



Full wwPDB EM Validation Report ⓘ

Mar 8, 2026 – 04:55 AM UTC

PDB ID : 7Z34 / pdb_00007z34
EMDB ID : EMD-14471
Title : Structure of pre-60S particle bound to DRG1(AFG2).
Authors : Prattes, M.; Grishkovskaya, I.; Bergler, H.; Haselbach, D.
Deposited on : 2022-03-01
Resolution : 3.80 Å(reported)
Based on initial model : 6N8K

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:

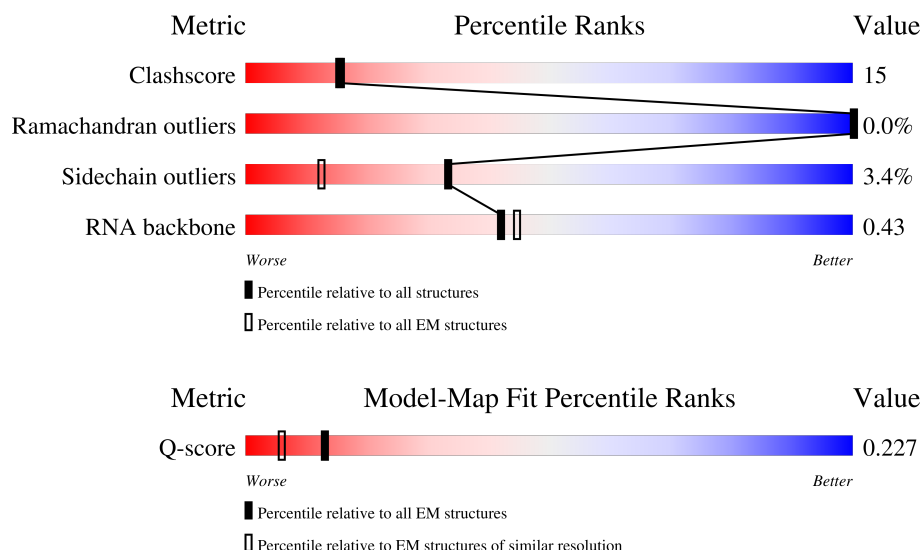
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance

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

The reported resolution of this entry is 3.80 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	10198 (3.30 - 4.30)

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	Aa	780	74% 79% 14% 7%
1	m	780	69% 73% 20% 6%
1	n	780	65% 70% 23% 6%

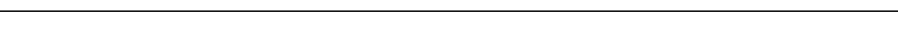
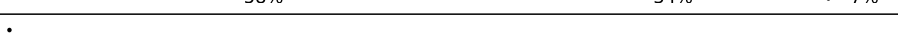
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Mol	Chain	Length	Quality of chain
1	t	780	
1	w	780	
1	x	780	
2	1	3396	
3	2	121	
4	3	158	
5	4	593	
6	A	254	
7	B	387	
8	C	362	
9	D	297	
10	E	176	
11	F	244	
12	G	256	
13	H	191	
14	I	166	
15	J	174	
16	K	149	
17	L	199	
18	M	138	
19	N	204	
20	O	199	
21	P	184	
22	Q	186	
23	R	189	

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Mol	Chain	Length	Quality of chain
24	S	172	
25	T	160	
26	U	121	
27	V	137	
28	W	236	
29	X	142	
30	Y	127	
31	Z	136	
32	a	165	
33	b	647	
34	c	105	
35	d	113	
36	e	130	
37	f	107	
38	g	121	
39	h	120	
40	i	100	
41	j	88	
42	k	78	
43	l	51	
44	o	59	
45	p	92	
46	q	106	
47	r	261	
48	u	199	

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Mol	Chain	Length	Quality of chain
49	v	518	33% 14% 53%
50	y	245	54% 35% 7%
51	z	106	28% 23% 48%
52	0	19	63% 84% 16%
53	oC	170	69% 31%

2 Entry composition [i](#)

There are 55 unique types of molecules in this entry. The entry contains 177847 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called ATPase family gene 2 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	Aa	728	Total	C	N	O	S	0	0
			5590	3536	954	1078	22		
1	m	730	Total	C	N	O	S	0	0
			5594	3533	958	1081	22		
1	n	730	Total	C	N	O	S	0	0
			5602	3541	958	1081	22		
1	t	731	Total	C	N	O	S	0	0
			5611	3547	960	1082	22		
1	w	734	Total	C	N	O	S	0	0
			5630	3556	963	1089	22		
1	x	734	Total	C	N	O	S	0	0
			5630	3556	963	1089	22		

- Molecule 2 is a RNA chain called 35S pre-ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	1	3347	Total	C	N	O	P	0	0
			71573	31964	12868	23394	3347		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
3	2	121	Total	C	N	O	P	0	0
			2579	1152	461	845	121		

- Molecule 4 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	3	157	Total	C	N	O	P	0	0
			3333	1491	584	1101	157		

- Molecule 5 is a protein called Probable metalloprotease ARX1.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	4	560	Total	C	N	O	S	0	0
			4331	2732	747	837	15		

- Molecule 6 is a protein called 60S ribosomal protein L2-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	A	245	Total	C	N	O	S	0	0
			1863	1162	376	324	1		

- Molecule 7 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	B	386	Total	C	N	O	S	0	0
			3082	1956	584	534	8		

- Molecule 8 is a protein called 60S ribosomal protein L4-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	C	361	Total	C	N	O	S	0	0
			2750	1730	522	495	3		

- Molecule 9 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	D	273	Total	C	N	O	S	0	0
			2204	1391	382	429	2		

- Molecule 10 is a protein called 60S ribosomal protein L6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	E	175	Total	C	N	O	S	0	0
			1401	902	251	247	1		

- Molecule 11 is a protein called 60S ribosomal protein L7-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	F	222	Total	C	N	O	S	0	0
			1785	1151	324	309	1		

- Molecule 12 is a protein called 60S ribosomal protein L8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	G	230	Total	C	N	O	S	0	0
			1798	1149	323	323	3		

- Molecule 13 is a protein called 60S ribosomal protein L9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	H	188	Total	C	N	O	S	0	0
			1493	948	271	270	4		

- Molecule 14 is a protein called Bud site selection protein 20.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	I	124	Total	C	N	O	S	0	0
			1003	628	186	185	4		

- Molecule 15 is a protein called 60S ribosomal protein L11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	J	164	Total	C	N	O	S	0	0
			1312	822	245	242	3		

- Molecule 16 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	K	148	Total	C	N	O	S	0	0
			1173	749	231	190	3		

- Molecule 17 is a protein called 60S ribosomal protein L13-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
17	L	193	Total	C	N	O	0	0
			1543	962	315	266		

- Molecule 18 is a protein called 60S ribosomal protein L14-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	M	137	Total	C	N	O	S	0	0
			1060	678	200	180	2		

- Molecule 19 is a protein called 60S ribosomal protein L15-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	N	203	Total	C	N	O	S	0	0
			1721	1077	361	282	1		

- Molecule 20 is a protein called 60S ribosomal protein L16-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	O	197	Total	C	N	O	S	0	0
			1556	1003	289	263	1		

- Molecule 21 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	P	183	Total	C	N	O	0	0
			1443	896	287	260		

- Molecule 22 is a protein called 60S ribosomal protein L18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	Q	154	Total	C	N	O	S	0	0
			1191	753	231	205	2		

- Molecule 23 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
23	R	154	Total	C	N	O	0	0
			1241	772	262	207		

- Molecule 24 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	S	170	Total	C	N	O	S	0	0
			1425	916	265	241	3		

- Molecule 25 is a protein called 60S ribosomal protein L21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	T	159	Total	C	N	O	S	0	0
			1276	805	246	221	4		

- Molecule 26 is a protein called 60S ribosomal protein L22-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
26	U	104	Total	C	N	O	0	0
			826	535	136	155		

- Molecule 27 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
27	V	136	Total	C	N	O	S	0
			1004	628	189	180	7	0

- Molecule 28 is a protein called Ribosome assembly factor MRT4.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	W	225	Total	C	N	O	S	0
			1810	1148	306	351	5	0

- Molecule 29 is a protein called 60S ribosomal protein L25.

Mol	Chain	Residues	Atoms				AltConf	Trace
29	X	120	Total	C	N	O	S	0
			960	617	168	173	2	0

- Molecule 30 is a protein called 60S ribosomal protein L26-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
30	Y	126	Total	C	N	O		0
			994	625	192	177		0

- Molecule 31 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
31	Z	135	Total	C	N	O		0
			1093	710	202	181		0

- Molecule 32 is a protein called 60S ribosomal protein L12-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
32	a	158	Total	C	N	O	S	0
			1196	750	216	228	2	0

- Molecule 33 is a protein called Nucleolar GTP-binding protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	b	630	Total	C	N	O	S	0	0
			5087	3185	914	962	26		

- Molecule 34 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	c	97	Total	C	N	O	S	0	0
			743	479	124	139	1		

- Molecule 35 is a protein called 60S ribosomal protein L31-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	d	107	Total	C	N	O	S	0	0
			873	553	165	154	1		

- Molecule 36 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	e	128	Total	C	N	O	S	0	0
			1029	652	206	170	1		

- Molecule 37 is a protein called 60S ribosomal protein L33-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	f	106	Total	C	N	O	S	0	0
			851	540	165	145	1		

- Molecule 38 is a protein called 60S ribosomal protein L34-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	g	112	Total	C	N	O	S	0	0
			881	546	179	152	4		

- Molecule 39 is a protein called 60S ribosomal protein L35-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	h	119	Total	C	N	O	S	0	0
			970	615	186	168	1		

- Molecule 40 is a protein called 60S ribosomal protein L36-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	i	96	Total	C	N	O	S	0	0
			743	465	148	128	2		

- Molecule 41 is a protein called 60S ribosomal protein L37-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	j	85	Total	C	N	O	S	0	0
			670	408	146	111	5		

- Molecule 42 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	k	77	Total	C	N	O	S	0	0
			613	391	115	107			

- Molecule 43 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	l	50	Total	C	N	O	S	0	0
			437	272	97	66	2		

- Molecule 44 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	o	54	Total	C	N	O	S	0	0
			434	271	94	69			

- Molecule 45 is a protein called 60S ribosomal protein L43-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	p	91	Total	C	N	O	S	0	0
			695	429	138	122	6		

- Molecule 46 is a protein called 60S ribosomal protein L42-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	q	105	Total	C	N	O	S	0	0
			848	534	170	139	5		

- Molecule 47 is a protein called Ribosome biogenesis protein NSA2.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	r	55	Total	C	N	O	S	0	0
			470	291	100	78	1		

- Molecule 48 is a protein called Ribosome biogenesis protein RLP24.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	u	149	Total	C	N	O	S	0	0
			1256	788	252	207	9		

- Molecule 49 is a protein called 60S ribosomal export protein NMD3.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	v	245	Total	C	N	O	S	0	0
			1946	1250	329	360	7		

- Molecule 50 is a protein called Eukaryotic translation initiation factor 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	y	228	Total	C	N	O	S	0	0
			1722	1068	299	349	6		

- Molecule 51 is a protein called UPF0642 protein YBL028C.

Mol	Chain	Residues	Atoms				AltConf	Trace
51	z	55	Total	C	N	O	0	0
			444	273	88	83		

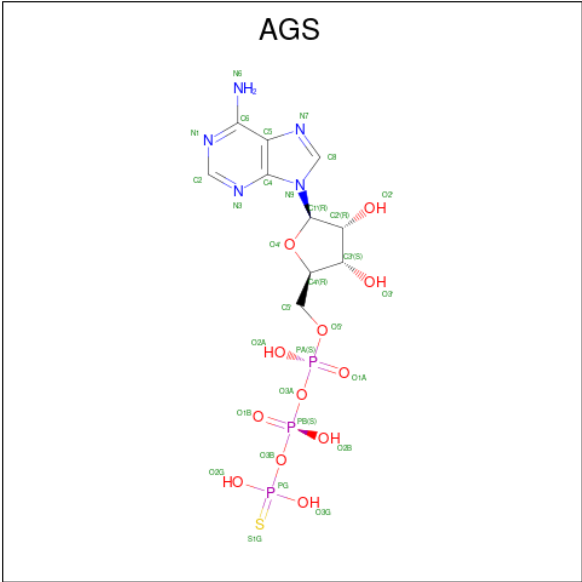
- Molecule 52 is a protein called Unknown peptide.

Mol	Chain	Residues	Atoms				AltConf	Trace
52	0	19	Total	C	N	O	0	0
			96	57	19	20		

- Molecule 53 is a protein called Unknown protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
53	oC	170	Total	C	N	O	0	0
			1021	680	170	171		

- Molecule 54 is PHOSPHOTHIOPHOSPHORIC ACID-ADENYLATE ESTER (CCD ID: AGS) (formula: C₁₀H₁₆N₅O₁₂P₃S).



Mol	Chain	Residues	Atoms						AltConf
54	Aa	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
54	Aa	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
54	m	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
54	m	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
54	n	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
54	n	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
54	t	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
54	w	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
54	w	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
54	w	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	
54	x	1	Total	C	N	O	P	S	0
			31	10	5	12	3	1	

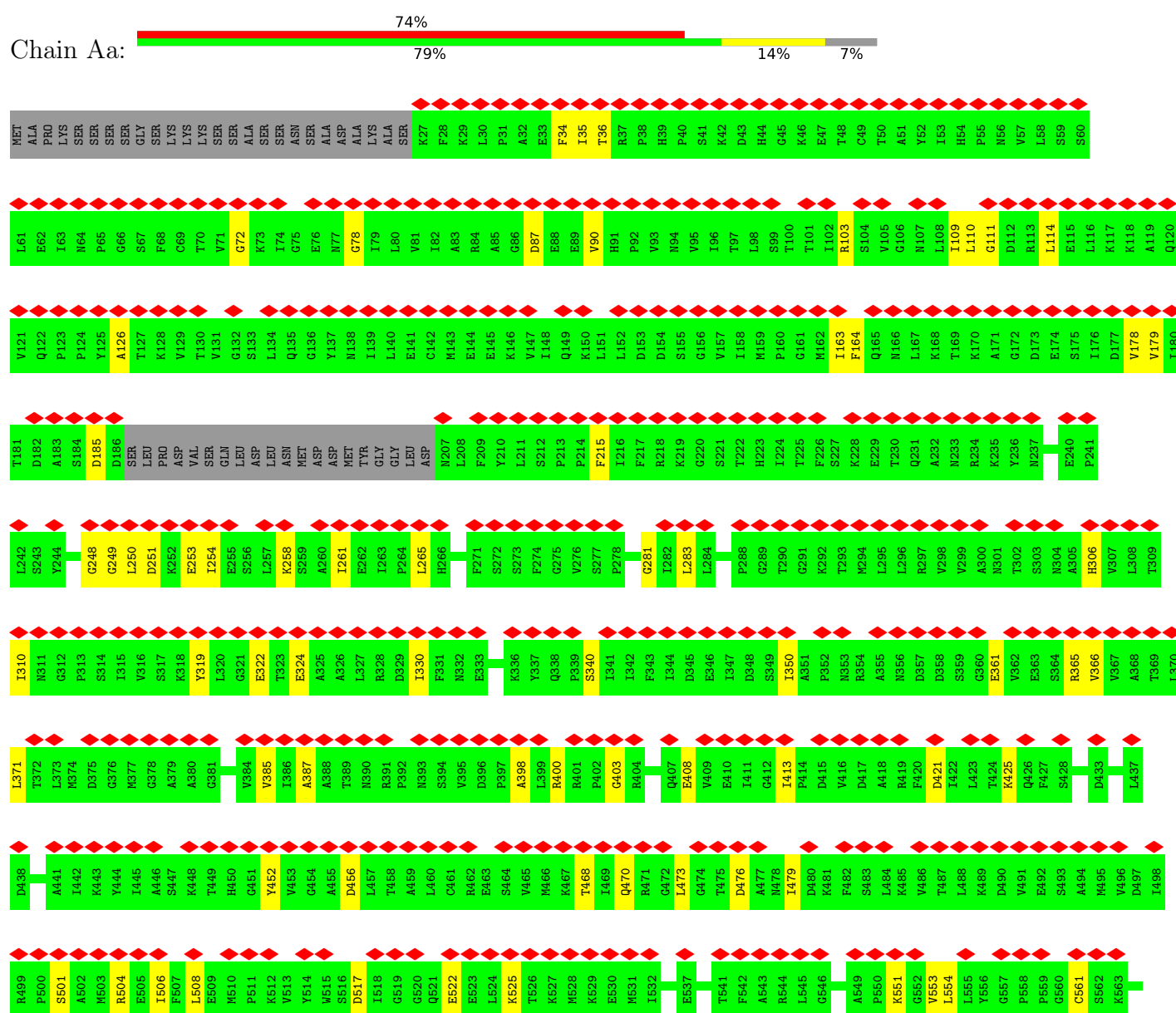
- Molecule 55 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

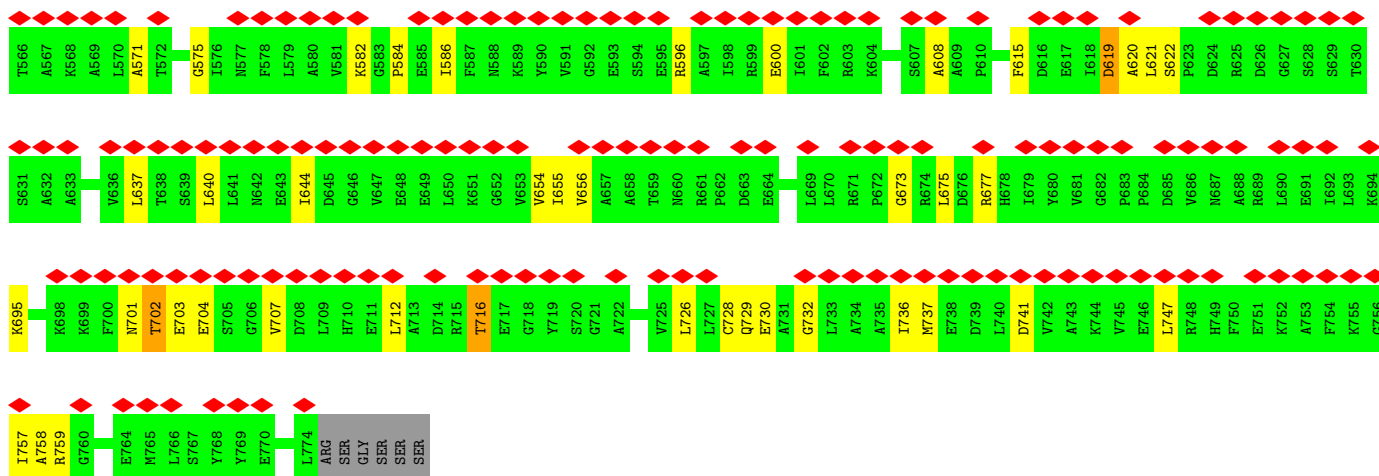
Mol	Chain	Residues	Atoms		AltConf
55	b	1	Total	Mg	0
			1	1	

3 Residue-property plots

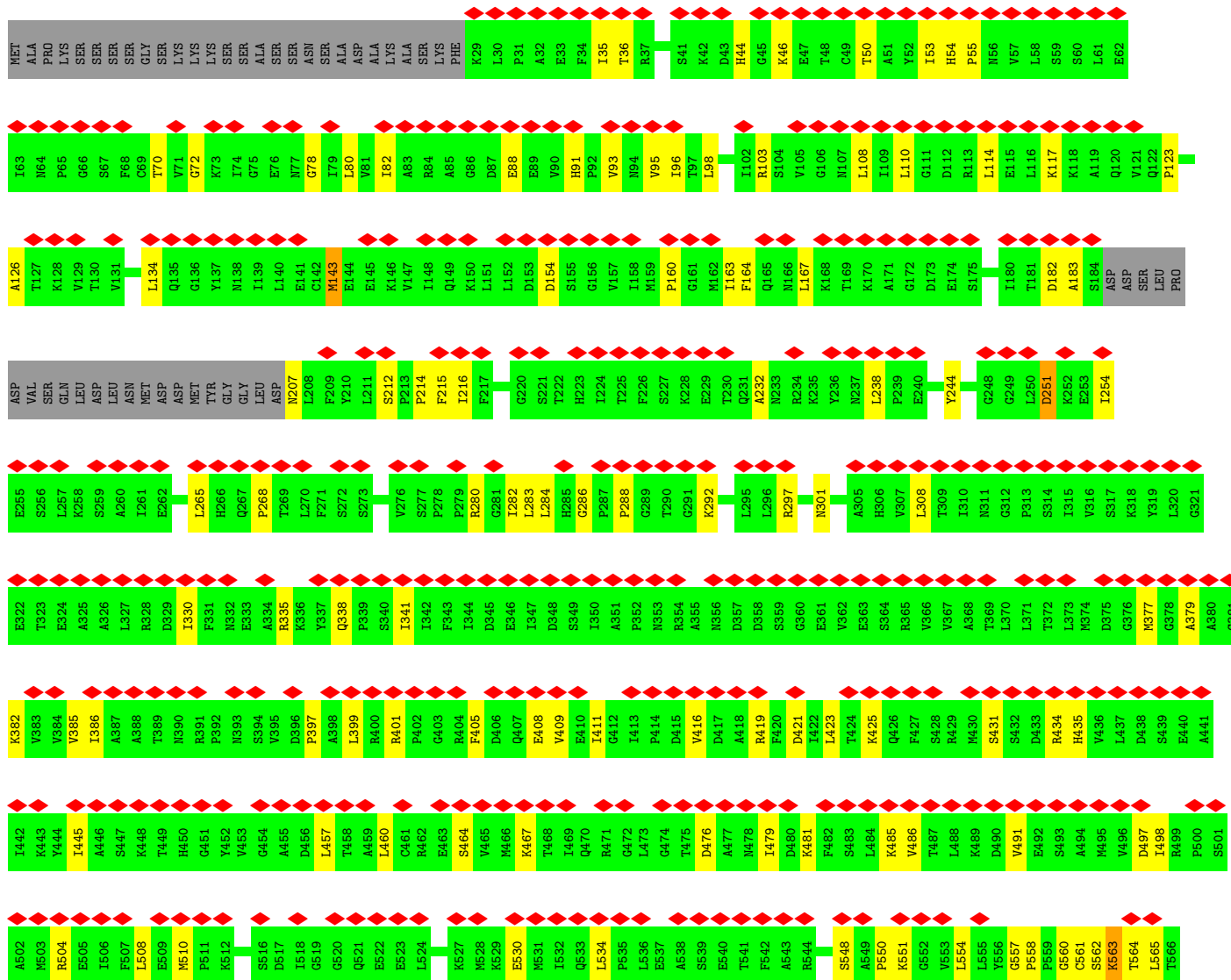
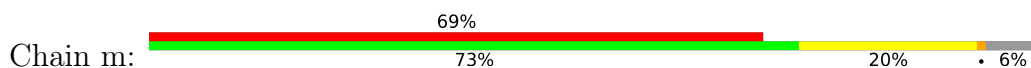
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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.

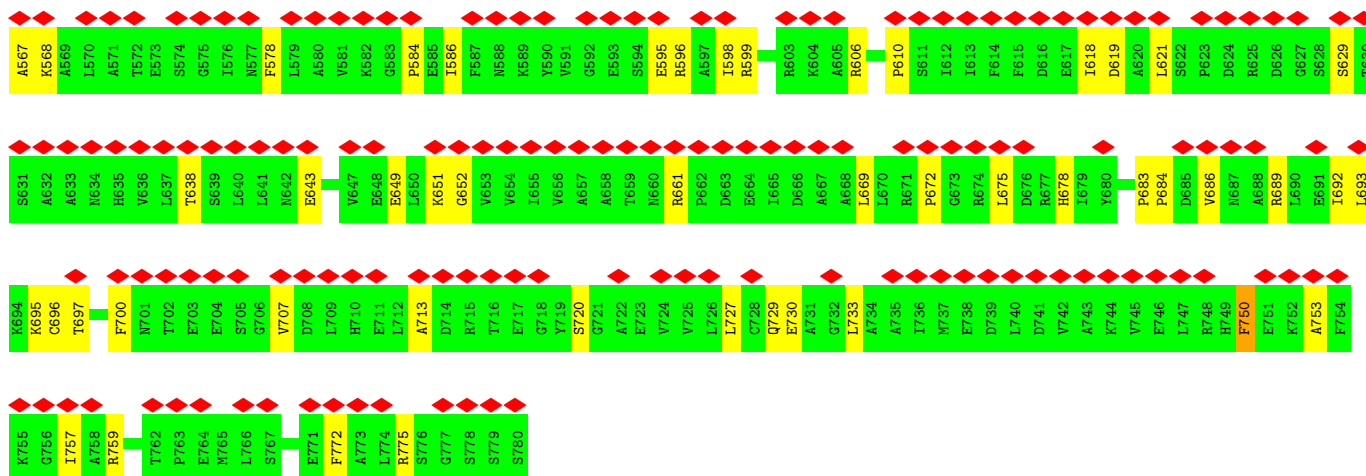
• Molecule 1: ATPase family gene 2 protein



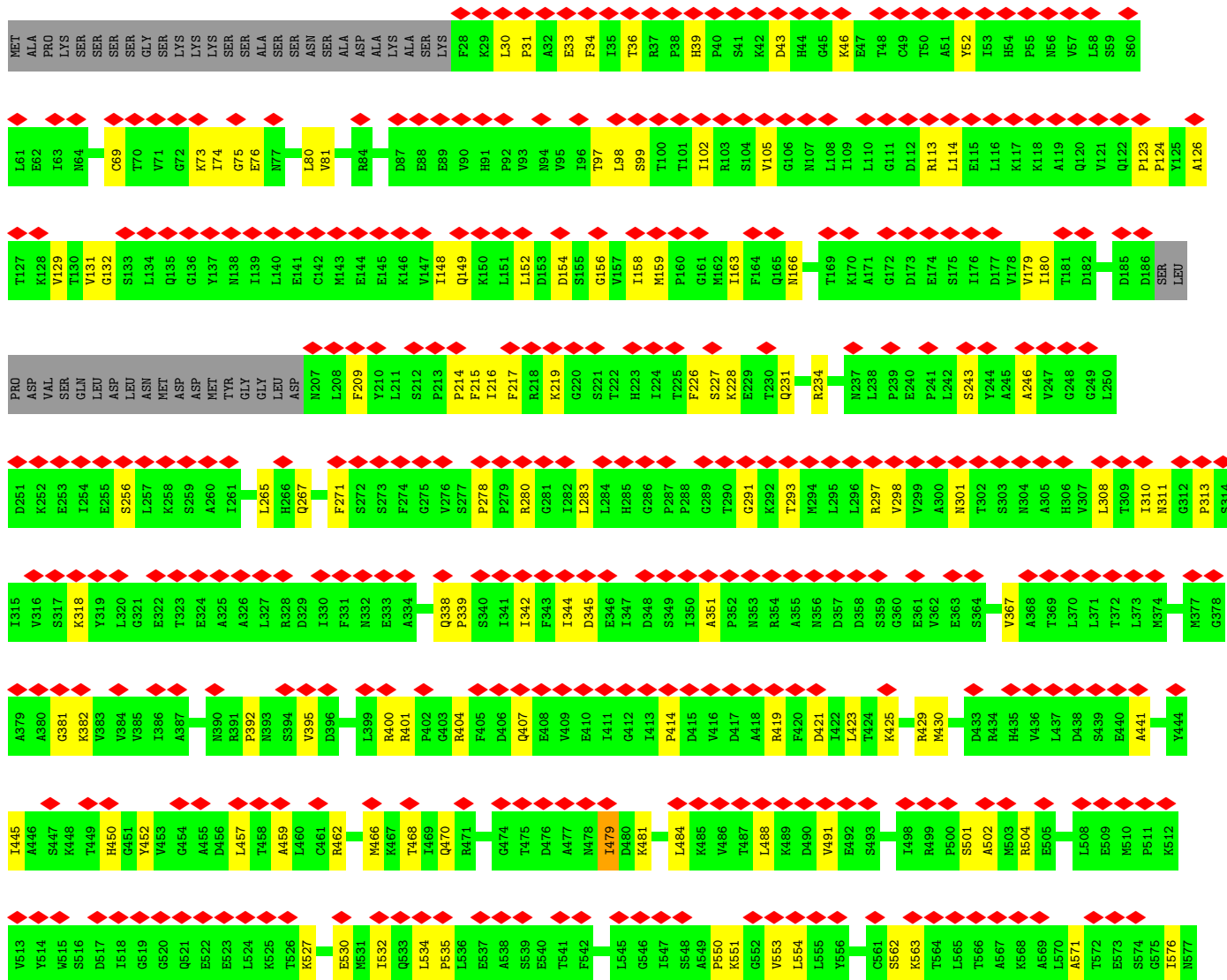


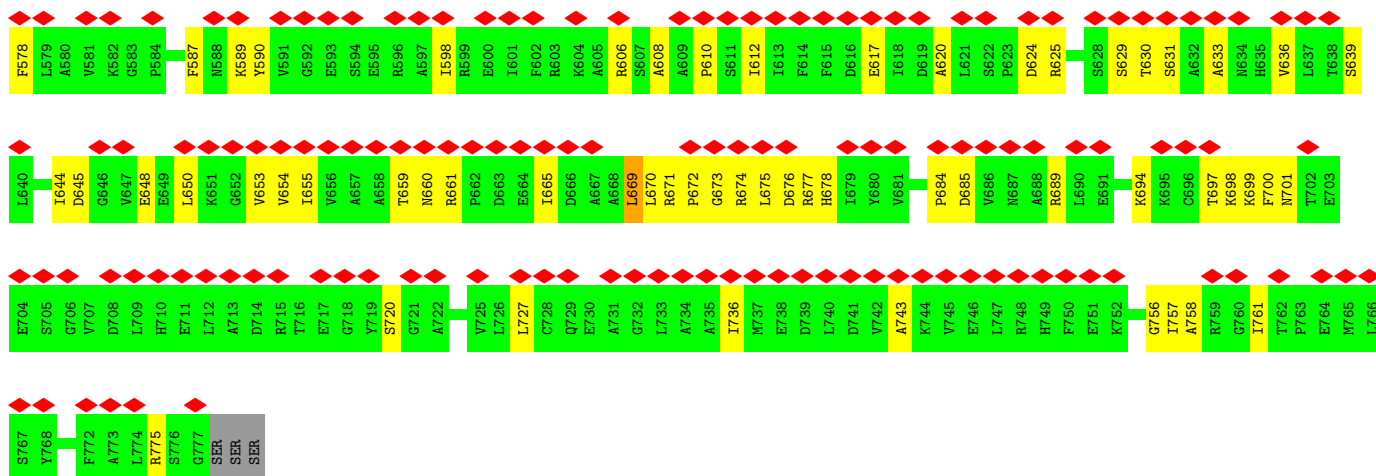
• Molecule 1: ATPase family gene 2 protein



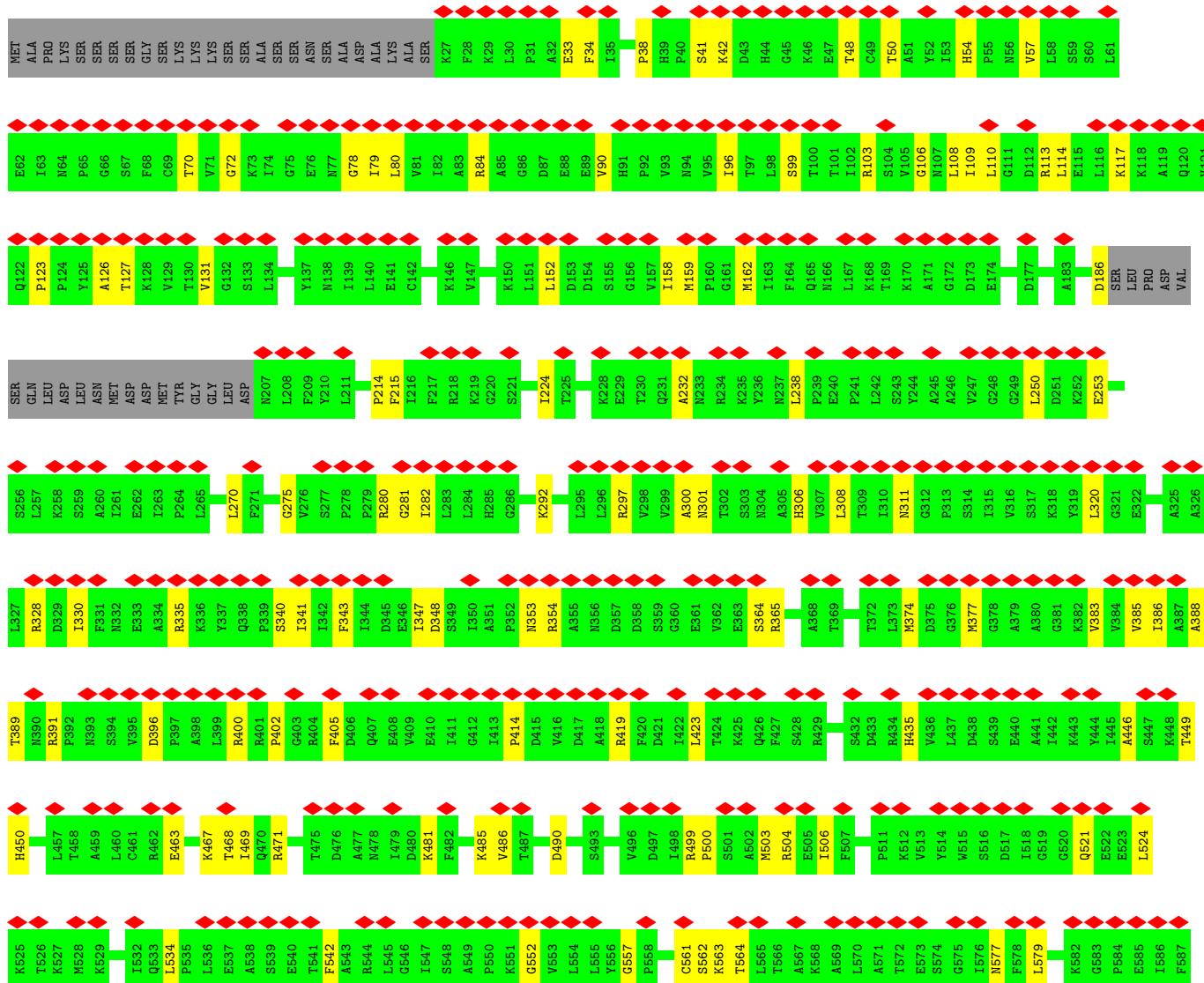
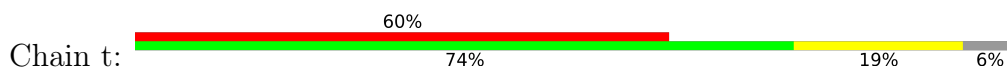


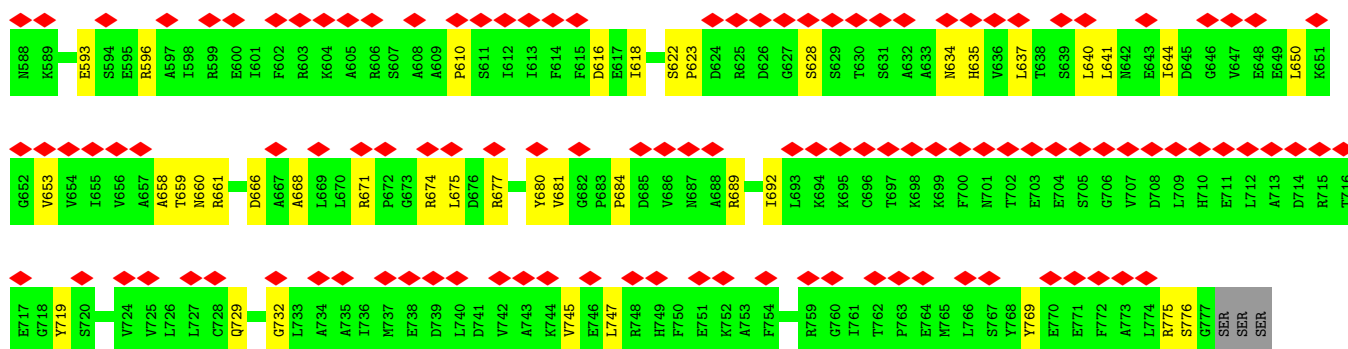
• Molecule 1: ATPase family gene 2 protein



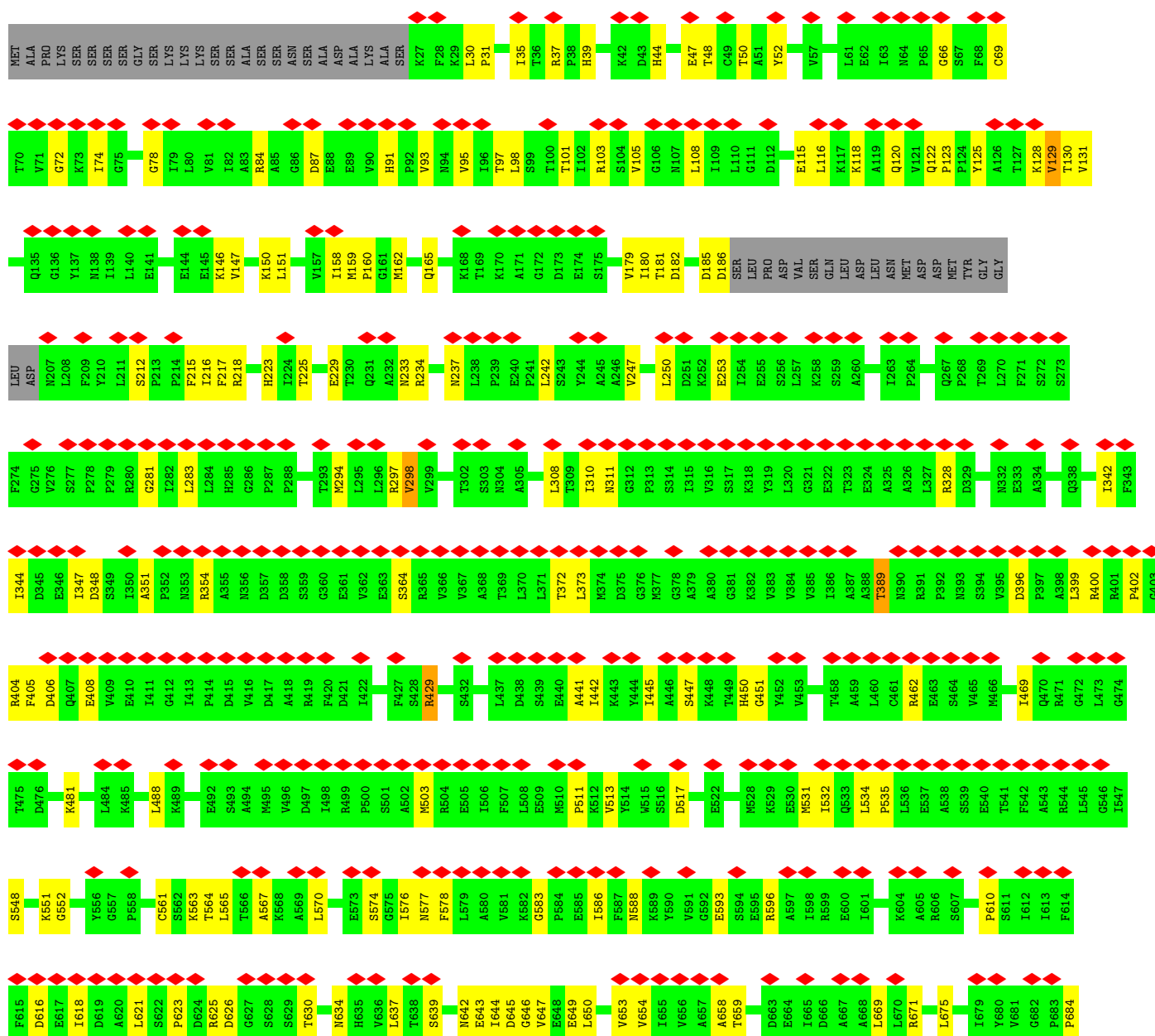
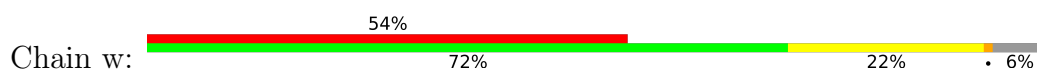


• Molecule 1: ATPase family gene 2 protein



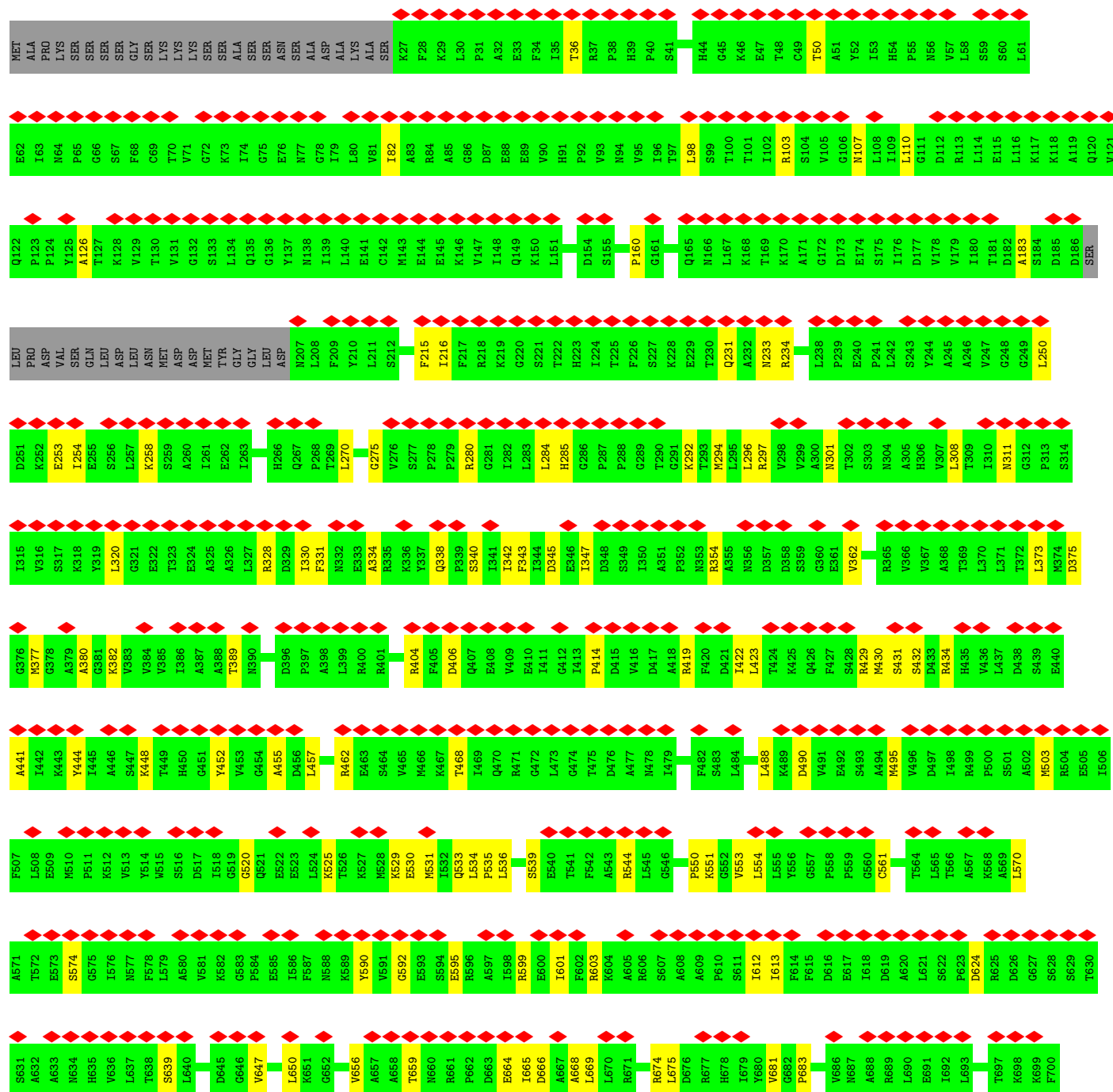
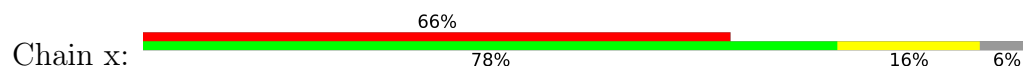


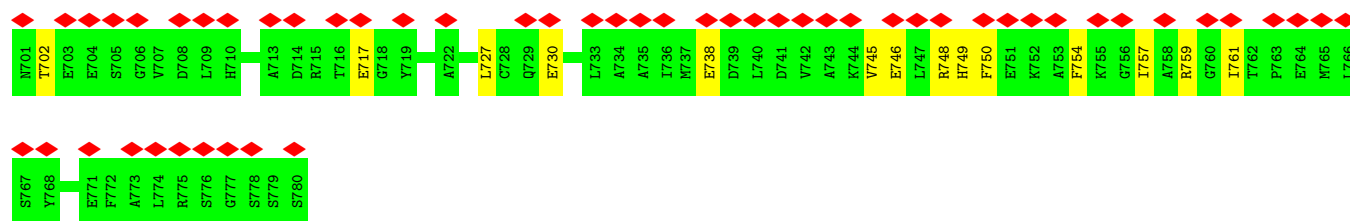
• Molecule 1: ATPase family gene 2 protein





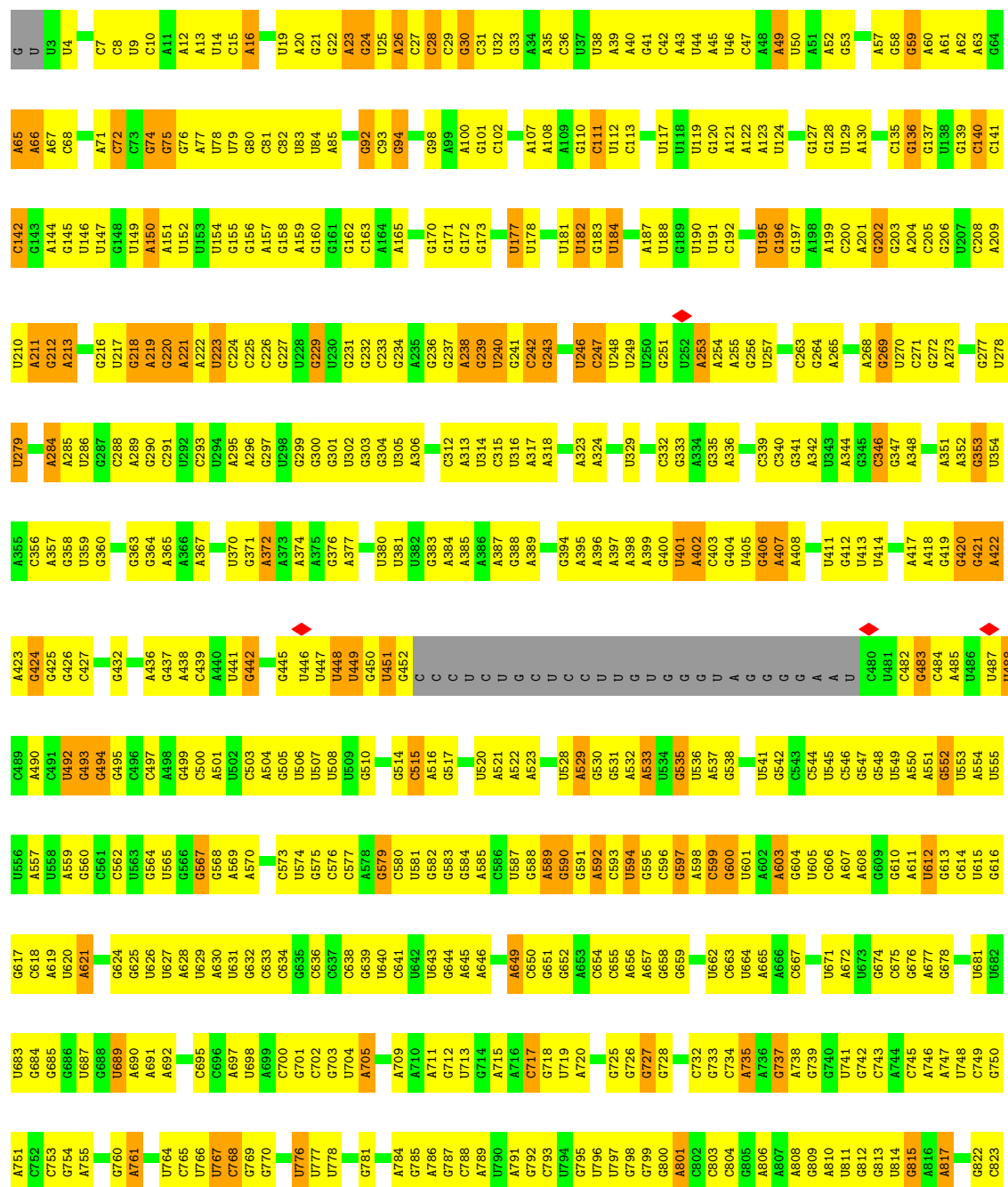
• Molecule 1: ATPase family gene 2 protein

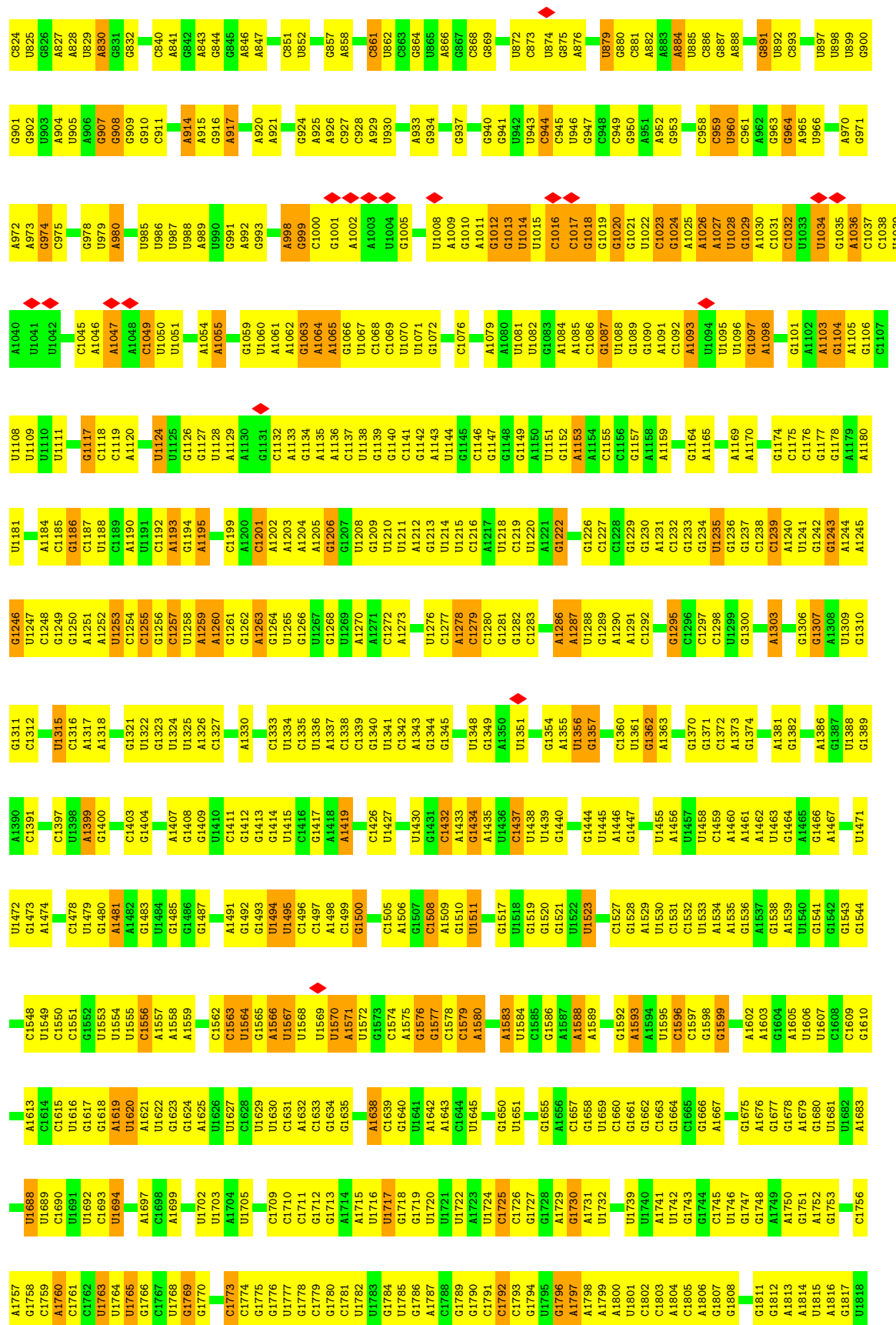




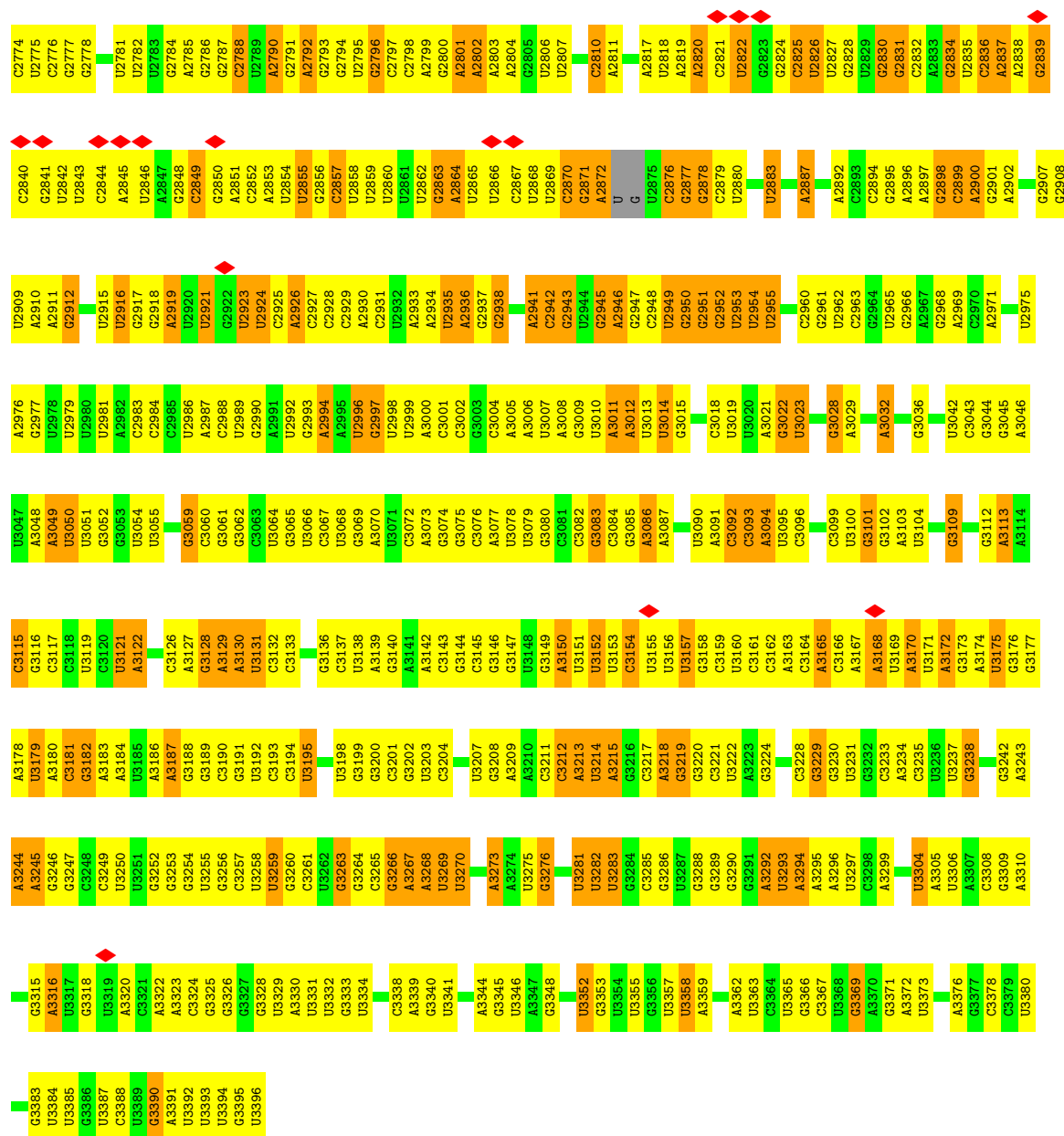
• Molecule 2: 35S pre-ribosomal RNA

Chain 1: 30% 54% 14%



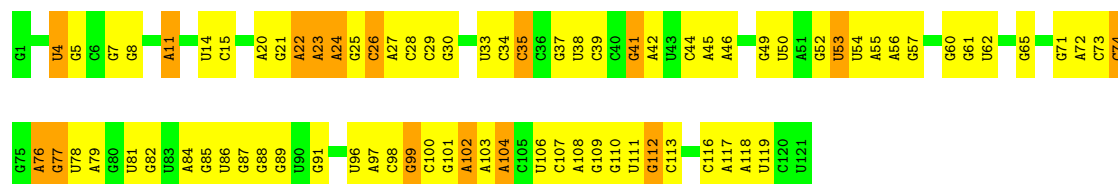


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C2710	G2637	A2569	G2503	A2309	A2172	C	C2030	U1968	A1893	C1822
C2711	G2638	U2570	U2504	U2310	U2176	A2099	U2031	A1896	G1897	A1823
G2712	G2639	U2571	U2505	G2311	G2177	A2100	G2032	U1970	G1898	U1824
U2713	A2640	G2572	U2506	G2312	G2178	C2101	G2033	U1971	G1899	G1825
U2714	U2641	G2573	C2507	A2313	A2179	U2102	C2034	C1972	G1899	C1826
G2715	A2642	G2574	U2508	U2314	A2180	U2103	G2035	G1973	A1900	G1827
U2716	G2646	G2575	U2509	G2315	G2181	A2104	U2036	G1974	A1901	A1828
U2717	A2647	C2576	U2510	G2316	C2182	G2105	G2037	C1975	G1902	G1829
G2720	G2648	U2577	A2511	G2317	A2183	A2106	U2043	G1976	U1903	G1830
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			C2566	G2371	U2230	A2168	G			
				A2372	G2231	A2168				
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					U2235	A2168				
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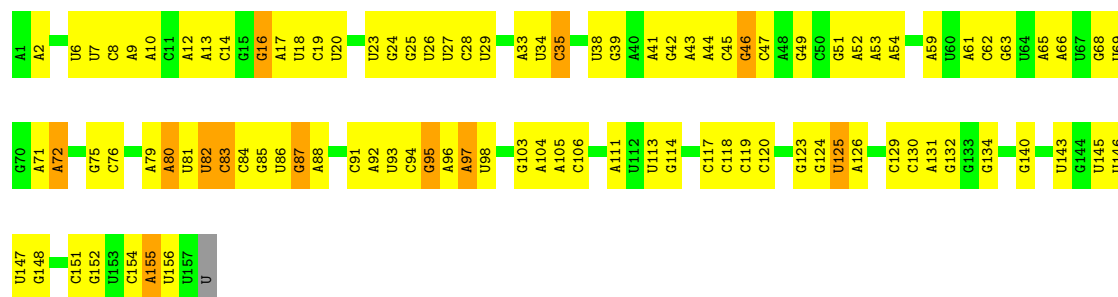
• Molecule 3: 5S rRNA

Chain 2: 35% 52% 13%

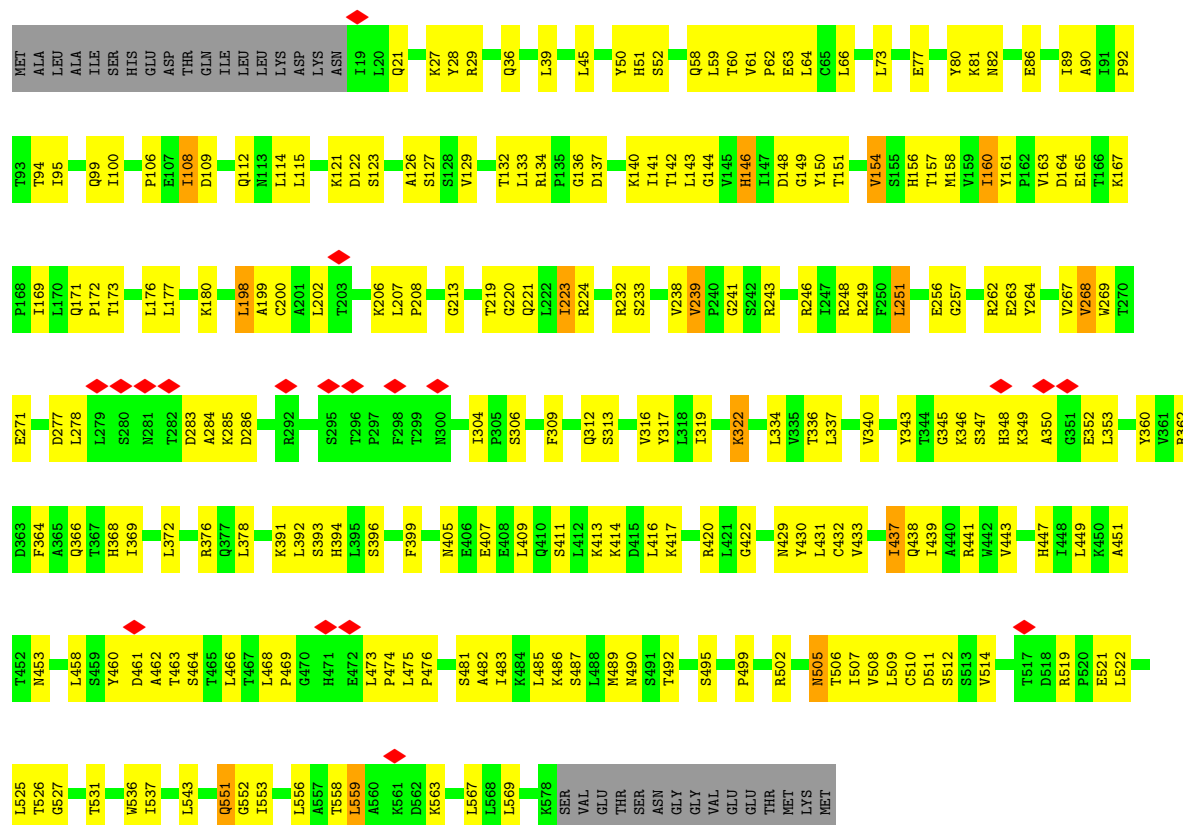


• Molecule 4: 5.8S rRNA

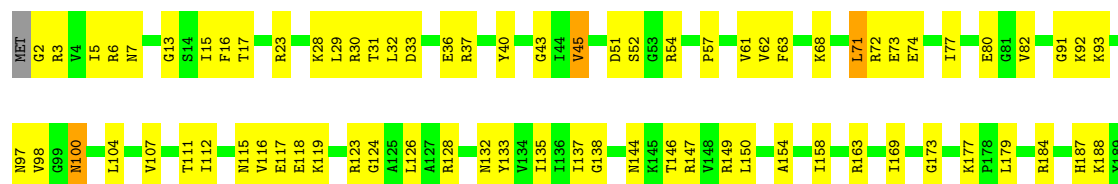
Chain 3: 37% 55% 8%

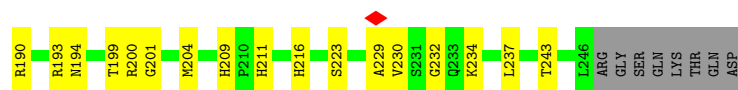


• Molecule 5: Probable metalloprotease ARX1



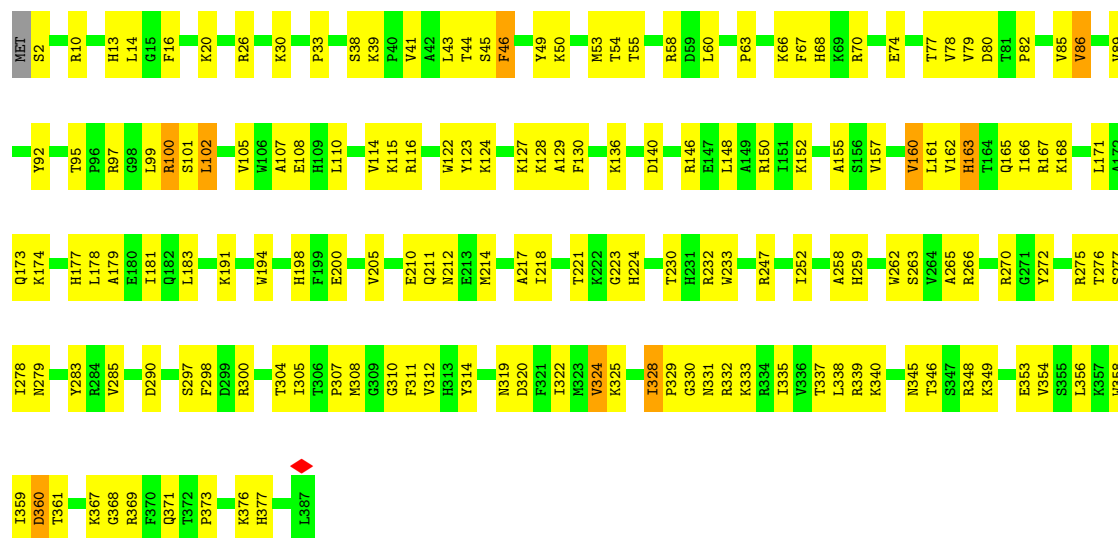
• Molecule 6: 60S ribosomal protein L2-A





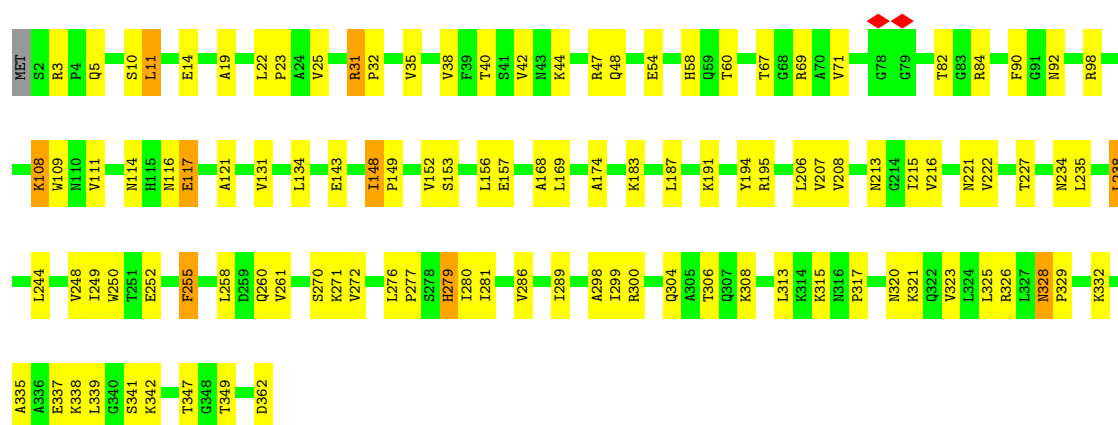
• Molecule 7: 60S ribosomal protein L3

Chain B: 58% 40%



• Molecule 8: 60S ribosomal protein L4-A

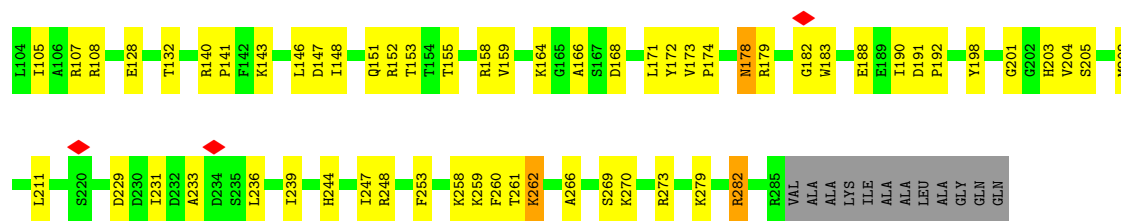
Chain C: 69% 28%



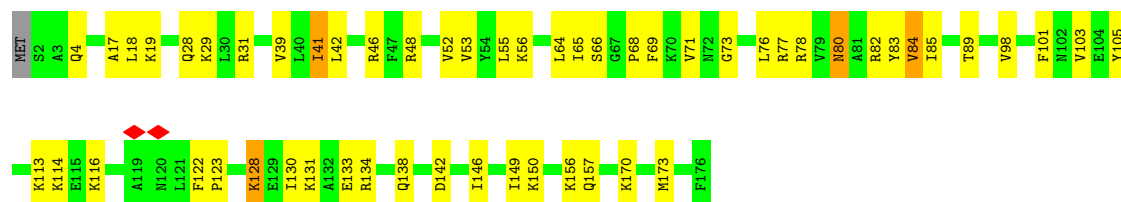
• Molecule 9: 60S ribosomal protein L5

Chain D: 62% 29% 8%

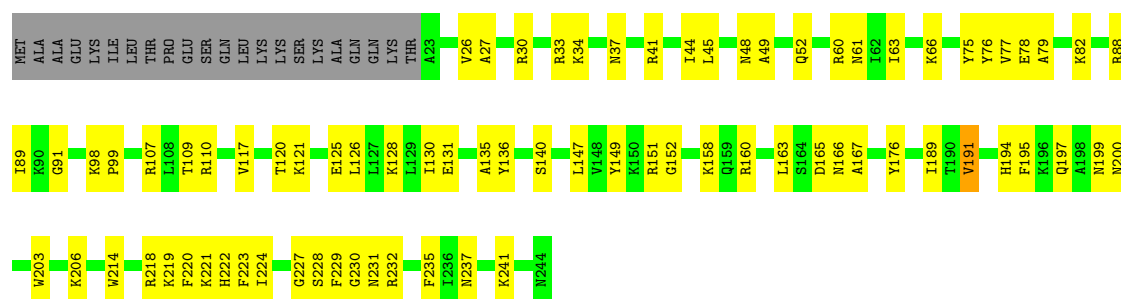




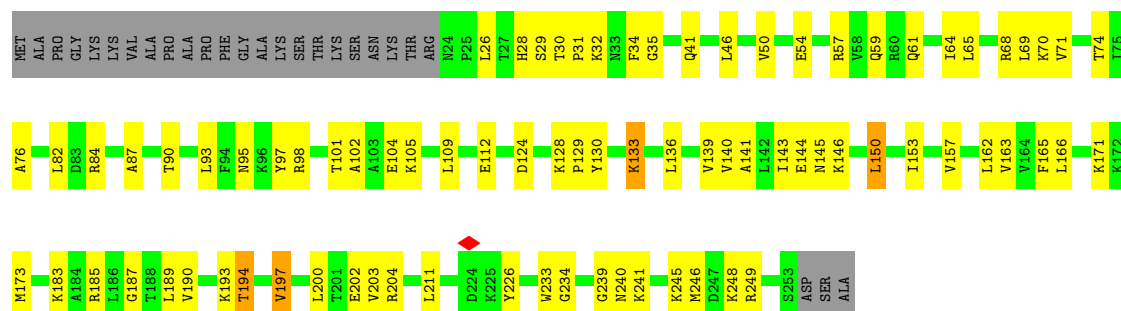
• Molecule 10: 60S ribosomal protein L6-A



• Molecule 11: 60S ribosomal protein L7-A

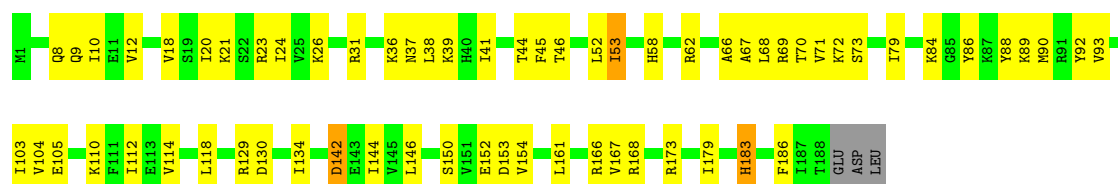


• Molecule 12: 60S ribosomal protein L8-A

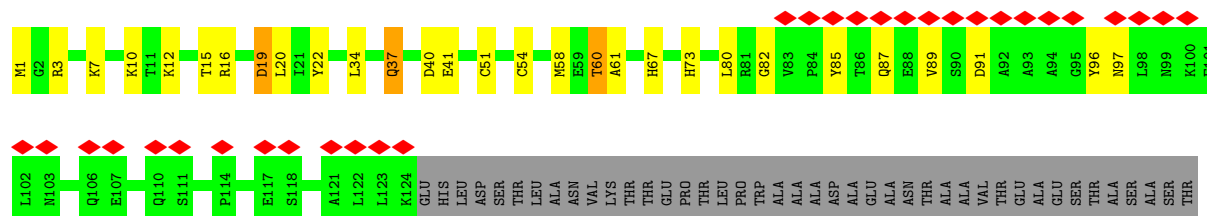


• Molecule 13: 60S ribosomal protein L9-A

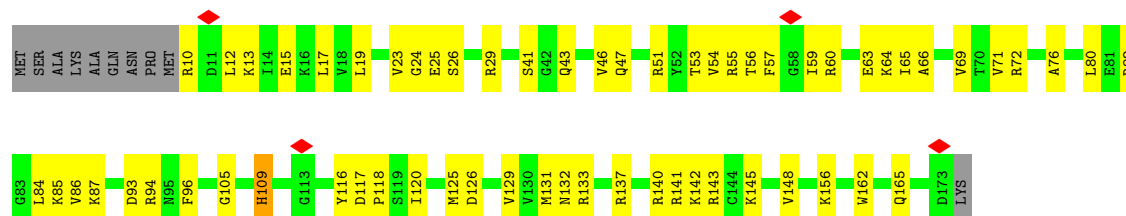




• Molecule 14: Bud site selection protein 20



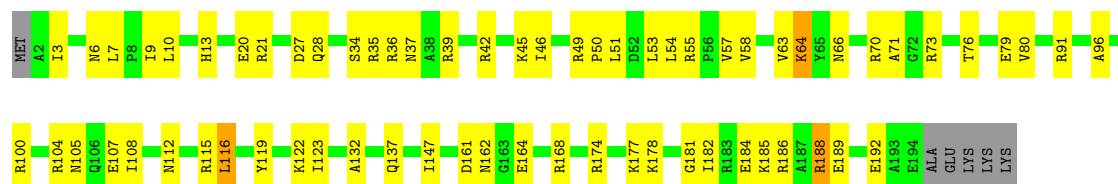
• Molecule 15: 60S ribosomal protein L11-A



• Molecule 16: 60S ribosomal protein L28

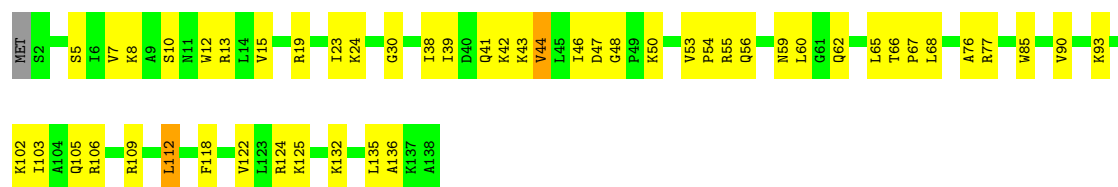


• Molecule 17: 60S ribosomal protein L13-A



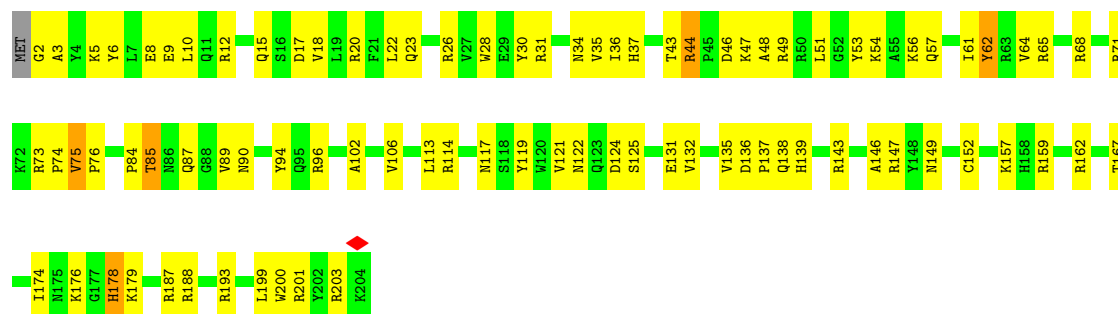
• Molecule 18: 60S ribosomal protein L14-A

Chain M:  63% 35% ..



