



Full wwPDB EM Validation Report ⓘ

Mar 10, 2026 – 05:05 AM UTC

PDB ID : 6WNW / pdb_00006wnw
EMDB ID : EMD-21858
Title : Active 70S ribosome without free 5S rRNA and bound with A- and P- tRNA
Authors : Loveland, A.B.; Korostelev, A.A.; Mankin, A.S.; Huang, S.; Aleksashin, N.A.; Klepacki, D.; Reier, K.; Kefi, A.; Szal, A.; Remme, J.; Jaeger, L.; Vazquez-Laslop, N.
Deposited on : 2020-04-23
Resolution : 3.20 Å(reported)

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev132
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

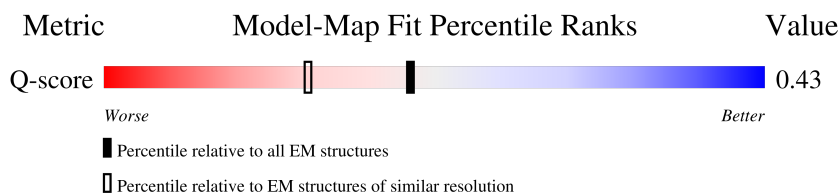
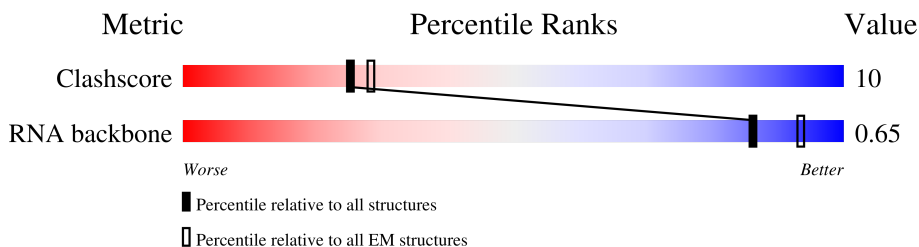
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.20 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	-
RNA backbone	8273	3508	-
Q-score	-	25397	15020 (2.70 - 3.70)

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	b	271	73% 27%
2	c	209	78% 22%
3	d	201	68% 31% .
4	e	177	66% 33% .
5	f	176	66% 33% .

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Mol	Chain	Length	Quality of chain
6	g	149	
7	h	131	
8	i	141	
9	j	142	
10	k	122	
11	l	143	
12	m	136	
13	n	120	
14	o	116	
15	p	114	
16	q	117	
17	r	103	
18	s	110	
19	t	93	
20	u	102	
21	v	94	
22	w	75	
23	x	77	
24	y	63	
25	z	58	
26	A	70	
27	B	56	
28	C	50	
29	D	46	
30	E	64	

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Mol	Chain	Length	Quality of chain
31	F	38	
32	G	225	
33	H	206	
34	I	205	
35	J	157	
36	K	100	
37	L	151	
38	M	129	
39	N	127	
40	O	98	
41	P	116	
42	Q	123	
43	R	114	
44	S	100	
45	T	88	
46	U	82	
47	V	80	
48	W	65	
49	X	79	
50	Y	85	
51	Z	65	
52	a	223	
53	3	1539	
54	4	3031	
55	5	77	

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Mol	Chain	Length	Quality of chain
56	1	10	70% 30%
57	7	76	5% 57% 37% 7%

2 Entry composition

There are 57 unique types of molecules in this entry. The entry contains 149080 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 L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	b	271	Total	C	N	O	S	0	0
			2083	1288	423	365	7		

- Molecule 2 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	c	209	Total	C	N	O	S	0	0
			1565	979	288	294	4		

- Molecule 3 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	d	201	Total	C	N	O	S	0	0
			1552	974	283	290	5		

- Molecule 4 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	e	177	Total	C	N	O	S	0	0
			1411	899	249	257	6		

- Molecule 5 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	f	176	Total	C	N	O	S	0	0
			1323	832	243	246	2		

- Molecule 6 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	g	149	Total	C	N	O	S	0	0
			1111	699	197	214	1		

- Molecule 7 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	h	131	Total	C	N	O	S	0	0
			989	625	175	184	5		

- Molecule 8 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	i	141	Total	C	N	O	S	0	0
			1032	651	179	196	6		

- Molecule 9 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	j	142	Total	C	N	O	S	0	0
			1129	714	212	199	4		

- Molecule 10 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	k	122	Total	C	N	O	S	0	0
			939	587	180	166	6		

- Molecule 11 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	l	143	Total	C	N	O	S	0	0
			1045	649	206	189	1		

- Molecule 12 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	m	136	Total	C	N	O	S	0	0
			1074	686	205	177	6		

- Molecule 13 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	n	120	Total	C	N	O	S	0	0
			961	593	196	167	5		

- Molecule 14 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	o	116	Total	C	N	O	0	0
			892	552	178	162		

- Molecule 15 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	p	114	Total	C	N	O	S	0	0
			917	574	179	163	1		

- Molecule 16 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms				AltConf	Trace
16	q	117	Total	C	N	O	0	0
			947	604	192	151		

- Molecule 17 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	r	103	Total	C	N	O	S	0	0
			816	516	153	145	2		

- Molecule 18 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	s	110	Total	C	N	O	S	0	0
			857	532	166	156	3		

- Molecule 19 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	t	93	Total	C	N	O	S	0	0
			739	466	139	132	2		

- Molecule 20 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
20	u	102	Total	C	N	O	0	0
			780	492	146	142		

- Molecule 21 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	v	94	Total	C	N	O	S	0	0
			753	479	137	134	3		

- Molecule 22 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	w	75	Total	C	N	O	S	0	0
			575	356	116	102	1		

- Molecule 23 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	x	77	Total	C	N	O	S	0	0
			625	388	129	106	2		

- Molecule 24 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	y	63	Total	C	N	O	S	0	0
			509	313	99	95	2		

- Molecule 25 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	z	58	Total	C	N	O	S	0	0
			449	281	87	79	2		

- Molecule 26 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	A	66	Total	C	N	O	S	0	0
			522	323	99	94	6		

- Molecule 27 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	B	56	Total	C	N	O	S	0	0
			444	269	94	80	1		

- Molecule 28 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	C	50	Total	C	N	O	0	0
			410	263	75	72		

- Molecule 29 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	D	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 30 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	E	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 31 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	F	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

- Molecule 32 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	G	225	Total	C	N	O	S	0	0
			1757	1111	315	323	8		

- Molecule 33 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	H	206	Total	C	N	O	S	0	0
			1625	1028	305	289	3		

- Molecule 34 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	I	205	Total	C	N	O	S	0	0
			1643	1026	315	298	4		

- Molecule 35 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	J	157	Total	C	N	O	S	0	0
			1157	719	218	214	6		

- Molecule 36 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	K	100	Total	C	N	O	S	0	0
			818	515	148	149	6		

- Molecule 37 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	L	151	Total	C	N	O	S	0	0
			1182	735	227	216	4		

- Molecule 38 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	M	129	Total	C	N	O	S	0	0
			979	616	173	184	6		

- Molecule 39 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	N	127	Total	C	N	O	S	0	0
			1022	634	206	179	3		

- Molecule 40 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	O	98	Total	C	N	O	S	0	0
			787	493	150	143	1		

- Molecule 41 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	P	116	Total	C	N	O	S	0	0
			870	535	173	159	3		

- Molecule 42 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	Q	123	Total	C	N	O	S	0	0
			955	590	196	165	4		

- Molecule 43 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	R	114	Total	C	N	O	S	0	0
			884	546	178	157	3		

- Molecule 44 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	S	100	Total	C	N	O	S	0	0
			805	499	164	139	3		

- Molecule 45 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	T	88	Total	C	N	O	S	0	0
			714	439	144	130	1		

- Molecule 46 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	U	82	Total	C	N	O	S	0	0
			649	406	128	114	1		

- Molecule 47 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	V	80	Total	C	N	O	S	0	0
			649	411	121	114	3		

- Molecule 48 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	W	65	Total	C	N	O	S	0	0
			536	339	100	96	1		

- Molecule 49 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	X	79	Total	C	N	O	S	0	0
			638	408	120	108	2		

- Molecule 50 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	Y	85	Total	C	N	O	S	0	0
			665	411	137	114	3		

- Molecule 51 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	Z	65	Total	C	N	O	S	0	0
			545	335	117	92	1		

- Molecule 52 is a protein called 50S ribosomal protein L1.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	a	134	Total	C	N	O	S	0	0
			1027	645	186	194	2		

- Molecule 53 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	3	1539	Total	C	N	O	P	0	0
			33012	14725	6052	10697	1538		

- Molecule 54 is a RNA chain called 23s-5s joint ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	4	3031	Total	C	N	O	P	0	0
			65057	29021	11966	21040	3030		

- Molecule 55 is a RNA chain called tRNA^{fMet}.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	5	77	Total	C	N	O	P	0	0
			1640	732	297	535	76		

- Molecule 56 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	1	10	Total	C	N	O	P	0	0
			213	96	39	68	10		

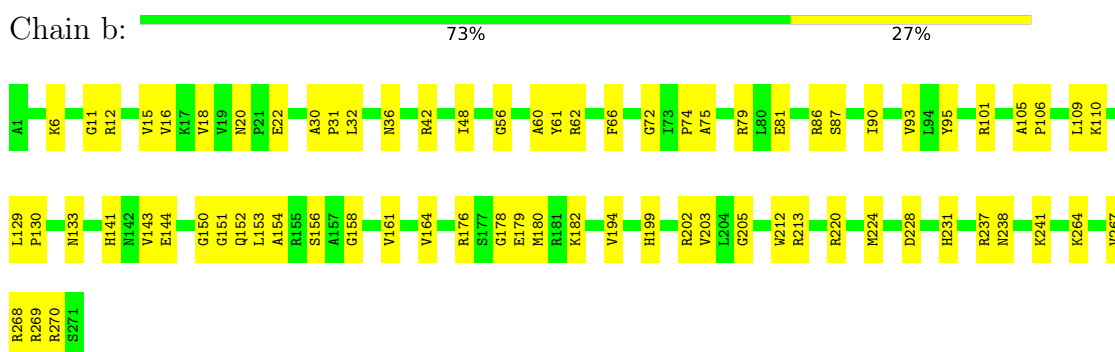
- Molecule 57 is a RNA chain called tRNAPhe.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	7	76	Total	C	N	O	P	0	0
			1619	723	290	531	75		

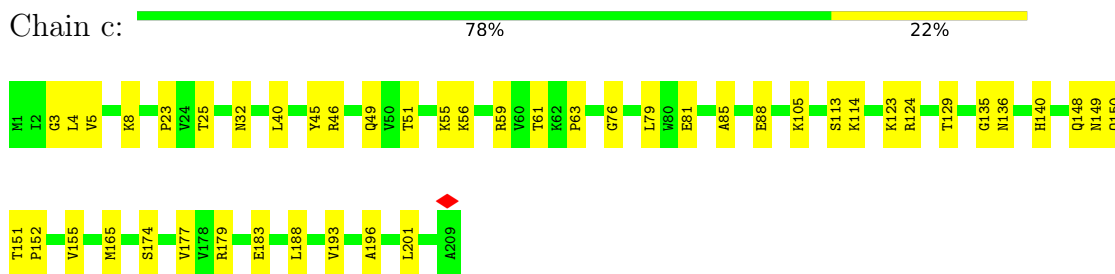
3 Residue-property plots

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.

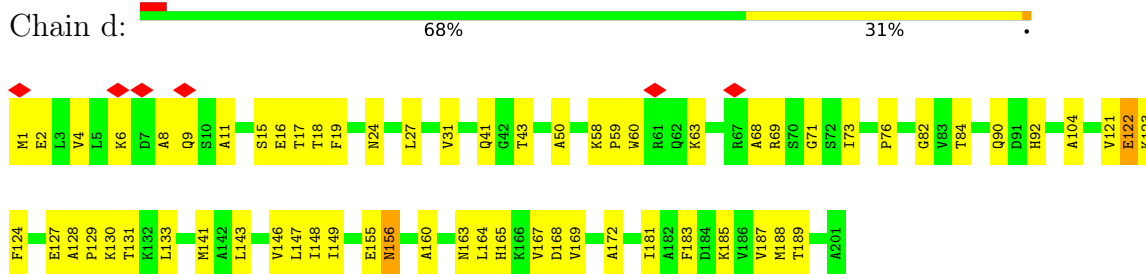
• Molecule 1: 50S ribosomal protein L2



• Molecule 2: 50S ribosomal protein L3

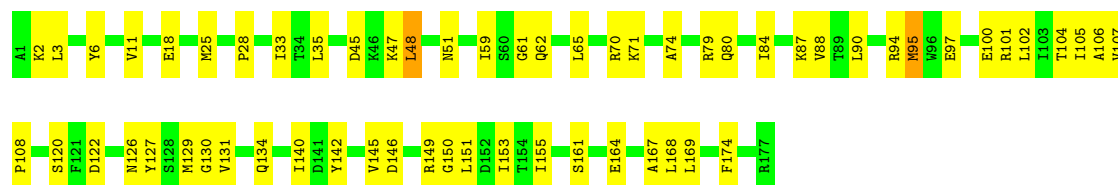


• Molecule 3: 50S ribosomal protein L4

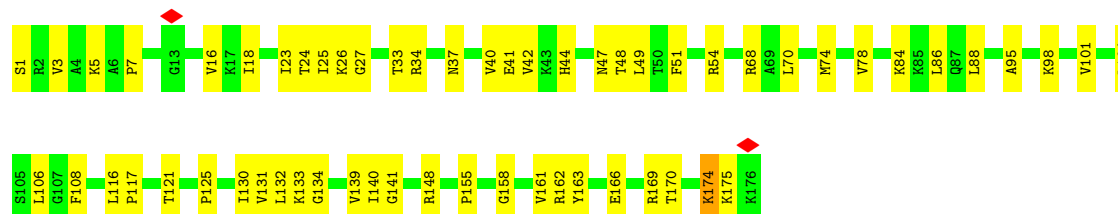


• Molecule 4: 50S ribosomal protein L5

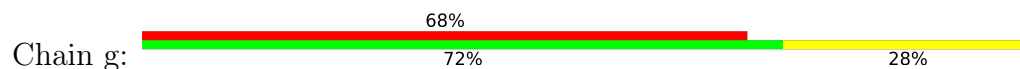




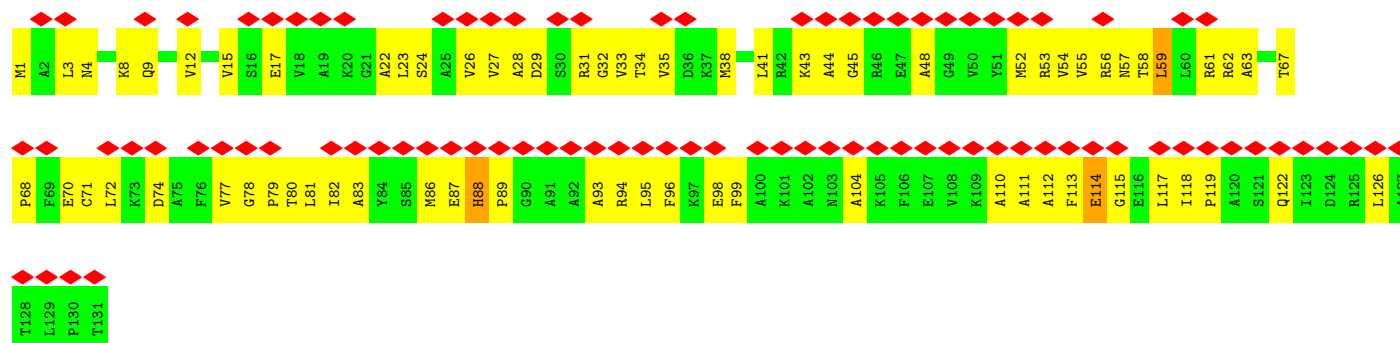
• Molecule 5: 50S ribosomal protein L6



• Molecule 6: 50S ribosomal protein L9



• Molecule 7: 50S ribosomal protein L10

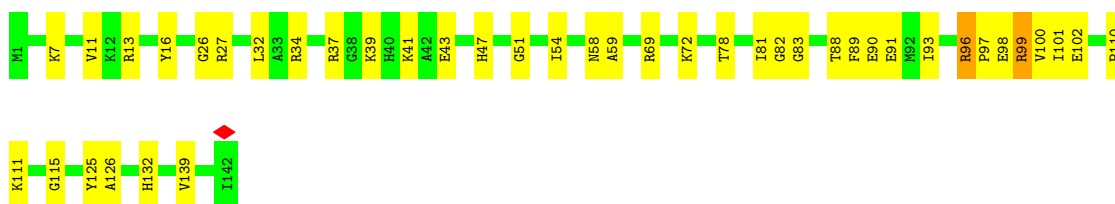


• Molecule 8: 50S ribosomal protein L11

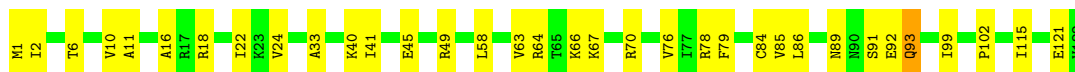




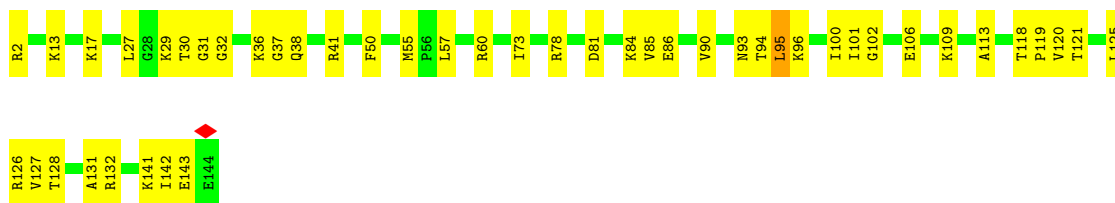
• Molecule 9: 50S ribosomal protein L13



• Molecule 10: 50S ribosomal protein L14



• Molecule 11: 50S ribosomal protein L15

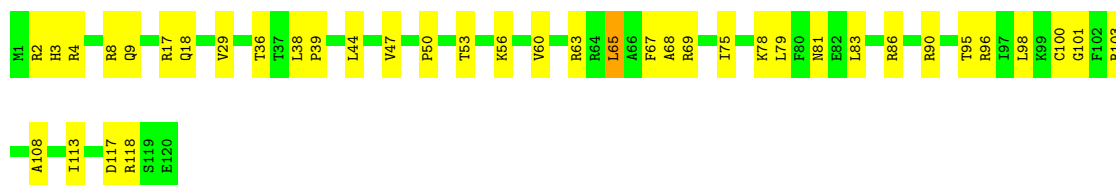


• Molecule 12: 50S ribosomal protein L16



• Molecule 13: 50S ribosomal protein L17





- Molecule 14: 50S ribosomal protein L18

Chain o: 78% 20% .



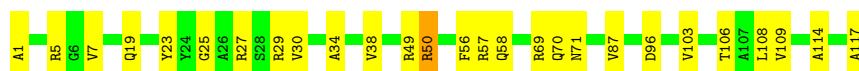
- Molecule 15: 50S ribosomal protein L19

Chain p: 77% 23% .



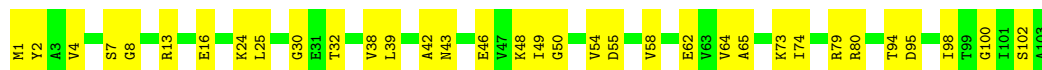
- Molecule 16: 50S ribosomal protein L20

Chain q: 77% 22% .



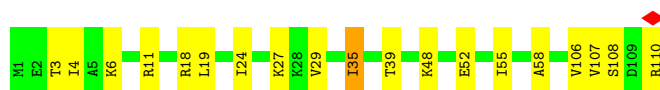
- Molecule 17: 50S ribosomal protein L21

Chain r: 67% 33% .



- Molecule 18: 50S ribosomal protein L22

Chain s: 83% 16% .

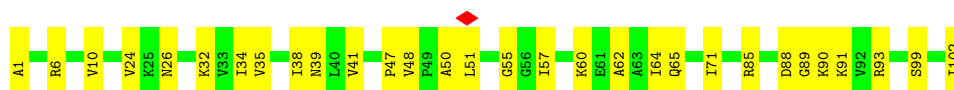


- Molecule 19: 50S ribosomal protein L23

Chain t: 73% 27% .



• Molecule 20: 50S ribosomal protein L24

Chain u:  71% 29%

• Molecule 21: 50S ribosomal protein L25

Chain v:  72% 27%

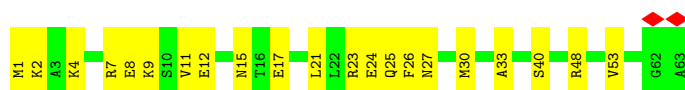
• Molecule 22: 50S ribosomal protein L27

Chain w:  79% 20%

• Molecule 23: 50S ribosomal protein L28

Chain x:  78% 21%

• Molecule 24: 50S ribosomal protein L29

Chain y:  67% 33%

• Molecule 25: 50S ribosomal protein L30

Chain z:  72% 28%

• Molecule 26: 50S ribosomal protein L31

Chain A:  11% 63% 30% 6%



- Molecule 27: 50S ribosomal protein L32



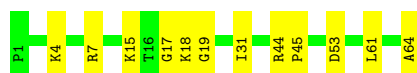
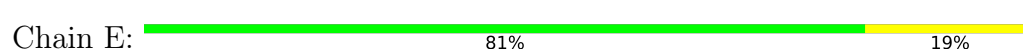
- Molecule 28: 50S ribosomal protein L33



- Molecule 29: 50S ribosomal protein L34



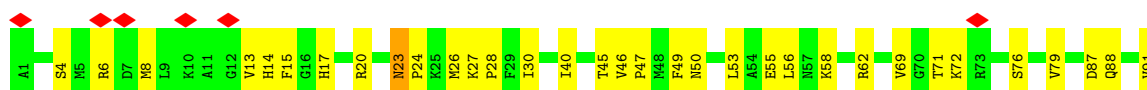
- Molecule 30: 50S ribosomal protein L35



- Molecule 31: 50S ribosomal protein L36

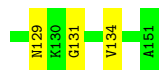
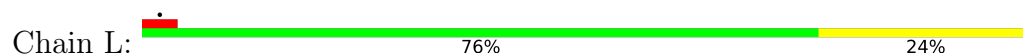


- Molecule 32: 30S ribosomal protein S2

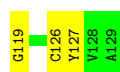




- Molecule 37: 30S ribosomal protein S7



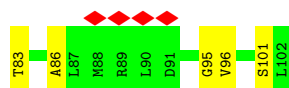
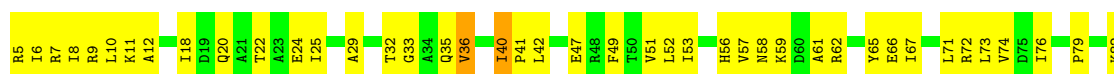
- Molecule 38: 30S ribosomal protein S8



- Molecule 39: 30S ribosomal protein S9

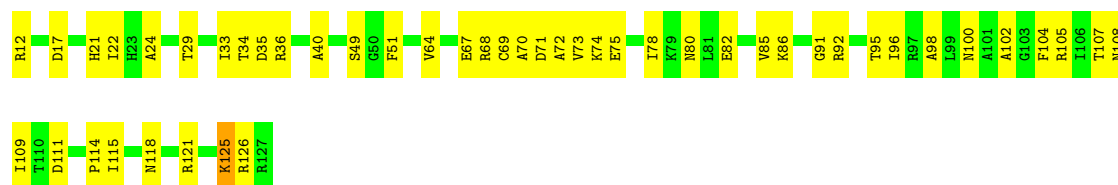


- Molecule 40: 30S ribosomal protein S10

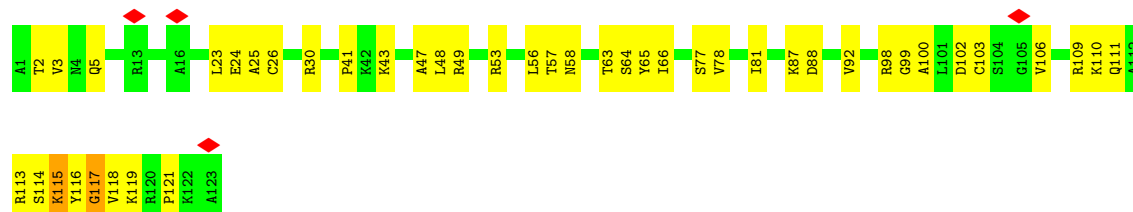


- Molecule 41: 30S ribosomal protein S11

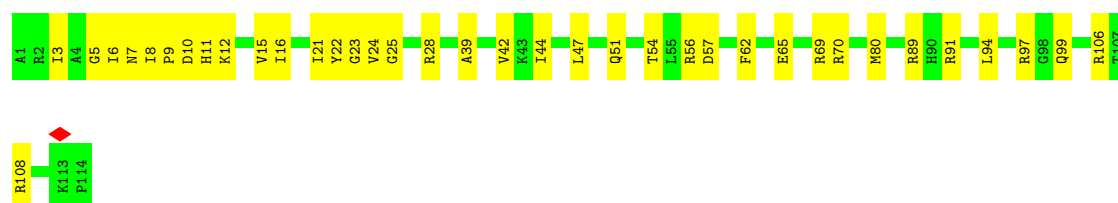




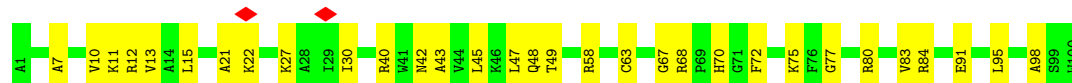
- Molecule 42: 30S ribosomal protein S12



- Molecule 43: 30S ribosomal protein S13



- Molecule 44: 30S ribosomal protein S14



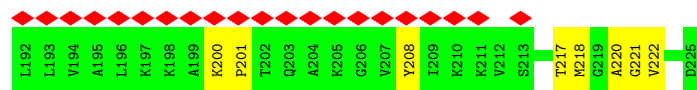
- Molecule 45: 30S ribosomal protein S15



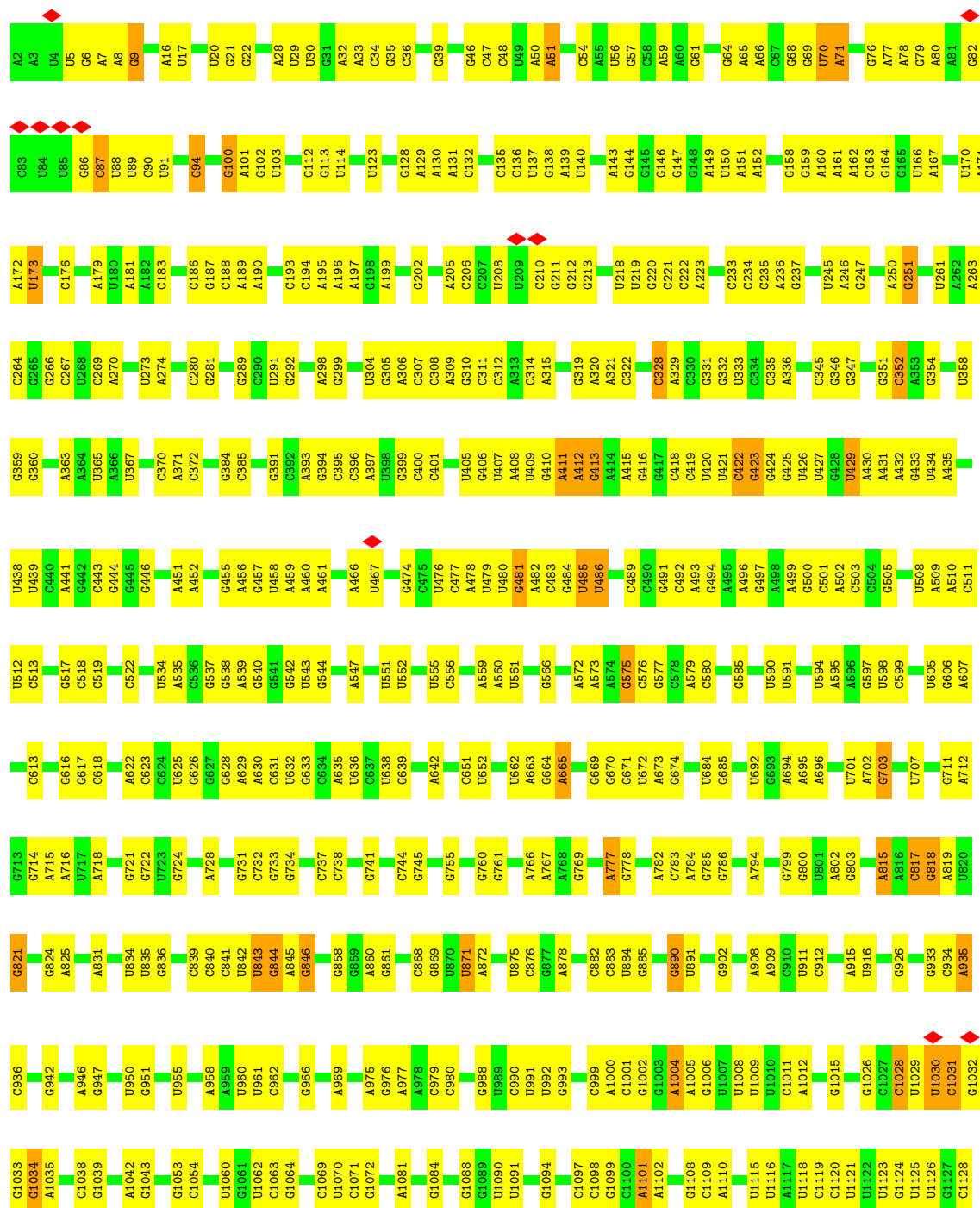
- Molecule 46: 30S ribosomal protein S16



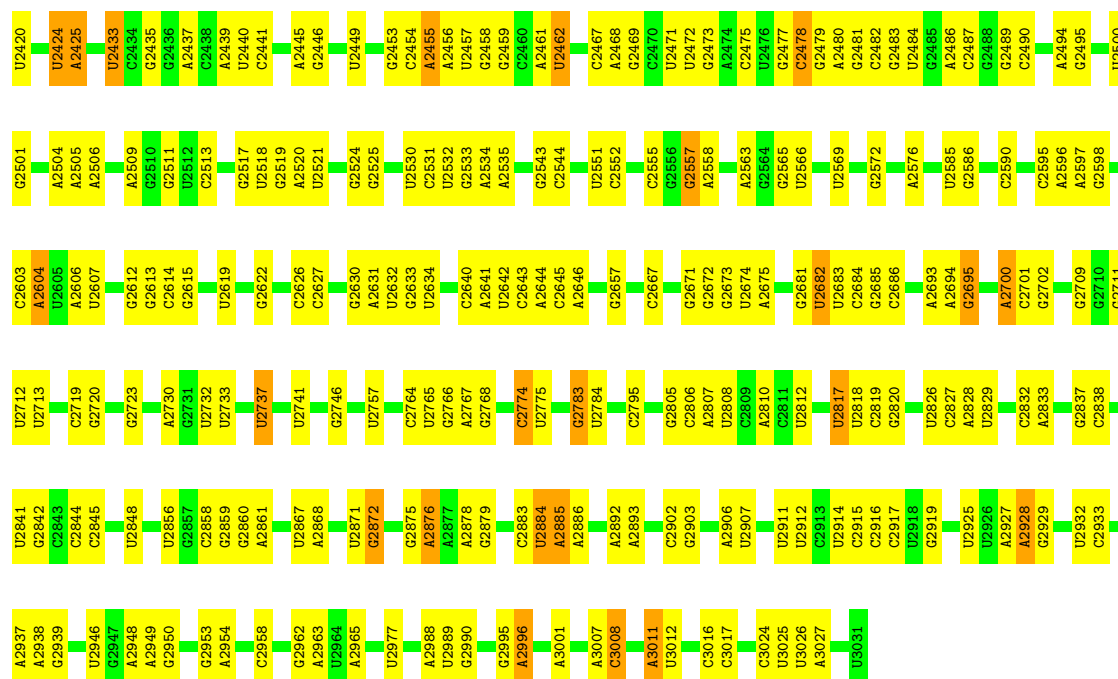
- | | |
|------|------|
| VAL | LEU | GLY | PRO | ARG | GLY | LEU | MET | PRO | ASN | PRO | LYS | VAL | GLY | THR | VAL | THR | VAL | VAL | ASN | ASN | VAL | ALA | ALA | GLU | ALA | VAL | VAL | LYS | ASN | ALA | LYS | ALA | G159 | G160 | Q161 | R162 | Y163 | R164 | N165 | D166 | K167 | N168 | G169 | I170 | I171 | H172 | T173 | T174 | I175 | G176 | F180 | D181 | A182 | D183 | K184 | L185 | K186 | E187 | N188 | L189 | E190 |
|------|------|



• Molecule 53: 16S ribosomal RNA



U2322	G2252	C2171	C2062	G1849	U1613	U1500	G1399	A1283	C1204	A1123	G1040
U2323	G2253	G2176	G2063	G1852	U1614	A1501	A1400	A1284	A1205	A1041	A1040
G2324	A2254	G2177	A2064	G1853	U1615	U1507	U1401	U1287	U1206	G1129	G1042
U2325	G2255	G2178	A2065	U1853	C1616	U1508	A1402	G1288	C1207	G1130	A1043
A2326	G2256	C2183	A2066	C1854	G1617	A1511	A1403	U1289	U1209	U1131	U1046
U2331	G2257	G2184	U2071	C1855	U1618	U1512	C1406	G1296	U1210	A1132	G1047
G2332	U2258	G2185	U2072	C1856	G1619	U1513	G1407	A1297	U1211	G1133	G1048
A2339	U2259	A2188	G2073	U1857	A1622	C1514	G1408	C1298	A1212	G1142	G1049
A2340	G2261	G2189	U2074	U1864	G1628	U1515	U1300	G1409	A1213	U1143	A1050
U2341	C2262	A2190	C2075	G1865	G1629	U1516	U1410	U1301	A1214	A1144	A1051
C2342	U2263	C2191	G2076	G1866	A1630	U1517	G1411	C1300	G1215	G1145	C1052
C2343	G2265	C2192	G2077	C1867	A1631	U1518	A1412	U1302	A1216	U1053	U1052
G2344	U2266	C2193	G2078	U1868	U1632	U1519	A1413	A1303	A1217	G1151	G1054
G2345	U2267	C2194	U2083	C1869	U1633	U1520	A1414	U1304	A1218	G1152	A1057
G2346	G2268	G2197	U2084	U1870	C1635	C1521	A1415	G1305	A1219	U1153	G1058
U2347	G2269	A2198	G2086	A1874	A1636	U1522	A1416	U1306	C1220	A1154	G1059
U2348	G2270	U1983	G2087	U1875	C1637	U1523	A1417	G1307	G1221	C1060	C1061
G2349	A2271	C2200	G2088	C1876	A1638	U1524	C1425	U1308	A1222	A1156	U1061
C2350	G2272	C2201	U2089	U1877	G1639	U1525	G1428	U1309	A1223	A1157	U1062
G2351	U2273	U2202	C2095	A1878	C1640	U1526	A1429	U1310	U1225	U1161	C1063
A2352	C2273	U2203	G2096	G1881	A1643	U1527	G1434	U1312	A1226	C1064	U1065
A2353	C2274	A2208	A2097	A1882	U1764	U1528	U1444	G1313	G1227	G1165	G1066
C2354	A2275	G2209	G2098	A1883	U1765	U1529	G1445	U1314	C1228	G1166	U1067
U2361	G2276	C2210	U2100	G1884	A1650	U1530	U1446	U1315	U1229	A1167	G1068
G2362	U2277	A2211	G2107	U1885	U1651	U1531	G1447	U1316	A1230	G1168	C1069
G2363	C2281	U2212	U2108	A1886	C1652	U1532	U1448	U1317	A1231	C1170	U1070
U2364	U2282	G2215	G2109	U1887	A1653	U1533	C1449	G1318	C1232	G1171	U1071
U2365	G2283	A2216	U2110	C1888	G1654	U1534	U1450	U1319	U1233	C1172	G1072
G2366	U2284	G2217	U2111	U1889	A1655	U1535	U1451	G1320	G1234	G1173	G1073
A2367	G2285	U2218	U2112	C1890	U1656	U1536	U1452	U1321	A1235	A1174	C1074
U2368	U2286	A2222	C2125	G1891	G1657	U1537	U1453	U1322	G1236	G1175	G1075
G2369	C2287	G2225	A2142	A1901	U1658	U1538	U1454	U1323	A1237	A1176	G1076
U2370	G2288	U2226	A2143	C1902	A1659	U1539	U1455	G1238	G1239	G1179	C1084
U2371	U2289	U2227	U2144	C1903	C1664	U1540	A1456	U1240	U1241	C1180	A1095
U2372	G2290	G2228	U2145	U1907	G1665	U1541	U1457	U1242	C1242	C1181	C1096
A2385	A2291	A2229	U2146	U1908	U1670	U1542	C1458	G1253	A1254	C1182	C1097
C2386	G2292	G2230	C2032	A1909	G1671	U1543	G1459	U1254	G1255	G1183	C1101
U2387	U2293	C2231	C2033	A1912	U1672	U1544	U1471	G1256	G1256	C1102	C1101
U2388	C2294	G2235	G2034	A1913	A1673	U1545	U1472	U1257	U1257	A1105	A1105
A2394	U2295	A2236	C2035	C1918	A1674	U1546	C1473	U1258	U1258	U1106	U1106
A2395	G2296	G2237	C2036	A1919	A1675	U1547	U1474	U1259	C1263	G1107	G1107
A2396	U2300	G2240	U2039	A1920	G1683	U1548	U1475	U1260	G1264	C1108	C1108
A2406	A2301	G2241	A2040	A1921	G1684	U1549	A1476	G1265	G1265	C1109	G1110
G2407	C2302	G2242	A2041	C1922	U1685	U1550	A1477	U1266	G1266	U1193	G1110
G2408	C2303	U2243	C2042	C1923	G1686	U1551	U1478	G1267	G1267	A1194	C1113
A2409	A2304	A2244	U2043	U1924	C1687	U1552	U1479	G1268	G1268	G1195	U1114
G2410	C2305	G2245	A2044	U1925	U1688	U1553	A1480	U1269	U1269	A1196	G1196
C2411	C2306	G2246	U2045	G1926	C1689	U1554	A1481	A1270	A1270	A1197	C1115
A2412	G2307	G2247	A2046	A1927	C1690	U1555	A1482	A1271	A1271	A1198	C1116
C2413	U2308	U2248	G2057	G1928	U1691	U1556	A1483	G1272	G1272	G1199	G1117
G2414	U2309	A2249	C2058	U1929	A1692	U1557	A1484	C1273	C1273	A1118	A1118
A2415	U2310	G2250	G2059	A1930	C1693	U1558	A1485	U1274	U1274	C1200	C1200
U2419	U2311	U2251	U2060	A1931	U1693	U1559	A1486	G1275	G1275	A1201	U1121
	U2312	G2252	A2061	U1932	C1702	U1560	G1487	C1276	C1276	G1202	G1202
	U2313	U2253	G2062	G1933	C1703	U1561	U1488	G1277	G1277	C1203	C1203
	U2314	U2254	U2063	A1934	C1704	U1562	G1489	C1278	C1278		
	U2315	U2255	U2064	G1935	C1705	U1563	U1490	G1279	G1279		
	U2316	U2256	U2065	A1935	C1706	U1564	A1491	C1280	C1280		
	U2317	U2257	U2066	A1936	C1707	U1565	A1492	C1281	C1281		
	U2318	U2258	U2067	A1937	C1708	U1566	A1493	G1282	G1282		
	U2319	U2259	U2068	A1938	C1709	U1567	A1494	C1283	C1283		
	U2320	U2260	U2069	A1939	C1710	U1568	A1495	G1284	G1284		
	U2321	U2261	U2070	U1940	C1711	U1569	A1496	C1285	C1285		
	U2322	U2262	U2071	G1941	C1712	U1570	G1497	G1286	G1286		
	U2323	U2263	U2072	A1942	C1713	U1571	U1498	C1287	C1287		
	U2324	U2264	U2073	A1943	C1714	U1572	A1499	G1288	G1288		
	U2325	U2265	U2074	G1944	C1715	U1573	A1500	C1289	C1289		
	U2326	U2266	U2075	A1945	C1716	U1574	U1501	G1290	G1290		
	U2327	U2267	U2076	A1946	C1717	U1575	U1502	C1291	C1291		
	U2328	U2268	U2077	U1947	C1718	U1576	U1503	G1292	G1292		
	U2329	U2269	U2078	A1948	C1719	U1577	U1504	C1293	C1293		
	U2330	U2270	U2079	A1949	C1720	U1578	U1505	G1294	G1294		
	U2331	U2271	U2080	A1950	C1721	U1579	U1506	C1295	C1295		
	U2332	U2272	U2081	A1951	C1722	U1580	U1507	G1296	G1296		
	U2333	U2273	U2082	A1952	C1723	U1581	U1508	C1297	C1297		
	U2334	U2274	U2083	A1953	C1724	U1582	U1509	G1298	G1298		
	U2335	U2275	U2084	A1954	C1725	U1583	U1510	C1299	C1299		
	U2336	U2276	U2085	A1955	C1726	U1584	U1511	G1300	G1300		
	U2337	U2277	U2086	A1956	C1727	U1585	U1512	U1301	U1301		
	U2338	U2278	U2087	A1957	C1728	U1586	U1513	A1302	A1302		
	U2339	U2279	U2088	A1958	C1729	U1587	U1514	U1303	U1303		
	U2340	U2280	U2089	A1959	C1730	U1588	U1515	G1304	G1304		
	U2341	U2281	U2090	A1960	C1731	U1589	U1516	U1305	U1305		
	U2342	U2282	U2091	A1961	C1732	U1590	U1517	A1306	A1306		
	U2343	U2283	U2092	A1962	C1733	U1591	U1518	U1307	U1307		
	U2344	U2284	U2093	A1963	C1734	U1592	U1519	U1308	U1308		
	U2345	U2285	U2094	A1964	C1735	U1593	U1520	U1309	U1309		
	U2346	U2286	U2095	A1965	C1736	U1594	U1521	U1310	U1310		
	U2347	U2287	U2096	A1966	C1737	U1595	U1522	U1311	U1311		
	U2348	U2288	U2097	A1967	C1738	U1596	U1523	U1312	U1312		
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	U2350	U2290	U2099	A1969	C1740	U1598	U1525	U1314	U1314		
	U2351	U2291	U2100	A1970	C1741	U1599	U1526	U1315	U1315		
	U2352	U2292	U2101	A1971	C1742	U1600	U1527	U1316	U1316		
	U2353	U2293	U2102	A1972	C1743	U1601	U1528	U1317	U1317		
	U2354	U2294	U2103	A1973	C1744	U1602	U1529	U1318	U1318		
	U2355	U2295	U2104	A1974	C1745	U1603	U1530	U1319	U1319		
	U2356	U2296	U2105	A1975	C1746	U1604	U1531	U1320	U1320		
	U2357	U2297	U2106	A1976	C1747	U1605	U1532	U1321	U1321		
	U2358	U2298	U2107	A1977	C1748	U1606	U1533	U1322	U1322		
	U2359	U2299	U2108	A1978	C1749	U1607	U1534	U1323	U1323		
	U2360	U2300	U2109	A1979	C1750	U1608	U1535	U1324	U1324		
	U2361	U2301	U2110	A1980	C1751	U1609	U1536	U1325	U1325		
	U2362	U2302	U2111	A1981	C1752	U1610	U1537	U1326	U1326		
	U2363	U2303	U2112	A1982	C1753	U1611	U1538	U1327	U1327		
	U2364	U2304	U2113	A1983	C1754	U1612	U1539	U1328	U1328		
	U2365	U2305	U2114	A1984	C1755	U1613	U1540	U1329	U1329		
	U2366	U2306	U2115	A1985	C1756	U1614	U1541	U1330	U1330		
	U2367	U2307	U2116	A1986	C1757	U1615	U1542	U1331	U1331		
	U2368	U2308	U2117	A1987	C1758	U1616	U1543	U1332	U1332		
	U2369	U2309	U2118	A1988	C1759	U1617	U1544	U1333	U1333		
	U2370	U2310	U2119	A1989	C1760	U1618	U1545	U1334	U1334		



