



Full wwPDB EM Validation Report ⓘ

Mar 8, 2026 – 09:59 PM UTC

PDB ID : 7PIC / pdb_00007pic
EMDB ID : EMD-13436
Title : 70S ribosome with P/E-site tRNA in spectinomycin-treated *Mycoplasma pneumoniae* cells
Authors : Xue, L.; Lenz, S.; Rappsilber, J.; Mahamid, J.
Deposited on : 2021-08-19
Resolution : 9.10 Å (reported)
Based on initial models : 7OOD, 4V7C, 7OOC

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
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

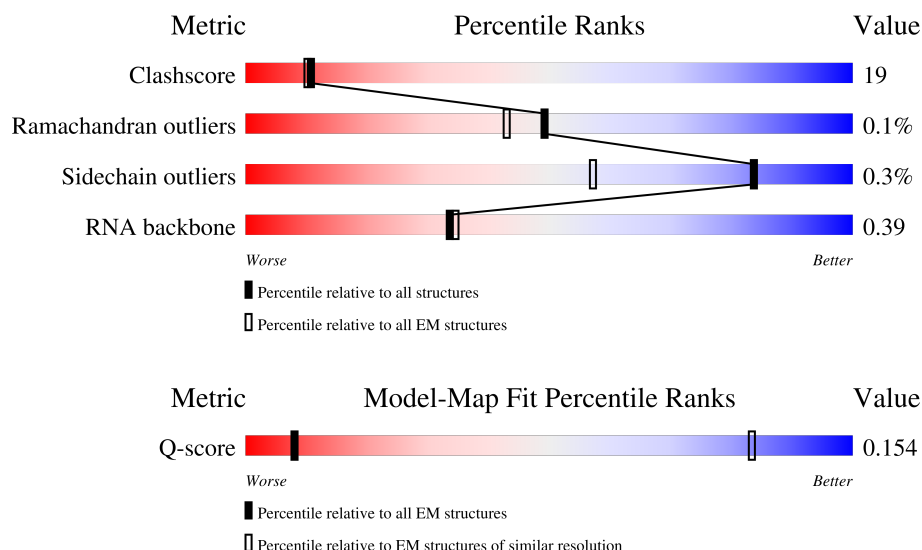
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 9.10 Å.

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



Metric	Whole archive (#Entries)	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	244 (8.60 - 9.60)

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	0	48	
2	1	59	
3	2	37	

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Mol	Chain	Length	Quality of chain
4	A	294	
5	B	273	
6	C	205	
7	D	219	
8	E	215	
9	F	155	
10	G	142	
11	H	132	
12	I	108	
13	J	121	
14	K	139	
15	L	124	
16	M	61	
17	N	86	
18	O	94	
19	P	85	
20	Q	104	
21	R	87	
22	S	87	
23	T	60	
24	a	287	
25	b	287	
26	c	212	
27	d	180	
28	e	184	

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Mol	Chain	Length	Quality of chain
29	f	149	
30	g	161	
31	h	137	
32	i	146	
33	j	122	
34	k	151	
35	l	139	
36	m	124	
37	n	116	
38	o	119	
39	p	127	
40	q	100	
41	r	159	
42	s	237	
43	t	111	
44	u	104	
45	v	65	
46	w	111	
47	x	97	
48	y	57	
49	z	53	
50	3	2907	
51	4	108	
52	5	1520	
53	8	76	

2 Entry composition

There are 53 unique types of molecules in this entry. The entry contains 144500 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 protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	0	47	Total	C	N	O	S	0	0
			380	236	81	61	2		

- Molecule 2 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	1	59	Total	C	N	O	S	0	0
			477	300	99	77	1		

- Molecule 3 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	2	37	Total	C	N	O	S	0	0
			304	189	65	46	4		

- Molecule 4 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	A	240	Total	C	N	O	S	0	0
			1921	1226	334	352	9		

- Molecule 5 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	B	215	Total	C	N	O	S	0	0
			1698	1073	313	307	5		

- Molecule 6 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	C	203	Total	C	N	O	S	0	0
			1660	1051	314	290	5		

- Molecule 7 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	D	153	Total	C	N	O	S	0	0
			1173	742	226	202	3		

- Molecule 8 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	E	167	Total	C	N	O	S	0	0
			1362	857	240	263	2		

- Molecule 9 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	F	154	Total	C	N	O	S	0	0
			1246	785	239	216	6		

- Molecule 10 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	G	141	Total	C	N	O	S	0	0
			1110	723	193	192	2		

- Molecule 11 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	H	128	Total	C	N	O	S	0	0
			1028	655	191	181	1		

- Molecule 12 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	I	101	Total	C	N	O	S	0	0
			809	523	142	143	1		

- Molecule 13 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	J	114	Total	C	N	O	S	0	0
			829	514	153	156	6		

- Molecule 14 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	K	136	Total	C	N	O	S	0	0
			1076	680	213	181	2		

- Molecule 15 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	L	118	Total	C	N	O		0	0
			951	594	191	166			

- Molecule 16 is a protein called 30S ribosomal protein S14 type Z.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	M	60	Total	C	N	O	S	0	0
			474	302	96	72	4		

- Molecule 17 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	N	83	Total	C	N	O		0	0
			673	428	125	120			

- Molecule 18 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	O	80	Total	C	N	O	S	0	0
			646	414	119	111	2		

- Molecule 19 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	P	83	Total	C	N	O		0	0
			675	425	135	115			

- Molecule 20 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	Q	65	Total	C	N	O	S	0	0
			535	342	103	86	4		

- Molecule 21 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	R	84	Total	C	N	O	S	0	0
			682	435	127	118	2		

- Molecule 22 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	S	77	Total	C	N	O	S	0	0
			629	383	135	111			

- Molecule 23 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	T	53	Total	C	N	O	S	0	0
			471	295	103	72	1		

- Molecule 24 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	a	285	Total	C	N	O	S	0	0
			2225	1385	437	397	6		

- Molecule 25 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	b	229	Total	C	N	O	S	0	0
			1762	1119	318	318	7		

- Molecule 26 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	c	210	Total	C	N	O	S	0	0
			1644	1047	297	297	3		

- Molecule 27 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	d	175	Total	C	N	O	S	0	0
			1388	893	245	246	4		

- Molecule 28 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	e	176	Total	C	N	O	0	0
			1396	899	247	250		

- Molecule 29 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms				AltConf	Trace
29	f	145	Total	C	N	O	S	0
			1182	763	206	210	3	0

- Molecule 30 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms				AltConf	Trace
30	g	123	Total	C	N	O	S	0
			936	599	160	174	3	0

- Molecule 31 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms				AltConf	Trace
31	h	128	Total	C	N	O	S	0
			959	616	160	177	6	0

- Molecule 32 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms				AltConf	Trace
32	i	144	Total	C	N	O	S	0
			1164	737	213	209	5	0

- Molecule 33 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms				AltConf	Trace
33	j	122	Total	C	N	O	S	0
			944	595	178	167	4	0

- Molecule 34 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms				AltConf	Trace
34	k	148	Total	C	N	O	0	0
			1153	731	226	196		

- Molecule 35 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	l	136	Total	C	N	O	S	0	0
			1079	694	196	182	7		

- Molecule 36 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	m	119	Total	C	N	O	S	0	0
			958	609	175	171	3		

- Molecule 37 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	n	112	Total	C	N	O	S	0	0
			889	557	175	155	2		

- Molecule 38 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	o	115	Total	C	N	O	S	0	0
			938	592	180	165	1		

- Molecule 39 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	p	114	Total	C	N	O	S	0	0
			947	603	188	154	2		

- Molecule 40 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	q	99	Total	C	N	O	S	0	0
			811	525	148	134	4		

- Molecule 41 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	r	139	Total	C	N	O	S	0	0
			1068	663	207	191	7		

- Molecule 42 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	s	92	Total	C	N	O	S	0	0
			720	475	122	122	1		

- Molecule 43 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	t	111	Total	C	N	O	S	0	0
			872	550	166	153	3		

- Molecule 44 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	u	86	Total	C	N	O	S	0	0
			657	409	130	117	1		

- Molecule 45 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	v	63	Total	C	N	O	S	0	0
			513	317	108	87	1		

- Molecule 46 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms				AltConf	Trace
46	w	100	Total	C	N	O	0	0
			818	517	153	148		

- Molecule 47 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	x	44	Total	C	N	O	S	0	0
			344	221	55	64	4		

- Molecule 48 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	y	56	Total	C	N	O	S	0	0
			452	274	98	75	5		

- Molecule 49 is a protein called 50S ribosomal protein L33 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	z	50	Total	C	N	O	S	0	0
			408	255	81	68	4		

- Molecule 50 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	3	2878	Total	C	N	O	P	0	0
			61664	27558	11236	19995	2875		

- Molecule 51 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	4	105	Total	C	N	O	P	0	0
			2239	1003	409	724	103		

- Molecule 52 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	5	1493	Total	C	N	O	P	0	0
			31943	14279	5792	10382	1490		

- Molecule 53 is a RNA chain called tRNA-Phe.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	8	76	Total	C	N	O	P	0	0
			1618	723	289	531	75		

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.

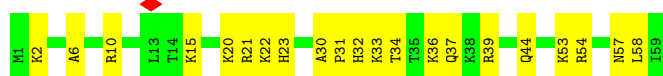
• Molecule 1: 50S ribosomal protein L34

Chain 0: 



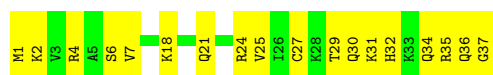
• Molecule 2: 50S ribosomal protein L35

Chain 1: 



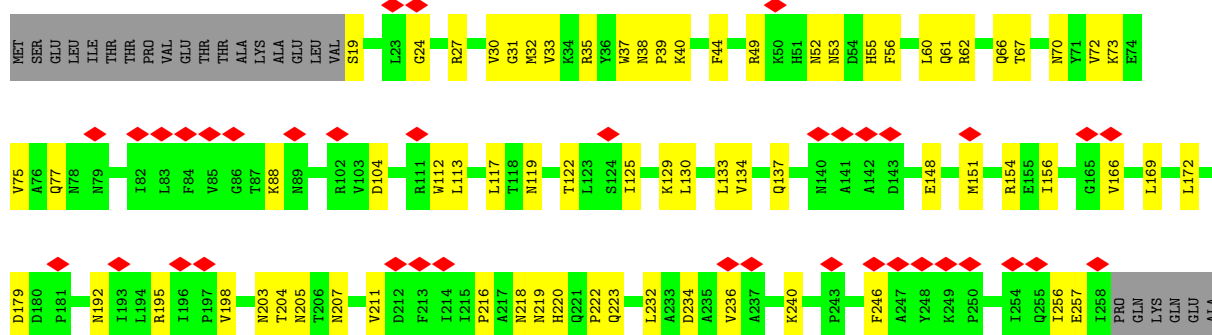
• Molecule 3: 50S ribosomal protein L36

Chain 2: 



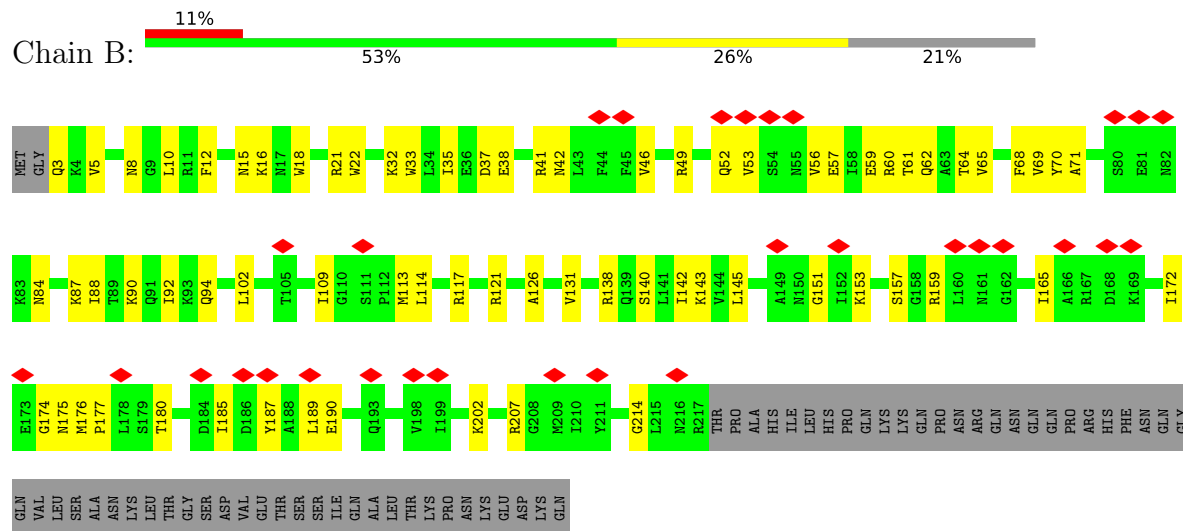
• Molecule 4: 30S ribosomal protein S2

Chain A: 

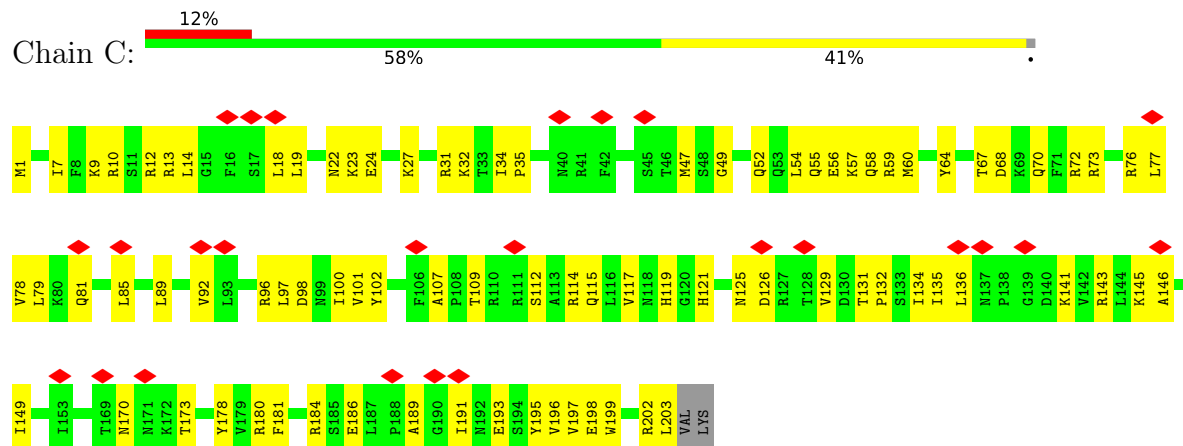


PRO ARG
GLN VAL
VAL ASN
ARG
ALA
ASN
SER
LYS
GLN
TLE
THR
SER
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PRO
GLU
VAL
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ARG
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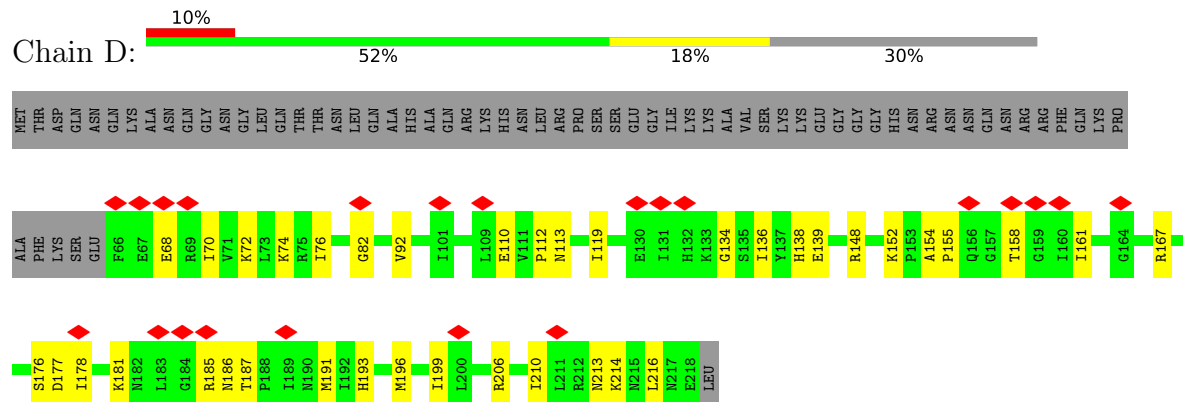
• Molecule 5: 30S ribosomal protein S3



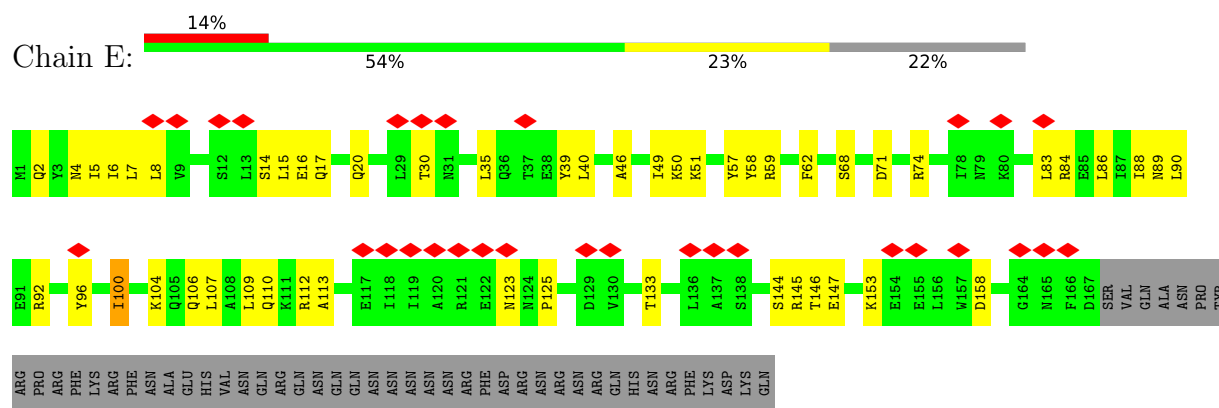
• Molecule 6: 30S ribosomal protein S4



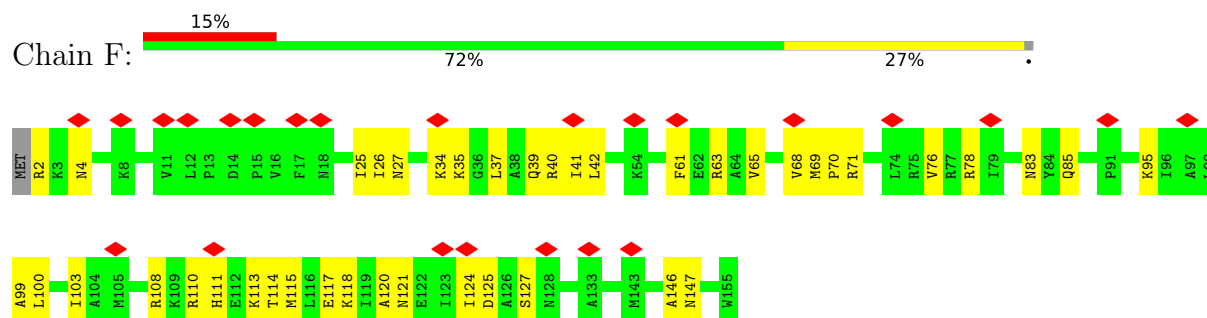
• Molecule 7: 30S ribosomal protein S5



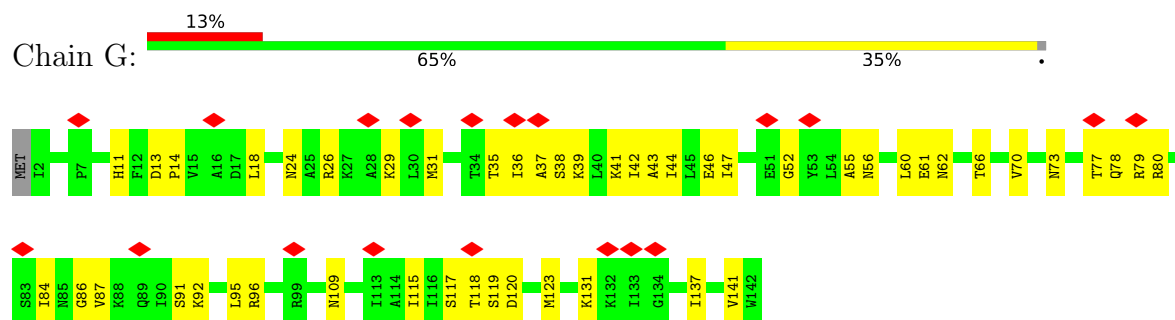
• Molecule 8: 30S ribosomal protein S6



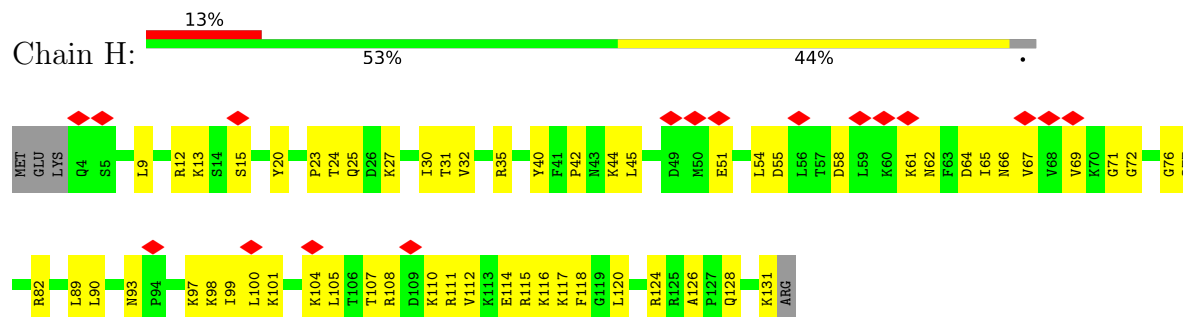
• Molecule 9: 30S ribosomal protein S7



• Molecule 10: 30S ribosomal protein S8

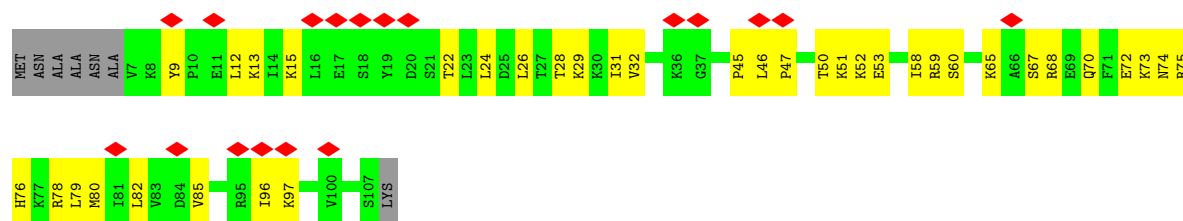


• Molecule 11: 30S ribosomal protein S9

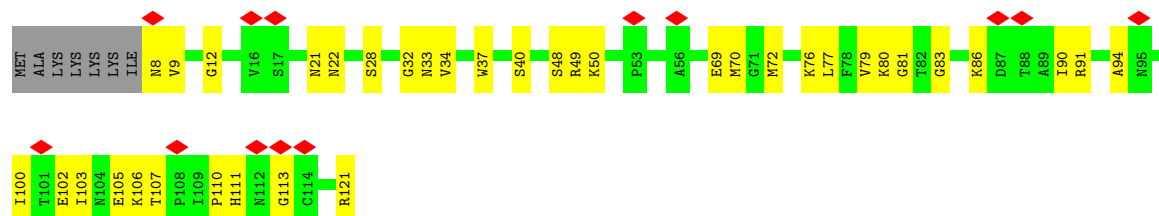


• Molecule 12: 30S ribosomal protein S10

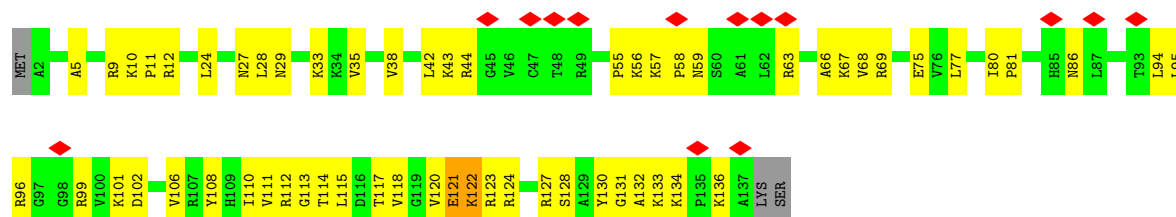




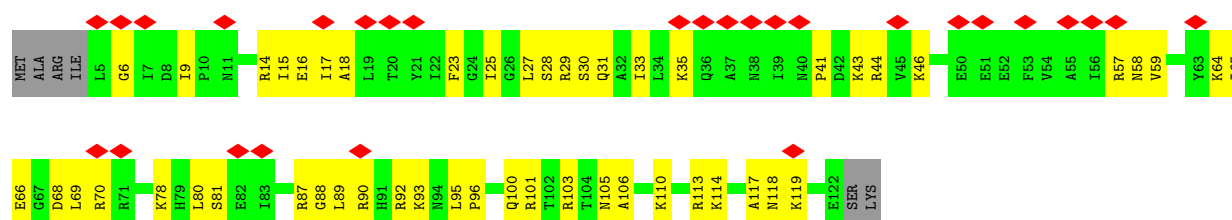
- Molecule 13: 30S ribosomal protein S11



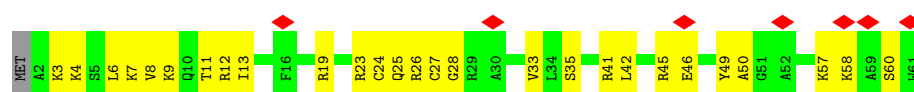
- Molecule 14: 30S ribosomal protein S12



- Molecule 15: 30S ribosomal protein S13



- Molecule 16: 30S ribosomal protein S14 type Z



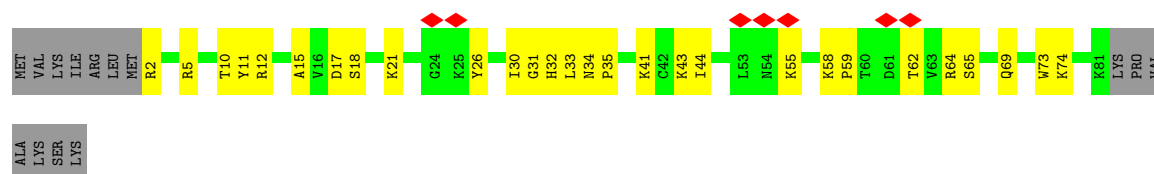
- Molecule 17: 30S ribosomal protein S15

Chain N: 



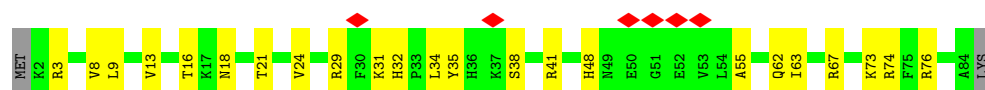
- Molecule 18: 30S ribosomal protein S16

Chain O: 

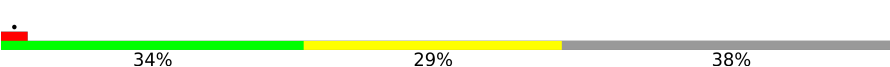


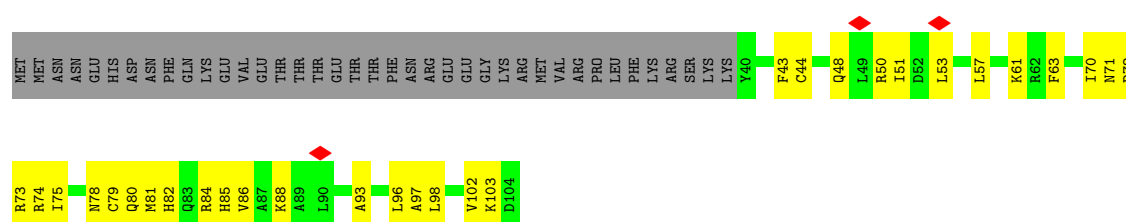
- Molecule 19: 30S ribosomal protein S17

Chain P: 



- Molecule 20: 30S ribosomal protein S18

Chain Q: 



- Molecule 21: 30S ribosomal protein S19

Chain R: 

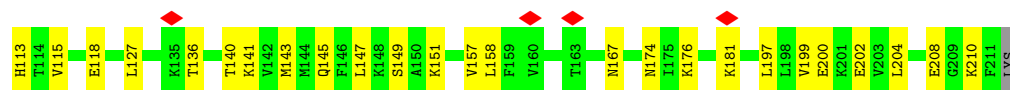


- Molecule 22: 30S ribosomal protein S20

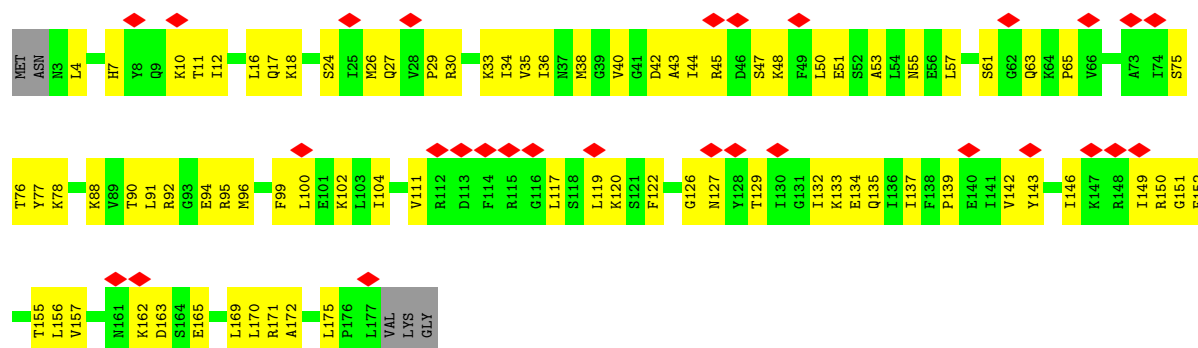
Chain S: 



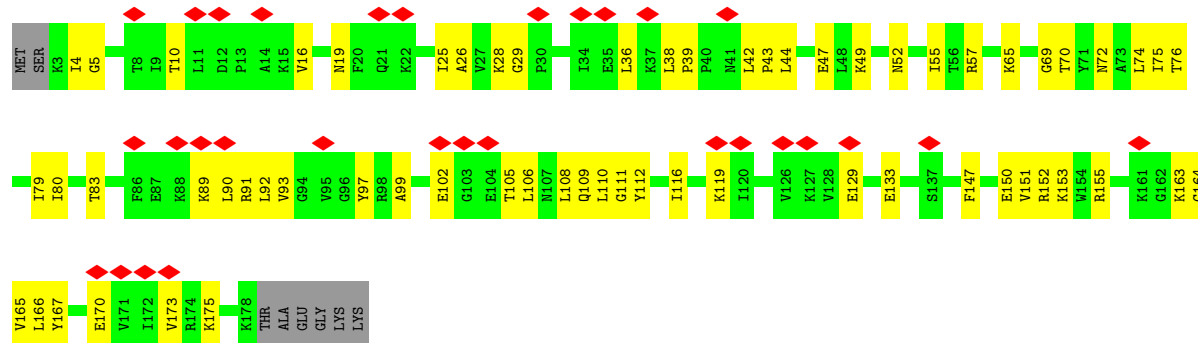
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A2
K3
R4
L5
K6
L7
E14
V18
K19
L20
S21
L22
P22
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K27
E28
L29
K30
L39
S44
K45
R46
Q47
G48
T49
I52
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L101
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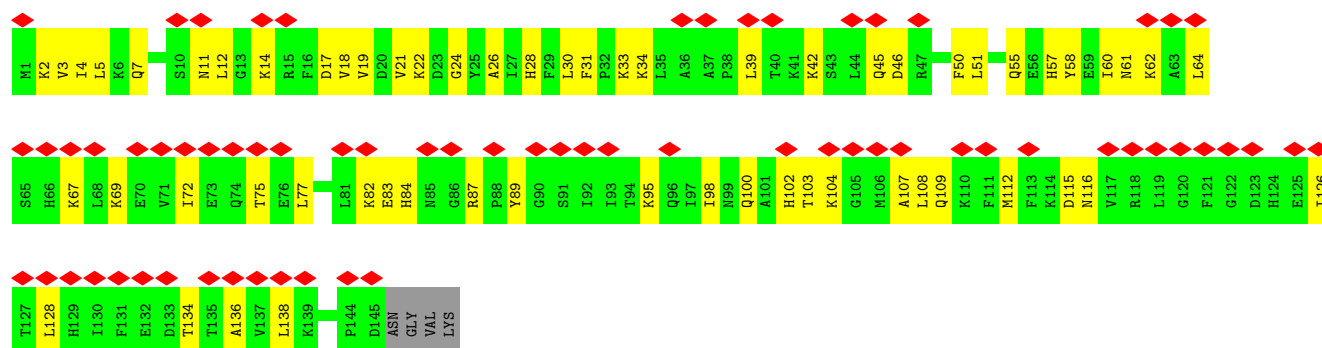
- Molecule 27: 50S ribosomal protein L5



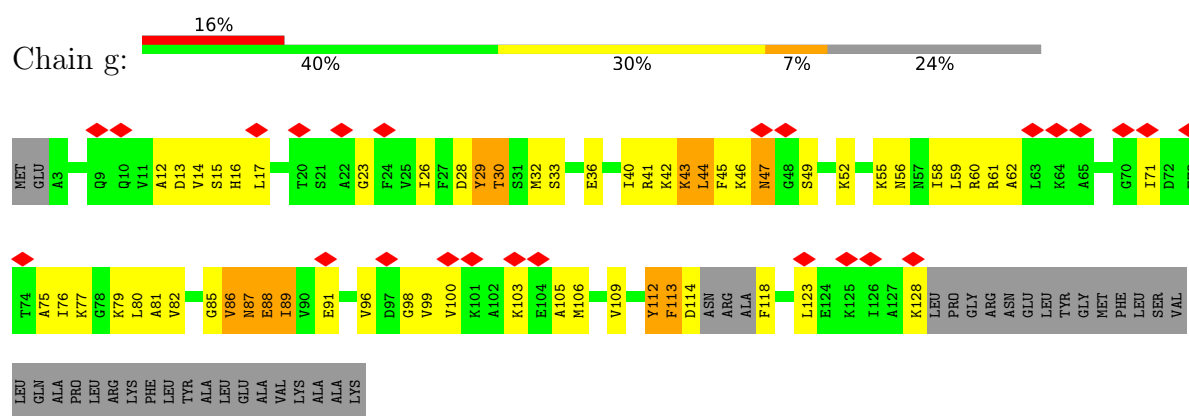
- Molecule 28: 50S ribosomal protein L6



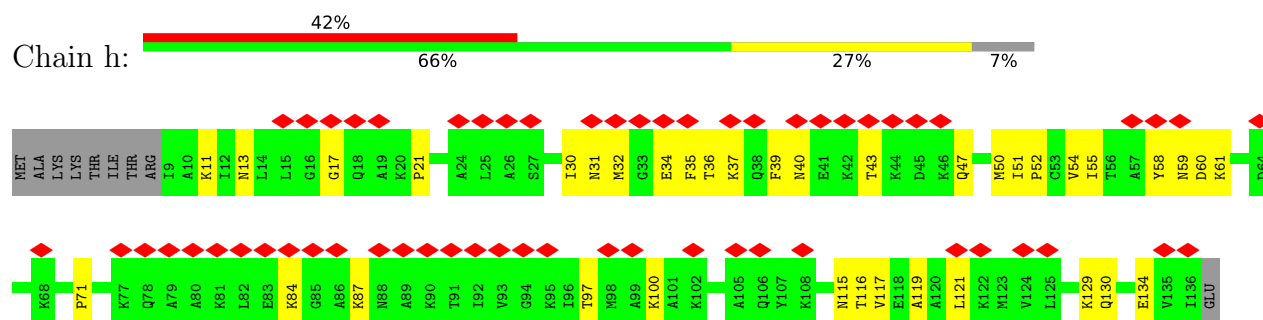
- Molecule 29: 50S ribosomal protein L9



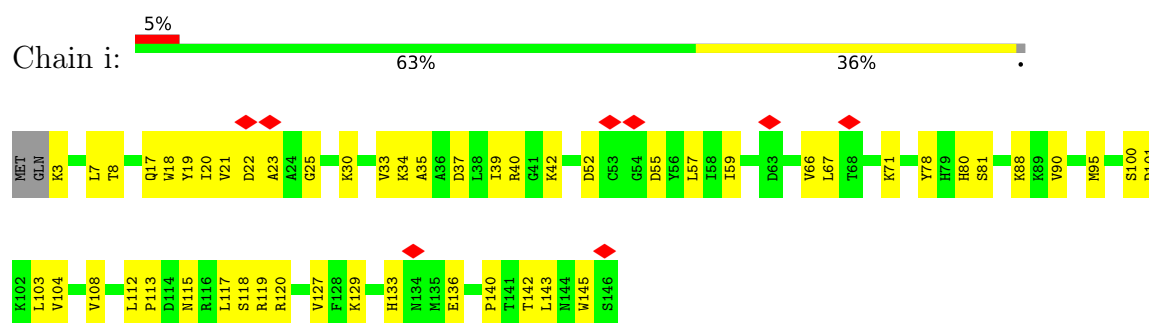
- Molecule 30: 50S ribosomal protein L10



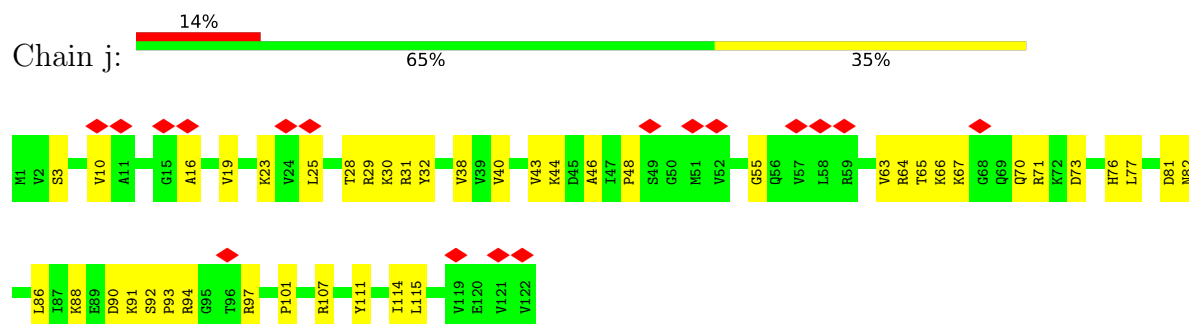
• Molecule 31: 50S ribosomal protein L11



• Molecule 32: 50S ribosomal protein L13

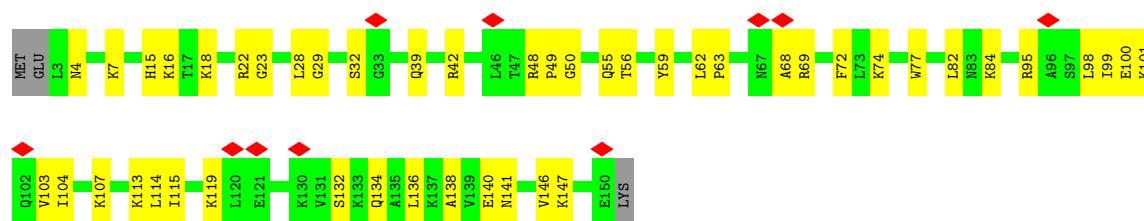


• Molecule 33: 50S ribosomal protein L14

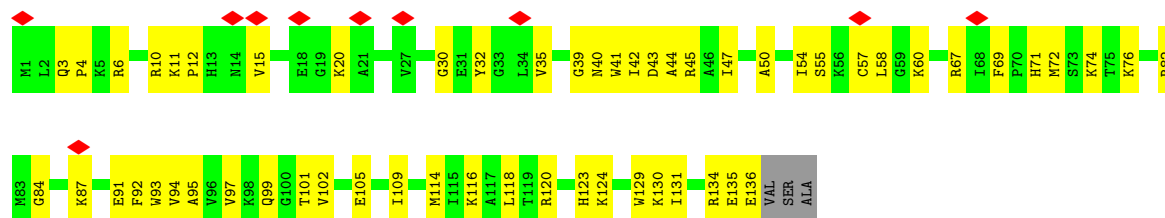


• Molecule 34: 50S ribosomal protein L15

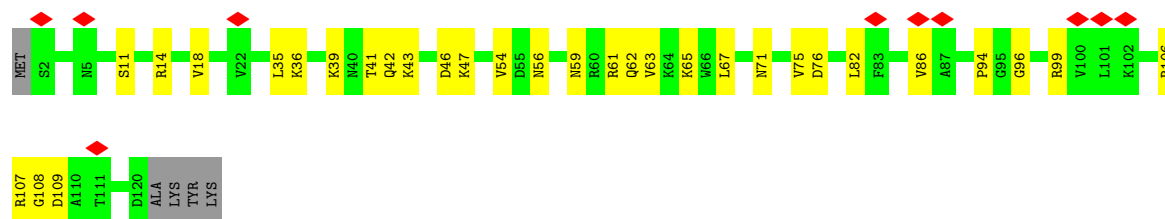




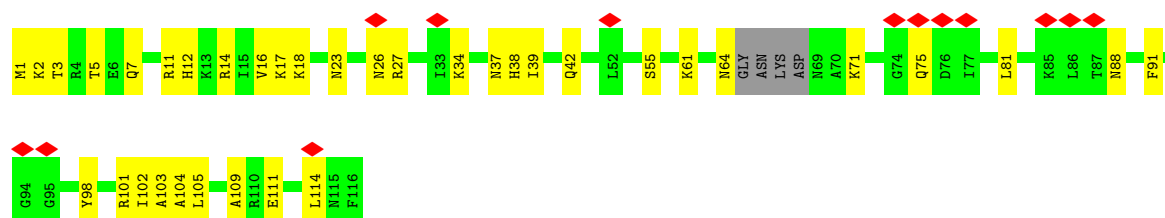
• Molecule 35: 50S ribosomal protein L16



• Molecule 36: 50S ribosomal protein L17

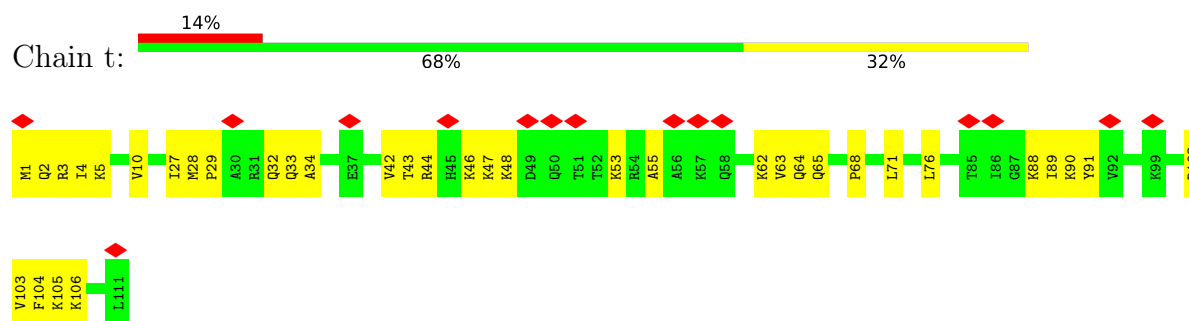


• Molecule 37: 50S ribosomal protein L18

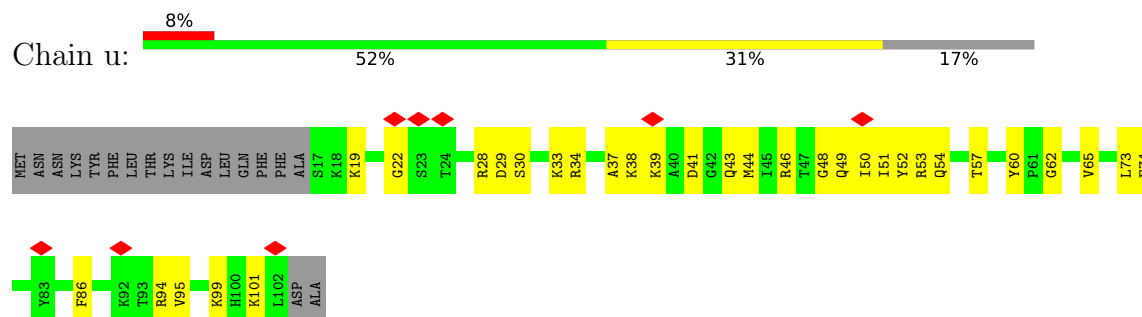


• Molecule 38: 50S ribosomal protein L19

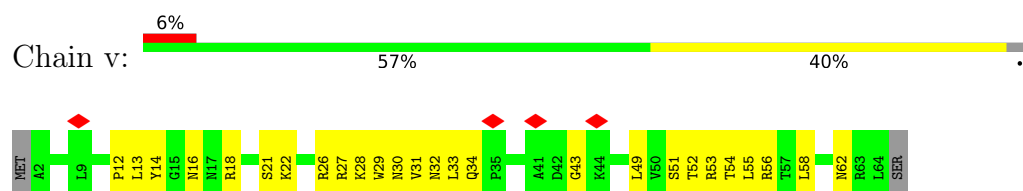




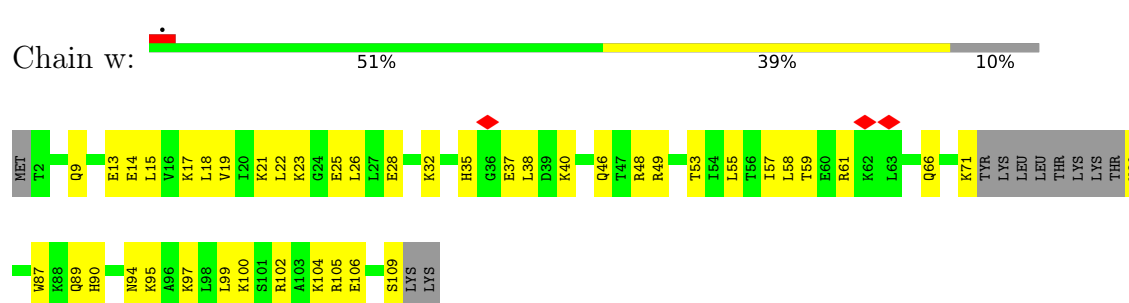
- Molecule 44: 50S ribosomal protein L27



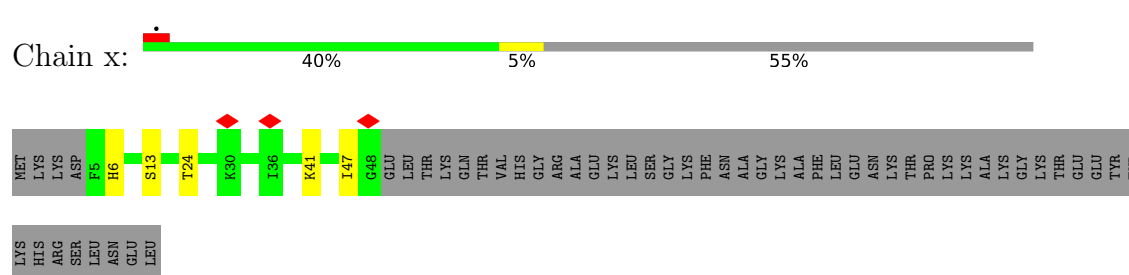
- Molecule 45: 50S ribosomal protein L28



- Molecule 46: 50S ribosomal protein L29



- Molecule 47: 50S ribosomal protein L31



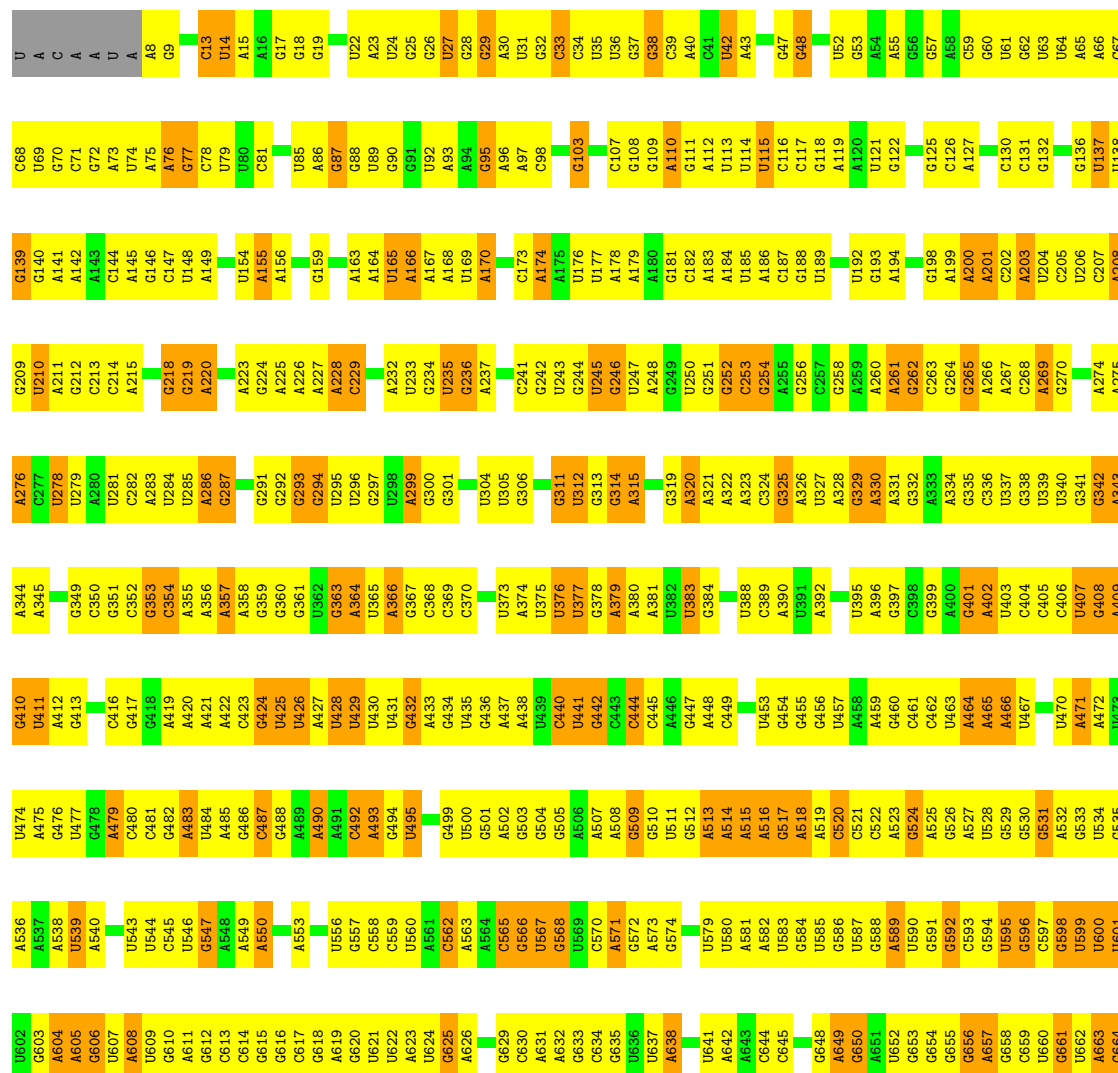
- Molecule 48: 50S ribosomal protein L32



- Molecule 49: 50S ribosomal protein L33 1



- Molecule 50: 23S ribosomal RNA

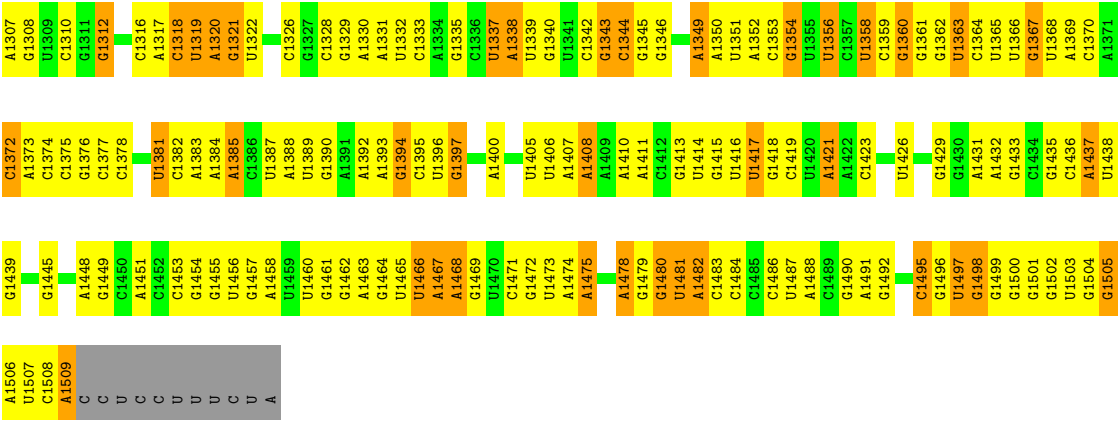


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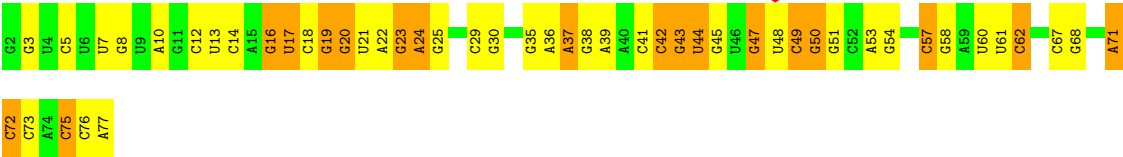
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U1189	A1058	G997	C1125	A1058	G997	G934	G934	G934	U870	G934	U870	C809	U745	U745	A678	G608	U541	A471	C405	A1253
A1254	U1059		U1126	G998		G937	G937	G937	C872	G937	C872	U810	A746	A746	U679	A611	C541	G472	G406	A1254
U1255	U1060		U1127	G999		A938	A938	A938	U873	A938	U873	U811	C747	C747	G680	G612	G542	A473	A407	A1255
U1256	C1062	A1000	G1128	C1062	A1000	U938	U938	U938	C874	U938	C874	A812	U748	U748	U681	G613	C543	G474	U408	G347
C1257	U1063	A1001	C1129	U1063	A1001	G939	G939	G939	C875	G939	C875	A813	G749	G749	G682	U614	A544	U475	G409	C348
U1258	G1064	U996	U1130	G1064	U996	U940	U940	U940	C876	U940	C876	C814	A750	A750	G683	U615	A545	U476	A410	A1258
G1259	U1065	G997	C1125	U1065	G997	A941	A941	A941	C877	A941	C877	G815	C751	C751	A694	G616	C542	G473	G406	A1259
U1260	G1066		U1132	U1066		G942	G942	G942	U878	G942	U878	A816	G752	G752	U676	G548	C543	U477	A411	G350
C1198	C1067	A1006	A1133	C1067	A1006	C943	C943	C943	G879	C943	G879	U817	C753	C753	G688	U549	C544	G478	G412	C351
A1261	U1068	U1007	U1134	U1068	U1007	A944	A944	A944	G880	A944	G880	A818	U754	U754	U681	U550	C545	U481	G413	A1261
A1262	U1069	U1008	U1135	U1069	U1008	U945	U945	U945	G881	U945	G881	G819	U755	U755	A691	A551	C546	G482	U417	A1262
G1263	U1070	U1009	C1136	U1070	U1009	G946	G946	G946	U882	G946	U882	A820	A756	A756	A692	A552	C547	U483	U418	G1263
U1264	A1071	G1003	C1137	A1071	G1003	U947	U947	U947	A883	U947	A883	U821			G693	C621	C553	A484	U419	A1264
U1265	U1072	A1011	U1138	U1072	A1011	U948	U948	U948	G884	U948	G884	A822	C759	C759	U694	G554	C554	G485	G421	U1265
G1266	A1073	U1012	A1139	A1073	U1012	G949	G949	G949	U885	G949	U885	C823	U760	U760	G697	G555	C555	C486	U422	G1266
A1204	U1074	C1013	A1140	U1074	C1013	C950	C950	C950	A886	C950	A886	U824	G768	G768	A697	G556	C556	A487	U423	A1204
C1205	U1075	U1014	U1141	U1075	U1014	U951	U951	U951	G887	U951	G887	A825			U698	A557	C557	U488	U424	A1205
U1206	G1076	A1015	C1142	G1076	A1015	U952	U952	U952	A888	U952	A888	G826	A765	A765	U699	C631	C558	U489	G425	G1206
U1207	U1077	U1016	U1143	U1077	U1016	A953	A953	A953	U889	A953	U889	C827	G766	G766	G700	U559	C559	U490	U426	U1207
G1208	G1078	A1017	C1144	G1078	A1017	G954	G954	G954	C891	G954	C891	U828	U767	U767	A632	U560	C560	U491	U427	A1208
A1273	U1018	G892	A1145	U1018	G892	U955	U955	U955	C892	U955	G892	G829	G768	G768	U702	A561	C561	G492	U428	A1273
G1274	U1081	G1019	A1146	U1081	G1019	U956	U956	U956	A895	U956	A895	U830	G769	G769	A703	U562	C562	A493	U429	G1274
U1275	U1086	A	U1147	U1086	A	C957	C957	C957	G896	C957	G896	C831	U770	U770	U704	A563	C563	A494	U430	U1275
C1277	C087	G	U1148	C087	G	A958	A958	A958	A897	A958	A897	G832	G771	G771	A705	A564	C564	U495	U431	A1277
G1278	U1088	G	G1150	U1088	G	C960	C960	C960	A898	C960	A898	G833	G772	G772	U706	A565	C565	U496	U432	G1278
G1279	C1089	U	A1151	C1089	U	G961	G961	G961	U899	G961	U899	G834	G773	G773	G707	C640	C566	A497	U433	A1279
G1283	U1090	U		U1090	U	G962	G962	G962	G900	G962	G900	G835	A774	A774	A708	U569	C567	G498	U434	G1283
A1284	C1091	A	A1154	C1091	A	U963	U963	U963	A901	U963	A901	G837	C776	C776	G710	A570	C568	U499	U435	A1284
G1285	A1092	G	A1155	A1092	G	A964	A964	A964	A902	A964	A902	G838	A777	A777	G711	A571	C569	G500	U436	U371
A1221	G1093	C1028	G1156	G1093	C1028	A965	A965	A965	A903	A965	A903	U839	A778	A778	A712	A572	C570	A438	A372	A1221
U1222	C1094	U1028	G1157	C1094	U1028	A966	A966	A966	G904	A966	G904	C840	A779	A779	A713	C574	C570	U439	U373	G1222
C1218	U1095	G1030	A1158	U1095	G1030	C967	C967	C967	U905	C967	U905	C841	U780	U780	C714	A575	C571	U506	U374	G1218
A1229	A1096	A1031	U1159	A1096	A1031	G968	G968	G968	C906	G968	C906	U844	A781	A781	A715	A576	C572	A507	U441	A1229
U1225	G1097	G1032	G1160	G1097	G1032	A969	A969	A969	A907	A969	A907	U845	G782	G782	C716	A577	C573	A508	G442	C1225
C1226	C1098	U1033	U1161	C1098	U1033	A970	A970	A970	A908	A970	A908	C846	G783	G783	C717	A578	C574	U509	G443	U1226
A1227	U1099	G1034	G1162	U1099	G1034	A971	A971	A971	A909	A971	A909	G847	A784	A784	A718	A579	C575	U510	A445	A1227
U1228	C1100	A1035	G1165	C1100	A1035	A972	A972	A972	C910	A972	C910	U848	U785	U785	G719	A580	C576	G515	A448	C1228
C1228	A1101	C1036	A1166	A1101	C1036	A973	A973	A973	C911	A973	C911	U849	U786	U786	U720	A581	C577	C516	A449	U1228
U1294	A1102	U1037	U1295	A1102	U1037	C974	C974	C974	G912	C974	G912	A849	A787	A787	G721	A582	C578	C517	U450	U1294
U1295	C1103	G1038	C1167	C1103	G1038	C975	C975	C975	A913	C975	A913	G850	G788	G788	G722	A583	C579	C518	G451	C1295
G1296	U1104	U1039	G1168	U1104	U1039	U976	U976	U976	A914	U976	A914	G851	A789	A789	G723	A584	C580	A518	G452	G1296
U1298	C1105	U1040	U1169	C1105	U1040	U977	U977	U977	U915	U977	U915	G852	U790	U790	G724	A585	C581	G453	A451	U1298
C1299	U1106	G1041	C1170	U1106	G1041	A978	A978	A978	U916	A978	U916	A853	A791	A791	A725	A586	C582	C520	U454	C1299
A1300	U1107	U1042	A1171	U1107	U1042	C979	C979	C979	G917	C979	G917	A854	C792	C792	A726	A587	C583	G524	U455	G387
U1301	A1102	U1043	U1172	A1102	U1043	C980	C980	C980	A918	C980	A918	G855			G525	A588	C584	G526	U456	U1301
C1302	U1103	G1044	A1173	U1103	G1044	U981	U981	U981	C919	U981	C919	U856	U795	U795	A731	A589	C585	G527	A457	A1302
U1303	C1104	U1045	C1174	C1104	U1045	A982	A982	A982	G920	A982	G920	U857	A796	A796	A732	A590	C586	G528	G458	C1303
A1304	U1105	C1046	C1175	U1105	C1046	G983	G983	G983	G921	G983	G921	A858	G797	G797	A733	A591	C587	G529	C459	A1304
G1305	U1113	U1046	A1176	U1113	U1046	A984	A984	A984	A984	A984	A984	A859	U798	U798	A734	A592	C588	G530	A454	G387
U1306	A1114	C985	U1177	A1114	C985	G985	G985	G985	G923	G985	G923	G860	C793	C793	A735	A593	C589	G531	G460	U1306
A1243	G1049	U986	G1115	G1049	U986	U1116	U1050	U1051	G988	C927	A861	G800	U737	U736	G670	A594	A531	G462	C397	C336
A1244	U1050	G988	U1117	U1051	G988	C927	U1050	U1051	G988	C927	A863	U801	A738	A737	G671	G595	A532	U463	G398	C337
A1245	G1052	A989	G1053	G990	A989	C928	U985	C929	G988	C928	A864	C803	G739	G739	A672	U599	A533	U464	C399	C338
G1249	C1054	A991	U1054	C1054	A991	A930	G966	A930	A966	A930	A867	C805	C741	C741	U674	U605	U536	C467	U401	U339
A1250	G1055		U1121	G1055		C931	C931	C931	A867	C931	A867	A806	C742	C742	U675	A605	A537	C468	G402	A340
G1251	U1056		U1122	U1056		A932	A932	A932	A870	A932	A870	C807	A743	A743	U676	A606	A538	C469	A403	C341
A1188	C1057	U996	U1123	C1057	U996	A933	A933	A933	A871	A933	A871	C808	U744	U744	C677	A607	U540	U470	A404	G343
U1189	A1058	G997	C1125	A1058	G997	G934	G934	G934	U870	G934	U870	C809	U745	U745	A678	G608	U541	A471	C405	A1253
A1254	U1059		U1126	G998		G937	G937	G937	C872	G937	C872	U810	A746	A746	U679	A611	C541	G472	G406	A1254
U1255	U1060		U1127	G999		A938	A938	A938	U873	A938	U873	U811	C747	C747	G680	G612	G542	A473	A407	A1255
U1256	C1062	A1000	G1128	C1062	A1000	U938	U938	U938	C874	U938	C874	A812	U748	U748	U681	G613	C543	G474	U408	G347
C1257	U1063	A1001	C1129																	



● Molecule 53: tRNA-Phe



4 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of subtomograms used	721	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 ($e^-/\text{\AA}^2$)	3.2	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	3750	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.735	Depositor
Minimum map value	-0.678	Depositor
Average map value	0.024	Depositor
Map value standard deviation	0.122	Depositor
Recommended contour level	0.37	Depositor
Map size (Å)	435.328, 435.328, 435.328	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.7005, 1.7005, 1.7005	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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	0	0.12	0/383	0.39	0/504
2	1	0.13	0/484	0.39	0/637
3	2	0.16	0/306	0.41	0/401
4	A	0.14	0/1954	0.38	0/2642
5	B	0.14	0/1721	0.39	0/2323
6	C	0.14	0/1691	0.42	0/2267
7	D	0.14	0/1188	0.38	0/1593
8	E	0.14	0/1384	0.41	1/1867 (0.1%)
9	F	0.14	0/1266	0.39	0/1700
10	G	0.15	0/1126	0.42	0/1517
11	H	0.15	0/1044	0.44	0/1395
12	I	0.13	0/820	0.41	0/1103
13	J	0.12	0/844	0.38	0/1136
14	K	0.26	0/1094	0.53	0/1468
15	L	0.14	0/962	0.48	0/1289
16	M	0.16	0/483	0.41	0/643
17	N	0.13	0/679	0.38	0/907
18	O	0.14	0/659	0.35	0/885
19	P	0.14	0/684	0.40	0/913
20	Q	0.15	0/545	0.42	0/730
21	R	0.14	0/698	0.40	0/936
22	S	0.13	0/631	0.35	0/838
23	T	0.12	0/475	0.38	0/621
24	a	0.14	0/2267	0.39	0/3044
25	b	0.16	0/1795	0.45	0/2412
26	c	0.14	0/1671	0.42	0/2246
27	d	0.15	0/1409	0.40	0/1894
28	e	0.13	0/1420	0.38	0/1912
29	f	0.15	0/1205	0.45	0/1616
30	g	2.05	6/944 (0.6%)	0.71	0/1260
31	h	0.13	0/968	0.44	0/1298
32	i	0.13	0/1186	0.37	0/1592
33	j	0.15	0/953	0.42	0/1275
34	k	0.13	0/1170	0.40	0/1559

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	l	0.15	0/1104	0.39	0/1481
36	m	0.14	0/973	0.40	0/1309
37	n	0.13	0/897	0.38	0/1198
38	o	0.14	0/948	0.41	1/1262 (0.1%)
39	p	0.12	0/961	0.33	0/1278
40	q	0.14	0/828	0.43	0/1111
41	r	0.13	0/1077	0.44	0/1441
42	s	0.14	0/732	0.43	0/988
43	t	0.13	0/879	0.36	0/1165
44	u	0.15	0/665	0.44	0/884
45	v	0.16	0/519	0.40	0/695
46	w	0.12	0/826	0.37	0/1104
47	x	0.13	0/353	0.34	0/474
48	y	0.30	0/457	0.62	0/601
49	z	0.13	0/412	0.39	0/547
50	3	0.10	0/69073	0.24	0/107710
51	4	0.10	0/2505	0.26	0/3902
52	5	0.09	0/35768	0.23	0/55764
53	8	0.09	0/1808	0.24	0/2817
All	All	0.19	6/156894 (0.0%)	0.30	2/234154 (0.0%)

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
30	g	112	TYR	CD2-CE2	33.19	2.38	1.38
30	g	112	TYR	CD1-CE1	32.75	2.36	1.38
30	g	112	TYR	CE1-CZ	21.42	1.89	1.38
30	g	112	TYR	CE2-CZ	20.90	1.88	1.38
30	g	112	TYR	CG-CD2	19.22	1.79	1.39
30	g	112	TYR	CG-CD1	18.18	1.77	1.39

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
38	o	60	ILE	N-CA-C	-5.83	107.81	113.53
8	E	100	ILE	N-CA-C	-5.47	107.79	113.10

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	380	0	429	16	0
2	1	477	0	530	21	0
3	2	304	0	350	16	0
4	A	1921	0	1973	52	0
5	B	1698	0	1768	53	0
6	C	1660	0	1719	70	0
7	D	1173	0	1267	30	0
8	E	1362	0	1377	43	0
9	F	1246	0	1308	32	0
10	G	1110	0	1226	41	0
11	H	1028	0	1094	43	0
12	I	809	0	894	33	0
13	J	829	0	855	36	0
14	K	1076	0	1170	53	0
15	L	951	0	1014	42	0
16	M	474	0	509	30	0
17	N	673	0	730	18	0
18	O	646	0	677	20	0
19	P	675	0	728	19	0
20	Q	535	0	562	25	0
21	R	682	0	691	18	0
22	S	629	0	681	20	0
23	T	471	0	522	25	0
24	a	2225	0	2301	93	0
25	b	1762	0	1808	53	0
26	c	1644	0	1731	47	0
27	d	1388	0	1469	62	0
28	e	1396	0	1481	43	0
29	f	1182	0	1227	69	0
30	g	936	0	989	59	0
31	h	959	0	1039	26	0
32	i	1164	0	1192	38	0
33	j	944	0	1019	34	0
34	k	1153	0	1256	40	0
35	l	1079	0	1134	49	0
36	m	958	0	1011	27	0
37	n	889	0	952	27	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	o	938	0	1008	39	0
39	p	947	0	1028	48	0
40	q	811	0	858	30	0
41	r	1068	0	1150	45	0
42	s	720	0	803	33	0
43	t	872	0	972	28	0
44	u	657	0	695	32	0
45	v	513	0	560	28	0
46	w	818	0	870	32	0
47	x	344	0	333	4	0
48	y	452	0	472	15	0
49	z	408	0	440	12	0
50	3	61664	0	30954	1900	0
51	4	2239	0	1137	51	0
52	5	31943	0	16058	1024	0
53	8	1618	0	821	48	0
All	All	144500	0	98842	4270	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 19.

