



Full wwPDB EM Validation Report ⓘ

Jun 21, 2026 – 06:06 am BST

PDB ID : 7ABZ / pdb_00007abz
EMDB ID : EMD-11710
Title : Structure of pre-accomodated trans-translation complex on E. coli stalled ribosome.
Authors : Guyomar, C.; D'Urso, G.; Chat, S.; Giudice, E.; Gillet, R.
Deposited on : 2020-09-09
Resolution : 3.21 Å(reported)
Based on initial model : 4YBB

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

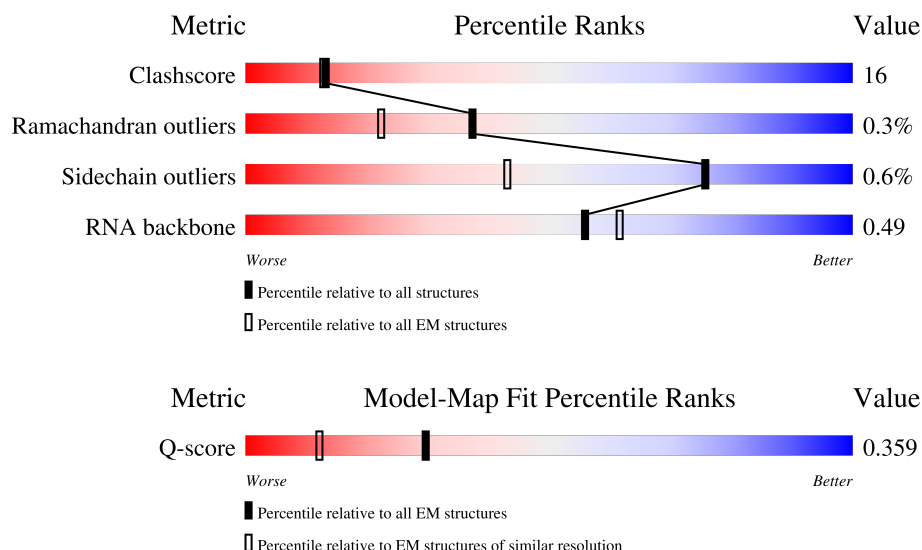
EMDB validation analysis : 0.0.1.dev132
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance i

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

The reported resolution of this entry is 3.21 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	14613 (2.71 - 3.71)

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

Mol	Chain	Length	Quality of chain
1	1	2904	
2	2	1540	
3	3	118	

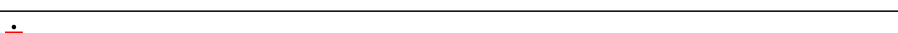
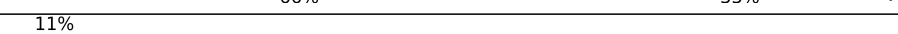
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Mol	Chain	Length	Quality of chain
4	4	363	
5	5	146	
6	6	394	
7	7	76	
8	8	15	
9	A	80	
10	B	271	
11	C	209	
12	D	201	
13	E	177	
14	F	176	
15	G	149	
16	H	130	
17	I	142	
18	J	142	
19	K	122	
20	L	144	
21	M	136	
22	N	120	
23	O	116	
24	P	114	
25	Q	117	
26	R	103	
27	S	110	
28	T	93	

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Mol	Chain	Length	Quality of chain
29	U	102	
30	V	94	
31	X	77	
32	Y	62	
33	Z	58	
34	b	56	
35	c	50	
36	d	46	
37	e	64	
38	f	38	
39	g	224	
40	h	206	
41	i	205	
42	j	167	
43	k	100	
44	l	151	
45	m	129	
46	n	127	
47	o	98	
48	p	117	
49	q	123	
50	r	114	
51	s	100	
52	t	88	
53	u	82	

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Mol	Chain	Length	Quality of chain
54	v	80	
55	w	55	
56	x	79	
57	y	85	
58	z	56	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
7	PSU	7	32	-	-	X	-

2 Entry composition

There are 62 unique types of molecules in this entry. The entry contains 157227 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 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1	2904	Total	C	N	O	P	0	0
			62355	27825	11472	20154	2904		

- Molecule 2 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	2	1540	Total	C	N	O	P	0	0
			33048	14747	6054	10707	1540		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
3	3	118	Total	C	N	O	P	0	0
			2529	1126	464	821	118		

- Molecule 4 is a RNA chain called transfer-messenger RNA (tmRNA).

Mol	Chain	Residues	Atoms					AltConf	Trace
4	4	363	Total	C	N	O	P	0	0
			7760	3466	1410	2521	363		

- Molecule 5 is a protein called SsrA-binding protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	5	146	Total	C	N	O	S	0	0
			1181	747	219	211	4		

- Molecule 6 is a protein called Elongation factor Tu 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	6	371	Total	C	N	O	S	0	0
			2871	1818	492	548	13		

- Molecule 7 is a RNA chain called tRNA-Phe.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	7	76	Total	C	N	O	P	S	
			1635	735	291	532	75	2	0

- Molecule 8 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	8	15	Total	C	N	O	P		
			327	145	60	107	15		0

- Molecule 9 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	A	80	Total	C	N	O	S		
			601	370	121	109	1		0

- Molecule 10 is a protein called 50S ribosomal protein L2.

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

- Molecule 11 is a protein called 50S ribosomal protein L3.

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

- Molecule 12 is a protein called 50S ribosomal protein L4.

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

- Molecule 13 is a protein called 50S ribosomal protein L5.

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

- Molecule 14 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	F	176	Total	C	N	O	S	0	0
			1322	832	243	245	2		

- Molecule 15 is a protein called 50S ribosomal protein L9.

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

- Molecule 16 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	H	130	Total	C	N	O	S	0	0
			980	620	174	182	4		

- Molecule 17 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	I	66	Total	C	N	O	S	0	0
			470	289	87	91	3		

- Molecule 18 is a protein called 50S ribosomal protein L13.

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

- Molecule 19 is a protein called 50S ribosomal protein L14.

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

- Molecule 20 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	L	144	Total	C	N	O	S	0	0
			1053	654	207	190	2		

- Molecule 21 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	M	136	Total	C	N	O	S	0	0
			1075	686	205	178	6		

- Molecule 22 is a protein called 50S ribosomal protein L17.

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

- Molecule 23 is a protein called 50S ribosomal protein L18.

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

- Molecule 24 is a protein called 50S ribosomal protein L19.

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

- Molecule 25 is a protein called 50S ribosomal protein L20.

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

- Molecule 26 is a protein called 50S ribosomal protein L21.

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

- Molecule 27 is a protein called 50S ribosomal protein L22.

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

- Molecule 28 is a protein called 50S ribosomal protein L23.

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

- Molecule 29 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	U	102	Total	C	N	O	S	0	0
			780	492	146	142			

- Molecule 30 is a protein called 50S ribosomal protein L25.

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

- Molecule 31 is a protein called 50S ribosomal protein L28.

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

- Molecule 32 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	Y	62	Total	C	N	O	S	0	0
			501	308	98	94	1		

- Molecule 33 is a protein called 50S ribosomal protein L30.

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

- Molecule 34 is a protein called 50S ribosomal protein L32.

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

- Molecule 35 is a protein called 50S ribosomal protein L33.

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

- Molecule 36 is a protein called 50S ribosomal protein L34.

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

- Molecule 37 is a protein called 50S ribosomal protein L35.

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

- Molecule 38 is a protein called 50S ribosomal protein L36.

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

- Molecule 39 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	g	224	Total	C	N	O	S	0	0
			1753	1109	315	321	8		

- Molecule 40 is a protein called 30S ribosomal protein S3.

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

- Molecule 41 is a protein called 30S ribosomal protein S4.

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

- Molecule 42 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	j	152	Total	C	N	O	S	0	0
			1118	695	214	203	6		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
j	161	LYS	VAL	conflict	UNP P0A7W1

- Molecule 43 is a protein called 30S ribosomal protein S6.

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

- Molecule 44 is a protein called 30S ribosomal protein S7.

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

- Molecule 45 is a protein called 30S ribosomal protein S8.

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

- Molecule 46 is a protein called 30S ribosomal protein S9.

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

- Molecule 47 is a protein called 30S ribosomal protein S10.

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

- Molecule 48 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	p	117	Total	C	N	O	S	0	0
			876	540	174	159	3		

- Molecule 49 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	q	123	Total	C	N	O	S	0	0
			956	591	196	164	5		

- Molecule 50 is a protein called 30S ribosomal protein S13.

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

- Molecule 51 is a protein called 30S ribosomal protein S14.

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

- Molecule 52 is a protein called 30S ribosomal protein S15.

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

- Molecule 53 is a protein called 30S ribosomal protein S16.

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

- Molecule 54 is a protein called 30S ribosomal protein S17.

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

- Molecule 55 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				AltConf	Trace
55	w	55	Total	C	N	O	0	0
			456	288	86	82		

- Molecule 56 is a protein called 30S ribosomal protein S19.

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

- Molecule 57 is a protein called 30S ribosomal protein S20.

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

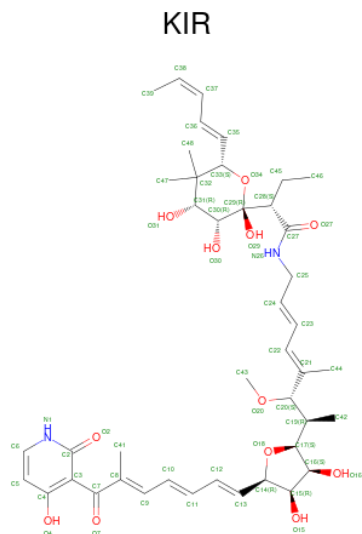
- Molecule 58 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	z	56	Total	C	N	O	S	0	0
			466	290	96	79	1		

- Molecule 59 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

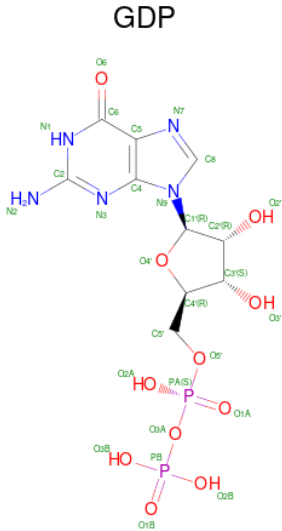
Mol	Chain	Residues	Atoms		AltConf
59	1	168	Total	Mg	0
			168	168	
59	2	18	Total	Mg	0
			18	18	
59	3	3	Total	Mg	0
			3	3	
59	B	1	Total	Mg	0
			1	1	
59	C	1	Total	Mg	0
			1	1	
59	O	1	Total	Mg	0
			1	1	

- Molecule 60 is KIRROMYCIN (CCD ID: KIR) (formula: C₄₃H₆₀N₂O₁₂).



Mol	Chain	Residues	Atoms				AltConf
60	6	1	Total	C	N	O	0
			57	43	2	12	

- Molecule 61 is GUANOSINE-5'-DIPHOSPHATE (CCD ID: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$).



Mol	Chain	Residues	Atoms					AltConf
61	6	1	Total 28	C 10	N 5	O 11	P 2	0

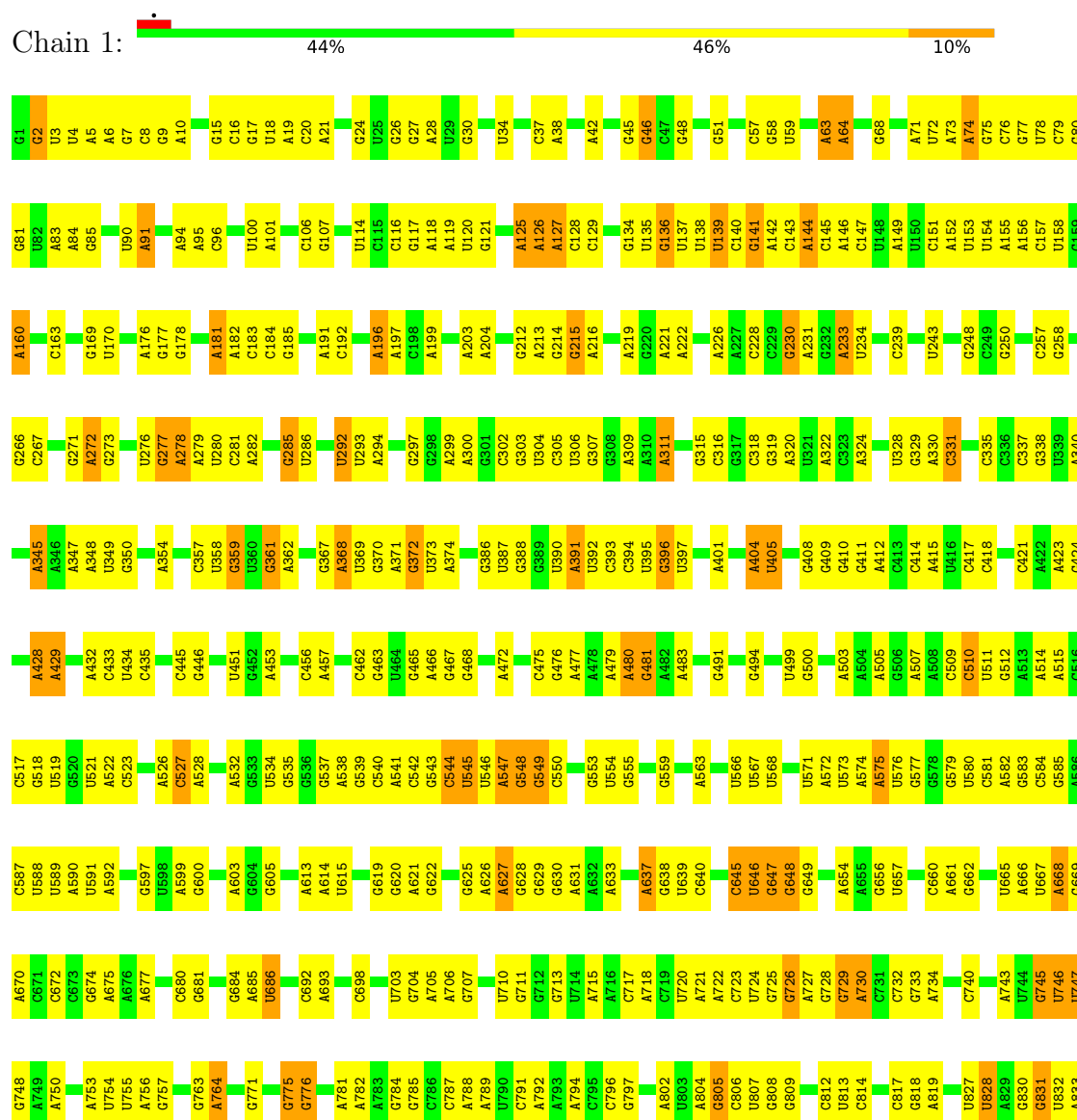
- Molecule 62 is ZINC ION (CCD ID: ZN) (formula: Zn).

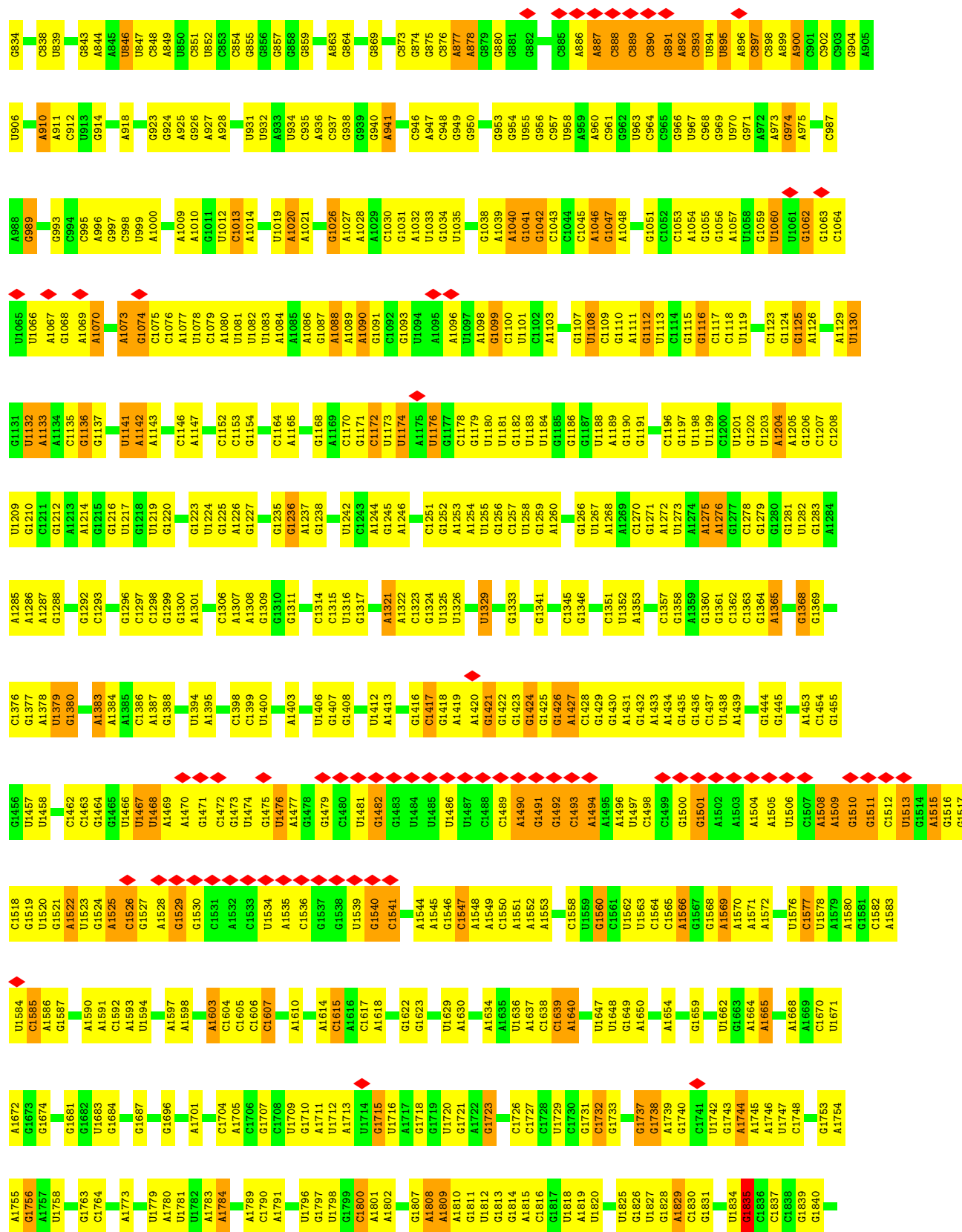
Mol	Chain	Residues	Atoms		AltConf
62	f	1	Total	Zn	0
			1	1	

3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

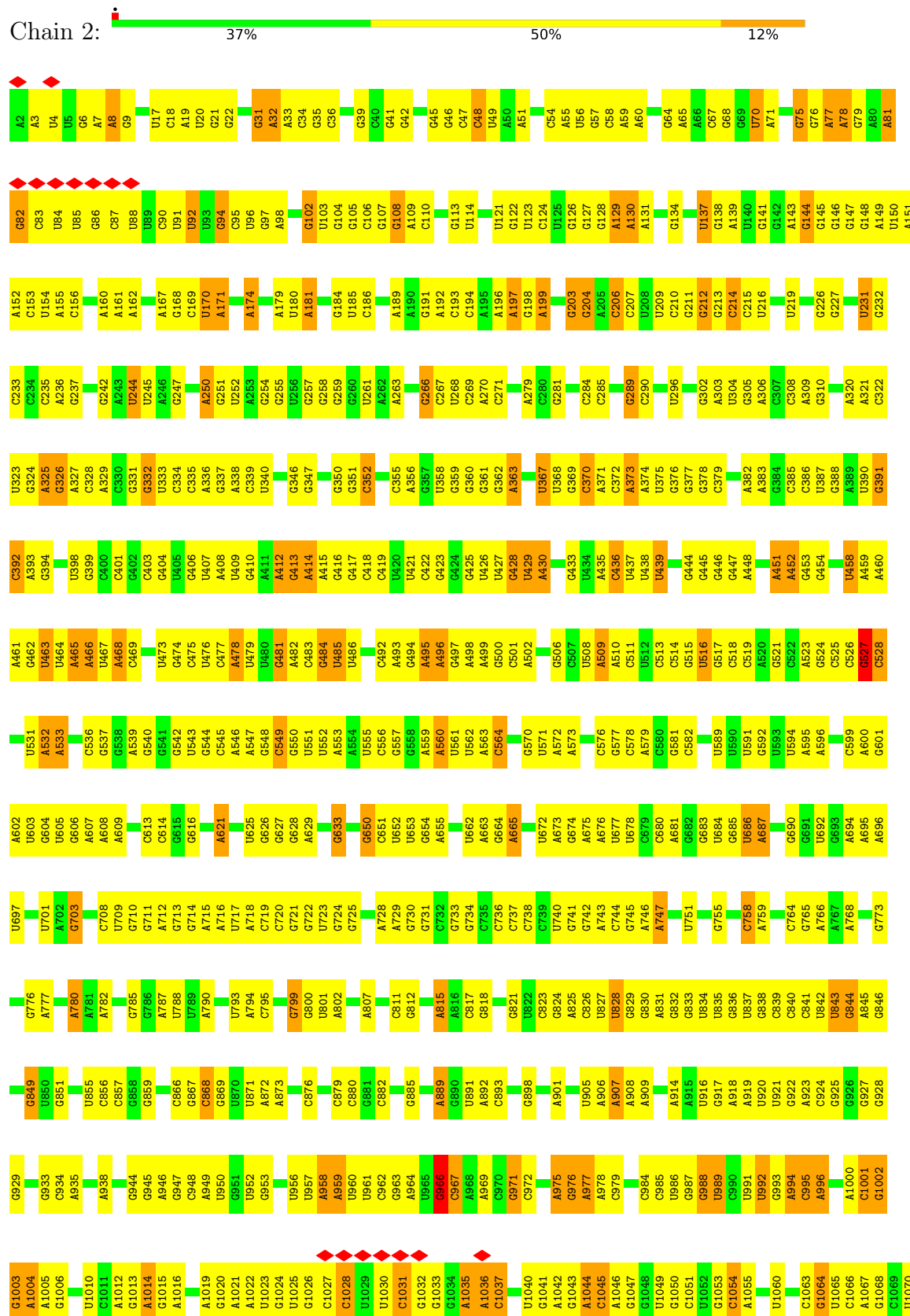
• Molecule 1: 23S ribosomal RNA

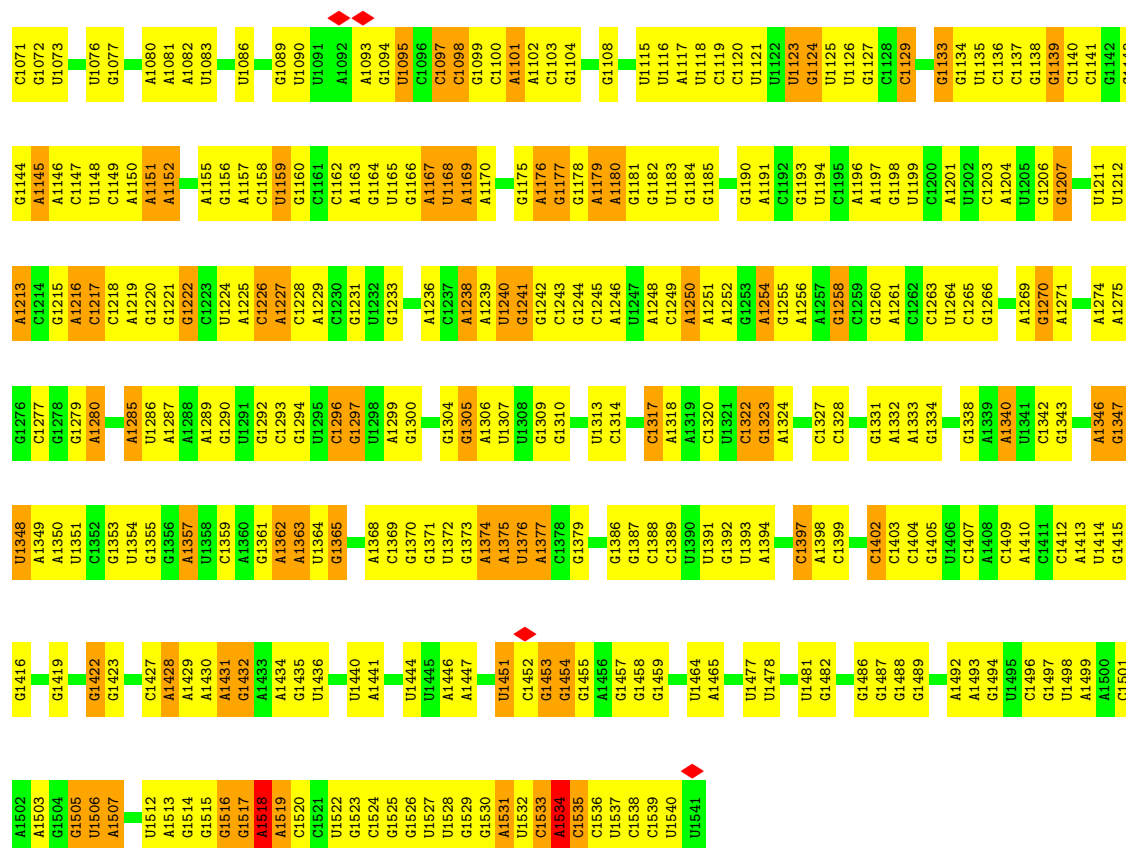




G2848	G2849	C2853	G2854	G2855	G2856	G2857	A2860	G2863	G2864	G2865	G2866	A2868	G2872	G2873	G2880	G2881	G2882	G2883	G2884	G2885	G2888	G2889	G2890	G2891	G2892	G2893	G2898	A2899	A2900	C2901	G2902	G2903	G2904	
U2779	G2780	A2781	G2782	G2783	G2784	G2785	G2788	G2789	G2790	G2791	G2794	U2797	U2798	U2799	A2800	G2801	G2802	G2803	G2804	G2805	A2809	A2810	G2811	G2812	G2813	A2814	G2815	G2816	U2817	U2818	G2819	A2820	A2821	G2822
G2697	U2698	C2699	A2700	G2701	G2702	U2707	G2708	G2709	G2710	A2711	G2714	G2715	G2716	G2717	G2718	G2719	U2720	G2641	G2642	G2645	G2646	U2647	G2648	A2725	A2726	A2727	G2728	G2729	G2730	G2731	A2732	G2733	G2737	
G2618	G2619	C2620	G2623	G2624	G2625	G2626	G2627	G2628	U2629	G2630	C2636	U2637	G2638	A2639	G2640	G2641	G2642	G2645	G2646	U2647	G2648	A2649	U2650	G2651	U2656	A2657	G2661	A2662	G2663	G2664	A2665	G2673	G2674	A2675
U2552	G2553	U2554	U2555	C2556	C2559	A2560	U2561	A2564	A2565	A2566	G2567	U2568	G2569	G2570	U2571	A2572	C2575	C2579	G2580	G2581	G2582	G2583	U2584	U2585	U2586	G2587	G2588	A2589	G2592	U2593	G2594	G2595	U2596	G2597
A2476	U2477	A2478	A2479	C2480	G2483	G2484	G2485	G2486	G2487	G2488	U2489	G2490	U2491	G2494	G2495	A2496	A2497	G2498	G2499	U2500	G2501	A2502	A2503	U2504	G2505	U2506	C2512	A2513	U2514	C2427	G2428	G2429	A2430	
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● Molecule 2: 16S ribosomal RNA

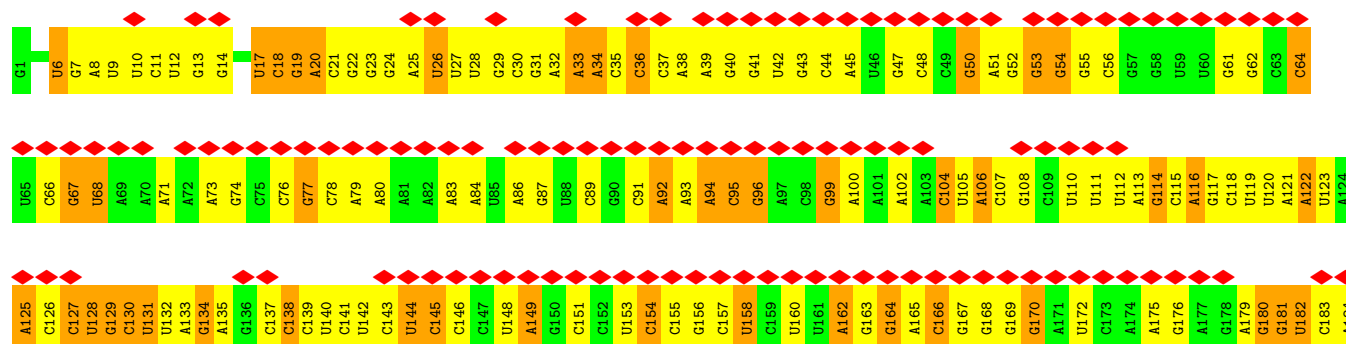




• Molecule 3: 5S ribosomal RNA



• Molecule 4: transfer-messenger RNA (tmRNA)

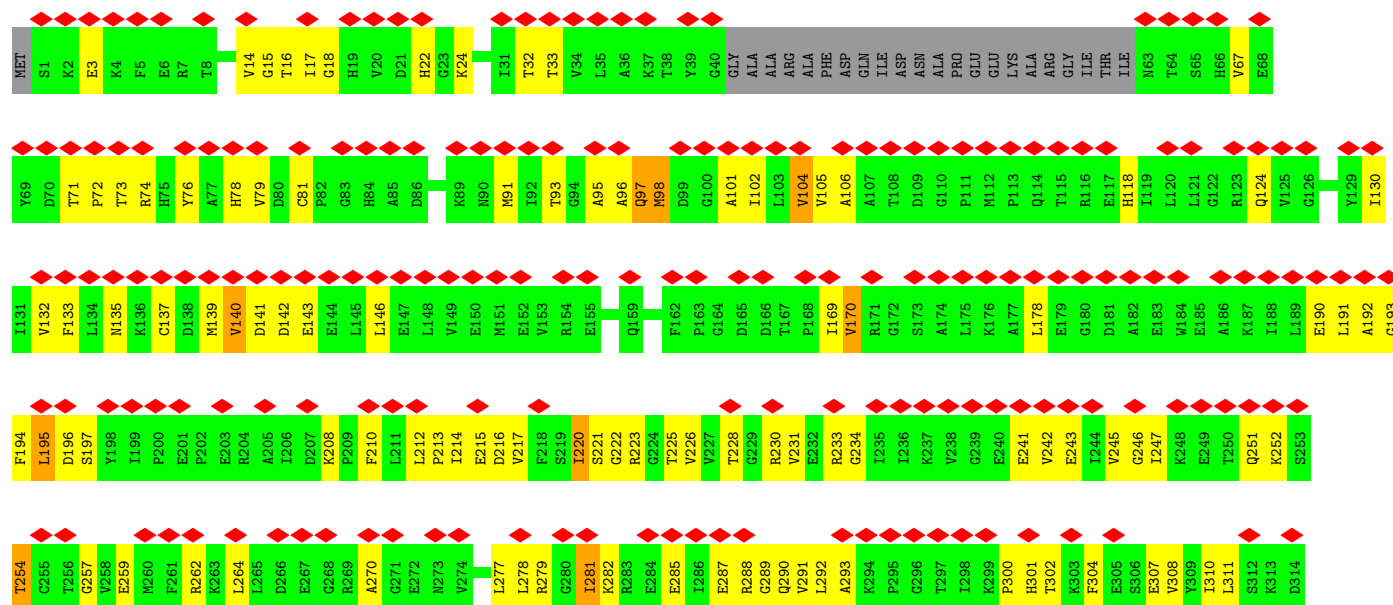


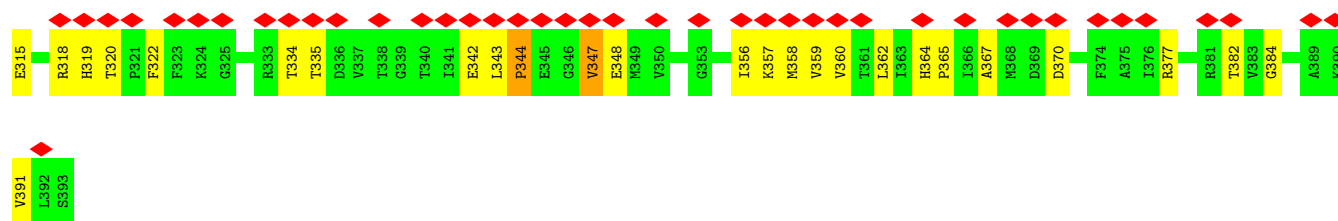


• Molecule 5: SsrA-binding protein

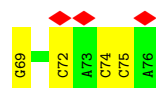


• Molecule 6: Elongation factor Tu 2

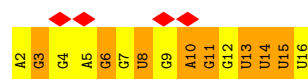




• Molecule 7: tRNA-Phe



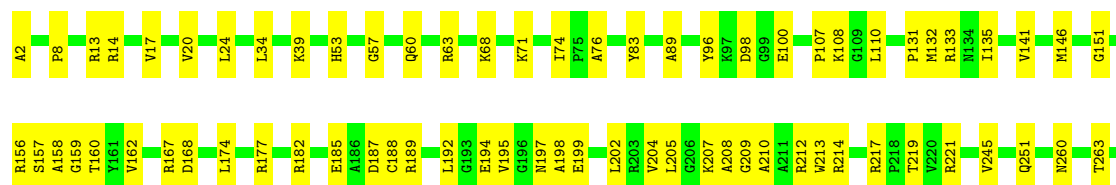
• Molecule 8: mRNA



• Molecule 9: 50S ribosomal protein L27

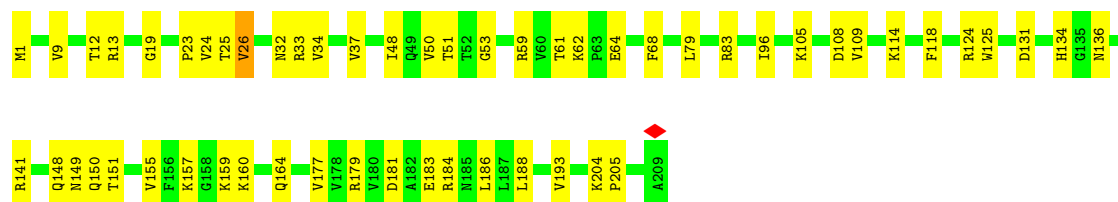


• Molecule 10: 50S ribosomal protein L2



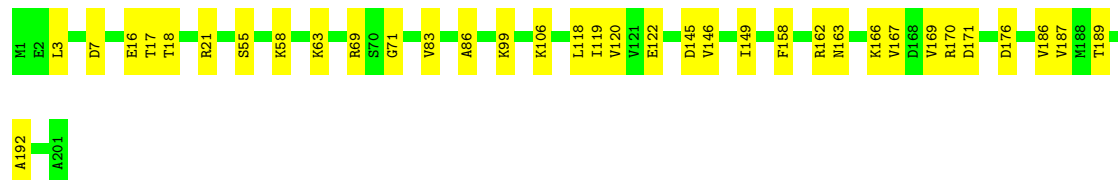
• Molecule 11: 50S ribosomal protein L3





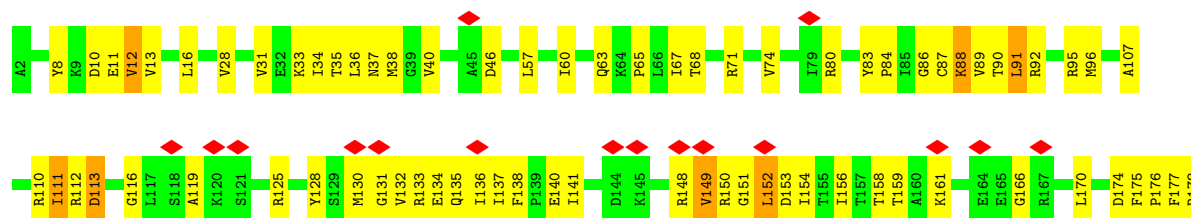
• Molecule 12: 50S ribosomal protein L4

Chain D: 83% 17%



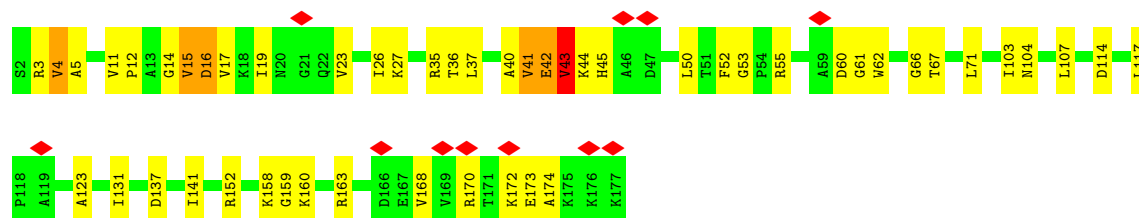
• Molecule 13: 50S ribosomal protein L5

Chain E: 9% 58% 38%



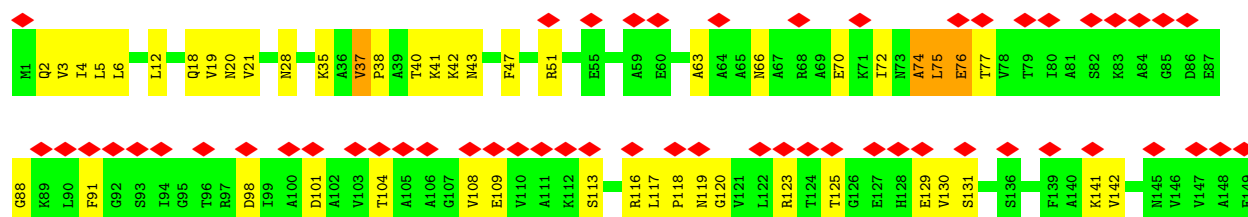
• Molecule 14: 50S ribosomal protein L6

Chain F: 6% 71% 26%

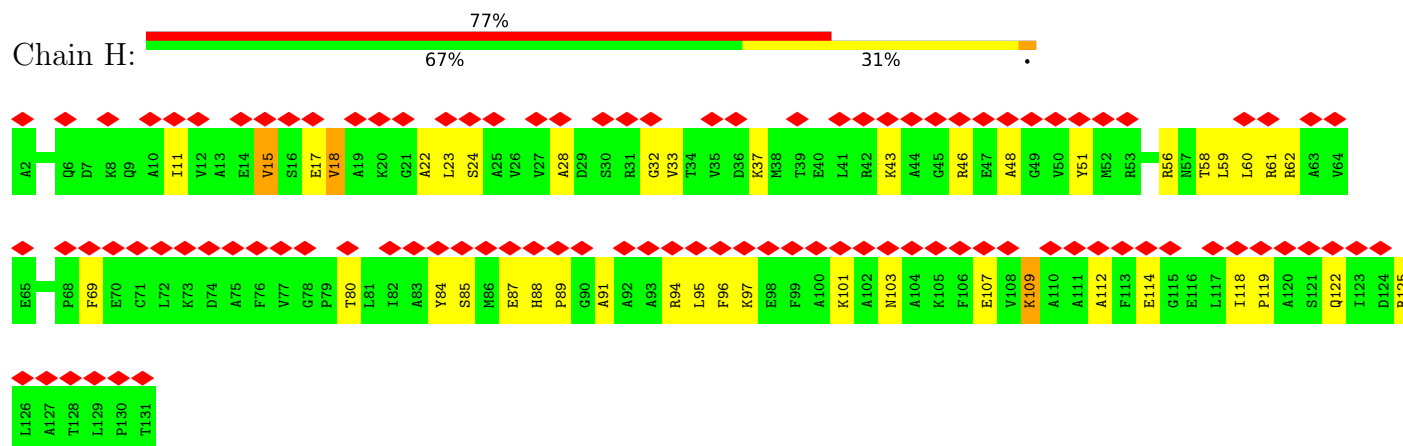


• Molecule 15: 50S ribosomal protein L9

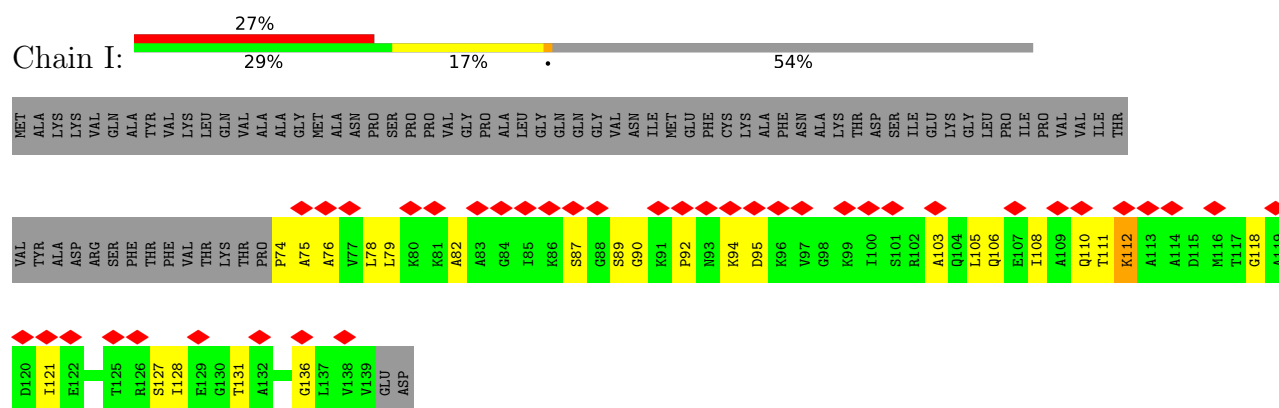
Chain G: 37% 68% 30%



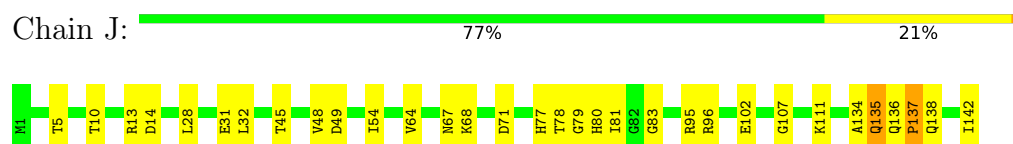
- Molecule 16: 50S ribosomal protein L10



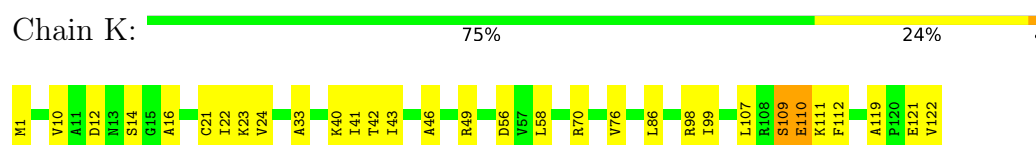
- Molecule 17: 50S ribosomal protein L11



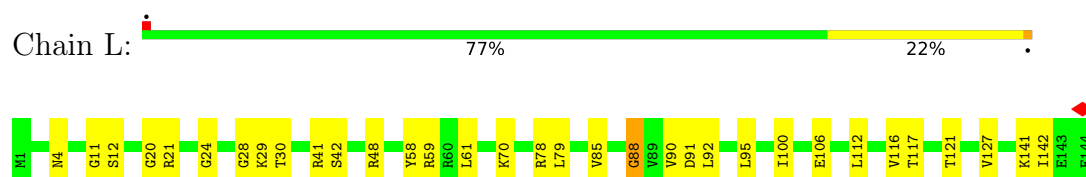
- Molecule 18: 50S ribosomal protein L13



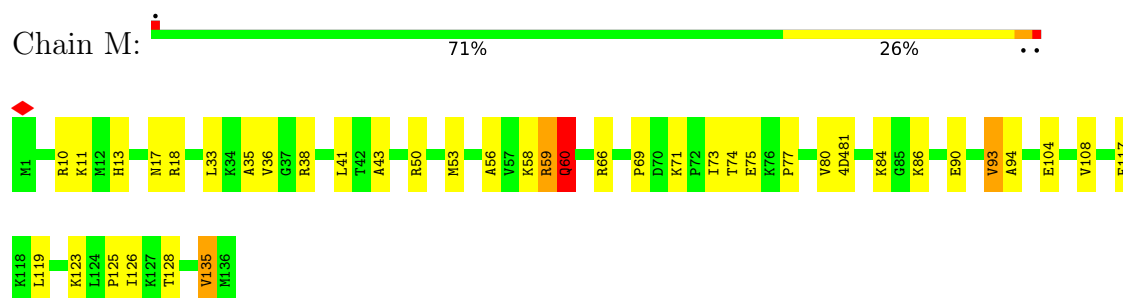
- Molecule 19: 50S ribosomal protein L14



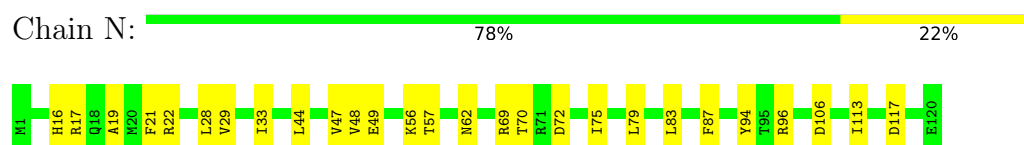
- Molecule 20: 50S ribosomal protein L15



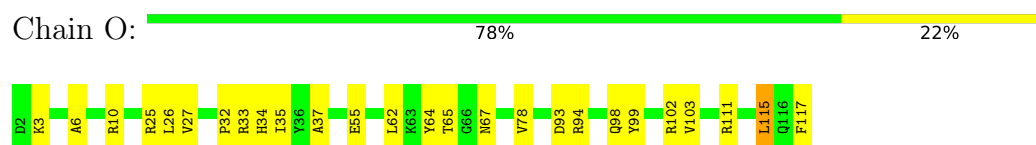
- Molecule 21: 50S ribosomal protein L16



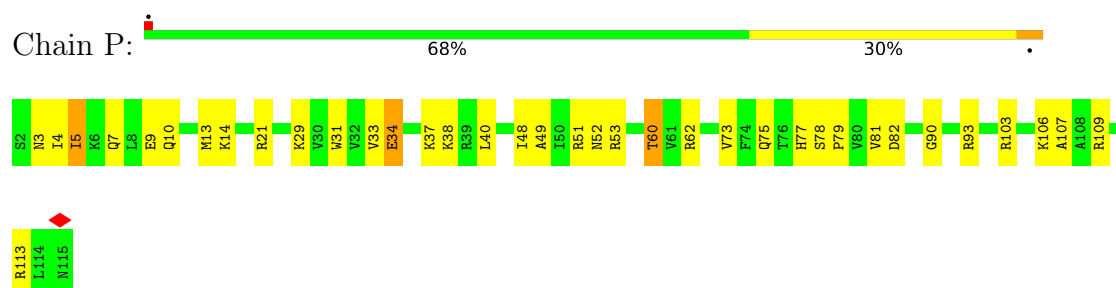
- Molecule 22: 50S ribosomal protein L17



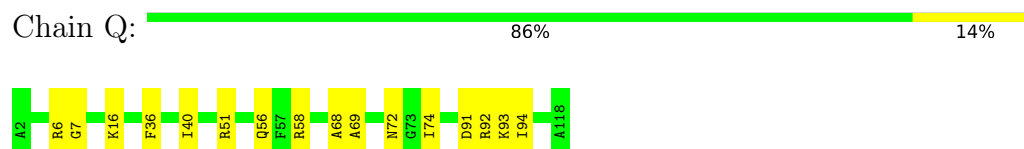
- Molecule 23: 50S ribosomal protein L18



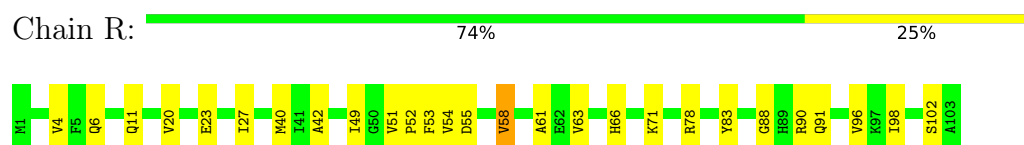
- Molecule 24: 50S ribosomal protein L19



- Molecule 25: 50S ribosomal protein L20



- Molecule 26: 50S ribosomal protein L21



- Molecule 27: 50S ribosomal protein L22

Chain S:  75% 25%



- Molecule 28: 50S ribosomal protein L23

Chain T:  85% 15%



- Molecule 29: 50S ribosomal protein L24

Chain U:  71% 27%



- Molecule 30: 50S ribosomal protein L25

Chain V:  65% 35%



- Molecule 31: 50S ribosomal protein L28

Chain X:  69% 30%



- Molecule 32: 50S ribosomal protein L29

Chain Y:  84% 16%



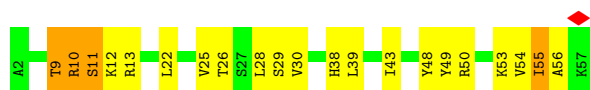
- Molecule 33: 50S ribosomal protein L30

Chain Z:  72% 28%



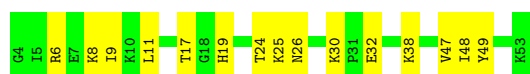
- Molecule 34: 50S ribosomal protein L32

Chain b:  62% 30% 7%



- Molecule 35: 50S ribosomal protein L33

Chain c:  70% 30%



- Molecule 36: 50S ribosomal protein L34

Chain d:  83% 15%



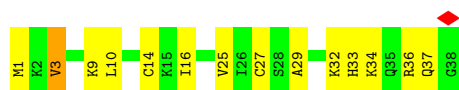
- Molecule 37: 50S ribosomal protein L35

Chain e:  73% 23%



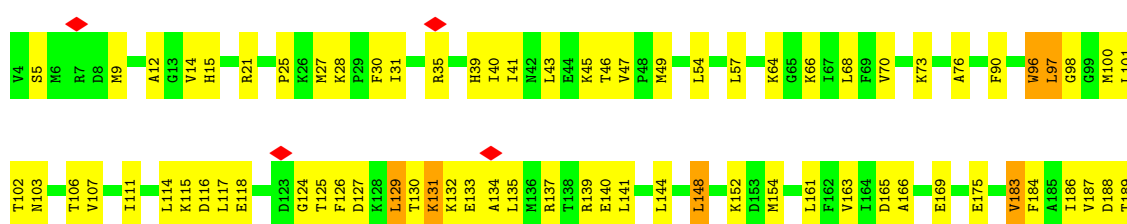
- Molecule 38: 50S ribosomal protein L36

Chain f:  63% 34%



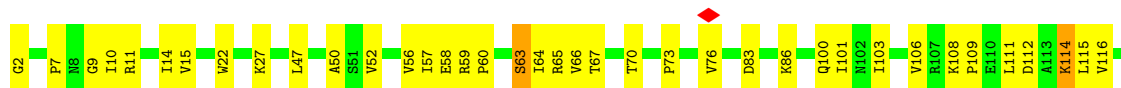
- Molecule 39: 30S ribosomal protein S2

Chain g:  58% 38%

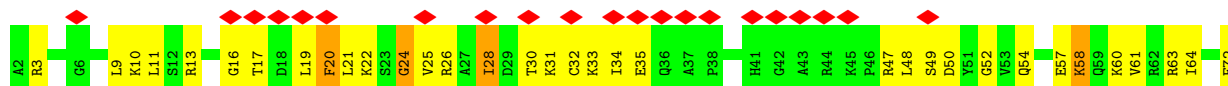




- Molecule 40: 30S ribosomal protein S3



- Molecule 41: 30S ribosomal protein S4



- Molecule 42: 30S ribosomal protein S5

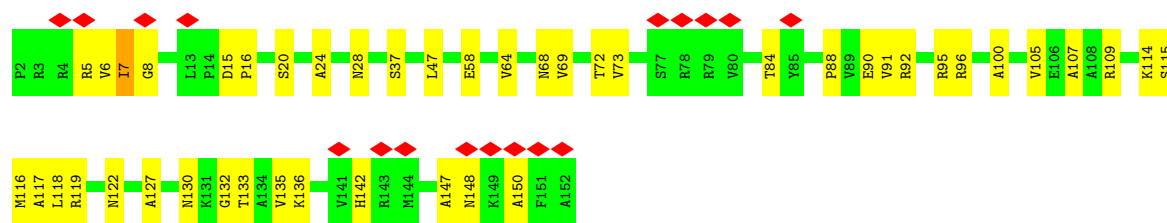


- Molecule 43: 30S ribosomal protein S6



- Molecule 44: 30S ribosomal protein S7





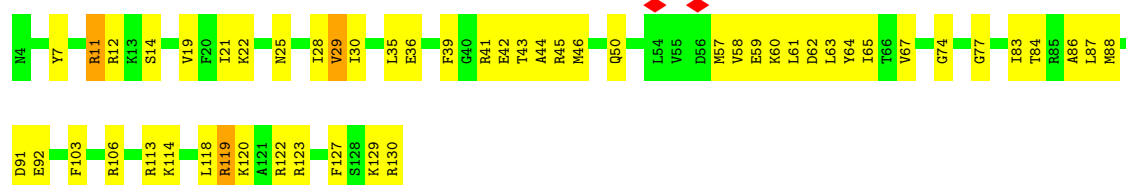
• Molecule 45: 30S ribosomal protein S8

Chain m: 80% 20%



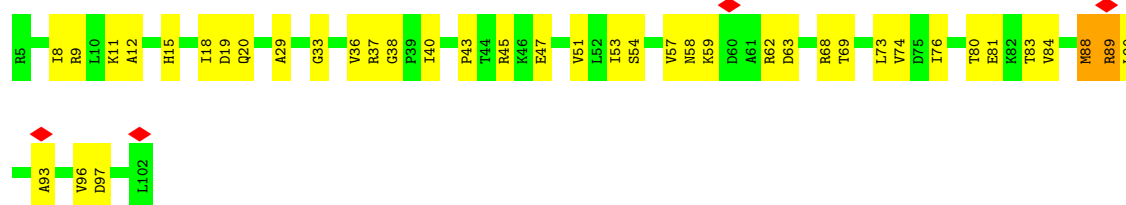
• Molecule 46: 30S ribosomal protein S9

Chain n: 59% 39%



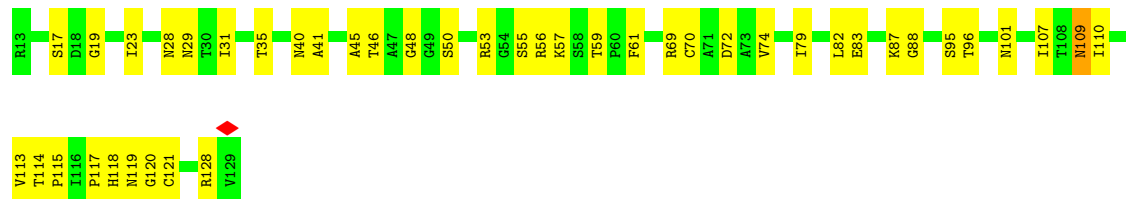
• Molecule 47: 30S ribosomal protein S10

Chain o: 59% 39%



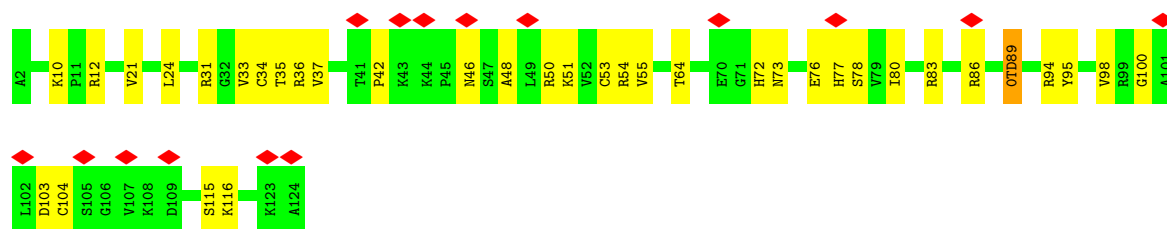
• Molecule 48: 30S ribosomal protein S11

Chain p: 63% 36%

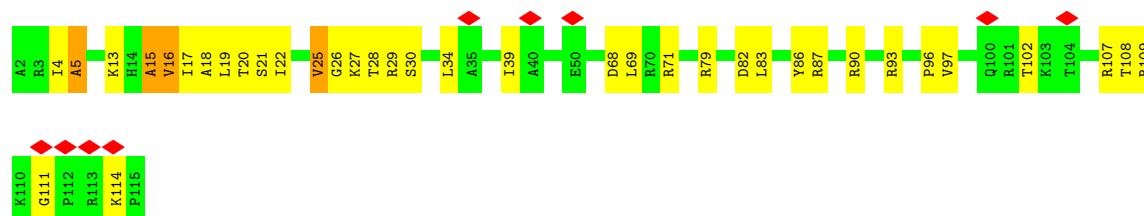


• Molecule 49: 30S ribosomal protein S12

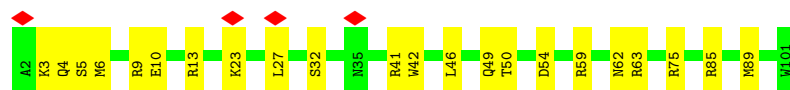
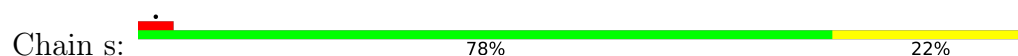
Chain q: 12% 71% 28%



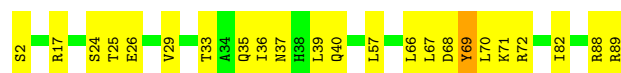
- Molecule 50: 30S ribosomal protein S13



- Molecule 51: 30S ribosomal protein S14



- Molecule 52: 30S ribosomal protein S15



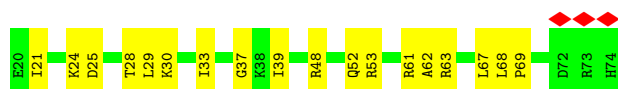
- Molecule 53: 30S ribosomal protein S16



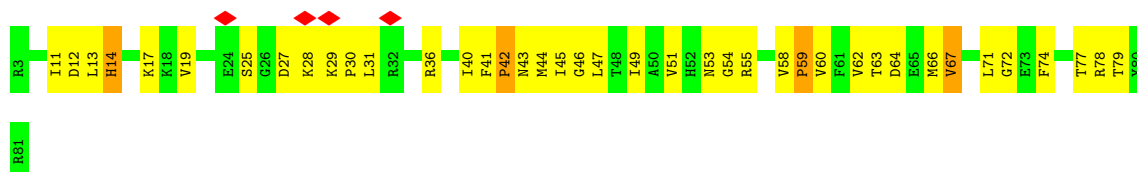
- Molecule 54: 30S ribosomal protein S17



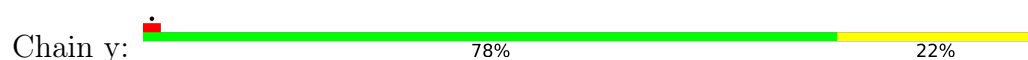
- Molecule 55: 30S ribosomal protein S18



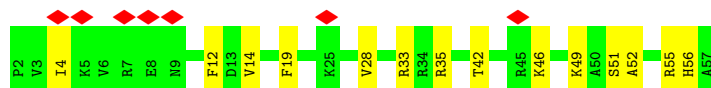
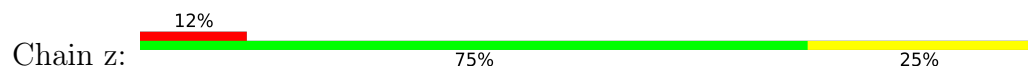
- Molecule 56: 30S ribosomal protein S19



- Molecule 57: 30S ribosomal protein S20



- Molecule 58: 30S ribosomal protein S21



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	18452	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	35	Depositor
Minimum defocus (nm)	-1000	Depositor
Maximum defocus (nm)	-3000	Depositor
Magnification	105000	Depositor
Image detector	GATAN K2 BASE (4k x 4k)	Depositor
Maximum map value	19.820	Depositor
Minimum map value	-6.531	Depositor
Average map value	0.000	Depositor
Map value standard deviation	1.000	Depositor
Recommended contour level	2.5	Depositor
Map size ($\text{\AA}$)	446.784, 446.784, 446.784	wwPDB
Map dimensions	416, 416, 416	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.074, 1.074, 1.074	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: GDP, OMC, 3TD, UR3, PSU, OMU, MA6, 5MU, 2MG, 6MZ, 3AU, KIR, 4OC, 5MC, 4SU, OMG, MG, 4D4, G7M, MIA, 0TD, 1MG, 2MA, ZN

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	1	0.09	1/69307 (0.0%)	0.25	12/108118 (0.0%)
2	2	0.10	1/36722 (0.0%)	0.22	1/57280 (0.0%)
3	3	0.08	0/2828	0.22	0/4410
4	4	0.10	0/8616	0.27	0/13430
5	5	0.34	2/1203 (0.2%)	0.77	8/1616 (0.5%)
6	6	0.33	3/2924 (0.1%)	0.75	19/3955 (0.5%)
7	7	0.49	6/1624 (0.4%)	0.30	0/2527
8	8	0.17	0/366	0.45	0/570
9	A	0.14	0/608	0.48	0/804
10	B	0.17	0/2121	0.53	3/2852 (0.1%)
11	C	0.15	0/1586	0.42	0/2134
12	D	0.14	0/1571	0.49	2/2113 (0.1%)
13	E	0.35	1/1434 (0.1%)	0.88	7/1926 (0.4%)
14	F	0.23	0/1342	0.80	9/1816 (0.5%)
15	G	0.41	3/1122 (0.3%)	0.77	5/1515 (0.3%)
16	H	0.18	0/993	0.70	4/1340 (0.3%)
17	I	0.14	0/471	0.62	2/627 (0.3%)
18	J	0.42	1/1152 (0.1%)	0.55	3/1551 (0.2%)
19	K	0.28	1/947 (0.1%)	0.62	5/1268 (0.4%)
20	L	0.17	0/1062	0.55	1/1413 (0.1%)
21	M	0.18	0/1081	0.52	2/1443 (0.1%)
22	N	0.16	0/973	0.49	0/1301
23	O	0.14	0/902	0.43	0/1209
24	P	0.17	0/929	0.68	4/1242 (0.3%)
25	Q	0.20	0/960	0.56	2/1278 (0.2%)
26	R	0.22	0/829	0.55	2/1107 (0.2%)
27	S	0.16	0/864	0.58	3/1156 (0.3%)
28	T	0.13	0/745	0.43	0/994
29	U	0.49	2/788 (0.3%)	0.76	4/1051 (0.4%)
30	V	0.14	0/766	0.39	0/1025
31	X	0.31	1/635 (0.2%)	0.72	4/848 (0.5%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	Y	0.10	0/502	0.34	0/667
33	Z	0.13	0/453	0.46	0/605
34	b	0.83	4/450 (0.9%)	0.81	1/599 (0.2%)
35	c	0.15	0/416	0.54	0/554
36	d	0.16	0/380	0.55	0/498
37	e	0.44	1/513 (0.2%)	0.84	3/676 (0.4%)
38	f	0.14	0/303	0.45	0/397
39	g	0.23	0/1784	0.77	9/2403 (0.4%)
40	h	0.15	0/1652	0.51	3/2225 (0.1%)
41	i	0.30	1/1665 (0.1%)	0.85	14/2227 (0.6%)
42	j	0.34	1/1131 (0.1%)	0.81	7/1520 (0.5%)
43	k	0.18	0/835	0.61	2/1128 (0.2%)
44	l	0.26	0/1196	0.72	5/1602 (0.3%)
45	m	0.15	0/989	0.42	0/1326
46	n	0.25	0/1034	0.91	10/1375 (0.7%)
47	o	0.26	1/797 (0.1%)	0.62	3/1077 (0.3%)
48	p	0.21	0/892	0.59	2/1205 (0.2%)
49	q	0.17	0/959	0.54	0/1286
50	r	0.18	0/892	0.75	7/1193 (0.6%)
51	s	0.14	0/817	0.41	0/1088
52	t	0.14	0/722	0.57	2/964 (0.2%)
53	u	0.15	0/659	0.56	1/884 (0.1%)
54	v	0.21	0/658	0.80	6/881 (0.7%)
55	w	0.14	0/463	0.47	0/621
56	x	0.71	2/653 (0.3%)	0.96	6/877 (0.7%)
57	y	0.15	0/671	0.46	0/888
58	z	0.14	0/473	0.37	0/627
All	All	0.17	32/169430 (0.0%)	0.39	183/253312 (0.1%)

All (32) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
56	x	59	PRO	N-CD	14.93	1.68	1.47
18	J	137	PRO	N-CD	-13.52	1.28	1.47
29	U	50	PRO	N-CD	10.82	1.62	1.47
34	b	10	ARG	C-O	-9.88	1.11	1.24
6	6	72	PRO	N-CD	9.36	1.60	1.47
34	b	10	ARG	C-N	-9.13	1.21	1.33
6	6	97	GLN	CA-C	8.29	1.64	1.52
15	G	38	PRO	N-CD	8.04	1.59	1.47
7	7	20	U	C5-C6	7.92	1.50	1.34
7	7	16	U	C5-C6	7.88	1.50	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
19	K	110	GLU	CA-C	7.60	1.63	1.53
6	6	344	PRO	N-CD	-7.49	1.37	1.47
29	U	99	ASN	CA-C	7.31	1.62	1.52
41	i	169	THR	CA-C	7.25	1.62	1.52
5	5	78	THR	CA-C	7.24	1.63	1.53
37	e	31	HIS	ND1-CE1	-7.10	1.25	1.32
5	5	84	PRO	N-CD	7.06	1.57	1.47
56	x	42	PRO	N-CD	-6.99	1.38	1.47
34	b	10	ARG	N-CA	-6.87	1.37	1.46
15	G	118	PRO	N-CD	-6.83	1.38	1.47
31	X	8	THR	CA-C	6.82	1.61	1.52
42	j	103	THR	CA-C	6.77	1.61	1.52
7	7	20	U	N1-C2	5.96	1.50	1.38
34	b	9	THR	C-N	-5.82	1.25	1.33
1	1	2439	A	O3'-P	5.75	1.69	1.61
13	E	12	VAL	CA-C	5.52	1.59	1.52
7	7	20	U	C2-N3	5.52	1.48	1.37
47	o	89	ARG	CA-C	5.51	1.60	1.52
7	7	16	U	C2-N3	5.49	1.48	1.37
7	7	16	U	N1-C2	5.33	1.49	1.38
15	G	75	LEU	CA-C	5.31	1.59	1.52
2	2	527	G7M	O3'-P	5.06	1.61	1.56