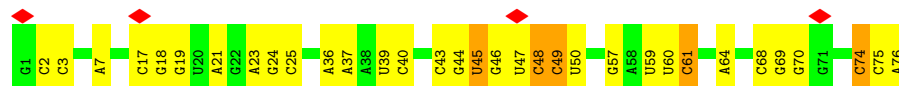
• Molecule 55: tRNAfMet



• Molecule 56: mRNA



• Molecule 57: tRNAPhe



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	26717	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	TFS TALOS	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/\text{\AA}^2$)	30	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	17.526	Depositor
Minimum map value	-5.137	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.802	Depositor
Recommended contour level	2.5	Depositor
Map size ($\text{\AA}$)	528.96, 528.96, 528.96	wwPDB
Map dimensions	608, 608, 608	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	0.87000006, 0.87000006, 0.87000006	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	b	0.33	0/2122	0.93	8/2852 (0.3%)
2	c	0.35	0/1586	0.89	4/2134 (0.2%)
3	d	0.36	0/1571	0.90	4/2113 (0.2%)
4	e	0.39	0/1435	0.91	4/1926 (0.2%)
5	f	0.38	0/1343	0.87	4/1816 (0.2%)
6	g	0.53	0/1122	0.98	5/1515 (0.3%)
7	h	0.56	0/1002	0.99	6/1350 (0.4%)
8	i	0.57	0/1046	1.07	6/1410 (0.4%)
9	j	0.34	0/1152	0.86	4/1551 (0.3%)
10	k	0.35	0/948	0.89	3/1268 (0.2%)
11	l	0.37	0/1054	0.91	1/1403 (0.1%)
12	m	0.35	0/1093	0.86	2/1460 (0.1%)
13	n	0.33	0/974	0.92	4/1301 (0.3%)
14	o	0.34	0/902	1.01	4/1209 (0.3%)
15	p	0.32	0/929	0.82	1/1242 (0.1%)
16	q	0.30	0/960	0.87	4/1278 (0.3%)
17	r	0.35	0/829	0.90	4/1107 (0.4%)
18	s	0.33	0/864	0.88	2/1156 (0.2%)
19	t	0.35	0/745	0.88	1/994 (0.1%)
20	u	0.36	0/788	0.86	0/1051
21	v	0.35	0/766	0.90	2/1025 (0.2%)
22	w	0.30	0/582	0.87	3/769 (0.4%)
23	x	0.31	0/635	0.81	2/848 (0.2%)
24	y	0.34	0/510	0.80	1/677 (0.1%)
25	z	0.35	0/453	0.84	1/605 (0.2%)
26	A	0.44	0/531	1.09	4/709 (0.6%)
27	B	0.33	0/450	0.78	0/599
28	C	0.36	0/417	0.85	1/554 (0.2%)
29	D	0.36	0/380	0.88	0/498
30	E	0.31	0/513	0.82	1/676 (0.1%)
31	F	0.31	0/303	0.90	0/397
32	G	0.42	0/1788	0.92	6/2408 (0.2%)
33	H	0.39	0/1652	0.87	7/2225 (0.3%)
34	I	0.44	0/1665	1.00	10/2227 (0.4%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	J	0.41	1/1170 (0.1%)	0.88	3/1573 (0.2%)
36	K	0.45	0/836	0.97	3/1128 (0.3%)
37	L	0.42	0/1196	0.98	3/1602 (0.2%)
38	M	0.37	0/989	0.93	3/1326 (0.2%)
39	N	0.41	0/1034	0.96	4/1375 (0.3%)
40	O	0.44	0/797	1.01	5/1077 (0.5%)
41	P	0.40	0/886	1.04	6/1195 (0.5%)
42	Q	0.41	0/969	0.97	5/1300 (0.4%)
43	R	0.41	0/893	0.86	1/1193 (0.1%)
44	S	0.39	0/817	0.88	2/1088 (0.2%)
45	T	0.34	0/722	0.89	3/964 (0.3%)
46	U	0.44	0/659	0.89	1/884 (0.1%)
47	V	0.38	0/658	0.83	1/881 (0.1%)
48	W	0.40	0/545	0.85	0/731
49	X	0.44	0/653	0.94	4/877 (0.5%)
50	Y	0.37	0/671	0.86	1/888 (0.1%)
51	Z	0.49	0/551	1.12	4/728 (0.5%)
52	a	0.57	0/1034	0.91	4/1387 (0.3%)
53	3	0.46	0/36963	0.50	1/57662 (0.0%)
54	4	0.44	0/72860	0.50	5/113668 (0.0%)
55	5	0.48	0/1832	0.45	0/2855
56	1	0.53	0/238	0.46	0/368
57	7	0.51	0/1809	0.49	0/2819
All	All	0.44	1/161892 (0.0%)	0.64	168/241922 (0.1%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
35	J	55	VAL	CA-CB	5.42	1.57	1.53

All (168) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
19	t	2	ILE	N-CA-C	-9.03	102.30	111.88
44	S	21	ALA	N-CA-C	-8.89	102.84	114.31
1	b	213	ARG	N-CA-C	-8.81	100.20	112.45
34	I	30	LYS	N-CA-C	-8.77	100.46	113.61
34	I	176	LYS	N-CA-C	-8.68	102.76	112.57
51	Z	23	GLU	N-CA-C	8.63	121.85	108.12
37	L	68	VAL	N-CA-C	-8.53	105.18	113.53
36	K	52	ASN	N-CA-C	-8.29	101.64	112.24
12	m	60	GLN	N-CA-C	8.25	120.56	110.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	f	139	VAL	N-CA-C	8.24	118.29	110.30
42	Q	115	LYS	N-CA-C	-8.03	98.40	110.28
34	I	169	TRP	N-CA-C	-7.99	104.68	114.75
45	T	43	ALA	N-CA-C	-7.92	101.94	111.69
14	o	84	GLU	N-CA-C	-7.88	103.45	113.23
54	4	1025	G	C2'-C3'-O3'	7.75	121.12	109.50
4	e	48	LEU	N-CA-C	-7.61	102.64	112.23
4	e	106	ALA	N-CA-C	7.36	119.19	111.03
34	I	63	ILE	N-CA-C	-7.33	106.35	113.53
41	P	40	ALA	N-CA-C	7.32	119.75	110.24
18	s	35	ILE	N-CA-C	-7.30	104.66	111.45
26	A	8	LYS	N-CA-C	7.18	119.84	110.43
3	d	141	MET	N-CA-C	-7.15	103.72	113.30
8	i	111	THR	N-CA-C	-7.10	102.96	111.69
47	V	16	MET	N-CA-C	7.08	118.77	110.41
15	p	68	GLY	N-CA-C	7.08	121.28	112.14
26	A	4	ASP	N-CA-C	6.98	121.54	113.38
1	b	12	ARG	N-CA-C	-6.77	103.20	113.89
1	b	87	SER	N-CA-C	-6.68	105.13	113.28
13	n	67	PHE	N-CA-C	-6.53	105.85	113.88
22	w	52	ASP	N-CA-C	-6.48	105.12	113.16
34	I	146	GLU	N-CA-C	6.47	118.02	110.97
32	G	71	THR	N-CA-C	6.47	120.03	111.75
8	i	132	ALA	N-CA-C	-6.46	104.09	112.23
39	N	95	SER	N-CA-C	-6.43	104.36	111.82
38	M	28	SER	N-CA-C	6.43	118.16	110.19
7	h	115	GLY	N-CA-C	-6.34	105.57	112.04
52	a	33	LEU	N-CA-C	6.25	117.89	111.14
8	i	30	GLN	N-CA-C	-6.25	105.66	113.28
37	L	47	GLU	N-CA-C	-6.19	103.85	111.40
6	g	115	VAL	N-CA-C	6.18	118.08	109.55
5	f	141	GLY	N-CA-C	-6.18	105.01	112.49
8	i	27	LEU	N-CA-C	-6.17	105.75	113.28
34	I	166	LYS	CA-C-N	6.11	127.48	119.84
34	I	166	LYS	C-N-CA	6.11	127.48	119.84
34	I	7	LYS	N-CA-C	6.10	118.73	111.71
16	q	50	ARG	N-CA-C	-6.09	105.87	113.55
5	f	47	ASN	N-CA-C	-6.08	105.79	112.72
34	I	104	MET	N-CA-C	-6.03	105.11	112.88
21	v	80	HIS	N-CA-C	-5.99	102.51	109.93
23	x	70	LEU	N-CA-C	-5.95	104.87	111.36
36	K	17	GLN	N-CA-C	5.95	119.60	112.93

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	d	122	GLU	N-CA-C	5.95	118.66	111.40
26	A	64	PHE	N-CA-C	-5.93	104.94	111.82
40	O	36	VAL	N-CA-C	-5.91	100.90	109.29
37	L	60	ALA	N-CA-C	-5.90	105.91	113.23
2	c	174	SER	N-CA-C	5.90	117.82	110.91
6	g	117	LEU	CA-C-N	5.89	127.20	119.84
6	g	117	LEU	C-N-CA	5.89	127.20	119.84
9	j	139	VAL	N-CA-C	5.88	116.00	108.12
16	q	49	ARG	N-CA-C	-5.87	105.89	113.16
1	b	178	GLY	N-CA-C	-5.86	106.88	115.72
33	H	71	ARG	CA-C-N	5.85	125.54	119.05
33	H	71	ARG	C-N-CA	5.85	125.54	119.05
33	H	85	LYS	N-CA-C	-5.83	104.84	111.14
13	n	68	ALA	N-CA-C	-5.82	105.02	111.71
41	P	125	LYS	N-CA-C	5.81	118.49	109.60
6	g	44	ILE	N-CA-C	-5.79	104.88	110.72
22	w	69	GLY	CA-C-N	5.79	125.32	119.19
22	w	69	GLY	C-N-CA	5.79	125.32	119.19
34	I	97	LEU	N-CA-C	5.79	118.05	111.11
54	4	1020	A	C2'-C3'-O3'	5.78	118.17	109.50
32	G	23	ASN	CA-C-N	5.77	126.17	119.47
32	G	23	ASN	C-N-CA	5.77	126.17	119.47
42	Q	43	LYS	N-CA-C	5.76	122.55	109.81
42	Q	114	SER	N-CA-C	-5.75	104.70	110.97
24	y	8	GLU	N-CA-C	5.74	118.27	110.35
32	G	137	THR	N-CA-C	-5.73	106.12	113.23
41	P	74	LYS	N-CA-C	-5.67	105.86	112.89
17	r	30	GLY	N-CA-C	-5.66	107.29	115.27
4	e	95	MET	N-CA-C	-5.66	105.19	111.36
6	g	105	ALA	N-CA-C	-5.63	107.04	114.31
3	d	156	ASN	N-CA-C	5.62	117.41	111.28
33	H	129	PHE	N-CA-C	5.61	118.12	111.33
40	O	86	ALA	N-CA-C	-5.61	106.60	113.50
9	j	96	ARG	CA-C-N	5.61	125.71	119.32
9	j	96	ARG	C-N-CA	5.61	125.71	119.32
7	h	88	HIS	N-CA-C	5.60	122.18	109.81
39	N	41	GLU	N-CA-C	5.60	117.13	110.19
16	q	7	VAL	N-CA-C	5.59	115.79	110.42
11	l	95	LEU	N-CA-C	-5.57	105.21	112.23
51	Z	8	ASN	N-CA-C	5.57	122.67	110.80
2	c	113	SER	N-CA-C	5.56	117.25	110.41
53	3	1190	G	C2'-C3'-O3'	5.56	117.84	109.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
35	J	134	ASN	N-CA-C	5.54	117.40	111.36
54	4	2415	A	N9-C1'-C2'	5.53	120.30	112.00
41	P	100	ASN	N-CA-C	-5.52	105.18	111.14
9	j	99	ARG	N-CA-C	5.51	118.05	111.71
7	h	80	THR	N-CA-C	5.51	122.53	110.80
21	v	59	GLU	N-CA-C	5.50	117.78	109.41
36	K	96	VAL	N-CA-C	5.50	116.15	108.89
32	G	30	ILE	N-CA-C	5.50	116.59	108.45
40	O	95	GLY	N-CA-C	-5.49	107.45	114.37
52	a	23	ILE	N-CA-C	5.48	116.12	110.36
4	e	11	VAL	N-CA-C	5.47	115.61	110.30
16	q	70	GLN	N-CA-C	-5.47	106.11	112.89
2	c	183	GLU	N-CA-C	5.45	116.90	111.07
49	X	63	ASP	N-CA-C	5.45	117.67	111.02
13	n	65	LEU	N-CA-C	-5.44	105.38	112.23
35	J	122	VAL	N-CA-C	5.42	120.61	109.34
43	R	56	ARG	N-CA-C	5.41	116.87	110.97
1	b	11	GLY	N-CA-C	-5.41	107.33	114.95
7	h	59	LEU	N-CA-C	-5.41	102.28	110.28
8	i	58	ILE	N-CA-C	5.39	116.00	108.89
3	d	165	HIS	N-CA-C	5.38	117.56	111.11
44	S	49	THR	N-CA-C	-5.37	105.59	111.82
42	Q	57	THR	N-CA-C	-5.32	107.09	113.21
41	P	91	GLY	N-CA-C	5.30	115.03	110.21
32	G	111	LYS	N-CA-C	-5.29	105.59	111.36
54	4	669	G	N9-C1'-C2'	5.29	119.93	112.00
49	X	64	GLU	N-CA-C	5.28	117.78	111.71
39	N	79	ARG	N-CA-C	-5.28	105.43	111.07
13	n	78	LYS	N-CA-C	-5.27	106.36	112.89
33	H	192	TYR	N-CA-C	-5.26	107.88	114.56
10	k	89	ASN	N-CA-C	5.26	117.76	111.71
8	i	12	VAL	N-CA-C	5.25	115.70	110.23
30	E	17	GLY	N-CA-C	5.25	118.59	112.50
49	X	4	LEU	N-CA-C	5.24	117.04	110.91
52	a	6	LYS	N-CA-C	5.24	121.97	110.80
41	P	69	CYS	N-CA-C	-5.23	106.74	113.23
40	O	40	ILE	N-CA-C	5.23	113.12	108.63
14	o	63	LYS	N-CA-C	-5.22	105.73	112.68
10	k	93	GLN	CA-C-N	5.21	125.20	119.89
10	k	93	GLN	C-N-CA	5.21	125.20	119.89
14	o	44	GLY	N-CA-C	5.20	120.88	114.69
12	m	70	ASP	N-CA-C	5.20	118.76	111.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
45	T	18	ALA	N-CA-C	5.19	116.62	111.07
49	X	50	VAL	N-CA-C	5.19	115.78	108.36
17	r	65	ALA	N-CA-C	5.18	116.01	108.14
45	T	46	LYS	N-CA-C	5.17	121.82	110.80
25	z	42	ALA	N-CA-C	-5.16	105.73	111.36
39	N	33	SER	N-CA-C	-5.16	103.22	110.50
54	4	2058	G	N9-C1'-C2'	5.15	119.73	112.00
17	r	46	GLU	N-CA-C	5.15	117.13	108.73
52	a	54	LYS	N-CA-C	5.12	118.08	110.14
1	b	6	LYS	CA-C-N	5.12	126.23	119.84
1	b	6	LYS	C-N-CA	5.12	126.23	119.84
40	O	35	GLN	N-CA-C	5.11	121.68	110.80
38	M	67	GLY	N-CA-C	-5.11	106.55	113.24
23	x	20	ALA	N-CA-C	-5.10	106.64	112.92
2	c	85	ALA	N-CA-C	5.09	117.76	110.68
46	U	76	LYS	N-CA-C	-5.09	105.38	111.03
33	H	5	HIS	CA-C-N	5.08	125.36	119.47
33	H	5	HIS	C-N-CA	5.08	125.36	119.47
18	s	107	VAL	N-CA-C	5.08	115.16	107.75
28	C	27	ARG	N-CA-C	5.07	118.30	112.57
7	h	104	ALA	N-CA-C	-5.07	107.27	113.50
1	b	237	ARG	N-CA-C	5.05	116.82	110.91
7	h	114	GLU	N-CA-C	5.05	119.09	111.96
42	Q	117	GLY	N-CA-C	5.05	125.16	113.18
50	Y	68	LYS	N-CA-C	5.05	121.56	110.80
26	A	43	PHE	N-CA-C	5.04	119.27	111.56
5	f	174	LYS	N-CA-C	5.03	117.16	111.02
38	M	126	CYS	N-CA-C	5.03	116.49	108.79
17	r	50	GLY	N-CA-C	-5.03	101.26	113.18
35	J	115	GLU	N-CA-C	-5.03	105.80	111.28
51	Z	17	ARG	N-CA-C	-5.03	107.10	113.18
14	o	25	ARG	N-CA-C	5.02	117.67	109.59
51	Z	41	THR	N-CA-C	-5.00	105.74	111.14

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	b	2083	0	2157	58	0
2	c	1565	0	1616	30	0
3	d	1552	0	1619	49	0
4	e	1411	0	1447	49	0
5	f	1323	0	1374	37	0
6	g	1111	0	1148	28	0
7	h	989	0	1025	68	0
8	i	1032	0	1088	51	0
9	j	1129	0	1162	31	0
10	k	939	0	1012	25	0
11	l	1045	0	1117	37	0
12	m	1074	0	1157	25	0
13	n	961	0	1000	31	0
14	o	892	0	923	21	0
15	p	917	0	965	21	0
16	q	947	0	1022	21	0
17	r	816	0	839	27	0
18	s	857	0	922	11	0
19	t	739	0	807	17	0
20	u	780	0	834	21	0
21	v	753	0	780	19	0
22	w	575	0	592	10	0
23	x	625	0	655	11	0
24	y	509	0	543	17	0
25	z	449	0	491	9	0
26	A	522	0	524	18	0
27	B	444	0	461	17	0
28	C	410	0	440	9	0
29	D	377	0	418	13	0
30	E	504	0	574	10	0
31	F	302	0	343	13	0
32	G	1757	0	1787	51	0
33	H	1625	0	1699	31	0
34	I	1643	0	1710	70	0
35	J	1157	0	1199	31	0
36	K	818	0	808	36	0
37	L	1182	0	1240	27	0
38	M	979	0	1034	28	0
39	N	1022	0	1070	44	0
40	O	787	0	828	42	0
41	P	870	0	878	34	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
42	Q	955	0	1019	38	0
43	R	884	0	944	32	0
44	S	805	0	847	23	0
45	T	714	0	737	13	0
46	U	649	0	666	19	0
47	V	649	0	691	16	0
48	W	536	0	552	18	0
49	X	638	0	665	22	0
50	Y	665	0	714	23	0
51	Z	545	0	579	20	0
52	a	1027	0	1092	31	0
53	3	33012	0	16618	518	0
54	4	65057	0	32732	911	0
55	5	1640	0	837	17	0
56	1	213	0	108	3	0
57	7	1619	0	822	22	0
All	All	149080	0	100931	2588	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 10.