All (4270) 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)
30:g:112:TYR:CD2	30:g:112:TYR:CG	1.79	1.67
30:g:112:TYR:CG	30:g:112:TYR:CD1	1.77	1.61
30:g:112:TYR:CE1	30:g:112:TYR:CZ	1.89	1.60
30:g:112:TYR:CZ	30:g:112:TYR:CE2	1.88	1.60
50:3:2133:A:N6	50:3:2176:G:H1	1.28	1.31
50:3:900:G:N2	50:3:903:A:H61	1.43	1.14
29:f:2:LYS:HD3	29:f:34:LYS:CB	1.79	1.12
50:3:1944:A:N6	50:3:1971:G:H21	1.47	1.12
30:g:112:TYR:CD2	30:g:112:TYR:CE2	2.38	1.11
30:g:112:TYR:CD1	30:g:112:TYR:CE1	2.36	1.11
50:3:2646:G:C2	50:3:2786:A:N6	2.20	1.09
29:f:2:LYS:HD3	29:f:34:LYS:HB3	1.33	1.07
50:3:341:G:N2	50:3:364:A:H61	1.52	1.06
50:3:1944:A:H61	50:3:1971:G:N2	1.52	1.06
29:f:2:LYS:CD	29:f:34:LYS:O	2.04	1.05
50:3:341:G:H21	50:3:364:A:N6	1.58	1.02
50:3:2299:U:H3	50:3:2349:G:H1	1.06	1.02

