.45	0.50
28:S:45:LEU:HD12	28:S:85:PHE:CE2	2.46	0.50
29:T:38:LYS:HB3	29:T:43:ASN:HB2	1.93	0.50
31:Z:74:SER:HA	31:Z:77:ARG:NH2	2.26	0.50
32:c:12:VAL:HG13	32:c:51:GLY:H	1.75	0.50
38:1:10:2MG:HM23	38:1:11:C:H1'	1.93	0.50
42:o:36:THR:HG22	42:o:74:GLN:HB3	1.93	0.50
43:p:480:ASP:OD1	43:p:481:ASN:N	2.43	0.50
1:2:32:U:OP1	15:X:139:LYS:NZ	2.41	0.50
1:2:360:C:H2'	1:2:361:G:C8	2.46	0.50
1:2:384:A:H5''	8:I:22:ARG:HG3	1.92	0.50
1:2:660:A:OP2	1:2:661:C:H3'	2.11	0.50
1:2:804:U:N3	1:2:805:A:N7	2.58	0.50
1:2:1003:U:H5'	1:2:1004:A:H5''	1.92	0.50
1:2:1359:A:H4'	29:T:2:PRO:HB2	1.93	0.50
1:2:1517:U:H2'	1:2:1518:U:C5	2.46	0.50
21:D:17:PHE:CZ	21:D:21:LEU:HD11	2.46	0.50
21:D:72:LEU:HD22	23:K:20:VAL:HG21	1.92	0.50
21:D:106:LYS:HG3	21:D:175:VAL:HG22	1.92	0.50
21:D:126:VAL:HG11	21:D:188:ILE:HD12	1.92	0.50
25:P:108:ARG:HH11	25:P:108:ARG:HG3	1.77	0.50
31:Z:58:ARG:HA	31:Z:103:ARG:NE	2.26	0.50
38:1:1:A:H2'	38:1:2:G:C8	2.46	0.50
39:j:91:SER:O	39:j:95:ILE:HG13	2.11	0.50
40:k:102:ASN:ND2	40:k:394:GLY:HA2	2.21	0.50
40:k:148:TYR:OH	40:k:169:GLU:O	2.23	0.50
1:2:326:U:H2'	1:2:327:A:C8	2.47	0.50
1:2:930:C:P	17:a:70:LYS:HZ1	2.34	0.50
1:2:1075:A:O3'	17:a:13:LYS:HD3	2.11	0.50
1:2:1259:U:O2'	1:2:1260:G:H8	1.94	0.50
1:2:1390:U:H2'	1:2:1391:C:C6	2.46	0.50
1:2:1431:G:C2	1:2:1432:U:C2	3.00	0.50
1:2:1563:C:H2'	1:2:1564:U:C6	2.46	0.50
1:2:1613:C:O2'	1:2:1614:G:OP2	2.23	0.50
3:B:28:GLU:HG3	3:B:50:LYS:HG2	1.92	0.50
15:X:107:PHE:HB2	15:X:122:PHE:HA	1.94	0.50
22:F:60:LEU:HD21	22:F:169:ARG:NH1	2.27	0.50
22:F:148:THR:HA	22:F:160:GLN:O	2.12	0.50
22:F:173:SER:O	22:F:177:LEU:HD23	2.11	0.50
29:T:37:VAL:HG12	29:T:39:THR:H	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:g:126:ALA:HB2	35:g:155:VAL:HG23	1.92	0.50
42:o:258:ARG:O	42:o:261:GLU:HG2	2.11	0.50
42:o:333:ILE:HG22	42:o:424:LEU:HD13	1.93	0.50
1:2:121:U:H2'	1:2:122:U:H6	1.74	0.50
1:2:324:G:OP1	10:L:134:THR:OG1	2.23	0.50
1:2:860:U:H4'	14:W:56:HIS:CE1	2.47	0.50
1:2:928:A:P	1:2:930:C:H42	2.34	0.50
1:2:1221:C:H2'	1:2:1222:A:C8	2.47	0.50
1:2:1683:G:H2'	1:2:1684:C:H6	1.76	0.50
8:I:48:THR:OG1	8:I:49:ARG:N	2.36	0.50
8:I:84:HIS:NE2	8:I:97:THR:OG1	2.42	0.50
15:X:69:ARG:HG3	15:X:117:ILE:HG13	1.93	0.50
25:P:79:HIS:CE1	25:P:102:PHE:CZ	2.99	0.50
28:S:122:HIS:HA	28:S:125:ILE:HG22	1.93	0.50
34:f:108:VAL:HA	34:f:114:VAL:HG22	1.94	0.50
35:g:194:ARG:NE	35:g:194:ARG:HA	2.26	0.50
42:o:52:VAL:O	42:o:56:LEU:HD13	2.12	0.50
1:2:53:G:H2'	1:2:54:C:C6	2.46	0.50
1:2:70:C:H2'	1:2:71:A:O4'	2.12	0.50
1:2:1227:G:H1'	34:f:100:LEU:HD21	1.94	0.50
1:2:1234:C:H5'	34:f:143:HIS:CE1	2.47	0.50
1:2:1513:A:O2'	1:2:1514:A:OP1	2.26	0.50
4:C:44:THR:O	4:C:46:LEU:N	2.44	0.50
5:E:11:ARG:HD3	5:E:21:ASP:O	2.11	0.50
5:E:106:LYS:HB2	5:E:108:ARG:NH1	2.26	0.50
6:G:10:ASN:HB3	6:G:128:THR:HA	1.93	0.50
8:I:69:SER:OG	8:I:186:GLU:OE2	2.17	0.50
24:M:105:LYS:HD2	24:M:106:VAL:HG12	1.94	0.50
35:g:265:SER:O	35:g:282:LYS:NZ	2.31	0.50
39:j:109:HIS:CE1	39:j:113:ARG:HD2	2.46	0.50
1:2:119:A:C2	1:2:120:PSU:H1'	2.47	0.50
1:2:257:C:H2'	1:2:258:U:C6	2.47	0.50
1:2:1320:A:H8	1:2:1321:A:H1'	1.75	0.50
4:C:45:LYS:NZ	4:C:253:THR:OG1	2.44	0.50
4:C:173:ARG:HB2	4:C:204:SER:HB2	1.94	0.50
8:I:38:ILE:HA	8:I:60:ILE:O	2.11	0.50
15:X:17:VAL:HA	15:X:20:ARG:HD3	1.92	0.50
21:D:41:VAL:HG22	21:D:46:THR:HG23	1.93	0.50
21:D:96:LEU:HD12	21:D:190:LYS:HG2	1.93	0.50
27:R:93:LEU:HD22	27:R:100:LEU:H	1.76	0.50
33:d:42:SER:O	33:d:46:LYS:HG2	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:g:20:TRP:CE2	35:g:313:THR:HB	2.46	0.50
40:k:142:TYR:CE1	40:k:190:SER:HB2	2.47	0.50
1:2:105:A:N6	1:2:307:C:O2	2.45	0.50
1:2:291:U:H2'	1:2:292:U:H6	1.76	0.50
1:2:701:U:H1'	1:2:738:G:N2	2.27	0.50
1:2:888:U:H2'	1:2:889:C:H6	1.77	0.50
12:O:25:ASP:HA	12:O:54:GLU:HB3	1.94	0.50
14:W:55:ASP:C	14:W:57:ARG:H	2.20	0.50
17:a:33:ASP:OD1	17:a:34:LYS:N	2.45	0.50
26:Q:41:PRO:O	26:Q:43:ILE:N	2.43	0.50
29:T:127:ASN:OD1	29:T:130:ARG:NH2	2.42	0.50
1:2:1514:A:O2'	1:2:1515:U:H5'	2.11	0.50
1:2:1774:A:OP1	20:h:11:ARG:NH2	2.44	0.50
5:E:18:TRP:HE3	5:E:20:LEU:HD11	1.77	0.50
5:E:201:HIS:CD2	5:E:207:LEU:HD13	2.47	0.50
12:O:135:ARG:N	17:a:26:CYS:O	2.45	0.50
13:V:17:CYS:HB2	13:V:56:SER:HB3	1.93	0.50
18:b:15:GLU:OE2	18:b:23:THR:HB	2.12	0.50
23:K:73:VAL:HG21	23:K:91:TYR:HE2	1.77	0.50
26:Q:12:LYS:HA	26:Q:16:ALA:O	2.12	0.50
28:S:91:ASP:O	28:S:93:ASN:N	2.43	0.50
1:2:65:A:N6	1:2:83:G:C2	2.79	0.49
1:2:1379:U:O4	1:2:1380:A:N6	2.44	0.49
1:2:1601:U:P	26:Q:132:ARG:HH12	2.35	0.49
4:C:70:GLU:OE1	4:C:72:GLN:HG2	2.12	0.49
4:C:153:LEU:HD13	13:V:4:ASP:OD2	2.11	0.49
38:1:63:G:H21	38:1:64:RIA:H4'	1.77	0.49
43:p:316:ASP:OD1	43:p:317:GLN:N	2.44	0.49
1:2:254:U:H2'	1:2:255:A:H8	1.77	0.49
1:2:385:G:H2'	1:2:386:A:C8	2.47	0.49
1:2:508:G:H2'	1:2:509:G:C8	2.46	0.49
1:2:625:U:H2'	1:2:626:C:C6	2.47	0.49
1:2:683:C:N4	1:2:684:A:H62	2.10	0.49
1:2:1055:U:N3	1:2:1062:U:O4	2.44	0.49
1:2:1102:U:O4	15:X:2:GLY:N	2.45	0.49
1:2:1349:G:H2'	1:2:1350:G:C8	2.47	0.49
1:2:1390:U:H2'	1:2:1391:C:H6	1.77	0.49
1:2:1498:C:H3'	1:2:1499:C:H6	1.77	0.49
1:2:1521:G:N7	29:T:68:ARG:NH1	2.59	0.49
1:2:1659:U:H2'	1:2:1660:G:C8	2.46	0.49
1:2:1791:G:H4'	1:2:1792:A:OP1	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:89:TYR:O	2:A:93:THR:OG1	2.27	0.49
7:H:47:ARG:HG2	7:H:61:PHE:HE1	1.76	0.49
34:f:83:LYS:HB3	34:f:85:TYR:HE1	1.76	0.49
35:g:198:ASP:C	35:g:199:PHE:HD1	2.20	0.49
36:i:59:ALA:HA	36:i:89:CYS:O	2.12	0.49
37:3:19:A:O2'	37:3:20:A:O4'	2.28	0.49
42:o:12:ILE:HG23	42:o:54:LYS:HD3	1.95	0.49
1:2:165:C:N3	6:G:132:ARG:NH2	2.60	0.49
1:2:533:A:C2	1:2:534:A:H1'	2.47	0.49
1:2:897:A:H61	1:2:913:G:H1'	1.77	0.49
1:2:949:C:C4'	11:N:104:ARG:HH12	2.25	0.49
1:2:1083:A:H5''	1:2:1084:G:OP2	2.12	0.49
1:2:1737:C:H2'	1:2:1738:A:C8	2.46	0.49
2:A:144:ILE:HA	2:A:158:VAL:O	2.12	0.49
5:E:34:GLY:HA3	5:E:83:PRO:HG2	1.94	0.49
11:N:4:MET:HG2	11:N:124:ARG:NH1	2.25	0.49
14:W:23:ARG:O	14:W:65:LEU:N	2.43	0.49
31:Z:43:ASP:OD1	31:Z:44:GLN:N	2.45	0.49
33:d:3:HIS:HB3	33:d:6:VAL:HB	1.94	0.49
42:o:31:LEU:O	42:o:35:ILE:HG12	2.12	0.49
1:2:60:U:H3	1:2:63:G:P	2.35	0.49
1:2:439:U:O2'	1:2:440:A:OP1	2.29	0.49
1:2:753:A:OP2	5:E:186:GLY:HA3	2.12	0.49
1:2:1358:C:H2'	1:2:1359:A:C8	2.47	0.49
2:A:126:PRO:HG2	2:A:147:THR:HG22	1.93	0.49
3:B:66:VAL:HG12	3:B:68:VAL:HG13	1.94	0.49
11:N:31:ASP:O	11:N:34:VAL:N	2.45	0.49
12:O:19:ILE:HG13	12:O:28:VAL:HG12	1.93	0.49
21:D:75:LYS:HG3	23:K:22:VAL:HG22	1.95	0.49
23:K:37:THR:HB	23:K:41:PHE:HE1	1.77	0.49
24:M:51:GLN:HE21	24:M:117:TRP:NE1	2.11	0.49
25:P:38:PRO:HA	25:P:42:ARG:HH12	1.77	0.49
29:T:126:ASP:OD1	29:T:126:ASP:N	2.43	0.49
35:g:117:ASP:HB2	35:g:122:LYS:H	1.77	0.49
43:p:682:MET:O	43:p:724:THR:HG21	2.13	0.49
1:2:1004:A:H2'	1:2:1005:C:C6	2.47	0.49
1:2:1219:C:H5''	23:K:52:LYS:HZ3	1.76	0.49
1:2:1595:A:C8	33:d:14:PHE:HD2	2.30	0.49
4:C:50:VAL:HG11	4:C:73:ILE:HD12	1.93	0.49
6:G:7:TYR:CE2	6:G:9:ILE:HB	2.47	0.49
9:J:81:VAL:HG21	9:J:91:LYS:HE2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:135:ALA:HA	9:J:140:ILE:HA	1.93	0.49
11:N:71:ILE:H	11:N:71:ILE:HD12	1.78	0.49
14:W:40:VAL:O	14:W:43:LYS:HG3	2.12	0.49
22:F:64:ILE:HG22	22:F:66:ILE:HG12	1.94	0.49
22:F:144:PRO:O	22:F:164:VAL:HG21	2.13	0.49
35:g:113:SER:HB2	35:g:154:LYS:HA	1.95	0.49
40:k:235:ALA:HA	40:k:238:ILE:HD12	1.93	0.49
40:k:402:VAL:HG13	40:k:406:LEU:HD13	1.95	0.49
43:p:677:PHE:O	43:p:680:LYS:HG2	2.12	0.49
1:2:71:A:H3'	1:2:72:A:H5''	1.93	0.49
1:2:903:G:H2'	1:2:904:A:O4'	2.12	0.49
1:2:1150:A:H2'	1:2:1151:A:C8	2.48	0.49
2:A:13:ASP:OD1	2:A:179:ARG:NH2	2.46	0.49
2:A:167:LYS:O	2:A:167:LYS:HG2	2.11	0.49
7:H:64:VAL:O	7:H:64:VAL:HG12	2.12	0.49
8:I:6:ASP:HB3	8:I:28:GLU:CD	2.37	0.49
21:D:210:GLU:OE1	27:R:19:LYS:NZ	2.44	0.49
22:F:114:ARG:HH21	31:Z:95:HIS:CG	2.30	0.49
29:T:40:SER:HA	29:T:97:SER:N	2.28	0.49
40:k:464:VAL:HG21	40:k:485:LEU:HD13	1.93	0.49
43:p:716:ARG:HA	43:p:719:VAL:HG12	1.95	0.49
1:2:14:C:H2'	1:2:15:U:C6	2.47	0.49
1:2:282:U:OP2	6:G:188:ARG:HD3	2.13	0.49
1:2:548:G:H1	1:2:588:C:H5	1.59	0.49
1:2:977:A:H2'	1:2:978:A:H8	1.78	0.49
1:2:1140:G:C6	1:2:1141:A:C6	3.01	0.49
1:2:1168:G:N3	1:2:1573:7MG:HM72	2.27	0.49
1:2:1359:A:N6	1:2:1360:C:N3	2.61	0.49
1:2:1366:G:O5'	29:T:7:ARG:NH2	2.46	0.49
3:B:89:ASP:OD1	3:B:89:ASP:N	2.43	0.49
5:E:115:THR:OG1	5:E:118:GLU:OE2	2.29	0.49
9:J:146:PHE:HD2	9:J:148:VAL:HG22	1.77	0.49
10:L:146:THR:OG1	10:L:150:ASN:OD1	2.30	0.49
11:N:38:ILE:O	11:N:42:ARG:HG3	2.12	0.49
24:M:104:ARG:HD2	24:M:107:VAL:HG12	1.92	0.49
27:R:6:THR:O	27:R:9:VAL:HG12	2.12	0.49
31:Z:95:HIS:ND1	31:Z:96:SER:O	2.46	0.49
38:1:9:1MG:O5'	38:1:46:7MG:H1'	2.12	0.49
40:k:353:ILE:HG12	40:k:417:VAL:HG12	1.94	0.49
42:o:483:ASP:OD1	42:o:484:HIS:N	2.45	0.49
1:2:169:U:OP1	1:2:266:U:O2'	2.23	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:266:U:OP1	6:G:183:ARG:NE	2.45	0.49
1:2:383:G:H2'	1:2:384:A:C8	2.48	0.49
1:2:604:A:OP2	1:2:605:A:O2'	2.21	0.49
1:2:664:U:H2'	1:2:665:A:H8	1.78	0.49
1:2:756:A:C4	1:2:757:A:C8	3.01	0.49
1:2:977:A:C4	1:2:978:A:C8	3.00	0.49
1:2:1076:C:H2'	1:2:1077:C:C6	2.47	0.49
1:2:1134:U:P	15:X:121:ARG:HH22	2.35	0.49
1:2:1147:C:H2'	1:2:1148:G:H8	1.77	0.49
3:B:195:LYS:HE2	42:o:14:ARG:HH21	1.77	0.49
4:C:40:TRP:O	4:C:40:TRP:HD1	1.96	0.49
17:a:37:LYS:HA	17:a:71:LEU:O	2.13	0.49
22:F:167:LEU:HG	22:F:171:ASN:HD21	1.77	0.49
23:K:22:VAL:HG23	23:K:23:ALA:H	1.78	0.49
38:1:52:G:H2'	38:1:53:G:C8	2.47	0.49
42:o:55:PHE:CE2	42:o:68:LEU:HA	2.47	0.49
43:p:445:GLU:OE2	43:p:509:TYR:OH	2.28	0.49
1:2:12:U:H2'	1:2:13:C:H6	1.77	0.49
1:2:176:U:C2'	1:2:177:U:H2'	2.43	0.49
1:2:707:A:H2	1:2:731:C:H2'	1.78	0.49
1:2:812:U:H3	10:L:153:PHE:HB2	1.78	0.49
1:2:888:U:H2'	1:2:889:C:C6	2.48	0.49
1:2:1078:U:P	17:a:93:ARG:HH12	2.36	0.49
1:2:1289:PSU:P	4:C:100:ARG:HH22	2.33	0.49
1:2:1555:U:C4'	25:P:118:GLU:OE2	2.61	0.49
1:2:1658:A:H2'	1:2:1659:U:C6	2.48	0.49
4:C:162:LYS:HA	4:C:174:LEU:O	2.13	0.49
4:C:193:MET:HA	4:C:193:MET:HE2	1.95	0.49
12:O:18:ARG:HG2	12:O:82:LYS:HB2	1.95	0.49
12:O:68:ALA:O	12:O:72:LYS:HG2	2.12	0.49
12:O:89:THR:O	12:O:128:LYS:HE3	2.13	0.49
32:c:15:VAL:HG23	32:c:28:VAL:HG12	1.95	0.49
35:g:126:ALA:HB1	35:g:152:VAL:HG23	1.95	0.49
39:j:123:LEU:HB3	39:j:127:TYR:CE2	2.48	0.49
43:p:687:TRP:HB2	43:p:717:VAL:HG12	1.94	0.49
1:2:200:G:H2'	1:2:201:A:C8	2.48	0.49
1:2:303:U:H2'	1:2:304:C:H6	1.76	0.49
1:2:315:A:H2'	1:2:316:C:H6	1.78	0.49
1:2:461:G:C6	1:2:462:U:C4	3.01	0.49
1:2:1172:C:OP1	28:S:132:ARG:NH2	2.30	0.49
1:2:1768:U:H2'	1:2:1769:U:C6	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1791:G:C4	17:a:75:ILE:HD11	2.48	0.49
1:2:1791:G:C2	17:a:75:ILE:HD11	2.48	0.49
2:A:183:ARG:CZ	2:A:191:ARG:HA	2.43	0.49
3:B:41:ARG:HH21	3:B:232:HIS:HD2	1.61	0.49
4:C:232:PRO:O	4:C:235:TRP:CD1	2.66	0.49
11:N:54:LEU:HB3	11:N:60:VAL:HB	1.94	0.49
14:W:98:GLN:OE1	14:W:98:GLN:N	2.37	0.49
16:Y:18:LEU:HB2	16:Y:20:ARG:HG2	1.95	0.49
21:D:132:LYS:HD2	21:D:189:MET:HE1	1.94	0.49
23:K:46:LEU:HB3	23:K:66:TYR:CE1	2.48	0.49
35:g:47:ARG:O	35:g:57:VAL:N	2.40	0.49
35:g:249:ALA:N	35:g:262:ALA:HB3	2.23	0.49
42:o:274:PRO:HB2	42:o:279:LEU:HG	1.94	0.49
42:o:423:PRO:O	42:o:427:VAL:HG23	2.13	0.49
43:p:401:GLU:HA	43:p:404:ILE:HD12	1.94	0.49
1:2:68:A:N3	6:G:160:ARG:NH1	2.61	0.48
1:2:573:G:O6	15:X:65:ASN:ND2	2.46	0.48
1:2:636:C:OP1	14:W:32:LYS:HG3	2.12	0.48
1:2:771:A:C4	1:2:772:G:C8	3.01	0.48
1:2:805:A:H2'	1:2:806:A:H8	1.77	0.48
1:2:1036:C:H1'	14:W:16:ASN:HD22	1.78	0.48
1:2:1239:U:H2'	1:2:1241:A:OP2	2.12	0.48
1:2:1346:U:H5	30:U:23:ARG:NH2	2.11	0.48
1:2:1592:G:H5'	33:d:33:LYS:CE	2.43	0.48
3:B:54:LEU:O	3:B:55:LYS:HB2	2.12	0.48
8:I:6:ASP:N	8:I:6:ASP:OD1	2.44	0.48
9:J:20:GLU:OE1	9:J:20:GLU:N	2.40	0.48
16:Y:130:ALA:HA	16:Y:133:ASN:HD21	1.78	0.48
22:F:44:LEU:HD13	22:F:50:PHE:HZ	1.78	0.48
30:U:78:THR:O	30:U:79:TRP:HD1	1.95	0.48
39:j:255:ILE:HD13	39:j:262:CYS:HB2	1.94	0.48
40:k:356:ARG:HH21	40:k:424:PRO:HD2	1.77	0.48
42:o:205:MET:O	42:o:209:HIS:ND1	2.46	0.48
1:2:179:A:H2'	1:2:180:A:O4'	2.14	0.48
1:2:926:C:O2	12:O:125:SER:OG	2.31	0.48
1:2:1141:A:H5''	17:a:2:PRO:HB3	1.95	0.48
1:2:1739:U:H2'	1:2:1740:U:H6	1.77	0.48
4:C:57:SER:OG	4:C:58:ILE:N	2.46	0.48
4:C:62:PHE:HZ	4:C:141:VAL:HG13	1.78	0.48
5:E:87:MET:HE1	5:E:123:LEU:HB3	1.94	0.48
7:H:71:HIS:HB3	7:H:131:PHE:CZ	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:108:ARG:HE	9:J:145:SER:HA	1.77	0.48
22:F:43:LYS:HE3	22:F:49:SER:HB3	1.95	0.48
22:F:68:LYS:HD3	22:F:69:PRO:HD2	1.95	0.48
22:F:81:ASN:OD1	22:F:82:LYS:N	2.46	0.48
24:M:25:LEU:HD13	24:M:92:ALA:HA	1.95	0.48
26:Q:101:SER:O	26:Q:105:LEU:HG	2.13	0.48
29:T:6:VAL:O	29:T:9:VAL:HG12	2.13	0.48
38:1:19:G:OP1	38:1:57:G:N2	2.46	0.48
40:k:390:ALA:HB1	40:k:396:ILE:HD13	1.94	0.48
43:p:606:LEU:HD23	43:p:607:PRO:HD2	1.95	0.48
1:2:91:G:H2'	1:2:92:A:O4'	2.13	0.48
1:2:611:U:OP2	15:X:5:LYS:NZ	2.47	0.48
1:2:1085:A:H5''	4:C:168:GLY:C	2.39	0.48
1:2:1197:G:H5''	33:d:40:ARG:NH2	2.23	0.48
1:2:1371:A:H2'	1:2:1372:C:H6	1.77	0.48
1:2:1738:A:H2'	1:2:1739:U:H6	1.76	0.48
3:B:191:GLU:HB2	3:B:194:ASN:ND2	2.28	0.48
8:I:111:GLN:HA	8:I:114:GLU:HG2	1.95	0.48
9:J:17:ARG:O	9:J:23:ARG:NH2	2.46	0.48
10:L:3:THR:HB	10:L:7:VAL:HG12	1.95	0.48
16:Y:73:GLY:O	16:Y:74:LEU:HD23	2.14	0.48
18:b:36:LYS:HG2	18:b:78:SER:OG	2.12	0.48
35:g:268:LYS:HD2	35:g:270:TYR:CE1	2.49	0.48
38:1:23:C:H4'	39:j:64:ARG:HH12	1.77	0.48
1:2:140:A:H61	6:G:187:LYS:HB2	1.78	0.48
1:2:160:U:OP2	6:G:87:ARG:NH2	2.46	0.48
1:2:242:G:C6	1:2:250:A:C6	3.01	0.48
1:2:748:U:OP1	14:W:82:LYS:NZ	2.31	0.48
1:2:1021:C:H4'	1:2:1124:A:N6	2.21	0.48
1:2:1169:G:O6	1:2:1572:G:C6	2.66	0.48
1:2:1482:G:H2'	1:2:1483:C:C6	2.48	0.48
1:2:1753:A:H5''	15:X:63:GLN:HE22	1.78	0.48
2:A:52:LYS:HA	2:A:55:GLU:OE2	2.13	0.48
3:B:48:VAL:HG11	3:B:61:LEU:HD21	1.96	0.48
4:C:148:TYR:OH	4:C:153:LEU:O	2.22	0.48
29:T:127:ASN:OD1	29:T:130:ARG:NH1	2.43	0.48
35:g:295:HIS:C	35:g:312:TYR:HD1	2.22	0.48
40:k:148:TYR:CE1	40:k:185:LEU:HB2	2.48	0.48
42:o:206:LEU:HG	42:o:240:ARG:HH12	1.78	0.48
43:p:433:PHE:HZ	43:p:466:LYS:HD2	1.78	0.48
1:2:381:C:C2	1:2:382:G:C8	3.01	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:485:G:H2'	1:2:486:G:C8	2.49	0.48
1:2:623:G:H2'	1:2:624:C:C6	2.48	0.48
1:2:682:U:C4	1:2:683:C:H1'	2.48	0.48
1:2:717:C:N3	1:2:720:G:N1	2.61	0.48
1:2:1067:C:H2'	1:2:1068:A:C8	2.49	0.48
1:2:1096:U:O2'	4:C:164:SER:OG	2.20	0.48
1:2:1532:G:OP2	1:2:1532:G:H2'	2.13	0.48
4:C:144:ILE:HG12	4:C:223:ILE:HD11	1.95	0.48
4:C:181:SER:N	4:C:200:ASP:OD1	2.46	0.48
5:E:55:ALA:HB3	5:E:61:VAL:HG22	1.95	0.48
7:H:64:VAL:N	7:H:65:PRO:HD3	2.28	0.48
12:O:72:LYS:NZ	12:O:108:SER:O	2.44	0.48
16:Y:6:THR:HB	16:Y:28:LEU:HB3	1.95	0.48
16:Y:15:ASN:HD21	16:Y:18:LEU:HD23	1.78	0.48
21:D:132:LYS:O	21:D:132:LYS:HG2	2.14	0.48
25:P:90:ILE:HD11	25:P:112:VAL:HG13	1.96	0.48
35:g:77:ASP:OD1	35:g:78:GLY:N	2.46	0.48
35:g:151:TRP:HB2	35:g:179:MET:CE	2.44	0.48
42:o:166:LEU:HG	42:o:209:HIS:CE1	2.49	0.48
43:p:516:PHE:HB3	43:p:557:LEU:HD12	1.95	0.48
1:2:203:G:H2'	1:2:204:U:O4'	2.12	0.48
1:2:268:G:H2'	1:2:269:C:H6	1.76	0.48
1:2:509:G:H5''	9:J:176:ARG:CZ	2.43	0.48
1:2:523:U:H1'	1:2:526:A:N7	2.28	0.48
1:2:1201:A:N6	1:2:1455:C:OP1	2.47	0.48
1:2:1396:U:H3'	1:2:1397:C:H5'	1.96	0.48
6:G:219:ARG:HH12	6:G:223:LYS:HB3	1.78	0.48
7:H:64:VAL:HG21	7:H:94:ALA:HB1	1.94	0.48
7:H:166:LEU:HD12	7:H:167:GLU:N	2.28	0.48
21:D:137:VAL:HG22	21:D:151:LYS:HG2	1.95	0.48
28:S:29:VAL:O	28:S:33:THR:HG23	2.14	0.48
30:U:99:ILE:HG13	30:U:100:VAL:HG23	1.96	0.48
35:g:208:VAL:HG11	35:g:249:ALA:HA	1.96	0.48
1:2:272:G:C5	1:2:283:G:C2	3.02	0.48
1:2:673:C:O2	1:2:674:A:N6	2.47	0.48
1:2:1000:A:H2'	1:2:1001:G:C8	2.48	0.48
1:2:1173:C:N3	1:2:1464:G:N1	2.61	0.48
1:2:1190:B8N:N34	38:1:34:C:OP1	2.46	0.48
1:2:1417:G:H2'	1:2:1418:C:C6	2.48	0.48
1:2:1465:C:H2'	1:2:1466:U:C6	2.48	0.48
1:2:1477:A:H2'	1:2:1478:G:H8	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1563:C:H4'	28:S:85:PHE:HD1	1.79	0.48
1:2:1582:G:O2'	1:2:1583:U:OP2	2.31	0.48
1:2:1599:G:C4	29:T:89:ARG:CZ	2.97	0.48
1:2:1785:C:H2'	1:2:1786:G:C8	2.49	0.48
2:A:14:ALA:O	2:A:18:LEU:HD23	2.13	0.48
2:A:117:GLU:OE2	4:C:45:LYS:N	2.39	0.48
2:A:197:ILE:H	2:A:197:ILE:HD12	1.78	0.48
9:J:65:LYS:HA	9:J:70:LEU:HD21	1.95	0.48
24:M:120:ASP:C	24:M:124:ARG:HH11	2.21	0.48
29:T:13:ASP:OD1	29:T:14:PHE:N	2.46	0.48
29:T:40:SER:HA	29:T:97:SER:H	1.79	0.48
30:U:100:VAL:O	30:U:104:THR:HG23	2.13	0.48
36:i:104:LYS:HE2	36:i:114:LYS:HG3	1.95	0.48
42:o:280:ALA:HA	42:o:309:LEU:HD13	1.95	0.48
43:p:631:PRO:HG3	43:p:720:GLU:OE1	2.14	0.48
1:2:387:G:C6	1:2:409:A:C6	3.02	0.48
1:2:415:A:H5'	1:2:416:A:N7	2.29	0.48
1:2:606:G:H5'	1:2:612:G:N2	2.29	0.48
7:H:76:LYS:HG3	7:H:79:ARG:HH21	1.78	0.48
13:V:71:ARG:O	13:V:75:GLN:HG2	2.13	0.48
16:Y:15:ASN:OD1	16:Y:17:LEU:HB2	2.14	0.48
21:D:229:GLU:O	35:g:194:ARG:N	2.47	0.48
30:U:57:ARG:HG3	30:U:89:ARG:HE	1.78	0.48
34:f:142:CYS:O	34:f:145:THR:OG1	2.27	0.48
35:g:204:ASN:OD1	35:g:205:TYR:N	2.45	0.48
40:k:88:ASN:ND2	40:k:90:LEU:HG	2.28	0.48
42:o:97:ILE:HG23	42:o:162:TYR:CE1	2.49	0.48
1:2:388:G:P	1:2:424:A:H61	2.36	0.48
1:2:544:A:C6	1:2:593:A:C8	3.02	0.48
1:2:749:U:H2'	1:2:750:U:C6	2.49	0.48
1:2:843:A:H2'	1:2:844:G:C8	2.49	0.48
1:2:997:A:C5	1:2:998:PSU:C2	3.02	0.48
1:2:1146:A:O2'	1:2:1634:C:OP2	2.28	0.48
1:2:1358:C:H5'	29:T:130:ARG:HG3	1.96	0.48
1:2:1360:C:O2'	1:2:1361:U:H5''	2.13	0.48
1:2:1782:C:H2'	1:2:1783:U:C6	2.49	0.48
5:E:66:MET:HE3	5:E:67:GLN:NE2	2.29	0.48
11:N:112:LYS:O	11:N:116:ILE:HG12	2.13	0.48
21:D:10:LYS:NZ	30:U:113:ASP:OD2	2.38	0.48
23:K:3:ILE:HG21	23:K:8:ARG:HB2	1.96	0.48
30:U:70:THR:OG1	30:U:72:ASN:OD1	2.32	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:i:106:GLN:HB2	36:i:108:GLU:OE1	2.13	0.48
43:p:341:VAL:HG23	43:p:345:ALA:O	2.13	0.48
43:p:644:ARG:HD2	43:p:646:PRO:HD2	1.96	0.48
43:p:748:PRO:HG2	43:p:751:LYS:HD2	1.95	0.48
1:2:305:U:H2'	1:2:306:G:C8	2.48	0.48
1:2:1639:C:H1'	1:2:1760:A:N1	2.29	0.48
2:A:30:GLN:OE1	2:A:149:LEU:HB3	2.13	0.48
3:B:70:LEU:HB2	3:B:82:ARG:HB2	1.96	0.48
12:O:28:VAL:HG23	12:O:67:VAL:HG11	1.96	0.48
19:e:30:PRO:HB2	19:e:34:ALA:CB	2.43	0.48
22:F:75:THR:N	22:F:93:GLU:OE2	2.47	0.48
39:j:72:VAL:CG1	39:j:86:SER:HB3	2.43	0.48
40:k:494:GLU:HG3	40:k:495:ILE:HG22	1.95	0.48
42:o:239:GLN:O	42:o:243:GLN:HG2	2.14	0.48
1:2:27:U:H2'	1:2:28:A:C8	2.48	0.47
1:2:900:G:C6	1:2:901:G:C6	3.02	0.47
1:2:1391:C:H2'	1:2:1392:G:C8	2.49	0.47
1:2:1516:C:H2'	1:2:1517:U:C6	2.49	0.47
1:2:1599:G:C1'	29:T:89:ARG:HH12	2.27	0.47
1:2:1659:U:H2'	1:2:1660:G:H8	1.79	0.47
2:A:41:ARG:NE	27:R:103:ASP:OD2	2.47	0.47
4:C:40:TRP:CZ3	4:C:70:GLU:HG3	2.48	0.47
7:H:89:HIS:ND1	7:H:165:LYS:HE3	2.29	0.47
9:J:121:SER:O	9:J:123:HIS:N	2.47	0.47
9:J:163:PRO:C	9:J:165:GLY:H	2.22	0.47
13:V:27:LYS:HA	13:V:27:LYS:HD3	1.67	0.47
17:a:43:ASN:HA	17:a:66:LYS:HG2	1.96	0.47
25:P:30:THR:HG23	25:P:88:GLU:OE2	2.14	0.47
28:S:44:ASN:OD1	28:S:48:LYS:NZ	2.26	0.47
29:T:41:ALA:O	29:T:84:LYS:HE3	2.14	0.47
39:j:222:LEU:HD11	40:k:324:ASN:HB3	1.96	0.47
1:2:66:U:OP1	6:G:136:LYS:NZ	2.47	0.47
1:2:743:U:H2'	1:2:744:U:O4'	2.14	0.47
1:2:1481:A:C6	1:2:1522:A:C6	3.02	0.47
1:2:1493:C:O2'	1:2:1517:U:O2	2.24	0.47
5:E:159:THR:HG21	5:E:227:VAL:O	2.14	0.47
7:H:41:LEU:HB3	7:H:70:TYR:OH	2.14	0.47
7:H:152:ILE:HG22	7:H:154:LEU:HD12	1.95	0.47
14:W:8:ALA:HA	14:W:74:VAL:HG11	1.94	0.47
18:b:64:CYS:HB3	18:b:71:ALA:HB1	1.96	0.47
21:D:219:GLU:HB2	21:D:220:PRO:HD3	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:M:52:LEU:HG	24:M:128:LEU:HD21	1.95	0.47
24:M:84:ASP:O	24:M:87:GLN:HG3	2.14	0.47
26:Q:140:LYS:HD3	26:Q:142:TYR:HE1	1.79	0.47
32:c:27:GLN:NE2	32:c:65:ARG:HH11	2.12	0.47
35:g:80:TYR:HB3	35:g:92:LEU:HD11	1.95	0.47
40:k:281:VAL:HG13	41:l:134:LEU:HD13	1.97	0.47
42:o:462:ALA:HA	42:o:465:ILE:HD12	1.96	0.47
1:2:14:C:H5'	4:C:169:SER:OG	2.14	0.47
1:2:127:G:O2'	1:2:128:U:H5'	2.14	0.47
1:2:313:C:N3	1:2:354:G:C6	2.83	0.47
3:B:21:VAL:O	3:B:23:PRO:HD3	2.14	0.47
4:C:71:PHE:CD1	4:C:135:ILE:HD12	2.48	0.47
7:H:28:GLU:OE1	7:H:39:ARG:NH1	2.47	0.47
15:X:56:LYS:HD3	15:X:93:LEU:HD11	1.94	0.47
16:Y:12:VAL:HB	16:Y:23:PHE:HB3	1.97	0.47
21:D:154:ASP:OD1	21:D:155:GLY:N	2.47	0.47
24:M:56:VAL:HG12	24:M:82:VAL:O	2.14	0.47
30:U:83:GLU:OE2	30:U:85:ARG:NH2	2.47	0.47
34:f:104:ASN:C	34:f:118:ARG:HH22	2.21	0.47
35:g:82:VAL:HB	35:g:114:VAL:HG11	1.96	0.47
39:j:72:VAL:O	39:j:86:SER:N	2.44	0.47
39:j:186:ALA:HA	39:j:266:MET:HG3	1.95	0.47
39:j:248:ILE:HG21	39:j:264:ILE:HD11	1.95	0.47
40:k:380:LEU:HD23	40:k:398:VAL:HG22	1.96	0.47
42:o:69:LYS:HG3	42:o:164:ALA:HB1	1.95	0.47
1:2:150:G:N2	6:G:13:GLN:OE1	2.39	0.47
1:2:358:A:C5	15:X:38:PHE:HD2	2.33	0.47
1:2:850:U:H2'	1:2:851:C:C6	2.49	0.47
1:2:867:G:N3	1:2:868:A:C8	2.83	0.47
1:2:992:A:OP1	1:2:1775:G:N2	2.42	0.47
1:2:1353:G:O6	1:2:1368:U:C2	2.68	0.47
1:2:1520:U:O3'	29:T:78:LYS:NZ	2.47	0.47
1:2:1563:C:H4'	28:S:85:PHE:CD1	2.48	0.47
1:2:1759:U:O2'	37:3:30:U:OP1	2.25	0.47
3:B:108:ASP:OD2	17:a:65:PRO:HB2	2.15	0.47
8:I:81:VAL:HG12	8:I:94:ASN:HA	1.96	0.47
21:D:142:LEU:O	21:D:143:ARG:HG2	2.14	0.47
27:R:47:ARG:NH1	27:R:48:ASN:OD1	2.46	0.47
31:Z:57:TYR:OH	31:Z:68:ARG:NE	2.21	0.47
35:g:153:THR:N	35:g:177:ALA:O	2.47	0.47
36:i:28:TYR:HA	36:i:35:TYR:OH	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:i:99:GLU:O	36:i:103:LEU:HG	2.15	0.47
40:k:245:ILE:HG12	40:k:279:PRO:HG2	1.96	0.47
1:2:162:G:H2'	1:2:163:A:C8	2.50	0.47
1:2:778:G:H1	16:Y:10:ARG:HD2	1.80	0.47
1:2:1106:G:H2'	1:2:1107:G:N3	2.29	0.47
1:2:1145:G:H2'	1:2:1146:A:H8	1.77	0.47
1:2:1372:C:H2'	1:2:1373:U:C6	2.49	0.47
1:2:1387:C:O2	1:2:1388:U:H4'	2.13	0.47
1:2:1586:G:C6	1:2:1587:C:C4	3.02	0.47
1:2:1791:G:C5	17:a:75:ILE:HD11	2.49	0.47
2:A:60:ALA:HA	2:A:63:ILE:HD12	1.96	0.47
2:A:101:ARG:HG2	2:A:103:THR:H	1.80	0.47
5:E:61:VAL:O	5:E:65:LEU:HD23	2.15	0.47
9:J:62:ARG:NH2	9:J:68:LYS:HD3	2.22	0.47
13:V:74:GLN:NE2	13:V:83:TRP:O	2.48	0.47
22:F:43:LYS:HB2	22:F:46:ASN:HA	1.96	0.47
25:P:85:ILE:CD1	25:P:111:MET:HB3	2.42	0.47
38:1:35:A:H2'	38:1:36:U:H6	1.77	0.47
39:j:46:ILE:HG13	39:j:85:LEU:HD22	1.97	0.47
39:j:100:GLU:HB3	39:j:104:LYS:HZ3	1.79	0.47
43:p:454:ALA:O	43:p:458:ILE:HG12	2.15	0.47
43:p:519:ALA:HA	43:p:522:MET:HE2	1.96	0.47
43:p:544:ASN:HB3	43:p:570:LEU:HD21	1.96	0.47
43:p:614:LEU:HA	43:p:617:ILE:HD12	1.97	0.47
1:2:485:G:O6	1:2:500:U:O4	2.32	0.47
1:2:519:A:C6	1:2:520:A:C6	3.02	0.47
1:2:1290:G:H22	1:2:1323:G:H22	1.63	0.47
1:2:1402:C:H2'	1:2:1403:G:H8	1.79	0.47
1:2:1488:A:H2	21:D:4:ILE:HB	1.78	0.47
1:2:1619:U:C4	1:2:1620:G:N7	2.83	0.47
2:A:183:ARG:HG3	2:A:188:LEU:HB3	1.96	0.47
3:B:36:SER:N	3:B:231:LEU:O	2.47	0.47
4:C:116:VAL:HG22	4:C:144:ILE:HD11	1.96	0.47
10:L:36:LYS:NZ	10:L:59:PRO:O	2.48	0.47
22:F:94:ARG:HH21	22:F:170:VAL:HG12	1.79	0.47
23:K:15:LEU:HG	23:K:68:LEU:HD11	1.95	0.47
34:f:136:ARG:HH11	34:f:138:TYR:HB2	1.79	0.47
1:2:330:A:C6	1:2:331:U:C4	3.02	0.47
1:2:369:A:C4	1:2:370:G:C8	3.02	0.47
1:2:552:G:N2	1:2:570:G:N7	2.62	0.47
1:2:593:A:OP2	9:J:38:ASN:ND2	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:929:A:OP2	1:2:930:C:N4	2.29	0.47
1:2:968:C:H4'	1:2:1103:U:O2'	2.15	0.47
1:2:1075:A:H4'	17:a:13:LYS:HD3	1.97	0.47
1:2:1119:U:H2'	1:2:1120:C:C6	2.50	0.47
1:2:1234:C:H5'	34:f:143:HIS:HE1	1.80	0.47
1:2:1422:A:H2'	1:2:1423:A:O4'	2.15	0.47
1:2:1433:G:O6	23:K:64:TYR:OH	2.17	0.47
1:2:1554:A:H8	25:P:40:ARG:HH22	1.60	0.47
1:2:1760:A:C2	1:2:1761:A:C8	3.01	0.47
2:A:208:GLU:O	2:A:211:GLU:HG2	2.15	0.47
3:B:48:VAL:HG12	3:B:49:ASN:O	2.15	0.47
4:C:148:TYR:CE2	4:C:156:PRO:HB3	2.49	0.47
4:C:234:LEU:HD11	13:V:13:VAL:HG23	1.97	0.47
5:E:163:ASP:CG	5:E:167:GLY:H	2.23	0.47
8:I:116:HIS:CE1	8:I:147:ARG:HE	2.33	0.47
8:I:116:HIS:CE1	8:I:147:ARG:HH21	2.32	0.47
9:J:170:GLY:HA2	9:J:174:ARG:NH1	2.29	0.47
11:N:33:VAL:HA	11:N:36:GLN:OE1	2.15	0.47
18:b:64:CYS:HB3	18:b:71:ALA:CB	2.45	0.47
22:F:151:VAL:HG21	32:c:66:LEU:HD11	1.97	0.47
23:K:88:PRO:HD2	23:K:91:TYR:CD2	2.50	0.47
26:Q:140:LYS:HD3	26:Q:142:TYR:CE1	2.50	0.47