All (2588) 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)
54:4:1303:A:H3'	54:4:1304:U:H5'	1.32	1.11
14:o:33:ARG:HG3	54:4:1118:A:H62	1.22	1.05
9:j:100:VAL:HG23	9:j:101:ILE:HD12	1.39	1.04
54:4:45:G:H5''	54:4:46:G:H5'	1.36	1.04
54:4:275:C:H2'	54:4:276:U:H4'	1.41	1.03
54:4:1024:G:H3'	54:4:1025:G:H2'	1.38	1.03
29:D:34:ARG:HD2	29:D:39:ARG:HD2	1.36	1.00
54:4:1069:C:H2'	54:4:1070:C:H5''	1.41	1.00
53:3:405:U:H3'	53:3:406:G:H5'	1.43	0.99
54:4:2289:C:H2'	54:4:2290:G:H5''	1.40	0.97
51:Z:9:GLU:HB3	51:Z:10:PRO:HD3	1.48	0.96
43:R:15:VAL:HG13	43:R:16:ILE:HD12	1.45	0.95
17:r:74:ILE:HD13	54:4:992:C:H4'	1.47	0.94
39:N:83:THR:HG21	39:N:102:PHE:HB3	1.49	0.94
54:4:1206:U:H5''	54:4:1207:C:H5''	1.51	0.93
54:4:1233:U:H2'	54:4:1234:G:H5''	1.50	0.92
54:4:2034:G:H2'	54:4:2035:G:H5''	1.53	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:g:96:THR:HG21	6:g:115:VAL:HG11	1.53	0.89
54:4:2305:C:H3'	54:4:2306:C:H5''	1.52	0.88
39:N:98:ARG:HD2	39:N:103:VAL:HG21	1.54	0.88
17:r:24:LYS:HA	17:r:94:THR:HG23	1.56	0.88
54:4:2291:A:H2'	54:4:2292:C:H5'	1.55	0.88
31:F:32:LYS:HE3	54:4:2606:A:H5'	1.55	0.87
11:l:95:LEU:HD22	11:l:100:ILE:HD11	1.56	0.86
54:4:2190:A:H2'	54:4:2191:C:H5'	1.57	0.86
52:a:221:GLY:H	54:4:2304:A:H4'	1.38	0.86
54:4:1307:G:H2'	54:4:1308:U:H4'	1.56	0.86
1:b:106:PRO:HD2	1:b:109:LEU:HD22	1.56	0.85
53:3:484:G:H4'	53:3:485:U:H5''	1.58	0.85
52:a:30:LEU:HD21	52:a:185:LEU:HD13	1.58	0.85
41:P:118:ASN:HB2	53:3:718:A:H5'	1.58	0.85
54:4:1155:A:H4'	54:4:1155:A:OP1	1.76	0.84
54:4:542:C:H2'	54:4:543:G:H5''	1.58	0.84
7:h:24:SER:HB2	7:h:86:MET:HE2	1.61	0.83
2:c:151:THR:HB	2:c:152:PRO:HD3	1.60	0.82
40:O:57:VAL:O	40:O:58:ASN:HB2	1.79	0.82
54:4:1154:A:O2'	54:4:1155:A:OP1	1.98	0.82
4:e:107:VAL:HG23	4:e:108:PRO:HD3	1.61	0.81
46:U:31:ARG:HB2	53:3:310:G:H5''	1.61	0.81
54:4:2064:A:H2	54:4:2071:U:H3	1.26	0.81
44:S:7:ALA:O	44:S:10:VAL:HG12	1.80	0.81
54:4:1233:U:C2'	54:4:1234:G:H5''	2.11	0.81
53:3:664:G:H22	53:3:741:G:H1	1.29	0.81
38:M:28:SER:HB3	38:M:56:PRO:HB2	1.63	0.81
25:z:4:ILE:HD11	25:z:56:VAL:HG23	1.62	0.81
36:K:3:HIS:O	36:K:92:THR:HG22	1.81	0.80
26:A:20:ASN:HD21	26:A:39:LYS:HB2	1.46	0.80
54:4:1428:G:H4'	54:4:1429:A:H5''	1.62	0.80
48:W:11:ARG:HE	48:W:12:PHE:H	1.29	0.80
6:g:110:VAL:HG22	6:g:114:GLU:HG3	1.64	0.79
14:o:33:ARG:HG3	54:4:1118:A:N6	1.97	0.79
54:4:1155:A:OP1	54:4:1155:A:O3'	2.01	0.79
4:e:35:LEU:HD22	4:e:153:ILE:HD12	1.63	0.79
32:G:45:THR:HG22	32:G:200:PRO:HG2	1.65	0.79
47:V:46:HIS:HB2	47:V:70:LYS:HD3	1.65	0.79
11:l:17:LYS:HD3	54:4:663:G:H5''	1.63	0.79
53:3:54:C:H2'	53:3:352:C:H41	1.46	0.79
54:4:1069:C:C2'	54:4:1070:C:H5''	2.13	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:T:38:LEU:HD23	45:T:55:LEU:HD13	1.65	0.79
54:4:161:A:H3'	54:4:162:U:H5''	1.65	0.78
54:4:1173:C:H5'	54:4:1174:A:H5'	1.65	0.78
4:e:84:ILE:HD11	54:4:2440:U:H5'	1.66	0.78
54:4:1155:A:O2'	54:4:1156:A:H5'	1.84	0.78
54:4:2376:C:H2'	54:4:2377:U:H5'	1.63	0.78
53:3:1378:C:H3'	53:3:1379:G:H5''	1.65	0.77
1:b:130:PRO:HG2	1:b:133:ASN:HD22	1.50	0.77
6:g:54:LEU:O	6:g:57:LYS:HG2	1.84	0.77
7:h:23:LEU:HB2	7:h:118:ILE:HG12	1.65	0.77
54:4:704:G:H2'	54:4:726:G:H22	1.48	0.77
54:4:2927:A:H2'	54:4:2928:A:H5'	1.66	0.76
32:G:14:HIS:O	32:G:15:PHE:O	2.02	0.76
54:4:2681:G:H3'	54:4:2682:U:H5''	1.66	0.76
54:4:2928:A:H3'	54:4:2929:G:H5'	1.66	0.76
54:4:858:G:H5'	54:4:859:G:OP2	1.86	0.76
8:i:12:VAL:HG13	54:4:1189:U:H3	1.50	0.76
1:b:106:PRO:HG2	1:b:109:LEU:HB2	1.67	0.75
29:D:12:ARG:HH11	29:D:44:VAL:HG11	1.49	0.75
53:3:1088:G:H21	53:3:1167:A:H61	1.32	0.75
3:d:1:MET:HB2	3:d:16:GLU:HG3	1.69	0.75
38:M:17:GLN:HE21	38:M:71:VAL:HG22	1.51	0.75
1:b:164:VAL:HG21	1:b:180:MET:HE1	1.67	0.75
54:4:2307:C:H2'	54:4:2308:U:C5	2.22	0.74
50:Y:80:ALA:O	50:Y:84:LYS:HG2	1.87	0.74
13:n:38:LEU:HB3	13:n:39:PRO:HD3	1.69	0.74
34:I:187:ARG:HH22	34:I:192:ALA:HA	1.51	0.74
42:Q:30:ARG:HG3	53:3:363:A:H5'	1.70	0.74
50:Y:43:LYS:HD2	50:Y:86:ALA:HB3	1.70	0.74
39:N:51:LEU:HD13	39:N:56:MET:HG3	1.70	0.74
8:i:4:VAL:HB	54:4:1227:G:H5'	1.69	0.74
34:I:60:VAL:O	34:I:63:ILE:HG22	1.87	0.74
48:W:11:ARG:NE	48:W:12:PHE:H	1.84	0.74
54:4:2034:G:C2'	54:4:2035:G:H5''	2.19	0.73
54:4:1935:G:H2'	54:4:1936:A:H5'	1.71	0.73
13:n:29:VAL:HG21	13:n:75:ILE:HG23	1.68	0.73
53:3:769:G:H4'	53:3:1513:A:H4'	1.70	0.73
47:V:11:VAL:HG13	47:V:20:ILE:HD11	1.71	0.73
24:y:2:LYS:HD2	54:4:78:U:OP2	1.87	0.73
13:n:86:ARG:HH21	13:n:117:ASP:HB3	1.54	0.73
54:4:704:G:H2'	54:4:726:G:N2	2.03	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:1269:U:H4'	54:4:1270:A:O4'	1.87	0.72
21:v:72:VAL:HG12	21:v:93:ARG:HA	1.71	0.72
36:K:66:ALA:HB1	36:K:67:PRO:HD2	1.71	0.72
53:3:424:G:H2'	53:3:425:G:H8	1.54	0.72
39:N:119:LYS:HE3	53:3:1350:A:OP2	1.89	0.72
33:H:96:VAL:HG22	33:H:97:PRO:HD2	1.70	0.72
7:h:56:ARG:HG2	54:4:1212:A:O4'	1.89	0.72
53:3:663:A:H5'	53:3:836:G:OP1	1.90	0.71
53:3:1033:G:H3'	53:3:1034:G:H5''	1.72	0.71
54:4:2305:C:H3'	54:4:2306:C:C5'	2.20	0.71
43:R:80:MET:HE3	43:R:91:ARG:HG2	1.72	0.71
54:4:1428:G:H4'	54:4:1429:A:C5'	2.20	0.71
5:f:88:LEU:HD11	5:f:95:ALA:HB2	1.72	0.71
3:d:15:SER:HB3	3:d:18:THR:HG22	1.71	0.71
54:4:1155:A:C2	54:4:2615:G:O2'	2.43	0.71
10:k:18:ARG:HB3	10:k:45:GLU:HB3	1.73	0.71
10:k:102:PRO:HB3	10:k:121:GLU:HB2	1.70	0.71
11:l:127:VAL:HG21	11:l:142:ILE:HD13	1.71	0.71
46:U:61:VAL:HG21	46:U:67:ILE:HD11	1.72	0.71
53:3:407:U:H2'	53:3:408:A:C8	2.25	0.71
54:4:1196:G:H2'	54:4:1197:A:O4'	1.90	0.71
40:O:65:TYR:HB3	44:S:95:LEU:HD11	1.73	0.71
7:h:43:LYS:HE3	7:h:99:PHE:HE1	1.55	0.71
7:h:12:VAL:HA	7:h:15:VAL:HG22	1.72	0.70
38:M:42:GLU:HG3	38:M:100:ILE:HD13	1.72	0.70
32:G:20:ARG:HG3	53:3:831:A:C5'	2.21	0.70
53:3:407:U:H2'	53:3:408:A:H8	1.53	0.70
54:4:2517:G:H5''	54:4:2518:U:O4'	1.92	0.70
48:W:11:ARG:HG2	53:3:845:A:O2'	1.92	0.70
54:4:1233:U:C3'	54:4:1234:G:H5''	2.22	0.70
54:4:2258:U:H4'	54:4:2287:G:H1	1.57	0.70
2:c:56:LYS:HE3	54:4:2958:C:H5''	1.72	0.70
51:Z:9:GLU:HB3	51:Z:10:PRO:CD	2.21	0.70
53:3:1028:C:H1'	53:3:1034:G:H1	1.56	0.70
4:e:161:SER:HB3	4:e:164:GLU:OE1	1.93	0.69
32:G:8:MET:HG3	32:G:13:VAL:HG11	1.74	0.69
53:3:212:G:H2'	53:3:213:G:H8	1.56	0.69
53:3:328:C:H4'	53:3:329:A:H5'	1.72	0.69
53:3:181:A:H62	53:3:194:C:H2'	1.57	0.69
15:p:90:ALA:HB2	15:p:112:ARG:HA	1.74	0.69
34:I:66:VAL:HG22	34:I:96:ARG:HH11	1.58	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:162:U:O2'	54:4:163:C:H5'	1.92	0.69
54:4:2683:U:H2'	54:4:2684:C:H5'	1.73	0.69
21:v:2:PHE:HB2	21:v:61:LEU:HD22	1.74	0.69
51:Z:43:GLU:HG2	51:Z:44:ARG:HH21	1.56	0.69
3:d:122:GLU:HG2	3:d:123:LYS:HG2	1.73	0.69
9:j:82:GLY:HA2	54:4:1259:G:OP1	1.93	0.69
40:O:7:ARG:HB3	40:O:101:SER:HB2	1.73	0.69
42:Q:64:SER:HB2	42:Q:81:ILE:HD11	1.73	0.69
54:4:1114:U:H2'	54:4:1115:C:C6	2.28	0.69
54:4:2519:G:H2'	54:4:2552:C:H41	1.58	0.69
54:4:2289:C:C2'	54:4:2290:G:H5''	2.21	0.69
17:r:98:ILE:H	17:r:98:ILE:HD12	1.58	0.68
41:P:96:ILE:HD12	41:P:109:ILE:HD12	1.75	0.68
41:P:126:ARG:O	51:Z:34:ARG:NH2	2.25	0.68
54:4:2255:G:H22	54:4:2289:C:H2'	1.57	0.68
8:i:4:VAL:HB	54:4:1227:G:C5'	2.22	0.68
53:3:459:A:H2'	53:3:460:A:H8	1.59	0.68
53:3:1256:A:O2'	53:3:1257:A:H5''	1.94	0.68
54:4:279:A:H2'	54:4:280:U:H5'	1.75	0.68
54:4:1061:A:C2'	54:4:1062:U:H5'	2.24	0.68
7:h:87:GLU:HG2	7:h:95:LEU:HB2	1.76	0.68
39:N:55:ASP:HB3	39:N:59:LYS:HD2	1.74	0.68
53:3:455:G:H2'	53:3:456:A:C8	2.29	0.68
53:3:458:U:H3	53:3:474:G:H1	1.40	0.68
54:4:1028:U:O4	54:4:1154:A:H3'	1.94	0.68
54:4:1907:U:H5	54:4:1912:A:N7	1.92	0.68
4:e:94:ARG:HH22	54:4:1109:C:H4'	1.58	0.68
9:j:69:ARG:O	9:j:90:GLU:HG3	1.93	0.68
54:4:542:C:C2'	54:4:543:G:H5''	2.23	0.68
7:h:28:ALA:H	7:h:110:ALA:HB1	1.59	0.67
8:i:20:SER:HB2	8:i:21:PRO:HD3	1.76	0.67
35:J:133:ILE:H	35:J:133:ILE:HD12	1.58	0.67
8:i:92:PRO:HD2	54:4:1204:C:H1'	1.74	0.67
10:k:10:VAL:HG11	10:k:16:ALA:HB3	1.77	0.67
13:n:79:LEU:HD23	13:n:83:LEU:HB2	1.77	0.67
32:G:216:VAL:O	32:G:219:THR:HG22	1.94	0.67
53:3:352:C:H4'	53:3:354:G:OP1	1.94	0.67
6:g:47:PHE:HA	6:g:51:ARG:HB2	1.77	0.67
14:o:81:ARG:O	14:o:84:GLU:HG2	1.95	0.67
17:r:48:LYS:HG2	17:r:49:ILE:H	1.60	0.67
57:7:50:U:H3	57:7:64:A:H61	1.41	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:G:20:ARG:HG3	53:3:831:A:H5'	1.77	0.67
35:J:22:LYS:HD3	35:J:29:ILE:HD11	1.76	0.67
8:i:57:VAL:HB	8:i:69:VAL:HB	1.76	0.67
13:n:63:ARG:NH2	54:4:1582:C:H5'	2.10	0.67
32:G:113:LEU:HD13	32:G:143:LEU:HB3	1.77	0.67
35:J:98:ALA:HB2	35:J:123:LEU:HG	1.76	0.67
45:T:88:ARG:H	45:T:88:ARG:HD3	1.59	0.67
54:4:704:G:H1'	54:4:727:A:N6	2.09	0.67
54:4:1132:A:H5''	54:4:1133:G:OP1	1.94	0.67
54:4:1447:C:O2'	54:4:1448:C:H5'	1.95	0.67
3:d:18:THR:HG23	3:d:19:PHE:HD1	1.58	0.67
11:l:93:ASN:O	11:l:94:THR:HG22	1.95	0.67
33:H:56:ILE:HG23	33:H:63:ILE:HD11	1.76	0.66
54:4:895:U:O2'	54:4:896:A:H5''	1.95	0.66
54:4:2257:C:H1'	54:4:2288:C:H42	1.61	0.66
16:q:108:LEU:HA	17:r:48:LYS:HZ3	1.60	0.66
54:4:121:G:H4'	54:4:149:A:H5'	1.78	0.66
54:4:1634:U:H2'	54:4:1635:C:C6	2.29	0.66
14:o:52:SER:OG	14:o:54:VAL:HG22	1.96	0.66
15:p:4:ILE:O	15:p:8:GLU:HG3	1.96	0.66
53:3:1130:A:H61	53:3:1144:G:H1'	1.61	0.66
15:p:52:ARG:NH2	54:4:2848:U:H5''	2.10	0.66
34:I:38:GLY:HA3	53:3:542:G:H5'	1.76	0.66
53:3:90:C:H2'	53:3:91:U:C6	2.30	0.66
50:Y:66:ILE:HG23	50:Y:70:LYS:HB3	1.77	0.66
53:3:1218:C:H2'	53:3:1219:A:C8	2.31	0.66
54:4:1218:A:H2'	54:4:1219:G:C8	2.31	0.66
53:3:199:A:H61	53:3:218:U:H3	1.43	0.66
54:4:2989:U:H2'	54:4:2990:G:H8	1.61	0.66
3:d:164:LEU:HB3	3:d:167:VAL:HG22	1.77	0.66
36:K:92:THR:OG1	36:K:93:LYS:N	2.25	0.66
54:4:1156:A:N6	54:4:1253:G:H2'	2.11	0.66
54:4:2000:A:H2'	54:4:2001:G:O4'	1.96	0.65
40:O:40:ILE:HD11	53:3:1124:G:H4'	1.78	0.65
53:3:483:C:H2'	53:3:484:G:C8	2.31	0.65
1:b:154:ALA:HB2	1:b:161:VAL:HG23	1.78	0.65
8:i:12:VAL:HG13	54:4:1189:U:N3	2.11	0.65
40:O:59:LYS:HE3	40:O:62:ARG:HH21	1.61	0.65
19:t:47:VAL:HG13	19:t:55:VAL:HG21	1.77	0.65
54:4:1982:A:H2'	54:4:1983:U:H5'	1.79	0.65
41:P:126:ARG:HH22	53:3:692:U:H5''	1.61	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1241:G:H2'	53:3:1242:G:H8	1.62	0.65
54:4:784:G:H5'	54:4:785:G:OP1	1.97	0.65
10:k:70:ARG:HG2	10:k:76:VAL:HG12	1.77	0.65
36:K:10:VAL:HG13	36:K:58:HIS:HB3	1.78	0.65
9:j:32:LEU:HD22	9:j:54:ILE:HG21	1.79	0.65
33:H:96:VAL:CG2	33:H:97:PRO:HD2	2.27	0.65
48:W:11:ARG:NH2	48:W:47:ARG:HG2	2.12	0.65
53:3:195:A:H2'	53:3:196:A:C8	2.31	0.65
54:4:215:G:H4'	54:4:216:A:H4'	1.77	0.65
34:I:7:LYS:O	34:I:20:LEU:HD13	1.96	0.65
53:3:412:A:H62	53:3:431:A:H61	1.45	0.65
3:d:41:GLN:HG3	3:d:43:THR:HG23	1.79	0.64
34:I:69:ARG:NH2	53:3:401:C:OP2	2.30	0.64
54:4:2414:G:H4'	54:4:2415:A:O4'	1.97	0.64
54:4:1307:G:C4	54:4:1308:U:H1'	2.33	0.64
34:I:23:GLY:HA2	34:I:108:ALA:HB1	1.80	0.64
42:Q:115:LYS:O	42:Q:116:TYR:HB2	1.96	0.64
54:4:1301:U:H2'	54:4:1302:U:H4'	1.80	0.64
42:Q:106:VAL:N	42:Q:118:VAL:HG22	2.13	0.64
54:4:995:C:H5'	54:4:995:C:H6	1.63	0.64
49:X:44:ILE:HD13	49:X:63:ASP:HA	1.79	0.64
54:4:1155:A:C2	54:4:1156:A:C5	2.86	0.64
34:I:157:ALA:HA	34:I:160:LEU:HD12	1.78	0.64
53:3:505:G:OP2	53:3:535:A:H5'	1.97	0.64
32:G:72:LYS:HZ1	32:G:164:ASP:HB2	1.63	0.64
50:Y:55:PRO:HB3	53:3:193:C:H4'	1.80	0.64
53:3:1170:A:H2'	53:3:1171:A:O4'	1.98	0.64
54:4:1025:G:H4'	54:4:1026:G:C5'	2.27	0.64
11:l:128:THR:HG23	11:l:131:ALA:H	1.62	0.64
54:4:1501:A:H5'	54:4:2340:A:H1'	1.80	0.64
54:4:2021:C:H2'	54:4:2022:C:H5'	1.79	0.64
7:h:27:VAL:HG13	7:h:83:ALA:HB3	1.80	0.64
34:I:170:LEU:HD12	34:I:170:LEU:O	1.97	0.64
54:4:2176:G:H2'	54:4:2177:G:H5''	1.80	0.64
4:e:33:ILE:HG22	4:e:155:ILE:HG13	1.81	0.63
4:e:45:ASP:HB3	4:e:48:LEU:HB2	1.81	0.63
4:e:65:LEU:HD11	54:4:1107:G:C8	2.33	0.63
34:I:120:LYS:HG3	53:3:439:U:H4'	1.78	0.63
54:4:880:G:H2'	54:4:881:G:H8	1.64	0.63
54:4:2300:U:H5''	54:4:2303:C:H41	1.61	0.63
20:u:65:GLN:HG3	54:4:328:U:O3'	1.99	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:j:100:VAL:CG2	9:j:101:ILE:HD12	2.23	0.63
32:G:107:ARG:O	32:G:110:ILE:HG22	1.98	0.63
34:I:173:ASP:HB3	34:I:178:GLU:HB3	1.79	0.63
6:g:5:LEU:HB2	6:g:16:GLY:H	1.64	0.63
43:R:39:ALA:HB3	43:R:42:VAL:HG13	1.79	0.63
54:4:1187:G:H3'	54:4:1188:U:H2'	1.81	0.63
2:c:5:VAL:H	2:c:32:ASN:HD21	1.45	0.63
8:i:91:LYS:N	8:i:92:PRO:HD3	2.13	0.63
34:I:3:TYR:C	34:I:4:LEU:HD23	2.24	0.63
54:4:2519:G:O2'	54:4:2557:G:N2	2.32	0.63
4:e:140:ILE:HG22	4:e:142:TYR:H	1.64	0.63
8:i:3:LYS:HE3	54:4:1228:C:OP2	1.97	0.63
12:m:12:MET:HA	54:4:910:A:H62	1.64	0.63
32:G:76:SER:O	32:G:79:VAL:HG12	1.99	0.63
53:3:411:A:N3	53:3:413:G:H1'	2.14	0.63
34:I:197:HIS:O	34:I:201:GLU:HG2	1.99	0.63
38:M:107:LYS:HB2	38:M:110:MET:HE1	1.81	0.63
53:3:193:C:H2'	53:3:194:C:C6	2.34	0.63
53:3:606:G:H5''	53:3:607:A:H5'	1.81	0.63
54:4:752:A:H62	54:4:2737:U:H3	1.46	0.63
54:4:1428:G:C4'	54:4:1429:A:H5''	2.28	0.63
39:N:123:ARG:HB2	53:3:1343:G:H4'	1.79	0.63
52:a:220:ALA:HB1	54:4:2304:A:H5'	1.80	0.63
53:3:1033:G:H2'	53:3:1034:G:C4'	2.29	0.63
54:4:310:A:C2'	54:4:311:A:H5''	2.29	0.63
53:3:842:U:H5''	53:3:846:G:C6	2.34	0.62
7:h:88:HIS:CD2	7:h:89:PRO:HD3	2.34	0.62
49:X:30:LEU:H	49:X:48:ILE:HA	1.63	0.62
52:a:221:GLY:H	54:4:2304:A:C4'	2.12	0.62
54:4:1050:A:N6	54:4:1131:U:H3'	2.13	0.62
54:4:2376:C:C2'	54:4:2377:U:H5'	2.28	0.62
12:m:6:ARG:HG3	12:m:6:ARG:O	1.99	0.62
53:3:47:C:H5'	53:3:365:U:C2	2.34	0.62
4:e:65:LEU:HD11	54:4:1107:G:H8	1.64	0.62
8:i:104:GLN:O	8:i:107:GLU:HG3	2.00	0.62
13:n:47:VAL:O	13:n:50:PRO:HD2	1.98	0.62
16:q:30:VAL:HG13	54:4:580:U:O3'	1.99	0.62
35:J:105:ILE:HD11	35:J:123:LEU:HD22	1.81	0.62
54:4:1602:U:H2'	54:4:1603:G:O4'	1.99	0.62
54:4:473:G:O2'	54:4:474:G:H5'	1.99	0.62
4:e:65:LEU:HD22	54:4:1108:C:C5	2.35	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:M:14:ARG:HH12	53:3:876:C:H4'	1.62	0.62
53:3:424:G:H2'	53:3:425:G:C8	2.34	0.62
54:4:1188:U:C4'	54:4:1190:G:H5'	2.29	0.62
54:4:1229:U:H2'	54:4:1230:C:C6	2.33	0.62
13:n:60:VAL:HG13	54:4:1582:C:O2'	2.00	0.62
53:3:632:U:H3'	53:3:633:G:H5'	1.81	0.62
7:h:71:CYS:HA	7:h:117:LEU:HD21	1.81	0.62
53:3:701:U:H4'	53:3:703:G:H1'	1.82	0.62
7:h:17:GLU:HG2	7:h:86:MET:HG3	1.81	0.62
15:p:59:THR:HG22	15:p:72:VAL:HG12	1.80	0.62
29:D:14:ARG:HD2	54:4:771:G:OP1	2.00	0.62
54:4:879:G:H2'	54:4:880:G:H5'	1.82	0.62
54:4:1183:G:H2'	54:4:1184:G:O4'	1.99	0.62
20:u:47:PRO:HD3	20:u:55:GLY:HA2	1.82	0.62
1:b:129:LEU:N	1:b:129:LEU:HD23	2.14	0.61
13:n:2:ARG:HG2	13:n:2:ARG:O	1.99	0.61
32:G:110:ILE:HD11	32:G:151:LYS:HA	1.80	0.61
54:4:2642:U:H2'	54:4:2643:C:C6	2.35	0.61
11:l:27:LEU:O	11:l:31:GLY:HA2	1.99	0.61
29:D:34:ARG:NH2	54:4:466:A:OP1	2.28	0.61
39:N:49:GLN:O	39:N:52:GLU:HG2	2.00	0.61
53:3:456:A:H61	53:3:476:U:H3	1.47	0.61
54:4:11:C:H2'	54:4:12:U:H5''	1.80	0.61
4:e:51:ASN:HB3	4:e:149:ARG:HH22	1.65	0.61
6:g:104:THR:HA	6:g:108:VAL:O	1.99	0.61
26:A:16:CYS:HB2	26:A:37:CYS:SG	2.40	0.61
37:L:113:LYS:HB3	53:3:1297:G:H21	1.64	0.61
54:4:2262:A:H1'	54:4:2287:G:H21	1.65	0.61
53:3:478:A:H2'	53:3:479:U:O4'	2.01	0.61
7:h:119:PRO:HG3	7:h:126:LEU:HD11	1.81	0.61
53:3:59:A:H3'	53:3:331:G:H22	1.65	0.61
53:3:412:A:N6	53:3:431:A:H61	1.98	0.61
54:4:1215:G:H2'	54:4:1217:A:O4'	2.00	0.61
54:4:1303:A:C3'	54:4:1304:U:H5'	2.21	0.61
54:4:2682:U:H2'	54:4:2683:U:C6	2.36	0.61
2:c:49:GLN:NE2	2:c:79:LEU:HD13	2.16	0.61
41:P:80:ASN:HB3	41:P:105:ARG:HD3	1.82	0.61
53:3:1436:U:H2'	53:3:1437:A:H8	1.66	0.61
54:4:2595:C:H2'	54:4:2596:A:O4'	1.99	0.61
54:4:362:A:H3'	54:4:363:G:H8	1.65	0.61
54:4:2783:G:O2'	54:4:2784:U:H5	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:P:126:ARG:NH2	53:3:692:U:H5''	2.16	0.61
29:D:10:LEU:HD11	29:D:14:ARG:NH1	2.16	0.61
54:4:2214:U:H2'	54:4:2215:G:C8	2.36	0.61
5:f:27:GLY:HA3	5:f:78:VAL:HB	1.83	0.60
7:h:38:MET:HE2	8:i:117:THR:HG21	1.83	0.60
29:D:24:THR:HG23	29:D:27:GLY:H	1.65	0.60
53:3:269:C:H2'	53:3:270:A:C8	2.35	0.60
54:4:1229:U:H2'	54:4:1230:C:H6	1.66	0.60
6:g:96:THR:HG21	6:g:115:VAL:CG1	2.30	0.60
7:h:1:MET:HE2	54:4:1176:A:H5'	1.83	0.60
10:k:1:MET:HE3	10:k:67:LYS:HG2	1.83	0.60
49:X:77:ARG:HD2	53:3:1225:A:H1'	1.83	0.60
54:4:2500:U:H2'	54:4:2501:G:C8	2.35	0.60
12:m:69:PRO:HA	12:m:94:ALA:HB2	1.82	0.60
53:3:66:A:H4'	53:3:173:U:C5	2.37	0.60
54:4:1307:G:C2'	54:4:1308:U:H4'	2.28	0.60
10:k:76:VAL:H	15:p:72:VAL:HG22	1.67	0.60
51:Z:40:PRO:O	51:Z:44:ARG:HG2	2.01	0.60
53:3:1280:A:O2'	53:3:1281:C:H5'	2.02	0.60
53:3:1306:A:N6	53:3:1331:G:H1'	2.17	0.60
35:J:41:GLY:O	35:J:118:GLY:HA3	2.01	0.60
53:3:193:C:H2'	53:3:194:C:H6	1.66	0.60
54:4:1154:A:HO2'	54:4:1155:A:P	2.24	0.60
2:c:155:VAL:HG21	54:4:2746:G:H21	1.66	0.60
3:d:148:ILE:HB	3:d:169:VAL:HG12	1.82	0.60
47:V:63:CYS:SG	47:V:64:ARG:N	2.72	0.60
53:3:560:A:H5'	53:3:566:G:N2	2.17	0.60
54:4:2927:A:C2'	54:4:2928:A:H5'	2.30	0.60
13:n:36:THR:HG22	54:4:1406:C:OP1	2.01	0.60
36:K:21:MET:O	36:K:24:ARG:HG2	2.01	0.60
42:Q:41:PRO:HB3	42:Q:88:ASP:HB3	1.82	0.60
53:3:871:U:H5''	53:3:872:A:OP2	2.01	0.60
54:4:2176:G:C3'	54:4:2177:G:H5''	2.32	0.60
4:e:84:ILE:HD12	54:4:2439:A:O2'	2.01	0.60
15:p:91:VAL:HG21	15:p:96:LEU:HD11	1.82	0.60
50:Y:56:ILE:O	50:Y:60:GLN:HG2	2.01	0.60
54:4:225:C:H2'	54:4:226:A:O4'	2.02	0.60
42:Q:3:VAL:HG23	47:V:33:TYR:HB3	1.83	0.60
54:4:1307:G:C5	54:4:1308:U:H1'	2.36	0.60
54:4:1955:U:O2'	54:4:1956:G:H5'	2.02	0.60
54:4:2290:G:H2'	54:4:2291:A:C8	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:120:SER:HB2	4:e:127:TYR:CE1	2.37	0.60
24:y:40:SER:HB2	54:4:61:C:O4'	2.02	0.60
50:Y:54:GLN:N	50:Y:55:PRO:HD2	2.17	0.60
54:4:2366:G:N3	54:4:2366:G:H2'	2.16	0.60
9:j:72:LYS:HB3	9:j:89:PHE:HB2	1.83	0.59
53:3:211:G:H2'	53:3:212:G:H5'	1.83	0.59
53:3:459:A:H2'	53:3:460:A:C8	2.37	0.59
7:h:117:LEU:HD12	7:h:117:LEU:O	2.02	0.59
54:4:1560:G:H2'	54:4:1561:A:C8	2.38	0.59
4:e:45:ASP:OD1	4:e:47:LYS:HG2	2.01	0.59
12:m:34:LYS:HD3	12:m:99:GLY:HA2	1.84	0.59
34:I:24:VAL:HG22	53:3:409:U:H5''	1.84	0.59
44:S:40:ARG:HH22	49:X:6:LYS:HB3	1.67	0.59
47:V:16:MET:HG3	47:V:19:SER:OG	2.02	0.59
53:3:451:A:H4'	53:3:452:A:O4'	2.02	0.59
54:4:1025:G:H4'	54:4:1026:G:H5'	1.83	0.59
53:3:137:U:H2'	53:3:138:G:H8	1.66	0.59
54:4:291:G:H1	54:4:349:U:H3	1.50	0.59
54:4:358:U:H2'	54:4:359:G:H8	1.67	0.59
54:4:1985:G:N2	54:4:2012:G:H2'	2.18	0.59
54:4:2291:A:C2'	54:4:2292:C:H5'	2.29	0.59
34:I:30:LYS:HD2	53:3:411:A:H8	1.67	0.59
47:V:74:LEU:HD23	47:V:75:VAL:N	2.17	0.59
53:3:1432:G:H1'	53:3:1468:A:H62	1.68	0.59
53:3:358:U:H2'	53:3:359:G:H8	1.67	0.59
34:I:12:ARG:HG2	34:I:33:ILE:HA	1.83	0.59
53:3:721:G:H4'	53:3:722:G:O4'	2.03	0.59
33:H:13:ILE:HG22	33:H:14:VAL:HG13	1.84	0.59
41:P:33:ILE:CD1	41:P:73:VAL:HG11	2.33	0.59
53:3:955:U:H3	53:3:1225:A:H61	1.50	0.59
54:4:2225:A:H2'	54:4:2226:U:C6	2.38	0.59
54:4:1314:G:H2'	54:4:1315:G:O4'	2.02	0.59
54:4:2640:C:H2'	54:4:2641:A:O4'	2.03	0.59
9:j:59:ALA:HB1	9:j:101:ILE:HD13	1.85	0.59
54:4:1656:A:H2'	54:4:1657:G:O4'	2.03	0.59
54:4:1986:A:H1'	54:4:2013:A:C2	2.38	0.59
4:e:87:LYS:HD2	54:4:2441:C:H5''	1.85	0.58
5:f:163:TYR:HB2	5:f:166:GLU:HB2	1.84	0.58
9:j:58:ASN:HA	9:j:126:ALA:O	2.03	0.58
28:C:28:THR:HG23	28:C:29:LYS:HG2	1.83	0.58
28:C:32:LYS:HB3	28:C:50:GLU:HG2	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:O:59:LYS:HE3	40:O:62:ARG:NH2	2.18	0.58
53:3:16:A:O2'	53:3:17:U:H5'	2.03	0.58
53:3:102:G:H2'	53:3:103:U:C6	2.38	0.58
53:3:434:U:H2'	53:3:435:A:H8	1.68	0.58
53:3:501:C:H2'	53:3:502:A:H8	1.67	0.58
53:3:1001:C:H2'	53:3:1002:G:H8	1.67	0.58
54:4:528:A:C2	54:4:2170:A:H2'	2.38	0.58
54:4:1495:A:H2'	54:4:1496:G:H5'	1.85	0.58
3:d:59:PRO:HB2	3:d:60:TRP:CE3	2.38	0.58
13:n:103:ARG:NH2	54:4:1415:A:O4'	2.35	0.58
17:r:98:ILE:HD12	17:r:98:ILE:N	2.18	0.58
41:P:49:SER:HA	41:P:68:ARG:HH11	1.68	0.58
52:a:8:MET:SD	54:4:2302:C:H5''	2.44	0.58
54:4:1061:A:O2'	54:4:1062:U:H5'	2.03	0.58
54:4:1298:C:H2'	54:4:1299:G:C8	2.38	0.58
14:o:105:ALA:O	14:o:108:ASP:OD1	2.21	0.58
32:G:218:ALA:O	32:G:222:GLU:HG2	2.03	0.58
54:4:1155:A:N1	54:4:2615:G:O2'	2.37	0.58
54:4:1199:G:OP1	54:4:1199:G:H3'	2.04	0.58
25:z:50:VAL:O	25:z:54:VAL:HG22	2.03	0.58
32:G:220:VAL:O	32:G:224:ARG:HG2	2.03	0.58
36:K:36:ILE:HG23	36:K:64:VAL:HG12	1.85	0.58
53:3:1137:C:H5'	53:3:1138:G:H5'	1.86	0.58
3:d:163:ASN:OD1	54:4:323:C:H5''	2.03	0.58
7:h:29:ASP:HB2	7:h:56:ARG:HH12	1.67	0.58
40:O:41:PRO:HG2	53:3:1150:A:C2	2.39	0.58
52:a:220:ALA:CB	54:4:2304:A:H5'	2.32	0.58
54:4:2962:G:O2'	54:4:2963:A:H5'	2.04	0.58
15:p:52:ARG:HH22	54:4:2848:U:H5''	1.68	0.58
29:D:34:ARG:CD	29:D:39:ARG:HD2	2.22	0.58
35:J:75:LEU:HD13	35:J:146:MET:HE1	1.84	0.58
54:4:1155:A:OP1	54:4:1155:A:C4'	2.51	0.58
54:4:1155:A:H2	54:4:1156:A:C4	2.20	0.58
1:b:231:HIS:HA	1:b:241:LYS:HD2	1.85	0.58
5:f:1:SER:O	5:f:5:LYS:HG3	2.04	0.58
7:h:53:ARG:HB3	7:h:55:VAL:HG23	1.85	0.58
11:l:101:ILE:HG13	11:l:102:GLY:N	2.19	0.58
20:u:1:ALA:HB2	54:4:83:A:OP1	2.03	0.58
35:J:105:ILE:HD11	35:J:123:LEU:CD2	2.34	0.58
53:3:1029:U:O2'	53:3:1031:C:H5'	2.04	0.58
6:g:96:THR:CG2	6:g:115:VAL:HG11	2.29	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:m:4:PRO:HG3	12:m:68:PHE:HE2	1.68	0.58
32:G:20:ARG:HG3	53:3:831:A:H5''	1.86	0.58
34:I:149:LYS:HD2	34:I:150:LYS:NZ	2.18	0.58
52:a:221:GLY:N	54:4:2304:A:H4'	2.15	0.58
54:4:1480:U:O2'	54:4:1481:A:H5'	2.04	0.58
40:O:66:GLU:HB2	44:S:98:ALA:HB2	1.86	0.58
42:Q:109:ARG:HH12	53:3:537:G:H5''	1.69	0.58
53:3:1497:G:O2'	53:3:1498:U:H5'	2.04	0.58
54:4:2989:U:H2'	54:4:2990:G:C8	2.39	0.58
33:H:3:LYS:HE3	53:3:1191:A:H5''	1.86	0.57
36:K:6:ILE:H	36:K:6:ILE:HD12	1.69	0.57
37:L:15:PRO:HA	39:N:45:MET:HG2	1.86	0.57
45:T:45:HIS:O	45:T:47:LYS:N	2.33	0.57
54:4:2419:U:H2'	54:4:2420:U:C6	2.39	0.57
24:y:9:LYS:HE3	24:y:11:VAL:HB	1.85	0.57
35:J:55:VAL:HG13	35:J:56:PRO:HD3	1.86	0.57
35:J:107:GLY:HA3	53:3:9:G:H5'	1.85	0.57
53:3:1432:G:H1'	53:3:1468:A:N6	2.18	0.57
54:4:1154:A:H4'	54:4:1155:A:OP2	2.04	0.57
54:4:1267:G:O2'	54:4:1268:C:H5'	2.03	0.57
54:4:1562:A:H2'	54:4:1563:G:C8	2.39	0.57
7:h:54:VAL:HG22	7:h:83:ALA:HB1	1.86	0.57
8:i:56:VAL:HG22	8:i:70:THR:HG22	1.86	0.57
41:P:71:ASP:O	41:P:72:ALA:HB3	2.04	0.57
52:a:7:ARG:O	52:a:10:VAL:HG12	2.02	0.57
54:4:1214:A:H4'	54:4:1231:A:C2	2.39	0.57
54:4:1308:U:H3'	54:4:1309:U:H6	1.68	0.57
5:f:3:VAL:HG21	54:4:2876:A:H5'	1.85	0.57
53:3:635:A:H2'	53:3:636:U:C6	2.38	0.57
54:4:45:G:H5''	54:4:46:G:C5'	2.23	0.57
54:4:2395:A:H5''	54:4:2396:A:H5'	1.87	0.57
2:c:135:GLY:HA2	54:4:743:A:OP1	2.05	0.57
53:3:396:C:H2'	53:3:397:A:H5''	1.85	0.57
54:4:644:A:H2'	54:4:645:C:C4'	2.35	0.57
54:4:2424:U:H5''	54:4:2425:A:OP1	2.04	0.57
17:r:54:VAL:HG23	17:r:55:ASP:H	1.68	0.57
37:L:115:MET:HB2	53:3:1240:U:OP1	2.04	0.57
43:R:11:HIS:HA	43:R:44:ILE:HB	1.87	0.57
48:W:31:TYR:O	48:W:39:VAL:HG12	2.05	0.57
49:X:62:THR:HG22	49:X:65:MET:HE3	1.87	0.57
54:4:357:C:H2'	54:4:358:U:C6	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:1938:A:H2'	54:4:1939:G:O4'	2.05	0.57
3:d:76:PRO:HA	3:d:82:GLY:HA2	1.87	0.57
19:t:8:LEU:HD13	24:y:21:LEU:HB3	1.87	0.57
34:I:61:ARG:HE	34:I:68:GLU:N	2.03	0.57
42:Q:110:LYS:HA	42:Q:113:ARG:HH12	1.68	0.57
43:R:97:ARG:HB2	43:R:99:GLN:HE22	1.69	0.57
53:3:1397:C:H42	56:1:22:A:H2'	1.70	0.57
2:c:129:THR:HG23	2:c:140:HIS:O	2.05	0.57
3:d:15:SER:OG	3:d:17:THR:HG22	2.04	0.57
4:e:71:LYS:HA	4:e:80:GLN:OE1	2.04	0.57
14:o:49:VAL:HG21	14:o:82:ALA:HA	1.87	0.57
53:3:161:A:H2'	53:3:162:A:O4'	2.03	0.57
54:4:420:C:O2'	54:4:421:C:H5'	2.05	0.57
54:4:1739:C:H5'	54:4:1739:C:H6	1.69	0.57
39:N:125:GLN:NE2	53:3:942:G:H21	2.03	0.57
54:4:2681:G:H2'	54:4:2682:U:H4'	1.87	0.57
54:4:2860:G:O2'	54:4:2861:A:H5'	2.05	0.57
36:K:81:ASN:O	36:K:84:VAL:HG12	2.04	0.56
54:4:1020:A:H1'	54:4:1021:A:OP2	2.05	0.56
54:4:1929:A:H5''	54:4:2331:U:H2'	1.87	0.56
21:v:75:GLN:HB2	21:v:92:VAL:HG13	1.86	0.56
31:F:36:ARG:O	31:F:37:GLN:HB2	2.05	0.56
53:3:839:C:H2'	53:3:840:C:C6	2.40	0.56
54:4:889:C:H2'	54:4:890:C:H5'	1.87	0.56
54:4:973:A:H5'	54:4:1316:U:H1'	1.87	0.56
7:h:22:ALA:HB1	7:h:118:ILE:HD11	1.87	0.56
10:k:58:LEU:N	10:k:58:LEU:HD23	2.19	0.56
16:q:108:LEU:HA	17:r:48:LYS:NZ	2.19	0.56
36:K:29:ILE:HD13	36:K:64:VAL:HG21	1.86	0.56
36:K:46:GLN:HA	36:K:56:LYS:HG2	1.88	0.56
52:a:4:LEU:HD11	54:4:2235:G:OP1	2.06	0.56
53:3:33:A:H2'	53:3:34:C:C6	2.41	0.56
54:4:310:A:O2'	54:4:311:A:H5''	2.05	0.56
54:4:1096:C:C2'	54:4:1097:C:H5'	2.35	0.56
54:4:2962:G:H2'	54:4:3007:A:H61	1.70	0.56
54:4:2977:U:H4'	54:4:2996:A:C2	2.41	0.56
39:N:11:ARG:HA	39:N:105:ARG:HH12	1.69	0.56
43:R:44:ILE:HA	43:R:47:LEU:HG	1.88	0.56
53:3:1062:U:H2'	53:3:1063:C:C6	2.41	0.56
54:4:1303:A:H3'	54:4:1304:U:C5'	2.21	0.56
8:i:92:PRO:HD2	54:4:1204:C:O2'	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1225:A:H5'	53:3:1226:C:OP2	2.05	0.56
54:4:112:U:H2'	54:4:113:U:H5'	1.87	0.56
54:4:1065:G:H4'	54:4:1066:G:C8	2.40	0.56
54:4:2844:C:O2'	54:4:2845:C:H5'	2.04	0.56
55:5:66:C:H2'	55:5:67:C:C6	2.41	0.56
14:o:33:ARG:HD2	54:4:1118:A:C5	2.41	0.56
36:K:1:MET:HE3	36:K:66:ALA:HA	1.86	0.56
48:W:11:ARG:HH21	48:W:47:ARG:HH11	1.52	0.56
53:3:70:U:H2'	53:3:94:G:C6	2.40	0.56
53:3:539:A:H2'	53:3:540:G:C8	2.40	0.56
57:7:39:U:H2'	57:7:40:C:C6	2.40	0.56
8:i:20:SER:O	8:i:25:PRO:HD3	2.06	0.56
16:q:87:VAL:HG13	17:r:49:ILE:HD11	1.88	0.56
54:4:639:U:H2'	54:4:640:C:C6	2.41	0.56
54:4:1303:A:H5'	54:4:1304:U:O4'	2.06	0.56
7:h:34:THR:HA	54:4:1213:A:H61	1.70	0.56
28:C:8:ILE:HD11	28:C:33:LEU:HD12	1.88	0.56
33:H:50:SER:HB2	33:H:114:LEU:HD11	1.87	0.56
39:N:34:LEU:HD12	39:N:35:GLU:N	2.21	0.56
52:a:200:LYS:HD3	52:a:201:PRO:HD2	1.88	0.56
53:3:179:A:H61	53:3:196:A:H62	1.52	0.56
54:4:2478:C:H2'	54:4:2479:G:O4'	2.05	0.56
57:7:69:G:H2'	57:7:70:G:C8	2.40	0.56
12:m:64:TRP:HB2	12:m:104:GLU:HB2	1.88	0.56
32:G:166:ASP:HB3	32:G:190:SER:HA	1.88	0.56
34:I:7:LYS:HG2	53:3:430:A:OP2	2.06	0.56
38:M:88:LYS:HE2	38:M:119:GLY:HA2	1.88	0.56
53:3:1202:U:H2'	53:3:1203:C:O4'	2.06	0.56
54:4:298:G:C2	54:4:339:U:H5	2.24	0.56
54:4:354:A:H2'	54:4:355:U:O4'	2.05	0.56
54:4:593:U:H2'	54:4:594:U:C6	2.40	0.56
54:4:880:G:H2'	54:4:881:G:C8	2.40	0.56
54:4:2911:U:H2'	54:4:2912:U:C6	2.41	0.56
1:b:81:GLU:HB3	1:b:90:ILE:HG13	1.88	0.56
6:g:6:LEU:HD11	6:g:37:VAL:HG23	1.88	0.56
8:i:135:MET:HE1	54:4:1190:G:H21	1.71	0.56
13:n:44:LEU:HD23	13:n:113:ILE:HD13	1.87	0.56
39:N:104:THR:HG22	53:3:1180:A:OP1	2.06	0.56
53:3:1405:G:O2'	53:3:1406:U:H5'	2.06	0.56
8:i:4:VAL:HB	54:4:1227:G:H4'	1.88	0.55
31:F:3:VAL:HG21	54:4:2667:C:H5'	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:Q:53:ARG:HG3	42:Q:63:THR:HG22	1.88	0.55
53:3:1005:A:H2'	53:3:1006:G:O4'	2.06	0.55
53:3:1273:C:H2'	53:3:1274:A:O4'	2.07	0.55
54:4:2425:A:N1	54:4:2449:U:H5	2.04	0.55
1:b:182:LYS:HE2	1:b:267:VAL:HG22	1.89	0.55
46:U:7:ALA:HB1	46:U:29:ASN:HD22	1.71	0.55
53:3:1378:C:H3'	53:3:1379:G:C5'	2.35	0.55
5:f:134:GLY:HA3	5:f:140:ILE:HG21	1.88	0.55
46:U:4:ILE:HG22	46:U:71:VAL:HG21	1.89	0.55
54:4:1692:C:O2'	54:4:1693:C:H5'	2.06	0.55
54:4:2524:G:O2'	54:4:2525:G:H5'	2.06	0.55
3:d:155:GLU:HG3	3:d:156:ASN:H	1.72	0.55
11:l:57:LEU:HD22	30:E:53:ASP:HB3	1.88	0.55
17:r:74:ILE:CD1	54:4:992:C:H4'	2.29	0.55
39:N:46:VAL:HA	39:N:49:GLN:HG3	1.89	0.55
53:3:79:G:H2'	53:3:80:A:O4'	2.07	0.55
53:3:695:A:H2'	53:3:696:A:C8	2.41	0.55
53:3:1436:U:H2'	53:3:1437:A:C8	2.40	0.55
54:4:1037:U:H2'	54:4:1038:G:H8	1.72	0.55
54:4:1209:U:H2'	54:4:1210:U:C6	2.42	0.55
54:4:1406:C:H2'	54:4:1407:G:H8	1.70	0.55
8:i:10:LEU:HD23	54:4:1198:A:N1	2.22	0.55
32:G:14:HIS:O	32:G:40:ILE:HD13	2.06	0.55
38:M:77:VAL:HG11	38:M:127:TYR:CE1	2.42	0.55
42:Q:78:VAL:O	42:Q:102:ASP:HB2	2.06	0.55
54:4:1984:U:H2'	54:4:1985:G:O4'	2.06	0.55
54:4:2875:G:O6	54:4:2883:C:H5'	2.07	0.55
11:l:85:VAL:HG11	11:l:90:VAL:HG22	1.89	0.55
21:v:2:PHE:HB3	21:v:50:MET:HE3	1.88	0.55
22:w:52:ASP:O	22:w:53:HIS:HB2	2.07	0.55
24:y:12:GLU:O	24:y:15:ASN:OD1	2.25	0.55
53:3:1171:A:H2'	53:3:1172:C:C6	2.41	0.55
54:4:546:U:H2'	54:4:547:A:O4'	2.07	0.55
54:4:1151:G:O2'	54:4:1152:G:H5'	2.07	0.55
56:1:17:U:O2'	56:1:18:G:H5'	2.07	0.55
3:d:155:GLU:HG3	3:d:156:ASN:N	2.22	0.55
9:j:96:ARG:HD3	9:j:99:ARG:HG2	1.88	0.55
50:Y:66:ILE:CG2	50:Y:70:LYS:HB3	2.36	0.55
53:3:187:G:H2'	53:3:189:A:OP2	2.06	0.55
53:3:405:U:C3'	53:3:406:G:H5'	2.29	0.55
53:3:1206:G:H2'	53:3:1207:G:O4'	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:242:G:N2	54:4:254:G:H2'	2.22	0.55
54:4:1096:C:H2'	54:4:1097:C:H5'	1.88	0.55
10:k:58:LEU:HD23	10:k:58:LEU:H	1.70	0.55
31:F:4:ARG:O	31:F:37:GLN:HB2	2.06	0.55
53:3:834:U:H2'	53:3:835:U:C6	2.42	0.55
54:4:1061:A:H2'	54:4:1062:U:O4'	2.07	0.55
54:4:1514:C:H2'	54:4:1515:A:C8	2.42	0.55
54:4:2307:C:H2'	54:4:2308:U:C6	2.42	0.55