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:d:132:ILE:O	27:d:151:GLY:HA3	1.59	1.01
52:5:253:G:H1	52:5:265:U:H3	1.04	1.01
50:3:2133:A:N6	50:3:2176:G:N1	2.09	0.99
52:5:1136:G:H1	52:5:1151:A:H61	1.09	0.99
50:3:574:G:H1	50:3:587:U:H3	1.05	0.98
50:3:2534:G:H1	50:3:2545:U:H3	1.10	0.98
29:f:4:ILE:HG12	29:f:18:VAL:HG22	1.42	0.98
50:3:730:G:H1	50:3:802:U:H3	1.11	0.97
50:3:2596:A:C2	50:3:2615:G:N1	2.32	0.97
50:3:2110:U:H3	50:3:2194:G:H1	1.01	0.97
50:3:2145:A:N6	50:3:2161:G:C6	2.32	0.97
50:3:193:G:H1	50:3:209:G:HO2'	1.06	0.97
52:5:612:G:H1	52:5:624:U:H3	1.11	0.97
52:5:1487:U:H3	52:5:1498:G:H1	1.09	0.97
43:t:90:LYS:HD2	43:t:105:LYS:HG2	1.47	0.96
29:f:2:LYS:HE2	29:f:34:LYS:O	1.66	0.96
50:3:325:G:H1	50:3:383:U:H3	1.13	0.95
50:3:1777:G:N2	50:3:1793:A:C5	2.34	0.95
50:3:1747:G:H21	50:3:1752:A:H62	0.97	0.95
50:3:2646:G:N2	50:3:2786:A:C6	2.35	0.95
50:3:137:U:H3	50:3:146:G:H1	0.98	0.95
50:3:250:U:H3	50:3:256:G:H1	1.15	0.94
29:f:2:LYS:CE	29:f:34:LYS:O	2.15	0.93
50:3:900:G:H21	50:3:903:A:H61	1.06	0.93
50:3:2646:G:N2	50:3:2786:A:N6	2.15	0.93
50:3:1853:G:N2	50:3:1902:C:O2	2.01	0.93
53:8:7:U:H3	53:8:68:G:H1	0.99	0.92
29:f:2:LYS:NZ	29:f:31:PHE:O	2.03	0.92
50:3:633:G:H1	50:3:692:U:H3	0.95	0.92
50:3:1772:G:H1	50:3:1994:U:H3	1.13	0.91
50:3:2536:U:H3	50:3:2543:G:H1	0.93	0.91
50:3:17:G:H1	50:3:560:U:H3	1.06	0.91
50:3:1803:U:H3	50:3:1830:G:H1	1.10	0.91
50:3:1067:A:H2	50:3:1157:G:H1	1.04	0.90
50:3:990:G:H1	50:3:999:U:H3	1.00	0.90
50:3:1504:G:H1	50:3:1539:U:H3	0.98	0.90
52:5:13:U:H3	52:5:23:G:H1	1.09	0.89
52:5:1390:G:H1	52:5:1460:U:H3	1.15	0.89
50:3:2133:A:H61	50:3:2176:G:H1	0.90	0.88
50:3:900:G:H21	50:3:903:A:N6	1.69	0.88
52:5:137:A:H62	52:5:156:U:H3	1.17	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:f:2:LYS:HD3	29:f:34:LYS:O	1.71	0.87
50:3:986:G:H1	50:3:1003:U:H3	1.22	0.87
50:3:989:G:H1	50:3:1000:U:H3	0.87	0.86
29:f:19:VAL:O	29:f:19:VAL:HG12	1.75	0.86
50:3:1747:G:N2	50:3:1752:A:H62	1.72	0.86
50:3:1385:U:H3	50:3:1402:G:H1	1.18	0.86
52:5:1138:U:H3	52:5:1149:G:H1	1.21	0.85
52:5:1106:U:H3	52:5:1160:G:H1	0.88	0.85
52:5:518:A:C6	52:5:527:G:C2	2.65	0.85
29:f:5:LEU:HD23	29:f:34:LYS:HG3	1.59	0.84
50:3:1200:U:H3	50:3:1215:G:H1	1.25	0.84
50:3:865:A:H61	50:3:2453:G:H21	1.26	0.84
52:5:660:A:N6	52:5:739:G:H1	1.76	0.83
39:p:62:LEU:HB2	50:3:1045:A:H5'	1.59	0.83
52:5:833:G:H1	52:5:844:U:H3	0.84	0.83
4:A:35:ARG:HG2	4:A:52:ASN:HD21	1.43	0.82
50:3:329:G:O6	50:3:377:U:C4	2.32	0.82
50:3:1027:U:H3	50:3:1198:G:H1	0.85	0.82
50:3:2059:G:H1	50:3:2625:U:H3	1.26	0.81
50:3:1747:G:H21	50:3:1752:A:N6	1.76	0.81
50:3:2530:U:H3'	50:3:2531:C:H5''	1.61	0.81
53:8:16:G:N2	53:8:49:C:N4	2.29	0.81
14:K:127:ARG:HH21	14:K:132:ALA:HB1	1.46	0.81
37:n:34:LYS:HZ2	37:n:101:ARG:HB2	1.44	0.81
50:3:900:G:N2	50:3:903:A:N6	2.26	0.81
36:m:109:ASP:HB3	50:3:1683:G:H21	1.46	0.80
50:3:1245:G:H1	50:3:1264:U:H3	0.81	0.80
50:3:2303:U:H3	50:3:2345:G:H1	1.22	0.80
52:5:1136:G:H1	52:5:1151:A:N6	1.79	0.80
20:Q:48:GLN:HB3	20:Q:51:ILE:HD11	1.64	0.79
50:3:1071:G:H1	50:3:1154:U:H3	1.29	0.79
50:3:1859:U:O2	50:3:1897:A:N7	2.14	0.79
50:3:341:G:H21	50:3:364:A:H61	0.84	0.79
44:u:41:ASP:HB2	50:3:891:G:H21	1.48	0.79
50:3:229:C:N3	50:3:235:U:O4	2.15	0.79
52:5:892:G:C2	52:5:895:A:C5	2.71	0.79
27:d:24:SER:OG	27:d:26:MET:SD	2.41	0.79
50:3:2474:C:C4	50:3:2475:C:N4	2.51	0.79
50:3:413:G:H1	50:3:435:U:H3	1.28	0.79
50:3:2436:G:H5''	50:3:2437:G:H5'	1.65	0.79
28:e:5:GLY:HA2	28:e:72:ASN:HD22	1.46	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2474:C:N4	50:3:2475:C:N4	2.30	0.78
52:5:169:G:H1	52:5:196:G:H22	1.28	0.78
50:3:2807:G:N7	50:3:2811:G:N2	2.31	0.78
24:a:56:ARG:HH22	24:a:228:VAL:H	1.30	0.78
50:3:2291:U:H3	50:3:2333:G:H1	1.31	0.78
23:T:53:ARG:HH22	52:5:720:U:H5''	1.49	0.78
50:3:144:C:H2'	50:3:145:A:H8	1.49	0.78
29:f:2:LYS:CD	29:f:34:LYS:HB3	2.14	0.78
53:8:12:C:O2	53:8:25:G:N2	2.13	0.78
50:3:224:G:H1	50:3:463:U:H3'	1.48	0.78
27:d:36:ILE:O	27:d:88:LYS:HA	1.84	0.78
30:g:75:ALA:HA	30:g:80:LEU:HD21	1.66	0.77
11:H:71:GLY:O	11:H:77:GLN:NE2	2.17	0.77
28:e:97:TYR:HA	28:e:109:GLN:O	1.84	0.77
44:u:57:THR:H	50:3:2338:G:H21	1.32	0.77
52:5:660:A:N6	52:5:739:G:N1	2.33	0.77
52:5:412:G:O6	52:5:424:U:O2	2.02	0.77
52:5:692:A:H61	52:5:783:G:H21	1.32	0.77
8:E:35:LEU:HB3	8:E:62:PHE:HB3	1.67	0.77
50:3:47:G:H5''	50:3:48:G:H5'	1.65	0.77
29:f:21:VAL:HG12	29:f:22:LYS:N	2.00	0.77
18:O:5:ARG:NH2	52:5:616:C:O2	2.19	0.76
45:v:33:LEU:HD22	45:v:49:LEU:HB3	1.66	0.76
50:3:1483:G:O6	50:3:2712:C:N4	2.17	0.76
52:5:616:C:H5'	52:5:617:U:H5''	1.65	0.76
50:3:2637:A:H62	50:3:2789:A:H61	1.32	0.76
14:K:56:LYS:HG3	14:K:58:PRO:HD2	1.67	0.76
50:3:2655:U:O2	50:3:2681:G:O6	2.04	0.76
11:H:116:LYS:HG3	52:5:1343:G:H5''	1.68	0.76
48:y:47:MET:HA	48:y:52:ARG:HA	1.66	0.76
50:3:25:G:H2'	50:3:26:G:H8	1.51	0.75
50:3:2070:C:N4	50:3:2509:C:O2	2.18	0.75
42:s:60:ARG:O	42:s:77:LEU:HA	1.86	0.75
22:S:7:ASN:HD21	52:5:328:G:H4'	1.52	0.75
50:3:2295:A:N6	50:3:2354:A:N7	2.34	0.75
50:3:2600:G:N1	50:3:2609:C:N3	2.34	0.75
50:3:2703:U:O2	50:3:2722:G:O6	2.05	0.75
50:3:2579:U:H5'	50:3:2580:A:H5''	1.67	0.75
19:P:48:HIS:HB2	19:P:73:LYS:HD3	1.68	0.75
52:5:1241:G:N2	52:5:1244:A:N7	2.35	0.75
50:3:605:A:H61	50:3:2036:G:H21	1.31	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:I:51:LYS:HB3	12:I:75:ARG:HB3	1.67	0.75
9:F:146:ALA:HB1	13:J:49:ARG:HH12	1.51	0.75
41:r:118:ILE:HD11	50:3:556:U:H1'	1.68	0.75
50:3:1871:U:H4'	50:3:2417:G:H21	1.50	0.75
53:8:23:G:N7	53:8:47:G:N2	2.33	0.75
50:3:2332:U:O2'	50:3:2393:C:N4	2.21	0.74
52:5:1002:A:N7	52:5:1018:U:O4	2.19	0.74
50:3:2589:G:N2	50:3:2589:G:OP2	2.19	0.74
52:5:1236:A:H4'	52:5:1258:U:H4'	1.69	0.74
50:3:1829:U:H2'	50:3:1830:G:H8	1.50	0.74
50:3:2004:G:H2'	50:3:2005:G:O4'	1.86	0.74
8:E:89:ASN:ND2	52:5:735:C:OP1	2.19	0.74
21:R:70:LYS:HE3	52:5:1293:A:H5''	1.70	0.74
29:f:2:LYS:HD2	29:f:28:HIS:HB2	1.68	0.74
50:3:1701:G:N2	50:3:1999:G:OP2	2.21	0.74
50:3:1746:U:H3	50:3:1753:G:H1	1.35	0.74
52:5:372:G:O6	52:5:383:U:C2	2.39	0.74
52:5:787:A:H61	52:5:1472:G:H5''	1.49	0.74
52:5:1320:A:N6	52:5:1350:A:OP2	2.20	0.74
6:C:97:LEU:HB2	6:C:134:ILE:HB	1.69	0.74
19:P:9:LEU:HB2	19:P:63:ILE:O	1.88	0.74
50:3:2267:G:N2	50:3:2397:G:OP1	2.21	0.74
25:b:85:ARG:O	25:b:208:ARG:NH1	2.21	0.73
32:i:115:ASN:H	32:i:118:SER:HB2	1.52	0.73
50:3:534:U:H3	50:3:538:A:H62	1.36	0.73
52:5:518:A:N6	52:5:527:G:C2	2.56	0.73
50:3:2136:A:H61	50:3:2166:U:H3	1.33	0.73
52:5:765:A:H61	52:5:808:C:H1'	1.51	0.73
23:T:36:LEU:O	23:T:41:ARG:NH2	2.21	0.73
50:3:1871:U:H3	50:3:1885:G:H1	1.37	0.73
52:5:732:A:H2'	52:5:733:A:H8	1.53	0.73
53:8:16:G:N2	53:8:49:C:H42	1.85	0.73
7:D:186:ASN:ND2	52:5:11:A:OP2	2.22	0.73
46:w:94:ASN:HA	46:w:97:LYS:HE2	1.70	0.73
52:5:983:G:H21	52:5:1012:A:H8	1.36	0.73
16:M:19:ARG:HH22	52:5:1193:U:H5''	1.52	0.73
29:f:72:ILE:HD11	29:f:136:ALA:HB1	1.69	0.73
50:3:2483:C:N4	50:3:2537:G:N2	2.37	0.73
50:3:454:G:H2'	50:3:455:G:C8	2.23	0.73
39:p:91:ARG:HB2	39:p:94:LEU:HB2	1.68	0.73
50:3:334:A:O2'	50:3:352:C:O2	2.07	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:558:C:O2'	50:3:574:G:N2	2.22	0.73
50:3:2050:G:H2'	50:3:2051:G:C8	2.24	0.73
18:O:55:LYS:O	52:5:223:G:N2	2.21	0.72
33:j:76:HIS:HB3	38:o:78:ASN:HB3	1.69	0.72
50:3:1093:U:H3	50:3:1115:G:H1	1.37	0.72
48:y:3:VAL:HG11	50:3:2063:G:H1'	1.69	0.72
50:3:251:G:H22	50:3:254:G:H5''	1.54	0.72
50:3:2299:U:O2	50:3:2382:A:O2'	2.05	0.72
29:f:2:LYS:HD3	29:f:34:LYS:C	2.14	0.72
50:3:204:U:H3	50:3:254:G:H1	1.37	0.72
50:3:2807:G:N7	50:3:2811:G:C2	2.57	0.72
52:5:137:A:N7	52:5:156:U:O4	2.22	0.72
52:5:1453:C:H2'	52:5:1454:G:H8	1.54	0.72
30:g:29:TYR:HB2	30:g:81:ALA:HB3	1.70	0.72
35:l:82:ARG:NH1	50:3:2259:G:OP1	2.22	0.72
52:5:947:U:H5''	52:5:959:A:H61	1.54	0.72
52:5:1112:U:O2	52:5:1128:G:N2	2.22	0.72
50:3:2105:G:H2'	50:3:2106:G:H8	1.55	0.72
50:3:769:A:HO2'	50:3:1668:G:HO2'	1.35	0.72
30:g:28:ASP:H	30:g:109:VAL:HG21	1.55	0.72
50:3:2596:A:N1	50:3:2615:G:C6	2.57	0.72
50:3:641:U:H2'	50:3:642:A:H8	1.54	0.72
52:5:803:C:H2'	52:5:804:A:H8	1.54	0.72
53:8:12:C:N3	53:8:25:G:N1	2.28	0.72
52:5:119:U:H3	52:5:225:U:H3	1.35	0.72
52:5:951:U:H3	52:5:1200:G:H1	1.38	0.71
52:5:1220:A:N1	52:5:1267:G:C6	2.57	0.71
50:3:305:U:H3	50:3:399:G:H1	1.36	0.71
50:3:725:G:N2	50:3:807:U:O2	2.23	0.71
50:3:1865:A:N6	50:3:1892:A:N7	2.37	0.71
26:c:54:THR:HG22	26:c:55:LYS:H	1.54	0.71
30:g:40:ILE:HD12	30:g:99:VAL:HB	1.71	0.71
30:g:59:LEU:HD23	30:g:80:LEU:HD23	1.70	0.71
50:3:959:C:H2'	50:3:960:A:H8	1.55	0.71
50:3:2212:U:H3	50:3:2228:U:H3	1.37	0.71
24:a:171:LEU:HD11	24:a:183:GLN:HB2	1.72	0.71
35:l:11:LYS:O	50:3:947:A:N6	2.23	0.71
50:3:1020:G:H5''	50:3:1021:C:H5	1.53	0.71
50:3:2684:G:H2'	50:3:2685:A:H8	1.55	0.71
24:a:122:LEU:HD21	29:f:87:ARG:HH12	1.56	0.71
50:3:2223:C:H2'	50:3:2224:A:H8	1.56	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:518:A:C5	52:5:527:G:N2	2.59	0.71
16:M:4:LYS:HG3	52:5:1038:G:H5''	1.72	0.71
52:5:710:G:H2'	52:5:711:G:H8	1.54	0.71
30:g:99:VAL:HG13	30:g:106:MET:HE1	1.73	0.71
50:3:409:A:N6	50:3:438:A:OP2	2.24	0.71
50:3:585:U:H2'	50:3:586:G:H8	1.53	0.71
50:3:2600:G:N2	50:3:2609:C:O2	2.19	0.71
52:5:708:A:H2'	52:5:709:A:H8	1.56	0.71
52:5:878:U:H4'	52:5:879:G:H5''	1.72	0.71
52:5:1002:A:H62	52:5:1018:U:H3	1.36	0.71
10:G:31:MET:HB2	10:G:80:ARG:HH12	1.56	0.71
50:3:853:G:N1	50:3:1219:U:OP2	2.24	0.71
50:3:2060:G:N7	50:3:2585:A:N6	2.38	0.70
52:5:1135:U:OP2	52:5:1157:G:N2	2.25	0.70
50:3:1957:G:N2	50:3:1964:C:C2	2.60	0.70
50:3:2433:A:H4'	50:3:2434:A:H5''	1.73	0.70
52:5:1266:U:H2'	52:5:1267:G:H8	1.56	0.70
22:S:13:GLN:NE2	52:5:90:G:OP2	2.24	0.70
27:d:57:LEU:HD22	27:d:65:PRO:HG3	1.71	0.70
29:f:4:ILE:HG12	29:f:18:VAL:CG2	2.20	0.70
50:3:733:C:O2'	50:3:769:A:N6	2.24	0.70
50:3:1494:U:H3	50:3:1550:G:H1	1.37	0.70
50:3:1940:G:H1	50:3:1974:U:H3	1.39	0.70
50:3:2828:C:H3'	50:3:2829:G:H21	1.56	0.70
52:5:371:U:H2'	52:5:372:G:H8	1.54	0.70
52:5:885:U:H2'	52:5:886:A:H8	1.56	0.70
9:F:113:LYS:O	52:5:1272:C:N4	2.24	0.70
52:5:599:G:N2	52:5:634:U:O2	2.24	0.70
24:a:83:VAL:HA	24:a:99:ILE:HG22	1.73	0.70
29:f:2:LYS:CD	29:f:34:LYS:CB	2.66	0.70
36:m:106:ARG:HD2	36:m:108:GLY:H	1.55	0.70
50:3:500:U:H3	50:3:719:G:H4'	1.55	0.70
50:3:2716:U:H2'	50:3:2717:G:H8	1.57	0.70
52:5:350:G:N2	52:5:384:G:O2'	2.24	0.70
52:5:1224:C:N4	52:5:1262:A:OP2	2.24	0.70
14:K:57:LYS:HE2	52:5:1466:U:H5'	1.74	0.70
52:5:1241:G:N1	52:5:1244:A:OP2	2.25	0.70
11:H:128:GLN:NE2	52:5:1207:U:OP1	2.25	0.70
20:Q:63:PHE:O	20:Q:71:ASN:ND2	2.24	0.70
50:3:355:A:H1'	50:3:374:A:H1'	1.73	0.70
50:3:1446:G:N2	50:3:1613:A:OP2	2.25	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:K:102:ASP:OD2	52:5:520:C:N4	2.23	0.70
26:c:55:LYS:NZ	50:3:836:G:N3	2.39	0.70
26:c:158:LEU:HD11	26:c:181:LYS:HB2	1.74	0.70
33:j:28:THR:HG22	33:j:29:ARG:HG2	1.73	0.69
41:r:113:GLU:H	41:r:116:GLU:HG2	1.56	0.69
50:3:1930:U:H2'	50:3:1931:C:C6	2.27	0.69
32:i:119:ARG:NH1	50:3:562:C:O2	2.25	0.69
50:3:2304:U:O2	50:3:2343:A:N7	2.25	0.69
25:b:85:ARG:NH2	50:3:2645:U:OP1	2.24	0.69
50:3:250:U:O2	50:3:256:G:N2	2.23	0.69
15:L:114:LYS:HB2	52:5:1203:A:H5'	1.74	0.69
50:3:2483:C:H42	50:3:2537:G:N2	1.91	0.69
27:d:171:ARG:NH1	47:x:47:ILE:O	2.25	0.69
50:3:784:A:H61	50:3:788:G:H21	1.40	0.69
50:3:2054:C:H2'	50:3:2055:A:C8	2.28	0.69
52:5:1279:G:C2	52:5:1306:A:N1	2.59	0.69
50:3:1334:U:O2'	50:3:1656:A:N6	2.24	0.69
5:B:57:GLU:HB2	5:B:68:PHE:HB2	1.75	0.69
25:b:26:ILE:HD12	25:b:182:VAL:HG21	1.74	0.69
50:3:518:A:H4'	50:3:533:G:H22	1.57	0.69
52:5:660:A:N1	52:5:739:G:N2	2.40	0.69
5:B:3:GLN:NE2	52:5:1169:U:O4	2.25	0.69
26:c:47:GLN:NE2	50:3:649:A:N1	2.40	0.69
29:f:5:LEU:CD1	29:f:14:LYS:HG3	2.22	0.69
50:3:1869:G:H2'	50:3:1870:G:H8	1.57	0.69
52:5:966:A:H5''	52:5:1206:G:H21	1.55	0.69
50:3:192:U:H3	50:3:212:G:H1	1.40	0.69
50:3:1645:C:H2'	50:3:1646:G:C8	2.27	0.69
28:e:28:LYS:NZ	28:e:29:GLY:O	2.25	0.69
50:3:1999:G:N2	50:3:2003:C:O2'	2.26	0.69
50:3:144:C:N4	50:3:145:A:H62	1.91	0.68
50:3:1543:U:H2'	50:3:1544:G:H8	1.57	0.68
52:5:109:G:N1	52:5:234:G:O6	2.26	0.68
12:I:50:THR:HG23	52:5:1127:A:H5''	1.75	0.68
24:a:217:GLY:O	24:a:221:HIS:ND1	2.25	0.68
50:3:915:A:N6	50:3:936:G:O2'	2.26	0.68
50:3:2298:G:C2	50:3:2351:U:O2	2.46	0.68
52:5:1392:A:H2'	52:5:1457:G:H22	1.57	0.68
50:3:1067:A:H2	50:3:1157:G:N1	1.86	0.68
28:e:167:TYR:HB2	28:e:170:GLU:HG3	1.74	0.68
53:8:54:G:H1	53:8:62:C:H42	1.40	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:126:ASP:H	6:C:143:ARG:HH12	1.42	0.68
6:C:180:ARG:NH2	6:C:181:PHE:O	2.27	0.68
10:G:92:LYS:HB2	10:G:95:LEU:HB3	1.76	0.68
52:5:144:U:O2	52:5:149:G:N2	2.22	0.68
50:3:2614:U:H2'	50:3:2615:G:C8	2.29	0.68
52:5:238:U:O2	52:5:280:G:O6	2.11	0.68
1:O:8:SER:HA	50:3:1337:G:H5'	1.75	0.68
20:Q:79:CYS:SG	20:Q:80:GLN:N	2.67	0.68
50:3:332:G:N1	50:3:373:U:OP2	2.25	0.68
50:3:739:G:N2	50:3:761:G:O2'	2.26	0.68
50:3:2367:C:H2'	50:3:2368:A:H8	1.58	0.68
51:4:79:U:H1'	51:4:86:G:H22	1.58	0.68
52:5:913:A:H2'	52:5:914:A:H8	1.59	0.68
38:o:97:ARG:NH1	50:3:2701:A:O2'	2.26	0.68
52:5:507:A:N6	52:5:541:C:O2'	2.26	0.68
52:5:682:G:H21	52:5:703:A:H61	1.42	0.68
45:v:12:PRO:HB3	45:v:30:ASN:HA	1.75	0.68
52:5:682:G:N2	52:5:703:A:H61	1.92	0.68
35:l:116:LYS:HG3	35:l:120:ARG:HH11	1.58	0.67
50:3:1777:G:N2	50:3:1793:A:C6	2.62	0.67
52:5:1132:G:H2'	52:5:1133:A:H2'	1.76	0.67
5:B:70:TYR:HB3	5:B:109:ILE:HB	1.76	0.67
50:3:580:U:OP1	50:3:1249:A:O2'	2.12	0.67
50:3:1672:C:O2	50:3:2706:U:O2'	2.12	0.67
50:3:2819:C:H2'	50:3:2820:G:H8	1.59	0.67
6:C:117:VAL:HB	6:C:132:PRO:HB3	1.77	0.67
18:O:2:ARG:NH1	18:O:5:ARG:O	2.28	0.67
20:Q:78:ASN:HB2	20:Q:82:HIS:HB2	1.76	0.67
50:3:2799:U:OP1	50:3:2896:G:N2	2.27	0.67
50:3:2803:G:OP2	50:3:2805:A:N6	2.27	0.67
52:5:663:G:N1	52:5:737:U:C2	2.63	0.67
52:5:892:G:N2	52:5:895:A:C4	2.63	0.67
8:E:4:ASN:HB3	8:E:88:ILE:HB	1.76	0.67
9:F:2:ARG:NH1	9:F:4:ASN:OD1	2.28	0.67
23:T:26:ARG:O	23:T:30:GLN:NE2	2.23	0.67
26:c:39:LEU:HD22	26:c:101:LEU:HD11	1.76	0.67
38:o:58:LYS:HD3	50:3:2849:G:H4'	1.76	0.67
50:3:919:C:H42	50:3:931:G:H1	1.42	0.67
50:3:2299:U:O4	50:3:2349:G:O6	2.13	0.67
51:4:4:G:O6	51:4:105:A:N6	2.28	0.67
52:5:1193:U:H2'	52:5:1194:A:H8	1.56	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:140:SER:HA	5:B:143:LYS:HE2	1.76	0.67
50:3:2596:A:C2	50:3:2615:G:C6	2.81	0.67
6:C:57:LYS:NZ	52:5:543:C:OP1	2.27	0.67
50:3:725:G:H1	50:3:807:U:H3	1.40	0.67
50:3:1067:A:N1	50:3:1157:G:O6	2.27	0.67
52:5:1065:G:H1	52:5:1074:U:H3	1.42	0.67
12:I:58:ILE:HG22	12:I:68:ARG:HG2	1.76	0.67
28:e:129:GLU:HB2	28:e:133:GLU:HG3	1.75	0.67
50:3:2807:G:C5	50:3:2811:G:N2	2.63	0.67
14:K:96:ARG:HG2	14:K:111:VAL:HG22	1.76	0.67
29:f:17:ASP:OD2	29:f:19:VAL:HG23	1.94	0.67
42:s:56:ASN:ND2	50:3:1369:U:O2'	2.27	0.67
50:3:603:G:O2'	50:3:1019:A:N6	2.28	0.67
50:3:799:A:OP1	50:3:1600:A:N6	2.28	0.67
50:3:2298:G:N2	50:3:2351:U:O2	2.28	0.67
4:A:66:GLN:HE21	4:A:70:ASN:HD22	1.40	0.67
50:3:329:G:C6	50:3:377:U:C4	2.83	0.67
50:3:629:G:H1	50:3:696:U:H3	1.42	0.67
52:5:106:C:N4	52:5:232:G:N7	2.42	0.67
5:B:138:ARG:NH1	7:D:113:ASN:OD1	2.27	0.67
41:r:1:MET:HE3	41:r:2:ILE:H	1.59	0.67
50:3:1958:U:O2'	50:3:1961:A:N7	2.28	0.67
50:3:2752:G:O6	50:3:2768:U:C4	2.48	0.67
52:5:1319:U:H4'	52:5:1320:A:H5''	1.76	0.67
3:2:7:VAL:HG23	3:2:37:GLY:HA3	1.77	0.66
4:A:166:VAL:HG12	4:A:169:LEU:HD22	1.77	0.66
50:3:1055:A:N3	50:3:1056:A:N6	2.43	0.66
50:3:1067:A:C2	50:3:1157:G:N1	2.54	0.66
52:5:987:U:O2'	52:5:1034:G:N7	2.28	0.66
11:H:24:THR:HG22	11:H:25:GLN:HG2	1.77	0.66
50:3:274:A:OP2	50:3:294:G:N1	2.28	0.66
50:3:2149:U:O2'	50:3:2190:G:N3	2.28	0.66
24:a:174:ASP:OD1	24:a:175:GLU:N	2.26	0.66
40:q:79:HIS:NE2	50:3:1218:G:O3'	2.27	0.66
50:3:173:C:H2'	50:3:174:A:H8	1.60	0.66
50:3:1027:U:O4	50:3:1198:G:O6	2.12	0.66
51:4:61:A:H2'	51:4:62:G:H8	1.60	0.66
52:5:590:G:H1	52:5:644:U:H3	1.43	0.66
26:c:140:THR:HA	26:c:143:MET:HE2	1.77	0.66
6:C:12:ARG:HD2	6:C:31:ARG:HB3	1.78	0.66
34:k:4:ASN:HB2	34:k:7:LYS:HG3	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:p:94:LEU:HG	40:q:13:LEU:HD22	1.76	0.66
50:3:814:U:H2'	50:3:815:G:C8	2.29	0.66
52:5:63:U:O2'	52:5:375:C:O2	2.13	0.66
24:a:144:GLY:HA3	52:5:709:A:H5''	1.78	0.66
27:d:162:LYS:NZ	27:d:163:ASP:OD1	2.26	0.66
29:f:77:LEU:HD23	29:f:100:GLN:HB3	1.77	0.66
35:l:35:VAL:HG22	35:l:102:VAL:HG22	1.78	0.66
50:3:2245:G:O2'	50:3:2247:G:N7	2.29	0.66
52:5:922:G:N2	52:5:1507:U:OP1	2.27	0.66
10:G:66:THR:HG22	52:5:649:U:H5'	1.78	0.66
24:a:246:ARG:NH2	50:3:1979:G:OP2	2.28	0.66
41:r:134:LYS:HA	41:r:137:MET:HG2	1.77	0.66
50:3:2596:A:N1	50:3:2615:G:O6	2.29	0.66
5:B:8:ASN:ND2	16:M:50:ALA:O	2.29	0.66
50:3:137:U:O2	50:3:146:G:N2	2.26	0.66
50:3:1232:U:H2'	50:3:1233:A:C8	2.31	0.66
50:3:1837:C:H2'	50:3:1838:A:C8	2.30	0.66
52:5:671:G:H2'	52:5:672:A:H8	1.61	0.66
52:5:892:G:N2	52:5:895:A:C5	2.64	0.66
27:d:38:MET:HE2	27:d:40:VAL:HG22	1.78	0.66
50:3:824:A:N6	50:3:1648:A:OP1	2.28	0.66
50:3:1902:C:H2'	50:3:1903:A:C8	2.31	0.66
52:5:13:U:O4	52:5:23:G:O6	2.13	0.66
52:5:402:G:N1	52:5:434:U:O2	2.29	0.66
52:5:664:A:H2'	52:5:665:G:C8	2.31	0.66
15:L:16:GLU:HB3	15:L:31:GLN:HG2	1.77	0.66
28:e:89:LYS:HD2	28:e:91:ARG:HH11	1.60	0.66
30:g:56:ASN:HB2	30:g:75:ALA:HB1	1.77	0.66
52:5:631:C:H2'	52:5:632:A:H8	1.61	0.66
52:5:1473:U:O2'	52:5:1475:A:N6	2.29	0.66
4:A:198:VAL:HG13	4:A:211:VAL:HG23	1.78	0.65
10:G:55:ALA:HB3	10:G:73:ASN:HB2	1.78	0.65
50:3:401:G:O2'	50:3:402:A:OP1	2.13	0.65
52:5:1220:A:C6	52:5:1267:G:O6	2.48	0.65
9:F:34:LYS:HE2	52:5:1263:A:H2'	1.77	0.65
50:3:410:G:H4'	50:3:411:U:O5'	1.97	0.65
50:3:742:G:H1	50:3:759:U:H3	0.76	0.65
50:3:2409:U:H3	50:3:2423:G:H1	1.44	0.65
35:l:134:ARG:NH1	35:l:135:GLU:O	2.29	0.65
50:3:899:A:N1	50:3:951:C:N4	2.42	0.65
33:j:30:LYS:NZ	33:j:32:TYR:O	2.29	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:l:76:LYS:HB2	35:l:91:GLU:HG3	1.77	0.65
50:3:806:A:HO2'	50:3:1383:G:HO2'	1.40	0.65
25:b:87:MET:HE1	25:b:90:PHE:HE1	1.61	0.65
29:f:2:LYS:CG	29:f:34:LYS:O	2.45	0.65
38:o:94:GLY:HA2	38:o:116:GLU:HB3	1.77	0.65
41:r:94:ASN:ND2	50:3:2020:A:O2'	2.29	0.65
24:a:190:ARG:NH1	24:a:191:LYS:O	2.30	0.65
41:r:9:ARG:HG3	41:r:80:PRO:HG2	1.78	0.65
50:3:235:U:H3'	50:3:236:G:C8	2.32	0.65
50:3:752:C:H3'	50:3:753:A:H8	1.62	0.65
53:8:20:G:N2	53:8:57:C:C2	2.65	0.65
4:A:222:PRO:HB3	4:A:257:GLU:HG3	1.79	0.65
42:s:62:PRO:HD3	42:s:77:LEU:HB2	1.79	0.65
50:3:590:U:H2'	50:3:591:G:H8	1.61	0.65
50:3:2829:G:H3'	50:3:2830:A:H8	1.61	0.65
8:E:16:GLU:O	8:E:20:GLN:NE2	2.30	0.65
24:a:195:GLU:O	24:a:197:ARG:NH1	2.30	0.65
41:r:82:MET:SD	41:r:84:ARG:NH2	2.70	0.65
50:3:1725:G:O6	50:3:1731:G:N2	2.30	0.65
52:5:500:G:H2'	52:5:501:A:C8	2.32	0.65
25:b:15:GLN:HA	25:b:25:PRO:HA	1.79	0.65
35:l:87:LYS:HD3	50:3:991:G:H5''	1.78	0.65
50:3:485:A:H61	50:3:490:A:H62	1.43	0.65
52:5:372:G:O6	52:5:383:U:O2	2.15	0.65
11:H:128:GLN:HG2	52:5:1316:C:H1'	1.78	0.65
42:s:7:LEU:HA	42:s:31:VAL:HG12	1.78	0.65
50:3:984:C:O2	50:3:1020:G:O2'	2.14	0.65
50:3:2036:G:N1	50:3:2040:A:OP2	2.25	0.65
6:C:134:ILE:HD13	52:5:618:U:H5	1.62	0.64
24:a:77:ASP:O	29:f:89:TYR:OH	2.13	0.64
43:t:44:ARG:HB3	43:t:63:VAL:HB	1.78	0.64
50:3:2521:A:H2'	50:3:2522:U:C6	2.32	0.64
2:1:10:ARG:NH1	34:k:62:LEU:O	2.29	0.64
52:5:708:A:H2'	52:5:709:A:C8	2.32	0.64
52:5:1244:A:N3	52:5:1286:G:N2	2.45	0.64
52:5:1384:A:H2'	52:5:1385:A:C8	2.31	0.64
5:B:84:ASN:HA	5:B:87:LYS:HE2	1.78	0.64
17:N:41:LEU:HA	17:N:44:LYS:HE3	1.78	0.64
25:b:56:THR:HA	25:b:78:THR:HA	1.78	0.64
48:y:32:LYS:HD2	48:y:50:ASP:H	1.62	0.64
52:5:93:A:OP2	52:5:322:G:N1	2.29	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:369:A:OP2	52:5:477:U:O2'	2.13	0.64
52:5:1196:G:H3'	52:5:1197:G:H8	1.62	0.64
52:5:1382:C:H2'	52:5:1383:A:H8	1.62	0.64
14:K:99:ARG:NH2	14:K:106:VAL:O	2.28	0.64
30:g:100:VAL:HG13	30:g:105:ALA:HA	1.79	0.64
50:3:612:G:H5'	50:3:2024:C:H2'	1.80	0.64
50:3:1866:G:O6	50:3:1891:A:C5	2.51	0.64
51:4:104:C:H2'	51:4:105:A:H8	1.62	0.64
52:5:254:G:H2'	52:5:255:G:C8	2.32	0.64
52:5:861:A:O2'	52:5:867:A:N1	2.30	0.64
11:H:98:LYS:HD2	11:H:99:ILE:HG23	1.78	0.64
12:I:45:PRO:HB2	12:I:78:ARG:HD2	1.79	0.64
29:f:2:LYS:HD3	29:f:34:LYS:HB2	1.79	0.64
36:m:11:SER:HA	36:m:14:ARG:HD2	1.79	0.64
50:3:525:A:N6	50:3:1312:A:N1	2.45	0.64
50:3:2096:U:O2	50:3:2238:G:O6	2.15	0.64
16:M:35:SER:OG	52:5:1333:C:OP2	2.15	0.64
25:b:129:LYS:HB2	50:3:2519:U:H4'	1.79	0.64
38:o:24:GLU:O	38:o:93:ARG:NH2	2.30	0.64
50:3:1301:G:O2'	50:3:1652:A:N7	2.25	0.64
51:4:70:G:O2'	51:4:95:G:N2	2.29	0.64
26:c:55:LYS:NZ	50:3:836:G:O4'	2.31	0.64
49:z:40:ARG:HH22	50:3:2410:C:H41	1.45	0.64
50:3:1298:A:H61	50:3:1353:G:H22	1.45	0.64
52:5:550:U:H2'	52:5:551:A:H8	1.63	0.64
24:a:85:SER:OG	24:a:87:GLU:OE2	2.15	0.64
44:u:33:LYS:NZ	50:3:2269:C:OP1	2.30	0.64
44:u:29:ASP:OD2	50:3:2272:C:N4	2.31	0.64
50:3:2594:C:N4	50:3:2616:G:O2'	2.29	0.64
52:5:1290:G:N2	52:5:1293:A:OP2	2.28	0.64
6:C:12:ARG:NH1	6:C:34:ILE:O	2.31	0.64
17:N:18:ASP:HA	52:5:747:C:H4'	1.80	0.64
50:3:330:A:H2'	50:3:331:A:C8	2.33	0.64
50:3:483:A:H5'	50:3:485:A:H62	1.64	0.64
50:3:2291:U:O2	50:3:2333:G:N2	2.31	0.64
50:3:2807:G:C8	50:3:2811:G:N1	2.66	0.64
52:5:91:C:H2'	52:5:92:G:H8	1.61	0.64
52:5:239:A:H62	52:5:277:G:H1'	1.63	0.64
52:5:941:A:H61	52:5:1210:U:H3	1.46	0.64
45:v:13:LEU:HB3	45:v:29:TRP:HB2	1.80	0.63
50:3:70:G:N2	50:3:76:A:OP2	2.30	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:509:G:H2'	50:3:510:G:C8	2.33	0.63
50:3:1386:G:N1	50:3:1400:U:OP2	2.31	0.63
50:3:2483:C:N4	50:3:2537:G:H22	1.94	0.63
50:3:2483:C:N3	50:3:2537:G:N1	2.45	0.63
52:5:455:U:H3	52:5:472:G:H22	1.44	0.63
53:8:20:G:H22	53:8:57:C:H2'	1.63	0.63
50:3:42:U:H2'	50:3:43:A:C8	2.33	0.63
50:3:524:G:H21	50:3:526:G:H8	1.44	0.63
50:3:1708:G:N2	50:3:1712:A:N1	2.46	0.63
52:5:1387:U:O4	52:5:1388:A:N6	2.31	0.63
15:L:93:LYS:HG3	15:L:95:LEU:HG	1.80	0.63
24:a:130:ILE:HG13	24:a:200:VAL:HG21	1.79	0.63
27:d:120:LYS:NZ	27:d:122:PHE:O	2.30	0.63
34:k:48:ARG:HD2	34:k:50:GLY:H	1.63	0.63
34:k:134:GLN:NE2	50:3:674:G:OP1	2.30	0.63
50:3:389:C:H2'	50:3:390:A:H8	1.64	0.63
50:3:2175:U:O2	50:3:2179:A:N7	2.31	0.63
52:5:290:G:H1'	52:5:302:A:H61	1.63	0.63
24:a:67:ARG:HH11	24:a:89:ASP:HA	1.64	0.63
43:t:4:ILE:HD13	43:t:71:LEU:HD12	1.81	0.63
50:3:1462:A:H61	50:3:1594:G:H1	1.47	0.63
50:3:1868:A:H2'	50:3:1869:G:C8	2.33	0.63
50:3:1965:C:H2'	50:3:1966:G:C8	2.33	0.63
50:3:1971:G:O2'	50:3:1974:U:OP2	2.17	0.63
50:3:2229:C:H2'	50:3:2230:A:H8	1.64	0.63
52:5:441:U:H2'	52:5:442:G:C8	2.34	0.63
52:5:1250:A:N6	52:5:1257:C:O2'	2.31	0.63
2:1:53:LYS:NZ	50:3:869:U:OP1	2.32	0.63
14:K:134:LYS:HG3	52:5:498:G:H5''	1.80	0.63
22:S:26:THR:HA	22:S:29:LYS:HE2	1.81	0.63
48:y:37:LYS:NZ	48:y:38:LEU:O	2.32	0.63
50:3:2039:G:OP2	50:3:2462:G:O2'	2.14	0.63
52:5:881:G:N7	52:5:882:U:N3	2.46	0.63
3:2:4:ARG:H	3:2:36:GLN:HB2	1.64	0.63
52:5:881:G:C2	52:5:905:U:O2	2.52	0.63
8:E:106:GLN:HG2	52:5:838:A:H4'	1.81	0.63
38:o:110:LYS:HG2	52:5:1438:U:H5''	1.80	0.63
50:3:652:U:H2'	50:3:653:G:H8	1.63	0.63
50:3:1640:G:O2'	50:3:1642:G:N2	2.31	0.63
50:3:1869:G:N2	50:3:1887:U:O2	2.30	0.63
52:5:403:A:N1	52:5:433:C:N3	2.46	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:n:23:ASN:OD1	37:n:27:ARG:NH2	2.31	0.63
50:3:419:A:H2'	50:3:420:A:C8	2.33	0.63
50:3:856:A:H61	50:3:1008:A:H2'	1.64	0.63
5:B:5:VAL:HA	12:I:59:ARG:HH12	1.64	0.63
38:o:62:GLU:HB3	38:o:81:ILE:HD12	1.80	0.63
39:p:13:ARG:NH1	50:3:616:G:OP2	2.30	0.63
50:3:32:G:N1	50:3:546:U:N3	2.47	0.63
50:3:598:G:H1	50:3:609:U:H3	1.46	0.63
50:3:2474:C:N4	50:3:2475:C:H41	1.97	0.63
52:5:55:C:H3'	52:5:348:C:H41	1.63	0.63
52:5:98:G:N2	52:5:349:A:O2'	2.32	0.63
53:8:23:G:N7	53:8:47:G:C2	2.65	0.63
21:R:42:PRO:HD3	21:R:67:VAL:HG21	1.81	0.62
24:a:268:ARG:NH1	50:3:1806:G:OP1	2.32	0.62
27:d:12:ILE:HD12	27:d:172:ALA:HB1	1.81	0.62
43:t:90:LYS:N	43:t:103:VAL:O	2.32	0.62
52:5:1077:U:H2'	52:5:1078:G:H8	1.64	0.62
24:a:9:ARG:HG2	50:3:1729:G:H5'	1.80	0.62
24:a:22:TYR:OH	50:3:1601:A:N6	2.32	0.62
45:v:30:ASN:O	50:3:2238:G:O2'	2.18	0.62
50:3:2058:G:N2	50:3:2060:G:O6	2.33	0.62
50:3:2303:U:O2	50:3:2345:G:N2	2.30	0.62
52:5:413:G:N2	52:5:538:G:O2'	2.32	0.62
6:C:109:THR:O	6:C:112:SER:OG	2.18	0.62
30:g:112:TYR:HD1	30:g:113:PHE:C	2.06	0.62
50:3:1928:G:H2'	50:3:1929:G:H8	1.64	0.62
25:b:19:THR:H	25:b:221:GLU:HB3	1.62	0.62
35:l:74:LYS:NZ	50:3:994:U:OP1	2.30	0.62
41:r:99:ARG:NH1	50:3:1291:C:OP1	2.32	0.62
43:t:3:ARG:HH21	43:t:4:ILE:HD11	1.62	0.62
50:3:2812:U:H1'	50:3:2813:A:H2'	1.80	0.62
51:4:31:G:N2	51:4:33:U:O4	2.32	0.62
52:5:1220:A:C6	52:5:1267:G:C6	2.87	0.62
15:L:105:ASN:OD1	15:L:106:ALA:N	2.33	0.62
17:N:51:ARG:NH2	52:5:725:A:OP1	2.32	0.62
24:a:56:ARG:O	24:a:57:HIS:ND1	2.33	0.62
50:3:144:C:H2'	50:3:145:A:C8	2.33	0.62
50:3:2266:C:O2'	50:3:2435:C:OP2	2.16	0.62
52:5:13:U:O2	52:5:23:G:N2	2.28	0.62
52:5:1382:C:H2'	52:5:1383:A:C8	2.34	0.62
34:k:55:GLN:NE2	50:3:860:C:O2'	2.33	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:523:A:N6	50:3:529:G:C6	2.67	0.62
50:3:865:A:H62	50:3:2073:C:H1'	1.65	0.62
52:5:580:C:O2	52:5:756:A:N6	2.32	0.62
52:5:811:A:OP2	52:5:813:A:N6	2.25	0.62
8:E:14:SER:OG	8:E:16:GLU:OE1	2.17	0.62
11:H:30:ILE:HA	11:H:65:ILE:HB	1.82	0.62
50:3:173:C:H2'	50:3:174:A:C8	2.34	0.62
50:3:821:C:O2'	50:3:1787:A:N6	2.32	0.62
50:3:2099:U:N3	50:3:2234:C:OP2	2.33	0.62
50:3:2865:U:H2'	50:3:2866:A:H8	1.64	0.62
8:E:110:GLN:HA	8:E:113:ALA:HB3	1.82	0.62
20:Q:81:MET:O	20:Q:85:HIS:ND1	2.29	0.62
25:b:148:GLN:HB2	50:3:2583:U:H1'	1.82	0.62
29:f:21:VAL:CG1	29:f:22:LYS:N	2.63	0.62
35:l:15:VAL:HG11	35:l:41:TRP:HE1	1.63	0.62
50:3:1063:A:N6	50:3:1161:A:OP1	2.32	0.62
52:5:1220:A:N6	52:5:1267:G:O6	2.33	0.62
52:5:1266:U:H2'	52:5:1267:G:C8	2.33	0.62
4:A:37:TRP:HE1	52:5:827:C:H5'	1.65	0.62
11:H:115:ARG:NE	52:5:1344:C:OP1	2.32	0.62
42:s:15:LYS:O	42:s:19:ASN:ND2	2.33	0.62
50:3:1070:U:O2	50:3:1155:G:O6	2.18	0.62
50:3:1348:C:N4	50:3:1359:C:OP2	2.31	0.62
51:4:31:G:O6	51:4:48:A:N6	2.33	0.62
52:5:56:A:OP2	52:5:348:C:N4	2.32	0.62
52:5:116:A:N6	52:5:229:G:O2'	2.33	0.62
5:B:3:GLN:N	52:5:1051:U:OP2	2.33	0.62
13:J:121:ARG:NH1	52:5:792:C:OP1	2.33	0.62
17:N:36:LEU:HD23	17:N:53:LEU:HB2	1.80	0.62
50:3:1156:C:H2'	50:3:1157:G:H8	1.63	0.62
50:3:1627:U:H2'	50:3:1628:G:H8	1.65	0.62
26:c:75:ARG:NH2	50:3:842:U:O2	2.33	0.61
29:f:64:LEU:HA	29:f:67:LYS:HD2	1.82	0.61
30:g:56:ASN:HA	30:g:80:LEU:HD22	1.82	0.61
32:i:119:ARG:NH2	50:3:563:A:N1	2.47	0.61
50:3:714:G:H2'	50:3:715:G:H8	1.64	0.61
52:5:26:C:O2'	52:5:506:U:O4	2.18	0.61
10:G:11:HIS:NE2	52:5:821:U:O2	2.30	0.61
46:w:105:ARG:HH11	50:3:1431:A:H4'	1.65	0.61
50:3:513:A:H2'	50:3:514:A:C5	2.34	0.61
10:G:24:ASN:ND2	52:5:823:C:O2	2.31	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:I:28:THR:HA	12:I:31:ILE:HD12	1.82	0.61
16:M:6:LEU:HB3	16:M:23:ARG:HH22	1.64	0.61
50:3:17:G:O6	50:3:560:U:O4	2.18	0.61
50:3:684:A:H2'	50:3:685:G:H8	1.64	0.61
50:3:823:A:OP1	50:3:826:C:N4	2.33	0.61
50:3:1866:G:O6	50:3:1891:A:C6	2.53	0.61
50:3:2587:U:H2'	50:3:2588:U:C5	2.35	0.61
52:5:1039:G:H2'	52:5:1041:G:C8	2.35	0.61
13:J:77:LEU:HD21	13:J:90:ILE:HD12	1.83	0.61
28:e:155:ARG:HG3	28:e:164:GLY:HA2	1.82	0.61
35:l:10:ARG:HB3	35:l:11:LYS:HZ2	1.65	0.61
40:q:69:ASN:HA	40:q:84:GLY:HA2	1.81	0.61
50:3:18:G:H2'	50:3:19:G:C8	2.35	0.61
50:3:793:C:H2'	50:3:794:G:H8	1.64	0.61
50:3:867:G:H3'	50:3:980:C:H42	1.64	0.61
50:3:995:A:N3	50:3:2465:U:O2'	2.33	0.61
50:3:1687:G:OP1	50:3:2826:G:N2	2.33	0.61
50:3:2650:A:H2'	50:3:2651:G:H8	1.63	0.61
52:5:435:U:O2'	52:5:438:A:N6	2.33	0.61
52:5:662:G:O6	52:5:721:G:O6	2.18	0.61
52:5:1115:G:N2	52:5:1116:U:O4	2.32	0.61
4:A:154:ARG:NH1	52:5:1087:C:O2'	2.31	0.61
16:M:4:LYS:NZ	52:5:1038:G:OP1	2.32	0.61
31:h:43:THR:O	31:h:47:GLN:NE2	2.31	0.61
36:m:106:ARG:NH2	36:m:109:ASP:OD2	2.33	0.61
50:3:595:U:H2'	50:3:605:A:H1'	1.82	0.61
52:5:448:A:N6	52:5:478:G:OP2	2.26	0.61
52:5:1223:A:H2'	52:5:1224:C:C6	2.36	0.61
52:5:1396:U:H3	52:5:1454:G:H1	1.49	0.61
26:c:54:THR:HG22	50:3:836:G:H22	1.64	0.61
50:3:728:A:O2'	50:3:1381:A:N3	2.34	0.61
52:5:1142:G:N2	52:5:1145:A:OP2	2.24	0.61
52:5:1316:C:H2'	52:5:1317:A:H8	1.65	0.61
12:I:65:LYS:HB2	52:5:968:G:H5'	1.81	0.61
23:T:37:ARG:HH11	23:T:40:MET:HE2	1.65	0.61
26:c:176:LYS:HE3	50:3:357:A:H1'	1.83	0.61
29:f:5:LEU:HD11	29:f:14:LYS:HG3	1.83	0.61
32:i:25:GLY:HA2	32:i:66:VAL:HG22	1.82	0.61
37:n:38:HIS:NE2	51:4:26:C:OP1	2.33	0.61
50:3:782:U:H3	50:3:2021:A:H1'	1.65	0.61
50:3:873:G:O6	50:3:976:C:N4	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:989:G:O6	50:3:1000:U:O4	2.18	0.61
50:3:2534:G:O6	50:3:2545:U:O4	2.17	0.61
52:5:376:G:N2	52:5:379:A:OP2	2.34	0.61
6:C:121:HIS:HA	6:C:145:LYS:HD2	1.82	0.61
20:Q:73:ARG:NH1	20:Q:79:CYS:O	2.33	0.61
29:f:128:LEU:HD21	29:f:138:LEU:HD13	1.83	0.61
35:l:45:ARG:NH2	50:3:2493:G:OP1	2.33	0.61
50:3:738:U:O2	50:3:763:G:N2	2.32	0.61
50:3:2350:C:H1'	50:3:2382:A:H5''	1.83	0.61
52:5:674:U:H3	52:5:710:G:H1	1.49	0.61
5:B:10:LEU:HD12	16:M:58:LYS:HE2	1.83	0.61
9:F:40:ARG:NH2	52:5:1266:U:OP2	2.34	0.61
15:L:9:ILE:HB	15:L:18:ALA:HB1	1.81	0.61
33:j:107:ARG:HE	33:j:115:LEU:HD23	1.66	0.61
50:3:539:U:H3	50:3:1264:U:H4'	1.66	0.61
13:J:37:TRP:HZ2	52:5:683:G:H4'	1.66	0.61
24:a:249:VAL:HG22	24:a:251:ARG:H	1.66	0.61
31:h:59:ASN:OD1	31:h:60:ASP:N	2.34	0.61
36:m:71:ASN:HD21	50:3:1307:G:H1'	1.64	0.61
50:3:914:G:N2	50:3:937:A:OP2	2.33	0.61
50:3:1692:A:H2'	50:3:1693:U:H6	1.66	0.61
52:5:1320:A:H62	52:5:1349:A:H3'	1.65	0.61
20:Q:81:MET:HA	20:Q:84:ARG:HG3	1.82	0.60
38:o:98:ARG:NH1	50:3:2725:G:N3	2.49	0.60
50:3:334:A:H2'	50:3:368:C:H1'	1.82	0.60
50:3:401:G:O2'	50:3:402:A:O4'	2.19	0.60
50:3:600:U:H2'	50:3:601:U:C6	2.36	0.60
50:3:1337:G:O6	50:3:1640:G:N2	2.34	0.60
50:3:2575:G:H2'	50:3:2576:A:C8	2.35	0.60
51:4:43:A:H2'	51:4:44:A:H8	1.66	0.60
52:5:1288:C:H2'	52:5:1289:U:H6	1.64	0.60
53:8:37:A:H2'	53:8:38:G:H8	1.66	0.60
50:3:352:C:N4	50:3:353:G:O6	2.34	0.60
50:3:1738:G:H2'	50:3:1739:G:H8	1.65	0.60
44:u:28:ARG:NH2	50:3:2288:G:O6	2.34	0.60
50:3:2323:U:H2'	50:3:2324:A:C8	2.36	0.60
50:3:2625:U:H2'	50:3:2626:A:H8	1.67	0.60
52:5:413:G:O6	52:5:423:U:O2	2.20	0.60
52:5:490:U:H2'	52:5:491:U:C6	2.37	0.60
52:5:833:G:O6	52:5:844:U:O4	2.20	0.60
52:5:1432:A:H2'	52:5:1433:G:C8	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:9:LYS:HD3	52:5:425:G:H3'	1.83	0.60
24:a:58:GLN:NE2	50:3:1830:G:OP1	2.33	0.60
24:a:159:GLN:NE2	50:3:1807:C:O2	2.35	0.60
31:h:51:ILE:HD12	31:h:52:PRO:HD2	1.82	0.60
35:l:42:ILE:HG13	35:l:95:ALA:HB3	1.83	0.60
50:3:534:U:O4	50:3:538:A:N7	2.34	0.60
50:3:815:G:O2'	50:3:818:A:N6	2.34	0.60
50:3:846:U:HO2'	50:3:1280:G:HO2'	1.50	0.60
50:3:1918:U:O2	50:3:1926:A:N6	2.34	0.60
50:3:2752:G:N1	50:3:2768:U:N3	2.50	0.60
24:a:159:GLN:HA	24:a:162:ARG:HE	1.66	0.60
28:e:110:LEU:HG	28:e:112:TYR:H	1.66	0.60
29:f:19:VAL:O	29:f:19:VAL:CG1	2.47	0.60
41:r:77:ASN:HB2	50:3:26:G:H1'	1.84	0.60
45:v:32:ASN:OD1	45:v:34:GLN:NE2	2.32	0.60
50:3:855:A:N7	50:3:1009:A:N6	2.50	0.60
50:3:1093:U:O4	50:3:1115:G:O6	2.19	0.60
50:3:1278:G:H3'	50:3:1279:U:H5''	1.82	0.60
50:3:1436:C:H2'	50:3:1628:G:H22	1.66	0.60
50:3:2823:A:H1'	50:3:2825:A:C5	2.35	0.60
52:5:123:U:H3	52:5:222:U:H3	1.49	0.60
52:5:404:A:N6	52:5:432:U:O4	2.33	0.60
52:5:664:A:H2'	52:5:665:G:H8	1.65	0.60
5:B:56:VAL:HG12	5:B:69:VAL:HA	1.84	0.60
10:G:26:ARG:HD3	10:G:84:ILE:HG23	1.83	0.60
11:H:51:GLU:HG3	11:H:54:LEU:HD23	1.82	0.60
31:h:87:LYS:HD3	50:3:1099:C:H1'	1.84	0.60
33:j:23:LYS:HB3	33:j:40:VAL:HB	1.82	0.60
50:3:1723:A:OP2	50:3:1732:A:N6	2.29	0.60
50:3:2701:A:H2'	50:3:2702:G:C8	2.36	0.60
52:5:149:G:H2'	52:5:150:A:H8	1.66	0.60
52:5:770:G:O6	52:5:804:A:N6	2.35	0.60
10:G:37:ALA:HB2	10:G:70:VAL:HG23	1.84	0.60
50:3:1381:A:OP2	50:3:1405:G:N1	2.32	0.60
52:5:885:U:H2'	52:5:886:A:C8	2.36	0.60
2:1:34:THR:OG1	2:1:37:GLN:OE1	2.14	0.60
6:C:115:GLN:O	6:C:119:HIS:ND1	2.34	0.60
7:D:213:ASN:H	10:G:52:GLY:HA3	1.66	0.60
39:p:83:LYS:NZ	50:3:1186:A:O5'	2.35	0.60
50:3:1306:G:H2'	50:3:1307:G:H8	1.66	0.60
50:3:1406:A:O2'	50:3:1408:G:N7	2.31	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:653:G:N1	52:5:748:U:O4	2.35	0.60
44:u:60:TYR:HH	50:3:2339:G:HO2'	1.47	0.60
50:3:148:U:H2'	50:3:149:A:C8	2.37	0.60
50:3:535:G:H2'	50:3:540:A:H61	1.67	0.60
50:3:558:C:O2	50:3:587:U:O2'	2.20	0.60
50:3:667:A:N6	50:3:2424:C:O2'	2.34	0.60
50:3:1778:G:H2'	50:3:1779:G:C8	2.37	0.60
53:8:67:C:H2'	53:8:68:G:H8	1.67	0.60
24:a:84:LYS:HE3	24:a:100:THR:HB	1.84	0.60
27:d:34:ILE:HD12	27:d:91:LEU:HD11	1.83	0.60
50:3:652:U:H2'	50:3:653:G:C8	2.37	0.60
50:3:2129:U:H2'	50:3:2130:A:C8	2.36	0.60
50:3:2603:G:N2	50:3:2606:A:OP2	2.29	0.60
52:5:453:C:H2'	52:5:454:U:C6	2.37	0.60
52:5:881:G:C2	52:5:905:U:C2	2.90	0.60
4:A:30:VAL:HB	4:A:55:HIS:HA	1.84	0.59
8:E:39:TYR:HA	8:E:58:TYR:HA	1.83	0.59
50:3:899:A:N3	51:4:90:G:O2'	2.35	0.59
50:3:1363:C:H2'	50:3:1364:A:H8	1.66	0.59
50:3:2376:C:H2'	50:3:2377:A:H8	1.67	0.59
50:3:2650:A:H2'	50:3:2651:G:C8	2.37	0.59
52:5:253:G:O6	52:5:266:A:N6	2.35	0.59
52:5:659:U:H4'	52:5:833:G:H5'	1.84	0.59
52:5:1150:G:H2'	52:5:1151:A:H8	1.66	0.59
6:C:129:VAL:HG21	6:C:134:ILE:HD11	1.83	0.59
24:a:8:SER:OG	50:3:762:A:O2'	2.19	0.59
25:b:128:PHE:HZ	25:b:164:LYS:HE3	1.67	0.59
50:3:840:G:H21	50:3:866:G:H1'	1.66	0.59
50:3:2137:A:O2'	50:3:2140:G:N3	2.35	0.59
52:5:409:G:N2	52:5:425:G:O2'	2.35	0.59
52:5:1263:A:H3'	52:5:1264:G:H8	1.67	0.59
52:5:1495:C:H2'	52:5:1496:G:H8	1.66	0.59
14:K:94:LEU:HB2	14:K:115:LEU:HD12	1.84	0.59
14:K:96:ARG:NH1	52:5:549:U:O2'	2.35	0.59
32:i:40:ARG:HH21	32:i:42:LYS:HG3	1.65	0.59
38:o:32:ASN:ND2	38:o:89:GLU:OE2	2.35	0.59
50:3:793:C:H2'	50:3:794:G:C8	2.38	0.59
50:3:1524:C:H2'	50:3:1525:G:H8	1.66	0.59
52:5:582:G:H1	52:5:754:U:H3	1.49	0.59
6:C:7:ILE:HG12	6:C:18:LEU:HD11	1.83	0.59
9:F:26:ILE:HD11	9:F:42:LEU:HD22	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:m:109:ASP:HB3	50:3:1683:G:N2	2.16	0.59
41:r:88:ARG:O	50:3:1648:A:N6	2.36	0.59
50:3:341:G:N1	50:3:344:A:OP2	2.30	0.59
50:3:2865:U:H2'	50:3:2866:A:C8	2.37	0.59
13:J:94:ALA:HA	13:J:100:ILE:HD11	1.83	0.59
29:f:24:GLY:O	29:f:28:HIS:NE2	2.35	0.59
50:3:111:G:H2'	50:3:112:A:C8	2.36	0.59
50:3:1844:C:H1'	50:3:1934:A:C2	2.37	0.59
50:3:2299:U:H2'	50:3:2300:A:C8	2.36	0.59
50:3:2684:G:H2'	50:3:2685:A:C8	2.36	0.59
52:5:124:U:H2'	52:5:125:A:C8	2.37	0.59
52:5:710:G:H2'	52:5:711:G:C8	2.35	0.59
53:8:71:A:O2'	53:8:72:C:OP1	2.20	0.59
26:c:28:GLU:OE2	26:c:30:LYS:NZ	2.34	0.59
37:n:71:LYS:HG2	37:n:104:ALA:HB1	1.84	0.59
50:3:733:C:H5''	50:3:734:A:H5'	1.85	0.59
50:3:888:A:H2'	50:3:889:G:C8	2.38	0.59
50:3:1337:G:H1	50:3:1639:C:H42	1.50	0.59
52:5:403:A:N6	52:5:433:C:N4	2.50	0.59
52:5:1055:G:O3'	52:5:1165:G:N2	2.35	0.59
1:0:5:TYR:HD2	50:3:1646:G:H4'	1.67	0.59
48:y:47:MET:HG2	48:y:52:ARG:HB2	1.83	0.59
50:3:875:G:N1	50:3:975:G:O6	2.36	0.59
50:3:1363:C:H2'	50:3:1364:A:C8	2.37	0.59
52:5:153:A:H2'	52:5:154:G:C8	2.38	0.59
52:5:1055:G:H4'	52:5:1056:U:H4'	1.84	0.59
52:5:1316:C:H2'	52:5:1317:A:C8	2.38	0.59
2:1:10:ARG:NH1	34:k:59:TYR:O	2.36	0.59
29:f:21:VAL:HG12	29:f:22:LYS:H	1.64	0.59
38:o:95:LYS:NZ	50:3:2867:U:OP1	2.35	0.59
45:v:33:LEU:HB3	45:v:49:LEU:HD12	1.84	0.59
50:3:214:C:H2'	50:3:215:A:C8	2.38	0.59
50:3:2134:G:H2'	50:3:2135:C:C6	2.37	0.59
50:3:2781:C:H2'	50:3:2782:A:H8	1.66	0.59
51:4:79:U:O2	51:4:86:G:N1	2.33	0.59
52:5:35:C:H42	52:5:548:G:H1	1.51	0.59
52:5:541:C:H2'	52:5:542:G:H8	1.68	0.59
11:H:114:GLU:OE2	11:H:124:ARG:NE	2.33	0.59
18:O:17:ASP:OD1	18:O:18:SER:N	2.35	0.59
30:g:47:ASN:HD21	30:g:49:SER:HB2	1.68	0.59
50:3:383:U:H2'	50:3:384:G:C8	2.38	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1010:G:OP1	50:3:1218:G:O2'	2.20	0.59
50:3:1666:A:N6	50:3:1716:A:O2'	2.35	0.59
50:3:2298:G:H2'	50:3:2299:U:C6	2.38	0.59
1:0:2:LYS:NZ	50:3:722:C:O5'	2.36	0.59
10:G:35:THR:HG22	10:G:36:ILE:H	1.68	0.59
14:K:81:PRO:HD2	14:K:110:ILE:HG12	1.85	0.59
27:d:132:ILE:O	27:d:151:GLY:CA	2.43	0.59
29:f:75:THR:OG1	29:f:104:LYS:NZ	2.36	0.59
32:i:59:ILE:HB	32:i:127:VAL:HG23	1.84	0.59
40:q:64:LEU:HB3	40:q:86:ARG:HE	1.68	0.59
50:3:494:G:N2	50:3:495:U:O4	2.36	0.59
52:5:818:A:H2'	52:5:819:G:H8	1.68	0.59
52:5:1389:U:H2'	52:5:1390:G:C8	2.38	0.59
5:B:153:LYS:HE3	5:B:172:ILE:HA	1.85	0.58
7:D:181:LYS:HD2	52:5:8:G:H1'	1.85	0.58
32:i:78:TYR:HB2	50:3:1167:U:C2	2.37	0.58
50:3:441:U:H3'	50:3:442:G:H8	1.68	0.58
50:3:525:A:H2'	50:3:526:G:C8	2.38	0.58
50:3:1201:A:H2'	50:3:1202:A:C8	2.38	0.58
50:3:2254:G:H2'	50:3:2255:A:C8	2.38	0.58
52:5:1068:G:N2	52:5:1071:A:OP2	2.33	0.58
53:8:16:G:N2	53:8:49:C:C4	2.71	0.58
16:M:13:ILE:HD11	52:5:1003:G:H5'	1.83	0.58
16:M:41:ARG:NH2	16:M:42:LEU:HB2	2.18	0.58
36:m:107:ARG:NH1	50:3:1313:G:O2'	2.31	0.58
40:q:67:LYS:HG3	40:q:86:ARG:HH21	1.68	0.58
50:3:982:G:H2'	50:3:983:A:C8	2.38	0.58
52:5:879:G:H2'	52:5:880:G:C8	2.38	0.58
52:5:1453:C:H2'	52:5:1454:G:C8	2.37	0.58
11:H:13:LYS:HA	11:H:112:VAL:HG23	1.85	0.58
25:b:19:THR:HG22	25:b:20:ASN:H	1.69	0.58
27:d:40:VAL:HB	27:d:50:LEU:HD22	1.85	0.58
29:f:21:VAL:CG1	29:f:22:LYS:H	2.15	0.58
30:g:96:VAL:HA	30:g:99:VAL:HG12	1.85	0.58
39:p:32:LYS:HD2	50:3:1282:G:H5'	1.84	0.58
52:5:1211:A:O2'	52:5:1308:G:N2	2.37	0.58
52:5:1258:U:H2'	52:5:1259:G:C8	2.38	0.58
30:g:43:LYS:HD3	30:g:98:GLY:HA3	1.86	0.58
32:i:18:TRP:HB2	32:i:140:PRO:HA	1.84	0.58
32:i:90:VAL:HG21	32:i:95:MET:HE3	1.86	0.58
50:3:522:C:H2'	50:3:523:A:C8	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1414:C:H2'	50:3:1415:A:C8	2.38	0.58
52:5:253:G:O6	52:5:265:U:O4	2.22	0.58
52:5:711:G:H1'	52:5:774:A:C8	2.39	0.58
52:5:1039:G:H2'	52:5:1041:G:H8	1.67	0.58
52:5:1136:G:N2	52:5:1151:A:N1	2.43	0.58
6:C:134:ILE:HA	52:5:618:U:C5	2.38	0.58
13:J:103:ILE:HB	23:T:8:ASN:HD22	1.67	0.58
16:M:27:CYS:HB2	52:5:1178:C:H5'	1.84	0.58
50:3:186:A:H2'	50:3:187:C:C6	2.38	0.58
50:3:224:G:H22	50:3:463:U:H2'	1.68	0.58
50:3:329:G:N1	50:3:377:U:N3	2.51	0.58
50:3:566:G:OP1	50:3:594:G:N2	2.36	0.58
52:5:616:C:N4	52:5:619:A:OP1	2.33	0.58
52:5:1366:U:N3	52:5:1367:G:O6	2.36	0.58
52:5:1487:U:O4	52:5:1498:G:O6	2.20	0.58
5:B:41:ARG:HH11	5:B:56:VAL:H	1.52	0.58
21:R:29:ARG:HG3	21:R:30:PRO:HD3	1.84	0.58
27:d:45:ARG:HE	27:d:78:LYS:HB2	1.68	0.58
28:e:4:ILE:O	28:e:72:ASN:ND2	2.37	0.58
28:e:166:LEU:HD22	28:e:170:GLU:HB2	1.85	0.58
50:3:17:G:N2	50:3:560:U:O2	2.30	0.58
50:3:1036:A:OP2	50:3:1189:G:N1	2.36	0.58
52:5:129:U:O2	52:5:216:G:N1	2.36	0.58
52:5:133:G:H2'	52:5:134:G:C8	2.39	0.58
52:5:832:G:H2'	52:5:833:G:H8	1.68	0.58
20:Q:43:PHE:O	20:Q:48:GLN:NE2	2.37	0.58
28:e:93:VAL:O	28:e:163:LYS:HA	2.03	0.58
50:3:32:G:C6	50:3:546:U:N3	2.72	0.58
50:3:71:C:O2	50:3:75:A:O2'	2.21	0.58
50:3:1829:U:H2'	50:3:1830:G:C8	2.37	0.58
50:3:2011:G:H3'	50:3:2012:A:H8	1.68	0.58
52:5:87:G:H2'	52:5:88:A:H8	1.68	0.58
52:5:305:A:H2'	52:5:306:G:C8	2.38	0.58
52:5:884:G:N2	52:5:901:A:OP2	2.37	0.58
52:5:1467:A:H5'	52:5:1468:A:H8	1.69	0.58
2:1:15:LYS:NZ	50:3:664:G:OP1	2.37	0.58
9:F:35:LYS:NZ	52:5:1349:A:OP1	2.37	0.58
10:G:66:THR:HA	52:5:649:U:H4'	1.86	0.58
15:L:6:GLY:O	15:L:57:ARG:NH2	2.36	0.58
16:M:8:VAL:HG21	52:5:990:C:H4'	1.84	0.58
41:r:17:ALA:O	41:r:20:VAL:HG22	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:t:44:ARG:NH2	50:3:515:A:O3'	2.37	0.58
50:3:329:G:H2'	50:3:330:A:C8	2.39	0.58
50:3:515:A:H4'	50:3:516:A:OP1	2.04	0.58
50:3:519:A:OP2	50:3:520:C:N4	2.27	0.58
50:3:528:U:H2'	50:3:529:G:H8	1.67	0.58
50:3:675:U:O4	50:3:685:G:O6	2.21	0.58
50:3:993:A:H61	50:3:2466:G:H4'	1.68	0.58
50:3:1673:U:H1'	50:3:2707:A:H4'	1.86	0.58
50:3:1776:G:H2'	50:3:1777:G:H8	1.69	0.58
50:3:2005:G:H2'	50:3:2006:C:H6	1.69	0.58
52:5:146:A:N6	52:5:340:A:N7	2.50	0.58
52:5:1226:A:H2'	52:5:1227:A:C8	2.39	0.58
29:f:2:LYS:HG2	29:f:34:LYS:O	2.04	0.58
50:3:1299:A:O2'	50:3:1353:G:O6	2.18	0.58
50:3:2031:C:H2'	50:3:2032:G:C8	2.38	0.58
50:3:2299:U:H5''	50:3:2388:C:H1'	1.86	0.58
50:3:2483:C:N3	50:3:2537:G:C2	2.72	0.58
27:d:7:HIS:HA	27:d:10:LYS:HG2	1.86	0.58
33:j:77:LEU:HD13	38:o:77:LYS:HD2	1.84	0.58
49:z:37:PHE:HE2	50:3:2379:G:H1'	1.68	0.58
50:3:528:U:H2'	50:3:529:G:C8	2.39	0.58
50:3:2704:U:H2'	50:3:2705:G:C8	2.39	0.58
52:5:135:A:O2'	52:5:1421:A:N1	2.34	0.58
52:5:679:U:H2'	52:5:680:G:C8	2.38	0.58
52:5:803:C:H2'	52:5:804:A:C8	2.39	0.58
52:5:1432:A:H2'	52:5:1433:G:H8	1.69	0.58
6:C:134:ILE:HD13	52:5:618:U:C5	2.39	0.57
11:H:82:ARG:NH2	11:H:105:LEU:O	2.36	0.57
14:K:57:LYS:NZ	52:5:1467:A:O2'	2.35	0.57
18:O:12:ARG:HA	18:O:33:LEU:H	1.69	0.57
29:f:5:LEU:HD11	29:f:14:LYS:CG	2.34	0.57
41:r:6:LYS:HG2	41:r:104:VAL:HG23	1.86	0.57
50:3:1220:A:H3'	50:3:1221:G:H8	1.69	0.57
50:3:2278:G:H3'	50:3:2279:G:C8	2.39	0.57
52:5:70:A:H2'	52:5:71:A:C8	2.39	0.57
3:2:18:LYS:HE3	3:2:21:GLN:HA	1.86	0.57
11:H:9:LEU:HD22	52:5:1124:U:H5'	1.85	0.57
14:K:86:ASN:HD22	14:K:118:VAL:HB	1.68	0.57
44:u:39:LYS:NZ	44:u:50:ILE:O	2.35	0.57
50:3:252:G:O2'	50:3:2440:A:N7	2.33	0.57
50:3:421:A:N6	50:3:424:G:OP2	2.36	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:875:G:H2'	50:3:876:A:C8	2.39	0.57
50:3:1308:A:H2'	50:3:1309:G:C8	2.39	0.57
50:3:1869:G:H2'	50:3:1870:G:C8	2.37	0.57
52:5:805:C:H2'	52:5:806:A:C8	2.40	0.57
9:F:63:ARG:NE	9:F:127:SER:OG	2.29	0.57
50:3:522:C:H2'	50:3:523:A:H8	1.68	0.57
50:3:1432:C:H2'	50:3:1433:U:C6	2.39	0.57
50:3:1820:U:O2'	50:3:1821:G:OP1	2.20	0.57
50:3:2106:G:H1	50:3:2198:G:H22	1.51	0.57
50:3:2557:G:H2'	50:3:2558:G:C8	2.39	0.57
50:3:2687:A:H2'	50:3:2688:C:C6	2.39	0.57
52:5:53:U:H2'	52:5:54:A:C8	2.39	0.57
13:J:12:GLY:HA3	13:J:72:MET:HE2	1.85	0.57
48:y:6:ARG:NH1	50:3:2027:G:N7	2.52	0.57
50:3:329:G:N1	50:3:377:U:C2	2.72	0.57
50:3:712:A:H61	50:3:835:U:H3	1.52	0.57
50:3:1235:U:H2'	50:3:1236:G:C8	2.39	0.57
50:3:1663:G:H2'	50:3:1664:A:C8	2.38	0.57
50:3:2180:U:H3'	50:3:2181:A:H8	1.67	0.57
50:3:2584:G:OP1	50:3:2584:G:N2	2.36	0.57
52:5:70:A:H2'	52:5:71:A:H8	1.68	0.57
52:5:1225:A:H2'	52:5:1226:A:C8	2.39	0.57
29:f:2:LYS:HD3	29:f:34:LYS:CA	2.35	0.57
50:3:1505:G:H1	50:3:1538:U:H3	1.53	0.57
50:3:2382:A:H2'	50:3:2383:G:C8	2.40	0.57
52:5:138:A:N6	52:5:155:C:N3	2.52	0.57
52:5:144:U:H3	52:5:149:G:H1	1.52	0.57
52:5:787:A:H8	53:8:39:A:H5'	1.69	0.57
22:S:7:ASN:ND2	52:5:328:G:OP2	2.37	0.57
50:3:25:G:H2'	50:3:26:G:C8	2.37	0.57
50:3:1076:U:O2	50:3:1149:G:O6	2.23	0.57
50:3:1964:C:H2'	50:3:1965:C:C6	2.39	0.57
50:3:2600:G:O6	50:3:2609:C:N4	2.37	0.57
50:3:2813:A:OP2	50:3:2894:G:N2	2.38	0.57
50:3:2820:G:N3	50:3:2887:A:O2'	2.38	0.57
52:5:1049:G:O6	52:5:1174:U:O2	2.22	0.57
52:5:1330:A:H2'	52:5:1331:A:C8	2.40	0.57
15:L:28:SER:HB3	52:5:1302:C:H5''	1.87	0.57
15:L:43:LYS:HG3	52:5:1270:C:H4'	1.86	0.57
50:3:1315:A:H2'	50:3:1316:U:C2	2.39	0.57
52:5:165:A:N6	52:5:198:A:OP2	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:579:G:N2	52:5:756:A:OP2	2.37	0.57
52:5:703:A:H2'	52:5:704:U:O4'	2.05	0.57
6:C:64:TYR:O	6:C:96:ARG:NH1	2.37	0.57
9:F:85:GLN:NE2	9:F:147:ASN:OD1	2.32	0.57
9:F:108:ARG:O	9:F:111:HIS:NE2	2.37	0.57
25:b:118:GLY:N	50:3:2826:G:OP1	2.37	0.57
32:i:3:LYS:HD3	40:q:21:PHE:HB2	1.86	0.57
50:3:852:C:O2'	50:3:874:U:OP1	2.23	0.57
50:3:1009:A:H4'	50:3:1219:U:H1'	1.86	0.57
50:3:1200:U:H2'	50:3:1201:A:C8	2.40	0.57
50:3:1484:G:O6	50:3:2711:C:N4	2.38	0.57
52:5:881:G:N1	52:5:905:U:C2	2.73	0.57
52:5:902:A:H2'	52:5:903:A:H8	1.70	0.57
2:1:54:ARG:NH2	50:3:2366:A:O2'	2.37	0.57
4:A:133:LEU:HB3	4:A:156:ILE:HD11	1.87	0.57
7:D:82:GLY:O	52:5:1373:A:N6	2.36	0.57
14:K:66:ALA:HB2	14:K:80:ILE:HD11	1.86	0.57
32:i:40:ARG:HD3	32:i:112:LEU:HD22	1.87	0.57
49:z:39:SER:OG	49:z:42:ARG:NH2	2.38	0.57
50:3:1961:A:O2'	50:3:1963:U:O4	2.18	0.57
50:3:2522:U:H2'	50:3:2523:C:H6	1.70	0.57
52:5:977:U:O2	52:5:1197:G:N2	2.35	0.57
52:5:1175:C:H5''	52:5:1178:C:H41	1.70	0.57
11:H:128:GLN:OE1	52:5:937:G:N2	2.37	0.57
46:w:66:GLN:OE1	50:3:147:C:O2'	2.21	0.57
50:3:947:A:N3	50:3:2272:C:O2'	2.32	0.57
50:3:1304:U:H2'	50:3:1305:G:C8	2.40	0.57
52:5:8:G:O4'	52:5:294:A:N6	2.37	0.57
52:5:50:U:N3	52:5:358:G:N3	2.52	0.57
52:5:1383:A:N6	52:5:1469:G:O6	2.38	0.57
52:5:1417:U:H2'	52:5:1418:G:C8	2.39	0.57
3:2:6:SER:OG	50:3:1065:G:N3	2.37	0.56
10:G:123:MET:HE1	10:G:131:LYS:HD3	1.87	0.56
50:3:253:C:OP2	50:3:2402:C:O2'	2.23	0.56
50:3:379:A:H1'	50:3:381:A:H61	1.69	0.56
50:3:678:U:H4'	50:3:2357:G:H4'	1.86	0.56
50:3:1876:G:N2	50:3:1879:A:OP2	2.36	0.56
50:3:2849:G:H2'	50:3:2850:G:H8	1.69	0.56
52:5:54:A:N6	52:5:355:A:H62	2.03	0.56
52:5:68:C:O2'	52:5:157:A:N3	2.35	0.56
24:a:255:ARG:HH21	24:a:261:ARG:HH11	1.53	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:l:124:LYS:HA	50:3:2492:G:H21	1.70	0.56
50:3:758:C:H2'	50:3:759:U:H6	1.70	0.56
50:3:1672:C:H2'	50:3:1673:U:C6	2.40	0.56
50:3:2849:G:H2'	50:3:2850:G:C8	2.40	0.56
52:5:312:A:N1	52:5:334:A:N6	2.54	0.56
10:G:92:LYS:NZ	52:5:871:U:OP1	2.38	0.56
13:J:79:VAL:HB	13:J:105:GLU:HG2	1.86	0.56
20:Q:43:PHE:HD2	20:Q:82:HIS:HB3	1.71	0.56
31:h:21:PRO:HA	50:3:1103:G:H21	1.70	0.56
34:k:119:LYS:NZ	34:k:138:ALA:O	2.38	0.56
50:3:598:G:O6	50:3:610:G:N1	2.39	0.56
50:3:742:G:O6	50:3:759:U:O4	2.22	0.56
50:3:1247:C:H2'	50:3:1248:A:C8	2.40	0.56
50:3:2013:C:O2'	50:3:2827:A:N3	2.36	0.56
50:3:2068:G:O2'	50:3:2071:C:N4	2.37	0.56
50:3:2231:A:H3'	50:3:2232:G:H8	1.70	0.56
51:4:77:G:N1	51:4:87:U:O4	2.38	0.56
52:5:144:U:N3	52:5:145:G:O6	2.37	0.56
52:5:289:U:OP1	52:5:608:G:N2	2.38	0.56
52:5:777:A:N6	52:5:798:U:OP2	2.39	0.56
52:5:948:U:H2'	52:5:949:G:H8	1.70	0.56
18:O:30:ILE:HG22	18:O:44:ILE:HB	1.86	0.56
25:b:225:GLN:HB2	38:o:17:GLN:HA	1.87	0.56
30:g:118:PHE:HB3	30:g:123:LEU:HB2	1.86	0.56
34:k:39:GLN:NE2	50:3:200:A:N7	2.47	0.56
50:3:71:C:H2'	50:3:72:G:C8	2.41	0.56
50:3:470:U:O2	50:3:471:A:N6	2.29	0.56
50:3:680:A:H2'	50:3:682:A:H8	1.71	0.56
50:3:1734:A:H3'	50:3:1735:A:H8	1.70	0.56
52:5:1001:A:OP2	52:5:1019:G:N1	2.38	0.56
3:2:2:LYS:H	3:2:35:ARG:HB3	1.70	0.56
8:E:8:LEU:HB2	8:E:84:ARG:HB2	1.88	0.56
11:H:97:LYS:HA	11:H:100:LEU:HB3	1.87	0.56
13:J:83:GLY:H	13:J:86:LYS:HD2	1.71	0.56
41:r:90:LYS:H	50:3:786:A:H5'	1.69	0.56
44:u:48:GLY:O	50:3:2361:G:N2	2.36	0.56
50:3:408:G:OP1	50:3:440:C:N4	2.38	0.56
50:3:420:A:N7	50:3:425:U:O4	2.39	0.56
50:3:520:C:H2'	50:3:521:C:C6	2.40	0.56
50:3:938:A:H2'	50:3:939:U:C6	2.40	0.56
50:3:1455:A:H61	50:3:1604:A:H3'	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2129:U:H2'	50:3:2130:A:H8	1.70	0.56
50:3:2632:C:H2'	50:3:2633:C:C6	2.41	0.56
50:3:2676:G:H2'	50:3:2677:A:H8	1.70	0.56
52:5:403:A:N6	52:5:433:C:H42	2.03	0.56
52:5:818:A:H2'	52:5:819:G:C8	2.40	0.56
52:5:881:G:N1	52:5:905:U:N3	2.53	0.56
53:8:35:G:O6	53:8:36:A:N6	2.38	0.56
4:A:67:THR:HA	4:A:70:ASN:HD21	1.71	0.56
24:a:112:PRO:HA	24:a:203:VAL:HA	1.87	0.56
27:d:63:GLN:HE22	27:d:90:THR:H	1.54	0.56
50:3:14:U:H3	50:3:2634:C:HO2'	1.54	0.56
50:3:633:G:O6	50:3:692:U:O4	2.23	0.56
50:3:1311:G:N1	50:3:1314:A:OP2	2.35	0.56
50:3:1557:G:H2'	50:3:1573:A:H61	1.71	0.56
52:5:108:C:H2'	52:5:109:G:C8	2.40	0.56
52:5:1339:U:H3'	52:5:1340:G:H8	1.71	0.56
8:E:30:THR:HG1	8:E:68:SER:HG	1.54	0.56
12:I:65:LYS:HE3	12:I:68:ARG:HD2	1.87	0.56
21:R:12:ASP:HB3	21:R:15:LEU:HB2	1.88	0.56
38:o:56:ARG:NH2	50:3:2727:G:OP1	2.38	0.56
50:3:111:G:H2'	50:3:112:A:H8	1.71	0.56
50:3:366:A:O2'	50:3:368:C:OP2	2.24	0.56
50:3:1077:G:O6	50:3:1148:U:C4	2.59	0.56
50:3:1468:U:H1'	50:3:1587:U:H3	1.71	0.56
50:3:1504:G:N2	50:3:1539:U:O2	2.29	0.56
50:3:2232:G:H5''	50:3:2234:C:H1'	1.87	0.56
50:3:2268:C:H2'	50:3:2269:C:H6	1.70	0.56
50:3:2331:G:C6	50:3:2340:U:N3	2.74	0.56
52:5:47:G:H1	52:5:391:C:H42	1.53	0.56
3:2:27:CYS:SG	3:2:32:HIS:ND1	2.75	0.56
13:J:77:LEU:HD23	13:J:103:ILE:HG13	1.88	0.56
21:R:32:LYS:HA	21:R:50:ALA:HB3	1.88	0.56
24:a:47:ARG:NH2	50:3:725:G:N3	2.54	0.56
30:g:61:ARG:HH22	50:3:1081:A:H1'	1.71	0.56
30:g:112:TYR:CD1	30:g:113:PHE:N	2.74	0.56
32:i:3:LYS:N	50:3:1030:U:HO2'	2.04	0.56
42:s:85:LEU:HB3	42:s:89:ILE:HD11	1.87	0.56
50:3:532:A:H2'	50:3:533:G:C8	2.41	0.56
50:3:1232:U:H2'	50:3:1233:A:H8	1.71	0.56
50:3:1324:A:O5'	50:3:2717:G:O2'	2.24	0.56
50:3:1663:G:H2'	50:3:1664:A:H8	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2751:C:OP2	50:3:2763:C:N4	2.38	0.56
51:4:85:A:H2'	51:4:86:G:C8	2.41	0.56
52:5:663:G:H2'	52:5:664:A:C8	2.41	0.56
52:5:805:C:H2'	52:5:806:A:H8	1.71	0.56
53:8:54:G:H1	53:8:62:C:N4	2.03	0.56
6:C:72:ARG:O	6:C:76:ARG:HG3	2.06	0.56
6:C:198:GLU:O	52:5:9:A:N6	2.38	0.56
14:K:112:ARG:HG3	14:K:130:TYR:HA	1.88	0.56
24:a:255:ARG:HD3	24:a:261:ARG:HH11	1.71	0.56
50:3:864:A:N7	50:3:2256:C:H5''	2.21	0.56
50:3:1885:G:H2'	50:3:1886:C:C6	2.41	0.56
52:5:795:U:H2'	52:5:796:A:C8	2.41	0.56
52:5:1077:U:H2'	52:5:1078:G:C8	2.41	0.56
52:5:1279:G:C2	52:5:1306:A:C2	2.93	0.56
52:5:1321:G:N2	52:5:1349:A:OP2	2.38	0.56
13:J:21:ASN:ND2	52:5:688:G:N7	2.53	0.56
25:b:147:VAL:HG23	50:3:2059:G:H5''	1.88	0.56
29:f:14:LYS:HE2	29:f:19:VAL:HB	1.87	0.56
37:n:2:LYS:HG3	37:n:7:GLN:HB2	1.88	0.56
38:o:31:VAL:HG12	38:o:90:LEU:HA	1.88	0.56
50:3:165:U:O2'	50:3:168:A:N6	2.35	0.56
50:3:899:A:H1'	51:4:90:G:H1'	1.88	0.56
50:3:1340:U:O2'	50:3:1342:C:N4	2.39	0.56
50:3:1838:A:C6	50:3:1982:G:N1	2.74	0.56
50:3:2090:G:N1	50:3:2244:U:N3	2.49	0.56
51:4:35:C:N3	51:4:46:C:O2'	2.37	0.56
52:5:1196:G:H3'	52:5:1197:G:C8	2.41	0.56
52:5:1390:G:O6	52:5:1460:U:O4	2.24	0.56
53:8:37:A:H2'	53:8:38:G:C8	2.41	0.56
6:C:10:ARG:NH1	52:5:541:C:OP1	2.25	0.55
10:G:39:LYS:HG2	52:5:588:U:H5''	1.88	0.55
24:a:165:GLY:H	24:a:203:VAL:HB	1.71	0.55
30:g:88:GLU:CD	30:g:91:GLU:HB3	2.30	0.55
50:3:514:A:N6	50:3:535:G:O2'	2.39	0.55
50:3:2229:C:H2'	50:3:2230:A:C8	2.41	0.55
50:3:2299:U:H2'	50:3:2300:A:H8	1.71	0.55
52:5:732:A:H2'	52:5:733:A:C8	2.40	0.55
52:5:1133:A:H4'	52:5:1134:C:OP1	2.05	0.55
6:C:7:ILE:HD12	6:C:10:ARG:HG3	1.87	0.55
9:F:35:LYS:HB2	11:H:44:LYS:HZ1	1.71	0.55
12:I:60:SER:N	12:I:67:SER:OG	2.37	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:89:U:H5''	50:3:90:G:H5''	1.88	0.55
50:3:2839:A:N6	50:3:2883:A:O4'	2.38	0.55
52:5:372:G:H3'	52:5:373:A:H8	1.72	0.55
52:5:715:A:H5''	52:5:716:C:H5	1.70	0.55
52:5:957:C:H2'	52:5:958:G:C8	2.41	0.55
52:5:1062:C:H2'	52:5:1063:G:C8	2.42	0.55
52:5:1245:A:H2'	52:5:1246:A:C8	2.41	0.55
4:A:61:GLN:NE2	4:A:216:PRO:O	2.40	0.55
9:F:37:LEU:O	9:F:41:ILE:HG12	2.07	0.55
12:I:72:GLU:O	16:M:57:LYS:N	2.37	0.55
25:b:40:LYS:O	25:b:48:SER:HA	2.06	0.55
45:v:56:ARG:NH1	50:3:435:U:OP2	2.39	0.55
50:3:1443:A:N6	50:3:1619:A:N7	2.52	0.55
50:3:1767:A:O4'	50:3:2719:A:O2'	2.24	0.55
51:4:11:A:O2'	51:4:13:G:O5'	2.25	0.55
52:5:140:U:H2'	52:5:141:A:C8	2.41	0.55
52:5:518:A:C6	52:5:527:G:N2	2.74	0.55
52:5:971:A:OP2	52:5:1332:U:O2'	2.18	0.55
52:5:1330:A:H2'	52:5:1331:A:H8	1.71	0.55
20:Q:70:ILE:HB	52:5:716:C:H2'	1.88	0.55
35:l:123:HIS:O	50:3:2492:G:N2	2.39	0.55
43:t:47:LYS:HB2	50:3:519:A:H5''	1.89	0.55
48:y:8:SER:H	50:3:1293:U:H4'	1.70	0.55
50:3:1374:U:H2'	50:3:1375:G:H8	1.71	0.55
50:3:1661:A:H2'	50:3:1662:G:H8	1.72	0.55
50:3:1744:U:H4'	50:3:2862:U:H3	1.72	0.55
50:3:2059:G:O6	50:3:2625:U:O4	2.25	0.55
50:3:2298:G:H2'	50:3:2299:U:H6	1.71	0.55
52:5:580:C:H41	52:5:755:U:H2'	1.71	0.55
11:H:42:PRO:HG3	52:5:1264:G:H21	1.72	0.55
12:I:59:ARG:NE	16:M:49:TYR:OH	2.40	0.55
41:r:99:ARG:NH2	50:3:1292:A:OP2	2.40	0.55
45:v:31:VAL:HG12	50:3:432:G:H5''	1.88	0.55
45:v:52:THR:HA	45:v:55:LEU:HD12	1.87	0.55
50:3:325:G:O6	50:3:326:A:N6	2.40	0.55
50:3:342:G:N2	50:3:363:G:O2'	2.40	0.55
50:3:454:G:H2'	50:3:455:G:H8	1.72	0.55
50:3:962:U:H2'	50:3:963:U:C6	2.41	0.55
50:3:1071:G:O6	50:3:1154:U:O4	2.25	0.55
50:3:1558:A:N6	50:3:1572:U:O2'	2.39	0.55
50:3:2607:G:H2'	50:3:2608:A:H8	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2663:G:N1	50:3:2673:A:OP2	2.33	0.55
52:5:335:C:H2'	52:5:336:U:C6	2.42	0.55
52:5:1505:G:H2'	52:5:1506:A:H8	1.71	0.55
50:3:199:A:H2'	50:3:202:C:H41	1.72	0.55
50:3:591:G:C6	50:3:592:G:O6	2.59	0.55
50:3:2413:G:O2'	50:3:2419:A:N6	2.39	0.55
50:3:2588:U:H2'	50:3:2589:G:O4'	2.07	0.55
50:3:2716:U:H2'	50:3:2717:G:C8	2.39	0.55
52:5:657:G:H2'	52:5:658:G:C8	2.41	0.55
52:5:1112:U:H3	52:5:1128:G:H1	1.55	0.55
52:5:1214:A:N6	52:5:1271:U:O4'	2.40	0.55
52:5:1414:U:O2'	52:5:1415:G:O4'	2.19	0.55
19:P:41:ARG:HH12	52:5:233:C:H5''	1.71	0.55
24:a:12:SER:OG	50:3:764:G:OP1	2.19	0.55
50:3:959:C:H2'	50:3:960:A:C8	2.41	0.55
50:3:2287:G:O2'	50:3:2335:A:O2'	2.24	0.55
52:5:674:U:H2'	52:5:675:U:C6	2.42	0.55
11:H:23:PRO:O	11:H:62:ASN:ND2	2.39	0.55
12:I:24:LEU:HD22	12:I:76:HIS:HB3	1.88	0.55
16:M:60:SER:HA	52:5:1162:G:H21	1.72	0.55
27:d:132:ILE:HG23	27:d:152:PHE:H	1.71	0.55
28:e:39:PRO:HD2	28:e:42:LEU:HD22	1.88	0.55
29:f:98:ILE:HD13	29:f:108:LEU:HD12	1.88	0.55
38:o:59:GLY:O	38:o:82:HIS:NE2	2.38	0.55
41:r:10:VAL:HG23	41:r:12:ILE:HG22	1.88	0.55
50:3:182:C:H3'	50:3:183:A:H8	1.71	0.55
50:3:547:G:OP1	50:3:1264:U:O2'	2.22	0.55
50:3:666:G:N2	50:3:669:A:OP2	2.37	0.55
50:3:1200:U:H2'	50:3:1201:A:H8	1.72	0.55
50:3:1414:C:H2'	50:3:1415:A:H8	1.72	0.55
50:3:1450:G:N1	50:3:1610:U:O2	2.20	0.55
50:3:1463:G:H2'	50:3:1464:G:C8	2.42	0.55
50:3:2473:C:H2'	50:3:2474:C:C6	2.42	0.55
50:3:2613:U:H2'	50:3:2614:U:C6	2.42	0.55
50:3:2717:G:H2'	50:3:2718:C:C6	2.41	0.55
52:5:389:A:H2'	52:5:390:G:H8	1.72	0.55
6:C:49:GLY:HA3	7:D:167:ARG:HH12	1.72	0.55
24:a:179:TYR:H	24:a:194:LYS:HG2	1.72	0.55
28:e:111:GLY:O	50:3:2674:C:N4	2.40	0.55
33:j:97:ARG:HH22	52:5:333:U:P	2.30	0.55
50:3:329:G:C6	50:3:377:U:N3	2.75	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1260:U:H2'	50:3:1261:U:C6	2.42	0.55
50:3:1454:G:H3'	50:3:1455:A:H2'	1.89	0.55
50:3:1672:C:H4'	50:3:2717:G:N2	2.22	0.55
50:3:1902:C:H2'	50:3:1903:A:H8	1.71	0.55
50:3:2093:U:H2'	50:3:2094:A:C8	2.41	0.55
50:3:2722:G:H2'	50:3:2723:C:C6	2.42	0.55
52:5:49:C:H41	52:5:360:A:H61	1.53	0.55
52:5:413:G:O6	52:5:423:U:C2	2.60	0.55
52:5:421:G:H2'	52:5:422:A:C8	2.42	0.55
52:5:1154:A:H2'	52:5:1155:A:C4	2.41	0.55
7:D:155:PRO:HG2	7:D:158:THR:HG21	1.88	0.55
26:c:115:VAL:HA	26:c:118:GLU:HG2	1.88	0.55
28:e:44:LEU:HD13	28:e:55:ILE:HD12	1.88	0.55
34:k:119:LYS:HZ3	34:k:141:ASN:HB2	1.71	0.55
43:t:2:GLN:O	43:t:102:ARG:NH1	2.36	0.55
50:3:32:G:N1	50:3:546:U:C2	2.74	0.55
50:3:379:A:H1'	50:3:381:A:N6	2.22	0.55
50:3:1416:G:H2'	50:3:1417:G:H8	1.72	0.55
52:5:590:G:H2'	52:5:591:A:C8	2.43	0.55
52:5:657:G:H2'	52:5:658:G:H8	1.71	0.55
52:5:901:A:O2'	52:5:902:A:O4'	2.17	0.55
52:5:1126:U:H2'	52:5:1127:A:H8	1.72	0.55
52:5:1381:U:O4	52:5:1471:C:N4	2.40	0.55
6:C:54:LEU:O	6:C:58:GLN:HG2	2.07	0.54
8:E:133:THR:N	52:5:836:C:O2'	2.38	0.54
25:b:134:GLY:HA3	50:3:2000:U:H5''	1.89	0.54
30:g:26:ILE:HG23	30:g:82:VAL:HG12	1.90	0.54
30:g:33:SER:HA	50:3:1090:G:H4'	1.89	0.54
50:3:2053:G:H1	50:3:2630:U:H3	1.54	0.54
50:3:2074:G:H3'	50:3:2075:U:H4'	1.89	0.54
50:3:2547:C:H2'	50:3:2548:G:H8	1.72	0.54
51:4:50:C:O2	51:4:51:A:N6	2.33	0.54
52:5:205:U:H2'	52:5:206:G:C8	2.42	0.54
52:5:782:G:H2'	52:5:783:G:C8	2.42	0.54
35:l:20:LYS:HA	35:l:99:GLN:HB3	1.89	0.54
35:l:43:ASP:OD1	35:l:44:ALA:N	2.40	0.54
50:3:574:G:O6	50:3:587:U:O4	2.24	0.54
50:3:787:C:OP2	50:3:1788:A:N6	2.40	0.54
50:3:1744:U:H2'	50:3:1745:A:C8	2.42	0.54
50:3:1979:G:H2'	50:3:1980:G:C8	2.42	0.54
50:3:2290:G:H21	50:3:2398:U:H3	1.55	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2552:G:H2'	50:3:2553:G:C8	2.43	0.54
52:5:104:A:OP2	52:5:284:A:N6	2.36	0.54
52:5:316:G:H2'	52:5:317:A:C8	2.42	0.54
52:5:913:A:H2'	52:5:914:A:C8	2.40	0.54
5:B:126:ALA:HB1	5:B:131:VAL:HG11	1.88	0.54
7:D:134:GLY:O	7:D:176:SER:N	2.36	0.54
34:k:84:LYS:HE3	50:3:661:G:H21	1.72	0.54
39:p:60:TRP:HD1	39:p:63:ARG:HH21	1.54	0.54
50:3:85:U:O4	50:3:103:G:O2'	2.22	0.54
50:3:319:G:H2'	50:3:320:A:H8	1.72	0.54
50:3:799:A:H61	50:3:1796:A:H2	1.56	0.54
50:3:2330:A:H2'	50:3:2331:G:C8	2.42	0.54
51:4:41:C:O2'	51:4:43:A:N7	2.37	0.54
52:5:16:G:H2'	52:5:17:A:H8	1.72	0.54
52:5:36:G:H2'	52:5:37:C:C6	2.42	0.54
52:5:69:G:H1	52:5:86:A:H61	1.55	0.54
52:5:663:G:N2	52:5:737:U:O2	2.41	0.54
52:5:711:G:H2'	52:5:712:A:H8	1.73	0.54
52:5:1104:C:H2'	52:5:1105:C:C6	2.42	0.54
52:5:1414:U:H2'	52:5:1415:G:C8	2.42	0.54
31:h:11:LYS:HB2	31:h:54:VAL:HA	1.89	0.54
34:k:115:ILE:HD12	34:k:132:SER:HB2	1.89	0.54
50:3:291:G:H2'	50:3:292:G:H8	1.71	0.54
50:3:558:C:H2'	50:3:559:C:C6	2.42	0.54
50:3:638:A:N6	50:3:661:G:O6	2.40	0.54
50:3:864:A:H5''	50:3:865:A:H2'	1.90	0.54
50:3:1076:U:H2'	50:3:1077:G:C8	2.42	0.54
50:3:1536:C:H2'	50:3:1537:A:C8	2.43	0.54
50:3:2764:U:H1'	50:3:2765:A:H5''	1.88	0.54
52:5:1139:A:H2'	52:5:1140:A:C8	2.43	0.54
52:5:1220:A:N6	52:5:1221:A:N6	2.56	0.54
11:H:89:LEU:O	11:H:93:ASN:N	2.32	0.54
12:I:53:GLU:HB3	12:I:73:LYS:HB3	1.90	0.54
29:f:45:GLN:OE1	29:f:45:GLN:N	2.37	0.54
30:g:112:TYR:HD1	30:g:114:ASP:N	2.05	0.54
50:3:562:C:H5	50:3:2050:G:H5''	1.71	0.54
50:3:684:A:H2'	50:3:685:G:C8	2.42	0.54
50:3:1654:G:H2'	50:3:1655:U:C6	2.43	0.54
52:5:412:G:C6	52:5:424:U:O2	2.60	0.54
52:5:578:C:H2'	52:5:579:G:O4'	2.08	0.54
52:5:742:C:H2'	52:5:743:A:C8	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:831:C:H2'	52:5:832:G:C8	2.42	0.54
52:5:1184:C:O2'	52:5:1189:U:O4	2.25	0.54
4:A:72:VAL:HA	4:A:75:VAL:HG22	1.90	0.54
11:H:20:TYR:HB2	11:H:66:ASN:HB3	1.90	0.54
23:T:33:GLU:HG3	23:T:34:TYR:CD1	2.43	0.54
33:j:3:SER:H	50:3:1700:G:H1'	1.73	0.54
38:o:117:ARG:NH1	52:5:1416:U:O3'	2.41	0.54
50:3:199:A:H2'	50:3:202:C:N4	2.23	0.54
50:3:203:A:N7	50:3:2442:A:N6	2.56	0.54
50:3:622:U:H2'	50:3:623:A:C8	2.41	0.54
50:3:729:U:H2'	50:3:730:G:C8	2.43	0.54
50:3:1654:G:O2'	50:3:1655:U:O5'	2.25	0.54
52:5:1359:C:H2'	52:5:1360:G:C8	2.43	0.54
52:5:1501:G:H2'	52:5:1502:G:C8	2.43	0.54
7:D:214:LYS:HZ1	7:D:216:LEU:HD22	1.71	0.54
15:L:14:ARG:HE	15:L:43:LYS:HD3	1.72	0.54
25:b:10:LYS:HB2	25:b:197:ILE:HD13	1.89	0.54
50:3:738:U:H3	50:3:763:G:H1	1.55	0.54
50:3:1236:G:H2'	50:3:1237:G:H8	1.71	0.54
50:3:1704:C:N3	50:3:2000:U:O2'	2.37	0.54
50:3:2380:U:H2'	50:3:2381:G:C8	2.43	0.54
51:4:59:A:O2'	51:4:60:C:OP1	2.25	0.54
52:5:582:G:H2'	52:5:583:G:H8	1.72	0.54
6:C:114:ARG:NH1	52:5:400:G:OP2	2.41	0.54
13:J:111:HIS:HB2	52:5:672:A:C2	2.43	0.54
21:R:78:ARG:NE	52:5:1197:G:OP1	2.41	0.54
24:a:112:PRO:HD2	24:a:115:ILE:HD13	1.90	0.54
26:c:204:LEU:O	26:c:208:GLU:HG2	2.08	0.54
27:d:96:MET:O	27:d:100:LEU:HG	2.08	0.54
28:e:99:ALA:HB1	28:e:106:LEU:HD11	1.89	0.54
35:l:42:ILE:HD12	35:l:47:ILE:HD11	1.89	0.54
39:p:2:ARG:HE	39:p:4:LYS:HG3	1.73	0.54
46:w:95:LYS:O	46:w:99:LEU:HG	2.07	0.54
50:3:18:G:H2'	50:3:19:G:H8	1.72	0.54
50:3:1369:U:OP1	50:3:1636:U:O2'	2.19	0.54
50:3:2200:U:H3'	50:3:2201:G:H8	1.73	0.54
52:5:27:A:H61	52:5:556:G:H1'	1.72	0.54
52:5:413:G:C6	52:5:423:U:O2	2.60	0.54
52:5:853:A:OP2	52:5:863:A:N6	2.33	0.54
7:D:70:ILE:HA	7:D:92:VAL:HG23	1.89	0.54
50:3:220:A:N6	50:3:467:U:C2	2.76	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:524:G:N2	50:3:526:G:H8	2.06	0.54
50:3:1553:G:H3'	50:3:1576:G:H21	1.72	0.54
50:3:1931:C:H2'	50:3:1932:C:C6	2.43	0.54
50:3:2090:G:O6	50:3:2244:U:O4	2.26	0.54
52:5:169:G:H21	52:5:220:U:H5'	1.73	0.54
52:5:706:U:H2'	52:5:707:G:C8	2.43	0.54
52:5:775:G:O6	52:5:801:U:O2	2.24	0.54
52:5:1043:U:O2	52:5:1181:G:O6	2.26	0.54
7:D:139:GLU:HG2	7:D:152:LYS:HA	1.89	0.54
16:M:4:LYS:HA	16:M:7:LYS:HE2	1.89	0.54
24:a:17:SER:OG	24:a:213:ILE:O	2.25	0.54
32:i:67:LEU:HB3	32:i:71:LYS:HE3	1.89	0.54
50:3:252:G:OP1	50:3:424:G:N2	2.41	0.54
50:3:420:A:H62	50:3:425:U:H3	1.55	0.54
50:3:1777:G:C2	50:3:1793:A:C6	2.96	0.54
52:5:912:G:H2'	52:5:913:A:C8	2.42	0.54
52:5:1010:A:H2'	52:5:1011:A:C4	2.43	0.54
52:5:1436:C:H2'	52:5:1437:A:C4	2.43	0.54
10:G:87:VAL:HG12	10:G:141:VAL:HG12	1.90	0.53
35:l:55:SER:HA	35:l:58:LEU:HD12	1.90	0.53
43:t:88:LYS:HB3	43:t:105:LYS:HD2	1.89	0.53
50:3:312:U:H2'	50:3:313:G:C8	2.43	0.53
50:3:706:C:H2'	50:3:707:C:C6	2.43	0.53
50:3:856:A:N6	50:3:1008:A:N3	2.55	0.53
50:3:2297:G:H2'	50:3:2298:G:C8	2.43	0.53
50:3:2744:A:N6	50:3:2777:A:N1	2.56	0.53
50:3:2829:G:H3'	50:3:2830:A:C8	2.43	0.53
52:5:296:A:H2	52:5:563:U:H3	1.55	0.53
52:5:318:C:H42	52:5:325:A:H62	1.54	0.53
52:5:1036:C:H2'	52:5:1037:A:C8	2.42	0.53
52:5:1086:U:OP1	52:5:1099:G:N1	2.38	0.53
52:5:1258:U:H2'	52:5:1259:G:H8	1.73	0.53
6:C:196:VAL:O	6:C:199:TRP:HB3	2.08	0.53
24:a:14:ILE:H	50:3:1780:A:H61	1.56	0.53
32:i:20:ILE:HB	32:i:142:THR:HA	1.91	0.53
34:k:23:GLY:H	50:3:846:U:H2'	1.73	0.53
39:p:97:LEU:HB2	40:q:13:LEU:HD21	1.91	0.53
50:3:223:A:N6	50:3:464:A:OP1	2.41	0.53
50:3:2015:C:H2'	50:3:2016:G:C8	2.43	0.53
50:3:2590:G:H2'	50:3:2591:G:C8	2.42	0.53
51:4:58:C:H2'	51:4:59:A:H8	1.72	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:4:104:C:H2'	51:4:105:A:C8	2.41	0.53
24:a:93:SER:O	24:a:205:ASN:ND2	2.40	0.53
32:i:33:VAL:HG23	32:i:34:LYS:HD2	1.91	0.53
36:m:67:LEU:HB2	36:m:75:VAL:HG13	1.89	0.53
44:u:62:GLY:HA2	44:u:94:ARG:HE	1.74	0.53
45:v:18:ARG:HD2	53:8:77:A:H2'	1.90	0.53
46:w:49:ARG:O	46:w:53:THR:HG23	2.08	0.53
49:z:10:GLY:HA2	49:z:18:ASN:HB2	1.89	0.53
50:3:67:C:O2'	50:3:492:C:N3	2.40	0.53
50:3:590:U:H2'	50:3:591:G:C8	2.41	0.53
50:3:1653:C:N4	50:3:1654:G:O6	2.41	0.53
52:5:68:C:H2'	52:5:69:G:C8	2.43	0.53
52:5:598:U:H2'	52:5:599:G:H8	1.73	0.53
5:B:187:TYR:HE1	5:B:202:LYS:HB3	1.72	0.53
6:C:58:GLN:NE2	52:5:542:G:OP1	2.41	0.53
6:C:114:ARG:HH12	52:5:399:C:P	2.31	0.53
10:G:77:THR:HG23	10:G:79:ARG:H	1.74	0.53
15:L:66:GLU:N	15:L:66:GLU:OE1	2.41	0.53
15:L:80:LEU:O	21:R:69:HIS:NE2	2.42	0.53
20:Q:70:ILE:O	52:5:716:C:O2'	2.19	0.53
20:Q:72:PRO:HD2	20:Q:75:ILE:HD12	1.90	0.53
22:S:14:ASN:HA	22:S:17:ARG:HB3	1.90	0.53
50:3:17:G:H2'	50:3:18:G:C8	2.43	0.53
50:3:81:C:N4	50:3:109:G:O6	2.40	0.53
52:5:684:A:N1	52:5:697:G:O2'	2.38	0.53
17:N:5:LYS:NZ	52:5:655:G:OP1	2.40	0.53
23:T:33:GLU:HG3	23:T:34:TYR:HD1	1.73	0.53
28:e:16:VAL:HG21	28:e:83:THR:HG22	1.90	0.53
33:j:71:ARG:HG3	33:j:77:LEU:H	1.74	0.53
50:3:42:U:H2'	50:3:43:A:H8	1.72	0.53
50:3:1890:U:O2'	50:3:1891:A:N3	2.42	0.53
50:3:2272:C:H2'	50:3:2273:U:C6	2.43	0.53
50:3:2699:C:H2'	50:3:2700:C:H6	1.74	0.53
52:5:331:C:H2'	52:5:332:A:H8	1.73	0.53
53:8:38:G:H3'	53:8:39:A:H8	1.73	0.53
5:B:15:ASN:ND2	5:B:214:GLY:O	2.41	0.53
36:m:109:ASP:OD1	50:3:2016:G:N2	2.42	0.53
50:3:32:G:C2	50:3:546:U:C2	2.96	0.53
50:3:2268:C:H2'	50:3:2269:C:C6	2.44	0.53
20:Q:74:ARG:NH2	52:5:717:C:OP1	2.42	0.53
24:a:256:THR:OG1	24:a:258:TRP:O	2.24	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:l:6:ARG:NH2	50:3:908:A:OP2	2.42	0.53
42:s:55:VAL:HG22	42:s:83:ILE:HG12	1.90	0.53
44:u:38:LYS:HE3	44:u:53:ARG:HD3	1.91	0.53
50:3:477:U:O2'	50:3:649:A:N6	2.27	0.53
50:3:843:G:H5'	50:3:2067:A:H61	1.74	0.53
50:3:1043:C:OP2	50:3:1046:A:N6	2.42	0.53
50:3:1092:A:OP1	50:3:1124:G:N2	2.42	0.53
50:3:1293:U:H2'	50:3:1294:G:C4	2.44	0.53
50:3:1845:C:H4'	50:3:1846:A:H5'	1.91	0.53
50:3:2755:G:N2	50:3:2764:U:OP1	2.36	0.53
52:5:22:G:H2'	52:5:23:G:C8	2.43	0.53
52:5:1216:G:H2'	52:5:1217:G:H8	1.73	0.53
52:5:1437:A:H2'	52:5:1438:U:C6	2.44	0.53
52:5:1478:A:C8	52:5:1506:A:H1'	2.44	0.53
24:a:52:LYS:NZ	50:3:809:A:OP1	2.41	0.53
26:c:174:ASN:ND2	50:3:356:A:OP2	2.32	0.53
29:f:109:GLN:H	29:f:112:MET:HE2	1.74	0.53
34:k:29:GLY:O	34:k:32:SER:OG	2.26	0.53
35:l:11:LYS:NZ	50:3:2285:G:O3'	2.41	0.53
39:p:36:GLN:HE21	50:3:1282:G:H1	1.57	0.53
50:3:194:A:N6	50:3:211:A:H1'	2.24	0.53
50:3:2063:G:H2'	50:3:2064:G:C8	2.44	0.53
50:3:2411:C:H2'	50:3:2412:A:H8	1.74	0.53
52:5:149:G:H2'	52:5:150:A:C8	2.44	0.53
52:5:338:C:N4	52:5:344:G:O6	2.42	0.53
52:5:771:G:H3'	52:5:772:G:H8	1.72	0.53
52:5:1331:A:H61	52:5:1340:G:H1	1.56	0.53
30:g:15:SER:HA	30:g:62:ALA:HA	1.91	0.53
30:g:55:LYS:NZ	50:3:1142:G:OP1	2.39	0.53
32:i:37:ASP:OD1	32:i:40:ARG:NH2	2.40	0.53
36:m:36:LYS:HG3	50:3:1685:G:H4'	1.89	0.53
39:p:2:ARG:NH1	50:3:1278:G:N3	2.56	0.53
40:q:4:ILE:HB	40:q:39:LEU:HB3	1.91	0.53
50:3:822:C:H5''	50:3:823:A:H5'	1.91	0.53
50:3:1308:A:H2'	50:3:1309:G:H8	1.74	0.53
50:3:1755:A:H2'	50:3:1756:A:H8	1.73	0.53
50:3:2819:C:H2'	50:3:2820:G:C8	2.41	0.53
5:B:22:TRP:HB3	5:B:60:ARG:H	1.74	0.53
5:B:52:GLN:HA	5:B:121:ARG:HH11	1.74	0.53
18:O:11:TYR:HE2	18:O:62:THR:HG21	1.74	0.53
23:T:46:ARG:NH1	52:5:721:G:O6	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:141:A:O2'	50:3:1437:A:H4'	2.09	0.53
50:3:401:G:H3'	50:3:402:A:H5''	1.91	0.53
50:3:746:G:H2'	50:3:747:A:C8	2.43	0.53
50:3:1432:C:H2'	50:3:1433:U:H6	1.72	0.53
50:3:2134:G:H2'	50:3:2135:C:H6	1.74	0.53
52:5:365:U:H2'	52:5:366:C:C6	2.44	0.53
52:5:1147:U:H2'	52:5:1148:U:C6	2.44	0.53
6:C:73:ARG:O	6:C:77:LEU:HG	2.08	0.52
15:L:81:SER:HB3	15:L:88:GLY:HA2	1.91	0.52
27:d:170:LEU:HD13	27:d:175:LEU:HD23	1.90	0.52
29:f:11:ASN:O	29:f:12:LEU:HD23	2.09	0.52
30:g:14:VAL:HG23	30:g:62:ALA:HB2	1.91	0.52
33:j:64:ARG:NH2	33:j:101:PRO:O	2.42	0.52
34:k:100:GLU:HG3	34:k:101:LYS:HE3	1.91	0.52
47:x:13:SER:HA	47:x:24:THR:HA	1.90	0.52
50:3:1491:G:H21	50:3:1578:A:H2	1.57	0.52
52:5:334:A:H2'	52:5:335:C:C6	2.44	0.52
52:5:826:G:H22	52:5:851:U:H3	1.55	0.52
53:8:8:G:O2'	53:8:50:G:O5'	2.27	0.52
3:2:2:LYS:HE3	50:3:2485:U:H3	1.75	0.52
22:S:10:ARG:NH1	52:5:92:G:O6	2.40	0.52
24:a:5:LYS:NZ	24:a:6:ILE:O	2.32	0.52
42:s:42:LEU:O	42:s:46:LEU:HG	2.09	0.52
50:3:108:G:O3'	50:3:327:U:O2'	2.20	0.52
50:3:276:A:N3	50:3:301:G:N2	2.55	0.52
50:3:746:G:H2'	50:3:747:A:H8	1.74	0.52
50:3:1077:G:N1	50:3:1148:U:N3	2.57	0.52
50:3:1522:U:OP2	50:3:1523:C:N4	2.27	0.52
50:3:1924:U:H3'	50:3:1925:A:H8	1.74	0.52
50:3:2303:U:N3	50:3:2345:G:N1	2.39	0.52
50:3:2584:G:H5''	50:3:2586:G:C8	2.44	0.52
50:3:2699:C:H2'	50:3:2700:C:C6	2.44	0.52
5:B:142:ILE:HD13	5:B:145:LEU:HD21	1.91	0.52
6:C:56:GLU:HA	6:C:59:ARG:HH21	1.74	0.52
7:D:206:ARG:O	7:D:210:ILE:HG12	2.10	0.52
8:E:96:TYR:HA	8:E:100:ILE:HD13	1.90	0.52
11:H:124:ARG:HG3	52:5:1322:U:H4'	1.91	0.52
18:O:73:TRP:CD1	18:O:73:TRP:H	2.27	0.52
24:a:38:LEU:HB3	24:a:65:LYS:HB3	1.91	0.52
35:l:84:GLY:HA3	50:3:2258:G:N1	2.25	0.52
50:3:975:G:H2'	50:3:976:C:C6	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2259:G:C8	50:3:2458:A:H5''	2.45	0.52
50:3:2303:U:O4	50:3:2345:G:O6	2.27	0.52
50:3:2349:G:H21	50:3:2383:G:H5'	1.74	0.52
52:5:41:C:H2'	52:5:42:G:C8	2.44	0.52
52:5:281:U:H2'	52:5:282:G:C8	2.45	0.52
52:5:406:G:H1'	52:5:430:G:N2	2.25	0.52
52:5:406:G:H21	52:5:429:A:H62	1.56	0.52
52:5:933:A:N3	52:5:1351:U:O2'	2.37	0.52
28:e:10:THR:HG22	28:e:76:THR:HG22	1.91	0.52
35:l:76:LYS:HG2	35:l:92:PHE:HE1	1.73	0.52
50:3:14:U:N3	50:3:2634:C:O2'	2.31	0.52
50:3:494:G:O2'	50:3:505:G:O6	2.28	0.52
50:3:2268:C:O2	50:3:2396:A:O2'	2.26	0.52
50:3:2646:G:N2	50:3:2784:A:N7	2.57	0.52
52:5:1216:G:H2'	52:5:1217:G:C8	2.45	0.52
52:5:1228:C:H2'	52:5:1229:A:H8	1.74	0.52
13:J:34:VAL:HG22	52:5:681:U:O2	2.10	0.52
17:N:59:LYS:HG3	17:N:62:ARG:HH11	1.74	0.52
19:P:18:ASN:HB2	19:P:21:THR:HB	1.90	0.52
19:P:74:ARG:HG2	52:5:230:G:H4'	1.92	0.52
32:i:20:ILE:HG12	32:i:140:PRO:HB2	1.91	0.52
41:r:51:LEU:O	41:r:55:ILE:HG12	2.10	0.52
42:s:10:PRO:HA	42:s:29:PHE:HA	1.91	0.52
50:3:504:G:H2'	50:3:505:G:H8	1.74	0.52
50:3:761:G:H1'	50:3:762:A:C8	2.44	0.52
50:3:819:U:N3	50:3:827:G:O4'	2.43	0.52
50:3:1607:G:N7	50:3:1608:C:N4	2.58	0.52
52:5:55:C:H42	52:5:354:U:H3	1.56	0.52
52:5:672:A:N6	52:5:713:A:N1	2.58	0.52
52:5:816:A:H3'	52:5:817:U:H6	1.75	0.52
4:A:192:ASN:O	4:A:195:ARG:NH1	2.42	0.52
25:b:159:VAL:HG11	50:3:2626:A:N3	2.25	0.52
27:d:135:GLN:HE22	27:d:149:ILE:HA	1.74	0.52
41:r:34:ASN:O	41:r:38:ASN:ND2	2.40	0.52
50:3:27:U:H2'	50:3:28:G:C4	2.44	0.52
50:3:33:C:H2'	50:3:34:C:C6	2.45	0.52
50:3:524:G:N2	50:3:526:G:H3'	2.25	0.52
50:3:730:G:H2'	50:3:731:A:C8	2.45	0.52
52:5:85:U:O2'	52:5:87:G:N7	2.42	0.52
52:5:281:U:H2'	52:5:282:G:H8	1.75	0.52
52:5:972:A:O2'	52:5:976:U:O4	2.26	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:35:ARG:NH2	50:3:55:A:N3	2.57	0.52
27:d:24:SER:HB3	27:d:27:GLN:HG3	1.91	0.52
27:d:53:ALA:HB2	27:d:146:ILE:HD12	1.91	0.52
35:l:39:GLY:CA	35:l:97:VAL:O	2.57	0.52
50:3:130:C:H5''	50:3:1633:C:H4'	1.90	0.52
50:3:629:G:H2'	50:3:630:C:C6	2.45	0.52
50:3:1038:G:H2'	50:3:1039:G:C8	2.44	0.52
50:3:1055:A:H1'	50:3:1056:A:C6	2.45	0.52
50:3:2529:C:H2'	50:3:2530:U:C6	2.44	0.52
52:5:1106:U:O2	52:5:1160:G:N2	2.32	0.52
52:5:1124:U:H3'	52:5:1125:C:C6	2.45	0.52
2:1:57:ASN:OD1	2:1:58:LEU:N	2.43	0.52
7:D:110:GLU:HG2	7:D:112:PRO:HD2	1.92	0.52
41:r:136:LYS:O	41:r:139:ARG:NH1	2.43	0.52
50:3:286:A:H4'	50:3:287:G:H5'	1.92	0.52
50:3:687:G:H2'	50:3:688:U:C6	2.45	0.52
50:3:713:C:H2'	50:3:714:G:C8	2.45	0.52
50:3:1044:C:O2	50:3:1045:A:N6	2.43	0.52
50:3:1700:G:C2	50:3:2002:U:O2	2.63	0.52
50:3:2130:A:H2'	50:3:2131:G:C8	2.44	0.52
50:3:2334:U:O2	50:3:2396:A:N6	2.43	0.52
50:3:2572:A:C8	50:3:2656:G:H5'	2.45	0.52
50:3:2682:A:H2'	50:3:2683:G:H8	1.74	0.52
52:5:536:U:H2'	52:5:537:A:C8	2.45	0.52
52:5:618:U:OP2	52:5:619:A:N6	2.43	0.52
12:I:46:LEU:HD12	12:I:47:PRO:HD2	1.92	0.52
27:d:7:HIS:O	27:d:11:THR:HG22	2.10	0.52
35:l:6:ARG:NE	50:3:907:A:OP1	2.43	0.52
50:3:675:U:C4	50:3:685:G:O6	2.63	0.52
50:3:1786:U:OP2	50:3:1791:A:N6	2.43	0.52
50:3:2378:G:H2'	50:3:2379:G:C8	2.44	0.52
50:3:2441:A:H1'	53:8:75:C:H42	1.75	0.52
52:5:13:U:H4'	52:5:524:C:H4'	1.92	0.52
52:5:305:A:H2'	52:5:306:G:H8	1.73	0.52
52:5:576:A:O2'	52:5:725:A:N3	2.39	0.52
52:5:930:A:H2'	52:5:931:C:C6	2.45	0.52
52:5:1002:A:N6	52:5:1018:U:H3	2.07	0.52
52:5:1406:U:H2'	52:5:1407:A:C8	2.44	0.52
2:1:21:ARG:HH12	2:1:23:HIS:CE1	2.27	0.52
2:1:33:LYS:HB3	2:1:37:GLN:HB2	1.92	0.52
26:c:106:LYS:NZ	50:3:656:G:O6	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:d:51:GLU:CD	27:d:55:ASN:HD21	2.18	0.52
31:h:31:ASN:HD22	31:h:34:GLU:HG2	1.74	0.52
44:u:65:VAL:HG21	44:u:95:VAL:HG13	1.92	0.52
50:3:186:A:N1	50:3:219:G:O6	2.43	0.52
50:3:201:A:O2'	50:3:2252:U:OP1	2.26	0.52
50:3:992:G:O2'	50:3:995:A:N6	2.41	0.52
50:3:1013:G:H2'	50:3:1014:G:H8	1.75	0.52
50:3:1116:U:H2'	50:3:1117:U:C6	2.45	0.52
50:3:1454:G:OP2	50:3:1455:A:O2'	2.28	0.52
52:5:145:G:N2	52:5:148:A:OP2	2.43	0.52
52:5:164:C:H2'	52:5:165:A:H8	1.74	0.52
52:5:631:C:H2'	52:5:632:A:C8	2.43	0.52
52:5:644:U:H2'	52:5:645:A:C8	2.44	0.52
52:5:800:G:O2'	52:5:801:U:OP1	2.25	0.52
52:5:1089:C:N4	52:5:1090:G:O6	2.43	0.52
6:C:97:LEU:HD13	6:C:136:LEU:HD21	1.92	0.51
11:H:118:PHE:HD1	12:I:70:GLN:HE21	1.56	0.51
25:b:158:ARG:NH2	50:3:1165:U:O2	2.41	0.51
27:d:122:PHE:CD2	27:d:163:ASP:HB2	2.45	0.51
36:m:96:GLY:O	36:m:99:ARG:NH1	2.28	0.51
50:3:139:G:H2'	50:3:140:G:O4'	2.10	0.51
50:3:1023:C:O2'	50:3:1036:A:N3	2.39	0.51
50:3:1416:G:H2'	50:3:1417:G:C8	2.45	0.51
50:3:1501:U:H3	50:3:1542:G:H1	1.58	0.51
50:3:1927:C:H2'	50:3:1928:G:C8	2.45	0.51
50:3:2136:A:N6	50:3:2166:U:H3	2.07	0.51
52:5:459:C:H2'	52:5:460:A:C8	2.45	0.51
52:5:1203:A:H2'	52:5:1204:A:C8	2.44	0.51
52:5:1277:C:H3'	52:5:1278:G:C8	2.45	0.51
53:8:23:G:C8	53:8:47:G:N1	2.79	0.51
6:C:13:ARG:HE	6:C:35:PRO:HD2	1.75	0.51
23:T:44:GLU:O	23:T:48:ILE:HG12	2.11	0.51
25:b:158:ARG:HA	50:3:2059:G:H21	1.74	0.51
30:g:88:GLU:OE1	30:g:91:GLU:CB	2.59	0.51
30:g:112:TYR:CD1	30:g:114:ASP:N	2.79	0.51
31:h:130:GLN:HG2	50:3:1123:A:H61	1.75	0.51
37:n:11:ARG:O	37:n:14:ARG:HG2	2.11	0.51
44:u:28:ARG:HB2	50:3:2286:A:H62	1.75	0.51
50:3:342:G:H2'	50:3:343:A:C8	2.44	0.51
50:3:680:A:H2'	50:3:682:A:C8	2.45	0.51
50:3:720:A:OP1	50:3:823:A:N6	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1236:G:H2'	50:3:1237:G:C8	2.44	0.51
50:3:2093:U:H2'	50:3:2094:A:H8	1.75	0.51
52:5:102:G:H22	52:5:309:A:H1'	1.75	0.51
52:5:232:G:H2'	52:5:233:C:C6	2.46	0.51
52:5:593:A:O2'	52:5:637:A:N6	2.42	0.51
2:1:2:LYS:NZ	50:3:258:G:OP2	2.43	0.51
50:3:730:G:H2'	50:3:731:A:H8	1.75	0.51
50:3:766:C:H2'	50:3:767:C:H6	1.76	0.51
50:3:2071:C:H2'	50:3:2072:C:C6	2.45	0.51
50:3:2154:A:H2'	50:3:2155:G:C8	2.45	0.51
50:3:2609:C:H2'	50:3:2611:G:C8	2.45	0.51
52:5:92:G:H3'	52:5:93:A:C2	2.45	0.51
52:5:671:G:H2'	52:5:672:A:C8	2.45	0.51
52:5:680:G:H2'	52:5:681:U:C6	2.45	0.51
52:5:1394:G:H2'	52:5:1395:C:C6	2.45	0.51
29:f:5:LEU:CD2	29:f:34:LYS:HG3	2.35	0.51
43:t:43:THR:OG1	50:3:534:U:O2'	2.28	0.51
43:t:89:ILE:HD13	43:t:104:PHE:HA	1.91	0.51
50:3:1489:G:H2'	50:3:1490:G:C8	2.45	0.51
50:3:1689:A:H61	50:3:2012:A:H1'	1.75	0.51
50:3:1828:A:H2'	50:3:1829:U:C6	2.45	0.51
50:3:2078:A:H2'	50:3:2079:G:C8	2.46	0.51
50:3:2571:U:N3	50:3:2574:A:OP2	2.38	0.51
50:3:2596:A:C2	50:3:2615:G:C2	2.99	0.51
52:5:715:A:H5''	52:5:716:C:C5	2.44	0.51
7:D:187:THR:O	7:D:191:MET:HG3	2.10	0.51
13:J:34:VAL:O	52:5:681:U:O2'	2.24	0.51
27:d:34:ILE:HD11	27:d:96:MET:HG3	1.91	0.51
29:f:39:LEU:H	45:v:62:ASN:HD22	1.58	0.51
32:i:80:HIS:ND1	32:i:81:SER:O	2.40	0.51
42:s:35:ALA:O	42:s:79:LYS:NZ	2.40	0.51
50:3:1778:G:H2'	50:3:1779:G:H8	1.76	0.51
50:3:2072:C:H2'	50:3:2073:C:H6	1.75	0.51
50:3:2645:U:H4'	50:3:2646:G:OP1	2.11	0.51
50:3:2667:G:N2	50:3:2669:G:H3'	2.25	0.51
52:5:612:G:O6	52:5:624:U:O4	2.27	0.51
52:5:1274:G:N2	52:5:1308:G:H3'	2.25	0.51
52:5:1448:A:H2'	52:5:1449:G:C8	2.45	0.51
14:K:96:ARG:HH12	52:5:549:U:H1'	1.75	0.51
27:d:95:ARG:HD3	27:d:95:ARG:H	1.76	0.51
50:3:154:U:H2'	50:3:155:A:C8	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:518:A:H5'	50:3:519:A:H5'	1.93	0.51
50:3:1304:U:H2'	50:3:1305:G:H8	1.74	0.51
4:A:40:LYS:HE2	4:A:207:ASN:HA	1.92	0.51
8:E:14:SER:OG	8:E:15:LEU:N	2.44	0.51
8:E:145:ARG:HH22	8:E:147:GLU:HB3	1.75	0.51
36:m:54:VAL:HB	36:m:59:ASN:ND2	2.25	0.51
45:v:43:GLY:HA3	50:3:169:U:H4'	1.92	0.51
50:3:299:A:H2'	50:3:300:G:C8	2.45	0.51
50:3:500:U:O4	50:3:719:G:O2'	2.29	0.51
50:3:1195:A:H2'	50:3:1196:U:C6	2.45	0.51
50:3:1838:A:H2'	50:3:1839:C:C6	2.46	0.51
50:3:2248:C:H2'	50:3:2249:A:H8	1.74	0.51
50:3:2599:C:H2'	50:3:2600:G:C8	2.46	0.51
50:3:2702:G:C2	50:3:2724:U:O2	2.64	0.51
51:4:37:A:H1'	51:4:44:A:H61	1.75	0.51
52:5:403:A:H61	52:5:433:C:N4	2.09	0.51
52:5:411:A:H2'	52:5:412:G:H8	1.75	0.51
52:5:1241:G:H2'	52:5:1243:A:N7	2.26	0.51
5:B:113:MET:HE1	5:B:143:LYS:HB3	1.92	0.51
14:K:112:ARG:HG2	14:K:120:VAL:HG23	1.93	0.51
14:K:114:THR:HG22	14:K:115:LEU:HG	1.92	0.51
18:O:10:THR:HA	18:O:35:PRO:HD2	1.93	0.51
26:c:89:ILE:HD12	50:3:1278:G:H1'	1.93	0.51
28:e:42:LEU:HD12	28:e:43:PRO:HD2	1.92	0.51
30:g:112:TYR:CD1	30:g:112:TYR:CB	2.82	0.51
37:n:26:ASN:O	37:n:88:ASN:ND2	2.43	0.51
38:o:97:ARG:NH2	50:3:2702:G:H5'	2.26	0.51
50:3:139:G:O6	50:3:145:A:N6	2.43	0.51
50:3:589:A:H2'	50:3:590:U:O4'	2.11	0.51
50:3:2376:C:H2'	50:3:2377:A:C8	2.45	0.51
52:5:411:A:H2'	52:5:412:G:C8	2.46	0.51
52:5:892:G:N3	52:5:895:A:C6	2.79	0.51
52:5:924:A:N6	52:5:1364:C:N3	2.57	0.51
2:1:22:LYS:HG2	2:1:44:GLN:HE22	1.75	0.51
4:A:154:ARG:HH12	52:5:1088:C:H5'	1.74	0.51
10:G:119:SER:O	52:5:637:A:O2'	2.25	0.51
24:a:242:GLY:HA3	50:3:2606:A:H5''	1.92	0.51
35:l:39:GLY:HA2	35:l:97:VAL:O	2.11	0.51
42:s:65:ILE:HG22	42:s:66:ARG:HG2	1.93	0.51
50:3:1166:G:HO2'	50:3:2032:G:HO2'	1.57	0.51
50:3:1503:A:OP2	50:3:1540:G:N2	2.40	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2700:C:H2'	50:3:2701:A:H8	1.76	0.51
50:3:2722:G:H2'	50:3:2723:C:H6	1.76	0.51
52:5:541:C:H2'	52:5:542:G:C8	2.45	0.51
52:5:691:A:H2'	52:5:692:A:C8	2.46	0.51
11:H:111:ARG:NH1	52:5:1320:A:O2'	2.44	0.51
17:N:59:LYS:HA	17:N:62:ARG:HE	1.76	0.51
23:T:42:LEU:O	23:T:46:ARG:HG3	2.11	0.51
26:c:2:ALA:N	26:c:18:VAL:O	2.44	0.51
26:c:199:VAL:HB	26:c:204:LEU:HD21	1.92	0.51
30:g:76:ILE:HG13	30:g:77:LYS:H	1.75	0.51
38:o:32:ASN:HB3	38:o:89:GLU:HG3	1.93	0.51
39:p:39:ILE:HG22	39:p:43:LYS:HE2	1.92	0.51
50:3:523:A:N6	50:3:529:G:O6	2.43	0.51
50:3:615:G:H2'	50:3:616:G:C8	2.46	0.51
50:3:683:G:N2	50:3:2358:U:O3'	2.44	0.51
50:3:1229:U:H2'	50:3:1230:U:H6	1.76	0.51
50:3:1229:U:H2'	50:3:1230:U:C6	2.45	0.51
50:3:1261:U:H2'	50:3:1262:G:C8	2.46	0.51
50:3:1304:U:OP2	50:3:1679:U:O2'	2.24	0.51
50:3:1475:C:H2'	50:3:1476:C:C6	2.46	0.51
50:3:1944:A:H61	50:3:1971:G:H21	0.70	0.51
50:3:2297:G:H22	50:3:2351:U:H2'	1.76	0.51
50:3:2547:C:H2'	50:3:2548:G:C8	2.45	0.51
50:3:2607:G:H2'	50:3:2608:A:C8	2.46	0.51
52:5:91:C:H1'	52:5:375:C:H5''	1.92	0.51
52:5:568:G:H2'	52:5:569:U:C6	2.45	0.51
10:G:14:PRO:HB3	10:G:41:LYS:HG3	1.93	0.50
24:a:255:ARG:HE	24:a:259:GLY:HA2	1.75	0.50
25:b:119:PHE:O	50:3:1688:A:O2'	2.22	0.50
26:c:202:GLU:OE1	26:c:202:GLU:N	2.44	0.50
29:f:116:ASN:ND2	50:3:2228:U:O3'	2.44	0.50
50:3:660:U:H2'	50:3:661:G:C8	2.46	0.50
50:3:758:C:H2'	50:3:759:U:C6	2.46	0.50
50:3:1013:G:H2'	50:3:1014:G:C8	2.46	0.50
50:3:1075:G:H2'	50:3:1076:U:C6	2.46	0.50
50:3:1684:A:H2'	50:3:1685:G:C8	2.46	0.50
50:3:1942:G:H3'	50:3:1969:C:H42	1.75	0.50
50:3:2122:G:H2'	50:3:2174:G:H21	1.76	0.50
50:3:2737:G:H2'	50:3:2738:U:C6	2.45	0.50
52:5:295:G:H2'	52:5:296:A:C4	2.46	0.50
52:5:733:A:H2'	52:5:734:A:C8	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:J:33:ASN:HB3	52:5:681:U:H1'	1.93	0.50
50:3:410:G:N2	50:3:411:U:O4	2.43	0.50
50:3:1355:C:H2'	50:3:1356:G:C4	2.47	0.50
50:3:1449:G:H2'	50:3:1450:G:H8	1.76	0.50
50:3:1507:G:O6	50:3:1537:A:N6	2.44	0.50
50:3:2005:G:H2'	50:3:2006:C:C6	2.46	0.50
50:3:2218:U:C2	50:3:2220:A:H2'	2.46	0.50
50:3:2567:C:H2'	50:3:2568:G:H8	1.75	0.50
50:3:2704:U:H2'	50:3:2705:G:H8	1.75	0.50
13:J:79:VAL:H	13:J:105:GLU:HA	1.75	0.50
26:c:92:GLY:HA2	50:3:1278:G:H5'	1.94	0.50
28:e:25:ILE:HD11	28:e:38:LEU:HD11	1.93	0.50
28:e:108:LEU:HD13	28:e:116:ILE:HG22	1.92	0.50
29:f:126:ILE:HG23	29:f:128:LEU:HD22	1.92	0.50
30:g:112:TYR:HD1	30:g:113:PHE:N	2.09	0.50
41:r:78:GLN:NE2	50:3:1292:A:OP1	2.45	0.50
50:3:117:C:H2'	50:3:118:G:O4'	2.12	0.50
50:3:730:G:O6	50:3:802:U:O4	2.29	0.50
50:3:1091:G:H5''	50:3:1092:A:O4'	2.10	0.50
50:3:1446:G:O2'	50:3:1613:A:N6	2.45	0.50
50:3:1670:U:H4'	50:3:1768:G:H5'	1.93	0.50
50:3:1722:U:O2'	50:3:1734:A:N7	2.39	0.50
52:5:582:G:H2'	52:5:583:G:C8	2.46	0.50
52:5:643:U:H2'	52:5:644:U:C6	2.47	0.50
17:N:70:ASN:OD1	17:N:71:ASP:N	2.44	0.50
22:S:35:PHE:HD1	22:S:43:ASN:HB3	1.76	0.50
25:b:22:GLU:HA	33:j:73:ASP:HA	1.94	0.50
30:g:52:LYS:HG2	50:3:1119:A:H5'	1.93	0.50
31:h:36:THR:HG23	31:h:37:LYS:HD2	1.94	0.50
39:p:61:ILE:HD13	50:3:1188:C:H5''	1.93	0.50
44:u:37:ALA:HA	44:u:52:TYR:HA	1.94	0.50
44:u:41:ASP:HB2	50:3:891:G:N2	2.20	0.50
50:3:144:C:N4	50:3:145:A:N6	2.58	0.50
50:3:201:A:H62	50:3:2438:A:H2'	1.76	0.50
50:3:325:G:N2	50:3:383:U:O2	2.36	0.50
50:3:907:A:H3'	50:3:908:A:H8	1.76	0.50
50:3:918:G:N2	50:3:933:A:OP1	2.45	0.50
50:3:1139:C:H2'	50:3:1140:U:C6	2.46	0.50
50:3:1182:U:H2'	50:3:1183:A:C8	2.47	0.50
50:3:1239:G:N2	50:3:1240:U:O4	2.45	0.50
50:3:1340:U:O2'	50:3:1367:G:N2	2.40	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1794:A:H4'	50:3:2597:A:O3'	2.12	0.50
50:3:2536:U:O4	50:3:2543:G:O6	2.29	0.50
50:3:2678:A:H2'	50:3:2679:G:C8	2.46	0.50
52:5:537:A:H2'	52:5:538:G:C8	2.46	0.50
52:5:999:C:O2'	52:5:1000:A:N7	2.37	0.50
5:B:92:ILE:HB	5:B:102:LEU:HD11	1.93	0.50
10:G:38:SER:O	10:G:42:ILE:HG12	2.12	0.50
12:I:73:LYS:NZ	12:I:74:ASN:O	2.41	0.50
16:M:3:LYS:HD2	16:M:28:GLY:HA3	1.94	0.50
25:b:13:MET:SD	50:3:2688:C:O2'	2.68	0.50
25:b:125:ARG:HB2	25:b:169:TYR:CZ	2.46	0.50
46:w:14:GLU:OE2	46:w:17:LYS:NZ	2.34	0.50
50:3:299:A:H2'	50:3:300:G:H8	1.75	0.50
50:3:376:U:H2'	50:3:377:U:C6	2.46	0.50
50:3:747:A:H2'	50:3:748:G:O4'	2.12	0.50
50:3:1104:A:H5''	50:3:1105:A:H2'	1.93	0.50
50:3:2638:G:H2'	50:3:2639:G:H8	1.77	0.50
50:3:2657:C:H2'	50:3:2658:U:C6	2.46	0.50
52:5:892:G:C2	52:5:895:A:C6	3.00	0.50
4:A:148:GLU:HA	4:A:151:MET:HE3	1.94	0.50
29:f:3:VAL:HG11	29:f:42:LYS:HE3	1.93	0.50
36:m:35:LEU:HG	36:m:36:LYS:HD3	1.93	0.50
46:w:28:GLU:O	46:w:32:LYS:HG2	2.12	0.50
46:w:97:LYS:O	46:w:100:LYS:HG3	2.11	0.50
49:z:32:LEU:H	49:z:49:GLU:HB2	1.75	0.50
50:3:433:A:H2'	50:3:434:G:H8	1.76	0.50
50:3:892:G:H2'	50:3:893:A:C4	2.47	0.50
50:3:1125:U:H2'	50:3:1126:G:O4'	2.11	0.50
50:3:1442:G:H2'	50:3:1443:A:H8	1.77	0.50
50:3:1844:C:H2'	50:3:1906:G:O6	2.12	0.50
50:3:1850:C:H2'	50:3:1851:U:C6	2.47	0.50
50:3:2645:U:O2'	50:3:2646:G:O5'	2.28	0.50
52:5:93:A:H3'	52:5:94:A:H2	1.76	0.50
52:5:318:C:N4	52:5:328:G:O6	2.45	0.50
6:C:24:GLU:HB3	6:C:32:LYS:HZ3	1.76	0.50
13:J:32:GLY:O	52:5:680:G:N2	2.45	0.50
24:a:159:GLN:O	50:3:1825:U:O2'	2.27	0.50
33:j:43:VAL:HG11	33:j:46:ALA:HB2	1.94	0.50
37:n:98:TYR:CE1	37:n:103:ALA:HA	2.47	0.50
50:3:61:U:H3	50:3:70:G:H1	1.58	0.50
50:3:349:G:H2'	50:3:350:C:C6	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1294:G:N2	50:3:2022:A:OP2	2.45	0.50
50:3:1449:G:H2'	50:3:1450:G:C8	2.47	0.50
50:3:1451:A:H2'	50:3:1452:G:C8	2.47	0.50
50:3:1577:A:H2'	50:3:1578:A:C8	2.47	0.50
50:3:1730:C:H2'	50:3:1731:G:O4'	2.12	0.50
50:3:1749:A:H2'	50:3:1750:A:C8	2.47	0.50
50:3:1856:G:H2'	50:3:1857:G:C8	2.47	0.50
50:3:2706:U:O4	50:3:2707:A:N6	2.44	0.50
52:5:126:U:O2'	52:5:168:A:N6	2.45	0.50
52:5:421:G:H2'	52:5:422:A:H8	1.76	0.50
52:5:475:U:H2'	52:5:476:U:H4'	1.93	0.50
52:5:646:A:H2'	52:5:647:U:C6	2.47	0.50
52:5:823:C:H2'	52:5:824:U:C6	2.47	0.50
52:5:1134:C:C4	52:5:1136:G:C8	2.99	0.50
3:2:35:ARG:HG2	3:2:36:GLN:N	2.26	0.50
5:B:3:GLN:NE2	52:5:1053:U:O4	2.45	0.50
8:E:109:LEU:O	8:E:113:ALA:N	2.38	0.50
9:F:115:MET:HA	9:F:118:LYS:HG2	1.93	0.50
20:Q:102:VAL:HG23	20:Q:103:LYS:HD3	1.93	0.50
24:a:146:GLN:O	24:a:201:GLY:N	2.38	0.50
25:b:142:ARG:NH1	50:3:1690:C:OP1	2.45	0.50
27:d:26:MET:HG3	51:4:55:A:N1	2.26	0.50
46:w:104:LYS:HE2	50:3:1430:U:H4'	1.93	0.50
50:3:293:G:H8	50:3:293:G:OP2	1.95	0.50
50:3:618:G:H3'	50:3:1281:A:H61	1.76	0.50
50:3:767:C:H2'	50:3:768:G:O4'	2.12	0.50
50:3:937:A:H2'	50:3:937:A:N3	2.27	0.50
51:4:58:C:H2'	51:4:59:A:C8	2.46	0.50
52:5:76:G:N2	52:5:79:A:OP2	2.34	0.50
52:5:1055:G:H1'	52:5:1165:G:H21	1.77	0.50
52:5:1367:G:H2'	52:5:1368:U:C6	2.47	0.50
52:5:1378:C:N3	52:5:1474:A:N6	2.60	0.50
52:5:1487:U:O2	52:5:1498:G:N2	2.42	0.50
8:E:112:ARG:NH1	8:E:112:ARG:O	2.45	0.50
16:M:7:LYS:O	16:M:11:THR:HG23	2.11	0.50
50:3:116:C:H2'	50:3:117:C:H6	1.77	0.50
50:3:530:G:H2'	50:3:531:G:C8	2.46	0.50
50:3:559:C:H2'	50:3:560:U:C6	2.47	0.50
50:3:1245:G:O6	50:3:1264:U:O4	2.30	0.50
50:3:1296:G:H1'	50:3:1297:U:H5	1.77	0.50
50:3:1691:U:H2'	50:3:1692:A:H8	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1890:U:O2'	50:3:1891:A:O5'	2.30	0.50
50:3:1923:A:N6	52:5:1383:A:O2'	2.45	0.50
50:3:2011:G:H3'	50:3:2012:A:C8	2.47	0.50
50:3:2522:U:H2'	50:3:2523:C:C6	2.47	0.50
50:3:2541:C:H1'	50:3:2672:G:H4'	1.93	0.50
51:4:12:U:H2'	51:4:13:G:H21	1.77	0.50
52:5:91:C:H2'	52:5:92:G:C8	2.45	0.50
52:5:294:A:H2'	52:5:295:G:C8	2.47	0.50
12:I:13:LYS:HG3	12:I:79:LEU:HD11	1.93	0.49
16:M:23:ARG:HA	16:M:33:VAL:HG21	1.93	0.49
25:b:40:LYS:NZ	25:b:51:LEU:HB2	2.27	0.49
34:k:98:LEU:HD13	34:k:103:VAL:HB	1.94	0.49
43:t:4:ILE:HG13	43:t:76:LEU:HD21	1.94	0.49
50:3:440:C:H1'	50:3:442:G:C4	2.46	0.49
50:3:598:G:H2'	50:3:599:U:H5'	1.93	0.49
50:3:606:G:OP2	50:3:608:A:N6	2.45	0.49
50:3:742:G:N2	50:3:759:U:O2	2.42	0.49
50:3:774:A:N3	50:3:775:C:N4	2.57	0.49
50:3:895:G:H1'	50:3:953:G:N1	2.26	0.49
50:3:1818:G:H2'	50:3:1819:G:H8	1.77	0.49
50:3:2044:C:H2'	50:3:2045:C:C6	2.46	0.49
50:3:2588:U:OP2	50:3:2618:C:O2'	2.29	0.49
50:3:2589:G:H22	50:3:2618:C:H2'	1.77	0.49
52:5:572:A:H1'	52:5:877:C:H1'	1.94	0.49
52:5:922:G:OP1	52:5:1480:G:N2	2.45	0.49
24:a:138:LEU:HD22	24:a:194:LYS:HA	1.94	0.49
35:l:97:VAL:HG13	35:l:101:THR:HB	1.94	0.49
42:s:48:TYR:HB3	42:s:50:ILE:HG12	1.93	0.49
44:u:99:LYS:O	44:u:101:LYS:NZ	2.45	0.49
50:3:155:A:H2'	50:3:156:A:H8	1.76	0.49
50:3:1507:G:O2'	50:3:1508:G:P	2.70	0.49
50:3:1910:G:H2'	50:3:1911:G:C8	2.48	0.49
50:3:2007:U:O2	50:3:2697:C:N4	2.45	0.49
50:3:2451:C:H2'	50:3:2452:G:C8	2.47	0.49
50:3:2867:U:H2'	50:3:2868:G:C8	2.47	0.49
52:5:169:G:O2'	52:5:220:U:O2'	2.26	0.49
52:5:194:U:H2'	52:5:195:U:C6	2.48	0.49
52:5:486:C:H2'	52:5:487:A:C8	2.47	0.49
52:5:1279:G:N2	52:5:1306:A:OP2	2.45	0.49
52:5:1394:G:H2'	52:5:1395:C:H6	1.76	0.49
5:B:61:THR:HG22	5:B:62:GLN:HG2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:I:22:THR:HA	12:I:26:LEU:HD13	1.94	0.49
19:P:13:VAL:HA	19:P:24:VAL:HA	1.93	0.49
36:m:18:VAL:HG13	36:m:41:THR:HG22	1.94	0.49
39:p:47:ARG:HH22	50:3:568:G:H21	1.58	0.49
50:3:2349:G:N2	50:3:2382:A:O2'	2.45	0.49
50:3:2781:C:H2'	50:3:2782:A:C8	2.45	0.49
52:5:41:C:H2'	52:5:42:G:H8	1.77	0.49
52:5:590:G:O6	52:5:644:U:O4	2.29	0.49
52:5:902:A:H2'	52:5:903:A:C8	2.47	0.49
10:G:91:SER:OG	10:G:137:ILE:O	2.24	0.49
12:I:59:ARG:HE	16:M:45:ARG:HH11	1.59	0.49
50:3:8:A:O5'	50:3:2637:A:OP2	2.28	0.49
50:3:603:G:H4'	50:3:1019:A:H61	1.77	0.49
50:3:1692:A:H2'	50:3:1693:U:C6	2.47	0.49
50:3:1738:G:H2'	50:3:1739:G:C8	2.46	0.49
50:3:2117:G:H5''	50:3:2118:U:H5	1.78	0.49
50:3:2638:G:H2'	50:3:2639:G:C8	2.47	0.49
50:3:2752:G:O6	50:3:2768:U:O4	2.30	0.49
52:5:318:C:H2'	52:5:319:U:C6	2.47	0.49
52:5:348:C:O2	52:5:351:C:N4	2.45	0.49
52:5:618:U:H3'	52:5:619:A:C8	2.48	0.49
52:5:770:G:H2'	52:5:771:G:H8	1.77	0.49
52:5:946:G:H4'	52:5:967:C:H5	1.75	0.49
52:5:1228:C:H2'	52:5:1229:A:C8	2.46	0.49
1:0:24:THR:HG23	1:0:27:GLY:H	1.78	0.49
7:D:196:MET:HA	7:D:199:ILE:HG12	1.93	0.49
11:H:101:LYS:HZ3	11:H:107:THR:HG21	1.76	0.49
14:K:69:ARG:HG3	14:K:75:GLU:HB2	1.92	0.49
18:O:74:LYS:HD3	52:5:470:U:H5'	1.95	0.49
19:P:3:ARG:HH11	52:5:114:C:H5	1.59	0.49
34:k:16:LYS:NZ	50:3:1225:A:N7	2.48	0.49
34:k:23:GLY:HA2	50:3:846:U:H3'	1.95	0.49
34:k:98:LEU:HD11	34:k:104:ILE:HG22	1.93	0.49
41:r:29:THR:HG23	41:r:51:LEU:HD11	1.94	0.49
42:s:49:GLY:HA3	46:w:80:ASN:HB3	1.95	0.49
43:t:33:GLN:HB3	43:t:68:PRO:HB2	1.94	0.49
43:t:44:ARG:HH11	43:t:46:LYS:HE2	1.76	0.49
50:3:711:A:HO2'	50:3:2450:C:HO2'	1.50	0.49
50:3:766:C:H2'	50:3:767:C:C6	2.48	0.49
50:3:1018:G:H21	50:3:2035:U:H4'	1.77	0.49
50:3:1056:A:H2'	50:3:1057:G:H4'	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1154:U:H2'	50:3:1155:G:H8	1.76	0.49
50:3:1777:G:H2'	50:3:1778:G:C8	2.47	0.49
50:3:2116:U:OP1	50:3:2156:G:N1	2.27	0.49
50:3:2323:U:H2'	50:3:2324:A:H8	1.76	0.49
50:3:2529:C:O2'	50:3:2572:A:N3	2.34	0.49
50:3:2843:G:O6	50:3:2882:U:O2	2.31	0.49
52:5:331:C:H2'	52:5:332:A:C8	2.47	0.49
4:A:44:PHE:HA	4:A:60:LEU:HD23	1.94	0.49
14:K:27:ASN:HD21	14:K:38:VAL:HB	1.78	0.49
14:K:86:ASN:ND2	14:K:118:VAL:HB	2.27	0.49
15:L:65:ILE:HG23	15:L:68:ASP:HB2	1.95	0.49
17:N:28:LEU:O	17:N:32:GLN:HG3	2.13	0.49
24:a:185:LEU:O	24:a:186:SER:OG	2.27	0.49
33:j:93:PRO:HD3	33:j:114:ILE:HG13	1.94	0.49
50:3:1342:C:HO2'	50:3:1421:A:HO2'	1.54	0.49
50:3:1408:G:H2'	50:3:1409:G:H8	1.77	0.49
50:3:1455:A:N6	50:3:1605:A:OP2	2.43	0.49
50:3:1509:U:H3	50:3:1530:G:H1	1.59	0.49
50:3:2100:G:N7	50:3:2233:A:H2'	2.28	0.49
51:4:30:U:O2	51:4:49:G:N2	2.46	0.49
53:8:7:U:O2	53:8:68:G:N2	2.38	0.49
7:D:68:GLU:HG2	7:D:119:ILE:HG12	1.95	0.49
8:E:153:LYS:HB3	10:G:56:ASN:HB2	1.94	0.49
10:G:117:SER:HB2	52:5:639:A:H1'	1.95	0.49
12:I:9:TYR:HE2	12:I:12:LEU:HD13	1.77	0.49
26:c:44:SER:HB3	50:3:650:G:H4'	1.95	0.49
34:k:15:HIS:HE1	50:3:695:G:H21	1.60	0.49
39:p:8:GLN:OE1	50:3:1228:G:O2'	2.29	0.49
42:s:65:ILE:N	42:s:73:GLY:O	2.33	0.49
50:3:32:G:C2	50:3:546:U:O2	2.65	0.49
50:3:2656:G:H2'	50:3:2657:C:C6	2.47	0.49
50:3:2820:G:H2'	50:3:2821:U:H6	1.77	0.49
52:5:799:A:H3'	52:5:800:G:H8	1.78	0.49
4:A:104:ASP:OD1	4:A:104:ASP:N	2.46	0.49
7:D:110:GLU:OE2	7:D:112:PRO:HG2	2.12	0.49
23:T:54:ARG:NH1	52:5:1509:A:O2'	2.46	0.49
25:b:152:GLY:O	25:b:157:GLN:NE2	2.46	0.49
25:b:180:ARG:HH12	50:3:2738:U:H5'	1.78	0.49
29:f:58:TYR:CZ	29:f:62:LYS:HD3	2.48	0.49
31:h:50:MET:HG2	31:h:71:PRO:HG2	1.94	0.49
32:i:17:GLN:OE1	32:i:17:GLN:N	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:i:133:HIS:NE2	32:i:136:GLU:HG2	2.28	0.49
41:r:21:CYS:HA	41:r:24:ILE:HG22	1.93	0.49
50:3:534:U:H3'	50:3:535:G:C8	2.47	0.49
50:3:631:A:H2'	50:3:632:A:H8	1.77	0.49
50:3:1076:U:H2'	50:3:1077:G:H8	1.78	0.49
50:3:1201:A:H2'	50:3:1202:A:H8	1.77	0.49
50:3:1721:G:N1	50:3:1734:A:OP1	2.46	0.49
50:3:1966:G:H21	52:5:1458:A:H2	1.59	0.49
50:3:2025:C:H2'	50:3:2026:A:H8	1.78	0.49
50:3:2072:C:H2'	50:3:2073:C:C6	2.47	0.49
50:3:2135:C:H2'	50:3:2136:A:H8	1.77	0.49
50:3:2275:A:H5''	50:3:2276:A:H5''	1.93	0.49
50:3:2820:G:H2'	50:3:2821:U:C6	2.48	0.49
50:3:2893:C:H2'	50:3:2894:G:O4'	2.12	0.49
52:5:25:U:H2'	52:5:26:C:C6	2.47	0.49
52:5:147:A:H2	52:5:339:U:H4'	1.78	0.49
52:5:1087:C:H2'	52:5:1088:C:C6	2.48	0.49
11:H:12:ARG:O	11:H:15:SER:OG	2.30	0.49
27:d:47:SER:C	27:d:48:LYS:HD3	2.38	0.49
28:e:152:ARG:NH2	50:3:2751:C:O2'	2.46	0.49
50:3:562:C:H42	50:3:2787:U:P	2.36	0.49
50:3:727:C:H2'	50:3:728:A:C8	2.48	0.49
50:3:915:A:OP2	50:3:936:G:N2	2.43	0.49
50:3:2596:A:H2'	50:3:2597:A:C8	2.48	0.49
52:5:170:A:H2'	52:5:171:A:C8	2.47	0.49
52:5:177:G:H22	52:5:188:U:H3	1.60	0.49
52:5:675:U:H1'	52:5:774:A:H4'	1.95	0.49
52:5:1413:G:N1	52:5:1438:U:O4	2.33	0.49
4:A:66:GLN:O	4:A:70:ASN:ND2	2.46	0.49
6:C:98:ASP:N	6:C:98:ASP:OD1	2.46	0.49
8:E:49:ILE:HD11	8:E:83:LEU:HD12	1.95	0.49
11:H:72:GLY:H	52:5:1225:A:H5''	1.77	0.49
15:L:58:ASN:OD1	15:L:59:VAL:N	2.45	0.49
15:L:119:LYS:HE3	52:5:949:G:H4'	1.95	0.49
17:N:45:LYS:HB3	52:5:665:G:H4'	1.95	0.49
25:b:50:THR:HG21	25:b:90:PHE:CD1	2.48	0.49
37:n:55:SER:HB2	37:n:61:LYS:HZ1	1.77	0.49
38:o:102:SER:HB2	38:o:105:ARG:NH2	2.28	0.49
41:r:61:ASN:CG	50:3:530:G:H21	2.20	0.49
50:3:682:A:N1	50:3:2358:U:O2'	2.46	0.49
50:3:768:G:N2	50:3:769:A:N7	2.61	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1665:G:O2'	50:3:1669:A:N6	2.46	0.49
50:3:2264:G:H2'	50:3:2265:U:C6	2.48	0.49
50:3:2747:U:H2'	50:3:2748:A:H8	1.78	0.49
52:5:28:G:H22	52:5:292:U:H4'	1.75	0.49
52:5:33:A:N1	52:5:551:A:N6	2.61	0.49
52:5:824:U:H2'	52:5:864:U:N3	2.28	0.49
52:5:1349:A:H2'	52:5:1350:A:C8	2.48	0.49
53:8:7:U:O4	53:8:68:G:O6	2.31	0.49
53:8:42:C:H2'	53:8:43:G:C8	2.47	0.49
6:C:134:ILE:HG22	6:C:136:LEU:HD22	1.94	0.48
12:I:82:LEU:HD21	12:I:85:VAL:HB	1.94	0.48
15:L:15:ILE:HG12	15:L:46:LYS:O	2.13	0.48
29:f:82:LYS:HD2	29:f:83:GLU:H	1.78	0.48
33:j:25:LEU:HD23	33:j:38:VAL:HB	1.95	0.48
42:s:14:GLU:OE1	50:3:1420:A:N6	2.42	0.48
50:3:514:A:O2'	50:3:516:A:H5'	2.13	0.48
50:3:664:G:H2'	50:3:665:C:H6	1.78	0.48
50:3:1000:U:O2'	50:3:2281:A:N3	2.43	0.48
50:3:1789:C:O2	50:3:2594:C:N4	2.46	0.48
50:3:2128:G:H2'	50:3:2129:U:C6	2.48	0.48
51:4:93:U:H2'	51:4:94:A:C8	2.48	0.48
52:5:381:C:H2'	52:5:382:U:C6	2.48	0.48
52:5:1056:U:H1'	52:5:1057:C:H5	1.78	0.48
6:C:125:ASN:H	6:C:143:ARG:HH22	1.61	0.48
6:C:129:VAL:HG22	6:C:131:THR:H	1.78	0.48
7:D:76:ILE:HA	52:5:17:A:H4'	1.95	0.48
14:K:63:ARG:HH12	52:5:520:C:H5	1.59	0.48
27:d:100:LEU:O	27:d:104:ILE:HG12	2.13	0.48
30:g:88:GLU:OE1	30:g:91:GLU:HB2	2.13	0.48
33:j:19:VAL:HA	33:j:44:LYS:H	1.77	0.48
50:3:8:A:H2'	50:3:9:G:C8	2.47	0.48
50:3:389:C:H2'	50:3:390:A:C8	2.46	0.48
50:3:571:A:H2'	50:3:572:G:O4'	2.13	0.48
50:3:714:G:H2'	50:3:715:G:C8	2.45	0.48
50:3:1039:G:N2	50:3:1046:A:O2'	2.46	0.48
50:3:1608:C:H2'	50:3:1609:U:C6	2.49	0.48
50:3:1880:G:H2'	50:3:1881:C:C6	2.47	0.48
50:3:2752:G:N1	50:3:2768:U:C2	2.80	0.48
50:3:2892:U:H2'	50:3:2893:C:C6	2.48	0.48
52:5:352:A:H3'	52:5:353:G:H8	1.78	0.48
52:5:852:G:N2	52:5:853:A:N7	2.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1317:A:H2'	52:5:1318:C:C6	2.48	0.48
52:5:1467:A:H5'	52:5:1468:A:C8	2.47	0.48
4:A:30:VAL:HA	4:A:56:PHE:HD2	1.79	0.48
5:B:33:TRP:CG	5:B:60:ARG:HE	2.32	0.48
6:C:96:ARG:O	6:C:100:ILE:HD12	2.13	0.48
8:E:6:ILE:HB	8:E:86:LEU:HB2	1.95	0.48
10:G:13:ASP:N	10:G:13:ASP:OD1	2.45	0.48
15:L:90:ARG:HG3	15:L:95:LEU:HD12	1.96	0.48
18:O:21:LYS:HE2	52:5:96:G:H5''	1.96	0.48
22:S:20:ASN:O	22:S:24:GLN:HG2	2.13	0.48
23:T:24:GLU:HG3	23:T:27:ARG:HH11	1.78	0.48
24:a:151:GLU:HG3	24:a:196:CYS:HB3	1.95	0.48
24:a:252:ASP:HA	50:3:1909:C:H1'	1.95	0.48
30:g:36:GLU:OE1	30:g:103:LYS:HG2	2.12	0.48
38:o:108:SER:OG	38:o:109:GLY:N	2.46	0.48
44:u:86:PHE:CE1	44:u:94:ARG:HG3	2.49	0.48
45:v:62:ASN:ND2	50:3:287:G:N7	2.61	0.48
46:w:9:GLN:HE22	46:w:15:LEU:HB2	1.78	0.48
50:3:322:A:H2'	50:3:323:A:C8	2.48	0.48
50:3:572:G:N2	50:3:590:U:O4	2.46	0.48
50:3:1335:A:N6	50:3:1641:A:OP2	2.46	0.48
50:3:2145:A:C5	50:3:2161:G:C2	3.01	0.48
50:3:2249:A:H2'	50:3:2250:G:C8	2.49	0.48
50:3:2515:C:O2	50:3:2561:G:N2	2.46	0.48
50:3:2667:G:N2	50:3:2670:A:OP2	2.32	0.48
50:3:2859:U:H2'	50:3:2860:A:C8	2.49	0.48
52:5:38:U:O2'	52:5:545:A:N1	2.41	0.48
52:5:780:U:O4	52:5:781:A:N6	2.47	0.48
52:5:796:A:H2'	52:5:797:G:O4'	2.13	0.48
52:5:853:A:H2'	52:5:854:A:H8	1.78	0.48
52:5:1010:A:N3	52:5:1194:A:O2'	2.35	0.48
52:5:1090:G:H2'	52:5:1091:C:O4'	2.14	0.48
52:5:1364:C:H2'	52:5:1365:U:C6	2.48	0.48
4:A:24:GLY:O	4:A:27:ARG:NH2	2.47	0.48
9:F:120:ALA:O	9:F:124:ILE:HG12	2.13	0.48
11:H:32:VAL:HA	11:H:67:VAL:HG22	1.94	0.48
17:N:47:PHE:HA	17:N:50:LYS:HB2	1.96	0.48
21:R:15:LEU:HD12	52:5:1010:A:OP2	2.14	0.48
26:c:200:GLU:HG2	26:c:202:GLU:H	1.78	0.48
31:h:129:LYS:HG2	31:h:134:GLU:HG3	1.94	0.48
37:n:34:LYS:NZ	37:n:102:ILE:HG12	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:116:C:H2'	50:3:117:C:C6	2.49	0.48
50:3:323:A:H2'	50:3:324:C:C6	2.48	0.48
50:3:474:U:H2'	50:3:475:A:C8	2.48	0.48
50:3:525:A:N1	50:3:1357:U:H5''	2.29	0.48
50:3:1881:C:H2'	50:3:1882:G:O4'	2.14	0.48
50:3:2267:G:H2'	50:3:2268:C:C6	2.48	0.48
50:3:2657:C:H2'	50:3:2658:U:H6	1.78	0.48
52:5:344:G:H2'	52:5:345:A:H8	1.78	0.48
52:5:1502:G:H2'	52:5:1503:U:C6	2.48	0.48
2:1:32:HIS:C	2:1:33:LYS:HD3	2.38	0.48
9:F:69:MET:O	9:F:71:ARG:NH2	2.46	0.48
10:G:92:LYS:HD3	52:5:871:U:H5''	1.95	0.48