29:T:29:GLU:OE2	29:T:29:GLU:N	2.45	0.47
31:Z:89:ILE:HG13	31:Z:89:ILE:O	2.15	0.47
34:f:78:LYS:HZ2	34:f:80:ARG:HG2	1.78	0.47
35:g:30:GLN:OE1	35:g:32:ASN:N	2.47	0.47
35:g:179:MET:HG3	35:g:205:TYR:CG	2.49	0.47
35:g:309:PHE:HD1	35:g:319:VAL:HG12	1.80	0.47
38:1:28:A:H2'	38:1:29:G:H8	1.80	0.47
38:1:47:H2U:H61	38:1:47:H2U:C5'	2.45	0.47
39:j:186:ALA:HB3	39:j:244:LEU:HD11	1.96	0.47
40:k:108:HIS:HB3	40:k:111:HIS:CE1	2.50	0.47
40:k:504:ARG:HG3	40:k:509:TRP:CE3	2.49	0.47
43:p:380:PHE:CE2	43:p:401:GLU:HB2	2.49	0.47
43:p:446:ASN:O	43:p:450:ILE:HG12	2.15	0.47
1:2:228:U:H2'	1:2:229:C:C6	2.49	0.47
1:2:640:G:H2'	1:2:641:G:O4'	2.15	0.47
1:2:723:G:N1	1:2:724:G:N7	2.62	0.47
1:2:1021:C:H41	1:2:1022:A:N6	2.13	0.47
1:2:1398:A:O3'	27:R:60:ARG:NH1	2.48	0.47
1:2:1470:C:H5'	1:2:1472:G:O4'	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1538:G:C5	1:2:1539:G:C5	3.03	0.47
1:2:1582:G:C5	26:Q:122:ARG:NH1	2.83	0.47
3:B:35:PRO:HD2	3:B:38:PHE:HE2	1.78	0.47
21:D:54:LYS:NZ	21:D:56:GLN:HB3	2.30	0.47
22:F:93:GLU:O	22:F:96:THR:OG1	2.27	0.47
27:R:92:ASP:C	27:R:94:SER:H	2.23	0.47
38:1:6:C:H2'	38:1:7:G:C8	2.49	0.47
39:j:218:VAL:HG22	39:j:232:THR:HG23	1.97	0.47
40:k:75:LEU:O	40:k:97:ARG:NH2	2.43	0.47
40:k:342:ILE:HD12	40:k:396:ILE:HD12	1.97	0.47
42:o:32:HIS:O	42:o:36:THR:OG1	2.17	0.47
42:o:410:LYS:O	42:o:413:SER:OG	2.18	0.47
43:p:691:VAL:HG22	43:p:695:ARG:HE	1.79	0.47
1:2:284:G:H2'	1:2:285:C:C6	2.50	0.47
1:2:1290:G:H22	1:2:1323:G:N2	2.12	0.47
1:2:1424:C:H3'	1:2:1425:A:H4'	1.97	0.47
1:2:1501:A:C5	28:S:84:TRP:CE2	3.03	0.47
1:2:1793:U:H5'	17:a:79:ILE:HD11	1.96	0.47
7:H:139:ARG:HB2	7:H:151:LYS:HB3	1.96	0.47
10:L:5:LEU:O	10:L:6:THR:OG1	2.28	0.47
24:M:55:LEU:HD13	24:M:68:VAL:HB	1.97	0.47
35:g:32:ASN:HB3	35:g:48:LEU:H	1.80	0.47
35:g:312:TYR:H	35:g:318:ARG:NH1	2.09	0.47
39:j:8:PHE:HD2	39:j:38:GLU:O	1.98	0.47
39:j:50:GLU:OE2	39:j:89:ARG:HG3	2.15	0.47
40:k:356:ARG:O	40:k:426:ILE:HD11	2.14	0.47
40:k:383:GLU:OE1	40:k:384:GLN:N	2.47	0.47
42:o:240:ARG:HB3	42:o:263:VAL:HG22	1.97	0.47
1:2:59:C:C4	1:2:451:A:C6	3.03	0.47
1:2:115:G:OP2	10:L:65:SER:OG	2.32	0.47
1:2:525:A:OP2	16:Y:93:ARG:NH2	2.47	0.47
1:2:547:G:H2'	1:2:548:G:H8	1.80	0.47
1:2:787:A:OP1	5:E:106:LYS:NZ	2.40	0.47
1:2:1180:U:H2'	1:2:1181:U:C6	2.49	0.47
1:2:1209:C:C2	1:2:1452:G:C2	3.03	0.47
1:2:1480:C:H2'	1:2:1481:A:H5''	1.96	0.47
1:2:1481:A:C6	1:2:1522:A:C5	3.03	0.47
3:B:109:LYS:HG3	3:B:113:MET:HE2	1.97	0.47
5:E:103:TYR:O	5:E:182:TYR:OH	2.33	0.47
20:h:2:ARG:HB2	20:h:5:TRP:HD1	1.80	0.47
25:P:111:MET:HA	28:S:119:ILE:HD11	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:Q:99:GLU:HG2	35:g:59:VAL:C	2.39	0.47
34:f:124:CYS:SG	34:f:141:LYS:HB3	2.54	0.47
38:1:12:G:H2'	38:1:13:C:C6	2.50	0.47
38:1:23:C:H3'	38:1:24:G:H8	1.80	0.47
39:j:170:LYS:HA	39:j:173:ILE:HG22	1.95	0.47
39:j:216:MET:HG3	39:j:233:GLN:O	2.15	0.47
42:o:229:ASP:OD1	42:o:229:ASP:N	2.48	0.47
43:p:369:ILE:HA	43:p:372:PHE:HD2	1.80	0.47
43:p:380:PHE:CZ	43:p:401:GLU:HB2	2.50	0.47
1:2:331:U:O2'	8:I:5:ARG:NH2	2.48	0.46
1:2:561:G:H2'	1:2:562:U:H6	1.79	0.46
1:2:749:U:H2'	1:2:750:U:H6	1.79	0.46
1:2:1315:G:OP1	27:R:7:LYS:HG3	2.16	0.46
1:2:1398:A:H2'	1:2:1399:A:C8	2.50	0.46
1:2:1605:G:H2'	1:2:1606:U:H6	1.79	0.46
1:2:1788:A:P	17:a:10:ARG:HH12	2.38	0.46
6:G:121:ILE:HD12	6:G:124:ILE:HD11	1.97	0.46
7:H:41:LEU:HD23	7:H:70:TYR:CZ	2.50	0.46
18:b:14:SER:HA	18:b:17:ARG:HB3	1.96	0.46
22:F:28:ALA:N	26:Q:26:LYS:O	2.47	0.46
28:S:11:PHE:CE1	31:Z:41:VAL:HG21	2.50	0.46
40:k:297:PHE:O	40:k:301:THR:OG1	2.33	0.46
42:o:23:GLU:O	42:o:23:GLU:HG2	2.15	0.46
43:p:380:PHE:HE1	43:p:397:ARG:HB3	1.80	0.46
1:2:984:G:C4	1:2:985:G:C8	3.04	0.46
1:2:1323:G:C6	1:2:1324:A:N7	2.83	0.46
1:2:1436:G:H2'	1:2:1437:C:H6	1.80	0.46
1:2:1475:G:C6	1:2:1529:G:C6	3.03	0.46
1:2:1688:G:N2	1:2:1689:A:N1	2.62	0.46
3:B:35:PRO:HD2	3:B:38:PHE:CE2	2.49	0.46
7:H:155:ASN:HD21	7:H:157:LYS:HE3	1.80	0.46
14:W:47:ILE:HG23	14:W:64:GLN:O	2.15	0.46
16:Y:79:VAL:O	16:Y:83:LYS:HG2	2.15	0.46
25:P:76:VAL:O	25:P:94:VAL:HA	2.15	0.46
25:P:89:MET:SD	25:P:107:ILE:HG21	2.55	0.46
26:Q:41:PRO:C	26:Q:43:ILE:N	2.74	0.46
27:R:27:ASP:HB3	27:R:30:THR:OG1	2.15	0.46
32:c:19:THR:OG1	32:c:20:GLY:N	2.48	0.46
35:g:14:LEU:N	35:g:317:ILE:O	2.39	0.46
42:o:28:LEU:HD21	42:o:67:LEU:HD23	1.97	0.46
42:o:45:PRO:O	42:o:75:TYR:OH	2.33	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:336:G:OP2	1:2:337:C:N4	2.47	0.46
1:2:380:C:H4'	5:E:12:LEU:HB2	1.96	0.46
1:2:845:G:H2'	1:2:846:A:O4'	2.16	0.46
1:2:965:A:OP1	11:N:124:ARG:HD3	2.14	0.46
1:2:1331:C:H4'	21:D:203:PRO:HB3	1.98	0.46
1:2:1647:G:H2'	1:2:1648:U:H6	1.78	0.46
1:2:1672:C:H2'	1:2:1673:C:C6	2.51	0.46
1:2:1797:U:H4'	1:2:1798:A:H5''	1.97	0.46
3:B:3:VAL:O	3:B:4:GLY:C	2.57	0.46
3:B:133:TYR:CE1	3:B:221:PRO:HD2	2.50	0.46
5:E:64:ILE:HD12	16:Y:17:LEU:HB3	1.97	0.46
6:G:49:VAL:O	6:G:113:ILE:HD12	2.14	0.46
6:G:214:LYS:O	6:G:217:SER:OG	2.31	0.46
8:I:72:VAL:HG11	8:I:112:TRP:CE2	2.50	0.46
8:I:105:ASP:OD1	8:I:165:ARG:NH2	2.49	0.46
8:I:121:LEU:HD13	8:I:158:ASP:OD1	2.15	0.46
10:L:115:PHE:HE2	10:L:142:VAL:H	1.63	0.46
25:P:37:ALA:HB1	25:P:41:VAL:HG11	1.97	0.46
31:Z:47:PHE:HA	31:Z:50:ILE:HG12	1.97	0.46
33:d:21:CYS:HB3	33:d:25:GLY:N	2.30	0.46
38:1:2:G:H2'	38:1:3:C:C6	2.50	0.46
39:j:138:PHE:HE2	39:j:154:VAL:HG23	1.81	0.46
43:p:410:ARG:NH1	43:p:459:ILE:HG13	2.31	0.46
1:2:609:G:O2'	1:2:612:G:O2'	2.17	0.46
1:2:981:U:O4	1:2:982:A:N6	2.48	0.46
1:2:1469:A:H2'	1:2:1469:A:N3	2.30	0.46
1:2:1496:G:N2	1:2:1508:U:O2	2.49	0.46
1:2:1519:G:O2'	1:2:1521:G:N2	2.48	0.46
1:2:1624:U:H2'	1:2:1625:U:C6	2.51	0.46
4:C:67:PRO:HA	13:V:29:HIS:CE1	2.51	0.46
5:E:100:ARG:HG2	5:E:102:VAL:HG23	1.98	0.46
12:O:50:ALA:C	12:O:52:ARG:H	2.23	0.46
13:V:12:TYR:CD2	13:V:12:TYR:O	2.69	0.46
23:K:54:PHE:HB3	23:K:72:GLY:CA	2.45	0.46
31:Z:80:LEU:HD21	31:Z:101:TYR:CE1	2.51	0.46
40:k:113:LYS:NZ	46:k:601:GCP:O3G	2.31	0.46
1:2:69:G:H2'	1:2:70:C:C6	2.50	0.46
1:2:441:C:H2'	1:2:442:C:C6	2.51	0.46
1:2:1191:C:O3'	26:Q:140:LYS:NZ	2.35	0.46
3:B:70:LEU:HB3	3:B:79:HIS:HB3	1.97	0.46
4:C:172:VAL:HG11	4:C:219:ALA:HA	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:201:HIS:HD2	5:E:207:LEU:HD13	1.81	0.46
6:G:131:LYS:NZ	6:G:133:LEU:O	2.37	0.46
7:H:43:PHE:CD2	7:H:46:ILE:HD11	2.50	0.46
12:O:21:ALA:HB2	12:O:98:GLY:HA3	1.97	0.46
24:M:31:HIS:O	24:M:116:ASN:ND2	2.47	0.46
31:Z:62:VAL:O	31:Z:66:VAL:HG23	2.16	0.46
32:c:44:VAL:HG11	32:c:48:VAL:HG11	1.97	0.46
35:g:134:VAL:HB	35:g:143:TYR:HB2	1.97	0.46
35:g:311:GLY:HA2	35:g:318:ARG:HH12	1.79	0.46
38:1:12:G:C2	38:1:13:C:C2	3.03	0.46
39:j:128:LYS:HG2	39:j:132:TRP:CZ3	2.51	0.46
43:p:347:PRO:HB3	43:p:360:ASP:HA	1.97	0.46
43:p:443:LYS:HD3	43:p:447:LEU:HD23	1.97	0.46
1:2:95:G:H5'	5:E:8:HIS:HB2	1.96	0.46
1:2:448:C:H2'	1:2:449:U:C6	2.51	0.46
1:2:529:C:O2	16:Y:61:ARG:NH2	2.29	0.46
1:2:651:U:H5''	1:2:652:C:C5	2.48	0.46
1:2:751:G:C6	1:2:798:A:C6	3.03	0.46
1:2:1423:A:O2'	1:2:1424:C:H5'	2.15	0.46
1:2:1497:G:OP2	29:T:73:VAL:HG12	2.16	0.46
1:2:1500:G:N7	29:T:102:ARG:NH2	2.63	0.46
9:J:108:ARG:NH2	9:J:144:PRO:HB2	2.31	0.46
9:J:123:HIS:HB3	19:e:37:ARG:NH2	2.30	0.46
13:V:51:VAL:HG21	13:V:78:LEU:HD21	1.98	0.46
14:W:69:LEU:HD11	14:W:72:CYS:SG	2.56	0.46
21:D:45:LYS:HB2	21:D:47:GLU:OE2	2.15	0.46
24:M:27:THR:HB	24:M:119:ALA:H	1.80	0.46
24:M:52:LEU:HD12	24:M:128:LEU:HD11	1.98	0.46
24:M:105:LYS:HE3	24:M:105:LYS:HB3	1.45	0.46
32:c:4:LYS:O	32:c:6:PRO:HD3	2.15	0.46
35:g:150:ASP:H	35:g:180:ASP:CG	2.24	0.46
35:g:231:ASN:HB3	35:g:234:HIS:HB2	1.97	0.46
40:k:473:ALA:HB2	40:k:487:LEU:HD23	1.96	0.46
42:o:396:ASP:HB3	42:o:399:THR:HG22	1.97	0.46
43:p:545:ARG:HH22	43:p:611:HIS:HA	1.81	0.46
1:2:222:U:H2'	1:2:223:C:C6	2.50	0.46
1:2:467:A:C6	1:2:594:G:N7	2.84	0.46
1:2:1038:A:H4'	13:V:62:ARG:HH22	1.80	0.46
1:2:1249:U:H5'	1:2:1250:U:OP2	2.16	0.46
1:2:1328:A:H2'	1:2:1329:G:O4'	2.15	0.46
1:2:1434:A:OP2	21:D:27:ARG:NH2	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1588:G:H2'	1:2:1589:C:C6	2.51	0.46
3:B:42:ASN:OD1	3:B:43:VAL:N	2.48	0.46
5:E:97:GLU:OE2	5:E:113:ARG:HG2	2.15	0.46
7:H:175:LYS:HD3	7:H:175:LYS:HA	1.78	0.46
8:I:29:LEU:HD21	8:I:31:ARG:HG3	1.97	0.46
17:a:31:PRO:O	17:a:35:ALA:HB2	2.16	0.46
21:D:163:PRO:HB3	21:D:167:PHE:CE2	2.50	0.46
22:F:114:ARG:HH12	26:Q:43:ILE:HD11	1.80	0.46
22:F:165:SER:O	22:F:169:ARG:HG3	2.15	0.46
30:U:63:LEU:O	30:U:83:GLU:HA	2.15	0.46
35:g:88:LYS:HB3	35:g:88:LYS:HE3	1.73	0.46
35:g:151:TRP:HB2	35:g:179:MET:HE2	1.97	0.46
40:k:94:ILE:HG12	40:k:389:PHE:HE1	1.81	0.46
40:k:501:LEU:HD11	40:k:515:ALA:HB2	1.97	0.46
42:o:7:ARG:HD2	42:o:8:PRO:HD2	1.96	0.46
43:p:635:ALA:HB2	43:p:727:PHE:CE2	2.51	0.46
1:2:92:A:H5''	1:2:93:A:H5''	1.97	0.46
1:2:444:A:H2'	1:2:445:A:H8	1.80	0.46
1:2:909:C:H2'	1:2:910:U:H6	1.81	0.46
1:2:1198:G:O5'	33:d:40:ARG:NH2	2.49	0.46
1:2:1290:G:H1	1:2:1323:G:H22	1.64	0.46
1:2:1341:C:C2	1:2:1342:U:C5	3.04	0.46
1:2:1559:U:H2'	1:2:1560:G:C8	2.51	0.46
1:2:1678:G:N2	1:2:1718:G:H2'	2.30	0.46
2:A:79:ARG:C	2:A:83:GLN:HE22	2.23	0.46
12:O:31:THR:CG2	12:O:35:GLY:HA2	2.46	0.46
21:D:23:GLU:CD	23:K:61:TRP:HE1	2.24	0.46
35:g:155:VAL:HG22	35:g:176:SER:CB	2.46	0.46
39:j:187:ASP:OD1	39:j:229:VAL:HG22	2.16	0.46
1:2:71:A:H3'	1:2:72:A:C5'	2.46	0.46
1:2:98:U:H2'	1:2:99:C:C6	2.51	0.46
1:2:221:A:OP2	1:2:832:U:H1'	2.16	0.46
1:2:278:G:H2'	1:2:279:U:O4'	2.16	0.46
1:2:299:A:C6	1:2:300:A:C6	3.03	0.46
1:2:686:C:O2'	1:2:687:C:O5'	2.34	0.46
1:2:928:A:H3'	1:2:929:A:H8	1.81	0.46
1:2:980:U:H1'	1:2:1123:A:H2	1.79	0.46
1:2:1091:A:C6	1:2:1093:G:C4	3.03	0.46
1:2:1550:U:H2'	1:2:1551:G:O4'	2.16	0.46
3:B:94:LYS:O	3:B:94:LYS:HD3	2.16	0.46
5:E:122:LYS:HB2	5:E:164:LEU:CD1	2.44	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:12:THR:HG21	6:G:124:ILE:HA	1.97	0.46
6:G:46:LYS:HE2	6:G:119:GLN:HG3	1.97	0.46
8:I:173:ARG:NE	8:I:176:GLN:HG3	2.29	0.46
12:O:133:ARG:HB2	12:O:136:ARG:HH11	1.81	0.46
30:U:84:MET:HE1	33:d:52:PHE:CZ	2.51	0.46
35:g:136:ASN:OD1	35:g:140:ASP:N	2.49	0.46
39:j:20:VAL:HG23	39:j:71:ALA:HB3	1.98	0.46
42:o:408:LEU:HD13	42:o:457:PRO:HG2	1.98	0.46
43:p:629:GLU:OE1	43:p:652:ILE:HG22	2.15	0.46
1:2:104:A:O4'	1:2:307:C:N4	2.49	0.46
1:2:295:U:H2'	1:2:296:U:H6	1.81	0.46
1:2:374:U:H2'	1:2:375:C:C6	2.51	0.46
1:2:815:G:H22	1:2:854:A:H2	1.63	0.46
1:2:946:U:H2'	1:2:947:G:H8	1.81	0.46
1:2:1002:A:N3	1:2:1004:A:C5	2.84	0.46
1:2:1152:G:H2'	1:2:1153:G:C8	2.51	0.46
1:2:1198:G:HO2'	1:2:1199:G:P	2.37	0.46
1:2:1752:A:H2'	36:i:44:ASN:CG	2.41	0.46
2:A:122:ILE:HG21	2:A:174:TRP:CH2	2.52	0.46
4:C:62:PHE:CE2	4:C:143:PRO:HD3	2.51	0.46
4:C:103:PHE:CZ	37:3:38:C:H2'	2.51	0.46
7:H:98:ILE:HD12	7:H:116:ARG:O	2.16	0.46
14:W:50:PHE:HB2	14:W:63:VAL:HA	1.98	0.46
15:X:43:PHE:HE1	15:X:48:HIS:C	2.24	0.46
18:b:49:HIS:HA	18:b:70:LYS:HA	1.98	0.46
21:D:206:VAL:HG11	27:R:12:ALA:HB1	1.97	0.46
25:P:111:MET:HE2	28:S:119:ILE:CD1	2.45	0.46
26:Q:41:PRO:CB	26:Q:44:LEU:HB2	2.45	0.46
26:Q:100:GLN:O	26:Q:104:GLU:OE1	2.34	0.46
28:S:84:TRP:HA	28:S:89:GLN:CD	2.40	0.46
32:c:61:ARG:HG2	32:c:61:ARG:NH1	2.31	0.46
35:g:223:LYS:HD3	35:g:246:GLU:HG3	1.97	0.46
36:i:26:LEU:HD11	36:i:28:TYR:CZ	2.51	0.46
39:j:108:VAL:HG21	39:j:141:ALA:HB3	1.98	0.46
42:o:187:MET:HE2	42:o:246:VAL:CB	2.45	0.46
42:o:414:LYS:HB2	42:o:416:TYR:CE2	2.51	0.46
42:o:445:GLN:HB2	42:o:487:ALA:HB1	1.98	0.46
1:2:28:A:C6	1:2:29:U:C4	3.03	0.45
1:2:442:C:N4	16:Y:105:ARG:HH22	2.14	0.45
1:2:551:G:C6	1:2:552:G:C6	3.04	0.45
1:2:850:U:H2'	1:2:851:C:H6	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:876:G:O6	1:2:950:A:N1	2.49	0.45
1:2:1048:U:P	18:b:70:LYS:HZ1	2.38	0.45
1:2:1146:A:H2'	1:2:1147:C:C6	2.51	0.45
1:2:1171:G:O2'	1:2:1541:A:O2'	2.31	0.45
1:2:1521:G:H21	1:2:1521:G:P	2.38	0.45
1:2:1735:G:H2'	1:2:1736:U:C6	2.51	0.45
6:G:120:GLU:OE2	6:G:125:THR:HB	2.16	0.45
12:O:17:ALA:HB2	12:O:79:VAL:HG11	1.98	0.45
21:D:67:ASN:ND2	23:K:90:THR:O	2.49	0.45
29:T:39:THR:HA	29:T:100:ILE:HG13	1.98	0.45
35:g:54:GLN:OE1	35:g:54:GLN:N	2.49	0.45
38:1:57:G:H2'	38:1:58:1MA:C8	2.51	0.45
39:j:205:LEU:CD1	39:j:220:VAL:HB	2.46	0.45
43:p:504:LEU:HD22	43:p:546:VAL:HG21	1.97	0.45
1:2:967:U:H1'	1:2:1102:U:O2'	2.16	0.45
1:2:1076:C:H2'	1:2:1077:C:H6	1.81	0.45
1:2:1380:A:O2'	1:2:1381:G:H8	1.99	0.45
1:2:1430:U:H4'	1:2:1431:G:O5'	2.15	0.45
1:2:1467:A:H2'	1:2:1468:C:C6	2.52	0.45
1:2:1537:G:H4'	28:S:40:ARG:HH22	1.81	0.45
9:J:122:VAL:O	9:J:125:ALA:HB3	2.15	0.45
16:Y:131:ARG:NH1	16:Y:131:ARG:HB3	2.31	0.45
21:D:143:ARG:NH2	37:3:37:U:O2	2.49	0.45
23:K:54:PHE:HB3	23:K:72:GLY:HA2	1.97	0.45
25:P:31:GLU:OE1	25:P:31:GLU:N	2.44	0.45
33:d:21:CYS:C	33:d:23:ILE:H	2.23	0.45
34:f:98:VAL:HG11	34:f:101:ALA:HB2	1.98	0.45
36:i:102:THR:O	36:i:106:GLN:HG2	2.15	0.45
38:1:16:H2U:H4'	38:1:16:H2U:OP1	2.16	0.45
38:1:28:A:H2'	38:1:29:G:C8	2.51	0.45
39:j:6:CYS:SG	39:j:127:TYR:HB2	2.56	0.45
39:j:222:LEU:HD12	40:k:330:ILE:HG12	1.98	0.45
39:j:252:THR:O	39:j:256:THR:HG23	2.16	0.45
42:o:311:SER:HA	42:o:321:PHE:CZ	2.47	0.45
1:2:799:U:H2'	1:2:800:G:H8	1.80	0.45
1:2:954:A:H2'	1:2:955:C:C6	2.52	0.45
1:2:1035:A:H2'	1:2:1036:C:H6	1.81	0.45
1:2:1147:C:H2'	1:2:1148:G:C8	2.51	0.45
1:2:1207:A:H4'	1:2:1269:G:OP2	2.17	0.45
1:2:1222:A:H2'	1:2:1223:A:O4'	2.17	0.45
1:2:1262:G:H3'	1:2:1263:G:H8	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1386:A:C6	1:2:1409:A:N7	2.84	0.45
1:2:1450:U:C2	1:2:1451:G:C8	3.04	0.45
1:2:1554:A:H5''	25:P:40:ARG:NH2	2.24	0.45
1:2:1648:U:H2'	1:2:1649:A:C8	2.52	0.45
2:A:48:ILE:HG21	2:A:161:PRO:HB2	1.97	0.45
2:A:102:PHE:CE2	2:A:132:ALA:HA	2.50	0.45
3:B:143:THR:HB	3:B:205:PHE:CE2	2.50	0.45
3:B:190:PRO:O	3:B:191:GLU:HG2	2.16	0.45
4:C:167:CYS:SG	4:C:217:LYS:HD2	2.56	0.45
7:H:35:LYS:C	7:H:37:ASP:H	2.23	0.45
9:J:86:LEU:HD23	9:J:87:SER:O	2.17	0.45
12:O:16:VAL:HA	12:O:80:HIS:O	2.16	0.45
14:W:86:VAL:O	14:W:90:THR:HG23	2.16	0.45
23:K:33:GLU:C	23:K:34:GLU:HG3	2.42	0.45
24:M:36:ARG:HE	24:M:94:LEU:CD1	2.29	0.45
24:M:66:LYS:NZ	34:f:111:GLU:HG3	2.30	0.45
24:M:89:GLY:O	24:M:94:LEU:HB2	2.17	0.45
26:Q:41:PRO:HG2	26:Q:78:VAL:CG2	2.43	0.45
28:S:42:TYR:HA	28:S:85:PHE:CZ	2.51	0.45
34:f:105:TYR:HA	34:f:118:ARG:HH12	1.81	0.45
35:g:301:TRP:CE2	35:g:308:LEU:HD13	2.51	0.45
42:o:247:SER:O	42:o:252:LEU:HB2	2.15	0.45
43:p:741:LEU:O	43:p:745:PHE:HB2	2.17	0.45
1:2:5:U:O2'	1:2:552:G:H4'	2.16	0.45
1:2:89:G:C6	1:2:90:C:C4	3.05	0.45
1:2:158:U:O2'	6:G:87:ARG:NE	2.49	0.45
1:2:245:G:C6	1:2:246:A:C6	3.05	0.45
1:2:334:U:H2'	1:2:335:G:O4'	2.16	0.45
1:2:917:U:H2'	1:2:918:A:H8	1.77	0.45
1:2:1040:G:OP2	2:A:32:HIS:NE2	2.49	0.45
1:2:1070:U:H2'	1:2:1071:C:C6	2.51	0.45
1:2:1350:G:H2'	1:2:1351:U:C6	2.51	0.45
1:2:1504:G:N1	1:2:1505:G:C6	2.85	0.45
5:E:57:ASN:HB3	5:E:60:GLU:OE1	2.17	0.45
11:N:99:ARG:NH2	11:N:119:GLU:OE2	2.49	0.45
13:V:6:GLY:N	13:V:7:GLN:OE1	2.49	0.45
14:W:15:ASN:ND2	14:W:72:CYS:O	2.46	0.45
22:F:63:TYR:CE1	22:F:167:LEU:HB2	2.51	0.45
22:F:99:LEU:O	22:F:182:ARG:NH2	2.48	0.45
28:S:4:VAL:HG23	28:S:6:GLN:H	1.80	0.45
29:T:13:ASP:HA	29:T:16:ASN:HD21	1.79	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:1:38:A:H2'	38:1:39:C:O4'	2.17	0.45
42:o:279:LEU:HA	42:o:282:TYR:HB3	1.98	0.45
42:o:333:ILE:O	42:o:363:ARG:NH2	2.49	0.45
43:p:384:LEU:HA	43:p:387:ILE:HG22	1.98	0.45
1:2:34:G:C2	1:2:474:A:C8	3.05	0.45
1:2:295:U:H2'	1:2:296:U:C6	2.52	0.45
1:2:806:A:C6	1:2:807:U:C4	3.04	0.45
1:2:1409:A:P	26:Q:114:ARG:HH22	2.39	0.45
1:2:1711:G:H3'	1:2:1712:A:C8	2.51	0.45
1:2:1795:A:N6	17:a:84:VAL:HG13	2.32	0.45
5:E:120:SER:O	5:E:164:LEU:HB2	2.16	0.45
7:H:61:PHE:HD2	7:H:95:GLU:HB3	1.81	0.45
10:L:78:THR:HG22	10:L:84:ILE:HD11	1.98	0.45
11:N:5:HIS:ND1	11:N:117:LEU:HD22	2.32	0.45
17:a:23:CYS:HB3	17:a:28:ARG:H	1.81	0.45
27:R:100:LEU:HD13	27:R:102:VAL:HG13	1.97	0.45
28:S:90:LYS:H	28:S:97:ASP:HA	1.81	0.45
32:c:67:ARG:NH2	37:3:24:U:OP2	2.50	0.45
35:g:159:PRO:HD2	35:g:215:GLY:HA2	1.99	0.45
42:o:431:ARG:HA	42:o:434:VAL:HG22	1.98	0.45
1:2:93:A:N7	1:2:398:A:C4	2.84	0.45
1:2:152:G:H2'	1:2:153:G:H8	1.81	0.45
1:2:334:U:C4	1:2:335:G:C5	3.04	0.45
1:2:387:G:O6	1:2:409:A:N6	2.50	0.45
1:2:487:G:N1	1:2:499:C:N3	2.65	0.45
1:2:913:G:HO2'	1:2:914:A:H8	1.63	0.45
1:2:921:G:H2'	1:2:922:A:C8	2.52	0.45
1:2:1522:A:C6	1:2:1523:A:C6	3.05	0.45
1:2:1534:G:C2	1:2:1536:U:N3	2.84	0.45
1:2:1606:U:O3'	26:Q:73:GLY:HA3	2.15	0.45
4:C:74:ILE:HG13	4:C:138:LYS:O	2.17	0.45
4:C:245:MET:HE3	4:C:245:MET:HB3	1.76	0.45
8:I:43:ILE:HD13	8:I:57:ALA:HA	1.97	0.45
9:J:109:LEU:HB3	9:J:144:PRO:O	2.16	0.45
15:X:86:PHE:HE1	15:X:88:PRO:HA	1.81	0.45
17:a:41:ILE:HG22	17:a:68:TYR:HD1	1.80	0.45
27:R:30:THR:O	27:R:34:LEU:HD23	2.16	0.45
33:d:10:HIS:CG	33:d:11:PRO:HD2	2.52	0.45
34:f:121:CYS:SG	34:f:124:CYS:CB	3.00	0.45
35:g:161:ASN:ND2	35:g:214:ASP:HB2	2.31	0.45
35:g:193:TYR:O	35:g:194:ARG:NH1	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:k:95:ILE:HD11	40:k:187:ARG:HG3	1.99	0.45
43:p:254:PHE:CE1	43:p:282:LEU:HB3	2.52	0.45
43:p:318:TRP:CZ2	43:p:380:PHE:HB2	2.52	0.45
1:2:700:C:HO2'	1:2:701:U:P	2.39	0.45
1:2:859:U:O4	1:2:860:U:O4	2.35	0.45
1:2:859:U:C4	1:2:860:U:O4	2.70	0.45
1:2:1185:U:OP2	1:2:1454:C:H1'	2.17	0.45
1:2:1359:A:C6	1:2:1360:C:C2	3.04	0.45
1:2:1731:C:H2'	1:2:1732:U:C6	2.52	0.45
3:B:138:PHE:CD1	3:B:214:LYS:HB3	2.52	0.45
9:J:127:VAL:O	9:J:131:GLN:HG2	2.16	0.45
15:X:61:SER:OG	15:X:62:LYS:N	2.49	0.45
22:F:150:ARG:NE	22:F:159:ARG:NH1	2.65	0.45
27:R:27:ASP:O	27:R:31:ASN:ND2	2.50	0.45
28:S:50:ALA:HB3	28:S:52:VAL:HG12	1.98	0.45
28:S:116:LEU:O	28:S:124:GLY:HA3	2.17	0.45
31:Z:95:HIS:HB3	31:Z:98:GLN:HE21	1.79	0.45
38:1:36:U:H2'	38:1:37:T6A:H8	1.82	0.45
43:p:440:ILE:HD12	43:p:448:ILE:HG23	1.98	0.45
43:p:567:LEU:HD12	43:p:571:LEU:HD13	1.98	0.45
1:2:419:A:H2'	1:2:420:A:H8	1.82	0.45
1:2:779:A:H1'	1:2:781:A:H62	1.80	0.45
1:2:1208:C:C4	1:2:1453:G:N2	2.85	0.45
1:2:1212:G:O2'	1:2:1243:A:N6	2.50	0.45
1:2:1723:U:H2'	1:2:1724:G:H8	1.81	0.45
1:2:1768:U:H2'	1:2:1769:U:H6	1.81	0.45
1:2:1787:G:OP1	17:a:17:HIS:NE2	2.46	0.45
4:C:147:GLY:HA3	4:C:160:ALA:HA	1.99	0.45
4:C:232:PRO:HA	4:C:235:TRP:CE2	2.52	0.45
6:G:219:ARG:NH2	6:G:223:LYS:HD3	2.30	0.45
10:L:21:THR:HA	10:L:32:LYS:HZ2	1.80	0.45
10:L:33:ARG:HH12	10:L:52:SER:HA	1.82	0.45
24:M:94:LEU:O	24:M:104:ARG:NE	2.49	0.45
27:R:41:ILE:HG23	27:R:46:LEU:HD22	1.99	0.45
27:R:60:ARG:HD2	27:R:66:VAL:HG11	1.99	0.45
30:U:68:ARG:CG	30:U:79:TRP:HE1	2.30	0.45
34:f:119:LYS:CB	34:f:130:LEU:HD12	2.47	0.45
35:g:6:ILE:HD12	35:g:324:THR:HA	1.98	0.45
40:k:108:HIS:HA	40:k:228:GLN:HG2	1.99	0.45
42:o:414:LYS:HB2	42:o:416:TYR:HE2	1.82	0.45
43:p:547:VAL:O	43:p:550:LEU:HG	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:p:552:LEU:O	43:p:556:LYS:HG3	2.17	0.45
43:p:633:MET:HE3	43:p:653:ARG:HD2	1.98	0.45
1:2:162:G:H2'	1:2:163:A:H8	1.82	0.45
1:2:239:C:H4'	1:2:240:U:OP2	2.17	0.45
1:2:473:A:H5'	9:J:144:PRO:HG2	1.99	0.45
1:2:584:A:H2'	1:2:585:G:H8	1.81	0.45
1:2:855:A:OP1	7:H:97:ARG:NH1	2.49	0.45
1:2:1788:A:O5'	17:a:10:ARG:NH1	2.50	0.45
9:J:55:ALA:O	9:J:59:LEU:HD23	2.17	0.45
11:N:99:ARG:HE	11:N:115:LEU:HD11	1.81	0.45
21:D:40:ARG:HH11	21:D:42:THR:HG23	1.82	0.45
28:S:24:GLY:HA2	28:S:58:ALA:HB3	1.99	0.45
28:S:45:LEU:CD2	28:S:48:LYS:HD2	2.45	0.45
34:f:142:CYS:SG	34:f:145:THR:OG1	2.54	0.45
35:g:68:ILE:HB	35:g:86:TRP:CG	2.52	0.45
35:g:280:GLU:HG3	35:g:282:LYS:HG2	1.98	0.45
39:j:71:ALA:CB	39:j:85:LEU:HD21	2.46	0.45
43:p:540:GLN:O	43:p:544:ASN:ND2	2.50	0.45
43:p:677:PHE:HA	43:p:680:LYS:HG2	1.98	0.45
1:2:53:G:H2'	1:2:54:C:H6	1.82	0.45
1:2:69:G:C2	1:2:70:C:C2	3.05	0.45
1:2:152:G:C6	1:2:161:A:N6	2.85	0.45
1:2:309:C:C2	1:2:356:G:C2	3.05	0.45
1:2:349:U:O2'	1:2:969:A:N1	2.48	0.45
1:2:555:A:N3	1:2:589:C:H1'	2.31	0.45
1:2:1320:A:N6	2:A:135:GLU:OE1	2.49	0.45
1:2:1386:A:OP2	27:R:32:LYS:NZ	2.49	0.45
1:2:1773:U:H2'	1:2:1774:A:C8	2.52	0.45
4:C:104:LYS:HD3	4:C:213:GLU:OE2	2.16	0.45
4:C:152:ASN:N	4:C:152:ASN:OD1	2.50	0.45
5:E:49:ARG:NE	5:E:50:ASN:OD1	2.36	0.45
5:E:63:ALA:O	5:E:66:MET:HG2	2.17	0.45
8:I:154:GLU:CD	8:I:156:ALA:H	2.25	0.45
18:b:20:LYS:C	18:b:22:LYS:H	2.25	0.45
22:F:127:THR:O	22:F:128:ASP:C	2.60	0.45
22:F:133:GLN:HE21	22:F:137:ASP:CG	2.25	0.45
24:M:51:GLN:HE21	24:M:117:TRP:HE1	1.64	0.45
24:M:56:VAL:HG21	24:M:85:ALA:HB2	1.98	0.45
26:Q:93:HIS:ND1	26:Q:97:VAL:HG21	2.32	0.45
27:R:113:LEU:HG	27:R:115:LEU:HD13	1.99	0.45
29:T:89:ARG:NE	29:T:89:ARG:CA	2.78	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:j:121:ILE:HD12	39:j:122:PRO:HD2	1.99	0.45
42:o:187:MET:HG3	42:o:246:VAL:HG21	1.98	0.45
1:2:701:U:H1'	1:2:738:G:H21	1.81	0.44
1:2:1043:U:H2'	1:2:1044:C:C6	2.51	0.44
1:2:1312:A:N3	1:2:1314:U:H5'	2.33	0.44
1:2:1533:U:C4	22:F:189:ILE:HD13	2.52	0.44
1:2:1534:G:C6	1:2:1536:U:O2	2.70	0.44
1:2:1599:G:C4	29:T:89:ARG:NH1	2.85	0.44
3:B:45:LYS:HA	3:B:45:LYS:HD2	1.66	0.44
4:C:64:HIS:HA	13:V:15:ARG:CZ	2.47	0.44
5:E:180:LEU:HD23	5:E:194:THR:HG22	1.98	0.44
6:G:2:LYS:C	6:G:3:LEU:HD12	2.41	0.44
22:F:129:GLN:O	22:F:130:ASN:C	2.60	0.44
22:F:147:ASP:OD1	22:F:148:THR:N	2.44	0.44
29:T:44:GLU:OE1	29:T:44:GLU:N	2.50	0.44
42:o:260:ILE:HG12	42:o:282:TYR:CE2	2.52	0.44
43:p:753:VAL:O	43:p:757:GLN:HG2	2.16	0.44
43:p:757:GLN:O	43:p:760:ILE:HG22	2.17	0.44
1:2:8:U:O2	1:2:1137:A:H3'	2.18	0.44
1:2:206:U:O2	8:I:179:ARG:NH2	2.43	0.44
1:2:248:U:H5	10:L:34:TRP:CE2	2.36	0.44
1:2:332:A:H5''	8:I:54:LYS:HE3	1.98	0.44
1:2:646:G:C6	1:2:688:G:C6	3.05	0.44
1:2:760:A:C5	1:2:761:G:C5	3.05	0.44
1:2:1633:A:N1	4:C:94:GLN:NE2	2.65	0.44
1:2:1751:A:H2'	1:2:1752:A:O4'	2.17	0.44
4:C:64:HIS:HB2	4:C:66:LEU:CD2	2.47	0.44
4:C:87:ASN:O	4:C:106:VAL:HG22	2.18	0.44
6:G:26:VAL:HG21	6:G:41:VAL:HG12	2.00	0.44
24:M:55:LEU:HD23	24:M:55:LEU:H	1.82	0.44
36:i:85:GLN:HB3	36:i:88:GLN:NE2	2.22	0.44
40:k:219:ALA:H	40:k:226:GLN:HE22	1.64	0.44
1:2:96:G:H2'	1:2:97:C:H6	1.82	0.44
1:2:370:G:C4	1:2:371:G:C8	3.05	0.44
1:2:431:G:H2'	1:2:432:C:C6	2.53	0.44
1:2:470:A:H5''	1:2:471:U:OP2	2.17	0.44
1:2:650:G:N2	1:2:651:U:O2	2.50	0.44
1:2:739:G:C6	1:2:740:A:C5	3.06	0.44
1:2:1190:B8N:O2'	1:2:1191:C:O4'	2.35	0.44
1:2:1473:A:C6	1:2:1474:C:C4	3.05	0.44
1:2:1583:U:H2'	1:2:1584:A:C8	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:23:HIS:NE2	2:A:24:LEU:HG	2.32	0.44
5:E:212:ASP:OD1	5:E:216:ASN:N	2.33	0.44
6:G:1:MET:N	6:G:18:ILE:O	2.48	0.44
14:W:81:VAL:HG12	14:W:123:GLY:O	2.17	0.44
21:D:72:LEU:HD21	23:K:20:VAL:HG11	1.98	0.44
21:D:105:MET:O	21:D:109:LEU:HD23	2.17	0.44
27:R:78:ARG:HH12	27:R:81:LYS:HD2	1.83	0.44
35:g:14:LEU:HD21	35:g:56:GLY:H	1.83	0.44
35:g:154:LYS:NZ	35:g:208:VAL:HG23	2.32	0.44
35:g:300:ALA:O	35:g:308:LEU:HD12	2.16	0.44
39:j:220:VAL:HA	39:j:229:VAL:O	2.17	0.44
43:p:438:ASP:HA	43:p:441:TYR:HE2	1.82	0.44
43:p:577:ARG:CZ	43:p:587:ARG:HD2	2.47	0.44
1:2:78:A:HO2'	1:2:79:C:P	2.39	0.44
1:2:335:G:H4'	10:L:131:ILE:O	2.18	0.44
1:2:445:A:P	5:E:59:ARG:HH12	2.40	0.44
1:2:470:A:H2'	1:2:470:A:N3	2.32	0.44
1:2:584:A:OP1	19:e:15:LYS:NZ	2.41	0.44
1:2:637:U:C2	7:H:114:ARG:CZ	3.00	0.44
1:2:837:G:H2'	1:2:838:U:C6	2.52	0.44
1:2:1350:G:H2'	1:2:1351:U:H6	1.82	0.44
1:2:1431:G:C2	33:d:41:GLN:OE1	2.71	0.44
2:A:188:LEU:HD13	2:A:195:TRP:HD1	1.81	0.44
6:G:76:LEU:HD21	6:G:92:ARG:HG2	1.99	0.44
10:L:80:MET:HE2	10:L:85:VAL:HG23	1.99	0.44
11:N:142:GLU:OE1	11:N:142:GLU:N	2.50	0.44
12:O:17:ALA:HB3	12:O:81:ILE:CD1	2.47	0.44
12:O:71:CYS:SG	12:O:76:ILE:HB	2.58	0.44
22:F:117:LYS:O	22:F:121:GLU:HG2	2.17	0.44
27:R:71:PHE:CD2	27:R:73:LEU:HB2	2.53	0.44
30:U:28:SER:HB2	30:U:112:VAL:HG22	1.99	0.44
30:U:37:VAL:O	30:U:41:ILE:HG12	2.17	0.44
31:Z:98:GLN:OE1	31:Z:100:ILE:HG12	2.17	0.44
36:i:70:TRP:HZ2	37:3:32:U:H1'	1.82	0.44
39:j:42:ILE:H	39:j:42:ILE:HG12	1.44	0.44
39:j:249:GLU:O	39:j:252:THR:OG1	2.31	0.44
42:o:45:PRO:HG3	42:o:79:ILE:HB	1.99	0.44
43:p:447:LEU:O	43:p:451:MET:HG3	2.18	0.44
1:2:894:G:H2'	1:2:895:U:C6	2.53	0.44
1:2:959:U:H5'	11:N:55:ARG:HD3	2.00	0.44
1:2:1627:G:H2'	1:2:1628:U:H6	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:83:GLN:O	2:A:87:LEU:HG	2.18	0.44
