Full wwPDB EM Validation Report ⓘ

Dec 18, 2022 – 01:57 am GMT

PDB ID	:	6ZTL
EMDB ID	:	EMD-11419
Title	:	E. coli 70S-RNAP expressome complex in collided state bound to NusG
Authors	:	Webster, M.W.; Takacs, M.; Weixlbaumer, A.
Deposited on	:	2020-07-20
Resolution	:	3.50 Å(reported)
Based on initial models	:	6ALH, 4YBB

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

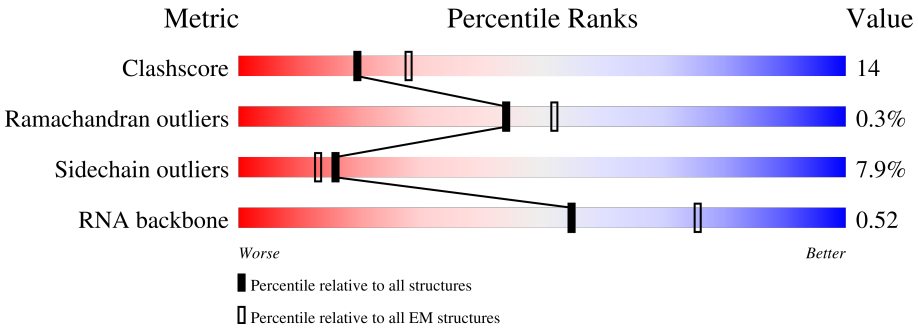
EMDB validation analysis	:	0.0.1.dev43
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.3

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.50 Å.

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



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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=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 <=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	1542	35% 53% 12%
2	AB	241	79% 55% 33% 6% 6%
3	AC	233	23% 59% 28% 9%
4	AD	206	55% 61% 33% 5%
5	AE	167	16% 68% 23% 7%
6	AF	131	18% 39% 33% 8% 21%
7	AG	156	39% 60% 33% 6%

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Mol	Chain	Length	Quality of chain
8	AH	130	15% 59% 35% 5%
9	AI	130	27% 68% 28%
10	AJ	103	49% 56% 37% 6%
11	AK	129	20% 56% 31% 9%
12	AL	124	17% 59% 34% 6%
13	AM	118	37% 62% 31%
14	AN	101	19% 68% 29%
15	AO	89	16% 72% 24%
16	AP	82	27% 55% 39% 6%
17	AQ	84	20% 48% 38% 10% 5%
18	AR	75	16% 49% 23% 24%
19	AS	92	29% 49% 34% 7% 11%
20	AT	87	18% 57% 38%
21	AU	71	89% 79% 18%
22	AV	49	35% 20% 20% 20% 8% 31%
23	AW	77	9% 31% 45% 21%
24	AX	76	30% 25% 59% 13%
25	BA	2904	6% 42% 46% 11%
26	BB	120	5% 48% 42% 10%
27	BC	273	5% 70% 27%
28	BD	209	7% 68% 27% 5%
29	BE	201	12% 75% 24%
30	BF	179	36% 53% 40% 7%
31	BG	177	20% 61% 33% 5%
32	BH	149	93% 85% 14%

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Mol	Chain	Length	Quality of chain
33	BK	142	61% 37%
34	BL	123	15% 65% 33%
35	BM	144	6% 74% 24%
36	BN	136	10% 74% 24%
37	BO	127	62% 28% 7%
38	BP	117	16% 62% 32% 6%
39	BQ	115	16% 59% 37%
40	BR	118	5% 69% 28%
41	BS	103	7% 67% 29%
42	BT	110	7% 63% 32% 5%
43	BU	100	12% 67% 26% 5%
44	BV	104	12% 64% 30%
45	BW	94	11% 62% 34%
46	BX	85	6% 60% 26% 11%
47	BY	78	6% 64% 33%
48	BZ	63	13% 60% 35%
49	B1	59	5% 59% 37%
50	B2	57	11% 67% 30%
51	B3	55	76% 44% 45% 5% 5%
52	B4	46	74% 22%
53	B5	65	5% 72% 18% 5%
54	B6	50	54% 22% 24%
55	CN	39	38% 18% 49% 10% 23%
56	CT	39	15% 8% 44% 26% 23%
57	CA	329	27% 57% 12% 30%

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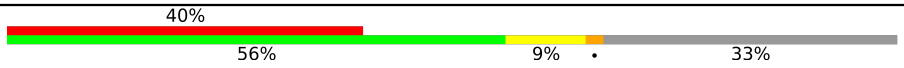
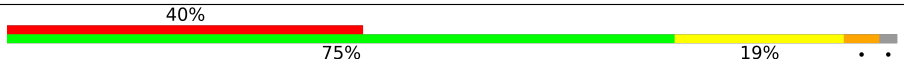
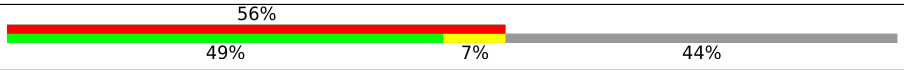
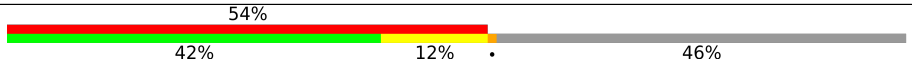
Mol	Chain	Length	Quality of chain
57	CB	329	
58	CC	1342	
59	CD	1407	
60	CE	91	
61	CF	181	

2 Entry composition

There are 64 unique types of molecules in this entry. The entry contains 173008 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	AA	1533	32908	14683	6037	10655	1533	0	0

- Molecule 2 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	AB	226	1764	1116	316	324	8	0	0

- Molecule 3 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	AC	211	1653	1046	310	293	4	0	0

- Molecule 4 is a protein called 30S ribosomal protein S4.

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

- Molecule 5 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	AE	156	1148	715	217	210	6	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AE	9	CYS	GLY	conflict	UNP P0A7W1
AE	151	ALA	GLU	conflict	UNP P0A7W1

- Molecule 6 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	AF	104	Total	C	N	O	S	0	0
			848	536	153	152	7		

- Molecule 7 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	AG	154	Total	C	N	O	S	0	0
			1214	756	235	219	4		

- Molecule 8 is a protein called 30S ribosomal protein S8.

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

- Molecule 9 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	AI	128	Total	C	N	O	S	0	0
			1031	639	207	182	3		

- Molecule 10 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	AJ	102	Total	C	N	O	S	0	0
			817	509	157	150	1		

- Molecule 11 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	AK	117	Total	C	N	O	S	0	0
			877	540	174	160	3		

- Molecule 12 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	AL	123	Total	C	N	O	S	0	0
			957	591	196	165	5		

- Molecule 13 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	AM	115	Total	C	N	O	S	0	0
			891	552	179	157	3		

- Molecule 14 is a protein called 30S ribosomal protein S14.

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

- Molecule 15 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	AO	89	Total	C	N	O	S	0	0
			722	444	145	131	2		

- Molecule 16 is a protein called 30S ribosomal protein S16.

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

- Molecule 17 is a protein called 30S ribosomal protein S17.

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

- Molecule 18 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				AltConf	Trace
18	AR	57	Total	C	N	O	0	0
			474	298	90	86		

- Molecule 19 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	AS	82	Total	C	N	O	S	0	0
			656	419	125	110	2		

- Molecule 20 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	AT	86	Total	C	N	O	S	0	0
			670	414	138	115	3		

- Molecule 21 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	AU	70	Total	C	N	O	S	0	0
			590	366	125	98	1		

- Molecule 22 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	AV	34	Total	C	N	O	P	0	0
			720	323	130	233	34		

- Molecule 23 is a RNA chain called tRNA(fmet) P-site.

Mol	Chain	Residues	Atoms						AltConf	Trace
23	AW	77	Total	C	N	O	P	S	0	0
			1645	734	297	536	77	1		

- Molecule 24 is a RNA chain called Phe-NH-tRNA(Phe) A-site.

Mol	Chain	Residues	Atoms						AltConf	Trace
24	AX	76	Total	C	N	O	P	S	0	0
			1629	729	290	533	76	1		

- Molecule 25 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	BA	2899	Total	C	N	O	P	0	0
			62248	27776	11451	20122	2899		

There are 5 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BA	?	-	G	deletion	GB CP023165.1
BA	?	-	C	deletion	GB CP023165.1
BA	1211	U	C	conflict	GB CP023165.1
BA	1723	G	A	conflict	GB CP023165.1
BA	2211	G	A	conflict	GB CP023165.1

- Molecule 26 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	BB	120	Total	C	N	O	P	0	0
			2569	1144	468	837	120		

- Molecule 27 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	BC	272	Total	C	N	O	S	0	0
			2092	1294	425	366	7		

- Molecule 28 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	BD	209	Total	C	N	O	S	0	0
			1566	980	288	294	4		

- Molecule 29 is a protein called 50S ribosomal protein L4.

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

- Molecule 30 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	BF	178	Total	C	N	O	S	0	0
			1420	905	251	258	6		

- Molecule 31 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	BG	175	Total	C	N	O	S	0	0
			1313	826	241	244	2		

- Molecule 32 is a protein called 50S ribosomal protein L9.

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

- Molecule 33 is a protein called 50S ribosomal protein L13.

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

- Molecule 34 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	BL	123	Total	C	N	O	S	0	0
			946	592	181	167	6		

- Molecule 35 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	BM	144	Total	C	N	O	S	0	0
			1052	653	207	190	2		

- Molecule 36 is a protein called 50S ribosomal protein L16.

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

- Molecule 37 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	BO	118	Total	C	N	O	S	0	0
			945	585	194	161	5		

- Molecule 38 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	BP	117	Total	C	N	O	S	0	0
			900	557	179	163	1		

- Molecule 39 is a protein called 50S ribosomal protein L19.

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

- Molecule 40 is a protein called 50S ribosomal protein L20.

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

- Molecule 41 is a protein called 50S ribosomal protein L21.

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

- Molecule 42 is a protein called 50S ribosomal protein L22.

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

- Molecule 43 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	BU	95	Total 757	C 479	N 141	O 135	S 2	0	0

- Molecule 44 is a protein called 50S ribosomal protein L24.

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

- Molecule 45 is a protein called 50S ribosomal protein L25.

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

- Molecule 46 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	BX	76	Total 582	C 360	N 117	O 104	S 1	0	0

- Molecule 47 is a protein called 50S ribosomal protein L28.

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

- Molecule 48 is a protein called 50S ribosomal protein L29.

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

- Molecule 49 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	B1	58	Total	C	N	O	S	0	0
			449	281	87	79	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
50	B2	56	Total	C	N	O	S	0	0
			444	269	94	80	1		

- Molecule 51 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
51	B3	52	Total	C	N	O	0	0
			426	275	78	73		

- Molecule 52 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	B4	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 53 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	B5	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 54 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	B6	38	Total	C	N	O	S	0	0
			301	185	65	47	4		

- Molecule 55 is a DNA chain called Non-template DNA strand.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	CN	30	Total	C	N	O	P	0	0
			618	294	114	180	30		

- Molecule 56 is a DNA chain called Template DNA strand.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	CT	30	Total	C	N	O	P	0	0
			606	288	105	183	30		

- Molecule 57 is a protein called DNA-directed RNA polymerase subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	CA	229	Total	C	N	O	S	0	0
			1775	1106	313	350	6		
57	CB	219	Total	C	N	O	S	0	0
			1684	1051	295	332	6		

- Molecule 58 is a protein called DNA-directed RNA polymerase subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	CC	1320	Total	C	N	O	S	0	0
			10415	6535	1815	2021	44		

- Molecule 59 is a protein called DNA-directed RNA polymerase subunit beta'.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	CD	1333	Total	C	N	O	S	0	0
			10375	6518	1851	1956	50		

- Molecule 60 is a protein called DNA-directed RNA polymerase subunit omega.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	CE	51	Total	C	N	O	S	0	0
			399	246	77	75	1		

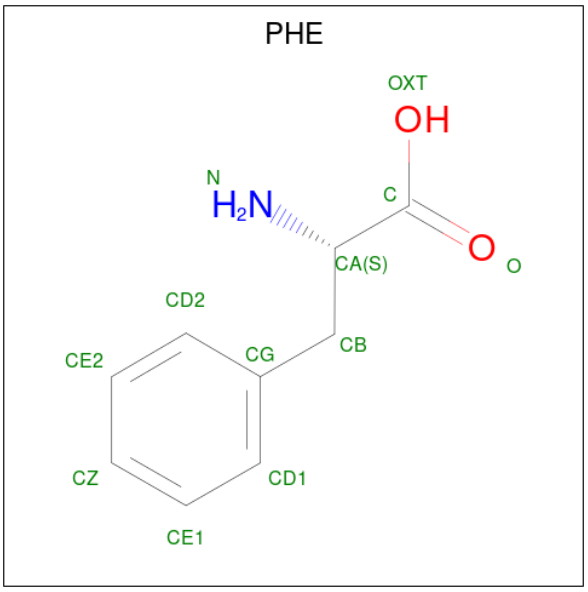
- Molecule 61 is a protein called Transcription termination/antitermination protein NusG.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	CF	98	Total	C	N	O	S	0	0
			790	505	139	140	6		

- Molecule 62 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
62	AA	115	Total	Mg	0
			115	115	
62	AL	1	Total	Mg	0
			1	1	
62	AM	1	Total	Mg	0
			1	1	
62	AN	1	Total	Mg	0
			1	1	
62	AP	1	Total	Mg	0
			1	1	
62	AX	1	Total	Mg	0
			1	1	
62	BA	304	Total	Mg	0
			304	304	
62	BB	8	Total	Mg	0
			8	8	
62	BC	4	Total	Mg	0
			4	4	
62	BD	2	Total	Mg	0
			2	2	
62	BQ	1	Total	Mg	0
			1	1	
62	BR	1	Total	Mg	0
			1	1	
62	CD	1	Total	Mg	0
			1	1	

- Molecule 63 is PHENYLALANINE (three-letter code: PHE) (formula: $C_9H_{11}NO_2$).



Mol	Chain	Residues	Atoms				AltConf
63	AX	1	Total	C	N	O	0
			11	9	1	1	

- Molecule 64 is ZINC ION (three-letter code: ZN) (formula: Zn).

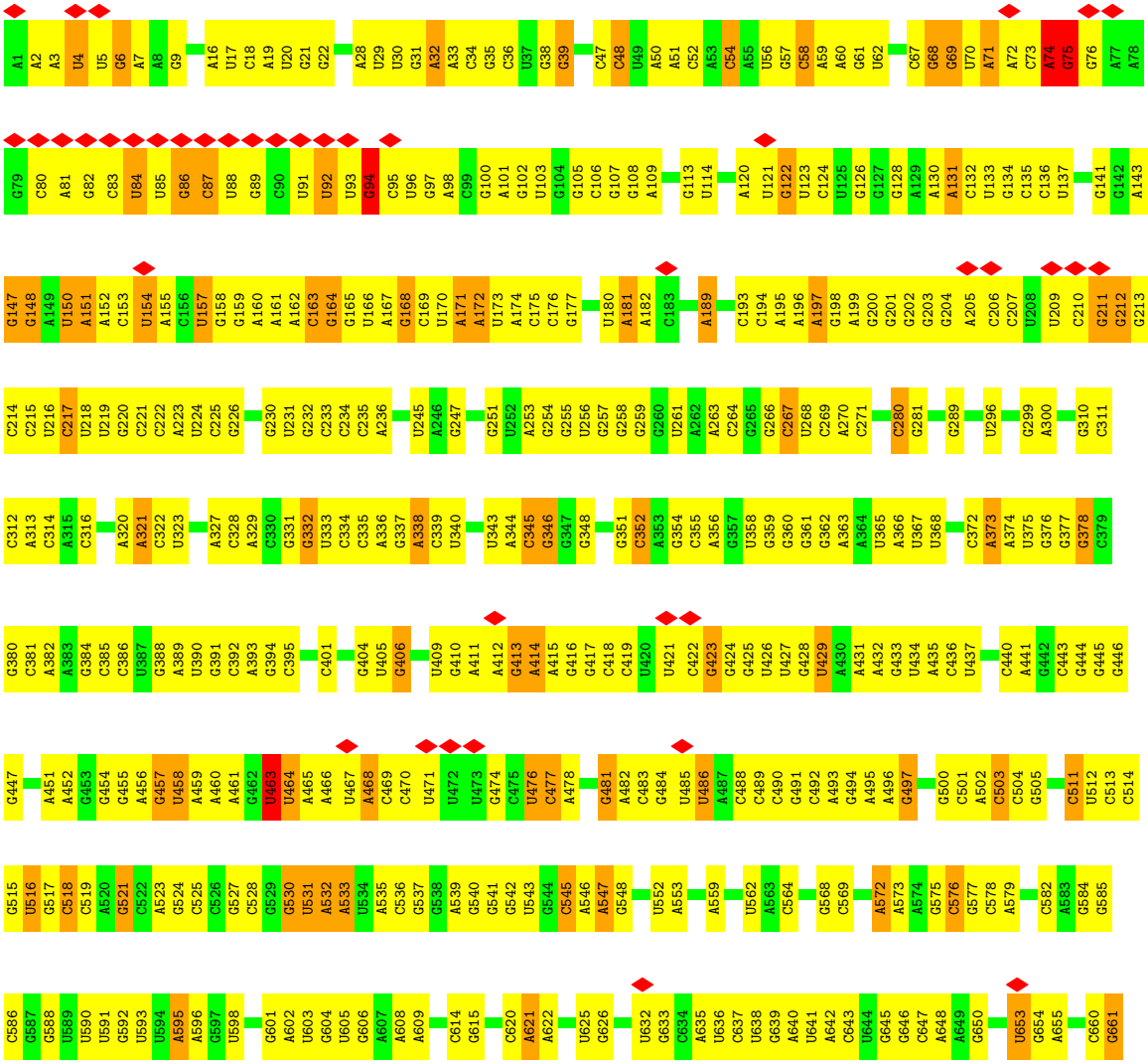
Mol	Chain	Residues	Atoms		AltConf
64	B6	1	Total	Zn	0
			1	1	
64	CD	2	Total	Zn	0
			2	2	

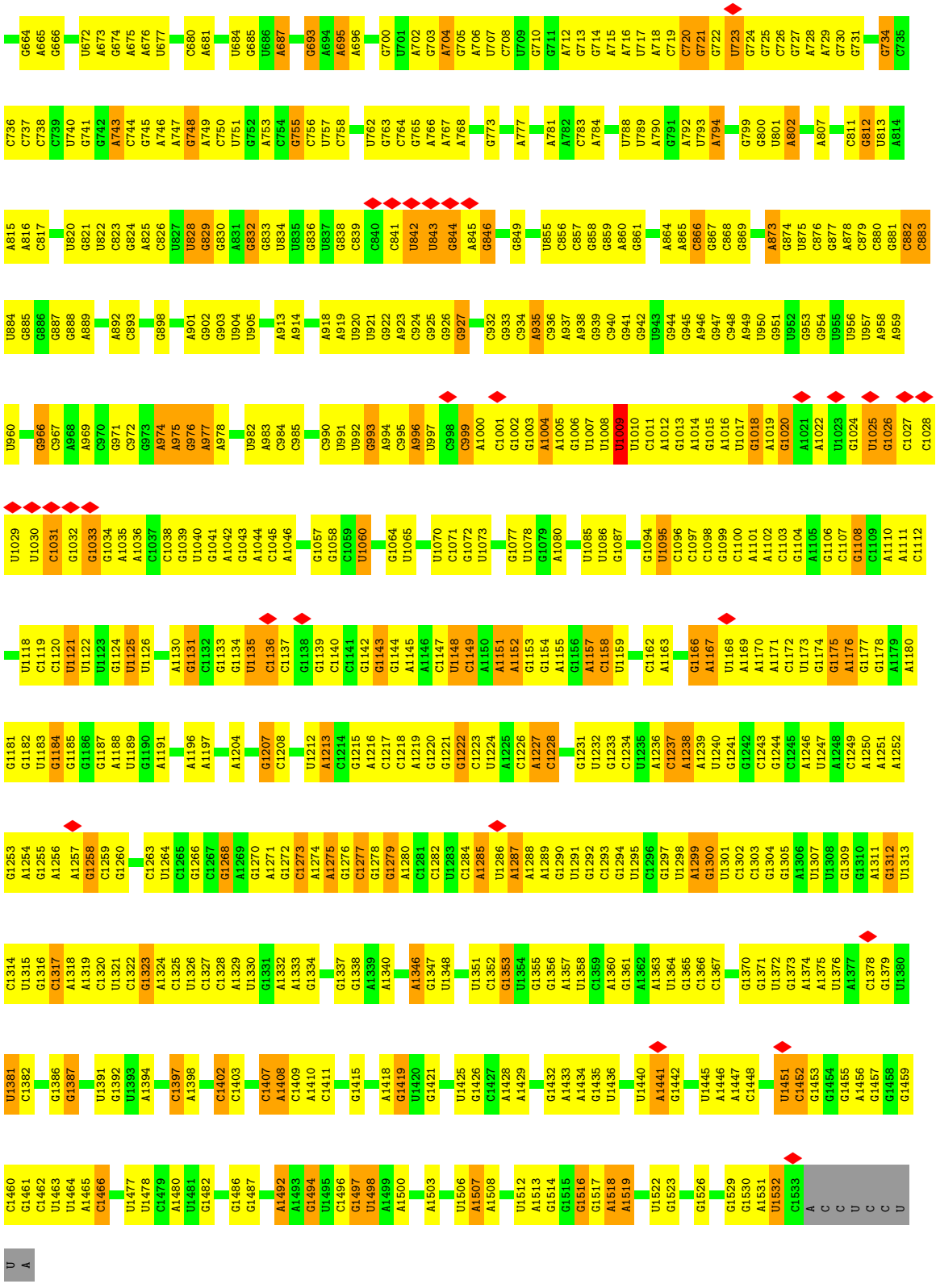
3 Residue-property plots (i)

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

- Molecule 1: 16S ribosomal RNA

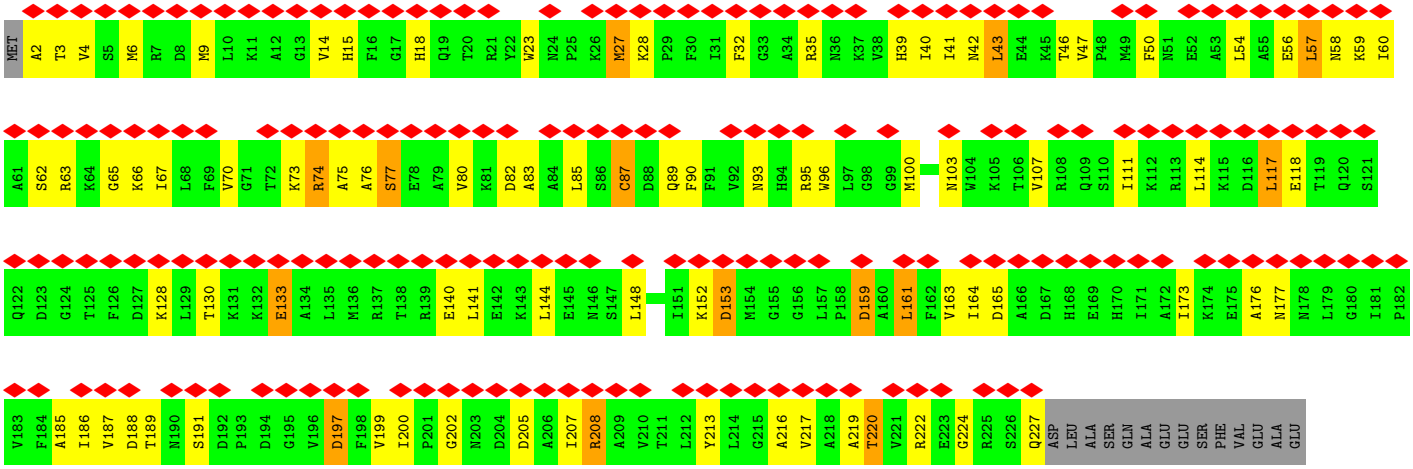
Chain AA:





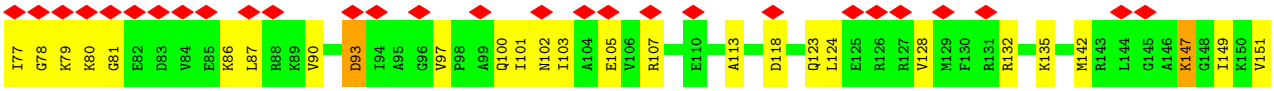
• Molecule 2: 30S ribosomal protein S2

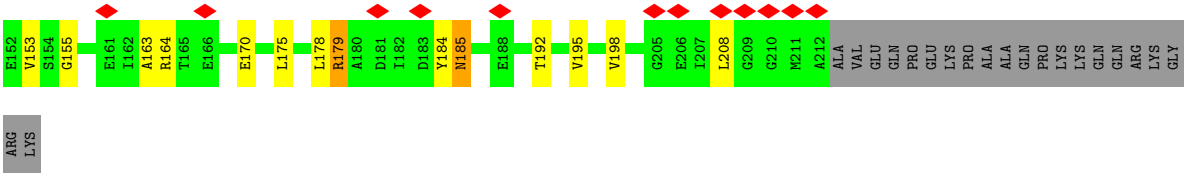
Chain AB:



• Molecule 3: 30S ribosomal protein S3

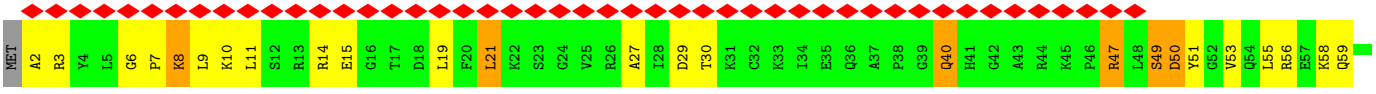
Chain AC:

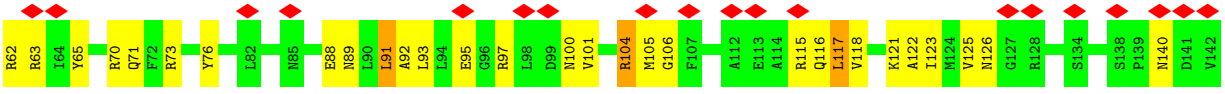


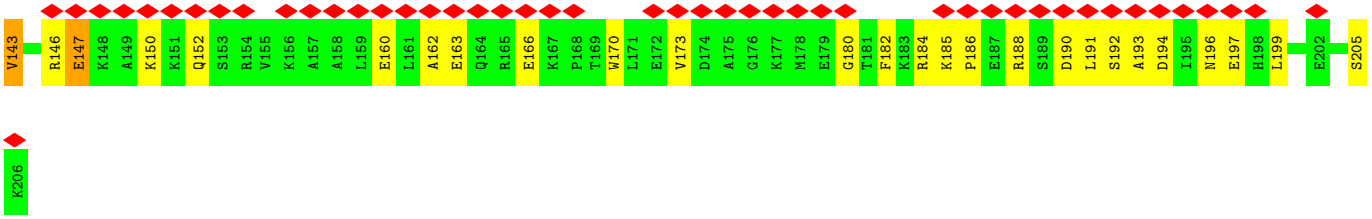


• Molecule 4: 30S ribosomal protein S4

Chain AD:

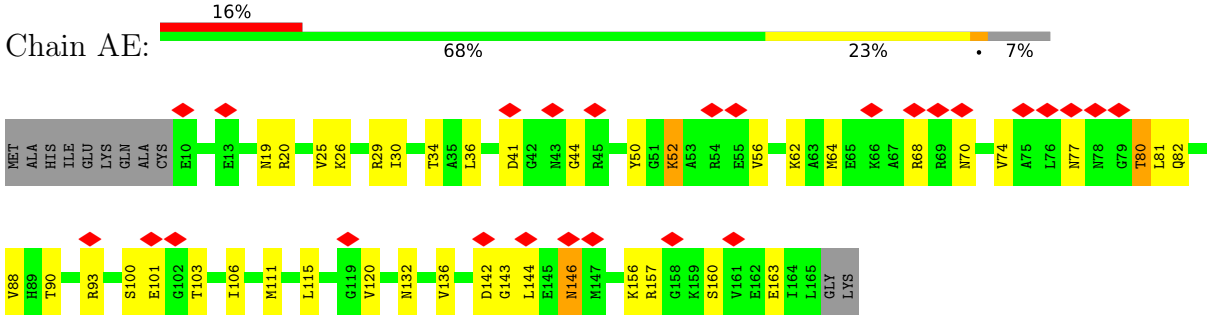






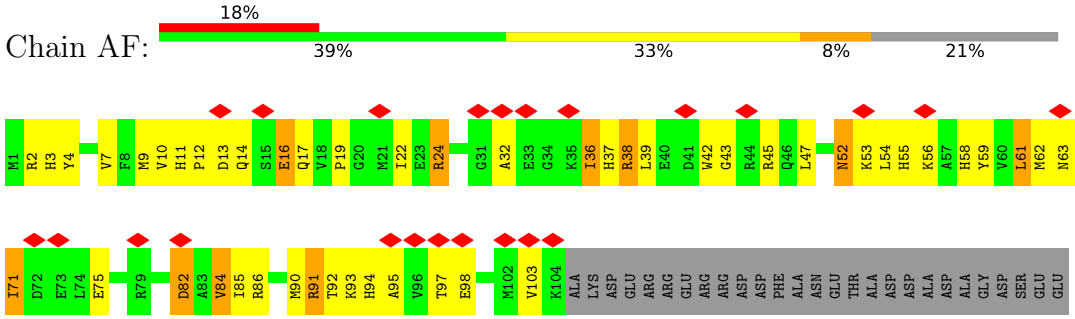
• Molecule 5: 30S ribosomal protein S5

Chain AE:



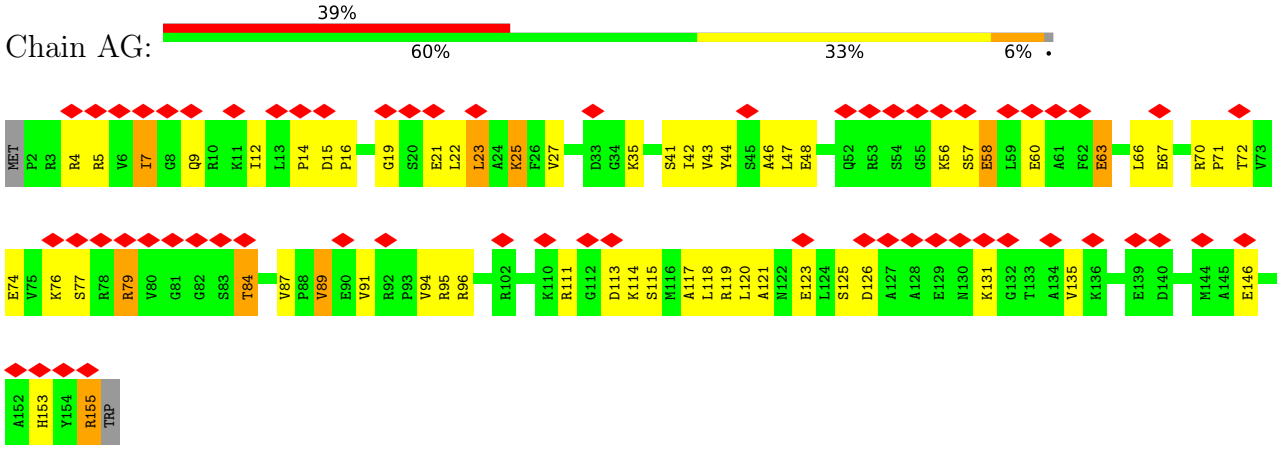
• Molecule 6: 30S ribosomal protein S6

Chain AF:



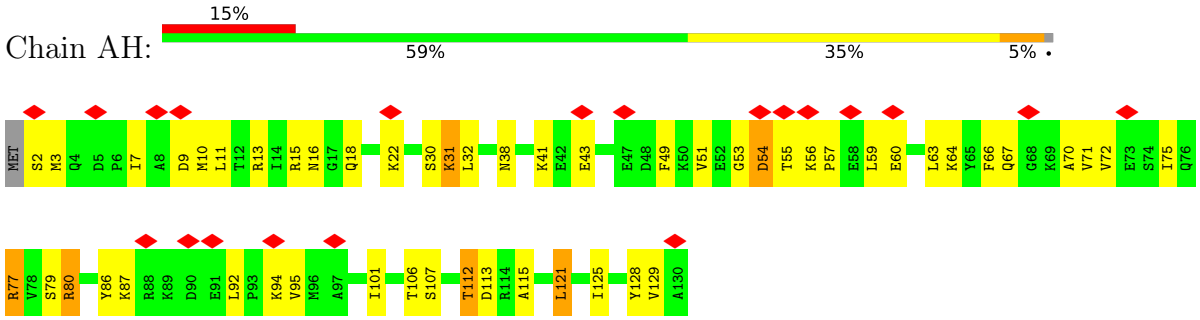
• Molecule 7: 30S ribosomal protein S7

Chain AG:



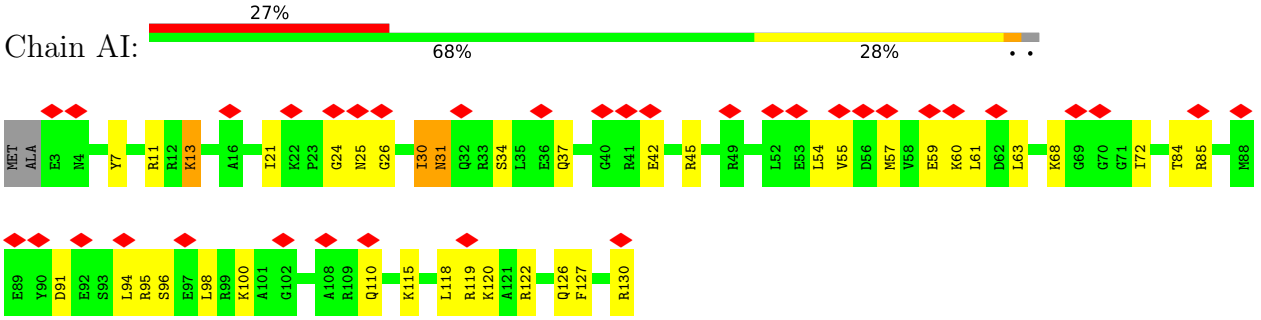
• Molecule 8: 30S ribosomal protein S8

Chain AH:



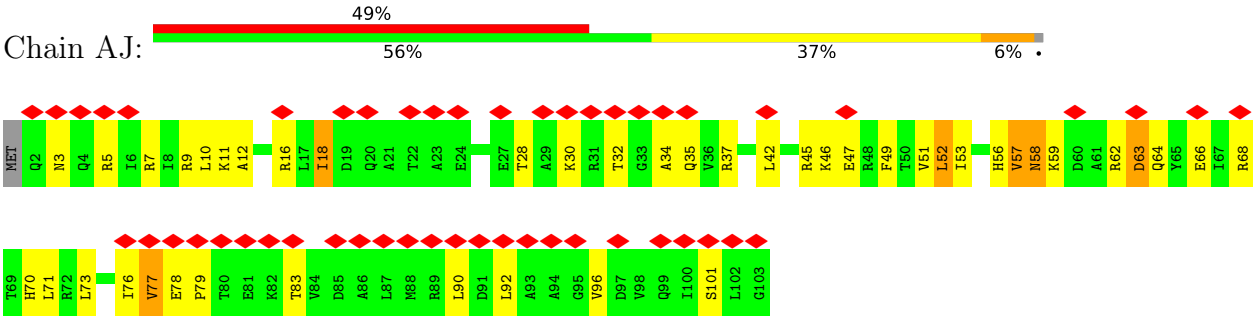
• Molecule 9: 30S ribosomal protein S9

Chain AI:



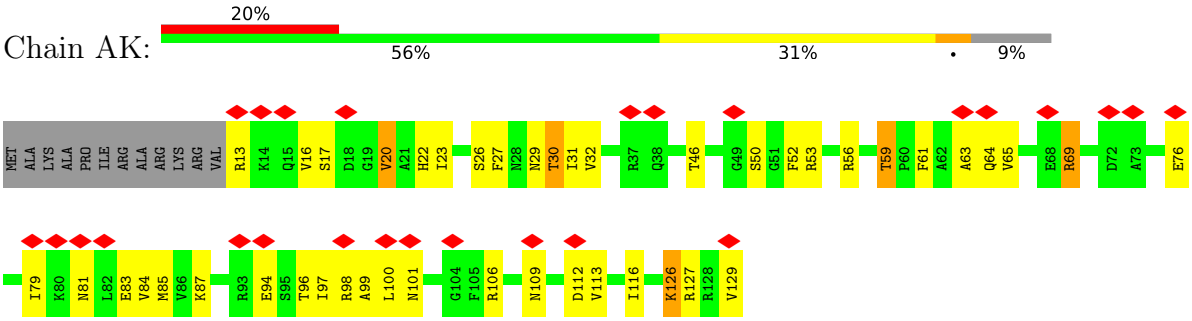
• Molecule 10: 30S ribosomal protein S10

Chain AJ:



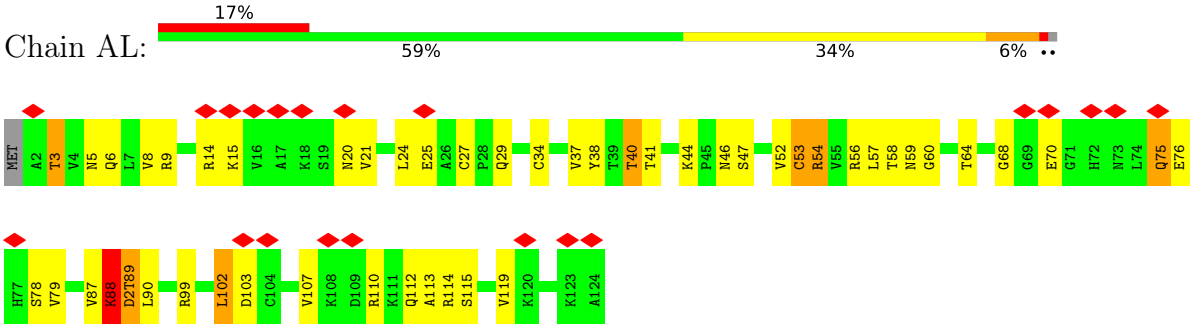
• Molecule 11: 30S ribosomal protein S11

Chain AK:



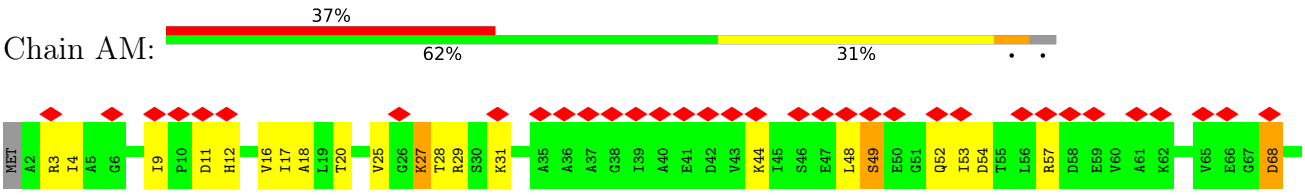
• Molecule 12: 30S ribosomal protein S12

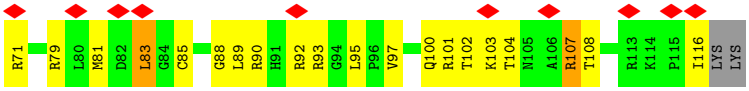
Chain AL:



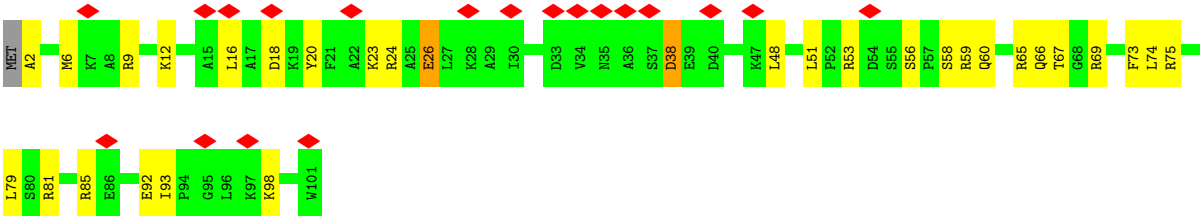
• Molecule 13: 30S ribosomal protein S13

Chain AM:

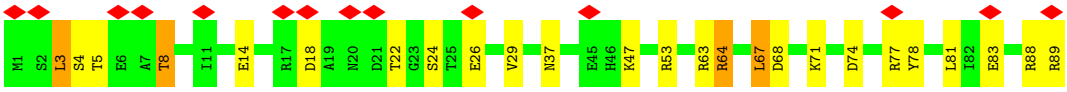




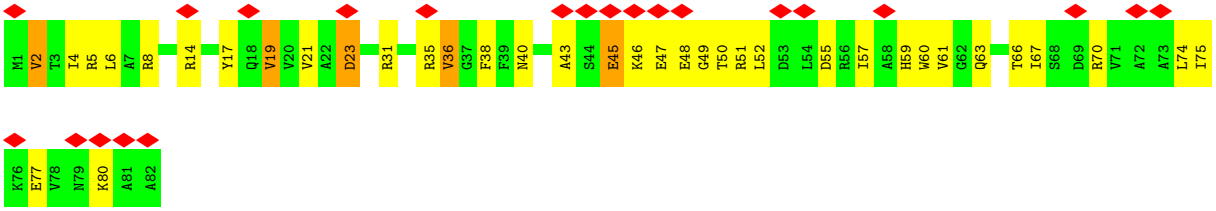
• Molecule 14: 30S ribosomal protein S14



• Molecule 15: 30S ribosomal protein S15

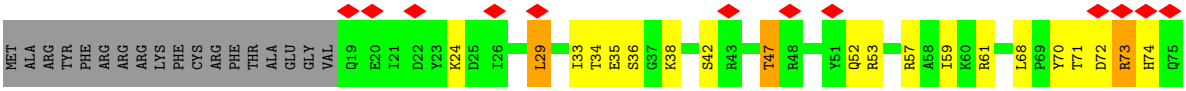


• Molecule 16: 30S ribosomal protein S16

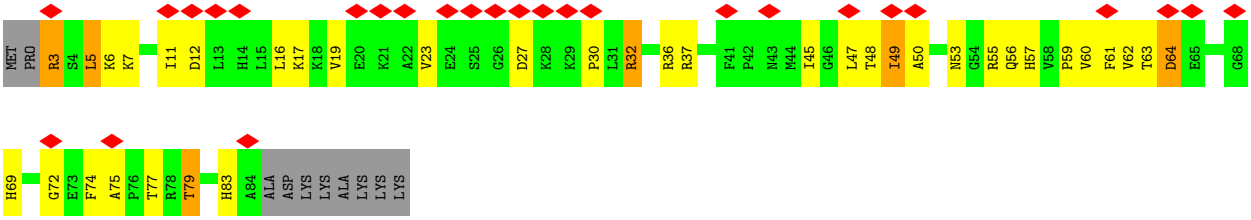


• Molecule 17: 30S ribosomal protein S17

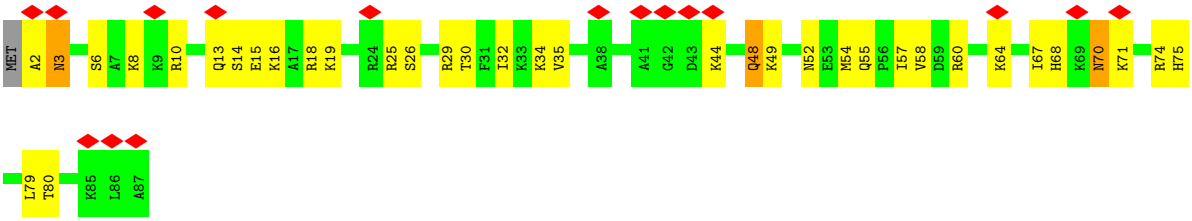
• Molecule 18: 30S ribosomal protein S18



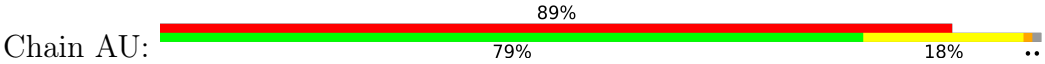
• Molecule 19: 30S ribosomal protein S19



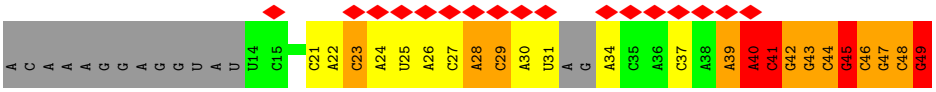
• Molecule 20: 30S ribosomal protein S20



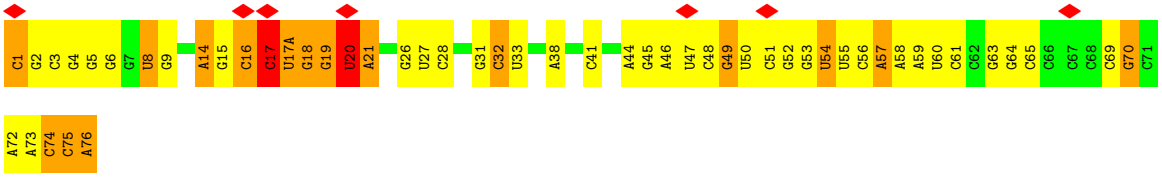
• Molecule 21: 30S ribosomal protein S21



• Molecule 22: mRNA

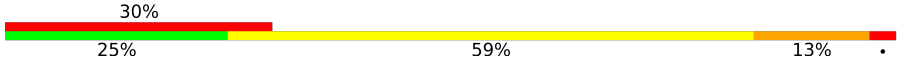


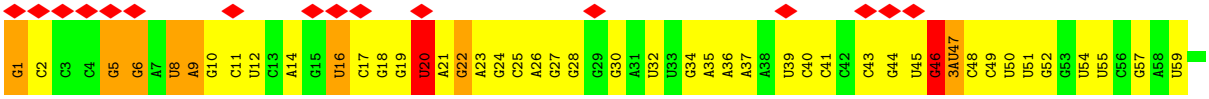
• Molecule 23: tRNA(fmet) P-site

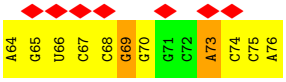


• Molecule 24: Phe-NH-tRNA(Phe) A-site

Chain AX:

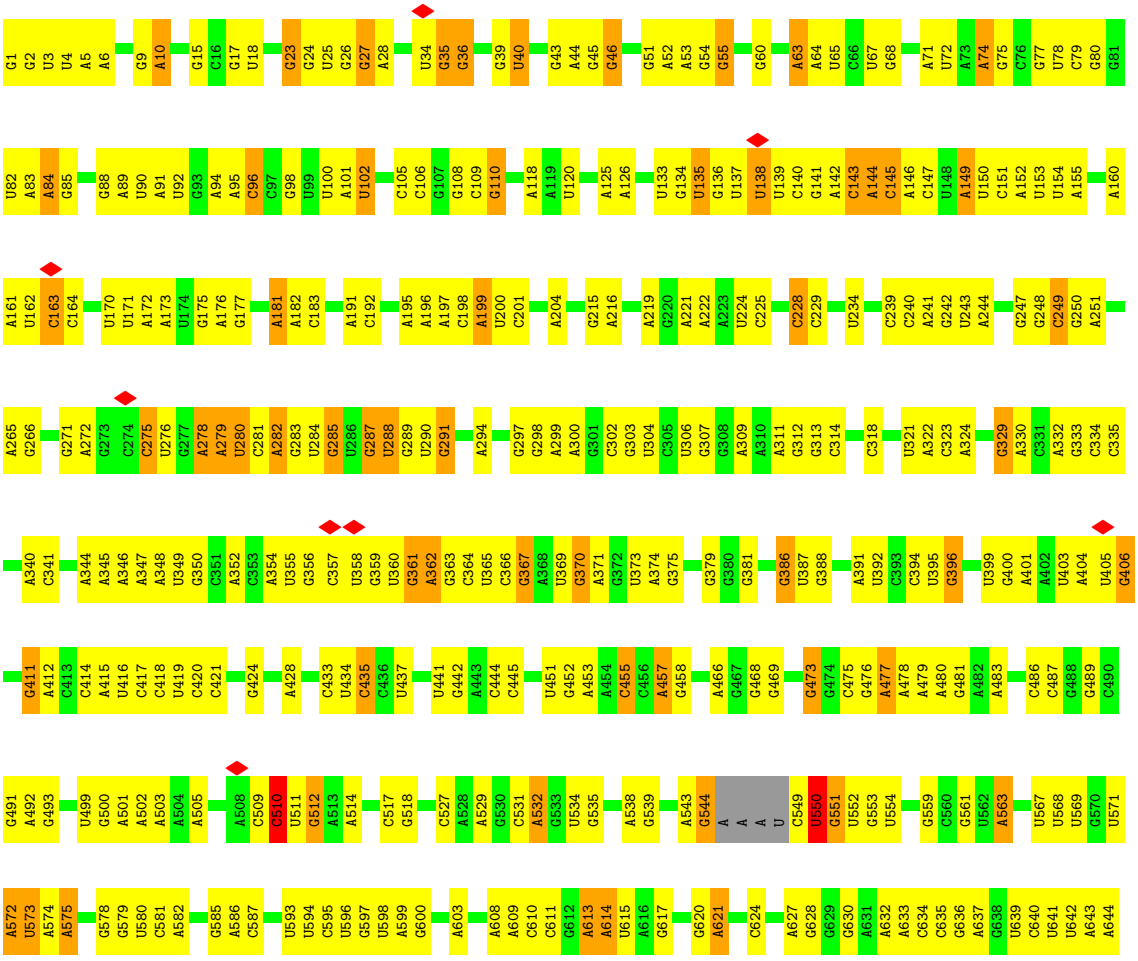


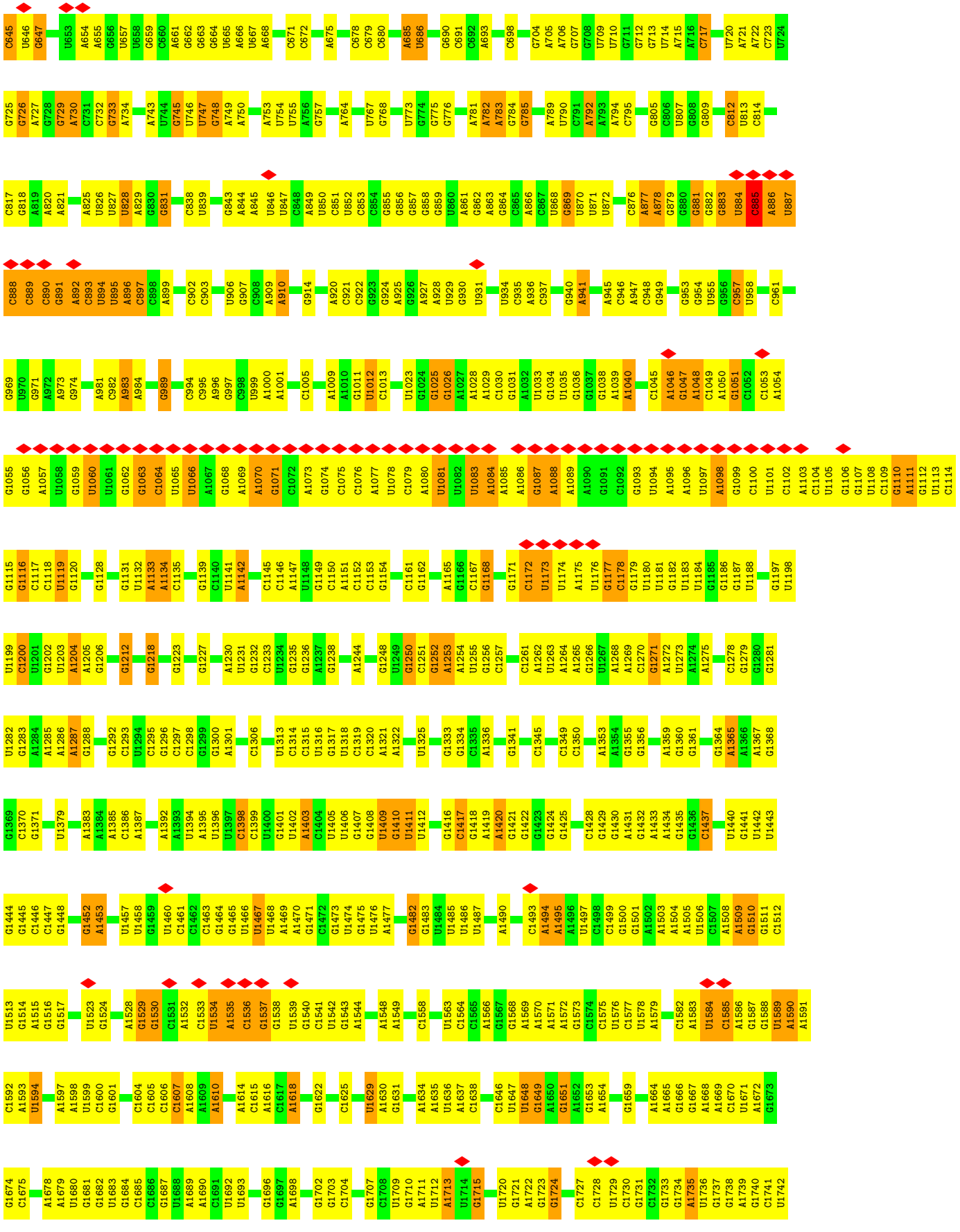


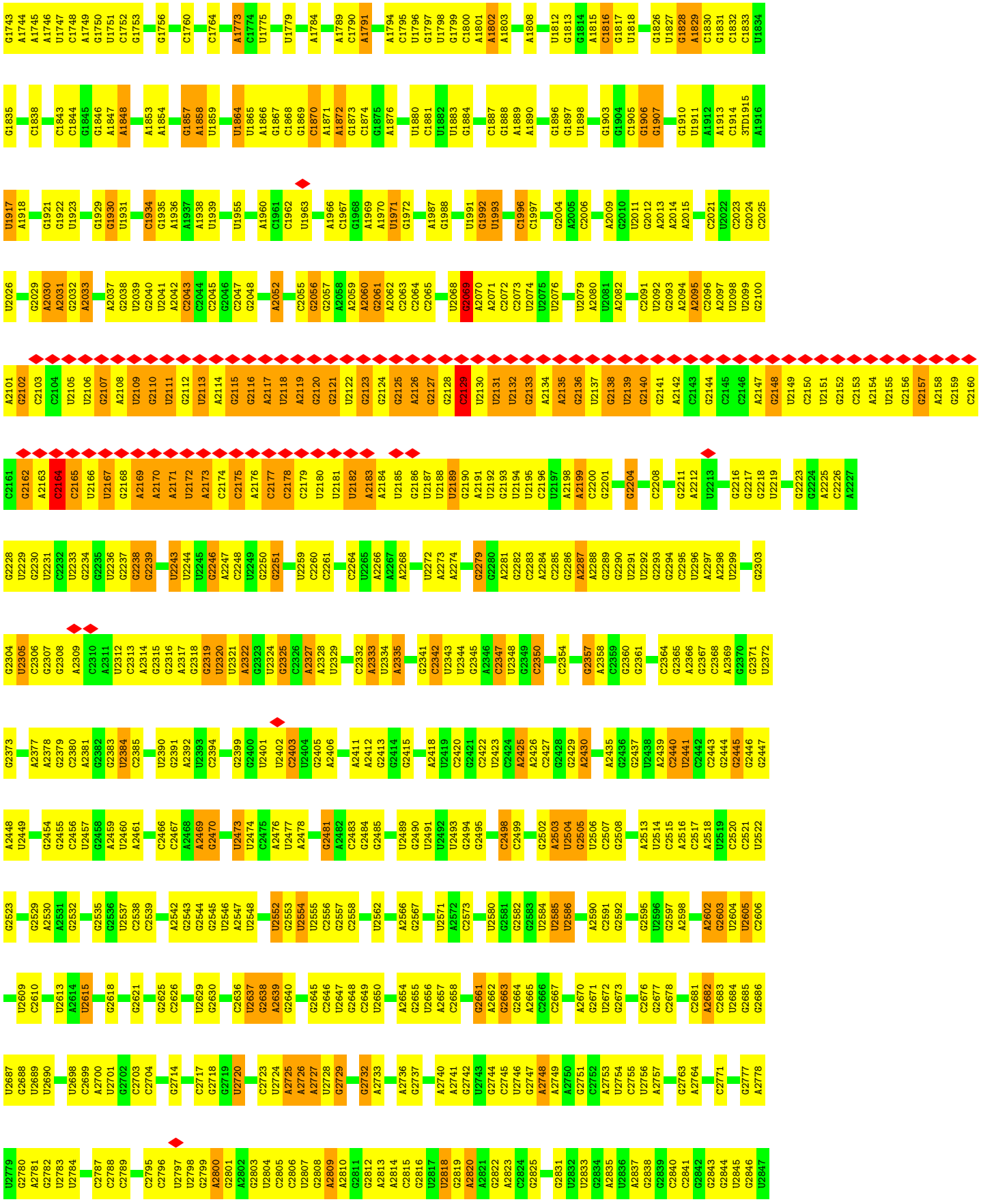


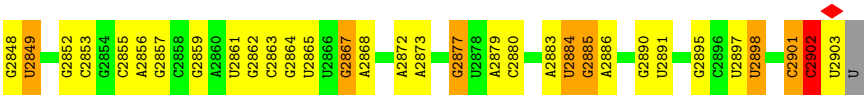
• Molecule 25: 23S ribosomal RNA

Chain BA:



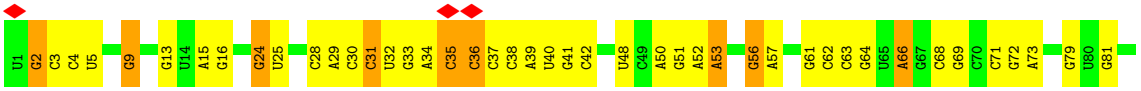


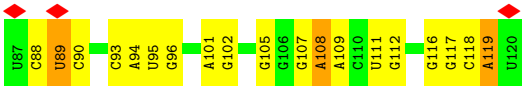




• Molecule 26: 5S ribosomal RNA

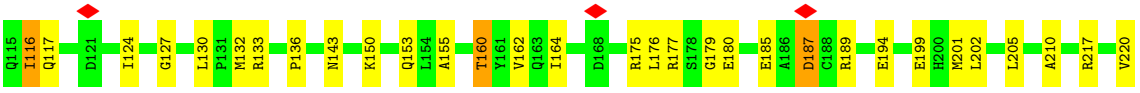
Chain BB:

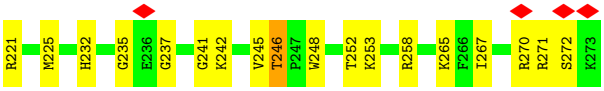




• Molecule 27: 50S ribosomal protein L2

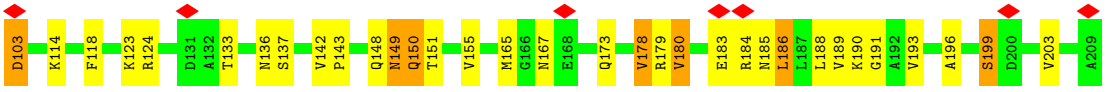
Chain BC:





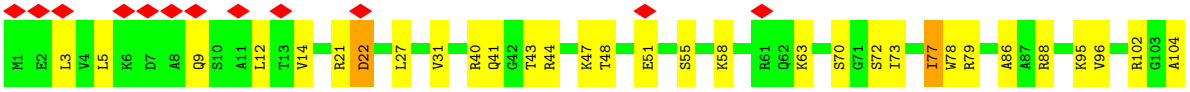
• Molecule 28: 50S ribosomal protein L3

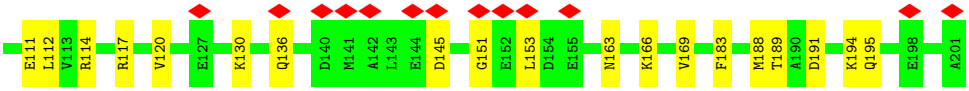
Chain BD:



• Molecule 29: 50S ribosomal protein L4

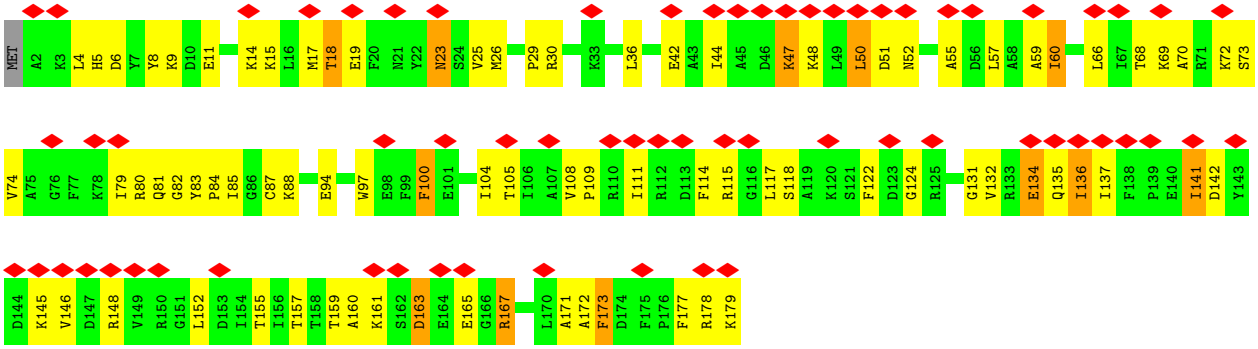
Chain BE:





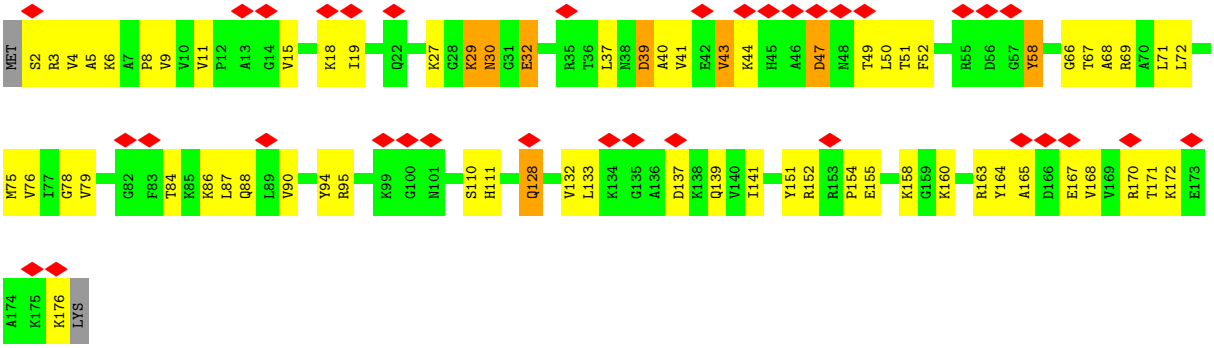
• Molecule 30: 50S ribosomal protein L5

Chain BF:



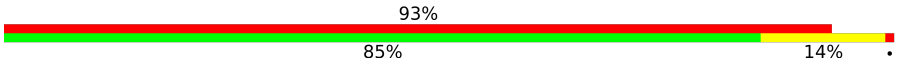
• Molecule 31: 50S ribosomal protein L6

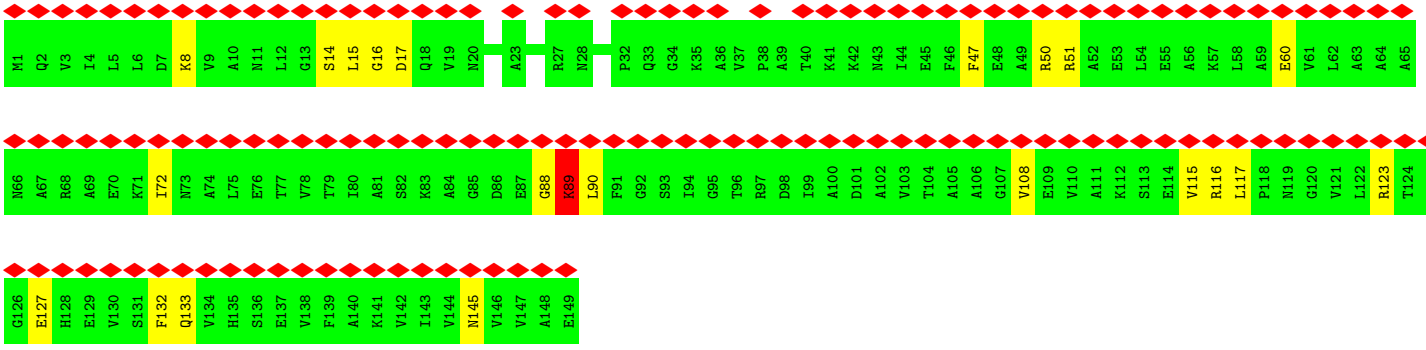
Chain BG:



• Molecule 32: 50S ribosomal protein L9

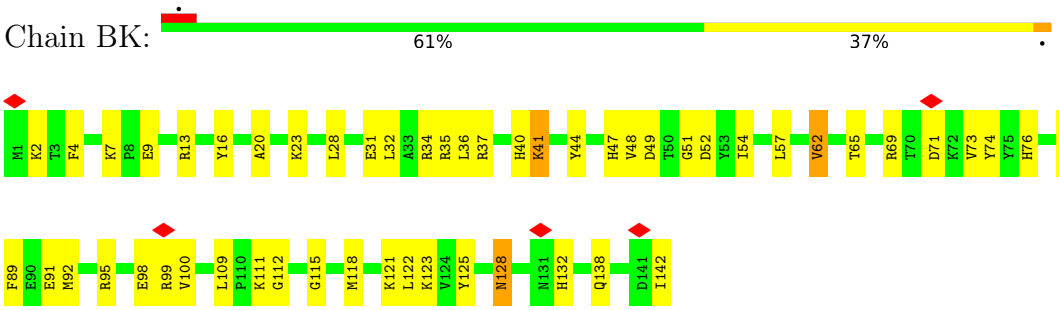
Chain BH:





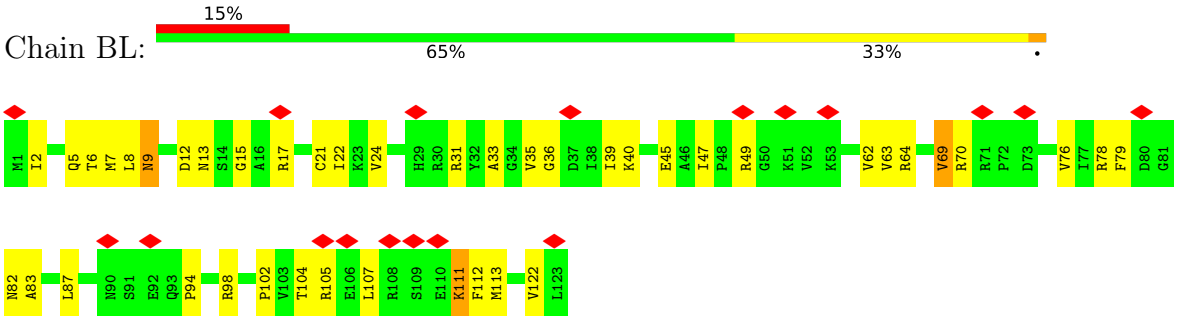
• Molecule 33: 50S ribosomal protein L13

Chain BK:



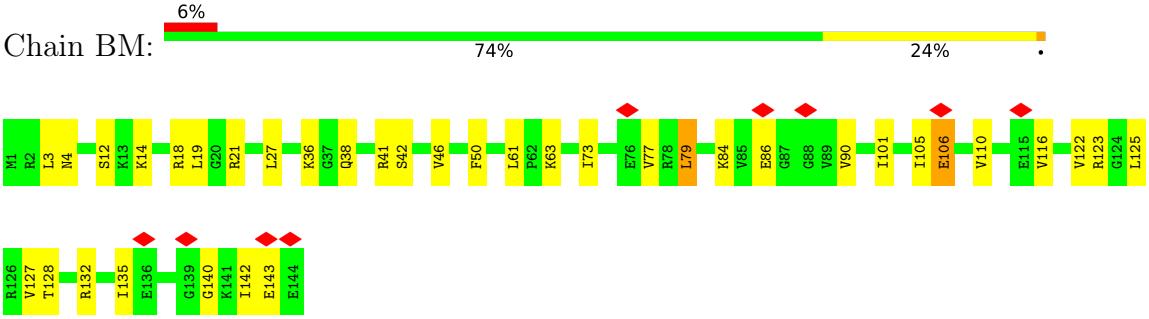
• Molecule 34: 50S ribosomal protein L14

Chain BL:



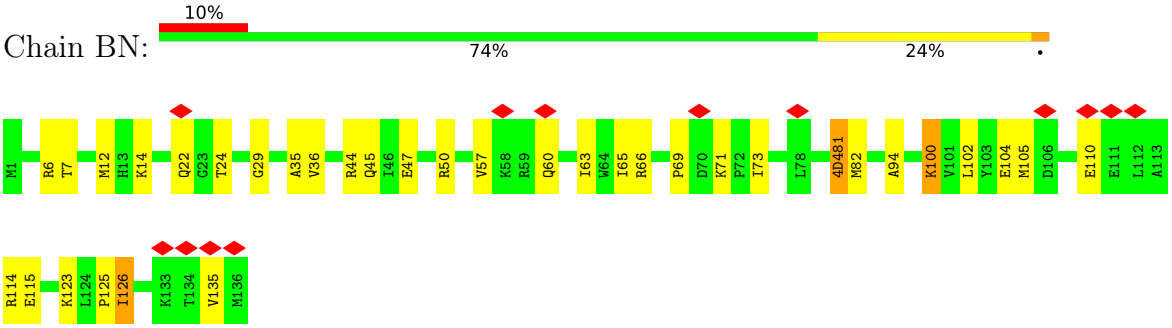
• Molecule 35: 50S ribosomal protein L15

Chain BM:



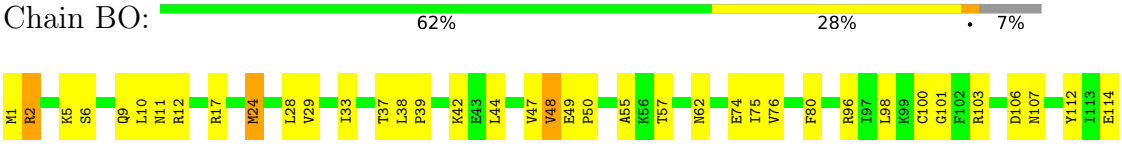
• Molecule 36: 50S ribosomal protein L16

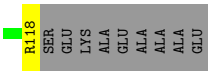
Chain BN:



• Molecule 37: 50S ribosomal protein L17

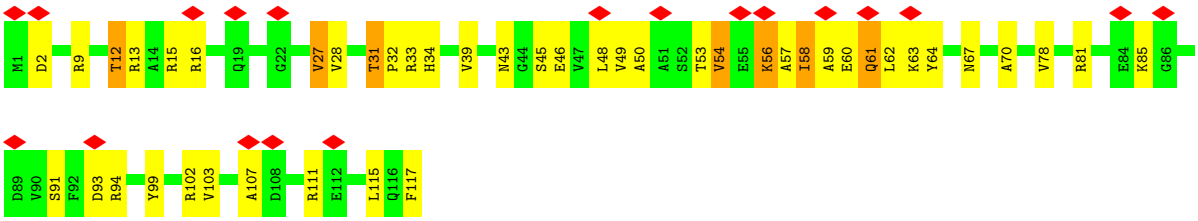
Chain BO:





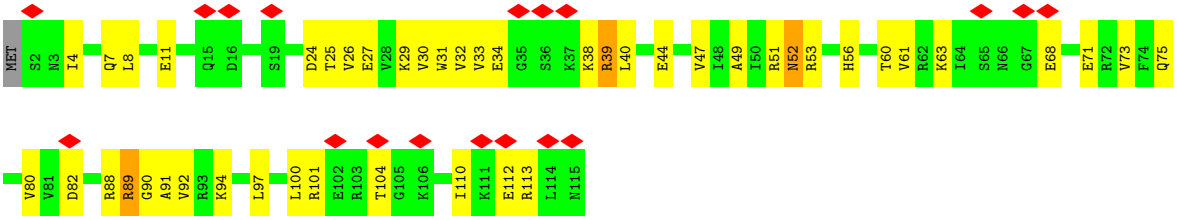
• Molecule 38: 50S ribosomal protein L18

Chain BP:



• Molecule 39: 50S ribosomal protein L19

Chain BQ:

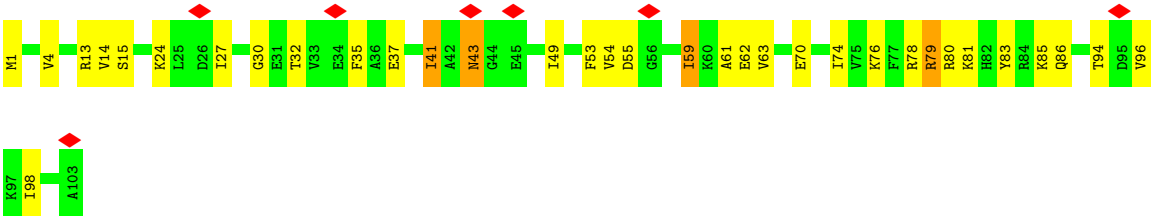


• Molecule 40: 50S ribosomal protein L20

Chain BR:

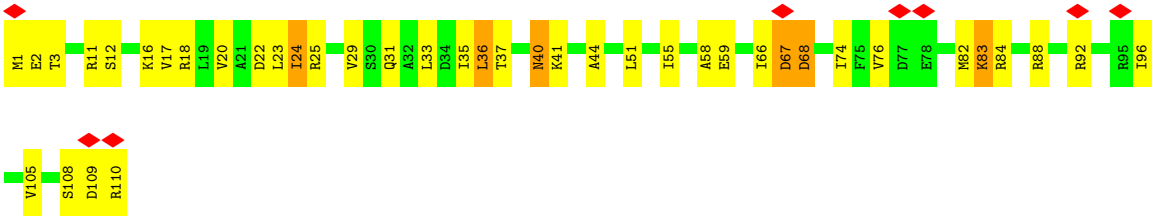
• Molecule 41: 50S ribosomal protein L21

Chain BS:



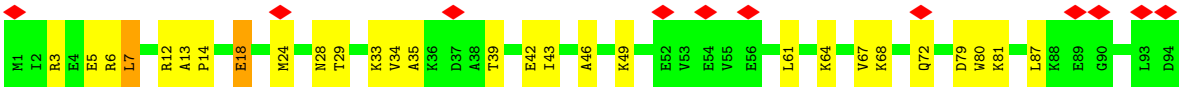
• Molecule 42: 50S ribosomal protein L22

Chain BT:



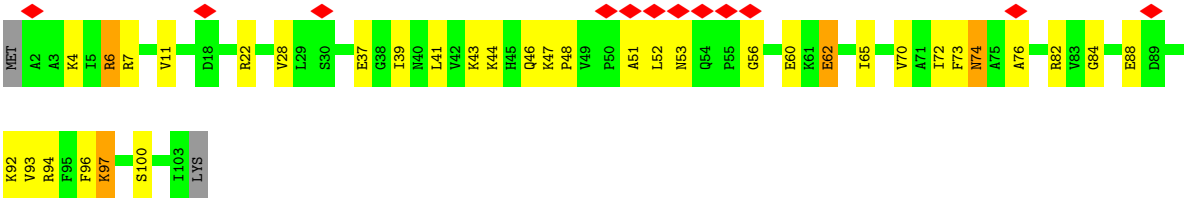
• Molecule 43: 50S ribosomal protein L23

Chain BU:



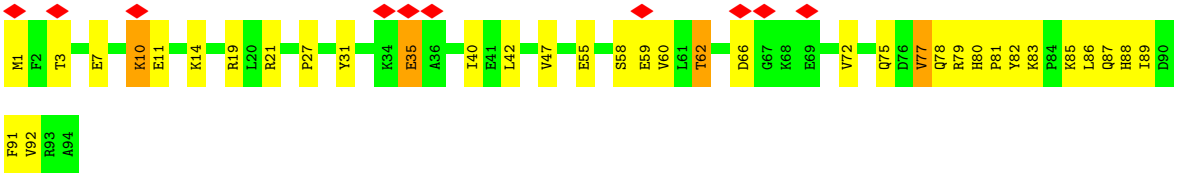
• Molecule 44: 50S ribosomal protein L24

Chain BV:



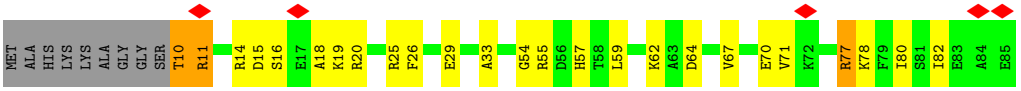
• Molecule 45: 50S ribosomal protein L25

Chain BW:



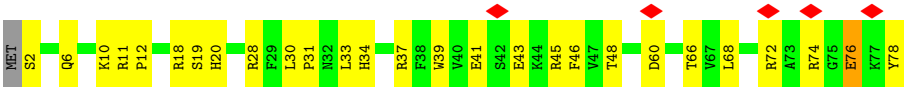
• Molecule 46: 50S ribosomal protein L27

Chain BX:



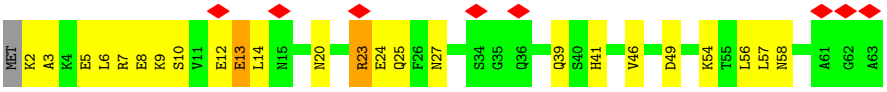
• Molecule 47: 50S ribosomal protein L28

Chain BY:



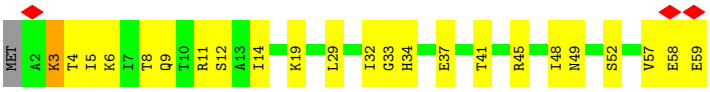
• Molecule 48: 50S ribosomal protein L29

Chain BZ:



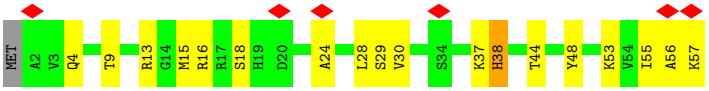
• Molecule 49: 50S ribosomal protein L30

Chain B1:



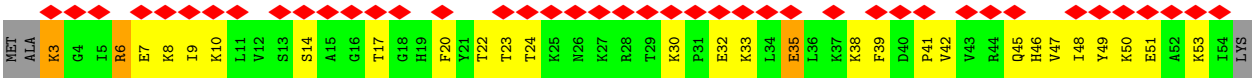
• Molecule 50: 50S ribosomal protein L32

Chain B2:



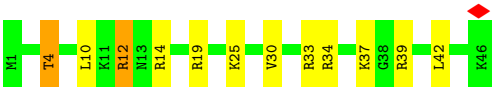
• Molecule 51: 50S ribosomal protein L33

Chain B3:



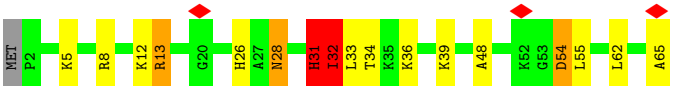
• Molecule 52: 50S ribosomal protein L34

Chain B4:



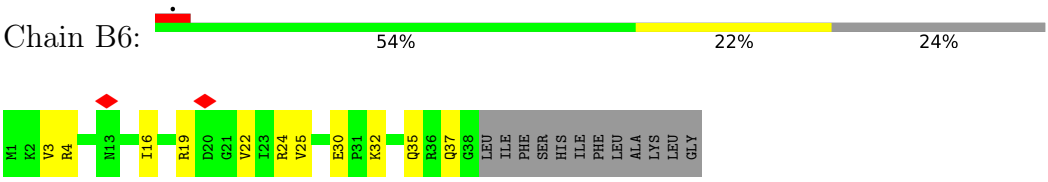
• Molecule 53: 50S ribosomal protein L35

Chain B5:



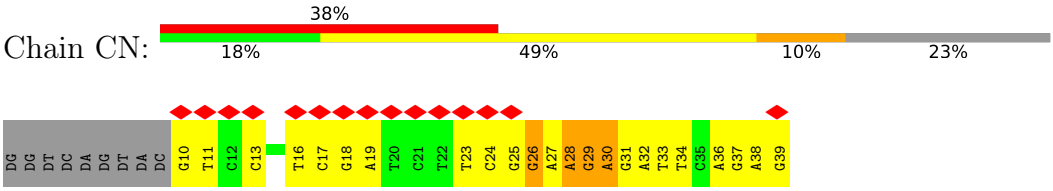
• Molecule 54: 50S ribosomal protein L36

Chain B6:



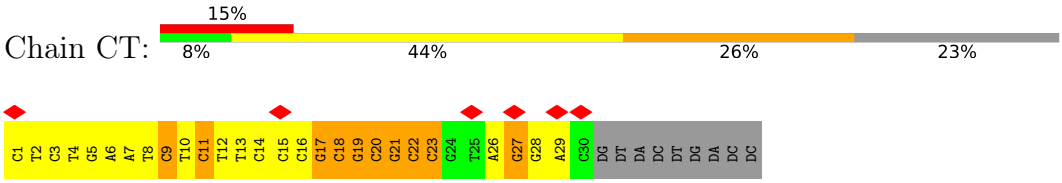
• Molecule 55: Non-template DNA strand

Chain CN:



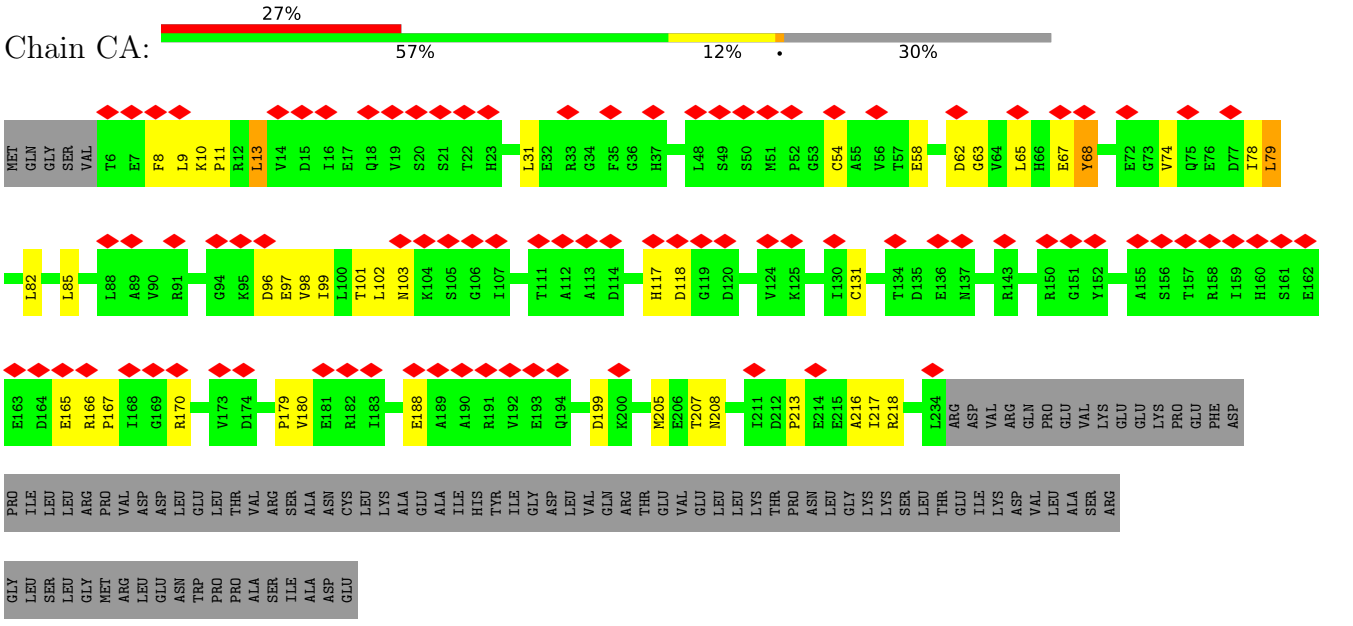
• Molecule 56: Template DNA strand

Chain CT:



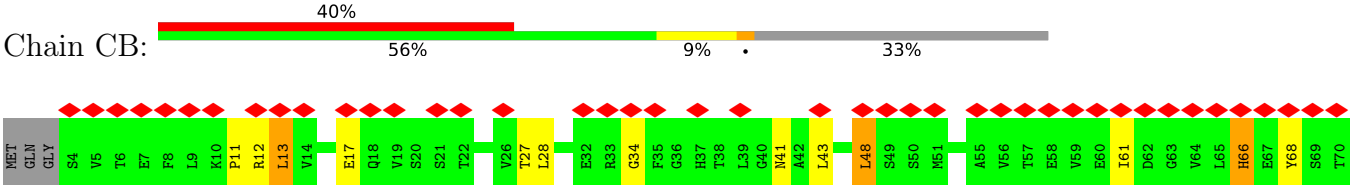
• Molecule 57: DNA-directed RNA polymerase subunit alpha

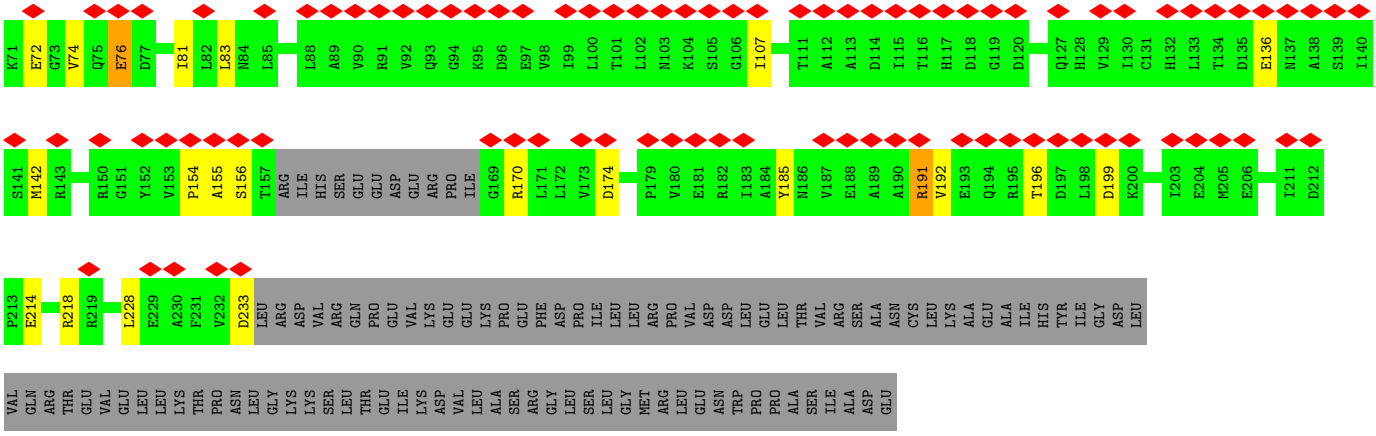
Chain CA:



• Molecule 57: DNA-directed RNA polymerase subunit alpha

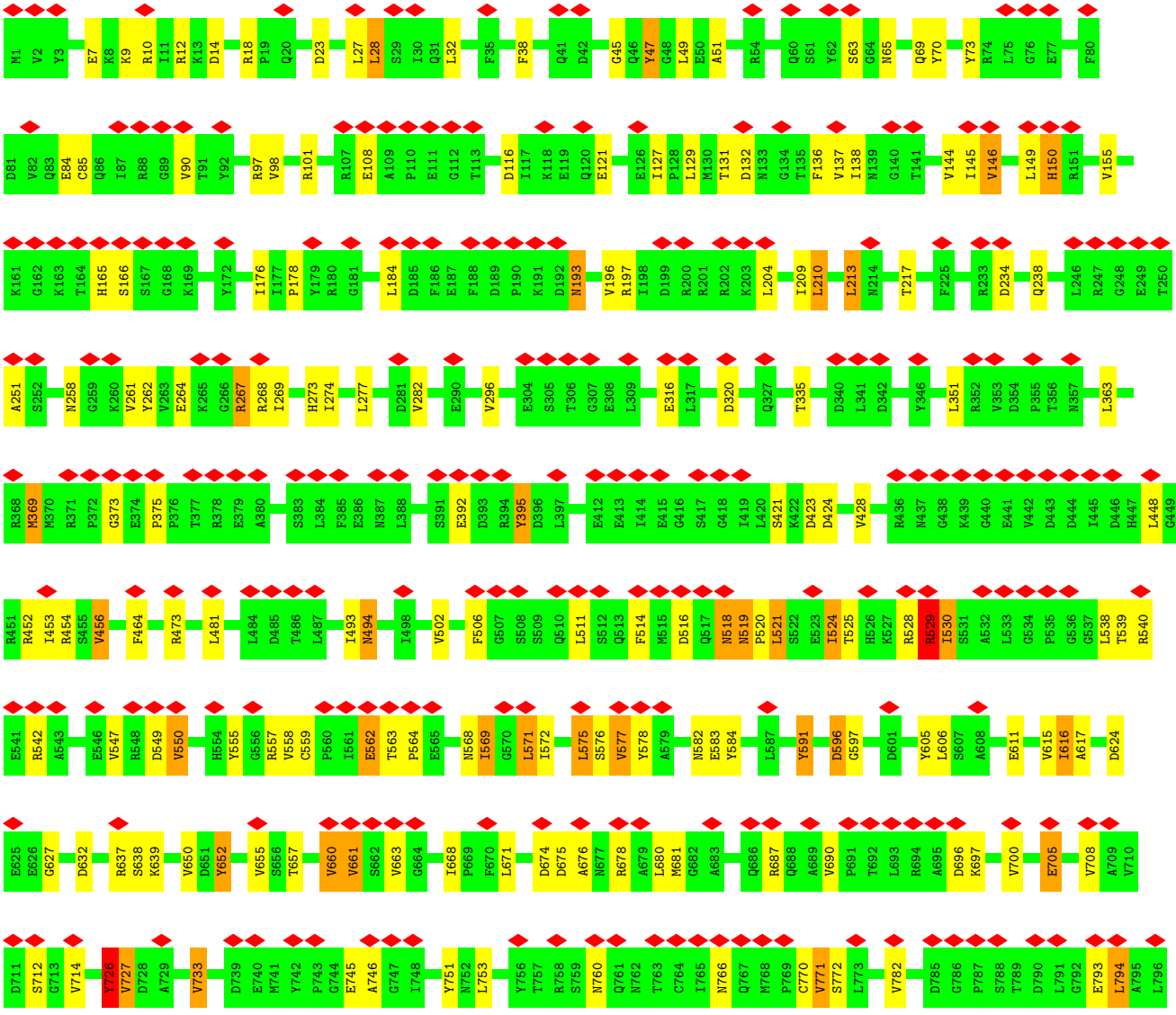
Chain CB:

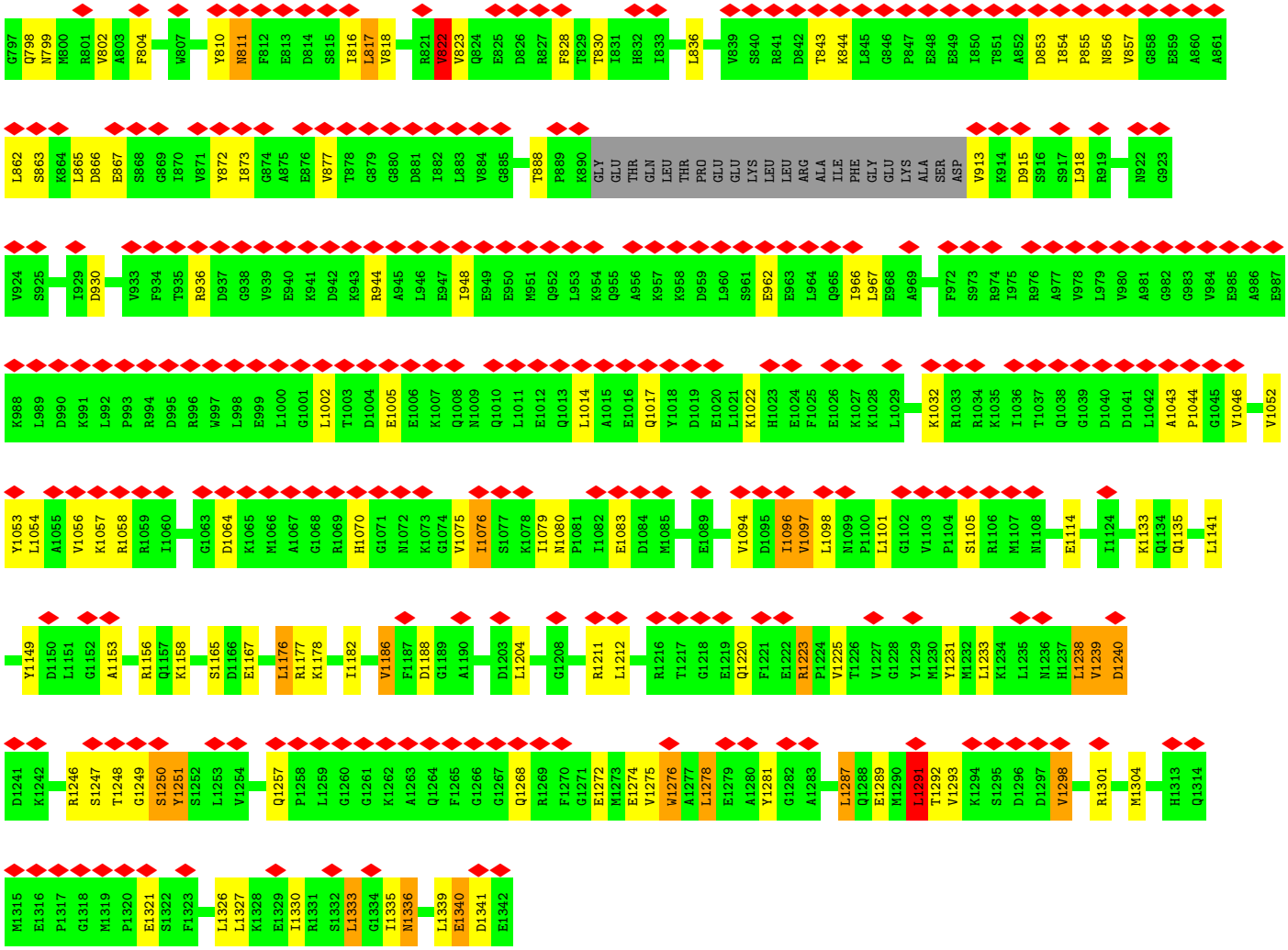




• Molecule 58: DNA-directed RNA polymerase subunit beta

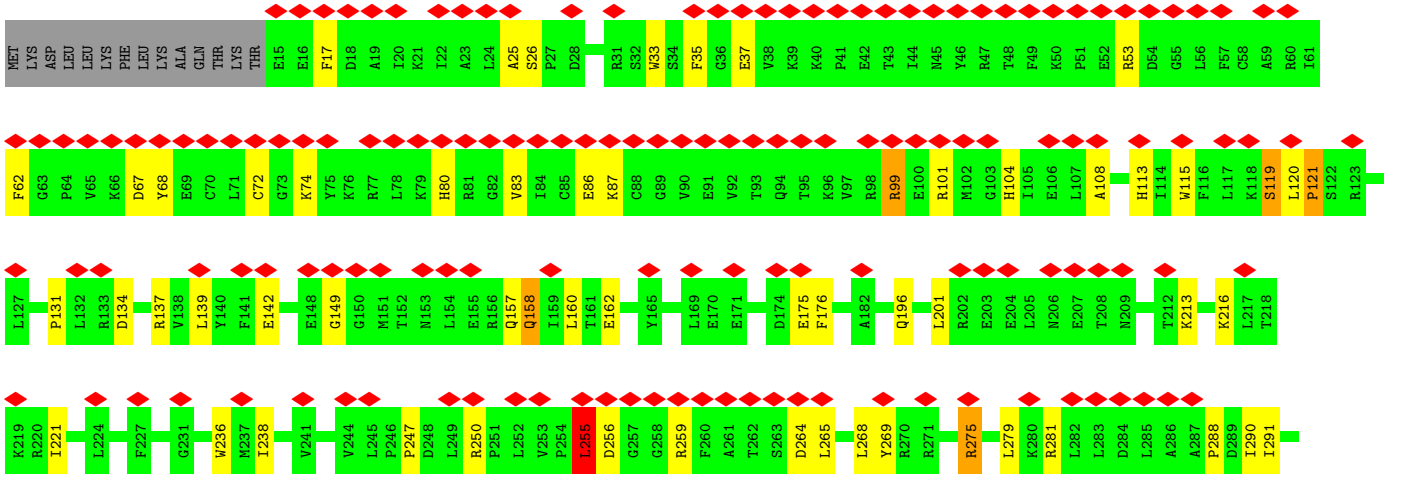
Chain CC:

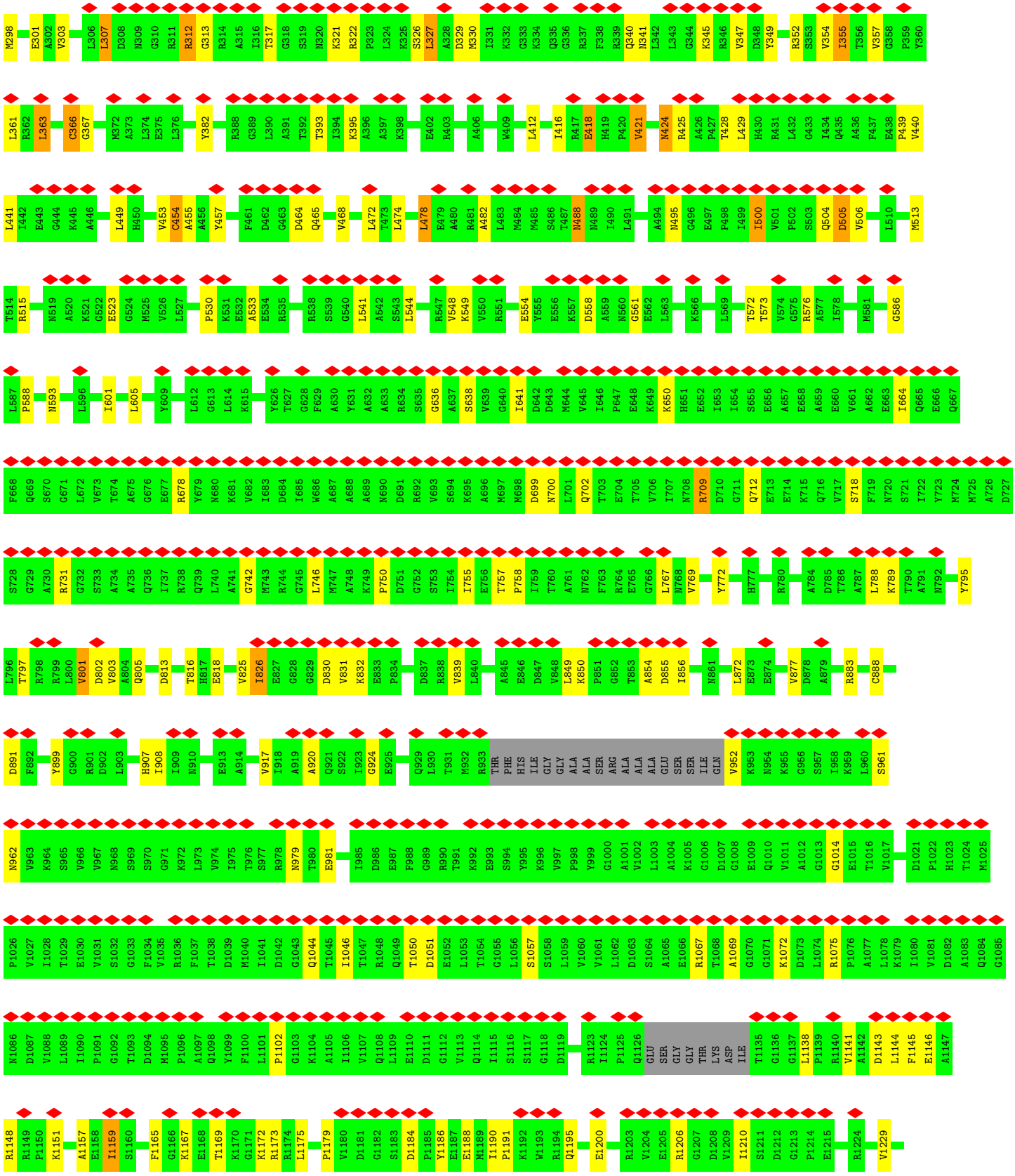


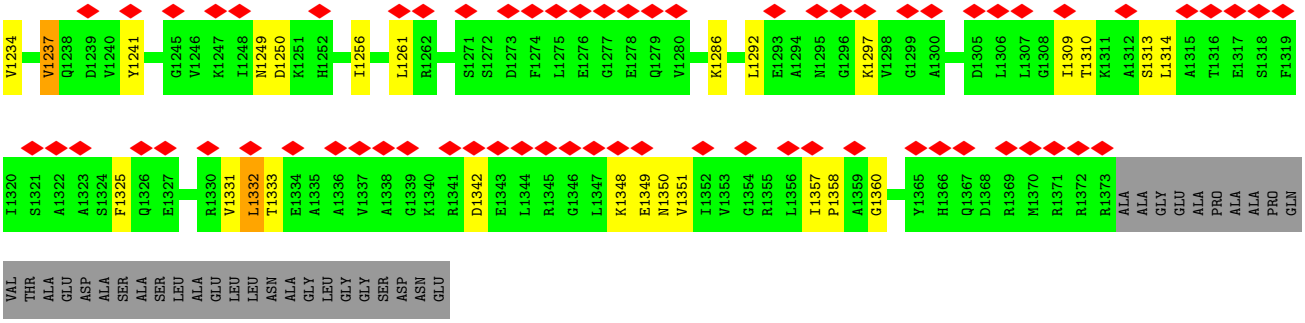


• Molecule 59: DNA-directed RNA polymerase subunit beta'

Chain CD:

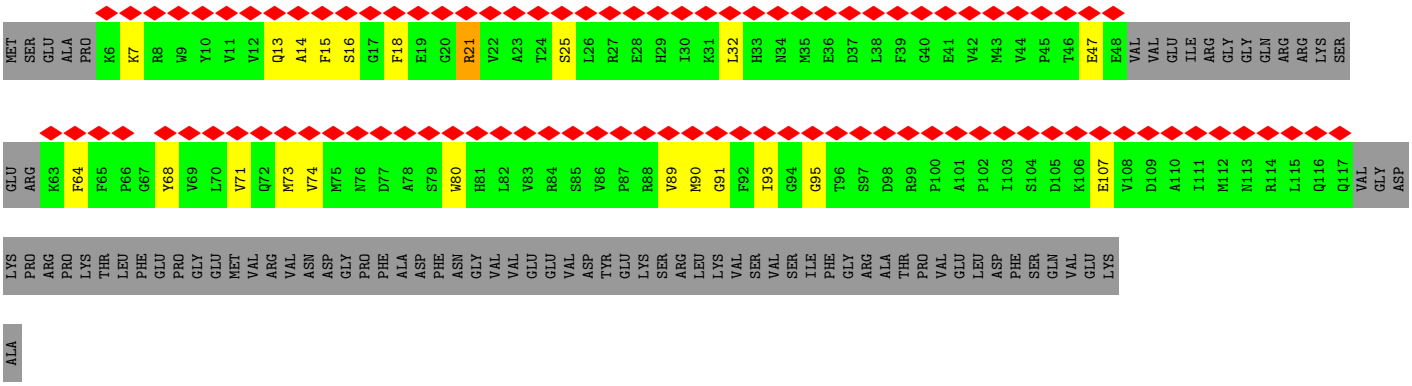



M298 E301 A302 V303 L306 L307 D308 N309 G310 R311 R312 G313 R314 A315 I316 T317 G318 S319 N320 K321 R322 P323 L324 K325 S326 L327 A328 D329 M330 I331 K332 G333 K334 Q335 G336 R337 F338 R339 Q340 N341 L342 L343 G344 K345 R346 V347 D348 Y349 R352 S353 V354 I355 T356 V357 G358 P359 Y360
L361 R362 L363 C366 G367 M372 A373 L374 E375 L376 Y382 R388 G389 L390 A391 T392 T393 I394 K395 A396 A397 K398 E402 R403 A406 W409 L412 I416 R417 E418 H419 P420 V421 N424 R425 A426 P427 T428 L429 H430 R431 L432 G433 I434 Q435 A436 F437 E438 P439 V440
L441 I442 E443 G444 K445 A446 L449 H450 V453 C454 A455 A456 Y457 F461 D462 G463 D464 Q465 V468 L472 T473 L474 L478 E479 A480 R481 A482 L483 M484 M485 S486 T487 N488 N489 I490 L491 A494 N495 G496 E497 P498 I499 I500 V501 P502 S503 Q504 D505 V506 L510 M513
T514 R515 N519 A520 K521 G522 E523 G524 M525 V526 L527 P530 K531 E532 A533 E534 R535 R538 S539 G540 L541 A542 S543 L544 R547 V548 K549 V550 R551 E554 Y555 E556 K557 D558 A559 N560 G561 E562 L563 K566 L569 T572 T573 V574 G575 R576 A577 I578 M581 G586
L587 P588 N593 L596 I601 L605 Y609 L612 G613 L614 K615 Y626 T627 G628 F629 A630 Y631 A632 A633 R634 S635 G636 A637 S638 V639 G640 I641 D642 D643 M644 V645 I646 P647 E648 K649 K650 H651 E652 I653 I654 S655 E656 A657 E658 A659 E660 V661 A662 E663 I664 Q665 E666 Q667
F668 Q669 S670 G671 L672 V673 T674 A675 G676 E677 R678 Y679 N680 K681 V682 I683 D684 I685 W686 A687 A688 A689 N690 D691 R692 V693 S694 K695 A696 M697 M698 D699 N700 L701 Q702 T703 E704 T705 V706 I707 N708 R709 D710 G711 Q712 E713 E714 K715 Q716 V717 S718 F719 N720 S721 I722 Y723 M724 M725 A726 D727
S728 G729 A730 R731 G732 S733 A734 A735 Q736 I737 R738 Q739 L740 A741 G742 M743 R744 G745 L746 M747 A748 K749 P750 D751 G752 S753 I754 I755 E756 T757 P758 I759 T760 A761 N762 F763 R764 E765 G766 L767 N768 V769 Y772 H777 R780 A784 D785 T786 A787 L788 K789 T790 A791 N792 Y795
L796 T797 R798 R799 L800 V801 D802 V803 A804 Q805 D813 T816 H817 E818 V825 I826 E827 G828 G829 D830 V831 K832 E833 P834 D837 R838 V839 L840 A845 E846 D847 V848 L849 K850 P851 G852 T853 A854 D855 I856 N861 L872 E873 E874 V877 D878 A879 R883 C888
D891 F892 Y899 G900 R901 D902 L903 H907 I908 I909 N910 E913 A914 V917 I918 A919 A920 Q921 S922 I923 G924 E925 Q929 L930 T931 M932 R933 THR PHE HIS ILE GLY GLY ALA ALA SER ARG ALA ALA ALA GLU SER SER ILE GLN V952 K953 N954 K955 G956 S957 I958 K959 L960 S961
N962 V963 K964 S965 V966 V967 N968 S969 S970 G971 K972 L973 V974 I975 T976 S977 R978 N979 T980 E981 I985 D986 E987 F988 G989 R990 T991 K992 E993 S994 Y995 K996 V997 P998 Y999 G1000 A1001 V1002 L1003 A1004 K1005 G1006 D1007 G1008 E1009 Q1010 V1011 A1012 G1013 G1014 E1015 T1016 V1017 D1021 P1022 H1023 T1024 M1025
P1026 V1027 I1028 T1029 E1030 V1031 S1032 G1033 F1034 V1035 R1036 F1037 T1038 D1039 M1040 I1041 D1042 G1043 Q1044 T1045 I1046 T1047 R1048 Q1049 T1050 D1051 E1052 L1053 T1054 G1055 L1056 S1057 S1058 L1059 V1060 V1061 L1062 D1063 S1064 A1065 E1066 R1067 T1068 A1069 G1070 G1071 Q1010 K1072 D1073 L1074 R1075 P1076 A1077 L1078 K1079 I1080 V1081 D1082 A1083 Q1084 G1085
N1086 D1087 V1088 L1089 I1090 P1091 G1092 T1093 D1094 M1095 P1096 A1097 Q1098 Y1099 F1100 L1101 P1102 G1103 K1104 A1105 I1106 V1107 Q1108 L1109 E1110 D1111 G1112 V1113 Q1114 I1115 S1116 S1117 G1118 D1119 R1123 I1124 P1125 Q1126 GLU SER GLY GLY THR LYS ASP ILE T1135 G1136 G1137 L1138 P1139 R1140 V1141 A1142 D1143 L1144 F1145 E1146 A1147
R1148 R1149 P1150 K1151 A1157 E1158 I1159 S1160 F1165 G1166 K1167 E1168 T1169 K1170 G1171 K1172 R1173 R1174 L1175 P1179 V1180 D1181 G1182 S1183 D1184 P1185 Y1186 E1187 E1188 M1189 I1190 P1191 K1192 W1193 R1194 Q1195 E1200 R1203 V1204 E1205 R1206 G1207 D1208 V1209 I1210 S1211 D1212 G1213 P1214 E1215 R1224 V1229



• Molecule 60: DNA-directed RNA polymerase subunit omega

• Molecule 61: Transcription termination/antitermination protein NusG



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	45774	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 ($e^-/Å^2$)	42	Depositor
Minimum defocus (nm)	700	Depositor
Maximum defocus (nm)	3500	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	2.406	Depositor
Minimum map value	-0.343	Depositor
Average map value	0.066	Depositor
Map value standard deviation	0.104	Depositor
Recommended contour level	0.5	Depositor
Map size (Å)	550.4, 550.4, 550.4	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.075, 1.075, 1.075	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: 5MC, 6MZ, 2MA, PSU, ZN, MG, H2U, UR3, MA6, MIA, OMU, 3AU, 4D4, 7MG, 1MG, G7M, 5MU, OMG, 4OC, MEQ, 4SU, OMC, 3TD, 2MG, D2T

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	0.73	0/36569	0.92	19/57044 (0.0%)
2	AB	0.31	0/1795	0.49	0/2418
3	AC	0.37	0/1680	0.48	0/2263
4	AD	0.34	0/1665	0.48	0/2227
5	AE	0.39	0/1161	0.50	0/1563
6	AF	0.37	0/867	0.52	0/1171
7	AG	0.30	0/1230	0.45	0/1649
8	AH	0.37	0/989	0.50	0/1326
9	AI	0.35	0/1043	0.63	0/1387
10	AJ	0.34	0/827	0.53	0/1117
11	AK	0.35	0/893	0.46	0/1205
12	AL	0.45	1/960 (0.1%)	0.51	0/1286
13	AM	0.33	0/900	0.50	0/1204
14	AN	0.32	0/817	0.43	0/1088
15	AO	0.32	0/730	0.43	0/974
16	AP	0.34	0/659	0.50	0/884
17	AQ	0.37	0/657	0.50	0/881
18	AR	0.37	0/481	0.49	0/645
19	AS	0.31	0/672	0.46	0/904
20	AT	0.30	0/676	0.42	0/895
21	AU	0.30	0/598	0.51	0/792
22	AV	1.76	27/803 (3.4%)	1.63	32/1245 (2.6%)
23	AW	0.70	1/1725 (0.1%)	0.94	2/2687 (0.1%)
24	AX	0.58	1/1584 (0.1%)	0.86	0/2463
25	BA	0.89	1/69143 (0.0%)	0.93	43/107862 (0.0%)
26	BB	0.67	0/2872	0.86	1/4478 (0.0%)
27	BC	0.48	1/2131 (0.0%)	0.52	0/2863
28	BD	0.44	0/1576	0.53	0/2119
29	BE	0.40	0/1571	0.48	0/2113
30	BF	0.34	0/1444	0.47	0/1937
31	BG	0.35	0/1333	0.47	0/1805

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
32	BH	0.31	0/1122	0.62	0/1515
33	BK	0.45	0/1152	0.48	0/1551
34	BL	0.43	0/955	0.53	0/1277
35	BM	0.42	0/1061	0.51	0/1412
36	BN	0.44	0/1081	0.50	0/1443
37	BO	0.41	0/958	0.49	0/1281
38	BP	0.33	0/910	0.49	0/1219
39	BQ	0.40	0/929	0.51	0/1242
40	BR	0.52	0/960	0.48	0/1278
41	BS	0.45	0/829	0.52	0/1107
42	BT	0.40	0/864	0.51	0/1156
43	BU	0.37	0/764	0.49	0/1021
44	BV	0.37	0/787	0.50	0/1051
45	BW	0.38	0/766	0.47	0/1025
46	BX	0.44	0/589	0.49	0/779
47	BY	0.42	0/635	0.48	0/848
48	BZ	0.32	0/502	0.44	0/667
49	B1	0.39	0/453	0.51	0/605
50	B2	0.40	0/450	0.56	0/599
51	B3	0.36	0/433	0.55	0/576
52	B4	0.42	0/380	0.48	0/498
53	B5	0.39	0/513	0.49	0/676
54	B6	0.41	0/302	0.47	0/397
55	CN	1.78	12/693 (1.7%)	1.24	2/1068 (0.2%)
56	CT	2.53	41/676 (6.1%)	1.33	9/1039 (0.9%)
57	CA	1.13	6/1797 (0.3%)	0.91	2/2436 (0.1%)
57	CB	0.81	1/1703 (0.1%)	0.86	3/2308 (0.1%)
58	CC	1.41	122/10581 (1.2%)	0.97	31/14275 (0.2%)
59	CD	1.12	57/10532 (0.5%)	0.91	16/14219 (0.1%)
60	CE	0.48	0/401	0.75	0/540
61	CF	0.41	0/808	0.58	0/1088
All	All	0.84	271/184637 (0.1%)	0.86	160/272691 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
9	AI	0	1
13	AM	0	2
22	AV	0	1

Continued on next page...

Continued from previous page...

Mol	Chain	#Chirality outliers	#Planarity outliers
53	B5	0	1
All	All	0	5

All (271) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
23	AW	1	C	OP3-P	-10.66	1.48	1.61
24	AX	1	G	OP3-P	-10.41	1.48	1.61
56	CT	18	DC	C3'-O3'	-10.24	1.30	1.44
59	CD	1357	ILE	C-N	-9.76	1.15	1.34
56	CT	14	DC	C3'-O3'	-9.59	1.31	1.44
56	CT	12	DT	N1-C2	-9.32	1.30	1.38
58	CC	146	VAL	CB-CG1	-9.00	1.33	1.52
22	AV	47	G	N3-C4	-9.00	1.29	1.35
58	CC	144	VAL	CB-CG1	-8.83	1.34	1.52
56	CT	15	DC	C3'-O3'	-8.73	1.32	1.44
22	AV	46	C	N1-C6	-8.65	1.31	1.37
58	CC	146	VAL	CB-CG2	-8.56	1.34	1.52
56	CT	16	DC	N1-C6	-8.49	1.32	1.37
56	CT	16	DC	C3'-O3'	-8.46	1.32	1.44
56	CT	13	DT	N1-C2	-8.40	1.31	1.38
59	CD	457	TYR	CD2-CE2	-8.36	1.26	1.39
58	CC	712	SER	CA-C	-8.34	1.31	1.52
59	CD	457	TYR	CE2-CZ	-8.34	1.27	1.38
58	CC	802	VAL	CB-CG1	-8.29	1.35	1.52
22	AV	47	G	C6-N1	-8.20	1.33	1.39
56	CT	22	DC	N1-C6	-7.95	1.32	1.37
58	CC	655	VAL	CB-CG1	-7.88	1.36	1.52
55	CN	28	DA	N3-C4	-7.79	1.30	1.34
59	CD	421	VAL	CB-CG2	-7.78	1.36	1.52
58	CC	663	VAL	CB-CG2	-7.73	1.36	1.52
55	CN	28	DA	C3'-O3'	-7.73	1.33	1.44
56	CT	18	DC	N1-C6	-7.63	1.32	1.37
58	CC	136	PHE	CB-CG	-7.60	1.38	1.51
59	CD	1145	PHE	CB-CG	-7.59	1.38	1.51
59	CD	457	TYR	CD1-CE1	-7.58	1.27	1.39
58	CC	591	TYR	CG-CD1	-7.58	1.29	1.39
58	CC	591	TYR	CD2-CE2	-7.58	1.27	1.39
22	AV	49	G	N7-C5	-7.54	1.34	1.39
58	CC	818	VAL	CB-CG2	-7.46	1.37	1.52
59	CD	1141	VAL	CB-CG1	-7.36	1.37	1.52
55	CN	26	DG	C3'-O3'	-7.34	1.34	1.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
58	CC	1239	VAL	CB-CG2	-7.31	1.37	1.52
58	CC	708	VAL	CB-CG1	-7.19	1.37	1.52
59	CD	453	VAL	CB-CG1	-7.16	1.37	1.52
58	CC	591	TYR	CD1-CE1	-7.14	1.28	1.39
58	CC	708	VAL	CB-CG2	-7.12	1.37	1.52
58	CC	137	VAL	CB-CG2	-7.09	1.38	1.52
56	CT	19	DG	N7-C5	-7.07	1.35	1.39
56	CT	16	DC	N1-C2	-7.05	1.33	1.40
58	CC	802	VAL	CB-CG2	-7.05	1.38	1.52
22	AV	46	C	N3-C4	-7.00	1.29	1.33
58	CC	578	TYR	CE2-CZ	-7.00	1.29	1.38
22	AV	46	C	N1-C2	-7.00	1.33	1.40
58	CC	591	TYR	CE1-CZ	-6.93	1.29	1.38
58	CC	663	VAL	CB-CG1	-6.91	1.38	1.52
58	CC	1289	GLU	CB-CG	-6.89	1.39	1.52
22	AV	47	G	C5-C4	-6.89	1.33	1.38
22	AV	43	G	N7-C5	-6.87	1.35	1.39
22	AV	47	G	N1-C2	-6.86	1.32	1.37
59	CD	457	TYR	CE1-CZ	-6.85	1.29	1.38
58	CC	652	TYR	CD1-CE1	-6.79	1.29	1.39
22	AV	43	G	C6-N1	-6.79	1.34	1.39
22	AV	48	C	N1-C6	-6.78	1.33	1.37
58	CC	577	VAL	CB-CG1	-6.77	1.38	1.52
58	CC	822	VAL	CB-CG1	-6.76	1.38	1.52
56	CT	14	DC	N1-C6	-6.75	1.33	1.37
58	CC	448	LEU	CA-C	-6.74	1.35	1.52
59	CD	801	VAL	CB-CG2	-6.74	1.38	1.52
58	CC	1094	VAL	CB-CG1	-6.70	1.38	1.52
58	CC	144	VAL	CB-CG2	-6.65	1.38	1.52
58	CC	705	GLU	CG-CD	-6.65	1.42	1.51
58	CC	530	ILE	CB-CG2	-6.64	1.32	1.52
58	CC	1251	TYR	CE1-CZ	-6.62	1.29	1.38
58	CC	558	VAL	CB-CG1	-6.59	1.39	1.52
58	CC	464	PHE	CB-CG	-6.57	1.40	1.51
56	CT	13	DT	C4-C5	-6.55	1.39	1.45
59	CD	772	TYR	CD2-CE2	-6.53	1.29	1.39
58	CC	578	TYR	CD2-CE2	-6.52	1.29	1.39
58	CC	727	VAL	CB-CG2	-6.48	1.39	1.52
58	CC	591	TYR	CE2-CZ	-6.47	1.30	1.38
58	CC	591	TYR	CB-CG	-6.46	1.42	1.51
59	CD	424	ASN	CB-CG	-6.45	1.36	1.51
58	CC	799	ASN	CB-CG	-6.41	1.36	1.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
59	CD	801	VAL	CB-CG1	-6.41	1.39	1.52
58	CC	1097	VAL	CB-CG1	-6.40	1.39	1.52
59	CD	421	VAL	CB-CG1	-6.39	1.39	1.52
22	AV	45	G	N3-C4	-6.38	1.30	1.35
22	AV	47	G	N7-C5	-6.35	1.35	1.39
58	CC	652	TYR	CE1-CZ	-6.34	1.30	1.38
59	CD	33	TRP	CB-CG	-6.34	1.38	1.50
58	CC	519	ASN	CB-CG	-6.32	1.36	1.51
58	CC	1225	VAL	CB-CG2	-6.31	1.39	1.52
59	CD	803	VAL	CB-CG1	-6.30	1.39	1.52
56	CT	20	DC	N1-C6	-6.28	1.33	1.37
59	CD	917	VAL	CB-CG1	-6.27	1.39	1.52
22	AV	47	G	C5-C6	-6.25	1.36	1.42
58	CC	578	TYR	CD1-CE1	-6.24	1.29	1.39
58	CC	1281	TYR	CD2-CE2	-6.22	1.30	1.39
22	AV	47	G	C2-N3	-6.21	1.27	1.32
56	CT	17	DG	N3-C4	-6.19	1.31	1.35
58	CC	1186	VAL	CB-CG2	-6.18	1.39	1.52
59	CD	1237	VAL	CB-CG2	-6.18	1.39	1.52
58	CC	823	VAL	CB-CG2	-6.16	1.40	1.52
58	CC	1094	VAL	CB-CG2	-6.14	1.40	1.52
22	AV	48	C	N1-C2	-6.13	1.34	1.40
58	CC	1149	TYR	CD2-CE2	-6.11	1.30	1.39
58	CC	1231	TYR	CE2-CZ	-6.11	1.30	1.38
59	CD	1145	PHE	CD2-CE2	-6.07	1.27	1.39
58	CC	1239	VAL	CB-CG1	-6.07	1.40	1.52
58	CC	1075	VAL	CB-CG2	-6.07	1.40	1.52
59	CD	303	VAL	CB-CG2	-6.07	1.40	1.52
56	CT	12	DT	C4-C5	-6.05	1.39	1.45
22	AV	47	G	N9-C4	-6.04	1.33	1.38
58	CC	518	ASN	CB-CG	-6.04	1.37	1.51
22	AV	49	G	C5-C6	-6.03	1.36	1.42
55	CN	30	DA	N9-C8	-6.03	1.32	1.37
59	CD	468	VAL	CB-CG2	-6.01	1.40	1.52
59	CD	795	TYR	CE1-CZ	-5.99	1.30	1.38
58	CC	818	VAL	CB-CG1	-5.97	1.40	1.52
58	CC	1231	TYR	CD2-CE2	-5.97	1.30	1.39
57	CA	68	TYR	CD1-CE1	-5.96	1.30	1.39
59	CD	1145	PHE	CD1-CE1	-5.96	1.27	1.39
58	CC	726	TYR	CD1-CE1	-5.96	1.30	1.39
22	AV	46	C	C4-C5	-5.95	1.38	1.43
56	CT	21	DG	C3'-O3'	-5.94	1.36	1.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
58	CC	1281	TYR	CE2-CZ	-5.93	1.30	1.38
59	CD	1241	TYR	CE1-CZ	-5.90	1.30	1.38
58	CC	661	VAL	CB-CG2	-5.89	1.40	1.52
58	CC	751	TYR	CE1-CZ	-5.88	1.30	1.38
58	CC	660	VAL	CB-CG1	-5.88	1.40	1.52
55	CN	13	DC	C3'-O3'	-5.87	1.36	1.44
59	CD	888	CYS	CB-SG	-5.86	1.72	1.81
57	CA	68	TYR	CE1-CZ	-5.83	1.30	1.38
59	CD	899	TYR	CE2-CZ	-5.83	1.30	1.38
57	CA	97	GLU	CB-CG	-5.80	1.41	1.52
58	CC	506	PHE	CG-CD1	-5.79	1.30	1.38
22	AV	45	G	C6-N1	-5.77	1.35	1.39
55	CN	28	DA	C6-N1	-5.77	1.31	1.35
58	CC	453	ILE	CB-CG2	-5.76	1.34	1.52
56	CT	19	DG	C3'-O3'	-5.75	1.36	1.44
58	CC	816	ILE	CB-CG2	-5.75	1.35	1.52
59	CD	772	TYR	CD1-CE1	-5.75	1.30	1.39
58	CC	700	VAL	CB-CG2	-5.75	1.40	1.52
59	CD	354	VAL	CB-CG1	-5.74	1.40	1.52
58	CC	877	VAL	CB-CG2	-5.74	1.40	1.52
59	CD	347	VAL	CB-CG2	-5.74	1.40	1.52
22	AV	49	G	C6-N1	-5.72	1.35	1.39
58	CC	1052	VAL	CB-CG1	-5.72	1.40	1.52
56	CT	22	DC	N3-C4	-5.71	1.29	1.33
56	CT	16	DC	N3-C4	-5.69	1.29	1.33
56	CT	17	DG	N7-C5	-5.69	1.35	1.39
57	CA	54	CYS	CB-SG	-5.66	1.72	1.81
56	CT	27	DG	C3'-O3'	-5.66	1.36	1.44
59	CD	899	TYR	CD2-CE2	-5.64	1.30	1.39
58	CC	73	TYR	CE1-CZ	-5.64	1.31	1.38
56	CT	17	DG	N9-C4	-5.63	1.33	1.38
58	CC	559	CYS	CB-SG	-5.63	1.72	1.81
59	CD	1331	VAL	CB-CG2	-5.63	1.41	1.52
56	CT	11	DC	C3'-O3'	-5.62	1.36	1.44
59	CD	269	TYR	CE1-CZ	-5.61	1.31	1.38
58	CC	577	VAL	CB-CG2	-5.60	1.41	1.52
59	CD	899	TYR	CE1-CZ	-5.60	1.31	1.38
59	CD	772	TYR	CE2-CZ	-5.59	1.31	1.38
57	CA	9	LEU	C-N	-5.59	1.21	1.34
58	CC	1056	VAL	CB-CG2	-5.59	1.41	1.52
58	CC	1096	ILE	CB-CG2	-5.57	1.35	1.52
58	CC	1251	TYR	CD1-CE1	-5.57	1.30	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
58	CC	690	VAL	CB-CG2	-5.57	1.41	1.52
58	CC	828	PHE	CE2-CZ	-5.56	1.26	1.37
59	CD	366	CYS	CB-SG	-5.56	1.72	1.81
22	AV	43	G	N3-C4	-5.56	1.31	1.35
58	CC	1276	TRP	CB-CG	-5.56	1.40	1.50
59	CD	349	TYR	CE2-CZ	-5.55	1.31	1.38
58	CC	578	TYR	CG-CD1	-5.54	1.31	1.39
12	AL	40	THR	C-N	-5.53	1.21	1.34
56	CT	12	DT	C1'-N1	-5.52	1.39	1.47
58	CC	798	GLN	CA-CB	-5.52	1.41	1.53
58	CC	660	VAL	CB-CG2	-5.51	1.41	1.52
22	AV	49	G	N3-C4	-5.51	1.31	1.35
59	CD	795	TYR	CD2-CE2	-5.51	1.31	1.39
56	CT	15	DC	C4'-C3'	-5.51	1.47	1.52
55	CN	28	DA	C5-C6	-5.49	1.36	1.41
55	CN	29	DG	N7-C5	-5.48	1.35	1.39
57	CA	131	CYS	CB-SG	-5.48	1.72	1.81
58	CC	1275	VAL	CB-CG1	-5.48	1.41	1.52
56	CT	13	DT	C3'-O3'	-5.48	1.36	1.44
56	CT	20	DC	C4-C5	-5.47	1.38	1.43
58	CC	674	ASP	CB-CG	-5.46	1.40	1.51
58	CC	456	VAL	CB-CG1	-5.45	1.41	1.52
58	CC	811	ASN	CB-CG	-5.45	1.38	1.51
58	CC	652	TYR	CD2-CE2	-5.44	1.31	1.39
58	CC	591	TYR	CG-CD2	-5.42	1.32	1.39
59	CD	1237	VAL	CB-CG1	-5.42	1.41	1.52
58	CC	782	VAL	CB-CG1	-5.42	1.41	1.52
58	CC	804	PHE	CD1-CE1	-5.41	1.28	1.39
59	CD	468	VAL	CB-CG1	-5.41	1.41	1.52
58	CC	98	VAL	CB-CG2	-5.41	1.41	1.52
58	CC	823	VAL	CB-CG1	-5.41	1.41	1.52
27	BC	225	MET	C-N	-5.41	1.21	1.34
58	CC	137	VAL	CB-CG1	-5.40	1.41	1.52
58	CC	73	TYR	CE2-CZ	-5.37	1.31	1.38
59	CD	355	ILE	CB-CG2	-5.37	1.36	1.52
57	CB	185	TYR	CB-CG	-5.37	1.43	1.51
58	CC	690	VAL	CB-CG1	-5.36	1.41	1.52
58	CC	456	VAL	CB-CG2	-5.36	1.41	1.52
58	CC	810	TYR	CE2-CZ	-5.36	1.31	1.38
58	CC	770	CYS	CB-SG	-5.33	1.73	1.81
59	CD	803	VAL	CB-CG2	-5.33	1.41	1.52
22	AV	41	C	N1-C2	-5.32	1.34	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
59	CD	465	GLN	CB-CG	-5.32	1.38	1.52
56	CT	17	DG	C3'-O3'	-5.31	1.37	1.44
58	CC	584	TYR	CD2-CE2	-5.31	1.31	1.39
56	CT	19	DG	C5-C4	-5.31	1.34	1.38
59	CD	269	TYR	CD1-CE1	-5.31	1.31	1.39
56	CT	16	DC	C2-O2	-5.30	1.19	1.24
56	CT	12	DT	C2-N3	-5.30	1.33	1.37
56	CT	11	DC	N3-C4	-5.30	1.30	1.33
22	AV	46	C	C2-N3	-5.28	1.31	1.35
58	CC	930	ASP	CB-CG	-5.28	1.40	1.51
59	CD	1333	THR	CB-CG2	-5.28	1.34	1.52
58	CC	136	PHE	CG-CD1	-5.27	1.30	1.38
58	CC	155	VAL	CB-CG2	-5.27	1.41	1.52
59	CD	453	VAL	CB-CG2	-5.27	1.41	1.52
59	CD	347	VAL	CB-CG1	-5.26	1.41	1.52
58	CC	428	VAL	CB-CG2	-5.26	1.41	1.52
58	CC	616	ILE	CB-CG2	-5.26	1.36	1.52
58	CC	1149	TYR	CE1-CZ	-5.25	1.31	1.38
58	CC	555	TYR	CD1-CE1	-5.25	1.31	1.39
58	CC	520	PRO	CB-CG	-5.24	1.23	1.50
59	CD	428	THR	CA-CB	-5.24	1.39	1.53
58	CC	1149	TYR	CD1-CE1	-5.23	1.31	1.39
58	CC	733	VAL	CB-CG1	-5.23	1.41	1.52
55	CN	29	DG	N3-C4	-5.21	1.31	1.35
59	CD	457	TYR	CG-CD1	-5.21	1.32	1.39
58	CC	395	TYR	CD2-CE2	-5.21	1.31	1.39
58	CC	1231	TYR	CE1-CZ	-5.20	1.31	1.38
59	CD	769	VAL	CB-CG1	-5.19	1.42	1.52
59	CD	1145	PHE	CG-CD1	-5.19	1.30	1.38
58	CC	70	TYR	CD2-CE2	-5.19	1.31	1.39
58	CC	714	VAL	CB-CG1	-5.19	1.42	1.52
58	CC	804	PHE	CD2-CE2	-5.18	1.28	1.39
58	CC	584	TYR	CD1-CE1	-5.17	1.31	1.39
56	CT	23	DC	N1-C6	-5.17	1.34	1.37
55	CN	29	DG	N9-C8	-5.16	1.34	1.37
58	CC	502	VAL	CB-CG2	-5.15	1.42	1.52
58	CC	578	TYR	CG-CD2	-5.15	1.32	1.39
56	CT	17	DG	C5-C6	-5.14	1.37	1.42
59	CD	506	VAL	CB-CG2	-5.13	1.42	1.52
22	AV	48	C	C4-C5	-5.13	1.38	1.43
56	CT	19	DG	C5-C6	-5.13	1.37	1.42
59	CD	1229	VAL	CB-CG1	-5.13	1.42	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
59	CD	115	TRP	CG-CD1	-5.12	1.29	1.36
55	CN	30	DA	N9-C4	-5.11	1.34	1.37
58	CC	1149	TYR	CE2-CZ	-5.11	1.31	1.38
58	CC	751	TYR	CE2-CZ	-5.10	1.31	1.38
58	CC	550	VAL	CB-CG2	-5.10	1.42	1.52
59	CD	382	TYR	CD2-CE2	-5.09	1.31	1.39
25	BA	550	U	C1'-N1	5.09	1.56	1.48
58	CC	771	VAL	CB-CG2	-5.09	1.42	1.52
58	CC	547	VAL	CB-CG2	-5.08	1.42	1.52
56	CT	17	DG	C6-N1	-5.08	1.35	1.39
56	CT	18	DC	C4-C5	-5.07	1.38	1.43
56	CT	12	DT	C2-O2	-5.07	1.18	1.22
59	CD	1234	VAL	CB-CG1	-5.06	1.42	1.52
56	CT	9	DC	N1-C6	-5.06	1.34	1.37
58	CC	373	GLY	C-N	-5.04	1.22	1.34
56	CT	15	DC	N1-C2	-5.04	1.35	1.40
55	CN	28	DA	C5-C4	-5.04	1.35	1.38
59	CD	115	TRP	CB-CG	-5.04	1.41	1.50
58	CC	572	ILE	CB-CG2	-5.03	1.37	1.52
58	CC	1272	GLU	CB-CG	-5.03	1.42	1.52
58	CC	1053	TYR	CE1-CZ	-5.02	1.32	1.38
22	AV	43	G	C5-C6	-5.02	1.37	1.42
58	CC	136	PHE	CD2-CE2	-5.01	1.29	1.39
59	CD	795	TYR	CD1-CE1	-5.01	1.31	1.39
58	CC	661	VAL	CB-CG1	-5.00	1.42	1.52