1:b:79:ARG:NH1	1:b:81:GLU:OE1	2.40	0.55
12:m:60:GLN:HE21	12:m:108:VAL:HG12	1.70	0.55
16:q:25:GLY:O	16:q:29:ARG:NH1	2.39	0.55
36:K:4:TYR:CD2	36:K:71:ILE:HG13	2.42	0.55
49:X:30:LEU:HB3	49:X:48:ILE:HG22	1.88	0.55
52:a:4:LEU:HD22	54:4:2303:C:OP1	2.06	0.55
53:3:1418:A:H3'	53:3:1419:G:H5''	1.89	0.55
54:4:1196:G:H21	54:4:1224:A:H5'	1.72	0.55
54:4:1215:G:C2	54:4:1231:A:H1'	2.41	0.55
7:h:114:GLU:HB3	7:h:122:GLN:HG2	1.89	0.54
17:r:2:TYR:CE1	17:r:42:ALA:HB3	2.42	0.54
23:x:22:ASN:ND2	54:4:2207:U:O2'	2.40	0.54
41:P:36:ARG:NH1	41:P:82:GLU:OE2	2.40	0.54
48:W:11:ARG:HH21	48:W:47:ARG:NH1	2.05	0.54
53:3:408:A:H2'	53:3:409:U:O4'	2.06	0.54
53:3:505:G:H5'	53:3:534:U:H2'	1.89	0.54
20:u:51:LEU:HD23	20:u:51:LEU:O	2.06	0.54
42:Q:2:THR:HG21	42:Q:5:GLN:HG3	1.88	0.54
43:R:6:ILE:HB	43:R:8:ILE:HD12	1.89	0.54
53:3:1001:C:H2'	53:3:1002:G:C8	2.42	0.54
53:3:1011:C:H2'	53:3:1012:A:C8	2.42	0.54
54:4:1046:A:H2'	54:4:1047:G:O4'	2.07	0.54
54:4:1985:G:H1'	54:4:2013:A:N6	2.22	0.54
6:g:65:ALA:O	6:g:68:ARG:HG2	2.07	0.54
14:o:31:THR:O	14:o:102:ARG:NH1	2.37	0.54
53:3:70:U:H4'	53:3:71:A:H8	1.71	0.54
53:3:434:U:H2'	53:3:435:A:C8	2.42	0.54
53:3:1506:U:O2'	53:3:1507:A:H5'	2.08	0.54
54:4:1196:G:N2	54:4:1224:A:H5'	2.22	0.54
1:b:56:GLY:HA2	1:b:212:TRP:HA	1.89	0.54
24:y:4:LYS:HA	24:y:7:ARG:HE	1.72	0.54
33:H:34:SER:O	33:H:38:VAL:HG23	2.07	0.54
36:K:3:HIS:HB2	36:K:92:THR:HB	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:Y:65:LEU:C	50:Y:66:ILE:HD12	2.33	0.54
54:4:358:U:H2'	54:4:359:G:C8	2.42	0.54
54:4:2243:G:H4'	54:4:2294:U:C2	2.42	0.54
40:O:51:VAL:HB	44:S:80:ARG:HB2	1.89	0.54
53:3:935:A:H2'	53:3:936:C:C6	2.42	0.54
54:4:1061:A:H2'	54:4:1062:U:H5'	1.87	0.54
54:4:2283:U:H2'	54:4:2284:G:H5'	1.88	0.54
54:4:2413:C:O2'	54:4:2414:G:H5'	2.07	0.54
57:7:7:A:O2'	57:7:49:C:H5''	2.07	0.54
4:e:104:THR:HG23	4:e:105:ILE:HG12	1.88	0.54
7:h:67:THR:N	7:h:68:PRO:HD3	2.23	0.54
12:m:42:THR:HG22	12:m:45:GLN:CD	2.33	0.54
17:r:38:VAL:HG13	17:r:54:VAL:HG22	1.89	0.54
43:R:10:ASP:OD1	43:R:12:LYS:HE3	2.07	0.54
46:U:18:GLN:HG2	46:U:35:ARG:HE	1.72	0.54
54:4:1061:A:H2'	54:4:1062:U:C5'	2.37	0.54
54:4:1522:U:H4'	54:4:1731:A:H4'	1.88	0.54
54:4:1636:A:H2'	54:4:1637:A:O4'	2.08	0.54
54:4:1637:A:H2'	54:4:1638:G:C8	2.43	0.54
54:4:2308:U:H2'	54:4:2309:U:O4'	2.08	0.54
54:4:2807:A:O2'	54:4:2808:U:H5'	2.08	0.54
5:f:84:LYS:HB2	5:f:132:LEU:HD21	1.90	0.54
8:i:77:VAL:HA	8:i:80:LYS:HE3	1.90	0.54
11:l:86:GLU:N	11:l:86:GLU:OE1	2.40	0.54
12:m:57:VAL:O	12:m:60:GLN:HG2	2.07	0.54
20:u:10:VAL:HG12	20:u:71:ILE:HA	1.90	0.54
25:z:23:LEU:HD11	25:z:53:MET:SD	2.47	0.54
33:H:80:GLY:O	33:H:83:VAL:HG12	2.07	0.54
48:W:13:THR:HG21	48:W:20:ILE:HD11	1.90	0.54
54:4:2320:U:H2'	54:4:2321:G:H8	1.72	0.54
15:p:20:ARG:HB3	15:p:21:PRO:HD2	1.90	0.54
44:S:30:ILE:HG22	44:S:40:ARG:HA	1.89	0.54
46:U:35:ARG:NH2	53:3:626:G:OP1	2.41	0.54
53:3:1256:A:H1'	53:3:1258:G:N9	2.23	0.54
54:4:49:A:H5'	54:4:51:G:O4'	2.07	0.54
54:4:1155:A:C2'	54:4:1156:A:H5'	2.38	0.54
54:4:1211:U:H2'	54:4:1213:A:OP2	2.06	0.54
16:q:27:ARG:NH1	54:4:532:A:H3'	2.23	0.54
34:I:37:PRO:O	53:3:542:G:H5''	2.08	0.54
34:I:115:GLN:HE21	34:I:119:HIS:CE1	2.26	0.54
34:I:171:GLU:HB2	34:I:180:THR:HG23	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:129:A:O2'	53:3:130:A:H5''	2.07	0.54
53:3:841:C:O2'	53:3:843:U:H4'	2.08	0.54
54:4:1025:G:C5	54:4:1263:C:H1'	2.43	0.54
42:Q:109:ARG:NH1	53:3:537:G:H5''	2.23	0.54
53:3:457:G:H2'	53:3:458:U:C6	2.43	0.54
54:4:1955:U:C2'	54:4:1956:G:H5'	2.38	0.54
54:4:2871:U:H2'	54:4:2872:G:O4'	2.07	0.54
38:M:14:ARG:NH1	53:3:876:C:H4'	2.23	0.53
54:4:554:U:H2'	54:4:555:G:O4'	2.08	0.53
54:4:669:G:H2'	54:4:669:G:N3	2.23	0.53
54:4:1067:U:H2'	54:4:1068:G:C8	2.43	0.53
54:4:1308:U:H3'	54:4:1309:U:C6	2.44	0.53
7:h:34:THR:HG22	54:4:1184:G:H5'	1.89	0.53
32:G:55:GLU:HG3	32:G:197:PHE:CZ	2.43	0.53
32:G:132:GLU:O	32:G:135:MET:HB3	2.08	0.53
36:K:10:VAL:CG1	36:K:58:HIS:HB3	2.37	0.53
54:4:310:A:H2'	54:4:311:A:H5''	1.89	0.53
54:4:1579:C:H4'	54:4:1580:G:O4'	2.08	0.53
54:4:1918:C:H2'	54:4:1919:A:C5	2.43	0.53
54:4:2248:G:H2'	54:4:2249:G:H5'	1.89	0.53
5:f:3:VAL:HG23	54:4:2879:G:H4'	1.89	0.53
54:4:511:U:H2'	54:4:512:G:H5'	1.90	0.53
8:i:89:SER:HB3	54:4:1191:G:H21	1.72	0.53
35:J:110:MET:O	35:J:113:VAL:HG12	2.09	0.53
42:Q:109:ARG:O	42:Q:113:ARG:NH1	2.41	0.53
50:Y:73:ARG:NH2	53:3:261:U:OP2	2.41	0.53
54:4:2988:A:H2'	54:4:2989:U:H5'	1.90	0.53
1:b:18:VAL:O	1:b:18:VAL:HG13	2.08	0.53
2:c:114:LYS:HE2	2:c:196:ALA:HB2	1.89	0.53
7:h:67:THR:HG22	7:h:70:GLU:O	2.08	0.53
53:3:59:A:H3'	53:3:331:G:N2	2.23	0.53
53:3:131:A:H2'	53:3:132:C:C6	2.44	0.53
53:3:491:G:O2'	53:3:492:C:H5'	2.07	0.53
53:3:979:C:H2'	53:3:980:C:H5'	1.91	0.53
12:m:108:VAL:HB	12:m:112:LEU:HD23	1.91	0.53
32:G:46:VAL:HG23	32:G:47:PRO:HD3	1.91	0.53
40:O:56:HIS:CD2	40:O:57:VAL:HG23	2.44	0.53
42:Q:66:ILE:HD12	42:Q:66:ILE:H	1.72	0.53
42:Q:116:TYR:OH	53:3:522:C:H5''	2.08	0.53
53:3:1033:G:C3'	53:3:1034:G:H5''	2.37	0.53
53:3:1236:A:H2'	53:3:1237:C:C6	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1379:G:O2'	53:3:1380:U:H5'	2.09	0.53
54:4:864:G:O2'	54:4:865:C:H5'	2.09	0.53
54:4:1073:G:O2'	54:4:1074:C:H5'	2.09	0.53
54:4:2034:G:C3'	54:4:2035:G:H5''	2.39	0.53
18:s:4:ILE:HG22	18:s:106:VAL:HG22	1.90	0.53
19:t:29:THR:HG23	19:t:85:VAL:C	2.34	0.53
19:t:48:GLN:NE2	19:t:55:VAL:H	2.07	0.53
22:w:39:THR:H	54:4:2459:G:H4'	1.74	0.53
34:I:124:VAL:HG12	34:I:142:VAL:HG23	1.89	0.53
37:L:29:LEU:HD23	37:L:29:LEU:O	2.09	0.53
41:P:121:ARG:HD2	53:3:778:G:H21	1.73	0.53
54:4:662:G:O2'	54:4:663:G:H5'	2.09	0.53
3:d:58:LYS:HB3	3:d:71:GLY:HA2	1.91	0.53
8:i:13:ALA:O	8:i:16:MET:HG2	2.09	0.53
36:K:79:ARG:NH2	53:3:671:G:O2'	2.42	0.53
53:3:423:G:H2'	53:3:424:G:H5'	1.90	0.53
53:3:559:A:H4'	53:3:560:A:H3'	1.90	0.53
53:3:715:A:H2'	53:3:716:A:C8	2.44	0.53
53:3:1305:G:H22	53:3:1331:G:H2'	1.72	0.53
54:4:1154:A:O2'	54:4:1155:A:P	2.67	0.53
57:7:36:A:H2'	57:7:37:A:H8	1.74	0.53
1:b:62:ARG:HG3	1:b:62:ARG:HH11	1.74	0.53
12:m:50:ARG:HD3	12:m:65:ILE:HD11	1.90	0.53
18:s:3:THR:HG21	18:s:58:ALA:HA	1.91	0.53
35:J:104:ILE:HA	35:J:121:ASN:O	2.08	0.53
52:a:15:VAL:HG22	52:a:222:VAL:HG22	1.89	0.53
54:4:1:G:H2'	54:4:2:G:C8	2.44	0.53
54:4:1188:U:O4'	54:4:1190:G:H5'	2.09	0.53
54:4:1876:C:H2'	54:4:1877:A:C8	2.43	0.53
54:4:2176:G:C2'	54:4:2177:G:H5''	2.38	0.53
54:4:2226:U:H2'	54:4:2227:U:O4'	2.09	0.53
39:N:8:THR:O	39:N:81:GLY:HA2	2.09	0.53
49:X:13:HIS:O	49:X:17:LYS:HG3	2.09	0.53
53:3:64:G:H4'	53:3:65:A:H3'	1.89	0.53
53:3:86:G:H5'	53:3:87:C:C4	2.44	0.53
53:3:1391:U:H2'	53:3:1392:G:C8	2.43	0.53
54:4:1069:C:C3'	54:4:1070:C:H5''	2.39	0.53
2:c:46:ARG:NH2	2:c:88:GLU:O	2.42	0.52
5:f:125:PRO:HD3	5:f:131:VAL:HG12	1.91	0.52
6:g:116:ARG:HG3	6:g:133:GLN:OE1	2.09	0.52
37:L:103:ILE:CD1	37:L:123:LEU:HD23	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:P:85:VAL:HG21	41:P:92:ARG:HB3	1.91	0.52
46:U:7:ALA:HB1	46:U:29:ASN:ND2	2.24	0.52
51:Z:46:ARG:HE	53:3:1533:C:H41	1.57	0.52
54:4:1901:A:C2'	54:4:1902:C:H5'	2.39	0.52
7:h:41:LEU:HD13	7:h:44:ALA:HB3	1.90	0.52
26:A:46:GLY:HA2	26:A:49:ARG:NE	2.25	0.52
35:J:92:ARG:HB2	35:J:127:TYR:HB2	1.91	0.52
38:M:9:MET:HG3	38:M:26:MET:SD	2.49	0.52
40:O:53:ILE:HG13	53:3:1060:U:H4'	1.90	0.52
53:3:171:A:H2'	53:3:172:A:H8	1.74	0.52
53:3:1414:U:H2'	53:3:1415:G:H8	1.72	0.52
54:4:677:A:O2'	54:4:2199:A:H5'	2.08	0.52
54:4:1401:U:H4'	54:4:1403:A:OP1	2.08	0.52
39:N:90:ASP:HB2	39:N:91:GLU:OE1	2.10	0.52
52:a:65:LEU:HD21	52:a:188:ASN:OD1	2.10	0.52
53:3:123:U:H5''	53:3:311:C:O2'	2.10	0.52
53:3:135:C:H2'	53:3:136:C:H5'	1.92	0.52
54:4:532:A:H2'	54:4:532:A:N3	2.25	0.52
54:4:1304:U:H2'	54:4:1305:G:C8	2.44	0.52
9:j:13:ARG:HD3	9:j:51:GLY:O	2.10	0.52
17:r:32:THR:HA	17:r:62:GLU:HA	1.92	0.52
37:L:69:ARG:HG2	37:L:95:ARG:HG2	1.91	0.52
39:N:90:ASP:O	39:N:92:SER:N	2.43	0.52
53:3:245:U:O2'	53:3:246:A:H5'	2.10	0.52
53:3:250:A:H4'	53:3:251:G:O5'	2.09	0.52
54:4:69:C:O2'	54:4:70:G:H5'	2.08	0.52
54:4:419:U:H2'	54:4:420:C:C6	2.45	0.52
54:4:1201:A:H2'	54:4:1202:G:O4'	2.09	0.52
54:4:1239:A:H2'	54:4:1239:A:N3	2.23	0.52
54:4:1806:A:H2'	54:4:1807:A:O4'	2.09	0.52
54:4:1845:A:H2'	54:4:1846:G:O4'	2.09	0.52
54:4:2928:A:H3'	54:4:2929:G:C5'	2.35	0.52
1:b:75:ALA:HB1	1:b:93:VAL:CG1	2.40	0.52
1:b:110:LYS:HA	1:b:110:LYS:HE2	1.90	0.52
2:c:61:THR:OG1	2:c:63:PRO:HD2	2.10	0.52
8:i:13:ALA:HB3	8:i:16:MET:HE3	1.90	0.52
8:i:20:SER:O	8:i:24:GLY:HA3	2.09	0.52
15:p:77:SER:O	15:p:80:VAL:HG22	2.09	0.52
32:G:40:ILE:N	32:G:40:ILE:HD12	2.25	0.52
43:R:23:GLY:O	53:3:1329:A:H4'	2.09	0.52
45:T:74:VAL:O	45:T:77:TYR:HB3	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:59:A:H1'	53:3:354:G:N2	2.25	0.52
54:4:181:A:H2'	54:4:182:A:C8	2.44	0.52
54:4:192:C:H2'	54:4:193:U:H5'	1.92	0.52
54:4:1068:G:H2'	54:4:1069:C:C6	2.44	0.52
54:4:1205:A:H2'	54:4:1206:U:H5'	1.90	0.52
54:4:1309:U:H2'	54:4:1310:G:C8	2.44	0.52
3:d:130:LYS:HD3	54:4:321:U:OP2	2.09	0.52
5:f:41:GLU:HG3	5:f:54:ARG:HE	1.75	0.52
6:g:3:VAL:HA	6:g:39:ALA:H	1.74	0.52
7:h:9:GLN:HA	7:h:12:VAL:HG22	1.92	0.52
16:q:34:ALA:O	16:q:38:VAL:HG23	2.09	0.52
32:G:49:PHE:HD1	32:G:199:ILE:HD13	1.74	0.52
33:H:70:ALA:C	33:H:72:PRO:HD3	2.35	0.52
41:P:98:ALA:O	41:P:102:ALA:HB2	2.09	0.52
42:Q:77:SER:HB3	42:Q:102:ASP:CG	2.35	0.52
51:Z:16:ARG:HD2	51:Z:19:LYS:NZ	2.24	0.52
54:4:1029:G:H4'	54:4:1030:C:O5'	2.10	0.52
54:4:2445:A:H2'	54:4:2446:G:O4'	2.10	0.52
20:u:57:ILE:HG23	20:u:57:ILE:O	2.10	0.52
42:Q:106:VAL:H	42:Q:118:VAL:HG22	1.74	0.52
53:3:88:U:H2'	53:3:89:U:C6	2.44	0.52
53:3:137:U:H2'	53:3:138:G:C8	2.45	0.52
53:3:1305:G:N2	53:3:1331:G:H2'	2.25	0.52
54:4:2406:A:H3'	54:4:2407:G:H5''	1.91	0.52
7:h:33:VAL:HG22	7:h:35:VAL:H	1.75	0.52
19:t:25:GLU:HG3	19:t:26:LYS:H	1.75	0.52
33:H:140:ALA:HB3	33:H:148:ILE:HG21	1.91	0.52
39:N:27:ILE:N	39:N:27:ILE:HD12	2.25	0.52
40:O:18:ILE:O	40:O:22:THR:HG23	2.10	0.52
43:R:51:GLN:O	43:R:54:THR:OG1	2.28	0.52
53:3:346:G:C2'	53:3:347:G:H5'	2.40	0.52
54:4:1062:U:H2'	54:4:1065:G:H21	1.75	0.52
54:4:1628:G:O2'	54:4:1629:G:H5'	2.09	0.52
2:c:149:ASN:HB3	54:4:2700:A:OP2	2.10	0.52
8:i:25:PRO:HB2	54:4:1223:A:N1	2.24	0.52
8:i:53:PRO:HB3	54:4:1189:U:O4	2.09	0.52
11:l:121:THR:HG22	11:l:141:LYS:H	1.75	0.52
34:I:120:LYS:HG2	34:I:130:ASN:HD21	1.75	0.52
48:W:59:LYS:HD3	53:3:734:G:O2'	2.10	0.52
49:X:5:LYS:HB2	53:3:1313:U:OP2	2.10	0.52
53:3:151:A:H62	53:3:170:U:H3	1.57	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:155:A:H2'	54:4:156:A:C8	2.45	0.52
54:4:1537:U:H2'	54:4:1538:G:C8	2.45	0.52
54:4:1662:U:H2'	54:4:1664:C:H1'	1.91	0.52
54:4:2273:C:H3'	54:4:2274:C:H5'	1.91	0.52
4:e:134:GLN:HB3	4:e:149:ARG:O	2.09	0.52
30:E:31:ILE:O	30:E:31:ILE:HG13	2.10	0.52
33:H:122:GLN:HG2	33:H:125:ARG:HH21	1.75	0.52
40:O:6:ILE:HB	40:O:76:ILE:HB	1.92	0.52
53:3:162:A:H2'	53:3:163:C:H5'	1.91	0.52
53:3:868:C:H2'	53:3:869:G:O4'	2.09	0.52
53:3:1293:C:H2'	53:3:1294:G:C8	2.45	0.52
54:4:2308:U:C2'	54:4:2309:U:H5'	2.38	0.52
7:h:74:ASP:O	7:h:77:VAL:HG22	2.09	0.51
12:m:2:LEU:HD12	12:m:2:LEU:H	1.75	0.51
13:n:100:CYS:SG	13:n:101:GLY:N	2.83	0.51
33:H:96:VAL:HG22	33:H:97:PRO:CD	2.38	0.51
53:3:1198:G:H5'	53:3:1198:G:H8	1.76	0.51
54:4:2262:A:N1	54:4:2285:G:H4'	2.25	0.51
54:4:2684:C:H2'	54:4:2685:G:O4'	2.10	0.51
3:d:31:VAL:HG21	3:d:104:ALA:HB2	1.91	0.51
3:d:50:ALA:HB2	54:4:801:G:C8	2.45	0.51
3:d:124:PHE:CE2	3:d:148:ILE:HD13	2.45	0.51
14:o:33:ARG:HD2	54:4:1118:A:N7	2.25	0.51
19:t:89:GLU:H	19:t:89:GLU:CD	2.18	0.51
38:M:35:ILE:HD13	38:M:102:VAL:HG11	1.91	0.51
53:3:128:G:O2'	53:3:129:A:H5'	2.10	0.51
53:3:1449:C:C2'	53:3:1450:U:H5'	2.41	0.51
54:4:1214:A:H4'	54:4:1231:A:H2	1.73	0.51
54:4:1302:U:H5'	54:4:1303:A:OP2	2.10	0.51
54:4:1311:U:H2'	54:4:1312:U:C6	2.44	0.51
42:Q:56:LEU:C	42:Q:58:ASN:H	2.19	0.51
53:3:112:G:H21	53:3:354:G:H5'	1.74	0.51
53:3:1352:C:H2'	53:3:1353:G:C8	2.45	0.51
54:4:538:A:H2'	54:4:539:G:O4'	2.10	0.51
54:4:783:A:H2'	54:4:784:G:H5'	1.93	0.51
54:4:1396:A:H2'	54:4:1397:A:O4'	2.10	0.51
54:4:2257:C:C2'	54:4:2258:U:H5'	2.40	0.51
54:4:2693:A:O2'	54:4:2694:A:H5'	2.09	0.51
3:d:181:ILE:HG23	11:l:2:ARG:HG3	1.91	0.51
28:C:12:SER:HB2	28:C:48:TYR:CE1	2.45	0.51
53:3:501:C:H2'	53:3:502:A:C8	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:581:C:H2'	54:4:582:A:C8	2.46	0.51
54:4:1155:A:H2	54:4:1156:A:C5	2.28	0.51
54:4:2045:U:O2'	54:4:2046:A:H5'	2.09	0.51
54:4:2712:U:H2'	54:4:2713:U:H2'	1.93	0.51
16:q:56:PHE:CZ	54:4:536:G:H4'	2.46	0.51
27:B:46:GLY:HA3	27:B:54:ILE:HG22	1.92	0.51
29:D:1:MET:SD	29:D:3:ARG:NH2	2.83	0.51
39:N:40:ARG:CZ	53:3:1292:G:H5''	2.40	0.51
53:3:1413:A:H2	53:3:1487:G:H22	1.59	0.51
54:4:742:A:H2'	54:4:743:A:C8	2.46	0.51
54:4:1557:G:H2'	54:4:1558:G:H8	1.76	0.51
54:4:2410:G:H4'	54:4:2517:G:O2'	2.10	0.51
54:4:2425:A:N1	54:4:2449:U:C5	2.78	0.51
54:4:2590:C:H1'	54:4:2619:U:O4	2.09	0.51
8:i:109:ALA:HB2	8:i:128:ILE:CG1	2.41	0.51
16:q:5:ARG:HD2	54:4:1378:G:H5''	1.92	0.51
22:w:33:ILE:HD11	22:w:78:ILE:HD11	1.93	0.51
24:y:23:ARG:O	24:y:25:GLN:N	2.44	0.51
29:D:12:ARG:NH2	54:4:686:U:O4	2.42	0.51
29:D:21:ARG:HH21	29:D:21:ARG:HG2	1.76	0.51
35:J:108:GLY:O	35:J:109:ALA:HB3	2.09	0.51
41:P:86:LYS:HG3	41:P:114:PRO:HD3	1.91	0.51
54:4:703:U:H2'	54:4:704:G:O4'	2.11	0.51
54:4:1234:G:H2'	54:4:1235:G:C8	2.45	0.51
54:4:1854:C:O2'	54:4:1855:C:H5'	2.11	0.51
54:4:1876:C:H2'	54:4:1877:A:H8	1.75	0.51
5:f:174:LYS:HG3	5:f:175:LYS:HG3	1.93	0.51
6:g:80:ILE:HG22	6:g:81:ALA:H	1.76	0.51
8:i:3:LYS:HD3	54:4:1228:C:OP1	2.10	0.51
12:m:134:THR:HG21	21:v:79:ARG:HH12	1.74	0.51
43:R:9:PRO:HG2	43:R:44:ILE:HG13	1.92	0.51
53:3:235:C:H2'	53:3:236:A:C8	2.46	0.51
53:3:424:G:O2'	53:3:425:G:H5'	2.11	0.51
53:3:737:C:H2'	53:3:738:C:C6	2.45	0.51
53:3:1489:G:O2'	53:3:1490:U:H5'	2.11	0.51
54:4:277:G:H4'	54:4:278:A:N7	2.26	0.51
54:4:310:A:O2'	54:4:311:A:H2'	2.10	0.51
54:4:580:U:H2'	54:4:581:C:C6	2.46	0.51
54:4:1901:A:H2'	54:4:1902:C:H5'	1.91	0.51
54:4:1922:A:H2'	54:4:1923:C:C6	2.46	0.51
54:4:2152:G:OP2	54:4:2162:U:H4'	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:7:44:G:H2'	57:7:45:U:O4'	2.10	0.51
4:e:90:LEU:HB3	4:e:95:MET:HA	1.93	0.51
4:e:102:LEU:O	4:e:107:VAL:HG22	2.10	0.51
26:A:46:GLY:HA2	26:A:49:ARG:HE	1.75	0.51
53:3:212:G:H2'	53:3:213:G:C8	2.41	0.51
54:4:1072:G:O2'	54:4:1073:G:H5'	2.11	0.51
5:f:16:VAL:HG13	5:f:25:ILE:CD1	2.41	0.51
12:m:58:LYS:O	12:m:59:ARG:HG2	2.11	0.51
18:s:29:VAL:HB	18:s:55:ILE:HD11	1.92	0.51
42:Q:30:ARG:HG3	53:3:363:A:C5'	2.39	0.51
51:Z:16:ARG:HD2	51:Z:19:LYS:HZ2	1.76	0.51
53:3:629:A:H2'	53:3:630:A:O4'	2.11	0.51
54:4:1175:G:H2'	54:4:1238:G:N1	2.26	0.51
54:4:1406:C:H2'	54:4:1407:G:C8	2.46	0.51
55:5:62:C:H2'	55:5:63:G:C8	2.46	0.51
21:v:4:ILE:HG21	21:v:42:LEU:HD22	1.91	0.51
44:S:42:ASN:HA	44:S:45:LEU:HD12	1.92	0.51
53:3:29:U:O2'	53:3:30:U:H5'	2.10	0.51
53:3:494:G:H2'	53:3:496:A:H1'	1.92	0.51
54:4:2361:U:H2'	54:4:2362:G:C8	2.46	0.51
54:4:2409:A:O2'	54:4:2410:G:H5'	2.10	0.51
7:h:58:THR:HA	7:h:63:ALA:HB2	1.93	0.50
36:K:6:ILE:HB	36:K:62:MET:HB2	1.91	0.50
53:3:408:A:H2'	53:3:409:U:H5'	1.93	0.50
53:3:494:G:C2'	53:3:496:A:H1'	2.41	0.50
53:3:785:G:O2'	53:3:786:G:H5'	2.11	0.50
1:b:143:VAL:HB	1:b:153:LEU:HB2	1.91	0.50
5:f:132:LEU:HD23	5:f:132:LEU:H	1.75	0.50
13:n:86:ARG:HH21	13:n:117:ASP:CB	2.24	0.50
18:s:35:ILE:O	18:s:39:THR:HG23	2.11	0.50
19:t:56:GLU:HG2	19:t:57:VAL:HG23	1.93	0.50
32:G:162:VAL:HG13	32:G:184:ALA:HB2	1.93	0.50
33:H:179:ALA:HB1	33:H:202:PHE:HE1	1.75	0.50
53:3:575:G:O2'	53:3:821:G:H5'	2.12	0.50
54:4:445:C:O2'	54:4:446:G:H5'	2.11	0.50
1:b:220:ARG:HD2	54:4:1955:U:OP2	2.11	0.50
3:d:143:LEU:HD21	3:d:185:LYS:HD2	1.93	0.50
9:j:16:TYR:HB2	9:j:54:ILE:HD13	1.94	0.50
9:j:27:ARG:NH2	54:4:1270:A:H4'	2.25	0.50
13:n:9:GLN:O	13:n:17:ARG:HD3	2.12	0.50
15:p:88:ARG:HB2	15:p:112:ARG:HH21	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:O:25:ILE:HD11	40:O:74:VAL:HG21	1.92	0.50
53:3:188:C:H2'	53:3:189:A:O4'	2.11	0.50
54:4:441:U:O2'	54:4:442:G:H5'	2.10	0.50
54:4:1753:C:H2'	54:4:1754:A:O4'	2.11	0.50
3:d:131:THR:HG23	54:4:321:U:H5''	1.93	0.50
5:f:121:THR:OG1	5:f:133:LYS:HB2	2.12	0.50
32:G:56:LEU:HD23	32:G:219:THR:HG21	1.94	0.50
36:K:18:VAL:HG21	36:K:58:HIS:CD2	2.46	0.50
39:N:24:ASN:HD22	39:N:26:LYS:HD2	1.75	0.50
41:P:33:ILE:HD12	41:P:73:VAL:HG11	1.93	0.50
53:3:181:A:N6	53:3:194:C:H2'	2.24	0.50
53:3:1502:A:C8	53:3:1505:G:N2	2.80	0.50
54:4:2826:U:H2'	54:4:2827:C:C6	2.47	0.50
2:c:40:LEU:HD23	2:c:45:TYR:HA	1.93	0.50
2:c:51:THR:HB	2:c:79:LEU:HD23	1.93	0.50
4:e:131:VAL:HG12	4:e:151:LEU:O	2.11	0.50
24:y:23:ARG:HA	24:y:27:ASN:HD22	1.77	0.50
26:A:16:CYS:SG	26:A:17:SER:N	2.83	0.50
36:K:5:GLU:HA	36:K:63:ASN:HA	1.94	0.50
53:3:422:C:H4'	53:3:423:G:C2	2.46	0.50
54:4:828:U:H2'	54:4:829:A:C8	2.47	0.50
54:4:1565:C:H2'	54:4:1566:U:C6	2.47	0.50
54:4:2585:U:O2'	54:4:2586:G:H5'	2.11	0.50
54:4:2867:U:O2'	54:4:2868:A:H5'	2.11	0.50
57:7:2:C:O2'	57:7:3:C:H5'	2.11	0.50
2:c:55:LYS:HE2	2:c:59:ARG:HB3	1.93	0.50
4:e:2:LYS:HE3	26:A:22:MET:HE1	1.93	0.50
7:h:72:LEU:H	7:h:72:LEU:HD12	1.77	0.50
11:l:101:ILE:HG13	11:l:102:GLY:H	1.77	0.50
18:s:11:ARG:HH21	54:4:1450:A:H5'	1.75	0.50
32:G:170:ILE:H	32:G:170:ILE:HD12	1.76	0.50
34:I:103:ARG:HD3	34:I:169:TRP:HZ2	1.76	0.50
53:3:1477:U:H2'	53:3:1478:U:C6	2.47	0.50
54:4:1:G:H2'	54:4:2:G:H8	1.77	0.50
54:4:435:C:H2'	54:4:436:C:H5'	1.94	0.50
54:4:1096:C:H2'	54:4:1097:C:C5'	2.42	0.50
54:4:1444:U:H2'	54:4:1445:G:C8	2.47	0.50
54:4:1864:U:H2'	54:4:1865:G:O4'	2.11	0.50
3:d:149:ILE:HD11	3:d:172:ALA:HA	1.94	0.50
4:e:155:ILE:HD12	4:e:155:ILE:N	2.27	0.50
18:s:19:LEU:HB3	27:B:21:LEU:HD23	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:A:16:CYS:HA	26:A:34:LEU:O	2.12	0.50
39:N:114:LYS:HE3	53:3:1187:G:H5'	1.94	0.50
46:U:8:ARG:HA	46:U:17:TYR:CD1	2.46	0.50
53:3:68:G:H2'	53:3:69:G:O4'	2.11	0.50
53:3:665:A:C1'	53:3:733:G:H1'	2.42	0.50
54:4:520:G:H2'	54:4:521:U:C6	2.46	0.50
54:4:888:C:O2	54:4:888:C:H2'	2.11	0.50
54:4:2009:C:H2'	54:4:2010:U:O4'	2.11	0.50
54:4:2267:U:H2'	54:4:2268:G:C8	2.46	0.50
54:4:2352:G:H4'	54:4:2354:C:C2	2.46	0.50
54:4:2473:G:H5'	54:4:2475:C:O4'	2.12	0.50
54:4:2783:G:O2'	54:4:2784:U:C5	2.65	0.50
3:d:127:GLU:H	3:d:127:GLU:CD	2.19	0.50
11:l:30:THR:O	11:l:32:GLY:N	2.45	0.50
25:z:5:LYS:HB2	25:z:57:GLU:O	2.11	0.50
46:U:8:ARG:HA	46:U:17:TYR:HD1	1.77	0.50
47:V:9:GLY:O	47:V:57:VAL:HA	2.12	0.50
53:3:173:U:H1'	53:3:197:A:C6	2.47	0.50
53:3:843:U:OP1	53:3:846:G:H1'	2.11	0.50
53:3:1123:U:O2'	53:3:1124:G:H5'	2.12	0.50
53:3:1449:C:H2'	53:3:1450:U:H5'	1.93	0.50
54:4:1053:U:H2'	54:4:1054:G:H8	1.77	0.50
54:4:1379:C:O2'	54:4:1380:G:H3'	2.12	0.50
54:4:1875:U:H2'	54:4:1876:C:C6	2.46	0.50
54:4:2406:A:C3'	54:4:2407:G:H5''	2.41	0.50
1:b:16:VAL:HB	1:b:203:VAL:CG1	2.42	0.50
8:i:4:VAL:HB	54:4:1227:G:C4'	2.42	0.50
39:N:6:TYR:OH	53:3:1148:U:H5'	2.12	0.50
54:4:1095:A:H2'	54:4:1096:C:C6	2.47	0.50
54:4:1277:G:H2'	54:4:1278:C:C6	2.47	0.50
54:4:1413:A:H2'	54:4:1414:A:H5'	1.93	0.50
4:e:130:GLY:HA3	54:4:2433:U:H5''	1.92	0.49
7:h:78:GLY:N	7:h:79:PRO:HD2	2.27	0.49
10:k:99:ILE:CD1	10:k:115:ILE:HG23	2.42	0.49
35:J:15:ILE:HD11	35:J:37:VAL:HG22	1.94	0.49
41:P:12:ARG:HG3	41:P:75:GLU:HB3	1.93	0.49
53:3:269:C:H2'	53:3:270:A:H8	1.75	0.49
53:3:651:C:H2'	53:3:652:U:C6	2.47	0.49
54:4:171:U:H2'	54:4:172:A:C8	2.46	0.49
54:4:1025:G:H8	54:4:1025:G:OP1	1.95	0.49
54:4:1049:G:H2'	54:4:1132:A:N1	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:1485:C:H2'	54:4:1486:G:O4'	2.11	0.49
7:h:28:ALA:HB2	7:h:111:ALA:HB2	1.95	0.49
7:h:56:ARG:HG3	54:4:1212:A:N3	2.27	0.49
7:h:88:HIS:CG	7:h:89:PRO:HD3	2.48	0.49
13:n:90:ARG:NH1	54:4:3008:C:O2'	2.46	0.49
13:n:96:ARG:HH22	27:B:51:ARG:HH12	1.60	0.49
15:p:105:LYS:O	15:p:108:ARG:HG2	2.12	0.49
27:B:46:GLY:HA3	27:B:54:ILE:CG2	2.41	0.49
40:O:40:ILE:CD1	53:3:1124:G:H4'	2.42	0.49
50:Y:4:LYS:NZ	53:3:61:G:OP1	2.45	0.49
53:3:158:G:H2'	53:3:159:G:O4'	2.12	0.49
53:3:452:A:H61	53:3:480:U:H3	1.60	0.49
53:3:1323:G:H2'	53:3:1324:A:C8	2.47	0.49
54:4:217:A:H2'	54:4:218:A:O4'	2.12	0.49
54:4:1425:C:OP1	54:4:2838:C:H4'	2.13	0.49
54:4:2107:U:O2'	54:4:2108:G:H5'	2.11	0.49
54:4:2166:G:H2'	54:4:2167:U:O4'	2.12	0.49
54:4:2236:A:H5'	54:4:2278:C:H4'	1.94	0.49
55:5:51:C:H2'	55:5:52:G:H8	1.78	0.49
57:7:23:A:H2'	57:7:24:G:C8	2.47	0.49
2:c:148:GLN:N	2:c:148:GLN:OE1	2.45	0.49
4:e:100:GLU:O	4:e:104:THR:HG22	2.13	0.49
10:k:10:VAL:HG11	10:k:16:ALA:CB	2.43	0.49
34:I:49:ASP:O	34:I:52:VAL:HG12	2.11	0.49
40:O:20:GLN:O	40:O:24:GLU:HB2	2.12	0.49
52:a:217:THR:O	54:4:2252:G:N2	2.45	0.49
53:3:1251:A:H2'	53:3:1252:A:O4'	2.13	0.49
53:3:1412:C:H2'	53:3:1413:A:C8	2.47	0.49
54:4:879:G:C2'	54:4:880:G:H5'	2.41	0.49
54:4:1182:A:H2'	54:4:1183:G:C8	2.47	0.49
54:4:2176:G:H3'	54:4:2177:G:H5''	1.93	0.49
4:e:107:VAL:CG2	4:e:108:PRO:HD3	2.37	0.49
9:j:43:GLU:CD	9:j:43:GLU:H	2.21	0.49
39:N:115:VAL:HG23	40:O:62:ARG:HH11	1.77	0.49
41:P:35:ASP:OD1	41:P:36:ARG:N	2.45	0.49
43:R:97:ARG:HB2	43:R:99:GLN:NE2	2.27	0.49
45:T:28:VAL:HG11	45:T:66:LEU:HD21	1.94	0.49
47:V:60:ILE:HG22	47:V:72:TRP:HE3	1.78	0.49
53:3:423:G:C2'	53:3:424:G:H5'	2.42	0.49
53:3:662:U:H2'	53:3:663:A:C8	2.48	0.49
53:3:1397:C:N4	56:1:22:A:H2'	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:1199:G:H1'	54:4:1217:A:O2'	2.12	0.49
3:d:147:LEU:HB2	3:d:183:PHE:CD2	2.48	0.49
5:f:3:VAL:CG2	54:4:2879:G:H4'	2.42	0.49
5:f:104:LEU:HB3	5:f:106:LEU:HD13	1.94	0.49
11:l:73:ILE:HD12	11:l:106:GLU:HB3	1.93	0.49
34:I:121:ALA:HB1	34:I:148:ALA:HB1	1.93	0.49
50:Y:66:ILE:HD12	50:Y:66:ILE:N	2.28	0.49
52:a:66:PRO:HG2	52:a:67:HIS:CE1	2.47	0.49
53:3:211:G:C2'	53:3:212:G:H5'	2.42	0.49
54:4:323:C:H2'	54:4:1333:A:N1	2.27	0.49
54:4:878:A:H3'	54:4:879:G:H8	1.78	0.49
54:4:2456:A:H2'	54:4:2457:U:C6	2.47	0.49
2:c:179:ARG:HB3	2:c:188:LEU:HD12	1.94	0.49
6:g:2:GLN:HE22	6:g:20:ASN:HB2	1.78	0.49
8:i:124:MET:O	8:i:127:SER:OG	2.29	0.49
20:u:32:LYS:HE2	20:u:65:GLN:NE2	2.28	0.49
32:G:116:LEU:HB3	32:G:140:LEU:HD13	1.92	0.49
42:Q:49:ARG:HH22	53:3:522:C:H41	1.60	0.49
46:U:39:PHE:CE2	46:U:41:PRO:HB3	2.48	0.49
49:X:77:ARG:HH22	53:3:1322:C:P	2.35	0.49
52:a:30:LEU:HD22	52:a:42:VAL:HG21	1.93	0.49
53:3:56:U:H2'	53:3:57:G:C8	2.48	0.49
54:4:890:C:H2'	54:4:891:G:O4'	2.12	0.49
54:4:2201:C:O2'	54:4:2202:U:H5'	2.12	0.49
14:o:90:VAL:HG22	14:o:91:SER:H	1.77	0.49
18:s:108:SER:OG	18:s:110:ARG:NH2	2.46	0.49
24:y:2:LYS:HE2	54:4:102:U:H1'	1.95	0.49
39:N:49:GLN:N	39:N:50:PRO:HD2	2.27	0.49
40:O:10:LEU:HD23	40:O:72:ARG:O	2.13	0.49
52:a:68:GLY:HA2	52:a:159:GLY:N	2.28	0.49
53:3:405:U:H3'	53:3:406:G:C5'	2.28	0.49
53:3:1252:A:H2'	53:3:1253:G:O4'	2.12	0.49
53:3:1329:A:O2'	53:3:1330:U:H5'	2.13	0.49
54:4:1848:U:H2'	54:4:1849:G:O4'	2.12	0.49
54:4:2414:G:H4'	54:4:2415:A:C1'	2.42	0.49
54:4:2519:G:H2'	54:4:2552:C:N4	2.25	0.49
54:4:2603:C:H2'	54:4:2604:A:H5'	1.94	0.49
6:g:97:ARG:O	6:g:100:ALA:HB3	2.13	0.49
34:I:30:LYS:HD2	53:3:411:A:H2'	1.94	0.49
49:X:52:ASN:HB3	49:X:74:ALA:HB1	1.95	0.49
53:3:1435:G:H2'	53:3:1436:U:C6	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:16:C:O2'	54:4:17:G:H5'	2.13	0.49
6:g:133:GLN:HG3	6:g:139:PHE:CE1	2.48	0.49
11:l:132:ARG:HG3	11:l:142:ILE:HD12	1.95	0.49
30:E:61:LEU:HB3	30:E:64:ALA:HB3	1.94	0.49
53:3:236:A:H2'	53:3:237:G:C8	2.48	0.49
53:3:273:U:H2'	53:3:274:A:H5'	1.95	0.49
54:4:1408:G:O2'	54:4:1409:G:H5'	2.12	0.49
54:4:1735:C:H4'	54:4:1736:A:O5'	2.13	0.49
54:4:2461:A:H5''	54:4:2462:U:OP1	2.13	0.49
54:4:2953:G:H2'	54:4:2954:A:H5'	1.95	0.49
1:b:36:ASN:HB2	1:b:61:TYR:HB2	1.94	0.49
6:g:10:ALA:O	6:g:12:LEU:HD23	2.13	0.49
14:o:69:ASP:OD1	14:o:69:ASP:N	2.46	0.49
19:t:1:MET:HE2	54:4:137:U:H4'	1.95	0.49
19:t:67:VAL:HG22	19:t:76:ARG:HD3	1.95	0.49
26:A:43:PHE:HE1	26:A:47:LYS:HE3	1.78	0.49
34:l:50:TYR:CD2	53:3:508:U:H4'	2.48	0.49
40:O:5:ARG:HD3	40:O:79:PRO:HD3	1.95	0.49
51:Z:62:GLU:H	51:Z:62:GLU:CD	2.20	0.49
54:4:1794:G:C2'	54:4:1795:G:H5'	2.43	0.49
54:4:2348:U:H2'	54:4:2349:G:H8	1.78	0.49
7:h:54:VAL:HG12	54:4:1212:A:C5'	2.43	0.48
14:o:25:ARG:HH12	54:4:1075:G:P	2.36	0.48
53:3:221:C:H2'	53:3:222:C:C6	2.48	0.48
53:3:625:U:H2'	53:3:626:G:H8	1.78	0.48
53:3:884:U:H4'	53:3:885:G:H5''	1.95	0.48
54:4:809:G:O2'	54:4:810:U:H5'	2.13	0.48
57:7:68:C:H2'	57:7:69:G:C8	2.48	0.48
4:e:145:VAL:HG22	4:e:146:ASP:H	1.78	0.48
24:y:24:GLU:O	24:y:25:GLN:C	2.55	0.48
54:4:2320:U:H2'	54:4:2321:G:C8	2.48	0.48
1:b:30:ALA:HB3	1:b:31:PRO:HD3	1.95	0.48
10:k:91:SER:O	10:k:92:GLU:C	2.56	0.48
39:N:117:LEU:HD11	39:N:123:ARG:HE	1.78	0.48
43:R:16:ILE:HD12	43:R:16:ILE:H	1.78	0.48
53:3:335:C:H2'	53:3:336:A:H8	1.78	0.48
53:3:396:C:C3'	53:3:397:A:H5''	2.43	0.48
53:3:408:A:C2'	53:3:409:U:H5'	2.43	0.48
53:3:411:A:C4	53:3:413:G:H1'	2.48	0.48
53:3:542:G:H2'	53:3:543:U:C6	2.49	0.48
53:3:598:U:H2'	53:3:599:C:C6	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1197:A:H2'	53:3:1198:G:H5''	1.95	0.48
54:4:1153:U:H5''	54:4:1154:A:OP2	2.13	0.48
54:4:2471:U:O2'	54:4:2472:U:H5'	2.12	0.48
55:5:27:U:H2'	55:5:28:C:C6	2.47	0.48
1:b:130:PRO:HG2	1:b:133:ASN:ND2	2.24	0.48
19:t:13:ALA:HB1	24:y:33:ALA:CB	2.43	0.48
19:t:23:ALA:O	19:t:27:SER:HB2	2.14	0.48
30:E:15:LYS:HE2	30:E:19:GLY:HA2	1.96	0.48
32:G:98:GLY:O	32:G:102:ASN:HB3	2.13	0.48
53:3:1305:G:HO2'	53:3:1306:A:H8	1.58	0.48
54:4:395:U:H2'	54:4:396:G:C8	2.48	0.48
54:4:886:A:H2'	54:4:886:A:N3	2.27	0.48
54:4:1129:C:H2'	54:4:1130:G:H8	1.79	0.48
54:4:1168:A:O2'	54:4:1169:G:H5'	2.14	0.48
54:4:1773:G:H5''	54:4:1774:C:H5'	1.95	0.48
55:5:25:C:H2'	55:5:26:G:O4'	2.13	0.48
1:b:182:LYS:HG3	1:b:267:VAL:CG2	2.44	0.48
4:e:102:LEU:HD23	4:e:102:LEU:C	2.38	0.48
7:h:3:LEU:HD21	54:4:1171:C:OP1	2.13	0.48
28:C:34:GLU:OE1	28:C:49:LYS:HG2	2.14	0.48
40:O:57:VAL:HG12	40:O:58:ASN:H	1.78	0.48
40:O:57:VAL:HG12	40:O:58:ASN:N	2.28	0.48
53:3:235:C:H2'	53:3:236:A:H8	1.77	0.48
53:3:1029:U:H4'	53:3:1030:U:C5	2.48	0.48
53:3:1256:A:H1'	53:3:1258:G:C8	2.48	0.48
53:3:1282:C:H2'	53:3:1283:U:C6	2.48	0.48
54:4:1563:G:H2'	54:4:1564:G:H8	1.78	0.48
3:d:143:LEU:CD2	3:d:185:LYS:HD2	2.42	0.48
9:j:41:LYS:HB3	9:j:43:GLU:OE2	2.12	0.48
12:m:33:LEU:HD23	12:m:103:TYR:HD2	1.79	0.48
49:X:51:HIS:CD2	53:3:1220:G:H1'	2.49	0.48
51:Z:6:ARG:C	51:Z:8:ASN:H	2.22	0.48
54:4:171:U:H2'	54:4:172:A:H8	1.78	0.48
54:4:1665:G:H3'	54:4:1665:G:N3	2.29	0.48
54:4:2371:U:H2'	54:4:2372:U:C6	2.48	0.48
57:7:36:A:H2'	57:7:37:A:C8	2.48	0.48
1:b:224:MET:SD	54:4:782:A:C2	3.07	0.48
3:d:69:ARG:HE	54:4:674:G:H1'	1.79	0.48
31:F:36:ARG:O	31:F:37:GLN:CB	2.60	0.48
37:L:78:ARG:NH2	37:L:83:THR:OG1	2.46	0.48
54:4:291:G:O2'	54:4:292:U:H5'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:d:147:LEU:HD12	3:d:168:ASP:O	2.14	0.48
7:h:55:VAL:HG12	7:h:57:ASN:H	1.78	0.48
33:H:70:ALA:O	33:H:72:PRO:HD3	2.13	0.48
34:I:80:ARG:HE	53:3:613:C:P	2.37	0.48
48:W:35:SER:HB3	51:Z:3:ILE:HG13	1.95	0.48
54:4:3:U:H2'	54:4:4:U:C6	2.49	0.48
54:4:581:C:H2'	54:4:582:A:H8	1.78	0.48
54:4:1965:C:H2'	54:4:2027:A:H61	1.79	0.48
3:d:68:ALA:HA	54:4:1383:U:C5	2.49	0.48
33:H:174:LEU:HD23	33:H:181:ILE:HD13	1.96	0.48
35:J:96:GLN:HG2	35:J:97:PRO:HD2	1.95	0.48
53:3:842:U:H2'	53:3:844:G:H5'	1.96	0.48
53:3:1354:U:H2'	53:3:1355:G:H8	1.79	0.48
54:4:1023:U:H2'	54:4:1024:G:H5'	1.96	0.48
54:4:1057:A:H2'	54:4:1058:G:C8	2.47	0.48
54:4:2473:G:N3	54:4:2509:A:H2'	2.29	0.48
54:4:2858:C:O2'	54:4:2859:G:H5'	2.14	0.48
1:b:16:VAL:HB	1:b:203:VAL:HG12	1.94	0.48
5:f:148:ARG:HA	5:f:161:VAL:HG13	1.96	0.48
6:g:22:LYS:HD3	54:4:2221:G:H5'	1.96	0.48
8:i:5:GLN:NE2	8:i:60:VAL:O	2.45	0.48
8:i:45:THR:HA	8:i:48:ILE:HD12	1.95	0.48
13:n:8:ARG:HG3	13:n:8:ARG:HH21	1.79	0.48
35:J:104:ILE:O	35:J:111:ARG:NH1	2.47	0.48
36:K:17:GLN:O	36:K:21:MET:HG3	2.14	0.48
37:L:16:LYS:HD2	37:L:17:PHE:HE1	1.78	0.48
37:L:16:LYS:HD2	37:L:17:PHE:CE1	2.49	0.48
41:P:34:THR:OG1	41:P:35:ASP:N	2.47	0.48
53:3:78:A:H2'	53:3:79:G:C8	2.49	0.48
54:4:1765:A:H5'	54:4:1888:C:O2'	2.14	0.48
54:4:2189:G:OP1	54:4:2189:G:H4'	2.13	0.48
54:4:2612:G:O2'	54:4:2613:G:H5'	2.13	0.48
54:4:2694:A:H4'	54:4:2695:G:H5''	1.96	0.48
55:5:43:A:O2'	55:5:44:A:H5'	2.14	0.48
11:l:95:LEU:HD11	11:l:125:LEU:HD21	1.96	0.47
14:o:33:ARG:O	14:o:34:HIS:CB	2.62	0.47
32:G:4:SER:O	32:G:46:VAL:HG11	2.14	0.47
34:I:25:ARG:HH12	34:I:30:LYS:HE3	1.79	0.47
47:V:10:ARG:HH11	47:V:55:GLY:HA2	1.78	0.47
53:3:1272:G:H2'	53:3:1273:C:O4'	2.13	0.47
54:4:327:G:O2'	54:4:328:U:H5'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:1048:G:H2'	54:4:1049:G:O4'	2.14	0.47