5:E:248:ILE:HA	5:E:251:GLU:HG2	2.00	0.44
6:G:88:ARG:HB3	6:G:91:GLU:CD	2.43	0.44
10:L:42:PHE:CD2	10:L:140:LEU:HD23	2.52	0.44
11:N:15:ALA:HB2	18:b:21:LEU:HD21	2.00	0.44
11:N:39:LYS:HA	11:N:42:ARG:HD2	1.99	0.44
13:V:3:ASN:HD22	13:V:9:VAL:HG11	1.82	0.44
14:W:66:ASN:HB2	14:W:68:ARG:HG3	1.98	0.44
22:F:96:THR:HG22	22:F:116:VAL:HG11	1.98	0.44
24:M:77:VAL:N	24:M:78:PRO:HD2	2.32	0.44
26:Q:47:LYS:HA	26:Q:50:GLU:HB2	1.99	0.44
35:g:154:LYS:HD3	35:g:156:ARG:HH21	1.82	0.44
38:l:43:G:O2'	38:l:44:A:OP1	2.33	0.44
42:o:57:GLU:O	42:o:61:GLU:HG2	2.18	0.44
42:o:430:ARG:HA	42:o:433:PHE:CD2	2.53	0.44
43:p:436:ARG:NH2	43:p:452:GLU:OE1	2.45	0.44
1:2:203:G:H3'	1:2:203:G:OP1	2.18	0.44
1:2:485:G:H2'	1:2:486:G:H8	1.83	0.44
1:2:1197:G:O3'	33:d:40:ARG:NH1	2.50	0.44
1:2:1500:G:N1	1:2:1504:G:O6	2.51	0.44
1:2:1716:A:H2'	1:2:1717:A:H8	1.81	0.44
1:2:1766:G:H4'	1:2:1767:U:H5''	2.00	0.44
1:2:1791:G:C6	17:a:75:ILE:HD11	2.51	0.44
2:A:41:ARG:HH11	2:A:45:VAL:HB	1.82	0.44
8:I:83:TYR:CZ	8:I:196:ARG:HG2	2.53	0.44
9:J:123:HIS:HB3	19:e:37:ARG:CZ	2.47	0.44
10:L:102:LYS:HE3	10:L:102:LYS:HB2	1.81	0.44
13:V:3:ASN:OD1	13:V:4:ASP:N	2.43	0.44
15:X:86:PHE:CE1	15:X:88:PRO:HA	2.53	0.44
18:b:48:SER:OG	18:b:49:HIS:ND1	2.51	0.44
22:F:110:LEU:HA	22:F:113:VAL:HG12	1.99	0.44
24:M:29:LEU:HD21	24:M:36:ARG:HH22	1.82	0.44
25:P:18:LYS:HE3	28:S:92:VAL:HG12	2.00	0.44
28:S:18:LEU:O	28:S:20:THR:HG23	2.18	0.44
30:U:19:ILE:HD11	30:U:94:GLU:C	2.43	0.44
35:g:258:TRP:HD1	35:g:271:ASP:HA	1.83	0.44
36:i:62:ARG:O	36:i:65:LEU:HB3	2.17	0.44
40:k:209:ALA:HA	40:k:239:MET:SD	2.58	0.44
40:k:356:ARG:NE	40:k:424:PRO:HD2	2.33	0.44
42:o:73:HIS:HB2	42:o:168:LEU:HD11	2.00	0.44
42:o:151:ILE:H	42:o:151:ILE:HD12	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:o:176:GLU:HB3	42:o:235:ARG:NH2	2.32	0.44
43:p:508:TYR:HD1	43:p:546:VAL:HG12	1.83	0.44
1:2:275:C:O2'	1:2:276:U:OP2	2.36	0.44
1:2:494:C:H2'	1:2:495:G:H5'	1.99	0.44
1:2:506:U:H3'	1:2:507:U:H5''	2.00	0.44
1:2:579:A:C5	1:2:582:C:C4	3.06	0.44
1:2:706:A:C5	1:2:734:A:C6	3.06	0.44
1:2:1216:A:C2	23:K:40:LEU:HD21	2.52	0.44
1:2:1395:U:N3	1:2:1400:G:O6	2.50	0.44
1:2:1486:G:O2'	1:2:1492:C:O2	2.34	0.44
1:2:1537:G:H4'	28:S:40:ARG:NH2	2.33	0.44
1:2:1687:A:H2'	1:2:1688:G:C8	2.53	0.44
2:A:3:LEU:HD21	2:A:62:ARG:NH1	2.32	0.44
9:J:125:ALA:O	9:J:129:ILE:HG12	2.17	0.44
22:F:197:ALA:O	22:F:201:ILE:HG12	2.18	0.44
38:1:34:C:C2	38:1:35:A:C8	3.06	0.44
39:j:119:PHE:CE2	39:j:165:VAL:HA	2.53	0.44
40:k:356:ARG:HD3	40:k:356:ARG:HA	1.77	0.44
1:2:38:C:N3	1:2:470:A:N6	2.66	0.44
1:2:798:A:H4'	5:E:201:HIS:CD2	2.52	0.44
1:2:861:A:H5''	11:N:16:ILE:HD11	2.00	0.44
1:2:914:A:H5''	1:2:915:U:H5	1.83	0.44
1:2:1057:U:OP1	3:B:202:LYS:NZ	2.37	0.44
1:2:1221:C:H2'	1:2:1222:A:H8	1.82	0.44
1:2:1335:A:C2	1:2:1414:G:C5	3.05	0.44
1:2:1488:A:OP1	21:D:9:ARG:NH2	2.51	0.44
1:2:1502:G:H1'	1:2:1561:C:O2'	2.18	0.44
1:2:1623:C:H2'	1:2:1624:U:H6	1.81	0.44
1:2:1634:C:C4	1:2:1636:G:C2	3.05	0.44
4:C:87:ASN:OD1	4:C:88:ILE:N	2.51	0.44
6:G:148:THR:O	6:G:150:GLU:N	2.51	0.44
8:I:83:TYR:CD2	8:I:101:ILE:HD13	2.47	0.44
11:N:99:ARG:HH21	11:N:115:LEU:HD11	1.82	0.44
20:h:19:LYS:HB3	20:h:23:ARG:CZ	2.48	0.44
22:F:64:ILE:HG23	22:F:91:ILE:HB	1.99	0.44
29:T:5:SER:H	29:T:8:ASP:HB2	1.83	0.44
29:T:18:TYR:CD1	29:T:135:ILE:HG13	2.53	0.44
40:k:341:SER:HB3	40:k:395:LEU:HD23	2.00	0.44
42:o:237:LEU:HG	42:o:241:PHE:CE2	2.53	0.44
42:o:241:PHE:HZ	42:o:274:PRO:HB3	1.82	0.44
1:2:82:U:H2'	1:2:83:G:O4'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:325:G:H2'	1:2:326:U:C6	2.53	0.44
1:2:328:G:N3	1:2:329:G:C8	2.86	0.44
1:2:789:U:C5	1:2:790:A:C5	3.00	0.44
1:2:945:U:H2'	1:2:946:U:C6	2.53	0.44
1:2:989:C:H2'	1:2:990:G:C8	2.52	0.44
1:2:1036:C:H2'	1:2:1037:U:C6	2.52	0.44
1:2:1538:G:C4	1:2:1539:G:C8	3.06	0.44
3:B:28:GLU:OE1	3:B:50:LYS:HA	2.18	0.44
4:C:92:GLN:NE2	4:C:99:GLN:HG3	2.33	0.44
5:E:18:TRP:HB3	5:E:20:LEU:HG	2.00	0.44
5:E:103:TYR:HE1	5:E:109:PHE:CE2	2.35	0.44
5:E:208:VAL:HG21	5:E:225:VAL:HG21	1.98	0.44
7:H:169:PHE:HB2	7:H:183:PHE:CE2	2.53	0.44
9:J:110:GLN:HG2	9:J:111:THR:N	2.33	0.44
12:O:19:ILE:HD13	12:O:81:ILE:HD11	1.99	0.44
13:V:60:ARG:HA	13:V:65:ALA:HB2	1.99	0.44
21:D:74:GLU:OE1	21:D:81:ARG:HA	2.18	0.44
21:D:115:ILE:HG13	21:D:116:ARG:N	2.33	0.44
22:F:203:ALA:HA	22:F:213:ILE:CD1	2.48	0.44
35:g:219:ALA:HB3	35:g:250:LEU:HD13	1.99	0.44
35:g:309:PHE:CD1	35:g:319:VAL:HG12	2.52	0.44
36:i:27:ILE:O	36:i:35:TYR:OH	2.28	0.44
38:1:59:A:H2'	38:1:60:A:C8	2.53	0.44
42:o:91:ALA:O	42:o:94:ARG:HG2	2.17	0.44
1:2:93:A:H1'	5:E:3:ARG:O	2.18	0.43
1:2:445:A:C6	1:2:446:U:C4	3.06	0.43
1:2:585:G:H2'	1:2:586:C:H6	1.81	0.43
1:2:914:A:C5	1:2:915:U:C4	3.05	0.43
1:2:1025:A:H4'	1:2:1027:C:C5	2.53	0.43
1:2:1202:A:C5	1:2:1553:A:N1	2.86	0.43
1:2:1274:A:C6	1:2:1436:G:C5	3.06	0.43
1:2:1394:U:H2'	1:2:1395:U:C6	2.53	0.43
1:2:1617:C:H1'	32:c:22:ARG:NH2	2.33	0.43
2:A:122:ILE:HA	2:A:144:ILE:O	2.18	0.43
3:B:184:LEU:O	3:B:188:LEU:HG	2.17	0.43
4:C:71:PHE:CG	4:C:135:ILE:HD12	2.53	0.43
6:G:25:ARG:HA	6:G:28:TYR:CD1	2.53	0.43
6:G:32:ILE:HG23	6:G:54:GLY:H	1.82	0.43
7:H:126:LEU:HD21	7:H:173:TYR:CE2	2.52	0.43
9:J:37:LYS:HE3	9:J:38:ASN:ND2	2.30	0.43
12:O:47:LYS:HE3	12:O:63:ALA:HA	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:X:100:ASP:OD1	15:X:128:SER:OG	2.34	0.43
19:e:41:THR:HA	19:e:45:VAL:HG12	1.99	0.43
21:D:32:GLU:HG2	21:D:57:ASP:HB3	2.00	0.43
22:F:44:LEU:HD22	22:F:132:LEU:HD21	2.00	0.43
22:F:100:MET:HE1	22:F:109:LYS:HA	2.00	0.43
35:g:257:PHE:CD2	35:g:272:LEU:HB2	2.53	0.43
40:k:174:CYS:HA	40:k:183:TYR:CE2	2.53	0.43
42:o:52:VAL:HG11	42:o:92:VAL:HG21	1.99	0.43
42:o:430:ARG:HA	42:o:433:PHE:HD2	1.83	0.43
43:p:393:ASP:O	43:p:397:ARG:HG2	2.18	0.43
1:2:512:U:H5'	9:J:133:HIS:CE1	2.53	0.43
1:2:638:U:OP2	7:H:117:THR:HB	2.18	0.43
1:2:877:G:H2'	1:2:878:G:H8	1.83	0.43
1:2:981:U:O4	1:2:1019:A:N6	2.50	0.43
1:2:1106:G:O2'	1:2:1107:G:H5'	2.18	0.43
1:2:1310:U:H5''	1:2:1401:C:H5'	2.00	0.43
1:2:1343:A:H4'	1:2:1344:A:OP1	2.18	0.43
1:2:1757:C:C2	1:2:1758:G:C8	3.06	0.43
7:H:44:LYS:HD2	7:H:95:GLU:HG2	2.00	0.43
9:J:44:ARG:O	9:J:48:GLN:OE1	2.37	0.43
13:V:42:GLU:OE1	13:V:42:GLU:N	2.48	0.43
17:a:13:LYS:HE3	17:a:13:LYS:HB2	1.93	0.43
19:e:8:LEU:HD23	19:e:9:ALA:N	2.33	0.43
21:D:223:LYS:HB3	35:g:198:ASP:O	2.18	0.43
22:F:98:SER:OG	22:F:178:THR:HG21	2.18	0.43
24:M:96:LYS:N	24:M:104:ARG:NH2	2.47	0.43
38:1:7:G:N2	38:1:49:5MC:H1'	2.33	0.43
38:1:8:U:H4'	38:1:9:1MG:OP2	2.17	0.43
40:k:324:ASN:ND2	40:k:333:LEU:HD11	2.28	0.43
42:o:12:ILE:HD11	42:o:50:PRO:HB2	2.00	0.43
42:o:68:LEU:O	42:o:72:LEU:HG	2.17	0.43
42:o:437:SER:HA	42:o:491:PHE:CD2	2.52	0.43
1:2:429:G:H2'	1:2:430:C:H6	1.83	0.43
1:2:521:U:H2'	1:2:522:G:O4'	2.19	0.43
1:2:653:C:N3	1:2:677:G:N1	2.59	0.43
1:2:930:C:P	17:a:70:LYS:NZ	2.92	0.43
1:2:998:PSU:O5'	1:2:998:PSU:H6	2.01	0.43
1:2:1121:G:C2	1:2:1125:G:C6	3.06	0.43
1:2:1195:A:OP2	1:2:1462:G:N2	2.50	0.43
1:2:1202:A:C6	1:2:1553:A:C6	3.06	0.43
1:2:1243:A:H2'	1:2:1243:A:N3	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:17:LEU:HD22	2:A:22:VAL:HG21	2.01	0.43
3:B:114:VAL:HA	3:B:142:PHE:HE2	1.83	0.43
4:C:233:ASN:CB	13:V:1:MET:HE1	2.48	0.43
5:E:43:PRO:HB2	5:E:45:ILE:HG22	2.01	0.43
7:H:162:ILE:HG23	7:H:165:LYS:HB2	1.99	0.43
8:I:107:THR:HG22	8:I:110:ARG:NH2	2.34	0.43
10:L:91:LEU:HD23	10:L:91:LEU:HA	1.73	0.43
13:V:40:ASP:HB3	13:V:46:ILE:HD11	2.01	0.43
14:W:31:SER:O	14:W:35:ILE:HD12	2.18	0.43
16:Y:27:VAL:HG11	16:Y:40:LEU:HD11	2.00	0.43
24:M:60:THR:C	24:M:62:GLU:H	2.24	0.43
24:M:110:SER:O	24:M:111:VAL:HG23	2.19	0.43
26:Q:127:LYS:HA	26:Q:134:ALA:HA	1.99	0.43
27:R:77:GLU:HA	27:R:80:ARG:HG2	2.00	0.43
28:S:91:ASP:C	28:S:93:ASN:H	2.25	0.43
29:T:66:TYR:HD1	29:T:67:LEU:HD22	1.84	0.43
36:i:79:VAL:HG23	36:i:90:ASP:C	2.44	0.43
39:j:21:MET:HG2	39:j:70:VAL:HA	2.01	0.43
42:o:213:ALA:O	42:o:217:GLN:HG2	2.18	0.43
42:o:248:VAL:HG21	42:o:285:ASN:CG	2.44	0.43
1:2:374:U:H2'	1:2:375:C:H6	1.81	0.43
1:2:431:G:C5	1:2:432:C:C4	3.06	0.43
1:2:897:A:C8	1:2:911:U:C4	3.06	0.43
1:2:951:A:H2'	1:2:952:G:H8	1.83	0.43
1:2:954:A:H2'	1:2:955:C:H6	1.83	0.43
1:2:1051:U:O2'	1:2:1052:G:OP1	2.36	0.43
1:2:1363:G:O3'	26:Q:26:LYS:NZ	2.50	0.43
1:2:1407:G:N1	1:2:1410:G:OP2	2.51	0.43
1:2:1540:G:N2	1:2:1567:A:OP2	2.39	0.43
1:2:1552:U:H2'	1:2:1553:A:O4'	2.18	0.43
1:2:1555:U:O2'	1:2:1556:U:H2'	2.18	0.43
17:a:47:ALA:HA	17:a:50:ILE:HG23	2.00	0.43
21:D:204:ASP:OD1	21:D:204:ASP:N	2.47	0.43
23:K:31:LYS:NZ	23:K:36:ASP:OD1	2.51	0.43
24:M:94:LEU:C	24:M:104:ARG:NH1	2.75	0.43
27:R:5:ARG:HD2	27:R:53:TYR:HD1	1.83	0.43
27:R:26:MET:HE2	27:R:58:MET:HB3	2.00	0.43
31:Z:73:GLY:O	31:Z:77:ARG:NH1	2.51	0.43
36:i:47:VAL:HG13	36:i:59:ALA:HB3	2.00	0.43
38:1:29:G:H2'	38:1:30:G:C8	2.51	0.43
40:k:320:SER:OG	40:k:409:ALA:O	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:o:36:THR:HB	42:o:74:GLN:NE2	2.34	0.43
43:p:406:ASN:ND2	43:p:455:ALA:HB2	2.32	0.43
1:2:182:U:H2'	1:2:183:C:C6	2.52	0.43
1:2:200:G:H2'	1:2:201:A:H8	1.82	0.43
1:2:206:U:H2'	1:2:207:U:C6	2.53	0.43
1:2:275:C:O2'	1:2:277:U:O2	2.25	0.43
1:2:343:A:C6	1:2:344:U:C4	3.06	0.43
1:2:511:A:H2'	1:2:512:U:C6	2.53	0.43
1:2:765:G:O6	9:J:149:ARG:HG2	2.17	0.43
1:2:932:A:C6	1:2:934:U:N3	2.86	0.43
1:2:1177:G:C4	1:2:1178:G:C8	3.07	0.43
1:2:1253:U:OP2	24:M:43:LYS:NZ	2.38	0.43
1:2:1341:C:H2'	1:2:1342:U:H6	1.83	0.43
1:2:1450:U:H2'	1:2:1451:G:C8	2.54	0.43
1:2:1594:C:O2'	1:2:1595:A:H3'	2.19	0.43
1:2:1599:G:O4'	29:T:89:ARG:NH1	2.50	0.43
1:2:1614:G:O2'	32:c:18:ARG:NE	2.42	0.43
1:2:1741:U:H2'	1:2:1742:A:H8	1.83	0.43
2:A:142:PRO:HB3	13:V:32:VAL:HG21	2.00	0.43
5:E:64:ILE:HG23	16:Y:17:LEU:HD12	2.01	0.43
11:N:96:VAL:HG21	11:N:150:VAL:HG21	2.00	0.43
12:O:32:ASP:OD2	12:O:34:SER:OG	2.31	0.43
24:M:95:GLY:C	24:M:104:ARG:HH12	2.27	0.43
26:Q:29:ILE:HG22	26:Q:36:ILE:HB	2.00	0.43
28:S:45:LEU:HD23	28:S:45:LEU:HA	1.66	0.43
40:k:78:GLN:CD	40:k:387:LEU:HD22	2.44	0.43
40:k:172:PRO:HD2	40:k:183:TYR:HB2	2.00	0.43
42:o:97:ILE:HG13	42:o:182:VAL:HG22	1.99	0.43
43:p:742:ALA:HB1	43:p:747:LEU:O	2.19	0.43
1:2:198:G:H2'	1:2:199:A:C8	2.53	0.43
1:2:398:A:H4'	5:E:3:ARG:HB2	2.00	0.43
1:2:504:A:H2'	1:2:506:U:O2	2.19	0.43
1:2:751:G:C4	1:2:752:A:C8	3.07	0.43
1:2:778:G:C6	1:2:782:G:C6	3.06	0.43
1:2:788:A:H2'	1:2:788:A:N3	2.34	0.43
1:2:1061:A:H2'	1:2:1062:U:O4'	2.18	0.43
1:2:1179:C:C4	1:2:1180:U:C4	3.07	0.43
1:2:1478:G:H3'	1:2:1479:C:H6	1.84	0.43
1:2:1584:A:N1	22:F:106:ASN:OD1	2.50	0.43
1:2:1679:A:H5''	1:2:1680:U:C5	2.53	0.43
3:B:32:ILE:HD11	3:B:46:THR:OG1	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:203:ASP:OD1	3:B:204:ILE:N	2.51	0.43
8:I:166:LEU:HD23	8:I:167:TYR:N	2.34	0.43
12:O:41:ARG:O	12:O:41:ARG:HG3	2.18	0.43
14:W:34:ILE:O	14:W:38:LEU:HD23	2.18	0.43
21:D:17:PHE:O	21:D:21:LEU:HG	2.18	0.43
21:D:101:GLN:O	21:D:104:SER:OG	2.28	0.43
22:F:37:GLN:N	22:F:39:GLN:OE1	2.51	0.43
22:F:114:ARG:NH1	26:Q:43:ILE:HD11	2.33	0.43
30:U:66:SER:HA	30:U:80:ASP:O	2.19	0.43
35:g:55:PHE:HB2	35:g:319:VAL:HG21	2.01	0.43
36:i:58:MET:HE2	36:i:58:MET:HB2	1.87	0.43
40:k:239:MET:O	40:k:239:MET:HG3	2.18	0.43
40:k:465:ASN:OD1	40:k:470:ALA:HA	2.19	0.43
43:p:483:ILE:HA	43:p:486:LEU:HD12	1.99	0.43
43:p:721:SER:O	43:p:724:THR:HG22	2.19	0.43
1:2:55:A:C2	1:2:425:G:C4	3.06	0.43
1:2:119:A:C5	1:2:396:A:C2	3.07	0.43
1:2:119:A:C4	1:2:396:A:C6	3.07	0.43
1:2:446:U:H2'	1:2:447:C:O4'	2.18	0.43
1:2:493:U:N3	1:2:494:C:H1'	2.34	0.43
1:2:565:C:OP2	36:i:62:ARG:NE	2.50	0.43
1:2:799:U:H2'	1:2:800:G:C8	2.54	0.43
1:2:921:G:H2'	1:2:922:A:H8	1.84	0.43
1:2:1046:G:H2'	1:2:1047:G:H8	1.82	0.43
1:2:1434:A:P	21:D:27:ARG:HH22	2.42	0.43
1:2:1447:U:H2'	1:2:1448:U:C6	2.54	0.43
1:2:1774:A:N6	1:2:1784:G:O6	2.51	0.43
4:C:42:PRO:CB	4:C:48:ARG:HG2	2.49	0.43
10:L:20:PHE:O	10:L:32:LYS:HD2	2.19	0.43
11:N:127:ARG:O	11:N:131:THR:HG23	2.18	0.43
16:Y:38:ASP:OD1	16:Y:38:ASP:N	2.52	0.43
23:K:77:ARG:O	23:K:81:ASN:N	2.52	0.43
35:g:41:LYS:HG2	35:g:67:HIS:O	2.19	0.43
35:g:288:TYR:CD2	35:g:294:PRO:HD3	2.53	0.43
39:j:155:TRP:HA	39:j:158:ILE:HD12	2.00	0.43
43:p:430:THR:HA	43:p:433:PHE:CD2	2.54	0.43
43:p:532:ILE:HG13	43:p:539:LEU:HB3	2.00	0.43
43:p:700:TRP:HE3	43:p:703:LEU:HD21	1.83	0.43
1:2:29:U:H2'	1:2:30:G:H8	1.83	0.43
1:2:305:U:H2'	1:2:306:G:H8	1.84	0.43
1:2:855:A:C6	7:H:96:ARG:HB3	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:897:A:H4'	12:O:46:MET:HE1	2.00	0.43
1:2:959:U:H5'	11:N:55:ARG:HH11	1.84	0.43
1:2:1323:G:H4'	2:A:113:ARG:CZ	2.49	0.43
1:2:1347:A:H2'	1:2:1348:G:O4'	2.19	0.43
1:2:1414:G:N1	1:2:1415:A:C5	2.86	0.43
1:2:1436:G:H2'	1:2:1437:C:C6	2.54	0.43
1:2:1508:U:H2'	1:2:1509:G:O4'	2.19	0.43
2:A:49:ASN:O	2:A:53:THR:HG23	2.19	0.43
2:A:143:VAL:O	2:A:143:VAL:HG23	2.19	0.43
3:B:105:PHE:HZ	3:B:211:HIS:HB3	1.83	0.43
3:B:127:VAL:HG23	3:B:176:VAL:HG11	2.00	0.43
3:B:175:GLU:HG3	3:B:193:ILE:HG12	2.00	0.43
4:C:232:PRO:C	4:C:234:LEU:N	2.76	0.43
5:E:94:ALA:C	5:E:96:ASN:H	2.27	0.43
5:E:136:ILE:HG21	5:E:148:ARG:HH11	1.83	0.43
7:H:63:PRO:HG2	7:H:65:PRO:HD3	2.01	0.43
10:L:21:THR:HG22	10:L:32:LYS:H	1.83	0.43
11:N:20:ARG:O	11:N:65:VAL:HG13	2.18	0.43
22:F:114:ARG:HE	31:Z:95:HIS:CD2	2.37	0.43
23:K:29:GLN:HE22	23:K:32:HIS:N	2.17	0.43
27:R:26:MET:CE	27:R:58:MET:HB3	2.49	0.43
30:U:81:THR:OG1	33:d:56:ARG:O	2.36	0.43
30:U:101:LYS:O	30:U:104:THR:OG1	2.28	0.43
36:i:39:THR:HA	36:i:73:GLN:HE21	1.83	0.43
39:j:225:ALA:HB3	39:j:226:PRO:HD3	2.00	0.43
40:k:99:ALA:HB2	40:k:188:HIS:CD2	2.54	0.43
42:o:166:LEU:HD21	42:o:206:LEU:CD2	2.49	0.43
42:o:325:SER:HB3	42:o:380:VAL:HG22	2.00	0.43
1:2:95:G:C4	1:2:96:G:C8	3.07	0.43
1:2:550:G:N3	1:2:551:G:C8	2.87	0.43
1:2:864:A:OP1	14:W:28:ARG:NH2	2.51	0.43
1:2:865:G:OP1	11:N:2:GLY:N	2.39	0.43
1:2:909:C:H2'	1:2:910:U:C6	2.53	0.43
1:2:959:U:H2'	1:2:960:U:C6	2.53	0.43
1:2:985:G:H3'	1:2:986:G:H8	1.84	0.43
1:2:1004:A:H2'	1:2:1005:C:H6	1.84	0.43
1:2:1134:U:P	15:X:121:ARG:HH12	2.42	0.43
1:2:1171:G:H2'	1:2:1172:C:C6	2.54	0.43
1:2:1318:A:H2'	1:2:1319:U:O4'	2.19	0.43
1:2:1411:U:O2'	1:2:1414:G:OP1	2.26	0.43
1:2:1477:A:C2	1:2:1478:G:C8	3.07	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1551:G:C5	25:P:47:ARG:NH1	2.87	0.43
1:2:1687:A:H2	1:2:1709:C:N4	2.16	0.43
1:2:1794:C:H6	17:a:7:SER:HB3	1.83	0.43
3:B:68:VAL:HG23	3:B:84:VAL:HG13	2.00	0.43
4:C:83:ASP:OD2	4:C:134:ILE:HG12	2.19	0.43
4:C:232:PRO:HG2	14:W:99:PHE:CB	2.48	0.43
6:G:26:VAL:HG11	6:G:40:SER:HB2	1.99	0.43
6:G:50:PHE:HB3	6:G:111:LEU:HD22	2.01	0.43
10:L:94:VAL:HG11	15:X:12:ALA:HB1	2.01	0.43
16:Y:20:ARG:NH2	16:Y:76:TYR:OH	2.51	0.43
21:D:207:THR:HB	27:R:40:THR:OG1	2.19	0.43
24:M:120:ASP:HB3	24:M:121:THR:H	1.74	0.43
26:Q:95:LYS:O	35:g:60:ARG:NH1	2.48	0.43
29:T:119:LYS:HE2	29:T:119:LYS:HB2	1.84	0.43
35:g:183:VAL:HB	35:g:230:TRP:HZ3	1.84	0.43
38:1:19:G:N7	38:1:57:G:N2	2.67	0.43
39:j:166:LEU:HB3	39:j:170:LYS:HE3	1.99	0.43
39:j:216:MET:HB3	39:j:243:GLN:HE22	1.83	0.43
40:k:128:PHE:HZ	40:k:139:LYS:HD2	1.84	0.43
1:2:388:G:C2	1:2:408:C:C2	3.07	0.43
1:2:586:C:H2'	1:2:587:U:C6	2.54	0.43
1:2:596:G:C2	1:2:597:U:C2	3.07	0.43
1:2:867:G:C2	1:2:960:U:C2	3.06	0.43
1:2:887:U:H2'	1:2:888:U:H6	1.82	0.43
1:2:939:A:C4	1:2:940:A:C8	3.07	0.43
1:2:1077:C:H2'	1:2:1078:U:C6	2.54	0.43
1:2:1203:A:C5	1:2:1204:C:C5	3.07	0.43
1:2:1605:G:H2'	1:2:1606:U:C6	2.53	0.43
2:A:166:GLY:O	2:A:167:LYS:HB3	2.19	0.43
3:B:27:LYS:HB3	3:B:47:LEU:HD11	2.00	0.43
5:E:181:VAL:HG21	5:E:225:VAL:HG13	2.00	0.43
6:G:142:ARG:NE	6:G:149:LYS:O	2.49	0.43
8:I:107:THR:C	8:I:111:GLN:HE22	2.26	0.43
22:F:102:ASN:OD1	22:F:182:ARG:HD3	2.19	0.43
25:P:22:LEU:HA	25:P:25:LEU:HD12	2.00	0.43
26:Q:141:SER:O	26:Q:142:TYR:HB2	2.19	0.43
39:j:244:LEU:HD22	39:j:268:PRO:CD	2.47	0.43
1:2:65:A:O2'	1:2:66:U:H5''	2.19	0.42
1:2:388:G:N2	1:2:408:C:C2	2.87	0.42
1:2:415:A:H5'	1:2:416:A:C8	2.54	0.42
1:2:523:U:H1'	1:2:526:A:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:564:C:OP2	1:2:576:G:O2'	2.23	0.42
1:2:897:A:N6	1:2:913:G:H1'	2.33	0.42
1:2:1096:U:H1'	4:C:173:ARG:HE	1.85	0.42
1:2:1380:A:H1'	30:U:57:ARG:HG2	2.00	0.42
1:2:1380:A:O3'	30:U:89:ARG:NH2	2.52	0.42
1:2:1439:C:H2'	1:2:1440:U:C6	2.54	0.42
1:2:1756:U:H2'	1:2:1757:C:C6	2.53	0.42
4:C:58:ILE:HD11	4:C:115:HIS:CD2	2.54	0.42
5:E:11:ARG:NE	5:E:27:TYR:O	2.43	0.42
5:E:57:ASN:O	5:E:61:VAL:HG23	2.18	0.42
5:E:213:SER:HB2	5:E:244:ILE:HD12	2.01	0.42
6:G:22:HIS:HA	6:G:25:ARG:HD2	2.00	0.42
6:G:22:HIS:HA	6:G:25:ARG:HH11	1.84	0.42
9:J:145:SER:O	9:J:147:MET:N	2.52	0.42
12:O:71:CYS:SG	12:O:110:LEU:HD21	2.59	0.42
13:V:58:TYR:O	13:V:62:ARG:HG2	2.19	0.42
15:X:92:CYS:SG	15:X:132:LEU:HD21	2.59	0.42
21:D:55:VAL:O	21:D:59:VAL:HG23	2.19	0.42
21:D:150:MET:SD	21:D:152:PHE:CZ	3.12	0.42
22:F:170:VAL:O	22:F:173:SER:OG	2.31	0.42
27:R:91:LEU:C	27:R:93:LEU:H	2.25	0.42
28:S:102:ALA:O	28:S:106:GLU:OE1	2.37	0.42
35:g:214:ASP:OD2	35:g:216:SER:OG	2.36	0.42
35:g:221:ALA:CB	35:g:247:VAL:HG11	2.48	0.42
38:l:24:G:C6	38:l:25:C:C4	3.07	0.42
39:j:222:LEU:HD21	40:k:324:ASN:HB3	2.01	0.42
1:2:12:U:H1'	1:2:1299:A:N3	2.34	0.42
1:2:595:C:H2'	1:2:596:G:H8	1.84	0.42
1:2:599:U:C4	1:2:600:A:N7	2.87	0.42
1:2:660:A:C8	1:2:661:C:H2'	2.54	0.42
1:2:701:U:H2'	1:2:702:G:O4'	2.19	0.42
1:2:828:A:O2'	1:2:829:U:OP2	2.23	0.42
1:2:1301:U:C2	1:2:1302:U:C5	3.08	0.42
1:2:1404:A:H2'	1:2:1405:U:C6	2.54	0.42
1:2:1582:G:C6	26:Q:122:ARG:NH1	2.86	0.42
2:A:88:LYS:NZ	27:R:82:ASP:O	2.52	0.42
3:B:132:ASP:HB3	3:B:221:PRO:HD3	2.01	0.42
4:C:183:ILE:HD12	4:C:201:VAL:HG22	2.01	0.42
5:E:147:ILE:HG21	5:E:169:ILE:HG23	2.00	0.42
6:G:32:ILE:HD12	6:G:54:GLY:H	1.84	0.42
7:H:16:LEU:HA	7:H:19:GLN:OE1	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:20:VAL:O	7:H:23:ALA:HB3	2.18	0.42
7:H:96:ARG:HB2	7:H:121:VAL:HG23	2.00	0.42
9:J:45:ILE:HG21	9:J:105:LEU:HD22	2.01	0.42
11:N:61:THR:HG22	18:b:32:PHE:HE2	1.83	0.42
14:W:57:ARG:HG3	14:W:57:ARG:O	2.19	0.42
21:D:46:THR:O	21:D:84:ILE:HG23	2.19	0.42
23:K:25:LYS:HG2	23:K:62:GLN:OE1	2.18	0.42
24:M:42:ALA:O	24:M:46:THR:HG23	2.18	0.42
26:Q:120:ASP:OD2	26:Q:122:ARG:HB3	2.19	0.42
32:c:11:LYS:NZ	32:c:51:GLY:HA2	2.34	0.42
34:f:104:ASN:HB3	34:f:118:ARG:HH22	1.84	0.42
39:j:5:HIS:H	39:j:123:LEU:HD12	1.83	0.42
40:k:241:LEU:HD23	40:k:241:LEU:HA	1.83	0.42
43:p:628:ILE:O	43:p:632:ARG:HD2	2.19	0.42
43:p:694:LEU:HD11	43:p:713:LEU:HD13	2.01	0.42
1:2:486:G:H2'	1:2:487:G:H8	1.83	0.42
1:2:650:G:C6	1:2:684:A:N6	2.87	0.42
1:2:679:U:H4'	1:2:680:U:OP2	2.18	0.42
1:2:777:C:H41	16:Y:10:ARG:HE	1.67	0.42
1:2:1073:G:H2'	1:2:1074:C:C6	2.54	0.42
1:2:1097:U:H5''	4:C:173:ARG:NH2	2.35	0.42
1:2:1173:C:H4'	1:2:1599:G:C6	2.54	0.42
1:2:1214:C:O2'	1:2:1215:C:H5'	2.20	0.42
1:2:1474:C:C2	1:2:1475:G:C8	3.07	0.42
1:2:1539:G:C6	1:2:1540:G:N1	2.86	0.42
1:2:1543:A:C6	1:2:1565:U:N3	2.87	0.42
3:B:47:LEU:O	12:O:37:GLU:HG3	2.18	0.42
5:E:94:ALA:O	5:E:95:THR:OG1	2.29	0.42
9:J:80:LEU:HD11	9:J:85:VAL:HB	2.00	0.42
9:J:145:SER:C	9:J:147:MET:N	2.76	0.42
11:N:49:GLN:HA	11:N:52:VAL:HG12	2.02	0.42
12:O:82:LYS:HD3	12:O:118:VAL:HG11	2.01	0.42
31:Z:90:LYS:NZ	31:Z:104:ALA:HA	2.34	0.42
38:1:69:C:H2'	38:1:70:G:C8	2.54	0.42
39:j:158:ILE:HG22	39:j:160:PRO:HD3	2.02	0.42
40:k:156:PRO:HD2	40:k:176:ARG:NH1	2.34	0.42
40:k:314:ARG:NE	40:k:494:GLU:HB2	2.34	0.42
40:k:352:GLU:OE2	40:k:374:PHE:HB3	2.19	0.42
40:k:400:THR:HG23	40:k:402:VAL:H	1.83	0.42
42:o:363:ARG:HH12	42:o:427:VAL:CG1	2.32	0.42
43:p:560:ILE:HG13	43:p:716:ARG:NE	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:18:C:C4	1:2:19:A:N7	2.88	0.42
1:2:178:A:H2'	1:2:179:A:C8	2.55	0.42
1:2:441:C:H2'	1:2:442:C:H6	1.85	0.42
1:2:913:G:H5''	1:2:914:A:OP1	2.19	0.42
1:2:1116:U:H2'	1:2:1117:G:C8	2.54	0.42
1:2:1414:G:C6	1:2:1415:A:C5	3.07	0.42
3:B:183:GLN:O	3:B:187:LYS:HG3	2.20	0.42
10:L:75:VAL:HG13	10:L:84:ILE:HD11	2.01	0.42
11:N:4:MET:HE2	11:N:4:MET:HB2	1.95	0.42
14:W:111:MET:HE1	14:W:119:LYS:HD2	2.01	0.42
26:Q:99:GLU:HG2	35:g:59:VAL:O	2.18	0.42
36:i:11:LYS:NZ	37:3:32:U:O4	2.52	0.42
43:p:318:TRP:CH2	43:p:380:PHE:HB2	2.55	0.42
1:2:314:A:N1	1:2:348:U:O2'	2.40	0.42
1:2:510:A:H5'	9:J:173:ALA:HB2	2.00	0.42
1:2:594:G:H2'	1:2:595:C:H6	1.84	0.42
1:2:760:A:C6	1:2:761:G:C4	3.08	0.42
1:2:788:A:C5	1:2:789:U:O2	2.73	0.42
1:2:827:U:O2'	1:2:828:A:H8	2.03	0.42
1:2:947:G:H2'	1:2:948:C:C6	2.54	0.42
1:2:1111:G:N2	1:2:1133:C:N4	2.67	0.42
1:2:1164:G:H5''	22:F:101:MET:HE1	2.02	0.42
1:2:1198:G:H3'	1:2:1198:G:N3	2.34	0.42
1:2:1344:A:H2'	1:2:1347:A:N6	2.34	0.42
1:2:1563:C:H2'	1:2:1564:U:H6	1.85	0.42
1:2:1754:A:O2'	1:2:1755:G:OP2	2.33	0.42
4:C:162:LYS:HG2	4:C:175:ILE:HA	2.01	0.42
6:G:28:TYR:OH	6:G:104:PRO:HB3	2.19	0.42
6:G:142:ARG:O	6:G:146:GLY:N	2.53	0.42
9:J:172:VAL:HG23	9:J:173:ALA:H	1.84	0.42
16:Y:128:LYS:HD2	16:Y:131:ARG:NH1	2.32	0.42
25:P:83:MET:C	25:P:116:LEU:HD23	2.44	0.42
29:T:38:LYS:C	29:T:40:SER:H	2.28	0.42
35:g:107:HIS:NE2	35:g:133:ARG:HD2	2.35	0.42
1:2:40:A:H3'	1:2:41:A:H8	1.85	0.42
1:2:81:G:C6	1:2:82:U:C4	3.07	0.42
1:2:397:G:P	8:I:47:ARG:HH22	2.42	0.42
1:2:522:G:OP2	16:Y:37:LYS:HD3	2.19	0.42
1:2:994:A:C2	1:2:1009:C:C2	3.08	0.42
1:2:1004:A:C6	1:2:1005:C:C4	3.08	0.42
1:2:1084:G:H5'	1:2:1085:A:OP2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1205:U:H2'	1:2:1206:C:C5	2.54	0.42
1:2:1389:A:C4	1:2:1390:U:C5	3.08	0.42
1:2:1432:U:H2'	1:2:1434:A:H5''	2.01	0.42
1:2:1475:G:C4	1:2:1476:G:C8	3.08	0.42
2:A:88:LYS:NZ	27:R:82:ASP:OD1	2.29	0.42
5:E:36:HIS:HB2	5:E:41:SER:HB2	2.01	0.42
7:H:14:THR:O	7:H:14:THR:HG22	2.19	0.42
7:H:15:GLU:OE1	7:H:15:GLU:N	2.52	0.42
7:H:24:PHE:CZ	7:H:38:LEU:HG	2.54	0.42
7:H:162:ILE:HG23	7:H:165:LYS:CB	2.49	0.42
8:I:83:TYR:HB3	8:I:101:ILE:HB	2.01	0.42
10:L:46:LYS:HE2	10:L:46:LYS:HB3	1.88	0.42
13:V:46:ILE:H	13:V:46:ILE:HD12	1.84	0.42
16:Y:130:ALA:HA	16:Y:133:ASN:ND2	2.34	0.42
22:F:105:ASN:OD1	22:F:108:LYS:HD2	2.19	0.42
27:R:51:ALA:O	27:R:55:THR:HG23	2.19	0.42
27:R:78:ARG:NE	27:R:78:ARG:HA	2.35	0.42
35:g:20:TRP:O	35:g:38:SER:HA	2.19	0.42
35:g:154:LYS:CD	35:g:156:ARG:HH21	2.32	0.42
39:j:255:ILE:HG21	39:j:262:CYS:SG	2.60	0.42
42:o:201:ARG:O	42:o:205:MET:HG2	2.19	0.42
43:p:556:LYS:HB3	43:p:705:ASN:HD21	1.85	0.42
1:2:30:G:C6	1:2:596:G:C6	3.08	0.42
1:2:413:C:C4	1:2:414:C:C4	3.08	0.42
1:2:539:G:O2'	1:2:540:A:O5'	2.38	0.42
1:2:982:A:N6	1:2:1018:A:H61	2.18	0.42
1:2:1048:U:OP1	18:b:70:LYS:NZ	2.52	0.42
1:2:1156:A:C2	1:2:1159:A:C8	3.07	0.42
1:2:1553:A:OP2	25:P:47:ARG:NH1	2.52	0.42
1:2:1764:A:C4	1:2:1792:A:C2	3.07	0.42
6:G:116:LYS:NZ	6:G:117:GLY:O	2.46	0.42
7:H:60:VAL:HG22	7:H:92:PHE:HA	2.02	0.42
7:H:114:ARG:O	7:H:117:THR:OG1	2.29	0.42
10:L:58:CYS:SG	10:L:61:THR:N	2.89	0.42
11:N:46:THR:O	11:N:50:ILE:HG12	2.19	0.42
12:O:14:PHE:HB2	12:O:33:LEU:HD21	2.02	0.42
15:X:110:LYS:HB2	15:X:110:LYS:HE2	1.85	0.42
18:b:20:LYS:O	18:b:21:LEU:HB2	2.19	0.42
21:D:68:GLU:HG3	21:D:69:LEU:HD22	2.01	0.42
25:P:17:TYR:HB2	25:P:25:LEU:HD11	2.02	0.42
35:g:171:ARG:NH2	35:g:187:SER:OG	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:p:318:TRP:HZ3	43:p:397:ARG:HE	1.68	0.42
43:p:388:ASP:O	43:p:391:SER:OG	2.33	0.42
1:2:218:A:N7	1:2:829:U:H5	2.17	0.42
1:2:484:A:C6	1:2:502:G:C6	3.08	0.42
1:2:525:A:C5	1:2:526:A:C8	3.08	0.42
1:2:673:C:H1'	1:2:674:A:N7	2.34	0.42
1:2:855:A:N1	7:H:96:ARG:HD2	2.35	0.42
1:2:905:A:OP1	12:O:52:ARG:HB3	2.20	0.42
1:2:949:C:H2'	1:2:950:A:C8	2.55	0.42
1:2:977:A:H2'	1:2:978:A:C8	2.54	0.42
1:2:1171:G:H2'	1:2:1172:C:H6	1.84	0.42
1:2:1197:G:C6	1:2:1199:G:C6	3.08	0.42
1:2:1513:A:OP2	21:D:7:LYS:HG2	2.20	0.42
1:2:1543:A:H3'	28:S:134:ARG:NH2	2.35	0.42
2:A:70:PRO:O	2:A:73:VAL:HG12	2.20	0.42
2:A:133:ILE:O	2:A:136:SER:OG	2.26	0.42
2:A:210:ILE:HD11	27:R:81:LYS:HB3	2.02	0.42
7:H:5:GLN:HE21	7:H:9:LEU:HD12	1.85	0.42
9:J:109:LEU:HB2	9:J:146:PHE:HB3	2.02	0.42
9:J:129:ILE:HG21	9:J:144:PRO:HA	2.02	0.42
10:L:45:PRO:HG2	10:L:48:ALA:HB2	2.02	0.42
21:D:65:ARG:O	21:D:68:GLU:HG2	2.19	0.42
22:F:50:PHE:CD1	22:F:132:LEU:HD13	2.54	0.42
26:Q:37:THR:O	26:Q:45:ARG:NE	2.52	0.42