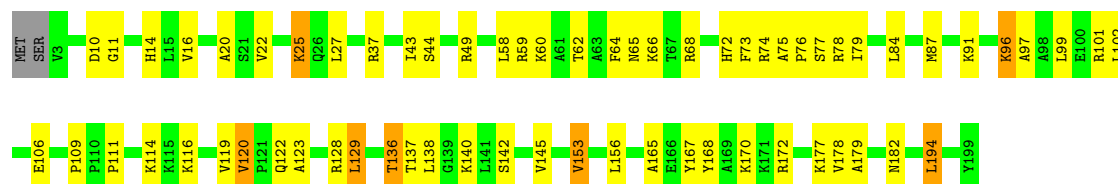
• Molecule 19: 60S ribosomal protein L15-A

Chain N:  57% 40% .



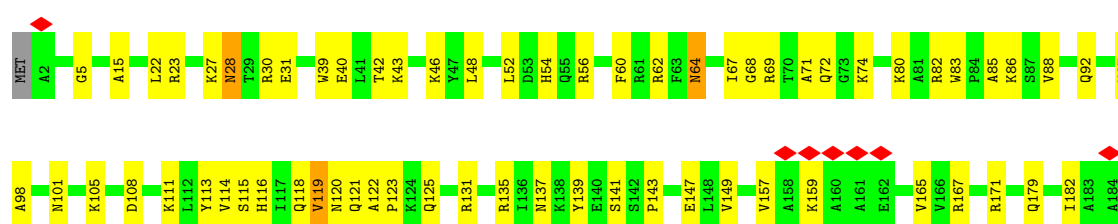
• Molecule 20: 60S ribosomal protein L16-A

Chain O:  66% 29% ..



• Molecule 21: 60S ribosomal protein L17-A

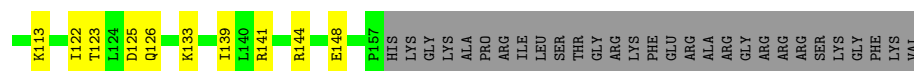
Chain P:  64% 34% ..



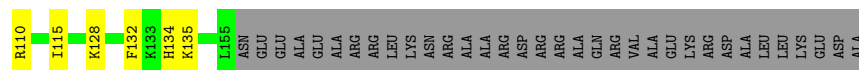
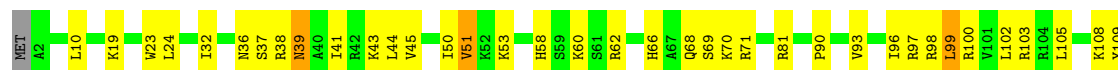
• Molecule 22: 60S ribosomal protein L18-A

Chain Q:  59% 23% . 17%





• Molecule 23: 60S ribosomal protein L19-A



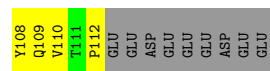
• Molecule 24: 60S ribosomal protein L20-A



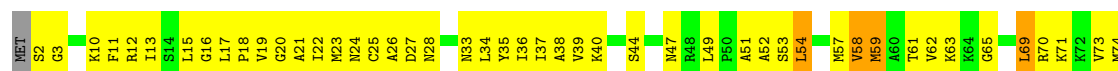
• Molecule 25: 60S ribosomal protein L21-A



• Molecule 26: 60S ribosomal protein L22-A

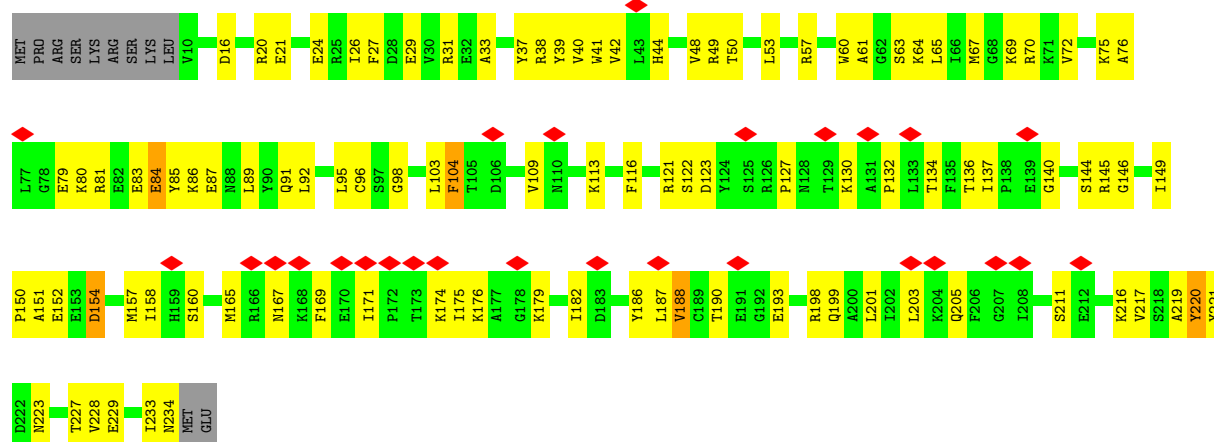


• Molecule 27: 60S ribosomal protein L23-A

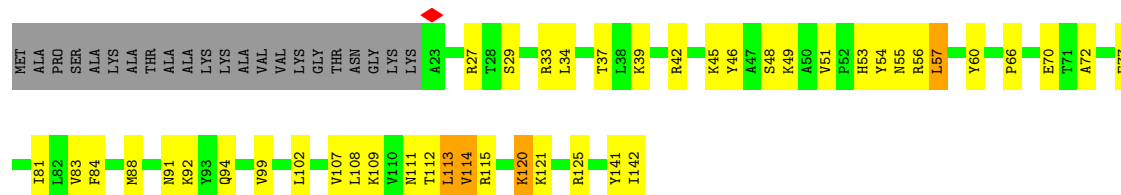




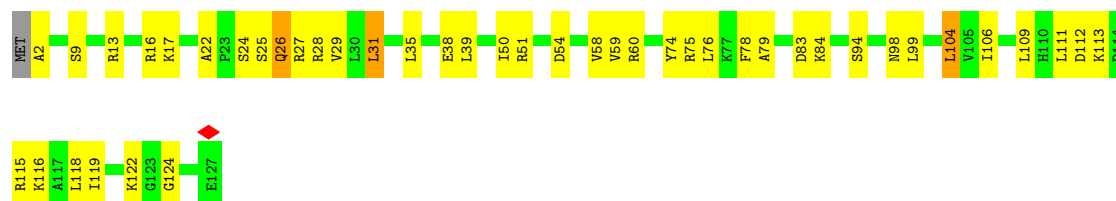
• Molecule 28: Ribosome assembly factor MRT4



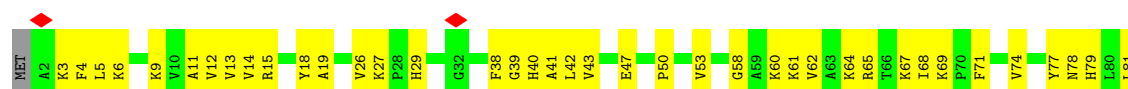
• Molecule 29: 60S ribosomal protein L25

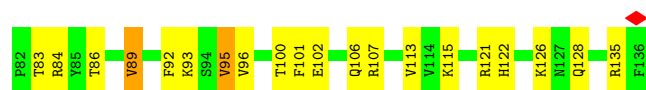


• Molecule 30: 60S ribosomal protein L26-A

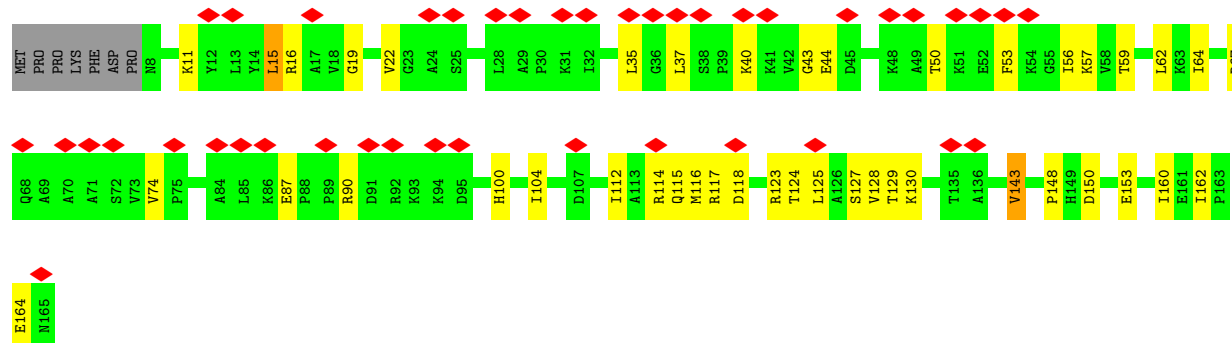


• Molecule 31: 60S ribosomal protein L27-A

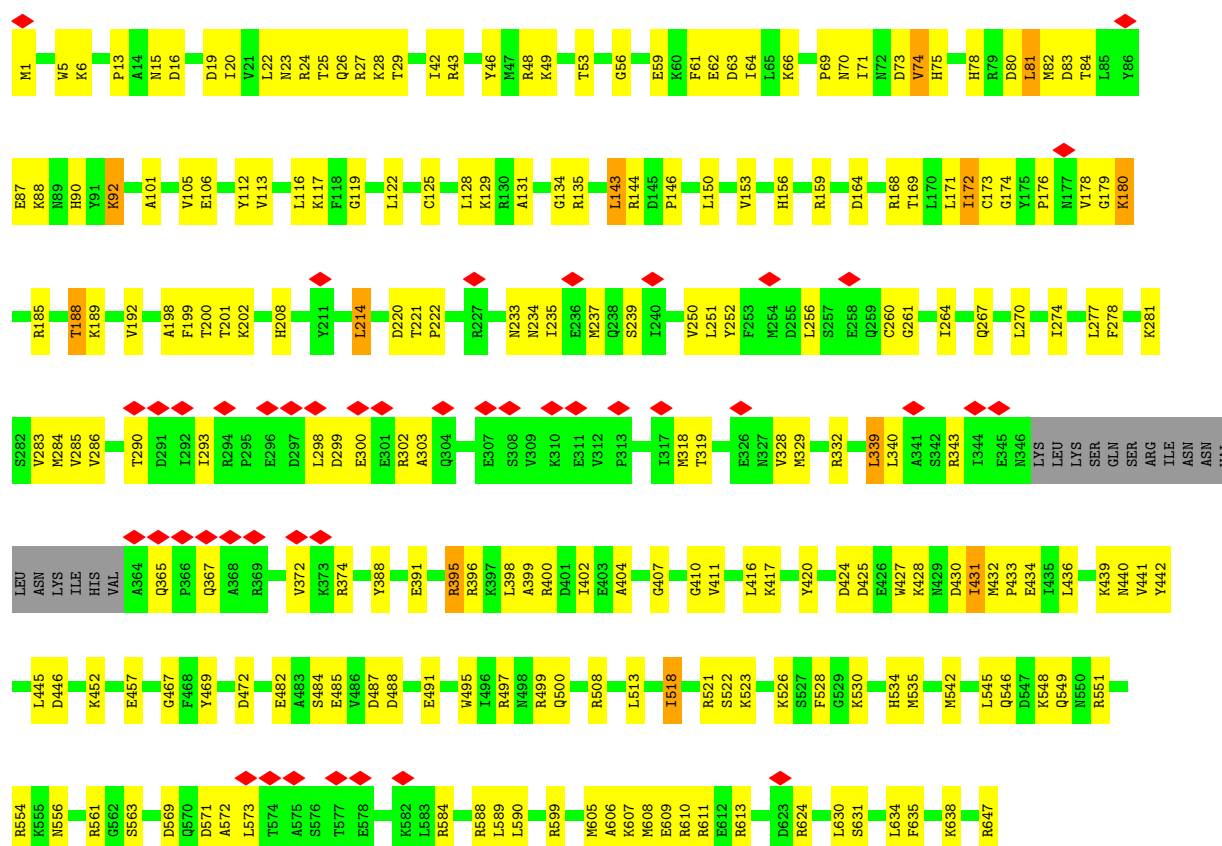




• Molecule 32: 60S ribosomal protein L12-A



• Molecule 33: Nucleolar GTP-binding protein 1



• Molecule 34: 60S ribosomal protein L30

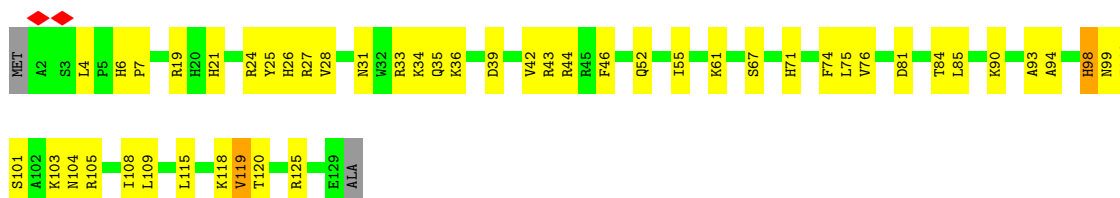




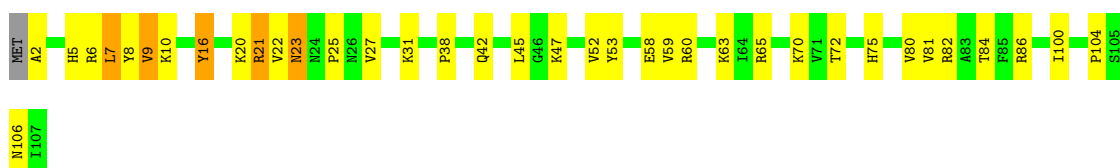
• Molecule 35: 60S ribosomal protein L31-A



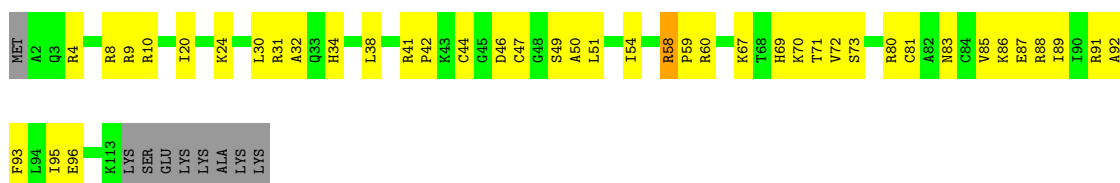
• Molecule 36: 60S ribosomal protein L32



• Molecule 37: 60S ribosomal protein L33-A

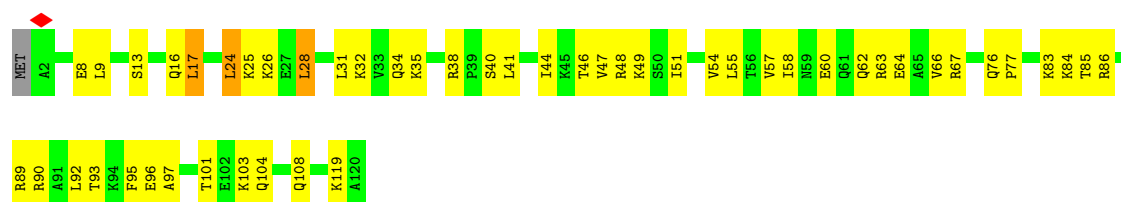


• Molecule 38: 60S ribosomal protein L34-A



• Molecule 39: 60S ribosomal protein L35-A





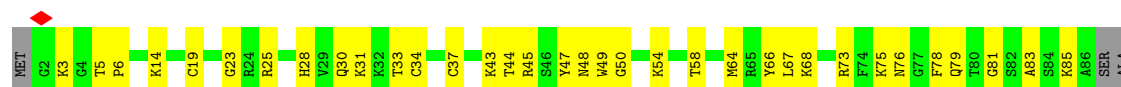
- Molecule 40: 60S ribosomal protein L36-A

Chain i: 56% 40% .



- Molecule 41: 60S ribosomal protein L37-A

Chain j: 58% 39% .



- Molecule 42: 60S ribosomal protein L38

Chain k: 63% 36% .



- Molecule 43: 60S ribosomal protein L39

Chain l: 53% 43% ..



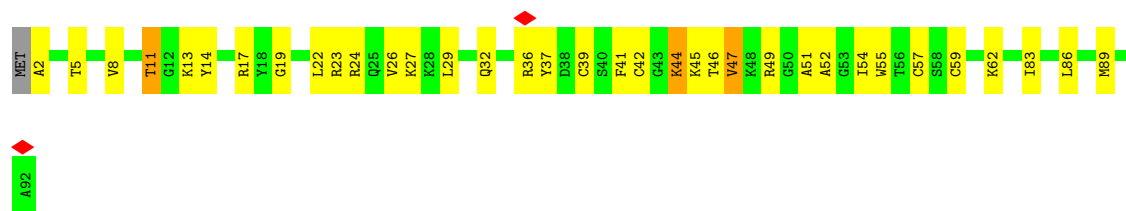
- Molecule 44: 60S ribosomal protein L29

Chain o: 61% 29% 8% .

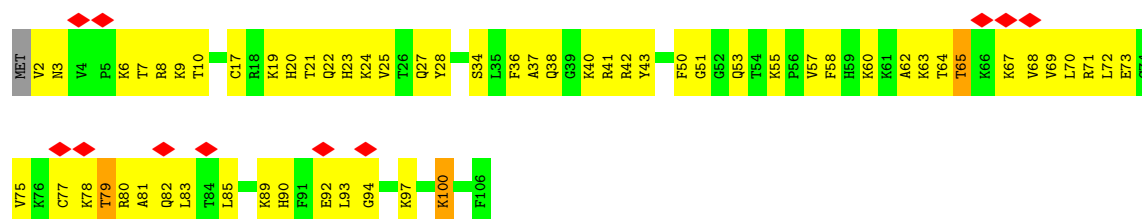


- Molecule 45: 60S ribosomal protein L43-A

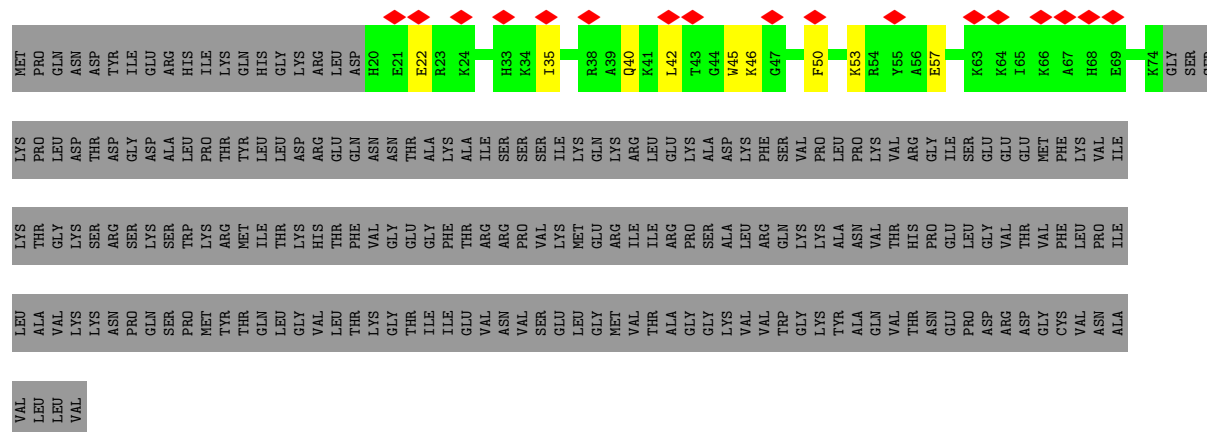
Chain p: 61% 35% ..



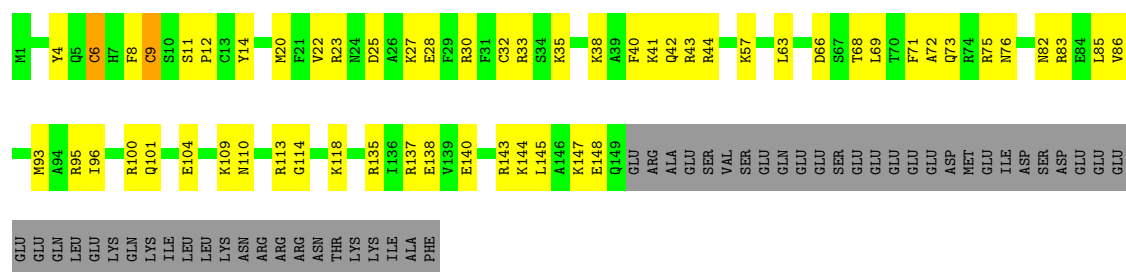
- Molecule 46: 60S ribosomal protein L42-A



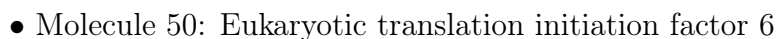
- Molecule 47: Ribosome biogenesis protein NSA2



- Molecule 48: Ribosome biogenesis protein RLP24



- Molecule 49: 60S ribosomal export protein NMD3





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	1782014	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	2.047	Depositor
Minimum map value	-0.001	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.039	Depositor
Recommended contour level	0.05	Depositor
Map size (Å)	642.0, 642.0, 642.0	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.3375, 1.3375, 1.3375	Depositor

5 Model quality

5.1 Standard geometry

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	Aa	0.07	0/5688	0.22	0/7700
1	m	0.07	0/5691	0.20	0/7702
1	n	0.07	0/5700	0.21	0/7716
1	t	0.07	0/5709	0.20	0/7727
1	w	0.08	0/5728	0.21	0/7751
1	x	0.07	0/5728	0.21	0/7751
2	1	0.14	0/80102	0.25	0/124881
3	2	0.12	0/2883	0.24	0/4491
4	3	0.14	0/3724	0.24	0/5798
5	4	0.12	0/4410	0.31	0/5990
6	A	0.11	0/1897	0.27	0/2550
7	B	0.13	0/3153	0.30	0/4239
8	C	0.12	0/2802	0.30	1/3792 (0.0%)
9	D	0.10	0/2250	0.26	0/3035
10	E	0.12	0/1425	0.30	0/1912
11	F	0.13	0/1822	0.30	0/2451
12	G	0.13	0/1830	0.30	0/2469
13	H	0.12	0/1514	0.27	0/2039
14	I	0.09	0/1018	0.25	0/1365
15	J	0.10	0/1332	0.29	0/1786
16	K	0.12	0/1204	0.25	0/1612
17	L	0.13	0/1568	0.31	0/2106
18	M	0.12	0/1075	0.26	0/1446
19	N	0.13	0/1758	0.25	0/2354
20	O	0.12	0/1586	0.28	0/2128
21	P	0.13	0/1466	0.28	0/1968
22	Q	0.11	0/1211	0.26	0/1633
23	R	0.12	0/1258	0.31	0/1679
24	S	0.12	0/1460	0.26	0/1962
25	T	0.12	0/1300	0.27	0/1743
26	U	0.12	0/843	0.31	0/1143
27	V	0.12	0/1019	0.29	0/1369

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
28	W	0.11	0/1842	0.27	0/2487
29	X	0.12	0/975	0.25	0/1314
30	Y	0.11	0/1005	0.25	0/1341
31	Z	0.12	0/1119	0.28	0/1497
32	a	0.08	0/1210	0.22	0/1627
33	b	0.11	0/5171	0.29	0/6947
34	c	0.10	0/751	0.22	0/1008
35	d	0.12	0/887	0.28	0/1191
36	e	0.12	0/1050	0.29	0/1406
37	f	0.13	0/869	0.26	0/1168
38	g	0.13	0/891	0.28	0/1191
39	h	0.11	0/979	0.27	0/1301
40	i	0.11	0/749	0.27	0/995
41	j	0.13	0/685	0.28	0/908
42	k	0.11	0/619	0.26	0/826
43	l	0.13	0/444	0.24	0/588
44	o	0.13	0/445	0.34	0/592
45	p	0.12	0/702	0.29	0/934
46	q	0.13	0/861	0.33	0/1136
47	r	0.08	0/476	0.20	0/621
48	u	0.12	0/1278	0.26	0/1699
49	v	0.11	0/1985	0.28	0/2692
50	y	0.12	0/1744	0.30	0/2375
51	z	0.10	0/445	0.24	0/585
All	All	0.12	0/187336	0.26	1/270717 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	C	183	LYS	N-CA-C	-5.23	107.92	114.56

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	Aa	5590	0	5669	70	0
1	m	5594	0	5675	105	0
1	n	5602	0	5677	131	0
1	t	5611	0	5690	109	0
1	w	5630	0	5705	123	0
1	x	5630	0	5705	83	0
2	1	71573	0	35968	2011	0
3	2	2579	0	1304	78	0
4	3	3333	0	1685	94	0
5	4	4331	0	4407	159	0
6	A	1863	0	1930	79	0
7	B	3082	0	3165	123	0
8	C	2750	0	2863	87	0
9	D	2204	0	2145	72	0
10	E	1401	0	1501	43	0
11	F	1785	0	1862	69	0
12	G	1798	0	1894	65	0
13	H	1493	0	1566	44	0
14	I	1003	0	1040	20	0
15	J	1312	0	1340	42	0
16	K	1173	0	1215	35	0
17	L	1543	0	1608	56	0
18	M	1060	0	1154	33	0
19	N	1721	0	1779	89	0
20	O	1556	0	1659	56	0
21	P	1443	0	1485	52	0
22	Q	1191	0	1265	37	0
23	R	1241	0	1330	44	0
24	S	1425	0	1466	53	0
25	T	1276	0	1323	64	0
26	U	826	0	843	22	0
27	V	1004	0	1048	62	0
28	W	1810	0	1829	87	0
29	X	960	0	1023	32	0
30	Y	994	0	1081	33	0
31	Z	1093	0	1155	41	0
32	a	1196	0	1257	26	0
33	b	5087	0	5118	182	0
34	c	743	0	797	18	0
35	d	873	0	914	24	0
36	e	1029	0	1096	33	0
37	f	851	0	880	26	0
38	g	881	0	945	42	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
39	h	970	0	1078	46	0
40	i	743	0	822	31	0
41	j	670	0	675	38	0
42	k	613	0	682	19	0
43	l	437	0	475	24	0
44	o	434	0	455	15	0
45	p	695	0	734	29	0
46	q	848	0	918	61	0
47	r	470	0	505	7	0
48	u	1256	0	1308	50	0
49	v	1946	0	1967	59	0
50	y	1722	0	1709	72	0
51	z	444	0	478	21	0
52	0	96	0	25	3	0
53	oC	1021	0	1060	36	0
54	Aa	62	0	24	4	0
54	m	62	0	24	8	0
54	n	62	0	24	7	0
54	t	31	0	12	8	0
54	w	93	0	36	4	0
54	x	31	0	12	3	0
55	b	1	0	0	0	0
All	All	177847	0	142084	4594	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 15.

All (4594) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:3112:G:N2	2:1:3122:A:H62	1.34	1.25
2:1:3112:G:H21	2:1:3122:A:N6	1.35	1.21
2:1:2275:A:H62	2:1:2311:G:N2	1.47	1.12
2:1:2275:A:N6	2:1:2311:G:H21	1.52	1.07
2:1:213:A:H62	2:1:227:G:N2	1.54	1.05
2:1:196:G:H21	2:1:219:A:N6	1.54	1.03
2:1:213:A:N6	2:1:227:G:H21	1.58	1.00
2:1:196:G:N2	2:1:219:A:H61	1.59	0.99
2:1:1896:A:H61	2:1:2339:C:N4	1.60	0.99
2:1:1717:U:H3	2:1:1727:G:H1	1.04	0.99
2:1:1973:G:H1	2:1:2049:A:N6	1.61	0.98

