



## Full wwPDB EM Validation Report ⓘ

Mar 2, 2024 – 11:27 AM EST

PDB ID : 5U9F  
EMDB ID : EMD-8521  
Title : 3.2 Å cryo-EM ArfA-RF2 ribosome rescue complex (Structure II)  
Authors : Demo, G.; Svidritskiy, E.; Madireddy, R.; Diaz-Avalos, R.; Grant, T.; Grigorieff, N.; Sousa, D.; Korostelev, A.A.  
Deposited on : 2016-12-16  
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](mailto: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>.

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

EMDB validation analysis : 0.0.1.dev70  
MolProbity : 4.02b-467  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.36

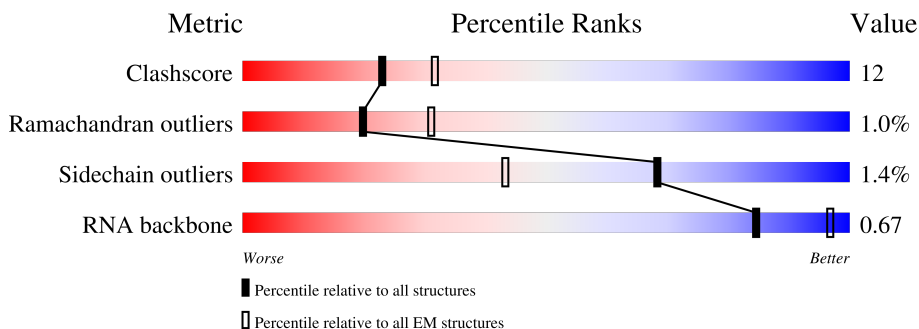
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.20 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.










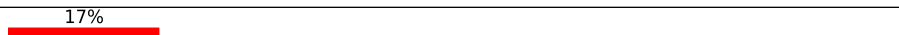
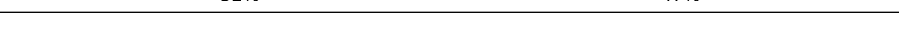
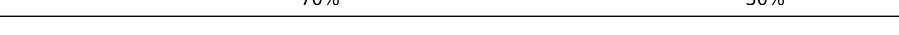
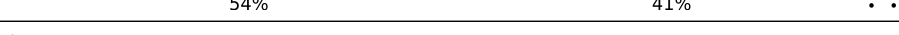
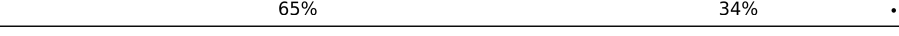













Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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  $\geq 3$ , 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	A	1539	
2	01	2903	
3	02	119	
4	Y	72	
5	W	77	
5	X	77	
6	03	234	

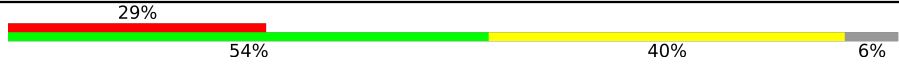







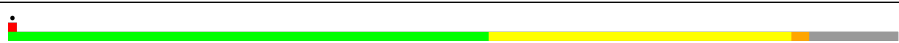

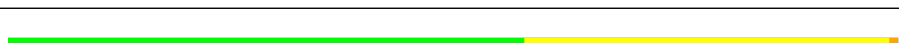


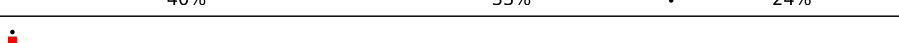
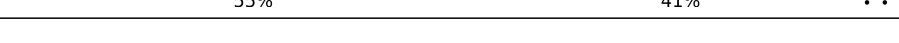
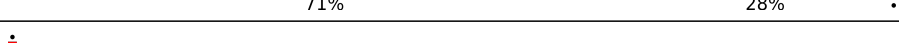
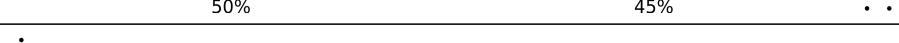
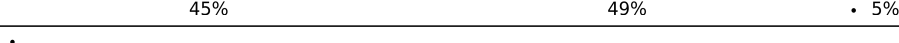
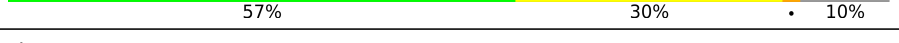






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Mol	Chain	Length	Quality of chain
7	04	273	 67% 32%
8	05	209	 67% 33%
9	06	201	 65% 34%
10	07	179	 56% 42%
11	08	177	 64% 34%
12	09	149	 55% 72% 27%
13	10	165	 25% 48% 29% 21%
14	11	142	 17% 52% 47%
15	12	142	 70% 30%
16	13	123	 54% 41%
17	14	144	 65% 34%
18	15	136	 68% 30%
19	16	127	 58% 35% 6%
20	17	117	 62% 36%
21	18	115	 66% 33%
22	19	118	 59% 39%
23	20	103	 75% 24%
24	21	110	 68% 32%
25	22	100	 56% 36% 7%
26	23	104	 62% 37%
27	24	94	 69% 30%
28	25	85	 49% 35% 12%
29	26	78	 62% 36%
30	27	63	 59% 38%
31	28	59	 66% 32%




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Mol	Chain	Length	Quality of chain
32	29	70	
33	30	57	
34	31	55	
35	32	46	
36	33	65	
37	34	38	
38	V	14	
39	Z	365	
40	B	241	
41	C	233	
42	D	206	
43	E	167	
44	F	131	
45	G	156	
46	H	130	
47	I	130	
48	J	103	
49	K	129	
50	L	124	
51	M	118	
52	N	101	
53	O	89	
54	P	82	
55	Q	84	
56	R	75	

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Mol	Chain	Length	Quality of chain
57	S	92	
58	T	87	
59	U	71	

## 2 Entry composition [i](#)

There are 61 unique types of molecules in this entry. The entry contains 152819 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 16S ribosomal RNA.

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

- Molecule 2 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	01	2903	62318	27801	11467	20148	2902	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
01	1847	G	A	conflict	GB 2073407

- Molecule 3 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	02	119	2546	1135	466	827	118	0	0

- Molecule 4 is a protein called Alternative ribosome-rescue factor A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	Y	47	377	233	78	65	1	0	0

- Molecule 5 is a RNA chain called fMet-tRNA (P- and E-site).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	X	77	1622	723	289	534	76	0	0
5	W	77	1640	732	297	535	76	0	0

- Molecule 6 is a protein called 50S ribosomal protein L1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	03	220	1353	804	270	277	2	0	0

- Molecule 7 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	04	271	2082	1288	423	364	7	0	0

- Molecule 8 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	05	209	1565	979	288	294	4	0	0

- Molecule 9 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	06	201	1552	974	283	290	5	0	0

- Molecule 10 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	07	177	1410	899	249	256	6	0	0

- Molecule 11 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	08	176	1323	832	243	246	2	0	0

- Molecule 12 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	09	149	1111	699	197	214	1	0	0

- Molecule 13 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	10	131	Total	C	N	O	S	0	0
			988	625	175	183	5		

- Molecule 14 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	11	141	Total	C	N	O	S	0	0
			1032	651	179	196	6		

- Molecule 15 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	12	142	Total	C	N	O	S	0	0
			1129	714	212	199	4		

- Molecule 16 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	13	122	Total	C	N	O	S	0	0
			938	587	180	165	6		

- Molecule 17 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	14	143	Total	C	N	O	S	0	0
			1045	649	206	189	1		

- Molecule 18 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	15	136	Total	C	N	O	S	0	0
			1074	686	205	177	6		

- Molecule 19 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	16	120	Total	C	N	O	S	0	0
			960	593	196	166	5		

- Molecule 20 is a protein called 50S ribosomal protein L18.



Mol	Chain	Residues	Atoms				AltConf	Trace
20	17	116	Total	C	N	O	0	0
			892	552	178	162		

- Molecule 21 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	18	114	Total	C	N	O	S	0	0
			917	574	179	163	1		

- Molecule 22 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms				AltConf	Trace
22	19	117	Total	C	N	O	0	0
			947	604	192	151		

- Molecule 23 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	20	103	Total	C	N	O	S	0	0
			816	516	153	145	2		

- Molecule 24 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	21	110	Total	C	N	O	S	0	0
			857	532	166	156	3		

- Molecule 25 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	22	93	Total	C	N	O	S	0	0
			738	466	139	131	2		

- Molecule 26 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
26	23	102	Total	C	N	O	0	0
			779	492	146	141		

- Molecule 27 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	24	94	Total	C	N	O	S	0	0
			753	479	137	134	3		

- Molecule 28 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	25	75	Total	C	N	O	S	0	0
			575	356	116	102	1		

- Molecule 29 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	26	77	Total	C	N	O	S	0	0
			625	388	129	106	2		

- Molecule 30 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	27	63	Total	C	N	O	S	0	0
			509	313	99	95	2		

- Molecule 31 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	28	58	Total	C	N	O	S	0	0
			449	281	87	79	2		

- Molecule 32 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	29	66	Total	C	N	O	S	0	0
			522	323	99	94	6		

- Molecule 33 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	30	56	Total	C	N	O	S	0	0
			444	269	94	80	1		

- Molecule 34 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
34	31	50	Total	C	N	O	0	0
			409	263	75	71		

- Molecule 35 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	32	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 36 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	33	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 37 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	34	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

- Molecule 38 is a RNA chain called truncated mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	V	14	Total	C	N	O	P	0	0
			306	138	64	91	13		

- Molecule 39 is a protein called Peptide chain release factor RF2.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Z	361	Total	C	N	O	S	0	0
			2844	1748	503	583	10		

- Molecule 40 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	B	218	Total	C	N	O	S	0	0
			1704	1081	305	311	7		

- Molecule 41 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	C	206	Total	C	N	O	S	0	0
			1624	1028	305	288	3		

- Molecule 42 is a protein called 30S ribosomal protein S4.

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

- Molecule 43 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	E	157	Total	C	N	O	S	0	0
			1156	719	218	213	6		

- Molecule 44 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	F	100	Total	C	N	O	S	0	0
			817	515	148	148	6		

- Molecule 45 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	G	151	Total	C	N	O	S	0	0
			1181	735	227	215	4		

- Molecule 46 is a protein called 30S ribosomal protein S8.

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

- Molecule 47 is a protein called 30S ribosomal protein S9.

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

- Molecule 48 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	J	98	Total	C	N	O	S	0	0
			786	493	150	142	1		

- Molecule 49 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	K	116	Total	C	N	O	S	0	0
			869	535	173	158	3		

- Molecule 50 is a protein called 30S ribosomal protein S12.

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

- Molecule 51 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	M	114	Total	C	N	O	S	0	0
			883	546	178	156	3		

- Molecule 52 is a protein called 30S ribosomal protein S14.

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

- Molecule 53 is a protein called 30S ribosomal protein S15.

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

- Molecule 54 is a protein called 30S ribosomal protein S16.

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

- Molecule 55 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	Q	80	Total	C	N	O	S	0	0
			648	411	121	113	3		

- Molecule 56 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	R	65	Total	C	N	O	S	0	0
			535	339	100	95	1		

- Molecule 57 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	S	79	Total	C	N	O	S	0	0
			637	408	120	107	2		

- Molecule 58 is a protein called 30S ribosomal protein S20.

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

- Molecule 59 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	U	65	Total	C	N	O	S	0	0
			544	335	117	91	1		

- Molecule 60 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
60	A	118	Total	Mg	0
			118	118	
60	01	221	Total	Mg	0
			221	221	
60	02	6	Total	Mg	0
			6	6	
60	X	5	Total	Mg	0
			5	5	
60	17	1	Total	Mg	0
			1	1	
60	19	1	Total	Mg	0
			1	1	

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Mol	Chain	Residues	Atoms		AltConf
60	30	1	Total 1	Mg 1	0
60	31	1	Total 1	Mg 1	0
60	34	1	Total 1	Mg 1	0
60	V	1	Total 1	Mg 1	0
60	W	3	Total 3	Mg 3	0
60	I	1	Total 1	Mg 1	0

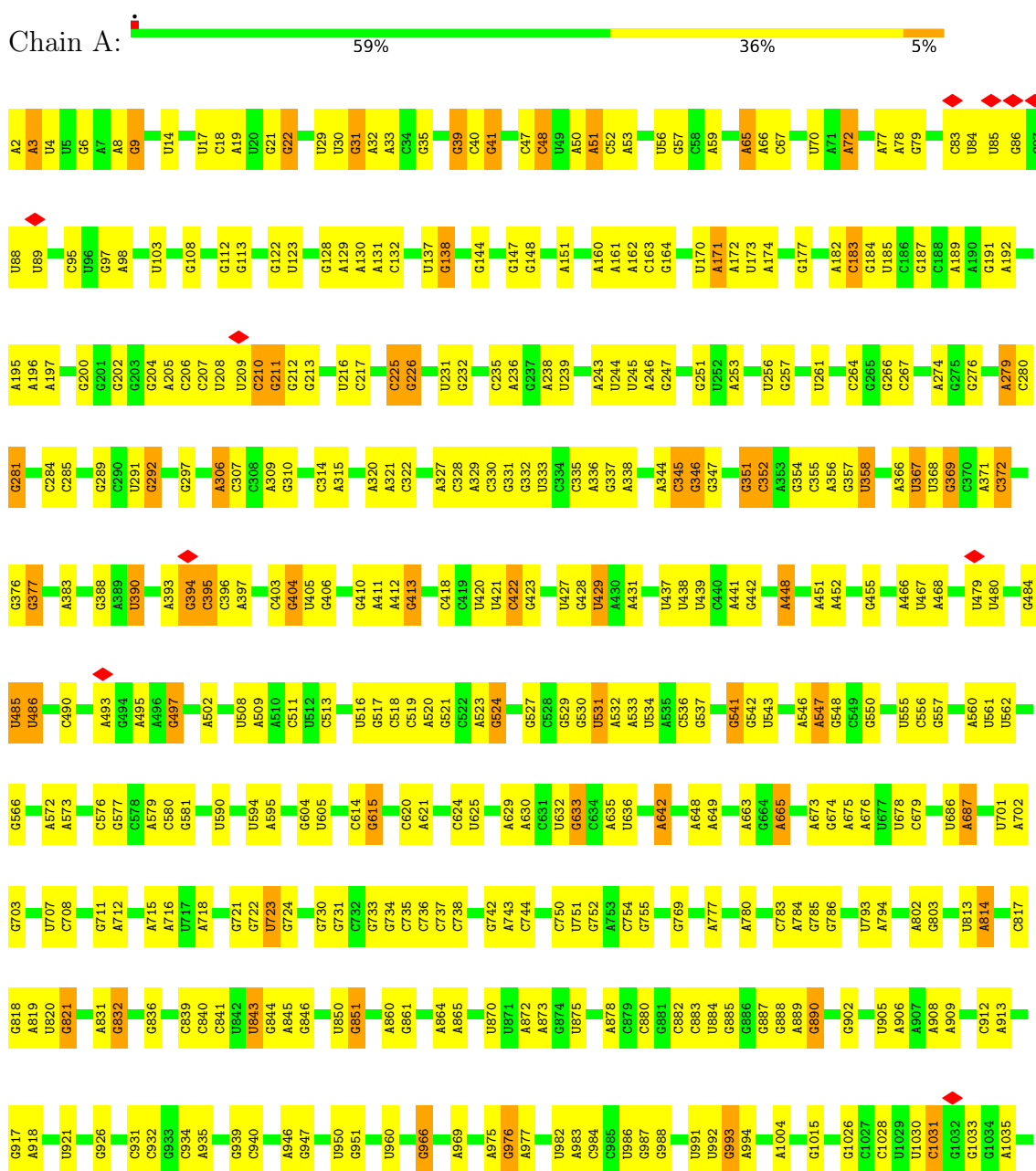
- Molecule 61 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
61	34	1	Total 1	Zn 1	0

### 3 Residue-property plots [i](#)

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.

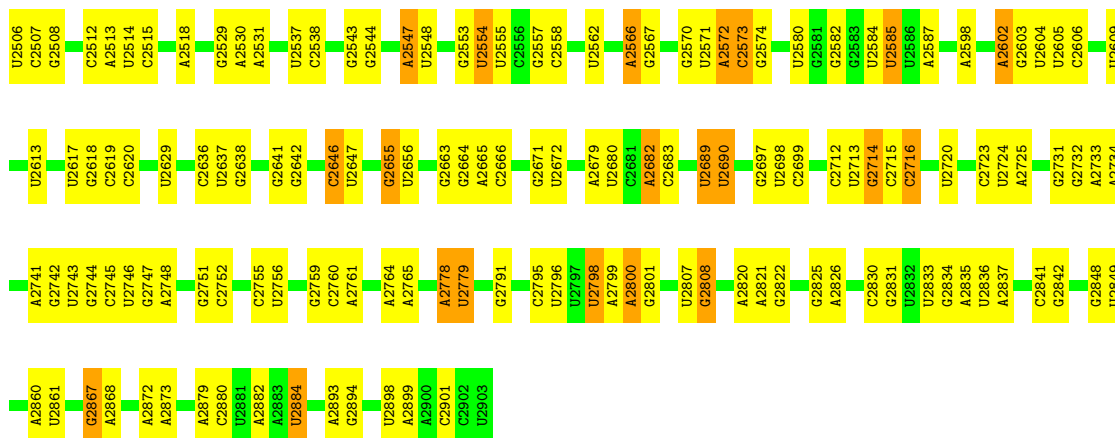
- Molecule 1: 16S ribosomal RNA



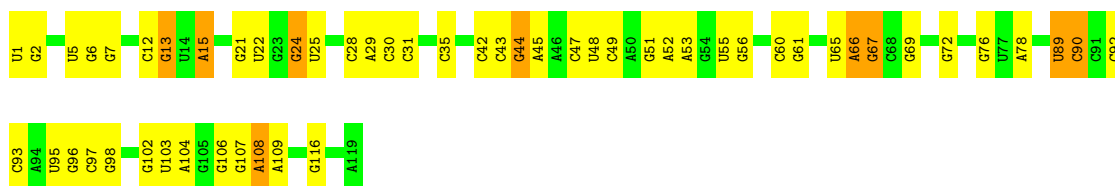




U1012	C1013	U1019	A1020	G1026	U1021	G1022	G1026	A1027	G1030	G1031	U1032	U1033	G1034	U1035	G1036	G1037	G1038	U1039	A1040	G1041	A1046	G1047	G1055	G1056	A1057	U1058	G1059	U1060	U1061	G1062	G1063	C1064	U1065	U1066	A1067	G1068	A1069	A1070	G1071	A1072	A1073	G1074	C1075	A1076	A1077	U1078	U1079	A1080	U1081	U1082	A1083	A1084	A1085
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C2222	A2225	U2229	G2230	G2231	U2231	C2232	G2233	G2238	G2239	U2240	A2241	G2242	U2243	U2244	U2245	G2246	A2247	C2248	U2249	G2250	U2257	C2258	C2261	A2266	A2267	A2268	G2269	C2271	A2281	C2282	G2283	G2286	A2287	U2291	U2292	G2293	C2294	C2295	U2296	A2297	U2298	U2299	G2304	U2305	A2309	G2388	U2390						
C2313	A2314	G2315	C2316	A2317	G2318	G2319	U2320	U2321	A2322	C2323	U2324	G2325	C2326	A2327	A2328	A2329	A2330	U2331	U2332	C2333	C2332	U2334	G2345	U2348	G2349	C2350	G2351	A2352	C2353	C2354	U2355	A2356	G2357	C2358	G2360	G2361	C2364	A2365	G2367	C2368	A2369	A2376	A2377	A2381	C2382	C2383	U2384	C2385	A2388	G2389	U2390		
G2391	A2392	C2393	C2394	U2402	C2403	U2404	G2405	A2406	U2423	G2428	G2429	A2430	U2431	A2432	U2441	U2448	U2449	A2450	A2451	G2455	C2456	U2457	G2458	C2462	C2466	C2467	A2468	A2469	C2475	A2476	U2477	A2478	U2479	G2485	C2486	G2487	G2488	U2491	U2492	U2493	G2494	C2498	G2502	A2503	U2504	G2505							



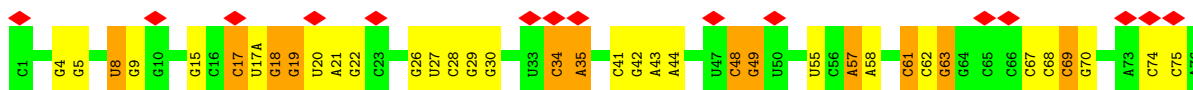
• Molecule 3: 5S ribosomal RNA



• Molecule 4: Alternative ribosome-rescue factor A



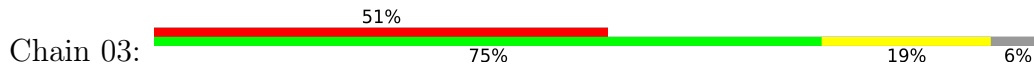
• Molecule 5: fMet-tRNA (P- and E-site)

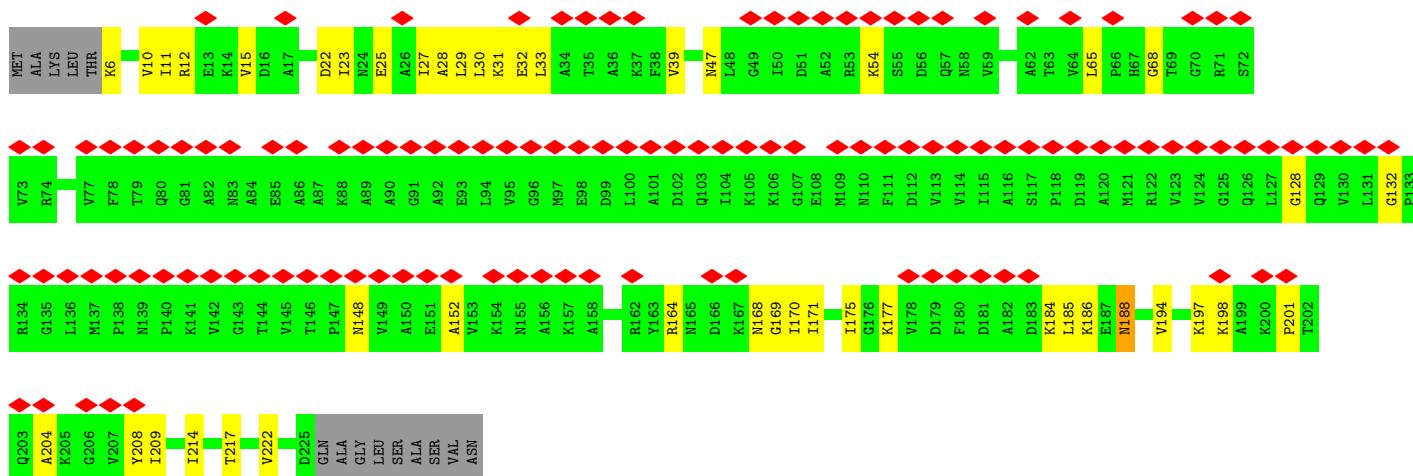


• Molecule 5: fMet-tRNA (P- and E-site)

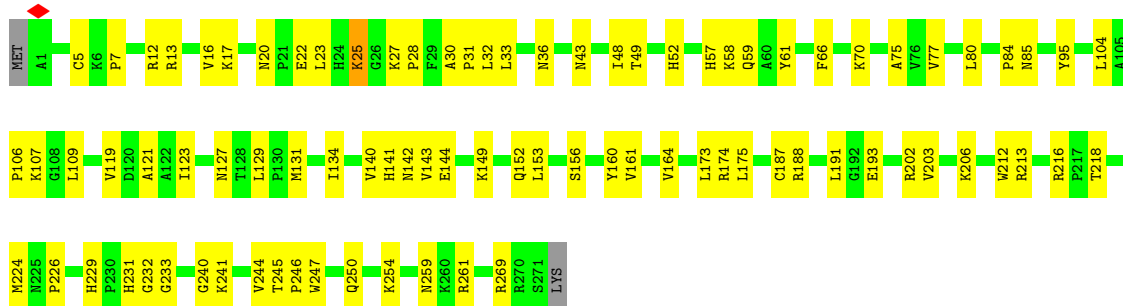


• Molecule 6: 50S ribosomal protein L1

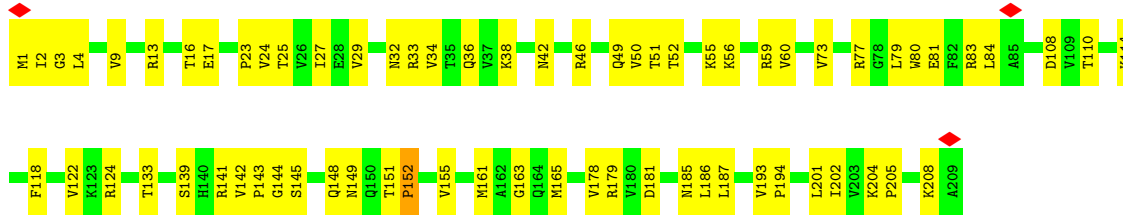




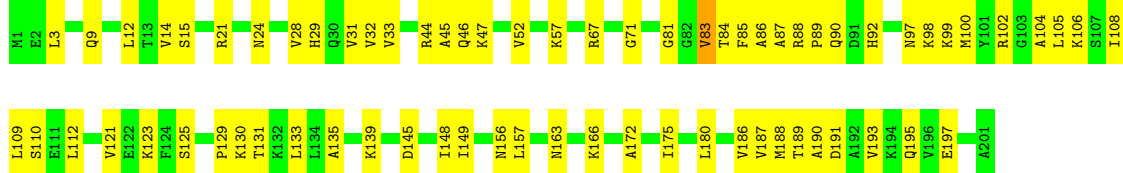
• Molecule 7: 50S ribosomal protein L2



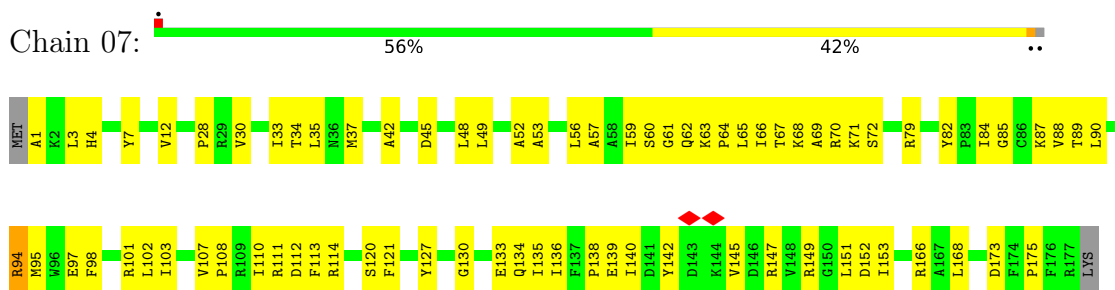
• Molecule 8: 50S ribosomal protein L3



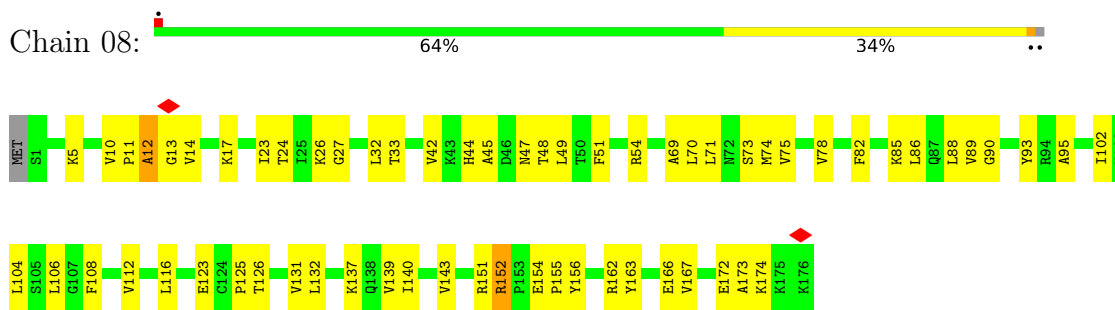
• Molecule 9: 50S ribosomal protein L4



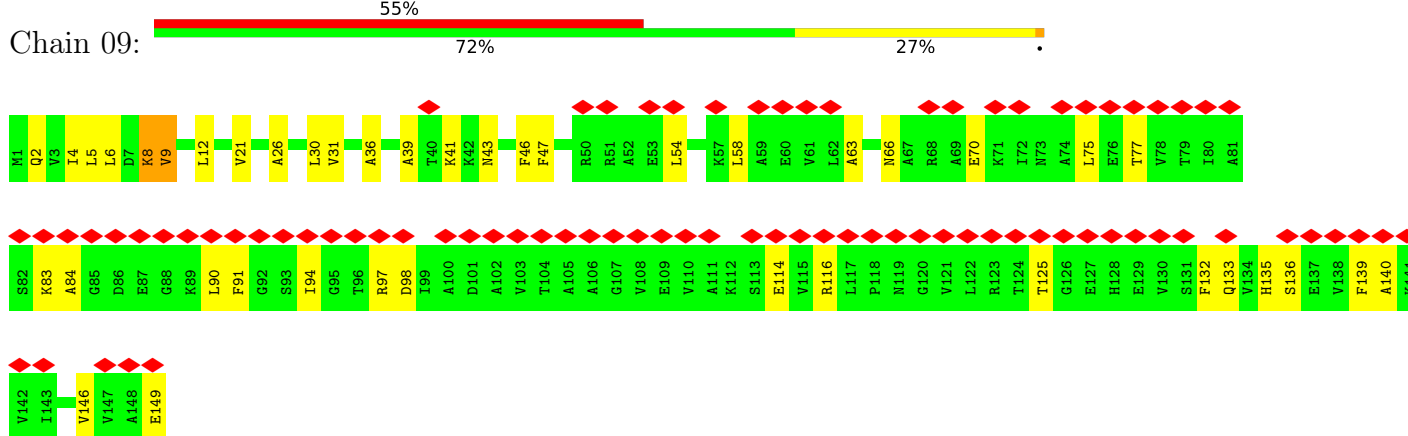
• Molecule 10: 50S ribosomal protein L5



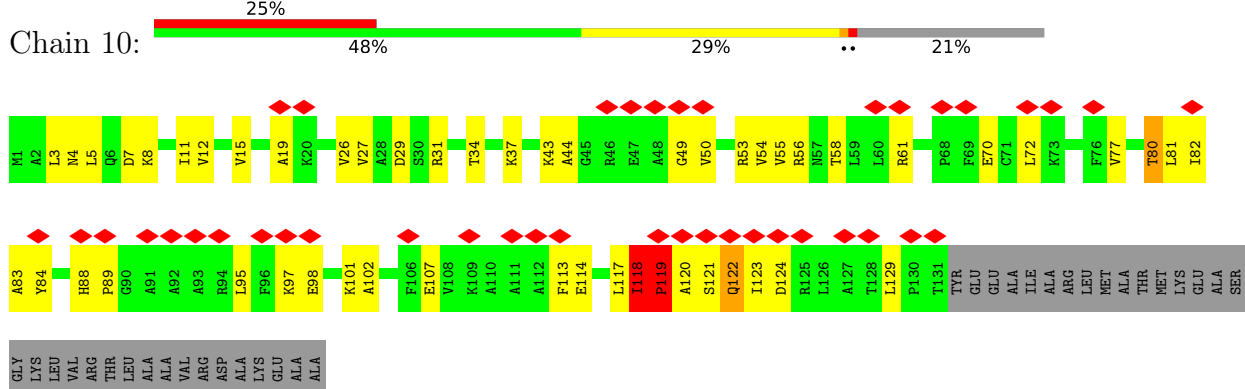
• Molecule 11: 50S ribosomal protein L6



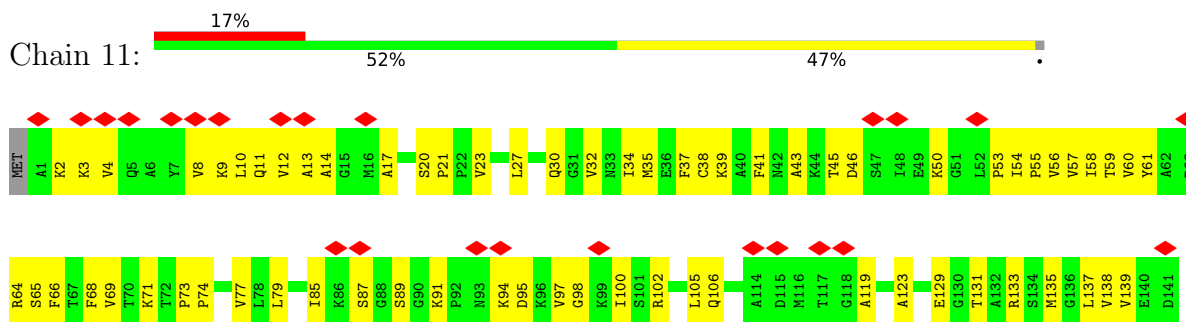
• Molecule 12: 50S ribosomal protein L9



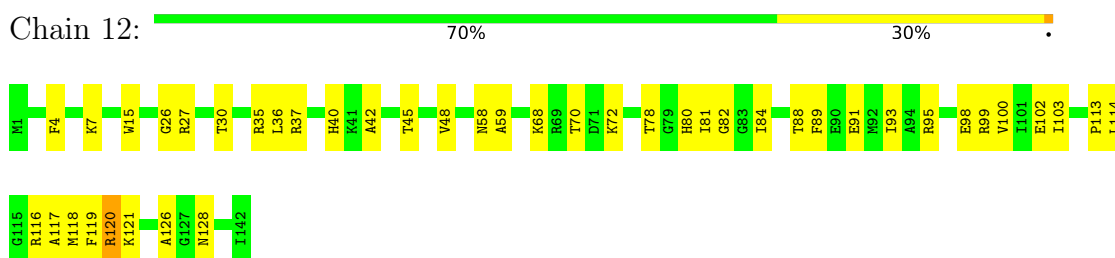
• Molecule 13: 50S ribosomal protein L10



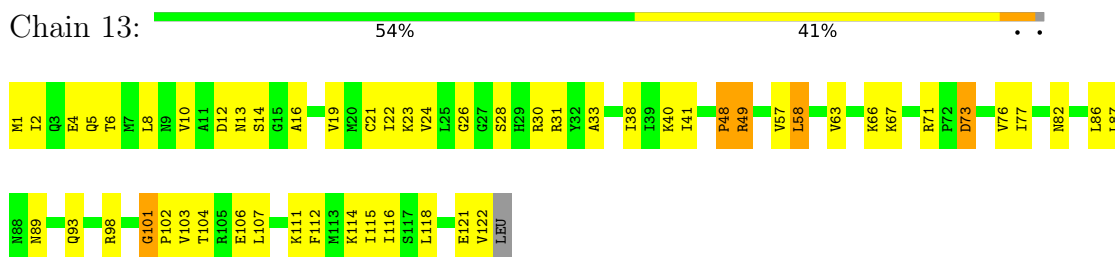
• Molecule 14: 50S ribosomal protein L11



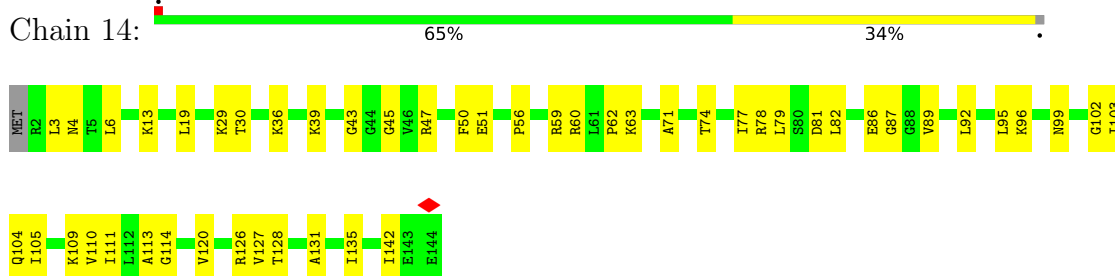
• Molecule 15: 50S ribosomal protein L13



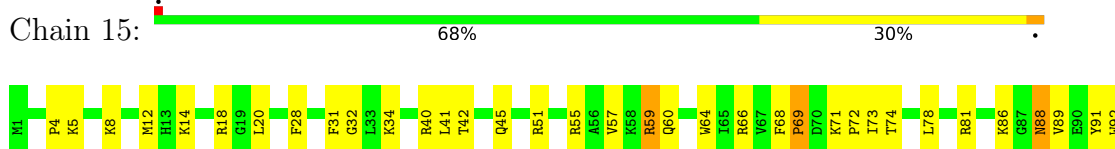
• Molecule 16: 50S ribosomal protein L14



• Molecule 17: 50S ribosomal protein L15

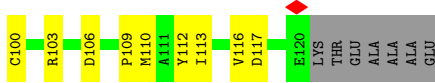


• Molecule 18: 50S ribosomal protein L16





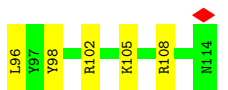
- Molecule 19: 50S ribosomal protein L17



- Molecule 20: 50S ribosomal protein L18



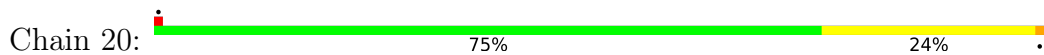
- Molecule 21: 50S ribosomal protein L19

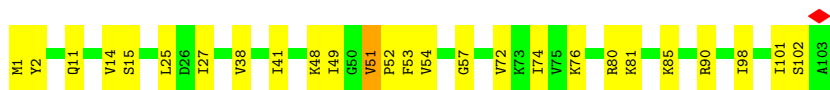


- Molecule 22: 50S ribosomal protein L20



- Molecule 23: 50S ribosomal protein L21

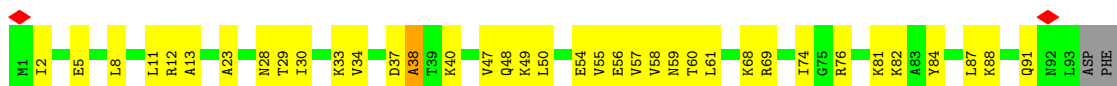




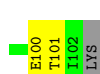
• Molecule 24: 50S ribosomal protein L22



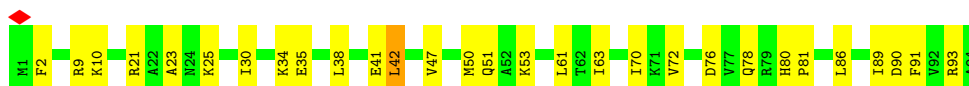
• Molecule 25: 50S ribosomal protein L23



• Molecule 26: 50S ribosomal protein L24



• Molecule 27: 50S ribosomal protein L25

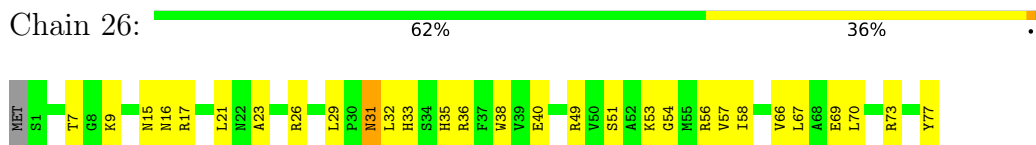


• Molecule 28: 50S ribosomal protein L27

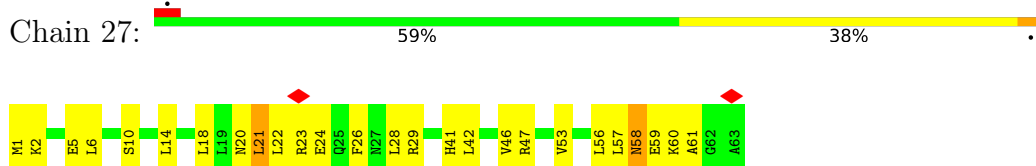




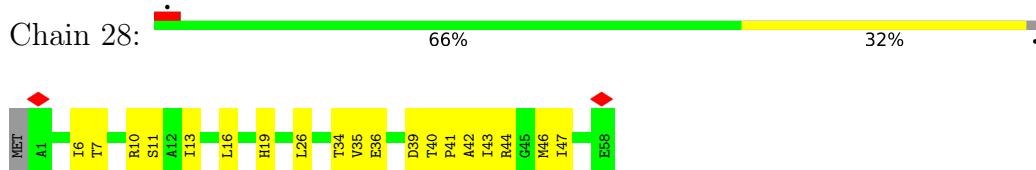
- Molecule 29: 50S ribosomal protein L28



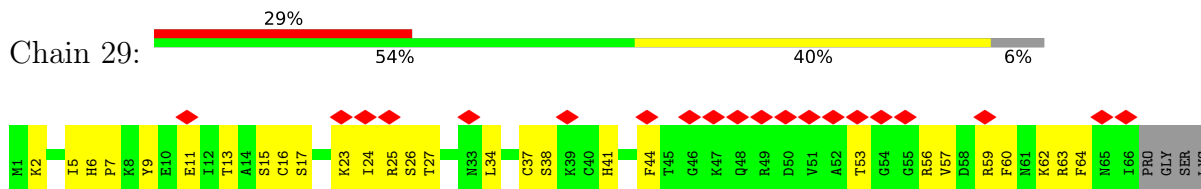
- Molecule 30: 50S ribosomal protein L29



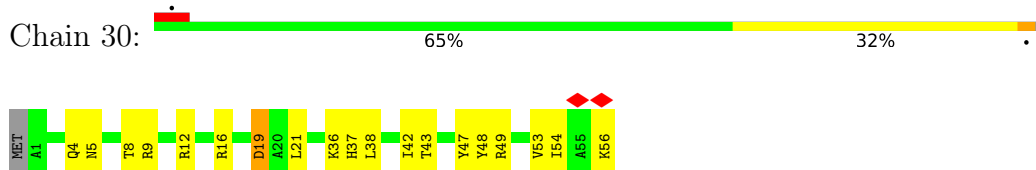
- Molecule 31: 50S ribosomal protein L30



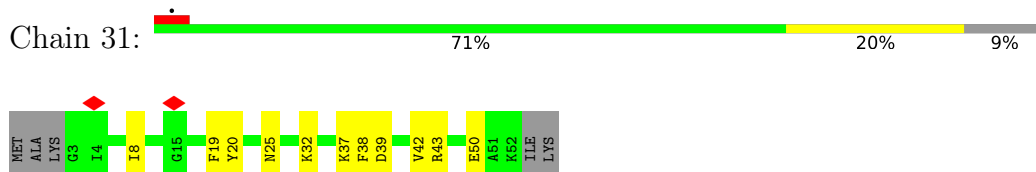
- Molecule 32: 50S ribosomal protein L31



- Molecule 33: 50S ribosomal protein L32

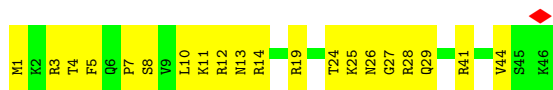


- Molecule 34: 50S ribosomal protein L33



- Molecule 35: 50S ribosomal protein L34

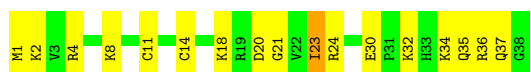




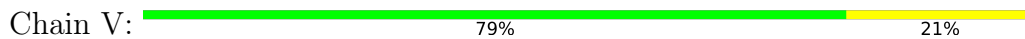
• Molecule 36: 50S ribosomal protein L35



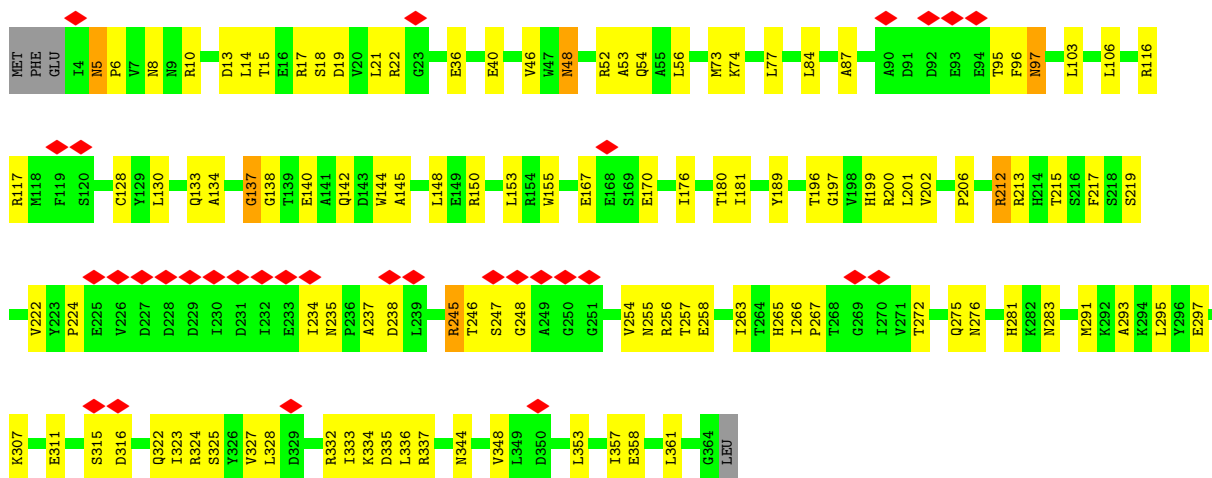
• Molecule 37: 50S ribosomal protein L36



• Molecule 38: truncated mRNA



• Molecule 39: Peptide chain release factor RF2



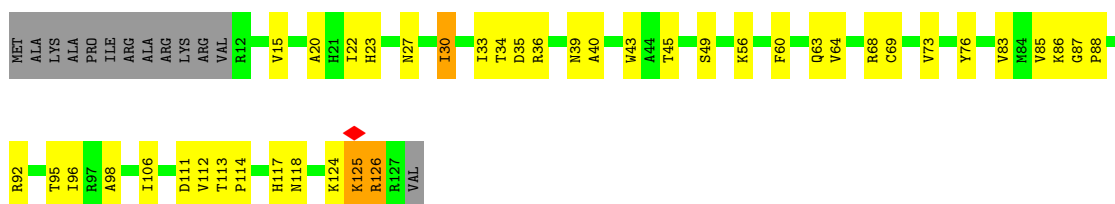
• Molecule 40: 30S ribosomal protein S2





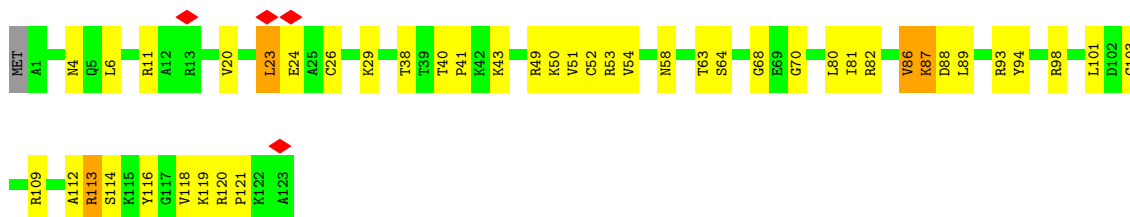


Chain K:  57% 30% 10%



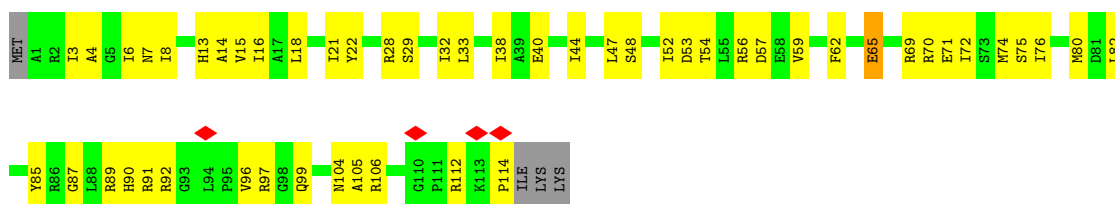
- Molecule 50: 30S ribosomal protein S12

Chain L:  64% 32% ..