54:4:1215:G:N2	54:4:1231:A:H1'	2.28	0.47
54:4:2385:U:O2'	54:4:2386:C:H5'	2.14	0.47
9:j:93:ILE:O	9:j:97:PRO:HG3	2.14	0.47
27:B:2:VAL:HG22	54:4:2143:A:C2	2.49	0.47
35:J:92:ARG:O	35:J:93:VAL:O	2.33	0.47
39:N:10:ARG:HA	39:N:14:SER:O	2.14	0.47
53:3:123:U:OP1	53:3:312:C:H5'	2.14	0.47
53:3:1033:G:H2'	53:3:1034:G:H4'	1.95	0.47
53:3:1151:A:H2'	53:3:1152:A:C8	2.49	0.47
54:4:668:A:H2'	54:4:670:A:H62	1.79	0.47
1:b:75:ALA:HB2	1:b:95:TYR:CD1	2.50	0.47
12:m:53:MET:HG3	12:m:63:ILE:HD13	1.96	0.47
14:o:111:ARG:NH2	14:o:117:PHE:OXT	2.48	0.47
21:v:21:ARG:NH2	21:v:87:GLN:O	2.48	0.47
26:A:11:GLU:HG2	26:A:23:LYS:HG2	1.95	0.47
34:I:82:LYS:HA	53:3:5:U:O4	2.14	0.47
53:3:59:A:H2'	53:3:59:A:N3	2.28	0.47
53:3:314:C:O2'	53:3:315:A:H5'	2.13	0.47
53:3:371:A:H5'	53:3:482:A:H4'	1.95	0.47
53:3:990:C:H2'	53:3:991:U:O4'	2.14	0.47
53:3:1429:A:H2'	53:3:1430:A:H8	1.79	0.47
54:4:717:C:H2'	54:4:718:A:H5'	1.94	0.47
54:4:1096:C:H2'	54:4:1097:C:O4'	2.14	0.47
54:4:1198:A:H3'	54:4:1200:C:OP1	2.13	0.47
54:4:1563:G:H2'	54:4:1564:G:C8	2.50	0.47
54:4:1764:U:H2'	54:4:1765:A:C8	2.49	0.47
5:f:155:PRO:O	5:f:170:THR:HG23	2.14	0.47
13:n:3:HIS:O	13:n:4:ARG:HB2	2.13	0.47
34:I:187:ARG:HD2	34:I:190:LEU:HD21	1.96	0.47
38:M:28:SER:OG	38:M:29:SER:N	2.48	0.47
39:N:51:LEU:HB3	39:N:56:MET:HB2	1.95	0.47
53:3:70:U:H5'	53:3:71:A:OP1	2.14	0.47
53:3:113:G:H2'	53:3:114:U:C6	2.49	0.47
53:3:1418:A:H3'	53:3:1419:G:C5'	2.43	0.47
54:4:1676:A:H2'	54:4:1677:A:C8	2.50	0.47
54:4:1883:A:H2'	54:4:1884:G:H5'	1.96	0.47
54:4:2063:G:O2'	54:4:2064:A:H5'	2.15	0.47
54:4:3016:C:H2'	54:4:3017:C:H6	1.79	0.47
22:w:33:ILE:HG21	22:w:76:ILE:HG21	1.97	0.47
24:y:26:PHE:CE1	24:y:30:MET:HE3	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:z:4:ILE:HD11	25:z:56:VAL:CG2	2.40	0.47
25:z:15:ARG:HG3	25:z:53:MET:HE1	1.96	0.47
38:M:17:GLN:HE22	38:M:70:VAL:HG12	1.80	0.47
53:3:50:A:H4'	53:3:51:A:H5'	1.95	0.47
53:3:139:A:H2'	53:3:140:U:C6	2.50	0.47
53:3:1137:C:H5'	53:3:1138:G:C5'	2.44	0.47
54:4:720:U:H2'	54:4:721:A:C8	2.50	0.47
54:4:905:A:O2'	54:4:906:U:H5'	2.15	0.47
54:4:1729:G:O2'	54:4:1730:U:H5'	2.15	0.47
54:4:2086:C:O2'	54:4:2087:G:H5'	2.15	0.47
7:h:56:ARG:HG2	54:4:1212:A:C1'	2.44	0.47
21:v:77:VAL:HG23	21:v:89:ILE:HG12	1.96	0.47
27:B:8:THR:CG2	54:4:2148:A:H5'	2.44	0.47
32:G:15:PHE:O	32:G:40:ILE:HD13	2.15	0.47
33:H:55:VAL:HB	33:H:66:THR:HB	1.97	0.47
47:V:11:VAL:CG1	47:V:20:ILE:HD11	2.41	0.47
53:3:304:U:O2'	53:3:305:G:H5'	2.15	0.47
53:3:481:G:H21	53:3:482:A:N6	2.11	0.47
54:4:780:G:H2'	54:4:782:A:N7	2.30	0.47
54:4:895:U:C2'	54:4:896:A:H5''	2.45	0.47
54:4:1037:U:H2'	54:4:1038:G:C8	2.50	0.47
54:4:2308:U:H2'	54:4:2309:U:H5'	1.94	0.47
54:4:2361:U:H2'	54:4:2362:G:H8	1.79	0.47
54:4:2634:U:O2'	57:7:76:A:H4'	2.14	0.47
7:h:54:VAL:HG12	54:4:1212:A:H5'	1.96	0.47
10:k:92:GLU:O	10:k:93:GLN:C	2.57	0.47
13:n:98:LEU:HD13	27:B:53:VAL:HG21	1.97	0.47
17:r:25:LEU:H	17:r:94:THR:HG21	1.80	0.47
21:v:14:LYS:HG3	54:4:1040:G:H1	1.79	0.47
23:x:27:ARG:NH2	54:4:1493:A:OP1	2.48	0.47
23:x:31:ASN:HD22	23:x:52:ALA:HB2	1.80	0.47
32:G:131:LYS:NZ	53:3:1159:U:H5'	2.30	0.47
34:I:11:SER:HA	34:I:18:LEU:HD13	1.96	0.47
42:Q:77:SER:HB3	42:Q:102:ASP:OD2	2.15	0.47
43:R:21:ILE:HB	43:R:24:VAL:HG22	1.96	0.47
46:U:8:ARG:NH1	53:3:391:G:H5''	2.30	0.47
52:a:62:ALA:HA	52:a:162:ARG:HA	1.97	0.47
53:3:20:U:H2'	53:3:21:G:O4'	2.14	0.47
53:3:140:U:O2	53:3:223:A:H2	1.96	0.47
53:3:711:G:O2'	53:3:712:A:H5'	2.14	0.47
54:4:504:A:H2'	54:4:504:A:N3	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:578:G:H21	54:4:1380:G:N2	2.13	0.47
54:4:996:A:H2'	54:4:997:G:H8	1.79	0.47
54:4:1075:G:O2'	54:4:1076:G:H5'	2.15	0.47
54:4:1121:U:O2'	54:4:1122:G:H5'	2.14	0.47
54:4:1458:C:O2'	54:4:1459:G:H5'	2.14	0.47
54:4:1575:C:H2'	54:4:1576:G:H8	1.79	0.47
54:4:1971:C:H2'	54:4:1972:C:C6	2.50	0.47
54:4:2001:G:H2'	54:4:2002:C:C6	2.50	0.47
54:4:2157:G:O6	54:4:2160:G:H5''	2.15	0.47
54:4:2693:A:C2'	54:4:2694:A:H5'	2.44	0.47
54:4:2767:A:H2'	54:4:2768:G:O4'	2.14	0.47
2:c:8:LYS:HB2	2:c:201:LEU:HD11	1.97	0.47
2:c:81:GLU:CD	54:4:2764:C:H4'	2.40	0.47
7:h:48:ALA:HB3	7:h:52:MET:HB2	1.95	0.47
17:r:16:GLU:HG3	17:r:100:GLY:HA2	1.96	0.47
39:N:40:ARG:NH2	53:3:1292:G:H5''	2.30	0.47
53:3:335:C:H2'	53:3:336:A:C8	2.50	0.47
54:4:145:C:H2'	54:4:146:A:C8	2.49	0.47
54:4:917:A:H5''	54:4:2396:A:H61	1.79	0.47
54:4:1025:G:OP1	54:4:1025:G:C8	2.68	0.47
54:4:1094:C:H2'	54:4:1095:A:C8	2.49	0.47
54:4:2001:G:H2'	54:4:2002:C:H6	1.80	0.47
54:4:2283:U:C2'	54:4:2284:G:H5'	2.45	0.47
54:4:2323:U:O2'	54:4:2324:C:H5'	2.15	0.47
54:4:2368:U:O2'	54:4:2369:A:H5'	2.15	0.47
54:4:2774:C:H2'	54:4:2775:U:O4'	2.13	0.47
1:b:106:PRO:HD2	1:b:109:LEU:CD2	2.37	0.47
1:b:129:LEU:HB2	1:b:130:PRO:HD2	1.95	0.47
4:e:59:ILE:O	4:e:101:ARG:NH1	2.48	0.47
5:f:44:HIS:HA	5:f:49:LEU:HG	1.96	0.47
12:m:42:THR:HA	12:m:93:VAL:HA	1.97	0.47
34:I:145:ARG:HH21	34:I:148:ALA:HB2	1.80	0.47
35:J:80:LEU:HG	35:J:122:VAL:HG11	1.95	0.47
53:3:393:A:H2'	53:3:394:G:H8	1.80	0.47
53:3:1042:A:H2'	53:3:1043:G:O4'	2.15	0.47
54:4:1028:U:N3	54:4:1029:G:O6	2.48	0.47
54:4:1188:U:H4'	54:4:1190:G:H5'	1.95	0.47
54:4:1341:A:H62	54:4:1364:G:H1'	1.79	0.47
4:e:140:ILE:N	4:e:140:ILE:HD12	2.30	0.47
10:k:70:ARG:NH1	54:4:2812:U:O4'	2.47	0.47
27:B:8:THR:HG21	54:4:2148:A:H5'	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:Q:23:LEU:O	42:Q:26:CYS:HB2	2.15	0.47
46:U:12:LYS:O	46:U:13:LYS:HB2	2.15	0.47
49:X:24:SER:HB2	49:X:27:LYS:HE2	1.96	0.47
52:a:63:THR:O	52:a:160:GLN:HA	2.14	0.47
53:3:46:G:OP1	53:3:307:C:H4'	2.15	0.47
53:3:399:G:H2'	53:3:400:C:C6	2.50	0.47
53:3:438:U:N3	53:3:494:G:N7	2.63	0.47
53:3:1346:A:O2'	53:3:1347:G:H4'	2.15	0.47
54:4:438:G:H2'	54:4:439:A:C8	2.50	0.47
54:4:644:A:H2'	54:4:645:C:H5''	1.97	0.47
54:4:1473:C:H5'	54:4:1473:C:H6	1.79	0.47
54:4:2455:A:H2'	54:4:2456:A:C8	2.50	0.47
57:7:43:C:H2'	57:7:44:G:C8	2.50	0.47
1:b:199:HIS:O	1:b:202:ARG:HG2	2.15	0.46
20:u:85:ARG:HH12	20:u:99:SER:HB3	1.81	0.46
34:I:25:ARG:HG2	34:I:27:ILE:H	1.80	0.46
35:J:55:VAL:N	35:J:56:PRO:HD2	2.30	0.46
40:O:6:ILE:O	40:O:8:ILE:HD12	2.15	0.46
40:O:36:VAL:HG12	40:O:76:ILE:HG23	1.98	0.46
41:P:78:ILE:HB	41:P:104:PHE:HE1	1.80	0.46
50:Y:72:ALA:HB1	53:3:186:C:H5'	1.97	0.46
52:a:8:MET:HG2	54:4:2302:C:H4'	1.97	0.46
52:a:218:MET:HE1	54:4:2256:G:H4'	1.96	0.46
53:3:79:G:C2'	53:3:80:A:H5'	2.45	0.46
53:3:1450:U:H2'	53:3:1452:C:O4'	2.14	0.46
54:4:445:C:C2'	54:4:446:G:H5'	2.45	0.46
54:4:1296:G:H2'	54:4:1297:A:C8	2.50	0.46
54:4:1532:C:O2'	54:4:1533:U:H5'	2.15	0.46
54:4:1986:A:N6	54:4:2012:G:O2'	2.48	0.46
2:c:56:LYS:HB2	2:c:59:ARG:HB2	1.96	0.46
3:d:84:THR:HG21	54:4:672:C:H4'	1.97	0.46
20:u:41:VAL:HG23	20:u:60:LYS:HB3	1.97	0.46
24:y:1:MET:CE	24:y:4:LYS:HE3	2.45	0.46
25:z:36:GLU:O	25:z:37:ARG:HD3	2.14	0.46
29:D:24:THR:HG23	29:D:27:GLY:N	2.30	0.46
34:I:54:LEU:CD2	53:3:509:A:H1'	2.45	0.46
37:L:131:GLY:O	37:L:134:VAL:HG12	2.15	0.46
40:O:10:LEU:HD23	40:O:10:LEU:H	1.79	0.46
40:O:53:ILE:HG12	40:O:61:ALA:O	2.15	0.46
45:T:23:SER:O	45:T:26:VAL:HG12	2.15	0.46
53:3:273:U:C2'	53:3:274:A:H5'	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:502:A:H61	53:3:543:U:H3	1.62	0.46
54:4:851:C:H2'	54:4:852:U:C6	2.50	0.46
54:4:1219:G:H2'	54:4:1220:C:C6	2.50	0.46
17:r:79:ARG:O	17:r:80:ARG:HB2	2.15	0.46
18:s:18:ARG:NE	54:4:518:G:H4'	2.30	0.46
32:G:87:ASP:OD1	32:G:88:GLN:NE2	2.48	0.46
34:I:147:LYS:NZ	53:3:491:G:OP2	2.39	0.46
34:I:164:ARG:HB3	34:I:165:GLU:H	1.65	0.46
41:P:22:ILE:HG21	41:P:95:THR:HG21	1.98	0.46
53:3:384:G:H2'	53:3:385:C:C6	2.50	0.46
53:3:579:A:H2'	53:3:580:C:C6	2.50	0.46
53:3:744:C:H2'	53:3:745:G:C8	2.50	0.46
53:3:817:C:H4'	53:3:818:G:H5''	1.97	0.46
53:3:1144:G:H21	53:3:1146:A:H62	1.64	0.46
54:4:817:C:O2'	54:4:839:U:H5''	2.15	0.46
54:4:1318:G:H2'	54:4:1319:G:H8	1.80	0.46
54:4:1701:G:H2'	54:4:1702:C:H5'	1.97	0.46
54:4:2192:C:H2'	54:4:2193:C:C6	2.49	0.46
55:5:23:C:H2'	55:5:24:U:C6	2.51	0.46
5:f:86:LEU:HB2	5:f:130:ILE:HG23	1.97	0.46
23:x:21:LEU:HB2	54:4:200:U:H4'	1.98	0.46
32:G:158:ASP:O	32:G:181:PRO:HG2	2.14	0.46
41:P:111:ASP:OD2	48:W:72:ARG:NH2	2.49	0.46
45:T:44:GLU:O	45:T:46:LYS:N	2.41	0.46
49:X:53:GLY:HA3	53:3:958:A:N1	2.30	0.46
50:Y:55:PRO:HA	53:3:193:C:O2'	2.15	0.46
54:4:528:A:H2	54:4:2171:C:H5'	1.80	0.46
54:4:2709:G:H2'	54:4:2709:G:N3	2.29	0.46
6:g:110:VAL:CG2	6:g:114:GLU:HG3	2.40	0.46
13:n:79:LEU:C	13:n:81:ASN:H	2.24	0.46
18:s:6:LYS:O	54:4:494:G:H4'	2.15	0.46
24:y:23:ARG:HA	24:y:27:ASN:ND2	2.30	0.46
32:G:103:TRP:HA	32:G:106:VAL:HG22	1.97	0.46
34:I:58:GLN:HE22	53:3:544:G:P	2.39	0.46
36:K:12:PRO:O	36:K:15:SER:CB	2.64	0.46
44:S:68:ARG:NH1	44:S:70:HIS:O	2.49	0.46
53:3:415:A:H2'	53:3:416:G:O4'	2.16	0.46
53:3:484:G:C5	53:3:486:U:H1'	2.50	0.46
53:3:684:U:H2'	53:3:685:G:O4'	2.16	0.46
53:3:1115:U:O2'	53:3:1116:U:H5'	2.16	0.46
53:3:1125:U:H2'	53:3:1126:U:H2'	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1513:A:H2'	53:3:1514:G:C8	2.51	0.46
54:4:304:U:H2'	54:4:305:C:C6	2.51	0.46
54:4:368:A:H2'	54:4:369:U:H5'	1.97	0.46
54:4:466:A:H2'	54:4:467:G:H5'	1.98	0.46
54:4:1175:G:H2'	54:4:1238:G:C2	2.50	0.46
54:4:1614:U:H2'	54:4:1615:U:C6	2.51	0.46
54:4:2257:C:H1'	54:4:2288:C:N4	2.28	0.46
8:i:14:ALA:HA	8:i:41:PHE:CE2	2.50	0.46
13:n:53:THR:HA	13:n:56:LYS:HD3	1.98	0.46
16:q:103:VAL:O	16:q:106:THR:OG1	2.32	0.46
31:F:11:CYS:HB3	31:F:33:HIS:CE1	2.50	0.46
47:V:5:ARG:HG2	47:V:5:ARG:HH11	1.80	0.46
53:3:481:G:H21	53:3:482:A:H62	1.63	0.46
54:4:404:A:H1'	54:4:406:G:C4	2.51	0.46
54:4:572:A:H5''	54:4:573:U:OP2	2.16	0.46
54:4:1155:A:N6	54:4:1254:A:C8	2.82	0.46
22:w:60:ASP:N	22:w:60:ASP:OD1	2.49	0.46
23:x:16:ASN:ND2	23:x:26:ARG:HB3	2.31	0.46
35:J:80:LEU:HG	35:J:122:VAL:CG1	2.45	0.46
35:J:86:GLY:O	35:J:92:ARG:O	2.33	0.46
36:K:49:TYR:OH	36:K:86:ARG:NH1	2.45	0.46
38:M:14:ARG:NH2	38:M:75:GLN:HA	2.31	0.46
38:M:54:THR:O	38:M:56:PRO:HD3	2.15	0.46
39:N:6:TYR:HE1	39:N:17:ARG:HB3	1.80	0.46
51:Z:64:ALA:O	51:Z:65:ARG:HB3	2.15	0.46
53:3:80:A:H2	53:3:89:U:H3	1.64	0.46
53:3:915:A:H2'	53:3:916:U:H5'	1.98	0.46
53:3:1289:A:H2'	53:3:1290:G:H5'	1.98	0.46
54:4:2486:A:H2'	54:4:2487:C:O4'	2.16	0.46
7:h:26:VAL:HG13	7:h:82:ILE:HG23	1.98	0.46
8:i:21:PRO:HB2	8:i:22:PRO:HD3	1.97	0.46
11:l:96:LYS:HG2	11:l:101:ILE:HD11	1.97	0.46
11:l:141:LYS:NZ	11:l:143:GLU:HB3	2.31	0.46
13:n:47:VAL:C	13:n:50:PRO:HD2	2.40	0.46
16:q:57:ARG:NH1	54:4:1282:G:OP2	2.49	0.46
20:u:48:VAL:HG12	20:u:50:ALA:H	1.79	0.46
28:C:37:LYS:HB2	28:C:48:TYR:CD2	2.51	0.46
37:L:103:ILE:HD11	37:L:123:LEU:HD23	1.98	0.46
38:M:17:GLN:HG2	38:M:62:LEU:HD13	1.98	0.46
42:Q:66:ILE:HD12	42:Q:66:ILE:N	2.30	0.46
43:R:24:VAL:HA	53:3:1329:A:H5''	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:X:36:ARG:HB3	53:3:1318:A:O2'	2.15	0.46
50:Y:73:ARG:CZ	53:3:261:U:H5	2.29	0.46
53:3:542:G:H2'	53:3:543:U:H6	1.79	0.46
54:4:974:G:H1'	54:4:975:A:C8	2.51	0.46
54:4:1181:C:C3'	54:4:1182:A:H5''	2.46	0.46
54:4:2719:C:H2'	54:4:2720:G:C8	2.51	0.46
54:4:3024:C:H2'	54:4:3025:U:C6	2.50	0.46
1:b:32:LEU:HD11	1:b:101:ARG:HA	1.97	0.46
10:k:78:ARG:NH2	15:p:70:GLU:OE2	2.49	0.46
34:I:44:LYS:HD2	34:I:45:PRO:HD2	1.98	0.46
34:I:160:LEU:HD23	34:I:163:GLN:HE21	1.81	0.46
53:3:171:A:H2'	53:3:172:A:C8	2.49	0.46
53:3:714:G:H2'	53:3:715:A:C8	2.51	0.46
53:3:1038:C:H2'	53:3:1039:G:C8	2.50	0.46
53:3:1165:U:H2'	53:3:1166:G:O4'	2.16	0.46
54:4:713:G:H2'	54:4:714:U:H5'	1.98	0.46
54:4:896:A:N7	57:7:19:G:N2	2.64	0.46
54:4:2021:C:C2'	54:4:2022:C:H5'	2.43	0.46
54:4:2324:C:O2'	54:4:2325:U:H5'	2.16	0.46
6:g:83:LYS:HB3	6:g:91:PHE:HB2	1.97	0.46
21:v:9:ARG:HG2	21:v:41:GLU:HB2	1.98	0.46
22:w:43:ALA:HB1	22:w:47:VAL:HG23	1.97	0.46
31:F:19:ARG:HD2	31:F:24:ARG:HD2	1.96	0.46
34:I:158:LEU:O	34:I:162:GLU:HG2	2.16	0.46
36:K:12:PRO:O	36:K:15:SER:OG	2.33	0.46
37:L:15:PRO:HB2	39:N:44:ARG:NH1	2.31	0.46
44:S:72:PHE:CZ	44:S:77:GLY:HA2	2.51	0.46
53:3:28:A:O2'	53:3:29:U:H5'	2.16	0.46
53:3:202:G:H21	53:3:466:A:H61	1.64	0.46
53:3:744:C:H2'	53:3:745:G:H8	1.81	0.46
54:4:995:C:H5'	54:4:995:C:C6	2.48	0.46
54:4:1206:U:C5'	54:4:1207:C:H5''	2.35	0.46
54:4:1415:A:O2'	54:4:1416:G:H5'	2.16	0.46
54:4:1670:U:H2'	54:4:1671:G:O4'	2.15	0.46
54:4:2473:G:H5'	54:4:2475:C:H5'	1.97	0.46
54:4:2817:U:O2	54:4:2841:U:H5''	2.16	0.46
54:4:2962:G:H2'	54:4:3007:A:N6	2.30	0.46
1:b:152:GLN:HB3	54:4:1946:U:N3	2.31	0.45
1:b:158:GLY:HA2	1:b:194:VAL:O	2.15	0.45
1:b:228:ASP:CG	54:4:780:G:H1	2.23	0.45
7:h:29:ASP:H	7:h:81:LEU:HD22	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:k:41:ILE:HD11	10:k:86:LEU:HD22	1.97	0.45
23:x:39:VAL:HG12	23:x:42:GLU:H	1.81	0.45
38:M:74:ILE:HG23	38:M:74:ILE:O	2.16	0.45
40:O:11:LYS:CB	40:O:71:LEU:HD22	2.46	0.45
48:W:54:LEU:O	48:W:58:ILE:HG12	2.16	0.45
53:3:860:A:H2'	53:3:861:G:O4'	2.16	0.45
53:3:1109:C:H2'	53:3:1110:A:O4'	2.16	0.45
53:3:1497:G:C2'	53:3:1498:U:H5'	2.46	0.45
54:4:818:G:H5'	54:4:839:U:OP1	2.16	0.45
54:4:1231:A:N3	54:4:1231:A:H2'	2.31	0.45
54:4:1341:A:N6	54:4:1364:G:H1'	2.31	0.45
54:4:1810:G:H2'	54:4:1811:U:C6	2.51	0.45
54:4:2158:A:N3	54:4:2627:C:H5''	2.31	0.45
54:4:2221:G:O2'	54:4:2222:A:H5'	2.16	0.45
55:5:51:C:H2'	55:5:52:G:C8	2.51	0.45
5:f:169:ARG:HH11	54:4:1220:C:H4'	1.81	0.45
7:h:12:VAL:HA	7:h:15:VAL:CG2	2.43	0.45
37:L:75:LYS:HE3	37:L:77:ARG:HD2	1.98	0.45
52:a:63:THR:O	52:a:159:GLY:O	2.34	0.45
53:3:631:C:H3'	53:3:632:U:H5'	1.97	0.45
53:3:858:G:O6	53:3:869:G:H3'	2.16	0.45
53:3:1310:G:O2'	53:3:1311:A:H5'	2.16	0.45
54:4:1729:G:C2'	54:4:1730:U:H5'	2.46	0.45
54:4:2058:G:H2'	54:4:2096:G:N1	2.31	0.45
54:4:2711:G:N2	57:7:76:A:H1'	2.31	0.45
54:4:2911:U:H2'	54:4:2912:U:H6	1.81	0.45
12:m:42:THR:HG22	12:m:45:GLN:NE2	2.32	0.45
13:n:95:THR:OG1	13:n:96:ARG:N	2.49	0.45
17:r:48:LYS:HG2	17:r:49:ILE:N	2.29	0.45
21:v:86:LEU:HD13	21:v:89:ILE:HD11	1.99	0.45
39:N:18:VAL:HG11	39:N:81:GLY:O	2.17	0.45
51:Z:49:ALA:O	51:Z:52:VAL:HG12	2.16	0.45
53:3:100:G:H3'	53:3:101:A:H8	1.81	0.45
53:3:731:G:O2'	53:3:732:C:H5'	2.16	0.45
53:3:988:G:H1'	53:3:1015:G:H22	1.81	0.45
53:3:1084:G:H5'	53:3:1102:A:OP2	2.17	0.45
53:3:1521:C:H2'	53:3:1522:U:C6	2.51	0.45
54:4:490:C:H4'	54:4:491:G:OP2	2.17	0.45
54:4:1542:C:H2'	54:4:1543:U:O4'	2.15	0.45
54:4:2255:G:H22	54:4:2289:C:C2'	2.26	0.45
54:4:2555:C:H5''	54:4:2557:G:H5'	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:2916:C:H2'	54:4:2917:C:C6	2.50	0.45
10:k:66:LYS:HD2	54:4:1794:G:OP1	2.16	0.45
12:m:14:LYS:NZ	54:4:956:G:O6	2.49	0.45
12:m:21:ALA:HB1	12:m:100:LYS:HE3	1.98	0.45
13:n:39:PRO:HG2	54:4:1779:G:H4'	1.99	0.45
14:o:75:GLY:O	14:o:78:VAL:HG22	2.17	0.45
33:H:1:GLY:HA3	53:3:1060:U:H5	1.82	0.45
34:I:104:MET:HG3	34:I:179:GLY:HA3	1.98	0.45
36:K:66:ALA:HB1	36:K:67:PRO:CD	2.44	0.45
53:3:263:A:H2'	53:3:264:C:C6	2.51	0.45
53:3:1168:U:H5''	53:3:1169:A:OP2	2.16	0.45
53:3:1306:A:H62	53:3:1331:G:H1'	1.79	0.45
54:4:112:U:C2'	54:4:113:U:H5'	2.46	0.45
54:4:191:A:H2'	54:4:192:C:C6	2.52	0.45
54:4:215:G:C4'	54:4:216:A:H4'	2.44	0.45
54:4:1240:G:H2'	54:4:1241:U:C6	2.52	0.45
54:4:1471:G:H1'	54:4:1725:A:C4	2.51	0.45
54:4:1654:C:H2'	54:4:1655:G:O4'	2.15	0.45
54:4:2494:A:H2'	54:4:2495:G:O4'	2.17	0.45
54:4:2505:A:O2'	54:4:2506:A:H5'	2.16	0.45
1:b:86:ARG:NH2	54:4:1945:G:OP1	2.49	0.45
2:c:3:GLY:C	2:c:4:LEU:HD12	2.42	0.45
10:k:64:ARG:HG2	10:k:79:PHE:CE2	2.51	0.45
23:x:48:LEU:HB3	23:x:50:VAL:HG13	1.98	0.45
31:F:3:VAL:O	31:F:3:VAL:HG12	2.16	0.45
33:H:25:THR:HG23	44:S:75:LYS:HD2	1.98	0.45
34:I:171:GLU:HG3	34:I:182:LYS:HB2	1.99	0.45
35:J:63:MET:HB3	35:J:67:ARG:HH12	1.81	0.45
52:a:59:VAL:HG12	52:a:165:ASN:HB3	1.99	0.45
53:3:309:A:H2'	53:3:310:G:H8	1.81	0.45
53:3:616:G:H2'	53:3:617:G:H8	1.80	0.45
54:4:277:G:H4'	54:4:278:A:C5	2.51	0.45
54:4:534:U:H2'	54:4:535:G:H8	1.81	0.45
54:4:1122:G:H4'	54:4:1123:A:H8	1.82	0.45
54:4:1306:C:H2'	54:4:1307:G:N7	2.32	0.45
54:4:1498:C:H2'	54:4:1499:G:O4'	2.16	0.45
54:4:2308:U:H2'	54:4:2309:U:C5'	2.47	0.45
57:7:18:G:O2'	57:7:57:G:N2	2.50	0.45
1:b:42:ARG:N	1:b:42:ARG:HD2	2.31	0.45
2:c:136:ASN:ND2	2:c:140:HIS:ND1	2.65	0.45
10:k:49:ARG:HH22	53:3:1423:G:H5'	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:l:41:ARG:NH1	54:4:807:U:OP2	2.42	0.45
19:t:8:LEU:HD23	19:t:50:LEU:HD21	1.99	0.45
23:x:18:SER:HB2	54:4:2208:A:H5'	1.99	0.45
32:G:91:VAL:HG11	32:G:95:TRP:HE3	1.82	0.45
40:O:7:ARG:HH12	53:3:1125:U:H4'	1.82	0.45
42:Q:98:ARG:HD2	42:Q:103:CYS:SG	2.56	0.45
45:T:31:LEU:HD22	45:T:58:MET:HB2	1.97	0.45
53:3:56:U:H2'	53:3:57:G:H8	1.81	0.45
54:4:394:C:H2'	54:4:395:U:O4'	2.17	0.45
54:4:534:U:H2'	54:4:535:G:C8	2.52	0.45
54:4:1019:U:H3	54:4:1270:A:H62	1.65	0.45
54:4:1194:U:O2'	54:4:1196:G:H5''	2.16	0.45
54:4:1494:A:H2'	54:4:1495:A:O4'	2.16	0.45
54:4:2819:C:H2'	54:4:2820:G:H8	1.81	0.45
7:h:4:ASN:O	7:h:8:LYS:HG3	2.16	0.45
9:j:98:GLU:HB3	9:j:102:GLU:OE1	2.17	0.45
20:u:39:ASN:HD22	20:u:64:ILE:HB	1.81	0.45
21:v:14:LYS:NZ	54:4:1145:G:N7	2.54	0.45
27:B:54:ILE:HG23	27:B:56:LYS:H	1.81	0.45
35:J:105:ILE:HG13	35:J:105:ILE:O	2.16	0.45
45:T:69:LEU:HD23	45:T:77:TYR:HA	1.98	0.45
53:3:950:U:H2'	53:3:951:G:H8	1.81	0.45
53:3:1308:U:H2'	53:3:1309:G:C8	2.52	0.45
54:4:395:U:H2'	54:4:396:G:H8	1.80	0.45
54:4:1537:U:H2'	54:4:1538:G:H8	1.81	0.45
54:4:2201:C:HO2'	54:4:2202:U:H5'	1.82	0.45
54:4:2504:A:H2'	54:4:2505:A:O4'	2.16	0.45
54:4:2932:U:H2'	54:4:2933:C:C6	2.52	0.45
3:d:129:PRO:HG3	3:d:156:ASN:OD1	2.17	0.45
7:h:41:LEU:HB3	54:4:1211:U:OP1	2.16	0.45
10:k:99:ILE:HD13	10:k:115:ILE:HG23	1.98	0.45
16:q:5:ARG:NH1	54:4:585:G:N7	2.64	0.45
19:t:25:GLU:HG3	19:t:26:LYS:N	2.32	0.45
27:B:9:ARG:NH1	54:4:516:C:OP1	2.47	0.45
32:G:26:MET:SD	32:G:192:PRO:HD3	2.57	0.45
40:O:40:ILE:HB	40:O:73:LEU:HB2	1.99	0.45
53:3:760:G:H2'	53:3:761:G:H5'	1.99	0.45
53:3:1120:C:H2'	53:3:1121:U:C6	2.52	0.45
53:3:1404:C:H2'	53:3:1405:G:C8	2.52	0.45
1:b:62:ARG:HG3	1:b:62:ARG:NH1	2.32	0.45
8:i:29:GLN:HB2	54:4:1223:A:N6	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:i:70:THR:C	8:i:71:LYS:HD3	2.42	0.45
10:k:22:ILE:HG12	10:k:40:LYS:O	2.17	0.45
17:r:64:VAL:HG22	17:r:95:ASP:O	2.17	0.45
28:C:7:LYS:HA	28:C:23:THR:HA	1.99	0.45
40:O:9:ARG:NH2	53:3:1279:G:H5'	2.32	0.45
40:O:49:PHE:HE2	40:O:67:ILE:HD12	1.82	0.45
45:T:88:ARG:H	45:T:88:ARG:CD	2.28	0.45
53:3:308:C:H2'	53:3:309:A:H8	1.81	0.45
53:3:460:A:H2'	53:3:461:A:H8	1.82	0.45
53:3:590:U:H2'	53:3:591:U:C6	2.52	0.45
53:3:1038:C:H2'	53:3:1039:G:H8	1.81	0.45
53:3:1425:U:H2'	53:3:1426:G:H8	1.81	0.45
54:4:644:A:H2'	54:4:645:C:C5'	2.47	0.45
54:4:967:U:H2'	54:4:968:C:C6	2.52	0.45
54:4:2765:U:H2'	54:4:2766:G:O4'	2.16	0.45
4:e:62:GLN:HG3	4:e:88:VAL:HG21	1.99	0.45
4:e:79:ARG:HH21	4:e:79:ARG:HA	1.82	0.45
4:e:145:VAL:HG22	4:e:146:ASP:N	2.32	0.45
5:f:108:PHE:HB3	54:4:2795:C:O2	2.17	0.45
7:h:41:LEU:O	7:h:45:GLY:N	2.50	0.45
8:i:105:LEU:HA	8:i:108:ILE:HD12	1.99	0.45
34:I:14:GLU:OE2	34:I:55:ARG:NH2	2.50	0.45
42:Q:41:PRO:HG3	42:Q:49:ARG:HG2	1.97	0.45
53:3:606:G:C5'	53:3:607:A:H5'	2.46	0.45
53:3:1070:U:O2'	53:3:1071:C:H5'	2.17	0.45
54:4:1156:A:H2'	54:4:1157:A:C8	2.51	0.45
54:4:1630:A:H2'	54:4:1631:A:O4'	2.17	0.45
8:i:41:PHE:HE1	8:i:70:THR:HG21	1.82	0.44
34:I:94:GLU:OE2	34:I:103:ARG:NH1	2.47	0.44
38:M:65:PHE:CD2	38:M:66:GLN:HG2	2.51	0.44
39:N:60:LEU:HD11	39:N:89:TYR:HE2	1.83	0.44
53:3:59:A:N6	53:3:331:G:H1'	2.32	0.44
53:3:219:U:H2'	53:3:220:G:C8	2.52	0.44
53:3:616:G:H2'	53:3:617:G:C8	2.52	0.44
54:4:808:G:O2'	54:4:1382:A:H4'	2.17	0.44
54:4:1105:A:H2'	54:4:1106:U:C6	2.53	0.44
54:4:1199:G:H5'	54:4:1216:A:O2'	2.16	0.44
54:4:1922:A:H2'	54:4:1923:C:H6	1.82	0.44
54:4:2938:A:H2'	54:4:2939:G:O4'	2.16	0.44
1:b:48:ILE:HG22	54:4:779:U:OP1	2.17	0.44
4:e:28:PRO:HB2	4:e:168:LEU:HD13	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:f:18:ILE:HD12	5:f:18:ILE:N	2.32	0.44
5:f:70:LEU:HD11	54:4:2886:A:N1	2.33	0.44
7:h:118:ILE:HD13	7:h:118:ILE:HA	1.91	0.44
9:j:111:LYS:HD2	9:j:111:LYS:N	2.32	0.44
15:p:27:VAL:HA	15:p:82:SER:O	2.17	0.44
25:z:11:SER:OG	25:z:12:ALA:N	2.50	0.44
32:G:46:VAL:N	32:G:47:PRO:HD2	2.31	0.44
39:N:69:GLY:H	53:3:1250:A:H4'	1.82	0.44
43:R:15:VAL:CG1	43:R:16:ILE:HD12	2.32	0.44
44:S:22:LYS:C	44:S:22:LYS:HD3	2.41	0.44
48:W:25:ILE:O	48:W:29:LYS:HG3	2.16	0.44
49:X:79:TYR:CZ	53:3:1226:C:H4'	2.52	0.44
54:4:79:C:O2'	54:4:346:A:H1'	2.17	0.44
54:4:974:G:H2'	54:4:974:G:N3	2.33	0.44
54:4:1181:C:H3'	54:4:1182:A:H5''	1.99	0.44
54:4:2058:G:O2'	54:4:2059:U:H5	2.00	0.44
54:4:2210:A:H2'	54:4:2211:G:O4'	2.17	0.44
11:l:81:ASP:HA	11:l:84:LYS:HD3	1.99	0.44
32:G:196:ASP:OD1	32:G:196:ASP:N	2.49	0.44
43:R:97:ARG:HB2	43:R:99:GLN:OE1	2.17	0.44
44:S:10:VAL:O	44:S:13:VAL:HG12	2.16	0.44
50:Y:59:ARG:O	50:Y:63:LYS:HG2	2.16	0.44
53:3:476:U:H2'	53:3:477:C:C6	2.52	0.44
53:3:509:A:N7	53:3:510:A:C6	2.85	0.44
54:4:78:U:H2'	54:4:79:C:C6	2.52	0.44
54:4:941:A:H2'	54:4:942:G:O4'	2.18	0.44
54:4:1596:U:H2'	54:4:1650:A:N6	2.32	0.44
54:4:2045:U:C2'	54:4:2046:A:H5'	2.48	0.44
54:4:3026:U:H2'	54:4:3027:A:C8	2.52	0.44
1:b:141:HIS:CD2	1:b:194:VAL:HG22	2.52	0.44
4:e:150:GLY:HA3	54:4:2433:U:C2	2.52	0.44
13:n:65:LEU:HG	13:n:69:ARG:NH2	2.33	0.44
15:p:105:LYS:HE2	53:3:1433:A:OP1	2.18	0.44
16:q:23:TYR:CD1	54:4:533:G:H5'	2.52	0.44
16:q:50:ARG:HG2	54:4:1284:A:C8	2.52	0.44
28:C:22:THR:OG1	28:C:23:THR:N	2.50	0.44
41:P:80:ASN:HB2	41:P:107:THR:CG2	2.48	0.44
50:Y:11:ILE:H	50:Y:11:ILE:HD12	1.82	0.44
53:3:1026:G:H1	53:3:1035:A:H2	1.66	0.44
53:3:1314:C:H2'	53:3:1315:U:C6	2.53	0.44
54:4:307:G:N2	54:4:309:A:H3'	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:1063:U:H2'	54:4:1066:G:H22	1.83	0.44
54:4:1181:C:H2'	54:4:1182:A:H5''	1.99	0.44
54:4:1280:C:H2'	54:4:1281:C:H6	1.82	0.44
54:4:1287:U:O2'	54:4:1288:G:H5'	2.18	0.44
54:4:1652:G:H2'	54:4:1653:A:H8	1.83	0.44
54:4:1823:G:H2'	54:4:1824:G:O4'	2.18	0.44
54:4:1974:G:H2'	54:4:1975:A:O4'	2.17	0.44
54:4:2300:U:C5'	54:4:2303:C:H41	2.29	0.44
54:4:2345:G:O2'	54:4:2346:G:H5'	2.17	0.44
8:i:26:ALA:HA	54:4:1224:A:N1	2.32	0.44
8:i:112:LYS:O	8:i:116:MET:N	2.38	0.44
14:o:3:LYS:HE3	54:4:1113:C:OP2	2.17	0.44
22:w:27:VAL:HB	22:w:31:SER:OG	2.18	0.44
33:H:39:ARG:NH1	44:S:91:GLU:OE2	2.51	0.44
37:L:55:LYS:HB3	37:L:56:SER:H	1.65	0.44
39:N:90:ASP:HB2	39:N:91:GLU:H	1.68	0.44
42:Q:65:TYR:HB2	42:Q:92:VAL:HG21	2.00	0.44
53:3:197:A:C6	53:3:221:C:H4'	2.53	0.44
53:3:396:C:C2'	53:3:397:A:H5''	2.46	0.44
53:3:594:U:C2'	53:3:595:A:H5'	2.47	0.44
54:4:1982:A:C2'	54:4:1983:U:H5'	2.47	0.44
54:4:2532:U:H2'	54:4:2533:G:O4'	2.17	0.44
57:7:74:C:H3'	57:7:75:C:C5'	2.48	0.44
2:c:149:ASN:OD1	2:c:150:GLN:N	2.48	0.44
2:c:151:THR:HB	2:c:152:PRO:CD	2.40	0.44
3:d:63:LYS:HE2	54:4:2572:G:OP2	2.18	0.44
5:f:23:ILE:HD11	5:f:42:VAL:HG21	1.98	0.44
5:f:174:LYS:HG3	5:f:175:LYS:H	1.83	0.44
7:h:27:VAL:O	7:h:83:ALA:HB3	2.18	0.44
7:h:89:PRO:HG2	7:h:93:ALA:HB3	2.00	0.44
11:l:13:LYS:HE3	54:4:1373:G:OP1	2.17	0.44
13:n:103:ARG:HD3	13:n:108:ALA:HB3	1.99	0.44
20:u:93:ARG:HB2	20:u:102:ILE:HD12	1.99	0.44
22:w:61:GLY:HA2	22:w:81:GLU:HB2	1.98	0.44
33:H:175:HIS:CD2	53:3:1108:G:H5'	2.52	0.44
34:I:50:TYR:CG	53:3:508:U:H4'	2.53	0.44
34:I:68:GLU:O	34:I:72:ARG:N	2.49	0.44
37:L:79:VAL:O	37:L:79:VAL:HG13	2.18	0.44
38:M:17:GLN:HG3	38:M:71:VAL:CG2	2.48	0.44
43:R:108:ARG:NH1	53:3:1308:U:H5'	2.32	0.44
52:a:175:ILE:HD12	52:a:188:ASN:HB3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:113:G:H1'	53:3:354:G:H5''	2.00	0.44
53:3:346:G:H2'	53:3:347:G:H5'	1.98	0.44
53:3:1155:A:H2'	53:3:1156:G:O4'	2.18	0.44
53:3:1255:G:O2'	53:3:1258:G:H1'	2.18	0.44
54:4:607:U:O4	54:4:620:G:H5'	2.18	0.44
54:4:2269:G:H2'	54:4:2270:A:H5'	2.00	0.44
7:h:1:MET:SD	7:h:62:ARG:NH2	2.91	0.44
7:h:33:VAL:HA	54:4:1183:G:H4'	2.00	0.44
9:j:78:THR:HG23	9:j:83:GLY:O	2.17	0.44
27:B:56:LYS:OXT	27:B:56:LYS:HD3	2.18	0.44
36:K:75:GLU:HA	36:K:78:PHE:HD2	1.82	0.44
37:L:113:LYS:HB3	53:3:1297:G:N2	2.30	0.44
47:V:26:ARG:NH2	53:3:237:G:H5''	2.32	0.44
50:Y:11:ILE:HD12	50:Y:11:ILE:N	2.33	0.44
52:a:5:THR:HG22	52:a:8:MET:CE	2.48	0.44
53:3:597:G:H2'	53:3:598:U:H5'	1.99	0.44
53:3:908:A:H2'	53:3:909:A:C8	2.53	0.44
53:3:1097:C:H2'	53:3:1098:C:C6	2.52	0.44
53:3:1330:U:H2'	53:3:1331:G:O4'	2.18	0.44
54:4:1434:C:H41	54:4:1734:C:H2'	1.83	0.44
54:4:1444:U:H2'	54:4:1445:G:H8	1.82	0.44
54:4:1615:U:H2'	54:4:1616:C:H6	1.81	0.44
54:4:2597:A:H2'	54:4:2598:G:O4'	2.17	0.44
4:e:18:GLU:OE2	4:e:167:ALA:HB1	2.18	0.44
12:m:66:ARG:HH21	12:m:104:GLU:CD	2.26	0.44
15:p:88:ARG:HD3	15:p:88:ARG:H	1.83	0.44
15:p:92:ARG:HD3	54:4:1881:G:H5''	2.00	0.44
26:A:56:ARG:HD2	49:X:66:VAL:CG1	2.48	0.44
37:L:15:PRO:HG2	37:L:43:TYR:OH	2.17	0.44
39:N:10:ARG:O	39:N:105:ARG:NH2	2.50	0.44
40:O:12:ALA:HB2	40:O:96:VAL:HA	2.00	0.44
41:P:17:ASP:HB3	41:P:36:ARG:NE	2.32	0.44
42:Q:119:LYS:O	42:Q:121:PRO:HD3	2.18	0.44
43:R:3:ILE:O	43:R:5:GLY:N	2.44	0.44
46:U:52:LEU:O	46:U:52:LEU:HD12	2.18	0.44
54:4:176:A:O2'	54:4:177:G:H5'	2.17	0.44
54:4:1266:G:H2'	54:4:1267:G:O4'	2.18	0.44
54:4:1454:U:H2'	54:4:1455:A:H8	1.82	0.44
54:4:2810:A:H61	54:4:2856:U:H1'	1.83	0.44
4:e:70:ARG:C	4:e:80:GLN:HE22	2.26	0.44
9:j:47:HIS:CG	54:4:536:G:H21	2.36	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:L:48:THR:O	37:L:52:ARG:HB2	2.18	0.44
44:S:11:LYS:O	44:S:15:LEU:HD23	2.17	0.44
44:S:30:ILE:HG21	44:S:43:ALA:HB2	1.99	0.44
44:S:80:ARG:HA	44:S:83:VAL:HG12	2.00	0.44
47:V:35:LYS:HZ1	53:3:585:G:H4'	1.83	0.44
53:3:766:A:H2'	53:3:767:A:O4'	2.17	0.44
53:3:890:G:O2'	53:3:891:U:H5	2.01	0.44
53:3:890:G:O2'	53:3:891:U:C5	2.70	0.44
53:3:1118:U:H2'	53:3:1119:C:C6	2.53	0.44
54:4:402:A:H2'	54:4:403:U:H5'	2.00	0.44
54:4:1301:U:C2'	54:4:1302:U:H4'	2.46	0.44
1:b:179:GLU:HG2	1:b:269:ARG:HA	1.99	0.43
3:d:121:VAL:O	3:d:189:THR:HA	2.17	0.43
5:f:26:LYS:HA	5:f:26:LYS:HD2	1.87	0.43
5:f:98:LYS:O	5:f:101:VAL:HG22	2.18	0.43
6:g:51:ARG:HG2	6:g:55:GLU:HB2	2.00	0.43
11:l:78:ARG:NH1	11:l:113:ALA:HB1	2.33	0.43
27:B:39:ARG:O	27:B:40:HIS:HB2	2.18	0.43
34:I:56:GLU:HG2	34:I:198:LEU:HD12	2.00	0.43
36:K:40:GLU:O	36:K:61:LEU:HB3	2.18	0.43
41:P:21:HIS:ND1	53:3:707:U:H4'	2.32	0.43
45:T:42:PHE:CE2	45:T:55:LEU:HD22	2.53	0.43
46:U:36:VAL:HB	46:U:53:ASP:HB2	1.99	0.43
52:a:67:HIS:CD2	52:a:184:LYS:HG3	2.52	0.43
53:3:208:U:H1'	53:3:212:G:N1	2.33	0.43
53:3:419:C:C2'	53:3:420:U:H5'	2.48	0.43
53:3:1443:C:H2'	53:3:1444:U:O4'	2.18	0.43
53:3:1486:G:H2'	53:3:1487:G:O4'	2.18	0.43
53:3:1487:G:O2'	53:3:1488:G:H5'	2.17	0.43
54:4:279:A:C2'	54:4:280:U:H5'	2.46	0.43
54:4:891:G:O2'	54:4:892:A:H5'	2.18	0.43
54:4:894:U:O2'	54:4:895:U:H5'	2.18	0.43
54:4:2215:G:H2'	54:4:2216:A:C8	2.53	0.43
3:d:43:THR:O	54:4:38:A:H1'	2.17	0.43
6:g:58:LEU:O	6:g:61:VAL:HG12	2.19	0.43
7:h:67:THR:HG22	7:h:67:THR:O	2.18	0.43
20:u:39:ASN:HB3	20:u:62:ALA:HB3	1.99	0.43
32:G:213:LEU:HA	32:G:216:VAL:HG22	2.00	0.43
38:M:14:ARG:HD3	53:3:875:U:O2'	2.18	0.43
41:P:67:GLU:O	41:P:70:ALA:HB3	2.17	0.43
53:3:149:A:H2'	53:3:150:U:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:799:G:H2'	53:3:800:G:O4'	2.17	0.43
53:3:842:U:H2'	53:3:844:G:C5'	2.48	0.43
53:3:882:C:O2'	53:3:883:C:H5'	2.17	0.43
54:4:296:U:H2'	54:4:297:G:H8	1.82	0.43
54:4:1101:C:O2'	54:4:1102:C:H5'	2.18	0.43
54:4:1206:U:H5''	54:4:1207:C:C5'	2.34	0.43
6:g:6:LEU:CD1	6:g:37:VAL:HG23	2.47	0.43
32:G:6:ARG:N	32:G:6:ARG:HD2	2.34	0.43
32:G:170:ILE:O	32:G:174:GLU:HG3	2.17	0.43
33:H:56:ILE:CD1	33:H:65:VAL:HG22	2.48	0.43
34:I:100:VAL:HG21	34:I:136:VAL:HG21	1.99	0.43
36:K:37:HIS:HB3	36:K:97:THR:HG22	2.01	0.43
43:R:28:ARG:HH21	43:R:62:PHE:HB2	1.84	0.43
53:3:1475:G:H4'	54:4:1817:A:H4'	1.99	0.43
54:4:5:A:H2'	54:4:6:A:C8	2.53	0.43
54:4:542:C:C3'	54:4:543:G:H5''	2.48	0.43
54:4:696:G:O2'	54:4:697:G:H5'	2.18	0.43
54:4:1514:C:H2'	54:4:1515:A:H8	1.80	0.43
54:4:1717:U:H2'	54:4:1718:A:C8	2.53	0.43
54:4:2076:G:O2'	54:4:2077:G:H5'	2.18	0.43
54:4:2673:G:H2'	54:4:2674:U:O4'	2.18	0.43
54:4:2828:A:H2'	54:4:2829:U:C6	2.53	0.43
3:d:90:GLN:HG3	3:d:92:HIS:CE1	2.54	0.43
5:f:34:ARG:HG3	5:f:74:MET:SD	2.58	0.43
9:j:34:ARG:HH22	16:q:69:ARG:CD	2.32	0.43
20:u:35:VAL:HG13	20:u:38:ILE:HB	1.99	0.43
25:z:25:GLY:HA3	25:z:46:MET:HE1	2.01	0.43
26:A:16:CYS:HB3	26:A:20:ASN:HB2	2.00	0.43
29:D:37:LYS:NZ	54:4:469:G:O6	2.50	0.43
34:I:149:LYS:HD2	34:I:150:LYS:HZ1	1.82	0.43
36:K:52:ASN:O	36:K:53:LYS:HB2	2.19	0.43
40:O:53:ILE:HG22	44:S:84:ARG:HD2	1.99	0.43
42:Q:109:ARG:HA	42:Q:109:ARG:HD2	1.86	0.43
53:3:1101:A:H4'	53:3:1102:A:O5'	2.18	0.43
54:4:74:A:H4'	54:4:75:G:O5'	2.18	0.43