All (160) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
25	BA	2902	C	N3-C2-O2	-11.33	113.97	121.90
56	CT	19	DG	O4'-C1'-N9	10.14	115.10	108.00
25	BA	2902	C	N1-C2-O2	9.98	124.89	118.90
22	AV	48	C	C6-N1-C2	-9.65	116.44	120.30
25	BA	2164	C	C2-N1-C1'	9.05	128.76	118.80
22	AV	41	C	O5'-P-OP2	-8.28	98.25	105.70
1	AA	75	G	O4'-C1'-N9	8.28	114.82	108.20
22	AV	48	C	N1-C2-O2	-8.19	113.98	118.90
1	AA	883	C	N3-C2-O2	-8.08	116.25	121.90
22	AV	40	A	C8-N9-C4	8.00	109.00	105.80
22	AV	45	G	O5'-P-OP1	-7.96	98.53	105.70
58	CC	210	LEU	CA-CB-CG	-7.68	97.63	115.30
58	CC	571	LEU	CB-CG-CD2	-7.63	98.02	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
25	BA	1625	C	N1-C2-O2	7.57	123.44	118.90
25	BA	2175	C	C2-N1-C1'	7.57	127.12	118.80
1	AA	463	U	C2-N1-C1'	7.53	126.74	117.70
25	BA	2164	C	C6-N1-C1'	-7.43	111.88	120.80
22	AV	47	G	C2-N3-C4	-7.33	108.23	111.90
56	CT	18	DC	O5'-P-OP1	-7.27	99.16	105.70
22	AV	49	G	C6-C5-N7	-7.26	126.05	130.40
58	CC	794	LEU	CB-CG-CD1	-7.22	98.73	111.00
25	BA	1857	G	O4'-C1'-N9	7.17	113.94	108.20
22	AV	47	G	N1-C2-N3	7.13	128.18	123.90
58	CC	149	LEU	CB-CG-CD1	-7.12	98.89	111.00
25	BA	1625	C	N3-C2-O2	-7.11	116.92	121.90
58	CC	1238	LEU	CB-CG-CD1	-7.10	98.92	111.00
22	AV	46	C	N1-C2-O2	-7.04	114.68	118.90
25	BA	2901	C	N3-C2-O2	-6.98	117.02	121.90
22	AV	49	G	C4-C5-N7	6.93	113.57	110.80
25	BA	370	G	O4'-C1'-N9	-6.91	102.67	108.20
57	CB	48	LEU	CA-CB-CG	6.74	130.80	115.30
22	AV	49	G	C8-N9-C4	-6.69	103.72	106.40
59	CD	307	LEU	CA-CB-CG	-6.69	99.92	115.30
22	AV	49	G	C5-N7-C8	-6.63	100.99	104.30
58	CC	575	LEU	CB-CG-CD2	-6.63	99.73	111.00
22	AV	45	G	O3'-P-O5'	-6.59	91.47	104.00
59	CD	478	LEU	CA-CB-CG	-6.55	100.24	115.30
1	AA	94	G	N3-C4-C5	6.50	131.85	128.60
1	AA	267	C	C2-N1-C1'	6.49	125.94	118.80
56	CT	17	DG	O4'-C1'-N9	6.47	112.53	108.00
58	CC	213	LEU	CA-CB-CG	-6.43	100.50	115.30
59	CD	449	LEU	CB-CG-CD1	-6.43	100.07	111.00
25	BA	2901	C	N1-C2-O2	6.42	122.75	118.90
25	BA	2164	C	N1-C2-O2	6.42	122.75	118.90
59	CD	1332	LEU	CB-CG-CD2	-6.37	100.17	111.00
25	BA	892	A	C6-N1-C2	-6.33	114.80	118.60
58	CC	1287	LEU	CB-CG-CD1	-6.32	100.26	111.00
58	CC	521	LEU	CB-CG-CD1	-6.31	100.27	111.00
22	AV	42	G	C5-C6-N1	6.30	114.65	111.50
56	CT	16	DC	O4'-C1'-N1	6.29	112.40	108.00
58	CC	511	LEU	CB-CG-CD1	-6.28	100.32	111.00
25	BA	1313	U	C2-N1-C1'	6.26	125.21	117.70
25	BA	2129	C	O5'-P-OP1	6.25	118.20	110.70
25	BA	510	C	N1-C2-O2	6.23	122.64	118.90
55	CN	26	DG	O4'-C4'-C3'	-6.23	102.01	104.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
25	BA	2473	U	C2-N1-C1'	6.23	125.17	117.70
25	BA	67	U	C5-C4-O4	-6.22	122.17	125.90
58	CC	1076	ILE	CG1-CB-CG2	-6.21	97.73	111.40
25	BA	2175	C	N1-C2-O2	6.21	122.63	118.90
58	CC	817	LEU	CB-CG-CD1	-6.18	100.50	111.00
25	BA	892	A	C5-C6-N6	-6.15	118.78	123.70
25	BA	729	G	O4'-C1'-N9	6.14	113.11	108.20
22	AV	41	C	O4'-C1'-N1	6.10	113.08	108.20
1	AA	1009	U	C2-N1-C1'	6.07	124.98	117.70
22	AV	48	C	N1-C2-N3	6.05	123.44	119.20
25	BA	2473	U	N1-C2-O2	6.03	127.02	122.80
25	BA	510	C	C2-N1-C1'	6.02	125.43	118.80
58	CC	529	ARG	CA-CB-CG	6.02	126.64	113.40
59	CD	1144	LEU	CB-CG-CD1	-6.01	100.78	111.00
22	AV	49	G	N7-C8-N9	6.00	116.10	113.10
25	BA	1314	C	C2-N1-C1'	5.96	125.36	118.80
59	CD	307	LEU	CB-CG-CD2	-5.96	100.88	111.00
59	CD	255	LEU	CA-CB-CG	5.95	128.98	115.30
22	AV	43	G	C6-C5-N7	-5.95	126.83	130.40
25	BA	2178	C	N1-C2-O2	5.93	122.46	118.90
59	CD	363	LEU	CB-CG-CD1	-5.92	100.94	111.00
22	AV	44	C	C6-N1-C2	-5.91	117.93	120.30
58	CC	1204	LEU	CA-CB-CG	-5.89	101.74	115.30
55	CN	25	DG	C1'-O4'-C4'	-5.89	104.21	110.10
57	CA	13	LEU	CA-CB-CG	5.89	128.85	115.30
59	CD	327	LEU	CB-CG-CD2	-5.88	101.00	111.00
59	CD	605	LEU	CB-CG-CD2	-5.87	101.02	111.00
56	CT	18	DC	O4'-C1'-N1	5.86	112.10	108.00
58	CC	1278	LEU	CB-CG-CD2	-5.86	101.04	111.00
58	CC	1291	LEU	CB-CG-CD2	-5.84	101.08	111.00
58	CC	452	ARG	NE-CZ-NH1	-5.82	117.39	120.30
56	CT	20	DC	O5'-P-OP2	-5.79	100.49	105.70
1	AA	882	C	N3-C2-O2	-5.78	117.85	121.90
58	CC	1141	LEU	CB-CG-CD1	-5.77	101.19	111.00
22	AV	42	G	N1-C6-O6	-5.76	116.44	119.90
57	CB	228	LEU	CA-CB-CG	-5.73	102.12	115.30
22	AV	40	A	O4'-C1'-N9	5.70	112.76	108.20
59	CD	1332	LEU	CB-CG-CD1	-5.70	101.31	111.00
25	BA	510	C	N3-C2-O2	-5.68	117.93	121.90
22	AV	37	C	C2-N1-C1'	5.65	125.01	118.80
1	AA	75	G	C4-N9-C1'	-5.64	119.17	126.50
1	AA	463	U	C6-N1-C1'	-5.64	113.31	121.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
22	AV	47	G	C5-N7-C8	-5.64	101.48	104.30
22	AV	49	G	C4-N9-C1'	5.62	133.81	126.50
58	CC	802	VAL	CG1-CB-CG2	-5.62	101.90	110.90
1	AA	75	G	C8-N9-C1'	5.62	134.31	127.00
23	AW	17	C	O5'-P-OP2	-5.59	100.67	105.70
57	CB	13	LEU	CA-CB-CG	5.56	128.09	115.30
1	AA	1222	G	C2-N3-C4	-5.55	109.12	111.90
58	CC	836	LEU	CB-CG-CD2	-5.54	101.59	111.00
22	AV	47	G	C8-N9-C4	-5.52	104.19	106.40
25	BA	2160	C	N1-C2-O2	5.52	122.21	118.90
59	CD	412	LEU	CB-CG-CD1	-5.51	101.64	111.00
1	AA	74	A	O4'-C1'-N9	5.50	112.60	108.20
58	CC	28	LEU	CA-CB-CG	-5.49	102.68	115.30
23	AW	56	C	N3-C2-O2	-5.47	118.07	121.90
59	CD	449	LEU	CB-CG-CD2	-5.47	101.70	111.00
58	CC	184	LEU	CB-CG-CD1	-5.46	101.72	111.00
25	BA	2177	C	N3-C2-O2	-5.46	118.08	121.90
25	BA	2177	C	N1-C2-O2	5.45	122.17	118.90
25	BA	67	U	N3-C4-O4	5.45	123.22	119.40
1	AA	1222	G	N1-C2-N3	5.44	127.17	123.90
22	AV	40	A	N7-C8-N9	-5.43	111.08	113.80
25	BA	2175	C	C6-N1-C1'	-5.43	114.29	120.80
59	CD	1138	LEU	CB-CG-CD2	-5.42	101.79	111.00
25	BA	2160	C	N3-C2-O2	-5.41	118.12	121.90
1	AA	503	C	C6-N1-C2	-5.39	118.14	120.30
26	BB	31	C	C2-N1-C1'	5.38	124.72	118.80
22	AV	43	G	C4-N9-C1'	5.38	133.49	126.50
58	CC	1054	LEU	CB-CG-CD2	-5.37	101.88	111.00
58	CC	671	LEU	CB-CG-CD2	-5.34	101.93	111.00
25	BA	143	C	C2-N1-C1'	5.33	124.67	118.80
25	BA	2347	C	C2-N1-C1'	5.32	124.65	118.80
58	CC	1064	ASP	CB-CG-OD2	5.30	123.07	118.30
22	AV	34	A	P-O3'-C3'	5.29	126.04	119.70
25	BA	892	A	N1-C6-N6	5.28	121.77	118.60
58	CC	210	LEU	CB-CG-CD2	-5.26	102.05	111.00
22	AV	41	C	C6-N1-C1'	-5.26	114.49	120.80
56	CT	12	DT	N3-C4-O4	5.25	123.05	119.90
25	BA	748	G	O4'-C1'-N9	5.23	112.39	108.20
22	AV	49	G	N9-C1'-C2'	5.22	120.79	114.00
1	AA	463	U	C5-C6-N1	5.22	125.31	122.70
25	BA	143	C	N1-C2-O2	5.22	122.03	118.90
25	BA	2342	C	N3-C2-O2	-5.22	118.25	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
56	CT	13	DT	N3-C4-O4	5.22	123.03	119.90
58	CC	1176	LEU	CB-CG-CD2	-5.21	102.15	111.00
25	BA	885	C	C5-C6-N1	5.19	123.59	121.00
58	CC	1333	LEU	CB-CG-CD2	-5.18	102.19	111.00
56	CT	8	DT	N3-C4-O4	5.15	122.99	119.90
1	AA	316	C	C2-N1-C1'	5.14	124.46	118.80
25	BA	27	G	O4'-C1'-N9	5.14	112.31	108.20
22	AV	47	G	N3-C4-N9	-5.13	122.92	126.00
58	CC	616	ILE	CG1-CB-CG2	-5.12	100.14	111.40
25	BA	2178	C	C5-C6-N1	5.11	123.56	121.00
1	AA	812	G	O4'-C1'-N9	5.11	112.28	108.20
57	CA	79	LEU	CB-CG-CD1	-5.07	102.38	111.00
25	BA	733	G	C4-C5-N7	5.06	112.83	110.80
59	CD	788	LEU	CB-CG-CD1	-5.06	102.40	111.00
22	AV	48	C	C2-N3-C4	-5.06	117.37	119.90
25	BA	1509	A	O4'-C1'-N9	5.05	112.24	108.20
58	CC	1233	LEU	CA-CB-CG	5.04	126.90	115.30
59	CD	454	CYS	CA-CB-SG	-5.01	104.97	114.00
1	AA	267	C	C6-N1-C1'	-5.01	114.78	120.80
58	CC	918	LEU	CA-CB-CG	-5.01	103.78	115.30
1	AA	1466	C	N3-C2-O2	-5.01	118.39	121.90

There are no chirality outliers.

All (5) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
9	AI	30	ILE	Peptide
13	AM	48	LEU	Peptide
13	AM	49	SER	Peptide
22	AV	41	C	Sidechain
53	B5	31	HIS	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	AA	32908	0	16576	926	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	AB	1764	0	1788	63	0
3	AC	1653	0	1725	140	0
4	AD	1643	0	1706	100	0
5	AE	1148	0	1195	26	0
6	AF	848	0	846	41	0
7	AG	1214	0	1267	42	0
8	AH	979	0	1031	41	0
9	AI	1031	0	1076	31	0
10	AJ	817	0	853	36	0
11	AK	877	0	887	29	0
12	AL	957	0	1017	32	0
13	AM	891	0	952	29	0
14	AN	805	0	844	21	0
15	AO	722	0	746	14	0
16	AP	649	0	666	34	0
17	AQ	648	0	691	29	0
18	AR	474	0	494	13	0
19	AS	656	0	680	36	0
20	AT	670	0	719	26	0
21	AU	590	0	629	10	0
22	AV	720	0	369	45	0
23	AW	1645	0	842	39	0
24	AX	1629	0	835	37	0
25	BA	62248	0	31320	1337	0
26	BB	2569	0	1301	55	0
27	BC	2092	0	2167	51	0
28	BD	1566	0	1618	46	0
29	BE	1552	0	1618	27	0
30	BF	1420	0	1457	49	0
31	BG	1313	0	1358	39	0
32	BH	1111	0	1148	13	0
33	BK	1129	0	1162	37	0
34	BL	946	0	1019	34	0
35	BM	1052	0	1127	27	0
36	BN	1075	0	1154	22	0
37	BO	945	0	989	25	0
38	BP	900	0	935	32	0
39	BQ	917	0	962	34	0
40	BR	947	0	1019	32	0
41	BS	816	0	839	23	0
42	BT	857	0	922	26	0
43	BU	757	0	820	16	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
44	BV	779	0	830	22	0
45	BW	753	0	780	24	0
46	BX	582	0	599	19	0
47	BY	625	0	652	19	0
48	BZ	501	0	531	14	0
49	B1	449	0	488	16	0
50	B2	444	0	458	15	0
51	B3	426	0	464	23	0
52	B4	377	0	418	9	0
53	B5	504	0	572	18	0
54	B6	301	0	340	8	0
55	CN	618	0	336	67	0
56	CT	606	0	338	39	0
57	CA	1775	0	1799	41	0
57	CB	1684	0	1713	19	0
58	CC	10415	0	10431	277	0
59	CD	10375	0	10596	191	0
60	CE	399	0	417	4	0
61	CF	790	0	781	61	0
62	AA	115	0	0	0	0
62	AL	1	0	0	0	0
62	AM	1	0	0	0	0
62	AN	1	0	0	0	0
62	AP	1	0	0	0	0
62	AX	1	0	0	0	0
62	BA	304	0	0	0	0
62	BB	8	0	0	0	0
62	BC	4	0	0	0	0
62	BD	2	0	0	0	0
62	BQ	1	0	0	0	0
62	BR	1	0	0	0	0
62	CD	1	0	0	0	0
63	AX	11	0	8	1	0
64	B6	1	0	0	0	0
64	CD	2	0	0	0	0
All	All	173008	0	123920	4047	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 14.

All (4047) 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)
4:AD:192:SER:CA	59:CD:74:LYS:HE2	1.36	1.52
3:AC:80:LYS:CE	58:CC:873:ILE:HG21	1.42	1.49
3:AC:107:ARG:CD	57:CA:165:GLU:HG2	1.05	1.48
4:AD:192:SER:HB3	59:CD:74:LYS:CE	1.43	1.46
3:AC:80:LYS:HE3	58:CC:873:ILE:CG2	1.40	1.46
3:AC:79:LYS:CE	58:CC:944:ARG:HE	1.31	1.44
3:AC:79:LYS:CE	58:CC:944:ARG:NE	1.86	1.36
4:AD:192:SER:HB3	59:CD:74:LYS:NZ	1.06	1.35
3:AC:78:GLY:N	58:CC:872:TYR:HE1	0.86	1.34
3:AC:107:ARG:CD	57:CA:165:GLU:CG	2.02	1.31
4:AD:193:ALA:H	59:CD:74:LYS:CD	1.44	1.30
4:AD:192:SER:CB	59:CD:74:LYS:CE	2.11	1.27
4:AD:192:SER:CB	59:CD:74:LYS:HZ3	1.48	1.26
22:AV:31:U:C4	58:CC:915:ASP:HB3	1.69	1.26
2:AB:15:HIS:HA	2:AB:41:ILE:O	1.36	1.26
22:AV:31:U:O2	58:CC:854:ILE:HG22	1.37	1.25
4:AD:193:ALA:N	59:CD:74:LYS:CE	1.98	1.25
3:AC:79:LYS:CD	58:CC:944:ARG:HE	1.49	1.24
3:AC:79:LYS:NZ	58:CC:944:ARG:O	1.70	1.24
3:AC:79:LYS:HE3	58:CC:944:ARG:NE	1.42	1.24
3:AC:79:LYS:CG	58:CC:944:ARG:HE	1.51	1.22
4:AD:192:SER:CB	59:CD:74:LYS:HE2	1.68	1.21
22:AV:31:U:C2	58:CC:854:ILE:HG22	1.76	1.19
3:AC:79:LYS:CG	58:CC:944:ARG:NE	2.05	1.19
4:AD:192:SER:C	59:CD:74:LYS:HE2	1.64	1.17
3:AC:80:LYS:CE	58:CC:873:ILE:CG2	2.08	1.16
61:CF:47:GLU:HG3	61:CF:64:PHE:CE1	1.80	1.16
4:AD:191:LEU:O	59:CD:86:GLU:CG	1.86	1.16
3:AC:72:ARG:HH22	58:CC:862:LEU:HB2	1.11	1.16
4:AD:192:SER:CB	59:CD:74:LYS:NZ	2.01	1.15
3:AC:72:ARG:HH12	58:CC:862:LEU:C	1.50	1.14
3:AC:107:ARG:HD3	57:CA:165:GLU:HG2	1.21	1.13
3:AC:107:ARG:HD2	57:CA:165:GLU:HG2	1.26	1.12
3:AC:75:ILE:HG12	58:CC:866:ASP:C	1.68	1.12
3:AC:78:GLY:N	58:CC:872:TYR:CE1	1.77	1.11
4:AD:193:ALA:H	59:CD:74:LYS:HD3	1.00	1.10
3:AC:79:LYS:HE3	58:CC:944:ARG:CD	1.80	1.10
61:CF:47:GLU:HG3	61:CF:64:PHE:HE1	1.01	1.09
22:AV:31:U:O2	58:CC:854:ILE:C	1.83	1.09
10:AJ:90:LEU:HD21	57:CA:117:HIS:O	1.51	1.08
4:AD:193:ALA:H	59:CD:74:LYS:CE	1.60	1.08
3:AC:78:GLY:CA	58:CC:872:TYR:HE1	1.67	1.07