All (183) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2439	A	C3'-C2'-O2'	-20.98	83.12	114.60
1	1	2439	A	C1'-C2'-O2'	-16.93	86.40	111.80
13	E	174	ASP	CA-C-N	14.36	139.91	120.67
13	E	174	ASP	C-N-CA	14.36	139.91	120.67
1	1	2439	A	C2'-C3'-O3'	-14.08	88.38	109.50
1	1	2195	U	OP1-P-OP2	-13.61	78.78	119.60
46	n	88	MET	N-CA-C	12.14	124.52	111.28
1	1	2194	U	OP1-P-O3'	-10.95	75.15	108.00
1	1	2195	U	O5'-P-OP2	-10.95	75.16	108.00
31	X	8	THR	N-CA-C	10.85	126.69	113.23
14	F	15	VAL	N-CA-C	10.85	122.28	106.55
56	x	14	HIS	N-CA-C	10.41	122.63	111.28
41	i	153	SER	N-CA-C	-10.40	99.85	112.54
44	l	117	ALA	N-CA-C	10.35	123.53	111.11
25	Q	93	LYS	N-CA-C	10.23	123.39	111.11
56	x	59	PRO	N-CA-CB	9.89	112.06	103.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
27	S	60	HIS	N-CA-C	9.80	122.04	111.36
44	l	136	LYS	N-CA-C	9.73	121.49	111.07
15	G	37	VAL	N-CA-CB	-9.57	105.23	111.83
37	e	31	HIS	CA-CB-CG	-9.55	104.25	113.80
41	i	155	VAL	N-CA-C	9.50	122.93	111.05
1	1	2194	U	OP2-P-O3'	9.32	135.97	108.00
5	5	79	HIS	N-CA-C	-9.31	99.64	112.12
6	6	98	MET	N-CA-C	9.31	123.73	110.23
37	e	32	ILE	N-CA-CB	-9.28	101.08	111.66
39	g	207	ILE	N-CA-C	9.28	119.33	110.42
41	i	170	TRP	N-CA-C	9.18	125.61	113.30
18	J	137	PRO	CA-N-CD	9.09	124.72	112.00
39	g	126	PHE	N-CA-C	-9.08	102.21	113.20
46	n	42	GLU	N-CA-C	9.03	123.56	112.54
21	M	60	GLN	N-CA-C	9.00	129.97	110.80
46	n	29	VAL	N-CA-C	8.97	120.65	107.37
14	F	4	VAL	N-CA-C	8.95	119.93	106.42
26	R	58	VAL	N-CA-C	8.91	122.21	107.24
41	i	169	THR	N-CA-C	8.87	122.11	111.82
19	K	111	LYS	N-CA-C	-8.61	101.73	113.18
6	6	195	LEU	N-CA-C	-8.49	101.97	111.14
47	o	90	LEU	N-CA-C	8.48	123.45	112.26
50	r	15	ALA	N-CA-C	8.35	120.00	111.07
39	g	129	LEU	N-CA-C	8.30	121.38	111.33
24	P	5	ILE	N-CA-C	8.29	119.08	110.62
5	5	77	SER	N-CA-C	-8.24	103.25	112.57
15	G	74	ALA	N-CA-C	-8.23	102.96	113.16
50	r	17	ILE	N-CA-C	-8.20	102.44	110.72
42	j	114	VAL	N-CA-C	8.18	118.96	110.62
46	n	86	ALA	N-CA-C	-8.15	102.47	111.36
6	6	140	VAL	N-CA-C	8.11	119.37	107.37
31	X	9	GLY	N-CA-C	-8.08	102.64	115.08
16	H	109	LYS	N-CA-C	8.07	119.77	110.97
14	F	43	VAL	CA-C-N	-8.06	110.15	122.81
14	F	43	VAL	C-N-CA	-8.06	110.15	122.81
54	v	16	LYS	N-CA-C	8.04	122.17	109.39
50	r	25	VAL	N-CA-C	7.99	119.30	108.11
39	g	124	GLY	N-CA-C	-7.98	104.86	115.32
17	I	112	LYS	N-CA-C	7.95	122.54	107.75
6	6	96	ALA	N-CA-C	-7.92	102.73	111.36
42	j	16	ILE	N-CA-CB	-7.92	102.70	111.41
41	i	170	TRP	N-CA-CB	-7.90	98.69	110.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2195	U	O5'-P-OP1	7.85	131.55	108.00
12	D	17	THR	N-CA-C	-7.75	102.77	111.14
56	x	59	PRO	CA-N-CD	-7.74	101.17	112.00
18	J	135	GLN	N-CA-C	-7.70	103.62	113.16
37	e	32	ILE	N-CA-C	7.69	118.92	107.15
6	6	281	ILE	N-CA-C	7.63	118.85	108.17
24	P	34	GLU	N-CA-C	7.63	121.16	108.73
18	J	137	PRO	N-CA-CB	-7.61	95.39	103.38
42	j	116	GLU	N-CA-C	-7.55	103.06	111.82
41	i	132	ILE	N-CA-CB	7.54	122.07	111.82
24	P	60	THR	N-CA-C	7.41	120.98	108.90
40	h	116	VAL	N-CA-C	7.34	120.23	111.05
42	j	132	ASN	N-CA-C	-7.27	100.63	109.72
41	i	168	PRO	N-CA-C	7.23	121.34	111.22
39	g	183	VAL	N-CA-C	7.21	118.50	108.12
6	6	104	VAL	N-CA-C	7.21	118.18	107.15
39	g	209	ALA	N-CA-C	-7.09	103.48	111.07
25	Q	91	ASP	N-CA-C	7.07	119.65	110.53
29	U	100	SER	N-CA-C	-7.06	101.63	111.52
19	K	109	SER	N-CA-C	-7.05	101.83	111.56
41	i	169	THR	CA-C-O	7.00	128.02	119.97
12	D	17	THR	N-CA-CB	6.99	120.20	110.07
6	6	347	VAL	N-CA-C	6.90	116.25	106.53
31	X	8	THR	CA-C-O	6.89	127.33	119.27
50	r	17	ILE	N-CA-CB	6.87	120.89	110.58
15	G	76	GLU	N-CA-CB	6.87	123.24	112.46
52	t	71	LYS	N-CA-C	-6.85	103.74	111.14
19	K	110	GLU	CA-C-O	6.78	129.55	121.08
54	v	46	VAL	N-CA-C	6.76	118.34	108.53
46	n	44	ALA	N-CA-CB	6.71	120.68	110.28
6	6	97	GLN	N-CA-C	6.66	119.39	111.33
41	i	205	SER	N-CA-C	-6.65	104.99	113.23
50	r	5	ALA	N-CA-C	-6.60	104.08	111.28
21	M	59	ARG	N-CA-C	-6.57	96.81	110.80
39	g	209	ALA	N-CA-CB	6.57	119.53	110.01
46	n	44	ALA	N-CA-C	-6.56	104.21	111.82
42	j	116	GLU	N-CA-CB	6.54	120.42	110.28
44	l	6	VAL	N-CA-C	6.51	122.89	109.34
14	F	4	VAL	N-CA-CB	-6.50	106.14	112.65
14	F	44	LYS	N-CA-CB	-6.44	100.07	111.08
6	6	97	GLN	CA-C-O	6.43	127.58	120.63
5	5	78	THR	CB-CA-C	-6.42	101.58	111.66

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
26	R	58	VAL	N-CA-CB	-6.42	103.88	112.10
29	U	50	PRO	N-CA-CB	6.42	109.95	102.76
39	g	96	TRP	N-CA-C	-6.39	104.74	112.54
1	1	2439	A	O4'-C1'-C2'	6.38	112.18	105.80
6	6	220	ILE	N-CA-C	6.35	117.93	108.54
6	6	193	GLY	N-CA-C	6.30	119.81	112.50
6	6	141	ASP	N-CA-CB	6.26	118.17	110.53
39	g	131	LYS	CB-CA-C	6.21	122.20	110.35
54	v	47	HIS	N-CA-C	-6.14	104.50	111.07
34	b	9	THR	N-CA-C	6.11	119.33	109.79
10	B	214	ARG	N-CA-C	-6.08	105.51	113.17
44	l	132	GLY	N-CA-C	6.05	120.29	112.54
16	H	18	VAL	N-CA-C	6.03	118.59	111.05
43	k	91	ARG	CB-CA-C	-6.02	101.22	112.30
1	1	2439	A	C5'-C4'-O4'	-6.02	100.07	109.10
14	F	14	GLY	N-CA-C	-5.99	106.82	114.37
40	h	114	LYS	N-CA-C	-5.98	104.84	111.36
52	t	69	TYR	N-CA-C	5.98	117.47	111.07
13	E	13	VAL	N-CA-C	5.97	121.77	109.34
24	P	3	ASN	N-CA-C	-5.96	104.87	111.36
43	k	92	THR	N-CA-C	5.92	117.54	111.14
5	5	79	HIS	N-CA-CB	5.91	122.09	110.63
6	6	195	LEU	N-CA-CB	5.91	118.63	110.07
53	u	46	LYS	N-CA-C	-5.90	105.16	112.72
1	1	2439	A	C4'-C3'-O3'	5.90	118.24	109.40
31	X	7	VAL	N-CA-C	-5.88	106.08	111.67
41	i	24	GLY	N-CA-C	-5.88	104.55	112.14
41	i	205	SER	N-CA-CB	5.88	119.62	110.44
5	5	78	THR	CA-C-O	5.88	128.43	121.08
54	v	17	MET	N-CA-C	5.87	117.03	107.23
6	6	139	MET	N-CA-C	-5.87	105.62	112.89
14	F	16	ASP	N-CA-CB	5.87	118.59	109.85
54	v	15	ASP	N-CA-C	-5.85	106.78	114.04
27	S	60	HIS	N-CA-CB	-5.82	101.55	110.16
42	j	106	ILE	N-CA-CB	-5.81	103.78	112.67
48	p	109	ASN	N-CA-CB	-5.79	100.83	111.37
6	6	72	PRO	N-CA-C	-5.77	105.86	113.65
41	i	166	GLU	N-CA-C	-5.77	101.41	110.36
29	U	99	ASN	CA-C-O	5.77	128.76	120.51
6	6	221	SER	N-CA-CB	5.75	118.41	109.85
10	B	212	ARG	N-CA-C	5.71	117.18	111.07
29	U	50	PRO	CA-N-CD	-5.71	104.01	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
13	E	88	LYS	N-CA-C	5.68	118.75	108.69
19	K	110	GLU	CB-CA-C	-5.68	102.75	111.66
46	n	119	ARG	N-CA-C	5.68	120.48	112.93
41	i	203	LEU	N-CA-C	5.65	117.12	111.07
56	x	14	HIS	N-CA-CB	-5.62	101.86	110.12
5	5	75	VAL	N-CA-C	-5.62	106.83	112.17
56	x	42	PRO	N-CA-CB	-5.60	97.59	103.19
44	l	115	SER	N-CA-C	5.60	118.76	110.48
15	G	37	VAL	N-CA-C	5.53	113.97	107.84
54	v	29	VAL	N-CA-C	-5.52	101.84	109.46
41	i	155	VAL	N-CA-CB	-5.49	101.25	110.65
2	2	1534	A	C2'-C3'-O3'	5.49	117.74	109.50
46	n	88	MET	N-CA-CB	-5.49	102.05	110.12
50	r	16	VAL	CB-CA-C	-5.47	103.40	112.26
1	1	2439	A	N9-C1'-C2'	5.46	122.19	114.00
27	S	59	GLU	N-CA-C	5.46	119.51	111.04
16	H	87	GLU	CA-C-N	5.46	126.54	119.78
16	H	87	GLU	C-N-CA	5.46	126.54	119.78
14	F	15	VAL	CB-CA-C	-5.44	106.48	112.68
15	G	76	GLU	N-CA-C	-5.43	104.64	111.92
5	5	78	THR	N-CA-C	5.42	119.05	111.90
40	h	63	SER	N-CA-C	-5.42	101.48	109.18
46	n	11	ARG	N-CA-C	5.42	118.06	109.50
13	E	151	GLY	CA-C-O	-5.38	116.58	121.47
46	n	119	ARG	CB-CA-C	-5.35	101.69	110.08
42	j	103	THR	CA-C-O	5.33	128.13	120.51
6	6	72	PRO	CA-N-CD	-5.30	104.58	112.00
56	x	12	ASP	N-CA-C	5.25	118.15	109.85
13	E	12	VAL	CA-C-O	5.22	126.48	121.05
13	E	91	LEU	N-CA-C	5.22	118.32	109.76
19	K	111	LYS	N-CA-CB	5.19	123.08	110.83
6	6	170	VAL	N-CA-C	5.18	115.32	107.80
20	L	88	GLY	N-CA-C	5.18	122.25	115.36
17	I	111	THR	N-CA-C	-5.15	106.51	112.89
5	5	126	LYS	N-CA-CB	5.13	118.35	110.60
48	p	95	SER	N-CA-C	-5.12	105.78	111.36
50	r	16	VAL	N-CA-C	5.12	117.48	111.09
47	o	90	LEU	N-CA-CB	-5.10	102.81	111.17
47	o	88	MET	N-CA-C	-5.04	103.88	110.53
10	B	208	ALA	N-CA-C	5.03	117.50	111.71
6	6	254	THR	N-CA-C	5.00	117.60	109.24

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1	62355	0	31381	1249	0
2	2	33048	0	16654	807	0
3	3	2529	0	1281	53	0
4	4	7760	0	3921	150	0
5	5	1181	0	1198	107	0
6	6	2871	0	2888	214	0
7	7	1635	0	844	60	0
8	8	327	0	161	18	0
9	A	601	0	615	15	0
10	B	2082	0	2154	90	0
11	C	1565	0	1616	48	0
12	D	1552	0	1619	26	0
13	E	1410	0	1444	116	0
14	F	1322	0	1371	45	0
15	G	1111	0	1148	71	0
16	H	980	0	1013	74	0
17	I	470	0	508	24	0
18	J	1129	0	1162	31	0
19	K	938	0	1012	27	0
20	L	1053	0	1129	30	0
21	M	1075	0	1154	32	0
22	N	960	0	1000	31	0
23	O	892	0	923	20	0
24	P	917	0	962	44	0
25	Q	947	0	1019	20	0
26	R	816	0	837	38	0
27	S	857	0	922	30	0
28	T	739	0	807	25	0
29	U	780	0	831	32	0
30	V	753	0	780	23	0
31	X	625	0	652	20	0
32	Y	501	0	531	9	0
33	Z	449	0	488	10	0
34	b	444	0	458	39	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
35	c	409	0	440	14	0
36	d	377	0	418	9	0
37	e	504	0	572	17	0
38	f	302	0	340	10	0
39	g	1753	0	1779	128	0
40	h	1625	0	1696	69	0
41	i	1643	0	1706	122	0
42	j	1118	0	1162	76	0
43	k	817	0	808	50	0
44	l	1182	0	1238	61	0
45	m	979	0	1031	35	0
46	n	1022	0	1070	76	0
47	o	787	0	828	36	0
48	p	876	0	887	36	0
49	q	956	0	1015	66	0
50	r	883	0	941	40	0
51	s	805	0	844	29	0
52	t	714	0	734	30	0
53	u	649	0	666	21	0
54	v	649	0	691	30	0
55	w	456	0	478	18	0
56	x	638	0	665	79	0
57	y	665	0	714	21	0
58	z	466	0	491	16	0
59	1	168	0	0	0	0
59	2	18	0	0	0	0
59	3	3	0	0	0	0
59	B	1	0	0	0	0
59	C	1	0	0	0	0
59	O	1	0	0	0	0
60	6	57	0	59	3	0
61	6	28	0	12	0	0
62	f	1	0	0	0	0
All	All	157227	0	105768	4191	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 16.

All (4191) 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)
6:6:191:LEU:HA	6:6:194:PHE:CE2	1.24	1.66
16:H:59:LEU:HD23	16:H:62:ARG:CG	1.16	1.60
52:t:25:THR:HG21	52:t:70:LEU:CD1	1.26	1.58
43:k:3:HIS:CE1	43:k:95:ALA:H	1.22	1.58
39:g:129:LEU:HD21	39:g:135:LEU:CD1	1.11	1.57
16:H:28:ALA:HB2	16:H:109:LYS:CG	1.29	1.56
10:B:209:GLY:C	10:B:213:TRP:CZ3	1.84	1.55
41:i:85:ASN:HB3	41:i:88:GLU:CD	1.26	1.54
42:j:76:LEU:HD11	42:j:120:VAL:CG1	1.05	1.51
54:v:21:ILE:CG2	54:v:46:VAL:CG2	1.80	1.51
16:H:28:ALA:CB	16:H:109:LYS:HG3	1.41	1.50
2:2:437:U:C1'	41:i:154:ARG:HH22	1.22	1.49
16:H:59:LEU:CD2	16:H:62:ARG:HG3	1.03	1.49
5:5:34:LEU:HD13	5:5:125:VAL:CG1	1.39	1.49
42:j:76:LEU:CD1	42:j:120:VAL:HG13	1.41	1.49
40:h:57:ILE:HD11	40:h:64:ILE:CG2	1.02	1.49
54:v:21:ILE:HG22	54:v:46:VAL:CG2	1.02	1.48
7:7:32:PSU:H3'	46:n:130:ARG:NH1	1.16	1.47
2:2:437:U:C1'	41:i:154:ARG:NH2	1.73	1.47
42:j:76:LEU:CD1	42:j:120:VAL:CG1	1.89	1.45
56:x:19:VAL:HG11	56:x:41:PHE:CZ	1.50	1.45
39:g:129:LEU:CD2	39:g:135:LEU:CD1	1.92	1.45
10:B:209:GLY:O	10:B:213:TRP:CE3	1.66	1.44
2:2:1240:U:C5	44:l:116:MET:HE2	1.51	1.43
2:2:437:U:H1'	41:i:154:ARG:NH2	1.12	1.42
56:x:59:PRO:CD	56:x:59:PRO:N	1.68	1.41
40:h:57:ILE:CD1	40:h:64:ILE:CG2	1.97	1.41
4:4:18:C:C2'	5:5:93:ASN:HD21	1.34	1.41
49:q:54:ARG:CD	49:q:64:THR:HG22	1.50	1.40
1:1:2305:U:C6	13:E:133:ARG:HD2	1.55	1.39
1:1:713:G:OP2	52:t:89:ARG:CD	1.71	1.36
40:h:57:ILE:CD1	40:h:64:ILE:HG22	1.55	1.36
42:j:105:ILE:HD13	42:j:123:VAL:CG1	1.55	1.35
40:h:109:PRO:O	40:h:115:LEU:CD2	1.74	1.35
5:5:59:ARG:CD	5:5:66:PHE:HZ	1.38	1.34
26:R:49:ILE:CD1	26:R:53:PHE:C	1.99	1.34
1:1:1252:G:O6	25:Q:36:PHE:CD2	1.81	1.33
6:6:71:THR:CG2	6:6:74:ARG:O	1.76	1.33
49:q:54:ARG:HD2	49:q:64:THR:CG2	1.60	1.31
39:g:30:PHE:CE1	39:g:45:LYS:HB3	1.65	1.31
26:R:49:ILE:CG1	26:R:51:VAL:O	1.76	1.31
35:c:30:LYS:HD2	35:c:32:GLU:OE2	1.13	1.31

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:59:ARG:HD2	5:5:66:PHE:CZ	1.65	1.31
41:i:85:ASN:N	41:i:88:GLU:OE2	1.63	1.30
5:5:59:ARG:CG	5:5:66:PHE:CZ	2.13	1.29
57:y:71:LYS:HE3	57:y:75:HIS:CE1	1.67	1.28
41:i:85:ASN:CA	41:i:88:GLU:OE2	1.81	1.28
5:5:34:LEU:HD11	5:5:125:VAL:CG2	1.62	1.28
28:T:53:VAL:CG1	28:T:87:LEU:HD22	1.61	1.28
39:g:129:LEU:CD2	39:g:135:LEU:HD12	1.57	1.28
39:g:30:PHE:HZ	39:g:49:MET:CE	1.45	1.27
42:j:76:LEU:HD23	42:j:77:ASN:O	1.25	1.27
43:k:3:HIS:CE1	43:k:95:ALA:N	1.98	1.27
5:5:34:LEU:CD1	5:5:125:VAL:CG2	2.13	1.27
41:i:85:ASN:HB3	41:i:88:GLU:OE1	1.17	1.27
5:5:34:LEU:CD1	5:5:125:VAL:CG1	2.13	1.27
39:g:30:PHE:CZ	39:g:49:MET:HE1	1.69	1.27
46:n:83:ILE:O	46:n:87:LEU:HG	1.23	1.27
43:k:3:HIS:O	43:k:92:THR:HG22	1.32	1.26
42:j:105:ILE:CD1	42:j:123:VAL:HG13	1.64	1.26
26:R:49:ILE:HD11	26:R:53:PHE:O	1.23	1.26
26:R:49:ILE:HD11	26:R:53:PHE:C	1.57	1.25
5:5:33:GLY:O	5:5:34:LEU:HD12	1.13	1.25
13:E:37:ASN:OD1	13:E:88:LYS:NZ	1.67	1.25
13:E:34:ILE:CD1	13:E:156:ILE:HG22	1.65	1.25
7:7:56:C:H4'	13:E:83:TYR:OH	1.31	1.25
49:q:34:CYS:HB3	49:q:53:CYS:SG	1.75	1.24
6:6:191:LEU:CA	6:6:194:PHE:CE2	2.18	1.24
44:l:107:ALA:HB1	44:l:133:THR:CG2	1.68	1.24
13:E:8:TYR:O	13:E:12:VAL:CG2	1.87	1.23
42:j:105:ILE:CD1	42:j:123:VAL:CG1	2.16	1.22
10:B:207:LYS:HE3	10:B:213:TRP:CH2	1.72	1.22
5:5:59:ARG:HG3	5:5:66:PHE:CZ	1.74	1.22
41:i:85:ASN:CB	41:i:88:GLU:CD	2.12	1.22
51:s:50:THR:HG22	56:x:13:LEU:CD2	1.68	1.22
2:2:439:U:O2'	41:i:131:ASN:ND2	1.73	1.21
41:i:25:VAL:HG23	41:i:28:ILE:CG2	1.69	1.21
41:i:25:VAL:CG2	41:i:28:ILE:HG22	1.71	1.21
41:i:19:LEU:O	41:i:20:PHE:CD1	1.93	1.21
2:2:437:U:H1'	41:i:154:ARG:CZ	1.70	1.20
15:G:2:GLN:OE1	15:G:21:VAL:HG22	1.36	1.20
52:t:25:THR:CG2	52:t:70:LEU:CD1	2.18	1.20
43:k:3:HIS:C	43:k:92:THR:HG22	1.67	1.20

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:m:51:VAL:CG1	45:m:59:LEU:HD13	1.70	1.20
54:v:21:ILE:CG2	54:v:46:VAL:HG21	1.52	1.20
49:q:21:VAL:CG1	49:q:24:LEU:HG	1.73	1.19
13:E:8:TYR:O	13:E:12:VAL:HG22	1.35	1.19
10:B:209:GLY:CA	10:B:213:TRP:CZ3	2.26	1.19
43:k:52:ASN:O	43:k:53:LYS:HG2	1.42	1.18
41:i:85:ASN:CB	41:i:88:GLU:OE1	1.90	1.18
56:x:13:LEU:HD12	56:x:14:HIS:N	1.55	1.18
52:t:25:THR:HG21	52:t:70:LEU:HD11	1.19	1.18
41:i:85:ASN:CB	41:i:88:GLU:OE2	1.92	1.17
13:E:34:ILE:CD1	13:E:156:ILE:CG2	2.22	1.17
47:o:88:MET:O	47:o:89:ARG:HG2	1.45	1.17
49:q:54:ARG:CD	49:q:64:THR:CG2	2.19	1.17
16:H:28:ALA:HB1	16:H:109:LYS:HE2	1.23	1.16
42:j:105:ILE:HD11	42:j:123:VAL:HG13	1.20	1.16
4:4:18:C:H2'	5:5:93:ASN:ND2	1.61	1.16
5:5:34:LEU:CD2	5:5:125:VAL:HG11	1.76	1.15
7:7:32:PSU:C3'	46:n:130:ARG:NH1	2.09	1.15
41:i:117:LEU:HD21	41:i:154:ARG:CD	1.75	1.15
1:1:1433:A:N6	1:1:1560:G:H1	1.42	1.15
1:1:1252:G:O6	25:Q:36:PHE:HD2	1.18	1.15
2:2:1149:C:OP2	46:n:11:ARG:NH2	1.80	1.15
6:6:18:GLY:HA3	6:6:104:VAL:CG1	1.75	1.14
7:7:32:PSU:C3'	46:n:130:ARG:HH12	1.60	1.14
42:j:105:ILE:HD12	42:j:123:VAL:O	1.43	1.14
52:t:25:THR:CG2	52:t:70:LEU:HD11	1.77	1.14
5:5:59:ARG:CD	5:5:66:PHE:CZ	2.22	1.14
13:E:34:ILE:HD11	13:E:156:ILE:HG22	1.29	1.14
15:G:40:THR:CG2	15:G:42:LYS:HG2	1.78	1.13
27:S:38:TYR:CD2	34:b:28:LEU:HD21	1.82	1.13
40:h:109:PRO:C	40:h:115:LEU:HD23	1.71	1.13
2:2:1149:C:P	46:n:11:ARG:NH2	2.22	1.13
10:B:209:GLY:CA	10:B:213:TRP:HZ3	1.61	1.13
26:R:49:ILE:HG13	26:R:51:VAL:O	0.97	1.13
41:i:117:LEU:HD21	41:i:154:ARG:HD3	1.19	1.13
4:4:18:C:C2'	5:5:93:ASN:ND2	2.11	1.12
15:G:2:GLN:OE1	15:G:21:VAL:N	1.82	1.12
29:U:49:VAL:CG1	29:U:52:LEU:O	1.98	1.12
5:5:34:LEU:CD1	5:5:125:VAL:HG21	1.76	1.11
42:j:76:LEU:CD2	42:j:77:ASN:O	1.98	1.11
40:h:112:ASP:HB3	40:h:115:LEU:HB3	1.29	1.11

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:6:106:ALA:HA	6:6:135:ASN:OD1	1.49	1.11
10:B:209:GLY:HA3	10:B:213:TRP:HZ3	1.05	1.11
28:T:53:VAL:HG12	28:T:87:LEU:CD2	1.81	1.10
39:g:129:LEU:CD1	39:g:135:LEU:H	1.63	1.10
5:5:59:ARG:CG	5:5:66:PHE:HZ	1.56	1.10
10:B:209:GLY:O	10:B:213:TRP:CZ3	1.92	1.09
40:h:57:ILE:HD11	40:h:64:ILE:HG21	1.18	1.09
13:E:8:TYR:C	13:E:12:VAL:HG22	1.76	1.09
39:g:129:LEU:HD21	39:g:135:LEU:HD11	1.23	1.09
39:g:129:LEU:HD13	39:g:135:LEU:N	1.68	1.09
49:q:54:ARG:HH11	49:q:64:THR:CG2	1.64	1.09
26:R:49:ILE:HD13	26:R:53:PHE:C	1.70	1.09
40:h:109:PRO:HB2	40:h:115:LEU:HD21	1.12	1.09
6:6:24:LYS:HG2	6:6:104:VAL:CG1	1.83	1.09
13:E:67:ILE:HG13	13:E:87:CYS:HB3	1.35	1.09
56:x:19:VAL:CG1	56:x:41:PHE:HZ	1.64	1.09
15:G:117:LEU:HD13	15:G:120:GLY:CA	1.81	1.08
57:y:71:LYS:CE	57:y:75:HIS:CE1	2.35	1.08
6:6:16:THR:HG23	6:6:78:HIS:NE2	1.68	1.08
56:x:47:LEU:HD13	56:x:49:ILE:HG23	1.28	1.08
1:1:713:G:OP2	52:t:89:ARG:HD3	0.91	1.08
1:1:1093:G:H21	1:1:1098:A:N6	1.51	1.08
27:S:38:TYR:CD2	34:b:28:LEU:CD2	2.37	1.08
48:p:23:ILE:HG12	48:p:96:THR:HG21	1.27	1.08
5:5:57:LEU:HG	5:5:66:PHE:HD2	1.16	1.08
4:4:18:C:H2'	5:5:93:ASN:HD21	1.01	1.07
48:p:101:ASN:HD21	58:z:12:PHE:HB2	1.16	1.07
5:5:34:LEU:CD1	5:5:125:VAL:HG11	1.76	1.07
24:P:48:ILE:HG13	24:P:60:THR:CG2	1.85	1.07
44:l:107:ALA:HB1	44:l:133:THR:HG22	1.29	1.07
49:q:36:ARG:O	49:q:53:CYS:SG	2.12	1.07
49:q:54:ARG:NH1	49:q:64:THR:HG23	1.69	1.07
13:E:8:TYR:HA	13:E:12:VAL:CG2	1.85	1.07
15:G:75:LEU:HD12	15:G:77:THR:H	1.19	1.07
49:q:33:VAL:C	49:q:55:VAL:HG23	1.80	1.07
6:6:191:LEU:HA	6:6:194:PHE:CZ	1.88	1.07
49:q:54:ARG:HH11	49:q:64:THR:HG23	1.11	1.07
1:1:1093:G:N2	1:1:1098:A:H62	1.52	1.07
40:h:109:PRO:HB2	40:h:115:LEU:CD2	1.85	1.07
44:l:107:ALA:CB	44:l:133:THR:CG2	2.33	1.07
6:6:18:GLY:HA3	6:6:104:VAL:HG12	1.09	1.06

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:H:28:ALA:HB1	16:H:109:LYS:CE	1.84	1.06
35:c:30:LYS:CD	35:c:32:GLU:OE2	2.03	1.06
39:g:129:LEU:HD13	39:g:135:LEU:H	0.93	1.06
39:g:129:LEU:HD12	39:g:133:GLU:N	1.69	1.06
13:E:34:ILE:HG12	13:E:91:LEU:HD23	1.31	1.06
16:H:23:LEU:HD22	16:H:95:LEU:CB	1.84	1.06
39:g:129:LEU:HD12	39:g:132:LYS:C	1.81	1.06
44:l:107:ALA:CB	44:l:133:THR:HG23	1.85	1.06
51:s:50:THR:HG22	56:x:13:LEU:HD22	1.09	1.06
57:y:71:LYS:HE3	57:y:75:HIS:HE1	0.98	1.06
16:H:59:LEU:HD22	16:H:62:ARG:HG3	1.35	1.06
41:i:17:THR:OG1	41:i:19:LEU:HG	1.52	1.06
28:T:53:VAL:CG1	28:T:87:LEU:CD2	2.32	1.05
42:j:44:GLY:HA2	42:j:74:VAL:HG22	1.38	1.05
54:v:21:ILE:CG2	54:v:46:VAL:HG22	1.85	1.05
5:5:34:LEU:HD21	5:5:90:LEU:HD23	1.34	1.05
10:B:207:LYS:CE	10:B:213:TRP:HH2	1.69	1.05
16:H:59:LEU:HD23	16:H:62:ARG:CB	1.86	1.05
1:l:2419:U:OP2	37:e:33:LEU:HD13	1.57	1.05
10:B:159:GLY:HA2	10:B:195:VAL:HG23	1.38	1.05
15:G:117:LEU:HD13	15:G:120:GLY:N	1.69	1.05
1:l:2305:U:H5''	13:E:133:ARG:HE	0.94	1.05
7:7:56:C:C4'	13:E:83:TYR:OH	2.03	1.05
16:H:59:LEU:CD2	16:H:62:ARG:CG	1.95	1.05
31:X:8:THR:OG1	31:X:10:LYS:HG3	1.56	1.05
39:g:129:LEU:HD21	39:g:135:LEU:HD13	1.11	1.05
10:B:57:GLY:HA2	10:B:213:TRP:HA	1.39	1.04
5:5:70:ILE:HD13	5:5:83:ASP:OD1	1.54	1.04
14:F:4:VAL:HG21	14:F:62:TRP:HB3	1.34	1.04
26:R:49:ILE:CD1	26:R:53:PHE:O	1.95	1.04
2:2:1160:G:H1	2:2:1176:A:N6	1.55	1.04
40:h:57:ILE:HD11	40:h:64:ILE:HG23	1.40	1.04
6:6:71:THR:HG22	6:6:74:ARG:O	0.86	1.04
6:6:192:ALA:O	6:6:195:LEU:HG	1.56	1.04
39:g:129:LEU:HD22	39:g:135:LEU:HD12	1.34	1.04
5:5:34:LEU:HD13	5:5:125:VAL:HG13	1.06	1.03
29:U:98:SER:O	29:U:99:ASN:OD1	1.73	1.03
41:i:25:VAL:CG2	41:i:28:ILE:CG2	2.32	1.03
45:m:51:VAL:HG13	45:m:59:LEU:HD13	1.36	1.03
6:6:225:THR:OG1	6:6:281:ILE:HB	1.57	1.03
16:H:28:ALA:CB	16:H:109:LYS:CG	2.14	1.03

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:k:3:HIS:ND1	43:k:95:ALA:HB2	1.74	1.03
5:5:57:LEU:HG	5:5:66:PHE:CD2	1.94	1.02
6:6:71:THR:HG23	6:6:74:ARG:H	1.22	1.02
15:G:40:THR:HG21	15:G:42:LYS:HG2	1.34	1.02
39:g:30:PHE:CZ	39:g:49:MET:CE	2.33	1.02
41:i:85:ASN:HB3	41:i:88:GLU:OE2	1.55	1.02
45:m:106:THR:HB	45:m:121:LEU:CD1	1.90	1.02
6:6:24:LYS:CG	6:6:104:VAL:HG11	1.88	1.02
40:h:57:ILE:HD13	40:h:66:VAL:HG12	1.37	1.02
56:x:13:LEU:HD12	56:x:14:HIS:H	1.19	1.02
42:j:105:ILE:HD13	42:j:123:VAL:HG12	1.02	1.01
49:q:34:CYS:CB	49:q:53:CYS:SG	2.48	1.01
57:y:71:LYS:CE	57:y:75:HIS:HE1	1.73	1.01
28:T:53:VAL:HG12	28:T:87:LEU:HD22	1.02	1.01
42:j:76:LEU:HD11	42:j:120:VAL:HG12	1.04	1.01
49:q:33:VAL:O	49:q:55:VAL:HG23	1.60	1.01
16:H:23:LEU:HD22	16:H:95:LEU:HB2	1.39	1.00
39:g:129:LEU:HA	39:g:133:GLU:HB2	1.43	1.00
42:j:115:LEU:HD13	42:j:123:VAL:HG11	1.38	1.00
49:q:21:VAL:HG11	49:q:24:LEU:HG	1.42	1.00
10:B:209:GLY:HA3	10:B:213:TRP:CZ3	1.93	1.00
47:o:54:SER:OG	47:o:58:ASN:OD1	1.78	1.00
50:r:19:LEU:O	50:r:25:VAL:CG1	2.09	1.00
6:6:18:GLY:CA	6:6:104:VAL:HG12	1.91	1.00
27:S:38:TYR:CE2	34:b:28:LEU:HD22	1.95	1.00
52:t:25:THR:CG2	52:t:70:LEU:HD13	1.84	1.00
1:1:2305:U:C6	13:E:133:ARG:CD	2.44	1.00
46:n:84:THR:HA	46:n:87:LEU:HD12	1.43	0.99
5:5:34:LEU:HD22	5:5:125:VAL:HG11	1.44	0.99
43:k:3:HIS:O	43:k:92:THR:CG2	2.10	0.99
50:r:19:LEU:O	50:r:25:VAL:HG13	1.62	0.99
39:g:30:PHE:CD1	39:g:45:LYS:HB3	1.96	0.99
2:2:198:G:H1	2:2:219:U:H3	1.06	0.99
6:6:24:LYS:HG2	6:6:104:VAL:HG11	1.01	0.99
34:b:54:VAL:HG12	34:b:55:ILE:H	1.26	0.99
26:R:58:VAL:CG1	26:R:102:SER:HB2	1.92	0.98
52:t:25:THR:CB	52:t:70:LEU:HD11	1.92	0.98
2:2:137:U:H3	2:2:226:G:H1	1.01	0.98
5:5:33:GLY:O	5:5:34:LEU:CD1	2.10	0.98
10:B:207:LYS:HE3	10:B:213:TRP:HH2	1.06	0.98
19:K:109:SER:C	19:K:110:GLU:OE1	2.07	0.98