26:Q:49:TYR:HB3	26:Q:53:LEU:HD23	2.02	0.42
39:j:7:ARG:HD3	39:j:7:ARG:N	2.34	0.42
39:j:25:GLN:H	39:j:34:VAL:HG11	1.84	0.42
1:2:2:A:H5''	4:C:184:VAL:HG11	2.01	0.42
1:2:167:A:OP1	6:G:140:ASN:ND2	2.52	0.42
1:2:250:A:H2'	1:2:251:U:O4'	2.19	0.42
1:2:742:U:H1'	7:H:107:ARG:NH1	2.35	0.42
1:2:914:A:N3	1:2:914:A:H2'	2.35	0.42
1:2:951:A:H2'	1:2:952:G:C8	2.55	0.42
1:2:1200:G:N2	1:2:1598:A:O4'	2.49	0.42
1:2:1308:C:C4	1:2:1309:U:C4	3.08	0.42
1:2:1540:G:O3'	1:2:1541:A:H8	2.03	0.42
2:A:9:LEU:HD13	2:A:54:TRP:CD1	2.55	0.42
3:B:56:ASN:OD1	3:B:57:ALA:N	2.53	0.42
3:B:114:VAL:HA	3:B:142:PHE:CE2	2.55	0.42
4:C:40:TRP:CG	4:C:72:GLN:HE22	2.38	0.42
6:G:5:ILE:HD13	6:G:16:ILE:HD12	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:162:ILE:C	7:H:164:ASN:H	2.27	0.42
9:J:49:LEU:HD23	9:J:53:ARG:HE	1.84	0.42
11:N:33:VAL:HG21	11:N:66:ILE:HG21	2.01	0.42
17:a:10:ARG:HG2	17:a:12:LYS:HB2	2.01	0.42
24:M:28:SER:O	24:M:32:ASP:N	2.53	0.42
25:P:83:MET:HG3	25:P:116:LEU:HD23	2.02	0.42
28:S:84:TRP:CD1	28:S:84:TRP:H	2.38	0.42
29:T:17:ASN:C	29:T:17:ASN:HD22	2.26	0.42
30:U:28:SER:O	30:U:86:ILE:HD12	2.20	0.42
35:g:149:THR:N	35:g:180:ASP:OD2	2.53	0.42
35:g:281:LEU:HD23	35:g:320:TRP:CE2	2.54	0.42
37:3:33:C:H2'	37:3:34:U:C2	2.54	0.42
38:1:16:H2U:H61	38:1:60:A:O4'	2.19	0.42
42:o:167:ASP:HA	42:o:209:HIS:NE2	2.34	0.42
43:p:438:ASP:HA	43:p:441:TYR:CE2	2.55	0.42
1:2:11:A:H4'	4:C:92:GLN:HB3	2.01	0.42
1:2:205:A:OP1	5:E:133:LYS:NZ	2.53	0.42
1:2:453:U:O2'	1:2:454:C:O5'	2.36	0.42
1:2:560:G:C6	1:2:584:A:N1	2.87	0.42
1:2:717:C:C2	1:2:720:G:N1	2.88	0.42
1:2:866:G:C4	1:2:867:G:C8	3.08	0.42
1:2:983:G:C4	1:2:984:G:C8	3.08	0.42
1:2:1203:A:N3	1:2:1203:A:H2'	2.35	0.42
1:2:1375:U:O2	1:2:1377:C:N4	2.45	0.42
1:2:1439:C:H2'	1:2:1440:U:H6	1.84	0.42
1:2:1554:A:H2'	25:P:40:ARG:NH2	2.35	0.42
1:2:1576:U:H2'	1:2:1577:U:H6	1.84	0.42
2:A:69:ASN:HB3	2:A:72:ASP:OD2	2.20	0.42
2:A:153:SER:OG	13:V:63:GLY:O	2.37	0.42
10:L:125:VAL:HG22	10:L:137:PHE:HB3	2.01	0.42
15:X:48:HIS:HA	15:X:104:LEU:O	2.20	0.42
17:a:22:ARG:NH2	17:a:27:SER:O	2.32	0.42
23:K:46:LEU:O	23:K:50:THR:HG23	2.20	0.42
24:M:124:ARG:HB2	24:M:125:GLU:OE1	2.19	0.42
26:Q:41:PRO:HB3	26:Q:44:LEU:HB2	2.02	0.42
28:S:138:THR:HA	28:S:141:THR:OG1	2.20	0.42
33:d:41:GLN:O	33:d:45:GLU:OE1	2.38	0.42
34:f:116:LYS:HB3	34:f:129:PHE:CE2	2.54	0.42
34:f:143:HIS:CG	34:f:144:SER:N	2.87	0.42
35:g:101:GLU:OE1	35:g:101:GLU:N	2.53	0.42
35:g:117:ASP:OD2	35:g:121:SER:N	2.51	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:1:44:A:H2'	38:1:45:U:C6	2.55	0.42
42:o:6:PHE:HB3	42:o:7:ARG:H	1.51	0.42
43:p:354:GLU:N	43:p:354:GLU:OE1	2.53	0.42
43:p:504:LEU:HA	43:p:507:ILE:HD12	2.02	0.42
43:p:635:ALA:HB2	43:p:727:PHE:CD2	2.55	0.42
1:2:79:C:H2'	1:2:80:A:O4'	2.19	0.41
1:2:312:U:O4'	1:2:1117:G:N2	2.53	0.41
1:2:370:G:C6	1:2:371:G:C5	3.08	0.41
1:2:605:A:H4'	1:2:606:G:H3'	2.01	0.41
1:2:808:G:H2'	1:2:809:G:C8	2.54	0.41
1:2:1235:A:C6	1:2:1236:G:C6	3.08	0.41
1:2:1293:G:H1	1:2:1302:U:H3	1.68	0.41
6:G:157:VAL:HG11	6:G:175:ILE:HD11	2.02	0.41
7:H:40:ALA:C	7:H:41:LEU:HD12	2.45	0.41
7:H:157:LYS:HE3	7:H:157:LYS:HB3	1.89	0.41
8:I:53:GLN:HA	8:I:53:GLN:OE1	2.20	0.41
11:N:91:LEU:HD23	11:N:91:LEU:HA	1.90	0.41
12:O:47:LYS:CE	12:O:63:ALA:HA	2.50	0.41
12:O:81:ILE:HD12	12:O:81:ILE:HA	1.76	0.41
19:e:35:TYR:HE1	19:e:39:LEU:HD12	1.84	0.41
21:D:13:ALA:HA	21:D:16:VAL:HG12	2.02	0.41
22:F:27:LEU:HD11	26:Q:57:LEU:HD12	2.01	0.41
23:K:29:GLN:HE22	23:K:31:LYS:C	2.28	0.41
29:T:31:PRO:HG2	29:T:34:VAL:HG13	2.01	0.41
29:T:115:GLU:N	29:T:115:GLU:OE1	2.53	0.41
30:U:21:LYS:HG2	30:U:94:GLU:OE1	2.20	0.41
30:U:36:ASN:OD1	30:U:37:VAL:N	2.53	0.41
34:f:89:LYS:HD2	34:f:89:LYS:HA	1.87	0.41
39:j:25:GLN:H	39:j:34:VAL:CG1	2.33	0.41
1:2:399:A:P	8:I:25:ARG:HE	2.43	0.41
1:2:519:A:H2'	1:2:520:A:C8	2.54	0.41
1:2:732:G:H1'	1:2:734:A:N6	2.36	0.41
1:2:789:U:C5	1:2:790:A:N7	2.88	0.41
1:2:1315:G:H2'	1:2:1316:C:C6	2.56	0.41
1:2:1424:C:O2'	1:2:1426:2MG:H8	2.03	0.41
1:2:1469:A:H2	1:2:1472:G:N3	2.17	0.41
1:2:1723:U:C2	1:2:1724:G:C8	3.08	0.41
1:2:1747:A:H2'	1:2:1748:A:O4'	2.20	0.41
1:2:1785:C:OP1	12:O:131:GLY:HA2	2.21	0.41
1:2:1795:A:H5'	17:a:95:ARG:HE	1.84	0.41
2:A:175:TYR:CD1	2:A:199:PRO:HA	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:C:193:MET:HG3	4:C:201:VAL:HG21	2.02	0.41
7:H:39:ARG:HE	7:H:39:ARG:HB3	1.72	0.41
12:O:133:ARG:HB2	12:O:136:ARG:NH1	2.35	0.41
14:W:44:HIS:CE1	14:W:101:TYR:CZ	3.07	0.41
16:Y:32:ARG:NH2	16:Y:39:GLU:OE1	2.53	0.41
22:F:109:LYS:O	22:F:110:LEU:C	2.63	0.41
22:F:192:ILE:HD12	22:F:192:ILE:H	1.85	0.41
24:M:31:HIS:ND1	24:M:118:GLY:HA2	2.35	0.41
27:R:5:ARG:HD2	27:R:53:TYR:CD1	2.55	0.41
31:Z:103:ARG:HD3	31:Z:103:ARG:N	2.35	0.41
35:g:62:TYR:HB3	35:g:93:TRP:CE3	2.55	0.41
35:g:254:PRO:HG2	35:g:302:SER:O	2.19	0.41
38:1:58:1MA:H8	38:1:58:1MA:O5'	2.03	0.41
42:o:237:LEU:HG	42:o:241:PHE:HE2	1.85	0.41
43:p:254:PHE:CE2	43:p:258:LEU:HD11	2.55	0.41
1:2:26:A:H2'	1:2:27:U:H6	1.84	0.41
1:2:82:U:C4	1:2:83:G:C5	3.09	0.41
1:2:357:U:H2'	1:2:359:A:H8	1.85	0.41
1:2:445:A:H5''	5:E:57:ASN:CG	2.45	0.41
1:2:703:G:H5'	1:2:704:C:OP2	2.20	0.41
1:2:762:A:C6	1:2:763:G:C5	3.09	0.41
1:2:802:A:C4	7:H:104:ARG:CZ	3.04	0.41
1:2:811:A:N6	1:2:857:G:H2'	2.35	0.41
1:2:1052:G:C2	1:2:1066:C:C2	3.08	0.41
1:2:1100:G:O2'	14:W:4:THR:OG1	2.35	0.41
2:A:120:LEU:HD23	2:A:121:VAL:N	2.35	0.41
8:I:42:ARG:HE	8:I:59:ARG:HD2	1.84	0.41
9:J:64:GLU:HA	9:J:69:ARG:NH1	2.35	0.41
13:V:22:ARG:NH1	14:W:18:GLU:OE2	2.46	0.41
16:Y:18:LEU:HG	16:Y:20:ARG:CZ	2.50	0.41
17:a:19:LYS:HE3	17:a:19:LYS:HB3	1.63	0.41
17:a:39:MET:SD	17:a:70:LYS:HG2	2.60	0.41
17:a:71:LEU:HD23	17:a:71:LEU:HA	1.82	0.41
18:b:61:THR:O	18:b:62:VAL:C	2.63	0.41
22:F:185:ALA:CB	22:F:192:ILE:HG13	2.49	0.41
35:g:25:SER:O	35:g:34:LEU:HD12	2.20	0.41
35:g:67:HIS:ND1	35:g:86:TRP:HB2	2.35	0.41
40:k:78:GLN:OE1	40:k:387:LEU:HB3	2.20	0.41
40:k:80:LEU:HA	40:k:388:LYS:HD3	2.02	0.41
1:2:434:C:C4	1:2:435:A:C2	3.08	0.41
1:2:474:A:OP2	9:J:37:LYS:HD2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:803:A:H2'	1:2:804:U:O4'	2.21	0.41
1:2:1260:G:C6	1:2:1261:U:C4	3.08	0.41
1:2:1471:U:C5	22:F:192:ILE:HG21	2.55	0.41
1:2:1478:G:H3'	1:2:1479:C:C6	2.56	0.41
6:G:10:ASN:ND2	6:G:125:THR:O	2.53	0.41
9:J:73:GLY:HA3	9:J:93:LEU:HD22	2.02	0.41
9:J:108:ARG:O	9:J:111:THR:OG1	2.25	0.41
14:W:94:LEU:HD22	14:W:100:GLY:HA3	2.03	0.41
15:X:121:ARG:HB2	15:X:122:PHE:CE2	2.55	0.41
17:a:21:VAL:HG21	17:a:32:LYS:HG3	2.01	0.41
28:S:19:ASN:OD1	28:S:103:ASN:ND2	2.54	0.41
33:d:16:LYS:HA	33:d:16:LYS:HD3	1.74	0.41
35:g:112:LEU:HD11	35:g:128:ARG:HG2	2.02	0.41
36:i:62:ARG:HG3	36:i:63:GLY:N	2.34	0.41
36:i:82:ARG:HB2	36:i:88:GLN:HE22	1.86	0.41
39:j:101:LYS:HB3	39:j:101:LYS:HE2	1.71	0.41
40:k:256:GLU:O	40:k:259:ALA:HB3	2.21	0.41
42:o:175:LEU:CD2	42:o:178:THR:HG21	2.50	0.41
42:o:397:VAL:HG13	42:o:432:VAL:HG22	2.02	0.41
43:p:510:THR:OG1	43:p:522:MET:HE1	2.21	0.41
1:2:57:G:C2	1:2:91:G:C2	3.09	0.41
1:2:161:A:C6	1:2:162:G:C6	3.08	0.41
1:2:537:A:C6	1:2:540:A:C6	3.09	0.41
1:2:609:G:C2	1:2:613:C:C4	3.08	0.41
1:2:636:C:OP1	14:W:32:LYS:N	2.32	0.41
1:2:704:C:O2	1:2:705:U:H1'	2.21	0.41
1:2:739:G:N1	1:2:740:A:C5	2.89	0.41
1:2:1166:G:C4	1:2:1167:U:C5	3.08	0.41
1:2:1249:U:OP2	1:2:1249:U:H6	2.03	0.41
1:2:1358:C:H4'	29:T:133:ASP:OD2	2.20	0.41
1:2:1469:A:C8	1:2:1538:G:H1'	2.54	0.41
1:2:1716:A:H2'	1:2:1717:A:C8	2.55	0.41
2:A:166:GLY:C	2:A:168:HIS:H	2.28	0.41
6:G:82:SER:OG	6:G:83:CYS:N	2.53	0.41
7:H:144:VAL:HA	14:W:42:GLN:NE2	2.36	0.41
16:Y:131:ARG:O	16:Y:135:ASP:N	2.45	0.41
17:a:27:SER:O	17:a:27:SER:OG	2.37	0.41
18:b:34:ASP:OD1	18:b:45:THR:HG22	2.20	0.41
21:D:17:PHE:CE2	21:D:21:LEU:HD11	2.54	0.41
22:F:37:GLN:HB3	22:F:39:GLN:HE22	1.85	0.41
24:M:38:LEU:HD12	24:M:39:ARG:N	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:M:52:LEU:HD21	24:M:80:ILE:HD12	2.03	0.41
27:R:105:GLN:O	27:R:108:GLU:HG3	2.20	0.41
32:c:64:ARG:H	32:c:64:ARG:HD3	1.84	0.41
35:g:19:GLY:O	35:g:38:SER:HB2	2.20	0.41
38:l:16:H2U:C2	38:l:59:A:H2	2.33	0.41
39:j:37:LEU:HD23	39:j:37:LEU:HA	1.82	0.41
40:k:420:LYS:HD2	40:k:420:LYS:HA	1.95	0.41
42:o:386:GLU:O	42:o:390:ILE:HG12	2.20	0.41
42:o:425:ARG:O	42:o:428:ILE:HG22	2.20	0.41
43:p:395:LEU:O	43:p:399:ARG:HG2	2.20	0.41
1:2:630:G:N2	1:2:1103:U:OP1	2.45	0.41
1:2:954:A:C6	1:2:955:C:C4	3.09	0.41
1:2:980:U:H1'	1:2:1123:A:C2	2.55	0.41
1:2:1037:U:C2	1:2:1093:G:N2	2.89	0.41
1:2:1071:C:H2'	1:2:1072:G:C8	2.55	0.41
1:2:1475:G:C6	1:2:1476:G:C6	3.08	0.41
1:2:1599:G:N9	29:T:89:ARG:NH1	2.68	0.41
1:2:1689:A:O2'	1:2:1690:G:O4'	2.26	0.41
1:2:1783:U:H2'	1:2:1784:G:H8	1.85	0.41
2:A:51:GLY:O	2:A:55:GLU:OE1	2.39	0.41
5:E:193:GLY:HA3	5:E:210:ILE:CG2	2.51	0.41
6:G:3:LEU:HG	6:G:109:LEU:HB2	2.02	0.41
22:F:165:SER:OG	32:c:47:PRO:O	2.36	0.41
24:M:96:LYS:N	24:M:104:ARG:HH12	2.18	0.41
28:S:76:PRO:HA	28:S:81:ILE:HD12	2.02	0.41
30:U:40:ASN:HA	30:U:43:LYS:HD3	2.03	0.41
35:g:263:THR:OG1	35:g:266:GLY:O	2.24	0.41
42:o:246:VAL:HA	42:o:249:LYS:HB2	2.02	0.41
42:o:252:LEU:HD22	42:o:255:GLU:HG3	2.02	0.41
43:p:436:ARG:HH22	43:p:452:GLU:CD	2.28	0.41
43:p:501:ARG:HG3	43:p:505:TYR:CE2	2.55	0.41
1:2:93:A:H4'	1:2:94:U:OP2	2.20	0.41
1:2:216:A:H2'	1:2:217:A:C8	2.56	0.41
1:2:596:G:N2	1:2:597:U:H1'	2.36	0.41
1:2:597:U:C5	1:2:598:A:C5	3.09	0.41
1:2:705:U:H5	1:2:730:G:N1	2.18	0.41
1:2:756:A:C5	1:2:757:A:C8	3.09	0.41
1:2:804:U:C2	1:2:805:A:N7	2.89	0.41
1:2:866:G:C6	1:2:867:G:C5	3.08	0.41
1:2:878:G:H2'	1:2:879:C:H6	1.84	0.41
1:2:1319:U:H2'	1:2:1321:A:H5'	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1381:G:C6	1:2:1382:A:C6	3.09	0.41
1:2:1514:A:P	30:U:88:LYS:HZ1	2.39	0.41
1:2:1557:A:H5'	1:2:1558:U:O5'	2.20	0.41
1:2:1573:7MG:HN22	38:1:42:U:H1'	1.85	0.41
1:2:1719:A:H2'	1:2:1720:A:H8	1.85	0.41
1:2:1789:A:C4	1:2:1791:G:C8	3.09	0.41
1:2:1789:A:H5''	17:a:8:ASN:HD21	1.85	0.41
4:C:227:TYR:O	4:C:229:PHE:N	2.45	0.41
11:N:31:ASP:O	11:N:35:GLU:OE1	2.38	0.41
15:X:6:PRO:HG3	15:X:14:LYS:CE	2.49	0.41
15:X:43:PHE:O	15:X:45:GLY:N	2.48	0.41
18:b:67:THR:HG22	18:b:68:GLY:N	2.36	0.41
19:e:33:ARG:CZ	19:e:33:ARG:HB3	2.51	0.41
29:T:31:PRO:HG2	29:T:34:VAL:CG1	2.51	0.41
29:T:89:ARG:HA	29:T:89:ARG:CZ	2.50	0.41
31:Z:58:ARG:HA	31:Z:103:ARG:CZ	2.51	0.41
38:1:20:A:N3	38:1:20:A:H2'	2.36	0.41
42:o:6:PHE:HB2	42:o:34:PHE:HE1	1.86	0.41
42:o:287:VAL:HG11	42:o:303:TRP:CE3	2.56	0.41
1:2:30:G:H2'	1:2:31:C:C6	2.55	0.41
1:2:88:U:H2'	1:2:89:G:H8	1.86	0.41
1:2:208:U:H2'	1:2:209:A:H8	1.85	0.41
1:2:345:G:C2	1:2:346:G:C8	3.08	0.41
1:2:445:A:N6	1:2:460:G:H21	2.18	0.41
1:2:474:A:OP1	9:J:126:ARG:NE	2.46	0.41
1:2:584:A:H2'	1:2:585:G:C8	2.55	0.41
1:2:685:A:H2'	1:2:686:C:H6	1.83	0.41
1:2:748:U:O2	1:2:801:G:C2	2.73	0.41
1:2:905:A:P	12:O:52:ARG:HB3	2.60	0.41
1:2:949:C:O2'	11:N:104:ARG:NH1	2.54	0.41
1:2:1227:G:H22	24:M:60:THR:HB	1.86	0.41
1:2:1228:G:O6	24:M:37:GLY:HA3	2.21	0.41
1:2:1372:C:H2'	1:2:1373:U:H6	1.84	0.41
1:2:1656:G:C6	1:2:1741:U:O2	2.72	0.41
1:2:1685:U:C4	1:2:1712:A:N6	2.86	0.41
1:2:1770:C:H3'	20:h:2:ARG:NH2	2.22	0.41
4:C:103:PHE:CE1	37:3:38:C:H2'	2.56	0.41
5:E:9:LEU:HG	5:E:28:ALA:HB3	2.03	0.41
5:E:20:LEU:HD21	5:E:46:VAL:HG22	2.02	0.41
7:H:136:VAL:HG12	7:H:153:LEU:O	2.20	0.41
9:J:31:ALA:HA	9:J:36:LEU:HD12	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:N:46:THR:HG22	11:N:49:GLN:HG3	2.01	0.41
11:N:62:GLN:HB2	11:N:65:VAL:HG23	2.02	0.41
23:K:56:LYS:HB2	23:K:67:THR:OG1	2.20	0.41
24:M:51:GLN:HB3	24:M:117:TRP:CZ2	2.55	0.41
27:R:92:ASP:C	27:R:94:SER:N	2.79	0.41
30:U:30:LYS:HE3	30:U:30:LYS:HB2	1.90	0.41
31:Z:46:LYS:HD2	31:Z:70:LYS:HB2	2.03	0.41
35:g:202:HIS:HE1	35:g:221:ALA:HA	1.86	0.41
35:g:210:GLN:HA	35:g:211:PRO:HD3	1.96	0.41
36:i:109:LEU:H	36:i:109:LEU:HD23	1.85	0.41
38:l:12:G:C6	38:l:24:G:N1	2.89	0.41
39:j:164:ASP:OD1	39:j:165:VAL:N	2.53	0.41
42:o:176:GLU:OE1	42:o:235:ARG:NE	2.52	0.41
43:p:279:LEU:HB2	43:p:299:LEU:HD13	2.03	0.41
1:2:127:G:C6	1:2:178:A:C2	3.08	0.41
1:2:396:A:C6	1:2:397:G:C2	3.09	0.41
1:2:568:C:H2'	1:2:569:A:O4'	2.20	0.41
1:2:611:U:H4'	1:2:1099:G:O6	2.20	0.41
1:2:729:G:N7	1:2:730:G:H1'	2.36	0.41
1:2:776:G:H2'	1:2:777:C:C6	2.56	0.41
1:2:849:A:H2'	1:2:850:U:C6	2.56	0.41
1:2:861:A:H5''	14:W:57:ARG:HH21	1.86	0.41
1:2:867:G:C2	1:2:868:A:N7	2.89	0.41
1:2:997:A:C6	1:2:1006:5MC:N4	2.89	0.41
1:2:1045:G:C6	1:2:1072:G:C6	3.08	0.41
1:2:1048:U:OP1	18:b:69:GLY:HA3	2.21	0.41
1:2:1055:U:H5''	1:2:1056:U:C6	2.56	0.41
1:2:1167:U:H2'	1:2:1168:G:H8	1.86	0.41
1:2:1201:A:N3	1:2:1201:A:H3'	2.36	0.41
1:2:1232:G:H2'	1:2:1233:A:O4'	2.21	0.41
1:2:1234:C:OP2	1:2:1244:G:H8	2.02	0.41
1:2:1373:U:H2'	1:2:1374:C:C6	2.56	0.41
1:2:1450:U:H2'	1:2:1451:G:H8	1.85	0.41
1:2:1624:U:H2'	1:2:1625:U:H6	1.84	0.41
1:2:1715:G:C6	1:2:1716:A:C5	3.09	0.41
2:A:98:ILE:HD13	2:A:102:PHE:HE1	1.86	0.41
3:B:86:LEU:HD23	3:B:100:PHE:HA	2.03	0.41
3:B:93:GLY:C	3:B:95:ASN:H	2.29	0.41
3:B:164:ILE:HG21	3:B:207:LEU:HD21	2.01	0.41
5:E:60:GLU:HB2	16:Y:18:LEU:HD11	2.01	0.41
5:E:181:VAL:HA	5:E:227:VAL:HA	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:19:ASP:OD1	6:G:20:ASP:N	2.54	0.41
7:H:174:ASN:O	7:H:178:GLY:N	2.53	0.41
8:I:190:LEU:O	8:I:194:LEU:HD23	2.20	0.41
9:J:29:LYS:O	9:J:32:GLY:N	2.54	0.41
9:J:44:ARG:O	9:J:47:PHE:HB3	2.20	0.41
13:V:42:GLU:HG2	13:V:44:ARG:HG2	2.03	0.41
14:W:17:ALA:HB3	14:W:25:VAL:HG22	2.03	0.41
14:W:57:ARG:C	14:W:59:GLY:H	2.29	0.41
16:Y:42:GLU:HA	16:Y:42:GLU:OE2	2.21	0.41
17:a:53:LEU:O	17:a:57:SER:OG	2.33	0.41
17:a:58:VAL:HG22	17:a:59:TYR:H	1.85	0.41
18:b:47:PHE:CE2	18:b:49:HIS:HB2	2.56	0.41
22:F:152:GLY:HA2	22:F:158:ARG:HE	1.85	0.41
23:K:32:HIS:NE2	23:K:35:ILE:HD12	2.36	0.41
23:K:69:THR:O	23:K:73:VAL:HG23	2.21	0.41
25:P:21:ASP:OD1	25:P:22:LEU:N	2.54	0.41
26:Q:44:LEU:O	26:Q:47:LYS:HB2	2.21	0.41
26:Q:102:LYS:HE3	26:Q:102:LYS:HB3	1.88	0.41
27:R:10:LYS:HD3	27:R:53:TYR:OH	2.20	0.41
35:g:43:LEU:HB2	35:g:62:TYR:HB2	2.02	0.41
35:g:84:ALA:HB1	35:g:111:VAL:HG12	2.01	0.41
35:g:110:ASP:N	35:g:110:ASP:OD1	2.53	0.41
35:g:245:ASP:OD1	35:g:246:GLU:N	2.54	0.41
40:k:234:ALA:O	40:k:238:ILE:HG13	2.21	0.41
42:o:91:ALA:HA	42:o:94:ARG:HE	1.86	0.41
43:p:348:ILE:H	43:p:348:ILE:HG13	1.68	0.41
43:p:590:LEU:HD23	43:p:590:LEU:H	1.85	0.41
1:2:220:A:C6	1:2:840:U:C4	3.09	0.41
1:2:329:G:C6	1:2:330:A:C6	3.09	0.41
1:2:392:C:H2'	1:2:393:C:C6	2.56	0.41
1:2:865:G:C4	1:2:866:G:C8	3.09	0.41
1:2:953:G:C6	1:2:954:A:C5	3.09	0.41
1:2:987:A:H2'	1:2:988:U:C6	2.56	0.41
1:2:1477:A:N3	1:2:1478:G:C8	2.89	0.41
1:2:1549:U:O4	25:P:40:ARG:NH1	2.54	0.41
1:2:1764:A:OP2	1:2:1792:A:H5'	2.21	0.41
3:B:194:ASN:OD1	3:B:211:HIS:HA	2.21	0.41
7:H:49:ILE:HG21	7:H:172:VAL:HA	2.03	0.41
14:W:55:ASP:C	14:W:57:ARG:N	2.78	0.41
15:X:53:VAL:HG13	15:X:99:ASN:H	1.86	0.41
15:X:69:ARG:HA	15:X:69:ARG:HD3	1.78	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:Y:77:ASN:HB2	16:Y:81:ASP:OD2	2.21	0.41
24:M:66:LYS:HE3	34:f:108:VAL:CG1	2.51	0.41
25:P:56:LEU:HD23	25:P:83:MET:HG2	2.02	0.41
40:k:84:PHE:HB3	40:k:309:PHE:HD2	1.86	0.41
40:k:344:ASN:OD1	40:k:344:ASN:N	2.54	0.41
40:k:353:ILE:HG13	40:k:419:ALA:HA	2.03	0.41
1:2:43:A:C6	1:2:44:U:N3	2.89	0.40
1:2:141:U:OP1	6:G:139:ASN:ND2	2.54	0.40
1:2:227:G:C2	1:2:228:U:C4	3.09	0.40
1:2:354:G:C2	1:2:355:G:C8	3.10	0.40
1:2:388:G:H2'	1:2:389:G:O4'	2.20	0.40
1:2:479:G:C4	1:2:480:A:C8	3.09	0.40
1:2:646:G:C6	1:2:647:G:C5	3.09	0.40
1:2:800:G:C6	1:2:801:G:C5	3.09	0.40
1:2:996:G:N1	1:2:1007:G:C6	2.89	0.40
1:2:1210:A:C6	1:2:1211:G:C5	3.10	0.40
1:2:1398:A:C6	1:2:1399:A:C6	3.09	0.40
1:2:1470:C:H4'	1:2:1471:U:O5'	2.20	0.40
1:2:1546:G:H2'	1:2:1547:C:H6	1.86	0.40
1:2:1665:A:H2'	1:2:1666:G:H8	1.87	0.40
1:2:1679:A:O3'	6:G:31:ARG:NH1	2.36	0.40
1:2:1683:G:C6	1:2:1715:G:C5	3.08	0.40
3:B:71:ALA:O	3:B:75:GLY:N	2.52	0.40
6:G:166:ASP:OD1	6:G:167:LYS:N	2.55	0.40
8:I:189:GLU:O	8:I:190:LEU:C	2.64	0.40
11:N:33:VAL:O	11:N:36:GLN:HG2	2.20	0.40
14:W:100:GLY:O	14:W:113:HIS:HE1	2.03	0.40
21:D:75:LYS:HA	21:D:75:LYS:HD2	1.97	0.40
21:D:107:PHE:HA	21:D:110:LEU:HD12	2.03	0.40
24:M:69:GLN:HE22	34:f:111:GLU:HA	1.86	0.40
28:S:42:TYR:CE2	28:S:99:HIS:CE1	3.09	0.40
29:T:21:PHE:HA	29:T:24:ARG:HE	1.86	0.40
30:U:48:PHE:CD2	30:U:99:ILE:HB	2.56	0.40
31:Z:43:ASP:HB3	31:Z:46:LYS:H	1.86	0.40
32:c:67:ARG:NH2	37:3:24:U:O4'	2.55	0.40
33:d:36:LEU:O	33:d:38:ILE:HG23	2.21	0.40
35:g:26:THR:HG22	35:g:34:LEU:HD13	2.03	0.40
35:g:75:SER:HB3	35:g:80:TYR:HB2	2.03	0.40
35:g:104:PHE:CD2	35:g:139:GLY:HA2	2.56	0.40
42:o:240:ARG:O	42:o:244:VAL:HG23	2.21	0.40
42:o:324:TYR:O	42:o:328:ILE:HG13	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:p:742:ALA:HB2	43:p:752:VAL:HG21	2.03	0.40
1:2:98:U:O2'	1:2:99:C:H5'	2.21	0.40
1:2:146:A:C5	1:2:167:A:N6	2.89	0.40
1:2:476:A:OP1	19:e:31:LYS:N	2.46	0.40
1:2:522:G:OP1	16:Y:59:GLY:N	2.55	0.40
1:2:700:C:O2'	1:2:701:U:P	2.79	0.40
1:2:778:G:H3'	1:2:780:A:C2	2.48	0.40
1:2:1134:U:OP2	15:X:121:ARG:NH2	2.45	0.40
1:2:1282:U:C4	1:2:1283:C:C4	3.09	0.40
1:2:1460:G:H2'	1:2:1461:C:C6	2.56	0.40
1:2:1606:U:O2'	1:2:1607:U:H5'	2.21	0.40
1:2:1741:U:H2'	1:2:1742:A:C8	2.56	0.40
2:A:22:VAL:O	2:A:48:ILE:HD13	2.22	0.40
3:B:2:ALA:N	39:j:89:ARG:HH12	2.19	0.40
4:C:116:VAL:O	4:C:142:ILE:N	2.40	0.40
4:C:149:TRP:CE2	14:W:97:ARG:NH2	2.90	0.40
4:C:158:SER:OG	4:C:159:LEU:N	2.54	0.40
5:E:106:LYS:HB2	5:E:108:ARG:HH12	1.85	0.40
11:N:30:SER:O	11:N:33:VAL:HB	2.22	0.40
12:O:135:ARG:O	17:a:26:CYS:HB2	2.21	0.40
15:X:69:ARG:NH1	15:X:116:ASP:OD1	2.53	0.40
22:F:49:SER:HB2	22:F:51:GLU:OE1	2.21	0.40
23:K:33:GLU:O	23:K:34:GLU:HG3	2.21	0.40
24:M:125:GLU:OE1	24:M:125:GLU:N	2.54	0.40
35:g:17:HIS:CG	35:g:38:SER:HB3	2.57	0.40
35:g:310:ALA:O	35:g:317:ILE:HA	2.22	0.40
36:i:52:PHE:CE2	36:i:109:LEU:HD12	2.57	0.40
39:j:239:LYS:O	39:j:242:GLU:HG3	2.21	0.40
40:k:66:LYS:HD2	40:k:66:LYS:HA	1.85	0.40
40:k:204:MET:HE3	40:k:232:HIS:ND1	2.35	0.40
40:k:435:PHE:HB2	40:k:514:TRP:NE1	2.36	0.40
42:o:94:ARG:NH1	42:o:177:ILE:HG22	2.35	0.40
43:p:594:ASN:OD1	43:p:597:SER:OG	2.39	0.40
1:2:562:U:H5'	19:e:17:GLN:OE1	2.22	0.40
1:2:749:U:C2	1:2:750:U:C5	3.09	0.40
1:2:1282:U:OP2	1:2:1283:C:O2'	2.33	0.40
1:2:1439:C:C2	1:2:1440:U:C5	3.09	0.40
1:2:1475:G:H3'	1:2:1476:G:H8	1.86	0.40
1:2:1557:A:N1	28:S:134:ARG:NH1	2.70	0.40
1:2:1638:C:N4	37:3:31:C:OP1	2.46	0.40
1:2:1674:U:H2'	1:2:1675:C:C6	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1796:U:H2'	17:a:38:ARG:HH11	1.86	0.40
4:C:139:LEU:HD23	4:C:139:LEU:HA	1.84	0.40
5:E:171:ASP:OD1	5:E:172:PHE:N	2.50	0.40
6:G:142:ARG:HD3	6:G:149:LYS:HA	2.02	0.40
6:G:164:LYS:HG2	6:G:167:LYS:O	2.22	0.40
8:I:99:ALA:N	8:I:170:ILE:O	2.41	0.40
12:O:92:LYS:HB2	12:O:92:LYS:HE3	1.81	0.40
13:V:74:GLN:HE21	13:V:82:VAL:N	2.19	0.40
14:W:70:ASN:HD21	14:W:130:TYR:HD2	1.69	0.40
26:Q:93:HIS:CD2	26:Q:105:LEU:HD11	2.57	0.40
27:R:13:SER:O	27:R:16:LEU:N	2.55	0.40
35:g:34:LEU:O	35:g:46:TRP:HD1	2.04	0.40
38:1:26:M2G:HM22	38:1:44:A:H2	1.86	0.40
39:j:55:ARG:NH2	39:j:57:ARG:HH11	2.19	0.40
39:j:241:ILE:HD13	39:j:268:PRO:HB2	2.03	0.40
43:p:356:LYS:O	43:p:356:LYS:HG2	2.20	0.40
43:p:576:LEU:HD13	43:p:614:LEU:HD22	2.04	0.40
43:p:577:ARG:HH21	43:p:583:GLN:CA	2.34	0.40
43:p:604:GLN:H	43:p:604:GLN:HG3	1.65	0.40
1:2:194:G:H2'	1:2:195:G:H5'	2.02	0.40
1:2:547:G:H2'	1:2:548:G:C8	2.56	0.40
1:2:774:A:OP2	1:2:787:A:H2	2.04	0.40
1:2:812:U:O2	10:L:155:LYS:N	2.54	0.40
1:2:848:C:H2'	1:2:849:A:C8	2.51	0.40
1:2:1034:G:H2'	1:2:1035:A:C8	2.56	0.40
1:2:1125:G:H2'	1:2:1126:G:H8	1.87	0.40
1:2:1146:A:H2'	1:2:1147:C:H6	1.86	0.40
1:2:1166:G:H2'	1:2:1167:U:C6	2.55	0.40
1:2:1201:A:N7	1:2:1454:C:C2	2.90	0.40
1:2:1538:G:C6	1:2:1539:G:C4	3.10	0.40
1:2:1543:A:C2	1:2:1565:U:C2	3.09	0.40
1:2:1602:U:H5'	30:U:79:TRP:CE3	2.56	0.40
2:A:103:THR:O	2:A:106:SER:OG	2.36	0.40
13:V:79:LEU:HD23	13:V:80:LYS:N	2.36	0.40
14:W:82:LYS:HA	14:W:82:LYS:HD3	1.94	0.40
16:Y:5:ILE:HD11	16:Y:32:ARG:HD3	2.03	0.40
16:Y:15:ASN:ND2	16:Y:18:LEU:HD23	2.36	0.40
16:Y:133:ASN:OD1	16:Y:134:ALA:N	2.55	0.40
18:b:16:ALA:HA	18:b:29:ARG:NH2	2.36	0.40
23:K:35:ILE:HG22	23:K:37:THR:HG23	2.03	0.40
24:M:127:LEU:HD23	24:M:127:LEU:HA	1.88	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:Q:38:LEU:HD11	29:T:10:PRO:HG3	2.04	0.40
26:Q:50:GLU:N	26:Q:51:PRO:HD2	2.37	0.40
27:R:88:VAL:HB	27:R:92:ASP:OD2	2.21	0.40
28:S:16:ARG:NH2	28:S:19:ASN:O	2.54	0.40
28:S:27:ASN:OD1	28:S:28:VAL:N	2.54	0.40
29:T:116:ILE:HG12	29:T:122:ARG:HE	1.85	0.40
35:g:52:GLU:OE2	35:g:53:GLN:NE2	2.49	0.40
35:g:213:PRO:HG2	35:g:254:PRO:HA	2.03	0.40
38:1:30:G:C2	38:1:31:G:C8	3.09	0.40
38:1:66:C:H2'	38:1:67:G:O4'	2.22	0.40
40:k:125:THR:O	40:k:127:ARG:N	2.54	0.40
42:o:433:PHE:CE1	42:o:469:LEU:HB2	2.57	0.40
42:o:470:LEU:O	42:o:474:VAL:HG23	2.21	0.40
1:2:358:A:H2'	15:X:38:PHE:HE2	1.86	0.40
1:2:541:A:C5	1:2:543:A:C2	3.09	0.40
1:2:709:C:H41	1:2:730:G:H21	1.69	0.40
1:2:900:G:H3'	1:2:901:G:C8	2.56	0.40
1:2:1307:G:C4	1:2:1308:C:C5	3.10	0.40
1:2:1402:C:H2'	1:2:1403:G:C8	2.57	0.40
1:2:1551:G:O2'	1:2:1553:A:N7	2.44	0.40
1:2:1564:U:H5''	28:S:39:GLY:N	2.35	0.40
1:2:1656:G:N3	1:2:1656:G:H2'	2.36	0.40
1:2:1786:G:H5''	12:O:132:ARG:NH1	2.22	0.40
3:B:128:LYS:HG3	3:B:134:VAL:HG22	2.03	0.40
3:B:137:ILE:HG23	3:B:215:VAL:HG22	2.03	0.40
4:C:164:SER:HA	4:C:172:VAL:O	2.21	0.40
4:C:229:PHE:HZ	14:W:130:TYR:HE2	1.69	0.40
4:C:232:PRO:C	4:C:234:LEU:H	2.29	0.40
9:J:25:ASP:HB3	19:e:44:PHE:HZ	1.86	0.40
11:N:115:LEU:HD23	11:N:116:ILE:HD13	2.04	0.40
12:O:10:ASN:OD1	12:O:12:GLN:HG2	2.22	0.40
12:O:81:ILE:CG2	12:O:115:ILE:HA	2.38	0.40
23:K:1:MET:HB2	23:K:3:ILE:HD11	2.04	0.40
24:M:85:ALA:CB	24:M:110:SER:HA	2.52	0.40
27:R:93:LEU:HB3	27:R:99:VAL:H	1.86	0.40
27:R:103:ASP:N	27:R:103:ASP:OD1	2.54	0.40
32:c:65:ARG:HB2	37:3:23:A:C2	2.56	0.40
35:g:223:LYS:HD3	35:g:246:GLU:CG	2.52	0.40
43:p:769:LEU:HD13	43:p:776:PHE:CE1	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	A	217/254 (85%)	187 (86%)	29 (13%)	1 (0%)	24	59
3	B	221/255 (87%)	196 (89%)	22 (10%)	3 (1%)	9	38
4	C	218/259 (84%)	201 (92%)	16 (7%)	1 (0%)	24	59
5	E	258/261 (99%)	233 (90%)	25 (10%)	0	100	100
6	G	228/236 (97%)	212 (93%)	16 (7%)	0	100	100
7	H	182/190 (96%)	158 (87%)	23 (13%)	1 (0%)	24	59
8	I	184/201 (92%)	165 (90%)	19 (10%)	0	100	100
9	J	180/188 (96%)	154 (86%)	24 (13%)	2 (1%)	11	43
10	L	153/156 (98%)	137 (90%)	16 (10%)	0	100	100
11	N	149/151 (99%)	139 (93%)	10 (7%)	0	100	100
12	O	127/137 (93%)	107 (84%)	20 (16%)	0	100	100
13	V	85/87 (98%)	75 (88%)	10 (12%)	0	100	100
14	W	127/130 (98%)	117 (92%)	10 (8%)	0	100	100
15	X	142/145 (98%)	117 (82%)	25 (18%)	0	100	100
16	Y	132/135 (98%)	118 (89%)	14 (11%)	0	100	100
17	a	100/119 (84%)	80 (80%)	20 (20%)	0	100	100
18	b	79/82 (96%)	64 (81%)	15 (19%)	0	100	100
19	e	58/63 (92%)	49 (84%)	9 (16%)	0	100	100
20	h	23/25 (92%)	23 (100%)	0	0	100	100
21	D	225/237 (95%)	211 (94%)	13 (6%)	1 (0%)	30	64
22	F	204/227 (90%)	172 (84%)	30 (15%)	2 (1%)	12	45
23	K	94/106 (89%)	81 (86%)	13 (14%)	0	100	100
24	M	113/134 (84%)	90 (80%)	21 (19%)	2 (2%)	6	34
25	P	115/142 (81%)	98 (85%)	16 (14%)	1 (1%)	14	47
26	Q	139/143 (97%)	127 (91%)	12 (9%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
27	R	128/136 (94%)	108 (84%)	17 (13%)	3 (2%)	5	31
28	S	143/146 (98%)	121 (85%)	20 (14%)	2 (1%)	9	38
29	T	141/144 (98%)	132 (94%)	9 (6%)	0	100	100
30	U	104/117 (89%)	94 (90%)	10 (10%)	0	100	100
31	Z	76/108 (70%)	68 (90%)	8 (10%)	0	100	100
32	c	62/67 (92%)	58 (94%)	4 (6%)	0	100	100
33	d	53/56 (95%)	50 (94%)	3 (6%)	0	100	100
34	f	72/150 (48%)	55 (76%)	17 (24%)	0	100	100
35	g	314/326 (96%)	287 (91%)	27 (9%)	0	100	100
36	i	98/153 (64%)	90 (92%)	8 (8%)	0	100	100
39	j	263/304 (86%)	233 (89%)	28 (11%)	2 (1%)	16	50
40	k	468/527 (89%)	433 (92%)	32 (7%)	3 (1%)	21	55
41	l	21/285 (7%)	20 (95%)	1 (5%)	0	100	100
42	o	445/964 (46%)	421 (95%)	24 (5%)	0	100	100
43	p	542/812 (67%)	505 (93%)	37 (7%)	0	100	100
All	All	6683/8358 (80%)	5986 (90%)	673 (10%)	24 (0%)	31	64