14:K:112:ARG:NH2	14:K:118:VAL:O	2.47	0.48
29:f:7:GLN:CD	29:f:61:ASN:HD22	2.21	0.48
41:r:29:THR:O	41:r:33:GLN:N	2.38	0.48
50:3:806:A:O2'	50:3:1383:G:O2'	2.14	0.48
50:3:1298:A:N6	50:3:1353:G:H22	2.10	0.48
50:3:1582:G:H2'	50:3:1583:G:C8	2.48	0.48
50:3:1605:A:H2'	50:3:1606:A:H8	1.78	0.48
50:3:2145:A:C6	50:3:2161:G:C6	3.01	0.48
51:4:22:G:N1	51:4:57:G:O6	2.47	0.48
52:5:472:G:H2'	52:5:473:A:C8	2.49	0.48
52:5:723:C:N4	52:5:724:G:O6	2.47	0.48
52:5:832:G:H2'	52:5:833:G:C8	2.49	0.48
52:5:846:G:H2'	52:5:847:G:C8	2.49	0.48
52:5:944:A:OP2	52:5:944:A:H8	1.96	0.48
52:5:1064:U:H2'	52:5:1065:G:H8	1.78	0.48
52:5:1262:A:H2	52:5:1326:C:O2	1.97	0.48
52:5:1460:U:H2'	52:5:1461:G:C8	2.48	0.48
52:5:1461:G:H2'	52:5:1462:G:C8	2.47	0.48
53:8:23:G:C5	53:8:47:G:N2	2.80	0.48
5:B:32:LYS:HA	5:B:35:ILE:HG22	1.95	0.48
14:K:101:LYS:HD3	52:5:907:A:OP1	2.14	0.48
33:j:88:LYS:NZ	33:j:93:PRO:O	2.45	0.48
50:3:511:U:H3'	50:3:512:G:C8	2.49	0.48
50:3:515:A:N3	50:3:517:G:H5''	2.28	0.48
50:3:526:G:H2'	50:3:527:A:C4	2.48	0.48
50:3:535:G:N1	50:3:538:A:OP2	2.47	0.48
50:3:799:A:H3'	50:3:800:C:H5''	1.96	0.48
50:3:909:U:H2'	50:3:910:G:C8	2.47	0.48
50:3:1937:G:O2'	50:3:1975:G:O6	2.30	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2045:C:H2'	50:3:2046:G:C8	2.48	0.48
52:5:128:A:H2'	52:5:129:U:H4'	1.94	0.48
52:5:245:U:H3	52:5:271:G:H1	1.62	0.48
52:5:822:A:H2'	52:5:823:C:C6	2.49	0.48
52:5:1055:G:N2	52:5:1165:G:O3'	2.47	0.48
25:b:64:LYS:NZ	50:3:2795:C:O3'	2.42	0.48
28:e:93:VAL:O	28:e:163:LYS:CA	2.61	0.48
34:k:132:SER:O	34:k:136:LEU:N	2.38	0.48
43:t:62:LYS:O	43:t:64:GLN:NE2	2.47	0.48
50:3:35:U:O4	50:3:482:G:O2'	2.28	0.48
50:3:202:C:O2'	50:3:203:A:H5'	2.13	0.48
50:3:512:G:H1'	50:3:516:A:N6	2.29	0.48
50:3:562:C:C5	50:3:2050:G:H5''	2.49	0.48
50:3:995:A:H2'	50:3:996:A:C8	2.49	0.48
50:3:1330:U:H3	50:3:1677:G:H21	1.60	0.48
50:3:1470:C:N3	50:3:1471:A:N6	2.62	0.48
50:3:1511:C:H2'	50:3:1512:A:H8	1.78	0.48
50:3:1994:U:H2'	50:3:1995:G:C8	2.48	0.48
50:3:2596:A:C6	50:3:2615:G:O6	2.66	0.48
52:5:39:G:N1	52:5:393:A:OP1	2.38	0.48
52:5:213:U:H2'	52:5:214:U:O4'	2.13	0.48
52:5:888:A:H61	52:5:898:A:H61	1.62	0.48
52:5:939:G:H2'	52:5:1312:G:N1	2.28	0.48
52:5:944:A:H2'	52:5:945:U:C6	2.49	0.48
27:d:117:LEU:O	27:d:119:LEU:HD12	2.14	0.48
27:d:126:GLY:HA2	27:d:163:ASP:HA	1.96	0.48
31:h:97:THR:HG23	31:h:100:LYS:H	1.79	0.48
41:r:16:LYS:HE3	50:3:1296:G:C5	2.48	0.48
48:y:47:MET:HE3	48:y:47:MET:HB3	1.67	0.48
50:3:292:G:H2'	50:3:293:G:H5'	1.95	0.48
50:3:322:A:H2'	50:3:323:A:H8	1.78	0.48
50:3:808:U:O2	50:3:813:G:O2'	2.30	0.48
50:3:1091:G:H4'	50:3:1121:A:C8	2.49	0.48
50:3:1646:G:H2'	50:3:1647:A:C8	2.49	0.48
50:3:2207:A:H62	50:3:2232:G:H21	1.61	0.48
50:3:2240:U:H2'	50:3:2241:A:C8	2.48	0.48
50:3:2274:A:N6	50:3:2282:A:N1	2.62	0.48
50:3:2483:C:H4'	50:3:2484:A:OP1	2.14	0.48
50:3:2832:G:H2'	50:3:2833:A:H8	1.78	0.48
51:4:85:A:O2'	51:4:86:G:O4'	2.29	0.48
52:5:26:C:H2'	52:5:27:A:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:50:U:H3	52:5:358:G:H1'	1.79	0.48
52:5:577:G:H2'	52:5:578:C:C6	2.49	0.48
52:5:767:U:H2'	52:5:768:G:C8	2.49	0.48
1:0:36:LYS:NZ	50:3:185:U:OP2	2.46	0.48
3:2:35:ARG:HG2	3:2:36:GLN:HG2	1.94	0.48
5:B:88:ILE:O	5:B:92:ILE:HG13	2.14	0.48
6:C:18:LEU:HB2	6:C:23:LYS:NZ	2.29	0.48
6:C:73:ARG:NH2	52:5:398:G:OP1	2.47	0.48
14:K:68:VAL:HG21	14:K:95:LEU:HD21	1.96	0.48
14:K:121:GLU:CD	14:K:121:GLU:N	2.72	0.48
15:L:101:ARG:HH21	52:5:1199:U:H4'	1.79	0.48
28:e:47:GLU:O	28:e:49:LYS:NZ	2.41	0.48
32:i:22:ASP:OD1	32:i:23:ALA:N	2.46	0.48
41:r:34:ASN:OD1	41:r:35:ILE:N	2.47	0.48
41:r:131:GLY:O	41:r:134:LYS:HG3	2.14	0.48
44:u:39:LYS:HD3	44:u:51:ILE:HG12	1.95	0.48
50:3:573:A:H2'	50:3:574:G:O4'	2.13	0.48
50:3:591:G:O6	50:3:592:G:O6	2.31	0.48
50:3:788:G:H2'	50:3:789:A:C8	2.49	0.48
50:3:854:A:H2'	50:3:855:A:C8	2.48	0.48
50:3:1245:G:N1	50:3:1264:U:N3	2.34	0.48
50:3:1508:G:OP2	50:3:1508:G:H4'	2.09	0.48
50:3:1974:U:H2'	50:3:1975:G:O4'	2.13	0.48
50:3:2309:A:H2'	50:3:2310:C:C6	2.48	0.48
50:3:2506:C:O2'	50:3:2507:C:OP1	2.32	0.48
50:3:2809:A:H2'	50:3:2810:A:O4'	2.14	0.48
52:5:366:C:H2'	52:5:367:A:C8	2.49	0.48
52:5:462:G:O2'	52:5:463:U:O4'	2.28	0.48
52:5:663:G:N1	52:5:737:U:N3	2.61	0.48
52:5:1214:A:H1'	52:5:1216:G:C5	2.49	0.48
52:5:1372:C:H5'	52:5:1373:A:C4	2.48	0.48
4:A:32:MET:SD	4:A:220:HIS:N	2.87	0.48
5:B:151:GLY:HA3	5:B:174:GLY:HA3	1.96	0.48
26:c:78:SER:OG	26:c:81:ASN:OD1	2.25	0.48
27:d:45:ARG:NH1	27:d:75:SER:O	2.47	0.48
41:r:92:SER:H	50:3:1648:A:H61	1.62	0.48
50:3:407:U:H3'	50:3:440:C:H41	1.78	0.48
50:3:528:U:C2	50:3:529:G:C8	3.02	0.48
50:3:812:G:H2'	50:3:813:G:H8	1.79	0.48
50:3:1152:U:H2'	50:3:1153:U:C6	2.49	0.48
50:3:1246:U:H2'	50:3:1247:C:C6	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1287:C:H2'	50:3:1288:C:C6	2.49	0.48
50:3:1470:C:H2'	50:3:1471:A:C8	2.48	0.48
50:3:1550:G:H2'	50:3:1551:U:C6	2.49	0.48
50:3:1935:A:OP2	50:3:1935:A:H8	1.97	0.48
50:3:2274:A:N6	50:3:2281:A:OP2	2.46	0.48
50:3:2719:A:H3'	50:3:2722:G:H4'	1.96	0.48
52:5:672:A:H3'	52:5:673:A:H8	1.79	0.48
52:5:791:A:O2'	52:5:1481:U:N3	2.47	0.48
52:5:1329:G:H2'	52:5:1330:A:H8	1.78	0.48
4:A:56:PHE:HE2	4:A:218:ASN:HB3	1.79	0.47
5:B:90:LYS:O	5:B:94:GLN:HG2	2.14	0.47
8:E:113:ALA:HA	8:E:123:ASN:HD21	1.79	0.47
13:J:79:VAL:O	13:J:106:LYS:N	2.35	0.47
15:L:23:PHE:HD1	52:5:1304:U:H4'	1.79	0.47
28:e:76:THR:O	28:e:80:ILE:HG12	2.13	0.47
30:g:55:LYS:HG3	50:3:1142:G:OP1	2.14	0.47
50:3:214:C:H2'	50:3:215:A:H8	1.78	0.47
50:3:727:C:H2'	50:3:728:A:H8	1.79	0.47
50:3:1033:A:H2'	50:3:1034:A:C8	2.49	0.47
50:3:1408:G:H2'	50:3:1409:G:C8	2.49	0.47
50:3:1529:U:H2'	50:3:1530:G:H8	1.79	0.47
50:3:1885:G:H2'	50:3:1886:C:H6	1.78	0.47
50:3:2299:U:H1'	50:3:2382:A:H1'	1.96	0.47
50:3:2840:U:H2'	50:3:2841:A:C8	2.49	0.47
50:3:2857:C:H2'	50:3:2858:A:H8	1.79	0.47
52:5:680:G:H2'	52:5:681:U:H6	1.76	0.47
52:5:715:A:O3'	52:5:717:C:N4	2.47	0.47
52:5:892:G:N1	52:5:895:A:OP2	2.40	0.47
52:5:1049:G:O6	52:5:1174:U:C2	2.67	0.47
52:5:1214:A:H62	52:5:1273:A:N6	2.12	0.47
2:1:2:LYS:HA	50:3:246:G:H2'	1.95	0.47
33:j:23:LYS:HD3	33:j:40:VAL:HG21	1.97	0.47
50:3:292:G:H3'	50:3:293:G:C8	2.50	0.47
50:3:631:A:H2'	50:3:632:A:C8	2.48	0.47
50:3:1297:U:O2'	50:3:1298:A:OP1	2.29	0.47
50:3:1391:U:H2'	50:3:1392:G:C8	2.49	0.47
50:3:1623:U:H2'	50:3:1624:A:C8	2.48	0.47
50:3:1880:G:H2'	50:3:1881:C:H6	1.79	0.47
50:3:2531:C:H2'	50:3:2532:G:C8	2.49	0.47
50:3:2595:A:H61	50:3:2616:G:H1'	1.80	0.47
50:3:2656:G:H2'	50:3:2657:C:H6	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:40:G:H2'	52:5:41:C:C6	2.49	0.47
52:5:265:U:H2'	52:5:266:A:H8	1.79	0.47
52:5:331:C:H1'	52:5:1408:A:C2	2.50	0.47
52:5:752:G:H2'	52:5:753:C:C6	2.49	0.47
52:5:1300:C:H2'	52:5:1301:U:C6	2.49	0.47
19:P:67:ARG:HB2	52:5:116:A:C8	2.48	0.47
29:f:39:LEU:H	45:v:62:ASN:ND2	2.12	0.47
31:h:11:LYS:HA	31:h:55:ILE:HG22	1.96	0.47
34:k:42:ARG:HH22	50:3:841:C:H3'	1.79	0.47
50:3:164:A:H1'	50:3:2216:U:H1'	1.95	0.47
50:3:292:G:H2'	50:3:292:G:N3	2.29	0.47
50:3:1041:C:H2'	50:3:1042:C:C6	2.50	0.47
50:3:2338:G:H2'	50:3:2339:G:C8	2.49	0.47
50:3:2876:G:H2'	50:3:2877:A:C8	2.50	0.47
52:5:379:A:H8	52:5:380:G:C8	2.32	0.47
52:5:973:A:O2'	52:5:1295:U:O4	2.33	0.47
52:5:1505:G:H2'	52:5:1506:A:C8	2.49	0.47
6:C:79:LEU:HD13	6:C:203:LEU:HD12	1.97	0.47
6:C:96:ARG:NH1	6:C:98:ASP:OD2	2.48	0.47
7:D:181:LYS:HG3	52:5:9:A:H5''	1.95	0.47
9:F:61:PHE:O	9:F:65:VAL:HG22	2.14	0.47
9:F:65:VAL:O	9:F:69:MET:HG3	2.14	0.47
24:a:162:ARG:HB2	50:3:1825:U:H2'	1.95	0.47
34:k:95:ARG:O	34:k:99:ILE:HG23	2.14	0.47
46:w:53:THR:HG22	50:3:78:C:O3'	2.15	0.47
50:3:1091:G:H4'	50:3:1121:A:H8	1.79	0.47
50:3:1392:G:O6	50:3:1396:A:N6	2.47	0.47
50:3:2242:G:H2'	50:3:2243:G:C8	2.48	0.47
50:3:2346:G:H2'	50:3:2347:G:C8	2.50	0.47
52:5:226:G:H2'	52:5:227:A:C8	2.50	0.47
52:5:352:A:N3	52:5:364:U:O2'	2.47	0.47
52:5:663:G:O6	52:5:737:U:C4	2.68	0.47
2:1:36:LYS:HD3	50:3:2373:G:N7	2.29	0.47
4:A:37:TRP:NE1	52:5:827:C:H5'	2.27	0.47
12:I:50:THR:OG1	12:I:52:LYS:NZ	2.47	0.47
21:R:53:ASN:HD21	52:5:953:A:H61	1.61	0.47
27:d:29:PRO:HB2	27:d:169:LEU:HD13	1.95	0.47
27:d:42:ASP:OD1	27:d:43:ALA:N	2.47	0.47
36:m:54:VAL:HB	36:m:59:ASN:HD21	1.80	0.47
40:q:76:GLN:HA	50:3:598:G:H5''	1.95	0.47
41:r:7:GLN:OE1	50:3:528:U:O2'	2.28	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:v:56:ARG:NH2	50:3:436:G:N7	2.58	0.47
50:3:155:A:H2'	50:3:156:A:C8	2.50	0.47
50:3:587:U:H2'	50:3:588:G:O4'	2.15	0.47
50:3:894:G:N3	50:3:2276:A:H2'	2.28	0.47
50:3:1316:U:O2'	50:3:1356:G:N2	2.45	0.47
50:3:2033:G:H2'	50:3:2034:G:C8	2.50	0.47
50:3:2446:U:O2'	50:3:2448:C:OP1	2.28	0.47
52:5:456:U:H2'	52:5:457:A:C8	2.49	0.47
52:5:747:C:H2'	52:5:748:U:C5	2.49	0.47
52:5:754:U:H2'	52:5:755:U:O4'	2.15	0.47
52:5:1104:C:H2'	52:5:1105:C:H6	1.79	0.47
9:F:110:ARG:NH2	9:F:121:ASN:OD1	2.47	0.47
12:I:9:TYR:CE2	12:I:12:LEU:HD13	2.49	0.47
16:M:19:ARG:NH2	52:5:1193:U:H5''	2.26	0.47
33:j:81:ASP:N	33:j:81:ASP:OD1	2.47	0.47
39:p:75:TYR:O	39:p:79:ILE:HG12	2.14	0.47
44:u:52:TYR:HB3	44:u:73:LEU:HB2	1.96	0.47
45:v:51:SER:HB2	45:v:54:THR:HG23	1.97	0.47
49:z:11:CYS:HB3	49:z:14:CYS:SG	2.55	0.47
50:3:263:C:H2'	50:3:264:G:C8	2.50	0.47
50:3:328:A:N6	50:3:379:A:O5'	2.47	0.47
50:3:556:U:C2	50:3:557:G:C8	3.03	0.47
50:3:1337:G:H2'	50:3:1338:G:H8	1.78	0.47
50:3:1479:A:H4'	50:3:1480:A:C4	2.49	0.47
50:3:1699:A:H2'	50:3:1700:G:C8	2.50	0.47
50:3:1703:A:H5''	50:3:1704:C:OP2	2.15	0.47
50:3:1933:U:O2'	50:3:1935:A:N7	2.48	0.47
50:3:2374:A:H3'	50:3:2375:A:H8	1.78	0.47
52:5:227:A:H2'	52:5:228:G:H8	1.79	0.47
52:5:572:A:O2'	52:5:876:C:O2	2.25	0.47
52:5:575:A:H2'	52:5:576:A:C8	2.49	0.47
52:5:767:U:H2'	52:5:768:G:H8	1.79	0.47
1:O:8:SER:HB3	1:O:11:LYS:HB3	1.95	0.47
4:A:49:ARG:HE	4:A:55:HIS:CE1	2.33	0.47
6:C:97:LEU:HD23	6:C:117:VAL:HG11	1.96	0.47
8:E:104:LYS:HD2	8:E:107:LEU:HB2	1.96	0.47
9:F:25:ILE:HG13	9:F:100:LEU:HD13	1.96	0.47
10:G:92:LYS:O	10:G:96:ARG:NH2	2.47	0.47
11:H:58:ASP:OD1	11:H:58:ASP:N	2.45	0.47
11:H:64:ASP:OD1	11:H:65:ILE:N	2.48	0.47
11:H:131:LYS:HE2	52:5:961:G:H1'	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:J:76:LYS:NZ	13:J:102:GLU:O	2.42	0.47
13:J:106:LYS:NZ	52:5:703:A:O2'	2.48	0.47
16:M:24:CYS:SG	16:M:26:ARG:HB2	2.54	0.47
24:a:58:GLN:HA	24:a:224:ILE:HA	1.95	0.47
27:d:92:ARG:HD2	51:4:42:G:H5'	1.96	0.47
28:e:16:VAL:HA	28:e:28:LYS:O	2.15	0.47
28:e:49:LYS:HG3	28:e:52:ASN:HB3	1.97	0.47
28:e:150:GLU:O	28:e:153:LYS:HG2	2.15	0.47
29:f:42:LYS:HA	29:f:46:ASP:HB2	1.97	0.47
30:g:85:GLY:O	30:g:87:ASN:N	2.47	0.47
41:r:133:GLN:NE2	41:r:137:MET:SD	2.87	0.47
50:3:261:A:H3'	50:3:262:G:H8	1.79	0.47
50:3:444:C:H2'	50:3:445:C:C6	2.50	0.47
50:3:603:G:N1	50:3:2507:C:OP2	2.26	0.47
50:3:663:A:H5'	50:3:672:G:N2	2.29	0.47
50:3:704:G:N2	50:3:707:C:OP1	2.29	0.47
50:3:989:G:H2'	50:3:990:G:H8	1.79	0.47
50:3:1094:G:H2'	50:3:1095:U:C5	2.50	0.47
50:3:1106:G:C2	50:3:1124:G:H2'	2.50	0.47
50:3:1245:G:O6	50:3:1265:G:N1	2.48	0.47
50:3:1253:G:N1	50:3:1256:A:OP2	2.33	0.47
50:3:1385:U:H2'	50:3:1386:G:O4'	2.15	0.47
50:3:1665:G:N2	50:3:1668:G:OP2	2.47	0.47
50:3:1684:A:H2'	50:3:1685:G:H8	1.78	0.47
50:3:1739:G:H2'	50:3:1740:U:C6	2.49	0.47
50:3:1793:A:OP2	50:3:1794:A:N6	2.28	0.47
50:3:1845:C:O2'	50:3:1905:U:O4	2.30	0.47
50:3:1976:A:O2'	50:3:1979:G:N3	2.41	0.47
50:3:2058:G:N2	50:3:2059:G:N7	2.63	0.47
50:3:2248:C:H2'	50:3:2249:A:C8	2.49	0.47
50:3:2599:C:H2'	50:3:2600:G:H8	1.79	0.47
50:3:2634:C:H2'	50:3:2635:G:H8	1.79	0.47
50:3:2700:C:H2'	50:3:2701:A:C8	2.50	0.47
52:5:21:U:H2'	52:5:22:G:O4'	2.15	0.47
52:5:69:G:H21	52:5:138:A:H1'	1.78	0.47
52:5:83:U:H2'	52:5:84:U:C6	2.49	0.47
52:5:87:G:H2'	52:5:88:A:C8	2.49	0.47
52:5:379:A:H3'	52:5:380:G:H8	1.79	0.47
52:5:515:G:O2'	52:5:528:G:OP1	2.25	0.47
52:5:711:G:H2'	52:5:712:A:C8	2.50	0.47
52:5:943:C:O2'	52:5:1339:U:O4	2.31	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:948:U:H2'	52:5:949:G:C8	2.50	0.47
52:5:961:G:H2'	52:5:962:G:C8	2.50	0.47
52:5:996:U:H2'	52:5:997:G:H8	1.79	0.47
52:5:1008:G:H2'	52:5:1009:G:C8	2.50	0.47
52:5:1376:G:O6	52:5:1479:G:N2	2.47	0.47
52:5:1383:A:H2'	52:5:1384:A:C8	2.50	0.47
8:E:71:ASP:HA	8:E:74:ARG:HG2	1.97	0.47
12:I:45:PRO:HD3	12:I:80:MET:HE1	1.96	0.47
22:S:33:LYS:O	22:S:37:LYS:HG3	2.15	0.47
29:f:3:VAL:HG12	29:f:18:VAL:HG13	1.96	0.47
31:h:30:ILE:HD13	31:h:35:PHE:HD1	1.80	0.47
39:p:89:ILE:HG21	40:q:11:GLN:HE22	1.80	0.47
50:3:148:U:H2'	50:3:149:A:H8	1.80	0.47
50:3:353:G:O2'	50:3:354:C:O4'	2.33	0.47
50:3:1831:G:C2	50:3:1832:G:N7	2.82	0.47
50:3:1932:C:H2'	50:3:1933:U:O4'	2.15	0.47
50:3:2483:C:C2	50:3:2537:G:N1	2.83	0.47
50:3:2537:G:H5''	50:3:2538:A:H5''	1.96	0.47
50:3:2554:U:O2'	50:3:2574:A:N3	2.47	0.47
50:3:2880:A:H2'	50:3:2881:A:C8	2.50	0.47
52:5:85:U:O2'	52:5:86:A:N7	2.45	0.47
52:5:154:G:H2'	52:5:155:C:C6	2.50	0.47
52:5:453:C:H2'	52:5:454:U:H6	1.80	0.47
52:5:570:A:H1'	52:5:911:G:H21	1.80	0.47
52:5:1056:U:O4'	52:5:1165:G:N2	2.48	0.47
41:r:4:PHE:CE1	41:r:6:LYS:HE3	2.50	0.47
43:t:44:ARG:HD3	50:3:516:A:OP2	2.15	0.47
44:u:52:TYR:CE1	44:u:54:GLN:HB3	2.50	0.47
50:3:987:U:H2'	50:3:988:G:C8	2.49	0.47
50:3:1343:C:H2'	50:3:1344:U:C6	2.50	0.47
50:3:1546:U:H3'	50:3:1547:G:H8	1.80	0.47
50:3:1775:G:H1	50:3:1991:U:H3	1.63	0.47
50:3:2007:U:H2'	50:3:2008:A:C8	2.50	0.47
52:5:344:G:H2'	52:5:345:A:C8	2.50	0.47
4:A:38:ASN:HB3	4:A:40:LYS:HG2	1.97	0.47
8:E:92:ARG:HG3	20:Q:50:ARG:NH2	2.30	0.47
9:F:69:MET:HB3	9:F:95:LYS:HD2	1.96	0.47
13:J:28:SER:HA	13:J:34:VAL:HA	1.97	0.47
18:O:12:ARG:NH1	52:5:607:A:OP1	2.47	0.47
41:r:53:SER:HA	50:3:523:A:H1'	1.96	0.47
42:s:17:TYR:HA	42:s:20:GLN:HG3	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:740:A:H2'	50:3:741:A:C8	2.49	0.47
50:3:1476:C:H2'	50:3:1477:A:C8	2.50	0.47
50:3:1654:G:O2'	50:3:1655:U:O4'	2.28	0.47
50:3:1666:A:H61	50:3:1717:C:H5'	1.80	0.47
50:3:1691:U:H2'	50:3:1692:A:C8	2.49	0.47
50:3:1818:G:H2'	50:3:1819:G:C8	2.51	0.47
50:3:2278:G:N2	50:3:2279:G:O4'	2.48	0.47
50:3:2530:U:H3'	50:3:2531:C:C5'	2.41	0.47
52:5:140:U:H2'	52:5:141:A:H8	1.79	0.47
5:B:12:PHE:HA	5:B:16:LYS:HB3	1.97	0.46
13:J:80:LYS:HE3	52:5:703:A:H5''	1.98	0.46
14:K:127:ARG:N	52:5:500:G:OP1	2.40	0.46
27:d:45:ARG:NH2	27:d:76:THR:O	2.48	0.46
30:g:13:ASP:O	30:g:17:LEU:HG	2.14	0.46
30:g:106:MET:HE3	30:g:106:MET:HB2	1.79	0.46
31:h:117:VAL:O	31:h:121:LEU:HG	2.16	0.46
40:q:21:PHE:CZ	40:q:91:LYS:HD3	2.50	0.46
42:s:26:LYS:HG2	42:s:82:VAL:HG22	1.97	0.46
45:v:13:LEU:HB2	50:3:432:G:H5'	1.96	0.46
50:3:107:C:H2'	50:3:108:G:C8	2.50	0.46
50:3:1350:A:N3	50:3:1350:A:H2'	2.30	0.46
50:3:1489:G:H2'	50:3:1490:G:H8	1.81	0.46
50:3:1511:C:H2'	50:3:1512:A:C8	2.49	0.46
50:3:1821:G:OP2	50:3:1822:A:H3'	2.14	0.46
50:3:1951:A:H5'	50:3:1962:U:C2	2.50	0.46
50:3:2227:U:H2'	50:3:2228:U:H6	1.80	0.46
50:3:2290:G:N2	50:3:2398:U:H3	2.13	0.46
50:3:2321:C:N4	50:3:2322:G:O6	2.47	0.46
50:3:2460:C:H2'	50:3:2461:A:C8	2.50	0.46
52:5:525:G:O2'	52:5:533:A:N1	2.36	0.46
52:5:682:G:H21	52:5:703:A:N6	2.12	0.46
52:5:1496:G:H2'	52:5:1497:U:C6	2.49	0.46
53:8:29:C:H2'	53:8:30:G:C8	2.50	0.46
5:B:157:SER:HB2	52:5:1048:G:H5''	1.97	0.46
6:C:97:LEU:O	6:C:101:VAL:HG23	2.15	0.46
15:L:95:LEU:HD21	15:L:110:LYS:HZ2	1.80	0.46
24:a:246:ARG:O	50:3:1978:U:H1'	2.15	0.46
33:j:90:ASP:OD1	33:j:90:ASP:N	2.46	0.46
37:n:64:ASN:HB3	37:n:101:ARG:HG2	1.95	0.46
38:o:38:LYS:HA	38:o:43:VAL:HG22	1.97	0.46
39:p:107:LEU:O	39:p:110:GLN:HG2	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:w:55:LEU:O	46:w:59:THR:HG23	2.14	0.46
50:3:314:G:O2'	50:3:315:A:H2'	2.16	0.46
50:3:379:A:H4'	50:3:380:A:C8	2.49	0.46
50:3:470:U:O2'	50:3:472:A:N7	2.48	0.46
50:3:1035:U:H2'	50:3:1036:A:H8	1.79	0.46
50:3:1086:G:H2'	50:3:1087:C:C6	2.51	0.46
50:3:1180:U:H2'	50:3:1181:A:C8	2.51	0.46
50:3:1501:U:O2	50:3:1542:G:N2	2.49	0.46
50:3:1845:C:O2	50:3:1908:A:N6	2.47	0.46
50:3:2128:G:H5''	50:3:2177:G:H22	1.79	0.46
50:3:2585:A:H4'	50:3:2620:C:C4	2.49	0.46
50:3:2832:G:H2'	50:3:2833:A:C8	2.51	0.46
51:4:94:A:H3'	51:4:95:G:C8	2.50	0.46
52:5:837:G:O2'	52:5:839:U:OP2	2.32	0.46
52:5:1300:C:H2'	52:5:1301:U:H6	1.81	0.46
5:B:37:ASP:OD1	5:B:38:GLU:N	2.48	0.46
6:C:27:LYS:HD2	52:5:407:A:H8	1.80	0.46
6:C:135:ILE:HB	52:5:618:U:H1'	1.97	0.46
12:I:59:ARG:NH1	52:5:1051:U:OP1	2.48	0.46
19:P:29:ARG:HG2	19:P:38:SER:OG	2.15	0.46
24:a:151:GLU:OE2	24:a:155:LYS:N	2.49	0.46
24:a:190:ARG:HG2	24:a:191:LYS:N	2.30	0.46
26:c:4:LEU:HD12	26:c:18:VAL:HB	1.96	0.46
46:w:102:ARG:HH22	50:3:1626:C:H5''	1.80	0.46
50:3:565:C:H1'	50:3:567:U:C5	2.51	0.46
50:3:1041:C:H2'	50:3:1042:C:H6	1.80	0.46
50:3:1067:A:N1	50:3:1157:G:C6	2.83	0.46
50:3:1077:G:O6	50:3:1148:U:O4	2.34	0.46
50:3:1642:G:O2'	50:3:1645:C:N4	2.48	0.46
50:3:1693:U:H2'	50:3:1694:A:C8	2.50	0.46
50:3:1783:G:C2	50:3:1784:U:C4	3.04	0.46
50:3:2544:G:H2'	50:3:2545:U:C6	2.51	0.46
50:3:2712:C:H2'	50:3:2713:A:O4'	2.14	0.46
52:5:113:C:H1'	52:5:230:G:N1	2.31	0.46
52:5:137:A:N6	52:5:156:U:H3	1.98	0.46
52:5:147:A:H8	52:5:147:A:OP2	1.97	0.46
52:5:323:A:O2'	52:5:324:C:O4'	2.32	0.46
52:5:1049:G:C6	52:5:1174:U:O2	2.69	0.46
52:5:1490:G:H2'	52:5:1491:A:H8	1.79	0.46
10:G:43:ALA:O	10:G:46:GLU:HG3	2.16	0.46
21:R:12:ASP:OD1	21:R:13:ALA:N	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:S:57:LYS:NZ	22:S:59:ILE:HD11	2.31	0.46
26:c:141:LYS:HG3	26:c:145:GLN:OE1	2.15	0.46
29:f:3:VAL:HG12	29:f:18:VAL:CG1	2.46	0.46
32:i:52:ASP:OD2	50:3:590:U:O2'	2.32	0.46
34:k:107:LYS:HD2	50:3:657:A:H5''	1.98	0.46
41:r:78:GLN:O	50:3:26:G:O2'	2.34	0.46
42:s:37:LYS:HD3	50:3:1632:C:H5''	1.97	0.46
45:v:53:ARG:NH2	50:3:435:U:O4	2.49	0.46
50:3:417:G:N1	50:3:432:G:O6	2.49	0.46
50:3:2073:C:H2'	50:3:2074:G:C8	2.49	0.46
50:3:2223:C:H2'	50:3:2224:A:C8	2.44	0.46
52:5:1197:G:OP1	52:5:1295:U:O2'	2.32	0.46
52:5:1286:G:H2'	52:5:1287:G:H8	1.80	0.46
53:8:72:C:H2'	53:8:73:C:O4'	2.16	0.46
22:S:57:LYS:HZ2	52:5:161:C:H5''	1.81	0.46
24:a:264:GLY:O	50:3:1850:C:O2'	2.28	0.46
26:c:47:GLN:HB2	26:c:49:THR:HG23	1.97	0.46
27:d:29:PRO:HG3	27:d:165:GLU:HB3	1.97	0.46
27:d:102:LYS:HG3	27:d:139:PRO:HG2	1.97	0.46
27:d:129:THR:HG21	50:3:2311:G:N3	2.31	0.46
27:d:133:LYS:HD3	27:d:133:LYS:N	2.31	0.46
34:k:28:LEU:HB3	34:k:32:SER:HA	1.98	0.46
37:n:34:LYS:HE3	51:4:46:C:OP1	2.16	0.46
50:3:804:U:H2'	50:3:805:G:C8	2.51	0.46
50:3:959:C:N4	50:3:960:A:H62	2.14	0.46
50:3:1777:G:H2'	50:3:1778:G:H8	1.80	0.46
50:3:1820:U:HO2'	50:3:1821:G:P	2.38	0.46
50:3:1990:C:H2'	50:3:1991:U:C6	2.51	0.46
50:3:2224:A:H2'	50:3:2225:G:C8	2.51	0.46
50:3:2322:G:H2'	50:3:2323:U:C6	2.50	0.46
50:3:2651:G:H2'	50:3:2652:U:O4'	2.16	0.46
50:3:2743:U:H2'	50:3:2744:A:C8	2.50	0.46
52:5:15:U:H2'	52:5:16:G:C8	2.50	0.46
52:5:268:C:H2'	52:5:269:A:H8	1.80	0.46
52:5:1002:A:H3'	52:5:1003:G:C8	2.51	0.46
52:5:1138:U:H2'	52:5:1139:A:H8	1.81	0.46
5:B:42:ASN:O	5:B:46:VAL:HG23	2.15	0.46
6:C:56:GLU:OE1	6:C:195:TYR:HB2	2.15	0.46
8:E:146:THR:HA	10:G:60:LEU:HA	1.96	0.46
13:J:48:SER:N	52:5:692:A:OP1	2.49	0.46
16:M:60:SER:HB2	52:5:1105:C:H1'	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:P:73:LYS:HZ1	52:5:250:G:H5''	1.81	0.46
19:P:76:ARG:NH1	52:5:115:A:O2'	2.48	0.46
24:a:231:SER:HA	24:a:240:HIS:HB2	1.98	0.46
25:b:29:ILE:HD11	25:b:197:ILE:HD11	1.97	0.46
40:q:24:LYS:NZ	50:3:1197:G:O3'	2.48	0.46
42:s:16:VAL:HG22	42:s:28:VAL:HG11	1.97	0.46
50:3:456:G:H2'	50:3:457:U:C6	2.51	0.46
50:3:743:G:H2'	50:3:744:U:C6	2.51	0.46
50:3:1535:A:H2'	50:3:1536:C:O4'	2.14	0.46
50:3:1545:A:H2'	50:3:1546:U:C6	2.50	0.46
50:3:1550:G:H2'	50:3:1551:U:H6	1.80	0.46
50:3:1801:U:H4'	50:3:1907:A:N6	2.30	0.46
52:5:227:A:H2'	52:5:228:G:C8	2.51	0.46
24:a:2:PRO:HD2	24:a:25:LEU:HD11	1.98	0.46
32:i:21:VAL:HG12	32:i:57:LEU:HD11	1.97	0.46
34:k:136:LEU:HD11	34:k:146:VAL:HG11	1.98	0.46
35:l:67:ARG:NH2	50:3:943:A:O2'	2.49	0.46
41:r:120:GLN:O	41:r:124:LEU:HG	2.15	0.46
50:3:269:A:H2'	50:3:464:A:H61	1.81	0.46
50:3:664:G:H2'	50:3:665:C:C6	2.50	0.46
50:3:901:C:H1'	50:3:903:A:H62	1.80	0.46
50:3:1553:G:N1	50:3:1577:A:OP2	2.39	0.46
50:3:2269:C:H1'	50:3:2396:A:H1'	1.97	0.46
51:4:10:C:H4'	51:4:11:A:OP1	2.15	0.46
52:5:22:G:H21	52:5:908:A:N6	2.13	0.46
52:5:136:U:H3	52:5:158:A:H62	1.64	0.46
52:5:398:G:H2'	52:5:399:C:C6	2.51	0.46
52:5:518:A:C6	52:5:527:G:N3	2.84	0.46
5:B:189:LEU:HD13	5:B:202:LYS:HG2	1.97	0.46
7:D:72:LYS:HZ1	7:D:74:LYS:HG2	1.81	0.46
17:N:56:LYS:NZ	52:5:654:U:OP1	2.49	0.46
24:a:217:GLY:HA3	50:3:799:A:H5''	1.98	0.46
26:c:149:SER:O	26:c:151:LYS:NZ	2.48	0.46
32:i:120:ARG:NH1	50:3:562:C:O2'	2.48	0.46
34:k:63:PRO:HG3	50:3:2401:U:H5''	1.98	0.46
36:m:56:ASN:H	36:m:59:ASN:HD22	1.63	0.46
38:o:16:LYS:HD2	38:o:16:LYS:N	2.31	0.46
43:t:27:ILE:HA	43:t:34:ALA:HA	1.98	0.46
50:3:1358:C:H2'	50:3:1359:C:C6	2.50	0.46
50:3:2682:A:H2'	50:3:2683:G:C8	2.50	0.46
52:5:578:C:H3'	52:5:579:G:H8	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1078:G:OP1	52:5:1363:U:O2'	2.34	0.46
52:5:1132:G:H21	52:5:1155:A:H2	1.63	0.46
52:5:1465:U:H2'	52:5:1466:U:C6	2.50	0.46
52:5:1487:U:H2'	52:5:1488:A:C8	2.51	0.46
52:5:1499:G:H2'	52:5:1500:G:C8	2.51	0.46
4:A:119:ASN:O	4:A:122:THR:OG1	2.34	0.46
4:A:154:ARG:NH1	52:5:1088:C:H5'	2.30	0.46
6:C:67:THR:HG23	6:C:70:GLN:H	1.81	0.46
8:E:40:LEU:N	8:E:57:TYR:O	2.37	0.46
11:H:126:ALA:H	52:5:1317:A:H4'	1.80	0.46
12:I:29:LYS:HA	12:I:32:VAL:HG22	1.98	0.46
14:K:5:ALA:O	14:K:9:ARG:HG2	2.15	0.46
17:N:6:ASN:O	17:N:10:LYS:HG2	2.16	0.46
20:Q:53:LEU:O	20:Q:53:LEU:HD23	2.16	0.46
26:c:174:ASN:O	50:3:357:A:H2'	2.16	0.46
31:h:50:MET:HE3	31:h:50:MET:HB2	1.86	0.46
38:o:65:ILE:HD11	38:o:76:GLU:HB2	1.98	0.46
44:u:29:ASP:OD1	44:u:30:SER:N	2.43	0.46
50:3:176:U:H2'	50:3:177:U:C6	2.50	0.46
50:3:205:C:H2'	50:3:206:U:C6	2.51	0.46
50:3:476:G:H2'	50:3:477:U:C6	2.50	0.46
50:3:585:U:H2'	50:3:586:G:C8	2.42	0.46
50:3:1337:G:H1	50:3:1639:C:N4	2.14	0.46
50:3:1443:A:H2	50:3:1621:U:H3	1.63	0.46
50:3:2854:A:H5'	50:3:2872:A:C2	2.51	0.46
52:5:725:A:H2'	52:5:726:A:C8	2.51	0.46
52:5:973:A:H8	52:5:974:C:C5	2.34	0.46
52:5:1126:U:H2'	52:5:1127:A:C8	2.50	0.46
52:5:1295:U:OP2	52:5:1296:C:H3'	2.15	0.46
5:B:53:VAL:HG12	5:B:71:ALA:HB2	1.98	0.46
5:B:117:ARG:HH12	5:B:190:GLU:HB2	1.81	0.46
9:F:39:GLN:HE22	11:H:45:LEU:HB3	1.81	0.46
13:J:22:ASN:HD22	13:J:50:LYS:NZ	2.13	0.46
13:J:37:TRP:CZ2	52:5:683:G:H4'	2.48	0.46
14:K:12:ARG:HE	52:5:560:U:H1'	1.80	0.46
17:N:30:THR:O	17:N:34:LYS:HG2	2.15	0.46
24:a:43:LYS:NZ	50:3:727:C:H5''	2.31	0.46
24:a:82:THR:HB	24:a:84:LYS:HE2	1.97	0.46
25:b:198:ALA:HB2	50:3:2687:A:H4'	1.98	0.46
28:e:147:PHE:O	28:e:151:VAL:HG23	2.15	0.46
32:i:7:LEU:HD21	39:p:63:ARG:HH12	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:k:74:LYS:HD3	50:3:668:A:H5''	1.98	0.46
35:l:72:MET:O	35:l:94:VAL:N	2.39	0.46
35:l:134:ARG:HD3	35:l:136:GLU:HG3	1.98	0.46
37:n:37:ASN:OD1	51:4:48:A:O2'	2.33	0.46
39:p:13:ARG:O	39:p:17:LEU:HG	2.16	0.46
50:3:614:C:H2'	50:3:615:G:C8	2.51	0.46
50:3:694:U:H2'	50:3:695:G:C8	2.50	0.46
50:3:720:A:H61	50:3:813:G:H1'	1.81	0.46
50:3:1042:C:H2'	50:3:1043:C:C6	2.51	0.46
50:3:1162:A:N7	50:3:2471:U:O2'	2.48	0.46
50:3:2896:G:H5'	50:3:2897:G:H21	1.81	0.46
52:5:36:G:H22	52:5:548:G:H1'	1.79	0.46
52:5:575:A:H2'	52:5:576:A:H8	1.80	0.46
52:5:1288:C:H2'	52:5:1289:U:C6	2.50	0.46
4:A:112:TRP:HZ3	4:A:117:LEU:HB2	1.81	0.45
5:B:38:GLU:OE2	16:M:26:ARG:HD3	2.16	0.45
5:B:41:ARG:HE	5:B:56:VAL:HG23	1.80	0.45
5:B:60:ARG:HG2	5:B:65:VAL:HG23	1.99	0.45
6:C:184:ARG:HH22	6:C:189:ALA:HA	1.81	0.45
25:b:51:LEU:HD21	25:b:81:LEU:HD13	1.98	0.45
27:d:132:ILE:HG13	27:d:134:GLU:H	1.81	0.45
39:p:87:ILE:H	39:p:87:ILE:HD12	1.81	0.45
44:u:22:GLY:HA2	50:3:2263:G:H21	1.80	0.45
44:u:39:LYS:HB2	44:u:51:ILE:HG23	1.98	0.45
50:3:364:A:O2'	50:3:365:U:H2'	2.16	0.45
50:3:858:A:H2'	50:3:859:G:H8	1.81	0.45
50:3:897:A:H2'	50:3:898:A:O4'	2.16	0.45
50:3:1188:C:H2'	50:3:1189:G:O4'	2.16	0.45
50:3:1290:G:H2'	50:3:1291:C:C6	2.52	0.45
50:3:1544:G:H2'	50:3:1545:A:C8	2.51	0.45
50:3:1853:G:N2	50:3:1902:C:C2	2.70	0.45
50:3:1972:C:H5''	50:3:1973:U:H2'	1.98	0.45
50:3:2316:G:H21	50:3:2316:G:P	2.39	0.45
50:3:2381:G:H2'	50:3:2382:A:H8	1.82	0.45
50:3:2521:A:H2'	50:3:2522:U:H6	1.77	0.45
50:3:2764:U:H4'	50:3:2765:A:OP1	2.15	0.45
52:5:594:A:H2'	52:5:594:A:N3	2.32	0.45
52:5:871:U:H2'	52:5:872:C:C6	2.51	0.45
12:I:59:ARG:HB2	12:I:67:SER:HB2	1.98	0.45
19:P:3:ARG:C	19:P:3:ARG:HD3	2.41	0.45
23:T:47:LYS:HZ2	23:T:51:LYS:HB2	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:a:159:GLN:HE21	50:3:1825:U:H3	1.64	0.45
25:b:226:THR:HA	25:b:228:LYS:HE2	1.96	0.45
27:d:35:VAL:HG23	27:d:155:THR:HB	1.98	0.45
28:e:19:ASN:HB2	28:e:26:ALA:HB3	1.98	0.45
29:f:103:THR:HA	50:3:166:A:C8	2.51	0.45
32:i:117:LEU:HD11	50:3:590:U:H4'	1.98	0.45
35:l:15:VAL:HG11	35:l:41:TRP:NE1	2.28	0.45
40:q:17:ASN:H	40:q:94:VAL:HG13	1.80	0.45
42:s:71:PHE:O	50:3:66:A:O2'	2.33	0.45
46:w:19:VAL:O	46:w:23:LYS:HG3	2.17	0.45
50:3:59:C:H2'	50:3:60:G:C8	2.51	0.45
50:3:177:U:H2'	50:3:178:A:C8	2.52	0.45
50:3:258:G:H4'	50:3:422:A:H4'	1.97	0.45
50:3:265:G:H2'	50:3:266:A:H8	1.81	0.45
50:3:404:C:H2'	50:3:405:C:H6	1.79	0.45
50:3:630:C:H2'	50:3:631:A:C8	2.52	0.45
50:3:697:U:H2'	50:3:698:A:C8	2.51	0.45
50:3:727:C:O2	50:3:1382:A:O2'	2.33	0.45
50:3:954:A:H5''	50:3:2276:A:H61	1.81	0.45
50:3:1037:A:H3'	50:3:1038:G:H8	1.81	0.45
50:3:1869:G:H1	50:3:1887:U:H3	1.64	0.45
51:4:99:A:H2'	51:4:100:G:O4'	2.16	0.45
52:5:568:G:H5'	52:5:817:U:H5'	1.98	0.45
52:5:1128:G:H2'	52:5:1129:C:C6	2.52	0.45
52:5:1305:G:H1'	52:5:1306:A:H2	1.81	0.45
24:a:146:GLN:OE1	24:a:167:TYR:HB2	2.16	0.45
35:l:41:TRP:HB3	35:l:94:VAL:HG21	1.97	0.45
35:l:69:PHE:HB3	35:l:71:HIS:CE1	2.51	0.45
39:p:47:ARG:HH22	50:3:568:G:N2	2.13	0.45
44:u:52:TYR:HE1	44:u:54:GLN:HB3	1.80	0.45
50:3:87:G:H2'	50:3:88:G:C8	2.51	0.45
50:3:178:A:H2'	50:3:179:A:C8	2.50	0.45
50:3:618:G:H1	50:3:1283:A:P	2.39	0.45
50:3:800:C:H2'	50:3:801:U:C6	2.51	0.45
50:3:1834:U:H2'	50:3:1835:G:O4'	2.17	0.45
50:3:2702:G:N1	50:3:2724:U:C2	2.84	0.45
50:3:2730:G:H5'	50:3:2824:A:H2	1.80	0.45
52:5:128:A:H1'	52:5:198:A:N6	2.31	0.45
52:5:1044:G:H5''	52:5:1175:C:H41	1.82	0.45
52:5:1490:G:H2'	52:5:1491:A:C8	2.51	0.45
7:D:193:HIS:O	7:D:196:MET:HG2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:E:5:ILE:HG13	8:E:62:PHE:HE1	1.80	0.45
9:F:99:ALA:O	9:F:103:ILE:HG12	2.17	0.45
15:L:17:ILE:HD11	15:L:43:LYS:HE2	1.99	0.45
15:L:78:LYS:HE2	15:L:78:LYS:HB3	1.61	0.45
23:T:53:ARG:NH2	52:5:720:U:OP1	2.49	0.45
31:h:52:PRO:HD3	31:h:71:PRO:HG3	1.98	0.45
35:l:71:HIS:NE2	50:3:907:A:N3	2.64	0.45
42:s:39:ARG:HH12	42:s:42:LEU:HD23	1.82	0.45
42:s:60:ARG:HD3	42:s:60:ARG:HA	1.77	0.45
45:v:21:SER:HB2	53:8:77:A:H62	1.81	0.45
50:3:38:G:H2'	50:3:39:C:C6	2.51	0.45
50:3:512:G:N2	50:3:514:A:O3'	2.50	0.45
50:3:1507:G:HO2'	50:3:1508:G:P	2.39	0.45
50:3:1581:U:H2'	50:3:1582:G:C8	2.52	0.45
50:3:1826:A:H1'	50:3:1828:A:C6	2.51	0.45
50:3:1917:G:C2	50:3:1928:G:C2	3.04	0.45
50:3:2277:A:H2'	50:3:2278:G:H8	1.81	0.45
52:5:739:G:H2'	52:5:740:G:H5'	1.98	0.45
52:5:888:A:N6	52:5:898:A:H61	2.14	0.45
52:5:1138:U:H2'	52:5:1139:A:C8	2.51	0.45
10:G:18:LEU:HD11	10:G:41:LYS:HG2	1.98	0.45
10:G:44:ILE:HD13	10:G:115:ILE:HG21	1.98	0.45
16:M:60:SER:O	52:5:1161:G:N2	2.49	0.45
19:P:16:THR:HB	19:P:55:ALA:HB3	1.98	0.45
22:S:62:THR:HG23	22:S:66:ARG:HH11	1.81	0.45
27:d:142:VAL:HG22	27:d:143:TYR:H	1.81	0.45
33:j:65:THR:HG22	33:j:67:LYS:HB3	1.99	0.45
39:p:23:SER:H	39:p:28:HIS:CE1	2.34	0.45
50:3:218:G:H2'	50:3:219:G:C8	2.51	0.45
50:3:633:G:N2	50:3:692:U:O2	2.41	0.45
50:3:937:A:H3'	50:3:938:A:C8	2.51	0.45
50:3:1427:C:H2'	50:3:1428:U:C6	2.52	0.45
50:3:1778:G:H4'	50:3:1945:A:N6	2.32	0.45
50:3:2037:A:N3	50:3:2507:C:H5''	2.31	0.45
50:3:2213:A:H2'	50:3:2214:A:H8	1.81	0.45
50:3:2646:G:N2	50:3:2786:A:C5	2.84	0.45
52:5:53:U:O4	52:5:356:G:N2	2.49	0.45
52:5:1112:U:H2'	52:5:1113:U:C6	2.51	0.45
3:2:4:ARG:HE	3:2:7:VAL:HG22	1.81	0.45
3:2:29:THR:HG22	3:2:31:LYS:H	1.81	0.45
5:B:21:ARG:HH11	5:B:59:GLU:CD	2.23	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:159:ARG:HA	5:B:165:ILE:HG12	1.98	0.45
6:C:180:ARG:HH12	6:C:186:GLU:CD	2.24	0.45
20:Q:57:LEU:O	20:Q:61:LYS:HG3	2.17	0.45
21:R:41:PHE:HD2	21:R:44:PHE:HE2	1.64	0.45
25:b:28:VAL:HB	25:b:190:LEU:HD21	1.98	0.45
29:f:69:LYS:HE2	29:f:134:THR:HG22	1.99	0.45
37:n:39:ILE:HD13	37:n:105:LEU:HD13	1.99	0.45
40:q:9:SER:HB3	50:3:1195:A:H1'	1.98	0.45
43:t:42:VAL:HB	43:t:65:GLN:HG2	1.98	0.45
45:v:54:THR:O	45:v:58:LEU:HG	2.16	0.45
46:w:38:LEU:O	46:w:40:LYS:HG2	2.17	0.45
50:3:344:A:N7	50:3:364:A:N6	2.65	0.45
50:3:523:A:C6	50:3:529:G:N1	2.84	0.45
50:3:527:A:H8	50:3:528:U:C6	2.35	0.45
50:3:895:G:H1'	50:3:953:G:H1	1.82	0.45
50:3:1307:G:H2'	50:3:1308:A:C8	2.52	0.45
50:3:1463:G:H2'	50:3:1464:G:H8	1.80	0.45
50:3:1924:U:H3'	50:3:1925:A:C8	2.52	0.45
50:3:1992:C:H2'	50:3:1993:U:C6	2.52	0.45
50:3:2273:U:H3'	50:3:2274:A:H8	1.82	0.45
52:5:733:A:H2'	52:5:734:A:H8	1.82	0.45
52:5:1044:G:N1	52:5:1049:G:O6	2.49	0.45
52:5:1274:G:O2'	52:5:1307:A:OP2	2.27	0.45
7:D:154:ALA:HB3	7:D:177:ASP:O	2.15	0.45
25:b:84:ILE:HG23	25:b:208:ARG:CZ	2.47	0.45
36:m:61:ARG:HH21	50:3:2713:A:H2	1.64	0.45
41:r:115:GLN:OE1	41:r:115:GLN:N	2.50	0.45
48:y:14:ASP:O	48:y:18:SER:N	2.50	0.45
50:3:312:U:H3	50:3:395:U:H3	1.64	0.45
50:3:858:A:H2'	50:3:859:G:C8	2.52	0.45
50:3:1236:G:O2'	50:3:1237:G:H5'	2.17	0.45
50:3:1307:G:H2'	50:3:1308:A:H8	1.81	0.45
50:3:1446:G:H1'	50:3:1613:A:H62	1.82	0.45
50:3:1916:C:H2'	50:3:1917:G:C8	2.52	0.45
50:3:2812:U:O2'	50:3:2814:A:N7	2.31	0.45
50:3:2856:G:H2'	50:3:2857:C:C6	2.51	0.45
52:5:230:G:H2'	52:5:231:U:C6	2.52	0.45
52:5:614:U:H2'	52:5:615:G:C8	2.52	0.45
52:5:681:U:H3'	52:5:682:G:N7	2.31	0.45
52:5:849:A:H2'	52:5:850:G:H8	1.82	0.45
52:5:1312:G:O2'	53:8:42:C:O2'	2.22	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:47:MET:HG3	6:C:52:GLN:HE21	1.81	0.45
15:L:27:LEU:O	15:L:31:GLN:HG3	2.15	0.45
21:R:34:TRP:CD2	21:R:52:HIS:HB2	2.52	0.45
24:a:274:SER:O	24:a:278:ILE:HG12	2.17	0.45
26:c:24:LEU:HA	26:c:113:HIS:CE1	2.51	0.45
35:l:120:ARG:HD3	50:3:2476:A:H4'	1.98	0.45
40:q:61:LYS:HG2	40:q:91:LYS:HB3	1.99	0.45
46:w:48:ARG:HH12	50:3:62:G:H5''	1.81	0.45
50:3:17:G:H2'	50:3:18:G:H8	1.81	0.45
50:3:154:U:O4	50:3:155:A:N6	2.50	0.45
50:3:200:A:H2'	50:3:2075:U:C5	2.52	0.45
50:3:263:C:H2'	50:3:264:G:H8	1.82	0.45
50:3:1005:G:N2	50:3:1021:C:OP1	2.49	0.45
50:3:1284:A:N3	50:3:1284:A:H2'	2.31	0.45
50:3:1341:U:H5''	50:3:1342:C:H5	1.81	0.45
50:3:1354:U:H3'	50:3:1355:C:C6	2.52	0.45
50:3:1841:U:C2	50:3:1979:G:N1	2.85	0.45
50:3:1912:C:H4'	50:3:1936:G:H8	1.82	0.45
50:3:2213:A:H2'	50:3:2214:A:C8	2.51	0.45
50:3:2619:C:H2'	50:3:2620:C:C6	2.51	0.45
51:4:11:A:H4'	51:4:13:G:C4	2.52	0.45
52:5:24:C:H2'	52:5:25:U:C6	2.52	0.45
52:5:180:C:N4	52:5:185:G:O6	2.50	0.45
52:5:454:U:H2'	52:5:455:U:H6	1.81	0.45
52:5:577:G:H2'	52:5:578:C:H6	1.82	0.45
52:5:831:C:H2'	52:5:832:G:H8	1.80	0.45
52:5:1007:U:H2'	52:5:1008:G:C8	2.52	0.45
52:5:1172:A:H2'	52:5:1173:A:C8	2.51	0.45
4:A:125:ILE:O	4:A:129:LYS:HG2	2.17	0.45
17:N:6:ASN:OD1	17:N:7:GLY:N	2.50	0.45
26:c:99:TYR:CE2	50:3:1276:A:H4'	2.52	0.45
31:h:84:LYS:HD3	31:h:84:LYS:HA	1.73	0.45
33:j:10:VAL:HG11	33:j:16:ALA:HB3	1.99	0.45
34:k:48:ARG:HG2	34:k:49:PRO:HD2	1.98	0.45
38:o:104:MET:HA	38:o:107:ARG:HD3	1.98	0.45
45:v:27:ARG:HH11	45:v:29:TRP:CD1	2.35	0.45
50:3:360:G:H2'	50:3:361:G:H8	1.81	0.45
50:3:431:U:O2'	50:3:432:G:N7	2.48	0.45
50:3:518:A:O2'	50:3:533:G:N1	2.50	0.45
50:3:812:G:H2'	50:3:813:G:C8	2.52	0.45
50:3:1286:G:H2'	50:3:1286:G:N3	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1335:A:OP2	50:3:1640:G:N2	2.46	0.45
50:3:1785:U:O2	50:3:1792:A:N6	2.50	0.45
50:3:1813:C:N4	50:3:1814:G:O6	2.50	0.45
50:3:2560:U:H2'	50:3:2562:U:OP2	2.17	0.45
52:5:192:A:H2'	52:5:193:G:H8	1.81	0.45
52:5:714:C:H2'	52:5:731:A:H8	1.81	0.45
52:5:748:U:H3'	52:5:749:G:C8	2.51	0.45
52:5:775:G:O6	52:5:801:U:C2	2.69	0.45
53:8:14:C:O2	53:8:23:G:N2	2.50	0.45
4:A:222:PRO:HG2	4:A:223:GLN:NE2	2.32	0.45
6:C:14:LEU:O	6:C:55:GLN:NE2	2.47	0.45
6:C:141:LYS:O	6:C:143:ARG:NH2	2.49	0.45
9:F:68:VAL:HG23	9:F:99:ALA:HB1	1.99	0.45
15:L:103:ARG:HG2	52:5:1201:C:H5	1.82	0.45
24:a:43:LYS:HB2	24:a:61:ARG:HD2	1.99	0.45
29:f:46:ASP:O	29:f:50:PHE:CB	2.65	0.45
30:g:44:LEU:HB3	30:g:91:GLU:OE2	2.17	0.45
36:m:106:ARG:HD2	36:m:108:GLY:N	2.27	0.45
49:z:43:LYS:HE2	49:z:43:LYS:HB2	1.80	0.45
50:3:477:U:HO2'	50:3:649:A:H61	1.56	0.45
50:3:1237:G:H2'	50:3:1238:A:C8	2.52	0.45
50:3:1786:U:H5	50:3:1791:A:N7	2.15	0.45
50:3:1819:G:H2'	50:3:1820:U:C6	2.52	0.45
50:3:1866:G:C6	50:3:1891:A:C5	3.05	0.45
50:3:2419:A:H2'	50:3:2420:A:C8	2.51	0.45
50:3:2705:G:H2'	50:3:2706:U:C6	2.51	0.45
50:3:2823:A:H1'	50:3:2825:A:N7	2.32	0.45
52:5:111:A:H2'	52:5:112:U:O4'	2.16	0.45
52:5:162:C:H3'	52:5:163:G:H21	1.82	0.45
52:5:246:A:H1'	52:5:248:U:C2	2.52	0.45
52:5:760:U:H2'	52:5:761:U:C6	2.52	0.45
52:5:760:U:H2'	52:5:761:U:H6	1.82	0.45
52:5:1057:C:H2'	52:5:1058:A:C8	2.52	0.45
52:5:1062:C:H2'	52:5:1063:G:H8	1.78	0.45
52:5:1287:G:H2'	52:5:1288:C:C6	2.51	0.45
1:0:9:LYS:NZ	50:3:1338:G:OP2	2.40	0.44
9:F:78:ARG:CZ	9:F:83:ASN:HD22	2.30	0.44
11:H:90:LEU:HD21	11:H:100:LEU:HD23	1.99	0.44
13:J:103:ILE:HG22	23:T:8:ASN:HB2	1.99	0.44
14:K:44:ARG:HG2	52:5:359:A:OP2	2.17	0.44
23:T:38:LYS:O	23:T:42:LEU:HG	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:g:12:ALA:O	30:g:16:HIS:ND1	2.50	0.44
42:s:35:ALA:HB1	42:s:39:ARG:HB2	1.98	0.44
50:3:23:A:H2'	50:3:24:U:C6	2.52	0.44
50:3:69:U:H2'	50:3:70:G:C8	2.51	0.44
50:3:319:G:H2'	50:3:320:A:C8	2.51	0.44
50:3:524:G:N2	50:3:527:A:C5	2.84	0.44
50:3:619:A:OP2	50:3:1281:A:N6	2.42	0.44
50:3:1347:A:N6	50:3:1359:C:OP2	2.50	0.44
50:3:1630:A:O2'	50:3:1631:A:O4'	2.20	0.44
50:3:2059:G:H2'	50:3:2060:G:C8	2.51	0.44
50:3:2420:A:H2'	50:3:2421:U:O4'	2.17	0.44
52:5:103:U:H3'	52:5:284:A:H61	1.82	0.44
52:5:301:G:H4'	52:5:302:A:H5'	1.98	0.44
52:5:1345:G:H2'	52:5:1346:G:H8	1.82	0.44
52:5:1358:U:H2'	52:5:1359:C:C6	2.52	0.44
52:5:1463:A:H2'	52:5:1464:G:H8	1.82	0.44
1:0:35:ARG:NH1	50:3:183:A:OP1	2.51	0.44
4:A:37:TRP:HA	4:A:204:THR:HG23	1.99	0.44
7:D:167:ARG:HA	7:D:170:ILE:HG22	2.00	0.44
14:K:42:LEU:HD22	52:5:34:A:N3	2.32	0.44
24:a:88:TYR:CD2	24:a:90:PRO:HD3	2.52	0.44
25:b:108:VAL:HB	25:b:208:ARG:O	2.17	0.44
27:d:61:SER:O	47:x:6:HIS:NE2	2.50	0.44
30:g:100:VAL:HG11	30:g:128:LYS:HE2	1.98	0.44
31:h:39:PHE:O	31:h:43:THR:HG22	2.17	0.44
34:k:22:ARG:NH2	50:3:1280:G:OP2	2.36	0.44
34:k:69:ARG:HH21	50:3:669:A:H5'	1.82	0.44
38:o:67:ARG:NH2	38:o:104:MET:O	2.50	0.44
39:p:36:GLN:NE2	50:3:1282:G:H1	2.14	0.44
46:w:22:LEU:O	46:w:25:GLU:HG2	2.17	0.44
50:3:182:C:H3'	50:3:183:A:C8	2.51	0.44
50:3:840:G:C6	50:3:2075:U:H5''	2.52	0.44
50:3:891:G:H8	50:3:891:G:O5'	2.01	0.44
50:3:1075:G:H2'	50:3:1076:U:H6	1.82	0.44
50:3:1398:C:H2'	50:3:1399:G:O4'	2.17	0.44
50:3:2135:C:H2'	50:3:2136:A:C8	2.52	0.44
50:3:2663:G:O2'	50:3:2672:G:N1	2.49	0.44
50:3:2794:U:H2'	50:3:2795:C:C6	2.52	0.44
52:5:40:G:H2'	52:5:41:C:H6	1.82	0.44
52:5:74:U:H2'	52:5:75:A:H8	1.83	0.44
52:5:570:A:H8	52:5:571:A:N7	2.15	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:K:67:LYS:HA	14:K:77:LEU:HA	1.99	0.44
14:K:99:ARG:HG3	14:K:101:LYS:HG3	1.99	0.44
22:S:71:ARG:NH1	52:5:256:G:N7	2.65	0.44
23:T:38:LYS:HD3	23:T:38:LYS:N	2.32	0.44
28:e:70:THR:O	28:e:74:LEU:HG	2.16	0.44
33:j:101:PRO:HG2	38:o:75:ILE:HD13	2.00	0.44
40:q:85:HIS:NE2	40:q:87:GLN:OE1	2.45	0.44
50:3:130:C:H2'	50:3:131:C:C6	2.52	0.44
50:3:360:G:H2'	50:3:361:G:C8	2.52	0.44
50:3:533:G:H2'	50:3:534:U:H6	1.82	0.44
50:3:696:U:H2'	50:3:697:U:C6	2.52	0.44
50:3:805:G:H2'	50:3:806:A:C8	2.52	0.44
50:3:811:G:H5''	50:3:812:G:H8	1.83	0.44
50:3:849:C:H2'	50:3:850:G:C8	2.52	0.44
50:3:998:C:H2'	50:3:999:U:C6	2.52	0.44
50:3:1553:G:H3'	50:3:1576:G:N2	2.31	0.44
50:3:2210:G:N1	50:3:2230:A:C6	2.86	0.44
50:3:2278:G:H2'	50:3:2278:G:N3	2.32	0.44
50:3:2381:G:H2'	50:3:2382:A:C8	2.51	0.44
50:3:2825:A:H2'	50:3:2826:G:O4'	2.17	0.44
52:5:32:U:H5'	52:5:302:A:H8	1.83	0.44
52:5:483:U:H2'	52:5:484:A:C8	2.52	0.44
52:5:586:G:C6	52:5:750:A:C5	3.05	0.44
52:5:734:A:H2'	52:5:735:C:C6	2.52	0.44
52:5:1415:G:H2'	52:5:1416:U:O4'	2.18	0.44
39:p:63:ARG:HB2	39:p:96:GLU:OE1	2.17	0.44
41:r:9:ARG:HH11	41:r:82:MET:HE2	1.81	0.44
41:r:94:ASN:OD1	41:r:95:MET:N	2.51	0.44
46:w:46:GLN:NE2	50:3:98:C:O2'	2.51	0.44
50:3:406:C:O2'	50:3:407:U:H5'	2.17	0.44
50:3:1182:U:H2'	50:3:1183:A:N7	2.32	0.44
50:3:1518:C:H5'	50:3:1519:A:N7	2.32	0.44
50:3:2501:U:H3'	50:3:2502:G:H5''	2.00	0.44
50:3:2552:G:H2'	50:3:2553:G:H8	1.81	0.44
51:4:7:G:H2'	51:4:8:C:C6	2.52	0.44
52:5:87:G:O2'	52:5:137:A:N3	2.47	0.44
52:5:239:A:H4'	52:5:241:C:H5''	2.00	0.44
52:5:314:G:H2'	52:5:315:G:C8	2.51	0.44
52:5:356:G:H2'	52:5:357:G:C8	2.52	0.44
52:5:556:G:H2'	52:5:557:A:C2	2.53	0.44
52:5:586:G:H2'	52:5:586:G:N3	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:853:A:H2'	52:5:854:A:C8	2.53	0.44
52:5:887:C:C2	52:5:888:A:C8	3.05	0.44
52:5:1283:G:H2'	52:5:1284:A:H8	1.83	0.44
52:5:1479:G:OP1	52:5:1482:A:O2'	2.35	0.44
52:5:1503:U:O2'	52:5:1505:G:H5''	2.18	0.44
53:8:17:U:H3	53:8:20:G:H5'	1.81	0.44
53:8:19:G:H2'	53:8:19:G:N3	2.32	0.44
53:8:23:G:H2'	53:8:24:A:C8	2.53	0.44
14:K:67:LYS:HD2	14:K:77:LEU:HG	1.99	0.44
24:a:159:GLN:HA	24:a:162:ARG:HH21	1.82	0.44
27:d:44:ILE:HG13	27:d:45:ARG:N	2.33	0.44
29:f:5:LEU:HD12	29:f:14:LYS:HG3	2.00	0.44
33:j:66:LYS:N	33:j:82:ASN:OD1	2.40	0.44
50:3:29:G:O2'	50:3:547:G:N2	2.51	0.44
50:3:70:G:H2'	50:3:71:C:C6	2.52	0.44
50:3:616:G:H2'	50:3:617:C:O4'	2.18	0.44
50:3:632:A:H2'	50:3:633:G:C8	2.52	0.44
50:3:935:U:H2'	50:3:936:G:O4'	2.18	0.44
50:3:1451:A:H2'	50:3:1452:G:H8	1.82	0.44
50:3:1457:A:H2'	50:3:1458:A:C8	2.52	0.44
50:3:1594:G:H2'	50:3:1595:C:C6	2.53	0.44
50:3:2297:G:N1	50:3:2351:U:C2	2.85	0.44
50:3:2647:A:H2'	50:3:2648:A:O4'	2.17	0.44
52:5:352:A:O2'	52:5:364:U:H4'	2.17	0.44
52:5:534:C:H2'	52:5:535:A:C8	2.53	0.44
52:5:811:A:H4'	52:5:1486:C:H4'	1.98	0.44
52:5:1018:U:H3'	52:5:1019:G:H8	1.83	0.44
5:B:177:PRO:HD2	5:B:185:ILE:HD11	1.99	0.44
7:D:185:ARG:NH1	52:5:22:G:O6	2.51	0.44
14:K:28:LEU:HB2	14:K:35:VAL:HG22	1.98	0.44
14:K:44:ARG:HB3	14:K:94:LEU:HD12	2.00	0.44
25:b:105:GLY:HA3	25:b:218:LYS:H	1.81	0.44
30:g:32:MET:HB3	50:3:1119:A:N6	2.33	0.44
36:m:62:GLN:OE1	36:m:65:LYS:NZ	2.38	0.44
40:q:15:HIS:N	40:q:18:ASP:OD2	2.51	0.44
45:v:16:ASN:HA	45:v:26:ARG:HA	1.99	0.44
50:3:138:U:O4	50:3:139:G:O6	2.35	0.44
50:3:241:C:H2'	50:3:242:G:C8	2.53	0.44
50:3:421:A:N6	50:3:423:C:H2'	2.32	0.44
50:3:1020:G:N2	50:3:1020:G:OP2	2.50	0.44
50:3:1028:C:H2'	50:3:1029:A:C8	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1075:G:H1	50:3:1150:U:H3	1.66	0.44
50:3:1226:G:H2'	50:3:1227:C:C6	2.53	0.44
50:3:1369:U:H5''	50:3:1425:U:O2	2.18	0.44
50:3:1604:A:H2'	50:3:1605:A:C8	2.53	0.44
50:3:1826:A:H1'	50:3:1828:A:C5	2.53	0.44
50:3:1831:G:H2'	50:3:1832:G:H8	1.83	0.44
50:3:2025:C:H2'	50:3:2026:A:C8	2.52	0.44
50:3:2081:U:H2'	50:3:2082:U:C6	2.52	0.44
50:3:2655:U:O2	50:3:2681:G:C6	2.71	0.44
50:3:2658:U:H2'	50:3:2659:U:H6	1.83	0.44
50:3:2708:G:C2	50:3:2716:U:C2	3.06	0.44
50:3:2727:G:H4'	50:3:2850:G:H4'	1.99	0.44
50:3:2823:A:OP1	50:3:2841:A:H5'	2.18	0.44
52:5:23:G:H5'	52:5:879:G:H5'	1.99	0.44
52:5:43:G:H2'	52:5:44:C:O4'	2.17	0.44
52:5:76:G:N2	52:5:78:A:H3'	2.33	0.44
52:5:658:G:C2	52:5:659:U:H1'	2.53	0.44
52:5:1225:A:O2'	52:5:1345:G:H4'	2.18	0.44
52:5:1279:G:N2	52:5:1306:A:C2	2.85	0.44
52:5:1328:C:H2'	52:5:1329:G:H8	1.82	0.44
52:5:1405:U:H3	52:5:1445:G:H1	1.65	0.44
6:C:193:GLU:O	6:C:197:VAL:HG23	2.18	0.44
14:K:124:ARG:HA	14:K:127:ARG:CZ	2.47	0.44
15:L:29:ARG:HG2	52:5:1302:C:H4'	2.00	0.44
20:Q:81:MET:HE1	52:5:660:A:H4'	1.99	0.44
24:a:97:SER:OG	24:a:111:SER:OG	2.31	0.44
26:c:46:ARG:HG2	50:3:479:A:OP1	2.18	0.44
28:e:173:VAL:HG12	28:e:175:LYS:H	1.82	0.44
29:f:30:LEU:HB3	50:3:2206:A:H1'	1.99	0.44
33:j:88:LYS:N	33:j:92:SER:O	2.34	0.44
35:l:30:GLY:H	35:l:105:GLU:HG3	1.82	0.44
40:q:78:HIS:CE1	50:3:1220:A:H5'	2.53	0.44
50:3:77:G:O6	50:3:112:A:N1	2.51	0.44
50:3:485:A:H2'	50:3:486:G:O4'	2.18	0.44
50:3:632:A:H2'	50:3:633:G:H8	1.82	0.44
50:3:917:G:H2'	50:3:918:G:O4'	2.18	0.44
50:3:964:A:H2'	50:3:965:U:C6	2.52	0.44
50:3:989:G:H2'	50:3:990:G:C8	2.53	0.44
50:3:1158:C:H2'	50:3:1159:C:C6	2.53	0.44
50:3:1300:C:H4'	50:3:1301:G:C8	2.53	0.44
50:3:2053:G:H2'	50:3:2054:C:H6	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:4:61:A:H2'	51:4:62:G:C8	2.47	0.44
52:5:205:U:H3	52:5:210:G:H1	1.66	0.44
52:5:318:C:N4	52:5:325:A:H62	2.16	0.44
52:5:433:C:H2'	52:5:434:U:O4'	2.18	0.44
52:5:441:U:H2'	52:5:442:G:H8	1.81	0.44
52:5:550:U:H2'	52:5:551:A:C8	2.47	0.44
52:5:556:G:C8	52:5:557:A:H2'	2.53	0.44
52:5:640:C:H2'	52:5:641:U:H6	1.82	0.44
52:5:740:G:H2'	52:5:741:C:H6	1.81	0.44
52:5:787:A:H2'	52:5:787:A:N3	2.32	0.44
52:5:1454:G:H2'	52:5:1455:G:C8	2.53	0.44
4:A:137:GLN:HG3	4:A:156:ILE:HD12	2.00	0.44
9:F:76:VAL:HG13	52:5:1356:U:H3	1.82	0.44
9:F:113:LYS:HA	52:5:1272:C:C5	2.53	0.44
11:H:117:LYS:HD3	11:H:120:LEU:HD12	2.00	0.44
14:K:44:ARG:HH22	52:5:358:G:P	2.41	0.44
14:K:94:LEU:HB3	14:K:111:VAL:HB	2.00	0.44
15:L:43:LYS:HD2	15:L:44:ARG:H	1.82	0.44
15:L:117:ALA:HB2	53:8:30:G:H5''	2.00	0.44
30:g:89:ILE:HD12	30:g:89:ILE:HA	1.73	0.44
30:g:118:PHE:HB2	30:g:123:LEU:HD22	1.99	0.44
32:i:104:VAL:O	32:i:108:VAL:HG12	2.18	0.44
33:j:63:VAL:HG23	33:j:64:ARG:HG3	2.00	0.44
34:k:56:THR:HG21	50:3:2400:A:C2	2.53	0.44
35:l:129:TRP:CZ2	50:3:1065:G:H5''	2.52	0.44
38:o:62:GLU:N	38:o:80:GLN:HE22	2.15	0.44
42:s:86:PRO:HB3	46:w:89:GLN:HE22	1.83	0.44
50:3:108:G:C6	50:3:109:G:N7	2.85	0.44
50:3:243:U:H2'	50:3:244:G:O4'	2.18	0.44
50:3:319:G:O2'	50:3:320:A:H5'	2.18	0.44
50:3:417:G:C2	50:3:432:G:C6	3.05	0.44
50:3:567:U:O4	50:3:2028:G:O2'	2.27	0.44
50:3:624:U:H3'	50:3:625:G:H5''	1.99	0.44
50:3:855:A:H2	50:3:979:U:H1'	1.83	0.44
50:3:1599:C:H2'	50:3:1601:A:C6	2.52	0.44
50:3:2038:A:O2'	50:3:2462:G:N2	2.47	0.44
50:3:2106:G:H1	50:3:2198:G:N2	2.15	0.44
50:3:2205:U:O2'	50:3:2232:G:N2	2.46	0.44
50:3:2270:U:H2'	50:3:2271:C:H6	1.83	0.44
52:5:7:U:O2	52:5:7:U:H2'	2.17	0.44
52:5:892:G:C2	52:5:895:A:N7	2.86	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:E:106:GLN:O	8:E:110:GLN:HG2	2.18	0.44
10:G:35:THR:HG22	10:G:36:ILE:N	2.32	0.44
10:G:118:THR:OG1	10:G:119:SER:N	2.51	0.44
11:H:31:THR:HB	11:H:35:ARG:H	1.83	0.44
11:H:69:VAL:HB	11:H:77:GLN:NE2	2.33	0.44
15:L:64:LYS:HA	15:L:64:LYS:HD2	1.68	0.44
15:L:87:ARG:NH1	52:5:1295:U:OP1	2.48	0.44
24:a:279:ILE:O	24:a:286:GLN:N	2.50	0.44
28:e:4:ILE:HD12	28:e:69:GLY:HA3	2.00	0.44
29:f:115:ASP:N	29:f:115:ASP:OD1	2.48	0.44
32:i:101:ASP:HB2	32:i:127:VAL:HG11	2.00	0.44
33:j:43:VAL:O	33:j:55:GLY:N	2.51	0.44
34:k:136:LEU:O	34:k:140:GLU:HG2	2.18	0.44
38:o:32:ASN:HB2	38:o:91:LYS:HD3	2.00	0.44
39:p:94:LEU:HD11	40:q:11:GLN:O	2.18	0.44
40:q:46:GLY:H	40:q:50:LEU:HD23	1.83	0.44
44:u:19:LYS:H	44:u:19:LYS:HG3	1.59	0.44
50:3:759:U:C4	50:3:760:G:C6	3.06	0.44
50:3:1028:C:H2'	50:3:1029:A:H8	1.82	0.44
50:3:1038:G:H2'	50:3:1039:G:H8	1.82	0.44
50:3:1406:A:H4'	50:3:1407:U:C5	2.53	0.44
50:3:1774:G:H2'	50:3:1775:G:H8	1.81	0.44
50:3:1783:G:H2'	50:3:1783:G:N3	2.32	0.44
50:3:2078:A:H2'	50:3:2079:G:H8	1.83	0.44
50:3:2145:A:N6	50:3:2161:G:N1	2.63	0.44
50:3:2418:G:H3'	50:3:2419:A:H8	1.83	0.44
52:5:204:C:H2'	52:5:205:U:C6	2.52	0.44
52:5:206:G:N2	52:5:208:A:H3'	2.32	0.44
52:5:445:A:N7	52:5:483:U:O2	2.51	0.44
52:5:658:G:H2'	52:5:659:U:O4'	2.18	0.44
52:5:1110:C:H2'	52:5:1111:G:H8	1.83	0.44
52:5:1299:C:H2'	52:5:1300:C:C6	2.53	0.44
2:1:2:LYS:HE3	50:3:258:G:N7	2.32	0.43
6:C:170:ASN:HB2	6:C:173:THR:HB	1.99	0.43
7:D:136:ILE:HG12	7:D:138:HIS:H	1.82	0.43
11:H:110:LYS:HE3	52:5:1159:A:N3	2.32	0.43
25:b:65:PRO:HG3	50:3:2795:C:H1'	2.00	0.43
27:d:95:ARG:HH22	51:4:42:G:P	2.42	0.43
30:g:60:ARG:HD2	30:g:71:ILE:HG22	1.98	0.43
35:l:50:ALA:O	35:l:54:ILE:HG12	2.18	0.43
44:u:38:LYS:N	44:u:51:ILE:O	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:70:G:H2'	50:3:71:C:H6	1.83	0.43
50:3:212:G:H2'	50:3:213:C:H6	1.83	0.43
50:3:453:U:H2'	50:3:454:G:H8	1.83	0.43
50:3:665:C:H2'	50:3:666:G:C8	2.53	0.43
50:3:1095:U:H1'	50:3:1097:G:OP2	2.18	0.43
50:3:1316:U:N3	50:3:1355:C:O2	2.51	0.43
50:3:1353:G:N2	50:3:2019:G:H1'	2.33	0.43
50:3:1507:G:OP2	50:3:1507:G:H2'	2.18	0.43
50:3:1728:A:H1'	50:3:1729:G:C6	2.53	0.43
50:3:1868:A:H2'	50:3:1869:G:H8	1.81	0.43
50:3:2021:A:H2'	50:3:2022:A:C4	2.53	0.43
50:3:2807:G:C8	50:3:2811:G:C2	3.04	0.43
50:3:2850:G:H2'	50:3:2851:U:H6	1.83	0.43
52:5:267:C:H2'	52:5:268:C:C6	2.53	0.43
52:5:1100:C:N3	52:5:1101:A:N6	2.65	0.43
52:5:1226:A:N3	52:5:1344:C:O2'	2.45	0.43
52:5:1252:C:O2'	52:5:1254:A:N3	2.46	0.43
14:K:33:LYS:HD3	14:K:33:LYS:HA	1.67	0.43
17:N:38:ASP:HA	17:N:41:LEU:HG	2.00	0.43
22:S:57:LYS:HZ3	22:S:59:ILE:HD11	1.83	0.43
24:a:56:ARG:HE	24:a:57:HIS:HB3	1.83	0.43
24:a:67:ARG:HE	24:a:89:ASP:CG	2.26	0.43
26:c:157:VAL:HG13	26:c:197:LEU:HA	1.99	0.43
32:i:19:TYR:HB3	32:i:143:LEU:HD21	2.00	0.43
33:j:19:VAL:HG22	33:j:43:VAL:HA	1.99	0.43
46:w:15:LEU:HA	46:w:18:LEU:HD12	1.99	0.43
50:3:139:G:N1	50:3:145:A:C6	2.86	0.43
50:3:245:U:H1'	50:3:246:G:H4'	1.99	0.43
50:3:615:G:H2'	50:3:616:G:H8	1.83	0.43
50:3:755:C:H2'	50:3:756:A:C8	2.52	0.43
50:3:780:G:H1'	50:3:785:A:H61	1.82	0.43
50:3:1151:U:H2'	50:3:1152:U:H6	1.83	0.43
50:3:1452:G:N1	50:3:1608:C:O2	2.47	0.43
50:3:1661:A:H2'	50:3:1662:G:C8	2.50	0.43
50:3:1727:U:H3'	50:3:1728:A:H8	1.82	0.43
50:3:1798:A:H2'	50:3:1799:A:O4'	2.17	0.43
50:3:1806:G:O5'	50:3:1826:A:N6	2.51	0.43
50:3:2460:C:H2'	50:3:2461:A:H8	1.82	0.43
50:3:2462:G:H2'	50:3:2463:G:C8	2.52	0.43
50:3:2666:C:H2'	50:3:2667:G:O4'	2.19	0.43
50:3:2797:C:O2'	50:3:2895:A:H2'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:164:C:H2'	52:5:165:A:C8	2.54	0.43
52:5:580:C:OP2	52:5:755:U:N3	2.39	0.43
52:5:618:U:O2	52:5:618:U:H2'	2.18	0.43
52:5:707:G:H2'	52:5:708:A:C8	2.53	0.43
52:5:714:C:O2'	52:5:731:A:O4'	2.26	0.43
52:5:1236:A:O2'	52:5:1250:A:N6	2.51	0.43
52:5:1351:U:H2'	52:5:1352:A:H8	1.83	0.43
52:5:1418:G:H2'	52:5:1419:C:C6	2.52	0.43
4:A:19:SER:OG	4:A:62:ARG:NH1	2.52	0.43
7:D:161:ILE:HD12	52:5:8:G:H3'	2.00	0.43
8:E:7:LEU:HB2	8:E:58:TYR:HB2	2.00	0.43
15:L:64:LYS:HE2	15:L:69:LEU:HD13	2.01	0.43
22:S:57:LYS:NZ	52:5:161:C:H5''	2.33	0.43
30:g:88:GLU:OE1	30:g:91:GLU:HB3	2.18	0.43
43:t:48:LYS:HE2	43:t:55:ALA:HB3	2.00	0.43
50:3:192:U:H2'	50:3:193:G:O4'	2.18	0.43
50:3:237:A:H61	50:3:268:C:H1'	1.83	0.43
50:3:683:G:H2'	50:3:684:A:C8	2.52	0.43
50:3:802:U:H2'	50:3:803:G:C8	2.53	0.43
50:3:852:C:H2'	50:3:853:G:O4'	2.18	0.43
50:3:1795:C:H2'	50:3:1796:A:O4'	2.18	0.43
50:3:2399:G:C6	50:3:2435:C:H1'	2.54	0.43
50:3:2474:C:C4	50:3:2475:C:C4	3.06	0.43
50:3:2789:A:H5''	50:3:2790:A:H5'	1.99	0.43
52:5:26:C:H2'	52:5:27:A:H8	1.84	0.43
52:5:702:U:H2'	52:5:703:A:C8	2.53	0.43
52:5:1125:C:H2'	52:5:1126:U:C2	2.53	0.43
52:5:1284:A:H2'	52:5:1285:G:H8	1.84	0.43
52:5:1464:G:C2	52:5:1465:U:C4	3.06	0.43
2:1:36:LYS:HA	2:1:39:ARG:HG2	2.00	0.43
8:E:46:ALA:N	20:Q:97:ALA:O	2.50	0.43
13:J:113:GLY:HA2	52:5:712:A:C2	2.53	0.43
26:c:55:LYS:O	26:c:55:LYS:HG2	2.18	0.43
27:d:127:ASN:OD1	27:d:157:VAL:HG23	2.18	0.43
29:f:84:HIS:HB3	29:f:89:TYR:CE2	2.54	0.43
30:g:23:GLY:HA3	30:g:114:ASP:HA	1.99	0.43
30:g:88:GLU:CD	30:g:91:GLU:CB	2.91	0.43
31:h:130:GLN:HG2	50:3:1123:A:N6	2.34	0.43
33:j:30:LYS:O	33:j:31:ARG:HG2	2.19	0.43
43:t:28:MET:N	43:t:33:GLN:O	2.38	0.43
48:y:40:HIS:HE2	50:3:2887:A:H4'	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:z:21:THR:HG21	50:3:2294:A:H61	1.83	0.43
50:3:97:A:H2'	50:3:98:C:C6	2.52	0.43
50:3:167:A:H3'	50:3:168:A:C8	2.54	0.43
50:3:374:A:H2'	50:3:374:A:N3	2.32	0.43
50:3:1018:G:N2	50:3:2035:U:H4'	2.32	0.43
50:3:1164:A:H62	50:3:2498:G:H5'	1.84	0.43
50:3:1819:G:H2'	50:3:1820:U:H6	1.83	0.43
50:3:1893:C:H2'	50:3:1894:U:H6	1.84	0.43
50:3:2492:G:H2'	50:3:2493:G:C8	2.53	0.43
50:3:2738:U:H2'	50:3:2739:C:C6	2.53	0.43
52:5:135:A:H2'	52:5:136:U:C6	2.54	0.43
52:5:316:G:H2'	52:5:317:A:H8	1.83	0.43
52:5:498:G:H2'	52:5:499:U:O4'	2.18	0.43
52:5:872:C:H2'	52:5:873:U:C6	2.54	0.43
52:5:883:A:C5	52:5:901:A:N7	2.87	0.43
52:5:1242:U:O4	52:5:1301:U:O2'	2.35	0.43
5:B:165:ILE:H	5:B:165:ILE:HG13	1.62	0.43
6:C:102:TYR:HA	6:C:107:ALA:HB3	1.99	0.43
8:E:144:SER:HA	10:G:62:ASN:HA	2.01	0.43
10:G:26:ARG:HH22	10:G:86:GLY:HA2	1.83	0.43
13:J:81:GLY:H	13:J:107:THR:HA	1.84	0.43
14:K:128:SER:HA	52:5:36:G:N3	2.33	0.43
16:M:3:LYS:NZ	52:5:1040:U:O4	2.48	0.43
23:T:7:LYS:HB3	23:T:17:LYS:HE3	2.00	0.43
28:e:44:LEU:HD23	28:e:57:ARG:HB3	1.99	0.43
34:k:82:LEU:HD21	34:k:114:LEU:HD21	2.00	0.43
39:p:30:SER:HB3	39:p:33:VAL:HB	2.01	0.43
42:s:63:THR:H	42:s:75:SER:HG	1.59	0.43
50:3:604:A:H1'	50:3:606:G:C8	2.52	0.43
50:3:634:C:H2'	50:3:635:G:O4'	2.18	0.43
50:3:854:A:H2'	50:3:855:A:H8	1.83	0.43
50:3:871:G:H1	50:3:979:U:H3	1.67	0.43
50:3:901:C:H1'	50:3:903:A:N6	2.34	0.43
50:3:986:G:N2	50:3:1003:U:O2	2.37	0.43
50:3:1358:C:H2'	50:3:1359:C:H6	1.83	0.43
50:3:1371:G:O2'	50:3:1412:A:N1	2.47	0.43
50:3:2224:A:C2	50:3:2225:G:C5	3.06	0.43
50:3:2278:G:H3'	50:3:2279:G:H8	1.83	0.43
50:3:2477:A:H2'	50:3:2478:G:O4'	2.18	0.43
50:3:2697:C:N3	50:3:2721:C:N4	2.66	0.43
50:3:2847:C:H2'	50:3:2848:A:H8	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:743:A:H2'	52:5:744:U:O4'	2.19	0.43
52:5:851:U:H2'	52:5:852:G:O4'	2.19	0.43
52:5:961:G:C6	53:8:35:G:H5'	2.54	0.43
52:5:1089:C:H2'	52:5:1090:G:C8	2.53	0.43
52:5:1214:A:H62	52:5:1273:A:H61	1.66	0.43
6:C:78:VAL:HG12	6:C:85:LEU:HD12	1.99	0.43
12:I:68:ARG:HH22	52:5:1342:C:H4'	1.83	0.43
14:K:86:ASN:HB3	14:K:118:VAL:HB	2.01	0.43
19:P:8:VAL:HA	19:P:62:GLN:NE2	2.34	0.43
21:R:32:LYS:HE3	21:R:32:LYS:HB3	1.75	0.43
24:a:268:ARG:HH12	50:3:1806:G:H3'	1.83	0.43
25:b:11:VAL:HG23	25:b:28:VAL:HG23	1.99	0.43
26:c:141:LYS:HA	26:c:141:LYS:HD2	1.79	0.43
35:l:60:LYS:HA	35:l:60:LYS:HD3	1.64	0.43
37:n:18:LYS:HE3	37:n:18:LYS:HB3	1.84	0.43
39:p:32:LYS:HG2	50:3:1282:G:N3	2.33	0.43
41:r:124:LEU:O	41:r:127:LYS:HG2	2.19	0.43
42:s:16:VAL:HA	42:s:19:ASN:HD21	1.83	0.43
43:t:1:MET:HE1	43:t:5:LYS:HD3	2.01	0.43
46:w:14:GLU:O	46:w:18:LEU:HG	2.19	0.43
50:3:78:C:H2'	50:3:79:U:C6	2.54	0.43
50:3:110:A:H2'	50:3:111:G:O4'	2.18	0.43
50:3:207:C:H3'	50:3:208:A:H8	1.83	0.43
50:3:220:A:N7	50:3:467:U:C4	2.87	0.43
50:3:267:A:H1'	50:3:466:A:N3	2.33	0.43
50:3:573:A:N6	50:3:588:G:H1'	2.34	0.43
50:3:661:G:H2'	50:3:662:U:O4'	2.19	0.43
50:3:736:G:H2'	50:3:737:U:O4'	2.19	0.43
50:3:1110:C:H2'	50:3:1111:C:C6	2.53	0.43
50:3:1156:C:H2'	50:3:1157:G:C8	2.49	0.43
50:3:1265:G:H2'	50:3:1266:G:C4	2.54	0.43
50:3:1946:U:H4'	50:3:2611:G:H21	1.83	0.43
50:3:2092:U:H2'	50:3:2093:U:C6	2.53	0.43
50:3:2575:G:H2'	50:3:2576:A:H8	1.78	0.43
50:3:2703:U:O2	50:3:2722:G:C6	2.71	0.43
52:5:365:U:H2'	52:5:366:C:H6	1.82	0.43
52:5:453:C:H6	52:5:453:C:O5'	2.02	0.43
52:5:583:G:H2'	52:5:584:C:C6	2.54	0.43
52:5:611:A:H2'	52:5:612:G:H8	1.83	0.43
52:5:1116:U:O2	52:5:1117:U:O2'	2.36	0.43
52:5:1204:A:H2'	52:5:1205:C:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:3:ARG:NH1	50:3:1646:G:H21	2.17	0.43
2:1:31:PRO:HB2	49:z:22:PHE:CZ	2.54	0.43
4:A:130:LEU:O	4:A:134:VAL:HG23	2.18	0.43
14:K:123:ARG:HA	14:K:123:ARG:HD2	1.84	0.43
16:M:9:LYS:HD2	16:M:12:ARG:HH11	1.83	0.43
20:Q:43:PHE:CD2	20:Q:82:HIS:HB3	2.53	0.43
23:T:22:SER:O	23:T:26:ARG:HG2	2.17	0.43
24:a:32:LYS:HG3	24:a:34:GLU:OE1	2.19	0.43
24:a:162:ARG:HD2	50:3:1825:U:C6	2.54	0.43
28:e:90:LEU:HD22	28:e:165:VAL:HG12	2.01	0.43
45:v:31:VAL:HA	50:3:432:G:O3'	2.18	0.43
50:3:181:G:H2'	50:3:182:C:C6	2.54	0.43
50:3:343:A:OP2	50:3:343:A:H8	2.01	0.43
50:3:549:A:H2'	50:3:550:A:C2	2.54	0.43
50:3:1108:A:C5	50:3:1109:G:C8	3.07	0.43
50:3:1141:U:H2'	50:3:1142:G:C8	2.53	0.43
50:3:1491:G:H2'	50:3:1492:G:C8	2.54	0.43
50:3:1987:C:H3'	50:3:1988:A:H5''	2.01	0.43
50:3:2060:G:H2'	50:3:2061:A:C8	2.54	0.43
50:3:2270:U:H2'	50:3:2271:C:C6	2.54	0.43
52:5:144:U:H2'	52:5:145:G:C8	2.53	0.43
52:5:455:U:H3	52:5:472:G:N2	2.11	0.43
52:5:740:G:H2'	52:5:741:C:C6	2.53	0.43
52:5:808:C:H41	52:5:809:G:H21	1.65	0.43
52:5:916:U:H2'	52:5:917:G:H8	1.83	0.43
52:5:1417:U:H2'	52:5:1418:G:H8	1.84	0.43
52:5:1431:A:H3'	52:5:1432:A:H8	1.84	0.43
3:2:2:LYS:HE3	50:3:2485:U:N3	2.34	0.43
12:I:15:LYS:HZ2	12:I:79:LEU:HB2	1.82	0.43
22:S:11:LEU:O	22:S:15:ILE:HG12	2.17	0.43
24:a:187:GLY:O	24:a:280:ARG:NH1	2.52	0.43
24:a:233:MET:HG3	24:a:238:HIS:HD2	1.82	0.43
26:c:210:LYS:HB2	26:c:210:LYS:HE3	1.73	0.43
32:i:35:ALA:O	32:i:39:ILE:HG12	2.18	0.43
33:j:91:LYS:HE3	33:j:111:TYR:HA	2.00	0.43
35:l:118:LEU:HD13	35:l:131:ILE:HD13	2.00	0.43
36:m:42:GLN:NE2	36:m:43:LYS:HG3	2.34	0.43
38:o:23:PRO:HG3	38:o:90:LEU:HB2	2.01	0.43
40:q:43:GLU:O	40:q:44:LYS:HG3	2.19	0.43
41:r:46:LEU:O	41:r:50:LEU:HG	2.18	0.43
42:s:47:VAL:HG23	42:s:48:TYR:HD2	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:t:104:PHE:HB3	43:t:106:LYS:HG2	2.01	0.43
50:3:260:A:H2'	50:3:261:A:C8	2.53	0.43
50:3:276:A:N3	50:3:406:C:H1'	2.34	0.43
50:3:429:U:H2'	50:3:430:U:C6	2.54	0.43
50:3:816:A:H2	50:3:1783:G:H2'	1.84	0.43
50:3:1441:A:H2'	50:3:1442:G:O4'	2.19	0.43
50:3:1474:C:H2'	50:3:1475:C:C6	2.53	0.43
50:3:1510:A:N6	50:3:1530:G:O6	2.51	0.43
50:3:2596:A:H2'	50:3:2597:A:H8	1.84	0.43
52:5:178:U:H2'	52:5:179:U:O4'	2.19	0.43
52:5:345:A:H2'	52:5:346:G:C8	2.54	0.43
5:B:12:PHE:CE1	5:B:18:TRP:HA	2.54	0.43
6:C:112:SER:O	6:C:115:GLN:HG3	2.19	0.43
8:E:30:THR:OG1	8:E:68:SER:OG	2.29	0.43
8:E:40:LEU:HD12	8:E:57:TYR:HB3	1.99	0.43
11:H:27:LYS:HA	11:H:61:LYS:C	2.44	0.43
16:M:9:LYS:HZ2	52:5:1192:C:H4'	1.84	0.43
21:R:48:THR:HA	21:R:61:TYR:HA	1.99	0.43
24:a:20:ILE:HG22	24:a:22:TYR:CE2	2.54	0.43
25:b:19:THR:HG22	25:b:20:ASN:N	2.31	0.43
27:d:92:ARG:NE	51:4:41:C:O2	2.48	0.43
31:h:13:ASN:HB3	50:3:1096:U:H2'	2.01	0.43
34:k:15:HIS:CE1	50:3:695:G:H21	2.37	0.43
34:k:77:TRP:CE3	34:k:113:LYS:HB2	2.54	0.43
50:3:39:C:H2'	50:3:40:A:C8	2.54	0.43
50:3:408:G:O2'	50:3:459:A:H3'	2.19	0.43
50:3:440:C:H1'	50:3:442:G:C5	2.53	0.43
50:3:1226:G:H2'	50:3:1227:C:H6	1.84	0.43
50:3:1354:U:C2'	50:3:1355:C:H5'	2.49	0.43
50:3:1906:G:H21	50:3:1909:C:N4	2.17	0.43
50:3:2225:G:H2'	50:3:2226:U:C6	2.53	0.43
50:3:2363:C:H3'	50:3:2364:A:H8	1.84	0.43
50:3:2837:U:H5''	50:3:2838:G:N7	2.34	0.43
52:5:405:C:H2'	52:5:406:G:O4'	2.19	0.43
52:5:944:A:C2	52:5:1208:G:C2	3.07	0.43
52:5:1110:C:H2'	52:5:1111:G:C8	2.54	0.43
14:K:133:LYS:HA	52:5:37:C:H4'	2.01	0.43
16:M:42:LEU:O	16:M:46:GLU:HG2	2.19	0.43
20:Q:82:HIS:O	20:Q:86:VAL:HG23	2.18	0.43
22:S:11:LEU:HD21	52:5:328:G:O2'	2.18	0.43
29:f:33:LYS:C	29:f:34:LYS:HD3	2.44	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:f:98:ILE:HG23	29:f:102:HIS:CE1	2.53	0.43
30:g:79:LYS:NZ	50:3:1119:A:H61	2.17	0.43
35:l:4:PRO:HD2	35:l:93:TRP:CG	2.54	0.43
35:l:130:LYS:HD3	35:l:131:ILE:O	2.19	0.43
39:p:44:TYR:O	39:p:47:ARG:HG3	2.19	0.43
40:q:7:CYS:HB3	40:q:12:TYR:HE2	1.84	0.43
41:r:112:ASN:O	41:r:113:GLU:HB2	2.19	0.43
41:r:128:ARG:NH1	50:3:580:U:OP2	2.52	0.43
50:3:210:U:H2'	50:3:211:A:C8	2.53	0.43
50:3:251:G:O2'	50:3:254:G:O6	2.33	0.43
50:3:990:G:N2	50:3:999:U:O2	2.36	0.43
50:3:1071:G:H2'	50:3:1072:A:O4'	2.18	0.43
50:3:1079:U:O2'	50:3:1146:A:N6	2.45	0.43
50:3:1289:G:H2'	50:3:1290:G:C8	2.54	0.43
50:3:1306:G:H2'	50:3:1307:G:C8	2.51	0.43
50:3:1471:A:H2'	50:3:1472:C:O4'	2.19	0.43
50:3:1583:G:O2'	50:3:1584:U:O4'	2.37	0.43
50:3:2267:G:H5'	50:3:2435:C:H3'	2.00	0.43
50:3:2676:G:H2'	50:3:2677:A:C8	2.50	0.43
51:4:11:A:O2'	51:4:12:U:H3'	2.19	0.43
52:5:259:A:C8	52:5:260:C:H5	2.37	0.43
52:5:598:U:H2'	52:5:599:G:C8	2.53	0.43
52:5:717:C:H2'	52:5:718:A:N7	2.33	0.43
52:5:861:A:H2'	52:5:862:C:C6	2.54	0.43
52:5:1501:G:C6	52:5:1502:G:C6	3.06	0.43
4:A:73:LYS:NZ	4:A:77:GLN:HE21	2.17	0.42
4:A:232:LEU:O	4:A:236:VAL:HG23	2.19	0.42
4:A:234:ASP:OD2	4:A:246:PHE:HB2	2.19	0.42
8:E:89:ASN:OD1	8:E:90:LEU:N	2.46	0.42
10:G:29:LYS:NZ	10:G:80:ARG:O	2.41	0.42
11:H:51:GLU:O	11:H:55:ASP:N	2.52	0.42
14:K:29:ASN:ND2	52:5:51:A:OP1	2.49	0.42
15:L:35:LYS:HE3	15:L:41:PRO:HD2	2.01	0.42
27:d:34:ILE:HG12	27:d:156:LEU:HD13	2.01	0.42
29:f:2:LYS:CD	29:f:34:LYS:HB2	2.42	0.42
37:n:14:ARG:HA	37:n:17:LYS:HG2	2.01	0.42
38:o:36:LYS:HZ3	38:o:85:ASN:HA	1.84	0.42
40:q:25:LEU:HD23	40:q:25:LEU:HA	1.87	0.42
50:3:248:A:H61	50:3:422:A:H1'	1.84	0.42
50:3:320:A:H2'	50:3:321:A:C8	2.54	0.42
50:3:499:G:N2	50:3:502:A:N7	2.66	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:621:U:O4	50:3:705:A:O2'	2.25	0.42
50:3:625:G:H2'	50:3:626:A:C8	2.53	0.42
50:3:629:G:H2'	50:3:630:C:H6	1.83	0.42
50:3:752:C:H3'	50:3:753:A:C8	2.49	0.42
50:3:832:C:H2'	50:3:833:C:C6	2.54	0.42
50:3:1507:G:O2'	50:3:1508:G:OP1	2.32	0.42
50:3:1543:U:H2'	50:3:1544:G:C8	2.46	0.42
50:3:1791:A:H1'	50:3:1792:A:C8	2.54	0.42
50:3:1804:A:N6	50:3:1830:G:O6	2.52	0.42
50:3:1846:A:C8	50:3:1934:A:N6	2.87	0.42
50:3:1894:U:H2'	50:3:1895:G:O4'	2.18	0.42
50:3:2142:U:H2'	50:3:2143:G:O4'	2.18	0.42
50:3:2595:A:H2'	50:3:2596:A:O4'	2.18	0.42
50:3:2670:A:H3'	50:3:2671:G:H8	1.83	0.42
50:3:2898:A:N3	50:3:2898:A:H2'	2.34	0.42
51:4:46:C:H2'	51:4:47:C:C6	2.53	0.42
52:5:859:A:H2'	52:5:860:C:O4'	2.19	0.42
52:5:1360:G:H2'	52:5:1361:G:C8	2.54	0.42
5:B:35:ILE:HD11	16:M:25:GLN:HB2	2.02	0.42
15:L:96:PRO:HB3	15:L:100:GLN:HB3	2.02	0.42
24:a:41:LEU:HD11	50:3:1823:U:H5''	2.02	0.42
26:c:81:ASN:C	26:c:83:HIS:H	2.26	0.42
27:d:111:VAL:HG22	27:d:137:ILE:HG12	2.01	0.42
39:p:69:ARG:HD3	39:p:69:ARG:HA	1.86	0.42
44:u:44:MET:HE3	44:u:44:MET:HB3	1.95	0.42
44:u:54:GLN:NE2	44:u:57:THR:HA	2.34	0.42
46:w:23:LYS:O	46:w:26:LEU:HG	2.19	0.42
48:y:40:HIS:NE2	50:3:2887:A:O3'	2.51	0.42
50:3:22:U:H2'	50:3:23:A:C8	2.54	0.42
50:3:170:A:H2	50:3:2217:G:H4'	1.84	0.42
50:3:188:G:H2'	50:3:189:U:C6	2.53	0.42
50:3:328:A:H62	50:3:378:G:H2'	1.84	0.42
50:3:891:G:H2'	50:3:892:G:C8	2.54	0.42
50:3:961:U:H2'	50:3:962:U:C4	2.54	0.42
50:3:1004:U:H2'	50:3:1005:G:C8	2.53	0.42
50:3:1273:U:O4	50:3:1274:A:N6	2.52	0.42
50:3:1433:U:C2	50:3:1434:U:C5	3.07	0.42
50:3:1436:C:H2'	50:3:1628:G:N2	2.33	0.42
50:3:2757:A:OP2	50:3:2758:A:O2'	2.34	0.42
52:5:847:G:H2'	52:5:848:U:O4'	2.18	0.42
52:5:916:U:H2'	52:5:917:G:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1180:U:H2'	52:5:1181:G:H8	1.84	0.42
1:0:10:LEU:O	1:0:14:LYS:HG3	2.19	0.42
4:A:222:PRO:HG3	4:A:256:ILE:HD12	2.01	0.42
5:B:180:THR:HA	52:5:1103:C:N3	2.34	0.42
14:K:113:GLY:HA3	14:K:131:GLY:N	2.34	0.42
16:M:3:LYS:N	52:5:1039:G:OP1	2.38	0.42
22:S:10:ARG:HD3	22:S:10:ARG:HA	1.80	0.42
25:b:3:ILE:HG23	25:b:209:THR:HB	2.02	0.42
25:b:110:VAL:HA	25:b:206:LEU:O	2.18	0.42
25:b:146:SER:HB2	50:3:2519:U:H3	1.84	0.42
28:e:75:ILE:O	28:e:79:ILE:HG12	2.19	0.42
39:p:1:MET:HB2	50:3:480:C:OP2	2.20	0.42
39:p:2:ARG:HD3	50:3:1278:G:C2	2.54	0.42
42:s:54:LYS:HZ2	42:s:84:THR:HG21	1.83	0.42
45:v:28:LYS:HE2	45:v:28:LYS:HB3	1.75	0.42
48:y:47:MET:HE3	48:y:50:ASP:HA	2.01	0.42
50:3:428:U:OP1	50:3:445:C:H5''	2.19	0.42
50:3:718:U:H2'	50:3:719:G:C8	2.54	0.42
50:3:1212:C:H2'	50:3:1213:U:C5	2.55	0.42
50:3:1482:U:HO2'	50:3:1483:G:H8	1.66	0.42
50:3:1516:G:H2'	50:3:1517:G:C8	2.54	0.42
50:3:1777:G:N2	50:3:1793:A:N7	2.67	0.42
50:3:2038:A:C6	50:3:2506:C:H1'	2.55	0.42
50:3:2110:U:O4	50:3:2194:G:O6	2.37	0.42
50:3:2259:G:OP2	50:3:2505:A:H8	2.03	0.42
50:3:2635:G:N2	50:3:2785:G:OP2	2.52	0.42
50:3:2693:U:H2'	50:3:2694:A:C8	2.54	0.42
50:3:2746:A:H2'	50:3:2747:U:C6	2.54	0.42
52:5:93:A:H3'	52:5:94:A:C2	2.55	0.42
52:5:97:G:H22	52:5:311:A:H2	1.67	0.42
52:5:663:G:C6	52:5:737:U:N3	2.87	0.42
52:5:759:C:H2'	52:5:760:U:H6	1.84	0.42
52:5:759:C:H2'	52:5:760:U:C6	2.55	0.42
52:5:971:A:N1	52:5:1338:A:H5''	2.34	0.42
52:5:981:U:H2'	52:5:982:A:H8	1.84	0.42
52:5:1130:G:H2'	52:5:1131:A:H8	1.83	0.42
52:5:1161:G:C6	52:5:1162:G:C6	3.07	0.42
52:5:1293:A:C6	52:5:1335:G:N2	2.87	0.42
3:2:1:MET:SD	3:2:1:MET:N	2.91	0.42
4:A:113:LEU:HD22	52:5:1093:A:H4'	2.00	0.42
6:C:81:GLN:HA	52:5:611:A:H5''	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:146:ALA:O	6:C:149:ILE:HG22	2.19	0.42
12:I:15:LYS:NZ	12:I:79:LEU:HB2	2.34	0.42
13:J:110:PRO:HB2	23:T:32:HIS:NE2	2.34	0.42
18:O:34:ASN:HB3	18:O:41:LYS:HD3	2.01	0.42
19:P:31:LYS:HA	19:P:38:SER:HA	2.02	0.42
25:b:150:GLY:HA3	25:b:156:ALA:HB3	2.02	0.42
26:c:112:LEU:HA	26:c:115:VAL:HG12	2.00	0.42
28:e:119:LYS:HB3	28:e:119:LYS:HE3	1.86	0.42
30:g:112:TYR:CD1	30:g:113:PHE:C	2.93	0.42
35:l:54:ILE:HA	35:l:57:CYS:SG	2.58	0.42
39:p:8:GLN:HE21	39:p:12:ARG:HG3	1.84	0.42
39:p:96:GLU:O	39:p:100:LYS:HG2	2.19	0.42
42:s:34:LYS:HA	42:s:34:LYS:HD3	1.83	0.42
44:u:43:GLN:NE2	50:3:960:A:H4'	2.35	0.42
50:3:159:G:C6	50:3:174:A:N6	2.87	0.42
50:3:326:A:H2'	50:3:327:U:C6	2.54	0.42
50:3:854:A:N1	50:3:978:G:H1'	2.34	0.42
50:3:1554:A:OP2	50:3:1576:G:N2	2.53	0.42
50:3:1597:U:H2'	50:3:1598:U:C6	2.54	0.42
50:3:2541:C:H2'	50:3:2542:A:O4'	2.20	0.42
50:3:2845:U:C2	50:3:2846:A:C8	3.07	0.42
50:3:2859:U:H2'	50:3:2860:A:H8	1.85	0.42
51:4:2:U:H2'	51:4:3:U:C6	2.54	0.42
52:5:19:C:H4'	52:5:1070:G:C2	2.55	0.42
52:5:130:G:H2'	52:5:131:G:C8	2.53	0.42
52:5:290:G:H2'	52:5:291:C:H6	1.84	0.42
52:5:317:A:N6	52:5:324:C:O2	2.52	0.42
52:5:618:U:P	52:5:619:A:H62	2.42	0.42
52:5:619:A:H3'	52:5:619:A:OP2	2.19	0.42
52:5:988:G:N2	52:5:991:A:H61	2.16	0.42
3:2:24:ARG:HH12	50:3:2750:A:P	2.42	0.42
5:B:21:ARG:NH1	5:B:59:GLU:OE2	2.49	0.42
6:C:68:ASP:OD2	6:C:72:ARG:NH1	2.52	0.42
8:E:51:LYS:HD3	8:E:51:LYS:HA	1.84	0.42
15:L:70:ARG:HE	15:L:70:ARG:HB2	1.62	0.42
24:a:209:ASN:ND2	50:3:1827:U:O4'	2.52	0.42
38:o:19:LYS:HE3	38:o:19:LYS:HB3	1.87	0.42
39:p:8:GLN:HG3	39:p:12:ARG:NH2	2.34	0.42
50:3:1003:U:H2'	50:3:1004:U:C6	2.54	0.42
50:3:1040:U:O2'	50:3:1046:A:H2'	2.18	0.42
50:3:1271:A:H2'	50:3:1272:A:C8	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1779:G:H2'	50:3:1780:A:O3'	2.19	0.42
50:3:1798:A:P	50:3:1798:A:H8	2.42	0.42
50:3:2483:C:C2	50:3:2537:G:C6	3.07	0.42
50:3:2484:A:H5'	50:3:2485:U:OP2	2.18	0.42
52:5:163:G:H2'	52:5:164:C:C6	2.54	0.42
52:5:454:U:H2'	52:5:455:U:C6	2.54	0.42
52:5:712:A:H2'	52:5:713:A:C8	2.55	0.42
52:5:856:U:H2'	52:5:857:U:C6	2.54	0.42
52:5:901:A:H2'	52:5:902:A:C8	2.53	0.42
52:5:1102:A:OP2	52:5:1103:C:N4	2.52	0.42
52:5:1329:G:H2'	52:5:1330:A:C8	2.54	0.42
53:8:41:C:H2'	53:8:42:C:C6	2.54	0.42
53:8:44:U:H4'	53:8:44:U:OP1	2.20	0.42
6:C:89:LEU:HA	6:C:92:VAL:HG22	2.02	0.42
8:E:40:LEU:HD21	8:E:59:ARG:HB2	2.02	0.42
9:F:110:ARG:NH2	9:F:125:ASP:OD2	2.38	0.42
22:S:7:ASN:ND2	52:5:328:G:H4'	2.29	0.42
25:b:114:SER:O	25:b:171:HIS:ND1	2.53	0.42
27:d:4:LEU:HA	27:d:7:HIS:CD2	2.55	0.42
27:d:30:ARG:NH2	51:4:29:C:OP1	2.50	0.42
28:e:65:LYS:HE3	50:3:2757:A:H4'	2.01	0.42
42:s:65:ILE:O	42:s:73:GLY:N	2.48	0.42
43:t:47:LYS:NZ	50:3:521:C:OP2	2.53	0.42
46:w:35:HIS:HB2	46:w:37:GLU:HG3	2.01	0.42
46:w:87:TRP:HA	46:w:90:HIS:HB3	2.01	0.42
50:3:453:U:H2'	50:3:454:G:C8	2.55	0.42
50:3:493:A:N6	50:3:507:A:OP2	2.32	0.42
50:3:604:A:H8	50:3:608:A:C2	2.37	0.42
50:3:615:G:H1	50:3:1288:C:H42	1.67	0.42
50:3:696:U:H2'	50:3:697:U:H6	1.83	0.42
50:3:759:U:H3'	50:3:760:G:H8	1.85	0.42
50:3:898:A:N1	50:3:899:A:N6	2.68	0.42
50:3:952:U:H3'	50:3:953:G:C8	2.55	0.42
50:3:964:A:H2'	50:3:965:U:H6	1.84	0.42
50:3:983:A:H2'	50:3:984:C:C6	2.55	0.42
50:3:998:C:O2'	50:3:999:U:H5'	2.20	0.42
50:3:1152:U:H2'	50:3:1153:U:H6	1.83	0.42
50:3:1210:A:H8	50:3:1210:A:OP1	2.02	0.42
50:3:1378:C:H42	50:3:1410:A:N6	2.17	0.42
50:3:1546:U:H3'	50:3:1547:G:C8	2.54	0.42
50:3:1927:C:H2'	50:3:1928:G:H8	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2008:A:H1'	50:3:2697:C:H5	1.83	0.42
50:3:2530:U:H4'	50:3:2656:G:OP1	2.19	0.42
50:3:2706:U:H2'	50:3:2707:A:C8	2.53	0.42
52:5:104:A:N3	52:5:105:A:N6	2.68	0.42
52:5:549:U:H2'	52:5:550:U:C6	2.54	0.42
52:5:670:G:H2'	52:5:671:G:C8	2.54	0.42
52:5:744:U:H4'	52:5:745:U:C5	2.54	0.42
52:5:919:C:H2'	52:5:920:G:C8	2.54	0.42
52:5:997:G:N2	52:5:1029:C:O2	2.47	0.42
2:1:6:ALA:O	2:1:10:ARG:HB2	2.19	0.42
2:1:20:LYS:HD3	2:1:44:GLN:HB3	2.02	0.42
4:A:179:ASP:OD1	4:A:179:ASP:N	2.52	0.42
5:B:176:MET:N	52:5:1098:C:OP1	2.52	0.42
6:C:13:ARG:NH1	52:5:540:U:O2'	2.52	0.42
6:C:60:MET:HE3	6:C:191:ILE:HD13	2.00	0.42
7:D:148:ARG:HD3	7:D:148:ARG:H	1.84	0.42
8:E:49:ILE:HG23	8:E:50:LYS:H	1.84	0.42
13:J:8:ASN:N	13:J:70:MET:O	2.53	0.42
18:O:12:ARG:HG2	18:O:32:HIS:HB2	2.01	0.42
18:O:26:TYR:OH	52:5:605:A:O2'	2.25	0.42
21:R:32:LYS:HD3	52:5:1010:A:H61	1.85	0.42
24:a:134:PHE:HB3	24:a:136:MET:HE1	2.01	0.42
27:d:33:LYS:HB3	27:d:92:ARG:NH2	2.35	0.42
30:g:14:VAL:HG21	30:g:58:ILE:HG23	2.01	0.42
39:p:2:ARG:H	50:3:481:C:H5''	1.84	0.42
43:t:29:PRO:O	43:t:32:GLN:NE2	2.52	0.42
46:w:17:LYS:O	46:w:21:LYS:HG3	2.20	0.42
50:3:603:G:H1	50:3:2507:C:P	2.39	0.42
50:3:888:A:H2'	50:3:889:G:H8	1.82	0.42
50:3:938:A:H3'	50:3:938:A:OP2	2.20	0.42
50:3:1016:A:N1	50:3:2044:C:O2'	2.48	0.42
50:3:1354:U:H3'	50:3:1355:C:H6	1.85	0.42
50:3:1474:C:H2'	50:3:1475:C:H6	1.85	0.42
50:3:1854:A:H2'	50:3:1855:A:H5''	2.02	0.42
50:3:2208:U:H2'	50:3:2209:U:C6	2.55	0.42
50:3:2329:G:H5''	50:3:2330:A:OP2	2.20	0.42
50:3:2403:C:H2'	50:3:2404:G:C8	2.54	0.42
50:3:2728:U:C2	50:3:2729:A:C8	3.08	0.42
52:5:214:U:H2'	52:5:215:C:C6	2.55	0.42
52:5:265:U:H2'	52:5:266:A:C8	2.54	0.42
52:5:656:U:H2'	52:5:657:G:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:694:U:H3	52:5:795:U:HO2'	1.65	0.42
52:5:897:A:H2'	52:5:898:A:H8	1.85	0.42
52:5:1238:C:C2	52:5:1239:U:C5	3.08	0.42
5:B:61:THR:O	5:B:64:THR:HG22	2.19	0.42
6:C:180:ARG:NH1	6:C:186:GLU:OE1	2.46	0.42
14:K:9:ARG:HD2	52:5:874:C:H5''	2.01	0.42
18:O:15:ALA:HA	18:O:59:PRO:HB3	2.00	0.42
25:b:28:VAL:HG12	25:b:192:LEU:HG	2.02	0.42
28:e:5:GLY:HA2	28:e:72:ASN:ND2	2.23	0.42
29:f:95:LYS:HB2	50:3:2227:U:O2'	2.20	0.42
36:m:108:GLY:O	50:3:1315:A:N6	2.51	0.42
39:p:93:VAL:HG13	39:p:94:LEU:HD12	2.00	0.42
40:q:61:LYS:HG2	40:q:91:LYS:HE3	2.02	0.42
42:s:38:THR:HA	42:s:41:LYS:HG2	2.02	0.42
50:3:668:A:H2'	50:3:669:A:C8	2.54	0.42
50:3:1397:G:H2'	50:3:1398:C:C6	2.54	0.42
50:3:1456:C:H41	50:3:1603:A:H3'	1.84	0.42
50:3:1710:A:H2'	50:3:1710:A:N3	2.35	0.42
50:3:2059:G:H2'	50:3:2060:G:H8	1.83	0.42
50:3:2403:C:H2'	50:3:2404:G:H8	1.84	0.42
50:3:2483:C:C4	50:3:2537:G:N2	2.87	0.42
52:5:46:U:H2'	52:5:47:G:C8	2.55	0.42
52:5:355:A:H3'	52:5:356:G:H8	1.85	0.42
52:5:1139:A:H2'	52:5:1140:A:H8	1.82	0.42
52:5:1377:C:H2'	52:5:1378:C:C6	2.55	0.42
5:B:49:ARG:H	5:B:49:ARG:HD3	1.85	0.42
5:B:172:ILE:HD11	52:5:1167:C:H4'	2.02	0.42
9:F:27:ASN:HB3	52:5:1349:A:O2'	2.20	0.42
9:F:113:LYS:HG2	9:F:117:GLU:OE2	2.20	0.42
10:G:120:ASP:OD1	52:5:637:A:O2'	2.37	0.42
15:L:101:ARG:HD3	52:5:945:U:P	2.60	0.42
28:e:92:LEU:HD13	28:e:165:VAL:HG22	2.01	0.42
31:h:32:MET:HE2	31:h:32:MET:HA	2.01	0.42
32:i:30:LYS:HG3	32:i:145:TRP:HZ2	1.85	0.42
32:i:100:SER:H	32:i:129:LYS:NZ	2.18	0.42
33:j:86:LEU:HG	33:j:94:ARG:NH1	2.35	0.42
39:p:35:LYS:O	39:p:39:ILE:HG12	2.20	0.42
39:p:111:LYS:HD2	40:q:43:GLU:HG3	2.02	0.42
46:w:58:LEU:HD12	46:w:61:ARG:HB2	2.01	0.42
48:y:48:TYR:HD1	48:y:48:TYR:HA	1.79	0.42
50:3:339:U:H2'	50:3:340:U:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:383:U:H2'	50:3:384:G:H8	1.82	0.42
50:3:511:U:H5'	50:3:545:C:H5'	2.02	0.42
50:3:754:U:H2'	50:3:755:C:C6	2.55	0.42
50:3:1415:A:N6	50:3:1429:G:O6	2.52	0.42
50:3:1734:A:H3'	50:3:1735:A:C8	2.54	0.42
50:3:1812:C:H2'	50:3:1813:C:C6	2.55	0.42
50:3:1956:G:H2'	50:3:1957:G:C8	2.55	0.42
50:3:2138:U:H5'	50:3:2140:G:C6	2.55	0.42
50:3:2242:G:H2'	50:3:2243:G:H8	1.85	0.42
50:3:2595:A:N6	50:3:2616:G:H1'	2.35	0.42
50:3:2736:U:O2'	50:3:2737:G:H8	2.01	0.42
52:5:435:U:HO2'	52:5:438:A:N6	2.18	0.42
52:5:712:A:H2'	52:5:713:A:H8	1.84	0.42
52:5:800:G:HO2'	52:5:801:U:P	2.42	0.42
52:5:1154:A:H2'	52:5:1155:A:C8	2.54	0.42
52:5:1233:G:H2'	52:5:1234:C:C6	2.54	0.42
53:8:71:A:HO2'	53:8:72:C:P	2.41	0.42
9:F:35:LYS:O	9:F:39:GLN:HG3	2.19	0.42
14:K:24:LEU:HG	14:K:108:TYR:CZ	2.55	0.42
15:L:118:ASN:ND2	52:5:948:U:O2	2.29	0.42
24:a:255:ARG:HH21	24:a:261:ARG:NH1	2.18	0.42
27:d:99:PHE:HA	27:d:102:LYS:HE2	2.01	0.42
30:g:40:ILE:HA	30:g:43:LYS:HB2	2.02	0.42
30:g:86:VAL:O	30:g:86:VAL:HG12	2.19	0.42
32:i:19:TYR:HE2	32:i:55:ASP:HB3	1.85	0.42
33:j:25:LEU:HB3	33:j:38:VAL:O	2.20	0.42
33:j:77:LEU:HB2	38:o:77:LYS:HE3	2.01	0.42
37:n:91:PHE:HE2	50:3:2384:A:H61	1.68	0.42
39:p:94:LEU:HD21	40:q:11:GLN:HB3	2.02	0.42
41:r:82:MET:HB2	41:r:98:LYS:HB2	2.01	0.42
48:y:12:ARG:HH11	50:3:2028:G:H4'	1.84	0.42
49:z:23:LYS:NZ	49:z:28:ASN:O	2.53	0.42
50:3:139:G:C6	50:3:140:G:C6	3.08	0.42
50:3:227:A:N1	50:3:412:A:O2'	2.48	0.42
50:3:465:A:OP2	50:3:465:A:H8	2.02	0.42
50:3:653:G:H2'	50:3:654:G:C8	2.55	0.42
50:3:665:C:O2	50:3:675:U:O2'	2.37	0.42
50:3:856:A:H5''	50:3:857:U:O5'	2.20	0.42
50:3:1035:U:H3'	50:3:1189:G:H1	1.84	0.42
50:3:1086:G:H2'	50:3:1087:C:H6	1.85	0.42
50:3:1999:G:N2	50:3:2003:C:HO2'	2.17	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2257:U:H1'	50:3:2283:C:H41	1.85	0.42
50:3:2485:U:H4'	50:3:2487:U:H5	1.85	0.42
50:3:2694:A:H2'	50:3:2695:U:O4'	2.19	0.42
50:3:2754:U:H2'	50:3:2755:G:O4'	2.19	0.42
50:3:2780:U:H2'	50:3:2781:C:H6	1.85	0.42
51:4:12:U:H2'	51:4:13:G:N2	2.35	0.42
52:5:321:A:H2'	52:5:322:G:O4'	2.20	0.42
52:5:591:A:H2'	52:5:592:A:C8	2.55	0.42
52:5:622:A:H2'	52:5:623:G:H8	1.85	0.42
52:5:638:A:H4'	52:5:639:A:H5'	2.01	0.42
52:5:1393:A:C5	52:5:1457:G:N2	2.88	0.42
4:A:73:LYS:HE3	4:A:73:LYS:HB3	1.85	0.41
5:B:175:ASN:OD1	52:5:1097:G:H5''	2.20	0.41
6:C:202:ARG:NE	52:5:28:G:O2'	2.53	0.41
10:G:117:SER:O	10:G:117:SER:OG	2.35	0.41
12:I:59:ARG:HG3	12:I:67:SER:O	2.20	0.41
18:O:43:LYS:HD3	18:O:43:LYS:HA	1.82	0.41
18:O:58:LYS:HB3	18:O:64:ARG:HH12	1.84	0.41
19:P:73:LYS:NZ	52:5:250:G:H5''	2.34	0.41
21:R:28:LYS:HE3	21:R:28:LYS:HB3	1.73	0.41
24:a:184:LEU:HD21	50:3:1806:G:C4	2.55	0.41
27:d:51:GLU:OE2	27:d:55:ASN:ND2	2.43	0.41
28:e:110:LEU:H	28:e:110:LEU:HD23	1.85	0.41
39:p:64:LEU:HD23	39:p:75:TYR:HD1	1.84	0.41
45:v:14:TYR:CE1	45:v:28:LYS:HE3	2.54	0.41
45:v:22:LYS:O	50:3:204:U:H5''	2.20	0.41
50:3:461:C:H2'	50:3:462:C:C6	2.55	0.41
50:3:1059:G:C6	50:3:1060:G:C6	3.08	0.41
50:3:1440:U:H2'	50:3:1441:A:C8	2.55	0.41
50:3:1686:U:H3	50:3:2012:A:H61	1.68	0.41
50:3:1772:G:H2'	50:3:1773:A:H8	1.86	0.41
50:3:2546:U:H2'	50:3:2547:C:C6	2.54	0.41
50:3:2718:C:H2'	50:3:2719:A:C8	2.55	0.41
50:3:2828:C:H3'	50:3:2829:G:N2	2.27	0.41
52:5:324:C:H4'	52:5:325:A:H5'	2.00	0.41
52:5:570:A:H4'	52:5:912:G:H5'	2.01	0.41
52:5:586:G:H22	52:5:650:A:H62	1.68	0.41
52:5:899:U:H2'	52:5:900:G:O4'	2.20	0.41
52:5:1410:A:H2'	52:5:1411:A:H8	1.84	0.41
3:2:30:GLN:HB3	50:3:2535:C:H5''	2.01	0.41
8:E:125:PRO:HA	52:5:838:A:N1	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:K:127:ARG:HG3	52:5:499:U:OP1	2.20	0.41
17:N:2:GLN:HG2	17:N:3:ILE:N	2.35	0.41
23:T:46:ARG:NH2	52:5:721:G:N7	2.68	0.41
25:b:68:GLY:HA2	25:b:71:GLU:CD	2.44	0.41
27:d:10:LYS:HB3	27:d:10:LYS:HE3	1.94	0.41
29:f:42:LYS:C	29:f:42:LYS:HD3	2.46	0.41
31:h:116:THR:HG23	31:h:119:ALA:H	1.84	0.41
35:l:40:ASN:CG	35:l:41:TRP:H	2.27	0.41
50:3:252:G:H5'	50:3:254:G:C5	2.55	0.41
50:3:525:A:C5	50:3:526:G:C6	3.07	0.41
50:3:750:A:H3'	50:3:751:A:H8	1.86	0.41
50:3:985:A:H2'	50:3:986:G:H8	1.85	0.41
50:3:988:G:C6	50:3:1002:A:N6	2.88	0.41
50:3:1220:A:H3'	50:3:1221:G:C8	2.53	0.41
50:3:1397:G:H2'	50:3:1398:C:H6	1.86	0.41
50:3:1504:G:O6	50:3:1539:U:O4	2.39	0.41
50:3:1544:G:H2'	50:3:1545:A:H8	1.86	0.41
50:3:1605:A:H2'	50:3:1606:A:C8	2.55	0.41
50:3:2071:C:H2'	50:3:2072:C:H6	1.83	0.41
50:3:2702:G:H2'	50:3:2703:U:O4'	2.20	0.41
50:3:2844:U:H2'	50:3:2845:U:C6	2.55	0.41
52:5:715:A:H3'	52:5:716:C:C6	2.55	0.41
52:5:977:U:N3	52:5:1198:C:O2	2.53	0.41
52:5:1483:C:H2'	52:5:1484:C:C6	2.54	0.41
53:8:12:C:H2'	53:8:13:U:C6	2.54	0.41
4:A:32:MET:HB2	4:A:218:ASN:HB2	2.01	0.41
5:B:114:LEU:HD12	5:B:207:ARG:HG2	2.01	0.41
8:E:145:ARG:HD3	10:G:61:GLU:O	2.20	0.41
11:H:104:LYS:HA	11:H:104:LYS:HD2	1.84	0.41
13:J:91:ARG:HH12	23:T:15:LEU:HD22	1.83	0.41
22:S:22:LYS:HB2	22:S:22:LYS:HE2	1.84	0.41
24:a:164:ALA:HB1	24:a:205:ASN:HB3	2.03	0.41
26:c:174:ASN:O	50:3:357:A:H8	2.03	0.41
27:d:44:ILE:O	27:d:77:TYR:HB3	2.19	0.41
31:h:17:GLY:HA2	31:h:40:ASN:HA	2.03	0.41
32:i:101:ASP:OD1	32:i:101:ASP:N	2.52	0.41
36:m:76:ASP:OD1	36:m:76:ASP:N	2.52	0.41
38:o:101:ILE:HD12	38:o:104:MET:HE3	2.02	0.41
39:p:31:TYR:O	39:p:35:LYS:HG3	2.20	0.41
39:p:53:LYS:HA	39:p:56:PHE:HB2	2.02	0.41
39:p:102:PRO:O	39:p:103:SER:OG	2.34	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:281:U:H2'	50:3:282:C:C6	2.55	0.41
50:3:486:G:H2'	50:3:487:C:H5	1.86	0.41
50:3:1340:U:N3	50:3:1368:U:O4	2.52	0.41
50:3:1495:A:OP2	50:3:1548:A:N6	2.49	0.41
50:3:1759:C:H2'	50:3:1760:G:C8	2.54	0.41
50:3:2068:G:H8	50:3:2509:C:O2'	2.04	0.41
50:3:2359:G:C6	50:3:2373:G:C6	3.09	0.41
50:3:2767:G:H2'	50:3:2768:U:C6	2.56	0.41
50:3:2829:G:H5''	50:3:2830:A:N7	2.35	0.41
52:5:129:U:H3	52:5:215:C:N4	2.17	0.41
52:5:553:C:H2'	52:5:554:C:C6	2.55	0.41
52:5:968:G:OP2	52:5:969:A:O2'	2.38	0.41
52:5:1000:A:H2'	52:5:1001:A:C8	2.56	0.41
52:5:1219:C:H2'	52:5:1220:A:C8	2.54	0.41
52:5:1395:C:H2'	52:5:1396:U:C6	2.55	0.41
52:5:1406:U:H2'	52:5:1407:A:H8	1.85	0.41
53:8:38:G:H3'	53:8:39:A:C8	2.54	0.41
53:8:67:C:H2'	53:8:68:G:C8	2.51	0.41
4:A:33:VAL:HG12	4:A:203:ASN:HD21	1.86	0.41
4:A:172:LEU:H	4:A:172:LEU:HD23	1.85	0.41
6:C:135:ILE:HG12	52:5:618:U:C2	2.56	0.41
13:J:8:ASN:CG	13:J:9:VAL:H	2.28	0.41
19:P:41:ARG:HA	52:5:276:U:H6	1.85	0.41
21:R:12:ASP:HB3	21:R:15:LEU:HD13	2.02	0.41
24:a:219:ASN:HA	24:a:222:ARG:HG2	2.02	0.41
37:n:3:THR:C	37:n:5:THR:H	2.28	0.41
50:3:155:A:N6	50:3:178:A:H61	2.18	0.41
50:3:182:C:H2'	50:3:183:A:O4'	2.20	0.41
50:3:203:A:H61	50:3:2441:A:H3'	1.85	0.41
50:3:366:A:O2'	50:3:369:C:N4	2.53	0.41
50:3:368:C:OP1	50:3:369:C:N4	2.54	0.41
50:3:425:U:H4'	50:3:426:U:OP2	2.19	0.41
50:3:642:A:OP2	50:3:655:G:N1	2.37	0.41
50:3:759:U:C2'	50:3:760:G:H5'	2.51	0.41
50:3:2204:C:O2	50:3:2206:A:N6	2.52	0.41
50:3:2507:C:H2'	50:3:2508:U:C6	2.55	0.41
50:3:2603:G:C2	50:3:2605:G:H8	2.39	0.41
50:3:2661:U:C5	50:3:2662:A:H2'	2.55	0.41
52:5:90:G:H2'	52:5:91:C:C6	2.55	0.41
52:5:744:U:H4'	52:5:745:U:H5	1.85	0.41
52:5:799:A:H3'	52:5:800:G:C8	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1279:G:H2'	52:5:1306:A:H61	1.86	0.41
52:5:1290:G:H2'	52:5:1292:A:OP2	2.20	0.41
13:J:40:SER:HB2	13:J:50:LYS:HB2	2.02	0.41
30:g:42:LYS:HE3	31:h:115:ASN:HB2	2.02	0.41
37:n:34:LYS:NZ	37:n:101:ARG:HB2	2.25	0.41
50:3:228:A:H61	50:3:236:G:N2	2.18	0.41
50:3:596:G:O6	50:3:611:A:N1	2.53	0.41
50:3:598:G:O6	50:3:610:G:C2	2.74	0.41
50:3:618:G:H3'	50:3:1281:A:N6	2.35	0.41
50:3:734:A:N3	50:3:1667:G:O2'	2.48	0.41
50:3:771:C:H2'	50:3:772:C:C6	2.56	0.41
50:3:1057:G:O2'	50:3:1059:G:O6	2.29	0.41
50:3:1134:G:H2'	50:3:1135:C:C6	2.55	0.41
50:3:1706:C:H2'	50:3:1707:U:H4'	2.01	0.41
50:3:1765:G:N2	50:3:2704:U:H4'	2.36	0.41
50:3:1841:U:O2'	50:3:1976:A:H2'	2.20	0.41
50:3:1860:A:H2'	50:3:1861:A:O4'	2.20	0.41
50:3:1965:C:H2'	50:3:1966:G:H8	1.81	0.41
50:3:2740:U:H5''	50:3:2741:A:C8	2.55	0.41
52:5:403:A:N1	52:5:433:C:C4	2.89	0.41
52:5:677:C:H2'	52:5:678:A:C8	2.56	0.41
52:5:781:A:H2'	52:5:782:G:C8	2.56	0.41
52:5:1036:C:H2'	52:5:1037:A:H8	1.86	0.41
52:5:1105:C:C2	52:5:1106:U:C5	3.08	0.41
52:5:1359:C:N4	52:5:1360:G:O6	2.53	0.41
53:8:44:U:H3'	53:8:45:G:H8	1.85	0.41
4:A:37:TRP:HB2	4:A:204:THR:OG1	2.19	0.41
6:C:1:MET:HB3	52:5:544:A:C6	2.55	0.41
11:H:40:TYR:CD1	52:5:1223:A:H4'	2.55	0.41
20:Q:84:ARG:HB3	20:Q:88:LYS:NZ	2.35	0.41
23:T:31:ARG:HE	23:T:32:HIS:CE1	2.37	0.41
23:T:48:ILE:O	23:T:52:LYS:HG2	2.21	0.41
32:i:88:LYS:HB2	32:i:88:LYS:HE3	1.80	0.41
33:j:70:GLN:HA	33:j:76:HIS:ND1	2.35	0.41
35:l:32:TYR:HB2	35:l:114:MET:SD	2.60	0.41
37:n:81:LEU:HD22	37:n:114:LEU:HD11	2.02	0.41
39:p:31:TYR:CZ	39:p:35:LYS:HD3	2.55	0.41
41:r:21:CYS:O	41:r:25:VAL:N	2.54	0.41
50:3:115:U:H3'	50:3:115:U:OP2	2.20	0.41
50:3:337:U:H2'	50:3:338:G:C8	2.56	0.41
50:3:847:C:H5''	50:3:1280:G:O2'	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1010:G:H1'	50:3:1026:A:N6	2.35	0.41
50:3:1262:G:H2'	50:3:1263:G:N9	2.36	0.41
50:3:1324:A:OP2	50:3:1324:A:H8	2.04	0.41
50:3:1928:G:H2'	50:3:1929:G:C8	2.48	0.41
50:3:2127:G:N3	50:3:2127:G:H2'	2.35	0.41
50:3:2271:C:H2'	50:3:2272:C:C6	2.55	0.41
50:3:2388:C:H2'	50:3:2389:A:C8	2.56	0.41
50:3:2516:G:H2'	50:3:2517:A:H5'	2.01	0.41
50:3:2677:A:H2'	50:3:2678:A:C8	2.56	0.41
52:5:193:G:H2'	52:5:194:U:O4'	2.21	0.41
52:5:435:U:H1'	52:5:437:U:O4	2.21	0.41
52:5:1065:G:H2'	52:5:1066:U:C6	2.55	0.41
52:5:1069:U:H2'	52:5:1070:G:C4	2.56	0.41
52:5:1337:U:H5'	52:5:1338:A:H5'	2.03	0.41
52:5:1435:G:H2'	52:5:1436:C:C6	2.56	0.41
5:B:187:TYR:CE1	5:B:202:LYS:HB3	2.53	0.41
6:C:14:LEU:HD13	6:C:59:ARG:HG3	2.02	0.41
8:E:14:SER:N	8:E:17:GLN:HE22	2.19	0.41
9:F:113:LYS:NZ	9:F:114:THR:OG1	2.50	0.41
24:a:120:LYS:HE3	24:a:120:LYS:HB3	1.85	0.41
24:a:127:PRO:HA	24:a:140:PHE:HB3	2.02	0.41
26:c:52:ILE:HB	26:c:93:PRO:HD2	2.01	0.41
27:d:12:ILE:O	27:d:16:LEU:HG	2.20	0.41
29:f:26:ALA:HB3	29:f:28:HIS:CD2	2.56	0.41
29:f:51:LEU:O	29:f:55:GLN:HG2	2.20	0.41
29:f:57:HIS:HA	29:f:60:ILE:HG12	2.02	0.41
35:l:3:GLN:HB3	35:l:93:TRP:CD1	2.55	0.41
36:m:46:ASP:OD1	36:m:47:LYS:N	2.53	0.41
37:n:1:MET:HG2	37:n:2:LYS:HD3	2.01	0.41
38:o:64:PHE:CE1	38:o:79:PHE:HB2	2.56	0.41
50:3:545:C:H2'	50:3:546:U:C6	2.56	0.41
50:3:658:G:H2'	50:3:659:C:C6	2.56	0.41
50:3:760:G:H8	50:3:760:G:OP2	2.03	0.41
50:3:859:G:N3	50:3:2366:A:N6	2.69	0.41
50:3:1479:A:H4'	50:3:1480:A:C5	2.56	0.41
50:3:1523:C:O4'	50:3:1611:C:H5'	2.20	0.41
50:3:1544:G:C2	50:3:1545:A:C5	3.09	0.41
50:3:1551:U:H2'	50:3:1552:C:H6	1.85	0.41
50:3:1646:G:H2'	50:3:1647:A:H8	1.85	0.41
50:3:1786:U:H5''	50:3:1787:A:H5'	2.02	0.41
52:5:84:U:H2'	52:5:85:U:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:397:C:N4	52:5:398:G:O6	2.53	0.41
52:5:619:A:H5''	52:5:620:A:OP1	2.21	0.41
52:5:927:C:H2'	52:5:928:G:C8	2.55	0.41
52:5:949:G:N2	52:5:1202:A:H62	2.19	0.41
52:5:1272:C:H4'	52:5:1273:A:H5'	2.03	0.41
52:5:1317:A:O2'	52:5:1318:C:H5'	2.21	0.41
53:8:50:G:H2'	53:8:51:G:H8	1.86	0.41
2:1:33:LYS:HD3	2:1:33:LYS:N	2.36	0.41
8:E:158:ASP:HA	10:G:78:GLN:HA	2.03	0.41
25:b:163:LYS:HA	25:b:163:LYS:HD3	1.89	0.41
26:c:6:LEU:HB3	26:c:14:GLU:O	2.21	0.41
26:c:59:ARG:NH2	50:3:488:G:N7	2.66	0.41
28:e:25:ILE:HD12	28:e:36:LEU:HD23	2.03	0.41
35:l:109:ILE:O	35:l:114:MET:HE2	2.21	0.41
36:m:82:LEU:HD12	36:m:86:VAL:HB	2.02	0.41
37:n:12:HIS:NE2	51:4:6:U:H5''	2.36	0.41
50:3:26:G:C5	50:3:27:U:C4	3.09	0.41
50:3:95:G:H2'	50:3:96:A:C8	2.55	0.41
50:3:213:C:H2'	50:3:214:C:C6	2.55	0.41
50:3:711:A:N6	50:3:2076:G:O2'	2.54	0.41
50:3:1341:U:H5''	50:3:1342:C:C5	2.56	0.41
50:3:1547:G:OP2	50:3:1548:A:O2'	2.32	0.41
50:3:1636:U:H3'	50:3:1637:A:H5''	2.03	0.41
50:3:2412:A:N6	50:3:2422:G:O6	2.54	0.41
50:3:2496:G:H2'	50:3:2497:U:C6	2.56	0.41
50:3:2701:A:H2'	50:3:2702:G:H8	1.81	0.41
52:5:788:G:N2	52:5:1472:G:H4'	2.35	0.41
52:5:827:C:H2'	52:5:828:U:C6	2.55	0.41
52:5:961:G:O6	53:8:35:G:H5'	2.20	0.41
52:5:1455:G:H2'	52:5:1456:U:O4'	2.21	0.41
1:0:12:ARG:HH21	1:0:44:VAL:HB	1.86	0.41
1:0:25:ALA:O	1:0:29:LYS:HG2	2.21	0.41
4:A:31:GLY:HA3	4:A:53:ASN:HB3	2.03	0.41
4:A:61:GLN:HB2	4:A:216:PRO:HG2	2.02	0.41
4:A:88:LYS:HE3	4:A:219:ASN:HB3	2.02	0.41
9:F:69:MET:HA	9:F:70:PRO:HD3	1.94	0.41
10:G:41:LYS:HA	10:G:44:ILE:HG22	2.03	0.41
11:H:12:ARG:HG3	11:H:76:GLY:HA2	2.03	0.41
15:L:25:ILE:HD11	15:L:30:SER:N	2.35	0.41
15:L:44:ARG:HE	52:5:1271:U:P	2.42	0.41
15:L:101:ARG:HD3	52:5:945:U:O5'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:L:113:ARG:NH1	52:5:941:A:OP1	2.54	0.41
19:P:34:LEU:HD12	19:P:34:LEU:HA	1.86	0.41
27:d:17:GLN:OE1	27:d:18:LYS:NZ	2.54	0.41
27:d:38:MET:HE2	27:d:38:MET:HB3	1.99	0.41
35:l:76:LYS:HA	35:l:76:LYS:HD3	1.82	0.41
37:n:12:HIS:O	37:n:16:VAL:HG13	2.21	0.41
37:n:34:LYS:HZ1	37:n:102:ILE:HG12	1.86	0.41
38:o:44:ARG:HG3	52:5:342:G:H4'	2.02	0.41
39:p:92:LYS:HD2	39:p:92:LYS:H	1.86	0.41
40:q:13:LEU:HD23	40:q:13:LEU:H	1.86	0.41
41:r:17:ALA:O	41:r:18:ARG:C	2.64	0.41
41:r:88:ARG:HG3	41:r:94:ASN:HB2	2.03	0.41
42:s:24:THR:HG23	42:s:26:LYS:HB2	2.03	0.41
45:v:12:PRO:HG2	50:3:1393:A:OP1	2.20	0.41
46:w:95:LYS:HE3	46:w:95:LYS:HB3	1.85	0.41
47:x:41:LYS:HD3	47:x:41:LYS:N	2.36	0.41
50:3:246:G:N2	50:3:258:G:H3'	2.35	0.41
50:3:428:U:C4	50:3:429:U:O4	2.74	0.41
50:3:598:G:C6	50:3:599:U:C4	3.08	0.41
50:3:612:G:H2'	50:3:613:C:C6	2.56	0.41
50:3:853:G:H3'	50:3:1218:G:H1	1.85	0.41
50:3:941:C:N4	50:3:942:A:H62	2.19	0.41
50:3:1001:C:H2'	50:3:1002:A:C8	2.55	0.41
50:3:1093:U:C4	50:3:1115:G:O6	2.74	0.41
50:3:1366:G:H2'	50:3:1367:G:O4'	2.20	0.41
50:3:1371:G:H2'	50:3:1371:G:N3	2.36	0.41
50:3:1425:U:H3'	50:3:1426:C:H5	1.86	0.41
50:3:1434:U:H2'	50:3:1435:A:C8	2.55	0.41
50:3:1938:U:H2'	50:3:1939:A:H8	1.86	0.41
50:3:2018:U:H2'	50:3:2019:G:O4'	2.20	0.41
50:3:2070:C:H42	50:3:2458:A:H61	1.68	0.41
50:3:2132:G:O2'	50:3:2181:A:N6	2.39	0.41
50:3:2229:C:C2	50:3:2230:A:N7	2.89	0.41
50:3:2239:U:H2'	50:3:2240:U:C6	2.56	0.41
50:3:2421:U:H2'	50:3:2422:G:C8	2.56	0.41
50:3:2468:U:C2	50:3:2469:A:C8	3.09	0.41
50:3:2481:U:O2	50:3:2481:U:H2'	2.21	0.41
50:3:2691:C:N3	50:3:2735:G:O2'	2.32	0.41
50:3:2706:U:H3	50:3:2717:G:H1	1.69	0.41
50:3:2857:C:H2'	50:3:2858:A:C8	2.55	0.41
52:5:42:G:H2'	52:5:43:G:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:53:U:H3	52:5:355:A:H61	1.69	0.41
52:5:198:A:H2	52:5:218:U:H1'	1.86	0.41
52:5:245:U:O4	52:5:271:G:O6	2.38	0.41
52:5:262:G:H1	52:5:267:C:H42	1.69	0.41
52:5:285:G:H2'	52:5:286:C:C6	2.55	0.41
52:5:300:A:H2'	52:5:301:G:C8	2.56	0.41
52:5:319:U:H2'	52:5:320:G:N9	2.36	0.41
52:5:361:U:H6	52:5:361:U:H2'	1.72	0.41
52:5:366:C:H2'	52:5:367:A:H8	1.84	0.41
52:5:557:A:H4'	52:5:558:U:H5''	2.02	0.41
52:5:785:U:O2'	52:5:786:U:O4'	2.35	0.41
52:5:891:C:H2'	52:5:892:G:H8	1.86	0.41
52:5:932:A:H1'	52:5:1354:G:C2	2.56	0.41
52:5:1059:G:OP1	52:5:1362:G:O2'	2.39	0.41
52:5:1154:A:H2'	52:5:1155:A:N9	2.36	0.41
1:0:41:GLN:NE2	1:0:43:THR:O	2.54	0.41
4:A:236:VAL:O	4:A:240:LYS:HG2	2.21	0.41
24:a:47:ARG:CZ	50:3:725:G:H21	2.33	0.41
24:a:152:LEU:HG	24:a:153:HIS:ND1	2.36	0.41
25:b:55:ASP:HB3	25:b:79:LYS:HB3	2.01	0.41
30:g:41:ARG:HE	50:3:1117:U:H4'	1.86	0.41
31:h:58:TYR:HD2	31:h:61:LYS:HG2	1.86	0.41
32:i:113:PRO:HD3	50:3:1043:C:H4'	2.03	0.41
34:k:18:LYS:N	50:3:698:A:OP1	2.54	0.41
38:o:54:ARG:NH1	50:3:2693:U:OP1	2.29	0.41
39:p:7:LYS:HD3	50:3:1245:G:H5''	2.03	0.41
43:t:53:LYS:HB3	43:t:53:LYS:HE3	1.69	0.41
49:z:8:ARG:HH11	49:z:20:LEU:HD12	1.86	0.41
50:3:321:A:H2'	50:3:322:A:C8	2.56	0.41
50:3:525:A:C6	50:3:1312:A:N1	2.88	0.41
50:3:889:G:H1	50:3:962:U:H3	1.68	0.41
50:3:1010:G:O2'	50:3:1011:A:O5'	2.35	0.41
50:3:1082:A:H8	50:3:1082:A:O5'	2.04	0.41
50:3:1213:U:C2'	50:3:1214:U:H5'	2.51	0.41
50:3:1225:A:H3'	50:3:1226:G:H5''	2.03	0.41
50:3:1455:A:N6	50:3:1604:A:H3'	2.33	0.41
50:3:2100:G:C8	50:3:2233:A:H2'	2.56	0.41
50:3:2243:G:O2'	50:3:2244:U:H5'	2.21	0.41
50:3:2267:G:H2'	50:3:2268:C:H6	1.85	0.41
50:3:2436:G:H4'	50:3:2437:G:C4	2.56	0.41
52:5:258:A:H2'	52:5:259:A:C4	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:492:G:O2'	52:5:494:A:H1'	2.21	0.41
52:5:828:U:H2'	52:5:829:G:H5''	2.02	0.41
52:5:930:A:H2'	52:5:931:C:H6	1.85	0.41
52:5:1507:U:H2'	52:5:1508:C:O4'	2.21	0.41
53:8:18:C:H3'	53:8:20:G:P	2.61	0.41
4:A:38:ASN:HB2	4:A:205:ASN:HA	2.03	0.40
6:C:178:TYR:OH	6:C:181:PHE:HA	2.20	0.40
7:D:177:ASP:OD1	7:D:177:ASP:N	2.54	0.40
8:E:2:GLN:HE22	8:E:90:LEU:HD13	1.86	0.40
8:E:5:ILE:HG13	8:E:62:PHE:CE1	2.56	0.40
10:G:44:ILE:O	10:G:47:ILE:HG22	2.21	0.40
13:J:76:LYS:HA	13:J:76:LYS:HD2	1.92	0.40
14:K:43:LYS:HD3	14:K:43:LYS:HA	1.94	0.40
24:a:225:ARG:HH11	24:a:225:ARG:HB3	1.86	0.40
26:c:19:LYS:HB2	26:c:19:LYS:HE2	1.76	0.40
26:c:136:THR:O	26:c:167:ASN:ND2	2.53	0.40
27:d:94:GLU:CD	27:d:94:GLU:H	2.28	0.40
29:f:102:HIS:NE2	29:f:107:ALA:HA	2.36	0.40
32:i:8:THR:HB	39:p:100:LYS:HB3	2.03	0.40
35:l:20:LYS:HE3	51:4:76:A:H5''	2.03	0.40
36:m:94:PRO:O	50:3:2843:G:N2	2.42	0.40
38:o:25:PHE:HE2	38:o:52:VAL:HG11	1.85	0.40
44:u:38:LYS:HD3	44:u:38:LYS:HA	1.76	0.40
50:3:359:G:H2'	50:3:360:G:C8	2.56	0.40
50:3:500:U:H2'	50:3:501:G:O4'	2.20	0.40
50:3:644:C:H2'	50:3:645:C:C6	2.56	0.40
50:3:680:A:C2	50:3:2377:A:H1'	2.55	0.40
50:3:1012:G:H21	50:3:1190:A:H1'	1.86	0.40
50:3:1076:U:C2	50:3:1149:G:O6	2.74	0.40
50:3:1249:A:O3'	50:3:1250:A:H2'	2.21	0.40
50:3:1468:U:H2'	50:3:1469:C:C6	2.55	0.40
50:3:1804:A:C6	50:3:1830:G:C6	3.09	0.40
50:3:1929:G:C2	50:3:1930:U:C5	3.09	0.40
50:3:2516:G:C2'	50:3:2517:A:H5'	2.51	0.40
50:3:2702:G:N1	50:3:2724:U:N3	2.69	0.40
50:3:2803:G:C2	50:3:2807:G:H5'	2.55	0.40
51:4:69:C:H2'	51:4:70:G:O4'	2.21	0.40
52:5:262:G:H1	52:5:267:C:N4	2.18	0.40
52:5:672:A:H61	52:5:712:A:H61	1.67	0.40
52:5:782:G:H2'	52:5:783:G:H8	1.85	0.40
52:5:1064:U:H2'	52:5:1065:G:C8	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1243:A:O2'	52:5:1244:A:O4'	2.23	0.40
52:5:1288:C:O2'	52:5:1289:U:H5'	2.21	0.40
3:2:25:VAL:HG22	3:2:34:GLN:H	1.86	0.40
6:C:19:LEU:HD12	6:C:22:ASN:HB2	2.03	0.40
12:I:12:LEU:H	12:I:82:LEU:HB3	1.85	0.40
13:J:111:HIS:CE1	52:5:672:A:H1'	2.56	0.40
14:K:10:LYS:HA	14:K:11:PRO:HD3	1.93	0.40
14:K:121:GLU:CD	14:K:121:GLU:H	2.27	0.40
14:K:136:LYS:NZ	52:5:38:U:OP1	2.54	0.40
15:L:89:LEU:HD12	15:L:92:ARG:HE	1.86	0.40
21:R:66:MET:HE2	21:R:66:MET:HB2	1.97	0.40
23:T:37:ARG:NH2	52:5:1501:G:OP2	2.50	0.40
24:a:147:VAL:HG12	24:a:200:VAL:HA	2.03	0.40
24:a:176:THR:HG23	24:a:178:LYS:H	1.86	0.40
25:b:70:PHE:HD2	25:b:77:PRO:HA	1.85	0.40
25:b:105:GLY:O	25:b:218:LYS:HG2	2.21	0.40
25:b:134:GLY:N	50:3:2001:C:OP1	2.54	0.40
26:c:75:ARG:HD3	50:3:709:G:H1'	2.02	0.40
27:d:40:VAL:HA	27:d:150:ARG:NH1	2.36	0.40
34:k:146:VAL:O	34:k:147:LYS:HE2	2.22	0.40
35:l:11:LYS:HA	35:l:12:PRO:HD3	1.92	0.40
36:m:39:LYS:HB2	36:m:39:LYS:HE2	1.88	0.40
36:m:59:ASN:O	36:m:63:VAL:HG22	2.21	0.40
37:n:42:GLN:HE22	51:4:5:G:H21	1.68	0.40
44:u:34:ARG:CZ	50:3:2279:G:H5'	2.50	0.40
46:w:57:ILE:O	46:w:61:ARG:NH2	2.54	0.40
49:z:38:CYS:HB2	49:z:47:HIS:CE1	2.57	0.40
50:3:61:U:H2'	50:3:76:A:H2	1.85	0.40
50:3:95:G:H2'	50:3:96:A:C5	2.56	0.40
50:3:416:C:N4	50:3:433:A:N1	2.68	0.40
50:3:592:G:H2'	50:3:593:C:C6	2.56	0.40
50:3:630:C:H2'	50:3:631:A:H8	1.86	0.40
50:3:841:C:O2	50:3:2452:G:O2'	2.39	0.40
50:3:857:U:H2'	50:3:858:A:H8	1.86	0.40
50:3:1224:G:H2'	50:3:1225:A:H8	1.86	0.40
50:3:1960:A:O2'	50:3:2558:G:N2	2.54	0.40
50:3:2880:A:H2'	50:3:2881:A:H8	1.83	0.40
51:4:59:A:H2'	51:4:60:C:C6	2.56	0.40
52:5:291:C:C2'	52:5:292:U:H5'	2.52	0.40
52:5:304:U:H2'	52:5:305:A:C8	2.57	0.40
52:5:355:A:N3	52:5:355:A:H2'	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1418:G:H2'	52:5:1419:C:H6	1.86	0.40
2:1:30:ALA:O	2:1:32:HIS:N	2.52	0.40
4:A:37:TRP:CZ3	4:A:39:PRO:HA	2.56	0.40
11:H:12:ARG:HD3	11:H:108:ARG:NH2	2.37	0.40
15:L:119:LYS:O	52:5:949:G:H5'	2.20	0.40
18:O:65:SER:O	18:O:69:GLN:HG2	2.20	0.40
19:P:32:HIS:HB3	19:P:35:TYR:HB2	2.04	0.40
20:Q:44:CYS:HA	20:Q:82:HIS:CE1	2.56	0.40
20:Q:93:ALA:HB1	20:Q:98:LEU:HD12	2.02	0.40
24:a:58:GLN:HG2	24:a:224:ILE:HG12	2.03	0.40
26:c:143:MET:N	26:c:143:MET:SD	2.94	0.40
26:c:147:LEU:O	26:c:151:LYS:N	2.54	0.40
28:e:102:GLU:HG2	28:e:105:THR:HB	2.03	0.40
32:i:95:MET:SD	32:i:103:LEU:HB2	2.61	0.40
33:j:48:PRO:HG3	52:5:1397:G:H4'	2.03	0.40
34:k:72:PHE:CE1	50:3:2413:G:H4'	2.57	0.40
38:o:54:ARG:HB2	38:o:100:TYR:HD1	1.86	0.40
38:o:98:ARG:HG2	50:3:2852:G:OP1	2.22	0.40
40:q:2:HIS:HA	40:q:15:HIS:HA	2.03	0.40
40:q:39:LEU:HD12	40:q:50:LEU:HG	2.03	0.40
43:t:3:ARG:HE	50:3:370:C:H5'	1.86	0.40
43:t:91:TYR:HD2	50:3:331:A:H5''	1.86	0.40
46:w:13:GLU:O	46:w:71:LYS:NZ	2.53	0.40
50:3:13:C:H2'	50:3:14:U:H4'	2.04	0.40
50:3:71:C:H2'	50:3:72:G:H8	1.83	0.40
50:3:723:U:H1'	50:3:1787:A:C2	2.56	0.40
50:3:1503:A:H3'	50:3:1504:G:H8	1.85	0.40
50:3:1723:A:H2'	50:3:1724:A:C8	2.56	0.40
50:3:1744:U:H2'	50:3:1745:A:H8	1.85	0.40
50:3:2263:G:N3	50:3:2263:G:H2'	2.36	0.40
50:3:2306:A:H3'	50:3:2307:G:H8	1.85	0.40
50:3:2411:C:H2'	50:3:2412:A:C8	2.53	0.40
50:3:2591:G:H2'	50:3:2592:U:O4'	2.21	0.40
52:5:377:A:N3	52:5:377:A:H2'	2.36	0.40
52:5:386:U:H2'	52:5:387:G:C8	2.56	0.40
52:5:516:C:C6	52:5:527:G:H3'	2.56	0.40
52:5:1011:A:O2'	52:5:1012:A:O4'	2.31	0.40
52:5:1187:U:H4'	52:5:1188:A:C8	2.56	0.40
52:5:1230:G:HO2'	52:5:1233:G:HO2'	1.67	0.40
1:0:12:ARG:NH2	50:3:501:G:OP1	2.45	0.40
7:D:139:GLU:N	10:G:109:ASN:OD1	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:D:177:ASP:O	7:D:178:ILE:HD13	2.21	0.40
14:K:55:PRO:HG2	14:K:59:ASN:O	2.21	0.40
17:N:15:HIS:HB2	17:N:18:ASP:CG	2.47	0.40
18:O:31:GLY:HA3	18:O:44:ILE:HG22	2.03	0.40
24:a:68:ILE:O	24:a:108:TYR:HB2	2.21	0.40
24:a:81:ALA:HB2	24:a:101:TYR:CD1	2.57	0.40
26:c:6:LEU:HD12	26:c:127:LEU:O	2.21	0.40
28:e:93:VAL:O	28:e:163:LYS:C	2.64	0.40
37:n:75:GLN:NE2	37:n:111:GLU:OE2	2.54	0.40
42:s:43:ALA:O	42:s:47:VAL:HG13	2.21	0.40
44:u:49:GLN:O	44:u:74:PHE:HB2	2.21	0.40
45:v:22:LYS:N	53:8:77:A:N7	2.60	0.40
48:y:52:ARG:HH11	48:y:55:LYS:HA	1.87	0.40
50:3:181:G:H2'	50:3:182:C:H6	1.86	0.40
50:3:210:U:H2'	50:3:211:A:H8	1.86	0.40
50:3:311:G:O2'	50:3:312:U:OP1	2.34	0.40
50:3:597:C:H2'	50:3:598:G:C8	2.56	0.40
50:3:683:G:H2'	50:3:684:A:H8	1.86	0.40
50:3:695:G:H2'	50:3:696:U:C6	2.56	0.40
50:3:757:A:H2'	50:3:758:C:C6	2.57	0.40
50:3:1373:C:H2'	50:3:1374:U:C6	2.57	0.40
50:3:1672:C:H2'	50:3:1673:U:H6	1.86	0.40
50:3:1747:G:C2	50:3:1753:G:C6	3.09	0.40
50:3:1806:G:N2	50:3:1826:A:OP2	2.53	0.40
50:3:2053:G:H2'	50:3:2054:C:C6	2.56	0.40
50:3:2151:G:N3	50:3:2154:A:N6	2.69	0.40
50:3:2473:C:H2'	50:3:2474:C:H6	1.85	0.40
50:3:2702:G:C2	50:3:2724:U:C2	3.09	0.40
52:5:372:G:H2'	52:5:373:A:H5'	2.02	0.40
52:5:407:A:N7	52:5:425:G:N2	2.69	0.40
52:5:452:A:H3'	52:5:453:C:C6	2.57	0.40
52:5:1366:U:H2'	52:5:1367:G:C8	2.56	0.40
1:0:34:ARG:NH2	50:3:503:G:H3'	2.37	0.40
8:E:86:LEU:HG	20:Q:96:LEU:HD21	2.03	0.40
12:I:96:ILE:O	12:I:97:LYS:HG2	2.21	0.40
13:J:69:GLU:HB2	13:J:70:MET:HE2	2.02	0.40
15:L:29:ARG:O	15:L:33:ILE:HG13	2.22	0.40
24:a:72:LYS:HE3	24:a:72:LYS:HB2	1.89	0.40
24:a:97:SER:HB2	24:a:109:ILE:HG13	2.03	0.40
30:g:44:LEU:H	30:g:44:LEU:HG	1.55	0.40
34:k:68:ALA:N	50:3:667:A:O2'	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:k:115:ILE:HD12	34:k:115:ILE:HA	1.95	0.40
37:n:109:ALA:O	37:n:114:LEU:HB2	2.20	0.40
40:q:12:TYR:CE2	40:q:22:VAL:HG12	2.56	0.40
41:r:127:LYS:NZ	50:3:1262:G:H4'	2.37	0.40
43:t:10:VAL:HG12	43:t:76:LEU:HA	2.04	0.40
44:u:46:ARG:H	44:u:49:GLN:HE21	1.69	0.40
46:w:105:ARG:NH1	50:3:1431:A:H4'	2.35	0.40
46:w:106:GLU:O	46:w:109:SER:OG	2.33	0.40
50:3:242:G:H2'	50:3:243:U:C6	2.57	0.40
50:3:278:U:H2'	50:3:279:U:C6	2.56	0.40
50:3:321:A:H2'	50:3:322:A:H8	1.87	0.40
50:3:513:A:N6	50:3:536:A:OP1	2.54	0.40
50:3:567:U:H4'	50:3:568:G:H8	1.86	0.40
50:3:815:G:H8	50:3:815:G:OP2	2.04	0.40
50:3:862:U:H1'	50:3:2254:G:O2'	2.21	0.40
50:3:1253:G:N1	50:3:1255:G:H3'	2.37	0.40
50:3:1425:U:H3'	50:3:1426:C:C5	2.57	0.40
50:3:1704:C:OP1	50:3:2557:G:H5'	2.21	0.40
50:3:2582:G:H2'	50:3:2583:U:C6	2.55	0.40
50:3:2658:U:H2'	50:3:2659:U:C6	2.56	0.40
50:3:2670:A:H3'	50:3:2671:G:C8	2.56	0.40
51:4:49:G:H2'	51:4:50:C:C6	2.57	0.40
52:5:33:A:H2'	52:5:34:A:C8	2.57	0.40
52:5:39:G:H1	52:5:393:A:P	2.44	0.40
52:5:219:A:H2'	52:5:220:U:C6	2.56	0.40
52:5:372:G:H3'	52:5:373:A:C8	2.55	0.40
52:5:376:G:N1	52:5:378:A:OP2	2.54	0.40
52:5:833:G:N2	52:5:844:U:O2	2.34	0.40
52:5:1091:C:O2'	52:5:1093:A:OP1	2.40	0.40
52:5:1147:U:H2'	52:5:1148:U:H6	1.85	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	
1	0	45/48 (94%)	43 (96%)	2 (4%)	0	100	100
2	1	57/59 (97%)	52 (91%)	5 (9%)	0	100	100
3	2	35/37 (95%)	33 (94%)	2 (6%)	0	100	100
4	A	238/294 (81%)	225 (94%)	13 (6%)	0	100	100
5	B	213/273 (78%)	200 (94%)	13 (6%)	0	100	100
6	C	201/205 (98%)	188 (94%)	13 (6%)	0	100	100
7	D	151/219 (69%)	150 (99%)	1 (1%)	0	100	100
8	E	165/215 (77%)	148 (90%)	17 (10%)	0	100	100
9	F	152/155 (98%)	136 (90%)	16 (10%)	0	100	100
10	G	139/142 (98%)	126 (91%)	13 (9%)	0	100	100
11	H	126/132 (96%)	111 (88%)	15 (12%)	0	100	100
12	I	99/108 (92%)	90 (91%)	9 (9%)	0	100	100
13	J	112/121 (93%)	109 (97%)	3 (3%)	0	100	100
14	K	134/139 (96%)	124 (92%)	9 (7%)	1 (1%)	18	56
15	L	116/124 (94%)	102 (88%)	14 (12%)	0	100	100
16	M	58/61 (95%)	55 (95%)	3 (5%)	0	100	100
17	N	81/86 (94%)	80 (99%)	1 (1%)	0	100	100
18	O	78/94 (83%)	76 (97%)	2 (3%)	0	100	100
19	P	81/85 (95%)	79 (98%)	2 (2%)	0	100	100
20	Q	63/104 (61%)	55 (87%)	8 (13%)	0	100	100
21	R	82/87 (94%)	74 (90%)	8 (10%)	0	100	100
22	S	75/87 (86%)	74 (99%)	1 (1%)	0	100	100
23	T	51/60 (85%)	50 (98%)	1 (2%)	0	100	100
24	a	283/287 (99%)	264 (93%)	19 (7%)	0	100	100
25	b	227/287 (79%)	208 (92%)	19 (8%)	0	100	100
26	c	208/212 (98%)	192 (92%)	16 (8%)	0	100	100
27	d	173/180 (96%)	159 (92%)	14 (8%)	0	100	100
28	e	174/184 (95%)	161 (92%)	13 (8%)	0	100	100
29	f	143/149 (96%)	130 (91%)	13 (9%)	0	100	100
30	g	119/161 (74%)	100 (84%)	16 (13%)	3 (2%)	4	26