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:h:109:PRO:O	40:h:115:LEU:HD23	0.80	0.98
40:h:112:ASP:HB3	40:h:115:LEU:CB	1.92	0.98
15:G:3:VAL:HG21	15:G:37:VAL:HG13	1.45	0.98
40:h:109:PRO:C	40:h:115:LEU:CD2	2.31	0.98
50:r:16:VAL:HG13	50:r:30:SER:HB2	1.46	0.97
56:x:47:LEU:CD1	56:x:49:ILE:HG12	1.94	0.97
16:H:28:ALA:CB	16:H:109:LYS:CD	2.42	0.97
27:S:38:TYR:HD2	34:b:28:LEU:HD21	1.17	0.97
44:l:90:GLU:OE1	44:l:92:ARG:NH2	1.97	0.97
2:2:1240:U:C5	44:l:116:MET:CE	2.47	0.97
39:g:30:PHE:CD1	39:g:45:LYS:CB	2.48	0.97
24:P:48:ILE:HG13	24:P:60:THR:HG23	1.45	0.96
6:6:220:ILE:HG21	6:6:223:ARG:CG	1.95	0.96
6:6:220:ILE:HG21	6:6:223:ARG:HG3	1.44	0.96
40:h:109:PRO:CB	40:h:115:LEU:HD21	1.96	0.96
56:x:47:LEU:HD11	56:x:49:ILE:HG12	1.47	0.96
1:1:2305:U:H5"	13:E:133:ARG:NE	1.79	0.96
22:N:33:ILE:HD13	34:b:55:ILE:HG21	1.46	0.96
24:P:48:ILE:CG1	24:P:60:THR:HG23	1.94	0.95
39:g:73:LYS:HB2	39:g:76:ALA:HB3	1.48	0.95
44:l:90:GLU:OE2	44:l:96:ARG:NH2	1.99	0.95
56:x:19:VAL:CG1	56:x:41:PHE:CZ	2.45	0.95
15:G:2:GLN:HE21	15:G:19:VAL:C	1.74	0.95
56:x:41:PHE:CE1	56:x:43:ASN:HB3	2.00	0.95
1:1:282:A:N6	1:1:359:G:C6	2.35	0.95
1:1:1907:G:H1	1:1:1923:U:H3	1.11	0.95
13:E:34:ILE:HG12	13:E:91:LEU:CD2	1.96	0.95
15:G:117:LEU:CD1	15:G:120:GLY:CA	2.45	0.95
39:g:30:PHE:HE1	39:g:45:LYS:HB3	1.21	0.95
49:q:21:VAL:HG12	49:q:24:LEU:HG	1.49	0.95
5:5:59:ARG:HD2	5:5:66:PHE:HZ	0.99	0.95
1:1:2298:A:H62	1:1:2318:G:H21	1.11	0.94
40:h:109:PRO:CB	40:h:115:LEU:CD2	2.44	0.94
44:l:72:THR:O	44:l:90:GLU:HG2	1.66	0.94
39:g:30:PHE:HZ	39:g:49:MET:HE1	0.78	0.94
43:k:3:HIS:HD1	43:k:95:ALA:HB2	1.31	0.94
15:G:2:GLN:NE2	15:G:19:VAL:C	2.25	0.94
42:j:105:ILE:CD1	42:j:123:VAL:O	2.14	0.94
6:6:140:VAL:CG1	6:6:146:LEU:HD11	1.98	0.94
6:6:170:VAL:HG11	6:6:194:PHE:HZ	1.29	0.94
42:j:12:GLN:HB3	42:j:40:GLY:O	1.67	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:j:76:LEU:HD11	42:j:120:VAL:HG11	1.48	0.94
10:B:209:GLY:C	10:B:213:TRP:CH2	2.45	0.93
15:G:2:GLN:OE1	15:G:21:VAL:CG2	2.16	0.93
36:d:44:VAL:HG23	36:d:45:SER:H	1.32	0.93
41:i:25:VAL:HG23	41:i:28:ILE:HG22	1.30	0.93
50:r:22:ILE:O	50:r:25:VAL:HG12	1.66	0.93
39:g:117:LEU:CD2	39:g:141:LEU:HD13	1.99	0.93
56:x:44:MET:HG3	56:x:47:LEU:HD21	1.50	0.93
4:4:21:C:C2	4:4:332:G:C2	2.57	0.92
5:5:34:LEU:HD11	5:5:125:VAL:HG21	0.93	0.92
10:B:207:LYS:CE	10:B:213:TRP:CH2	2.50	0.92
26:R:49:ILE:HD13	26:R:54:VAL:N	1.83	0.92
13:E:8:TYR:CA	13:E:12:VAL:CG2	2.48	0.92
6:6:16:THR:CG2	6:6:78:HIS:NE2	2.33	0.92
6:6:16:THR:HG23	6:6:78:HIS:CE1	2.04	0.92
6:6:301:HIS:CD2	6:6:391:VAL:HG21	2.05	0.92
2:2:1240:U:OP1	44:l:116:MET:HG2	1.69	0.92
16:H:23:LEU:HG	16:H:96:PHE:CE1	2.04	0.91
39:g:57:LEU:HB2	39:g:184:PHE:HE2	1.34	0.91
6:6:170:VAL:HG11	6:6:194:PHE:CZ	2.05	0.91
51:s:50:THR:CG2	56:x:13:LEU:HD22	1.99	0.91
5:5:34:LEU:CD2	5:5:65:LEU:HD22	2.00	0.91
13:E:80:ARG:N	13:E:83:TYR:HD2	1.67	0.91
22:N:33:ILE:CD1	34:b:55:ILE:HG21	2.00	0.91
54:v:21:ILE:HG22	54:v:46:VAL:HG21	1.16	0.91
41:i:25:VAL:HG23	41:i:28:ILE:HG21	1.48	0.91
52:t:25:THR:HG21	52:t:70:LEU:HD13	0.93	0.91
18:J:135:GLN:C	18:J:136:GLN:OE1	2.14	0.91
1:1:997:G:OP1	25:Q:92:ARG:HG2	1.69	0.90
41:i:19:LEU:O	41:i:20:PHE:CG	2.24	0.90
27:S:55:ILE:O	27:S:59:GLU:HG2	1.70	0.90
29:U:49:VAL:HG11	29:U:52:LEU:O	1.71	0.90
5:5:34:LEU:CD1	5:5:125:VAL:HG22	2.01	0.90
5:5:34:LEU:HD21	5:5:90:LEU:CD2	2.01	0.90
44:l:90:GLU:OE2	44:l:91:VAL:O	1.88	0.90
54:v:21:ILE:HG23	54:v:46:VAL:CG2	1.99	0.90
2:2:1233:G:H5'	46:n:119:ARG:HH22	1.36	0.90
46:n:83:ILE:HG22	46:n:87:LEU:HD11	1.53	0.90
10:B:158:ALA:O	10:B:195:VAL:CG2	2.20	0.90
13:E:34:ILE:HD13	13:E:156:ILE:HG22	1.54	0.90
5:5:57:LEU:HD12	5:5:66:PHE:HE2	1.37	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:n:83:ILE:O	46:n:87:LEU:CG	2.17	0.89
39:g:97:LEU:HD12	39:g:97:LEU:O	1.71	0.89
41:i:48:LEU:HD22	41:i:52:GLY:HA3	1.53	0.89
1:1:2526:G:H1	1:1:2537:U:H3	0.92	0.89
6:6:245:VAL:CG1	6:6:291:VAL:HG23	2.01	0.89
1:1:1252:G:O6	25:Q:36:PHE:CE2	2.26	0.89
6:6:195:LEU:HD12	6:6:196:ASP:N	1.86	0.89
2:2:1160:G:H1	2:2:1176:A:H61	1.09	0.89
5:5:33:GLY:C	5:5:34:LEU:HD12	1.98	0.89
6:6:192:ALA:HA	6:6:195:LEU:CD2	2.02	0.89
26:R:58:VAL:HG11	26:R:102:SER:HB2	1.51	0.89
2:2:1060:U:O2'	47:o:58:ASN:ND2	2.05	0.89
54:v:21:ILE:HG22	54:v:46:VAL:HG22	1.40	0.89
2:2:437:U:C1'	41:i:154:ARG:CZ	2.41	0.88
54:v:21:ILE:HG22	54:v:46:VAL:HG23	0.89	0.88
21:M:71:LYS:HB3	21:M:93:VAL:O	1.73	0.88
45:m:51:VAL:CG1	45:m:59:LEU:CD1	2.51	0.88
13:E:8:TYR:CA	13:E:12:VAL:HG22	2.03	0.88
39:g:30:PHE:CE1	39:g:45:LYS:CB	2.56	0.88
13:E:34:ILE:HD11	13:E:156:ILE:CG2	1.96	0.87
16:H:28:ALA:HB2	16:H:109:LYS:CD	2.02	0.87
2:2:1149:C:OP1	46:n:11:ARG:CZ	2.23	0.87
6:6:71:THR:CG2	6:6:74:ARG:H	1.87	0.87
1:1:728:G:H4'	10:B:13:ARG:HH21	1.36	0.87
6:6:242:VAL:HG13	6:6:293:ALA:O	1.72	0.87
49:q:21:VAL:HG11	49:q:24:LEU:CG	2.04	0.87
49:q:54:ARG:HD3	49:q:64:THR:CG2	2.05	0.87
34:b:55:ILE:HD12	34:b:56:ALA:N	1.88	0.87
42:j:15:LEU:HB3	42:j:37:THR:HG22	1.56	0.87
16:H:59:LEU:HB3	16:H:62:ARG:HB2	1.56	0.87
53:u:4:ILE:HG12	53:u:21:VAL:HG12	1.57	0.87
14:F:12:PRO:O	14:F:15:VAL:HG22	1.74	0.87
40:h:109:PRO:CA	40:h:115:LEU:CD2	2.53	0.87
2:2:950:U:H3	2:2:1231:G:H1	0.88	0.86
5:5:34:LEU:HD22	5:5:65:LEU:HD22	1.56	0.86
6:6:220:ILE:CG2	6:6:223:ARG:CG	2.52	0.86
2:2:148:G:H1	2:2:174:A:H61	1.21	0.86
41:i:117:LEU:CD2	41:i:154:ARG:HD3	2.03	0.86
1:1:2305:U:H6	13:E:133:ARG:HD2	1.31	0.86
7:7:32:PSU:H3'	46:n:130:ARG:HH11	1.36	0.86
2:2:963:G:N2	47:o:57:VAL:HG11	1.90	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:r:16:VAL:HG13	50:r:30:SER:CB	2.05	0.86
15:G:75:LEU:CD1	15:G:77:THR:H	1.88	0.86
24:P:48:ILE:HG13	24:P:60:THR:HG21	1.57	0.86
39:g:117:LEU:CD2	39:g:140:GLU:OE2	2.23	0.86
4:4:18:C:O2'	5:5:93:ASN:ND2	2.06	0.86
50:r:16:VAL:HG11	50:r:27:LYS:HD3	1.57	0.86
6:6:170:VAL:CG1	6:6:194:PHE:CZ	2.58	0.86
13:E:80:ARG:N	13:E:83:TYR:CD2	2.17	0.86
15:G:2:GLN:HE22	15:G:21:VAL:HG13	1.39	0.86
5:5:34:LEU:CG	5:5:125:VAL:HG11	2.05	0.86
6:6:133:PHE:HA	6:6:170:VAL:HG23	1.56	0.86
6:6:97:GLN:HE22	6:6:230:ARG:CB	1.89	0.85
6:6:334:THR:HG23	6:6:335:THR:H	1.39	0.85
40:h:57:ILE:HD11	40:h:64:ILE:HG22	0.86	0.85
6:6:140:VAL:HG11	6:6:146:LEU:HD11	1.58	0.85
13:E:8:TYR:HA	13:E:12:VAL:HG21	1.57	0.85
56:x:47:LEU:HD11	56:x:49:ILE:CG1	2.05	0.85
45:m:52:GLU:OE2	45:m:60:GLU:OE2	1.94	0.85
5:5:59:ARG:CG	5:5:66:PHE:CE2	2.60	0.85
14:F:4:VAL:HG21	14:F:62:TRP:CB	2.07	0.85
1:1:2305:U:C5	13:E:133:ARG:HD2	2.12	0.84
10:B:158:ALA:O	10:B:195:VAL:HG23	1.76	0.84
2:2:1240:U:H5	44:l:116:MET:HE2	1.10	0.84
16:H:28:ALA:HB1	16:H:109:LYS:CD	2.04	0.84
13:E:80:ARG:H	13:E:83:TYR:HD2	1.18	0.84
39:g:30:PHE:HD1	39:g:45:LYS:HB2	1.41	0.84
39:g:117:LEU:HD21	39:g:140:GLU:OE2	1.77	0.84
44:l:16:PRO:HB3	46:n:43:THR:OG1	1.78	0.84
5:5:34:LEU:HD13	5:5:125:VAL:CB	2.08	0.84
15:G:40:THR:HG22	15:G:42:LYS:HG2	1.57	0.83
13:E:8:TYR:C	13:E:12:VAL:CG2	2.45	0.83
15:G:19:VAL:HG12	15:G:20:ASN:H	1.44	0.83
16:H:23:LEU:HD22	16:H:95:LEU:HB3	1.58	0.83
42:j:44:GLY:CA	42:j:74:VAL:HG22	2.07	0.83
43:k:3:HIS:HE1	43:k:92:THR:O	1.61	0.83
49:q:21:VAL:HG11	49:q:24:LEU:CD1	2.08	0.83
5:5:96:GLU:O	5:5:100:LEU:HB2	1.77	0.83
16:H:28:ALA:CA	16:H:109:LYS:HG3	2.08	0.83
2:2:151:A:N7	2:2:170:U:O2	2.12	0.83
18:J:136:GLN:O	18:J:136:GLN:HG2	1.78	0.83
45:m:51:VAL:HG13	45:m:59:LEU:CD1	2.08	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:k:3:HIS:HE1	43:k:95:ALA:N	1.76	0.83
45:m:51:VAL:HG12	45:m:59:LEU:HD13	1.60	0.83
5:5:57:LEU:CD1	5:5:66:PHE:CE2	2.61	0.83
15:G:40:THR:HG21	15:G:42:LYS:CG	2.09	0.83
35:c:47:VAL:HG12	35:c:48:ILE:N	1.94	0.83
56:x:19:VAL:HG11	56:x:41:PHE:CE1	2.14	0.83
56:x:44:MET:HE3	56:x:47:LEU:CD2	2.08	0.83
6:6:71:THR:HG23	6:6:74:ARG:N	1.93	0.83
39:g:100:MET:HA	39:g:107:VAL:HG21	1.61	0.82
13:E:34:ILE:CG1	13:E:91:LEU:CD2	2.57	0.82
16:H:28:ALA:CB	16:H:109:LYS:HE2	2.07	0.82
56:x:13:LEU:CD1	56:x:14:HIS:H	1.90	0.82
10:B:209:GLY:O	10:B:213:TRP:CD2	2.32	0.82
1:1:1475:G:H1'	1:1:1732:C:H41	1.44	0.82
39:g:129:LEU:CD1	39:g:132:LYS:C	2.53	0.82
5:5:34:LEU:CD2	5:5:90:LEU:HD23	2.10	0.82
20:L:92:LEU:CD1	20:L:106:GLU:O	2.27	0.82
42:j:76:LEU:HD23	42:j:77:ASN:C	2.03	0.82
43:k:3:HIS:ND1	43:k:95:ALA:CB	2.42	0.82
49:q:21:VAL:CG1	49:q:24:LEU:CG	2.58	0.82
21:M:58:LYS:C	21:M:60:GLN:N	2.33	0.82
28:T:53:VAL:HG11	28:T:87:LEU:CD2	2.06	0.82
2:2:1423:G:H1	2:2:1477:U:H3	1.26	0.82
15:G:19:VAL:HG12	15:G:20:ASN:N	1.94	0.82
56:x:47:LEU:CD1	56:x:49:ILE:HG23	2.10	0.82
6:6:190:GLU:O	6:6:194:PHE:CD2	2.32	0.81
2:2:1240:U:P	44:l:116:MET:HG2	2.20	0.81
29:U:98:SER:O	29:U:99:ASN:CG	2.22	0.81
41:i:119:SER:HA	41:i:131:ASN:OD1	1.80	0.81
2:2:437:U:O4'	41:i:154:ARG:NH2	2.13	0.81
47:o:88:MET:O	47:o:89:ARG:CG	2.26	0.81
5:5:59:ARG:HG2	5:5:66:PHE:CE2	2.15	0.81
14:F:4:VAL:CG2	14:F:62:TRP:HB3	2.11	0.81
17:I:78:LEU:HD12	17:I:112:LYS:NZ	1.95	0.81
42:j:76:LEU:HD11	42:j:120:VAL:HG13	1.00	0.81
5:5:34:LEU:CD1	5:5:125:VAL:CB	2.59	0.81
6:6:191:LEU:HG	6:6:194:PHE:HZ	1.45	0.81
35:c:47:VAL:HG12	35:c:48:ILE:H	1.45	0.81
16:H:59:LEU:HG	16:H:62:ARG:H	1.46	0.81
10:B:159:GLY:HA2	10:B:195:VAL:CG2	2.11	0.80
39:g:117:LEU:HD22	39:g:141:LEU:CD1	2.11	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:k:3:HIS:C	43:k:92:THR:CG2	2.53	0.80
14:F:103:ILE:HG12	14:F:117:LEU:HD21	1.60	0.80
28:T:53:VAL:HG11	28:T:87:LEU:CD1	2.12	0.80
6:6:220:ILE:CG2	6:6:223:ARG:HB2	2.11	0.80
54:v:21:ILE:HG21	54:v:46:VAL:HG21	1.62	0.80
16:H:23:LEU:HD21	16:H:96:PHE:CD1	2.17	0.80
49:q:37:VAL:HG22	49:q:53:CYS:SG	2.21	0.80
1:1:2439:A:H1'	1:1:2441:U:OP2	1.82	0.80
1:1:2802:G:H2'	1:1:2803:G:H8	1.46	0.80
1:1:45:G:H5''	1:1:46:G:H5'	1.64	0.80
5:5:57:LEU:CD1	5:5:66:PHE:HE2	1.94	0.80
1:1:647:G:H21	1:1:2351:G:H5'	1.47	0.79
50:r:4:ILE:HG22	50:r:5:ALA:N	1.96	0.79
56:x:41:PHE:HE1	56:x:43:ASN:HB3	1.42	0.79
43:k:51:ILE:O	43:k:52:ASN:OD1	2.00	0.79
2:2:437:U:H1'	41:i:154:ARG:NH1	1.96	0.79
4:4:210:C:HO2'	4:4:220:G:H1	1.28	0.79
22:N:57:THR:CG2	22:N:62:ASN:ND2	2.46	0.79
2:2:664:G:H22	2:2:741:G:H1	1.29	0.79
43:k:52:ASN:O	43:k:53:LYS:CG	2.27	0.79
6:6:334:THR:HG23	6:6:335:THR:N	1.97	0.79
41:i:17:THR:OG1	41:i:19:LEU:CG	2.30	0.79
14:F:37:LEU:HB3	14:F:41:VAL:HG21	1.63	0.79
2:2:589:U:H3	2:2:650:G:H1	1.30	0.79
6:6:192:ALA:HA	6:6:195:LEU:HD23	1.63	0.79
6:6:216:ASP:HB3	6:6:228:THR:CG2	2.13	0.79
50:r:22:ILE:HB	50:r:25:VAL:HG11	1.65	0.79
41:i:21:LEU:HD22	41:i:28:ILE:CD1	2.13	0.79
44:l:107:ALA:HB2	44:l:133:THR:HG23	1.64	0.79
15:G:2:GLN:CG	15:G:19:VAL:O	2.31	0.79
42:j:154:ALA:HB1	42:j:159:LYS:HB2	1.65	0.79
4:4:18:C:H2'	5:5:93:ASN:CG	2.08	0.78
50:r:19:LEU:O	50:r:25:VAL:HG11	1.82	0.78
11:C:186:LEU:HD21	24:P:4:ILE:HG21	1.64	0.78
27:S:38:TYR:CD2	34:b:28:LEU:HD22	2.14	0.78
31:X:8:THR:OG1	31:X:10:LYS:CG	2.31	0.78
39:g:30:PHE:CZ	39:g:49:MET:SD	2.77	0.78
1:1:1915:3TD:H2'	1:1:1916:A:H8	1.49	0.78
7:7:56:C:O3'	13:E:83:TYR:OH	2.01	0.78
20:L:92:LEU:HD13	20:L:106:GLU:O	1.83	0.78
13:E:8:TYR:CA	13:E:12:VAL:HG21	2.13	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:M:60:GLN:O	21:M:108:VAL:HG12	1.83	0.78
2:2:509:A:OP2	41:i:48:LEU:HD11	1.83	0.78
1:1:136:G:C6	1:1:144:A:N6	2.51	0.78
6:6:133:PHE:HD1	6:6:170:VAL:HG23	1.49	0.78
6:6:278:LEU:HB2	6:6:281:ILE:HG13	1.66	0.78
21:M:58:LYS:C	21:M:60:GLN:H	1.91	0.78
1:1:729:G:C8	10:B:207:LYS:HD2	2.19	0.77
6:6:170:VAL:HG11	6:6:191:LEU:HG	1.67	0.77
42:j:76:LEU:CD1	42:j:120:VAL:HG11	2.04	0.77
45:m:50:LYS:HB2	45:m:60:GLU:OE2	1.84	0.77
51:s:50:THR:CG2	56:x:13:LEU:CD2	2.59	0.77
2:2:1240:U:H5	44:l:116:MET:CE	1.89	0.77
6:6:245:VAL:HG12	6:6:291:VAL:HG23	1.66	0.77
40:h:57:ILE:HD13	40:h:66:VAL:CG1	2.15	0.77
45:m:106:THR:HB	45:m:121:LEU:HD13	1.66	0.77
13:E:34:ILE:CD1	13:E:156:ILE:HG23	2.14	0.77
1:1:1270:C:H5''	1:1:1271:G:H5'	1.65	0.77
42:j:44:GLY:HA2	42:j:74:VAL:CG2	2.15	0.77
1:1:475:C:O2	1:1:479:A:N6	2.18	0.77
2:2:148:G:H1	2:2:174:A:N6	1.83	0.77
41:i:117:LEU:HD21	41:i:154:ARG:HD2	1.65	0.77
2:2:1377:A:N6	44:l:7:ILE:HG21	2.00	0.77
14:F:3:ARG:HG3	14:F:4:VAL:H	1.50	0.77
42:j:76:LEU:HD13	42:j:120:VAL:HG13	1.62	0.76
1:1:2298:A:H62	1:1:2318:G:N2	1.82	0.76
2:2:152:A:N6	2:2:169:C:C2	2.54	0.76
4:4:137:C:OP2	4:4:138:C:N4	2.18	0.76
42:j:76:LEU:HD12	42:j:120:VAL:CG1	2.11	0.76
27:S:59:GLU:OE2	27:S:66:ILE:HG13	1.85	0.76
56:x:13:LEU:CD1	56:x:14:HIS:N	2.43	0.76
39:g:129:LEU:HB2	39:g:134:ALA:HB3	1.67	0.76
5:5:157:ASN:HD21	42:j:15:LEU:HD21	1.49	0.76
15:G:75:LEU:HD12	15:G:76:GLU:N	2.00	0.76
50:r:16:VAL:O	50:r:20:THR:HG23	1.85	0.76
54:v:28:PHE:CE1	54:v:37:PHE:C	2.62	0.76
2:2:358:U:H2'	2:2:359:G:H8	1.50	0.76
41:i:85:ASN:O	41:i:88:GLU:CD	2.29	0.76
54:v:21:ILE:HG23	54:v:46:VAL:HG22	1.63	0.76
5:5:34:LEU:HD22	5:5:125:VAL:CG1	2.16	0.76
19:K:109:SER:O	19:K:110:GLU:CD	2.29	0.76
39:g:129:LEU:HA	39:g:133:GLU:CB	2.15	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:x:41:PHE:HD1	56:x:43:ASN:H	1.34	0.76
13:E:8:TYR:O	13:E:12:VAL:HG23	1.84	0.76
2:2:1003:G:N2	2:2:1037:C:O2	2.18	0.75
13:E:8:TYR:CG	13:E:12:VAL:HG21	2.21	0.75
26:R:49:ILE:HG12	26:R:52:PRO:C	2.11	0.75
15:G:117:LEU:HD11	15:G:120:GLY:HA3	1.67	0.75
56:x:44:MET:CG	56:x:47:LEU:HD21	2.17	0.75
1:1:463:G:N2	1:1:466:A:OP2	2.18	0.75
1:1:2857:G:N2	1:1:2860:A:OP2	2.19	0.75
10:B:210:ALA:HA	10:B:213:TRP:CZ2	2.21	0.75
43:k:4:TYR:CD1	43:k:92:THR:HG23	2.20	0.75
51:s:54:ASP:HA	51:s:59:ARG:HG2	1.68	0.75
1:1:1723:G:O6	1:1:1737:G:N2	2.19	0.75
1:1:2305:U:C5	13:E:133:ARG:CD	2.70	0.75
10:B:210:ALA:N	10:B:213:TRP:CH2	2.54	0.75
6:6:140:VAL:HG13	6:6:146:LEU:HD11	1.68	0.75
1:1:511:U:H4'	1:1:1235:G:H4'	1.67	0.75
25:Q:36:PHE:CZ	25:Q:40:ILE:HD11	2.21	0.75
34:b:55:ILE:HD12	34:b:56:ALA:H	1.49	0.75
27:S:38:TYR:HD2	34:b:28:LEU:CD2	1.85	0.75
29:U:49:VAL:HG13	29:U:52:LEU:O	1.83	0.75
3:3:8:C:N3	3:3:112:G:N1	2.30	0.75
4:4:22:G:C6	4:4:332:G:C2	2.75	0.75
2:2:1444:U:O2	2:2:1458:G:O6	2.05	0.75
41:i:17:THR:HG1	41:i:19:LEU:HG	1.49	0.75
2:2:1149:C:OP1	46:n:11:ARG:NH1	2.19	0.74
2:2:1233:G:O5'	46:n:119:ARG:NH1	2.17	0.74
2:2:376:G:H1	2:2:387:U:H3	1.34	0.74
3:3:8:C:O2	3:3:112:G:N2	2.15	0.74
41:i:54:GLN:HG2	41:i:199:LEU:HB3	1.69	0.74
48:p:101:ASN:ND2	58:z:12:PHE:HB2	1.99	0.74
34:b:55:ILE:CD1	34:b:56:ALA:H	2.00	0.74
2:2:1149:C:P	46:n:11:ARG:CZ	2.76	0.74
41:i:85:ASN:C	41:i:88:GLU:OE2	2.30	0.74
1:1:729:G:C5	10:B:207:LYS:HB2	2.22	0.74
4:4:339:G:H1	4:4:349:C:H42	1.35	0.74
13:E:34:ILE:CG1	13:E:91:LEU:HD22	2.18	0.74
6:6:191:LEU:HA	6:6:194:PHE:HE2	0.95	0.74
6:6:254:THR:HG21	6:6:279:ARG:CZ	2.18	0.74
13:E:34:ILE:HD12	13:E:156:ILE:CG2	2.17	0.74
1:1:1307:A:N6	1:1:1606:C:O2	2.21	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:204:G:H1'	2:2:465:A:H62	1.52	0.74
6:6:97:GLN:NE2	6:6:230:ARG:CB	2.50	0.74
18:J:135:GLN:O	18:J:136:GLN:CD	2.31	0.74
5:5:57:LEU:HD12	5:5:66:PHE:CE2	2.23	0.74
15:G:2:GLN:HG2	15:G:19:VAL:O	1.88	0.74
41:i:21:LEU:HD12	41:i:22:LYS:O	1.87	0.74
1:1:1252:G:C6	25:Q:36:PHE:CD2	2.75	0.74
6:6:133:PHE:CD1	6:6:170:VAL:HG23	2.23	0.74
56:x:47:LEU:HD13	56:x:49:ILE:CG2	2.13	0.74
2:2:1026:G:O6	2:2:1035:A:N1	2.20	0.73
3:3:72:G:H21	3:3:104:A:H62	1.36	0.73
15:G:117:LEU:HD13	15:G:120:GLY:HA2	1.67	0.73
49:q:33:VAL:HG23	49:q:78:SER:C	2.12	0.73
22:N:57:THR:HG23	22:N:62:ASN:ND2	2.01	0.73
4:4:194:G:H3'	4:4:195:A:H5''	1.70	0.73
15:G:3:VAL:HG21	15:G:37:VAL:CG1	2.18	0.73
26:R:58:VAL:HG13	26:R:102:SER:HB2	1.70	0.73
41:i:21:LEU:CD1	41:i:22:LYS:O	2.36	0.73
1:1:698:C:O2'	1:1:734:A:N6	2.20	0.73
6:6:71:THR:HG22	6:6:74:ARG:C	2.02	0.73
39:g:117:LEU:CD2	39:g:141:LEU:CD1	2.66	0.73
41:i:85:ASN:CG	41:i:88:GLU:OE1	2.30	0.73
2:2:1001:C:O2'	2:2:1002:G:N7	2.20	0.73
2:2:1233:G:C5'	46:n:119:ARG:HH12	2.02	0.73
13:E:8:TYR:HA	13:E:12:VAL:HG22	1.59	0.73
15:G:40:THR:HG22	15:G:42:LYS:H	1.53	0.73
28:T:44:LYS:HG3	28:T:55:VAL:HG11	1.69	0.73
39:g:129:LEU:HD13	39:g:134:ALA:N	2.02	0.73
15:G:75:LEU:HD12	15:G:77:THR:N	2.01	0.73
1:1:997:G:OP1	25:Q:92:ARG:CG	2.36	0.73
2:2:988:G:H1	2:2:1217:C:H42	1.35	0.73
49:q:54:ARG:HD2	49:q:64:THR:HG22	0.77	0.73
56:x:44:MET:HE3	56:x:47:LEU:HD21	1.69	0.73
1:1:1235:G:H2'	1:1:1236:G:C4	2.24	0.73
11:C:181:ASP:OD1	11:C:183:GLU:CD	2.32	0.73
5:5:70:ILE:CD1	5:5:83:ASP:OD1	2.36	0.72
22:N:22:ARG:HG3	22:N:70:THR:HA	1.71	0.72
1:1:279:A:N6	1:1:361:G:O2'	2.23	0.72
13:E:67:ILE:HA	13:E:87:CYS:HA	1.71	0.72
1:1:139:U:H1'	1:1:141:G:H22	1.52	0.72
6:6:278:LEU:CB	6:6:281:ILE:HG13	2.19	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:F:3:ARG:HH11	14:F:4:VAL:HG12	1.53	0.72
42:j:76:LEU:HD12	42:j:120:VAL:HG13	1.65	0.72
49:q:37:VAL:CG2	49:q:53:CYS:SG	2.77	0.72
15:G:117:LEU:CD1	15:G:120:GLY:N	2.49	0.72
45:m:11:LEU:HD22	45:m:75:ILE:HD11	1.70	0.72
1:1:1476:U:O2	1:1:1515:A:N7	2.22	0.72
17:I:78:LEU:HD12	17:I:112:LYS:HZ1	1.53	0.72
41:i:145:ILE:HB	41:i:178:MET:HB3	1.71	0.72
46:n:25:ASN:HB3	46:n:62:ASP:HB2	1.70	0.72
6:6:97:GLN:NE2	6:6:230:ARG:HB2	2.04	0.72
24:P:48:ILE:HG12	24:P:60:THR:HG23	1.70	0.72
49:q:46:ASN:ND2	49:q:89:OTD:SB	2.63	0.72
7:7:56:C:C3'	13:E:83:TYR:OH	2.38	0.72
16:H:51:TYR:HE2	16:H:88:HIS:HE2	1.37	0.72
56:x:79:THR:HG23	56:x:79:THR:O	1.90	0.72
2:2:416:G:H1	2:2:427:U:H3	1.38	0.71
15:G:117:LEU:CD1	15:G:120:GLY:HA3	2.17	0.71
39:g:129:LEU:CD2	39:g:135:LEU:HD13	1.89	0.71
1:1:1470:A:H62	1:1:1521:G:H21	1.38	0.71
2:2:1003:G:N1	2:2:1037:C:N3	2.34	0.71
6:6:93:THR:O	6:6:97:GLN:HG2	1.91	0.71
1:1:713:G:OP2	52:t:89:ARG:NE	2.23	0.71
2:2:1266:G:N2	2:2:1269:A:OP2	2.21	0.71
6:6:245:VAL:HG13	6:6:291:VAL:CG2	2.20	0.71
42:j:131:THR:HG23	42:j:131:THR:O	1.89	0.71
2:2:437:U:O2'	41:i:154:ARG:NH1	2.23	0.71
2:2:1290:G:O2'	46:n:41:ARG:NH1	2.24	0.71
4:4:201:C:N4	4:4:230:U:OP1	2.22	0.71
15:G:2:GLN:CD	15:G:21:VAL:H	1.98	0.71
21:M:58:LYS:O	21:M:60:GLN:N	2.24	0.71
24:P:49:ALA:N	24:P:60:THR:HG22	2.05	0.71
48:p:23:ILE:HG12	48:p:96:THR:CG2	2.15	0.71
56:x:47:LEU:HD11	56:x:49:ILE:CD1	2.21	0.71
2:2:77:A:H61	2:2:78:A:H62	1.38	0.71
4:4:21:C:C2	4:4:332:G:N2	2.59	0.71
15:G:2:GLN:CD	15:G:21:VAL:N	2.49	0.71
40:h:109:PRO:CB	40:h:115:LEU:HD22	2.20	0.71
2:2:454:G:H1	2:2:478:A:H61	1.38	0.71
2:2:1160:G:N1	2:2:1176:A:N6	2.29	0.71
2:2:1097:C:H4'	39:g:139:ARG:HH21	1.55	0.71
10:B:159:GLY:CA	10:B:195:VAL:CG2	2.69	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:E:34:ILE:H	13:E:91:LEU:HB3	1.56	0.71
1:1:2476:A:O2'	1:1:2480:C:N4	2.24	0.71
6:6:245:VAL:CG1	6:6:291:VAL:CG2	2.69	0.70
46:n:29:VAL:HG12	46:n:63:LEU:O	1.91	0.70
46:n:83:ILE:C	46:n:87:LEU:HG	2.12	0.70
57:y:71:LYS:NZ	57:y:75:HIS:CE1	2.59	0.70
2:2:945:G:N2	2:2:1334:G:O2'	2.24	0.70
35:c:47:VAL:CG1	35:c:48:ILE:H	2.03	0.70
2:2:437:U:H1'	41:i:154:ARG:HH22	0.63	0.70
2:2:439:U:HO2'	41:i:131:ASN:HD21	1.34	0.70
2:2:673:A:H2'	2:2:674:G:C8	2.25	0.70
15:G:72:ILE:O	15:G:75:LEU:HD23	1.91	0.70
49:q:33:VAL:HG23	49:q:78:SER:O	1.92	0.70
1:1:2853:C:N4	1:1:2854:G:O6	2.25	0.70
2:2:687:A:C6	2:2:701:U:C2	2.79	0.70
6:6:212:LEU:HD12	6:6:231:VAL:HG22	1.74	0.70
16:H:59:LEU:CD2	16:H:62:ARG:CD	2.70	0.70
31:X:37:ARG:HG2	31:X:48:THR:HG22	1.72	0.70
1:1:900:A:OP2	1:1:902:C:N4	2.25	0.70
2:2:106:C:H2'	2:2:107:G:C8	2.26	0.70
2:2:1350:A:N7	46:n:120:LYS:NZ	2.40	0.70
45:m:106:THR:CB	45:m:121:LEU:CD1	2.68	0.70
54:v:21:ILE:CG2	54:v:46:VAL:HG23	1.85	0.70
1:1:1019:U:O2'	1:1:1021:A:N7	2.23	0.70
1:1:2229:U:O2	31:X:34:HIS:NE2	2.25	0.70
6:6:106:ALA:HA	6:6:135:ASN:CG	2.17	0.70
42:j:97:GLN:HB3	42:j:124:LEU:HB2	1.74	0.70
45:m:106:THR:HB	45:m:121:LEU:HD11	1.73	0.70
2:2:214:C:N3	2:2:215:C:N4	2.38	0.70
34:b:28:LEU:HD23	34:b:39:LEU:HD23	1.73	0.70
47:o:54:SER:HB3	47:o:58:ASN:HD21	1.56	0.70
1:1:282:A:N6	1:1:359:G:C5	2.60	0.69
30:V:20:LEU:HG	30:V:25:LYS:HG3	1.74	0.69
1:1:1489:C:O2'	1:1:1501:G:N2	2.26	0.69
2:2:1160:G:H5''	39:g:131:LYS:HD3	1.73	0.69
7:7:56:C:H4'	13:E:83:TYR:CZ	2.26	0.69
10:B:158:ALA:C	10:B:195:VAL:HG21	2.17	0.69
24:P:78:SER:O	24:P:81:VAL:HG12	1.92	0.69
36:d:44:VAL:HG23	36:d:45:SER:N	2.06	0.69
39:g:222:ARG:O	39:g:226:SER:HB3	1.91	0.69
4:4:31:G:OP1	4:4:321:G:N2	2.25	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:B:159:GLY:CA	10:B:195:VAL:HG23	2.17	0.69
17:I:110:GLN:HG3	17:I:121:ILE:HD12	1.72	0.69
44:l:5:ARG:HG2	44:l:7:ILE:CD1	2.22	0.69
1:1:571:U:N3	1:1:575:A:N7	2.40	0.69
1:1:2581:G:OP2	1:1:2581:G:N2	2.20	0.69
2:2:674:G:H2'	2:2:675:A:H8	1.58	0.69
1:1:629:G:N3	1:1:639:U:O2'	2.25	0.69
1:1:1433:A:H61	1:1:1560:G:H1	0.74	0.69
2:2:1261:A:N6	2:2:1274:A:O2'	2.26	0.69
51:s:6:MET:HB3	51:s:63:ARG:HH12	1.58	0.69
8:8:14:U:O2'	8:8:15:U:O5'	2.09	0.69
10:B:158:ALA:C	10:B:195:VAL:CG2	2.65	0.69
14:F:4:VAL:O	14:F:4:VAL:HG13	1.91	0.69
1:1:212:G:H2'	1:1:213:A:C8	2.28	0.69
1:1:1597:A:H5''	1:1:1598:A:H5'	1.75	0.69
2:2:1233:G:P	46:n:119:ARG:HH12	2.15	0.69
5:5:34:LEU:HG	5:5:89:LYS:O	1.93	0.69
6:6:97:GLN:HE22	6:6:230:ARG:HB3	1.56	0.69
6:6:190:GLU:O	6:6:194:PHE:HD2	1.75	0.69
39:g:117:LEU:HD23	39:g:141:LEU:HD13	1.72	0.69
40:h:11:ARG:NH1	40:h:177:THR:O	2.25	0.69
1:1:2530:A:O2'	1:1:2534:A:N6	2.26	0.69
56:x:44:MET:HE3	56:x:47:LEU:HD22	1.75	0.69
2:2:713:G:H2'	2:2:714:G:C8	2.27	0.69
10:B:207:LYS:HE3	10:B:213:TRP:CZ3	2.25	0.69
44:l:24:ALA:O	44:l:28:ASN:ND2	2.26	0.69
45:m:51:VAL:HG12	45:m:59:LEU:CD1	2.19	0.69
6:6:16:THR:CG2	6:6:78:HIS:CE1	2.76	0.68
40:h:14:ILE:HG22	40:h:15:VAL:HG13	1.75	0.68
6:6:133:PHE:HD1	6:6:170:VAL:CG2	2.06	0.68
6:6:216:ASP:HB3	6:6:228:THR:HG21	1.75	0.68
1:1:987:C:O2'	1:1:1000:A:N3	2.27	0.68
1:1:2305:U:C5'	13:E:133:ARG:HE	1.89	0.68
2:2:1175:G:H2'	2:2:1176:A:H8	1.56	0.68
40:h:63:SER:O	40:h:64:ILE:HD13	1.93	0.68
1:1:877:A:H61	1:1:899:A:H2'	1.57	0.68
1:1:397:U:OP2	31:X:10:LYS:NZ	2.25	0.68
2:2:213:G:OP2	2:2:214:C:N4	2.26	0.68
12:D:119:ILE:HB	12:D:187:VAL:HG12	1.76	0.68
46:n:29:VAL:HG13	46:n:29:VAL:O	1.94	0.68
1:1:1288:G:OP2	1:1:1288:G:N2	2.22	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1432:G:H2'	1:1:1433:A:H8	1.58	0.68
2:2:1123:U:H2'	2:2:1124:G:C8	2.29	0.68
3:3:12:C:H41	9:A:71:VAL:HB	1.59	0.68
3:3:45:A:H8	13:E:92:ARG:HG2	1.58	0.68
4:4:83:A:H4'	4:4:92:A:H61	1.57	0.68
6:6:132:VAL:O	6:6:170:VAL:HG22	1.93	0.68
43:k:3:HIS:CE1	43:k:92:THR:O	2.44	0.68
2:2:212:G:H2'	2:2:213:G:C8	2.29	0.68
15:G:2:GLN:NE2	15:G:21:VAL:HG13	2.07	0.68
42:j:11:LEU:O	42:j:40:GLY:O	2.11	0.68
4:4:17:U:H2'	4:4:20:A:H61	1.59	0.68
43:k:51:ILE:O	43:k:52:ASN:CG	2.36	0.68
46:n:29:VAL:CG1	46:n:64:TYR:HA	2.24	0.68
1:1:465:G:H21	1:1:684:G:H1'	1.58	0.68
1:1:1914:C:O2'	5:5:14:ILE:N	2.26	0.68
2:2:126:G:OP1	2:2:605:U:O2'	2.12	0.68
2:2:1377:A:C6	44:l:7:ILE:HG21	2.29	0.68
26:R:58:VAL:HG13	26:R:58:VAL:O	1.94	0.68
50:r:87:ARG:HG3	50:r:97:VAL:HG11	1.75	0.68
1:1:24:G:H1'	27:S:77:ASP:HB3	1.75	0.68
2:2:392:C:H2'	2:2:393:A:H8	1.59	0.68
14:F:3:ARG:NH1	14:F:4:VAL:HG12	2.08	0.68
18:J:135:GLN:C	18:J:136:GLN:CD	2.62	0.68
29:U:4:LYS:HB3	29:U:83:VAL:CG1	2.24	0.68
41:i:85:ASN:CA	41:i:88:GLU:CD	2.59	0.68
49:q:33:VAL:HA	49:q:78:SER:O	1.94	0.68
56:x:44:MET:HG3	56:x:47:LEU:CD2	2.22	0.68
56:x:47:LEU:CD1	56:x:49:ILE:CG1	2.69	0.68
1:1:743:A:O2'	1:1:1659:G:OP1	2.12	0.67
1:1:1434:A:H61	1:1:1558:C:H42	1.40	0.67
4:4:54:G:N2	4:4:56:C:OP2	2.27	0.67
6:6:220:ILE:CG2	6:6:223:ARG:CB	2.72	0.67
6:6:247:ILE:HG22	6:6:364:HIS:HB3	1.77	0.67
39:g:73:LYS:HE2	39:g:165:ASP:CB	2.25	0.67
2:2:1001:C:OP1	2:2:1032:G:O2'	2.11	0.67
4:4:22:G:C6	4:4:332:G:N2	2.62	0.67
15:G:19:VAL:CG1	15:G:20:ASN:H	2.06	0.67
1:1:1742:U:H2'	1:1:1743:G:H8	1.58	0.67
2:2:991:U:O2	2:2:1213:A:N7	2.27	0.67
2:2:1225:A:H3'	50:r:102:THR:HG21	1.77	0.67
7:7:18:G:O2'	7:7:57:G:N2	2.26	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:B:158:ALA:HB1	10:B:197:ASN:HB3	1.76	0.67
1:1:1042:G:H1	1:1:1113:U:H3	1.43	0.67
6:6:334:THR:CG2	6:6:335:THR:H	2.06	0.67
42:j:76:LEU:HD23	42:j:77:ASN:N	2.09	0.67
1:1:1030:C:N3	1:1:1125:G:N2	2.43	0.67
2:2:1041:G:H2'	2:2:1042:A:C8	2.29	0.67
16:H:17:GLU:HG3	16:H:22:ALA:HB2	1.77	0.67
26:R:49:ILE:CD1	26:R:53:PHE:CA	2.73	0.67
1:1:1307:A:N6	1:1:1606:C:C2	2.62	0.67
1:1:2532:G:N2	1:1:2663:G:O2'	2.28	0.67
2:2:782:A:H62	2:2:800:G:H21	1.43	0.67
2:2:958:A:N6	56:x:77:THR:O	2.26	0.67
4:4:106:A:N6	4:4:138:C:O2'	2.27	0.67
14:F:23:VAL:HG22	14:F:36:THR:OG1	1.95	0.67
34:b:55:ILE:CG1	34:b:56:ALA:H	2.08	0.67
1:1:576:U:H2'	1:1:577:G:C8	2.29	0.67
1:1:1830:C:H2'	1:1:1831:G:H8	1.59	0.67
44:l:127:ALA:HA	44:l:135:VAL:HG21	1.76	0.67
48:p:88:GLY:H	48:p:114:THR:HG22	1.60	0.67
50:r:22:ILE:O	50:r:25:VAL:CG1	2.41	0.67
1:1:213:A:H2'	1:1:214:G:C8	2.30	0.67
2:2:105:G:N2	2:2:379:C:O3'	2.28	0.67
4:4:116:A:N6	4:4:127:C:O2'	2.28	0.67
6:6:220:ILE:HB	6:6:223:ARG:HB2	1.77	0.67
18:J:68:LYS:HA	18:J:71:ASP:OD1	1.95	0.67
39:g:12:ALA:HB1	39:g:209:ALA:HA	1.76	0.67
1:1:137:U:H3	1:1:143:C:H42	1.43	0.67
1:1:544:C:O2	1:1:545:U:H4'	1.94	0.67
24:P:34:GLU:HG2	24:P:34:GLU:O	1.95	0.67
26:R:6:GLN:OE1	26:R:11:GLN:CG	2.43	0.67
26:R:58:VAL:HG12	26:R:102:SER:O	1.96	0.67
34:b:54:VAL:HG12	34:b:55:ILE:N	2.05	0.67
45:m:106:THR:CB	45:m:121:LEU:HD11	2.24	0.67
1:1:514:A:N3	1:1:581:C:O2'	2.28	0.66
1:1:2144:G:N7	1:1:2146:C:O2'	2.27	0.66
2:2:687:A:N6	2:2:701:U:O4'	2.28	0.66
42:j:115:LEU:HD13	42:j:123:VAL:CG1	2.22	0.66
2:2:75:G:N2	2:2:76:G:O6	2.28	0.66
4:4:18:C:C3'	5:5:93:ASN:HD21	2.07	0.66
5:5:155:MET:HB2	41:i:49:SER:HB3	1.78	0.66
16:H:80:THR:O	16:H:80:THR:HG22	1.95	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:g:129:LEU:HD11	39:g:135:LEU:HD13	1.77	0.66
44:l:5:ARG:HG2	44:l:7:ILE:HD11	1.76	0.66
51:s:6:MET:SD	51:s:9:ARG:NH2	2.68	0.66
2:2:147:G:H2'	2:2:148:G:C8	2.29	0.66
13:E:68:THR:N	13:E:86:GLY:O	2.28	0.66
1:1:1471:G:H1	1:1:1520:U:H3	1.44	0.66
53:u:21:VAL:HG22	53:u:34:GLU:O	1.96	0.66
2:2:404:G:O2'	2:2:498:A:N6	2.29	0.66
50:r:90:ARG:NH1	50:r:96:PRO:O	2.29	0.66
56:x:53:ASN:HB2	56:x:58:VAL:HG13	1.76	0.66
1:1:2801:G:H2'	1:1:2802:G:C8	2.31	0.66
1:1:1818:U:OP2	10:B:156:ARG:NH1	2.29	0.66
2:2:1255:G:O2'	2:2:1258:G:N3	2.28	0.66
29:U:28:VAL:HG12	29:U:34:VAL:HG12	1.77	0.66
1:1:2258:C:O2'	1:1:2427:C:OP2	2.14	0.66
6:6:106:ALA:CA	6:6:135:ASN:OD1	2.37	0.66
6:6:140:VAL:HG11	6:6:146:LEU:CD1	2.25	0.66
6:6:254:THR:HG21	6:6:279:ARG:NH1	2.11	0.66
13:E:80:ARG:O	13:E:83:TYR:CD2	2.49	0.66
24:P:49:ALA:N	24:P:60:THR:CG2	2.58	0.66
24:P:49:ALA:H	24:P:60:THR:HG22	1.60	0.66
48:p:35:THR:OG1	48:p:40:ASN:O	2.13	0.66
1:1:639:U:H3	1:1:649:G:H1	1.41	0.66
4:4:104:C:O2'	4:4:182:U:O2	2.14	0.66
6:6:343:LEU:HD23	6:6:356:ILE:HD11	1.78	0.66
26:R:49:ILE:CD1	26:R:51:VAL:O	2.44	0.66
42:j:159:LYS:HG2	42:j:161:LYS:H	1.61	0.66
1:1:707:G:H1	1:1:724:U:H3	0.79	0.66
2:2:437:U:N1	41:i:154:ARG:NH2	2.36	0.66
16:H:60:LEU:HD12	16:H:61:ARG:N	2.11	0.66
18:J:32:LEU:HD22	18:J:54:ILE:HG21	1.77	0.66
27:S:55:ILE:O	27:S:59:GLU:CG	2.43	0.66
39:g:30:PHE:HD1	39:g:45:LYS:CB	1.98	0.66
40:h:114:LYS:HD3	40:h:185:ASN:HD21	1.61	0.66
57:y:35:VAL:HG21	57:y:54:MET:HG2	1.77	0.66
1:1:73:A:H3'	32:Y:47:ARG:HH12	1.61	0.65
1:1:727:A:OP2	1:1:1431:A:O2'	2.14	0.65
1:1:2751:G:OP1	1:1:2751:G:N2	2.26	0.65
2:2:1397:C:OP2	42:j:29:ARG:NH2	2.27	0.65
1:1:1798:U:O2'	1:1:1802:A:N3	2.29	0.65
2:2:153:C:H2'	2:2:154:U:C6	2.30	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:835:U:H2'	2:2:836:G:H8	1.61	0.65
20:L:92:LEU:HD11	20:L:106:GLU:O	1.94	0.65
2:2:1533:C:H41	58:z:55:ARG:HH22	1.44	0.65
6:6:191:LEU:CA	6:6:194:PHE:HE2	1.77	0.65
6:6:301:HIS:CG	6:6:391:VAL:HG21	2.31	0.65
13:E:34:ILE:HD12	13:E:156:ILE:HG23	1.75	0.65
28:T:53:VAL:HG11	28:T:87:LEU:HD13	1.78	0.65
46:n:83:ILE:HG22	46:n:87:LEU:CD1	2.27	0.65
2:2:790:A:OP1	7:7:38:A:O2'	2.14	0.65
2:2:1123:U:O4	2:2:1151:A:N6	2.30	0.65
3:3:25:U:O2	3:3:117:G:O2'	2.13	0.65
40:h:109:PRO:CA	40:h:115:LEU:HD22	2.25	0.65
50:r:4:ILE:HG22	50:r:5:ALA:H	1.60	0.65
5:5:157:ASN:HD21	42:j:15:LEU:CD2	2.10	0.65
52:t:25:THR:HG23	52:t:66:LEU:HD12	1.79	0.65
1:1:2743:U:OP1	38:f:34:LYS:NZ	2.27	0.65
1:1:1826:G:O2'	1:1:1971:U:OP2	2.14	0.65
35:c:47:VAL:CG1	35:c:48:ILE:N	2.59	0.65
39:g:222:ARG:O	39:g:226:SER:CB	2.44	0.65
1:1:1566:A:O4'	10:B:213:TRP:CD1	2.50	0.65
43:k:3:HIS:O	43:k:92:THR:CB	2.45	0.65
4:4:252:G:O6	4:4:281:A:N6	2.30	0.65
1:1:1999:C:O2	1:1:2687:U:O2'	2.15	0.65
12:D:83:VAL:HB	12:D:86:ALA:HB2	1.78	0.65
16:H:23:LEU:CD2	16:H:95:LEU:HB2	2.22	0.65
38:f:16:ILE:HG22	38:f:25:VAL:HG22	1.79	0.65
1:1:720:U:H2'	1:1:721:A:H8	1.61	0.64
13:E:113:ASP:HB2	50:r:71:ARG:HH22	1.61	0.64
28:T:72:GLN:HG2	28:T:73:ARG:HD2	1.77	0.64
39:g:73:LYS:HB2	39:g:76:ALA:CB	2.25	0.64
39:g:117:LEU:HD22	39:g:140:GLU:OE2	1.98	0.64
1:1:2293:G:H5''	23:O:94:ARG:HH22	1.62	0.64
16:H:28:ALA:HB2	16:H:109:LYS:HG3	0.67	0.64
1:1:1445:G:O6	1:1:1466:U:O2	2.15	0.64
1:1:1911:PSU:O2'	1:1:1919:A:N6	2.30	0.64
2:2:18:C:OP1	42:j:132:ASN:ND2	2.31	0.64
13:E:68:THR:HG21	13:E:88:LYS:HD2	1.79	0.64
39:g:30:PHE:CD1	39:g:45:LYS:HB2	2.18	0.64
41:i:85:ASN:C	41:i:88:GLU:CD	2.65	0.64
42:j:15:LEU:HA	42:j:37:THR:HA	1.80	0.64
1:1:372:G:N2	1:1:401:A:OP2	2.30	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:564:C:OP1	49:q:12:ARG:NH1	2.30	0.64
2:2:751:U:OP1	52:t:17:ARG:NH2	2.31	0.64
2:2:1127:G:H1	2:2:1145:A:H61	1.45	0.64
1:1:605:G:OP1	12:D:99:LYS:NZ	2.30	0.64
6:6:140:VAL:HG13	6:6:140:VAL:O	1.96	0.64
1:1:1417:C:H2'	1:1:1418:G:C8	2.32	0.64
1:1:1992:G:N2	1:1:1996:C:O2'	2.31	0.64
2:2:714:G:H2'	2:2:715:A:C8	2.33	0.64
3:3:13:G:O2'	3:3:15:A:OP2	2.16	0.64
5:5:96:GLU:O	5:5:100:LEU:CB	2.45	0.64
7:7:17:C:H2'	7:7:18:G:H8	1.63	0.64
16:H:32:GLY:HA2	16:H:37:LYS:HD3	1.80	0.64
19:K:109:SER:C	19:K:110:GLU:CD	2.66	0.64
27:S:4:ILE:HG22	27:S:106:VAL:HG22	1.78	0.64
51:s:13:ARG:HG2	51:s:54:ASP:HB2	1.78	0.64
6:6:220:ILE:HG22	6:6:223:ARG:HG2	1.79	0.64
13:E:80:ARG:C	13:E:83:TYR:CD2	2.70	0.64
13:E:113:ASP:O	13:E:113:ASP:OD1	2.15	0.64
21:M:69:PRO:HA	21:M:94:ALA:HB2	1.79	0.64
49:q:78:SER:CB	49:q:103:ASP:OD2	2.46	0.64
1:1:177:G:OP2	1:1:177:G:N2	2.19	0.64
1:1:335:C:O2	29:U:68:SER:OG	2.15	0.64
1:1:1078:U:H1'	1:1:1088:A:H5'	1.80	0.64
4:4:116:A:H3'	4:4:117:G:H8	1.62	0.64
1:1:685:A:H5''	1:1:788:A:H62	1.63	0.64
4:4:66:C:C2	4:4:68:U:C4	2.86	0.64
6:6:216:ASP:HB3	6:6:228:THR:HG22	1.79	0.64
39:g:208:ARG:HA	39:g:211:THR:OG1	1.98	0.64
1:1:1638:C:O2	1:1:2698:U:O2'	2.16	0.64
2:2:952:U:H2'	2:2:953:G:H8	1.62	0.64
10:B:8:PRO:HA	10:B:14:ARG:HA	1.80	0.64
13:E:34:ILE:HG23	13:E:154:ILE:HG23	1.79	0.64
13:E:65:PRO:HB2	13:E:87:CYS:HB2	1.78	0.64
1:1:1715:G:N1	1:1:1744:A:OP2	2.32	0.63
1:1:1915:3TD:H2'	1:1:1916:A:C8	2.32	0.63
1:1:2250:G:O2'	1:1:2496:C:OP1	2.16	0.63
1:1:2405:G:O2'	1:1:2411:A:N6	2.31	0.63
1:1:2616:C:H2'	1:1:2617:U:H6	1.63	0.63
2:2:1218:C:H2'	2:2:1219:A:C8	2.33	0.63
2:2:1317:C:H1'	51:s:49:GLN:HB3	1.80	0.63
13:E:67:ILE:CG1	13:E:87:CYS:HB3	2.22	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:d:44:VAL:CG2	36:d:45:SER:H	2.09	0.63
44:l:90:GLU:CD	44:l:91:VAL:N	2.56	0.63
48:p:83:GLU:HG3	48:p:109:ASN:HB3	1.80	0.63
1:1:2626:C:H2'	1:1:2627:G:H8	1.63	0.63
2:2:1233:G:H5'	46:n:119:ARG:NH2	2.11	0.63
6:6:104:VAL:O	6:6:104:VAL:HG13	1.98	0.63
39:g:129:LEU:HB2	39:g:134:ALA:CB	2.28	0.63
21:M:75:GLU:HB2	21:M:90:GLU:HG3	1.80	0.63
2:2:408:A:H5''	41:i:22:LYS:HB3	1.78	0.63
2:2:1270:G:H2'	2:2:1271:A:H8	1.63	0.63
6:6:133:PHE:HA	6:6:170:VAL:CG2	2.26	0.63
6:6:231:VAL:HB	6:6:270:ALA:HA	1.79	0.63
10:B:107:PRO:HD2	10:B:110:LEU:HD22	1.79	0.63
17:I:82:ALA:HA	17:I:105:LEU:HD21	1.79	0.63
38:f:9:LYS:NZ	38:f:14:CYS:O	2.31	0.63
41:i:124:MET:O	41:i:143:VAL:HG23	1.98	0.63
56:x:41:PHE:HB2	56:x:42:PRO:HD2	1.81	0.63
1:1:2512:C:O2'	11:C:159:LYS:NZ	2.31	0.63
2:2:477:C:H2'	2:2:478:A:C8	2.33	0.63
2:2:1117:A:O2'	46:n:106:ARG:NH2	2.31	0.63
13:E:34:ILE:HD13	13:E:156:ILE:CG2	2.18	0.63
1:1:2314:A:H2'	1:1:2315:G:C8	2.34	0.63
16:H:28:ALA:HB2	16:H:109:LYS:HG2	1.64	0.63
45:m:52:GLU:CD	45:m:60:GLU:OE2	2.42	0.63
1:1:645:C:H2'	1:1:647:G:C8	2.34	0.63
2:2:403:C:H2'	2:2:404:G:H8	1.64	0.63
2:2:1538:C:N3	8:8:4:G:N2	2.47	0.63
20:L:117:THR:HG23	20:L:117:THR:O	1.97	0.63
1:1:1435:G:H2'	1:1:1436:G:H8	1.64	0.63
1:1:2831:G:OP2	11:C:59:ARG:NH1	2.32	0.63
26:R:49:ILE:HD11	26:R:53:PHE:CA	2.28	0.63
41:i:19:LEU:C	41:i:20:PHE:CD1	2.76	0.63
49:q:54:ARG:HD3	49:q:64:THR:HG22	1.64	0.63
1:1:1062:G:O2'	17:I:87:SER:O	2.12	0.63
1:1:2271:G:H5'	9:A:20:ARG:HG2	1.81	0.63
2:2:460:A:H2'	2:2:461:A:H8	1.64	0.63
2:2:1118:U:H1'	2:2:1179:A:C8	2.34	0.63
7:7:56:C:C3'	13:E:83:TYR:HH	2.12	0.63
19:K:12:ASP:HA	19:K:99:ILE:HA	1.81	0.63
39:g:129:LEU:CD1	39:g:134:ALA:N	2.61	0.63
1:1:347:A:H2'	1:1:348:A:H8	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2115:G:O2'	1:1:2165:C:N4	2.32	0.62
44:l:73:VAL:HA	44:l:90:GLU:HA	1.80	0.62
52:t:82:ILE:HD11	52:t:88:ARG:HB2	1.81	0.62
6:6:220:ILE:CG2	6:6:223:ARG:HG2	2.30	0.62
27:S:69:LEU:HD12	27:S:107:VAL:HG22	1.81	0.62
1:1:136:G:C5	1:1:144:A:N6	2.67	0.62
41:i:85:ASN:OD1	41:i:88:GLU:OE1	2.17	0.62
1:1:576:U:H2'	1:1:577:G:H8	1.62	0.62
1:1:1055:G:H4'	16:H:33:VAL:HG22	1.82	0.62
1:1:1432:G:H2'	1:1:1433:A:C8	2.34	0.62
1:1:1953:A:O2'	1:1:2559:C:O2	2.15	0.62
2:2:41:G:H2'	2:2:42:G:H8	1.65	0.62
5:5:125:VAL:HG23	5:5:125:VAL:O	1.99	0.62
13:E:8:TYR:CD1	13:E:12:VAL:HG21	2.34	0.62
1:1:136:G:N1	1:1:144:A:C5	2.67	0.62
1:1:453:A:N3	1:1:457:A:O2'	2.33	0.62
7:7:37:MIA:H122	8:8:13:U:H3	1.64	0.62
15:G:40:THR:CG2	15:G:42:LYS:CG	2.67	0.62
42:j:105:ILE:HG13	42:j:107:ALA:H	1.63	0.62
48:p:23:ILE:CG1	48:p:96:THR:HG21	2.17	0.62
1:1:145:C:H2'	1:1:146:A:H8	1.64	0.62
2:2:916:U:H2'	2:2:917:G:H8	1.62	0.62
20:L:61:LEU:O	37:e:13:ARG:NH2	2.33	0.62
43:k:21:MET:HG2	43:k:24:ARG:HH21	1.64	0.62
1:1:499:U:H4'	29:U:43:LYS:HB2	1.80	0.62
1:1:2345:G:H5'	1:1:2347:C:H5''	1.81	0.62
2:2:216:U:O2'	2:2:468:A:N6	2.32	0.62
2:2:855:U:OP2	2:2:871:U:N3	2.31	0.62
4:4:7:G:O2'	4:4:336:G:OP1	2.15	0.62
40:h:114:LYS:HA	40:h:185:ASN:HD22	1.64	0.62
43:k:4:TYR:N	43:k:92:THR:HG22	2.14	0.62
1:1:2295:C:OP1	23:O:10:ARG:NH2	2.33	0.62
2:2:1403:C:N4	8:8:16:U:OP1	2.32	0.62
6:6:191:LEU:HG	6:6:194:PHE:CZ	2.31	0.62
40:h:57:ILE:CD1	40:h:66:VAL:HG12	2.24	0.62
40:h:66:VAL:CG2	40:h:101:ILE:HG12	2.30	0.62
1:1:2298:A:N6	1:1:2318:G:H21	1.92	0.62
1:1:2475:C:N3	1:1:2529:G:N1	2.48	0.62
4:4:21:C:O2	4:4:332:G:C2	2.53	0.62
6:6:101:ALA:HB3	6:6:130:ILE:HG12	1.81	0.62
1:1:764:A:OP1	10:B:213:TRP:CZ3	2.53	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:461:A:H2'	2:2:462:G:H8	1.64	0.61
2:2:933:G:N2	2:2:935:A:H1'	2.14	0.61
4:4:108:G:O6	4:4:135:A:N1	2.33	0.61
15:G:3:VAL:CG2	15:G:37:VAL:HG13	2.26	0.61
1:1:2304:G:C2'	13:E:133:ARG:NH2	2.63	0.61
43:k:3:HIS:O	43:k:3:HIS:ND1	2.33	0.61
43:k:90:MET:SD	55:w:61:ARG:NE	2.73	0.61
1:1:151:C:H2'	1:1:152:A:H8	1.65	0.61
1:1:874:G:H2'	1:1:875:G:H8	1.66	0.61
2:2:552:U:H2'	2:2:553:A:H8	1.65	0.61
6:6:18:GLY:HA3	6:6:104:VAL:HG13	1.79	0.61
41:i:117:LEU:CD2	41:i:154:ARG:CD	2.65	0.61
1:1:1668:A:N3	1:1:1670:C:N4	2.47	0.61
6:6:79:VAL:O	6:6:79:VAL:HG13	1.99	0.61
13:E:125:ARG:H	13:E:166:GLY:HA2	1.66	0.61
16:H:23:LEU:HG	16:H:96:PHE:CZ	2.36	0.61
16:H:59:LEU:HD22	16:H:62:ARG:CD	2.30	0.61
1:1:1508:A:O2'	1:1:1509:A:O4'	2.19	0.61
1:1:2032:G:N2	11:C:151:THR:OG1	2.33	0.61
1:1:2816:G:N3	1:1:2883:A:O2'	2.29	0.61
2:2:408:A:H4'	41:i:24:GLY:H	1.66	0.61
4:4:34:A:H1'	4:4:324:G:H1'	1.83	0.61
10:B:57:GLY:HA2	10:B:213:TRP:CA	2.25	0.61
46:n:12:ARG:HD3	46:n:74:GLY:HA2	1.82	0.61
49:q:78:SER:HB3	49:q:103:ASP:OD2	2.00	0.61
50:r:4:ILE:CG2	50:r:5:ALA:N	2.62	0.61
52:t:25:THR:HB	52:t:70:LEU:HD21	1.82	0.61
16:H:23:LEU:CD2	16:H:96:PHE:CD1	2.83	0.61
30:V:6:ALA:HB2	30:V:63:ILE:HD11	1.83	0.61
39:g:117:LEU:HD22	39:g:141:LEU:HD12	1.81	0.61
48:p:117:PRO:O	58:z:35:ARG:NH1	2.33	0.61
50:r:22:ILE:HB	50:r:25:VAL:CG1	2.30	0.61
56:x:47:LEU:HD12	56:x:49:ILE:HG12	1.81	0.61
1:1:1107:G:H5''	16:H:58:THR:HB	1.82	0.61
2:2:484:G:H4'	2:2:485:U:H5'	1.83	0.61
4:4:142:U:H2'	4:4:145:C:H41	1.64	0.61
5:5:57:LEU:HD11	5:5:66:PHE:CE2	2.36	0.61
6:6:245:VAL:CG2	6:6:300:PRO:HD3	2.31	0.61
29:U:86:ARG:NH1	29:U:102:THR:OG1	2.34	0.61
42:j:106:ILE:HG12	42:j:124:LEU:HD23	1.82	0.61
1:1:542:C:H2'	1:1:543:G:H8	1.65	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1753:G:H5''	24:P:93:ARG:HG3	1.83	0.61
1:1:2134:A:N6	1:1:2157:G:O2'	2.33	0.61
2:2:77:A:N6	2:2:78:A:H62	1.98	0.61
2:2:150:U:H2'	2:2:151:A:H8	1.66	0.61
6:6:95:ALA:HA	6:6:98:MET:HE3	1.81	0.61
8:8:11:G:OP2	8:8:11:G:N2	2.27	0.61
17:I:108:ILE:O	17:I:112:LYS:HD3	2.00	0.61
49:q:37:VAL:HG22	49:q:53:CYS:HB2	1.82	0.61
1:1:9:G:H21	1:1:2800:A:H61	1.48	0.61
1:1:1141:U:OP2	18:J:68:LYS:NZ	2.29	0.61
2:2:517:G:N2	2:2:533:A:OP2	2.29	0.61
2:2:546:A:HO2'	2:2:548:G:HO2'	1.45	0.61
2:2:675:A:H61	2:2:715:A:H61	1.49	0.61
2:2:744:C:H2'	2:2:745:G:H8	1.66	0.61
2:2:946:A:O2'	2:2:1333:A:N3	2.34	0.61
6:6:208:LYS:HB2	6:6:233:ARG:HD2	1.81	0.61
22:N:33:ILE:CD1	34:b:55:ILE:CG2	2.77	0.61
24:P:14:LYS:NZ	24:P:81:VAL:HG13	2.15	0.61
51:s:50:THR:HG22	56:x:13:LEU:HD23	1.75	0.61
53:u:40:ASN:HB3	53:u:43:ALA:HA	1.83	0.61
53:u:42:ILE:O	53:u:45:GLU:OE2	2.19	0.61
1:1:320:A:N3	12:D:163:ASN:ND2	2.49	0.61
1:1:639:U:H2'	1:1:640:C:H6	1.66	0.61
1:1:2684:U:OP2	24:P:51:ARG:NH1	2.34	0.61
2:2:1346:A:H61	2:2:1374:A:H3'	1.66	0.61
6:6:220:ILE:CB	6:6:223:ARG:HB2	2.31	0.61
10:B:107:PRO:HG2	10:B:110:LEU:HB2	1.83	0.61
19:K:16:ALA:HA	19:K:46:ALA:HA	1.83	0.61
33:Z:9:GLN:HB2	33:Z:29:LEU:HD13	1.81	0.61
1:1:2743:U:OP2	1:1:2755:C:N4	2.34	0.60
2:2:415:A:N7	2:2:428:G:O6	2.34	0.60
6:6:310:ILE:HG12	6:6:384:GLY:HA3	1.82	0.60
15:G:19:VAL:CG1	15:G:20:ASN:N	2.61	0.60
39:g:57:LEU:HB2	39:g:184:PHE:CE2	2.26	0.60
41:i:25:VAL:HG22	41:i:28:ILE:HG22	1.74	0.60
49:q:54:ARG:HH11	49:q:64:THR:HG21	1.60	0.60
1:1:2419:U:P	37:e:33:LEU:HD13	2.41	0.60
2:2:407:U:H2'	2:2:408:A:C8	2.35	0.60
6:6:220:ILE:HG22	6:6:223:ARG:CG	2.28	0.60
46:n:30:ILE:HD11	46:n:67:VAL:HG12	1.82	0.60
2:2:1377:A:C2	44:l:7:ILE:HG13	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:U:49:VAL:HG22	29:U:51:ALA:H	1.65	0.60
1:1:1252:G:C6	25:Q:36:PHE:HD2	2.10	0.60
1:1:1395:A:H2'	1:1:1398:C:H41	1.67	0.60
15:G:113:SER:O	15:G:116:ARG:NH1	2.35	0.60
16:H:122:GLN:O	16:H:125:ARG:NH2	2.31	0.60
1:1:707:G:O6	1:1:724:U:O4	2.19	0.60
6:6:242:VAL:HG12	6:6:243:GLU:N	2.17	0.60
22:N:72:ASP:HB3	22:N:75:ILE:HB	1.84	0.60
1:1:574:A:N6	1:1:2034:U:OP1	2.33	0.60
2:2:1139:G:N2	2:2:1143:G:O6	2.35	0.60
4:4:119:U:N3	4:4:122:A:OP2	2.34	0.60
5:5:18:LYS:O	5:5:22:HIS:ND1	2.30	0.60
6:6:289:GLY:HA2	6:6:334:THR:CG2	2.30	0.60
42:j:105:ILE:HG13	42:j:106:ILE:N	2.16	0.60
44:l:127:ALA:HA	44:l:135:VAL:CG2	2.31	0.60
1:1:145:C:H2'	1:1:146:A:C8	2.37	0.60
1:1:2081:U:H2'	1:1:2082:A:H8	1.66	0.60
1:1:2385:C:H2'	1:1:2386:A:H8	1.67	0.60
2:2:78:A:N6	2:2:92:U:O2	2.34	0.60
2:2:153:C:H2'	2:2:154:U:H6	1.65	0.60
13:E:16:LEU:HD12	13:E:28:VAL:HG23	1.82	0.60
41:i:61:VAL:CG2	41:i:195:ILE:CD1	2.80	0.60
41:i:150:LYS:HE2	41:i:178:MET:HB2	1.83	0.60
56:x:44:MET:SD	56:x:47:LEU:CD2	2.90	0.60
1:1:698:C:HO2'	1:1:734:A:H61	1.45	0.60
1:1:807:U:O2'	1:1:2060:A:N1	2.34	0.60
1:1:918:A:N3	3:3:80:U:O2'	2.34	0.60
2:2:1404:C:H2'	2:2:1405:G:C8	2.37	0.60
13:E:112:ARG:HG2	13:E:113:ASP:CG	2.26	0.60
22:N:44:LEU:HD23	22:N:113:ILE:HD13	1.82	0.60
34:b:43:ILE:HG22	34:b:49:TYR:HB2	1.84	0.60
41:i:19:LEU:O	41:i:20:PHE:CE1	2.53	0.60
1:1:568:U:H1'	1:1:2030:6MZ:H9C1	1.82	0.60
1:1:787:C:H5''	1:1:788:A:H5'	1.84	0.60
1:1:1649:G:H2'	1:1:1650:A:H8	1.67	0.60
1:1:2320:U:O2'	1:1:2322:A:N6	2.34	0.60
3:3:18:G:H1	3:3:65:U:H3	1.49	0.60
3:3:77:U:OP1	30:V:21:ARG:NH1	2.33	0.60
6:6:288:ARG:NH2	6:6:335:THR:HG22	2.16	0.60
6:6:343:LEU:CD2	6:6:356:ILE:HD11	2.31	0.60
42:j:85:VAL:HG12	42:j:96:MET:HB2	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:j:105:ILE:HG13	42:j:106:ILE:H	1.66	0.60
48:p:35:THR:OG1	48:p:40:ASN:C	2.44	0.60
1:1:713:G:OP2	52:t:89:ARG:NH2	2.35	0.60
1:1:2483:C:N3	21:M:123:LYS:NZ	2.43	0.60
2:2:77:A:N6	2:2:79:G:O6	2.31	0.60
43:k:3:HIS:CE1	43:k:92:THR:C	2.80	0.60
56:x:44:MET:CE	56:x:47:LEU:CD2	2.80	0.60
1:1:1125:G:H5''	1:1:1126:A:H2'	1.83	0.59
1:1:1779:U:OP2	1:1:1784:A:N6	2.35	0.59
14:F:42:GLU:HG3	14:F:55:ARG:HH21	1.67	0.59
15:G:2:GLN:NE2	15:G:20:ASN:N	2.50	0.59
29:U:82:ARG:HG3	29:U:97:LYS:HD2	1.84	0.59
41:i:48:LEU:HD22	41:i:52:GLY:CA	2.28	0.59
43:k:4:TYR:HA	43:k:92:THR:HG22	1.82	0.59
1:1:1026:G:H2'	1:1:1027:A:H8	1.66	0.59
1:1:2111:U:OP2	1:1:2145:C:N4	2.36	0.59
2:2:662:U:H2'	2:2:663:A:C8	2.37	0.59
2:2:1124:G:H5'	47:o:37:ARG:HH21	1.67	0.59
51:s:62:ASN:OD1	51:s:75:ARG:NH2	2.35	0.59
1:1:1914:C:HO2'	5:5:14:ILE:N	1.97	0.59
1:1:2692:G:N3	1:1:2847:U:O2'	2.35	0.59
2:2:244:U:O4	2:2:893:C:N3	2.35	0.59
2:2:320:A:H2'	2:2:321:A:C8	2.37	0.59
2:2:843:U:OP1	2:2:844:G:N2	2.35	0.59
2:2:1251:A:N3	2:2:1369:C:O2'	2.32	0.59
7:7:37:MIA:H2'	7:7:38:A:C8	2.37	0.59
18:J:14:ASP:OD2	18:J:138:GLN:NE2	2.35	0.59
40:h:60:PRO:HB2	47:o:93:ALA:HB1	1.84	0.59
40:h:114:LYS:CD	40:h:185:ASN:HD21	2.15	0.59
54:v:32:PRO:HB2	54:v:33:ILE:HD12	1.84	0.59
1:1:494:G:H4'	27:S:6:LYS:HB2	1.85	0.59
2:2:227:G:N2	53:u:63:GLN:O	2.27	0.59
2:2:694:A:OP1	48:p:55:SER:OG	2.21	0.59
2:2:1067:A:O2'	2:2:1093:A:O2'	2.21	0.59
4:4:95:C:H1'	4:4:96:G:C5	2.37	0.59
5:5:59:ARG:HB2	5:5:64:PHE:H	1.67	0.59
6:6:220:ILE:HG21	6:6:223:ARG:CB	2.33	0.59
41:i:85:ASN:O	41:i:88:GLU:OE2	2.21	0.59
43:k:52:ASN:C	43:k:53:LYS:HG2	2.25	0.59
45:m:35:ALA:HB1	45:m:110:VAL:HG11	1.83	0.59
2:2:1101:A:N6	39:g:175:GLU:OE2	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:S:38:TYR:HE2	34:b:28:LEU:HD22	1.59	0.59
54:v:28:PHE:HA	54:v:38:ILE:O	2.02	0.59
1:1:713:G:P	52:t:89:ARG:NH2	2.76	0.59
1:1:1422:G:O2'	1:1:1492:G:N3	2.35	0.59
4:4:26:U:OP2	4:4:323:A:N6	2.36	0.59
4:4:263:G:OP2	4:4:310:G:N2	2.35	0.59
5:5:79:HIS:O	49:q:73:ASN:ND2	2.35	0.59
39:g:54:LEU:HD22	39:g:220:THR:HG21	1.84	0.59
57:y:67:ILE:HG23	57:y:68:HIS:H	1.68	0.59
1:1:674:G:H1'	12:D:69:ARG:HD3	1.84	0.59
1:1:2330:G:H21	9:A:42:GLY:HA2	1.67	0.59
4:4:317:G:H2'	4:4:318:G:C8	2.38	0.59
30:V:45:ASP:O	30:V:49:ASN:ND2	2.32	0.59
31:X:59:ILE:HG12	31:X:67:VAL:HG21	1.84	0.59
51:s:32:SER:HA	51:s:41:ARG:HD3	1.84	0.59
1:1:1474:U:H3	1:1:1517:G:H1	1.51	0.59
1:1:2313:C:H5'	13:E:88:LYS:HE2	1.84	0.59
2:2:1245:C:H2'	2:2:1246:A:H8	1.68	0.59
2:2:1348:U:H4'	46:n:122:ARG:HD2	1.85	0.59
2:2:1451:U:HO2'	2:2:1453:G:N2	2.01	0.59
4:4:19:G:C5	5:5:91:LEU:HB3	2.37	0.59
17:I:78:LEU:CD1	17:I:112:LYS:NZ	2.64	0.59
57:y:66:LEU:HD12	57:y:67:ILE:HG22	1.84	0.59
1:1:582:A:H2'	1:1:583:G:H8	1.67	0.59
1:1:1862:G:H2'	1:1:1863:G:H8	1.68	0.59
1:1:2190:G:O2'	1:1:2191:A:O5'	2.19	0.59
2:2:377:G:H2'	2:2:378:G:C8	2.38	0.59
2:2:712:A:H2'	2:2:713:G:C8	2.38	0.59
2:2:1143:G:H2'	2:2:1144:G:C8	2.38	0.59
4:4:45:A:H4'	4:4:312:A:H8	1.67	0.59
5:5:57:LEU:CG	5:5:66:PHE:CD2	2.79	0.59
14:F:107:LEU:O	14:F:152:ARG:NH2	2.36	0.59
16:H:23:LEU:CD2	16:H:95:LEU:CB	2.73	0.59
47:o:45:ARG:NH1	47:o:47:GLU:OE2	2.36	0.59
56:x:44:MET:CE	56:x:47:LEU:HD21	2.32	0.59
1:1:517:C:OP1	34:b:13:ARG:NH2	2.35	0.59
1:1:750:A:OP1	1:1:1615:C:N4	2.33	0.59
1:1:1090:A:H2'	1:1:1091:G:C8	2.38	0.59
1:1:2285:C:OP2	35:c:6:ARG:NE	2.36	0.59
1:1:2693:G:H2'	1:1:2694:G:H8	1.68	0.59
34:b:55:ILE:CD1	34:b:56:ALA:N	2.61	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1093:G:H21	1:1:1098:A:H62	0.73	0.58
1:1:1998:A:OP2	11:C:141:ARG:NH2	2.36	0.58
2:2:1183:U:O2'	2:2:1185:G:OP2	2.21	0.58
14:F:17:VAL:HG12	14:F:26:ILE:HG12	1.84	0.58
19:K:121:GLU:HG3	19:K:122:VAL:HG23	1.85	0.58
1:1:2438:U:C2'	1:1:2439:A:H5''	2.33	0.58
2:2:1451:U:O2'	2:2:1453:G:N2	2.36	0.58
4:4:21:C:N3	4:4:332:G:N1	2.51	0.58
5:5:100:LEU:HD11	5:5:111:VAL:HG11	1.86	0.58
14:F:4:VAL:HG11	14:F:62:TRP:CE3	2.37	0.58
42:j:142:ASP:O	42:j:146:ASN:ND2	2.32	0.58
1:1:1070:A:N7	1:1:1096:A:O2'	2.32	0.58
1:1:1518:C:H2'	1:1:1519:G:H8	1.68	0.58
1:1:2385:C:H2'	1:1:2386:A:C8	2.37	0.58
2:2:198:G:O6	2:2:219:U:O4	2.20	0.58
2:2:1240:U:O5'	44:l:116:MET:HG2	2.03	0.58
6:6:343:LEU:HD11	6:6:358:MET:CE	2.34	0.58
22:N:33:ILE:HD13	34:b:55:ILE:CG2	2.27	0.58
1:1:2292:U:H2'	1:1:2293:G:H8	1.69	0.58
1:1:2812:G:H2'	1:1:2813:A:H8	1.69	0.58
1:1:2882:A:OP1	22:N:96:ARG:NH2	2.36	0.58
2:2:938:A:N3	2:2:1376:U:O2'	2.35	0.58
6:6:318:ARG:NH1	6:6:320:THR:OG1	2.36	0.58
41:i:13:ARG:HB2	41:i:35:GLU:HA	1.85	0.58
56:x:47:LEU:CD1	56:x:49:ILE:CG2	2.79	0.58
1:1:547:A:N1	1:1:549:G:C6	2.72	0.58
1:1:1048:A:H1'	1:1:1112:G:H21	1.67	0.58
1:1:1059:G:H1'	17:l:79:LEU:HD23	1.85	0.58
2:2:823:C:H2'	2:2:824:G:H8	1.66	0.58
2:2:1083:U:O2'	2:2:1102:A:OP2	2.22	0.58
2:2:1151:A:O2'	2:2:1152:A:H8	1.87	0.58
6:6:343:LEU:HD11	6:6:358:MET:HE2	1.84	0.58
7:7:33:U:P	46:n:130:ARG:HH12	2.26	0.58
7:7:74:C:H2'	7:7:75:C:C6	2.38	0.58
52:t:25:THR:OG1	52:t:70:LEU:HD11	2.03	0.58
1:1:966:G:H4'	1:1:2271:G:H22	1.69	0.58
1:1:1223:G:OP2	26:R:90:ARG:NH1	2.37	0.58
1:1:2475:C:C2	1:1:2529:G:C6	2.91	0.58
14:F:15:VAL:O	14:F:15:VAL:HG23	2.03	0.58
29:U:98:SER:C	29:U:99:ASN:OD1	2.46	0.58
46:n:84:THR:HA	46:n:87:LEU:CD1	2.26	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1204:A:N6	1:1:1242:U:O4	2.36	0.58
1:1:1837:C:O2'	1:1:1927:A:N3	2.31	0.58
1:1:2892:G:H5''	1:1:2893:A:H5'	1.84	0.58
2:2:556:C:H2'	2:2:557:G:C8	2.38	0.58
2:2:714:G:H2'	2:2:715:A:H8	1.68	0.58
5:5:59:ARG:CD	5:5:66:PHE:CE2	2.85	0.58
6:6:343:LEU:HD23	6:6:356:ILE:CD1	2.34	0.58
11:C:61:THR:OG1	11:C:64:GLU:OE1	2.21	0.58
38:f:1:MET:HE2	38:f:36:ARG:HB2	1.84	0.58
1:1:479:A:H1'	1:1:481:G:H5'	1.86	0.58
1:1:2245:U:H5''	1:1:2246:G:H5'	1.86	0.58
1:1:2246:G:H2'	1:1:2247:A:H8	1.69	0.58
2:2:674:G:H2'	2:2:675:A:C8	2.37	0.58
2:2:1042:A:H2'	2:2:1043:G:C8	2.38	0.58
4:4:149:A:H1'	4:4:151:C:H41	1.67	0.58
5:5:34:LEU:HD11	5:5:125:VAL:CB	2.28	0.58
11:C:19:GLY:HA2	24:P:79:PRO:HG2	1.84	0.58
46:n:39:PHE:O	46:n:45:ARG:NH2	2.35	0.58
56:x:41:PHE:CD1	56:x:43:ASN:HB3	2.37	0.58
1:1:832:U:H2'	1:1:833:A:H8	1.69	0.58
1:1:2692:G:H1'	1:1:2847:U:H1'	1.86	0.58
2:2:321:A:H4'	2:2:1436:U:H5'	1.86	0.58
2:2:1350:A:OP1	46:n:123:ARG:NH1	2.37	0.58
6:6:15:GLY:HA3	6:6:98:MET:HE2	1.85	0.58
31:X:17:ASN:HB2	31:X:27:ARG:HD2	1.86	0.58
39:g:129:LEU:CG	39:g:135:LEU:HD13	2.33	0.58
40:h:22:TRP:HB3	40:h:59:ARG:H	1.69	0.58
44:l:107:ALA:CA	44:l:133:THR:CG2	2.82	0.58
54:v:9:GLN:HE21	54:v:58:VAL:HG13	1.67	0.58
1:1:1154:G:OP2	25:Q:58:ARG:NH1	2.36	0.58
3:3:28:C:H2'	3:3:29:A:C8	2.39	0.58
7:7:52:G:H2'	7:7:53:G:H8	1.69	0.58
14:F:123:ALA:HB1	14:F:131:ILE:HD11	1.86	0.58
23:O:98:GLN:O	23:O:103:VAL:HG21	2.03	0.58
24:P:31:TRP:NE1	24:P:82:ASP:OD1	2.37	0.58
27:S:66:ILE:HA	27:S:69:LEU:HD23	1.84	0.58
47:o:54:SER:HB3	47:o:58:ASN:ND2	2.19	0.58
1:1:582:A:H2'	1:1:583:G:C8	2.39	0.57
1:1:771:G:OP2	36:d:11:LYS:NZ	2.37	0.57
2:2:1181:G:H4'	2:2:1182:G:H5'	1.86	0.57
3:3:66:A:N6	3:3:108:A:OP2	2.33	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:U:4:LYS:HB3	29:U:83:VAL:HG11	1.85	0.57
35:c:9:ILE:HD13	35:c:25:LYS:HD2	1.86	0.57
47:o:8:ILE:HB	47:o:74:VAL:HG22	1.85	0.57
1:1:2079:U:O2'	31:X:23:ASN:OD1	2.21	0.57
1:1:2443:C:H2'	1:1:2444:G:H8	1.70	0.57
1:1:2855:C:H2'	1:1:2856:A:H8	1.69	0.57
2:2:1250:A:H2'	2:2:1251:A:C8	2.39	0.57
21:M:66:ARG:NH1	21:M:104:GLU:OE2	2.37	0.57
49:q:37:VAL:HG22	49:q:53:CYS:CB	2.34	0.57
1:1:302:C:H2'	1:1:303:G:H8	1.69	0.57
1:1:2627:G:N2	1:1:2777:G:OP2	2.36	0.57
2:2:1047:G:H5''	51:s:4:GLN:HG3	1.86	0.57
2:2:1166:G:H21	2:2:1170:A:N6	2.02	0.57
2:2:1429:A:H2'	2:2:1430:A:H8	1.70	0.57
1:1:139:U:O2	1:1:141:G:N2	2.37	0.57
1:1:1275:A:H4'	1:1:1276:A:OP1	2.04	0.57
1:1:1299:G:H22	1:1:1640:A:H5'	1.70	0.57
5:5:119:LYS:HB2	5:5:124:LYS:HE3	1.86	0.57
7:7:22:G:H2'	7:7:23:A:H8	1.68	0.57
19:K:58:LEU:HD11	19:K:86:LEU:HD23	1.85	0.57
24:P:81:VAL:HG13	24:P:81:VAL:O	2.04	0.57
43:k:4:TYR:CA	43:k:92:THR:HG22	2.34	0.57
48:p:48:GLY:HA2	48:p:53:ARG:HB3	1.85	0.57
1:1:250:G:H4'	20:L:59:ARG:HD2	1.86	0.57
1:1:272:A:H2'	1:1:273:G:C8	2.39	0.57
1:1:627:A:O4'	1:1:637:A:N6	2.37	0.57
1:1:713:G:OP2	52:t:89:ARG:CZ	2.52	0.57
1:1:1790:C:H2'	1:1:1791:A:C8	2.39	0.57
1:1:2544:G:H1'	1:1:2646:C:H5'	1.87	0.57
1:1:2883:A:OP2	34:b:50:ARG:NH2	2.38	0.57
2:2:1098:C:H1'	2:2:1167:A:H62	1.69	0.57
3:3:49:C:H2'	3:3:50:A:H8	1.69	0.57
24:P:48:ILE:CG1	24:P:60:THR:CG2	2.62	0.57
24:P:103:ARG:HE	24:P:107:ALA:HB1	1.70	0.57
26:R:49:ILE:HD11	26:R:53:PHE:N	2.20	0.57
39:g:70:VAL:HB	39:g:163:VAL:HG12	1.86	0.57
46:n:84:THR:CA	46:n:87:LEU:HD12	2.27	0.57
1:1:475:C:C2	1:1:479:A:N6	2.71	0.57
1:1:543:G:H2'	1:1:544:C:H5''	1.86	0.57
1:1:1251:C:OP2	25:Q:6:ARG:NH2	2.36	0.57
1:1:1285:A:N6	1:1:1329:U:C2	2.72	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1607:C:N4	1:1:1622:G:OP2	2.36	0.57
1:1:2291:U:O2	1:1:2374:C:O2'	2.23	0.57
4:4:201:C:N4	4:4:229:U:O2'	2.38	0.57
11:C:186:LEU:HD21	24:P:4:ILE:CG2	2.35	0.57
15:G:2:GLN:OE1	15:G:21:VAL:CB	2.51	0.57
16:H:23:LEU:CG	16:H:96:PHE:CE1	2.85	0.57
41:i:150:LYS:HD2	41:i:178:MET:HE3	1.87	0.57
42:j:12:GLN:CB	42:j:40:GLY:O	2.48	0.57
45:m:50:LYS:O	45:m:60:GLU:OE1	2.22	0.57
1:1:693:A:O2'	1:1:1353:A:N3	2.36	0.57
1:1:1074:G:OP1	1:1:2474:U:O2'	2.20	0.57
1:1:1687:G:H21	1:1:1701:A:H62	1.53	0.57
1:1:1789:A:OP2	10:B:221:ARG:NH1	2.37	0.57
51:s:50:THR:HA	56:x:13:LEU:CD2	2.34	0.57
1:1:136:G:C6	1:1:144:A:C6	2.92	0.57
1:1:1422:G:H2'	1:1:1423:G:C8	2.40	0.57
1:1:1925:C:H42	1:1:1929:G:H22	1.53	0.57
1:1:2316:G:H2'	1:1:2317:A:H8	1.70	0.57
2:2:409:U:HO2'	2:2:433:G:H22	1.52	0.57
2:2:744:C:H2'	2:2:745:G:C8	2.40	0.57
16:H:59:LEU:CB	16:H:62:ARG:HD2	2.35	0.57
55:w:25:ASP:HB3	55:w:28:THR:HG22	1.87	0.57
1:1:577:G:O2'	1:1:1254:A:OP1	2.21	0.57
1:1:887:A:O2'	1:1:888:C:O4'	2.22	0.57
2:2:461:A:H2'	2:2:462:G:C8	2.39	0.57
2:2:1457:G:H2'	2:2:1458:G:H8	1.70	0.57
4:4:66:C:N3	4:4:68:U:C4	2.73	0.57
6:6:133:PHE:CA	6:6:170:VAL:HG23	2.32	0.57
6:6:347:VAL:HG23	6:6:347:VAL:O	2.03	0.57
21:M:17:ASN:O	21:M:38:ARG:NH1	2.38	0.57
22:N:79:LEU:HA	22:N:83:LEU:HD23	1.85	0.57
30:V:30:ILE:HG12	30:V:91:PHE:HB2	1.86	0.57
1:1:302:C:H2'	1:1:303:G:C8	2.40	0.57
1:1:686:U:H2'	1:1:788:A:N1	2.20	0.57
1:1:733:G:N2	1:1:734:A:N7	2.53	0.57
1:1:2362:C:OP1	37:e:40:ARG:NH1	2.37	0.57
1:1:2531:A:H5'	14:F:174:ALA:HB1	1.87	0.57
2:2:725:G:OP1	2:2:833:G:N2	2.38	0.57
2:2:1115:U:H3	2:2:1185:G:H1	1.52	0.57
2:2:1405:G:O2'	2:2:1518:MA6:O2'	2.19	0.57
4:4:42:U:H3	4:4:313:C:N4	2.02	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:55:TYR:H	5:5:67:GLY:HA3	1.70	0.57
40:h:7:PRO:HA	40:h:10:ILE:HG22	1.85	0.57
41:i:83:LYS:O	41:i:89:ASN:ND2	2.32	0.57
41:i:152:GLN:HB3	41:i:154:ARG:HB3	1.87	0.57
1:1:428:A:O2'	1:1:429:A:OP1	2.21	0.56
1:1:468:G:H5''	12:D:55:SER:HB3	1.86	0.56
1:1:1463:C:H2'	1:1:1464:G:H8	1.69	0.56
1:1:1614:A:N6	27:S:92:ARG:O	2.33	0.56
1:1:1807:G:N2	1:1:1810:A:OP2	2.38	0.56
1:1:1812:U:H2'	1:1:1813:G:H8	1.69	0.56
13:E:91:LEU:HD13	13:E:96:MET:HB2	1.87	0.56
16:H:59:LEU:CG	16:H:62:ARG:H	2.15	0.56
18:J:31:GLU:HG2	18:J:142:ILE:HG12	1.87	0.56
28:T:44:LYS:HG3	28:T:55:VAL:CG1	2.33	0.56
45:m:13:ARG:NH2	45:m:26:THR:O	2.35	0.56
1:1:796:C:H2'	1:1:797:G:H8	1.70	0.56
2:2:837:U:H2'	2:2:838:G:C8	2.39	0.56
2:2:1229:A:O2'	7:7:30:G:OP1	2.22	0.56
6:6:15:GLY:HA2	6:6:79:VAL:CG1	2.35	0.56
10:B:2:ALA:N	10:B:20:VAL:O	2.38	0.56
40:h:114:LYS:HD3	40:h:185:ASN:ND2	2.19	0.56
44:l:118:LEU:O	44:l:122:ASN:ND2	2.38	0.56
1:1:6:A:N3	18:J:135:GLN:NE2	2.53	0.56
1:1:1341:G:OP2	1:1:1394:U:O2'	2.24	0.56
1:1:1825:U:H2'	1:1:1826:G:H8	1.68	0.56
1:1:1952:A:C6	19:K:22:ILE:HD12	2.40	0.56
1:1:2229:U:H2'	1:1:2230:G:H8	1.69	0.56
1:1:2376:A:N3	23:O:111:ARG:NH1	2.49	0.56
2:2:134:G:O6	53:u:25:ARG:NH1	2.39	0.56
2:2:296:U:O2'	2:2:556:C:O2	2.23	0.56
2:2:922:G:H2'	2:2:923:A:C8	2.41	0.56
2:2:1077:G:N2	2:2:1080:A:OP2	2.28	0.56
2:2:1375:A:O2'	2:2:1376:U:OP1	2.22	0.56
2:2:1522:U:H2'	2:2:1523:G:H8	1.69	0.56
3:3:83:G:O6	3:3:94:A:N6	2.38	0.56
6:6:3:GLU:O	6:6:264:LEU:N	2.37	0.56
6:6:318:ARG:HH22	6:6:322:PHE:HB3	1.70	0.56
39:g:114:LEU:HB2	39:g:144:LEU:HD13	1.87	0.56
39:g:118:GLU:HB3	39:g:141:LEU:HD11	1.87	0.56
41:i:61:VAL:HG23	41:i:195:ILE:CD1	2.35	0.56
1:1:177:G:H3'	1:1:178:G:H8	1.69	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1696:G:N2	1:1:1977:A:O2'	2.33	0.56
1:1:1834:U:H5''	1:1:1835:2MG:H5'	1.87	0.56
1:1:2646:C:OP2	1:1:2732:G:O2'	2.20	0.56
1:1:2822:G:OP1	11:C:164:GLN:NE2	2.32	0.56
2:2:1179:A:H1'	46:n:106:ARG:HH22	1.70	0.56
5:5:83:ASP:HB2	5:5:86:ARG:HB2	1.88	0.56
6:6:22:HIS:O	6:6:135:ASN:ND2	2.38	0.56
40:h:186:THR:HG22	40:h:199:LYS:HG2	1.87	0.56
45:m:45:PHE:HD2	45:m:72:VAL:HG22	1.70	0.56
49:q:54:ARG:HD3	49:q:64:THR:HG21	1.84	0.56
56:x:58:VAL:HG23	56:x:58:VAL:O	2.05	0.56
1:1:672:C:OP2	20:L:42:SER:OG	2.21	0.56
2:2:555:U:H2'	2:2:556:C:C6	2.40	0.56
2:2:561:U:H4'	2:2:563:A:H62	1.71	0.56
2:2:626:G:OP1	53:u:35:ARG:NH2	2.39	0.56
2:2:673:A:H2'	2:2:674:G:H8	1.70	0.56
2:2:987:G:H2'	2:2:988:G:C8	2.41	0.56
2:2:1270:G:H2'	2:2:1271:A:C8	2.40	0.56
4:4:18:C:C2'	5:5:93:ASN:CG	2.71	0.56
6:6:195:LEU:HD12	6:6:195:LEU:C	2.31	0.56
21:M:50:ARG:HA	21:M:53:MET:HE2	1.86	0.56
57:y:71:LYS:HZ2	57:y:75:HIS:CE1	2.21	0.56
1:1:414:C:H2'	1:1:415:A:H8	1.69	0.56
1:1:1353:A:OP2	1:1:1377:G:N1	2.37	0.56
1:1:1709:U:H2'	1:1:1710:G:H8	1.70	0.56
2:2:1368:A:OP1	46:n:113:ARG:NH2	2.38	0.56
6:6:246:GLY:HA3	6:6:290:GLN:HG2	1.87	0.56
23:O:33:ARG:O	23:O:34:HIS:ND1	2.39	0.56
41:i:61:VAL:CG2	41:i:195:ILE:HD13	2.36	0.56
53:u:78:VAL:HG13	53:u:79:ASN:H	1.70	0.56
1:1:76:C:OP1	32:Y:48:ARG:NH2	2.38	0.56
1:1:728:G:O2'	1:1:730:A:O4'	2.22	0.56
1:1:2241:A:H2'	1:1:2242:G:C8	2.41	0.56
2:2:946:A:H2'	2:2:947:G:H8	1.71	0.56
5:5:56:VAL:HA	5:5:66:PHE:HB2	1.88	0.56
16:H:28:ALA:CB	16:H:109:LYS:HD3	2.33	0.56
39:g:129:LEU:CD1	39:g:135:LEU:HD13	2.35	0.56
53:u:21:VAL:HG23	53:u:21:VAL:O	2.06	0.56
1:1:24:G:O2'	27:S:78:GLU:O	2.19	0.56
2:2:600:A:H5''	45:m:89:LYS:HB2	1.88	0.56
3:3:72:G:N2	3:3:104:A:H62	2.04	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:7:4:C:H42	7:7:69:G:H22	1.54	0.56
14:F:5:ALA:HB2	14:F:66:GLY:HA2	1.88	0.56
15:G:2:GLN:OE1	15:G:21:VAL:CA	2.52	0.56
16:H:24:SER:HA	16:H:85:SER:O	2.06	0.56
40:h:57:ILE:CD1	40:h:64:ILE:HG23	2.10	0.56
40:h:136:ARG:O	40:h:140:ASN:ND2	2.39	0.56
1:1:184:C:H2'	1:1:185:G:H8	1.71	0.56
1:1:1020:A:N1	1:1:1141:U:O2'	2.35	0.56
1:1:1952:A:N1	19:K:22:ILE:HG23	2.21	0.56
1:1:2475:C:C2	1:1:2529:G:N1	2.73	0.56
1:1:2748:A:H1'	14:F:67:THR:HG22	1.86	0.56
2:2:335:C:H2'	2:2:336:A:H8	1.70	0.56
2:2:1305:G:H21	2:2:1332:A:H2	1.54	0.56
4:4:53:G:N2	4:4:73:A:N3	2.54	0.56
13:E:35:THR:HG22	13:E:90:THR:HG22	1.87	0.56
41:i:10:LYS:HA	41:i:13:ARG:HG2	1.88	0.56
55:w:29:LEU:HB3	55:w:68:LEU:HD11	1.87	0.56
1:1:414:C:H2'	1:1:415:A:C8	2.40	0.56
2:2:235:C:H2'	2:2:236:A:H8	1.70	0.56
2:2:922:G:H2'	2:2:923:A:H8	1.71	0.56
2:2:1073:U:O2'	39:g:103:ASN:OD1	2.24	0.56
2:2:1124:G:N2	2:2:1125:U:O4	2.30	0.56
2:2:1250:A:H2'	2:2:1251:A:H8	1.70	0.56
4:4:52:G:H2'	4:4:53:G:C8	2.40	0.56
34:b:10:ARG:O	34:b:11:SER:C	2.44	0.56
43:k:48:ALA:HB1	55:w:69:PRO:HG3	1.88	0.56
45:m:52:GLU:OE1	45:m:60:GLU:OE1	2.24	0.56
47:o:88:MET:C	47:o:89:ARG:HG2	2.28	0.56
56:x:40:ILE:HG12	56:x:71:LEU:HD23	1.88	0.56
1:1:30:G:O2'	1:1:1214:A:N3	2.35	0.55
1:1:277:G:O2'	1:1:278:A:N7	2.36	0.55
1:1:647:G:N2	1:1:2350:C:O3'	2.39	0.55
1:1:1059:G:H5'	17:I:76:ALA:HB1	1.87	0.55
1:1:2215:C:H2'	1:1:2216:G:H8	1.71	0.55
2:2:599:C:H2'	2:2:600:A:H8	1.71	0.55
2:2:1528:U:OP1	58:z:49:LYS:NZ	2.38	0.55
4:4:129:G:N1	4:4:130:C:O2	2.38	0.55
6:6:289:GLY:HA2	6:6:334:THR:HG21	1.88	0.55
45:m:50:LYS:O	45:m:60:GLU:CD	2.50	0.55
1:1:541:A:H2'	1:1:542:C:C6	2.41	0.55
1:1:1582:C:O2'	1:1:1585:C:N3	2.34	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2304:G:O2'	13:E:133:ARG:NH2	2.37	0.55
2:2:137:U:O4	2:2:226:G:O6	2.24	0.55
2:2:460:A:H2'	2:2:461:A:C8	2.41	0.55
2:2:971:G:OP2	2:2:1231:G:N2	2.36	0.55
16:H:103:ASN:HA	16:H:107:GLU:HB3	1.87	0.55
40:h:114:LYS:CD	40:h:185:ASN:ND2	2.69	0.55
1:1:18:U:H2'	1:1:19:A:C8	2.41	0.55
1:1:1042:G:H2'	1:1:1043:C:H6	1.71	0.55
1:1:2438:U:C3'	1:1:2439:A:H5''	2.36	0.55
1:1:2698:U:H2'	1:1:2699:C:C6	2.42	0.55
20:L:121:THR:HG23	20:L:141:LYS:HG3	1.87	0.55
50:r:4:ILE:CG2	50:r:5:ALA:H	2.17	0.55
1:1:37:C:H2'	1:1:38:A:H8	1.72	0.55
1:1:155:A:H2'	1:1:156:A:H8	1.71	0.55
1:1:297:G:H5''	29:U:85:PHE:HB2	1.89	0.55
1:1:587:C:OP2	20:L:21:ARG:NH2	2.33	0.55
1:1:997:G:OP1	25:Q:92:ARG:N	2.29	0.55
1:1:2039:U:H2'	1:1:2040:G:C8	2.42	0.55
2:2:413:G:N2	2:2:428:G:O3'	2.39	0.55
2:2:1486:G:H2'	2:2:1487:G:C8	2.42	0.55
13:E:33:LYS:O	13:E:34:ILE:HD13	2.06	0.55
32:Y:12:GLU:HA	32:Y:15:ASN:HD21	1.70	0.55
40:h:57:ILE:HD12	40:h:64:ILE:HG22	1.77	0.55
1:1:4:U:H2'	1:1:5:A:H8	1.70	0.55
1:1:184:C:H2'	1:1:185:G:C8	2.42	0.55
1:1:591:U:O4	1:1:592:A:N6	2.40	0.55
1:1:1227:G:OP2	25:Q:16:LYS:NZ	2.35	0.55
1:1:1871:A:O2'	1:1:1872:A:N7	2.40	0.55
2:2:966:2MG:H2'	2:2:967:5MC:C6	2.42	0.55
2:2:1377:A:OP1	44:l:95:ARG:NH1	2.38	0.55
2:2:1422:G:H1	2:2:1478:U:H3	1.54	0.55
5:5:34:LEU:CD1	5:5:125:VAL:HG13	2.01	0.55
13:E:125:ARG:HG3	13:E:170:LEU:HB2	1.87	0.55
1:1:935:C:H2'	1:1:936:A:H8	1.71	0.55
1:1:1431:A:H2'	1:1:1432:G:H8	1.71	0.55
1:1:2305:U:C5	13:E:133:ARG:HD3	2.41	0.55
2:2:340:U:N3	2:2:350:G:N1	2.55	0.55
4:4:110:U:H2'	4:4:111:U:C6	2.42	0.55
12:D:158:PHE:HE2	12:D:162:ARG:HH11	1.53	0.55
39:g:129:LEU:O	39:g:130:THR:OG1	2.23	0.55
48:p:35:THR:HG1	48:p:40:ASN:C	2.12	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:541:A:N6	1:1:553:G:O6	2.39	0.55
1:1:873:C:H2'	1:1:874:G:H8	1.72	0.55
1:1:1866:A:H2'	1:1:1867:G:O4'	2.07	0.55
2:2:517:G:O2'	2:2:531:U:OP2	2.22	0.55
2:2:678:U:H1'	2:2:777:A:H4'	1.88	0.55
2:2:963:G:H21	47:o:57:VAL:HG11	1.68	0.55
4:4:241:C:H2'	4:4:242:A:C4	2.41	0.55
6:6:247:ILE:HD11	6:6:287:GLU:HB2	1.89	0.55
12:D:21:ARG:HD3	12:D:106:LYS:HE2	1.89	0.55
49:q:36:ARG:C	49:q:53:CYS:SG	2.89	0.55
1:1:16:C:H2'	1:1:17:G:H8	1.72	0.55
1:1:969:G:H4'	33:Z:15:GLY:HA2	1.89	0.55
1:1:1026:G:H2'	1:1:1027:A:C8	2.41	0.55
2:2:7:A:N6	42:j:97:GLN:OE1	2.40	0.55
2:2:628:G:H2'	2:2:629:A:C8	2.41	0.55
2:2:1031:C:O2'	2:2:1032:G:N2	2.39	0.55
2:2:1347:G:H4'	2:2:1348:U:H5'	1.89	0.55
4:4:336:G:H2'	4:4:337:C:C6	2.42	0.55
6:6:170:VAL:HG23	6:6:170:VAL:O	2.07	0.55
10:B:74:ILE:HG23	10:B:98:ASP:HB2	1.89	0.55
24:P:33:VAL:HG22	24:P:38:LYS:HG3	1.89	0.55
43:k:3:HIS:CE1	43:k:95:ALA:CA	2.89	0.55
44:l:105:VAL:O	44:l:109:ARG:HG2	2.07	0.55
49:q:103:ASP:OD1	49:q:103:ASP:O	2.25	0.55
1:1:367:G:H3'	1:1:368:A:C8	2.42	0.55
1:1:720:U:H2'	1:1:721:A:C8	2.42	0.55
1:1:818:G:H21	1:1:1189:A:H62	1.55	0.55
1:1:893:C:H2'	1:1:894:U:C6	2.42	0.55
1:1:1791:A:H4'	10:B:205:LEU:HB2	1.88	0.55
1:1:2549:G:H2'	1:1:2550:G:H8	1.71	0.55
1:1:2837:A:H2'	1:1:2838:G:H8	1.71	0.55
2:2:70:U:H2'	2:2:94:G:C5	2.42	0.55
2:2:628:G:H2'	2:2:629:A:H8	1.72	0.55
6:6:214:ILE:HD11	6:6:217:VAL:HG22	1.89	0.55
13:E:67:ILE:HG13	13:E:87:CYS:CB	2.25	0.55
51:s:3:LYS:HB2	51:s:6:MET:HG2	1.89	0.55
52:t:35:GLN:HE21	52:t:39:LEU:HG	1.72	0.55
1:1:1188:U:H2'	1:1:1189:A:H8	1.72	0.55
1:1:2052:A:H4'	11:C:148:GLN:O	2.06	0.55
1:1:2291:U:H1'	1:1:2374:C:H1'	1.89	0.55
2:2:1524:C:H2'	2:2:1525:G:H8	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:92:C:OP1	30:V:18:ARG:NH2	2.39	0.55
4:4:138:C:O2'	4:4:139:C:O4'	2.23	0.55
39:g:9:MET:HE3	39:g:14:VAL:HG21	1.88	0.55
39:g:68:LEU:HB3	39:g:161:LEU:HG	1.88	0.55
56:x:46:GLY:H	56:x:62:VAL:HG21	1.73	0.55
1:1:1326:U:O2'	1:1:2010:G:O2'	2.25	0.54
1:1:1463:C:H2'	1:1:1464:G:C8	2.42	0.54
8:8:3:G:H2'	8:8:4:G:C8	2.42	0.54
15:G:40:THR:HB	15:G:43:ASN:OD1	2.07	0.54
16:H:18:VAL:HG21	16:H:69:PHE:HB3	1.89	0.54
2:2:409:U:O2'	2:2:433:G:N2	2.39	0.54
2:2:697:U:O2	2:2:785:G:N2	2.36	0.54
2:2:1505:G:H5'	2:2:1506:U:H3'	1.89	0.54
6:6:301:HIS:CG	6:6:391:VAL:CG2	2.91	0.54
6:6:302:THR:OG1	6:6:362:LEU:O	2.25	0.54
11:C:186:LEU:CD2	24:P:4:ILE:HG21	2.35	0.54
18:J:10:THR:O	18:J:10:THR:HG22	2.06	0.54
49:q:55:VAL:HG11	49:q:80:ILE:HD11	1.89	0.54
1:1:2475:C:N3	1:1:2529:G:C2	2.75	0.54
1:1:2596:U:O2'	1:1:2597:G:OP1	2.22	0.54
2:2:898:G:N2	2:2:901:A:OP2	2.40	0.54
27:S:59:GLU:CD	27:S:66:ILE:HG13	2.32	0.54
1:1:542:C:H2'	1:1:543:G:C8	2.41	0.54
1:1:2092:U:OP2	15:G:28:ASN:ND2	2.33	0.54
1:1:2336:A:H61	9:A:43:THR:HG21	1.73	0.54
1:1:2349:G:OP1	37:e:45:ARG:NH2	2.40	0.54
2:2:160:A:N6	2:2:346:G:O6	2.40	0.54
2:2:1240:U:C6	44:l:116:MET:HE2	2.28	0.54
48:p:50:SER:OG	48:p:69:ARG:NH1	2.40	0.54
1:1:20:C:H2'	1:1:21:A:C8	2.43	0.54
1:1:645:C:H2'	1:1:647:G:H8	1.71	0.54
1:1:796:C:H2'	1:1:797:G:C8	2.42	0.54
1:1:2293:G:OP1	23:O:94:ARG:NH1	2.41	0.54
2:2:102:G:H2'	2:2:103:U:C6	2.43	0.54
2:2:514:C:N4	2:2:515:G:O6	2.40	0.54
2:2:664:G:OP1	55:w:53:ARG:NE	2.39	0.54
2:2:1245:C:H2'	2:2:1246:A:C8	2.42	0.54
40:h:57:ILE:CD1	40:h:64:ILE:HG21	2.02	0.54
41:i:105:MET:HE3	41:i:171:LEU:HD22	1.90	0.54
46:n:114:LYS:NZ	46:n:118:LEU:O	2.34	0.54
1:1:243:U:OP2	37:e:8:ARG:NH1	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1433:A:N1	1:1:1560:G:N2	2.47	0.54
1:1:1518:C:H2'	1:1:1519:G:C8	2.42	0.54
1:1:2292:U:H2'	1:1:2293:G:C8	2.43	0.54
1:1:2683:C:OP1	24:P:51:ARG:NH2	2.40	0.54
1:1:2885:G:O6	34:b:29:SER:OG	2.24	0.54
4:4:66:C:H2'	4:4:67:G:H4'	1.90	0.54
6:6:78:HIS:HE1	6:6:102:ILE:HD12	1.73	0.54
14:F:35:ARG:HH12	14:F:71:LEU:HD13	1.72	0.54
52:t:33:THR:O	52:t:37:ASN:ND2	2.35	0.54
1:1:2285:C:OP1	35:c:26:ASN:ND2	2.41	0.54
1:1:2313:C:H4'	13:E:88:LYS:HE2	1.88	0.54
2:2:331:G:O2'	57:y:5:LYS:NZ	2.41	0.54
2:2:463:U:H2'	2:2:464:U:C2	2.42	0.54
2:2:582:C:OP2	2:2:758:C:N4	2.35	0.54
2:2:1512:U:H2'	2:2:1513:A:C8	2.43	0.54
4:4:89:C:H2'	4:4:96:G:C6	2.42	0.54
4:4:162:A:H2'	4:4:163:G:C8	2.43	0.54
13:E:37:ASN:O	13:E:152:LEU:HA	2.08	0.54
39:g:129:LEU:CB	39:g:134:ALA:H	2.20	0.54
43:k:92:THR:O	43:k:93:LYS:C	2.50	0.54
1:1:527:C:N4	1:1:2779:U:OP2	2.40	0.54
1:1:1041:G:N1	1:1:1115:G:O6	2.41	0.54
1:1:1056:G:H21	1:1:1103:A:H62	1.55	0.54
1:1:1427:A:N6	1:1:1571:A:OP2	2.29	0.54
1:1:1987:A:H2'	1:1:1988:G:H8	1.73	0.54
2:2:437:U:C1'	41:i:154:ARG:NH1	2.64	0.54
2:2:838:G:H2'	2:2:839:C:O4'	2.08	0.54
4:4:323:A:O2'	4:4:324:G:O4'	2.23	0.54
10:B:131:PRO:HA	10:B:189:ARG:HA	1.88	0.54
56:x:13:LEU:HD12	56:x:14:HIS:CA	2.35	0.54
1:1:1812:U:H2'	1:1:1813:G:C8	2.42	0.54
1:1:2331:G:O2'	9:A:43:THR:OG1	2.21	0.54
2:2:339:C:OP2	19:K:98:ARG:NH1	2.41	0.54
4:4:18:C:O2'	5:5:93:ASN:CG	2.50	0.54
7:7:43:C:N4	7:7:44:G:O6	2.41	0.54
15:G:117:LEU:CD1	15:G:120:GLY:HA2	2.32	0.54
49:q:33:VAL:HG23	49:q:78:SER:N	2.23	0.54
54:v:19:LYS:HA	54:v:51:ASN:HB3	1.90	0.54
55:w:30:LYS:HA	55:w:33:ILE:HG12	1.90	0.54
2:2:437:U:O4'	41:i:154:ARG:CZ	2.53	0.54
2:2:444:G:H2'	2:2:445:G:H8	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:720:C:O2'	55:w:52:GLN:NE2	2.39	0.54
2:2:1068:G:N7	2:2:1094:G:H2'	2.23	0.54
2:2:1162:C:H2'	2:2:1163:A:H8	1.73	0.54
2:2:1252:A:H61	2:2:1285:A:H61	1.55	0.54
2:2:1512:U:H2'	2:2:1513:A:H8	1.73	0.54
6:6:97:GLN:NE2	6:6:230:ARG:HB3	2.20	0.54
24:P:60:THR:HG23	24:P:60:THR:O	2.08	0.54
41:i:57:GLU:O	41:i:61:VAL:HG23	2.08	0.54
47:o:80:THR:O	47:o:83:THR:OG1	2.26	0.54
1:1:117:G:OP2	1:1:119:A:O2'	2.19	0.53
1:1:277:G:H2'	1:1:361:G:C6	2.43	0.53
1:1:692:C:H2'	1:1:693:A:H8	1.73	0.53
4:4:40:G:H2'	4:4:41:G:C8	2.43	0.53
5:5:111:VAL:HA	5:5:129:VAL:HA	1.89	0.53
12:D:158:PHE:HA	12:D:169:VAL:HG11	1.90	0.53
22:N:56:LYS:NZ	22:N:94:TYR:OH	2.32	0.53
42:j:11:LEU:C	42:j:40:GLY:O	2.51	0.53
53:u:74:LEU:O	53:u:78:VAL:HG12	2.08	0.53
58:z:52:ALA:O	58:z:56:HIS:ND1	2.35	0.53
1:1:538:A:H62	1:1:555:G:N2	2.06	0.53
1:1:948:C:H2'	1:1:949:G:C8	2.43	0.53
1:1:1438:U:H2'	1:1:1439:A:H8	1.74	0.53
2:2:605:U:O2	2:2:633:G:O6	2.27	0.53
2:2:765:G:N1	2:2:812:G:O2'	2.34	0.53
5:5:113:ALA:HA	5:5:127:ILE:HA	1.89	0.53
12:D:189:THR:HG23	12:D:192:ALA:H	1.73	0.53
18:J:77:HIS:CE1	18:J:83:GLY:HA3	2.42	0.53
18:J:107:GLY:O	18:J:111:LYS:NZ	2.38	0.53
40:h:47:LEU:HB3	40:h:50:ALA:HB3	1.91	0.53
54:v:15:ASP:HA	54:v:21:ILE:HG13	1.88	0.53
1:1:1709:U:H2'	1:1:1710:G:C8	2.43	0.53
1:1:2649:C:H2'	1:1:2650:U:H6	1.73	0.53
2:2:437:U:H1'	41:i:154:ARG:HH12	1.73	0.53
2:2:508:U:H1'	2:2:509:A:N7	2.23	0.53
2:2:711:G:H2'	2:2:712:A:H8	1.73	0.53
2:2:835:U:H2'	2:2:836:G:C8	2.44	0.53
2:2:988:G:O2'	2:2:989:U:OP1	2.22	0.53
4:4:6:U:H3	4:4:354:A:H61	1.57	0.53
6:6:15:GLY:HA2	6:6:79:VAL:HG12	1.90	0.53
6:6:24:LYS:CG	6:6:104:VAL:CG1	2.68	0.53
7:7:27:G:H2'	7:7:28:G:H8	1.72	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:o:54:SER:HG	47:o:58:ASN:CG	2.10	0.53
1:1:445:C:H2'	1:1:446:G:C8	2.44	0.53
1:1:1368:G:H2'	1:1:1369:G:H8	1.73	0.53
1:1:1550:C:H5'	1:1:1740:G:H22	1.74	0.53
2:2:464:U:N3	2:2:466:A:O3'	2.42	0.53
2:2:746:A:H2'	2:2:747:A:C8	2.43	0.53
2:2:1148:U:H5''	46:n:11:ARG:HH21	1.74	0.53
4:4:132:U:H2'	4:4:133:A:H8	1.73	0.53
34:b:25:VAL:HG13	34:b:26:THR:N	2.23	0.53
44:l:7:ILE:O	44:l:7:ILE:HG22	2.06	0.53
46:n:114:LYS:HE2	46:n:119:ARG:O	2.08	0.53
1:1:125:A:H5'	36:d:19:ARG:HD3	1.89	0.53
1:1:154:U:H2'	1:1:155:A:H8	1.74	0.53
1:1:155:A:H2'	1:1:156:A:C8	2.43	0.53
1:1:1696:G:H21	1:1:1977:A:HO2'	1.57	0.53
1:1:2691:C:H2'	1:1:2692:G:H8	1.74	0.53
2:2:34:C:H2'	2:2:35:G:H8	1.74	0.53
4:4:118:C:O2'	4:4:125:A:N6	2.42	0.53
6:6:16:THR:HG21	6:6:78:HIS:NE2	2.21	0.53
6:6:195:LEU:CD1	6:6:196:ASP:N	2.69	0.53
30:V:72:VAL:HG12	30:V:93:ARG:HA	1.89	0.53
49:q:35:THR:N	49:q:54:ARG:O	2.42	0.53
1:1:518:G:H4'	27:S:18:ARG:HE	1.74	0.53
2:2:1310:G:N2	2:2:1328:C:C2	2.77	0.53
2:2:1351:U:H3	2:2:1371:G:H1	1.56	0.53
7:7:17:C:H2'	7:7:18:G:C8	2.43	0.53
49:q:37:VAL:HG23	49:q:53:CYS:SG	2.49	0.53
57:y:80:THR:HA	57:y:83:ILE:HG12	1.91	0.53
1:1:1983:G:H4'	1:1:2606:C:H4'	1.91	0.53
1:1:2526:G:O6	1:1:2537:U:O4	2.27	0.53
2:2:855:U:H2'	2:2:856:C:H6	1.74	0.53
2:2:975:A:N1	47:o:62:ARG:NH1	2.52	0.53
12:D:58:LYS:HG3	12:D:71:GLY:HA2	1.91	0.53
34:b:55:ILE:CG1	34:b:56:ALA:N	2.71	0.53
49:q:54:ARG:NH1	49:q:64:THR:CG2	2.42	0.53
1:1:958:U:O2	3:3:89:U:O2'	2.26	0.53
1:1:1429:G:H2'	1:1:1430:G:H8	1.74	0.53
2:2:373:A:N3	2:2:482:A:N6	2.57	0.53
2:2:715:A:H2'	2:2:716:A:C8	2.43	0.53
2:2:1004:A:H1'	2:2:1036:A:H61	1.73	0.53
2:2:1431:A:H2'	2:2:1432:G:H5'	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:6:191:LEU:CA	6:6:194:PHE:CZ	2.71	0.53
14:F:11:VAL:HG13	14:F:15:VAL:HG21	1.89	0.53
17:I:74:PRO:O	17:I:112:LYS:NZ	2.42	0.53
1:1:5:A:H2'	1:1:6:A:C8	2.44	0.53
1:1:665:U:H2'	1:1:666:A:H8	1.74	0.53
1:1:937:C:H2'	1:1:938:G:C8	2.44	0.53
1:1:2696:U:H2'	1:1:2697:G:H8	1.74	0.53
2:2:795:C:O2'	48:p:128:ARG:O	2.27	0.53
2:2:835:U:H3	2:2:851:G:H1	1.55	0.53
2:2:917:G:H2'	2:2:918:A:H8	1.74	0.53
4:4:18:C:O2	5:5:93:ASN:OD1	2.26	0.53
39:g:73:LYS:HE2	39:g:165:ASP:HB2	1.90	0.53
43:k:3:HIS:CE1	43:k:95:ALA:CB	2.92	0.53
44:l:37:SER:OG	46:n:41:ARG:NE	2.40	0.53
46:n:91:ASP:OD1	46:n:92:GLU:N	2.41	0.53
56:x:47:LEU:HD11	56:x:49:ILE:HD13	1.89	0.53
1:1:404:A:N6	1:1:421:C:O2'	2.42	0.53
1:1:1038:G:H2'	1:1:1039:A:C8	2.44	0.53
1:1:1172:C:O2'	1:1:1173:U:O4'	2.22	0.53
1:1:1568:G:H5'	10:B:60:GLN:HA	1.91	0.53
1:1:1921:G:H2'	1:1:1922:G:H8	1.72	0.53
2:2:1221:G:OP1	56:x:36:ARG:NH1	2.41	0.53
42:j:76:LEU:CD1	42:j:120:VAL:HG12	2.00	0.53
1:1:729:G:O2'	1:1:763:G:H4'	2.09	0.52
1:1:1386:C:H2'	1:1:1387:A:C8	2.43	0.52
1:1:1422:G:H1'	1:1:1496:A:H61	1.74	0.52
1:1:1431:A:H2'	1:1:1432:G:C8	2.44	0.52
1:1:1649:G:H2'	1:1:1650:A:C8	2.43	0.52
1:1:2564:A:C2	1:1:2647:U:H4'	2.45	0.52
2:2:127:G:O2'	54:v:6:ARG:NH2	2.42	0.52
2:2:144:G:H2'	2:2:145:G:C8	2.44	0.52
4:4:301:A:OP1	4:4:304:C:N4	2.40	0.52
13:E:34:ILE:HG13	13:E:91:LEU:HD22	1.91	0.52
14:F:158:LYS:HD2	14:F:160:LYS:HG3	1.91	0.52
30:V:21:ARG:HH21	30:V:87:GLN:HB2	1.74	0.52
56:x:44:MET:SD	56:x:47:LEU:HD21	2.48	0.52
1:1:239:C:O2'	1:1:622:G:O2'	2.20	0.52
1:1:1090:A:H2'	1:1:1091:G:H8	1.74	0.52
1:1:2626:C:H2'	1:1:2627:G:C8	2.44	0.52
1:1:2810:A:H4'	11:C:62:LYS:HD2	1.90	0.52
2:2:64:G:H4'	2:2:65:A:H3'	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:563:A:H5''	2:2:564:C:H5	1.74	0.52
2:2:815:A:O2'	2:2:1526:G:N2	2.35	0.52
2:2:920:U:H2'	2:2:921:U:C6	2.44	0.52
2:2:1241:G:H2'	2:2:1242:G:C8	2.44	0.52
15:G:47:PHE:HA	15:G:51:ARG:HB2	1.90	0.52
24:P:49:ALA:H	24:P:60:THR:CG2	2.20	0.52
39:g:183:VAL:HG23	39:g:197:ASP:H	1.74	0.52
39:g:184:PHE:HE1	39:g:198:PHE:CD1	2.28	0.52
1:1:1223:G:N2	1:1:1226:A:OP2	2.34	0.52
1:1:1363:C:O2'	1:1:1809:A:N3	2.35	0.52
1:1:2579:C:H2'	1:1:2580:PSU:C6	2.45	0.52
2:2:32:A:H2'	2:2:33:A:C8	2.44	0.52
2:2:368:U:O4	6:6:223:ARG:NH2	2.43	0.52
2:2:839:C:H2'	2:2:840:C:C6	2.44	0.52
2:2:1310:G:C2	2:2:1328:C:C2	2.98	0.52
12:D:149:ILE:HD11	12:D:171:ASP:O	2.10	0.52
13:E:10:ASP:OD1	13:E:11:GLU:N	2.42	0.52
15:G:4:ILE:HG22	15:G:18:GLN:HB3	1.91	0.52
23:O:27:VAL:HG12	23:O:93:ASP:HB3	1.92	0.52
56:x:51:VAL:O	56:x:58:VAL:HG22	2.10	0.52
1:1:272:A:H2'	1:1:273:G:H8	1.72	0.52
1:1:417:C:H2'	1:1:418:C:C6	2.44	0.52
1:1:633:A:O2'	1:1:2404:U:OP1	2.26	0.52
1:1:863:A:H2'	1:1:864:G:C8	2.45	0.52
1:1:1549:A:O3'	1:1:1740:G:N2	2.41	0.52
1:1:1590:A:H2'	1:1:1591:A:H8	1.75	0.52
1:1:2752:C:H3'	1:1:2753:A:H8	1.74	0.52
2:2:986:U:H2'	2:2:987:G:C8	2.44	0.52
7:7:21:A:H62	7:7:46:G7M:H1'	1.74	0.52
23:O:64:TYR:O	23:O:67:ASN:ND2	2.42	0.52
1:1:924:G:H2'	1:1:925:A:H8	1.75	0.52
1:1:1808:A:H3'	1:1:1809:A:C8	2.44	0.52
2:2:21:G:H2'	2:2:22:G:C8	2.44	0.52
2:2:108:G:O2'	2:2:110:C:N4	2.43	0.52
2:2:206:C:H2'	2:2:207:C:C6	2.44	0.52
10:B:207:LYS:HE2	10:B:213:TRP:HH2	1.67	0.52
13:E:8:TYR:HA	13:E:12:VAL:CG1	2.39	0.52
14:F:3:ARG:NH1	14:F:4:VAL:CG1	2.72	0.52
33:Z:16:ARG:HG3	33:Z:54:MET:HE1	1.92	0.52
41:i:16:GLY:C	41:i:17:THR:HG23	2.34	0.52
55:w:25:ASP:CG	55:w:28:THR:HG22	2.34	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1422:G:H2'	1:1:1423:G:H8	1.72	0.52
1:1:2657:A:O2'	14:F:160:LYS:NZ	2.41	0.52
1:1:2757:A:N1	14:F:67:THR:HG21	2.25	0.52
2:2:261:U:OP2	57:y:71:LYS:NZ	2.33	0.52
2:2:310:G:H5''	53:u:31:ARG:HB3	1.90	0.52
2:2:454:G:H1	2:2:478:A:N6	2.05	0.52
2:2:972:C:OP2	47:o:59:LYS:NZ	2.40	0.52
2:2:992:U:O2'	2:2:1040:U:O4	2.25	0.52
2:2:1156:G:O2'	2:2:1180:A:N6	2.35	0.52
4:4:33:A:H4'	4:4:34:A:H5'	1.91	0.52
5:5:41:VAL:HG22	5:5:42:LYS:H	1.75	0.52
5:5:55:TYR:O	5:5:66:PHE:HB2	2.09	0.52
15:G:2:GLN:NE2	15:G:19:VAL:O	2.43	0.52
29:U:25:VAL:HG12	29:U:36:VAL:HG22	1.90	0.52
34:b:9:THR:O	34:b:10:ARG:C	2.49	0.52
42:j:45:ARG:H	42:j:73:ASN:HA	1.74	0.52
44:l:69:VAL:HG13	44:l:100:ALA:HB1	1.91	0.52
44:l:147:ALA:O	48:p:56:ARG:NH1	2.37	0.52
46:n:84:THR:O	46:n:87:LEU:HB2	2.08	0.52
1:1:627:A:H5''	20:L:78:ARG:HH12	1.75	0.52
1:1:633:A:H5''	20:L:70:LYS:HD2	1.90	0.52
1:1:2008:C:H2'	1:1:2009:A:H8	1.74	0.52
1:1:2275:C:H1'	21:M:84:LYS:HA	1.91	0.52
1:1:2866:U:H5'	1:1:2868:A:H5'	1.90	0.52
2:2:76:G:C5	2:2:77:A:H1'	2.44	0.52
2:2:1371:G:OP1	46:n:14:SER:OG	2.27	0.52
2:2:1492:A:O2'	5:5:22:HIS:NE2	2.35	0.52
4:4:18:C:H2'	5:5:93:ASN:OD1	2.09	0.52
4:4:129:G:C2	4:4:130:C:H1'	2.45	0.52
5:5:34:LEU:HG	5:5:90:LEU:HA	1.90	0.52
7:7:32:PSU:H3'	46:n:130:ARG:HH12	0.71	0.52
10:B:185:GLU:HG3	10:B:187:ASP:H	1.74	0.52
11:C:131:ASP:O	11:C:136:ASN:ND2	2.42	0.52
31:X:72:ARG:NH2	31:X:78:TYR:OH	2.42	0.52
1:1:1146:C:H2'	1:1:1147:A:H8	1.75	0.52
1:1:1278:C:H2'	1:1:1279:G:H8	1.74	0.52
1:1:2339:C:O3'	3:3:41:G:N2	2.43	0.52
2:2:152:A:N6	2:2:169:C:N3	2.57	0.52
2:2:203:G:O2'	2:2:204:G:H8	1.92	0.52
2:2:254:G:O3'	54:v:71:LYS:NZ	2.42	0.52
2:2:536:C:H2'	2:2:537:G:C8	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:977:A:N6	2:2:1224:U:OP1	2.41	0.52
2:2:1133:G:H2'	2:2:1134:G:C8	2.45	0.52
15:G:91:PHE:O	15:G:123:ARG:NH1	2.43	0.52
19:K:76:VAL:H	24:P:73:VAL:HG22	1.75	0.52
21:M:71:LYS:HE3	21:M:73:ILE:HD11	1.92	0.52
26:R:49:ILE:HG12	26:R:53:PHE:N	2.24	0.52
37:e:16:LYS:HE3	37:e:20:GLY:HA2	1.91	0.52
50:r:22:ILE:C	50:r:25:VAL:HG12	2.35	0.52
1:1:726:G:O5'	1:1:1432:G:O2'	2.27	0.52
1:1:832:U:H2'	1:1:833:A:C8	2.45	0.52
1:1:1470:A:H62	1:1:1521:G:N2	2.07	0.52
1:1:2313:C:H4'	13:E:88:LYS:NZ	2.25	0.52
1:1:2374:C:N4	1:1:2375:G:O6	2.42	0.52
2:2:198:G:H2'	2:2:199:A:H8	1.74	0.52
2:2:528:C:H41	49:q:46:ASN:CG	2.18	0.52
2:2:1340:A:O2'	7:7:31:A:O3'	2.28	0.52
2:2:1354:U:H2'	2:2:1355:G:C8	2.44	0.52
7:7:33:U:C6	46:n:130:ARG:NH1	2.66	0.52
18:J:136:GLN:OE1	18:J:136:GLN:N	2.43	0.52
34:b:55:ILE:HG13	34:b:56:ALA:H	1.74	0.52
40:h:126:ARG:O	40:h:127:ARG:HG2	2.10	0.52
1:1:4:U:H2'	1:1:5:A:C8	2.45	0.52
1:1:1754:A:N1	1:1:2716:C:O2'	2.42	0.52
2:2:413:G:N1	2:2:429:U:OP2	2.43	0.52
2:2:1124:G:H1'	2:2:1125:U:H5	1.75	0.52
2:2:1251:A:H2'	2:2:1252:A:C8	2.45	0.52
15:G:40:THR:HG22	15:G:42:LYS:N	2.23	0.52
15:G:131:SER:HA	15:G:141:LYS:HA	1.92	0.52
26:R:6:GLN:OE1	26:R:11:GLN:HG3	2.09	0.52
56:x:45:ILE:HA	56:x:62:VAL:HG11	1.91	0.52
1:1:80:G:H2'	1:1:81:G:H8	1.76	0.51
1:1:85:G:C5'	29:U:28:VAL:CG2	2.88	0.51
1:1:527:C:O2'	1:1:2779:U:O2'	2.26	0.51
1:1:843:G:H2'	1:1:844:A:H8	1.75	0.51
1:1:1062:G:H2'	1:1:1063:G:C8	2.44	0.51
1:1:1858:A:N6	1:1:1884:G:H1'	2.25	0.51
2:2:1071:C:H2'	2:2:1072:G:H8	1.74	0.51
3:3:115:A:O2'	23:O:55:GLU:OE2	2.26	0.51
4:4:19:G:C6	5:5:91:LEU:HB3	2.44	0.51
4:4:219:G:N1	4:4:241:C:N3	2.58	0.51
6:6:142:ASP:OD1	6:6:143:GLU:N	2.42	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:H:23:LEU:CD2	16:H:95:LEU:HB3	2.37	0.51
24:P:13:MET:HE3	24:P:77:HIS:HE1	1.76	0.51
40:h:137:ALA:HA	40:h:140:ASN:HD21	1.76	0.51
41:i:54:GLN:HB2	41:i:203:LEU:HD12	1.92	0.51
44:l:7:ILE:O	44:l:8:GLY:C	2.53	0.51
46:n:36:GLU:OE1	46:n:45:ARG:NH1	2.43	0.51
48:p:59:THR:HG22	48:p:61:PHE:H	1.74	0.51
1:1:937:C:H2'	1:1:938:G:H8	1.75	0.51
1:1:1287:A:H61	1:1:1649:G:H1'	1.75	0.51
1:1:1435:G:H2'	1:1:1436:G:C8	2.44	0.51
1:1:1500:G:H2'	1:1:1501:G:C8	2.45	0.51
2:2:33:A:O2'	2:2:363:A:O2'	2.26	0.51
2:2:373:A:H2'	2:2:374:A:H8	1.76	0.51
2:2:551:U:O2'	49:q:83:ARG:NH1	2.43	0.51
2:2:782:A:H62	2:2:800:G:N2	2.06	0.51
2:2:1533:C:H2'	2:2:1534:A:H1'	1.92	0.51
4:4:180:G:H21	4:4:181:G:H1	1.58	0.51
7:7:4:C:H2'	7:7:5:G:H8	1.74	0.51
22:N:28:LEU:HD23	22:N:48:VAL:HG21	1.91	0.51
26:R:6:GLN:HB2	26:R:11:GLN:HG2	1.93	0.51
39:g:66:LYS:HB3	39:g:90:PHE:HE2	1.76	0.51
39:g:129:LEU:CD1	39:g:135:LEU:CD1	2.88	0.51
42:j:34:THR:HG22	42:j:52:LYS:HG2	1.91	0.51
43:k:3:HIS:HA	43:k:65:GLU:HA	1.91	0.51
1:1:1081:U:H5'	17:l:127:SER:HB3	1.92	0.51
1:1:2804:U:H2'	1:1:2805:C:H6	1.76	0.51
1:1:2815:C:H2'	1:1:2816:G:H8	1.75	0.51
2:2:398:U:H2'	2:2:399:G:H8	1.75	0.51
2:2:556:C:H2'	2:2:557:G:H8	1.75	0.51
2:2:712:A:H2'	2:2:713:G:H8	1.74	0.51
2:2:1515:G:H2'	2:2:1516:2MG:C8	2.46	0.51
2:2:1517:G:H2'	2:2:1518:MA6:H8	1.93	0.51
3:3:114:C:H2'	3:3:115:A:C8	2.45	0.51
4:4:363:A:H2'	6:6:262:ARG:H	1.75	0.51
6:6:15:GLY:CA	6:6:79:VAL:CG1	2.88	0.51
9:A:50:ASN:HB2	9:A:82:ILE:HB	1.91	0.51
10:B:132:MET:HE1	10:B:188:CYS:HB2	1.93	0.51
39:g:43:LEU:HA	39:g:46:THR:HG22	1.92	0.51
51:s:23:LYS:HA	51:s:27:LEU:HD12	1.93	0.51
1:1:59:U:O2'	1:1:74:A:OP2	2.28	0.51
1:1:1170:C:H2'	1:1:1171:G:C8	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1664:A:H61	1:1:1996:C:H42	1.58	0.51
1:1:1923:U:H2'	1:1:1924:C:C6	2.45	0.51
1:1:2036:C:H2'	1:1:2037:A:H8	1.75	0.51
1:1:2618:G:O2'	11:C:155:VAL:O	2.28	0.51
2:2:6:G:H2'	42:j:124:LEU:HD11	1.93	0.51
2:2:1103:C:H5'	39:g:97:LEU:HD22	1.93	0.51
2:2:1250:A:C2	2:2:1370:G:H1'	2.45	0.51
2:2:1516:2MG:N2	2:2:1519:MA6:OP2	2.32	0.51
3:3:36:C:N4	3:3:49:C:O2	2.44	0.51
6:6:170:VAL:CG1	6:6:194:PHE:HZ	2.02	0.51
6:6:215:GLU:HG3	6:6:228:THR:HG23	1.91	0.51
6:6:300:PRO:HB2	6:6:365:PRO:HB2	1.92	0.51
17:I:78:LEU:CD1	17:I:112:LYS:HZ2	2.23	0.51
21:M:60:GLN:O	21:M:60:GLN:HG2	2.10	0.51
39:g:222:ARG:O	39:g:226:SER:OG	2.28	0.51
41:i:25:VAL:CG2	41:i:28:ILE:HG21	2.19	0.51
1:1:63:A:H2'	1:1:64:A:H8	1.75	0.51
1:1:1170:C:H2'	1:1:1171:G:H8	1.74	0.51
1:1:1493:C:H3'	1:1:1494:A:H5''	1.92	0.51
1:1:2698:U:H2'	1:1:2699:C:H6	1.75	0.51
2:2:501:C:O2	2:2:549:C:O2'	2.28	0.51
2:2:986:U:H2'	2:2:987:G:H8	1.73	0.51
2:2:1022:A:H2'	2:2:1023:U:C6	2.45	0.51
2:2:1423:G:OP1	19:K:49:ARG:NH2	2.40	0.51
6:6:342:GLU:HB2	6:6:359:VAL:HG23	1.93	0.51
26:R:63:VAL:HA	26:R:96:VAL:HG12	1.91	0.51
28:T:53:VAL:CG1	28:T:87:LEU:HD21	2.34	0.51
46:n:29:VAL:HG13	46:n:64:TYR:HA	1.90	0.51
58:z:4:ILE:HD13	58:z:19:PHE:HB2	1.92	0.51
1:1:151:C:H2'	1:1:152:A:C8	2.45	0.51
1:1:547:A:C2	1:1:549:G:C6	2.98	0.51
1:1:639:U:H2'	1:1:640:C:C6	2.45	0.51
1:1:873:C:H2'	1:1:874:G:C8	2.46	0.51
1:1:877:A:H2'	1:1:878:A:C8	2.46	0.51
1:1:1028:A:N6	1:1:1125:G:H2'	2.26	0.51
1:1:1571:A:H2'	1:1:1572:A:C8	2.46	0.51
1:1:1874:C:C4	1:1:1875:G:H1'	2.46	0.51
1:1:2246:G:H2'	1:1:2247:A:C8	2.45	0.51
1:1:2362:C:H5''	37:e:40:ARG:HH11	1.75	0.51
2:2:995:C:H2'	2:2:996:A:H8	1.75	0.51
2:2:1233:G:P	46:n:119:ARG:NH1	2.82	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1256:A:C6	2:2:1277:C:C4	2.99	0.51
4:4:363:A:C6	6:6:259:GLU:HG3	2.46	0.51
10:B:89:ALA:HB2	10:B:158:ALA:HA	1.92	0.51
14:F:45:HIS:HB2	14:F:50:LEU:HG	1.93	0.51
17:I:128:ILE:HA	17:I:131:THR:HG22	1.93	0.51
21:M:36:VAL:HG23	30:V:82:TYR:HB2	1.91	0.51
24:P:90:GLY:O	24:P:113:ARG:NH1	2.44	0.51
42:j:15:LEU:CB	42:j:37:THR:HG22	2.35	0.51
1:1:755:U:H2'	1:1:756:A:C8	2.46	0.51
1:1:1287:A:H62	22:N:106:ASP:HB3	1.74	0.51
1:1:1923:U:H2'	1:1:1924:C:H6	1.76	0.51
1:1:2298:A:OP1	13:E:71:ARG:NH2	2.44	0.51
1:1:2620:C:O2'	11:C:124:ARG:NH1	2.40	0.51
2:2:550:G:O2'	49:q:116:LYS:NZ	2.37	0.51
2:2:736:C:OP1	55:w:61:ARG:NH1	2.39	0.51
2:2:768:A:H4'	2:2:1523:G:N2	2.26	0.51
2:2:1055:A:O2'	40:h:156:ARG:NH1	2.43	0.51
2:2:1081:A:H2'	2:2:1082:A:H8	1.75	0.51
2:2:1527:U:H2'	2:2:1528:U:C6	2.46	0.51
4:4:64:C:H1'	4:4:74:G:H1'	1.93	0.51
8:8:7:G:H8	58:z:33:ARG:HH22	1.57	0.51
13:E:60:ILE:HD11	13:E:141:ILE:HD11	1.91	0.51
21:M:33:LEU:HD13	21:M:117:PHE:HB3	1.91	0.51
41:i:17:THR:OG1	41:i:19:LEU:CD2	2.59	0.51
43:k:4:TYR:CG	43:k:92:THR:HG23	2.45	0.51
1:1:2233:U:H2'	1:1:2234:G:C8	2.46	0.51
1:1:2589:A:N1	1:1:2606:C:N4	2.59	0.51
1:1:2682:A:C2	11:C:23:PRO:HB3	2.46	0.51
2:2:978:A:N6	2:2:1318:A:N7	2.59	0.51
2:2:1118:U:H2'	2:2:1119:C:C6	2.44	0.51
2:2:1297:G:OP1	50:r:13:LYS:NZ	2.43	0.51
2:2:1414:U:H2'	2:2:1415:G:H8	1.75	0.51
4:4:139:C:N4	4:4:179:A:H61	2.08	0.51
4:4:185:A:N6	40:h:73:PRO:HD2	2.25	0.51
11:C:12:THR:OG1	11:C:13:ARG:N	2.43	0.51
11:C:157:LYS:HB2	18:J:80:HIS:HA	1.91	0.51
26:R:27:ILE:O	26:R:66:HIS:NE2	2.38	0.51
47:o:15:HIS:HA	47:o:18:ILE:HG22	1.93	0.51
1:1:9:G:N2	1:1:2800:A:H61	2.09	0.51
1:1:628:G:H2'	1:1:629:G:H8	1.76	0.51
1:1:1047:G:N2	1:1:1110:G:O2'	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:8:A:N6	41:i:202:GLU:O	2.44	0.51
2:2:909:A:N3	2:2:1413:A:O2'	2.42	0.51
2:2:1457:G:H2'	2:2:1458:G:C8	2.45	0.51
6:6:195:LEU:HD12	6:6:196:ASP:CA	2.41	0.51
6:6:245:VAL:HG23	6:6:300:PRO:HD3	1.93	0.51
13:E:34:ILE:CG1	13:E:91:LEU:HD23	2.16	0.51
13:E:111:ILE:HG12	13:E:137:ILE:HG22	1.91	0.51
16:H:94:ARG:HG2	16:H:97:LYS:HB3	1.93	0.51
39:g:129:LEU:HG	39:g:131:LYS:H	1.76	0.51
1:1:5:A:H2'	1:1:6:A:H8	1.76	0.51
1:1:755:U:H2'	1:1:756:A:H8	1.76	0.51
1:1:776:G:N1	1:1:2072:C:OP1	2.39	0.51
1:1:781:A:OP1	10:B:217:ARG:NH2	2.39	0.51
1:1:1704:C:H2'	1:1:1705:A:C8	2.46	0.51
1:1:2086:U:H2'	1:1:2087:G:C8	2.46	0.51
1:1:2286:G:H4'	1:1:2287:A:O5'	2.11	0.51
1:1:2898:U:H2'	1:1:2899:A:C8	2.46	0.51
2:2:1051:C:H42	2:2:1207:2MG:HN1	1.57	0.51
3:3:78:A:H62	3:3:98:G:H21	1.58	0.51
11:C:1:MET:HB3	11:C:205:PRO:HG2	1.93	0.51
39:g:98:GLY:O	39:g:102:THR:HG22	2.11	0.51
41:i:25:VAL:HG21	41:i:28:ILE:CG2	2.35	0.51
1:1:18:U:H2'	1:1:19:A:H8	1.75	0.50
1:1:923:G:H2'	1:1:924:G:H8	1.76	0.50
1:1:1412:U:H2'	1:1:1413:A:C8	2.46	0.50
2:2:916:U:H2'	2:2:917:G:C8	2.45	0.50
3:3:49:C:H2'	3:3:50:A:C8	2.45	0.50
4:4:22:G:O6	4:4:332:G:C2	2.65	0.50
4:4:45:A:H4'	4:4:312:A:C8	2.44	0.50
6:6:133:PHE:HA	6:6:170:VAL:O	2.11	0.50
13:E:46:ASP:OD1	13:E:46:ASP:N	2.43	0.50
16:H:46:ARG:NH2	17:I:118:GLY:O	2.42	0.50
22:N:83:LEU:HD12	22:N:87:PHE:HE2	1.76	0.50
39:g:129:LEU:CG	39:g:135:LEU:CD1	2.84	0.50
39:g:166:ALA:HA	39:g:169:GLU:HG2	1.92	0.50
47:o:51:VAL:HG12	47:o:63:ASP:HB2	1.93	0.50
1:1:817:C:H2'	1:1:818:G:O4'	2.11	0.50
1:1:1306:C:H2'	1:1:1307:A:H8	1.75	0.50
1:1:1445:G:O6	1:1:1466:U:C2	2.64	0.50
1:1:1576:U:H3'	1:1:1577:C:H5''	1.93	0.50
1:1:1992:G:O2'	1:1:1997:C:N4	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2215:C:H2'	1:1:2216:G:C8	2.47	0.50
1:1:2232:C:OP1	31:X:27:ARG:NH1	2.44	0.50
2:2:146:G:H2'	2:2:147:G:C8	2.47	0.50
2:2:946:A:H2'	2:2:947:G:C8	2.46	0.50
2:2:1147:C:H4'	46:n:7:TYR:CE1	2.46	0.50
10:B:205:LEU:HB3	10:B:210:ALA:HB3	1.93	0.50
1:1:26:G:H1'	1:1:515:A:H61	1.76	0.50
1:1:483:A:O2'	29:U:56:GLY:O	2.23	0.50
1:1:584:C:N4	1:1:585:G:O6	2.45	0.50
1:1:599:A:H2'	1:1:600:G:H8	1.76	0.50
1:1:2865:U:OP2	1:1:2866:U:O2'	2.21	0.50
1:1:2866:U:H4'	1:1:2867:G:H4'	1.93	0.50
2:2:390:U:H2'	2:2:391:G:C8	2.46	0.50
2:2:408:A:N6	2:2:435:A:N1	2.60	0.50
39:g:125:THR:CG2	39:g:127:ASP:OD1	2.60	0.50
54:v:53:CYS:SG	54:v:54:GLY:N	2.84	0.50
1:1:63:A:O2'	28:T:77:ARG:NH1	2.44	0.50
1:1:948:C:H2'	1:1:949:G:H8	1.76	0.50
1:1:2191:A:H2'	1:1:2192:U:C6	2.46	0.50
1:1:2656:U:O2	1:1:2665:A:N7	2.45	0.50
2:2:552:U:O2'	49:q:83:ARG:O	2.20	0.50
2:2:740:U:H2'	2:2:741:G:H8	1.76	0.50
2:2:776:G:N2	2:2:802:A:OP2	2.42	0.50
2:2:927:G:H2'	2:2:928:G:H8	1.77	0.50
2:2:1071:C:OP1	42:j:54:ARG:NH2	2.45	0.50
2:2:1279:G:H5''	47:o:9:ARG:HH12	1.75	0.50
2:2:1328:C:H5''	50:r:28:THR:OG1	2.12	0.50
6:6:334:THR:CG2	6:6:335:THR:N	2.65	0.50
8:8:7:G:OP2	58:z:33:ARG:NH1	2.45	0.50
15:G:88:GLY:HA2	15:G:125:THR:HG23	1.92	0.50
23:O:37:ALA:HB3	23:O:78:VAL:HG11	1.92	0.50
54:v:21:ILE:C	54:v:46:VAL:HG22	2.37	0.50
56:x:14:HIS:HA	56:x:17:LYS:HE2	1.93	0.50
1:1:197:A:N6	1:1:2430:A:O2'	2.45	0.50
1:1:1515:A:H3'	1:1:1516:G:H8	1.76	0.50
1:1:1639:C:H2'	1:1:1640:A:H5''	1.94	0.50
1:1:1791:A:C2	1:1:1829:A:H4'	2.47	0.50
1:1:2732:G:H5''	1:1:2733:A:O4'	2.12	0.50
2:2:105:G:H2'	2:2:106:C:C6	2.47	0.50
2:2:181:A:O2'	2:2:193:C:N4	2.45	0.50
2:2:773:G:O6	2:2:807:A:N6	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1116:U:O4	2:2:1117:A:N6	2.45	0.50
2:2:1222:G:OP1	56:x:77:THR:OG1	2.28	0.50
11:C:181:ASP:OD1	11:C:183:GLU:OE2	2.29	0.50
29:U:34:VAL:HG13	29:U:67:VAL:HG22	1.94	0.50
40:h:112:ASP:HB3	40:h:115:LEU:HB2	1.85	0.50
43:k:26:THR:HA	43:k:29:ILE:HD12	1.94	0.50
44:l:88:PRO:HD3	44:l:148:ASN:HB2	1.93	0.50
1:1:192:C:O2'	1:1:802:A:N3	2.44	0.50
1:1:863:A:H2'	1:1:864:G:H8	1.77	0.50
1:1:926:G:H2'	1:1:927:A:C8	2.47	0.50
1:1:1379:U:O2'	1:1:1380:G:OP1	2.29	0.50
1:1:1712:U:OP2	1:1:1713:A:O2'	2.20	0.50
1:1:2818:U:H2'	1:1:2819:G:C8	2.47	0.50
1:1:2855:C:H2'	1:1:2856:A:C8	2.46	0.50
1:1:2899:A:H2'	1:1:2900:A:C8	2.47	0.50
2:2:409:U:H5''	41:i:26:ARG:HG2	1.93	0.50
18:J:64:VAL:HB	18:J:68:LYS:HE3	1.94	0.50
30:V:29:ILE:HD11	30:V:37:PRO:HB2	1.92	0.50
43:k:3:HIS:HE1	43:k:92:THR:C	2.19	0.50
46:n:127:PHE:HE2	46:n:129:LYS:HE3	1.77	0.50
52:t:24:SER:OG	52:t:26:GLU:OE1	2.30	0.50
1:1:322:A:H5'	1:1:340:A:H1'	1.92	0.50
1:1:580:U:H2'	1:1:581:C:C6	2.46	0.50
1:1:2029:G:N1	1:1:2033:A:OP2	2.30	0.50
1:1:2417:C:H2'	1:1:2418:A:H8	1.76	0.50
2:2:309:A:O2'	2:2:607:A:N1	2.43	0.50
2:2:321:A:H2'	2:2:322:C:H6	1.77	0.50
2:2:692:U:OP2	48:p:28:ASN:ND2	2.45	0.50
2:2:1310:G:C2	2:2:1328:C:O2	2.65	0.50
6:6:14:VAL:O	6:6:78:HIS:HA	2.12	0.50
6:6:15:GLY:CA	6:6:79:VAL:HG12	2.42	0.50
39:g:129:LEU:HD11	39:g:135:LEU:HB2	1.93	0.50
49:q:51:LYS:HD2	49:q:72:HIS:CD2	2.47	0.50
56:x:66:MET:HG3	56:x:74:PHE:HZ	1.76	0.50
1:1:37:C:H2'	1:1:38:A:C8	2.46	0.50
1:1:221:A:C4	1:1:233:A:H1'	2.47	0.50
1:1:647:G:O2'	1:1:648:G:OP1	2.28	0.50
1:1:1510:G:C5	1:1:1511:G:H1'	2.47	0.50
1:1:1511:G:H2'	1:1:1512:C:H6	1.77	0.50
1:1:1525:A:HO2'	1:1:1526:C:P	2.35	0.50
1:1:2293:G:H2'	1:1:2294:G:H8	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2728:U:O2'	1:1:2729:G:H8	1.94	0.50
1:1:2863:C:H2'	1:1:2864:G:C8	2.46	0.50
6:6:170:VAL:HG12	6:6:194:PHE:CZ	2.47	0.50
6:6:192:ALA:C	6:6:195:LEU:HG	2.33	0.50
11:C:68:PHE:HE1	11:C:79:LEU:HD21	1.76	0.50
13:E:148:ARG:HG2	13:E:149:VAL:H	1.77	0.50
15:G:6:LEU:HD11	15:G:35:LYS:HA	1.94	0.50
21:M:58:LYS:O	21:M:59:ARG:C	2.54	0.50
29:U:83:VAL:CG2	29:U:94:ARG:HB3	2.41	0.50
39:g:129:LEU:HD11	39:g:135:LEU:CD1	2.40	0.50
1:1:806:C:O2	1:1:2444:G:O2'	2.30	0.50
1:1:1434:A:H2'	1:1:1435:G:C8	2.47	0.50
1:1:2405:G:H3'	1:1:2406:A:H5'	1.94	0.50
1:1:2421:G:OP1	35:c:8:LYS:NZ	2.45	0.50
1:1:2699:C:H2'	1:1:2700:A:H8	1.77	0.50
1:1:2723:C:OP1	11:C:114:LYS:NZ	2.35	0.50
1:1:2836:U:H2'	1:1:2837:A:C8	2.47	0.50
2:2:811:C:O2'	2:2:901:A:N1	2.44	0.50
2:2:949:A:O2'	2:2:971:G:O6	2.24	0.50
5:5:131:LYS:NZ	5:5:132:GLY:O	2.44	0.50
15:G:76:GLU:HA	15:G:142:VAL:HG13	1.93	0.50
22:N:57:THR:CG2	22:N:62:ASN:HD22	2.24	0.50
25:Q:68:ALA:O	25:Q:72:ASN:ND2	2.35	0.50
39:g:64:LYS:HB2	39:g:225:ARG:HH21	1.75	0.50
41:i:130:VAL:CG1	41:i:132:ILE:HG12	2.42	0.50
52:t:2:SER:N	52:t:35:GLN:OE1	2.45	0.50
1:1:90:U:H5''	1:1:91:A:H2'	1.95	0.49
1:1:404:A:H4'	1:1:405:U:O5'	2.12	0.49
1:1:592:A:O2'	37:e:64:TYR:OH	2.28	0.49
1:1:2370:G:H2'	1:1:2371:G:C8	2.47	0.49
2:2:96:U:H2'	2:2:97:G:C8	2.47	0.49
2:2:147:G:H2'	2:2:148:G:H8	1.76	0.49
2:2:321:A:H2'	2:2:322:C:C6	2.47	0.49
2:2:996:A:H61	2:2:1045:C:H2'	1.77	0.49
4:4:114:G:N2	4:4:131:U:H2'	2.27	0.49
5:5:39:TRP:HB3	5:5:82:CYS:HB3	1.93	0.49
26:R:40:MET:HE2	26:R:42:ALA:HB2	1.92	0.49
28:T:38:ALA:O	28:T:81:LYS:NZ	2.36	0.49
39:g:101:LEU:HD23	39:g:175:GLU:HB3	1.94	0.49
41:i:3:ARG:HD3	41:i:115:ARG:HE	1.77	0.49
44:l:5:ARG:CG	44:l:7:ILE:HD11	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:o:57:VAL:HG23	47:o:57:VAL:O	2.10	0.49
1:1:997:G:OP1	25:Q:92:ARG:CB	2.60	0.49
1:1:1285:A:C6	1:1:1329:U:C4	3.00	0.49
1:1:1800:C:H5'	10:B:146:MET:HE1	1.94	0.49
2:2:917:G:H2'	2:2:918:A:C8	2.47	0.49
2:2:1005:A:N7	2:2:1024:G:O2'	2.45	0.49
2:2:1216:A:H2'	2:2:1217:C:C6	2.47	0.49
2:2:1370:G:H2'	2:2:1371:G:H8	1.77	0.49
3:3:20:G:H2'	3:3:21:G:H8	1.78	0.49
7:7:23:A:H2'	7:7:24:G:H8	1.78	0.49
7:7:33:U:H6	46:n:130:ARG:NH1	2.06	0.49
14:F:159:GLY:C	14:F:163:ARG:HH12	2.20	0.49
1:1:1060:U:N3	1:1:1088:A:N7	2.61	0.49
1:1:1141:U:H4'	1:1:1142:A:O4'	2.12	0.49
1:1:1399:C:H2'	1:1:1400:U:C6	2.47	0.49
2:2:104:G:H2'	2:2:105:G:H8	1.77	0.49
2:2:337:G:H2'	2:2:338:A:H8	1.77	0.49
2:2:950:U:O2	2:2:1231:G:N2	2.27	0.49
2:2:995:C:H2'	2:2:996:A:C8	2.47	0.49
4:4:66:C:C2	4:4:68:U:N3	2.80	0.49
4:4:202:G:O2'	4:4:235:C:OP2	2.28	0.49