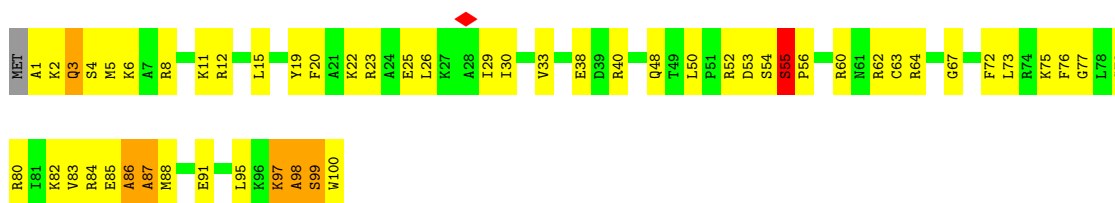
- Molecule 51: 30S ribosomal protein S13

Chain M:  53% 43% ..



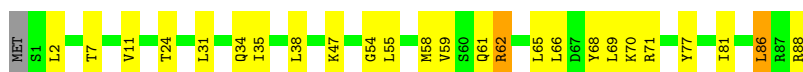
- Molecule 52: 30S ribosomal protein S14

Chain N:  47% 46% 6% ..

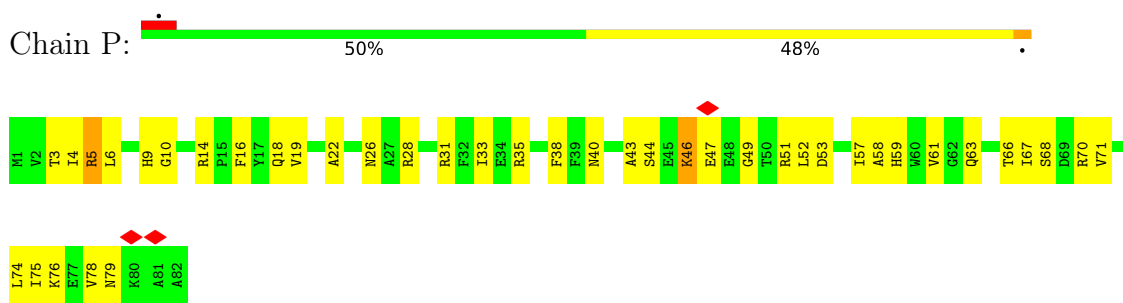


- Molecule 53: 30S ribosomal protein S15

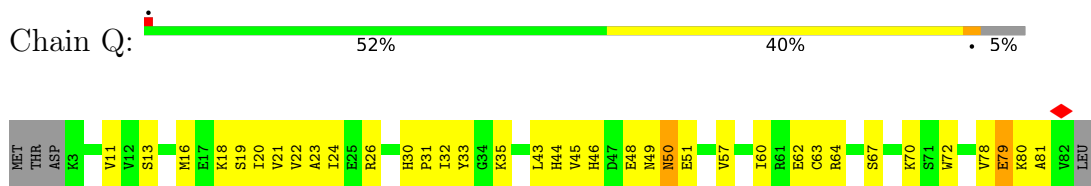
Chain O:  71% 26% ..



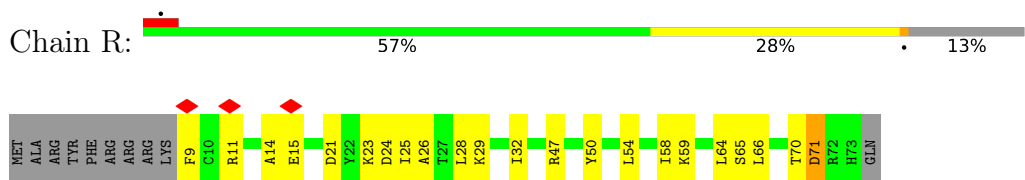
- Molecule 54: 30S ribosomal protein S16



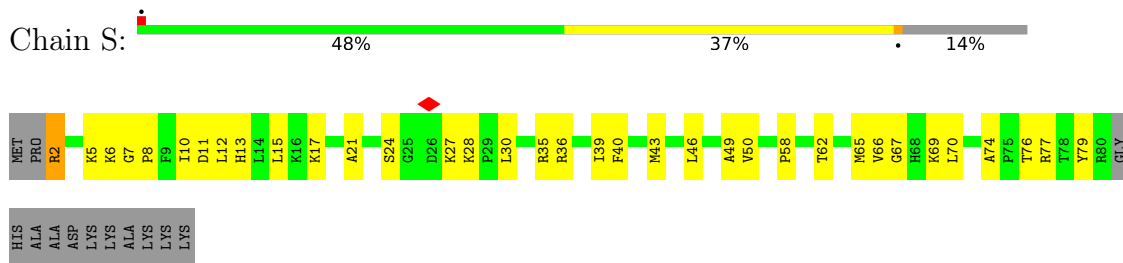
• Molecule 55: 30S ribosomal protein S17



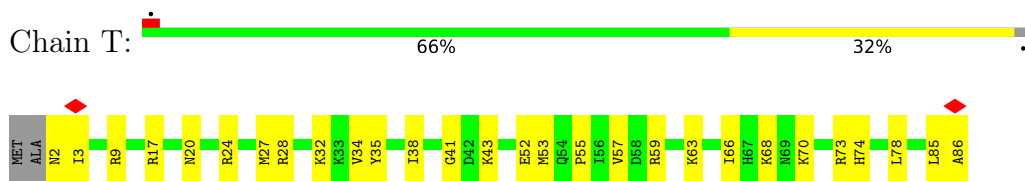
• Molecule 56: 30S ribosomal protein S18



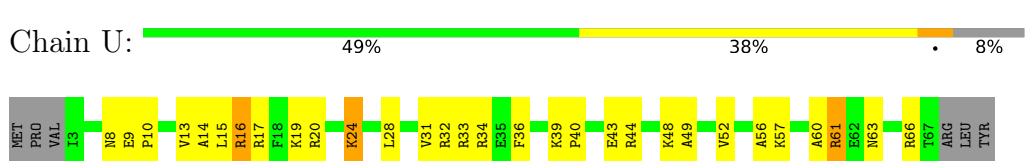
• Molecule 57: 30S ribosomal protein S19



• Molecule 58: 30S ribosomal protein S20



• Molecule 59: 30S ribosomal protein S21



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	96070	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	1.2	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	29000	Depositor
Image detector	DIRECT ELECTRON DE-20 (5k x 3k)	Depositor
Maximum map value	18.146	Depositor
Minimum map value	-6.484	Depositor
Average map value	-1.164	Depositor
Map value standard deviation	1.530	Depositor
Recommended contour level	2.5	Depositor
Map size ( $\text{\AA}$ )	388.80002, 388.80002, 388.80002	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	1.215, 1.215, 1.215	Depositor

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z  > 5$	RMSZ	$\# Z  > 5$
1	A	0.25	0/36963	0.65	0/57662
2	01	0.25	0/69797	0.65	1/108890 (0.0%)
3	02	0.26	0/2847	0.65	0/4440
4	Y	0.30	0/383	0.51	0/504
5	W	0.24	0/1832	0.64	0/2855
5	X	0.29	0/1811	0.66	0/2822
6	03	0.29	0/1361	0.57	0/1796
7	04	0.30	0/2121	0.61	0/2852
8	05	0.33	0/1586	0.60	0/2134
9	06	0.31	0/1571	0.59	0/2113
10	07	0.32	0/1434	0.56	0/1926
11	08	0.30	0/1343	0.60	0/1816
12	09	0.32	0/1122	0.64	0/1515
13	10	0.40	0/1001	0.93	3/1350 (0.2%)
14	11	0.32	0/1046	0.60	0/1410
15	12	0.31	0/1152	0.56	0/1551
16	13	0.32	0/947	0.63	1/1268 (0.1%)
17	14	0.31	0/1054	0.58	0/1403
18	15	0.33	0/1093	0.59	0/1460
19	16	0.32	0/973	0.57	0/1301
20	17	0.29	0/902	0.54	0/1209
21	18	0.31	0/929	0.56	0/1242
22	19	0.30	0/960	0.47	0/1278
23	20	0.33	0/829	0.64	1/1107 (0.1%)
24	21	0.29	0/864	0.59	0/1156
25	22	0.31	0/744	0.59	0/994
26	23	0.33	0/787	0.59	0/1051
27	24	0.31	0/766	0.53	0/1025
28	25	0.34	0/582	0.59	0/769
29	26	0.31	0/635	0.54	0/848
30	27	0.28	0/510	0.49	0/677
31	28	0.29	0/453	0.55	0/605



Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
32	29	0.34	0/531	0.56	0/709
33	30	0.30	0/450	0.57	0/599
34	31	0.33	0/416	0.54	0/554
35	32	0.32	0/380	0.57	0/498
36	33	0.30	0/513	0.58	0/676
37	34	0.23	0/303	0.40	0/397
38	V	0.20	0/345	0.60	0/538
39	Z	0.28	0/2884	0.49	0/3884
40	B	0.32	0/1735	0.58	1/2338 (0.0%)
41	C	0.30	0/1651	0.54	0/2225
42	D	0.29	0/1665	0.58	0/2227
43	E	0.33	0/1169	0.66	0/1573
44	F	0.33	0/835	0.71	2/1128 (0.2%)
45	G	0.29	0/1195	0.53	0/1602
46	H	0.29	0/989	0.56	0/1326
47	I	0.31	0/1034	0.63	0/1375
48	J	0.29	0/796	0.60	0/1077
49	K	0.32	0/885	0.59	1/1195 (0.1%)
50	L	0.32	0/969	0.68	0/1300
51	M	0.28	0/892	0.59	0/1193
52	N	0.37	0/817	0.73	3/1088 (0.3%)
53	O	0.28	0/722	0.50	0/964
54	P	0.34	0/659	0.60	0/884
55	Q	0.33	0/657	0.59	0/881
56	R	0.29	0/544	0.51	0/731
57	S	0.32	0/652	0.58	0/877
58	T	0.30	0/671	0.48	0/888
59	U	0.36	0/550	0.71	0/728
All	All	0.27	0/165307	0.63	13/246484 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
52	N	0	1

There are no bond length outliers.

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
13	10	118	ILE	C-N-CD	-18.15	80.67	120.60
13	10	118	ILE	C-N-CA	7.52	153.59	122.00
52	N	55	SER	N-CA-C	6.88	129.58	111.00
49	K	125	LYS	N-CA-C	6.75	129.21	111.00
40	B	16	GLY	N-CA-C	6.51	129.38	113.10
52	N	86	ALA	N-CA-C	-6.47	93.53	111.00
52	N	87	ALA	N-CA-C	6.29	127.99	111.00
13	10	119	PRO	CA-N-CD	-6.09	102.98	111.50
44	F	12	PRO	N-CA-C	5.74	127.03	112.10
44	F	93	LYS	N-CA-C	-5.18	97.00	111.00
23	20	51	VAL	N-CA-C	-5.03	97.43	111.00
16	13	48	PRO	N-CA-C	5.02	125.15	112.10
2	01	2177	C	N1-C1'-C2'	5.00	120.51	114.00

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
52	N	86	ALA	Peptide

## 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	33012	0	16618	477	0
2	01	62318	0	31345	788	0
3	02	2546	0	1292	50	0
4	Y	377	0	383	29	0
5	W	1640	0	837	11	0
5	X	1622	0	827	28	0
6	03	1353	0	1159	38	0
7	04	2082	0	2157	78	0
8	05	1565	0	1616	68	0
9	06	1552	0	1619	56	0
10	07	1410	0	1447	72	0
11	08	1323	0	1374	56	0
12	09	1111	0	1148	31	0
13	10	988	0	1025	47	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
14	11	1032	0	1088	56	0
15	12	1129	0	1162	44	0
16	13	938	0	1012	51	0
17	14	1045	0	1117	46	0
18	15	1074	0	1157	38	0
19	16	960	0	1000	47	0
20	17	892	0	923	39	0
21	18	917	0	965	41	0
22	19	947	0	1022	45	0
23	20	816	0	839	25	0
24	21	857	0	922	23	0
25	22	738	0	807	26	0
26	23	779	0	834	32	0
27	24	753	0	780	27	0
28	25	575	0	592	30	0
29	26	625	0	655	25	0
30	27	509	0	543	25	0
31	28	449	0	491	14	0
32	29	522	0	524	26	0
33	30	444	0	461	24	0
34	31	409	0	440	8	0
35	32	377	0	418	19	0
36	33	504	0	574	19	0
37	34	302	0	340	23	0
38	V	306	0	154	1	0
39	Z	2844	0	2739	113	0
40	B	1704	0	1732	77	0
41	C	1624	0	1699	50	0
42	D	1643	0	1710	82	0
43	E	1156	0	1199	55	0
44	F	817	0	808	36	0
45	G	1181	0	1240	45	0
46	H	979	0	1034	32	0
47	I	1022	0	1070	65	0
48	J	786	0	828	54	0
49	K	869	0	878	44	0
50	L	955	0	1019	42	0
51	M	883	0	944	52	0
52	N	805	0	847	63	0
53	O	714	0	737	19	0
54	P	649	0	666	39	0
55	Q	648	0	691	35	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
56	R	535	0	552	19	0
57	S	637	0	665	45	0
58	T	665	0	714	23	0
59	U	544	0	579	43	0
60	01	221	0	0	0	0
60	02	6	0	0	0	0
60	17	1	0	0	0	0
60	19	1	0	0	0	0
60	30	1	0	0	0	0
60	31	1	0	0	0	0
60	34	1	0	0	0	0
60	A	118	0	0	0	0
60	I	1	0	0	0	0
60	V	1	0	0	0	0
60	W	3	0	0	0	0
60	X	5	0	0	0	0
61	34	1	0	0	0	0
All	All	152819	0	104018	3184	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 12.

All (3184) 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)
2:01:45:G:H5''	2:01:46:G:H5'	1.26	1.14
1:A:291:U:H2'	1:A:292:G:H5''	1.31	1.12
13:10:117:LEU:C	13:10:119:PRO:HD2	1.71	1.10
1:A:376:G:H2'	1:A:377:G:H5''	1.35	1.07
51:M:3:ILE:HG12	51:M:7:ASN:HB2	1.25	1.07
5:W:13:C:H2'	5:W:14:A:H5''	1.36	1.06
7:04:20:ASN:HD22	7:04:23:LEU:HG	1.18	1.05
37:34:23:ILE:H	37:34:23:ILE:HD12	1.18	1.03
2:01:517:C:H2'	2:01:518:G:H5''	1.38	1.01
54:P:5:ARG:HE	54:P:22:ALA:HB3	1.23	1.01
1:A:516:U:H5	1:A:533:A:H62	1.08	1.01
1:A:405:U:H3'	1:A:406:G:H5'	1.43	1.00
52:N:23:ARG:HH12	52:N:50:LEU:HD21	1.28	0.98
16:13:121:GLU:HG2	16:13:122:VAL:HG23	1.46	0.97
47:I:56:MET:HE1	47:I:60:LEU:H	1.27	0.97
1:A:3:A:H5'	1:A:4:U:H5'	1.46	0.96