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
31	h	126/137 (92%)	120 (95%)	6 (5%)	0	100	100
32	i	142/146 (97%)	133 (94%)	9 (6%)	0	100	100
33	j	120/122 (98%)	114 (95%)	6 (5%)	0	100	100
34	k	146/151 (97%)	140 (96%)	6 (4%)	0	100	100
35	l	134/139 (96%)	127 (95%)	7 (5%)	0	100	100
36	m	117/124 (94%)	115 (98%)	2 (2%)	0	100	100
37	n	108/116 (93%)	102 (94%)	6 (6%)	0	100	100
38	o	113/119 (95%)	110 (97%)	3 (3%)	0	100	100
39	p	112/127 (88%)	110 (98%)	2 (2%)	0	100	100
40	q	97/100 (97%)	85 (88%)	12 (12%)	0	100	100
41	r	137/159 (86%)	128 (93%)	9 (7%)	0	100	100
42	s	90/237 (38%)	88 (98%)	2 (2%)	0	100	100
43	t	109/111 (98%)	101 (93%)	8 (7%)	0	100	100
44	u	84/104 (81%)	78 (93%)	6 (7%)	0	100	100
45	v	61/65 (94%)	56 (92%)	5 (8%)	0	100	100
46	w	96/111 (86%)	92 (96%)	4 (4%)	0	100	100
47	x	42/97 (43%)	42 (100%)	0	0	100	100
48	y	54/57 (95%)	50 (93%)	3 (6%)	1 (2%)	6	32
49	z	48/53 (91%)	45 (94%)	3 (6%)	0	100	100
All	All	5815/6670 (87%)	5430 (93%)	380 (6%)	5 (0%)	49	83