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:CN:18:DG:H2'	61:CF:13:GLN:O	1.54	1.07
4:AD:192:SER:CA	59:CD:74:LYS:CE	2.29	1.07
25:BA:1869:G:C2	25:BA:1872:A:C6	2.43	1.06
4:AD:191:LEU:O	59:CD:86:GLU:HG2	1.29	1.06
3:AC:79:LYS:HG2	58:CC:944:ARG:NH1	1.68	1.06
3:AC:79:LYS:HG3	58:CC:944:ARG:NE	1.67	1.05
22:AV:31:U:O2	58:CC:854:ILE:CG2	2.05	1.03
25:BA:1869:G:N2	25:BA:1872:A:C6	2.26	1.03
22:AV:31:U:H5"	58:CC:855:PRO:HB3	1.40	1.02
22:AV:31:U:O3'	58:CC:853:ASP:O	1.74	1.02
3:AC:78:GLY:CA	58:CC:872:TYR:CE1	2.41	1.02
25:BA:1869:G:N2	25:BA:1872:A:C5	2.27	1.02
4:AD:192:SER:C	59:CD:74:LYS:CE	2.28	1.00
25:BA:1869:G:C2	25:BA:1872:A:N6	2.30	1.00
4:AD:192:SER:HA	59:CD:74:LYS:HE2	1.39	1.00
1:AA:984:C:N3	1:AA:1222:G:N2	2.09	1.00
55:CN:18:DG:C2'	61:CF:13:GLN:HB3	1.91	1.00
25:BA:543:A:H2'	25:BA:544:G:C8	1.96	0.99
25:BA:2100:G:H1	25:BA:2189:U:H3	1.03	0.99
16:AP:40:ASN:O	16:AP:49:GLY:HA2	1.61	0.99
16:AP:40:ASN:O	16:AP:49:GLY:CA	2.11	0.99
55:CN:18:DG:C8	61:CF:90:MET:SD	2.55	0.98
55:CN:18:DG:H8	61:CF:90:MET:SD	1.85	0.98
25:BA:1036:G:H1	25:BA:1119:U:H3	1.02	0.98
61:CF:47:GLU:CG	61:CF:64:PHE:HE1	1.76	0.98
3:AC:80:LYS:HA	57:CA:65:LEU:HD11	1.45	0.97
3:AC:79:LYS:HG2	58:CC:944:ARG:HH11	1.29	0.96
25:BA:1040:A:H61	25:BA:1115:G:H1	1.04	0.96
4:AD:193:ALA:N	59:CD:74:LYS:HD3	1.80	0.96
3:AC:75:ILE:C	58:CC:872:TYR:OH	2.05	0.95
22:AV:31:U:C4	58:CC:915:ASP:CB	2.49	0.95
3:AC:71:ALA:O	58:CC:863:SER:HB3	1.65	0.95
55:CN:17:DC:H4'	61:CF:15:PHE:CE1	2.01	0.95
25:BA:1040:A:N6	25:BA:1115:G:H1	1.64	0.94
25:BA:284:U:H3	25:BA:356:G:H1	0.95	0.94
10:AJ:53:ILE:HD11	10:AJ:63:ASP:HB2	1.50	0.94
3:AC:72:ARG:NH1	58:CC:862:LEU:C	2.19	0.94
4:AD:166:GLU:CG	59:CD:53:ARG:NH2	2.31	0.93
3:AC:72:ARG:NH2	58:CC:862:LEU:HB2	1.84	0.93
1:AA:409:U:H3	1:AA:433:G:H1	1.02	0.93
4:AD:166:GLU:HG3	59:CD:53:ARG:NH2	1.83	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:CN:18:DG:OP1	61:CF:90:MET:CE	2.16	0.92
23:AW:50:U:H3	23:AW:64:G:H1	1.11	0.92
55:CN:18:DG:H1'	61:CF:13:GLN:OE1	1.66	0.92
3:AC:79:LYS:HE2	58:CC:944:ARG:NE	1.85	0.92
3:AC:72:ARG:NH1	58:CC:862:LEU:O	2.03	0.90
55:CN:18:DG:OP1	61:CF:90:MET:HE1	1.70	0.90
22:AV:31:U:O4	58:CC:915:ASP:CG	2.10	0.90
3:AC:79:LYS:HG2	58:CC:944:ARG:CZ	2.02	0.89
1:AA:458:U:H3	1:AA:474:G:H1	1.03	0.89
4:AD:193:ALA:N	59:CD:74:LYS:HE3	1.86	0.89
3:AC:80:LYS:HE2	58:CC:873:ILE:CG2	2.03	0.88
22:AV:31:U:O2	58:CC:854:ILE:CB	2.21	0.88
25:BA:1597:A:H5"	25:BA:1598:A:H5'	1.54	0.88
3:AC:80:LYS:CE	58:CC:873:ILE:HG22	2.03	0.87
25:BA:1105:U:H2'	25:BA:1106:G:H8	1.37	0.87
3:AC:75:ILE:CA	58:CC:872:TYR:OH	2.19	0.87
42:BT:59:GLU:HB3	42:BT:66:ILE:HD11	1.57	0.86
25:BA:1798:U:OP2	27:BC:271:ARG:NH2	2.09	0.86
1:AA:1148:U:O2	9:AI:68:LYS:NZ	2.09	0.86
10:AJ:90:LEU:HD22	57:CA:118:ASP:OD1	1.75	0.86
1:AA:1005:A:N6	1:AA:1024:G:O2'	2.09	0.85
25:BA:2099:U:H3	25:BA:2190:G:H1	0.85	0.85
3:AC:79:LYS:CE	58:CC:944:ARG:HB3	2.07	0.85
2:AB:187:VAL:HG13	2:AB:191:SER:HB2	1.57	0.85
3:AC:75:ILE:HG23	58:CC:867:GLU:HB3	1.57	0.84
1:AA:180:U:O2	1:AA:196:A:N6	2.10	0.84
55:CN:19:DA:OP2	61:CF:89:VAL:CG1	2.13	0.84
3:AC:75:ILE:HA	58:CC:866:ASP:HA	1.59	0.84
1:AA:1017:U:HO2'	1:AA:1018:G:H8	1.26	0.84
1:AA:339:C:OP2	34:BL:98:ARG:NH1	2.10	0.84
1:AA:1492:A:H5"	12:AL:44:LYS:HG3	1.59	0.84
55:CN:17:DC:H4'	61:CF:15:PHE:CZ	2.12	0.84
30:BF:142:ASP:HB3	30:BF:145:LYS:HG2	1.58	0.83
22:AV:31:U:N3	58:CC:915:ASP:HB3	1.93	0.83
22:AV:46:C:H2'	22:AV:47:G:H8	1.43	0.83
1:AA:152:A:N6	1:AA:169:C:O2	2.10	0.83
25:BA:1607:C:N4	25:BA:1622:G:OP2	2.11	0.83
55:CN:18:DG:C6	61:CF:14:ALA:N	2.45	0.83
1:AA:61:G:N7	20:AT:6:SER:OG	2.12	0.83
25:BA:355:U:H2'	25:BA:356:G:H8	1.43	0.83
3:AC:79:LYS:HE3	58:CC:944:ARG:CB	2.08	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:1270:C:H5”	25:BA:1271:G:H5’	1.58	0.82
1:AA:159:G:N2	1:AA:162:A:OP2	2.13	0.82
3:AC:71:ALA:O	58:CC:863:SER:CB	2.28	0.82
25:BA:2116:G:H1	25:BA:2164:C:H42	1.28	0.82
3:AC:79:LYS:CG	58:CC:944:ARG:CZ	2.58	0.82
4:AD:193:ALA:N	59:CD:74:LYS:HE2	1.75	0.82
22:AV:47:G:H2’	22:AV:48:C:H6	1.44	0.82
25:BA:2135:A:H3’	25:BA:2136:G:H8	1.44	0.82
4:AD:166:GLU:HG2	59:CD:53:ARG:HH22	1.45	0.81
5:AE:142:ASP:O	5:AE:146:ASN:ND2	2.14	0.81
25:BA:543:A:H2’	25:BA:544:G:H8	1.44	0.81
1:AA:409:U:O2	1:AA:433:G:N2	2.11	0.81
3:AC:80:LYS:HE2	58:CC:873:ILE:HG22	1.62	0.81
1:AA:458:U:O2	1:AA:474:G:N2	2.14	0.81
25:BA:2636:C:O2’	28:BD:45:TYR:OH	1.99	0.81
25:BA:1529:G:H1	25:BA:1542:U:H3	1.28	0.80
41:BS:59:ILE:HD11	41:BS:98:ILE:HD12	1.63	0.80
1:AA:160:A:N6	1:AA:346:G:O6	2.15	0.80
59:CD:429:LEU:H	59:CD:429:LEU:HD22	1.46	0.80
55:CN:18:DG:C8	61:CF:13:GLN:NE2	2.48	0.80
23:AW:50:U:O2	23:AW:64:G:N2	2.13	0.80
25:BA:543:A:N6	25:BA:551:G:C6	2.50	0.80
1:AA:859:G:H2’	1:AA:860:A:H8	1.47	0.80
55:CN:18:DG:H2”	61:CF:91:GLY:H	1.47	0.79
57:CB:191:ARG:HB3	57:CB:196:THR:HG23	1.64	0.79
25:BA:445:C:OP1	40:BR:2:ALA:N	2.15	0.79
25:BA:2831:G:OP2	28:BD:59:ARG:NH1	2.16	0.79
25:BA:1070:A:N7	25:BA:1096:A:O2’	2.15	0.79
42:BT:68:ASP:N	42:BT:68:ASP:OD1	2.14	0.79
1:AA:1147:C:HO2’	9:AI:7:TYR:HH	1.23	0.79
1:AA:913:A:OP1	12:AL:88:LYS:NZ	2.16	0.79
1:AA:1307:U:OP1	13:AM:100:GLN:NE2	2.15	0.79
25:BA:2172:U:O2’	25:BA:2174:C:OP2	2.01	0.79
1:AA:1313:U:O4	19:AS:3:ARG:NH1	2.16	0.79
1:AA:1009:U:O4	1:AA:1020:G:O6	2.01	0.78
4:AD:166:GLU:HG2	59:CD:53:ARG:NH2	1.99	0.78
25:BA:137:U:H5”	25:BA:138:U:H5	1.48	0.78
25:BA:200:U:O2	25:BA:386:G:N2	2.16	0.78
25:BA:2658:C:OP1	31:BG:158:LYS:NZ	2.17	0.78
25:BA:2685:G:OP1	34:BL:78:ARG:NH2	2.16	0.78
25:BA:2102:G:O6	25:BA:2187:U:O4	2.01	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:BB:2:G:H2'	26:BB:3:C:C6	2.18	0.78
56:CT:18:DC:H2'	56:CT:19:DG:C8	2.19	0.78
8:AH:11:LEU:HD22	8:AH:75:ILE:HD11	1.65	0.78
25:BA:1724:G:O6	25:BA:1737:G:N2	2.16	0.78
35:BM:110:VAL:HB	35:BM:127:VAL:HG12	1.64	0.78
3:AC:72:ARG:HH12	58:CC:862:LEU:CB	1.96	0.78
59:CD:288:PRO:HB3	61:CF:107:GLU:OE1	1.83	0.78
3:AC:75:ILE:HG12	58:CC:866:ASP:CA	2.14	0.78
25:BA:878:A:N6	25:BA:899:A:O2'	2.16	0.78
36:BN:63:ILE:HG12	36:BN:105:MET:HG3	1.65	0.78
26:BB:31:C:O2	26:BB:53:A:N6	2.17	0.78
38:BP:48:LEU:O	38:BP:85:LYS:NZ	2.17	0.78
58:CC:481:LEU:HD21	61:CF:25:SER:OG	1.84	0.78
2:AB:117:LEU:HB3	2:AB:141:LEU:HD13	1.65	0.77
1:AA:1126:U:O4	10:AJ:9:ARG:NH1	2.17	0.77
4:AD:140:ASN:HA	4:AD:182:PHE:O	1.84	0.77
1:AA:1178:G:H21	1:AA:1180:A:H8	1.32	0.77
24:AX:20:H2U:H61	24:AX:20:H2U:OP1	1.85	0.77
25:BA:1689:A:H2'	25:BA:1690:A:H8	1.50	0.77
57:CB:74:VAL:HG21	57:CB:81:ILE:HD11	1.66	0.77
1:AA:714:G:H2'	1:AA:715:A:C8	2.19	0.77
10:AJ:90:LEU:CD2	57:CA:117:HIS:O	2.33	0.77
5:AE:157:ARG:NH1	8:AH:43:GLU:OE2	2.17	0.77
3:AC:80:LYS:HA	57:CA:65:LEU:CD1	2.10	0.77
25:BA:567:U:O3'	35:BM:36:LYS:NZ	2.18	0.77
25:BA:1047:G:N2	25:BA:1110:G:O2'	2.19	0.76
59:CD:1186:TYR:OH	59:CD:1188:GLU:OE1	2.01	0.76
6:AF:3:HIS:HD2	6:AF:95:ALA:H	1.34	0.76
16:AP:40:ASN:O	16:AP:49:GLY:HA3	1.84	0.76
1:AA:1366:C:O2'	10:AJ:62:ARG:NH1	2.17	0.76
59:CD:288:PRO:HB3	61:CF:107:GLU:CD	2.05	0.76
25:BA:140:C:O2	25:BA:141:G:N2	2.17	0.76
25:BA:2030:6MZ:O2'	25:BA:2031:A:OP2	2.04	0.76
3:AC:79:LYS:HE2	58:CC:944:ARG:CZ	2.16	0.76
54:B6:19:ARG:HB2	54:B6:24:ARG:HH11	1.50	0.76
58:CC:63:SER:OG	61:CF:32:LEU:HD13	1.85	0.76
1:AA:1356:G:H2'	1:AA:1357:A:C8	2.20	0.76
3:AC:79:LYS:NZ	58:CC:944:ARG:C	2.38	0.76
4:AD:193:ALA:N	59:CD:74:LYS:CD	2.25	0.76
25:BA:2153:C:H2'	25:BA:2154:A:C8	2.20	0.76
1:AA:1356:G:H2'	1:AA:1357:A:H8	1.51	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:AB:73:LYS:NZ	2:AB:165:ASP:OD2	2.16	0.75
35:BM:127:VAL:HG21	35:BM:142:ILE:HD13	1.68	0.75
25:BA:1115:G:HO2'	25:BA:1116:G:H8	1.31	0.75
1:AA:108:G:H5'	1:AA:109:A:H5"	1.68	0.75
1:AA:280:C:H1'	17:AQ:40:ARG:HH22	1.49	0.75
1:AA:1029:U:O2	1:AA:1032:G:N1	2.17	0.75
9:AI:130:ARG:NH2	23:AW:33:U:OP2	2.20	0.75
1:AA:521:G:H4'	12:AL:70:GLU:HG2	1.69	0.75
3:AC:75:ILE:CA	58:CC:866:ASP:HA	2.17	0.75
12:AL:54:ARG:NH1	12:AL:64:THR:OG1	2.19	0.74
33:BK:128:ASN:O	33:BK:128:ASN:ND2	2.20	0.74
25:BA:476:G:N1	25:BA:479:A:OP2	2.19	0.74
1:AA:88:U:H2'	1:AA:89:G:H8	1.53	0.74
25:BA:2162:G:OP2	25:BA:2164:C:N4	2.19	0.74
57:CA:62:ASP:OD1	57:CA:63:GLY:N	2.19	0.74
1:AA:1254:A:OP2	10:AJ:45:ARG:NH1	2.20	0.74
1:AA:993:G:O2'	1:AA:994:A:N7	2.20	0.74
12:AL:110:ARG:NH1	12:AL:112:GLN:O	2.20	0.74
59:CD:1179:PRO:HD2	59:CD:1184:ASP:HA	1.69	0.74
2:AB:111:ILE:HD12	2:AB:152:LYS:HA	1.68	0.74
16:AP:4:ILE:HG12	16:AP:21:VAL:HG22	1.70	0.74
25:BA:2140:G:O6	25:BA:2151:U:C4	2.41	0.74
15:AO:64:ARG:NH1	15:AO:68:ASP:OD1	2.21	0.74
1:AA:1445:U:H3	1:AA:1457:G:H1	1.35	0.74
26:BB:69:G:O6	26:BB:107:G:N2	2.18	0.74
13:AM:27:LYS:HE3	13:AM:27:LYS:H	1.53	0.73
37:BO:107:ASN:OD1	42:BT:40:ASN:ND2	2.21	0.73
4:AD:76:TYR:OH	4:AD:205:SER:OG	2.06	0.73
25:BA:275:C:N3	25:BA:362:A:N6	2.36	0.73
25:BA:720:U:H2'	25:BA:721:A:H8	1.53	0.73
1:AA:685:G:N1	1:AA:704:A:OP2	2.22	0.73
22:AV:46:C:H2'	22:AV:47:G:C8	2.21	0.73
1:AA:533:A:O2'	1:AA:535:A:OP2	2.06	0.73
58:CC:63:SER:OG	61:CF:32:LEU:CD1	2.36	0.73
25:BA:284:U:O4	25:BA:356:G:O6	2.05	0.73
25:BA:475:C:O2	25:BA:479:A:N6	2.22	0.73
25:BA:630:G:N2	25:BA:633:A:OP2	2.19	0.73
25:BA:1154:G:OP2	40:BR:58:ARG:NH1	2.21	0.73
55:CN:17:DC:C4'	61:CF:15:PHE:CZ	2.71	0.73
1:AA:235:C:H2'	1:AA:236:A:H8	1.52	0.73
28:BD:34:VAL:O	28:BD:93:GLY:N	2.22	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:CN:18:DG:N1	61:CF:14:ALA:N	2.10	0.73
1:AA:1119:C:H2'	1:AA:1120:C:H6	1.52	0.73
22:AV:31:U:H5"	58:CC:855:PRO:CB	2.18	0.73
25:BA:2171:A:O2'	25:BA:2173:A:OP1	2.05	0.73
18:AR:36:SER:HA	18:AR:72:ASP:HB2	1.70	0.73
6:AF:38:ARG:HH21	6:AF:61:LEU:HD11	1.53	0.73
25:BA:1668:A:N3	25:BA:1670:C:N4	2.36	0.73
1:AA:1436:U:OP1	20:AT:18:ARG:NH2	2.21	0.73
10:AJ:42:LEU:HB2	10:AJ:71:LEU:HB2	1.70	0.73
25:BA:279:A:H61	25:BA:361:G:H1'	1.54	0.73
25:BA:2503:2MA:O2'	25:BA:2505:G:OP2	2.07	0.73
25:BA:2595:G:N2	25:BA:2598:A:OP2	2.18	0.73
28:BD:37:VAL:HG13	28:BD:48:ILE:HG22	1.70	0.73
1:AA:75:G:H2'	1:AA:76:G:H8	1.55	0.72
25:BA:84:A:N1	25:BA:98:G:O2'	2.22	0.72
25:BA:994:C:OP2	40:BR:54:LYS:NZ	2.22	0.72
25:BA:1250:G:N7	35:BM:18:ARG:NH2	2.36	0.72
58:CC:10:ARG:NH2	58:CC:793:GLU:OE1	2.21	0.72
59:CD:816:THR:OG1	59:CD:818:GLU:OE1	2.04	0.72
38:BP:39:VAL:HB	38:BP:49:VAL:HG22	1.69	0.72
47:BY:72:ARG:NH1	47:BY:78:TYR:OH	2.22	0.72
4:AD:194:ASP:H	59:CD:74:LYS:HE3	1.55	0.72
1:AA:490:C:H2'	1:AA:491:G:H8	1.54	0.72
25:BA:1051:G:H1	25:BA:1108:U:H3	1.37	0.72
1:AA:70:U:O2	1:AA:71:A:N6	2.23	0.72
1:AA:744:C:H2'	1:AA:745:G:H8	1.54	0.72
1:AA:1317:C:N3	14:AN:53:ARG:NH2	2.37	0.72
5:AE:34:THR:HG22	5:AE:52:LYS:HG3	1.70	0.72
25:BA:2328:A:H2'	25:BA:2329:U:C6	2.25	0.72
22:AV:31:U:C5'	58:CC:855:PRO:HB3	1.86	0.72
25:BA:884:U:O4	25:BA:892:A:N1	2.23	0.72
25:BA:2134:A:N6	25:BA:2157:G:O2'	2.22	0.72
25:BA:2279:G:N7	46:BX:14:ARG:NH2	2.35	0.72
1:AA:459:A:H2'	1:AA:460:A:H8	1.54	0.72
6:AF:3:HIS:CD2	6:AF:95:ALA:H	2.08	0.72
25:BA:322:A:OP2	29:BE:163:ASN:ND2	2.19	0.72
25:BA:884:U:O4	25:BA:892:A:C6	2.43	0.72
38:BP:31:THR:O	38:BP:102:ARG:NH1	2.22	0.71
10:AJ:90:LEU:HD11	57:CA:118:ASP:HA	1.70	0.71
22:AV:47:G:H2'	22:AV:48:C:C6	2.25	0.71
3:AC:80:LYS:HE3	58:CC:873:ILE:CB	2.19	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:2140:G:H2'	25:BA:2141:G:C8	2.25	0.71
39:BQ:49:ALA:HB3	39:BQ:60:THR:HB	1.72	0.71
58:CC:27:LEU:O	58:CC:528:ARG:NH1	2.24	0.71
1:AA:1363:A:O2'	1:AA:1365:G:N7	2.22	0.71
34:BL:36:GLY:N	34:BL:62:VAL:O	2.23	0.71
59:CD:454:CYS:SG	59:CD:455:ALA:N	2.64	0.71
25:BA:1079:C:H2'	25:BA:1080:A:H8	1.54	0.71
25:BA:2366:A:H4'	46:BX:62:LYS:HE3	1.73	0.71
1:AA:86:G:H1'	1:AA:87:C:H5	1.55	0.71
1:AA:310:G:H5"	16:AP:31:ARG:HB2	1.73	0.71
25:BA:1187:G:OP1	41:BS:85:LYS:NZ	2.24	0.71
55:CN:18:DG:H22	61:CF:68:TYR:HA	1.55	0.71
56:CT:29:DA:OP1	61:CF:21:ARG:NH2	2.23	0.71
25:BA:2070:A:H2'	25:BA:2071:A:H8	1.56	0.71
3:AC:35:SER:OG	3:AC:59:ARG:NH1	2.23	0.71
31:BG:39:ASP:N	31:BG:39:ASP:OD1	2.24	0.71
1:AA:235:C:H2'	1:AA:236:A:C8	2.25	0.70
1:AA:1355:G:H2'	1:AA:1356:G:H8	1.55	0.70
13:AM:68:ASP:N	13:AM:68:ASP:OD1	2.21	0.70
1:AA:1445:U:O2	1:AA:1457:G:N2	2.23	0.70
1:AA:280:C:N3	17:AQ:41:THR:OG1	2.24	0.70
3:AC:80:LYS:CA	57:CA:65:LEU:HD11	1.99	0.70
55:CN:19:DA:OP2	61:CF:89:VAL:HG12	1.88	0.70
1:AA:459:A:H2'	1:AA:460:A:C8	2.26	0.70
25:BA:2162:G:O2'	25:BA:2163:A:N7	2.24	0.70
33:BK:37:ARG:NH2	33:BK:44:TYR:OH	2.24	0.70
55:CN:18:DG:H2"	61:CF:91:GLY:N	2.05	0.70
1:AA:35:G:H2'	1:AA:36:C:C6	2.26	0.70
25:BA:1083:U:O2'	25:BA:1085:A:OP2	2.07	0.70
27:BC:232:HIS:HA	27:BC:242:LYS:HD2	1.73	0.70
28:BD:46:ARG:NH1	28:BD:85:ALA:O	2.22	0.70
58:CC:624:ASP:OD1	58:CC:627:GLY:N	2.25	0.70
25:BA:2781:A:H5"	25:BA:2782:G:H5'	1.72	0.70
1:AA:204:G:H3'	1:AA:205:A:H8	1.55	0.70
31:BG:30:ASN:ND2	31:BG:78:GLY:O	2.23	0.70
27:BC:98:ASP:OD1	27:BC:98:ASP:N	2.15	0.70
25:BA:247:G:O6	53:B5:12:LYS:NZ	2.21	0.70
25:BA:885:C:N3	25:BA:892:A:N6	2.40	0.70
25:BA:920:A:OP1	49:B1:19:LYS:NZ	2.25	0.70
25:BA:1434:A:H2'	25:BA:1435:G:H8	1.55	0.70
25:BA:2667:C:N3	31:BG:110:SER:OG	2.23	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:BF:70:ALA:HB3	30:BF:82:GLY:H	1.57	0.70
25:BA:639:U:H2'	25:BA:640:C:C6	2.27	0.70
25:BA:1847:A:O2'	25:BA:1848:A:N7	2.23	0.70
1:AA:454:G:H2'	1:AA:455:G:H8	1.56	0.69
1:AA:401:C:O2'	1:AA:621:A:N3	2.23	0.69
1:AA:1125:U:OP1	10:AJ:37:ARG:NH2	2.25	0.69
7:AG:5:ARG:HB2	7:AG:7:ILE:HG23	1.74	0.69
25:BA:1710:G:H2'	25:BA:1711:A:H8	1.56	0.69
48:BZ:9:LYS:HB3	48:BZ:13:GLU:HG3	1.73	0.69
25:BA:68:G:N2	25:BA:74:A:OP2	2.25	0.69
25:BA:1869:G:N1	25:BA:1872:A:N6	2.39	0.69
1:AA:458:U:O4	1:AA:474:G:O6	2.10	0.69
1:AA:1314:C:OP1	19:AS:7:LYS:NZ	2.25	0.69
25:BA:1036:G:O6	25:BA:1119:U:O4	2.11	0.69
28:BD:13:ARG:NH1	39:BQ:75:GLN:OE1	2.25	0.69
1:AA:1152:A:OP1	10:AJ:70:HIS:ND1	2.25	0.69
25:BA:2182:U:O2	25:BA:2183:A:N6	2.21	0.69
25:BA:2335:A:OP1	38:BP:13:ARG:NH1	2.25	0.69
3:AC:79:LYS:CE	58:CC:944:ARG:CZ	2.68	0.69
17:AQ:77:ARG:HH12	17:AQ:79:VAL:HG13	1.58	0.69
25:BA:1386:C:H2'	25:BA:1387:A:C8	2.27	0.69
25:BA:2199:A:OP1	47:BY:37:ARG:NH1	2.26	0.69
25:BA:2539:C:H5'	54:B6:3:VAL:HG11	1.75	0.69
56:CT:28:DG:H5"	61:CF:18:PHE:CZ	2.28	0.69
1:AA:4:U:H2'	1:AA:5:U:H2'	1.74	0.69
1:AA:1351:U:O4	9:AI:120:LYS:NZ	2.26	0.69
25:BA:807:U:OP2	35:BM:41:ARG:NH1	2.24	0.69
25:BA:2291:U:H2'	25:BA:2292:U:C6	2.28	0.69
36:BN:110:GLU:OE2	36:BN:114:ARG:NH2	2.26	0.69
1:AA:181:A:N6	1:AA:195:A:N7	2.39	0.69
1:AA:231:U:H2'	1:AA:232:G:H8	1.56	0.69
1:AA:925:G:O2'	1:AA:927:G:OP1	2.10	0.69
1:AA:1218:C:H2'	1:AA:1219:A:C8	2.27	0.69
1:AA:1373:G:O6	9:AI:13:LYS:NZ	2.25	0.69
3:AC:78:GLY:HA2	58:CC:872:TYR:CE1	2.26	0.69
11:AK:52:PHE:HB3	11:AK:56:ARG:HG3	1.75	0.69
48:BZ:3:ALA:O	48:BZ:7:ARG:HB2	1.93	0.69
1:AA:1218:C:H2'	1:AA:1219:A:H8	1.57	0.69
4:AD:140:ASN:CA	4:AD:182:PHE:O	2.40	0.69
25:BA:468:G:OP2	52:B4:37:LYS:NZ	2.24	0.69
49:B1:9:GLN:HB2	49:B1:29:LEU:HD13	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:CN:16:DT:OP1	61:CF:16:SER:OG	2.09	0.69
1:AA:1077:G:N2	1:AA:1080:A:OP2	2.25	0.69
12:AL:25:GLU:OE2	12:AL:59:ASN:ND2	2.25	0.69
12:AL:75:GLN:NE2	12:AL:76:GLU:O	2.26	0.69
36:BN:36:VAL:HG12	45:BW:82:TYR:HB2	1.74	0.69
1:AA:152:A:N6	1:AA:169:C:C2	2.61	0.68
25:BA:411:G:OP2	25:BA:2406:A:O2'	2.10	0.68
1:AA:157:U:O2	1:AA:164:G:O6	2.12	0.68
1:AA:490:C:H2'	1:AA:491:G:C8	2.28	0.68
22:AV:31:U:O2	58:CC:854:ILE:CA	2.40	0.68
25:BA:1364:G:N2	25:BA:1367:A:OP2	2.23	0.68
25:BA:1434:A:H2'	25:BA:1435:G:C8	2.29	0.68
2:AB:14:VAL:HG22	2:AB:43:LEU:HD23	1.75	0.68
25:BA:641:U:O4	25:BA:647:G:O6	2.10	0.68
25:BA:1105:U:H2'	25:BA:1106:G:C8	2.25	0.68
25:BA:2530:A:N7	31:BG:172:LYS:NZ	2.40	0.68
1:AA:514:C:H2'	1:AA:515:G:H8	1.56	0.68
1:AA:606:G:N2	1:AA:632:U:OP1	2.23	0.68
1:AA:944:G:N1	1:AA:1338:G:OP2	2.24	0.68
29:BE:3:LEU:HD21	29:BE:120:VAL:HG21	1.74	0.68
1:AA:219:U:H2'	1:AA:220:G:H8	1.58	0.68
1:AA:362:G:N2	1:AA:365:U:OP2	2.26	0.68
1:AA:460:A:H2'	1:AA:461:A:C8	2.29	0.68
25:BA:549:C:H2'	25:BA:550:U:C6	2.28	0.68
25:BA:563:A:OP2	41:BS:79:ARG:NH1	2.27	0.68
46:BX:33:ALA:N	46:BX:64:ASP:OD1	2.27	0.68
54:B6:25:VAL:HB	54:B6:35:GLN:HG3	1.76	0.68
1:AA:1004:A:H2'	1:AA:1005:A:O4'	1.93	0.68
25:BA:2602:A:H4'	25:BA:2603:G:H5'	1.75	0.68
1:AA:575:G:H4'	1:AA:576:C:H5"	1.76	0.68
1:AA:875:U:O2'	8:AH:15:ARG:NH1	2.27	0.68
1:AA:1060:U:OP1	14:AN:85:ARG:NH2	2.23	0.68
1:AA:1239:A:H62	1:AA:1299:A:N6	1.91	0.68
2:AB:118:GLU:HG2	2:AB:141:LEU:HD11	1.76	0.68
7:AG:115:SER:HB3	7:AG:118:LEU:HD12	1.76	0.68
9:AI:24:GLY:N	9:AI:60:LYS:O	2.21	0.68
25:BA:1604:C:O2'	25:BA:1610:A:N1	2.27	0.68
1:AA:126:G:OP1	1:AA:605:U:O2'	2.09	0.68
25:BA:309:A:N3	25:BA:329:G:O2'	2.27	0.68
25:BA:620:G:OP2	25:BA:620:G:N2	2.24	0.68
27:BC:34:LEU:HD21	27:BC:63:ARG:HD3	1.76	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:BT:25:ARG:NH1	42:BT:74:ILE:O	2.26	0.68
1:AA:1004:A:C6	1:AA:1026:G:H1'	2.29	0.67
25:BA:279:A:N6	25:BA:361:G:H1'	2.08	0.67
59:CD:1157:ALA:HB2	59:CD:1210:ILE:HD11	1.74	0.67
1:AA:75:G:H2'	1:AA:76:G:C8	2.28	0.67
3:AC:80:LYS:HE3	58:CC:873:ILE:HG21	0.69	0.67
25:BA:1871:A:OP2	25:BA:1872:A:N6	2.27	0.67
25:BA:2246:G:H2'	25:BA:2247:A:H8	1.60	0.67
25:BA:2469:A:N6	25:BA:2481:G:O2'	2.25	0.67
56:CT:19:DG:H2'	56:CT:20:DC:C6	2.29	0.67
1:AA:56:U:H2'	1:AA:57:G:H8	1.58	0.67
1:AA:1275:A:H3'	1:AA:1276:G:H8	1.59	0.67
3:AC:79:LYS:HZ3	58:CC:948:ILE:HG12	1.60	0.67
11:AK:97:ILE:HD11	21:AU:16:LEU:HD13	1.75	0.67
22:AV:31:U:C5'	58:CC:855:PRO:CB	2.70	0.67
3:AC:79:LYS:HE3	58:CC:944:ARG:HB3	1.72	0.67
25:BA:2804:U:H2'	25:BA:2805:C:H6	1.59	0.67
26:BB:9:G:OP2	38:BP:15:ARG:NH1	2.27	0.67
41:BS:14:VAL:HG21	41:BS:98:ILE:HG13	1.76	0.67
7:AG:79:ARG:NH1	7:AG:79:ARG:O	2.27	0.67
25:BA:2299:U:OP1	30:BF:72:LYS:NZ	2.27	0.67
34:BL:12:ASP:OD1	34:BL:13:ASN:N	2.27	0.67
25:BA:1432:G:H2'	25:BA:1433:A:C8	2.29	0.67
25:BA:1469:A:H2'	25:BA:1470:A:C8	2.29	0.67
25:BA:1710:G:H2'	25:BA:1711:A:C8	2.29	0.67
1:AA:643:C:OP1	8:AH:31:LYS:NZ	2.20	0.67
53:B5:28:ASN:O	53:B5:36:LYS:NZ	2.28	0.67
4:AD:71:GLN:OE1	4:AD:97:ARG:NH1	2.28	0.67
19:AS:45:ILE:HA	19:AS:62:VAL:HB	1.77	0.67
26:BB:79:G:N7	45:BW:14:LYS:NZ	2.42	0.67
33:BK:36:LEU:HD11	33:BK:122:LEU:HB2	1.77	0.67
46:BX:18:ALA:O	46:BX:20:ARG:NH1	2.28	0.67
1:AA:1355:G:H2'	1:AA:1356:G:C8	2.30	0.67
9:AI:26:GLY:HA3	9:AI:59:GLU:HA	1.75	0.67
25:BA:2474:U:O4	31:BG:176:LYS:NZ	2.24	0.67
25:BA:2780:G:O6	33:BK:99:ARG:NH1	2.28	0.67
45:BW:21:ARG:NH2	45:BW:87:GLN:O	2.27	0.67
2:AB:32:PHE:HB2	2:AB:42:ASN:HB3	1.77	0.67
2:AB:173:ILE:O	2:AB:177:ASN:ND2	2.28	0.67
27:BC:160:THR:HG22	27:BC:177:ARG:HG2	1.76	0.67
1:AA:1347:G:O2'	1:AA:1373:G:O6	2.11	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:AN:38:ASP:OD1	14:AN:38:ASP:N	2.27	0.66
17:AQ:8:LEU:O	17:AQ:60:GLU:HA	1.95	0.66
23:AW:17:C:OP2	23:AW:17(A):U:O2'	2.11	0.66
25:BA:219:A:N3	25:BA:234:U:O2'	2.27	0.66
25:BA:813:U:H2'	25:BA:814:C:H6	1.61	0.66
43:BU:7:LEU:HG	43:BU:46:ALA:HA	1.77	0.66
1:AA:131:A:H2'	1:AA:132:C:H6	1.60	0.66
25:BA:280:U:O4	25:BA:360:U:O2	2.14	0.66
25:BA:396:G:OP2	47:BY:10:LYS:NZ	2.28	0.66
55:CN:18:DG:H2'	61:CF:13:GLN:C	2.14	0.66
1:AA:974:A:OP1	14:AN:69:ARG:NH2	2.27	0.66
1:AA:1247:U:O2	1:AA:1290:G:O6	2.12	0.66
23:AW:19:G:OP1	23:AW:20:H2U:H51	1.94	0.66
25:BA:881:G:O6	25:BA:895:U:O4	2.12	0.66
25:BA:1789:A:OP2	27:BC:221:ARG:NH1	2.28	0.66
59:CD:504:GLN:NE2	59:CD:505:ASP:OD1	2.18	0.66
10:AJ:3:ASN:HB3	10:AJ:79:PRO:HG2	1.77	0.66
27:BC:24:LEU:HD13	27:BC:83:TYR:HB2	1.77	0.66
29:BE:22:ASP:N	29:BE:22:ASP:OD1	2.26	0.66
37:BO:37:THR:HG22	37:BO:39:PRO:HD2	1.77	0.66
25:BA:1168:G:O6	25:BA:1181:U:O2	2.13	0.66
25:BA:2126:A:O3'	25:BA:2162:G:N2	2.28	0.66
25:BA:2377:A:O2'	38:BP:117:PHE:OXT	2.13	0.66
46:BX:54:GLY:O	46:BX:57:HIS:N	2.28	0.66
55:CN:18:DG:OP1	61:CF:90:MET:HE2	1.93	0.66
23:AW:16:C:H4'	23:AW:17:C:OP2	1.94	0.66
23:AW:76:A:HO2'	63:AX:102:PHE:N	1.94	0.66
25:BA:559:G:N2	40:BR:49:ASP:OD1	2.28	0.66
1:AA:1015:G:H2'	1:AA:1016:A:C8	2.31	0.66
3:AC:79:LYS:HZ1	58:CC:944:ARG:HB3	1.61	0.66
4:AD:192:SER:HB3	59:CD:74:LYS:HZ3	0.84	0.66
25:BA:1709:U:H2'	25:BA:1710:G:H8	1.61	0.66
25:BA:2070:A:H2'	25:BA:2071:A:C8	2.29	0.66
31:BG:9:VAL:HB	31:BG:50:LEU:HB2	1.77	0.66
25:BA:2562:U:OP1	34:BL:40:LYS:NZ	2.27	0.66
7:AG:27:VAL:HG22	7:AG:43:VAL:HG21	1.78	0.66
25:BA:249:C:O2	53:B5:12:LYS:NZ	2.29	0.66
25:BA:1264:A:OP1	50:B2:16:ARG:NH1	2.28	0.66
25:BA:2333:A:OP1	46:BX:77:ARG:NH1	2.25	0.66
49:B1:8:THR:HA	49:B1:34:HIS:O	1.95	0.66
1:AA:269:C:H2'	1:AA:270:A:H8	1.60	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:AD:166:GLU:CG	59:CD:53:ARG:HH22	2.02	0.66
10:AJ:90:LEU:HD13	57:CA:118:ASP:OD1	1.95	0.66
25:BA:2153:C:H2'	25:BA:2154:A:H8	1.61	0.66
25:BA:2246:G:H2'	25:BA:2247:A:C8	2.31	0.66
29:BE:117:ARG:NH2	29:BE:183:PHE:O	2.27	0.66
2:AB:15:HIS:O	2:AB:40:ILE:HA	1.95	0.65
4:AD:140:ASN:N	4:AD:182:PHE:O	2.29	0.65
4:AD:194:ASP:N	59:CD:74:LYS:HG2	2.10	0.65
25:BA:818:G:N1	25:BA:1188:U:OP2	2.27	0.65
25:BA:1248:G:OP1	29:BE:44:ARG:NH1	2.29	0.65
25:BA:1266:G:O2'	25:BA:2012:G:O6	2.14	0.65
25:BA:2136:G:O6	25:BA:2155:U:O2	2.13	0.65
46:BX:59:LEU:HD12	46:BX:80:ILE:HD12	1.76	0.65
1:AA:736:C:H2'	1:AA:737:C:H6	1.61	0.65
25:BA:729:G:H5"	25:BA:730:A:H5"	1.79	0.65
25:BA:1084:A:H2'	25:BA:1085:A:C8	2.31	0.65
25:BA:1474:U:O2	25:BA:1517:G:O6	2.13	0.65
25:BA:2120:G:H5"	25:BA:2172:U:H5"	1.76	0.65
1:AA:1119:C:OP2	9:AI:11:ARG:NH2	2.27	0.65
25:BA:2200:C:OP2	47:BY:37:ARG:NH2	2.30	0.65
38:BP:34:HIS:HD1	38:BP:53:THR:HG1	1.45	0.65
25:BA:281:C:H2'	25:BA:282:A:C8	2.31	0.65
25:BA:1599:U:OP1	43:BU:39:THR:OG1	2.14	0.65
25:BA:2261:C:OP1	46:BX:19:LYS:NZ	2.26	0.65
25:BA:2316:G:H2'	25:BA:2317:A:H8	1.61	0.65
25:BA:2683:C:OP1	39:BQ:51:ARG:NH2	2.28	0.65
1:AA:1249:C:N4	1:AA:1288:A:OP2	2.30	0.65
25:BA:1447:C:H2'	25:BA:1448:G:H8	1.60	0.65
25:BA:1212:G:O2'	25:BA:1236:G:N2	2.25	0.65
25:BA:1735:A:H2'	25:BA:1736:U:C6	2.31	0.65
1:AA:1371:G:H2'	1:AA:1372:U:C6	2.31	0.65
26:BB:2:G:H2'	26:BB:3:C:H6	1.59	0.65
38:BP:111:ARG:HD3	38:BP:117:PHE:HB2	1.79	0.65
1:AA:1464:U:H2'	1:AA:1465:A:H8	1.62	0.65
3:AC:79:LYS:CE	58:CC:944:ARG:CB	2.73	0.65
22:AV:45:G:H5"	58:CC:540:ARG:NH2	2.11	0.65
25:BA:300:A:OP2	44:BV:97:LYS:NZ	2.29	0.65
25:BA:1173:U:O2'	25:BA:1175:A:OP1	2.15	0.65
3:AC:72:ARG:HH22	58:CC:862:LEU:CB	2.00	0.65
6:AF:42:TRP:HB3	6:AF:45:ARG:HH11	1.62	0.65
25:BA:511:U:H4'	25:BA:1235:G:H4'	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:CN:18:DG:N2	61:CF:68:TYR:HA	2.11	0.65
56:CT:17:DG:C5	56:CT:18:DC:C5	2.84	0.65
25:BA:72:U:O4	48:BZ:58:ASN:ND2	2.29	0.65
25:BA:2477:U:O2	54:B6:4:ARG:NH2	2.30	0.65
59:CD:429:LEU:HD22	59:CD:429:LEU:N	2.12	0.65
1:AA:842:U:O2'	1:AA:843:U:OP1	2.15	0.64
10:AJ:12:ALA:HB2	10:AJ:18:ILE:HD13	1.79	0.64
12:AL:68:GLY:O	12:AL:99:ARG:NH1	2.30	0.64
25:BA:288:U:H2'	25:BA:289:G:C8	2.31	0.64
25:BA:888:C:O2'	25:BA:889:C:N3	2.29	0.64
1:AA:20:U:H2'	1:AA:21:G:O4'	1.98	0.64
2:AB:58:ASN:OD1	2:AB:227:GLN:NE2	2.30	0.64
3:AC:72:ARG:HH12	58:CC:862:LEU:CA	2.10	0.64
25:BA:1689:A:H2'	25:BA:1690:A:C8	2.32	0.64
25:BA:2190:G:H2'	25:BA:2191:A:C8	2.32	0.64
3:AC:155:GLY:HA2	3:AC:163:ALA:HB1	1.78	0.64
20:AT:10:ARG:O	20:AT:14:SER:OG	2.13	0.64
25:BA:285:G:O6	25:BA:355:U:O2	2.14	0.64
25:BA:444:C:OP1	29:BE:40:ARG:NH2	2.31	0.64
25:BA:1653:G:O6	37:BO:11:ASN:ND2	2.30	0.64
56:CT:19:DG:C6	56:CT:20:DC:C4	2.85	0.64
3:AC:75:ILE:HD13	58:CC:867:GLU:HA	1.80	0.64
25:BA:543:A:N6	25:BA:551:G:O6	2.31	0.64
25:BA:2114:A:N6	25:BA:2168:G:O6	2.30	0.64
29:BE:58:LYS:NZ	29:BE:70:SER:O	2.30	0.64
41:BS:61:ALA:HB2	41:BS:98:ILE:HD13	1.78	0.64
1:AA:1291:U:H2'	1:AA:1292:G:H8	1.63	0.64
5:AE:25:VAL:HG22	5:AE:26:LYS:H	1.62	0.64
25:BA:561:G:HO2'	40:BR:45:TYR:HH	1.43	0.64
25:BA:2285:C:OP2	51:B3:6:ARG:NH2	2.31	0.64
27:BC:116:ILE:HD11	27:BC:127:GLY:HA3	1.80	0.64
37:BO:12:ARG:O	37:BO:17:ARG:NH2	2.31	0.64
58:CC:582:ASN:OD1	58:CC:583:GLU:N	2.31	0.64
1:AA:413:G:H21	1:AA:428:G:H1'	1.62	0.64
25:BA:1494:A:H2'	25:BA:1495:A:C8	2.32	0.64
26:BB:66:A:OP2	26:BB:108:A:N6	2.30	0.64
27:BC:8:PRO:HB3	27:BC:14:ARG:HG3	1.79	0.64
37:BO:24:MET:HG2	37:BO:44:LEU:HD22	1.79	0.64
1:AA:636:U:H2'	1:AA:637:C:C6	2.32	0.64
1:AA:1232:U:OP1	9:AI:126:GLN:NE2	2.31	0.64
11:AK:23:ILE:HD13	11:AK:96:THR:HB	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:BF:132:VAL:HG11	30:BF:137:ILE:HD13	1.80	0.64
34:BL:9:ASN:O	34:BL:83:ALA:HA	1.98	0.64
50:B2:29:SER:HB3	50:B2:38:HIS:CD2	2.33	0.64
55:CN:32:DA:H5'	55:CN:32:DA:C8	2.32	0.64
59:CD:256:ASP:O	59:CD:259:ARG:NH2	2.22	0.64
1:AA:584:G:H2'	1:AA:585:G:H8	1.63	0.64
1:AA:674:G:N2	1:AA:717:U:O2	2.17	0.64
7:AG:87:VAL:HG11	7:AG:155:ARG:HB3	1.79	0.64
25:BA:1536:C:O2	25:BA:1537:G:N2	2.30	0.64
25:BA:1629:U:O4	25:BA:1630:A:N6	2.30	0.64
43:BU:34:VAL:HG21	43:BU:43:ILE:HD11	1.80	0.64
47:BY:19:SER:OG	47:BY:20:HIS:N	2.31	0.64
1:AA:736:C:H2'	1:AA:737:C:C6	2.32	0.63
1:AA:1316:G:N1	1:AA:1319:A:OP2	2.32	0.63
2:AB:164:ILE:HG22	2:AB:186:ILE:HD13	1.79	0.63
3:AC:80:LYS:NZ	58:CC:873:ILE:HG21	2.13	0.63
19:AS:36:ARG:HH21	19:AS:75:ALA:HB3	1.62	0.63
25:BA:1040:A:N6	25:BA:1115:G:N1	2.31	0.63
25:BA:1178:C:H2'	25:BA:1179:G:C8	2.32	0.63
1:AA:626:G:O2'	16:AP:51:ARG:NH2	2.31	0.63
6:AF:47:LEU:HD12	6:AF:55:HIS:HA	1.80	0.63
32:BH:115:VAL:O	32:BH:116:ARG:NH1	2.30	0.63
56:CT:19:DG:H2'	56:CT:20:DC:H6	1.63	0.63
1:AA:416:G:H2'	1:AA:417:G:H8	1.61	0.63
25:BA:287:G:H2'	25:BA:288:U:C6	2.33	0.63
25:BA:813:U:H2'	25:BA:814:C:C6	2.33	0.63
1:AA:826:C:O2	8:AH:16:ASN:ND2	2.31	0.63
1:AA:923:A:H2'	1:AA:924:C:C6	2.34	0.63
3:AC:6:HIS:ND1	3:AC:8:ASN:OD1	2.27	0.63
7:AG:16:PRO:HB2	9:AI:42:GLU:HG3	1.80	0.63
25:BA:2059:A:H2'	25:BA:2503:2MA:HM23	1.78	0.63
3:AC:153:VAL:HG12	3:AC:198:VAL:HG22	1.80	0.63
25:BA:84:A:OP1	44:BV:6:ARG:NH1	2.32	0.63
25:BA:2139:U:O2	25:BA:2152:G:O6	2.16	0.63
36:BN:35:ALA:HB2	36:BN:102:LEU:HD11	1.79	0.63
1:AA:1287:A:H2'	1:AA:1288:A:C8	2.33	0.63
7:AG:70:ARG:HG2	7:AG:96:ARG:HG2	1.79	0.63
7:AG:72:THR:HA	7:AG:96:ARG:HH12	1.64	0.63
11:AK:56:ARG:O	11:AK:59:THR:OG1	2.17	0.63
16:AP:35:ARG:HH21	16:AP:38:PHE:HB3	1.64	0.63
24:AX:46:7MG:OP1	24:AX:46:7MG:H2'	1.98	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:1636:U:O2'	25:BA:1760:C:O2	2.14	0.63
25:BA:2532:G:N2	25:BA:2663:G:O2'	2.32	0.63
55:CN:18:DG:H8	61:CF:90:MET:CE	2.12	0.63
58:CC:18:ARG:NH1	58:CC:1188:ASP:OD1	2.31	0.63
59:CD:474:LEU:HD21	60:CE:27:ALA:HB3	1.79	0.63
25:BA:714:U:H1'	25:BA:717:C:H5	1.63	0.63
1:AA:1136:C:OP2	1:AA:1137:C:N4	2.29	0.63
1:AA:1522:U:H2'	1:AA:1523:G:H8	1.63	0.63
25:BA:2676:C:P	34:BL:31:ARG:HH22	2.22	0.63
1:AA:313:A:H2'	1:AA:314:C:C6	2.34	0.62
1:AA:595:A:N6	1:AA:641:U:O2'	2.32	0.62
1:AA:825:A:H2'	1:AA:826:C:H6	1.64	0.62
25:BA:1153:C:OP1	40:BR:92:ARG:NH1	2.32	0.62
25:BA:1599:U:H2'	25:BA:1600:C:H6	1.64	0.62
25:BA:1799:G:OP1	27:BC:258:ARG:NH1	2.32	0.62
56:CT:19:DG:C5	56:CT:20:DC:C5	2.86	0.62
58:CC:251:ALA:HB2	58:CC:269:ILE:HD11	1.80	0.62
1:AA:674:G:H2'	1:AA:675:A:C8	2.34	0.62
1:AA:1119:C:P	9:AI:11:ARG:HH22	2.22	0.62
3:AC:79:LYS:NZ	58:CC:944:ARG:HB3	2.13	0.62
3:AC:107:ARG:HD2	57:CA:165:GLU:CG	2.00	0.62
10:AJ:49:PHE:O	10:AJ:64:GLN:HA	1.99	0.62
22:AV:31:U:N3	58:CC:915:ASP:CB	2.59	0.62
24:AX:14:A:H61	24:AX:21:A:H2	1.46	0.62
1:AA:898:G:N2	1:AA:901:A:OP2	2.28	0.62
25:BA:1141:U:H4'	25:BA:1142:A:O4'	2.00	0.62
25:BA:1482:G:H2'	25:BA:1483:G:H8	1.62	0.62
25:BA:1534:U:O2'	25:BA:1537:G:O6	2.14	0.62
25:BA:2688:G:N1	25:BA:2720:U:OP2	2.24	0.62
39:BQ:89:ARG:HD2	39:BQ:113:ARG:HB3	1.81	0.62
3:AC:79:LYS:HZ1	58:CC:944:ARG:C	2.01	0.62
16:AP:43:ALA:HB1	16:AP:47:GLU:HB3	1.81	0.62
25:BA:468:G:N7	52:B4:39:ARG:NH2	2.48	0.62
25:BA:1779:U:OP2	25:BA:1784:A:N6	2.27	0.62
25:BA:2102:G:O6	25:BA:2187:U:C4	2.53	0.62
55:CN:19:DA:C8	61:CF:89:VAL:N	2.66	0.62
55:CN:38:DA:H2"	55:CN:39:DG:N7	2.14	0.62
1:AA:254:G:H2'	1:AA:255:G:H8	1.65	0.62
25:BA:1437:C:HO2'	25:BA:1516:G:HO2'	1.40	0.62
10:AJ:90:LEU:CD2	57:CA:118:ASP:OD1	2.48	0.62
1:AA:1239:A:H62	1:AA:1299:A:H62	1.47	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:163:C:H2'	25:BA:164:C:C6	2.35	0.62
25:BA:2099:U:O4	25:BA:2190:G:O6	2.17	0.62
25:BA:2728:U:HO2'	25:BA:2729:G:H8	1.47	0.62
55:CN:17:DC:C4'	61:CF:15:PHE:HZ	2.11	0.62
1:AA:1312:G:O6	19:AS:3:ARG:NH2	2.32	0.62
25:BA:2140:G:O6	25:BA:2151:U:O4	2.18	0.62
57:CB:27:THR:C	57:CB:28:LEU:HD22	2.19	0.62
25:BA:160:A:N3	25:BA:2208:C:O2'	2.33	0.62
25:BA:1816:C:N4	27:BC:35:GLU:OE2	2.33	0.62
25:BA:2135:A:H3'	25:BA:2136:G:C8	2.31	0.62
25:BA:2682:A:H2'	25:BA:2683:C:H6	1.64	0.62
26:BB:63:C:H2'	26:BB:64:G:H8	1.65	0.62
25:BA:499:U:H5"	44:BV:43:LYS:HD3	1.81	0.62
25:BA:1028:A:H2'	25:BA:1029:A:C8	2.34	0.62
25:BA:1068:G:O2'	25:BA:1070:A:N7	2.29	0.62
25:BA:1071:G:N2	25:BA:1089:A:HO2'	1.97	0.62
25:BA:2485:G:H5"	36:BN:45:GLN:HE21	1.65	0.62
55:CN:18:DG:P	61:CF:90:MET:CE	2.87	0.62
25:BA:1031:G:N3	54:B6:37:GLN:NE2	2.46	0.61
25:BA:2683:C:O2	34:BL:70:ARG:NH2	2.32	0.61
30:BF:42:GLU:OE2	30:BF:148:ARG:NH2	2.32	0.61
59:CD:576:ARG:NH1	59:CD:593:ASN:O	2.32	0.61
1:AA:68:G:H22	1:AA:101:A:H2	1.48	0.61
13:AM:81:MET:O	13:AM:92:ARG:NH1	2.32	0.61
13:AM:89:LEU:O	13:AM:93:ARG:HG2	2.00	0.61
24:AX:64:A:H2'	24:AX:65:G:H8	1.65	0.61
25:BA:182:A:H2'	25:BA:183:C:H6	1.66	0.61
59:CD:504:GLN:HG3	59:CD:505:ASP:H	1.65	0.61
1:AA:1323:G:H2'	1:AA:1324:A:C8	2.35	0.61
25:BA:1447:C:H2'	25:BA:1448:G:C8	2.35	0.61
59:CD:1360:GLY:HA2	60:CE:17:PHE:CZ	2.35	0.61
1:AA:636:U:H2'	1:AA:637:C:H6	1.66	0.61
2:AB:188:ASP:OD1	2:AB:189:THR:N	2.33	0.61
56:CT:9:DC:H2'	56:CT:10:DT:C6	2.34	0.61
14:AN:6:MET:SD	14:AN:9:ARG:NH2	2.74	0.61
25:BA:152:A:H2'	25:BA:153:U:C6	2.36	0.61
25:BA:500:G:N1	25:BA:503:A:OP2	2.33	0.61
25:BA:881:G:H1	25:BA:895:U:H3	1.46	0.61
25:BA:2640:G:OP1	33:BK:95:ARG:NH1	2.34	0.61
51:B3:47:VAL:HG12	51:B3:48:ILE:H	1.66	0.61
1:AA:877:G:H2'	1:AA:878:A:H8	1.65	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1072:G:OP1	5:AE:62:LYS:NZ	2.33	0.61
25:BA:300:A:OP2	44:BV:82:ARG:NH2	2.34	0.61
38:BP:62:LEU:HD13	38:BP:70:ALA:HA	1.81	0.61
50:B2:15:MET:O	50:B2:18:SER:HB3	2.00	0.61
59:CD:288:PRO:CB	61:CF:107:GLU:OE1	2.47	0.61
1:AA:545:C:OP1	4:AD:58:LYS:NZ	2.34	0.61
1:AA:1040:U:H2'	1:AA:1041:G:C8	2.35	0.61
1:AA:1080:A:OP1	5:AE:52:LYS:NZ	2.24	0.61
10:AJ:57:VAL:HG22	10:AJ:58:ASN:H	1.66	0.61
37:BO:2:ARG:HB3	37:BO:2:ARG:HH11	1.65	0.61
56:CT:18:DC:H2'	56:CT:19:DG:H8	1.65	0.61
1:AA:866:C:H42	1:AA:873:A:H2	1.49	0.61
4:AD:118:VAL:HG22	4:AD:123:ILE:HG13	1.80	0.61
10:AJ:10:LEU:HB3	10:AJ:18:ILE:HD11	1.83	0.61
12:AL:37:VAL:HG22	12:AL:53:CYS:HB3	1.82	0.61
25:BA:3:U:H2'	25:BA:4:U:C6	2.35	0.61
25:BA:1469:A:H2'	25:BA:1470:A:H8	1.65	0.61
1:AA:312:C:H2'	1:AA:313:A:H8	1.65	0.61
1:AA:736:C:OP1	18:AR:61:ARG:NH1	2.34	0.61
1:AA:790:A:OP1	23:AW:38:A:O2'	2.19	0.61
6:AF:38:ARG:NH2	6:AF:63:ASN:OD1	2.34	0.61
25:BA:281:C:H2'	25:BA:282:A:H8	1.66	0.61
25:BA:414:C:H2'	25:BA:415:A:H8	1.65	0.61
25:BA:632:A:N3	25:BA:2403:C:O2'	2.33	0.61
25:BA:1682:G:H2'	25:BA:1683:U:C6	2.36	0.61
1:AA:1254:A:H2'	1:AA:1255:G:H8	1.64	0.61
1:AA:1394:A:N6	1:AA:1500:A:O2'	2.34	0.61
11:AK:63:ALA:HB1	11:AK:96:THR:HG23	1.82	0.61
25:BA:935:C:H2'	25:BA:936:A:H8	1.66	0.61
25:BA:1093:G:H21	25:BA:1098:A:H62	1.48	0.61
57:CA:8:PHE:O	57:CA:10:LYS:NZ	2.26	0.61
1:AA:198:G:H1	1:AA:219:U:H3	1.48	0.60
1:AA:211:G:C5	1:AA:212:G:H1'	2.36	0.60
1:AA:1100:C:OP2	2:AB:95:ARG:HD3	2.01	0.60
3:AC:75:ILE:CG1	58:CC:866:ASP:C	2.59	0.60
3:AC:103:ILE:O	57:CA:167:PRO:HB3	2.01	0.60
25:BA:414:C:H2'	25:BA:415:A:C8	2.36	0.60
27:BC:185:GLU:HG2	27:BC:187:ASP:H	1.65	0.60
38:BP:34:HIS:ND1	38:BP:53:THR:OG1	2.29	0.60
58:CC:705:GLU:HB3	58:CC:794:LEU:H	1.66	0.60
59:CD:441:LEU:HD22	59:CD:441:LEU:N	2.16	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:946:A:H2'	1:AA:947:G:H8	1.67	0.60
1:AA:1011:C:H2'	1:AA:1012:A:H8	1.66	0.60
2:AB:117:LEU:HD12	2:AB:141:LEU:HB2	1.83	0.60
3:AC:11:ARG:NH2	3:AC:175:LEU:O	2.35	0.60
6:AF:3:HIS:HB3	6:AF:95:ALA:HB2	1.82	0.60
13:AM:27:LYS:HG2	13:AM:28:THR:N	2.16	0.60
25:BA:279:A:H2'	25:BA:280:U:O4'	2.00	0.60
25:BA:906:U:O2'	36:BN:66:ARG:NH2	2.34	0.60
25:BA:1026:G:OP1	25:BA:1134:A:O2'	2.15	0.60
25:BA:2247:A:H2'	25:BA:2248:C:H6	1.66	0.60
26:BB:111:U:H2'	26:BB:112:G:H8	1.67	0.60
29:BE:111:GLU:OE1	29:BE:114:ARG:NH1	2.34	0.60
49:B1:59:GLU:N	49:B1:59:GLU:OE1	2.34	0.60
25:BA:1025:G:N2	25:BA:1139:G:O6	2.30	0.60
27:BC:108:LYS:N	27:BC:194:GLU:O	2.34	0.60
31:BG:27:LYS:HA	31:BG:32:GLU:HB3	1.83	0.60
56:CT:28:DG:H5"	61:CF:18:PHE:CE1	2.37	0.60
59:CD:797:THR:HG22	59:CD:924:GLY:HA3	1.83	0.60
12:AL:110:ARG:HH12	12:AL:113:ALA:HB3	1.67	0.60
25:BA:458:G:O2'	25:BA:469:G:O6	2.19	0.60
25:BA:1114:C:H2'	25:BA:1115:G:C8	2.37	0.60
1:AA:972:C:OP2	10:AJ:59:LYS:NZ	2.34	0.60
4:AD:146:ARG:O	4:AD:150:LYS:HB2	2.02	0.60
25:BA:1000:A:OP2	25:BA:1154:G:N1	2.22	0.60
28:BD:179:ARG:HB3	28:BD:188:LEU:HB2	1.83	0.60
33:BK:4:PHE:CD2	40:BR:100:VAL:HG11	2.37	0.60
1:AA:56:U:H2'	1:AA:57:G:C8	2.37	0.60
1:AA:765:G:N2	1:AA:813:U:OP2	2.34	0.60
1:AA:1157:A:N6	1:AA:1177:G:H1	2.00	0.60
1:AA:1254:A:H2'	1:AA:1255:G:C8	2.37	0.60
4:AD:47:ARG:HA	22:AV:28:A:N7	2.16	0.60
4:AD:192:SER:C	59:CD:74:LYS:HE3	2.15	0.60
15:AO:47:LYS:O	15:AO:53:ARG:NH2	2.35	0.60
25:BA:5:A:H2'	25:BA:6:A:C8	2.36	0.60
25:BA:645:C:H2'	25:BA:647:G:C8	2.37	0.60
25:BA:1062:G:O6	25:BA:1077:A:N6	2.34	0.60
25:BA:2646:C:OP2	25:BA:2732:G:O2'	2.18	0.60
59:CD:429:LEU:H	59:CD:429:LEU:CD2	2.13	0.60
1:AA:312:C:H2'	1:AA:313:A:C8	2.37	0.60
1:AA:1120:C:H2'	1:AA:1121:U:C6	2.37	0.60
1:AA:1157:A:H62	1:AA:1177:G:H22	1.49	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:AC:75:ILE:HG13	58:CC:865:LEU:O	2.01	0.60
25:BA:1541:C:H2'	25:BA:1542:U:H6	1.67	0.60
25:BA:2799:G:O2'	25:BA:2800:A:H5"	2.02	0.60
25:BA:2804:U:H2'	25:BA:2805:C:C6	2.37	0.60
26:BB:61:G:H2'	26:BB:62:C:C6	2.37	0.60
30:BF:47:LYS:O	30:BF:51:ASP:N	2.27	0.60
1:AA:1031:C:H5'	1:AA:1032:G:C4	2.37	0.60
1:AA:1154:G:H2'	1:AA:1155:A:H8	1.67	0.60
3:AC:72:ARG:NH1	58:CC:862:LEU:CB	2.63	0.60
4:AD:47:ARG:HD2	22:AV:28:A:OP1	2.02	0.60
6:AF:45:ARG:O	6:AF:56:LYS:HA	2.02	0.60
25:BA:2591:C:H2'	25:BA:2592:G:C8	2.36	0.60
58:CC:23:ASP:OD1	58:CC:23:ASP:N	2.34	0.60
1:AA:147:G:H2'	1:AA:148:G:C8	2.37	0.59
1:AA:195:A:H2'	1:AA:196:A:C8	2.37	0.59
1:AA:405:U:OP2	4:AD:3:ARG:NH1	2.35	0.59
26:BB:81:G:O6	26:BB:95:U:O2	2.20	0.59
28:BD:148:GLN:OE1	28:BD:148:GLN:N	2.35	0.59
25:BA:1051:G:O6	25:BA:1108:U:O4	2.20	0.59
25:BA:1070:A:H2'	25:BA:1097:U:H4'	1.84	0.59
1:AA:96:U:H2'	1:AA:97:G:H8	1.67	0.59
2:AB:153:ASP:N	2:AB:153:ASP:OD1	2.35	0.59
6:AF:82:ASP:OD1	6:AF:82:ASP:N	2.31	0.59
25:BA:2109:U:N3	25:BA:2180:U:O4	2.34	0.59
28:BD:149:ASN:OD1	28:BD:150:MEQ:N	2.34	0.59
1:AA:1268:G:N3	1:AA:1326:U:O2'	2.35	0.59
3:AC:79:LYS:HE3	58:CC:944:ARG:CG	2.31	0.59
25:BA:748:G:OP1	42:BT:88:ARG:NH1	2.35	0.59
25:BA:1106:G:H2'	25:BA:1107:G:H8	1.67	0.59
25:BA:2405:G:O2'	25:BA:2411:A:N6	2.34	0.59
34:BL:78:ARG:NH1	39:BQ:71:GLU:OE1	2.34	0.59
11:AK:29:ASN:OD1	11:AK:30:THR:N	2.35	0.59
23:AW:19:G:C2	23:AW:57:A:H1'	2.37	0.59
25:BA:878:A:H3'	25:BA:879:G:H8	1.67	0.59
30:BF:60:ILE:HD11	30:BF:141:ILE:HG13	1.83	0.59
59:CD:1169:THR:OG1	59:CD:1173:ARG:HB3	2.03	0.59
19:AS:30:PRO:HA	19:AS:48:THR:O	2.01	0.59
25:BA:1063:G:H2'	25:BA:1064:C:C5	2.37	0.59
25:BA:1278:C:H2'	25:BA:1279:G:H8	1.68	0.59
25:BA:2591:C:H2'	25:BA:2592:G:H8	1.67	0.59
31:BG:40:ALA:HA	31:BG:58:TYR:CE1	2.38	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:CN:17:DC:C4'	61:CF:15:PHE:CE1	2.83	0.59
1:AA:363:A:N6	12:AL:27:CYS:SG	2.76	0.59
1:AA:1346:A:N1	1:AA:1374:A:H5"	2.18	0.59
25:BA:2154:A:H2'	25:BA:2155:U:O4'	2.03	0.59
25:BA:2316:G:H2'	25:BA:2317:A:C8	2.37	0.59
30:BF:48:LYS:O	30:BF:52:ASN:N	2.36	0.59
31:BG:8:PRO:HB2	31:BG:49:THR:HB	1.85	0.59
1:AA:154:U:H2'	1:AA:155:A:C8	2.38	0.59
25:BA:90:U:H3'	25:BA:91:A:H2'	1.84	0.59
25:BA:483:A:OP1	44:BV:47:LYS:NZ	2.34	0.59
25:BA:2384:U:OP2	46:BX:55:ARG:NH1	2.36	0.59
1:AA:811:C:O2'	1:AA:901:A:N1	2.34	0.59
18:AR:34:THR:OG1	18:AR:35:GLU:OE2	2.19	0.59
22:AV:40:A:O2'	22:AV:41:C:OP2	2.21	0.59
25:BA:1408:G:O6	25:BA:1594:U:O4	2.20	0.59
30:BF:134:GLU:HB2	30:BF:136:ILE:HG22	1.84	0.59
1:AA:133:U:H1'	1:AA:230:G:N2	2.17	0.59
1:AA:165:G:H2'	1:AA:166:U:C6	2.38	0.59
1:AA:463:U:H3'	1:AA:464:U:O2	2.02	0.59
1:AA:664:G:H22	1:AA:741:G:H1	1.47	0.59
4:AD:14:ARG:HG3	4:AD:56:ARG:NH2	2.17	0.59
4:AD:173:VAL:HA	4:AD:180:GLY:HA2	1.84	0.59
11:AK:81:ASN:OD1	11:AK:106:ARG:NH2	2.29	0.59
25:BA:340:A:H2'	25:BA:341:C:O4'	2.03	0.59
25:BA:1433:A:H2'	25:BA:1434:A:C8	2.37	0.59
25:BA:2071:A:H2'	25:BA:2072:C:C6	2.38	0.59
33:BK:31:GLU:OE2	33:BK:34:ARG:NH1	2.36	0.59
1:AA:493:A:H2'	1:AA:494:G:C8	2.39	0.58
1:AA:946:A:H2'	1:AA:947:G:C8	2.38	0.58
3:AC:142:MET:HG3	3:AC:170:GLU:HG2	1.85	0.58
23:AW:69:C:N4	23:AW:70:G:O6	2.36	0.58
24:AX:51:U:H2'	24:AX:52:G:C8	2.38	0.58
25:BA:593:U:H2'	25:BA:594:U:C6	2.38	0.58
25:BA:1093:G:N2	25:BA:1098:A:H62	2.01	0.58
25:BA:1796:U:H2'	25:BA:1797:G:H8	1.68	0.58
33:BK:76:HIS:CE1	33:BK:85:LYS:HB2	2.37	0.58
55:CN:26:DG:OP2	58:CC:542:ARG:NH1	2.35	0.58
56:CT:17:DG:C6	56:CT:18:DC:C4	2.91	0.58
59:CD:650:LYS:HE3	59:CD:742:GLY:O	2.02	0.58
1:AA:1317:C:H5"	14:AN:24:ARG:HH21	1.68	0.58
8:AH:59:LEU:HD12	8:AH:60:GLU:H	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:AL:8:VAL:HG22	17:AQ:31:HIS:HD2	1.68	0.58
13:AM:27:LYS:NZ	13:AM:28:THR:OG1	2.35	0.58
25:BA:927:A:H2'	25:BA:928:A:C8	2.38	0.58
28:BD:186:LEU:HD21	39:BQ:4:ILE:HG21	1.85	0.58
55:CN:17:DC:H4'	61:CF:15:PHE:HE1	1.61	0.58
1:AA:518:C:O2'	1:AA:1492:A:N6	2.36	0.58
1:AA:843:U:OP1	1:AA:846:G:N1	2.36	0.58
1:AA:1041:G:H2'	1:AA:1042:A:C8	2.38	0.58
1:AA:1095:U:OP1	1:AA:1108:G:N2	2.28	0.58
23:AW:1:C:H2'	23:AW:2:G:H8	1.69	0.58
39:BQ:90:GLY:O	39:BQ:113:ARG:NH1	2.36	0.58
49:B1:48:ILE:O	49:B1:52:SER:HB3	2.03	0.58
58:CC:525:THR:HG21	58:CC:687:ARG:HH11	1.67	0.58
58:CC:525:THR:HG21	58:CC:687:ARG:NH1	2.18	0.58
1:AA:923:A:H2'	1:AA:924:C:H6	1.68	0.58
3:AC:75:ILE:N	58:CC:866:ASP:HA	2.18	0.58
6:AF:3:HIS:HB2	6:AF:92:THR:O	2.02	0.58
22:AV:31:U:O4	58:CC:915:ASP:OD1	2.20	0.58
23:AW:53:G:H2'	23:AW:54:5MU:C6	2.38	0.58
25:BA:1045:C:H4'	25:BA:1047:G:H5'	1.86	0.58
34:BL:17:ARG:NH2	34:BL:45:GLU:OE2	2.35	0.58
1:AA:198:G:H2'	1:AA:199:A:H8	1.67	0.58
1:AA:427:U:O2'	1:AA:541:G:OP1	2.19	0.58
1:AA:677:U:H3	1:AA:713:G:H22	1.50	0.58
4:AD:147:GLU:CD	4:AD:147:GLU:H	2.05	0.58
6:AF:2:ARG:HB3	6:AF:91:ARG:HH11	1.68	0.58
17:AQ:9:GLN:HG3	17:AQ:60:GLU:HB3	1.85	0.58
25:BA:527:C:N4	25:BA:2043:C:OP2	2.37	0.58
25:BA:2127:G:H2'	25:BA:2128:G:C8	2.39	0.58
25:BA:2483:C:N3	36:BN:123:LYS:NZ	2.47	0.58
31:BG:29:LYS:NZ	31:BG:30:ASN:OD1	2.37	0.58
38:BP:50:ALA:O	38:BP:81:ARG:NH1	2.37	0.58
42:BT:2:GLU:OE1	42:BT:2:GLU:N	2.26	0.58
48:BZ:23:ARG:O	48:BZ:27:ASN:ND2	2.36	0.58
56:CT:20:DC:H2'	56:CT:21:DG:H8	1.68	0.58
58:CC:638:SER:OG	58:CC:639:LYS:N	2.32	0.58
2:AB:6:MET:HE2	2:AB:47:VAL:HG21	1.84	0.58
5:AE:70:ASN:O	5:AE:70:ASN:ND2	2.36	0.58
25:BA:1709:U:H2'	25:BA:1710:G:C8	2.38	0.58
40:BR:109:LEU:HD13	41:BS:49:ILE:HG12	1.84	0.58
1:AA:532:A:H3'	1:AA:533:A:H5'	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:AF:17:GLN:N	6:AF:17:GLN:OE1	2.37	0.58
25:BA:886:A:O2'	25:BA:888:C:OP1	2.21	0.58
25:BA:2295:C:P	38:BP:9:ARG:HH22	2.27	0.58
25:BA:2348:U:H4'	51:B3:41:PRO:HG3	1.86	0.58
25:BA:2557:G:H2'	25:BA:2558:C:C6	2.39	0.58
54:B6:16:ILE:HG12	54:B6:25:VAL:HG22	1.85	0.58
55:CN:27:DA:C4	55:CN:28:DA:C8	2.90	0.58
1:AA:416:G:H2'	1:AA:417:G:C8	2.38	0.58
1:AA:539:A:H2'	1:AA:540:G:C8	2.39	0.58
1:AA:727:G:N2	1:AA:730:G:OP2	2.37	0.58
11:AK:116:ILE:HD11	21:AU:28:VAL:HG22	1.86	0.58
17:AQ:5:ILE:HD13	17:AQ:62:ARG:HD2	1.85	0.58
23:AW:27:U:H2'	23:AW:28:C:H6	1.68	0.58
25:BA:1076:C:H2'	25:BA:1077:A:C8	2.39	0.58
25:BA:1281:G:H2'	25:BA:1282:U:C6	2.39	0.58
42:BT:17:VAL:HG12	42:BT:76:VAL:HG21	1.85	0.58
49:B1:4:THR:OG1	49:B1:37:GLU:OE1	2.19	0.58
58:CC:696:ASP:CG	58:CC:697:LYS:H	2.06	0.58
1:AA:502:A:H2'	1:AA:503:C:C6	2.39	0.58
1:AA:664:G:O2'	1:AA:666:G:OP2	2.21	0.58
25:BA:79:C:O2'	25:BA:346:A:N3	2.31	0.58
25:BA:1405:U:H2'	25:BA:1406:U:H6	1.69	0.58
25:BA:1794:A:H2'	25:BA:1795:C:C6	2.39	0.58
49:B1:3:LYS:H	49:B1:3:LYS:HD2	1.69	0.58
1:AA:160:A:H2'	1:AA:161:A:O4'	2.04	0.58
1:AA:1182:G:H4'	1:AA:1183:U:H5"	1.85	0.58
1:AA:1226:C:H41	13:AM:103:LYS:HE2	1.69	0.58
1:AA:1394:A:N6	1:AA:1500:A:HO2'	2.01	0.58
25:BA:243:U:OP2	53:B5:8:ARG:NH1	2.37	0.58
25:BA:2818:U:OP2	37:BO:42:LYS:NZ	2.35	0.58
57:CA:67:GLU:OE1	58:CC:1057:LYS:NZ	2.33	0.58
58:CC:320:ASP:N	58:CC:320:ASP:OD1	2.37	0.58
4:AD:185:LYS:HD3	4:AD:186:PRO:HD2	1.84	0.57
22:AV:44:C:H2'	22:AV:45:G:O4'	2.04	0.57
25:BA:948:C:H2'	25:BA:949:G:H8	1.68	0.57
25:BA:1386:C:H2'	25:BA:1387:A:H8	1.67	0.57
25:BA:2032:G:C8	28:BD:150:MEQ:HE1	2.39	0.57
25:BA:2155:U:H2'	25:BA:2156:G:C8	2.38	0.57
1:AA:94:G:N2	1:AA:97:G:O6	2.35	0.57
1:AA:713:G:H2'	1:AA:714:G:C8	2.39	0.57
1:AA:859:G:H2'	1:AA:860:A:C8	2.34	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1151:A:O2'	1:AA:1152:A:H8	1.86	0.57
4:AD:188:ARG:NH2	4:AD:192:SER:O	2.32	0.57
8:AH:9:ASP:OD2	8:AH:13:ARG:NH1	2.37	0.57
25:BA:863:A:H2'	25:BA:864:G:H8	1.67	0.57
26:BB:93:C:H2'	26:BB:94:A:H8	1.69	0.57
27:BC:176:LEU:O	27:BC:179:GLY:N	2.37	0.57
40:BR:3:ARG:HH22	40:BR:5:LYS:NZ	2.03	0.57
1:AA:877:G:C2	1:AA:878:A:N7	2.72	0.57
3:AC:8:ASN:OD1	3:AC:9:GLY:N	2.38	0.57
22:AV:31:U:O4	58:CC:915:ASP:CB	2.47	0.57
25:BA:357:C:H2'	25:BA:358:U:H6	1.69	0.57
25:BA:517:C:O2'	42:BT:18:ARG:NH2	2.35	0.57
25:BA:543:A:C6	25:BA:551:G:C6	2.91	0.57
25:BA:641:U:C4	25:BA:647:G:O6	2.58	0.57
29:BE:51:GLU:OE2	29:BE:88:ARG:NH1	2.37	0.57
55:CN:18:DG:C2'	61:CF:91:GLY:H	2.17	0.57
58:CC:423:ASP:N	58:CC:423:ASP:OD1	2.33	0.57
3:AC:107:ARG:HD3	57:CA:165:GLU:CG	2.01	0.57
25:BA:585:G:N7	40:BR:6:ARG:NH1	2.52	0.57
26:BB:13:G:H22	26:BB:69:G:C2'	2.16	0.57
59:CD:515:ARG:NH2	59:CD:718:SER:O	2.37	0.57
59:CD:523:GLU:CD	59:CD:709:ARG:HH22	2.07	0.57
1:AA:460:A:H2'	1:AA:461:A:H8	1.69	0.57
3:AC:132:ARG:NH1	22:AV:29:C:O3'	2.38	0.57
7:AG:74:GLU:HG3	7:AG:89:VAL:HG23	1.86	0.57
12:AL:87:VAL:O	12:AL:88:LYS:HB2	2.03	0.57
58:CC:1165:SER:O	58:CC:1167:GLU:N	2.37	0.57
59:CD:1069:ALA:HA	59:CD:1072:LYS:HB2	1.85	0.57
1:AA:211:G:C6	1:AA:212:G:H1'	2.39	0.57
3:AC:79:LYS:HZ2	58:CC:944:ARG:C	2.00	0.57
17:AQ:15:ASP:OD1	17:AQ:15:ASP:N	2.36	0.57
28:BD:25:THR:HG21	28:BD:193:VAL:HG22	1.85	0.57
28:BD:36:GLN:NE2	28:BD:49:GLN:OE1	2.37	0.57
29:BE:5:LEU:O	29:BE:9:GLN:N	2.37	0.57
33:BK:32:LEU:HD22	33:BK:54:ILE:HG21	1.85	0.57
47:BY:43:GLU:HB2	47:BY:45:ARG:HG2	1.84	0.57
1:AA:165:G:H2'	1:AA:166:U:H6	1.70	0.57
1:AA:429:U:H3'	4:AD:9:LEU:HD12	1.86	0.57
1:AA:582:C:OP2	1:AA:758:C:N4	2.33	0.57
1:AA:1031:C:H4'	1:AA:1032:G:H5"	1.86	0.57
12:AL:8:VAL:HG22	17:AQ:31:HIS:CD2	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:BB:32:U:C2	26:BB:33:G:C8	2.93	0.57
26:BB:51:G:OP2	38:BP:67:ASN:ND2	2.36	0.57
26:BB:66:A:H61	26:BB:107:G:H2'	1.69	0.57
39:BQ:91:ALA:HB2	39:BQ:113:ARG:HA	1.86	0.57
58:CC:726:TYR:HB3	58:CC:733:VAL:CG1	2.34	0.57
1:AA:68:G:H3'	1:AA:69:G:H5"	1.85	0.57
1:AA:1071:C:H2'	1:AA:1072:G:H8	1.70	0.57
1:AA:1236:A:H2'	1:AA:1237:C:C6	2.40	0.57
1:AA:1309:G:C6	1:AA:1329:A:C6	2.93	0.57
3:AC:78:GLY:O	58:CC:872:TYR:HD1	1.86	0.57
11:AK:112:ASP:HB3	21:AU:2:PRO:HD2	1.87	0.57
25:BA:884:U:C4	25:BA:892:A:N1	2.73	0.57
25:BA:1826:G:O2'	25:BA:1971:U:OP2	2.22	0.57
25:BA:1871:A:O2'	25:BA:1872:A:O4'	2.17	0.57
36:BN:14:LYS:O	36:BN:71:LYS:NZ	2.38	0.57
48:BZ:39:GLN:HB3	48:BZ:41:HIS:CE1	2.39	0.57
1:AA:146:G:H2'	1:AA:147:G:H8	1.70	0.57
1:AA:335:C:H2'	1:AA:336:A:H8	1.68	0.57
1:AA:590:U:H2'	1:AA:591:U:C6	2.39	0.57
1:AA:1219:A:H2'	1:AA:1220:G:H8	1.69	0.57
7:AG:14:PRO:HB2	7:AG:19:GLY:HA2	1.87	0.57
25:BA:1141:U:OP2	33:BK:65:THR:OG1	2.21	0.57
25:BA:2354:C:O3'	46:BX:25:ARG:NH2	2.36	0.57
56:CT:26:DA:H2"	56:CT:27:DG:C8	2.39	0.57
1:AA:927:G:H21	1:AA:1532:U:H5'	1.70	0.57
1:AA:950:U:H2'	1:AA:951:G:C8	2.39	0.57
1:AA:1250:A:H2'	1:AA:1251:A:C8	2.39	0.57
17:AQ:45:HIS:CG	17:AQ:70:THR:HG1	2.23	0.57
23:AW:3:C:H2'	23:AW:4:G:C8	2.39	0.57
25:BA:1505:A:H2'	25:BA:1506:U:C6	2.40	0.57
25:BA:1692:U:O2'	25:BA:1693:U:H2'	2.05	0.57
25:BA:2748:A:H5'	31:BG:4:VAL:HG21	1.87	0.57
58:CC:7:GLU:O	58:CC:9:LYS:N	2.34	0.57
1:AA:299:G:H2'	1:AA:300:A:C8	2.39	0.56
1:AA:384:G:H2'	1:AA:385:C:C6	2.40	0.56
1:AA:635:A:H2'	1:AA:636:U:C6	2.40	0.56
1:AA:1125:U:O2'	1:AA:1126:U:O5'	2.22	0.56
13:AM:12:HIS:HA	13:AM:44:LYS:HD3	1.87	0.56
25:BA:1306:C:H41	25:BA:1606:C:H2'	1.69	0.56
25:BA:2110:G:H5'	25:BA:2118:U:O2'	2.05	0.56
56:CT:19:DG:C4	56:CT:20:DC:C5	2.93	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:CC:12:ARG:NE	58:CC:793:GLU:OE2	2.36	0.56
58:CC:421:SER:H	58:CC:424:ASP:HB2	1.70	0.56
25:BA:594:U:H2'	25:BA:595:C:C6	2.40	0.56
25:BA:1433:A:H2'	25:BA:1434:A:H8	1.70	0.56
25:BA:2305:U:H2'	25:BA:2306:C:C6	2.40	0.56
58:CC:12:ARG:HH21	58:CC:793:GLU:CD	2.07	0.56
59:CD:301:GLU:OE1	59:CD:312:ARG:NH1	2.37	0.56
1:AA:392:C:O2'	1:AA:483:C:O2'	2.17	0.56
1:AA:447:G:N1	1:AA:486:U:OP2	2.38	0.56
1:AA:950:U:H2'	1:AA:951:G:H8	1.69	0.56
1:AA:1250:A:H2'	1:AA:1251:A:H8	1.70	0.56
1:AA:1300:G:C6	1:AA:1334:G:C5	2.93	0.56
4:AD:192:SER:HB3	59:CD:74:LYS:HZ1	1.52	0.56
8:AH:18:GLN:HG3	8:AH:72:VAL:HB	1.87	0.56
8:AH:77:ARG:NH1	8:AH:79:SER:O	2.38	0.56
23:AW:19:G:OP1	23:AW:60:U:N3	2.33	0.56
25:BA:45:G:H5"	25:BA:46:G:H5'	1.87	0.56
25:BA:349:U:H2'	25:BA:350:G:C8	2.40	0.56
25:BA:664:G:H2'	25:BA:665:U:H6	1.69	0.56
25:BA:693:A:O2'	25:BA:1353:A:N3	2.36	0.56
25:BA:2128:G:H3'	25:BA:2129:C:C5'	2.35	0.56
28:BD:34:VAL:O	28:BD:93:GLY:CA	2.53	0.56
28:BD:124:ARG:HG3	28:BD:165:MET:HB2	1.86	0.56
29:BE:112:LEU:HD22	29:BE:117:ARG:HB2	1.88	0.56
1:AA:454:G:H2'	1:AA:455:G:C8	2.38	0.56
1:AA:1095:U:H2'	1:AA:1096:C:C6	2.40	0.56
1:AA:1154:G:H2'	1:AA:1155:A:C8	2.41	0.56
4:AD:47:ARG:HH11	22:AV:28:A:H5"	1.71	0.56
6:AF:37:HIS:HB3	6:AF:97:THR:HG22	1.87	0.56
25:BA:635:C:O2'	25:BA:639:U:OP1	2.23	0.56
7:AG:79:ARG:HB3	7:AG:79:ARG:HH11	1.71	0.56
16:AP:8:ARG:HA	16:AP:17:TYR:HD1	1.71	0.56
23:AW:53:G:C8	23:AW:54:5MU:H72	2.41	0.56
25:BA:63:A:H61	25:BA:91:A:N6	2.04	0.56
25:BA:1231:U:H2'	25:BA:1232:G:H8	1.70	0.56
25:BA:2072:C:H2'	25:BA:2073:C:H6	1.70	0.56
26:BB:30:C:H1'	26:BB:57:A:H61	1.70	0.56
1:AA:146:G:H2'	1:AA:147:G:C8	2.41	0.56
1:AA:1040:U:H2'	1:AA:1041:G:H8	1.70	0.56
1:AA:1175:G:N3	1:AA:1176:A:C8	2.74	0.56
2:AB:197:ASP:N	2:AB:197:ASP:OD1	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:1075:C:H2'	25:BA:1076:C:C6	2.40	0.56
25:BA:1418:G:N2	25:BA:1579:A:N7	2.53	0.56
25:BA:2100:G:O6	25:BA:2189:U:O4	2.24	0.56
37:BO:103:ARG:NH2	37:BO:106:ASP:OD2	2.32	0.56
41:BS:35:PHE:HB2	41:BS:59:ILE:HG23	1.88	0.56
1:AA:1188:A:O3'	14:AN:98:LYS:NZ	2.39	0.56
1:AA:1402:4OC:H2'	1:AA:1403:C:O4'	2.06	0.56
2:AB:60:ILE:HD13	2:AB:63:ARG:HH21	1.71	0.56
10:AJ:52:LEU:HD21	10:AJ:59:LYS:HD2	1.87	0.56
25:BA:851:C:H2'	25:BA:852:U:C6	2.40	0.56
25:BA:2401:U:O2	25:BA:2415:G:O6	2.24	0.56
25:BA:2681:C:OP2	28:BD:114:LYS:NZ	2.38	0.56
55:CN:28:DA:H2"	55:CN:29:DG:H8	1.70	0.56
58:CC:591:TYR:OH	58:CC:637:ARG:NH2	2.36	0.56
1:AA:136:C:H2'	1:AA:137:U:C6	2.40	0.56
1:AA:1465:A:H2'	1:AA:1466:C:H6	1.71	0.56
25:BA:1292:G:H2'	25:BA:1293:C:C6	2.41	0.56
25:BA:2291:U:OP1	25:BA:2380:C:O2'	2.24	0.56
25:BA:2885:G:N1	50:B2:30:VAL:O	2.35	0.56
45:BW:80:HIS:ND1	45:BW:83:LYS:HB2	2.21	0.56
1:AA:198:G:H2'	1:AA:199:A:C8	2.41	0.56
1:AA:269:C:H2'	1:AA:270:A:C8	2.40	0.56
1:AA:1176:A:H2'	1:AA:1177:G:O4'	2.06	0.56
7:AG:155:ARG:H	7:AG:155:ARG:HE	1.53	0.56
10:AJ:7:ARG:HG3	10:AJ:101:SER:HB3	1.88	0.56
25:BA:888:C:H4'	25:BA:889:C:OP1	2.05	0.56
25:BA:1494:A:H2'	25:BA:1495:A:H8	1.71	0.56
30:BF:108:VAL:HG11	30:BF:117:LEU:HD21	1.87	0.56
49:B1:12:SER:HB2	49:B1:32:ILE:HD11	1.88	0.56
59:CD:160:LEU:HD23	59:CD:160:LEU:H	1.71	0.56
59:CD:495:ASN:OD1	59:CD:495:ASN:N	2.37	0.56
59:CD:813:ASP:OD1	59:CD:883:ARG:NH2	2.35	0.56
1:AA:17:U:H2'	1:AA:18:C:C6	2.41	0.56
1:AA:413:G:N2	1:AA:428:G:H1'	2.20	0.56
1:AA:1312:G:H5'	19:AS:6:LYS:HD3	1.88	0.56
1:AA:1314:C:H2'	1:AA:1315:U:H6	1.71	0.56
3:AC:79:LYS:CG	58:CC:944:ARG:NH1	2.57	0.56
6:AF:36:ILE:HD11	6:AF:39:LEU:HB2	1.86	0.56
25:BA:247:G:OP2	25:BA:249:C:N4	2.39	0.56
25:BA:1203:U:O2'	35:BM:4:ASN:OD1	2.20	0.56
25:BA:2029:G:N1	25:BA:2033:A:OP2	2.35	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:2522:U:O2'	25:BA:2647:U:OP1	2.18	0.56
28:BD:25:THR:OG1	28:BD:191:GLY:O	2.23	0.56
33:BK:98:GLU:N	33:BK:98:GLU:OE2	2.39	0.56
1:AA:280:C:O2	17:AQ:40:ARG:NH2	2.39	0.55
1:AA:673:A:H2'	1:AA:674:G:C8	2.41	0.55
12:AL:102:LEU:HD22	12:AL:102:LEU:H	1.71	0.55
19:AS:49:ILE:HG13	19:AS:60:VAL:HG13	1.89	0.55
23:AW:44:A:H2'	23:AW:45:G:O4'	2.06	0.55
25:BA:181:A:H1'	25:BA:435:C:H5'	1.88	0.55
25:BA:922:C:H1'	46:BX:26:PHE:CD2	2.41	0.55
25:BA:1721:G:HO2'	25:BA:1722:A:H8	1.51	0.55
25:BA:1880:U:H2'	25:BA:1881:C:H6	1.71	0.55
57:CB:76:GLU:H	57:CB:76:GLU:CD	2.08	0.55
1:AA:322:C:H2'	1:AA:323:U:C6	2.41	0.55
1:AA:1375:A:OP1	7:AG:25:LYS:NZ	2.39	0.55
4:AD:117:LEU:HG	4:AD:122:ALA:HB3	1.89	0.55
5:AE:143:GLY:HA2	5:AE:146:ASN:HD21	1.70	0.55
25:BA:414:C:O2	25:BA:1864:U:O2'	2.23	0.55
25:BA:2425:A:H4'	25:BA:2426:A:H5"	1.88	0.55
25:BA:2655:G:N2	25:BA:2665:A:OP2	2.37	0.55
25:BA:2822:G:O6	37:BO:2:ARG:NH1	2.38	0.55
48:BZ:10:SER:OG	48:BZ:13:GLU:OE2	2.19	0.55
61:CF:47:GLU:CG	61:CF:64:PHE:CE1	2.64	0.55
1:AA:825:A:H2'	1:AA:826:C:C6	2.41	0.55
1:AA:1031:C:H5'	1:AA:1032:G:N3	2.22	0.55
1:AA:1157:A:C6	1:AA:1181:G:C5	2.94	0.55
2:AB:159:ASP:OD1	2:AB:159:ASP:N	2.39	0.55
3:AC:75:ILE:HG12	58:CC:866:ASP:O	2.03	0.55
7:AG:79:ARG:HA	7:AG:84:THR:HA	1.88	0.55
25:BA:568:U:O4	41:BS:81:LYS:NZ	2.37	0.55
25:BA:843:G:H2'	25:BA:844:A:C8	2.42	0.55
25:BA:1664:A:H61	25:BA:1996:C:H42	1.54	0.55
25:BA:1670:C:H2'	25:BA:1671:U:O4'	2.06	0.55
25:BA:2119:A:H62	25:BA:2167:U:H1'	1.71	0.55
27:BC:53:HIS:O	27:BC:217:ARG:N	2.35	0.55
59:CD:37:GLU:HB2	59:CD:104:HIS:CE1	2.41	0.55
1:AA:878:A:OP1	8:AH:80:ARG:NH2	2.39	0.55
25:BA:300:A:H2'	25:BA:334:C:H1'	1.88	0.55
25:BA:1666:G:H4'	34:BL:6:THR:HG23	1.88	0.55
25:BA:1707:G:C8	25:BA:1756:G:C5	2.95	0.55
25:BA:2182:U:H1'	25:BA:2183:A:N7	2.21	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:BU:39:THR:HG22	43:BU:42:GLU:HG3	1.87	0.55
1:AA:528:C:N4	12:AL:46:ASN:OD1	2.35	0.55
1:AA:642:A:N7	8:AH:107:SER:HA	2.22	0.55
1:AA:748:G:H2'	1:AA:749:A:C8	2.42	0.55
1:AA:820:U:H4'	1:AA:821:G:OP2	2.06	0.55
3:AC:75:ILE:HA	58:CC:866:ASP:CA	2.31	0.55
25:BA:321:U:OP1	29:BE:130:LYS:NZ	2.30	0.55
28:BD:184:ARG:HB2	28:BD:186:LEU:HG	1.87	0.55
55:CN:34:DT:H6	55:CN:34:DT:H5'	1.70	0.55
1:AA:488:C:H2'	1:AA:489:C:H6	1.71	0.55
1:AA:830:G:H5'	2:AB:23:TRP:HE1	1.71	0.55
3:AC:77:ILE:HG23	3:AC:81:GLY:HA2	1.89	0.55
25:BA:151:C:H2'	25:BA:152:A:H8	1.71	0.55
25:BA:2901:C:C2	25:BA:2902:C:C5	2.95	0.55
48:BZ:23:ARG:NH2	48:BZ:27:ASN:OD1	2.39	0.55
57:CB:13:LEU:HA	57:CB:28:LEU:HD13	1.89	0.55
1:AA:1328:C:H2'	1:AA:1329:A:H8	1.71	0.55
25:BA:727:A:OP1	25:BA:1431:A:O2'	2.20	0.55
25:BA:1097:U:H3'	25:BA:1098:A:H8	1.71	0.55
25:BA:1411:U:H2'	25:BA:1412:U:C6	2.42	0.55
25:BA:2571:U:O2'	28:BD:151:THR:O	2.22	0.55
25:BA:2685:G:H2'	25:BA:2686:G:H8	1.72	0.55
31:BG:47:ASP:OD1	31:BG:47:ASP:N	2.34	0.55
1:AA:6:G:H22	5:AE:103:THR:HG22	1.72	0.55
1:AA:935:A:H2'	1:AA:936:C:H6	1.71	0.55
1:AA:1009:U:H3	1:AA:1020:G:H1	0.68	0.55
13:AM:92:ARG:HB3	25:BA:888:C:C4	2.40	0.55
25:BA:574:A:H2	28:BD:150:MEQ:HE3	1.71	0.55
37:BO:28:LEU:HD23	37:BO:48:VAL:HG21	1.88	0.55
1:AA:88:U:H2'	1:AA:89:G:C8	2.37	0.55
1:AA:1118:U:H2'	1:AA:1119:C:C6	2.41	0.55
10:AJ:47:GLU:O	10:AJ:66:GLU:HA	2.06	0.55
25:BA:1093:G:N2	25:BA:1099:G:O6	2.40	0.55
25:BA:2190:G:H2'	25:BA:2191:A:H8	1.70	0.55
25:BA:2740:A:OP2	25:BA:2763:G:N1	2.24	0.55
38:BP:43:ASN:ND2	38:BP:46:GLU:OE1	2.37	0.55
1:AA:231:U:H2'	1:AA:232:G:C8	2.41	0.55
1:AA:1157:A:H4'	1:AA:1158:C:O5'	2.06	0.55
3:AC:47:LEU:HD21	3:AC:87:LEU:HD11	1.89	0.55
4:AD:170:TRP:CE2	4:AD:186:PRO:HB3	2.42	0.55
5:AE:156:LYS:HG2	8:AH:71:VAL:HG13	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:AT:35:VAL:HG11	20:AT:79:LEU:HD13	1.88	0.55
20:AT:70:ASN:N	20:AT:70:ASN:OD1	2.38	0.55
47:BY:39:TRP:HB2	47:BY:46:PHE:HE1	1.72	0.55
49:B1:58:GLU:N	49:B1:58:GLU:OE1	2.40	0.55
51:B3:17:THR:HG21	51:B3:42:VAL:HG11	1.89	0.55
53:B5:62:LEU:HB3	53:B5:65:ALA:HB3	1.88	0.55
1:AA:958:A:N6	19:AS:77:THR:O	2.40	0.54
7:AG:76:LYS:HG2	7:AG:89:VAL:HG21	1.88	0.54
25:BA:886:A:H1'	25:BA:888:C:P	2.46	0.54
25:BA:927:A:H2'	25:BA:928:A:H8	1.71	0.54
25:BA:1117:C:H2'	25:BA:1118:C:C6	2.42	0.54
25:BA:1410:G:H2'	25:BA:1411:U:C6	2.41	0.54
46:BX:11:ARG:HD3	46:BX:11:ARG:H	1.71	0.54
58:CC:632:ASP:N	58:CC:632:ASP:OD1	2.39	0.54
1:AA:501:C:H2'	1:AA:502:A:C8	2.42	0.54
3:AC:75:ILE:HG23	58:CC:867:GLU:CB	2.31	0.54
4:AD:15:GLU:OE2	4:AD:56:ARG:NH2	2.40	0.54
4:AD:166:GLU:HG3	59:CD:53:ARG:HH21	1.70	0.54
23:AW:19:G:H4'	23:AW:20:H2U:OP2	2.07	0.54
25:BA:85:G:C5	25:BA:98:G:N2	2.76	0.54
25:BA:142:A:H8	25:BA:142:A:OP2	1.90	0.54
25:BA:1452:G:H22	25:BA:1457:U:H2'	1.72	0.54
25:BA:2091:C:H1'	47:BY:34:HIS:CD2	2.41	0.54
27:BC:78:VAL:O	27:BC:113:GLY:N	2.40	0.54
1:AA:6:G:O2'	1:AA:7:A:H8	1.89	0.54
1:AA:62:U:OP1	1:AA:385:C:O2'	2.25	0.54
1:AA:715:A:H2'	1:AA:716:A:C8	2.42	0.54
1:AA:1309:G:O6	1:AA:1329:A:N6	2.40	0.54
1:AA:1317:C:O2	19:AS:37:ARG:NH2	2.41	0.54
6:AF:66:ALA:HB3	6:AF:71:ILE:HD13	1.89	0.54
11:AK:81:ASN:ND2	11:AK:106:ARG:HH12	2.06	0.54
19:AS:5:LEU:HD22	19:AS:5:LEU:H	1.71	0.54
25:BA:1038:G:H2'	25:BA:1039:A:C8	2.43	0.54
25:BA:1168:G:O6	25:BA:1181:U:C2	2.60	0.54
25:BA:1715:G:O2'	25:BA:1743:G:O6	2.23	0.54
25:BA:2025:C:H2'	25:BA:2026:U:C6	2.42	0.54
45:BW:55:GLU:OE1	45:BW:55:GLU:N	2.33	0.54
1:AA:131:A:H2'	1:AA:132:C:C6	2.41	0.54
1:AA:193:C:O4'	20:AT:55:GLN:NE2	2.40	0.54
1:AA:440:C:C2	1:AA:441:A:C8	2.96	0.54
1:AA:985:C:C2	1:AA:1221:G:N2	2.76	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:993:G:H2'	1:AA:995:C:H41	1.73	0.54
1:AA:1157:A:H62	1:AA:1177:G:N2	2.05	0.54
18:AR:29:LEU:HG	18:AR:59:ILE:HG12	1.89	0.54
25:BA:1417:C:O2'	25:BA:1587:G:O2'	2.21	0.54
25:BA:2299:U:O4	25:BA:2318:G:N2	2.40	0.54
60:CE:9:ALA:HB1	60:CE:19:LEU:HD11	1.89	0.54
1:AA:123:U:H2'	1:AA:124:C:C6	2.43	0.54
1:AA:720:C:H2'	1:AA:721:G:C8	2.42	0.54
1:AA:728:A:H2'	1:AA:729:A:C8	2.43	0.54
25:BA:886:A:H2'	25:BA:891:G:N2	2.22	0.54
25:BA:2076:U:OP2	25:BA:2238:G:N2	2.40	0.54
33:BK:89:PHE:HE1	33:BK:100:VAL:HG11	1.73	0.54
34:BL:2:ILE:HG21	34:BL:8:LEU:HD21	1.90	0.54
58:CC:1079:ILE:HG23	58:CC:1079:ILE:O	2.08	0.54
58:CC:1176:LEU:O	58:CC:1178:LYS:N	2.40	0.54
1:AA:201:G:O6	1:AA:217:C:N4	2.41	0.54
1:AA:233:C:H2'	1:AA:234:C:H6	1.72	0.54
1:AA:635:A:H2'	1:AA:636:U:H6	1.71	0.54
1:AA:1038:C:H2'	1:AA:1039:G:H8	1.72	0.54
3:AC:24:ALA:HB1	3:AC:28:GLU:HB2	1.89	0.54
25:BA:1408:G:H1	25:BA:1594:U:H3	1.54	0.54
25:BA:2127:G:H21	25:BA:2173:A:H4'	1.72	0.54
25:BA:2233:U:H2'	25:BA:2234:G:C8	2.42	0.54
29:BE:151:GLY:O	29:BE:195:GLN:NE2	2.40	0.54
45:BW:79:ARG:HG3	45:BW:86:LEU:HD23	1.88	0.54
48:BZ:25:GLN:HB2	48:BZ:46:VAL:HG11	1.90	0.54
52:B4:10:LEU:HD11	52:B4:14:ARG:HE	1.72	0.54
1:AA:1096:C:H2'	1:AA:1097:C:H6	1.72	0.54
25:BA:1071:G:N2	25:BA:1089:A:O2'	2.39	0.54
25:BA:1445:G:H2'	25:BA:1446:C:H6	1.71	0.54
25:BA:1466:U:H5"	25:BA:1467:U:H5'	1.88	0.54
39:BQ:25:THR:HB	39:BQ:88:ARG:HB3	1.89	0.54
1:AA:36:C:O2'	12:AL:114:ARG:NH2	2.41	0.54
1:AA:500:G:H2'	1:AA:501:C:C6	2.43	0.54
1:AA:590:U:H2'	1:AA:591:U:H6	1.73	0.54
1:AA:737:C:H2'	1:AA:738:C:H6	1.72	0.54
1:AA:1323:G:H2'	1:AA:1324:A:H8	1.71	0.54
8:AH:43:GLU:HG3	8:AH:101:ILE:HG21	1.88	0.54
8:AH:87:LYS:HB2	8:AH:125:ILE:HD11	1.90	0.54
25:BA:953:G:C2	25:BA:954:G:C8	2.95	0.54
25:BA:1548:A:H2'	25:BA:1549:A:C8	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:2399:G:C6	25:BA:2418:A:C6	2.96	0.54
26:BB:2:G:C6	26:BB:119:A:C2	2.95	0.54
30:BF:73:SER:OG	30:BF:79:ILE:O	2.20	0.54
59:CD:907:HIS:ND1	59:CD:908:ILE:O	2.36	0.54
1:AA:1497:G:H1'	1:AA:1518:MA6:H2	1.90	0.54
16:AP:61:VAL:HG21	16:AP:67:ILE:HD11	1.89	0.54
20:AT:26:SER:O	20:AT:30:THR:OG1	2.22	0.54
25:BA:3:U:H2'	25:BA:4:U:H6	1.73	0.54
25:BA:1794:A:H2'	25:BA:1795:C:H6	1.71	0.54
25:BA:2552:OMU:H6	25:BA:2552:OMU:O5'	2.07	0.54
1:AA:176:C:C2	1:AA:177:G:C2	2.95	0.54
1:AA:1386:G:H2'	1:AA:1387:G:H8	1.72	0.54
19:AS:36:ARG:NH2	19:AS:75:ALA:O	2.41	0.54
20:AT:48:GLN:O	20:AT:52:ASN:ND2	2.41	0.54
25:BA:949:G:C4	25:BA:969:G:N2	2.76	0.54
25:BA:1079:C:H2'	25:BA:1080:A:C8	2.38	0.54
25:BA:1443:U:H2'	25:BA:1444:G:H8	1.72	0.54
25:BA:2649:C:H2'	25:BA:2650:U:C6	2.43	0.54
36:BN:81:4D4:OB	36:BN:82:MET:N	2.37	0.54
47:BY:12:PRO:HB2	47:BY:28:ARG:HH21	1.73	0.54
55:CN:26:DG:C6	55:CN:27:DA:N6	2.76	0.54
55:CN:31:DG:H2"	55:CN:32:DA:C8	2.42	0.54
58:CC:538:LEU:HD12	58:CC:539:THR:N	2.23	0.54
1:AA:502:A:H2'	1:AA:503:C:H6	1.72	0.53
5:AE:74:VAL:HG11	5:AE:144:LEU:HB3	1.89	0.53
17:AQ:60:GLU:OE2	17:AQ:77:ARG:NE	2.40	0.53
21:AU:11:PRO:HB2	21:AU:14:VAL:HG23	1.89	0.53
25:BA:283:G:H2'	25:BA:284:U:H6	1.73	0.53
25:BA:2848:G:O2'	25:BA:2867:G:N2	2.40	0.53
27:BC:6:CYS:HB2	27:BC:16:VAL:HG12	1.89	0.53
28:BD:103:ASP:OD1	28:BD:103:ASP:N	2.40	0.53
30:BF:122:PHE:HB3	30:BF:163:ASP:OD1	2.07	0.53
32:BH:115:VAL:HG22	32:BH:132:PHE:CE1	2.43	0.53
38:BP:58:ILE:HD11	38:BP:81:ARG:HH22	1.74	0.53
1:AA:1119:C:H2'	1:AA:1120:C:C6	2.39	0.53
4:AD:47:ARG:HE	4:AD:47:ARG:H	1.56	0.53
7:AG:63:GLU:OE1	7:AG:70:ARG:NH2	2.41	0.53
11:AK:17:SER:HA	11:AK:79:ILE:HA	1.89	0.53
17:AQ:25:ILE:HD11	17:AQ:44:LEU:HD12	1.89	0.53
23:AW:73:A:H5'	23:AW:74:C:O4'	2.09	0.53
25:BA:868:U:C4	25:BA:869:G:N7	2.76	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:882:G:H1	25:BA:894:U:H3	1.56	0.53
1:AA:338:A:H3'	34:BL:98:ARG:HH12	1.72	0.53
1:AA:1147:C:H2'	1:AA:1148:U:C6	2.43	0.53
25:BA:2747:G:O6	25:BA:2755:C:H5"	2.09	0.53
58:CC:1321:GLU:OE2	59:CD:99:ARG:NH1	2.41	0.53
1:AA:384:G:H2'	1:AA:385:C:H6	1.74	0.53
1:AA:728:A:H2'	1:AA:729:A:H8	1.73	0.53
2:AB:77:SER:OG	2:AB:93:ASN:O	2.25	0.53
3:AC:79:LYS:NZ	58:CC:944:ARG:CA	2.72	0.53
11:AK:20:VAL:HG13	11:AK:83:GLU:HG3	1.91	0.53
11:AK:31:ILE:HA	11:AK:46:THR:HG22	1.91	0.53
15:AO:29:VAL:HG21	15:AO:67:LEU:HD13	1.90	0.53
25:BA:72:U:OP2	48:BZ:54:LYS:NZ	2.42	0.53
26:BB:52:A:N7	38:BP:33:ARG:NH1	2.56	0.53
34:BL:64:ARG:NE	39:BQ:68:GLU:OE1	2.41	0.53
1:AA:876:C:H2'	1:AA:877:G:H8	1.73	0.53
2:AB:76:ALA:O	2:AB:80:VAL:HG12	2.08	0.53
5:AE:19:ASN:OD1	5:AE:20:ARG:N	2.42	0.53
5:AE:157:ARG:O	8:AH:64:LYS:NZ	2.41	0.53
16:AP:57:ILE:HG21	16:AP:75:ILE:HD11	1.90	0.53
23:AW:21:A:H61	23:AW:46:A:H2'	1.73	0.53
25:BA:881:G:O6	25:BA:895:U:C4	2.62	0.53
25:BA:1060:U:C2	25:BA:1062:G:H5'	2.44	0.53
25:BA:1385:A:O2'	25:BA:1396:U:O2	2.25	0.53
25:BA:2812:G:H2'	25:BA:2813:A:C8	2.43	0.53
27:BC:155:ALA:HB2	27:BC:162:VAL:HG23	1.90	0.53
36:BN:50:ARG:HD3	36:BN:65:ILE:HD11	1.89	0.53
58:CC:1340:GLU:OE1	58:CC:1341:ASP:N	2.34	0.53
59:CD:317:THR:OG1	59:CD:322:ARG:O	2.20	0.53
1:AA:1266:G:C6	1:AA:1270:G:C6	2.97	0.53
1:AA:1289:A:H61	9:AI:72:ILE:HD11	1.74	0.53
25:BA:44:A:H2'	25:BA:45:G:O4'	2.09	0.53
25:BA:863:A:H2'	25:BA:864:G:C8	2.43	0.53
25:BA:1054:A:H2'	25:BA:1055:G:O4'	2.09	0.53
25:BA:1405:U:H2'	25:BA:1406:U:C6	2.43	0.53
25:BA:2537:U:H2'	25:BA:2538:C:H6	1.73	0.53
30:BF:115:ARG:HH12	30:BF:178:ARG:HE	1.57	0.53
44:BV:22:ARG:HD2	44:BV:73:PHE:CE2	2.44	0.53
58:CC:150:HIS:CE1	58:CC:454:ARG:HG3	2.43	0.53
58:CC:524:ILE:HG22	58:CC:525:THR:N	2.22	0.53
59:CD:825:VAL:HG13	59:CD:825:VAL:O	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:163:C:H2'	1:AA:164:G:O4'	2.08	0.53
1:AA:543:U:OP1	4:AD:14:ARG:NE	2.36	0.53
1:AA:1174:G:C2'	1:AA:1175:G:H5'	2.39	0.53
1:AA:1263:C:H2'	1:AA:1264:U:C6	2.44	0.53
3:AC:74:GLY:C	58:CC:866:ASP:HA	2.29	0.53
7:AG:44:TYR:O	7:AG:48:GLU:HG2	2.09	0.53
25:BA:2038:G:H2'	25:BA:2039:U:O4'	2.09	0.53
25:BA:2064:C:H2'	25:BA:2065:C:C6	2.43	0.53
29:BE:41:GLN:OE1	29:BE:43:THR:OG1	2.22	0.53
57:CB:191:ARG:NH2	57:CB:192:VAL:O	2.42	0.53
59:CD:801:VAL:HG12	59:CD:920:ALA:HB3	1.91	0.53
1:AA:39:G:C4	1:AA:404:G:N2	2.76	0.53
1:AA:757:U:OP1	1:AA:822:U:O2'	2.26	0.53
1:AA:1219:A:H2'	1:AA:1220:G:C8	2.43	0.53
25:BA:2840:C:H2'	25:BA:2841:C:H6	1.74	0.53
26:BB:15:A:OP2	26:BB:69:G:N2	2.31	0.53
30:BF:48:LYS:HA	30:BF:51:ASP:HB3	1.91	0.53
35:BM:135:ILE:HG22	35:BM:140:GLY:HA3	1.91	0.53
58:CC:696:ASP:OD1	58:CC:697:LYS:N	2.39	0.53
1:AA:67:C:H2'	1:AA:68:G:C8	2.44	0.53
1:AA:492:C:H2'	1:AA:493:A:C8	2.43	0.53
2:AB:202:GLY:HA3	2:AB:213:TYR:OH	2.09	0.53
4:AD:59:GLN:OE1	4:AD:62:ARG:NH1	2.41	0.53
17:AQ:77:ARG:HB2	17:AQ:77:ARG:HH11	1.74	0.53
25:BA:2372:U:H2'	25:BA:2373:G:H8	1.74	0.53
26:BB:28:C:H2'	26:BB:29:A:C8	2.44	0.53
26:BB:37:C:O2	26:BB:48:U:O2'	2.27	0.53
39:BQ:34:GLU:OE2	39:BQ:39:ARG:NH2	2.42	0.53
54:B6:30:GLU:HG3	54:B6:32:LYS:HB2	1.91	0.53
1:AA:673:A:H4'	6:AF:86:ARG:HH21	1.74	0.53
1:AA:763:G:H2'	1:AA:764:C:H6	1.74	0.53
6:AF:64:VAL:HG12	6:AF:65:GLU:H	1.74	0.53
25:BA:224:U:O4	25:BA:419:U:O2'	2.26	0.53
25:BA:1996:C:OP1	34:BL:31:ARG:NE	2.42	0.53
25:BA:2420:C:OP2	53:B5:33:LEU:N	2.40	0.53
25:BA:2537:U:H2'	25:BA:2538:C:C6	2.45	0.53
28:BD:136:ASN:OD1	28:BD:137:SER:N	2.42	0.53
37:BO:2:ARG:HG2	37:BO:5:LYS:HB2	1.89	0.53
1:AA:380:G:N1	1:AA:384:G:O6	2.42	0.52
1:AA:645:G:C2	1:AA:646:G:C8	2.96	0.52
5:AE:146:ASN:HD22	5:AE:146:ASN:H	1.57	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:AN:48:LEU:HD12	14:AN:51:LEU:HD12	1.91	0.52