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:403:C:H2'	1:A:404:G:H5''	1.46	0.94
1:A:170:U:H2'	1:A:171:A:H5''	1.47	0.93
14:11:57:VAL:HB	14:11:69:VAL:HB	1.50	0.93
14:11:55:PRO:HG2	14:11:71:LYS:HB3	1.50	0.92
42:D:27:ILE:HG13	42:D:29:THR:H	1.33	0.92
12:09:9:VAL:HB	12:09:12:LEU:O	1.69	0.92
2:01:1668:A:H4'	2:01:1669:A:H5'	1.50	0.92
39:Z:246:THR:HG22	39:Z:247:SER:H	1.35	0.91
2:01:543:G:H2'	2:01:544:C:H5''	1.50	0.91
1:A:291:U:C2'	1:A:292:G:H5''	2.01	0.91
2:01:2334:U:H5'	20:17:12:THR:HB	1.50	0.91
7:04:77:VAL:HG21	7:04:109:LEU:HD11	1.53	0.91
1:A:1259:C:H3'	1:A:1260:G:H5''	1.51	0.90
1:A:614:C:H2'	1:A:615:G:H5''	1.53	0.90
2:01:855:G:H2'	2:01:856:G:H5''	1.50	0.90
10:07:35:LEU:HD11	10:07:151:LEU:HD23	1.54	0.89
24:21:10:ALA:HB1	24:21:46:LEU:HD21	1.54	0.89
1:A:357:G:H2'	1:A:358:U:H5''	1.55	0.89
54:P:40:ASN:ND2	54:P:43:ALA:HB2	1.88	0.88
10:07:140:ILE:HG23	10:07:145:VAL:HG11	1.55	0.88
2:01:2457:U:H5	2:01:2494:G:H1	1.22	0.88
13:10:119:PRO:HG2	13:10:121:SER:H	1.38	0.88
2:01:2331:G:H4'	28:25:39:THR:H	1.39	0.88
44:F:85:ILE:HG22	44:F:86:ARG:HG2	1.56	0.87
4:Y:3:ARG:HG3	39:Z:316:ASP:HB2	1.56	0.87
16:13:49:ARG:HD3	16:13:49:ARG:H	1.39	0.87
4:Y:28:ARG:HB2	39:Z:215:THR:OG1	1.73	0.87
14:11:91:LYS:HB3	14:11:94:LYS:HB2	1.56	0.87
54:P:5:ARG:NE	54:P:22:ALA:HB3	1.90	0.86
1:A:376:G:C2'	1:A:377:G:H5''	2.05	0.86
13:10:118:ILE:N	13:10:119:PRO:HD2	1.83	0.85
1:A:1306:A:N6	1:A:1331:G:H1'	1.92	0.84
5:X:57:A:H2'	5:X:58:A:H5'	1.57	0.84
26:23:51:LEU:H	26:23:51:LEU:HD12	1.41	0.84
25:22:28:ASN:ND2	25:22:91:GLN:HB3	1.92	0.84
5:W:47:U:H4'	5:W:48:C:H5''	1.59	0.84
19:16:2:ARG:HA	19:16:5:LYS:HD2	1.59	0.84
2:01:1807:G:H2'	2:01:1808:A:H5'	1.60	0.83
1:A:1030:U:H2'	1:A:1031:C:H5'	1.60	0.83
2:01:2848:G:O2'	2:01:2849:U:H5'	1.78	0.83
2:01:2720:U:H3	2:01:2873:A:H62	1.26	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:10:34:THR:HA	13:10:37:LYS:HE2	1.60	0.83
2:01:1020:A:H1'	2:01:1021:A:OP2	1.78	0.83
2:01:674:G:H5''	9:06:71:GLY:H	1.40	0.83
37:34:36:ARG:HG2	37:34:37:GLN:H	1.44	0.83
54:P:40:ASN:HD22	54:P:43:ALA:HB2	1.43	0.83
27:24:42:LEU:HD12	27:24:47:VAL:HG21	1.60	0.83
52:N:97:LYS:HG3	52:N:98:ALA:H	1.44	0.83
1:A:40:C:H2'	1:A:41:G:H5''	1.57	0.82
52:N:8:ARG:HB3	52:N:12:ARG:HH12	1.44	0.82
22:19:59:LEU:HD21	22:19:63:ARG:HE	1.43	0.82
41:C:39:ARG:HH12	52:N:91:GLU:HG2	1.44	0.82
7:04:25:LYS:H	7:04:25:LYS:HD3	1.43	0.81
8:05:46:ARG:HB2	8:05:84:LEU:HD12	1.60	0.81
35:32:1:MET:HB2	35:32:3:ARG:HH22	1.44	0.81
10:07:45:ASP:HB2	10:07:48:LEU:HD13	1.61	0.81
1:A:1124:G:H5''	48:J:37:ARG:HG3	1.63	0.81
2:01:955:U:H5	2:01:962:G:H1	1.27	0.81
47:I:54:VAL:HG11	47:I:93:LEU:HG	1.63	0.81
1:A:850:U:H2'	1:A:851:G:H5''	1.61	0.80
2:01:1727:C:H2'	2:01:1728:C:H5'	1.61	0.80
5:W:13:C:C2'	5:W:14:A:H5''	2.12	0.80
18:15:42:THR:HG22	18:15:93:VAL:HG12	1.64	0.80
1:A:1410:A:H4'	4:Y:8:LYS:HA	1.62	0.80
1:A:357:G:C2'	1:A:358:U:H5''	2.11	0.80
49:K:23:HIS:HB3	49:K:30:ILE:HG23	1.64	0.80
55:Q:11:VAL:HG11	55:Q:20:ILE:HD11	1.64	0.80
56:R:11:ARG:HG3	56:R:14:ALA:HB3	1.64	0.80
40:B:56:LEU:HD21	40:B:216:VAL:HG13	1.64	0.79
1:A:718:A:H5'	49:K:118:ASN:HB2	1.64	0.79
1:A:151:A:H62	1:A:170:U:H3	1.29	0.79
40:B:33:ALA:HB2	40:B:39:ILE:HG13	1.64	0.79
37:34:1:MET:HA	37:34:34:LYS:O	1.82	0.79
17:14:110:VAL:HB	17:14:127:VAL:HG12	1.63	0.79
1:A:376:G:H5''	54:P:5:ARG:HB2	1.63	0.79
15:12:117:ALA:HA	15:12:120:ARG:HE	1.46	0.79
7:04:16:VAL:HB	7:04:203:VAL:HG22	1.65	0.79
2:01:1716:U:H3	2:01:1744:A:H62	1.29	0.78
1:A:14:U:H5	4:Y:41:ARG:HE	1.30	0.78
2:01:2553:G:H3'	2:01:2554:U:H5''	1.65	0.78
9:06:112:LEU:HD13	9:06:186:VAL:HG21	1.65	0.78
18:15:60:GLN:HE21	18:15:108:VAL:HG12	1.48	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:J:11:LYS:HB2	48:J:97:ASP:HB3	1.66	0.78
24:21:82:MET:HB2	24:21:98:LYS:HB2	1.64	0.78
18:15:64:TRP:HB2	18:15:104:GLU:HG3	1.64	0.78
1:A:484:G:H4'	1:A:485:U:H5'	1.64	0.78
10:07:114:ARG:HG3	51:M:70:ARG:HH22	1.48	0.78
2:01:475:C:H4'	2:01:510:C:H5'	1.66	0.78
2:01:74:A:H4'	2:01:75:G:H5''	1.64	0.77
2:01:517:C:C2'	2:01:518:G:H5''	2.12	0.77
2:01:2562:U:H1'	16:13:23:LYS:NZ	2.00	0.77
39:Z:248:GLY:HA3	39:Z:255:ASN:HD21	1.47	0.77
2:01:2807:U:H3'	2:01:2808:G:H5''	1.64	0.77
51:M:16:ILE:H	51:M:16:ILE:HD12	1.48	0.77
1:A:1432:G:H1'	1:A:1468:A:H62	1.49	0.77
1:A:170:U:C2'	1:A:171:A:H5''	2.14	0.77
14:11:4:VAL:HA	14:11:59:THR:HG21	1.67	0.77
1:A:1279:G:H5''	48:J:9:ARG:NH1	2.00	0.77
2:01:855:G:C2'	2:01:856:G:H5''	2.14	0.77
2:01:1081:U:H4'	14:11:123:ALA:HB1	1.64	0.76
1:A:403:C:C2'	1:A:404:G:H5''	2.14	0.76
13:10:117:LEU:O	13:10:119:PRO:HD2	1.84	0.76
26:23:81:ARG:HD2	26:23:96:LYS:HD2	1.65	0.76
46:H:6:ILE:HG12	46:H:31:LEU:HD23	1.66	0.76
48:J:57:VAL:HG22	48:J:58:ASN:H	1.50	0.76
51:M:3:ILE:HD11	51:M:21:ILE:HD11	1.66	0.76
1:A:1297:G:H1'	1:A:1298:U:OP2	1.86	0.76
42:D:27:ILE:HG13	42:D:28:ASP:H	1.50	0.76
54:P:46:LYS:H	54:P:46:LYS:HD2	1.50	0.76
6:03:39:VAL:HG22	6:03:177:LYS:HD3	1.66	0.76
2:01:1936:A:H2	2:01:1943:U:H3	1.32	0.76
1:A:845:A:H2'	56:R:9:PHE:HD2	1.50	0.76
2:01:1521:G:H3'	2:01:1522:A:H5''	1.68	0.76
13:10:88:HIS:HB2	13:10:89:PRO:HD3	1.68	0.76
44:F:91:ARG:HG2	44:F:92:THR:H	1.47	0.76
11:08:49:LEU:HD12	11:08:71:LEU:HD21	1.67	0.76
10:07:33:ILE:HB	10:07:90:LEU:HB2	1.67	0.75
48:J:76:ILE:HG23	48:J:78:GLU:OE2	1.84	0.75
52:N:55:SER:HB3	52:N:56:PRO:HD3	1.69	0.75
1:A:420:U:H2'	1:A:422:C:O4'	1.87	0.75
14:11:34:ILE:HD12	14:11:35:MET:H	1.51	0.75
1:A:225:C:H2'	1:A:226:G:H5''	1.67	0.75
43:E:80:LEU:HD13	43:E:122:VAL:HG11	1.68	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:05:13:ARG:HH22	21:18:74:GLN:NE2	1.85	0.75
14:11:74:PRO:HG2	14:11:77:VAL:HG22	1.67	0.74
18:15:4:PRO:HG3	18:15:68:PHE:HE2	1.52	0.74
15:12:37:ARG:HG3	15:12:118:MET:HE3	1.69	0.74
32:29:59:ARG:HH21	32:29:62:LYS:HB3	1.52	0.74
2:01:17:G:H4'	22:19:24:TYR:HE1	1.51	0.74
2:01:543:G:C2'	2:01:544:C:H5''	2.16	0.74
42:D:104:MET:HE2	42:D:170:LEU:HD22	1.68	0.74
43:E:88:HIS:NE2	43:E:137:ARG:HD2	2.02	0.74
59:U:15:LEU:HA	59:U:17:ARG:HH12	1.52	0.74
10:07:138:PRO:HG2	10:07:139:GLU:OE2	1.88	0.74
50:L:109:ARG:HB3	50:L:118:VAL:HG21	1.68	0.74
1:A:769:G:H4'	1:A:1513:A:H4'	1.69	0.74
2:01:906:U:H2'	2:01:907:G:H5''	1.70	0.74
40:B:99:MET:HA	40:B:106:VAL:HG21	1.68	0.74
59:U:36:PHE:CD1	59:U:39:LYS:HD2	2.23	0.74
3:02:66:A:H5''	3:02:67:G:OP1	1.88	0.74
1:A:1279:G:H5''	48:J:9:ARG:HH12	1.53	0.74
2:01:974:G:H1'	2:01:975:A:C8	2.23	0.73
2:01:1664:A:H61	2:01:1996:C:H42	1.33	0.73
20:17:25:ARG:HH12	20:17:44:GLY:HA2	1.53	0.73
59:U:16:ARG:HH21	59:U:19:LYS:HG2	1.52	0.73
50:L:54:VAL:HG21	50:L:81:ILE:HD11	1.69	0.73
16:13:104:THR:HG22	16:13:106:GLU:H	1.53	0.73
42:D:10:LEU:HD13	42:D:62:ARG:HD2	1.70	0.73
43:E:111:ARG:O	43:E:115:GLU:HG2	1.88	0.73
8:05:4:LEU:HD11	8:05:29:VAL:HG11	1.70	0.73
25:22:69:ARG:HG2	25:22:74:ILE:HG22	1.69	0.73
42:D:100:VAL:HG21	42:D:136:VAL:HG21	1.70	0.73
55:Q:46:HIS:HB2	55:Q:70:LYS:NZ	2.03	0.73
11:08:132:LEU:HD23	11:08:132:LEU:H	1.54	0.73
19:16:1:MET:O	19:16:2:ARG:HG3	1.89	0.73
55:Q:31:PRO:HG2	55:Q:32:ILE:HD12	1.71	0.73
9:06:88:ARG:HB3	9:06:89:PRO:HD2	1.69	0.73
48:J:52:LEU:HD21	48:J:59:LYS:HD3	1.70	0.73
2:01:2048:G:H2'	2:01:2049:G:H5''	1.71	0.72
47:I:11:ARG:HA	47:I:105:ARG:HH12	1.54	0.72
25:22:11:LEU:HD12	25:22:50:LEU:HD23	1.71	0.72
26:23:65:GLN:HB3	26:23:68:ASN:ND2	2.04	0.72
2:01:300:A:OP2	26:23:96:LYS:HD3	1.88	0.72
21:18:40:GLN:HG2	21:18:41:ALA:H	1.54	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:Z:117:ARG:HH22	39:Z:357:ILE:HG22	1.55	0.72
1:A:78:A:H2'	1:A:79:G:H5'	1.71	0.72
2:01:1140:C:H5'	15:12:26:GLY:HA3	1.72	0.72
2:01:1141:U:H4'	2:01:1142:A:O4'	1.88	0.72
2:01:713:G:H21	2:01:718:A:H62	1.35	0.72
37:34:18:LYS:HE2	37:34:21:GLY:HA2	1.71	0.72
40:B:163:ILE:HG23	40:B:185:ILE:HD11	1.69	0.72
52:N:23:ARG:NH1	52:N:50:LEU:HD21	2.05	0.72
2:01:1031:G:H5''	37:34:8:LYS:HE3	1.72	0.72
25:22:56:GLU:HG2	25:22:57:VAL:HG23	1.70	0.72
59:U:32:ARG:HG3	59:U:33:ARG:HG2	1.71	0.72
20:17:40:ILE:HG12	20:17:47:VAL:HG12	1.72	0.71
6:03:23:ILE:HD12	6:03:186:LYS:HG3	1.70	0.71
11:08:152:ARG:H	11:08:152:ARG:HD2	1.54	0.71
1:A:112:G:H21	1:A:354:G:H5'	1.55	0.71
23:20:49:ILE:HD12	23:20:52:PRO:HA	1.71	0.71
48:J:8:ILE:HD13	48:J:76:ILE:HD13	1.71	0.71
1:A:614:C:C2'	1:A:615:G:H5''	2.19	0.71
41:C:107:LYS:HD2	41:C:110:LEU:HD22	1.72	0.71
8:05:51:THR:HB	8:05:79:LEU:HD23	1.70	0.71
48:J:19:ASP:HA	48:J:22:THR:HG22	1.73	0.71
1:A:1348:U:H4'	47:I:121:ARG:HD2	1.72	0.71
9:06:44:ARG:NH2	9:06:87:ALA:HB3	2.06	0.71
41:C:110:LEU:HD21	41:C:203:LYS:HD3	1.73	0.71
57:S:5:LYS:HG3	57:S:6:LYS:HD3	1.73	0.71
1:A:780:A:H5''	49:K:124:LYS:HE3	1.73	0.71
1:A:1330:U:H4'	51:M:22:TYR:CE1	2.26	0.71
2:01:1074:G:H2'	2:01:1075:C:H4'	1.73	0.71
1:A:9:G:H5'	43:E:107:GLY:HA3	1.73	0.70
3:02:43:C:H4'	10:07:62:GLN:NE2	2.06	0.70
52:N:63:CYS:HB3	52:N:67:GLY:H	1.55	0.70
2:01:2508:G:H1	2:01:2580:U:H5	1.39	0.70
13:10:56:ARG:HD2	13:10:81:LEU:HB2	1.73	0.70
1:A:40:C:C2'	1:A:41:G:H5''	2.21	0.70
10:07:79:ARG:HG2	10:07:82:TYR:CE2	2.26	0.70
2:01:2356:U:O3'	28:25:16:ARG:HD3	1.92	0.70
36:33:32:LEU:HD23	36:33:35:LYS:HD2	1.73	0.70
2:01:12:U:O2	2:01:12:U:H2'	1.92	0.70
2:01:119:A:H4'	2:01:120:U:H5'	1.74	0.70
7:04:106:PRO:HD2	7:04:109:LEU:HD22	1.73	0.69
25:22:28:ASN:HD21	25:22:91:GLN:HB3	1.54	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:B:156:LEU:HD23	40:B:156:LEU:H	1.56	0.69
2:01:1059:G:H5'	14:11:71:LYS:HE3	1.75	0.69
7:04:59:GLN:HE21	7:04:84:PRO:HB2	1.57	0.69
12:09:75:LEU:HD23	12:09:75:LEU:H	1.58	0.69
8:05:151:THR:OG1	8:05:152:PRO:HD3	1.93	0.69
49:K:88:PRO:HG3	59:U:28:LEU:HD13	1.75	0.69
1:A:1319:A:H5''	57:S:69:LYS:HE3	1.73	0.69
2:01:2054:A:H2'	33:30:4:GLN:HE21	1.58	0.69
13:10:8:LYS:HE2	13:10:8:LYS:HA	1.75	0.69
40:B:46:VAL:HB	40:B:47:PRO:HD3	1.75	0.69
7:04:121:ALA:HB1	7:04:127:ASN:HD22	1.57	0.69
16:13:13:ASN:HB2	16:13:98:ARG:HB2	1.74	0.69
33:30:8:THR:HG22	33:30:9:ARG:H	1.56	0.69
42:D:89:LEU:O	42:D:93:LEU:HD13	1.93	0.69
1:A:412:A:H3'	1:A:413:G:H5''	1.74	0.68
1:A:850:U:C2'	1:A:851:G:H5''	2.23	0.68
5:X:18:G:H2'	5:X:19:G:H4'	1.73	0.68
59:U:9:GLU:HB3	59:U:10:PRO:HD3	1.74	0.68
10:07:134:GLN:HG2	10:07:140:ILE:HG12	1.75	0.68
1:A:1100:C:OP2	40:B:94:ARG:HG2	1.94	0.68
10:07:142:TYR:HA	10:07:145:VAL:HG22	1.75	0.68
6:03:30:LEU:HD22	6:03:214:ILE:HD13	1.76	0.68
24:21:6:LYS:HE3	24:21:8:ARG:HD2	1.74	0.68
37:34:36:ARG:HD3	37:34:37:GLN:HG3	1.74	0.68
39:Z:238:ASP:HA	39:Z:266:ILE:HD12	1.76	0.68
32:29:34:LEU:HD23	32:29:34:LEU:H	1.57	0.68
1:A:1196:A:H1'	4:Y:34:LYS:HD3	1.75	0.68
55:Q:46:HIS:HB2	55:Q:70:LYS:HZ3	1.58	0.68
44:F:11:HIS:CE1	44:F:83:ALA:HA	2.29	0.68
2:01:511:U:H2'	2:01:512:G:H5'	1.76	0.67
2:01:704:G:H1'	2:01:727:A:H61	1.58	0.67
1:A:1124:G:H4'	48:J:40:ILE:HD11	1.76	0.67
2:01:973:A:H5''	23:20:81:LYS:HD2	1.76	0.67
7:04:129:LEU:HD12	7:04:129:LEU:O	1.94	0.67
16:13:71:ARG:HD3	16:13:77:ILE:HD11	1.76	0.67
23:20:48:LYS:HG2	23:20:49:ILE:H	1.59	0.67
2:01:2715:C:H2'	2:01:2716:C:H5''	1.76	0.67
39:Z:117:ARG:HH12	39:Z:361:LEU:HD13	1.59	0.67
42:D:60:VAL:HG21	42:D:199:ILE:HD11	1.76	0.67
1:A:624:C:H4'	54:P:10:GLY:HA2	1.75	0.67
1:A:1432:G:H1'	1:A:1468:A:N6	2.08	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:08:17:LYS:HB2	11:08:17:LYS:HZ2	1.58	0.67
39:Z:52:ARG:HH12	39:Z:56:LEU:HD22	1.59	0.67
17:14:103:ILE:HD12	17:14:104:GLN:N	2.09	0.67
2:01:704:G:H1'	2:01:727:A:N6	2.09	0.67
5:X:29:G:H2'	5:X:30:G:O4'	1.94	0.67
14:11:87:SER:HB3	14:11:97:VAL:HG22	1.77	0.67
45:G:64:ALA:HA	45:G:67:ASN:HD22	1.58	0.67
47:I:57:VAL:HG23	47:I:58:GLU:H	1.59	0.67
21:18:36:LYS:HE2	21:18:36:LYS:HA	1.75	0.67
29:26:15:ASN:HD22	29:26:23:ALA:HB1	1.60	0.67
46:H:10:LEU:HD22	46:H:74:ILE:HD11	1.76	0.67
8:05:1:MET:HG3	8:05:205:PRO:HG2	1.77	0.67
31:28:26:LEU:HD11	31:28:46:MET:HB3	1.77	0.67
37:34:34:LYS:NZ	37:34:34:LYS:HB3	2.09	0.67
52:N:20:PHE:HE2	52:N:54:SER:HB3	1.60	0.66
11:08:70:LEU:O	11:08:70:LEU:HD23	1.95	0.66
13:10:11:ILE:O	13:10:15:VAL:HG23	1.96	0.66
37:34:36:ARG:HG2	37:34:37:GLN:N	2.11	0.66
47:I:48:ARG:HA	47:I:51:LEU:HD12	1.78	0.66
14:11:11:GLN:HB2	14:11:56:VAL:HG12	1.76	0.66
2:01:2177:C:O2	2:01:2177:C:H2'	1.93	0.66
7:04:70:LYS:HB2	7:04:70:LYS:NZ	2.10	0.66
11:08:44:HIS:HA	11:08:49:LEU:HD23	1.77	0.66
2:01:1142:A:H4'	15:12:27:ARG:NH2	2.10	0.66
24:21:4:ILE:HG22	24:21:106:VAL:HG22	1.76	0.66
2:01:161:A:H3'	2:01:162:U:H5''	1.77	0.66
2:01:2715:C:C3'	2:01:2716:C:H5''	2.26	0.66
16:13:112:PHE:HA	16:13:115:ILE:HD13	1.78	0.66
53:O:61:GLN:O	53:O:65:LEU:HD23	1.96	0.66
1:A:225:C:C2'	1:A:226:G:H5''	2.25	0.66
2:01:2297:A:N6	2:01:2319:G:H1'	2.11	0.66
14:11:30:GLN:HB3	14:11:64:ARG:NH1	2.09	0.66
48:J:6:ILE:HG13	48:J:76:ILE:HB	1.78	0.66
53:O:24:THR:HG22	53:O:65:LEU:HD12	1.78	0.66
5:X:41:C:H2'	5:X:42:G:H8	1.60	0.66
5:X:62:C:H3'	5:X:63:G:H5''	1.77	0.66
40:B:15:PHE:H	40:B:15:PHE:HD1	1.43	0.66
57:S:66:VAL:HG23	57:S:67:GLY:N	2.11	0.66
39:Z:307:LYS:NZ	39:Z:307:LYS:HB2	2.11	0.66
2:01:1476:U:H3	2:01:1515:A:H62	1.43	0.65
25:22:13:ALA:HB3	25:22:33:LYS:HD3	1.77	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:I:46:VAL:HG21	47:I:75:ALA:HB1	1.78	0.65
52:N:82:LYS:HA	52:N:85:GLU:HB3	1.78	0.65
1:A:632:U:H3'	1:A:633:G:H5'	1.78	0.65
1:A:225:C:C3'	1:A:226:G:H5''	2.26	0.65
2:O1:2267:A:H5''	2:O1:2268:A:H5'	1.78	0.65
16:13:26:GLY:HA3	16:13:30:ARG:HH11	1.62	0.65
57:S:43:MET:O	57:S:46:LEU:HD13	1.96	0.65
2:O1:45:G:C5'	2:O1:46:G:H5'	2.16	0.65
50:L:98:ARG:HB2	50:L:116:TYR:HA	1.78	0.65
1:A:9:G:H5'	43:E:107:GLY:CA	2.26	0.65
24:21:5:ALA:HB2	24:21:54:ALA:HB2	1.77	0.65
57:S:27:LYS:NZ	57:S:27:LYS:HB3	2.11	0.65
40:B:102:ASN:ND2	40:B:105:THR:HB	2.12	0.65
37:34:23:ILE:H	37:34:23:ILE:CD1	1.96	0.65
14:11:54:ILE:HG12	14:11:73:PRO:HG3	1.78	0.65
27:24:42:LEU:HD11	27:24:89:ILE:HD11	1.79	0.65
50:L:29:LYS:NZ	50:L:58:ASN:HD21	1.95	0.65
2:O1:2094:A:H2'	2:O1:2095:A:H5''	1.79	0.65
50:L:86:VAL:HG23	50:L:87:LYS:H	1.62	0.65
14:11:85:ILE:HD12	14:11:85:ILE:O	1.96	0.65
2:O1:517:C:H5''	33:30:12:ARG:HH12	1.62	0.64
2:O1:2598:A:H5''	7:O4:233:GLY:HA3	1.78	0.64
1:A:1026:G:H1	1:A:1035:A:H2	1.44	0.64
2:O1:192:C:H2'	2:O1:193:U:H5'	1.79	0.64
2:O1:2048:G:C3'	2:O1:2049:G:H5''	2.28	0.64
7:O4:131:MET:HG2	7:O4:134:ILE:HD12	1.79	0.64
40:B:59:ILE:HD12	40:B:159:ALA:HB2	1.79	0.64
42:D:13:ARG:HD2	42:D:37:PRO:HB3	1.79	0.64
58:T:66:ILE:HG23	58:T:70:LYS:HD3	1.78	0.64
9:O6:14:VAL:HG12	9:O6:15:SER:H	1.61	0.64
59:U:33:ARG:HH12	59:U:34:ARG:NE	1.95	0.64
2:O1:2094:A:C3'	2:O1:2095:A:H5''	2.27	0.64
3:O2:65:U:H3'	3:O2:108:A:H61	1.62	0.64
6:O3:22:ASP:H	6:O3:25:GLU:HB2	1.62	0.64
11:O8:32:LEU:HD23	11:O8:33:THR:N	2.12	0.64
1:A:310:G:H5''	54:P:31:ARG:HB2	1.78	0.64
2:O1:2641:G:H5''	15:12:78:THR:HB	1.80	0.64
13:10:118:ILE:N	13:10:119:PRO:CD	2.60	0.64
43:E:119:VAL:HG11	43:E:122:VAL:HG22	1.79	0.64
51:M:89:ARG:HB2	51:M:96:VAL:HG22	1.78	0.64
2:O1:1753:G:OP1	21:18:92:ARG:HD2	1.98	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:W:48:C:H2'	5:W:59:A:H4'	1.79	0.64
59:U:33:ARG:HH22	59:U:34:ARG:HD3	1.63	0.64
12:09:12:LEU:HD11	12:09:21:VAL:HG12	1.79	0.64
1:A:1228:C:H4'	51:M:114:PRO:HB3	1.79	0.64
2:01:2514:U:H5''	15:12:81:ILE:HD11	1.79	0.64
40:B:58:LYS:O	40:B:62:ARG:HG2	1.98	0.64
2:01:310:A:H2'	2:01:311:A:H5''	1.80	0.63
2:01:955:U:H5	2:01:962:G:N1	1.96	0.63
2:01:1142:A:H4'	15:12:27:ARG:HH22	1.63	0.63
16:13:76:VAL:H	21:18:72:VAL:HG22	1.63	0.63
20:17:37:ALA:HB2	20:17:106:LEU:HD11	1.78	0.63
7:04:245:THR:HB	7:04:246:PRO:HD2	1.80	0.63
35:32:25:LYS:HA	35:32:28:ARG:HH12	1.64	0.63
2:01:575:A:O2'	2:01:576:U:H5'	1.98	0.63
31:28:6:ILE:HD13	31:28:47:ILE:HD11	1.81	0.63
42:D:161:ALA:HA	42:D:164:ARG:HG3	1.80	0.63
56:R:25:ILE:HG21	56:R:66:LEU:HB3	1.80	0.63
5:X:34:C:H3'	5:X:35:A:H5''	1.79	0.63
13:10:27:VAL:HG21	13:10:107:GLU:OE2	1.98	0.63
40:B:131:LYS:O	40:B:135:MET:HG3	1.99	0.63
1:A:245:U:O2'	1:A:246:A:H5'	1.98	0.63
1:A:327:A:O2'	1:A:328:C:H4'	1.99	0.63
1:A:508:U:H4'	42:D:50:TYR:CD2	2.33	0.63
10:07:59:ILE:CD1	10:07:151:LEU:HD21	2.28	0.63
46:H:17:GLN:OE1	46:H:71:VAL:HB	1.98	0.63
2:01:1062:G:H2'	2:01:1063:G:H5''	1.81	0.63
2:01:1394:U:H4'	2:01:1603:A:H4'	1.79	0.63
2:01:1697:G:H4'	2:01:1978:A:H5''	1.79	0.63
2:01:2243:U:H2'	2:01:2244:U:C6	2.34	0.63
1:A:355:C:H1'	1:A:388:G:H1'	1.79	0.63
16:13:73:ASP:O	21:18:74:GLN:HG3	1.97	0.63
41:C:79:LYS:HA	41:C:79:LYS:HE2	1.79	0.63
2:01:310:A:C2'	2:01:311:A:H5''	2.29	0.63
2:01:1801:A:H5''	2:01:2203:U:H2'	1.80	0.63
2:01:855:G:C3'	2:01:856:G:H5''	2.29	0.63
2:01:2720:U:H5''	21:18:52:ARG:HH21	1.63	0.63
19:16:2:ARG:O	19:16:2:ARG:HD3	1.99	0.63
30:27:42:LEU:O	30:27:46:VAL:HG23	1.99	0.63
39:Z:248:GLY:CA	39:Z:255:ASN:HD21	2.12	0.63
40:B:102:ASN:HD21	40:B:105:THR:HB	1.64	0.63
59:U:36:PHE:HB3	59:U:39:LYS:HB2	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:45:G:H5''	2:01:46:G:C5'	2.16	0.62
13:10:56:ARG:NH1	13:10:83:ALA:HB2	2.14	0.62
13:10:72:LEU:O	13:10:72:LEU:HD23	1.99	0.62
26:23:38:ILE:HG22	26:23:39:ASN:ND2	2.14	0.62
40:B:110:ILE:HG12	40:B:147:LEU:HD11	1.79	0.62
2:01:2799:A:H2'	2:01:2800:A:H5'	1.80	0.62
14:11:3:LYS:HG3	14:11:4:VAL:HG23	1.80	0.62
16:13:40:LYS:HD2	16:13:57:VAL:HG12	1.81	0.62
33:30:16:ARG:HA	33:30:19:ASP:CG	2.19	0.62
46:H:48:PHE:HB3	46:H:60:LEU:HD23	1.79	0.62
9:06:98:LYS:HB3	9:06:102:ARG:HH22	1.64	0.62
10:07:28:PRO:HB2	10:07:168:LEU:HD22	1.81	0.62
47:I:56:MET:HE1	47:I:60:LEU:N	2.09	0.62
13:10:27:VAL:HG22	13:10:29:ASP:H	1.64	0.62
26:23:51:LEU:H	26:23:51:LEU:CD1	2.13	0.62
54:P:38:PHE:CE1	54:P:51:ARG:HB3	2.34	0.62
57:S:21:ALA:HB2	57:S:30:LEU:HD21	1.80	0.62
2:01:2035:G:H5'	2:01:2036:C:H5	1.64	0.62
3:02:43:C:H4'	10:07:62:GLN:HE22	1.64	0.62
9:06:90:GLN:HG3	9:06:92:HIS:CE1	2.34	0.62
32:29:16:CYS:HB2	32:29:37:CYS:SG	2.39	0.62
1:A:1240:U:H4'	45:G:37:THR:CG2	2.30	0.62
1:A:1280:A:O2'	1:A:1281:C:H5'	1.99	0.62
2:01:704:G:H2'	2:01:726:G:H22	1.63	0.62
2:01:1068:G:H22	39:Z:54:GLN:HE21	1.46	0.62
5:X:74:C:H4'	5:X:75:C:H3'	1.81	0.62
7:04:259:ASN:OD1	7:04:261:ARG:HG2	2.00	0.62
14:11:34:ILE:HD12	14:11:35:MET:N	2.15	0.62
48:J:65:TYR:HB3	52:N:95:LEU:HD11	1.82	0.62
2:01:279:A:H2'	2:01:280:U:H5'	1.81	0.62
2:01:1012:U:H3	15:12:27:ARG:HG2	1.65	0.62
12:09:83:LYS:HA	12:09:149:GLU:HB2	1.82	0.62
42:D:27:ILE:HG13	42:D:29:THR:N	2.10	0.62
58:T:34:VAL:O	58:T:38:ILE:HG13	1.99	0.62
1:A:412:A:H3'	1:A:413:G:C5'	2.30	0.62
2:01:1818:U:O4	7:04:152:GLN:HG3	2.00	0.62
2:01:2334:U:C5'	20:17:12:THR:HB	2.25	0.62
10:07:114:ARG:HG3	51:M:70:ARG:NH2	2.15	0.62
1:A:850:U:C3'	1:A:851:G:H5''	2.30	0.61
50:L:109:ARG:HH21	50:L:112:ALA:HB3	1.65	0.61
40:B:70:GLY:HA3	40:B:163:ILE:HD12	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1137:C:H4'	1:A:1138:G:N2	2.15	0.61
2:01:2145:C:H3'	2:01:2146:C:H5'	1.82	0.61
5:X:57:A:C2'	5:X:58:A:H5'	2.29	0.61
19:16:79:LEU:HD23	19:16:83:LEU:HD12	1.81	0.61
36:33:23:HIS:HD2	36:33:49:VAL:HG22	1.65	0.61
30:27:18:LEU:HB3	30:27:22:LEU:HD23	1.82	0.61
39:Z:103:LEU:HD23	39:Z:103:LEU:O	2.00	0.61
52:N:52:ARG:HH12	57:S:36:ARG:NH2	1.98	0.61
2:01:1874:C:H2'	2:01:1875:G:O4'	2.00	0.61
19:16:90:ARG:HH12	19:16:116:VAL:CG1	2.13	0.61
51:M:85:TYR:O	51:M:89:ARG:HG2	2.00	0.61
59:U:32:ARG:NH1	59:U:33:ARG:HD3	2.15	0.61
1:A:730:G:H2'	1:A:731:G:H5'	1.81	0.61
2:01:558:U:P	15:12:113:PRO:HD2	2.40	0.61
9:06:172:ALA:HB3	9:06:195:GLN:OE1	2.00	0.61
26:23:95:PHE:HD2	26:23:100:GLU:HB2	1.65	0.61
52:N:5:MET:HB3	52:N:62:ARG:NH1	2.16	0.61
1:A:182:A:H2'	1:A:183:C:H5''	1.82	0.61
7:04:27:LYS:HB3	7:04:27:LYS:NZ	2.16	0.61
14:11:30:GLN:HB3	14:11:64:ARG:HH12	1.64	0.61
20:17:98:GLN:HE21	20:17:100:HIS:HB2	1.64	0.61
42:D:141:VAL:HG12	42:D:180:THR:HG22	1.83	0.61
54:P:71:VAL:O	54:P:74:LEU:HG	2.00	0.61
1:A:352:C:H4'	1:A:354:G:OP1	2.01	0.61
4:Y:30:GLU:OE1	39:Z:213:ARG:HD3	2.00	0.61
15:12:102:GLU:HG2	15:12:119:PHE:HZ	1.66	0.61
21:18:23:ASP:OD1	21:18:88:ARG:HA	2.00	0.61
53:O:81:ILE:HA	53:O:86:LEU:HD21	1.81	0.61
1:A:490:C:H5''	42:D:147:LYS:NZ	2.15	0.61
7:04:119:VAL:HB	12:09:91:PHE:CE1	2.35	0.61
39:Z:153:LEU:O	39:Z:153:LEU:HD23	2.01	0.61
2:01:1064:C:O2'	2:01:1065:U:H5'	2.01	0.61
2:01:1727:C:C2'	2:01:1728:C:H5'	2.31	0.60
2:01:2024:G:OP2	2:01:2034:U:H4'	2.02	0.60
10:07:71:LYS:HG3	10:07:72:SER:H	1.66	0.60
41:C:143:LEU:HD23	41:C:143:LEU:O	2.00	0.60
49:K:34:THR:HG22	49:K:40:ALA:HA	1.80	0.60
56:R:11:ARG:HD2	56:R:15:GLU:HG2	1.83	0.60
15:12:93:ILE:HD13	15:12:100:VAL:HG21	1.83	0.60
34:31:32:LYS:HZ3	34:31:32:LYS:HB3	1.66	0.60
8:05:55:LYS:HD3	8:05:77:ARG:HA	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:Z:246:THR:HG22	39:Z:247:SER:N	2.11	0.60
22:19:13:HIS:O	22:19:17:LEU:HD13	2.01	0.60
43:E:113:VAL:HG11	43:E:136:VAL:HG13	1.84	0.60
2:01:2:G:H1	2:01:2901:C:H42	1.48	0.60
2:01:2048:G:C2'	2:01:2049:G:H5''	2.30	0.60
2:01:2313:C:H4'	10:07:87:LYS:HD3	1.83	0.60
10:07:121:PHE:HE1	10:07:127:TYR:HB2	1.66	0.60
23:20:76:LYS:HB2	23:20:85:LYS:HB2	1.82	0.60
39:Z:275:GLN:HA	39:Z:283:ASN:ND2	2.16	0.60
1:A:531:U:H5	39:Z:332:ARG:HH22	1.50	0.60
2:01:639:U:H2'	2:01:640:C:C6	2.37	0.60
8:05:2:ILE:HG13	8:05:3:GLY:H	1.67	0.60
12:09:133:GLN:HE21	12:09:139:PHE:HE1	1.49	0.60
8:05:34:VAL:HG22	8:05:50:VAL:HG12	1.84	0.60
37:34:11:CYS:O	37:34:14:CYS:HB2	2.01	0.60
2:01:668:A:H2'	2:01:670:A:H62	1.66	0.60
2:01:1726:C:H2'	2:01:1727:C:C6	2.37	0.60
2:01:2756:U:H3'	37:34:20:ASP:H	1.65	0.60
3:02:72:G:H21	3:02:104:A:H62	1.49	0.60
6:03:15:VAL:HG23	6:03:29:LEU:HD21	1.84	0.60
14:11:45:THR:HB	14:11:50:LYS:HG2	1.84	0.60
27:24:30:ILE:HB	27:24:38:LEU:HB3	1.83	0.60
32:29:9:TYR:OH	32:29:25:ARG:HB3	2.01	0.60
44:F:18:VAL:CG1	44:F:19:PRO:HD3	2.32	0.60
54:P:26:ASN:HD22	54:P:26:ASN:N	2.00	0.60
1:A:40:C:C3'	1:A:41:G:H5''	2.31	0.60
26:23:71:ILE:HD12	26:23:71:ILE:O	2.01	0.60
2:01:940:G:H2'	2:01:941:A:H5''	1.84	0.59
2:01:2105:U:H2'	2:01:2106:U:H5'	1.83	0.59
18:15:28:PHE:HB2	18:15:104:GLU:OE2	2.03	0.59
42:D:64:TYR:CD2	42:D:93:LEU:HD23	2.37	0.59
45:G:65:LEU:O	45:G:65:LEU:HD23	2.01	0.59
51:M:82:LEU:HD21	57:S:65:MET:HG2	1.84	0.59
1:A:279:A:H5'	1:A:281:G:H5'	1.84	0.59
1:A:405:U:C3'	1:A:406:G:H5'	2.27	0.59
1:A:784:A:H2'	1:A:785:G:C8	2.37	0.59
1:A:1221:G:H4'	57:S:76:THR:HG21	1.84	0.59
2:01:1651:G:H4'	19:16:39:PRO:HG2	1.82	0.59
7:04:144:GLU:HB2	7:04:187:CYS:HB3	1.84	0.59
7:04:241:LYS:HB2	7:04:241:LYS:NZ	2.17	0.59
17:14:135:ILE:HB	17:14:142:ILE:HD11	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:17:43:ASN:HD22	20:17:43:ASN:N	1.98	0.59
33:30:8:THR:HG22	33:30:9:ARG:N	2.17	0.59
43:E:82:HIS:HB2	43:E:83:PRO:HD2	1.84	0.59
2:01:674:G:H5''	9:06:71:GLY:N	2.15	0.59
19:16:55:ALA:HA	19:16:80:PHE:CE1	2.37	0.59
56:R:26:ALA:HA	56:R:29:LYS:HE2	1.84	0.59
4:Y:17:GLU:OE2	39:Z:133:GLN:HG2	2.03	0.59
14:11:9:LYS:C	14:11:10:LEU:HD12	2.23	0.59
57:S:35:ARG:HH12	57:S:74:ALA:HB3	1.66	0.59
2:01:559:G:H21	22:19:51:GLN:HG2	1.67	0.59
2:01:2636:C:H2'	2:01:2637:U:H6	1.67	0.59
10:07:98:PHE:HA	10:07:101:ARG:HG2	1.85	0.59
54:P:76:LYS:HB2	54:P:76:LYS:NZ	2.18	0.59
2:01:2573:C:O5'	39:Z:256:ARG:NH2	2.35	0.59
2:01:2715:C:C2'	2:01:2716:C:H5''	2.32	0.59
8:05:179:ARG:NH2	21:18:7:LEU:HD11	2.17	0.59
30:27:28:LEU:HD22	30:27:46:VAL:HG21	1.85	0.59
41:C:45:GLU:HG3	41:C:46:LEU:HD12	1.83	0.59
47:I:42:THR:HA	47:I:44:ARG:HH11	1.67	0.59
2:01:2572:A:H5'	2:01:2574:G:H4'	1.83	0.59
3:02:60:C:H2'	3:02:61:G:H8	1.67	0.59
26:23:96:LYS:HB2	26:23:96:LYS:NZ	2.18	0.59
40:B:116:LEU:HD21	40:B:136:ARG:NH2	2.17	0.59
1:A:59:A:H3'	1:A:331:G:H22	1.68	0.59
7:04:20:ASN:ND2	7:04:23:LEU:HG	2.03	0.59
11:08:12:ALA:O	11:08:14:VAL:N	2.36	0.59
17:14:78:ARG:HB2	17:14:81:ASP:OD2	2.01	0.59
43:E:104:ILE:HD11	43:E:114:LEU:HB3	1.85	0.59
55:Q:18:LYS:NZ	55:Q:18:LYS:HB2	2.18	0.59
1:A:1138:G:H3'	1:A:1138:G:N3	2.18	0.59
2:01:543:G:C3'	2:01:544:C:H5''	2.33	0.59
4:Y:11:ILE:HD12	39:Z:315:SER:HB3	1.85	0.59
7:04:202:ARG:HH21	7:04:213:ARG:NH2	2.01	0.59
2:01:661:A:H5'	17:14:13:LYS:HZ2	1.66	0.59
1:A:1162:C:H2'	1:A:1163:A:H8	1.68	0.58
2:01:704:G:H2'	2:01:726:G:N2	2.18	0.58
2:01:1181:U:H2'	2:01:1182:G:C8	2.38	0.58
2:01:2104:C:H2'	2:01:2105:U:C6	2.38	0.58
10:07:121:PHE:CE1	10:07:127:TYR:HB2	2.38	0.58
29:26:16:ASN:ND2	29:26:26:ARG:HB3	2.18	0.58
57:S:66:VAL:HG23	57:S:67:GLY:H	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:768:G:N2	2:01:1379:U:H1'	2.18	0.58
2:01:1062:G:C2'	2:01:1063:G:H5''	2.32	0.58
2:01:2204:G:H4'	7:04:149:LYS:HD3	1.84	0.58
5:W:6:G:O2'	5:W:7:G:H5'	2.03	0.58
43:E:113:VAL:HG23	43:E:114:LEU:CD1	2.33	0.58
1:A:1124:G:H4'	48:J:40:ILE:CD1	2.33	0.58
2:01:1344:U:H3'	2:01:1345:C:H5'	1.84	0.58
3:02:44:G:H1'	3:02:47:C:N4	2.18	0.58
7:04:131:MET:HE2	7:04:187:CYS:HB2	1.85	0.58
20:17:104:GLN:HG2	20:17:108:ASP:OD2	2.04	0.58
21:18:40:GLN:HG2	21:18:41:ALA:N	2.17	0.58
52:N:63:CYS:HB2	52:N:79:SER:OG	2.03	0.58
1:A:177:G:H5'	58:T:59:ARG:NH1	2.19	0.58
1:A:412:A:H62	1:A:431:A:H61	1.49	0.58
2:01:17:G:H4'	22:19:24:TYR:CE1	2.36	0.58
2:01:2134:A:H62	2:01:2156:G:H21	1.51	0.58
16:13:114:LYS:O	16:13:118:LEU:HD23	2.04	0.58
27:24:30:ILE:HD13	27:24:91:PHE:HB2	1.85	0.58
35:32:12:ARG:HG3	35:32:13:ASN:ND2	2.18	0.58
52:N:11:LYS:HA	52:N:11:LYS:HE2	1.85	0.58
52:N:84:ARG:HG2	52:N:84:ARG:HH11	1.68	0.58
59:U:13:VAL:HB	59:U:15:LEU:CD1	2.33	0.58
1:A:418:C:H5''	1:A:513:C:O2'	2.02	0.58
2:01:644:A:H2'	2:01:645:C:C4'	2.33	0.58
7:04:107:LYS:HE3	7:04:193:GLU:HB3	1.84	0.58
15:12:72:LYS:HB3	15:12:89:PHE:HB2	1.86	0.58
19:16:103:ARG:HG3	19:16:110:MET:SD	2.43	0.58
39:Z:325:SER:HB2	39:Z:334:LYS:HB3	1.86	0.58
43:E:68:ARG:C	43:E:69:ASN:HD22	2.07	0.58
1:A:1368:A:OP2	47:I:113:LYS:HB3	2.04	0.58
35:32:26:ASN:HA	35:32:29:GLN:HE21	1.68	0.58
47:I:34:LEU:HD11	47:I:47:VAL:HG21	1.86	0.58
2:01:1083:U:H2'	2:01:1085:A:OP2	2.03	0.58
1:A:396:C:H3'	1:A:397:A:H5''	1.86	0.58
1:A:1412:C:H2'	1:A:1413:A:C8	2.39	0.58
2:01:2715:C:H3'	2:01:2716:C:H5''	1.86	0.58
44:F:5:GLU:HB2	44:F:90:MET:HB2	1.86	0.58
4:Y:27:GLN:HB2	39:Z:137:GLY:HA2	1.84	0.58
12:09:84:ALA:HA	12:09:91:PHE:H	1.69	0.58
43:E:163:ILE:HD12	43:E:164:LEU:N	2.18	0.58
49:K:33:ILE:HG13	49:K:69:CYS:SG	2.43	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1108:G:H5'	41:C:175:HIS:ND1	2.18	0.58
1:A:1295:U:H2'	1:A:1296:C:C6	2.39	0.58
2:01:517:C:H5''	33:30:12:ARG:HH22	1.67	0.58
2:01:1700:A:H2'	2:01:1701:A:H5'	1.84	0.58
2:01:2747:G:O6	2:01:2755:C:H5''	2.04	0.58
7:04:58:LYS:HB2	7:04:58:LYS:NZ	2.19	0.58
39:Z:266:ILE:HB	39:Z:267:PRO:HD3	1.84	0.58
47:I:16:ALA:HA	47:I:66:VAL:HA	1.86	0.58
1:A:369:G:H5'	1:A:369:G:H8	1.69	0.57
2:01:69:C:O2'	2:01:70:G:H5'	2.04	0.57
2:01:322:A:H5'	2:01:340:A:H1'	1.85	0.57
8:05:142:VAL:HG13	8:05:143:PRO:HD2	1.86	0.57
37:34:23:ILE:HD12	37:34:23:ILE:N	2.02	0.57
40:B:34:ARG:HD2	40:B:35:ASN:HD22	1.69	0.57
45:G:35:LYS:O	45:G:39:GLU:HG2	2.03	0.57
53:O:69:LEU:O	53:O:69:LEU:HD13	2.03	0.57
1:A:715:A:H2'	1:A:716:A:C8	2.40	0.57
1:A:845:A:H2'	56:R:9:PHE:CD2	2.34	0.57
1:A:878:A:H5''	46:H:80:PRO:HG2	1.85	0.57
1:A:1147:C:H4'	47:I:6:TYR:CE2	2.39	0.57
1:A:1307:U:H5''	51:M:99:GLN:HE22	1.69	0.57
2:01:1022:G:N7	15:12:68:LYS:HD3	2.19	0.57
2:01:2508:G:N1	2:01:2580:U:H5	2.03	0.57
3:02:78:A:H62	3:02:98:G:H21	1.52	0.57
7:04:164:VAL:CG2	7:04:174:ARG:HB2	2.34	0.57
1:A:78:A:C2'	1:A:79:G:H5'	2.34	0.57
2:01:1076:C:H2'	2:01:1077:A:O4'	2.04	0.57
2:01:2799:A:C2'	2:01:2800:A:H5'	2.34	0.57
13:10:19:ALA:HA	13:10:70:GLU:OE1	2.04	0.57
15:12:81:ILE:HG23	15:12:82:GLY:H	1.69	0.57
16:13:49:ARG:H	16:13:49:ARG:CD	2.15	0.57
33:30:56:LYS:HB3	33:30:56:LYS:NZ	2.19	0.57
40:B:130:LYS:O	40:B:134:LEU:HD13	2.03	0.57
44:F:98:GLU:HG2	44:F:99:ALA:H	1.69	0.57
1:A:1516:G:H2'	1:A:1518:A:OP2	2.04	0.57
2:01:686:U:H3'	2:01:687:C:H5'	1.85	0.57
12:09:9:VAL:HG11	12:09:12:LEU:HB3	1.87	0.57
23:20:27:ILE:HD12	23:20:27:ILE:N	2.19	0.57
1:A:1156:G:H21	1:A:1179:A:H61	1.53	0.57
1:A:1305:G:H1'	1:A:1332:A:N6	2.20	0.57
1:A:1506:U:O2'	1:A:1507:A:H5'	2.05	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:1914:C:H5	4:Y:11:ILE:HA	1.68	0.57
2:01:2432:A:O2'	5:X:75:C:H5'	2.05	0.57
39:Z:291:MET:HE2	39:Z:295:LEU:HB2	1.86	0.57
45:G:42:VAL:O	45:G:46:LEU:HD13	2.04	0.57
51:M:82:LEU:HD11	57:S:65:MET:HG3	1.86	0.57
51:M:3:ILE:CD1	51:M:21:ILE:HD11	2.34	0.57
52:N:22:LYS:NZ	52:N:22:LYS:HB3	2.19	0.57
1:A:537:G:H5''	50:L:109:ARG:HH12	1.70	0.57
2:01:49:A:H5'	2:01:51:G:O4'	2.05	0.57
2:01:2848:G:H2'	2:01:2867:G:N2	2.19	0.57
3:02:52:A:H62	20:17:33:ARG:HB2	1.68	0.57
7:04:216:ARG:HG2	7:04:216:ARG:HH11	1.69	0.57
32:29:2:LYS:HB2	32:29:2:LYS:NZ	2.20	0.57
34:31:32:LYS:HB3	34:31:32:LYS:NZ	2.20	0.57
40:B:35:ASN:HD22	40:B:35:ASN:N	2.01	0.57
43:E:156:ARG:HH11	46:H:42:GLU:HB3	1.69	0.57
1:A:235:C:H1'	55:Q:62:GLU:OE2	2.04	0.57
1:A:884:U:H4'	1:A:885:G:H5''	1.86	0.57
6:03:65:LEU:HG	6:03:68:GLY:H	1.70	0.57
10:07:87:LYS:NZ	10:07:87:LYS:HB3	2.20	0.57
13:10:118:ILE:HG22	13:10:118:ILE:O	2.04	0.57
42:D:36:ALA:N	42:D:37:PRO:HD3	2.19	0.57
45:G:12:LEU:HD11	47:I:49:GLN:NE2	2.20	0.57
1:A:665:A:O4'	1:A:733:G:H1'	2.05	0.57
3:02:55:U:O2'	3:02:56:G:H5'	2.05	0.57
20:17:35:ILE:HD11	20:17:106:LEU:HD12	1.87	0.57
2:01:2636:C:H2'	2:01:2637:U:C6	2.40	0.57
7:04:123:ILE:HG23	7:04:191:LEU:HD13	1.87	0.57
22:19:90:ASP:H	23:20:11:GLN:HE22	1.53	0.57
33:30:54:ILE:HG23	33:30:56:LYS:H	1.70	0.57
1:A:521:G:H21	1:A:536:C:H5'	1.70	0.56
1:A:523:A:C2'	1:A:524:G:H5''	2.35	0.56
2:01:144:A:H5''	25:22:2:ILE:HD11	1.87	0.56
2:01:962:G:H21	2:01:2250:G:H1	1.53	0.56
2:01:2798:U:H4'	2:01:2799:A:C4	2.40	0.56
2:01:2836:U:H2'	2:01:2837:A:C8	2.39	0.56
30:27:20:ASN:HD22	30:27:20:ASN:N	2.02	0.56
41:C:5:HIS:HE1	41:C:7:ASN:HD22	1.53	0.56
1:A:108:G:N1	58:T:9:ARG:HG2	2.19	0.56
2:01:1827:U:H2'	2:01:1828:G:O4'	2.05	0.56
3:02:51:G:O2'	3:02:52:A:H5'	2.04	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:22:37:ASP:CG	25:22:38:ALA:H	2.08	0.56
42:D:131:ILE:HG13	42:D:134:TYR:HB2	1.85	0.56
1:A:1118:U:H2'	1:A:1119:C:C6	2.39	0.56
2:01:74:A:H4'	2:01:75:G:C5'	2.32	0.56
2:01:1203:U:H5'	17:14:3:LEU:HD23	1.87	0.56
2:01:2094:A:C2'	2:01:2095:A:H5''	2.35	0.56
2:01:2504:U:H2'	2:01:2505:G:H5''	1.87	0.56
3:02:44:G:H1'	3:02:47:C:H42	1.70	0.56
7:04:160:TYR:HB3	7:04:193:GLU:HG3	1.88	0.56
9:06:29:HIS:O	9:06:33:VAL:HG23	2.05	0.56
11:08:89:VAL:HG11	11:08:162:ARG:HH11	1.70	0.56
17:14:79:LEU:H	17:14:113:ALA:HB3	1.70	0.56
17:14:103:ILE:CD1	17:14:104:GLN:HG3	2.35	0.56
32:29:13:THR:HA	32:29:23:LYS:HA	1.88	0.56
35:32:25:LYS:HA	35:32:28:ARG:NH1	2.19	0.56
39:Z:353:LEU:O	39:Z:357:ILE:HG12	2.04	0.56
43:E:14:LEU:HA	43:E:36:THR:HG22	1.87	0.56
44:F:91:ARG:CG	44:F:92:THR:H	2.16	0.56
45:G:112:ASP:C	45:G:113:LYS:HD2	2.26	0.56
48:J:10:LEU:HD12	48:J:10:LEU:N	2.21	0.56
48:J:57:VAL:HG22	48:J:58:ASN:N	2.18	0.56
2:01:1565:C:O2'	2:01:1566:A:H2'	2.05	0.56
7:04:36:ASN:HB2	7:04:61:TYR:HB2	1.88	0.56
8:05:142:VAL:HG12	8:05:144:GLY:H	1.69	0.56
13:10:80:THR:O	13:10:82:ILE:HG13	2.05	0.56
39:Z:263:ILE:HB	39:Z:272:THR:HB	1.87	0.56
8:05:4:LEU:HD21	8:05:29:VAL:HG11	1.85	0.56
40:B:68:PHE:HD2	40:B:83:ALA:HB2	1.71	0.56
49:K:15:VAL:HG12	49:K:76:TYR:HB3	1.87	0.56
50:L:120:ARG:HG2	50:L:121:PRO:HD2	1.87	0.56
55:Q:18:LYS:HG2	55:Q:46:HIS:HE1	1.70	0.56
2:01:703:U:H2'	2:01:704:G:O4'	2.06	0.56
2:01:1181:U:H2'	2:01:1182:G:H8	1.70	0.56
20:17:24:THR:HG22	20:17:42:PRO:HD3	1.88	0.56
39:Z:322:GLN:CB	39:Z:336:LEU:HD21	2.36	0.56
41:C:63:ILE:HG22	41:C:96:VAL:HG23	1.87	0.56
1:A:841:C:O2'	1:A:843:U:H5''	2.04	0.56
2:01:1468:U:H2'	2:01:1522:A:N6	2.20	0.56
2:01:2655:G:O2'	2:01:2656:U:H5	1.88	0.56
4:Y:16:ILE:HD13	39:Z:197:GLY:N	2.21	0.56
7:04:25:LYS:H	7:04:25:LYS:CD	2.16	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:Z:144:TRP:CE2	39:Z:201:LEU:HB2	2.41	0.56
44:F:29:ILE:HG22	44:F:34:GLY:HA3	1.87	0.56
51:M:53:ASP:OD1	51:M:54:THR:HG23	2.05	0.56
51:M:69:ARG:HA	51:M:72:ILE:HG12	1.88	0.56
2:01:264:C:C2'	2:01:265:A:H5''	2.35	0.56
2:01:1035:U:H2'	2:01:1036:G:H8	1.71	0.56
2:01:1046:A:C5'	2:01:1047:G:H5''	2.36	0.56
8:05:24:VAL:HG12	8:05:178:VAL:HG21	1.87	0.56
8:05:110:THR:HB	8:05:202:ILE:HB	1.87	0.56
9:06:90:GLN:HG3	9:06:92:HIS:HE1	1.70	0.56
11:08:45:ALA:N	11:08:48:THR:O	2.39	0.56
14:11:97:VAL:HB	14:11:137:LEU:HA	1.86	0.56
16:13:115:ILE:HD12	16:13:115:ILE:N	2.21	0.56
47:I:91:GLU:HA	47:I:94:ARG:HB3	1.87	0.56
1:A:530:G:H22	4:Y:28:ARG:HB3	1.70	0.56
1:A:614:C:C3'	1:A:615:G:H5''	2.36	0.56
1:A:1306:A:H61	1:A:1331:G:H1'	1.66	0.56
2:01:813:U:H2'	2:01:814:C:C6	2.41	0.56
2:01:1336:A:OP2	25:22:68:LYS:HD2	2.06	0.56
2:01:2164:C:H2'	2:01:2165:C:H5'	1.87	0.56
2:01:2584:U:H4'	39:Z:248:GLY:O	2.05	0.56
2:01:2884:U:C6	33:30:49:ARG:HG2	2.41	0.56
11:08:27:GLY:HA3	11:08:78:VAL:HB	1.87	0.56
16:13:21:CYS:HA	16:13:41:ILE:HG22	1.88	0.56
29:26:7:THR:OG1	29:26:9:LYS:HG3	2.06	0.56
39:Z:130:LEU:HB3	39:Z:181:ILE:HB	1.88	0.56
43:E:82:HIS:HD2	46:H:98:LEU:HD22	1.71	0.56
1:A:451:A:H4'	1:A:452:A:N3	2.21	0.56
1:A:1117:A:H4'	47:I:105:ARG:HE	1.69	0.56
2:01:1027:A:H2	2:01:2488:G:H4'	1.70	0.56
2:01:2066:C:O2'	2:01:2067:G:H5'	2.06	0.56
2:01:2297:A:H62	2:01:2319:G:H1'	1.70	0.56
9:06:123:LYS:HE2	9:06:125:SER:OG	2.06	0.56
21:18:50:ARG:NH1	21:18:52:ARG:HG3	2.21	0.56
23:20:80:ARG:HB2	23:20:80:ARG:NH1	2.21	0.56
27:24:10:LYS:HB3	27:24:10:LYS:NZ	2.21	0.56
42:D:186:GLU:HB2	42:D:189:ASP:HB2	1.87	0.56
1:A:723:U:O4	59:U:49:ALA:HA	2.05	0.55
5:X:69:C:H2'	5:X:70:G:H8	1.71	0.55
15:12:45:THR:HB	15:12:48:VAL:HG12	1.87	0.55
22:19:90:ASP:N	23:20:11:GLN:HE22	2.04	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:23:3:LYS:HB2	26:23:4:ILE:HD12	1.88	0.55
47:I:44:ARG:H	47:I:44:ARG:HD3	1.70	0.55
1:A:1251:A:H2'	1:A:1252:A:C8	2.41	0.55
2:01:1077:A:H2'	2:01:1078:U:O4'	2.06	0.55
2:01:1367:A:H2'	2:01:1368:G:H5'	1.86	0.55
2:01:2638:G:H1'	2:01:2778:A:H61	1.71	0.55
15:12:99:ARG:O	15:12:103:ILE:HG12	2.06	0.55
23:20:51:VAL:HG23	23:20:52:PRO:O	2.05	0.55
46:H:15:ASN:HD22	46:H:15:ASN:N	2.04	0.55
2:01:1186:G:H2'	2:01:1187:G:O4'	2.07	0.55
2:01:2297:A:N1	2:01:2321:U:C5	2.74	0.55
2:01:2514:U:H2'	2:01:2515:C:C6	2.41	0.55
12:09:94:ILE:HG23	12:09:98:ASP:HB2	1.88	0.55
14:11:2:LYS:HD2	14:11:61:TYR:HA	1.87	0.55
26:23:4:ILE:HD12	26:23:4:ILE:N	2.21	0.55
2:01:1063:G:C8	14:11:89:SER:HB3	2.42	0.55
2:01:1668:A:C4'	2:01:1669:A:H5'	2.31	0.55
5:X:41:C:H2'	5:X:42:G:C8	2.41	0.55
8:05:36:GLN:HE21	8:05:38:LYS:HG2	1.70	0.55
27:24:51:GLN:HE22	27:24:86:LEU:HG	1.71	0.55
47:I:24:ASN:ND2	47:I:26:LYS:HG3	2.21	0.55
1:A:56:U:H2'	1:A:57:G:C8	2.41	0.55
1:A:882:C:O2'	1:A:883:C:H5'	2.06	0.55
1:A:1218:C:H2'	1:A:1219:A:C8	2.41	0.55
2:01:433:C:O2'	2:01:434:U:H5'	2.07	0.55
2:01:679:C:H2'	2:01:680:C:C6	2.41	0.55
2:01:851:C:H2'	2:01:852:U:C6	2.42	0.55
3:02:106:G:H2'	3:02:107:G:O4'	2.06	0.55
14:11:102:ARG:O	14:11:106:GLN:HG2	2.06	0.55
39:Z:155:TRP:CE2	39:Z:353:LEU:HD11	2.41	0.55
1:A:403:C:C3'	1:A:404:G:H5''	2.36	0.55
1:A:794:A:H4'	1:A:1521:C:O2'	2.06	0.55
2:01:1170:C:H2'	2:01:1171:G:C8	2.42	0.55
2:01:2618:G:H21	8:05:155:VAL:HG21	1.71	0.55
2:01:2720:U:H5''	21:18:52:ARG:NH2	2.22	0.55
10:07:62:GLN:HA	32:29:6:HIS:ND1	2.21	0.55
18:15:57:VAL:O	18:15:60:GLN:HG2	2.06	0.55
48:J:15:HIS:HA	48:J:18:ILE:HG22	1.87	0.55
50:L:49:ARG:HG3	50:L:89:LEU:HD21	1.89	0.55
52:N:20:PHE:HD2	52:N:55:SER:HB3	1.71	0.55
2:01:937:C:OP1	36:33:51:LYS:HD3	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:15:59:ARG:HH21	18:15:59:ARG:HG3	1.71	0.55
49:K:39:ASN:HD22	49:K:39:ASN:N	2.04	0.55
57:S:13:HIS:O	57:S:17:LYS:HG2	2.05	0.55
7:04:5:CYS:SG	7:04:17:LYS:HE2	2.47	0.55
10:07:37:MET:HE1	10:07:52:ALA:HB1	1.89	0.55
12:09:8:LYS:O	12:09:9:VAL:HG23	2.06	0.55
19:16:38:LEU:HB2	19:16:39:PRO:HD3	1.89	0.55
27:24:21:ARG:NH1	27:24:21:ARG:HB2	2.22	0.55
42:D:187:ARG:HE	42:D:196:GLU:HG2	1.72	0.55
1:A:537:G:H5''	50:L:109:ARG:NH1	2.20	0.55
2:01:942:G:H2'	2:01:943:A:O4'	2.06	0.55
2:01:2071:A:H2'	2:01:2072:C:C6	2.41	0.55
3:02:12:C:H1'	3:02:15:A:C2	2.42	0.55
7:04:231:HIS:HA	7:04:241:LYS:NZ	2.22	0.55
8:05:9:VAL:HG11	21:18:3:ILE:HD11	1.88	0.55
10:07:28:PRO:HG2	10:07:168:LEU:HD13	1.89	0.55
10:07:37:MET:CE	10:07:52:ALA:HB1	2.37	0.55
42:D:12:ARG:HG2	42:D:37:PRO:HA	1.89	0.55
1:A:202:G:H21	1:A:466:A:H61	1.54	0.55
2:01:2134:A:H62	2:01:2156:G:N2	2.05	0.55
2:01:2295:C:O2'	2:01:2296:U:H5'	2.07	0.55
2:01:2492:U:H4'	39:Z:258:GLU:OE1	2.07	0.55
11:08:23:ILE:HD12	11:08:23:ILE:N	2.23	0.55
13:10:56:ARG:HH11	13:10:83:ALA:HB2	1.72	0.55
46:H:6:ILE:N	46:H:6:ILE:HD12	2.21	0.55
1:A:1026:G:N1	1:A:1035:A:H2	2.05	0.54
2:01:941:A:H2'	2:01:942:G:O4'	2.08	0.54
2:01:1251:C:O2'	2:01:1252:G:H3'	2.05	0.54
2:01:1529:G:H2'	2:01:1530:G:C4'	2.37	0.54
50:L:38:THR:HG22	50:L:50:LYS:HD3	1.89	0.54
58:T:41:GLY:HA2	58:T:85:LEU:HD11	1.88	0.54
2:01:1060:U:O4'	2:01:1062:G:H5'	2.06	0.54
8:05:4:LEU:HD21	8:05:29:VAL:CG1	2.37	0.54
9:06:166:LYS:N	9:06:166:LYS:HD2	2.22	0.54
18:15:32:GLY:HA2	18:15:104:GLU:HA	1.90	0.54
42:D:12:ARG:HD3	42:D:36:ALA:O	2.07	0.54
47:I:30:ASN:C	47:I:31:GLN:HE21	2.11	0.54
51:M:16:ILE:HD12	51:M:16:ILE:N	2.20	0.54
2:01:1645:G:H5''	2:01:1646:C:H5'	1.89	0.54
2:01:1783:A:N1	2:01:2587:A:H2'	2.22	0.54
2:01:2689:U:O2	2:01:2713:U:H5''	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:02:52:A:H62	20:17:33:ARG:CB	2.21	0.54
5:X:62:C:C3'	5:X:63:G:H5''	2.37	0.54
8:05:149:ASN:O	8:05:152:PRO:HD2	2.07	0.54
12:09:135:HIS:CD2	12:09:136:SER:H	2.25	0.54
14:11:39:LYS:O	14:11:43:ALA:N	2.40	0.54
19:16:56:LYS:HB2	19:16:56:LYS:NZ	2.23	0.54
21:18:105:LYS:O	21:18:108:ARG:NH2	2.40	0.54
27:24:51:GLN:HE22	27:24:86:LEU:CG	2.20	0.54
42:D:191:SER:OG	42:D:194:ILE:HD13	2.07	0.54
44:F:11:HIS:HE1	44:F:83:ALA:HA	1.70	0.54
58:T:20:ASN:HD22	58:T:20:ASN:N	2.06	0.54
2:01:20:C:H2'	2:01:21:A:H8	1.73	0.54
2:01:386:G:H3'	2:01:387:U:C5'	2.38	0.54
3:02:13:G:P	28:25:72:ASN:HD21	2.30	0.54
26:23:17:ASP:HB3	26:23:20:LYS:HB3	1.88	0.54
29:26:53:LYS:HB2	29:26:53:LYS:NZ	2.22	0.54
39:Z:17:ARG:O	39:Z:21:LEU:HD13	2.08	0.54
52:N:48:GLN:OE1	57:S:11:ASP:HA	2.06	0.54
54:P:33:ILE:N	54:P:33:ILE:HD12	2.22	0.54
1:A:674:G:H21	49:K:117:HIS:HB2	1.72	0.54
1:A:711:G:O2'	1:A:712:A:H5'	2.08	0.54
1:A:1308:U:H2'	1:A:1309:G:H8	1.72	0.54
1:A:1351:U:O4	47:I:119:LYS:HE3	2.07	0.54
2:01:7:G:H4'	15:12:15:TRP:CH2	2.42	0.54
7:04:241:LYS:HB2	7:04:241:LYS:HZ2	1.71	0.54
32:29:11:GLU:HG2	32:29:25:ARG:HG2	1.90	0.54
40:B:178:LEU:HD12	40:B:178:LEU:N	2.23	0.54
45:G:73:GLU:OE2	45:G:88:VAL:HG13	2.07	0.54
50:L:113:ARG:HB2	50:L:118:VAL:HB	1.88	0.54
1:A:530:G:N2	4:Y:28:ARG:HB3	2.22	0.54
1:A:1367:C:H4'	48:J:50:THR:HG21	1.88	0.54
43:E:19:ARG:HE	43:E:30:PHE:HB3	1.72	0.54
43:E:113:VAL:HG23	43:E:114:LEU:HD12	1.90	0.54
53:O:55:LEU:HA	53:O:58:MET:HE3	1.90	0.54
1:A:128:G:O2'	1:A:129:A:H5'	2.08	0.54
1:A:130:A:O2'	1:A:264:C:H5'	2.07	0.54
1:A:663:A:H5'	1:A:836:G:OP1	2.08	0.54
2:01:2898:U:H2'	2:01:2899:A:C8	2.42	0.54
7:04:32:LEU:O	7:04:33:LEU:HD12	2.06	0.54
13:10:50:VAL:HG12	13:10:50:VAL:O	2.08	0.54
19:16:98:LEU:HD21	33:30:53:VAL:HG21	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:F:51:ILE:HG21	44:F:85:ILE:HG21	1.88	0.54
45:G:74:VAL:HA	45:G:87:PRO:HA	1.88	0.54
1:A:35:G:H21	50:L:114:SER:HB2	1.72	0.54
1:A:376:G:C3'	1:A:377:G:H5''	2.37	0.54
1:A:533:A:O2'	1:A:534:U:H5''	2.07	0.54
1:A:1225:A:H4'	57:S:77:ARG:NH1	2.23	0.54
2:01:131:A:H2'	2:01:132:G:H8	1.73	0.54
2:01:455:C:O2	2:01:473:G:H5'	2.08	0.54
2:01:558:U:OP1	15:12:113:PRO:HD2	2.07	0.54
2:01:1669:A:H5''	16:13:5:GLN:HE21	1.72	0.54
2:01:2328:A:H2'	2:01:2329:U:C6	2.42	0.54
16:13:1:MET:HE2	16:13:67:LYS:HD3	1.89	0.54
22:19:90:ASP:H	23:20:11:GLN:NE2	2.05	0.54
38:V:17:U:H2'	38:V:18:G:C8	2.43	0.54
48:J:8:ILE:O	48:J:74:VAL:HG12	2.07	0.54
48:J:10:LEU:HD21	48:J:25:ILE:HD12	1.89	0.54
49:K:126:ARG:HA	49:K:126:ARG:HE	1.73	0.54
5:X:8:U:H5'	5:X:49:G:H5'	1.89	0.54
7:04:43:ASN:HD22	7:04:49:THR:HG21	1.73	0.54
8:05:33:ARG:HG3	8:05:51:THR:HG23	1.90	0.54
16:13:49:ARG:HD3	16:13:49:ARG:N	2.14	0.54
43:E:38:VAL:HG22	43:E:66:ALA:HB1	1.90	0.54
44:F:4:TYR:CE2	44:F:71:ILE:HG13	2.42	0.54
49:K:126:ARG:N	59:U:33:ARG:HH21	2.06	0.54
2:01:96:C:H4'	30:27:41:HIS:CG	2.42	0.54
2:01:2554:U:H2'	2:01:2555:U:C6	2.43	0.54
2:01:2724:U:H2'	2:01:2725:A:C8	2.43	0.54
7:04:22:GLU:OE1	7:04:80:LEU:HD22	2.08	0.54
8:05:33:ARG:NH2	8:05:52:THR:HA	2.23	0.54
9:06:83:VAL:HB	9:06:86:ALA:HB2	1.88	0.54
13:10:8:LYS:O	13:10:12:VAL:HG23	2.07	0.54
39:Z:322:GLN:O	39:Z:336:LEU:HD11	2.08	0.54
40:B:56:LEU:HD12	40:B:59:ILE:HD11	1.90	0.54
43:E:133:ILE:HD12	43:E:133:ILE:N	2.22	0.54
45:G:24:LYS:O	45:G:28:ILE:HG13	2.08	0.54
50:L:86:VAL:HG23	50:L:87:LYS:N	2.23	0.54
1:A:427:U:H4'	1:A:541:G:H5'	1.90	0.53
1:A:495:A:H61	42:D:119:HIS:HE1	1.54	0.53
1:A:1379:G:O2'	1:A:1380:U:H5'	2.08	0.53
2:01:1373:A:H5'	2:01:2212:A:H1'	1.89	0.53
24:21:72:THR:HG22	24:21:73:LYS:HG3	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:21:88:ARG:HG3	24:21:94:ASP:OD2	2.08	0.53
32:29:53:THR:HG21	51:M:74:MET:HG3	1.90	0.53
46:H:6:ILE:HD12	46:H:6:ILE:H	1.71	0.53
59:U:13:VAL:HB	59:U:15:LEU:HD12	1.90	0.53
1:A:1414:U:H2'	1:A:1415:G:H8	1.73	0.53
2:01:279:A:C2'	2:01:280:U:H5'	2.38	0.53
2:01:1838:C:H4'	2:01:1839:G:H5'	1.90	0.53
2:01:2074:U:H2'	2:01:2075:U:C6	2.43	0.53
5:X:68:C:H2'	5:X:69:C:O4'	2.07	0.53
18:15:133:LYS:NZ	18:15:133:LYS:HB3	2.22	0.53
23:20:14:VAL:HG11	23:20:98:ILE:CD1	2.39	0.53
29:26:54:GLY:O	29:26:58:ILE:HG13	2.09	0.53
2:01:1057:A:O2'	13:10:34:THR:HG23	2.08	0.53
2:01:2360:G:H2'	2:01:2361:G:H5'	1.89	0.53
5:W:47:U:H4'	5:W:48:C:C5'	2.35	0.53
39:Z:333:ILE:HD12	39:Z:333:ILE:N	2.24	0.53
1:A:1210:C:H2'	1:A:1211:U:H5'	1.90	0.53
1:A:1228:C:C5'	51:M:114:PRO:HB3	2.38	0.53
1:A:1302:C:N4	51:M:13:HIS:HD2	2.06	0.53
1:A:1356:G:H2'	1:A:1357:A:C8	2.43	0.53
2:01:20:C:H2'	2:01:21:A:C8	2.43	0.53
2:01:1979:U:O2'	2:01:1980:G:H5'	2.09	0.53
9:06:102:ARG:O	9:06:106:LYS:HG3	2.09	0.53
10:07:59:ILE:HD12	10:07:151:LEU:HD21	1.89	0.53
24:21:18:ARG:HH21	24:21:76:VAL:HG23	1.73	0.53
40:B:113:LEU:HD23	40:B:147:LEU:HD22	1.90	0.53
57:S:39:ILE:HG23	57:S:43:MET:SD	2.48	0.53
1:A:195:A:H2'	1:A:196:A:C8	2.43	0.53
1:A:225:C:H3'	1:A:226:G:H5''	1.89	0.53
1:A:1313:U:OP2	57:S:5:LYS:HA	2.09	0.53
2:01:399:U:H2'	2:01:400:G:O4'	2.09	0.53
2:01:536:G:H4'	22:19:56:PHE:CZ	2.43	0.53
2:01:594:U:H2'	2:01:595:C:C6	2.44	0.53
2:01:1111:A:H3'	2:01:1111:A:N3	2.24	0.53
2:01:2136:G:H2'	2:01:2137:U:H5''	1.90	0.53
2:01:2177:C:C2	6:03:170:ILE:HG21	2.44	0.53
2:01:2286:G:H4'	2:01:2287:A:O4'	2.08	0.53
11:08:106:LEU:HB3	11:08:151:ARG:HD3	1.90	0.53
13:10:4:ASN:HA	13:10:7:ASP:HB2	1.90	0.53
42:D:191:SER:O	42:D:193:ASP:N	2.39	0.53
43:E:110:MET:O	43:E:114:LEU:HD13	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:M:106:ARG:NH1	51:M:112:ARG:HA	2.23	0.53
52:N:84:ARG:HG2	52:N:84:ARG:NH1	2.24	0.53
57:S:12:LEU:HD23	57:S:12:LEU:O	2.09	0.53
3:02:65:U:H3'	3:02:108:A:N6	2.23	0.53
7:04:7:PRO:HB2	7:04:13:ARG:NH1	2.23	0.53
7:04:140:VAL:O	7:04:161:VAL:N	2.40	0.53
14:11:97:VAL:HG12	14:11:98:GLY:N	2.23	0.53
16:13:41:ILE:HD11	16:13:86:LEU:CD2	2.39	0.53
19:16:98:LEU:HD11	33:30:48:TYR:CD2	2.42	0.53
22:19:23:TYR:HB2	22:19:28:SER:HB3	1.91	0.53
23:20:74:ILE:N	23:20:74:ILE:HD12	2.24	0.53
36:33:32:LEU:CD2	36:33:35:LYS:HD2	2.38	0.53
39:Z:307:LYS:O	39:Z:311:GLU:HG2	2.09	0.53
42:D:103:ARG:HB2	42:D:170:LEU:HD21	1.90	0.53
44:F:81:ASN:OD1	44:F:83:ALA:HB3	2.09	0.53
47:I:115:VAL:HG21	48:J:62:ARG:CG	2.39	0.53
52:N:55:SER:CB	52:N:56:PRO:HD3	2.38	0.53
1:A:784:A:H2'	1:A:785:G:H8	1.73	0.53
15:12:98:GLU:OE1	15:12:126:ALA:HB2	2.08	0.53
35:32:12:ARG:HH21	35:32:12:ARG:HB2	1.73	0.53
39:Z:322:GLN:HB2	39:Z:336:LEU:HD21	1.91	0.53
42:D:96:ARG:O	42:D:100:VAL:HG23	2.08	0.53
48:J:26:VAL:HG13	48:J:36:VAL:HG11	1.90	0.53
53:O:86:LEU:HD23	53:O:86:LEU:N	2.24	0.53
59:U:16:ARG:O	59:U:16:ARG:HD3	2.09	0.53
1:A:17:U:H2'	1:A:18:C:C6	2.43	0.53
2:01:1071:G:H1'	2:01:1089:A:C5	2.43	0.53
2:01:2529:G:H5''	2:01:2530:A:H5''	1.90	0.53
6:03:11:ILE:HD12	6:03:12:ARG:N	2.24	0.53
6:03:201:PRO:HG2	6:03:204:ALA:HB2	1.89	0.53
42:D:59:LYS:O	42:D:63:ILE:HG13	2.08	0.53
10:07:59:ILE:HD13	10:07:151:LEU:HD21	1.89	0.53
26:23:51:LEU:HD12	26:23:51:LEU:N	2.20	0.53
43:E:98:ALA:HB2	43:E:123:LEU:HG	1.91	0.53
51:M:76:ILE:HG22	51:M:80:MET:SD	2.48	0.53
58:T:24:ARG:O	58:T:28:ARG:HG3	2.09	0.53
1:A:427:U:H2'	1:A:428:G:C8	2.44	0.53
2:01:2111:U:H2'	2:01:2112:G:H5'	1.91	0.53
2:01:2642:G:H5'	15:12:80:HIS:CD2	2.43	0.53
27:24:80:HIS:CD2	27:24:81:PRO:HD2	2.44	0.53
28:25:41:PHE:O	28:25:55:LEU:HD11	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:B:34:ARG:HD2	40:B:35:ASN:ND2	2.23	0.53
49:K:22:ILE:HB	49:K:85:VAL:HA	1.91	0.53
2:01:96:C:H4'	30:27:41:HIS:CD2	2.44	0.52
2:01:669:G:H2'	2:01:669:G:N3	2.24	0.52
2:01:995:C:H6	2:01:995:C:H5'	1.74	0.52
2:01:2800:A:H3'	2:01:2801:G:H5'	1.89	0.52
2:01:2834:G:H2'	2:01:2879:A:H61	1.74	0.52
5:X:4:G:H2'	5:X:5:G:C8	2.44	0.52
5:X:26:G:N3	5:X:26:G:H2'	2.23	0.52
12:09:43:ASN:HA	12:09:46:PHE:HB2	1.90	0.52
36:33:30:HIS:ND1	36:33:31:ILE:HG13	2.24	0.52
39:Z:291:MET:CE	39:Z:295:LEU:HB2	2.39	0.52
43:E:13:LYS:HE2	43:E:115:GLU:OE2	2.09	0.52
47:I:24:ASN:HD22	47:I:26:LYS:HG3	1.75	0.52
49:K:86:LYS:HE3	49:K:114:PRO:CG	2.39	0.52
1:A:831:A:C3'	1:A:832:G:H5''	2.39	0.52
1:A:950:U:H2'	1:A:951:G:H8	1.75	0.52
1:A:988:G:H1'	1:A:1015:G:H22	1.73	0.52
1:A:1240:U:H4'	45:G:37:THR:HG21	1.89	0.52
2:01:112:U:H2'	2:01:113:U:H5'	1.91	0.52
2:01:1213:A:N6	2:01:1236:G:H1'	2.23	0.52
2:01:1243:C:H1'	17:14:4:ASN:O	2.10	0.52
2:01:2345:G:N3	2:01:2381:A:H2'	2.24	0.52
18:15:20:LEU:HD13	27:24:81:PRO:HG2	1.90	0.52
48:J:42:LEU:HB2	48:J:71:LEU:HB2	1.91	0.52
1:A:72:A:H61	1:A:98:A:H2	1.56	0.52
1:A:1367:C:H5''	47:I:115:VAL:HG23	1.91	0.52
2:01:917:A:H5''	2:01:2268:A:H61	1.74	0.52
2:01:1139:G:O2'	2:01:1140:C:H5'	2.09	0.52
2:01:1529:G:H3'	2:01:1530:G:H5''	1.92	0.52
2:01:2475:C:H2'	2:01:2476:A:H5'	1.90	0.52
6:03:208:TYR:CD2	6:03:209:ILE:HG23	2.45	0.52
26:23:86:PHE:CE1	26:23:91:LYS:HB3	2.43	0.52
29:26:38:TRP:HE1	29:26:40:GLU:HG2	1.74	0.52
32:29:57:VAL:HG22	57:S:66:VAL:HG11	1.92	0.52
39:Z:307:LYS:HB2	39:Z:307:LYS:HZ3	1.74	0.52
40:B:29:PHE:HA	40:B:44:LYS:HD3	1.91	0.52
51:M:29:SER:O	51:M:33:LEU:HD13	2.09	0.52
53:O:34:GLN:O	53:O:38:LEU:HD13	2.10	0.52
1:A:509:A:H1'	42:D:54:LEU:CD2	2.38	0.52
1:A:1259:C:H3'	1:A:1260:G:C5'	2.33	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:242:G:H5''	36:33:63:TYR:CE2	2.44	0.52
2:01:864:G:O2'	2:01:865:C:H5'	2.10	0.52
2:01:2394:C:H5''	17:14:63:LYS:HD3	1.91	0.52
2:01:2836:U:H2'	2:01:2837:A:H8	1.73	0.52
5:X:27:U:H2'	5:X:28:C:C6	2.44	0.52
7:04:143:VAL:HB	7:04:153:LEU:HB2	1.92	0.52
7:04:226:PRO:HD3	7:04:233:GLY:H	1.75	0.52
20:17:4:LYS:O	20:17:8:ILE:HD13	2.09	0.52
21:18:26:GLU:HG2	21:18:43:GLU:HG2	1.92	0.52
32:29:60:PHE:O	32:29:64:PHE:N	2.36	0.52
51:M:14:ALA:HA	51:M:44:ILE:HD11	1.91	0.52
1:A:40:C:H2'	1:A:41:G:C5'	2.34	0.52
1:A:147:G:H2'	1:A:148:G:C8	2.45	0.52
1:A:191:G:H2'	1:A:192:A:C8	2.44	0.52
1:A:1422:G:H5'	16:13:48:PRO:HB3	1.92	0.52
1:A:1513:A:H2'	1:A:1514:G:C8	2.45	0.52
2:01:948:C:H2'	2:01:949:G:H8	1.74	0.52
15:12:120:ARG:HH21	15:12:120:ARG:HG2	1.74	0.52
25:22:61:LEU:HD23	25:22:82:LYS:HD2	1.91	0.52
44:F:18:VAL:HG13	44:F:19:PRO:HD3	1.91	0.52
49:K:60:PHE:O	49:K:64:VAL:HG23	2.10	0.52
55:Q:31:PRO:HG2	55:Q:32:ILE:CD1	2.38	0.52
1:A:335:C:H2'	1:A:336:A:C8	2.44	0.52
1:A:982:U:H4'	1:A:983:A:O4'	2.09	0.52
2:01:2094:A:H3'	2:01:2095:A:H5''	1.91	0.52
10:07:33:ILE:HG12	10:07:95:MET:HG3	1.92	0.52
11:08:163:TYR:HB2	11:08:166:GLU:HB2	1.92	0.52
30:27:24:GLU:O	30:27:28:LEU:HD13	2.10	0.52
43:E:47:PHE:HD1	43:E:47:PHE:H	1.56	0.52
51:M:106:ARG:HH11	51:M:112:ARG:HA	1.75	0.52
51:M:106:ARG:NE	51:M:106:ARG:HA	2.25	0.52
1:A:1261:A:H1'	1:A:1283:U:H5''	1.92	0.52
2:01:535:G:O2'	22:19:52:ARG:HG2	2.09	0.52
2:01:1319:C:O2'	2:01:1320:C:H5'	2.10	0.52
20:17:7:ARG:HD2	20:17:97:PHE:CZ	2.45	0.52
20:17:12:THR:HA	20:17:15:ARG:HB3	1.91	0.52
25:22:40:LYS:HE3	25:22:58:VAL:O	2.10	0.52
58:T:2:ASN:OD1	58:T:3:ILE:HG12	2.09	0.52
1:A:543:U:OP1	42:D:13:ARG:HG3	2.10	0.52
1:A:860:A:H2'	1:A:861:G:O4'	2.09	0.52
1:A:939:G:H2'	1:A:940:C:C6	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:320:A:H4'	2:01:322:A:N7	2.25	0.52