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
14	K	122	LYS
30	g	86	VAL
30	g	30	THR
48	y	51	LEU
30	g	88	GLU

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	40/41 (98%)	40 (100%)	0	100	100
2	1	51/51 (100%)	51 (100%)	0	100	100
3	2	35/35 (100%)	35 (100%)	0	100	100
4	A	212/262 (81%)	212 (100%)	0	100	100
5	B	180/232 (78%)	180 (100%)	0	100	100
6	C	181/183 (99%)	181 (100%)	0	100	100
7	D	123/178 (69%)	123 (100%)	0	100	100
8	E	150/196 (76%)	150 (100%)	0	100	100
9	F	131/132 (99%)	131 (100%)	0	100	100
10	G	123/124 (99%)	123 (100%)	0	100	100
11	H	111/115 (96%)	111 (100%)	0	100	100
12	I	95/99 (96%)	95 (100%)	0	100	100
13	J	91/97 (94%)	91 (100%)	0	100	100
14	K	117/120 (98%)	114 (97%)	3 (3%)	40	62
15	L	100/105 (95%)	100 (100%)	0	100	100
16	M	47/48 (98%)	47 (100%)	0	100	100
17	N	76/78 (97%)	76 (100%)	0	100	100
18	O	69/82 (84%)	69 (100%)	0	100	100
19	P	73/75 (97%)	73 (100%)	0	100	100
20	Q	56/94 (60%)	56 (100%)	0	100	100
21	R	74/77 (96%)	74 (100%)	0	100	100
22	S	70/77 (91%)	70 (100%)	0	100	100
23	T	49/56 (88%)	49 (100%)	0	100	100
24	a	241/243 (99%)	241 (100%)	0	100	100
25	b	186/233 (80%)	186 (100%)	0	100	100
26	c	182/184 (99%)	182 (100%)	0	100	100
27	d	150/154 (97%)	150 (100%)	0	100	100
28	e	153/159 (96%)	153 (100%)	0	100	100
29	f	131/134 (98%)	131 (100%)	0	100	100
30	g	99/129 (77%)	89 (90%)	10 (10%)	7	23