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2931:C:N4	2:1:2935:U:H3	1.61	0.97
2:1:528:U:H3	2:1:564:G:H1	0.98	0.97
2:1:1896:A:H61	2:1:2339:C:H42	1.09	0.96
3:2:79:A:H62	3:2:101:G:N2	1.65	0.94
2:1:3113:A:N6	2:1:3119:U:H3	1.66	0.93
2:1:1985:G:H1	2:1:2036:U:H3	0.96	0.93
2:1:2007:G:H1	2:1:2014:U:H3	1.10	0.93
2:1:3348:G:H1	2:1:3357:U:H3	1.15	0.92
2:1:2442:G:H1	2:1:2505:U:H3	0.92	0.92
2:1:659:G:N2	2:1:1435:A:C6	2.39	0.91
3:2:79:A:N6	3:2:101:G:H21	1.70	0.90
2:1:1993:G:H1	2:1:2028:U:H3	0.90	0.89
2:1:2250:G:H1	2:1:2266:U:H3	1.19	0.89
46:q:37:ALA:O	46:q:41:ARG:HB2	1.71	0.89
3:2:79:A:H62	3:2:101:G:H21	0.90	0.88
2:1:196:G:H21	2:1:219:A:H61	0.88	0.88
2:1:1896:A:N6	2:1:2339:C:H42	1.70	0.88
21:P:48:LEU:HD13	21:P:92:GLN:HG2	1.55	0.88
2:1:2931:C:H42	2:1:2935:U:H3	0.88	0.88
2:1:501:A:N1	2:1:613:G:C6	2.43	0.86
2:1:2002:G:H1	2:1:2019:U:H3	1.22	0.86
21:P:60:PHE:HB3	21:P:64:ASN:HB3	1.57	0.86
2:1:213:A:H62	2:1:227:G:H21	0.89	0.85
2:1:353:G:H22	2:1:364:G:H2'	1.40	0.85
18:M:23:ILE:HG23	18:M:30:GLY:H	1.41	0.84
2:1:659:G:N2	2:1:1435:A:N6	2.27	0.83
14:I:1:MET:HE3	14:I:3:ARG:HB2	1.59	0.83
42:k:2:ALA:N	42:k:50:SER:HG	1.77	0.82
46:q:25:VAL:HG23	46:q:71:ARG:H	1.43	0.82
2:1:3113:A:H62	2:1:3119:U:H3	0.86	0.82
2:1:2912:G:H21	2:1:3130:A:H2'	1.44	0.82
2:1:655:C:H2'	2:1:656:A:H8	1.45	0.81
2:1:363:G:H21	8:C:82:THR:HG22	1.45	0.81
14:I:10:LYS:HD3	14:I:12:LYS:H	1.44	0.81
2:1:1281:G:H5''	28:W:69:LYS:HD3	1.63	0.80
1:n:80:LEU:HB3	1:n:159:MET:HE1	1.63	0.80
2:1:3074:G:H4'	35:d:62:ARG:HD2	1.61	0.80
24:S:7:TYR:HB3	24:S:61:ILE:HD11	1.63	0.80
2:1:2350:C:H5''	21:P:68:GLY:HA3	1.64	0.80
8:C:206:LEU:HB2	8:C:248:VAL:HG12	1.62	0.80
2:1:1237:G:O6	2:1:1251:A:N1	2.16	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:442:G:C5	2:1:493:G:C2	2.71	0.78
2:1:2791:G:H1'	46:q:82:GLN:HG2	1.66	0.78
5:4:199:ALA:HA	5:4:522:LEU:HD13	1.66	0.78
11:F:27:ALA:HA	11:F:30:ARG:HE	1.48	0.78
49:v:291:LEU:HD21	49:v:330:ARG:HG3	1.66	0.78
2:1:1481:A:N3	38:g:4:ARG:NH1	2.32	0.77
2:1:2487:U:O2'	2:1:2488:A:N7	2.16	0.77
2:1:3212:C:OP2	2:1:3213:A:N6	2.18	0.77
2:1:1535:A:H62	2:1:1586:G:H21	1.30	0.77
2:1:2465:G:N2	2:1:2490:C:O2	2.18	0.77
2:1:761:A:H62	2:1:770:G:H21	1.32	0.77
2:1:2452:G:N1	2:1:2494:A:N6	2.33	0.77
5:4:161:TYR:HH	5:4:173:THR:HG1	1.31	0.77
28:W:145:ARG:HE	28:W:149:ILE:H	1.30	0.76
5:4:378:LEU:HD21	5:4:422:GLY:HA3	1.67	0.76
2:1:1947:G:HO3'	23:R:134:HIS:HE2	1.30	0.76
2:1:1973:G:N1	2:1:2049:A:N6	2.33	0.76
53:oC:3440:UNK:O	53:oC:3442:UNK:N	2.19	0.76
5:4:207:LEU:H	5:4:213:GLY:HA2	1.50	0.76
2:1:1981:G:H2'	2:1:1982:G:H8	1.51	0.76
28:W:64:LYS:HE2	28:W:104:PHE:HB2	1.68	0.76
46:q:6:LYS:HZ2	46:q:25:VAL:HG13	1.50	0.76
2:1:1957:G:C6	2:1:2085:U:C4	2.74	0.75
2:1:1413:G:H2'	2:1:1414:G:H8	1.51	0.75
33:b:180:LYS:HE3	33:b:180:LYS:H	1.49	0.75
2:1:442:G:N7	2:1:493:G:N1	2.34	0.75
1:m:143:MET:SD	1:m:143:MET:N	2.59	0.75
2:1:832:G:H1	2:1:862:U:H3	1.33	0.75
2:1:1986:U:N3	2:1:2035:G:N1	2.35	0.74
2:1:2374:C:N4	2:1:2820:A:N7	2.36	0.74
19:N:114:ARG:HH21	19:N:157:LYS:HB2	1.53	0.74
2:1:297:G:H8	2:1:299:G:H1'	1.52	0.74
2:1:2565:U:H3	2:1:2576:G:H1	1.34	0.74
16:K:103:ASP:HA	16:K:126:LYS:HB3	1.70	0.74
23:R:23:TRP:HB2	23:R:53:LYS:HE3	1.69	0.74
50:y:119:PRO:HA	50:y:139:ARG:HE	1.53	0.74
2:1:240:U:O2'	2:1:242:C:N4	2.18	0.74
2:1:2227:C:H2'	2:1:2228:A:H8	1.52	0.74
7:B:58:ARG:NH1	7:B:283:TYR:OH	2.20	0.74
2:1:173:G:C2	2:1:246:U:O2	2.41	0.74
2:1:1152:G:N2	2:1:1152:G:OP2	2.20	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:451:U:O2	2:1:483:G:O6	2.06	0.73
2:1:616:G:H2'	2:1:617:G:H8	1.51	0.73
5:4:163:VAL:HA	5:4:172:PRO:HB3	1.70	0.73
33:b:43:ARG:NH2	33:b:119:GLY:O	2.21	0.73
2:1:2870:C:H4'	2:1:2924:U:H3	1.53	0.73
2:1:1889:G:N2	2:1:2347:U:O2	2.22	0.73
13:H:92:TYR:HB3	13:H:179:ILE:HG22	1.68	0.73
2:1:1746:U:H2'	2:1:1747:G:H8	1.52	0.73
31:Z:78:ASN:HA	34:c:35:ARG:HH22	1.53	0.73
1:Aa:729:GLN:HB3	1:m:550:PRO:HD3	1.70	0.73
2:1:3348:G:N2	2:1:3357:U:O2	2.20	0.73
2:1:417:A:H2'	2:1:418:A:H8	1.51	0.73
2:1:2514:U:OP1	12:G:68:ARG:NE	2.22	0.73
33:b:188:THR:HG21	33:b:208:HIS:H	1.53	0.73
27:V:136:VAL:HG13	27:V:137:VAL:HG23	1.71	0.73
1:Aa:621:LEU:HD23	1:Aa:640:LEU:HD13	1.71	0.72
2:1:197:G:N2	2:1:395:A:N7	2.37	0.72
2:1:284:A:H5'	2:1:285:A:H5'	1.71	0.72
2:1:1993:G:N2	2:1:2028:U:O2	2.22	0.72
2:1:1064:A:O2'	2:1:1093:A:N6	2.23	0.72
8:C:337:GLU:HG2	8:C:339:LEU:H	1.54	0.72
15:J:53:THR:HG22	15:J:60:ARG:HA	1.70	0.72
15:J:94:ARG:NH1	15:J:96:PHE:O	2.22	0.72
23:R:105:LEU:HD13	23:R:135:LYS:HD2	1.72	0.72
48:u:32:CYS:SG	48:u:33:ARG:N	2.62	0.72
2:1:173:G:H1	2:1:246:U:H3	1.34	0.72
2:1:813:G:O2'	41:j:45:ARG:NH2	2.21	0.72
2:1:2837:A:N6	2:1:2849:C:O2'	2.22	0.72
2:1:748:U:H5''	44:o:31:SER:HB2	1.71	0.72
8:C:31:ARG:HH12	22:Q:24:VAL:HG22	1.55	0.72
47:r:42:LEU:HD12	47:r:46:LYS:HB2	1.72	0.72
2:1:2452:G:C6	2:1:2494:A:N6	2.57	0.72
2:1:1464:G:N2	2:1:1467:A:OP2	2.23	0.72
2:1:1985:G:N2	2:1:2036:U:O2	2.21	0.71
9:D:22:ARG:HH21	9:D:28:THR:HB	1.55	0.71
2:1:436:A:OP2	2:1:621:A:N6	2.22	0.71
2:1:2433:U:OP2	2:1:2434:U:O2'	2.08	0.71
2:1:2742:C:H2'	2:1:2743:A:H8	1.54	0.71
2:1:108:A:OP1	17:L:42:ARG:NH1	2.23	0.71
2:1:3208:G:O6	20:O:116:LYS:NZ	2.23	0.71
12:G:185:ARG:NH1	12:G:185:ARG:O	2.23	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:I:19:ASP:OD1	14:I:19:ASP:N	2.22	0.71
2:1:1957:G:O6	2:1:2085:U:C4	2.44	0.71
13:H:8:GLN:HG3	13:H:72:LYS:HD2	1.72	0.71
46:q:27:GLN:HG3	46:q:92:GLU:HA	1.72	0.71
2:1:2465:G:N1	2:1:2490:C:N3	2.30	0.71
2:1:2522:G:H22	6:A:68:LYS:HD2	1.56	0.71
2:1:2661:G:H2'	2:1:2662:G:H8	1.55	0.71
19:N:61:ILE:HD11	19:N:131:GLU:HB2	1.73	0.71
28:W:216:LYS:HG3	28:W:234:ASN:HA	1.72	0.71
1:Aa:400:ARG:NH2	1:Aa:408:GLU:OE1	2.24	0.71
17:L:104:ARG:NH2	40:i:17:VAL:O	2.24	0.71
2:1:1054:A:H5''	2:1:2637:A:H61	1.56	0.70
6:A:112:ILE:HD11	6:A:133:TYR:HB2	1.72	0.70
1:n:46:LYS:HB3	1:n:154:ASP:HB2	1.73	0.70
2:1:117:U:OP2	19:N:2:GLY:N	2.24	0.70
2:1:1222:G:N2	2:1:1286:A:N6	2.38	0.70
2:1:3113:A:N7	2:1:3119:U:O4	2.24	0.70
1:n:123:PRO:HB3	1:n:214:PRO:HB2	1.73	0.70
2:1:442:G:C8	2:1:493:G:N2	2.59	0.70
1:t:292:LYS:NZ	1:t:389:THR:O	2.23	0.70
2:1:869:G:N1	2:1:891:G:O6	2.24	0.70
2:1:1427:U:OP2	16:K:4:ARG:NH2	2.24	0.70
6:A:97:ASN:H	6:A:100:ASN:HD21	1.39	0.70
7:B:50:LYS:HB3	7:B:79:VAL:HG22	1.72	0.70
37:f:47:LYS:NZ	37:f:104:PRO:O	2.24	0.70
1:n:590:TYR:HA	52:0:12:UNK:HA	1.74	0.70
2:1:3149:G:O2'	7:B:129:ALA:O	2.10	0.70
1:w:74:ILE:HG12	1:w:115:GLU:HG3	1.73	0.70
2:1:2386:A:H62	2:1:2993:G:H21	1.37	0.70
3:2:7:G:OP1	9:D:33:ARG:NH1	2.25	0.70
5:4:556:LEU:HA	5:4:559:LEU:HD23	1.72	0.70
28:W:57:ARG:NH1	28:W:60:TRP:O	2.25	0.70
2:1:2004:U:H2'	2:1:2005:G:H8	1.56	0.70
8:C:328:ASN:ND2	11:F:149:TYR:OH	2.23	0.70
2:1:3044:G:H2'	2:1:3045:G:H8	1.57	0.69
2:1:3082:C:N4	2:1:3083:G:O6	2.25	0.69
42:k:2:ALA:N	42:k:51:LEU:O	2.25	0.69
23:R:110:ARG:NH2	23:R:115:ILE:O	2.25	0.69
2:1:173:G:N2	2:1:246:U:O2	2.25	0.69
48:u:32:CYS:SG	48:u:35:LYS:NZ	2.66	0.69
1:x:36:THR:HB	1:x:110:LEU:HA	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:659:G:C2	2:1:1435:A:N6	2.61	0.69
2:1:2799:A:N3	16:K:42:ARG:NH1	2.40	0.69
19:N:22:LEU:HD12	19:N:26:ARG:HH21	1.57	0.69
45:p:44:LYS:NZ	45:p:57:CYS:SG	2.65	0.69
50:y:42:LEU:HD13	50:y:46:ILE:HG12	1.75	0.69
2:1:564:G:N2	2:1:565:U:O4	2.24	0.69
5:4:224:ARG:NH2	5:4:268:VAL:O	2.24	0.69
10:E:69:PHE:HA	10:E:73:GLY:HA2	1.73	0.69
2:1:998:A:O2'	2:1:999:G:OP1	2.10	0.69
2:1:1997:U:O4	2:1:2024:G:O6	2.11	0.69
2:1:2401:A:H1'	2:1:2404:A:H62	1.56	0.69
33:b:588:ARG:HH21	43:l:24:PRO:HG3	1.58	0.69
2:1:1497:C:H2'	2:1:1498:A:H8	1.57	0.69
28:W:49:ARG:NH2	28:W:50:THR:OG1	2.26	0.69
49:v:162:ARG:NH1	49:v:198:ASP:OD1	2.24	0.69
5:4:460:TYR:HB3	5:4:468:LEU:HD11	1.75	0.69
24:S:80:ARG:NH1	25:T:154:VAL:O	2.26	0.69
1:w:645:ASP:OD2	1:w:671:ARG:NH1	2.25	0.69
2:1:1481:A:N6	2:1:1872:C:O2	2.25	0.69
2:1:3100:U:H5'	51:z:18:ARG:HH22	1.58	0.69
2:1:743:C:N3	22:Q:141:ARG:NH2	2.39	0.69
2:1:1060:U:H2'	2:1:1061:A:H8	1.58	0.69
2:1:1481:A:H1'	38:g:4:ARG:HH12	1.58	0.69
28:W:134:THR:HB	28:W:187:LEU:HD11	1.75	0.69
38:g:44:CYS:HB3	38:g:49:SER:H	1.58	0.69
2:1:2828:G:H21	33:b:22:LEU:HB3	1.56	0.68
2:1:2834:G:H22	2:1:2854:U:H2'	1.58	0.68
2:1:442:G:O6	2:1:492:U:O2	2.11	0.68
32:a:112:ILE:O	32:a:115:GLN:NE2	2.25	0.68
33:b:299:ASP:O	33:b:302:ARG:NH2	2.26	0.68
39:h:24:LEU:HD21	39:h:51:ILE:HG22	1.74	0.68
2:1:442:G:N7	2:1:493:G:C2	2.61	0.68
2:1:3019:U:N3	2:1:3036:G:N1	2.41	0.68
5:4:94:THR:HG1	5:4:142:THR:HG1	1.36	0.68
12:G:144:GLU:OE2	12:G:145:ASN:ND2	2.26	0.68
2:1:2810:C:H2'	2:1:2811:A:H8	1.59	0.68
2:1:2863:G:O6	33:b:71:ILE:N	2.22	0.68
2:1:2876:C:N4	2:1:2951:G:O3'	2.26	0.68
4:3:29:U:H5''	17:L:27:ASP:HB3	1.74	0.68
1:t:70:THR:HB	1:t:117:LYS:HB2	1.74	0.68
1:w:684:PRO:O	1:w:689:ARG:NH1	2.27	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:oC:3454:UNK:O	53:oC:3456:UNK:N	2.26	0.68
2:1:1661:G:H2'	2:1:1662:G:C8	2.29	0.68
4:3:79:A:OP1	5:4:349:LYS:NZ	2.26	0.68
38:g:8:ARG:O	38:g:10:ARG:NH2	2.25	0.68
34:c:13:LYS:HB3	34:c:100:ILE:HD11	1.75	0.68
2:1:407:A:H4'	2:1:1397:C:H5'	1.75	0.68
2:1:1886:A:H2'	2:1:1887:A:H8	1.58	0.68
2:1:1921:A:OP2	2:1:1930:A:N6	2.27	0.68
1:Aa:476:ASP:HB3	1:Aa:479:ILE:HB	1.76	0.68
24:S:167:ARG:NH2	24:S:169:SER:OG	2.27	0.68
40:i:50:LEU:O	40:i:55:ARG:NH1	2.26	0.68
1:m:695:LYS:NZ	1:m:696:CYS:SG	2.63	0.68
49:v:258:VAL:HG23	49:v:272:GLN:HB3	1.76	0.68
2:1:1222:G:H21	2:1:1286:A:N6	1.91	0.68
2:1:2251:G:H2'	2:1:2252:A:C8	2.28	0.68
50:y:143:SER:HB3	50:y:164:GLN:HE21	1.59	0.68
2:1:600:G:N2	2:1:603:A:OP2	2.26	0.68
29:X:27:ARG:NH1	29:X:29:SER:O	2.27	0.68
1:x:107:ASN:ND2	1:x:301:ASN:OD1	2.27	0.68
1:x:520:GLY:O	1:x:525:LYS:NZ	2.27	0.68
2:1:197:G:O2'	2:1:218:G:N2	2.27	0.67
48:u:57:LYS:NZ	48:u:63:LEU:O	2.25	0.67
2:1:1986:U:O2	2:1:2035:G:N2	2.27	0.67
2:1:3064:U:H2'	2:1:3065:G:H8	1.60	0.67
11:F:88:ARG:NH2	11:F:91:GLY:O	2.27	0.67
21:P:30:ARG:HA	21:P:119:VAL:HG11	1.76	0.67
46:q:89:LYS:O	49:v:380:ASN:ND2	2.27	0.67
2:1:1713:G:O2'	2:1:1730:G:N2	2.26	0.67
2:1:2465:G:H2'	2:1:2466:G:C8	2.28	0.67
33:b:607:LYS:HD2	33:b:610:ARG:HH12	1.57	0.67
2:1:2111:G:O2'	48:u:44:ARG:NH1	2.28	0.67
10:E:150:LYS:HD2	10:E:156:LYS:HE2	1.76	0.67
2:1:303:G:H5''	2:1:304:G:H5''	1.77	0.67
2:1:1553:U:H4'	2:1:1554:U:H5'	1.77	0.67
2:1:1661:G:H2'	2:1:1662:G:H8	1.58	0.67
21:P:67:ILE:O	21:P:80:LYS:NZ	2.28	0.67
1:w:447:SER:O	1:w:450:HIS:NE2	2.27	0.67
3:2:107:C:H2'	3:2:108:A:H8	1.60	0.67
1:x:570:LEU:O	1:x:574:SER:OG	2.13	0.67
2:1:445:G:N2	2:1:448:U:OP2	2.23	0.67
2:1:1389:G:OP1	36:e:104:ASN:ND2	2.28	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1617:G:H2'	2:1:1618:G:C8	2.29	0.67
2:1:2123:G:H1	2:1:2330:C:H42	1.41	0.67
2:1:2346:C:O2'	2:1:2347:U:O5'	2.12	0.67
33:b:442:TYR:HA	33:b:445:LEU:HD22	1.75	0.67
2:1:2987:A:H5''	20:O:68:ARG:HH12	1.60	0.67
33:b:171:LEU:HB3	33:b:250:VAL:HG22	1.77	0.67
1:t:684:PRO:O	1:t:689:ARG:NH1	2.28	0.67
2:1:1897:G:H2'	2:1:1898:G:H8	1.59	0.66
5:4:432:CYS:SG	5:4:433:VAL:N	2.68	0.66
28:W:151:ALA:HA	28:W:154:ASP:HB2	1.77	0.66
2:1:417:A:H2'	2:1:418:A:C8	2.30	0.66
2:1:3276:G:O6	21:P:171:ARG:NH2	2.27	0.66
14:I:54:CYS:SG	14:I:73:HIS:ND1	2.68	0.66
37:f:9:VAL:HG13	37:f:100:ILE:HB	1.77	0.66
49:v:278:LYS:NZ	49:v:280:SER:OG	2.28	0.66
1:w:593:GLU:OE2	1:w:596:ARG:NH1	2.27	0.66
2:1:1655:G:H21	2:1:1800:A:H62	1.43	0.66
2:1:2011:U:O2	1:w:150:LYS:NZ	2.28	0.66
13:H:31:ARG:NH2	13:H:84:LYS:O	2.28	0.66
40:i:3:VAL:O	40:i:12:ASN:ND2	2.29	0.66
1:n:551:LYS:HD2	1:n:654:VAL:HG22	1.77	0.66
50:y:20:THR:HG23	50:y:22:THR:H	1.60	0.66
2:1:213:A:OP1	30:Y:2:ALA:N	2.29	0.66
2:1:448:U:O2'	2:1:449:U:OP2	2.14	0.66
2:1:801:A:OP1	16:K:27:LYS:NZ	2.27	0.66
2:1:3172:A:O2'	20:O:101:ARG:NH1	2.27	0.66
1:Aa:126:ALA:HB2	1:Aa:215:PHE:HB3	1.78	0.66
2:1:149:U:OP2	19:N:49:ARG:NH1	2.29	0.66
2:1:1635:G:N2	2:1:1638:A:OP2	2.29	0.66
2:1:1794:G:N7	6:A:184:ARG:NH1	2.43	0.66
5:4:86:GLU:HB3	5:4:148:ASP:HA	1.75	0.66
13:H:20:ILE:HB	18:M:7:VAL:HG13	1.78	0.66
46:q:27:GLN:HG2	46:q:68:VAL:HG23	1.76	0.66
1:w:242:LEU:HB3	1:w:298:VAL:HG12	1.77	0.66
1:w:531:MET:HE1	1:w:552:GLY:H	1.61	0.66
2:1:2828:G:N2	33:b:19:ASP:OD1	2.29	0.66
6:A:62:VAL:HA	6:A:73:GLU:HA	1.76	0.66
10:E:41:ILE:HG23	10:E:85:ILE:HB	1.78	0.66
39:h:17:LEU:HD21	39:h:58:ILE:HG12	1.77	0.66
46:q:64:THR:HA	49:v:382:ASP:HB2	1.76	0.66
27:V:81:GLN:O	27:V:98:ASN:ND2	2.28	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1556:C:H2'	2:1:2169:G:H22	1.60	0.66
14:I:54:CYS:SG	14:I:67:HIS:NE2	2.63	0.66
31:Z:121:ARG:NH2	31:Z:126:LYS:O	2.29	0.66
1:m:335:ARG:NH2	1:m:377:MET:SD	2.67	0.66
8:C:207:VAL:HA	8:C:249:ILE:HG22	1.78	0.66
2:1:952:A:OP1	44:o:14:ARG:NH1	2.29	0.65
2:1:2855:U:OP1	33:b:144:ARG:NH2	2.29	0.65
4:3:9:A:H2'	4:3:10:A:H8	1.62	0.65
2:1:2005:G:H1	2:1:2016:U:H3	0.72	0.65
2:1:2986:U:H2'	2:1:2987:A:H8	1.61	0.65
26:U:97:SER:HA	26:U:103:TYR:HA	1.76	0.65
2:1:31:C:OP2	19:N:187:ARG:NH2	2.30	0.65
2:1:1372:C:H2'	2:1:1373:A:H8	1.61	0.65
2:1:2002:G:H2'	2:1:2003:G:C8	2.31	0.65
41:j:49:TRP:CD1	41:j:50:GLY:H	2.14	0.65
33:b:80:ASP:OD2	33:b:84:THR:OG1	2.15	0.65
33:b:180:LYS:NZ	33:b:198:ALA:O	2.29	0.65
45:p:37:TYR:HB2	45:p:47:VAL:HG11	1.77	0.65
2:1:184:U:H3	2:1:232:G:H1	0.77	0.65
5:4:271:GLU:HB2	5:4:334:LEU:HD11	1.78	0.65
9:D:49:TYR:HB3	9:D:64:ILE:HD11	1.77	0.65
10:E:146:ILE:HD13	10:E:149:ILE:HD11	1.78	0.65
17:L:50:PRO:HA	17:L:137:GLN:HE21	1.62	0.65
28:W:145:ARG:NH2	28:W:149:ILE:O	2.29	0.65
31:Z:27:LYS:HB2	31:Z:42:LEU:HB3	1.78	0.65
33:b:74:VAL:HG13	33:b:75:HIS:HD2	1.60	0.65
33:b:83:ASP:HB3	33:b:88:LYS:HB2	1.79	0.65
33:b:199:PHE:O	33:b:202:LYS:NZ	2.29	0.65
48:u:20:MET:HE3	48:u:28:GLU:HB3	1.77	0.65
2:1:548:G:O2'	2:1:549:U:O4'	2.11	0.65
2:1:1993:G:O6	2:1:2028:U:O4	2.14	0.65
28:W:127:PRO:HG2	28:W:130:LYS:HB3	1.77	0.65
1:w:732:GLY:HA2	1:w:745:VAL:HG21	1.79	0.65
8:C:47:ARG:HH21	8:C:109:TRP:HA	1.60	0.65
28:W:121:ARG:NH1	28:W:122:SER:O	2.30	0.65
45:p:5:THR:HG21	45:p:8:VAL:HB	1.79	0.65
1:t:499:ARG:HB3	1:t:503:MET:HB3	1.79	0.65
2:1:80:G:H5''	19:N:193:ARG:HH22	1.62	0.65
2:1:1193:A:O2'	2:1:1298:C:OP1	2.14	0.65
2:1:1307:G:OP1	20:O:59:ARG:NH2	2.29	0.65
2:1:2465:G:H2'	2:1:2466:G:H8	1.61	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2745:G:N2	2:1:2748:A:OP2	2.28	0.65
2:1:3013:U:H2'	2:1:3014:U:C6	2.31	0.65
5:4:221:GLN:NE2	5:4:306:SER:O	2.29	0.65
15:J:17:LEU:HB2	15:J:71:VAL:HG23	1.78	0.65
2:1:411:U:H2'	2:1:412:G:H8	1.62	0.65
2:1:2005:G:N2	2:1:2016:U:O2	2.22	0.65
2:1:2676:A:N3	2:1:2677:G:N1	2.45	0.65
3:2:44:C:O2'	9:D:152:ARG:NH1	2.30	0.65
17:L:115:ARG:HH12	17:L:116:LEU:HG	1.61	0.65
26:U:29:ASP:N	26:U:29:ASP:OD1	2.29	0.65
40:i:9:ILE:HA	40:i:13:LYS:HE3	1.78	0.65
1:n:698:LYS:HE3	1:n:699:LYS:HE3	1.78	0.65
1:w:402:PRO:HA	1:w:406:ASP:HB2	1.79	0.65
53:oC:3519:UNK:O	53:oC:3523:UNK:N	2.30	0.65
2:1:184:U:O4	2:1:232:G:O6	2.15	0.65
2:1:220:G:N7	2:1:1389:G:N1	2.44	0.65
2:1:341:G:N7	8:C:195:ARG:NH2	2.45	0.65
2:1:1979:G:O6	2:1:2043:U:O4	2.15	0.65
3:2:23:A:OP1	3:2:25:G:N1	2.28	0.65
44:o:38:LYS:O	44:o:42:ASN:ND2	2.30	0.65
1:t:414:PRO:O	1:t:419:ARG:NH1	2.30	0.65
2:1:2000:U:N3	2:1:2021:G:N1	2.44	0.64
12:G:146:LYS:NZ	12:G:173:MET:O	2.28	0.64
27:V:104:ASN:OD1	27:V:108:GLU:N	2.29	0.64
28:W:61:ALA:HB1	32:a:123:ARG:HD3	1.78	0.64
1:n:589:LYS:O	52:0:13:UNK:N	2.30	0.64
44:o:36:ASP:OD2	44:o:39:PHE:N	2.30	0.64
2:1:2831:G:O6	2:1:2858:U:O2	2.15	0.64
5:4:285:LYS:HB2	5:4:449:LEU:HD13	1.80	0.64
18:M:55:ARG:NH2	18:M:76:ALA:O	2.25	0.64
31:Z:102:GLU:O	31:Z:106:GLN:NE2	2.30	0.64
2:1:975:C:H4'	22:Q:144:ARG:HH22	1.62	0.64
2:1:2005:G:O6	2:1:2016:U:O4	2.14	0.64
2:1:2469:G:N2	2:1:2477:G:N3	2.36	0.64
11:F:107:ARG:NH2	11:F:200:ASN:OD1	2.29	0.64
43:l:20:ASN:ND2	43:l:42:ARG:O	2.31	0.64
1:x:338:GLN:NE2	1:x:380:ALA:O	2.26	0.64
7:B:38:SER:OG	7:B:39:LYS:NZ	2.30	0.64
11:F:151:ARG:NH1	11:F:206:LYS:O	2.31	0.64
33:b:62:GLU:OE1	33:b:66:LYS:NZ	2.29	0.64
2:1:351:A:N6	43:l:37:TYR:O	2.23	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2651:G:O3'	2:1:2760:C:N4	2.29	0.64
2:1:2785:A:H2'	2:1:2786:G:C8	2.32	0.64
2:1:3324:C:H5'	35:d:70:ARG:HH12	1.62	0.64
5:4:154:VAL:HB	5:4:526:THR:HB	1.79	0.64
34:c:66:LYS:NZ	34:c:103:THR:O	2.29	0.64
2:1:664:U:H2'	2:1:665:A:H8	1.63	0.64
2:1:3244:A:OP2	7:B:100:ARG:NH1	2.31	0.64
2:1:3295:A:H2'	2:1:3296:A:C8	2.32	0.64
28:W:84:GLU:HG2	28:W:89:LEU:HB2	1.79	0.64
32:a:15:LEU:HD23	32:a:62:LEU:HD22	1.79	0.64
1:n:291:GLY:HA2	54:n:901:AGS:H5'2	1.79	0.64
2:1:1785:U:H2'	2:1:1786:G:C8	2.33	0.64
2:1:2533:G:N2	2:1:2534:G:O6	2.31	0.64
2:1:2931:C:N3	2:1:2935:U:O4	2.30	0.64
1:Aa:35:ILE:HG23	1:Aa:111:GLY:HA2	1.78	0.64
2:1:2950:G:N2	2:1:2953:U:OP1	2.31	0.64
40:i:20:MET:SD	40:i:20:MET:N	2.68	0.64
2:1:528:U:O2	2:1:564:G:N2	2.22	0.64
2:1:2831:G:C6	2:1:2858:U:O2	2.51	0.64
4:3:47:C:H1'	4:3:61:A:H2'	1.80	0.64
13:H:36:LYS:NZ	13:H:37:ASN:O	2.31	0.64
1:n:598:ILE:HD11	1:n:636:VAL:HG13	1.80	0.64
1:x:297:ARG:O	1:x:301:ASN:ND2	2.31	0.64
2:1:814:U:H2'	2:1:815:G:C8	2.32	0.64
2:1:3211:C:H2'	2:1:3212:C:H5	1.62	0.64
5:4:405:ASN:ND2	5:4:407:GLU:OE2	2.31	0.64
5:4:492:THR:OG1	5:4:495:SER:OG	2.16	0.64
38:g:42:PRO:HG2	38:g:54:ILE:HG12	1.80	0.64
42:k:5:ILE:HB	42:k:54:LEU:HG	1.80	0.64
1:m:684:PRO:O	1:m:689:ARG:NH1	2.31	0.64
50:y:80:GLU:OE1	50:y:80:GLU:N	2.31	0.64
2:1:905:U:H1'	6:A:15:ILE:HD11	1.80	0.63
2:1:2044:U:H2'	2:1:2045:G:C8	2.32	0.63
2:1:2600:C:H2'	2:1:2601:A:H8	1.62	0.63
8:C:35:VAL:HG21	8:C:244:LEU:HD21	1.79	0.63
8:C:131:VAL:HG11	8:C:134:LEU:HB3	1.80	0.63
27:V:23:MET:HB3	27:V:34:LEU:HB2	1.79	0.63
46:q:27:GLN:HB2	46:q:93:LEU:HB3	1.80	0.63
1:w:250:LEU:HB3	1:w:253:GLU:HB2	1.80	0.63
1:w:402:PRO:O	1:w:404:ARG:NH2	2.31	0.63
2:1:1985:G:O6	2:1:2036:U:O4	2.17	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:414:LYS:HA	5:4:417:LYS:HE2	1.80	0.63
5:4:563:LYS:HE2	5:4:567:LEU:HB3	1.79	0.63
19:N:143:ARG:HH12	39:h:93:THR:H	1.46	0.63
27:V:16:GLY:HA3	27:V:83:LYS:HG3	1.79	0.63
1:m:618:ILE:HG13	1:m:621:LEU:HD12	1.80	0.63
46:q:90:HIS:ND1	49:v:379:TYR:O	2.31	0.63
49:v:156:ARG:H	49:v:241:LYS:HE3	1.63	0.63
49:v:291:LEU:HD13	49:v:334:VAL:HG11	1.79	0.63
2:1:1370:G:H2'	2:1:1371:G:H8	1.63	0.63
2:1:2458:A:O2'	2:1:2459:A:O4'	2.17	0.63
2:1:3068:U:OP2	23:R:62:ARG:NH2	2.31	0.63
15:J:41:SER:OG	15:J:43:GLN:NE2	2.28	0.63
1:n:563:LYS:NZ	1:n:660:ASN:OD1	2.32	0.63
2:1:72:C:O2'	17:L:66:ASN:OD1	2.15	0.63
2:1:3002:C:OP1	7:B:26:ARG:NH1	2.27	0.63
8:C:58:HIS:HA	8:C:90:PHE:HE1	1.62	0.63
19:N:54:LYS:HE3	19:N:56:LYS:HD2	1.80	0.63
32:a:124:THR:HG23	32:a:127:SER:H	1.64	0.63
41:j:48:ASN:HA	41:j:54:LYS:HD2	1.79	0.63
46:q:8:ARG:HG2	46:q:97:LYS:HD2	1.80	0.63
1:Aa:620:ALA:HB2	1:m:638:THR:HG21	1.81	0.63
2:1:65:A:O2'	17:L:100:ARG:NH2	2.32	0.63
2:1:1900:A:O2'	2:1:1906:G:N7	2.31	0.63
2:1:2000:U:O4	2:1:2021:G:O6	2.16	0.63
2:1:3229:G:O6	2:1:3258:U:O2	2.16	0.63
13:H:18:VAL:O	18:M:5:SER:OG	2.15	0.63
42:k:22:THR:OG1	42:k:46:ARG:O	2.16	0.63
45:p:14:TYR:O	45:p:17:ARG:NH2	2.31	0.63
2:1:882:A:N1	33:b:647:ARG:NH1	2.47	0.63
2:1:970:A:H2'	2:1:971:G:C8	2.34	0.63
2:1:1203:A:N6	2:1:1300:G:O2'	2.30	0.63
3:2:53:U:O2'	3:2:55:A:N6	2.32	0.63
21:P:97:ASN:O	21:P:101:ASN:ND2	2.32	0.63
53:oC:3444:UNK:HB2	53:oC:3550:UNK:H	1.63	0.63
2:1:1119:C:H2'	2:1:1120:A:H8	1.64	0.63
2:1:1474:A:O2'	35:d:57:GLN:NE2	2.32	0.63
2:1:2452:G:N1	2:1:2494:A:C6	2.67	0.63
13:H:166:ARG:HH22	13:H:168:ARG:HA	1.64	0.63
17:L:20:GLU:N	17:L:20:GLU:OE1	2.30	0.63
22:Q:16:ARG:HH22	22:Q:18:ALA:HB3	1.63	0.63
31:Z:101:PHE:HD1	31:Z:107:ARG:HH12	1.46	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:530:G:H2'	2:1:531:G:C8	2.34	0.63
2:1:899:U:H2'	2:1:900:G:H8	1.63	0.63
18:M:66:THR:HG22	18:M:68:LEU:H	1.62	0.63
34:c:13:LYS:NZ	34:c:99:ASP:OD1	2.32	0.63
42:k:74:LYS:NZ	42:k:76:ASN:OD1	2.32	0.63
2:1:3392:U:OP1	21:P:43:LYS:NZ	2.32	0.63
19:N:73:ARG:HD3	19:N:74:PRO:HD2	1.81	0.63
1:m:730:GLU:HG3	1:m:757:ILE:HD11	1.80	0.63
49:v:341:ALA:HB2	49:v:352:VAL:HG23	1.81	0.63
50:y:15:VAL:HG13	50:y:16:PHE:HD1	1.64	0.63
2:1:212:G:C6	2:1:222:A:H2	2.17	0.62
2:1:2762:A:N7	2:1:2795:U:O4	2.32	0.62
6:A:33:ASP:O	6:A:37:ARG:HB2	1.98	0.62
10:E:4:GLN:HG3	36:e:75:LEU:HB2	1.81	0.62
24:S:89:ASN:HD21	25:T:156:TYR:H	1.47	0.62
32:a:117:ARG:HD2	32:a:125:LEU:HD13	1.81	0.62
2:1:753:C:H2'	2:1:754:G:H8	1.64	0.62
18:M:62:GLN:OE1	18:M:62:GLN:N	2.32	0.62
50:y:72:VAL:HG23	50:y:96:ARG:HB3	1.81	0.62
53:oC:3462:UNK:HG2	53:oC:3463:UNK:HG3	1.80	0.62
2:1:423:A:H2'	2:1:424:G:N3	2.13	0.62
2:1:2621:G:N2	49:v:243:SER:OG	2.33	0.62
2:1:2681:U:H4'	15:J:66:ALA:HB2	1.81	0.62
19:N:73:ARG:HG3	19:N:75:VAL:H	1.64	0.62
24:S:71:LYS:O	24:S:73:LYS:NZ	2.32	0.62
32:a:129:THR:HG21	32:a:162:ILE:HG13	1.80	0.62
2:1:655:C:H2'	2:1:656:A:C8	2.32	0.62
2:1:2897:A:N7	2:1:2899:C:N4	2.46	0.62
49:v:259:LEU:O	49:v:272:GLN:NE2	2.32	0.62
2:1:944:C:O2'	2:1:1407:A:O2'	2.16	0.62
2:1:959:C:O2	2:1:2614:G:O2'	2.13	0.62
2:1:1218:U:H5''	28:W:20:ARG:HH22	1.64	0.62
2:1:1803:C:H2'	2:1:1804:A:C8	2.34	0.62
4:3:72:A:H61	4:3:79:A:N6	1.97	0.62
5:4:458:LEU:HD21	5:4:483:ILE:HG13	1.82	0.62
5:4:486:LYS:O	5:4:490:ASN:ND2	2.33	0.62
12:G:128:LYS:NZ	12:G:129:PRO:O	2.33	0.62
1:m:554:LEU:HG	1:m:675:LEU:HD13	1.81	0.62
2:1:377:A:N6	2:1:400:G:O2'	2.33	0.62
2:1:1699:A:N6	2:1:1747:G:O6	2.33	0.62
2:1:2361:A:N1	2:1:2377:G:O6	2.33	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:C:67:THR:O	33:b:638:LYS:NZ	2.30	0.62
33:b:329:MET:SD	33:b:332:ARG:NH2	2.73	0.62
33:b:546:GLN:HE21	33:b:549:GLN:HB3	1.65	0.62
1:Aa:596:ARG:NH1	1:Aa:600:GLU:OE2	2.33	0.62
2:1:442:G:O6	2:1:493:G:C6	2.51	0.62
2:1:2585:G:N1	4:3:151:C:OP1	2.28	0.62
2:1:3092:C:O2'	2:1:3094:A:OP2	2.16	0.62
7:B:77:THR:HG23	7:B:324:VAL:HG13	1.80	0.62
17:L:53:LEU:HD12	17:L:96:ALA:HB2	1.81	0.62
1:m:123:PRO:HB2	1:m:216:ILE:HG13	1.82	0.62
1:n:701:ASN:ND2	1:n:743:ALA:O	2.32	0.62
1:w:328:ARG:HG2	1:w:373:LEU:HD21	1.81	0.62
2:1:761:A:H62	2:1:770:G:N2	1.98	0.62
2:1:2744:U:H2'	2:1:2745:G:C8	2.34	0.62
12:G:104:GLU:N	12:G:104:GLU:OE1	2.33	0.62
1:Aa:34:PHE:HB2	1:Aa:114:LEU:HB2	1.81	0.62
15:J:15:GLU:HG2	15:J:140:ARG:HH22	1.64	0.62
30:Y:24:SER:HB2	30:Y:75:ARG:HH22	1.64	0.62
2:1:412:G:OP1	21:P:62:ARG:NH1	2.33	0.62
2:1:1598:G:H2'	2:1:1599:G:C8	2.35	0.62
2:1:1803:C:O2'	38:g:70:LYS:NZ	2.25	0.62
7:B:53:MET:N	7:B:53:MET:SD	2.73	0.62
10:E:116:LYS:HZ2	10:E:123:PRO:HD3	1.65	0.62
1:m:619:ASP:OD2	1:n:625:ARG:NH2	2.32	0.62
49:v:369:VAL:HA	49:v:400:LYS:HA	1.82	0.62
1:w:552:GLY:HA3	1:w:675:LEU:HA	1.81	0.62
2:1:241:G:N2	2:1:242:C:O4'	2.33	0.61
2:1:866:A:N6	2:1:893:C:O2	2.33	0.61
10:E:80:ASN:OD1	10:E:83:TYR:N	2.32	0.61
12:G:65:LEU:HG	12:G:69:LEU:HD13	1.82	0.61
27:V:80:ARG:HD3	27:V:117:PRO:HG2	1.81	0.61
1:t:593:GLU:OE2	1:t:596:ARG:NH1	2.33	0.61
2:1:1413:G:H2'	2:1:1414:G:C8	2.34	0.61
2:1:2651:G:O2'	2:1:2796:G:O6	2.18	0.61
3:2:35:C:H4'	9:D:182:GLY:H	1.65	0.61
4:3:81:U:C4	4:3:83:C:H2'	2.35	0.61
5:4:345:GLY:HA3	39:h:41:LEU:HD22	1.82	0.61
1:n:280:ARG:NH2	1:n:381:GLY:O	2.32	0.61
2:1:124:U:O4	2:1:145:G:N2	2.33	0.61
2:1:627:U:H2'	2:1:628:A:C8	2.35	0.61
2:1:1538:G:N2	2:1:1583:A:H62	1.98	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2218:G:H2'	2:1:2219:A:H8	1.65	0.61
2:1:2432:A:N6	2:1:2598:G:O6	2.33	0.61
5:4:121:LYS:HD2	5:4:123:SER:HB3	1.82	0.61
45:p:11:THR:HG23	45:p:27:LYS:HB3	1.83	0.61
2:1:1339:C:H2'	2:1:1340:G:H8	1.65	0.61
2:1:1957:G:C6	2:1:2085:U:O4	2.52	0.61
2:1:3007:U:O4	2:1:3008:A:N6	2.32	0.61
7:B:223:GLY:HA3	7:B:272:TYR:HB2	1.81	0.61
28:W:157:MET:N	28:W:157:MET:SD	2.73	0.61
36:e:42:VAL:O	36:e:52:GLN:NE2	2.33	0.61
1:m:460:LEU:HA	1:m:498:ILE:HG13	1.82	0.61
1:w:98:LEU:O	1:w:103:ARG:NH1	2.34	0.61
50:y:125:THR:HA	50:y:128:LEU:HD23	1.82	0.61
2:1:38:U:H4'	16:K:32:ARG:HH11	1.64	0.61
2:1:222:A:H2'	2:1:223:U:O4'	2.00	0.61
2:1:346:C:O2	2:1:348:A:N6	2.32	0.61
2:1:695:C:OP1	8:C:271:LYS:NZ	2.32	0.61
2:1:1967:U:H3'	2:1:2053:C:H42	1.66	0.61
2:1:3019:U:N3	2:1:3036:G:C6	2.68	0.61
2:1:3100:U:HO2'	2:1:3101:G:H8	1.49	0.61
5:4:510:CYS:HB2	5:4:521:GLU:H	1.64	0.61
14:I:15:THR:OG1	48:u:43:ARG:NH2	2.34	0.61
19:N:131:GLU:OE1	19:N:131:GLU:N	2.33	0.61
25:T:115:LYS:NZ	25:T:127:GLN:O	2.32	0.61
28:W:123:ASP:O	28:W:211:SER:HB2	2.00	0.61
43:l:23:LEU:HG	43:l:38:ASN:HD22	1.64	0.61
1:t:126:ALA:HB2	1:t:215:PHE:HB3	1.81	0.61
2:1:814:U:H5'	41:j:45:ARG:HH22	1.64	0.61
2:1:1994:G:H2'	2:1:1995:A:C8	2.36	0.61
2:1:2916:U:O2'	27:V:44:SER:OG	2.16	0.61
2:1:3222:U:H3	2:1:3263:G:H1	1.48	0.61
7:B:77:THR:HG21	7:B:328:ILE:HG22	1.80	0.61
20:O:65:ASN:OD1	20:O:66:LYS:N	2.34	0.61
2:1:20:A:H2'	2:1:21:G:C8	2.35	0.61
2:1:1222:G:N2	2:1:1286:A:C6	2.69	0.61
2:1:1803:C:H2'	2:1:1804:A:H8	1.65	0.61
4:3:130:C:H2'	4:3:131:A:H8	1.64	0.61
6:A:209:HIS:CD2	6:A:211:HIS:H	2.17	0.61
18:M:41:GLN:HG2	18:M:42:LYS:HE2	1.81	0.61
28:W:158:ILE:HG22	28:W:160:SER:H	1.64	0.61
1:n:670:LEU:HD13	1:n:775:ARG:HH12	1.66	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:w:308:LEU:HD12	1:w:342:ILE:HG12	1.83	0.61
53:oC:3543:UNK:HA	53:oC:3546:UNK:HG3	1.83	0.61
2:1:520:U:O4	8:C:349:THR:OG1	2.18	0.61
2:1:528:U:H2'	2:1:529:A:C8	2.36	0.61
2:1:2705:A:N6	25:T:47:SER:O	2.34	0.61
2:1:3211:C:H2'	2:1:3212:C:C5	2.36	0.61
7:B:66:LYS:O	7:B:70:ARG:NH1	2.34	0.61
7:B:360:ASP:OD1	7:B:360:ASP:N	2.34	0.61
8:C:11:LEU:HD12	8:C:168:ALA:HB1	1.83	0.61
10:E:131:LYS:HB2	10:E:134:ARG:HE	1.65	0.61
20:O:75:ALA:HB3	20:O:78:ARG:HG3	1.82	0.61
35:d:80:ASN:ND2	35:d:89:LEU:O	2.34	0.61
45:p:14:TYR:HE2	45:p:26:VAL:HG11	1.65	0.61
45:p:83:ILE:HD13	45:p:86:LEU:HD21	1.82	0.61
1:Aa:712:LEU:O	1:Aa:716:THR:OG1	2.18	0.61
2:1:1084:A:H2'	2:1:1085:A:C8	2.35	0.61
2:1:1598:G:H2'	2:1:1599:G:H8	1.66	0.61
2:1:2107:A:HO2'	2:1:3344:A:HO2'	1.49	0.61
2:1:2459:A:N6	2:1:2486:A:N1	2.49	0.61
2:1:3073:A:O2'	33:b:508:ARG:NH1	2.33	0.61
2:1:3293:U:H4'	7:B:128:LYS:HZ1	1.66	0.61
7:B:171:LEU:HB3	7:B:173:GLN:HE21	1.65	0.61
21:P:60:PHE:HE2	21:P:82:ARG:HB2	1.65	0.61
21:P:131:ARG:HE	21:P:137:ASN:HD21	1.47	0.61
27:V:13:ILE:HG21	27:V:54:LEU:HB2	1.82	0.61
2:1:627:U:H2'	2:1:628:A:H8	1.66	0.61
20:O:22:VAL:O	20:O:25:LYS:NZ	2.33	0.61
1:n:645:ASP:OD2	1:n:671:ARG:NH1	2.34	0.61
1:t:281:GLY:HA3	1:t:405:PHE:HA	1.83	0.61
54:Aa:901:AGS:O2A	54:Aa:901:AGS:S1G	2.59	0.60
2:1:52:A:N3	2:1:811:U:O2'	2.34	0.60
2:1:597:G:O3'	11:F:41:ARG:NH1	2.34	0.60
2:1:1132:C:H2'	2:1:1133:A:H8	1.65	0.60
2:1:2611:U:H2'	2:1:2612:U:C6	2.36	0.60
19:N:34:ASN:O	19:N:37:HIS:ND1	2.33	0.60
24:S:167:ARG:NH1	24:S:168:PRO:O	2.34	0.60
39:h:38:ARG:NH1	39:h:40:SER:O	2.32	0.60
48:u:6:CYS:SG	48:u:9:CYS:N	2.74	0.60
2:1:3219:G:O6	37:f:2:ALA:N	2.35	0.60
5:4:366:GLN:HE21	5:4:368:HIS:HB2	1.66	0.60
5:4:511:ASP:OD1	5:4:512:SER:N	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:E:82:ARG:HD2	37:f:104:PRO:HA	1.82	0.60
12:G:165:PHE:HB3	19:N:10:LEU:HD11	1.82	0.60
13:H:86:TYR:HA	13:H:186:PHE:HA	1.82	0.60
1:x:231:GLN:OE1	1:x:234:ARG:NH2	2.34	0.60
1:x:331:PHE:HB3	1:x:377:MET:HE1	1.82	0.60
2:1:591:G:O2'	10:E:17:ALA:O	2.19	0.60
2:1:909:G:N7	6:A:3:ARG:NH1	2.49	0.60
2:1:1623:G:H2'	2:1:1624:G:H8	1.65	0.60
2:1:3295:A:H2'	2:1:3296:A:H8	1.66	0.60
12:G:71:VAL:N	12:G:234:GLY:O	2.33	0.60
17:L:105:ASN:HB3	17:L:108:ILE:HG12	1.84	0.60
27:V:62:VAL:HG11	27:V:69:LEU:HD23	1.83	0.60
41:j:54:LYS:O	41:j:58:THR:HB	2.01	0.60
2:1:112:U:OP1	39:h:103:LYS:NZ	2.33	0.60
2:1:442:G:O6	2:1:493:G:C5	2.54	0.60
25:T:99:SER:OG	25:T:101:CYS:SG	2.59	0.60
32:a:16:ARG:HD2	32:a:57:LYS:HD3	1.82	0.60
1:n:131:VAL:HG22	1:n:180:ILE:HG12	1.83	0.60
2:1:574:U:H2'	2:1:575:G:H8	1.66	0.60
4:3:8:C:H2'	4:3:9:A:H8	1.67	0.60
2:1:520:U:H3	8:C:347:THR:HB	1.65	0.60
2:1:596:C:O2	8:C:326:ARG:NH2	2.34	0.60
2:1:616:G:H2'	2:1:617:G:C8	2.36	0.60
2:1:1529:A:OP2	2:1:1592:G:N2	2.33	0.60
2:1:1680:G:OP1	33:b:521:ARG:N	2.25	0.60
2:1:2213:A:H2'	2:1:2214:A:H8	1.66	0.60
2:1:3192:U:H3	2:1:3200:G:H1	1.49	0.60
6:A:177:LYS:HG2	45:p:29:LEU:HD23	1.82	0.60
8:C:54:GLU:OE1	8:C:104:LYS:NZ	2.34	0.60
14:I:22:TYR:OH	14:I:82:GLY:O	2.20	0.60
21:P:116:HIS:HE1	21:P:118:GLN:HB2	1.65	0.60
28:W:186:TYR:OH	28:W:198:ARG:NH2	2.35	0.60
30:Y:54:ASP:OD1	30:Y:54:ASP:N	2.34	0.60
1:m:629:SER:HB2	1:n:631:SER:HB2	1.84	0.60
1:n:43:ASP:OD2	1:n:166:ASN:ND2	2.27	0.60
2:1:1918:C:H2'	2:1:1919:G:C8	2.37	0.60
2:1:3044:G:H2'	2:1:3045:G:C8	2.37	0.60
5:4:447:HIS:O	5:4:451:ALA:HB2	2.02	0.60
18:M:132:LYS:HD2	18:M:135:LEU:HD21	1.82	0.60
31:Z:121:ARG:HH12	31:Z:126:LYS:H	1.50	0.60
34:c:103:THR:HG22	34:c:105:ALA:H	1.66	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:e:44:ARG:HE	36:e:46:PHE:HE1	1.50	0.60
46:q:22:GLN:HB3	46:q:24:LYS:HZ1	1.67	0.60
1:w:450:HIS:HB3	1:w:610:PRO:HD2	1.82	0.60
2:1:356:C:OP1	33:b:624:ARG:NH2	2.33	0.60
2:1:2425:G:H21	6:A:229:ALA:HB3	1.67	0.60
2:1:2733:A:H2'	2:1:2734:A:C8	2.37	0.60
2:1:3259:U:OP1	2:1:3261:C:N4	2.34	0.60
1:t:72:GLY:HA3	1:t:78:GLY:HA2	1.83	0.60
2:1:809:G:H2'	2:1:810:A:C8	2.36	0.60
2:1:1463:U:H3	2:1:1467:A:H62	1.50	0.60
2:1:3292:A:O2'	2:1:3293:U:O4'	2.20	0.60
1:n:126:ALA:HB2	1:n:215:PHE:HB3	1.82	0.60
2:1:1588:A:N6	43:l:4:GLN:O	2.34	0.60
2:1:2107:A:O2'	2:1:3344:A:O2'	2.20	0.60
2:1:2269:U:OP1	2:1:2270:A:N6	2.35	0.60
5:4:372:LEU:HD11	29:X:77:GLU:HG2	1.83	0.60
6:A:51:ASP:OD1	6:A:52:SER:N	2.34	0.60
25:T:46:GLY:O	25:T:49:GLN:NE2	2.35	0.60
29:X:37:THR:O	29:X:39:LYS:NZ	2.32	0.60
1:n:430:MET:N	1:n:430:MET:SD	2.74	0.60
2:1:15:C:H5''	29:X:42:ARG:HG2	1.83	0.59
2:1:2168:A:N6	2:1:2170:U:O2	2.34	0.59
2:1:2820:A:N6	2:1:2941:A:O3'	2.34	0.59
10:E:116:LYS:NZ	10:E:122:PHE:H	2.00	0.59
10:E:138:GLN:NE2	10:E:142:ASP:OD2	2.34	0.59
13:H:45:PHE:HB3	13:H:53:ILE:HD11	1.84	0.59
28:W:140:GLY:HA2	28:W:182:ILE:H	1.67	0.59
30:Y:25:SER:OG	30:Y:26:GLN:OE1	2.19	0.59
33:b:424:ASP:OD1	48:u:83:ARG:NH1	2.34	0.59
1:t:618:ILE:HG22	1:t:659:THR:HB	1.82	0.59
50:y:74:THR:OG1	50:y:96:ARG:NH2	2.35	0.59
2:1:67:A:O2'	2:1:315:C:O2	2.20	0.59
2:1:1717:U:H2'	2:1:1718:G:C8	2.36	0.59
2:1:2421:U:O2'	46:q:51:GLY:O	2.20	0.59
2:1:2724:U:H3	2:1:2732:G:H1	1.48	0.59
2:1:3186:A:N3	13:H:44:THR:OG1	2.35	0.59
4:3:53:A:H2'	4:3:54:A:H8	1.67	0.59
7:B:92:TYR:CZ	7:B:101:SER:HB3	2.37	0.59
15:J:24:GLY:HA2	15:J:65:ILE:HG23	1.83	0.59
29:X:53:HIS:ND1	29:X:54:TYR:O	2.35	0.59
33:b:485:GLU:N	33:b:485:GLU:OE1	2.34	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:j:28:HIS:HE1	41:j:30:GLN:HB2	1.67	0.59
1:m:421:ASP:OD1	1:m:425:LYS:NZ	2.31	0.59
2:1:497:C:O3'	37:f:86:ARG:NH2	2.35	0.59
2:1:1666:G:H2'	2:1:1667:A:H8	1.67	0.59
2:1:3193:C:H2'	2:1:3194:C:C6	2.37	0.59
20:O:128:ARG:HH21	20:O:129:LEU:HD22	1.67	0.59
1:t:650:LEU:HB3	1:t:653:VAL:HB	1.84	0.59
1:Aa:504:ARG:NH1	1:m:408:GLU:OE2	2.34	0.59
2:1:2044:U:H2'	2:1:2045:G:H8	1.68	0.59
2:1:2424:A:OP1	19:N:90:ASN:ND2	2.35	0.59
2:1:3193:C:H2'	2:1:3194:C:H6	1.67	0.59
5:4:337:LEU:HB3	5:4:438:GLN:HB3	1.83	0.59
8:C:157:GLU:N	8:C:157:GLU:OE1	2.35	0.59
17:L:45:LYS:HG3	17:L:46:ILE:HG12	1.84	0.59
33:b:267:GLN:HA	33:b:270:LEU:HD12	1.82	0.59
2:1:67:A:N6	2:1:271:C:O2'	2.33	0.59
2:1:963:G:H2'	2:1:964:G:H8	1.67	0.59
2:1:1098:A:OP1	25:T:130:ARG:NH1	2.35	0.59
2:1:1214:U:H2'	2:1:1215:U:H6	1.68	0.59
2:1:1863:G:N1	2:1:1866:C:OP2	2.35	0.59
2:1:2028:U:OP2	5:4:82:ASN:ND2	2.36	0.59
2:1:2368:A:H2'	2:1:2369:G:H8	1.67	0.59
2:1:2894:C:H2'	2:1:2895:G:H8	1.66	0.59
12:G:130:TYR:CZ	12:G:204:ARG:HG2	2.38	0.59
20:O:84:LEU:HA	20:O:87:MET:HE2	1.84	0.59
28:W:72:VAL:HA	28:W:75:LYS:HD2	1.84	0.59
37:f:31:LYS:HG2	37:f:80:VAL:HG22	1.83	0.59
40:i:87:VAL:HG13	40:i:90:MET:HE2	1.83	0.59
41:j:49:TRP:HD1	41:j:50:GLY:H	1.48	0.59
1:n:532:ILE:HG13	1:n:612:ILE:HD11	1.85	0.59
1:w:44:HIS:NE2	1:w:165:GLN:O	2.35	0.59
51:z:29:ARG:HA	51:z:32:ARG:HE	1.66	0.59
2:1:1713:G:OP2	34:c:32:LYS:NZ	2.35	0.59
2:1:1997:U:H3	2:1:2024:G:H1	0.72	0.59
2:1:2942:C:HO2'	7:B:2:SER:N	2.01	0.59
2:1:3187:A:OP1	13:H:23:ARG:NH1	2.36	0.59
8:C:300:ARG:O	22:Q:39:ARG:NH2	2.35	0.59
12:G:61:GLN:HA	12:G:64:ILE:HG22	1.85	0.59
12:G:128:LYS:HD2	12:G:129:PRO:HD2	1.83	0.59
22:Q:148:GLU:N	22:Q:148:GLU:OE1	2.34	0.59
28:W:31:ARG:NH1	28:W:76:ALA:O	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:Y:35:LEU:HD11	30:Y:39:LEU:HD23	1.84	0.59
33:b:234:ASN:HA	33:b:237:MET:HG2	1.83	0.59
1:m:561:CYS:O	54:m:902:AGS:O2A	2.21	0.59
1:w:105:VAL:HG11	1:w:159:MET:HG3	1.84	0.59
1:x:441:ALA:HB1	1:x:488:LEU:HD13	1.84	0.59
2:1:66:A:N6	2:1:76:G:H1'	2.18	0.59
2:1:1214:U:H2'	2:1:1215:U:C6	2.37	0.59
2:1:1660:C:H2'	2:1:1661:G:C8	2.38	0.59
2:1:2405:C:H5'	2:1:2954:U:C2	2.38	0.59
2:1:2608:G:H2'	2:1:2609:A:H8	1.67	0.59
3:2:25:G:O2'	3:2:26:C:O4'	2.20	0.59
4:3:152:G:OP1	12:G:59:GLN:NE2	2.35	0.59
7:B:58:ARG:HH21	7:B:60:LEU:HD21	1.65	0.59
16:K:37:GLY:HA2	16:K:41:HIS:HB2	1.85	0.59
19:N:36:ILE:HG12	19:N:64:VAL:HG23	1.84	0.59
19:N:143:ARG:NH2	39:h:93:THR:O	2.35	0.59
21:P:108:ASP:OD2	21:P:111:LYS:NZ	2.36	0.59
1:n:310:ILE:HD12	1:n:344:ILE:HG12	1.85	0.59
1:t:250:LEU:HB3	1:t:253:GLU:HB2	1.85	0.59
1:x:452:TYR:OH	1:x:495:MET:SD	2.60	0.59
2:1:71:A:OP1	16:K:67:HIS:NE2	2.35	0.59
2:1:494:G:OP1	2:1:494:G:N2	2.31	0.59
2:1:2122:G:H2'	2:1:2123:G:C8	2.38	0.59
4:3:52:A:O3'	43:l:19:GLN:NE2	2.33	0.59
7:B:297:SER:HB2	33:b:431:ILE:HD12	1.84	0.59
19:N:137:PRO:HG2	19:N:138:GLN:HE21	1.67	0.59
25:T:28:SER:O	25:T:32:LYS:NZ	2.36	0.59
25:T:109:VAL:HA	25:T:112:ASN:HD21	1.67	0.59
27:V:38:ALA:HB3	27:V:59:MET:HB3	1.85	0.59
2:1:336:A:O2'	8:C:48:GLN:NE2	2.35	0.59
2:1:671:U:H2'	2:1:672:A:H8	1.67	0.59
2:1:2369:G:H2'	2:1:2370:G:C8	2.38	0.59
2:1:2433:U:H1'	19:N:125:SER:HB2	1.83	0.59
2:1:2515:A:H5''	19:N:28:TRP:CD1	2.38	0.59
4:3:84:C:H1'	30:Y:113:LYS:HE3	1.84	0.59
18:M:54:PRO:O	18:M:56:GLN:NE2	2.36	0.59
26:U:94:ARG:NH1	26:U:108:TYR:OH	2.36	0.59
48:u:82:ASN:HB3	48:u:85:LEU:HB2	1.84	0.59
1:x:717:GLU:O	1:x:759:ARG:NE	2.29	0.59
2:1:656:A:H2'	2:1:657:A:H8	1.67	0.59
2:1:1144:U:OP2	36:e:43:ARG:NH2	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1233:G:H2'	2:1:1234:G:C8	2.37	0.59
2:1:1519:G:H2'	2:1:1520:G:H8	1.67	0.59
2:1:1890:U:O4	2:1:1891:A:N6	2.36	0.59
2:1:1997:U:O2	2:1:2024:G:N2	2.23	0.59
2:1:2526:C:H2'	2:1:2527:G:H8	1.68	0.59
3:2:84:A:H2'	3:2:85:G:C8	2.37	0.59
6:A:45:VAL:HB	6:A:61:VAL:HG22	1.85	0.59
7:B:44:THR:H	7:B:181:ILE:HD11	1.68	0.59
9:D:99:TYR:OH	9:D:168:ASP:OD2	2.21	0.59
27:V:20:GLY:HA2	27:V:35:TYR:HE1	1.67	0.59
1:t:469:ILE:HG23	1:t:481:LYS:HD2	1.84	0.59
49:v:258:VAL:HG12	49:v:309:LEU:HB2	1.85	0.59
1:w:72:GLY:HA3	1:w:78:GLY:HA2	1.84	0.59
2:1:760:G:H22	2:1:770:G:H1'	1.68	0.58
5:4:148:ASP:OD1	5:4:249:ARG:NH2	2.36	0.58
16:K:63:LYS:O	16:K:65:GLN:NE2	2.33	0.58
17:L:42:ARG:HD2	17:L:45:LYS:HE2	1.83	0.58
22:Q:21:SER:O	22:Q:27:LYS:NZ	2.35	0.58
32:a:22:VAL:HG13	32:a:43:GLY:HA3	1.84	0.58
1:m:423:LEU:HD21	1:m:457:LEU:HD22	1.85	0.58
1:m:610:PRO:HB3	1:m:652:GLY:HA3	1.84	0.58
1:t:729:GLN:NE2	1:w:548:SER:O	2.36	0.58
2:1:181:U:O2'	41:j:75:LYS:NZ	2.35	0.58
2:1:365:A:H5'	8:C:84:ARG:HH22	1.67	0.58
2:1:1717:U:O2	2:1:1727:G:N2	2.27	0.58
2:1:1959:G:N7	2:1:2083:G:N1	2.44	0.58
2:1:2275:A:H62	2:1:2311:G:H21	0.73	0.58
2:1:2908:G:H5''	47:r:42:LEU:HD21	1.85	0.58
7:B:14:LEU:HD21	7:B:262:TRP:HE1	1.68	0.58
27:V:22:ILE:HG23	27:V:33:ASN:ND2	2.18	0.58
1:t:297:ARG:O	1:t:301:ASN:ND2	2.31	0.58
1:t:391:ARG:NH2	1:w:354:ARG:O	2.34	0.58
50:y:209:ASP:N	50:y:209:ASP:OD1	2.36	0.58
2:1:1064:A:HO2'	2:1:1093:A:H61	1.51	0.58
3:2:116:C:H2'	3:2:117:A:C8	2.38	0.58
4:3:95:G:O2'	41:j:81:GLY:O	2.20	0.58
4:3:143:U:O2'	19:N:57:GLN:NE2	2.36	0.58
5:4:221:GLN:HE22	5:4:306:SER:HB2	1.68	0.58
5:4:347:SER:OG	5:4:349:LYS:NZ	2.36	0.58
7:B:110:LEU:HB3	7:B:114:VAL:HG21	1.85	0.58
19:N:30:TYR:HE2	19:N:121:VAL:HG11	1.67	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:Q:23:ASN:HB2	22:Q:26:LEU:HG	1.85	0.58
30:Y:50:ILE:HG22	30:Y:106:ILE:HD11	1.85	0.58
1:m:565:LEU:HD12	1:m:568:LYS:HD2	1.86	0.58
1:n:308:LEU:HD12	1:n:342:ILE:HG12	1.86	0.58
1:t:689:ARG:NH1	1:t:719:TYR:O	2.33	0.58
1:w:294:MET:SD	1:w:297:ARG:NH1	2.77	0.58
50:y:68:ARG:NH1	50:y:112:ASP:OD1	2.35	0.58
2:1:828:A:H2'	2:1:829:U:C6	2.38	0.58
2:1:1388:U:O2'	36:e:99:ASN:ND2	2.36	0.58
2:1:3101:G:H2'	2:1:3102:G:H8	1.68	0.58
3:2:116:C:H2'	3:2:117:A:H8	1.68	0.58
16:K:75:LEU:N	16:K:113:LEU:O	2.36	0.58
45:p:19:GLY:O	45:p:23:ARG:NH1	2.37	0.58
1:w:561:CYS:O	54:w:903:AGS:O2B	2.21	0.58
1:Aa:677:ARG:NH1	1:x:730:GLU:OE2	2.36	0.58
2:1:1211:U:O2'	24:S:113:ARG:NH1	2.37	0.58
2:1:1229:G:H2'	2:1:1230:G:H8	1.68	0.58
2:1:1632:A:OP1	31:Z:69:LYS:NZ	2.29	0.58
2:1:1786:G:H2'	2:1:1787:A:C8	2.38	0.58
2:1:1833:G:H5''	43:l:10:LYS:HD2	1.86	0.58
2:1:2471:U:O2'	2:1:2473:C:N4	2.32	0.58
6:A:13:GLY:HA2	6:A:16:PHE:HB2	1.86	0.58
7:B:67:PHE:HA	7:B:70:ARG:HD2	1.85	0.58
8:C:258:LEU:HA	8:C:261:VAL:HG12	1.84	0.58
31:Z:83:THR:HB	38:g:93:PHE:HZ	1.68	0.58
47:r:53:LYS:NZ	47:r:57:GLU:OE2	2.36	0.58
1:x:624:ASP:HA	1:x:666:ASP:HA	1.85	0.58
1:Aa:586:ILE:HG13	1:Aa:621:LEU:HA	1.84	0.58
2:1:286:U:O2'	19:N:179:LYS:O	2.21	0.58
2:1:1494:U:OP2	43:l:42:ARG:NH2	2.37	0.58
2:1:3390:G:H2'	2:1:3391:A:C8	2.38	0.58
50:y:62:MET:N	50:y:62:MET:SD	2.77	0.58
2:1:886:C:H2'	2:1:887:G:H8	1.67	0.58
2:1:1957:G:OP2	2:1:2078:C:N4	2.30	0.58
2:1:2968:G:H2'	2:1:2969:A:H8	1.69	0.58
2:1:3390:G:H2'	2:1:3391:A:H8	1.67	0.58
7:B:358:TRP:HH2	48:u:14:TYR:HB3	1.67	0.58
9:D:269:SER:OG	9:D:273:ARG:NH1	2.36	0.58
12:G:140:VAL:HG21	19:N:3:ALA:HB2	1.86	0.58
2:1:1459:C:H2'	2:1:1460:A:H8	1.68	0.58
2:1:1909:A:H2'	2:1:1910:A:C5	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2272:G:N2	2:1:2272:G:OP2	2.34	0.58
2:1:2407:C:H2'	2:1:2408:U:C6	2.39	0.58
4:3:8:C:H2'	4:3:9:A:C8	2.39	0.58
8:C:40:THR:O	8:C:44:LYS:NZ	2.37	0.58
26:U:25:ASN:HD21	33:b:545:LEU:HD23	1.68	0.58
27:V:74:MET:HE3	27:V:75:PRO:HD2	1.86	0.58
1:m:435:HIS:HB2	1:m:485:LYS:HD3	1.86	0.58
2:1:19:U:H5''	39:h:90:ARG:HH12	1.68	0.58
2:1:928:C:H2'	2:1:929:A:C8	2.39	0.58
2:1:1046:A:N6	2:1:1049:C:N3	2.52	0.58
2:1:1947:G:O3'	23:R:134:HIS:NE2	2.26	0.58
2:1:2251:G:H2'	2:1:2252:A:H8	1.66	0.58
3:2:27:A:H4'	15:J:141:ARG:HH22	1.68	0.58
7:B:183:LEU:HD13	7:B:191:LYS:HB3	1.86	0.58
22:Q:40:THR:O	22:Q:133:LYS:NZ	2.37	0.58
22:Q:44:PHE:HD1	22:Q:139:ILE:HD11	1.68	0.58
27:V:61:THR:HG22	27:V:73:VAL:HG12	1.86	0.58
1:m:50:THR:HA	1:m:82:ILE:HB	1.86	0.58
1:n:698:LYS:HG3	1:n:699:LYS:HG3	1.84	0.58
1:t:463:GLU:HG3	1:t:467:LYS:HG2	1.86	0.58
2:1:1802:C:H2'	2:1:1803:C:C6	2.39	0.58
2:1:2747:A:H2'	2:1:2748:A:C8	2.39	0.58
2:1:3036:G:O3'	51:z:17:LYS:NZ	2.37	0.58
4:3:130:C:H2'	4:3:131:A:C8	2.37	0.58
5:4:50:TYR:OH	5:4:58:GLN:NE2	2.27	0.58
15:J:26:SER:O	15:J:29:ARG:NH1	2.37	0.58
46:q:22:GLN:HB3	46:q:24:LYS:NZ	2.19	0.58
2:1:787:G:H2'	2:1:788:C:C6	2.38	0.57
2:1:1020:G:H3'	2:1:1021:G:H21	1.68	0.57
2:1:1678:G:H2'	2:1:1679:A:H8	1.69	0.57
2:1:2154:U:H2'	2:1:2155:G:H8	1.67	0.57
2:1:2301:U:H2'	2:1:2302:G:H8	1.69	0.57
2:1:2434:U:H4'	2:1:2435:G:H5''	1.86	0.57
2:1:2733:A:H2'	2:1:2734:A:H8	1.68	0.57
6:A:63:PHE:N	6:A:72:ARG:O	2.35	0.57
19:N:6:TYR:OH	40:i:36:ARG:NH2	2.37	0.57
28:W:40:VAL:H	28:W:223:ASN:HD21	1.50	0.57
33:b:499:ARG:HG2	48:u:137:ARG:HH21	1.69	0.57
36:e:4:LEU:HG	36:e:90:LYS:HB3	1.84	0.57
41:j:64:MET:HB2	41:j:67:LEU:HB2	1.86	0.57
1:n:311:ASN:HA	1:n:345:ASP:HB3	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:w:216:ILE:O	1:w:218:ARG:NH1	2.37	0.57
1:x:535:PRO:HB3	1:x:550:PRO:HG2	1.85	0.57
2:1:2499:U:H2'	2:1:2500:A:C8	2.39	0.57
40:i:74:LYS:NZ	40:i:78:GLY:O	2.32	0.57
1:x:414:PRO:O	1:x:419:ARG:NH1	2.37	0.57
50:y:159:GLY:HA3	50:y:181:LEU:HD12	1.85	0.57
2:1:209:A:N3	8:C:221:ASN:ND2	2.52	0.57
2:1:576:C:OP1	11:F:241:LYS:NZ	2.37	0.57
2:1:1076:C:O4'	44:o:42:ASN:ND2	2.37	0.57
2:1:1381:A:H2'	2:1:1382:G:H8	1.69	0.57
2:1:1535:A:H62	2:1:1586:G:N2	2.01	0.57
2:1:1702:U:O2	2:1:1743:G:O6	2.21	0.57
2:1:3242:G:O6	7:B:150:ARG:NH2	2.37	0.57
5:4:277:ASP:OD1	5:4:278:LEU:N	2.35	0.57
36:e:6:HIS:ND1	36:e:7:PRO:O	2.32	0.57
2:1:1527:C:N4	2:1:1528:G:O6	2.37	0.57
2:1:2032:U:H2'	2:1:2033:G:C8	2.39	0.57
2:1:3064:U:H2'	2:1:3065:G:C8	2.38	0.57
6:A:23:ARG:NH1	6:A:52:SER:O	2.37	0.57
11:F:165:ASP:OD1	11:F:166:ASN:N	2.37	0.57
19:N:121:VAL:HG23	19:N:131:GLU:CD	2.29	0.57
33:b:436:LEU:HD12	33:b:439:LYS:HB2	1.86	0.57
35:d:80:ASN:ND2	35:d:87:ASN:O	2.33	0.57
1:n:504:ARG:O	1:t:400:ARG:NH2	2.38	0.57
2:1:746:A:H2'	2:1:747:A:H8	1.70	0.57
2:1:1538:G:H21	2:1:1583:A:H62	1.49	0.57
2:1:2187:G:O6	6:A:200:ARG:NH1	2.37	0.57
2:1:3000:A:H2'	2:1:3001:C:H6	1.70	0.57
4:3:103:G:OP2	4:3:105:A:O2'	2.21	0.57
24:S:65:ASN:O	24:S:99:ARG:NH2	2.38	0.57
27:V:87:ARG:NH1	27:V:121:GLU:OE1	2.36	0.57
1:m:476:ASP:HB3	1:m:479:ILE:HB	1.85	0.57
1:w:531:MET:HE3	1:w:654:VAL:HG13	1.87	0.57
2:1:1567:U:H3	2:1:1570:U:H2'	1.69	0.57
2:1:1579:C:H2'	2:1:1580:A:C4	2.40	0.57
2:1:1597:C:H2'	2:1:1598:G:C8	2.39	0.57
2:1:2810:C:H2'	2:1:2811:A:C8	2.39	0.57
7:B:43:LEU:O	7:B:340:LYS:NZ	2.34	0.57
11:F:121:LYS:NZ	25:T:133:ALA:O	2.37	0.57
11:F:140:SER:N	11:F:237:ASN:OD1	2.37	0.57
14:I:22:TYR:OH	14:I:80:LEU:O	2.22	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:X:102:LEU:HD11	39:h:26:LYS:HD3	1.85	0.57
1:w:551:LYS:NZ	1:w:649:GLU:O	2.37	0.57
1:w:625:ARG:HB2	1:w:637:LEU:HD21	1.87	0.57
2:1:27:C:H2'	2:1:28:C:C6	2.40	0.57
2:1:297:G:OP2	2:1:297:G:N2	2.38	0.57
2:1:2249:G:H2'	2:1:2250:G:C8	2.39	0.57
2:1:3254:G:H2'	2:1:3255:U:C6	2.39	0.57
7:B:328:ILE:HD12	7:B:329:PRO:HD2	1.86	0.57
8:C:315:LYS:HB2	8:C:323:VAL:HG21	1.87	0.57
17:L:112:ASN:O	17:L:115:ARG:NH2	2.38	0.57
1:n:310:ILE:HB	1:n:344:ILE:HA	1.87	0.57
1:x:430:MET:HE1	1:x:434:ARG:HG3	1.87	0.57
50:y:198:VAL:HG13	50:y:205:VAL:HG13	1.85	0.57
2:1:224:C:H2'	2:1:225:C:H6	1.70	0.57
2:1:300:G:H5''	40:i:82:ARG:HH11	1.69	0.57
2:1:516:A:H2'	2:1:517:G:H8	1.69	0.57
2:1:1805:C:H2'	2:1:1806:A:C8	2.40	0.57
2:1:1958:U:OP1	2:1:2077:U:N3	2.38	0.57
2:1:2936:A:H2'	2:1:2937:G:H8	1.70	0.57
5:4:316:VAL:HG23	5:4:508:VAL:HG22	1.87	0.57
8:C:152:VAL:HG21	8:C:156:LEU:HD13	1.86	0.57
1:m:649:GLU:HB3	1:m:651:LYS:HE2	1.87	0.57
1:n:727:LEU:HD21	1:n:757:ILE:HD13	1.86	0.57
50:y:28:VAL:HG22	50:y:50:HIS:HE1	1.69	0.57
2:1:2548:C:OP2	6:A:93:LYS:NZ	2.37	0.57
3:2:106:U:H2'	3:2:107:C:C6	2.39	0.57
5:4:505:ASN:N	5:4:505:ASN:OD1	2.38	0.57
25:T:17:ARG:HD3	25:T:45:ASN:HD21	1.70	0.57
28:W:21:GLU:N	28:W:21:GLU:OE1	2.37	0.57
1:m:35:ILE:HD11	1:m:95:VAL:HG22	1.86	0.57
2:1:277:G:H2'	2:1:278:U:C6	2.40	0.57
2:1:335:G:OP1	30:Y:9:SER:OG	2.16	0.57
2:1:1925:U:N3	2:1:2189:U:O2	2.38	0.57
2:1:1956:A:N3	2:1:1957:G:N1	2.50	0.57
2:1:2331:C:H2'	2:1:2332:A:C8	2.40	0.57
2:1:2685:C:H2'	2:1:2686:A:H8	1.70	0.57
2:1:3234:A:N1	2:1:3253:G:O6	2.38	0.57
2:1:3244:A:OP1	7:B:97:ARG:NH2	2.38	0.57
2:1:3252:G:H2'	2:1:3253:G:C8	2.40	0.57
5:4:99:GLN:HB3	5:4:439:ILE:HG23	1.87	0.57
6:A:29:LEU:HB3	6:A:123:ARG:HD3	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:U:50:LEU:HD11	26:U:54:VAL:HB	1.86	0.57
27:V:22:ILE:HG23	27:V:33:ASN:HD21	1.70	0.57
1:x:595:GLU:HG2	1:x:639:SER:HB2	1.87	0.57
2:1:946:U:H2'	2:1:947:G:H8	1.71	0.56
2:1:1986:U:O4	2:1:2035:G:O6	2.23	0.56
2:1:2366:C:H2'	2:1:2367:A:H8	1.69	0.56
4:3:93:U:H2'	4:3:94:C:O4'	2.05	0.56
33:b:484:SER:OG	33:b:485:GLU:OE1	2.22	0.56
41:j:47:TYR:HB2	41:j:49:TRP:CD1	2.39	0.56
1:m:44:HIS:HE1	1:m:164:PHE:HB2	1.70	0.56
1:m:126:ALA:HB2	1:m:215:PHE:HB3	1.87	0.56
1:n:459:ALA:HA	1:n:462:ARG:HE	1.68	0.56
1:t:123:PRO:HB3	1:t:214:PRO:HB2	1.86	0.56
2:1:503:C:H2'	2:1:504:A:H8	1.71	0.56
2:1:1186:G:O2'	24:S:113:ARG:NE	2.38	0.56
2:1:1602:A:OP2	23:R:38:ARG:NH1	2.39	0.56
2:1:3113:A:O2'	13:H:66:ALA:O	2.22	0.56
2:1:3234:A:H2	2:1:3253:G:H1	1.53	0.56
9:D:31:TYR:HA	9:D:34:LYS:HE3	1.87	0.56
30:Y:99:LEU:HB3	30:Y:104:LEU:HD21	1.86	0.56
1:n:554:LEU:HB2	1:n:675:LEU:HD13	1.87	0.56
2:1:301:G:O6	2:1:315:C:N4	2.39	0.56
2:1:689:U:H3	8:C:227:THR:HG1	1.49	0.56
2:1:979:U:O2	2:1:980:A:N6	2.39	0.56
2:1:1079:A:H4'	9:D:140:ARG:HB2	1.85	0.56
2:1:1306:G:C5	20:O:62:THR:HA	2.40	0.56
2:1:1722:U:H4'	23:R:99:LEU:HD12	1.88	0.56
2:1:1764:U:H3'	2:1:1765:U:H4'	1.88	0.56
2:1:1897:G:H21	27:V:18:PRO:HG2	1.69	0.56
2:1:2286:U:H4'	2:1:2287:C:H3'	1.86	0.56
2:1:2794:G:H4'	46:q:63:LYS:HB2	1.87	0.56
2:1:2880:U:OP1	27:V:47:ASN:ND2	2.35	0.56
9:D:233:ALA:HA	9:D:236:LEU:HG	1.87	0.56
12:G:143:ILE:O	12:G:145:ASN:ND2	2.35	0.56
19:N:157:LYS:O	19:N:162:ARG:NH1	2.38	0.56
22:Q:71:LEU:HD21	22:Q:81:VAL:HG21	1.88	0.56
24:S:11:GLY:HA2	24:S:59:VAL:HG12	1.86	0.56
25:T:108:ARG:O	25:T:112:ASN:ND2	2.38	0.56
33:b:542:MET:HA	33:b:545:LEU:HD12	1.87	0.56
36:e:101:SER:OG	36:e:104:ASN:ND2	2.38	0.56
1:m:103:ARG:HH11	1:m:110:LEU:HD21	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:m:733:LEU:HD22	1:n:530:GLU:HB3	1.87	0.56
44:o:38:LYS:HG2	44:o:41:ARG:HH21	1.71	0.56
45:p:41:PHE:HB2	45:p:62:LYS:HE3	1.86	0.56
48:u:69:LEU:HD13	48:u:100:ARG:HH22	1.71	0.56
1:w:481:LYS:HG2	1:x:270:LEU:HD13	1.87	0.56
1:w:630:THR:HA	1:w:634:ASN:HD21	1.69	0.56
51:z:15:SER:O	51:z:19:ARG:NH2	2.38	0.56
53:oC:3503:UNK:O	53:oC:3529:UNK:N	2.38	0.56
2:1:30:G:O2'	19:N:96:ARG:NH2	2.38	0.56
2:1:2724:U:OP2	25:T:87:LYS:NZ	2.33	0.56
4:3:9:A:H2'	4:3:10:A:C8	2.41	0.56
4:3:26:U:H2'	4:3:27:U:C6	2.40	0.56
5:4:349:LYS:HB2	5:4:352:GLU:HB2	1.86	0.56
7:B:368:GLY:O	48:u:33:ARG:NH2	2.36	0.56
8:C:286:VAL:HG21	22:Q:31:LYS:HZ1	1.70	0.56
9:D:258:LYS:NZ	9:D:260:PHE:O	2.38	0.56
19:N:124:ASP:OD1	19:N:125:SER:N	2.37	0.56
22:Q:73:GLN:HE21	22:Q:76:ALA:HB2	1.70	0.56
1:w:744:LYS:NZ	1:w:746:GLU:OE2	2.38	0.56
1:Aa:561:CYS:O	54:Aa:902:AGS:O2A	2.24	0.56
2:1:370:U:H3	2:1:374:A:N6	2.03	0.56
2:1:657:A:H2'	2:1:658:G:H8	1.70	0.56
2:1:1764:U:OP1	5:4:376:ARG:NH2	2.39	0.56
2:1:2051:G:H2'	2:1:2052:G:H8	1.71	0.56
2:1:2465:G:O2'	53:oC:3560:UNK:O	2.23	0.56
2:1:2999:U:O2	2:1:3149:G:O6	2.23	0.56
2:1:3153:U:H2'	2:1:3154:C:C2	2.39	0.56
23:R:103:ARG:HH22	23:R:128:LYS:HA	1.70	0.56
24:S:23:LYS:HD3	24:S:24:LEU:H	1.70	0.56
24:S:52:LYS:N	24:S:55:SER:OG	2.32	0.56
1:n:256:SER:OG	1:n:407:GLN:NE2	2.38	0.56
1:w:35:ILE:HB	1:w:95:VAL:HG22	1.88	0.56
50:y:162:HIS:HD1	50:y:164:GLN:H	1.54	0.56
2:1:574:U:H2'	2:1:575:G:C8	2.40	0.56
2:1:684:G:H2'	2:1:685:G:H8	1.70	0.56
2:1:1909:A:O2'	2:1:1910:A:O5'	2.17	0.56
2:1:2124:G:H2'	2:1:2125:A:H8	1.71	0.56
2:1:2429:G:H2'	2:1:2430:A:C8	2.41	0.56
2:1:3154:C:O2	2:1:3157:U:N3	2.38	0.56
21:P:54:HIS:ND1	21:P:54:HIS:O	2.38	0.56
39:h:48:ARG:O	39:h:51:ILE:HG13	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:n:297:ARG:HG2	1:t:377:MET:HG3	1.87	0.56
1:t:450:HIS:HB3	1:t:610:PRO:HD2	1.87	0.56
1:t:504:ARG:NH1	1:w:400:ARG:O	2.38	0.56
2:1:629:U:H2'	2:1:630:A:C8	2.40	0.56
2:1:1757:A:H2'	2:1:1758:G:C8	2.41	0.56
2:1:2442:G:O6	2:1:2505:U:O4	2.23	0.56
2:1:2549:G:N2	12:G:35:GLY:O	2.39	0.56
2:1:2660:G:OP1	2:1:2750:U:O2'	2.23	0.56
2:1:2661:G:H2'	2:1:2662:G:C8	2.37	0.56
5:4:551:GLN:OE1	5:4:552:GLY:N	2.38	0.56
6:A:124:GLY:HA3	6:A:128:ARG:HH22	1.71	0.56
9:D:258:LYS:NZ	9:D:259:LYS:O	2.27	0.56
10:E:28:GLN:NE2	10:E:29:LYS:O	2.39	0.56
19:N:136:ASP:OD2	19:N:139:HIS:N	2.39	0.56
21:P:98:ALA:HA	21:P:101:ASN:HD21	1.71	0.56
24:S:83:SER:OG	24:S:84:ARG:N	2.39	0.56
33:b:73:ASP:N	33:b:73:ASP:OD1	2.38	0.56
37:f:58:GLU:HB2	37:f:63:LYS:HE2	1.88	0.56
1:n:532:ILE:HD11	1:n:654:VAL:HG21	1.87	0.56
1:n:756:GLY:HA2	1:t:776:SER:HB3	1.86	0.56
48:u:32:CYS:O	48:u:33:ARG:NH1	2.34	0.56
50:y:21:ASN:HA	50:y:202:TYR:HE1	1.71	0.56
1:Aa:701:ASN:HB2	1:Aa:704:GLU:HB3	1.87	0.56
2:1:129:U:H2'	2:1:130:A:C8	2.40	0.56
2:1:746:A:H2'	2:1:747:A:C8	2.41	0.56
2:1:814:U:H2'	2:1:815:G:H8	1.71	0.56
2:1:998:A:HO2'	2:1:999:G:P	2.27	0.56
2:1:1407:A:O3'	36:e:33:ARG:NH1	2.37	0.56
2:1:1530:U:OP2	2:1:1531:C:N4	2.35	0.56
2:1:1805:C:H2'	2:1:1806:A:H8	1.70	0.56
2:1:3160:U:H3	2:1:3290:G:H1	1.54	0.56
12:G:64:ILE:O	12:G:68:ARG:HG3	2.06	0.56
17:L:122:LYS:NZ	17:L:122:LYS:O	2.39	0.56
22:Q:64:VAL:HG21	22:Q:113:LYS:HD2	1.87	0.56
27:V:135:VAL:HG12	50:y:101:LEU:HA	1.88	0.56
36:e:81:ASP:O	36:e:84:THR:OG1	2.24	0.56
1:n:39:HIS:HB2	1:n:99:SER:HA	1.88	0.56
1:n:450:HIS:HB3	1:n:610:PRO:HD2	1.86	0.56
2:1:39:A:H61	2:1:42:C:H3'	1.71	0.56
2:1:370:U:H3	2:1:374:A:H62	1.54	0.56
2:1:1937:U:H2'	2:1:1938:U:H6	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1979:G:N2	2:1:2043:U:O2	2.24	0.56
2:1:2386:A:H62	2:1:2993:G:N2	2.04	0.56
2:1:2936:A:H2'	2:1:2937:G:C8	2.40	0.56
5:4:36:GLN:HB3	5:4:531:THR:HG21	1.88	0.56
12:G:82:LEU:O	12:G:84:ARG:NH2	2.38	0.56
13:H:23:ARG:HD3	13:H:39:LYS:HA	1.86	0.56
33:b:260:CYS:SG	33:b:261:GLY:N	2.78	0.56
35:d:51:LEU:HA	35:d:93:VAL:HG22	1.86	0.56
50:y:18:LYS:HE3	50:y:59:ILE:HG22	1.88	0.56
1:Aa:403:GLY:HA2	1:x:462:ARG:HH12	1.70	0.56
2:1:562:C:O3'	24:S:71:LYS:NZ	2.38	0.56
2:1:1188:U:OP1	2:1:1210:U:O2'	2.23	0.56
2:1:2389:C:H2'	2:1:2390:A:H8	1.71	0.56
2:1:2961:G:N7	6:A:216:HIS:NE2	2.52	0.56
2:1:3231:U:O2	2:1:3256:G:O6	2.23	0.56
8:C:157:GLU:HA	8:C:215:ILE:HD13	1.87	0.56
11:F:232:ARG:HB2	11:F:235:PHE:HB2	1.88	0.56
16:K:101:VAL:HG12	16:K:124:ILE:HB	1.88	0.56
23:R:109:TYR:HE2	23:R:115:ILE:HB	1.71	0.56
26:U:110:VAL:HG12	33:b:526:LYS:HB2	1.87	0.56
32:a:114:ARG:NH1	32:a:118:ASP:OD1	2.39	0.56
33:b:168:ARG:HB2	33:b:343:ARG:HH22	1.70	0.56
33:b:172:ILE:HG23	33:b:220:ASP:HA	1.88	0.56
33:b:251:LEU:HD11	33:b:286:VAL:HG22	1.87	0.56
1:t:732:GLY:HA2	1:t:745:VAL:HG11	1.86	0.56
54:x:901:AGS:O2A	54:x:901:AGS:S1G	2.64	0.56
50:y:77:THR:OG1	50:y:80:GLU:OE1	2.20	0.56
2:1:1176:C:OP2	2:1:1177:G:O2'	2.18	0.55
2:1:1185:C:N4	2:1:1186:G:O6	2.39	0.55
2:1:1322:U:H2'	2:1:1323:G:H8	1.71	0.55
2:1:1785:U:H2'	2:1:1786:G:H8	1.69	0.55
2:1:2150:G:H1	2:1:2186:U:H3	1.54	0.55
2:1:2176:U:OP1	6:A:54:ARG:NH2	2.33	0.55
2:1:2250:G:H2'	2:1:2251:G:C8	2.41	0.55
2:1:2747:A:H2'	2:1:2748:A:H8	1.70	0.55
11:F:222:HIS:CD2	11:F:224:ILE:HB	2.41	0.55
25:T:19:PHE:O	25:T:21:LYS:NZ	2.31	0.55
1:m:292:LYS:NZ	54:m:901:AGS:O3G	2.35	0.55
1:m:759:ARG:O	1:n:775:ARG:NH2	2.39	0.55
48:u:4:TYR:HB2	48:u:30:ARG:HH11	1.70	0.55
48:u:93:MET:HA	48:u:96:ILE:HG12	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:w:637:LEU:HB2	1:w:669:LEU:HD11	1.87	0.55
1:x:539:SER:OG	1:x:544:ARG:NH2	2.40	0.55
50:y:83:HIS:HA	50:y:86:ASN:HD21	1.71	0.55
53:oC:3512:UNK:HA	53:oC:3515:UNK:HG3	1.88	0.55
1:Aa:707:VAL:HG13	1:Aa:747:LEU:HD13	1.88	0.55
2:1:421:G:H5'	2:1:422:A:OP1	2.07	0.55
2:1:1237:G:H1	2:1:1251:A:H2	1.55	0.55
2:1:1381:A:H2'	2:1:1382:G:C8	2.41	0.55
2:1:2111:G:HO2'	48:u:44:ARG:NH1	2.05	0.55
2:1:2268:U:O4	2:1:2272:G:O6	2.25	0.55
2:1:3192:U:H2'	2:1:3193:C:C6	2.41	0.55
2:1:3339:A:H2'	2:1:3340:G:H8	1.71	0.55
5:4:441:ARG:HB3	5:4:489:MET:HE2	1.88	0.55
6:A:61:VAL:O	6:A:74:GLU:N	2.40	0.55
18:M:122:VAL:O	18:M:125:LYS:HG3	2.06	0.55
20:O:109:PRO:HB2	20:O:111:PRO:HD2	1.88	0.55
46:q:60:LYS:HZ2	46:q:62:ALA:HB2	1.72	0.55
2:1:533:A:O2'	2:1:535:G:OP2	2.24	0.55
2:1:754:G:H2'	2:1:755:A:H8	1.70	0.55
2:1:991:G:H21	25:T:59:GLY:HA3	1.70	0.55
2:1:1363:A:H5'	11:F:160:ARG:HG3	1.87	0.55
2:1:1717:U:H2'	2:1:1718:G:H8	1.69	0.55
2:1:1973:G:OP2	2:1:2048:G:N2	2.28	0.55
2:1:2477:G:H5''	2:1:2478:C:H5	1.71	0.55
2:1:3332:U:H2'	2:1:3333:G:O4'	2.06	0.55
7:B:160:VAL:HG13	7:B:181:ILE:HG23	1.88	0.55
15:J:59:ILE:O	15:J:60:ARG:NH1	2.36	0.55
26:U:19:VAL:HG12	26:U:22:PRO:HG2	1.88	0.55
33:b:63:ASP:N	33:b:63:ASP:OD1	2.36	0.55
1:m:91:HIS:NE2	1:m:95:VAL:O	2.39	0.55
46:q:72:LEU:HG	46:q:83:LEU:HB2	1.88	0.55
2:1:23:A:H3'	2:1:24:G:C8	2.41	0.55
2:1:296:A:H2'	2:1:297:G:C4	2.41	0.55
2:1:1016:C:O4'	2:1:2678:A:N6	2.39	0.55
2:1:1104:G:H2'	2:1:1105:A:H8	1.71	0.55
2:1:1897:G:H2'	2:1:1898:G:C8	2.40	0.55
2:1:2157:G:C8	6:A:150:LEU:HD13	2.41	0.55
2:1:2738:A:N6	2:1:2739:A:H62	2.04	0.55
2:1:2941:A:H3'	2:1:2943:G:H5'	1.88	0.55
2:1:3132:C:H2'	2:1:3133:C:C6	2.42	0.55
2:1:3316:A:N1	7:B:124:LYS:NZ	2.54	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:140:LYS:HB3	5:4:157:THR:HG22	1.89	0.55
5:4:413:LYS:HZ2	5:4:416:LEU:HD13	1.71	0.55
9:D:178:ASN:OD1	9:D:178:ASN:N	2.39	0.55
14:I:96:TYR:HA	48:u:72:ALA:HB3	1.88	0.55
19:N:187:ARG:HE	19:N:188:ARG:HE	1.54	0.55
20:O:178:VAL:O	20:O:182:ASN:ND2	2.39	0.55
33:b:117:LYS:O	33:b:117:LYS:NZ	2.36	0.55
1:m:72:GLY:HA3	1:m:78:GLY:HA2	1.87	0.55
1:m:286:GLY:HA3	1:m:411:ILE:HB	1.87	0.55
46:q:80:ARG:HE	46:q:81:ALA:N	2.04	0.55
1:w:146:LYS:HD2	1:w:150:LYS:HE2	1.87	0.55
2:1:411:U:H2'	2:1:412:G:C8	2.41	0.55
2:1:671:U:H2'	2:1:672:A:C8	2.41	0.55
2:1:1101:G:OP1	11:F:107:ARG:NH2	2.39	0.55
2:1:1342:C:H5''	22:Q:12:ARG:HG2	1.87	0.55
2:1:1360:C:H2'	2:1:1361:U:C6	2.42	0.55
2:1:2226:U:H2'	2:1:2227:C:C6	2.42	0.55
2:1:3066:U:H2'	2:1:3067:C:C6	2.41	0.55
3:2:81:U:O2	3:2:99:G:O6	2.23	0.55
13:H:103:ILE:HD11	13:H:134:ILE:HB	1.89	0.55
18:M:13:ARG:HH21	18:M:67:PRO:HD3	1.72	0.55
2:1:1403:C:H2'	2:1:1404:G:C8	2.41	0.55
2:1:3177:G:O2'	2:1:3179:U:OP1	2.25	0.55
7:B:283:TYR:HB3	7:B:356:LEU:HD11	1.88	0.55
27:V:38:ALA:O	27:V:59:MET:N	2.38	0.55
27:V:39:VAL:HG11	27:V:52:ALA:HB2	1.88	0.55
38:g:8:ARG:HH22	38:g:31:ARG:HE	1.53	0.55
1:m:70:THR:HB	1:m:117:LYS:HB2	1.88	0.55
1:t:623:PRO:HD2	1:t:637:LEU:HD22	1.88	0.55
2:1:659:G:O2'	8:C:92:ASN:ND2	2.40	0.55
2:1:830:A:H62	2:1:864:G:N2	2.04	0.55
2:1:1035:G:H2'	2:1:1036:A:H4'	1.88	0.55
2:1:1090:G:H2'	2:1:1091:A:H8	1.71	0.55
2:1:1576:G:H1'	2:1:1577:G:C8	2.41	0.55
2:1:3151:U:H5'	2:1:3152:U:H5'	1.88	0.55
11:F:33:ARG:O	11:F:37:ASN:ND2	2.38	0.55
17:L:186:ARG:O	17:L:189:GLU:HG3	2.07	0.55
20:O:167:TYR:HA	20:O:170:LYS:HE2	1.89	0.55
28:W:61:ALA:HB1	32:a:123:ARG:HH11	1.70	0.55
32:a:59:THR:OG1	32:a:74:VAL:O	2.21	0.55
34:c:40:LYS:O	34:c:65:THR:OG1	2.25	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:p:47:VAL:HG23	45:p:55:TRP:HB3	1.88	0.55
2:1:66:A:H61	2:1:76:G:H1'	1.71	0.55
2:1:499:G:OP1	37:f:70:LYS:NZ	2.38	0.55
2:1:664:U:H2'	2:1:665:A:C8	2.42	0.55
2:1:769:G:O2'	17:L:168:ARG:NH2	2.40	0.55
2:1:1124:U:H3	2:1:1134:G:H1	1.54	0.55
2:1:1967:U:H3	2:1:2054:C:H41	1.54	0.55
2:1:2746:A:C8	9:D:153:THR:HG21	2.41	0.55
2:1:2759:U:H5''	2:1:2760:C:H5'	1.89	0.55
2:1:3015:G:OP2	51:z:2:ALA:N	2.40	0.55
5:4:21:GLN:HB3	5:4:514:VAL:HG22	1.89	0.55
12:G:203:VAL:HG13	12:G:211:LEU:HD12	1.88	0.55
33:b:46:TYR:HA	33:b:49:LYS:HG2	1.89	0.55
33:b:546:GLN:O	33:b:546:GLN:NE2	2.39	0.55
35:d:10:ARG:HB3	35:d:108:VAL:HG22	1.89	0.55
1:n:351:ALA:HA	1:n:367:VAL:HG22	1.88	0.55
53:oC:3504:UNK:HA	53:oC:3529:UNK:HG3	1.88	0.55
2:1:27:C:H2'	2:1:28:C:H6	1.72	0.55
2:1:1639:C:H2'	2:1:1640:G:C8	2.42	0.55
2:1:3315:G:OP2	7:B:116:ARG:NH2	2.40	0.55
3:2:77:G:C6	24:S:52:LYS:HE2	2.42	0.55
4:3:6:U:H2'	4:3:7:U:H6	1.72	0.55
5:4:28:TYR:HB3	5:4:525:LEU:HD21	1.88	0.55
5:4:453:ASN:O	30:Y:94:SER:N	2.36	0.55
7:B:86:VAL:HA	7:B:162:VAL:HA	1.89	0.55
17:L:70:ARG:NH1	17:L:71:ALA:O	2.38	0.55
28:W:175:ILE:HG13	28:W:203:LEU:HA	1.89	0.55
33:b:29:THR:HG21	33:b:49:LYS:HE2	1.89	0.55
1:m:80:LEU:HD12	1:m:214:PRO:HB3	1.88	0.55
1:t:33:GLU:OE1	1:t:113:ARG:NH1	2.37	0.55
1:t:232:ALA:HB1	1:t:238:LEU:HD12	1.87	0.55
1:w:396:ASP:HB3	1:w:399:LEU:HG	1.88	0.55
1:x:423:LEU:HD11	1:x:457:LEU:HD22	1.88	0.55
2:1:272:G:H2'	2:1:273:A:H8	1.72	0.55
2:1:1025:A:H4'	2:1:1026:A:H5''	1.89	0.55
2:1:1565:G:H2'	2:1:1566:A:C8	2.42	0.55
2:1:1994:G:H2'	2:1:1995:A:H8	1.72	0.55
2:1:2283:G:N3	2:1:2285:C:N4	2.55	0.55
2:1:2429:G:H2'	2:1:2430:A:H8	1.72	0.55
4:3:154:C:H2'	4:3:155:A:C8	2.41	0.55
6:A:116:VAL:HG12	6:A:126:LEU:HB3	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:M:8:LYS:HG3	18:M:10:SER:H	1.72	0.55
28:W:85:TYR:HD1	28:W:86:LYS:HG2	1.72	0.55
33:b:590:LEU:O	33:b:599:ARG:NH2	2.39	0.55
45:p:32:GLN:O	45:p:37:TYR:OH	2.24	0.55
1:Aa:737:MET:HG3	1:m:530:GLU:HG2	1.89	0.54
2:1:289:A:H2'	2:1:290:G:H8	1.71	0.54
2:1:599:C:H2'	2:1:600:G:O4'	2.07	0.54
2:1:612:U:H2'	2:1:613:G:C8	2.42	0.54
2:1:1290:A:H2'	2:1:1291:A:C8	2.42	0.54
2:1:1340:G:OP1	36:e:61:LYS:NZ	2.33	0.54
2:1:3158:G:H2'	2:1:3159:C:H6	1.72	0.54
5:4:563:LYS:HB3	5:4:567:LEU:HB3	1.88	0.54
20:O:22:VAL:O	20:O:25:LYS:HG3	2.07	0.54
29:X:114:VAL:HA	29:X:120:LYS:HA	1.88	0.54
33:b:624:ARG:NH1	43:l:39:ALA:O	2.40	0.54
42:k:56:ILE:HG13	42:k:57:ASN:H	1.72	0.54
1:n:617:GLU:OE2	1:n:660:ASN:ND2	2.39	0.54
1:t:446:ALA:O	1:t:449:THR:OG1	2.23	0.54
1:x:347:ILE:HG22	1:x:389:THR:HB	1.89	0.54
2:1:692:A:OP1	19:N:201:ARG:NH2	2.40	0.54
2:1:1776:G:H2'	2:1:1777:U:C6	2.42	0.54
2:1:2896:A:H2'	2:1:2897:A:C8	2.43	0.54
2:1:3308:C:O2'	21:P:69:ARG:O	2.23	0.54
9:D:208:MET:HA	9:D:211:LEU:HG	1.89	0.54
20:O:179:ALA:HA	20:O:182:ASN:HD21	1.72	0.54
33:b:609:GLU:HG3	33:b:613:ARG:HH22	1.71	0.54
1:m:561:CYS:C	54:m:902:AGS:H2	2.32	0.54
49:v:163:GLN:HE21	49:v:250:PRO:HA	1.72	0.54
49:v:256:LEU:HG	49:v:309:LEU:HD23	1.89	0.54
51:z:29:ARG:HE	51:z:33:ILE:HG13	1.73	0.54
1:Aa:582:LYS:O	1:Aa:584:PRO:HD2	2.06	0.54
2:1:420:G:H21	2:1:2384:A:H3'	1.73	0.54
2:1:656:A:H2'	2:1:657:A:C8	2.41	0.54
2:1:791:A:H2'	2:1:792:G:H8	1.72	0.54
2:1:1028:U:OP2	49:v:404:ARG:NE	2.40	0.54
2:1:2898:G:O2'	33:b:159:ARG:NH2	2.41	0.54
2:1:2960:C:H2'	2:1:2961:G:H8	1.72	0.54
2:1:3149:G:H2'	2:1:3150:A:C8	2.42	0.54
4:3:27:U:H2'	4:3:28:C:C6	2.42	0.54
10:E:68:PRO:HB2	10:E:71:VAL:HG12	1.90	0.54
17:L:42:ARG:HB3	17:L:51:LEU:HD11	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:Y:98:ASN:OD1	30:Y:99:LEU:N	2.41	0.54
39:h:8:GLU:OE1	39:h:8:GLU:N	2.40	0.54
1:n:502:ALA:HB3	1:n:608:ALA:HB2	1.89	0.54
1:n:669:LEU:HA	1:n:674:ARG:HD2	1.88	0.54
45:p:36:ARG:HD3	45:p:45:LYS:HE2	1.89	0.54
49:v:225:SER:OG	49:v:243:SER:OG	2.23	0.54
1:w:130:THR:O	1:w:181:THR:OG1	2.25	0.54
1:w:563:LYS:HG2	1:w:658:ALA:HB1	1.88	0.54
2:1:209:A:O2'	2:1:211:A:OP2	2.24	0.54
2:1:940:G:O2'	2:1:1435:A:O2'	2.24	0.54
2:1:1278:A:O2'	2:1:1279:C:O5'	2.24	0.54
2:1:1505:C:H2'	2:1:1506:A:H8	1.73	0.54
2:1:1551:C:O2'	2:1:2170:U:O2'	2.26	0.54
2:1:2004:U:H2'	2:1:2005:G:C8	2.40	0.54
3:2:26:C:O2'	3:2:57:G:N2	2.40	0.54
12:G:34:PHE:HE1	12:G:41:GLN:HA	1.72	0.54
13:H:166:ARG:NH2	13:H:167:VAL:O	2.41	0.54
29:X:81:ILE:HG12	29:X:125:ARG:HG2	1.88	0.54
2:1:3061:G:H2'	2:1:3062:G:H8	1.73	0.54
3:2:56:A:H3'	3:2:57:G:H8	1.71	0.54
5:4:458:LEU:HB2	5:4:481:SER:HB2	1.90	0.54
5:4:466:LEU:HD21	33:b:572:ALA:HA	1.88	0.54
8:C:339:LEU:O	8:C:342:LYS:NZ	2.31	0.54
9:D:108:ARG:HH11	9:D:253:PHE:HB3	1.73	0.54
11:F:34:LYS:HA	11:F:37:ASN:HD21	1.71	0.54
15:J:109:HIS:HB3	15:J:125:MET:SD	2.48	0.54
19:N:113:LEU:HD22	19:N:136:ASP:HA	1.89	0.54
33:b:19:ASP:O	33:b:23:ASN:ND2	2.40	0.54
44:o:11:ASN:HB3	44:o:14:ARG:HH21	1.72	0.54
48:u:38:LYS:HA	48:u:41:LYS:HG2	1.88	0.54
2:1:604:G:H2'	2:1:605:U:C6	2.43	0.54
2:1:988:U:O4	2:1:989:A:N6	2.41	0.54
2:1:1024:G:H1'	2:1:1029:G:H22	1.73	0.54
2:1:1339:C:H2'	2:1:1340:G:C8	2.42	0.54
2:1:1343:A:H2'	2:1:1344:G:H8	1.73	0.54
2:1:1447:G:C8	21:P:27:LYS:HE2	2.42	0.54
2:1:1505:C:H2'	2:1:1506:A:C8	2.42	0.54
2:1:1784:G:H2'	2:1:1785:U:C6	2.43	0.54
2:1:2368:A:H2'	2:1:2369:G:C8	2.42	0.54
2:1:2472:U:O2'	2:1:2473:C:O4'	2.25	0.54
42:k:77:ARG:HG2	42:k:78:LEU:HG	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:n:293:THR:OG1	54:n:901:AGS:S1G	2.64	0.54
1:t:348:ASP:OD1	1:t:389:THR:OG1	2.26	0.54
48:u:82:ASN:OD1	48:u:85:LEU:N	2.39	0.54
50:y:122:ASP:OD1	50:y:125:THR:OG1	2.22	0.54
2:1:1141:C:O2'	2:1:1153:A:N3	2.36	0.54
2:1:1548:C:O3'	41:j:43:LYS:NZ	2.40	0.54
2:1:1660:C:H2'	2:1:1661:G:H8	1.72	0.54
2:1:2987:A:H5''	20:O:68:ARG:NH1	2.23	0.54
2:1:3095:U:H2'	2:1:3096:C:C6	2.43	0.54
4:3:155:A:H2'	4:3:156:U:C6	2.43	0.54
8:C:329:PRO:HG3	11:F:41:ARG:NE	2.22	0.54
9:D:183:TRP:HE1	9:D:188:GLU:HA	1.72	0.54
12:G:68:ARG:HH22	12:G:239:GLY:H	1.56	0.54
19:N:143:ARG:CZ	39:h:92:LEU:HB3	2.37	0.54
22:Q:89:ASP:OD1	22:Q:107:THR:OG1	2.25	0.54
29:X:48:SER:OG	29:X:49:LYS:NZ	2.41	0.54
1:w:429:ARG:HA	1:w:429:ARG:HH11	1.72	0.54
2:1:964:G:H2'	2:1:965:A:C8	2.42	0.54
2:1:1012:G:O2'	2:1:1013:G:O4'	2.26	0.54
2:1:1639:C:N4	38:g:73:SER:OG	2.40	0.54
2:1:2729:U:H2'	2:1:2730:G:C8	2.43	0.54
2:1:2975:U:O4	2:1:2976:A:N6	2.40	0.54
2:1:3065:G:H2'	2:1:3066:U:C6	2.43	0.54
11:F:121:LYS:HZ1	25:T:133:ALA:HB3	1.73	0.54
12:G:101:THR:OG1	12:G:102:ALA:N	2.41	0.54
16:K:126:LYS:HE2	16:K:148:ILE:HD12	1.90	0.54
17:L:105:ASN:HD21	17:L:107:GLU:HB2	1.73	0.54
18:M:15:VAL:HG22	18:M:65:LEU:HD21	1.90	0.54
19:N:143:ARG:HH12	39:h:93:THR:HG22	1.73	0.54
25:T:132:PRO:O	25:T:134:GLN:NE2	2.41	0.54
38:g:41:ARG:HH12	38:g:50:ALA:HB1	1.72	0.54
1:m:557:GLY:H	1:m:563:LYS:HD3	1.72	0.54
51:z:34:SER:HA	51:z:37:LEU:HD12	1.90	0.54
2:1:718:G:H22	44:o:48:HIS:HE1	1.55	0.54
2:1:858:A:H2	45:p:13:LYS:HA	1.73	0.54
2:1:2296:A:HO2'	2:1:2928:C:HO2'	1.41	0.54
2:1:2723:U:H5''	25:T:87:LYS:HD2	1.89	0.54
2:1:3194:C:H2'	2:1:3195:U:H5''	1.88	0.54
7:B:308:MET:HE1	7:B:373:PRO:HG3	1.90	0.54
9:D:166:ALA:HB1	9:D:171:LEU:HB2	1.89	0.54
10:E:131:LYS:HB2	10:E:134:ARG:NE	2.22	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:y:162:HIS:ND1	50:y:164:GLN:OE1	2.36	0.54
53:oC:3524:UNK:HG2	53:oC:3526:UNK:HG3	1.90	0.54
2:1:255:A:H2'	2:1:256:G:H8	1.72	0.54
2:1:788:C:H2'	2:1:789:A:H8	1.72	0.54
2:1:1991:G:H2'	2:1:1992:U:C6	2.42	0.54
2:1:2250:G:H2'	2:1:2251:G:H8	1.72	0.54
2:1:2830:G:H1'	33:b:131:ALA:HA	1.89	0.54
2:1:3152:U:OP2	2:1:3395:G:N1	2.39	0.54
4:3:45:C:H2'	4:3:46:G:H8	1.73	0.54
9:D:27:LYS:HA	15:J:143:ARG:HE	1.73	0.54
20:O:27:LEU:HD11	20:O:102:LEU:HD13	1.89	0.54
23:R:134:HIS:CE1	23:R:135:LYS:HG2	2.43	0.54
24:S:36:ILE:O	24:S:40:ARG:HG2	2.08	0.54
32:a:125:LEU:HD23	32:a:164:GLU:HA	1.89	0.54
38:g:8:ARG:HH22	38:g:31:ARG:HB3	1.73	0.54
1:x:98:LEU:O	1:x:103:ARG:NH1	2.40	0.54
1:Aa:501:SER:HA	1:Aa:504:ARG:HE	1.73	0.53
1:Aa:551:LYS:NZ	1:Aa:673:GLY:O	2.40	0.53
2:1:1538:G:H21	2:1:1583:A:N6	2.06	0.53
2:1:2608:G:H2'	2:1:2609:A:C8	2.42	0.53
2:1:3201:C:H2'	2:1:3202:G:H8	1.73	0.53
2:1:3266:G:H2'	2:1:3267:A:O4'	2.07	0.53
5:4:313:SER:HA	5:4:509:LEU:HD12	1.89	0.53
7:B:33:PRO:HG2	7:B:44:THR:HG21	1.89	0.53
7:B:95:THR:HG23	7:B:97:ARG:H	1.73	0.53
20:O:137:THR:H	20:O:140:LYS:HZ3	1.56	0.53
1:n:75:GLY:HA3	1:t:335:ARG:HE	1.73	0.53
1:n:129:VAL:HG11	1:n:158:ILE:HD13	1.89	0.53
1:x:530:GLU:HA	1:x:534:LEU:HD12	1.90	0.53
1:x:551:LYS:NZ	1:x:650:LEU:O	2.40	0.53
2:1:537:A:H2'	2:1:538:G:C8	2.43	0.53
2:1:552:G:H2'	2:1:553:U:C6	2.43	0.53
2:1:1140:G:H2'	2:1:1141:C:C6	2.43	0.53
2:1:1619:A:O2'	2:1:1620:U:O4'	2.25	0.53
2:1:2615:G:H2'	2:1:2616:C:C6	2.43	0.53
5:4:460:TYR:CZ	5:4:462:ALA:HB3	2.42	0.53
5:4:506:THR:HB	5:4:525:LEU:HB2	1.91	0.53
23:R:24:LEU:HD23	23:R:32:ILE:HD12	1.89	0.53
28:W:188:VAL:HB	28:W:198:ARG:HH12	1.72	0.53
31:Z:15:ARG:NH2	31:Z:78:ASN:O	2.39	0.53
31:Z:58:GLY:H	31:Z:61:LYS:HD2	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:b:374:ARG:NH1	50:y:178:GLN:OE1	2.42	0.53
38:g:85:VAL:O	38:g:88:ARG:HG3	2.08	0.53
40:i:4:LYS:HG3	40:i:16:LYS:HA	1.90	0.53
1:m:244:TYR:HB2	1:m:254:ILE:HG21	1.89	0.53
1:m:772:PHE:O	1:m:775:ARG:NH1	2.32	0.53
1:t:500:PRO:HG2	1:t:577:ASN:HD21	1.72	0.53
1:w:399:LEU:HD22	1:w:405:PHE:HE1	1.73	0.53
50:y:104:LEU:HA	50:y:107:VAL:HG22	1.90	0.53
2:1:2499:U:H2'	2:1:2500:A:H8	1.72	0.53
2:1:3005:A:OP2	7:B:30:LYS:NZ	2.38	0.53
13:H:38:LEU:HB3	13:H:41:ILE:HD13	1.90	0.53
23:R:45:VAL:HG12	23:R:50:ILE:HB	1.91	0.53
33:b:185:ARG:HA	33:b:185:ARG:CZ	2.37	0.53
33:b:298:LEU:HB3	33:b:302:ARG:NH2	2.23	0.53
46:q:60:LYS:HG3	46:q:62:ALA:H	1.72	0.53
48:u:76:ASN:ND2	50:y:96:ARG:O	2.41	0.53
49:v:249:VAL:HG12	49:v:251:ILE:H	1.72	0.53
2:1:255:A:H2'	2:1:256:G:C8	2.43	0.53
2:1:447:U:O2	2:1:490:A:O2'	2.26	0.53
2:1:595:G:OP1	11:F:33:ARG:NH2	2.42	0.53
2:1:2515:A:OP1	19:N:28:TRP:NE1	2.42	0.53
2:1:2529:A:N1	2:1:2530:G:N2	2.56	0.53
2:1:3067:C:OP2	23:R:62:ARG:NE	2.42	0.53
6:A:97:ASN:OD1	6:A:98:VAL:N	2.33	0.53
7:B:221:THR:HA	7:B:330:GLY:HA2	1.90	0.53
9:D:107:ARG:NH2	9:D:247:ILE:O	2.41	0.53
13:H:10:ILE:HB	13:H:53:ILE:HG23	1.91	0.53
21:P:60:PHE:HB2	21:P:80:LYS:HB2	1.89	0.53
24:S:13:ARG:HA	24:S:56:GLY:HA2	1.91	0.53
33:b:87:GLU:HB3	33:b:90:HIS:CE1	2.43	0.53
1:n:612:ILE:HG12	1:n:654:VAL:HB	1.90	0.53
1:w:237:ASN:HD21	1:x:380:ALA:HB3	1.74	0.53
2:1:120:G:H22	12:G:124:ASP:HA	1.73	0.53
2:1:629:U:H2'	2:1:630:A:H8	1.72	0.53
2:1:1259:A:H62	28:W:67:MET:HG2	1.74	0.53
2:1:1758:G:H2'	2:1:1759:C:C6	2.44	0.53
2:1:2072:G:H2'	2:1:2073:A:C8	2.43	0.53
2:1:3019:U:C2	2:1:3036:G:N1	2.77	0.53
3:2:117:A:H2'	3:2:118:A:C8	2.42	0.53
7:B:218:ILE:HG22	7:B:276:THR:HA	1.90	0.53
10:E:4:GLN:HE21	36:e:75:LEU:HD23	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:G:187:GLY:HA2	12:G:190:VAL:HG12	1.90	0.53
18:M:42:LYS:HG3	18:M:59:ASN:HD21	1.72	0.53
21:P:64:ASN:OD1	21:P:64:ASN:N	2.38	0.53
22:Q:16:ARG:HH12	22:Q:18:ALA:H	1.57	0.53
27:V:62:VAL:HG13	27:V:70:ARG:HD3	1.88	0.53
27:V:96:GLU:N	27:V:96:GLU:OE1	2.42	0.53
32:a:40:LYS:NZ	32:a:44:GLU:OE2	2.39	0.53
33:b:589:LEU:HG	43:l:25:GLN:HG3	1.91	0.53
1:n:34:PHE:HB2	1:n:114:LEU:HG	1.91	0.53
1:w:158:ILE:HG23	1:w:180:ILE:HD13	1.89	0.53
50:y:185:THR:HB	50:y:189:GLY:HA2	1.90	0.53
2:1:504:A:O3'	8:C:315:LYS:NZ	2.40	0.53
2:1:754:G:H1	2:1:778:U:H3	1.56	0.53
2:1:1005:G:N2	2:1:1045:C:O2	2.41	0.53
2:1:1372:C:H2'	2:1:1373:A:C8	2.41	0.53
2:1:2784:G:H2'	2:1:2785:A:C8	2.43	0.53
3:2:61:G:H2'	3:2:62:U:C6	2.44	0.53
3:2:98:C:O2'	11:F:131:GLU:OE1	2.24	0.53
5:4:92:PRO:HB3	5:4:394:HIS:CE1	2.44	0.53
5:4:134:ARG:NH1	5:4:137:ASP:OD1	2.42	0.53
9:D:102:GLY:O	9:D:105:ILE:HG13	2.09	0.53
9:D:147:ASP:OD1	9:D:148:ILE:N	2.42	0.53
15:J:10:ARG:HB2	15:J:133:ARG:HH12	1.73	0.53
33:b:64:ILE:HD11	33:b:150:LEU:HD21	1.89	0.53
33:b:185:ARG:HE	33:b:192:VAL:HG12	1.74	0.53
36:e:34:LYS:NZ	36:e:35:GLN:O	2.42	0.53
1:m:504:ARG:HB3	1:n:400:ARG:HD2	1.90	0.53
1:n:661:ARG:NH2	1:t:666:ASP:OD1	2.41	0.53
1:t:33:GLU:HB3	1:t:113:ARG:HB3	1.90	0.53
2:1:1432:C:O2'	2:1:1434:G:OP2	2.27	0.53
2:1:1624:G:H2'	2:1:1625:A:H8	1.73	0.53
2:1:1891:A:H2'	2:1:1892:G:O4'	2.09	0.53
2:1:3273:A:OP1	10:E:77:ARG:NH2	2.42	0.53
5:4:396:SER:HB3	5:4:399:PHE:HB2	1.90	0.53
7:B:275:ARG:NH1	7:B:276:THR:O	2.42	0.53
9:D:141:PRO:O	9:D:143:LYS:NZ	2.36	0.53
11:F:222:HIS:ND1	11:F:229:PHE:O	2.42	0.53
15:J:84:LEU:HA	15:J:87:LYS:HZ1	1.74	0.53
17:L:53:LEU:HG	17:L:55:ARG:HD3	1.91	0.53
29:X:72:ALA:HB1	29:X:83:VAL:HG11	1.89	0.53
49:v:332:ASN:N	49:v:332:ASN:OD1	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:x:659:THR:HG21	1:x:665:ILE:HD11	1.89	0.53
2:1:184:U:O2	2:1:232:G:N2	2.34	0.53
2:1:296:A:H2'	2:1:297:G:N3	2.24	0.53
2:1:492:U:H2'	2:1:493:G:C8	2.42	0.53
2:1:1492:G:O5'	2:1:1493:G:N2	2.42	0.53
2:1:1639:C:H2'	2:1:1640:G:H8	1.73	0.53
2:1:2347:U:H2'	2:1:2348:A:C4	2.44	0.53
2:1:2477:G:H3'	2:1:2478:C:C6	2.43	0.53
2:1:3067:C:H3'	23:R:62:ARG:NH2	2.24	0.53
3:2:23:A:OP2	3:2:24:A:N6	2.42	0.53
19:N:68:ARG:NH1	19:N:124:ASP:O	2.41	0.53
26:U:109:GLN:OE1	26:U:109:GLN:N	2.42	0.53
54:m:901:AGS:O3B	1:n:404:ARG:NH2	2.28	0.53
46:q:38:GLN:OE1	46:q:42:ARG:NH2	2.42	0.53
48:u:66:ASP:OD2	48:u:68:THR:OG1	2.24	0.53
48:u:143:ARG:HH12	48:u:144:LYS:HE2	1.74	0.53
1:x:160:PRO:HG3	1:x:183:ALA:H	1.73	0.53
2:1:44:U:C2	2:1:45:A:C8	2.97	0.53
2:1:1340:G:H2'	2:1:1341:U:C6	2.43	0.53
2:1:1875:G:H2'	2:1:1876:U:C6	2.43	0.53
2:1:2834:G:N1	2:1:2854:U:C2	2.77	0.53
2:1:2947:G:H2'	2:1:2948:C:C6	2.44	0.53
2:1:3191:G:P	20:O:172:ARG:HH22	2.32	0.53
2:1:3366:G:H2'	2:1:3367:C:C6	2.44	0.53
10:E:56:LYS:HD3	10:E:98:VAL:HG13	1.91	0.53
11:F:121:LYS:HD2	25:T:132:PRO:HB3	1.91	0.53
12:G:162:LEU:HD12	12:G:163:VAL:HG13	1.90	0.53
36:e:21:HIS:CE1	36:e:24:ARG:HH12	2.27	0.53
36:e:21:HIS:CD2	36:e:24:ARG:HH22	2.27	0.53
1:m:280:ARG:HH11	1:m:377:MET:HE3	1.74	0.53
46:q:6:LYS:HE2	46:q:94:GLY:H	1.74	0.53
50:y:66:ASN:OD1	50:y:66:ASN:N	2.41	0.53
51:z:28:ALA:O	51:z:32:ARG:HG2	2.09	0.53
2:1:98:G:N7	17:L:13:HIS:NE2	2.56	0.53
2:1:173:G:N1	2:1:246:U:N3	2.55	0.53
2:1:597:G:H2'	2:1:598:A:H8	1.74	0.53
2:1:768:C:H2'	2:1:769:G:C8	2.43	0.53
2:1:822:G:H2'	2:1:823:C:H6	1.74	0.53
2:1:1063:G:O2'	2:1:1097:G:N2	2.42	0.53
2:1:1508:C:O2	2:1:1880:U:H1'	2.08	0.53
2:1:1541:G:N1	2:1:1555:U:O2	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1666:G:H2'	2:1:1667:A:C8	2.44	0.53
9:D:128:GLU:OE1	9:D:128:GLU:N	2.38	0.53
15:J:17:LEU:HD12	15:J:76:ALA:HB1	1.91	0.53
20:O:97:ALA:O	20:O:101:ARG:HG2	2.08	0.53
34:c:76:GLU:OE1	34:c:76:GLU:N	2.40	0.53
1:n:30:LEU:HD12	1:n:31:PRO:HD2	1.89	0.53
1:n:69:CYS:N	1:n:81:VAL:O	2.38	0.53
2:1:19:U:H3	4:3:140:G:H1	1.55	0.52
2:1:425:G:H2'	2:1:426:G:H8	1.74	0.52
2:1:970:A:H2'	2:1:971:G:H8	1.74	0.52
2:1:1613:A:OP2	42:k:46:ARG:NH1	2.40	0.52
2:1:2103:U:H2'	2:1:2104:A:H8	1.73	0.52
2:1:2632:G:OP1	25:T:10:ARG:N	2.41	0.52
2:1:2871:G:OP2	2:1:2872:A:N6	2.42	0.52
2:1:3190:C:O3'	20:O:172:ARG:NH2	2.36	0.52
4:3:92:A:H2'	4:3:93:U:C6	2.44	0.52
4:3:118:C:H2'	4:3:119:C:H6	1.74	0.52
27:V:81:GLN:HG3	27:V:83:LYS:HG2	1.91	0.52
29:X:88:MET:HA	29:X:120:LYS:HE2	1.90	0.52
1:n:423:LEU:HD12	1:n:457:LEU:HD22	1.91	0.52
1:t:661:ARG:NH1	1:w:626:ASP:OD2	2.33	0.52
2:1:1564:U:H2'	2:1:1565:G:H8	1.74	0.52
2:1:1593:A:H5'	38:g:60:ARG:HG3	1.90	0.52
2:1:2181:C:H5''	6:A:193:ARG:HH12	1.74	0.52
2:1:2346:C:H2'	2:1:2347:U:C6	2.45	0.52
2:1:2781:U:H2'	2:1:2782:U:H6	1.74	0.52
2:1:3049:A:H2'	2:1:3050:U:C6	2.44	0.52
2:1:3129:A:C6	2:1:3131:U:H1'	2.44	0.52
2:1:3212:C:OP2	18:M:124:ARG:NH2	2.42	0.52
5:4:241:GLY:O	5:4:243:ARG:NH2	2.40	0.52
5:4:483:ILE:HA	5:4:486:LYS:HE2	1.91	0.52
18:M:48:GLY:HA3	18:M:53:VAL:HB	1.90	0.52
19:N:51:LEU:HD21	19:N:117:ASN:HB3	1.92	0.52
23:R:37:SER:OG	23:R:39:ASN:ND2	2.42	0.52
38:g:8:ARG:NH2	38:g:31:ARG:HB3	2.24	0.52
2:1:289:A:H2'	2:1:290:G:C8	2.45	0.52
2:1:516:A:H2'	2:1:517:G:C8	2.44	0.52
2:1:1027:A:H4'	2:1:1028:U:O5'	2.08	0.52
2:1:1711:C:N4	2:1:1712:G:O6	2.43	0.52
2:1:2930:A:H2'	2:1:2931:C:C6	2.45	0.52
2:1:2989:U:O2'	7:B:232:ARG:NH1	2.41	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:3294:A:H4'	7:B:128:LYS:HD2	1.91	0.52
2:1:3339:A:H2'	2:1:3340:G:C8	2.45	0.52
3:2:96:U:H2'	3:2:97:A:C8	2.43	0.52
3:2:112:G:H2'	3:2:113:C:C6	2.44	0.52
7:B:212:ASN:ND2	7:B:353:GLU:HA	2.24	0.52
28:W:144:SER:OG	28:W:205:GLN:OE1	2.20	0.52
31:Z:29:HIS:O	31:Z:77:TYR:OH	2.23	0.52
37:f:75:HIS:HD2	37:f:82:ARG:HH21	1.57	0.52
44:o:35:VAL:O	44:o:40:ARG:NH1	2.43	0.52
1:t:521:GLN:HB3	1:t:524:LEU:HB3	1.91	0.52
2:1:632:G:H2'	2:1:633:C:C6	2.44	0.52
2:1:901:G:H2'	2:1:902:G:H8	1.74	0.52
2:1:1277:C:O2'	2:1:1278:A:O5'	2.27	0.52
2:1:1630:U:H5'	31:Z:67:LYS:HE2	1.92	0.52
2:1:1908:A:H3'	2:1:1909:A:C8	2.45	0.52
2:1:2367:A:H2'	2:1:2368:A:C8	2.45	0.52
4:3:154:C:N3	4:3:155:A:N6	2.49	0.52
5:4:202:LEU:HD21	5:4:509:LEU:HD22	1.92	0.52
7:B:163:HIS:HB2	7:B:178:LEU:HD23	1.92	0.52
12:G:26:LEU:H	12:G:26:LEU:HD23	1.74	0.52
25:T:8:ARG:O	25:T:11:THR:OG1	2.25	0.52
37:f:20:LYS:HG3	37:f:21:ARG:HE	1.73	0.52
1:n:132:GLY:N	1:n:179:VAL:O	2.29	0.52
1:n:163:ILE:HA	1:n:179:VAL:HG22	1.92	0.52
1:n:694:LYS:O	1:n:694:LYS:NZ	2.39	0.52
1:t:561:CYS:O	54:t:801:AGS:O2B	2.28	0.52
48:u:8:PHE:CE2	48:u:40:PHE:HB2	2.45	0.52
1:w:186:ASP:OD1	1:w:186:ASP:N	2.42	0.52
2:1:33:G:OP1	19:N:73:ARG:NH1	2.42	0.52
2:1:352:A:H62	2:1:367:A:H62	1.57	0.52
2:1:843:A:H2'	2:1:844:G:H8	1.73	0.52
2:1:1298:C:O2'	47:r:40:GLN:OE1	2.28	0.52
2:1:1824:U:H2'	2:1:1825:G:C8	2.44	0.52
2:1:3022:G:N2	2:1:3032:A:OP2	2.34	0.52
2:1:3101:G:H2'	2:1:3102:G:C8	2.45	0.52
26:U:108:TYR:HE1	33:b:522:SER:HA	1.74	0.52
29:X:55:ASN:ND2	29:X:57:LEU:O	2.42	0.52
1:x:746:GLU:OE1	1:x:748:ARG:NE	2.42	0.52
2:1:522:A:H1'	24:S:65:ASN:HD22	1.74	0.52
2:1:1187:C:H2'	2:1:1188:U:C6	2.45	0.52
2:1:1997:U:H2'	2:1:1998:G:C8	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2104:A:OP2	23:R:81:ARG:NH2	2.42	0.52
2:1:2419:A:H2'	2:1:2420:C:C6	2.44	0.52
2:1:2477:G:H3'	2:1:2478:C:H6	1.75	0.52
4:3:27:U:H2'	4:3:28:C:H6	1.75	0.52
5:4:158:MET:N	5:4:158:MET:SD	2.82	0.52
10:E:146:ILE:HD12	10:E:150:LYS:HE2	1.91	0.52
15:J:93:ASP:N	15:J:93:ASP:OD1	2.42	0.52
15:J:132:ASN:ND2	15:J:133:ARG:O	2.42	0.52
1:n:297:ARG:O	1:n:301:ASN:ND2	2.36	0.52
1:t:280:ARG:NE	1:t:383:VAL:O	2.42	0.52
1:x:468:THR:OG1	1:x:490:ASP:OD2	2.27	0.52
1:Aa:413:ILE:HB	1:Aa:608:ALA:HB2	1.90	0.52
2:1:449:U:O2'	2:1:488:U:O2	2.25	0.52
2:1:633:C:H2'	2:1:634:C:C6	2.45	0.52
2:1:717:C:H41	2:1:751:A:H4'	1.75	0.52
2:1:1277:C:O2'	2:1:1278:A:H8	1.93	0.52
2:1:1571:A:H2'	2:1:1572:U:C6	2.45	0.52
2:1:1764:U:OP1	23:R:43:LYS:NZ	2.42	0.52
2:1:2876:C:O2'	2:1:2877:G:H8	1.93	0.52
2:1:2892:A:O3'	51:z:3:LYS:NZ	2.43	0.52
2:1:2992:U:H2'	2:1:2993:G:O4'	2.09	0.52
4:3:84:C:N3	30:Y:112:ASP:HA	2.25	0.52
10:E:113:LYS:O	10:E:114:LYS:HG2	2.09	0.52
18:M:46:ILE:O	18:M:55:ARG:HA	2.10	0.52
24:S:9:VAL:HB	24:S:61:ILE:HD13	1.91	0.52
28:W:92:LEU:HD11	28:W:221:TYR:CG	2.45	0.52
32:a:53:PHE:HB3	32:a:56:ILE:HB	1.91	0.52
33:b:70:ASN:ND2	33:b:73:ASP:O	2.43	0.52
1:m:265:LEU:HD11	1:m:341:ILE:HD11	1.91	0.52
49:v:323:VAL:HG22	49:v:338:ILE:HG22	1.90	0.52
49:v:374:ILE:HD11	49:v:396:VAL:HG12	1.91	0.52
1:x:668:ALA:O	1:x:674:ARG:NE	2.37	0.52
2:1:359:U:O4	2:1:920:A:O2'	2.24	0.52
2:1:640:U:H2'	2:1:641:C:C6	2.45	0.52
2:1:1250:G:H2'	2:1:1251:A:C8	2.45	0.52
2:1:1479:U:O4	2:1:1480:G:N1	2.43	0.52
2:1:1979:G:H1	2:1:2043:U:H3	0.69	0.52
7:B:224:HIS:HE1	7:B:270:ARG:HD3	1.74	0.52
15:J:117:ASP:O	15:J:120:ILE:HG12	2.10	0.52
16:K:133:LEU:HD23	16:K:133:LEU:H	1.74	0.52
25:T:26:HIS:CE1	25:T:29:THR:HG23	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:h:25:LYS:HA	39:h:28:LEU:HD23	1.91	0.52
1:t:159:MET:H	1:t:162:MET:HE3	1.75	0.52
1:t:562:SER:O	54:t:801:AGS:O2A	2.27	0.52
1:Aa:726:LEU:HD22	1:m:672:PRO:HB3	1.92	0.52
2:1:52:A:O2'	2:1:811:U:O2	2.26	0.52
2:1:78:U:OP1	19:N:176:LYS:NZ	2.43	0.52
2:1:1222:G:N2	2:1:1286:A:C5	2.78	0.52
2:1:1234:G:N2	2:1:1255:C:O2	2.43	0.52
2:1:2229:A:H2'	2:1:2230:C:C6	2.45	0.52
2:1:3000:A:H2'	2:1:3001:C:C6	2.45	0.52
11:F:136:TYR:CZ	11:F:231:ASN:HB3	2.44	0.52
23:R:10:LEU:HB3	23:R:38:ARG:NH2	2.25	0.52
33:b:607:LYS:HD2	33:b:610:ARG:HH22	1.75	0.52
38:g:8:ARG:HB2	38:g:34:HIS:CE1	2.45	0.52
1:w:283:LEU:HB3	1:w:408:GLU:HG2	1.91	0.52
1:w:354:ARG:NH2	1:w:364:SER:OG	2.43	0.52
1:w:625:ARG:HD3	1:w:637:LEU:HD11	1.92	0.52
2:1:1018:G:N2	2:1:1034:U:O4	2.42	0.52
2:1:1460:A:H2'	2:1:1461:A:H8	1.75	0.52
2:1:1497:C:H2'	2:1:1498:A:C8	2.40	0.52
2:1:1697:A:H62	2:1:1748:G:H21	1.58	0.52
2:1:2103:U:H2'	2:1:2104:A:C8	2.45	0.52
2:1:2786:G:C2	2:1:2787:G:C8	2.98	0.52
2:1:3163:A:C6	2:1:3288:G:C6	2.98	0.52
2:1:3376:A:OP1	35:d:18:LYS:NZ	2.43	0.52
4:3:53:A:H2'	4:3:54:A:C8	2.44	0.52
6:A:150:LEU:HD12	6:A:154:ALA:HB3	1.91	0.52
7:B:369:ARG:NH2	48:u:12:PRO:O	2.39	0.52
9:D:38:THR:HG21	25:T:30:TYR:HD2	1.74	0.52
27:V:15:LEU:HD13	27:V:51:ALA:HB3	1.92	0.52
32:a:19:GLY:HA2	32:a:50:THR:HB	1.91	0.52
32:a:37:LEU:HD21	32:a:67:ARG:HB3	1.92	0.52
34:c:74:ASN:OD1	34:c:75:ASN:ND2	2.43	0.52
36:e:67:SER:N	36:e:71:HIS:O	2.28	0.52
39:h:64:GLU:OE2	39:h:67:ARG:NH2	2.43	0.52
1:m:481:LYS:HE2	1:n:267:GLN:HE22	1.75	0.52
1:n:697:THR:HG22	1:n:700:PHE:HD2	1.74	0.52
1:t:103:ARG:NH1	1:t:108:LEU:O	2.33	0.52
1:w:644:ILE:HA	1:w:650:LEU:HD22	1.91	0.52
1:Aa:468:THR:O	1:Aa:470:GLN:N	2.42	0.51
2:1:93:C:H5	46:q:42:ARG:HH12	1.58	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:542:G:O6	2:1:550:A:N6	2.43	0.51
2:1:612:U:H2'	2:1:613:G:H8	1.75	0.51
2:1:1678:G:H4'	2:1:1756:C:H4'	1.91	0.51
2:1:2017:G:H2'	2:1:2018:C:C6	2.45	0.51
2:1:3182:G:H2'	2:1:3183:A:C4	2.45	0.51
4:3:118:C:H2'	4:3:119:C:C6	2.44	0.51
8:C:299:ILE:HG23	22:Q:39:ARG:HB3	1.91	0.51
10:E:39:VAL:HG22	10:E:53:VAL:HG22	1.91	0.51
18:M:103:ILE:HG12	18:M:106:ARG:HH21	1.75	0.51
20:O:43:ILE:HG23	20:O:136:THR:HG23	1.91	0.51
27:V:24:ASN:ND2	27:V:97:ASP:OD2	2.39	0.51
33:b:113:VAL:HA	33:b:116:LEU:HG	1.91	0.51
33:b:340:LEU:HD13	33:b:343:ARG:HD2	1.91	0.51
33:b:425:ASP:O	33:b:428:LYS:NZ	2.28	0.51
1:m:684:PRO:HD2	1:m:720:SER:HA	1.92	0.51
2:1:840:C:H2'	2:1:841:A:H8	1.74	0.51
2:1:898:U:H2'	2:1:899:U:C6	2.46	0.51
2:1:1609:C:H2'	2:1:1610:G:C8	2.46	0.51
2:1:1792:C:HO2'	2:1:1794:G:H8	1.58	0.51
2:1:2043:U:H2'	2:1:2044:U:C6	2.45	0.51
2:1:2600:C:H2'	2:1:2601:A:C8	2.45	0.51
2:1:2864:A:H2'	2:1:2865:U:O4'	2.10	0.51
2:1:2883:U:OP1	7:B:10:ARG:NH1	2.43	0.51
2:1:3113:A:N7	2:1:3119:U:C4	2.78	0.51
3:2:49:G:C5	9:D:58:LYS:HE2	2.45	0.51
3:2:99:G:O2'	11:F:128:LYS:NZ	2.38	0.51
5:4:60:THR:N	5:4:63:GLU:OE2	2.41	0.51
5:4:164:ASP:OD2	5:4:167:LYS:NZ	2.33	0.51
11:F:194:HIS:ND1	11:F:197:GLN:OE1	2.38	0.51
24:S:107:TYR:HE2	24:S:118:PHE:HB2	1.76	0.51
27:V:118:VAL:O	27:V:137:VAL:N	2.43	0.51
41:j:49:TRP:CD1	41:j:50:GLY:N	2.77	0.51
1:n:671:ARG:HG2	1:n:672:PRO:HD2	1.91	0.51
46:q:24:LYS:HZ3	46:q:75:VAL:H	1.57	0.51
1:t:34:PHE:O	1:t:114:LEU:N	2.39	0.51
48:u:137:ARG:O	48:u:140:GLU:HG3	2.11	0.51
1:w:123:PRO:HB2	1:w:215:PHE:CD2	2.44	0.51
1:w:586:ILE:O	1:w:588:ASN:ND2	2.43	0.51
2:1:504:A:H2'	2:1:505:G:H8	1.75	0.51
2:1:531:G:H2'	2:1:532:A:C8	2.44	0.51
2:1:1222:G:N2	2:1:1286:A:H62	2.07	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1278:A:O2'	2:1:1279:C:H6	1.94	0.51
2:1:1889:G:H1	2:1:2347:U:H3	1.57	0.51
2:1:2154:U:H2'	2:1:2155:G:C8	2.45	0.51
2:1:2218:G:H2'	2:1:2219:A:C8	2.46	0.51
2:1:2412:G:H2'	2:1:2413:A:H8	1.76	0.51
2:1:2448:G:N2	2:1:2449:A:H62	2.09	0.51
3:2:20:A:H2'	3:2:21:G:C8	2.46	0.51
7:B:305:ILE:HA	7:B:361:THR:HG21	1.92	0.51
12:G:171:LYS:HG2	12:G:226:TYR:CE2	2.44	0.51
16:K:71:PRO:HB2	16:K:109:TYR:HA	1.92	0.51
33:b:442:TYR:OH	50:y:82:GLN:OE1	2.28	0.51
35:d:57:GLN:O	35:d:61:LYS:HB2	2.10	0.51
1:n:73:LYS:HB2	1:n:76:GLU:HB2	1.92	0.51
1:t:79:ILE:HD11	1:t:106:GLY:HA3	1.92	0.51
1:x:126:ALA:N	1:x:216:ILE:O	2.32	0.51
50:y:82:GLN:O	50:y:86:ASN:ND2	2.44	0.51
2:1:1211:U:H2'	2:1:1212:A:C8	2.45	0.51
2:1:1356:U:H5'	2:1:1357:G:C8	2.45	0.51
2:1:1729:A:N6	45:p:42:CYS:SG	2.83	0.51
2:1:2242:A:H4'	6:A:243:THR:HG21	1.93	0.51
2:1:2316:G:O6	2:1:2317:A:N6	2.43	0.51
2:1:2440:G:N2	2:1:2508:U:O2	2.36	0.51
2:1:2563:G:O6	2:1:2578:U:O2	2.28	0.51
2:1:2586:G:O6	12:G:240:ASN:N	2.43	0.51
2:1:2646:C:H2'	2:1:2647:A:C8	2.46	0.51
5:4:411:SER:O	5:4:414:LYS:HG2	2.11	0.51
7:B:58:ARG:NH1	7:B:74:GLU:OE1	2.44	0.51
17:L:161:ASP:OD1	17:L:162:ASN:N	2.43	0.51
25:T:41:ASP:OD1	25:T:42:ILE:N	2.40	0.51
31:Z:26:VAL:HG22	31:Z:89:VAL:HG11	1.91	0.51
33:b:290:THR:HA	33:b:293:ILE:HG12	1.91	0.51
1:n:231:GLN:OE1	1:n:234:ARG:NH2	2.44	0.51
1:n:504:ARG:NH2	1:t:402:PRO:HG3	2.26	0.51
50:y:145:ASN:ND2	50:y:147:LEU:O	2.43	0.51
1:Aa:310:ILE:HD11	1:Aa:330:ILE:HG13	1.91	0.51
2:1:501:A:C2	2:1:613:G:C6	2.98	0.51
2:1:544:C:H4'	2:1:545:U:H5	1.75	0.51
2:1:1321:G:H2'	2:1:1322:U:C6	2.46	0.51
2:1:2220:A:H2'	2:1:2221:G:C8	2.46	0.51
2:1:2483:G:N1	2:1:2486:A:N7	2.58	0.51
2:1:2781:U:H2'	2:1:2782:U:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2921:U:H2'	2:1:2923:U:OP2	2.10	0.51
2:1:2968:G:H2'	2:1:2969:A:C8	2.46	0.51
3:2:72:A:O2'	3:2:74:C:OP1	2.27	0.51
3:2:103:A:H2'	3:2:104:A:H8	1.76	0.51
12:G:64:ILE:HG13	12:G:68:ARG:HD2	1.93	0.51
1:m:416:VAL:HG22	1:m:419:ARG:HH22	1.76	0.51
54:m:902:AGS:O2G	1:n:671:ARG:NH2	2.34	0.51
49:v:320:VAL:HG22	49:v:340:VAL:HG12	1.92	0.51
1:w:513:VAL:HG11	1:w:565:LEU:HD11	1.92	0.51
2:1:268:A:O2'	19:N:12:ARG:NH2	2.36	0.51
2:1:1139:G:H2'	2:1:1140:G:C8	2.46	0.51
2:1:1256:G:OP2	2:1:1257:C:N4	2.39	0.51
2:1:1822:C:H2'	2:1:1823:A:H8	1.74	0.51
2:1:2466:G:O6	2:1:2490:C:N4	2.40	0.51
9:D:83:LEU:HG	9:D:88:ILE:HB	1.93	0.51
19:N:146:ALA:O	19:N:149:ASN:ND2	2.38	0.51
27:V:54:LEU:HD13	27:V:81:GLN:HB2	1.93	0.51
33:b:395:ARG:HD3	33:b:398:LEU:HD21	1.91	0.51
37:f:6:ARG:HH21	37:f:10:LYS:HG3	1.76	0.51
38:g:67:LYS:HA	38:g:70:LYS:HB2	1.92	0.51
1:n:479:ILE:HD12	1:n:484:LEU:HD21	1.91	0.51
49:v:262:LYS:HA	49:v:265:LYS:HE2	1.93	0.51
2:1:10:C:O2'	2:1:1558:A:N6	2.44	0.51
2:1:171:G:N2	2:1:248:U:O2	2.43	0.51
2:1:1085:A:H2'	2:1:1086:C:C6	2.45	0.51
2:1:2178:A:OP1	6:A:132:ASN:ND2	2.44	0.51
2:1:2492:C:O2'	2:1:2493:U:O4'	2.27	0.51
2:1:2573:G:OP1	31:Z:58:GLY:N	2.44	0.51
2:1:2918:G:H2'	2:1:2919:A:C8	2.45	0.51
4:3:41:A:H5'	41:j:64:MET:HA	1.92	0.51
4:3:75:G:OP2	30:Y:74:TYR:OH	2.18	0.51
5:4:136:GLY:N	5:4:160:ILE:O	2.36	0.51
20:O:128:ARG:HH21	20:O:129:LEU:HA	1.75	0.51
30:Y:22:ALA:O	30:Y:27:ARG:NH1	2.43	0.51
2:1:372:A:N6	2:1:394:G:O2'	2.44	0.51
2:1:553:U:H2'	2:1:554:A:C4	2.46	0.51
2:1:608:A:H5'	8:C:320:ASN:HD21	1.75	0.51
2:1:700:C:H2'	2:1:701:G:H8	1.76	0.51
2:1:1138:U:H2'	2:1:1139:G:C8	2.46	0.51
2:1:2426:U:H2'	2:1:2427:U:C6	2.46	0.51
2:1:3331:U:H2'	2:1:3332:U:O4'	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:3333:G:H22	2:1:3369:G:H1'	1.76	0.51
5:4:198:LEU:HD12	5:4:507:ILE:HG21	1.93	0.51
5:4:369:ILE:HD11	23:R:36:ASN:H	1.76	0.51
11:F:88:ARG:NH1	11:F:109:THR:O	2.44	0.51
15:J:86:VAL:HG13	15:J:87:LYS:HG3	1.92	0.51
27:V:120:LYS:HD3	27:V:137:VAL:HG22	1.92	0.51
29:X:111:ASN:OD1	29:X:112:THR:N	2.43	0.51
33:b:372:VAL:HG22	33:b:374:ARG:HE	1.76	0.51
41:j:47:TYR:HB2	41:j:49:TRP:NE1	2.26	0.51
2:1:299:G:H1	2:1:316:U:H3	1.58	0.51
2:1:412:G:H2'	2:1:413:U:C6	2.46	0.51
2:1:1226:G:H2'	2:1:1227:C:C6	2.46	0.51
2:1:2077:U:H4'	2:1:2083:G:N1	2.25	0.51
2:1:2646:C:H2'	2:1:2647:A:H8	1.76	0.51
3:2:4:U:H2'	3:2:5:G:C8	2.46	0.51
5:4:312:GLN:O	5:4:317:TYR:OH	2.28	0.51
8:C:11:LEU:HD11	8:C:156:LEU:HB2	1.93	0.51
8:C:157:GLU:O	8:C:213:ASN:ND2	2.43	0.51
13:H:12:VAL:HG12	13:H:79:ILE:HD13	1.92	0.51
19:N:87:GLN:N	19:N:87:GLN:OE1	2.44	0.51
21:P:88:VAL:O	21:P:92:GLN:HG3	2.10	0.51
21:P:120:ASN:OD1	21:P:121:GLN:N	2.43	0.51
31:Z:39:GLY:O	31:Z:40:HIS:ND1	2.44	0.51
38:g:46:ASP:OD2	38:g:80:ARG:NE	2.40	0.51
1:t:308:LEU:HD13	1:t:330:ILE:HG23	1.93	0.51
49:v:156:ARG:HA	49:v:241:LYS:HG2	1.93	0.51
2:1:23:A:N3	2:1:23:A:H2'	2.26	0.51
2:1:1858:A:N3	38:g:4:ARG:NH1	2.59	0.51
2:1:1967:U:H2'	2:1:1968:G:C8	2.46	0.51
2:1:2469:G:H2'	2:1:2470:C:C5	2.46	0.51
2:1:2536:A:H3'	2:1:2537:U:H5'	1.92	0.51
2:1:3060:C:H2'	2:1:3061:G:C8	2.46	0.51
2:1:3310:A:OP1	21:P:74:LYS:NZ	2.35	0.51
3:2:110:G:H2'	3:2:111:U:C6	2.46	0.51
5:4:458:LEU:HD11	5:4:483:ILE:HD12	1.93	0.51
7:B:82:PRO:HA	7:B:168:LYS:HZ3	1.76	0.51
8:C:335:ALA:O	8:C:338:LYS:NZ	2.30	0.51
25:T:79:MET:HB2	25:T:84:TYR:HE1	1.75	0.51
28:W:220:TYR:HB3	28:W:229:GLU:HG2	1.93	0.51
30:Y:83:ASP:OD1	30:Y:84:LYS:N	2.43	0.51
33:b:530:LYS:HE2	33:b:534:HIS:CE1	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:b:609:GLU:HG3	33:b:613:ARG:HH12	1.75	0.51
42:k:3:ARG:HD3	42:k:52:TYR:HD1	1.76	0.51
1:m:182:ASP:OD1	1:m:183:ALA:N	2.44	0.51
1:t:616:ASP:HA	1:t:658:ALA:HB3	1.93	0.51
1:x:50:THR:HA	1:x:82:ILE:HB	1.93	0.51
2:1:129:U:H2'	2:1:130:A:H8	1.77	0.50
2:1:425:G:H2'	2:1:426:G:C8	2.46	0.50
2:1:689:U:N3	8:C:227:THR:OG1	2.32	0.50
2:1:1289:G:H2'	2:1:1290:A:H8	1.76	0.50
2:1:1938:U:O2'	2:1:2115:G:OP2	2.27	0.50
2:1:2331:C:H2'	2:1:2332:A:H8	1.76	0.50
2:1:2743:A:H2'	2:1:2744:U:C6	2.46	0.50
3:2:20:A:H2'	3:2:21:G:H8	1.76	0.50
3:2:27:A:H2'	3:2:28:C:H6	1.76	0.50
6:A:223:SER:O	6:A:237:LEU:N	2.44	0.50
16:K:78:LEU:HD11	16:K:102:ILE:HG21	1.93	0.50
27:V:15:LEU:HD23	27:V:53:SER:HB3	1.92	0.50
29:X:66:PRO:HA	29:X:84:PHE:HA	1.93	0.50
1:t:552:GLY:HA3	1:t:675:LEU:HA	1.93	0.50
2:1:23:A:N6	4:3:35:C:O2	2.44	0.50
2:1:1758:G:H2'	2:1:1759:C:H6	1.76	0.50
2:1:2007:G:N2	2:1:2014:U:O2	2.34	0.50
2:1:2443:A:N6	2:1:2505:U:O4	2.44	0.50
2:1:2553:U:H1'	38:g:91:ARG:NH1	2.26	0.50
2:1:2555:G:H2'	2:1:2555:G:N3	2.25	0.50
4:3:26:U:H2'	4:3:27:U:H6	1.76	0.50
6:A:117:GLU:HG3	6:A:124:GLY:H	1.76	0.50
33:b:13:PRO:HG2	33:b:16:ASP:HB2	1.92	0.50
33:b:256:LEU:HA	33:b:264:ILE:HD11	1.93	0.50
39:h:16:GLN:N	39:h:16:GLN:OE1	2.41	0.50
41:j:31:LYS:HG3	41:j:33:THR:HG22	1.93	0.50
1:w:48:THR:HG23	1:w:101:THR:HG21	1.93	0.50
1:x:280:ARG:HH21	1:x:382:LYS:HA	1.75	0.50
53:oC:3463:UNK:HG2	53:oC:3466:UNK:HG3	1.92	0.50
2:1:121:A:C2	12:G:129:PRO:HB3	2.47	0.50
2:1:404:G:H2'	2:1:405:U:O4'	2.11	0.50
2:1:599:C:OP1	8:C:332:LYS:NZ	2.44	0.50
2:1:868:C:H2'	2:1:869:G:C8	2.46	0.50
2:1:1802:C:H2'	2:1:1803:C:H6	1.76	0.50
2:1:2221:G:N2	2:1:2224:A:OP2	2.33	0.50
2:1:2480:A:H3'	2:1:2481:G:C8	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2988:C:OP2	20:O:68:ARG:NH2	2.44	0.50
3:2:109:G:H2'	3:2:110:G:C8	2.46	0.50
4:3:68:G:H2'	4:3:69:U:C6	2.47	0.50
5:4:268:VAL:HG22	5:4:304:ILE:HD11	1.93	0.50
5:4:286:ASP:OD1	5:4:286:ASP:N	2.43	0.50
6:A:30:ARG:NH2	6:A:31:THR:OG1	2.44	0.50
7:B:177:HIS:CE1	7:B:335:ILE:HD11	2.46	0.50
8:C:286:VAL:O	8:C:289:ILE:HG13	2.12	0.50
11:F:214:TRP:CD1	11:F:219:LYS:HD2	2.46	0.50
27:V:20:GLY:HA2	27:V:35:TYR:CE1	2.46	0.50
33:b:222:PRO:HB2	33:b:235:ILE:HG23	1.94	0.50
1:m:335:ARG:HG3	1:m:338:GLN:HE21	1.76	0.50
49:v:258:VAL:HB	49:v:309:LEU:HD22	1.92	0.50
53:oC:3430:UNK:HG2	53:oC:3431:UNK:HG3	1.93	0.50
2:1:407:A:H2'	2:1:408:A:C8	2.47	0.50
2:1:664:U:O3'	19:N:203:ARG:NH1	2.45	0.50
2:1:764:U:H3	2:1:767:U:H3	1.60	0.50
2:1:1333:C:H2'	2:1:1334:U:C6	2.47	0.50
2:1:1391:C:C4	36:e:103:LYS:HE3	2.47	0.50
2:1:1615:C:H2'	2:1:1616:U:C6	2.47	0.50
2:1:1622:U:N3	2:1:1623:G:N7	2.60	0.50
2:1:1945:A:H2'	2:1:1946:A:C8	2.47	0.50
2:1:2193:U:H5''	2:1:2194:G:H5'	1.92	0.50
2:1:2784:G:H2'	2:1:2785:A:H8	1.76	0.50
2:1:2946:A:H61	2:1:2984:C:N4	2.08	0.50
2:1:2999:U:H2'	2:1:3000:A:C8	2.46	0.50
2:1:3158:G:H2'	2:1:3159:C:C6	2.46	0.50
16:K:75:LEU:HB2	16:K:114:GLY:HA2	1.93	0.50
21:P:179:GLN:HA	21:P:182:ILE:HG22	1.94	0.50
24:S:107:TYR:CE2	24:S:118:PHE:HB2	2.46	0.50
26:U:82:LYS:O	26:U:85:LYS:HG3	2.12	0.50
27:V:10:LYS:NZ	27:V:54:LEU:O	2.35	0.50
1:n:392:PRO:O	1:n:400:ARG:NH1	2.45	0.50
1:n:684:PRO:O	1:n:689:ARG:NH1	2.44	0.50
1:t:353:ASN:HA	1:t:396:ASP:HA	1.93	0.50
48:u:23:ARG:HB2	48:u:27:LYS:HB2	1.94	0.50
48:u:114:GLY:O	48:u:118:LYS:HG2	2.11	0.50
53:oC:3511:UNK:O	53:oC:3515:UNK:N	2.45	0.50
1:Aa:250:LEU:HB3	1:Aa:253:GLU:HB2	1.93	0.50
1:Aa:757:ILE:O	1:Aa:759:ARG:NH1	2.43	0.50
2:1:500:C:H2'	2:1:501:A:C8	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1404:G:N2	2:1:1407:A:OP2	2.25	0.50
2:1:1493:G:N2	2:1:1493:G:OP2	2.25	0.50
2:1:1528:G:H21	2:1:1588:A:H2	1.59	0.50
2:1:2137:U:OP2	2:1:2142:A:N6	2.44	0.50
2:1:2482:U:H2'	2:1:2483:G:C8	2.46	0.50
2:1:2601:A:H2'	2:1:2602:G:H8	1.77	0.50
2:1:2636:A:H5''	2:1:2637:A:H5'	1.93	0.50
10:E:114:LYS:HG3	10:E:116:LYS:H	1.75	0.50
11:F:231:ASN:OD1	11:F:231:ASN:N	2.44	0.50
12:G:68:ARG:HH22	12:G:239:GLY:N	2.09	0.50
18:M:47:ASP:HB3	18:M:55:ARG:HG2	1.93	0.50
20:O:10:ASP:OD1	20:O:11:GLY:N	2.45	0.50
27:V:104:ASN:HD21	27:V:106:LYS:HB2	1.77	0.50
31:Z:3:LYS:HD2	31:Z:5:LEU:HD12	1.94	0.50
33:b:233:ASN:OD1	33:b:234:ASN:N	2.37	0.50
37:f:47:LYS:HD2	37:f:104:PRO:HG2	1.93	0.50
46:q:80:ARG:NH2	46:q:81:ALA:O	2.34	0.50
1:t:374:MET:HE1	1:t:385:VAL:HG11	1.94	0.50
1:t:506:ILE:HD12	1:t:579:LEU:HD22	1.93	0.50
1:Aa:701:ASN:O	1:Aa:703:GLU:N	2.44	0.50
1:Aa:737:MET:HE2	1:m:534:LEU:HB2	1.93	0.50
2:1:715:A:H5''	16:K:115:LYS:HB2	1.93	0.50
2:1:1613:A:OP1	42:k:50:SER:OG	2.30	0.50
2:1:1826:C:H2'	2:1:1827:C:C6	2.47	0.50
2:1:1883:A:OP1	35:d:31:ARG:NH1	2.44	0.50
4:3:71:A:OP2	30:Y:51:ARG:NH1	2.44	0.50
11:F:77:VAL:HB	24:S:59:VAL:HG23	1.93	0.50
33:b:179:GLY:HA2	33:b:200:THR:HG21	1.93	0.50
1:x:328:ARG:HG2	1:x:373:LEU:HD21	1.94	0.50
1:x:531:MET:HE2	1:x:553:VAL:HA	1.94	0.50
2:1:254:A:H2'	2:1:255:A:H8	1.76	0.50
2:1:442:G:O6	2:1:492:U:C2	2.65	0.50
2:1:2269:U:H5'	2:1:2270:A:C6	2.47	0.50
2:1:2469:G:H2'	2:1:2470:C:H5	1.77	0.50
2:1:3304:U:N3	7:B:333:LYS:O	2.41	0.50
4:3:20:U:OP2	8:C:191:LYS:NZ	2.44	0.50
6:A:36:GLU:HB2	6:A:91:GLY:HA2	1.93	0.50
6:A:57:PRO:HG3	45:p:54:ILE:HG23	1.93	0.50
12:G:71:VAL:HG11	12:G:76:ALA:HB2	1.93	0.50
13:H:9:GLN:HB3	13:H:52:LEU:HD21	1.92	0.50
17:L:71:ALA:HB2	17:L:147:ILE:HD11	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:b:122:LEU:H	33:b:122:LEU:HD23	1.77	0.50
43:l:30:ARG:N	43:l:33:ASN:HD21	2.10	0.50
54:n:901:AGS:O1B	54:n:901:AGS:O2G	2.29	0.50
1:t:34:PHE:HB2	1:t:114:LEU:HB2	1.93	0.50
53:oC:3494:UNK:HA	53:oC:3497:UNK:HG3	1.92	0.50
2:1:38:U:H5''	16:K:32:ARG:HD3	1.93	0.50
2:1:52:A:H1'	2:1:811:U:H1'	1.92	0.50
2:1:633:C:O2'	37:f:21:ARG:O	2.29	0.50
2:1:650:C:H2'	2:1:651:G:C8	2.45	0.50
2:1:1485:G:N2	38:g:4:ARG:HE	2.10	0.50
2:1:1508:C:H2'	2:1:1509:A:C4	2.47	0.50
2:1:1908:A:OP2	2:1:1909:A:N6	2.44	0.50
2:1:2199:G:H2'	2:1:2200:U:C6	2.47	0.50
2:1:3163:A:N6	2:1:3164:C:N3	2.60	0.50
2:1:3384:U:H2'	2:1:3385:U:C6	2.46	0.50
5:4:206:LYS:HZ2	1:w:122:GLN:H	1.58	0.50
9:D:201:GLY:HA2	9:D:203:HIS:CE1	2.47	0.50
16:K:74:ASN:OD1	16:K:115:LYS:N	2.45	0.50
23:R:58:HIS:O	23:R:60:LYS:NZ	2.43	0.50
24:S:66:GLU:HG3	24:S:99:ARG:HG3	1.94	0.50
28:W:109:VAL:O	28:W:113:LYS:HG2	2.12	0.50
33:b:416:LEU:HD23	33:b:416:LEU:H	1.77	0.50
38:g:9:ARG:HG3	38:g:34:HIS:HE1	1.76	0.50
1:n:209:PHE:HE2	1:t:90:VAL:HA	1.77	0.50
2:1:340:C:N4	2:1:341:G:O6	2.45	0.50
2:1:814:U:OP1	41:j:45:ARG:NH1	2.43	0.50
2:1:1169:A:H4'	11:F:219:LYS:HD3	1.93	0.50
2:1:2295:A:OP2	27:V:71:LYS:HA	2.12	0.50
2:1:2526:C:H2'	2:1:2527:G:C8	2.47	0.50
2:1:2623:G:O3'	49:v:162:ARG:NE	2.44	0.50
2:1:2662:G:H2'	2:1:2663:G:C8	2.47	0.50
2:1:3252:G:H2'	2:1:3253:G:H8	1.77	0.50
2:1:3371:G:H2'	2:1:3372:A:C8	2.47	0.50
2:1:3371:G:H2'	2:1:3372:A:H8	1.77	0.50
5:4:510:CYS:HB2	5:4:521:GLU:N	2.25	0.50
17:L:185:LYS:O	17:L:188:ARG:HG3	2.12	0.50
23:R:68:GLN:OE1	23:R:71:ARG:NH2	2.43	0.50
26:U:112:PRO:HG3	33:b:528:PHE:H	1.77	0.50
31:Z:92:PHE:O	31:Z:96:VAL:HG22	2.12	0.50
33:b:251:LEU:HA	33:b:284:MET:HB3	1.94	0.50
33:b:551:ARG:O	33:b:554:ARG:NH1	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:c:22:LYS:HB3	34:c:94:GLU:HB2	1.93	0.50
40:i:74:LYS:HE2	40:i:80:PHE:HB2	1.94	0.50
40:i:87:VAL:O	40:i:90:MET:HG2	2.12	0.50
1:w:348:ASP:OD1	1:w:348:ASP:N	2.44	0.50
1:w:570:LEU:O	1:w:574:SER:OG	2.24	0.50
1:w:621:LEU:H	1:w:621:LEU:HD23	1.77	0.50
2:1:182:U:H2'	2:1:183:G:H8	1.76	0.49
2:1:515:C:H4'	8:C:341:SER:HA	1.94	0.49
2:1:1126:G:H2'	2:1:1127:G:C8	2.48	0.49
2:1:1237:G:C6	2:1:1251:A:N1	2.80	0.49
2:1:2219:A:H2'	2:1:2220:A:C8	2.47	0.49
9:D:190:ILE:HG13	9:D:192:PRO:HD3	1.94	0.49
12:G:183:LYS:HE3	12:G:194:THR:HB	1.94	0.49
19:N:121:VAL:HG12	19:N:122:ASN:HD22	1.77	0.49
20:O:10:ASP:OD2	20:O:37:ARG:NH1	2.45	0.49
22:Q:59:ARG:HH12	22:Q:86:THR:HG23	1.76	0.49
37:f:27:VAL:HG12	37:f:84:THR:HG22	1.94	0.49
1:t:347:ILE:H	1:t:389:THR:HB	1.77	0.49
2:1:32:U:H3	2:1:52:A:H61	1.60	0.49
2:1:129:U:H3	2:1:139:G:H1	1.60	0.49
2:1:162:G:H2'	2:1:163:C:C6	2.47	0.49
2:1:1472:U:H2'	2:1:1473:G:C8	2.47	0.49
2:1:1617:G:C6	2:1:1618:G:C6	3.00	0.49
2:1:2635:A:N6	2:1:2642:A:OP2	2.42	0.49
2:1:2769:A:H5''	46:q:78:LYS:HB3	1.94	0.49
3:2:7:G:OP2	9:D:22:ARG:NH2	2.45	0.49
4:3:23:U:P	30:Y:16:ARG:HE	2.35	0.49
5:4:487:SER:HA	5:4:490:ASN:HD21	1.78	0.49
7:B:198:HIS:CE1	51:z:41:LEU:HD11	2.47	0.49
7:B:217:ALA:HA	7:B:337:THR:O	2.12	0.49
9:D:191:ASP:OD1	9:D:191:ASP:N	2.45	0.49
10:E:78:ARG:HH22	10:E:103:VAL:HG13	1.77	0.49
11:F:89:ILE:HD11	11:F:135:ALA:HB2	1.94	0.49
12:G:141:ALA:O	12:G:145:ASN:ND2	2.45	0.49
17:L:105:ASN:HD22	17:L:108:ILE:HG23	1.77	0.49
19:N:12:ARG:CZ	19:N:12:ARG:HA	2.42	0.49
28:W:80:LYS:N	28:W:83:GLU:OE2	2.35	0.49
35:d:50:ARG:HG2	35:d:90:PHE:HE1	1.77	0.49
39:h:63:ARG:HA	39:h:66:VAL:HG12	1.94	0.49
40:i:90:MET:O	40:i:93:ILE:HG13	2.12	0.49
1:m:284:LEU:HD12	1:m:409:VAL:HB	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:x:308:LEU:HD13	1:x:330:ILE:HG23	1.94	0.49
1:x:746:GLU:H	1:x:749:HIS:CE1	2.29	0.49
50:y:19:LEU:HA	50:y:24:CYS:HA	1.93	0.49
2:1:181:U:H4'	41:j:75:LYS:HE2	1.93	0.49
2:1:1138:U:H2'	2:1:1139:G:H8	1.76	0.49
2:1:1564:U:H2'	2:1:1565:G:C8	2.47	0.49
2:1:2029:A:H2'	2:1:2030:C:C6	2.47	0.49
2:1:3013:U:H2'	2:1:3014:U:H6	1.75	0.49
9:D:103:LEU:HG	9:D:248:ARG:HH12	1.77	0.49
13:H:58:HIS:NE2	24:S:151:PRO:HD2	2.27	0.49
15:J:116:TYR:HD2	15:J:118:PRO:HD3	1.77	0.49
19:N:35:VAL:HG23	19:N:65:ARG:HE	1.76	0.49
20:O:20:ALA:HB1	20:O:87:MET:HE1	1.93	0.49
25:T:19:PHE:CD2	25:T:20:ARG:HG3	2.48	0.49
27:V:2:SER:OG	27:V:3:GLY:N	2.40	0.49
28:W:40:VAL:H	28:W:223:ASN:ND2	2.10	0.49
28:W:217:VAL:HG23	28:W:233:ILE:HB	1.93	0.49
30:Y:59:VAL:HG12	30:Y:60:ARG:HG3	1.94	0.49
36:e:19:ARG:HG2	36:e:28:VAL:HG21	1.93	0.49
41:j:28:HIS:ND1	41:j:31:LYS:HG2	2.28	0.49
1:n:36:THR:HG23	1:n:98:LEU:HD12	1.94	0.49
2:1:993:G:O2'	2:1:2637:A:N3	2.44	0.49
2:1:1139:G:H2'	2:1:1140:G:H8	1.77	0.49
2:1:1343:A:H2'	2:1:1344:G:C8	2.46	0.49
2:1:1471:U:H2'	2:1:1472:U:C6	2.48	0.49
2:1:1519:G:H2'	2:1:1520:G:C8	2.47	0.49
2:1:2304:C:H3'	2:1:2305:G:H21	1.77	0.49
5:4:122:ASP:HB2	5:4:126:ALA:HB2	1.94	0.49
5:4:248:ARG:HB3	5:4:251:LEU:HD11	1.95	0.49
6:A:92:LYS:N	6:A:163:ARG:HH22	2.11	0.49
7:B:283:TYR:CE2	7:B:325:LYS:HB2	2.48	0.49
15:J:54:VAL:HG13	15:J:56:THR:H	1.77	0.49
31:Z:89:VAL:O	31:Z:93:LYS:HG3	2.13	0.49
1:n:149:GLN:HB3	1:n:219:LYS:HE3	1.94	0.49
1:n:630:THR:HG23	1:n:633:ALA:H	1.78	0.49
1:Aa:103:ARG:HH21	1:Aa:109:ILE:HA	1.77	0.49
2:1:112:U:O3'	19:N:147:ARG:NH1	2.45	0.49
2:1:507:U:H2'	2:1:508:U:C6	2.48	0.49
2:1:1069:C:H2'	2:1:1070:U:C6	2.47	0.49
2:1:1493:G:C6	43:l:13:MET:HE1	2.46	0.49
2:1:1579:C:H2'	2:1:1580:A:C8	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1619:A:O2'	4:3:125:U:O4	2.30	0.49
2:1:2196:C:H2'	2:1:2242:A:H61	1.78	0.49
2:1:2342:U:O2'	2:1:3054:U:O2'	2.30	0.49
2:1:2412:G:H2'	2:1:2413:A:C8	2.47	0.49
4:3:71:A:N6	4:3:87:G:H1'	2.26	0.49
4:3:145:U:H2'	4:3:146:U:C6	2.48	0.49
5:4:27:LYS:HG2	5:4:80:TYR:HE2	1.78	0.49
8:C:328:ASN:OD1	8:C:328:ASN:N	2.46	0.49
11:F:44:ILE:O	11:F:48:ASN:ND2	2.45	0.49
27:V:82:ALA:HA	27:V:94:TYR:HB2	1.94	0.49
1:n:429:ARG:NH2	1:t:275:GLY:O	2.45	0.49
1:t:34:PHE:HB3	1:t:96:ILE:HG22	1.94	0.49
2:1:1063:G:N7	2:1:1097:G:O2'	2.34	0.49
2:1:1250:G:H2'	2:1:1251:A:H8	1.77	0.49
2:1:1336:U:H2'	2:1:1337:A:C8	2.48	0.49
2:1:2467:G:H1	2:1:2487:U:P	2.36	0.49
2:1:2566:C:H2'	2:1:2567:C:C6	2.48	0.49
3:2:28:C:H5''	15:J:137:ARG:HD3	1.93	0.49
4:3:19:C:H2'	4:3:20:U:C6	2.47	0.49
4:3:119:C:H2'	4:3:120:C:C6	2.47	0.49
11:F:235:PHE:HZ	24:S:33:ASN:HD21	1.60	0.49
27:V:21:ALA:HB3	27:V:36:ILE:HD12	1.95	0.49
1:m:44:HIS:CE1	1:m:164:PHE:HB2	2.47	0.49
46:q:2:VAL:N	49:v:376:ASN:O	2.46	0.49
50:y:101:LEU:HD22	50:y:107:VAL:HG11	1.93	0.49
1:Aa:473:LEU:HD23	1:Aa:479:ILE:HG22	1.93	0.49
2:1:243:G:H5''	17:L:132:ALA:HB2	1.95	0.49
2:1:358:G:H21	2:1:360:G:H8	1.61	0.49
2:1:643:U:OP1	2:1:953:G:N2	2.46	0.49
2:1:649:A:H2'	2:1:650:C:C6	2.48	0.49
2:1:929:A:H2'	2:1:930:U:C6	2.48	0.49
2:1:1334:U:H2'	2:1:1335:C:C6	2.47	0.49
2:1:1447:G:O2'	2:1:2355:G:O6	2.25	0.49
2:1:1480:G:H4'	2:1:1481:A:H5''	1.95	0.49
2:1:2474:G:N2	2:1:2475:G:O6	2.44	0.49
2:1:2612:U:H2'	2:1:2613:U:C2	2.46	0.49
2:1:3163:A:C6	2:1:3288:G:C5	3.01	0.49
2:1:3201:C:H2'	2:1:3202:G:C8	2.47	0.49
5:4:62:PRO:HG3	5:4:106:PRO:HB2	1.94	0.49
6:A:62:VAL:HG11	6:A:71:LEU:HD12	1.94	0.49
7:B:320:ASP:OD1	7:B:320:ASP:N	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:B:331:ASN:OD1	7:B:332:ARG:N	2.44	0.49
11:F:221:LYS:O	11:F:228:SER:N	2.40	0.49
19:N:9:GLU:OE2	40:i:41:ARG:NH1	2.45	0.49
23:R:90:PRO:HB2	23:R:93:VAL:HG13	1.95	0.49
28:W:37:TYR:HB2	28:W:104:PHE:CG	2.48	0.49
34:c:51:LEU:HD23	34:c:51:LEU:H	1.77	0.49
36:e:39:ASP:HA	36:e:44:ARG:HH12	1.78	0.49
1:m:338:GLN:HE22	1:m:379:ALA:HB2	1.77	0.49
1:w:31:PRO:HG3	1:w:93:VAL:HG12	1.94	0.49
2:1:299:G:H2'	2:1:300:G:H8	1.77	0.49
2:1:1370:G:H2'	2:1:1371:G:C8	2.45	0.49
2:1:1827:C:H2'	2:1:1828:A:C8	2.47	0.49
2:1:2530:G:O2'	2:1:2531:C:O4'	2.14	0.49
2:1:2573:G:H2'	2:1:2574:G:C8	2.48	0.49
2:1:2863:G:C2	33:b:92:LYS:HE3	2.47	0.49
2:1:2953:U:H5'	2:1:2954:U:OP2	2.13	0.49
2:1:3304:U:O4'	7:B:333:LYS:NZ	2.45	0.49
4:3:97:A:P	39:h:63:ARG:HH22	2.35	0.49
5:4:121:LYS:HG2	5:4:350:ALA:HA	1.94	0.49
5:4:233:SER:HB2	5:4:543:LEU:HA	1.94	0.49
5:4:312:GLN:OE1	5:4:312:GLN:N	2.45	0.49
5:4:360:TYR:HB3	5:4:432:CYS:SG	2.52	0.49
7:B:367:LYS:HD3	48:u:33:ARG:HD2	1.94	0.49
12:G:87:ALA:O	12:G:90:THR:OG1	2.24	0.49
25:T:48:ILE:HG13	25:T:94:GLU:HG3	1.94	0.49
32:a:104:ILE:H	32:a:143:VAL:HA	1.76	0.49
33:b:106:GLU:N	33:b:106:GLU:OE1	2.43	0.49
38:g:8:ARG:HH22	38:g:31:ARG:NE	2.11	0.49
38:g:71:THR:OG1	38:g:72:VAL:N	2.45	0.49
1:n:310:ILE:O	1:n:345:ASP:N	2.46	0.49
1:w:103:ARG:HB3	1:w:108:LEU:HB2	1.95	0.49
1:w:741:ASP:OD1	1:w:741:ASP:N	2.45	0.49
1:x:430:MET:SD	1:x:431:SER:N	2.85	0.49
1:Aa:554:LEU:HD22	1:Aa:675:LEU:HD22	1.94	0.49
2:1:147:U:C5	12:G:183:LYS:HE2	2.48	0.49
2:1:254:A:H2'	2:1:255:A:C8	2.48	0.49
2:1:908:G:H21	6:A:2:GLY:HA2	1.77	0.49
2:1:1091:A:H2'	2:1:1092:C:C6	2.48	0.49
2:1:2877:G:O2'	2:1:2878:G:H5'	2.13	0.49
5:4:219:THR:HA	5:4:309:PHE:HB2	1.95	0.49
17:L:54:LEU:HD21	17:L:115:ARG:HD2	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:T:17:ARG:HD3	25:T:45:ASN:ND2	2.28	0.49
26:U:82:LYS:HA	26:U:85:LYS:HZ3	1.78	0.49
27:V:109:MET:HE3	27:V:111:GLY:HA3	1.95	0.49
33:b:178:VAL:HG22	33:b:180:LYS:HE2	1.95	0.49
1:m:103:ARG:HA	1:m:108:LEU:HB3	1.94	0.49
46:q:7:THR:HA	46:q:23:HIS:O	2.13	0.49
1:t:564:THR:HG21	1:w:647:VAL:HG22	1.94	0.49
2:1:370:U:N3	2:1:374:A:N6	2.57	0.49
2:1:529:A:H2'	2:1:530:G:C8	2.48	0.49
2:1:1785:U:H4'	38:g:38:LEU:HD12	1.95	0.49
2:1:1967:U:H3'	2:1:2053:C:N4	2.28	0.49
2:1:2506:U:N3	2:1:2507:C:O2	2.45	0.49
2:1:2769:A:H2'	46:q:81:ALA:HB3	1.95	0.49
2:1:3358:U:H2'	2:1:3359:A:H8	1.77	0.49
5:4:28:TYR:HE1	5:4:150:TYR:HB3	1.77	0.49
5:4:336:THR:OG1	5:4:337:LEU:N	2.46	0.49
6:A:209:HIS:HD2	6:A:211:HIS:H	1.61	0.49
7:B:70:ARG:NH1	50:y:55:GLY:O	2.46	0.49
8:C:339:LEU:HB2	8:C:342:LYS:HD3	1.93	0.49
16:K:90:TYR:HD2	16:K:100:PRO:HG3	1.78	0.49
21:P:60:PHE:CE2	21:P:82:ARG:HB2	2.46	0.49
1:m:567:ALA:HB1	1:m:578:PHE:HZ	1.78	0.49
1:t:423:LEU:HD12	1:t:446:ALA:HB2	1.94	0.49
1:t:692:ILE:HG13	54:t:801:AGS:HN61	1.78	0.49
1:Aa:517:ASP:O	54:Aa:902:AGS:N6	2.34	0.48
2:1:395:A:H2'	2:1:396:A:O4'	2.13	0.48
2:1:504:A:H2'	2:1:505:G:C8	2.48	0.48
2:1:697:A:H2'	2:1:698:U:C6	2.47	0.48
2:1:891:G:H2'	2:1:892:U:C6	2.48	0.48
2:1:1694:U:H4'	38:g:24:LYS:HD3	1.94	0.48
2:1:2518:C:H2'	2:1:2519:A:C8	2.48	0.48
2:1:3044:G:H4'	7:B:13:HIS:HB2	1.95	0.48
4:3:97:A:O5'	39:h:63:ARG:NH1	2.38	0.48
10:E:31:ARG:HH12	37:f:106:ASN:HD22	1.60	0.48
11:F:76:TYR:HE2	11:F:78:GLU:HG3	1.77	0.48
11:F:136:TYR:CE2	11:F:231:ASN:HB3	2.47	0.48
11:F:160:ARG:HD3	11:F:203:TRP:CD1	2.47	0.48
19:N:44:ARG:HH21	19:N:121:VAL:HG22	1.78	0.48
23:R:51:VAL:HG23	23:R:53:LYS:H	1.78	0.48
23:R:99:LEU:O	23:R:103:ARG:HG2	2.12	0.48
28:W:157:MET:HG2	28:W:179:LYS:HB2	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:Z:11:ALA:HB1	31:Z:81:LEU:H	1.78	0.48
1:w:532:ILE:HD11	1:w:654:VAL:HG11	1.94	0.48
2:1:347:G:H2'	2:1:348:A:C8	2.48	0.48
2:1:1105:A:H2'	2:1:1106:G:C8	2.48	0.48
2:1:1373:A:H2'	2:1:1374:G:C8	2.48	0.48
2:1:1544:G:H21	2:1:2167:A:H2	1.61	0.48
2:1:2413:A:H2'	2:1:2414:G:H8	1.77	0.48
2:1:3296:A:H2'	2:1:3297:U:C6	2.47	0.48
5:4:146:HIS:CD2	5:4:149:GLY:H	2.31	0.48
5:4:447:HIS:HD2	5:4:492:THR:HG22	1.78	0.48
11:F:126:LEU:O	11:F:130:ILE:HG12	2.13	0.48
13:H:58:HIS:CE1	24:S:150:PHE:HB2	2.49	0.48
19:N:73:ARG:HB3	19:N:89:VAL:HG13	1.95	0.48
21:P:23:ARG:HH21	21:P:143:PRO:HB3	1.78	0.48
33:b:631:SER:HB3	33:b:634:LEU:HB2	1.95	0.48
1:n:481:LYS:HD3	1:t:270:LEU:HD11	1.94	0.48
49:v:221:LYS:HB2	49:v:302:TRP:NE1	2.28	0.48
54:w:902:AGS:O2B	54:w:902:AGS:O1A	2.31	0.48
2:1:615:U:H2'	2:1:616:G:C8	2.48	0.48
2:1:1088:U:C2	2:1:1089:G:C8	3.00	0.48
7:B:54:THR:OG1	7:B:360:ASP:O	2.29	0.48
17:L:105:ASN:ND2	17:L:107:GLU:HB2	2.26	0.48
1:n:553:VAL:HG21	1:n:677:ARG:HH21	1.77	0.48
50:y:121:ILE:HD13	50:y:126:GLU:HG2	1.96	0.48
2:1:872:U:H2'	2:1:873:C:C6	2.48	0.48
2:1:1242:G:H2'	2:1:1243:G:C8	2.49	0.48
2:1:1827:C:H2'	2:1:1828:A:H8	1.78	0.48
2:1:1857:C:H2'	38:g:4:ARG:HD2	1.96	0.48
2:1:1901:A:N3	2:1:1901:A:H2'	2.29	0.48
2:1:2190:U:H2'	2:1:2191:U:C6	2.48	0.48
2:1:2206:G:N2	2:1:2238:G:H1'	2.28	0.48
2:1:2252:A:H3'	2:1:2253:G:H8	1.78	0.48
2:1:3245:A:H5''	2:1:3246:G:C8	2.48	0.48