2:01:538:A:H5''	15:12:7:LYS:HE2	1.90	0.52
2:01:1357:C:H2'	2:01:1358:G:O4'	2.09	0.52
2:01:1709:U:H2'	2:01:1710:G:H8	1.75	0.52
11:08:70:LEU:O	11:08:74:MET:HG3	2.09	0.52
17:14:96:LYS:HE2	17:14:103:ILE:HG22	1.91	0.52
37:34:24:ARG:HG2	37:34:36:ARG:HA	1.91	0.52
39:Z:196:THR:CG2	39:Z:222:VAL:HG22	2.40	0.52
50:L:23:LEU:O	50:L:24:GLU:HB2	2.10	0.52
1:A:1410:A:H1'	4:Y:7:THR:HG1	1.74	0.52
2:01:885:C:H41	2:01:887:U:H1'	1.75	0.52
2:01:1300:G:H4'	2:01:1301:A:H5'	1.91	0.52
3:02:49:C:OP1	20:17:102:ARG:HG2	2.09	0.52
7:04:70:LYS:HB2	7:04:70:LYS:HZ3	1.73	0.52
7:04:85:ASN:HD22	7:04:85:ASN:N	2.06	0.52
9:06:156:ASN:HD22	9:06:156:ASN:N	2.07	0.52
11:08:104:LEU:HB2	11:08:112:VAL:HB	1.92	0.52
12:09:77:THR:O	12:09:77:THR:HG23	2.10	0.52
17:14:103:ILE:HD12	17:14:104:GLN:H	1.74	0.52
42:D:204:SER:HB3	43:E:105:ILE:HD12	1.92	0.52
51:M:33:LEU:HD23	51:M:40:GLU:HA	1.92	0.52
1:A:870:U:H4'	1:A:872:A:OP2	2.09	0.52
1:A:1219:A:OP1	52:N:52:ARG:HG2	2.10	0.52
1:A:1316:G:H2'	1:A:1317:C:H5''	1.91	0.52
6:03:184:LYS:O	6:03:188:ASN:N	2.43	0.52
19:16:116:VAL:HG12	19:16:117:ASP:N	2.24	0.52
28:25:42:HIS:CD2	28:25:73:ARG:HD3	2.44	0.52
31:28:7:THR:HG22	31:28:34:THR:HG23	1.92	0.52
39:Z:202:VAL:HB	39:Z:327:VAL:HA	1.92	0.52
1:A:131:A:H2'	1:A:132:C:C6	2.44	0.51
2:01:644:A:H2'	2:01:645:C:H4'	1.92	0.51
2:01:834:G:H1'	2:01:2358:A:N3	2.26	0.51
2:01:1074:G:N2	2:01:1075:C:HO2'	2.07	0.51
2:01:1930:G:N2	2:01:1968:G:H2'	2.25	0.51
14:11:14:ALA:H	14:11:53:PRO:HA	1.74	0.51
25:22:48:GLN:HE21	25:22:49:LYS:NZ	2.07	0.51
41:C:9:ILE:HG23	41:C:10:ARG:HG3	1.92	0.51
45:G:135:LYS:HG2	45:G:139:ASP:OD2	2.10	0.51
45:G:136:LYS:HA	45:G:139:ASP:HB2	1.92	0.51
49:K:27:ASN:O	49:K:56:LYS:HG3	2.09	0.51
50:L:29:LYS:O	50:L:80:LEU:HD12	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:U:20:ARG:HA	59:U:24:LYS:HB2	1.91	0.51
2:01:397:U:H5''	29:26:31:ASN:HB2	1.92	0.51
2:01:2305:U:H5''	10:07:130:GLY:HA3	1.91	0.51
2:01:2712:C:OP1	2:01:2714:G:H4'	2.10	0.51
42:D:58:GLN:O	42:D:62:ARG:HG2	2.10	0.51
51:M:33:LEU:O	51:M:38:ILE:N	2.41	0.51
54:P:71:VAL:O	54:P:75:ILE:HG13	2.10	0.51
58:T:70:LYS:HA	58:T:73:ARG:NH1	2.25	0.51
1:A:1477:U:H2'	1:A:1478:U:C6	2.44	0.51
2:01:121:G:H4'	2:01:149:A:H5'	1.91	0.51
2:01:1151:A:H4'	22:19:80:ASN:OD1	2.10	0.51
2:01:1373:A:C5'	2:01:2212:A:H1'	2.40	0.51
2:01:1428:C:O2'	2:01:1429:G:H5'	2.11	0.51
2:01:1753:G:H5''	21:18:92:ARG:HD3	1.91	0.51
3:02:12:C:N3	28:25:70:PRO:HB3	2.25	0.51
17:14:51:GLU:OE2	36:33:56:LEU:HD13	2.11	0.51
19:16:9:GLN:HA	19:16:17:ARG:HH21	1.74	0.51
40:B:96:LEU:O	40:B:99:MET:HG2	2.10	0.51
41:C:59:PRO:HG3	41:C:64:ARG:CZ	2.40	0.51
47:I:61:ASP:C	47:I:62:LEU:HD12	2.30	0.51
56:R:29:LYS:HA	56:R:32:ILE:HG12	1.92	0.51
1:A:736:C:H2'	1:A:737:C:C6	2.45	0.51
2:01:948:C:H2'	2:01:949:G:C8	2.45	0.51
2:01:2015:A:H5'	24:21:92:ARG:HH22	1.75	0.51
7:04:140:VAL:HG13	7:04:191:LEU:HA	1.92	0.51
13:10:97:LYS:HB2	13:10:129:LEU:HD11	1.92	0.51
13:10:119:PRO:HG2	13:10:120:ALA:N	2.24	0.51
30:27:24:GLU:HA	30:27:28:LEU:HD13	1.93	0.51
35:32:24:THR:HG23	35:32:27:GLY:H	1.76	0.51
41:C:156:LEU:HD12	41:C:156:LEU:H	1.74	0.51
42:D:137:SER:HB2	42:D:140:ASP:OD2	2.10	0.51
46:H:12:ARG:NH1	46:H:26:MET:HB3	2.26	0.51
51:M:28:ARG:O	51:M:32:ILE:HG12	2.10	0.51
52:N:23:ARG:HH11	52:N:50:LEU:HD11	1.75	0.51
53:O:31:LEU:O	53:O:35:ILE:HG12	2.10	0.51
2:01:2530:A:N6	11:08:155:PRO:HG3	2.26	0.51
3:02:7:G:H5'	20:17:29:HIS:CE1	2.46	0.51
12:09:4:ILE:HG13	12:09:39:ALA:HB2	1.93	0.51
13:10:122:GLN:O	13:10:124:ASP:N	2.43	0.51
15:12:84:ILE:HG23	15:12:84:ILE:O	2.11	0.51
39:Z:5:ASN:HD22	39:Z:6:PRO:CD	2.23	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:B:23:ASN:ND2	40:B:25:LYS:HB2	2.25	0.51
49:K:106:ILE:HD12	49:K:106:ILE:N	2.25	0.51
52:N:33:VAL:HG23	52:N:33:VAL:O	2.10	0.51
1:A:357:G:H2'	1:A:358:U:C5'	2.35	0.51
2:01:226:A:H2'	2:01:227:A:O4'	2.11	0.51
2:01:2105:U:C2'	2:01:2106:U:H5'	2.41	0.51
7:04:48:ILE:O	7:04:48:ILE:HG23	2.09	0.51
19:16:83:LEU:HD22	19:16:87:PHE:HE2	1.76	0.51
22:19:59:LEU:HD21	22:19:63:ARG:NE	2.20	0.51
26:23:10:VAL:HG12	26:23:71:ILE:HA	1.93	0.51
40:B:35:ASN:N	40:B:35:ASN:ND2	2.59	0.51
44:F:49:TYR:CE1	56:R:65:SER:HA	2.46	0.51
55:Q:18:LYS:HG2	55:Q:46:HIS:CE1	2.45	0.51
1:A:1238:A:C2	1:A:1241:G:H1'	2.46	0.51
3:02:12:C:N4	28:25:70:PRO:HB3	2.25	0.51
3:02:53:A:H2'	3:02:53:A:N3	2.26	0.51
18:15:42:THR:HA	18:15:93:VAL:HA	1.91	0.51
18:15:51:ARG:HB3	18:15:55:ARG:HH22	1.75	0.51
21:18:71:ARG:HH11	21:18:71:ARG:HG3	1.76	0.51
39:Z:117:ARG:HH21	39:Z:358:GLU:HA	1.76	0.51
49:K:36:ARG:NH1	49:K:36:ARG:HB3	2.25	0.51
50:L:41:PRO:HB3	50:L:88:ASP:OD2	2.10	0.51
1:A:108:G:H1	58:T:9:ARG:HG2	1.76	0.51
1:A:346:G:C2'	1:A:347:G:H5'	2.41	0.51
1:A:875:U:O2'	46:H:14:ARG:HD2	2.11	0.51
1:A:1259:C:C3'	1:A:1260:G:H5''	2.33	0.51
1:A:1308:U:H2'	1:A:1309:G:C8	2.46	0.51
3:02:12:C:C4	28:25:70:PRO:HB3	2.45	0.51
9:06:57:LYS:HB3	9:06:57:LYS:NZ	2.25	0.51
16:13:102:PRO:HB3	16:13:121:GLU:HB3	1.92	0.51
18:15:14:LYS:HE2	18:15:40:ARG:HH12	1.76	0.51
18:15:59:ARG:HG3	18:15:59:ARG:NH2	2.24	0.51
25:22:28:ASN:OD1	25:22:87:LEU:HB2	2.11	0.51
40:B:178:LEU:HD22	40:B:180:ILE:HD11	1.92	0.51
41:C:22:PHE:CD2	48:J:97:ASP:HB2	2.44	0.51
42:D:25:ARG:HH12	42:D:30:LYS:NZ	2.08	0.51
52:N:52:ARG:NH1	57:S:36:ARG:HH22	2.08	0.51
1:A:356:A:H2'	1:A:357:G:O4'	2.11	0.51
1:A:560:A:H5'	1:A:566:G:N2	2.26	0.51
1:A:1103:C:O2	40:B:105:THR:HG21	2.11	0.51
1:A:1314:C:OP1	57:S:5:LYS:HD3	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:1755:A:H2'	2:01:1756:G:H5'	1.92	0.51
2:01:2317:A:H2'	2:01:2318:G:O4'	2.11	0.51
7:04:131:MET:CE	7:04:187:CYS:HB2	2.41	0.51
10:07:61:GLY:O	32:29:7:PRO:HD2	2.10	0.51
12:09:2:GLN:HG3	12:09:39:ALA:HB3	1.93	0.51
12:09:5:LEU:HD12	12:09:5:LEU:N	2.25	0.51
15:12:95:ARG:HG2	15:12:95:ARG:HH11	1.75	0.51
21:18:33:GLU:OE1	21:18:38:ARG:HD3	2.09	0.51
29:26:17:ARG:HH21	29:26:21:LEU:HB3	1.75	0.51
39:Z:74:LYS:HD2	39:Z:77:LEU:HD12	1.93	0.51
56:R:21:ASP:OD2	56:R:23:LYS:HB2	2.11	0.51
1:A:831:A:H3'	1:A:832:G:H5''	1.93	0.51
1:A:1287:A:H2'	1:A:1288:A:C8	2.46	0.51
1:A:1527:U:O2'	1:A:1528:U:H5'	2.10	0.51
2:01:2281:A:O2'	2:01:2282:G:H5'	2.11	0.51
2:01:2512:C:H2'	2:01:2513:A:O4'	2.11	0.51
5:X:4:G:H2'	5:X:5:G:H8	1.75	0.51
6:03:128:GLY:O	6:03:132:GLY:N	2.42	0.51
45:G:22:LEU:O	45:G:26:VAL:HG23	2.11	0.51
46:H:9:MET:HG3	46:H:26:MET:SD	2.51	0.51
1:A:56:U:H2'	1:A:57:G:H8	1.77	0.50
2:01:580:U:O3'	22:19:30:VAL:HG13	2.10	0.50
2:01:1061:U:O2	14:11:12:VAL:HG12	2.11	0.50
2:01:1856:U:C2'	2:01:1857:G:H5'	2.41	0.50
2:01:2177:C:O2	2:01:2177:C:C2'	2.59	0.50
23:20:2:TYR:H	23:20:2:TYR:HD1	1.60	0.50
42:D:2:ARG:O	42:D:4:LEU:HD13	2.11	0.50
1:A:8:A:C8	43:E:105:ILE:HG13	2.46	0.50
1:A:1371:G:O3'	47:I:70:GLY:HA3	2.11	0.50
2:01:226:A:H2'	2:01:227:A:C8	2.46	0.50
2:01:661:A:H5'	17:14:13:LYS:NZ	2.27	0.50
2:01:1856:U:H2'	2:01:1857:G:H5'	1.92	0.50
2:01:1900:A:H1'	2:01:1970:A:H2'	1.94	0.50
3:02:30:C:H2'	3:02:31:C:H5'	1.93	0.50
8:05:122:VAL:HG21	8:05:141:ARG:CG	2.41	0.50
16:13:2:ILE:O	16:13:33:ALA:N	2.43	0.50
17:14:39:LYS:HD2	17:14:45:GLY:HA2	1.92	0.50
29:26:77:TYR:HD1	29:26:77:TYR:H	1.59	0.50
40:B:17:HIS:HB3	40:B:37:VAL:HB	1.92	0.50
41:C:139:ASN:HD22	41:C:139:ASN:N	2.09	0.50
2:01:225:C:H2'	2:01:226:A:O4'	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:1079:C:H2'	2:01:1080:A:C8	2.45	0.50
2:01:1094:U:H2'	2:01:1096:A:OP2	2.12	0.50
2:01:1424:G:H2'	2:01:1425:G:O4'	2.12	0.50
2:01:1669:A:O4'	16:13:5:GLN:HG3	2.11	0.50
2:01:2230:G:H2'	2:01:2231:U:C6	2.46	0.50
2:01:2383:G:O2'	2:01:2384:U:H5'	2.11	0.50
17:14:63:LYS:HE3	36:33:11:LYS:HD3	1.92	0.50
18:15:74:THR:HG21	18:15:86:LYS:HE2	1.94	0.50
27:24:76:ASP:HB2	27:24:90:ASP:OD2	2.10	0.50
32:29:9:TYR:OH	32:29:25:ARG:HD3	2.12	0.50
43:E:37:VAL:HG21	43:E:113:VAL:HG12	1.93	0.50
1:A:31:G:N1	1:A:48:C:H5''	2.27	0.50
1:A:50:A:H4'	1:A:51:A:H5'	1.93	0.50
2:01:533:G:H5'	22:19:23:TYR:CD1	2.47	0.50
2:01:2249:U:H3'	2:01:2250:G:H5'	1.94	0.50
2:01:2898:U:H2'	2:01:2899:A:H8	1.76	0.50
9:06:186:VAL:HG23	9:06:186:VAL:O	2.11	0.50
10:07:111:ARG:HG2	10:07:112:ASP:OD2	2.11	0.50
20:17:30:ARG:C	20:17:30:ARG:HD2	2.32	0.50
21:18:47:ILE:HG23	21:18:96:LEU:O	2.11	0.50
22:19:34:ALA:O	22:19:38:VAL:HG23	2.11	0.50
26:23:81:ARG:CD	26:23:96:LYS:HD2	2.37	0.50
27:24:80:HIS:HD2	27:24:81:PRO:HD2	1.75	0.50
28:25:36:GLN:HE21	28:25:40:LYS:HB3	1.77	0.50
29:26:31:ASN:ND2	29:26:33:HIS:HE1	2.09	0.50
47:I:31:GLN:NE2	47:I:31:GLN:N	2.59	0.50
47:I:82:ILE:O	47:I:86:LEU:HG	2.12	0.50
1:A:1344:C:O2'	1:A:1345:U:H5'	2.12	0.50
2:01:712:G:P	53:O:88:ARG:HH12	2.34	0.50
2:01:873:C:H2'	2:01:874:G:C8	2.46	0.50
2:01:898:C:H2'	2:01:899:A:O4'	2.12	0.50
2:01:1027:A:C2	2:01:2488:G:H4'	2.47	0.50
2:01:2529:G:H4'	11:08:174:LYS:CD	2.42	0.50
2:01:2723:C:OP1	8:05:114:LYS:HD2	2.12	0.50
6:03:30:LEU:HD12	6:03:33:LEU:HD12	1.92	0.50
7:04:123:ILE:HG23	7:04:191:LEU:CD1	2.41	0.50
35:32:19:ARG:HG2	35:32:19:ARG:HH21	1.77	0.50
40:B:23:ASN:HD21	40:B:25:LYS:HB2	1.76	0.50
46:H:8:ASP:O	46:H:12:ARG:HG2	2.12	0.50
46:H:104:SER:OG	46:H:125:ILE:HD11	2.11	0.50
1:A:1219:A:H2'	1:A:1220:G:H8	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:671:C:H2'	2:01:672:C:C6	2.47	0.50
2:01:771:G:OP1	35:32:14:ARG:HG3	2.12	0.50
2:01:1079:C:H4'	14:11:133:ARG:HH21	1.76	0.50
2:01:2114:A:N3	2:01:2114:A:H2'	2.26	0.50
2:01:2584:U:H2'	2:01:2585:U:H5''	1.91	0.50
12:09:58:LEU:O	12:09:58:LEU:HD13	2.12	0.50
43:E:14:LEU:HD23	43:E:15:ILE:N	2.27	0.50
55:Q:20:ILE:HG22	55:Q:45:VAL:O	2.11	0.50
2:01:1666:G:H4'	16:13:6:THR:HG23	1.94	0.50
2:01:1727:C:H2'	2:01:1728:C:C5'	2.38	0.50
9:06:32:VAL:HG11	17:14:6:LEU:HD13	1.93	0.50
11:08:5:LYS:HB2	11:08:5:LYS:NZ	2.27	0.50
11:08:106:LEU:HB3	11:08:151:ARG:CD	2.42	0.50
40:B:26:MET:SD	40:B:192:PRO:HG3	2.52	0.50
51:M:71:GLU:O	51:M:75:SER:N	2.41	0.50
2:01:125:A:H4'	35:32:13:ASN:O	2.11	0.50
2:01:671:C:OP1	17:14:43:GLY:N	2.33	0.50
21:18:16:VAL:HG21	21:18:76:HIS:CE1	2.47	0.50
43:E:88:HIS:CD2	43:E:137:ARG:HD2	2.47	0.50
44:F:18:VAL:O	44:F:22:ILE:HG13	2.12	0.50
53:O:54:GLY:O	53:O:58:MET:HG3	2.11	0.50
55:Q:13:SER:HB2	55:Q:21:VAL:HB	1.93	0.50
55:Q:24:ILE:HD11	55:Q:60:ILE:HD11	1.93	0.50
2:01:146:A:H2'	2:01:147:C:C6	2.47	0.50
2:01:528:A:H3'	15:12:116:ARG:NH2	2.27	0.50
2:01:1069:A:OP1	2:01:1070:A:H8	1.95	0.50
2:01:1965:C:H5''	2:01:1966:A:H2'	1.93	0.50
10:07:42:ALA:HB3	10:07:84:ILE:HD12	1.93	0.50
10:07:63:LYS:HD3	32:29:5:ILE:HB	1.94	0.50
13:10:44:ALA:O	13:10:49:GLY:N	2.45	0.50
19:16:67:PHE:O	19:16:71:ARG:HD2	2.12	0.50
39:Z:128:CYS:HB3	39:Z:189:TYR:HB2	1.94	0.50
41:C:55:VAL:CG1	41:C:66:THR:HB	2.42	0.50
43:E:51:LYS:H	43:E:61:LYS:HD3	1.77	0.50
44:F:64:VAL:HG22	44:F:65:GLU:N	2.26	0.50
47:I:93:LEU:HD23	47:I:93:LEU:C	2.32	0.50
54:P:68:SER:HB3	54:P:71:VAL:HG23	1.93	0.50
55:Q:22:VAL:HG22	55:Q:23:ALA:N	2.27	0.50
55:Q:67:SER:HB3	55:Q:70:LYS:HB3	1.94	0.50
2:01:676:A:H62	2:01:802:A:H61	1.59	0.49
2:01:1571:A:H2'	2:01:1572:A:C8	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:2455:G:H2'	2:01:2456:C:C6	2.47	0.49
2:01:2636:C:H4'	8:05:81:GLU:OE2	2.12	0.49
6:03:194:VAL:O	6:03:198:LYS:N	2.43	0.49
16:13:38:ILE:HD11	16:13:112:PHE:HZ	1.77	0.49
18:15:31:PHE:HB3	18:15:130:PHE:CE1	2.47	0.49
42:D:66:VAL:C	42:D:67:LEU:HD12	2.32	0.49
42:D:170:LEU:HD12	42:D:170:LEU:O	2.11	0.49
54:P:3:THR:HA	54:P:66:THR:H	1.77	0.49
1:A:162:A:H2'	1:A:163:C:O4'	2.12	0.49
1:A:831:A:H5''	40:B:20:ARG:HE	1.77	0.49
1:A:1173:U:H2'	1:A:1174:G:H8	1.77	0.49
2:01:38:A:H4'	9:06:45:ALA:CB	2.43	0.49
2:01:1657:U:H2'	2:01:1658:C:C6	2.47	0.49
2:01:2086:U:H2'	2:01:2087:G:C8	2.46	0.49
7:04:25:LYS:HD3	7:04:25:LYS:N	2.20	0.49
11:08:152:ARG:H	11:08:152:ARG:CD	2.23	0.49
17:14:82:LEU:HB3	17:14:120:VAL:HG21	1.93	0.49
20:17:66:GLY:HA2	20:17:102:ARG:HH12	1.77	0.49
23:20:41:ILE:HD12	23:20:54:VAL:HG11	1.93	0.49
26:23:84:PHE:CE1	26:23:93:ARG:HG2	2.47	0.49
32:29:23:LYS:C	32:29:24:ILE:HD12	2.32	0.49
39:Z:148:LEU:HD21	39:Z:199:HIS:CD2	2.47	0.49
42:D:45:PRO:HG2	42:D:47:LEU:HD11	1.94	0.49
1:A:314:C:O2'	1:A:315:A:H5'	2.12	0.49
1:A:1401:G:H2'	1:A:1402:C:O4'	2.11	0.49
2:01:215:G:O3'	2:01:216:A:H4'	2.13	0.49
5:X:69:C:H2'	5:X:70:G:C8	2.48	0.49
22:19:65:ASN:O	22:19:69:ARG:HG3	2.12	0.49
30:27:6:LEU:HD11	30:27:59:GLU:OE2	2.12	0.49
36:33:30:HIS:O	36:33:32:LEU:HG	2.12	0.49
39:Z:234:ILE:O	39:Z:234:ILE:HG12	2.12	0.49
39:Z:337:ARG:HG2	39:Z:337:ARG:HH11	1.77	0.49
41:C:19:SER:HB3	41:C:21:TRP:HE1	1.76	0.49
55:Q:18:LYS:H	55:Q:50:ASN:HD21	1.59	0.49
57:S:49:ALA:HA	57:S:58:PRO:HA	1.93	0.49
1:A:346:G:H2'	1:A:347:G:H5'	1.94	0.49
1:A:427:U:H4'	1:A:541:G:C5'	2.42	0.49
1:A:1162:C:H2'	1:A:1163:A:C8	2.46	0.49
2:01:473:G:O2'	2:01:474:G:H5'	2.12	0.49
2:01:1570:A:H2'	2:01:1571:A:C8	2.47	0.49
2:01:2733:A:N1	8:05:208:LYS:HB2	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:2807:U:C3'	2:01:2808:G:H5''	2.39	0.49
3:02:90:C:H5'	18:15:18:ARG:HG2	1.94	0.49
9:06:130:LYS:HB2	9:06:133:LEU:HG	1.94	0.49
16:13:116:ILE:HD12	16:13:116:ILE:N	2.27	0.49
17:14:29:LYS:O	17:14:30:THR:OG1	2.30	0.49
23:20:101:ILE:HG12	23:20:102:SER:N	2.26	0.49
37:34:18:LYS:HG2	37:34:21:GLY:HA2	1.93	0.49
44:F:67:PRO:HG2	44:F:70:VAL:HG23	1.93	0.49
49:K:86:LYS:HE3	49:K:114:PRO:HG2	1.95	0.49
49:K:125:LYS:C	49:K:126:ARG:HG2	2.33	0.49
54:P:58:ALA:HA	54:P:61:VAL:HG12	1.95	0.49
1:A:1329:A:O2'	1:A:1330:U:H5'	2.13	0.49
2:01:807:U:H2'	2:01:808:G:C8	2.48	0.49
2:01:2189:U:H2'	2:01:2190:G:H8	1.77	0.49
2:01:2619:C:O2'	2:01:2620:C:H5'	2.12	0.49
7:04:153:LEU:HD13	7:04:175:LEU:HD21	1.94	0.49
11:08:102:ILE:HD11	11:08:116:LEU:HD21	1.94	0.49
13:10:61:ARG:HD3	13:10:61:ARG:N	2.27	0.49
15:12:102:GLU:HG2	15:12:119:PHE:CZ	2.47	0.49
24:21:51:LEU:O	24:21:55:ILE:HG12	2.12	0.49
28:25:8:ASN:HA	28:25:10:ARG:NH1	2.27	0.49
45:G:110:ARG:NH1	45:G:121:ASN:HB3	2.27	0.49
2:01:414:C:H2'	2:01:415:A:C8	2.48	0.49
2:01:1434:A:H2'	2:01:1435:G:C8	2.48	0.49
2:01:2282:G:H4'	2:01:2389:G:O2'	2.12	0.49
7:04:75:ALA:HB2	7:04:95:TYR:CD1	2.47	0.49
8:05:77:ARG:NH2	8:05:80:TRP:HH2	2.11	0.49
14:11:8:VAL:HB	14:11:10:LEU:CD1	2.43	0.49
34:31:39:ASP:OD2	34:31:42:VAL:HG22	2.13	0.49
40:B:129:THR:HB	40:B:132:GLU:HB2	1.94	0.49
43:E:104:ILE:HG23	43:E:111:ARG:NH1	2.26	0.49
52:N:25:GLU:HA	52:N:29:ILE:HD12	1.94	0.49
55:Q:32:ILE:HD12	55:Q:32:ILE:N	2.26	0.49
1:A:390:U:H4'	54:P:28:ARG:NH1	2.27	0.49
1:A:1239:A:H61	1:A:1297:G:H5'	1.76	0.49
2:01:372:G:O2'	2:01:373:U:H5	1.94	0.49
2:01:1726:C:H2'	2:01:1727:C:H6	1.76	0.49
2:01:2050:C:H1'	8:05:161:MET:HE2	1.94	0.49
2:01:2298:A:H2'	2:01:2299:U:O4'	2.12	0.49
2:01:2345:G:OP2	34:31:37:LYS:HG2	2.12	0.49
2:01:2682:A:O2'	2:01:2683:C:H5'	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:06:145:ASP:HA	9:06:166:LYS:HB3	1.94	0.49
10:07:90:LEU:HB3	10:07:95:MET:HA	1.94	0.49
14:11:23:VAL:O	14:11:23:VAL:HG12	2.12	0.49
24:21:79:GLY:H	24:21:101:SER:HA	1.78	0.49
44:F:64:VAL:HG22	44:F:65:GLU:H	1.77	0.49
46:H:45:ILE:CD1	46:H:62:LEU:HA	2.43	0.49
51:M:6:ILE:HG13	51:M:6:ILE:O	2.12	0.49
1:A:1081:A:N7	43:E:51:LYS:NZ	2.61	0.49
2:01:1108:U:H5'	13:10:80:THR:HG22	1.94	0.49
2:01:1847:G:HO2'	2:01:1848:A:H8	1.59	0.49
2:01:2529:G:H4'	11:08:174:LYS:HG3	1.95	0.49
3:02:29:A:H2'	3:02:30:C:C6	2.47	0.49
32:29:63:ARG:HG2	57:S:8:PRO:HG2	1.94	0.49
33:30:37:HIS:ND1	33:30:38:LEU:O	2.42	0.49
40:B:94:ARG:HD2	40:B:94:ARG:N	2.28	0.49
47:I:46:VAL:HA	47:I:49:GLN:HG3	1.95	0.49
59:U:24:LYS:O	59:U:28:LEU:HD12	2.13	0.49
8:05:46:ARG:HG3	8:05:84:LEU:HB2	1.94	0.49
9:06:46:GLN:HB3	9:06:83:VAL:HG21	1.94	0.49
9:06:105:LEU:O	9:06:109:LEU:HD13	2.13	0.49
9:06:149:ILE:HD13	9:06:188:MET:HE2	1.94	0.49
10:07:49:LEU:O	10:07:53:ALA:N	2.46	0.49
11:08:154:GLU:OE2	11:08:155:PRO:HD2	2.12	0.49
21:18:28:LYS:HG3	21:18:82:SER:HB3	1.95	0.49
22:19:46:TYR:HA	22:19:49:ARG:NH1	2.27	0.49
41:C:8:GLY:HA3	52:N:88:MET:HB3	1.95	0.49
47:I:115:VAL:HG21	48:J:62:ARG:HD3	1.95	0.49
49:K:88:PRO:CG	59:U:28:LEU:HD13	2.41	0.49
52:N:40:ARG:HH12	57:S:6:LYS:HG2	1.78	0.49
1:A:276:G:H5''	55:Q:16:MET:HE3	1.95	0.49
1:A:1227:A:H2'	1:A:1228:C:H5'	1.93	0.49
1:A:1513:A:H2'	1:A:1514:G:H8	1.78	0.49
2:01:651:G:H5'	36:33:18:LYS:HG3	1.95	0.49
2:01:1923:U:H2'	2:01:1924:C:C6	2.48	0.49
2:01:2404:U:H2'	2:01:2405:G:O4'	2.13	0.49
5:X:29:G:H2'	5:X:30:G:C4'	2.43	0.49
8:05:122:VAL:HG21	8:05:141:ARG:HG3	1.95	0.49
10:07:67:THR:N	10:07:85:GLY:O	2.43	0.49
14:11:8:VAL:HB	14:11:10:LEU:HD13	1.95	0.49
20:17:83:LEU:HD23	20:17:83:LEU:O	2.13	0.49
28:25:21:ARG:HG2	28:25:21:ARG:HH11	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:Z:246:THR:CG2	39:Z:247:SER:H	2.17	0.49
39:Z:361:LEU:O	39:Z:361:LEU:HD23	2.13	0.49
40:B:96:LEU:HB2	40:B:99:MET:HB3	1.94	0.49
44:F:20:GLY:O	44:F:24:ARG:HG3	2.13	0.49
47:I:24:ASN:HD22	47:I:26:LYS:CD	2.26	0.49
1:A:137:U:H2'	1:A:138:G:C5'	2.42	0.48
1:A:1221:G:H5'	57:S:35:ARG:CD	2.42	0.48
2:01:320:A:N3	9:06:163:ASN:ND2	2.61	0.48
2:01:554:U:H2'	2:01:555:G:O4'	2.13	0.48
2:01:575:A:H2'	2:01:576:U:H6	1.78	0.48
2:01:1287:A:C2	2:01:1649:G:H4'	2.48	0.48
2:01:1753:G:H5''	21:18:92:ARG:CD	2.43	0.48
3:02:102:G:O2'	3:02:103:U:H5'	2.13	0.48
7:04:57:HIS:ND1	7:04:58:LYS:N	2.61	0.48
8:05:4:LEU:HD11	8:05:29:VAL:CG1	2.41	0.48
9:06:104:ALA:O	9:06:108:ILE:HG13	2.12	0.48
18:15:8:LYS:HB2	18:15:8:LYS:NZ	2.28	0.48
18:15:12:MET:O	18:15:86:LYS:NZ	2.46	0.48
25:22:54:GLU:HB3	25:22:88:LYS:HD2	1.94	0.48
27:24:35:GLU:OE1	27:24:93:ARG:HD3	2.13	0.48
27:24:70:ILE:HG21	27:24:93:ARG:HH12	1.77	0.48
40:B:91:VAL:HG21	40:B:99:MET:HE2	1.95	0.48
43:E:81:GLN:HE21	43:E:81:GLN:HA	1.79	0.48
52:N:8:ARG:HB3	52:N:12:ARG:NH1	2.22	0.48
55:Q:16:MET:HB3	55:Q:19:SER:HB3	1.95	0.48
57:S:5:LYS:O	57:S:6:LYS:HD2	2.13	0.48
59:U:33:ARG:NH2	59:U:34:ARG:HD3	2.26	0.48
1:A:245:U:HO2'	1:A:246:A:H5'	1.77	0.48
1:A:734:G:O2'	56:R:59:LYS:HD3	2.13	0.48
1:A:1147:C:H4'	47:I:6:TYR:HE2	1.78	0.48
2:01:586:A:H5'	9:06:84:THR:HG21	1.95	0.48
2:01:662:G:O2'	2:01:663:G:H5'	2.14	0.48
2:01:1107:G:H4'	13:10:81:LEU:N	2.28	0.48
2:01:1427:A:H4'	2:01:1428:C:O4'	2.12	0.48
2:01:1450:G:C2'	2:01:1451:C:H5'	2.43	0.48
2:01:2266:A:H4'	2:01:2267:A:N3	2.27	0.48
8:05:33:ARG:HD3	8:05:73:VAL:HB	1.95	0.48
9:06:29:HIS:HA	9:06:32:VAL:HG12	1.94	0.48
14:11:129:GLU:HG2	14:11:139:VAL:HG11	1.95	0.48
17:14:103:ILE:HD12	17:14:104:GLN:HG3	1.93	0.48
19:16:100:CYS:HA	33:30:42:ILE:HG12	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:B:163:ILE:O	40:B:185:ILE:HG13	2.12	0.48
40:B:187:ASP:OD2	40:B:203:ASP:OD2	2.32	0.48
45:G:11:ILE:C	45:G:11:ILE:HD12	2.34	0.48
49:K:106:ILE:HD12	49:K:106:ILE:H	1.78	0.48
53:O:68:TYR:HA	53:O:71:ARG:HE	1.78	0.48
1:A:2:A:H5''	42:D:82:LYS:HE2	1.94	0.48
1:A:337:G:H2'	1:A:338:A:C8	2.49	0.48
1:A:950:U:H2'	1:A:951:G:C8	2.47	0.48
1:A:1305:G:H22	1:A:1331:G:H2'	1.78	0.48
2:01:360:U:H2'	2:01:361:G:O4'	2.14	0.48
2:01:808:G:OP2	17:14:36:LYS:HE2	2.14	0.48
2:01:1058:U:H2'	2:01:1059:G:C8	2.47	0.48
2:01:1360:G:H2'	2:01:1361:G:H5'	1.95	0.48
2:01:2537:U:H2'	2:01:2538:C:C6	2.47	0.48
8:05:193:VAL:HG21	8:05:201:LEU:HD11	1.95	0.48
9:06:175:ILE:HD12	9:06:180:LEU:HD11	1.95	0.48
10:07:136:ILE:C	10:07:136:ILE:HD12	2.34	0.48
18:15:73:ILE:HG13	18:15:93:VAL:HG13	1.96	0.48
30:27:47:ARG:HH21	30:27:47:ARG:HG3	1.77	0.48
47:I:48:ARG:O	47:I:52:GLU:HG2	2.13	0.48
47:I:79:ARG:HD3	47:I:102:PHE:HD1	1.78	0.48
47:I:93:LEU:HD23	47:I:93:LEU:O	2.13	0.48
1:A:297:G:H4'	1:A:557:G:H4'	1.95	0.48
1:A:555:U:H2'	1:A:556:C:C6	2.48	0.48
1:A:625:U:H5''	54:P:16:PHE:CD2	2.48	0.48
1:A:1147:C:H1'	47:I:17:ARG:NH2	2.28	0.48
2:01:562:U:O4'	2:01:2036:C:H5'	2.13	0.48
2:01:1084:A:H5'	13:10:54:VAL:HB	1.96	0.48
2:01:1802:A:H2'	2:01:1803:A:C8	2.48	0.48
2:01:1909:C:H2'	2:01:1910:G:H8	1.78	0.48
2:01:2249:U:O2'	2:01:2250:G:H5''	2.13	0.48
7:04:202:ARG:HH21	7:04:213:ARG:HH22	1.60	0.48
14:11:35:MET:HA	14:11:38:CYS:HB3	1.95	0.48
16:13:10:VAL:HG21	16:13:16:ALA:HB3	1.96	0.48
25:22:23:ALA:HB1	25:22:29:THR:HB	1.95	0.48
25:22:76:ARG:HG2	25:22:76:ARG:HH11	1.78	0.48
30:27:10:SER:O	30:27:14:LEU:N	2.45	0.48
37:34:34:LYS:HB3	37:34:34:LYS:HZ3	1.78	0.48
42:D:167:PRO:HB3	42:D:169:TRP:CZ3	2.47	0.48
44:F:49:TYR:HE1	56:R:65:SER:HA	1.79	0.48
45:G:13:PRO:HG3	45:G:20:GLU:HG2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:G:70:PRO:HD3	45:G:102:TRP:HZ3	1.78	0.48
49:K:30:ILE:HA	49:K:45:THR:HG22	1.96	0.48
49:K:125:LYS:O	49:K:126:ARG:HG2	2.14	0.48
52:N:1:ALA:N	52:N:6:LYS:HE3	2.29	0.48
53:O:70:LYS:HD3	53:O:77:TYR:CE2	2.49	0.48
54:P:78:VAL:O	54:P:78:VAL:HG22	2.13	0.48
56:R:54:LEU:O	56:R:58:ILE:HG13	2.13	0.48
59:U:57:LYS:HA	59:U:60:ALA:HB3	1.96	0.48
1:A:191:G:H2'	1:A:192:A:H8	1.78	0.48
1:A:521:G:H5'	50:L:68:GLY:O	2.13	0.48
1:A:1250:A:H4'	47:I:69:GLY:N	2.29	0.48
1:A:1435:G:H2'	1:A:1436:U:C6	2.48	0.48
2:01:467:G:O2'	2:01:468:G:H5'	2.12	0.48
2:01:2350:C:H2'	2:01:2351:G:O4'	2.13	0.48
11:08:85:LYS:C	11:08:86:LEU:HD12	2.33	0.48
11:08:132:LEU:H	11:08:132:LEU:CD2	2.24	0.48
52:N:23:ARG:HG2	52:N:50:LEU:HD11	1.95	0.48
58:T:27:MET:SD	58:T:66:ILE:HG13	2.53	0.48
1:A:1211:U:H4'	1:A:1213:A:N3	2.28	0.48
1:A:1318:A:H2'	1:A:1319:A:H5'	1.96	0.48
2:01:2297:A:N1	2:01:2321:U:H5	2.12	0.48
2:01:2457:U:H5	2:01:2494:G:N1	2.02	0.48
6:03:194:VAL:HA	6:03:197:LYS:HB3	1.95	0.48
16:13:86:LEU:C	16:13:87:LEU:HD12	2.34	0.48
19:16:59:SER:HB3	19:16:62:ASN:HD22	1.79	0.48
39:Z:293:ALA:O	39:Z:297:GLU:HG2	2.14	0.48
48:J:17:LEU:HD23	48:J:17:LEU:C	2.34	0.48
51:M:6:ILE:HB	51:M:8:ILE:HG23	1.95	0.48
51:M:54:THR:HA	51:M:57:ASP:OD2	2.14	0.48
54:P:70:ARG:HH11	54:P:70:ARG:HG3	1.79	0.48
2:01:757:G:H2'	2:01:758:C:H5'	1.96	0.48
2:01:1133:A:H4'	2:01:1134:A:H5''	1.94	0.48
2:01:2059:A:N6	2:01:2503:A:H2'	2.28	0.48
2:01:2087:G:H2'	2:01:2088:A:H8	1.78	0.48
2:01:2233:U:H2'	2:01:2234:G:C8	2.49	0.48
14:11:91:LYS:HE2	14:11:95:ASP:HB3	1.95	0.48
16:13:112:PHE:CA	16:13:115:ILE:HD13	2.43	0.48
26:23:48:VAL:HG22	26:23:50:ALA:H	1.78	0.48
27:24:34:LYS:HB2	27:24:35:GLU:OE2	2.14	0.48
33:30:16:ARG:HA	33:30:19:ASP:OD1	2.14	0.48
39:Z:148:LEU:HD21	39:Z:199:HIS:HD2	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:C:156:LEU:H	41:C:156:LEU:CD1	2.27	0.48
43:E:19:ARG:HE	43:E:30:PHE:CB	2.26	0.48
52:N:23:ARG:HD3	52:N:25:GLU:HG2	1.95	0.48
54:P:52:LEU:N	54:P:52:LEU:HD23	2.27	0.48
1:A:1030:U:C2'	1:A:1031:C:H5'	2.39	0.48
1:A:1297:G:C1'	1:A:1298:U:OP2	2.58	0.48
2:01:12:U:O2	2:01:12:U:C2'	2.61	0.48
2:01:297:G:H2'	2:01:298:G:H5'	1.95	0.48
2:01:1087:G:N2	2:01:1103:A:H1'	2.28	0.48
2:01:2389:G:H5''	2:01:2390:U:O4'	2.14	0.48
4:Y:20:LEU:HD22	39:Z:219:SER:OG	2.14	0.48
9:06:3:LEU:HB2	9:06:12:LEU:HB2	1.94	0.48
9:06:97:ASN:HB2	9:06:100:MET:HG3	1.95	0.48
15:12:88:THR:HB	15:12:91:GLU:OE1	2.13	0.48
15:12:120:ARG:HG2	15:12:120:ARG:NH2	2.29	0.48
16:13:26:GLY:HA3	16:13:30:ARG:NH1	2.29	0.48
19:16:29:VAL:HG12	19:16:78:LYS:HG2	1.95	0.48
23:20:14:VAL:HG21	23:20:98:ILE:HD12	1.95	0.48
28:25:33:ILE:HG22	28:25:34:VAL:HG23	1.96	0.48
32:29:15:SER:O	32:29:34:LEU:HD23	2.14	0.48
39:Z:276:ASN:HD22	39:Z:276:ASN:N	2.10	0.48
44:F:47:LEU:HD21	44:F:57:ALA:HB3	1.94	0.48
45:G:66:GLU:HA	45:G:69:ARG:HG2	1.96	0.48
1:A:723:U:OP1	59:U:44:ARG:HG3	2.14	0.48
2:01:644:A:H2'	2:01:645:C:C5'	2.44	0.48
2:01:1386:C:H2'	2:01:1387:A:C8	2.49	0.48
2:01:1405:U:H2'	2:01:1406:U:C6	2.49	0.48
2:01:1432:G:H2'	2:01:1433:A:C8	2.49	0.48
2:01:2834:G:O2'	2:01:2835:A:H5'	2.14	0.48
29:26:32:LEU:HA	29:26:51:SER:HA	1.96	0.48
31:28:43:ILE:O	31:28:47:ILE:HG12	2.14	0.48
39:Z:73:MET:HA	39:Z:106:LEU:HD22	1.95	0.48
39:Z:134:ALA:HB2	39:Z:145:ALA:HB2	1.96	0.48
42:D:58:GLN:NE2	42:D:62:ARG:NE	2.62	0.48
52:N:20:PHE:HB2	52:N:55:SER:HB3	1.96	0.48
52:N:73:LEU:O	52:N:77:GLY:N	2.42	0.48
54:P:6:LEU:HD23	54:P:19:VAL:HA	1.95	0.48
59:U:31:VAL:O	59:U:31:VAL:HG22	2.14	0.48
1:A:451:A:H4'	1:A:452:A:C4	2.47	0.48
1:A:1173:U:H2'	1:A:1174:G:C8	2.49	0.48
1:A:1237:C:OP1	1:A:1238:A:H1'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1378:C:H3'	1:A:1378:C:OP2	2.14	0.48
8:05:36:GLN:NE2	8:05:38:LYS:HG2	2.29	0.48
10:07:140:ILE:HD12	10:07:140:ILE:N	2.29	0.48
20:17:106:LEU:O	20:17:106:LEU:HD23	2.14	0.48
31:28:41:PRO:HA	31:28:44:ARG:HB2	1.96	0.48
40:B:192:PRO:O	40:B:195:VAL:HG22	2.13	0.48
41:C:110:LEU:O	41:C:110:LEU:HD23	2.14	0.48
43:E:17:VAL:O	43:E:17:VAL:HG13	2.14	0.48
45:G:70:PRO:HG3	45:G:98:LEU:HD23	1.96	0.48
58:T:53:MET:HE3	58:T:57:VAL:HG21	1.95	0.48
1:A:66:A:H4'	1:A:173:U:O4	2.14	0.47
1:A:678:U:H2'	1:A:679:C:C6	2.49	0.47
1:A:1144:G:H21	1:A:1146:A:H62	1.61	0.47
1:A:1221:G:H5'	57:S:35:ARG:HD3	1.95	0.47
2:01:115:C:O2'	2:01:116:C:H5'	2.13	0.47
2:01:2020:A:H62	33:30:5:ASN:ND2	2.12	0.47
2:01:2039:U:H2'	2:01:2040:G:C8	2.48	0.47
2:01:2822:G:O6	19:16:2:ARG:HD2	2.14	0.47
10:07:34:THR:HB	10:07:87:LYS:HD2	1.96	0.47
14:11:11:GLN:HB2	14:11:56:VAL:CG1	2.43	0.47
17:14:105:ILE:N	17:14:105:ILE:HD12	2.29	0.47
18:15:51:ARG:HB3	18:15:55:ARG:NH2	2.29	0.47
44:F:53:LYS:HB2	44:F:54:LEU:HD13	1.95	0.47
48:J:7:ARG:HA	48:J:75:ASP:HA	1.96	0.47
49:K:63:GLN:OE1	49:K:98:ALA:HB2	2.13	0.47
49:K:86:LYS:HE3	49:K:114:PRO:CD	2.44	0.47
56:R:24:ASP:O	56:R:28:LEU:HD13	2.14	0.47
59:U:16:ARG:NH2	59:U:19:LYS:HG2	2.23	0.47
1:A:814:A:H5''	1:A:1511:G:H4'	1.95	0.47
2:01:279:A:H2'	2:01:280:U:C5'	2.44	0.47
2:01:871:U:H2'	2:01:872:U:C6	2.49	0.47
2:01:2830:C:O2'	2:01:2831:G:H5'	2.14	0.47
2:01:2860:A:H2'	2:01:2861:U:H5'	1.95	0.47
4:Y:4:TYR:HA	50:L:38:THR:OG1	2.13	0.47
13:10:81:LEU:N	13:10:81:LEU:HD23	2.29	0.47
13:10:113:PHE:H	13:10:113:PHE:HD1	1.62	0.47
14:11:61:TYR:N	14:11:65:SER:O	2.44	0.47
21:18:4:ILE:O	21:18:8:GLU:N	2.46	0.47
35:32:41:ARG:HG2	35:32:41:ARG:HH21	1.78	0.47
37:34:30:GLU:C	37:34:32:LYS:H	2.17	0.47
41:C:168:ARG:HG2	41:C:168:ARG:HH11	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:T:34:VAL:O	58:T:38:ILE:N	2.46	0.47
1:A:715:A:H2'	1:A:716:A:H8	1.79	0.47
1:A:1254:A:OP1	48:J:47:GLU:HG2	2.15	0.47
2:01:72:U:O2'	2:01:73:A:H5'	2.14	0.47
2:01:2183:A:H2'	2:01:2184:A:C8	2.50	0.47
2:01:2391:G:H5''	36:33:31:ILE:HD12	1.96	0.47
7:04:140:VAL:HG12	7:04:141:HIS:N	2.29	0.47
19:16:47:VAL:C	19:16:50:PRO:HD2	2.35	0.47
26:23:11:ILE:HG22	26:23:70:ALA:O	2.14	0.47
44:F:52:ASN:O	44:F:53:LYS:HG2	2.14	0.47
47:I:33:SER:HB3	47:I:36:GLN:HG3	1.97	0.47
50:L:23:LEU:HB3	50:L:58:ASN:OD1	2.15	0.47
52:N:40:ARG:NH1	57:S:6:LYS:HG2	2.29	0.47
1:A:261:U:OP2	58:T:70:LYS:HE2	2.13	0.47
1:A:1099:G:H4'	59:U:66:ARG:HG3	1.96	0.47
1:A:1145:A:H2	1:A:1147:C:H41	1.61	0.47
1:A:1240:U:H5'	45:G:41:ILE:HD11	1.96	0.47
2:01:118:A:OP2	2:01:119:A:H5''	2.13	0.47
2:01:1468:U:H2'	2:01:1522:A:H61	1.80	0.47
2:01:1545:A:H2'	2:01:1546:G:H5'	1.96	0.47
2:01:1869:G:H3'	2:01:1870:C:C5'	2.44	0.47
2:01:2011:U:H2'	2:01:2012:G:O4'	2.14	0.47
2:01:2562:U:H1'	16:13:23:LYS:HZ3	1.79	0.47
2:01:2605:U:H2'	2:01:2606:C:C6	2.48	0.47
2:01:2698:U:H2'	2:01:2699:C:C6	2.49	0.47
3:02:92:C:H2'	3:02:93:C:C6	2.49	0.47
6:03:27:ILE:HG21	6:03:185:LEU:HB3	1.96	0.47
18:15:88:ASN:HD22	18:15:89:VAL:H	1.62	0.47
20:17:32:PRO:HG2	20:17:33:ARG:H	1.79	0.47
45:G:5:VAL:HG23	45:G:5:VAL:O	2.14	0.47
46:H:74:ILE:HG23	46:H:74:ILE:O	2.13	0.47
53:O:55:LEU:O	53:O:55:LEU:HD23	2.15	0.47
59:U:16:ARG:HG2	59:U:16:ARG:HH11	1.78	0.47
1:A:673:A:H2'	1:A:674:G:C8	2.49	0.47
1:A:1170:A:H2'	1:A:1171:A:H5'	1.96	0.47
1:A:1429:A:H2'	1:A:1430:A:H8	1.80	0.47
2:01:627:A:C5	17:14:111:ILE:HD12	2.49	0.47
2:01:906:U:H2'	2:01:907:G:C5'	2.41	0.47
2:01:1890:A:H2'	2:01:1891:G:O4'	2.14	0.47
2:01:2177:C:O2'	6:03:47:ASN:HB2	2.15	0.47
17:14:86:GLU:HG2	17:14:87:GLY:H	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:15:88:ASN:ND2	18:15:89:VAL:H	2.11	0.47
39:Z:235:ASN:ND2	39:Z:237:ALA:HB3	2.29	0.47
40:B:128:LEU:N	40:B:128:LEU:HD23	2.29	0.47
50:L:98:ARG:HD2	50:L:103:CYS:SG	2.55	0.47
52:N:98:ALA:O	52:N:99:SER:HB2	2.14	0.47
2:01:100:U:H4'	2:01:101:A:O4'	2.14	0.47
2:01:1107:G:H4'	13:10:81:LEU:H	1.78	0.47
2:01:1991:U:H2'	2:01:1992:G:H5'	1.97	0.47
2:01:2345:G:H4'	2:01:2346:A:H3'	1.95	0.47
2:01:2641:G:H5''	15:12:78:THR:CB	2.44	0.47
16:13:58:LEU:HD11	16:13:86:LEU:HD22	1.95	0.47
22:19:59:LEU:HD23	22:19:59:LEU:C	2.35	0.47
42:D:61:ARG:HH21	42:D:67:LEU:HA	1.80	0.47
47:I:20:ILE:CG2	47:I:60:LEU:HD22	2.45	0.47
48:J:44:THR:HG23	48:J:69:THR:O	2.15	0.47
57:S:10:ILE:HD13	57:S:40:PHE:HE2	1.79	0.47
1:A:204:G:H2'	1:A:205:A:C8	2.50	0.47
1:A:351:G:H8	1:A:351:G:OP2	1.97	0.47
1:A:864:A:H5''	43:E:89:THR:HG23	1.96	0.47
1:A:1129:C:H4'	47:I:17:ARG:HH12	1.80	0.47
1:A:1219:A:H2'	1:A:1220:G:C8	2.49	0.47
1:A:1391:U:H2'	1:A:1392:G:C8	2.50	0.47
2:01:367:G:H2'	2:01:368:A:O4'	2.15	0.47
2:01:906:U:H2'	2:01:907:G:O4'	2.15	0.47
2:01:1031:G:H5''	37:34:8:LYS:CE	2.44	0.47
2:01:1083:U:O3'	13:10:53:ARG:HB3	2.14	0.47
2:01:1509:A:H2'	2:01:1510:G:C8	2.49	0.47
2:01:1529:G:C3'	2:01:1530:G:H5''	2.44	0.47
2:01:1535:A:H3'	2:01:1536:C:H5'	1.95	0.47
2:01:2048:G:H3'	2:01:2049:G:H5''	1.94	0.47
2:01:2191:A:H2'	2:01:2192:U:C6	2.50	0.47
2:01:2334:U:H5'	20:17:12:THR:CB	2.33	0.47
2:01:2475:C:C2'	2:01:2476:A:H5'	2.45	0.47
2:01:2507:C:H5''	39:Z:256:ARG:NH1	2.29	0.47
2:01:2641:G:H5''	15:12:78:THR:CG2	2.45	0.47
3:02:21:G:O2'	3:02:22:U:H5'	2.15	0.47
3:02:60:C:H2'	3:02:61:G:C8	2.47	0.47
3:02:116:G:H4'	20:17:54:VAL:O	2.14	0.47
6:03:22:ASP:N	6:03:25:GLU:HB2	2.28	0.47
7:04:66:PHE:HE1	7:04:104:LEU:HD11	1.78	0.47
10:07:153:ILE:HD12	10:07:153:ILE:N	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:08:125:PRO:HG2	11:08:126:THR:H	1.79	0.47
22:19:75:TYR:CZ	22:19:79:ILE:HG13	2.49	0.47
41:C:137:VAL:HG21	41:C:167:TYR:CD2	2.50	0.47
42:D:58:GLN:NE2	42:D:62:ARG:HE	2.12	0.47
43:E:44:ARG:NH1	43:E:72:ASN:HB2	2.29	0.47
51:M:90:HIS:CE1	51:M:96:VAL:HG21	2.49	0.47
52:N:98:ALA:HB1	52:N:100:TRP:CZ3	2.49	0.47
54:P:43:ALA:HB1	54:P:46:LYS:HD3	1.97	0.47
59:U:39:LYS:N	59:U:40:PRO:CD	2.78	0.47
1:A:1144:G:H2'	1:A:1145:A:C8	2.49	0.47
2:01:1736:U:H2'	2:01:1737:G:O4'	2.14	0.47
2:01:2122:U:H2'	2:01:2123:G:H5'	1.96	0.47
6:03:169:GLY:C	6:03:170:ILE:HD12	2.36	0.47
10:07:72:SER:O	5:W:56:C:H4'	2.15	0.47
11:08:71:LEU:HD12	11:08:74:MET:HE3	1.96	0.47
13:10:27:VAL:HG22	13:10:29:ASP:N	2.30	0.47
20:17:43:ASN:N	20:17:43:ASN:ND2	2.61	0.47
21:18:19:PHE:HE2	21:18:46:VAL:HG21	1.80	0.47
48:J:7:ARG:C	48:J:8:ILE:HD12	2.34	0.47
50:L:52:CYS:SG	50:L:64:SER:HB3	2.54	0.47
52:N:3:GLN:HE22	52:N:6:LYS:NZ	2.13	0.47
53:O:55:LEU:HD23	53:O:59:VAL:HG23	1.96	0.47
57:S:62:THR:H	57:S:65:MET:HE3	1.79	0.47
1:A:122:G:O2'	1:A:123:U:H5'	2.15	0.47
1:A:396:C:C3'	1:A:397:A:H5''	2.44	0.47
1:A:839:C:H2'	1:A:840:C:C6	2.49	0.47
1:A:1323:G:H2'	1:A:1324:A:C8	2.50	0.47
2:01:140:C:H42	2:01:1409:U:H1'	1.79	0.47
2:01:814:C:H1'	2:01:1225:G:H21	1.79	0.47
2:01:919:U:H2'	2:01:920:A:O4'	2.15	0.47
2:01:2318:G:H2'	2:01:2319:G:O4'	2.15	0.47
2:01:2742:G:O2'	2:01:2743:U:H5'	2.15	0.47
6:03:39:VAL:CG2	6:03:177:LYS:HD3	2.40	0.47
8:05:108:ASP:N	8:05:204:LYS:O	2.48	0.47
20:17:66:GLY:HA2	20:17:102:ARG:NH1	2.30	0.47
25:22:59:ASN:HB2	25:22:84:TYR:HB2	1.97	0.47
35:32:8:SER:HB3	35:32:11:LYS:HB2	1.95	0.47
56:R:47:ARG:HD2	56:R:50:TYR:CD2	2.50	0.47
1:A:72:A:N6	1:A:98:A:H2	2.13	0.47
1:A:235:C:H2'	1:A:236:A:H8	1.80	0.47
2:01:419:U:H2'	2:01:420:C:C6	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:1258:U:H2'	2:01:1259:G:C8	2.50	0.47
2:01:1443:U:H2'	2:01:1444:G:C8	2.50	0.47
2:01:1447:C:H2'	2:01:1448:G:H8	1.79	0.47
2:01:1932:A:H2'	2:01:1933:G:O4'	2.15	0.47
2:01:2055:C:H5'	2:01:2056:G:O5'	2.15	0.47
2:01:2261:C:C6	28:25:12:SER:HB3	2.50	0.47
2:01:2759:G:O2'	2:01:2760:C:H5'	2.15	0.47
2:01:2841:C:H2'	2:01:2842:G:H8	1.80	0.47
2:01:2849:U:H4'	2:01:2868:A:C2	2.50	0.47
5:W:48:C:H2'	5:W:59:A:C4'	2.45	0.47
39:Z:36:GLU:O	39:Z:40:GLU:HG2	2.14	0.47
47:I:54:VAL:HG11	47:I:93:LEU:CG	2.42	0.47
59:U:33:ARG:HH11	59:U:33:ARG:HG3	1.80	0.47
1:A:113:G:H1'	1:A:354:G:H5''	1.97	0.46
1:A:523:A:H2'	1:A:524:G:H5''	1.98	0.46
1:A:831:A:H2'	1:A:832:G:H5''	1.97	0.46
1:A:1064:G:H21	1:A:1190:G:H1'	1.79	0.46
2:01:481:G:H1'	2:01:506:G:N2	2.30	0.46
2:01:1637:A:H5'	2:01:1760:C:O2'	2.16	0.46
2:01:1824:G:O2'	2:01:1825:U:H5'	2.15	0.46
2:01:2882:A:H5'	19:16:96:ARG:HG3	1.97	0.46
8:05:13:ARG:NH1	21:18:55:HIS:HA	2.30	0.46
10:07:68:LYS:HB2	10:07:68:LYS:NZ	2.30	0.46
10:07:103:ILE:HD12	10:07:173:ASP:HB3	1.97	0.46
13:10:26:VAL:HB	13:10:82:ILE:CG2	2.45	0.46
17:14:89:VAL:HG13	17:14:89:VAL:O	2.15	0.46
19:16:90:ARG:HH12	19:16:116:VAL:HG11	1.80	0.46
35:32:5:PHE:CZ	35:32:7:PRO:HB3	2.50	0.46
40:B:10:LYS:NZ	40:B:10:LYS:HB2	2.30	0.46
40:B:129:THR:O	40:B:133:ALA:N	2.46	0.46
41:C:172:VAL:HG23	41:C:172:VAL:O	2.15	0.46
42:D:149:LYS:HE2	42:D:177:MET:HG3	1.98	0.46
45:G:66:GLU:HA	45:G:69:ARG:NE	2.30	0.46
45:G:113:LYS:CB	45:G:117:LEU:HD13	2.44	0.46
51:M:53:ASP:OD1	51:M:54:THR:N	2.48	0.46
57:S:10:ILE:HD13	57:S:40:PHE:CE2	2.50	0.46
1:A:516:U:O4	1:A:533:A:N7	2.47	0.46
1:A:864:A:H2'	1:A:865:A:C8	2.50	0.46
1:A:1056:U:H4'	41:C:162:ALA:HB2	1.97	0.46
1:A:1522:U:H2'	1:A:1523:G:H8	1.79	0.46
2:01:176:A:O2'	2:01:177:G:H5'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:532:A:H2'	2:01:532:A:N3	2.29	0.46
2:01:728:G:H4'	7:04:12:ARG:HD2	1.96	0.46
2:01:1020:A:C1'	2:01:1021:A:OP2	2.56	0.46
2:01:1268:A:H2'	2:01:1269:A:O4'	2.15	0.46
2:01:2485:G:O2'	2:01:2486:C:H5'	2.15	0.46
7:04:52:HIS:CE1	7:04:218:THR:HA	2.50	0.46
7:04:231:HIS:HA	7:04:241:LYS:HZ1	1.81	0.46
10:07:35:LEU:HB3	10:07:88:VAL:HB	1.96	0.46
11:08:166:GLU:OE2	11:08:167:VAL:O	2.33	0.46
39:Z:167:GLU:HB2	39:Z:180:THR:HB	1.97	0.46
40:B:114:LYS:HA	40:B:151:LYS:HE3	1.98	0.46
41:C:129:PHE:CD2	41:C:156:LEU:HD23	2.50	0.46
42:D:56:GLU:HG2	42:D:198:LEU:HB2	1.97	0.46
42:D:109:THR:HG22	42:D:110:ARG:N	2.30	0.46
42:D:176:LYS:NZ	42:D:176:LYS:HB3	2.29	0.46
44:F:14:GLN:OE1	44:F:14:GLN:HA	2.14	0.46
46:H:5:PRO:HG2	46:H:6:ILE:HD12	1.96	0.46
54:P:33:ILE:HD12	54:P:33:ILE:H	1.79	0.46
1:A:966:G:N2	5:W:34:C:H5'	2.31	0.46
2:01:1709:U:H2'	2:01:1710:G:C8	2.50	0.46
2:01:1912:A:H62	2:01:1917:U:H5	1.56	0.46
2:01:2724:U:H2'	2:01:2725:A:H8	1.80	0.46
8:05:32:ASN:N	8:05:32:ASN:HD22	2.12	0.46
10:07:84:ILE:HG13	10:07:84:ILE:O	2.15	0.46
11:08:73:SER:OG	11:08:137:LYS:HB3	2.15	0.46
14:11:20:SER:HB3	14:11:21:PRO:HD3	1.95	0.46
16:13:4:GLU:OE2	16:13:24:VAL:HG23	2.16	0.46
26:23:39:ASN:HB2	26:23:62:ALA:HB3	1.97	0.46
26:23:43:LYS:N	26:23:58:VAL:O	2.46	0.46
46:H:50:VAL:HG22	46:H:50:VAL:O	2.15	0.46
49:K:88:PRO:HG3	59:U:28:LEU:CD1	2.45	0.46
1:A:839:C:H2'	1:A:840:C:H6	1.81	0.46
1:A:1412:C:H2'	1:A:1413:A:H8	1.80	0.46
2:01:1548:A:H2'	2:01:1549:A:C8	2.51	0.46
2:01:1807:G:C2'	2:01:1808:A:H5'	2.39	0.46
2:01:2257:U:O2'	2:01:2258:C:H5'	2.16	0.46
3:02:76:G:H21	27:24:78:GLN:HE22	1.63	0.46
11:08:71:LEU:O	11:08:75:VAL:HG23	2.15	0.46
13:10:102:ALA:HB3	13:10:107:GLU:OE1	2.14	0.46
21:18:25:VAL:HG22	21:18:26:GLU:N	2.30	0.46
26:23:35:VAL:HB	26:23:38:ILE:HG13	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:25:66:GLU:HG3	28:25:68:LYS:HG3	1.98	0.46
31:28:39:ASP:OD1	31:28:44:ARG:HD3	2.16	0.46
39:Z:128:CYS:HA	39:Z:224:PRO:HA	1.96	0.46
39:Z:200:ARG:HG3	39:Z:217:PHE:HE1	1.81	0.46
42:D:60:VAL:HG21	42:D:199:ILE:CD1	2.45	0.46
51:M:22:TYR:HB3	51:M:65:GLU:OE2	2.16	0.46
54:P:59:HIS:O	54:P:63:GLN:HG2	2.16	0.46
55:Q:21:VAL:HG22	55:Q:44:HIS:ND1	2.31	0.46
57:S:24:SER:HB2	57:S:27:LYS:HD2	1.96	0.46
1:A:1273:C:H2'	1:A:1274:A:O4'	2.15	0.46
1:A:1402:C:H2'	1:A:1403:C:O4'	2.14	0.46
2:01:291:G:O2'	2:01:292:U:H5'	2.15	0.46
2:01:1797:G:H4'	7:04:254:LYS:O	2.16	0.46
2:01:2019:A:H4'	22:19:33:VAL:HG21	1.97	0.46
2:01:2573:C:O2	2:01:2573:C:H2'	2.15	0.46
12:09:26:ALA:HA	12:09:30:LEU:HD12	1.98	0.46
16:13:12:ASP:OD2	16:13:14:SER:HB3	2.16	0.46
21:18:23:ASP:O	21:18:46:VAL:HG23	2.15	0.46
47:I:83:THR:HA	47:I:86:LEU:HD12	1.98	0.46
50:L:26:CYS:SG	50:L:29:LYS:HD3	2.56	0.46
1:A:529:G:H5'	1:A:530:G:OP2	2.16	0.46
2:01:46:G:H2'	2:01:47:C:C6	2.50	0.46
2:01:2022:U:O2'	2:01:2617:U:H5'	2.15	0.46
2:01:2291:U:H2'	2:01:2292:U:C6	2.50	0.46
5:X:8:U:H4'	5:X:48:C:H4'	1.97	0.46
20:17:3:LYS:N	20:17:3:LYS:HD2	2.31	0.46
21:18:50:ARG:HH12	21:18:52:ARG:HG3	1.80	0.46
22:19:91:ARG:HH11	22:19:91:ARG:HG3	1.80	0.46
24:21:97:LEU:HD12	24:21:97:LEU:N	2.30	0.46
32:29:56:ARG:NH1	57:S:67:GLY:HA3	2.30	0.46
40:B:123:GLY:O	40:B:125:PHE:HD1	1.99	0.46
42:D:58:GLN:HE21	42:D:62:ARG:HE	1.62	0.46
42:D:103:ARG:CB	42:D:170:LEU:HD21	2.45	0.46
44:F:4:TYR:CD2	44:F:71:ILE:HG13	2.50	0.46
47:I:21:LYS:O	47:I:61:ASP:N	2.43	0.46
48:J:57:VAL:O	48:J:58:ASN:HB2	2.15	0.46
50:L:51:VAL:HG13	50:L:64:SER:O	2.15	0.46
1:A:137:U:C2'	1:A:138:G:H5''	2.46	0.46
1:A:170:U:C3'	1:A:171:A:H5''	2.46	0.46
1:A:238:A:O2'	1:A:239:U:H5'	2.16	0.46
1:A:335:C:H2'	1:A:336:A:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:251:A:H5''	17:14:47:ARG:NH1	2.29	0.46
2:01:517:C:C3'	2:01:518:G:H5''	2.46	0.46
2:01:1790:C:H2'	2:01:1791:A:C5	2.51	0.46
16:13:8:LEU:HB2	16:13:19:VAL:CG2	2.46	0.46
40:B:15:PHE:CD1	40:B:15:PHE:N	2.82	0.46
41:C:122:GLN:HB3	41:C:127:VAL:HG11	1.98	0.46
44:F:86:ARG:HH11	44:F:86:ARG:HG3	1.81	0.46
46:H:9:MET:O	46:H:13:ILE:HG13	2.16	0.46
48:J:26:VAL:O	48:J:30:LYS:HG3	2.16	0.46
52:N:52:ARG:NH1	57:S:36:ARG:NH2	2.62	0.46
59:U:13:VAL:HG12	59:U:14:ALA:H	1.80	0.46
1:A:345:C:H5'	21:18:38:ARG:HD2	1.97	0.46
1:A:517:G:H4'	1:A:519:C:C6	2.50	0.46
1:A:730:G:C2'	1:A:731:G:H5'	2.44	0.46
1:A:1054:C:N4	39:Z:212:ARG:HA	2.31	0.46
1:A:1058:G:OP1	41:C:198:LYS:HE3	2.15	0.46
2:01:807:U:H2'	2:01:808:G:H8	1.81	0.46
2:01:1131:G:C8	2:01:2025:C:H4'	2.51	0.46
2:01:1138:G:H2'	2:01:1139:G:O4'	2.16	0.46
6:03:27:ILE:HA	6:03:30:LEU:HB3	1.98	0.46
8:05:2:ILE:HG13	8:05:3:GLY:N	2.31	0.46
17:14:59:ARG:HH11	17:14:59:ARG:HG3	1.81	0.46
19:16:37:THR:HA	19:16:110:MET:HA	1.98	0.46
27:24:61:LEU:N	27:24:72:VAL:O	2.49	0.46
35:32:12:ARG:HB2	35:32:12:ARG:NH2	2.31	0.46
42:D:16:THR:HG21	42:D:59:LYS:HE3	1.98	0.46
52:N:73:LEU:HD12	52:N:83:VAL:HG11	1.96	0.46
53:O:81:ILE:HA	53:O:86:LEU:CD2	2.45	0.46
54:P:46:LYS:H	54:P:46:LYS:CD	2.26	0.46
55:Q:63:CYS:SG	55:Q:64:ARG:N	2.89	0.46
58:T:70:LYS:HG3	58:T:73:ARG:NH2	2.30	0.46
1:A:624:C:H2'	1:A:625:U:O4'	2.15	0.46
1:A:1326:U:O2'	1:A:1327:C:H5'	2.16	0.46
2:01:487:C:H4'	24:21:56:ALA:HB2	1.97	0.46
2:01:1639:C:O2'	2:01:1640:A:H5'	2.16	0.46
2:01:2880:C:O2'	19:16:90:ARG:HD3	2.16	0.46
3:02:12:C:H1'	3:02:15:A:N1	2.30	0.46
4:Y:11:ILE:HD12	39:Z:315:SER:CB	2.46	0.46
5:X:62:C:H4'	6:03:54:LYS:HE2	1.98	0.46
8:05:25:THR:HG21	8:05:193:VAL:HG22	1.98	0.46
8:05:118:PHE:CE1	8:05:163:GLY:HA2	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:30:43:THR:HG23	33:30:47:TYR:O	2.16	0.46
37:34:2:LYS:HB2	37:34:2:LYS:NZ	2.31	0.46
39:Z:130:LEU:N	39:Z:181:ILE:O	2.39	0.46
41:C:137:VAL:HG13	41:C:148:ILE:CG2	2.46	0.46
42:D:58:GLN:HE21	42:D:62:ARG:NE	2.14	0.46
42:D:187:ARG:HH21	42:D:196:GLU:HG3	1.80	0.46
45:G:119:LEU:O	45:G:123:LEU:HD13	2.15	0.46
46:H:86:LYS:HB3	46:H:90:GLU:HG3	1.97	0.46
49:K:68:ARG:HG3	49:K:68:ARG:HH11	1.80	0.46
51:M:16:ILE:H	51:M:16:ILE:CD1	2.24	0.46
55:Q:26:ARG:HG3	55:Q:26:ARG:HH11	1.81	0.46
59:U:60:ALA:O	59:U:63:ASN:ND2	2.48	0.46
1:A:8:A:N7	42:D:205:LYS:HB3	2.31	0.46
1:A:887:G:H2'	1:A:888:G:H5'	1.98	0.46
1:A:912:C:O2'	1:A:913:A:H5'	2.16	0.46
2:01:214:G:H2'	2:01:215:G:O4'	2.16	0.46
2:01:321:U:H5'	9:06:129:PRO:O	2.16	0.46
2:01:1149:G:H2'	2:01:1150:C:C6	2.50	0.46
2:01:2052:A:OP1	8:05:145:SER:HA	2.15	0.46
2:01:2312:U:OP1	10:07:69:ALA:HA	2.16	0.46
6:03:175:ILE:HD11	6:03:188:ASN:HB3	1.98	0.46
29:26:53:LYS:O	29:26:57:VAL:HG23	2.16	0.46
30:27:56:LEU:O	30:27:60:LYS:HG2	2.16	0.46
47:I:62:LEU:HD12	47:I:62:LEU:N	2.31	0.46
54:P:4:ILE:HD12	54:P:67:ILE:CD1	2.46	0.46
54:P:5:ARG:HD3	54:P:5:ARG:H	1.81	0.46
1:A:208:U:H2'	1:A:210:C:H1'	1.97	0.45
2:01:1420:A:H5'	2:01:1421:G:OP2	2.15	0.45
2:01:1759:A:C2	2:01:2697:G:H1'	2.51	0.45
2:01:2731:G:H2'	2:01:2732:G:C8	2.52	0.45
3:02:1:U:H2'	3:02:2:G:H8	1.82	0.45
7:04:43:ASN:HD22	7:04:49:THR:CG2	2.29	0.45
9:06:148:ILE:HG21	9:06:157:LEU:HD21	1.98	0.45
39:Z:324:ARG:HG2	39:Z:335:ASP:HA	1.98	0.45
43:E:15:ILE:N	43:E:15:ILE:HD12	2.30	0.45
48:J:86:ALA:O	48:J:90:LEU:HD12	2.16	0.45
1:A:332:G:O2'	1:A:333:U:H5'	2.16	0.45
1:A:993:G:H2'	1:A:993:G:N3	2.32	0.45
2:01:988:A:C8	31:28:13:ILE:HD12	2.50	0.45
2:01:1417:C:H2'	2:01:1418:G:O4'	2.16	0.45
2:01:1928:A:H2'	2:01:1929:G:O4'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:2004:G:H2'	2:01:2005:A:O4'	2.16	0.45
2:01:2241:A:H2'	2:01:2242:G:C8	2.51	0.45
2:01:2547:A:H2'	2:01:2548:U:C6	2.52	0.45
2:01:2680:U:H5'	8:05:194:PRO:HA	1.99	0.45
10:07:71:LYS:HG3	10:07:72:SER:N	2.31	0.45
20:17:8:ILE:HD12	20:17:8:ILE:N	2.31	0.45
33:30:12:ARG:HD2	33:30:16:ARG:NH2	2.31	0.45
39:Z:15:THR:HG22	39:Z:19:ASP:OD2	2.15	0.45
40:B:84:LEU:HB2	40:B:90:PHE:CE1	2.51	0.45
42:D:104:MET:CE	42:D:170:LEU:HB2	2.46	0.45
42:D:144:ILE:HG22	42:D:145:ARG:O	2.16	0.45
43:E:132:PRO:O	43:E:136:VAL:HG23	2.16	0.45
47:I:80:HIS:NE2	47:I:84:ARG:HD3	2.31	0.45
48:J:67:ILE:HG13	48:J:67:ILE:O	2.16	0.45
54:P:26:ASN:N	54:P:26:ASN:ND2	2.63	0.45
1:A:103:U:H5'	1:A:151:A:O2'	2.16	0.45
1:A:519:C:O2'	1:A:520:A:H5'	2.16	0.45
1:A:802:A:H2'	1:A:803:G:O4'	2.17	0.45
1:A:1422:G:C5'	16:13:48:PRO:HB3	2.46	0.45
1:A:1422:G:OP1	16:13:48:PRO:HA	2.16	0.45
2:01:742:A:H2'	2:01:743:A:C8	2.51	0.45
2:01:1019:U:H3	2:01:1142:A:H62	1.62	0.45
2:01:1112:G:H2'	2:01:1113:U:C6	2.51	0.45
10:07:66:ILE:HG13	10:07:66:ILE:O	2.17	0.45
10:07:103:ILE:HA	10:07:107:VAL:CG2	2.46	0.45
14:11:9:LYS:O	14:11:10:LEU:HD12	2.17	0.45
18:15:71:LYS:HG2	18:15:95:LEU:HD11	1.97	0.45
20:17:40:ILE:HG23	20:17:47:VAL:HG12	1.98	0.45
28:25:74:LYS:N	28:25:74:LYS:HD2	2.32	0.45
36:33:31:ILE:HG22	36:33:31:ILE:O	2.16	0.45
39:Z:200:ARG:HH11	39:Z:217:PHE:HE1	1.63	0.45
39:Z:322:GLN:HB3	39:Z:336:LEU:HD21	1.98	0.45
46:H:64:TYR:HD1	46:H:69:ALA:HA	1.81	0.45
1:A:59:A:H2'	1:A:59:A:N3	2.31	0.45
1:A:518:C:OP2	1:A:530:G:H4'	2.16	0.45
1:A:921:U:H5''	1:A:1082:A:H5'	1.98	0.45
2:01:435:C:H2'	2:01:436:C:H5'	1.98	0.45
2:01:633:A:H2'	2:01:634:C:H5'	1.98	0.45
2:01:812:C:O2'	2:01:813:U:H5'	2.16	0.45
2:01:1571:A:H2'	2:01:1572:A:H8	1.81	0.45
2:01:2270:A:H2'	2:01:2271:G:O4'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:2636:C:H4'	8:05:81:GLU:CD	2.37	0.45
3:02:48:U:H2'	3:02:49:C:C6	2.51	0.45
8:05:33:ARG:CG	8:05:51:THR:HG23	2.46	0.45
13:10:43:LYS:HE3	13:10:98:GLU:HB2	1.97	0.45
14:11:56:VAL:HG22	14:11:57:VAL:N	2.31	0.45
14:11:100:ILE:H	14:11:139:VAL:HA	1.81	0.45
16:13:111:LYS:HE3	16:13:112:PHE:CE2	2.50	0.45
20:17:58:ILE:HG22	20:17:62:LEU:HG	1.98	0.45
26:23:85:ARG:NH1	26:23:101:THR:OG1	2.50	0.45
32:29:44:PHE:H	32:29:44:PHE:HD1	1.64	0.45
39:Z:5:ASN:HD22	39:Z:6:PRO:HD2	1.81	0.45
40:B:136:ARG:O	40:B:140:LEU:N	2.50	0.45
40:B:216:VAL:O	40:B:220:VAL:HG23	2.17	0.45
42:D:32:LYS:HE2	42:D:34:GLU:HB3	1.98	0.45
42:D:33:ILE:HG13	42:D:33:ILE:O	2.17	0.45
48:J:40:ILE:HD12	48:J:75:ASP:OD2	2.16	0.45
51:M:18:LEU:HD12	51:M:33:LEU:HD11	1.98	0.45
51:M:56:ARG:HA	51:M:59:VAL:HG22	1.99	0.45
52:N:19:TYR:O	52:N:23:ARG:N	2.37	0.45
52:N:20:PHE:CD2	52:N:55:SER:HB3	2.51	0.45
54:P:53:ASP:O	54:P:57:ILE:HG13	2.16	0.45
57:S:28:LYS:NZ	57:S:28:LYS:HB3	2.31	0.45
58:T:43:LYS:HB3	58:T:86:ALA:HA	1.98	0.45
1:A:546:A:OP2	42:D:67:LEU:HB3	2.17	0.45
1:A:562:U:H1'	50:L:11:ARG:HG3	1.98	0.45
1:A:1125:U:O2'	1:A:1126:U:H5'	2.17	0.45
2:01:370:G:H2'	2:01:423:A:N7	2.31	0.45
2:01:451:U:H4'	9:06:47:LYS:HE3	1.98	0.45
2:01:1083:U:O2'	2:01:1084:A:H5'	2.16	0.45
2:01:1450:G:H2'	2:01:1451:C:H5'	1.98	0.45
2:01:1515:A:H2'	2:01:1516:G:O4'	2.17	0.45
2:01:2177:C:O2	6:03:170:ILE:HG21	2.17	0.45
2:01:2741:A:H2'	2:01:2742:G:H5'	1.98	0.45
7:04:143:VAL:HG12	7:04:144:GLU:O	2.16	0.45
10:07:94:ARG:HD3	10:07:94:ARG:N	2.31	0.45
10:07:152:ASP:C	10:07:153:ILE:HD12	2.37	0.45
15:12:70:THR:HG22	15:12:70:THR:O	2.17	0.45
18:15:41:LEU:O	18:15:94:ALA:N	2.44	0.45
39:Z:275:GLN:HA	39:Z:283:ASN:HD22	1.80	0.45
41:C:6:PRO:HG2	41:C:200:TRP:HE1	1.81	0.45
45:G:111:GLY:HA2	45:G:118:ARG:CZ	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:H:12:ARG:HH12	46:H:26:MET:HA	1.81	0.45
49:K:92:ARG:HH22	49:K:111:ASP:CG	2.19	0.45
55:Q:78:VAL:HG23	55:Q:79:GLU:HG3	1.98	0.45
1:A:686:U:H2'	1:A:687:A:C8	2.52	0.45
1:A:1120:C:H2'	1:A:1121:U:C6	2.52	0.45
1:A:1277:C:H2'	1:A:1278:G:H5''	1.98	0.45
2:01:876:C:H2'	2:01:877:A:O4'	2.16	0.45
2:01:1909:C:H2'	2:01:1910:G:C8	2.51	0.45
6:03:6:LYS:O	6:03:10:VAL:HG23	2.16	0.45
11:08:17:LYS:HZ2	11:08:24:THR:HB	1.80	0.45
16:13:101:GLY:HA2	16:13:102:PRO:HD2	1.72	0.45
21:18:37:LYS:NZ	21:18:37:LYS:HB2	2.32	0.45
27:24:53:LYS:N	27:24:53:LYS:HD2	2.31	0.45
37:34:34:LYS:HB3	37:34:34:LYS:HZ2	1.81	0.45
42:D:87:GLU:HG2	42:D:187:ARG:HD3	1.98	0.45
49:K:64:VAL:O	49:K:68:ARG:HG2	2.17	0.45
51:M:97:ARG:HH11	51:M:97:ARG:HG3	1.82	0.45
54:P:3:THR:HG23	54:P:5:ARG:HD2	1.98	0.45
1:A:531:U:OP1	39:Z:213:ARG:NH2	2.46	0.45
2:01:922:C:H1'	28:25:22:PHE:CD2	2.52	0.45
2:01:1919:A:H2'	2:01:1920:C:H5'	1.98	0.45
2:01:2376:A:H2'	2:01:2377:A:O4'	2.17	0.45
2:01:2457:U:O2'	2:01:2458:G:H5'	2.17	0.45
10:07:7:TYR:O	10:07:12:VAL:HG23	2.17	0.45
11:08:71:LEU:HA	11:08:74:MET:CE	2.46	0.45
13:10:56:ARG:HG2	13:10:82:ILE:C	2.37	0.45
15:12:36:LEU:HD22	15:12:121:LYS:HB2	1.97	0.45
17:14:51:GLU:HG3	17:14:56:PRO:HA	1.99	0.45
18:15:69:PRO:HA	18:15:94:ALA:HB2	1.99	0.45
22:19:108:LEU:HD23	23:20:48:LYS:HD2	1.99	0.45
39:Z:10:ARG:NH2	39:Z:13:ASP:OD2	2.50	0.45
42:D:167:PRO:HB3	42:D:169:TRP:CH2	2.52	0.45
49:K:113:THR:HG21	59:U:28:LEU:CD1	2.46	0.45
50:L:6:LEU:HB3	55:Q:33:TYR:CZ	2.51	0.45
52:N:20:PHE:CE2	52:N:54:SER:HB3	2.44	0.45
2:01:765:C:H2'	2:01:766:U:C6	2.52	0.45
2:01:792:A:H3'	2:01:793:A:H5'	1.98	0.45
2:01:873:C:H2'	2:01:874:G:H8	1.81	0.45
2:01:1103:A:H2'	2:01:1103:A:N3	2.32	0.45
2:01:1653:G:H3'	19:16:2:ARG:HG2	1.98	0.45
3:02:76:G:H5'	27:24:9:ARG:HH12	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:03:208:TYR:HD1	6:03:208:TYR:H	1.65	0.45
8:05:179:ARG:HH21	21:18:7:LEU:HD11	1.79	0.45
12:09:5:LEU:C	12:09:6:LEU:HD12	2.37	0.45
16:13:107:LEU:N	16:13:107:LEU:HD12	2.32	0.45
19:16:59:SER:HB3	19:16:62:ASN:ND2	2.31	0.45
24:21:23:LEU:CD1	24:21:39:THR:HG21	2.46	0.45
29:26:49:ARG:HG2	29:26:49:ARG:HH11	1.82	0.45
29:26:67:LEU:HD12	29:26:70:LEU:HD12	1.99	0.45
39:Z:46:VAL:HG22	39:Z:53:ALA:HB2	1.98	0.45
40:B:212:TYR:O	40:B:216:VAL:HG23	2.17	0.45
44:F:17:GLN:HE21	44:F:17:GLN:HB3	1.55	0.45
47:I:114:LYS:O	47:I:117:LEU:HD13	2.17	0.45
54:P:44:SER:H	54:P:46:LYS:NZ	2.14	0.45
1:A:674:G:N2	49:K:117:HIS:HB2	2.31	0.45
2:01:264:C:O2'	2:01:265:A:H5''	2.17	0.45
2:01:1450:G:H21	2:01:1452:G:H1	1.65	0.45
2:01:2221:G:O2'	2:01:2222:C:H5'	2.17	0.45
2:01:2331:G:C4'	28:25:39:THR:H	2.20	0.45
3:02:43:C:H1'	10:07:89:THR:HB	1.99	0.45
4:Y:44:LYS:NZ	4:Y:44:LYS:HB3	2.31	0.45
17:14:47:ARG:HG3	17:14:50:PHE:HB2	1.99	0.45
41:C:127:VAL:HG22	41:C:128:MET:N	2.32	0.45
43:E:105:ILE:O	43:E:105:ILE:HG23	2.17	0.45
47:I:11:ARG:HH11	47:I:11:ARG:HG3	1.82	0.45
55:Q:45:VAL:HG21	55:Q:60:ILE:HG21	1.99	0.45
55:Q:49:ASN:O	55:Q:51:GLU:N	2.50	0.45
1:A:183:C:H5'	1:A:184:G:OP2	2.16	0.45
2:01:357:C:H2'	2:01:358:U:C6	2.52	0.45
2:01:833:A:H2'	2:01:834:G:H8	1.82	0.45
2:01:870:U:H5''	18:15:5:LYS:O	2.17	0.45
2:01:1092:C:H2'	2:01:1093:G:O4'	2.17	0.45
2:01:1480:C:H2'	2:01:1481:U:C6	2.52	0.45
2:01:2352:A:H2'	2:01:2353:G:H5'	1.98	0.45
3:02:13:G:H8	3:02:69:G:H21	1.65	0.45
3:02:30:C:C2'	3:02:31:C:H5'	2.45	0.45
6:03:30:LEU:HD22	6:03:214:ILE:CD1	2.46	0.45
10:07:57:ALA:HB2	10:07:64:PRO:HD3	1.99	0.45
11:08:14:VAL:HG13	11:08:27:GLY:HA2	1.98	0.45
12:09:116:ARG:HG3	12:09:133:GLN:OE1	2.16	0.45
22:19:38:VAL:O	22:19:42:GLY:N	2.50	0.45
27:24:51:GLN:NE2	27:24:86:LEU:HD11	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:34:2:LYS:NZ	37:34:35:GLN:HE21	2.16	0.45
40:B:106:VAL:O	40:B:110:ILE:HG13	2.17	0.45
45:G:55:LYS:HD3	45:G:59:GLU:O	2.17	0.45
46:H:95:MET:SD	46:H:129:ALA:HB1	2.56	0.45
51:M:56:ARG:HA	51:M:59:VAL:CG2	2.47	0.45
51:M:92:ARG:HG2	51:M:92:ARG:HH11	1.82	0.45
53:O:7:THR:O	53:O:11:VAL:HG23	2.17	0.45
1:A:556:C:O2'	1:A:557:G:H5'	2.15	0.44
1:A:931:C:O2'	1:A:932:C:H5'	2.17	0.44
1:A:1433:A:OP1	21:18:105:LYS:HD3	2.17	0.44