10:B:209:GLY:C	10:B:213:TRP:CE3	2.40	0.49
44:l:91:VAL:O	44:l:96:ARG:NE	2.35	0.49
51:s:50:THR:HA	56:x:13:LEU:HD23	1.92	0.49
54:v:28:PHE:CE1	54:v:37:PHE:O	2.65	0.49
1:1:157:C:H2'	1:1:158:U:O4'	2.12	0.49
1:1:160:A:N3	1:1:2208:C:O2'	2.45	0.49
2:2:436:C:H2'	2:2:437:U:C6	2.48	0.49
2:2:458:U:H2'	2:2:459:A:C8	2.47	0.49
2:2:908:A:H2'	2:2:909:A:H8	1.77	0.49
2:2:1377:A:C6	44:l:7:ILE:HG13	2.47	0.49
6:6:254:THR:CG2	6:6:279:ARG:HB3	2.42	0.49
7:7:33:U:OP2	46:n:130:ARG:NH2	2.40	0.49
10:B:158:ALA:O	10:B:195:VAL:CB	2.60	0.49
33:Z:8:THR:HA	33:Z:34:HIS:O	2.13	0.49
34:b:25:VAL:HG13	34:b:26:THR:H	1.77	0.49
34:b:28:LEU:CD2	34:b:39:LEU:HD23	2.41	0.49
39:g:73:LYS:CE	39:g:165:ASP:CB	2.91	0.49
51:s:9:ARG:HD2	51:s:13:ARG:HH12	1.77	0.49
1:1:367:G:H2'	1:1:367:G:N3	2.27	0.49
1:1:370:G:P	1:1:423:A:H62	2.36	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:537:G:H4'	18:J:5:THR:HG21	1.93	0.49
1:1:729:G:N7	10:B:207:LYS:HB2	2.27	0.49
1:1:1592:C:H2'	1:1:1593:A:C8	2.48	0.49
1:1:1629:U:H2'	1:1:1630:A:C8	2.48	0.49
1:1:2443:C:H2'	1:1:2444:G:C8	2.46	0.49
2:2:687:A:C5	2:2:701:U:C2	3.00	0.49
2:2:1327:C:H2'	2:2:1328:C:C6	2.47	0.49
2:2:1369:C:H2'	2:2:1370:G:C8	2.46	0.49
2:2:1444:U:O2	2:2:1458:G:C6	2.66	0.49
4:4:79:A:N7	4:4:80:A:N6	2.60	0.49
6:6:282:LYS:HE3	6:6:285:GLU:HB2	1.94	0.49
9:A:56:ASP:OD1	9:A:58:THR:OG1	2.30	0.49
10:B:199:GLU:HA	10:B:202:LEU:HD13	1.94	0.49
13:E:31:VAL:HB	13:E:158:THR:HA	1.94	0.49
43:k:3:HIS:CE1	43:k:92:THR:HB	2.47	0.49
47:o:36:VAL:HG22	47:o:76:ILE:HG13	1.95	0.49
54:v:21:ILE:O	54:v:46:VAL:HG22	2.12	0.49
56:x:64:ASP:N	56:x:64:ASP:OD1	2.44	0.49
1:1:1664:A:H61	1:1:1996:C:N4	2.11	0.49
2:2:109:A:H61	2:2:324:G:H1'	1.76	0.49
2:2:1123:U:O2'	2:2:1124:G:O5'	2.25	0.49
3:3:28:C:H2'	3:3:29:A:H8	1.76	0.49
4:4:342:PSU:H2'	4:4:344:A:H62	1.76	0.49
6:6:191:LEU:C	6:6:194:PHE:CE2	2.87	0.49
7:7:23:A:H2'	7:7:24:G:C8	2.47	0.49
35:c:17:THR:HG22	35:c:19:HIS:H	1.78	0.49
39:g:129:LEU:CA	39:g:134:ALA:H	2.24	0.49
50:r:86:TYR:OH	50:r:90:ARG:NH2	2.45	0.49
1:1:154:U:H2'	1:1:155:A:C8	2.46	0.49
1:1:456:C:H2'	28:T:73:ARG:HH11	1.76	0.49
1:1:1592:C:H2'	1:1:1593:A:H8	1.76	0.49
1:1:2691:C:H2'	1:1:2692:G:C8	2.48	0.49
1:1:2699:C:H2'	1:1:2700:A:C8	2.48	0.49
2:2:1309:G:H2'	2:2:1310:G:C8	2.47	0.49
3:3:6:G:H2'	3:3:7:G:C8	2.48	0.49
4:4:240:U:O2	4:4:241:C:N4	2.46	0.49
4:4:312:A:H2'	4:4:313:C:C5	2.47	0.49
13:E:36:LEU:HD23	13:E:152:LEU:HD11	1.94	0.49
19:K:22:ILE:HG13	19:K:42:THR:HG23	1.94	0.49
30:V:51:GLN:OE1	30:V:79:ARG:NH2	2.44	0.49
41:i:117:LEU:HD23	41:i:154:ARG:HH11	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:u:20:VAL:HG23	53:u:35:ARG:HA	1.95	0.49
1:1:68:G:N2	1:1:74:A:O4'	2.45	0.49
1:1:625:G:H2'	1:1:626:A:C8	2.48	0.49
1:1:713:G:OP1	52:t:89:ARG:NH2	2.46	0.49
1:1:1345:C:H2'	1:1:1346:G:C8	2.48	0.49
1:1:2286:G:H5''	1:1:2287:A:OP1	2.12	0.49
1:1:2639:A:O3'	18:J:96:ARG:NH2	2.45	0.49
2:2:952:U:H2'	2:2:953:G:C8	2.46	0.49
2:2:1000:A:H2'	2:2:1001:C:O4'	2.12	0.49
2:2:1020:G:H2'	2:2:1021:A:C8	2.48	0.49
2:2:1150:A:O3'	47:o:43:PRO:HA	2.13	0.49
12:D:118:LEU:CD1	12:D:186:VAL:HG13	2.43	0.49
26:R:49:ILE:HG23	26:R:49:ILE:O	2.13	0.49
27:S:13:SER:O	27:S:17:VAL:HG23	2.13	0.49
32:Y:6:LEU:HD13	32:Y:9:LYS:HD2	1.94	0.49
41:i:172:GLU:HG2	41:i:183:LYS:HD2	1.93	0.49
44:l:5:ARG:HG2	44:l:7:ILE:HD13	1.94	0.49
1:1:20:C:H2'	1:1:21:A:H8	1.76	0.49
1:1:324:A:OP2	1:1:1205:A:N6	2.45	0.49
1:1:717:C:H3'	1:1:718:A:H8	1.77	0.49
1:1:848:C:H2'	1:1:849:A:H8	1.77	0.49
1:1:2202:U:O2'	1:1:2204:G:OP1	2.23	0.49
1:1:2628:C:O2'	1:1:2782:G:OP1	2.31	0.49
2:2:382:A:H2'	2:2:383:A:C8	2.48	0.49
2:2:613:C:H2'	2:2:614:C:C6	2.48	0.49
2:2:1226:C:H2'	50:r:102:THR:HB	1.94	0.49
3:3:9:G:H2'	3:3:10:G:C8	2.48	0.49
5:5:51:ILE:HD13	5:5:116:LEU:HG	1.94	0.49
7:7:50:U:H2'	7:7:51:U:C6	2.47	0.49
19:K:21:CYS:HA	19:K:41:ILE:HG22	1.95	0.49
21:M:11:LYS:HD3	21:M:86:LYS:HD3	1.94	0.49
31:X:43:GLU:OE1	31:X:45:ARG:NE	2.46	0.49
35:c:11:LEU:HB3	35:c:49:TYR:HB3	1.94	0.49
39:g:111:ILE:HD13	39:g:148:LEU:HD13	1.93	0.49
44:l:5:ARG:CD	44:l:7:ILE:HD11	2.43	0.49
50:r:16:VAL:CG1	50:r:30:SER:HB2	2.30	0.49
1:1:181:A:H2'	1:1:182:A:H8	1.77	0.49
1:1:1819:A:H5''	10:B:160:THR:HG21	1.94	0.49
1:1:1830:C:H2'	1:1:1831:G:C8	2.43	0.49
1:1:2637:U:H3	1:1:2776:A:H62	1.61	0.49
2:2:501:C:H2'	2:2:502:A:C8	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1309:G:H2'	2:2:1310:G:H8	1.78	0.49
2:2:1409:C:H2'	2:2:1410:A:H8	1.78	0.49
2:2:1412:C:H2'	2:2:1413:A:C8	2.46	0.49
18:J:45:THR:HB	18:J:48:VAL:HB	1.94	0.49
36:d:1:MET:HG3	36:d:2:LYS:N	2.28	0.49
39:g:183:VAL:CG2	39:g:197:ASP:H	2.25	0.49
1:1:713:G:P	52:t:89:ARG:HH21	2.36	0.48
1:1:1311:G:H21	1:1:1603:A:H62	1.60	0.48
1:1:1511:G:H2'	1:1:1512:C:C6	2.49	0.48
1:1:1726:C:H2'	1:1:1727:C:C6	2.48	0.48
1:1:2028:U:H3	1:1:2033:A:H62	1.61	0.48
1:1:2301:C:H2'	1:1:2302:U:C6	2.48	0.48
2:2:259:G:OP1	57:y:36:TYR:OH	2.25	0.48
2:2:1236:A:H4'	2:2:1304:G:H4'	1.95	0.48
2:2:1246:A:C6	2:2:1292:G:C6	3.01	0.48
2:2:1254:A:H2'	2:2:1255:G:C8	2.48	0.48
2:2:1349:A:N3	2:2:1374:A:N6	2.60	0.48
4:4:128:U:H5'	4:4:129:G:OP2	2.13	0.48
4:4:291:A:H2'	4:4:292:A:O4'	2.13	0.48
6:6:242:VAL:CG1	6:6:243:GLU:N	2.76	0.48
7:7:66:U:H2'	7:7:67:C:C6	2.48	0.48
12:D:16:GLU:CD	12:D:16:GLU:C	2.81	0.48
14:F:11:VAL:CG1	14:F:15:VAL:CG2	2.91	0.48
19:K:12:ASP:OD2	19:K:14:SER:OG	2.29	0.48
24:P:7:GLN:OE1	24:P:10:GLN:NE2	2.46	0.48
29:U:83:VAL:HG22	29:U:84:GLY:N	2.27	0.48
57:y:57:ILE:HD11	57:y:61:GLN:HE21	1.77	0.48
1:1:541:A:H2'	1:1:542:C:H6	1.78	0.48
1:1:630:G:N2	1:1:633:A:OP2	2.36	0.48
1:1:843:G:H2'	1:1:844:A:C8	2.47	0.48
1:1:927:A:H2'	1:1:928:A:C8	2.48	0.48
1:1:2290:G:H2'	1:1:2291:U:H6	1.78	0.48
1:1:2475:C:O2	1:1:2529:G:C6	2.65	0.48
2:2:123:U:H2'	2:2:124:C:C6	2.48	0.48
2:2:337:G:H2'	2:2:338:A:C8	2.49	0.48
2:2:451:A:H4'	2:2:452:A:O4'	2.13	0.48
2:2:492:C:H2'	2:2:493:A:C8	2.48	0.48
2:2:603:U:H2'	2:2:604:G:C8	2.49	0.48
2:2:837:U:H2'	2:2:838:G:H8	1.77	0.48
13:E:133:ARG:O	13:E:152:LEU:N	2.46	0.48
47:o:12:ALA:HB2	47:o:96:VAL:HG13	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:q:33:VAL:C	49:q:55:VAL:CG2	2.71	0.48
1:1:646:U:H3'	1:1:647:G:H5''	1.95	0.48
1:1:807:U:OP2	20:L:41:ARG:NH1	2.46	0.48
1:1:1322:A:N1	1:1:1333:G:O2'	2.43	0.48
1:1:1796:U:H2'	1:1:1797:G:C8	2.47	0.48
1:1:1825:U:H2'	1:1:1826:G:C8	2.48	0.48
1:1:1849:G:H2'	1:1:1850:G:H8	1.79	0.48
1:1:2039:U:H2'	1:1:2040:G:H8	1.77	0.48
1:1:2425:A:OP2	1:1:2426:A:O2'	2.25	0.48
1:1:2683:C:O2	19:K:70:ARG:NH2	2.46	0.48
1:1:2685:G:H21	1:1:2726:A:N6	2.12	0.48
2:2:1072:G:H21	39:g:106:THR:HG21	1.78	0.48
4:4:166:C:N4	4:4:167:G:N7	2.61	0.48
4:4:299:C:H2'	4:4:300:U:H4'	1.94	0.48
6:6:97:GLN:HE22	6:6:230:ARG:H	1.61	0.48
6:6:278:LEU:HB3	6:6:281:ILE:HG13	1.93	0.48
16:H:43:LYS:HE3	16:H:101:LYS:HE3	1.94	0.48
39:g:129:LEU:CA	39:g:133:GLU:HB2	2.28	0.48
41:i:72:PHE:HE1	41:i:94:LEU:HD11	1.78	0.48
1:1:475:C:N3	1:1:479:A:N7	2.61	0.48
1:1:629:G:H1'	1:1:639:U:H1'	1.94	0.48
1:1:1048:A:H1'	1:1:1112:G:N2	2.29	0.48
1:1:1267:U:H2'	1:1:1268:A:H8	1.78	0.48
1:1:1323:C:H2'	1:1:1324:G:C8	2.49	0.48
1:1:1457:U:O2	1:1:2702:G:O6	2.32	0.48
1:1:1854:A:H61	1:1:1888:G:H1'	1.79	0.48
1:1:2162:G:H5''	1:1:2171:A:H8	1.78	0.48
1:1:2606:C:H2'	1:1:2607:G:C8	2.49	0.48
2:2:920:U:H2'	2:2:921:U:H6	1.78	0.48
2:2:1265:C:H2'	2:2:1266:G:C8	2.48	0.48
3:3:33:G:H2'	3:3:34:A:O4'	2.13	0.48
11:C:32:ASN:O	11:C:96:ILE:N	2.46	0.48
17:I:89:SER:HB3	17:I:136:GLY:HA3	1.96	0.48
39:g:111:ILE:HD12	39:g:152:LYS:HA	1.95	0.48
39:g:222:ARG:C	39:g:224:GLY:H	2.21	0.48
1:1:572:A:H61	1:1:2029:G:H21	1.61	0.48
1:1:1297:C:H2'	1:1:1298:C:H6	1.78	0.48
1:1:1315:C:H2'	1:1:1316:U:C6	2.48	0.48
1:1:2023:C:H2'	1:1:2024:G:H8	1.79	0.48
1:1:2193:G:O2'	1:1:2194:U:OP1	2.28	0.48
1:1:2827:C:H2'	1:1:2828:G:H8	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:236:A:H2'	2:2:237:G:C8	2.49	0.48
2:2:524:G:H2'	2:2:525:C:C6	2.49	0.48
2:2:589:U:O2	2:2:650:G:N2	2.37	0.48
2:2:730:G:O2'	2:2:766:A:O4'	2.31	0.48
2:2:1486:G:H2'	2:2:1487:G:H8	1.77	0.48
4:4:22:G:C5	4:4:332:G:N2	2.82	0.48
4:4:209:C:H2'	4:4:210:C:H5''	1.93	0.48
6:6:71:THR:CG2	6:6:74:ARG:N	2.63	0.48
7:7:2:C:OP1	21:M:10:ARG:NH1	2.46	0.48
8:8:14:U:H1'	8:8:15:U:OP1	2.12	0.48
31:X:41:GLU:O	31:X:44:LYS:NZ	2.41	0.48
40:h:57:ILE:CG1	40:h:64:ILE:CG2	2.84	0.48
51:s:49:GLN:NE2	56:x:11:ILE:O	2.37	0.48
1:1:94:A:H2'	1:1:95:A:C8	2.49	0.48
1:1:391:A:O2'	1:1:410:G:OP1	2.27	0.48
1:1:1743:G:H21	1:1:1744:A:N6	2.11	0.48
1:1:2327:A:H2'	1:1:2328:A:C8	2.49	0.48
1:1:2328:A:H2'	1:1:2329:U:C6	2.48	0.48
1:1:2799:A:O2'	1:1:2800:A:H5''	2.14	0.48
1:1:2840:C:H2'	1:1:2841:C:C6	2.49	0.48
1:1:2884:U:H6	34:b:50:ARG:HG3	1.79	0.48
2:2:579:A:H5'	2:2:728:A:H1'	1.96	0.48
2:2:591:U:H2'	2:2:592:G:H8	1.79	0.48
2:2:687:A:H61	2:2:701:U:H5''	1.79	0.48
2:2:976:G:N2	2:2:1362:A:O2'	2.44	0.48
2:2:1149:C:P	46:n:11:ARG:HH22	2.14	0.48
2:2:1238:A:H2'	2:2:1238:A:N3	2.29	0.48
2:2:1404:C:H2'	2:2:1405:G:H8	1.78	0.48
5:5:34:LEU:HD11	5:5:125:VAL:HG11	1.86	0.48
5:5:34:LEU:HD12	5:5:125:VAL:HG22	1.92	0.48
10:B:96:TYR:HB2	10:B:100:GLU:H	1.77	0.48
10:B:135:ILE:O	10:B:167:ARG:NH1	2.42	0.48
11:C:9:VAL:HB	11:C:26:VAL:HG13	1.95	0.48
27:S:36:LEU:HD13	27:S:48:LYS:HA	1.96	0.48
29:U:49:VAL:O	29:U:54:GLN:HA	2.13	0.48
44:l:130:ASN:HA	44:l:135:VAL:HG11	1.95	0.48
54:v:16:LYS:HG3	54:v:16:LYS:O	2.14	0.48
55:w:25:ASP:CB	55:w:28:THR:HG22	2.43	0.48
1:1:16:C:H2'	1:1:17:G:C8	2.48	0.48
1:1:499:U:H2'	1:1:500:G:O4'	2.13	0.48
1:1:1075:C:H2'	1:1:1076:C:C6	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1352:U:H1'	1:1:1570:A:H2	1.79	0.48
1:1:1486:U:O4	1:1:1504:A:N6	2.46	0.48
1:1:1710:G:H2'	1:1:1711:A:C8	2.49	0.48
2:2:67:C:H2'	2:2:68:G:C8	2.48	0.48
2:2:254:G:H2'	2:2:255:G:C8	2.49	0.48
2:2:626:G:O2'	53:u:51:ARG:NH2	2.46	0.48
2:2:987:G:H2'	2:2:988:G:H8	1.78	0.48
2:2:991:U:C2	2:2:1213:A:N7	2.82	0.48
2:2:1307:U:O2'	50:r:109:ARG:NH1	2.46	0.48
4:4:293:G:H5'	4:4:309:A:N1	2.28	0.48
6:6:242:VAL:HG11	6:6:292:LEU:HB3	1.95	0.48
19:K:24:VAL:HG13	19:K:33:ALA:HB2	1.95	0.48
24:P:34:GLU:CD	24:P:37:LYS:O	2.56	0.48
40:h:56:VAL:HG23	40:h:67:THR:HB	1.96	0.48
45:m:52:GLU:OE1	45:m:60:GLU:OE2	2.32	0.48
1:1:315:G:H2'	1:1:316:C:C6	2.48	0.48
1:1:1387:A:H2'	1:1:1388:G:H8	1.79	0.48
1:1:1520:U:H2'	1:1:1521:G:O4'	2.14	0.48
1:1:1954:G:O2'	1:1:1956:U:O4	2.25	0.48
1:1:2731:G:H2'	1:1:2732:G:C8	2.49	0.48
2:2:360:G:H2'	2:2:361:G:C8	2.49	0.48
2:2:1342:C:H2'	2:2:1343:G:C8	2.48	0.48
5:5:34:LEU:CG	5:5:90:LEU:HD23	2.44	0.48
6:6:319:HIS:CD2	6:6:320:THR:HG23	2.49	0.48
24:P:29:LYS:HE3	24:P:40:LEU:HD12	1.95	0.48
55:w:48:ARG:H	55:w:48:ARG:HD2	1.78	0.48
1:1:331:C:N4	1:1:1210:G:H22	2.11	0.48
1:1:581:C:H2'	1:1:582:A:C8	2.49	0.48
1:1:899:A:H5'	1:1:900:A:OP1	2.13	0.48
1:1:1021:A:O2'	1:1:1123:C:OP1	2.31	0.48
1:1:1190:G:H2'	1:1:1191:G:H8	1.79	0.48
2:2:250:A:H8	2:2:252:U:C2	2.31	0.48
2:2:385:C:H2'	2:2:386:C:C6	2.49	0.48
2:2:474:G:H2'	2:2:475:C:C6	2.49	0.48
13:E:112:ARG:O	13:E:113:ASP:C	2.57	0.48
13:E:138:PHE:O	13:E:140:GLU:N	2.47	0.48
15:G:75:LEU:HD12	15:G:76:GLU:H	1.75	0.48
30:V:61:LEU:C	30:V:61:LEU:HD12	2.39	0.48
31:X:8:THR:OG1	31:X:10:LYS:CD	2.62	0.48
41:i:30:THR:HG22	41:i:34:ILE:HG21	1.95	0.48
41:i:170:TRP:CE2	41:i:186:PRO:HG3	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:l:119:ARG:HA	44:l:122:ASN:HD21	1.78	0.48
1:1:277:G:N1	1:1:358:U:OP1	2.44	0.48
1:1:311:A:N6	1:1:328:U:C2	2.82	0.48
1:1:877:A:H2	1:1:900:A:H62	1.60	0.48
1:1:1196:C:H2'	1:1:1197:G:H8	1.78	0.48
1:1:2313:C:H4'	13:E:88:LYS:CE	2.43	0.48
1:1:2845:U:O3'	24:P:53:ARG:NH1	2.47	0.48
2:2:41:G:H2'	2:2:42:G:C8	2.46	0.48
2:2:60:A:N7	2:2:108:G:O2'	2.42	0.48
2:2:1413:A:H2	2:2:1487:G:H22	1.62	0.48
4:4:67:G:N2	4:4:68:U:O4	2.32	0.48
6:6:251:GLN:N	6:6:251:GLN:OE1	2.47	0.48
9:A:40:GLN:HE22	9:A:45:PHE:H	1.62	0.48
15:G:63:ALA:HA	15:G:66:ASN:ND2	2.29	0.48
16:H:59:LEU:HD22	16:H:62:ARG:NE	2.28	0.48
26:R:23:GLU:OE2	26:R:91:GLN:NE2	2.35	0.48
29:U:83:VAL:HG21	29:U:94:ARG:HB3	1.96	0.48
40:h:58:GLU:O	40:h:64:ILE:HA	2.14	0.48
56:x:29:LYS:HB3	56:x:30:PRO:HD2	1.94	0.48
58:z:51:SER:O	58:z:55:ARG:HD3	2.14	0.48
1:1:125:A:OP2	36:d:19:ARG:NH2	2.47	0.47
1:1:285:G:H2'	1:1:286:U:C6	2.49	0.47
1:1:874:G:H2'	1:1:875:G:C8	2.49	0.47
1:1:906:U:O2'	21:M:66:ARG:NH2	2.41	0.47
1:1:911:A:N6	21:M:11:LYS:O	2.47	0.47
1:1:1062:G:H2'	1:1:1063:G:H8	1.79	0.47
1:1:1124:G:N3	38:f:37:GLN:NE2	2.61	0.47
1:1:1475:G:H1'	1:1:1732:C:N4	2.22	0.47
1:1:2216:G:H2'	1:1:2217:G:H8	1.79	0.47
1:1:2361:G:OP1	37:e:26:HIS:ND1	2.42	0.47
2:2:198:G:H2'	2:2:199:A:C8	2.49	0.47
2:2:203:G:O2'	2:2:204:G:O5'	2.31	0.47
2:2:591:U:H2'	2:2:592:G:C8	2.49	0.47
2:2:600:A:H2'	2:2:601:G:H8	1.78	0.47
2:2:1054:C:N4	5:5:135:GLN:O	2.47	0.47
6:6:343:LEU:HG	6:6:358:MET:HB3	1.96	0.47
15:G:70:GLU:HG3	15:G:74:ALA:HB2	1.96	0.47
16:H:33:VAL:O	16:H:37:LYS:N	2.47	0.47
16:H:59:LEU:HD23	16:H:62:ARG:CA	2.41	0.47
39:g:125:THR:HG23	39:g:127:ASP:OD1	2.13	0.47
46:n:57:MET:SD	46:n:61:LEU:N	2.87	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:w:33:ILE:HD12	55:w:37:GLY:HA2	1.96	0.47
1:1:677:A:H4'	1:1:2071:A:H5'	1.97	0.47
1:1:967:U:H2'	1:1:968:C:C6	2.49	0.47
1:1:989:G:OP2	33:Z:12:SER:OG	2.29	0.47
1:1:2458:G:O2'	1:1:2460:U:O4	2.29	0.47
1:1:2567:G:H2'	1:1:2568:U:C6	2.49	0.47
1:1:2599:G:H2'	1:1:2600:A:H8	1.78	0.47
2:2:437:U:H2'	2:2:438:U:H5'	1.96	0.47
2:2:1322:C:OP1	56:x:78:ARG:NH2	2.47	0.47
2:2:1526:G:H3'	58:z:42:THR:HG22	1.95	0.47
6:6:133:PHE:CD1	6:6:170:VAL:CG2	2.90	0.47
6:6:301:HIS:CD2	6:6:391:VAL:CG2	2.89	0.47
6:6:377:ARG:HG2	6:6:382:THR:HG22	1.97	0.47
27:S:73:LYS:HB3	27:S:106:VAL:HB	1.95	0.47
33:Z:47:MET:O	33:Z:51:VAL:HG22	2.14	0.47
41:i:57:GLU:HB3	41:i:195:ILE:HD11	1.96	0.47
43:k:51:ILE:C	43:k:53:LYS:H	2.22	0.47
1:1:523:C:H5''	1:1:540:C:O2'	2.14	0.47
1:1:660:C:H2'	1:1:661:A:H8	1.78	0.47
1:1:753:A:H2'	1:1:754:U:H6	1.79	0.47
1:1:1571:A:H2'	1:1:1572:A:H8	1.78	0.47
1:1:1779:U:C2	1:1:1783:A:N7	2.82	0.47
1:1:2802:G:H2'	1:1:2803:G:C8	2.38	0.47
2:2:304:U:H2'	2:2:305:G:C8	2.49	0.47
2:2:323:U:H2'	2:2:324:G:O4'	2.14	0.47
2:2:539:A:H2'	2:2:540:G:C8	2.49	0.47
2:2:1220:G:O6	2:2:1221:G:N2	2.34	0.47
2:2:1220:G:N2	56:x:54:GLY:O	2.47	0.47
2:2:1342:C:H2'	2:2:1343:G:H8	1.78	0.47
2:2:1435:G:H2'	2:2:1436:U:C6	2.49	0.47
3:3:19:C:H2'	3:3:20:G:C8	2.49	0.47
5:5:83:ASP:OD1	5:5:83:ASP:O	2.32	0.47
6:6:73:THR:HG22	6:6:74:ARG:HG3	1.96	0.47
6:6:97:GLN:HE22	6:6:230:ARG:N	2.12	0.47
10:B:182:ARG:HG3	10:B:267:ILE:HD13	1.97	0.47
21:M:135:VAL:HG21	30:V:54:ALA:HA	1.96	0.47
28:T:53:VAL:HG11	28:T:87:LEU:HD21	1.94	0.47
37:e:31:HIS:CD2	37:e:32:ILE:HG13	2.49	0.47
43:k:6:ILE:HG12	43:k:89:VAL:HG12	1.95	0.47
43:k:10:VAL:HG11	43:k:21:MET:HE1	1.96	0.47
1:1:833:A:H2'	1:1:834:G:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:854:C:H2'	1:1:855:G:H8	1.79	0.47
1:1:1636:U:H2'	1:1:1637:A:C8	2.50	0.47
1:1:1827:U:H2'	1:1:1828:G:O4'	2.14	0.47
1:1:2298:A:H2'	1:1:2299:U:O4'	2.15	0.47
2:2:665:A:H1'	2:2:733:G:H5'	1.97	0.47
2:2:718:A:H5'	48:p:119:ASN:HD21	1.79	0.47
2:2:1099:G:H2'	2:2:1100:C:C6	2.50	0.47
2:2:1228:C:H5'	50:r:114:LYS:HB2	1.97	0.47
4:4:134:G:H2'	4:4:135:A:O4'	2.15	0.47
8:8:10:A:O2'	8:8:11:G:OP1	2.30	0.47
30:V:9:ARG:HD3	30:V:39:ALA:HB1	1.95	0.47
39:g:163:VAL:HB	39:g:169:GLU:CD	2.39	0.47
45:m:52:GLU:OE1	45:m:60:GLU:CD	2.57	0.47
1:1:746:PSU:O2'	1:1:2611:C:O2'	2.26	0.47
1:1:924:G:H2'	1:1:925:A:C8	2.48	0.47
1:1:1038:G:H2'	1:1:1039:A:H8	1.80	0.47
1:1:1099:G:H2'	1:1:1100:C:C6	2.49	0.47
1:1:1550:C:H2'	1:1:1551:A:C8	2.48	0.47
1:1:2090:A:N6	1:1:2230:G:O6	2.47	0.47
1:1:2419:U:H2'	1:1:2420:C:C6	2.50	0.47
2:2:370:C:H2'	2:2:371:A:H8	1.79	0.47
2:2:780:A:N6	2:2:801:U:OP2	2.46	0.47
2:2:1164:G:H2'	2:2:1165:U:C6	2.50	0.47
2:2:1233:G:OP1	46:n:119:ARG:NH1	2.48	0.47
3:3:114:C:H2'	3:3:115:A:H8	1.78	0.47
12:D:170:ARG:NH2	12:D:176:ASP:OD1	2.48	0.47
14:F:16:ASP:HB3	14:F:27:LYS:HG3	1.95	0.47
18:J:95:ARG:HG2	18:J:96:ARG:HG3	1.96	0.47
20:L:58:TYR:O	37:e:13:ARG:NE	2.47	0.47
45:m:51:VAL:HG12	45:m:59:LEU:HB2	1.96	0.47
50:r:83:LEU:HD22	56:x:63:THR:CG2	2.45	0.47
1:1:137:U:H3	1:1:143:C:N4	2.10	0.47
1:1:1316:U:H2'	1:1:1317:G:C8	2.50	0.47
1:1:1672:A:C2	1:1:2582:G:H5'	2.50	0.47
1:1:1880:U:H2'	1:1:1881:C:C6	2.49	0.47
1:1:2581:G:H22	1:1:2610:C:H2'	1.80	0.47
2:2:144:G:N1	2:2:179:A:N7	2.62	0.47
2:2:1354:U:H2'	2:2:1355:G:H8	1.80	0.47
7:7:18:G:N2	7:7:58:A:OP2	2.47	0.47
44:l:16:PRO:HB3	46:n:43:THR:CB	2.44	0.47
49:q:89:0TD:H5	49:q:89:0TD:H4	1.70	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:t:36:ILE:O	52:t:40:GLN:HG2	2.15	0.47
1:1:196:A:H61	1:1:831:G:H21	1.62	0.47
1:1:703:U:H3'	1:1:704:G:C8	2.50	0.47
1:1:1201:U:H2'	1:1:1202:G:C8	2.50	0.47
1:1:1408:G:H1	1:1:1594:U:H3	1.63	0.47
1:1:1791:A:H5''	10:B:205:LEU:HD12	1.97	0.47
1:1:2535:G:H2'	1:1:2536:G:H8	1.79	0.47
1:1:2650:U:H2'	1:1:2651:C:C6	2.49	0.47
2:2:322:C:H2'	2:2:323:U:C6	2.50	0.47
2:2:370:C:H2'	2:2:371:A:C8	2.50	0.47
2:2:578:C:H2'	2:2:579:A:H8	1.80	0.47
2:2:1129:C:H2'	2:2:1139:G:N7	2.30	0.47
2:2:1429:A:H2'	2:2:1430:A:C8	2.50	0.47
4:4:22:G:H2'	4:4:23:G:H4'	1.97	0.47
4:4:295:C:OP2	4:4:308:U:O2'	2.32	0.47
13:E:135:GLN:HG3	13:E:136:ILE:H	1.80	0.47
14:F:40:ALA:HB1	14:F:61:GLY:HA2	1.97	0.47
14:F:43:VAL:HA	14:F:52:PHE:HA	1.96	0.47
15:G:2:GLN:CD	15:G:20:ASN:HA	2.40	0.47
39:g:127:ASP:OD1	39:g:127:ASP:N	2.48	0.47
39:g:192:ASP:OD1	39:g:192:ASP:N	2.46	0.47
42:j:64:MET:O	42:j:68:ARG:HG2	2.15	0.47
42:j:142:ASP:OD1	42:j:146:ASN:ND2	2.48	0.47
43:k:100:SER:HA	55:w:24:LYS:HE3	1.95	0.47
44:l:64:VAL:O	44:l:68:ASN:ND2	2.33	0.47
46:n:29:VAL:O	46:n:65:ILE:HG12	2.15	0.47
56:x:41:PHE:CD1	56:x:43:ASN:CB	2.97	0.47
1:1:126:A:O2'	1:1:127:A:O4'	2.30	0.47
1:1:1244:A:N6	1:1:1245:G:O6	2.47	0.47
1:1:1292:G:H2'	1:1:1293:C:H6	1.80	0.47
1:1:1563:U:H2'	1:1:1564:C:C6	2.50	0.47
1:1:2377:A:O2'	23:O:117:PHE:O	2.25	0.47
1:1:2440:C:H2'	1:1:2441:U:H4'	1.96	0.47
1:1:2547:A:H2'	1:1:2548:U:C6	2.50	0.47
1:1:2720:U:C2	1:1:2721:A:C8	3.03	0.47
2:2:215:C:H2'	2:2:216:U:O4'	2.14	0.47
2:2:429:U:H1'	2:2:430:A:H5''	1.96	0.47
2:2:570:G:H2'	2:2:571:U:C6	2.50	0.47
2:2:1014:A:N3	2:2:1219:A:H1'	2.29	0.47
2:2:1513:A:H2'	2:2:1514:G:C8	2.48	0.47
6:6:220:ILE:HG22	6:6:223:ARG:CB	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:B:162:VAL:HG22	10:B:174:LEU:HD12	1.97	0.47
12:D:149:ILE:HG23	12:D:149:ILE:O	2.14	0.47
13:E:65:PRO:HB3	13:E:89:VAL:HG23	1.97	0.47
15:G:63:ALA:HA	15:G:66:ASN:HD21	1.79	0.47
28:T:55:VAL:CG2	28:T:85:VAL:HG13	2.45	0.47
32:Y:11:VAL:O	32:Y:15:ASN:ND2	2.47	0.47
41:i:58:LYS:HD3	41:i:203:LEU:HD13	1.96	0.47
41:i:124:MET:O	41:i:143:VAL:CG2	2.63	0.47
1:1:1152:C:H2'	1:1:1153:C:H6	1.80	0.47
1:1:1681:G:N2	1:1:1763:G:OP2	2.44	0.47
1:1:1914:C:N4	2:2:1409:C:O3'	2.48	0.47
1:1:1924:C:H2'	1:1:1925:C:C6	2.50	0.47
1:1:2847:U:H2'	1:1:2848:G:O4'	2.15	0.47
2:2:663:A:H61	2:2:742:G:H1	1.63	0.47
2:2:1016:A:H1'	2:2:1218:C:H1'	1.97	0.47
2:2:1348:U:H2'	2:2:1349:A:C8	2.50	0.47
3:3:20:G:H2'	3:3:21:G:C8	2.50	0.47
3:3:110:C:H2'	3:3:111:U:O4'	2.15	0.47
4:4:111:U:H2'	4:4:112:U:C6	2.50	0.47
5:5:36:LEU:HD12	5:5:40:GLU:HG2	1.96	0.47
10:B:168:ASP:OD1	10:B:168:ASP:N	2.47	0.47
39:g:186:ILE:HD13	39:g:200:ILE:HB	1.97	0.47
39:g:187:VAL:HG13	39:g:191:SER:HB2	1.96	0.47
44:l:90:GLU:CD	44:l:91:VAL:H	2.22	0.47
47:o:19:ASP:OD1	47:o:20:GLN:N	2.47	0.47
50:r:20:THR:HG22	50:r:26:GLY:C	2.40	0.47
1:1:1042:G:H2'	1:1:1043:C:C6	2.50	0.47
1:1:1779:U:H5''	1:1:1780:A:H5''	1.97	0.47
1:1:2514:U:H4'	18:J:81:ILE:HG12	1.96	0.47
1:1:2677:G:H2'	1:1:2678:C:C6	2.50	0.47
1:1:2788:C:H2'	1:1:2789:C:C6	2.50	0.47
1:1:2804:U:H2'	1:1:2805:C:C6	2.50	0.47
2:2:709:U:H2'	2:2:710:G:H8	1.80	0.47
2:2:923:A:O2'	2:2:1399:C:OP2	2.29	0.47
2:2:1239:A:N1	2:2:1296:C:H2'	2.30	0.47
2:2:1243:C:H2'	2:2:1244:G:H8	1.80	0.47
2:2:1363:A:O2'	2:2:1365:G:N7	2.43	0.47
2:2:1457:G:C2	2:2:1458:G:C5	3.03	0.47
3:3:70:C:H2'	3:3:71:C:C6	2.50	0.47
4:4:42:U:H3	4:4:313:C:H42	1.61	0.47
4:4:313:C:H2'	4:4:314:C:C6	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:4:339:G:O3'	6:6:318:ARG:NH1	2.48	0.47
25:Q:94:ILE:HG21	26:R:4:VAL:HG11	1.97	0.47
45:m:18:GLN:NE2	45:m:72:VAL:O	2.48	0.47
49:q:33:VAL:CG2	49:q:77:HIS:C	2.87	0.47
50:r:68:ASP:OD1	50:r:69:LEU:N	2.47	0.47
57:y:61:GLN:HB3	57:y:66:LEU:HD11	1.96	0.47
1:1:373:U:O2'	1:1:423:A:N3	2.38	0.46
1:1:627:A:OP1	20:L:78:ARG:NH2	2.46	0.46
1:1:1019:U:OP1	1:1:1035:U:O2'	2.21	0.46
1:1:1421:G:H5'	1:1:2211:A:H8	1.80	0.46
1:1:1662:U:H1'	1:1:2687:U:H5'	1.97	0.46
1:1:2002:G:OP1	22:N:17:ARG:NH2	2.34	0.46
1:1:2314:A:O3'	13:E:33:LYS:NZ	2.44	0.46
1:1:2515:C:H2'	1:1:2516:A:H8	1.81	0.46
2:2:335:C:H2'	2:2:336:A:C8	2.49	0.46
2:2:393:A:C2	2:2:394:G:C8	3.03	0.46
2:2:720:C:OP2	2:2:721:G:O2'	2.19	0.46
2:2:799:G:H3'	2:2:800:G:H8	1.81	0.46
4:4:115:C:O2'	4:4:131:U:O4	2.32	0.46
6:6:308:VAL:HG12	6:6:310:ILE:HG13	1.97	0.46
7:7:37:MIA:H163	8:8:13:U:C2	2.50	0.46
13:E:68:THR:HG21	13:E:88:LYS:CD	2.43	0.46
17:I:90:GLY:HA3	17:I:94:LYS:HB2	1.97	0.46
40:h:111:LEU:HB3	40:h:204:LYS:HE2	1.96	0.46
41:i:21:LEU:HD12	41:i:21:LEU:C	2.40	0.46
45:m:7:ILE:O	45:m:11:LEU:HG	2.15	0.46
1:1:57:C:H2'	1:1:58:G:H8	1.79	0.46
1:1:183:C:H1'	1:1:432:A:C2	2.50	0.46
1:1:1046:A:P	16:H:61:ARG:HG3	2.55	0.46
2:2:323:U:O4	2:2:327:A:N7	2.48	0.46
2:2:458:U:H2'	2:2:459:A:H8	1.80	0.46
2:2:1246:A:C6	2:2:1292:G:N1	2.84	0.46
2:2:1427:C:H2'	2:2:1428:A:C8	2.51	0.46
2:2:1531:A:O2'	2:2:1532:U:O4'	2.28	0.46
4:4:116:A:C5	4:4:117:G:H1'	2.50	0.46
10:B:108:LYS:N	10:B:194:GLU:O	2.48	0.46
19:K:109:SER:CA	19:K:110:GLU:OE1	2.63	0.46
39:g:15:HIS:HB3	39:g:43:LEU:HD11	1.95	0.46
39:g:115:LYS:O	39:g:118:GLU:HG3	2.16	0.46
40:h:59:ARG:HA	40:h:64:ILE:HD13	1.79	0.46
47:o:81:GLU:C	47:o:83:THR:H	2.22	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:p:45:ALA:HB3	48:p:70:CYS:HB2	1.97	0.46
1:1:370:G:O2'	1:1:424:G:OP1	2.32	0.46
1:1:666:A:H4'	20:L:48:ARG:HH11	1.79	0.46
1:1:1207:C:H2'	1:1:1208:C:C6	2.49	0.46
1:1:1526:C:H2'	1:1:1527:G:O4'	2.16	0.46
1:1:1753:G:N2	1:1:1756:G:OP2	2.42	0.46
1:1:2304:G:C2'	13:E:133:ARG:HH22	2.27	0.46
1:1:2637:U:H5''	11:C:83:ARG:HH22	1.81	0.46
2:2:418:C:H2'	2:2:419:C:C6	2.50	0.46
2:2:1313:U:H2'	2:2:1314:C:H6	1.80	0.46
3:3:24:G:N2	3:3:27:C:N3	2.64	0.46
6:6:245:VAL:HG13	6:6:291:VAL:HG22	1.96	0.46
6:6:311:LEU:HB2	6:6:315:GLU:HB2	1.98	0.46
19:K:12:ASP:HB3	19:K:99:ILE:HG22	1.96	0.46
25:Q:69:ALA:HB1	25:Q:74:ILE:HG23	1.96	0.46
27:S:22:ASP:OD1	27:S:25:ARG:NH1	2.36	0.46
40:h:73:PRO:HA	40:h:76:VAL:HB	1.97	0.46
1:1:1059:G:C2	1:1:1080:A:C2	3.03	0.46
1:1:1433:A:N6	1:1:1560:G:N1	2.21	0.46
1:1:1438:U:OP2	1:1:1552:A:N6	2.45	0.46
1:1:1684:G:O6	1:1:1705:A:N6	2.49	0.46
1:1:1746:A:H2'	1:1:1747:U:C6	2.50	0.46
1:1:1947:C:H2'	1:1:1948:G:H8	1.79	0.46
1:1:2514:U:H2'	1:1:2515:C:H6	1.80	0.46
1:1:2650:U:H2'	1:1:2651:C:H6	1.79	0.46
1:1:2898:U:H2'	1:1:2899:A:H8	1.81	0.46
2:2:1118:U:H2'	2:2:1119:C:H6	1.79	0.46
2:2:1507:A:H61	58:z:46:LYS:NZ	2.12	0.46
4:4:18:C:C2'	5:5:93:ASN:OD1	2.63	0.46
5:5:44:LEU:O	5:5:118:TRP:NE1	2.49	0.46
7:7:22:G:H2'	7:7:23:A:C8	2.50	0.46
10:B:158:ALA:O	10:B:195:VAL:HB	2.16	0.46
10:B:210:ALA:CA	10:B:213:TRP:CH2	2.99	0.46
27:S:38:TYR:CE2	34:b:28:LEU:CD2	2.69	0.46
39:g:129:LEU:HB2	39:g:134:ALA:H	1.79	0.46
43:k:42:TRP:HE1	43:k:61:LEU:HD22	1.80	0.46
1:1:299:A:N3	1:1:319:G:O2'	2.45	0.46
1:1:813:U:OP2	20:L:24:GLY:N	2.42	0.46
1:1:1360:G:N2	1:1:2212:A:N1	2.64	0.46
1:1:2401:U:H4'	1:1:2402:U:OP1	2.15	0.46
1:1:2438:U:H2'	1:1:2439:A:H5''	1.95	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2784:U:H2'	1:1:2785:C:C6	2.50	0.46
4:4:328:U:H2'	4:4:329:U:C5	2.51	0.46
5:5:59:ARG:HG3	5:5:64:PHE:HB2	1.98	0.46
16:H:11:ILE:O	16:H:15:VAL:HG23	2.15	0.46
18:J:13:ARG:NH1	18:J:49:ASP:O	2.45	0.46
20:L:90:VAL:HG13	20:L:95:LEU:HD21	1.96	0.46
35:c:6:ARG:HH11	35:c:24:THR:HG22	1.81	0.46
41:i:117:LEU:HB3	41:i:122:ALA:HB3	1.96	0.46
45:m:51:VAL:HG12	45:m:59:LEU:CB	2.46	0.46
46:n:19:VAL:HG12	46:n:65:ILE:HG22	1.96	0.46
1:1:1469:A:OP2	1:1:1522:A:N6	2.41	0.46
1:1:1710:G:H2'	1:1:1711:A:H8	1.80	0.46
1:1:2707:U:H2'	1:1:2708:G:H8	1.79	0.46
2:2:425:G:H2'	2:2:426:U:O4'	2.15	0.46
2:2:696:A:H2'	2:2:697:U:C6	2.51	0.46
2:2:837:U:H3	2:2:849:G:H1	1.63	0.46
4:4:78:C:O2'	4:4:84:A:O3'	2.32	0.46
41:i:31:LYS:HG3	41:i:32:CYS:H	1.80	0.46
42:j:150:PRO:HA	42:j:153:VAL:HG12	1.96	0.46
44:l:150:ALA:HB3	48:p:56:ARG:HD2	1.96	0.46
46:n:28:ILE:HG21	46:n:35:LEU:HD22	1.98	0.46
46:n:57:MET:HG2	46:n:60:LYS:HB2	1.97	0.46
1:1:775:G:C6	1:1:794:A:C8	3.04	0.46
1:1:1361:G:H2'	1:1:1362:C:H6	1.80	0.46
1:1:1547:C:H2'	1:1:1548:A:C8	2.51	0.46
1:1:1791:A:N1	1:1:1829:A:H4'	2.30	0.46
1:1:2036:C:H2'	1:1:2037:A:C8	2.51	0.46
1:1:2693:G:H2'	1:1:2694:G:C8	2.48	0.46
2:2:151:A:C5	2:2:171:A:N6	2.84	0.46
2:2:1040:U:H2'	2:2:1041:G:N7	2.31	0.46
2:2:1357:A:H61	2:2:1365:G:H1	1.62	0.46
4:4:153:U:H3'	4:4:154:C:H5''	1.98	0.46
4:4:345:A:H1'	4:4:346:C:H3'	1.98	0.46
10:B:158:ALA:C	10:B:195:VAL:HG23	2.37	0.46
22:N:57:THR:HG23	22:N:57:THR:O	2.16	0.46
26:R:58:VAL:CG1	26:R:102:SER:O	2.61	0.46
39:g:14:VAL:HG12	39:g:43:LEU:CD2	2.45	0.46
44:l:16:PRO:CB	46:n:43:THR:HB	2.46	0.46
1:1:631:A:N3	1:1:2415:G:O2'	2.31	0.46
1:1:897:C:H2'	1:1:898:C:C6	2.51	0.46
1:1:1387:A:H2'	1:1:1388:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1406:U:H2'	1:1:1407:G:C8	2.51	0.46
1:1:1467:U:H2'	1:1:1468:U:O4'	2.16	0.46
1:1:1720:U:N3	1:1:1740:G:O6	2.49	0.46
1:1:1847:A:O2'	1:1:1848:A:O5'	2.33	0.46
1:1:2514:U:H3	1:1:2570:G:H1	1.64	0.46
1:1:2625:G:H2'	1:1:2626:C:C6	2.51	0.46
1:1:2707:U:H2'	1:1:2708:G:C8	2.51	0.46
2:2:340:U:C2	2:2:350:G:C2	3.04	0.46
2:2:1103:C:C5'	39:g:97:LEU:HD22	2.46	0.46
2:2:1123:U:HO2'	2:2:1124:G:C5'	2.28	0.46
7:7:21:A:H2'	7:7:22:G:C8	2.50	0.46
7:7:47:3AU:H10A	7:7:50:U:H4'	1.98	0.46
8:8:5:A:H1'	8:8:6:G:C6	2.50	0.46
14:F:23:VAL:HG22	14:F:36:THR:CB	2.45	0.46
15:G:117:LEU:HD22	15:G:120:GLY:HA2	1.98	0.46
17:I:74:PRO:N	17:I:112:LYS:HZ1	2.14	0.46
18:J:136:GLN:HA	18:J:137:PRO:HD2	1.67	0.46
39:g:27:MET:O	39:g:31:ILE:HG13	2.16	0.46
41:i:11:LEU:HD21	41:i:63:ARG:HD2	1.97	0.46
50:r:15:ALA:O	50:r:19:LEU:HD13	2.16	0.46
1:1:451:U:O2	1:1:453:A:N6	2.48	0.46
1:1:1490:A:H2'	1:1:1491:G:C5	2.51	0.46
1:1:1539:U:H2'	1:1:1540:G:C8	2.50	0.46
1:1:2647:U:H2'	1:1:2648:G:H8	1.80	0.46
1:1:2673:G:H2'	1:1:2674:G:H8	1.81	0.46
2:2:398:U:H2'	2:2:399:G:C8	2.50	0.46
2:2:509:A:P	41:i:48:LEU:HD11	2.55	0.46
2:2:1063:C:H3'	2:2:1064:G:H8	1.81	0.46
2:2:1481:U:H2'	2:2:1482:G:H8	1.81	0.46
4:4:116:A:H3'	4:4:117:G:C8	2.48	0.46
5:5:15:ALA:HB1	5:5:51:ILE:HD11	1.97	0.46
6:6:216:ASP:CB	6:6:228:THR:CG2	2.91	0.46
11:C:34:VAL:HA	11:C:50:VAL:HG12	1.98	0.46
15:G:3:VAL:CG2	15:G:37:VAL:CG1	2.91	0.46
42:j:103:THR:HG23	42:j:103:THR:O	2.14	0.46
42:j:106:ILE:HD11	42:j:125:ALA:H	1.81	0.46
47:o:36:VAL:HG12	47:o:38:GLY:H	1.80	0.46
49:q:33:VAL:CG2	49:q:78:SER:N	2.79	0.46
54:v:57:ASP:OD1	54:v:58:VAL:N	2.49	0.46
1:1:1568:G:OP2	10:B:63:ARG:NH1	2.49	0.46
1:1:1683:U:H2'	1:1:1684:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1683:U:H2'	1:1:1684:G:H8	1.80	0.46
1:1:1704:C:H2'	1:1:1705:A:H8	1.81	0.46
1:1:2103:C:HO2'	1:1:2104:C:P	2.38	0.46
1:1:2473:U:O2	1:1:2473:U:H2'	2.16	0.46
1:1:2841:C:H2'	1:1:2842:G:C8	2.51	0.46
2:2:501:C:H2'	2:2:502:A:H8	1.81	0.46
2:2:676:A:H5''	48:p:115:PRO:HB3	1.98	0.46
2:2:1166:G:N2	2:2:1170:A:N6	2.64	0.46
2:2:1323:G:H2'	2:2:1324:A:C8	2.51	0.46
7:7:52:G:H2'	7:7:53:G:C8	2.51	0.46
11:C:33:ARG:NH1	11:C:53:GLY:O	2.43	0.46
17:I:103:ALA:HA	17:I:106:GLN:HB3	1.98	0.46
50:r:25:VAL:HG13	50:r:25:VAL:O	2.15	0.46
1:1:1322:A:H61	1:1:1333:G:H1'	1.80	0.45
1:1:1423:G:H4'	1:1:1491:G:C2	2.51	0.45
1:1:1745:A:O5'	1:1:1745:A:H8	1.99	0.45
1:1:2500:U:O2'	1:1:2504:PSU:OP1	2.30	0.45
1:1:2623:G:H2'	1:1:2624:G:C8	2.51	0.45
6:6:137:CYS:O	6:6:140:VAL:HG12	2.17	0.45
20:L:95:LEU:HD22	20:L:100:ILE:HD11	1.97	0.45
26:R:49:ILE:CD1	26:R:53:PHE:N	2.78	0.45
48:p:107:ILE:HD12	48:p:110:ILE:HD11	1.96	0.45
1:1:85:G:H5''	29:U:28:VAL:CG2	2.45	0.45
1:1:1081:U:H2'	1:1:1082:U:C6	2.52	0.45
1:1:1361:G:H2'	1:1:1362:C:C6	2.51	0.45
1:1:1462:C:H2'	1:1:1463:C:H6	1.82	0.45
1:1:1496:A:H1'	1:1:1578:U:H4'	1.97	0.45
1:1:2485:G:H4'	21:M:125:PRO:HB3	1.99	0.45
1:1:2830:C:OP2	11:C:59:ARG:NH2	2.49	0.45
2:2:444:G:H2'	2:2:445:G:C8	2.51	0.45
2:2:578:C:H2'	2:2:579:A:C8	2.51	0.45
2:2:654:G:H2'	2:2:655:A:O4'	2.16	0.45
2:2:687:A:C5	2:2:701:U:N3	2.84	0.45
2:2:944:G:N1	2:2:1338:G:OP2	2.45	0.45
2:2:1119:C:H2'	2:2:1120:C:C6	2.51	0.45
2:2:1458:G:H2'	2:2:1459:G:C8	2.52	0.45
5:5:37:GLN:HG2	5:5:38:GLY:H	1.81	0.45
7:7:18:G:OP2	7:7:60:U:O2'	2.32	0.45
9:A:59:LEU:HD13	9:A:80:ILE:HD12	1.98	0.45
11:C:179:ARG:HB3	11:C:188:LEU:HD13	1.98	0.45
16:H:91:ALA:HB1	16:H:118:ILE:HG21	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:q:83:ARG:HD3	49:q:98:VAL:HG22	1.98	0.45
50:r:18:ALA:O	50:r:21:SER:OG	2.25	0.45
1:1:740:C:H5'	1:1:1784:A:H2'	1.97	0.45
1:1:1174:U:H4'	1:1:1176:U:H1'	1.99	0.45
1:1:2425:A:H4'	1:1:2426:A:O5'	2.16	0.45
1:1:2865:U:H3'	1:1:2866:U:H2'	1.98	0.45
2:2:213:G:H3'	2:2:214:C:C6	2.51	0.45
2:2:266:G:H1'	2:2:268:U:OP2	2.16	0.45
2:2:445:G:H2'	2:2:446:G:C8	2.51	0.45
2:2:532:A:N6	2:2:1206:G:O2'	2.49	0.45
2:2:868:C:H2'	2:2:869:G:O4'	2.16	0.45
2:2:979:C:O2	51:s:59:ARG:NH1	2.49	0.45
2:2:1120:C:H2'	2:2:1121:U:C6	2.51	0.45
3:3:116:G:H2'	3:3:117:G:C8	2.50	0.45
4:4:129:G:H2'	4:4:130:C:H4'	1.98	0.45
4:4:257:U:O2'	4:4:258:G:N7	2.49	0.45
6:6:254:THR:O	6:6:254:THR:HG23	2.15	0.45
60:6:401:KIR:H443	60:6:401:KIR:H191	1.79	0.45
9:A:38:VAL:HB	9:A:59:LEU:HD12	1.98	0.45
13:E:119:ALA:HB2	13:E:177:PHE:HD2	1.81	0.45
14:F:60:ASP:OD1	14:F:61:GLY:N	2.40	0.45
16:H:59:LEU:HB2	16:H:62:ARG:HD2	1.97	0.45
16:H:118:ILE:HB	16:H:119:PRO:HD3	1.97	0.45
29:U:88:GLU:HB3	29:U:89:ASP:H	1.59	0.45
41:i:92:ALA:O	41:i:95:GLU:HG3	2.16	0.45
1:1:152:A:H2'	1:1:153:U:C6	2.51	0.45
1:1:666:A:H2'	1:1:667:U:C6	2.51	0.45
1:1:808:G:H2'	1:1:809:G:H8	1.81	0.45
1:1:838:C:H2'	1:1:839:U:H6	1.82	0.45
1:1:1064:C:N4	1:1:1076:C:N3	2.65	0.45
1:1:1281:G:H2'	1:1:1282:U:C6	2.51	0.45
1:1:1716:U:N3	1:1:1744:A:N6	2.64	0.45
1:1:2401:U:O2'	1:1:2402:U:O5'	2.32	0.45
1:1:2780:G:H1	18:J:102:GLU:CD	2.25	0.45
2:2:237:G:H5''	54:v:27:ARG:CZ	2.46	0.45
2:2:555:U:H2'	2:2:556:C:H6	1.81	0.45
2:2:1240:U:O5'	44:l:116:MET:CG	2.64	0.45
2:2:1250:A:H2	2:2:1370:G:H1'	1.80	0.45
3:3:16:G:N2	3:3:69:G:H1'	2.32	0.45
4:4:113:A:H2'	4:4:114:G:C8	2.51	0.45
4:4:256:G:H5''	4:4:272:C:N4	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:34:LEU:HD21	5:5:125:VAL:HG11	1.86	0.45
5:5:137:ASP:OD1	5:5:137:ASP:N	2.49	0.45
11:C:181:ASP:HB3	11:C:186:LEU:HB2	1.99	0.45
20:L:91:ASP:O	20:L:95:LEU:HG	2.17	0.45
29:U:28:VAL:HG23	29:U:28:VAL:O	2.15	0.45
33:Z:7:ILE:HG22	33:Z:57:VAL:HB	1.99	0.45
39:g:133:GLU:O	39:g:137:ARG:HG2	2.16	0.45
1:1:78:U:H2'	1:1:79:C:C6	2.51	0.45
1:1:1275:A:N6	22:N:19:ALA:HB3	2.31	0.45
1:1:1434:A:H2'	1:1:1435:G:H8	1.81	0.45
1:1:2022:U:O2'	1:1:2617:U:H5'	2.17	0.45
1:1:2424:C:O2	1:1:2429:G:O2'	2.31	0.45
1:1:2475:C:N4	1:1:2529:G:N2	2.65	0.45
2:2:269:C:H2'	2:2:270:A:C8	2.52	0.45
2:2:736:C:H2'	2:2:737:C:C6	2.52	0.45
2:2:826:C:H1'	45:m:16:ASN:HD22	1.82	0.45
6:6:71:THR:CG2	6:6:74:ARG:C	2.73	0.45
10:B:71:LYS:HB3	10:B:71:LYS:HE2	1.77	0.45
10:B:159:GLY:N	10:B:195:VAL:HG21	2.30	0.45
10:B:245:VAL:HG12	10:B:251:GLN:HA	1.98	0.45
21:M:41:LEU:HD21	21:M:126:ILE:HG22	1.99	0.45
27:S:82:MET:HB2	27:S:98:LYS:HB2	1.99	0.45
28:T:48:GLN:HE21	28:T:55:VAL:HG12	1.81	0.45
39:g:41:ILE:HD11	39:g:189:THR:HG22	1.97	0.45
46:n:84:THR:HG21	46:n:103:PHE:HB3	1.99	0.45
56:x:13:LEU:CG	56:x:14:HIS:H	2.28	0.45
1:1:851:C:H2'	1:1:852:U:C6	2.52	0.45
1:1:1031:G:H2'	1:1:1032:A:C8	2.52	0.45
1:1:1438:U:H2'	1:1:1439:A:C8	2.51	0.45
2:2:81:A:H4'	2:2:82:G:OP1	2.17	0.45
2:2:500:G:H2'	2:2:501:C:C6	2.52	0.45
2:2:524:G:H2'	2:2:525:C:H6	1.81	0.45
2:2:663:A:H2'	2:2:664:G:C8	2.52	0.45
2:2:1372:U:H2'	2:2:1373:G:O4'	2.16	0.45
2:2:1496:C:H2'	2:2:1497:G:C8	2.51	0.45
4:4:52:G:H2'	4:4:53:G:N7	2.32	0.45
4:4:149:A:N3	4:4:151:C:N4	2.64	0.45
18:J:136:GLN:O	18:J:136:GLN:CG	2.57	0.45
41:i:201:VAL:HG11	42:j:103:THR:CG2	2.46	0.45
1:1:57:C:H2'	1:1:58:G:C8	2.51	0.45
1:1:895:U:H2'	1:1:897:C:H41	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:970:U:H2'	1:1:971:G:C8	2.52	0.45
1:1:1522:A:H5'	1:1:1524:G:C8	2.52	0.45
1:1:1820:U:H3	10:B:198:ALA:HA	1.81	0.45
2:2:500:G:H2'	2:2:501:C:H6	1.81	0.45
2:2:1159:U:O4	2:2:1182:G:O2'	2.34	0.45
2:2:1513:A:H2'	2:2:1514:G:H8	1.82	0.45
3:3:10:G:H2'	3:3:11:C:O4'	2.16	0.45
3:3:95:U:H2'	3:3:96:G:H8	1.80	0.45
14:F:104:ASN:ND2	14:F:114:ASP:OD1	2.41	0.45
14:F:170:ARG:NH2	38:f:29:ALA:O	2.49	0.45
18:J:28:LEU:O	18:J:32:LEU:HG	2.17	0.45
22:N:57:THR:HG23	22:N:62:ASN:HD22	1.81	0.45
24:P:31:TRP:CE3	24:P:38:LYS:HG2	2.52	0.45
34:b:48:TYR:CZ	34:b:53:LYS:HD3	2.51	0.45
34:b:54:VAL:CG1	34:b:55:ILE:H	2.08	0.45
43:k:9:MET:HG2	43:k:86:ARG:HB2	1.98	0.45
44:l:107:ALA:HA	44:l:133:THR:CG2	2.47	0.45
56:x:47:LEU:HG	56:x:62:VAL:CG2	2.46	0.45
1:1:3:U:H2'	1:1:4:U:H6	1.82	0.45
1:1:337:C:H2'	1:1:338:G:O4'	2.17	0.45
1:1:1275:A:H1'	1:1:1276:A:O4'	2.17	0.45
1:1:1696:G:N2	1:1:1977:A:HO2'	2.12	0.45
1:1:1917:PSU:H3'	1:1:1918:A:C8	2.52	0.45
1:1:2074:U:H2'	1:1:2075:U:H6	1.82	0.45
2:2:138:G:H2'	2:2:139:A:C8	2.51	0.45
2:2:308:C:H2'	2:2:309:A:H8	1.82	0.45
2:2:523:A:N6	49:q:50:ARG:HH12	2.15	0.45
2:2:737:C:H2'	2:2:738:C:C6	2.51	0.45
2:2:879:C:H2'	2:2:880:C:H6	1.82	0.45
2:2:889:A:H61	2:2:907:A:H3'	1.81	0.45
3:3:23:G:H2'	3:3:24:G:C5	2.52	0.45
3:3:70:C:H2'	3:3:71:C:H6	1.82	0.45
10:B:160:THR:HG22	10:B:177:ARG:HG2	1.98	0.45
10:B:210:ALA:HA	10:B:213:TRP:CH2	2.50	0.45
20:L:29:LYS:O	20:L:30:THR:OG1	2.27	0.45
24:P:14:LYS:NZ	24:P:81:VAL:CG1	2.79	0.45
24:P:106:LYS:O	24:P:109:ARG:NE	2.49	0.45
38:f:14:CYS:SG	38:f:27:CYS:HB2	2.56	0.45
39:g:66:LYS:HD2	39:g:154:MET:HG3	1.98	0.45
39:g:129:LEU:HA	39:g:134:ALA:H	1.82	0.45
40:h:27:LYS:H	40:h:27:LYS:HD2	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:279:A:OP2	1:1:361:G:N2	2.39	0.45
1:1:335:C:OP2	29:U:82:ARG:NH2	2.50	0.45
1:1:372:G:H2'	31:X:58:VAL:HG22	1.99	0.45
1:1:373:U:H2'	1:1:374:A:H8	1.82	0.45
1:1:888:C:H4'	1:1:889:C:C5	2.51	0.45
1:1:954:G:H5''	21:M:13:HIS:CG	2.52	0.45
1:1:1549:A:H2'	1:1:1550:C:C6	2.52	0.45
1:1:2126:A:H62	1:1:2163:A:H5'	1.81	0.45
1:1:2438:U:O2'	1:1:2440:C:OP1	2.34	0.45
2:2:600:A:H2'	2:2:601:G:C8	2.52	0.45
2:2:882:C:OP2	49:q:10:LYS:NZ	2.50	0.45
5:5:17:ASN:HB3	5:5:114:LEU:HD12	1.98	0.45
9:A:72:LYS:HB2	9:A:79:PHE:CD1	2.52	0.45
10:B:133:ARG:NH2	10:B:187:ASP:OD1	2.50	0.45
14:F:11:VAL:CG1	14:F:15:VAL:HG21	2.46	0.45
30:V:45:ASP:OD1	30:V:49:ASN:ND2	2.48	0.45
40:h:112:ASP:CB	40:h:115:LEU:CB	2.81	0.45
41:i:116:GLN:O	41:i:120:HIS:ND1	2.50	0.45
45:m:60:GLU:O	45:m:60:GLU:HG2	2.17	0.45
1:1:510:C:H2'	1:1:510:C:O2	2.17	0.45
1:1:579:G:H2'	1:1:580:U:C6	2.52	0.45
1:1:805:G:H22	1:1:828:U:H5''	1.81	0.45
1:1:1909:C:H2'	1:1:1910:G:C8	2.52	0.45
1:1:2071:A:H2'	1:1:2072:C:H6	1.81	0.45
1:1:2116:G:H5'	1:1:2165:C:H42	1.81	0.45
1:1:2193:G:HO2'	1:1:2194:U:P	2.38	0.45
1:1:2676:C:H2'	1:1:2677:G:C8	2.52	0.45
4:4:335:C:H4'	4:4:336:G:O5'	2.17	0.45
6:6:17:ILE:HB	6:6:118:HIS:HD2	1.82	0.45
6:6:220:ILE:HG21	6:6:223:ARG:HB2	1.93	0.45
6:6:278:LEU:HB3	6:6:281:ILE:CG1	2.46	0.45
9:A:15:ASP:OD1	9:A:16:SER:N	2.45	0.45
9:A:25:ARG:HB2	9:A:37:ILE:HG23	1.99	0.45
13:E:34:ILE:N	13:E:91:LEU:HB3	2.27	0.45
14:F:137:ASP:O	14:F:141:ILE:HG13	2.17	0.45
15:G:2:GLN:CD	15:G:20:ASN:CA	2.90	0.45
16:H:59:LEU:HB3	16:H:62:ARG:HD2	1.98	0.45
17:I:95:ASP:OD1	17:I:95:ASP:N	2.49	0.45
40:h:108:LYS:HD2	40:h:144:LEU:HD12	1.98	0.45
42:j:132:ASN:CG	42:j:135:ASN:HD22	2.25	0.45
43:k:3:HIS:NE2	43:k:94:HIS:HA	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:77:G:OP1	32:Y:52:ARG:NE	2.41	0.44
1:1:876:C:H3'	1:1:877:A:C8	2.52	0.44
1:1:1433:A:H2'	1:1:1434:A:H8	1.81	0.44
1:1:1746:A:H2'	1:1:1747:U:H6	1.82	0.44
1:1:2615:U:H2'	1:1:2616:C:C6	2.52	0.44
2:2:138:G:H2'	2:2:139:A:H8	1.82	0.44
2:2:675:A:N6	2:2:715:A:H61	2.12	0.44
2:2:921:U:H2'	2:2:922:G:H8	1.81	0.44
2:2:924:C:H2'	2:2:925:G:H8	1.83	0.44
2:2:1015:G:N3	2:2:1218:C:O2'	2.44	0.44
2:2:1348:U:H2'	2:2:1349:A:H8	1.83	0.44
2:2:1477:U:H2'	2:2:1478:U:C6	2.51	0.44
6:6:132:VAL:HB	6:6:169:ILE:HD12	1.99	0.44
7:7:25:C:C2	7:7:26:A:C8	3.05	0.44
13:E:110:ARG:HH21	13:E:138:PHE:HB3	1.82	0.44
15:G:104:THR:HG23	15:G:109:GLU:HG2	1.98	0.44
24:P:75:GLN:HB2	24:P:78:SER:HB3	1.98	0.44
27:S:66:ILE:H	27:S:66:ILE:HD12	1.83	0.44
28:T:11:LEU:O	32:Y:29:ARG:NH2	2.50	0.44
37:e:29:LEU:HD12	37:e:33:LEU:CD2	2.47	0.44
56:x:60:VAL:HG21	56:x:74:PHE:HB3	1.98	0.44
1:1:72:U:O4	32:Y:58:ASN:ND2	2.45	0.44
1:1:199:A:O3'	31:X:23:ASN:ND2	2.50	0.44
1:1:549:G:H5''	1:1:550:C:C6	2.53	0.44
1:1:947:A:H2'	1:1:948:C:C6	2.53	0.44
1:1:1130:U:C2	1:1:2025:C:H5''	2.52	0.44
1:1:1357:C:H2'	1:1:1358:G:O4'	2.17	0.44
1:1:1754:A:N6	1:1:2717:C:O4'	2.50	0.44
1:1:2656:U:C2	1:1:2665:A:N7	2.85	0.44
1:1:2696:U:H2'	1:1:2697:G:C8	2.53	0.44
2:2:155:A:N6	2:2:167:A:H61	2.15	0.44
2:2:429:U:H5'	41:i:9:LEU:HD12	1.98	0.44
2:2:686:U:O4	2:2:703:G:H1'	2.17	0.44
2:2:1293:C:H2'	2:2:1294:G:H8	1.82	0.44
2:2:1507:A:H61	58:z:46:LYS:HZ1	1.64	0.44
7:7:10:G:N2	7:7:26:A:H1'	2.32	0.44
7:7:59:U:H2'	7:7:60:U:C2	2.52	0.44
11:C:51:THR:HB	11:C:79:LEU:HD23	2.00	0.44
16:H:60:LEU:CD1	16:H:61:ARG:HG2	2.47	0.44
22:N:79:LEU:HD23	22:N:83:LEU:HD23	1.99	0.44
41:i:131:ASN:OD1	41:i:131:ASN:O	2.35	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:k:11:HIS:HA	43:k:54:LEU:HD21	1.99	0.44
57:y:57:ILE:O	57:y:61:GLN:HG2	2.16	0.44
1:1:3:U:H2'	1:1:4:U:C6	2.52	0.44
1:1:121:G:H4'	1:1:149:A:H5'	1.99	0.44
1:1:559:G:N3	25:Q:56:GLN:NE2	2.65	0.44
1:1:619:G:H3'	1:1:620:G:H21	1.81	0.44
1:1:1129:A:O2'	1:1:2515:C:O2	2.34	0.44
1:1:2011:U:H2'	1:1:2012:G:O4'	2.18	0.44
1:1:2639:A:H2'	1:1:2640:G:O4'	2.18	0.44
2:2:59:A:H3'	2:2:331:G:H22	1.81	0.44
2:2:323:U:H3	2:2:327:A:H62	1.64	0.44
2:2:690:G:OP2	48:p:29:ASN:ND2	2.44	0.44
2:2:855:U:H2'	2:2:856:C:C6	2.52	0.44
2:2:859:G:OP2	2:2:869:G:N1	2.38	0.44
2:2:1014:A:H2'	2:2:1015:G:C4	2.52	0.44
2:2:1147:C:H2'	2:2:1148:U:C6	2.52	0.44
2:2:1252:A:H61	2:2:1285:A:N6	2.16	0.44
4:4:66:C:N3	4:4:68:U:O4	2.50	0.44
4:4:363:A:H2	6:6:277:LEU:HB2	1.82	0.44
6:6:192:ALA:HA	6:6:195:LEU:HD21	1.91	0.44
10:B:76:ALA:HA	10:B:96:TYR:HA	1.99	0.44
12:D:3:LEU:HD11	12:D:120:VAL:HG21	1.99	0.44
23:O:35:ILE:HD11	23:O:102:ARG:HD2	1.99	0.44
30:V:57:TYR:OH	30:V:79:ARG:NH2	2.49	0.44
39:g:129:LEU:HG	39:g:131:LYS:N	2.32	0.44
41:i:16:GLY:O	41:i:17:THR:HG23	2.17	0.44
44:l:72:THR:HG22	44:l:142:HIS:CE1	2.53	0.44
1:1:1615:C:OP2	1:1:1617:C:N4	2.48	0.44
1:1:1947:C:H2'	1:1:1948:G:C8	2.53	0.44
1:1:2298:A:H5''	13:E:71:ARG:HH22	1.83	0.44
1:1:2572:A:OP2	11:C:149:ASN:HB3	2.18	0.44
2:2:616:G:O2'	53:u:47:GLU:OE2	2.25	0.44
2:2:626:G:H2'	2:2:627:G:C8	2.52	0.44
2:2:680:C:H2'	2:2:681:A:C8	2.52	0.44
2:2:833:G:C6	2:2:834:U:C4	3.06	0.44
2:2:918:A:H2'	2:2:919:A:C8	2.52	0.44
2:2:921:U:H2'	2:2:922:G:C8	2.53	0.44
2:2:1127:G:H22	2:2:1145:A:N6	2.16	0.44
5:5:34:LEU:HD13	5:5:125:VAL:CG2	2.11	0.44
5:5:109:TYR:HB3	5:5:129:VAL:HG12	2.00	0.44
7:7:27:G:H2'	7:7:28:G:C8	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:7:50:U:H2'	7:7:51:U:H6	1.82	0.44
11:C:108:ASP:N	11:C:204:LYS:O	2.41	0.44
14:F:172:LYS:HG3	14:F:173:GLU:H	1.82	0.44
16:H:28:ALA:CB	16:H:109:LYS:CE	2.64	0.44
39:g:5:SER:O	39:g:9:MET:HG2	2.18	0.44
48:p:101:ASN:HD21	58:z:12:PHE:CB	2.06	0.44
49:q:34:CYS:SG	49:q:80:ILE:HD13	2.58	0.44
1:1:521:U:H2'	1:1:522:A:C8	2.52	0.44
1:1:813:U:H2'	1:1:814:C:C6	2.53	0.44
1:1:956:G:N2	1:1:960:A:OP2	2.44	0.44
1:1:1315:C:H2'	1:1:1316:U:H6	1.83	0.44
1:1:1798:U:O3'	1:1:1802:A:O2'	2.35	0.44
1:1:2645:G:OP2	1:1:2645:G:N2	2.21	0.44
2:2:1409:C:H2'	2:2:1410:A:C8	2.52	0.44
2:2:1458:G:H2'	2:2:1459:G:H8	1.82	0.44
4:4:21:C:C2	4:4:332:G:N1	2.86	0.44
5:5:151:LYS:NZ	42:j:18:VAL:H	2.16	0.44
6:6:33:THR:HG21	6:6:178:LEU:HD21	1.98	0.44
7:7:49:C:H2'	7:7:50:U:C6	2.53	0.44
7:7:66:U:O2'	7:7:67:C:OP1	2.30	0.44
13:E:119:ALA:N	13:E:128:TYR:OH	2.50	0.44
15:G:117:LEU:HD12	15:G:117:LEU:O	2.18	0.44
41:i:201:VAL:HG11	42:j:103:THR:HG23	1.99	0.44
46:n:29:VAL:O	46:n:29:VAL:CG1	2.64	0.44
56:x:41:PHE:HA	56:x:67:VAL:HG23	1.99	0.44
1:1:106:C:H2'	1:1:107:G:C8	2.51	0.44
1:1:219:A:N3	1:1:234:U:O2'	2.44	0.44
1:1:721:A:H2'	1:1:722:A:H8	1.80	0.44
1:1:807:U:H2'	1:1:808:G:H8	1.82	0.44
1:1:1545:A:H2'	1:1:1546:G:O4'	2.16	0.44
1:1:1649:G:O6	1:1:2009:A:N6	2.51	0.44
1:1:1665:A:H1'	19:K:1:MET:HG2	2.00	0.44
1:1:2291:U:H2'	1:1:2292:U:C6	2.53	0.44
1:1:2575:C:H5'	11:C:149:ASN:HB2	1.99	0.44
1:1:2816:G:H2'	1:1:2817:U:H6	1.83	0.44
1:1:2819:G:H2'	1:1:2821:A:N7	2.33	0.44
2:2:34:C:H2'	2:2:35:G:C8	2.52	0.44
2:2:268:U:H2'	2:2:269:C:C6	2.52	0.44
2:2:695:A:H2'	2:2:696:A:C8	2.53	0.44
2:2:764:C:H2'	2:2:765:G:O4'	2.17	0.44
2:2:921:U:C2	2:2:922:G:C8	3.06	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1027:C:H5''	2:2:1028:C:C5	2.52	0.44
2:2:1144:G:N2	2:2:1146:A:H62	2.16	0.44
2:2:1377:A:N1	44:l:7:ILE:HG13	2.33	0.44
4:4:158:U:H3	4:4:196:G:H22	1.66	0.44
6:6:105:VAL:HG22	6:6:106:ALA:N	2.33	0.44
6:6:254:THR:HG22	6:6:279:ARG:HB3	1.99	0.44
14:F:3:ARG:HG3	14:F:4:VAL:N	2.27	0.44
16:H:60:LEU:HD12	16:H:61:ARG:HG2	2.00	0.44
22:N:57:THR:CG2	22:N:62:ASN:HD21	2.29	0.44
28:T:72:GLN:H	28:T:72:GLN:CD	2.25	0.44
41:i:64:ILE:O	41:i:111:ARG:HD2	2.18	0.44
41:i:107:PHE:HE1	41:i:178:MET:HG3	1.82	0.44
43:k:51:ILE:HD12	43:k:86:ARG:NH2	2.33	0.44
46:n:58:VAL:HG23	46:n:59:GLU:N	2.33	0.44
48:p:17:SER:HA	48:p:79:ILE:HA	1.99	0.44
1:1:1136:G:H2'	1:1:1137:G:C8	2.52	0.44
1:1:1287:A:N6	22:N:106:ASP:HB3	2.33	0.44
1:1:1426:G:H5''	1:1:1427:A:H5''	2.00	0.44
1:1:2071:A:H2'	1:1:2072:C:C6	2.52	0.44
2:2:481:G:O2'	2:2:483:C:N4	2.50	0.44
2:2:1203:C:H2'	2:2:1204:A:C8	2.52	0.44
4:4:76:C:H41	4:4:77:G:H21	1.64	0.44
4:4:163:G:N2	4:4:191:A:H62	2.15	0.44
12:D:146:VAL:HG13	12:D:167:VAL:HG13	2.00	0.44
19:K:43:ILE:HD12	19:K:56:ASP:HB3	2.00	0.44
22:N:69:ARG:O	22:N:70:THR:OG1	2.32	0.44
30:V:73:LYS:HB2	30:V:92:VAL:HG23	2.00	0.44
42:j:38:VAL:HG23	42:j:117:VAL:HG21	2.00	0.44
51:s:54:ASP:OD1	51:s:54:ASP:N	2.51	0.44
53:u:44:SER:O	53:u:46:LYS:N	2.45	0.44
56:x:19:VAL:HG11	56:x:41:PHE:HZ	0.83	0.44
1:1:7:G:H2'	1:1:8:C:C6	2.53	0.44
1:1:250:G:O5'	20:L:59:ARG:NH1	2.49	0.44
1:1:392:U:C2	1:1:393:C:C5	3.06	0.44
1:1:1418:G:O6	1:1:1578:U:H3'	2.18	0.44
1:1:1434:A:N6	1:1:1558:C:H42	2.09	0.44
1:1:2030:6MZ:N3	1:1:2499:C:H5''	2.32	0.44
1:1:2290:G:H2'	1:1:2291:U:C6	2.52	0.44
1:1:2440:C:H5''	1:1:2587:A:H4'	2.00	0.44
1:1:2540:C:O2'	1:1:2740:A:N3	2.38	0.44
1:1:2818:U:H2'	1:1:2819:G:H8	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:31:G:N2	2:2:48:C:OP1	2.51	0.44
2:2:355:C:H1'	2:2:388:G:H1'	2.00	0.44
2:2:543:U:H2'	2:2:544:G:C8	2.52	0.44
2:2:684:U:H2'	2:2:685:G:O4'	2.18	0.44
2:2:1124:G:OP2	47:o:37:ARG:NH2	2.51	0.44
2:2:1219:A:H2'	2:2:1220:G:C8	2.52	0.44
2:2:1531:A:H2'	2:2:1532:U:C6	2.53	0.44
11:C:37:VAL:HG22	11:C:48:ILE:HG22	2.00	0.44
13:E:130:MET:HG2	13:E:131:GLY:N	2.33	0.44
22:N:117:ASP:OD1	22:N:117:ASP:N	2.45	0.44
31:X:49:LEU:HD21	31:X:78:TYR:HB2	1.99	0.44
39:g:73:LYS:CE	39:g:165:ASP:HB2	2.48	0.44
44:l:107:ALA:HA	44:l:133:THR:HG21	1.99	0.44
45:m:112:THR:OG1	45:m:113:ASP:N	2.51	0.44
47:o:11:LYS:HG3	47:o:97:ASP:HB2	1.99	0.44
1:1:953:G:P	21:M:18:ARG:HH12	2.41	0.44
1:1:1345:C:H2'	1:1:1346:G:H8	1.82	0.44
1:1:1547:C:H2'	1:1:1548:A:H8	1.83	0.44
1:1:1569:A:H2'	1:1:1570:A:C8	2.53	0.44
1:1:1909:C:H2'	1:1:1910:G:H8	1.82	0.44
2:2:254:G:H21	54:v:18:GLU:HG3	1.82	0.44
2:2:625:U:H2'	2:2:626:G:H8	1.83	0.44
2:2:677:U:H1'	48:p:121:CYS:SG	2.58	0.44
2:2:879:C:H2'	2:2:880:C:C6	2.53	0.44
2:2:923:A:H2'	2:2:924:C:C6	2.52	0.44
2:2:1454:G:H2'	2:2:1455:G:H8	1.82	0.44
4:4:281:A:H2'	4:4:282:G:C8	2.53	0.44
6:6:18:GLY:N	6:6:104:VAL:HG12	2.30	0.44
6:6:226:VAL:HG12	6:6:277:LEU:HA	1.99	0.44
15:G:40:THR:HG22	15:G:41:LYS:N	2.33	0.44
27:S:2:GLU:HA	27:S:108:SER:HB3	2.00	0.44
39:g:31:ILE:HG12	39:g:39:HIS:HE1	1.83	0.44
42:j:80:THR:OG1	42:j:81:LEU:N	2.51	0.44
49:q:100:GLY:H	49:q:104:CYS:HB3	1.83	0.44
1:1:6:A:H2'	1:1:7:G:C8	2.53	0.43
1:1:347:A:H2'	1:1:348:A:C8	2.48	0.43
1:1:1283:G:N2	1:1:1329:U:O4	2.36	0.43
1:1:2322:A:H2'	1:1:2323:G:C8	2.53	0.43
1:1:2568:U:H2'	1:1:2569:G:O4'	2.17	0.43
2:2:536:C:H2'	2:2:537:G:H8	1.82	0.43
2:2:604:G:H2'	2:2:605:U:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:956:U:H2'	2:2:957:U:C6	2.53	0.43
21:M:43:ALA:HB2	21:M:69:PRO:HG2	2.00	0.43
23:O:26:LEU:HD22	23:O:115:LEU:HD23	2.00	0.43
23:O:98:GLN:HG3	23:O:99:TYR:H	1.83	0.43
24:P:49:ALA:O	24:P:60:THR:HG22	2.18	0.43
26:R:49:ILE:CG1	26:R:53:PHE:N	2.81	0.43
38:f:10:LEU:HD13	38:f:33:HIS:CD2	2.53	0.43
54:v:64:CYS:O	54:v:72:SER:OG	2.36	0.43
56:x:40:ILE:HB	56:x:67:VAL:HA	2.00	0.43
56:x:44:MET:CE	56:x:47:LEU:HD22	2.44	0.43
1:1:79:C:H2'	1:1:80:G:C8	2.54	0.43
1:1:345:A:N3	1:1:347:A:N6	2.66	0.43
1:1:408:G:H2'	1:1:409:G:C8	2.53	0.43
1:1:589:U:H2'	1:1:590:A:C8	2.53	0.43
1:1:667:U:H2'	1:1:668:A:O4'	2.17	0.43
1:1:788:A:OP1	1:1:791:C:N4	2.43	0.43
1:1:890:C:H2'	1:1:891:G:C8	2.53	0.43
1:1:1308:A:H3'	1:1:1309:G:H8	1.82	0.43
1:1:1671:U:H1'	11:C:134:HIS:CE1	2.53	0.43
1:1:1925:C:H42	1:1:1929:G:N2	2.15	0.43
1:1:2555:U:H5''	1:1:2556:C:H5	1.82	0.43
1:1:2637:U:H2'	1:1:2638:G:O4'	2.18	0.43
2:2:235:C:H2'	2:2:236:A:C8	2.50	0.43
2:2:408:A:O2'	41:i:24:GLY:HA3	2.18	0.43
2:2:436:C:H41	2:2:495:A:P	2.41	0.43
2:2:672:U:H2'	2:2:673:A:C8	2.53	0.43
2:2:962:C:H2'	2:2:963:G:H8	1.83	0.43
4:4:179:A:H2'	4:4:179:A:N3	2.32	0.43
7:7:32:PSU:C2'	46:n:130:ARG:NH1	2.80	0.43
13:E:31:VAL:HG22	13:E:33:LYS:H	1.83	0.43
20:L:85:VAL:HG11	20:L:90:VAL:HG22	1.99	0.43
20:L:88:GLY:O	20:L:121:THR:N	2.51	0.43
28:T:55:VAL:HG23	28:T:85:VAL:HG13	2.00	0.43
39:g:129:LEU:HD13	39:g:134:ALA:C	2.38	0.43
40:h:65:ARG:HD2	40:h:100:GLN:HB3	2.00	0.43
40:h:114:LYS:HD2	40:h:185:ASN:ND2	2.32	0.43
46:n:12:ARG:HD2	46:n:77:GLY:HA3	1.98	0.43
51:s:85:ARG:O	51:s:89:MET:HG2	2.19	0.43
57:y:60:ARG:HG2	57:y:64:LYS:HE2	2.00	0.43
1:1:26:G:N3	1:1:515:A:N6	2.66	0.43
1:1:156:A:H2'	1:1:157:C:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:585:G:H2'	1:1:1251:C:H42	1.83	0.43
1:1:1323:C:H2'	1:1:1324:G:H8	1.82	0.43
1:1:1403:A:HO2'	1:1:1471:G:HO2'	1.62	0.43
1:1:1407:G:H2'	1:1:1408:G:H8	1.82	0.43
1:1:1422:G:H1	1:1:1576:U:H3	1.64	0.43
1:1:2419:U:OP1	37:e:41:LYS:NZ	2.40	0.43
1:1:2494:G:C2	1:1:2495:G:C8	3.06	0.43
1:1:2514:U:H2'	1:1:2515:C:C6	2.53	0.43
2:2:185:U:H2'	2:2:186:C:C6	2.53	0.43
2:2:713:G:H2'	2:2:714:G:H8	1.78	0.43
2:2:1060:U:C5	40:h:2:GLY:HA3	2.53	0.43
2:2:1118:U:H5'	46:n:106:ARG:CZ	2.48	0.43
3:3:92:C:P	30:V:18:ARG:HH22	2.41	0.43
7:7:28:G:H2'	7:7:29:G:O4'	2.18	0.43
10:B:39:LYS:NZ	10:B:60:GLN:HG2	2.33	0.43
15:G:76:GLU:HG2	15:G:142:VAL:HA	2.00	0.43
26:R:6:GLN:OE1	26:R:11:GLN:HG2	2.18	0.43
34:b:10:ARG:O	34:b:12:LYS:N	2.51	0.43
38:f:3:VAL:HG21	38:f:36:ARG:HH21	1.83	0.43
42:j:76:LEU:HD12	42:j:120:VAL:HG11	1.90	0.43
43:k:5:GLU:HG2	43:k:90:MET:O	2.18	0.43
1:1:754:U:H2'	1:1:755:U:C6	2.54	0.43
1:1:2252:G:H2'	1:1:2253:G:H8	1.84	0.43
1:1:2417:C:H2'	1:1:2418:A:C8	2.53	0.43
2:2:19:A:H2'	2:2:20:U:C6	2.53	0.43
2:2:123:U:H2'	2:2:124:C:H6	1.83	0.43
2:2:325:A:O2'	2:2:326:G:OP1	2.35	0.43
2:2:416:G:H2'	2:2:417:G:H8	1.83	0.43
2:2:446:G:H2'	2:2:447:G:O4'	2.18	0.43
2:2:494:G:H2'	2:2:496:A:H8	1.83	0.43
2:2:741:G:OP1	52:t:2:SER:N	2.51	0.43
2:2:1150:A:H1'	2:2:1280:A:N6	2.33	0.43
2:2:1168:U:OP2	2:2:1169:A:N6	2.51	0.43
10:B:260:ASN:OD1	10:B:263:THR:N	2.52	0.43
13:E:113:ASP:O	13:E:113:ASP:CG	2.60	0.43
16:H:23:LEU:CD2	16:H:96:PHE:CE1	3.01	0.43
41:i:88:GLU:HG2	41:i:89:ASN:N	2.33	0.43
51:s:10:GLU:HG3	51:s:63:ARG:HD2	2.00	0.43
1:1:597:G:O2'	20:L:11:GLY:O	2.31	0.43
1:1:661:A:H2'	1:1:662:G:H8	1.83	0.43
1:1:680:C:H2'	1:1:681:G:H8	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1476:U:H2'	1:1:1477:A:C8	2.54	0.43
1:1:1876:A:C4	1:1:1877:A:C8	3.06	0.43
1:1:1966:A:H62	1:1:2602:A:N6	2.16	0.43
1:1:2343:U:H4'	1:1:2373:G:H4'	2.00	0.43
1:1:2788:C:O2'	1:1:2809:A:N3	2.50	0.43
2:2:17:U:H2'	2:2:18:C:C6	2.54	0.43
2:2:830:G:O2'	39:g:21:ARG:NH1	2.52	0.43
2:2:985:C:H2'	2:2:986:U:H6	1.84	0.43
3:3:24:G:H1'	3:3:26:C:H41	1.84	0.43
4:4:27:U:OP2	4:4:323:A:N6	2.45	0.43
4:4:50:G:O6	4:4:68:U:O2'	2.34	0.43
4:4:337:C:H2'	4:4:338:G:C8	2.53	0.43
7:7:27:G:C2	7:7:28:G:C5	3.06	0.43
13:E:132:VAL:C	13:E:134:GLU:H	2.27	0.43
17:I:74:PRO:CA	17:I:112:LYS:HZ1	2.32	0.43
31:X:8:THR:OG1	31:X:10:LYS:HD2	2.19	0.43
41:i:117:LEU:CD2	41:i:154:ARG:HH11	2.31	0.43
43:k:76:THR:HA	43:k:79:ARG:HG2	2.00	0.43
53:u:34:GLU:OE2	53:u:56:ARG:NE	2.52	0.43
57:y:35:VAL:HG11	57:y:79:LEU:HD13	2.01	0.43
1:1:1040:A:N6	1:1:1116:G:O6	2.51	0.43
1:1:1285:A:C5	1:1:1329:U:C4	3.07	0.43
1:1:1564:C:H2'	1:1:1565:C:C6	2.53	0.43
1:1:2027:G:H2'	1:1:2028:U:C6	2.54	0.43
1:1:2079:U:H2'	1:1:2080:A:O4'	2.18	0.43
1:1:2185:U:H3'	1:1:2186:G:H8	1.83	0.43
1:1:2194:U:H2'	1:1:2195:U:H6	1.84	0.43
1:1:2333:A:H5''	1:1:2334:U:H2'	2.01	0.43
1:1:2457:PSU:H2'	1:1:2458:G:C8	2.52	0.43
1:1:2594:C:H2'	1:1:2595:G:C8	2.54	0.43
1:1:2636:C:H2'	1:1:2637:U:H6	1.83	0.43
1:1:2849:U:O4	24:P:21:ARG:NH2	2.52	0.43
2:2:130:A:N6	2:2:233:C:O2	2.52	0.43
2:2:191:G:H2'	2:2:192:A:C8	2.54	0.43
2:2:715:A:H2	48:p:120:GLY:HA2	1.84	0.43
2:2:743:A:H2'	2:2:744:C:C6	2.54	0.43
2:2:928:G:H2'	2:2:929:G:H8	1.84	0.43
3:3:8:C:N4	3:3:112:G:O6	2.32	0.43
4:4:227:C:C4	4:4:228:G:H1'	2.53	0.43
6:6:140:VAL:CG1	6:6:140:VAL:O	2.65	0.43
6:6:245:VAL:CG2	6:6:367:ALA:HB2	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:G:98:ASP:HA	15:G:101:ASP:OD2	2.18	0.43
16:H:59:LEU:CD2	16:H:62:ARG:N	2.81	0.43
29:U:26:LYS:N	29:U:35:ILE:O	2.40	0.43
41:i:156:LYS:O	41:i:159:LEU:HG	2.18	0.43
1:1:48:G:H22	1:1:177:G:P	2.41	0.43
1:1:152:A:H2'	1:1:153:U:H6	1.83	0.43
1:1:311:A:C6	1:1:328:U:C4	3.07	0.43
1:1:581:C:H2'	1:1:582:A:H8	1.83	0.43
1:1:1100:C:H2'	1:1:1101:U:C6	2.54	0.43
1:1:1275:A:H62	22:N:16:HIS:HA	1.83	0.43
1:1:1529:G:H2'	1:1:1530:G:C8	2.54	0.43
1:1:2561:U:O3'	19:K:40:LYS:NZ	2.50	0.43
1:1:2719:G:H4'	1:1:2846:G:H4'	2.00	0.43
2:2:155:A:H2'	2:2:156:C:C6	2.53	0.43
2:2:231:U:H2'	2:2:232:G:H8	1.84	0.43
2:2:257:G:H2'	2:2:258:G:H8	1.84	0.43
2:2:709:U:H2'	2:2:710:G:C8	2.52	0.43
2:2:1010:U:H1'	2:2:1020:G:H22	1.83	0.43
2:2:1076:U:H2'	2:2:1077:G:C8	2.54	0.43
2:2:1198:G:H2'	2:2:1199:U:C6	2.54	0.43
4:4:114:G:H1	4:4:129:G:N2	2.16	0.43
4:4:179:A:H5''	4:4:185:A:OP1	2.19	0.43
4:4:186:A:H1'	40:h:73:PRO:HB2	2.01	0.43
6:6:220:ILE:HG22	6:6:223:ARG:HB2	1.98	0.43
49:q:86:ARG:HA	49:q:94:ARG:HA	2.00	0.43
50:r:107:ARG:O	50:r:108:THR:OG1	2.33	0.43
55:w:21:ILE:HD12	55:w:21:ILE:HA	1.95	0.43
56:x:47:LEU:HD12	56:x:47:LEU:C	2.44	0.43
1:1:318:C:H2'	1:1:319:G:H8	1.84	0.43
1:1:349:U:H2'	1:1:350:G:C8	2.54	0.43
1:1:726:G:H5''	1:1:1432:G:H1'	1.99	0.43
1:1:998:C:OP2	25:Q:58:ARG:NH2	2.52	0.43
1:1:1054:A:H2'	1:1:1055:G:H8	1.82	0.43
1:1:1093:G:N2	1:1:1098:A:N6	2.33	0.43
1:1:1278:C:H2'	1:1:1279:G:C8	2.52	0.43
1:1:1716:U:C2	1:1:1744:A:N6	2.87	0.43
1:1:2035:G:H5''	1:1:2036:C:H5	1.83	0.43
1:1:2231:U:H2'	1:1:2232:C:C6	2.54	0.43
1:1:2304:G:O3'	13:E:133:ARG:NH2	2.48	0.43
1:1:2649:C:H2'	1:1:2650:U:C6	2.52	0.43
1:1:2676:C:O2	1:1:2732:G:N2	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:19:A:H5''	42:j:91:GLY:HA3	2.01	0.43
2:2:302:G:H2'	2:2:303:A:H8	1.83	0.43
2:2:675:A:H1'	48:p:118:HIS:CD2	2.54	0.43
2:2:1012:A:H2'	2:2:1013:G:C8	2.54	0.43
4:4:78:C:C6	4:4:84:A:H4'	2.54	0.43
4:4:144:U:H5''	4:4:145:C:C6	2.54	0.43
4:4:164:G:H2'	4:4:166:C:N4	2.34	0.43
4:4:205:G:H2'	4:4:206:A:C8	2.54	0.43
6:6:133:PHE:CB	6:6:170:VAL:HG23	2.49	0.43
13:E:107:ALA:O	13:E:111:ILE:HG13	2.18	0.43
15:G:75:LEU:HD13	15:G:77:THR:OG1	2.19	0.43
17:I:74:PRO:CA	17:I:112:LYS:NZ	2.82	0.43
23:O:62:LEU:HD23	23:O:65:THR:HG22	2.00	0.43
24:P:49:ALA:CA	24:P:60:THR:HG22	2.49	0.43
26:R:78:ARG:HB2	26:R:83:TYR:HD2	1.82	0.43
28:T:53:VAL:CG1	28:T:87:LEU:HD13	2.46	0.43
39:g:129:LEU:HD13	39:g:134:ALA:CA	2.48	0.43
40:h:111:LEU:HD21	40:h:146:ALA:HB2	1.99	0.43
1:1:476:G:H1'	1:1:480:A:H61	1.83	0.43
1:1:910:A:H2'	1:1:911:A:C8	2.54	0.43
1:1:1074:G:H2'	1:1:1075:C:O4'	2.19	0.43
1:1:1146:C:H2'	1:1:1147:A:C8	2.52	0.43
1:1:1420:A:O2'	1:1:2211:A:N7	2.50	0.43
1:1:2291:U:O2'	1:1:2374:C:O2	2.30	0.43
1:1:2329:U:H2'	1:1:2330:G:C8	2.54	0.43
1:1:2377:A:H2'	1:1:2378:A:C8	2.52	0.43
2:2:161:A:H2'	2:2:162:A:C8	2.53	0.43
2:2:236:A:H2'	2:2:237:G:H8	1.84	0.43
2:2:736:C:H5''	55:w:61:ARG:NH2	2.34	0.43
2:2:1179:A:H1'	46:n:106:ARG:NH2	2.33	0.43
3:3:19:C:H2'	3:3:20:G:H8	1.84	0.43
15:G:5:LEU:HD21	15:G:12:LEU:HD22	2.01	0.43
16:H:59:LEU:HD23	16:H:62:ARG:HG3	0.46	0.43
18:J:67:ASN:O	18:J:71:ASP:OD1	2.36	0.43
26:R:61:ALA:HB2	26:R:98:ILE:HD13	2.01	0.43
46:n:22:LYS:HB3	46:n:62:ASP:HB3	2.00	0.43
49:q:103:ASP:O	49:q:103:ASP:CG	2.62	0.43
56:x:13:LEU:HD12	56:x:14:HIS:CB	2.49	0.43
1:1:526:A:O2'	1:1:2043:C:O2	2.37	0.43
1:1:993:G:OP2	25:Q:51:ARG:NH2	2.52	0.43
1:1:1130:U:N3	1:1:2025:C:OP1	2.41	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1462:C:H2'	1:1:1463:C:C6	2.54	0.43
1:1:1707:G:C8	1:1:1756:G:C5	3.07	0.43
1:1:1924:C:H2'	1:1:1925:C:H6	1.84	0.43
1:1:2136:G:C2	1:1:2156:G:H1'	2.54	0.43
1:1:2597:G:H2'	1:1:2598:A:C8	2.53	0.43
1:1:2888:C:H2'	1:1:2889:C:H6	1.83	0.43
2:2:154:U:H2'	2:2:155:A:C8	2.54	0.43
2:2:696:A:H2'	2:2:697:U:H6	1.83	0.43
2:2:719:C:O2	55:w:39:ILE:HG12	2.19	0.43
2:2:1313:U:H2'	2:2:1314:C:C6	2.54	0.43
2:2:1481:U:H2'	2:2:1482:G:C8	2.54	0.43
2:2:1539:C:H1'	8:8:3:G:N2	2.34	0.43
6:6:93:THR:O	6:6:97:GLN:CG	2.65	0.43
14:F:23:VAL:HA	14:F:36:THR:HA	2.00	0.43
28:T:72:GLN:HE21	28:T:73:ARG:HH21	1.65	0.43
30:V:47:VAL:HG12	30:V:86:LEU:HD11	2.00	0.43
33:Z:58:GLU:OE1	33:Z:58:GLU:N	2.52	0.43
39:g:28:LYS:HA	39:g:31:ILE:HD12	2.01	0.43
44:l:84:THR:O	44:l:84:THR:HG23	2.19	0.43
45:m:14:ILE:HD13	45:m:25:VAL:HG21	2.01	0.43
49:q:21:VAL:HG13	49:q:95:TYR:CE2	2.54	0.43
1:1:128:C:H2'	1:1:129:C:C6	2.54	0.42
1:1:203:A:H3'	1:1:204:A:H8	1.83	0.42
1:1:467:G:OP1	36:d:33:ARG:NE	2.49	0.42
1:1:656:G:H2'	1:1:657:U:C6	2.54	0.42
1:1:680:C:H2'	1:1:681:G:C8	2.54	0.42
1:1:1164:C:H2'	1:1:1165:A:H8	1.84	0.42
1:1:1275:A:H61	22:N:19:ALA:HB3	1.84	0.42
1:1:1622:G:C2	1:1:1623:G:C8	3.07	0.42
1:1:1907:G:O6	1:1:1923:U:O4	2.37	0.42
1:1:2300:C:H2'	1:1:2301:C:C6	2.54	0.42
1:1:2840:C:H2'	1:1:2841:C:H6	1.84	0.42
2:2:465:A:H2'	2:2:465:A:N3	2.34	0.42
2:2:581:G:N1	2:2:759:A:OP2	2.35	0.42
2:2:905:U:H2'	2:2:906:A:O4'	2.19	0.42
2:2:1297:G:C4	44:l:114:LYS:HD2	2.54	0.42
3:3:46:A:H5''	23:O:3:LYS:NZ	2.34	0.42
4:4:194:G:O2'	4:4:195:A:OP1	2.27	0.42
6:6:18:GLY:CA	6:6:104:VAL:CG1	2.66	0.42
21:M:35:ALA:HA	21:M:128:THR:HG22	2.01	0.42
40:h:73:PRO:HB3	40:h:103:ILE:HG21	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:j:14:LYS:NZ	42:j:116:GLU:OE2	2.40	0.42
1:1:463:G:O2'	1:1:465:G:O6	2.35	0.42
1:1:599:A:H2'	1:1:600:G:C8	2.53	0.42
1:1:935:C:H2'	1:1:936:A:C8	2.52	0.42
1:1:1363:C:H2'	1:1:1364:G:H8	1.84	0.42
1:1:1383:A:O2'	1:1:1384:A:O4'	2.35	0.42
1:1:1512:C:C2	1:1:1513:U:C5	3.07	0.42
1:1:1865:U:O2'	1:1:1866:A:H5'	2.20	0.42
1:1:2251:OMG:HM22	1:1:2252:G:H5'	2.00	0.42
1:1:2364:C:H2'	1:1:2365:G:O4'	2.19	0.42
1:1:2533:U:H2'	1:1:2534:A:O4'	2.19	0.42
1:1:2641:G:H2'	1:1:2642:G:C8	2.55	0.42
2:2:96:U:O4	2:2:97:G:O6	2.37	0.42
10:B:141:VAL:HG12	10:B:192:LEU:HA	2.01	0.42
18:J:77:HIS:CD2	18:J:79:GLY:H	2.36	0.42
33:Z:10:THR:HG23	33:Z:11:ARG:HG3	2.02	0.42
42:j:105:ILE:CD1	42:j:123:VAL:C	2.90	0.42
42:j:107:ALA:HB2	42:j:125:ALA:HB3	2.01	0.42
1:1:9:G:H21	1:1:2800:A:N6	2.16	0.42
1:1:116:C:H2'	1:1:117:G:O4'	2.20	0.42
1:1:292:U:H2'	1:1:293:U:C6	2.54	0.42
1:1:304:U:H2'	1:1:305:C:C6	2.54	0.42
1:1:974:G:H1'	1:1:975:A:C8	2.54	0.42
1:1:1309:G:H4'	36:d:7:PRO:HB2	2.01	0.42
1:1:1779:U:H2'	1:1:1783:A:H62	1.84	0.42
1:1:1818:U:H2'	10:B:156:ARG:HB2	2.00	0.42
1:1:2139:U:H2'	1:1:2140:G:C8	2.54	0.42
1:1:2788:C:H2'	1:1:2789:C:H6	1.85	0.42
2:2:148:G:C2	2:2:149:A:C8	3.08	0.42
2:2:408:A:N6	2:2:435:A:C6	2.87	0.42
2:2:958:A:O2'	2:2:959:A:O4'	2.29	0.42
4:4:313:C:O2'	4:4:314:C:O4'	2.28	0.42
6:6:210:PHE:HA	6:6:234:GLY:HA3	2.01	0.42
6:6:315:GLU:HA	60:6:401:KIR:H413	2.00	0.42
12:D:118:LEU:HD13	12:D:186:VAL:HG13	2.00	0.42
26:R:71:LYS:HA	26:R:90:ARG:HG2	2.01	0.42
40:h:156:ARG:NH1	40:h:160:ALA:O	2.52	0.42
48:p:31:ILE:HG12	48:p:46:THR:HG22	2.00	0.42
56:x:28:LYS:HD3	56:x:31:LEU:HD13	2.01	0.42
57:y:43:ASP:OD1	57:y:44:LYS:N	2.51	0.42
1:1:303:G:H2'	1:1:304:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:539:G:H1	1:1:554:U:H3	1.66	0.42
1:1:710:U:H2'	1:1:711:G:H8	1.83	0.42
1:1:1051:G:H1	1:1:1108:U:H3	1.67	0.42
1:1:1183:U:H2'	1:1:1184:U:H6	1.84	0.42
1:1:1352:U:H1'	1:1:1570:A:C2	2.55	0.42
1:1:1423:G:H2'	1:1:1424:G:H8	1.84	0.42
1:1:1540:G:H2'	1:1:1541:C:C6	2.53	0.42
1:1:1742:U:H2'	1:1:1743:G:C8	2.45	0.42
1:1:1966:A:N3	1:1:2592:G:O2'	2.41	0.42
2:2:1050:G:H2'	2:2:1051:C:C6	2.55	0.42
2:2:1179:A:H2'	2:2:1180:A:C8	2.54	0.42
2:2:1305:G:HO2'	2:2:1306:A:H8	1.66	0.42
4:4:95:C:H5''	4:4:99:G:H2'	2.01	0.42
6:6:190:GLU:O	6:6:194:PHE:CE2	2.73	0.42
16:H:114:GLU:HG2	16:H:125:ARG:HH22	1.85	0.42
22:N:21:PHE:HB3	22:N:47:VAL:HG21	2.00	0.42
45:m:29:SER:HB2	45:m:59:LEU:HB2	2.01	0.42
56:x:41:PHE:HD1	56:x:43:ASN:N	2.09	0.42
1:1:710:U:C2	1:1:711:G:C8	3.07	0.42
1:1:966:G:H2'	1:1:967:U:C6	2.54	0.42
1:1:1010:A:N3	1:1:1153:C:H1'	2.35	0.42
1:1:1073:A:H1'	1:1:2473:U:O2'	2.19	0.42
1:1:1245:G:H2'	1:1:1246:A:C8	2.54	0.42
1:1:1715:G:N2	1:1:1716:U:O4	2.51	0.42
2:2:722:G:H1	2:2:733:G:H1	1.67	0.42
2:2:1123:U:H4'	2:2:1124:G:OP1	2.19	0.42
2:2:1488:G:H2'	2:2:1489:G:H8	1.83	0.42
7:7:49:C:H2'	7:7:50:U:H6	1.85	0.42
16:H:48:ALA:HB1	16:H:89:PRO:HG3	2.02	0.42
27:S:9:HIS:H	27:S:102:HIS:CE1	2.38	0.42
37:e:36:LYS:HD3	37:e:40:ARG:HH22	1.84	0.42
40:h:9:GLY:HA3	51:s:89:MET:HE3	2.02	0.42
41:i:102:VAL:HG13	41:i:107:PHE:HB2	2.01	0.42
48:p:72:ASP:C	48:p:74:VAL:H	2.28	0.42
50:r:34:LEU:HD22	50:r:39:ILE:HB	2.00	0.42
52:t:68:ASP:OD1	52:t:88:ARG:NH2	2.52	0.42
1:1:721:A:H2'	1:1:722:A:C8	2.54	0.42
1:1:949:G:H2'	1:1:950:G:H8	1.84	0.42
1:1:1062:G:N2	17:I:89:SER:O	2.52	0.42
1:1:1132:U:H2'	1:1:1133:A:C5	2.55	0.42
1:1:1394:U:H5'	1:1:1603:A:H4'	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1814:G:OP2	1:1:1815:A:O2'	2.24	0.42
1:1:2163:A:OP1	1:1:2170:A:O2'	2.26	0.42
2:2:129:A:H1'	2:2:130:A:C8	2.55	0.42
2:2:284:C:H2'	2:2:285:C:H6	1.85	0.42
2:2:825:A:H2'	2:2:826:C:H6	1.84	0.42
2:2:986:U:H1'	56:x:55:ARG:HA	2.02	0.42
2:2:1517:G:H2'	2:2:1518:MA6:C8	2.48	0.42
6:6:15:GLY:HA2	6:6:79:VAL:HG13	2.02	0.42
6:6:93:THR:OG1	6:6:288:ARG:NH1	2.53	0.42
6:6:319:HIS:HD2	6:6:320:THR:HG23	1.84	0.42
11:C:125:TRP:CD1	11:C:160:LYS:HB3	2.55	0.42
14:F:42:GLU:N	14:F:53:GLY:O	2.52	0.42
19:K:99:ILE:HD11	19:K:119:ALA:HA	2.02	0.42
21:M:77:PRO:HG2	21:M:80:VAL:HG11	2.01	0.42
39:g:125:THR:O	39:g:125:THR:HG22	2.19	0.42
40:h:109:PRO:HA	40:h:115:LEU:HD22	2.00	0.42
41:i:72:PHE:CZ	41:i:90:LEU:HD21	2.54	0.42
41:i:172:GLU:HG3	41:i:181:THR:HB	2.01	0.42
43:k:4:TYR:HA	43:k:92:THR:CG2	2.47	0.42
50:r:111:GLY:HA3	50:r:114:LYS:HE3	2.01	0.42
52:t:29:VAL:HG11	52:t:67:LEU:HD21	2.01	0.42
1:1:176:A:H2'	1:1:177:G:N3	2.34	0.42
1:1:300:A:OP1	29:U:97:LYS:HD3	2.20	0.42
1:1:548:G:H5'	1:1:549:G:H5'	2.00	0.42
1:1:1066:U:O2	1:1:1069:A:H2'	2.19	0.42
1:1:1818:U:H2'	10:B:156:ARG:HD3	2.00	0.42
1:1:1883:U:H2'	1:1:1884:G:O4'	2.20	0.42
1:1:2392:A:H5''	37:e:28:ASN:HA	2.02	0.42
1:1:2766:A:N3	1:1:2766:A:H2'	2.34	0.42
2:2:309:A:H2'	2:2:310:G:H8	1.84	0.42
2:2:788:U:H4'	8:8:11:G:C8	2.54	0.42
2:2:823:C:H2'	2:2:824:G:C8	2.51	0.42
2:2:1115:U:H5'	47:o:68:ARG:HH22	1.84	0.42
2:2:1227:A:OP1	50:r:93:ARG:NH2	2.52	0.42
2:2:1359:C:OP1	51:s:62:ASN:ND2	2.52	0.42
2:2:1538:C:H2'	2:2:1539:C:O4'	2.20	0.42
4:4:252:G:N3	4:4:280:A:N6	2.68	0.42
13:E:38:MET:HG3	13:E:57:LEU:HD11	2.01	0.42
27:S:55:ILE:O	27:S:59:GLU:CB	2.68	0.42
29:U:89:ASP:OD1	29:U:89:ASP:O	2.36	0.42
46:n:21:ILE:HA	46:n:62:ASP:O	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:s:42:TRP:O	51:s:46:LEU:HG	2.20	0.42
56:x:44:MET:CG	56:x:47:LEU:CD2	2.90	0.42
1:1:517:C:OP2	34:b:10:ARG:NE	2.51	0.42
1:1:1363:C:H2'	1:1:1364:G:C8	2.54	0.42
1:1:1364:G:OP1	31:X:3:ARG:HG3	2.20	0.42
1:1:1394:U:H2'	1:1:1395:A:O4'	2.19	0.42
1:1:1839:G:C2	1:1:1840:G:C8	3.08	0.42
1:1:1839:G:C2	1:1:1927:A:N6	2.88	0.42
1:1:1952:A:N6	19:K:22:ILE:HD12	2.35	0.42
1:1:2379:G:H2'	1:1:2380:C:C6	2.54	0.42
1:1:2391:G:C6	1:1:2427:C:H1'	2.54	0.42
2:2:608:A:C2	2:2:609:A:H1'	2.54	0.42
2:2:1125:U:O2'	2:2:1126:U:O5'	2.27	0.42
2:2:1414:U:H2'	2:2:1415:G:C8	2.54	0.42
3:3:12:C:N4	9:A:76:ASN:HA	2.35	0.42
6:6:225:THR:OG1	6:6:281:ILE:CB	2.48	0.42
6:6:257:GLY:O	6:6:259:GLU:HG2	2.20	0.42
16:H:59:LEU:HD23	16:H:62:ARG:N	2.35	0.42
35:c:38:LYS:HB2	35:c:49:TYR:CD1	2.55	0.42
41:i:108:GLY:HA3	41:i:114:ALA:HB2	2.01	0.42
45:m:67:GLN:HG2	45:m:68:GLY:H	1.84	0.42
48:p:53:ARG:HA	48:p:57:LYS:HB3	2.02	0.42
56:x:63:THR:O	56:x:63:THR:HG22	2.20	0.42
1:1:45:G:N7	1:1:215:G:O2'	2.46	0.42
1:1:282:A:C6	1:1:359:G:C5	3.08	0.42
1:1:705:A:H2'	1:1:706:A:C8	2.54	0.42
1:1:1198:U:H2'	1:1:1199:U:C6	2.55	0.42
1:1:1549:A:H2'	1:1:1550:C:H6	1.85	0.42
1:1:1827:U:H5'	1:1:1971:U:H4'	2.01	0.42
1:1:2028:U:O4	1:1:2033:A:N7	2.53	0.42
1:1:2395:C:H2'	1:1:2396:G:C8	2.55	0.42
1:1:2888:C:H2'	1:1:2889:C:C6	2.54	0.42
1:1:2898:U:O2'	18:J:134:ALA:O	2.21	0.42
2:2:680:C:H2'	2:2:681:A:H8	1.85	0.42
2:2:1193:G:H2'	2:2:1194:U:H6	1.85	0.42
2:2:1263:C:H2'	2:2:1264:U:C6	2.55	0.42
2:2:1306:A:N6	2:2:1331:G:O4'	2.53	0.42
4:4:337:C:H2'	4:4:338:G:H8	1.85	0.42
5:5:49:ALA:HA	5:5:71:THR:HB	2.02	0.42
6:6:215:GLU:CG	6:6:228:THR:HG23	2.49	0.42
6:6:307:GLU:HA	6:6:357:LYS:HA	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:B:195:VAL:HG23	10:B:195:VAL:O	2.19	0.42
12:D:7:ASP:HB3	12:D:122:GLU:HG2	2.01	0.42
12:D:149:ILE:HD12	12:D:170:ARG:O	2.19	0.42
14:F:4:VAL:O	14:F:4:VAL:CG1	2.63	0.42
34:b:38:HIS:ND1	34:b:39:LEU:O	2.53	0.42
39:g:116:ASP:OD1	39:g:117:LEU:N	2.52	0.42
39:g:210:VAL:HA	39:g:213:TYR:CZ	2.55	0.42
41:i:57:GLU:HA	41:i:60:LYS:HD3	2.02	0.42
53:u:79:ASN:HB3	53:u:82:ALA:H	1.85	0.42
1:1:191:A:H2'	1:1:192:C:C6	2.55	0.42
1:1:387:U:H4'	1:1:388:G:O4'	2.20	0.42
1:1:753:A:H2'	1:1:754:U:C6	2.55	0.42
1:1:1406:U:H2'	1:1:1407:G:H8	1.85	0.42
1:1:1862:G:H2'	1:1:1863:G:C8	2.51	0.42
1:1:2229:U:H2'	1:1:2230:G:C8	2.53	0.42
1:1:2266:A:H4'	1:1:2267:A:N3	2.35	0.42
1:1:2737:G:H2'	1:1:2738:A:C8	2.54	0.42
2:2:184:G:N2	2:2:194:C:O2	2.53	0.42
2:2:197:A:N3	2:2:198:G:H1'	2.35	0.42
2:2:214:C:H2'	2:2:215:C:C5	2.55	0.42
2:2:1251:A:H2'	2:2:1252:A:H8	1.85	0.42
2:2:1289:A:H3'	2:2:1290:G:H8	1.84	0.42
3:3:42:C:O2'	3:3:43:C:OP1	2.34	0.42
7:7:32:PSU:C3'	46:n:130:ARG:HH11	2.08	0.42
11:C:25:THR:HG21	11:C:193:VAL:HG22	2.02	0.42
12:D:176:ASP:OD1	12:D:176:ASP:N	2.52	0.42
21:M:74:THR:HG21	21:M:86:LYS:HE3	2.02	0.42
44:l:16:PRO:CB	46:n:43:THR:CB	2.97	0.42
46:n:28:ILE:HA	46:n:63:LEU:HD11	2.02	0.42
1:1:181:A:H2'	1:1:182:A:C8	2.55	0.41
1:1:462:C:N4	1:1:463:G:O6	2.53	0.41
1:1:518:G:H2'	1:1:519:U:C6	2.54	0.41
1:1:804:A:H2'	1:1:806:C:C4	2.55	0.41
1:1:889:C:O2'	1:1:890:C:O4'	2.33	0.41
1:1:963:U:H2'	1:1:964:C:C6	2.55	0.41
1:1:999:U:H2'	1:1:1000:A:H8	1.85	0.41
1:1:1445:G:C6	1:1:1466:U:O2	2.73	0.41
1:1:2047:C:H2'	1:1:2048:G:H8	1.85	0.41
1:1:2070:A:H2'	1:1:2071:A:H8	1.85	0.41
1:1:2376:A:H2'	1:1:2377:A:O4'	2.20	0.41
1:1:2548:U:O2	19:K:23:LYS:NZ	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2784:U:H2'	1:1:2785:C:H6	1.85	0.41
2:2:8:A:N3	42:j:108:GLY:HA2	2.35	0.41
2:2:113:G:H2'	2:2:114:U:C6	2.55	0.41
2:2:284:C:C2	2:2:285:C:C5	3.07	0.41
2:2:439:U:O2'	41:i:119:SER:O	2.35	0.41
2:2:517:G:H4'	2:2:519:C:C2	2.55	0.41
2:2:539:A:H2'	2:2:540:G:H8	1.84	0.41
2:2:1004:A:O2'	2:2:1005:A:O4'	2.22	0.41
2:2:1072:G:N2	39:g:106:THR:HG21	2.35	0.41
2:2:1094:G:O2'	2:2:1095:U:OP1	2.32	0.41
2:2:1254:A:H2'	2:2:1255:G:H8	1.82	0.41
2:2:1532:U:C3'	2:2:1533:C:H4'	2.50	0.41
6:6:17:ILE:HG22	6:6:81:CYS:HB2	2.02	0.41
10:B:53:HIS:CE1	10:B:219:THR:HG23	2.55	0.41
16:H:59:LEU:HB3	16:H:62:ARG:CB	2.38	0.41
21:M:60:GLN:O	21:M:108:VAL:CG1	2.62	0.41
40:h:66:VAL:O	40:h:66:VAL:HG23	2.19	0.41
41:i:47:ARG:HA	41:i:47:ARG:HD2	1.89	0.41
41:i:130:VAL:CG1	41:i:132:ILE:CG1	2.98	0.41
48:p:87:LYS:HB3	48:p:113:VAL:HG23	2.01	0.41
53:u:55:ASP:OD1	53:u:55:ASP:N	2.52	0.41
55:w:62:ALA:HB1	55:w:67:LEU:HB2	2.01	0.41
1:1:226:A:H1'	1:1:230:G:N2	2.35	0.41
1:1:566:U:H2'	1:1:567:U:C6	2.56	0.41
1:1:638:G:H2'	1:1:639:U:C6	2.55	0.41
1:1:1117:C:H2'	1:1:1118:C:C6	2.55	0.41
1:1:1562:U:H2'	1:1:1563:U:C6	2.55	0.41
1:1:1604:C:H2'	1:1:1605:C:C6	2.55	0.41
1:1:2305:U:H6	13:E:133:ARG:CD	2.06	0.41
1:1:2475:C:N4	1:1:2529:G:H22	2.18	0.41
1:1:2776:A:O2'	1:1:2782:G:N7	2.43	0.41
2:2:417:G:O6	2:2:426:U:O2	2.38	0.41
2:2:683:G:O6	2:2:708:C:N4	2.53	0.41
2:2:1388:C:H2'	2:2:1389:C:C6	2.55	0.41
2:2:1415:G:H2'	2:2:1416:G:H8	1.85	0.41
4:4:38:A:H8	4:4:38:A:OP2	2.03	0.41
5:5:57:LEU:CD1	5:5:66:PHE:CD2	3.02	0.41
6:6:241:GLU:OE2	6:6:252:LYS:HB3	2.20	0.41
11:C:32:ASN:HB2	11:C:96:ILE:HB	2.01	0.41
24:P:13:MET:HG2	24:P:77:HIS:ND1	2.35	0.41
27:S:23:LEU:HD11	34:b:22:LEU:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:g:35:ARG:HD2	39:g:40:ILE:HG13	2.02	0.41
41:i:117:LEU:CD2	41:i:154:ARG:HD2	2.41	0.41
42:j:76:LEU:HG	42:j:80:THR:O	2.20	0.41
44:l:15:ASP:N	44:l:20:SER:O	2.52	0.41
1:1:891:G:H2'	1:1:892:A:H8	1.85	0.41
1:1:910:A:H1'	1:1:2264:C:O2'	2.21	0.41
1:1:1639:C:O2'	1:1:2699:C:H4'	2.20	0.41
1:1:1925:C:H2'	1:1:1926:U:C6	2.54	0.41
1:1:2572:A:P	11:C:149:ASN:HB3	2.60	0.41
1:1:2677:G:H2'	1:1:2678:C:H6	1.85	0.41
1:1:2889:C:H2'	1:1:2890:G:O4'	2.21	0.41
2:2:728:A:H2'	2:2:729:A:C8	2.55	0.41
2:2:866:C:C4	2:2:867:G:H1'	2.56	0.41
2:2:945:G:C2	2:2:946:A:C8	3.09	0.41
2:2:1177:G:H3'	2:2:1177:G:OP2	2.20	0.41
2:2:1535:C:H5''	8:8:8:U:H5	1.84	0.41
3:3:8:C:O3'	23:O:25:ARG:NH1	2.51	0.41
7:7:37:MIA:H2'	7:7:38:A:H8	1.81	0.41
10:B:132:MET:HA	10:B:135:ILE:HD12	2.01	0.41
13:E:113:ASP:OD1	13:E:113:ASP:C	2.63	0.41
14:F:4:VAL:HG21	14:F:62:TRP:CE3	2.55	0.41
15:G:72:ILE:HG21	15:G:108:VAL:HG13	2.02	0.41
21:M:56:ALA:HB2	21:M:119:LEU:HD12	2.02	0.41
40:h:130:PHE:CE2	40:h:131:ARG:HG3	2.55	0.41
49:q:36:ARG:HA	49:q:76:GLU:HG2	2.03	0.41
55:w:37:GLY:O	55:w:63:ARG:NH2	2.49	0.41
1:1:589:U:H2'	1:1:590:A:H8	1.85	0.41
1:1:1203:U:O2'	20:L:4:ASN:OD1	2.36	0.41
1:1:1664:A:N6	1:1:1996:C:H42	2.16	0.41
1:1:2072:C:H2'	1:1:2073:C:H6	1.84	0.41
2:2:45:G:H2'	2:2:46:G:H8	1.85	0.41
2:2:425:G:H4'	41:i:33:LYS:HE3	2.01	0.41
2:2:515:G:H2'	2:2:516:PSU:C6	2.55	0.41
2:2:560:A:H4'	2:2:561:U:H5''	2.02	0.41
2:2:714:G:H1'	2:2:777:A:C8	2.55	0.41
2:2:714:G:H1'	2:2:777:A:N7	2.36	0.41
2:2:826:C:H2'	2:2:827:U:C6	2.54	0.41
2:2:1361:G:O6	2:2:1362:A:N6	2.54	0.41
2:2:1374:A:H2'	2:2:1375:A:C8	2.55	0.41
3:3:71:C:H2'	3:3:72:G:O4'	2.20	0.41
4:4:169:G:H2'	4:4:170:G:N9	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:4:250:U:H1'	4:4:284:G:N2	2.35	0.41
11:C:109:VAL:HG11	11:C:193:VAL:HB	2.03	0.41
13:E:170:LEU:HG	13:E:175:PHE:CE1	2.56	0.41
16:H:59:LEU:HD22	16:H:62:ARG:CG	2.07	0.41
22:N:49:GLU:OE2	22:N:94:TYR:N	2.53	0.41
41:i:168:PRO:HG3	41:i:171:LEU:HD12	2.02	0.41
1:1:19:A:H2'	1:1:20:C:C6	2.55	0.41
1:1:1287:A:H2'	1:1:1288:G:N3	2.35	0.41
1:1:1297:C:H2'	1:1:1298:C:C6	2.55	0.41
1:1:1490:A:N6	1:1:1492:G:O6	2.54	0.41
2:2:22:G:H4'	2:2:885:G:C8	2.55	0.41
2:2:35:G:H21	49:q:115:SER:HB2	1.85	0.41
2:2:54:C:H2'	2:2:352:C:H41	1.85	0.41
2:2:56:U:H2'	2:2:57:G:C8	2.55	0.41
2:2:146:G:H2'	2:2:147:G:H8	1.84	0.41
2:2:1434:A:H2'	2:2:1435:G:O4'	2.20	0.41
4:4:47:G:H2'	4:4:48:C:H5	1.86	0.41
4:4:181:G:H2'	4:4:181:G:N3	2.36	0.41
7:7:20:U:O2	7:7:20:U:H2'	2.19	0.41
28:T:12:ARG:HH11	32:Y:29:ARG:NH2	2.18	0.41
47:o:45:ARG:HB3	47:o:69:THR:HB	2.02	0.41
49:q:42:PRO:HG3	49:q:48:ALA:O	2.21	0.41
1:1:77:G:H2'	1:1:78:U:C6	2.56	0.41
1:1:169:G:H2'	1:1:170:U:C6	2.56	0.41
1:1:305:C:H2'	1:1:306:U:H6	1.86	0.41
1:1:554:U:H2'	1:1:555:G:O4'	2.20	0.41
1:1:579:G:H2'	1:1:580:U:H6	1.86	0.41
1:1:660:C:C2	1:1:661:A:C8	3.08	0.41
1:1:685:A:H5''	1:1:788:A:N6	2.32	0.41
1:1:707:G:C6	1:1:725:G:C2	3.09	0.41
1:1:710:U:H2'	1:1:711:G:C8	2.55	0.41
1:1:925:A:H2'	1:1:926:G:C8	2.55	0.41
1:1:1368:G:H2'	1:1:1369:G:C8	2.54	0.41
1:1:1713:A:H8	1:1:1713:A:OP1	2.04	0.41
1:1:1747:U:H2'	1:1:1748:C:C6	2.55	0.41
1:1:1927:A:H2'	1:1:1928:A:C8	2.55	0.41
1:1:2278:A:H5''	9:A:12:ASN:HD21	1.86	0.41
1:1:2307:G:H21	1:1:2310:C:P	2.43	0.41
1:1:2489:U:H2'	1:1:2490:G:O4'	2.21	0.41
1:1:2687:U:H3'	1:1:2688:G:H8	1.85	0.41
2:2:185:U:H2'	2:2:186:C:H6	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:367:U:O5'	6:6:279:ARG:NH2	2.53	0.41
2:2:1044:A:H3'	2:2:1045:C:C5'	2.51	0.41
2:2:1118:U:H1'	2:2:1179:A:N7	2.35	0.41
2:2:1496:C:H2'	2:2:1497:G:H8	1.85	0.41
20:L:20:GLY:HA2	20:L:28:GLY:HA2	2.03	0.41
23:O:32:PRO:HA	23:O:102:ARG:HH22	1.86	0.41
28:T:72:GLN:HE21	28:T:73:ARG:NH2	2.18	0.41
39:g:219:ALA:O	39:g:223:GLU:HG2	2.20	0.41
43:k:38:ARG:HB3	43:k:63:ASN:OD1	2.20	0.41
47:o:81:GLU:HA	47:o:84:VAL:HG22	2.02	0.41
49:q:50:ARG:NH1	49:q:89:0TD:OD2	2.53	0.41
52:t:69:TYR:HA	52:t:72:ARG:HG2	2.02	0.41
1:1:1069:A:H4'	1:1:1070:A:H5''	2.02	0.41
1:1:1316:U:H2'	1:1:1317:G:H8	1.86	0.41
1:1:1687:G:N2	1:1:1701:A:H62	2.18	0.41
1:1:1738:G:H21	1:1:1739:A:N6	2.17	0.41
1:1:1851:U:O2	1:1:1891:G:O6	2.39	0.41
1:1:2025:C:H2'	1:1:2026:U:C6	2.56	0.41
1:1:2299:U:OP2	13:E:71:ARG:NH1	2.40	0.41
1:1:2843:G:H2'	1:1:2844:G:C8	2.54	0.41
2:2:35:G:H2'	2:2:36:C:C6	2.56	0.41
2:2:45:G:H2'	2:2:46:G:C8	2.55	0.41
2:2:545:C:O2'	2:2:549:C:H5'	2.21	0.41
2:2:562:U:H5'	2:2:563:A:C5	2.56	0.41
2:2:1155:A:H2'	2:2:1156:G:O4'	2.21	0.41
2:2:1169:A:O2'	2:2:1170:A:O4'	2.23	0.41
2:2:1324:A:O4'	2:2:1362:A:H4'	2.21	0.41
2:2:1524:C:H2'	2:2:1525:G:C8	2.54	0.41
4:4:245:C:H5	4:4:283:C:H5'	1.86	0.41
5:5:90:LEU:HD13	5:5:127:ILE:HD13	2.03	0.41
6:6:348:GLU:OE1	6:6:348:GLU:N	2.51	0.41
8:8:2:A:O2'	58:z:55:ARG:HG3	2.20	0.41
10:B:17:VAL:HB	10:B:204:VAL:HG22	2.02	0.41
10:B:68:LYS:HA	10:B:151:GLY:HA2	2.03	0.41
10:B:159:GLY:N	10:B:195:VAL:CG2	2.83	0.41
13:E:67:ILE:HG22	13:E:84:PRO:HB3	2.02	0.41
16:H:48:ALA:HB2	16:H:95:LEU:HD11	2.02	0.41
17:I:74:PRO:HB2	17:I:75:ALA:H	1.64	0.41
18:J:10:THR:O	18:J:10:THR:CG2	2.69	0.41
39:g:184:PHE:CE1	39:g:198:PHE:CD1	3.08	0.41
40:h:57:ILE:CD1	40:h:66:VAL:CG1	2.94	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:i:145:ILE:HG23	41:i:149:ALA:HB3	2.02	0.41
54:v:61:ILE:HA	54:v:75:LEU:HA	2.02	0.41
1:1:2:G:H2'	1:1:3:U:H6	1.85	0.41
1:1:146:A:H2'	1:1:147:C:C6	2.56	0.41
1:1:457:A:N7	1:1:472:A:N6	2.69	0.41
1:1:745:1MG:HN22	1:1:748:G:N2	2.19	0.41
1:1:846:U:HO2'	1:1:847:U:H6	1.67	0.41
1:1:1168:G:H1	1:1:1181:U:H3	1.69	0.41
1:1:1275:A:N6	22:N:16:HIS:HA	2.35	0.41
1:1:1425:G:H2'	1:1:1426:G:C8	2.55	0.41
1:1:1654:A:O2'	11:C:118:PHE:O	2.31	0.41
1:1:2064:C:H2'	1:1:2065:C:C6	2.55	0.41
1:1:2255:G:C6	1:1:2256:G:C5	3.09	0.41
1:1:2456:C:N3	1:1:2457:PSU:N1	2.69	0.41
1:1:2487:G:C2	1:1:2488:G:C5	3.09	0.41
1:1:2845:U:H5''	24:P:52:ASN:O	2.21	0.41
2:2:826:C:O2	45:m:16:ASN:ND2	2.53	0.41
2:2:1151:A:O2'	2:2:1152:A:O5'	2.36	0.41
2:2:1225:A:O4'	56:x:78:ARG:NH1	2.54	0.41
4:4:47:G:H2'	4:4:48:C:C5	2.56	0.41
5:5:154:ILE:HD12	5:5:154:ILE:HA	1.97	0.41
10:B:24:LEU:HD13	10:B:83:TYR:HB2	2.03	0.41
12:D:18:THR:HG23	12:D:106:LYS:HG2	2.02	0.41
20:L:85:VAL:HG23	20:L:88:GLY:H	1.85	0.41
29:U:9:ASP:CG	29:U:94:ARG:HH12	2.29	0.41
30:V:60:VAL:HG22	30:V:73:LYS:HD3	2.03	0.41
33:Z:24:LEU:HD11	33:Z:54:MET:HE2	2.03	0.41
39:g:184:PHE:HD1	39:g:198:PHE:HB2	1.86	0.41
40:h:184:TYR:HA	40:h:200:VAL:O	2.21	0.41
44:l:150:ALA:HA	48:p:59:THR:HG21	2.02	0.41
50:r:79:ARG:HA	50:r:82:ASP:OD2	2.20	0.41
1:1:134:G:H2'	1:1:135:U:C6	2.56	0.41
1:1:428:A:HO2'	1:1:429:A:P	2.41	0.41
1:1:500:G:H22	1:1:503:A:H5'	1.86	0.41
1:1:597:G:N2	20:L:12:SER:O	2.45	0.41
1:1:668:A:H2'	1:1:670:A:H62	1.84	0.41
1:1:722:A:H2'	1:1:723:C:H6	1.86	0.41
1:1:899:A:H5''	1:1:900:A:H5'	2.03	0.41
1:1:1013:C:H2'	1:1:1014:A:C8	2.56	0.41
1:1:1209:U:O2'	1:1:1237:A:N1	2.42	0.41
1:1:1257:C:H2'	1:1:1258:U:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1281:G:H2'	1:1:1282:U:H6	1.85	0.41
1:1:1365:A:P	31:X:28:ARG:HH22	2.44	0.41
1:1:1470:A:N6	1:1:1521:G:H21	2.14	0.41
1:1:1562:U:H2'	1:1:1563:U:H6	1.86	0.41
1:1:1566:A:O4'	10:B:213:TRP:NE1	2.53	0.41
1:1:1969:A:H2'	1:1:1972:G:H21	1.84	0.41
1:1:2090:A:H2'	1:1:2091:C:C6	2.56	0.41
1:1:2487:G:H2'	1:1:2488:G:C8	2.56	0.41
1:1:2552:OMU:HM23	1:1:2552:OMU:H1'	1.81	0.41
1:1:2553:G:C2	1:1:2583:G:H1'	2.56	0.41
1:1:2710:C:H2'	1:1:2711:A:C8	2.56	0.41
2:2:242:G:O2'	2:2:245:U:OP1	2.33	0.41
2:2:270:A:H2'	2:2:271:C:C6	2.56	0.41
2:2:332:G:C5	2:2:333:U:C5	3.09	0.41
2:2:337:G:C2	2:2:338:A:C5	3.08	0.41
2:2:375:U:H2'	2:2:376:G:O4'	2.21	0.41
2:2:602:A:H2'	2:2:603:U:C6	2.56	0.41
2:2:1049:U:H5'	2:2:1201:A:OP1	2.21	0.41
2:2:1080:A:OP1	42:j:52:LYS:HD3	2.21	0.41
2:2:1119:C:H2'	2:2:1120:C:H6	1.86	0.41
2:2:1181:G:H1'	2:2:1182:G:C4	2.56	0.41
2:2:1347:G:N1	2:2:1374:A:OP2	2.42	0.41
2:2:1386:G:H2'	2:2:1387:G:H8	1.85	0.41
2:2:1458:G:H5''	57:y:26:SER:OG	2.21	0.41
2:2:1488:G:H2'	2:2:1489:G:C8	2.56	0.41
2:2:1516:2MG:HM21	2:2:1519:MA6:N7	2.35	0.41
4:4:106:A:N3	4:4:106:A:H2'	2.35	0.41
5:5:33:GLY:C	5:5:34:LEU:CD1	2.80	0.41
6:6:24:LYS:NZ	6:6:81:CYS:O	2.38	0.41
6:6:124:GLN:HG2	60:6:401:KIR:H221	2.03	0.41
6:6:245:VAL:HG21	6:6:300:PRO:HD3	2.03	0.41
6:6:344:PRO:O	6:6:347:VAL:HG22	2.21	0.41
10:B:71:LYS:HZ1	10:B:74:ILE:HG21	1.85	0.41
10:B:157:SER:O	10:B:195:VAL:HG11	2.20	0.41
13:E:159:THR:O	13:E:161:LYS:NZ	2.53	0.41
15:G:2:GLN:HG2	15:G:20:ASN:HA	2.03	0.41
16:H:112:ALA:O	16:H:114:GLU:HG3	2.21	0.41
24:P:34:GLU:OE1	24:P:34:GLU:N	2.49	0.41
30:V:14:LYS:O	30:V:18:ARG:HG3	2.21	0.41
31:X:39:TRP:HB2	31:X:46:PHE:HE1	1.86	0.41
37:e:7:VAL:HG12	37:e:10:ALA:H	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:g:43:LEU:O	39:g:47:VAL:HG23	2.21	0.41
39:g:96:TRP:CH2	39:g:169:GLU:HA	2.55	0.41
40:h:70:THR:O	40:h:106:VAL:HG22	2.21	0.41
41:i:21:LEU:HD22	41:i:28:ILE:HD13	2.00	0.41
41:i:79:ALA:HB1	41:i:89:ASN:HB2	2.03	0.41
42:j:89:HIS:CG	42:j:90:THR:H	2.39	0.41
47:o:29:ALA:O	47:o:33:GLY:N	2.54	0.41
47:o:40:ILE:HB	47:o:73:LEU:HB3	2.03	0.41
47:o:53:ILE:HG13	51:s:85:ARG:HE	1.85	0.41
53:u:8:ARG:CZ	53:u:15:PRO:HB3	2.50	0.41
54:v:77:ARG:HG2	54:v:79:VAL:HG13	2.02	0.41
56:x:36:ARG:NH2	56:x:72:GLY:O	2.54	0.41
1:1:90:U:OP2	1:1:91:A:O2'	2.37	0.41
1:1:309:A:H1'	1:1:329:G:C4	2.56	0.41
1:1:393:C:C2	1:1:394:C:C5	3.09	0.41
1:1:692:C:H2'	1:1:693:A:C8	2.54	0.41
1:1:808:G:H2'	1:1:809:G:C8	2.56	0.41
1:1:877:A:H2'	1:1:878:A:H8	1.84	0.41
1:1:1080:A:H2'	1:1:1081:U:C5	2.56	0.41
1:1:1292:G:C4	1:1:1293:C:C5	3.09	0.41
1:1:1321:A:N3	1:1:1321:A:H2'	2.35	0.41
1:1:1376:C:H2'	1:1:1377:G:O4'	2.21	0.41
1:1:1417:C:H2'	1:1:1418:G:H8	1.83	0.41
1:1:1423:G:H2'	1:1:1424:G:C8	2.56	0.41
1:1:1524:G:C2	1:1:1525:A:C8	3.09	0.41
1:1:1998:A:H2'	1:1:1999:C:C6	2.56	0.41
1:1:2031:A:N3	1:1:2455:G:O2'	2.38	0.41
1:1:2078:C:H2'	1:1:2079:U:C6	2.56	0.41
1:1:2329:U:H2'	1:1:2330:G:H8	1.84	0.41
1:1:2405:G:HO2'	1:1:2411:A:N6	2.19	0.41
2:2:369:G:H2'	2:2:370:C:H6	1.86	0.41
2:2:683:G:H2'	2:2:684:U:H6	1.86	0.41
2:2:1005:A:H2'	2:2:1006:G:O4'	2.20	0.41
2:2:1060:U:H5''	47:o:53:ILE:HG12	2.02	0.41
2:2:1063:C:H3'	2:2:1064:G:C8	2.55	0.41
2:2:1218:C:H2'	2:2:1219:A:H8	1.82	0.41
4:4:141:C:O3'	4:4:167:G:N2	2.54	0.41
5:5:135:GLN:HG2	5:5:136:HIS:N	2.36	0.41
6:6:104:VAL:CG1	6:6:104:VAL:O	2.69	0.41
6:6:194:PHE:HA	6:6:197:SER:HB2	2.01	0.41
6:6:242:VAL:CG1	6:6:243:GLU:H	2.33	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:6:307:GLU:HG3	6:6:357:LYS:HB2	2.02	0.41
15:G:119:ASN:OD1	15:G:120:GLY:N	2.53	0.41
23:O:6:ALA:O	23:O:10:ARG:HG3	2.21	0.41
40:h:83:ASP:HA	40:h:86:LYS:HG2	2.03	0.41
42:j:115:LEU:CD1	42:j:123:VAL:HG11	2.28	0.41
43:k:3:HIS:CE1	43:k:94:HIS:C	2.88	0.41
48:p:35:THR:HB	48:p:41:ALA:HA	2.03	0.41
49:q:21:VAL:HG12	49:q:24:LEU:CG	2.32	0.41
49:q:21:VAL:HG12	49:q:21:VAL:O	2.21	0.41
53:u:42:ILE:O	53:u:45:GLU:CD	2.64	0.41
53:u:43:ALA:HB3	53:u:45:GLU:OE2	2.21	0.41
1:1:306:U:H2'	1:1:307:G:O4'	2.21	0.40
1:1:428:A:O2'	1:1:429:A:P	2.79	0.40
1:1:481:G:N1	1:1:507:A:H1'	2.36	0.40
1:1:511:U:H2'	1:1:512:G:O4'	2.21	0.40
1:1:728:G:C4'	10:B:13:ARG:HH21	2.20	0.40
1:1:1351:C:H2'	1:1:1352:U:C6	2.56	0.40
1:1:1472:C:H2'	1:1:1473:G:H8	1.86	0.40
1:1:1614:A:P	1:1:1614:A:H8	2.44	0.40
1:1:1811:G:H2'	1:1:1812:U:C6	2.56	0.40
1:1:2018:G:H2'	1:1:2019:A:C8	2.57	0.40
1:1:2159:G:H2'	1:1:2160:C:C6	2.56	0.40
2:2:57:G:H2'	2:2:58:C:C6	2.56	0.40
2:2:651:C:H2'	2:2:652:U:C6	2.56	0.40
2:2:673:A:C6	2:2:734:G:C6	3.08	0.40
2:2:924:C:H2'	2:2:925:G:C8	2.56	0.40
2:2:948:C:H2'	2:2:949:A:H8	1.85	0.40
2:2:994:A:N3	51:s:5:SER:HB2	2.36	0.40
2:2:1019:A:H2'	2:2:1020:G:C8	2.56	0.40
2:2:1464:U:H2'	2:2:1465:A:C8	2.55	0.40
2:2:1528:U:C5	58:z:46:LYS:HE2	2.56	0.40
4:4:21:C:N1	4:4:332:G:N2	2.69	0.40
6:6:32:THR:HG21	6:6:67:VAL:HG21	2.03	0.40
6:6:213:PRO:HA	6:6:291:VAL:HG12	2.03	0.40
7:7:57:G:OP1	13:E:80:ARG:HD3	2.22	0.40
11:C:183:GLU:HG2	11:C:184:ARG:N	2.36	0.40
19:K:10:VAL:HG21	19:K:16:ALA:HB3	2.03	0.40
20:L:79:LEU:HD11	20:L:112:LEU:HD12	2.01	0.40
24:P:48:ILE:HD13	24:P:62:ARG:HB2	2.01	0.40
39:g:188:ASP:OD1	39:g:189:THR:N	2.49	0.40
39:g:210:VAL:HA	39:g:213:TYR:CE2	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:j:15:LEU:HD12	42:j:15:LEU:C	2.46	0.40
42:j:106:ILE:H	42:j:106:ILE:HG13	1.70	0.40
44:l:47:LEU:HG	44:l:58:GLU:HG2	2.02	0.40
50:r:16:VAL:HA	50:r:30:SER:HB3	2.03	0.40
1:1:534:U:H2'	1:1:535:G:C8	2.57	0.40
1:1:1259:G:H2'	1:1:1260:A:C8	2.57	0.40
1:1:1267:U:H2'	1:1:1268:A:C8	2.57	0.40
1:1:1286:A:H1'	1:1:1288:G:P	2.61	0.40
1:1:1296:G:H2'	1:1:1297:C:C6	2.56	0.40
1:1:1418:G:H21	1:1:1580:A:H62	1.69	0.40
1:1:1481:U:H2'	1:1:1482:G:H4'	2.03	0.40
1:1:1493:C:N4	1:1:2212:A:OP1	2.54	0.40
1:1:2190:G:H2'	1:1:2191:A:C8	2.56	0.40
1:1:2528:U:H5''	38:f:32:LYS:HE2	2.03	0.40
1:1:2641:G:H5''	18:J:78:THR:HB	2.03	0.40
1:1:2884:U:H2'	1:1:2885:G:C8	2.56	0.40
1:1:2902:C:H2'	1:1:2903:U:C5	2.56	0.40
2:2:289:G:H2'	2:2:290:C:C6	2.56	0.40
2:2:334:C:H2'	2:2:335:C:H6	1.86	0.40
2:2:711:G:H2'	2:2:712:A:C8	2.53	0.40
2:2:1167:A:H3'	2:2:1169:A:N6	2.35	0.40
2:2:1393:U:O2'	2:2:1501:C:O2'	2.32	0.40
3:3:66:A:N6	3:3:107:G:H3'	2.37	0.40
3:3:79:G:N7	30:V:14:LYS:NZ	2.68	0.40
6:6:91:MET:SD	6:6:118:HIS:NE2	2.94	0.40
6:6:370:ASP:OD1	6:6:370:ASP:N	2.54	0.40
7:7:6:G:H1	7:7:67:C:H42	1.68	0.40
13:E:34:ILE:HB	13:E:91:LEU:HD22	2.02	0.40
13:E:34:ILE:CB	13:E:91:LEU:HD22	2.51	0.40
13:E:63:GLN:HE22	13:E:95:ARG:HG2	1.85	0.40
13:E:176:PRO:O	13:E:177:PHE:HD1	2.04	0.40
14:F:168:VAL:HG23	14:F:168:VAL:O	2.21	0.40
15:G:129:GLU:OE1	15:G:129:GLU:N	2.55	0.40
20:L:127:VAL:HG21	20:L:142:ILE:HD13	2.02	0.40
23:O:99:TYR:HA	23:O:103:VAL:CG2	2.51	0.40
46:n:46:MET:O	46:n:50:GLN:HG3	2.20	0.40
56:x:31:LEU:HB3	56:x:49:ILE:HG22	2.04	0.40
1:1:85:G:OP2	29:U:28:VAL:HG22	2.21	0.40
1:1:257:C:H2'	1:1:258:G:O4'	2.22	0.40
1:1:433:C:H2'	1:1:434:U:C6	2.56	0.40
1:1:628:G:H2'	1:1:629:G:C8	2.55	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:705:A:H2'	1:1:706:A:H8	1.86	0.40
1:1:715:A:H62	52:t:57:LEU:HD21	1.86	0.40
1:1:732:C:H2'	1:1:733:G:O4'	2.22	0.40
1:1:797:G:OP1	12:D:55:SER:HB2	2.22	0.40
1:1:1079:C:H41	1:1:1088:A:H5''	1.85	0.40
1:1:1216:G:H2'	1:1:1217:U:C6	2.57	0.40
1:1:1219:U:H2'	1:1:1220:G:C8	2.56	0.40
1:1:1224:U:H4'	26:R:88:GLY:H	1.85	0.40
1:1:1296:G:H2'	1:1:1297:C:H6	1.86	0.40
1:1:1417:C:H1'	1:1:1586:A:N1	2.37	0.40
1:1:1504:A:H2'	1:1:1505:A:C8	2.56	0.40
1:1:1811:G:H2'	1:1:1812:U:H6	1.85	0.40
1:1:1858:A:H61	1:1:1884:G:H1'	1.86	0.40
1:1:1894:C:C2	1:1:1895:C:C5	3.10	0.40
1:1:2099:U:H2'	1:1:2100:G:C5	2.57	0.40
1:1:2303:G:C6	1:1:2314:A:C6	3.09	0.40
1:1:2373:G:H2'	1:1:2374:C:C6	2.57	0.40
1:1:2811:G:H2'	1:1:2812:G:H8	1.87	0.40
2:2:390:U:H2'	2:2:391:G:H8	1.85	0.40
2:2:510:A:N3	2:2:543:U:H1'	2.37	0.40
2:2:513:C:H2'	2:2:514:C:C6	2.56	0.40
2:2:1248:A:H2'	2:2:1249:C:C6	2.56	0.40
3:3:95:U:H2'	3:3:96:G:C8	2.56	0.40
4:4:67:G:H3'	4:4:302:A:C8	2.57	0.40
4:4:92:A:OP1	4:4:94:A:N6	2.55	0.40
6:6:74:ARG:HB2	6:6:76:TYR:CE1	2.57	0.40
6:6:214:ILE:HG22	6:6:290:GLN:O	2.21	0.40
7:7:36:A:N6	8:8:15:U:O4	2.54	0.40
11:C:24:VAL:HG21	11:C:188:LEU:HD23	2.03	0.40
11:C:125:TRP:CG	11:C:160:LYS:HB3	2.56	0.40
11:C:149:ASN:OD1	11:C:150:GLN:N	2.54	0.40
16:H:17:GLU:HG3	16:H:22:ALA:CB	2.47	0.40
16:H:59:LEU:CD2	16:H:62:ARG:H	2.35	0.40
19:K:107:LEU:O	19:K:112:PHE:HB2	2.22	0.40
28:T:11:LEU:HD22	28:T:32:LEU:HD23	2.04	0.40
30:V:40:ILE:HD12	30:V:42:LEU:HD21	2.03	0.40
48:p:19:GLY:O	48:p:82:LEU:HA	2.21	0.40
1:1:305:C:H2'	1:1:306:U:C6	2.56	0.40
1:1:395:U:O2'	1:1:396:G:N7	2.32	0.40
1:1:538:A:H62	1:1:555:G:H21	1.68	0.40
1:1:583:G:OP1	25:Q:7:GLY:HA2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:665:U:H2'	1:1:666:A:C8	2.53	0.40
1:1:1201:U:H2'	1:1:1202:G:H8	1.84	0.40
1:1:2190:G:H2'	1:1:2191:A:N7	2.37	0.40
1:1:2208:C:H2'	1:1:2209:G:C8	2.57	0.40
1:1:2444:G:P	12:D:63:LYS:HD2	2.61	0.40
2:2:362:G:OP2	49:q:31:ARG:NH2	2.54	0.40
2:2:401:C:O2'	2:2:621:A:N3	2.50	0.40
2:2:828:U:O2	39:g:25:PRO:HG2	2.22	0.40
2:2:918:A:H2'	2:2:919:A:H8	1.86	0.40
2:2:964:A:H4'	2:2:1198:G:H4'	2.04	0.40
2:2:1067:A:N1	2:2:1108:G:O2'	2.54	0.40
2:2:1089:G:H2'	2:2:1090:U:O4'	2.21	0.40
2:2:1213:A:C2	2:2:1215:G:H1'	2.57	0.40
2:2:1391:U:H2'	2:2:1392:G:C8	2.56	0.40
3:3:116:G:H2'	3:3:117:G:H8	1.86	0.40
6:6:79:VAL:O	6:6:79:VAL:CG1	2.68	0.40
6:6:133:PHE:CA	6:6:170:VAL:CG2	2.97	0.40
10:B:39:LYS:HZ2	10:B:60:GLN:HG2	1.86	0.40
24:P:5:ILE:O	24:P:9:GLU:HG2	2.21	0.40
51:s:23:LYS:HB3	51:s:23:LYS:HE3	1.81	0.40
1:1:940:G:H2'	1:1:941:A:O4'	2.21	0.40
1:1:2027:G:H2'	1:1:2028:U:H6	1.87	0.40
1:1:2097:A:N6	1:1:2193:G:C5	2.89	0.40
1:1:2106:U:H2'	1:1:2107:G:C8	2.56	0.40
1:1:2767:C:H2'	1:1:2768:U:H6	1.87	0.40
2:2:55:A:C4	6:6:222:GLY:HA3	2.57	0.40
2:2:412:A:N3	2:2:414:A:H1'	2.35	0.40
2:2:526:C:C4	2:2:527:G7M:H1'	2.57	0.40
2:2:606:G:H5''	2:2:607:A:H5'	2.03	0.40
2:2:673:A:H4'	43:k:86:ARG:NH2	2.37	0.40
2:2:856:C:H2'	2:2:857:C:H6	1.87	0.40
2:2:891:U:H2'	2:2:892:A:H8	1.86	0.40
2:2:1238:A:H2'	2:2:1239:A:H5''	2.03	0.40
2:2:1328:C:O2'	50:r:29:ARG:NH1	2.55	0.40
2:2:1402:4OC:HM41	8:8:15:U:H5'	2.03	0.40
4:4:36:C:H2'	4:4:37:C:C6	2.57	0.40
4:4:40:G:O6	4:4:317:G:N1	2.55	0.40
6:6:304:PHE:CZ	6:6:360:VAL:HG11	2.55	0.40
11:C:105:LYS:C	11:C:177:VAL:HG12	2.47	0.40
12:D:145:ASP:HA	12:D:166:LYS:HB3	2.03	0.40
13:E:116:GLY:HA3	13:E:178:ARG:HG2	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:H:56:ARG:HA	16:H:84:TYR:HB2	2.03	0.40
17:I:74:PRO:HA	17:I:112:LYS:NZ	2.36	0.40
22:N:29:VAL:HG11	22:N:75:ILE:HG23	2.04	0.40
26:R:55:ASP:OD1	26:R:55:ASP:N	2.54	0.40
34:b:54:VAL:HG12	34:b:55:ILE:HG23	2.02	0.40
41:i:50:ASP:C	41:i:52:GLY:H	2.29	0.40
49:q:51:LYS:HE3	49:q:51:LYS:HB2	1.92	0.40
57:y:68:HIS:HB3	57:y:71:LYS:H	1.86	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	5	144/146 (99%)	127 (88%)	17 (12%)	0	100	100
6	6	367/394 (93%)	343 (94%)	24 (6%)	0	100	100
9	A	78/80 (98%)	74 (95%)	4 (5%)	0	100	100
10	B	269/271 (99%)	257 (96%)	12 (4%)	0	100	100
11	C	207/209 (99%)	200 (97%)	7 (3%)	0	100	100
12	D	199/201 (99%)	196 (98%)	3 (2%)	0	100	100
13	E	175/177 (99%)	149 (85%)	23 (13%)	3 (2%)	7	33
14	F	174/176 (99%)	161 (92%)	11 (6%)	2 (1%)	11	42
15	G	147/149 (99%)	133 (90%)	14 (10%)	0	100	100
16	H	128/130 (98%)	105 (82%)	23 (18%)	0	100	100
17	I	64/142 (45%)	55 (86%)	8 (12%)	1 (2%)	7	35
18	J	140/142 (99%)	134 (96%)	6 (4%)	0	100	100
19	K	120/122 (98%)	116 (97%)	4 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
20	L	142/144 (99%)	131 (92%)	11 (8%)	0	100	100
21	M	133/136 (98%)	127 (96%)	5 (4%)	1 (1%)	16	48
22	N	118/120 (98%)	111 (94%)	7 (6%)	0	100	100
23	O	114/116 (98%)	113 (99%)	1 (1%)	0	100	100
24	P	112/114 (98%)	110 (98%)	2 (2%)	0	100	100
25	Q	115/117 (98%)	114 (99%)	1 (1%)	0	100	100
26	R	101/103 (98%)	97 (96%)	4 (4%)	0	100	100
27	S	108/110 (98%)	103 (95%)	5 (5%)	0	100	100
28	T	91/93 (98%)	86 (94%)	5 (6%)	0	100	100
29	U	100/102 (98%)	88 (88%)	10 (10%)	2 (2%)	6	30
30	V	92/94 (98%)	90 (98%)	2 (2%)	0	100	100
31	X	75/77 (97%)	75 (100%)	0	0	100	100
32	Y	60/62 (97%)	55 (92%)	5 (8%)	0	100	100
33	Z	56/58 (97%)	55 (98%)	1 (2%)	0	100	100
34	b	54/56 (96%)	47 (87%)	5 (9%)	2 (4%)	2	17
35	c	48/50 (96%)	47 (98%)	1 (2%)	0	100	100
36	d	44/46 (96%)	42 (96%)	1 (2%)	1 (2%)	5	27
37	e	62/64 (97%)	60 (97%)	2 (3%)	0	100	100
38	f	36/38 (95%)	35 (97%)	1 (3%)	0	100	100
39	g	222/224 (99%)	201 (90%)	20 (9%)	1 (0%)	24	58
40	h	204/206 (99%)	194 (95%)	10 (5%)	0	100	100
41	i	203/205 (99%)	185 (91%)	17 (8%)	1 (0%)	24	58
42	j	150/167 (90%)	129 (86%)	20 (13%)	1 (1%)	18	52
43	k	98/100 (98%)	89 (91%)	9 (9%)	0	100	100
44	l	149/151 (99%)	143 (96%)	5 (3%)	1 (1%)	18	52
45	m	127/129 (98%)	124 (98%)	3 (2%)	0	100	100
46	n	125/127 (98%)	114 (91%)	11 (9%)	0	100	100
47	o	96/98 (98%)	87 (91%)	9 (9%)	0	100	100
48	p	115/117 (98%)	98 (85%)	17 (15%)	0	100	100
49	q	120/123 (98%)	114 (95%)	6 (5%)	0	100	100
50	r	112/114 (98%)	100 (89%)	12 (11%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
51	s	98/100 (98%)	93 (95%)	5 (5%)	0	100	100
52	t	86/88 (98%)	83 (96%)	3 (4%)	0	100	100
53	u	80/82 (98%)	69 (86%)	11 (14%)	0	100	100
54	v	78/80 (98%)	75 (96%)	3 (4%)	0	100	100
55	w	53/55 (96%)	50 (94%)	3 (6%)	0	100	100
56	x	77/79 (98%)	68 (88%)	9 (12%)	0	100	100
57	y	83/85 (98%)	81 (98%)	2 (2%)	0	100	100
58	z	54/56 (96%)	54 (100%)	0	0	100	100
All	All	6203/6425 (96%)	5787 (93%)	400 (6%)	16 (0%)	37	67