54:4:2193:C:O2'	54:4:2194:C:H5'	2.18	0.43
54:4:2228:G:H1	54:4:2317:U:H3	1.65	0.43
3:d:143:LEU:HD13	3:d:146:VAL:HG11	2.00	0.43
4:e:62:GLN:HB2	26:A:6:HIS:CE1	2.53	0.43
5:f:158:GLY:O	5:f:162:ARG:NH1	2.48	0.43
17:r:1:MET:HA	17:r:43:ASN:HB3	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:r:7:SER:OG	17:r:8:GLY:N	2.51	0.43
35:J:11:GLN:NE2	35:J:116:VAL:HA	2.33	0.43
51:Z:24:LYS:HB3	51:Z:25:ALA:H	1.71	0.43
53:3:205:A:H2'	53:3:206:C:O4'	2.18	0.43
53:3:784:A:H2'	53:3:785:G:C8	2.54	0.43
53:3:815:A:H4'	53:3:817:C:C4	2.54	0.43
54:4:362:A:H3'	54:4:363:G:C8	2.49	0.43
54:4:601:C:H2'	54:4:602:A:O4'	2.19	0.43
54:4:1053:U:H2'	54:4:1054:G:C8	2.53	0.43
54:4:1303:A:H5''	54:4:1304:U:H4'	2.01	0.43
54:4:1817:A:H2'	54:4:1818:A:C8	2.53	0.43
54:4:1856:C:C2'	54:4:1857:U:H5''	2.48	0.43
54:4:2058:G:O2'	54:4:2059:U:C5	2.71	0.43
54:4:3024:C:H2'	54:4:3025:U:H6	1.83	0.43
1:b:15:VAL:HG22	1:b:205:GLY:HA3	2.00	0.43
1:b:48:ILE:HG23	1:b:48:ILE:O	2.18	0.43
3:d:181:ILE:CG2	11:l:2:ARG:HG3	2.47	0.43
6:g:103:VAL:HB	6:g:108:VAL:HG22	2.01	0.43
10:k:11:ALA:HB3	10:k:85:VAL:HG22	1.99	0.43
16:q:19:GLN:HE22	17:r:73:LYS:HE2	1.83	0.43
21:v:75:GLN:CB	21:v:92:VAL:HG13	2.49	0.43
31:F:1:MET:HE3	31:F:34:LYS:HG2	2.00	0.43
33:H:168:ARG:O	33:H:168:ARG:HG3	2.19	0.43
35:J:59:ILE:O	35:J:63:MET:HG2	2.19	0.43
37:L:30:MET:HE2	37:L:35:LYS:HD2	2.00	0.43
39:N:119:LYS:HZ3	53:3:1351:U:H5	1.66	0.43
44:S:27:LYS:HB3	44:S:47:LEU:HD13	2.01	0.43
53:3:151:A:H2'	53:3:152:A:O4'	2.18	0.43
53:3:423:G:H2'	53:3:424:G:C5'	2.48	0.43
53:3:483:C:H2'	53:3:484:G:H8	1.82	0.43
53:3:638:U:H2'	53:3:639:G:O4'	2.18	0.43
53:3:1219:A:H2'	53:3:1220:G:C8	2.53	0.43
53:3:1516:G:H2'	53:3:1518:A:OP2	2.18	0.43
54:4:327:G:H2'	54:4:328:U:O4'	2.18	0.43
54:4:1060:C:H2'	54:4:1061:A:C8	2.54	0.43
54:4:1222:U:H1'	54:4:1225:U:C5	2.53	0.43
54:4:1652:G:H2'	54:4:1653:A:C8	2.53	0.43
54:4:2032:G:O2'	54:4:2033:C:H5'	2.18	0.43
54:4:2226:U:C2'	54:4:2227:U:H5'	2.48	0.43
54:4:2349:G:O2'	54:4:2350:C:H5'	2.18	0.43
54:4:2565:G:O2'	54:4:2566:U:H5'	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:2732:U:O2'	54:4:2733:U:H5'	2.19	0.43
54:4:2832:C:H2'	54:4:2833:A:O4'	2.19	0.43
3:d:149:ILE:CG2	3:d:188:MET:HG2	2.48	0.43
8:i:101:SER:HA	8:i:140:GLU:O	2.18	0.43
17:r:4:VAL:O	17:r:39:LEU:N	2.46	0.43
21:v:80:HIS:CG	21:v:81:PRO:HD2	2.54	0.43
34:I:16:THR:HG22	34:I:17:ASP:H	1.83	0.43
41:P:80:ASN:HB2	41:P:107:THR:HG22	2.01	0.43
42:Q:115:LYS:O	42:Q:116:TYR:CB	2.65	0.43
49:X:69:LYS:HE2	53:3:1320:C:OP1	2.19	0.43
50:Y:23:ARG:NH2	53:3:176:C:H4'	2.32	0.43
52:a:5:THR:HG22	52:a:8:MET:HE3	2.01	0.43
53:3:418:C:H2'	53:3:419:C:O4'	2.19	0.43
53:3:1512:U:H2'	53:3:1513:A:C8	2.54	0.43
54:4:2060:A:H2'	54:4:2061:G:O4'	2.18	0.43
54:4:2700:A:OP1	54:4:2702:G:H4'	2.18	0.43
1:b:66:PHE:HB3	1:b:150:GLY:O	2.18	0.43
1:b:72:GLY:O	1:b:74:PRO:HD3	2.18	0.43
2:c:123:LYS:HG3	2:c:165:MET:SD	2.58	0.43
7:h:9:GLN:O	7:h:12:VAL:HG22	2.19	0.43
7:h:59:LEU:C	7:h:61:ARG:H	2.26	0.43
14:o:33:ARG:O	14:o:34:HIS:HB2	2.18	0.43
15:p:87:ARG:NH1	15:p:111:GLU:OE1	2.51	0.43
16:q:96:ASP:OD2	17:r:13:ARG:NE	2.49	0.43
32:G:103:TRP:NE1	32:G:155:GLY:HA2	2.34	0.43
36:K:44:ARG:HA	36:K:58:HIS:HA	2.01	0.43
38:M:5:PRO:HB2	38:M:32:LYS:HE3	2.01	0.43
46:U:78:VAL:HG13	46:U:78:VAL:O	2.19	0.43
53:3:423:G:H2'	53:3:424:G:C4'	2.49	0.43
53:3:1256:A:H1'	53:3:1258:G:C4	2.53	0.43
54:4:118:A:H2'	54:4:120:U:O4	2.18	0.43
54:4:255:A:H2'	54:4:256:A:O4'	2.19	0.43
54:4:859:G:C2'	54:4:860:U:OP2	2.66	0.43
54:4:2230:G:O2'	54:4:2231:C:H5'	2.19	0.43
54:4:2774:C:H6	54:4:2774:C:O5'	2.01	0.43
54:4:2946:U:H4'	54:4:2965:A:H4'	2.01	0.43
2:c:124:ARG:HG3	2:c:165:MET:HB2	2.01	0.43
5:f:37:ASN:O	5:f:40:VAL:HG22	2.19	0.43
8:i:27:LEU:O	8:i:32:VAL:HG22	2.18	0.43
9:j:110:PRO:O	9:j:115:GLY:HA3	2.19	0.43
9:j:111:LYS:HD2	9:j:111:LYS:H	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:G:27:LYS:HB3	32:G:28:PRO:HD3	2.00	0.43
37:L:46:LEU:HD23	37:L:46:LEU:HA	1.92	0.43
41:P:24:ALA:HA	41:P:29:THR:HA	2.00	0.43
43:R:22:TYR:HB3	43:R:65:GLU:HG3	1.99	0.43
53:3:419:C:H2'	53:3:420:U:H5'	2.01	0.43
53:3:673:A:H2'	53:3:674:G:C8	2.54	0.43
53:3:782:A:H2'	53:3:783:C:H5'	2.01	0.43
53:3:946:A:H2'	53:3:947:G:C8	2.54	0.43
53:3:1301:U:O2	53:3:1301:U:H2'	2.18	0.43
54:4:28:A:H1'	54:4:513:A:C2	2.54	0.43
54:4:690:G:H2'	54:4:691:C:C6	2.53	0.43
4:e:3:LEU:O	4:e:6:TYR:HB3	2.19	0.43
5:f:116:LEU:HA	5:f:117:PRO:HD3	1.91	0.43
7:h:118:ILE:H	7:h:119:PRO:HD2	1.83	0.43
9:j:7:LYS:O	9:j:11:VAL:HG23	2.19	0.43
10:k:24:VAL:HG13	10:k:33:ALA:HB2	2.01	0.43
14:o:90:VAL:HG22	14:o:91:SER:N	2.33	0.43
20:u:91:LYS:NZ	54:4:296:U:O3'	2.48	0.43
28:C:25:ASN:HB3	28:C:28:THR:HG22	2.00	0.43
37:L:52:ARG:HH12	37:L:121:ASN:HA	1.83	0.43
39:N:11:ARG:HA	39:N:105:ARG:NH1	2.33	0.43
46:U:4:ILE:HD12	46:U:67:ILE:HG12	2.01	0.43
51:Z:23:GLU:HB3	51:Z:24:LYS:H	1.55	0.43
53:3:146:G:H2'	53:3:147:G:H8	1.84	0.43
53:3:512:U:H2'	53:3:513:C:C6	2.54	0.43
53:3:555:U:H2'	53:3:556:C:C6	2.53	0.43
53:3:999:C:H2'	53:3:1000:A:H8	1.84	0.43
54:4:145:C:H2'	54:4:146:A:H8	1.84	0.43
54:4:2254:A:H4'	54:4:2255:G:O4'	2.19	0.43
3:d:2:GLU:HB2	3:d:11:ALA:HB1	2.00	0.42
4:e:74:ALA:HB2	55:5:56:C:O2'	2.19	0.42
7:h:72:LEU:C	7:h:74:ASP:H	2.27	0.42
11:l:109:LYS:HA	11:l:126:ARG:O	2.19	0.42
20:u:6:ARG:N	54:4:85:G:OP1	2.51	0.42
20:u:26:ASN:OD1	20:u:34:ILE:HD12	2.19	0.42
33:H:19:SER:HB3	33:H:21:TRP:HE1	1.84	0.42
51:Z:34:ARG:HB3	51:Z:36:PHE:CE1	2.54	0.42
51:Z:66:ARG:CD	53:3:1099:G:H5'	2.49	0.42
53:3:1354:U:H2'	53:3:1355:G:C8	2.54	0.42
54:4:1029:G:H4'	54:4:1030:C:C5'	2.49	0.42
54:4:1156:A:H1'	54:4:2614:C:O2'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:1359:U:H2'	54:4:1360:G:H8	1.84	0.42
54:4:2468:A:H2'	54:4:2469:G:H8	1.83	0.42
1:b:105:ALA:HA	1:b:106:PRO:HD2	1.94	0.42
6:g:121:VAL:HG22	6:g:121:VAL:O	2.19	0.42
7:h:29:ASP:OD1	7:h:32:GLY:HA3	2.18	0.42
8:i:71:LYS:HB3	8:i:72:THR:H	1.61	0.42
8:i:135:MET:CE	54:4:1190:G:H21	2.31	0.42
16:q:71:ASN:HB3	16:q:109:VAL:HG11	2.01	0.42
17:r:98:ILE:H	17:r:98:ILE:CD1	2.29	0.42
20:u:6:ARG:O	20:u:24:VAL:HB	2.18	0.42
31:F:11:CYS:HB3	31:F:33:HIS:HE1	1.85	0.42
33:H:190:THR:HG23	33:H:192:TYR:H	1.84	0.42
34:I:149:LYS:HG2	34:I:150:LYS:H	1.84	0.42
35:J:89:THR:HB	35:J:134:ASN:ND2	2.34	0.42
39:N:68:GLY:HA2	53:3:1250:A:H4'	2.01	0.42
44:S:58:ARG:NH1	53:3:979:C:O2	2.52	0.42
46:U:5:ARG:C	46:U:6:LEU:HD12	2.44	0.42
53:3:432:A:H2'	53:3:433:G:H5'	2.01	0.42
53:3:605:U:H2'	53:3:606:G:C8	2.54	0.42
53:3:802:A:H2'	53:3:803:G:O4'	2.19	0.42
53:3:1351:U:H2'	53:3:1352:C:C6	2.54	0.42
54:4:196:A:N3	54:4:196:A:H2'	2.33	0.42
54:4:197:A:H4'	54:4:2197:G:OP2	2.19	0.42
54:4:293:U:H2'	54:4:294:A:H5''	2.00	0.42
54:4:337:C:H2'	54:4:338:G:O4'	2.19	0.42
54:4:378:C:O2'	54:4:379:G:H5'	2.18	0.42
54:4:493:G:H2'	54:4:494:G:O4'	2.19	0.42
54:4:621:A:H2'	54:4:622:G:O4'	2.19	0.42
54:4:1115:C:H2'	54:4:1116:A:H8	1.84	0.42
1:b:238:ASN:ND2	54:4:2723:G:O6	2.53	0.42
27:B:11:LYS:HA	27:B:11:LYS:HD3	1.77	0.42
40:O:32:THR:HB	40:O:82:LYS:HG3	2.01	0.42
41:P:17:ASP:HB3	41:P:36:ARG:HE	1.83	0.42
43:R:5:GLY:O	43:R:6:ILE:HG23	2.20	0.42
53:3:425:G:H2'	53:3:426:U:O4'	2.20	0.42
53:3:1496:C:H2'	53:3:1497:G:O4'	2.19	0.42
54:4:315:G:H2'	54:4:316:C:O4'	2.19	0.42
54:4:747:C:O2	54:4:2142:A:H1'	2.19	0.42
54:4:1192:C:H3'	54:4:1193:U:C5'	2.49	0.42
54:4:1853:U:H2'	54:4:1854:C:O4'	2.19	0.42
54:4:2819:C:H2'	54:4:2820:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:20:ASN:HD21	1:b:22:GLU:HB2	1.85	0.42
1:b:156:SER:HB3	54:4:1946:U:H5'	2.02	0.42
7:h:57:ASN:C	7:h:59:LEU:H	2.28	0.42
9:j:97:PRO:O	9:j:100:VAL:HG22	2.19	0.42
33:H:156:LEU:HD12	33:H:156:LEU:O	2.19	0.42
34:I:16:THR:HG22	34:I:17:ASP:N	2.34	0.42
34:I:205:LYS:HB3	53:3:8:A:C5	2.55	0.42
52:a:48:LEU:HD22	52:a:208:TYR:CE2	2.55	0.42
53:3:35:G:H2'	53:3:36:C:C6	2.54	0.42
53:3:539:A:H2'	53:3:540:G:H8	1.84	0.42
53:3:1504:G:OP1	53:3:1507:A:H4'	2.19	0.42
54:4:877:A:H1'	54:4:900:A:H62	1.84	0.42
54:4:1059:G:H2'	54:4:1060:C:O4'	2.19	0.42
54:4:1705:C:H2'	54:4:1706:U:O4'	2.20	0.42
54:4:1852:G:H2'	54:4:1853:U:C6	2.55	0.42
54:4:1869:C:O2'	54:4:1870:U:H5'	2.20	0.42
54:4:1907:U:C5	54:4:1912:A:N7	2.80	0.42
54:4:2467:C:H2'	54:4:2468:A:C8	2.54	0.42
3:d:131:THR:HG22	3:d:160:ALA:HA	2.00	0.42
19:t:69:ARG:NH1	19:t:74:ILE:HD11	2.34	0.42
20:u:88:ASP:OD2	20:u:89:GLY:N	2.45	0.42
24:y:48:ARG:HA	24:y:48:ARG:HD3	1.85	0.42
34:I:24:VAL:CG2	53:3:409:U:H5''	2.49	0.42
35:J:67:ARG:O	35:J:70:MET:HG3	2.19	0.42
39:N:128:LYS:NZ	55:5:34:C:OP2	2.46	0.42
41:P:115:ILE:O	41:P:115:ILE:HG13	2.19	0.42
42:Q:111:GLN:HB2	53:3:538:G:OP2	2.19	0.42
51:Z:66:ARG:HD2	53:3:1099:G:H5'	2.00	0.42
53:3:492:C:H2'	53:3:493:A:C8	2.55	0.42
54:4:558:U:H2'	54:4:559:G:C8	2.55	0.42
54:4:2273:C:H3'	54:4:2274:C:C5'	2.50	0.42
54:4:2884:U:H4'	54:4:2885:A:OP1	2.18	0.42
11:l:118:THR:C	11:l:120:VAL:H	2.28	0.42
27:B:4:GLN:O	54:4:2145:U:H4'	2.20	0.42
34:I:38:GLY:CA	53:3:542:G:H5'	2.47	0.42
34:I:97:LEU:HB2	34:I:134:TYR:HB3	2.02	0.42
38:M:71:VAL:HG23	38:M:71:VAL:O	2.20	0.42
53:3:999:C:H2'	53:3:1000:A:C8	2.54	0.42
53:3:1008:U:H2'	53:3:1009:U:O4'	2.20	0.42
54:4:419:U:H2'	54:4:420:C:H6	1.84	0.42
54:4:467:G:O2'	54:4:468:G:H5'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:2021:C:H2'	54:4:2022:C:C5'	2.49	0.42
54:4:2257:C:H2'	54:4:2258:U:H5'	2.01	0.42
6:g:94:ILE:H	6:g:94:ILE:HG13	1.55	0.42
12:m:35:ALA:HA	12:m:128:THR:HG22	2.00	0.42
34:I:12:ARG:NH2	53:3:427:U:OP1	2.52	0.42
34:I:184:LYS:HA	34:I:185:PRO:HD3	1.78	0.42
36:K:1:MET:HE1	36:K:34:GLY:HA2	2.01	0.42
38:M:30:LYS:O	38:M:33:VAL:HG12	2.20	0.42
43:R:57:ASP:OD1	43:R:57:ASP:N	2.51	0.42
46:U:12:LYS:HG2	46:U:13:LYS:HG2	2.01	0.42
53:3:359:G:H2'	53:3:360:G:O4'	2.20	0.42
53:3:370:C:H2'	53:3:371:A:H8	1.83	0.42
53:3:911:U:H2'	53:3:912:C:C6	2.54	0.42
53:3:1296:C:H4'	53:3:1302:C:N4	2.34	0.42
53:3:1318:A:H2'	53:3:1319:A:H5'	2.01	0.42
54:4:598:U:H2'	54:4:599:A:C8	2.55	0.42
54:4:1190:G:OP1	54:4:1198:A:H5''	2.19	0.42
54:4:1447:C:C2'	54:4:1448:C:H5'	2.50	0.42
54:4:1597:A:H2'	54:4:1598:A:C8	2.54	0.42
54:4:2198:A:H2'	54:4:2199:A:O4'	2.20	0.42
54:4:2277:U:H2'	54:4:2278:C:O4'	2.19	0.42
1:b:176:ARG:HA	1:b:176:ARG:HD2	1.89	0.42
5:f:174:LYS:HG3	5:f:175:LYS:N	2.34	0.42
7:h:53:ARG:HA	54:4:1212:A:OP1	2.20	0.42
7:h:96:PHE:HE2	7:h:126:LEU:H	1.68	0.42
7:h:111:ALA:O	7:h:112:ALA:HB3	2.20	0.42
7:h:112:ALA:O	7:h:113:PHE:C	2.61	0.42
11:l:29:LYS:O	11:l:30:THR:OG1	2.29	0.42
27:B:27:LEU:HD23	27:B:27:LEU:HA	1.84	0.42
30:E:44:ARG:N	30:E:45:PRO:HD2	2.35	0.42
39:N:49:GLN:HA	39:N:52:GLU:CD	2.45	0.42
39:N:93:LEU:O	39:N:96:GLU:HB3	2.19	0.42
42:Q:109:ARG:HB3	42:Q:118:VAL:HG21	2.02	0.42
47:V:22:VAL:HG12	47:V:43:LEU:O	2.19	0.42
48:W:39:VAL:CG2	48:W:40:PRO:HD2	2.50	0.42
53:3:622:A:H2'	53:3:623:C:H5'	2.00	0.42
53:3:692:U:H2'	53:3:694:A:OP2	2.20	0.42
53:3:1138:G:H3'	53:3:1138:G:N3	2.34	0.42
53:3:1219:A:H2'	53:3:1220:G:H8	1.84	0.42
53:3:1484:C:H2'	53:3:1485:U:O4'	2.18	0.42
54:4:601:C:O2'	54:4:605:G:H5''	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:2074:U:H2'	54:4:2075:C:C6	2.55	0.42
54:4:2291:A:H2'	54:4:2292:C:C5'	2.38	0.42
54:4:2482:C:O2'	54:4:2483:G:H5'	2.19	0.42
54:4:2671:G:H2'	54:4:2672:G:C8	2.54	0.42
57:7:48:C:O2'	57:7:59:U:H4'	2.19	0.42
1:b:180:MET:HB2	1:b:268:ARG:H	1.85	0.42
4:e:61:GLY:HA2	26:A:27:THR:HG21	2.02	0.42
9:j:39:LYS:HE2	9:j:39:LYS:HB3	1.86	0.42
11:l:60:ARG:O	54:4:2521:U:H5'	2.19	0.42
13:n:103:ARG:CD	13:n:108:ALA:HB3	2.50	0.42
15:p:93:LYS:HB2	15:p:93:LYS:HE2	1.88	0.42
16:q:114:ALA:O	16:q:117:ALA:O	2.38	0.42
30:E:18:LYS:HG3	54:4:651:G:H5'	2.02	0.42
32:G:50:ASN:HA	32:G:53:LEU:HB2	2.01	0.42
32:G:58:LYS:NZ	32:G:62:ARG:HD3	2.34	0.42
33:H:4:VAL:HG22	33:H:5:HIS:N	2.35	0.42
33:H:34:SER:OG	33:H:58:ARG:NH2	2.53	0.42
33:H:135:ARG:O	33:H:138:GLN:HG2	2.19	0.42
34:I:81:LEU:HD12	34:I:81:LEU:HA	1.90	0.42
34:I:160:LEU:O	34:I:164:ARG:HD3	2.20	0.42
35:J:79:THR:OG1	35:J:80:LEU:N	2.53	0.42
39:N:101:GLY:C	39:N:103:VAL:H	2.27	0.42
41:P:71:ASP:O	41:P:72:ALA:CB	2.67	0.42
45:T:88:ARG:HD3	45:T:88:ARG:N	2.30	0.42
53:3:306:A:O2'	53:3:307:C:H5'	2.19	0.42
53:3:824:G:H2'	53:3:825:A:H8	1.84	0.42
54:4:493:G:O2'	54:4:494:G:H5'	2.20	0.42
54:4:1042:G:H2'	54:4:1043:A:O4'	2.20	0.42
54:4:1233:U:H2'	54:4:1234:G:C5'	2.36	0.42
54:4:2167:U:H2'	54:4:2168:G:C8	2.55	0.42
54:4:2914:U:H2'	54:4:2915:C:C6	2.54	0.42
55:5:48:C:H4'	55:5:49:G:H5''	2.02	0.42
4:e:94:ARG:HA	4:e:97:GLU:HB3	2.01	0.42
4:e:122:ASP:OD1	4:e:126:ASN:HB2	2.20	0.42
6:g:2:GLN:HB3	6:g:18:GLN:HE21	1.85	0.42
12:m:135:VAL:O	12:m:136:MET:HB3	2.20	0.42
17:r:58:VAL:H	17:r:102:SER:HG	1.66	0.42
18:s:24:ILE:HA	18:s:27:LYS:HG3	2.01	0.42
21:v:19:ARG:NH2	54:4:1037:U:OP2	2.48	0.42
32:G:103:TRP:HE1	32:G:155:GLY:HA2	1.85	0.42
32:G:176:ASN:ND2	32:G:194:GLY:O	2.48	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:M:35:ILE:CD1	38:M:102:VAL:HG11	2.50	0.42
40:O:11:LYS:HB3	40:O:71:LEU:HD22	2.02	0.42
46:U:40:ASN:OD1	46:U:43:ALA:HB2	2.19	0.42
49:X:49:ALA:HB1	49:X:56:HIS:HB3	2.01	0.42
51:Z:28:LEU:HD13	51:Z:28:LEU:HA	1.91	0.42
54:4:26:G:C6	54:4:27:G:N1	2.88	0.42
54:4:984:A:H5''	54:4:985:C:OP2	2.20	0.42
54:4:1155:A:C2	54:4:1156:A:C4	3.05	0.42
54:4:1874:A:H2'	54:4:1875:U:C6	2.54	0.42
54:4:2394:A:H4'	54:4:2395:A:N3	2.35	0.42
54:4:2480:A:H2'	54:4:2481:G:H5'	2.02	0.42
55:5:20:U:C3'	55:5:21:A:H5'	2.49	0.42
2:c:61:THR:OG1	54:4:2939:G:H5''	2.20	0.41
5:f:7:PRO:HB2	5:f:48:THR:CG2	2.50	0.41
7:h:94:ARG:NH2	7:h:98:GLU:HG3	2.35	0.41
8:i:73:PRO:HA	8:i:74:PRO:HD3	1.91	0.41
8:i:74:PRO:HD2	8:i:77:VAL:HG21	2.01	0.41
10:k:58:LEU:N	10:k:58:LEU:CD2	2.83	0.41
26:A:39:LYS:HA	26:A:39:LYS:HD3	1.85	0.41
30:E:4:LYS:NZ	54:4:253:C:OP2	2.47	0.41
34:I:131:ILE:HG22	34:I:134:TYR:N	2.35	0.41
34:I:142:VAL:O	34:I:142:VAL:HG13	2.20	0.41
42:Q:47:ALA:O	42:Q:48:LEU:HD22	2.20	0.41
42:Q:99:GLY:HA3	42:Q:117:GLY:HA3	2.02	0.41
53:3:422:C:H4'	53:3:423:G:N2	2.34	0.41
53:3:551:U:H2'	53:3:552:U:C6	2.55	0.41
53:3:1004:A:H2'	53:3:1005:A:O4'	2.20	0.41
54:4:279:A:H61	54:4:361:G:H1'	1.84	0.41
54:4:738:G:O2'	54:4:739:A:H5'	2.20	0.41
54:4:1575:C:H2'	54:4:1576:G:C8	2.54	0.41
54:4:1829:A:H2'	54:4:1830:G:H5'	2.00	0.41
57:7:24:G:H2'	57:7:25:C:C6	2.55	0.41
57:7:59:U:C2'	57:7:60:U:H5'	2.50	0.41
57:7:60:U:O2'	57:7:61:C:H5''	2.20	0.41
1:b:42:ARG:HH12	54:4:690:G:H21	1.68	0.41
2:c:25:THR:HG21	2:c:193:VAL:HG22	2.01	0.41
11:l:36:LYS:HB3	11:l:37:GLY:H	1.74	0.41
14:o:40:ILE:HG12	14:o:47:VAL:HG12	2.01	0.41
21:v:21:ARG:HA	21:v:25:LYS:O	2.21	0.41
37:L:14:ASP:HB3	37:L:17:PHE:O	2.21	0.41
48:W:11:ARG:NH2	48:W:47:ARG:HH11	2.16	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:321:A:H2'	53:3:322:C:C6	2.55	0.41
53:3:358:U:H2'	53:3:359:G:C8	2.51	0.41
53:3:883:C:O2'	53:3:884:U:H5'	2.21	0.41
54:4:36:G:O2'	54:4:37:C:H5'	2.20	0.41
54:4:594:U:H2'	54:4:595:C:C6	2.54	0.41
54:4:634:C:H2'	54:4:635:C:H6	1.85	0.41
54:4:712:G:H2'	54:4:713:G:O4'	2.20	0.41
54:4:940:G:H2'	54:4:941:A:H5''	2.01	0.41
54:4:1142:G:O2'	54:4:1143:U:H5'	2.20	0.41
54:4:1615:U:H2'	54:4:1616:C:C6	2.55	0.41
4:e:127:TYR:CE2	4:e:129:MET:HB3	2.56	0.41
9:j:81:ILE:HG13	9:j:82:GLY:H	1.84	0.41
14:o:33:ARG:O	14:o:34:HIS:CG	2.73	0.41
16:q:1:ALA:HB3	54:4:1376:G:OP1	2.20	0.41
17:r:55:ASP:OD1	17:r:55:ASP:N	2.54	0.41
32:G:69:VAL:HB	32:G:162:VAL:HA	2.02	0.41
40:O:33:GLY:HA3	40:O:83:THR:CG2	2.50	0.41
53:3:160:A:H2'	53:3:161:A:O4'	2.20	0.41
53:3:394:G:H2'	53:3:395:C:O4'	2.19	0.41
53:3:579:A:H5'	53:3:728:A:H1'	2.01	0.41
54:4:804:A:H2'	54:4:806:C:C4	2.55	0.41
54:4:940:G:H2'	54:4:941:A:C4'	2.49	0.41
54:4:2457:U:H2'	54:4:2458:G:C8	2.55	0.41
1:b:224:MET:HG2	54:4:782:A:N3	2.36	0.41
3:d:1:MET:N	3:d:16:GLU:OE2	2.53	0.41
7:h:43:LYS:HE3	7:h:99:PHE:CE1	2.43	0.41
9:j:125:TYR:OH	9:j:132:HIS:NE2	2.53	0.41
11:l:96:LYS:CG	11:l:101:ILE:HD11	2.50	0.41
13:n:2:ARG:HD3	54:4:2950:G:O6	2.20	0.41
22:w:16:ARG:HG2	54:4:2484:U:O3'	2.20	0.41
34:I:120:LYS:CG	34:I:130:ASN:HD21	2.33	0.41
34:I:149:LYS:HD2	34:I:150:LYS:HZ2	1.84	0.41
36:K:38:ARG:HH21	36:K:40:GLU:HB2	1.84	0.41
44:S:63:CYS:HB3	44:S:67:GLY:H	1.85	0.41
48:W:25:ILE:HG21	48:W:66:LEU:HB3	2.03	0.41
54:4:296:U:H2'	54:4:297:G:C8	2.56	0.41
54:4:845:A:H3'	54:4:845:A:N3	2.35	0.41
54:4:877:A:H1'	54:4:900:A:N6	2.36	0.41
54:4:1311:U:H2'	54:4:1312:U:H6	1.86	0.41
54:4:1705:C:H2'	54:4:1706:U:C1'	2.51	0.41
54:4:1895:G:O2'	54:4:1896:C:H5'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:2190:A:H2'	54:4:2191:C:C5'	2.40	0.41
1:b:62:ARG:HD3	1:b:90:ILE:HD11	2.02	0.41
3:d:15:SER:HB3	3:d:18:THR:CG2	2.44	0.41
8:i:41:PHE:HD1	8:i:44:LYS:HD2	1.86	0.41
11:l:100:ILE:HG13	11:l:101:ILE:HG23	2.02	0.41
13:n:117:ASP:HB3	13:n:118:ARG:H	1.70	0.41
20:u:88:ASP:C	20:u:90:LYS:H	2.28	0.41
27:B:12:ARG:NH2	54:4:517:C:OP1	2.54	0.41
30:E:7:ARG:NH1	54:4:243:U:OP2	2.54	0.41
33:H:21:TRP:HB3	33:H:58:ARG:H	1.86	0.41
35:J:22:LYS:HG3	53:3:1081:A:H5'	2.03	0.41
40:O:57:VAL:O	40:O:58:ASN:CB	2.58	0.41
41:P:96:ILE:HD12	41:P:109:ILE:CD1	2.48	0.41
43:R:16:ILE:HD12	43:R:16:ILE:N	2.35	0.41
50:Y:70:LYS:HG3	50:Y:73:ARG:NH2	2.36	0.41
52:a:7:ARG:NH1	52:a:40:GLU:OE1	2.54	0.41
52:a:185:LEU:HA	52:a:188:ASN:HB2	2.03	0.41
53:3:669:G:O2'	53:3:670:G:H5'	2.19	0.41
53:3:784:A:H4'	54:4:1965:C:OP1	2.19	0.41
53:3:962:C:H1'	53:3:1201:A:C6	2.55	0.41
53:3:1128:C:H4'	53:3:1148:U:O2	2.21	0.41
53:3:1293:C:H2'	53:3:1294:G:H8	1.85	0.41
54:4:251:A:H2'	54:4:252:G:O4'	2.20	0.41
54:4:859:G:O2'	54:4:860:U:C6	2.72	0.41
54:4:1310:G:H2'	54:4:1311:U:O4'	2.20	0.41
54:4:1545:C:H2'	54:4:1546:G:O4'	2.20	0.41
54:4:2805:G:O2'	54:4:2806:C:H5'	2.20	0.41
54:4:3026:U:H2'	54:4:3027:A:H8	1.86	0.41
55:5:62:C:H2'	55:5:63:G:H8	1.84	0.41
11:l:121:THR:HG21	11:l:141:LYS:HG2	2.03	0.41
21:v:9:ARG:NH2	21:v:11:GLU:O	2.54	0.41
21:v:83:LYS:HA	21:v:84:PRO:HD3	1.88	0.41
31:F:16:ILE:CD1	31:F:25:VAL:HG22	2.51	0.41
32:G:23:ASN:HA	32:G:24:PRO:HD3	1.89	0.41
40:O:29:ALA:O	40:O:33:GLY:CA	2.69	0.41
42:Q:87:LYS:HG2	42:Q:87:LYS:O	2.20	0.41
43:R:44:ILE:HG23	43:R:47:LEU:HD12	2.03	0.41
53:3:298:A:H2'	53:3:299:G:O4'	2.20	0.41
53:3:409:U:H2'	53:3:410:G:C8	2.56	0.41
53:3:502:A:H2'	53:3:503:C:O4'	2.20	0.41
53:3:946:A:H2'	53:3:947:G:H8	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1090:U:O2'	53:3:1091:U:H5'	2.21	0.41
53:3:1220:G:H2'	53:3:1221:G:O4'	2.20	0.41
53:3:1384:C:H2'	53:3:1385:G:C8	2.56	0.41
54:4:27:G:N2	54:4:512:G:H1'	2.35	0.41
54:4:803:U:O2'	54:4:804:A:H5'	2.21	0.41
54:4:2058:G:H2'	54:4:2096:G:C6	2.55	0.41
54:4:2543:G:H2'	54:4:2544:C:C6	2.54	0.41
54:4:2585:U:H3	54:4:2622:G:H1	1.69	0.41
57:7:61:C:H5'	57:7:61:C:H6	1.85	0.41
3:d:68:ALA:HA	54:4:1383:U:C6	2.55	0.41
11:l:38:GLN:HG3	54:4:805:G:H5''	2.02	0.41
13:n:2:ARG:O	13:n:2:ARG:NH1	2.51	0.41
40:O:8:ILE:HB	40:O:74:VAL:HB	2.03	0.41
40:O:47:GLU:HG2	53:3:1254:A:OP1	2.21	0.41
41:P:51:PHE:CE2	41:P:64:VAL:HG11	2.55	0.41
43:R:25:GLY:H	53:3:1329:A:H5''	1.85	0.41
48:W:33:THR:OG1	48:W:34:GLU:N	2.54	0.41
53:3:166:U:H2'	53:3:167:A:C8	2.55	0.41
53:3:1258:G:H2'	53:3:1259:C:C6	2.56	0.41
54:4:368:A:C2'	54:4:369:U:H5'	2.51	0.41
54:4:481:G:H2'	54:4:507:A:N1	2.36	0.41
54:4:1434:C:N4	54:4:1734:C:H2'	2.36	0.41
54:4:1561:A:H2'	54:4:1562:A:O4'	2.21	0.41
2:c:105:LYS:O	2:c:177:VAL:HG12	2.20	0.41
10:k:63:VAL:HG22	10:k:84:CYS:HA	2.01	0.41
16:q:58:GLN:HG3	54:4:1009:A:O4'	2.21	0.41
19:t:36:LYS:HA	19:t:36:LYS:HD2	1.91	0.41
35:J:89:THR:HB	35:J:134:ASN:HD22	1.86	0.41
37:L:112:ASP:OD2	37:L:121:ASN:ND2	2.54	0.41
47:V:10:ARG:NH1	47:V:11:VAL:O	2.54	0.41
49:X:7:GLY:HA2	49:X:8:PRO:HD3	1.91	0.41
53:3:129:A:H1'	53:3:130:A:C8	2.56	0.41
53:3:143:A:H2	53:3:220:G:H1	1.68	0.41
53:3:332:G:O2'	53:3:333:U:H5'	2.21	0.41
53:3:446:G:N2	53:3:489:C:H1'	2.36	0.41
54:4:12:U:H2'	54:4:13:A:H5'	2.03	0.41
54:4:635:C:O2'	54:4:639:U:H5''	2.21	0.41
54:4:1241:U:H2'	54:4:1242:C:C6	2.55	0.41
54:4:1501:A:C5'	54:4:2340:A:H1'	2.48	0.41
54:4:2322:U:H2'	54:4:2323:U:C6	2.56	0.41
54:4:2375:A:H2'	54:4:2376:C:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:61:TYR:HE1	54:4:1945:G:OP1	2.03	0.41
2:c:51:THR:OG1	2:c:76:GLY:HA3	2.21	0.41
3:d:2:GLU:OE1	3:d:4:VAL:HG13	2.20	0.41
3:d:128:ALA:HB3	3:d:133:LEU:HD12	2.03	0.41
4:e:25:MET:HG2	54:4:1123:A:C6	2.56	0.41
5:f:24:THR:HG22	5:f:33:THR:HG22	2.03	0.41
5:f:51:PHE:CE2	5:f:68:ARG:HA	2.56	0.41
7:h:23:LEU:HB2	7:h:118:ILE:CG1	2.42	0.41
7:h:31:ARG:O	54:4:1183:G:H5'	2.20	0.41
7:h:95:LEU:HD22	7:h:99:PHE:CZ	2.56	0.41
8:i:2:LYS:HE2	8:i:5:GLN:HB2	2.03	0.41
9:j:26:GLY:HA3	54:4:1268:C:H5'	2.03	0.41
10:k:2:ILE:HG23	10:k:6:THR:HG21	2.01	0.41
12:m:4:PRO:HG3	12:m:68:PHE:CE2	2.54	0.41
13:n:18:GLN:NE2	54:4:2837:G:OP1	2.54	0.41
15:p:88:ARG:H	15:p:88:ARG:CD	2.34	0.41
23:x:51:SER:OG	23:x:52:ALA:N	2.54	0.41
23:x:70:LEU:HD23	23:x:70:LEU:HA	1.93	0.41
24:y:17:GLU:HB2	24:y:53:VAL:HG21	2.03	0.41
26:A:21:VAL:HG23	26:A:21:VAL:O	2.20	0.41
26:A:56:ARG:HD2	49:X:66:VAL:HG13	2.03	0.41
30:E:4:LYS:HE2	54:4:242:G:C6	2.55	0.41
32:G:49:PHE:O	32:G:53:LEU:HD23	2.21	0.41
34:I:10:LEU:HD23	34:I:10:LEU:HA	1.90	0.41
36:K:51:ILE:O	36:K:52:ASN:HB2	2.21	0.41
37:L:2:ARG:HA	53:3:1380:U:C5	2.56	0.41
38:M:49:LYS:O	38:M:59:GLU:N	2.47	0.41
42:Q:66:ILE:HG22	42:Q:98:ARG:HH21	1.86	0.41
42:Q:100:ALA:O	42:Q:102:ASP:N	2.49	0.41
43:R:69:ARG:HA	43:R:69:ARG:HD3	1.92	0.41
45:T:7:THR:O	45:T:11:VAL:HG23	2.21	0.41
49:X:46:LEU:HB3	49:X:48:ILE:HG23	2.03	0.41
50:Y:54:GLN:N	50:Y:55:PRO:CD	2.84	0.41
53:3:189:A:H2'	53:3:190:A:O4'	2.21	0.41
53:3:429:U:H4'	53:3:430:A:O5'	2.21	0.41
53:3:443:C:H2'	53:3:444:G:C8	2.56	0.41
53:3:1034:G:H2'	53:3:1035:A:H5'	2.02	0.41
53:3:1187:G:O2'	53:3:1188:A:H5'	2.20	0.41
54:4:244:A:H2'	54:4:245:G:O4'	2.21	0.41
54:4:436:C:O2'	54:4:437:U:H5'	2.20	0.41
54:4:1156:A:H62	54:4:1253:G:H2'	1.83	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:1179:G:H2'	54:4:1180:C:O4'	2.21	0.41
54:4:1239:A:O2'	54:4:1240:G:H4'	2.21	0.41
54:4:1446:U:H2'	54:4:1447:C:C6	2.56	0.41
54:4:2230:G:C2'	54:4:2231:C:H5'	2.50	0.41
54:4:2713:U:C5	55:5:76:A:H3'	2.55	0.41
55:5:53:G:O2'	55:5:54:U:H5'	2.21	0.41
4:e:3:LEU:HB2	4:e:100:GLU:CD	2.45	0.41
5:f:84:LYS:HB2	5:f:132:LEU:CD2	2.51	0.41
8:i:109:ALA:HB2	8:i:128:ILE:HG12	2.03	0.41
9:j:81:ILE:HG13	9:j:82:GLY:N	2.35	0.41
11:l:118:THR:HA	11:l:119:PRO:HD3	1.87	0.41
37:L:67:ASN:HB3	37:L:129:ASN:HB3	2.03	0.41
39:N:112:ARG:O	39:N:114:LYS:HD2	2.21	0.41
40:O:42:LEU:HB3	40:O:71:LEU:O	2.20	0.41
50:Y:28:ARG:O	50:Y:32:LYS:HG2	2.21	0.41
50:Y:79:THR:O	50:Y:83:ASN:ND2	2.54	0.41
53:3:1197:A:C2'	53:3:1198:G:H5''	2.51	0.41
54:4:26:G:O2'	54:4:27:G:H5'	2.21	0.41
54:4:118:A:OP2	54:4:119:A:H5''	2.21	0.41
54:4:262:A:H2'	54:4:263:G:O4'	2.20	0.41
54:4:543:G:H2'	54:4:544:C:O4'	2.20	0.41
54:4:858:G:C5	54:4:2396:A:C2	3.09	0.41
54:4:1165:G:O2'	54:4:1166:G:H5'	2.21	0.41
54:4:1613:U:H2'	54:4:1614:U:C6	2.55	0.41
54:4:2644:A:O2'	54:4:2645:C:H5'	2.21	0.41
54:4:3016:C:H2'	54:4:3017:C:C6	2.56	0.41
55:5:7:G:H2'	55:5:49:G:OP2	2.20	0.41
19:t:73:ARG:HH21	19:t:73:ARG:HG3	1.87	0.40
30:E:44:ARG:NH2	54:4:2477:G:OP1	2.54	0.40
31:F:16:ILE:HD13	31:F:25:VAL:HG22	2.02	0.40
32:G:162:VAL:CG1	32:G:184:ALA:HB2	2.51	0.40
33:H:81:GLU:HG2	33:H:82:ASP:N	2.35	0.40
34:I:33:ILE:O	34:I:35:GLN:NE2	2.54	0.40
35:J:55:VAL:HG13	35:J:56:PRO:CD	2.50	0.40
38:M:79:ARG:HB3	53:3:878:A:OP1	2.21	0.40
39:N:57:VAL:HG23	39:N:58:GLU:H	1.86	0.40
40:O:52:LEU:HD21	40:O:59:LYS:HD2	2.03	0.40
53:3:628:G:O2'	53:3:629:A:H5'	2.21	0.40
53:3:1123:U:C2'	53:3:1124:G:H5'	2.51	0.40
54:4:492:A:H2'	54:4:493:G:O4'	2.21	0.40
54:4:1325:G:H2'	54:4:1326:U:C6	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:1518:U:O2'	54:4:1519:U:H5'	2.20	0.40
1:b:48:ILE:HG22	54:4:779:U:P	2.61	0.40
1:b:264:LYS:HE2	54:4:2352:G:OP1	2.22	0.40
2:c:23:PRO:HB3	54:4:2810:A:C2	2.55	0.40
4:e:28:PRO:HB2	4:e:168:LEU:CD1	2.52	0.40
8:i:4:VAL:CB	54:4:1227:G:H4'	2.50	0.40
8:i:105:LEU:HB3	8:i:128:ILE:CG2	2.51	0.40
11:l:55:MET:HG2	54:4:2520:A:C2	2.56	0.40
11:l:121:THR:CG2	11:l:141:LYS:HG2	2.51	0.40
14:o:90:VAL:CG1	14:o:117:PHE:HB3	2.51	0.40
17:r:80:ARG:NH2	54:4:572:A:OP2	2.55	0.40
21:v:14:LYS:HE3	54:4:1040:G:N2	2.36	0.40
26:A:51:VAL:HG22	43:R:70:ARG:HH22	1.87	0.40
31:F:37:GLN:OE1	54:4:1253:G:H5'	2.21	0.40
32:G:17:HIS:CD2	32:G:189:ASN:HB2	2.55	0.40
36:K:22:ILE:H	36:K:22:ILE:HG13	1.64	0.40
36:K:79:ARG:HH12	53:3:672:U:H5'	1.86	0.40
38:M:10:LEU:HD22	38:M:74:ILE:HG12	2.03	0.40
38:M:14:ARG:HH21	38:M:75:GLN:HA	1.87	0.40
41:P:125:LYS:O	51:Z:34:ARG:NE	2.54	0.40
43:R:89:ARG:HH21	43:R:94:LEU:HB3	1.86	0.40
47:V:12:VAL:CG2	47:V:23:ALA:HB2	2.51	0.40
53:3:76:G:O2'	53:3:77:A:H5'	2.21	0.40
53:3:291:U:O2'	53:3:292:G:H5'	2.20	0.40
53:3:319:G:O2'	53:3:320:A:H5'	2.21	0.40
53:3:451:A:H8	53:3:451:A:OP1	2.04	0.40
53:3:605:U:H2'	53:3:606:G:H8	1.86	0.40
53:3:1306:A:H2'	53:3:1307:U:H5'	2.03	0.40
54:4:892:A:H2'	54:4:893:C:C6	2.57	0.40
54:4:996:A:H2'	54:4:997:G:C8	2.56	0.40
54:4:2036:C:O2'	55:5:12:G:H5''	2.20	0.40
54:4:2902:C:H2'	54:4:2903:G:O4'	2.21	0.40
1:b:182:LYS:HG3	1:b:267:VAL:HG23	2.03	0.40
3:d:73:ILE:O	3:d:73:ILE:HG12	2.20	0.40
3:d:148:ILE:HA	3:d:187:VAL:HG13	2.03	0.40
4:e:169:LEU:HB3	4:e:174:PHE:CB	2.51	0.40
8:i:25:PRO:HB2	54:4:1223:A:C2	2.57	0.40
8:i:87:SER:OG	54:4:1192:C:H4'	2.20	0.40
9:j:37:ARG:HG3	9:j:37:ARG:HH21	1.86	0.40
12:m:66:ARG:HD3	54:4:906:U:O2'	2.21	0.40
22:w:8:ASN:ND2	54:4:2406:A:C8	2.90	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:x:30:PRO:HG2	23:x:32:LEU:HG	2.02	0.40
26:A:10:GLU:HG2	26:A:11:GLU:N	2.36	0.40
36:K:59:TYR:CE2	48:W:66:LEU:HD21	2.56	0.40
36:K:75:GLU:HA	36:K:78:PHE:CD2	2.56	0.40
37:L:9:ARG:HB3	37:L:10:LYS:H	1.76	0.40
41:P:107:THR:OG1	41:P:108:ASN:N	2.54	0.40
42:Q:2:THR:CG2	42:Q:5:GLN:HG3	2.51	0.40
44:S:48:GLN:OE1	49:X:11:ASP:HA	2.22	0.40
53:3:629:A:O2'	53:3:630:A:H5'	2.21	0.40
53:3:1071:C:H2'	53:3:1072:G:C8	2.56	0.40
53:3:1265:C:H2'	53:3:1266:G:C8	2.56	0.40
53:3:1305:G:O2'	53:3:1306:A:H8	2.04	0.40
54:4:1411:G:H1'	54:4:1457:U:O2	2.21	0.40
54:4:1482:A:H2'	54:4:1483:G:O4'	2.21	0.40
54:4:2063:G:H1'	54:4:2092:G:N2	2.35	0.40
54:4:2343:C:H2'	54:4:2344:G:C8	2.55	0.40
54:4:2489:G:O2'	54:4:2490:C:H5'	2.21	0.40
57:7:59:U:O2'	57:7:60:U:H5'	2.21	0.40
1:b:144:GLU:HA	1:b:151:GLY:HA2	2.02	0.40
1:b:270:ARG:NH2	54:4:1926:U:OP2	2.55	0.40
3:d:6:LYS:O	3:d:9:GLN:NE2	2.55	0.40
3:d:8:ALA:O	3:d:9:GLN:HB2	2.21	0.40
6:g:68:ARG:HH11	6:g:68:ARG:HG3	1.85	0.40
7:h:54:VAL:CG2	7:h:83:ALA:HB1	2.50	0.40
9:j:88:THR:OG1	9:j:91:GLU:HG3	2.22	0.40
11:l:50:PHE:HZ	54:4:196:A:C2	2.40	0.40
15:p:7:LEU:HD12	15:p:7:LEU:HA	1.92	0.40
15:p:77:SER:HA	15:p:78:PRO:HD3	1.92	0.40
18:s:48:LYS:O	18:s:52:GLU:HG3	2.22	0.40
20:u:88:ASP:CG	20:u:89:GLY:H	2.28	0.40
27:B:5:ASN:ND2	54:4:2148:A:H62	2.19	0.40
36:K:92:THR:C	36:K:94:HIS:H	2.29	0.40
38:M:89:ASP:OD1	38:M:89:ASP:N	2.53	0.40
40:O:52:LEU:HD23	40:O:62:ARG:HG2	2.03	0.40
42:Q:24:GLU:O	42:Q:25:ALA:HB3	2.22	0.40
43:R:25:GLY:N	53:3:1329:A:H5''	2.37	0.40
50:Y:78:LEU:HD23	50:Y:78:LEU:HA	1.87	0.40
53:3:70:U:H4'	53:3:71:A:C8	2.54	0.40
53:3:233:C:H2'	53:3:234:C:C6	2.57	0.40
53:3:517:G:H4'	53:3:519:C:C2	2.56	0.40
53:3:715:A:H1'	53:3:777:A:N1	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:4:283:G:H2'	54:4:284:U:O4'	2.21	0.40
54:4:1639:G:O2'	54:4:1640:C:H5'	2.21	0.40
54:4:2039:U:H2'	54:4:2046:A:N1	2.37	0.40
54:4:2043:U:O2	54:4:2043:U:O4'	2.36	0.40
54:4:2348:U:H2'	54:4:2349:G:C8	2.56	0.40
54:4:2683:U:H2'	54:4:2684:C:C5'	2.46	0.40
54:4:2685:G:H2'	54:4:2686:C:C6	2.55	0.40
54:4:2719:C:H2'	54:4:2720:G:H8	1.85	0.40
54:4:2962:G:H1'	54:4:3011:A:N6	2.36	0.40
1:b:60:ALA:O	1:b:62:ARG:NH1	2.55	0.40
3:d:24:ASN:ND2	3:d:27:LEU:HB2	2.35	0.40
19:t:59:ASN:HB2	19:t:84:TYR:HB2	2.03	0.40
24:y:23:ARG:O	24:y:24:GLU:C	2.64	0.40
29:D:26:ASN:CG	54:4:682:G:H5'	2.47	0.40
32:G:40:ILE:HD12	32:G:40:ILE:H	1.85	0.40
33:H:169:GLU:OE1	33:H:170:GLY:N	2.55	0.40
34:I:151:GLN:O	34:I:152:SER:OG	2.30	0.40
37:L:2:ARG:HB3	53:3:933:G:OP2	2.22	0.40
39:N:121:ARG:HG3	53:3:1348:U:H4'	2.04	0.40
43:R:6:ILE:HG13	43:R:7:ASN:N	2.36	0.40
43:R:106:ARG:HD3	43:R:106:ARG:HA	1.96	0.40
44:S:10:VAL:HG13	44:S:11:LYS:N	2.35	0.40
44:S:12:ARG:HH11	44:S:12:ARG:HG3	1.85	0.40
52:a:63:THR:HG23	52:a:163:TYR:CD1	2.56	0.40
53:3:1069:C:O2'	53:3:1192:C:H1'	2.20	0.40
53:3:1308:U:H2'	53:3:1309:G:H8	1.86	0.40
54:4:1562:A:H2'	54:4:1563:G:H8	1.84	0.40
54:4:1856:C:H2'	54:4:1857:U:H5''	2.03	0.40
54:4:2606:A:H2'	54:4:2607:U:O4'	2.20	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