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
31	h	102/110 (93%)	102 (100%)	0	100	100
32	i	126/128 (98%)	126 (100%)	0	100	100
33	j	103/103 (100%)	103 (100%)	0	100	100
34	k	123/126 (98%)	123 (100%)	0	100	100
35	l	113/115 (98%)	113 (100%)	0	100	100
36	m	105/109 (96%)	105 (100%)	0	100	100
37	n	96/99 (97%)	96 (100%)	0	100	100
38	o	101/105 (96%)	101 (100%)	0	100	100
39	p	100/108 (93%)	100 (100%)	0	100	100
40	q	90/91 (99%)	90 (100%)	0	100	100
41	r	116/132 (88%)	116 (100%)	0	100	100
42	s	82/208 (39%)	81 (99%)	1 (1%)	63	75
43	t	96/96 (100%)	96 (100%)	0	100	100
44	u	69/85 (81%)	69 (100%)	0	100	100
45	v	58/60 (97%)	58 (100%)	0	100	100
46	w	87/98 (89%)	87 (100%)	0	100	100
47	x	41/86 (48%)	41 (100%)	0	100	100
48	y	48/49 (98%)	45 (94%)	3 (6%)	16	37
49	z	47/50 (94%)	47 (100%)	0	100	100
All	All	5099/5751 (89%)	5082 (100%)	17 (0%)	84	86

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

Mol	Chain	Res	Type
14	K	117	THR
14	K	121	GLU
14	K	122	LYS
30	g	29	TYR
30	g	30	THR
30	g	43	LYS
30	g	44	LEU
30	g	45	PHE
30	g	46	LYS
30	g	47	ASN
30	g	87	ASN

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Mol	Chain	Res	Type
30	g	89	ILE
30	g	113	PHE
42	s	5	ASN
48	y	47	MET
48	y	48	TYR
48	y	50	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (75) such sidechains are listed below:

Mol	Chain	Res	Type
4	A	70	ASN
4	A	77	GLN
4	A	97	ASN
4	A	137	GLN
4	A	219	ASN
4	A	220	HIS
4	A	221	GLN
4	A	223	GLN
5	B	3	GLN
5	B	25	ASN
6	C	37	GLN
6	C	40	ASN
6	C	99	ASN
7	D	182	ASN
8	E	20	GLN
8	E	106	GLN
11	H	62	ASN
11	H	77	GLN
13	J	21	ASN
13	J	22	ASN
13	J	112	ASN
14	K	88	GLN
15	L	40	ASN
15	L	91	HIS
18	O	32	HIS
19	P	5	GLN
20	Q	48	GLN
20	Q	82	HIS
20	Q	83	GLN
21	R	79	ASN
22	S	7	ASN
22	S	13	GLN

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Mol	Chain	Res	Type
22	S	31	ASN
23	T	8	ASN
24	a	11	ASN
24	a	16	HIS
24	a	29	ASN
24	a	269	ASN
25	b	35	GLN
25	b	157	GLN
26	c	182	HIS
28	e	33	GLN
28	e	52	ASN
28	e	54	GLN
28	e	72	ASN
28	e	114	HIS
29	f	61	ASN
29	f	78	HIS
29	f	109	GLN
29	f	116	ASN
30	g	47	ASN
31	h	106	GLN
32	i	43	ASN
32	i	61	ASN
32	i	126	HIS
34	k	24	HIS
34	k	109	GLN
35	l	89	ASN
35	l	113	GLN
36	m	20	GLN
36	m	59	ASN
38	o	5	ASN
38	o	47	ASN
39	p	19	GLN
39	p	106	ASN
41	r	78	GLN
41	r	121	GLN
42	s	19	ASN
42	s	56	ASN
43	t	2	GLN
45	v	62	ASN
46	w	9	GLN
46	w	35	HIS
46	w	89	GLN

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Mol	Chain	Res	Type
48	y	25	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
50	3	2875/2907 (98%)	910 (31%)	32 (1%)
51	4	103/108 (95%)	40 (38%)	3 (2%)
52	5	1490/1520 (98%)	432 (28%)	7 (0%)
53	8	75/76 (98%)	29 (38%)	1 (1%)
All	All	4543/4611 (98%)	1411 (31%)	43 (0%)

All (1411) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
50	3	13	C
50	3	14	U
50	3	15	A
50	3	27	U
50	3	29	G
50	3	30	A
50	3	31	U
50	3	33	C
50	3	36	U
50	3	37	G
50	3	38	G
50	3	42	U
50	3	48	G
50	3	52	U
50	3	53	G
50	3	57	G
50	3	63	U
50	3	64	U
50	3	65	A
50	3	68	C
50	3	73	A
50	3	74	U
50	3	76	A
50	3	77	G
50	3	86	A
50	3	87	G
50	3	92	U

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Mol	Chain	Res	Type
50	3	93	A
50	3	95	G
50	3	103	G
50	3	110	A
50	3	113	U
50	3	114	U
50	3	115	U
50	3	119	A
50	3	121	U
50	3	122	G
50	3	125	G
50	3	126	C
50	3	127	A
50	3	132	G
50	3	136	G
50	3	137	U
50	3	139	G
50	3	142	A
50	3	155	A
50	3	163	A
50	3	165	U
50	3	166	A
50	3	170	A
50	3	174	A
50	3	184	A
50	3	198	G
50	3	200	A
50	3	201	A
50	3	203	A
50	3	208	A
50	3	210	U
50	3	218	G
50	3	219	G
50	3	220	A
50	3	225	A
50	3	226	A
50	3	228	A
50	3	229	C
50	3	232	A
50	3	233	U
50	3	234	G
50	3	235	U

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Mol	Chain	Res	Type
50	3	236	G
50	3	245	U
50	3	246	G
50	3	247	U
50	3	252	G
50	3	253	C
50	3	254	G
50	3	261	A
50	3	262	G
50	3	265	G
50	3	269	A
50	3	270	G
50	3	275	A
50	3	276	A
50	3	278	U
50	3	283	A
50	3	284	U
50	3	285	U
50	3	286	A
50	3	287	G
50	3	293	G
50	3	294	G
50	3	295	U
50	3	296	U
50	3	297	G
50	3	299	A
50	3	304	U
50	3	306	G
50	3	312	U
50	3	314	G
50	3	315	A
50	3	320	A
50	3	325	G
50	3	329	G
50	3	330	A
50	3	335	G
50	3	336	C
50	3	342	G
50	3	343	A
50	3	345	A
50	3	351	G
50	3	354	C

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Mol	Chain	Res	Type
50	3	357	A
50	3	358	A
50	3	363	G
50	3	364	A
50	3	366	A
50	3	367	G
50	3	375	U
50	3	376	U
50	3	377	U
50	3	379	A
50	3	383	U
50	3	388	U
50	3	392	A
50	3	396	A
50	3	397	G
50	3	401	G
50	3	402	A
50	3	403	U
50	3	407	U
50	3	408	G
50	3	409	A
50	3	410	G
50	3	411	U
50	3	424	G
50	3	425	U
50	3	426	U
50	3	428	U
50	3	429	U
50	3	432	G
50	3	437	A
50	3	440	C
50	3	441	U
50	3	442	G
50	3	444	C
50	3	447	G
50	3	448	A
50	3	449	C
50	3	460	G
50	3	464	A
50	3	465	A
50	3	466	A
50	3	471	A

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Mol	Chain	Res	Type
50	3	479	A
50	3	483	A
50	3	484	U
50	3	487	C
50	3	490	A
50	3	492	C
50	3	493	A
50	3	495	U
50	3	509	G
50	3	514	A
50	3	515	A
50	3	516	A
50	3	517	G
50	3	518	A
50	3	520	C
50	3	524	G
50	3	531	G
50	3	539	U
50	3	543	U
50	3	544	U
50	3	547	G
50	3	550	A
50	3	553	A
50	3	562	C
50	3	565	C
50	3	566	G
50	3	567	U
50	3	568	G
50	3	570	C
50	3	571	A
50	3	579	U
50	3	581	A
50	3	582	A
50	3	583	U
50	3	584	G
50	3	589	A
50	3	592	G
50	3	595	U
50	3	596	G
50	3	598	G
50	3	599	U
50	3	600	U

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Mol	Chain	Res	Type
50	3	601	U
50	3	604	A
50	3	606	G
50	3	607	U
50	3	608	A
50	3	620	G
50	3	625	G
50	3	637	U
50	3	638	A
50	3	648	G
50	3	649	A
50	3	650	G
50	3	656	G
50	3	657	A
50	3	661	G
50	3	663	A
50	3	664	G
50	3	668	A
50	3	673	A
50	3	681	A
50	3	687	G
50	3	689	U
50	3	691	G
50	3	695	G
50	3	698	A
50	3	703	A
50	3	704	G
50	3	706	C
50	3	708	C
50	3	718	U
50	3	720	A
50	3	721	G
50	3	722	C
50	3	725	G
50	3	730	G
50	3	737	U
50	3	752	C
50	3	760	G
50	3	761	G
50	3	763	G
50	3	764	G
50	3	765	A

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Mol	Chain	Res	Type
50	3	774	A
50	3	779	C
50	3	781	U
50	3	782	U
50	3	783	G
50	3	787	C
50	3	788	G
50	3	792	G
50	3	794	G
50	3	797	U
50	3	800	C
50	3	810	G
50	3	811	G
50	3	814	U
50	3	815	G
50	3	816	A
50	3	817	A
50	3	819	U
50	3	820	U
50	3	824	A
50	3	825	U
50	3	827	G
50	3	828	A
50	3	829	A
50	3	835	U
50	3	838	U
50	3	840	G
50	3	842	U
50	3	847	C
50	3	854	A
50	3	862	U
50	3	863	U
50	3	864	A
50	3	865	A
50	3	880	C
50	3	882	C
50	3	886	U
50	3	888	A
50	3	893	A
50	3	896	U
50	3	904	C
50	3	905	U

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Mol	Chain	Res	Type
50	3	912	A
50	3	914	G
50	3	917	G
50	3	932	U
50	3	933	A
50	3	937	A
50	3	938	A
50	3	940	A
50	3	943	A
50	3	944	U
50	3	947	A
50	3	949	C
50	3	952	U
50	3	953	G
50	3	957	G
50	3	958	C
50	3	962	U
50	3	964	A
50	3	967	U
50	3	968	U
50	3	975	G
50	3	978	G
50	3	980	C
50	3	981	A
50	3	982	G
50	3	989	G
50	3	990	G
50	3	993	A
50	3	994	U
50	3	995	A
50	3	997	G
50	3	998	C
50	3	999	U
50	3	1008	A
50	3	1009	A
50	3	1011	A
50	3	1016	A
50	3	1017	A
50	3	1018	G
50	3	1019	A
50	3	1021	C
50	3	1022	C

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Mol	Chain	Res	Type
50	3	1026	A
50	3	1027	U
50	3	1032	A
50	3	1035	U
50	3	1045	A
50	3	1046	A
50	3	1047	A
50	3	1049	U
50	3	1052	A
50	3	1055	A
50	3	1056	A
50	3	1057	G
50	3	1061	A
50	3	1068	U
50	3	1070	U
50	3	1075	G
50	3	1080	A
50	3	1081	A
50	3	1096	U
50	3	1097	G
50	3	1102	A
50	3	1103	G
50	3	1104	A
50	3	1105	A
50	3	1106	G
50	3	1107	C
50	3	1110	C
50	3	1113	U
50	3	1122	G
50	3	1123	A
50	3	1124	G
50	3	1125	U
50	3	1132	C
50	3	1147	G
50	3	1151	U
50	3	1154	U
50	3	1155	G
50	3	1162	A
50	3	1167	U
50	3	1168	A
50	3	1169	A
50	3	1170	C

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Mol	Chain	Res	Type
50	3	1171	G
50	3	1174	G
50	3	1176	U
50	3	1177	A
50	3	1178	A
50	3	1179	G
50	3	1181	A
50	3	1183	A
50	3	1185	U
50	3	1186	A
50	3	1192	U
50	3	1195	A
50	3	1199	A
50	3	1202	A
50	3	1204	A
50	3	1209	U
50	3	1210	A
50	3	1212	C
50	3	1214	U
50	3	1215	G
50	3	1216	U
50	3	1217	G
50	3	1226	G
50	3	1234	U
50	3	1235	U
50	3	1236	G
50	3	1237	G
50	3	1240	U
50	3	1241	U
50	3	1242	G
50	3	1243	A
50	3	1250	A
50	3	1251	G
50	3	1253	G
50	3	1257	G
50	3	1260	U
50	3	1264	U
50	3	1265	G
50	3	1266	G
50	3	1267	A
50	3	1268	U
50	3	1274	A

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Mol	Chain	Res	Type
50	3	1279	U
50	3	1283	A
50	3	1284	A
50	3	1285	U
50	3	1286	G
50	3	1287	C
50	3	1292	A
50	3	1293	U
50	3	1298	A
50	3	1301	G
50	3	1303	U
50	3	1304	U
50	3	1311	G
50	3	1314	A
50	3	1317	C
50	3	1322	A
50	3	1324	A
50	3	1326	C
50	3	1327	G
50	3	1328	A
50	3	1329	U
50	3	1330	U
50	3	1331	G
50	3	1334	U
50	3	1342	C
50	3	1350	A
50	3	1351	G
50	3	1353	G
50	3	1355	C
50	3	1356	G
50	3	1357	U
50	3	1360	U
50	3	1368	U
50	3	1369	U
50	3	1370	A
50	3	1372	U
50	3	1373	C
50	3	1380	U
50	3	1393	A
50	3	1408	G
50	3	1418	U
50	3	1422	U

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Mol	Chain	Res	Type
50	3	1423	A
50	3	1424	U
50	3	1425	U
50	3	1426	C
50	3	1431	A
50	3	1435	A
50	3	1436	C
50	3	1437	A
50	3	1444	C
50	3	1445	U
50	3	1447	A
50	3	1456	C
50	3	1457	A
50	3	1459	A
50	3	1463	G
50	3	1466	U
50	3	1467	U
50	3	1470	C
50	3	1479	A
50	3	1480	A
50	3	1481	U
50	3	1482	U
50	3	1483	G
50	3	1484	G
50	3	1486	U
50	3	1487	U
50	3	1491	G
50	3	1493	A
50	3	1502	A
50	3	1507	G
50	3	1508	G
50	3	1510	A
50	3	1515	A
50	3	1518	C
50	3	1519	A
50	3	1522	U
50	3	1523	C
50	3	1529	U
50	3	1534	A
50	3	1541	A
50	3	1542	G
50	3	1546	U

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Mol	Chain	Res	Type
50	3	1548	A
50	3	1549	U
50	3	1550	G
50	3	1557	G
50	3	1558	A
50	3	1559	A
50	3	1571	G
50	3	1574	G
50	3	1577	A
50	3	1584	U
50	3	1585	A
50	3	1588	A
50	3	1589	A
50	3	1594	G
50	3	1599	C
50	3	1600	A
50	3	1603	A
50	3	1612	U
50	3	1618	U
50	3	1619	A
50	3	1627	U
50	3	1632	C
50	3	1634	A
50	3	1640	G
50	3	1641	A
50	3	1642	G
50	3	1644	A
50	3	1646	G
50	3	1650	A
50	3	1651	C
50	3	1652	A
50	3	1654	G
50	3	1655	U
50	3	1656	A
50	3	1663	G
50	3	1669	A
50	3	1670	U
50	3	1679	U
50	3	1680	A
50	3	1681	G
50	3	1682	C
50	3	1683	G

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Mol	Chain	Res	Type
50	3	1687	G
50	3	1692	A
50	3	1694	A
50	3	1698	A
50	3	1699	A
50	3	1701	G
50	3	1702	A
50	3	1703	A
50	3	1704	C
50	3	1705	U
50	3	1707	U
50	3	1708	G
50	3	1709	C
50	3	1711	A
50	3	1715	A
50	3	1716	A
50	3	1727	U
50	3	1728	A
50	3	1729	G
50	3	1730	C
50	3	1733	G
50	3	1741	G
50	3	1748	U
50	3	1749	A
50	3	1752	A
50	3	1763	G
50	3	1764	U
50	3	1765	G
50	3	1767	A
50	3	1768	G
50	3	1769	A
50	3	1770	A
50	3	1771	C
50	3	1772	G
50	3	1780	A
50	3	1784	U
50	3	1786	U
50	3	1787	A
50	3	1788	A
50	3	1789	C
50	3	1791	A
50	3	1794	A

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Mol	Chain	Res	Type
50	3	1798	A
50	3	1807	C
50	3	1808	C
50	3	1815	U
50	3	1816	A
50	3	1821	G
50	3	1823	U
50	3	1827	U
50	3	1828	A
50	3	1835	G
50	3	1836	A
50	3	1842	G
50	3	1855	A
50	3	1856	G
50	3	1873	A
50	3	1876	G
50	3	1877	C
50	3	1879	A
50	3	1880	G
50	3	1890	U
50	3	1891	A
50	3	1907	A
50	3	1908	A
50	3	1913	G
50	3	1914	G
50	3	1920	A
50	3	1922	U
50	3	1926	A
50	3	1934	A
50	3	1935	A
50	3	1936	G
50	3	1937	G
50	3	1943	A
50	3	1944	A
50	3	1945	A
50	3	1947	U
50	3	1950	U
50	3	1951	A
50	3	1952	G
50	3	1961	A
50	3	1962	U
50	3	1963	U

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Mol	Chain	Res	Type
50	3	1970	C
50	3	1971	G
50	3	1972	C
50	3	1976	A
50	3	1977	A
50	3	1978	U
50	3	1979	G
50	3	1982	G
50	3	1984	A
50	3	1989	U
50	3	1997	C
50	3	1998	U
50	3	1999	G
50	3	2000	U
50	3	2003	C
50	3	2007	U
50	3	2009	U
50	3	2010	A
50	3	2012	A
50	3	2013	C
50	3	2028	G
50	3	2029	U
50	3	2030	A
50	3	2037	A
50	3	2038	A
50	3	2039	G
50	3	2040	A
50	3	2041	C
50	3	2046	G
50	3	2047	U
50	3	2050	G
50	3	2055	A
50	3	2056	A
50	3	2059	G
50	3	2062	C
50	3	2063	G
50	3	2066	A
50	3	2067	A
50	3	2068	G
50	3	2069	A
50	3	2070	C
50	3	2075	U