4:3:71:A:H4'	4:3:72:A:O5'	2.13	0.48
6:A:30:ARG:HH12	6:A:31:THR:HG23	1.78	0.48
21:P:116:HIS:CE1	21:P:118:GLN:HB2	2.46	0.48
24:S:7:TYR:HE1	24:S:63:GLN:HB3	1.78	0.48
43:l:24:PRO:HB2	43:l:27:ILE:HD13	1.94	0.48
43:l:49:MET:SD	43:l:49:MET:N	2.84	0.48
1:n:685:ASP:OD1	1:n:685:ASP:N	2.37	0.48
1:t:557:GLY:O	1:t:563:LYS:NZ	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:v:356:ARG:NH1	53:oC:3436:UNK:O	2.44	0.48
1:Aa:36:THR:HB	1:Aa:110:LEU:HA	1.95	0.48
2:1:791:A:H2'	2:1:792:G:C8	2.47	0.48
2:1:2900:A:N7	33:b:6:LYS:NZ	2.62	0.48
2:1:2930:A:H2'	2:1:2931:C:H6	1.78	0.48
3:2:39:C:C6	15:J:46:VAL:HG21	2.49	0.48
4:3:17:A:H2'	4:3:18:U:H6	1.78	0.48
4:3:79:A:OP1	5:4:347:SER:OG	2.22	0.48
7:B:13:HIS:HD2	7:B:16:PHE:CE2	2.30	0.48
7:B:298:PHE:HA	33:b:433:PRO:HA	1.95	0.48
7:B:371:GLN:HG2	48:u:14:TYR:CE2	2.47	0.48
9:D:266:ALA:O	9:D:270:LYS:HG2	2.13	0.48
12:G:153:ILE:HG12	12:G:166:LEU:HD13	1.95	0.48
13:H:129:ARG:HD3	13:H:130:ASP:H	1.78	0.48
17:L:164:GLU:OE1	17:L:164:GLU:N	2.44	0.48
24:S:96:ASP:OD1	24:S:97:VAL:N	2.46	0.48
33:b:75:HIS:HE1	33:b:78:HIS:HD2	1.61	0.48
2:1:139:G:H2'	2:1:140:C:C6	2.48	0.48
2:1:420:G:OP2	2:1:2385:G:N2	2.47	0.48
2:1:442:G:C5	2:1:493:G:N1	2.81	0.48
2:1:569:A:H2'	2:1:570:A:H8	1.77	0.48
2:1:792:G:H2'	2:1:793:C:C6	2.49	0.48
2:1:972:A:H2'	2:1:973:A:C8	2.48	0.48
2:1:1777:U:H2'	2:1:1778:G:C8	2.48	0.48
2:1:2230:C:H2'	2:1:2231:C:O4'	2.12	0.48
2:1:2428:U:H2'	2:1:2429:G:H8	1.79	0.48
2:1:3392:U:OP1	21:P:46:LYS:NZ	2.39	0.48
3:2:4:U:H2'	3:2:5:G:H8	1.79	0.48
5:4:527:GLY:O	5:4:531:THR:OG1	2.32	0.48
7:B:148:LEU:O	7:B:152:LYS:HG2	2.13	0.48
12:G:183:LYS:HG2	12:G:194:THR:HG22	1.95	0.48
12:G:245:LYS:O	12:G:248:LYS:HG3	2.13	0.48
16:K:86:LYS:O	16:K:87:ARG:NH1	2.46	0.48
19:N:143:ARG:HH21	39:h:97:ALA:N	2.12	0.48
21:P:43:LYS:HD2	21:P:46:LYS:HE2	1.95	0.48
49:v:273:PHE:HE2	49:v:374:ILE:HG12	1.78	0.48
1:w:451:GLY:HA3	1:w:577:ASN:HD21	1.78	0.48
2:1:618:C:O3'	21:P:167:ARG:NH2	2.46	0.48
2:1:1097:G:H4'	2:1:1098:A:O5'	2.14	0.48
2:1:1190:A:C8	2:1:1193:A:H1'	2.48	0.48
2:1:2301:U:H2'	2:1:2302:G:C8	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2837:A:H2'	2:1:2839:G:C2	2.48	0.48
3:2:22:A:H3'	3:2:22:A:N3	2.29	0.48
5:4:206:LYS:HZ3	1:w:122:GLN:HG3	1.77	0.48
5:4:239:VAL:HG13	5:4:322:LYS:HG3	1.95	0.48
11:F:107:ARG:NH1	11:F:199:ASN:O	2.47	0.48
18:M:38:ILE:HA	18:M:44:VAL:HG13	1.95	0.48
26:U:42:LYS:HG3	26:U:47:VAL:HG22	1.96	0.48
38:g:83:ASN:O	38:g:86:LYS:NZ	2.43	0.48
1:m:596:ARG:HG3	1:m:599:ARG:HH21	1.78	0.48
1:n:644:ILE:HD12	1:n:655:ILE:HG13	1.95	0.48
1:w:118:LYS:HD3	1:w:120:GLN:HE21	1.78	0.48
2:1:44:U:OP1	19:N:85:THR:OG1	2.28	0.48
2:1:119:U:O2'	12:G:133:LYS:NZ	2.43	0.48
2:1:817:A:H2'	2:1:920:A:H2	1.79	0.48
2:1:2043:U:H2'	2:1:2044:U:H6	1.78	0.48
2:1:2193:U:H1'	2:1:2315:G:N2	2.29	0.48
2:1:3168:A:N6	2:1:3282:U:O2	2.47	0.48
3:2:96:U:H2'	3:2:97:A:H8	1.79	0.48
3:2:97:A:H2'	3:2:98:C:C6	2.49	0.48
6:A:111:THR:HG22	45:p:86:LEU:HD22	1.95	0.48
10:E:42:LEU:HD23	10:E:84:VAL:HG23	1.94	0.48
13:H:58:HIS:CD2	24:S:151:PRO:HD2	2.48	0.48
28:W:150:PRO:HB2	28:W:152:GLU:HG2	1.96	0.48
29:X:49:LYS:HG3	29:X:51:VAL:H	1.79	0.48
33:b:173:CYS:SG	33:b:174:GLY:N	2.86	0.48
39:h:34:GLN:HE22	39:h:41:LEU:HD11	1.79	0.48
1:m:232:ALA:HB1	1:m:238:LEU:HB2	1.94	0.48
1:m:606:ARG:NH2	1:m:643:GLU:OE1	2.47	0.48
1:n:74:ILE:O	1:t:335:ARG:NH2	2.39	0.48
1:n:338:GLN:HB3	1:n:382:LYS:HB2	1.95	0.48
1:t:48:THR:O	1:t:99:SER:OG	2.32	0.48
48:u:38:LYS:HG2	48:u:41:LYS:HE3	1.95	0.48
2:1:840:C:H2'	2:1:841:A:C8	2.49	0.48
2:1:1472:U:H2'	2:1:1473:G:H8	1.78	0.48
2:1:1619:A:H2'	2:1:1620:U:C6	2.49	0.48
2:1:2323:G:O2'	2:1:2325:G:OP2	2.29	0.48
3:2:28:C:OP1	15:J:137:ARG:NH1	2.47	0.48
5:4:167:LYS:HB2	5:4:169:ILE:HG22	1.96	0.48
5:4:246:ARG:NH2	5:4:263:GLU:O	2.46	0.48
5:4:420:ARG:HG3	29:X:142:ILE:HG21	1.96	0.48
5:4:429:ASN:OD1	5:4:430:TYR:N	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:40:TYR:HA	6:A:91:GLY:HA3	1.95	0.48
9:D:81:HIS:C	9:D:84:PRO:HD2	2.39	0.48
28:W:227:THR:OG1	28:W:228:VAL:N	2.47	0.48
33:b:318:MET:N	33:b:318:MET:SD	2.87	0.48
48:u:25:ASP:HB3	50:y:100:ARG:HG3	1.96	0.48
50:y:117:VAL:HG11	50:y:137:VAL:HG13	1.95	0.48
50:y:187:ASN:OD1	50:y:188:ARG:NH1	2.47	0.48
1:Aa:164:PHE:HB2	1:Aa:178:VAL:HB	1.95	0.48
2:1:15:C:H2'	2:1:16:A:C8	2.49	0.48
2:1:238:A:H3'	2:1:239:G:H8	1.79	0.48
2:1:658:G:C4	2:1:659:G:C8	3.02	0.48
2:1:1459:C:H2'	2:1:1460:A:C8	2.47	0.48
2:1:1506:A:H1'	2:1:1848:G:O6	2.14	0.48
2:1:1523:U:H5'	29:X:113:LEU:HG	1.96	0.48
2:1:1588:A:C5	43:l:4:GLN:HB3	2.48	0.48
2:1:1710:C:H2'	2:1:1711:C:H6	1.78	0.48
2:1:2710:C:H2'	2:1:2711:C:C6	2.49	0.48
2:1:3268:A:H5'	10:E:46:ARG:HH12	1.79	0.48
4:3:24:G:OP2	30:Y:13:ARG:NH1	2.47	0.48
9:D:55:PHE:CE1	9:D:159:VAL:HA	2.49	0.48
19:N:71:ARG:HB2	19:N:94:TYR:HB2	1.96	0.48
23:R:98:ARG:NH2	23:R:132:PHE:O	2.47	0.48
27:V:19:VAL:HG12	27:V:49:LEU:HD21	1.96	0.48
28:W:81:ARG:HA	28:W:81:ARG:HH11	1.79	0.48
31:Z:19:ALA:HB1	38:g:89:ILE:HD11	1.95	0.48
33:b:25:THR:HA	33:b:28:LYS:HG2	1.95	0.48
45:p:49:ARG:NH2	45:p:52:ALA:HB2	2.28	0.48
1:w:48:THR:O	1:w:101:THR:OG1	2.32	0.48
1:w:87:ASP:HB3	1:w:91:HIS:H	1.79	0.48
1:x:296:LEU:HD23	1:x:343:PHE:HD1	1.79	0.48
50:y:4:ARG:HD3	50:y:208:LEU:HD12	1.95	0.48
2:1:159:A:H2'	2:1:160:G:H8	1.79	0.47
2:1:613:G:H2'	2:1:614:C:C6	2.49	0.47
2:1:613:G:H2'	2:1:614:C:H6	1.79	0.47
2:1:822:G:H2'	2:1:823:C:C6	2.49	0.47
2:1:892:U:H2'	2:1:893:C:O4'	2.14	0.47
2:1:1295:G:OP1	24:S:84:ARG:NH1	2.47	0.47
2:1:1811:G:H2'	2:1:1812:G:C8	2.49	0.47
2:1:2262:A:H3'	2:1:2263:C:O2	2.14	0.47
2:1:2370:G:H2'	2:1:2371:G:C8	2.49	0.47
2:1:2420:C:H2'	2:1:2421:U:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2452:G:N2	2:1:2494:A:N1	2.62	0.47
2:1:2682:C:P	15:J:51:ARG:HH12	2.37	0.47
2:1:2686:A:H2'	2:1:2687:G:O4'	2.14	0.47
2:1:2929:C:H2'	2:1:2930:A:C8	2.49	0.47
5:4:306:SER:HA	5:4:309:PHE:CE2	2.49	0.47
17:L:104:ARG:NH1	40:i:19:SER:HB2	2.29	0.47
21:P:67:ILE:HB	21:P:80:LYS:HE3	1.96	0.47
25:T:122:GLN:NE2	25:T:124:VAL:O	2.47	0.47
32:a:117:ARG:HG3	32:a:128:VAL:HG21	1.96	0.47
1:n:102:ILE:HD12	1:n:105:VAL:HG21	1.96	0.47
45:p:37:TYR:H	45:p:45:LYS:HD3	1.79	0.47
1:x:233:ASN:OD1	1:x:234:ARG:N	2.47	0.47
1:x:423:LEU:HG	1:x:457:LEU:HD13	1.96	0.47
53:oC:3468:UNK:HA	53:oC:3471:UNK:HB1	1.95	0.47
2:1:136:G:H2'	2:1:137:G:H8	1.78	0.47
2:1:269:G:OP2	19:N:47:LYS:NZ	2.36	0.47
2:1:312:C:H2'	2:1:313:A:H8	1.79	0.47
2:1:1134:G:O2'	2:1:2642:A:N3	2.47	0.47
2:1:1321:G:O2'	24:S:117:ARG:NH2	2.47	0.47
2:1:1622:U:H2'	2:1:1623:G:H8	1.80	0.47
2:1:1692:U:H2'	2:1:1693:C:C6	2.49	0.47
2:1:1829:G:H5''	2:1:1830:G:H5'	1.96	0.47
2:1:1981:G:H2'	2:1:1982:G:C8	2.41	0.47
4:3:7:U:H2'	4:3:8:C:C6	2.49	0.47
4:3:123:G:H2'	4:3:124:G:C8	2.49	0.47
13:H:105:GLU:HA	13:H:110:LYS:H	1.78	0.47
13:H:112:ILE:HG21	13:H:161:LEU:HD21	1.95	0.47
14:I:60:THR:OG1	14:I:61:ALA:N	2.44	0.47
29:X:108:LEU:HD23	29:X:109:LYS:HG2	1.96	0.47
34:c:51:LEU:HB3	38:g:91:ARG:CZ	2.44	0.47
36:e:100:ILE:O	36:e:125:ARG:NH1	2.38	0.47
39:h:57:VAL:HA	39:h:60:GLU:HG2	1.95	0.47
1:w:233:ASN:OD1	1:w:234:ARG:N	2.48	0.47
1:w:441:ALA:HB1	1:w:488:LEU:HD11	1.95	0.47
2:1:113:C:N4	2:1:154:U:O2	2.48	0.47
2:1:536:U:H2'	2:1:537:A:C8	2.50	0.47
2:1:663:C:H2'	2:1:664:U:C6	2.49	0.47
2:1:732:C:N4	2:1:733:G:O6	2.47	0.47
2:1:741:U:H2'	2:1:742:G:O4'	2.14	0.47
2:1:788:C:H2'	2:1:789:A:C8	2.49	0.47
2:1:843:A:H2'	2:1:844:G:C8	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2108:C:H1'	2:1:3344:A:H8	1.80	0.47
2:1:2165:G:H21	2:1:2168:A:N6	2.12	0.47
2:1:2390:A:H2'	2:1:2391:G:H8	1.78	0.47
2:1:2492:C:H2'	2:1:2493:U:C6	2.50	0.47
2:1:2767:U:H2'	2:1:2768:U:O2	2.14	0.47
2:1:3181:C:N3	20:O:168:TYR:HB2	2.29	0.47
2:1:3257:C:H2'	2:1:3258:U:O4'	2.14	0.47
5:4:164:ASP:OD1	5:4:165:GLU:N	2.47	0.47
5:4:463:THR:OG1	5:4:464:SER:N	2.46	0.47
7:B:214:MET:SD	7:B:279:ASN:HA	2.54	0.47
25:T:14:MET:HE3	25:T:14:MET:HB2	1.79	0.47
25:T:67:VAL:HG22	25:T:72:VAL:HG23	1.95	0.47
25:T:78:LYS:HG3	25:T:80:VAL:HG23	1.96	0.47
28:W:44:HIS:CE1	28:W:219:ALA:HB2	2.49	0.47
28:W:175:ILE:HG22	28:W:205:GLN:HB3	1.96	0.47
33:b:399:ALA:HB3	50:y:36:SER:HB2	1.97	0.47
40:i:89:GLU:HA	40:i:92:ASN:ND2	2.29	0.47
46:q:3:ASN:ND2	46:q:100:LYS:HB2	2.28	0.47
48:u:76:ASN:OD1	50:y:96:ARG:NH1	2.46	0.47
1:x:429:ARG:HG3	1:x:430:MET:HG3	1.96	0.47
1:Aa:371:LEU:HD11	1:Aa:398:ALA:HB1	1.96	0.47
2:1:100:A:H2	16:K:64:GLN:HE22	1.61	0.47
2:1:107:A:OP1	17:L:39:ARG:NH1	2.45	0.47
2:1:402:A:C6	33:b:611:ARG:HD3	2.49	0.47
2:1:610:G:N1	2:1:1337:A:OP1	2.30	0.47
2:1:651:G:H2'	2:1:652:G:C8	2.50	0.47
2:1:674:G:H2'	2:1:675:C:C6	2.48	0.47
2:1:1226:G:H2'	2:1:1227:C:H6	1.80	0.47
2:1:1229:G:H2'	2:1:1230:G:C8	2.49	0.47
2:1:1711:C:H2'	2:1:1712:G:C8	2.49	0.47
2:1:2106:A:H2'	2:1:2107:A:C8	2.48	0.47
2:1:2149:A:H4'	6:A:179:LEU:HB2	1.97	0.47
2:1:2477:G:N3	2:1:2477:G:H2'	2.28	0.47
2:1:3269:U:OP2	10:E:46:ARG:NH1	2.48	0.47
3:2:45:A:H2'	3:2:46:A:C8	2.49	0.47
5:4:66:LEU:HD11	5:4:393:SER:HB2	1.96	0.47
7:B:165:GLN:HE21	7:B:167:ARG:HB2	1.79	0.47
7:B:166:ILE:HG12	7:B:173:GLN:HB2	1.97	0.47
8:C:35:VAL:HA	8:C:38:VAL:HG12	1.97	0.47
9:D:14:SER:O	25:T:20:ARG:NH2	2.47	0.47
15:J:162:TRP:HA	15:J:165:GLN:HG2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:R:134:HIS:CG	23:R:135:LYS:H	2.33	0.47
24:S:77:VAL:HG11	24:S:106:LEU:HD13	1.95	0.47
25:T:137:GLU:H	25:T:139:ARG:HH21	1.63	0.47
31:Z:95:VAL:HG11	31:Z:113:VAL:HG11	1.97	0.47
33:b:404:ALA:HA	33:b:407:GLY:O	2.15	0.47
1:m:55:PRO:HG2	1:m:88:GLU:HB2	1.96	0.47
1:n:720:SER:OG	1:t:671:ARG:NH2	2.47	0.47
46:q:6:LYS:HA	46:q:25:VAL:HG12	1.96	0.47
1:w:131:VAL:N	1:w:225:THR:O	2.44	0.47
1:Aa:554:LEU:HD13	1:Aa:675:LEU:HD13	1.96	0.47
2:1:92:G:C5	2:1:94:G:N2	2.83	0.47
2:1:101:G:H2'	2:1:102:C:C6	2.48	0.47
2:1:426:G:H2'	2:1:427:C:C6	2.49	0.47
2:1:727:G:H2'	2:1:728:G:O4'	2.15	0.47
2:1:1184:A:H2'	2:1:1185:C:C6	2.49	0.47
2:1:1615:C:H2'	2:1:1616:U:H6	1.80	0.47
2:1:1725:C:H2'	2:1:1726:C:C6	2.49	0.47
2:1:1851:G:H2'	2:1:1852:G:C8	2.49	0.47
2:1:2051:G:H2'	2:1:2052:G:C8	2.48	0.47
2:1:2102:U:H2'	2:1:2103:U:C6	2.49	0.47
2:1:2206:G:O2'	2:1:2207:A:O4'	2.27	0.47
6:A:13:GLY:O	6:A:17:THR:OG1	2.26	0.47
7:B:74:GLU:HB3	7:B:325:LYS:HE2	1.97	0.47
8:C:10:SER:OG	8:C:14:GLU:OE1	2.31	0.47
13:H:92:TYR:CZ	13:H:142:ASP:HA	2.49	0.47
23:R:109:TYR:CE2	23:R:115:ILE:HB	2.50	0.47
49:v:205:ASN:OD1	49:v:205:ASN:N	2.48	0.47
1:x:334:ALA:O	1:x:340:SER:OG	2.30	0.47
2:1:217:U:O4	2:1:221:A:N7	2.48	0.47
2:1:436:A:H2'	2:1:437:G:C8	2.49	0.47
2:1:529:A:H2'	2:1:530:G:H8	1.79	0.47
2:1:641:C:P	16:K:21:ARG:HH21	2.38	0.47
2:1:1105:A:H2'	2:1:1106:G:H8	1.78	0.47
2:1:1532:C:H2'	2:1:1533:U:C6	2.49	0.47
2:1:2632:G:P	25:T:10:ARG:H	2.36	0.47
4:3:45:C:H2'	4:3:46:G:C8	2.49	0.47
5:4:224:ARG:HH12	5:4:269:TRP:HA	1.79	0.47
10:E:66:SER:HB2	10:E:76:LEU:HA	1.97	0.47
19:N:35:VAL:HG13	19:N:36:ILE:HG13	1.97	0.47
19:N:46:ASP:OD1	19:N:46:ASP:N	2.47	0.47
30:Y:118:LEU:O	30:Y:122:LYS:HG2	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:f:42:GLN:HA	37:f:45:LEU:HD23	1.97	0.47
41:j:5:THR:OG1	41:j:6:PRO:HD3	2.15	0.47
45:p:86:LEU:HA	45:p:89:MET:HG2	1.96	0.47
49:v:348:VAL:HA	53:oC:3530:UNK:HB2	1.97	0.47
1:x:727:LEU:HD21	1:x:757:ILE:HB	1.95	0.47
50:y:15:VAL:HB	50:y:195:ALA:HB1	1.96	0.47
1:Aa:254:ILE:HG22	1:Aa:258:LYS:HE2	1.96	0.47
2:1:12:A:H2'	2:1:13:A:C8	2.49	0.47
2:1:92:G:OP1	46:q:55:LYS:NZ	2.48	0.47
2:1:388:G:H2'	2:1:389:A:H8	1.79	0.47
2:1:552:G:H2'	2:1:553:U:H6	1.78	0.47
2:1:728:G:H5''	22:Q:43:PRO:HB2	1.97	0.47
2:1:1211:U:H2'	2:1:1212:A:H8	1.80	0.47
2:1:1324:U:H2'	2:1:1325:U:C6	2.49	0.47
2:1:1403:C:H2'	2:1:1404:G:H8	1.77	0.47
2:1:1408:G:H2'	2:1:1409:G:H8	1.79	0.47
2:1:1495:U:H2'	2:1:1842:A:C2	2.49	0.47
2:1:1655:G:N2	2:1:1800:A:H62	2.11	0.47
2:1:1699:A:C6	2:1:1747:G:C6	3.03	0.47
2:1:1741:A:H2'	2:1:1742:U:O4'	2.15	0.47
2:1:1937:U:H2'	2:1:1938:U:C6	2.48	0.47
2:1:1997:U:O2'	5:4:29:ARG:NH1	2.45	0.47
2:1:2021:G:H2'	2:1:2022:G:C8	2.49	0.47
2:1:2106:A:H2'	2:1:2107:A:H8	1.80	0.47
2:1:2248:C:O2'	2:1:2272:G:H1'	2.15	0.47
2:1:2489:C:H5	2:1:2490:C:H41	1.61	0.47
2:1:2586:G:C6	12:G:241:LYS:HE3	2.50	0.47
2:1:2667:A:H2'	2:1:2668:U:O4'	2.15	0.47
2:1:3181:C:H42	20:O:165:ALA:HA	1.79	0.47
3:2:7:G:H2'	3:2:8:G:H8	1.79	0.47
5:4:409:LEU:O	5:4:413:LYS:HG2	2.15	0.47
8:C:279:HIS:ND1	8:C:281:ILE:O	2.45	0.47
10:E:64:LEU:HD21	10:E:76:LEU:HD23	1.95	0.47
22:Q:23:ASN:OD1	22:Q:23:ASN:N	2.47	0.47
31:Z:83:THR:OG1	31:Z:84:ARG:N	2.47	0.47
32:a:87:GLU:HB2	32:a:100:HIS:CD2	2.50	0.47
33:b:185:ARG:HA	33:b:185:ARG:NH1	2.30	0.47
38:g:20:ILE:HD11	38:g:32:ALA:HB1	1.96	0.47
1:n:445:ILE:HD13	1:n:491:VAL:HG11	1.96	0.47
1:t:343:PHE:HE1	1:t:386:ILE:HD12	1.80	0.47
49:v:171:PHE:O	49:v:174:LEU:HG	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:x:419:ARG:HA	1:x:422:ILE:HD12	1.96	0.47
1:x:599:ARG:O	1:x:603:ARG:N	2.40	0.47
2:1:19:U:H2'	2:1:20:A:C8	2.50	0.47
2:1:236:G:H2'	2:1:237:G:H8	1.80	0.47
2:1:1026:A:H61	49:v:399:LYS:NZ	2.12	0.47
2:1:1316:C:OP1	20:O:128:ARG:NH2	2.47	0.47
2:1:1529:A:P	2:1:1592:G:H1	2.38	0.47
2:1:1558:A:H1'	29:X:34:LEU:HG	1.96	0.47
2:1:1602:A:N6	29:X:70:GLU:OE2	2.35	0.47
2:1:2344:U:H2'	2:1:2345:A:C8	2.48	0.47
2:1:2769:A:H3'	46:q:79:THR:O	2.15	0.47
2:1:3315:G:N1	7:B:123:TYR:OH	2.47	0.47
5:4:553:ILE:O	5:4:556:LEU:HG	2.14	0.47
7:B:10:ARG:NH1	7:B:263:SER:HB2	2.30	0.47
13:H:86:TYR:CE2	13:H:154:VAL:HG11	2.50	0.47
18:M:102:LYS:O	18:M:105:GLN:HG3	2.14	0.47
25:T:122:GLN:HE22	25:T:124:VAL:HG22	1.80	0.47
33:b:192:VAL:HG21	33:b:201:THR:HG22	1.97	0.47
33:b:277:LEU:O	33:b:281:LYS:NZ	2.37	0.47
42:k:56:ILE:HG13	42:k:57:ASN:N	2.29	0.47
1:m:268:PRO:HG3	1:m:382:LYS:HE2	1.95	0.47
1:t:348:ASP:OD1	1:t:348:ASP:N	2.48	0.47
1:t:467:LYS:O	1:t:471:ARG:HG2	2.14	0.47
1:t:660:ASN:O	1:t:769:TYR:OH	2.21	0.47
1:Aa:571:ALA:HA	1:Aa:575:GLY:HA3	1.97	0.47
2:1:49:A:N7	19:N:187:ARG:HD3	2.29	0.47
2:1:74:G:H2'	2:1:75:G:H8	1.80	0.47
2:1:1623:G:H2'	2:1:1624:G:C8	2.49	0.47
2:1:1935:G:H2'	2:1:1936:A:H8	1.80	0.47
2:1:2696:A:H2'	2:1:2697:A:C8	2.50	0.47
2:1:3296:A:H2'	2:1:3297:U:H6	1.79	0.47
6:A:201:GLY:HA2	6:A:204:MET:SD	2.55	0.47
7:B:92:TYR:O	7:B:157:VAL:HB	2.14	0.47
24:S:80:ARG:HA	24:S:89:ASN:HA	1.96	0.47
25:T:70:SER:HB3	25:T:92:ARG:HH21	1.80	0.47
33:b:20:ILE:HA	33:b:23:ASN:HD21	1.79	0.47
34:c:11:ASN:OD1	34:c:12:GLN:N	2.47	0.47
1:t:660:ASN:OD1	54:t:801:AGS:O3G	2.33	0.47
50:y:28:VAL:HG22	50:y:50:HIS:CE1	2.50	0.47
51:z:43:LYS:HE3	51:z:43:LYS:HB3	1.77	0.47
2:1:288:C:H2'	2:1:289:A:C8	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1212:A:H5'	24:S:113:ARG:NH1	2.30	0.47
2:1:1910:A:H2'	2:1:1911:A:C4	2.50	0.47
2:1:2005:G:H2'	2:1:2006:G:C8	2.50	0.47
2:1:2362:C:N3	2:1:2364:G:N2	2.62	0.47
2:1:2624:G:H2'	2:1:2625:C:C6	2.50	0.47
2:1:2830:G:C5	2:1:2831:G:C8	3.03	0.47
2:1:3067:C:H3'	23:R:62:ARG:HH22	1.77	0.47
3:2:100:C:H2'	3:2:101:G:O4'	2.15	0.47
4:3:6:U:H2'	4:3:7:U:C6	2.50	0.47
13:H:142:ASP:OD1	13:H:142:ASP:N	2.47	0.47
19:N:147:ARG:HH22	39:h:103:LYS:HB3	1.80	0.47
35:d:68:GLU:OE1	35:d:70:ARG:N	2.48	0.47
42:k:44:LYS:HA	42:k:52:TYR:O	2.15	0.47
46:q:24:LYS:HB2	46:q:73:GLU:HB3	1.97	0.47
46:q:28:TYR:CE1	46:q:67:LYS:HD2	2.49	0.47
1:w:311:ASN:HD21	1:x:354:ARG:HH22	1.63	0.47
1:Aa:551:LYS:HG3	1:Aa:654:VAL:HG12	1.97	0.46
2:1:146:U:H4'	2:1:147:U:H5''	1.96	0.46
2:1:412:G:H2'	2:1:413:U:H6	1.81	0.46
2:1:582:G:H2'	2:1:583:G:H8	1.80	0.46
2:1:915:A:O2'	2:1:917:A:OP1	2.24	0.46
2:1:1095:U:H3	25:T:127:GLN:HA	1.80	0.46
2:1:1203:A:H2'	2:1:1204:A:C8	2.50	0.46
2:1:1335:C:H2'	2:1:1336:U:C6	2.50	0.46
2:1:2933:A:H2'	2:1:2934:A:C8	2.50	0.46
3:2:37:G:O2'	3:2:38:U:O4'	2.21	0.46
3:2:42:A:O4'	15:J:72:ARG:NH1	2.31	0.46
3:2:45:A:OP1	9:D:151:GLN:NE2	2.47	0.46
8:C:281:ILE:HD13	22:Q:25:TYR:HB2	1.98	0.46
9:D:36:LEU:HB3	9:D:50:ARG:NH1	2.30	0.46
9:D:151:GLN:OE1	9:D:152:ARG:N	2.47	0.46
27:V:112:SER:O	27:V:132:ASN:ND2	2.41	0.46
28:W:176:LYS:NZ	28:W:201:LEU:O	2.38	0.46
31:Z:92:PHE:HB2	31:Z:95:VAL:HG12	1.96	0.46
33:b:427:TRP:HB3	48:u:83:ARG:HH11	1.80	0.46
34:c:9:SER:OG	34:c:11:ASN:OD1	2.32	0.46
1:n:466:MET:O	1:n:470:GLN:NE2	2.48	0.46
1:w:47:GLU:OE1	1:w:50:THR:OG1	2.30	0.46
1:w:160:PRO:HD2	1:w:212:SER:HB2	1.97	0.46
1:x:423:LEU:HD21	1:x:457:LEU:HB3	1.96	0.46
50:y:51:THR:HG23	50:y:59:ILE:HD13	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:8:C:H2'	2:1:9:U:C6	2.50	0.46
2:1:406:G:N2	4:3:16:G:N3	2.64	0.46
2:1:725:G:H2'	2:1:726:G:O4'	2.16	0.46
2:1:963:G:H2'	2:1:964:G:C8	2.48	0.46
2:1:1132:C:H2'	2:1:1133:A:C8	2.49	0.46
2:1:1439:U:H2'	2:1:1440:G:C8	2.50	0.46
2:1:1710:C:H2'	2:1:1711:C:C6	2.50	0.46
2:1:2221:G:N2	2:1:2223:A:H3'	2.31	0.46
2:1:2634:U:OP2	2:1:2635:A:O2'	2.30	0.46
2:1:2660:G:H2'	2:1:2661:G:C8	2.50	0.46
2:1:2787:G:N3	2:1:2787:G:H2'	2.29	0.46
2:1:3169:U:O2'	2:1:3170:A:OP2	2.30	0.46
2:1:3183:A:H2'	2:1:3184:A:C8	2.50	0.46
2:1:3218:A:H5''	2:1:3219:G:C2	2.51	0.46
6:A:137:ILE:HD12	6:A:147:ARG:HG3	1.97	0.46
8:C:169:LEU:HB3	8:C:174:ALA:HB3	1.96	0.46
15:J:10:ARG:HB2	15:J:133:ARG:HH22	1.80	0.46
22:Q:122:ILE:HG23	22:Q:126:GLN:HB2	1.96	0.46
27:V:57:MET:HE2	27:V:126:TRP:CH2	2.50	0.46
28:W:49:ARG:CZ	28:W:50:THR:H	2.27	0.46
31:Z:29:HIS:N	31:Z:77:TYR:OH	2.47	0.46
33:b:427:TRP:O	48:u:83:ARG:NH1	2.44	0.46
40:i:68:ARG:HA	40:i:71:LYS:HG2	1.98	0.46
1:m:283:LEU:HB2	1:m:405:PHE:HB3	1.98	0.46
1:n:673:GLY:N	1:n:676:ASP:OD1	2.47	0.46
49:v:322:ASP:HB2	53:oC:3522:UNK:HB1	1.97	0.46
1:w:39:HIS:NE2	1:w:97:THR:O	2.49	0.46
1:w:623:PRO:HD2	1:w:637:LEU:HD23	1.96	0.46
2:1:7:C:H5''	12:G:193:LYS:HG3	1.96	0.46
2:1:23:A:OP1	41:j:44:THR:N	2.45	0.46
2:1:197:G:H22	2:1:395:A:N6	2.13	0.46
2:1:204:A:H2'	2:1:205:C:C6	2.51	0.46
2:1:383:G:N1	2:1:387:A:C6	2.83	0.46
2:1:901:G:H2'	2:1:902:G:C8	2.49	0.46
2:1:927:C:H2'	2:1:928:C:C6	2.50	0.46
2:1:945:C:H2'	2:1:946:U:C6	2.50	0.46
2:1:1046:A:N7	2:1:1049:C:N4	2.61	0.46
2:1:2019:U:H2'	2:1:2020:A:C8	2.51	0.46
2:1:2482:U:H2'	2:1:2483:G:H8	1.80	0.46
2:1:2801:A:O2'	2:1:2802:A:H2'	2.15	0.46
4:3:134:G:OP1	29:X:56:ARG:HG2	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:283:ASP:OD1	5:4:284:ALA:N	2.45	0.46
5:4:567:LEU:HG	5:4:569:LEU:H	1.80	0.46
7:B:300:ARG:HD2	33:b:433:PRO:HG3	1.97	0.46
9:D:37:VAL:HG12	9:D:50:ARG:HD2	1.98	0.46
14:I:1:MET:O	14:I:3:ARG:NH1	2.49	0.46
26:U:58:GLU:OE2	26:U:60:GLY:N	2.35	0.46
29:X:94:GLN:OE1	29:X:94:GLN:N	2.35	0.46
33:b:75:HIS:ND1	33:b:78:HIS:HB3	2.31	0.46
33:b:274:ILE:HB	33:b:278:PHE:CD1	2.51	0.46
33:b:467:GLY:HA2	33:b:469:TYR:CE2	2.50	0.46
36:e:105:ARG:O	36:e:108:ILE:HG13	2.16	0.46
46:q:9:LYS:HA	46:q:21:THR:O	2.15	0.46
1:t:109:ILE:HD12	1:t:301:ASN:HA	1.96	0.46
49:v:155:TRP:HE3	49:v:241:LYS:HZ2	1.61	0.46
1:x:529:LYS:HG3	1:x:533:GLN:HB2	1.97	0.46
1:x:601:ILE:HG22	1:x:613:ILE:HD13	1.98	0.46
51:z:36:LYS:O	51:z:39:GLU:HG3	2.16	0.46
51:z:47:GLU:HA	51:z:50:LYS:HG2	1.97	0.46
53:oC:3404:UNK:HA	53:oC:3407:UNK:HG3	1.98	0.46
2:1:76:G:H3'	17:L:73:ARG:HG3	1.96	0.46
2:1:926:A:H2'	2:1:927:C:C6	2.50	0.46
2:1:1084:A:H2'	2:1:1085:A:H8	1.80	0.46
2:1:1108:U:H2'	2:1:1109:U:C6	2.50	0.46
2:1:1149:G:H21	2:1:1199:C:N4	2.13	0.46
2:1:1928:G:H2'	2:1:1929:G:O4'	2.15	0.46
2:1:2670:G:H2'	2:1:2671:A:H8	1.80	0.46
5:4:77:GLU:O	5:4:81:LYS:HE3	2.16	0.46
9:D:229:ASP:HB3	9:D:231:ILE:HG22	1.98	0.46
25:T:8:ARG:HB3	25:T:15:PHE:HE2	1.80	0.46
31:Z:41:ALA:HB2	31:Z:77:TYR:HE1	1.81	0.46
33:b:23:ASN:O	33:b:26:GLN:HG2	2.15	0.46
33:b:143:LEU:C	33:b:146:PRO:HD2	2.40	0.46
1:m:53:ILE:HG12	1:m:96:ILE:HG23	1.97	0.46
1:t:561:CYS:C	54:t:801:AGS:H2	2.40	0.46
1:w:618:ILE:HG22	1:w:659:THR:HB	1.98	0.46
1:x:430:MET:HE2	1:x:432:SER:H	1.79	0.46
1:Aa:728:CYS:O	1:Aa:732:GLY:N	2.44	0.46
2:1:44:U:H3'	2:1:45:A:H8	1.80	0.46
2:1:278:U:H2'	2:1:279:U:C6	2.51	0.46
2:1:306:A:H1'	46:q:36:PHE:CZ	2.51	0.46
2:1:1201:C:H2'	2:1:1202:A:C8	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1485:G:O2'	2:1:1874:A:O2'	2.32	0.46
2:1:1583:A:H2'	2:1:1584:U:O4'	2.15	0.46
2:1:1678:G:H2'	2:1:1679:A:C8	2.48	0.46
2:1:2527:G:H2'	2:1:2528:G:H8	1.81	0.46
2:1:2574:G:H2'	2:1:2575:G:C8	2.50	0.46
2:1:2946:A:H61	2:1:2984:C:H42	1.64	0.46
2:1:2950:G:O2'	2:1:2952:G:OP1	2.21	0.46
5:4:343:TYR:HB2	5:4:346:LYS:NZ	2.30	0.46
5:4:392:LEU:H	5:4:392:LEU:HD12	1.81	0.46
5:4:473:LEU:HD23	5:4:476:PRO:HA	1.97	0.46
7:B:369:ARG:NH2	48:u:11:SER:OG	2.49	0.46
9:D:34:LYS:O	9:D:38:THR:OG1	2.26	0.46
21:P:122:ALA:HB3	21:P:143:PRO:HG2	1.98	0.46
31:Z:50:PRO:HB3	31:Z:65:ARG:O	2.16	0.46
31:Z:60:LYS:O	31:Z:64:LYS:HG2	2.16	0.46
33:b:300:GLU:HA	33:b:303:ALA:HB3	1.97	0.46
36:e:34:LYS:O	36:e:36:LYS:NZ	2.47	0.46
41:j:64:MET:HG3	41:j:68:LYS:HG2	1.96	0.46
42:k:2:ALA:N	42:k:50:SER:OG	2.46	0.46
1:n:571:ALA:HB2	1:n:578:PHE:HB3	1.97	0.46
49:v:373:PHE:CZ	49:v:375:ALA:HB3	2.50	0.46
1:w:247:VAL:HA	54:w:902:AGS:HN61	1.81	0.46
2:1:737:G:H2'	2:1:738:A:C8	2.50	0.46
2:1:809:G:H2'	2:1:810:A:H8	1.81	0.46
2:1:1745:C:H2'	2:1:1746:U:C6	2.50	0.46
2:1:1970:U:H2'	2:1:1971:C:C6	2.51	0.46
2:1:2122:G:H2'	2:1:2123:G:H8	1.78	0.46
2:1:2171:G:H2'	2:1:2172:A:H8	1.81	0.46
2:1:2279:A:H5''	2:1:2280:A:C5	2.51	0.46
2:1:2610:G:H2'	2:1:2611:U:C6	2.51	0.46
2:1:2768:U:H1'	46:q:69:VAL:HG11	1.97	0.46
2:1:3322:A:H2'	2:1:3323:A:C8	2.50	0.46
3:2:11:A:H62	25:T:20:ARG:HH12	1.64	0.46
4:3:14:C:H5''	21:P:123:PRO:HD3	1.98	0.46
4:3:71:A:H61	4:3:87:G:H1'	1.81	0.46
4:3:82:U:O2'	4:3:85:G:N2	2.48	0.46
4:3:123:G:H2'	4:3:124:G:H8	1.80	0.46
8:C:5:GLN:HB3	8:C:19:ALA:HB1	1.96	0.46
11:F:158:LYS:HA	11:F:203:TRP:HZ2	1.81	0.46
14:I:37:GLN:H	14:I:37:GLN:HG2	1.55	0.46
30:Y:119:ILE:HG13	30:Y:124:GLY:HA3	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:b:607:LYS:HD2	33:b:610:ARG:NH1	2.29	0.46
2:1:158:G:H2'	2:1:159:A:H8	1.80	0.46
2:1:225:C:H2'	2:1:226:C:H6	1.81	0.46
2:1:388:G:H2'	2:1:389:A:C8	2.51	0.46
2:1:933:A:N3	8:C:98:ARG:NH2	2.64	0.46
2:1:1731:A:H2'	2:1:1732:U:C6	2.51	0.46
2:1:1945:A:H2'	2:1:1946:A:H8	1.81	0.46
2:1:1987:G:H2'	2:1:1988:C:C6	2.50	0.46
2:1:2000:U:C4	2:1:2021:G:O6	2.68	0.46
2:1:2583:C:H2'	2:1:2584:G:C8	2.51	0.46
2:1:2806:U:H2'	2:1:2807:U:C6	2.50	0.46
2:1:3042:U:OP2	2:1:3092:C:N4	2.49	0.46
2:1:3112:G:N1	2:1:3121:U:O4	2.48	0.46
2:1:3244:A:P	7:B:100:ARG:HH12	2.38	0.46
5:4:180:LYS:HE2	5:4:499:PRO:HG3	1.97	0.46
5:4:474:PRO:HG2	5:4:482:ALA:HB2	1.97	0.46
8:C:3:ARG:HG2	8:C:22:LEU:HB2	1.97	0.46
23:R:93:VAL:HA	23:R:96:ILE:HG12	1.96	0.46
24:S:138:GLN:HA	24:S:141:LYS:HB3	1.97	0.46
27:V:11:PHE:HZ	27:V:88:ARG:HE	1.64	0.46
28:W:92:LEU:HD21	28:W:221:TYR:HB2	1.97	0.46
42:k:74:LYS:NZ	42:k:75:VAL:O	2.47	0.46
49:v:208:VAL:HA	49:v:211:ILE:HG22	1.98	0.46
1:Aa:87:ASP:HB3	1:Aa:90:VAL:HB	1.98	0.46
2:1:225:C:H2'	2:1:226:C:C6	2.51	0.46
2:1:792:G:H2'	2:1:793:C:H6	1.81	0.46
2:1:1014:U:OP1	2:1:1016:C:N4	2.39	0.46
2:1:1282:G:OP2	28:W:69:LYS:NZ	2.49	0.46
2:1:1609:C:H2'	2:1:1610:G:H8	1.80	0.46
2:1:2101:C:O2'	2:1:2102:U:O5'	2.26	0.46
2:1:2188:A:O2'	45:p:22:LEU:HD11	2.16	0.46
2:1:2515:A:O3'	19:N:31:ARG:NH2	2.48	0.46
2:1:2568:C:O2'	2:1:2573:G:N2	2.48	0.46
2:1:2836:C:H3'	2:1:2837:A:H8	1.80	0.46
2:1:3160:U:H2'	2:1:3161:C:C6	2.51	0.46
2:1:3230:G:H2'	2:1:3231:U:O4'	2.16	0.46
2:1:3299:A:N6	2:1:3315:G:H1	2.13	0.46
5:4:340:VAL:HB	5:4:437:ILE:HG23	1.97	0.46
8:C:321:LYS:O	8:C:325:LEU:N	2.45	0.46
28:W:145:ARG:HE	28:W:149:ILE:HG23	1.81	0.46
31:Z:83:THR:HB	38:g:93:PHE:CZ	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:b:1:MET:HE1	33:b:69:PRO:HB3	1.96	0.46
33:b:83:ASP:N	33:b:83:ASP:OD1	2.46	0.46
33:b:472:ASP:OD1	48:u:109:LYS:NZ	2.38	0.46
41:j:28:HIS:N	41:j:33:THR:O	2.49	0.46
1:m:282:ILE:HD12	1:m:386:ILE:HG12	1.96	0.46
1:n:527:LYS:HB3	1:n:677:ARG:NH1	2.31	0.46
1:t:467:LYS:HB3	1:t:490:ASP:HB3	1.97	0.46
1:x:570:LEU:HD21	1:x:612:ILE:HD12	1.97	0.46
2:1:208:C:H2'	2:1:209:A:C8	2.50	0.46
2:1:342:A:O4'	2:1:344:A:N6	2.49	0.46
2:1:712:G:H2'	2:1:713:U:H6	1.81	0.46
2:1:1023:C:H2'	2:1:1024:G:O4'	2.16	0.46
2:1:1534:A:H2'	2:1:1535:A:C8	2.51	0.46
2:1:2876:C:O2'	2:1:2877:G:O5'	2.32	0.46
2:1:2948:C:H2'	2:1:2949:U:N1	2.31	0.46
2:1:3066:U:H2'	2:1:3067:C:H6	1.80	0.46
2:1:3084:C:H2'	2:1:3085:G:O4'	2.15	0.46
2:1:3121:U:H1'	2:1:3122:A:H5''	1.97	0.46
2:1:3293:U:H4'	7:B:128:LYS:NZ	2.30	0.46
7:B:217:ALA:O	7:B:277:SER:OG	2.24	0.46
9:D:95:TRP:CE2	9:D:158:ARG:HA	2.51	0.46
9:D:201:GLY:O	9:D:204:VAL:HG22	2.16	0.46
17:L:105:ASN:ND2	17:L:108:ILE:HG23	2.31	0.46
18:M:90:VAL:HA	18:M:93:LYS:HE2	1.97	0.46
19:N:146:ALA:HA	19:N:149:ASN:HB3	1.98	0.46
28:W:48:VAL:HG21	28:W:53:LEU:HD21	1.98	0.46
29:X:51:VAL:HA	39:h:62:GLN:HE22	1.80	0.46
33:b:457:GLU:OE2	48:u:95:ARG:NE	2.47	0.46
33:b:561:ARG:NH2	33:b:563:SER:HB2	2.31	0.46
40:i:57:LEU:HA	40:i:60:LEU:HG	1.97	0.46
1:m:558:PRO:HG3	1:m:683:PRO:HG3	1.98	0.46
1:n:148:ILE:HG13	1:n:226:PHE:HZ	1.80	0.46
1:n:318:LYS:O	52:0:0:UNK:N	2.48	0.46
1:n:650:LEU:HG	1:n:653:VAL:HB	1.97	0.46
1:t:127:THR:OG1	1:t:186:ASP:N	2.48	0.46
1:w:347:ILE:O	1:w:351:ALA:N	2.47	0.46
2:1:654:C:H2'	2:1:655:C:C6	2.51	0.46
2:1:949:C:H2'	2:1:950:G:C8	2.51	0.46
2:1:1297:C:H2'	2:1:1298:C:H6	1.80	0.46
2:1:1373:A:H2'	2:1:1374:G:H8	1.81	0.46
2:1:1793:C:N4	6:A:177:LYS:O	2.36	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2108:C:H2'	2:1:2109:U:C6	2.51	0.46
2:1:2406:C:H2'	2:1:2407:C:C6	2.51	0.46
2:1:2634:U:H3'	2:1:2635:A:H2'	1.97	0.46
2:1:2747:A:H4'	9:D:174:PRO:HB2	1.97	0.46
2:1:2769:A:O2'	46:q:71:ARG:HB2	2.15	0.46
2:1:2937:G:H2'	2:1:2938:G:O4'	2.15	0.46
2:1:3022:G:H4'	2:1:3023:U:H5'	1.97	0.46
2:1:3100:U:OP1	51:z:14:LYS:NZ	2.37	0.46
2:1:3326:G:H1	2:1:3380:U:H3	1.64	0.46
2:1:3365:U:H2'	2:1:3366:G:C8	2.51	0.46
3:2:109:G:H2'	3:2:110:G:H8	1.81	0.46
3:2:109:G:C2	3:2:110:G:C5	3.04	0.46
5:4:256:GLU:OE1	5:4:257:GLY:N	2.48	0.46
8:C:329:PRO:HG3	11:F:41:ARG:HE	1.80	0.46
11:F:152:GLY:C	11:F:163:LEU:HG	2.41	0.46
24:S:82:ASP:OD1	24:S:82:ASP:N	2.47	0.46
33:b:417:LYS:HA	33:b:420:TYR:HE2	1.81	0.46
1:w:451:GLY:HA3	1:w:577:ASN:ND2	2.32	0.46
1:x:683:PRO:HG3	1:x:761:ILE:HD13	1.98	0.46
2:1:155:G:N1	2:1:265:A:OP2	2.48	0.45
2:1:910:G:H2'	2:1:911:C:O4'	2.16	0.45
2:1:1017:C:H3'	15:J:55:ARG:HH12	1.79	0.45
2:1:1213:G:H2'	2:1:1214:U:C6	2.51	0.45
2:1:1414:G:H2'	2:1:1415:U:C6	2.51	0.45
2:1:1456:A:O4'	35:d:26:LYS:NZ	2.48	0.45
2:1:1719:G:H2'	2:1:1720:U:C6	2.51	0.45
2:1:1896:A:N7	2:1:3093:C:N4	2.64	0.45
2:1:2582:C:H2'	2:1:2583:C:C6	2.50	0.45
2:1:2785:A:H2'	2:1:2786:G:H8	1.76	0.45
2:1:2848:G:H21	2:1:2851:A:H61	1.63	0.45
2:1:3086:A:C4	2:1:3087:A:C8	3.05	0.45
2:1:3112:G:H4'	13:H:73:SER:HB3	1.98	0.45
5:4:220:GLY:H	5:4:309:PHE:HD2	1.62	0.45
7:B:191:LYS:HA	7:B:191:LYS:HD3	1.74	0.45
7:B:218:ILE:HG23	7:B:339:ARG:HH22	1.81	0.45
14:I:85:TYR:HD1	14:I:89:VAL:HG21	1.80	0.45
17:L:76:THR:HG23	17:L:79:GLU:H	1.81	0.45
24:S:34:GLU:CD	24:S:34:GLU:H	2.23	0.45
26:U:17:VAL:HB	26:U:63:VAL:HG13	1.98	0.45
33:b:339:LEU:HD23	33:b:340:LEU:HD22	1.97	0.45
33:b:584:ARG:NH1	33:b:584:ARG:HA	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:h:83:LYS:HA	39:h:89:ARG:NH2	2.31	0.45
41:j:76:ASN:HD21	41:j:79:GLN:HB2	1.81	0.45
46:q:3:ASN:HB2	46:q:100:LYS:HD3	1.98	0.45
54:Aa:902:AGS:O1A	54:Aa:902:AGS:O2G	2.34	0.45
2:1:584:G:H2'	2:1:585:A:C8	2.51	0.45
2:1:1471:U:H2'	2:1:1472:U:H6	1.80	0.45
2:1:1713:G:O6	34:c:28:LYS:NZ	2.35	0.45
2:1:2017:G:H2'	2:1:2018:C:H6	1.81	0.45
2:1:2022:G:H2'	2:1:2023:C:C6	2.51	0.45
2:1:2221:G:N2	2:1:2223:A:H8	2.14	0.45
2:1:2340:U:H2'	2:1:2341:A:H8	1.81	0.45
2:1:2827:U:H3	47:r:45:TRP:HZ2	1.64	0.45
4:3:12:A:H2'	4:3:13:A:H8	1.80	0.45
4:3:61:A:OP2	39:h:48:ARG:NH2	2.36	0.45
6:A:137:ILE:HD11	6:A:149:ARG:HB2	1.97	0.45
10:E:52:VAL:HG11	10:E:65:ILE:HD12	1.98	0.45
11:F:82:LYS:NZ	11:F:189:ILE:O	2.40	0.45
13:H:88:TYR:HB2	13:H:146:LEU:HB2	1.97	0.45
15:J:12:LEU:HG	15:J:131:MET:HE2	1.99	0.45
19:N:187:ARG:HH21	19:N:188:ARG:NH2	2.14	0.45
20:O:153:VAL:HA	20:O:156:LEU:HG	1.98	0.45
21:P:74:LYS:H	21:P:74:LYS:HD2	1.81	0.45
24:S:8:GLN:O	24:S:61:ILE:HD12	2.16	0.45
33:b:29:THR:HA	33:b:48:ARG:HH12	1.80	0.45
35:d:80:ASN:HB2	35:d:88:PRO:HA	1.97	0.45
1:m:693:LEU:O	1:m:697:THR:OG1	2.19	0.45
1:w:158:ILE:HG12	1:w:217:PHE:HB2	1.99	0.45
2:1:413:U:H2'	2:1:414:U:C6	2.51	0.45
2:1:579:G:H2'	2:1:580:C:C6	2.52	0.45
2:1:702:C:H2'	2:1:703:G:C8	2.51	0.45
2:1:869:G:N1	2:1:891:G:C6	2.84	0.45
2:1:1149:G:H21	2:1:1199:C:H42	1.64	0.45
2:1:1336:U:H2'	2:1:1337:A:H8	1.81	0.45
2:1:1463:U:H2'	2:1:1464:G:O4'	2.16	0.45
2:1:2180:G:H2'	2:1:2181:C:C6	2.51	0.45
2:1:2353:G:O3'	21:P:86:LYS:NZ	2.38	0.45
2:1:2452:G:H1'	2:1:2462:A:OP2	2.16	0.45
6:A:32:LEU:HG	6:A:37:ARG:HE	1.81	0.45
7:B:41:VAL:HB	7:B:191:LYS:HE3	1.97	0.45
9:D:29:ASP:OD1	9:D:30:TYR:N	2.50	0.45
15:J:142:LYS:O	15:J:145:LYS:NZ	2.37	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:M:109:ARG:O	18:M:112:LEU:HG	2.17	0.45
27:V:89:ASP:N	27:V:89:ASP:OD1	2.49	0.45
33:b:252:TYR:N	33:b:284:MET:O	2.26	0.45
1:n:501:SER:HA	1:n:504:ARG:HD2	1.99	0.45
46:q:70:LEU:HD13	46:q:85:LEU:HB2	1.96	0.45
1:x:250:LEU:HB3	1:x:253:GLU:HB2	1.97	0.45
50:y:85:ARG:HH21	50:y:86:ASN:HA	1.82	0.45
2:1:84:U:OP2	2:1:85:A:O2'	2.30	0.45
2:1:203:G:H2'	2:1:204:A:C8	2.51	0.45
2:1:241:G:H2'	2:1:241:G:N3	2.31	0.45
2:1:359:U:H2'	2:1:360:G:C4	2.51	0.45
2:1:591:G:C2	10:E:18:LEU:HB3	2.52	0.45
2:1:654:C:P	36:e:27:ARG:HH22	2.38	0.45
2:1:748:U:H2'	2:1:749:C:C6	2.52	0.45
2:1:1437:C:H2'	2:1:1438:U:C6	2.50	0.45
2:1:1617:G:C6	2:1:1618:G:O6	2.68	0.45
2:1:1881:A:H2'	2:1:1882:G:C8	2.51	0.45
2:1:1947:G:H5''	23:R:134:HIS:CE1	2.51	0.45
2:1:2660:G:H1'	2:1:2744:U:H1'	1.98	0.45
2:1:3008:A:H2'	2:1:3009:G:H8	1.82	0.45
2:1:3048:A:H4'	7:B:53:MET:SD	2.56	0.45
2:1:3234:A:H2'	2:1:3235:C:C6	2.51	0.45
3:2:118:A:H2'	3:2:119:U:C6	2.51	0.45
5:4:200:CYS:SG	5:4:207:LEU:HD23	2.56	0.45
7:B:49:TYR:O	7:B:80:ASP:N	2.42	0.45
17:L:177:LYS:NZ	40:i:11:LEU:HA	2.31	0.45
25:T:109:VAL:HA	25:T:112:ASN:ND2	2.30	0.45
28:W:87:GLU:O	28:W:221:TYR:OH	2.35	0.45
1:m:399:LEU:HB3	1:m:405:PHE:HE2	1.79	0.45
1:m:562:SER:N	54:m:902:AGS:H2	2.32	0.45
1:t:628:SER:HG	1:t:634:ASN:HD21	1.60	0.45
1:w:69:CYS:HB2	1:w:116:LEU:HD11	1.99	0.45
53:oC:3458:UNK:O	53:oC:3460:UNK:N	2.50	0.45
53:oC:3460:UNK:HB1	53:oC:3502:UNK:HA	1.98	0.45
1:Aa:72:GLY:HA3	1:Aa:78:GLY:HA2	1.99	0.45
2:1:442:G:N7	2:1:493:G:N2	2.64	0.45
2:1:1176:C:H2'	2:1:1177:G:N2	2.32	0.45
2:1:1307:G:O4'	20:O:60:LYS:NZ	2.47	0.45
2:1:1832:C:H2'	2:1:1833:G:C8	2.51	0.45
2:1:1977:C:N3	2:1:2046:U:O4	2.50	0.45
2:1:2196:C:H2'	2:1:2242:A:N6	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2392:C:H2'	2:1:2393:G:C4	2.51	0.45
2:1:2532:U:H2'	2:1:2533:G:N7	2.31	0.45
2:1:2831:G:O6	2:1:2858:U:C2	2.69	0.45
2:1:2960:C:H2'	2:1:2961:G:C8	2.52	0.45
2:1:3309:G:H5'	21:P:71:ALA:HB2	1.98	0.45
10:E:55:LEU:HD11	10:E:66:SER:HB3	1.97	0.45
11:F:222:HIS:O	11:F:227:GLY:N	2.38	0.45
12:G:109:LEU:O	12:G:112:GLU:HG3	2.17	0.45
13:H:21:LYS:HE3	13:H:24:ILE:HD11	1.97	0.45
15:J:47:GLN:HG2	15:J:64:LYS:HB3	1.98	0.45
19:N:15:GLN:HG2	19:N:20:ARG:HH21	1.82	0.45
25:T:53:PRO:HB3	25:T:91:LEU:HD21	1.98	0.45
27:V:40:LYS:HB2	27:V:57:MET:HB2	1.99	0.45
33:b:599:ARG:NH1	43:l:25:GLN:OE1	2.50	0.45
1:m:431:SER:HA	1:m:434:ARG:HB2	1.99	0.45
1:n:33:GLU:OE1	1:n:113:ARG:NH1	2.46	0.45
1:n:441:ALA:HB1	1:n:488:LEU:HD13	1.98	0.45
1:n:720:SER:HB3	1:n:761:ILE:HD11	1.98	0.45
2:1:150:A:C5	2:1:151:A:C8	3.04	0.45
2:1:195:U:O2'	2:1:196:G:O5'	2.34	0.45
2:1:332:C:H2'	2:1:333:G:C8	2.52	0.45
2:1:364:G:OP1	8:C:60:THR:HA	2.16	0.45
2:1:1104:G:H2'	2:1:1105:A:C8	2.51	0.45
2:1:1413:G:C4	2:1:1414:G:N7	2.85	0.45
2:1:1757:A:H2'	2:1:1758:G:H8	1.81	0.45
2:1:1761:C:H1'	2:1:1763:U:C5	2.52	0.45
2:1:1959:G:N7	2:1:2077:U:H5'	2.31	0.45
2:1:2003:G:H2'	2:1:2004:U:O4'	2.17	0.45
2:1:2199:G:H2'	2:1:2200:U:H6	1.81	0.45
2:1:2451:G:H2'	2:1:2496:C:N3	2.31	0.45
2:1:2697:A:H2'	2:1:2698:G:C8	2.52	0.45
4:3:117:C:H2'	4:3:118:C:C6	2.51	0.45
5:4:232:ARG:NH1	5:4:232:ARG:HA	2.31	0.45
5:4:461:ASP:H	5:4:468:LEU:HD11	1.82	0.45
5:4:475:LEU:HD11	5:4:485:LEU:HD22	1.98	0.45
6:A:15:ILE:O	6:A:194:ASN:ND2	2.50	0.45
6:A:230:VAL:HG23	6:A:232:GLY:H	1.81	0.45
8:C:114:ASN:O	8:C:117:GLU:HG3	2.17	0.45
11:F:223:PHE:CD2	11:F:232:ARG:HB3	2.52	0.45
17:L:189:GLU:HA	17:L:192:GLU:HG3	1.99	0.45
21:P:82:ARG:HG3	21:P:83:TRP:H	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:b:388:TYR:OH	33:b:396:ARG:NH2	2.49	0.45
35:d:13:THR:HB	35:d:72:ARG:HH11	1.82	0.45
49:v:403:GLN:NE2	49:v:404:ARG:O	2.47	0.45
2:1:595:G:H2'	2:1:596:C:C6	2.52	0.45
2:1:803:C:C2	2:1:804:C:C5	3.05	0.45
2:1:1219:C:P	28:W:20:ARG:HH21	2.40	0.45
2:1:1326:A:H2'	2:1:1327:C:C6	2.51	0.45
2:1:1438:U:H2'	2:1:1439:U:C6	2.52	0.45
2:1:1602:A:H5''	23:R:38:ARG:HH12	1.81	0.45
2:1:2375:G:O2'	2:1:2377:G:OP2	2.31	0.45
2:1:2785:A:H4'	46:q:36:PHE:HB3	1.98	0.45
2:1:2834:G:C2	2:1:2854:U:O2	2.69	0.45
2:1:2900:A:C4	2:1:2901:G:C8	3.05	0.45
2:1:2916:U:H2'	2:1:2917:G:C8	2.51	0.45
2:1:2997:G:H1'	2:1:3396:U:H5''	1.97	0.45
2:1:3001:C:H2'	2:1:3002:C:C6	2.52	0.45
2:1:3305:A:O2'	2:1:3306:U:O4'	2.26	0.45
3:2:87:G:H2'	3:2:88:G:H8	1.82	0.45
3:2:112:G:H2'	3:2:113:C:H6	1.81	0.45
7:B:102:LEU:HD11	7:B:155:ALA:HB2	1.98	0.45
7:B:311:PHE:HB2	7:B:314:TYR:HB3	1.99	0.45
9:D:33:ARG:HA	9:D:36:LEU:HB2	1.99	0.45
11:F:191:VAL:HG23	11:F:195:PHE:HB2	1.97	0.45
17:L:119:TYR:CZ	17:L:123:ILE:HD11	2.52	0.45
18:M:19:ARG:NH1	18:M:66:THR:O	2.49	0.45
20:O:22:VAL:HG11	20:O:122:GLN:HE21	1.82	0.45
33:b:56:GLY:O	33:b:59:GLU:HG3	2.16	0.45
35:d:16:LEU:HB3	35:d:20:LEU:HD12	1.99	0.45
1:m:686:VAL:HG13	1:m:713:ALA:HB1	1.99	0.45
54:n:902:AGS:O2G	1:t:674:ARG:NH2	2.50	0.45
1:t:306:HIS:HB3	1:t:340:SER:HA	1.99	0.45
50:y:23:TYR:CE2	50:y:25:LEU:HB2	2.52	0.45
50:y:118:HIS:CE1	50:y:120:ASP:HB2	2.51	0.45
2:1:187:A:H2'	2:1:188:U:C6	2.51	0.45
2:1:738:A:H2'	2:1:739:G:H8	1.82	0.45
2:1:800:G:O2'	2:1:801:A:O5'	2.34	0.45
2:1:1480:G:H4'	2:1:1481:A:C5'	2.47	0.45
2:1:1579:C:H2'	2:1:1580:A:C5	2.52	0.45
2:1:1975:C:H2'	2:1:1976:G:C8	2.52	0.45
2:1:2351:U:H4'	21:P:83:TRP:CZ3	2.51	0.45
2:1:2505:U:O2'	2:1:2506:U:OP2	2.33	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:B:54:THR:OG1	7:B:55:THR:N	2.48	0.45
19:N:30:TYR:OH	19:N:43:THR:HG21	2.17	0.45
33:b:75:HIS:CE1	33:b:78:HIS:HD2	2.35	0.45
33:b:391:GLU:HA	33:b:400:ARG:HH22	1.82	0.45
33:b:432:MET:HE3	33:b:432:MET:HB3	1.85	0.45
35:d:14:ILE:HD11	35:d:39:PHE:CG	2.51	0.45
1:n:606:ARG:NH2	1:n:648:GLU:OE1	2.50	0.45
48:u:101:GLN:O	48:u:104:GLU:HG3	2.17	0.45
51:z:21:VAL:HG12	51:z:24:LYS:HE2	1.98	0.45
1:Aa:350:ILE:HG22	1:Aa:366:VAL:HG11	1.99	0.45
2:1:150:A:C4	2:1:151:A:H8	2.35	0.45
2:1:418:A:H2'	2:1:419:G:H8	1.82	0.45
2:1:589:A:N6	2:1:610:G:H1'	2.31	0.45
2:1:998:A:N6	3:2:102:A:N1	2.65	0.45
2:1:1194:G:H2'	2:1:1195:A:C8	2.51	0.45
2:1:1291:A:H2'	2:1:1292:C:C6	2.52	0.45
2:1:1633:C:H2'	2:1:1634:G:C8	2.52	0.45
2:1:1659:U:H3	2:1:1790:G:H1	1.64	0.45
2:1:1752:A:H2'	2:1:1753:G:O4'	2.16	0.45
2:1:1881:A:H2'	2:1:1882:G:H8	1.82	0.45
2:1:1947:G:HO3'	23:R:134:HIS:CD2	2.29	0.45
2:1:2379:U:H2'	2:1:2380:U:C6	2.52	0.45
2:1:3059:G:H2'	2:1:3060:C:C6	2.52	0.45
2:1:3137:C:H5''	7:B:276:THR:HG21	1.98	0.45
2:1:3243:A:N6	20:O:156:LEU:HD13	2.32	0.45
2:1:3325:G:OP2	35:d:70:ARG:NH2	2.50	0.45
6:A:118:GLU:HG2	6:A:119:LYS:HG2	1.97	0.45
13:H:46:THR:O	13:H:53:ILE:HD12	2.16	0.45
14:I:87:GLN:NE2	14:I:91:ASP:OD1	2.49	0.45
24:S:16:THR:HG23	24:S:19:VAL:HG13	1.99	0.45
25:T:131:GLN:HE21	25:T:134:GLN:HE22	1.65	0.45
37:f:53:TYR:CZ	37:f:65:ARG:HB3	2.52	0.45
43:l:30:ARG:H	43:l:33:ASN:HD21	1.64	0.45
1:m:548:SER:OG	1:m:551:LYS:NZ	2.44	0.45
1:n:123:PRO:HB2	1:n:216:ILE:HG13	1.98	0.45
46:q:40:LYS:HA	46:q:43:TYR:HB3	1.99	0.45
1:t:320:LEU:HD11	1:t:365:ARG:HH12	1.82	0.45
49:v:165:VAL:HG22	49:v:167:HIS:H	1.81	0.45
1:w:564:THR:OG1	54:w:903:AGS:O3G	2.31	0.45
2:1:263:C:H2'	2:1:264:G:O4'	2.17	0.45
2:1:380:U:H2'	2:1:381:U:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:401:U:H2'	33:b:608:MET:HG3	1.98	0.45
2:1:684:G:H2'	2:1:685:G:C8	2.50	0.45
2:1:734:C:H2'	2:1:735:A:C8	2.52	0.45
2:1:735:A:OP2	2:1:735:A:H8	2.00	0.45
2:1:1258:U:H2'	2:1:1259:A:H3'	1.98	0.45
2:1:1946:A:H2'	2:1:1947:G:C8	2.52	0.45
2:1:1974:A:C6	2:1:2048:G:H1'	2.52	0.45
2:1:2685:C:H2'	2:1:2686:A:C8	2.50	0.45
2:1:3012:A:C6	2:1:3013:U:C4	3.05	0.45
4:3:7:U:H2'	4:3:8:C:H6	1.82	0.45
5:4:92:PRO:HB3	5:4:394:HIS:HE1	1.82	0.45
6:A:30:ARG:NH1	6:A:31:THR:H	2.14	0.45
8:C:114:ASN:HD21	8:C:116:ASN:HB3	1.80	0.45
19:N:143:ARG:NH1	39:h:93:THR:HG22	2.31	0.45
20:O:96:LYS:HG3	20:O:97:ALA:N	2.31	0.45
28:W:40:VAL:HG13	28:W:223:ASN:HD21	1.82	0.45
30:Y:24:SER:HB2	30:Y:75:ARG:HH12	1.82	0.45
1:t:50:THR:HB	1:t:84:ARG:HG3	1.98	0.45
49:v:320:VAL:O	49:v:366:GLY:N	2.41	0.45
2:1:33:G:N1	2:1:50:U:OP2	2.33	0.44
2:1:39:A:H3'	2:1:41:G:OP2	2.16	0.44
2:1:144:A:H2'	2:1:145:G:O4'	2.16	0.44
2:1:182:U:H2'	2:1:183:G:C8	2.52	0.44
2:1:306:A:H1'	46:q:36:PHE:CE1	2.53	0.44
2:1:672:A:OP2	22:Q:55:SER:OG	2.25	0.44
2:1:795:G:H2'	2:1:796:U:C6	2.52	0.44
2:1:830:A:N6	2:1:864:G:H21	2.15	0.44
2:1:1021:G:N7	2:1:1031:C:O2'	2.50	0.44
2:1:1061:A:H2'	2:1:1062:A:C8	2.52	0.44
2:1:1064:A:H4'	2:1:1065:A:O5'	2.16	0.44
2:1:1498:A:H2'	2:1:1499:C:C6	2.51	0.44
2:1:1806:A:H2'	2:1:1807:G:O4'	2.17	0.44
2:1:3043:C:H2'	2:1:3044:G:H8	1.82	0.44
2:1:3092:C:O2	27:V:12:ARG:NH2	2.46	0.44
2:1:3306:U:H1'	2:1:3309:G:H1	1.82	0.44
7:B:67:PHE:CE1	27:V:88:ARG:HG2	2.52	0.44
7:B:198:HIS:CE1	51:z:41:LEU:HD21	2.52	0.44
8:C:276:LEU:HD12	8:C:277:PRO:HD2	1.99	0.44
12:G:98:ARG:NH2	12:G:189:LEU:HB2	2.31	0.44
12:G:246:MET:O	12:G:249:ARG:HG2	2.16	0.44
15:J:23:VAL:HG22	15:J:25:GLU:H	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:L:181:GLY:O	17:L:184:GLU:HG3	2.17	0.44
25:T:101:CYS:SG	25:T:102:ARG:N	2.90	0.44
33:b:290:THR:HG21	33:b:319:THR:HA	1.98	0.44
54:m:901:AGS:O2B	1:n:404:ARG:NH1	2.35	0.44
1:n:52:TYR:HB2	1:n:97:THR:HB	1.98	0.44
1:n:152:LEU:HD13	1:n:158:ILE:HD11	1.99	0.44
49:v:273:PHE:CE2	49:v:374:ILE:HG12	2.52	0.44
2:1:201:A:H2'	2:1:202:G:H8	1.81	0.44
2:1:247:C:H2'	2:1:248:U:O4'	2.16	0.44
2:1:353:G:N2	2:1:354:U:O4	2.44	0.44
2:1:402:A:C5	33:b:611:ARG:HD3	2.52	0.44
2:1:510:G:C6	2:1:582:G:C6	3.05	0.44
2:1:760:G:N2	2:1:770:G:H1'	2.33	0.44
2:1:1146:C:H2'	2:1:1147:G:H8	1.81	0.44
2:1:2344:U:H2'	2:1:2345:A:N7	2.33	0.44
2:1:2424:A:H3'	2:1:2425:G:H8	1.82	0.44
2:1:2615:G:H2'	2:1:2616:C:H6	1.83	0.44
2:1:2654:C:N4	2:1:2754:G:O6	2.51	0.44
2:1:3019:U:C2	2:1:3036:G:C2	3.05	0.44
2:1:3060:C:H2'	2:1:3061:G:H8	1.82	0.44
5:4:169:ILE:HG13	5:4:171:GLN:HE21	1.82	0.44
19:N:48:ALA:HB1	19:N:53:TYR:HB3	1.99	0.44
26:U:94:ARG:HB2	26:U:108:TYR:CZ	2.52	0.44
29:X:91:ASN:HD22	29:X:94:GLN:NE2	2.14	0.44
30:Y:74:TYR:CE1	30:Y:76:LEU:HB3	2.52	0.44
33:b:15:ASN:OD1	33:b:16:ASP:N	2.50	0.44
1:n:578:PHE:CD1	1:n:612:ILE:HB	2.52	0.44
1:x:554:LEU:HD12	1:x:675:LEU:HD13	1.99	0.44
2:1:35:A:H2'	2:1:36:C:H6	1.82	0.44
2:1:197:G:N2	2:1:395:A:C5	2.84	0.44
2:1:506:U:H2'	2:1:507:U:O4'	2.16	0.44
2:1:644:G:H21	2:1:2372:A:H5'	1.82	0.44
2:1:2185:G:H2'	2:1:2186:U:H6	1.83	0.44
2:1:2383:C:N3	20:O:91:LYS:NZ	2.63	0.44
2:1:2786:G:C4	2:1:2787:G:H8	2.35	0.44
2:1:3180:A:C6	20:O:114:LYS:HG3	2.51	0.44
2:1:3345:G:H2'	2:1:3346:U:C6	2.52	0.44
3:2:86:U:O2'	11:F:218:ARG:NH1	2.50	0.44
4:3:119:C:H2'	4:3:120:C:H6	1.82	0.44
6:A:43:GLY:HA3	6:A:63:PHE:CE1	2.51	0.44
11:F:26:VAL:O	11:F:30:ARG:NE	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:G:70:LYS:HE2	12:G:233:TRP:CE3	2.53	0.44
14:I:40:ASP:OD1	14:I:41:GLU:N	2.51	0.44
14:I:51:CYS:SG	14:I:54:CYS:HB2	2.57	0.44
16:K:111:LYS:HA	16:K:129:PHE:HB2	2.00	0.44
19:N:152:CYS:HB2	39:h:92:LEU:HD11	1.99	0.44
24:S:110:MET:HE2	24:S:121:ILE:HD13	2.00	0.44
34:c:51:LEU:HD13	38:g:87:GLU:HG3	1.98	0.44
54:n:902:AGS:O3G	54:n:902:AGS:O1B	2.35	0.44
49:v:359:LEU:HD13	49:v:397:LEU:HB2	1.99	0.44
1:w:52:TYR:HA	1:w:84:ARG:HB2	1.99	0.44
1:w:469:ILE:HG23	1:w:481:LYS:HG3	2.00	0.44
1:w:733:LEU:HD13	1:x:550:PRO:HB3	2.00	0.44
2:1:162:G:H2'	2:1:163:C:H6	1.82	0.44
2:1:211:A:H1'	2:1:229:G:H21	1.82	0.44
2:1:514:G:H2'	2:1:515:C:O4'	2.17	0.44
2:1:632:G:H2'	2:1:633:C:H6	1.83	0.44
2:1:796:U:H1'	17:L:7:LEU:HD22	1.98	0.44
2:1:1117:G:H2'	2:1:1118:C:C6	2.52	0.44
2:1:1255:C:H2'	2:1:1256:G:H8	1.82	0.44
2:1:1279:C:H2'	2:1:1280:C:C6	2.53	0.44
2:1:1491:A:H2'	2:1:1492:G:O4'	2.18	0.44
2:1:1715:A:H62	34:c:84:LEU:HD13	1.82	0.44
2:1:1746:U:H2'	2:1:1747:G:C8	2.41	0.44
2:1:1760:A:H2'	2:1:1760:A:N3	2.33	0.44
2:1:2165:G:H21	2:1:2168:A:H62	1.65	0.44
2:1:2677:G:C6	2:1:2680:A:N6	2.85	0.44
2:1:2806:U:H2'	2:1:2807:U:H6	1.82	0.44
2:1:2851:A:H2'	2:1:2852:C:C6	2.53	0.44
2:1:3138:U:H2'	2:1:3139:A:C8	2.53	0.44
2:1:3220:G:H22	2:1:3266:G:H1	1.64	0.44
15:J:54:VAL:HG13	15:J:57:PHE:H	1.82	0.44
16:K:24:LYS:HB2	16:K:26:ARG:CZ	2.48	0.44
20:O:73:PHE:C	20:O:74:ARG:HH11	2.25	0.44
25:T:7:TYR:O	25:T:55:LYS:NZ	2.44	0.44
28:W:190:THR:H	28:W:193:GLU:CD	2.25	0.44
31:Z:121:ARG:HH12	31:Z:126:LYS:HG2	1.81	0.44
39:h:76:GLN:H	39:h:76:GLN:CD	2.25	0.44
49:v:283:VAL:HG23	49:v:296:LEU:HB3	2.00	0.44
1:x:455:ALA:HB2	54:x:901:AGS:H5'2	1.99	0.44
50:y:12:GLU:OE1	50:y:12:GLU:N	2.30	0.44
2:1:887:G:H2'	2:1:888:A:C8	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1549:U:H2'	2:1:1550:C:C6	2.52	0.44
2:1:1597:C:N4	2:1:1598:G:O6	2.50	0.44
2:1:1659:U:H2'	2:1:1660:C:C6	2.52	0.44
2:1:1822:C:H2'	2:1:1823:A:C8	2.52	0.44
2:1:2250:G:N2	2:1:2266:U:O2	2.40	0.44
2:1:2367:A:H2'	2:1:2368:A:H8	1.83	0.44
2:1:2794:G:H5'	46:q:65:THR:OG1	2.17	0.44
2:1:2830:G:O4'	33:b:134:GLY:HA3	2.18	0.44
2:1:3086:A:H3'	2:1:3087:A:H8	1.82	0.44
2:1:3090:U:H2'	2:1:3091:A:C8	2.53	0.44
2:1:3181:C:N4	20:O:165:ALA:HA	2.32	0.44
2:1:3299:A:H61	2:1:3315:G:H1	1.64	0.44
2:1:3387:U:H2'	2:1:3388:C:C6	2.53	0.44
3:2:29:C:H1'	3:2:52:G:N2	2.33	0.44
5:4:262:ARG:HG3	5:4:263:GLU:CD	2.42	0.44
5:4:405:ASN:N	5:4:405:ASN:OD1	2.51	0.44
11:F:99:PRO:HA	11:F:130:ILE:HD12	1.98	0.44
11:F:125:GLU:O	11:F:128:LYS:HG2	2.17	0.44
16:K:87:ARG:NH1	16:K:87:ARG:HA	2.32	0.44
16:K:87:ARG:HA	16:K:87:ARG:CZ	2.47	0.44
19:N:64:VAL:HG11	19:N:102:ALA:HB1	2.00	0.44
22:Q:59:ARG:HH21	22:Q:104:LEU:HB2	1.82	0.44
23:R:66:HIS:O	23:R:70:LYS:HG3	2.17	0.44
25:T:122:GLN:NE2	25:T:124:VAL:H	2.15	0.44
26:U:71:PHE:CZ	26:U:76:LEU:HB2	2.53	0.44
28:W:145:ARG:CZ	28:W:149:ILE:HG12	2.48	0.44
29:X:115:ARG:HD3	29:X:121:LYS:HD3	1.99	0.44
33:b:278:PHE:HD2	33:b:283:VAL:HG22	1.81	0.44
33:b:434:GLU:HA	33:b:441:VAL:HG22	1.98	0.44
33:b:535:MET:HB3	33:b:542:MET:HE1	1.99	0.44
1:m:669:LEU:HB3	1:m:675:LEU:HD12	1.99	0.44
1:w:429:ARG:HG3	1:x:275:GLY:HA3	1.99	0.44
1:w:469:ILE:HG23	1:w:481:LYS:HE2	2.00	0.44
50:y:162:HIS:CE1	50:y:164:GLN:HB3	2.51	0.44
2:1:23:A:H4'	41:j:44:THR:OG1	2.17	0.44
2:1:29:C:H2'	2:1:30:G:O4'	2.18	0.44
2:1:68:C:OP2	2:1:301:G:N2	2.45	0.44
2:1:236:G:H2'	2:1:237:G:C8	2.53	0.44
2:1:631:U:H2'	2:1:632:G:C8	2.52	0.44
2:1:1087:G:OP1	44:o:29:TYR:OH	2.35	0.44
2:1:1213:G:H4'	24:S:90:MET:HG2	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1279:C:H5''	28:W:16:ASP:C	2.43	0.44
2:1:1460:A:H2'	2:1:1461:A:C8	2.52	0.44
2:1:1986:U:C2	2:1:2035:G:N1	2.85	0.44
2:1:2452:G:OP2	2:1:2452:G:H2'	2.17	0.44
2:1:2581:U:H2'	2:1:2582:C:C6	2.51	0.44
2:1:3198:U:O4	13:H:26:LYS:HB2	2.18	0.44
2:1:3233:C:H2'	2:1:3234:A:C8	2.53	0.44
2:1:3393:U:H2'	2:1:3394:U:C6	2.52	0.44
3:2:37:G:N2	3:2:41:G:N3	2.65	0.44
5:4:100:ILE:HG23	5:4:437:ILE:HD11	1.99	0.44
5:4:161:TYR:CZ	5:4:172:PRO:HB2	2.51	0.44
8:C:252:GLU:CD	8:C:252:GLU:H	2.26	0.44
15:J:87:LYS:HE2	15:J:87:LYS:HB2	1.89	0.44
16:K:90:TYR:CD2	16:K:100:PRO:HG3	2.53	0.44
17:L:34:SER:OG	17:L:35:ARG:NH2	2.50	0.44
20:O:77:SER:HB3	20:O:106:GLU:HG3	1.99	0.44
26:U:50:LEU:HD23	26:U:52:ASN:H	1.83	0.44
33:b:81:LEU:HD12	33:b:82:MET:H	1.82	0.44
33:b:398:LEU:HD13	33:b:400:ARG:HE	1.82	0.44
33:b:484:SER:HA	33:b:487:ASP:OD2	2.18	0.44
36:e:31:ASN:N	36:e:31:ASN:OD1	2.50	0.44
1:m:308:LEU:HD13	1:m:330:ILE:HG23	1.99	0.44
1:n:562:SER:HB3	54:n:902:AGS:H2	2.00	0.44
45:p:39:CYS:SG	45:p:42:CYS:HB2	2.57	0.44
46:q:17:CYS:O	46:q:19:LYS:HG3	2.18	0.44
54:t:801:AGS:O5'	1:w:671:ARG:NH2	2.50	0.44
50:y:132:VAL:HG12	50:y:133:LEU:HD23	1.99	0.44
2:1:16:A:P	29:X:42:ARG:HE	2.41	0.44
2:1:224:C:H2'	2:1:225:C:C6	2.52	0.44
2:1:277:G:H2'	2:1:278:U:H6	1.80	0.44
2:1:738:A:H2'	2:1:739:G:C8	2.53	0.44
2:1:972:A:H2'	2:1:973:A:H8	1.83	0.44
2:1:1281:G:H2'	2:1:1282:G:H8	1.83	0.44
2:1:1987:G:H2'	2:1:1988:C:H6	1.81	0.44
2:1:2428:U:H2'	2:1:2429:G:C8	2.53	0.44
2:1:2475:G:H2'	2:1:2476:C:O4'	2.17	0.44
2:1:2962:U:H2'	2:1:2963:C:C6	2.53	0.44
2:1:2976:A:H2'	2:1:2977:G:C8	2.52	0.44
2:1:3161:C:H2'	2:1:3162:C:C6	2.53	0.44
2:1:3175:U:OP1	37:f:8:TYR:OH	2.35	0.44
5:4:347:SER:OG	5:4:348:HIS:N	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:519:ARG:O	5:4:521:GLU:HG3	2.17	0.44
8:C:71:VAL:HG11	33:b:635:PHE:HB3	2.00	0.44
8:C:153:SER:HA	8:C:252:GLU:OE1	2.18	0.44
21:P:15:ALA:HB2	21:P:105:LYS:HD2	1.98	0.44
21:P:39:TRP:O	21:P:113:TYR:HB2	2.18	0.44
24:S:80:ARG:HB3	24:S:89:ASN:OD1	2.18	0.44
28:W:41:TRP:HB2	28:W:103:LEU:HB2	1.99	0.44
40:i:5:THR:OG1	40:i:12:ASN:HB3	2.18	0.44
1:n:576:ILE:HB	1:n:610:PRO:HG2	2.00	0.44
1:w:450:HIS:CE1	1:w:576:ILE:HG22	2.53	0.44
1:x:531:MET:HE2	1:x:553:VAL:HG22	1.99	0.44
2:1:301:G:H2'	2:1:302:U:C6	2.53	0.44
2:1:418:A:H2'	2:1:419:G:C8	2.53	0.44
2:1:1324:U:H2'	2:1:1325:U:H6	1.83	0.44
2:1:1883:A:H2'	2:1:1884:A:H8	1.82	0.44
2:1:2002:G:H2'	2:1:2003:G:H8	1.79	0.44
2:1:2018:C:H2'	2:1:2019:U:O4'	2.18	0.44
2:1:2102:U:H2'	2:1:2103:U:H6	1.83	0.44
2:1:2876:C:H41	2:1:2951:G:H1'	1.82	0.44
2:1:3011:A:N3	2:1:3012:A:H1'	2.33	0.44
2:1:3165:A:N6	2:1:3285:C:H42	2.16	0.44
2:1:3177:G:C2	2:1:3179:U:C4	3.06	0.44
2:1:3199:G:H2'	2:1:3200:G:H8	1.83	0.44
3:2:87:G:H2'	3:2:88:G:C8	2.53	0.44
6:A:104:LEU:HA	6:A:107:VAL:HG12	1.99	0.44
8:C:143:GLU:OE1	8:C:143:GLU:N	2.51	0.44
21:P:28:ASN:HA	21:P:31:GLU:HG2	1.99	0.44
21:P:28:ASN:OD1	21:P:28:ASN:N	2.50	0.44
25:T:35:LYS:N	25:T:38:ASP:OD2	2.30	0.44
25:T:119:ALA:HA	25:T:122:GLN:HE21	1.83	0.44
33:b:491:GLU:HG3	33:b:495:TRP:CE2	2.53	0.44
1:m:297:ARG:O	1:m:301:ASN:ND2	2.37	0.44
1:m:397:PRO:O	1:m:401:ARG:NH1	2.50	0.44
1:x:284:LEU:HG	1:x:292:LYS:HD2	1.99	0.44
1:x:738:GLU:OE2	1:x:748:ARG:NH1	2.39	0.44
1:Aa:249:GLY:N	1:Aa:421:ASP:OD2	2.50	0.44
1:Aa:584:PRO:HB3	1:m:595:GLU:HG2	2.00	0.44
2:1:238:A:H3'	2:1:239:G:C8	2.53	0.44
2:1:353:G:N2	2:1:364:G:H2'	2.21	0.44
2:1:697:A:H2'	2:1:698:U:H6	1.82	0.44
2:1:711:A:C2	2:1:2774:C:H4'	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:987:U:H2'	2:1:988:U:C6	2.52	0.44
2:1:1119:C:N3	2:1:1140:G:N1	2.66	0.44
2:1:1492:G:O6	43:l:2:ALA:N	2.51	0.44
2:1:1520:G:H2'	2:1:1521:G:C8	2.53	0.44
2:1:1623:G:C4	2:1:1624:G:N7	2.86	0.44
2:1:1781:C:H2'	2:1:1782:U:C6	2.53	0.44
2:1:1851:G:H2'	2:1:1852:G:H8	1.83	0.44
2:1:2023:C:H2'	2:1:2024:G:C8	2.53	0.44
2:1:2163:C:H2'	2:1:2164:A:C8	2.52	0.44
2:1:2413:A:H2'	2:1:2414:G:C8	2.52	0.44
2:1:2537:U:H3'	2:1:2537:U:OP2	2.18	0.44
2:1:2954:U:O2'	2:1:2955:U:OP2	2.33	0.44
2:1:3152:U:H1'	2:1:3294:A:C5	2.53	0.44
3:2:89:G:H21	3:2:91:G:H8	1.66	0.44
10:E:170:LYS:HB2	10:E:173:MET:HE2	1.99	0.44
11:F:63:ILE:HA	11:F:66:LYS:HZ3	1.82	0.44
19:N:199:LEU:HD22	19:N:203:ARG:HD2	1.98	0.44
28:W:37:TYR:CD2	28:W:104:PHE:HB3	2.53	0.44
28:W:57:ARG:HE	28:W:65:LEU:HB2	1.83	0.44
28:W:84:GLU:OE2	28:W:89:LEU:N	2.50	0.44
29:X:46:TYR:CD2	39:h:77:PRO:HA	2.53	0.44
35:d:20:LEU:HD11	35:d:32:ALA:HB2	1.99	0.44
1:m:586:ILE:HD12	1:m:598:ILE:HD11	2.00	0.44
1:m:661:ARG:NH2	1:n:624:ASP:O	2.50	0.44
46:q:3:ASN:HB2	46:q:100:LYS:HZ2	1.83	0.44
1:w:702:THR:HB	1:w:707:VAL:HB	2.00	0.44
1:x:126:ALA:HB2	1:x:215:PHE:HB3	2.00	0.44
2:1:24:G:OP2	2:1:24:G:H3'	2.18	0.43
2:1:284:A:H5''	46:q:41:ARG:HH21	1.82	0.43
2:1:553:U:H2'	2:1:554:A:C5	2.53	0.43
2:1:626:U:H2'	2:1:627:U:C6	2.53	0.43
2:1:907:G:C6	2:1:926:A:C8	3.06	0.43
2:1:946:U:H2'	2:1:947:G:C8	2.51	0.43
2:1:1059:G:H2'	2:1:1060:U:C6	2.53	0.43
2:1:1260:A:H2'	2:1:1261:G:C5	2.53	0.43
2:1:1467:A:N6	2:1:1511:U:O2	2.51	0.43
2:1:1739:U:H1'	38:g:41:ARG:HD3	1.99	0.43
2:1:2568:C:H3'	2:1:2569:A:C8	2.52	0.43
2:1:2631:U:OP1	25:T:6:GLY:HA3	2.18	0.43
2:1:2766:U:H3	2:1:2792:A:H62	1.66	0.43
2:1:2878:G:C4	2:1:2879:C:C5	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:3018:C:H2'	2:1:3019:U:C6	2.53	0.43
3:2:71:G:H2'	3:2:72:A:C8	2.53	0.43
5:4:108:ILE:H	5:4:108:ILE:HG12	1.52	0.43
10:E:48:ARG:HH21	37:f:7:LEU:HD11	1.83	0.43
10:E:128:LYS:H	10:E:128:LYS:HD3	1.81	0.43
11:F:79:ALA:N	25:T:138:SER:OG	2.50	0.43
11:F:165:ASP:OD1	11:F:167:ALA:N	2.48	0.43
19:N:178:HIS:CE1	19:N:179:LYS:HE3	2.53	0.43
20:O:58:LEU:HA	20:O:72:HIS:CD2	2.53	0.43
21:P:125:GLN:HB3	21:P:141:SER:HB3	2.00	0.43
27:V:28:ASN:HD21	27:V:112:SER:HB2	1.83	0.43
27:V:57:MET:HE2	27:V:126:TRP:HH2	1.83	0.43
32:a:150:ASP:O	32:a:153:GLU:HG2	2.18	0.43
42:k:64:LYS:HA	42:k:67:GLN:HE21	1.82	0.43
45:p:51:ALA:HB3	45:p:54:ILE:HD11	2.00	0.43
54:t:801:AGS:O1B	54:t:801:AGS:O2G	2.35	0.43
48:u:135:ARG:NH2	48:u:138:GLU:OE1	2.50	0.43
49:v:287:ASP:OD2	49:v:290:THR:OG1	2.29	0.43
53:oC:3471:UNK:C	53:oC:3473:UNK:H	2.31	0.43
1:Aa:644:ILE:HB	1:Aa:655:ILE:HD11	2.00	0.43
2:1:584:G:H2'	2:1:585:A:H8	1.83	0.43
2:1:830:A:H62	2:1:864:G:H21	1.65	0.43
2:1:1633:C:H2'	2:1:1634:G:H8	1.82	0.43
2:1:2426:U:H2'	2:1:2427:U:H6	1.83	0.43
2:1:3069:G:C2	2:1:3070:A:C8	3.06	0.43
3:2:60:G:C2	3:2:61:G:C5	3.06	0.43
4:3:12:A:H2'	4:3:13:A:C8	2.54	0.43
9:D:51:LEU:HD23	9:D:146:LEU:HD21	2.00	0.43
17:L:53:LEU:HD23	17:L:53:LEU:H	1.83	0.43
18:M:106:ARG:O	18:M:109:ARG:NH2	2.51	0.43
19:N:36:ILE:HG22	19:N:62:TYR:CE2	2.53	0.43
19:N:178:HIS:HE1	19:N:179:LYS:HE3	1.83	0.43
28:W:165:MET:HA	28:W:169:PHE:HD1	1.84	0.43
28:W:193:GLU:OE2	28:W:199:GLN:NE2	2.50	0.43
34:c:24:THR:OG1	34:c:25:LEU:N	2.51	0.43
1:m:753:ALA:O	1:m:757:ILE:HG12	2.18	0.43
1:n:421:ASP:OD2	1:n:425:LYS:NZ	2.51	0.43
1:t:79:ILE:HD12	1:t:108:LEU:HD11	1.99	0.43
1:t:131:VAL:HG12	1:t:224:ILE:HD11	2.00	0.43
48:u:143:ARG:HG2	48:u:147:LYS:HE3	1.99	0.43
49:v:188:ILE:HG12	49:v:200:PHE:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:oC:3494:UNK:O	53:oC:3498:UNK:N	2.51	0.43
2:1:195:U:O2'	2:1:196:G:O4'	2.35	0.43
2:1:293:C:H4'	40:i:76:ARG:HH12	1.83	0.43
2:1:886:C:H2'	2:1:887:G:C8	2.52	0.43
2:1:958:C:N4	2:1:960:U:O2	2.51	0.43
2:1:1260:A:H2'	2:1:1261:G:C4	2.53	0.43
2:1:1279:C:H2'	2:1:1280:C:H6	1.83	0.43
2:1:1310:G:H2'	2:1:1311:G:H8	1.83	0.43
2:1:1960:A:H2'	2:1:1961:G:C8	2.53	0.43
2:1:2192:C:O2'	2:1:2312:A:N1	2.42	0.43
2:1:2354:C:H2'	2:1:2355:G:O4'	2.17	0.43
2:1:2828:G:O4'	33:b:26:GLN:NE2	2.51	0.43
2:1:3082:C:O3'	14:l:1:MET:HE1	2.18	0.43
2:1:3213:A:H2'	2:1:3214:U:C2	2.53	0.43
2:1:3245:A:H5''	2:1:3246:G:H8	1.81	0.43
3:2:61:G:H2'	3:2:62:U:H6	1.83	0.43
4:3:38:U:O2'	39:h:83:LYS:NZ	2.51	0.43
4:3:117:C:H2'	4:3:118:C:H6	1.83	0.43
6:A:138:GLY:O	6:A:147:ARG:N	2.34	0.43
7:B:49:TYR:HE1	7:B:335:ILE:HG12	1.84	0.43
10:E:105:TYR:OH	10:E:134:ARG:HG3	2.19	0.43
15:J:82:ARG:O	15:J:85:LYS:HG2	2.19	0.43
16:K:133:LEU:O	16:K:136:GLU:HG2	2.18	0.43
22:Q:59:ARG:NE	22:Q:104:LEU:HD12	2.32	0.43
25:T:94:GLU:HG2	25:T:95:HIS:CD2	2.54	0.43
1:t:563:LYS:NZ	54:t:801:AGS:O3G	2.37	0.43
1:w:185:ASP:OD1	1:w:186:ASP:N	2.51	0.43
1:w:281:GLY:HA3	1:w:404:ARG:O	2.17	0.43
1:x:375:ASP:HB2	1:x:404:ARG:HE	1.84	0.43
50:y:6:GLN:CD	50:y:208:LEU:HB3	2.44	0.43
1:Aa:283:LEU:HD13	1:Aa:387:ALA:HB3	1.99	0.43
2:1:127:G:H2'	2:1:128:G:H8	1.83	0.43
2:1:208:C:H2'	2:1:209:A:H8	1.82	0.43
2:1:312:C:H2'	2:1:313:A:C8	2.53	0.43
2:1:501:A:C2	2:1:613:G:C2	3.06	0.43
2:1:1239:C:H2'	2:1:1240:A:H8	1.83	0.43
2:1:1577:G:H2'	2:1:1578:C:C6	2.54	0.43
2:1:2273:G:H1'	2:1:2274:U:H5	1.83	0.43
2:1:2352:A:H2'	2:1:2353:G:C8	2.53	0.43
2:1:2529:A:C6	2:1:2530:G:N2	2.86	0.43
2:1:2587:U:H2'	2:1:2588:U:H6	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:3102:G:H2'	2:1:3103:A:C8	2.53	0.43
2:1:3109:G:C6	2:1:3126:C:N3	2.86	0.43
2:1:3383:G:H2'	2:1:3384:U:C6	2.53	0.43
3:2:29:C:H1'	3:2:52:G:H22	1.82	0.43
4:3:145:U:H2'	4:3:146:U:H6	1.84	0.43
5:4:391:LYS:O	5:4:394:HIS:HB2	2.19	0.43
6:A:177:LYS:NZ	45:p:26:VAL:O	2.51	0.43
8:C:23:PRO:HG2	8:C:25:VAL:HG12	2.00	0.43
11:F:45:LEU:HA	11:F:48:ASN:HD21	1.84	0.43
13:H:150:SER:HB3	13:H:153:ASP:HB2	2.00	0.43
20:O:79:ILE:HG21	20:O:138:LEU:HD11	2.00	0.43
28:W:27:PHE:O	28:W:31:ARG:HG2	2.18	0.43
28:W:64:LYS:NZ	28:W:104:PHE:HD2	2.16	0.43
31:Z:9:LYS:HG2	31:Z:86:THR:HG22	1.99	0.43
33:b:82:MET:HE2	33:b:153:VAL:HG22	2.00	0.43
33:b:221:THR:HB	33:b:239:SER:HB3	2.00	0.43
33:b:365:GLN:HG2	33:b:367:GLN:H	1.83	0.43
41:j:83:ALA:O	41:j:85:LYS:NZ	2.51	0.43
1:t:306:HIS:O	1:t:341:ILE:N	2.43	0.43
50:y:11:ASN:ND2	50:y:209:ASP:OD2	2.52	0.43
50:y:33:ASN:OD1	50:y:33:ASN:N	2.51	0.43
2:1:83:U:H2'	2:1:84:U:O4'	2.19	0.43
2:1:129:U:OP1	29:X:45:LYS:NZ	2.36	0.43
2:1:638:C:N4	2:1:639:G:O6	2.51	0.43
2:1:705:A:H8	2:1:705:A:OP1	2.01	0.43
2:1:1063:G:C8	25:T:105:PHE:HZ	2.36	0.43
2:1:1432:C:O2'	2:1:1433:A:H3'	2.19	0.43
2:1:1543:G:O2'	2:1:2168:A:O2'	2.34	0.43
2:1:1791:C:HO2'	6:A:184:ARG:HH22	1.66	0.43
2:1:2527:G:H2'	2:1:2528:G:C8	2.53	0.43
2:1:2716:U:H2'	2:1:2717:U:C6	2.53	0.43
2:1:2775:U:C2	2:1:2786:G:N2	2.86	0.43
2:1:2876:C:HO2'	2:1:2877:G:C5'	2.30	0.43
2:1:2912:G:N2	2:1:3130:A:C4	2.86	0.43
3:2:76:A:H1'	3:2:78:U:C6	2.53	0.43
5:4:45:LEU:HD21	5:4:64:LEU:HD22	2.00	0.43
5:4:51:HIS:CG	5:4:52:SER:H	2.37	0.43
10:E:146:ILE:HG23	10:E:150:LYS:HE2	1.99	0.43
21:P:5:GLY:N	21:P:147:GLU:OE2	2.42	0.43
33:b:252:TYR:O	33:b:285:VAL:HA	2.18	0.43
33:b:571:ASP:OD1	33:b:571:ASP:N	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:b:584:ARG:HA	33:b:584:ARG:HH11	1.83	0.43
33:b:606:ALA:O	33:b:610:ARG:HG3	2.18	0.43
35:d:12:TYR:HE2	35:d:43:HIS:HB3	1.83	0.43
38:g:20:ILE:HD12	38:g:20:ILE:HA	1.90	0.43
38:g:58:ARG:NE	38:g:59:PRO:HD2	2.34	0.43
40:i:83:ALA:O	40:i:86:LYS:HG3	2.19	0.43
40:i:89:GLU:HA	40:i:92:ASN:HD21	1.82	0.43
41:j:19:CYS:HB3	41:j:23:GLY:H	1.83	0.43
1:m:251:ASP:OD1	1:m:251:ASP:N	2.52	0.43
1:t:38:PRO:HD3	1:t:110:LEU:HD22	2.01	0.43
50:y:85:ARG:NH1	50:y:90:ASP:OD1	2.41	0.43
50:y:117:VAL:HG22	50:y:138:PHE:O	2.18	0.43
53:oC:3461:UNK:HG3	53:oC:3476:UNK:HG2	1.99	0.43
2:1:80:G:H2'	2:1:81:C:H6	1.83	0.43
2:1:177:U:H2'	2:1:178:U:C6	2.53	0.43
2:1:256:G:H2'	2:1:257:U:C6	2.53	0.43
2:1:301:G:P	40:i:82:ARG:HH12	2.42	0.43
2:1:501:A:C2	2:1:613:G:N1	2.87	0.43
2:1:567:G:H2'	2:1:568:G:C8	2.53	0.43
2:1:579:G:H2'	2:1:580:C:H6	1.83	0.43
2:1:589:A:H5''	2:1:590:G:OP2	2.18	0.43
2:1:1137:C:H2'	2:1:1138:U:C6	2.52	0.43
2:1:1259:A:H2'	2:1:1260:A:C5	2.53	0.43
2:1:1498:A:H2'	2:1:1499:C:H6	1.82	0.43
2:1:1768:U:H2'	2:1:1769:G:O4'	2.19	0.43
2:1:1773:C:H2'	2:1:1774:C:C6	2.54	0.43
2:1:2563:G:O2'	12:G:29:SER:OG	2.23	0.43
2:1:2620:G:N1	49:v:226:GLU:O	2.49	0.43
2:1:2681:U:H2'	2:1:2682:C:C6	2.53	0.43
2:1:3269:U:H4'	2:1:3270:U:O5'	2.17	0.43
3:2:46:A:OP1	9:D:158:ARG:HG2	2.19	0.43
5:4:114:LEU:HD13	5:4:129:VAL:HB	2.00	0.43
8:C:320:ASN:O	8:C:323:VAL:HG12	2.18	0.43
18:M:41:GLN:HB3	24:S:143:PHE:HZ	1.84	0.43
20:O:137:THR:H	20:O:140:LYS:NZ	2.15	0.43
22:Q:24:VAL:O	22:Q:28:LEU:HG	2.19	0.43
28:W:37:TYR:HB2	28:W:104:PHE:CD1	2.53	0.43
30:Y:116:LYS:HA	30:Y:119:ILE:HG22	2.01	0.43
31:Z:101:PHE:HA	31:Z:107:ARG:HH22	1.84	0.43
40:i:66:GLU:OE1	40:i:70:ARG:NH2	2.51	0.43
1:m:282:ILE:N	1:m:385:VAL:O	2.42	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:m:399:LEU:HB3	1:m:405:PHE:CE2	2.53	0.43
1:n:589:LYS:HD3	1:t:593:GLU:HG2	2.00	0.43
44:o:41:ARG:HA	44:o:44:LYS:HG2	1.99	0.43
44:o:48:HIS:NE2	44:o:52:LYS:HE3	2.33	0.43
46:q:58:PHE:CE1	46:q:62:ALA:HB3	2.54	0.43
46:q:80:ARG:HH21	46:q:81:ALA:C	2.22	0.43
53:oC:3463:UNK:HA	53:oC:3479:UNK:HB2	2.01	0.43
1:Aa:306:HIS:HB2	1:Aa:340:SER:HA	2.01	0.43
2:1:61:A:C4	2:1:62:A:C8	3.07	0.43
2:1:253:A:H2'	2:1:254:A:H8	1.83	0.43
2:1:598:A:H2'	2:1:599:C:C6	2.53	0.43
2:1:725:G:O6	2:1:746:A:N6	2.52	0.43
2:1:885:U:H2'	2:1:886:C:C6	2.54	0.43
2:1:971:G:H2'	2:1:972:A:H8	1.83	0.43
2:1:1157:G:H5'	11:F:220:PHE:CE2	2.54	0.43
2:1:1338:C:H2'	2:1:1339:C:C6	2.54	0.43
2:1:1499:C:N4	2:1:1500:G:O6	2.52	0.43
2:1:1807:G:H5''	31:Z:135:ARG:NH1	2.33	0.43
2:1:2186:U:H2'	2:1:2187:G:O4'	2.18	0.43
2:1:2516:U:H5'	19:N:31:ARG:CZ	2.48	0.43
2:1:2585:G:H2'	2:1:2585:G:N3	2.32	0.43
2:1:3008:A:H2'	2:1:3009:G:C8	2.54	0.43
2:1:3102:G:H2'	2:1:3103:A:H8	1.84	0.43
2:1:3188:G:H2'	2:1:3189:G:C8	2.53	0.43
2:1:3264:G:H2'	2:1:3265:C:C6	2.54	0.43
4:3:96:A:H2'	4:3:97:A:O4'	2.18	0.43
5:4:95:ILE:HG12	5:4:141:ILE:HD12	2.01	0.43
9:D:269:SER:O	9:D:273:ARG:NH1	2.52	0.43
15:J:19:LEU:HB2	15:J:69:VAL:HB	2.01	0.43
18:M:136:ALA:H	20:O:177:LYS:HZ1	1.65	0.43
19:N:17:ASP:OD1	19:N:17:ASP:N	2.51	0.43
20:O:194:LEU:HD13	20:O:194:LEU:HA	1.91	0.43
32:a:16:ARG:HH11	32:a:57:LYS:HG3	1.84	0.43
33:b:497:ARG:O	33:b:500:GLN:HG3	2.18	0.43
36:e:118:LYS:NZ	36:e:119:VAL:O	2.38	0.43
43:l:22:PRO:HD3	43:l:41:ARG:HH21	1.83	0.43
1:t:292:LYS:HD3	1:t:388:ALA:HB1	1.99	0.43
1:t:680:TYR:HE1	1:t:769:TYR:HB3	1.84	0.43
48:u:110:ASN:HA	48:u:113:ARG:HG3	2.00	0.43
1:w:147:VAL:O	1:w:151:LEU:N	2.46	0.43
1:w:450:HIS:CD2	1:w:576:ILE:HG22	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:x:422:ILE:HD13	54:x:901:AGS:H2	2.01	0.43
1:x:570:LEU:HD11	1:x:612:ILE:HD12	1.99	0.43
50:y:61:ARG:O	50:y:105:GLY:N	2.52	0.43
2:1:822:G:C6	2:1:904:A:C6	3.07	0.43
2:1:1411:C:OP1	36:e:98:HIS:N	2.45	0.43
2:1:1747:G:C6	2:1:1748:G:C6	3.07	0.43
2:1:1789:G:H2'	2:1:1790:G:H8	1.84	0.43
2:1:1856:C:H2'	2:1:1857:C:C6	2.54	0.43
2:1:1956:A:H2'	2:1:1957:G:C2	2.54	0.43
2:1:1991:G:H2'	2:1:1992:U:H6	1.81	0.43
2:1:2005:G:C6	2:1:2017:G:C6	3.07	0.43
2:1:2147:A:H2'	2:1:2148:U:C6	2.53	0.43
2:1:2232:A:H2'	2:1:2233:A:C8	2.54	0.43
2:1:2249:G:H2'	2:1:2250:G:H8	1.84	0.43
2:1:2430:A:H2'	2:1:2431:C:C6	2.54	0.43
2:1:2555:G:H1	38:g:92:ALA:HB2	1.84	0.43
2:1:3060:C:N4	2:1:3061:G:O6	2.52	0.43
2:1:3392:U:H5''	21:P:43:LYS:HZ1	1.84	0.43
5:4:362:ARG:HD3	5:4:364:PHE:HE1	1.83	0.43
6:A:204:MET:HE2	6:A:209:HIS:HB2	2.00	0.43
8:C:108:LYS:HE2	8:C:111:VAL:HG13	2.01	0.43
10:E:114:LYS:NZ	10:E:116:LYS:HB2	2.34	0.43
12:G:144:GLU:HG2	40:i:36:ARG:HH22	1.83	0.43
18:M:55:ARG:HD2	24:S:70:THR:HB	1.99	0.43
27:V:26:ALA:O	27:V:114:ILE:HA	2.19	0.43
32:a:116:MET:HE3	32:a:116:MET:HB3	1.89	0.43
37:f:59:VAL:HG12	37:f:60:ARG:HG2	2.01	0.43
39:h:46:THR:O	39:h:49:LYS:HG3	2.19	0.43
42:k:5:ILE:HD12	42:k:54:LEU:HB2	2.00	0.43
1:m:164:PHE:HD2	1:m:167:LEU:HD21	1.84	0.43
1:n:620:ALA:HB1	1:t:635:HIS:CE1	2.54	0.43
1:t:80:LEU:HD12	1:t:214:PRO:HB3	2.00	0.43
1:w:39:HIS:CD2	1:w:97:THR:HG22	2.54	0.43
50:y:71:LEU:HD11	50:y:97:VAL:HG22	2.00	0.43
1:Aa:553:VAL:HB	1:Aa:656:VAL:HG13	2.01	0.43
2:1:39:A:N6	2:1:42:C:O5'	2.52	0.43
2:1:59:G:C8	4:3:33:A:C4	3.07	0.43
2:1:218:G:C2	2:1:372:A:H2	2.37	0.43
2:1:406:G:N2	4:3:16:G:C4	2.86	0.43
2:1:745:C:H2'	2:1:746:A:H8	1.83	0.43
2:1:971:G:H2'	2:1:972:A:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1289:G:H2'	2:1:1290:A:C8	2.53	0.43
2:1:1360:C:H2'	2:1:1361:U:H6	1.82	0.43
2:1:1627:U:O2'	2:1:1630:U:O2	2.28	0.43
2:1:1801:U:H2'	2:1:1802:C:C6	2.53	0.43
2:1:2561:A:C5	12:G:32:LYS:HE2	2.53	0.43
2:1:2790:A:N1	46:q:80:ARG:NH1	2.67	0.43
2:1:2836:C:H3'	2:1:2837:A:C8	2.54	0.43
2:1:2908:G:H2'	2:1:2909:U:C6	2.54	0.43
2:1:3200:G:H2'	2:1:3201:C:C6	2.54	0.43
11:F:176:TYR:HB3	11:F:194:HIS:CE1	2.54	0.43
11:F:219:LYS:HE2	11:F:219:LYS:HB3	1.86	0.43
17:L:122:LYS:HZ1	39:h:119:LYS:N	2.17	0.43
23:R:51:VAL:HG23	23:R:53:LYS:N	2.34	0.43
24:S:7:TYR:CE1	24:S:63:GLN:HB3	2.53	0.43
27:V:124:ASP:HA	50:y:58:ILE:HG21	2.01	0.43
28:W:33:ALA:O	28:W:64:LYS:NZ	2.41	0.43
33:b:128:LEU:HD12	33:b:129:LYS:N	2.34	0.43
33:b:399:ALA:HA	33:b:402:ILE:HG12	2.01	0.43
36:e:76:VAL:HG21	36:e:94:ALA:HB1	2.01	0.43
1:n:670:LEU:HD13	1:n:775:ARG:NH1	2.31	0.43
1:x:444:TYR:CZ	1:x:448:LYS:HG3	2.54	0.43
2:1:127:G:H2'	2:1:128:G:C8	2.54	0.43
2:1:604:G:H2'	2:1:605:U:H6	1.82	0.43
2:1:803:C:H2'	2:1:804:C:C6	2.54	0.43
2:1:985:U:H2'	2:1:986:U:C6	2.54	0.43
2:1:1045:C:H2'	2:1:1046:A:C8	2.53	0.43
2:1:1303:A:C6	2:1:2887:A:C6	3.06	0.43
2:1:1371:G:H2'	2:1:1372:C:C6	2.54	0.43
2:1:1517:G:H5''	43:l:22:PRO:HG3	2.01	0.43
2:1:1680:G:H4'	33:b:518:ILE:HD12	2.01	0.43
2:1:2376:G:H2'	2:1:2377:G:C8	2.53	0.43
2:1:2463:G:H2'	2:1:2464:U:C6	2.54	0.43
2:1:2926:A:O2'	2:1:2927:C:O4'	2.24	0.43
2:1:3391:A:H2'	2:1:3392:U:C6	2.54	0.43
6:A:30:ARG:CZ	6:A:31:THR:H	2.31	0.43
7:B:116:ARG:HG2	7:B:174:LYS:O	2.18	0.43
17:L:46:ILE:HG21	17:L:49:ARG:HE	1.84	0.43
17:L:63:VAL:HA	17:L:66:ASN:ND2	2.34	0.43
19:N:146:ALA:HB3	39:h:101:THR:HG23	2.01	0.43
25:T:68:THR:OG1	25:T:71:SER:HB2	2.19	0.43
27:V:17:LEU:HG	27:V:23:MET:HE1	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:W:26:ILE:O	28:W:29:GLU:HG3	2.19	0.43
28:W:130:LYS:HG3	28:W:132:PRO:HD3	2.01	0.43
30:Y:74:TYR:HB3	30:Y:79:ALA:HB3	2.01	0.43
31:Z:6:LYS:HG2	31:Z:9:LYS:HG3	2.01	0.43
33:b:251:LEU:HD13	33:b:284:MET:HG3	2.01	0.43
33:b:446:ASP:OD1	48:u:75:ARG:NH1	2.52	0.43
39:h:31:LEU:HG	39:h:35:LYS:HZ1	1.84	0.43
39:h:35:LYS:HB3	39:h:41:LEU:HD12	2.00	0.43
41:j:28:HIS:CE1	41:j:30:GLN:HB2	2.52	0.43
1:m:53:ILE:HG23	1:m:96:ILE:HG12	2.00	0.43
1:n:629:SER:OG	1:n:630:THR:N	2.52	0.43
44:o:32:LEU:O	44:o:35:VAL:HG22	2.19	0.43
53:oC:3460:UNK:HB2	53:oC:3504:UNK:HG3	2.00	0.43
1:Aa:163:ILE:HG12	1:Aa:179:VAL:HG22	2.01	0.42
2:1:332:C:H2'	2:1:333:G:H8	1.84	0.42
2:1:397:A:HO2'	2:1:400:G:H8	1.64	0.42
2:1:422:A:O2'	2:1:423:A:O4'	2.27	0.42
2:1:437:G:H2'	2:1:438:A:C8	2.53	0.42
2:1:824:C:H2'	2:1:825:U:C6	2.54	0.42
2:1:1047:A:N3	2:1:2633:U:O2'	2.52	0.42
2:1:1049:C:H2'	2:1:1050:U:C6	2.54	0.42
2:1:1090:G:H2'	2:1:1091:A:C8	2.52	0.42
2:1:1258:U:H2'	2:1:1260:A:OP2	2.19	0.42
2:1:1458:U:O2	35:d:56:ASN:ND2	2.50	0.42
2:1:1675:G:H2'	2:1:1676:A:H8	1.84	0.42
2:1:1688:U:H2'	2:1:1689:U:C6	2.53	0.42
2:1:1799:A:H2'	2:1:1800:A:C8	2.54	0.42
2:1:1883:A:H2'	2:1:1884:A:C8	2.54	0.42
2:1:1957:G:P	2:1:2078:C:H42	2.40	0.42
2:1:2194:G:O6	2:1:2273:G:N2	2.52	0.42
2:1:2424:A:H2'	2:1:2425:G:O4'	2.19	0.42
5:4:391:LYS:HB2	5:4:394:HIS:CD2	2.53	0.42
7:B:46:PHE:HE2	7:B:205:VAL:HG13	1.84	0.42
9:D:107:ARG:NH2	9:D:248:ARG:O	2.52	0.42
9:D:244:HIS:O	9:D:248:ARG:NE	2.52	0.42
10:E:116:LYS:HZ1	10:E:122:PHE:H	1.65	0.42
12:G:54:GLU:HA	12:G:57:ARG:HE	1.84	0.42
18:M:50:LYS:HG3	18:M:85:TRP:CD1	2.54	0.42
19:N:114:ARG:NH2	19:N:157:LYS:HB2	2.29	0.42
25:T:70:SER:O	25:T:92:ARG:NE	2.48	0.42
28:W:85:TYR:CE1	28:W:86:LYS:HE2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:Y:112:ASP:OD1	30:Y:113:LYS:N	2.51	0.42
31:Z:13:VAL:HG11	31:Z:18:TYR:HB2	2.01	0.42
31:Z:15:ARG:NH1	31:Z:79:HIS:HA	2.33	0.42
32:a:35:LEU:HA	32:a:67:ARG:HE	1.84	0.42
37:f:72:THR:OG1	37:f:82:ARG:HG3	2.19	0.42
1:m:445:ILE:HD13	1:m:491:VAL:HG11	2.00	0.42
1:n:756:GLY:HA3	1:t:677:ARG:HH21	1.83	0.42
46:q:10:THR:C	46:q:20:HIS:HA	2.44	0.42
46:q:58:PHE:CD1	46:q:63:LYS:HG2	2.54	0.42
1:t:618:ILE:O	1:t:622:SER:N	2.52	0.42
1:x:553:VAL:HB	1:x:656:VAL:HG22	2.01	0.42
1:x:669:LEU:HD23	1:x:674:ARG:HD2	2.01	0.42
50:y:225:GLN:HG2	50:y:228:GLN:HG3	2.00	0.42
53:oC:3464:UNK:HA	53:oC:3467:UNK:HB1	2.00	0.42
1:Aa:281:GLY:HA2	1:Aa:385:VAL:H	1.84	0.42
2:1:357:A:H2'	2:1:358:G:C8	2.54	0.42
2:1:587:U:H2'	2:1:588:G:C8	2.54	0.42
2:1:803:C:H2'	2:1:804:C:H6	1.82	0.42
2:1:1801:U:H2'	2:1:1802:C:H6	1.84	0.42
2:1:2138:A:C8	41:j:3:LYS:HD2	2.54	0.42
2:1:2228:A:H2'	2:1:2229:A:C8	2.54	0.42
2:1:2366:C:H2'	2:1:2367:A:C8	2.53	0.42
2:1:2509:U:H2'	2:1:2510:U:C6	2.54	0.42
2:1:2586:G:O6	12:G:241:LYS:HG2	2.19	0.42
2:1:2793:G:H5'	46:q:65:THR:HB	2.01	0.42
2:1:3004:C:O2'	7:B:99:LEU:O	2.25	0.42
2:1:3174:A:H3'	2:1:3174:A:N3	2.34	0.42
7:B:115:LYS:HZ3	7:B:130:PHE:HD2	1.67	0.42
7:B:230:THR:HB	7:B:247:ARG:HB3	2.00	0.42
8:C:234:ASN:O	8:C:238:LEU:HB2	2.19	0.42
9:D:155:THR:OG1	9:D:179:ARG:NH1	2.43	0.42
12:G:144:GLU:HB3	12:G:173:MET:HG3	2.01	0.42
15:J:13:LYS:C	15:J:131:MET:HE3	2.43	0.42
19:N:73:ARG:HB2	19:N:89:VAL:HA	2.01	0.42
23:R:90:PRO:O	23:R:93:VAL:HG22	2.19	0.42
32:a:127:SER:O	32:a:130:LYS:HG2	2.19	0.42
39:h:86:ARG:O	39:h:90:ARG:HG3	2.19	0.42
1:n:243:SER:HA	1:n:298:VAL:HG13	2.01	0.42
1:n:468:THR:O	1:n:470:GLN:N	2.47	0.42
1:t:34:PHE:N	1:t:114:LEU:O	2.51	0.42
1:t:534:LEU:HG	1:t:542:PHE:CE2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Aa:619:ASP:OD1	1:Aa:619:ASP:N	2.52	0.42
2:1:760:G:N2	2:1:770:G:N3	2.67	0.42
2:1:767:U:O5'	17:L:186:ARG:NH1	2.48	0.42
2:1:1362:G:H2'	2:1:1363:A:C8	2.55	0.42
2:1:1624:G:N3	2:1:1625:A:C8	2.87	0.42
2:1:1852:G:H2'	2:1:1853:U:C6	2.53	0.42
2:1:2361:A:O2'	36:e:25:TYR:OH	2.32	0.42
2:1:3126:C:O2'	2:1:3127:A:H5'	2.19	0.42
7:B:171:LEU:HB3	7:B:173:GLN:NE2	2.33	0.42
8:C:32:PRO:O	8:C:35:VAL:HG12	2.20	0.42
9:D:31:TYR:O	9:D:35:ARG:NH1	2.52	0.42
10:E:133:GLU:HB2	10:E:134:ARG:NH2	2.33	0.42
19:N:28:TRP:HD1	19:N:31:ARG:HH21	1.66	0.42
24:S:12:ARG:NH2	24:S:15:PRO:HG3	2.35	0.42
28:W:37:TYR:HD2	28:W:104:PHE:HB3	1.84	0.42
28:W:70:ARG:HH21	28:W:98:GLY:C	2.26	0.42
28:W:145:ARG:NH2	28:W:154:ASP:OD2	2.52	0.42
36:e:74:PHE:CD2	36:e:85:LEU:HD11	2.54	0.42
36:e:101:SER:O	36:e:105:ARG:HG2	2.18	0.42
1:m:689:ARG:HA	1:m:692:ILE:HB	2.00	0.42
1:n:124:PRO:HD2	1:n:214:PRO:HG2	2.01	0.42
1:n:452:TYR:HB3	1:n:457:LEU:HG	2.01	0.42
1:t:54:HIS:HB3	1:t:57:VAL:HG23	2.01	0.42
53:oC:3440:UNK:HG2	53:oC:3441:UNK:HG3	2.00	0.42
2:1:253:A:H2'	2:1:254:A:C8	2.54	0.42
2:1:370:U:O4	2:1:374:A:N7	2.52	0.42
2:1:605:U:H2'	2:1:606:C:C6	2.54	0.42
2:1:991:G:C5	2:1:1059:G:C6	3.08	0.42
2:1:1234:G:OP2	2:1:1235:U:O2'	2.34	0.42
2:1:1315:U:OP2	20:O:44:SER:OG	2.25	0.42
2:1:1444:G:H2'	2:1:1445:U:O4'	2.19	0.42
2:1:1986:U:N3	2:1:2035:G:C6	2.86	0.42
2:1:2183:A:O3'	6:A:7:ASN:ND2	2.46	0.42
2:1:2353:G:OP1	21:P:85:ALA:N	2.53	0.42
2:1:2909:U:H2'	2:1:2910:A:O4'	2.20	0.42
2:1:3345:G:H2'	2:1:3346:U:H6	1.85	0.42
2:1:3372:A:H2'	2:1:3373:U:C6	2.53	0.42
4:3:41:A:OP1	41:j:66:TYR:N	2.53	0.42
4:3:65:A:H2'	4:3:66:A:H8	1.84	0.42
5:4:306:SER:HA	5:4:309:PHE:HE2	1.83	0.42
9:D:132:THR:HG21	9:D:172:TYR:CD1	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:G:68:ARG:HH12	12:G:239:GLY:N	2.18	0.42
19:N:114:ARG:HH12	19:N:137:PRO:HG3	1.84	0.42
24:S:28:ARG:HH22	24:S:99:ARG:HD2	1.85	0.42
26:U:50:LEU:HD23	26:U:52:ASN:N	2.34	0.42
28:W:41:TRP:CZ2	28:W:116:PHE:HE2	2.37	0.42
33:b:556:ASN:OD1	33:b:556:ASN:N	2.52	0.42
35:d:14:ILE:HD11	35:d:39:PHE:CD1	2.55	0.42
42:k:32:ASN:HB3	42:k:35:GLY:C	2.45	0.42
1:m:729:GLN:HB3	1:n:550:PRO:HG3	2.01	0.42
44:o:44:LYS:HG3	44:o:45:HIS:N	2.33	0.42
47:r:35:ILE:HG23	47:r:50:PHE:HZ	1.84	0.42
1:w:129:VAL:HG21	1:w:182:ASP:O	2.20	0.42
1:w:695:LYS:HA	1:w:698:LYS:HE2	2.00	0.42
1:x:254:ILE:HG22	1:x:258:LYS:HE2	2.02	0.42
50:y:62:MET:HG3	50:y:103:ALA:HA	2.01	0.42
51:z:13:ALA:O	51:z:16:VAL:HG12	2.19	0.42
2:1:401:U:O2'	33:b:608:MET:SD	2.59	0.42
2:1:799:G:H2'	2:1:801:A:H62	1.85	0.42
2:1:1169:A:H3'	2:1:1170:A:H8	1.84	0.42
2:1:1246:G:H2'	2:1:1247:U:C6	2.55	0.42
2:1:1651:U:H5''	6:A:71:LEU:HD21	2.01	0.42
2:1:1759:C:H2'	2:1:1760:A:C8	2.54	0.42
2:1:1862:U:O4	2:1:1863:G:N1	2.52	0.42
2:1:2147:A:OP1	6:A:199:THR:HA	2.19	0.42
2:1:2351:U:H4'	21:P:83:TRP:HZ3	1.85	0.42
2:1:2669:G:C6	2:1:2686:A:C6	3.08	0.42
2:1:2703:A:N7	9:D:23:ARG:NH2	2.66	0.42
2:1:2862:U:H1'	33:b:92:LYS:HG3	2.01	0.42
2:1:3010:U:O2	2:1:3136:G:O6	2.38	0.42
2:1:3139:A:H2'	2:1:3140:G:C8	2.55	0.42
2:1:3237:U:H2'	2:1:3238:G:C8	2.54	0.42
4:3:146:U:H2'	4:3:147:U:C6	2.54	0.42
7:B:41:VAL:HG11	7:B:194:TRP:CD1	2.54	0.42
9:D:164:LYS:HA	9:D:164:LYS:HD3	1.80	0.42
9:D:183:TRP:NE1	9:D:188:GLU:HA	2.33	0.42
13:H:90:MET:HE2	13:H:90:MET:HB2	1.97	0.42
19:N:5:LYS:O	19:N:8:GLU:HG2	2.19	0.42
20:O:120:VAL:HG13	20:O:123:ALA:HB3	2.01	0.42
26:U:19:VAL:HG11	26:U:28:PHE:CZ	2.54	0.42
27:V:27:ASP:OD1	27:V:27:ASP:N	2.52	0.42
28:W:20:ARG:O	28:W:24:GLU:HG2	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:W:91:GLN:HG2	28:W:228:VAL:HG22	2.01	0.42
33:b:452:LYS:HB3	48:u:71:PHE:HE1	1.85	0.42
37:f:16:TYR:HB3	37:f:27:VAL:O	2.20	0.42
38:g:95:ILE:HG13	38:g:96:GLU:N	2.34	0.42
39:h:104:GLN:O	39:h:108:GLN:HG2	2.19	0.42
40:i:54:GLU:HA	40:i:57:LEU:HG	2.02	0.42
42:k:42:LYS:HD2	42:k:53:THR:HB	2.00	0.42
1:m:288:PRO:HB2	1:n:401:ARG:HE	1.84	0.42
1:x:750:PHE:O	1:x:754:PHE:N	2.44	0.42
50:y:61:ARG:HD2	50:y:106:ASN:HD21	1.84	0.42
53:oC:3404:UNK:C	53:oC:3406:UNK:H	2.32	0.42
2:1:31:C:H2'	2:1:32:U:C6	2.54	0.42
2:1:341:G:C6	8:C:194:TYR:HE1	2.37	0.42
2:1:796:U:H2'	2:1:797:U:C6	2.55	0.42
2:1:827:A:H2'	2:1:828:A:C8	2.55	0.42
2:1:1779:C:H5'	23:R:97:ARG:HH21	1.84	0.42
2:1:2012:G:H4'	2:1:2013:C:O5'	2.18	0.42
2:1:2341:A:H2'	2:1:2342:U:C6	2.54	0.42
2:1:2359:C:H2'	2:1:2360:C:C6	2.55	0.42
2:1:2582:C:H2'	2:1:2583:C:H6	1.84	0.42
2:1:2722:U:O2'	25:T:88:ARG:O	2.38	0.42
2:1:2747:A:H2	9:D:36:LEU:HD21	1.84	0.42
2:1:2769:A:C8	46:q:80:ARG:HA	2.54	0.42
2:1:3074:G:H2'	2:1:3075:G:H8	1.84	0.42
2:1:3096:C:H4'	7:B:325:LYS:NZ	2.34	0.42
2:1:3292:A:H2'	2:1:3293:U:C6	2.55	0.42
6:A:144:ASN:ND2	6:A:144:ASN:O	2.52	0.42
8:C:298:ALA:HB1	22:Q:133:LYS:HE2	2.00	0.42
8:C:335:ALA:HA	8:C:338:LYS:HD3	2.00	0.42
11:F:110:ARG:NH2	22:Q:4:ASP:O	2.53	0.42
17:L:164:GLU:H	17:L:164:GLU:CD	2.26	0.42
22:Q:4:ASP:OD1	22:Q:5:HIS:N	2.49	0.42
25:T:18:ASP:HB2	25:T:21:LYS:HD2	2.02	0.42
28:W:40:VAL:HG22	28:W:223:ASN:HD21	1.85	0.42
33:b:457:GLU:OE1	48:u:95:ARG:NH2	2.53	0.42
35:d:78:LYS:O	35:d:90:PHE:HB3	2.19	0.42
37:f:75:HIS:CD2	37:f:82:ARG:HH21	2.36	0.42
1:n:659:THR:HG21	1:n:665:ILE:HD11	2.01	0.42
46:q:70:LEU:HB3	46:q:85:LEU:HD13	2.01	0.42
1:w:66:GLY:H	1:w:84:ARG:HH21	1.67	0.42
1:w:513:VAL:HG13	1:w:517:ASP:HB2	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:y:124:GLU:H	50:y:124:GLU:CD	2.27	0.42
2:1:216:G:H2'	2:1:217:U:C6	2.53	0.42
2:1:272:G:H2'	2:1:273:A:C8	2.54	0.42
2:1:301:G:H2'	2:1:302:U:H6	1.85	0.42
2:1:678:G:C6	2:1:703:G:N1	2.88	0.42
2:1:687:U:OP2	17:L:36:ARG:NH2	2.49	0.42
2:1:1253:U:H5'	2:1:1263:A:C2	2.55	0.42
2:1:1317:A:O2'	2:1:1318:A:H3'	2.19	0.42
2:1:1492:G:P	2:1:1493:G:H22	2.43	0.42
2:1:1550:C:H2'	2:1:1551:C:H6	1.84	0.42
2:1:1599:G:N2	2:1:1609:C:C2	2.88	0.42
2:1:1663:C:O3'	23:R:100:ARG:NH2	2.51	0.42
2:1:1709:C:H2'	2:1:1710:C:H6	1.85	0.42
2:1:1761:C:O2'	2:1:1763:U:OP2	2.27	0.42
2:1:2071:A:H3'	2:1:2072:G:C8	2.55	0.42
2:1:2135:U:H2'	2:1:2136:C:C6	2.55	0.42
2:1:2265:C:H2'	2:1:2266:U:C6	2.55	0.42
2:1:2401:A:H2'	2:1:2401:A:N3	2.34	0.42
2:1:2674:A:H5''	15:J:105:GLY:H	1.85	0.42
2:1:2775:U:H2'	2:1:2776:C:C6	2.54	0.42
2:1:2901:G:C4	2:1:2902:A:C8	3.08	0.42
2:1:2907:G:H2'	2:1:2908:G:H8	1.85	0.42
2:1:2927:C:H2'	2:1:2928:C:H5'	2.01	0.42
2:1:3051:U:H2'	2:1:3052:G:H8	1.84	0.42
2:1:3116:G:N3	2:1:3116:G:H2'	2.34	0.42
3:2:28:C:H2'	3:2:29:C:O4'	2.18	0.42
3:2:81:U:H2'	3:2:82:G:C8	2.54	0.42
4:3:96:A:O3'	39:h:63:ARG:NH2	2.42	0.42
5:4:256:GLU:HB3	5:4:257:GLY:H	1.68	0.42
7:B:307:PRO:HG2	7:B:310:GLY:HA2	2.01	0.42
8:C:148:ILE:HG12	8:C:149:PRO:HD2	2.00	0.42
11:F:49:ALA:O	11:F:52:GLN:HG3	2.19	0.42
13:H:67:ALA:O	13:H:70:THR:OG1	2.35	0.42
13:H:166:ARG:HH12	13:H:168:ARG:HB2	1.84	0.42
21:P:115:SER:OG	21:P:149:VAL:O	2.32	0.42
27:V:123:ALA:HB1	27:V:130:ALA:HB2	2.01	0.42
33:b:499:ARG:HG2	48:u:137:ARG:NH2	2.32	0.42
35:d:10:ARG:HA	35:d:108:VAL:HA	2.02	0.42
39:h:95:PHE:HD2	39:h:96:GLU:HG3	1.85	0.42
1:m:508:LEU:HD13	1:m:510:MET:HE2	2.01	0.42
1:n:227:SER:OG	1:n:228:LYS:N	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:n:271:PHE:CG	1:n:278:PRO:HG3	2.55	0.42
44:o:23:LYS:C	44:o:25:LYS:H	2.27	0.42
1:w:128:LYS:HD2	1:w:186:ASP:HB3	2.00	0.42
1:w:583:GLY:H	1:w:616:ASP:HB3	1.85	0.42
1:x:311:ASN:HA	1:x:345:ASP:HB3	2.01	0.42
1:Aa:736:ILE:HA	1:Aa:741:ASP:HB3	2.01	0.42
2:1:423:A:H2	2:1:2363:A:H4'	1.85	0.42
2:1:812:G:H2'	2:1:813:G:H8	1.84	0.42
2:1:1571:A:O2'	2:1:1572:U:O4'	2.29	0.42
2:1:1739:U:OP1	38:g:69:HIS:NE2	2.48	0.42
2:1:2556:C:H3'	2:1:2556:C:OP2	2.19	0.42
2:1:2677:G:N3	2:1:2677:G:H2'	2.35	0.42
2:1:2720:G:H2'	2:1:2721:A:C8	2.54	0.42
2:1:2769:A:N7	46:q:80:ARG:HA	2.35	0.42
2:1:2830:G:C2	33:b:135:ARG:HD3	2.54	0.42
2:1:2894:C:H2'	2:1:2895:G:C8	2.51	0.42
2:1:2998:U:H2'	2:1:2999:U:O4'	2.20	0.42
2:1:3115:C:O2	2:1:3117:C:N4	2.49	0.42
2:1:3281:U:H1'	2:1:3283:U:O4	2.20	0.42
3:2:103:A:H2'	3:2:104:A:C8	2.55	0.42
5:4:468:LEU:HB3	5:4:469:PRO:HD3	2.02	0.42
6:A:146:THR:HG22	6:A:158:ILE:O	2.20	0.42
7:B:376:LYS:HB3	7:B:376:LYS:HE3	1.76	0.42
11:F:222:HIS:HD2	11:F:224:ILE:HB	1.84	0.42
19:N:84:PRO:HA	19:N:87:GLN:HE22	1.85	0.42
26:U:109:GLN:H	26:U:109:GLN:CD	2.28	0.42
27:V:54:LEU:HD12	27:V:54:LEU:HA	1.76	0.42
31:Z:53:VAL:HG11	31:Z:62:VAL:HG22	2.01	0.42
33:b:548:LYS:O	33:b:551:ARG:HB3	2.20	0.42
37:f:38:PRO:O	37:f:42:GLN:HG2	2.20	0.42
39:h:47:VAL:O	39:h:51:ILE:HG23	2.19	0.42
41:j:14:LYS:HE3	41:j:25:ARG:HH22	1.84	0.42
46:q:34:SER:HB2	46:q:37:ALA:HB2	2.01	0.42
1:t:561:CYS:HB3	1:t:681:VAL:HG12	2.01	0.42
1:w:738:GLU:HG3	1:w:739:ASP:H	1.85	0.42
50:y:165:THR:OG1	50:y:169:ASP:HB2	2.20	0.42
50:y:202:TYR:CE2	50:y:203:LEU:HD22	2.54	0.42
51:z:21:VAL:HA	51:z:24:LYS:HE2	2.01	0.42
1:Aa:324:GLU:OE1	1:Aa:365:ARG:NH2	2.53	0.42
2:1:26:A:H2'	2:1:27:C:H6	1.85	0.42
2:1:128:G:H2'	2:1:129:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:897:U:H2'	2:1:898:U:C6	2.54	0.42
2:1:949:C:H2'	2:1:950:G:O4'	2.19	0.42
2:1:1062:A:OP1	2:1:1063:G:H5'	2.19	0.42
2:1:1079:A:H5'	9:D:143:LYS:HG2	2.01	0.42
2:1:1135:A:C2	2:1:1136:A:N7	2.88	0.42
2:1:1184:A:H2'	2:1:1185:C:H6	1.83	0.42
2:1:1310:G:H2'	2:1:1311:G:C8	2.54	0.42
2:1:1622:U:C2	2:1:1623:G:N7	2.88	0.42
2:1:1675:G:H2'	2:1:1676:A:C8	2.55	0.42
2:1:1794:G:H5'	6:A:188:LYS:HA	2.01	0.42
2:1:2878:G:OP1	2:1:2924:U:H5'	2.19	0.42
2:1:3218:A:H5''	2:1:3219:G:C4	2.55	0.42
5:4:39:LEU:HD12	5:4:156:HIS:NE2	2.35	0.42
5:4:127:SER:HB2	5:4:132:THR:O	2.19	0.42
5:4:353:LEU:HD13	5:4:353:LEU:HA	1.93	0.42
8:C:235:LEU:HD23	8:C:235:LEU:H	1.84	0.42
12:G:28:HIS:HD2	31:Z:128:GLN:HG3	1.84	0.42
16:K:41:HIS:CD2	17:L:3:ILE:HG22	2.54	0.42
27:V:81:GLN:O	27:V:83:LYS:HE2	2.19	0.42
28:W:41:TRP:HE3	28:W:42:VAL:H	1.68	0.42
28:W:79:GLU:H	28:W:79:GLU:CD	2.27	0.42
30:Y:38:GLU:OE1	30:Y:38:GLU:N	2.52	0.42
33:b:485:GLU:HA	33:b:488:ASP:OD2	2.20	0.42
37:f:23:ASN:HD21	37:f:25:PRO:HG3	1.83	0.42
39:h:13:SER:H	39:h:16:GLN:NE2	2.18	0.42
39:h:84:LYS:HD2	41:j:78:PHE:HB3	2.02	0.42
1:m:561:CYS:SG	1:m:684:PRO:HD3	2.59	0.42
1:m:697:THR:HA	1:m:700:PHE:HD1	1.83	0.42
1:m:727:LEU:HB3	1:m:750:PHE:CE2	2.55	0.42
1:t:41:SER:OG	1:t:42:LYS:N	2.53	0.42
1:w:503:MET:HE1	1:w:578:PHE:H	1.84	0.42
1:x:320:LEU:HD22	1:x:362:VAL:HG22	2.01	0.42
53:oC:3485:UNK:HG2	53:oC:3486:UNK:HG3	2.01	0.42
2:1:592:A:H2'	2:1:592:A:N3	2.35	0.42
2:1:658:G:H2'	2:1:659:G:H8	1.84	0.42
2:1:1287:A:H2'	2:1:1288:U:C6	2.55	0.42
2:1:1433:A:H62	36:e:19:ARG:HH21	1.67	0.42
2:1:1831:U:OP1	29:X:92:LYS:HG2	2.20	0.42
2:1:2334:U:OP1	14:I:7:LYS:NZ	2.36	0.42
2:1:2450:G:H8	2:1:2450:G:OP2	2.02	0.42
2:1:2561:A:N1	12:G:31:PRO:HA	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2581:U:H2'	2:1:2582:C:H6	1.85	0.42
2:1:2898:G:OP2	13:H:173:ARG:NH1	2.53	0.42
2:1:3002:C:N3	2:1:3147:G:N1	2.67	0.42
3:2:106:U:H2'	3:2:107:C:H6	1.83	0.42
4:3:42:G:H2'	4:3:43:A:C8	2.54	0.42
4:3:154:C:H2'	4:3:155:A:N7	2.34	0.42
6:A:77:ILE:HG21	6:A:169:ILE:HD11	2.01	0.42
7:B:212:ASN:HD21	7:B:353:GLU:HA	1.85	0.42
7:B:345:ASN:OD1	7:B:346:THR:N	2.52	0.42
11:F:63:ILE:HD13	11:F:66:LYS:NZ	2.35	0.42
20:O:142:SER:HA	20:O:145:VAL:HG22	2.01	0.42
23:R:66:HIS:O	23:R:69:SER:OG	2.31	0.42
24:S:110:MET:HE2	24:S:121:ILE:HG21	2.01	0.42
41:j:34:CYS:HB3	41:j:37:CYS:O	2.20	0.42
1:t:354:ARG:NH2	1:t:364:SER:OG	2.51	0.42
1:w:242:LEU:HD21	1:w:297:ARG:HH21	1.85	0.42
1:w:639:SER:O	1:w:643:GLU:HB2	2.20	0.42
53:oC:3466:UNK:O	53:oC:3470:UNK:HG3	2.20	0.42
2:1:8:C:H2'	2:1:9:U:H6	1.84	0.41
2:1:219:A:N3	2:1:219:A:H2'	2.34	0.41
2:1:432:G:C6	2:1:628:A:C6	3.08	0.41
2:1:628:A:H5'	2:1:1399:A:C2	2.54	0.41
2:1:665:A:N6	2:1:798:G:O6	2.53	0.41
2:1:869:G:C2	2:1:891:G:C6	3.08	0.41
2:1:915:A:C8	2:1:917:A:H1'	2.55	0.41
2:1:1070:U:H2'	2:1:1071:U:O4'	2.20	0.41
2:1:1205:A:H2'	2:1:1206:G:H8	1.84	0.41
2:1:1266:G:N2	2:1:1276:U:H1'	2.35	0.41
2:1:2193:U:H5''	2:1:2194:G:C5'	2.50	0.41
2:1:2445:A:N6	2:1:2503:G:O6	2.52	0.41
2:1:2480:A:H3'	2:1:2481:G:H8	1.85	0.41
2:1:2670:G:H2'	2:1:2671:A:C8	2.55	0.41
2:1:2749:G:H2'	2:1:2750:U:C6	2.55	0.41
2:1:2912:G:N2	2:1:3130:A:N3	2.67	0.41
2:1:2945:G:HO2'	2:1:2946:A:P	2.43	0.41
2:1:3004:C:N4	2:1:3005:A:N1	2.68	0.41
2:1:3036:G:H5''	51:z:17:LYS:HE3	2.02	0.41
2:1:3328:G:H2'	2:1:3329:U:O4'	2.19	0.41
5:4:61:VAL:HG13	5:4:95:ILE:HB	2.02	0.41
5:4:161:TYR:CE1	5:4:172:PRO:HB2	2.55	0.41
6:A:200:ARG:O	6:A:204:MET:HG3	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:C:304:GLN:C	8:C:306:THR:H	2.28	0.41
9:D:51:LEU:HB3	9:D:146:LEU:HD23	2.01	0.41
21:P:157:VAL:HG12	21:P:159:LYS:H	1.84	0.41
24:S:23:LYS:HZ1	25:T:147:VAL:N	2.18	0.41
28:W:38:ARG:NH2	28:W:39:TYR:HB2	2.35	0.41
33:b:482:GLU:HB2	33:b:485:GLU:OE1	2.20	0.41
41:j:25:ARG:NH1	43:l:50:ASN:HB3	2.35	0.41
41:j:73:ARG:NH1	41:j:73:ARG:HB2	2.35	0.41
1:n:671:ARG:HD2	1:n:672:PRO:O	2.20	0.41
49:v:310:ALA:HB2	49:v:379:TYR:OH	2.20	0.41
49:v:399:LYS:HE3	49:v:400:LYS:HG2	2.01	0.41
1:w:685:ASP:OD1	1:w:685:ASP:N	2.46	0.41
1:x:590:TYR:HD2	1:x:592:GLY:H	1.67	0.41
1:x:702:THR:HG22	1:x:745:VAL:H	1.84	0.41
50:y:107:VAL:HB	50:y:118:HIS:HB2	2.02	0.41
1:Aa:248:GLY:HA3	1:Aa:425:LYS:HD2	2.03	0.41
1:Aa:361:GLU:N	1:Aa:361:GLU:OE1	2.53	0.41
2:1:651:G:H2'	2:1:652:G:H8	1.85	0.41
2:1:861:C:H2'	2:1:862:U:H6	1.84	0.41
2:1:904:A:H2'	2:1:905:U:C6	2.56	0.41
2:1:992:A:H2'	2:1:993:G:C8	2.54	0.41
2:1:1593:A:O4'	38:g:60:ARG:NH1	2.53	0.41
2:1:2427:U:H2'	2:1:2428:U:C6	2.55	0.41
2:1:2587:U:H2'	2:1:2588:U:C6	2.55	0.41
2:1:2951:G:O2'	2:1:2952:G:H5'	2.19	0.41
5:4:112:GLN:O	5:4:115:LEU:HG	2.20	0.41
5:4:143:LEU:HB3	5:4:154:VAL:HG13	2.02	0.41
5:4:146:HIS:HB2	5:4:151:THR:HG22	2.00	0.41
6:A:28:LYS:HG2	6:A:29:LEU:O	2.20	0.41
7:B:233:TRP:CD1	7:B:265:ALA:HB1	2.56	0.41
8:C:260:GLN:O	8:C:270:SER:OG	2.21	0.41
9:D:148:ILE:HG23	9:D:159:VAL:HG21	2.02	0.41
9:D:205:SER:HA	9:D:208:MET:HG2	2.02	0.41
11:F:34:LYS:HA	11:F:37:ASN:ND2	2.32	0.41
14:I:97:ASN:HB2	48:u:73:GLN:HA	2.02	0.41
15:J:60:ARG:H	15:J:63:GLU:HG3	1.85	0.41
18:M:39:ILE:HB	18:M:43:LYS:O	2.20	0.41
19:N:106:VAL:HG21	19:N:132:VAL:HG11	2.01	0.41
21:P:40:GLU:OE1	21:P:42:THR:N	2.53	0.41
27:V:63:LYS:HD3	27:V:63:LYS:HA	1.83	0.41
28:W:109:VAL:HG13	28:W:220:TYR:OH	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:b:42:ILE:H	33:b:42:ILE:HG13	1.67	0.41
33:b:122:LEU:HA	33:b:125:CYS:SG	2.61	0.41
33:b:125:CYS:HA	33:b:128:LEU:HG	2.03	0.41
33:b:168:ARG:NH1	33:b:168:ARG:O	2.50	0.41
39:h:9:LEU:HD21	39:h:54:VAL:HG22	2.01	0.41
1:m:560:GLY:HA2	1:n:671:ARG:HD3	2.02	0.41
1:n:246:ALA:O	54:n:901:AGS:N6	2.52	0.41
1:n:313:PRO:O	1:t:328:ARG:NH1	2.52	0.41
1:n:532:ILE:C	1:n:535:PRO:HD2	2.45	0.41
1:t:641:LEU:HD13	1:t:668:ALA:HB3	2.03	0.41
1:w:130:THR:HA	1:w:225:THR:HB	2.01	0.41
1:w:650:LEU:HG	1:w:653:VAL:HB	2.01	0.41
1:x:624:ASP:N	1:x:664:GLU:O	2.53	0.41
2:1:1024:G:H2'	2:1:1026:A:C2	2.55	0.41
2:1:1104:G:C2	2:1:1105:A:C5	3.08	0.41
2:1:1297:C:H2'	2:1:1298:C:C6	2.56	0.41
2:1:1411:C:H2'	2:1:1412:G:H8	1.85	0.41
2:1:1986:U:C4	2:1:2035:G:O6	2.72	0.41
2:1:2524:A:C6	12:G:46:LEU:HD11	2.55	0.41
2:1:2662:G:H2'	2:1:2663:G:H8	1.85	0.41
2:1:2684:C:H2'	2:1:2685:C:C6	2.55	0.41
9:D:282:ARG:HE	9:D:282:ARG:HB3	1.50	0.41
11:F:222:HIS:CE1	11:F:230:GLY:HA3	2.55	0.41
12:G:139:VAL:O	12:G:143:ILE:HG23	2.20	0.41
14:I:16:ARG:HB3	14:I:20:LEU:HD11	2.01	0.41
15:J:17:LEU:HD22	15:J:129:VAL:HG22	2.01	0.41
19:N:47:LYS:HG2	19:N:119:TYR:CD2	2.54	0.41
22:Q:96:PHE:CD1	22:Q:97:PRO:HD2	2.55	0.41
22:Q:123:THR:HG23	22:Q:126:GLN:H	1.84	0.41
23:R:102:LEU:HD11	23:R:103:ARG:NH1	2.35	0.41
33:b:430:ASP:OD1	33:b:430:ASP:N	2.52	0.41
38:g:83:ASN:O	38:g:86:LYS:HG2	2.20	0.41
1:w:531:MET:HE1	1:w:551:LYS:HA	2.01	0.41
2:1:277:G:O6	2:1:289:A:N6	2.53	0.41
2:1:624:G:H2'	2:1:625:G:H8	1.85	0.41
2:1:768:C:H2'	2:1:769:G:H8	1.86	0.41
2:1:808:A:C6	2:1:934:G:C6	3.07	0.41
2:1:846:A:H2'	2:1:847:A:C8	2.55	0.41
2:1:879:U:H1'	21:P:135:ARG:NH1	2.35	0.41
2:1:963:G:C2	2:1:964:G:C5	3.09	0.41
2:1:1128:U:H2'	2:1:1129:A:C8	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1797:A:H2'	2:1:1798:A:C8	2.55	0.41
2:1:2838:A:H61	2:1:2848:G:H22	1.66	0.41
2:1:3009:G:H5'	20:O:66:LYS:HG2	2.02	0.41
2:1:3144:G:H2'	2:1:3145:C:H6	1.86	0.41
2:1:3203:U:H2'	2:1:3204:C:C6	2.55	0.41
3:2:7:G:H2'	3:2:8:G:C8	2.54	0.41
5:4:176:LEU:HB3	5:4:537:ILE:HD13	2.03	0.41
6:A:117:GLU:OE1	6:A:123:ARG:NH2	2.39	0.41
6:A:187:HIS:HA	6:A:190:ARG:NH1	2.35	0.41
7:B:45:SER:HB3	7:B:181:ILE:HB	2.02	0.41
7:B:210:GLU:HG3	51:z:29:ARG:NH1	2.35	0.41
7:B:290:ASP:OD1	7:B:290:ASP:N	2.50	0.41
9:D:279:LYS:O	9:D:282:ARG:NH2	2.54	0.41
13:H:92:TYR:CE1	13:H:144:ILE:HG13	2.56	0.41
31:Z:47:GLU:HG3	31:Z:71:PHE:CD1	2.56	0.41
33:b:25:THR:HG21	33:b:53:THR:HG22	2.03	0.41
33:b:82:MET:HE2	33:b:153:VAL:HA	2.02	0.41
1:m:96:ILE:HD12	1:m:114:LEU:HD12	2.01	0.41
1:m:584:PRO:HD2	1:n:639:SER:HB2	2.02	0.41
49:v:399:LYS:HD2	49:v:399:LYS:HA	1.59	0.41
1:x:430:MET:SD	1:x:434:ARG:NE	2.70	0.41
53:oC:3445:UNK:O	53:oC:3447:UNK:N	2.53	0.41
1:Aa:622:SER:HB2	1:Aa:637:LEU:HD13	2.02	0.41
2:1:407:A:H2'	2:1:408:A:H8	1.83	0.41
2:1:615:U:H2'	2:1:616:G:H8	1.85	0.41
2:1:749:C:H2'	2:1:750:G:O4'	2.21	0.41
2:1:754:G:H2'	2:1:755:A:C8	2.52	0.41
2:1:799:G:C2	2:1:801:A:C6	3.07	0.41
2:1:852:U:C4	45:p:2:ALA:HB2	2.56	0.41
2:1:914:A:N1	6:A:204:MET:HE3	2.36	0.41
2:1:1054:A:C8	2:1:1055:A:N7	2.88	0.41
2:1:1311:G:H2'	2:1:1312:C:C6	2.56	0.41
2:1:1419:A:C8	8:C:187:LEU:HD23	2.56	0.41
2:1:1650:G:H2'	2:1:1651:U:C6	2.55	0.41
2:1:1804:A:H5'	38:g:70:LYS:HZ3	1.84	0.41
2:1:2078:C:O2'	2:1:2079:G:OP1	2.38	0.41
2:1:2298:U:H2'	2:1:2921:U:O5'	2.20	0.41
2:1:2402:A:OP2	8:C:69:ARG:NE	2.54	0.41
2:1:2962:U:H2'	2:1:2963:C:H6	1.85	0.41
2:1:3249:C:H2'	2:1:3250:U:C6	2.56	0.41
6:A:124:GLY:C	6:A:128:ARG:HH12	2.28	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:B:285:VAL:HG22	7:B:322:ILE:HG22	2.02	0.41
10:E:157:GLN:H	10:E:157:GLN:CD	2.25	0.41
19:N:20:ARG:O	19:N:23:GLN:HG3	2.20	0.41
22:Q:9:GLN:HE21	22:Q:10:HIS:CE1	2.39	0.41
28:W:70:ARG:HH12	28:W:96:CYS:HB3	1.85	0.41
28:W:89:LEU:HD23	28:W:89:LEU:HA	1.89	0.41
40:i:41:ARG:HA	40:i:44:VAL:HG12	2.03	0.41
42:k:31:LEU:HA	42:k:37:PRO:HA	2.02	0.41
1:m:160:PRO:HD2	1:m:212:SER:HB2	2.02	0.41
1:n:534:LEU:HB3	1:n:535:PRO:HD3	2.01	0.41
1:t:644:ILE:HG21	1:t:674:ARG:HA	2.02	0.41
1:w:128:LYS:HG2	1:w:223:HIS:H	1.86	0.41
1:w:567:ALA:HB1	1:w:578:PHE:HZ	1.84	0.41
53:oC:3490:UNK:HA	53:oC:3493:UNK:HG3	2.02	0.41
1:Aa:261:ILE:HG23	1:Aa:265:LEU:HD12	2.02	0.41
1:Aa:319:TYR:HB3	1:Aa:322:GLU:HB2	2.02	0.41
2:1:53:G:OP2	41:j:48:ASN:ND2	2.50	0.41
2:1:80:G:H2'	2:1:81:C:C6	2.56	0.41
2:1:383:G:C2	2:1:387:A:C6	3.09	0.41
2:1:384:A:H2'	2:1:385:A:O4'	2.21	0.41
2:1:412:G:H5''	21:P:30:ARG:HE	1.84	0.41
2:1:507:U:H2'	2:1:508:U:H6	1.85	0.41
2:1:697:A:OP1	8:C:272:VAL:HG11	2.21	0.41
2:1:828:A:H2'	2:1:829:U:H6	1.83	0.41
2:1:1031:C:O2'	2:1:1032:C:N3	2.36	0.41
2:1:1559:A:OP2	29:X:33:ARG:NH2	2.51	0.41
2:1:1624:G:N2	2:1:1625:A:C4	2.88	0.41
2:1:1658:G:O4'	2:1:1796:G:H2'	2.21	0.41
2:1:1689:U:H2'	2:1:1690:C:H6	1.86	0.41
2:1:2321:A:H2'	2:1:2322:C:O4'	2.19	0.41
2:1:2577:C:C4	2:1:2578:U:C4	3.09	0.41
5:4:50:TYR:CZ	5:4:58:GLN:HG2	2.56	0.41
7:B:258:ALA:O	7:B:259:HIS:ND1	2.53	0.41
7:B:307:PRO:HG3	7:B:311:PHE:CD1	2.56	0.41
8:C:280:ILE:HG21	22:Q:25:TYR:CE2	2.56	0.41
12:G:102:ALA:HA	12:G:105:LYS:HG2	2.03	0.41
13:H:92:TYR:HE1	13:H:144:ILE:HG13	1.85	0.41
13:H:118:LEU:HD11	13:H:167:VAL:HG22	2.02	0.41
19:N:114:ARG:NH1	19:N:137:PRO:HG3	2.35	0.41
25:T:66:ASN:OD1	25:T:73:GLY:HA3	2.20	0.41
28:W:146:GLY:HA3	28:W:174:LYS:HE3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:X:99:VAL:HG21	29:X:107:VAL:HG21	2.03	0.41
32:a:143:VAL:HG12	32:a:148:PRO:HG3	2.02	0.41
33:b:101:ALA:O	33:b:105:VAL:HG23	2.20	0.41
33:b:188:THR:HG22	33:b:189:LYS:H	1.85	0.41
49:v:263:LEU:HD13	49:v:263:LEU:HA	1.94	0.41
1:w:429:ARG:HA	1:w:429:ARG:HD2	1.86	0.41
1:w:511:PRO:HB3	1:x:647:VAL:HG12	2.02	0.41
1:w:534:LEU:HB3	1:w:535:PRO:HD3	2.03	0.41
2:1:79:U:H2'	2:1:80:G:H8	1.86	0.41
2:1:111:C:OP2	17:L:91:ARG:NH1	2.54	0.41
2:1:370:U:H3'	2:1:371:G:C8	2.56	0.41
2:1:1307:G:C5	20:O:60:LYS:HD3	2.55	0.41
2:1:1847:A:H4'	43:l:46:ARG:HH12	1.84	0.41
2:1:2134:G:C6	2:1:2147:A:H2	2.39	0.41
2:1:2281:A:O2'	2:1:2282:U:H5'	2.20	0.41
2:1:2512:C:H2'	2:1:2513:U:C6	2.56	0.41
2:1:2533:G:H2'	2:1:2534:G:C8	2.55	0.41
2:1:2639:G:C4	2:1:2640:A:C8	3.09	0.41
2:1:2704:A:O2'	2:1:2705:A:O5'	2.35	0.41
2:1:2857:C:H3'	2:1:2858:U:H5	1.86	0.41
2:1:2990:G:H5'	7:B:20:LYS:HD3	2.02	0.41
2:1:3100:U:H5'	51:z:18:ARG:NH2	2.31	0.41
3:2:49:G:N2	3:2:50:U:O4	2.54	0.41
7:B:77:THR:OG1	7:B:78:VAL:N	2.54	0.41
9:D:82:GLU:OE1	9:D:82:GLU:N	2.50	0.41
13:H:68:LEU:O	13:H:71:VAL:HG22	2.20	0.41
16:K:93:SER:OG	16:K:94:ALA:N	2.52	0.41
17:L:76:THR:O	17:L:80:VAL:HG23	2.20	0.41
18:M:24:LYS:HE3	18:M:24:LYS:HB3	1.93	0.41
27:V:120:LYS:HB3	27:V:137:VAL:HG22	2.03	0.41
33:b:23:ASN:O	33:b:27:ARG:HG2	2.21	0.41
1:m:464:SER:HB3	1:m:486:VAL:HG11	2.03	0.41
1:n:758:ALA:HA	1:t:775:ARG:O	2.19	0.41
45:p:24:ARG:HA	45:p:27:LYS:HE2	2.01	0.41
48:u:42:GLN:HB3	48:u:44:ARG:HG2	2.03	0.41
49:v:153:ASN:HB3	49:v:229:ILE:HD12	2.02	0.41
49:v:291:LEU:HD22	49:v:334:VAL:HB	2.03	0.41
53:oC:3470:UNK:O	53:oC:3473:UNK:HG3	2.20	0.41
1:Aa:586:ILE:HD11	1:Aa:621:LEU:HG	2.02	0.41
2:1:75:G:H3'	2:1:76:G:C8	2.56	0.41
2:1:288:C:H2'	2:1:289:A:H8	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:317:A:H2'	2:1:318:A:C8	2.56	0.41
2:1:594:U:O4	8:C:308:LYS:NZ	2.28	0.41
2:1:704:U:P	2:1:705:A:H5'	2.61	0.41
2:1:1530:U:O2'	4:3:114:G:O3'	2.38	0.41
2:1:1563:C:H2'	2:1:1564:U:C6	2.56	0.41
2:1:1689:U:H2'	2:1:1690:C:C6	2.55	0.41
2:1:1870:C:H5''	2:1:3076:C:O2'	2.21	0.41
2:1:1916:U:C2	2:1:1917:C:C5	3.09	0.41
2:1:1976:G:H2'	2:1:1977:C:C6	2.56	0.41
2:1:1987:G:C5	2:1:2035:G:C6	3.08	0.41
2:1:2131:A:N1	45:p:17:ARG:HB3	2.35	0.41
2:1:2163:C:OP1	6:A:234:LYS:HD3	2.21	0.41
2:1:2462:A:C2	2:1:2463:G:H1'	2.55	0.41
2:1:2514:U:H6	2:1:2514:U:P	2.44	0.41
2:1:2612:U:H2'	2:1:2613:U:N1	2.35	0.41
2:1:2834:G:N2	2:1:2854:U:O2	2.54	0.41
2:1:2926:A:H2'	2:1:2927:C:C6	2.56	0.41
2:1:3127:A:H2'	2:1:3128:G:C4	2.55	0.41
2:1:3149:G:O2'	2:1:3150:A:H5'	2.20	0.41
2:1:3352:U:H4'	2:1:3353:G:H5'	2.02	0.41
4:3:68:G:N1	4:3:92:A:C6	2.88	0.41
5:4:73:LEU:O	5:4:77:GLU:HG2	2.21	0.41
6:A:5:ILE:HG12	6:A:6:ARG:H	1.86	0.41
6:A:133:TYR:CE2	6:A:135:ILE:HD11	2.55	0.41
7:B:107:ALA:HB1	7:B:200:GLU:HG2	2.03	0.41
7:B:122:TRP:CD1	7:B:127:LYS:HD2	2.56	0.41
7:B:348:ARG:HH22	33:b:411:VAL:HG13	1.86	0.41
8:C:317:PRO:HG2	11:F:149:TYR:HB3	2.03	0.41
8:C:362:ASP:OXT	25:T:150:THR:OG1	2.30	0.41
18:M:12:TRP:CH2	24:S:171:PHE:HB2	2.55	0.41
30:Y:28:ARG:HH21	30:Y:29:VAL:HG22	1.85	0.41
1:Aa:506:ILE:HG22	1:Aa:508:LEU:HG	2.02	0.41
2:1:58:G:H2'	2:1:59:G:O4'	2.20	0.41
2:1:63:A:H5''	19:N:174:ILE:HG21	2.02	0.41
2:1:199:A:C4	2:1:201:A:C8	3.09	0.41
2:1:199:A:C4	2:1:201:A:N7	2.89	0.41
2:1:290:G:H2'	2:1:291:C:C6	2.55	0.41
2:1:576:C:H2'	2:1:577:C:C6	2.56	0.41
2:1:596:C:O2'	11:F:165:ASP:OD2	2.34	0.41
2:1:662:U:H2'	2:1:663:C:C6	2.56	0.41
2:1:717:C:OP1	2:1:751:A:O2'	2.38	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:795:G:H2'	2:1:796:U:H6	1.86	0.41
2:1:824:C:N3	2:1:902:G:N1	2.68	0.41
2:1:985:U:O3'	11:F:98:LYS:NZ	2.52	0.41
2:1:1068:C:H2'	2:1:1069:C:H6	1.85	0.41
2:1:1215:U:H2'	2:1:1216:C:C6	2.56	0.41
2:1:1268:G:H21	2:1:1273:A:H62	1.68	0.41
2:1:1845:G:O2'	41:j:5:THR:HG22	2.20	0.41
2:1:1861:G:H2'	2:1:1862:U:C6	2.56	0.41
2:1:1985:G:C6	2:1:2037:G:C6	3.09	0.41
2:1:2123:G:H2'	2:1:2124:G:H8	1.85	0.41
2:1:2416:U:H2'	2:1:2417:U:H6	1.86	0.41
2:1:2468:A:H1'	2:1:2469:G:N3	2.36	0.41
2:1:2787:G:C2	2:1:2788:C:C5	3.09	0.41
2:1:2822:U:C5	2:1:2825:C:H1'	2.55	0.41
2:1:2996:U:H3'	2:1:2997:G:C5'	2.51	0.41
2:1:3131:U:H2'	2:1:3132:C:C6	2.55	0.41
2:1:3144:G:H2'	2:1:3145:C:C6	2.55	0.41
2:1:3215:A:OP1	2:1:3215:A:H2'	2.20	0.41
3:2:14:U:H2'	3:2:15:C:H6	1.86	0.41
3:2:49:G:C6	9:D:58:LYS:HE2	2.56	0.41
3:2:71:G:H2'	3:2:72:A:H8	1.86	0.41
4:3:44:A:O3'	43:l:12:LYS:NZ	2.50	0.41
5:4:109:ASP:HB3	5:4:413:LYS:CE	2.51	0.41
5:4:206:LYS:NZ	1:w:122:GLN:HG3	2.36	0.41
5:4:208:PRO:HB2	5:4:558:THR:OG1	2.20	0.41
6:A:123:ARG:HH12	6:A:163:ARG:HG3	1.86	0.41
7:B:259:HIS:HD2	20:O:64:PHE:CZ	2.39	0.41
8:C:42:VAL:HG11	8:C:235:LEU:HD11	2.03	0.41
9:D:108:ARG:NH1	9:D:253:PHE:HB3	2.36	0.41
9:D:236:LEU:O	9:D:239:ILE:HG12	2.21	0.41
9:D:261:THR:OG1	9:D:262:LYS:N	2.54	0.41
12:G:140:VAL:O	12:G:143:ILE:HG12	2.21	0.41
15:J:125:MET:SD	15:J:125:MET:N	2.94	0.41
19:N:75:VAL:HG22	19:N:76:PRO:HD2	2.03	0.41
20:O:14:HIS:HE1	20:O:119:VAL:HB	1.86	0.41
29:X:108:LEU:N	29:X:125:ARG:O	2.49	0.41
30:Y:51:ARG:HD2	30:Y:51:ARG:HA	1.98	0.41
33:b:374:ARG:HB3	50:y:113:TYR:CE2	2.56	0.41
39:h:83:LYS:HA	39:h:89:ARG:HH21	1.86	0.41
43:l:21:ARG:HA	43:l:41:ARG:HH21	1.86	0.41
45:p:46:THR:OG1	45:p:57:CYS:SG	2.79	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:q:53:GLN:NE2	46:q:55:LYS:O	2.39	0.41
1:t:435:HIS:HB2	1:t:485:LYS:HB3	2.03	0.41
1:t:468:THR:HG21	1:t:486:VAL:HG22	2.02	0.41
48:u:140:GLU:O	48:u:143:ARG:NH2	2.54	0.41
1:w:347:ILE:HG22	1:w:389:THR:HB	2.02	0.41
1:w:462:ARG:NH2	1:x:406:ASP:OD2	2.48	0.41
1:w:642:ASN:HA	1:w:646:GLY:HA3	2.02	0.41
1:Aa:702:THR:OG1	1:Aa:703:GLU:N	2.54	0.41
2:1:82:C:C4	2:1:83:U:C4	3.09	0.41
2:1:232:G:H2'	2:1:233:C:H6	1.86	0.41
2:1:1117:G:C6	2:1:1142:G:N2	2.89	0.41
2:1:1602:A:H5''	23:R:38:ARG:NH1	2.35	0.41
2:1:1911:A:C8	2:1:1912:U:H5	2.38	0.41
2:1:2163:C:H2'	2:1:2164:A:H8	1.85	0.41
2:1:2518:C:H2'	2:1:2519:A:H8	1.86	0.41
2:1:2946:A:H1'	2:1:2981:U:C4	2.56	0.41
2:1:3028:G:H2'	2:1:3029:A:C8	2.55	0.41
2:1:3198:U:O4'	13:H:21:LYS:HE2	2.21	0.41
3:2:81:U:H2'	3:2:82:G:H8	1.85	0.41
4:3:17:A:H2'	4:3:18:U:C6	2.55	0.41
5:4:220:GLY:O	5:4:223:ILE:HG12	2.20	0.41
7:B:63:PRO:HB2	33:b:410:GLY:HA2	2.03	0.41
16:K:28:HIS:CE1	16:K:32:ARG:HH21	2.39	0.41
16:K:74:ASN:OD1	16:K:75:LEU:N	2.54	0.41
20:O:79:ILE:HD12	20:O:79:ILE:HA	1.95	0.41
22:Q:59:ARG:NH2	22:Q:104:LEU:HB2	2.36	0.41
25:T:26:HIS:CE1	25:T:28:SER:HB2	2.56	0.41
26:U:90:ARG:C	26:U:92:TRP:H	2.28	0.41
31:Z:121:ARG:HH22	31:Z:126:LYS:N	2.19	0.41
32:a:11:LYS:HE3	32:a:64:ILE:HB	2.02	0.41
33:b:24:ARG:HG2	33:b:28:LYS:NZ	2.36	0.41
33:b:605:MET:HA	33:b:608:MET:HE3	2.03	0.41
1:m:134:LEU:HD11	1:m:163:ILE:HD13	2.03	0.41
1:m:207:ASN:OD1	1:m:214:PRO:HD2	2.21	0.41
1:n:156:GLY:HA2	1:n:217:PHE:HB3	2.03	0.41
1:n:265:LEU:HD13	1:n:339:PRO:HB2	2.01	0.41
1:n:414:PRO:O	1:n:419:ARG:NH1	2.54	0.41
46:q:65:THR:HA	49:v:380:ASN:HD21	1.86	0.41
48:u:145:LEU:HA	48:u:148:GLU:CD	2.46	0.41
1:x:536:LEU:HD12	1:x:551:LYS:HE2	2.02	0.41
53:oC:3473:UNK:HB2	53:oC:3541:UNK:HG1	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Aa:522:GLU:HA	1:Aa:525:LYS:HE2	2.03	0.40
2:1:370:U:C2	2:1:374:A:N6	2.89	0.40
2:1:436:A:H2'	2:1:437:G:H8	1.87	0.40
2:1:881:C:H1'	2:1:1850:A:C8	2.56	0.40
2:1:974:G:H2'	2:1:975:C:C6	2.56	0.40
2:1:2184:U:P	6:A:7:ASN:HD21	2.43	0.40
2:1:2185:G:H2'	2:1:2186:U:C6	2.55	0.40
2:1:2586:G:O6	12:G:241:LYS:N	2.48	0.40
2:1:2790:A:H61	46:q:80:ARG:NH1	2.18	0.40
2:1:3095:U:P	27:V:86:ARG:HH12	2.44	0.40
4:3:80:A:H1'	4:3:81:U:C2	2.56	0.40
5:4:90:ALA:N	5:4:144:GLY:O	2.54	0.40
5:4:322:LYS:HD3	5:4:502:ARG:HH21	1.86	0.40
7:B:44:THR:HA	7:B:340:LYS:HZ3	1.85	0.40
7:B:140:ASP:OD1	7:B:140:ASP:N	2.53	0.40
8:C:38:VAL:HG11	8:C:121:ALA:CB	2.51	0.40
12:G:95:ASN:HA	12:G:98:ARG:NH1	2.36	0.40
12:G:136:LEU:HA	12:G:197:VAL:HG21	2.03	0.40
25:T:84:TYR:HD1	25:T:84:TYR:HA	1.80	0.40
27:V:22:ILE:HD13	27:V:22:ILE:HA	1.93	0.40
28:W:145:ARG:NH2	28:W:149:ILE:HG12	2.35	0.40
28:W:176:LYS:HB2	28:W:205:GLN:HB2	2.03	0.40
40:i:63:ASN:OD1	40:i:64:SER:OG	2.31	0.40
1:n:670:LEU:HD22	1:n:678:HIS:CE1	2.56	0.40
49:v:167:HIS:CE1	49:v:169:ARG:HD3	2.56	0.40
49:v:241:LYS:HB3	49:v:241:LYS:HE2	1.80	0.40
1:x:561:CYS:HB3	1:x:681:VAL:HG12	2.03	0.40
50:y:35:TYR:OH	50:y:50:HIS:ND1	2.54	0.40
50:y:74:THR:HB	50:y:97:VAL:O	2.20	0.40
1:Aa:452:TYR:HD2	1:Aa:456:ASP:HB2	1.87	0.40
1:Aa:758:ALA:HB3	1:m:678:HIS:CE1	2.56	0.40
2:1:589:A:H62	2:1:610:G:H1'	1.85	0.40
2:1:591:G:H1'	10:E:19:LYS:HG3	2.02	0.40
2:1:712:G:H2'	2:1:713:U:C6	2.56	0.40
2:1:884:A:C4	33:b:647:ARG:HB2	2.56	0.40
2:1:1103:A:H61	11:F:109:THR:HG21	1.86	0.40
2:1:1461:A:H2'	2:1:1462:A:H8	1.85	0.40
2:1:1478:C:H2'	2:1:1479:U:H6	1.86	0.40
2:1:2029:A:H2'	2:1:2030:C:H6	1.84	0.40
2:1:2179:C:N3	6:A:173:GLY:N	2.50	0.40
2:1:2213:A:H2'	2:1:2214:A:C8	2.52	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2316:G:C6	2:1:2317:A:C6	3.09	0.40
2:1:2386:A:C6	2:1:2994:A:N1	2.89	0.40
2:1:2432:A:H2'	2:1:2433:U:C6	2.56	0.40
2:1:2573:G:H2'	2:1:2574:G:H8	1.85	0.40
2:1:2603:G:H2'	2:1:2604:U:C6	2.57	0.40
2:1:2683:U:H2'	2:1:2684:C:C6	2.55	0.40
2:1:3234:A:N1	2:1:3253:G:C6	2.90	0.40
4:3:46:G:H2'	4:3:47:C:C6	2.57	0.40
4:3:75:G:H2'	4:3:76:C:C6	2.57	0.40
4:3:84:C:N4	30:Y:111:LEU:O	2.54	0.40
5:4:134:ARG:HG2	5:4:137:ASP:CG	2.46	0.40
5:4:171:GLN:HB3	5:4:536:TRP:HZ3	1.86	0.40
7:B:44:THR:HA	7:B:340:LYS:NZ	2.36	0.40
16:K:3:SER:O	16:K:6:THR:OG1	2.34	0.40
17:L:10:LEU:HD12	17:L:10:LEU:HA	1.79	0.40
20:O:60:LYS:HB2	20:O:60:LYS:HE2	1.91	0.40
25:T:122:GLN:NE2	25:T:124:VAL:HG22	2.36	0.40
31:Z:26:VAL:HG12	31:Z:27:LYS:HG2	2.03	0.40
33:b:176:PRO:HA	33:b:180:LYS:HD3	2.02	0.40
33:b:214:LEU:HD13	33:b:214:LEU:HA	1.91	0.40
38:g:49:SER:OG	38:g:50:ALA:N	2.55	0.40
1:m:46:LYS:NZ	1:m:154:ASP:OD2	2.55	0.40
54:m:901:AGS:PB	1:n:404:ARG:HH12	2.43	0.40
1:t:113:ARG:HA	1:t:113:ARG:HD3	1.94	0.40
1:w:37:ARG:O	1:w:98:LEU:N	2.48	0.40
1:w:128:LYS:HG2	1:w:223:HIS:N	2.36	0.40
1:w:399:LEU:HB3	1:w:405:PHE:CD1	2.56	0.40
1:Aa:251:ASP:N	1:Aa:251:ASP:OD1	2.54	0.40
1:Aa:615:PHE:CE2	1:Aa:621:LEU:HD21	2.57	0.40
2:1:123:A:C6	2:1:150:A:C5	3.09	0.40
2:1:141:C:H2'	2:1:142:C:C6	2.55	0.40
2:1:380:U:H2'	2:1:381:U:H6	1.86	0.40
2:1:542:G:C6	2:1:550:A:C6	3.10	0.40
2:1:597:G:H2'	2:1:598:A:C8	2.56	0.40
2:1:659:G:H21	2:1:1435:A:N6	2.06	0.40
2:1:945:C:H2'	2:1:946:U:H6	1.86	0.40
2:1:958:C:O2'	16:K:39:HIS:O	2.22	0.40
2:1:1066:G:H2'	2:1:1067:U:C6	2.56	0.40
2:1:1164:G:H2'	2:1:1165:A:H8	1.86	0.40
2:1:1426:C:H2'	2:1:1427:U:C6	2.57	0.40
2:1:1597:C:H2'	2:1:1598:G:H8	1.82	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1875:G:OP1	23:R:19:LYS:HG2	2.22	0.40
2:1:2350:C:H2'	2:1:2351:U:C6	2.55	0.40
2:1:2401:A:O2'	2:1:2403:G:O4'	2.38	0.40
2:1:2575:G:N1	2:1:2576:G:N7	2.69	0.40
2:1:2837:A:H2	2:1:2852:C:H41	1.69	0.40
2:1:3043:C:H2'	2:1:3044:G:C8	2.56	0.40
2:1:3146:G:H2'	2:1:3147:G:C8	2.56	0.40
2:1:3200:G:H2'	2:1:3201:C:H6	1.86	0.40
3:2:33:U:H2'	3:2:34:C:C6	2.57	0.40
4:3:129:C:H2'	4:3:130:C:C6	2.56	0.40
4:3:131:A:H2'	4:3:132:G:H8	1.86	0.40
7:B:252:ILE:HG13	7:B:266:ARG:HH11	1.87	0.40
8:C:208:VAL:HG21	8:C:250:TRP:CE3	2.56	0.40
12:G:130:TYR:HA	12:G:202:GLU:OE2	2.21	0.40
16:K:66:ALA:HA	17:L:64:LYS:HG3	2.03	0.40
17:L:177:LYS:HE2	40:i:11:LEU:HD23	2.02	0.40
17:L:182:ILE:H	17:L:182:ILE:HD12	1.87	0.40
22:Q:16:ARG:HD2	22:Q:16:ARG:HA	1.95	0.40
23:R:41:ILE:HD13	23:R:44:LEU:HD21	2.03	0.40
24:S:134:ASP:OD1	24:S:134:ASP:N	2.45	0.40
27:V:39:VAL:HA	27:V:58:VAL:HA	2.03	0.40
30:Y:31:LEU:HD21	30:Y:78:PHE:HD1	1.87	0.40
36:e:93:ALA:HB1	36:e:120:THR:HG22	2.03	0.40
39:h:32:LYS:HD2	39:h:35:LYS:HD2	2.03	0.40
1:m:280:ARG:NH1	1:m:377:MET:HE3	2.36	0.40
1:m:467:LYS:NZ	1:m:497:ASP:OD2	2.36	0.40
1:m:562:SER:O	1:m:564:THR:N	2.54	0.40
1:n:736:ILE:HG21	1:t:534:LEU:HD11	2.03	0.40
1:x:285:HIS:HA	1:x:389:THR:O	2.21	0.40
50:y:93:LYS:HB3	50:y:93:LYS:HE3	1.56	0.40
50:y:221:ILE:HG13	50:y:222:PHE:CD1	2.57	0.40
1:Aa:185:ASP:HB2	1:Aa:215:PHE:HE1	1.85	0.40
1:Aa:517:ASP:HA	1:Aa:695:LYS:HE3	2.04	0.40
2:1:23:A:N6	4:3:35:C:C2	2.90	0.40
2:1:201:A:H2'	2:1:202:G:C8	2.56	0.40
2:1:676:G:C2	2:1:787:G:C6	3.10	0.40
2:1:776:U:N3	2:1:2720:G:N3	2.64	0.40
2:1:1066:G:H2'	2:1:1067:U:H6	1.87	0.40
2:1:1174:G:H2'	2:1:1175:C:C6	2.57	0.40
2:1:1229:G:C6	2:1:1281:G:C6	3.10	0.40
2:1:1438:U:H2'	2:1:1439:U:H6	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1664:G:P	23:R:100:ARG:HH22	2.44	0.40
2:1:1908:A:H5''	2:1:1909:A:N7	2.36	0.40
2:1:1917:C:H2'	2:1:1918:C:C6	2.56	0.40
2:1:2345:A:C6	2:1:2346:C:N4	2.89	0.40
2:1:2590:A:H2'	2:1:2591:A:C8	2.56	0.40
2:1:2771:U:OP1	46:q:77:CYS:HB3	2.21	0.40
2:1:2826:U:H5'	2:1:2827:U:OP2	2.22	0.40
2:1:3006:A:H2'	2:1:3007:U:O4'	2.22	0.40
2:1:3192:U:H2'	2:1:3193:C:H6	1.83	0.40
4:3:83:C:H4'	4:3:84:C:H5'	2.03	0.40
7:B:161:LEU:HD12	7:B:179:ALA:O	2.21	0.40
7:B:211:GLN:HG3	7:B:283:TYR:O	2.22	0.40
10:E:82:ARG:HH12	37:f:106:ASN:HD22	1.68	0.40
11:F:30:ARG:O	11:F:34:LYS:HG2	2.21	0.40
12:G:150:LEU:HB3	12:G:200:LEU:HD13	2.03	0.40
17:L:20:GLU:HG2	17:L:21:ARG:HD3	2.04	0.40
18:M:38:ILE:HG12	24:S:148:LEU:HD23	2.04	0.40
19:N:15:GLN:OE1	40:i:52:PRO:HD2	2.21	0.40
21:P:56:ARG:HA	21:P:72:GLN:OE1	2.22	0.40
24:S:40:ARG:HH11	24:S:40:ARG:HA	1.85	0.40
25:T:119:ALA:O	25:T:122:GLN:NE2	2.54	0.40
27:V:65:GLY:H	27:V:70:ARG:NH2	2.19	0.40
28:W:33:ALA:HB1	28:W:64:LYS:NZ	2.35	0.40
33:b:5:TRP:CD1	33:b:69:PRO:HG3	2.55	0.40
1:t:152:LEU:HD22	1:t:158:ILE:HD11	2.03	0.40
1:t:282:ILE:HB	1:t:386:ILE:HG23	2.04	0.40
1:t:618:ILE:HD11	1:t:640:LEU:HD21	2.03	0.40
1:w:310:ILE:HD12	1:w:344:ILE:HG12	2.03	0.40
1:w:442:ILE:HD13	1:w:445:ILE:HD12	2.03	0.40
1:x:308:LEU:HD12	1:x:342:ILE:HG12	2.04	0.40
2:1:120:G:H1	12:G:124:ASP:CG	2.29	0.40
2:1:314:U:H2'	2:1:315:C:C6	2.56	0.40
2:1:394:G:H21	2:1:399:A:H62	1.67	0.40
2:1:580:C:H2'	2:1:581:U:C6	2.56	0.40
2:1:657:A:H2'	2:1:658:G:C8	2.53	0.40
2:1:725:G:H2'	2:1:726:G:C8	2.56	0.40
2:1:965:A:H2'	2:1:966:U:C6	2.57	0.40
2:1:1290:A:H2'	2:1:1291:A:H8	1.86	0.40
2:1:1315:U:O4	20:O:49:ARG:NH2	2.47	0.40
2:1:1595:U:O2'	2:1:1596:C:H5''	2.21	0.40
2:1:1896:A:H2'	2:1:1896:A:N3	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2187:G:H4'	2:1:2188:A:OP1	2.21	0.40
2:1:2704:A:H5''	9:D:31:TYR:CE2	2.56	0.40
2:1:2834:G:N1	2:1:2854:U:N3	2.70	0.40
2:1:3220:G:H2'	2:1:3221:C:C6	2.56	0.40
2:1:3338:C:H2'	2:1:3339:A:C8	2.56	0.40
4:3:23:U:P	30:Y:16:ARG:HH21	2.43	0.40
5:4:366:GLN:HA	33:b:573:LEU:HD21	2.04	0.40
5:4:372:LEU:O	5:4:376:ARG:HG3	2.21	0.40
8:C:23:PRO:HD3	8:C:255:PHE:CE2	2.56	0.40
9:D:30:TYR:HA	9:D:33:ARG:HB3	2.03	0.40
11:F:60:ARG:HH12	11:F:63:ILE:HB	1.86	0.40
13:H:89:LYS:HD2	13:H:183:HIS:HE1	1.85	0.40
17:L:28:GLN:HE21	19:N:200:TRP:HE3	1.69	0.40
20:O:76:PRO:O	20:O:79:ILE:HG22	2.22	0.40
22:Q:28:LEU:HA	22:Q:31:LYS:HZ2	1.87	0.40
25:T:14:MET:HG3	25:T:15:PHE:N	2.37	0.40
27:V:120:LYS:NZ	50:y:54:ALA:HB1	2.37	0.40
28:W:57:ARG:HH12	28:W:63:SER:C	2.30	0.40
28:W:81:ARG:HH12	28:W:84:GLU:CD	2.29	0.40
28:W:167:ASN:ND2	47:r:22:GLU:OE2	2.54	0.40
30:Y:115:ARG:HH21	30:Y:118:LEU:HD13	1.86	0.40
31:Z:6:LYS:HB2	31:Z:6:LYS:HE3	1.84	0.40
41:j:28:HIS:CD2	41:j:31:LYS:HZ3	2.40	0.40
1:m:36:THR:HG22	1:m:114:LEU:HD11	2.03	0.40
1:m:54:HIS:CD2	1:m:93:VAL:HA	2.56	0.40
45:p:44:LYS:NZ	45:p:59:CYS:H	2.20	0.40
1:t:300:ALA:HB2	1:t:343:PHE:HE2	1.86	0.40
1:t:311:ASN:HB3	1:w:372:THR:HB	2.03	0.40
1:t:668:ALA:HA	1:t:671:ARG:HG2	2.04	0.40
49:v:311:ASP:OD1	49:v:312:VAL:N	2.45	0.40
49:v:399:LYS:HG3	49:v:400:LYS:H	1.86	0.40
50:y:118:HIS:CD2	50:y:119:PRO:HD2	2.57	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