All (16) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
14	F	42	GLU
42	j	103	THR
21	M	60	GLN
29	U	99	ASN
34	b	11	SER
34	b	55	ILE
13	E	113	ASP
13	E	152	LEU
39	g	97	LEU
29	U	89	ASP
14	F	43	VAL
41	i	20	PHE
13	E	111	ILE
17	I	92	PRO
36	d	44	VAL
44	l	7	ILE

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	5	122/122 (100%)	122 (100%)	0	100	100
6	6	310/327 (95%)	310 (100%)	0	100	100
9	A	59/59 (100%)	59 (100%)	0	100	100
10	B	216/216 (100%)	215 (100%)	1 (0%)	81	84
11	C	164/164 (100%)	163 (99%)	1 (1%)	78	83
12	D	165/165 (100%)	165 (100%)	0	100	100
13	E	148/148 (100%)	143 (97%)	5 (3%)	32	62
14	F	137/137 (100%)	135 (98%)	2 (2%)	57	74
15	G	114/114 (100%)	113 (99%)	1 (1%)	70	79
16	H	99/99 (100%)	98 (99%)	1 (1%)	68	78
17	I	48/110 (44%)	48 (100%)	0	100	100
18	J	116/116 (100%)	116 (100%)	0	100	100
19	K	103/103 (100%)	103 (100%)	0	100	100
20	L	103/103 (100%)	102 (99%)	1 (1%)	68	78
21	M	108/108 (100%)	106 (98%)	2 (2%)	50	71
22	N	100/100 (100%)	100 (100%)	0	100	100
23	O	86/86 (100%)	85 (99%)	1 (1%)	63	77
24	P	99/99 (100%)	99 (100%)	0	100	100
25	Q	89/89 (100%)	89 (100%)	0	100	100
26	R	84/84 (100%)	83 (99%)	1 (1%)	63	77
27	S	93/93 (100%)	93 (100%)	0	100	100
28	T	80/80 (100%)	80 (100%)	0	100	100
29	U	83/83 (100%)	83 (100%)	0	100	100
30	V	78/78 (100%)	76 (97%)	2 (3%)	40	66
31	X	67/67 (100%)	67 (100%)	0	100	100
32	Y	54/54 (100%)	54 (100%)	0	100	100
33	Z	48/48 (100%)	48 (100%)	0	100	100
34	b	47/47 (100%)	46 (98%)	1 (2%)	47	69
35	c	45/45 (100%)	45 (100%)	0	100	100
36	d	38/38 (100%)	38 (100%)	0	100	100
37	e	51/51 (100%)	51 (100%)	0	100	100
38	f	34/34 (100%)	33 (97%)	1 (3%)	37	64