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Mol	Chain	Res	Type
50	3	2076	G
50	3	2083	U
50	3	2084	A
50	3	2086	U
50	3	2100	G
50	3	2108	C
50	3	2109	A
50	3	2110	U
50	3	2111	U
50	3	2112	A
50	3	2114	C
50	3	2115	A
50	3	2116	U
50	3	2118	U
50	3	2119	A
50	3	2122	G
50	3	2123	A
50	3	2124	A
50	3	2125	U
50	3	2126	A
50	3	2133	A
50	3	2134	G
50	3	2140	G
50	3	2145	A
50	3	2149	U
50	3	2150	C
50	3	2153	U
50	3	2154	A
50	3	2157	A
50	3	2163	U
50	3	2166	U
50	3	2169	G
50	3	2170	A
50	3	2171	A
50	3	2179	A
50	3	2180	U
50	3	2193	U
50	3	2194	G
50	3	2195	U
50	3	2196	G
50	3	2198	G
50	3	2200	U

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Mol	Chain	Res	Type
50	3	2202	U
50	3	2203	U
50	3	2206	A
50	3	2208	U
50	3	2211	G
50	3	2212	U
50	3	2219	U
50	3	2220	A
50	3	2231	A
50	3	2232	G
50	3	2233	A
50	3	2234	C
50	3	2238	G
50	3	2244	U
50	3	2246	G
50	3	2247	G
50	3	2251	U
50	3	2254	G
50	3	2259	G
50	3	2262	C
50	3	2276	A
50	3	2278	G
50	3	2279	G
50	3	2281	A
50	3	2286	A
50	3	2291	U
50	3	2294	A
50	3	2295	A
50	3	2296	A
50	3	2299	U
50	3	2305	C
50	3	2312	G
50	3	2313	U
50	3	2315	G
50	3	2327	U
50	3	2330	A
50	3	2332	U
50	3	2333	G
50	3	2335	A
50	3	2342	U
50	3	2343	A
50	3	2344	A

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Mol	Chain	Res	Type
50	3	2350	C
50	3	2352	U
50	3	2353	G
50	3	2355	C
50	3	2362	A
50	3	2365	U
50	3	2370	G
50	3	2373	G
50	3	2379	G
50	3	2382	A
50	3	2391	G
50	3	2393	C
50	3	2397	G
50	3	2410	C
50	3	2411	C
50	3	2415	A
50	3	2418	G
50	3	2431	U
50	3	2432	C
50	3	2433	A
50	3	2434	A
50	3	2436	G
50	3	2437	G
50	3	2438	A
50	3	2442	A
50	3	2443	A
50	3	2449	U
50	3	2453	G
50	3	2456	A
50	3	2458	A
50	3	2472	G
50	3	2477	A
50	3	2483	C
50	3	2484	A
50	3	2487	U
50	3	2488	C
50	3	2492	G
50	3	2495	A
50	3	2498	G
50	3	2499	U
50	3	2500	U
50	3	2502	G

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Mol	Chain	Res	Type
50	3	2504	C
50	3	2505	A
50	3	2507	C
50	3	2509	C
50	3	2511	A
50	3	2512	U
50	3	2513	G
50	3	2514	U
50	3	2516	G
50	3	2517	A
50	3	2521	A
50	3	2526	A
50	3	2527	U
50	3	2531	C
50	3	2537	G
50	3	2539	A
50	3	2543	G
50	3	2550	A
50	3	2551	G
50	3	2555	U
50	3	2561	G
50	3	2562	U
50	3	2563	U
50	3	2565	G
50	3	2570	U
50	3	2574	A
50	3	2575	G
50	3	2578	A
50	3	2581	C
50	3	2582	G
50	3	2583	U
50	3	2584	G
50	3	2586	G
50	3	2590	G
50	3	2593	U
50	3	2594	C
50	3	2595	A
50	3	2604	U
50	3	2606	A
50	3	2610	A
50	3	2611	G
50	3	2618	C

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Mol	Chain	Res	Type
50	3	2619	C
50	3	2621	U
50	3	2622	A
50	3	2629	G
50	3	2632	C
50	3	2636	U
50	3	2637	A
50	3	2638	G
50	3	2644	U
50	3	2645	U
50	3	2646	G
50	3	2647	A
50	3	2653	G
50	3	2656	G
50	3	2662	A
50	3	2664	U
50	3	2669	G
50	3	2681	G
50	3	2689	C
50	3	2693	U
50	3	2697	C
50	3	2698	U
50	3	2710	G
50	3	2712	C
50	3	2714	G
50	3	2721	C
50	3	2722	G
50	3	2734	C
50	3	2737	G
50	3	2741	A
50	3	2747	U
50	3	2752	G
50	3	2756	A
50	3	2760	C
50	3	2765	A
50	3	2766	A
50	3	2771	G
50	3	2772	A
50	3	2774	A
50	3	2786	A
50	3	2788	U
50	3	2790	A

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Mol	Chain	Res	Type
50	3	2791	U
50	3	2799	U
50	3	2801	U
50	3	2804	C
50	3	2805	A
50	3	2806	A
50	3	2807	G
50	3	2808	A
50	3	2809	A
50	3	2810	A
50	3	2811	G
50	3	2812	U
50	3	2813	A
50	3	2815	G
50	3	2822	C
50	3	2823	A
50	3	2824	A
50	3	2825	A
50	3	2827	A
50	3	2830	A
50	3	2831	U
50	3	2835	G
50	3	2837	U
50	3	2838	G
50	3	2839	A
50	3	2853	U
50	3	2854	A
50	3	2862	U
50	3	2863	G
50	3	2865	U
50	3	2871	G
50	3	2872	A
50	3	2876	G
50	3	2881	A
50	3	2883	A
50	3	2884	C
50	3	2888	U
50	3	2889	U
50	3	2890	G
50	3	2895	A
50	3	2897	G
50	3	2898	A

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Mol	Chain	Res	Type
50	3	2899	C
51	4	4	G
51	4	8	C
51	4	10	C
51	4	11	A
51	4	19	G
51	4	22	G
51	4	23	A
51	4	24	A
51	4	28	C
51	4	31	G
51	4	32	G
51	4	33	U
51	4	35	C
51	4	39	U
51	4	40	U
51	4	41	C
51	4	42	G
51	4	43	A
51	4	47	C
51	4	48	A
51	4	49	G
51	4	51	A
51	4	54	U
51	4	55	A
51	4	60	C
51	4	66	A
51	4	71	A
51	4	72	A
51	4	73	U
51	4	74	G
51	4	77	G
51	4	78	C
51	4	80	G
51	4	86	G
51	4	88	G
51	4	89	A
51	4	99	A
51	4	102	A
51	4	105	A
51	4	108	C
52	5	6	C

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Mol	Chain	Res	Type
52	5	7	U
52	5	8	G
52	5	9	A
52	5	15	U
52	5	16	G
52	5	27	A
52	5	32	U
52	5	33	A
52	5	36	G
52	5	39	G
52	5	40	G
52	5	45	A
52	5	48	C
52	5	49	C
52	5	52	A
52	5	57	U
52	5	67	U
52	5	73	G
52	5	75	A
52	5	80	U
52	5	86	A
52	5	105	A
52	5	106	C
52	5	107	A
52	5	112	U
52	5	115	A
52	5	117	U
52	5	120	A
52	5	127	A
52	5	128	A
52	5	129	U
52	5	135	A
52	5	145	G
52	5	146	A
52	5	147	A
52	5	148	A
52	5	149	G
52	5	159	U
52	5	163	G
52	5	168	A
52	5	169	G
52	5	173	U

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Mol	Chain	Res	Type
52	5	180	C
52	5	187	A
52	5	197	A
52	5	205	U
52	5	208	A
52	5	222	U
52	5	234	G
52	5	236	C
52	5	240	U
52	5	241	C
52	5	242	A
52	5	243	G
52	5	247	G
52	5	258	A
52	5	259	A
52	5	260	C
52	5	262	G
52	5	271	G
52	5	275	A
52	5	276	U
52	5	285	G
52	5	292	U
52	5	293	G
52	5	296	A
52	5	302	A
52	5	311	A
52	5	312	A
52	5	319	U
52	5	322	G
52	5	323	A
52	5	324	C
52	5	325	A
52	5	326	C
52	5	328	G
52	5	334	A
52	5	336	U
52	5	340	A
52	5	341	C
52	5	342	G
52	5	347	G
52	5	348	C
52	5	350	G

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Mol	Chain	Res	Type
52	5	353	G
52	5	358	G
52	5	359	A
52	5	361	U
52	5	363	U
52	5	364	U
52	5	365	U
52	5	366	C
52	5	368	C
52	5	369	A
52	5	373	A
52	5	377	A
52	5	378	A
52	5	384	G
52	5	385	A
52	5	394	U
52	5	400	G
52	5	401	U
52	5	402	G
52	5	407	A
52	5	408	U
52	5	409	G
52	5	410	A
52	5	411	A
52	5	417	U
52	5	418	U
52	5	421	G
52	5	425	G
52	5	426	U
52	5	433	C
52	5	434	U
52	5	435	U
52	5	440	U
52	5	449	A
52	5	450	U
52	5	452	A
52	5	456	U
52	5	461	G
52	5	465	A
52	5	466	U
52	5	467	G
52	5	468	G

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Mol	Chain	Res	Type
52	5	470	U
52	5	476	U
52	5	478	G
52	5	481	U
52	5	488	U
52	5	489	U
52	5	490	U
52	5	493	A
52	5	494	A
52	5	495	U
52	5	497	A
52	5	507	A
52	5	508	A
52	5	509	C
52	5	510	U
52	5	516	C
52	5	517	C
52	5	519	G
52	5	520	C
52	5	525	G
52	5	528	G
52	5	530	A
52	5	531	A
52	5	532	U
52	5	533	A
52	5	534	C
52	5	536	U
52	5	543	C
52	5	544	A
52	5	545	A
52	5	548	G
52	5	557	A
52	5	560	U
52	5	561	A
52	5	564	G
52	5	569	U
52	5	570	A
52	5	571	A
52	5	573	G
52	5	574	C
52	5	575	A
52	5	580	C

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Mol	Chain	Res	Type
52	5	586	G
52	5	594	A
52	5	595	G
52	5	599	G
52	5	616	C
52	5	617	U
52	5	618	U
52	5	619	A
52	5	620	A
52	5	638	A
52	5	639	A
52	5	646	A
52	5	649	U
52	5	650	A
52	5	651	G
52	5	652	A
52	5	660	A
52	5	662	G
52	5	663	G
52	5	681	U
52	5	682	G
52	5	683	G
52	5	698	U
52	5	699	A
52	5	700	G
52	5	709	A
52	5	715	A
52	5	716	C
52	5	718	A
52	5	719	G
52	5	720	U
52	5	721	G
52	5	731	A
52	5	733	A
52	5	740	G
52	5	745	U
52	5	751	C
52	5	752	G
52	5	770	G
52	5	772	G
52	5	773	G
52	5	774	A

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Mol	Chain	Res	Type
52	5	779	A
52	5	780	U
52	5	787	A
52	5	789	A
52	5	790	U
52	5	791	A
52	5	796	A
52	5	801	U
52	5	802	C
52	5	806	A
52	5	808	C
52	5	809	G
52	5	814	C
52	5	815	G
52	5	816	A
52	5	818	A
52	5	825	A
52	5	829	G
52	5	835	G
52	5	841	C
52	5	849	A
52	5	855	G
52	5	861	A
52	5	863	A
52	5	864	U
52	5	865	U
52	5	870	A
52	5	882	U
52	5	885	U
52	5	892	G
52	5	896	G
52	5	908	A
52	5	910	C
52	5	912	G
52	5	915	U
52	5	917	G
52	5	919	C
52	5	921	G
52	5	922	G
52	5	929	C
52	5	930	A
52	5	933	A

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Mol	Chain	Res	Type
52	5	934	G
52	5	937	G
52	5	938	U
52	5	939	G
52	5	940	G
52	5	941	A
52	5	944	A
52	5	948	U
52	5	955	U
52	5	956	U
52	5	960	C
52	5	961	G
52	5	964	A
52	5	966	A
52	5	970	A
52	5	971	A
52	5	974	C
52	5	979	C
52	5	984	A
52	5	986	U
52	5	987	U
52	5	988	G
52	5	991	A
52	5	995	U
52	5	1000	A
52	5	1002	A
52	5	1003	G
52	5	1006	A
52	5	1007	U
52	5	1012	A
52	5	1013	C
52	5	1014	A
52	5	1015	U
52	5	1016	A
52	5	1030	G
52	5	1032	G
52	5	1034	G
52	5	1037	A
52	5	1040	U
52	5	1041	G
52	5	1042	G
52	5	1044	G

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Mol	Chain	Res	Type
52	5	1045	C
52	5	1046	A
52	5	1047	U
52	5	1056	U
52	5	1057	C
52	5	1064	U
52	5	1068	G
52	5	1069	U
52	5	1070	G
52	5	1071	A
52	5	1072	G
52	5	1075	G
52	5	1077	U
52	5	1081	U
52	5	1086	U
52	5	1092	A
52	5	1095	G
52	5	1101	A
52	5	1103	C
52	5	1106	U
52	5	1107	U
52	5	1117	U
52	5	1118	A
52	5	1121	U
52	5	1122	U
52	5	1123	G
52	5	1124	U
52	5	1125	C
52	5	1128	G
52	5	1133	A
52	5	1134	C
52	5	1135	U
52	5	1142	G
52	5	1143	C
52	5	1144	A
52	5	1146	A
52	5	1147	U
52	5	1154	A
52	5	1156	G
52	5	1158	A
52	5	1159	A
52	5	1168	G

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Mol	Chain	Res	Type
52	5	1170	C
52	5	1171	A
52	5	1172	A
52	5	1173	A
52	5	1175	C
52	5	1176	A
52	5	1180	U
52	5	1187	U
52	5	1188	A
52	5	1200	G
52	5	1201	C
52	5	1202	A
52	5	1206	G
52	5	1208	G
52	5	1214	A
52	5	1215	U
52	5	1216	G
52	5	1217	G
52	5	1225	A
52	5	1226	A
52	5	1233	G
52	5	1235	C
52	5	1242	U
52	5	1243	A
52	5	1249	G
52	5	1251	G
52	5	1254	A
52	5	1255	A
52	5	1256	U
52	5	1260	U
52	5	1261	A
52	5	1263	A
52	5	1264	G
52	5	1271	U
52	5	1273	A
52	5	1275	U
52	5	1279	G
52	5	1289	U
52	5	1290	G
52	5	1291	C
52	5	1294	U
52	5	1296	C

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Mol	Chain	Res	Type
52	5	1297	G
52	5	1310	C
52	5	1312	G
52	5	1318	C
52	5	1319	U
52	5	1320	A
52	5	1321	G
52	5	1337	U
52	5	1338	A
52	5	1343	G
52	5	1344	C
52	5	1349	A
52	5	1353	C
52	5	1354	G
52	5	1356	U
52	5	1358	U
52	5	1360	G
52	5	1363	U
52	5	1367	G
52	5	1369	A
52	5	1370	C
52	5	1372	C
52	5	1374	C
52	5	1375	C
52	5	1381	U
52	5	1385	A
52	5	1394	G
52	5	1397	G
52	5	1400	A
52	5	1408	A
52	5	1417	U
52	5	1421	A
52	5	1423	C
52	5	1426	U
52	5	1429	G
52	5	1437	A
52	5	1439	G
52	5	1451	A
52	5	1466	U
52	5	1467	A
52	5	1468	A
52	5	1475	A

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Mol	Chain	Res	Type
52	5	1478	A
52	5	1480	G
52	5	1481	U
52	5	1482	A
52	5	1492	G
52	5	1495	C
52	5	1497	U
52	5	1498	G
52	5	1504	G
52	5	1505	G
52	5	1509	A
53	8	3	G
53	8	5	C
53	8	10	A
53	8	16	G
53	8	17	U
53	8	19	G
53	8	20	G
53	8	21	U
53	8	22	A
53	8	23	G
53	8	24	A
53	8	37	A
53	8	42	C
53	8	43	G
53	8	44	U
53	8	47	G
53	8	48	U
53	8	49	C
53	8	50	G
53	8	53	A
53	8	57	C
53	8	58	G
53	8	60	U
53	8	61	U
53	8	62	C
53	8	71	A
53	8	72	C
53	8	75	C
53	8	76	C

All (43) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
50	3	311	G
50	3	353	G
50	3	410	G
50	3	425	U
50	3	427	A
50	3	508	A
50	3	513	A
50	3	514	A
50	3	515	A
50	3	605	A
50	3	688	U
50	3	952	U
50	3	1048	A
50	3	1209	U
50	3	1216	U
50	3	1297	U
50	3	1481	U
50	3	1507	G
50	3	1587	U
50	3	1654	G
50	3	1820	U
50	3	2331	G
50	3	2483	C
50	3	2497	U
50	3	2499	U
50	3	2504	C
50	3	2506	C
50	3	2645	U
50	3	2764	U
50	3	2800	U
50	3	2823	A
50	3	2897	G
51	4	10	C
51	4	54	U
51	4	59	A
52	5	425	G
52	5	527	G
52	5	533	A
52	5	637	A
52	5	772	G
52	5	800	G
52	5	1133	A
53	8	71	A

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

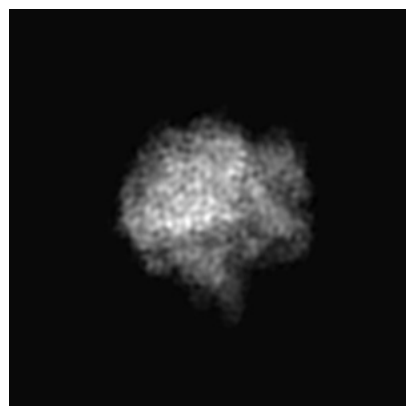
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-13436. These allow visual inspection of the internal detail of the map and identification of artifacts.

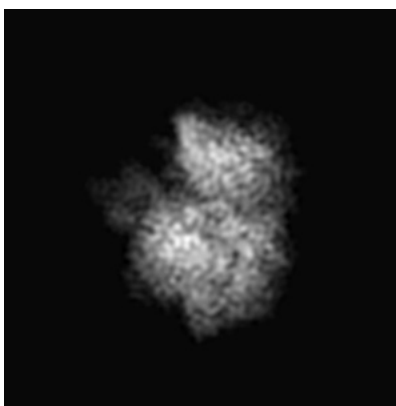
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

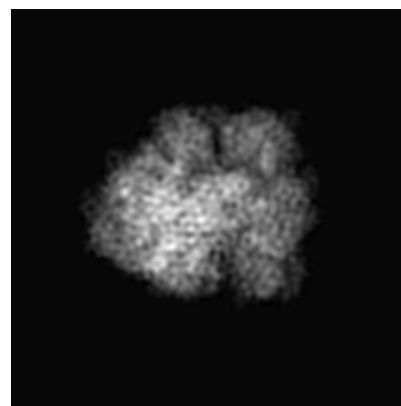
6.1.1 Primary map



X

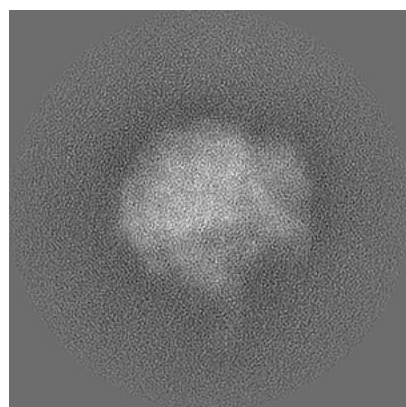


Y

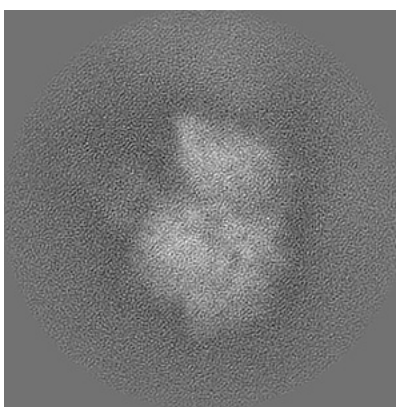


Z

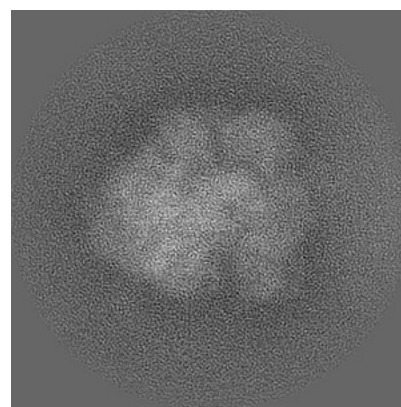
6.1.2 Raw map



X



Y

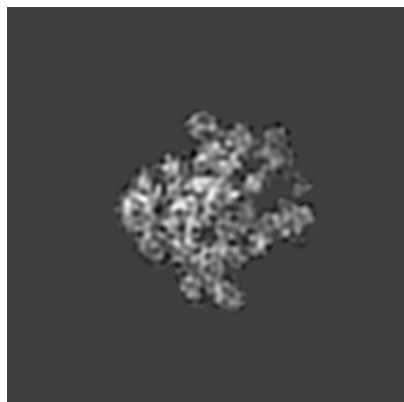


Z

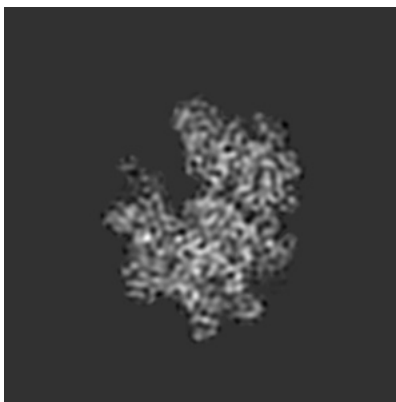
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

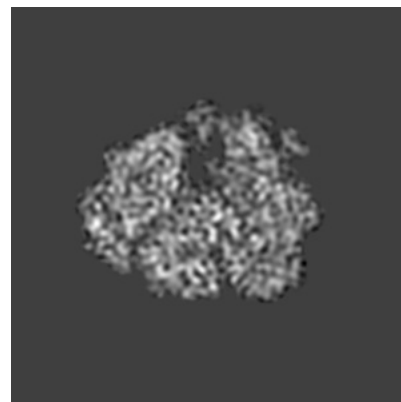
6.2.1 Primary map



X Index: 128

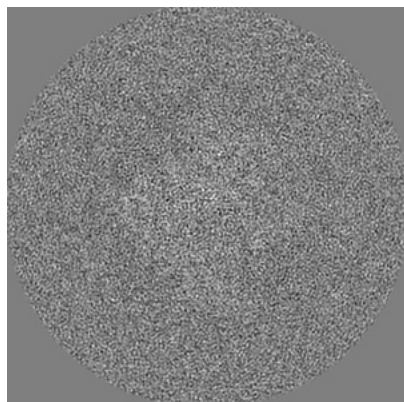


Y Index: 128

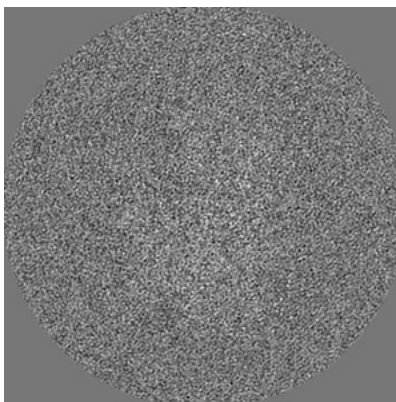


Z Index: 128

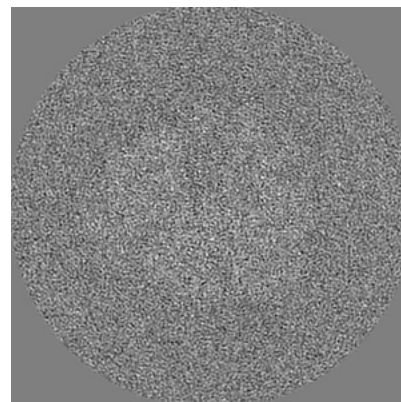
6.2.2 Raw map



X Index: 128



Y Index: 128

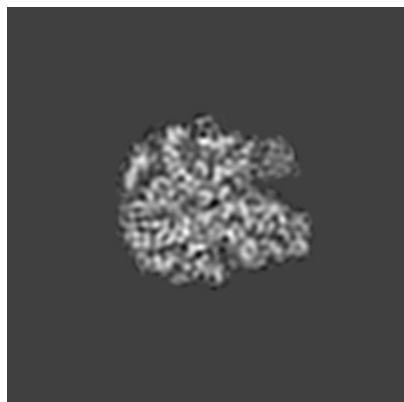


Z Index: 128

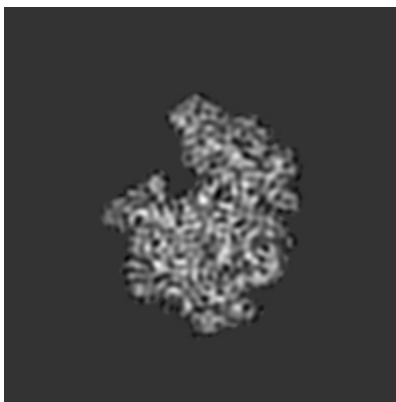
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

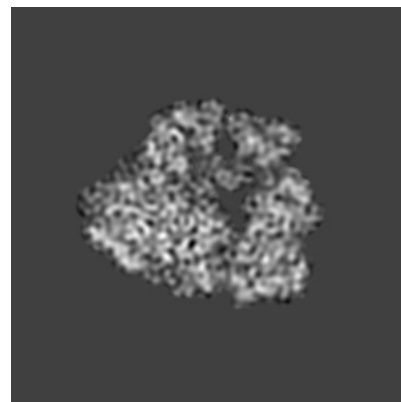
6.3.1 Primary map



X Index: 104

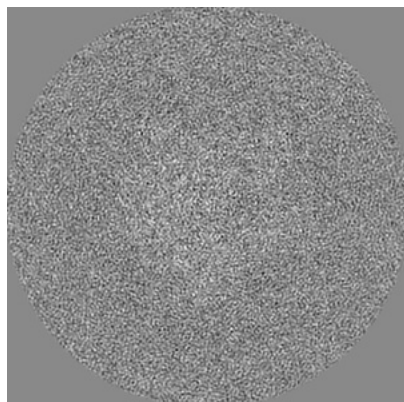


Y Index: 121

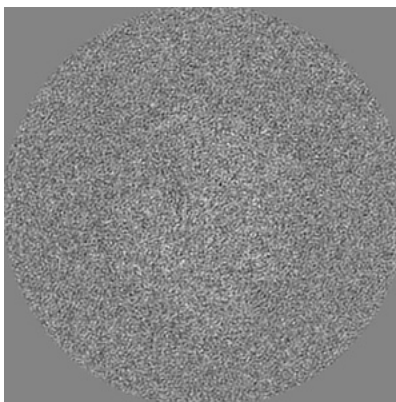


Z Index: 120

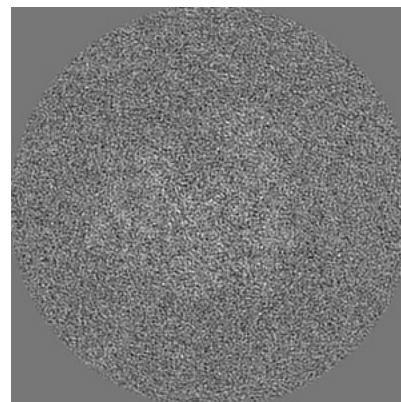
6.3.2 Raw map



X Index: 119



Y Index: 123

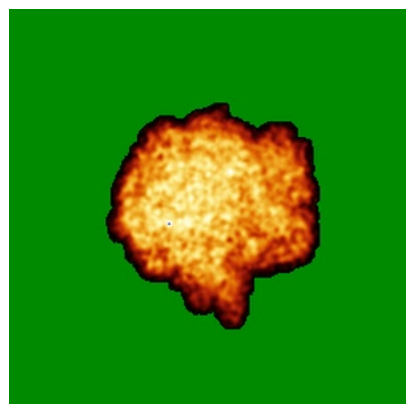


Z Index: 135

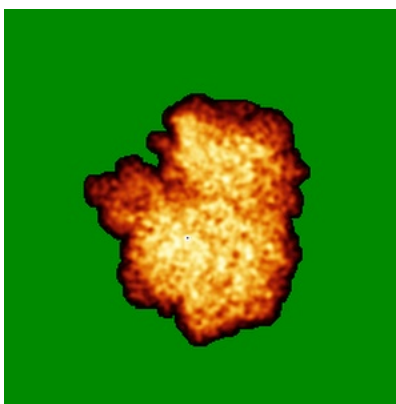
The images above show the largest variance slices of the map in three orthogonal directions.

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

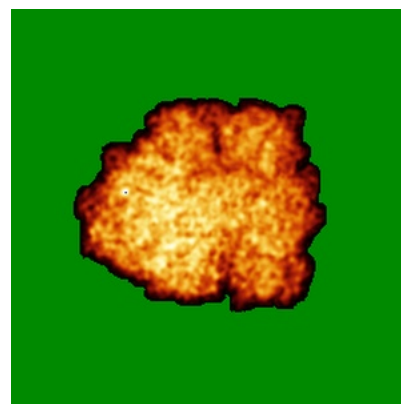
6.4.1 Primary map



X

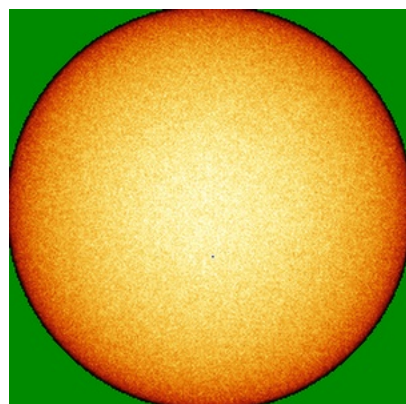


Y

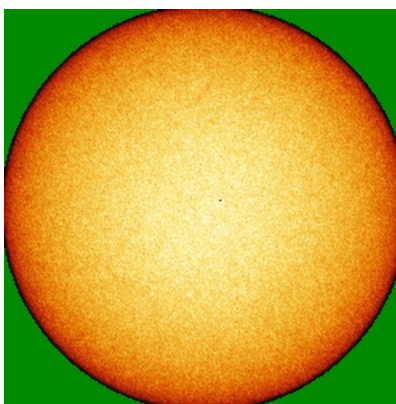


Z

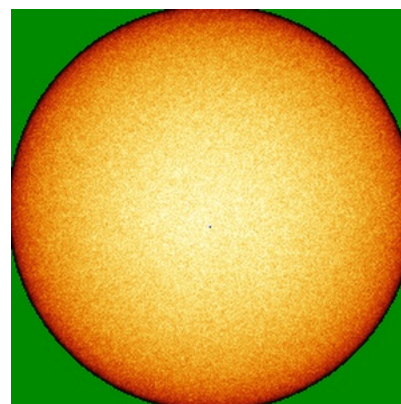
6.4.2 Raw map



X



Y



Z

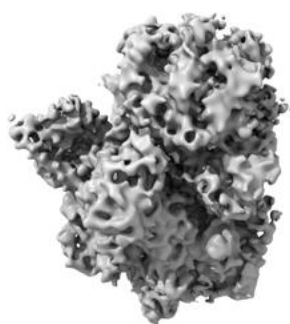
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

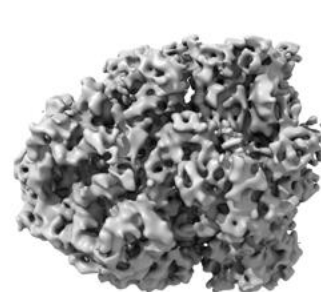
6.5.1 Primary map



X



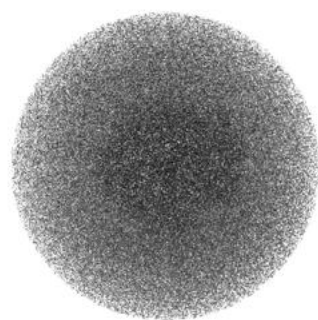
Y



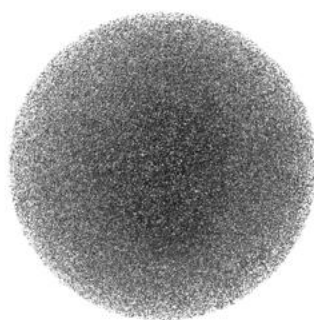
Z

The images above show the 3D surface view of the map at the recommended contour level 0.37. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

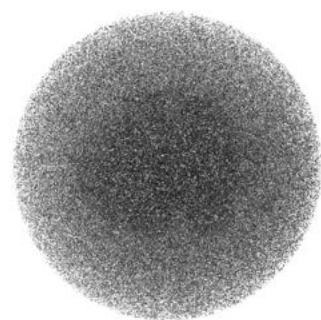
6.5.2 Raw map



X



Y



Z

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.

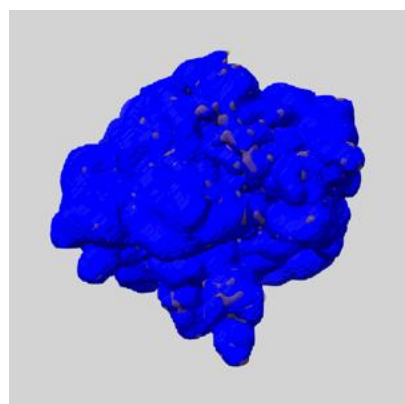
6.6 Mask visualisation [i](#)

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

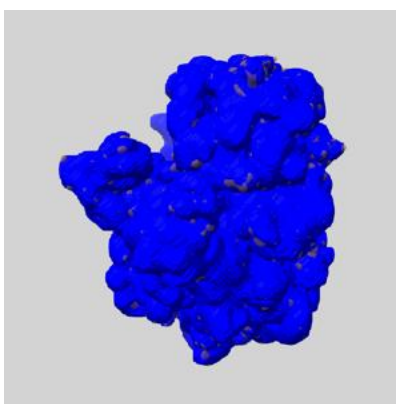
A mask typically either:

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

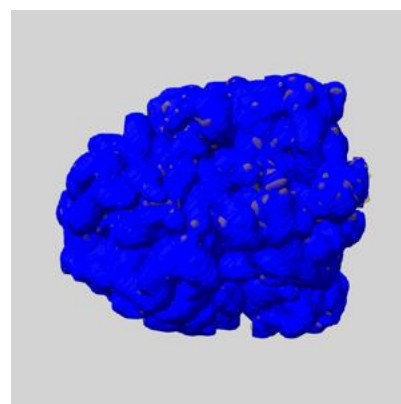
6.6.1 emd_13436_msk_1.map [i](#)



X



Y

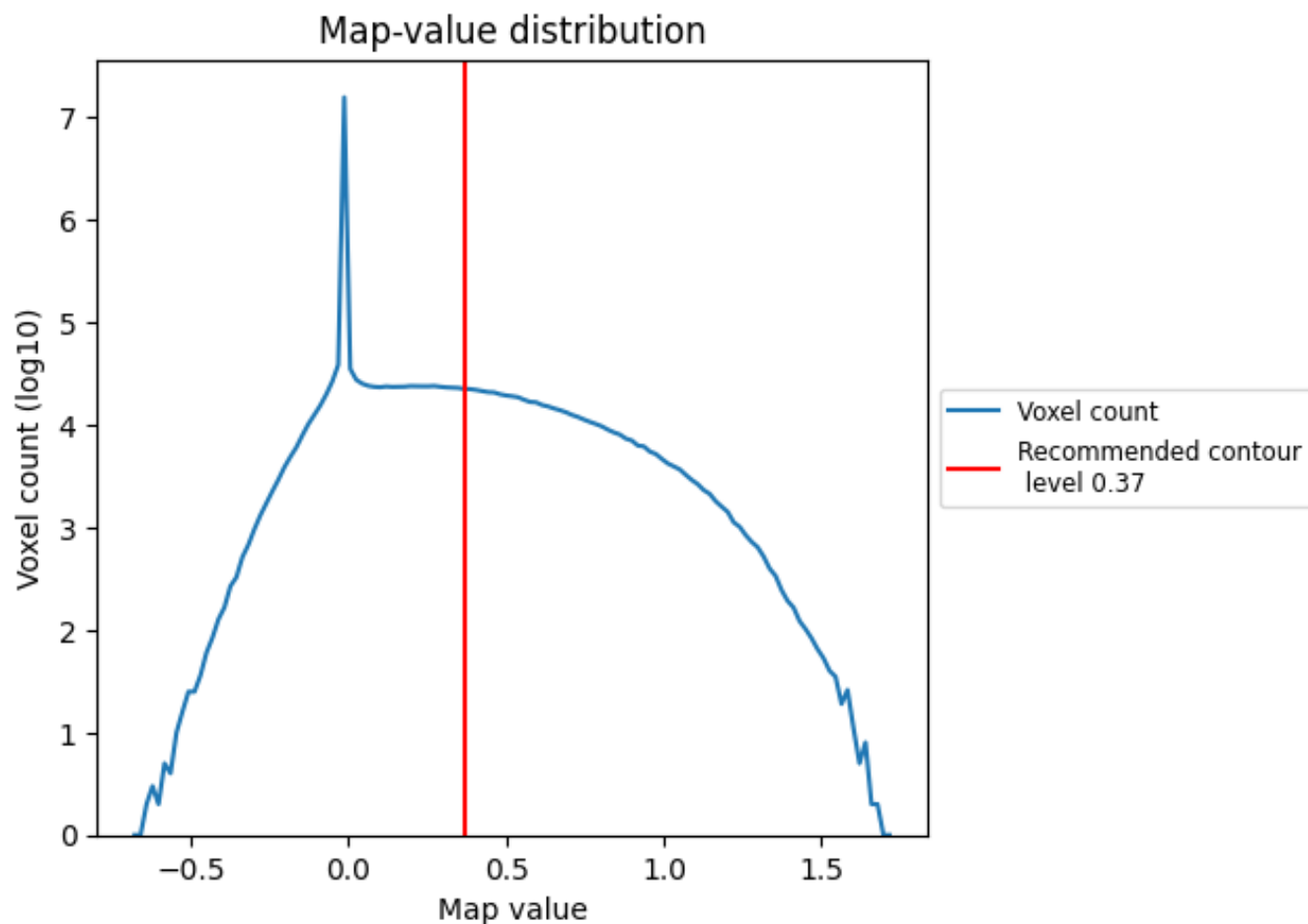


Z

7 Map analysis [i](#)

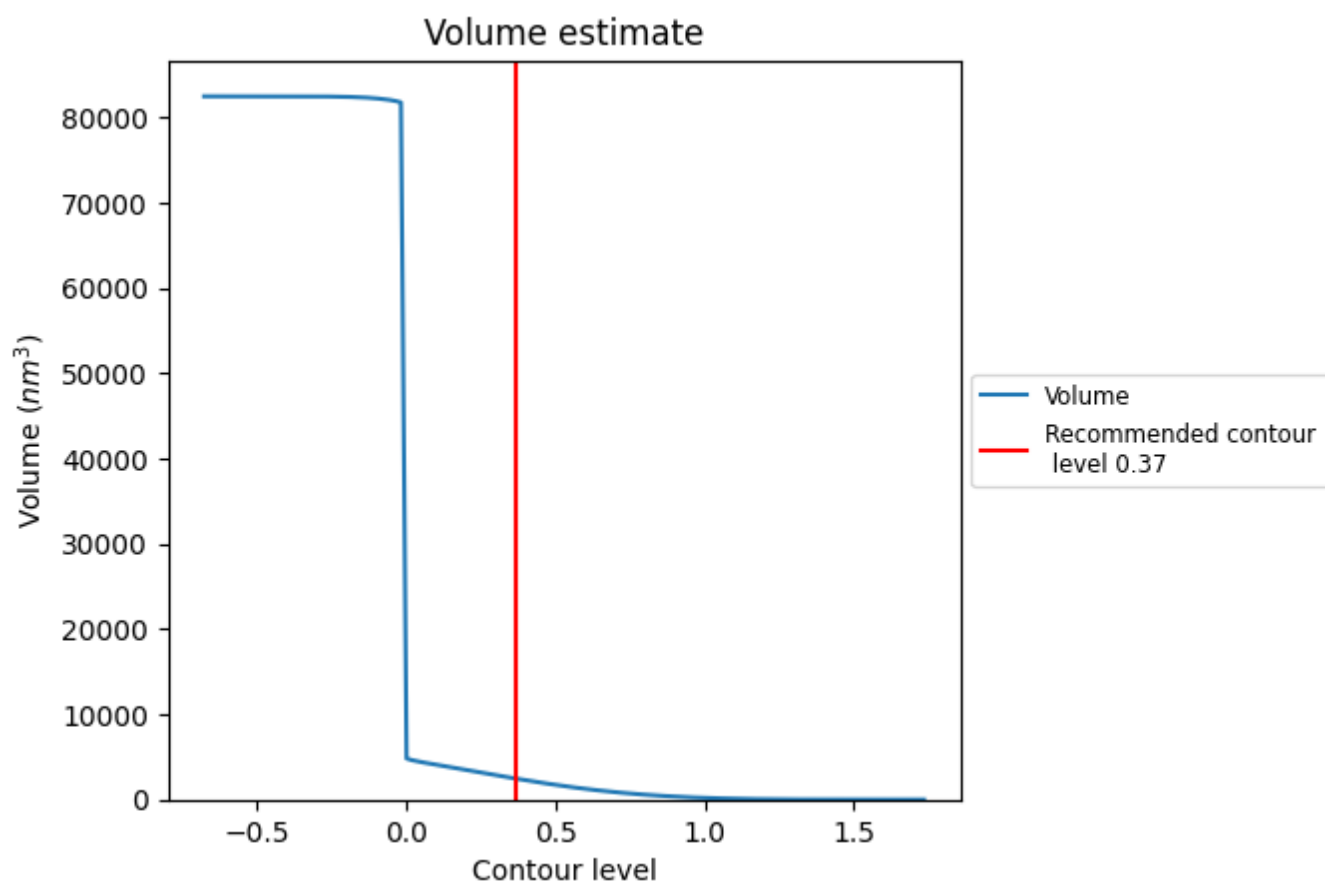
This section contains the results of statistical analysis of the map.

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.

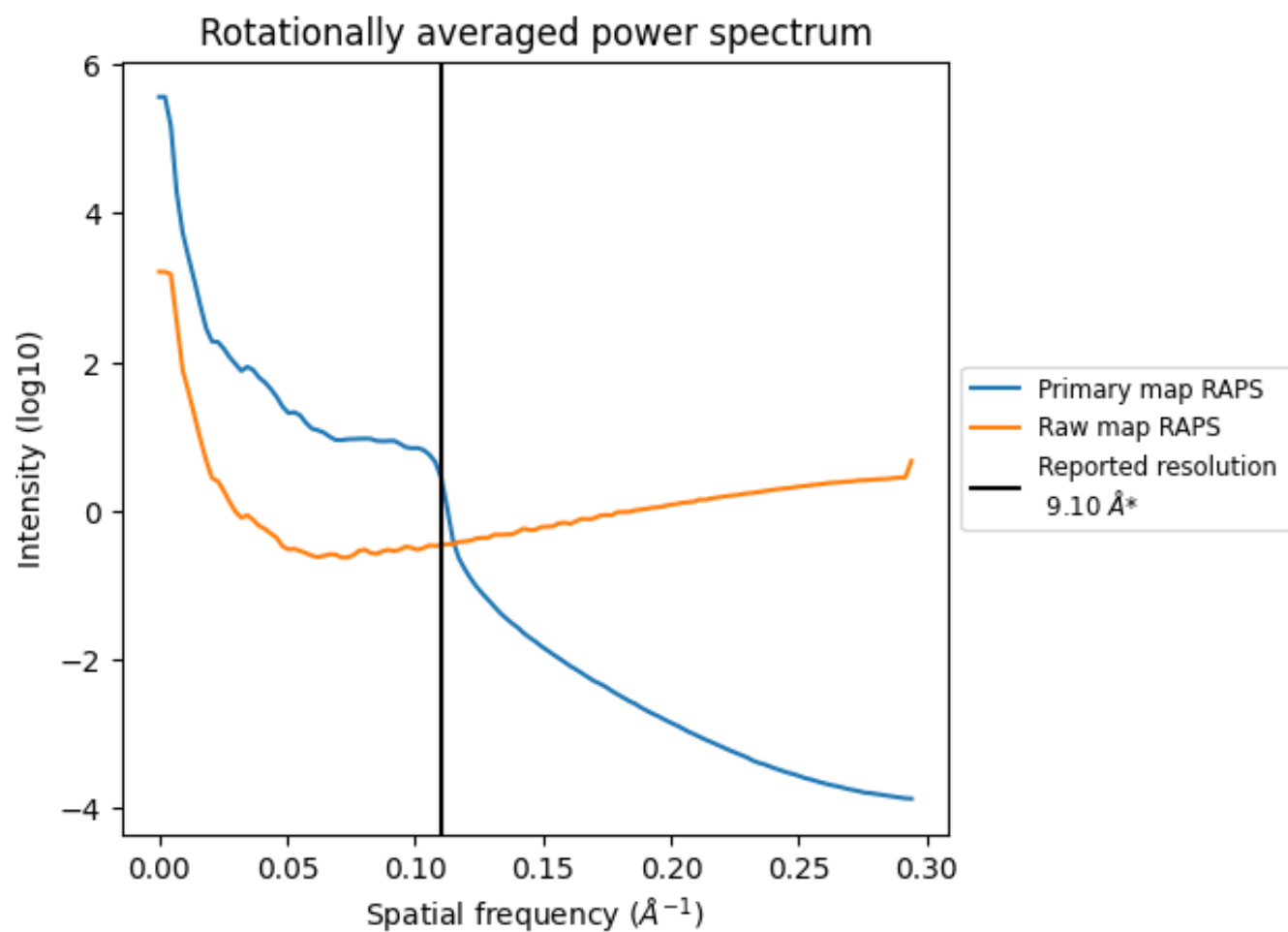
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2444 nm³; this corresponds to an approximate mass of 2208 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 ⓘ

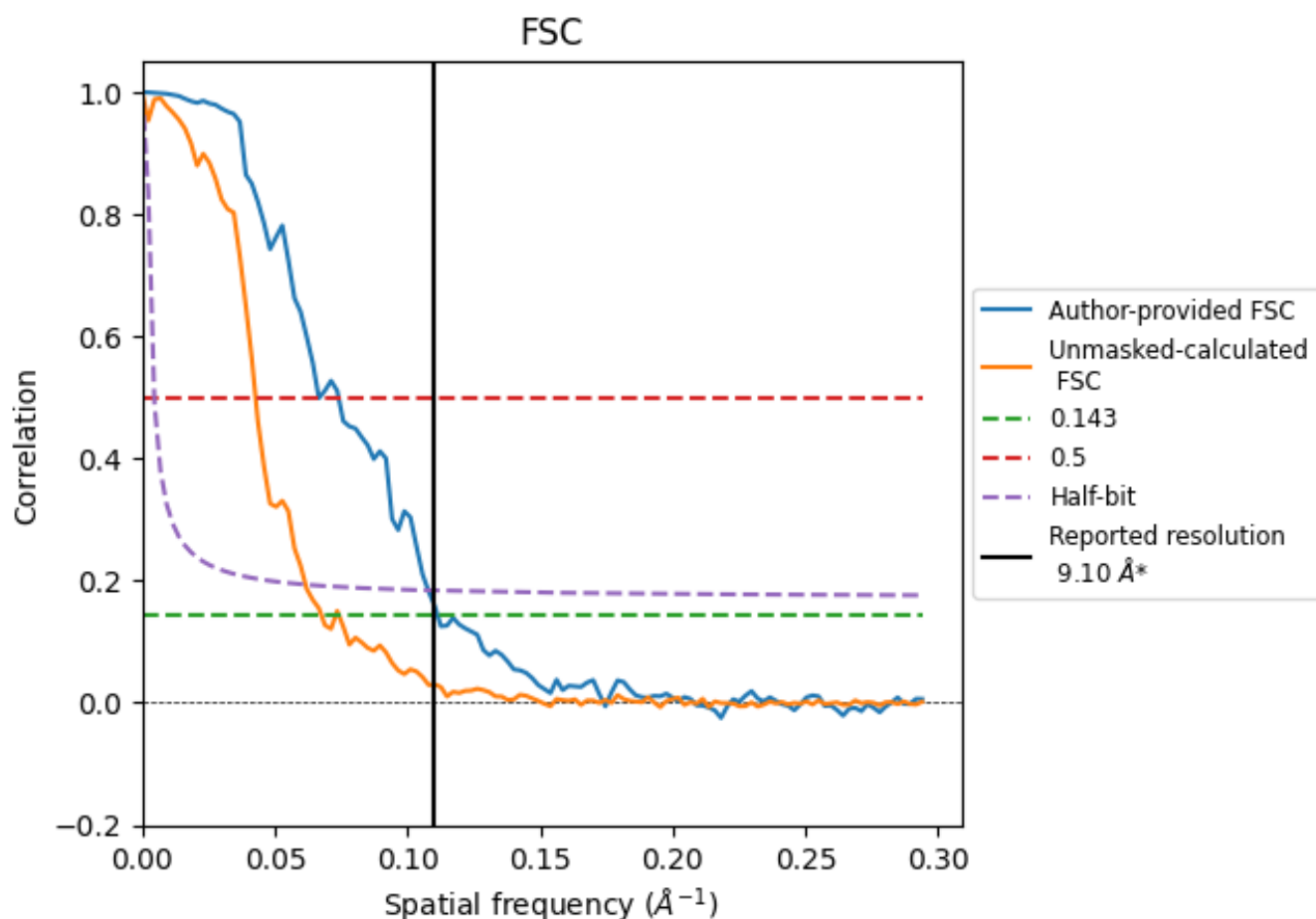


*Reported resolution corresponds to spatial frequency of 0.110 $\text{\AA}^{-1}$

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 0.110 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

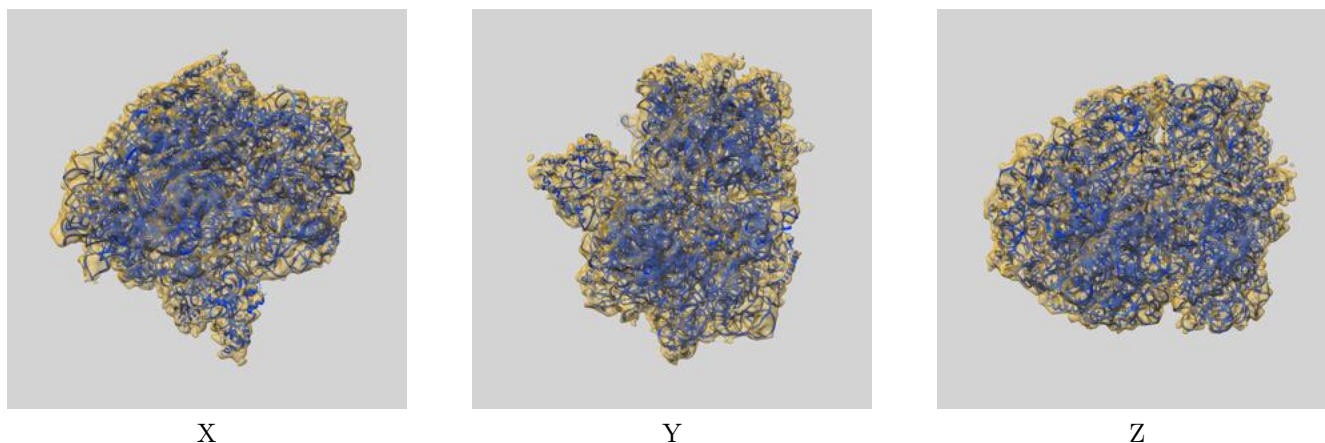
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	9.10	-	-
Author-provided FSC curve	8.98	15.02	9.28
Unmasked-calculated*	14.79	23.36	16.23

*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 14.79 differs from the reported value 9.1 by more than 10 %

9 Map-model fit [i](#)

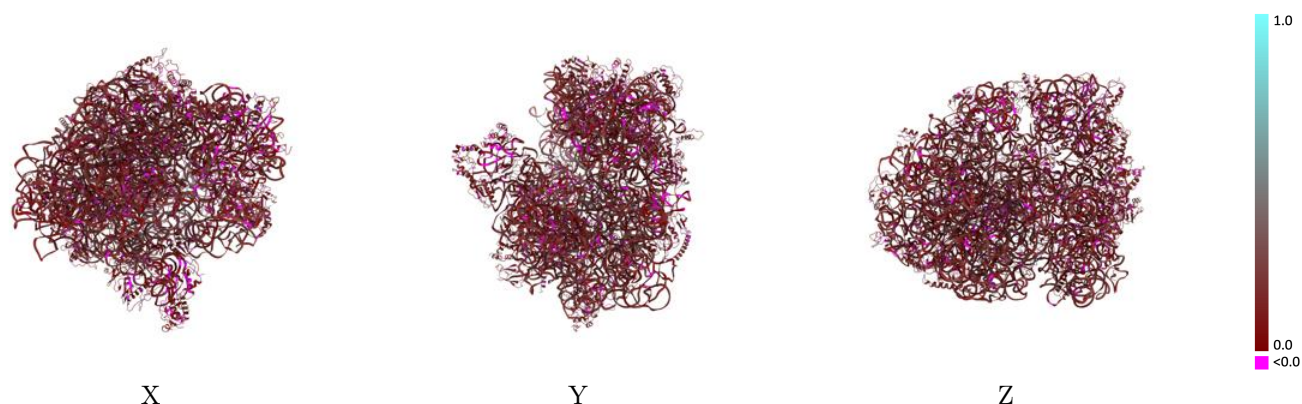
This section contains information regarding the fit between EMDB map EMD-13436 and PDB model 7PIC. Per-residue inclusion information can be found in section [3](#) on page [13](#).

9.1 Map-model overlay [i](#)



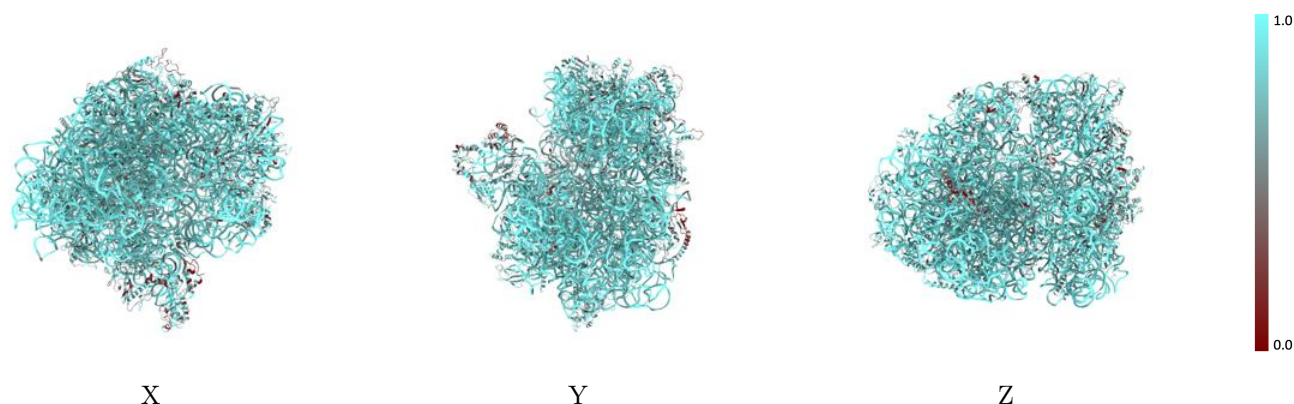
The images above show the 3D surface view of the map at the recommended contour level 0.37 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



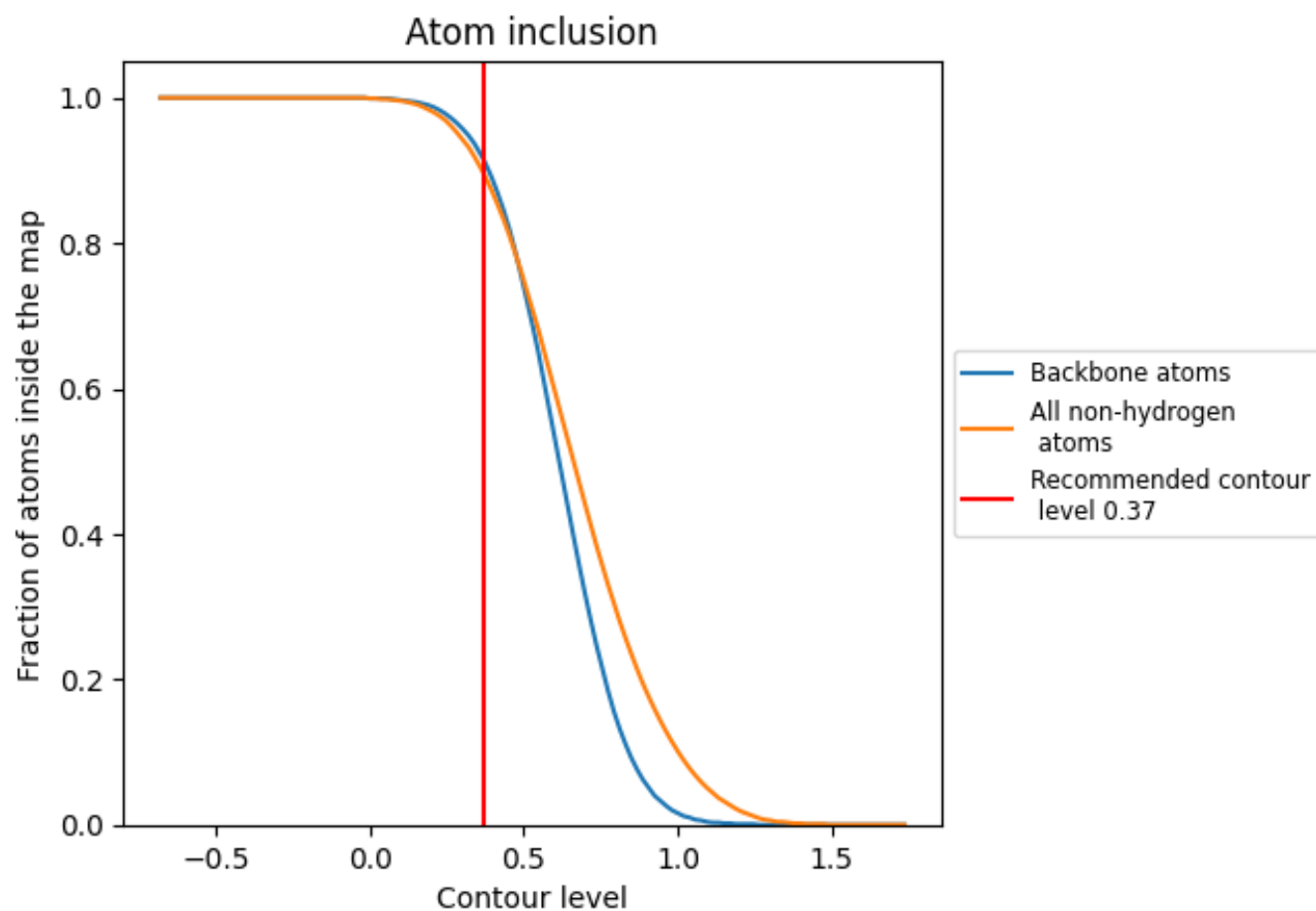
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.37).

9.4 Atom inclusion [i](#)



At the recommended contour level, 92% of all backbone atoms, 90% 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 (0.37) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8960	 0.1540
0	 0.8880	 0.1410
1	 0.8800	 0.1460
2	 0.8620	 0.1380
3	 0.9620	 0.1630
4	 0.9590	 0.1660
5	 0.9590	 0.1600
8	 0.9260	 0.1540
A	 0.7230	 0.1560
B	 0.7190	 0.1470
C	 0.7550	 0.1380
D	 0.7200	 0.1320
E	 0.6550	 0.1600
F	 0.7170	 0.1250
G	 0.7080	 0.1340
H	 0.7510	 0.1090
I	 0.6920	 0.1070
J	 0.8100	 0.1200
K	 0.7800	 0.1290
L	 0.6590	 0.1230
M	 0.7320	 0.0930
N	 0.8080	 0.1760
O	 0.8160	 0.1390
P	 0.8310	 0.1370
Q	 0.7890	 0.1510
R	 0.7490	 0.1180
S	 0.8540	 0.1650
T	 0.7950	 0.1630
a	 0.8220	 0.1250
b	 0.7790	 0.1260
c	 0.8150	 0.1580
d	 0.6960	 0.1340
e	 0.7040	 0.1430
f	 0.4630	 0.1430
g	 0.6560	 0.1110



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Chain	Atom inclusion	Q-score
h	 0.4990	 0.1010
i	 0.8260	 0.1460
j	 0.7000	 0.1400
k	 0.8450	 0.1380
l	 0.8180	 0.1290
m	 0.8130	 0.1330
n	 0.7770	 0.1330
o	 0.7940	 0.1460
p	 0.8670	 0.1470
q	 0.8160	 0.1510
r	 0.8630	 0.1420
s	 0.7870	 0.1480
t	 0.7310	 0.1420
u	 0.8310	 0.1130
v	 0.8550	 0.1390
w	 0.8370	 0.1880
x	 0.7430	 0.1860
y	 0.7970	 0.1160
z	 0.8590	 0.1700