2:01:1537:G:H3'	2:01:1537:G:N3	2.31	0.44
4:Y:6:HIS:HD2	4:Y:8:LYS:HG3	1.83	0.44
4:Y:44:LYS:HG2	4:Y:45:HIS:CE1	2.51	0.44
7:04:106:PRO:CD	7:04:109:LEU:HD22	2.45	0.44
8:05:9:VAL:HG12	21:18:4:ILE:HD11	1.98	0.44
22:19:45:ALA:O	22:19:49:ARG:HG3	2.17	0.44
33:30:19:ASP:OD1	33:30:19:ASP:N	2.50	0.44
37:34:36:ARG:CG	37:34:37:GLN:N	2.80	0.44
41:C:34:SER:O	41:C:38:VAL:HG23	2.16	0.44
43:E:136:VAL:O	43:E:140:ILE:HG12	2.17	0.44
45:G:25:PHE:HD1	45:G:100:MET:HG3	1.82	0.44
46:H:17:GLN:HA	46:H:64:TYR:OH	2.16	0.44
51:M:15:VAL:HG22	51:M:33:LEU:HD22	1.98	0.44
54:P:76:LYS:HB2	54:P:76:LYS:HZ2	1.82	0.44
1:A:590:U:OP1	46:H:30:LYS:HG3	2.17	0.44
2:01:372:G:O2'	2:01:373:U:C5	2.69	0.44
2:01:414:C:H2'	2:01:415:A:H8	1.82	0.44
2:01:770:G:H5''	35:32:10:LEU:HD23	2.00	0.44
2:01:1386:C:H2'	2:01:1387:A:H8	1.82	0.44
2:01:2029:G:O6	2:01:2032:G:H5''	2.16	0.44
2:01:2466:C:OP1	37:34:4:ARG:HB3	2.17	0.44
2:01:2553:G:C3'	2:01:2554:U:H5''	2.43	0.44
2:01:2570:G:H2'	2:01:2571:U:O4'	2.17	0.44
12:09:54:LEU:HD23	12:09:54:LEU:C	2.37	0.44
21:18:82:SER:O	21:18:83:ILE:HD13	2.17	0.44
27:24:63:ILE:HG23	27:24:70:ILE:HB	1.99	0.44
39:Z:8:ASN:HD22	39:Z:8:ASN:N	2.13	0.44
39:Z:245:ARG:HH11	39:Z:245:ARG:HG3	1.81	0.44
40:B:31:PHE:N	40:B:39:ILE:O	2.41	0.44
48:J:14:ASP:OD2	48:J:16:ARG:HB2	2.17	0.44
58:T:32:LYS:HA	58:T:35:TYR:HD2	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:137:U:H2'	1:A:138:G:H5'	1.99	0.44
1:A:845:A:O4'	56:R:11:ARG:HD3	2.18	0.44
1:A:908:A:H2'	1:A:909:A:C8	2.52	0.44
2:01:242:G:H5''	36:33:63:TYR:CD2	2.52	0.44
2:01:1028:A:H2'	2:01:1029:A:C8	2.52	0.44
2:01:1046:A:H5'	2:01:1047:G:H5''	1.97	0.44
2:01:1230:A:H2'	2:01:1231:U:O4'	2.17	0.44
2:01:1300:G:H4'	2:01:1301:A:C5'	2.48	0.44
2:01:1575:C:O2'	2:01:1576:U:H5'	2.17	0.44
2:01:2514:U:H5''	15:12:81:ILE:CD1	2.47	0.44
2:01:2573:C:O2	2:01:2573:C:C2'	2.65	0.44
22:19:71:ASN:HD22	22:19:71:ASN:HA	1.56	0.44
23:20:1:MET:HG3	23:20:15:SER:HB2	1.98	0.44
29:26:31:ASN:HD21	29:26:33:HIS:HE1	1.66	0.44
30:27:10:SER:O	30:27:14:LEU:HD13	2.16	0.44
32:29:59:ARG:NH2	32:29:62:LYS:HB3	2.25	0.44
36:33:30:HIS:O	36:33:32:LEU:N	2.50	0.44
36:33:36:ALA:O	36:33:40:LYS:HG3	2.17	0.44
39:Z:18:SER:O	39:Z:22:ARG:HG3	2.17	0.44
42:D:3:TYR:CD2	42:D:10:LEU:HD11	2.52	0.44
45:G:92:PRO:HA	45:G:95:ARG:HD2	1.99	0.44
47:I:29:ILE:HD11	47:I:66:VAL:HG12	1.99	0.44
50:L:70:GLY:O	50:L:98:ARG:NH2	2.49	0.44
53:O:47:LYS:N	53:O:47:LYS:HD2	2.33	0.44
54:P:26:ASN:OD1	54:P:31:ARG:HB3	2.17	0.44
55:Q:43:LEU:HD13	55:Q:72:TRP:CE2	2.52	0.44
1:A:256:U:H2'	1:A:257:G:C8	2.53	0.44
1:A:291:U:C3'	1:A:292:G:H5''	2.47	0.44
1:A:579:A:H2'	1:A:580:C:H6	1.82	0.44
1:A:1170:A:H2'	1:A:1171:A:O4'	2.17	0.44
2:01:738:G:O2'	2:01:739:A:H5'	2.17	0.44
2:01:906:U:C2'	2:01:907:G:H5''	2.42	0.44
2:01:974:G:H2'	2:01:974:G:N3	2.33	0.44
2:01:1818:U:H5'	7:04:156:SER:OG	2.17	0.44
9:06:189:THR:HG22	9:06:191:ASP:H	1.82	0.44
10:07:1:ALA:N	10:07:4:HIS:HB3	2.32	0.44
11:08:172:GLU:HG2	11:08:173:ALA:N	2.33	0.44
11:08:172:GLU:HG2	11:08:174:LYS:H	1.82	0.44
15:12:4:PHE:CD2	22:19:99:VAL:HG11	2.52	0.44
18:15:34:LYS:HD2	27:24:81:PRO:O	2.17	0.44
19:16:9:GLN:O	19:16:17:ARG:HD3	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:16:61:ALA:O	19:16:65:LEU:HD12	2.18	0.44
19:16:73:ASN:O	19:16:77:ALA:N	2.45	0.44
20:17:106:LEU:HD23	20:17:106:LEU:C	2.37	0.44
22:19:105:PHE:O	22:19:109:VAL:HG23	2.16	0.44
32:29:16:CYS:SG	32:29:17:SER:N	2.90	0.44
41:C:122:GLN:O	41:C:127:VAL:HG12	2.17	0.44
48:J:76:ILE:N	48:J:76:ILE:HD12	2.32	0.44
50:L:23:LEU:HD22	50:L:58:ASN:HB3	2.00	0.44
50:L:29:LYS:CE	50:L:58:ASN:HD21	2.30	0.44
1:A:579:A:H2'	1:A:580:C:C6	2.53	0.44
1:A:1114:C:H1'	52:N:99:SER:HB3	1.98	0.44
1:A:1413:A:H2	1:A:1487:G:H22	1.65	0.44
2:01:687:C:H5''	35:32:4:THR:O	2.16	0.44
2:01:940:G:C2'	2:01:941:A:H5''	2.47	0.44
2:01:940:G:C3'	2:01:941:A:H5''	2.47	0.44
2:01:1085:A:H5'	2:01:1105:U:O2'	2.18	0.44
2:01:2246:G:H2'	2:01:2247:A:C8	2.51	0.44
2:01:2841:C:H2'	2:01:2842:G:C8	2.53	0.44
11:08:123:GLU:HB2	11:08:131:VAL:O	2.18	0.44
13:10:31:ARG:HH11	13:10:31:ARG:HG3	1.82	0.44
16:13:1:MET:HG2	16:13:67:LYS:HD2	1.99	0.44
29:26:69:GLU:O	29:26:73:ARG:HG3	2.17	0.44
39:Z:144:TRP:CD1	39:Z:201:LEU:HD22	2.52	0.44
40:B:68:PHE:HD1	40:B:161:PHE:HB3	1.82	0.44
43:E:158:LYS:N	43:E:158:LYS:HD2	2.32	0.44
44:F:18:VAL:HG21	44:F:58:HIS:CD2	2.53	0.44
47:I:60:LEU:HD12	47:I:60:LEU:O	2.18	0.44
51:M:76:ILE:O	51:M:80:MET:HG3	2.18	0.44
1:A:31:G:H5'	1:A:306:A:C2	2.53	0.44
1:A:1250:A:H5'	47:I:68:GLY:HA2	2.00	0.44
2:01:517:C:H5''	33:30:12:ARG:NH1	2.30	0.44
2:01:1021:A:H2'	2:01:1022:G:H4'	1.99	0.44
2:01:1111:A:H2'	2:01:1112:G:H4'	2.00	0.44
2:01:2055:C:H2'	2:01:2504:U:H5'	2.00	0.44
2:01:2140:G:O2'	2:01:2141:G:H5'	2.18	0.44
2:01:2331:G:H4'	28:25:39:THR:N	2.19	0.44
2:01:2468:A:HO2'	2:01:2469:A:H8	1.62	0.44
2:01:2603:G:O2'	2:01:2604:U:H5'	2.17	0.44
14:11:14:ALA:HA	14:11:41:PHE:CZ	2.53	0.44
16:13:63:VAL:HB	16:13:103:VAL:HG12	1.99	0.44
22:19:49:ARG:HH21	23:20:72:VAL:HG13	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:26:16:ASN:HD21	29:26:26:ARG:HB3	1.83	0.44
30:27:26:PHE:HD1	30:27:29:ARG:HH11	1.64	0.44
31:28:26:LEU:HD11	31:28:46:MET:CB	2.46	0.44
51:M:28:ARG:NH2	51:M:62:PHE:HB2	2.31	0.44
51:M:48:SER:O	51:M:52:ILE:HG13	2.18	0.44
52:N:97:LYS:CG	52:N:98:ALA:H	2.21	0.44
2:01:2243:U:H2'	2:01:2244:U:H6	1.81	0.44
2:01:2294:G:O2'	2:01:2295:C:H5'	2.17	0.44
5:X:19:G:H1'	5:X:57:A:N1	2.32	0.44
7:04:202:ARG:NH2	7:04:213:ARG:NH2	2.65	0.44
7:04:246:PRO:HG2	7:04:247:TRP:CE3	2.53	0.44
11:08:14:VAL:HG13	11:08:26:LYS:O	2.18	0.44
11:08:106:LEU:HB2	11:08:108:PHE:CE2	2.52	0.44
15:12:35:ARG:HA	15:12:40:HIS:HD2	1.82	0.44
16:13:38:ILE:HD11	16:13:112:PHE:CZ	2.53	0.44
22:19:12:ARG:HH21	22:19:12:ARG:HG3	1.83	0.44
22:19:16:ILE:HG23	22:19:38:VAL:HG21	1.99	0.44
22:19:61:ILE:HG23	22:19:75:TYR:CZ	2.52	0.44
40:B:13:VAL:HG21	40:B:207:ARG:HD3	1.99	0.44
40:B:138:ARG:HG2	40:B:138:ARG:HH11	1.81	0.44
41:C:119:ILE:HD11	41:C:197:VAL:HG11	2.00	0.44
45:G:68:VAL:HG21	45:G:103:ILE:HD11	1.98	0.44
1:A:279:A:H4'	1:A:281:G:C8	2.53	0.44
1:A:383:A:H4'	1:A:455:G:H5'	2.00	0.44
1:A:1064:G:N2	1:A:1190:G:H1'	2.33	0.44
1:A:1313:U:P	57:S:5:LYS:HA	2.57	0.44
1:A:1496:C:H2'	1:A:1497:G:O4'	2.18	0.44
2:01:581:C:H2'	2:01:582:A:C8	2.52	0.44
2:01:826:U:H2'	2:01:828:U:O4'	2.18	0.44
2:01:2322:A:H2'	2:01:2323:G:O4'	2.18	0.44
7:04:143:VAL:HG11	7:04:173:LEU:HD11	2.00	0.44
12:09:30:LEU:HB3	12:09:36:ALA:HB3	1.99	0.44
14:11:37:PHE:O	14:11:41:PHE:N	2.44	0.44
25:22:8:LEU:CD1	30:27:21:LEU:HD12	2.48	0.44
30:27:53:VAL:O	30:27:57:LEU:HD13	2.17	0.44
42:D:145:ARG:HG2	42:D:145:ARG:HH11	1.82	0.44
44:F:35:LYS:HB2	44:F:65:GLU:HB3	2.00	0.44
47:I:118:ARG:HH11	47:I:118:ARG:HG3	1.82	0.44
58:T:52:GLU:O	58:T:55:PRO:HD2	2.18	0.44
1:A:17:U:H2'	1:A:18:C:H6	1.83	0.44
1:A:366:A:H2	1:A:393:A:H61	1.66	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:394:G:H2'	1:A:395:C:H5''	1.98	0.44
1:A:1225:A:H5'	1:A:1226:C:OP2	2.18	0.44
1:A:1299:A:H2'	1:A:1300:G:H4'	2.00	0.44
2:01:27:G:N2	2:01:512:G:H1'	2.32	0.44
2:01:278:A:H2	2:01:279:A:N7	2.16	0.44
2:01:1057:A:H1'	13:10:37:LYS:NZ	2.33	0.44
2:01:1443:U:H2'	2:01:1444:G:H8	1.83	0.44
2:01:1447:C:H2'	2:01:1448:G:C8	2.52	0.44
2:01:1650:A:H4'	19:16:103:ARG:NH2	2.32	0.44
2:01:2266:A:H4'	2:01:2267:A:C2	2.52	0.44
2:01:2566:A:N1	16:13:28:SER:HB2	2.32	0.44
2:01:2755:C:O2'	2:01:2756:U:H2'	2.18	0.44
7:04:129:LEU:HD11	7:04:134:ILE:HG12	1.98	0.44
7:04:164:VAL:HG23	7:04:174:ARG:HB2	1.99	0.44
10:07:3:LEU:O	10:07:7:TYR:N	2.49	0.44
18:15:78:LEU:HD13	39:Z:281:HIS:ND1	2.33	0.44
32:29:38:SER:HA	32:29:41:HIS:HB2	1.99	0.44
43:E:75:LEU:O	43:E:75:LEU:HD12	2.18	0.44
44:F:7:VAL:HB	44:F:88:MET:HB3	2.00	0.44
44:F:18:VAL:HG12	44:F:19:PRO:HD3	2.00	0.44
52:N:2:LYS:O	52:N:5:MET:N	2.45	0.44
1:A:88:U:H2'	1:A:89:U:C5	2.53	0.43
1:A:707:U:H2'	1:A:708:C:C6	2.53	0.43
1:A:813:U:H2'	1:A:814:A:H5''	2.00	0.43
1:A:1196:A:C4	4:Y:34:LYS:HB3	2.53	0.43
2:01:1437:C:H2'	2:01:1438:U:C6	2.53	0.43
2:01:2006:C:H5''	2:01:2048:G:H5''	2.00	0.43
2:01:2087:G:H2'	2:01:2088:A:C8	2.53	0.43
2:01:2364:C:H2'	2:01:2365:G:O4'	2.18	0.43
2:01:2391:G:C5'	36:33:31:ILE:HD12	2.48	0.43
8:05:27:ILE:HB	8:05:187:LEU:HB3	2.00	0.43
8:05:56:LYS:HB2	8:05:59:ARG:HB3	2.00	0.43
9:06:24:ASN:O	9:06:28:VAL:HG23	2.18	0.43
11:08:90:GLY:HA3	11:08:93:TYR:CE2	2.53	0.43
17:14:92:LEU:O	17:14:96:LYS:HG2	2.18	0.43
19:16:90:ARG:HH12	19:16:116:VAL:HB	1.82	0.43
23:20:90:ARG:HG2	23:20:90:ARG:HH11	1.81	0.43
27:24:42:LEU:CD1	27:24:47:VAL:HG21	2.39	0.43
49:K:126:ARG:HB2	59:U:33:ARG:NH2	2.33	0.43
50:L:4:ASN:ND2	55:Q:35:LYS:NZ	2.66	0.43
50:L:58:ASN:N	50:L:58:ASN:ND2	2.66	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:U:13:VAL:HB	59:U:15:LEU:HD11	2.00	0.43
1:A:276:G:H5''	55:Q:16:MET:CE	2.49	0.43
1:A:1062:U:H2'	1:A:1063:C:C6	2.53	0.43
1:A:1123:U:O2'	1:A:1124:G:H5'	2.18	0.43
1:A:1320:C:OP1	57:S:69:LYS:HE2	2.17	0.43
2:01:527:C:N3	2:01:2779:U:H2'	2.34	0.43
2:01:1038:G:H2'	2:01:1039:A:C8	2.54	0.43
2:01:1912:A:N6	2:01:1917:U:C5	2.76	0.43
19:16:38:LEU:HD13	19:16:109:PRO:O	2.18	0.43
24:21:74:ILE:HD13	24:21:105:VAL:HG22	2.00	0.43
25:22:54:GLU:HB2	25:22:88:LYS:HB2	2.01	0.43
39:Z:138:GLY:O	39:Z:142:GLN:HG2	2.18	0.43
41:C:28:PHE:HE2	52:N:76:PHE:CD1	2.36	0.43
41:C:69:THR:O	41:C:105:VAL:HG23	2.18	0.43
44:F:44:ARG:HA	44:F:58:HIS:HA	1.99	0.43
2:01:729:G:C5	7:04:206:LYS:HB2	2.54	0.43
2:01:817:C:O2'	2:01:839:U:H5''	2.18	0.43
2:01:940:G:H2'	2:01:941:A:C5'	2.48	0.43
2:01:1794:A:H2'	2:01:1795:C:C6	2.53	0.43
2:01:2450:A:O2'	2:01:2451:A:H5'	2.18	0.43
8:05:16:THR:HG22	8:05:17:GLU:N	2.32	0.43
8:05:181:ASP:HB2	8:05:186:LEU:HB2	2.01	0.43
11:08:10:VAL:HG12	11:08:47:ASN:O	2.18	0.43
14:11:46:ASP:HA	14:11:50:LYS:HD3	1.99	0.43
19:16:35:LYS:HE2	19:16:110:MET:SD	2.58	0.43
20:17:31:THR:HB	20:17:32:PRO:HD2	2.01	0.43
21:18:61:ARG:HG3	21:18:61:ARG:HH21	1.84	0.43
21:18:96:LEU:HD22	21:18:98:TYR:HE1	1.84	0.43
22:19:2:ARG:HH22	22:19:4:LYS:HG2	1.83	0.43
39:Z:84:LEU:HD11	39:Z:96:PHE:HD1	1.83	0.43
39:Z:344:ASN:O	39:Z:348:VAL:HG23	2.18	0.43
43:E:151:MET:HE3	43:E:154:ALA:HB3	2.01	0.43
59:U:15:LEU:HA	59:U:17:ARG:NH1	2.28	0.43
1:A:546:A:OP1	42:D:69:ARG:HG2	2.18	0.43
1:A:1049:U:H5'	1:A:1201:A:P	2.59	0.43
1:A:1436:U:H2'	1:A:1437:A:H8	1.82	0.43
2:01:687:C:H2'	2:01:688:U:O4'	2.18	0.43
2:01:729:G:C6	7:04:206:LYS:HB2	2.54	0.43
2:01:1040:A:O2'	2:01:1041:G:H5'	2.18	0.43
2:01:1335:C:H2'	2:01:1336:A:C8	2.54	0.43
2:01:1775:U:H2'	2:01:1776:G:O4'	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:2345:G:H5'	2:01:2347:C:H5'	2.00	0.43
2:01:2348:U:H5'	34:31:20:TYR:OH	2.18	0.43
2:01:2741:A:C2'	2:01:2742:G:H5'	2.48	0.43
6:03:170:ILE:HD12	6:03:170:ILE:N	2.34	0.43
7:04:30:ALA:HB3	7:04:31:PRO:HD3	2.00	0.43
19:16:9:GLN:HA	19:16:17:ARG:NH2	2.33	0.43
24:21:84:ARG:HH21	24:21:84:ARG:HG2	1.82	0.43
26:23:60:LYS:HG3	26:23:61:GLU:N	2.33	0.43
32:29:6:HIS:HB3	32:29:7:PRO:HD2	2.00	0.43
39:Z:117:ARG:NH2	39:Z:357:ILE:HG22	2.29	0.43
41:C:150:VAL:HG22	41:C:199:VAL:HG23	2.00	0.43
43:E:119:VAL:CG1	43:E:122:VAL:HG22	2.48	0.43
47:I:78:ILE:O	47:I:82:ILE:HG13	2.19	0.43
53:O:2:LEU:HG	53:O:7:THR:OG1	2.18	0.43
1:A:52:C:H2'	1:A:53:A:H8	1.83	0.43
1:A:52:C:H2'	1:A:53:A:C8	2.53	0.43
1:A:502:A:O2'	1:A:550:G:H4'	2.18	0.43
1:A:722:G:H1	1:A:733:G:H1	1.67	0.43
1:A:750:C:H2'	1:A:751:U:C6	2.53	0.43
2:01:627:A:N7	17:14:111:ILE:HD12	2.33	0.43
2:01:996:A:H4'	22:19:90:ASP:OD2	2.18	0.43
2:01:1367:A:C2'	2:01:1368:G:H5'	2.48	0.43
2:01:1666:G:O2'	2:01:1667:G:H5'	2.19	0.43
2:01:2327:A:H2'	2:01:2328:A:C8	2.54	0.43
2:01:2741:A:H2'	2:01:2742:G:O4'	2.18	0.43
3:02:97:C:C2'	3:02:98:G:H5'	2.49	0.43
5:X:17:C:OP1	5:X:61:C:H5'	2.18	0.43
8:05:38:LYS:HE2	8:05:81:GLU:OE1	2.19	0.43
9:06:148:ILE:HD13	9:06:187:VAL:CG1	2.48	0.43
19:16:44:LEU:HD23	19:16:113:ILE:HD13	2.01	0.43
28:25:10:ARG:H	28:25:10:ARG:HD3	1.83	0.43
39:Z:144:TRP:CG	39:Z:201:LEU:HD22	2.53	0.43
48:J:49:PHE:CZ	52:N:75:LYS:HG2	2.54	0.43
49:K:33:ILE:HD12	49:K:73:VAL:HG11	1.98	0.43
52:N:23:ARG:NH1	52:N:50:LEU:HD11	2.34	0.43
52:N:26:LEU:O	52:N:30:ILE:HB	2.18	0.43
1:A:29:U:O2'	1:A:30:U:H5'	2.19	0.43
1:A:367:U:C2	1:A:393:A:C2	3.06	0.43
1:A:735:C:H5'	56:R:59:LYS:HD3	2.00	0.43
1:A:946:A:H2'	1:A:947:G:C8	2.54	0.43
1:A:983:A:H5'	1:A:984:C:OP2	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:184:C:H2'	2:01:185:G:C8	2.54	0.43
2:01:327:G:O2'	2:01:328:U:H5'	2.19	0.43
2:01:1666:G:C2'	2:01:1667:G:H5'	2.49	0.43
2:01:2025:C:H2'	2:01:2026:U:C6	2.53	0.43
7:04:28:PRO:HG2	7:04:33:LEU:HD21	2.00	0.43
7:04:85:ASN:N	7:04:85:ASN:ND2	2.66	0.43
8:05:38:LYS:NZ	8:05:49:GLN:HB2	2.33	0.43
9:06:187:VAL:HG13	9:06:187:VAL:O	2.19	0.43
9:06:188:MET:SD	9:06:193:VAL:HG22	2.58	0.43
12:09:132:PHE:HB2	12:09:140:ALA:HB3	1.99	0.43
21:18:19:PHE:CE2	21:18:46:VAL:HG21	2.53	0.43
26:23:32:LYS:HB3	26:23:63:ALA:HB1	2.00	0.43
35:32:1:MET:HB2	35:32:3:ARG:NH2	2.24	0.43
39:Z:150:ARG:HA	39:Z:153:LEU:HB3	2.01	0.43
42:D:88:ASN:O	42:D:92:LEU:HG	2.18	0.43
48:J:100:ILE:O	48:J:100:ILE:HG13	2.18	0.43
52:N:80:ARG:HA	52:N:83:VAL:HG22	1.99	0.43
52:N:87:ALA:HB1	52:N:88:MET:H	1.51	0.43
59:U:52:VAL:O	59:U:56:ALA:N	2.43	0.43
1:A:371:A:H2'	1:A:372:C:O4'	2.18	0.43
1:A:448:A:H62	1:A:486:U:H3	1.67	0.43
1:A:1422:G:H5'	16:13:48:PRO:CG	2.49	0.43
1:A:1436:U:H2'	1:A:1437:A:C8	2.53	0.43
2:01:84:A:N7	2:01:101:A:H2	2.17	0.43
2:01:397:U:OP2	29:26:9:LYS:HD3	2.18	0.43
2:01:616:A:H2'	2:01:617:G:O4'	2.19	0.43
2:01:1210:G:P	2:01:1212:G:H5'	2.58	0.43
2:01:2665:A:O2'	2:01:2666:C:H5'	2.19	0.43
6:03:164:ARG:HG3	6:03:171:ILE:HD13	1.99	0.43
8:05:83:ARG:HG2	8:05:83:ARG:HH21	1.83	0.43
9:06:21:ARG:HG2	9:06:110:SER:OG	2.19	0.43
10:07:147:ARG:HB2	10:07:149:ARG:HG2	1.99	0.43
15:12:58:ASN:HD21	15:12:128:ASN:ND2	2.17	0.43
18:15:66:ARG:HG3	18:15:66:ARG:HH11	1.82	0.43
19:16:35:LYS:HB2	19:16:112:TYR:CE1	2.53	0.43
22:19:91:ARG:HG3	22:19:91:ARG:NH1	2.33	0.43
22:19:95:ALA:O	22:19:99:VAL:HG23	2.19	0.43
23:20:57:GLY:CA	23:20:102:SER:HB3	2.48	0.43
26:23:95:PHE:CD2	26:23:100:GLU:HB2	2.49	0.43
28:25:7:ARG:O	28:25:10:ARG:NH1	2.51	0.43
39:Z:48:ASN:O	39:Z:48:ASN:ND2	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:Z:52:ARG:HG3	39:Z:52:ARG:HH11	1.83	0.43
39:Z:265:HIS:CD2	39:Z:267:PRO:HD2	2.53	0.43
42:D:194:ILE:N	42:D:194:ILE:HD12	2.33	0.43
50:L:68:GLY:HA3	50:L:98:ARG:NH1	2.34	0.43
1:A:889:A:O3'	1:A:890:G:H4'	2.19	0.43
1:A:986:U:H2'	1:A:987:G:C8	2.53	0.43
2:01:395:U:H2'	2:01:396:G:C8	2.52	0.43
2:01:967:U:H2'	2:01:968:C:C6	2.54	0.43
2:01:1565:C:O2'	2:01:1566:A:C8	2.72	0.43
2:01:2183:A:H2'	2:01:2184:A:H8	1.84	0.43
2:01:2360:G:C2'	2:01:2361:G:H5'	2.48	0.43
3:02:28:C:H2'	3:02:29:A:C8	2.53	0.43
8:05:77:ARG:HH21	8:05:77:ARG:HG3	1.83	0.43
11:08:42:VAL:HB	11:08:51:PHE:CD1	2.54	0.43
11:08:54:ARG:HH11	11:08:54:ARG:HG3	1.84	0.43
12:09:90:LEU:HD23	12:09:91:PHE:N	2.33	0.43
13:10:7:ASP:O	13:10:11:ILE:HG12	2.18	0.43
14:11:131:THR:O	14:11:135:MET:HG2	2.19	0.43
21:18:91:VAL:HG21	21:18:96:LEU:HD21	1.99	0.43
22:19:40:LYS:HG3	22:19:44:TYR:CE2	2.54	0.43
25:22:12:ARG:NH1	30:27:29:ARG:HH21	2.17	0.43
40:B:17:HIS:O	40:B:19:THR:N	2.44	0.43
41:C:6:PRO:HD2	41:C:183:TYR:CD2	2.53	0.43
45:G:91:ARG:O	45:G:95:ARG:HG3	2.18	0.43
46:H:45:ILE:HD12	46:H:62:LEU:HA	2.01	0.43
57:S:2:ARG:N	57:S:2:ARG:HD2	2.34	0.43
1:A:21:G:H2'	1:A:22:G:C8	2.54	0.43
1:A:410:G:H2'	1:A:429:U:C4	2.54	0.43
1:A:742:G:O2'	1:A:743:A:H5'	2.19	0.43
2:01:1528:A:H2'	2:01:1529:G:O4'	2.19	0.43
2:01:1545:A:C2'	2:01:1546:G:H5'	2.49	0.43
3:02:5:U:H2'	3:02:6:G:H8	1.84	0.43
4:Y:28:ARG:HH11	4:Y:28:ARG:HG3	1.83	0.43
13:10:43:LYS:NZ	13:10:95:LEU:HA	2.34	0.43
14:11:97:VAL:O	14:11:138:VAL:HG23	2.19	0.43
19:16:60:VAL:O	19:16:64:ARG:HG2	2.19	0.43
39:Z:245:ARG:HG3	39:Z:245:ARG:NH1	2.34	0.43
40:B:211:LEU:HD23	40:B:211:LEU:C	2.38	0.43
42:D:71:PHE:HE1	42:D:93:LEU:HD21	1.83	0.43
47:I:91:GLU:H	47:I:91:GLU:CD	2.21	0.43
50:L:4:ASN:HD22	55:Q:35:LYS:NZ	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1097:C:H2'	1:A:1098:C:C6	2.54	0.43
1:A:1191:A:H5''	41:C:3:LYS:NZ	2.33	0.43
1:A:1241:G:H2'	1:A:1242:G:C8	2.54	0.43
2:01:6:A:H2'	2:01:7:G:C8	2.54	0.43
2:01:859:G:HO2'	2:01:860:U:H6	1.64	0.43
2:01:1934:C:H4'	2:01:1974:C:O3'	2.19	0.43
2:01:2164:C:C2'	2:01:2165:C:H5'	2.49	0.43
2:01:2531:A:H4'	11:08:156:TYR:CZ	2.53	0.43
4:Y:4:TYR:CZ	4:Y:24:LEU:HB2	2.54	0.43
7:04:134:ILE:HD13	7:04:140:VAL:HG21	1.99	0.43
9:06:31:VAL:HG21	9:06:104:ALA:HB2	2.01	0.43
10:07:97:GLU:O	10:07:101:ARG:HG2	2.19	0.43
15:12:114:LEU:HG	15:12:118:MET:SD	2.59	0.43
16:13:2:ILE:HD12	16:13:8:LEU:HD21	2.00	0.43
40:B:83:ALA:HB1	40:B:88:GLN:C	2.39	0.43
42:D:161:ALA:HA	42:D:164:ARG:HH11	1.84	0.43
46:H:21:LYS:O	46:H:62:LEU:HD12	2.19	0.43
47:I:46:VAL:HA	47:I:49:GLN:CD	2.39	0.43
48:J:33:GLY:O	48:J:34:ALA:HB2	2.19	0.43
1:A:77:A:H2'	1:A:78:A:C8	2.54	0.42
1:A:97:G:H2'	1:A:98:A:H5'	2.00	0.42
1:A:320:A:H2'	1:A:321:A:C8	2.54	0.42
1:A:368:U:H5'	1:A:369:G:H5''	2.01	0.42
1:A:676:A:H5''	49:K:114:PRO:HB3	2.01	0.42
1:A:820:U:H3'	1:A:821:G:C5'	2.49	0.42
1:A:880:C:OP2	50:L:4:ASN:HB3	2.19	0.42
1:A:1216:A:H5''	52:N:4:SER:OG	2.19	0.42
2:01:243:U:O2'	2:01:244:A:H5'	2.18	0.42
2:01:1404:C:O2'	2:01:1405:U:H5'	2.19	0.42
2:01:1522:A:H8	2:01:1522:A:OP1	2.02	0.42
2:01:1846:G:H2'	2:01:1847:G:C8	2.54	0.42
2:01:1858:A:H1'	2:01:1885:A:C2	2.53	0.42
2:01:2286:G:H4'	2:01:2287:A:C4	2.54	0.42
2:01:2641:G:H2'	2:01:2642:G:H8	1.84	0.42
2:01:2671:G:H2'	2:01:2672:U:C6	2.53	0.42
2:01:2834:G:H2'	2:01:2879:A:N6	2.32	0.42
4:Y:24:LEU:HA	50:L:40:THR:HG21	2.01	0.42
5:X:55:U:C4	5:X:57:A:H5''	2.54	0.42
6:03:175:ILE:HG12	6:03:188:ASN:OD1	2.19	0.42
9:06:14:VAL:HG12	9:06:15:SER:N	2.29	0.42
11:08:82:PHE:CE2	11:08:137:LYS:HB2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:08:88:LEU:HD12	11:08:88:LEU:N	2.34	0.42
15:12:59:ALA:HB3	15:12:126:ALA:HA	2.01	0.42
17:14:79:LEU:HB3	17:14:114:GLY:H	1.84	0.42
17:14:102:GLY:C	17:14:105:ILE:HD13	2.39	0.42
39:Z:170:GLU:HA	39:Z:176:ILE:HA	2.01	0.42
40:B:168:GLU:O	40:B:172:ILE:HG13	2.18	0.42
45:G:11:ILE:HD11	45:G:20:GLU:HB3	2.01	0.42
45:G:96:ASN:O	45:G:100:MET:SD	2.77	0.42
45:G:132:THR:O	45:G:136:LYS:HG3	2.19	0.42
47:I:64:ILE:HD13	47:I:78:ILE:HG23	2.01	0.42
47:I:123:ARG:HG3	47:I:124:PRO:HD2	2.01	0.42
50:L:4:ASN:HD22	55:Q:35:LYS:HZ1	1.67	0.42
51:M:47:LEU:HD23	51:M:47:LEU:C	2.40	0.42
1:A:1143:G:O2'	1:A:1144:G:H5'	2.19	0.42
1:A:1151:A:H1'	48:J:41:PRO:HG3	2.00	0.42
2:01:127:A:H5''	2:01:128:C:O4'	2.20	0.42
2:01:150:U:H2'	2:01:151:C:C6	2.54	0.42
3:02:95:U:H2'	3:02:96:G:C8	2.55	0.42
6:03:27:ILE:O	6:03:31:LYS:N	2.52	0.42
6:03:28:ALA:O	6:03:32:GLU:HG2	2.18	0.42
8:05:139:SER:HA	8:05:142:VAL:CG2	2.49	0.42
12:09:97:ARG:HH11	12:09:97:ARG:HG3	1.83	0.42
15:12:117:ALA:HA	15:12:120:ARG:NE	2.24	0.42
26:23:28:LEU:N	26:23:28:LEU:HD12	2.34	0.42
26:23:33:VAL:HG23	26:23:64:ILE:HG23	2.00	0.42
5:W:23:C:H2'	5:W:24:U:C6	2.53	0.42
39:Z:336:LEU:HD12	39:Z:336:LEU:C	2.39	0.42
42:D:27:ILE:HG13	42:D:28:ASP:N	2.27	0.42
43:E:44:ARG:HG2	43:E:44:ARG:HH11	1.83	0.42
45:G:9:ARG:HG3	45:G:9:ARG:HH11	1.84	0.42
45:G:142:ARG:HG2	45:G:142:ARG:HH11	1.84	0.42
51:M:72:ILE:O	51:M:76:ILE:HG13	2.19	0.42
54:P:18:GLN:NE2	54:P:35:ARG:HD2	2.34	0.42
55:Q:18:LYS:HD3	55:Q:48:GLU:OE2	2.19	0.42
56:R:70:THR:OG1	56:R:71:ASP:N	2.49	0.42
1:A:163:C:H2'	1:A:164:G:C4'	2.50	0.42
1:A:917:G:H2'	1:A:918:A:C8	2.54	0.42
2:01:6:A:H2'	2:01:7:G:H8	1.84	0.42
2:01:249:C:H2'	2:01:2394:C:O2'	2.20	0.42
2:01:720:U:H2'	2:01:721:A:H8	1.84	0.42
2:01:859:G:O2'	2:01:860:U:C6	2.73	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:941:A:O2'	2:01:1190:G:H4'	2.19	0.42
2:01:1352:U:O2'	2:01:1353:A:H5'	2.19	0.42
2:01:2230:G:H5''	29:26:29:LEU:HD12	2.01	0.42
2:01:2646:C:H2'	2:01:2647:U:O4'	2.20	0.42
2:01:2679:A:O2'	2:01:2680:U:H5'	2.19	0.42
2:01:2825:G:H2'	2:01:2826:A:H5'	2.02	0.42
3:02:49:C:H4'	20:17:68:LYS:HZ1	1.83	0.42
10:07:70:ARG:HG2	10:07:70:ARG:HH21	1.84	0.42
11:08:152:ARG:HD2	11:08:152:ARG:N	2.27	0.42
12:09:4:ILE:HG21	12:09:47:PHE:CD2	2.54	0.42
41:C:46:LEU:HB3	41:C:49:ALA:HB3	2.01	0.42
1:A:206:C:H2'	1:A:207:C:H5'	2.00	0.42
1:A:530:G:C6	4:Y:30:GLU:HA	2.55	0.42
1:A:1026:G:N1	1:A:1035:A:C2	2.77	0.42
1:A:1118:U:H2'	1:A:1119:C:H6	1.82	0.42
1:A:1170:A:C2'	1:A:1171:A:H5'	2.49	0.42
1:A:1522:U:H2'	1:A:1523:G:C8	2.54	0.42
2:01:184:C:H2'	2:01:185:G:H8	1.84	0.42
2:01:222:A:N6	2:01:232:G:H1'	2.34	0.42
2:01:386:G:H3'	2:01:387:U:H5''	2.01	0.42
2:01:566:U:H2'	2:01:567:U:O4'	2.19	0.42
2:01:1306:C:H41	2:01:1606:C:H2'	1.82	0.42
2:01:1651:G:H5'	19:16:39:PRO:HB2	2.00	0.42
2:01:2136:G:H2'	2:01:2137:U:C5'	2.49	0.42
2:01:2330:G:H21	28:25:38:GLY:HA2	1.84	0.42
2:01:2364:C:OP1	28:25:51:ARG:HD3	2.19	0.42
5:X:26:G:H1	5:X:44:A:H2	1.67	0.42
8:05:1:MET:CG	8:05:205:PRO:HG2	2.49	0.42
9:06:135:ALA:O	9:06:139:LYS:HG3	2.19	0.42
11:08:93:TYR:CD1	11:08:106:LEU:HA	2.55	0.42
23:20:38:VAL:HG11	23:20:57:GLY:HA3	2.01	0.42
28:25:66:GLU:O	28:25:75:PHE:N	2.50	0.42
29:26:58:ILE:HG12	29:26:66:VAL:HG21	2.02	0.42
39:Z:116:ARG:HH11	39:Z:116:ARG:HG3	1.84	0.42
39:Z:212:ARG:H	39:Z:212:ARG:HD3	1.84	0.42
40:B:68:PHE:CD2	40:B:83:ALA:HB2	2.54	0.42
41:C:135:ARG:HH11	41:C:135:ARG:HG3	1.84	0.42
45:G:55:LYS:HB2	45:G:60:ALA:HB2	2.02	0.42
48:J:83:THR:O	48:J:87:LEU:HG	2.19	0.42
51:M:18:LEU:HD12	51:M:33:LEU:CD1	2.49	0.42
51:M:104:ASN:HB3	51:M:105:ALA:H	1.65	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:S:15:LEU:O	57:S:15:LEU:HD23	2.19	0.42
1:A:547:A:H4'	1:A:548:G:O5'	2.20	0.42
1:A:629:A:H2'	1:A:630:A:O4'	2.19	0.42
2:01:420:C:O2'	2:01:421:C:H5'	2.20	0.42
2:01:878:A:H3'	2:01:879:G:H8	1.85	0.42
2:01:1458:U:H4'	2:01:1459:G:C4	2.54	0.42
2:01:1697:G:C4'	2:01:1978:A:H5''	2.49	0.42
2:01:1912:A:N7	2:01:1917:U:O4	2.52	0.42
2:01:2298:A:H62	2:01:2318:G:H21	1.67	0.42
10:07:110:ILE:HD13	10:07:136:ILE:HG21	2.00	0.42
12:09:70:GLU:OE1	12:09:140:ALA:HB2	2.20	0.42
14:11:105:LEU:HD22	14:11:139:VAL:HG21	2.02	0.42
17:14:77:ILE:HB	17:14:110:VAL:HG22	2.01	0.42
18:15:81:ARG:HG2	18:15:81:ARG:HH11	1.85	0.42
20:17:110:ALA:HB1	20:17:115:LEU:HD23	2.01	0.42
34:31:38:PHE:CZ	34:31:43:ARG:HA	2.54	0.42
39:Z:248:GLY:HA3	39:Z:255:ASN:ND2	2.24	0.42
44:F:38:ARG:HB2	44:F:63:ASN:HB2	2.02	0.42
47:I:66:VAL:HG21	47:I:74:GLN:HB3	2.02	0.42
55:Q:57:VAL:O	55:Q:78:VAL:HG22	2.19	0.42
1:A:438:U:HO2'	1:A:439:U:H5	1.66	0.42
1:A:976:G:N2	1:A:1362:A:H2'	2.35	0.42
1:A:1355:G:O2'	1:A:1356:G:H5'	2.19	0.42
1:A:1469:C:H2'	1:A:1470:U:H5'	2.01	0.42
2:01:368:A:H2'	2:01:369:U:O4'	2.19	0.42
2:01:682:G:H5'	35:32:26:ASN:CG	2.40	0.42
2:01:1079:C:H4'	14:11:133:ARG:NH2	2.35	0.42
2:01:2487:G:O2'	2:01:2488:G:H5'	2.20	0.42
7:04:224:MET:SD	7:04:229:HIS:HB2	2.60	0.42
8:05:4:LEU:HD21	8:05:29:VAL:CG2	2.50	0.42
10:07:102:LEU:O	10:07:107:VAL:HG23	2.19	0.42
16:13:104:THR:O	16:13:107:LEU:HD13	2.20	0.42
28:25:69:GLY:HA2	28:25:70:PRO:HD2	1.74	0.42
36:33:35:LYS:HB3	36:33:39:ARG:HD3	2.01	0.42
42:D:110:ARG:O	42:D:114:ARG:N	2.52	0.42
42:D:196:GLU:O	42:D:200:VAL:HG23	2.20	0.42
45:G:82:SER:HB3	45:G:84:TYR:CE1	2.55	0.42
45:G:140:VAL:O	45:G:144:ALA:N	2.52	0.42
47:I:24:ASN:HD22	47:I:26:LYS:CG	2.32	0.42
48:J:31:ARG:O	48:J:31:ARG:HD2	2.20	0.42
49:K:39:ASN:N	49:K:39:ASN:ND2	2.66	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:L:20:VAL:HB	50:L:94:TYR:CE1	2.55	0.42
52:N:20:PHE:HD2	52:N:56:PRO:HD3	1.84	0.42
1:A:88:U:H2'	1:A:89:U:C6	2.54	0.42
1:A:160:A:H2'	1:A:161:A:O4'	2.19	0.42
1:A:620:C:H4'	42:D:134:TYR:HE1	1.84	0.42
1:A:1096:C:H2'	1:A:1097:C:C6	2.55	0.42
1:A:1487:G:O2'	1:A:1488:G:H5'	2.19	0.42
2:01:10:A:H2'	2:01:11:C:H5'	2.02	0.42
2:01:85:G:N7	26:23:6:ARG:NH1	2.68	0.42
2:01:118:A:H2'	2:01:120:U:O4	2.20	0.42
2:01:1279:G:H4'	19:16:31:HIS:CD2	2.55	0.42
2:01:1335:C:H2'	2:01:1336:A:H8	1.85	0.42
2:01:1744:A:H2'	2:01:1745:A:O4'	2.19	0.42
2:01:1934:C:O2'	2:01:1935:G:H5'	2.20	0.42
2:01:2194:U:H2'	2:01:2195:U:C6	2.53	0.42
2:01:2467:C:H2'	2:01:2468:A:O4'	2.19	0.42
2:01:2682:A:C2	8:05:23:PRO:HB3	2.54	0.42
3:02:24:G:H4'	3:02:25:U:C5	2.55	0.42
8:05:142:VAL:CG1	8:05:143:PRO:HD2	2.48	0.42
14:11:79:LEU:HD12	14:11:79:LEU:N	2.35	0.42
17:14:92:LEU:HD13	17:14:95:LEU:HD12	2.02	0.42
19:16:13:ASN:O	19:16:17:ARG:HG3	2.19	0.42
20:17:99:TYR:HE1	20:17:107:ALA:HB3	1.84	0.42
23:20:25:LEU:HD12	23:20:25:LEU:O	2.20	0.42
39:Z:196:THR:HG23	39:Z:222:VAL:HG22	2.02	0.42
40:B:31:PHE:HB2	40:B:39:ILE:HB	2.01	0.42
40:B:156:LEU:HD23	40:B:156:LEU:N	2.29	0.42
49:K:86:LYS:HG3	49:K:114:PRO:HD3	2.02	0.42
1:A:65:A:O4'	1:A:200:G:H4'	2.19	0.42
1:A:185:U:H4'	58:T:68:LYS:HE3	2.02	0.42
1:A:723:U:OP1	59:U:48:LYS:HG3	2.19	0.42
2:01:293:U:H2'	2:01:294:A:H5''	2.01	0.42
2:01:720:U:H2'	2:01:721:A:C8	2.54	0.42
2:01:746:U:H1'	2:01:748:G:H21	1.84	0.42
2:01:2035:G:H5'	2:01:2036:C:C5	2.48	0.42
2:01:2355:G:O2'	28:25:20:LYS:HE3	2.20	0.42
2:01:2602:A:C6	39:Z:254:VAL:HG12	2.55	0.42
2:01:2655:G:O2'	2:01:2656:U:C5	2.70	0.42
3:02:97:C:H2'	3:02:98:G:H5'	2.01	0.42
5:X:8:U:C4'	5:X:48:C:H4'	2.49	0.42
9:06:67:ARG:HG2	9:06:67:ARG:HH11	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:07:30:VAL:HG13	10:07:30:VAL:O	2.19	0.42
10:07:135:ILE:HG22	10:07:140:ILE:HG21	2.01	0.42
13:10:77:VAL:HB	13:10:84:TYR:OH	2.19	0.42
24:21:75:PHE:N	24:21:75:PHE:CD1	2.88	0.42
29:26:56:ARG:HG2	29:26:56:ARG:HH11	1.85	0.42
39:Z:10:ARG:HH21	39:Z:14:LEU:HD12	1.85	0.42
41:C:149:LYS:HG3	41:C:168:ARG:HB2	2.01	0.42
42:D:169:TRP:CG	42:D:185:PRO:HG3	2.54	0.42
44:F:46:GLN:HA	44:F:56:LYS:HA	2.02	0.42
50:L:53:ARG:HA	50:L:63:THR:HA	2.00	0.42
55:Q:80:LYS:HG3	55:Q:81:ALA:N	2.34	0.42
1:A:231:U:O2'	1:A:232:G:H5'	2.20	0.42
1:A:306:A:O2'	1:A:307:C:H5'	2.20	0.42
1:A:620:C:H4'	42:D:134:TYR:CE1	2.55	0.42
1:A:635:A:H2'	1:A:636:U:C6	2.55	0.42
1:A:642:A:N7	46:H:106:SER:HA	2.35	0.42
1:A:1315:U:H2'	1:A:1316:G:O4'	2.20	0.42
2:01:466:A:H2'	2:01:467:G:H5'	2.02	0.42
2:01:503:A:H4'	2:01:504:A:H5'	2.02	0.42
2:01:601:C:H4'	9:06:99:LYS:HE2	2.02	0.42
2:01:1550:C:H2'	2:01:1551:A:H8	1.84	0.42
2:01:1611:C:H5'	2:01:1611:C:H6	1.85	0.42
2:01:2294:G:OP1	20:17:10:ARG:HD3	2.20	0.42
2:01:2368:C:H2'	2:01:2369:A:H8	1.85	0.42
3:02:30:C:H2'	3:02:31:C:C5'	2.50	0.42
6:03:29:LEU:HD23	6:03:222:VAL:HG22	2.02	0.42
8:05:60:VAL:O	8:05:60:VAL:HG13	2.20	0.42
17:14:109:LYS:HG3	17:14:126:ARG:O	2.20	0.42
30:27:58:ASN:HA	30:27:61:ALA:HB3	2.01	0.42
31:28:35:VAL:HG22	31:28:36:GLU:N	2.35	0.42
42:D:201:GLU:OE1	43:E:104:ILE:HG22	2.20	0.42
44:F:18:VAL:HG13	44:F:19:PRO:CD	2.50	0.42
55:Q:30:HIS:HD2	55:Q:33:TYR:H	1.67	0.42
56:R:26:ALA:HA	56:R:29:LYS:CE	2.49	0.42
1:A:648:A:H2'	1:A:649:A:C8	2.55	0.42
1:A:675:A:H1'	49:K:117:HIS:CD2	2.55	0.42
1:A:783:C:H2'	1:A:784:A:H8	1.85	0.42
1:A:1325:C:O2'	1:A:1326:U:H5'	2.19	0.42
1:A:1369:C:OP2	47:I:112:ARG:HA	2.20	0.42
1:A:1489:G:H2'	1:A:1490:U:C6	2.55	0.42
1:A:1494:G:O2'	1:A:1495:U:H5'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:01:535:G:O3'	22:19:52:ARG:HD3	2.19	0.42
2:01:833:A:H2'	2:01:834:G:C8	2.55	0.42
2:01:1601:G:C2'	2:01:1602:U:H5'	2.50	0.42
2:01:1641:A:H2'	2:01:1642:G:O4'	2.20	0.42
2:01:1810:A:H2'	2:01:1811:G:O4'	2.19	0.42
2:01:1826:G:H2'	2:01:1827:U:O4'	2.20	0.42
2:01:2124:G:H21	6:03:217:THR:HG22	1.85	0.42
6:03:148:ASN:O	6:03:152:ALA:N	2.51	0.42
19:16:98:LEU:HD11	33:30:48:TYR:CE2	2.55	0.42
20:17:74:VAL:O	20:17:78:VAL:HG13	2.20	0.42
22:19:47:ARG:HG2	22:19:47:ARG:HH21	1.84	0.42
22:19:64:ILE:HD11	22:19:94:LEU:HB2	2.01	0.42
24:21:7:HIS:N	24:21:103:ILE:O	2.53	0.42
28:25:19:VAL:HG13	28:25:34:VAL:HG22	2.02	0.42
28:25:69:GLY:O	28:25:71:LYS:N	2.52	0.42
29:26:53:LYS:HB2	29:26:53:LYS:HZ2	1.84	0.42
42:D:104:MET:HE2	42:D:170:LEU:HB2	2.02	0.42
42:D:131:ILE:HD11	42:D:134:TYR:HD1	1.85	0.42
47:I:35:GLU:HA	47:I:39:GLY:HA3	2.01	0.42
48:J:50:THR:HG22	48:J:62:ARG:NE	2.35	0.42
54:P:40:ASN:N	54:P:49:GLY:O	2.53	0.42
57:S:30:LEU:HD12	57:S:30:LEU:N	2.35	0.42
1:A:508:U:H4'	42:D:50:TYR:HD2	1.80	0.41
1:A:1228:C:H2'	1:A:1229:A:H8	1.84	0.41
2:01:1450:G:O2'	2:01:1451:C:H5'	2.20	0.41
2:01:1665:A:H5''	16:13:66:LYS:HG3	2.01	0.41
2:01:1739:A:H2'	2:01:1740:G:O4'	2.20	0.41
2:01:1858:A:C2	2:01:1885:A:H1'	2.54	0.41
2:01:1935:G:H1'	2:01:1964:G:N2	2.35	0.41
2:01:2039:U:H2'	2:01:2040:G:H8	1.83	0.41
2:01:2366:A:H2'	2:01:2367:G:O4'	2.18	0.41
2:01:2493:U:H5''	39:Z:257:THR:HG23	2.01	0.41
10:07:107:VAL:HB	10:07:108:PRO:HD3	2.01	0.41
17:14:71:ALA:O	17:14:74:THR:HG22	2.20	0.41
25:22:34:VAL:HG22	25:22:81:LYS:O	2.19	0.41
34:31:19:PHE:CD1	34:31:19:PHE:N	2.88	0.41
36:33:55:GLY:HA2	36:33:58:ILE:HG22	2.01	0.41
40:B:185:ILE:HA	40:B:199:ILE:HB	2.01	0.41
41:C:69:THR:O	41:C:105:VAL:N	2.49	0.41
48:J:9:ARG:C	48:J:10:LEU:HD12	2.40	0.41
53:O:62:ARG:O	53:O:66:LEU:HG	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:78:A:C3'	1:A:79:G:H5'	2.49	0.41
1:A:594:U:O2'	1:A:595:A:H5'	2.20	0.41
1:A:843:U:H3'	1:A:844:G:H5''	2.01	0.41
2:01:2478:A:H2'	2:01:2479:U:O4'	2.19	0.41
2:01:2747:G:H5''	11:08:69:ALA:HB1	2.02	0.41
4:Y:26:ARG:HH22	50:L:43:LYS:HA	1.86	0.41
8:05:51:THR:HB	8:05:79:LEU:CD2	2.46	0.41
8:05:124:ARG:HA	8:05:165:MET:CE	2.49	0.41
10:07:113:PHE:CE2	10:07:175:PRO:HB2	2.54	0.41
10:07:166:ARG:HG3	10:07:166:ARG:HH11	1.84	0.41
12:09:26:ALA:O	12:09:31:VAL:HG23	2.19	0.41
14:11:87:SER:CB	14:11:97:VAL:HG22	2.45	0.41
15:12:42:ALA:HB2	22:19:67:ALA:HB2	2.02	0.41
19:16:90:ARG:NH1	19:16:116:VAL:HG11	2.34	0.41
32:29:2:LYS:HG2	32:29:2:LYS:O	2.20	0.41
39:Z:361:LEU:HD23	39:Z:361:LEU:C	2.41	0.41
43:E:33:THR:HG22	43:E:51:LYS:HB3	2.03	0.41
48:J:69:THR:O	48:J:71:LEU:HD12	2.20	0.41
49:K:112:VAL:HG23	49:K:112:VAL:O	2.20	0.41
51:M:70:ARG:HA	51:M:70:ARG:HD3	1.83	0.41
51:M:106:ARG:HA	51:M:106:ARG:HE	1.84	0.41
54:P:14:ARG:HG2	54:P:14:ARG:HH11	1.84	0.41
57:S:10:ILE:HG21	57:S:40:PHE:HE2	1.85	0.41
59:U:32:ARG:HH12	59:U:33:ARG:HD3	1.85	0.41
1:A:9:G:H5'	43:E:107:GLY:HA2	1.99	0.41
1:A:212:G:O2'	1:A:213:G:H5'	2.19	0.41
1:A:721:G:H4'	1:A:722:G:O4'	2.20	0.41
1:A:785:G:O2'	1:A:786:G:H5'	2.20	0.41
1:A:1248:A:O2'	1:A:1249:C:H5'	2.19	0.41
2:01:277:G:H3'	2:01:277:G:N3	2.36	0.41
2:01:958:U:H2'	3:02:89:U:H1'	2.01	0.41
2:01:2746:U:H5''	11:08:137:LYS:HE3	2.01	0.41
2:01:2795:C:H2'	2:01:2796:U:O4'	2.20	0.41
4:Y:3:ARG:HG3	39:Z:316:ASP:CB	2.40	0.41
4:Y:27:GLN:NE2	39:Z:137:GLY:O	2.53	0.41
5:X:18:G:H3'	5:X:19:G:H5''	2.01	0.41
9:06:52:VAL:HG11	9:06:81:GLY:HA2	2.01	0.41
13:10:119:PRO:HG2	13:10:121:SER:N	2.20	0.41
17:14:92:LEU:HD22	17:14:92:LEU:N	2.35	0.41
19:16:46:ARG:HG2	19:16:46:ARG:O	2.19	0.41
25:22:47:VAL:HB	25:22:55:VAL:HG21	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:B:16:GLY:H	40:B:202:ASN:HB2	1.84	0.41
40:B:142:LYS:HA	40:B:145:ASN:HD21	1.84	0.41
41:C:90:VAL:HA	41:C:93:ILE:HG22	2.03	0.41
42:D:113:ALA:O	42:D:117:VAL:HG23	2.20	0.41
46:H:103:VAL:HG23	46:H:105:THR:HG23	2.02	0.41
50:L:86:VAL:CG2	50:L:87:LYS:H	2.26	0.41
52:N:20:PHE:HD1	52:N:23:ARG:HB3	1.85	0.41
1:A:39:G:H2'	1:A:40:C:C6	2.56	0.41
1:A:112:G:N2	1:A:354:G:H5'	2.29	0.41
1:A:1252:A:O2'	1:A:1253:G:H5'	2.19	0.41
1:A:1258:G:H2'	1:A:1259:C:C6	2.56	0.41
2:01:399:U:OP1	2:01:2090:A:H5''	2.21	0.41
2:01:511:U:C2'	2:01:512:G:H5'	2.45	0.41
2:01:538:A:H2'	2:01:539:G:O4'	2.19	0.41
2:01:857:G:H2'	2:01:858:G:O4'	2.21	0.41
2:01:1666:G:H5''	16:13:82:ASN:HD21	1.86	0.41
2:01:2557:G:H2'	2:01:2558:C:C6	2.55	0.41
7:04:269:ARG:HH11	7:04:269:ARG:HG3	1.86	0.41
8:05:4:LEU:HD21	8:05:29:VAL:HG21	2.02	0.41
18:15:41:LEU:HD23	18:15:42:THR:N	2.35	0.41
39:Z:323:ILE:CD1	39:Z:337:ARG:HD2	2.50	0.41
40:B:41:ASN:OD1	40:B:44:LYS:HG3	2.20	0.41
41:C:156:LEU:HD12	41:C:156:LEU:N	2.35	0.41
43:E:89:THR:O	43:E:89:THR:HG22	2.20	0.41
44:F:88:MET:HB2	56:R:64:LEU:HD21	2.02	0.41
45:G:39:GLU:HG3	47:I:42:THR:HG21	2.02	0.41
47:I:83:THR:HG21	47:I:102:PHE:HB3	2.02	0.41
48:J:80:THR:HB	48:J:83:THR:OG1	2.19	0.41
49:K:20:ALA:HA	49:K:33:ILE:HA	2.02	0.41
51:M:87:GLY:O	51:M:91:ARG:HG3	2.19	0.41
1:A:67:C:H4'	1:A:172:A:H4'	2.02	0.41
1:A:211:G:H2'	1:A:212:G:H5'	2.02	0.41
1:A:243:A:H4'	1:A:244:U:H3'	2.03	0.41
2:01:78:U:OP2	30:27:2:LYS:HD2	2.20	0.41
2:01:2065:C:H1'	2:01:2449:U:H3	1.86	0.41
2:01:2229:U:H2'	2:01:2230:G:H8	1.85	0.41
3:02:42:C:O4'	10:07:65:LEU:HB2	2.21	0.41
4:Y:16:ILE:HD13	39:Z:197:GLY:HA2	2.02	0.41
9:06:44:ARG:HH21	9:06:87:ALA:HB3	1.81	0.41
10:07:60:SER:HB3	10:07:90:LEU:HD21	2.02	0.41
10:07:133:GLU:HG3	10:07:135:ILE:HG12	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:08:90:GLY:HA3	11:08:93:TYR:CD2	2.55	0.41
28:25:17:LEU:HB3	28:25:18:GLY:H	1.77	0.41
30:27:20:ASN:N	30:27:20:ASN:ND2	2.67	0.41
31:28:16:LEU:HB2	31:28:19:HIS:ND1	2.34	0.41
39:Z:87:ALA:HB2	39:Z:95:THR:HG22	2.03	0.41
45:G:30:MET:SD	45:G:31:VAL:N	2.94	0.41
46:H:45:ILE:HG13	46:H:46:GLU:N	2.34	0.41
48:J:57:VAL:CG2	48:J:58:ASN:H	2.25	0.41
52:N:63:CYS:HA	52:N:72:PHE:HE1	1.86	0.41
57:S:66:VAL:CG2	57:S:67:GLY:N	2.80	0.41
1:A:309:A:H2'	1:A:310:G:H8	1.84	0.41
1:A:337:G:H2'	1:A:338:A:H8	1.86	0.41
1:A:751:U:H2'	1:A:752:G:H5'	2.03	0.41
1:A:1054:C:H42	39:Z:212:ARG:HA	1.86	0.41
1:A:1228:C:H2'	1:A:1229:A:C8	2.55	0.41
2:01:203:A:H5''	2:01:204:A:H2'	2.03	0.41
2:01:1685:C:H2'	2:01:1686:C:C6	2.56	0.41
2:01:2197:U:O2'	2:01:2198:A:H5''	2.20	0.41
6:03:208:TYR:CE2	6:03:209:ILE:HG23	2.56	0.41
7:04:216:ARG:HG2	7:04:216:ARG:NH1	2.35	0.41
7:04:244:VAL:HG12	7:04:250:GLN:HA	2.02	0.41
8:05:124:ARG:HG3	8:05:165:MET:HE3	2.01	0.41
12:09:63:ALA:HA	12:09:66:ASN:ND2	2.36	0.41
14:11:14:ALA:HA	14:11:41:PHE:HZ	1.85	0.41
15:12:35:ARG:HG2	15:12:40:HIS:CD2	2.55	0.41
15:12:98:GLU:OE1	15:12:98:GLU:N	2.54	0.41
16:13:22:ILE:HD11	16:13:40:LYS:HG3	2.03	0.41
18:15:72:PRO:HG3	18:15:92:TRP:CZ3	2.55	0.41
22:19:68:ALA:O	22:19:72:GLY:N	2.53	0.41
24:21:23:LEU:HD11	33:30:21:LEU:HD23	2.02	0.41
27:24:2:PHE:HB3	27:24:50:MET:SD	2.61	0.41
27:24:23:ALA:O	27:24:25:LYS:HG3	2.20	0.41
37:34:30:GLU:O	37:34:32:LYS:N	2.51	0.41
5:W:52:G:O2'	5:W:53:G:H5'	2.21	0.41
39:Z:97:ASN:ND2	39:Z:97:ASN:O	2.53	0.41
39:Z:328:LEU:HD12	39:Z:328:LEU:N	2.35	0.41
40:B:66:ILE:HA	40:B:159:ALA:HB3	2.01	0.41
40:B:80:LYS:HG2	40:B:90:PHE:CE2	2.55	0.41
40:B:145:ASN:OD1	40:B:146:SER:N	2.54	0.41
42:D:170:LEU:HD12	42:D:170:LEU:C	2.41	0.41
47:I:10:ARG:O	47:I:105:ARG:NH2	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:N:60:ARG:HA	52:N:60:ARG:HD2	1.89	0.41
59:U:40:PRO:HA	59:U:43:GLU:HB3	2.03	0.41
1:A:187:G:H2'	1:A:189:A:OP2	2.20	0.41
1:A:284:C:H2'	1:A:285:C:C6	2.56	0.41
1:A:321:A:O2'	1:A:322:C:H5'	2.20	0.41
1:A:441:A:H1'	1:A:497:G:N2	2.36	0.41
1:A:1057:G:H2'	1:A:1058:G:O4'	2.21	0.41
1:A:1251:A:H2'	1:A:1252:A:H8	1.81	0.41
2:01:192:C:C2'	2:01:193:U:H5'	2.47	0.41
2:01:204:A:O3'	2:01:205:G:H4'	2.21	0.41
2:01:1341:G:H4'	25:22:60:THR:O	2.20	0.41
2:01:1521:G:C3'	2:01:1522:A:H5''	2.44	0.41
2:01:1564:C:H2'	2:01:1565:C:O4'	2.20	0.41
2:01:1686:C:H2'	2:01:1687:G:O4'	2.21	0.41
2:01:1993:U:H4'	8:05:133:THR:HG22	2.03	0.41
6:03:11:ILE:HD12	6:03:11:ILE:C	2.41	0.41
10:07:59:ILE:HG22	10:07:98:PHE:HE1	1.85	0.41
12:09:125:THR:HA	12:09:146:VAL:HB	2.02	0.41
14:11:27:LEU:HB2	14:11:32:VAL:HB	2.03	0.41
29:26:9:LYS:HE3	29:26:53:LYS:HB3	2.03	0.41
40:B:19:THR:HG21	40:B:21:TYR:CZ	2.55	0.41
40:B:91:VAL:HG21	40:B:99:MET:CE	2.50	0.41
40:B:224:ARG:HH21	40:B:224:ARG:HG3	1.85	0.41
42:D:120:LYS:HG2	42:D:130:ASN:OD1	2.21	0.41
1:A:216:U:H2'	1:A:217:C:C6	2.56	0.41
1:A:743:A:O2'	1:A:744:C:H5'	2.21	0.41
1:A:1486:G:H2'	1:A:1487:G:O4'	2.21	0.41
2:01:216:A:H2'	2:01:217:A:O4'	2.20	0.41
2:01:653:U:H3'	2:01:654:A:H5''	2.02	0.41
2:01:1179:G:C5	2:01:1180:U:H1'	2.56	0.41
2:01:1592:C:H2'	2:01:1593:A:C8	2.56	0.41
2:01:2314:A:H2'	2:01:2315:G:C8	2.56	0.41
2:01:2462:C:H1'	2:01:2491:U:O4	2.21	0.41
2:01:2505:G:O2'	2:01:2506:U:H5'	2.20	0.41
2:01:2531:A:H4'	11:08:156:TYR:CE2	2.55	0.41
6:03:65:LEU:HD23	6:03:65:LEU:N	2.36	0.41
8:05:29:VAL:O	8:05:185:ASN:HB3	2.19	0.41
12:09:75:LEU:H	12:09:75:LEU:CD2	2.30	0.41
14:11:58:ILE:HD13	14:11:68:PHE:HA	2.03	0.41
18:15:71:LYS:HB3	18:15:93:VAL:O	2.21	0.41
22:19:73:ILE:HD11	22:19:77:LYS:CB	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:28:6:ILE:CD1	31:28:47:ILE:HD11	2.50	0.41
31:28:10:ARG:HG2	31:28:10:ARG:HH21	1.86	0.41
31:28:11:SER:OG	31:28:13:ILE:HG13	2.21	0.41
33:30:56:LYS:HB3	33:30:56:LYS:HZ2	1.86	0.41
39:Z:10:ARG:HG2	39:Z:103:LEU:HD11	2.01	0.41
42:D:36:ALA:N	42:D:37:PRO:CD	2.83	0.41
42:D:120:LYS:O	42:D:145:ARG:HD3	2.21	0.41
43:E:159:SER:HB2	43:E:162:GLU:HB3	2.03	0.41
48:J:17:LEU:HD23	48:J:17:LEU:O	2.21	0.41
48:J:52:LEU:HB2	52:N:80:ARG:HD2	2.02	0.41
52:N:15:LEU:HD13	52:N:53:ASP:HB2	2.03	0.41
52:N:64:ARG:HH11	52:N:64:ARG:HG2	1.86	0.41
58:T:53:MET:O	58:T:57:VAL:HG23	2.21	0.41
59:U:61:ARG:C	59:U:61:ARG:HD2	2.41	0.41
1:A:19:A:OP1	43:E:90:GLY:HA3	2.21	0.41
1:A:642:A:C2	46:H:104:SER:HB3	2.56	0.41
1:A:737:C:H2'	1:A:738:C:C6	2.56	0.41
1:A:754:C:O2	1:A:754:C:H3'	2.21	0.41
1:A:1188:A:O2'	52:N:97:LYS:HD2	2.21	0.41
1:A:1379:G:O6	45:G:1:PRO:HD2	2.20	0.41
2:01:103:A:H2'	2:01:104:A:O4'	2.21	0.41
2:01:144:A:C5'	25:22:2:ILE:HD11	2.51	0.41
2:01:230:G:O2'	2:01:231:A:H5'	2.21	0.41
2:01:625:G:O2'	2:01:626:A:H5'	2.21	0.41
2:01:894:U:H2'	2:01:895:U:H5'	2.03	0.41
2:01:1005:C:O2'	15:12:30:THR:HG21	2.21	0.41
2:01:1055:G:H2'	2:01:1056:G:O4'	2.21	0.41
2:01:2065:C:H2'	2:01:2066:C:C6	2.56	0.41
2:01:2204:G:H2'	2:01:2205:A:H8	1.86	0.41
2:01:2292:U:H2'	2:01:2293:G:H8	1.86	0.41
2:01:2663:G:H2'	2:01:2664:G:O4'	2.21	0.41
2:01:2760:C:O2'	2:01:2761:A:H5'	2.21	0.41
9:06:99:LYS:HG2	9:06:102:ARG:NH1	2.36	0.41
13:10:97:LYS:O	13:10:101:LYS:HG2	2.20	0.41
14:11:102:ARG:HH11	14:11:102:ARG:HG3	1.86	0.41
15:12:58:ASN:OD1	15:12:128:ASN:HA	2.21	0.41
17:14:109:LYS:HE2	17:14:128:THR:HG22	2.03	0.41
19:16:106:ASP:OD1	19:16:106:ASP:N	2.54	0.41
20:17:99:TYR:CZ	20:17:104:GLN:HG3	2.56	0.41
21:18:102:ARG:HH11	21:18:102:ARG:HG3	1.86	0.41
24:21:34:ASP:OD1	33:30:36:LYS:HD2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:27:22:LEU:CD1	30:27:23:ARG:HG2	2.51	0.41
30:27:28:LEU:HD12	30:27:28:LEU:N	2.36	0.41
39:Z:196:THR:HG22	39:Z:222:VAL:HG22	2.03	0.41
41:C:86:LEU:O	41:C:90:VAL:HG23	2.20	0.41
41:C:112:ALA:HB3	41:C:184:ASN:HD22	1.85	0.41
43:E:87:VAL:HG21	43:E:92:ARG:HH11	1.86	0.41
43:E:156:ARG:NH2	43:E:163:ILE:HG22	2.36	0.41
45:G:25:PHE:O	45:G:29:LEU:HG	2.21	0.41
48:J:49:PHE:HZ	52:N:75:LYS:HG2	1.85	0.41
49:K:22:ILE:HG21	49:K:95:THR:HG21	2.03	0.41
55:Q:18:LYS:HB2	55:Q:18:LYS:HZ3	1.86	0.41
57:S:27:LYS:HB3	57:S:27:LYS:HZ2	1.82	0.41
58:T:74:HIS:O	58:T:78:LEU:HD13	2.21	0.41
59:U:19:LYS:HD2	59:U:19:LYS:N	2.36	0.41
1:A:235:C:H2'	1:A:236:A:C8	2.55	0.41
1:A:405:U:H3'	1:A:406:G:C5'	2.32	0.41
1:A:1345:U:H5''	47:I:121:ARG:NH1	2.36	0.41
2:01:45:G:H2'	2:01:215:G:C5	2.56	0.41
2:01:355:U:H2'	2:01:356:G:H8	1.86	0.41
2:01:540:C:H2'	2:01:541:A:C8	2.56	0.41
2:01:558:U:H2'	2:01:559:G:H8	1.86	0.41
2:01:857:G:H5'	28:25:65:PHE:CG	2.56	0.41
2:01:1317:G:H2'	2:01:1318:U:O4'	2.21	0.41
2:01:1529:G:H2'	2:01:1530:G:C5'	2.50	0.41
2:01:1664:A:H61	2:01:1996:C:N4	2.10	0.41
2:01:2061:G:OP1	2:01:2061:G:H4'	2.20	0.41
2:01:2115:G:H2'	2:01:2117:A:OP2	2.20	0.41
2:01:2428:G:H21	17:14:60:ARG:CZ	2.34	0.41
2:01:2751:G:O2'	2:01:2752:C:H5'	2.20	0.41
9:06:88:ARG:HB3	9:06:89:PRO:CD	2.46	0.41
13:10:3:LEU:CD1	13:10:5:LEU:H	2.34	0.41
14:11:60:VAL:HG22	14:11:66:PHE:HB3	2.02	0.41
16:13:31:ARG:HG3	16:13:31:ARG:HH11	1.86	0.41
18:15:133:LYS:HB3	18:15:133:LYS:HZ3	1.84	0.41
23:20:38:VAL:HG13	23:20:54:VAL:HB	2.03	0.41
26:23:80:ASP:OD2	26:23:96:LYS:N	2.54	0.41
39:Z:189:TYR:CG	39:Z:224:PRO:HG3	2.56	0.41
41:C:109:GLU:HB2	41:C:143:LEU:HD12	2.02	0.41
47:I:31:GLN:HE21	47:I:31:GLN:N	2.18	0.41
59:U:17:ARG:HH11	59:U:17:ARG:HG2	1.86	0.41
1:A:750:C:H2'	1:A:751:U:H6	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1349:A:H2'	1:A:1350:A:O4'	2.21	0.40
2:01:121:G:H2'	2:01:122:G:H8	1.85	0.40
2:01:140:C:H42	2:01:1409:U:C1'	2.34	0.40
2:01:207:A:H2'	2:01:208:C:O4'	2.20	0.40
2:01:611:C:H2'	2:01:612:G:O4'	2.21	0.40
2:01:1086:A:H3'	2:01:1086:A:N3	2.36	0.40
2:01:2282:G:H5''	2:01:2283:C:O4'	2.21	0.40
2:01:2286:G:H21	2:01:2287:A:N6	2.20	0.40
2:01:2849:U:H3	2:01:2867:G:H5''	1.86	0.40
11:08:17:LYS:HZ2	11:08:17:LYS:CB	2.30	0.40
11:08:88:LEU:HD22	11:08:95:ALA:HB2	2.02	0.40
17:14:131:ALA:O	17:14:135:ILE:HG13	2.21	0.40
23:20:38:VAL:CG1	23:20:54:VAL:HB	2.50	0.40
24:21:74:ILE:O	24:21:74:ILE:HG23	2.21	0.40
25:22:30:ILE:HD11	25:22:87:LEU:HD11	2.02	0.40
26:23:96:LYS:HB2	26:23:96:LYS:HZ3	1.86	0.40
30:27:47:ARG:HG3	30:27:47:ARG:NH2	2.36	0.40
31:28:40:THR:HG22	31:28:42:ALA:H	1.86	0.40
39:Z:140:GLU:OE1	39:Z:206:PRO:HD2	2.21	0.40
40:B:80:LYS:HE3	40:B:92:ASN:HD21	1.86	0.40
45:G:58:LEU:HD12	45:G:58:LEU:N	2.35	0.40
48:J:8:ILE:HB	48:J:74:VAL:CG1	2.51	0.40
48:J:40:ILE:N	48:J:73:LEU:O	2.40	0.40
48:J:72:ARG:HG2	48:J:72:ARG:HH11	1.86	0.40
49:K:49:SER:HA	49:K:68:ARG:NH1	2.36	0.40
49:K:83:VAL:HG11	49:K:96:ILE:CG2	2.51	0.40
1:A:3:A:C5'	1:A:4:U:H5'	2.33	0.40
1:A:604:G:H2'	1:A:605:U:O4'	2.20	0.40
1:A:1226:C:H4'	57:S:79:TYR:CZ	2.56	0.40
2:01:26:G:H1'	2:01:514:A:N6	2.37	0.40
2:01:251:A:H5''	17:14:47:ARG:HH11	1.84	0.40
2:01:639:U:H2'	2:01:640:C:H6	1.85	0.40
2:01:691:C:O2'	2:01:692:C:H5'	2.21	0.40
2:01:745:G:O2'	2:01:748:G:H1'	2.20	0.40
2:01:1082:U:H5''	14:11:119:ALA:HB3	2.03	0.40
2:01:2529:G:H5''	2:01:2530:A:C5'	2.50	0.40
2:01:2690:U:O2'	2:01:2872:A:H1'	2.21	0.40
14:11:85:ILE:HD12	14:11:85:ILE:C	2.40	0.40
18:15:45:GLN:OE1	18:15:125:PRO:HD3	2.21	0.40
19:16:56:LYS:HB2	19:16:56:LYS:HZ2	1.86	0.40
24:21:84:ARG:HG2	24:21:84:ARG:NH2	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:23:71:ILE:H	26:23:71:ILE:HG13	1.66	0.40
29:26:67:LEU:HA	29:26:70:LEU:HD12	2.03	0.40
42:D:149:LYS:O	42:D:150:LYS:HG2	2.21	0.40
45:G:39:GLU:O	45:G:43:TYR:CD2	2.75	0.40
48:J:45:ARG:HG2	48:J:47:GLU:HG3	2.03	0.40
1:A:542:G:O2'	1:A:543:U:H5'	2.21	0.40
1:A:905:U:H2'	1:A:906:A:H5'	2.03	0.40
1:A:1070:U:O2'	1:A:1071:C:H5'	2.20	0.40
1:A:1104:G:O2'	1:A:1105:A:H5'	2.21	0.40
1:A:1253:G:H2'	1:A:1254:A:C8	2.56	0.40
1:A:1389:C:H2'	1:A:1390:U:C6	2.56	0.40
2:01:321:U:H5''	9:06:131:THR:HG23	2.01	0.40
2:01:679:C:H2'	2:01:680:C:H6	1.86	0.40
2:01:1593:A:H2'	2:01:1594:U:O4'	2.20	0.40
2:01:2131:U:H5'	2:01:2132:U:H5''	2.03	0.40
2:01:2393:U:H5''	17:14:62:PRO:HB3	2.03	0.40
2:01:2543:G:H2'	2:01:2544:G:C8	2.55	0.40
3:02:28:C:H2'	3:02:29:A:H8	1.87	0.40
7:04:80:LEU:HD12	7:04:80:LEU:N	2.36	0.40
8:05:33:ARG:HH22	8:05:52:THR:HA	1.86	0.40
9:06:98:LYS:HB3	9:06:102:ARG:NH2	2.32	0.40
11:08:139:VAL:O	11:08:143:VAL:HG23	2.21	0.40
14:11:17:ALA:HA	14:11:41:PHE:HE2	1.86	0.40
18:15:4:PRO:HD2	18:15:92:TRP:CZ3	2.56	0.40
20:17:62:LEU:HD13	20:17:65:THR:HG22	2.03	0.40
25:22:2:ILE:HG22	25:22:5:GLU:OE1	2.21	0.40
30:27:18:LEU:O	30:27:22:LEU:HG	2.21	0.40
32:29:26:SER:OG	32:29:27:THR:N	2.54	0.40
33:30:38:LEU:HD12	33:30:38:LEU:N	2.37	0.40
39:Z:84:LEU:HA	39:Z:87:ALA:HB3	2.02	0.40
41:C:28:PHE:HE2	52:N:76:PHE:HD1	1.68	0.40
41:C:39:ARG:HH11	41:C:39:ARG:HG3	1.86	0.40
1:A:580:C:H2'	1:A:581:G:O4'	2.21	0.40
1:A:686:U:HO2'	49:K:43:TRP:HZ2	1.70	0.40
1:A:813:U:H2'	1:A:814:A:C5'	2.51	0.40
2:01:1182:G:H2'	2:01:1183:U:O4'	2.22	0.40
2:01:1415:U:H2'	2:01:1416:G:H4'	2.04	0.40
2:01:1796:U:H2'	2:01:1797:G:H8	1.85	0.40
2:01:2035:G:C5'	2:01:2036:C:H5	2.33	0.40
2:01:2292:U:H2'	2:01:2293:G:C8	2.57	0.40
2:01:2304:G:H5'	10:07:120:SER:OG	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:05:13:ARG:HH22	21:18:74:GLN:HE21	1.63	0.40
9:06:121:VAL:O	9:06:190:ALA:N	2.54	0.40
10:07:33:ILE:O	10:07:90:LEU:N	2.41	0.40
11:08:82:PHE:CB	11:08:140:ILE:HD13	2.51	0.40
17:14:19:LEU:HD12	17:14:19:LEU:N	2.35	0.40
17:14:63:LYS:HE3	36:33:11:LYS:CD	2.51	0.40
19:16:36:THR:OG1	19:16:37:THR:N	2.55	0.40
22:19:68:ALA:HB1	22:19:73:ILE:HG23	2.03	0.40
24:21:65:ASP:OD2	24:21:68:ASP:HB2	2.22	0.40
28:25:43:ALA:HB1	28:25:47:VAL:HG23	2.04	0.40
29:26:35:HIS:ND1	29:26:36:ARG:N	2.69	0.40
40:B:93:HIS:NE2	40:B:145:ASN:HB2	2.36	0.40
40:B:221:ARG:HH11	40:B:221:ARG:HG3	1.86	0.40
41:C:137:VAL:HG21	41:C:167:TYR:HD2	1.85	0.40
43:E:110:MET:SD	43:E:126:ALA:HB2	2.61	0.40
49:K:88:PRO:CD	59:U:28:LEU:HD13	2.52	0.40
50:L:82:ARG:HG2	50:L:82:ARG:HH11	1.86	0.40
59:U:33:ARG:HG3	59:U:33:ARG:NH1	2.37	0.40
1:A:208:U:H4'	1:A:212:G:N1	2.37	0.40
1:A:261:U:H5	58:T:73:ARG:NE	2.20	0.40
1:A:625:U:OP1	54:P:9:HIS:HB3	2.21	0.40
1:A:1282:C:H2'	1:A:1283:U:C6	2.56	0.40
1:A:1441:A:H3'	1:A:1441:A:N3	2.36	0.40
1:A:1502:A:C8	1:A:1505:G:N2	2.90	0.40
2:01:108:G:H2'	2:01:109:C:O4'	2.21	0.40
2:01:587:C:H5'	9:06:85:PHE:CE2	2.57	0.40
2:01:818:G:C2'	2:01:819:A:H5''	2.52	0.40
2:01:1130:U:O2'	2:01:1131:G:OP1	2.32	0.40
2:01:1252:G:H22	22:19:36:GLN:NE2	2.20	0.40
2:01:1438:U:O2'	2:01:1439:A:H5'	2.21	0.40
2:01:1507:C:H2'	2:01:1508:A:O4'	2.22	0.40
2:01:1522:A:H1'	2:01:1524:G:C5	2.57	0.40
2:01:2733:A:O2'	2:01:2734:A:H5'	2.22	0.40
2:01:2744:G:O2'	2:01:2745:C:H5'	2.22	0.40
7:04:188:ARG:HG2	7:04:188:ARG:NH1	2.37	0.40
9:06:46:GLN:HB2	9:06:86:ALA:HB1	2.02	0.40
9:06:149:ILE:HD13	9:06:188:MET:CE	2.51	0.40
10:07:37:MET:HB3	10:07:56:LEU:HD11	2.04	0.40
18:15:34:LYS:HA	18:15:101:VAL:HA	2.03	0.40
21:18:47:ILE:HD11	21:18:61:ARG:CB	2.52	0.40
27:24:25:LYS:HE2	27:24:41:GLU:CD	2.40	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:24:63:ILE:CG2	27:24:70:ILE:HB	2.52	0.40
30:27:1:MET:O	30:27:5:GLU:HG2	2.21	0.40
32:29:59:ARG:HH21	32:29:62:LYS:CB	2.26	0.40
34:31:8:ILE:HB	34:31:50:GLU:OE2	2.21	0.40
35:32:26:ASN:HA	35:32:29:GLN:NE2	2.35	0.40
40:B:161:PHE:HZ	40:B:212:TYR:HB3	1.86	0.40
41:C:5:HIS:HB2	52:N:88:MET:SD	2.62	0.40
43:E:132:PRO:HA	43:E:135:VAL:HG22	2.04	0.40
50:L:58:ASN:N	50:L:58:ASN:HD22	2.20	0.40
57:S:50:VAL:HG11	57:S:70:LEU:HB3	2.02	0.40
58:T:59:ARG:O	58:T:63:LYS:N	2.54	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	Y	45/72 (62%)	40 (89%)	5 (11%)	0	100	100
6	03	218/234 (93%)	195 (89%)	23 (11%)	0	100	100
7	04	269/273 (98%)	242 (90%)	25 (9%)	2 (1%)	22	61
8	05	207/209 (99%)	189 (91%)	17 (8%)	1 (0%)	29	67
9	06	199/201 (99%)	180 (90%)	17 (8%)	2 (1%)	15	54
10	07	175/179 (98%)	155 (89%)	20 (11%)	0	100	100
11	08	174/177 (98%)	154 (88%)	17 (10%)	3 (2%)	9	42
12	09	147/149 (99%)	131 (89%)	13 (9%)	3 (2%)	7	38
13	10	129/165 (78%)	95 (74%)	28 (22%)	6 (5%)	2	17
14	11	139/142 (98%)	120 (86%)	18 (13%)	1 (1%)	22	61
15	12	140/142 (99%)	133 (95%)	7 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
16	13	120/123 (98%)	100 (83%)	18 (15%)	2 (2%)	9	42
17	14	141/144 (98%)	128 (91%)	13 (9%)	0	100	100
18	15	134/136 (98%)	125 (93%)	7 (5%)	2 (2%)	10	44
19	16	118/127 (93%)	106 (90%)	11 (9%)	1 (1%)	19	58
20	17	114/117 (97%)	102 (90%)	11 (10%)	1 (1%)	17	56
21	18	112/115 (97%)	98 (88%)	14 (12%)	0	100	100
22	19	115/118 (98%)	113 (98%)	2 (2%)	0	100	100
23	20	101/103 (98%)	84 (83%)	16 (16%)	1 (1%)	15	54
24	21	108/110 (98%)	97 (90%)	11 (10%)	0	100	100
25	22	91/100 (91%)	77 (85%)	13 (14%)	1 (1%)	14	51
26	23	100/104 (96%)	90 (90%)	10 (10%)	0	100	100
27	24	92/94 (98%)	89 (97%)	3 (3%)	0	100	100
28	25	73/85 (86%)	60 (82%)	11 (15%)	2 (3%)	5	30
29	26	75/78 (96%)	69 (92%)	6 (8%)	0	100	100
30	27	61/63 (97%)	60 (98%)	1 (2%)	0	100	100
31	28	56/59 (95%)	51 (91%)	5 (9%)	0	100	100
32	29	64/70 (91%)	55 (86%)	9 (14%)	0	100	100
33	30	54/57 (95%)	49 (91%)	5 (9%)	0	100	100
34	31	48/55 (87%)	45 (94%)	3 (6%)	0	100	100
35	32	44/46 (96%)	38 (86%)	5 (11%)	1 (2%)	6	34
36	33	62/65 (95%)	53 (86%)	7 (11%)	2 (3%)	4	26
37	34	36/38 (95%)	31 (86%)	5 (14%)	0	100	100
39	Z	359/365 (98%)	332 (92%)	26 (7%)	1 (0%)	41	74
40	B	216/241 (90%)	188 (87%)	26 (12%)	2 (1%)	17	56
41	C	204/233 (88%)	189 (93%)	15 (7%)	0	100	100
42	D	203/206 (98%)	177 (87%)	25 (12%)	1 (0%)	29	67
43	E	155/167 (93%)	125 (81%)	29 (19%)	1 (1%)	25	64
44	F	98/131 (75%)	77 (79%)	16 (16%)	5 (5%)	2	15
45	G	149/156 (96%)	134 (90%)	14 (9%)	1 (1%)	22	61
46	H	127/130 (98%)	115 (91%)	12 (9%)	0	100	100
47	I	125/130 (96%)	101 (81%)	22 (18%)	2 (2%)	9	43