20:AT:68:HIS:ND1	20:AT:70:ASN:OD1	2.41	0.52
25:BA:2118:U:O4	25:BA:2148:G:N2	2.43	0.52
25:BA:2343:U:HO2'	25:BA:2373:G:HO2'	1.56	0.52
53:B5:54:ASP:N	53:B5:54:ASP:OD1	2.42	0.52
59:CD:367:GLY:HA2	59:CD:440:VAL:O	2.08	0.52
1:AA:456:A:H2'	1:AA:457:G:H1'	1.91	0.52
7:AG:72:THR:HA	7:AG:96:ARG:NH1	2.23	0.52
12:AL:56:ARG:NH2	12:AL:60:GLY:O	2.38	0.52
12:AL:79:VAL:N	12:AL:103:ASP:OD2	2.37	0.52
25:BA:559:G:N3	40:BR:56:GLN:NE2	2.56	0.52
25:BA:561:G:O2'	40:BR:45:TYR:OH	2.15	0.52
25:BA:1088:A:H4'	25:BA:1089:A:H8	1.75	0.52
25:BA:1171:G:H2'	25:BA:1172:C:H5'	1.92	0.52
25:BA:1420:A:HO2'	25:BA:2211:G:H8	1.58	0.52
25:BA:1536:C:H1'	25:BA:1537:G:C2	2.44	0.52
25:BA:2061:G:OP1	29:BE:63:LYS:NZ	2.29	0.52
33:BK:35:ARG:HG2	33:BK:40:HIS:HD2	1.73	0.52
55:CN:18:DG:C2'	61:CF:13:GLN:CB	2.70	0.52
58:CC:178:PRO:HB3	58:CC:395:TYR:CZ	2.44	0.52
58:CC:726:TYR:CD1	58:CC:727:VAL:N	2.77	0.52
1:AA:1011:C:H2'	1:AA:1012:A:C8	2.44	0.52
25:BA:635:C:H2'	25:BA:636:G:O4'	2.10	0.52
25:BA:1167:C:H2'	25:BA:1168:G:O4'	2.08	0.52
25:BA:1486:U:H2'	25:BA:1487:U:H6	1.74	0.52
25:BA:2223:G:O2'	27:BC:265:LYS:NZ	2.32	0.52
25:BA:2290:G:H2'	25:BA:2291:U:C6	2.45	0.52
59:CD:35:PHE:CD1	59:CD:101:ARG:HB3	2.44	0.52
59:CD:312:ARG:HG2	59:CD:313:GLY:N	2.24	0.52
1:AA:221:C:H2'	1:AA:222:C:C6	2.45	0.52
1:AA:389:A:H3'	1:AA:390:U:H6	1.74	0.52
1:AA:712:A:H2'	1:AA:713:G:C8	2.45	0.52
1:AA:1320:C:H41	19:AS:37:ARG:HB3	1.74	0.52
2:AB:114:LEU:HD13	2:AB:144:LEU:HB3	1.91	0.52
13:AM:4:ILE:HD11	13:AM:53:ILE:HG23	1.92	0.52
22:AV:39:A:OP2	58:CC:1250:SER:OG	2.22	0.52
25:BA:283:G:H2'	25:BA:284:U:C6	2.45	0.52
25:BA:2411:A:H2'	25:BA:2412:A:H8	1.73	0.52
25:BA:2657:A:O3'	31:BG:160:LYS:NZ	2.43	0.52
25:BA:2855:C:H2'	25:BA:2856:A:C8	2.45	0.52
38:BP:34:HIS:ND1	38:BP:54:VAL:HG22	2.25	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:BT:23:LEU:HD21	50:B2:24:ALA:HB2	1.90	0.52
55:CN:17:DC:O4'	61:CF:15:PHE:HZ	1.92	0.52
55:CN:18:DG:C8	61:CF:90:MET:CE	2.91	0.52
56:CT:21:DG:C6	56:CT:22:DC:N4	2.77	0.52
1:AA:366:A:O2'	1:AA:394:G:N2	2.43	0.52
1:AA:695:A:H2'	1:AA:696:A:C8	2.45	0.52
3:AC:10:ILE:HD13	14:AN:98:LYS:HD3	1.92	0.52
19:AS:5:LEU:HD23	19:AS:7:LYS:HB2	1.92	0.52
25:BA:144:A:H2'	25:BA:145:C:C6	2.44	0.52
25:BA:1445:G:H2'	25:BA:1446:C:C6	2.45	0.52
26:BB:28:C:H2'	26:BB:29:A:H8	1.75	0.52
44:BV:41:LEU:HA	44:BV:62:GLU:HA	1.90	0.52
58:CC:519:ASN:C	58:CC:519:ASN:OD1	2.46	0.52
1:AA:204:G:C2	1:AA:205:A:H1'	2.45	0.52
1:AA:218:U:H2'	1:AA:219:U:C6	2.45	0.52
1:AA:222:C:H2'	1:AA:223:A:H8	1.75	0.52
1:AA:725:G:H2'	1:AA:726:C:C6	2.45	0.52
1:AA:880:C:OP1	12:AL:5:ASN:ND2	2.42	0.52
1:AA:1319:A:C8	1:AA:1323:G:C5	2.98	0.52
1:AA:1425:U:H2'	1:AA:1426:G:H8	1.73	0.52
3:AC:100:GLN:NE2	3:AC:101:ILE:O	2.42	0.52
14:AN:12:LYS:O	14:AN:16:LEU:HG	2.10	0.52
25:BA:357:C:H2'	25:BA:358:U:C6	2.45	0.52
25:BA:639:U:H2'	25:BA:640:C:H6	1.73	0.52
25:BA:1000:A:H2'	25:BA:1001:A:C8	2.45	0.52
25:BA:1570:A:H2'	25:BA:1571:A:C8	2.44	0.52
25:BA:2040:G:H2'	25:BA:2041:U:O4'	2.08	0.52
25:BA:2119:A:H2'	25:BA:2168:G:H22	1.74	0.52
25:BA:2371:G:HO2'	51:B3:46:HIS:HD1	1.57	0.52
48:BZ:2:LYS:N	48:BZ:5:GLU:OE2	2.42	0.52
57:CA:218:ARG:NH1	57:CB:233:ASP:OD1	2.42	0.52
58:CC:85:CYS:SG	58:CC:90:VAL:HG23	2.50	0.52
1:AA:162:A:N6	1:AA:163:C:O2	2.43	0.52
1:AA:443:C:H2'	1:AA:444:G:C8	2.45	0.52
1:AA:1314:C:H2'	1:AA:1315:U:C6	2.45	0.52
1:AA:1433:A:H2'	1:AA:1434:A:C8	2.45	0.52
1:AA:1516:2MG:N2	1:AA:1519:MA6:OP2	2.43	0.52
6:AF:38:ARG:NE	6:AF:98:GLU:O	2.43	0.52
25:BA:1796:U:H2'	25:BA:1797:G:C8	2.44	0.52
34:BL:49:ARG:HB2	34:BL:49:ARG:HH11	1.73	0.52
37:BO:100:CYS:SG	37:BO:101:GLY:N	2.83	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:CC:193:ASN:HD22	58:CC:193:ASN:N	2.08	0.52
1:AA:985:C:N3	1:AA:1221:G:N1	2.58	0.52
1:AA:1477:U:H2'	1:AA:1478:U:C6	2.45	0.52
3:AC:79:LYS:HG3	58:CC:944:ARG:CD	2.38	0.52
7:AG:58:GLU:OE1	7:AG:58:GLU:N	2.42	0.52
25:BA:27:G:O2'	25:BA:28:A:OP2	2.23	0.52
25:BA:499:U:H2'	25:BA:500:G:O4'	2.09	0.52
25:BA:698:C:O2'	25:BA:734:A:N6	2.39	0.52
25:BA:1541:C:H2'	25:BA:1542:U:C6	2.44	0.52
25:BA:2105:U:H2'	25:BA:2106:U:C6	2.45	0.52
25:BA:2812:G:H2'	25:BA:2813:A:H8	1.74	0.52
33:BK:37:ARG:HG3	33:BK:118:MET:HE1	1.91	0.52
58:CC:1070:HIS:NE2	58:CC:1114:GLU:OE1	2.41	0.52
59:CD:326:SER:O	59:CD:329:ASP:N	2.43	0.52
1:AA:337:G:H2'	1:AA:338:A:C8	2.44	0.52
1:AA:1013:G:O2'	1:AA:1015:G:O6	2.28	0.52
1:AA:1119:C:OP1	9:AI:85:ARG:NH1	2.36	0.52
1:AA:1173:U:H2'	1:AA:1174:G:H8	1.75	0.52
1:AA:1447:A:P	1:AA:1448:C:H41	2.33	0.52
3:AC:36:ASP:OD1	3:AC:59:ARG:NH1	2.42	0.52
6:AF:43:GLY:HA2	6:AF:58:HIS:NE2	2.25	0.52
8:AH:10:MET:HG2	8:AH:11:LEU:HD23	1.91	0.52
25:BA:1093:G:H21	25:BA:1098:A:N6	2.08	0.52
25:BA:1149:G:H2'	25:BA:1150:C:C6	2.44	0.52
25:BA:2795:C:H2'	25:BA:2796:C:C6	2.45	0.52
30:BF:15:LYS:HE3	30:BF:172:ALA:HB1	1.91	0.52
30:BF:50:LEU:HD22	30:BF:84:PRO:HB2	1.92	0.52
58:CC:494:ASN:C	58:CC:494:ASN:HD22	2.08	0.52
47:BY:6:GLN:NE2	47:BY:76:GLU:OE1	2.41	0.52
48:BZ:24:GLU:HA	48:BZ:27:ASN:HD22	1.74	0.52
59:CD:504:GLN:HG3	59:CD:505:ASP:N	2.25	0.52
1:AA:860:A:N6	1:AA:869:G:O2'	2.42	0.51
9:AI:13:LYS:HA	9:AI:110:GLN:HE22	1.75	0.51
10:AJ:35:GLN:HB2	10:AJ:78:GLU:HG2	1.92	0.51
11:AK:94:GLU:OE2	11:AK:98:ARG:NH2	2.42	0.51
25:BA:250:G:OP2	53:B5:13:ARG:NH1	2.43	0.51
25:BA:587:C:C2	35:BM:19:LEU:HD12	2.45	0.51
25:BA:2411:A:H2'	25:BA:2412:A:C8	2.45	0.51
25:BA:2698:U:H2'	25:BA:2699:C:C6	2.45	0.51
44:BV:4:LYS:O	44:BV:94:ARG:NH2	2.39	0.51
1:AA:376:G:H2'	1:AA:377:G:H8	1.74	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:416:G:N2	1:AA:427:U:O2	2.40	0.51
1:AA:501:C:H2'	1:AA:502:A:H8	1.74	0.51
1:AA:922:G:N3	1:AA:1398:A:H2	2.07	0.51
3:AC:147:LYS:HE3	3:AC:147:LYS:H	1.75	0.51
25:BA:1511:G:H2'	25:BA:1512:C:C6	2.45	0.51
25:BA:1791:A:N6	25:BA:1828:G:O2'	2.39	0.51
25:BA:2165:C:H2'	25:BA:2166:U:O4'	2.10	0.51
25:BA:2863:C:H2'	25:BA:2864:G:H8	1.74	0.51
33:BK:112:GLY:O	33:BK:115:GLY:N	2.43	0.51
59:CD:290:ILE:HG23	61:CF:93:ILE:HG22	1.92	0.51
1:AA:339:C:H2'	1:AA:340:U:C6	2.45	0.51
1:AA:874:G:C6	1:AA:875:U:C4	2.98	0.51
1:AA:1299:A:O2'	1:AA:1300:G:H4'	2.11	0.51
3:AC:72:ARG:CZ	58:CC:862:LEU:HB2	2.40	0.51
8:AH:53:GLY:HA3	8:AH:57:PRO:HA	1.92	0.51
22:AV:31:U:N3	58:CC:854:ILE:HG22	2.21	0.51
25:BA:5:A:H2'	25:BA:6:A:H8	1.76	0.51
25:BA:172:A:H2'	25:BA:173:A:C8	2.45	0.51
25:BA:595:C:H2'	25:BA:596:U:C6	2.46	0.51
25:BA:1086:A:H4'	25:BA:1087:G:H5'	1.93	0.51
25:BA:1637:A:H2'	25:BA:1638:C:C6	2.45	0.51
25:BA:2129:C:OP1	25:BA:2129:C:H4'	2.09	0.51
31:BG:5:ALA:HB2	31:BG:66:GLY:HA2	1.91	0.51
55:CN:18:DG:H2'	61:CF:13:GLN:HB3	1.83	0.51
1:AA:162:A:C5	1:AA:163:C:H1'	2.44	0.51
1:AA:221:C:H2'	1:AA:222:C:H6	1.74	0.51
1:AA:999:C:H2'	1:AA:1000:A:H8	1.76	0.51
4:AD:170:TRP:HB2	4:AD:184:ARG:HG3	1.92	0.51
7:AG:5:ARG:HD2	7:AG:7:ILE:HD12	1.92	0.51
13:AM:25:VAL:HG13	13:AM:29:ARG:HB2	1.92	0.51
59:CD:441:LEU:HD22	59:CD:441:LEU:H	1.73	0.51
59:CD:1075:ARG:HH21	59:CD:1102:PRO:HA	1.75	0.51
1:AA:263:A:OP1	20:AT:74:ARG:NH1	2.43	0.51
1:AA:413:G:H1'	1:AA:428:G:H21	1.75	0.51
1:AA:621:A:H2'	1:AA:622:A:C8	2.45	0.51
3:AC:79:LYS:HE3	58:CC:944:ARG:CA	2.40	0.51
20:AT:13:GLN:HA	20:AT:16:LYS:HE2	1.92	0.51
25:BA:349:U:H2'	25:BA:350:G:H8	1.75	0.51
25:BA:902:C:H2'	25:BA:903:C:H6	1.76	0.51
25:BA:1870:C:H5"	25:BA:1872:A:N1	2.25	0.51
36:BN:69:PRO:HA	36:BN:94:ALA:HB2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:CC:63:SER:OG	61:CF:32:LEU:HD11	2.10	0.51
58:CC:392:GLU:H	58:CC:392:GLU:CD	2.12	0.51
1:AA:19:A:O2'	1:AA:572:A:N1	2.35	0.51
1:AA:35:G:H2'	1:AA:36:C:H6	1.73	0.51
1:AA:521:G:HO2'	1:AA:536:C:HO2'	1.59	0.51
1:AA:718:A:H2	18:AR:38:LYS:HE2	1.76	0.51
1:AA:936:C:C2	1:AA:937:A:C8	2.98	0.51
1:AA:976:G:OP2	1:AA:1358:U:O2'	2.28	0.51
2:AB:23:TRP:HZ3	2:AB:28:LYS:HB2	1.76	0.51
18:AR:33:ILE:HG22	18:AR:59:ILE:HD13	1.93	0.51
24:AX:68:C:H2'	24:AX:69:G:C8	2.46	0.51
25:BA:242:G:N7	53:B5:5:LYS:NZ	2.52	0.51
25:BA:829:A:N7	25:BA:2248:C:H5'	2.26	0.51
25:BA:871:U:H2'	25:BA:872:U:C6	2.46	0.51
25:BA:2305:U:H5"	30:BF:131:GLY:HA3	1.92	0.51
25:BA:2717:C:HO2'	39:BQ:94:LYS:HZ1	1.53	0.51
26:BB:52:A:N7	38:BP:64:TYR:OH	2.41	0.51
32:BH:16:GLY:HA2	32:BH:47:PHE:CE1	2.46	0.51
59:CD:288:PRO:HD2	59:CD:291:ILE:HD12	1.93	0.51
59:CD:366:CYS:O	59:CD:439:PRO:HA	2.11	0.51
1:AA:171:A:H2'	1:AA:172:A:C8	2.46	0.51
1:AA:1118:U:H2'	1:AA:1119:C:H6	1.75	0.51
16:AP:59:HIS:O	16:AP:63:GLN:HG2	2.09	0.51
19:AS:69:HIS:HB3	19:AS:74:PHE:HE1	1.76	0.51
25:BA:1365:A:O2'	47:BY:11:ARG:NH2	2.44	0.51
25:BA:1847:A:O5'	25:BA:1847:A:H8	1.93	0.51
25:BA:2467:C:O2	36:BN:123:LYS:NZ	2.43	0.51
56:CT:9:DC:H2'	56:CT:10:DT:H71	1.93	0.51
61:CF:71:VAL:HG12	61:CF:73:MET:HB2	1.93	0.51
1:AA:646:G:C6	1:AA:647:C:C4	2.99	0.51
1:AA:833:G:H2'	1:AA:834:U:C6	2.46	0.51
1:AA:951:G:C6	1:AA:1231:G:C6	2.99	0.51
1:AA:1147:C:H4'	9:AI:7:TYR:CE2	2.46	0.51
1:AA:1173:U:H2'	1:AA:1174:G:C8	2.45	0.51
8:AH:66:PHE:HD2	8:AH:67:GLN:HG2	1.75	0.51
25:BA:948:C:H2'	25:BA:949:G:C8	2.44	0.51
25:BA:1447:C:O2'	25:BA:1544:A:N3	2.36	0.51
25:BA:1883:U:H2'	25:BA:1884:G:O4'	2.10	0.51
25:BA:2100:G:N2	25:BA:2189:U:O2	2.35	0.51
26:BB:61:G:H2'	26:BB:62:C:H6	1.74	0.51
27:BC:124:ILE:HD13	27:BC:136:PRO:HD3	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:17:U:H2'	1:AA:18:C:H6	1.74	0.51
1:AA:1391:U:H2'	1:AA:1392:G:C8	2.46	0.51
3:AC:33:LEU:HD11	14:AN:93:ILE:HG12	1.91	0.51
20:AT:54:MET:O	20:AT:57:ILE:HG22	2.10	0.51
22:AV:48:C:H2'	22:AV:49:G:C1'	2.41	0.51
24:AX:23:A:H2'	24:AX:24:G:C8	2.45	0.51
25:BA:373:U:OP2	25:BA:400:G:N1	2.26	0.51
25:BA:451:U:C2	25:BA:453:A:N7	2.79	0.51
25:BA:843:G:H2'	25:BA:844:A:H8	1.76	0.51
25:BA:1115:G:O2'	25:BA:1116:G:H8	1.89	0.51
25:BA:1261:C:OP2	42:BT:83:LYS:NZ	2.44	0.51
25:BA:1406:U:C2	25:BA:1407:G:C8	2.99	0.51
25:BA:2845:U:O3'	39:BQ:53:ARG:NH1	2.44	0.51
35:BM:79:LEU:HG	35:BM:116:VAL:HG12	1.93	0.51
55:CN:19:DA:OP2	61:CF:89:VAL:HG13	2.04	0.51
59:CD:67:ASP:N	59:CD:67:ASP:OD1	2.43	0.51
1:AA:136:C:H2'	1:AA:137:U:H6	1.76	0.51
1:AA:255:G:OP2	17:AQ:68:SER:OG	2.29	0.51
1:AA:280:C:H1'	17:AQ:40:ARG:NH2	2.21	0.51
1:AA:458:U:N3	1:AA:474:G:N1	2.22	0.51
1:AA:639:G:C2	1:AA:640:A:C8	2.99	0.51
1:AA:1360:A:C8	14:AN:58:SER:HB2	2.45	0.51
3:AC:75:ILE:CG1	58:CC:865:LEU:O	2.58	0.51
4:AD:47:ARG:NH1	22:AV:28:A:H5"	2.26	0.51
4:AD:188:ARG:NH1	4:AD:188:ARG:O	2.44	0.51
5:AE:160:SER:HB3	5:AE:163:GLU:HG3	1.93	0.51
25:BA:1812:U:H2'	25:BA:1813:G:H8	1.76	0.51
25:BA:2064:C:H2'	25:BA:2065:C:H6	1.76	0.51
55:CN:32:DA:H5'	55:CN:32:DA:H8	1.76	0.51
58:CC:296:VAL:O	58:CC:335:THR:HB	2.10	0.51
58:CC:516:ASP:O	58:CC:518:ASN:N	2.41	0.51
1:AA:81:A:H2'	1:AA:82:G:C8	2.46	0.50
1:AA:106:C:H2'	1:AA:107:G:O4'	2.11	0.50
1:AA:205:A:O2'	1:AA:206:C:H5'	2.11	0.50
1:AA:214:C:H2'	1:AA:215:C:H6	1.75	0.50
1:AA:882:C:O2'	1:AA:883:C:H5'	2.10	0.50
1:AA:1007:U:H2'	1:AA:1008:U:C6	2.45	0.50
3:AC:72:ARG:NH2	58:CC:862:LEU:CB	2.66	0.50
3:AC:79:LYS:HE3	58:CC:944:ARG:HD2	1.86	0.50
10:AJ:28:THR:O	10:AJ:32:THR:HG22	2.11	0.50
13:AM:52:GLN:OE1	13:AM:52:GLN:N	2.39	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:AW:14:A:H2'	23:AW:15:G:H5'	1.93	0.50
25:BA:228:C:H4'	25:BA:229:C:H5"	1.93	0.50
25:BA:1011:G:OP2	40:BR:66:ASN:ND2	2.40	0.50
25:BA:1587:G:C2	25:BA:1588:G:C8	2.99	0.50
25:BA:2030:6MZ:HA	25:BA:2031:A:P	2.34	0.50
25:BA:2114:A:C6	25:BA:2115:G:H1'	2.46	0.50
25:BA:2119:A:O2'	25:BA:2169:A:N6	2.44	0.50
25:BA:2756:U:OP2	54:B6:19:ARG:NE	2.44	0.50
25:BA:2855:C:H2'	25:BA:2856:A:H8	1.76	0.50
27:BC:78:VAL:HG22	27:BC:94:VAL:HG12	1.92	0.50
28:BD:46:ARG:HH22	28:BD:88:GLU:H	1.58	0.50
32:BH:72:ILE:HG22	32:BH:108:VAL:HG22	1.92	0.50
34:BL:22:ILE:HG12	34:BL:40:LYS:O	2.11	0.50
50:B2:15:MET:O	50:B2:18:SER:N	2.44	0.50
55:CN:28:DA:H2"	55:CN:29:DG:C8	2.46	0.50
1:AA:91:U:C2'	1:AA:92:U:H5'	2.41	0.50
1:AA:154:U:H2'	1:AA:155:A:H8	1.73	0.50
1:AA:457:G:H3'	1:AA:458:U:C6	2.46	0.50
1:AA:552:U:C2	1:AA:553:A:C8	3.00	0.50
1:AA:781:A:OP2	1:AA:800:G:N1	2.34	0.50
1:AA:838:G:H2'	1:AA:839:C:C6	2.46	0.50
1:AA:855:U:H2'	1:AA:856:C:H6	1.76	0.50
1:AA:1226:C:O2	19:AS:83:HIS:NE2	2.28	0.50
20:AT:15:GLU:HG3	20:AT:19:LYS:HE3	1.93	0.50
25:BA:85:G:OP1	44:BV:7:ARG:N	2.43	0.50
25:BA:108:G:H2'	25:BA:109:C:O4'	2.12	0.50
25:BA:163:C:H2'	25:BA:164:C:H6	1.73	0.50
25:BA:578:G:OP1	25:BA:1255:U:O2'	2.28	0.50
25:BA:593:U:H2'	25:BA:594:U:H6	1.76	0.50
30:BF:30:ARG:O	30:BF:159:THR:OG1	2.28	0.50
57:CB:28:LEU:HD22	57:CB:28:LEU:N	2.27	0.50
58:CC:855:PRO:HG3	58:CC:913:VAL:HG23	1.92	0.50
59:CD:275:ARG:HH11	59:CD:298:MET:HB3	1.76	0.50
1:AA:3:A:H5"	1:AA:4:U:O4'	2.12	0.50
1:AA:975:A:H8	1:AA:1357:A:HO2'	1.59	0.50
2:AB:15:HIS:CA	2:AB:41:ILE:O	2.31	0.50
22:AV:47:G:C2	22:AV:48:C:C4	3.00	0.50
24:AX:44:G:H2'	24:AX:45:U:C6	2.46	0.50
25:BA:198:C:O2'	25:BA:199:A:H5'	2.11	0.50
25:BA:354:A:H2'	25:BA:355:U:C6	2.47	0.50
25:BA:419:U:H2'	25:BA:420:C:C6	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:1421:G:C2	25:BA:1422:G:C8	3.00	0.50
25:BA:1442:U:H2'	25:BA:1443:U:C6	2.47	0.50
25:BA:1475:G:O2'	25:BA:1514:G:O6	2.28	0.50
25:BA:1486:U:H2'	25:BA:1487:U:C6	2.46	0.50
25:BA:2006:C:O2'	25:BA:2823:A:N3	2.45	0.50
25:BA:2127:G:H21	25:BA:2173:A:C4'	2.24	0.50
25:BA:2455:G:H2'	25:BA:2456:C:C6	2.46	0.50
28:BD:184:ARG:CZ	39:BQ:7:GLN:HE22	2.24	0.50
41:BS:32:THR:HA	41:BS:62:GLU:HA	1.91	0.50
43:BU:28:ASN:OD1	43:BU:87:LEU:HB2	2.11	0.50
57:CA:68:TYR:CD1	57:CA:68:TYR:N	2.79	0.50
58:CC:617:ALA:HB2	58:CC:650:VAL:HG21	1.93	0.50
58:CC:705:GLU:CD	58:CC:705:GLU:H	2.14	0.50
58:CC:726:TYR:CD1	58:CC:726:TYR:C	2.84	0.50
1:AA:373:A:C2	1:AA:374:A:C8	2.99	0.50
3:AC:73:PRO:HA	3:AC:76:VAL:HG12	1.94	0.50
15:AO:26:GLU:HG3	15:AO:81:LEU:HD22	1.92	0.50
25:BA:146:A:H2'	25:BA:147:C:C6	2.45	0.50
25:BA:1315:C:H2'	25:BA:1316:U:C6	2.47	0.50
25:BA:1511:G:H2'	25:BA:1512:C:H6	1.76	0.50
25:BA:1917:PSU:H2'	25:BA:1918:A:C8	2.46	0.50
1:AA:146:G:C2	1:AA:147:G:C5	2.99	0.50
1:AA:444:G:H2'	1:AA:445:G:H8	1.76	0.50
1:AA:660:C:H2'	1:AA:661:G:O4'	2.11	0.50
1:AA:1294:G:H2'	1:AA:1295:U:O4'	2.11	0.50
3:AC:107:ARG:HE	57:CA:165:GLU:CD	2.14	0.50
6:AF:61:LEU:HD22	6:AF:62:MET:N	2.27	0.50
20:AT:2:ALA:O	20:AT:8:LYS:NZ	2.44	0.50
22:AV:47:G:C4	22:AV:48:C:C5	3.00	0.50
25:BA:64:A:H2'	25:BA:65:U:C6	2.47	0.50
25:BA:851:C:H2'	25:BA:852:U:H6	1.75	0.50
25:BA:2174:C:C2	25:BA:2175:C:C5	3.00	0.50
37:BO:38:LEU:HB3	37:BO:39:PRO:HD3	1.94	0.50
56:CT:18:DC:O2	56:CT:19:DG:C8	2.64	0.50
57:CA:102:LEU:HD23	57:CA:103:ASN:N	2.27	0.50
1:AA:343:U:H3'	1:AA:345:C:H41	1.76	0.50
1:AA:838:G:H2'	1:AA:839:C:H6	1.76	0.50
1:AA:1110:A:C4	1:AA:1111:A:C8	2.99	0.50
1:AA:1319:A:H3'	19:AS:3:ARG:N	2.26	0.50
1:AA:1451:U:OP2	1:AA:1452:C:N4	2.45	0.50
2:AB:43:LEU:O	2:AB:47:VAL:HG23	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:AB:100:MET:HA	2:AB:107:VAL:HG21	1.93	0.50
3:AC:34:ASP:OD2	14:AN:65:ARG:NH1	2.44	0.50
13:AM:93:ARG:HB2	13:AM:95:LEU:HG	1.94	0.50
25:BA:285:G:C6	25:BA:356:G:C5	2.99	0.50
25:BA:595:C:H2'	25:BA:596:U:H6	1.76	0.50
25:BA:1306:C:N4	25:BA:1606:C:H2'	2.27	0.50
25:BA:1630:A:N6	25:BA:1637:A:H61	2.09	0.50
28:BD:37:VAL:HG23	28:BD:92:VAL:HG22	1.94	0.50
1:AA:459:A:C6	1:AA:474:G:C6	3.00	0.50
1:AA:1004:A:N1	1:AA:1026:G:H1'	2.27	0.50
6:AF:7:VAL:HG22	6:AF:61:LEU:HD23	1.93	0.50
7:AG:114:LYS:N	7:AG:114:LYS:HD2	2.27	0.50
19:AS:27:ASP:N	19:AS:27:ASP:OD1	2.45	0.50
23:AW:26:G:O6	23:AW:45:G:N2	2.45	0.50
24:AX:46:7MG:H4'	24:AX:47:3AU:OP1	2.11	0.50
25:BA:363:G:H2'	25:BA:364:C:H6	1.77	0.50
25:BA:614:A:P	25:BA:614:A:H8	2.35	0.50
25:BA:1709:U:C2	25:BA:1750:G:N2	2.79	0.50
25:BA:2292:U:H2'	25:BA:2293:G:H8	1.76	0.50
28:BD:186:LEU:HD13	28:BD:188:LEU:HD21	1.92	0.50
30:BF:11:GLU:OE2	30:BF:15:LYS:NZ	2.33	0.50
31:BG:44:LYS:HG2	31:BG:51:THR:OG1	2.12	0.50
34:BL:9:ASN:N	34:BL:9:ASN:OD1	2.43	0.50
38:BP:28:VAL:HG21	38:BP:103:VAL:HG13	1.93	0.50
42:BT:11:ARG:O	42:BT:12:SER:OG	2.29	0.50
57:CB:11:PRO:O	57:CB:12:ARG:HD2	2.12	0.50
58:CC:274:ILE:HA	58:CC:277:LEU:HD12	1.93	0.50
59:CD:530:PRO:O	59:CD:533:ALA:HB3	2.12	0.50
1:AA:338:A:OP2	34:BL:98:ARG:NH2	2.45	0.50
1:AA:984:C:C4	1:AA:1222:G:N2	2.78	0.50
1:AA:984:C:N4	1:AA:1222:G:H22	2.09	0.50
1:AA:1120:C:C2	1:AA:1121:U:C5	3.00	0.50
1:AA:1157:A:N6	1:AA:1181:G:N7	2.60	0.50
1:AA:1157:A:H62	1:AA:1177:G:H1	1.60	0.50
1:AA:1187:G:H5'	9:AI:115:LYS:HD3	1.93	0.50
3:AC:22:TRP:CD1	3:AC:59:ARG:HG2	2.47	0.50
3:AC:35:SER:O	3:AC:39:VAL:HG13	2.12	0.50
3:AC:184:TYR:O	3:AC:185:ASN:ND2	2.45	0.50
4:AD:194:ASP:H	59:CD:74:LYS:HG2	1.75	0.50
25:BA:1095:A:H3'	25:BA:1096:A:C8	2.47	0.50
25:BA:1292:G:H2'	25:BA:1293:C:H6	1.75	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:1727:C:H2'	25:BA:1728:C:C6	2.46	0.50
25:BA:1737:G:H8	25:BA:1737:G:O5'	1.95	0.50
25:BA:1880:U:H2'	25:BA:1881:C:C6	2.47	0.50
25:BA:2677:G:H2'	25:BA:2678:C:C6	2.47	0.50
25:BA:2819:G:O2'	25:BA:2820:A:H5"	2.12	0.50
28:BD:196:ALA:O	28:BD:199:SER:HB3	2.12	0.50
44:BV:48:PRO:HG3	44:BV:56:GLY:HA3	1.94	0.50
46:BX:67:VAL:HA	46:BX:82:ILE:HD13	1.94	0.50
46:BX:71:VAL:HG22	46:BX:78:LYS:HD2	1.94	0.50
51:B3:6:ARG:HD2	51:B3:24:THR:CB	2.42	0.50
58:CC:1083:GLU:CD	58:CC:1083:GLU:H	2.13	0.50
1:AA:335:C:H2'	1:AA:336:A:C8	2.46	0.50
1:AA:381:C:H2'	1:AA:382:A:C8	2.47	0.50
1:AA:416:G:H1	1:AA:427:U:H3	1.59	0.50
1:AA:737:C:C2	1:AA:738:C:C5	3.00	0.50
1:AA:749:A:H2'	1:AA:750:C:O4'	2.12	0.50
1:AA:932:C:H5"	7:AG:4:ARG:HH11	1.76	0.50
1:AA:945:G:C2	1:AA:946:A:C8	3.00	0.50
1:AA:953:G:H2'	1:AA:954:G:O4'	2.12	0.50
4:AD:95:GLU:HG2	4:AD:186:PRO:HG3	1.93	0.50
6:AF:97:THR:O	6:AF:97:THR:OG1	2.30	0.50
23:AW:27:U:H2'	23:AW:28:C:C6	2.45	0.50
24:AX:16:H2U:H62	24:AX:16:H2U:O5'	2.12	0.50
25:BA:1278:C:H2'	25:BA:1279:G:C8	2.47	0.50
25:BA:1510:G:H2'	25:BA:1511:G:H8	1.77	0.50
30:BF:5:HIS:HB2	30:BF:97:TRP:CG	2.47	0.50
51:B3:6:ARG:HD2	51:B3:24:THR:HB	1.93	0.50
55:CN:23:DT:H1'	55:CN:24:DC:C4	2.47	0.50
55:CN:27:DA:C6	55:CN:28:DA:C6	3.00	0.50
59:CD:1313:SER:HG	59:CD:1325:PHE:HE2	1.60	0.50
1:AA:459:A:N6	1:AA:474:G:O6	2.44	0.49
1:AA:1279:G:O2'	1:AA:1282:C:N4	2.45	0.49
17:AQ:17:MET:HG3	17:AQ:20:SER:HB2	1.94	0.49
24:AX:43:C:H2'	24:AX:44:G:C8	2.47	0.49
25:BA:1:G:H3'	25:BA:2:G:H8	1.76	0.49
25:BA:679:C:H2'	25:BA:680:C:C6	2.47	0.49
25:BA:871:U:H2'	25:BA:872:U:H6	1.77	0.49
25:BA:1341:G:OP2	25:BA:1394:U:O2'	2.23	0.49
25:BA:2130:U:C2	25:BA:2131:U:H5	2.30	0.49
31:BG:95:ARG:HD2	31:BG:128:GLN:HE22	1.76	0.49
55:CN:18:DG:P	61:CF:90:MET:HE2	2.50	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:625:U:H2'	1:AA:626:G:C8	2.47	0.49
1:AA:1096:C:H2'	1:AA:1097:C:C6	2.47	0.49
1:AA:1120:C:H2'	1:AA:1121:U:H6	1.77	0.49
3:AC:100:GLN:NE2	3:AC:102:ASN:OD1	2.43	0.49
4:AD:147:GLU:HA	4:AD:150:LYS:HE3	1.95	0.49
25:BA:856:G:H2'	25:BA:857:G:C8	2.47	0.49
25:BA:1094:U:H2'	25:BA:1096:A:C8	2.47	0.49
25:BA:1649:G:O6	25:BA:2009:A:N6	2.45	0.49
25:BA:2247:A:H2'	25:BA:2248:C:C6	2.47	0.49
25:BA:2745:C:C4	25:BA:2746:U:C4	3.00	0.49
35:BM:86:GLU:OE1	35:BM:86:GLU:N	2.45	0.49
45:BW:42:LEU:HB3	45:BW:47:VAL:HG21	1.93	0.49
56:CT:20:DC:H2'	56:CT:21:DG:C8	2.47	0.49
1:AA:254:G:H2'	1:AA:255:G:C8	2.45	0.49
1:AA:676:A:H2'	1:AA:677:U:H6	1.78	0.49
1:AA:843:U:H3'	1:AA:844:G:H5"	1.93	0.49
1:AA:1320:C:C2	19:AS:72:GLY:HA3	2.47	0.49
1:AA:1465:A:H2'	1:AA:1466:C:C6	2.46	0.49
2:AB:161:LEU:HD22	2:AB:176:ALA:HB2	1.94	0.49
3:AC:107:ARG:NH1	57:CA:165:GLU:O	2.25	0.49
4:AD:65:TYR:OH	4:AD:95:GLU:OE1	2.25	0.49
10:AJ:77:VAL:O	10:AJ:79:PRO:HD3	2.12	0.49
24:AX:64:A:H2'	24:AX:65:G:C8	2.45	0.49
25:BA:552:U:C2	25:BA:553:G:C8	3.01	0.49
25:BA:667:U:H2'	25:BA:668:A:O4'	2.12	0.49
25:BA:1844:C:C2	25:BA:1897:G:N2	2.80	0.49
25:BA:2099:U:O2	25:BA:2190:G:N2	2.27	0.49
25:BA:2584:U:H3'	25:BA:2585:U:H5"	1.93	0.49
25:BA:2788:C:H2'	25:BA:2789:C:C6	2.47	0.49
31:BG:67:THR:O	31:BG:71:LEU:HG	2.12	0.49
1:AA:1009:U:O2	1:AA:1020:G:N2	2.29	0.49
1:AA:1025:U:H5"	1:AA:1026:G:H5'	1.95	0.49
1:AA:1071:C:H2'	1:AA:1072:G:C8	2.48	0.49
3:AC:75:ILE:HG12	58:CC:866:ASP:HA	1.92	0.49
8:AH:38:ASN:HA	8:AH:49:PHE:HE2	1.77	0.49
11:AK:84:VAL:HG11	11:AK:97:ILE:HG22	1.93	0.49
23:AW:5:G:H2'	23:AW:6:G:O4'	2.12	0.49
25:BA:265:A:O2'	25:BA:428:A:N6	2.44	0.49
25:BA:1316:U:C2	25:BA:1317:G:C8	3.00	0.49
25:BA:1417:C:C2	25:BA:1418:G:C8	3.01	0.49
25:BA:1873:G:H2'	25:BA:1874:C:C6	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:2216:G:H2'	25:BA:2217:G:H8	1.76	0.49
25:BA:2723:C:OP1	28:BD:114:LYS:NZ	2.43	0.49
36:BN:125:PRO:HG2	36:BN:126:ILE:HG12	1.95	0.49
51:B3:14:SER:HB2	51:B3:50:LYS:NZ	2.27	0.49
1:AA:1136:C:H5"	1:AA:1137:C:N3	2.27	0.49
1:AA:1258:G:H2'	1:AA:1259:C:C6	2.48	0.49
1:AA:1435:G:H2'	1:AA:1436:U:C6	2.48	0.49
7:AG:155:ARG:H	7:AG:155:ARG:NE	2.10	0.49
24:AX:9:A:HO2'	24:AX:11:C:H5	1.61	0.49
25:BA:250:G:H2'	25:BA:251:A:C8	2.46	0.49
25:BA:861:A:H2'	25:BA:862:G:O4'	2.12	0.49
25:BA:1453:A:N6	37:BO:74:GLU:HG2	2.27	0.49
25:BA:2133:G:O2'	25:BA:2158:A:N6	2.45	0.49
32:BH:117:LEU:H	32:BH:117:LEU:HD12	1.78	0.49
39:BQ:100:LEU:HD11	39:BQ:110:ILE:HD11	1.95	0.49
43:BU:5:GLU:OE2	43:BU:5:GLU:N	2.28	0.49
52:B4:4:THR:O	52:B4:4:THR:OG1	2.23	0.49
59:CD:1159:ILE:O	59:CD:1206:ARG:N	2.43	0.49
1:AA:201:G:H1	1:AA:216:U:H3	1.60	0.49
1:AA:816:A:OP1	1:AA:1526:G:O2'	2.29	0.49
1:AA:1038:C:H2'	1:AA:1039:G:C8	2.47	0.49
1:AA:1147:C:H4'	9:AI:7:TYR:CZ	2.47	0.49
1:AA:1246:A:H2'	1:AA:1247:U:O4'	2.13	0.49
4:AD:170:TRP:CZ3	4:AD:190:ASP:HB3	2.47	0.49
24:AX:40:C:H2'	24:AX:41:C:H6	1.77	0.49
25:BA:137:U:H5"	25:BA:138:U:C5	2.37	0.49
25:BA:191:A:H2'	25:BA:192:C:C6	2.47	0.49
25:BA:614:A:H8	25:BA:614:A:OP2	1.95	0.49
25:BA:679:C:H2'	25:BA:680:C:H6	1.77	0.49
25:BA:1036:G:N2	25:BA:1119:U:O2	2.38	0.49
25:BA:1098:A:H3'	25:BA:1099:G:H8	1.78	0.49
1:AA:76:G:H22	1:AA:93:U:H3	1.61	0.49
1:AA:419:C:N3	1:AA:425:G:N1	2.61	0.49
1:AA:592:G:C6	1:AA:648:A:C6	3.01	0.49
1:AA:639:G:C2	1:AA:640:A:N7	2.81	0.49
1:AA:1125:U:O2	1:AA:1126:U:O2'	2.19	0.49
2:AB:163:VAL:O	2:AB:185:ALA:HA	2.12	0.49
2:AB:187:VAL:HB	2:AB:199:VAL:HG23	1.95	0.49
4:AD:188:ARG:NH1	4:AD:191:LEU:HB2	2.28	0.49
6:AF:71:ILE:O	6:AF:75:GLU:HG3	2.13	0.49
8:AH:106:THR:OG1	8:AH:107:SER:N	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:AQ:15:ASP:OD1	17:AQ:16:LYS:NZ	2.45	0.49
25:BA:82:U:H2'	25:BA:83:A:C8	2.48	0.49
25:BA:306:U:H2'	25:BA:307:G:O4'	2.12	0.49
25:BA:750:A:OP1	25:BA:1615:C:N4	2.45	0.49
25:BA:1106:G:N3	25:BA:1107:G:C8	2.81	0.49
25:BA:1582:C:O2'	25:BA:1585:C:N3	2.38	0.49
25:BA:2127:G:H2'	25:BA:2128:G:H8	1.75	0.49
25:BA:2140:G:N1	25:BA:2151:U:N3	2.60	0.49
25:BA:2144:G:H1'	25:BA:2147:A:H61	1.77	0.49
27:BC:73:GLY:O	27:BC:117:GLN:NE2	2.45	0.49
58:CC:267:ARG:NE	58:CC:268:ARG:O	2.37	0.49
1:AA:54:C:H2'	1:AA:352:C:H41	1.78	0.49
1:AA:270:A:H2'	1:AA:271:C:C6	2.46	0.49
1:AA:984:C:H42	1:AA:1222:G:H22	1.60	0.49
1:AA:1033:G:C4	1:AA:1034:G:C8	3.00	0.49
1:AA:1178:G:OP1	9:AI:95:ARG:NH2	2.46	0.49
13:AM:93:ARG:HD2	25:BA:888:C:H42	1.78	0.49
25:BA:1477:A:N6	25:BA:1514:G:O2'	2.35	0.49
25:BA:1802:A:H2'	25:BA:1803:A:C8	2.48	0.49
25:BA:2072:C:H2'	25:BA:2073:C:C6	2.48	0.49
25:BA:2625:G:H2'	25:BA:2626:C:O4'	2.13	0.49
30:BF:66:LEU:HD23	30:BF:88:LYS:HE2	1.95	0.49
45:BW:86:LEU:HD13	45:BW:89:ILE:HD11	1.94	0.49
55:CN:28:DA:C6	55:CN:29:DG:C6	3.01	0.49
1:AA:214:C:H2'	1:AA:215:C:C6	2.48	0.49
1:AA:824:G:O4'	8:AH:2:SER:N	2.46	0.49
1:AA:867:G:H2'	1:AA:868:C:C6	2.48	0.49
1:AA:1099:G:O2'	21:AU:69:ARG:NH1	2.45	0.49
1:AA:1169:A:H2'	1:AA:1170:A:C8	2.47	0.49
1:AA:1299:A:H2'	1:AA:1299:A:N3	2.28	0.49
1:AA:1507:A:H2'	1:AA:1508:A:C8	2.47	0.49
6:AF:52:ASN:OD1	6:AF:52:ASN:N	2.46	0.49
17:AQ:49:GLU:H	17:AQ:49:GLU:CD	2.16	0.49
25:BA:550:U:O2'	25:BA:551:G:OP1	2.25	0.49
25:BA:838:C:H2'	25:BA:839:U:C6	2.48	0.49
25:BA:910:A:N3	25:BA:2264:C:O2'	2.41	0.49
25:BA:1440:U:H2'	25:BA:1441:G:C8	2.47	0.49
25:BA:1713:A:N6	25:BA:1745:A:H61	2.10	0.49
25:BA:2291:U:H2'	25:BA:2292:U:H6	1.73	0.49
25:BA:2446:G:H2'	25:BA:2447:G:H5"	1.94	0.49
25:BA:2813:A:C4	25:BA:2814:A:C8	3.00	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:BR:72:ASN:ND2	40:BR:107:THR:HA	2.27	0.49
59:CD:175:GLU:CD	59:CD:175:GLU:H	2.15	0.49
1:AA:109:A:C6	1:AA:327:A:C6	3.01	0.49
1:AA:170:U:C2'	1:AA:171:A:H5'	2.43	0.49
1:AA:339:C:H2'	1:AA:340:U:H6	1.78	0.49
1:AA:674:G:H1	1:AA:717:U:H3	1.60	0.49
13:AM:9:ILE:CG2	13:AM:18:ALA:HB1	2.43	0.49
24:AX:27:G:H2'	24:AX:28:G:H8	1.78	0.49
25:BA:287:G:C6	25:BA:354:A:C6	3.00	0.49
25:BA:989:G:OP2	49:B1:12:SER:OG	2.20	0.49
25:BA:2250:G:H21	25:BA:2250:G:P	2.36	0.49
25:BA:2298:A:H2'	25:BA:2299:U:O4'	2.13	0.49
34:BL:63:VAL:HG23	34:BL:64:ARG:HG3	1.95	0.49
56:CT:9:DC:H2'	56:CT:10:DT:C5	2.48	0.49
56:CT:19:DG:C4	56:CT:20:DC:C6	3.01	0.49
58:CC:529:ARG:NH2	58:CC:562:GLU:OE2	2.46	0.49
59:CD:137:ARG:HG3	59:CD:142:GLU:HB2	1.94	0.49
1:AA:436:C:H2'	1:AA:437:U:C6	2.47	0.48
1:AA:637:C:H2'	1:AA:638:U:H6	1.78	0.48
1:AA:949:A:N6	1:AA:1233:G:C6	2.81	0.48
1:AA:978:A:C5	1:AA:1319:A:C2	3.01	0.48
1:AA:1327:C:H2'	1:AA:1328:C:C6	2.47	0.48
10:AJ:53:ILE:CD1	10:AJ:63:ASP:HB2	2.34	0.48
13:AM:90:ARG:HB2	13:AM:97:VAL:HG13	1.94	0.48
25:BA:300:A:O2'	25:BA:318:C:O2	2.31	0.48
25:BA:2024:G:C5	25:BA:2040:G:C2	3.01	0.48
27:BC:143:ASN:ND2	27:BC:143:ASN:O	2.46	0.48
43:BU:34:VAL:HG22	43:BU:81:LYS:HB3	1.95	0.48
48:BZ:6:LEU:HB2	48:BZ:56:LEU:HD13	1.94	0.48
59:CD:767:LEU:HD12	59:CD:767:LEU:N	2.28	0.48
1:AA:147:G:H2'	1:AA:148:G:H8	1.77	0.48
1:AA:212:G:H2'	1:AA:213:G:H8	1.77	0.48
1:AA:313:A:H2'	1:AA:314:C:H6	1.77	0.48
1:AA:546:A:OP1	4:AD:70:ARG:N	2.39	0.48
1:AA:693:G:OP1	11:AK:127:ARG:NH2	2.26	0.48
1:AA:722:G:H5'	1:AA:723:U:OP1	2.13	0.48
1:AA:985:C:C2	1:AA:1221:G:C2	3.01	0.48
1:AA:1513:A:H2'	1:AA:1514:G:C8	2.48	0.48
16:AP:45:GLU:O	16:AP:46:LYS:HG2	2.13	0.48
25:BA:144:A:H2'	25:BA:145:C:H6	1.78	0.48
25:BA:535:G:C6	25:BA:559:G:C6	3.01	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:1113:U:H2'	25:BA:1114:C:C6	2.48	0.48
25:BA:1476:U:H2'	25:BA:1477:A:H8	1.78	0.48
25:BA:2243:U:H2'	25:BA:2244:U:C6	2.49	0.48
25:BA:2441:U:OP2	25:BA:2586:U:O2'	2.30	0.48
42:BT:17:VAL:HB	42:BT:76:VAL:HG11	1.94	0.48
58:CC:261:VAL:HG21	58:CC:264:GLU:HG2	1.94	0.48
58:CC:1239:VAL:HG13	58:CC:1240:ASP:N	2.27	0.48
59:CD:158:GLN:NE2	59:CD:158:GLN:O	2.46	0.48
1:AA:320:A:H2'	1:AA:321:A:C8	2.48	0.48
1:AA:1013:G:N2	1:AA:1016:A:OP2	2.46	0.48
1:AA:1251:A:H2'	1:AA:1252:A:C8	2.48	0.48
4:AD:49:SER:O	4:AD:53:VAL:HG13	2.14	0.48
17:AQ:26:GLU:HA	17:AQ:41:THR:HA	1.95	0.48
20:AT:25:ARG:HG2	20:AT:29:ARG:NH1	2.27	0.48
24:AX:67:C:H2'	24:AX:68:C:C6	2.48	0.48
25:BA:783:A:O2'	25:BA:785:G:OP1	2.18	0.48
25:BA:1591:A:H2'	25:BA:1592:C:C6	2.49	0.48
25:BA:2259:U:H2'	25:BA:2260:C:H6	1.78	0.48
46:BX:15:ASP:OD1	46:BX:16:SER:N	2.41	0.48
56:CT:17:DG:C6	56:CT:18:DC:C5	3.00	0.48
58:CC:811:ASN:ND2	58:CC:1097:VAL:O	2.43	0.48
58:CC:1238:LEU:N	58:CC:1238:LEU:HD23	2.28	0.48
59:CD:474:LEU:HD21	60:CE:27:ALA:CB	2.43	0.48
1:AA:151:A:N7	1:AA:170:U:O4	2.47	0.48
1:AA:434:U:H2'	1:AA:435:A:C8	2.48	0.48
1:AA:680:C:H2'	1:AA:681:A:C8	2.49	0.48
1:AA:821:G:C6	1:AA:822:U:C4	3.02	0.48
1:AA:996:A:C2	1:AA:997:U:C4	3.01	0.48
1:AA:1347:G:N2	1:AA:1373:G:H2'	2.28	0.48
3:AC:75:ILE:CG2	58:CC:867:GLU:HB3	2.37	0.48
5:AE:88:VAL:HG22	5:AE:93:ARG:HG3	1.95	0.48
13:AM:71:ARG:HH12	30:BF:115:ARG:HB2	1.77	0.48
22:AV:21:C:H2'	22:AV:22:A:O4'	2.13	0.48
25:BA:197:A:H4'	25:BA:2069:G7M:OP2	2.13	0.48
25:BA:500:G:C5	25:BA:502:A:OP2	2.66	0.48
25:BA:1183:U:H2'	25:BA:1184:U:C6	2.48	0.48
25:BA:2514:U:H2'	25:BA:2515:C:C6	2.49	0.48
25:BA:2661:G:OP2	25:BA:2661:G:H8	1.96	0.48
31:BG:94:TYR:OH	31:BG:152:ARG:NH2	2.38	0.48
31:BG:137:ASP:O	31:BG:141:ILE:HG22	2.14	0.48
59:CD:961:SER:HB2	59:CD:981:GLU:HB2	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:261:U:OP2	20:AT:74:ARG:NH2	2.43	0.48
1:AA:488:C:H2'	1:AA:489:C:C6	2.47	0.48
1:AA:750:C:H2'	1:AA:751:U:C6	2.49	0.48
1:AA:903:G:H2'	1:AA:904:U:C6	2.48	0.48
1:AA:1366:C:H2'	1:AA:1367:C:C6	2.48	0.48
24:AX:25:C:C2	24:AX:26:A:C8	3.01	0.48
24:AX:76:A:O2'	25:BA:2506:U:O2	2.30	0.48
25:BA:1296:G:H2'	25:BA:1297:C:H6	1.78	0.48
25:BA:1703:G:H2'	25:BA:1704:C:C6	2.49	0.48
57:CB:61:ILE:HD12	57:CB:142:MET:HB3	1.96	0.48
58:CC:234:ASP:HB3	58:CC:238:GLN:NE2	2.29	0.48
6:AF:9:MET:O	6:AF:85:ILE:N	2.45	0.48
14:AN:2:ALA:N	14:AN:67:THR:O	2.46	0.48
15:AO:26:GLU:OE1	15:AO:26:GLU:N	2.37	0.48
19:AS:50:ALA:HB1	19:AS:57:HIS:HB3	1.94	0.48
23:AW:72:A:H2'	23:AW:73:A:O4'	2.14	0.48
25:BA:2060:A:HO2'	25:BA:2061:G:P	2.36	0.48
25:BA:2473:U:O2	25:BA:2473:U:H2'	2.13	0.48
25:BA:2856:A:H2'	25:BA:2857:G:O4'	2.13	0.48
32:BH:127:GLU:HG3	32:BH:145:ASN:HA	1.94	0.48
43:BU:13:ALA:HB3	43:BU:33:LYS:HE2	1.95	0.48
50:B2:28:LEU:HB2	50:B2:37:LYS:HE2	1.96	0.48
55:CN:32:DA:H1'	55:CN:33:DT:O4'	2.14	0.48
58:CC:1292:THR:OG1	58:CC:1293:VAL:N	2.47	0.48
1:AA:166:U:H2'	1:AA:167:A:C8	2.48	0.48
1:AA:511:C:HO2'	1:AA:512:U:H6	1.61	0.48
1:AA:767:A:H2'	1:AA:768:A:O4'	2.14	0.48
1:AA:1130:A:H2'	1:AA:1131:G:H8	1.79	0.48
1:AA:1513:A:H2'	1:AA:1514:G:H8	1.78	0.48
16:AP:21:VAL:HG21	16:AP:60:TRP:CD1	2.49	0.48
16:AP:21:VAL:HG11	16:AP:60:TRP:CE2	2.48	0.48
24:AX:44:G:H2'	24:AX:45:U:N1	2.29	0.48
25:BA:172:A:H2'	25:BA:173:A:H8	1.78	0.48
25:BA:613:A:H8	25:BA:614:A:H5'	1.78	0.48
25:BA:732:C:H2'	25:BA:733:G:O4'	2.13	0.48
25:BA:896:A:O2'	25:BA:897:C:H5'	2.13	0.48
25:BA:989:G:H5"	49:B1:14:ILE:HD11	1.95	0.48
25:BA:1107:G:C6	25:BA:1108:U:C5	3.02	0.48
25:BA:2140:G:C6	25:BA:2151:U:N3	2.82	0.48
25:BA:2345:G:N3	25:BA:2381:A:H2'	2.29	0.48
34:BL:8:LEU:HD23	34:BL:82:ASN:HB3	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:BU:24:MET:HA	43:BU:29:THR:O	2.12	0.48
47:BY:43:GLU:OE2	47:BY:45:ARG:NE	2.47	0.48
58:CC:269:ILE:HD12	58:CC:269:ILE:N	2.29	0.48
59:CD:746:LEU:HD23	59:CD:758:PRO:HB3	1.96	0.48
1:AA:358:U:H2'	1:AA:359:G:C8	2.49	0.48
1:AA:1166:G:O2'	1:AA:1167:A:OP1	2.27	0.48
5:AE:100:SER:OG	5:AE:101:GLU:N	2.47	0.48
24:AX:23:A:H2'	24:AX:24:G:H8	1.78	0.48
25:BA:1028:A:H2'	25:BA:1029:A:H8	1.77	0.48
25:BA:1094:U:N3	25:BA:1097:U:OP2	2.41	0.48
25:BA:1474:U:C2	25:BA:1517:G:O6	2.66	0.48
25:BA:1651:G:H5'	37:BO:39:PRO:HG2	1.94	0.48
25:BA:2041:U:O4	25:BA:2042:A:N6	2.46	0.48
26:BB:63:C:H2'	26:BB:64:G:C8	2.48	0.48
31:BG:76:VAL:HA	31:BG:79:VAL:HG22	1.96	0.48
37:BO:33:ILE:HG13	37:BO:114:GLU:HB3	1.96	0.48
44:BV:11:VAL:HG12	44:BV:72:ILE:HD13	1.95	0.48
56:CT:19:DG:C5	56:CT:20:DC:C4	3.02	0.48
57:CB:34:GLY:N	57:CB:199:ASP:OD2	2.46	0.48
1:AA:446:G:C2	1:AA:489:C:C2	3.02	0.48
1:AA:1005:A:C2	1:AA:1006:G:H1'	2.48	0.48
1:AA:1329:A:C5	1:AA:1330:U:C5	3.02	0.48
4:AD:89:ASN:O	4:AD:93:LEU:HG	2.14	0.48
16:AP:2:VAL:HA	16:AP:23:ASP:HA	1.96	0.48
25:BA:4:U:H2'	25:BA:5:A:H8	1.78	0.48
25:BA:24:G:H2'	25:BA:25:U:C6	2.49	0.48
25:BA:532:A:N7	25:BA:2021:C:O2'	2.34	0.48
25:BA:624:C:O2'	25:BA:657:U:OP1	2.32	0.48
25:BA:1385:A:H1'	25:BA:1386:C:C6	2.49	0.48
25:BA:1441:G:H2'	25:BA:1442:U:C6	2.48	0.48
25:BA:1532:A:H2'	25:BA:1533:C:H6	1.79	0.48
25:BA:2082:A:C4	25:BA:2239:G:N2	2.82	0.48
25:BA:2292:U:H2'	25:BA:2293:G:C8	2.49	0.48
26:BB:95:U:H2'	26:BB:96:G:C8	2.49	0.48
43:BU:33:LYS:HG2	43:BU:80:TRP:CZ3	2.49	0.48
58:CC:267:ARG:HH22	58:CC:273:HIS:CE1	2.32	0.48
59:CD:301:GLU:OE1	59:CD:312:ARG:NE	2.46	0.48
1:AA:346:G:OP1	39:BQ:39:ARG:NH1	2.46	0.48
1:AA:1045:C:H2'	1:AA:1046:A:O4'	2.13	0.48
5:AE:111:MET:O	5:AE:115:LEU:HG	2.13	0.48
25:BA:357:C:C2	25:BA:358:U:C5	3.01	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:538:A:H2'	25:BA:539:G:O4'	2.14	0.48
25:BA:876:C:H2'	25:BA:877:A:O4'	2.13	0.48
25:BA:2286:G:N2	51:B3:24:THR:O	2.44	0.48
31:BG:86:LYS:HG2	31:BG:132:VAL:HG22	1.95	0.48
34:BL:5:GLN:N	34:BL:21:CYS:O	2.47	0.48
38:BP:56:LYS:HA	38:BP:59:ALA:HB3	1.96	0.48
56:CT:22:DC:C2	56:CT:23:DC:C5	3.01	0.48
59:CD:62:PHE:O	59:CD:101:ARG:NH2	2.46	0.48
1:AA:62:U:H3	1:AA:105:G:H1	1.61	0.47
1:AA:134:G:H2'	1:AA:135:C:O4'	2.14	0.47
2:AB:117:LEU:HD12	2:AB:141:LEU:HD22	1.95	0.47
4:AD:104:ARG:HA	4:AD:104:ARG:HD2	1.69	0.47
11:AK:26:SER:OG	11:AK:27:PHE:N	2.46	0.47
11:AK:83:GLU:HB2	11:AK:109:ASN:HB2	1.96	0.47
17:AQ:46:VAL:HG22	17:AQ:73:TRP:HB2	1.95	0.47
25:BA:567:U:H2'	25:BA:568:U:O4'	2.14	0.47
25:BA:1827:U:H2'	25:BA:1828:G:O4'	2.14	0.47
25:BA:2119:A:C8	25:BA:2168:G:N1	2.82	0.47
25:BA:2399:G:O6	25:BA:2418:A:N6	2.48	0.47
58:CC:69:GLN:OE1	58:CC:101:ARG:NE	2.44	0.47
58:CC:766:ASN:CG	58:CC:766:ASN:O	2.53	0.47
59:CD:805:GLN:OE1	59:CD:1348:LYS:HB2	2.13	0.47
1:AA:625:U:H2'	1:AA:626:G:H8	1.78	0.47
1:AA:705:G:C5	1:AA:706:A:C8	3.01	0.47
1:AA:996:A:N7	1:AA:1046:A:O2'	2.47	0.47
1:AA:1172:C:C2	1:AA:1173:U:C5	3.02	0.47
11:AK:23:ILE:HG12	11:AK:32:VAL:HG13	1.96	0.47
25:BA:284:U:H2'	25:BA:285:G:O4'	2.14	0.47
25:BA:831:G:O2'	35:BM:38:GLN:OE1	2.31	0.47
25:BA:1355:G:C2	25:BA:1356:G:C8	3.02	0.47
25:BA:1476:U:H2'	25:BA:1477:A:C8	2.49	0.47
25:BA:1736:U:H2'	25:BA:1737:G:O4'	2.14	0.47
25:BA:1740:G:C6	25:BA:1741:C:C4	3.02	0.47
25:BA:2116:G:N1	25:BA:2164:C:N3	2.63	0.47
25:BA:2313:C:H2'	25:BA:2314:A:H8	1.78	0.47
25:BA:2849:U:H4'	25:BA:2868:A:C2	2.49	0.47
27:BC:21:ASN:HB3	27:BC:24:LEU:HG	1.96	0.47
31:BG:90:VAL:HG21	31:BG:163:ARG:HD3	1.96	0.47
53:B5:26:HIS:NE2	53:B5:48:ALA:HB2	2.29	0.47
58:CC:576:SER:OG	58:CC:577:VAL:N	2.47	0.47
59:CD:1292:LEU:HD11	59:CD:1297:LYS:HB2	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:763:G:H2'	1:AA:764:C:C6	2.49	0.47
1:AA:932:C:H2'	1:AA:933:G:C8	2.49	0.47
1:AA:1142:G:C2	1:AA:1143:G:H1'	2.49	0.47
1:AA:1244:G:C6	1:AA:1294:G:C6	3.01	0.47
2:AB:208:ARG:H	2:AB:208:ARG:HG3	1.37	0.47
3:AC:78:GLY:CA	58:CC:872:TYR:CD1	2.96	0.47
16:AP:47:GLU:O	16:AP:48:GLU:HG2	2.14	0.47
25:BA:88:G:C2	25:BA:89:A:C8	3.02	0.47
25:BA:1046:A:O2'	25:BA:1047:G:OP1	2.31	0.47
25:BA:1079:C:O2	25:BA:1080:A:C8	2.67	0.47
25:BA:2783:U:H2'	25:BA:2784:U:H6	1.79	0.47
40:BR:72:ASN:HD21	40:BR:107:THR:HG22	1.80	0.47
44:BV:84:GLY:HA3	44:BV:97:LYS:HD3	1.97	0.47
53:B5:32:ILE:O	53:B5:32:ILE:HG12	2.13	0.47
59:CD:26:SER:HB3	59:CD:236:TRP:CZ2	2.49	0.47
59:CD:850:LYS:N	59:CD:855:ASP:O	2.33	0.47
1:AA:88:U:O5'	1:AA:88:U:H6	1.97	0.47
1:AA:1243:C:H2'	1:AA:1244:G:H8	1.80	0.47
1:AA:1263:C:H2'	1:AA:1264:U:H6	1.79	0.47
4:AD:193:ALA:CB	59:CD:74:LYS:HD3	2.44	0.47
25:BA:924:G:H2'	25:BA:925:A:H8	1.79	0.47
25:BA:1177:G:OP2	25:BA:1177:G:H2'	2.14	0.47
25:BA:1318:U:H2'	25:BA:1319:C:C6	2.50	0.47
25:BA:1853:A:H2'	25:BA:1854:A:C8	2.50	0.47
25:BA:1889:A:H2'	25:BA:1890:A:C8	2.49	0.47
31:BG:75:MET:O	31:BG:79:VAL:HG13	2.14	0.47
36:BN:47:GLU:OE2	36:BN:50:ARG:NH1	2.47	0.47
56:CT:21:DG:H2'	56:CT:22:DC:C6	2.50	0.47
1:AA:69:G:H2'	1:AA:70:U:C6	2.49	0.47
1:AA:680:C:H2'	1:AA:681:A:H8	1.79	0.47
5:AE:44:GLY:O	5:AE:74:VAL:HG22	2.14	0.47
10:AJ:46:LYS:HE2	10:AJ:68:ARG:HD3	1.95	0.47
20:AT:71:LYS:HD2	20:AT:74:ARG:NH2	2.28	0.47
25:BA:64:A:H2'	25:BA:65:U:H6	1.80	0.47
25:BA:1106:G:C2	25:BA:1107:G:C8	3.03	0.47
25:BA:1152:C:H2'	25:BA:1153:C:H6	1.79	0.47
25:BA:1296:G:H2'	25:BA:1297:C:C6	2.50	0.47
25:BA:1429:G:H2'	25:BA:1430:G:H8	1.80	0.47
25:BA:1463:C:H2'	25:BA:1464:G:C8	2.49	0.47
25:BA:2233:U:H2'	25:BA:2234:G:H8	1.78	0.47
25:BA:2313:C:H2'	25:BA:2314:A:C8	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:2650:U:C2	25:BA:2671:G:N2	2.83	0.47
32:BH:90:LEU:O	32:BH:123:ARG:NH2	2.47	0.47
40:BR:50:ARG:NH2	41:BS:74:ILE:HG13	2.30	0.47
58:CC:1098:LEU:N	58:CC:1098:LEU:HD12	2.29	0.47
59:CD:139:LEU:HD23	59:CD:139:LEU:HA	1.68	0.47
1:AA:468:A:H3'	1:AA:469:C:H6	1.80	0.47
1:AA:1004:A:C6	1:AA:1005:A:C4	3.02	0.47
1:AA:1034:G:C2	1:AA:1035:A:C8	3.02	0.47
1:AA:1095:U:P	1:AA:1108:G:H1	2.38	0.47
1:AA:1121:U:C2	1:AA:1122:U:C5	3.03	0.47
9:AI:30:ILE:HG22	9:AI:31:ASN:H	1.79	0.47
14:AN:23:LYS:O	14:AN:26:GLU:HG3	2.13	0.47
25:BA:355:U:H2'	25:BA:356:G:C8	2.35	0.47
25:BA:662:G:H2'	25:BA:663:G:H8	1.79	0.47
25:BA:2455:G:H2'	25:BA:2456:C:H6	1.79	0.47
25:BA:2484:G:OP1	36:BN:44:ARG:HD3	2.15	0.47
25:BA:2658:C:P	31:BG:160:LYS:HZ1	2.37	0.47
25:BA:2831:G:N2	25:BA:2884:U:OP2	2.41	0.47
26:BB:29:A:H2'	26:BB:30:C:O4'	2.14	0.47
33:BK:7:LYS:O	33:BK:9:GLU:N	2.41	0.47
33:BK:125:TYR:OH	33:BK:132:HIS:NE2	2.48	0.47
59:CD:255:LEU:HG	59:CD:256:ASP:H	1.79	0.47
1:AA:29:U:O2'	1:AA:30:U:H5'	2.15	0.47
1:AA:32:A:H2'	1:AA:33:A:C8	2.50	0.47
1:AA:150:U:O2	1:AA:171:A:N7	2.48	0.47
1:AA:425:G:C6	1:AA:426:U:C4	3.03	0.47
1:AA:604:G:H2'	1:AA:605:U:O4'	2.15	0.47
1:AA:704:A:C4	1:AA:705:G:C8	3.03	0.47
1:AA:707:U:H2'	1:AA:708:C:C6	2.49	0.47
1:AA:801:U:C2	1:AA:802:A:C8	3.02	0.47
1:AA:868:C:H2'	1:AA:869:G:O4'	2.14	0.47
1:AA:990:C:H2'	1:AA:991:U:C6	2.50	0.47
1:AA:1171:A:H2'	1:AA:1172:C:H6	1.78	0.47
1:AA:1338:G:N3	23:AW:41:C:O2'	2.47	0.47
1:AA:1463:U:H2'	1:AA:1464:U:C6	2.50	0.47
4:AD:11:LEU:HD22	4:AD:63:ARG:HH11	1.80	0.47
6:AF:12:PRO:HB3	6:AF:56:LYS:O	2.15	0.47
7:AG:121:ALA:O	7:AG:125:SER:OG	2.24	0.47
10:AJ:34:ALA:HB1	10:AJ:76:ILE:HG23	1.96	0.47
10:AJ:90:LEU:CD1	57:CA:118:ASP:OD1	2.63	0.47
25:BA:287:G:O2'	25:BA:288:U:OP1	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:365:U:H2'	25:BA:366:C:C6	2.50	0.47
25:BA:418:C:H2'	25:BA:419:U:C6	2.50	0.47
25:BA:820:A:H2'	25:BA:821:A:O4'	2.15	0.47
25:BA:1025:G:H4'	25:BA:1026:G:OP2	2.15	0.47
25:BA:1049:C:N3	25:BA:1050:A:C8	2.83	0.47
25:BA:1063:G:H2'	25:BA:1064:C:C6	2.50	0.47
25:BA:1254:A:H5"	25:BA:1255:U:H5"	1.96	0.47
25:BA:1315:C:H2'	25:BA:1316:U:H6	1.80	0.47
25:BA:1315:C:O2'	25:BA:1392:A:N3	2.45	0.47
25:BA:1417:C:H2'	25:BA:1418:G:O4'	2.14	0.47
25:BA:1463:C:H2'	25:BA:1464:G:H8	1.80	0.47
25:BA:1846:G:H2'	25:BA:1847:A:O4'	2.15	0.47
25:BA:2107:G:H2'	25:BA:2108:A:N7	2.30	0.47
25:BA:2148:G:H2'	25:BA:2149:U:C5	2.50	0.47
25:BA:2304:G:H22	25:BA:2312:U:H3	1.61	0.47
28:BD:32:ASN:HD22	28:BD:52:THR:HB	1.79	0.47
30:BF:118:SER:HA	30:BF:178:ARG:HD3	1.97	0.47
35:BM:4:ASN:O	35:BM:4:ASN:ND2	2.47	0.47
36:BN:6:ARG:NH1	36:BN:6:ARG:HB3	2.30	0.47
41:BS:55:ASP:N	41:BS:55:ASP:OD1	2.47	0.47
55:CN:27:DA:C2	55:CN:28:DA:C4	3.02	0.47
59:CD:393:THR:HG23	59:CD:395:LYS:H	1.80	0.47
59:CD:416:ILE:O	59:CD:416:ILE:HG23	2.15	0.47
59:CD:664:ILE:HG22	59:CD:678:ARG:HG2	1.96	0.47
59:CD:849:LEU:HA	59:CD:856:ILE:HA	1.96	0.47
1:AA:345:C:H4'	1:AA:346:G:O4'	2.15	0.47
1:AA:918:A:H2'	1:AA:919:A:C8	2.50	0.47
1:AA:1148:U:O2'	1:AA:1149:C:OP1	2.29	0.47
1:AA:1512:U:H2'	1:AA:1513:A:C8	2.49	0.47
20:AT:60:ARG:O	20:AT:64:LYS:HG2	2.13	0.47
23:AW:31:G:H2'	23:AW:32:OMC:H6	1.80	0.47
25:BA:2116:G:O5'	25:BA:2165:C:N4	2.45	0.47
25:BA:2151:U:H2'	25:BA:2152:G:H8	1.79	0.47
25:BA:2493:U:C4	25:BA:2494:G:C8	3.02	0.47
25:BA:2615:U:C2	50:B2:4:GLN:HA	2.49	0.47
25:BA:2682:A:H2'	25:BA:2683:C:C6	2.48	0.47
25:BA:2783:U:H2'	25:BA:2784:U:C6	2.49	0.47
32:BH:17:ASP:OD1	32:BH:17:ASP:N	2.38	0.47
41:BS:78:ARG:HB3	41:BS:83:TYR:HB3	1.96	0.47
45:BW:77:VAL:HB	45:BW:89:ILE:HG12	1.97	0.47
58:CC:696:ASP:OD1	58:CC:696:ASP:N	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:CC:1333:LEU:O	58:CC:1335:ILE:N	2.48	0.47
59:CD:1256:ILE:HD12	59:CD:1256:ILE:HG23	1.59	0.47
1:AA:94:G:C2	1:AA:98:A:C6	3.03	0.47
1:AA:637:C:H2'	1:AA:638:U:C6	2.50	0.47
3:AC:79:LYS:NZ	58:CC:948:ILE:HG12	2.27	0.47
12:AL:88:LYS:HE3	12:AL:88:LYS:HB3	1.70	0.47
18:AR:24:LYS:HE3	18:AR:24:LYS:HB2	1.69	0.47
25:BA:63:A:N6	25:BA:91:A:H61	2.13	0.47
25:BA:347:A:H2'	25:BA:348:A:H8	1.80	0.47
25:BA:753:A:H2'	25:BA:754:U:H6	1.79	0.47
25:BA:1287:A:OP1	25:BA:1288:G:N2	2.48	0.47
25:BA:2097:A:H2'	25:BA:2098:U:C6	2.50	0.47
25:BA:2281:A:O2'	25:BA:2282:G:H5'	2.15	0.47
25:BA:2547:A:H2'	25:BA:2548:U:C6	2.50	0.47
25:BA:2808:G:O2'	25:BA:2890:G:O6	2.30	0.47
27:BC:201:MET:HG3	27:BC:202:LEU:HD12	1.96	0.47
45:BW:55:GLU:HA	45:BW:58:SER:OG	2.15	0.47
57:CA:179:PRO:HA	57:CA:208:ASN:ND2	2.30	0.47
1:AA:123:U:OP1	1:AA:312:C:H5'	2.16	0.47
1:AA:748:G:H2'	1:AA:749:A:H8	1.80	0.47
1:AA:833:G:H2'	1:AA:834:U:H6	1.80	0.47
3:AC:78:GLY:O	58:CC:872:TYR:CD1	2.67	0.47
8:AH:54:ASP:OD1	8:AH:54:ASP:N	2.47	0.47
17:AQ:61:ILE:HG22	17:AQ:75:LEU:HA	1.97	0.47
25:BA:706:A:H2'	25:BA:707:G:O4'	2.15	0.47
25:BA:1252:G:O2'	25:BA:1253:A:O5'	2.30	0.47
25:BA:1568:G:N7	27:BC:28:LYS:NZ	2.63	0.47
25:BA:1599:U:C2	25:BA:1600:C:C5	3.03	0.47
25:BA:1739:A:H2'	25:BA:1740:G:O4'	2.14	0.47
25:BA:1747:U:H2'	25:BA:1748:C:C6	2.51	0.47
25:BA:1775:U:O4	25:BA:1789:A:H2	1.98	0.47
1:AA:74:A:N6	1:AA:97:G:O6	2.48	0.46
1:AA:253:A:H2'	1:AA:254:G:C8	2.50	0.46
1:AA:1098:C:H2'	1:AA:1099:G:O4'	2.15	0.46
6:AF:43:GLY:HA2	6:AF:58:HIS:CE1	2.49	0.46
24:AX:11:C:H2'	24:AX:12:U:C6	2.50	0.46
25:BA:323:C:C4	25:BA:333:G:C8	3.03	0.46
25:BA:641:U:O2'	25:BA:2350:C:OP1	2.32	0.46
25:BA:690:G:H2'	25:BA:691:C:C6	2.50	0.46
25:BA:825:A:H2'	25:BA:826:U:O4'	2.15	0.46
25:BA:2139:U:H2'	25:BA:2140:G:C8	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:2303:G:H2'	25:BA:2304:G:H8	1.80	0.46
25:BA:2703:C:C2	25:BA:2704:C:C5	3.03	0.46
29:BE:48:THR:HG23	29:BE:86:ALA:HB3	1.96	0.46
30:BF:111:ILE:HB	30:BF:114:PHE:HB2	1.96	0.46
38:BP:28:VAL:HG12	38:BP:93:ASP:O	2.14	0.46
42:BT:109:ASP:OD1	42:BT:110:ARG:N	2.48	0.46
58:CC:28:LEU:HD23	58:CC:28:LEU:HA	1.54	0.46
1:AA:81:A:H2'	1:AA:82:G:H8	1.79	0.46
1:AA:203:G:H2'	1:AA:204:G:H8	1.80	0.46
1:AA:459:A:C2	1:AA:460:A:C5	3.03	0.46
1:AA:470:C:H2'	1:AA:471:U:C6	2.50	0.46
1:AA:504:C:C2	1:AA:542:G:N2	2.83	0.46
1:AA:642:A:H2'	1:AA:643:C:C6	2.50	0.46
1:AA:1397:C:O5'	22:AV:23:C:N4	2.48	0.46
1:AA:1461:G:H2'	1:AA:1462:C:C6	2.51	0.46
5:AE:80:THR:HA	5:AE:120:VAL:HG13	1.97	0.46
25:BA:23:G:C2	25:BA:24:G:C8	3.03	0.46
25:BA:643:A:N1	25:BA:2369:A:O2'	2.44	0.46
25:BA:1333:G:C2	25:BA:1334:G:C8	3.03	0.46
25:BA:1499:C:C2	25:BA:1500:G:C8	3.03	0.46
25:BA:1528:A:N6	25:BA:1543:G:O2'	2.48	0.46
25:BA:2648:G:H2'	25:BA:2649:C:H6	1.80	0.46
25:BA:2843:G:H2'	25:BA:2844:G:H8	1.80	0.46
39:BQ:8:LEU:O	39:BQ:11:GLU:HG3	2.14	0.46
42:BT:33:LEU:O	42:BT:37:THR:OG1	2.23	0.46
1:AA:502:A:OP1	12:AL:115:SER:OG	2.31	0.46
1:AA:605:U:C2	1:AA:606:G:C8	3.03	0.46
1:AA:636:U:H5'	17:AQ:6:ARG:HH21	1.80	0.46
1:AA:823:C:HO2'	8:AH:2:SER:N	2.13	0.46
1:AA:865:A:H2'	1:AA:866:C:O4'	2.15	0.46
1:AA:983:A:H5'	1:AA:984:C:OP2	2.16	0.46
3:AC:79:LYS:HE2	58:CC:944:ARG:NH1	2.31	0.46
9:AI:96:SER:O	9:AI:100:LYS:HB2	2.14	0.46
16:AP:19:VAL:HB	16:AP:36:VAL:HG22	1.97	0.46
25:BA:1034:G:H2'	25:BA:1035:U:O4'	2.15	0.46
25:BA:1286:A:H1'	25:BA:1288:G:OP2	2.15	0.46
25:BA:1319:C:O2'	25:BA:1320:C:H5'	2.15	0.46
25:BA:2073:C:C2	25:BA:2437:G:N2	2.84	0.46
25:BA:2113:U:C2	25:BA:2114:A:H8	2.33	0.46
25:BA:2287:A:N7	25:BA:2289:G:C8	2.82	0.46
25:BA:2809:A:OP2	25:BA:2890:G:N1	2.41	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:BT:20:VAL:HG11	42:BT:44:ALA:HA	1.96	0.46
55:CN:10:DG:H2"	55:CN:11:DT:H72	1.97	0.46
1:AA:512:U:H2'	1:AA:513:C:C6	2.50	0.46
1:AA:932:C:H2'	1:AA:933:G:H8	1.81	0.46
1:AA:1017:U:O2'	1:AA:1018:G:H8	1.94	0.46
1:AA:1346:A:OP1	9:AI:122:ARG:NH1	2.45	0.46
6:AF:38:ARG:HG2	6:AF:63:ASN:HB2	1.97	0.46
15:AO:78:TYR:OH	15:AO:89:ARG:O	2.34	0.46
22:AV:31:U:O2	58:CC:854:ILE:HB	2.09	0.46
25:BA:477:A:H2'	25:BA:478:A:C8	2.51	0.46
25:BA:575:A:OP2	25:BA:2499:C:O2'	2.33	0.46
25:BA:2178:C:H2'	25:BA:2179:C:C6	2.51	0.46
25:BA:2230:G:H2'	25:BA:2231:U:C6	2.51	0.46
27:BC:80:ARG:NE	27:BC:82:GLU:OE2	2.43	0.46
28:BD:40:LEU:H	28:BD:40:LEU:HD12	1.79	0.46
28:BD:98:VAL:HG22	28:BD:180:VAL:HG23	1.98	0.46
29:BE:77:ILE:HG12	29:BE:78:TRP:HD1	1.79	0.46
30:BF:165:GLU:OE1	30:BF:165:GLU:N	2.48	0.46
34:BL:15:GLY:O	34:BL:47:ILE:HG23	2.16	0.46
57:CA:79:LEU:HD23	57:CA:79:LEU:O	2.15	0.46
1:AA:344:A:H3'	1:AA:345:C:C5	2.51	0.46
1:AA:392:C:C2	1:AA:393:A:C8	3.03	0.46
1:AA:418:C:H2'	1:AA:419:C:C6	2.49	0.46
1:AA:451:A:N6	1:AA:481:G:OP2	2.37	0.46
1:AA:1241:G:OP1	7:AG:35:LYS:NZ	2.46	0.46
1:AA:1277:C:H2'	1:AA:1278:G:H5"	1.96	0.46
1:AA:1394:A:H61	1:AA:1500:A:HO2'	1.61	0.46
3:AC:79:LYS:HE3	58:CC:944:ARG:HA	1.98	0.46
18:AR:29:LEU:O	18:AR:33:ILE:HG23	2.16	0.46
24:AX:27:G:C2	24:AX:44:G:C2	3.03	0.46
25:BA:725:G:H2'	25:BA:726:G:C4	2.50	0.46
25:BA:935:C:H2'	25:BA:936:A:C8	2.47	0.46
25:BA:1283:G:N2	25:BA:1286:A:OP2	2.47	0.46
25:BA:1440:U:H2'	25:BA:1441:G:H8	1.81	0.46
25:BA:1631:G:N1	25:BA:1634:A:OP2	2.45	0.46
25:BA:2342:C:H2'	25:BA:2343:U:O4'	2.16	0.46
25:BA:2469:A:H2'	25:BA:2470:G:O4'	2.15	0.46
27:BC:71:LYS:HD3	27:BC:71:LYS:HA	1.70	0.46
35:BM:77:VAL:O	35:BM:110:VAL:HA	2.15	0.46
55:CN:18:DG:C8	61:CF:90:MET:HE3	2.51	0.46
1:AA:423:G:H3'	1:AA:423:G:N3	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1184:G:C2	1:AA:1185:G:C8	3.03	0.46
1:AA:1346:A:H61	1:AA:1374:A:H3'	1.80	0.46
6:AF:32:ALA:HB2	6:AF:70:VAL:HG11	1.97	0.46
25:BA:280:U:H2'	25:BA:281:C:C6	2.51	0.46
25:BA:571:U:H1'	25:BA:573:U:H6	1.81	0.46
25:BA:642:U:O2'	25:BA:644:A:N7	2.37	0.46
25:BA:2108:A:H8	25:BA:2108:A:O5'	1.98	0.46
25:BA:2285:C:P	51:B3:6:ARG:HH21	2.38	0.46
25:BA:2315:G:H2'	25:BA:2316:G:H8	1.80	0.46
25:BA:2837:A:H2'	25:BA:2838:G:H8	1.80	0.46
29:BE:27:LEU:O	29:BE:31:VAL:HG13	2.16	0.46
1:AA:31:G:O2'	1:AA:48:C:N4	2.49	0.46
1:AA:91:U:O2'	1:AA:92:U:H5'	2.15	0.46
1:AA:1313:U:H2'	1:AA:1314:C:H6	1.81	0.46
4:AD:3:ARG:HD2	4:AD:115:ARG:NE	2.30	0.46
8:AH:66:PHE:CD2	8:AH:67:GLN:HG2	2.50	0.46
11:AK:87:LYS:HB2	11:AK:113:VAL:HG23	1.98	0.46
17:AQ:47:HIS:HB2	17:AQ:71:LYS:HE3	1.97	0.46
25:BA:441:U:H2'	25:BA:442:G:C8	2.51	0.46
25:BA:817:C:H2'	25:BA:818:G:O4'	2.16	0.46
25:BA:1231:U:H2'	25:BA:1232:G:C8	2.50	0.46
25:BA:2856:A:C6	25:BA:2857:G:C5	3.04	0.46
25:BA:2885:G:H2'	25:BA:2886:A:O4'	2.15	0.46
26:BB:25:U:O2	26:BB:117:G:O2'	2.34	0.46
32:BH:50:ARG:NH2	32:BH:51:ARG:HH21	2.14	0.46
39:BQ:31:TRP:CD1	39:BQ:82:ASP:HB2	2.51	0.46
42:BT:82:MET:HB3	42:BT:84:ARG:HH22	1.80	0.46
45:BW:80:HIS:HB2	45:BW:85:LYS:HB2	1.96	0.46
55:CN:19:DA:OP1	61:CF:89:VAL:CA	2.40	0.46
59:CD:265:LEU:O	59:CD:268:LEU:N	2.45	0.46
59:CD:830:ASP:OD1	59:CD:832:LYS:NZ	2.43	0.46
1:AA:199:A:H2'	1:AA:200:G:H8	1.81	0.46
1:AA:451:A:H4'	1:AA:452:A:O5'	2.16	0.46
1:AA:1217:C:H2'	1:AA:1218:C:C6	2.51	0.46
18:AR:29:LEU:HB3	18:AR:68:LEU:HD11	1.96	0.46
19:AS:64:ASP:OD1	19:AS:64:ASP:N	2.35	0.46
25:BA:291:G:C6	25:BA:350:G:C6	3.03	0.46
25:BA:579:G:H2'	25:BA:580:U:C6	2.51	0.46
25:BA:781:A:OP1	27:BC:217:ARG:NH2	2.27	0.46
25:BA:886:A:H1'	25:BA:888:C:OP2	2.16	0.46
25:BA:1036:G:C5	25:BA:1120:G:C6	3.04	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:1364:G:N7	47:BY:2:SER:N	2.63	0.46
25:BA:1721:G:H1'	25:BA:1739:A:N6	2.31	0.46
25:BA:1865:U:HO2'	25:BA:1866:A:H8	1.62	0.46
25:BA:2094:A:H2'	25:BA:2095:A:O4'	2.16	0.46
25:BA:2102:G:H2'	25:BA:2103:C:O4'	2.16	0.46
25:BA:2122:U:H3'	25:BA:2123:G:H8	1.80	0.46
25:BA:2189:U:H2'	25:BA:2190:G:C8	2.51	0.46
25:BA:2328:A:H2'	25:BA:2329:U:H6	1.77	0.46
25:BA:2466:C:N3	25:BA:2467:C:C5	2.84	0.46
25:BA:2717:C:C2	25:BA:2718:G:C8	3.04	0.46
26:BB:24:G:N7	26:BB:56:G:H2'	2.31	0.46
26:BB:51:G:H2'	26:BB:52:A:C8	2.50	0.46
28:BD:184:ARG:NE	39:BQ:7:GLN:HE22	2.13	0.46
34:BL:24:VAL:HG13	34:BL:33:ALA:HB2	1.98	0.46
38:BP:45:SER:OG	38:BP:46:GLU:OE1	2.24	0.46
38:BP:57:ALA:O	38:BP:60:GLU:HG3	2.16	0.46
41:BS:30:GLY:CA	41:BS:63:VAL:O	2.63	0.46
58:CC:696:ASP:CG	58:CC:697:LYS:N	2.67	0.46
58:CC:1333:LEU:C	58:CC:1335:ILE:H	2.18	0.46
1:AA:338:A:H2'	1:AA:339:C:C6	2.50	0.46
1:AA:496:A:H5'	1:AA:497:G:OP2	2.16	0.46
1:AA:672:U:H2'	1:AA:673:A:C8	2.51	0.46
1:AA:829:G:C6	1:AA:858:G:C2	3.04	0.46
1:AA:1107:C:C4	1:AA:1108:G:C8	3.04	0.46
1:AA:1118:U:P	9:AI:11:ARG:HH21	2.39	0.46
1:AA:1170:A:C8	1:AA:1171:A:C8	3.04	0.46
8:AH:49:PHE:HB2	8:AH:59:LEU:HD11	1.98	0.46
25:BA:63:A:H61	25:BA:91:A:H61	1.63	0.46
25:BA:149:A:H2'	25:BA:150:U:H6	1.79	0.46
25:BA:891:G:H2'	25:BA:892:A:C8	2.50	0.46
25:BA:997:G:OP1	40:BR:92:ARG:HG2	2.16	0.46
25:BA:1054:A:C6	25:BA:1106:G:C6	3.03	0.46
25:BA:1385:A:C6	25:BA:1403:A:C5	3.03	0.46
25:BA:1599:U:H2'	25:BA:1600:C:C6	2.47	0.46
25:BA:2319:G:H1'	25:BA:2320:U:C5	2.51	0.46
25:BA:2741:A:H2'	25:BA:2742:G:O4'	2.16	0.46
26:BB:3:C:H2'	26:BB:4:C:C6	2.51	0.46
27:BC:84:ASP:OD2	27:BC:87:ARG:NE	2.42	0.46
29:BE:145:ASP:HA	29:BE:166:LYS:O	2.16	0.46
33:BK:74:TYR:CD2	33:BK:92:MET:HG3	2.51	0.46
46:BX:29:GLU:O	46:BX:67:VAL:HG23	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:B3:39:PHE:HB2	51:B3:46:HIS:CE1	2.51	0.46
59:CD:891:ASP:OD1	59:CD:1286:LYS:NZ	2.49	0.46
1:AA:410:G:H2'	1:AA:429:U:C4	2.51	0.46
1:AA:878:A:C2	1:AA:879:C:C2	3.04	0.46
1:AA:904:U:H2'	1:AA:905:U:C6	2.51	0.46
1:AA:949:A:H2'	1:AA:950:U:C6	2.50	0.46
3:AC:79:LYS:CG	58:CC:944:ARG:HH11	2.14	0.46
4:AD:7:PRO:HB2	4:AD:10:LYS:HB2	1.98	0.46
25:BA:152:A:H2'	25:BA:153:U:H6	1.79	0.46
25:BA:363:G:H2'	25:BA:364:C:C6	2.51	0.46
25:BA:594:U:H2'	25:BA:595:C:H6	1.81	0.46
25:BA:792:A:C8	25:BA:2440:C:O2	2.69	0.46
25:BA:870:U:P	36:BN:6:ARG:HH22	2.38	0.46
25:BA:1563:U:H2'	25:BA:1564:C:C6	2.51	0.46
25:BA:1653:G:N1	37:BO:9:GLN:OE1	2.49	0.46
25:BA:1672:A:C2	25:BA:2582:G:H5'	2.51	0.46
25:BA:1791:A:H4'	27:BC:205:LEU:HB2	1.97	0.46
25:BA:2096:C:H2'	25:BA:2097:A:C8	2.51	0.46
25:BA:2312:U:H5'	30:BF:85:ILE:HD11	1.98	0.46
25:BA:2460:U:C2	25:BA:2461:A:C8	3.04	0.46
26:BB:39:A:H2'	26:BB:40:U:C6	2.51	0.46
32:BH:47:PHE:HA	32:BH:51:ARG:HB2	1.97	0.46
39:BQ:47:VAL:HG22	39:BQ:61:VAL:HG22	1.98	0.46
40:BR:90:ILE:HG22	40:BR:95:LEU:HG	1.98	0.46
1:AA:707:U:H2'	1:AA:708:C:H6	1.81	0.45
15:AO:67:LEU:HD12	15:AO:67:LEU:HA	1.79	0.45
22:AV:48:C:H2'	22:AV:49:G:O4'	2.16	0.45
23:AW:75:C:H5"	23:AW:76:A:OP2	2.16	0.45
24:AX:27:G:N3	24:AX:44:G:N2	2.64	0.45
25:BA:298:G:O2'	25:BA:322:A:N1	2.42	0.45
25:BA:866:A:O4'	25:BA:914:G:N2	2.49	0.45
25:BA:947:A:H2'	25:BA:948:C:C6	2.51	0.45
25:BA:1066:U:C2	25:BA:1068:G:N7	2.84	0.45
25:BA:1069:A:O2'	25:BA:1074:G:O6	2.34	0.45
25:BA:1468:U:H5'	25:BA:1469:A:OP1	2.16	0.45
25:BA:1751:U:H2'	25:BA:1752:C:C6	2.51	0.45
25:BA:2286:G:OP1	51:B3:30:LYS:NZ	2.49	0.45
25:BA:2485:G:H5"	36:BN:45:GLN:NE2	2.28	0.45
35:BM:73:ILE:HD12	35:BM:106:GLU:HB2	1.98	0.45
37:BO:76:VAL:HG13	37:BO:80:PHE:CE2	2.51	0.45
58:CC:145:ILE:CG2	58:CC:456:VAL:HG22	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:CC:596:ASP:OD1	58:CC:597:GLY:N	2.38	0.45
1:AA:358:U:H2'	1:AA:359:G:H8	1.81	0.45
1:AA:861:G:O6	1:AA:869:G:N2	2.49	0.45
1:AA:1000:A:H2'	1:AA:1001:C:O4'	2.16	0.45
2:AB:219:ALA:HA	2:AB:222:ARG:HE	1.82	0.45
25:BA:391:A:C5	25:BA:392:U:C5	3.04	0.45
25:BA:492:A:H2'	25:BA:493:G:O4'	2.16	0.45
25:BA:550:U:HO2'	25:BA:551:G:P	2.40	0.45
25:BA:995:C:N4	33:BK:2:LYS:HD2	2.30	0.45
25:BA:1503:A:H2'	25:BA:1504:A:C8	2.52	0.45
25:BA:1636:U:H2'	25:BA:1637:A:C8	2.51	0.45
25:BA:2133:G:H2'	25:BA:2157:G:H1	1.82	0.45
25:BA:2273:A:H2'	25:BA:2274:A:C8	2.51	0.45
25:BA:2670:A:H2'	25:BA:2671:G:C8	2.51	0.45
26:BB:29:A:OP2	38:BP:32:PRO:HD2	2.16	0.45
26:BB:95:U:OP2	45:BW:19:ARG:NH2	2.48	0.45
31:BG:43:VAL:HA	31:BG:51:THR:O	2.17	0.45
37:BO:47:VAL:O	37:BO:50:PRO:HD2	2.15	0.45
58:CC:668:ILE:HD13	58:CC:668:ILE:HG21	1.69	0.45
58:CC:1291:LEU:HD21	59:CD:1351:VAL:HG13	1.97	0.45
58:CC:1327:LEU:HD23	58:CC:1327:LEU:HA	1.70	0.45
1:AA:1233:G:H2'	1:AA:1234:C:C6	2.52	0.45
9:AI:21:ILE:HD12	9:AI:63:LEU:HD22	1.98	0.45
9:AI:42:GLU:HA	9:AI:45:ARG:HD2	1.98	0.45
17:AQ:81:LYS:H	17:AQ:81:LYS:HG2	1.59	0.45
25:BA:571:U:OP1	41:BS:80:ARG:NH2	2.49	0.45
25:BA:997:G:OP1	40:BR:91:ASP:HB2	2.17	0.45
25:BA:2392:A:OP2	53:B5:31:HIS:NE2	2.37	0.45
25:BA:2521:C:C2	25:BA:2545:G:N2	2.85	0.45
25:BA:2685:G:H1	25:BA:2724:U:H3	1.63	0.45
25:BA:2803:G:H2'	25:BA:2804:U:H6	1.82	0.45
26:BB:66:A:N6	26:BB:107:G:H2'	2.31	0.45
37:BO:33:ILE:HD11	37:BO:112:TYR:HD2	1.81	0.45
51:B3:9:ILE:HD12	51:B3:51:GLU:HG3	1.98	0.45
51:B3:48:ILE:HD13	51:B3:48:ILE:HA	1.78	0.45
55:CN:26:DG:C4	55:CN:27:DA:N7	2.85	0.45
58:CC:138:ILE:HD13	58:CC:138:ILE:HA	1.53	0.45
58:CC:213:LEU:HD23	58:CC:213:LEU:HA	1.73	0.45
59:CD:247:PRO:HA	59:CD:250:ARG:CZ	2.45	0.45
59:CD:1249:ASN:OD1	59:CD:1250:ASP:N	2.49	0.45
1:AA:203:G:H2'	1:AA:204:G:C8	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:552:U:N3	1:AA:553:A:N7	2.63	0.45
1:AA:999:C:C2	1:AA:1000:A:C8	3.04	0.45
1:AA:1095:U:H2'	1:AA:1096:C:H6	1.81	0.45
2:AB:60:ILE:HG22	2:AB:65:GLY:HA3	1.97	0.45
7:AG:113:ASP:HB3	7:AG:119:ARG:HG3	1.99	0.45
21:AU:17:ARG:O	21:AU:21:ARG:HG2	2.16	0.45
22:AV:47:G:C2	22:AV:48:C:C5	3.04	0.45
25:BA:39:G:H2'	25:BA:40:U:C6	2.51	0.45
25:BA:133:U:H2'	25:BA:134:G:C8	2.51	0.45
25:BA:1050:A:C2	25:BA:2751:G:C5	3.04	0.45
25:BA:1538:G:H2'	25:BA:1539:U:O4'	2.17	0.45
25:BA:1746:A:H2'	25:BA:1747:U:C6	2.52	0.45
25:BA:1867:G:H2'	25:BA:1868:C:C6	2.51	0.45
25:BA:2189:U:H2'	25:BA:2190:G:H8	1.81	0.45
25:BA:2523:G:O2'	25:BA:2764:A:O2'	2.12	0.45
27:BC:267:ILE:HG21	27:BC:270:ARG:HD2	1.98	0.45
58:CC:1278:LEU:HA	58:CC:1278:LEU:HD23	1.49	0.45
1:AA:257:G:O6	1:AA:270:A:N6	2.49	0.45
1:AA:1246:A:C6	1:AA:1292:G:C6	3.04	0.45
2:AB:2:ALA:O	2:AB:54:LEU:HD13	2.16	0.45
3:AC:72:ARG:HA	58:CC:863:SER:O	2.15	0.45
8:AH:112:THR:HG23	8:AH:115:ALA:H	1.81	0.45
25:BA:453:A:N3	25:BA:457:A:O2'	2.50	0.45
25:BA:552:U:N3	25:BA:553:G:N7	2.64	0.45
25:BA:580:U:H2'	25:BA:581:C:C6	2.52	0.45
25:BA:2618:G:H21	28:BD:155:VAL:HG21	1.82	0.45
25:BA:2771:C:O2'	28:BD:173:GLN:NE2	2.49	0.45
39:BQ:30:VAL:HG13	39:BQ:80:VAL:HG13	1.99	0.45
39:BQ:94:LYS:HE2	39:BQ:94:LYS:HB3	1.54	0.45
39:BQ:112:GLU:HG3	39:BQ:113:ARG:N	2.30	0.45
55:CN:18:DG:C1'	61:CF:13:GLN:OE1	2.39	0.45
58:CC:1043:ALA:O	58:CC:1046:VAL:HG22	2.17	0.45
59:CD:478:LEU:HA	59:CD:478:LEU:HD23	1.63	0.45
59:CD:1075:ARG:NH2	59:CD:1102:PRO:HA	2.31	0.45
1:AA:158:G:C5	1:AA:164:G:C6	3.05	0.45
1:AA:1271:A:C6	1:AA:1272:G:O6	2.69	0.45
2:AB:216:ALA:O	2:AB:220:THR:OG1	2.34	0.45
19:AS:53:ASN:HD21	19:AS:56:GLN:HE21	1.62	0.45
22:AV:31:U:O2'	58:CC:854:ILE:HA	2.16	0.45
25:BA:170:U:H2'	25:BA:171:U:H6	1.82	0.45
25:BA:479:A:H4'	25:BA:480:A:OP1	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:690:G:H2'	25:BA:691:C:H6	1.82	0.45
25:BA:958:U:H2'	26:BB:89:U:O2	2.16	0.45
25:BA:1831:G:H2'	25:BA:1832:C:C6	2.52	0.45
25:BA:2045:C:H5"	50:B2:15:MET:SD	2.57	0.45
25:BA:2554:U:H2'	25:BA:2555:U:C6	2.52	0.45
27:BC:205:LEU:HB3	27:BC:210:ALA:HB3	1.99	0.45
30:BF:124:GLY:N	30:BF:163:ASP:OD1	2.48	0.45
31:BG:9:VAL:O	31:BG:49:THR:HA	2.15	0.45
36:BN:57:VAL:HG11	36:BN:105:MET:SD	2.56	0.45
39:BQ:29:LYS:HB3	39:BQ:40:LEU:HG	1.98	0.45
50:B2:53:LYS:HE3	50:B2:56:ALA:HA	1.98	0.45
58:CC:38:PHE:CZ	58:CC:49:LEU:HD21	2.51	0.45
58:CC:514:PHE:CE1	58:CC:760:ASN:HB3	2.51	0.45
58:CC:530:ILE:HD12	58:CC:530:ILE:HG23	1.63	0.45
59:CD:1309:ILE:HG13	59:CD:1310:THR:N	2.31	0.45
1:AA:335:C:O2'	1:AA:1433:A:O2'	2.19	0.45
1:AA:881:G:P	12:AL:9:ARG:HH22	2.40	0.45
1:AA:957:U:H4'	19:AS:79:THR:HG23	1.98	0.45
1:AA:1213:A:C4	1:AA:1215:G:C8	3.04	0.45
11:AK:22:HIS:HD2	11:AK:85:MET:HB2	1.81	0.45
11:AK:64:GLN:HG3	11:AK:99:ALA:HB2	1.97	0.45
25:BA:133:U:H2'	25:BA:134:G:H8	1.82	0.45
25:BA:1721:G:H1'	25:BA:1739:A:H61	1.81	0.45
25:BA:2024:G:C4	25:BA:2040:G:N2	2.85	0.45
25:BA:2333:A:H5'	25:BA:2335:A:H1'	1.98	0.45
25:BA:2412:A:H2'	25:BA:2413:G:O4'	2.16	0.45
25:BA:2591:C:C2	25:BA:2592:G:N7	2.84	0.45
25:BA:2663:G:H2'	25:BA:2664:G:O4'	2.17	0.45
30:BF:29:PRO:HB3	30:BF:160:ALA:HB2	1.97	0.45
31:BG:2:SER:C	31:BG:6:LYS:HE2	2.38	0.45
32:BH:8:LYS:HA	32:BH:14:SER:HA	1.99	0.45
58:CC:563:THR:OG1	58:CC:564:PRO:HD2	2.16	0.45
58:CC:1257:GLN:NE2	59:CD:345:LYS:HD3	2.32	0.45
58:CC:1276:TRP:CE2	59:CD:801:VAL:HG21	2.52	0.45
1:AA:181:A:C4	1:AA:194:C:N4	2.85	0.45
1:AA:268:U:H2'	1:AA:269:C:C6	2.52	0.45
1:AA:377:G:H2'	1:AA:378:G:H8	1.82	0.45
1:AA:451:A:OP2	16:AP:70:ARG:NH2	2.37	0.45
1:AA:530:G:HO2'	1:AA:531:U:P	2.39	0.45
1:AA:935:A:H2'	1:AA:936:C:C6	2.51	0.45
1:AA:1176:A:H2'	1:AA:1177:G:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1428:A:H2'	1:AA:1429:A:O4'	2.17	0.45
4:AD:194:ASP:N	59:CD:74:LYS:HE3	2.28	0.45
8:AH:11:LEU:HB3	8:AH:75:ILE:HG12	1.99	0.45
24:AX:5:G:C2	24:AX:6:G:C5	3.05	0.45
24:AX:51:U:H2'	24:AX:52:G:H8	1.79	0.45
25:BA:1071:G:OP2	25:BA:1071:G:H8	2.00	0.45
25:BA:2321:U:H5'	25:BA:2322:A:OP2	2.17	0.45
25:BA:2862:G:H2'	25:BA:2863:C:C6	2.52	0.45
30:BF:4:LEU:HG	30:BF:173:PHE:HE1	1.81	0.45
44:BV:74:ASN:HD21	44:BV:76:ALA:HB3	1.82	0.45
58:CC:363:LEU:HA	58:CC:363:LEU:HD23	1.74	0.45
59:CD:952:VAL:HG13	59:CD:1014:GLY:H	1.81	0.45
1:AA:96:U:H2'	1:AA:97:G:C8	2.49	0.45
1:AA:327:A:C5	1:AA:329:A:C5	3.05	0.45
1:AA:642:A:H2'	1:AA:643:C:H6	1.82	0.45
1:AA:1253:G:H2'	1:AA:1254:A:C8	2.52	0.45
3:AC:39:VAL:O	3:AC:43:LEU:HB2	2.17	0.45
4:AD:19:LEU:HB2	4:AD:21:LEU:HD22	1.99	0.45
13:AM:49:SER:OG	13:AM:53:ILE:HD12	2.17	0.45
15:AO:63:ARG:HH22	25:BA:715:A:H4'	1.81	0.45
15:AO:88:ARG:NH2	25:BA:714:U:OP2	2.39	0.45
19:AS:32:ARG:HG2	19:AS:57:HIS:CG	2.52	0.45
25:BA:849:A:H2'	25:BA:850:U:C6	2.51	0.45
25:BA:858:G:C2	25:BA:2268:A:C4	3.05	0.45
25:BA:883:G:O2'	25:BA:884:U:H5'	2.16	0.45
25:BA:934:U:H2'	25:BA:935:C:C6	2.52	0.45
25:BA:1482:G:H2'	25:BA:1483:G:C8	2.48	0.45
25:BA:2636:C:H2'	25:BA:2637:U:C6	2.52	0.45
30:BF:105:THR:O	30:BF:109:PRO:HG2	2.16	0.45
34:BL:35:VAL:HG11	34:BL:69:VAL:HG22	1.99	0.45
45:BW:3:THR:HA	45:BW:62:THR:O	2.17	0.45
1:AA:620:C:H2'	1:AA:621:A:C8	2.52	0.45
1:AA:1221:G:N1	1:AA:1222:G:N2	2.64	0.45
1:AA:1410:A:H2'	1:AA:1411:C:C6	2.52	0.45
4:AD:194:ASP:H	59:CD:74:LYS:CG	2.30	0.45
6:AF:38:ARG:NH2	6:AF:61:LEU:HD11	2.27	0.45
15:AO:37:ASN:N	15:AO:37:ASN:OD1	2.49	0.45
22:AV:31:U:O2	58:CC:857:VAL:HG12	2.17	0.45
25:BA:344:A:O2'	25:BA:345:A:H5'	2.16	0.45
25:BA:1263:U:H2'	25:BA:1264:A:C8	2.52	0.45
25:BA:1818:U:O2'	27:BC:153:GLN:O	2.26	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:2128:G:H3'	25:BA:2129:C:H5"	1.98	0.45
25:BA:2700:A:H2'	25:BA:2701:U:H6	1.82	0.45
27:BC:28:LYS:HA	27:BC:28:LYS:HD3	1.80	0.45
34:BL:64:ARG:HD3	34:BL:102:PRO:O	2.17	0.45
35:BM:132:ARG:HG3	35:BM:142:ILE:HD12	1.98	0.45
40:BR:48:ARG:HE	40:BR:48:ARG:HB3	1.65	0.45
41:BS:1:MET:HG3	41:BS:43:ASN:HA	1.98	0.45
41:BS:63:VAL:HG22	41:BS:96:VAL:HG12	1.98	0.45
57:CB:107:ILE:HD11	57:CB:136:GLU:HA	1.99	0.45
1:AA:257:G:C2	1:AA:258:G:C8	3.05	0.44
1:AA:638:U:H2'	1:AA:639:G:O4'	2.17	0.44
1:AA:744:C:H2'	1:AA:745:G:C8	2.43	0.44
1:AA:1227:A:C8	19:AS:83:HIS:HD2	2.35	0.44
1:AA:1355:G:C2	1:AA:1356:G:C5	3.05	0.44
3:AC:50:ALA:O	3:AC:70:THR:OG1	2.36	0.44
4:AD:3:ARG:HD2	4:AD:115:ARG:HE	1.82	0.44
6:AF:11:HIS:HA	6:AF:85:ILE:HD11	1.99	0.44
24:AX:21:A:O2'	24:AX:22:G:O5'	2.33	0.44
25:BA:52:A:H2'	25:BA:53:A:C8	2.52	0.44
25:BA:571:U:H1'	25:BA:573:U:C6	2.52	0.44
25:BA:887:U:H4'	25:BA:888:C:OP1	2.17	0.44
25:BA:949:G:C2	25:BA:969:G:C2	3.05	0.44
25:BA:1145:C:C2	25:BA:1146:C:C5	3.06	0.44
25:BA:1501:G:H4'	27:BC:95:LEU:HD21	1.99	0.44
25:BA:1889:A:H2'	25:BA:1890:A:H8	1.82	0.44
25:BA:2749:A:OP1	31:BG:2:SER:HB3	2.16	0.44
30:BF:171:ALA:HB2	30:BF:177:PHE:HE2	1.81	0.44
38:BP:12:THR:HA	38:BP:15:ARG:HB2	1.99	0.44
43:BU:3:ARG:O	43:BU:6:ARG:N	2.50	0.44
45:BW:10:LYS:HD2	45:BW:11:GLU:H	1.82	0.44
45:BW:75:GLN:HB2	45:BW:92:VAL:HG12	1.99	0.44
47:BY:37:ARG:HG2	47:BY:48:THR:HG22	1.99	0.44
57:CA:85:LEU:HD23	57:CA:85:LEU:HA	1.84	0.44
59:CD:213:LYS:O	59:CD:213:LYS:HD3	2.17	0.44
59:CD:424:ASN:O	59:CD:424:ASN:ND2	2.51	0.44
1:AA:86:G:H1'	1:AA:87:C:C5	2.45	0.44
1:AA:105:G:H2'	1:AA:106:C:C6	2.52	0.44
1:AA:255:G:H2'	1:AA:256:U:C6	2.52	0.44
1:AA:338:A:H2'	1:AA:339:C:H6	1.82	0.44
1:AA:444:G:H2'	1:AA:445:G:C8	2.52	0.44
1:AA:578:C:O2'	1:AA:728:A:N3	2.46	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:743:A:H2'	1:AA:744:C:C6	2.53	0.44
1:AA:1315:U:H2'	1:AA:1316:G:C8	2.52	0.44
1:AA:1320:C:H2'	1:AA:1321:U:C6	2.51	0.44
5:AE:80:THR:OG1	5:AE:81:LEU:N	2.50	0.44
23:AW:63:G:H2'	23:AW:64:G:H8	1.82	0.44
25:BA:289:G:H2'	25:BA:290:U:C6	2.52	0.44
25:BA:361:G:H8	25:BA:361:G:OP2	2.00	0.44
25:BA:981:A:OP2	25:BA:982:C:N4	2.51	0.44
25:BA:1040:A:N6	25:BA:1115:G:C6	2.82	0.44
25:BA:1077:A:C6	25:BA:1078:U:C2	3.05	0.44
25:BA:1297:C:H2'	25:BA:1298:C:C6	2.52	0.44
25:BA:1532:A:H2'	25:BA:1533:C:C6	2.52	0.44
25:BA:2684:U:O4'	34:BL:70:ARG:NH1	2.50	0.44
25:BA:2687:U:H2'	25:BA:2688:G:O4'	2.17	0.44
55:CN:18:DG:H2'	61:CF:13:GLN:CB	2.45	0.44
57:CB:66:HIS:CG	57:CB:68:TYR:HB3	2.52	0.44
58:CC:936:ARG:HH22	58:CC:1044:PRO:HA	1.82	0.44
58:CC:1238:LEU:N	58:CC:1238:LEU:CD2	2.81	0.44
59:CD:119:SER:OG	59:CD:120:LEU:N	2.50	0.44
59:CD:149:GLY:HA2	59:CD:176:PHE:HB2	1.99	0.44
59:CD:482:ALA:O	59:CD:488:ASN:ND2	2.50	0.44
1:AA:253:A:H2'	1:AA:254:G:H8	1.83	0.44
1:AA:878:A:H2'	1:AA:879:C:C6	2.51	0.44
1:AA:920:U:H2'	1:AA:921:U:H6	1.82	0.44
1:AA:1106:G:H2'	1:AA:1107:C:H6	1.81	0.44
1:AA:1402:4OC:O5'	1:AA:1402:4OC:H6	2.17	0.44
1:AA:1455:G:H2'	1:AA:1456:A:H8	1.83	0.44
3:AC:107:ARG:HD2	57:CA:165:GLU:OE2	2.17	0.44
3:AC:123:GLN:HB3	3:AC:128:VAL:HG21	1.99	0.44
4:AD:193:ALA:HB3	59:CD:74:LYS:HD3	1.98	0.44
8:AH:55:THR:OG1	8:AH:56:LYS:N	2.51	0.44
8:AH:95:VAL:HG21	8:AH:128:TYR:HB3	1.99	0.44
23:AW:19:G:C6	23:AW:57:A:N3	2.85	0.44
25:BA:77:G:H2'	25:BA:78:U:C6	2.53	0.44
25:BA:754:U:C2	25:BA:755:U:C5	3.06	0.44
25:BA:782:A:N7	27:BC:220:VAL:HG21	2.32	0.44
25:BA:1223:G:C6	25:BA:1227:G:C6	3.05	0.44
25:BA:1733:G:N3	25:BA:1734:G:C8	2.85	0.44
25:BA:2111:U:H4'	25:BA:2111:U:OP1	2.16	0.44
25:BA:2191:A:H2'	25:BA:2192:U:O4'	2.17	0.44
27:BC:132:MET:HG2	27:BC:164:ILE:HD11	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:BD:24:VAL:HG11	28:BD:178:VAL:HG21	1.99	0.44
35:BM:61:LEU:O	53:B5:13:ARG:HD3	2.16	0.44
58:CC:196:VAL:HG21	58:CC:209:ILE:HD11	2.00	0.44
1:AA:100:G:C4	1:AA:101:A:C8	3.06	0.44
1:AA:432:A:C5	1:AA:433:G:C8	3.05	0.44
1:AA:664:G:P	18:AR:53:ARG:HH21	2.39	0.44
1:AA:737:C:H2'	1:AA:738:C:C6	2.50	0.44