There are no protein backbone outliers to report in this entry.

5.3.2 Protein sidechains [i](#)

There are no protein residues with a non-rotameric sidechain to report in this entry.

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
53	3	1538/1539 (99%)	150 (9%)	1 (0%)
54	4	3030/3031 (99%)	345 (11%)	13 (0%)
55	5	76/77 (98%)	7 (9%)	0
56	1	9/10 (90%)	0	0
57	7	75/76 (98%)	9 (12%)	0
All	All	4728/4733 (99%)	511 (10%)	14 (0%)

All (511) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
53	3	6	G
53	3	7	A
53	3	9	G
53	3	22	G
53	3	32	A
53	3	39	G
53	3	48	C
53	3	51	A
53	3	70	U
53	3	71	A
53	3	82	G
53	3	87	C
53	3	94	G
53	3	100	G
53	3	144	G
53	3	164	G
53	3	173	U
53	3	183	C
53	3	210	C
53	3	247	G
53	3	251	G
53	3	266	G
53	3	267	C
53	3	280	C
53	3	281	G
53	3	289	G
53	3	328	C
53	3	345	C
53	3	351	G
53	3	352	C
53	3	367	U

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Mol	Chain	Res	Type
53	3	372	C
53	3	411	A
53	3	412	A
53	3	413	G
53	3	421	U
53	3	422	C
53	3	423	G
53	3	429	U
53	3	441	A
53	3	467	U
53	3	481	G
53	3	485	U
53	3	486	U
53	3	497	G
53	3	499	A
53	3	500	G
53	3	511	C
53	3	518	C
53	3	547	A
53	3	561	U
53	3	572	A
53	3	573	A
53	3	575	G
53	3	576	C
53	3	577	G
53	3	618	C
53	3	642	A
53	3	665	A
53	3	702	A
53	3	703	G
53	3	724	G
53	3	755	G
53	3	777	A
53	3	794	A
53	3	815	A
53	3	817	C
53	3	818	G
53	3	819	A
53	3	821	G
53	3	843	U
53	3	844	G
53	3	846	G

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Mol	Chain	Res	Type
53	3	871	U
53	3	890	G
53	3	902	G
53	3	926	G
53	3	934	C
53	3	935	A
53	3	960	U
53	3	961	U
53	3	966	G
53	3	969	A
53	3	975	A
53	3	976	G
53	3	977	A
53	3	992	U
53	3	993	G
53	3	1004	A
53	3	1028	C
53	3	1030	U
53	3	1031	C
53	3	1032	G
53	3	1034	G
53	3	1053	G
53	3	1054	C
53	3	1064	G
53	3	1094	G
53	3	1101	A
53	3	1130	A
53	3	1136	C
53	3	1137	C
53	3	1138	G
53	3	1139	G
53	3	1140	C
53	3	1159	U
53	3	1168	U
53	3	1182	G
53	3	1184	G
53	3	1191	A
53	3	1196	A
53	3	1198	G
53	3	1201	A
53	3	1202	U
53	3	1212	U

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Mol	Chain	Res	Type
53	3	1213	A
53	3	1225	A
53	3	1238	A
53	3	1241	G
53	3	1257	A
53	3	1258	G
53	3	1261	A
53	3	1275	A
53	3	1278	G
53	3	1280	A
53	3	1282	C
53	3	1286	U
53	3	1287	A
53	3	1300	G
53	3	1302	C
53	3	1317	C
53	3	1320	C
53	3	1346	A
53	3	1347	G
53	3	1363	A
53	3	1364	U
53	3	1378	C
53	3	1379	G
53	3	1395	C
53	3	1419	G
53	3	1441	A
53	3	1446	A
53	3	1452	C
53	3	1492	A
53	3	1503	A
53	3	1506	U
53	3	1517	G
53	3	1529	G
53	3	1530	G
53	3	1533	C
54	4	10	A
54	4	12	U
54	4	34	U
54	4	35	G
54	4	46	G
54	4	51	G
54	4	71	A

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Mol	Chain	Res	Type
54	4	74	A
54	4	75	G
54	4	119	A
54	4	120	U
54	4	139	U
54	4	140	C
54	4	141	G
54	4	162	U
54	4	163	C
54	4	181	A
54	4	196	A
54	4	216	A
54	4	221	A
54	4	222	A
54	4	228	C
54	4	229	C
54	4	233	A
54	4	248	G
54	4	249	C
54	4	255	A
54	4	265	A
54	4	266	G
54	4	276	U
54	4	294	A
54	4	301	G
54	4	311	A
54	4	323	C
54	4	324	A
54	4	329	G
54	4	330	A
54	4	361	G
54	4	371	A
54	4	372	G
54	4	386	G
54	4	387	U
54	4	404	A
54	4	406	G
54	4	411	G
54	4	412	A
54	4	424	G
54	4	457	A
54	4	481	G

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Mol	Chain	Res	Type
54	4	491	G
54	4	504	A
54	4	505	A
54	4	508	A
54	4	529	A
54	4	530	G
54	4	532	A
54	4	533	G
54	4	543	G
54	4	545	U
54	4	548	G
54	4	563	A
54	4	573	U
54	4	574	A
54	4	575	A
54	4	588	U
54	4	603	A
54	4	613	A
54	4	614	A
54	4	627	A
54	4	637	A
54	4	646	U
54	4	654	A
54	4	655	A
54	4	669	G
54	4	686	U
54	4	695	G
54	4	714	U
54	4	717	C
54	4	730	A
54	4	747	C
54	4	752	A
54	4	764	A
54	4	775	G
54	4	776	G
54	4	782	A
54	4	784	G
54	4	785	G
54	4	805	G
54	4	812	C
54	4	819	A
54	4	827	U

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Mol	Chain	Res	Type
54	4	828	U
54	4	830	G
54	4	845	A
54	4	846	U
54	4	847	U
54	4	858	G
54	4	860	U
54	4	878	A
54	4	887	U
54	4	888	C
54	4	896	A
54	4	897	C
54	4	910	A
54	4	932	U
54	4	941	A
54	4	946	C
54	4	961	C
54	4	974	G
54	4	983	A
54	4	995	C
54	4	996	A
54	4	1012	U
54	4	1013	C
54	4	1021	A
54	4	1022	G
54	4	1025	G
54	4	1026	G
54	4	1027	C
54	4	1029	G
54	4	1050	A
54	4	1051	A
54	4	1058	G
54	4	1063	U
54	4	1064	C
54	4	1066	G
54	4	1067	U
54	4	1070	C
54	4	1101	C
54	4	1110	G
54	4	1133	G
54	4	1154	A
54	4	1155	A

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Mol	Chain	Res	Type
54	4	1161	U
54	4	1173	C
54	4	1174	A
54	4	1175	G
54	4	1182	A
54	4	1188	U
54	4	1190	G
54	4	1193	U
54	4	1194	U
54	4	1198	A
54	4	1199	G
54	4	1200	C
54	4	1207	C
54	4	1212	A
54	4	1216	A
54	4	1217	A
54	4	1218	A
54	4	1232	C
54	4	1234	G
54	4	1239	A
54	4	1260	U
54	4	1263	C
54	4	1270	A
54	4	1271	A
54	4	1301	U
54	4	1302	U
54	4	1303	A
54	4	1304	U
54	4	1305	G
54	4	1307	G
54	4	1308	U
54	4	1334	G
54	4	1340	G
54	4	1376	G
54	4	1378	G
54	4	1379	C
54	4	1381	A
54	4	1384	G
54	4	1399	G
54	4	1400	A
54	4	1403	A
54	4	1417	C

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Mol	Chain	Res	Type
54	4	1429	A
54	4	1449	A
54	4	1457	U
54	4	1458	C
54	4	1473	C
54	4	1493	A
54	4	1507	U
54	4	1511	A
54	4	1544	G
54	4	1547	A
54	4	1548	A
54	4	1556	C
54	4	1582	C
54	4	1589	C
54	4	1610	G
54	4	1618	A
54	4	1619	G
54	4	1622	A
54	4	1643	A
54	4	1652	G
54	4	1663	A
54	4	1664	C
54	4	1683	G
54	4	1687	U
54	4	1688	G
54	4	1697	A
54	4	1706	U
54	4	1712	U
54	4	1736	A
54	4	1739	C
54	4	1744	A
54	4	1775	U
54	4	1776	U
54	4	1777	G
54	4	1802	G
54	4	1843	G
54	4	1857	U
54	4	1858	C
54	4	1866	G
54	4	1886	U
54	4	1892	C
54	4	1901	A

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Mol	Chain	Res	Type
54	4	1908	A
54	4	1928	C
54	4	1929	A
54	4	1936	A
54	4	1944	C
54	4	1957	A
54	4	2029	A
54	4	2034	G
54	4	2035	G
54	4	2041	A
54	4	2042	C
54	4	2057	G
54	4	2058	G
54	4	2065	A
54	4	2066	A
54	4	2072	U
54	4	2083	U
54	4	2095	C
54	4	2098	A
54	4	2099	U
54	4	2100	G
54	4	2119	U
54	4	2120	G
54	4	2121	U
54	4	2125	C
54	4	2150	U
54	4	2151	C
54	4	2158	A
54	4	2159	A
54	4	2171	C
54	4	2177	G
54	4	2183	C
54	4	2184	G
54	4	2188	A
54	4	2189	G
54	4	2190	A
54	4	2191	C
54	4	2197	G
54	4	2200	C
54	4	2239	U
54	4	2240	G
54	4	2246	U

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Mol	Chain	Res	Type
54	4	2247	A
54	4	2259	U
54	4	2260	U
54	4	2261	G
54	4	2273	C
54	4	2274	C
54	4	2277	U
54	4	2290	G
54	4	2300	U
54	4	2301	A
54	4	2302	C
54	4	2306	C
54	4	2317	U
54	4	2326	A
54	4	2331	U
54	4	2332	G
54	4	2339	A
54	4	2340	A
54	4	2341	U
54	4	2353	A
54	4	2366	G
54	4	2407	G
54	4	2411	C
54	4	2414	G
54	4	2415	A
54	4	2425	A
54	4	2433	U
54	4	2435	G
54	4	2437	A
54	4	2453	G
54	4	2455	A
54	4	2462	U
54	4	2478	C
54	4	2511	G
54	4	2513	C
54	4	2530	U
54	4	2531	C
54	4	2534	A
54	4	2535	A
54	4	2551	U
54	4	2557	G
54	4	2558	A

Continued on next page...

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Mol	Chain	Res	Type
54	4	2563	A
54	4	2569	U
54	4	2576	A
54	4	2604	A
54	4	2626	C
54	4	2630	G
54	4	2631	A
54	4	2632	U
54	4	2633	G
54	4	2646	A
54	4	2657	G
54	4	2675	A
54	4	2682	U
54	4	2695	G
54	4	2700	A
54	4	2701	C
54	4	2730	A
54	4	2737	U
54	4	2741	U
54	4	2757	U
54	4	2774	C
54	4	2783	G
54	4	2817	U
54	4	2818	U
54	4	2842	G
54	4	2872	G
54	4	2876	A
54	4	2878	A
54	4	2885	A
54	4	2892	A
54	4	2893	A
54	4	2906	A
54	4	2907	U
54	4	2919	G
54	4	2925	U
54	4	2928	A
54	4	2937	A
54	4	2948	A
54	4	2949	A
54	4	2995	G
54	4	2996	A
54	4	3008	C

Continued on next page...