entries.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	Aa	428/780 (55%)	404 (94%)	23 (5%)	1 (0%)	43	73
1	m	726/780 (93%)	707 (97%)	17 (2%)	2 (0%)	36	67
1	n	726/780 (93%)	703 (97%)	23 (3%)	0	100	100
1	t	727/780 (93%)	706 (97%)	21 (3%)	0	100	100
1	w	730/780 (94%)	702 (96%)	28 (4%)	0	100	100
1	x	730/780 (94%)	709 (97%)	21 (3%)	0	100	100
5	4	558/593 (94%)	502 (90%)	56 (10%)	0	100	100
6	A	243/254 (96%)	226 (93%)	17 (7%)	0	100	100
7	B	384/387 (99%)	345 (90%)	39 (10%)	0	100	100
8	C	359/362 (99%)	329 (92%)	30 (8%)	0	100	100
9	D	269/297 (91%)	257 (96%)	12 (4%)	0	100	100
10	E	173/176 (98%)	159 (92%)	14 (8%)	0	100	100
11	F	220/244 (90%)	211 (96%)	9 (4%)	0	100	100
12	G	228/256 (89%)	215 (94%)	13 (6%)	0	100	100
13	H	186/191 (97%)	180 (97%)	6 (3%)	0	100	100
14	I	122/166 (74%)	114 (93%)	8 (7%)	0	100	100
15	J	162/174 (93%)	150 (93%)	12 (7%)	0	100	100
16	K	146/149 (98%)	132 (90%)	14 (10%)	0	100	100
17	L	191/199 (96%)	176 (92%)	15 (8%)	0	100	100
18	M	135/138 (98%)	130 (96%)	5 (4%)	0	100	100
19	N	201/204 (98%)	189 (94%)	12 (6%)	0	100	100
20	O	187/199 (94%)	183 (98%)	4 (2%)	0	100	100
21	P	181/184 (98%)	170 (94%)	11 (6%)	0	100	100
22	Q	152/186 (82%)	145 (95%)	7 (5%)	0	100	100
23	R	152/189 (80%)	146 (96%)	6 (4%)	0	100	100
24	S	168/172 (98%)	154 (92%)	14 (8%)	0	100	100
25	T	157/160 (98%)	154 (98%)	3 (2%)	0	100	100
26	U	102/121 (84%)	91 (89%)	11 (11%)	0	100	100
27	V	134/137 (98%)	128 (96%)	6 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
28	W	223/236 (94%)	209 (94%)	14 (6%)	0	100	100
29	X	118/142 (83%)	114 (97%)	4 (3%)	0	100	100
30	Y	124/127 (98%)	119 (96%)	5 (4%)	0	100	100
31	Z	133/136 (98%)	120 (90%)	13 (10%)	0	100	100
32	a	156/165 (94%)	153 (98%)	3 (2%)	0	100	100
33	b	618/647 (96%)	561 (91%)	57 (9%)	0	100	100
34	c	95/105 (90%)	94 (99%)	1 (1%)	0	100	100
35	d	105/113 (93%)	98 (93%)	7 (7%)	0	100	100
36	e	126/130 (97%)	120 (95%)	6 (5%)	0	100	100
37	f	104/107 (97%)	96 (92%)	8 (8%)	0	100	100
38	g	110/121 (91%)	105 (96%)	5 (4%)	0	100	100
39	h	117/120 (98%)	113 (97%)	4 (3%)	0	100	100
40	i	94/100 (94%)	92 (98%)	2 (2%)	0	100	100
41	j	83/88 (94%)	80 (96%)	3 (4%)	0	100	100
42	k	75/78 (96%)	70 (93%)	5 (7%)	0	100	100
43	l	48/51 (94%)	44 (92%)	4 (8%)	0	100	100
44	o	52/59 (88%)	48 (92%)	4 (8%)	0	100	100
45	p	89/92 (97%)	85 (96%)	4 (4%)	0	100	100
46	q	103/106 (97%)	88 (85%)	15 (15%)	0	100	100
47	r	53/261 (20%)	51 (96%)	2 (4%)	0	100	100
48	u	147/199 (74%)	140 (95%)	7 (5%)	0	100	100
49	v	241/518 (46%)	225 (93%)	16 (7%)	0	100	100
50	y	226/245 (92%)	208 (92%)	18 (8%)	0	100	100
51	z	53/106 (50%)	53 (100%)	0	0	100	100
All	All	12170/13870 (88%)	11503 (94%)	664 (6%)	3 (0%)	100	100