1:AA:920:U:H2'	1:AA:921:U:C6	2.52	0.44
1:AA:1220:G:H2'	1:AA:1221:G:C8	2.53	0.44
1:AA:1397:C:P	22:AV:23:C:H41	2.41	0.44
3:AC:79:LYS:HZ1	58:CC:944:ARG:CB	2.29	0.44
7:AG:71:PRO:O	7:AG:96:ARG:NH1	2.50	0.44
10:AJ:11:LYS:HG2	10:AJ:71:LEU:HD22	1.99	0.44
11:AK:126:LYS:HG3	21:AU:37:PHE:CD2	2.53	0.44
23:AW:18:G:N7	23:AW:57:A:N6	2.65	0.44
25:BA:91:A:H1'	25:BA:92:U:C6	2.53	0.44
25:BA:289:G:H2'	25:BA:290:U:H6	1.82	0.44
25:BA:640:C:H2'	25:BA:641:U:H6	1.82	0.44
25:BA:1218:G:C6	25:BA:1232:G:C6	3.05	0.44
25:BA:1402:U:O2'	25:BA:1470:A:N1	2.44	0.44
25:BA:1470:A:H2'	25:BA:1471:G:O4'	2.17	0.44
25:BA:1593:A:H2'	25:BA:1594:U:O4'	2.17	0.44
25:BA:1711:A:C6	25:BA:1712:U:C4	3.06	0.44
25:BA:2840:C:H2'	25:BA:2841:C:C6	2.52	0.44
26:BB:101:A:H2'	26:BB:102:G:O4'	2.18	0.44
30:BF:8:TYR:HB2	30:BF:173:PHE:CZ	2.52	0.44
30:BF:83:TYR:O	30:BF:85:ILE:HG23	2.18	0.44
35:BM:90:VAL:HB	35:BM:122:VAL:HA	1.99	0.44
36:BN:29:GLY:N	36:BN:104:GLU:OE2	2.31	0.44
40:BR:67:ALA:O	40:BR:71:GLN:HG2	2.16	0.44
48:BZ:14:LEU:HD23	48:BZ:14:LEU:HA	1.77	0.44
56:CT:4:DT:H2"	56:CT:5:DG:H8	1.82	0.44
58:CC:557:ARG:NH2	58:CC:611:GLU:OE1	2.44	0.44
58:CC:1212:LEU:HA	58:CC:1212:LEU:HD23	1.67	0.44
59:CD:265:LEU:HA	59:CD:265:LEU:HD23	1.67	0.44
1:AA:335:C:C2	1:AA:336:A:C8	3.05	0.44
1:AA:514:C:H2'	1:AA:515:G:C8	2.45	0.44
1:AA:672:U:H3	1:AA:734:G:H1	1.66	0.44
1:AA:999:C:H2'	1:AA:1000:A:C8	2.53	0.44
1:AA:1247:U:C2	1:AA:1290:G:O6	2.70	0.44
1:AA:1298:U:C4	7:AG:114:LYS:HG3	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:AC:79:LYS:NZ	58:CC:944:ARG:CB	2.81	0.44
4:AD:121:LYS:O	4:AD:146:ARG:HD3	2.18	0.44
5:AE:36:LEU:HB2	5:AE:50:TYR:HD1	1.83	0.44
10:AJ:56:HIS:CG	10:AJ:57:VAL:H	2.36	0.44
13:AM:49:SER:O	13:AM:53:ILE:HB	2.17	0.44
13:AM:79:ARG:O	13:AM:83:LEU:HD22	2.18	0.44
15:AO:3:LEU:HD23	15:AO:3:LEU:HA	1.83	0.44
23:AW:64:G:H2'	23:AW:65:C:H6	1.83	0.44
25:BA:2:G:H2'	25:BA:3:U:C6	2.53	0.44
25:BA:45:G:H5"	25:BA:46:G:OP1	2.18	0.44
25:BA:852:U:H2'	25:BA:853:C:C6	2.52	0.44
25:BA:857:G:H2'	25:BA:858:G:O4'	2.17	0.44
25:BA:1036:G:C6	25:BA:1120:G:C6	3.05	0.44
25:BA:1050:A:H2'	25:BA:1051:G:O4'	2.18	0.44
25:BA:1349:C:C2	25:BA:1350:C:C5	3.06	0.44
25:BA:1707:G:O6	25:BA:1752:C:N4	2.50	0.44
25:BA:2117:A:O2'	25:BA:2118:U:H4'	2.17	0.44
25:BA:2473:U:O4	31:BG:176:LYS:NZ	2.49	0.44
32:BH:88:GLY:O	32:BH:89:LYS:O	2.36	0.44
34:BL:63:VAL:HG12	34:BL:107:LEU:HD21	2.00	0.44
35:BM:36:LYS:HB2	35:BM:36:LYS:HE2	1.89	0.44
1:AA:258:G:H2'	1:AA:259:G:O4'	2.18	0.44
1:AA:500:G:H2'	1:AA:501:C:H6	1.81	0.44
1:AA:598:U:H4'	8:AH:86:TYR:CD2	2.52	0.44
1:AA:1007:U:H2'	1:AA:1008:U:H6	1.82	0.44
1:AA:1191:A:H5"	3:AC:4:LYS:HE2	1.99	0.44
3:AC:72:ARG:NH1	58:CC:862:LEU:HB2	2.32	0.44
19:AS:36:ARG:CZ	19:AS:72:GLY:HA2	2.48	0.44
25:BA:77:G:C6	25:BA:110:G:C6	3.04	0.44
25:BA:152:A:C6	25:BA:175:G:C6	3.06	0.44
25:BA:290:U:H2'	25:BA:291:G:C8	2.53	0.44
25:BA:374:A:H2'	25:BA:375:G:O4'	2.18	0.44
25:BA:1173:U:H1'	25:BA:1175:A:OP2	2.17	0.44
25:BA:1733:G:H2'	25:BA:1734:G:H8	1.82	0.44
25:BA:1870:C:H5"	25:BA:1872:A:H61	1.83	0.44
25:BA:1993:U:H4'	28:BD:133:THR:OG1	2.18	0.44
25:BA:2138:G:H2'	25:BA:2139:U:O4'	2.17	0.44
25:BA:2529:G:H5'	31:BG:176:LYS:HB2	2.00	0.44
25:BA:2805:C:H2'	25:BA:2806:C:H6	1.82	0.44
25:BA:2815:C:C2	25:BA:2816:G:C8	3.06	0.44
26:BB:2:G:C4	26:BB:3:C:C5	3.05	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:BB:118:C:H2'	26:BB:119:A:O4'	2.18	0.44
28:BD:24:VAL:HA	28:BD:189:VAL:O	2.17	0.44
39:BQ:33:VAL:HG12	39:BQ:38:LYS:HD3	1.99	0.44
44:BV:41:LEU:HD23	44:BV:60:GLU:HG3	2.00	0.44
45:BW:83:LYS:HD3	45:BW:83:LYS:HA	1.75	0.44
56:CT:1:DC:H6	56:CT:1:DC:H2'	1.64	0.44
58:CC:680:LEU:HD23	58:CC:680:LEU:C	2.37	0.44
59:CD:513:MET:HG3	59:CD:544:LEU:HD21	1.98	0.44
1:AA:58:C:O2	1:AA:58:C:H2'	2.18	0.44
1:AA:158:G:C6	1:AA:159:G:C5	3.06	0.44
1:AA:524:G:H2'	1:AA:525:C:C6	2.53	0.44
1:AA:884:U:H4'	1:AA:885:G:H5"	2.00	0.44
1:AA:1314:C:C2	1:AA:1315:U:C5	3.05	0.44
1:AA:1360:A:H2'	1:AA:1361:G:H8	1.81	0.44
4:AD:50:ASP:O	4:AD:53:VAL:HG22	2.18	0.44
7:AG:57:SER:HB2	7:AG:60:GLU:HB2	2.00	0.44
7:AG:76:LYS:HD3	7:AG:76:LYS:HA	1.81	0.44
14:AN:98:LYS:HB3	14:AN:98:LYS:HE2	1.77	0.44
16:AP:52:LEU:HD22	16:AP:57:ILE:HD11	2.00	0.44
17:AQ:44:LEU:HD13	17:AQ:73:TRP:CD1	2.53	0.44
25:BA:149:A:H2'	25:BA:150:U:C6	2.53	0.44
25:BA:287:G:O2'	25:BA:288:U:P	2.76	0.44
25:BA:358:U:C2	25:BA:359:G:C8	3.05	0.44
25:BA:433:C:O2'	25:BA:434:U:H5'	2.18	0.44
25:BA:794:A:H2'	25:BA:795:C:C6	2.52	0.44
25:BA:1131:G:H5'	33:BK:84:ILE:HB	2.00	0.44
25:BA:1270:C:O2'	25:BA:1648:U:OP2	2.36	0.44
25:BA:2864:G:H2'	25:BA:2865:U:C6	2.52	0.44
38:BP:27:VAL:HA	38:BP:93:ASP:HB3	1.99	0.44
42:BT:3:THR:HG21	42:BT:58:ALA:N	2.33	0.44
45:BW:35:GLU:H	45:BW:35:GLU:CD	2.20	0.44
51:B3:35:GLU:HA	51:B3:49:TYR:O	2.17	0.44
58:CC:569:ILE:O	58:CC:571:LEU:N	2.51	0.44
59:CD:317:THR:HG21	59:CD:321:LYS:HA	1.99	0.44
1:AA:519:C:OP2	12:AL:47:SER:OG	2.35	0.44
1:AA:1173:U:C2	1:AA:1174:G:C8	3.06	0.44
1:AA:1326:U:H2'	1:AA:1327:C:C6	2.52	0.44
2:AB:59:LYS:HE3	2:AB:59:LYS:HB2	1.78	0.44
4:AD:97:ARG:O	4:AD:101:VAL:HG23	2.17	0.44
8:AH:18:GLN:HE21	8:AH:72:VAL:H	1.66	0.44
18:AR:42:SER:OG	18:AR:47:THR:O	2.36	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:AS:69:HIS:CB	19:AS:74:PHE:HE1	2.30	0.44
22:AV:45:G:H5"	58:CC:540:ARG:HH22	1.79	0.44
25:BA:136:G:N2	25:BA:144:A:C4	2.86	0.44
25:BA:285:G:O6	25:BA:355:U:C2	2.70	0.44
25:BA:303:G:H2'	25:BA:304:U:C6	2.53	0.44
25:BA:366:C:H2'	25:BA:367:G:O4'	2.18	0.44
25:BA:510:C:C2	25:BA:511:U:C5	3.06	0.44
25:BA:686:U:O4	52:B4:12:ARG:HB2	2.17	0.44
25:BA:1108:U:C4	25:BA:1109:C:N4	2.86	0.44
25:BA:1232:G:C6	25:BA:1233:C:C4	3.06	0.44
25:BA:1419:A:O2'	25:BA:1421:G:N7	2.46	0.44
25:BA:1588:G:O2'	25:BA:1589:U:H5'	2.18	0.44
25:BA:2123:G:N1	25:BA:2176:A:N6	2.65	0.44
25:BA:2218:G:H2'	25:BA:2219:U:O4'	2.18	0.44
25:BA:2332:C:OP1	46:BX:77:ARG:NH2	2.51	0.44
25:BA:2439:A:H4'	25:BA:2440:C:H5"	2.00	0.44
25:BA:2637:U:H2'	25:BA:2638:G:H5'	2.00	0.44
28:BD:71:ALA:HB3	28:BD:73:VAL:HG12	1.99	0.44
37:BO:55:ALA:HA	37:BO:80:PHE:CE1	2.53	0.44
39:BQ:24:ASP:N	39:BQ:24:ASP:OD1	2.49	0.44
39:BQ:27:GLU:OE1	39:BQ:29:LYS:NZ	2.40	0.44
39:BQ:52:ASN:N	39:BQ:52:ASN:OD1	2.51	0.44
44:BV:44:LYS:HZ2	44:BV:46:GLN:HG3	1.82	0.44
51:B3:10:LYS:HD2	51:B3:20:PHE:CD2	2.52	0.44
58:CC:129:LEU:HD23	58:CC:129:LEU:HA	1.68	0.44
58:CC:493:ILE:C	58:CC:493:ILE:HD12	2.38	0.44
1:AA:164:G:C6	1:AA:165:G:C5	3.06	0.44
1:AA:903:G:H2'	1:AA:904:U:H6	1.83	0.44
1:AA:949:A:C6	1:AA:1233:G:N1	2.86	0.44
1:AA:1316:G:N2	1:AA:1318:A:H3'	2.33	0.44
4:AD:106:GLY:HA3	4:AD:162:ALA:HB2	2.00	0.44
6:AF:10:VAL:HA	6:AF:84:VAL:HA	2.00	0.44
9:AI:26:GLY:HA2	9:AI:61:LEU:O	2.17	0.44
10:AJ:18:ILE:HD12	10:AJ:18:ILE:HA	1.62	0.44
24:AX:1:G:P	24:AX:1:G:H8	2.41	0.44
25:BA:271:G:HO2'	25:BA:272:A:H8	1.66	0.44
25:BA:356:G:H2'	25:BA:357:C:C6	2.53	0.44
25:BA:617:G:OP1	29:BE:102:ARG:NH2	2.51	0.44
25:BA:720:U:H2'	25:BA:721:A:C8	2.42	0.44
25:BA:812:C:OP1	40:BR:13:ARG:NH1	2.50	0.44
25:BA:858:G:N2	25:BA:2268:A:C5	2.86	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:947:A:C6	25:BA:971:G:C6	3.06	0.44
25:BA:957:C:N4	25:BA:2459:A:C8	2.86	0.44
25:BA:1199:U:H2'	25:BA:1200:C:O4'	2.18	0.44
25:BA:1638:C:O2	25:BA:2698:U:O2'	2.36	0.44
25:BA:1684:G:H2'	25:BA:1685:C:C6	2.53	0.44
25:BA:1858:A:H2'	25:BA:1859:U:O4'	2.18	0.44
25:BA:2111:U:C5	25:BA:2147:A:H1'	2.53	0.44
25:BA:2185:U:H2'	25:BA:2186:G:O4'	2.17	0.44
26:BB:13:G:H2'	26:BB:13:G:N3	2.33	0.44
29:BE:5:LEU:O	29:BE:9:GLN:CA	2.66	0.44
37:BO:10:LEU:O	37:BO:12:ARG:NH2	2.51	0.44
57:CA:213:PRO:HA	57:CA:216:ALA:HB3	2.00	0.44
59:CD:108:ALA:HB3	59:CD:279:LEU:HD23	2.00	0.44
59:CD:120:LEU:HB3	59:CD:121:PRO:CD	2.47	0.44
59:CD:488:ASN:N	59:CD:488:ASN:OD1	2.48	0.44
1:AA:73:C:H2'	1:AA:74:A:C8	2.52	0.43
1:AA:94:G:N2	1:AA:98:A:C6	2.86	0.43
1:AA:94:G:N1	1:AA:98:A:N1	2.66	0.43
1:AA:153:C:H2'	1:AA:154:U:C6	2.53	0.43
1:AA:230:G:H2'	1:AA:231:U:O4'	2.18	0.43
1:AA:684:U:H2'	1:AA:685:G:O4'	2.18	0.43
1:AA:687:A:C2	1:AA:704:A:C5	3.06	0.43
1:AA:721:G:H4'	1:AA:722:G:O4'	2.18	0.43
1:AA:745:G:C2	1:AA:746:A:C5	3.06	0.43
1:AA:792:A:C4	1:AA:794:A:C6	3.06	0.43
1:AA:1226:C:N4	13:AM:103:LYS:HE2	2.31	0.43
1:AA:1258:G:H2'	1:AA:1259:C:H6	1.82	0.43
1:AA:1325:C:C2	1:AA:1326:U:C5	3.06	0.43
3:AC:52:VAL:HA	3:AC:70:THR:HB	1.99	0.43
23:AW:27:U:C2	23:AW:28:C:C5	3.06	0.43
25:BA:299:A:C6	25:BA:322:A:C4	3.06	0.43
25:BA:534:U:O2'	40:BR:49:ASP:OD2	2.25	0.43
25:BA:665:U:C2	25:BA:666:A:C8	3.06	0.43
25:BA:1367:A:O2'	52:B4:25:LYS:HE2	2.18	0.43
25:BA:1868:C:N4	25:BA:1869:G:O6	2.51	0.43
25:BA:2166:U:H3'	25:BA:2167:U:H5"	2.00	0.43
25:BA:2183:A:H2'	25:BA:2184:A:O4'	2.18	0.43
25:BA:2392:A:P	53:B5:31:HIS:HE2	2.41	0.43
29:BE:27:LEU:HG	29:BE:104:ALA:HB2	2.00	0.43
29:BE:48:THR:OG1	29:BE:51:GLU:OE1	2.28	0.43
30:BF:108:VAL:HG13	30:BF:111:ILE:HD12	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:BM:19:LEU:HD22	35:BM:27:LEU:HD22	2.00	0.43
56:CT:4:DT:C2	56:CT:5:DG:N7	2.86	0.43
58:CC:84:GLU:OE2	58:CC:1032:LYS:NZ	2.48	0.43
58:CC:753:LEU:HA	58:CC:753:LEU:HD23	1.75	0.43
1:AA:113:G:H2'	1:AA:114:U:C6	2.53	0.43
1:AA:939:G:H2'	1:AA:940:C:C6	2.53	0.43
1:AA:1147:C:H2'	1:AA:1148:U:H6	1.82	0.43
1:AA:1223:C:H5"	1:AA:1224:U:H5"	2.00	0.43
2:AB:224:GLY:HA2	2:AB:227:GLN:NE2	2.34	0.43
8:AH:18:GLN:NE2	8:AH:70:ALA:HB1	2.33	0.43
15:AO:26:GLU:OE2	15:AO:77:ARG:NH2	2.51	0.43
25:BA:282:A:C6	25:BA:359:G:C6	3.07	0.43
25:BA:984:A:H2'	25:BA:984:A:N3	2.32	0.43
25:BA:1068:G:HO2'	25:BA:1096:A:HO2'	1.59	0.43
25:BA:1385:A:C4	25:BA:1386:C:C5	3.06	0.43
25:BA:1664:A:H61	25:BA:1996:C:N4	2.15	0.43
25:BA:1667:G:OP1	34:BL:7:MET:HB2	2.19	0.43
25:BA:1668:A:N3	25:BA:1670:C:C4	2.87	0.43
25:BA:1710:G:C6	25:BA:1749:A:N1	2.86	0.43
25:BA:2372:U:H2'	25:BA:2373:G:C8	2.52	0.43
26:BB:16:G:N2	26:BB:69:G:H1'	2.33	0.43
28:BD:7:LYS:HE3	28:BD:7:LYS:HB2	1.74	0.43
51:B3:45:GLN:O	51:B3:47:VAL:HG23	2.18	0.43
56:CT:6:DA:C2	56:CT:7:DA:C5	3.06	0.43
58:CC:138:ILE:HD12	58:CC:138:ILE:HG23	1.78	0.43
58:CC:375:PRO:HG3	61:CF:80:TRP:CH2	2.53	0.43
58:CC:771:VAL:H	58:CC:771:VAL:HG22	1.60	0.43
59:CD:307:LEU:HD23	59:CD:307:LEU:HA	1.77	0.43
1:AA:28:A:O2'	1:AA:296:U:OP1	2.32	0.43
1:AA:181:A:H1'	1:AA:182:A:C8	2.53	0.43
1:AA:257:G:C6	1:AA:270:A:N6	2.86	0.43
1:AA:584:G:H2'	1:AA:585:G:C8	2.47	0.43
1:AA:585:G:C6	1:AA:586:C:C4	3.05	0.43
1:AA:638:U:C2	1:AA:639:G:C8	3.06	0.43
1:AA:977:A:H1'	1:AA:982:U:O4	2.17	0.43
1:AA:1457:G:OP1	20:AT:34:LYS:NZ	2.37	0.43
6:AF:9:MET:HG2	6:AF:59:TYR:CE1	2.54	0.43
25:BA:150:U:H2'	25:BA:151:C:H6	1.83	0.43
25:BA:362:A:N3	25:BA:362:A:H2'	2.33	0.43
25:BA:902:C:C2	25:BA:903:C:C5	3.07	0.43
25:BA:1080:A:C4	25:BA:1081:U:C5	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:1789:A:H2'	25:BA:1790:C:O4'	2.18	0.43
25:BA:1869:G:N1	25:BA:1873:G:C6	2.86	0.43
25:BA:2014:A:H2'	25:BA:2015:A:C8	2.53	0.43
33:BK:40:HIS:CE1	33:BK:41:LYS:HG2	2.53	0.43
58:CC:571:LEU:HD23	58:CC:571:LEU:HA	1.47	0.43
59:CD:264:ASP:N	59:CD:264:ASP:OD1	2.51	0.43
59:CD:576:ARG:HD3	59:CD:593:ASN:HA	2.00	0.43
1:AA:169:C:H2'	1:AA:170:U:O4'	2.18	0.43
1:AA:455:G:C2	1:AA:478:A:C2	3.07	0.43
1:AA:531:U:H4'	1:AA:532:A:O5'	2.18	0.43
1:AA:637:C:H5"	17:AQ:4:LYS:NZ	2.34	0.43
1:AA:653:U:C5	8:AH:56:LYS:HG2	2.53	0.43
1:AA:956:U:H2'	1:AA:957:U:C6	2.54	0.43
4:AD:88:GLU:HG2	4:AD:188:ARG:HB2	1.99	0.43
9:AI:84:THR:HG23	9:AI:98:LEU:HD13	2.01	0.43
24:AX:18:G:O2'	24:AX:57:G:N2	2.38	0.43
25:BA:709:U:H2'	25:BA:710:U:C6	2.53	0.43
25:BA:936:A:H2'	25:BA:937:C:C6	2.54	0.43
25:BA:2119:A:H62	25:BA:2167:U:C1'	2.31	0.43
25:BA:2172:U:OP2	25:BA:2172:U:H4'	2.17	0.43
25:BA:2454:G:C6	25:BA:2499:C:N4	2.87	0.43
27:BC:116:ILE:HD12	27:BC:116:ILE:HA	1.79	0.43
33:BK:16:TYR:HB2	33:BK:54:ILE:HD13	2.00	0.43
37:BO:29:VAL:HG11	37:BO:75:ILE:HG23	2.01	0.43
40:BR:18:LEU:HD13	40:BR:18:LEU:HA	1.81	0.43
40:BR:94:ILE:HD12	41:BS:13:ARG:HB2	2.00	0.43
52:B4:30:VAL:HG22	52:B4:33:ARG:NH1	2.33	0.43
58:CC:1105:SER:HB2	59:CD:731:ARG:HB3	2.00	0.43
59:CD:238:ILE:HD12	59:CD:238:ILE:HG23	1.71	0.43
1:AA:255:G:H2'	1:AA:256:U:H6	1.83	0.43
1:AA:356:A:N3	1:AA:368:U:O2'	2.44	0.43
1:AA:437:U:H4'	4:AD:152:GLN:NE2	2.33	0.43
1:AA:710:G:H5"	6:AF:53:LYS:HE2	2.01	0.43
1:AA:920:U:C2	1:AA:921:U:C5	3.07	0.43
1:AA:1233:G:OP1	9:AI:119:ARG:NH2	2.51	0.43
1:AA:1311:A:H2'	1:AA:1312:G:O4'	2.19	0.43
3:AC:20:SER:OG	3:AC:22:TRP:NE1	2.52	0.43
7:AG:56:LYS:HG3	7:AG:60:GLU:HB3	2.00	0.43
7:AG:111:ARG:HD2	7:AG:123:GLU:HG2	1.99	0.43
16:AP:19:VAL:HG21	16:AP:52:LEU:HD21	1.99	0.43
17:AQ:16:LYS:HD3	17:AQ:16:LYS:HA	1.75	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:370:G:H4'	25:BA:371:A:OP2	2.19	0.43
25:BA:517:C:OP1	50:B2:13:ARG:NH2	2.41	0.43
25:BA:599:A:O2'	25:BA:600:G:H5'	2.19	0.43
25:BA:675:A:N3	25:BA:2443:C:O2'	2.39	0.43
25:BA:893:C:O2'	25:BA:894:U:H5'	2.17	0.43
25:BA:1268:A:H2'	25:BA:1269:A:O4'	2.18	0.43
25:BA:2184:A:H2'	25:BA:2185:U:C5	2.53	0.43
25:BA:2788:C:O2'	25:BA:2809:A:N3	2.37	0.43
33:BK:23:LYS:HD2	33:BK:28:LEU:HD13	2.00	0.43
34:BL:87:LEU:HD23	34:BL:94:PRO:HA	1.99	0.43
55:CN:28:DA:C4	55:CN:29:DG:C5	3.06	0.43
58:CC:1133:LYS:O	58:CC:1135:GLN:NE2	2.47	0.43
1:AA:152:A:C8	1:AA:153:C:C5	3.06	0.43
1:AA:216:U:H4'	1:AA:464:U:H4'	2.00	0.43
1:AA:233:C:H2'	1:AA:234:C:C6	2.52	0.43
1:AA:414:A:C4	1:AA:415:A:C8	3.07	0.43
1:AA:523:A:H61	12:AL:89:D2T:CG	2.29	0.43
1:AA:1073:U:O2	2:AB:103:ASN:ND2	2.52	0.43
1:AA:1256:A:N6	1:AA:1277:C:N3	2.66	0.43
1:AA:1461:G:H2'	1:AA:1462:C:H6	1.83	0.43
2:AB:96:TRP:CZ2	2:AB:100:MET:HB3	2.54	0.43
12:AL:40:THR:HB	12:AL:90:LEU:HD21	2.00	0.43
25:BA:466:A:OP1	52:B4:34:ARG:NH2	2.52	0.43
25:BA:553:G:H2'	25:BA:554:U:O4'	2.19	0.43
25:BA:659:G:O2'	29:BE:95:LYS:O	2.36	0.43
25:BA:1197:G:H2'	25:BA:1198:U:H6	1.84	0.43
25:BA:1297:C:H2'	25:BA:1298:C:H6	1.84	0.43
25:BA:1409:U:H2'	25:BA:1410:G:H8	1.83	0.43
25:BA:1629:U:C4	25:BA:1630:A:N7	2.87	0.43
25:BA:2024:G:H2'	25:BA:2025:C:H6	1.83	0.43
25:BA:2639:A:H2'	25:BA:2640:G:O4'	2.18	0.43
30:BF:6:ASP:HA	30:BF:9:LYS:HB2	2.00	0.43
33:BK:88:THR:OG1	33:BK:91:GLU:HG3	2.17	0.43
41:BS:4:VAL:HG22	41:BS:13:ARG:HG3	2.01	0.43
42:BT:29:VAL:HB	42:BT:55:ILE:HD11	2.01	0.43
45:BW:59:GLU:HG2	45:BW:60:VAL:N	2.33	0.43
47:BY:39:TRP:NE1	47:BY:41:GLU:HG2	2.33	0.43
58:CC:524:ILE:HD13	58:CC:524:ILE:HG21	1.76	0.43
58:CC:616:ILE:HA	58:CC:652:TYR:O	2.18	0.43
61:CF:7:LYS:HG2	61:CF:74:VAL:HG13	2.01	0.43
61:CF:47:GLU:HG3	61:CF:64:PHE:CD1	2.44	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:167:A:N6	1:AA:168:G:O6	2.51	0.43
1:AA:213:G:C5	1:AA:214:C:C5	3.07	0.43
1:AA:360:G:H2'	1:AA:361:G:C8	2.53	0.43
1:AA:592:G:C6	1:AA:593:U:C4	3.06	0.43
1:AA:878:A:P	8:AH:80:ARG:HH21	2.42	0.43
1:AA:1070:U:OP1	5:AE:25:VAL:HG21	2.19	0.43
1:AA:1152:A:C6	1:AA:1153:G:C5	3.07	0.43
1:AA:1220:G:H2'	1:AA:1221:G:H8	1.82	0.43
1:AA:1255:G:C6	1:AA:1279:G:C8	3.07	0.43
1:AA:1315:U:H2'	1:AA:1316:G:O4'	2.19	0.43
1:AA:1440:U:O2'	1:AA:1441:A:H5"	2.19	0.43
4:AD:196:ASN:HB3	4:AD:199:LEU:HD12	2.00	0.43
6:AF:54:LEU:HD11	6:AF:85:ILE:HD13	2.00	0.43
16:AP:38:PHE:CE1	16:AP:51:ARG:HB3	2.53	0.43
20:AT:16:LYS:HB2	20:AT:16:LYS:HE3	1.85	0.43
25:BA:971:G:O2'	25:BA:983:A:N3	2.44	0.43
25:BA:1178:C:H2'	25:BA:1179:G:H8	1.80	0.43
25:BA:1534:U:H1'	25:BA:1538:G:H22	1.83	0.43
25:BA:2216:G:H2'	25:BA:2217:G:C8	2.53	0.43
25:BA:2286:G:H4'	25:BA:2287:A:O4'	2.18	0.43
25:BA:2814:A:C5	25:BA:2815:C:C5	3.06	0.43
34:BL:111:LYS:HG2	34:BL:112:PHE:CE1	2.54	0.43
41:BS:37:GLU:HB2	41:BS:53:PHE:CE1	2.53	0.43
45:BW:72:VAL:HB	45:BW:91:PHE:HB3	1.99	0.43
49:B1:5:ILE:HD11	49:B1:59:GLU:HB3	2.01	0.43
58:CC:1076:ILE:O	58:CC:1076:ILE:HG13	2.15	0.43
59:CD:361:LEU:HD23	59:CD:361:LEU:HA	1.79	0.43
59:CD:962:ASN:ND2	59:CD:979:ASN:O	2.51	0.43
1:AA:73:C:H42	1:AA:94:G:H1	1.66	0.43
1:AA:199:A:H2'	1:AA:200:G:C8	2.54	0.43
1:AA:404:G:N7	4:AD:2:ALA:HB3	2.34	0.43
1:AA:675:A:H2'	1:AA:676:A:H8	1.83	0.43
1:AA:1292:G:C6	1:AA:1293:C:C4	3.06	0.43
4:AD:105:MET:SD	4:AD:180:GLY:HA3	2.59	0.43
12:AL:15:LYS:H	12:AL:15:LYS:HG2	1.53	0.43
23:AW:15:G:N2	23:AW:59:A:N7	2.66	0.43
23:AW:52:G:C2	23:AW:53:G:C8	3.07	0.43
25:BA:17:G:H2'	25:BA:18:U:C6	2.54	0.43
25:BA:35:G:H2'	25:BA:36:G:O4'	2.19	0.43
25:BA:312:G:C2	25:BA:313:G:C8	3.07	0.43
25:BA:838:C:H2'	25:BA:839:U:H6	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:1152:C:H2'	25:BA:1153:C:C6	2.53	0.43
25:BA:1198:U:H2'	25:BA:1199:U:C6	2.53	0.43
25:BA:2229:U:H2'	25:BA:2230:G:H8	1.83	0.43
25:BA:2494:G:C2	25:BA:2495:G:C8	3.06	0.43
25:BA:2648:G:H2'	25:BA:2649:C:C6	2.53	0.43
25:BA:2698:U:H2'	25:BA:2699:C:H6	1.84	0.43
32:BH:116:ARG:HD3	32:BH:116:ARG:HA	1.86	0.43
38:BP:34:HIS:CE1	38:BP:54:VAL:HG22	2.53	0.43
39:BQ:34:GLU:OE2	39:BQ:39:ARG:HD3	2.18	0.43
42:BT:41:LYS:HE3	42:BT:41:LYS:HB3	1.84	0.43
45:BW:66:ASP:OD1	45:BW:66:ASP:N	2.50	0.43
49:B1:6:LYS:HG3	49:B1:37:GLU:OE2	2.18	0.43
55:CN:26:DG:C4	55:CN:27:DA:C5	3.07	0.43
58:CC:1058:ARG:HH21	58:CC:1240:ASP:CG	2.20	0.43
59:CD:340:GLN:HG3	59:CD:341:ASN:OD1	2.18	0.43
1:AA:214:C:C2	1:AA:215:C:C5	3.07	0.43
1:AA:537:G:OP1	12:AL:110:ARG:NH2	2.52	0.43
1:AA:864:A:H4'	5:AE:90:THR:HG23	2.00	0.43
1:AA:1106:G:H2'	1:AA:1107:C:C6	2.54	0.43
1:AA:1304:G:N2	1:AA:1334:G:O6	2.52	0.43
1:AA:1408:A:N6	1:AA:1494:G:O6	2.52	0.43
3:AC:70:THR:OG1	3:AC:71:ALA:N	2.52	0.43
20:AT:58:VAL:O	20:AT:67:ILE:HD11	2.18	0.43
24:AX:67:C:H2'	24:AX:68:C:H6	1.83	0.43
25:BA:280:U:H2'	25:BA:281:C:O4'	2.18	0.43
25:BA:358:U:H2'	25:BA:359:G:C8	2.53	0.43
25:BA:486:C:H2'	25:BA:487:C:C6	2.54	0.43
25:BA:753:A:H2'	25:BA:754:U:C6	2.54	0.43
25:BA:1417:C:HO2'	25:BA:1587:G:HO2'	1.58	0.43
25:BA:1873:G:H2'	25:BA:1874:C:H6	1.82	0.43
25:BA:2170:A:O2'	25:BA:2171:A:H5"	2.18	0.43
25:BA:2201:G:C6	25:BA:2223:G:N1	2.87	0.43
25:BA:2645:G:OP2	25:BA:2645:G:N2	2.34	0.43
25:BA:2845:U:H2'	25:BA:2846:G:C8	2.54	0.43
30:BF:36:LEU:HB3	30:BF:57:LEU:HD11	2.01	0.43
31:BG:72:LEU:HA	31:BG:72:LEU:HD12	1.69	0.43
33:BK:71:ASP:O	33:BK:73:VAL:HG23	2.19	0.43
36:BN:22:GLN:O	36:BN:100:LYS:NZ	2.51	0.43
51:B3:38:LYS:HB2	51:B3:49:TYR:CD1	2.54	0.43
58:CC:1333:LEU:HA	58:CC:1333:LEU:HD23	1.84	0.43
1:AA:71:A:C5	1:AA:100:G:C8	3.07	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:391:G:C6	1:AA:392:C:C4	3.07	0.43
1:AA:1514:G:N2	1:AA:1522:U:O2	2.52	0.43
2:AB:27:MET:SD	2:AB:189:THR:HA	2.59	0.43
2:AB:130:THR:N	2:AB:133:GLU:OE1	2.51	0.43
4:AD:27:ALA:O	4:AD:30:THR:OG1	2.29	0.43
6:AF:64:VAL:HG12	6:AF:65:GLU:N	2.34	0.43
7:AG:22:LEU:H	7:AG:22:LEU:HD12	1.84	0.43
7:AG:46:ALA:HB2	7:AG:117:ALA:HA	2.00	0.43
10:AJ:51:VAL:HB	14:AN:81:ARG:HB2	2.01	0.43
15:AO:4:SER:O	15:AO:8:THR:OG1	2.30	0.43
24:AX:27:G:H2'	24:AX:28:G:C8	2.54	0.43
25:BA:102:U:O4	48:BZ:2:LYS:N	2.52	0.43
25:BA:105:C:C2	25:BA:106:C:C5	3.07	0.43
25:BA:195:A:H61	25:BA:198:C:H3'	1.84	0.43
25:BA:572:A:H61	25:BA:2029:G:H21	1.66	0.43
25:BA:586:A:N1	25:BA:809:G:O2'	2.39	0.43
25:BA:828:U:O2'	25:BA:829:A:O4'	2.36	0.43
25:BA:1071:G:O2'	25:BA:1089:A:OP2	2.32	0.43
25:BA:1359:A:OP2	25:BA:1371:G:N1	2.41	0.43
25:BA:1387:A:C6	25:BA:1401:G:N1	2.87	0.43
25:BA:1425:G:H8	25:BA:1425:G:O5'	2.01	0.43
25:BA:1575:C:H2'	25:BA:1576:U:O4'	2.19	0.43
25:BA:1687:G:N2	25:BA:1702:G:C6	2.87	0.43
25:BA:1922:G:H2'	25:BA:1923:U:O4'	2.19	0.43
25:BA:2112:G:H3'	25:BA:2113:U:C6	2.54	0.43
25:BA:2314:A:H1'	30:BF:155:THR:HG21	2.00	0.43
25:BA:2316:G:C2	25:BA:2317:A:C5	3.07	0.43
25:BA:2357:G:H5'	25:BA:2358:A:OP2	2.19	0.43
25:BA:2422:C:H41	53:B5:31:HIS:CE1	2.37	0.43
30:BF:8:TYR:OH	30:BF:30:ARG:HB3	2.19	0.43
38:BP:58:ILE:HA	38:BP:61:GLN:NE2	2.34	0.43
39:BQ:31:TRP:NE1	39:BQ:82:ASP:OD1	2.52	0.43
58:CC:204:LEU:HD21	58:CC:369:MET:SD	2.59	0.43
58:CC:210:LEU:HA	58:CC:210:LEU:HD23	1.60	0.43
59:CD:1332:LEU:HA	59:CD:1332:LEU:HD12	1.73	0.43
1:AA:33:A:N3	12:AL:29:GLN:NE2	2.54	0.42
1:AA:38:G:H4'	1:AA:547:A:N6	2.34	0.42
1:AA:74:A:N1	1:AA:97:G:C6	2.87	0.42
1:AA:91:U:H2'	1:AA:92:U:H6	1.83	0.42
1:AA:102:G:H2'	1:AA:103:U:H6	1.84	0.42
1:AA:263:A:H2'	1:AA:264:C:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1112:C:H1'	3:AC:179:ARG:HG2	1.99	0.42
1:AA:1301:U:H2'	1:AA:1303:C:H5	1.84	0.42
1:AA:1365:G:C6	1:AA:1366:C:C4	3.07	0.42
2:AB:62:SER:HB3	2:AB:224:GLY:HA2	2.01	0.42
25:BA:391:A:H2'	25:BA:391:A:N3	2.34	0.42
25:BA:455:C:N3	25:BA:473:G:H5'	2.34	0.42
25:BA:1696:G:OP2	25:BA:1696:G:H8	2.02	0.42
25:BA:2443:C:H2'	25:BA:2444:G:H8	1.83	0.42
25:BA:2813:A:H2'	25:BA:2814:A:H8	1.83	0.42
28:BD:22:ILE:HG23	28:BD:190:LYS:HD2	2.01	0.42
31:BG:37:LEU:HD13	31:BG:68:ALA:HB1	2.00	0.42
45:BW:31:TYR:O	45:BW:92:VAL:HA	2.18	0.42
50:B2:38:HIS:ND1	50:B2:44:THR:HG22	2.34	0.42
55:CN:36:DA:H2"	55:CN:37:DG:C8	2.54	0.42
57:CA:82:LEU:HD23	57:CA:82:LEU:HA	1.65	0.42
58:CC:131:THR:HG22	58:CC:132:ASP:N	2.34	0.42
58:CC:196:VAL:HG22	58:CC:197:ARG:N	2.34	0.42
59:CD:213:LYS:HZ3	59:CD:216:LYS:HG3	1.84	0.42
59:CD:327:LEU:O	59:CD:330:MET:N	2.51	0.42
1:AA:212:G:C4	1:AA:213:G:C8	3.07	0.42
1:AA:482:A:H2'	1:AA:483:C:O4'	2.19	0.42
1:AA:773:G:C6	1:AA:807:A:N6	2.87	0.42
1:AA:1272:G:H2'	1:AA:1273:C:C6	2.55	0.42
1:AA:1360:A:H2'	1:AA:1361:G:C8	2.55	0.42
2:AB:43:LEU:HD12	2:AB:43:LEU:H	1.84	0.42
2:AB:67:ILE:H	2:AB:89:GLN:HE22	1.67	0.42
4:AD:6:GLY:O	4:AD:8:LYS:HD3	2.18	0.42
4:AD:125:VAL:HG22	4:AD:143:VAL:HB	2.00	0.42
6:AF:13:ASP:N	6:AF:13:ASP:OD1	2.52	0.42
6:AF:24:ARG:HE	6:AF:24:ARG:HB2	1.55	0.42
11:AK:52:PHE:O	11:AK:53:ARG:HG2	2.19	0.42
24:AX:1:G:H8	24:AX:1:G:OP2	2.02	0.42
25:BA:145:C:H2'	25:BA:146:A:C8	2.54	0.42
25:BA:244:A:OP2	53:B5:8:ARG:NH2	2.53	0.42
25:BA:284:U:C4	25:BA:356:G:O6	2.71	0.42
25:BA:395:U:O2'	25:BA:396:G:N7	2.49	0.42
25:BA:451:U:OP1	29:BE:47:LYS:NZ	2.45	0.42
25:BA:1040:A:N1	25:BA:1115:G:N2	2.58	0.42
25:BA:1102:C:H2'	25:BA:1103:A:H8	1.84	0.42
25:BA:1868:C:H2'	25:BA:1869:G:C8	2.54	0.42
25:BA:2228:G:H2'	25:BA:2229:U:C6	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:2341:G:H2'	25:BA:2342:C:C6	2.54	0.42
26:BB:5:U:OP1	26:BB:61:G:O2'	2.33	0.42
34:BL:21:CYS:HB2	34:BL:39:ILE:HD12	2.01	0.42
37:BO:76:VAL:HG13	37:BO:80:PHE:HE2	1.84	0.42
42:BT:51:LEU:HD13	42:BT:105:VAL:HG11	2.01	0.42
43:BU:34:VAL:HG23	43:BU:35:ALA:O	2.20	0.42
49:B1:3:LYS:HE3	49:B1:3:LYS:HB3	1.73	0.42
50:B2:29:SER:O	50:B2:37:LYS:HA	2.18	0.42
56:CT:5:DG:H2'	56:CT:6:DA:C8	2.53	0.42
56:CT:10:DT:H2"	56:CT:11:DC:C6	2.53	0.42
58:CC:528:ARG:HH11	58:CC:528:ARG:HD2	1.63	0.42
59:CD:424:ASN:ND2	59:CD:424:ASN:C	2.73	0.42
59:CD:1172:LYS:HE3	59:CD:1191:PRO:HA	2.01	0.42
1:AA:34:C:H2'	1:AA:35:G:C8	2.54	0.42
1:AA:376:G:H5"	16:AP:5:ARG:HB2	2.00	0.42
1:AA:664:G:N2	1:AA:741:G:H1	2.15	0.42
1:AA:1014:A:H8	1:AA:1014:A:OP1	2.02	0.42
1:AA:1347:G:N2	1:AA:1348:U:O4	2.38	0.42
3:AC:124:LEU:HD23	3:AC:124:LEU:HA	1.86	0.42
11:AK:126:LYS:HG3	21:AU:37:PHE:HD2	1.84	0.42
12:AL:3:THR:HG23	12:AL:6:GLN:OE1	2.19	0.42
19:AS:36:ARG:NH2	19:AS:75:ALA:HB3	2.31	0.42
25:BA:10:A:N6	25:BA:2800:A:C2	2.88	0.42
25:BA:379:G:N1	25:BA:396:G:C6	2.88	0.42
25:BA:886:A:O2'	25:BA:887:U:OP2	2.36	0.42
25:BA:921:C:C2	25:BA:922:C:C5	3.06	0.42
25:BA:1036:G:O6	25:BA:1119:U:C4	2.72	0.42
25:BA:1107:G:C2	25:BA:1108:U:C6	3.08	0.42
25:BA:1635:A:H2'	25:BA:1636:U:O4'	2.19	0.42
25:BA:1773:A:N7	25:BA:1829:A:H1'	2.34	0.42
25:BA:2125:G:H22	25:BA:2171:A:H5'	1.84	0.42
25:BA:2545:G:H2'	25:BA:2546:U:O4'	2.20	0.42
30:BF:30:ARG:HG3	30:BF:159:THR:OG1	2.19	0.42
33:BK:109:LEU:HD23	33:BK:109:LEU:HA	1.91	0.42
55:CN:30:DA:C6	55:CN:31:DG:C6	3.07	0.42
58:CC:1182:ILE:HG21	58:CC:1182:ILE:HD13	1.70	0.42
58:CC:1211:ARG:NH1	58:CC:1220:GLN:OE1	2.52	0.42
59:CD:548:VAL:HG22	59:CD:549:LYS:N	2.35	0.42
1:AA:34:C:H2'	1:AA:35:G:H8	1.83	0.42
1:AA:215:C:H2'	1:AA:216:U:O4'	2.19	0.42
1:AA:426:U:H2'	1:AA:427:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:443:C:H2'	1:AA:444:G:H8	1.84	0.42
1:AA:601:G:H2'	1:AA:602:A:C8	2.54	0.42
1:AA:601:G:H2'	1:AA:602:A:H8	1.84	0.42
1:AA:755:G:C6	1:AA:756:C:N4	2.87	0.42
1:AA:762:U:C2	1:AA:763:G:C8	3.07	0.42
1:AA:766:A:OP2	1:AA:812:G:N2	2.51	0.42
1:AA:783:C:H2'	1:AA:784:A:H8	1.84	0.42
1:AA:938:A:C2	1:AA:1376:U:H1'	2.55	0.42
1:AA:1072:G:H2'	1:AA:1073:U:C6	2.55	0.42
2:AB:56:GLU:O	2:AB:60:ILE:HG12	2.20	0.42
2:AB:186:ILE:HG13	2:AB:200:ILE:HB	2.01	0.42
11:AK:127:ARG:HH21	11:AK:129:VAL:HG11	1.84	0.42
16:AP:6:LEU:HD23	16:AP:19:VAL:HG13	2.01	0.42
16:AP:8:ARG:HG3	16:AP:17:TYR:HE1	1.83	0.42
16:AP:14:ARG:HB3	16:AP:14:ARG:NH1	2.34	0.42
20:AT:32:ILE:HD13	20:AT:75:HIS:CE1	2.53	0.42
23:AW:18:G:C6	23:AW:58:A:C6	3.07	0.42
25:BA:671:C:H2'	25:BA:672:C:C6	2.54	0.42
25:BA:922:C:H1'	46:BX:26:PHE:HD2	1.82	0.42
25:BA:1025:G:H3'	25:BA:1026:G:H5'	2.01	0.42
25:BA:1059:G:H2'	25:BA:1060:U:C5	2.54	0.42
25:BA:1494:A:O2'	25:BA:1495:A:OP1	2.33	0.42
25:BA:1589:U:HO2'	25:BA:1590:A:H8	1.64	0.42
25:BA:1664:A:N6	25:BA:1996:C:H42	2.16	0.42
25:BA:1789:A:OP1	27:BC:221:ARG:HG3	2.19	0.42
25:BA:1930:G:H22	25:BA:1969:A:P	2.42	0.42
25:BA:2096:C:H2'	25:BA:2097:A:H8	1.83	0.42
25:BA:2122:U:H5'	25:BA:2123:G:OP2	2.19	0.42
25:BA:2295:C:O2'	25:BA:2296:U:H5'	2.20	0.42
27:BC:235:GLY:O	27:BC:237:GLY:N	2.51	0.42
31:BG:2:SER:OG	31:BG:3:ARG:N	2.51	0.42
31:BG:88:GLN:HE21	31:BG:165:ALA:HA	1.83	0.42
35:BM:21:ARG:HD3	35:BM:21:ARG:HA	1.80	0.42
40:BR:76:TYR:OH	40:BR:92:ARG:NH1	2.53	0.42
43:BU:14:PRO:O	43:BU:33:LYS:NZ	2.35	0.42
47:BY:12:PRO:HB3	47:BY:30:LEU:HD23	2.00	0.42
49:B1:48:ILE:HG21	49:B1:57:VAL:HG21	2.00	0.42
50:B2:48:TYR:CE2	50:B2:53:LYS:HD3	2.55	0.42
56:CT:19:DG:C6	56:CT:20:DC:N4	2.87	0.42
57:CA:217:ILE:HD12	57:CA:217:ILE:HA	1.90	0.42
59:CD:500:ILE:O	59:CD:500:ILE:HG22	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:131:A:N6	1:AA:232:G:O6	2.52	0.42
1:AA:377:G:H2'	1:AA:378:G:C8	2.54	0.42
1:AA:585:G:C5	1:AA:586:C:C5	3.08	0.42
1:AA:642:A:C5	8:AH:107:SER:HA	2.55	0.42
1:AA:958:A:N7	19:AS:55:ARG:NH2	2.68	0.42
1:AA:1096:C:C2	1:AA:1097:C:C5	3.08	0.42
3:AC:105:GLU:O	3:AC:107:ARG:NH1	2.53	0.42
4:AD:126:ASN:OD1	4:AD:126:ASN:N	2.52	0.42
6:AF:16:GLU:N	6:AF:16:GLU:OE1	2.53	0.42
7:AG:58:GLU:CD	7:AG:58:GLU:H	2.19	0.42
7:AG:91:VAL:HG23	7:AG:95:ARG:HG2	2.02	0.42
8:AH:7:ILE:HD11	8:AH:32:LEU:HD23	2.01	0.42
10:AJ:7:ARG:HB2	10:AJ:73:LEU:HD11	2.00	0.42
14:AN:74:LEU:HD23	14:AN:74:LEU:HA	1.86	0.42
16:AP:77:GLU:O	16:AP:80:LYS:HE2	2.20	0.42
16:AP:80:LYS:HE2	16:AP:80:LYS:HB3	1.83	0.42
25:BA:9:G:N2	25:BA:2895:G:C5	2.87	0.42
25:BA:26:G:H2'	25:BA:27:G:O4'	2.20	0.42
25:BA:135:U:H2'	25:BA:136:G:O4'	2.19	0.42
25:BA:743:A:O2'	25:BA:1659:G:OP1	2.35	0.42
25:BA:890:C:H2'	25:BA:891:G:H4'	2.02	0.42
25:BA:1317:G:C6	25:BA:1336:A:C6	3.08	0.42
25:BA:1630:A:N6	25:BA:1637:A:N6	2.67	0.42
25:BA:1790:C:H2'	25:BA:1791:A:C5	2.54	0.42
25:BA:1906:G:C2	25:BA:1907:G:C8	3.08	0.42
25:BA:2048:G:C6	25:BA:2621:G:N1	2.87	0.42
25:BA:2799:G:C2	25:BA:2801:G:C4	3.07	0.42
25:BA:2841:C:C2	25:BA:2877:G:N2	2.87	0.42
26:BB:36:C:H5"	26:BB:38:C:H41	1.84	0.42
27:BC:70:ASN:OD1	27:BC:70:ASN:N	2.42	0.42
30:BF:115:ARG:HH12	30:BF:178:ARG:NE	2.17	0.42
30:BF:115:ARG:NH1	30:BF:178:ARG:HE	2.17	0.42
58:CC:45:GLY:O	58:CC:51:ALA:HB2	2.19	0.42
1:AA:602:A:H2'	1:AA:603:U:H6	1.84	0.42
1:AA:604:G:H2'	1:AA:605:U:C6	2.55	0.42
1:AA:637:C:C2	1:AA:638:U:C5	3.08	0.42
1:AA:719:C:OP2	1:AA:720:C:N4	2.50	0.42
1:AA:877:G:N3	1:AA:878:A:C8	2.87	0.42
8:AH:41:LYS:HE2	8:AH:41:LYS:HB3	1.87	0.42
10:AJ:47:GLU:HG2	10:AJ:49:PHE:CZ	2.55	0.42
13:AM:88:GLY:O	13:AM:92:ARG:HD3	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:285:G:C5	25:BA:356:G:C6	3.07	0.42
25:BA:299:A:C4	25:BA:322:A:C6	3.07	0.42
25:BA:704:G:O2'	25:BA:705:A:OP2	2.34	0.42
25:BA:1056:G:H2'	25:BA:1103:A:H61	1.84	0.42
25:BA:1447:C:C2	25:BA:1465:G:N2	2.87	0.42
25:BA:1485:U:H2'	25:BA:1486:U:C6	2.55	0.42
25:BA:1576:U:H2'	25:BA:1577:C:C6	2.54	0.42
25:BA:1713:A:N6	25:BA:1745:A:N6	2.67	0.42
25:BA:1843:C:H2'	25:BA:1844:C:H6	1.85	0.42
25:BA:2127:G:N7	25:BA:2162:G:N1	2.67	0.42
33:BK:36:LEU:O	33:BK:51:GLY:HA3	2.18	0.42
40:BR:3:ARG:HH22	40:BR:5:LYS:HZ2	1.67	0.42
55:CN:27:DA:H1'	55:CN:28:DA:H5'	2.01	0.42
56:CT:10:DT:H2"	56:CT:11:DC:C5	2.54	0.42
57:CA:96:ASP:OD1	57:CA:96:ASP:N	2.50	0.42
58:CC:32:LEU:HA	58:CC:32:LEU:HD23	1.78	0.42
58:CC:473:ARG:HH11	58:CC:473:ARG:HG3	1.83	0.42
58:CC:1014:LEU:HD12	58:CC:1017:GLN:HB3	2.00	0.42
59:CD:160:LEU:HD23	59:CD:160:LEU:N	2.34	0.42
59:CD:175:GLU:CD	59:CD:175:GLU:N	2.72	0.42
59:CD:558:ASP:OD1	59:CD:561:GLY:N	2.48	0.42
59:CD:755:ILE:HG22	59:CD:757:THR:H	1.85	0.42
1:AA:68:G:H3'	1:AA:69:G:C5'	2.50	0.42
1:AA:212:G:H2'	1:AA:213:G:C8	2.54	0.42
1:AA:385:C:H2'	1:AA:386:C:C6	2.55	0.42
1:AA:435:A:H2'	1:AA:436:C:C6	2.54	0.42
1:AA:1152:A:C4	1:AA:1153:G:C8	3.08	0.42
3:AC:178:LEU:HD13	3:AC:178:LEU:HA	1.89	0.42
4:AD:55:LEU:O	4:AD:59:GLN:HG2	2.18	0.42
4:AD:170:TRP:HB3	4:AD:184:ARG:CZ	2.49	0.42
13:AM:17:ILE:O	13:AM:20:THR:HB	2.20	0.42
25:BA:500:G:N2	25:BA:503:A:C8	2.88	0.42
25:BA:514:A:N3	25:BA:581:C:O2'	2.42	0.42
25:BA:892:A:C8	25:BA:893:C:C5	3.07	0.42
25:BA:940:G:H2'	25:BA:941:A:O4'	2.20	0.42
25:BA:1050:A:H1'	25:BA:2751:G:N2	2.35	0.42
25:BA:1079:C:C2	25:BA:1080:A:N7	2.88	0.42
25:BA:1370:C:H2'	25:BA:1371:G:O4'	2.20	0.42
25:BA:1407:G:C2	25:BA:1408:G:C5	3.08	0.42
25:BA:1733:G:C2	25:BA:1734:G:C8	3.07	0.42
25:BA:1829:A:C8	25:BA:1830:C:C5	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:2251:OMG:HM23	25:BA:2251:OMG:H1'	1.87	0.42
25:BA:2543:G:C6	25:BA:2544:G:C6	3.08	0.42
33:BK:13:ARG:NH1	33:BK:49:ASP:O	2.53	0.42
35:BM:14:LYS:HB2	35:BM:14:LYS:HE3	1.62	0.42
38:BP:115:LEU:HA	38:BP:115:LEU:HD12	1.82	0.42
42:BT:24:ILE:HG21	42:BT:36:LEU:HD21	2.01	0.42
56:CT:2:DT:H2"	56:CT:3:DC:H5	1.85	0.42
58:CC:1096:ILE:HD13	58:CC:1096:ILE:HG21	1.64	0.42
59:CD:357:VAL:HG13	59:CD:357:VAL:O	2.18	0.42
59:CD:636:GLY:O	59:CD:638:SER:N	2.49	0.42
59:CD:1143:ASP:OD1	59:CD:1143:ASP:C	2.57	0.42
1:AA:892:A:H2'	1:AA:893:C:C6	2.55	0.42
1:AA:945:G:C2	1:AA:1337:G:C2	3.07	0.42
1:AA:1026:G:H1	1:AA:1035:A:N6	2.18	0.42
1:AA:1352:C:H2'	1:AA:1353:G:C8	2.54	0.42
1:AA:1356:G:C2	1:AA:1357:A:C5	3.08	0.42
8:AH:101:ILE:HG12	8:AH:129:VAL:HB	2.02	0.42
14:AN:53:ARG:HH22	19:AS:37:ARG:HH12	1.65	0.42
25:BA:1161:C:H2'	25:BA:1162:G:H8	1.85	0.42
25:BA:1443:U:C2	25:BA:1444:G:C8	3.08	0.42
25:BA:1590:A:H2'	25:BA:1591:A:C8	2.54	0.42
25:BA:2803:G:H2'	25:BA:2804:U:C6	2.54	0.42
28:BD:183:GLU:H	28:BD:183:GLU:CD	2.23	0.42
30:BF:55:ALA:O	30:BF:59:ALA:N	2.53	0.42
33:BK:36:LEU:HA	33:BK:36:LEU:HD23	1.77	0.42
38:BP:99:TYR:HE1	38:BP:107:ALA:HB3	1.84	0.42
40:BR:72:ASN:HD21	40:BR:107:THR:HA	1.85	0.42
41:BS:30:GLY:N	41:BS:63:VAL:O	2.51	0.42
57:CA:78:ILE:HA	57:CA:78:ILE:HD13	1.84	0.42
58:CC:127:ILE:HG13	58:CC:127:ILE:O	2.18	0.42
58:CC:962:GLU:O	58:CC:966:ILE:HD13	2.20	0.42
58:CC:1251:TYR:CE1	58:CC:1301:ARG:NH1	2.88	0.42
59:CD:35:PHE:CZ	59:CD:101:ARG:HD2	2.55	0.42
59:CD:72:CYS:HB2	59:CD:87:LYS:HD3	2.02	0.42
59:CD:363:LEU:HA	59:CD:363:LEU:HD12	1.73	0.42
1:AA:161:A:H2'	1:AA:162:A:O4'	2.19	0.42
1:AA:193:C:H2'	1:AA:194:C:C6	2.54	0.42
1:AA:224:U:H2'	1:AA:225:C:C6	2.55	0.42
1:AA:456:A:N6	1:AA:477:C:H42	2.17	0.42
1:AA:602:A:H2'	1:AA:603:U:C6	2.54	0.42
1:AA:788:U:C4	1:AA:789:U:C4	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:940:C:H2'	1:AA:941:G:C8	2.55	0.42
1:AA:976:G:H5"	1:AA:1358:U:O2'	2.20	0.42
1:AA:1130:A:C5	1:AA:1131:G:N7	2.88	0.42
1:AA:1253:G:C2	1:AA:1254:A:C5	3.08	0.42
1:AA:1332:A:H2'	1:AA:1333:A:O4'	2.20	0.42
1:AA:1381:U:C2	1:AA:1382:C:C6	3.07	0.42
1:AA:1512:U:H2'	1:AA:1513:A:H8	1.85	0.42
4:AD:92:ALA:HB1	4:AD:185:LYS:HD2	2.02	0.42
8:AH:106:THR:OG1	8:AH:121:LEU:HD13	2.20	0.42
20:AT:49:LYS:HA	20:AT:52:ASN:HD21	1.85	0.42
24:AX:20:H2U:H4'	24:AX:21:A:OP2	2.19	0.42
25:BA:43:G:C2	25:BA:437:U:C2	3.08	0.42
25:BA:247:G:N2	25:BA:250:G:H3'	2.35	0.42
25:BA:598:U:H2'	25:BA:599:A:H8	1.85	0.42
25:BA:713:G:H2'	25:BA:714:U:C6	2.55	0.42
25:BA:781:A:H5'	27:BC:220:VAL:HG21	2.02	0.42
25:BA:1048:A:H2'	25:BA:1049:C:H6	1.85	0.42
25:BA:1088:A:N3	25:BA:1088:A:H2'	2.35	0.42
25:BA:1177:G:C4	25:BA:1178:C:C5	3.08	0.42
25:BA:1392:A:H62	43:BU:18:GLU:HG2	1.85	0.42
25:BA:1510:G:H2'	25:BA:1511:G:C8	2.53	0.42
25:BA:1529:G:O6	25:BA:1542:U:O4	2.37	0.42
25:BA:1536:C:H4'	25:BA:1537:G:OP1	2.20	0.42
25:BA:1590:A:H2'	25:BA:1591:A:H8	1.85	0.42
25:BA:1796:U:C2	25:BA:1797:G:N7	2.88	0.42
25:BA:2071:A:H2'	25:BA:2072:C:H6	1.82	0.42
25:BA:2324:U:H3'	25:BA:2325:G:C5'	2.50	0.42
25:BA:2444:G:OP2	29:BE:63:LYS:HD2	2.20	0.42
25:BA:2885:G:O6	50:B2:29:SER:OG	2.36	0.42
25:BA:2902:C:O2	25:BA:2902:C:H2'	2.20	0.42
27:BC:71:LYS:HG2	27:BC:102:ARG:NH1	2.35	0.42
44:BV:44:LYS:NZ	44:BV:46:GLN:HG3	2.35	0.42
56:CT:17:DG:C4	56:CT:18:DC:C6	3.07	0.42
58:CC:316:GLU:CD	58:CC:316:GLU:H	2.22	0.42
58:CC:549:ASP:OD1	58:CC:550:VAL:N	2.52	0.42
1:AA:1001:C:H2'	1:AA:1002:G:H8	1.83	0.42
1:AA:1142:G:H3'	1:AA:1143:G:H8	1.85	0.42
1:AA:1152:A:H2'	1:AA:1153:G:H8	1.85	0.42
1:AA:1325:C:H2'	1:AA:1326:U:H6	1.85	0.42
5:AE:77:ASN:HB2	5:AE:82:GLN:NE2	2.34	0.42
7:AG:67:GLU:N	7:AG:70:ARG:HH21	2.17	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:AP:21:VAL:HG23	16:AP:36:VAL:CG1	2.50	0.42
25:BA:85:G:P	44:BV:7:ARG:HB2	2.60	0.42
25:BA:94:A:H8	25:BA:94:A:O5'	2.02	0.42
25:BA:297:G:OP1	44:BV:92:LYS:NZ	2.48	0.42
25:BA:1853:A:N3	25:BA:2233:U:O2'	2.51	0.42
25:BA:2367:G:C2	25:BA:2368:C:C5	3.08	0.42
25:BA:2394:C:H5"	35:BM:63:LYS:HE2	2.01	0.42
25:BA:2489:U:H2'	25:BA:2490:G:O4'	2.20	0.42
25:BA:2728:U:O2'	25:BA:2729:G:H8	2.03	0.42
25:BA:2809:A:H2'	25:BA:2810:A:C8	2.54	0.42
34:BL:79:PHE:HZ	34:BL:104:THR:HG22	1.84	0.42
55:CN:27:DA:C5	55:CN:28:DA:N7	2.88	0.42
57:CA:205:MET:SD	57:CA:213:PRO:HG3	2.60	0.42
58:CC:615:VAL:O	58:CC:615:VAL:HG13	2.20	0.42
59:CD:425:ARG:HE	59:CD:464:ASP:CG	2.21	0.42
1:AA:413:G:H1'	1:AA:428:G:N2	2.35	0.41
1:AA:435:A:H2'	1:AA:436:C:H6	1.85	0.41
1:AA:614:C:C4	1:AA:615:G:N7	2.88	0.41
1:AA:765:G:N1	1:AA:812:G:O2'	2.51	0.41
1:AA:959:A:H2	1:AA:1221:G:N3	2.18	0.41
1:AA:1031:C:H5'	1:AA:1032:G:C2	2.54	0.41
1:AA:1125:U:HO2'	1:AA:1126:U:P	2.42	0.41
1:AA:1152:A:H2'	1:AA:1153:G:C8	2.55	0.41
1:AA:1240:U:H5'	7:AG:42:ILE:HD11	2.02	0.41
3:AC:76:VAL:N	58:CC:872:TYR:OH	2.53	0.41
25:BA:313:G:H2'	25:BA:314:C:O4'	2.20	0.41
25:BA:767:U:H2'	25:BA:768:G:H8	1.84	0.41
25:BA:1692:U:HO2'	25:BA:1693:U:H2'	1.83	0.41
25:BA:1799:G:H8	27:BC:180:GLU:OE1	2.02	0.41
25:BA:2074:U:O2'	25:BA:2597:G:H1'	2.20	0.41
25:BA:2123:G:N3	25:BA:2123:G:H2'	2.33	0.41
25:BA:2131:U:H5'	25:BA:2132:U:OP1	2.20	0.41
25:BA:2148:G:C2	25:BA:2149:U:C4	3.08	0.41
30:BF:167:ARG:HH22	30:BF:179:LYS:HD3	1.85	0.41
35:BM:101:ILE:HB	35:BM:105:ILE:HG13	2.01	0.41
42:BT:31:GLN:O	42:BT:35:ILE:HG13	2.20	0.41
43:BU:12:ARG:HB3	43:BU:33:LYS:O	2.19	0.41
47:BY:18:ARG:HA	47:BY:18:ARG:HD2	1.82	0.41
57:CA:11:PRO:HB3	57:CA:31:LEU:HD21	2.02	0.41
57:CB:214:GLU:OE1	57:CB:218:ARG:NH2	2.52	0.41
58:CC:521:LEU:HA	58:CC:521:LEU:HD12	1.74	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:CC:569:ILE:HG21	58:CC:569:ILE:HD13	1.60	0.41
59:CD:1350:ASN:ND2	59:CD:1358:PRO:HD3	2.34	0.41
1:AA:83:C:O2'	1:AA:84:U:O5'	2.36	0.41
1:AA:331:G:O3'	20:AT:3:ASN:ND2	2.50	0.41
1:AA:747:A:C6	1:AA:748:G:C6	3.08	0.41
1:AA:844:G:H4'	1:AA:844:G:OP1	2.20	0.41
1:AA:866:C:N4	1:AA:873:A:H2	2.15	0.41
1:AA:936:C:C4	1:AA:937:A:N7	2.88	0.41
1:AA:993:G:H2'	1:AA:995:C:N4	2.34	0.41
1:AA:1162:C:H2'	1:AA:1163:A:C8	2.54	0.41
2:AB:70:VAL:O	2:AB:164:ILE:HG13	2.20	0.41
4:AD:95:GLU:O	4:AD:100:ASN:ND2	2.50	0.41
9:AI:25:ASN:OD1	9:AI:26:GLY:N	2.52	0.41
16:AP:48:GLU:O	16:AP:50:THR:N	2.52	0.41
19:AS:17:LYS:HD3	19:AS:17:LYS:HA	1.70	0.41
25:BA:596:U:C2	25:BA:597:G:C8	3.08	0.41
25:BA:881:G:C2	25:BA:897:C:C2	3.08	0.41
25:BA:1251:C:H4'	25:BA:1252:G:OP1	2.21	0.41
25:BA:1731:G:C2	25:BA:1733:G:C4	3.08	0.41
25:BA:1817:G:H2'	25:BA:1817:G:N3	2.35	0.41
25:BA:2011:U:OP2	42:BT:16:LYS:NZ	2.45	0.41
25:BA:2068:U:O4	25:BA:2430:A:N7	2.53	0.41
25:BA:2120:G:O2'	25:BA:2121:G:O5'	2.24	0.41
25:BA:2167:U:O4	25:BA:2170:A:H5"	2.20	0.41
25:BA:2552:OMU:HM22	25:BA:2553:G:C8	2.55	0.41
25:BA:2736:A:H2'	25:BA:2737:G:C8	2.55	0.41
25:BA:2805:C:H2'	25:BA:2806:C:C6	2.55	0.41
31:BG:164:TYR:HB2	31:BG:167:GLU:OE1	2.21	0.41
33:BK:47:HIS:CE1	33:BK:48:VAL:HG23	2.55	0.41
33:BK:118:MET:HA	33:BK:121:LYS:HZ3	1.84	0.41
57:CB:154:PRO:C	57:CB:156:SER:H	2.24	0.41
58:CC:1251:TYR:CE1	58:CC:1301:ARG:CZ	3.03	0.41
59:CD:1175:LEU:HB2	59:CD:1190:ILE:HD12	2.01	0.41
1:AA:336:A:C4	1:AA:337:G:C8	3.08	0.41
1:AA:405:U:OP1	1:AA:406:G:O2'	2.23	0.41
1:AA:512:U:H2'	1:AA:513:C:H6	1.85	0.41
1:AA:855:U:H2'	1:AA:856:C:C6	2.54	0.41
1:AA:978:A:C5	1:AA:1318:A:C6	3.08	0.41
1:AA:1012:A:H3'	1:AA:1013:G:H8	1.85	0.41
1:AA:1031:C:H4'	1:AA:1032:G:C5'	2.49	0.41
1:AA:1174:G:O2'	1:AA:1175:G:H5'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1207:2MG:HM23	1:AA:1208:C:H1'	2.01	0.41
2:AB:75:ALA:HB1	2:AB:207:ILE:HG23	2.01	0.41
7:AG:23:LEU:O	7:AG:27:VAL:HG23	2.21	0.41
24:AX:68:C:H2'	24:AX:69:G:H8	1.84	0.41
25:BA:219:A:O5'	25:BA:219:A:H8	2.03	0.41
25:BA:634:C:H2'	25:BA:635:C:C6	2.55	0.41
25:BA:902:C:H2'	25:BA:903:C:C6	2.55	0.41
25:BA:1360:G:C8	25:BA:1361:G:C8	3.08	0.41
25:BA:1680:U:H2'	25:BA:1681:G:O4'	2.20	0.41
25:BA:1735:A:H2'	25:BA:1736:U:H6	1.82	0.41
25:BA:1838:C:N4	25:BA:1898:U:H2'	2.35	0.41
25:BA:1853:A:N6	25:BA:1889:A:C5	2.88	0.41
25:BA:2114:A:N3	25:BA:2114:A:H2'	2.36	0.41
25:BA:2364:C:H2'	25:BA:2365:G:O4'	2.21	0.41
25:BA:2700:A:H2'	25:BA:2701:U:C6	2.56	0.41
25:BA:2717:C:O2'	39:BQ:94:LYS:NZ	2.24	0.41
27:BC:246:THR:O	27:BC:248:TRP:N	2.53	0.41
31:BG:154:PRO:HA	31:BG:160:LYS:O	2.21	0.41
33:BK:23:LYS:HE3	33:BK:23:LYS:HB2	1.65	0.41
35:BM:46:VAL:HG21	35:BM:50:PHE:CD2	2.54	0.41
37:BO:57:THR:HB	37:BO:62:ASN:ND2	2.35	0.41
42:BT:67:ASP:N	42:BT:67:ASP:OD1	2.53	0.41
46:BX:10:THR:O	46:BX:10:THR:OG1	2.20	0.41
51:B3:7:GLU:HG2	51:B3:8:LYS:H	1.85	0.41
56:CT:20:DC:O2	56:CT:21:DG:C8	2.73	0.41
57:CA:180:VAL:HG12	57:CA:207:THR:HG22	2.02	0.41
57:CA:188:GLU:O	57:CA:199:ASP:HA	2.20	0.41
58:CC:176:ILE:HG21	58:CC:176:ILE:HD13	1.67	0.41
58:CC:1176:LEU:HD23	58:CC:1176:LEU:HA	1.79	0.41
59:CD:416:ILE:HD13	59:CD:416:ILE:HG21	1.58	0.41
59:CD:554:GLU:OE1	59:CD:588:PRO:HA	2.20	0.41
1:AA:59:A:H3'	1:AA:331:G:H22	1.85	0.41
1:AA:393:A:C4	1:AA:394:G:C8	3.09	0.41
1:AA:1004:A:O2'	1:AA:1036:A:N1	2.46	0.41
1:AA:1408:A:H2'	1:AA:1409:C:H6	1.86	0.41
2:AB:111:ILE:HD13	2:AB:111:ILE:HA	1.93	0.41
2:AB:188:ASP:OD1	2:AB:189:THR:HG22	2.19	0.41
3:AC:147:LYS:HE3	3:AC:147:LYS:N	2.36	0.41
13:AM:81:MET:HB3	25:BA:889:C:H42	1.84	0.41
20:AT:71:LYS:HD2	20:AT:74:ARG:HH22	1.85	0.41
22:AV:43:G:C6	22:AV:44:C:C4	3.07	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:AX:34:G:H2'	24:AX:35:A:C8	2.55	0.41
25:BA:4:U:H2'	25:BA:5:A:C8	2.54	0.41
25:BA:85:G:OP2	44:BV:7:ARG:HB2	2.20	0.41
25:BA:126:A:O5'	52:B4:19:ARG:HG3	2.19	0.41
25:BA:151:C:C2	25:BA:152:A:C8	3.09	0.41
25:BA:387:U:H4'	25:BA:388:G:O4'	2.20	0.41
25:BA:417:C:H2'	25:BA:418:C:C6	2.55	0.41
25:BA:634:C:H2'	25:BA:635:C:H6	1.85	0.41
25:BA:929:U:H2'	25:BA:930:G:O4'	2.20	0.41
25:BA:1118:C:H2'	25:BA:1119:U:O4'	2.21	0.41
25:BA:1600:C:N3	25:BA:1601:G:N7	2.68	0.41
25:BA:2052:A:H4'	28:BD:148:GLN:O	2.21	0.41
25:BA:2128:G:H1'	25:BA:2174:C:H5'	2.01	0.41
25:BA:2236:U:H2'	25:BA:2237:G:O4'	2.21	0.41
25:BA:2507:C:H6	25:BA:2507:C:O5'	2.03	0.41
30:BF:100:PHE:O	30:BF:104:ILE:HG12	2.20	0.41
59:CD:416:ILE:O	59:CD:418:GLU:N	2.53	0.41
59:CD:1310:THR:HG22	59:CD:1310:THR:O	2.20	0.41
1:AA:390:U:C2	1:AA:391:G:C8	3.08	0.41
1:AA:470:C:H2'	1:AA:471:U:H6	1.86	0.41
1:AA:825:A:C4	1:AA:826:C:C5	3.08	0.41
1:AA:1057:G:C6	1:AA:1204:A:C6	3.08	0.41
1:AA:1143:G:N3	1:AA:1144:G:C8	2.89	0.41
2:AB:15:HIS:HB2	2:AB:40:ILE:HG23	2.01	0.41
2:AB:87:CYS:SG	2:AB:222:ARG:HG3	2.60	0.41
6:AF:19:PRO:HA	6:AF:22:ILE:HD12	2.02	0.41
9:AI:34:SER:HB3	9:AI:37:GLN:CG	2.50	0.41
9:AI:91:ASP:OD2	9:AI:94:LEU:HG	2.20	0.41
10:AJ:42:LEU:HD23	10:AJ:42:LEU:HA	1.81	0.41
11:AK:50:SER:HA	11:AK:69:ARG:CZ	2.50	0.41
11:AK:61:PHE:O	11:AK:65:VAL:HG13	2.20	0.41
13:AM:3:ARG:O	13:AM:57:ARG:NH2	2.41	0.41
14:AN:73:PHE:CE2	14:AN:75:ARG:HA	2.55	0.41
16:AP:14:ARG:HB3	16:AP:14:ARG:HH11	1.85	0.41
19:AS:11:ILE:HD13	19:AS:16:LEU:HD13	2.02	0.41
25:BA:381:G:C2	25:BA:394:C:N3	2.89	0.41
25:BA:1572:A:H2'	25:BA:1573:G:C8	2.55	0.41
25:BA:2204:G:O5'	27:BC:150:LYS:NZ	2.43	0.41
25:BA:2507:C:H2'	25:BA:2508:G:O4'	2.20	0.41
25:BA:2605:PSU:C4	25:BA:2606:C:C5	3.08	0.41
25:BA:2671:G:H2'	25:BA:2672:U:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:BC:43:ARG:NH2	27:BC:49:ILE:HD11	2.35	0.41
47:BY:31:PRO:HG2	47:BY:33:LEU:HG	2.02	0.41
55:CN:19:DA:OP1	61:CF:89:VAL:N	2.53	0.41
59:CD:162:GLU:HG3	61:CF:95:GLY:HA3	2.03	0.41
59:CD:201:LEU:HD23	59:CD:221:ILE:HG22	2.03	0.41
59:CD:1342:ASP:C	59:CD:1342:ASP:OD1	2.58	0.41
1:AA:91:U:H2'	1:AA:92:U:C6	2.56	0.41
1:AA:189:A:H8	1:AA:189:A:OP2	2.03	0.41
1:AA:332:G:H2'	1:AA:333:U:H6	1.85	0.41
1:AA:334:C:H2'	1:AA:335:C:H6	1.86	0.41
1:AA:493:A:H2'	1:AA:494:G:H8	1.85	0.41
1:AA:828:U:C4	1:AA:859:G:C4	3.09	0.41
1:AA:857:C:H2'	1:AA:858:G:O4'	2.21	0.41
1:AA:1246:A:N6	1:AA:1292:G:O6	2.54	0.41
1:AA:1408:A:H2'	1:AA:1409:C:C6	2.56	0.41
1:AA:1433:A:C6	1:AA:1434:A:C6	3.08	0.41
2:AB:6:MET:HA	2:AB:9:MET:HG3	2.03	0.41
2:AB:82:ASP:OD1	2:AB:83:ALA:N	2.53	0.41
18:AR:42:SER:HB2	18:AR:52:GLN:HG2	2.03	0.41
23:AW:2:G:C6	23:AW:72:A:C2	3.09	0.41
24:AX:25:C:H2'	24:AX:26:A:H8	1.86	0.41
25:BA:154:U:H2'	25:BA:155:A:H8	1.86	0.41
25:BA:161:A:OP2	25:BA:162:U:O2'	2.32	0.41
25:BA:176:A:O2'	25:BA:177:G:H5'	2.20	0.41
25:BA:278:A:H2	25:BA:361:G:N3	2.18	0.41
25:BA:405:U:O2'	25:BA:406:G:H5'	2.21	0.41
25:BA:628:G:C6	25:BA:636:G:C2	3.09	0.41
25:BA:712:G:C5	25:BA:713:G:C8	3.09	0.41
25:BA:722:A:H2'	25:BA:723:C:C6	2.56	0.41
25:BA:1295:C:C2	25:BA:1296:G:C8	3.09	0.41
25:BA:1604:C:H2'	25:BA:1605:C:C6	2.55	0.41
25:BA:1614:A:N6	42:BT:92:ARG:O	2.31	0.41
25:BA:1668:A:H4'	25:BA:1669:A:O5'	2.21	0.41
25:BA:1720:U:H2'	25:BA:1721:G:O4'	2.20	0.41
25:BA:2171:A:H4'	25:BA:2172:U:OP1	2.20	0.41
25:BA:2303:G:H2'	25:BA:2304:G:C8	2.55	0.41
25:BA:2365:G:N7	53:B5:39:LYS:NZ	2.49	0.41
25:BA:2787:C:H2'	25:BA:2788:C:H6	1.86	0.41
26:BB:81:G:O6	26:BB:95:U:C2	2.72	0.41
33:BK:49:ASP:OD1	33:BK:118:MET:HG2	2.21	0.41
33:BK:118:MET:HA	33:BK:121:LYS:NZ	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:BS:41:ILE:HD11	41:BS:54:VAL:HG11	2.02	0.41
43:BU:64:LYS:HA	43:BU:79:ASP:OD1	2.21	0.41
44:BV:6:ARG:HE	44:BV:6:ARG:HB3	1.55	0.41
56:CT:4:DT:H2"	56:CT:5:DG:C8	2.55	0.41
59:CD:1314:LEU:HA	59:CD:1314:LEU:HD23	1.76	0.41
1:AA:60:A:N7	1:AA:108:G:O2'	2.46	0.41
1:AA:75:G:H2'	1:AA:76:G:O5'	2.21	0.41
1:AA:80:C:C2'	1:AA:81:A:H5'	2.51	0.41
1:AA:146:G:N3	1:AA:147:G:C8	2.89	0.41
1:AA:374:A:H2'	1:AA:375:U:C6	2.56	0.41
1:AA:1070:U:H2'	1:AA:1071:C:C6	2.56	0.41
1:AA:1284:C:OP2	1:AA:1285:A:O2'	2.35	0.41
3:AC:113:ALA:CB	3:AC:185:ASN:HB2	2.51	0.41
7:AG:56:LYS:HD2	7:AG:60:GLU:HG3	2.02	0.41
7:AG:67:GLU:HG2	7:AG:70:ARG:NH2	2.36	0.41
8:AH:55:THR:OG1	8:AH:56:LYS:HG3	2.20	0.41
11:AK:53:ARG:HA	11:AK:53:ARG:HE	1.85	0.41
15:AO:71:LYS:HD2	15:AO:78:TYR:CE2	2.56	0.41
19:AS:53:ASN:HD21	19:AS:56:GLN:NE2	2.19	0.41
25:BA:27:G:N1	25:BA:512:G:H1'	2.35	0.41
25:BA:685:A:C8	25:BA:773:U:C4	3.09	0.41
25:BA:1056:G:N2	25:BA:1104:C:C4	2.89	0.41
25:BA:1443:U:H2'	25:BA:1444:G:C8	2.53	0.41
25:BA:1513:U:H2'	25:BA:1514:G:O4'	2.20	0.41
25:BA:1723:G:H3'	25:BA:1724:G:H8	1.84	0.41
25:BA:1906:G:H2'	25:BA:1907:G:O4'	2.21	0.41
25:BA:1934:C:C2	25:BA:1935:G:C8	3.08	0.41
25:BA:2129:C:H2'	25:BA:2130:U:C6	2.56	0.41
25:BA:2141:G:H2'	25:BA:2142:A:O4'	2.19	0.41
25:BA:2377:A:H2'	25:BA:2378:A:C8	2.56	0.41
25:BA:2390:U:O2'	25:BA:2391:G:H5'	2.21	0.41
26:BB:50:A:C6	26:BB:51:G:C5	3.08	0.41
28:BD:42:ASN:ND2	28:BD:43:ASP:OD1	2.43	0.41
30:BF:23:ASN:OD1	30:BF:23:ASN:N	2.52	0.41
30:BF:161:LYS:HE3	30:BF:161:LYS:HB3	1.92	0.41
33:BK:20:ALA:HB1	33:BK:62:VAL:HG23	2.02	0.41
42:BT:84:ARG:O	42:BT:96:ILE:N	2.46	0.41
57:CA:102:LEU:HD23	57:CA:102:LEU:C	2.41	0.41
58:CC:456:VAL:H	58:CC:456:VAL:HG23	1.53	0.41
58:CC:1339:LEU:HD22	59:CD:17:PHE:CG	2.55	0.41
59:CD:572:THR:HG23	59:CD:573:THR:N	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:CD:641:ILE:HD12	59:CD:641:ILE:HA	1.70	0.41
59:CD:1146:GLU:OE2	59:CD:1148:ARG:NE	2.50	0.41
1:AA:108:G:H5'	1:AA:109:A:C5'	2.45	0.41
1:AA:120:A:C5	1:AA:122:G:C6	3.09	0.41
1:AA:469:C:H2'	1:AA:470:C:C6	2.56	0.41
1:AA:568:G:H2'	1:AA:569:C:C6	2.55	0.41
1:AA:608:A:C5	1:AA:609:A:C8	3.09	0.41
1:AA:654:G:H2'	1:AA:655:A:O4'	2.21	0.41
1:AA:832:G:C6	1:AA:833:G:N7	2.89	0.41
1:AA:1102:A:H2'	1:AA:1103:C:C6	2.56	0.41
1:AA:1419:G:C6	1:AA:1482:G:C2	3.08	0.41
1:AA:1459:G:H2'	1:AA:1460:C:C6	2.56	0.41
1:AA:1496:C:H2'	1:AA:1497:G:O4'	2.21	0.41
4:AD:47:ARG:HE	4:AD:47:ARG:N	2.17	0.41
13:AM:16:VAL:HG21	13:AM:31:LYS:HG3	2.03	0.41
13:AM:54:ASP:OD1	13:AM:57:ARG:NH1	2.52	0.41
25:BA:78:U:H2'	25:BA:79:C:C6	2.55	0.41
25:BA:239:C:H1'	25:BA:621:A:H2	1.86	0.41
25:BA:1048:A:C5	25:BA:1111:A:N1	2.89	0.41
25:BA:1106:G:C2	25:BA:1107:G:N7	2.89	0.41
25:BA:1203:U:H5'	35:BM:3:LEU:HD12	2.03	0.41
25:BA:1230:A:H2'	25:BA:1231:U:O4'	2.20	0.41
25:BA:1262:A:C5	25:BA:1263:U:C5	3.08	0.41
25:BA:1869:G:C2	25:BA:1873:G:C6	3.09	0.41
25:BA:2039:U:OP1	33:BK:111:LYS:NZ	2.35	0.41
25:BA:2725:A:C4	25:BA:2727:A:C8	3.09	0.41
25:BA:2726:A:O2'	25:BA:2727:A:O5'	2.34	0.41
25:BA:2843:G:H2'	25:BA:2844:G:C8	2.55	0.41
25:BA:2852:G:H2'	25:BA:2853:C:O4'	2.20	0.41
26:BB:3:C:H2'	26:BB:4:C:H6	1.85	0.41
28:BD:142:VAL:HB	28:BD:143:PRO:HD2	2.03	0.41
39:BQ:60:THR:OG1	39:BQ:73:VAL:HG22	2.20	0.41
40:BR:17:ILE:HA	40:BR:17:ILE:HD13	1.68	0.41
47:BY:68:LEU:HD23	47:BY:68:LEU:HA	1.90	0.41
55:CN:37:DG:H2"	55:CN:38:DA:OP2	2.19	0.41
57:CB:66:HIS:CE1	57:CB:68:TYR:HD1	2.39	0.41
58:CC:166:SER:HB2	59:CD:1151:LYS:HE3	2.03	0.41
58:CC:217:THR:HG23	58:CC:351:LEU:HD21	2.02	0.41
58:CC:1326:LEU:HA	58:CC:1326:LEU:HD12	1.91	0.41
58:CC:1336:ASN:HD22	58:CC:1336:ASN:C	2.22	0.41
58:CC:1336:ASN:HB2	59:CD:25:ALA:HB2	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:CD:80:HIS:O	59:CD:83:VAL:HG22	2.21	0.41
59:CD:789:LYS:HB3	59:CD:789:LYS:HE2	1.62	0.41
1:AA:197:A:H4'	1:AA:198:G:O5'	2.21	0.41
1:AA:217:C:H2'	1:AA:218:U:C6	2.56	0.41
1:AA:311:C:OP1	16:AP:31:ARG:NH1	2.54	0.41
1:AA:740:U:H2'	1:AA:741:G:H8	1.85	0.41
1:AA:1121:U:H2'	1:AA:1122:U:H6	1.85	0.41
1:AA:1407:5MC:H2'	1:AA:1408:A:H8	1.86	0.41
1:AA:1434:A:H2'	1:AA:1435:G:O4'	2.20	0.41
2:AB:43:LEU:HA	2:AB:46:THR:HB	2.03	0.41
2:AB:74:ARG:CZ	2:AB:74:ARG:HA	2.51	0.41
4:AD:40:GLN:HE21	4:AD:40:GLN:HA	1.84	0.41
4:AD:91:LEU:HD13	4:AD:91:LEU:HA	1.85	0.41
8:AH:30:SER:OG	8:AH:31:LYS:N	2.54	0.41
9:AI:55:VAL:O	9:AI:57:MET:N	2.46	0.41
19:AS:19:VAL:O	19:AS:23:VAL:HG23	2.20	0.41
25:BA:95:A:H2'	25:BA:96:C:O4'	2.20	0.41
25:BA:240:C:O5'	25:BA:240:C:H6	2.03	0.41
25:BA:347:A:H2'	25:BA:348:A:C8	2.56	0.41
25:BA:581:C:H2'	25:BA:582:A:H8	1.86	0.41
25:BA:608:A:H2'	25:BA:609:A:C8	2.56	0.41
25:BA:678:C:H2'	25:BA:679:C:H6	1.86	0.41
25:BA:749:A:O2'	25:BA:1618:6MZ:O1P	2.27	0.41
25:BA:1068:G:N3	25:BA:1095:A:O2'	2.46	0.41
25:BA:1528:A:C4	25:BA:1544:A:N6	2.88	0.41
25:BA:1584:U:H4'	25:BA:1585:C:O4'	2.20	0.41
25:BA:1587:G:N3	25:BA:1588:G:C8	2.89	0.41
25:BA:1678:A:C4	25:BA:1679:A:C8	3.09	0.41
25:BA:1992:G:N2	25:BA:1996:C:O2'	2.53	0.41
25:BA:2037:A:C6	25:BA:2038:G:C6	3.08	0.41
25:BA:2079:U:H2'	25:BA:2080:A:O4'	2.21	0.41
25:BA:2147:A:H2'	25:BA:2148:G:O4'	2.21	0.41
25:BA:2357:G:N2	25:BA:2360:G:OP2	2.52	0.41
25:BA:2379:G:H2'	25:BA:2380:C:C6	2.55	0.41
25:BA:2516:A:O2'	25:BA:2517:C:H5'	2.21	0.41
25:BA:2590:A:H2'	25:BA:2591:C:H6	1.86	0.41
25:BA:2662:A:H8	25:BA:2662:A:O5'	2.03	0.41
25:BA:2841:C:N3	25:BA:2877:G:N1	2.68	0.41
25:BA:2863:C:H2'	25:BA:2864:G:C8	2.54	0.41
25:BA:2901:C:O2	25:BA:2901:C:H2'	2.19	0.41
26:BB:33:G:H2'	26:BB:34:A:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:BD:114:LYS:O	28:BD:167:ASN:N	2.33	0.41
35:BM:123:ARG:HA	35:BM:143:GLU:HB3	2.02	0.41
44:BV:51:ALA:C	44:BV:53:ASN:H	2.24	0.41
44:BV:96:PHE:O	44:BV:100:SER:HA	2.21	0.41
45:BW:7:GLU:O	45:BW:40:ILE:HA	2.21	0.41
45:BW:80:HIS:CD2	45:BW:81:PRO:HD2	2.55	0.41
51:B3:22:THR:HG23	53:B5:34:THR:HG23	2.02	0.41
56:CT:20:DC:C2	56:CT:21:DG:N7	2.88	0.41
57:CA:58:GLU:OE1	57:CA:170:ARG:HD3	2.21	0.41
57:CB:66:HIS:O	57:CB:66:HIS:ND1	2.44	0.41
58:CC:97:ARG:HB3	58:CC:121:GLU:HB2	2.03	0.41
58:CC:1248:THR:HG22	58:CC:1249:GLY:N	2.35	0.41
58:CC:1268:GLN:OE1	59:CD:352:ARG:NH1	2.53	0.41
58:CC:1330:ILE:HD13	58:CC:1330:ILE:HG21	1.83	0.41
59:CD:541:LEU:HA	59:CD:541:LEU:HD23	1.84	0.41
59:CD:601:ILE:HG21	59:CD:601:ILE:HD13	1.72	0.41
59:CD:826:ILE:HG23	59:CD:831:VAL:HG12	2.02	0.41
59:CD:1044:GLN:O	59:CD:1067:ARG:HG2	2.21	0.41
59:CD:1050:THR:C	59:CD:1057:SER:HB3	2.41	0.41
1:AA:542:G:H2'	1:AA:543:U:C6	2.55	0.41
1:AA:901:A:C5	1:AA:902:G:H1'	2.56	0.41
1:AA:946:A:C2	1:AA:947:G:C5	3.08	0.41
2:AB:85:LEU:HD23	2:AB:85:LEU:HA	1.82	0.41
14:AN:20:TYR:CD2	14:AN:51:LEU:HD22	2.56	0.41
16:AP:57:ILE:O	16:AP:61:VAL:HG23	2.21	0.41
18:AR:73:ARG:NH1	18:AR:73:ARG:HA	2.36	0.41
23:AW:51:C:C2	23:AW:52:G:C8	3.09	0.41
25:BA:24:G:H2'	25:BA:25:U:H6	1.86	0.41
25:BA:869:G:C5	25:BA:870:U:C5	3.09	0.41
25:BA:1171:G:C2'	25:BA:1172:C:H5'	2.52	0.41
25:BA:1321:A:C4	25:BA:1322:A:C8	3.09	0.41
25:BA:2113:U:H2'	25:BA:2114:A:O4'	2.20	0.41
25:BA:2195:U:H2'	25:BA:2196:C:H6	1.86	0.41
25:BA:2272:U:H5"	25:BA:2273:A:OP1	2.21	0.41
25:BA:2320:U:H2'	25:BA:2320:U:OP2	2.21	0.41
25:BA:2505:G:O2'	25:BA:2506:U:H6	2.04	0.41
25:BA:2804:U:C2	25:BA:2805:C:C5	3.09	0.41
25:BA:2856:A:C6	25:BA:2862:G:N1	2.89	0.41
26:BB:35:C:H2'	26:BB:36:C:O4'	2.21	0.41
26:BB:73:A:N3	26:BB:73:A:H2'	2.35	0.41
30:BF:14:LYS:O	30:BF:18:THR:OG1	2.39	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:BQ:27:GLU:HB2	39:BQ:44:GLU:HG3	2.03	0.41
40:BR:92:ARG:HG2	40:BR:92:ARG:H	1.48	0.41
45:BW:27:PRO:O	45:BW:88:HIS:HA	2.20	0.41
51:B3:3:LYS:HE3	51:B3:3:LYS:HB3	1.86	0.41
51:B3:33:LYS:HA	51:B3:51:GLU:OE1	2.21	0.41
55:CN:28:DA:C4	55:CN:29:DG:N7	2.89	0.41
58:CC:150:HIS:O	58:CC:150:HIS:ND1	2.54	0.41
58:CC:678:ARG:NH1	58:CC:681:MET:SD	2.94	0.41
59:CD:699:ASP:HA	59:CD:702:GLN:HG2	2.03	0.41
1:AA:18:C:H4'	1:AA:1078:U:H3	1.85	0.40
1:AA:562:U:C5	1:AA:884:U:C6	3.09	0.40
1:AA:1002:G:C4	1:AA:1003:G:C8	3.09	0.40
1:AA:1099:G:O3'	21:AU:69:ARG:NH1	2.52	0.40
1:AA:1421:G:C6	1:AA:1480:A:N1	2.89	0.40
1:AA:1464:U:H2'	1:AA:1465:A:C8	2.49	0.40
12:AL:110:ARG:HB2	12:AL:119:VAL:HG21	2.03	0.40
19:AS:50:ALA:HA	19:AS:59:PRO:HA	2.03	0.40
20:AT:68:HIS:HD1	20:AT:70:ASN:H	1.69	0.40
25:BA:597:G:C6	25:BA:661:A:C6	3.09	0.40
25:BA:709:U:H2'	25:BA:710:U:H6	1.85	0.40
25:BA:1062:G:C6	25:BA:1077:A:N6	2.89	0.40
25:BA:1146:C:C2	25:BA:1147:A:C8	3.09	0.40
25:BA:1202:G:C6	25:BA:1244:A:C6	3.08	0.40
25:BA:1204:A:C4	25:BA:1206:G:C6	3.09	0.40
25:BA:1473:G:C5	25:BA:1474:U:C5	3.09	0.40
25:BA:1535:A:OP2	25:BA:1536:C:H5	2.04	0.40
25:BA:1540:G:C6	25:BA:1541:C:C4	3.08	0.40
25:BA:1571:A:H2'	25:BA:1572:A:C8	2.56	0.40
25:BA:1753:G:C2	25:BA:1756:G:C2	3.09	0.40
25:BA:1910:G:C2	25:BA:1921:G:C2	3.09	0.40
25:BA:2284:A:OP2	51:B3:6:ARG:HB3	2.21	0.40
25:BA:2327:A:H3'	25:BA:2328:A:C8	2.56	0.40
25:BA:2814:A:H2'	25:BA:2815:C:H6	1.86	0.40
26:BB:51:G:C6	26:BB:52:A:C6	3.09	0.40
30:BF:57:LEU:HA	30:BF:57:LEU:HD12	1.90	0.40
38:BP:63:LYS:HA	38:BP:63:LYS:HD2	1.91	0.40
49:B1:32:ILE:HG22	49:B1:33:GLY:H	1.87	0.40
58:CC:549:ASP:OD2	59:CD:750:PRO:HB3	2.21	0.40
58:CC:675:ASP:OD1	58:CC:676:ALA:N	2.54	0.40
58:CC:746:ALA:HB2	58:CC:967:LEU:HD21	2.02	0.40
58:CC:817:LEU:HD12	58:CC:817:LEU:HA	1.70	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:CD:441:LEU:N	59:CD:441:LEU:CD2	2.84	0.40
59:CD:472:LEU:HD23	59:CD:472:LEU:HA	1.80	0.40
1:AA:131:A:C6	1:AA:232:G:C6	3.09	0.40
1:AA:201:G:N1	1:AA:217:C:N3	2.69	0.40
1:AA:1010:U:H2'	1:AA:1011:C:H6	1.86	0.40
1:AA:1057:G:H2'	1:AA:1058:G:O4'	2.21	0.40
1:AA:1134:G:H2'	1:AA:1135:U:C6	2.56	0.40
1:AA:1188:A:H2'	1:AA:1189:U:O4'	2.20	0.40
1:AA:1239:A:C2	1:AA:1297:G:C2	3.09	0.40
2:AB:57:LEU:HD23	2:AB:217:VAL:HG13	2.02	0.40
2:AB:70:VAL:HB	2:AB:163:VAL:HG22	2.03	0.40
4:AD:188:ARG:HA	4:AD:188:ARG:HD2	1.92	0.40
6:AF:2:ARG:HB2	6:AF:4:TYR:CE1	2.57	0.40
21:AU:51:SER:O	21:AU:54:LYS:HG2	2.20	0.40
24:AX:73:A:H8	24:AX:73:A:OP2	2.03	0.40
25:BA:17:G:H2'	25:BA:18:U:H6	1.86	0.40
25:BA:54:G:H2'	25:BA:55:G:O4'	2.22	0.40
25:BA:1257:C:O5'	25:BA:1257:C:H6	2.04	0.40
25:BA:1410:G:H2'	25:BA:1411:U:H6	1.84	0.40
25:BA:1444:G:C6	25:BA:1548:A:C6	3.09	0.40
25:BA:2056:G:C2	25:BA:2057:G:C8	3.10	0.40
25:BA:2110:G:H8	25:BA:2110:G:OP2	2.04	0.40
25:BA:2162:G:OP1	25:BA:2171:A:C6	2.75	0.40
25:BA:2298:A:N1	25:BA:2321:U:C4	2.89	0.40
25:BA:2677:G:H2'	25:BA:2678:C:H6	1.85	0.40
25:BA:2753:A:H2'	25:BA:2754:U:O4'	2.21	0.40
25:BA:2807:U:O2'	25:BA:2808:G:H5'	2.21	0.40
26:BB:2:G:C6	26:BB:3:C:N4	2.89	0.40
26:BB:116:G:H2'	26:BB:117:G:C8	2.56	0.40
27:BC:34:LEU:HA	27:BC:34:LEU:HD23	1.75	0.40
28:BD:26:VAL:HG22	28:BD:188:LEU:HD22	2.03	0.40
31:BG:18:LYS:HD2	31:BG:18:LYS:HA	1.85	0.40
33:BK:51:GLY:O	33:BK:121:LYS:HE3	2.21	0.40
35:BM:79:LEU:HD12	35:BM:79:LEU:HA	1.92	0.40
38:BP:16:ARG:HA	38:BP:16:ARG:HD2	1.93	0.40
39:BQ:92:VAL:HG21	39:BQ:97:LEU:HD21	2.03	0.40
41:BS:14:VAL:HG22	41:BS:15:SER:O	2.22	0.40
57:CA:98:VAL:HG22	57:CA:99:ILE:N	2.37	0.40
58:CC:529:ARG:HH11	58:CC:529:ARG:HD3	1.71	0.40
59:CD:157:GLN:CG	59:CD:158:GLN:H	2.34	0.40
59:CD:421:VAL:O	59:CD:421:VAL:HG23	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:CD:1325:PHE:C	59:CD:1325:PHE:CD1	2.94	0.40
1:AA:343:U:H2'	1:AA:345:C:H5	1.85	0.40
1:AA:445:G:H2'	1:AA:446:G:C8	2.56	0.40
1:AA:996:A:H2'	1:AA:997:U:C6	2.56	0.40
2:AB:66:LYS:HB3	2:AB:90:PHE:HE2	1.87	0.40
3:AC:14:ILE:H	3:AC:14:ILE:HG12	1.64	0.40
24:AX:1:G:O6	24:AX:73:A:N6	2.55	0.40
25:BA:356:G:C6	25:BA:357:C:C4	3.09	0.40
25:BA:511:U:H2'	25:BA:512:G:H5'	2.02	0.40
25:BA:610:C:C2	25:BA:611:C:C5	3.09	0.40
25:BA:745:1MG:HN21	25:BA:745:1MG:HM11	1.79	0.40
25:BA:921:C:H2'	25:BA:922:C:H6	1.85	0.40
25:BA:1012:U:P	40:BR:70:ARG:HH12	2.44	0.40
25:BA:1029:A:H2'	25:BA:1030:C:O4'	2.21	0.40
25:BA:1398:C:H2'	25:BA:1399:C:H6	1.87	0.40
25:BA:1485:U:H2'	25:BA:1486:U:H6	1.87	0.40
25:BA:1529:G:H3'	25:BA:1530:G:H8	1.86	0.40
25:BA:1707:G:C5	25:BA:1756:G:C6	3.09	0.40
25:BA:1857:G:C2	25:BA:1884:G:N3	2.89	0.40
25:BA:2897:U:H2'	25:BA:2898:U:O4'	2.22	0.40
26:BB:117:G:H2'	26:BB:118:C:C6	2.56	0.40
27:BC:252:THR:HG22	27:BC:253:LYS:H	1.85	0.40
34:BL:105:ARG:HD3	34:BL:122:VAL:HG12	2.04	0.40
36:BN:73:ILE:HD13	36:BN:73:ILE:HA	1.87	0.40
40:BR:80:ILE:HD13	40:BR:80:ILE:HA	1.77	0.40
55:CN:27:DA:C4	55:CN:28:DA:N7	2.89	0.40
58:CC:145:ILE:HD12	58:CC:145:ILE:N	2.36	0.40
58:CC:1101:LEU:HA	58:CC:1101:LEU:HD23	1.77	0.40
58:CC:1339:LEU:HD23	58:CC:1339:LEU:HA	1.87	0.40
59:CD:290:ILE:HD12	59:CD:290:ILE:H	1.86	0.40
59:CD:355:ILE:HG21	59:CD:355:ILE:HD13	1.78	0.40
1:AA:355:C:C4	1:AA:356:A:N7	2.89	0.40
1:AA:469:C:H2'	1:AA:470:C:O4'	2.22	0.40
1:AA:476:U:C4	1:AA:477:C:N4	2.89	0.40
1:AA:523:A:N6	12:AL:89:D2T:OD1	2.41	0.40
1:AA:1087:G:C6	1:AA:1099:G:C6	3.09	0.40
1:AA:1207:2MG:C5	1:AA:1208:C:C5	3.09	0.40
1:AA:1238:A:N3	1:AA:1238:A:H2'	2.36	0.40
1:AA:1256:A:O2'	1:AA:1278:G:O6	2.29	0.40
1:AA:1313:U:H2'	1:AA:1314:C:C6	2.57	0.40
1:AA:1418:A:N6	1:AA:1482:G:O2'	2.50	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1498:UR3:O5'	1:AA:1498:UR3:H6	2.22	0.40
4:AD:47:ARG:H	4:AD:47:ARG:NE	2.19	0.40
5:AE:64:MET:O	5:AE:68:ARG:HG3	2.21	0.40
7:AG:66:LEU:C	7:AG:70:ARG:HE	2.23	0.40
16:AP:8:ARG:HA	16:AP:17:TYR:CD1	2.55	0.40
25:BA:271:G:N2	25:BA:367:G:H1'	2.36	0.40
25:BA:322:A:P	29:BE:163:ASN:HD21	2.37	0.40
25:BA:324:A:OP2	25:BA:1205:A:N6	2.55	0.40
25:BA:332:A:C5	25:BA:335:C:C4	3.09	0.40
25:BA:1053:C:H2'	25:BA:1054:A:C8	2.57	0.40
25:BA:1167:C:N3	25:BA:1168:G:C8	2.89	0.40
25:BA:1202:G:O6	25:BA:1244:A:N6	2.54	0.40
25:BA:1482:G:C2	25:BA:1483:G:C5	3.10	0.40
25:BA:1712:U:H3'	25:BA:1713:A:H2'	2.04	0.40
25:BA:1741:C:C4	25:BA:1742:U:C5	3.09	0.40
25:BA:1987:A:C2	25:BA:1988:G:C5	3.09	0.40
25:BA:2047:C:H2'	25:BA:2048:G:H8	1.86	0.40
25:BA:2455:G:C4	25:BA:2456:C:C5	3.10	0.40
25:BA:2756:U:H1'	25:BA:2757:A:H5"	2.04	0.40
26:BB:71:C:H2'	26:BB:72:G:O4'	2.22	0.40
30:BF:73:SER:HB2	30:BF:81:GLN:N	2.36	0.40
41:BS:24:LYS:HA	41:BS:94:THR:OG1	2.21	0.40
58:CC:204:LEU:HA	58:CC:204:LEU:HD23	1.73	0.40
58:CC:660:VAL:HG13	58:CC:661:VAL:HG13	2.02	0.40
58:CC:1298:VAL:H	58:CC:1298:VAL:HG23	1.53	0.40
59:CD:1349:GLU:H	59:CD:1349:GLU:CD	2.24	0.40
1:AA:21:G:H2'	1:AA:22:G:C8	2.57	0.40
1:AA:216:U:H2'	1:AA:217:C:C6	2.56	0.40
1:AA:373:A:H61	1:AA:391:G:H1'	1.85	0.40
1:AA:431:A:C4	1:AA:432:A:C8	3.10	0.40
1:AA:456:A:H2'	1:AA:457:G:C1'	2.52	0.40
1:AA:948:C:H2'	1:AA:949:A:H8	1.86	0.40
1:AA:1012:A:H2'	1:AA:1013:G:O4'	2.21	0.40
1:AA:1027:C:C2	1:AA:1028:C:C5	3.09	0.40
1:AA:1171:A:H2'	1:AA:1172:C:C6	2.56	0.40
1:AA:1216:A:H2'	1:AA:1217:C:H6	1.86	0.40
1:AA:1221:G:OP1	1:AA:1321:U:N3	2.40	0.40
1:AA:1228:C:OP1	13:AM:107:ARG:NH2	2.54	0.40
1:AA:1288:A:C6	1:AA:1289:A:C5	3.09	0.40
1:AA:1415:G:C6	1:AA:1486:G:C6	3.09	0.40
3:AC:79:LYS:CE	58:CC:944:ARG:CA	2.99	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:AC:90:VAL:HA	3:AC:93:ASP:OD2	2.22	0.40
17:AQ:44:LEU:HD23	17:AQ:44:LEU:HA	1.93	0.40
19:AS:47:LEU:O	19:AS:62:VAL:HG23	2.22	0.40
23:AW:49:G:C6	23:AW:50:U:C4	3.10	0.40
25:BA:359:G:C5	25:BA:360:U:C4	3.09	0.40
25:BA:782:A:C8	27:BC:220:VAL:HG11	2.56	0.40
25:BA:1062:G:H3'	25:BA:1063:G:H8	1.87	0.40
25:BA:1103:A:H3'	25:BA:1104:C:C6	2.57	0.40
25:BA:1133:A:H4'	25:BA:1134:A:H5"	2.04	0.40
25:BA:1172:C:O2	25:BA:1173:U:O2'	2.37	0.40
25:BA:1232:G:C5	25:BA:1233:C:C5	3.10	0.40
25:BA:1858:A:OP2	25:BA:1858:A:H8	2.05	0.40
25:BA:1887:C:H2'	25:BA:1888:G:O4'	2.21	0.40
25:BA:2135:A:H8	25:BA:2156:G:H21	1.69	0.40
25:BA:2636:C:C2	25:BA:2637:U:C5	3.10	0.40
31:BG:52:PHE:CE2	31:BG:69:ARG:HA	2.56	0.40
55:CN:18:DG:C6	61:CF:14:ALA:CA	2.97	0.40
56:CT:2:DT:C2	56:CT:3:DC:C4	3.10	0.40
57:CB:43:LEU:HA	57:CB:43:LEU:HD23	1.85	0.40
57:CB:66:HIS:ND1	57:CB:68:TYR:HB3	2.36	0.40
58:CC:14:ASP:OD2	58:CC:1156:ARG:NH2	2.46	0.40
58:CC:146:VAL:H	58:CC:146:VAL:HG22	1.59	0.40
58:CC:605:TYR:C	58:CC:606:LEU:HD12	2.42	0.40
58:CC:822:VAL:H	58:CC:822:VAL:HG13	1.68	0.40
58:CC:866:ASP:C	58:CC:866:ASP:OD1	2.60	0.40
58:CC:1246:ARG:NH2	58:CC:1250:SER:O	2.52	0.40
59:CD:131:PRO:O	59:CD:134:ASP:N	2.55	0.40
59:CD:872:LEU:HD22	59:CD:877:VAL:HG21	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	AB	224/241 (93%)	200 (89%)	24 (11%)	0	100	100
3	AC	209/233 (90%)	197 (94%)	12 (6%)	0	100	100
4	AD	203/206 (98%)	191 (94%)	12 (6%)	0	100	100
5	AE	154/167 (92%)	140 (91%)	14 (9%)	0	100	100
6	AF	102/131 (78%)	94 (92%)	8 (8%)	0	100	100
7	AG	152/156 (97%)	140 (92%)	12 (8%)	0	100	100
8	AH	127/130 (98%)	122 (96%)	5 (4%)	0	100	100
9	AI	126/130 (97%)	115 (91%)	10 (8%)	1 (1%)	19	58
10	AJ	100/103 (97%)	88 (88%)	10 (10%)	2 (2%)	7	39
11	AK	115/129 (89%)	105 (91%)	10 (9%)	0	100	100
12	AL	120/124 (97%)	107 (89%)	12 (10%)	1 (1%)	19	58
13	AM	113/118 (96%)	106 (94%)	7 (6%)	0	100	100
14	AN	98/101 (97%)	93 (95%)	5 (5%)	0	100	100
15	AO	87/89 (98%)	84 (97%)	3 (3%)	0	100	100
16	AP	80/82 (98%)	68 (85%)	12 (15%)	0	100	100
17	AQ	78/84 (93%)	72 (92%)	6 (8%)	0	100	100
18	AR	55/75 (73%)	51 (93%)	4 (7%)	0	100	100
19	AS	80/92 (87%)	73 (91%)	7 (9%)	0	100	100
20	AT	84/87 (97%)	81 (96%)	3 (4%)	0	100	100
21	AU	68/71 (96%)	66 (97%)	2 (3%)	0	100	100
27	BC	270/273 (99%)	244 (90%)	25 (9%)	1 (0%)	34	72
28	BD	206/209 (99%)	198 (96%)	7 (3%)	1 (0%)	29	68
29	BE	199/201 (99%)	191 (96%)	8 (4%)	0	100	100
30	BF	176/179 (98%)	159 (90%)	17 (10%)	0	100	100
31	BG	173/177 (98%)	158 (91%)	15 (9%)	0	100	100
32	BH	147/149 (99%)	134 (91%)	11 (8%)	2 (1%)	11	46
33	BK	140/142 (99%)	132 (94%)	8 (6%)	0	100	100
34	BL	121/123 (98%)	108 (89%)	13 (11%)	0	100	100
35	BM	142/144 (99%)	131 (92%)	11 (8%)	0	100	100
36	BN	133/136 (98%)	126 (95%)	7 (5%)	0	100	100
37	BO	116/127 (91%)	108 (93%)	8 (7%)	0	100	100
38	BP	115/117 (98%)	102 (89%)	13 (11%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
39	BQ	112/115 (97%)	104 (93%)	8 (7%)	0	100	100
40	BR	115/118 (98%)	112 (97%)	3 (3%)	0	100	100
41	BS	101/103 (98%)	94 (93%)	7 (7%)	0	100	100
42	BT	108/110 (98%)	100 (93%)	8 (7%)	0	100	100
43	BU	93/100 (93%)	83 (89%)	10 (11%)	0	100	100
44	BV	100/104 (96%)	87 (87%)	13 (13%)	0	100	100
45	BW	92/94 (98%)	85 (92%)	7 (8%)	0	100	100
46	BX	74/85 (87%)	66 (89%)	8 (11%)	0	100	100
47	BY	75/78 (96%)	69 (92%)	6 (8%)	0	100	100
48	BZ	60/63 (95%)	57 (95%)	3 (5%)	0	100	100
49	B1	56/59 (95%)	53 (95%)	3 (5%)	0	100	100
50	B2	54/57 (95%)	52 (96%)	2 (4%)	0	100	100
51	B3	50/55 (91%)	49 (98%)	1 (2%)	0	100	100
52	B4	44/46 (96%)	39 (89%)	5 (11%)	0	100	100
53	B5	62/65 (95%)	52 (84%)	9 (14%)	1 (2%)	9	43
54	B6	36/50 (72%)	35 (97%)	1 (3%)	0	100	100
57	CA	227/329 (69%)	217 (96%)	10 (4%)	0	100	100
57	CB	215/329 (65%)	203 (94%)	11 (5%)	1 (0%)	29	68
58	CC	1316/1342 (98%)	1197 (91%)	110 (8%)	9 (1%)	22	61
59	CD	1327/1407 (94%)	1223 (92%)	94 (7%)	10 (1%)	19	58
60	CE	49/91 (54%)	40 (82%)	8 (16%)	1 (2%)	7	39
61	CF	94/181 (52%)	88 (94%)	6 (6%)	0	100	100
All	All	8773/9507 (92%)	8089 (92%)	654 (8%)	30 (0%)	44	75