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
48	J	96/103 (93%)	85 (88%)	9 (9%)	2 (2%)	7	37
49	K	114/129 (88%)	102 (90%)	11 (10%)	1 (1%)	17	56
50	L	121/124 (98%)	92 (76%)	23 (19%)	6 (5%)	2	16
51	M	112/118 (95%)	94 (84%)	16 (14%)	2 (2%)	8	41
52	N	98/101 (97%)	79 (81%)	13 (13%)	6 (6%)	1	12
53	O	86/89 (97%)	79 (92%)	7 (8%)	0	100	100
54	P	80/82 (98%)	65 (81%)	13 (16%)	2 (2%)	5	32
55	Q	78/84 (93%)	63 (81%)	14 (18%)	1 (1%)	12	47
56	R	63/75 (84%)	60 (95%)	3 (5%)	0	100	100
57	S	77/92 (84%)	69 (90%)	7 (9%)	1 (1%)	12	47
58	T	83/87 (95%)	81 (98%)	2 (2%)	0	100	100
59	U	63/71 (89%)	44 (70%)	17 (27%)	2 (3%)	4	26
All	All	6468/6864 (94%)	5705 (88%)	696 (11%)	67 (1%)	20	54

All (67) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
9	06	83	VAL
11	08	12	ALA
12	09	9	VAL
13	10	55	VAL
13	10	119	PRO
13	10	123	ILE
36	33	31	ILE
42	D	192	ALA
43	E	122	VAL
44	F	92	THR
44	F	94	HIS
47	I	57	VAL
47	I	90	ASP
48	J	58	ASN
50	L	101	LEU
51	M	4	ALA
51	M	65	GLU
59	U	8	ASN
59	U	24	LYS
7	04	232	GLY
9	06	9	GLN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
11	08	13	GLY
13	10	80	THR
13	10	122	GLN
14	11	13	ALA
20	17	34	HIS
28	25	70	PRO
39	Z	137	GLY
40	B	18	GLN
48	J	34	ALA
50	L	119	LYS
52	N	38	GLU
54	P	47	GLU
7	04	240	GLY
12	09	8	LYS
16	13	101	GLY
36	33	32	LEU
40	B	19	THR
45	G	56	SER
50	L	23	LEU
52	N	3	GLN
52	N	97	LYS
52	N	99	SER
55	Q	50	ASN
18	15	59	ARG
23	20	53	PHE
25	22	38	ALA
44	F	93	LYS
50	L	86	VAL
54	P	79	ASN
12	09	41	LYS
13	10	118	ILE
19	16	71	ARG
44	F	40	GLU
44	F	53	LYS
49	K	87	GLY
57	S	7	GLY
8	05	152	PRO
16	13	93	GLN
18	15	69	PRO
50	L	87	LYS
50	L	113	ARG
52	N	98	ALA