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
39	g	186/186 (100%)	185 (100%)	1 (0%)	81	84
40	h	170/170 (100%)	168 (99%)	2 (1%)	63	77
41	i	172/172 (100%)	170 (99%)	2 (1%)	63	77
42	j	114/126 (90%)	113 (99%)	1 (1%)	70	79
43	k	87/87 (100%)	85 (98%)	2 (2%)	44	68
44	l	124/124 (100%)	124 (100%)	0	100	100
45	m	104/104 (100%)	104 (100%)	0	100	100
46	n	105/105 (100%)	105 (100%)	0	100	100
47	o	86/86 (100%)	86 (100%)	0	100	100
48	p	90/90 (100%)	90 (100%)	0	100	100
49	q	102/102 (100%)	102 (100%)	0	100	100
50	r	92/92 (100%)	92 (100%)	0	100	100
51	s	83/83 (100%)	83 (100%)	0	100	100
52	t	76/76 (100%)	76 (100%)	0	100	100
53	u	65/65 (100%)	65 (100%)	0	100	100
54	v	74/74 (100%)	74 (100%)	0	100	100
55	w	48/48 (100%)	48 (100%)	0	100	100
56	x	70/70 (100%)	67 (96%)	3 (4%)	26	57
57	y	65/65 (100%)	65 (100%)	0	100	100
58	z	48/48 (100%)	46 (96%)	2 (4%)	26	58
All	All	5149/5240 (98%)	5116 (99%)	33 (1%)	76	83