All (24) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
24	M	122	GLN
28	S	92	VAL
39	j	41	ASN
40	k	130	ASP
3	B	3	VAL
4	C	45	LYS
9	J	101	VAL
22	F	129	GLN
27	R	92	ASP
3	B	221	PRO
24	M	121	THR
40	k	507	LYS
22	F	128	ASP
27	R	97	ASN
27	R	99	VAL
3	B	55	LYS
7	H	163	ASP

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Mol	Chain	Res	Type
9	J	122	VAL
25	P	50	SER
28	S	91	ASP
39	j	7	ARG
21	D	220	PRO
40	k	126	VAL
2	A	158	VAL

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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%)	202 (100%)	0	100	100
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%)	192 (100%)	0	100	100
7	H	164/170 (96%)	164 (100%)	0	100	100
8	I	147/159 (92%)	147 (100%)	0	100	100
9	J	153/158 (97%)	151 (99%)	2 (1%)	61	71
10	L	136/137 (99%)	136 (100%)	0	100	100
11	N	128/128 (100%)	127 (99%)	1 (1%)	73	77
12	O	97/104 (93%)	97 (100%)	0	100	100
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

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
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%)	174 (100%)	0	100	100
23	K	88/96 (92%)	88 (100%)	0	100	100
24	M	93/109 (85%)	89 (96%)	4 (4%)	26	50
25	P	99/119 (83%)	99 (100%)	0	100	100
26	Q	56/119 (47%)	56 (100%)	0	100	100
27	R	110/124 (89%)	109 (99%)	1 (1%)	70	75
28	S	127/129 (98%)	125 (98%)	2 (2%)	55	69
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	85/130 (65%)	85 (100%)	0	100	100
39	j	239/274 (87%)	235 (98%)	4 (2%)	53	68
40	k	393/449 (88%)	393 (100%)	0	100	100
41	l	22/246 (9%)	22 (100%)	0	100	100
42	o	406/846 (48%)	406 (100%)	0	100	100
43	p	506/749 (68%)	503 (99%)	3 (1%)	78	80
All	All	5721/7190 (80%)	5704 (100%)	17 (0%)	84	85