All (30) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
9	AI	13	LYS
32	BH	89	LYS
58	CC	165	HIS
59	CD	1159	ILE
32	BH	15	LEU
57	CB	155	ALA
58	CC	47	TYR

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Mol	Chain	Res	Type
59	CD	1051	ASP
12	AL	88	LYS
28	BD	149	ASN
58	CC	258	ASN
58	CC	1177	ARG
59	CD	119	SER
59	CD	121	PRO
59	CD	712	GLN
59	CD	854	ALA
59	CD	1200	GLU
60	CE	6	VAL
10	AJ	57	VAL
10	AJ	58	ASN
58	CC	282	VAL
58	CC	596	ASP
58	CC	1153	ALA
59	CD	586	GLY
58	CC	1223	ARG
59	CD	312	ARG
27	BC	241	GLY
53	B5	32	ILE
58	CC	1186	VAL
59	CD	500	ILE

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
2	AB	187/199 (94%)	163 (87%)	24 (13%)	4 22
3	AC	172/190 (90%)	151 (88%)	21 (12%)	5 23
4	AD	172/173 (99%)	154 (90%)	18 (10%)	7 31
5	AE	118/126 (94%)	108 (92%)	10 (8%)	10 39
6	AF	91/112 (81%)	76 (84%)	15 (16%)	2 13
7	AG	127/129 (98%)	104 (82%)	23 (18%)	1 9