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	m	563	LYS
1	Aa	702	THR
1	m	707	VAL

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	Aa	614/657 (94%)	611 (100%)	3 (0%)	81	81
1	m	615/657 (94%)	611 (99%)	4 (1%)	76	77
1	n	615/657 (94%)	610 (99%)	5 (1%)	73	76
1	t	616/657 (94%)	615 (100%)	1 (0%)	87	87
1	w	619/657 (94%)	610 (98%)	9 (2%)	57	69
1	x	619/657 (94%)	617 (100%)	2 (0%)	86	84
5	4	491/520 (94%)	467 (95%)	24 (5%)	22	47
6	A	188/196 (96%)	182 (97%)	6 (3%)	34	56
7	B	322/323 (100%)	297 (92%)	25 (8%)	11	36
8	C	288/289 (100%)	276 (96%)	12 (4%)	26	50
9	D	230/245 (94%)	224 (97%)	6 (3%)	40	60
10	E	152/153 (99%)	145 (95%)	7 (5%)	24	48
11	F	186/205 (91%)	180 (97%)	6 (3%)	34	56
12	G	189/208 (91%)	179 (95%)	10 (5%)	20	45
13	H	168/171 (98%)	159 (95%)	9 (5%)	20	45
14	I	110/141 (78%)	105 (96%)	5 (4%)	24	48
15	J	142/150 (95%)	137 (96%)	5 (4%)	32	54
16	K	118/119 (99%)	114 (97%)	4 (3%)	32	55
17	L	154/159 (97%)	144 (94%)	10 (6%)	15	42
18	M	108/109 (99%)	103 (95%)	5 (5%)	24	48
19	N	175/176 (99%)	166 (95%)	9 (5%)	21	46
20	O	160/162 (99%)	151 (94%)	9 (6%)	19	45
21	P	145/146 (99%)	137 (94%)	8 (6%)	19	45
22	Q	126/151 (83%)	121 (96%)	5 (4%)	28	52
23	R	127/154 (82%)	123 (97%)	4 (3%)	35	57
24	S	154/156 (99%)	141 (92%)	13 (8%)	10	34