All (17) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
9	J	161	THR
9	J	162	SER
11	N	105	ASN
24	M	97	ILE
24	M	102	ASN
24	M	104	ARG
24	M	105	LYS

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Mol	Chain	Res	Type
27	R	97	ASN
28	S	90	LYS
28	S	92	VAL
39	j	41	ASN
39	j	42	ILE
39	j	99	GLU
39	j	101	LYS
43	p	582	GLN
43	p	583	GLN
43	p	606	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (53) such sidechains are listed below:

Mol	Chain	Res	Type
3	B	40	ASN
3	B	124	ASN
3	B	149	GLN
3	B	209	ASN
4	C	238	GLN
5	E	17	HIS
5	E	98	ASN
5	E	188	ASN
5	E	201	HIS
8	I	111	GLN
8	I	119	GLN
8	I	176	GLN
9	J	38	ASN
9	J	142	ASN
10	L	8	GLN
10	L	14	GLN
10	L	81	HIS
10	L	138	ASN
11	N	78	ASN
12	O	12	GLN
13	V	74	GLN
14	W	42	GLN
14	W	80	ASN
15	X	10	ASN
15	X	48	HIS
15	X	63	GLN
16	Y	22	GLN
16	Y	113	ASN

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Mol	Chain	Res	Type
17	a	8	ASN
21	D	162	GLN
22	F	118	HIS
23	K	29	GLN
24	M	51	GLN
25	P	103	ASN
26	Q	83	GLN
28	S	75	ASN
28	S	103	ASN
30	U	20	HIS
30	U	33	GLN
31	Z	44	GLN
33	d	37	ASN
35	g	240	ASN
36	i	88	GLN
39	j	41	ASN
39	j	238	GLN
40	k	248	GLN
40	k	415	GLN
40	k	433	ASN
41	l	146	ASN
42	o	265	HIS
43	p	251	GLN
43	p	386	ASN
43	p	529	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	2	1797/1798 (99%)	622 (34%)	24 (1%)
37	3	25/49 (51%)	14 (56%)	0
38	1	71/75 (94%)	24 (33%)	4 (5%)
All	All	1893/1922 (98%)	660 (34%)	28 (1%)

All (660) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	2	2	A
1	2	3	U
1	2	4	C
1	2	13	C

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Mol	Chain	Res	Type
1	2	17	C
1	2	25	C
1	2	26	A
1	2	27	U
1	2	34	G
1	2	43	A
1	2	47	A
1	2	50	C
1	2	57	G
1	2	63	G
1	2	68	A
1	2	69	G
1	2	72	A
1	2	73	U
1	2	74	U
1	2	75	U
1	2	76	A
1	2	77	U
1	2	78	A
1	2	79	C
1	2	81	G
1	2	104	A
1	2	114	C
1	2	115	G
1	2	116	U
1	2	119	A
1	2	120	PSU
1	2	121	U
1	2	124	A
1	2	127	G
1	2	128	U
1	2	129	U
1	2	130	C
1	2	131	C
1	2	132	U
1	2	135	A
1	2	136	C
1	2	137	U
1	2	139	C
1	2	140	A
1	2	146	A
1	2	152	G

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Mol	Chain	Res	Type
1	2	155	A
1	2	158	U
1	2	159	C
1	2	160	U
1	2	161	A
1	2	165	C
1	2	167	A
1	2	171	C
1	2	173	U
1	2	176	U
1	2	177	U
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	196	A
1	2	214	A
1	2	217	A
1	2	218	A
1	2	220	A
1	2	223	C
1	2	226	U
1	2	227	G
1	2	228	U
1	2	231	U
1	2	232	C
1	2	234	G
1	2	235	A
1	2	237	U
1	2	238	C
1	2	239	C
1	2	240	U
1	2	248	U
1	2	249	C
1	2	256	A
1	2	259	U
1	2	260	U
1	2	264	A
1	2	271	U

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Mol	Chain	Res	Type
1	2	274	C
1	2	275	C
1	2	276	U
1	2	278	G
1	2	279	U
1	2	280	G
1	2	286	G
1	2	289	G
1	2	290	G
1	2	298	A
1	2	300	A
1	2	301	U
1	2	307	C
1	2	308	C
1	2	311	A
1	2	312	U
1	2	313	C
1	2	315	A
1	2	318	U
1	2	319	U
1	2	321	G
1	2	332	A
1	2	336	G
1	2	337	C
1	2	342	C
1	2	359	A
1	2	360	C
1	2	389	G
1	2	390	A
1	2	399	A
1	2	400	A
1	2	401	C
1	2	403	G
1	2	411	A
1	2	412	U
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	425	G

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Mol	Chain	Res	Type
1	2	427	A
1	2	433	G
1	2	434	C
1	2	436	A
1	2	438	U
1	2	439	U
1	2	440	A
1	2	443	C
1	2	444	A
1	2	447	C
1	2	453	U
1	2	454	C
1	2	459	A
1	2	467	A
1	2	468	C
1	2	470	A
1	2	471	U
1	2	473	A
1	2	474	A
1	2	476	A
1	2	478	C
1	2	479	G
1	2	481	U
1	2	482	A
1	2	483	C
1	2	486	G
1	2	488	C
1	2	489	C
1	2	490	C
1	2	491	A
1	2	492	U
1	2	493	U
1	2	495	G
1	2	496	G
1	2	497	G
1	2	499	C
1	2	501	U
1	2	502	G
1	2	505	A
1	2	506	U
1	2	507	U
1	2	513	G

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Mol	Chain	Res	Type
1	2	516	U
1	2	518	C
1	2	519	A
1	2	526	A
1	2	533	A
1	2	535	C
1	2	537	A
1	2	539	G
1	2	540	A
1	2	541	A
1	2	542	C
1	2	544	A
1	2	547	G
1	2	553	C
1	2	557	U
1	2	558	C
1	2	564	C
1	2	567	G
1	2	577	U
1	2	578	A
1	2	583	C
1	2	584	A
1	2	593	A
1	2	594	G
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	622	A
1	2	623	G
1	2	637	U
1	2	638	U
1	2	641	G
1	2	644	C
1	2	647	G
1	2	649	U
1	2	650	G
1	2	652	C
1	2	653	C
1	2	657	C

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Mol	Chain	Res	Type
1	2	661	C
1	2	662	U
1	2	663	U
1	2	664	U
1	2	671	C
1	2	672	G
1	2	675	C
1	2	679	U
1	2	680	U
1	2	681	U
1	2	684	A
1	2	685	A
1	2	686	C
1	2	687	C
1	2	688	G
1	2	692	C
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	709	C
1	2	710	U
1	2	711	G
1	2	712	U
1	2	714	C
1	2	715	U
1	2	717	C
1	2	718	U
1	2	719	U
1	2	720	G
1	2	721	U
1	2	722	G
1	2	727	C
1	2	731	C
1	2	732	G
1	2	733	A
1	2	734	A
1	2	736	C
1	2	738	G

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Mol	Chain	Res	Type
1	2	739	G
1	2	741	C
1	2	742	U
1	2	743	U
1	2	745	U
1	2	753	A
1	2	755	A
1	2	765	G
1	2	766	PSU
1	2	767	U
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	788	A
1	2	789	U
1	2	792	A
1	2	793	U
1	2	794	U
1	2	802	A
1	2	805	A
1	2	809	G
1	2	811	A
1	2	813	A
1	2	814	G
1	2	819	U
1	2	820	U
1	2	821	U
1	2	822	G
1	2	823	G
1	2	826	C
1	2	827	U
1	2	828	A
1	2	829	U
1	2	832	U
1	2	835	U
1	2	836	G
1	2	837	G

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Mol	Chain	Res	Type
1	2	838	U
1	2	840	U
1	2	845	G
1	2	852	G
1	2	855	A
1	2	859	U
1	2	862	A
1	2	864	A
1	2	866	G
1	2	872	U
1	2	875	G
1	2	885	U
1	2	887	U
1	2	895	U
1	2	897	A
1	2	898	G
1	2	905	A
1	2	911	U
1	2	912	G
1	2	913	G
1	2	915	U
1	2	916	U
1	2	917	U
1	2	918	A
1	2	919	U
1	2	920	U
1	2	930	C
1	2	932	A
1	2	934	U
1	2	941	G
1	2	944	U
1	2	950	A
1	2	958	U
1	2	959	U
1	2	965	A
1	2	969	A
1	2	972	A
1	2	981	U
1	2	982	A
1	2	985	G
1	2	986	G
1	2	987	A

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Mol	Chain	Res	Type
1	2	990	G
1	2	991	A
1	2	992	A
1	2	993	G
1	2	996	G
1	2	1002	A
1	2	1008	U
1	2	1015	C
1	2	1017	U
1	2	1018	A
1	2	1024	A
1	2	1025	A
1	2	1026	A
1	2	1027	C
1	2	1030	U
1	2	1031	G
1	2	1038	A
1	2	1039	G
1	2	1041	G
1	2	1042	A
1	2	1049	G
1	2	1050	G
1	2	1051	U
1	2	1052	G
1	2	1054	U
1	2	1055	U
1	2	1056	U
1	2	1057	U
1	2	1058	C
1	2	1059	U
1	2	1062	U
1	2	1069	C
1	2	1075	A
1	2	1081	C
1	2	1082	G
1	2	1083	A
1	2	1084	G
1	2	1085	A
1	2	1086	A
1	2	1091	A
1	2	1092	A
1	2	1095	C

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Mol	Chain	Res	Type
1	2	1096	U
1	2	1097	U
1	2	1099	G
1	2	1103	U
1	2	1104	C
1	2	1110	G
1	2	1112	A
1	2	1113	G
1	2	1125	G
1	2	1134	U
1	2	1137	A
1	2	1142	A
1	2	1149	G
1	2	1150	A
1	2	1155	C
1	2	1157	C
1	2	1158	C
1	2	1163	G
1	2	1166	G
1	2	1184	U
1	2	1189	C
1	2	1190	B8N
1	2	1193	A
1	2	1198	G
1	2	1199	G
1	2	1200	G
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	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

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Mol	Chain	Res	Type
1	2	1246	U
1	2	1247	C
1	2	1249	U
1	2	1250	U
1	2	1251	C
1	2	1254	G
1	2	1255	A
1	2	1259	U
1	2	1260	G
1	2	1268	U
1	2	1269	G
1	2	1272	G
1	2	1273	C
1	2	1275	U
1	2	1279	C
1	2	1284	U
1	2	1287	G
1	2	1289	PSU
1	2	1292	U
1	2	1296	G
1	2	1297	U
1	2	1298	G
1	2	1306	U
1	2	1307	G
1	2	1313	U
1	2	1314	U
1	2	1315	G
1	2	1317	G
1	2	1319	U
1	2	1320	A
1	2	1321	A
1	2	1323	G
1	2	1324	A
1	2	1332	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

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Mol	Chain	Res	Type
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	1369	U
1	2	1370	G
1	2	1380	A
1	2	1383	G
1	2	1388	U
1	2	1390	U
1	2	1394	U
1	2	1396	U
1	2	1397	C
1	2	1398	A
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	1412	U
1	2	1413	U
1	2	1417	G
1	2	1418	C
1	2	1425	A
1	2	1426	2MG
1	2	1429	C
1	2	1431	G
1	2	1434	A
1	2	1442	A
1	2	1443	G
1	2	1444	A
1	2	1457	C
1	2	1458	A
1	2	1464	G
1	2	1467	A
1	2	1469	A
1	2	1471	U
1	2	1476	G

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Mol	Chain	Res	Type
1	2	1479	C
1	2	1481	A
1	2	1482	G
1	2	1483	C
1	2	1484	G
1	2	1488	A
1	2	1489	C
1	2	1490	A
1	2	1491	A
1	2	1494	U
1	2	1499	C
1	2	1504	G
1	2	1510	G
1	2	1512	U
1	2	1513	A
1	2	1514	A
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	1534	G
1	2	1535	C
1	2	1538	G
1	2	1540	G
1	2	1544	G
1	2	1555	U
1	2	1557	A
1	2	1558	U
1	2	1566	C
1	2	1567	A
1	2	1572	G
1	2	1573	7MG
1	2	1581	A
1	2	1588	G
1	2	1595	A
1	2	1597	C
1	2	1598	A
1	2	1599	G
1	2	1602	U
1	2	1603	G

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Mol	Chain	Res	Type
1	2	1608	G
1	2	1614	G
1	2	1617	C
1	2	1620	G
1	2	1632	C
1	2	1633	A
1	2	1637	5MC
1	2	1640	G
1	2	1646	A
1	2	1653	A
1	2	1654	U
1	2	1655	U
1	2	1656	G
1	2	1662	C
1	2	1678	G
1	2	1679	A
1	2	1680	U
1	2	1685	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	1700	A
1	2	1702	U
1	2	1703	C
1	2	1705	A
1	2	1706	U
1	2	1707	C
1	2	1708	U
1	2	1709	C
1	2	1710	A
1	2	1711	G
1	2	1712	A
1	2	1713	G
1	2	1715	G

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Mol	Chain	Res	Type
1	2	1719	A
1	2	1724	G
1	2	1725	G
1	2	1728	A
1	2	1729	A
1	2	1730	A
1	2	1735	G
1	2	1740	U
1	2	1742	A
1	2	1743	G
1	2	1748	A
1	2	1750	U
1	2	1753	A
1	2	1754	A
1	2	1755	G
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	1798	A
37	3	16	U
37	3	18	U
37	3	20	A
37	3	22	U
37	3	24	U
37	3	26	A
37	3	32	U
37	3	33	C
37	3	34	U
37	3	35	C
37	3	36	U
37	3	37	U

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Mol	Chain	Res	Type
37	3	38	C
37	3	40	C
38	1	4	G
38	1	8	U
38	1	9	1MG
38	1	13	C
38	1	14	A
38	1	15	G
38	1	16	H2U
38	1	19	G
38	1	20	A
38	1	21	A
38	1	22	G
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	52	G
38	1	59	A
38	1	60	A
38	1	61	C
38	1	74	C
38	1	75	C
38	1	76	A

All (28) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	2	74	U
1	2	78	A
1	2	216	A
1	2	239	C
1	2	277	U
1	2	279	U
1	2	649	U
1	2	670	G
1	2	686	C
1	2	695	U
1	2	700	C
1	2	828	A

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Mol	Chain	Res	Type
1	2	1198	G
1	2	1204	C
1	2	1206	C
1	2	1343	A
1	2	1430	U
1	2	1470	C
1	2	1513	A
1	2	1566	C
1	2	1571	A
1	2	1613	C
1	2	1765	G
1	2	1797	U
38	1	8	U
38	1	43	G
38	1	48	5MC
38	1	74	C

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
1	5MC	2	1637	1	19,22,23	3.65	8 (42%)	26,32,35	0.94	2 (7%)
1	PSU	2	1289	1	18,21,22	4.24	7 (38%)	21,30,33	1.98	5 (23%)
1	MA6	2	1780	1	23,26,27	1.44	4 (17%)	33,38,41	3.18	11 (33%)
1	2MG	2	1570	1	23,26,27	2.85	9 (39%)	33,38,41	2.17	9 (27%)
38	RIA	1	64	38	35,38,39	4.63	14 (40%)	50,57,60	2.06	11 (22%)
1	5MC	2	1006	1	19,22,23	3.49	8 (42%)	26,32,35	1.31	3 (11%)
1	PSU	2	998	1	18,21,22	4.35	8 (44%)	21,30,33	2.00	5 (23%)
1	PSU	2	465	1,44	18,21,22	4.25	7 (38%)	21,30,33	1.89	4 (19%)
38	2MG	1	10	38	23,26,27	2.93	8 (34%)	33,38,41	2.16	8 (24%)
38	1MA	1	58	38	21,25,26	3.08	6 (28%)	30,37,40	2.28	8 (26%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
38	1MG	1	9	38	23,26,27	3.28	8 (34%)	33,39,42	2.38	8 (24%)
38	H2U	1	47	38	18,21,22	3.20	4 (22%)	19,30,33	1.39	4 (21%)
38	5MC	1	49	38	19,22,23	3.95	8 (42%)	26,32,35	1.02	1 (3%)
1	PSU	2	120	1	18,21,22	4.35	7 (38%)	21,30,33	1.90	5 (23%)
1	2MG	2	1426	1,44	23,26,27	2.74	8 (34%)	33,38,41	2.17	10 (30%)
38	T6A	1	37	38	31,34,35	1.82	9 (29%)	43,49,52	2.14	11 (25%)
1	PSU	2	766	1	18,21,22	4.27	8 (44%)	21,30,33	2.23	5 (23%)
38	M2G	1	26	38	24,27,28	2.60	8 (33%)	33,40,43	1.68	7 (21%)
38	H2U	1	16	38	18,21,22	3.11	4 (22%)	19,30,33	1.47	4 (21%)
1	B8N	2	1190	1	25,29,30	3.32	8 (32%)	28,42,45	2.02	9 (32%)
1	7MG	2	1573	1	23,26,27	3.38	10 (43%)	27,39,42	2.21	9 (33%)
38	5MC	1	48	38	19,22,23	3.83	8 (42%)	26,32,35	1.14	2 (7%)
38	7MG	1	46	38	23,26,27	3.51	10 (43%)	27,39,42	2.10	8 (29%)

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
1	5MC	2	1637	1	-	2/7/25/26	0/2/2/2
1	PSU	2	1289	1	-	2/7/25/26	0/2/2/2
1	MA6	2	1780	1	-	7/11/29/30	0/3/3/3
1	2MG	2	1570	1	-	2/9/27/28	0/3/3/3
38	RIA	1	64	38	-	2/17/51/52	0/4/4/4
1	5MC	2	1006	1	-	0/7/25/26	0/2/2/2
1	PSU	2	998	1	-	4/7/25/26	0/2/2/2
1	PSU	2	465	1,44	-	2/7/25/26	0/2/2/2
38	2MG	1	10	38	-	2/9/27/28	0/3/3/3
38	1MA	1	58	38	-	0/7/25/26	0/3/3/3
38	1MG	1	9	38	-	3/7/25/26	0/3/3/3
38	H2U	1	47	38	-	5/7/38/39	0/2/2/2
38	5MC	1	49	38	-	3/7/25/26	0/2/2/2
1	PSU	2	120	1	-	2/7/25/26	0/2/2/2
1	2MG	2	1426	1,44	-	0/9/27/28	0/3/3/3
38	T6A	1	37	38	-	6/23/41/42	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	PSU	2	766	1	-	2/7/25/26	0/2/2/2
38	M2G	1	26	38	-	1/11/29/30	0/3/3/3
38	H2U	1	16	38	-	2/7/38/39	0/2/2/2
1	B8N	2	1190	1	-	5/16/34/35	0/2/2/2
1	7MG	2	1573	1	-	2/7/37/38	0/3/3/3
38	5MC	1	48	38	-	3/7/25/26	0/2/2/2
38	7MG	1	46	38	-	2/7/37/38	0/3/3/3

All (179) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
38	1	64	RIA	C1'-C2'	-16.31	1.32	1.52
1	2	120	PSU	C6-C5	11.46	1.48	1.35
1	2	998	PSU	C6-C5	11.33	1.47	1.35
1	2	465	PSU	C6-C5	11.33	1.47	1.35
1	2	766	PSU	C6-C5	10.98	1.47	1.35
1	2	1289	PSU	C6-C5	10.90	1.47	1.35
38	1	64	RIA	O1'-C1'	10.86	1.60	1.41
38	1	47	H2U	C2-N1	9.96	1.49	1.35
38	1	16	H2U	C2-N1	9.67	1.49	1.35
1	2	998	PSU	C2-N1	9.65	1.49	1.36
1	2	120	PSU	C2-N1	9.62	1.49	1.36
1	2	766	PSU	C2-N1	9.62	1.49	1.36
1	2	1289	PSU	C2-N1	9.52	1.49	1.36
38	1	58	1MA	C2-N3	9.47	1.47	1.30
38	1	49	5MC	C6-C5	9.44	1.50	1.34
1	2	465	PSU	C2-N1	9.31	1.48	1.36
38	1	64	RIA	C2A-C1A	-9.22	1.30	1.53
38	1	64	RIA	O4'-C1A	9.18	1.63	1.42
38	1	9	1MG	C2-N2	9.16	1.50	1.34
38	1	48	5MC	C6-C5	8.99	1.49	1.34
1	2	1637	5MC	C6-C5	8.72	1.48	1.34
38	1	46	7MG	C8-N9	8.47	1.51	1.45
1	2	1573	7MG	C8-N9	8.25	1.51	1.45
1	2	1006	5MC	C6-C5	8.13	1.47	1.34
1	2	1190	B8N	C6-N1	8.11	1.56	1.36
1	2	1190	B8N	C4-N3	-8.05	1.26	1.40
38	1	10	2MG	C2-N3	7.85	1.47	1.32
1	2	998	PSU	C2-N3	7.59	1.50	1.37
1	2	1570	2MG	C2-N3	7.55	1.46	1.32
1	2	120	PSU	C2-N3	7.53	1.49	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	2	1289	PSU	C2-N3	7.51	1.49	1.37
1	2	766	PSU	C2-N3	7.43	1.49	1.37
1	2	465	PSU	C2-N3	7.21	1.49	1.37
1	2	1190	B8N	C4-C5	7.10	1.63	1.47
1	2	1426	2MG	C2-N3	7.05	1.45	1.32
38	1	46	7MG	C5-N7	7.02	1.44	1.35
38	1	49	5MC	C5-C4	7.00	1.49	1.44
38	1	58	1MA	C4-N3	6.97	1.49	1.35
38	1	48	5MC	C4-N3	6.95	1.45	1.34
38	1	49	5MC	C4-N3	6.88	1.45	1.34
38	1	10	2MG	C4-N3	6.82	1.49	1.34
38	1	9	1MG	C2-N3	6.80	1.44	1.33
38	1	64	RIA	O1'-C4'	-6.78	1.29	1.45
38	1	48	5MC	C5-C4	6.74	1.49	1.44
1	2	1637	5MC	C4-N3	6.70	1.44	1.34
38	1	47	H2U	C2-N3	6.70	1.49	1.38
1	2	1006	5MC	C4-N3	6.56	1.44	1.34
38	1	26	M2G	C4-N3	6.47	1.49	1.34
38	1	16	H2U	C2-N3	6.46	1.49	1.38
1	2	1570	2MG	C4-N3	6.44	1.49	1.34
38	1	9	1MG	C4-N3	6.33	1.48	1.34
38	1	49	5MC	C2-N3	6.26	1.48	1.36
38	1	48	5MC	C2-N3	6.23	1.48	1.36
38	1	26	M2G	C2-N2	6.23	1.46	1.35
1	2	1573	7MG	C5-N7	6.10	1.43	1.35
1	2	1006	5MC	C2-N3	6.09	1.48	1.36
1	2	1426	2MG	C4-N3	6.06	1.48	1.34
1	2	1637	5MC	C2-N3	6.01	1.48	1.36
38	1	64	RIA	C6-N6	6.01	1.49	1.34
38	1	10	2MG	C2-N2	5.93	1.45	1.33
38	1	64	RIA	O4'-C4A	-5.92	1.31	1.45
1	2	1573	7MG	C2-N3	5.91	1.47	1.33
38	1	26	M2G	C2-N3	5.82	1.46	1.32
1	2	1637	5MC	C5-C4	5.75	1.48	1.44
38	1	46	7MG	C2-N3	5.70	1.47	1.33
38	1	46	7MG	C4-N3	5.67	1.47	1.34
1	2	1573	7MG	C4-N3	5.62	1.47	1.34
1	2	1570	2MG	C2-N2	5.61	1.45	1.33
1	2	1190	B8N	C2-N1	5.45	1.55	1.39
38	1	9	1MG	C2-N1	5.33	1.46	1.37
1	2	1006	5MC	C5-C4	5.31	1.48	1.44
1	2	1426	2MG	C2-N2	5.28	1.44	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	2	120	PSU	C6-N1	5.19	1.44	1.36
38	1	47	H2U	C4-N3	5.12	1.46	1.37
1	2	465	PSU	C6-N1	5.11	1.44	1.36
1	2	1289	PSU	C6-N1	5.11	1.44	1.36
1	2	998	PSU	C6-N1	5.09	1.44	1.36
38	1	37	T6A	C10-N11	5.04	1.49	1.35
1	2	766	PSU	C6-N1	4.98	1.44	1.36
38	1	16	H2U	C4-N3	4.97	1.45	1.37
38	1	37	T6A	C10-N6	4.93	1.48	1.37
38	1	46	7MG	C2-N2	4.85	1.45	1.34
38	1	58	1MA	C2-N1	4.79	1.45	1.35
1	2	1573	7MG	C2-N2	4.73	1.45	1.34
38	1	10	2MG	C2-N1	4.72	1.44	1.36
1	2	1190	B8N	C6-C5	4.72	1.41	1.35
1	2	1190	B8N	C1'-C5	-4.71	1.39	1.50
1	2	1573	7MG	C4-N9	4.69	1.43	1.37
38	1	49	5MC	C6-N1	4.69	1.46	1.38
1	2	1570	2MG	C2-N1	4.63	1.44	1.36
38	1	46	7MG	C4-N9	4.57	1.43	1.37
38	1	49	5MC	C2-N1	4.55	1.49	1.40
1	2	1426	2MG	C2-N1	4.53	1.43	1.36
38	1	49	5MC	C4-N4	4.47	1.45	1.34
38	1	48	5MC	C6-N1	4.40	1.45	1.38
1	2	1637	5MC	C6-N1	4.31	1.45	1.38
38	1	48	5MC	C2-N1	4.31	1.49	1.40
38	1	48	5MC	C4-N4	4.27	1.45	1.34
1	2	1637	5MC	C4-N4	4.25	1.45	1.34
1	2	1006	5MC	C4-N4	4.13	1.44	1.34
1	2	1006	5MC	C2-N1	4.04	1.48	1.40
38	1	58	1MA	C5-C6	4.00	1.54	1.43
1	2	1637	5MC	C2-N1	3.95	1.48	1.40
38	1	9	1MG	O6-C6	-3.91	1.15	1.23
38	1	46	7MG	C2-N1	3.90	1.47	1.37
1	2	1006	5MC	C6-N1	3.70	1.44	1.38
1	2	120	PSU	C4-N3	3.67	1.45	1.38
1	2	1573	7MG	C2-N1	3.64	1.46	1.37
1	2	998	PSU	C4-N3	3.61	1.45	1.38
1	2	1780	MA6	C6-N6	3.58	1.46	1.36
1	2	465	PSU	C4-N3	3.54	1.45	1.38
38	1	26	M2G	C2-N1	3.53	1.44	1.36
1	2	1289	PSU	C4-N3	3.51	1.45	1.38
38	1	46	7MG	C5-C6	3.50	1.52	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	2	766	PSU	C4-N3	3.49	1.45	1.38
38	1	9	1MG	C5-N7	-3.27	1.32	1.39
1	2	1573	7MG	C5-C6	3.24	1.51	1.43
38	1	9	1MG	C5-C6	3.24	1.53	1.45
38	1	46	7MG	C6-N1	3.23	1.44	1.38
1	2	1426	2MG	C5-N7	-3.22	1.32	1.39
38	1	64	RIA	O3A-C3A	-3.20	1.35	1.43
1	2	1780	MA6	C5-C4	-3.12	1.33	1.39
38	1	64	RIA	O2A-C2A	3.09	1.51	1.43
38	1	58	1MA	C5-N7	-3.08	1.32	1.39
38	1	10	2MG	C5-N7	-3.08	1.32	1.39
1	2	1570	2MG	C5-N7	-3.07	1.32	1.39
38	1	64	RIA	O2'-C2'	2.99	1.50	1.43
38	1	37	T6A	C5-N7	-2.97	1.33	1.39
1	2	1006	5MC	O2-C2	-2.94	1.18	1.23
1	2	1637	5MC	O2-C2	-2.94	1.18	1.23
1	2	1426	2MG	O6-C6	-2.88	1.18	1.23
1	2	1289	PSU	O4-C4	-2.87	1.18	1.23
38	1	64	RIA	C5-N7	-2.86	1.33	1.39
1	2	1573	7MG	C6-N1	2.85	1.44	1.38
38	1	26	M2G	C5-N7	-2.80	1.33	1.39
1	2	998	PSU	O4-C4	-2.78	1.18	1.23
38	1	48	5MC	O2-C2	-2.75	1.18	1.23
1	2	1573	7MG	O6-C6	-2.73	1.18	1.23
1	2	1780	MA6	C5-N7	-2.72	1.34	1.39
1	2	766	PSU	O4-C4	-2.71	1.18	1.23
38	1	49	5MC	O2-C2	-2.71	1.18	1.23
1	2	766	PSU	O4'-C1'	-2.71	1.40	1.43
1	2	465	PSU	O4-C4	-2.65	1.18	1.23
38	1	46	7MG	O6-C6	-2.62	1.18	1.23
1	2	120	PSU	O4-C4	-2.61	1.18	1.23
38	1	16	H2U	O2-C2	-2.60	1.18	1.23
38	1	26	M2G	C6-N1	2.60	1.43	1.38
38	1	26	M2G	C5-C6	2.59	1.54	1.44
38	1	10	2MG	O6-C6	-2.59	1.18	1.23
1	2	1570	2MG	O6-C6	-2.54	1.18	1.23
38	1	37	T6A	C5-C4	-2.50	1.34	1.39
38	1	26	M2G	O6-C6	-2.46	1.18	1.23
38	1	47	H2U	O2-C2	-2.44	1.18	1.23
38	1	64	RIA	O3'-C3'	-2.41	1.37	1.43
38	1	10	2MG	C5-C6	2.39	1.53	1.44
38	1	64	RIA	P'-O5'	2.38	1.67	1.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	2	1570	2MG	C5-C6	2.38	1.53	1.44
1	2	465	PSU	O2-C2	-2.37	1.18	1.23
38	1	9	1MG	C4-N9	-2.35	1.32	1.38
38	1	37	T6A	ODA-C13	2.35	1.29	1.22
1	2	998	PSU	O4'-C1'	-2.33	1.40	1.43
1	2	1190	B8N	O2-C2	-2.31	1.18	1.22
1	2	1780	MA6	C8-N9	-2.29	1.33	1.37
1	2	1426	2MG	C5-C6	2.27	1.52	1.44
1	2	1570	2MG	C6-N1	2.26	1.43	1.38
1	2	766	PSU	O2-C2	-2.25	1.18	1.23
1	2	1426	2MG	C4-N9	-2.22	1.32	1.38
38	1	58	1MA	CM1-N1	-2.21	1.42	1.46
1	2	120	PSU	O2-C2	-2.20	1.18	1.23
1	2	1289	PSU	O2-C2	-2.19	1.18	1.23
38	1	37	T6A	C4-N9	-2.18	1.33	1.37
38	1	10	2MG	C6-N1	2.14	1.42	1.38
1	2	1570	2MG	C4-N9	-2.13	1.32	1.38
1	2	998	PSU	O2-C2	-2.12	1.18	1.23
38	1	37	T6A	O10-C10	-2.10	1.18	1.23
38	1	64	RIA	C2-N1	2.10	1.37	1.33
38	1	37	T6A	C6-N1	-2.09	1.31	1.35
1	2	1190	B8N	O4-C4	-2.08	1.18	1.23
38	1	37	T6A	C2-N1	2.02	1.37	1.33