All (33) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
10	B	34	LEU
11	C	26	VAL
13	E	40	VAL
13	E	74	VAL
13	E	149	VAL
13	E	150	ARG
13	E	153	ASP
14	F	19	ILE
14	F	41	VAL
15	G	130	VAL

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Mol	Chain	Res	Type
16	H	15	VAL
20	L	116	VAL
21	M	93	VAL
21	M	135	VAL
23	O	115	LEU
26	R	20	VAL
30	V	65	VAL
30	V	77	VAL
34	b	30	VAL
38	f	3	VAL
39	g	148	LEU
40	h	52	VAL
40	h	128	VAL
41	i	28	ILE
41	i	58	LYS
42	j	101	GLU
43	k	36	ILE
43	k	69	GLU
56	x	25	SER
56	x	27	ASP
56	x	67	VAL
58	z	14	VAL
58	z	28	VAL

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

Mol	Chain	Res	Type
5	5	93	ASN
5	5	94	GLN
6	6	66	HIS
6	6	90	ASN
6	6	97	GLN
6	6	301	HIS
11	C	134	HIS
12	D	62	GLN
12	D	94	GLN
12	D	97	ASN
14	F	45	HIS
15	G	73	ASN
18	J	47	HIS
18	J	77	HIS
22	N	11	ASN

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Mol	Chain	Res	Type
22	N	31	HIS
23	O	19	GLN
23	O	29	HIS
24	P	10	GLN
24	P	56	HIS
24	P	77	HIS
25	Q	37	GLN
28	T	48	GLN
29	U	53	ASN
30	V	24	ASN
31	X	32	ASN
31	X	36	HIS
32	Y	15	ASN
32	Y	20	ASN
32	Y	45	GLN
39	g	120	GLN
40	h	19	ASN
40	h	140	ASN
40	h	185	ASN
41	i	71	GLN
41	i	85	ASN
41	i	131	ASN
42	j	19	ASN
42	j	135	ASN
43	k	3	HIS
43	k	63	ASN
45	m	16	ASN
45	m	18	GLN
47	o	58	ASN
48	p	15	GLN
48	p	101	ASN
48	p	119	ASN
49	q	72	HIS
52	t	35	GLN
52	t	62	GLN
53	u	63	GLN
54	v	9	GLN
57	y	48	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	2903/2904 (99%)	560 (19%)	24 (0%)
2	2	1539/1540 (99%)	337 (21%)	14 (0%)
3	3	117/118 (99%)	22 (18%)	3 (2%)
4	4	362/363 (99%)	175 (48%)	10 (2%)
7	7	75/76 (98%)	16 (21%)	3 (4%)
8	8	14/15 (93%)	10 (71%)	1 (7%)
All	All	5010/5016 (99%)	1120 (22%)	55 (1%)

All (1120) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	2	G
1	1	10	A
1	1	15	G
1	1	27	G
1	1	28	A
1	1	34	U
1	1	42	A
1	1	46	G
1	1	51	G
1	1	63	A
1	1	64	A
1	1	71	A
1	1	74	A
1	1	75	G
1	1	83	A
1	1	84	A
1	1	91	A
1	1	96	C
1	1	100	U
1	1	101	A
1	1	114	U
1	1	118	A
1	1	120	U
1	1	125	A
1	1	126	A
1	1	127	A
1	1	136	G
1	1	138	U
1	1	139	U
1	1	140	C
1	1	141	G
1	1	142	A

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Mol	Chain	Res	Type
1	1	144	A
1	1	160	A
1	1	163	C
1	1	181	A
1	1	196	A
1	1	215	G
1	1	216	A
1	1	222	A
1	1	228	C
1	1	230	G
1	1	231	A
1	1	233	A
1	1	248	G
1	1	266	G
1	1	267	C
1	1	271	G
1	1	272	A
1	1	276	U
1	1	277	G
1	1	278	A
1	1	280	U
1	1	281	C
1	1	285	G
1	1	292	U
1	1	294	A
1	1	311	A
1	1	330	A
1	1	331	C
1	1	345	A
1	1	354	A
1	1	357	C
1	1	359	G
1	1	361	G
1	1	362	A
1	1	368	A
1	1	369	U
1	1	371	A
1	1	372	G
1	1	386	G
1	1	390	U
1	1	391	A
1	1	396	G

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Mol	Chain	Res	Type
1	1	404	A
1	1	405	U
1	1	411	G
1	1	412	A
1	1	429	A
1	1	435	C
1	1	477	A
1	1	480	A
1	1	481	G
1	1	491	G
1	1	505	A
1	1	509	C
1	1	510	C
1	1	527	C
1	1	528	A
1	1	532	A
1	1	544	C
1	1	545	U
1	1	546	U
1	1	547	A
1	1	548	G
1	1	549	G
1	1	563	A
1	1	573	U
1	1	575	A
1	1	588	U
1	1	603	A
1	1	613	A
1	1	614	A
1	1	615	U
1	1	621	A
1	1	627	A
1	1	637	A
1	1	645	C
1	1	646	U
1	1	647	G
1	1	648	G
1	1	654	A
1	1	668	A
1	1	669	G
1	1	675	A
1	1	686	U

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Mol	Chain	Res	Type
1	1	726	G
1	1	729	G
1	1	730	A
1	1	747	5MU
1	1	757	G
1	1	764	A
1	1	775	G
1	1	776	G
1	1	782	A
1	1	784	G
1	1	785	G
1	1	789	A
1	1	792	A
1	1	805	G
1	1	812	C
1	1	819	A
1	1	827	U
1	1	828	U
1	1	830	G
1	1	831	G
1	1	846	U
1	1	857	G
1	1	859	G
1	1	869	G
1	1	877	A
1	1	878	A
1	1	880	G
1	1	886	A
1	1	887	A
1	1	888	C
1	1	889	C
1	1	890	C
1	1	891	G
1	1	892	A
1	1	893	C
1	1	895	U
1	1	896	A
1	1	897	C
1	1	900	A
1	1	904	G
1	1	910	A
1	1	912	C

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Mol	Chain	Res	Type
1	1	914	G
1	1	931	U
1	1	932	U
1	1	934	U
1	1	941	A
1	1	946	C
1	1	957	C
1	1	961	C
1	1	973	A
1	1	974	G
1	1	989	G
1	1	995	C
1	1	996	A
1	1	1009	A
1	1	1012	U
1	1	1013	C
1	1	1020	A
1	1	1026	G
1	1	1033	U
1	1	1034	G
1	1	1040	A
1	1	1041	G
1	1	1042	G
1	1	1045	C
1	1	1046	A
1	1	1047	G
1	1	1053	C
1	1	1057	A
1	1	1060	U
1	1	1062	G
1	1	1067	A
1	1	1068	G
1	1	1070	A
1	1	1073	A
1	1	1074	G
1	1	1077	A
1	1	1083	U
1	1	1084	A
1	1	1086	A
1	1	1087	G
1	1	1088	A
1	1	1089	A

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Mol	Chain	Res	Type
1	1	1090	A
1	1	1099	G
1	1	1108	U
1	1	1109	C
1	1	1111	A
1	1	1112	G
1	1	1116	G
1	1	1119	U
1	1	1125	G
1	1	1130	U
1	1	1132	U
1	1	1133	A
1	1	1135	C
1	1	1136	G
1	1	1141	U
1	1	1142	A
1	1	1143	A
1	1	1172	C
1	1	1174	U
1	1	1176	U
1	1	1178	C
1	1	1179	G
1	1	1180	U
1	1	1182	G
1	1	1186	G
1	1	1204	A
1	1	1206	G
1	1	1212	G
1	1	1225	G
1	1	1236	G
1	1	1238	G
1	1	1253	A
1	1	1255	U
1	1	1256	G
1	1	1266	G
1	1	1272	A
1	1	1273	U
1	1	1275	A
1	1	1276	A
1	1	1300	G
1	1	1301	A
1	1	1314	C

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Mol	Chain	Res	Type
1	1	1321	A
1	1	1325	U
1	1	1329	U
1	1	1365	A
1	1	1368	G
1	1	1378	A
1	1	1379	U
1	1	1380	G
1	1	1383	A
1	1	1416	G
1	1	1417	C
1	1	1419	A
1	1	1421	G
1	1	1424	G
1	1	1426	G
1	1	1427	A
1	1	1428	C
1	1	1437	C
1	1	1444	G
1	1	1453	A
1	1	1454	C
1	1	1455	G
1	1	1458	U
1	1	1467	U
1	1	1468	U
1	1	1476	U
1	1	1479	G
1	1	1482	G
1	1	1490	A
1	1	1491	G
1	1	1492	G
1	1	1493	C
1	1	1494	A
1	1	1497	U
1	1	1498	C
1	1	1501	G
1	1	1506	U
1	1	1508	A
1	1	1509	A
1	1	1510	G
1	1	1511	G
1	1	1513	U

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Mol	Chain	Res	Type
1	1	1515	A
1	1	1522	A
1	1	1523	U
1	1	1526	C
1	1	1528	A
1	1	1529	G
1	1	1534	U
1	1	1535	A
1	1	1536	C
1	1	1540	G
1	1	1541	C
1	1	1544	A
1	1	1547	C
1	1	1553	A
1	1	1560	G
1	1	1566	A
1	1	1569	A
1	1	1577	C
1	1	1583	A
1	1	1584	U
1	1	1585	C
1	1	1587	G
1	1	1603	A
1	1	1607	C
1	1	1610	A
1	1	1615	C
1	1	1634	A
1	1	1639	C
1	1	1640	A
1	1	1647	U
1	1	1648	U
1	1	1665	A
1	1	1674	G
1	1	1715	G
1	1	1718	G
1	1	1721	G
1	1	1723	G
1	1	1729	U
1	1	1731	G
1	1	1732	C
1	1	1733	G
1	1	1737	G

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Mol	Chain	Res	Type
1	1	1738	G
1	1	1744	A
1	1	1755	A
1	1	1756	G
1	1	1758	U
1	1	1764	C
1	1	1773	A
1	1	1781	U
1	1	1784	A
1	1	1800	C
1	1	1801	A
1	1	1808	A
1	1	1809	A
1	1	1816	C
1	1	1829	A
1	1	1835	2MG
1	1	1848	A
1	1	1851	U
1	1	1857	G
1	1	1858	A
1	1	1866	A
1	1	1870	C
1	1	1872	A
1	1	1875	G
1	1	1876	A
1	1	1906	G
1	1	1913	A
1	1	1914	C
1	1	1915	3TD
1	1	1918	A
1	1	1919	A
1	1	1929	G
1	1	1930	G
1	1	1931	U
1	1	1938	A
1	1	1939	5MU
1	1	1943	U
1	1	1955	U
1	1	1964	G
1	1	1966	A
1	1	1967	C
1	1	1970	A

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Mol	Chain	Res	Type
1	1	1971	U
1	1	1972	G
1	1	1991	U
1	1	1992	G
1	1	1993	U
1	1	1997	C
1	1	2020	A
1	1	2022	U
1	1	2023	C
1	1	2030	6MZ
1	1	2031	A
1	1	2033	A
1	1	2043	C
1	1	2055	C
1	1	2056	G
1	1	2059	A
1	1	2060	A
1	1	2061	G
1	1	2062	A
1	1	2068	U
1	1	2069	G7M
1	1	2077	A
1	1	2080	A
1	1	2093	G
1	1	2097	A
1	1	2099	U
1	1	2100	G
1	1	2101	A
1	1	2102	G
1	1	2103	C
1	1	2104	C
1	1	2106	U
1	1	2107	G
1	1	2108	A
1	1	2110	G
1	1	2111	U
1	1	2112	G
1	1	2113	U
1	1	2115	G
1	1	2116	G
1	1	2117	A
1	1	2118	U

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Mol	Chain	Res	Type
1	1	2119	A
1	1	2120	G
1	1	2122	U
1	1	2123	G
1	1	2126	A
1	1	2127	G
1	1	2128	G
1	1	2129	C
1	1	2130	U
1	1	2132	U
1	1	2133	G
1	1	2137	U
1	1	2139	U
1	1	2143	C
1	1	2146	C
1	1	2155	U
1	1	2157	G
1	1	2158	A
1	1	2161	C
1	1	2163	A
1	1	2164	C
1	1	2165	C
1	1	2166	U
1	1	2167	U
1	1	2168	G
1	1	2169	A
1	1	2171	A
1	1	2172	U
1	1	2174	C
1	1	2175	C
1	1	2183	A
1	1	2185	U
1	1	2186	G
1	1	2189	U
1	1	2190	G
1	1	2191	A
1	1	2194	U
1	1	2198	A
1	1	2204	G
1	1	2211	A
1	1	2225	A
1	1	2238	G

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Mol	Chain	Res	Type
1	1	2239	G
1	1	2243	U
1	1	2250	G
1	1	2251	OMG
1	1	2266	A
1	1	2279	G
1	1	2283	C
1	1	2287	A
1	1	2304	G
1	1	2305	U
1	1	2306	C
1	1	2309	A
1	1	2311	A
1	1	2312	U
1	1	2313	C
1	1	2319	G
1	1	2320	U
1	1	2322	A
1	1	2325	G
1	1	2333	A
1	1	2347	C
1	1	2350	C
1	1	2357	G
1	1	2361	G
1	1	2379	G
1	1	2383	G
1	1	2385	C
1	1	2402	U
1	1	2403	C
1	1	2423	U
1	1	2424	C
1	1	2425	A
1	1	2426	A
1	1	2428	G
1	1	2429	G
1	1	2430	A
1	1	2431	U
1	1	2439	A
1	1	2441	U
1	1	2445	2MG
1	1	2447	G
1	1	2448	A

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Mol	Chain	Res	Type
1	1	2473	U
1	1	2475	C
1	1	2476	A
1	1	2478	A
1	1	2480	C
1	1	2491	U
1	1	2494	G
1	1	2498	OMC
1	1	2499	C
1	1	2502	G
1	1	2505	G
1	1	2506	U
1	1	2518	A
1	1	2529	G
1	1	2547	A
1	1	2554	U
1	1	2566	A
1	1	2567	G
1	1	2572	A
1	1	2582	G
1	1	2585	U
1	1	2586	U
1	1	2597	G
1	1	2602	A
1	1	2603	G
1	1	2609	U
1	1	2610	C
1	1	2611	C
1	1	2613	U
1	1	2615	U
1	1	2630	G
1	1	2639	A
1	1	2646	C
1	1	2661	G
1	1	2682	A
1	1	2685	G
1	1	2687	U
1	1	2689	U
1	1	2690	U
1	1	2714	G
1	1	2725	A
1	1	2726	A

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Mol	Chain	Res	Type
1	1	2729	G
1	1	2733	A
1	1	2744	G
1	1	2748	A
1	1	2752	C
1	1	2757	A
1	1	2765	A
1	1	2778	A
1	1	2780	G
1	1	2791	G
1	1	2794	C
1	1	2797	U
1	1	2798	U
1	1	2818	U
1	1	2820	A
1	1	2833	U
1	1	2849	U
1	1	2867	G
1	1	2872	A
1	1	2873	A
1	1	2880	C
1	1	2883	A
1	1	2893	A
1	1	2904	U
2	2	3	A
2	2	4	U
2	2	8	A
2	2	9	G
2	2	31	G
2	2	32	A
2	2	39	G
2	2	47	C
2	2	48	C
2	2	49	U
2	2	51	A
2	2	70	U
2	2	71	A
2	2	75	G
2	2	77	A
2	2	78	A
2	2	82	G
2	2	83	C

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Mol	Chain	Res	Type
2	2	84	U
2	2	85	U
2	2	86	G
2	2	87	C
2	2	88	U
2	2	90	C
2	2	91	U
2	2	92	U
2	2	94	G
2	2	95	C
2	2	98	A
2	2	102	G
2	2	108	G
2	2	121	U
2	2	122	G
2	2	128	G
2	2	129	A
2	2	130	A
2	2	131	A
2	2	137	U
2	2	141	G
2	2	143	A
2	2	144	G
2	2	168	G
2	2	170	U
2	2	171	A
2	2	174	A
2	2	180	U
2	2	181	A
2	2	189	A
2	2	196	A
2	2	197	A
2	2	199	A
2	2	204	G
2	2	206	C
2	2	209	U
2	2	210	C
2	2	211	G
2	2	212	G
2	2	214	C
2	2	231	U
2	2	244	U

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Mol	Chain	Res	Type
2	2	247	G
2	2	250	A
2	2	251	G
2	2	263	A
2	2	266	G
2	2	267	C
2	2	279	A
2	2	281	G
2	2	289	G
2	2	306	A
2	2	326	G
2	2	328	C
2	2	329	A
2	2	332	G
2	2	347	G
2	2	351	G
2	2	352	C
2	2	356	A
2	2	363	A
2	2	367	U
2	2	370	C
2	2	372	C
2	2	373	A
2	2	392	C
2	2	406	G
2	2	410	G
2	2	412	A
2	2	413	G
2	2	414	A
2	2	421	U
2	2	422	C
2	2	423	G
2	2	428	G
2	2	429	U
2	2	430	A
2	2	436	C
2	2	439	U
2	2	448	A
2	2	451	A
2	2	452	A
2	2	453	G
2	2	458	U

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Mol	Chain	Res	Type
2	2	463	U
2	2	465	A
2	2	466	A
2	2	467	U
2	2	468	A
2	2	469	C
2	2	473	U
2	2	476	U
2	2	478	A
2	2	479	U
2	2	481	G
2	2	484	G
2	2	485	U
2	2	486	U
2	2	495	A
2	2	496	A
2	2	497	G
2	2	499	A
2	2	506	G
2	2	509	A
2	2	511	C
2	2	518	C
2	2	521	G
2	2	527	G7M
2	2	528	C
2	2	532	A
2	2	533	A
2	2	542	G
2	2	547	A
2	2	549	C
2	2	559	A
2	2	560	A
2	2	564	C
2	2	572	A
2	2	573	A
2	2	576	C
2	2	577	G
2	2	594	U
2	2	595	A
2	2	596	A
2	2	621	A
2	2	633	G

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Mol	Chain	Res	Type
2	2	650	G
2	2	653	U
2	2	665	A
2	2	686	U
2	2	687	A
2	2	703	G
2	2	717	U
2	2	723	U
2	2	724	G
2	2	731	G
2	2	747	A
2	2	755	G
2	2	758	C
2	2	780	A
2	2	787	A
2	2	793	U
2	2	794	A
2	2	799	G
2	2	815	A
2	2	817	C
2	2	818	G
2	2	821	G
2	2	828	U
2	2	829	G
2	2	831	A
2	2	832	G
2	2	841	C
2	2	842	U
2	2	843	U
2	2	844	G
2	2	845	A
2	2	846	G
2	2	849	G
2	2	868	C
2	2	872	A
2	2	873	A
2	2	876	C
2	2	889	A
2	2	907	A
2	2	914	A
2	2	934	C
2	2	958	A

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Mol	Chain	Res	Type
2	2	959	A
2	2	960	U
2	2	961	U
2	2	966	2MG
2	2	969	A
2	2	971	G
2	2	975	A
2	2	976	G
2	2	977	A
2	2	984	C
2	2	989	U
2	2	992	U
2	2	993	G
2	2	994	A
2	2	995	C
2	2	996	A
2	2	1002	G
2	2	1003	G
2	2	1004	A
2	2	1014	A
2	2	1025	U
2	2	1028	C
2	2	1030	U
2	2	1031	C
2	2	1033	G
2	2	1035	A
2	2	1036	A
2	2	1037	C
2	2	1044	A
2	2	1045	C
2	2	1046	A
2	2	1053	G
2	2	1054	C
2	2	1064	G
2	2	1065	U
2	2	1066	C
2	2	1070	U
2	2	1086	U
2	2	1095	U
2	2	1097	C
2	2	1098	C
2	2	1101	A

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Mol	Chain	Res	Type
2	2	1104	G
2	2	1123	U
2	2	1124	G
2	2	1129	C
2	2	1133	G
2	2	1135	U
2	2	1136	C
2	2	1137	C
2	2	1138	G
2	2	1139	G
2	2	1140	C
2	2	1141	C
2	2	1145	A
2	2	1151	A
2	2	1152	A
2	2	1157	A
2	2	1158	C
2	2	1159	U
2	2	1167	A
2	2	1168	U
2	2	1169	A
2	2	1176	A
2	2	1177	G
2	2	1178	G
2	2	1179	A
2	2	1180	A
2	2	1184	G
2	2	1190	G
2	2	1191	A
2	2	1196	A
2	2	1197	A
2	2	1211	U
2	2	1212	U
2	2	1213	A
2	2	1216	A
2	2	1217	C
2	2	1222	G
2	2	1226	C
2	2	1227	A
2	2	1238	A
2	2	1240	U
2	2	1241	G

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Mol	Chain	Res	Type
2	2	1250	A
2	2	1254	A
2	2	1258	G
2	2	1260	G
2	2	1270	G
2	2	1275	A
2	2	1280	A
2	2	1285	A
2	2	1286	U
2	2	1287	A
2	2	1297	G
2	2	1299	A
2	2	1300	G
2	2	1305	G
2	2	1317	C
2	2	1320	C
2	2	1322	C
2	2	1323	G
2	2	1340	A
2	2	1346	A
2	2	1347	G
2	2	1348	U
2	2	1353	G
2	2	1357	A
2	2	1362	A
2	2	1363	A
2	2	1364	U
2	2	1365	G
2	2	1374	A
2	2	1376	U
2	2	1377	A
2	2	1379	G
2	2	1394	A
2	2	1397	C
2	2	1398	A
2	2	1419	G
2	2	1422	G
2	2	1428	A
2	2	1431	A
2	2	1432	G
2	2	1440	U
2	2	1441	A

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Mol	Chain	Res	Type
2	2	1446	A
2	2	1447	A
2	2	1451	U
2	2	1452	C
2	2	1453	G
2	2	1454	G
2	2	1493	A
2	2	1494	G
2	2	1499	A
2	2	1503	A
2	2	1505	G
2	2	1506	U
2	2	1507	A
2	2	1517	G
2	2	1518	MA6
2	2	1520	C
2	2	1529	G
2	2	1530	G
2	2	1531	A
2	2	1533	C
2	2	1534	A
2	2	1535	C
2	2	1536	C
2	2	1537	U
2	2	1540	U
3	3	12	C
3	3	13	G
3	3	15	A
3	3	16	G
3	3	24	G
3	3	25	U
3	3	34	A
3	3	35	C
3	3	37	C
3	3	41	G
3	3	43	C
3	3	45	A
3	3	56	G
3	3	88	C
3	3	89	U
3	3	90	C
3	3	99	A

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Mol	Chain	Res	Type
3	3	108	A
3	3	109	A
3	3	112	G
3	3	113	C
3	3	119	A
4	4	6	U
4	4	8	A
4	4	9	U
4	4	10	U
4	4	11	C
4	4	12	U
4	4	13	G
4	4	14	G
4	4	17	U
4	4	18	C
4	4	19	G
4	4	20	A
4	4	24	G
4	4	25	A
4	4	26	U
4	4	28	U
4	4	29	G
4	4	30	C
4	4	32	A
4	4	33	A
4	4	34	A
4	4	35	C
4	4	36	C
4	4	39	A
4	4	43	G
4	4	44	C
4	4	50	G
4	4	51	A
4	4	53	G
4	4	54	G
4	4	55	G
4	4	61	G
4	4	62	G
4	4	64	C
4	4	67	G
4	4	68	U
4	4	71	A

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Mol	Chain	Res	Type
4	4	77	G
4	4	86	A
4	4	87	G
4	4	91	C
4	4	92	A
4	4	93	A
4	4	94	A
4	4	95	C
4	4	96	G
4	4	99	G
4	4	100	A
4	4	102	A
4	4	104	C
4	4	105	U
4	4	106	A
4	4	107	C
4	4	114	G
4	4	116	A
4	4	120	U
4	4	121	A
4	4	122	A
4	4	123	U
4	4	125	A
4	4	126	C
4	4	127	C
4	4	128	U
4	4	129	G
4	4	130	C
4	4	131	U
4	4	134	G
4	4	138	C
4	4	140	U
4	4	143	C
4	4	144	U
4	4	145	C
4	4	146	C
4	4	149	A
4	4	154	C
4	4	155	C
4	4	156	G
4	4	157	C
4	4	158	U

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Mol	Chain	Res	Type
4	4	160	U
4	4	162	A
4	4	164	G
4	4	165	A
4	4	166	C
4	4	168	G
4	4	170	G
4	4	172	U
4	4	175	A
4	4	176	G
4	4	180	G
4	4	181	G
4	4	182	U
4	4	183	C
4	4	184	A
4	4	186	A
4	4	188	C
4	4	195	A
4	4	196	G
4	4	197	A
4	4	198	U
4	4	199	C
4	4	200	G
4	4	205	G
4	4	206	A
4	4	208	G
4	4	209	C
4	4	210	C
4	4	211	C
4	4	213	G
4	4	214	C
4	4	216	U
4	4	218	G
4	4	222	U
4	4	223	G
4	4	224	A
4	4	225	A
4	4	227	C
4	4	228	G
4	4	230	U
4	4	231	A
4	4	233	A

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Mol	Chain	Res	Type
4	4	236	U
4	4	240	U
4	4	245	C
4	4	246	U
4	4	247	A
4	4	248	G
4	4	251	U
4	4	252	G
4	4	256	G
4	4	258	G
4	4	263	G
4	4	264	U
4	4	265	C
4	4	267	G
4	4	268	U
4	4	270	C
4	4	271	G
4	4	274	G
4	4	278	G
4	4	281	A
4	4	283	C
4	4	285	A
4	4	287	U
4	4	290	A
4	4	296	U
4	4	299	C
4	4	300	U
4	4	301	A
4	4	302	A
4	4	305	A
4	4	307	G
4	4	308	U
4	4	309	A
4	4	313	C
4	4	315	G
4	4	317	G
4	4	318	G
4	4	321	G
4	4	323	A
4	4	328	U
4	4	330	U
4	4	331	C

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Mol	Chain	Res	Type
4	4	333	G
4	4	335	C
4	4	336	G
4	4	339	G
4	4	340	G
4	4	342	PSU
4	4	343	C
4	4	344	A
4	4	347	PSU
4	4	359	C
4	4	362	C
4	4	363	A
7	7	8	4SU
7	7	16	U
7	7	17	C
7	7	20	U
7	7	22	G
7	7	43	C
7	7	44	G
7	7	45	U
7	7	46	G7M
7	7	48	C
7	7	49	C
7	7	58	A
7	7	60	U
7	7	65	G
7	7	67	C
7	7	72	C
8	8	3	G
8	8	6	G
8	8	8	U
8	8	9	G
8	8	10	A
8	8	11	G
8	8	12	G
8	8	13	U
8	8	14	U
8	8	15	U

All (55) RNA pucker outliers are listed below:

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Mol	Chain	Res	Type
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Mol	Chain	Res	Type
1	1	100	U
1	1	139	U
1	1	271	G
1	1	404	A
1	1	428	A
1	1	647	G
1	1	784	G
1	1	1275	A
1	1	1379	U
1	1	1454	C
1	1	1525	A
1	1	1847	A
1	1	1912	A
1	1	2103	C
1	1	2128	G
1	1	2190	G
1	1	2193	G
1	1	2286	G
1	1	2332	C
1	1	2401	U
1	1	2425	A
1	1	2596	U
1	1	2756	U
1	1	2903	U
2	2	81	A
2	2	94	G
2	2	203	G
2	2	325	A
2	2	391	G
2	2	429	U
2	2	466	A
2	2	988	G
2	2	1001	C
2	2	1123	U
2	2	1296	C
2	2	1346	A
2	2	1375	A
2	2	1534	A
3	3	34	A
3	3	42	C
3	3	89	U

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Mol	Chain	Res	Type
4	4	53	G
4	4	95	C
4	4	148	U
4	4	229	U
4	4	308	U
4	4	314	C
4	4	316	A
4	4	327	A
4	4	334	A
4	4	335	C
7	7	16	U
7	7	19	G
7	7	66	U
8	8	14	U

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	PSU	1	746	1,59	18,21,22	1.07	1 (5%)	22,30,33	1.71	5 (22%)
21	4D4	M	81	21	9,11,12	2.03	2 (22%)	8,13,15	1.86	3 (37%)
1	6MZ	1	2030	1	22,25,26	2.71	3 (13%)	30,36,39	2.38	11 (36%)
1	PSU	1	2457	1	18,21,22	1.04	1 (5%)	22,30,33	1.73	4 (18%)
2	MA6	2	1518	2	23,26,27	1.75	4 (17%)	34,38,41	3.94	14 (41%)
1	2MG	1	2445	1	23,26,27	3.04	8 (34%)	32,38,41	2.76	12 (37%)
2	MA6	2	1519	2	23,26,27	1.76	4 (17%)	34,38,41	3.97	14 (41%)
1	2MG	1	1835	1	23,26,27	3.09	7 (30%)	32,38,41	2.85	12 (37%)
1	PSU	1	1917	1	18,21,22	1.14	2 (11%)	22,30,33	1.84	5 (22%)
2	4OC	2	1402	2	20,23,24	3.21	8 (40%)	26,32,35	0.88	1 (3%)
1	1MG	1	745	1	22,26,27	2.65	5 (22%)	33,39,42	1.76	8 (24%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	UR3	2	1498	2	19,22,23	3.01	8 (42%)	26,32,35	1.29	2 (7%)
1	5MU	1	1939	1	19,22,23	5.27	5 (26%)	28,32,35	3.60	9 (32%)
1	PSU	1	955	1	18,21,22	1.10	1 (5%)	22,30,33	1.74	4 (18%)
1	2MA	1	2503	1,59	22,25,26	3.88	7 (31%)	33,37,40	3.58	11 (33%)
2	2MG	2	1516	2	23,26,27	3.05	8 (34%)	32,38,41	2.74	13 (40%)
7	PSU	7	55	7	18,21,22	1.10	1 (5%)	22,30,33	1.74	4 (18%)
49	0TD	q	89	49	7,9,10	1.47	0	6,11,13	2.02	2 (33%)
1	G7M	1	2069	1	23,26,27	2.63	8 (34%)	35,39,42	2.44	10 (28%)
7	G7M	7	46	7	23,26,27	4.08	11 (47%)	35,39,42	1.69	7 (20%)
2	PSU	2	516	2	18,21,22	1.08	1 (5%)	22,30,33	1.75	4 (18%)
7	PSU	7	32	7	18,21,22	1.10	1 (5%)	22,30,33	1.69	5 (22%)
1	5MU	1	747	1	19,22,23	5.26	5 (26%)	28,32,35	3.60	9 (32%)
1	5MC	1	1962	1	18,22,23	3.74	7 (38%)	26,32,35	1.04	2 (7%)
2	5MC	2	967	2	18,22,23	3.75	7 (38%)	26,32,35	0.98	1 (3%)
2	5MC	2	1407	2	18,22,23	3.76	7 (38%)	26,32,35	0.99	2 (7%)
7	5MU	7	54	7	19,22,23	5.19	5 (26%)	28,32,35	3.51	9 (32%)
2	G7M	2	527	2	23,26,27	2.66	8 (34%)	35,39,42	2.42	10 (28%)
1	PSU	1	2504	1	18,21,22	1.09	1 (5%)	22,30,33	1.76	4 (18%)
1	OMU	1	2552	1	19,22,23	2.99	8 (42%)	26,31,34	1.70	5 (19%)
4	PSU	4	347	4	18,21,22	1.10	1 (5%)	22,30,33	1.82	5 (22%)
7	4SU	7	8	7	18,21,22	3.83	7 (38%)	26,30,33	2.23	4 (15%)
1	6MZ	1	1618	1	22,25,26	2.72	3 (13%)	30,36,39	2.33	11 (36%)
2	2MG	2	966	2	23,26,27	3.08	8 (34%)	32,38,41	2.82	12 (37%)
4	PSU	4	342	4	18,21,22	1.12	1 (5%)	22,30,33	1.76	4 (18%)
1	PSU	1	2580	1	18,21,22	1.05	1 (5%)	22,30,33	1.86	5 (22%)
1	3TD	1	1915	1	18,22,23	4.22	6 (33%)	22,32,35	1.65	3 (13%)
4	5MU	4	341	4	19,22,23	5.27	5 (26%)	28,32,35	3.52	9 (32%)
7	PSU	7	39	7	18,21,22	1.10	1 (5%)	22,30,33	1.73	4 (18%)
1	PSU	1	2605	1	18,21,22	1.11	1 (5%)	22,30,33	1.75	4 (18%)
7	MIA	7	37	7	28,31,32	2.55	4 (14%)	40,44,47	5.72	18 (45%)
1	PSU	1	1911	1	18,21,22	1.08	1 (5%)	22,30,33	1.76	4 (18%)
7	3AU	7	47	7	24,28,29	2.40	8 (33%)	33,40,43	1.23	2 (6%)
1	OMG	1	2251	1,7	23,26,27	2.67	6 (26%)	33,38,41	3.30	9 (27%)
1	OMC	1	2498	1,59	19,22,23	3.40	8 (42%)	26,31,34	0.75	0
2	2MG	2	1207	2	23,26,27	3.07	8 (34%)	32,38,41	2.75	12 (37%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	PSU	1	746	1,59	-	2/7/25/26	0/2/2/2
21	4D4	M	81	21	-	4/11/12/14	-
1	6MZ	1	2030	1	-	4/9/27/28	0/3/3/3
1	PSU	1	2457	1	-	0/7/25/26	0/2/2/2
2	MA6	2	1518	2	-	2/11/29/30	0/3/3/3
1	2MG	1	2445	1	-	3/9/27/28	0/3/3/3
2	MA6	2	1519	2	-	2/11/29/30	0/3/3/3
1	2MG	1	1835	1	-	0/9/27/28	0/3/3/3
1	PSU	1	1917	1	-	0/7/25/26	0/2/2/2
2	4OC	2	1402	2	-	0/9/29/30	0/2/2/2
1	1MG	1	745	1	-	0/7/25/26	0/3/3/3
2	UR3	2	1498	2	-	2/7/25/26	0/2/2/2
1	5MU	1	1939	1	-	0/7/25/26	0/2/2/2
1	PSU	1	955	1	-	0/7/25/26	0/2/2/2
1	2MA	1	2503	1,59	-	3/7/25/26	0/3/3/3
2	2MG	2	1516	2	-	0/9/27/28	0/3/3/3
7	PSU	7	55	7	-	0/7/25/26	0/2/2/2
49	0TD	q	89	49	-	5/7/12/14	-
1	G7M	1	2069	1	-	1/7/25/26	0/3/3/3
7	G7M	7	46	7	-	2/7/25/26	0/3/3/3
2	PSU	2	516	2	-	0/7/25/26	0/2/2/2
7	PSU	7	32	7	-	0/7/25/26	0/2/2/2
1	5MU	1	747	1	-	1/7/25/26	0/2/2/2
1	5MC	1	1962	1	-	0/7/25/26	0/2/2/2
2	5MC	2	967	2	-	0/7/25/26	0/2/2/2
2	5MC	2	1407	2	-	0/7/25/26	0/2/2/2
7	5MU	7	54	7	-	0/7/25/26	0/2/2/2
2	G7M	2	527	2	-	2/7/25/26	0/3/3/3
1	PSU	1	2504	1	-	2/7/25/26	0/2/2/2
1	OMU	1	2552	1	-	0/9/27/28	0/2/2/2
4	PSU	4	347	4	-	0/7/25/26	0/2/2/2
7	4SU	7	8	7	-	1/7/25/26	0/2/2/2
1	6MZ	1	1618	1	-	2/9/27/28	0/3/3/3
2	2MG	2	966	2	-	2/9/27/28	0/3/3/3
4	PSU	4	342	4	-	2/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	PSU	1	2580	1	-	0/7/25/26	0/2/2/2
1	3TD	1	1915	1	-	4/7/25/26	0/2/2/2
4	5MU	4	341	4	-	2/7/25/26	0/2/2/2
7	PSU	7	39	7	-	0/7/25/26	0/2/2/2
1	PSU	1	2605	1	-	0/7/25/26	0/2/2/2
7	MIA	7	37	7	-	2/15/33/34	0/3/3/3
1	PSU	1	1911	1	-	0/7/25/26	0/2/2/2
7	3AU	7	47	7	-	1/16/34/35	0/2/2/2
1	OMG	1	2251	1,7	-	3/9/27/28	0/3/3/3
1	OMC	1	2498	1,59	-	2/9/27/28	0/2/2/2
2	2MG	2	1207	2	-	0/9/27/28	0/3/3/3

All (213) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	4	341	5MU	C6-N1	12.75	1.59	1.38
1	1	1939	5MU	C6-N1	12.71	1.59	1.38
1	1	747	5MU	C6-N1	12.70	1.59	1.38
7	7	54	5MU	C6-N1	12.64	1.59	1.38
1	1	1915	3TD	C6-C5	12.36	1.49	1.35
1	1	1939	5MU	C2-N1	12.13	1.57	1.38
4	4	341	5MU	C4-C5	12.11	1.64	1.44
1	1	747	5MU	C2-N1	12.07	1.57	1.38
1	1	1939	5MU	C4-C5	12.06	1.64	1.44
7	7	54	5MU	C2-N1	12.04	1.57	1.38
1	1	747	5MU	C4-C5	11.98	1.64	1.44
1	1	2503	2MA	C4-N3	11.98	1.49	1.34
4	4	341	5MU	C2-N1	11.95	1.57	1.38
7	7	54	5MU	C4-C5	11.70	1.64	1.44
1	1	1618	6MZ	C6-N6	11.66	1.46	1.34
1	1	2030	6MZ	C6-N6	11.62	1.46	1.34
7	7	46	G7M	C8-N7	11.15	1.53	1.33
2	2	967	5MC	C6-C5	9.64	1.50	1.34
1	1	1962	5MC	C6-C5	9.62	1.50	1.34
2	2	1407	5MC	C6-C5	9.62	1.50	1.34
1	1	1915	3TD	C2-N1	9.42	1.49	1.37
7	7	37	MIA	C6-N6	8.70	1.48	1.34
1	1	1835	2MG	C2-N3	8.58	1.48	1.31
7	7	37	MIA	C2-S10	8.49	1.82	1.75
2	2	966	2MG	C2-N3	8.46	1.48	1.31
2	2	1207	2MG	C2-N3	8.41	1.48	1.31

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	2445	2MG	C2-N3	8.38	1.47	1.31
7	7	8	4SU	C4-N3	8.37	1.46	1.37
2	2	1516	2MG	C2-N3	8.35	1.47	1.31
1	1	2503	2MA	C2-N3	7.72	1.47	1.34
7	7	47	3AU	O4-C4	7.68	1.40	1.23
2	2	1498	UR3	C2-N1	7.67	1.49	1.38
1	1	745	1MG	C4-N3	7.41	1.51	1.34
2	2	1402	4OC	C4-N3	7.25	1.45	1.32
7	7	8	4SU	C2-N3	7.09	1.50	1.38
7	7	8	4SU	C2-N1	7.00	1.49	1.38
1	1	745	1MG	C2-N3	6.96	1.47	1.34
7	7	46	G7M	C5-N7	6.86	1.47	1.39
1	1	2498	OMC	C2-N3	6.75	1.50	1.36
1	1	2251	OMG	C2-N2	6.75	1.50	1.34
2	2	527	G7M	C4-N3	6.75	1.50	1.34
1	1	2251	OMG	C4-N3	6.72	1.50	1.34
1	1	2498	OMC	C6-C5	6.66	1.50	1.35
2	2	967	5MC	C4-N3	6.65	1.45	1.34
7	7	46	G7M	C2-N3	6.64	1.49	1.33
2	2	1407	5MC	C2-N3	6.61	1.49	1.36
2	2	1407	5MC	C4-N3	6.61	1.45	1.34
1	1	1962	5MC	C4-N3	6.60	1.45	1.34
1	1	1962	5MC	C2-N3	6.59	1.49	1.36
2	2	967	5MC	C2-N3	6.59	1.49	1.36
1	1	2069	G7M	C4-N3	6.51	1.49	1.34
1	1	2552	OMU	C2-N1	6.49	1.48	1.38
7	7	46	G7M	C8-N9	6.48	1.53	1.35
1	1	1835	2MG	C4-N3	6.46	1.49	1.34
1	1	2503	2MA	C2-N1	6.45	1.45	1.34
1	1	2498	OMC	C4-N4	6.42	1.49	1.33
1	1	2552	OMU	C2-N3	6.33	1.49	1.38
2	2	966	2MG	C4-N3	6.32	1.49	1.34
2	2	1207	2MG	C4-N3	6.31	1.49	1.34
2	2	1402	4OC	C6-C5	6.30	1.49	1.35
1	1	2445	2MG	C4-N3	6.27	1.49	1.34
2	2	1516	2MG	C4-N3	6.23	1.49	1.34
2	2	1402	4OC	C2-N3	6.21	1.48	1.36
4	4	341	5MU	C4-N3	-6.20	1.27	1.38
1	1	747	5MU	C4-N3	-6.18	1.27	1.38
1	1	1939	5MU	C4-N3	-6.18	1.27	1.38
2	2	1498	UR3	C6-C5	6.14	1.49	1.35
7	7	54	5MU	C4-N3	-6.10	1.27	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	1516	2MG	C2-N1	6.09	1.46	1.36
2	2	966	2MG	C2-N1	6.07	1.46	1.36
7	7	8	4SU	C6-C5	6.05	1.49	1.35
2	2	1207	2MG	C2-N1	6.04	1.46	1.36
1	1	1835	2MG	C2-N2	6.04	1.46	1.33
2	2	966	2MG	C2-N2	5.97	1.46	1.33
2	2	1207	2MG	C2-N2	5.96	1.46	1.33
1	1	1835	2MG	C2-N1	5.95	1.46	1.36
1	1	2445	2MG	C2-N1	5.95	1.46	1.36
2	2	1516	2MG	C2-N2	5.89	1.46	1.33
1	1	1915	3TD	C6-N1	5.87	1.46	1.36
1	1	2445	2MG	C2-N2	5.86	1.46	1.33
2	2	1498	UR3	C2-N3	5.84	1.50	1.39
1	1	747	5MU	C6-C5	5.74	1.44	1.34
4	4	341	5MU	C6-C5	5.71	1.44	1.34
1	1	1939	5MU	C6-C5	5.70	1.44	1.34
1	1	2503	2MA	C6-N1	5.65	1.43	1.35
1	1	2498	OMC	C4-N3	5.63	1.45	1.34
2	2	527	G7M	C2-N3	5.59	1.46	1.33
7	7	54	5MU	C6-C5	5.47	1.43	1.34
1	1	2069	G7M	C2-N3	5.42	1.46	1.33
1	1	2503	2MA	C5-C6	5.39	1.56	1.41
7	7	46	G7M	C4-N3	5.34	1.47	1.34
7	7	46	G7M	C2-N2	5.29	1.46	1.34
1	1	2251	OMG	C2-N3	5.24	1.45	1.33
21	M	81	4D4	CZ-NE	5.22	1.43	1.33
2	2	1518	MA6	C6-N6	5.17	1.52	1.36
2	2	1519	MA6	C6-N6	5.12	1.52	1.36
1	1	2498	OMC	C2-N1	5.11	1.51	1.40
7	7	8	4SU	C5-C4	4.99	1.49	1.42
2	2	1407	5MC	C6-N1	4.99	1.46	1.38
2	2	967	5MC	C6-N1	4.96	1.46	1.38
1	1	2552	OMU	C6-C5	4.95	1.46	1.35
7	7	47	3AU	C4-N3	-4.90	1.33	1.40
2	2	527	G7M	C5-N7	-4.90	1.33	1.39
1	1	1962	5MC	C6-N1	4.87	1.46	1.38
2	2	527	G7M	C2-N2	4.80	1.45	1.34
1	1	2069	G7M	C5-N7	-4.79	1.33	1.39
1	1	2069	G7M	C2-N2	4.75	1.45	1.34
2	2	1402	4OC	C4-N4	4.66	1.45	1.35
7	7	46	G7M	C2-N1	4.64	1.49	1.37
1	1	1915	3TD	C2-N3	4.62	1.48	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	1407	5MC	C4-N4	4.57	1.46	1.34
1	1	1962	5MC	C4-N4	4.55	1.45	1.34
2	2	967	5MC	C4-N4	4.55	1.45	1.34
1	1	2552	OMU	O2-C2	-4.46	1.14	1.23
2	2	1402	4OC	C2-N1	4.32	1.49	1.40
1	1	1962	5MC	C2-N1	4.30	1.49	1.40
2	2	1407	5MC	C2-N1	4.29	1.49	1.40
2	2	1519	MA6	C9-N6	4.28	1.55	1.45
2	2	967	5MC	C2-N1	4.27	1.49	1.40
1	1	745	1MG	C5-C6	4.25	1.56	1.45
2	2	1518	MA6	C9-N6	4.22	1.55	1.45
1	1	2251	OMG	C2-N1	4.19	1.48	1.37
7	7	8	4SU	C4-S4	-4.13	1.60	1.68
2	2	1402	4OC	C5-C4	4.04	1.49	1.40
1	1	745	1MG	C2-N2	3.92	1.41	1.34
7	7	46	G7M	C5-C6	3.86	1.54	1.43
1	1	2069	G7M	C5-C6	3.84	1.54	1.43
2	2	527	G7M	C5-C6	3.82	1.54	1.43
2	2	1498	UR3	C6-N1	3.79	1.47	1.38
4	4	342	PSU	C6-C5	3.78	1.39	1.35
7	7	32	PSU	C6-C5	3.68	1.39	1.35
1	1	2552	OMU	C4-N3	3.68	1.45	1.38
1	1	955	PSU	C6-C5	3.64	1.39	1.35
4	4	347	PSU	C6-C5	3.64	1.39	1.35
7	7	55	PSU	C6-C5	3.63	1.39	1.35
1	1	2605	PSU	C6-C5	3.62	1.39	1.35
7	7	39	PSU	C6-C5	3.62	1.39	1.35
1	1	2504	PSU	C6-C5	3.59	1.39	1.35
1	1	2498	OMC	C6-N1	3.57	1.46	1.38
1	1	746	PSU	C6-C5	3.54	1.39	1.35
1	1	1911	PSU	C6-C5	3.53	1.39	1.35
1	1	1917	PSU	C6-C5	3.52	1.39	1.35
2	2	516	PSU	C6-C5	3.50	1.39	1.35
7	7	47	3AU	C2-N3	-3.50	1.32	1.38
1	1	2552	OMU	O4-C4	-3.49	1.17	1.24
1	1	2457	PSU	C6-C5	3.34	1.39	1.35
7	7	46	G7M	C6-N1	3.28	1.44	1.38
7	7	47	3AU	C2-N1	-3.25	1.33	1.38
1	1	2580	PSU	C6-C5	3.25	1.39	1.35
2	2	1207	2MG	C5-C6	3.25	1.56	1.44
2	2	1516	2MG	C5-C6	3.24	1.56	1.44
7	7	8	4SU	C6-N1	3.22	1.45	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	7	46	G7M	C4-N9	3.21	1.46	1.38
2	2	966	2MG	C5-C6	3.21	1.56	1.44
1	1	2445	2MG	C5-C6	3.19	1.56	1.44
1	1	1835	2MG	C5-C6	3.19	1.56	1.44
2	2	1402	4OC	C6-N1	3.19	1.45	1.38
1	1	2552	OMU	C6-N1	2.97	1.45	1.38
1	1	2445	2MG	C5-N7	-2.95	1.33	1.39
2	2	1516	2MG	C5-N7	-2.94	1.33	1.39
2	2	966	2MG	C5-N7	-2.93	1.33	1.39
1	1	1835	2MG	C5-N7	-2.92	1.33	1.39
1	1	2498	OMC	O2-C2	-2.90	1.18	1.23
2	2	1498	UR3	C5-C4	2.90	1.51	1.43
2	2	1207	2MG	C5-N7	-2.90	1.33	1.39
1	1	2251	OMG	C5-C6	2.84	1.54	1.44
1	1	1915	3TD	C4-N3	2.83	1.46	1.40
7	7	46	G7M	C5-C4	2.81	1.45	1.38
1	1	2498	OMC	C5-C4	2.81	1.49	1.42
1	1	2503	2MA	C8-N7	2.79	1.36	1.31
1	1	2069	G7M	C2-N1	2.77	1.44	1.37
1	1	745	1MG	C5-N7	-2.76	1.33	1.39
2	2	527	G7M	C2-N1	2.71	1.44	1.37
2	2	1407	5MC	O2-C2	-2.67	1.18	1.23
1	1	1962	5MC	O2-C2	-2.66	1.18	1.23
2	2	967	5MC	O2-C2	-2.64	1.18	1.23
1	1	2251	OMG	C5-N7	-2.63	1.34	1.39
2	2	1402	4OC	O2-C2	-2.59	1.18	1.23
1	1	2069	G7M	C6-N1	2.57	1.43	1.38
2	2	1518	MA6	C5-C4	-2.56	1.34	1.39
1	1	2030	6MZ	C5-C4	-2.54	1.34	1.39
2	2	1519	MA6	C5-C4	-2.50	1.34	1.39
1	1	2503	2MA	C5-N7	-2.50	1.34	1.39
1	1	1618	6MZ	C5-C4	-2.50	1.34	1.39
2	2	527	G7M	C6-N1	2.48	1.43	1.38
1	1	1915	3TD	O4-C4	-2.47	1.17	1.23
1	1	2069	G7M	O6-C6	-2.44	1.19	1.23
7	7	47	3AU	C6-N1	-2.42	1.32	1.38
2	2	1498	UR3	O4-C4	-2.42	1.18	1.23
21	M	81	4D4	CZ-NH1	2.41	1.44	1.34
2	2	527	G7M	O6-C6	-2.41	1.19	1.23
2	2	1498	UR3	O2-C2	-2.41	1.18	1.22
2	2	1498	UR3	C4-N3	2.37	1.46	1.40
1	1	2552	OMU	C5-C4	2.36	1.48	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	1519	MA6	C5-N7	-2.25	1.34	1.39
2	2	1516	2MG	C6-N1	2.24	1.43	1.38
1	1	2445	2MG	C4-N9	-2.23	1.32	1.38
2	2	1207	2MG	C6-N1	2.23	1.43	1.38
7	7	47	3AU	C6-C5	2.23	1.40	1.35
7	7	37	MIA	C5-C4	-2.22	1.34	1.39
1	1	2030	6MZ	C5-N7	-2.21	1.34	1.39
2	2	1207	2MG	C4-N9	-2.21	1.32	1.38
1	1	1618	6MZ	C5-N7	-2.20	1.34	1.39
2	2	966	2MG	C6-N1	2.20	1.42	1.38
2	2	966	2MG	C4-N9	-2.18	1.32	1.38
2	2	1518	MA6	C5-N7	-2.17	1.34	1.39
2	2	1516	2MG	C4-N9	-2.16	1.32	1.38
1	1	1835	2MG	C6-N1	2.15	1.42	1.38
1	1	1917	PSU	O4'-C1'	-2.14	1.40	1.43
7	7	47	3AU	C10-N3	2.10	1.52	1.47
1	1	2445	2MG	C6-N1	2.10	1.42	1.38
7	7	37	MIA	C5-N7	-2.10	1.35	1.39
7	7	47	3AU	O2-C2	-2.02	1.18	1.22

All (308) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	7	37	MIA	N6-C6-N1	-23.59	88.40	118.50
7	7	37	MIA	C5-C6-N6	17.52	151.33	121.76
2	2	1519	MA6	N1-C6-N6	-15.07	100.61	117.08
2	2	1518	MA6	N1-C6-N6	-14.93	100.76	117.08
1	1	2503	2MA	C1'-N9-C8	-12.94	97.93	127.14
1	1	747	5MU	C5-C4-N3	11.99	125.55	115.31
1	1	1939	5MU	C5-C4-N3	11.99	125.55	115.31
7	7	54	5MU	C5-C4-N3	11.83	125.41	115.31
4	4	341	5MU	C5-C4-N3	11.79	125.37	115.31
1	1	2251	OMG	C1'-N9-C8	-11.59	93.72	126.70
1	1	2251	OMG	C1'-N9-C4	10.94	158.99	126.50
1	1	2503	2MA	C4-N9-C1'	10.76	152.22	126.59
7	7	37	MIA	C11-S10-C2	10.13	109.83	102.27
1	1	1939	5MU	C5-C6-N1	-9.93	113.12	123.34
1	1	747	5MU	C5-C6-N1	-9.87	113.18	123.34
4	4	341	5MU	C5-C6-N1	-9.50	113.56	123.34
7	7	54	5MU	C5-C6-N1	-9.10	113.98	123.34
2	2	1519	MA6	C5-C6-N6	8.26	139.69	125.30
2	2	1518	MA6	C5-C6-N6	8.17	139.52	125.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	2	966	2MG	C1'-N9-C8	-8.08	103.69	126.70
7	7	37	MIA	C4-N9-C1'	-8.06	107.40	126.59
1	1	1835	2MG	C1'-N9-C8	-7.99	103.94	126.70
1	1	2445	2MG	C1'-N9-C8	-7.84	104.37	126.70
7	7	8	4SU	C4-N3-C2	-7.83	119.74	127.34
2	2	1207	2MG	C1'-N9-C8	-7.66	104.89	126.70
2	2	1516	2MG	C1'-N9-C8	-7.60	105.07	126.70
7	7	37	MIA	C1'-N9-C8	7.55	144.18	127.14
2	2	1518	MA6	C1'-N9-C8	-7.17	110.94	127.14
2	2	1519	MA6	C1'-N9-C8	-6.99	111.35	127.14
7	7	37	MIA	C5-C4-N3	-6.62	119.75	127.19
1	1	1835	2MG	C2-N3-C4	6.40	119.97	112.04
1	1	2069	G7M	C1'-N9-C4	-6.36	107.60	126.50
2	2	1207	2MG	C2-N3-C4	6.32	119.87	112.04
2	2	1516	2MG	C2-N3-C4	6.27	119.81	112.04
2	2	966	2MG	C2-N3-C4	6.22	119.75	112.04
2	2	966	2MG	C1'-N9-C4	6.20	144.90	126.50
1	1	2445	2MG	C2-N3-C4	6.17	119.69	112.04
1	1	1835	2MG	C1'-N9-C4	6.09	144.60	126.50
2	2	1518	MA6	C4-N9-C1'	6.04	140.99	126.59
1	1	2445	2MG	C1'-N9-C4	6.02	144.39	126.50
2	2	1516	2MG	C1'-N9-C4	5.95	144.16	126.50
7	7	37	MIA	S10-C2-N1	5.91	136.46	116.01
2	2	1207	2MG	C1'-N9-C4	5.84	143.86	126.50
2	2	1519	MA6	C4-N9-C1'	5.83	140.49	126.59
7	7	8	4SU	C5-C4-N3	5.57	119.86	114.69
1	1	2503	2MA	C5-C4-N3	-5.57	120.93	127.19
1	1	2030	6MZ	N1-C2-N3	-5.53	119.94	128.60
7	7	54	5MU	O4-C4-C5	-5.52	118.50	124.90
2	2	1518	MA6	N1-C2-N3	-5.50	119.99	128.60
1	1	1618	6MZ	N1-C2-N3	-5.47	120.04	128.60
1	1	745	1MG	C5-C4-N3	-5.46	119.60	128.46
2	2	1519	MA6	N1-C2-N3	-5.44	120.08	128.60
1	1	2503	2MA	N9-C8-N7	-5.44	106.47	113.91
2	2	1519	MA6	C5-C4-N3	-5.30	119.83	126.75
1	1	2552	OMU	C4-N3-C2	-5.23	119.68	126.58
1	1	2030	6MZ	C5-C4-N3	-5.20	119.96	126.75
1	1	1618	6MZ	C5-C4-N3	-5.20	119.97	126.75
2	2	1518	MA6	C5-C4-N3	-5.17	120.01	126.75
2	2	527	G7M	C1'-N9-C4	-5.16	111.17	126.50
2	2	527	G7M	C2-N3-C4	5.10	121.39	112.30
1	1	2251	OMG	C5-C4-N3	-5.06	120.25	128.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2069	G7M	C1'-N9-C8	5.05	143.79	126.74
2	2	527	G7M	C5-C4-N3	-5.03	118.51	128.15
1	1	1915	3TD	N1-C2-N3	5.01	120.09	116.14
2	2	527	G7M	CN7-N7-C5	4.89	132.84	126.77
1	1	1939	5MU	O4-C4-C5	-4.83	119.30	124.90
1	1	747	5MU	O4-C4-C5	-4.83	119.30	124.90
1	1	1835	2MG	C5-C4-N3	-4.82	120.64	128.46
1	1	1939	5MU	C4-N3-C2	-4.82	121.12	127.35
1	1	747	5MU	C4-N3-C2	-4.78	121.16	127.35
2	2	1498	UR3	C4-N3-C2	-4.76	120.08	124.56
1	1	2069	G7M	C2-N3-C4	4.73	120.72	112.30
2	2	1516	2MG	C5-C4-N3	-4.70	120.84	128.46
2	2	966	2MG	C5-C4-N3	-4.65	120.91	128.46
4	4	347	PSU	C4-N3-C2	-4.63	119.66	126.34
4	4	347	PSU	N1-C2-N3	4.61	120.36	115.13
1	1	2445	2MG	C5-C4-N3	-4.60	120.99	128.46
7	7	46	G7M	C2-N3-C4	4.59	120.47	112.30
1	1	2580	PSU	N1-C2-N3	4.58	120.32	115.13
2	2	1207	2MG	C5-C4-N3	-4.57	121.05	128.46
1	1	1618	6MZ	N9-C8-N7	-4.56	107.68	113.91
1	1	2069	G7M	CN7-N7-C5	4.55	132.43	126.77
1	1	1911	PSU	C4-N3-C2	-4.55	119.79	126.34
4	4	341	5MU	C4-N3-C2	-4.55	121.46	127.35
1	1	2030	6MZ	N9-C8-N7	-4.54	107.70	113.91
1	1	2504	PSU	C4-N3-C2	-4.53	119.81	126.34
7	7	55	PSU	C4-N3-C2	-4.53	119.82	126.34
2	2	516	PSU	C4-N3-C2	-4.52	119.82	126.34
1	1	746	PSU	C4-N3-C2	-4.51	119.83	126.34
1	1	2069	G7M	C5-C4-N3	-4.51	119.51	128.15
4	4	342	PSU	N1-C2-N3	4.50	120.22	115.13
1	1	2580	PSU	C4-N3-C2	-4.47	119.90	126.34
1	1	2605	PSU	C4-N3-C2	-4.47	119.91	126.34
1	1	2504	PSU	N1-C2-N3	4.46	120.18	115.13
1	1	2251	OMG	C2-N3-C4	4.45	120.22	112.30
1	1	1917	PSU	C4-N3-C2	-4.44	119.94	126.34
7	7	37	MIA	N9-C8-N7	-4.44	107.84	113.91
4	4	341	5MU	O4-C4-C5	-4.43	119.76	124.90
1	1	955	PSU	C4-N3-C2	-4.43	119.95	126.34
1	1	2457	PSU	C4-N3-C2	-4.42	119.97	126.34
1	1	955	PSU	N1-C2-N3	4.42	120.14	115.13
4	4	341	5MU	C5M-C5-C4	4.42	123.63	118.77
2	2	1519	MA6	N9-C8-N7	-4.41	107.88	113.91

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	1917	PSU	N1-C2-N3	4.41	120.12	115.13
1	1	1911	PSU	N1-C2-N3	4.40	120.12	115.13
7	7	37	MIA	C4-C5-C6	4.40	120.22	116.81
1	1	746	PSU	N1-C2-N3	4.40	120.12	115.13
1	1	2605	PSU	N1-C2-N3	4.40	120.11	115.13
7	7	39	PSU	C4-N3-C2	-4.40	120.00	126.34
4	4	342	PSU	C4-N3-C2	-4.39	120.02	126.34
2	2	516	PSU	N1-C2-N3	4.37	120.09	115.13
1	1	1939	5MU	N3-C2-N1	4.37	120.69	114.89
7	7	39	PSU	N1-C2-N3	4.37	120.08	115.13
1	1	747	5MU	N3-C2-N1	4.35	120.66	114.89
7	7	55	PSU	N1-C2-N3	4.35	120.05	115.13
1	1	2457	PSU	N1-C2-N3	4.32	120.03	115.13
7	7	32	PSU	C4-N3-C2	-4.32	120.11	126.34
4	4	341	5MU	N3-C2-N1	4.32	120.62	114.89
7	7	54	5MU	C4-N3-C2	-4.31	121.78	127.35
7	7	32	PSU	N1-C2-N3	4.30	120.00	115.13
2	2	1518	MA6	N9-C8-N7	-4.26	108.08	113.91
2	2	527	G7M	N9-C4-N3	4.25	134.47	125.94
1	1	1835	2MG	N9-C8-N7	-4.20	105.47	113.39
1	1	747	5MU	C5M-C5-C4	4.20	123.39	118.77
7	7	54	5MU	C5M-C5-C4	4.18	123.37	118.77
2	2	966	2MG	N9-C8-N7	-4.17	105.53	113.39
2	2	1516	2MG	C2-N1-C6	-4.17	119.68	124.48
7	7	46	G7M	C5-C4-N3	-4.17	120.16	128.15
2	2	1207	2MG	N9-C8-N7	-4.16	105.56	113.39
2	2	527	G7M	C5-C6-N1	4.14	120.43	111.79
1	1	747	5MU	C5M-C5-C6	-4.13	117.33	122.85
4	4	341	5MU	C5M-C5-C6	-4.12	117.35	122.85
1	1	2445	2MG	N9-C8-N7	-4.11	105.65	113.39
7	7	37	MIA	S10-C2-N3	-4.11	101.80	116.01
2	2	527	G7M	C1'-N9-C8	4.11	140.60	126.74
7	7	37	MIA	N3-C4-N9	4.09	132.66	126.99
7	7	37	MIA	C12-C13-C14	-4.08	119.20	127.14
1	1	1939	5MU	C5M-C5-C4	4.08	123.26	118.77
1	1	1939	5MU	C5M-C5-C6	-4.08	117.41	122.85
1	1	1835	2MG	C2-N1-C6	-4.07	119.80	124.48
1	1	2069	G7M	C5-C6-N1	4.07	120.28	111.79
1	1	1915	3TD	C4-N3-C2	-4.05	120.21	124.61
2	2	966	2MG	C2-N1-C6	-4.03	119.84	124.48
1	1	2030	6MZ	C9-N6-C6	-4.01	119.42	122.87
2	2	1516	2MG	N9-C8-N7	-3.96	105.93	113.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	2	1519	MA6	C4-C5-C6	3.95	120.30	115.88
2	2	1207	2MG	C2-N1-C6	-3.94	119.94	124.48
7	7	54	5MU	N3-C2-N1	3.94	120.12	114.89
1	1	2552	OMU	N3-C2-N1	3.89	120.05	114.89
1	1	2445	2MG	C2-N1-C6	-3.89	120.01	124.48
1	1	1835	2MG	N9-C4-N3	3.87	133.70	125.94
7	7	8	4SU	N3-C2-N1	3.85	120.00	114.89
2	2	1518	MA6	C4-C5-C6	3.85	120.19	115.88
7	7	46	G7M	C5-C6-N1	3.83	119.80	111.79
1	1	2503	2MA	C4-N9-C8	3.80	109.85	105.73
1	1	1618	6MZ	C4-C5-C6	3.80	119.75	116.81
7	7	54	5MU	C5M-C5-C6	-3.77	117.81	122.85
2	2	527	G7M	CN7-N7-C8	-3.76	119.04	124.84
1	1	745	1MG	C2-N3-C4	3.72	120.34	111.98
1	1	2503	2MA	N3-C4-N9	3.68	132.10	126.99
1	1	2503	2MA	C5-N7-C8	3.64	108.69	103.51
1	1	2030	6MZ	C2-N3-C4	3.62	120.30	111.75
1	1	2069	G7M	CN7-N7-C8	-3.62	119.25	124.84
49	q	89	0TD	OD2-CG-CB	3.61	120.94	113.15
1	1	2030	6MZ	C4-C5-C6	3.60	119.59	116.81
2	2	966	2MG	N9-C4-N3	3.58	133.12	125.94
2	2	1518	MA6	C2-N1-C6	3.57	120.18	111.75
1	1	1618	6MZ	C2-N3-C4	3.55	120.14	111.75
2	2	1519	MA6	C2-N1-C6	3.54	120.11	111.75
1	1	2445	2MG	N9-C4-N3	3.54	133.04	125.94
2	2	527	G7M	O6-C6-C5	-3.52	120.12	128.06
1	1	2069	G7M	N9-C4-N3	3.52	133.00	125.94
1	1	2069	G7M	O6-C6-C5	-3.51	120.14	128.06
2	2	1519	MA6	C2-N3-C4	3.48	119.97	111.75
2	2	1518	MA6	C2-N3-C4	3.45	119.91	111.75
2	2	1207	2MG	N9-C4-N3	3.44	132.84	125.94
1	1	1962	5MC	C5-C6-N1	-3.40	119.84	123.34
21	M	81	4D4	NE-CZ-NH2	3.40	126.67	120.70
2	2	1516	2MG	N9-C4-N3	3.40	132.76	125.94
1	1	745	1MG	N9-C4-N3	3.37	132.70	125.94
2	2	1519	MA6	C5-N7-C8	3.34	108.25	103.51
7	7	46	G7M	O6-C6-C5	-3.31	120.59	128.06
7	7	37	MIA	C5-N7-C8	3.28	108.17	103.51
1	1	1618	6MZ	C5-N7-C8	3.27	108.16	103.51
1	1	2552	OMU	C5-C4-N3	3.27	119.74	114.84
1	1	2030	6MZ	C5-N7-C8	3.26	108.14	103.51
1	1	1618	6MZ	N3-C4-N9	3.25	132.44	127.08