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
25	T	136/137 (99%)	128 (94%)	8 (6%)	18	43
26	U	91/107 (85%)	83 (91%)	8 (9%)	9	33
27	V	104/105 (99%)	96 (92%)	8 (8%)	12	37
28	W	202/213 (95%)	193 (96%)	9 (4%)	24	48
29	X	104/118 (88%)	98 (94%)	6 (6%)	18	44
30	Y	109/110 (99%)	103 (94%)	6 (6%)	19	45
31	Z	115/116 (99%)	103 (90%)	12 (10%)	7	26
32	a	129/136 (95%)	125 (97%)	4 (3%)	35	57
33	b	556/573 (97%)	533 (96%)	23 (4%)	27	51
34	c	81/88 (92%)	80 (99%)	1 (1%)	63	72
35	d	94/97 (97%)	87 (93%)	7 (7%)	13	38
36	e	110/111 (99%)	104 (94%)	6 (6%)	19	45
37	f	90/91 (99%)	81 (90%)	9 (10%)	7	28
38	g	95/103 (92%)	90 (95%)	5 (5%)	20	45
39	h	104/105 (99%)	98 (94%)	6 (6%)	18	44
40	i	78/82 (95%)	76 (97%)	2 (3%)	40	60
41	j	69/71 (97%)	69 (100%)	0	100	100
42	k	68/69 (99%)	65 (96%)	3 (4%)	25	49
43	l	45/46 (98%)	44 (98%)	1 (2%)	45	63
44	o	43/47 (92%)	42 (98%)	1 (2%)	44	63
45	p	71/72 (99%)	68 (96%)	3 (4%)	26	50
46	q	90/91 (99%)	85 (94%)	5 (6%)	19	45
47	r	48/229 (21%)	48 (100%)	0	100	100
48	u	132/180 (73%)	128 (97%)	4 (3%)	36	57
49	v	220/467 (47%)	214 (97%)	6 (3%)	39	59
50	y	195/211 (92%)	182 (93%)	13 (7%)	15	41
51	z	48/95 (50%)	45 (94%)	3 (6%)	16	42
All	All	10658/11745 (91%)	10293 (97%)	365 (3%)	33	55

All (365) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	Aa	619	ASP

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Mol	Chain	Res	Type
1	Aa	716	THR
1	Aa	730	GLU
5	4	59	LEU
5	4	89	ILE
5	4	108	ILE
5	4	133	LEU
5	4	146	HIS
5	4	154	VAL
5	4	160	ILE
5	4	177	LEU
5	4	198	LEU
5	4	223	ILE
5	4	238	VAL
5	4	239	VAL
5	4	251	LEU
5	4	264	TYR
5	4	267	VAL
5	4	268	VAL
5	4	319	ILE
5	4	322	LYS
5	4	431	LEU
5	4	437	ILE
5	4	443	VAL
5	4	505	ASN
5	4	551	GLN
5	4	559	LEU
6	A	45	VAL
6	A	71	LEU
6	A	80	GLU
6	A	82	VAL
6	A	100	ASN
6	A	115	ASN
7	B	46	PHE
7	B	68	HIS
7	B	85	VAL
7	B	86	VAL
7	B	89	VAL
7	B	100	ARG
7	B	102	LEU
7	B	105	VAL
7	B	108	GLU
7	B	136	LYS

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Mol	Chain	Res	Type
7	B	146	ARG
7	B	160	VAL
7	B	163	HIS
7	B	278	ILE
7	B	304	THR
7	B	312	VAL
7	B	319	ASN
7	B	324	VAL
7	B	328	ILE
7	B	338	LEU
7	B	349	LYS
7	B	354	VAL
7	B	359	ILE
7	B	360	ASP
7	B	377	HIS
8	C	11	LEU
8	C	31	ARG
8	C	108	LYS
8	C	117	GLU
8	C	148	ILE
8	C	216	VAL
8	C	222	VAL
8	C	238	LEU
8	C	255	PHE
8	C	279	HIS
8	C	313	LEU
8	C	328	ASN
9	D	17	GLN
9	D	173	VAL
9	D	178	ASN
9	D	198	TYR
9	D	262	LYS
9	D	282	ARG
10	E	41	ILE
10	E	80	ASN
10	E	84	VAL
10	E	89	THR
10	E	101	PHE
10	E	128	LYS
10	E	130	ILE
11	F	61	ASN
11	F	75	TYR

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Mol	Chain	Res	Type
11	F	117	VAL
11	F	120	THR
11	F	147	LEU
11	F	191	VAL
12	G	30	THR
12	G	50	VAL
12	G	74	THR
12	G	93	LEU
12	G	97	TYR
12	G	133	LYS
12	G	150	LEU
12	G	157	VAL
12	G	194	THR
12	G	197	VAL
13	H	53	ILE
13	H	62	ARG
13	H	69	ARG
13	H	93	VAL
13	H	104	VAL
13	H	114	VAL
13	H	142	ASP
13	H	152	GLU
13	H	183	HIS
14	I	19	ASP
14	I	34	LEU
14	I	37	GLN
14	I	58	MET
14	I	60	THR
15	J	80	LEU
15	J	109	HIS
15	J	126	ASP
15	J	148	VAL
15	J	156	LYS
16	K	11	HIS
16	K	121	VAL
16	K	123	VAL
16	K	131	SER
17	L	6	ASN
17	L	9	ILE
17	L	37	ASN
17	L	57	VAL
17	L	58	VAL

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Mol	Chain	Res	Type
17	L	64	LYS
17	L	116	LEU
17	L	174	ARG
17	L	178	LYS
17	L	188	ARG
18	M	44	VAL
18	M	60	LEU
18	M	77	ARG
18	M	112	LEU
18	M	118	PHE
19	N	18	VAL
19	N	44	ARG
19	N	62	TYR
19	N	75	VAL
19	N	85	THR
19	N	135	VAL
19	N	159	ARG
19	N	167	THR
19	N	178	HIS
20	O	16	VAL
20	O	25	LYS
20	O	96	LYS
20	O	99	LEU
20	O	120	VAL
20	O	129	LEU
20	O	136	THR
20	O	153	VAL
20	O	194	LEU
21	P	22	LEU
21	P	28	ASN
21	P	52	LEU
21	P	64	ASN
21	P	114	VAL
21	P	119	VAL
21	P	139	TYR
21	P	165	VAL
22	Q	23	ASN
22	Q	52	LEU
22	Q	83	VAL
22	Q	89	ASP
22	Q	125	ASP
23	R	39	ASN

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Mol	Chain	Res	Type
23	R	51	VAL
23	R	99	LEU
23	R	108	LYS
24	S	9	VAL
24	S	14	LEU
24	S	27	MET
24	S	30	PHE
24	S	59	VAL
24	S	61	ILE
24	S	88	HIS
24	S	100	VAL
24	S	107	TYR
24	S	118	PHE
24	S	149	LYS
24	S	167	ARG
24	S	170	THR
25	T	14	MET
25	T	21	LYS
25	T	74	VAL
25	T	91	LEU
25	T	98	HIS
25	T	104	GLU
25	T	124	VAL
25	T	154	VAL
26	U	19	VAL
26	U	29	ASP
26	U	56	VAL
26	U	63	VAL
26	U	85	LYS
26	U	94	ARG
26	U	96	VAL
26	U	100	THR
27	V	25	CYS
27	V	37	ILE
27	V	54	LEU
27	V	58	VAL
27	V	59	MET
27	V	69	LEU
27	V	78	VAL
27	V	79	VAL
28	W	84	GLU
28	W	95	LEU

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Mol	Chain	Res	Type
28	W	104	PHE
28	W	136	THR
28	W	137	ILE
28	W	154	ASP
28	W	171	ILE
28	W	188	VAL
28	W	220	TYR
29	X	57	LEU
29	X	60	TYR
29	X	113	LEU
29	X	114	VAL
29	X	120	LYS
29	X	141	TYR
30	Y	17	LYS
30	Y	26	GLN
30	Y	31	LEU
30	Y	58	VAL
30	Y	104	LEU
30	Y	109	LEU
31	Z	4	PHE
31	Z	12	VAL
31	Z	14	VAL
31	Z	38	PHE
31	Z	43	VAL
31	Z	68	ILE
31	Z	74	VAL
31	Z	89	VAL
31	Z	95	VAL
31	Z	100	THR
31	Z	115	LYS
31	Z	122	HIS
32	a	15	LEU
32	a	90	ARG
32	a	143	VAL
32	a	160	ILE
33	b	61	PHE
33	b	74	VAL
33	b	81	LEU
33	b	92	LYS
33	b	112	TYR
33	b	143	LEU
33	b	156	HIS

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Mol	Chain	Res	Type
33	b	164	ASP
33	b	169	THR
33	b	172	ILE
33	b	180	LYS
33	b	188	THR
33	b	214	LEU
33	b	328	VAL
33	b	339	LEU
33	b	395	ARG
33	b	431	ILE
33	b	440	ASN
33	b	513	LEU
33	b	518	ILE
33	b	523	LYS
33	b	569	ASP
33	b	630	LEU
34	c	27	TYR
35	d	14	ILE
35	d	17	HIS
35	d	37	LYS
35	d	49	VAL
35	d	93	VAL
35	d	96	VAL
35	d	106	THR
36	e	26	HIS
36	e	55	ILE
36	e	98	HIS
36	e	109	LEU
36	e	115	LEU
36	e	119	VAL
37	f	5	HIS
37	f	7	LEU
37	f	9	VAL
37	f	16	TYR
37	f	21	ARG
37	f	22	VAL
37	f	23	ASN
37	f	52	VAL
37	f	81	VAL
38	g	30	LEU
38	g	47	CYS
38	g	51	LEU

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Mol	Chain	Res	Type
38	g	58	ARG
38	g	81	CYS
39	h	17	LEU
39	h	24	LEU
39	h	28	LEU
39	h	44	ILE
39	h	55	LEU
39	h	85	THR
40	i	30	LYS
40	i	61	ILE
42	k	55	VAL
42	k	65	LEU
42	k	73	LEU
43	l	42	ARG
1	m	98	LEU
1	m	143	MET
1	m	251	ASP
1	m	750	PHE
1	n	283	LEU
1	n	395	VAL
1	n	479	ILE
1	n	587	PHE
1	n	669	LEU
44	o	36	ASP
45	p	11	THR
45	p	44	LYS
45	p	47	VAL
46	q	50	PHE
46	q	57	VAL
46	q	65	THR
46	q	79	THR
46	q	100	LYS
1	t	747	LEU
48	u	6	CYS
48	u	9	CYS
48	u	22	VAL
48	u	86	VAL
49	v	161	ILE
49	v	172	LEU
49	v	332	ASN
49	v	335	LEU
49	v	379	TYR

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Mol	Chain	Res	Type
49	v	399	LYS
1	w	30	LEU
1	w	125	TYR
1	w	129	VAL
1	w	162	MET
1	w	179	VAL
1	w	229	GLU
1	w	298	VAL
1	w	389	THR
1	w	429	ARG
1	x	294	MET
1	x	503	MET
50	y	18	LYS
50	y	34	PHE
50	y	66	ASN
50	y	77	THR
50	y	92	VAL
50	y	117	VAL
50	y	121	ILE
50	y	128	LEU
50	y	165	THR
50	y	181	LEU
50	y	198	VAL
50	y	205	VAL
50	y	210	THR
51	z	16	VAL
51	z	35	ASP
51	z	48	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (150) such sidechains are listed below:

Mol	Chain	Res	Type
1	Aa	533	GLN
1	Aa	678	HIS
1	Aa	729	GLN
5	4	113	ASN
5	4	171	GLN
5	4	188	HIS
5	4	221	GLN
5	4	235	ASN
5	4	274	GLN
5	4	348	HIS

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Mol	Chain	Res	Type
5	4	366	GLN
5	4	490	ASN
6	A	86	GLN
6	A	100	ASN
6	A	132	ASN
7	B	13	HIS
7	B	165	GLN
7	B	173	GLN
7	B	177	HIS
7	B	198	HIS
7	B	319	ASN
8	C	36	HIS
8	C	45	ASN
8	C	48	GLN
8	C	92	ASN
8	C	296	GLN
8	C	311	HIS
8	C	320	ASN
8	C	322	GLN
9	D	32	GLN
9	D	90	HIS
10	E	4	GLN
10	E	28	GLN
11	F	52	GLN
11	F	93	ASN
12	G	33	ASN
12	G	232	HIS
12	G	240	ASN
13	H	40	HIS
13	H	58	HIS
13	H	96	HIS
13	H	149	ASN
13	H	183	HIS
15	J	43	GLN
15	J	47	GLN
15	J	101	ASN
15	J	150	ASN
15	J	165	GLN
16	K	38	GLN
16	K	39	HIS
16	K	64	GLN
17	L	19	GLN

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Mol	Chain	Res	Type
17	L	137	GLN
19	N	57	GLN
19	N	122	ASN
19	N	138	GLN
19	N	156	HIS
20	O	182	ASN
21	P	101	ASN
21	P	116	HIS
21	P	179	GLN
22	Q	9	GLN
23	R	34	GLN
23	R	39	ASN
23	R	118	HIS
24	S	65	ASN
24	S	74	ASN
24	S	89	ASN
24	S	108	GLN
25	T	22	HIS
25	T	58	GLN
25	T	134	GLN
26	U	25	ASN
27	V	33	ASN
28	W	44	HIS
28	W	199	GLN
28	W	223	ASN
28	W	232	ASN
29	X	91	ASN
32	a	61	GLN
32	a	65	GLN
32	a	156	ASN
33	b	26	GLN
33	b	72	ASN
33	b	75	HIS
33	b	78	HIS
33	b	124	GLN
33	b	156	HIS
33	b	195	GLN
33	b	333	ASN
33	b	406	ASN
33	b	534	HIS
33	b	540	HIS
33	b	546	GLN

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Mol	Chain	Res	Type
34	c	75	ASN
35	d	57	GLN
35	d	87	ASN
36	e	13	HIS
36	e	78	ASN
36	e	104	ASN
36	e	121	ASN
37	f	75	HIS
37	f	77	ASN
37	f	106	ASN
38	g	61	GLN
39	h	34	GLN
39	h	59	ASN
39	h	108	GLN
39	h	113	GLN
41	j	28	HIS
41	j	76	ASN
41	j	79	GLN
42	k	67	GLN
43	l	38	ASN
1	m	231	GLN
1	m	267	GLN
1	m	304	ASN
1	m	338	GLN
1	m	729	GLN
1	n	56	ASN
1	n	267	GLN
1	n	470	GLN
1	n	749	HIS
44	o	43	HIS
44	o	48	HIS
45	p	34	HIS
46	q	82	GLN
1	t	56	ASN
1	t	149	GLN
1	t	635	HIS
1	t	642	ASN
48	u	115	ASN
48	u	149	GLN
49	v	163	GLN
49	v	281	ASN
1	w	91	HIS

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Mol	Chain	Res	Type
1	w	120	GLN
1	w	237	ASN
1	w	267	GLN
1	w	311	ASN
1	w	577	ASN
1	x	56	ASN
1	x	237	ASN
1	x	306	HIS
1	x	678	HIS
50	y	11	ASN
50	y	118	HIS
50	y	145	ASN
50	y	170	GLN
50	y	200	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	1	3342/3396 (98%)	870 (26%)	38 (1%)
3	2	120/121 (99%)	20 (16%)	0
4	3	156/158 (98%)	31 (19%)	0
All	All	3618/3675 (98%)	921 (25%)	38 (1%)

All (921) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	1	4	U
2	1	14	U
2	1	16	A
2	1	22	G
2	1	23	A
2	1	24	G
2	1	25	U
2	1	26	A
2	1	28	C
2	1	30	G
2	1	40	A
2	1	43	A
2	1	46	U
2	1	47	C
2	1	49	A

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Mol	Chain	Res	Type
2	1	57	A
2	1	59	G
2	1	60	A
2	1	65	A
2	1	66	A
2	1	72	C
2	1	74	G
2	1	75	G
2	1	77	A
2	1	92	G
2	1	94	G
2	1	110	G
2	1	111	C
2	1	122	A
2	1	135	C
2	1	136	G
2	1	140	C
2	1	142	C
2	1	150	A
2	1	152	U
2	1	156	G
2	1	157	A
2	1	165	A
2	1	170	G
2	1	172	G
2	1	177	U
2	1	182	U
2	1	184	U
2	1	190	U
2	1	191	U
2	1	192	C
2	1	195	U
2	1	196	G
2	1	200	C
2	1	202	G
2	1	206	G
2	1	210	U
2	1	211	A
2	1	212	G
2	1	213	A
2	1	218	G
2	1	219	A

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Mol	Chain	Res	Type
2	1	220	G
2	1	221	A
2	1	223	U
2	1	229	G
2	1	231	G
2	1	234	G
2	1	238	A
2	1	239	G
2	1	240	U
2	1	242	C
2	1	243	G
2	1	246	U
2	1	247	C
2	1	249	U
2	1	251	G
2	1	253	A
2	1	269	G
2	1	270	U
2	1	279	U
2	1	284	A
2	1	295	A
2	1	305	U
2	1	323	A
2	1	324	A
2	1	329	U
2	1	339	C
2	1	346	C
2	1	353	G
2	1	372	A
2	1	376	G
2	1	398	A
2	1	401	U
2	1	402	A
2	1	403	C
2	1	406	G
2	1	407	A
2	1	420	G
2	1	421	G
2	1	422	A
2	1	424	G
2	1	439	C
2	1	441	U

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Mol	Chain	Res	Type
2	1	442	G
2	1	446	U
2	1	448	U
2	1	449	U
2	1	450	G
2	1	451	U
2	1	452	G
2	1	482	C
2	1	483	G
2	1	484	C
2	1	485	A
2	1	487	U
2	1	488	U
2	1	492	U
2	1	493	G
2	1	494	G
2	1	495	G
2	1	515	C
2	1	521	A
2	1	523	A
2	1	529	A
2	1	533	A
2	1	535	G
2	1	541	U
2	1	546	C
2	1	547	G
2	1	551	A
2	1	552	G
2	1	555	U
2	1	557	A
2	1	559	A
2	1	560	G
2	1	567	G
2	1	573	C
2	1	579	G
2	1	589	A
2	1	590	G
2	1	592	A
2	1	593	C
2	1	594	U
2	1	597	G
2	1	599	C

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Mol	Chain	Res	Type
2	1	600	G
2	1	601	U
2	1	603	A
2	1	607	A
2	1	611	A
2	1	612	U
2	1	620	U
2	1	621	A
2	1	636	C
2	1	645	A
2	1	646	A
2	1	649	A
2	1	667	C
2	1	677	A
2	1	681	U
2	1	683	U
2	1	689	U
2	1	690	A
2	1	691	A
2	1	705	A
2	1	709	A
2	1	717	C
2	1	719	U
2	1	720	A
2	1	727	G
2	1	735	A
2	1	737	G
2	1	761	A
2	1	765	C
2	1	766	U
2	1	767	U
2	1	768	C
2	1	776	U
2	1	777	U
2	1	781	G
2	1	784	A
2	1	785	G
2	1	786	A
2	1	801	A
2	1	806	A
2	1	815	G
2	1	817	A

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Mol	Chain	Res	Type
2	1	830	A
2	1	851	C
2	1	857	G
2	1	861	C
2	1	874	U
2	1	875	G
2	1	876	A
2	1	879	U
2	1	880	G
2	1	884	A
2	1	891	G
2	1	907	G
2	1	908	G
2	1	914	A
2	1	916	G
2	1	917	A
2	1	921	A
2	1	924	G
2	1	925	A
2	1	937	G
2	1	941	G
2	1	943	U
2	1	944	C
2	1	959	C
2	1	960	U
2	1	961	C
2	1	964	G
2	1	974	G
2	1	978	G
2	1	980	A
2	1	998	A
2	1	999	G
2	1	1000	C
2	1	1001	G
2	1	1002	A
2	1	1008	U
2	1	1009	A
2	1	1010	G
2	1	1011	A
2	1	1012	G
2	1	1013	G
2	1	1014	U

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Mol	Chain	Res	Type
2	1	1015	U
2	1	1016	C
2	1	1017	C
2	1	1018	G
2	1	1019	G
2	1	1020	G
2	1	1022	U
2	1	1023	C
2	1	1024	G
2	1	1026	A
2	1	1028	U
2	1	1029	G
2	1	1030	A
2	1	1032	C
2	1	1034	U
2	1	1036	A
2	1	1037	C
2	1	1038	C
2	1	1039	U
2	1	1047	A
2	1	1049	C
2	1	1051	U
2	1	1055	A
2	1	1063	G
2	1	1064	A
2	1	1065	A
2	1	1072	G
2	1	1081	U
2	1	1082	U
2	1	1087	G
2	1	1093	A
2	1	1096	U
2	1	1097	G
2	1	1098	A
2	1	1103	A
2	1	1104	G
2	1	1111	U
2	1	1117	G
2	1	1124	U
2	1	1143	A
2	1	1151	U
2	1	1153	A

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Mol	Chain	Res	Type
2	1	1155	C
2	1	1159	A
2	1	1178	G
2	1	1180	A
2	1	1181	U
2	1	1186	G
2	1	1192	C
2	1	1193	A
2	1	1195	A
2	1	1201	C
2	1	1206	G
2	1	1208	U
2	1	1209	G
2	1	1220	U
2	1	1222	G
2	1	1231	A
2	1	1232	C
2	1	1235	U
2	1	1236	G
2	1	1238	C
2	1	1239	C
2	1	1241	U
2	1	1243	G
2	1	1244	A
2	1	1245	A
2	1	1246	G
2	1	1248	C
2	1	1249	G
2	1	1252	A
2	1	1253	U
2	1	1254	C
2	1	1255	C
2	1	1257	C
2	1	1259	A
2	1	1260	A
2	1	1262	G
2	1	1263	A
2	1	1264	G
2	1	1265	U
2	1	1270	A
2	1	1272	C
2	1	1278	A

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Mol	Chain	Res	Type
2	1	1279	C
2	1	1283	C
2	1	1286	A
2	1	1287	A
2	1	1295	G
2	1	1303	A
2	1	1307	G
2	1	1309	U
2	1	1315	U
2	1	1330	A
2	1	1345	G
2	1	1348	U
2	1	1349	G
2	1	1351	U
2	1	1354	G
2	1	1355	A
2	1	1356	U
2	1	1357	G
2	1	1362	G
2	1	1386	A
2	1	1399	A
2	1	1400	G
2	1	1417	G
2	1	1419	A
2	1	1430	U
2	1	1432	C
2	1	1434	G
2	1	1437	C
2	1	1446	A
2	1	1455	U
2	1	1466	G
2	1	1481	A
2	1	1483	G
2	1	1487	G
2	1	1495	U
2	1	1496	C
2	1	1500	G
2	1	1508	C
2	1	1510	G
2	1	1511	U
2	1	1523	U
2	1	1536	G

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Mol	Chain	Res	Type
2	1	1539	A
2	1	1556	C
2	1	1557	A
2	1	1562	C
2	1	1563	C
2	1	1564	U
2	1	1566	A
2	1	1567	U
2	1	1568	U
2	1	1569	U
2	1	1570	U
2	1	1571	A
2	1	1574	C
2	1	1575	A
2	1	1576	G
2	1	1577	G
2	1	1579	C
2	1	1580	A
2	1	1583	A
2	1	1588	A
2	1	1589	A
2	1	1593	A
2	1	1596	C
2	1	1599	G
2	1	1603	A
2	1	1605	A
2	1	1606	U
2	1	1607	U
2	1	1619	A
2	1	1620	U
2	1	1621	A
2	1	1629	U
2	1	1631	C
2	1	1638	A
2	1	1642	A
2	1	1643	A
2	1	1645	U
2	1	1657	C
2	1	1677	G
2	1	1681	U
2	1	1683	A
2	1	1688	U

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Mol	Chain	Res	Type
2	1	1694	U
2	1	1703	U
2	1	1705	U
2	1	1716	U
2	1	1717	U
2	1	1724	U
2	1	1725	C
2	1	1730	G
2	1	1750	A
2	1	1751	G
2	1	1760	A
2	1	1763	U
2	1	1765	U
2	1	1766	G
2	1	1769	G
2	1	1770	G
2	1	1773	C
2	1	1775	G
2	1	1780	G
2	1	1792	C
2	1	1796	G
2	1	1797	A
2	1	1808	G
2	1	1813	A
2	1	1814	A
2	1	1816	A
2	1	1817	G
2	1	1819	U
2	1	1820	U
2	1	1821	U
2	1	1839	A
2	1	1841	A
2	1	1842	A
2	1	1849	C
2	1	1850	A
2	1	1880	U
2	1	1884	A
2	1	1892	G
2	1	1893	A
2	1	1900	A
2	1	1903	U
2	1	1904	C

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Mol	Chain	Res	Type
2	1	1906	G
2	1	1907	C
2	1	1908	A
2	1	1909	A
2	1	1910	A
2	1	1926	C
2	1	1954	G
2	1	1955	U
2	1	1956	A
2	1	1957	G
2	1	1958	U
2	1	1962	G
2	1	1963	G
2	1	1964	C
2	1	1967	U
2	1	1969	G
2	1	1971	C
2	1	1972	A
2	1	1977	C
2	1	1991	G
2	1	1995	A
2	1	1997	U
2	1	2002	G
2	1	2003	G
2	1	2008	G
2	1	2010	U
2	1	2011	U
2	1	2012	G
2	1	2013	C
2	1	2014	U
2	1	2021	G
2	1	2022	G
2	1	2026	A
2	1	2028	U
2	1	2029	A
2	1	2047	A
2	1	2048	G
2	1	2050	C
2	1	2055	U
2	1	2056	U
2	1	2057	G
2	1	2058	G

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Mol	Chain	Res	Type
2	1	2060	A
2	1	2064	C
2	1	2066	C
2	1	2069	G
2	1	2072	G
2	1	2076	G
2	1	2077	U
2	1	2078	C
2	1	2079	G
2	1	2080	C
2	1	2083	G
2	1	2084	C
2	1	2085	U
2	1	2086	A
2	1	2087	C
2	1	2088	A
2	1	2101	C
2	1	2102	U
2	1	2107	A
2	1	2111	G
2	1	2112	U
2	1	2113	A
2	1	2116	G
2	1	2119	A
2	1	2121	G
2	1	2122	G
2	1	2131	A
2	1	2139	A
2	1	2142	A
2	1	2149	A
2	1	2158	A
2	1	2160	G
2	1	2170	U
2	1	2180	G
2	1	2192	C
2	1	2194	G
2	1	2197	C
2	1	2205	U
2	1	2208	A
2	1	2209	U
2	1	2210	G
2	1	2211	U

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Mol	Chain	Res	Type
2	1	2242	A
2	1	2250	G
2	1	2254	U
2	1	2260	U
2	1	2261	G
2	1	2262	A
2	1	2265	C
2	1	2267	C
2	1	2269	U
2	1	2270	A
2	1	2271	A
2	1	2273	G
2	1	2279	A
2	1	2282	U
2	1	2287	C
2	1	2293	C
2	1	2297	U
2	1	2298	U
2	1	2307	G
2	1	2310	U
2	1	2313	A
2	1	2315	G
2	1	2330	C
2	1	2332	A
2	1	2335	G
2	1	2336	U
2	1	2346	C
2	1	2347	U
2	1	2356	A
2	1	2364	G
2	1	2372	A
2	1	2373	A
2	1	2374	C
2	1	2375	G
2	1	2388	U
2	1	2393	G
2	1	2397	A
2	1	2399	A
2	1	2400	G
2	1	2402	A
2	1	2403	G
2	1	2404	A

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Mol	Chain	Res	Type
2	1	2410	U
2	1	2411	U
2	1	2415	C
2	1	2419	A
2	1	2435	G
2	1	2437	G
2	1	2439	A
2	1	2445	A
2	1	2450	G
2	1	2452	G
2	1	2453	U
2	1	2454	G
2	1	2458	A
2	1	2459	A
2	1	2460	U
2	1	2461	A
2	1	2462	A
2	1	2463	G
2	1	2468	A
2	1	2470	C
2	1	2472	U
2	1	2474	G
2	1	2478	C
2	1	2481	G
2	1	2485	A
2	1	2486	A
2	1	2487	U
2	1	2488	A
2	1	2489	C
2	1	2490	C
2	1	2491	A
2	1	2494	A
2	1	2495	C
2	1	2496	C
2	1	2498	U
2	1	2502	A
2	1	2503	G
2	1	2505	U
2	1	2506	U
2	1	2507	C
2	1	2508	U
2	1	2510	U

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Mol	Chain	Res	Type
2	1	2511	A
2	1	2514	U
2	1	2524	A
2	1	2526	C
2	1	2530	G
2	1	2532	U
2	1	2533	G
2	1	2536	A
2	1	2537	U
2	1	2540	A
2	1	2541	U
2	1	2542	U
2	1	2548	C
2	1	2549	G
2	1	2551	U
2	1	2552	C
2	1	2554	A
2	1	2555	G
2	1	2556	C
2	1	2557	A
2	1	2561	A
2	1	2562	A
2	1	2566	C
2	1	2569	A
2	1	2570	U
2	1	2571	U
2	1	2572	C
2	1	2573	G
2	1	2577	C
2	1	2585	G
2	1	2586	G
2	1	2593	A
2	1	2606	G
2	1	2607	G
2	1	2614	G
2	1	2629	U
2	1	2635	A
2	1	2636	A
2	1	2648	G
2	1	2649	A
2	1	2652	U
2	1	2656	A

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Mol	Chain	Res	Type
2	1	2672	G
2	1	2674	A
2	1	2677	G
2	1	2678	A
2	1	2679	A
2	1	2689	A
2	1	2691	A
2	1	2694	A
2	1	2696	A
2	1	2704	A
2	1	2706	G
2	1	2712	U
2	1	2714	G
2	1	2716	U
2	1	2726	C
2	1	2728	G
2	1	2729	U
2	1	2736	A
2	1	2740	A
2	1	2753	G
2	1	2762	A
2	1	2768	U
2	1	2769	A
2	1	2770	G
2	1	2771	U
2	1	2772	C
2	1	2773	C
2	1	2777	G
2	1	2778	G
2	1	2788	C
2	1	2790	A
2	1	2792	A
2	1	2796	G
2	1	2797	C
2	1	2798	C
2	1	2800	G
2	1	2801	A
2	1	2802	A
2	1	2803	A
2	1	2804	A
2	1	2810	C
2	1	2817	A

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Mol	Chain	Res	Type
2	1	2818	U
2	1	2819	A
2	1	2820	A
2	1	2821	C
2	1	2822	U
2	1	2824	G
2	1	2825	C
2	1	2826	U
2	1	2830	G
2	1	2831	G
2	1	2832	C
2	1	2834	G
2	1	2835	U
2	1	2836	C
2	1	2837	A
2	1	2839	G
2	1	2840	C
2	1	2841	G
2	1	2842	U
2	1	2843	U
2	1	2844	C
2	1	2845	A
2	1	2846	U
2	1	2849	C
2	1	2850	G
2	1	2853	A
2	1	2855	U
2	1	2856	G
2	1	2857	C
2	1	2859	U
2	1	2860	U
2	1	2863	G
2	1	2864	A
2	1	2867	C
2	1	2868	U
2	1	2869	U
2	1	2870	C
2	1	2871	G
2	1	2872	A
2	1	2876	C
2	1	2877	G
2	1	2878	G

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Mol	Chain	Res	Type
2	1	2883	U
2	1	2887	A
2	1	2898	G
2	1	2899	C
2	1	2900	A
2	1	2911	A
2	1	2912	G
2	1	2915	U
2	1	2916	U
2	1	2919	A
2	1	2921	U
2	1	2923	U
2	1	2924	U
2	1	2925	C
2	1	2926	A
2	1	2935	U
2	1	2936	A
2	1	2938	G
2	1	2941	A
2	1	2942	C
2	1	2943	G
2	1	2945	G
2	1	2946	A
2	1	2949	U
2	1	2950	G
2	1	2951	G
2	1	2952	G
2	1	2953	U
2	1	2954	U
2	1	2955	U
2	1	2966	G
2	1	2971	A
2	1	2979	U
2	1	2983	C
2	1	2994	A
2	1	2996	U
2	1	2997	G
2	1	3011	A
2	1	3012	A
2	1	3014	U
2	1	3021	A
2	1	3022	G

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Mol	Chain	Res	Type
2	1	3023	U
2	1	3028	G
2	1	3032	A
2	1	3046	A
2	1	3049	A
2	1	3050	U
2	1	3055	U
2	1	3059	G
2	1	3072	C
2	1	3077	A
2	1	3079	U
2	1	3080	G
2	1	3083	G
2	1	3086	A
2	1	3092	C
2	1	3093	C
2	1	3094	A
2	1	3099	C
2	1	3101	G
2	1	3104	U
2	1	3109	G
2	1	3113	A
2	1	3115	C
2	1	3122	A
2	1	3128	G
2	1	3129	A
2	1	3130	A
2	1	3131	U
2	1	3142	A
2	1	3143	C
2	1	3150	A
2	1	3152	U
2	1	3154	C
2	1	3155	U
2	1	3156	U
2	1	3157	U
2	1	3165	A
2	1	3166	C
2	1	3167	A
2	1	3168	A
2	1	3170	A
2	1	3171	U

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Mol	Chain	Res	Type
2	1	3172	A
2	1	3173	G
2	1	3175	U
2	1	3176	G
2	1	3178	A
2	1	3179	U
2	1	3181	C
2	1	3182	G
2	1	3187	A
2	1	3195	U
2	1	3207	U
2	1	3209	A
2	1	3212	C
2	1	3213	A
2	1	3214	U
2	1	3215	A
2	1	3217	C
2	1	3218	A
2	1	3219	G
2	1	3224	G
2	1	3229	G
2	1	3238	G
2	1	3244	A
2	1	3245	A
2	1	3247	G
2	1	3259	U
2	1	3260	G
2	1	3263	G
2	1	3266	G
2	1	3267	A
2	1	3268	A
2	1	3270	U
2	1	3273	A
2	1	3275	U
2	1	3276	G
2	1	3281	U
2	1	3282	U
2	1	3283	U
2	1	3286	G
2	1	3289	G
2	1	3293	U
2	1	3294	A

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Mol	Chain	Res	Type
2	1	3304	U
2	1	3316	A
2	1	3318	G
2	1	3320	A
2	1	3330	A
2	1	3334	U
2	1	3341	U
2	1	3352	U
2	1	3355	U
2	1	3358	U
2	1	3362	A
2	1	3363	U
2	1	3369	G
2	1	3378	C
2	1	3390	G
3	2	4	U
3	2	11	A
3	2	22	A
3	2	23	A
3	2	24	A
3	2	26	C
3	2	30	G
3	2	35	C
3	2	41	G
3	2	53	U
3	2	54	U
3	2	65	G
3	2	73	C
3	2	74	C
3	2	76	A
3	2	77	G
3	2	99	G
3	2	102	A
3	2	104	A
3	2	112	G
4	3	2	A
4	3	16	G
4	3	25	G
4	3	34	U
4	3	35	C
4	3	39	G
4	3	46	G

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Mol	Chain	Res	Type
4	3	49	G
4	3	51	G
4	3	59	A
4	3	62	C
4	3	63	G
4	3	72	A
4	3	80	A
4	3	82	U
4	3	83	C
4	3	86	U
4	3	87	G
4	3	88	A
4	3	91	C
4	3	95	G
4	3	97	A
4	3	98	U
4	3	104	A
4	3	106	C
4	3	111	A
4	3	113	U
4	3	125	U
4	3	126	A
4	3	148	G
4	3	155	A

All (38) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	1	421	G
2	1	448	U
2	1	493	G
2	1	599	C
2	1	619	A
2	1	916	G
2	1	998	A
2	1	1027	A
2	1	1038	C
2	1	1064	A
2	1	1097	G
2	1	1243	G
2	1	1494	U
2	1	1576	G

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Mol	Chain	Res	Type
2	1	1815	U
2	1	1816	A
2	1	1953	G
2	1	2012	G
2	1	2056	U
2	1	2101	C
2	1	2209	U
2	1	2249	G
2	1	2264	U
2	1	2266	U
2	1	2346	C
2	1	2403	G
2	1	2501	U
2	1	2541	U
2	1	2547	A
2	1	2845	A
2	1	2866	U
2	1	2945	G
2	1	2965	U
2	1	3078	U
2	1	3121	U
2	1	3228	C
2	1	3269	U
2	1	3292	A

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 12 ligands modelled in this entry, 1 is monoatomic - leaving 11 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
54	AGS	w	902	-	32,33,33	0.46	1 (3%)	45,52,52	0.69	1 (2%)
54	AGS	w	901	-	32,33,33	0.45	1 (3%)	45,52,52	0.67	1 (2%)
54	AGS	m	901	-	32,33,33	0.47	1 (3%)	45,52,52	0.66	1 (2%)
54	AGS	Aa	901	-	32,33,33	0.46	1 (3%)	45,52,52	0.66	1 (2%)
54	AGS	Aa	902	-	32,33,33	0.47	1 (3%)	45,52,52	0.68	1 (2%)
54	AGS	t	801	-	32,33,33	0.46	1 (3%)	45,52,52	0.67	1 (2%)
54	AGS	n	901	-	32,33,33	0.46	1 (3%)	45,52,52	0.67	1 (2%)
54	AGS	w	903	-	32,33,33	0.47	1 (3%)	45,52,52	0.64	1 (2%)
54	AGS	x	901	-	32,33,33	0.47	1 (3%)	45,52,52	0.69	1 (2%)
54	AGS	n	902	-	32,33,33	0.46	1 (3%)	45,52,52	0.67	1 (2%)
54	AGS	m	902	-	32,33,33	0.46	1 (3%)	45,52,52	0.66	1 (2%)

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
54	AGS	w	902	-	-	6/21/38/38	0/3/3/3
54	AGS	w	901	-	-	8/21/38/38	0/3/3/3
54	AGS	m	901	-	-	7/21/38/38	0/3/3/3
54	AGS	Aa	901	-	-	7/21/38/38	0/3/3/3
54	AGS	Aa	902	-	-	3/21/38/38	0/3/3/3
54	AGS	t	801	-	-	8/21/38/38	0/3/3/3
54	AGS	n	901	-	-	8/21/38/38	0/3/3/3
54	AGS	w	903	-	-	4/21/38/38	0/3/3/3
54	AGS	x	901	-	-	5/21/38/38	0/3/3/3
54	AGS	n	902	-	-	4/21/38/38	0/3/3/3
54	AGS	m	902	-	-	4/21/38/38	0/3/3/3

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
54	m	902	AGS	PG-S1G	2.17	1.95	1.90
54	w	902	AGS	PG-S1G	2.17	1.95	1.90
54	n	902	AGS	PG-S1G	2.16	1.95	1.90
54	x	901	AGS	PG-S1G	2.16	1.95	1.90
54	Aa	901	AGS	PG-S1G	2.15	1.95	1.90
54	Aa	902	AGS	PG-S1G	2.15	1.95	1.90
54	w	901	AGS	PG-S1G	2.15	1.95	1.90
54	n	901	AGS	PG-S1G	2.14	1.95	1.90
54	t	801	AGS	PG-S1G	2.14	1.95	1.90
54	m	901	AGS	PG-S1G	2.12	1.95	1.90
54	w	903	AGS	PG-S1G	2.12	1.95	1.90

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
54	w	902	AGS	PB-O3B-PG	-3.73	119.53	133.17
54	w	901	AGS	PB-O3B-PG	-3.63	119.90	133.17
54	n	902	AGS	PB-O3B-PG	-3.55	120.16	133.17
54	n	901	AGS	PB-O3B-PG	-3.55	120.19	133.17
54	x	901	AGS	PB-O3B-PG	-3.53	120.24	133.17
54	t	801	AGS	PB-O3B-PG	-3.47	120.47	133.17
54	Aa	902	AGS	PB-O3B-PG	-3.45	120.53	133.17
54	m	902	AGS	PB-O3B-PG	-3.45	120.53	133.17
54	Aa	901	AGS	PB-O3B-PG	-3.41	120.71	133.17
54	m	901	AGS	PB-O3B-PG	-3.39	120.78	133.17
54	w	903	AGS	PB-O3B-PG	-3.34	120.96	133.17

There are no chirality outliers.

All (64) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
54	Aa	902	AGS	C2'-C1'-N9-C8
54	m	902	AGS	PB-O3B-PG-O3G
54	n	901	AGS	PB-O3B-PG-O2G
54	n	901	AGS	PB-O3B-PG-O3G
54	n	902	AGS	C5'-O5'-PA-O2A
54	t	801	AGS	PB-O3B-PG-O2G
54	t	801	AGS	PB-O3B-PG-O3G
54	t	801	AGS	C5'-O5'-PA-O3A
54	t	801	AGS	O4'-C1'-N9-C8
54	t	801	AGS	O4'-C1'-N9-C4
54	w	901	AGS	PB-O3B-PG-O2G

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Mol	Chain	Res	Type	Atoms
54	w	901	AGS	PB-O3B-PG-O3G
54	w	901	AGS	C5'-O5'-PA-O1A
54	w	901	AGS	C5'-O5'-PA-O3A
54	w	903	AGS	C5'-O5'-PA-O1A
54	w	903	AGS	C5'-O5'-PA-O3A
54	w	901	AGS	O4'-C4'-C5'-O5'
54	w	903	AGS	O4'-C4'-C5'-O5'
54	t	801	AGS	C3'-C4'-C5'-O5'
54	w	903	AGS	C3'-C4'-C5'-O5'
54	Aa	902	AGS	C2'-C1'-N9-C4
54	w	901	AGS	C3'-C4'-C5'-O5'
54	Aa	901	AGS	C3'-C4'-C5'-O5'
54	x	901	AGS	O4'-C4'-C5'-O5'
54	t	801	AGS	O4'-C4'-C5'-O5'
54	n	901	AGS	C2'-C1'-N9-C8
54	x	901	AGS	C2'-C1'-N9-C8
54	m	902	AGS	O4'-C1'-N9-C4
54	m	902	AGS	O4'-C1'-N9-C8
54	Aa	901	AGS	C2'-C1'-N9-C8
54	m	901	AGS	C2'-C1'-N9-C8
54	w	902	AGS	C2'-C1'-N9-C8
54	w	902	AGS	O4'-C1'-N9-C8
54	n	901	AGS	C4'-C5'-O5'-PA
54	n	901	AGS	C5'-O5'-PA-O1A
54	n	902	AGS	C5'-O5'-PA-O1A
54	n	902	AGS	C5'-O5'-PA-O3A
54	t	801	AGS	C5'-O5'-PA-O1A
54	w	901	AGS	C5'-O5'-PA-O2A
54	w	902	AGS	C5'-O5'-PA-O1A
54	w	902	AGS	C5'-O5'-PA-O2A
54	w	902	AGS	C5'-O5'-PA-O3A
54	m	901	AGS	C4'-C5'-O5'-PA
54	Aa	901	AGS	O4'-C1'-N9-C4
54	w	902	AGS	O4'-C1'-N9-C4
54	m	901	AGS	PA-O3A-PB-O2B
54	n	901	AGS	C2'-C1'-N9-C4
54	x	901	AGS	C2'-C1'-N9-C4
54	x	901	AGS	C3'-C4'-C5'-O5'
54	m	901	AGS	O4'-C1'-N9-C8
54	m	901	AGS	O4'-C1'-N9-C4
54	Aa	901	AGS	O4'-C1'-N9-C8
54	Aa	901	AGS	PA-O3A-PB-O1B

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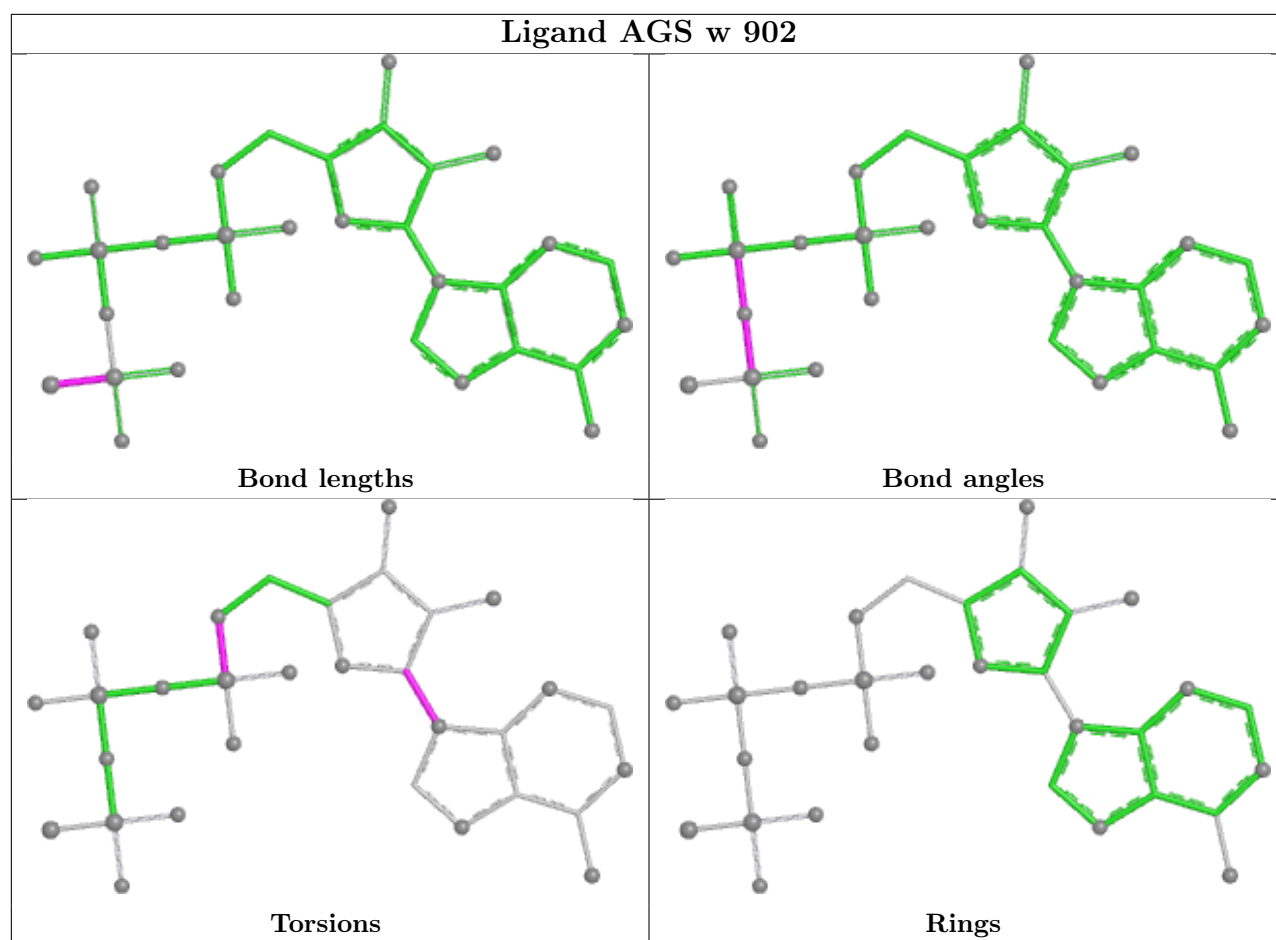
Mol	Chain	Res	Type	Atoms
54	m	902	AGS	PB-O3B-PG-O2G
54	Aa	901	AGS	PA-O3A-PB-O3B
54	x	901	AGS	O4'-C1'-N9-C8
54	Aa	902	AGS	PA-O3A-PB-O2B
54	m	901	AGS	PA-O3A-PB-O1B
54	m	901	AGS	O4'-C4'-C5'-O5'
54	n	902	AGS	O4'-C4'-C5'-O5'
54	Aa	901	AGS	C2'-C1'-N9-C4
54	n	901	AGS	O4'-C4'-C5'-O5'
54	n	901	AGS	O4'-C1'-N9-C8
54	w	901	AGS	O4'-C1'-N9-C8

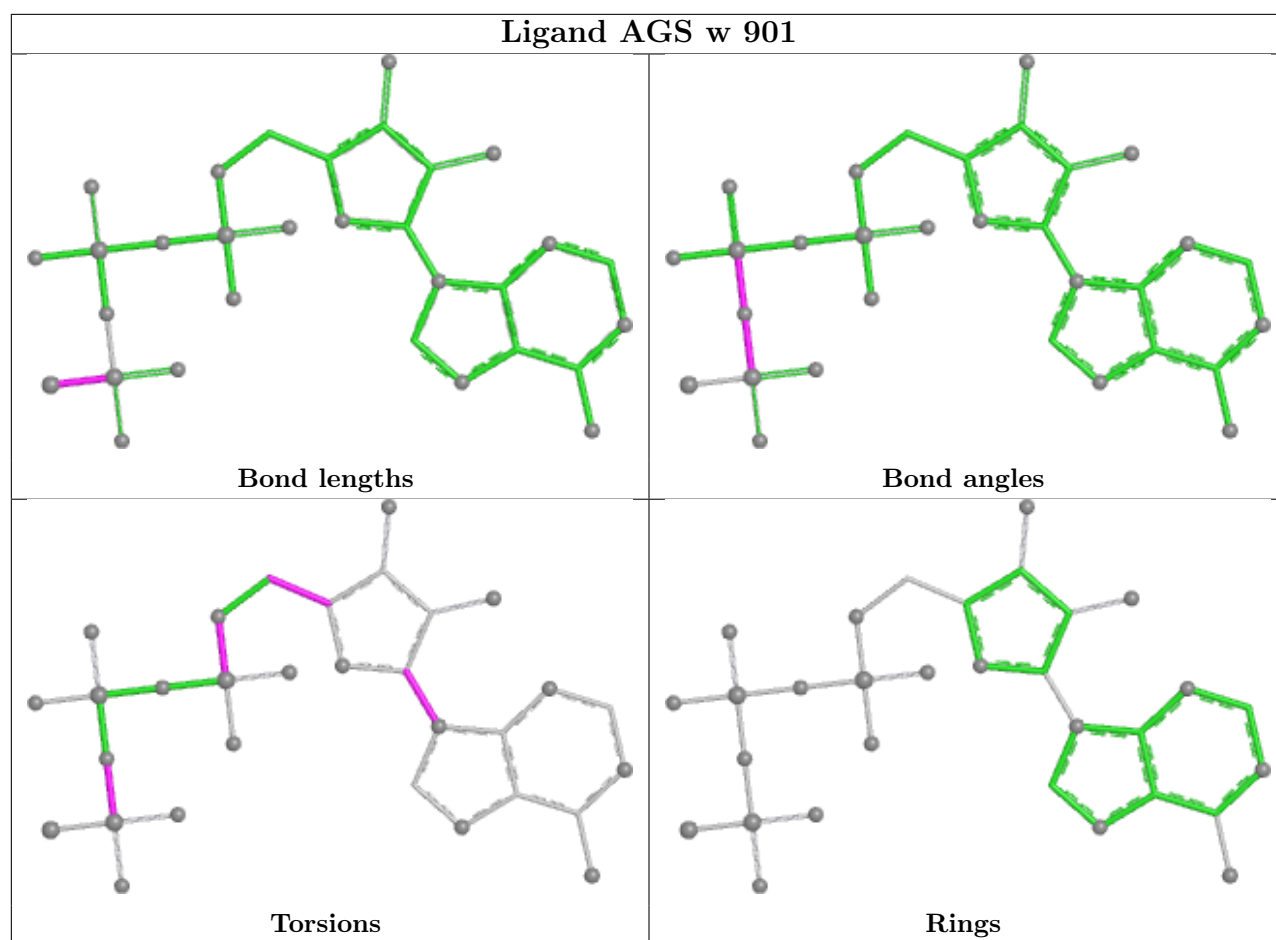
There are no ring outliers.