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Mol	Chain	Res	Type
28	25	69	GLY
35	32	44	VAL
11	08	11	PRO
52	N	55	SER

### 5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	Y	38/59 (64%)	38 (100%)	0	100	100
6	03	106/181 (59%)	104 (98%)	2 (2%)	57	81
7	04	216/218 (99%)	213 (99%)	3 (1%)	67	86
8	05	164/164 (100%)	162 (99%)	2 (1%)	71	88
9	06	165/165 (100%)	164 (99%)	1 (1%)	86	94
10	07	148/150 (99%)	147 (99%)	1 (1%)	84	94
11	08	137/138 (99%)	136 (99%)	1 (1%)	84	94
12	09	114/114 (100%)	113 (99%)	1 (1%)	78	91
13	10	100/123 (81%)	98 (98%)	2 (2%)	55	80
14	11	109/110 (99%)	109 (100%)	0	100	100
15	12	116/116 (100%)	115 (99%)	1 (1%)	78	91
16	13	103/104 (99%)	99 (96%)	4 (4%)	32	67
17	14	102/103 (99%)	101 (99%)	1 (1%)	76	90
18	15	109/109 (100%)	107 (98%)	2 (2%)	59	82
19	16	100/104 (96%)	99 (99%)	1 (1%)	76	90
20	17	86/87 (99%)	84 (98%)	2 (2%)	50	78
21	18	99/100 (99%)	98 (99%)	1 (1%)	76	90
22	19	89/90 (99%)	88 (99%)	1 (1%)	73	88
23	20	84/84 (100%)	84 (100%)	0	100	100
24	21	93/93 (100%)	92 (99%)	1 (1%)	73	88

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
25	22	80/84 (95%)	80 (100%)	0	100	100
26	23	83/85 (98%)	83 (100%)	0	100	100
27	24	78/78 (100%)	77 (99%)	1 (1%)	69	87
28	25	57/63 (90%)	56 (98%)	1 (2%)	59	82
29	26	67/68 (98%)	66 (98%)	1 (2%)	65	85
30	27	55/55 (100%)	53 (96%)	2 (4%)	35	69
31	28	48/49 (98%)	48 (100%)	0	100	100
32	29	59/62 (95%)	59 (100%)	0	100	100
33	30	47/48 (98%)	46 (98%)	1 (2%)	53	79
34	31	45/49 (92%)	44 (98%)	1 (2%)	52	79
35	32	38/38 (100%)	38 (100%)	0	100	100
36	33	51/52 (98%)	51 (100%)	0	100	100
37	34	34/34 (100%)	33 (97%)	1 (3%)	42	74
39	Z	303/311 (97%)	298 (98%)	5 (2%)	60	83
40	B	180/199 (90%)	176 (98%)	4 (2%)	52	79
41	C	170/190 (90%)	170 (100%)	0	100	100
42	D	172/173 (99%)	169 (98%)	3 (2%)	60	83
43	E	119/126 (94%)	116 (98%)	3 (2%)	47	77
44	F	87/112 (78%)	85 (98%)	2 (2%)	50	78
45	G	124/129 (96%)	122 (98%)	2 (2%)	62	84
46	H	104/105 (99%)	103 (99%)	1 (1%)	76	90
47	I	105/107 (98%)	102 (97%)	3 (3%)	42	74
48	J	86/90 (96%)	85 (99%)	1 (1%)	71	88
49	K	89/99 (90%)	86 (97%)	3 (3%)	37	70
50	L	103/104 (99%)	102 (99%)	1 (1%)	76	90
51	M	92/96 (96%)	92 (100%)	0	100	100
52	N	83/84 (99%)	83 (100%)	0	100	100
53	O	76/77 (99%)	74 (97%)	2 (3%)	46	76
54	P	65/65 (100%)	63 (97%)	2 (3%)	40	72
55	Q	74/78 (95%)	73 (99%)	1 (1%)	67	86
56	R	56/65 (86%)	55 (98%)	1 (2%)	59	82

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
57	S	70/79 (89%)	69 (99%)	1 (1%)	67	86
58	T	65/66 (98%)	64 (98%)	1 (2%)	65	85
59	U	55/61 (90%)	53 (96%)	2 (4%)	35	69
All	All	5298/5593 (95%)	5225 (99%)	73 (1%)	68	86