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Mol	Chain	Res	Type
54	4	3011	A
54	4	3012	U
55	5	8	U
55	5	9	G
55	5	19	G
55	5	20	U
55	5	47	U
55	5	74	C
55	5	76	A
57	7	17	C
57	7	21	A
57	7	45	U
57	7	46	G
57	7	47	U
57	7	48	C
57	7	49	C
57	7	61	C
57	7	74	C

All (14) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
53	3	1190	G
54	4	227	A
54	4	490	C
54	4	774	G
54	4	859	G
54	4	1020	A
54	4	1025	G
54	4	1132	A
54	4	1154	A
54	4	1618	A
54	4	2424	U
54	4	2454	C
54	4	2884	U
54	4	3001	A

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

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.

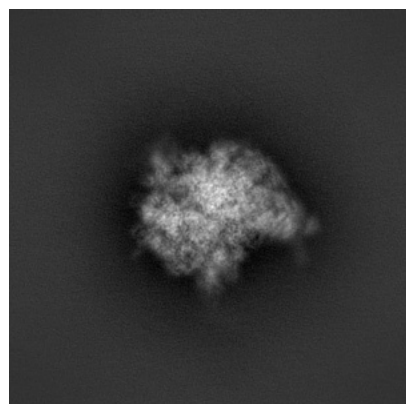
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-21858. These allow visual inspection of the internal detail of the map and identification of artifacts.

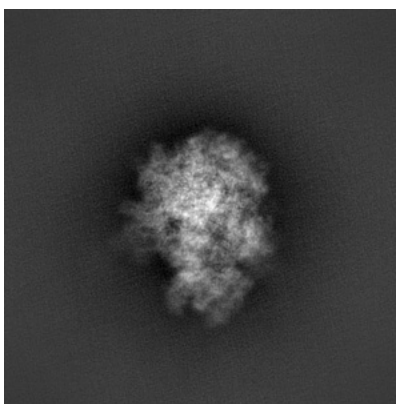
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

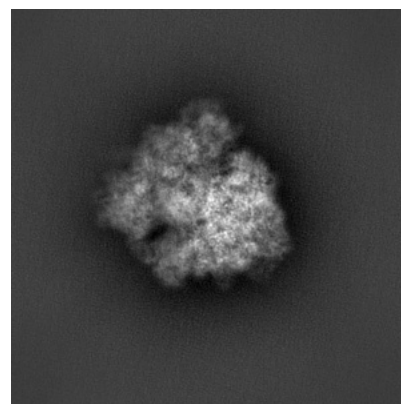
6.1.1 Primary map



X

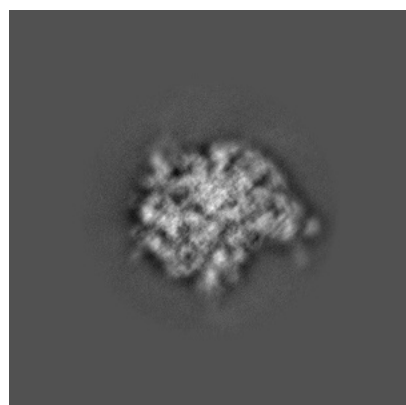


Y

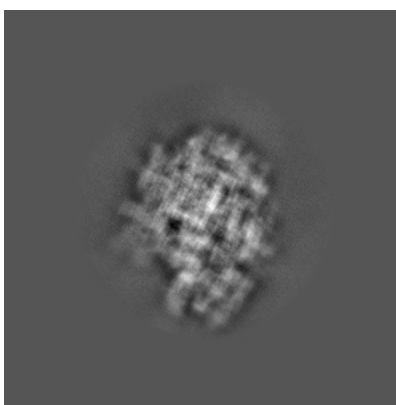


Z

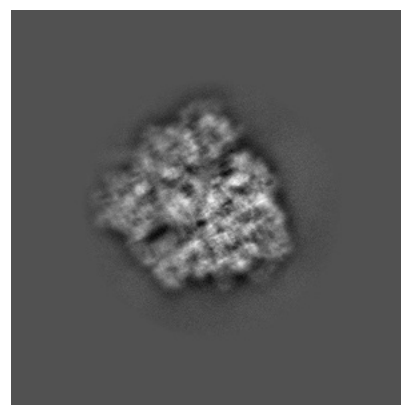
6.1.2 Raw map



X



Y

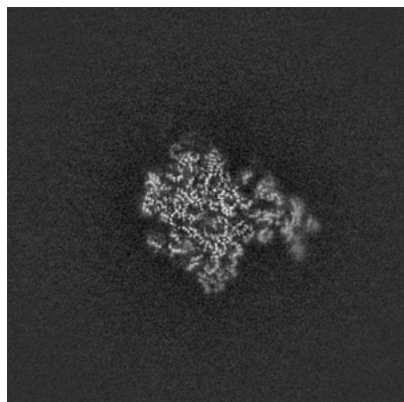


Z

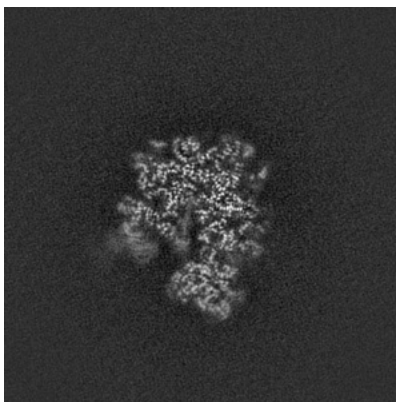
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

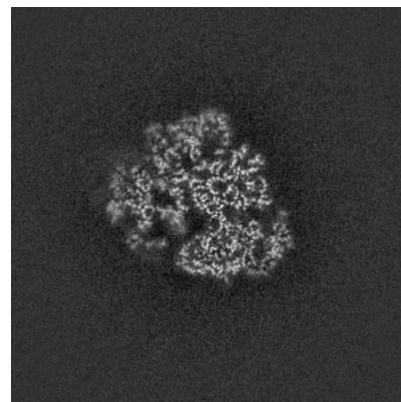
6.2.1 Primary map



X Index: 304

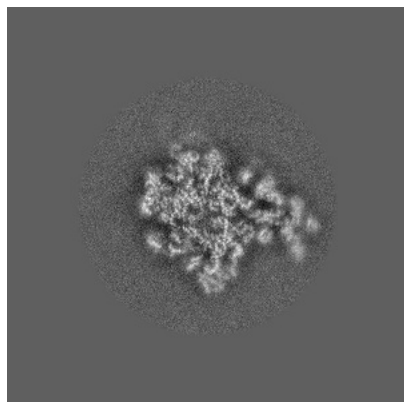


Y Index: 304

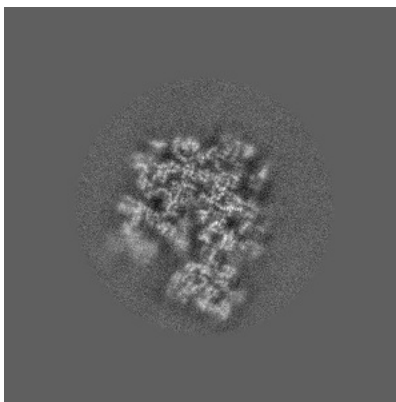


Z Index: 304

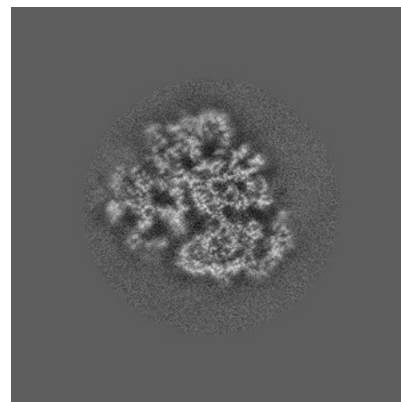
6.2.2 Raw map



X Index: 304



Y Index: 304

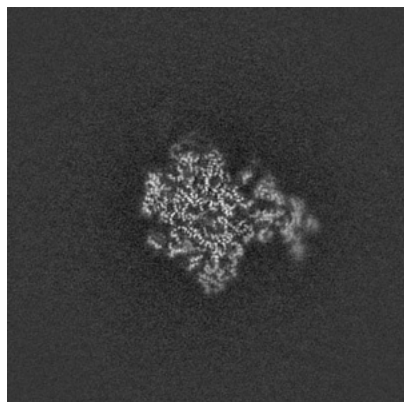


Z Index: 304

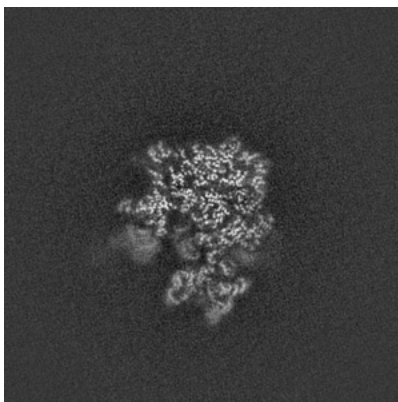
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

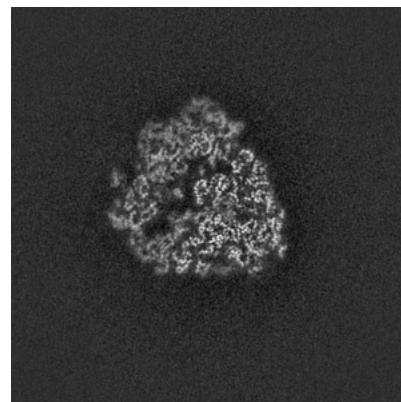
6.3.1 Primary map



X Index: 303

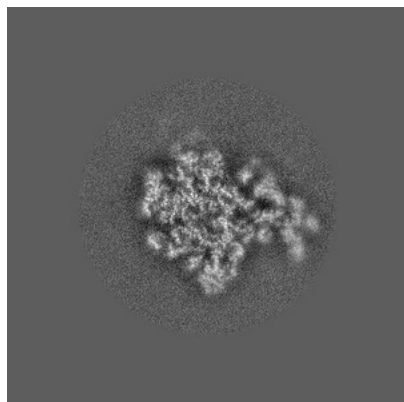


Y Index: 317

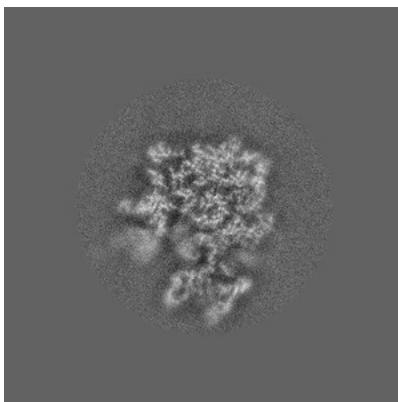


Z Index: 290

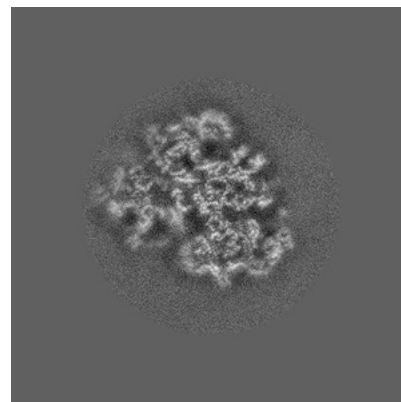
6.3.2 Raw map



X Index: 302



Y Index: 318

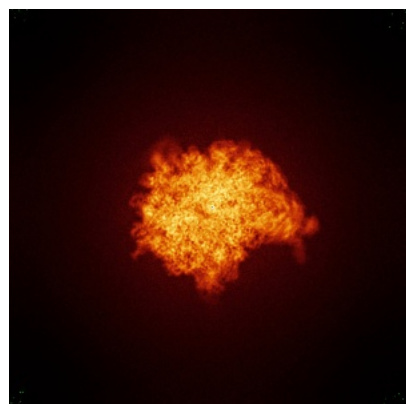


Z Index: 307

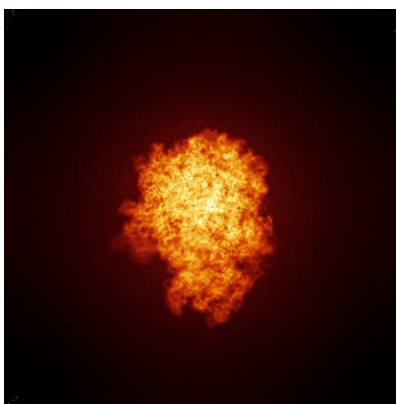
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



X

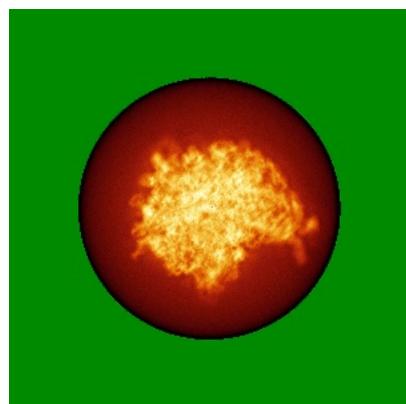


Y

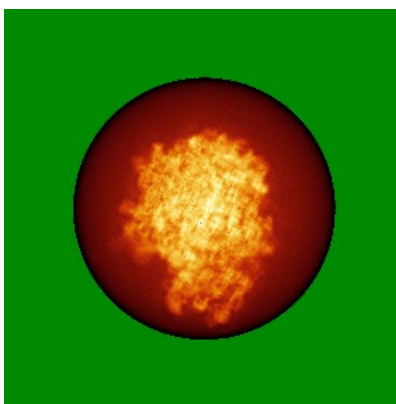


Z

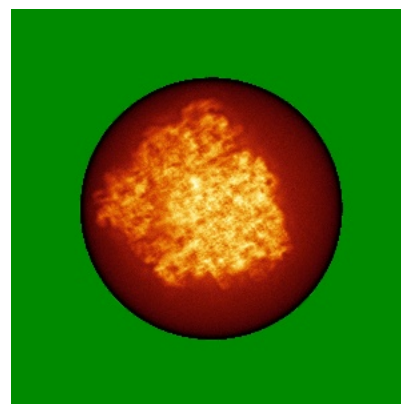
6.4.2 Raw map



X



Y



Z

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

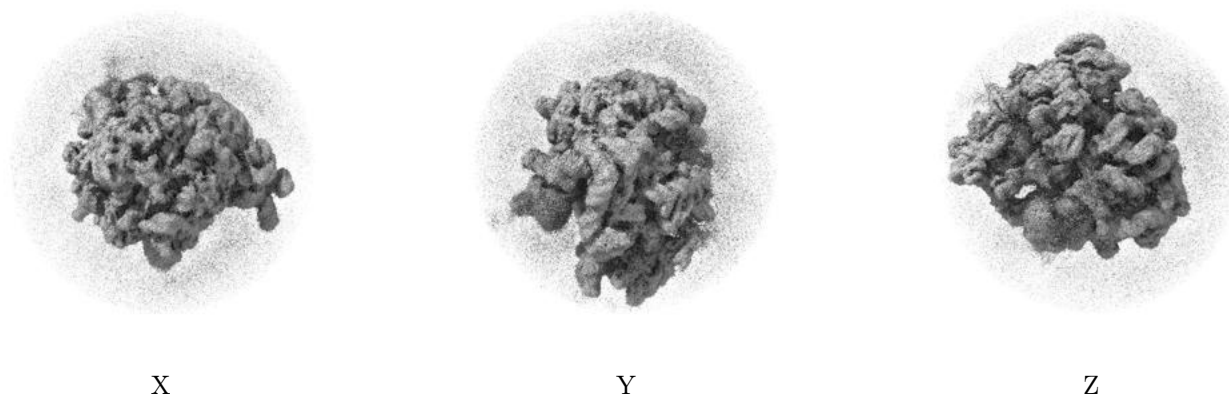
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 2.5. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

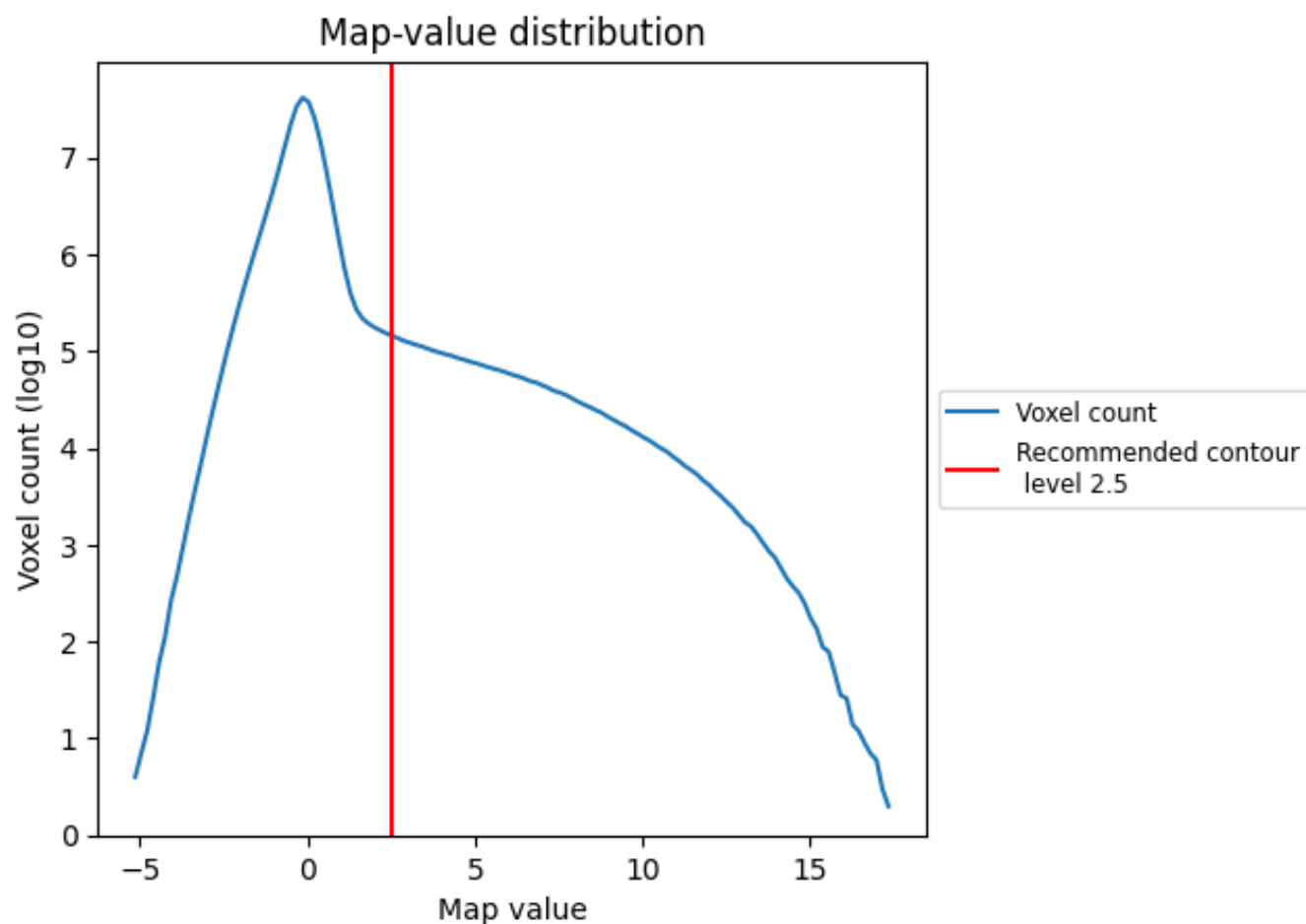
6.6 Mask visualisation [i](#)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis [i](#)

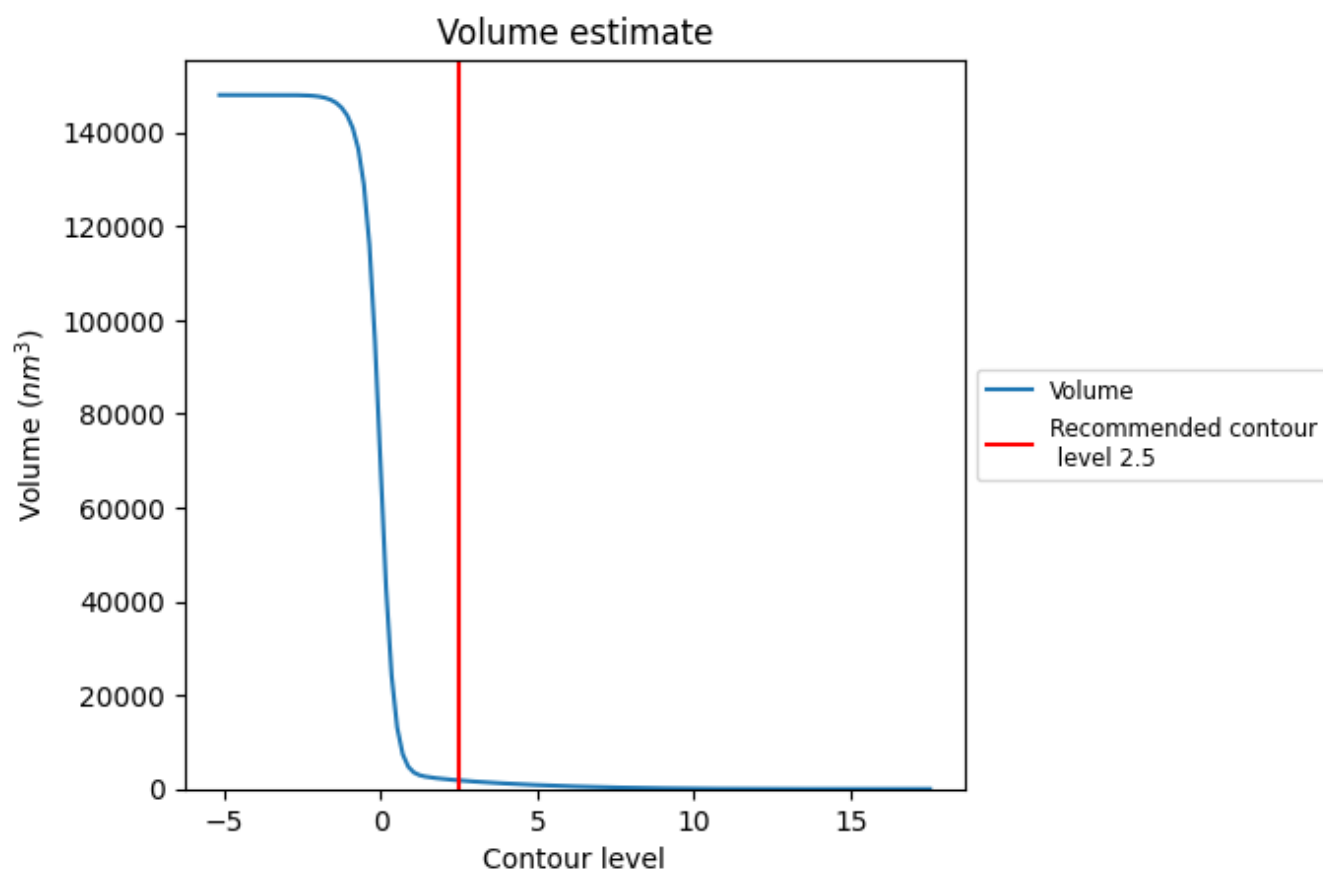
This section contains the results of statistical analysis of the map.

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.

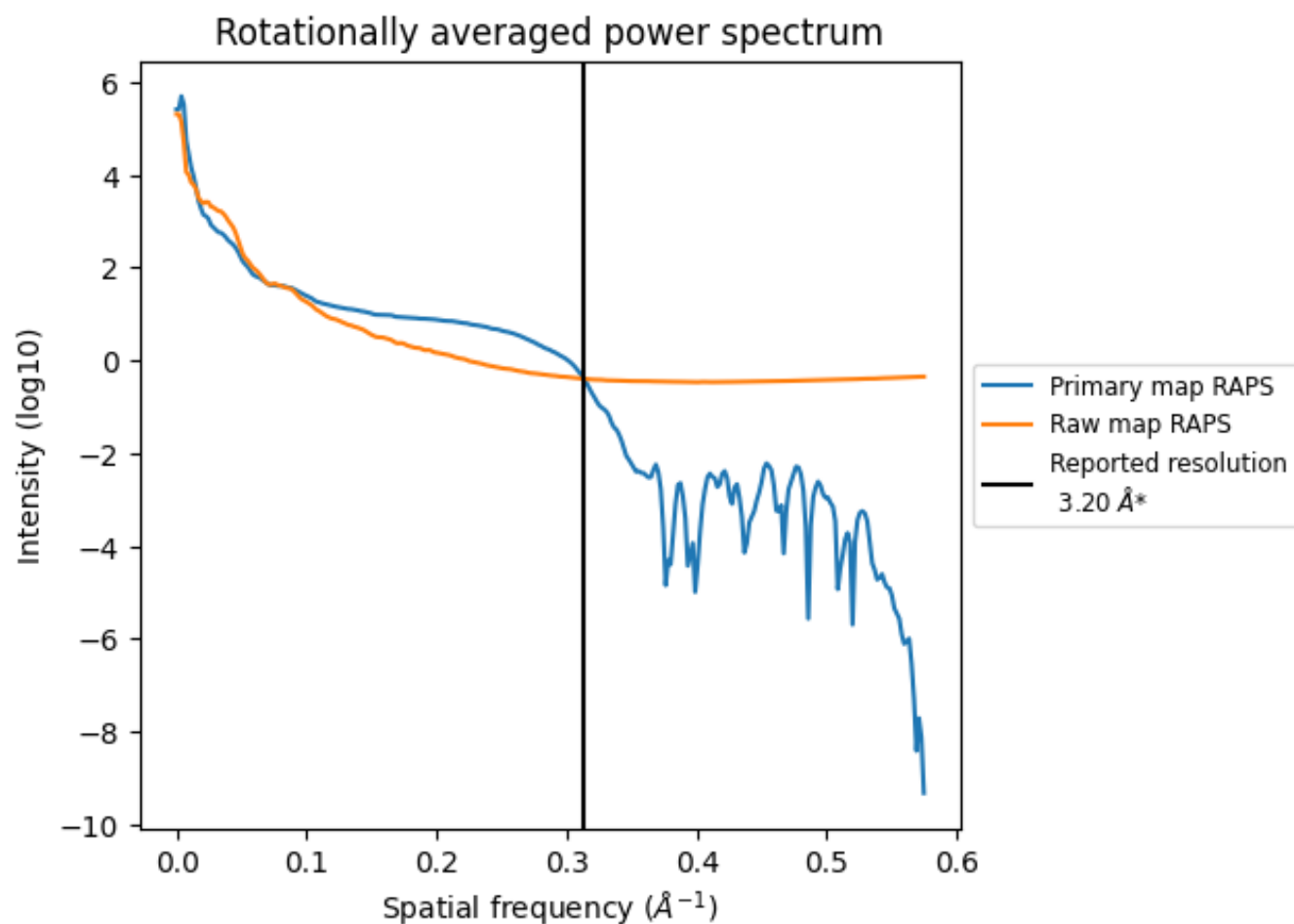
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1831 nm^3 ; this corresponds to an approximate mass of 1654 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 ⓘ

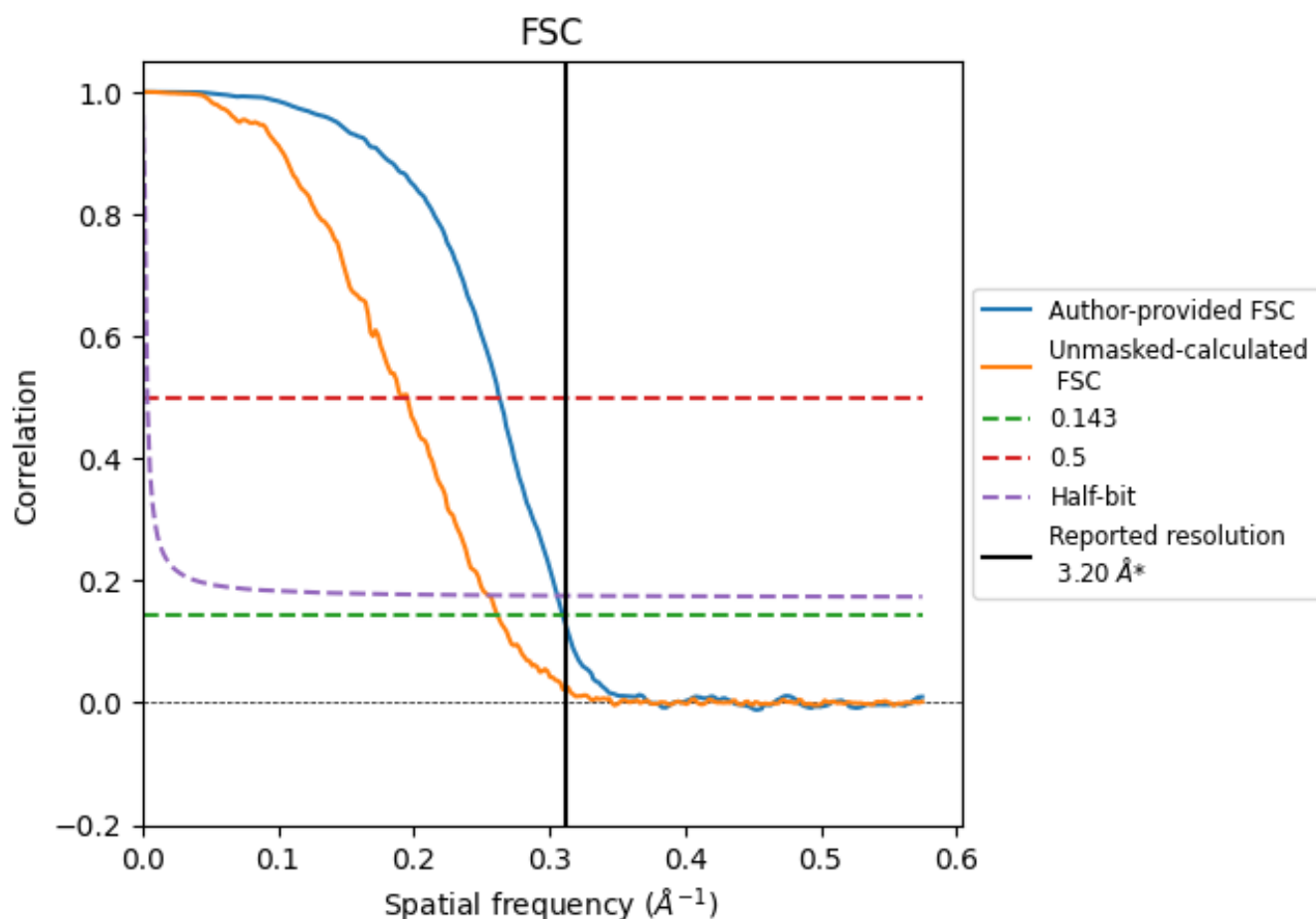


*Reported resolution corresponds to spatial frequency of 0.312 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.312 Å⁻¹

8.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.20	-	-
Author-provided FSC curve	3.23	3.80	3.27
Unmasked-calculated*	3.82	5.24	3.92

*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 3.82 differs from the reported value 3.2 by more than 10 %

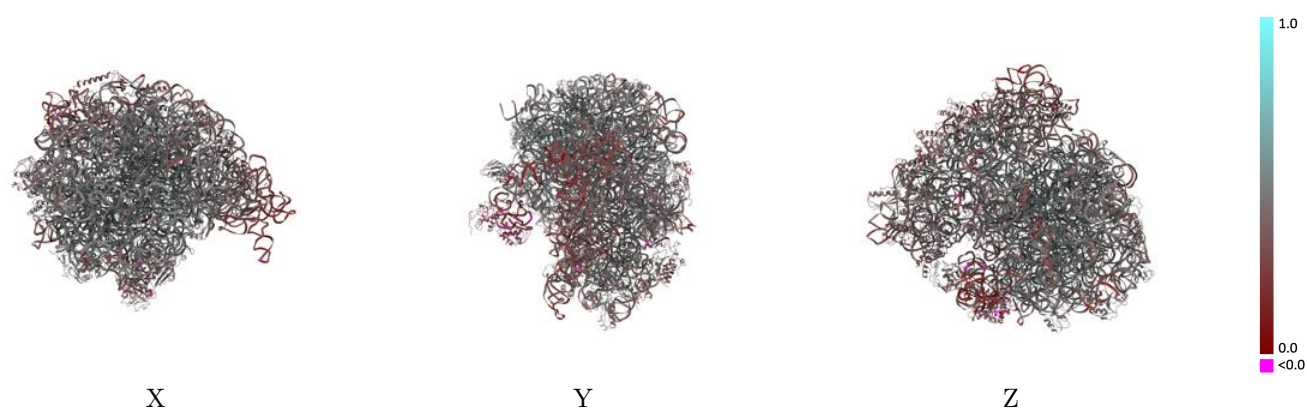
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-21858 and PDB model 6WNW. Per-residue inclusion information can be found in section 3 on page 15.

9.1 Map-model overlay [i](#)

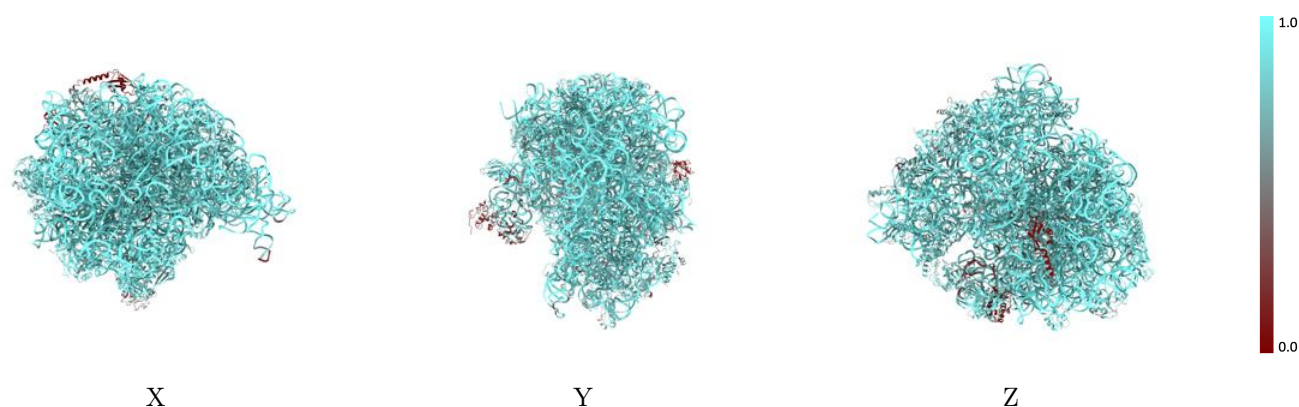
This section was not generated.

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



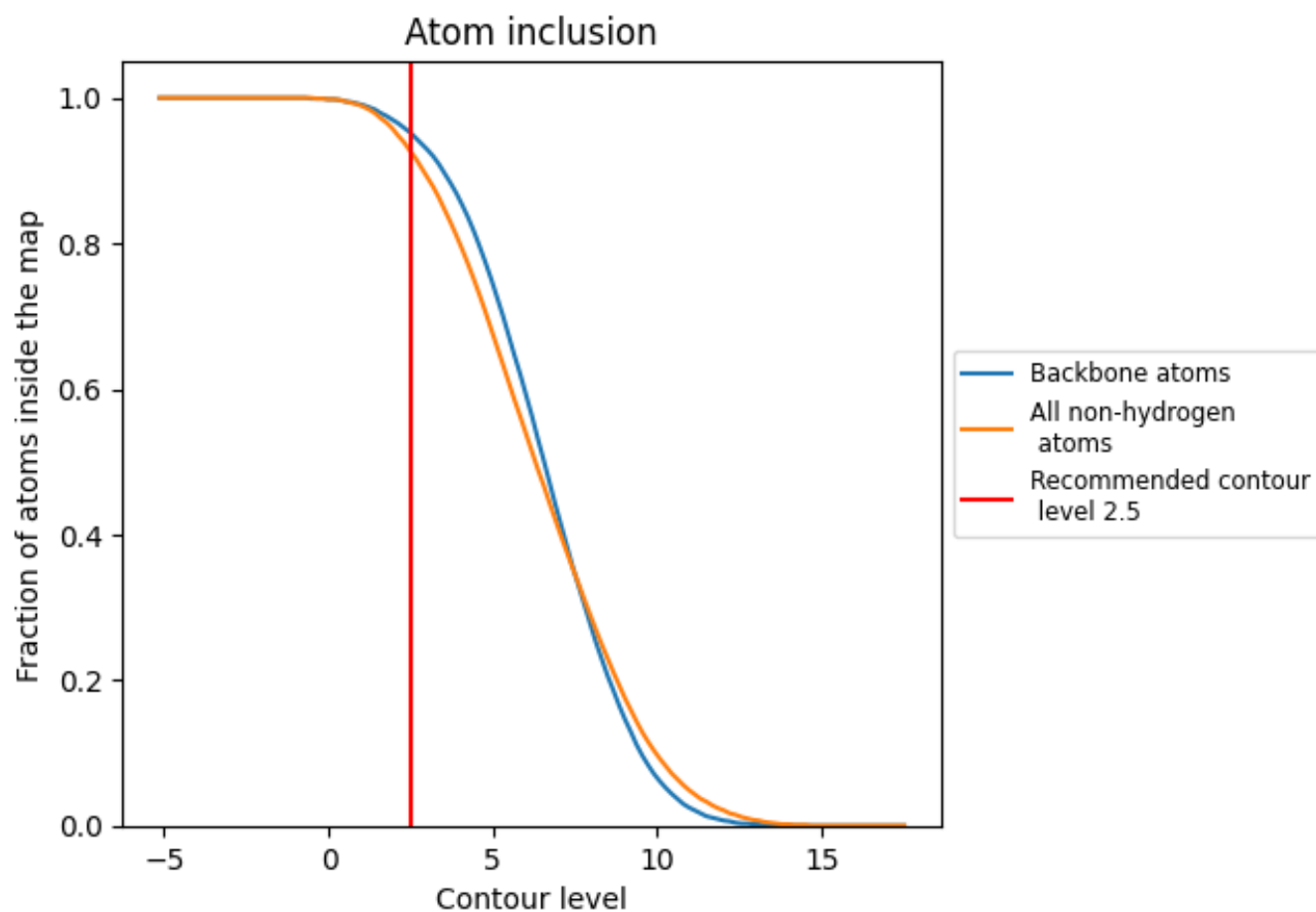
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (2.5).

9.4 Atom inclusion [i](#)



At the recommended contour level, 95% of all backbone atoms, 93% 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 (2.5) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9260	 0.4300
1	 0.9440	 0.4570
3	 0.9750	 0.4050
4	 0.9790	 0.4510
5	 0.9450	 0.4090
7	 0.7840	 0.3290
A	 0.7870	 0.3940
B	 0.9160	 0.4750
C	 0.8230	 0.4620
D	 0.9270	 0.5000
E	 0.9450	 0.5130
F	 0.9040	 0.4920
G	 0.7740	 0.3920
H	 0.8320	 0.4340
I	 0.8120	 0.3380
J	 0.8670	 0.4460
K	 0.8720	 0.3990
L	 0.7710	 0.3840
M	 0.8720	 0.4490
N	 0.8690	 0.3890
O	 0.7830	 0.3970
P	 0.9070	 0.4350
Q	 0.8430	 0.4200
R	 0.8780	 0.3930
S	 0.8700	 0.4080
T	 0.9090	 0.4380
U	 0.8490	 0.3730
V	 0.8850	 0.3980
W	 0.8950	 0.4330
X	 0.8910	 0.4110
Y	 0.8650	 0.3600
Z	 0.7160	 0.3550
a	 0.2890	 0.2280
b	 0.9130	 0.5010
c	 0.9170	 0.4930



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Chain	Atom inclusion	Q-score
d	 0.8400	 0.4480
e	 0.8750	 0.4100
f	 0.8950	 0.4240
g	 0.2610	 0.3500
h	 0.3160	 0.2410
i	 0.3940	 0.2430
j	 0.9010	 0.4710
k	 0.8800	 0.4960
l	 0.9150	 0.4780
m	 0.8950	 0.4910
n	 0.9330	 0.4860
o	 0.9150	 0.4420
p	 0.8740	 0.4710
q	 0.9250	 0.4800
r	 0.9030	 0.4750
s	 0.8670	 0.4810
t	 0.8840	 0.4530
u	 0.8890	 0.4360
v	 0.9050	 0.4600
w	 0.9160	 0.5050
x	 0.9150	 0.4850
y	 0.8530	 0.3960
z	 0.8950	 0.4760