All (149) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	2	1780	MA6	N1-C6-N6	-11.67	102.64	116.86
1	2	1780	MA6	C5-C6-N6	7.54	137.26	125.33
38	1	9	1MG	C1'-N9-C4	-7.24	105.09	126.49
38	1	10	2MG	C2-N3-C4	6.62	120.29	112.00
38	1	9	1MG	C1'-N9-C8	6.60	145.48	126.73
38	1	58	1MA	C1'-N9-C8	-6.44	108.43	126.73
1	2	1570	2MG	C2-N3-C4	6.13	119.67	112.00
1	2	1426	2MG	C2-N3-C4	5.88	119.35	112.00
38	1	64	RIA	N3-C2-N1	-5.78	119.83	128.58
38	1	10	2MG	C5-C4-N3	-5.75	119.23	128.39
38	1	37	T6A	N3-C2-N1	-5.70	119.95	128.58
1	2	1780	MA6	N1-C2-N3	-5.59	120.12	128.58
38	1	64	RIA	C5-C4-N3	-5.54	119.09	126.72
38	1	58	1MA	C1'-N9-C4	5.43	142.54	126.49
1	2	1570	2MG	C5-C4-N3	-5.35	119.88	128.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	2	766	PSU	C4-N3-C2	-5.31	119.06	126.37
1	2	1426	2MG	C5-C4-N3	-5.30	119.95	128.39
38	1	26	M2G	C5-C4-N3	-5.13	120.22	128.39
1	2	1190	B8N	C5-C4-N3	5.12	125.44	116.15
1	2	1573	7MG	C5-C6-N1	5.11	119.94	110.94
38	1	64	RIA	N6-C6-N1	-4.98	107.28	118.38
38	1	46	7MG	C5-C6-N1	4.95	119.66	110.94
1	2	1289	PSU	C4-N3-C2	-4.95	119.56	126.37
1	2	1426	2MG	C2-N1-C6	-4.90	118.63	124.55
1	2	1780	MA6	C5-C4-N3	-4.89	119.98	126.72
38	1	58	1MA	N1-C2-N3	-4.82	120.27	126.00
1	2	998	PSU	C4-N3-C2	-4.82	119.73	126.37
1	2	766	PSU	N1-C2-N3	4.82	120.25	115.17
38	1	9	1MG	C5-C4-N3	-4.73	120.86	128.39
1	2	1190	B8N	C4-N3-C2	-4.68	119.86	125.62
38	1	37	T6A	N6-C10-N11	4.63	120.14	113.77
38	1	37	T6A	C5-C4-N3	-4.62	120.36	126.72
1	2	465	PSU	C4-N3-C2	-4.55	120.10	126.37
1	2	120	PSU	C4-N3-C2	-4.52	120.14	126.37
1	2	1570	2MG	C2-N1-C6	-4.46	119.16	124.55
38	1	58	1MA	C5-C4-N3	-4.41	120.78	127.27
1	2	465	PSU	N1-C2-N3	4.40	119.81	115.17
1	2	1289	PSU	N1-C2-N3	4.37	119.78	115.17
1	2	998	PSU	N1-C2-N3	4.36	119.77	115.17
38	1	46	7MG	C2-N3-C4	4.34	119.77	112.30
1	2	1573	7MG	C5-C4-N3	-4.29	120.08	128.13
1	2	1573	7MG	C2-N3-C4	4.28	119.67	112.30
38	1	37	T6A	C4-C5-C6	4.28	120.34	116.78
1	2	120	PSU	N1-C2-N3	4.27	119.67	115.17
1	2	1006	5MC	C5-C6-N1	-4.23	118.72	123.31
38	1	10	2MG	C2-N1-C6	-4.23	119.44	124.55
1	2	1780	MA6	C4-C5-C6	4.15	120.20	115.91
1	2	1573	7MG	C4-C5-N7	4.10	110.22	105.38
38	1	64	RIA	C1'-O2A-C2A	-4.07	108.34	117.98
38	1	26	M2G	C2-N3-C4	4.03	119.96	112.51
38	1	64	RIA	N9-C8-N7	-4.02	108.23	113.94
1	2	766	PSU	C6-C5-C4	3.96	120.84	118.17
38	1	37	T6A	N9-C8-N7	-3.95	108.33	113.94
38	1	37	T6A	C12-N11-C10	3.86	128.40	121.99
1	2	1780	MA6	N9-C8-N7	-3.83	108.50	113.94
38	1	46	7MG	C5-C4-N3	-3.80	120.99	128.13
38	1	10	2MG	N9-C4-N3	3.80	133.55	125.95

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	2	1190	B8N	N3-C2-N1	3.79	121.35	116.72
38	1	46	7MG	C4-C5-N7	3.76	109.82	105.38
38	1	64	RIA	C5-C6-N6	3.74	132.55	123.29
38	1	48	5MC	C5-C6-N1	-3.71	119.28	123.31
38	1	64	RIA	C2-N3-C4	3.64	120.72	111.83
1	2	465	PSU	C6-N1-C2	-3.61	119.34	122.69
1	2	998	PSU	C6-N1-C2	-3.59	119.36	122.69
38	1	64	RIA	N3-C4-N9	3.54	133.19	127.17
38	1	9	1MG	N9-C8-N7	-3.53	106.85	113.40
38	1	58	1MA	C2-N3-C4	3.53	119.45	112.53
38	1	9	1MG	C2-N3-C4	3.44	119.70	111.98
1	2	120	PSU	C6-N1-C2	-3.41	119.52	122.69
38	1	37	T6A	O10-C10-N6	-3.38	117.64	123.64
38	1	16	H2U	N3-C2-N1	3.36	120.02	116.65
38	1	58	1MA	N9-C8-N7	-3.28	107.31	113.40
1	2	1780	MA6	C2-N1-C6	3.27	119.82	111.83
1	2	1780	MA6	C2-N3-C4	3.26	119.78	111.83
1	2	1426	2MG	CM2-N2-C2	-3.25	116.67	123.65
1	2	766	PSU	C6-N1-C2	-3.23	119.69	122.69
1	2	1570	2MG	N1-C2-N2	3.22	119.84	116.56
1	2	1289	PSU	C6-N1-C2	-3.21	119.71	122.69
1	2	1573	7MG	C5-C4-N9	3.20	110.44	106.33
1	2	1570	2MG	N9-C4-N3	3.18	132.30	125.95
38	1	47	H2U	C5-C6-N1	3.15	121.06	111.52
1	2	1573	7MG	C2-N1-C6	-3.12	119.45	125.11
1	2	1780	MA6	N3-C4-N9	3.12	132.47	127.17
38	1	46	7MG	C5-C4-N9	3.11	110.32	106.33
38	1	37	T6A	C2-N3-C4	3.11	119.43	111.83
1	2	1190	B8N	C31-N3-C4	3.07	121.53	117.18
38	1	9	1MG	N9-C4-N3	3.04	132.03	125.95
38	1	47	H2U	N3-C2-N1	3.02	119.68	116.65
38	1	64	RIA	C5-N7-C8	3.00	108.16	103.45
1	2	1190	B8N	C1'-C5-C4	2.99	122.15	117.61
38	1	49	5MC	C5-C6-N1	-2.97	120.09	123.31
38	1	16	H2U	C5-C4-N3	2.96	119.84	116.69
38	1	47	H2U	C5-C4-N3	2.96	119.83	116.69
38	1	46	7MG	O6-C6-C5	-2.94	120.40	127.62
38	1	9	1MG	C5-C6-N1	2.92	120.42	115.02
1	2	998	PSU	O2-C2-N1	-2.92	119.78	122.79
1	2	766	PSU	O2-C2-N1	-2.92	119.78	122.79
1	2	1573	7MG	O6-C6-C5	-2.90	120.49	127.62
38	1	16	H2U	C5-C6-N1	2.89	120.26	111.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
38	1	26	M2G	N9-C8-N7	-2.87	108.08	113.40
1	2	1637	5MC	C5-C6-N1	-2.86	120.20	123.31
1	2	1289	PSU	O2-C2-N1	-2.85	119.85	122.79
1	2	1426	2MG	N9-C4-N3	2.82	131.60	125.95
1	2	1570	2MG	N9-C8-N7	-2.78	108.24	113.40
1	2	120	PSU	C6-C5-C4	2.75	120.03	118.17
1	2	1006	5MC	CM5-C5-C6	-2.74	119.14	122.85
1	2	1573	7MG	N9-C4-N3	2.74	129.48	125.46
38	1	46	7MG	C2-N1-C6	-2.74	120.14	125.11
1	2	1289	PSU	C6-C5-C4	2.72	120.01	118.17
38	1	10	2MG	C5-C6-N1	2.72	120.17	113.25
38	1	16	H2U	O2-C2-N1	-2.69	119.87	123.10
38	1	26	M2G	N9-C4-N3	2.68	131.32	125.95
38	1	37	T6A	N3-C4-N9	2.67	131.70	127.17
38	1	10	2MG	N9-C8-N7	-2.65	108.49	113.40
38	1	26	M2G	C5-C6-N1	2.64	119.98	113.25
1	2	120	PSU	O2-C2-N1	-2.63	120.07	122.79
1	2	1426	2MG	C5-C6-N1	2.63	119.94	113.25
1	2	1426	2MG	N1-C2-N2	2.60	119.22	116.56
1	2	465	PSU	O2-C2-N1	-2.60	120.11	122.79
1	2	1570	2MG	C5-C6-N1	2.58	119.83	113.25
1	2	1190	B8N	O4-C4-N3	-2.56	115.83	119.99
1	2	1426	2MG	N9-C8-N7	-2.56	108.66	113.40
38	1	26	M2G	O6-C6-C5	-2.54	119.82	126.53
38	1	37	T6A	C5-N7-C8	2.54	107.44	103.45
1	2	1570	2MG	O6-C6-C5	-2.54	119.84	126.53
38	1	10	2MG	O6-C6-C5	-2.50	119.93	126.53
1	2	1780	MA6	C5-N7-C8	2.42	107.26	103.45
1	2	1573	7MG	N9-C8-N7	2.42	106.79	103.37
1	2	1426	2MG	O6-C6-C5	-2.40	120.19	126.53
1	2	1570	2MG	CM2-N2-C2	-2.32	118.67	123.65
1	2	1190	B8N	O4'-C1'-C2'	2.26	108.28	105.15
38	1	9	1MG	C8-N7-C5	2.24	108.26	104.26
1	2	998	PSU	C6-C5-C4	2.23	119.68	118.17
38	1	37	T6A	N6-C6-N1	2.23	123.30	117.54
1	2	1190	B8N	O4-C4-C5	-2.23	118.73	122.58
38	1	58	1MA	N9-C4-N3	2.21	131.93	126.90
38	1	46	7MG	N9-C4-N3	2.20	128.69	125.46
38	1	64	RIA	C4-C5-N7	-2.20	108.07	110.58
38	1	58	1MA	C8-N7-C5	2.19	108.17	104.26
1	2	1637	5MC	CM5-C5-C6	-2.19	119.88	122.85
38	1	64	RIA	C6-C5-C4	2.17	120.15	117.18

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	2	1190	B8N	O2-C2-N3	-2.16	119.08	121.98
38	1	26	M2G	C8-N7-C5	2.11	108.02	104.26
38	1	48	5MC	C5-C4-N4	-2.10	118.43	121.39
38	1	10	2MG	N1-C2-N3	-2.09	120.17	123.68
1	2	1006	5MC	C5-C4-N4	-2.07	118.48	121.39
1	2	1426	2MG	C1'-N9-C4	-2.05	120.42	126.49
1	2	1780	MA6	C4-N9-C8	2.04	107.88	105.74
38	1	47	H2U	O2-C2-N1	-2.01	120.68	123.10

There are no chirality outliers.

All (59) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	2	120	PSU	O4'-C4'-C5'-O5'
1	2	1190	B8N	O4'-C4'-C5'-O5'
1	2	1780	MA6	O4'-C4'-C5'-O5'
1	2	1780	MA6	C5-C6-N6-C9
1	2	1780	MA6	C5-C6-N6-C10
1	2	1780	MA6	N1-C6-N6-C9
1	2	1780	MA6	N1-C6-N6-C10
38	1	9	1MG	O4'-C4'-C5'-O5'
38	1	16	H2U	C4'-C5'-O5'-P
38	1	37	T6A	C14-C12-N11-C10
38	1	37	T6A	C13-C12-C14-O14
38	1	37	T6A	C13-C12-C14-C15
38	1	47	H2U	O4'-C4'-C5'-O5'
38	1	48	5MC	C4'-C5'-O5'-P
38	1	49	5MC	O4'-C4'-C5'-O5'
1	2	120	PSU	C3'-C4'-C5'-O5'
1	2	766	PSU	C3'-C4'-C5'-O5'
1	2	766	PSU	O4'-C4'-C5'-O5'
1	2	1637	5MC	O4'-C4'-C5'-O5'
38	1	9	1MG	C3'-C4'-C5'-O5'
38	1	47	H2U	C3'-C4'-C5'-O5'
1	2	1573	7MG	O4'-C4'-C5'-O5'
1	2	1573	7MG	C3'-C4'-C5'-O5'
1	2	1780	MA6	C3'-C4'-C5'-O5'
38	1	49	5MC	C3'-C4'-C5'-O5'
1	2	1190	B8N	C3'-C4'-C5'-O5'
1	2	465	PSU	O4'-C4'-C5'-O5'
1	2	1637	5MC	C3'-C4'-C5'-O5'
38	1	10	2MG	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
1	2	998	PSU	O4'-C4'-C5'-O5'
38	1	37	T6A	N11-C12-C14-C15
38	1	64	RIA	C4A-C5A-O5A-P
1	2	998	PSU	C3'-C4'-C5'-O5'
38	1	26	M2G	C3'-C4'-C5'-O5'
38	1	46	7MG	C3'-C4'-C5'-O5'
38	1	48	5MC	O4'-C4'-C5'-O5'
38	1	47	H2U	C4'-C5'-O5'-P
1	2	1780	MA6	C4'-C5'-O5'-P
38	1	9	1MG	C4'-C5'-O5'-P
38	1	46	7MG	C4'-C5'-O5'-P
1	2	998	PSU	O4'-C1'-C5-C4
1	2	1190	B8N	O4'-C1'-C5-C4
1	2	1289	PSU	C3'-C4'-C5'-O5'
38	1	64	RIA	C4'-C5'-O5'-P'
1	2	1190	B8N	N34-C33-C34-O36
38	1	37	T6A	C13-C12-N11-C10
38	1	37	T6A	N11-C12-C13-ODA
1	2	1570	2MG	C2'-C1'-N9-C8
1	2	465	PSU	C3'-C4'-C5'-O5'
38	1	10	2MG	C3'-C4'-C5'-O5'
1	2	998	PSU	O4'-C1'-C5-C6
38	1	47	H2U	C2'-C1'-N1-C6
1	2	1289	PSU	O4'-C4'-C5'-O5'
1	2	1570	2MG	C2'-C1'-N9-C4
38	1	16	H2U	C2'-C1'-N1-C6
38	1	48	5MC	C3'-C4'-C5'-O5'
38	1	47	H2U	C2'-C1'-N1-C2
38	1	49	5MC	C4'-C5'-O5'-P
1	2	1190	B8N	N34-C33-C34-O35

There are no ring outliers.

17 monomers are involved in 35 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	2	1289	PSU	3	0
38	1	64	RIA	2	0
1	2	1006	5MC	2	0
1	2	998	PSU	2	0
38	1	10	2MG	2	0
38	1	58	1MA	2	0
38	1	9	1MG	4	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
38	1	47	H2U	2	0
38	1	49	5MC	1	0
1	2	120	PSU	1	0
1	2	1426	2MG	2	0
38	1	37	T6A	2	0
38	1	26	M2G	2	0
38	1	16	H2U	4	0
1	2	1190	B8N	2	0
1	2	1573	7MG	2	0
38	1	46	7MG	2	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	601	-	32,34,34	3.19	12 (37%)	49,54,54	1.64	9 (18%)
47	MET	k	603	-	6,7,8	0.50	0	2,7,9	0.45	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	601	-	-	3/19/38/38	0/3/3/3
47	MET	k	603	-	-	1/5/6/8	-

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
46	k	601	GCP	O4'-C1'	8.62	1.61	1.42
46	k	601	GCP	C2'-C1'	-7.29	1.30	1.53
46	k	601	GCP	O4'-C4'	-6.24	1.31	1.45
46	k	601	GCP	PB-O3A	6.20	1.65	1.58
46	k	601	GCP	PA-O3A	5.45	1.65	1.59
46	k	601	GCP	C2-N2	4.93	1.45	1.34
46	k	601	GCP	C6-N1	-3.20	1.32	1.38
46	k	601	GCP	O2'-C2'	2.85	1.50	1.43
46	k	601	GCP	O3'-C3'	-2.74	1.36	1.43
46	k	601	GCP	O6-C6	-2.46	1.18	1.23
46	k	601	GCP	C5-N7	-2.26	1.34	1.39
46	k	601	GCP	PB-O2B	-2.07	1.51	1.56

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	k	601	GCP	C5-C4-N3	-5.25	120.04	128.39
46	k	601	GCP	C2-N3-C4	4.47	120.01	112.30
46	k	601	GCP	N9-C8-N7	-2.96	107.91	113.40
46	k	601	GCP	N9-C4-N3	2.90	131.75	125.95
46	k	601	GCP	C2-N1-C6	-2.76	120.10	125.11
46	k	601	GCP	C5-C6-N1	2.55	119.75	113.25
46	k	601	GCP	PB-O3A-PA	-2.54	124.06	132.37
46	k	601	GCP	O6-C6-C5	-2.37	120.28	126.53
46	k	601	GCP	C8-N7-C5	2.22	108.21	104.26

There are no chirality outliers.

All (4) torsion outliers are listed below:

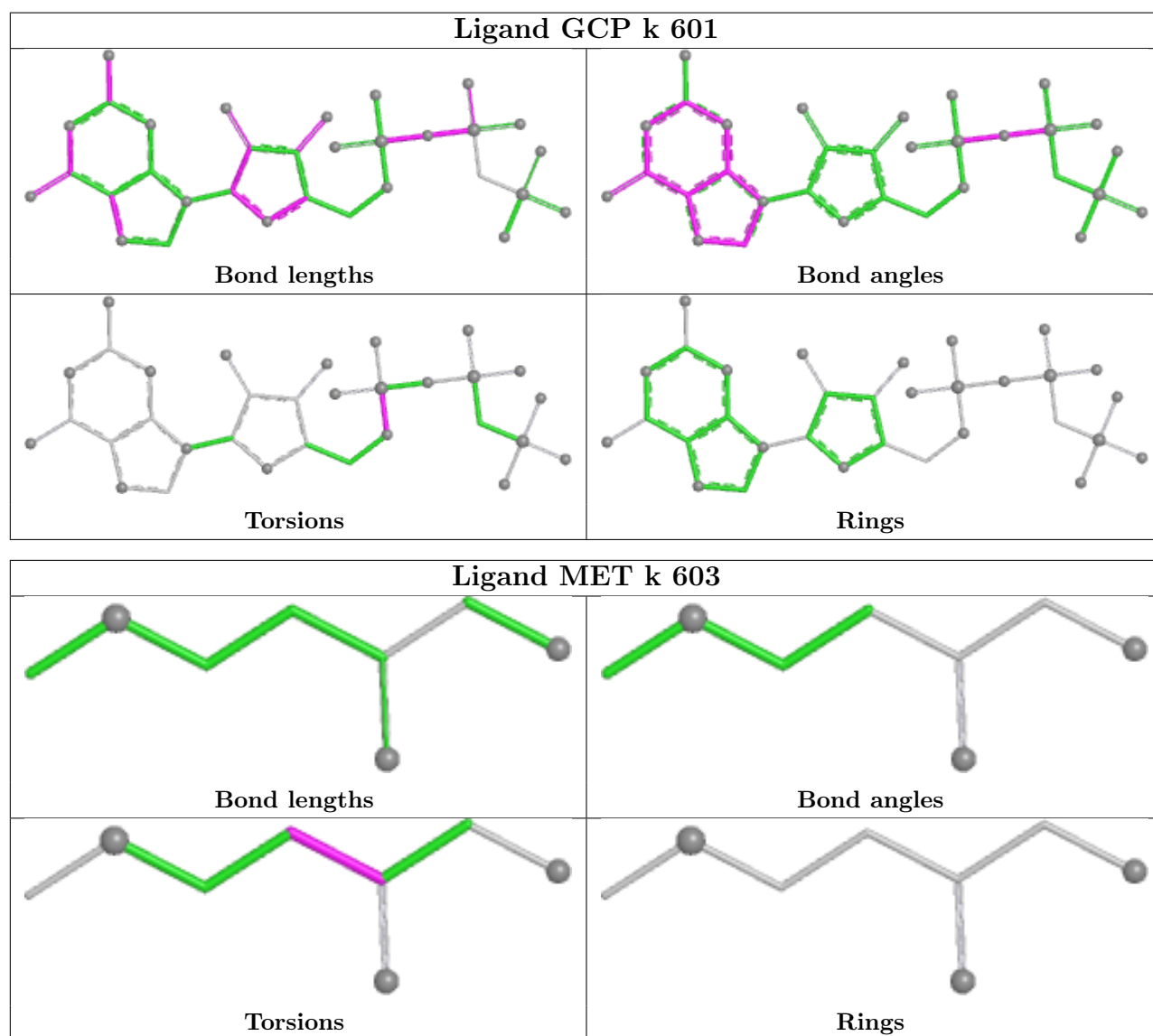
Mol	Chain	Res	Type	Atoms
46	k	601	GCP	C5'-O5'-PA-O2A
47	k	603	MET	C-CA-CB-CG
46	k	601	GCP	C5'-O5'-PA-O3A
46	k	601	GCP	C5'-O5'-PA-O1A

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
46	k	601	GCP	1	0

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



5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues

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	9.12
1	1	63:G	O3'	64:RIA	P	4.29
1	1	16:H2U	O3'	18:G	P	4.10

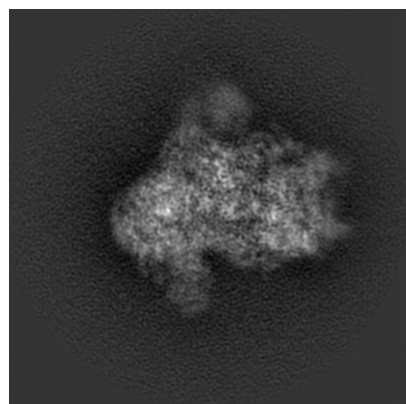
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-19802. These allow visual inspection of the internal detail of the map and identification of artifacts.

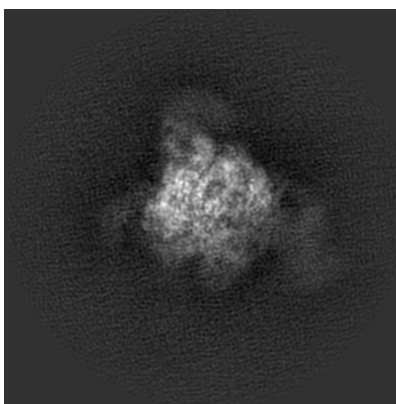
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

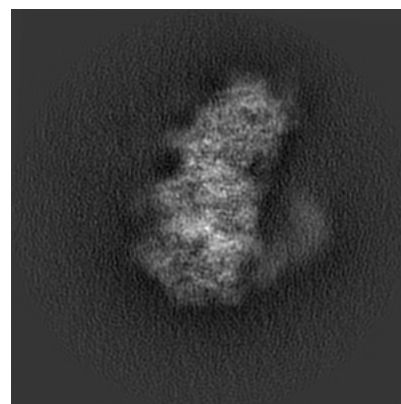
6.1.1 Primary map



X

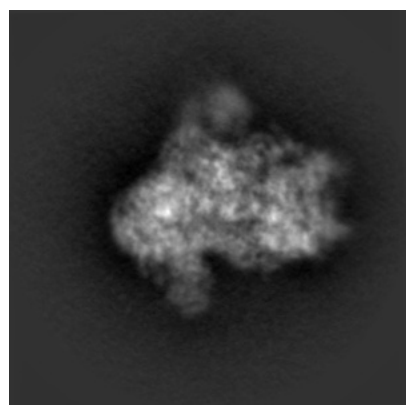


Y

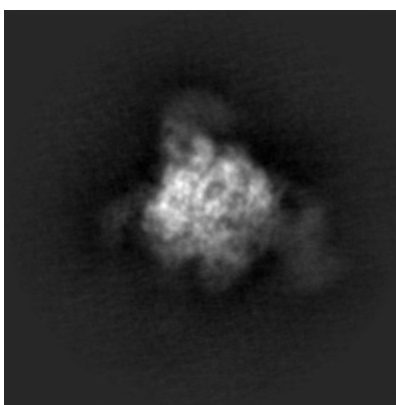


Z

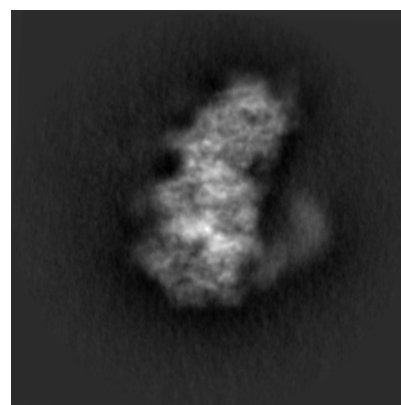
6.1.2 Raw map



X



Y

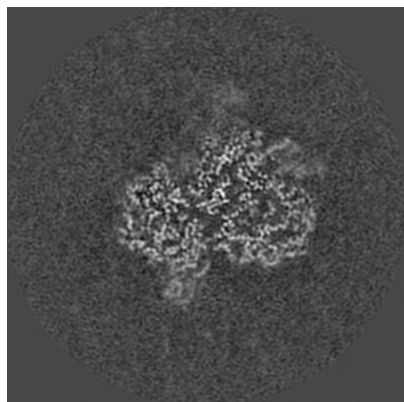


Z

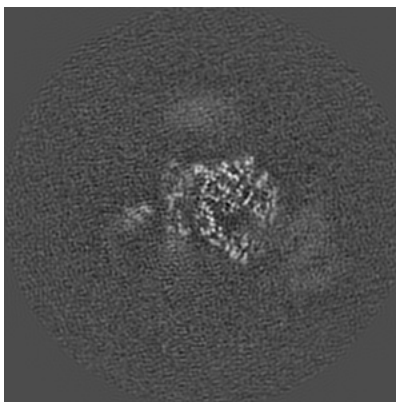
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

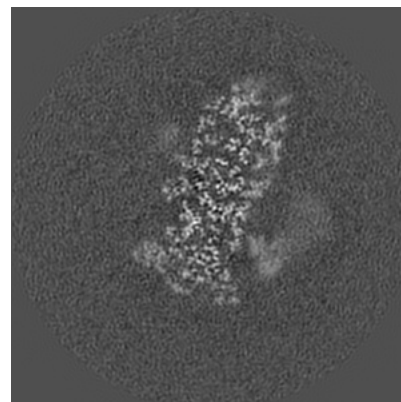
6.2.1 Primary map



X Index: 150

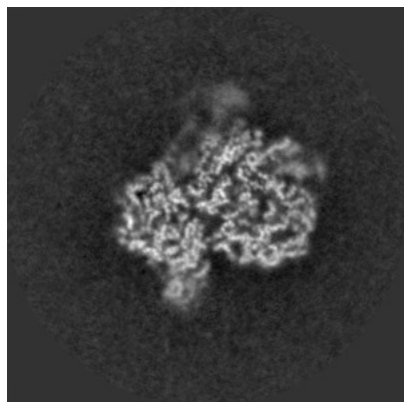


Y Index: 150

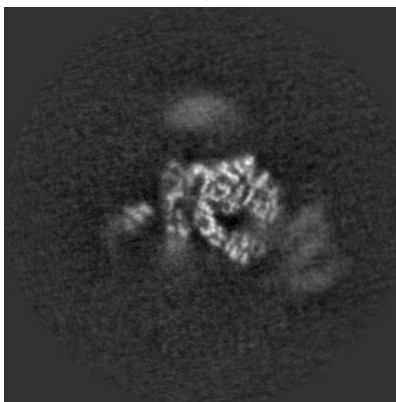


Z Index: 150

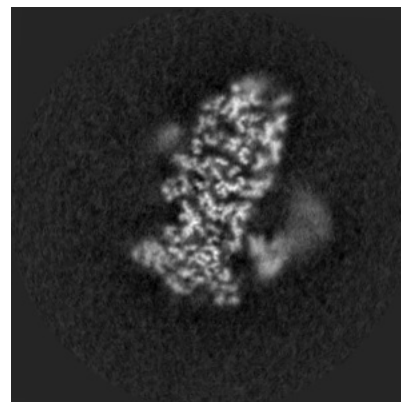
6.2.2 Raw map



X Index: 150



Y Index: 150

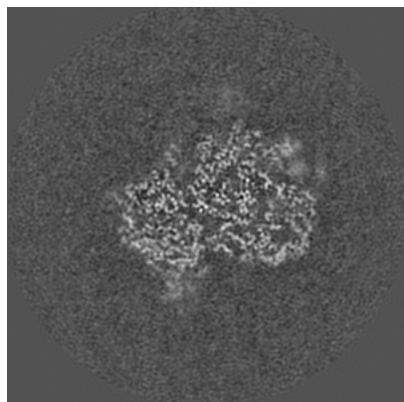


Z Index: 150

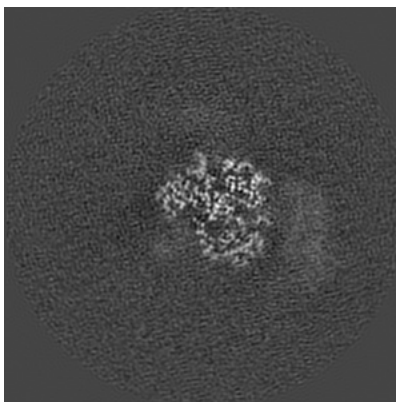
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

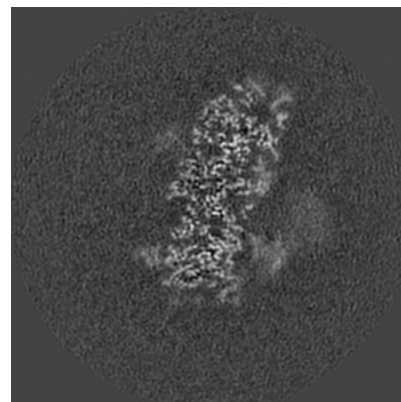
6.3.1 Primary map



X Index: 152

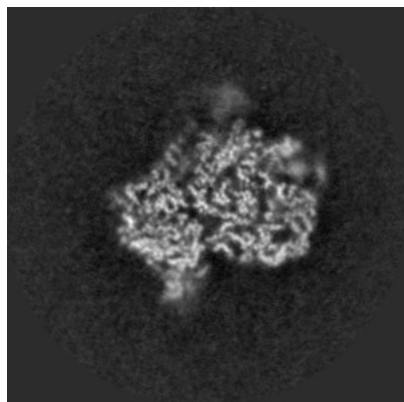


Y Index: 161

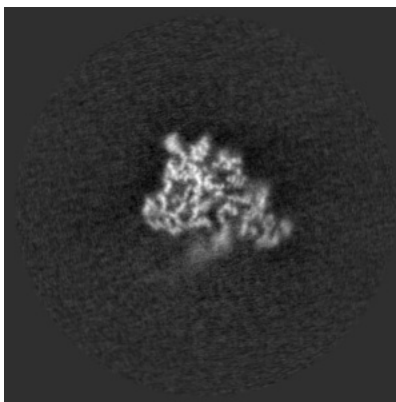


Z Index: 147

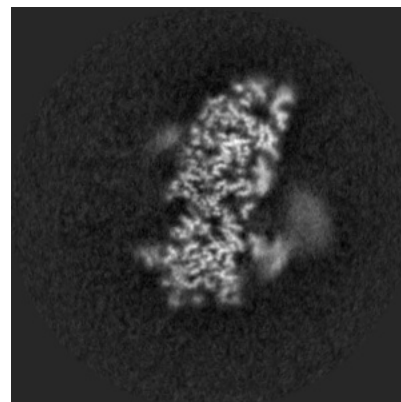
6.3.2 Raw map



X Index: 152



Y Index: 198

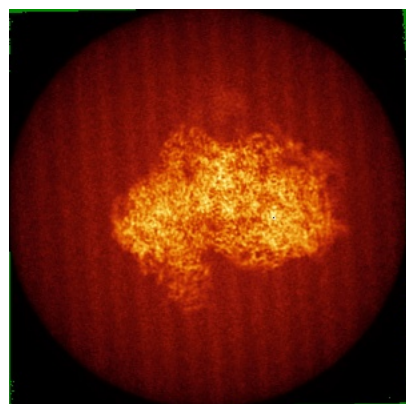


Z Index: 146

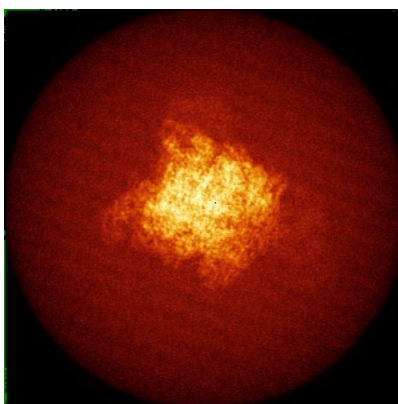
The images above show the largest variance slices of the map in three orthogonal directions.