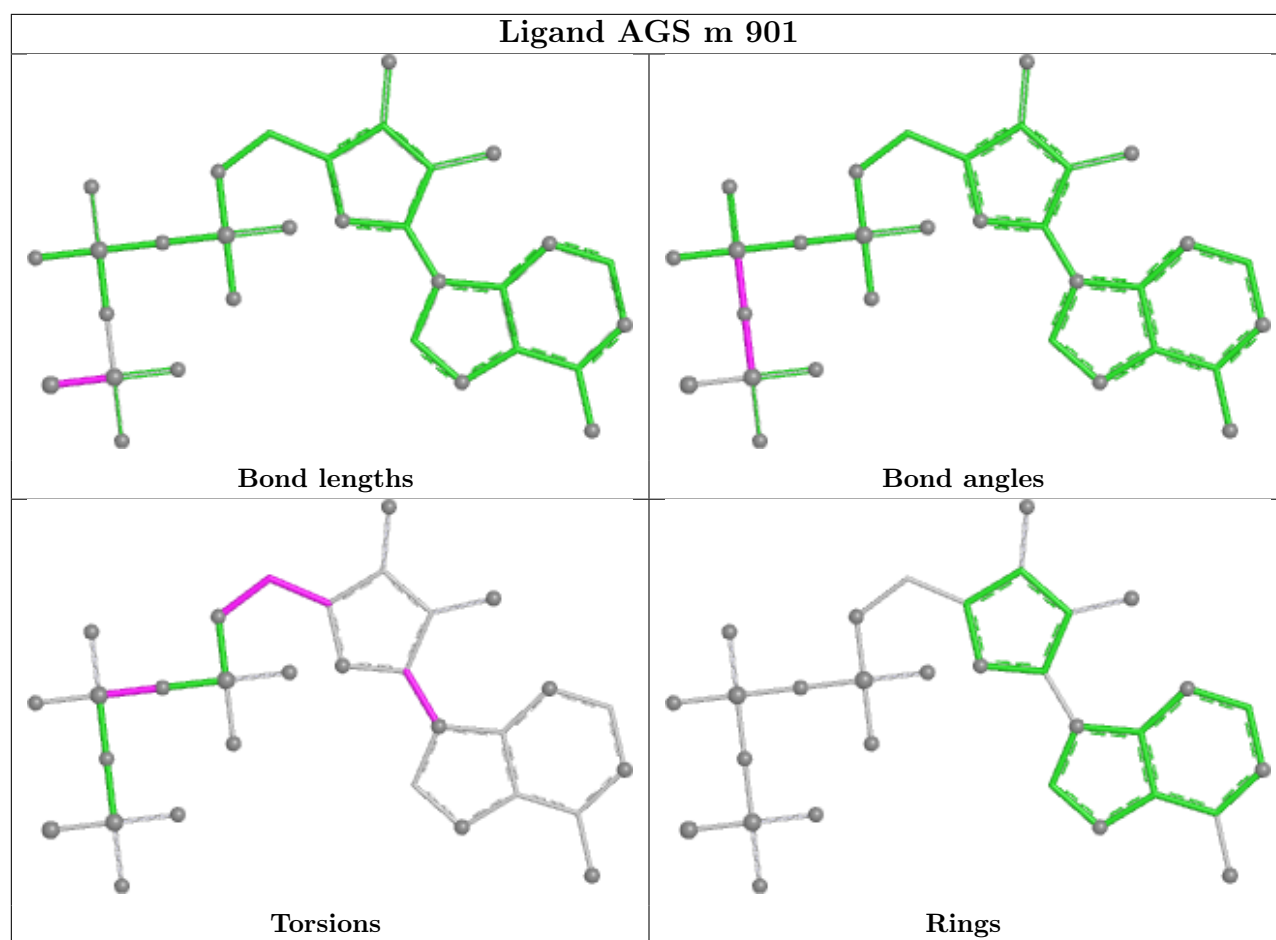
10 monomers are involved in 34 short contacts:

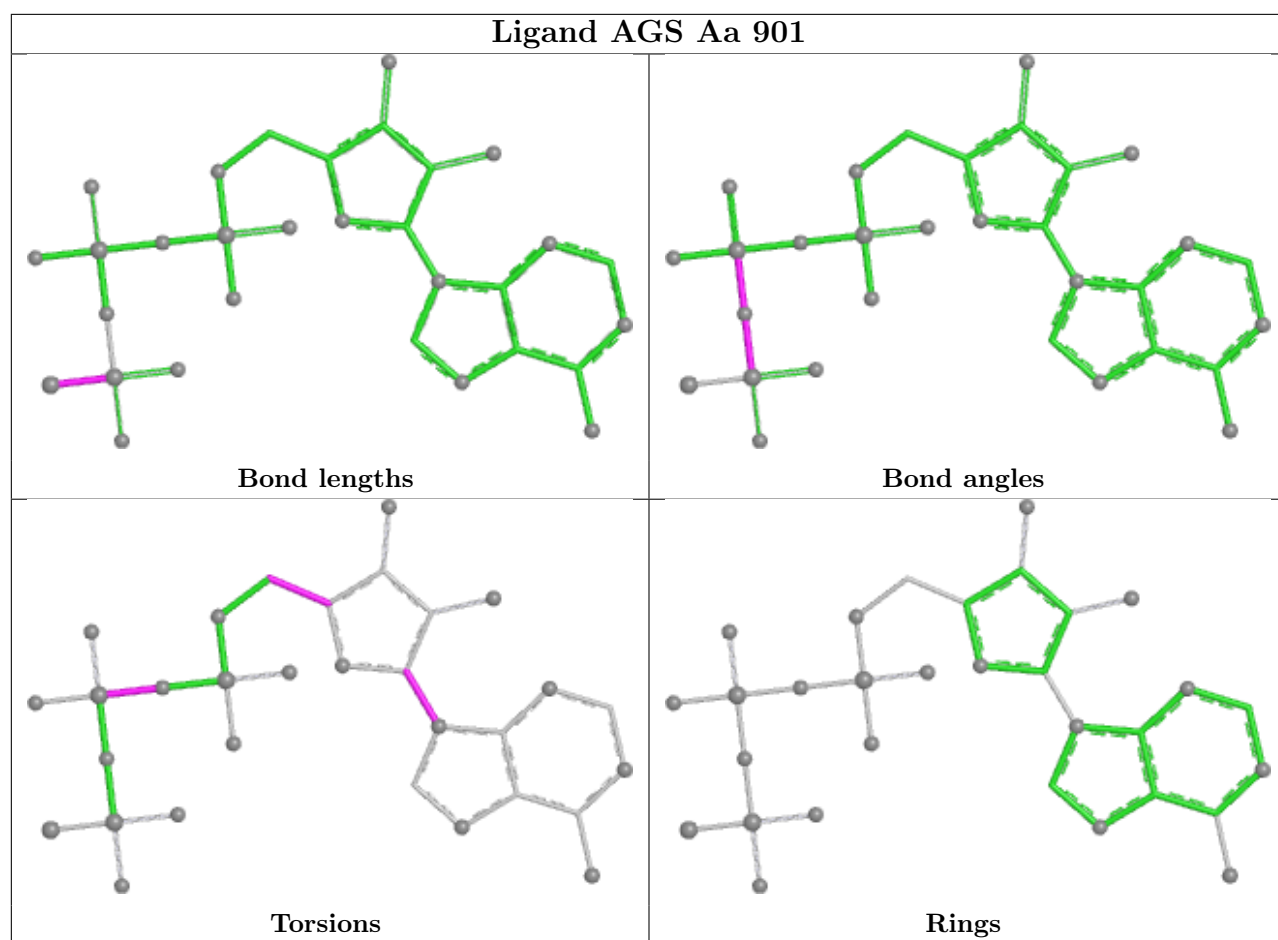
Mol	Chain	Res	Type	Clashes	Symm-Clashes
54	w	902	AGS	2	0
54	m	901	AGS	4	0
54	Aa	901	AGS	1	0
54	Aa	902	AGS	3	0
54	t	801	AGS	8	0
54	n	901	AGS	4	0
54	w	903	AGS	2	0
54	x	901	AGS	3	0
54	n	902	AGS	3	0
54	m	902	AGS	4	0

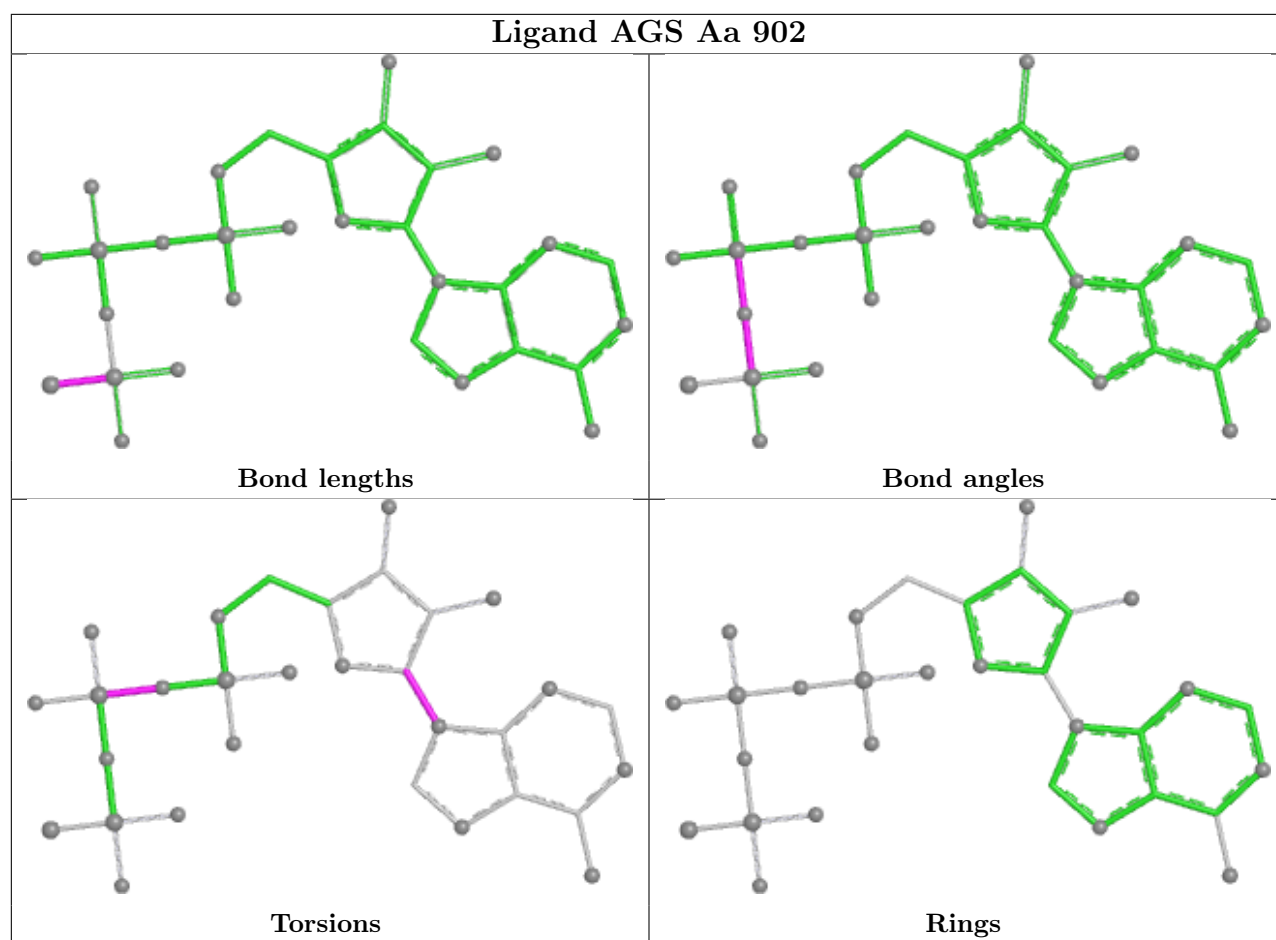
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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.

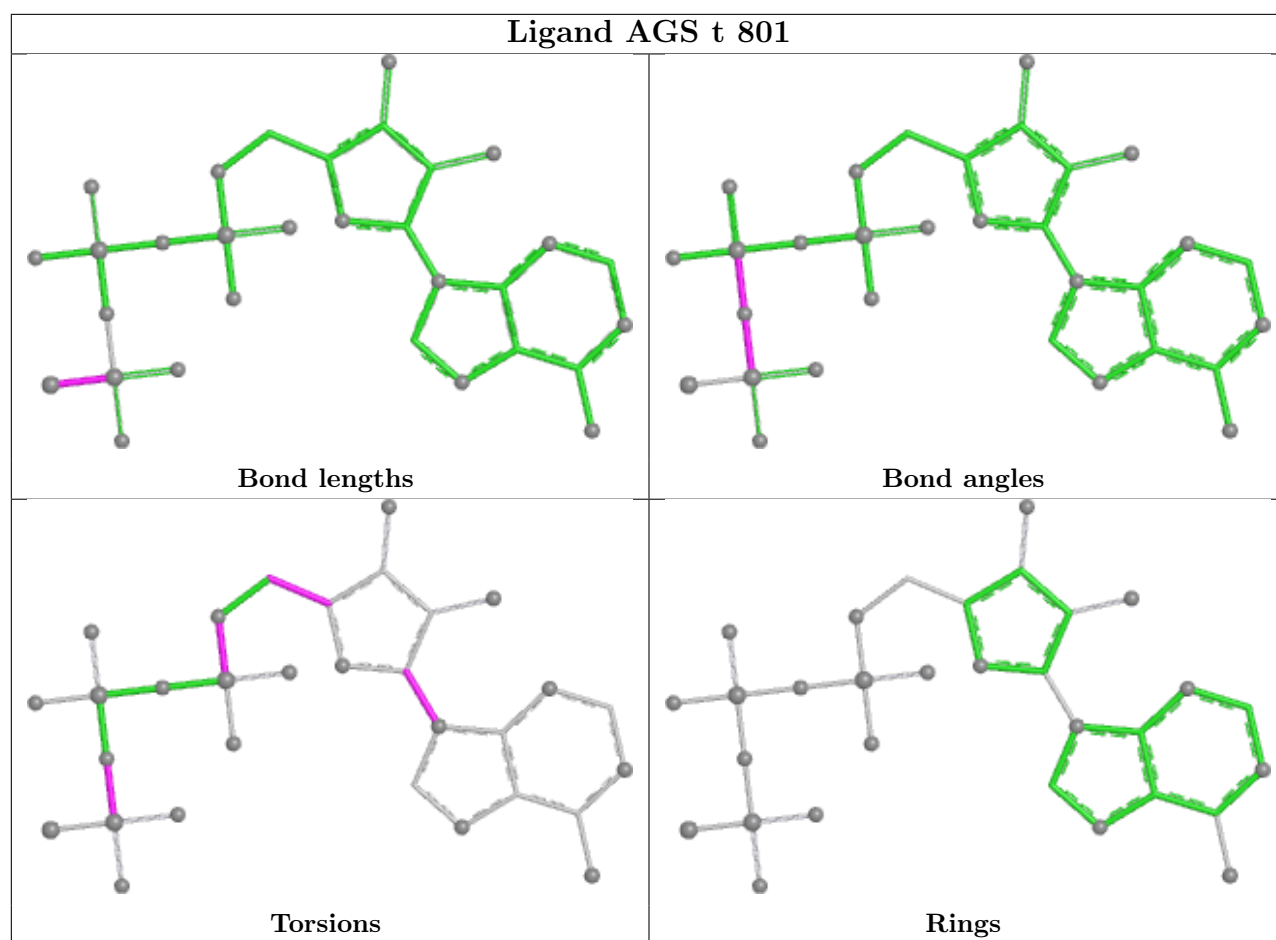




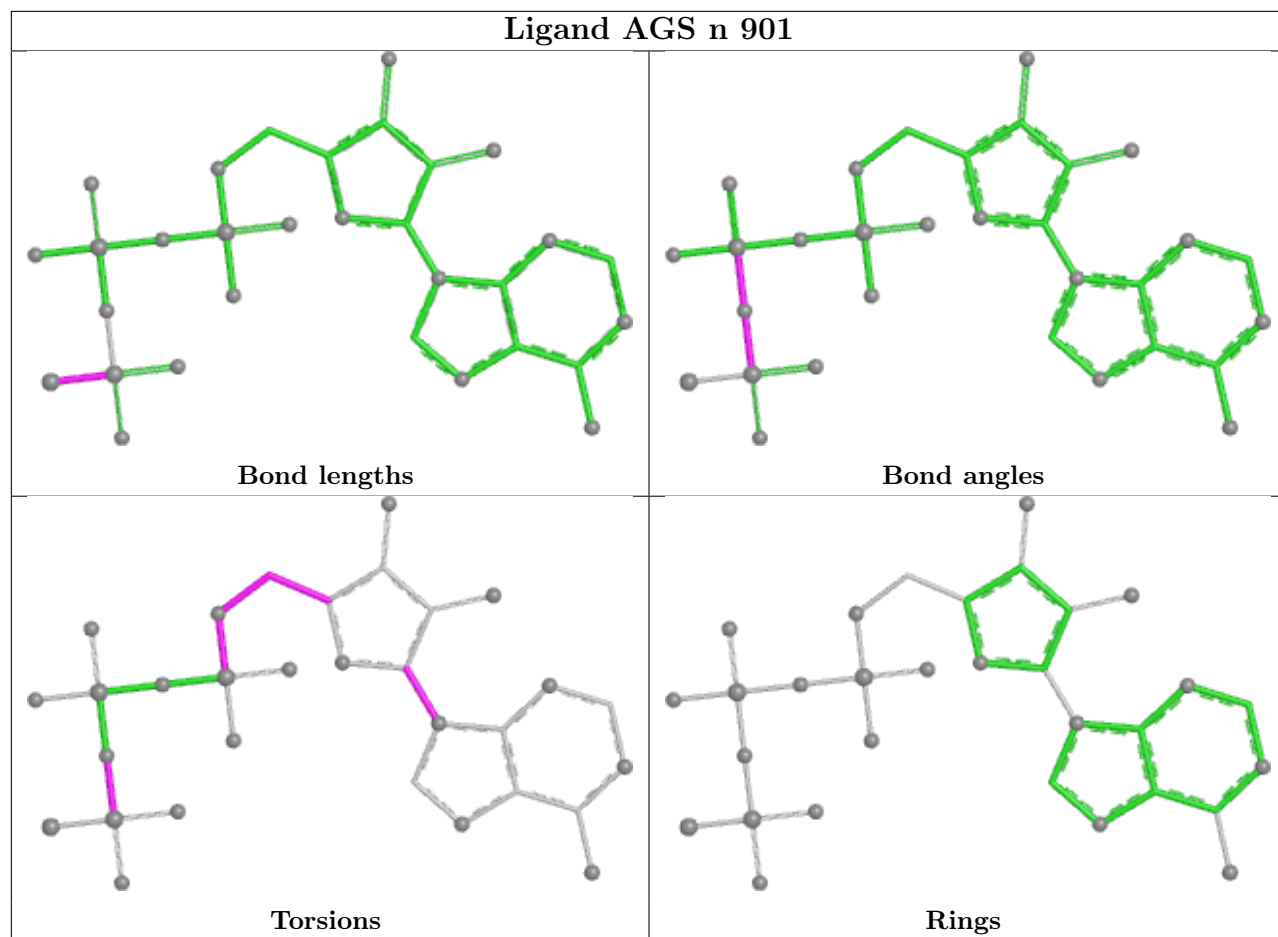


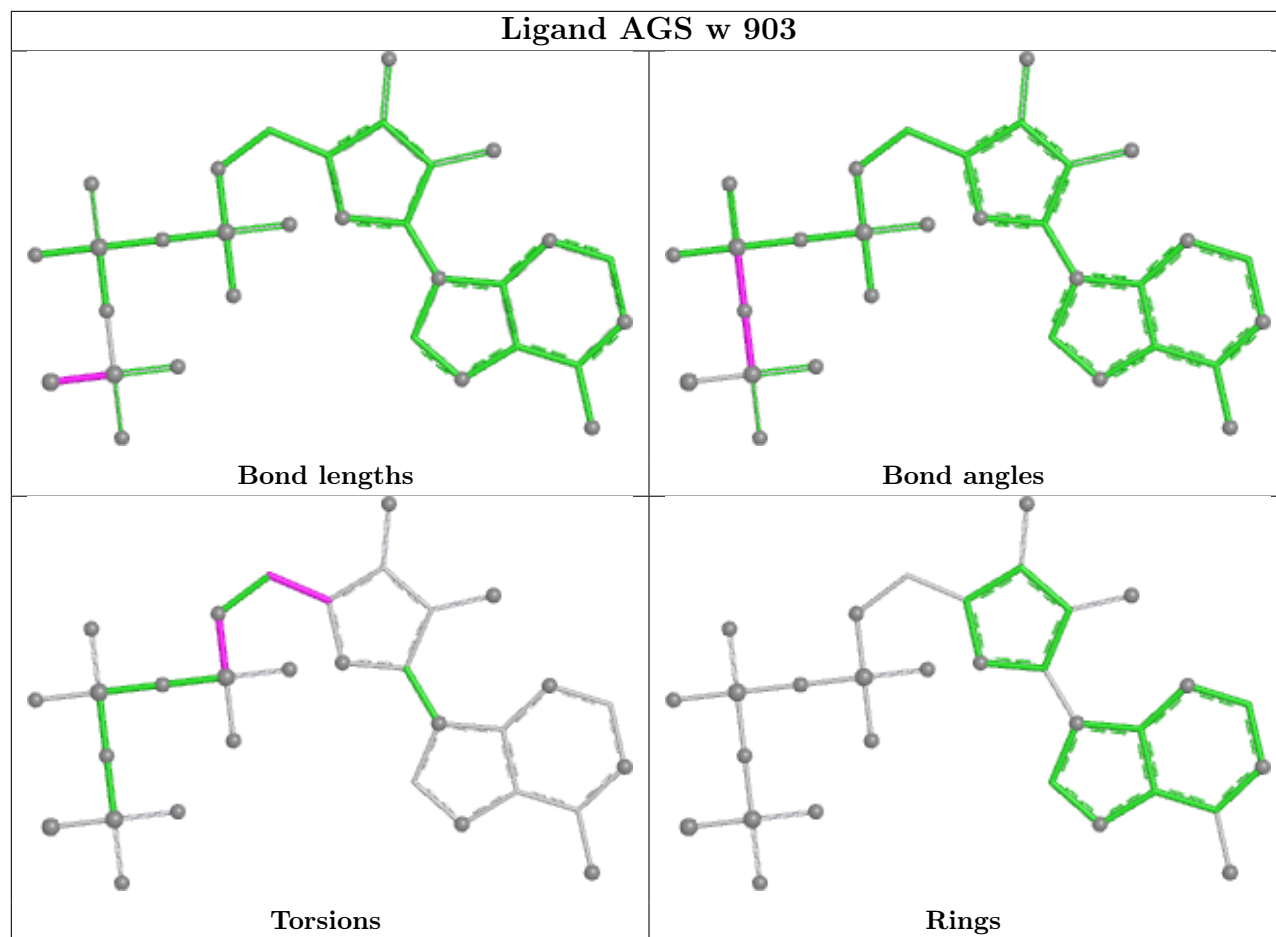


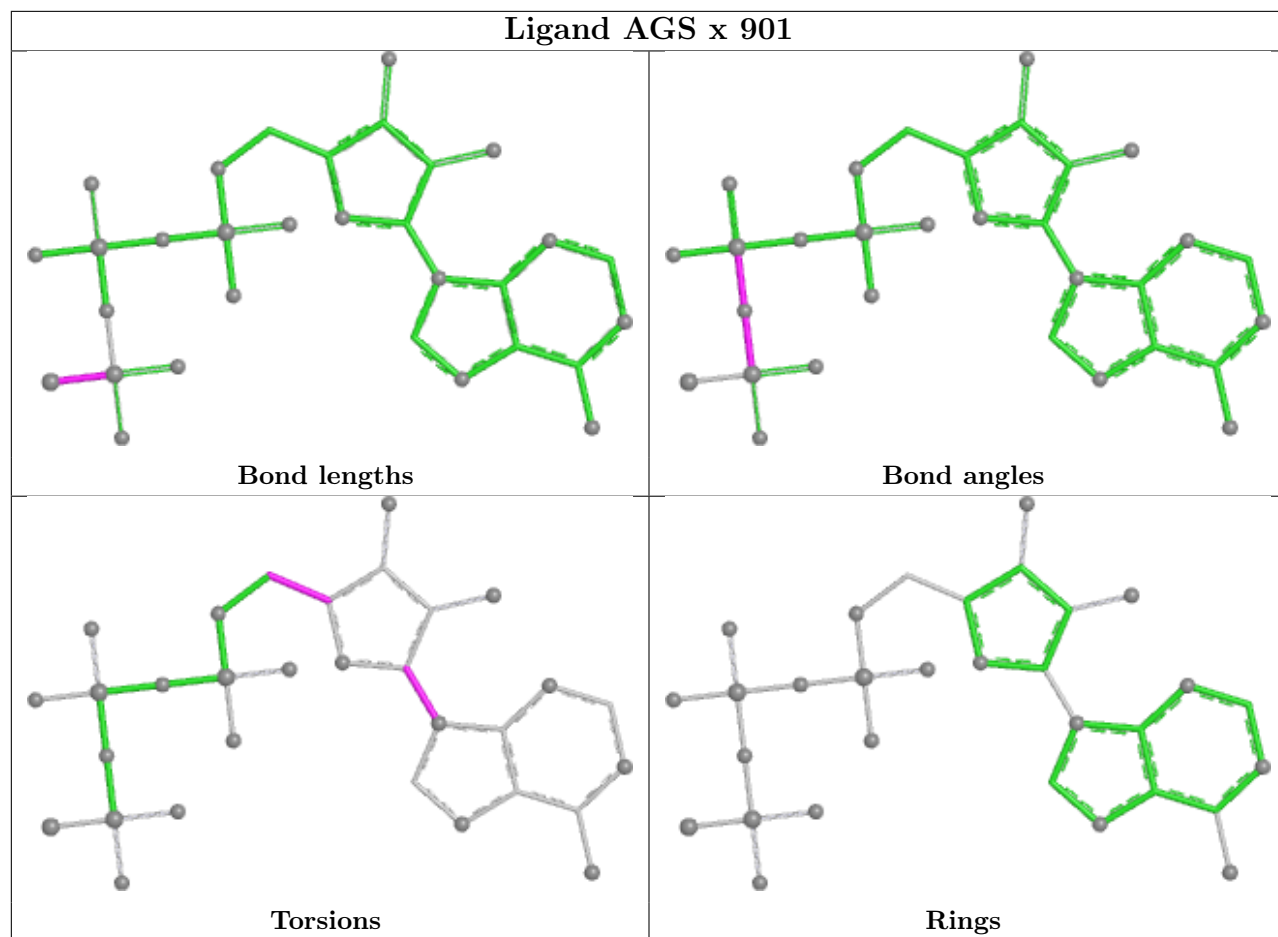




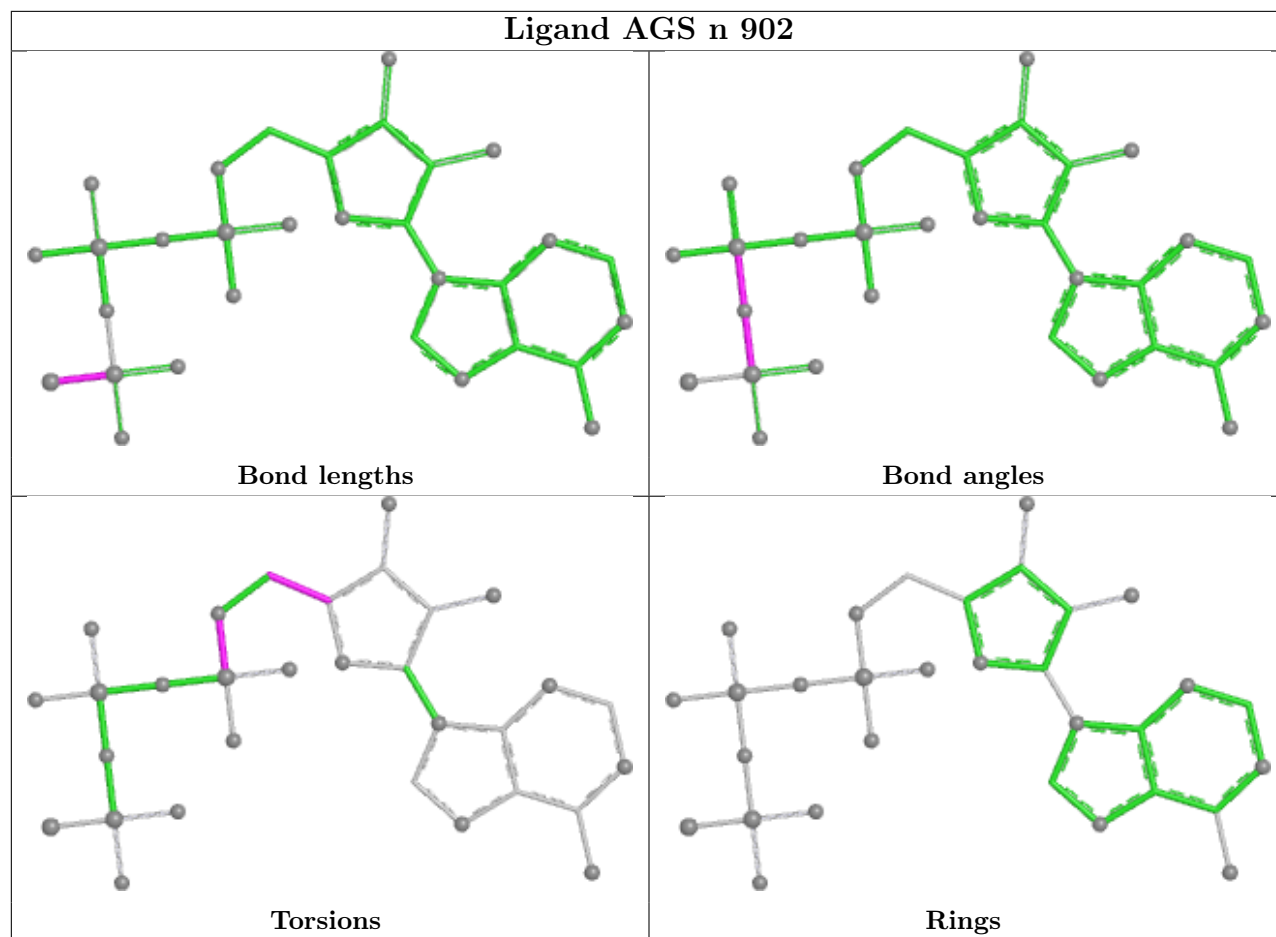
Ligand AGS n 901

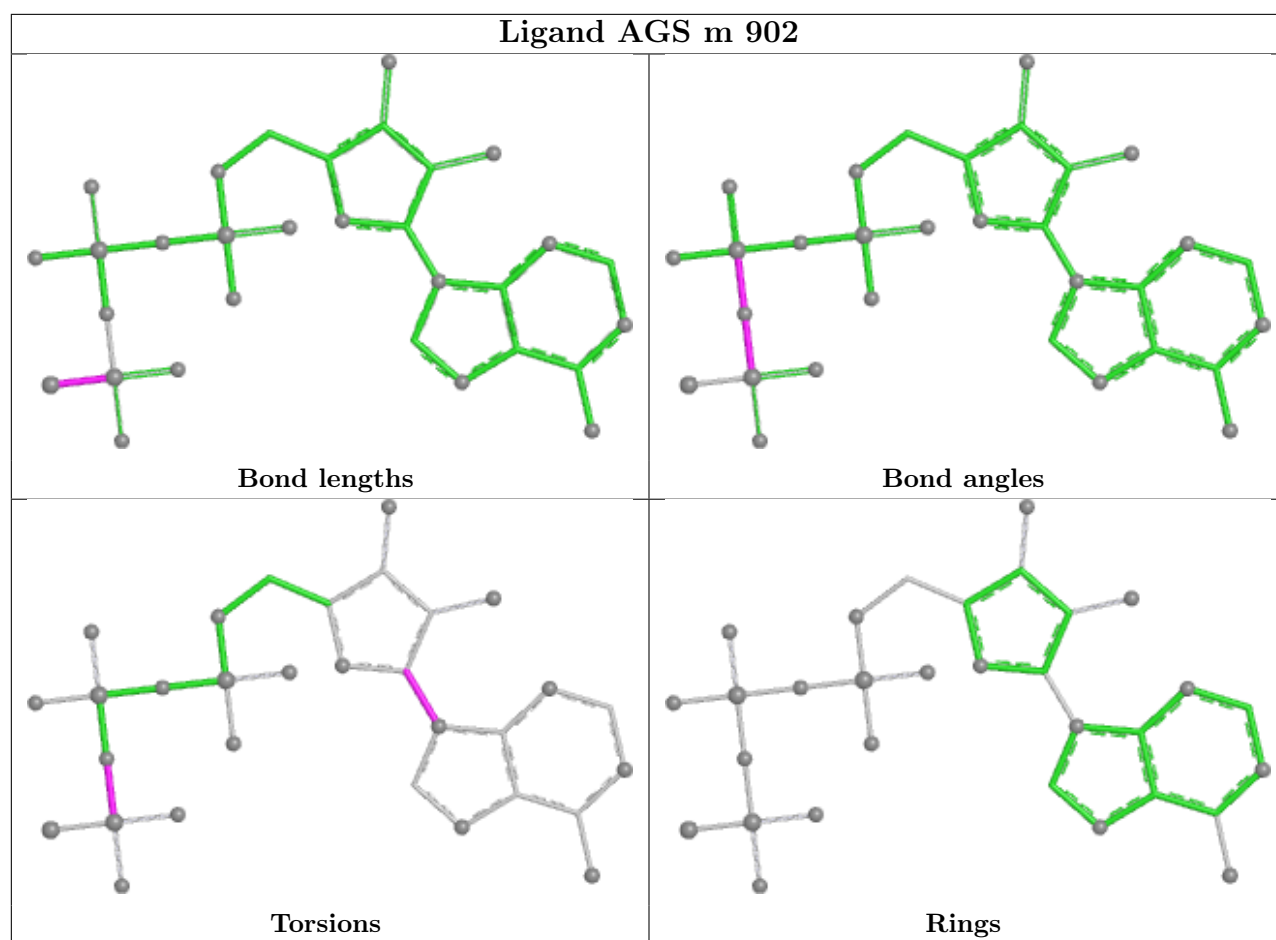






Ligand AGS n 902





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.

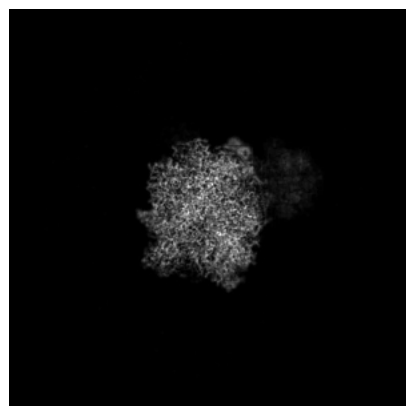
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-14471. These allow visual inspection of the internal detail of the map and identification of artifacts.

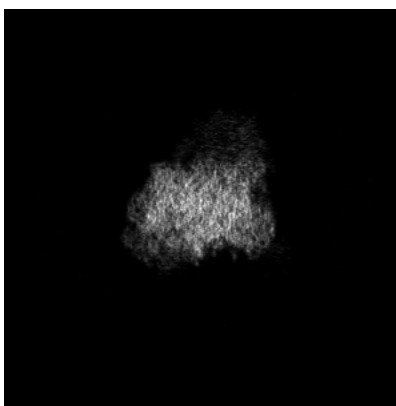
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

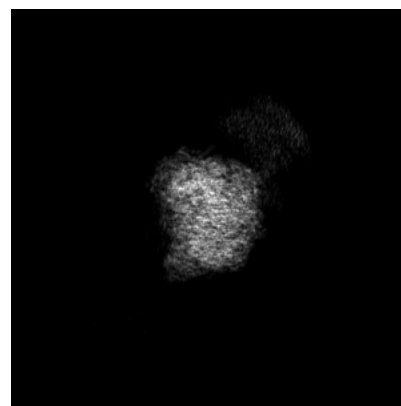
6.1.1 Primary map



X

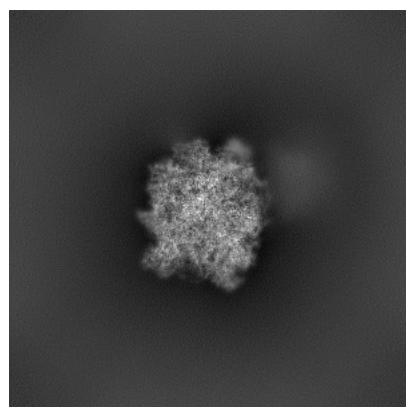


Y

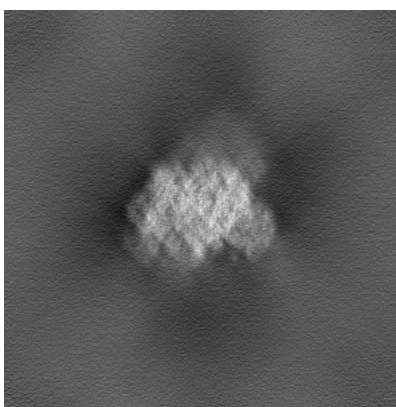


Z

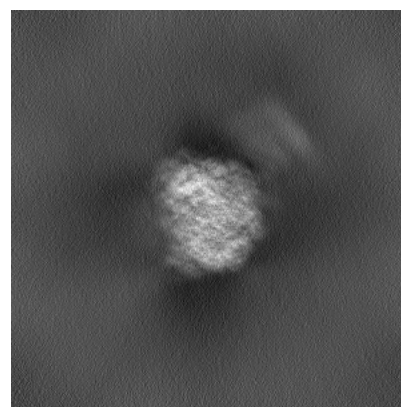
6.1.2 Raw map



X



Y



Z

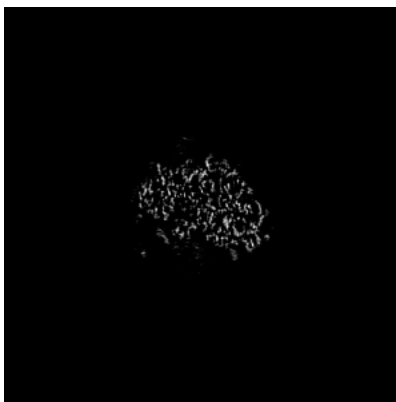
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

6.2.1 Primary map



X Index: 240

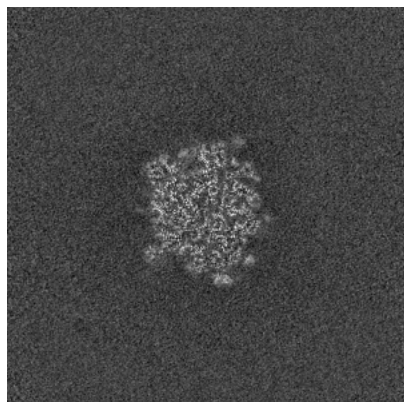


Y Index: 240

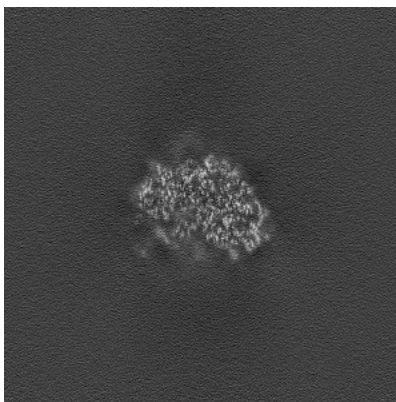


Z Index: 240

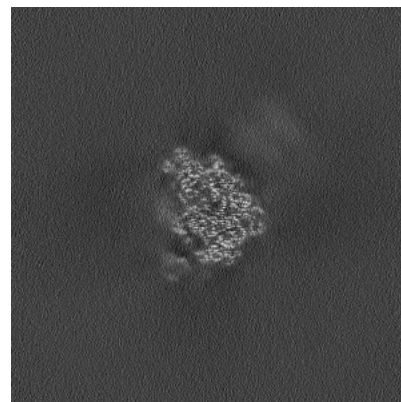
6.2.2 Raw map



X Index: 240



Y Index: 240



Z Index: 240

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

6.3 Largest variance slices [i](#)

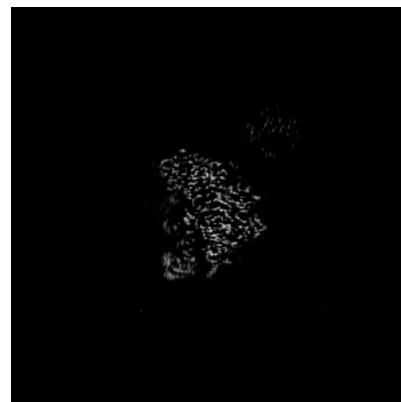
6.3.1 Primary map



X Index: 241

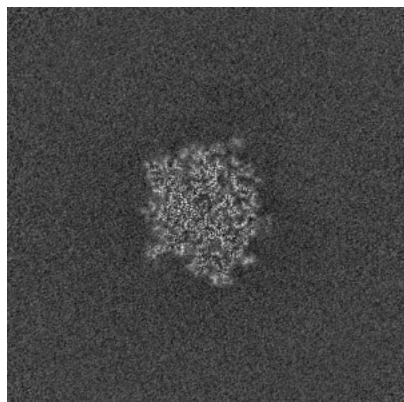


Y Index: 237

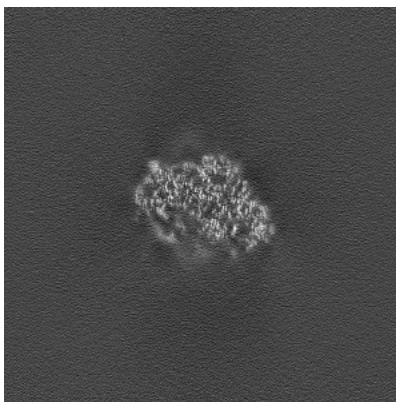


Z Index: 235

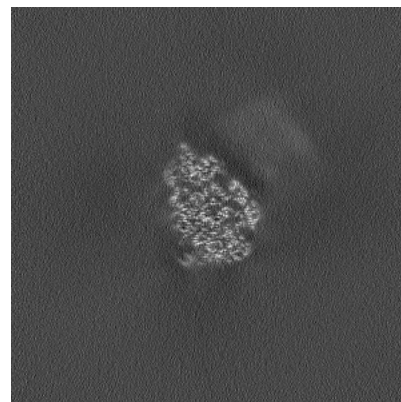
6.3.2 Raw map



X Index: 243



Y Index: 236

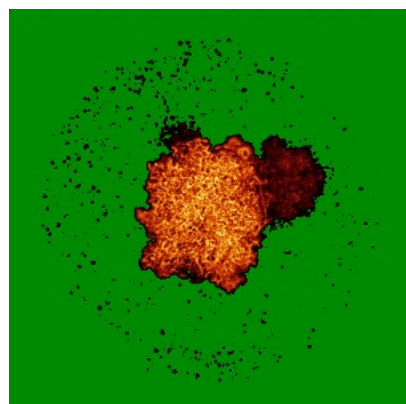


Z Index: 254

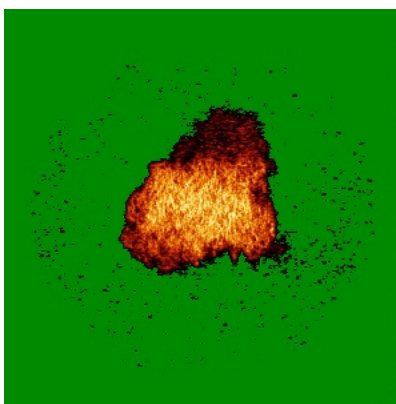
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) ⓘ

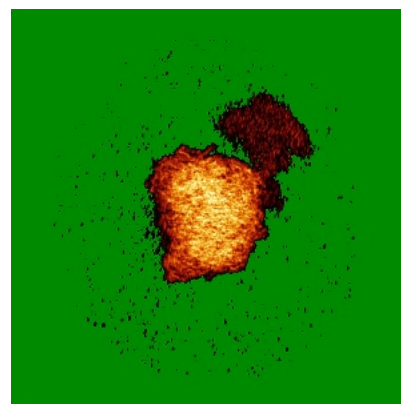
6.4.1 Primary map



X

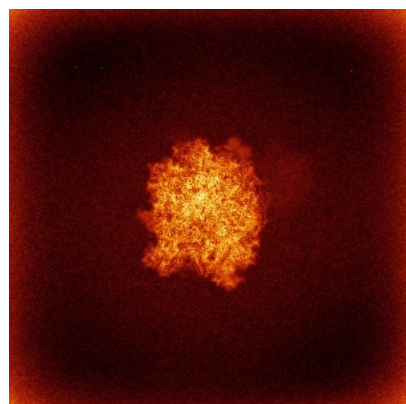


Y

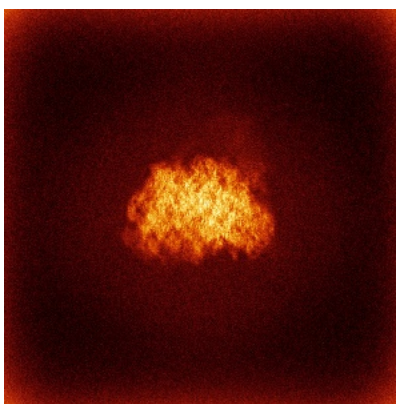


Z

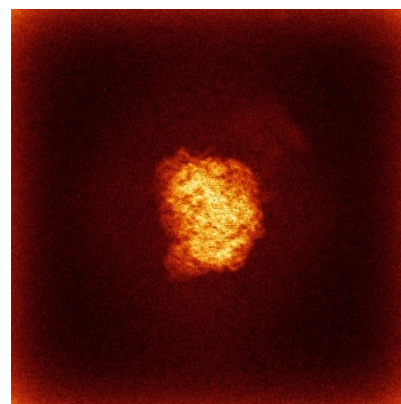
6.4.2 Raw map



X



Y



Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.05. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

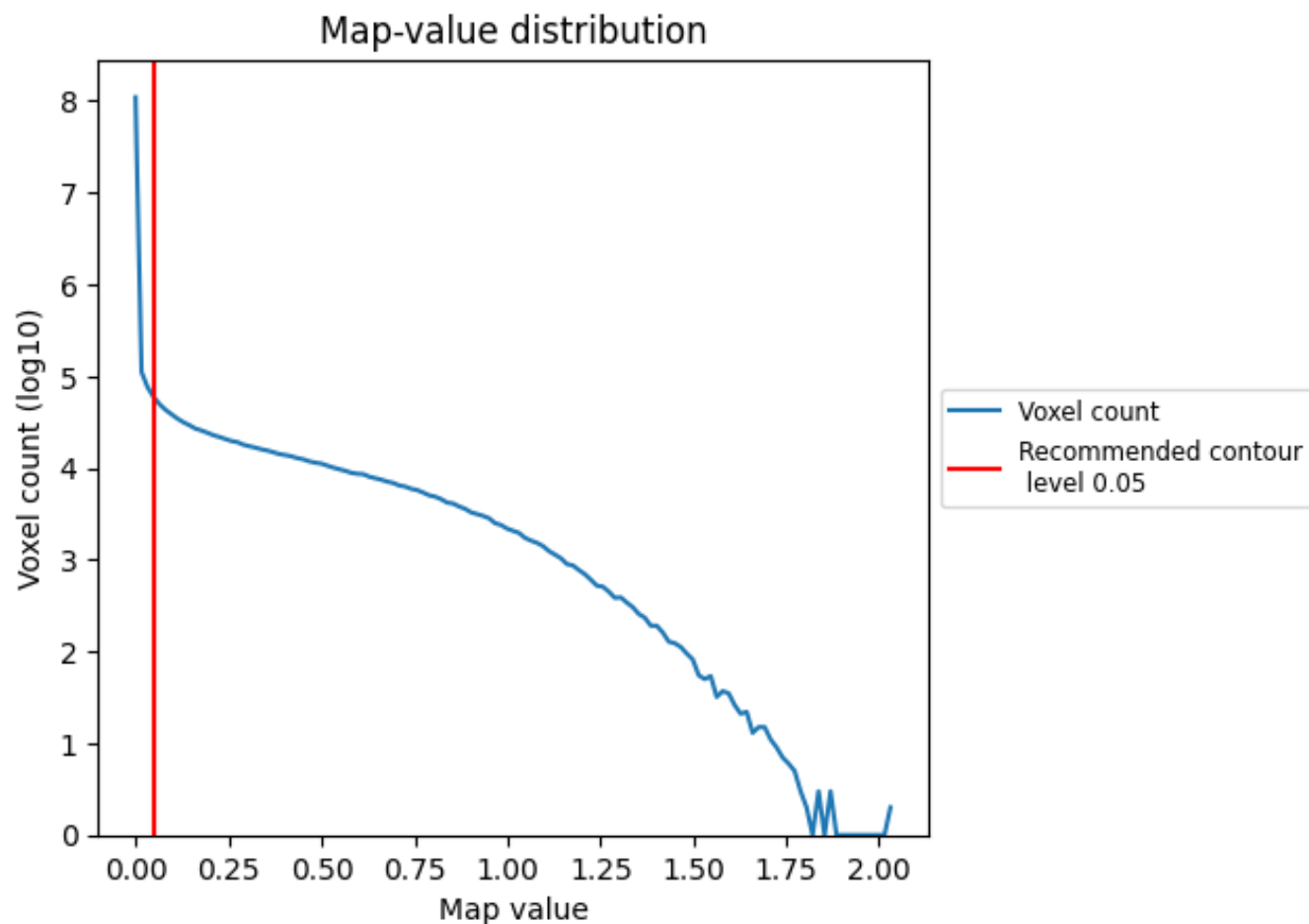
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

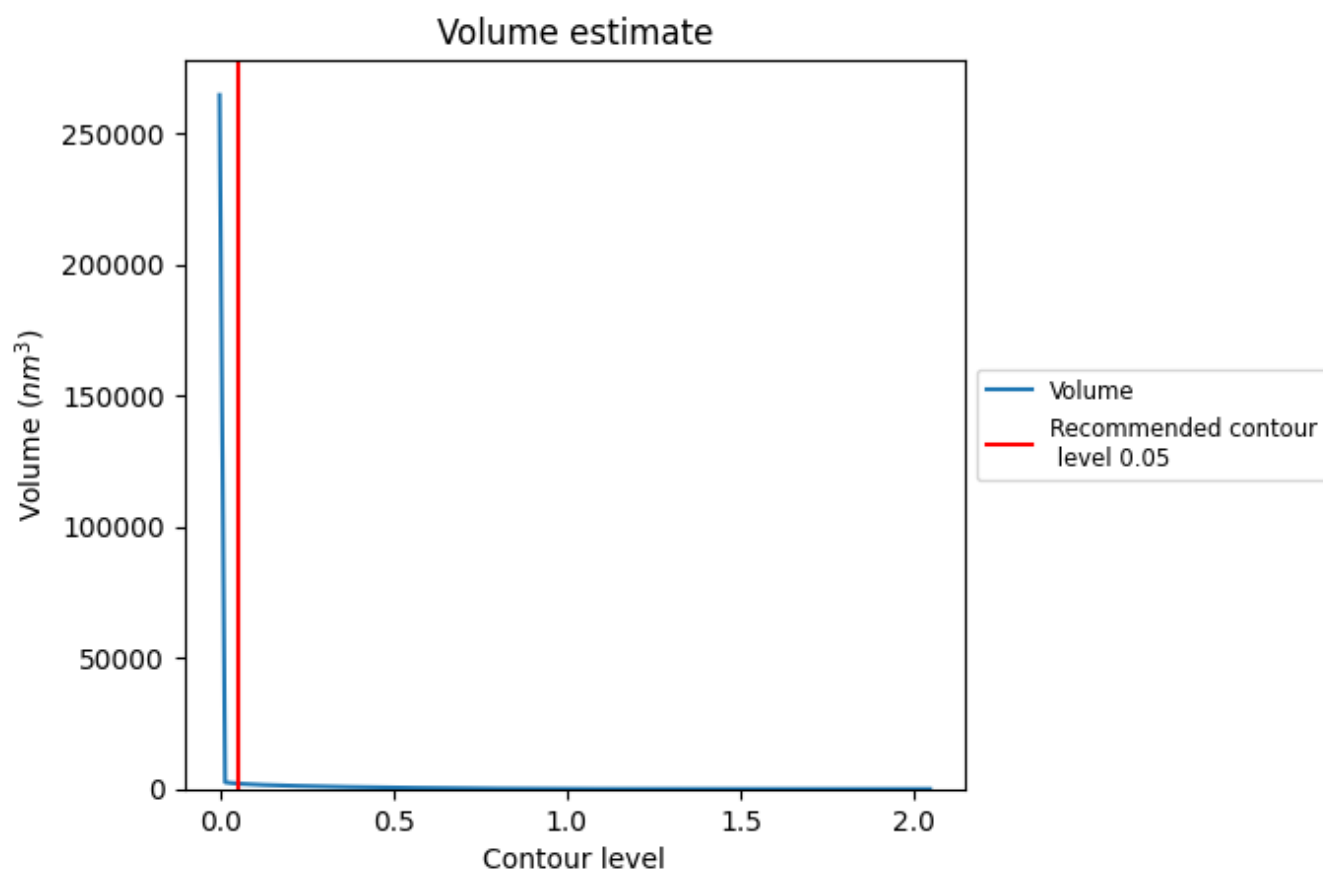
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

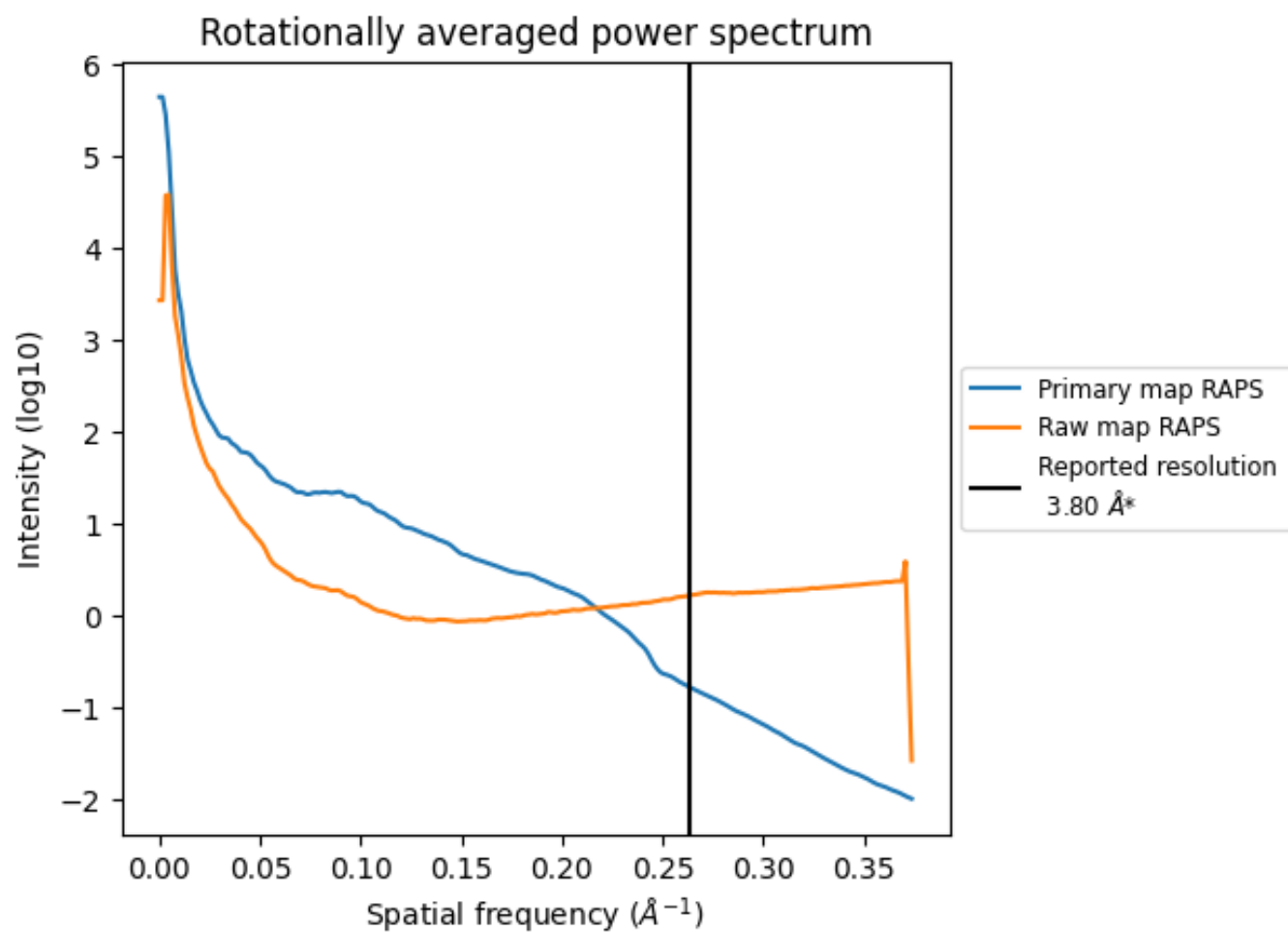
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2056 nm^3 ; this corresponds to an approximate mass of 1857 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 ⓘ

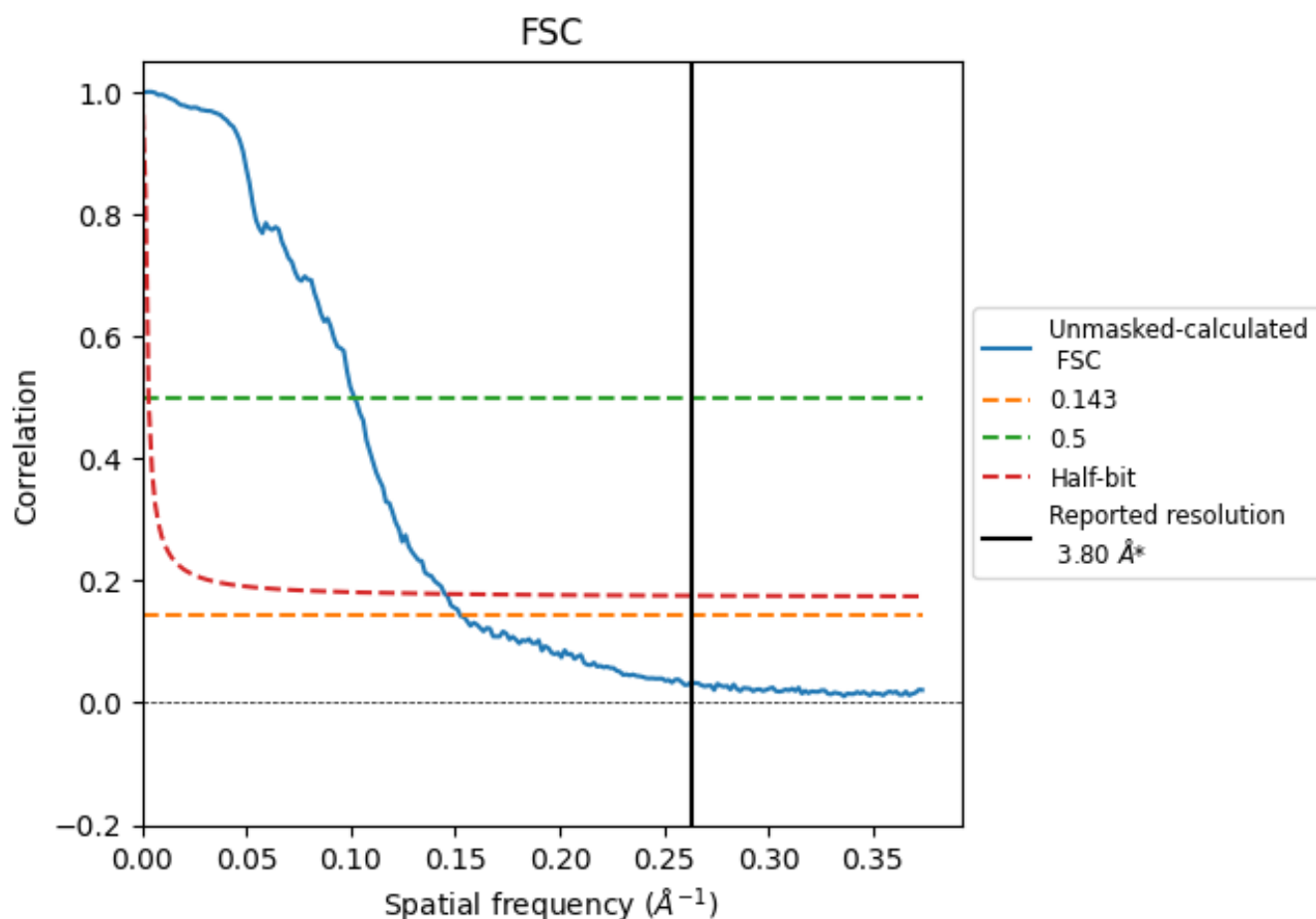


*Reported resolution corresponds to spatial frequency of 0.263 $\text{\AA}^{-1}$

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.263 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

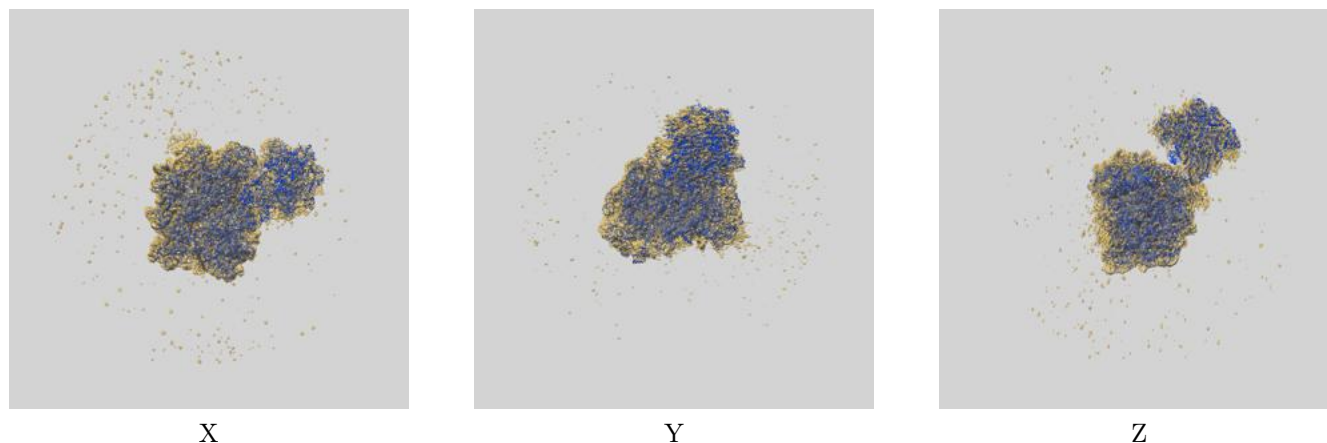
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.80	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	6.56	9.83	6.90

*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 6.56 differs from the reported value 3.8 by more than 10 %

9 Map-model fit [i](#)

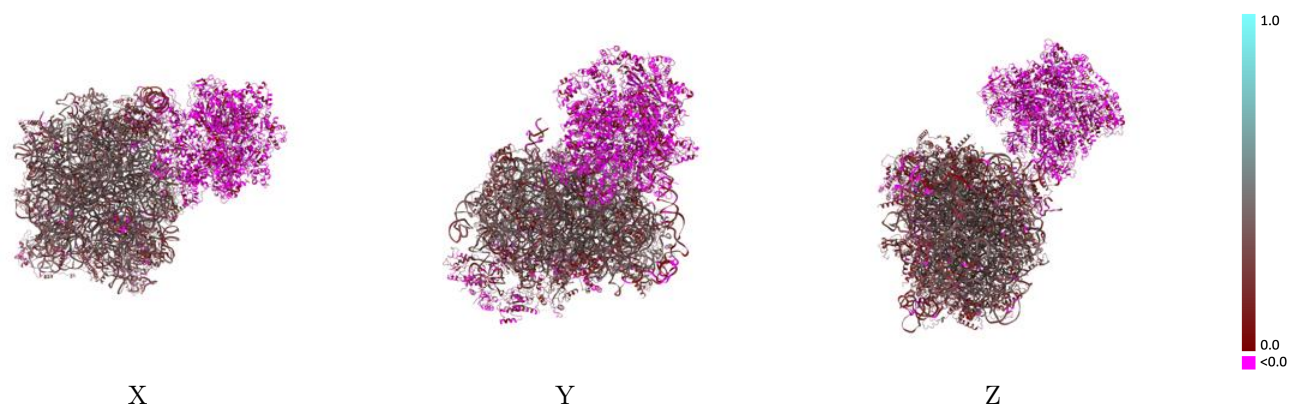
This section contains information regarding the fit between EMDB map EMD-14471 and PDB model 7Z34. Per-residue inclusion information can be found in section 3 on page 15.

9.1 Map-model overlay [i](#)



The images above show the 3D surface view of the map at the recommended contour level 0.05 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](#)

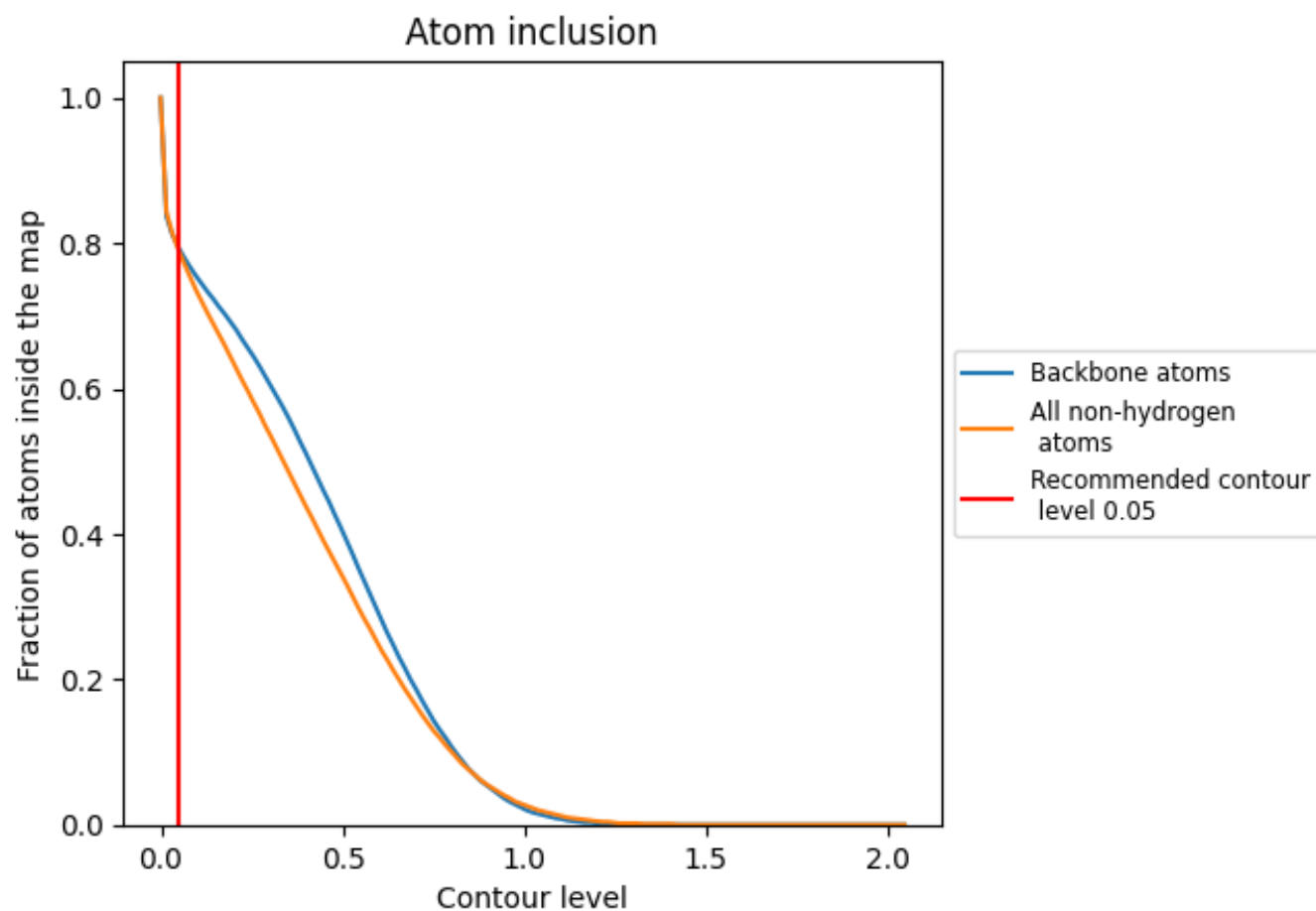


The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

This section was not generated.

9.4 Atom inclusion [i](#)



At the recommended contour level, 79% of all backbone atoms, 79% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.05) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7880	 0.2270
0	 0.2810	 0.0450
1	 0.9430	 0.3120
2	 0.9590	 0.3070
3	 0.9770	 0.3520
4	 0.8610	 0.2430
A	 0.8920	 0.3020
Aa	 0.1900	 -0.0320
B	 0.9010	 0.3070
C	 0.9040	 0.3030
D	 0.8520	 0.2130
E	 0.8710	 0.2760
F	 0.9050	 0.2810
G	 0.8930	 0.2610
H	 0.8970	 0.2800
I	 0.6590	 0.1650
J	 0.8450	 0.2000
K	 0.8960	 0.3040
L	 0.9040	 0.3000
M	 0.8740	 0.2670
N	 0.8910	 0.3110
O	 0.8970	 0.2890
P	 0.8680	 0.2840
Q	 0.8870	 0.2900
R	 0.8780	 0.2610
S	 0.8840	 0.3010
T	 0.8850	 0.2880
U	 0.8990	 0.2720
V	 0.8870	 0.2950
W	 0.7970	 0.1140
X	 0.8790	 0.3020
Y	 0.8920	 0.3040
Z	 0.8760	 0.2510
a	 0.6300	 0.0470
b	 0.7880	 0.1820



Continued on next page...

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Chain	Atom inclusion	Q-score
c	 0.8840	 0.2590
d	 0.8500	 0.2850
e	 0.8980	 0.3200
f	 0.9070	 0.3350
g	 0.8620	 0.2720
h	 0.8890	 0.2880
i	 0.8690	 0.2390
j	 0.9180	 0.3350
k	 0.8630	 0.2390
l	 0.8800	 0.2800
m	 0.2600	 -0.0330
n	 0.2820	 -0.0240
o	 0.8630	 0.2480
oC	 0.9470	 0.2780
p	 0.8720	 0.2350
q	 0.7740	 0.1850
r	 0.5150	 0.0500
t	 0.3220	 -0.0230
u	 0.8770	 0.2460
v	 0.8090	 0.2320
w	 0.3860	 0.0020
x	 0.2680	 -0.0230
y	 0.8940	 0.2390
z	 0.8890	 0.2650