All (73) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
6	03	168	ASN
6	03	188	ASN
7	04	25	LYS
7	04	142	ASN
7	04	212	TRP
8	05	42	ASN
8	05	148	GLN
9	06	197	GLU
10	07	94	ARG
11	08	152	ARG
12	09	114	GLU
13	10	58	THR
13	10	114	GLU
15	12	120	ARG
16	13	49	ARG
16	13	58	LEU
16	13	73	ASP
16	13	89	ASN
17	14	99	ASN
18	15	88	ASN
18	15	91	TYR
19	16	2	ARG
20	17	12	THR
20	17	81	ARG
21	18	2	ASN
22	19	71	ASN
24	21	109	ASP
27	24	42	LEU
28	25	10	ARG
29	26	31	ASN
30	27	21	LEU
30	27	58	ASN
33	30	19	ASP

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
34	31	25	ASN
37	34	23	ILE
39	Z	5	ASN
39	Z	48	ASN
39	Z	97	ASN
39	Z	212	ARG
39	Z	245	ARG
40	B	15	PHE
40	B	34	ARG
40	B	35	ASN
40	B	41	ASN
42	D	28	ASP
42	D	57	LYS
42	D	196	GLU
43	E	47	PHE
43	E	145	ASN
43	E	156	ARG
44	F	2	ARG
44	F	17	GLN
45	G	100	MET
45	G	147	ASN
46	H	37	ASN
47	I	31	GLN
47	I	44	ARG
47	I	105	ARG
48	J	92	LEU
49	K	30	ILE
49	K	35	ASP
49	K	126	ARG
50	L	93	ARG
53	O	62	ARG
53	O	86	LEU
54	P	5	ARG
54	P	46	LYS
55	Q	79	GLU
56	R	71	ASP
57	S	2	ARG
58	T	17	ARG
59	U	16	ARG
59	U	61	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (134) such sidechains are listed below:

Mol	Chain	Res	Type
4	Y	27	GLN
6	03	168	ASN
6	03	188	ASN
7	04	20	ASN
7	04	44	ASN
7	04	52	HIS
7	04	59	GLN
7	04	69	ASN
7	04	85	ASN
7	04	89	ASN
7	04	127	ASN
7	04	133	ASN
7	04	142	ASN
7	04	250	GLN
8	05	36	GLN
8	05	42	ASN
8	05	150	GLN
9	06	90	GLN
9	06	92	HIS
9	06	156	ASN
10	07	20	ASN
11	08	47	ASN
11	08	63	GLN
11	08	127	GLN
11	08	138	GLN
12	09	11	ASN
12	09	43	ASN
12	09	135	HIS
13	10	57	ASN
14	11	11	GLN
14	11	33	ASN
14	11	93	ASN
14	11	106	GLN
15	12	128	ASN
15	12	131	ASN
16	13	82	ASN
16	13	89	ASN
17	14	99	ASN
18	15	17	ASN
18	15	60	GLN
18	15	88	ASN
19	16	62	ASN
20	17	43	ASN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
20	17	98	GLN
21	18	2	ASN
21	18	74	GLN
21	18	76	HIS
22	19	36	GLN
23	20	11	GLN
23	20	89	HIS
24	21	40	ASN
25	22	48	GLN
25	22	59	ASN
26	23	39	ASN
26	23	65	GLN
27	24	24	ASN
27	24	51	GLN
27	24	78	GLN
27	24	80	HIS
28	25	72	ASN
29	26	15	ASN
29	26	31	ASN
30	27	20	ASN
30	27	27	ASN
30	27	39	GLN
31	28	8	GLN
32	29	41	HIS
33	30	5	ASN
33	30	40	HIS
34	31	25	ASN
35	32	13	ASN
35	32	26	ASN
35	32	29	GLN
36	33	23	HIS
37	34	35	GLN
39	Z	5	ASN
39	Z	8	ASN
39	Z	38	ASN
39	Z	48	ASN
39	Z	54	GLN
39	Z	97	ASN
39	Z	133	GLN
39	Z	235	ASN
39	Z	255	ASN
39	Z	276	ASN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
39	Z	283	ASN
39	Z	304	ASN
40	B	23	ASN
40	B	35	ASN
40	B	41	ASN
40	B	50	ASN
40	B	167	HIS
41	C	7	ASN
41	C	18	ASN
41	C	24	ASN
41	C	139	ASN
41	C	184	ASN
42	D	58	GLN
42	D	88	ASN
42	D	119	HIS
43	E	60	GLN
43	E	69	ASN
43	E	81	GLN
43	E	134	ASN
43	E	145	ASN
44	F	17	GLN
45	G	67	ASN
45	G	121	ASN
46	H	15	ASN
46	H	37	ASN
47	I	4	GLN
47	I	24	ASN
47	I	30	ASN
47	I	31	GLN
48	J	64	GLN
49	K	39	ASN
50	L	4	ASN
50	L	28	GLN
50	L	58	ASN
50	L	72	ASN
51	M	7	ASN
51	M	99	GLN
52	N	3	GLN
52	N	59	GLN
52	N	61	ASN
53	O	19	ASN
53	O	27	GLN

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Mol	Chain	Res	Type
53	O	36	ASN
54	P	9	HIS
54	P	26	ASN
54	P	40	ASN
55	Q	30	HIS
55	Q	49	ASN
58	T	20	ASN

### 5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1538/1539 (99%)	182 (11%)	1 (0%)
2	01	2902/2903 (99%)	320 (11%)	6 (0%)
3	02	118/119 (99%)	11 (9%)	1 (0%)
38	V	13/14 (92%)	1 (7%)	0
5	W	76/77 (98%)	8 (10%)	0
5	X	76/77 (98%)	19 (25%)	1 (1%)
All	All	4723/4729 (99%)	541 (11%)	9 (0%)

All (541) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	3	A
1	A	6	G
1	A	9	G
1	A	22	G
1	A	31	G
1	A	32	A
1	A	33	A
1	A	39	G
1	A	41	G
1	A	47	C
1	A	48	C
1	A	51	A
1	A	65	A
1	A	70	U
1	A	72	A
1	A	83	C
1	A	84	U
1	A	85	U
1	A	86	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	95	C
1	A	138	G
1	A	144	G
1	A	171	A
1	A	174	A
1	A	183	C
1	A	197	A
1	A	209	U
1	A	210	C
1	A	211	G
1	A	225	C
1	A	226	G
1	A	247	G
1	A	251	G
1	A	253	A
1	A	266	G
1	A	267	C
1	A	274	A
1	A	279	A
1	A	280	C
1	A	281	G
1	A	289	G
1	A	292	G
1	A	306	A
1	A	329	A
1	A	330	C
1	A	344	A
1	A	345	C
1	A	346	G
1	A	351	G
1	A	352	C
1	A	358	U
1	A	367	U
1	A	369	G
1	A	372	C
1	A	377	G
1	A	390	U
1	A	394	G
1	A	395	C
1	A	404	G
1	A	411	A
1	A	413	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	421	U
1	A	422	C
1	A	423	G
1	A	429	U
1	A	437	U
1	A	442	G
1	A	448	A
1	A	467	U
1	A	468	A
1	A	479	U
1	A	480	U
1	A	485	U
1	A	486	U
1	A	493	A
1	A	497	G
1	A	511	C
1	A	524	G
1	A	527	G
1	A	531	U
1	A	532	A
1	A	541	G
1	A	547	A
1	A	561	U
1	A	572	A
1	A	573	A
1	A	576	C
1	A	577	G
1	A	615	G
1	A	621	A
1	A	633	G
1	A	642	A
1	A	665	A
1	A	687	A
1	A	701	U
1	A	702	A
1	A	703	G
1	A	723	U
1	A	724	G
1	A	755	G
1	A	777	A
1	A	793	U
1	A	814	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	817	C
1	A	818	G
1	A	819	A
1	A	821	G
1	A	832	G
1	A	843	U
1	A	846	G
1	A	851	G
1	A	873	A
1	A	890	G
1	A	902	G
1	A	926	G
1	A	934	C
1	A	935	A
1	A	960	U
1	A	966	G
1	A	969	A
1	A	975	A
1	A	976	G
1	A	977	A
1	A	991	U
1	A	992	U
1	A	993	G
1	A	994	A
1	A	1004	A
1	A	1028	C
1	A	1031	C
1	A	1033	G
1	A	1094	G
1	A	1101	A
1	A	1137	C
1	A	1138	G
1	A	1139	G
1	A	1159	U
1	A	1168	U
1	A	1182	G
1	A	1184	G
1	A	1196	A
1	A	1197	A
1	A	1213	A
1	A	1225	A
1	A	1238	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	1240	U
1	A	1241	G
1	A	1258	G
1	A	1260	G
1	A	1261	A
1	A	1275	A
1	A	1278	G
1	A	1280	A
1	A	1285	A
1	A	1286	U
1	A	1287	A
1	A	1297	G
1	A	1298	U
1	A	1300	G
1	A	1317	C
1	A	1320	C
1	A	1337	G
1	A	1346	A
1	A	1347	G
1	A	1363	A
1	A	1378	C
1	A	1394	A
1	A	1397	C
1	A	1398	A
1	A	1446	A
1	A	1448	C
1	A	1451	U
1	A	1452	C
1	A	1492	A
1	A	1493	A
1	A	1494	G
1	A	1499	A
1	A	1503	A
1	A	1506	U
1	A	1517	G
1	A	1529	G
1	A	1530	G
2	01	10	A
2	01	34	U
2	01	35	G
2	01	51	G
2	01	63	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	01	71	A
2	01	74	A
2	01	75	G
2	01	84	A
2	01	118	A
2	01	119	A
2	01	120	U
2	01	141	G
2	01	162	U
2	01	163	C
2	01	181	A
2	01	196	A
2	01	215	G
2	01	216	A
2	01	221	A
2	01	229	C
2	01	230	G
2	01	248	G
2	01	249	C
2	01	255	A
2	01	265	A
2	01	266	G
2	01	281	C
2	01	294	A
2	01	311	A
2	01	312	G
2	01	323	C
2	01	324	A
2	01	329	G
2	01	330	A
2	01	346	A
2	01	371	A
2	01	372	G
2	01	386	G
2	01	387	U
2	01	404	A
2	01	406	G
2	01	411	G
2	01	412	A
2	01	422	A
2	01	424	G
2	01	451	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	01	480	A
2	01	481	G
2	01	490	C
2	01	491	G
2	01	504	A
2	01	505	A
2	01	508	A
2	01	509	C
2	01	518	G
2	01	529	A
2	01	531	C
2	01	532	A
2	01	544	C
2	01	548	G
2	01	563	A
2	01	573	U
2	01	588	U
2	01	603	A
2	01	615	U
2	01	627	A
2	01	637	A
2	01	646	U
2	01	654	A
2	01	655	A
2	01	669	G
2	01	686	U
2	01	687	C
2	01	730	A
2	01	747	U
2	01	764	A
2	01	776	G
2	01	782	A
2	01	784	G
2	01	785	G
2	01	805	G
2	01	812	C
2	01	819	A
2	01	827	U
2	01	828	U
2	01	830	G
2	01	845	A
2	01	846	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	01	847	U
2	01	856	G
2	01	860	U
2	01	878	A
2	01	887	U
2	01	891	G
2	01	896	A
2	01	897	C
2	01	907	G
2	01	910	A
2	01	915	C
2	01	932	U
2	01	941	A
2	01	946	C
2	01	961	C
2	01	974	G
2	01	975	A
2	01	983	A
2	01	995	C
2	01	996	A
2	01	1012	U
2	01	1013	C
2	01	1021	A
2	01	1022	G
2	01	1026	G
2	01	1033	U
2	01	1046	A
2	01	1047	G
2	01	1059	G
2	01	1062	G
2	01	1063	G
2	01	1064	C
2	01	1065	U
2	01	1066	U
2	01	1067	A
2	01	1070	A
2	01	1071	G
2	01	1072	C
2	01	1073	A
2	01	1074	G
2	01	1075	C
2	01	1076	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	01	1079	C
2	01	1084	A
2	01	1088	A
2	01	1094	U
2	01	1095	A
2	01	1104	C
2	01	1111	A
2	01	1131	G
2	01	1132	U
2	01	1135	C
2	01	1157	G
2	01	1173	U
2	01	1175	A
2	01	1176	U
2	01	1180	U
2	01	1204	A
2	01	1212	G
2	01	1250	G
2	01	1251	C
2	01	1253	A
2	01	1256	G
2	01	1271	G
2	01	1272	A
2	01	1275	A
2	01	1289	C
2	01	1301	A
2	01	1332	G
2	01	1345	C
2	01	1365	A
2	01	1378	A
2	01	1379	U
2	01	1383	A
2	01	1398	C
2	01	1416	G
2	01	1420	A
2	01	1428	C
2	01	1461	C
2	01	1475	G
2	01	1482	G
2	01	1490	A
2	01	1497	U
2	01	1515	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	01	1522	A
2	01	1524	G
2	01	1530	G
2	01	1535	A
2	01	1536	C
2	01	1537	G
2	01	1555	G
2	01	1560	G
2	01	1569	A
2	01	1608	A
2	01	1611	C
2	01	1616	A
2	01	1647	U
2	01	1648	U
2	01	1674	G
2	01	1699	G
2	01	1715	G
2	01	1729	U
2	01	1730	C
2	01	1731	G
2	01	1738	G
2	01	1758	U
2	01	1764	C
2	01	1773	A
2	01	1800	C
2	01	1801	A
2	01	1808	A
2	01	1816	C
2	01	1829	A
2	01	1901	A
2	01	1906	G
2	01	1914	C
2	01	1929	G
2	01	1930	G
2	01	1937	A
2	01	1938	A
2	01	1944	U
2	01	1955	U
2	01	1963	U
2	01	1967	C
2	01	1970	A
2	01	1971	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	01	1972	G
2	01	1991	U
2	01	1992	G
2	01	1993	U
2	01	1997	C
2	01	2022	U
2	01	2023	C
2	01	2030	A
2	01	2031	A
2	01	2036	C
2	01	2043	C
2	01	2049	G
2	01	2052	A
2	01	2055	C
2	01	2056	G
2	01	2060	A
2	01	2061	G
2	01	2062	A
2	01	2069	G
2	01	2072	C
2	01	2095	A
2	01	2111	U
2	01	2112	G
2	01	2115	G
2	01	2118	U
2	01	2119	A
2	01	2120	G
2	01	2128	G
2	01	2132	U
2	01	2133	G
2	01	2137	U
2	01	2146	C
2	01	2148	G
2	01	2166	U
2	01	2170	A
2	01	2172	U
2	01	2173	A
2	01	2198	A
2	01	2204	G
2	01	2213	U
2	01	2225	A
2	01	2238	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	01	2239	G
2	01	2250	G
2	01	2283	C
2	01	2287	A
2	01	2297	A
2	01	2305	U
2	01	2309	A
2	01	2325	G
2	01	2327	A
2	01	2333	A
2	01	2334	U
2	01	2383	G
2	01	2385	C
2	01	2388	A
2	01	2402	U
2	01	2403	C
2	01	2406	A
2	01	2423	U
2	01	2429	G
2	01	2430	A
2	01	2441	U
2	01	2448	A
2	01	2476	A
2	01	2498	C
2	01	2502	G
2	01	2503	A
2	01	2504	U
2	01	2518	A
2	01	2547	A
2	01	2554	U
2	01	2566	A
2	01	2567	G
2	01	2572	A
2	01	2573	C
2	01	2582	G
2	01	2585	U
2	01	2602	A
2	01	2609	U
2	01	2613	U
2	01	2629	U
2	01	2646	C
2	01	2655	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	01	2682	A
2	01	2689	U
2	01	2690	U
2	01	2714	G
2	01	2716	C
2	01	2748	A
2	01	2764	A
2	01	2765	A
2	01	2778	A
2	01	2779	U
2	01	2791	G
2	01	2798	U
2	01	2800	A
2	01	2808	G
2	01	2820	A
2	01	2821	A
2	01	2833	U
2	01	2867	G
2	01	2884	U
2	01	2893	A
2	01	2894	G
3	02	13	G
3	02	15	A
3	02	24	G
3	02	35	C
3	02	44	G
3	02	45	A
3	02	67	G
3	02	89	U
3	02	90	C
3	02	108	A
3	02	109	A
5	X	8	U
5	X	9	G
5	X	15	G
5	X	17	C
5	X	18	G
5	X	19	G
5	X	20	U
5	X	21	A
5	X	22	G
5	X	34	C

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Mol	Chain	Res	Type
5	X	35	A
5	X	43	A
5	X	48	C
5	X	49	G
5	X	57	A
5	X	61	C
5	X	63	G
5	X	67	C
5	X	69	C
38	V	12	A
5	W	9	G
5	W	14	A
5	W	18	G
5	W	19	G
5	W	20	U
5	W	48	C
5	W	61	C
5	W	76	A

All (9) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	1297	G
2	01	421	C
2	01	859	G
2	01	1020	A
2	01	1130	U
2	01	2296	U
2	01	2326	C
3	02	66	A
5	X	17(A)	U

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

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

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry

Of 361 ligands modelled in this entry, 361 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

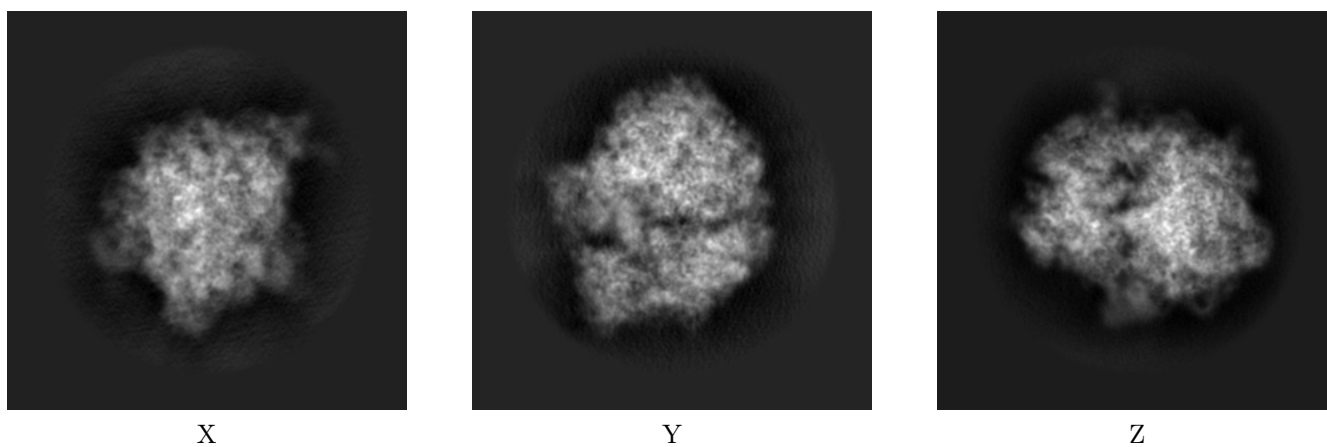
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-8521. These allow visual inspection of the internal detail of the map and identification of artifacts.

No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

### 6.1 Orthogonal projections [i](#)

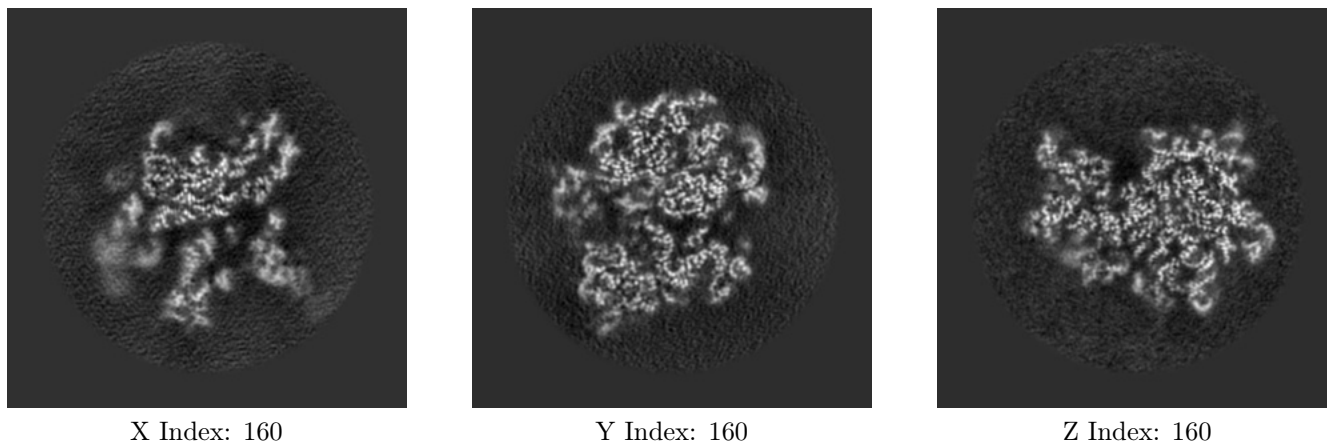
#### 6.1.1 Primary map



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

### 6.2 Central slices [i](#)

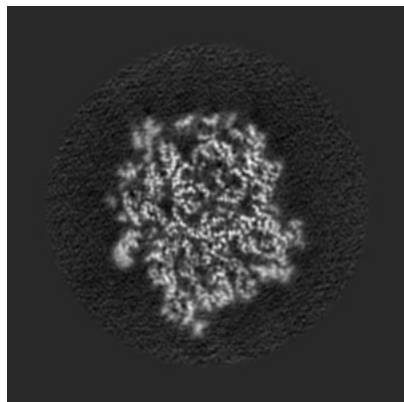
#### 6.2.1 Primary map



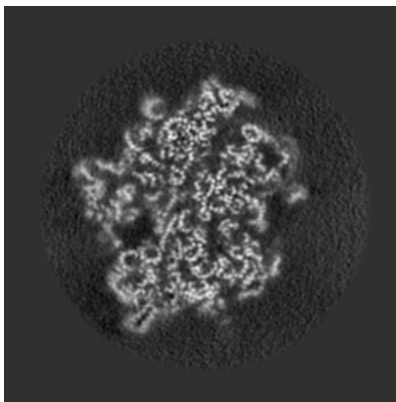
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

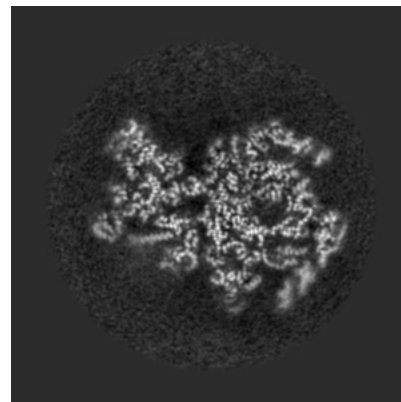
### 6.3.1 Primary map



X Index: 188



Y Index: 154

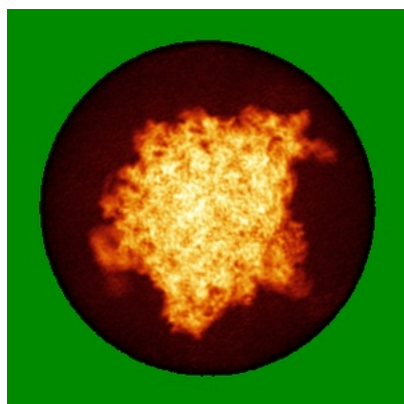


Z Index: 170

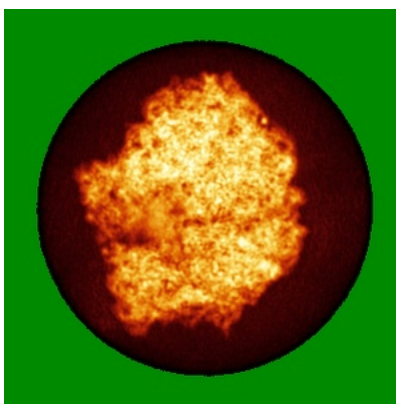
The images above show the largest variance slices of the map in three orthogonal directions.

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

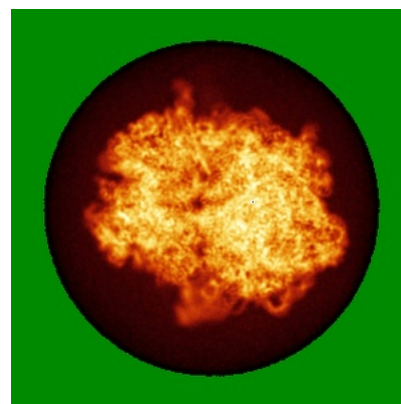
### 6.4.1 Primary map



X



Y

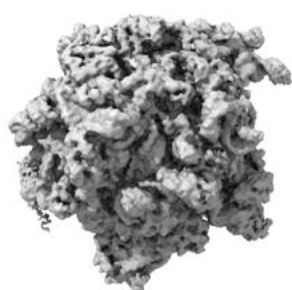


Z

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

## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



X



Y



Z

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

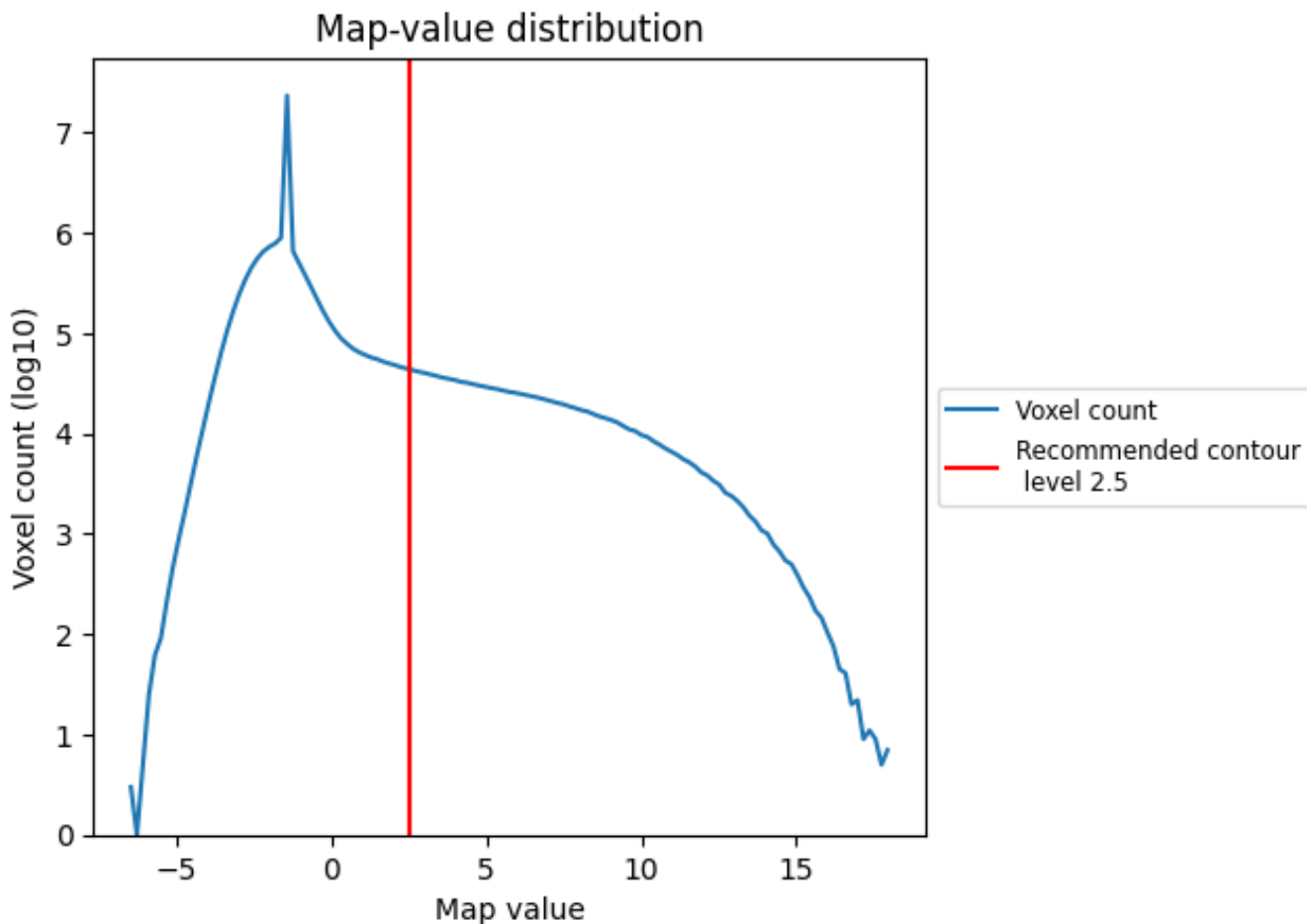
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

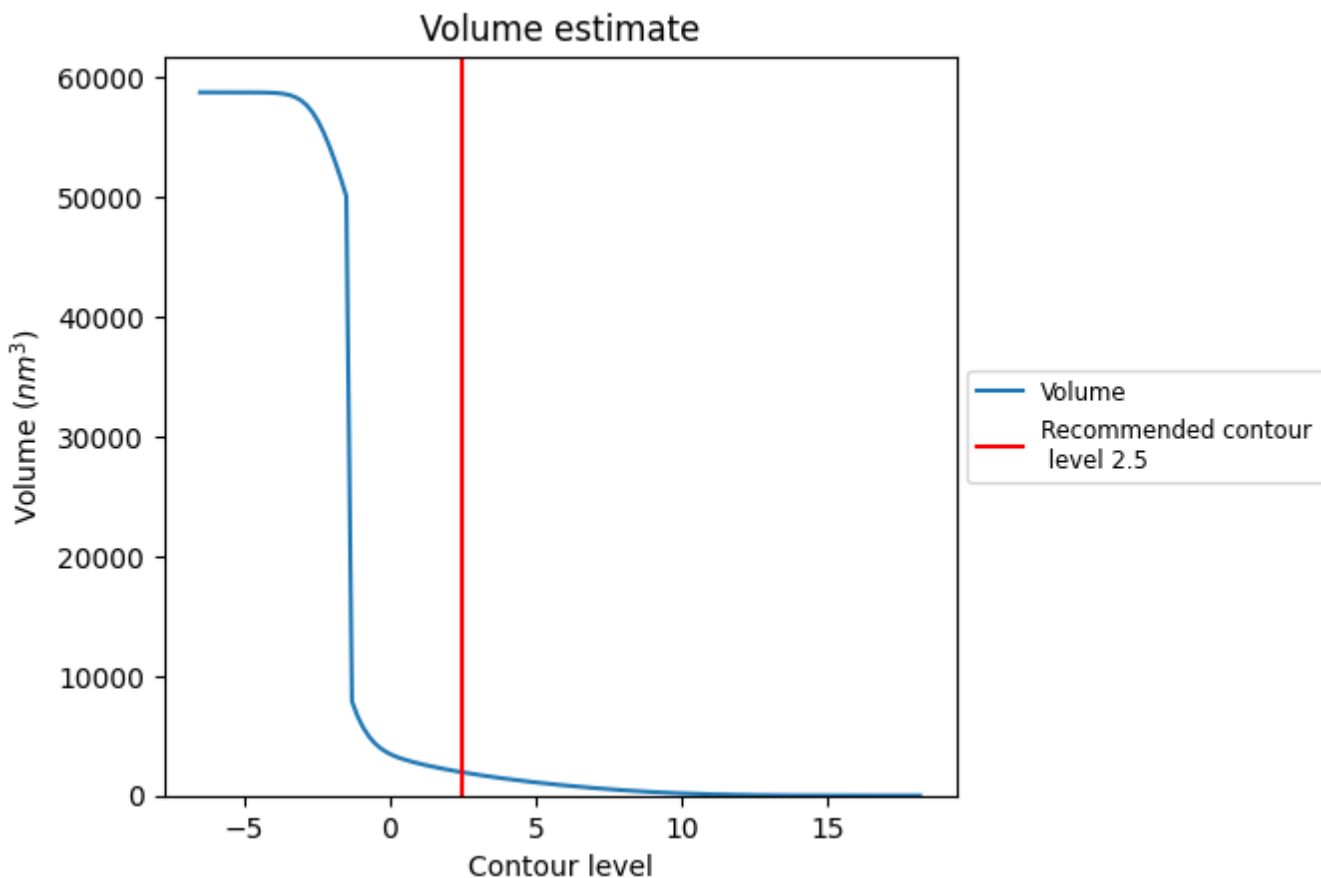
This section contains the results of statistical analysis of the map.

### 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](#)

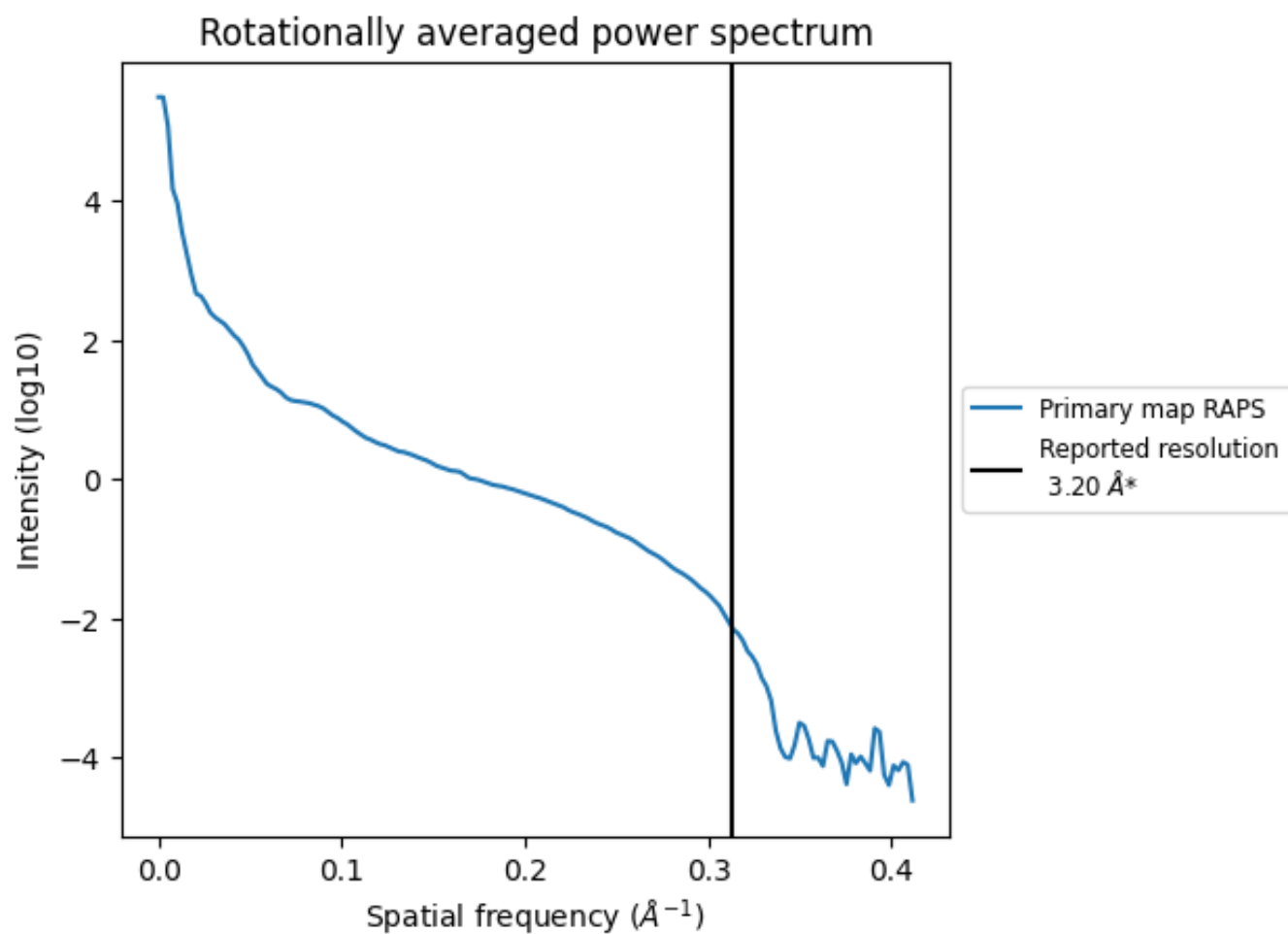


The volume at the recommended contour level is 1941 nm<sup>3</sup>; this corresponds to an approximate mass of 1753 kDa.

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 [i](#)



\*Reported resolution corresponds to spatial frequency of  $0.312 \text{\AA}^{-1}$

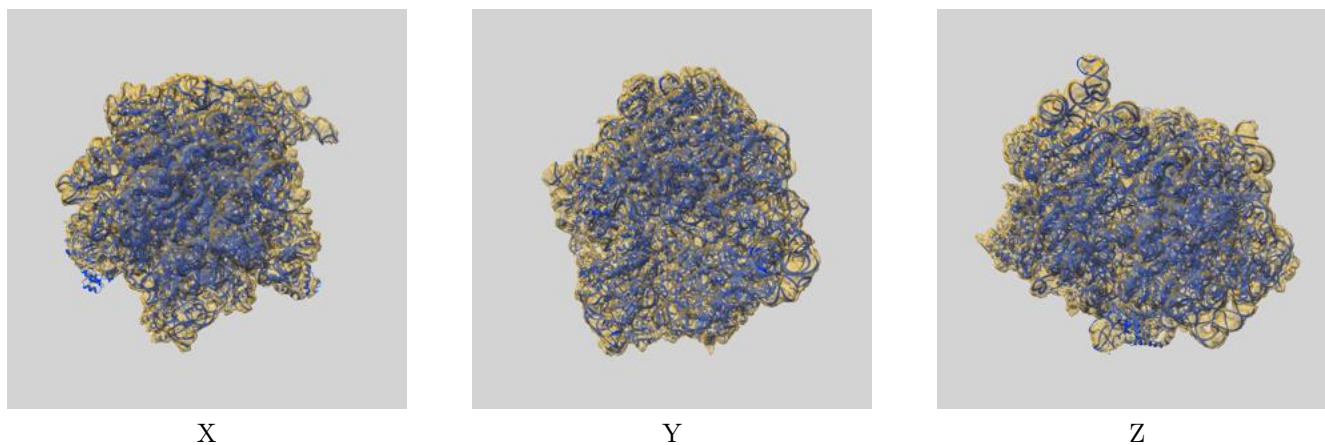
## 8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

## 9 Map-model fit [i](#)

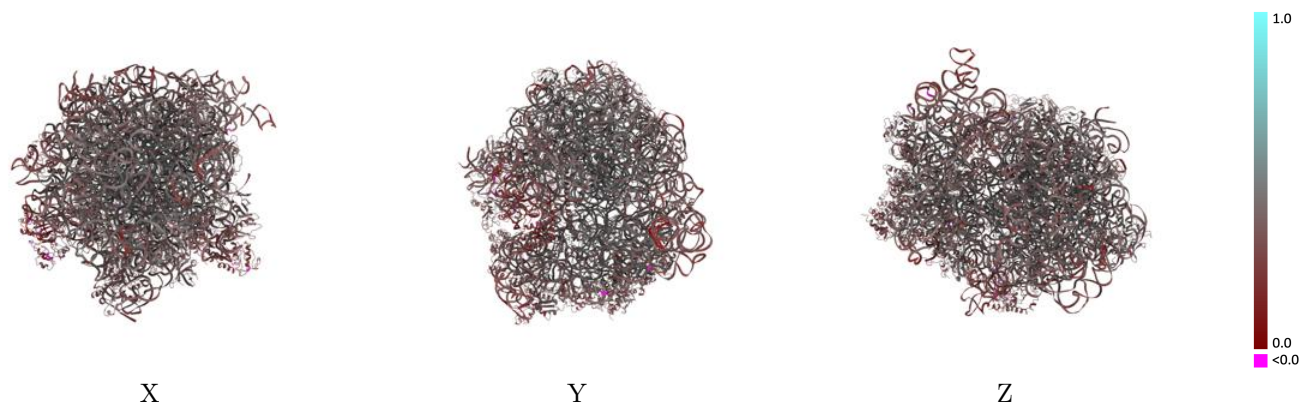
This section contains information regarding the fit between EMDB map EMD-8521 and PDB model 5U9F. Per-residue inclusion information can be found in section 3 on page 16.

### 9.1 Map-model overlay [i](#)



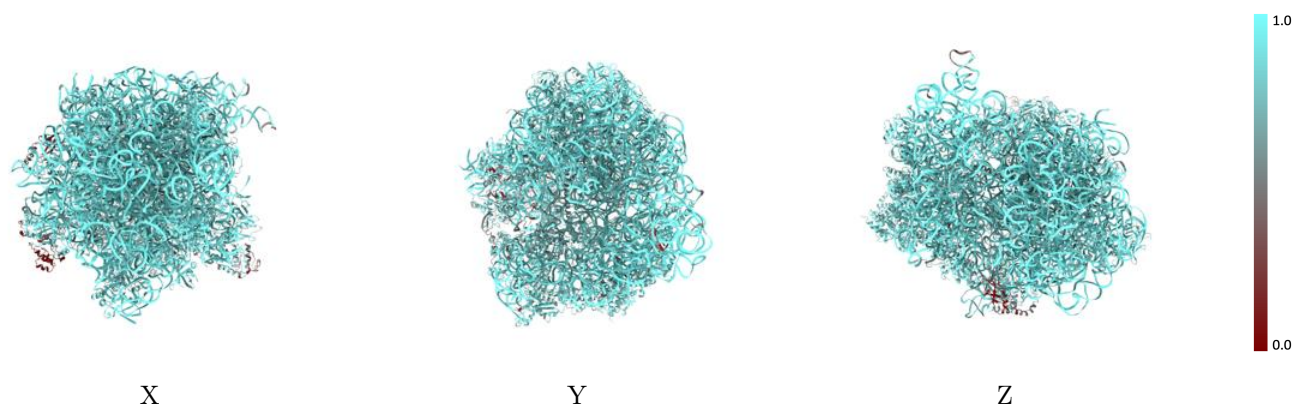
The images above show the 3D surface view of the map at the recommended contour level 2.5 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



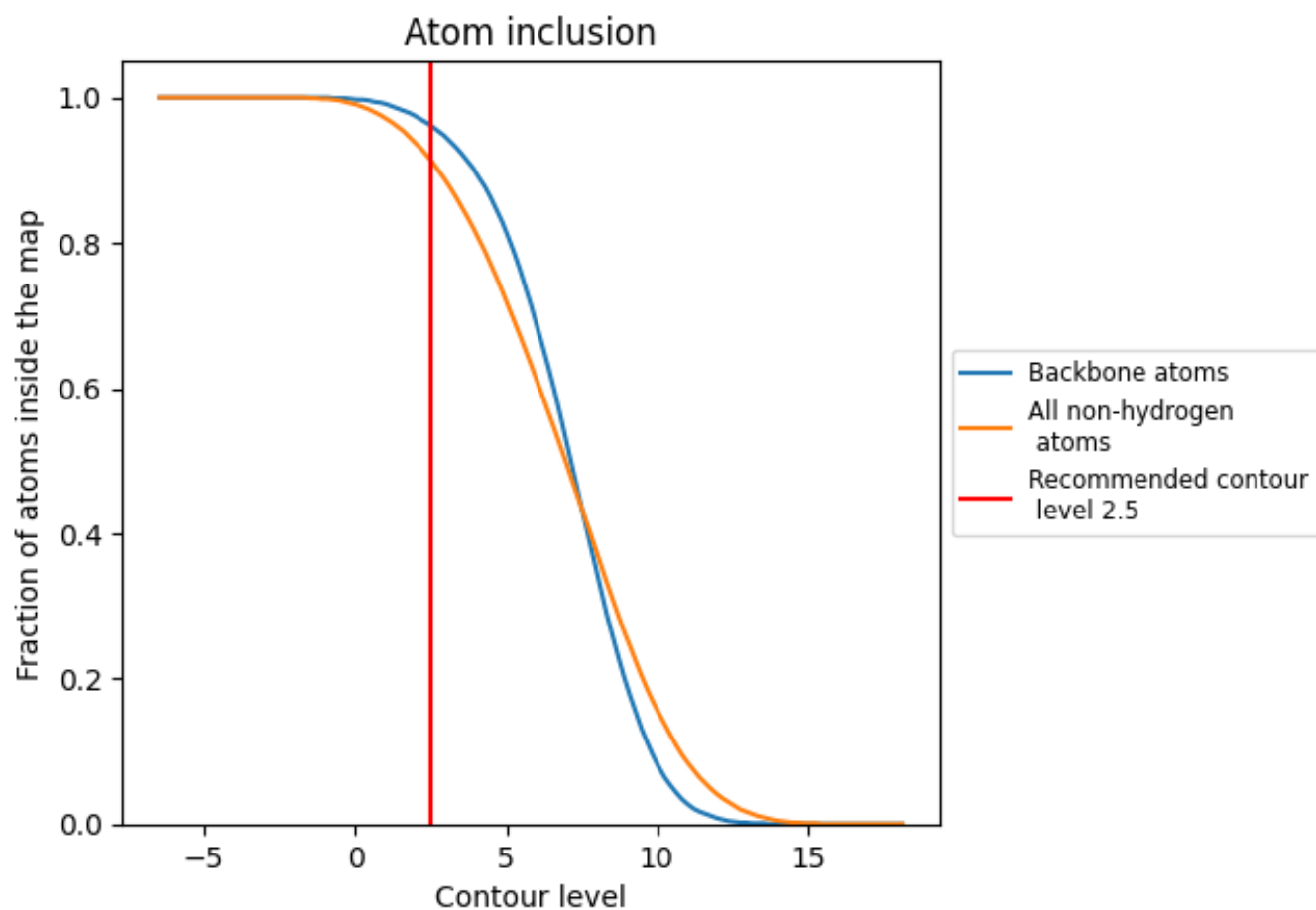
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



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







































































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 96% of all backbone atoms, 91% 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	 0.9140	 0.3830
01	 0.9760	 0.4040
02	 0.9790	 0.3530
03	 0.4600	 0.1980
04	 0.8360	 0.4350
05	 0.8650	 0.4250
06	 0.8650	 0.4000
07	 0.8590	 0.3230
08	 0.8480	 0.3650
09	 0.3690	 0.3050
10	 0.5420	 0.2120
11	 0.6920	 0.2380
12	 0.8750	 0.4120
13	 0.8030	 0.4230
14	 0.8820	 0.4140
15	 0.8110	 0.4120
16	 0.8930	 0.3900
17	 0.8900	 0.3420
18	 0.8240	 0.4010
19	 0.8770	 0.4080
20	 0.8760	 0.4140
21	 0.8340	 0.4090
22	 0.8010	 0.3790
23	 0.8400	 0.3800
24	 0.8820	 0.3800
25	 0.8940	 0.4230
26	 0.8370	 0.4040
27	 0.8150	 0.3030
28	 0.8440	 0.4040
29	 0.5380	 0.2840
30	 0.8530	 0.4020
31	 0.7980	 0.4010
32	 0.8620	 0.4280
33	 0.8860	 0.4290
34	 0.7790	 0.3680



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Chain	Atom inclusion	Q-score
A	 0.9730	 0.3860
B	 0.8110	 0.3300
C	 0.8190	 0.3740
D	 0.8430	 0.3600
E	 0.8700	 0.4010
F	 0.8130	 0.3530
G	 0.8090	 0.3290
H	 0.8650	 0.3960
I	 0.8570	 0.3340
J	 0.8270	 0.3250
K	 0.8580	 0.3870
L	 0.8280	 0.4250
M	 0.8070	 0.3170
N	 0.8550	 0.3310
O	 0.8730	 0.3590
P	 0.8840	 0.4020
Q	 0.8450	 0.3770
R	 0.8310	 0.3680
S	 0.8570	 0.3540
T	 0.8390	 0.3360
U	 0.7450	 0.2650
V	 0.8730	 0.3070
W	 0.9350	 0.3850
X	 0.6450	 0.2180
Y	 0.7570	 0.3830
Z	 0.6680	 0.3170