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	2	1519	MA6	N3-C4-N9	3.23	132.41	127.08
1	1	2503	2MA	N3-C2-N1	-3.23	119.79	125.72
7	7	47	3AU	C5-C4-N3	3.22	119.75	115.50
1	1	2069	G7M	C2-N1-C6	-3.22	119.23	125.10
1	1	2030	6MZ	N3-C4-N9	3.18	132.33	127.08
7	7	47	3AU	C4-N3-C2	-3.18	120.65	124.63
2	2	527	G7M	C2-N1-C6	-3.17	119.31	125.10
7	7	8	4SU	C5-C4-S4	-3.16	120.40	124.47
2	2	1518	MA6	N3-C4-N9	3.15	132.28	127.08
2	2	1407	5MC	C5-C6-N1	-3.15	120.10	123.34
2	2	1518	MA6	C5-N7-C8	3.14	107.98	103.51
1	1	2580	PSU	O2-C2-N1	-3.13	119.35	122.79
2	2	967	5MC	C5-C6-N1	-3.11	120.14	123.34
1	1	1618	6MZ	C9-N6-C6	-3.11	120.19	122.87
1	1	2251	OMG	C2-N1-C6	-2.99	119.66	125.10
7	7	46	G7M	C2-N1-C6	-2.91	119.78	125.10
7	7	37	MIA	N3-C2-N1	-2.84	121.74	126.95
1	1	1835	2MG	C8-N9-C4	2.84	111.45	106.05
1	1	2552	OMU	O4-C4-C5	-2.80	120.23	125.16
1	1	745	1MG	N9-C8-N7	-2.78	108.15	113.39
2	2	966	2MG	C8-N9-C4	2.78	111.34	106.05
4	4	347	PSU	O2-C2-N1	-2.76	119.75	122.79
1	1	2457	PSU	O2-C2-N1	-2.75	119.76	122.79
4	4	341	5MU	O4-C4-N3	-2.74	114.87	120.12
2	2	1207	2MG	C8-N9-C4	2.73	111.25	106.05
1	1	2445	2MG	C8-N9-C4	2.73	111.24	106.05
1	1	1835	2MG	C5-C6-N1	2.71	120.08	113.19
1	1	2251	OMG	C5-C6-N1	2.70	120.05	113.19
2	2	516	PSU	O2-C2-N1	-2.70	119.82	122.79
1	1	2251	OMG	N9-C4-N3	2.68	131.33	125.94
1	1	745	1MG	C5-C6-N1	2.68	120.08	114.91
2	2	1207	2MG	N1-C2-N3	-2.66	119.84	123.95
1	1	1835	2MG	N1-C2-N3	-2.66	119.84	123.95
1	1	1917	PSU	O2-C2-N1	-2.64	119.89	122.79
1	1	1917	PSU	O4'-C1'-C2'	2.63	108.86	105.14
1	1	2605	PSU	O2-C2-N1	-2.63	119.89	122.79
2	2	1207	2MG	C5-C6-N1	2.62	119.85	113.19
2	2	966	2MG	C5-C6-N1	2.61	119.82	113.19
1	1	955	PSU	O2-C2-N1	-2.59	119.93	122.79
1	1	2504	PSU	O2-C2-N1	-2.59	119.93	122.79
7	7	39	PSU	O2-C2-N1	-2.59	119.94	122.79
7	7	37	MIA	C2-N3-C4	2.59	119.18	112.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	747	5MU	O4-C4-N3	-2.59	115.15	120.12
1	1	1939	5MU	O4-C4-N3	-2.59	115.15	120.12
7	7	55	PSU	O2-C2-N1	-2.59	119.94	122.79
2	2	1516	2MG	C5-C6-N1	2.58	119.74	113.19
1	1	2445	2MG	C5-C6-N1	2.57	119.72	113.19
1	1	2445	2MG	N1-C2-N3	-2.56	119.99	123.95
1	1	1835	2MG	C8-N7-C5	2.56	108.87	104.24
1	1	746	PSU	O2-C2-N1	-2.56	119.98	122.79
1	1	1911	PSU	O2-C2-N1	-2.55	119.99	122.79
7	7	32	PSU	O2-C2-N1	-2.54	119.99	122.79
2	2	966	2MG	C8-N7-C5	2.54	108.84	104.24
1	1	2580	PSU	C6-N1-C2	-2.54	120.08	122.68
2	2	966	2MG	N1-C2-N3	-2.54	120.02	123.95
4	4	342	PSU	O2-C2-N1	-2.53	120.00	122.79
1	1	2251	OMG	N9-C8-N7	-2.53	108.63	113.39
1	1	745	1MG	C1'-N9-C4	-2.52	119.01	126.50
1	1	1618	6MZ	C4-N9-C8	2.50	108.44	105.73
2	2	1207	2MG	C8-N7-C5	2.50	108.76	104.24
1	1	1835	2MG	O6-C6-C5	-2.48	120.01	126.60
4	4	341	5MU	O2-C2-N1	-2.48	119.49	122.79
2	2	1516	2MG	C8-N9-C4	2.48	110.77	106.05
1	1	2030	6MZ	C4-N9-C8	2.47	108.41	105.73
1	1	2251	OMG	O6-C6-C5	-2.47	120.05	126.60
1	1	2445	2MG	O6-C6-C5	-2.46	120.06	126.60
2	2	966	2MG	O6-C6-C5	-2.46	120.08	126.60
7	7	37	MIA	C4-N9-C8	2.45	108.39	105.73
21	M	81	4D4	CB-CA-C	-2.45	107.85	111.77
2	2	1516	2MG	N1-C2-N3	-2.45	120.17	123.95
1	1	2445	2MG	C8-N7-C5	2.45	108.67	104.24
2	2	1516	2MG	C8-N7-C5	2.45	108.67	104.24
1	1	2580	PSU	O4'-C1'-C2'	2.44	108.59	105.14
2	2	1207	2MG	O6-C6-C5	-2.44	120.13	126.60
2	2	1516	2MG	O6-C6-C5	-2.42	120.17	126.60
4	4	342	PSU	C6-N1-C2	-2.39	120.24	122.68
7	7	37	MIA	C16-C14-C15	2.37	119.85	114.60
1	1	1939	5MU	O2-C2-N1	-2.37	119.64	122.79
1	1	747	5MU	O2-C2-N1	-2.33	119.69	122.79
7	7	54	5MU	C1'-N1-C2	2.31	121.76	117.57
49	q	89	0TD	OD1-CG-CB	-2.31	117.60	122.44
7	7	39	PSU	C6-N1-C2	-2.31	120.32	122.68
1	1	1917	PSU	C6-N1-C2	-2.30	120.33	122.68
1	1	955	PSU	C6-N1-C2	-2.29	120.34	122.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	2	1519	MA6	C4-N9-C8	2.25	108.16	105.73
1	1	2504	PSU	C6-N1-C2	-2.24	120.39	122.68
4	4	347	PSU	C6-N1-C2	-2.23	120.40	122.68
2	2	1402	4OC	C6-C5-C4	2.23	119.69	116.96
7	7	46	G7M	N9-C8-N7	-2.22	106.72	112.21
1	1	2605	PSU	C6-N1-C2	-2.22	120.42	122.68
1	1	745	1MG	C1'-N9-C8	2.21	133.00	126.70
21	M	81	4D4	O-C-CA	-2.21	118.98	124.78
7	7	32	PSU	C6-N1-C2	-2.19	120.44	122.68
2	2	1519	MA6	C4-C5-N7	-2.19	107.95	110.62
1	1	2030	6MZ	C4-N9-C1'	-2.18	121.39	126.59
1	1	746	PSU	C6-N1-C2	-2.17	120.47	122.68
2	2	1518	MA6	C4-N9-C8	2.16	108.07	105.73
1	1	1962	5MC	CM5-C5-C6	-2.16	119.97	122.85
1	1	1618	6MZ	C4-N9-C1'	-2.15	121.46	126.59
7	7	55	PSU	C6-N1-C2	-2.15	120.48	122.68
7	7	37	MIA	C4-C5-N7	-2.15	108.00	110.62
2	2	516	PSU	C6-N1-C2	-2.15	120.49	122.68
1	1	2503	2MA	CM2-C2-N1	2.15	120.50	117.15
1	1	1915	3TD	C6-C5-C4	2.14	119.70	118.22
1	1	2503	2MA	C4-C5-N7	-2.13	108.02	110.62
1	1	2030	6MZ	C4-C5-N7	-2.12	108.03	110.62
1	1	2503	2MA	N6-C6-N1	2.11	120.02	117.03
1	1	2457	PSU	C6-N1-C2	-2.11	120.53	122.68
1	1	1911	PSU	C6-N1-C2	-2.11	120.53	122.68
7	7	54	5MU	O4-C4-N3	-2.10	116.09	120.12
2	2	1498	UR3	C6-N1-C2	-2.10	119.91	121.79
7	7	32	PSU	O4'-C1'-C2'	2.08	108.08	105.14
2	2	1516	2MG	CM2-N2-C2	-2.07	119.29	123.86
1	1	2552	OMU	O2-C2-N1	-2.07	120.04	122.79
4	4	347	PSU	C6-C5-C4	2.07	119.64	118.20
1	1	745	1MG	C8-N7-C5	2.06	107.97	104.24
2	2	1407	5MC	CM5-C5-C6	-2.05	120.11	122.85
1	1	1618	6MZ	C4-C5-N7	-2.05	108.12	110.62
2	2	1518	MA6	C4-C5-N7	-2.02	108.16	110.62
7	7	46	G7M	C5-C4-N9	2.01	110.29	105.89
1	1	746	PSU	C6-C5-C4	2.00	119.60	118.20

There are no chirality outliers.

All (56) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
21	M	81	4D4	C-CA-CB-OB
21	M	81	4D4	C-CA-CB-CG
21	M	81	4D4	N-CA-CB-OB
21	M	81	4D4	N-CA-CB-CG
49	q	89	0TD	CG-CB-SB-CSB
49	q	89	0TD	CA-CB-CG-OD2
49	q	89	0TD	CA-CB-CG-OD1
1	1	1618	6MZ	N1-C6-N6-C9
1	1	1915	3TD	C3'-C4'-C5'-O5'
1	1	1915	3TD	O4'-C4'-C5'-O5'
1	1	2030	6MZ	N1-C6-N6-C9
1	1	2030	6MZ	C3'-C4'-C5'-O5'
1	1	2069	G7M	O4'-C4'-C5'-O5'
1	1	2251	OMG	O4'-C4'-C5'-O5'
1	1	2445	2MG	C3'-C4'-C5'-O5'
2	2	527	G7M	O4'-C4'-C5'-O5'
2	2	527	G7M	C3'-C4'-C5'-O5'
2	2	966	2MG	O4'-C4'-C5'-O5'
2	2	1518	MA6	C3'-C4'-C5'-O5'
7	7	37	MIA	C5-C6-N6-C12
7	7	46	G7M	O4'-C4'-C5'-O5'
7	7	47	3AU	N3-C10-C11-C12
1	1	2503	2MA	O4'-C4'-C5'-O5'
2	2	966	2MG	C3'-C4'-C5'-O5'
2	2	1498	UR3	O4'-C4'-C5'-O5'
2	2	1518	MA6	O4'-C4'-C5'-O5'
7	7	46	G7M	C3'-C4'-C5'-O5'
1	1	2251	OMG	C3'-C4'-C5'-O5'
1	1	2498	OMC	C3'-C4'-C5'-O5'
1	1	2498	OMC	O4'-C4'-C5'-O5'
2	2	1498	UR3	C3'-C4'-C5'-O5'
1	1	2503	2MA	C3'-C4'-C5'-O5'
4	4	341	5MU	O4'-C4'-C5'-O5'
1	1	2030	6MZ	C4'-C5'-O5'-P
7	7	37	MIA	N1-C6-N6-C12
1	1	2445	2MG	O4'-C4'-C5'-O5'
2	2	1519	MA6	C3'-C4'-C5'-O5'
1	1	2030	6MZ	O4'-C4'-C5'-O5'
2	2	1519	MA6	O4'-C4'-C5'-O5'
4	4	341	5MU	C3'-C4'-C5'-O5'
1	1	2504	PSU	O4'-C4'-C5'-O5'
1	1	1618	6MZ	C5-C6-N6-C9
7	7	8	4SU	C4'-C5'-O5'-P

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Mol	Chain	Res	Type	Atoms
4	4	342	PSU	C4'-C5'-O5'-P
1	1	2503	2MA	C4'-C5'-O5'-P
1	1	746	PSU	O4'-C1'-C5-C4
1	1	1915	3TD	O4'-C1'-C5-C4
1	1	2445	2MG	C4'-C5'-O5'-P
49	q	89	0TD	CA-CB-SB-CSB
49	q	89	0TD	SB-CB-CG-OD2
1	1	747	5MU	C4'-C5'-O5'-P
1	1	2504	PSU	C3'-C4'-C5'-O5'
1	1	746	PSU	O4'-C1'-C5-C6
1	1	1915	3TD	O4'-C1'-C5-C6
4	4	342	PSU	C3'-C4'-C5'-O5'
1	1	2251	OMG	C4'-C5'-O5'-P

There are no ring outliers.

27 monomers are involved in 43 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	1	746	PSU	1	0
1	1	2030	6MZ	2	0
1	1	2457	PSU	2	0
2	2	1518	MA6	3	0
2	2	1519	MA6	2	0
1	1	1835	2MG	1	0
1	1	1917	PSU	1	0
2	2	1402	4OC	1	0
1	1	745	1MG	1	0
2	2	1516	2MG	3	0
49	q	89	0TD	3	0
7	7	46	G7M	1	0
2	2	516	PSU	1	0
7	7	32	PSU	7	0
2	2	967	5MC	1	0
2	2	527	G7M	1	0
1	1	2504	PSU	1	0
1	1	2552	OMU	1	0
2	2	966	2MG	1	0
4	4	342	PSU	1	0
1	1	2580	PSU	1	0
1	1	1915	3TD	2	0
7	7	37	MIA	4	0
1	1	1911	PSU	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	7	47	3AU	1	0
1	1	2251	OMG	1	0
2	2	1207	2MG	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 195 ligands modelled in this entry, 193 are monoatomic - leaving 2 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
60	KIR	6	401	-	57,59,59	0.95	3 (5%)	63,84,84	1.01	2 (3%)
61	GDP	6	402	-	28,30,30	1.14	3 (10%)	44,47,47	1.84	8 (18%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
60	KIR	6	401	-	-	22/53/98/98	0/3/3/3
61	GDP	6	402	-	-	1/16/32/32	0/3/3/3

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	6	401	KIR	C37-C36	-4.13	1.32	1.44
60	6	401	KIR	C23-C22	-3.55	1.32	1.43
61	6	402	GDP	C5-C4	3.13	1.47	1.38
61	6	402	GDP	C6-N1	-2.47	1.34	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	6	401	KIR	C8-C7	-2.45	1.42	1.48
61	6	402	GDP	C5-N7	-2.09	1.35	1.39

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
61	6	402	GDP	C5-C4-N3	-6.15	118.49	128.46
61	6	402	GDP	C2-N3-C4	4.94	121.11	112.30
61	6	402	GDP	N9-C4-N3	4.55	135.08	125.94
60	6	401	KIR	C11-C10-C9	3.73	131.10	123.47
61	6	402	GDP	PA-O3A-PB	-3.49	120.84	132.83
60	6	401	KIR	C20-C21-C22	3.44	122.41	119.13
61	6	402	GDP	C6-C5-N7	3.24	136.27	130.25
61	6	402	GDP	C4-C5-N7	-2.66	106.50	110.72
61	6	402	GDP	C3'-C2'-C1'	2.23	105.66	101.43
61	6	402	GDP	O6-C6-C5	-2.07	121.11	126.60

There are no chirality outliers.

All (23) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
60	6	401	KIR	C17-C19-C20-O20
60	6	401	KIR	C20-C21-C22-C23
60	6	401	KIR	C44-C21-C22-C23
60	6	401	KIR	C22-C23-C24-C25
60	6	401	KIR	C9-C10-C11-C12
60	6	401	KIR	C11-C12-C13-C14
60	6	401	KIR	C16-C17-C19-C20
60	6	401	KIR	C16-C17-C19-C42
60	6	401	KIR	O18-C17-C19-C20
60	6	401	KIR	O18-C17-C19-C42
60	6	401	KIR	C27-C28-C45-C46
60	6	401	KIR	C29-C28-C45-C46
60	6	401	KIR	C33-C35-C36-C37
60	6	401	KIR	C36-C37-C38-C39
60	6	401	KIR	C21-C22-C23-C24
60	6	401	KIR	C42-C19-C20-O20
60	6	401	KIR	C11-C10-C9-C8
60	6	401	KIR	C41-C8-C9-C10
60	6	401	KIR	C7-C8-C9-C10
60	6	401	KIR	C23-C24-C25-N26
60	6	401	KIR	C42-C19-C20-C21

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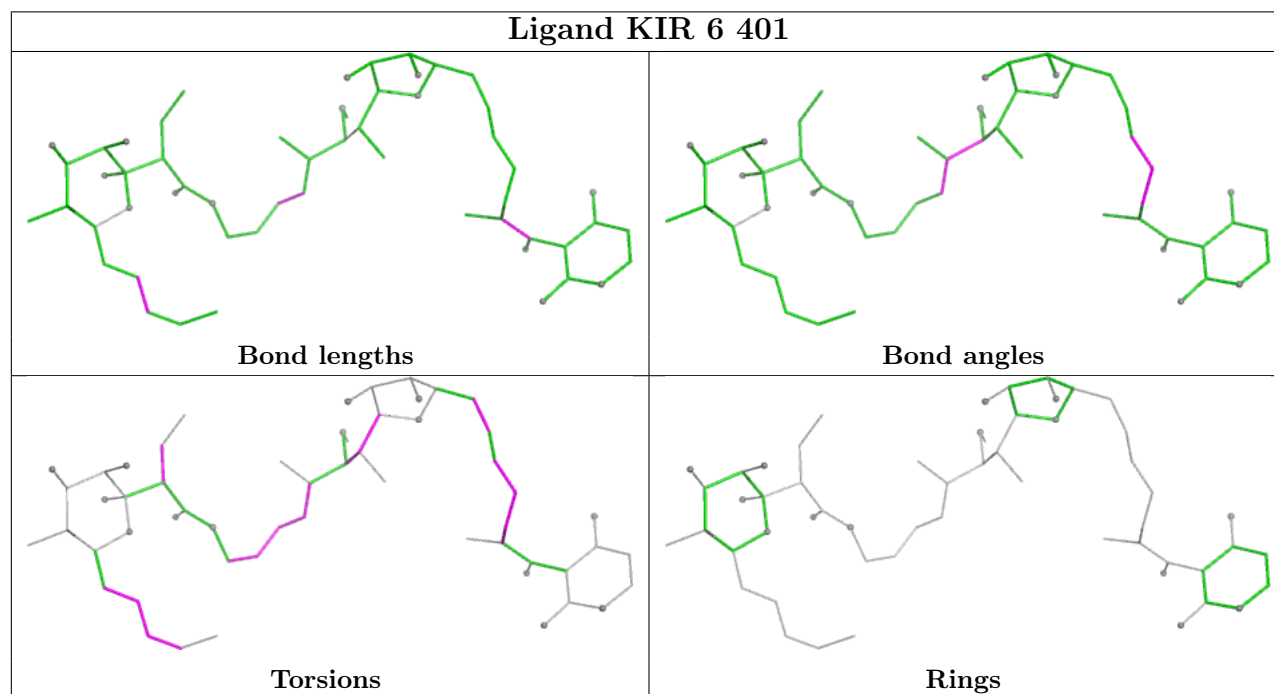
Mol	Chain	Res	Type	Atoms
60	6	401	KIR	C35-C36-C37-C38
61	6	402	GDP	C3'-C4'-C5'-O5'

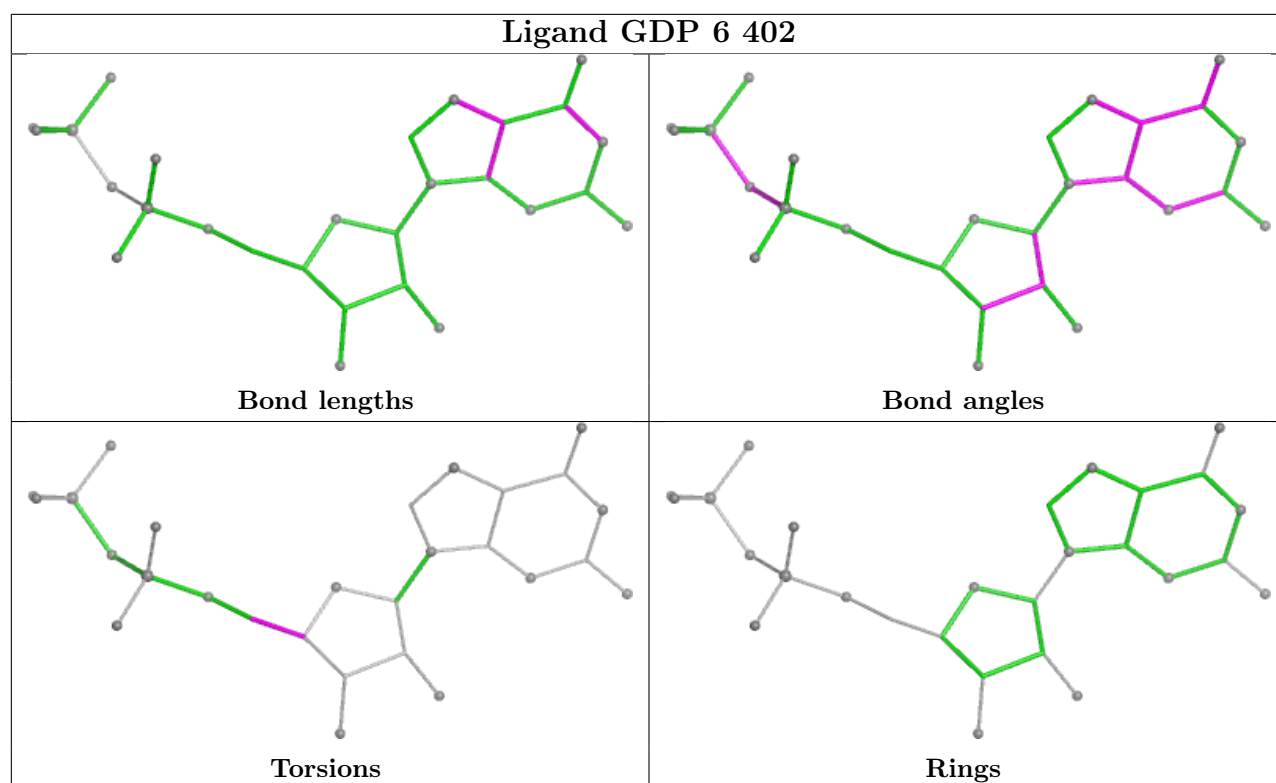
There are no ring outliers.

1 monomer is involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
60	6	401	KIR	3	0

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





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

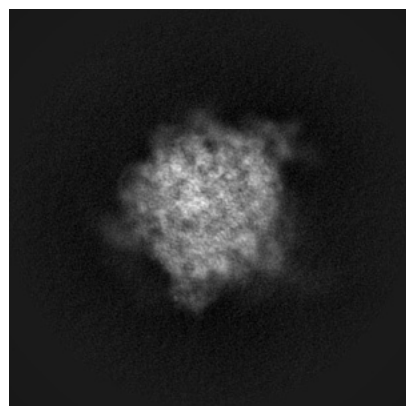
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-11710. These allow visual inspection of the internal detail of the map and identification of artifacts.

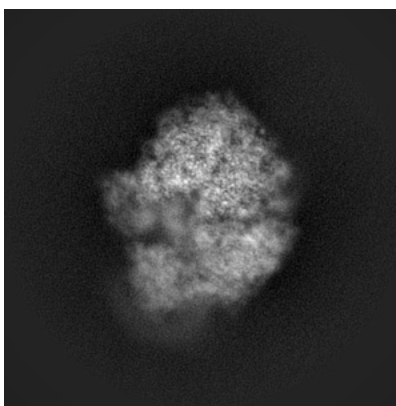
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

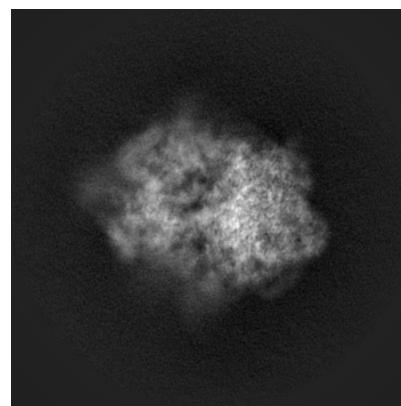
6.1.1 Primary map



X

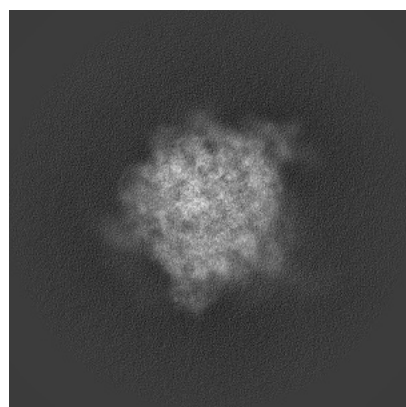


Y

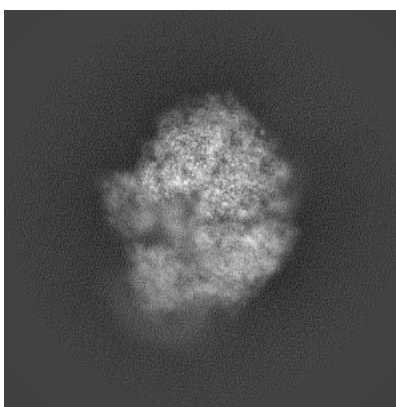


Z

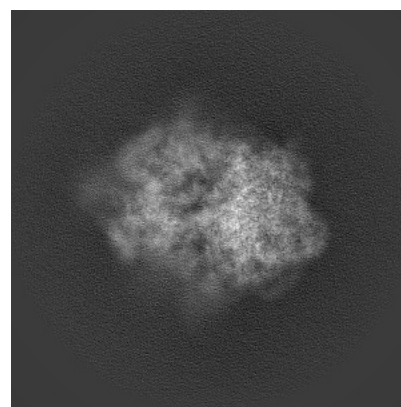
6.1.2 Raw map



X



Y

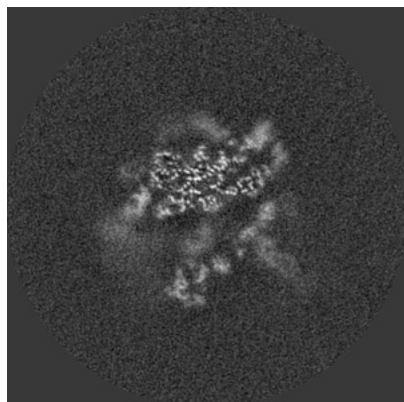


Z

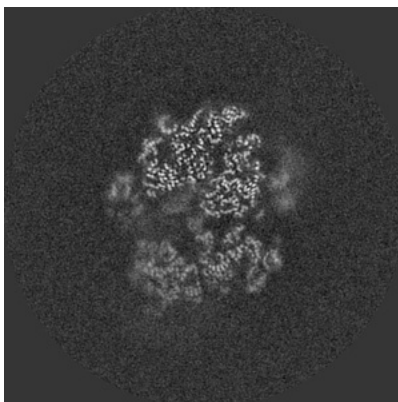
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

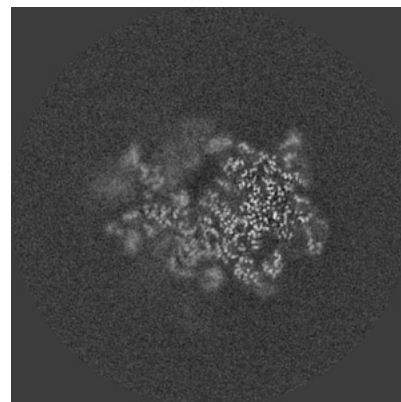
6.2.1 Primary map



X Index: 208

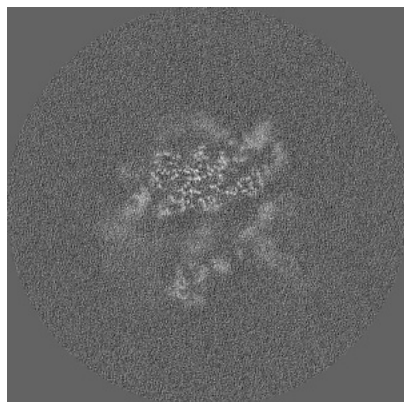


Y Index: 208

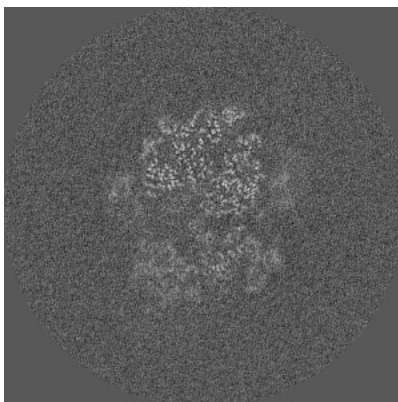


Z Index: 208

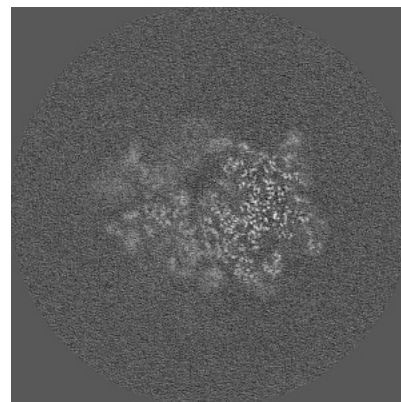
6.2.2 Raw map



X Index: 208



Y Index: 208

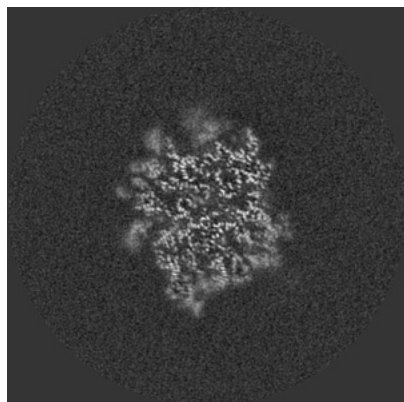


Z Index: 208

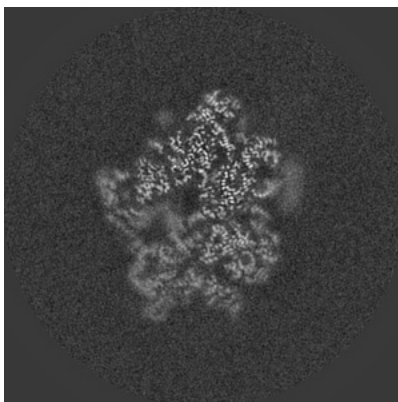
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

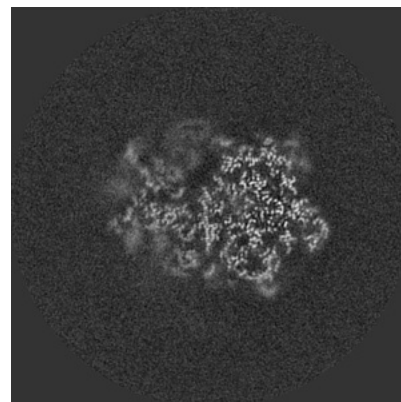
6.3.1 Primary map



X Index: 236

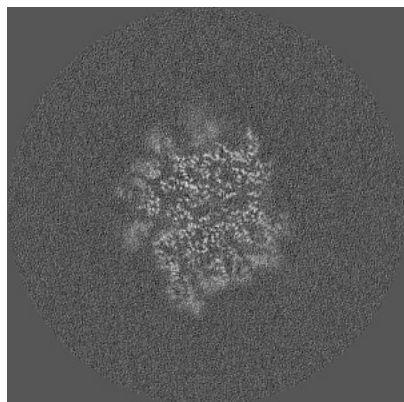


Y Index: 194

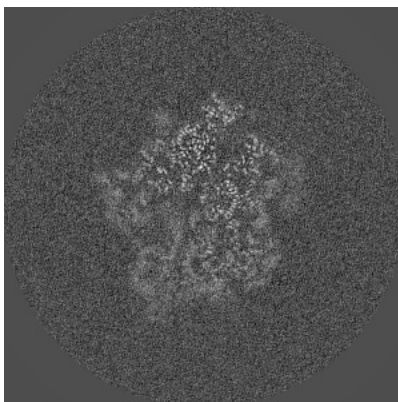


Z Index: 213

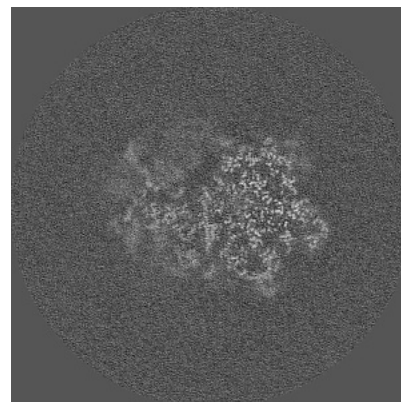
6.3.2 Raw map



X Index: 235



Y Index: 199

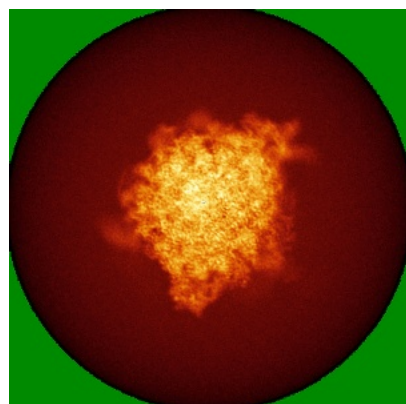


Z Index: 213

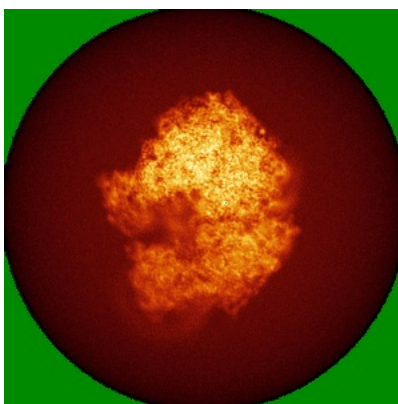
The images above show the largest variance slices of the map in three orthogonal directions.

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

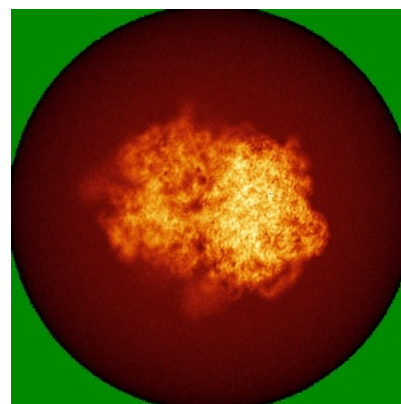
6.4.1 Primary map



X

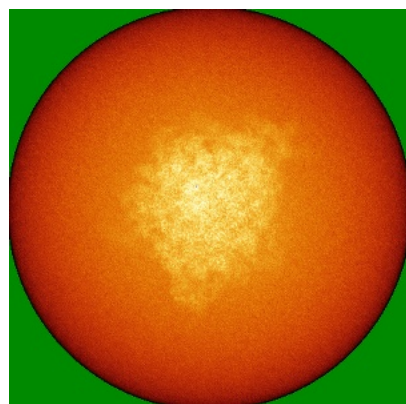


Y

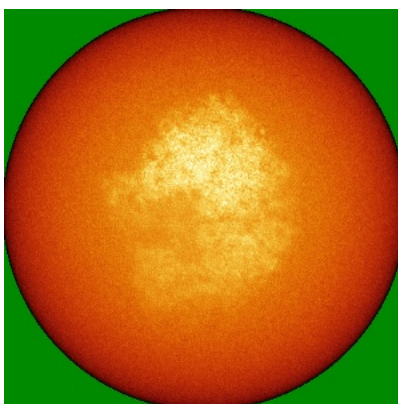


Z

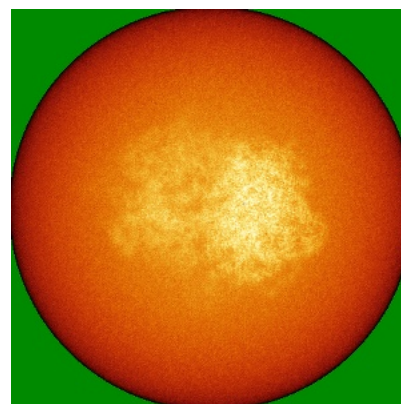
6.4.2 Raw map



X



Y

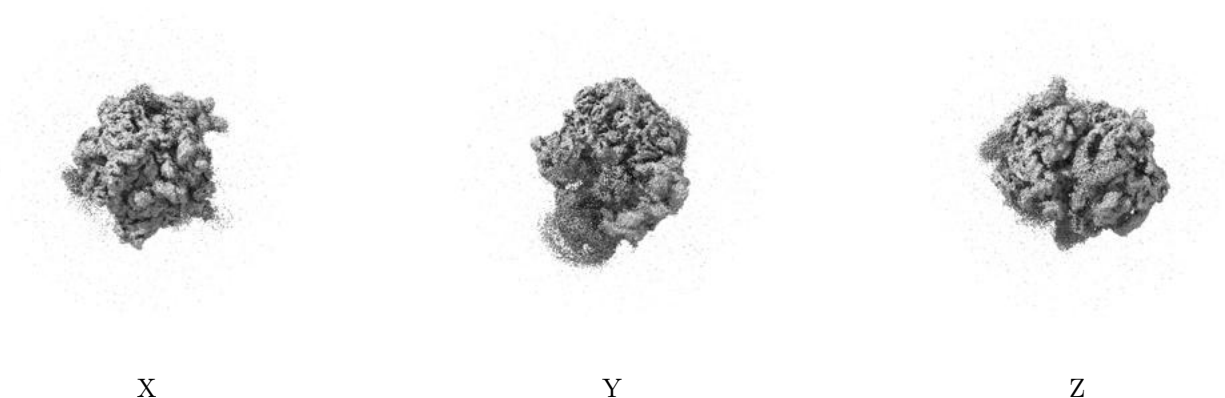


Z

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

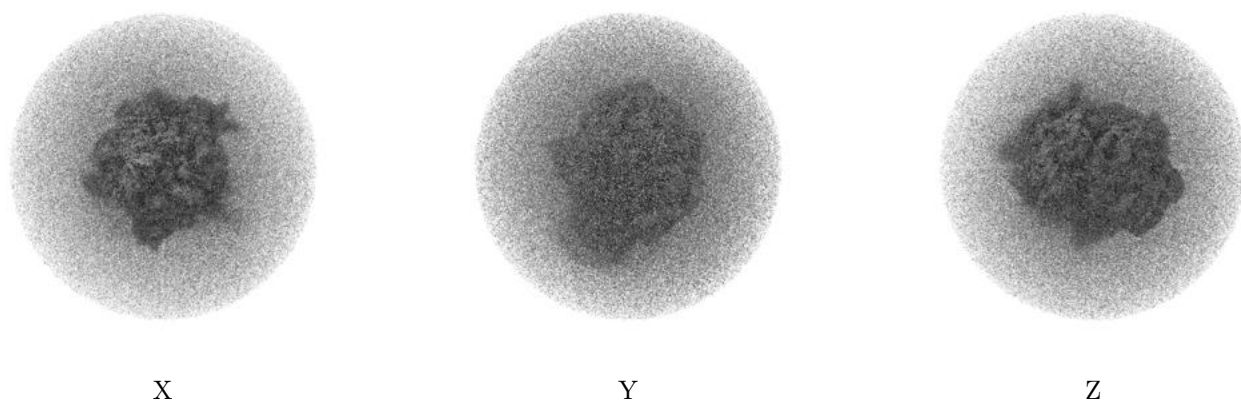
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



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

6.5.2 Raw map



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

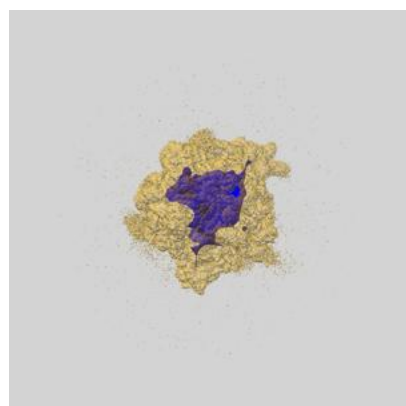
6.6 Mask visualisation [i](#)

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

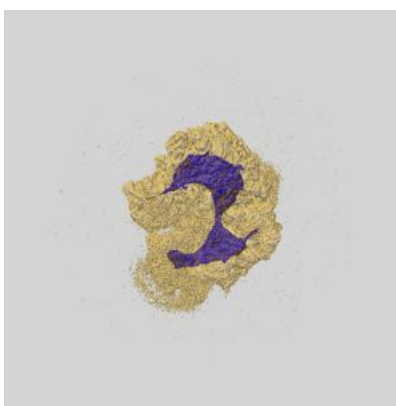
A mask typically either:

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

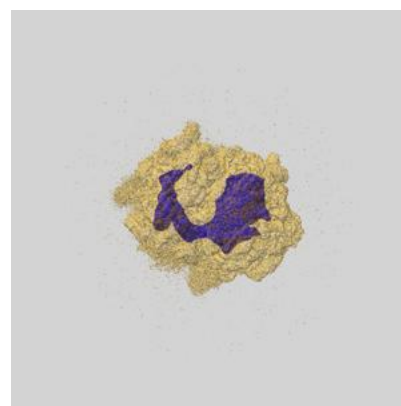
6.6.1 emd_11710_msk_1.map [i](#)



X



Y

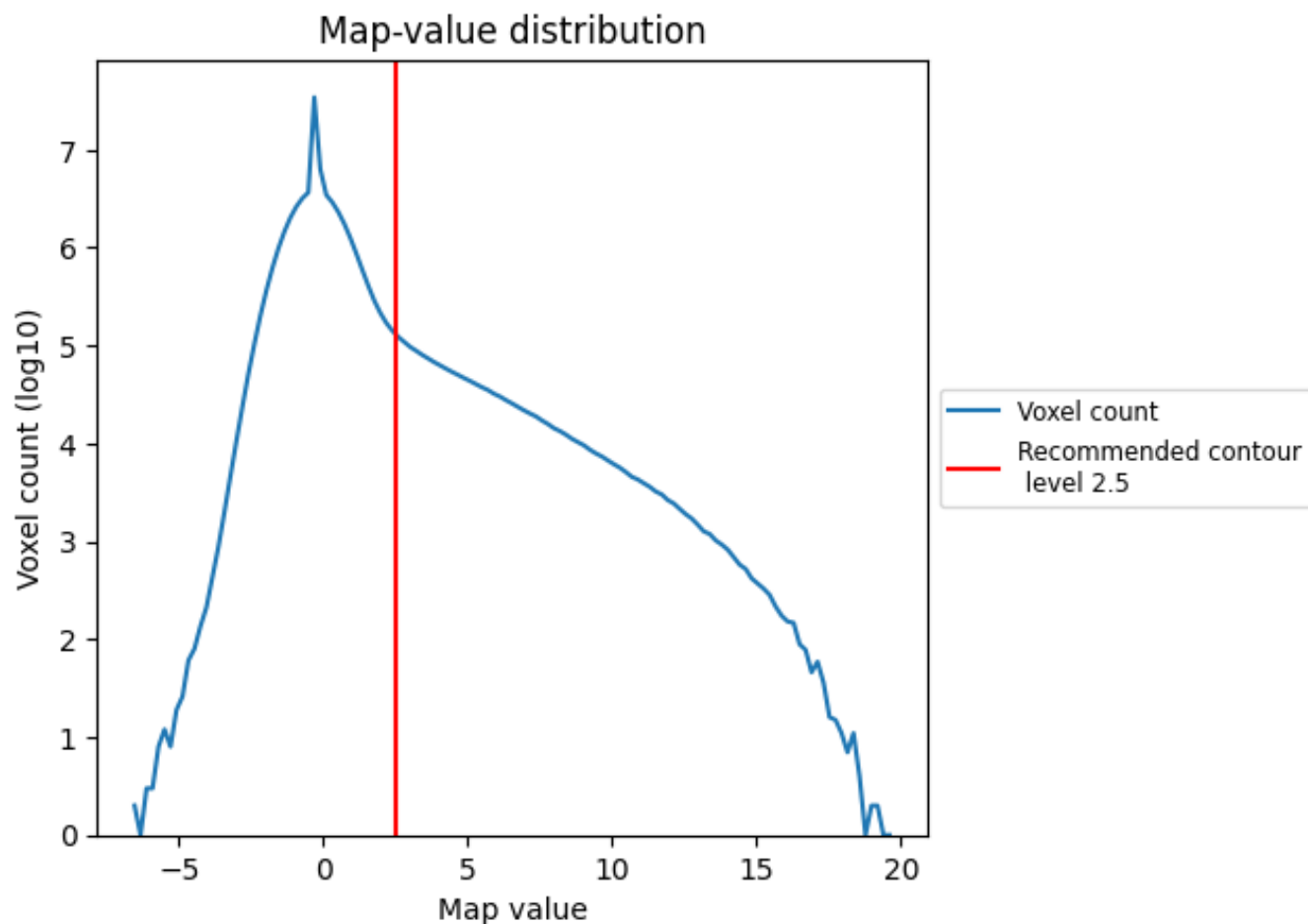


Z

7 Map analysis [i](#)

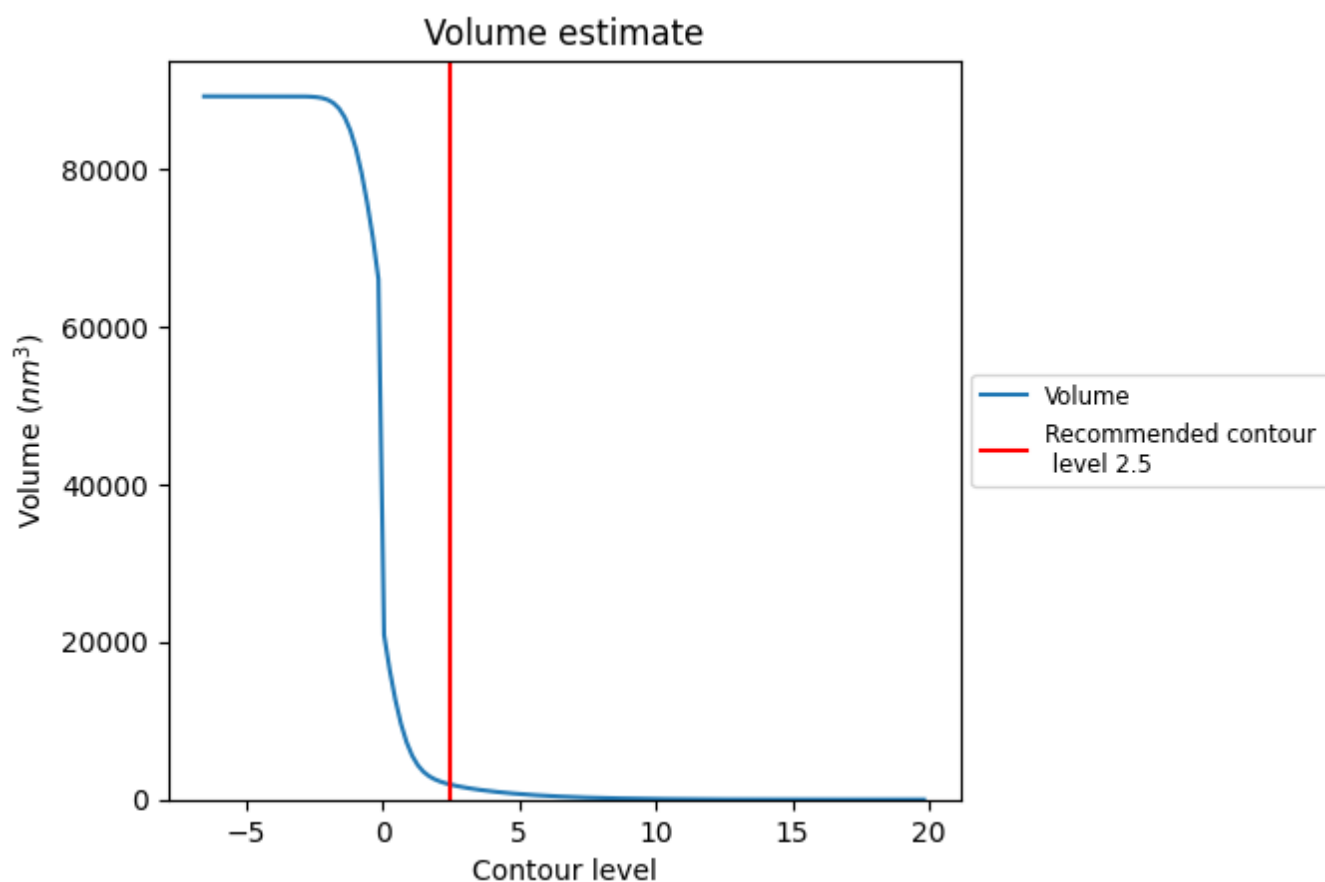
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

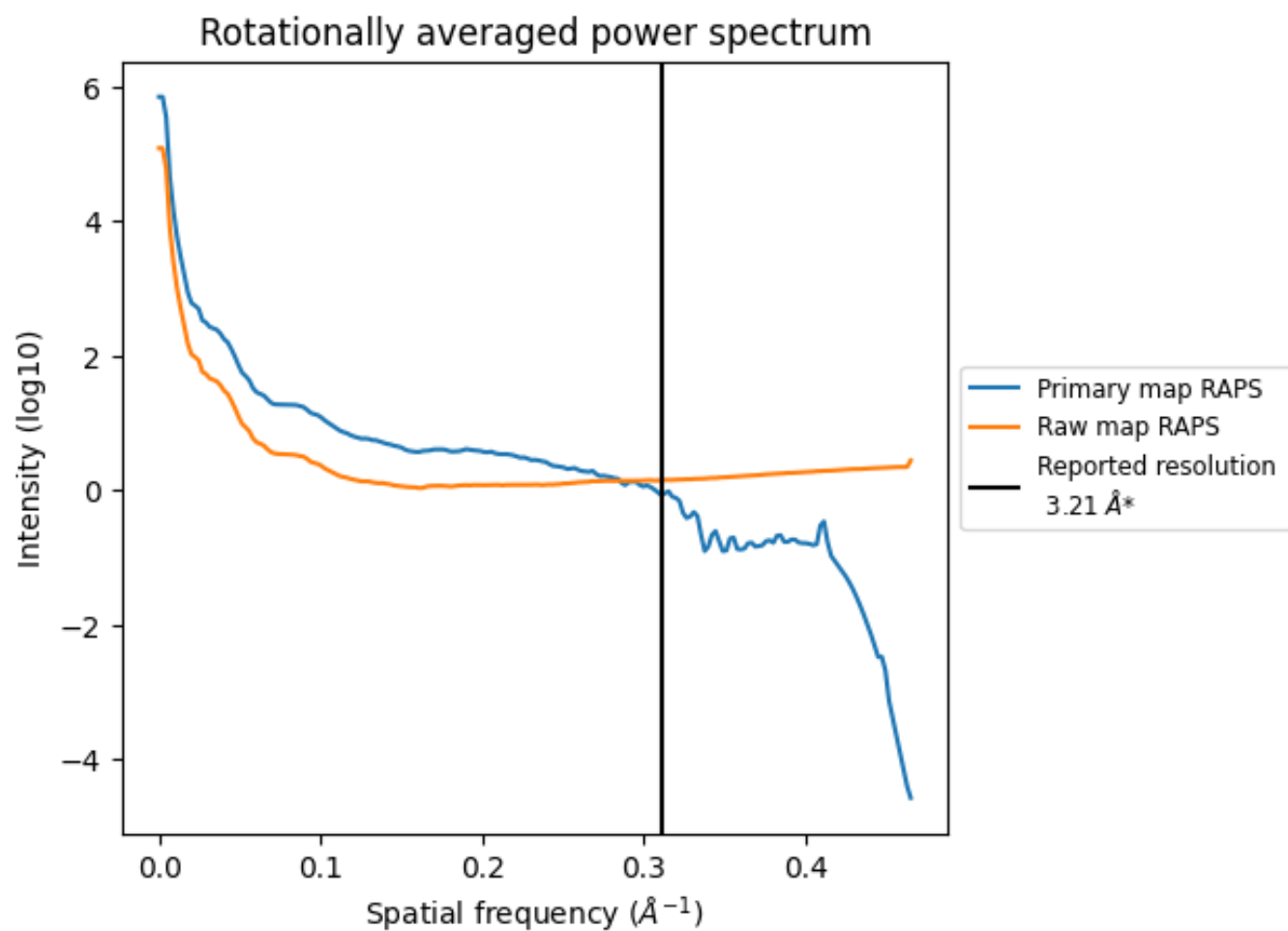
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1895 nm^3 ; this corresponds to an approximate mass of 1712 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

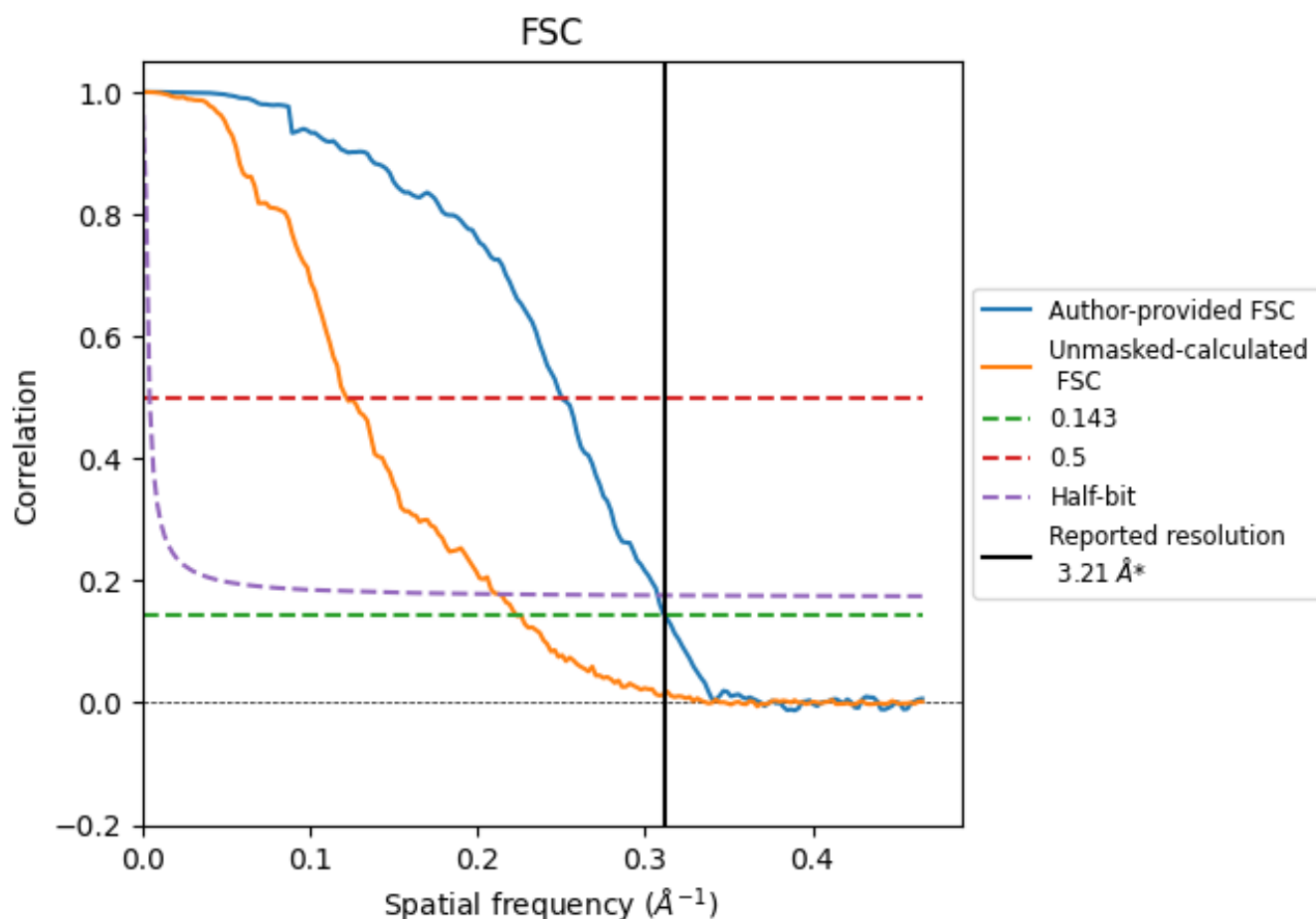


*Reported resolution corresponds to spatial frequency of 0.312 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



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

8.2 Resolution estimates [i](#)

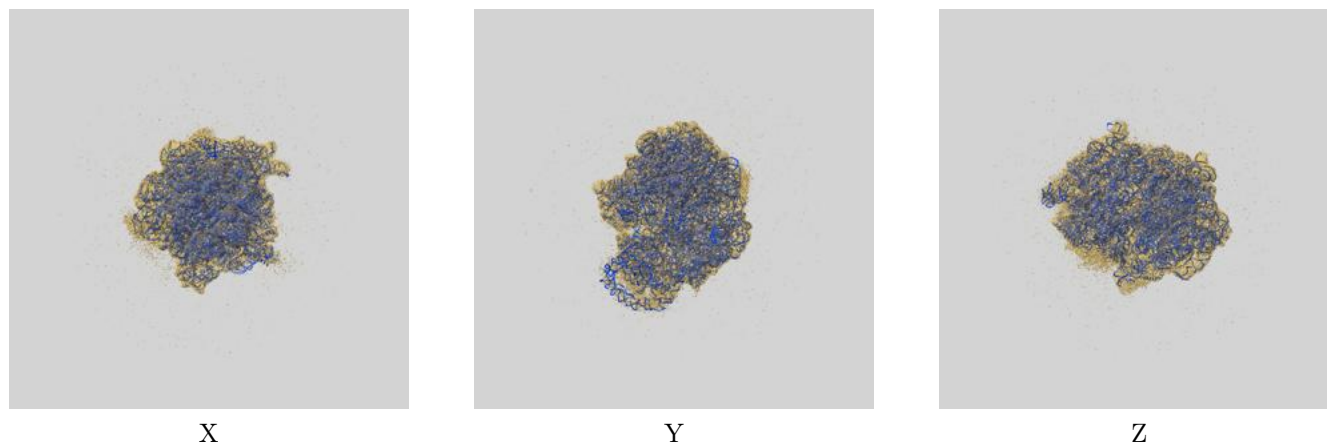
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.21	-	-
Author-provided FSC curve	3.21	4.00	3.25
Unmasked-calculated*	4.47	8.21	4.70

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.47 differs from the reported value 3.21 by more than 10 %

9 Map-model fit [i](#)

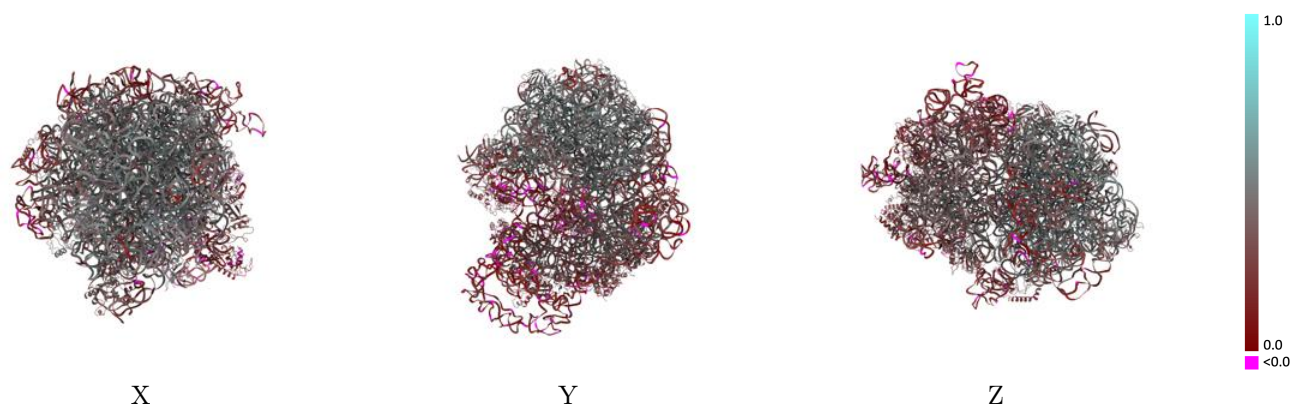
This section contains information regarding the fit between EMDB map EMD-11710 and PDB model 7ABZ. Per-residue inclusion information can be found in section 3 on page 17.

9.1 Map-model overlay [i](#)



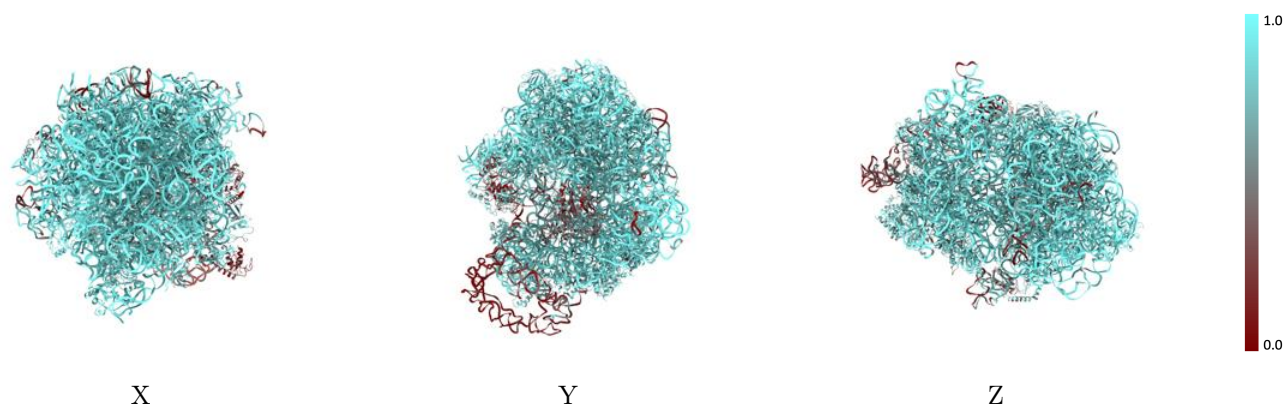
The images above show the 3D surface view of the map at the recommended contour level 2.5 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



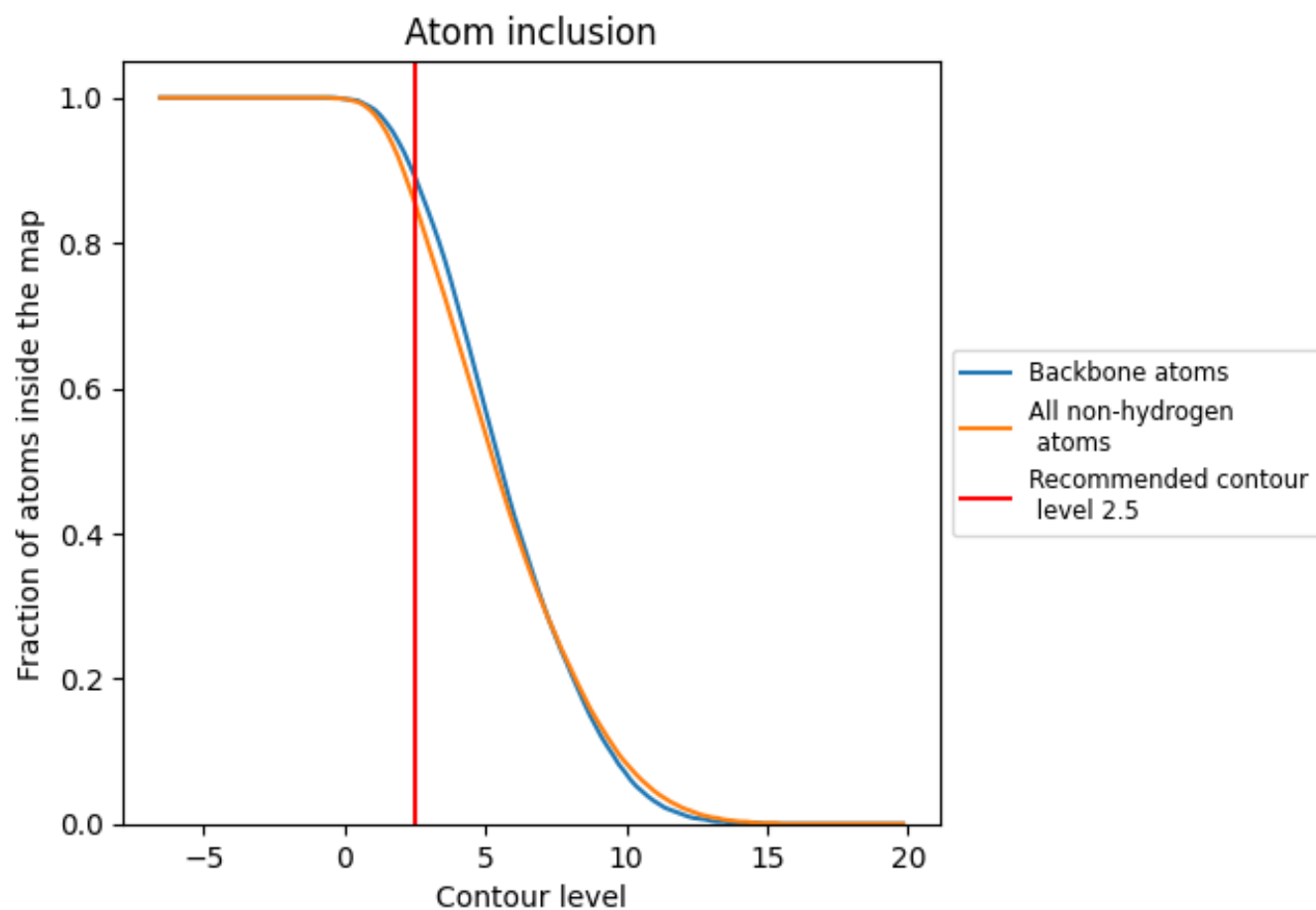
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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, 89% of all backbone atoms, 86% 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	 0.8550	 0.3590
1	 0.9320	 0.4120
2	 0.9490	 0.3250
3	 0.9780	 0.3560
4	 0.2840	 0.1290
5	 0.4340	 0.1850
6	 0.3330	 0.2090
7	 0.6880	 0.1980
8	 0.6420	 0.1550
A	 0.8840	 0.4690
B	 0.9180	 0.4830
C	 0.9080	 0.4870
D	 0.9000	 0.4620
E	 0.7550	 0.2140
F	 0.7370	 0.3160
G	 0.5450	 0.2720
H	 0.2320	 0.1770
I	 0.3430	 0.1790
J	 0.9280	 0.4840
K	 0.8760	 0.4660
L	 0.9030	 0.4760
M	 0.8840	 0.4680
N	 0.9180	 0.4750
O	 0.9040	 0.3780
P	 0.8720	 0.4560
Q	 0.9260	 0.4920
R	 0.9060	 0.4780
S	 0.8890	 0.4670
T	 0.8930	 0.4460
U	 0.9090	 0.4360
V	 0.8830	 0.4260
X	 0.8920	 0.4420
Y	 0.8510	 0.3830
Z	 0.9020	 0.4770
b	 0.9040	 0.4680



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Chain	Atom inclusion	Q-score
c	 0.9030	 0.4520
d	 0.9180	 0.5090
e	 0.9060	 0.5070
f	 0.8160	 0.4060
g	 0.7820	 0.2890
h	 0.8310	 0.3320
i	 0.7490	 0.2570
j	 0.8690	 0.3970
k	 0.8420	 0.3170
l	 0.7070	 0.2120
m	 0.8780	 0.3910
n	 0.8210	 0.2320
o	 0.7940	 0.2700
p	 0.8500	 0.3360
q	 0.7540	 0.3250
r	 0.7600	 0.2110
s	 0.8130	 0.2840
t	 0.8750	 0.3510
u	 0.8520	 0.3320
v	 0.8750	 0.3700
w	 0.8380	 0.3370
x	 0.7810	 0.2120
y	 0.8030	 0.2710
z	 0.6650	 0.3150