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

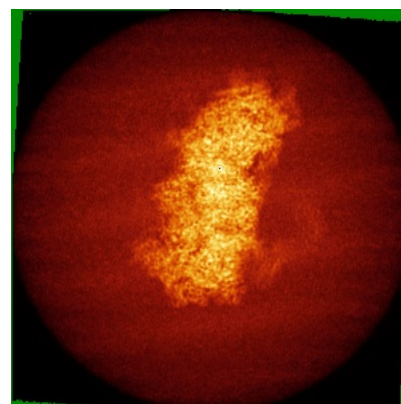
6.4.1 Primary map



X

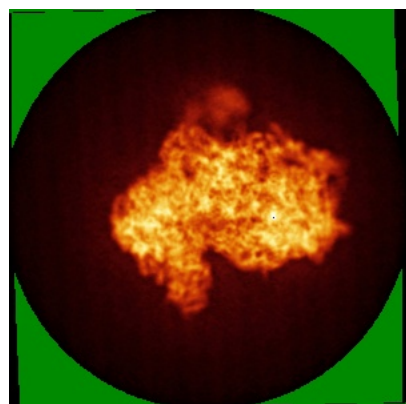


Y

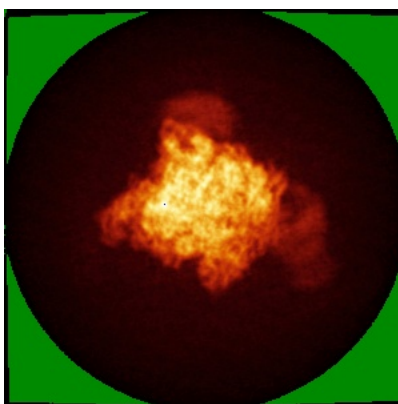


Z

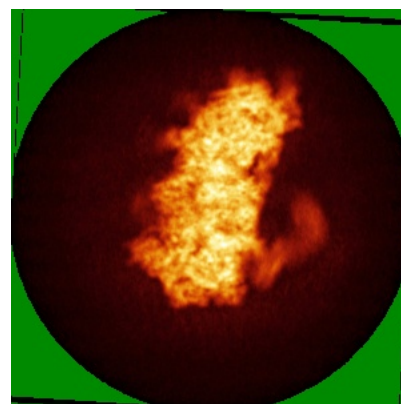
6.4.2 Raw map



X



Y

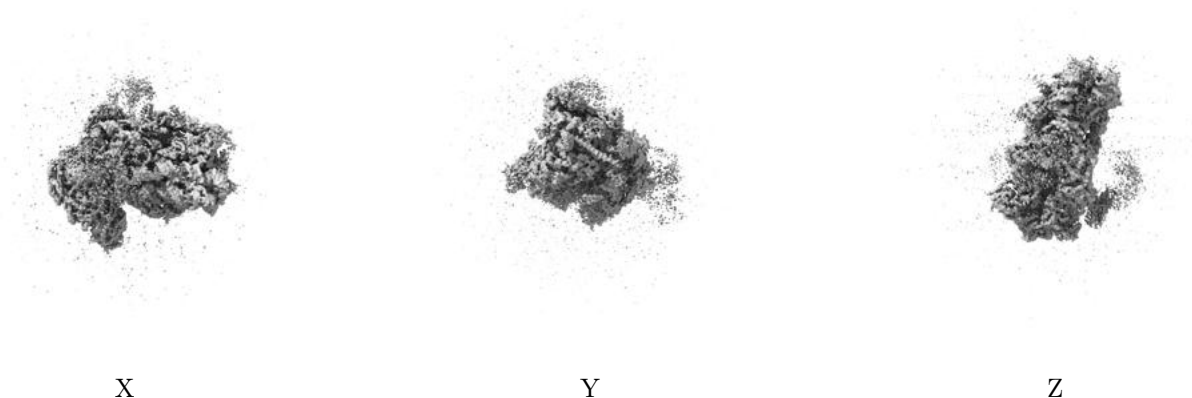


Z

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.

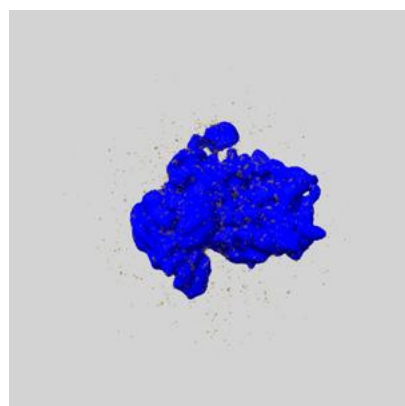
6.6 Mask visualisation [i](#)

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

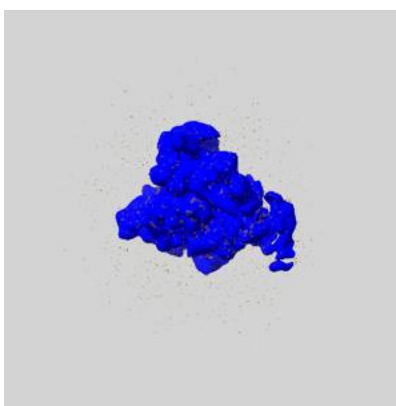
A mask typically either:

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

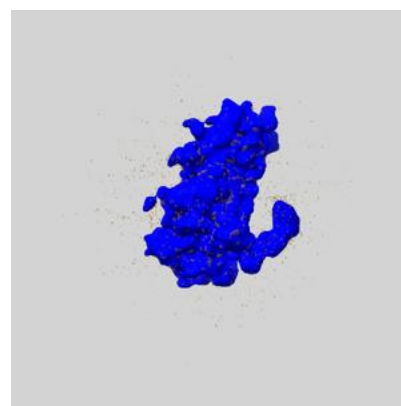
6.6.1 emd_19802_msk_1.map [i](#)



X



Y

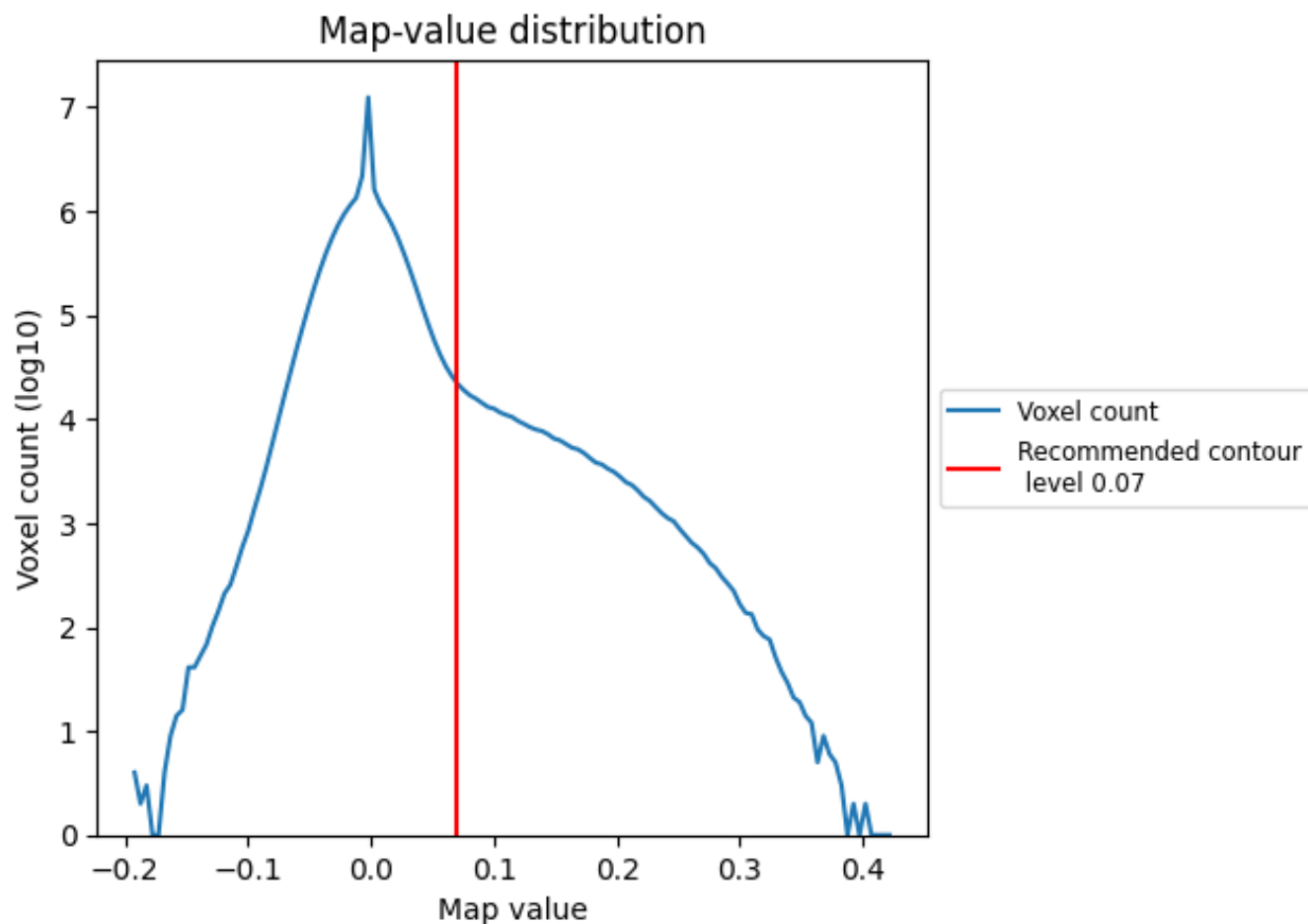


Z

7 Map analysis [i](#)

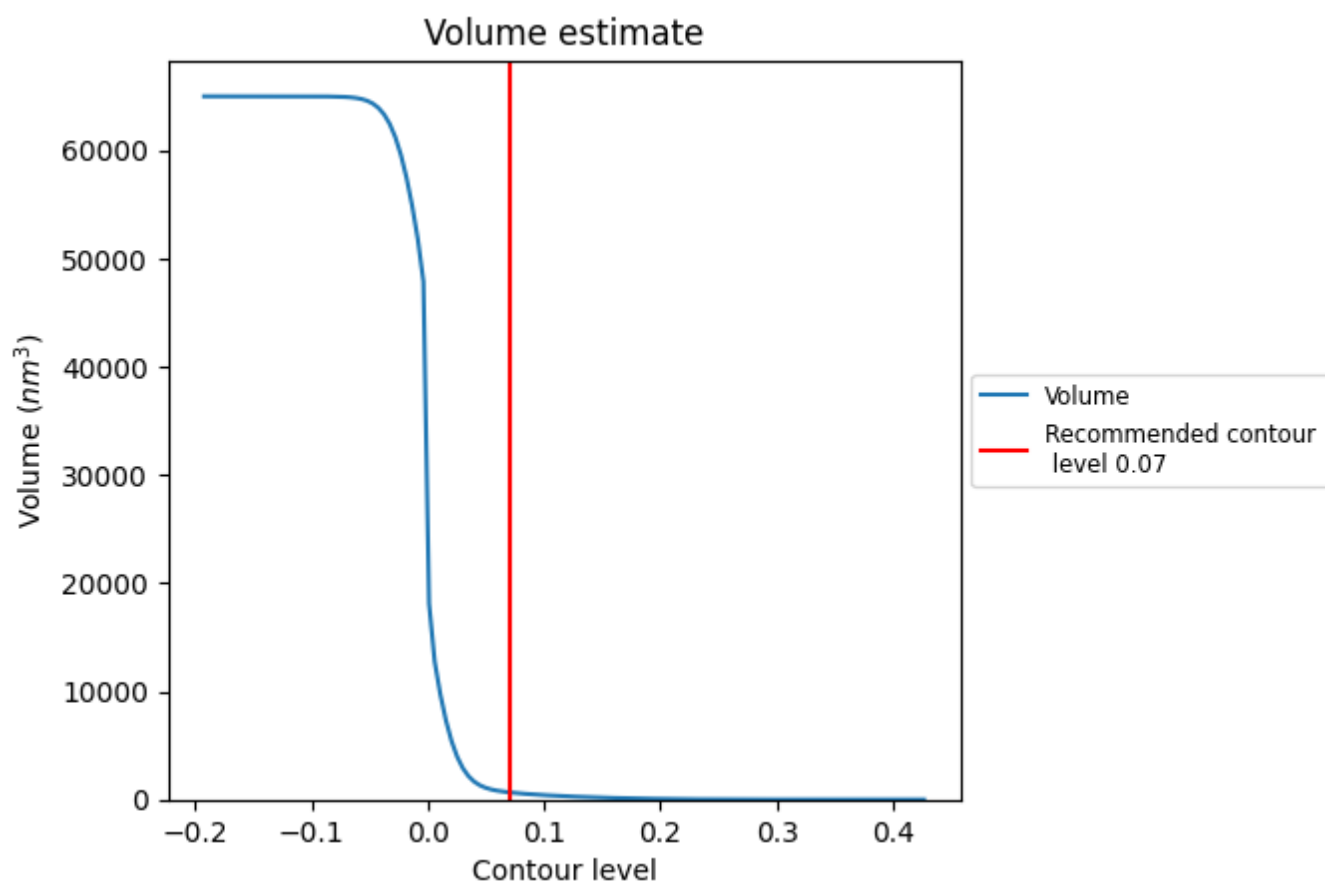
This section contains the results of statistical analysis of the map.

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.

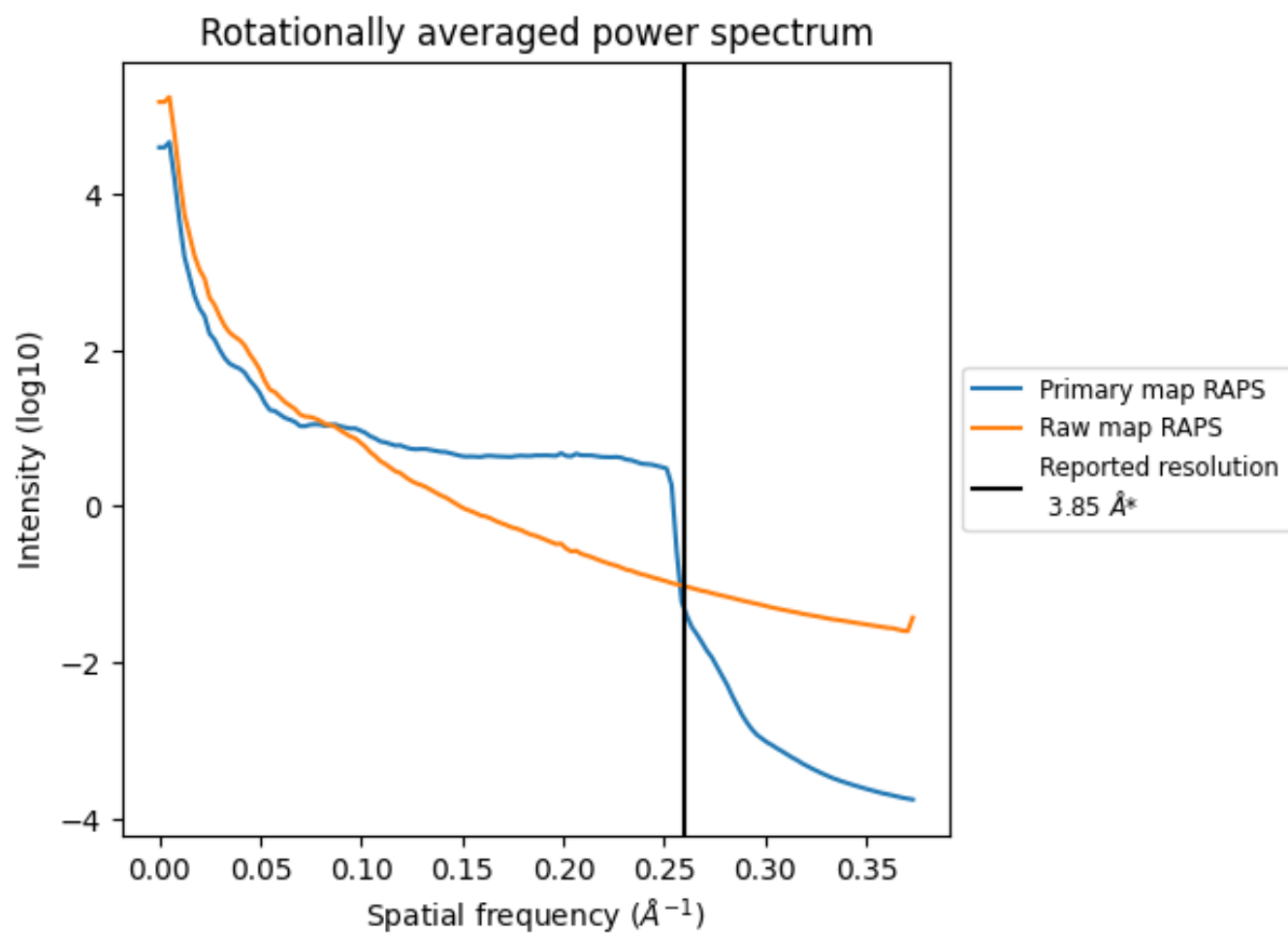
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 666 nm³; this corresponds to an approximate mass of 601 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 ⓘ

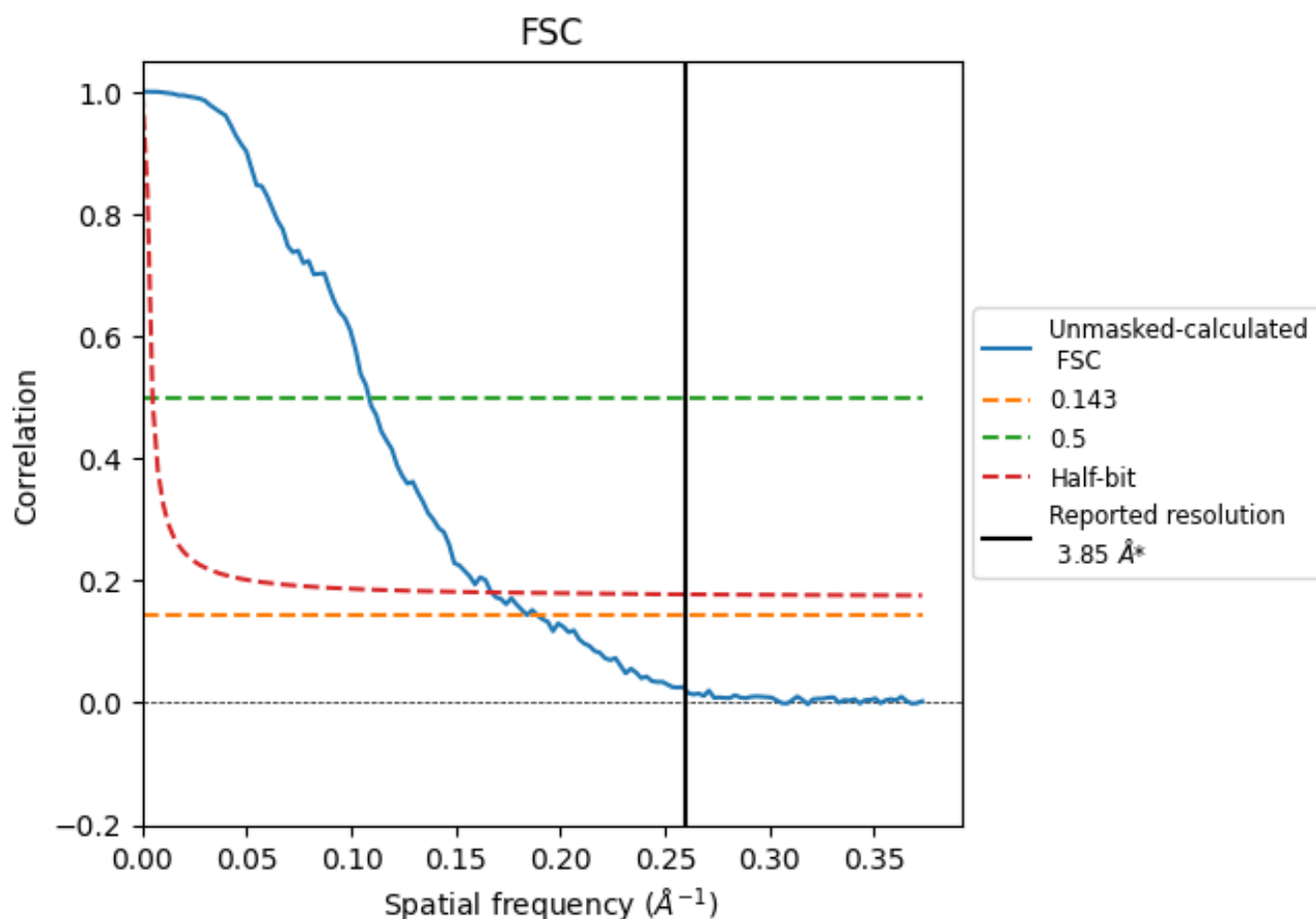


*Reported resolution corresponds to spatial frequency of 0.260 Å⁻¹

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 0.260 Å⁻¹

8.2 Resolution estimates [i](#)

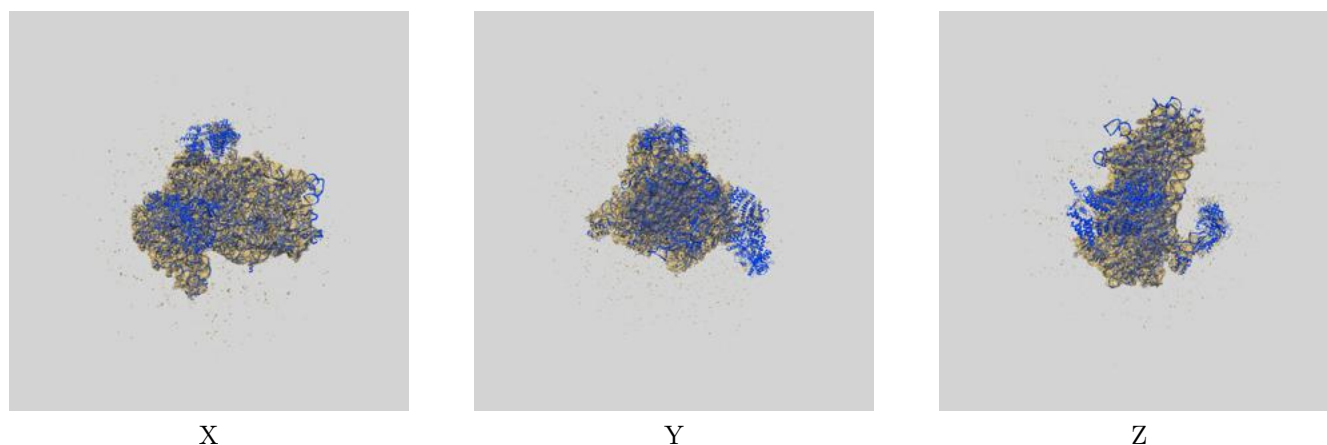
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.85	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	5.29	9.23	5.98

*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 5.29 differs from the reported value 3.85 by more than 10 %

9 Map-model fit [i](#)

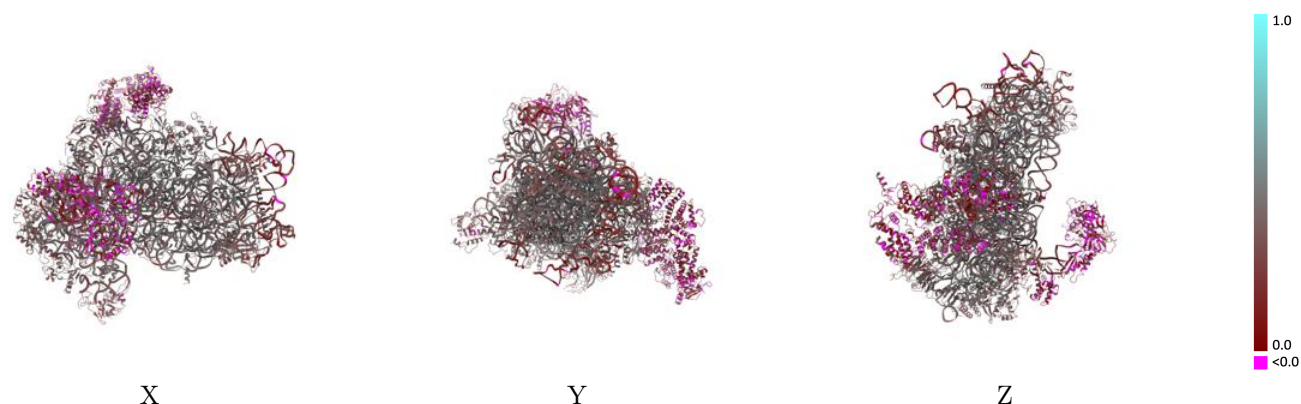
This section contains information regarding the fit between EMDB map EMD-19802 and PDB model 8S8E. Per-residue inclusion information can be found in [section 3](#) on [page 14](#).

9.1 Map-model overlay [i](#)



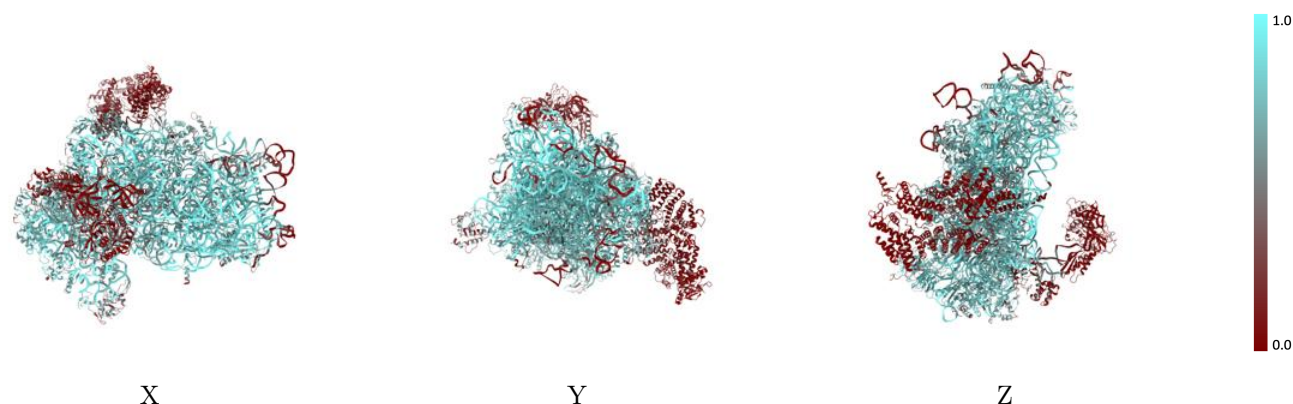
The images above show the 3D surface view of the map at the recommended contour level 0.07 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



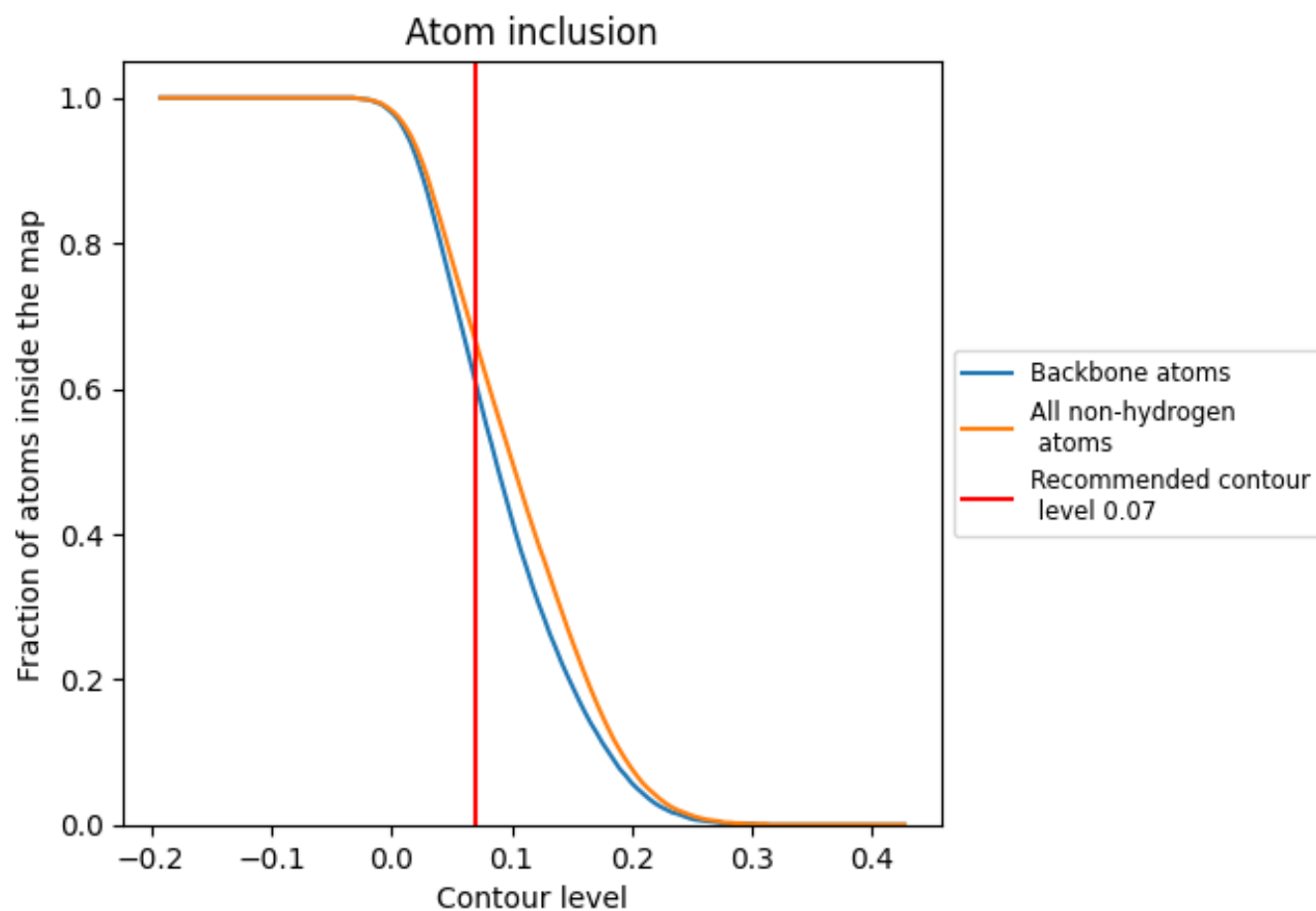
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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, 61% of all backbone atoms, 66% 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	 0.6640	 0.3470
1	 0.5800	 0.2250
2	 0.8660	 0.3830
3	 0.3360	 0.2790
A	 0.7460	 0.3960
B	 0.6940	 0.4000
C	 0.7670	 0.4320
D	 0.7040	 0.4140
E	 0.7840	 0.4330
F	 0.7250	 0.3990
G	 0.7440	 0.3630
H	 0.6330	 0.3740
I	 0.7390	 0.3990
J	 0.7720	 0.4190
K	 0.7500	 0.3760
L	 0.7110	 0.4220
M	 0.3650	 0.2660
N	 0.7750	 0.4140
O	 0.7660	 0.4020
P	 0.7680	 0.3720
Q	 0.8010	 0.4170
R	 0.6540	 0.3790
S	 0.7550	 0.3790
T	 0.7980	 0.3850
U	 0.6610	 0.3820
V	 0.7980	 0.4090
W	 0.7910	 0.4380
X	 0.7710	 0.4530
Y	 0.7920	 0.3990
Z	 0.5530	 0.3290
a	 0.7740	 0.4550
b	 0.5810	 0.4100
c	 0.7040	 0.4260
d	 0.8260	 0.4330
e	 0.6270	 0.3880



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Chain	Atom inclusion	Q-score
f	 0.4990	 0.2860
g	 0.7090	 0.3660
h	 0.1560	 0.2870
i	 0.3120	 0.3800
j	 0.1340	 0.1730
k	 0.0220	 0.0870
l	 0.0110	 0.0520
o	 0.0210	 0.1460
p	 0.0280	 0.1400