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
8	AH	104/105 (99%)	91 (88%)	13 (12%)	4 23
9	AI	106/107 (99%)	102 (96%)	4 (4%)	33 65
10	AJ	89/90 (99%)	79 (89%)	10 (11%)	6 27
11	AK	90/99 (91%)	80 (89%)	10 (11%)	6 28
12	AL	102/103 (99%)	84 (82%)	18 (18%)	2 10
13	AM	93/96 (97%)	82 (88%)	11 (12%)	5 25
14	AN	83/84 (99%)	74 (89%)	9 (11%)	6 30
15	AO	77/77 (100%)	66 (86%)	11 (14%)	3 19
16	AP	65/65 (100%)	57 (88%)	8 (12%)	4 23
17	AQ	74/78 (95%)	56 (76%)	18 (24%)	0 4
18	AR	50/65 (77%)	43 (86%)	7 (14%)	3 19
19	AS	71/79 (90%)	62 (87%)	9 (13%)	4 22
20	AT	65/66 (98%)	60 (92%)	5 (8%)	13 42
21	AU	60/61 (98%)	56 (93%)	4 (7%)	16 48
27	BC	217/218 (100%)	201 (93%)	16 (7%)	13 44
28	BD	163/163 (100%)	144 (88%)	19 (12%)	5 26
29	BE	165/165 (100%)	148 (90%)	17 (10%)	7 32
30	BF	149/150 (99%)	122 (82%)	27 (18%)	1 9
31	BG	136/138 (99%)	114 (84%)	22 (16%)	2 14
32	BH	114/114 (100%)	111 (97%)	3 (3%)	46 74
33	BK	116/116 (100%)	107 (92%)	9 (8%)	12 42
34	BL	104/104 (100%)	99 (95%)	5 (5%)	25 60
35	BM	103/103 (100%)	96 (93%)	7 (7%)	16 48
36	BN	108/108 (100%)	100 (93%)	8 (7%)	13 44
37	BO	98/103 (95%)	89 (91%)	9 (9%)	9 36
38	BP	87/87 (100%)	76 (87%)	11 (13%)	4 22
39	BQ	99/100 (99%)	90 (91%)	9 (9%)	9 36
40	BR	89/90 (99%)	81 (91%)	8 (9%)	9 37
41	BS	84/84 (100%)	76 (90%)	8 (10%)	8 34
42	BT	93/93 (100%)	84 (90%)	9 (10%)	8 33
43	BU	82/84 (98%)	75 (92%)	7 (8%)	10 39

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
44	BV	83/85 (98%)	71 (86%)	12 (14%)	3 18
45	BW	78/78 (100%)	72 (92%)	6 (8%)	13 42
46	BX	58/63 (92%)	54 (93%)	4 (7%)	15 47
47	BY	67/68 (98%)	63 (94%)	4 (6%)	19 52
48	BZ	54/55 (98%)	47 (87%)	7 (13%)	4 21
49	B1	48/49 (98%)	43 (90%)	5 (10%)	7 31
50	B2	47/48 (98%)	43 (92%)	4 (8%)	10 39
51	B3	47/49 (96%)	41 (87%)	6 (13%)	4 22
52	B4	38/38 (100%)	35 (92%)	3 (8%)	12 41
53	B5	51/52 (98%)	45 (88%)	6 (12%)	5 25
54	B6	34/44 (77%)	33 (97%)	1 (3%)	42 71
57	CA	197/286 (69%)	193 (98%)	4 (2%)	55 79
57	CB	187/286 (65%)	177 (95%)	10 (5%)	22 55
58	CC	1139/1157 (98%)	1097 (96%)	42 (4%)	34 65
59	CD	1118/1168 (96%)	1096 (98%)	22 (2%)	55 79
60	CE	43/75 (57%)	42 (98%)	1 (2%)	50 77
61	CF	86/158 (54%)	85 (99%)	1 (1%)	71 87
All	All	7378/7883 (94%)	6798 (92%)	580 (8%)	16 41

All (580) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	AB	3	THR
2	AB	4	VAL
2	AB	18	HIS
2	AB	27	MET
2	AB	35	ARG
2	AB	39	HIS
2	AB	43	LEU
2	AB	50	PHE
2	AB	57	LEU
2	AB	74	ARG
2	AB	77	SER
2	AB	87	CYS
2	AB	117	LEU
2	AB	128	LYS

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Mol	Chain	Res	Type
2	AB	133	GLU
2	AB	140	GLU
2	AB	148	LEU
2	AB	153	ASP
2	AB	159	ASP
2	AB	161	LEU
2	AB	197	ASP
2	AB	205	ASP
2	AB	208	ARG
2	AB	220	THR
3	AC	3	GLN
3	AC	14	ILE
3	AC	33	LEU
3	AC	37	PHE
3	AC	41	GLN
3	AC	46	GLU
3	AC	59	ARG
3	AC	86	LYS
3	AC	93	ASP
3	AC	97	VAL
3	AC	118	ASP
3	AC	135	LYS
3	AC	147	LYS
3	AC	149	ILE
3	AC	151	VAL
3	AC	164	ARG
3	AC	179	ARG
3	AC	185	ASN
3	AC	192	THR
3	AC	195	VAL
3	AC	208	LEU
4	AD	8	LYS
4	AD	21	LEU
4	AD	29	ASP
4	AD	40	GLN
4	AD	47	ARG
4	AD	49	SER
4	AD	50	ASP
4	AD	51	TYR
4	AD	73	ARG
4	AD	91	LEU
4	AD	104	ARG

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Mol	Chain	Res	Type
4	AD	116	GLN
4	AD	117	LEU
4	AD	143	VAL
4	AD	147	GLU
4	AD	160	GLU
4	AD	163	GLU
4	AD	197	GLU
5	AE	29	ARG
5	AE	30	ILE
5	AE	41	ASP
5	AE	52	LYS
5	AE	56	VAL
5	AE	80	THR
5	AE	106	ILE
5	AE	132	ASN
5	AE	136	VAL
5	AE	146	ASN
6	AF	14	GLN
6	AF	16	GLU
6	AF	24	ARG
6	AF	36	ILE
6	AF	38	ARG
6	AF	52	ASN
6	AF	61	LEU
6	AF	71	ILE
6	AF	82	ASP
6	AF	84	VAL
6	AF	90	MET
6	AF	91	ARG
6	AF	93	LYS
6	AF	94	HIS
6	AF	103	VAL
7	AG	7	ILE
7	AG	9	GLN
7	AG	12	ILE
7	AG	15	ASP
7	AG	21	GLU
7	AG	23	LEU
7	AG	25	LYS
7	AG	41	SER
7	AG	47	LEU
7	AG	58	GLU

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Mol	Chain	Res	Type
7	AG	63	GLU
7	AG	77	SER
7	AG	79	ARG
7	AG	84	THR
7	AG	89	VAL
7	AG	94	VAL
7	AG	120	LEU
7	AG	126	ASP
7	AG	131	LYS
7	AG	135	VAL
7	AG	146	GLU
7	AG	153	HIS
7	AG	155	ARG
8	AH	3	MET
8	AH	22	LYS
8	AH	31	LYS
8	AH	51	VAL
8	AH	54	ASP
8	AH	63	LEU
8	AH	77	ARG
8	AH	80	ARG
8	AH	92	LEU
8	AH	94	LYS
8	AH	112	THR
8	AH	113	ASP
8	AH	121	LEU
9	AI	31	ASN
9	AI	54	LEU
9	AI	118	LEU
9	AI	127	PHE
10	AJ	5	ARG
10	AJ	16	ARG
10	AJ	18	ILE
10	AJ	30	LYS
10	AJ	52	LEU
10	AJ	63	ASP
10	AJ	77	VAL
10	AJ	83	THR
10	AJ	92	LEU
10	AJ	96	VAL
11	AK	13	ARG
11	AK	16	VAL

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Mol	Chain	Res	Type
11	AK	20	VAL
11	AK	30	THR
11	AK	59	THR
11	AK	69	ARG
11	AK	76	GLU
11	AK	100	LEU
11	AK	101	ASN
11	AK	126	LYS
12	AL	3	THR
12	AL	14	ARG
12	AL	20	ASN
12	AL	21	VAL
12	AL	24	LEU
12	AL	34	CYS
12	AL	38	TYR
12	AL	41	THR
12	AL	52	VAL
12	AL	53	CYS
12	AL	54	ARG
12	AL	57	LEU
12	AL	58	THR
12	AL	75	GLN
12	AL	78	SER
12	AL	88	LYS
12	AL	102	LEU
12	AL	107	VAL
13	AM	11	ASP
13	AM	27	LYS
13	AM	68	ASP
13	AM	83	LEU
13	AM	85	CYS
13	AM	101	ARG
13	AM	102	THR
13	AM	104	THR
13	AM	107	ARG
13	AM	108	THR
13	AM	116	ILE
14	AN	18	ASP
14	AN	26	GLU
14	AN	38	ASP
14	AN	56	SER
14	AN	59	ARG

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Mol	Chain	Res	Type
14	AN	60	GLN
14	AN	66	GLN
14	AN	79	LEU
14	AN	92	GLU
15	AO	3	LEU
15	AO	5	THR
15	AO	8	THR
15	AO	14	GLU
15	AO	18	ASP
15	AO	22	THR
15	AO	24	SER
15	AO	64	ARG
15	AO	67	LEU
15	AO	74	ASP
15	AO	83	GLU
16	AP	2	VAL
16	AP	19	VAL
16	AP	23	ASP
16	AP	36	VAL
16	AP	45	GLU
16	AP	55	ASP
16	AP	66	THR
16	AP	74	LEU
17	AQ	7	THR
17	AQ	15	ASP
17	AQ	22	VAL
17	AQ	26	GLU
17	AQ	31	HIS
17	AQ	42	THR
17	AQ	43	LYS
17	AQ	50	ASN
17	AQ	52	GLU
17	AQ	57	ASP
17	AQ	59	VAL
17	AQ	62	ARG
17	AQ	65	ARG
17	AQ	68	SER
17	AQ	75	LEU
17	AQ	77	ARG
17	AQ	78	VAL
17	AQ	79	VAL
18	AR	29	LEU

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Mol	Chain	Res	Type
18	AR	47	THR
18	AR	57	ARG
18	AR	70	TYR
18	AR	71	THR
18	AR	73	ARG
18	AR	74	HIS
19	AS	3	ARG
19	AS	5	LEU
19	AS	12	ASP
19	AS	32	ARG
19	AS	49	ILE
19	AS	61	PHE
19	AS	63	THR
19	AS	64	ASP
19	AS	79	THR
20	AT	3	ASN
20	AT	44	LYS
20	AT	48	GLN
20	AT	70	ASN
20	AT	80	THR
21	AU	4	ILE
21	AU	67	ARG
21	AU	69	ARG
21	AU	70	LEU
27	BC	16	VAL
27	BC	52	ARG
27	BC	66	ASP
27	BC	90	ASN
27	BC	98	ASP
27	BC	116	ILE
27	BC	130	LEU
27	BC	133	ARG
27	BC	160	THR
27	BC	175	ARG
27	BC	187	ASP
27	BC	189	ARG
27	BC	199	GLU
27	BC	245	VAL
27	BC	246	THR
27	BC	272	SER
28	BD	9	VAL
28	BD	13	ARG

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Mol	Chain	Res	Type
28	BD	33	ARG
28	BD	37	VAL
28	BD	50	VAL
28	BD	52	THR
28	BD	58	ASN
28	BD	60	VAL
28	BD	100	LEU
28	BD	101	PHE
28	BD	103	ASP
28	BD	118	PHE
28	BD	123	LYS
28	BD	178	VAL
28	BD	180	VAL
28	BD	185	ASN
28	BD	186	LEU
28	BD	199	SER
28	BD	203	VAL
29	BE	12	LEU
29	BE	14	VAL
29	BE	21	ARG
29	BE	22	ASP
29	BE	55	SER
29	BE	72	SER
29	BE	73	ILE
29	BE	77	ILE
29	BE	79	ARG
29	BE	96	VAL
29	BE	136	GLN
29	BE	153	LEU
29	BE	169	VAL
29	BE	188	MET
29	BE	189	THR
29	BE	191	ASP
29	BE	194	LYS
30	BF	17	MET
30	BF	18	THR
30	BF	19	GLU
30	BF	23	ASN
30	BF	25	VAL
30	BF	26	MET
30	BF	44	ILE
30	BF	47	LYS

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Mol	Chain	Res	Type
30	BF	50	LEU
30	BF	60	ILE
30	BF	68	THR
30	BF	69	LYS
30	BF	74	VAL
30	BF	80	ARG
30	BF	87	CYS
30	BF	94	GLU
30	BF	100	PHE
30	BF	134	GLU
30	BF	135	GLN
30	BF	136	ILE
30	BF	141	ILE
30	BF	146	VAL
30	BF	152	LEU
30	BF	157	THR
30	BF	163	ASP
30	BF	167	ARG
30	BF	173	PHE
31	BG	11	VAL
31	BG	15	VAL
31	BG	19	ILE
31	BG	29	LYS
31	BG	30	ASN
31	BG	32	GLU
31	BG	39	ASP
31	BG	41	VAL
31	BG	43	VAL
31	BG	47	ASP
31	BG	58	TYR
31	BG	84	THR
31	BG	87	LEU
31	BG	111	HIS
31	BG	128	GLN
31	BG	133	LEU
31	BG	139	GLN
31	BG	151	TYR
31	BG	155	GLU
31	BG	168	VAL
31	BG	170	ARG
31	BG	171	THR
32	BH	60	GLU

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Mol	Chain	Res	Type
32	BH	89	LYS
32	BH	133	GLN
33	BK	41	LYS
33	BK	52	ASP
33	BK	57	LEU
33	BK	62	VAL
33	BK	69	ARG
33	BK	123	LYS
33	BK	128	ASN
33	BK	138	GLN
33	BK	142	ILE
34	BL	9	ASN
34	BL	69	VAL
34	BL	76	VAL
34	BL	111	LYS
34	BL	113	MET
35	BM	12	SER
35	BM	42	SER
35	BM	79	LEU
35	BM	84	LYS
35	BM	106	GLU
35	BM	125	LEU
35	BM	128	THR
36	BN	7	THR
36	BN	12	MET
36	BN	24	THR
36	BN	60	GLN
36	BN	100	LYS
36	BN	115	GLU
36	BN	126	ILE
36	BN	135	VAL
37	BO	1	MET
37	BO	2	ARG
37	BO	6	SER
37	BO	24	MET
37	BO	48	VAL
37	BO	49	GLU
37	BO	96	ARG
37	BO	98	LEU
37	BO	118	ARG
38	BP	2	ASP
38	BP	12	THR

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Mol	Chain	Res	Type
38	BP	27	VAL
38	BP	31	THR
38	BP	54	VAL
38	BP	56	LYS
38	BP	58	ILE
38	BP	61	GLN
38	BP	78	VAL
38	BP	91	SER
38	BP	94	ARG
39	BQ	26	VAL
39	BQ	32	VAL
39	BQ	39	ARG
39	BQ	52	ASN
39	BQ	56	HIS
39	BQ	63	LYS
39	BQ	89	ARG
39	BQ	101	ARG
39	BQ	104	THR
40	BR	11	ARG
40	BR	17	ILE
40	BR	51	ARG
40	BR	57	PHE
40	BR	92	ARG
40	BR	97	ASP
40	BR	111	GLU
40	BR	117	LEU
41	BS	27	ILE
41	BS	41	ILE
41	BS	43	ASN
41	BS	59	ILE
41	BS	70	GLU
41	BS	76	LYS
41	BS	79	ARG
41	BS	86	GLN
42	BT	1	MET
42	BT	22	ASP
42	BT	24	ILE
42	BT	36	LEU
42	BT	40	ASN
42	BT	67	ASP
42	BT	68	ASP
42	BT	83	LYS

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Mol	Chain	Res	Type
42	BT	108	SER
43	BU	7	LEU
43	BU	18	GLU
43	BU	49	LYS
43	BU	61	LEU
43	BU	67	VAL
43	BU	68	LYS
43	BU	72	GLN
44	BV	6	ARG
44	BV	28	VAL
44	BV	37	GLU
44	BV	39	ILE
44	BV	52	LEU
44	BV	62	GLU
44	BV	65	ILE
44	BV	70	VAL
44	BV	74	ASN
44	BV	88	GLU
44	BV	93	VAL
44	BV	97	LYS
45	BW	1	MET
45	BW	10	LYS
45	BW	35	GLU
45	BW	62	THR
45	BW	77	VAL
45	BW	78	GLN
46	BX	10	THR
46	BX	11	ARG
46	BX	70	GLU
46	BX	77	ARG
47	BY	60	ASP
47	BY	66	THR
47	BY	74	ARG
47	BY	76	GLU
48	BZ	8	GLU
48	BZ	12	GLU
48	BZ	13	GLU
48	BZ	20	ASN
48	BZ	23	ARG
48	BZ	49	ASP
48	BZ	57	LEU
49	B1	3	LYS

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Mol	Chain	Res	Type
49	B1	11	ARG
49	B1	41	THR
49	B1	45	ARG
49	B1	49	ASN
50	B2	9	THR
50	B2	38	HIS
50	B2	55	ILE
50	B2	57	LYS
51	B3	3	LYS
51	B3	6	ARG
51	B3	23	THR
51	B3	32	GLU
51	B3	35	GLU
51	B3	53	LYS
52	B4	4	THR
52	B4	12	ARG
52	B4	42	LEU
53	B5	13	ARG
53	B5	28	ASN
53	B5	31	HIS
53	B5	32	ILE
53	B5	54	ASP
53	B5	55	LEU
54	B6	22	VAL
57	CA	13	LEU
57	CA	74	VAL
57	CA	101	THR
57	CA	166	ARG
57	CB	17	GLU
57	CB	41	ASN
57	CB	48	LEU
57	CB	66	HIS
57	CB	72	GLU
57	CB	76	GLU
57	CB	83	LEU
57	CB	170	ARG
57	CB	174	ASP
57	CB	191	ARG
58	CC	47	TYR
58	CC	65	ASN
58	CC	108	GLU
58	CC	116	ASP

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Mol	Chain	Res	Type
58	CC	150	HIS
58	CC	193	ASN
58	CC	262	TYR
58	CC	267	ARG
58	CC	369	MET
58	CC	494	ASN
58	CC	524	ILE
58	CC	529	ARG
58	CC	562	GLU
58	CC	568	ASN
58	CC	569	ILE
58	CC	575	LEU
58	CC	657	THR
58	CC	726	TYR
58	CC	745	GLU
58	CC	772	SER
58	CC	822	VAL
58	CC	830	THR
58	CC	843	THR
58	CC	844	LYS
58	CC	856	ASN
58	CC	888	THR
58	CC	1002	LEU
58	CC	1005	GLU
58	CC	1022	LYS
58	CC	1080	ASN
58	CC	1158	LYS
58	CC	1223	ARG
58	CC	1240	ASP
58	CC	1247	SER
58	CC	1250	SER
58	CC	1274	GLU
58	CC	1287	LEU
58	CC	1291	LEU
58	CC	1298	VAL
58	CC	1304	MET
58	CC	1336	ASN
58	CC	1340	GLU
59	CD	68	TYR
59	CD	99	ARG
59	CD	113	HIS
59	CD	158	GLN

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Mol	Chain	Res	Type
59	CD	196	GLN
59	CD	255	LEU
59	CD	275	ARG
59	CD	281	ARG
59	CD	418	GLU
59	CD	488	ASN
59	CD	505	ASP
59	CD	700	ASN
59	CD	709	ARG
59	CD	802	ASP
59	CD	826	ILE
59	CD	839	VAL
59	CD	1046	ILE
59	CD	1165	PHE
59	CD	1167	LYS
59	CD	1195	GLN
59	CD	1237	VAL
59	CD	1261	LEU
60	CE	53	GLU
61	CF	21	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (18) such sidechains are listed below:

Mol	Chain	Res	Type
2	AB	58	ASN
2	AB	177	ASN
2	AB	227	GLN
5	AE	146	ASN
6	AF	3	HIS
8	AH	18	GLN
12	AL	75	GLN
19	AS	56	GLN
19	AS	57	HIS
28	BD	36	GLN
30	BF	135	GLN
37	BO	11	ASN
37	BO	107	ASN
39	BQ	7	GLN
40	BR	72	ASN
42	BT	40	ASN
48	BZ	41	HIS
48	BZ	58	ASN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	AA	1529/1542 (99%)	299 (19%)	8 (0%)
22	AV	32/49 (65%)	13 (40%)	1 (3%)
23	AW	76/77 (98%)	19 (25%)	2 (2%)
24	AX	73/76 (96%)	22 (30%)	1 (1%)
25	BA	2893/2904 (99%)	561 (19%)	7 (0%)
26	BB	119/120 (99%)	17 (14%)	1 (0%)
All	All	4722/4768 (99%)	931 (19%)	20 (0%)

All (931) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	AA	2	A
1	AA	4	U
1	AA	6	G
1	AA	9	G
1	AA	16	A
1	AA	32	A
1	AA	39	G
1	AA	47	C
1	AA	48	C
1	AA	50	A
1	AA	51	A
1	AA	52	C
1	AA	54	C
1	AA	58	C
1	AA	68	G
1	AA	69	G
1	AA	71	A
1	AA	72	A
1	AA	74	A
1	AA	75	G
1	AA	84	U
1	AA	85	U
1	AA	86	G
1	AA	87	C
1	AA	92	U
1	AA	94	G
1	AA	95	C
1	AA	121	U
1	AA	122	G
1	AA	128	G

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Mol	Chain	Res	Type
1	AA	130	A
1	AA	131	A
1	AA	141	G
1	AA	143	A
1	AA	144	G
1	AA	147	G
1	AA	148	G
1	AA	150	U
1	AA	151	A
1	AA	154	U
1	AA	157	U
1	AA	163	C
1	AA	164	G
1	AA	168	G
1	AA	171	A
1	AA	172	A
1	AA	173	U
1	AA	174	A
1	AA	175	C
1	AA	181	A
1	AA	189	A
1	AA	197	A
1	AA	202	G
1	AA	207	C
1	AA	209	U
1	AA	210	C
1	AA	211	G
1	AA	212	G
1	AA	217	C
1	AA	226	G
1	AA	245	U
1	AA	247	G
1	AA	251	G
1	AA	266	G
1	AA	267	C
1	AA	280	C
1	AA	281	G
1	AA	289	G
1	AA	321	A
1	AA	328	C
1	AA	332	G
1	AA	338	A

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Mol	Chain	Res	Type
1	AA	345	C
1	AA	346	G
1	AA	348	G
1	AA	351	G
1	AA	352	C
1	AA	354	G
1	AA	367	U
1	AA	372	C
1	AA	373	A
1	AA	378	G
1	AA	388	G
1	AA	395	C
1	AA	406	G
1	AA	411	A
1	AA	412	A
1	AA	413	G
1	AA	414	A
1	AA	421	U
1	AA	422	C
1	AA	423	G
1	AA	424	G
1	AA	429	U
1	AA	457	G
1	AA	458	U
1	AA	463	U
1	AA	464	U
1	AA	465	A
1	AA	466	A
1	AA	467	U
1	AA	468	A
1	AA	476	U
1	AA	477	C
1	AA	481	G
1	AA	484	G
1	AA	485	U
1	AA	486	U
1	AA	495	A
1	AA	497	G
1	AA	505	G
1	AA	511	C
1	AA	516	PSU
1	AA	517	G

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Mol	Chain	Res	Type
1	AA	518	C
1	AA	521	G
1	AA	531	U
1	AA	532	A
1	AA	533	A
1	AA	545	C
1	AA	547	A
1	AA	548	G
1	AA	559	A
1	AA	564	C
1	AA	572	A
1	AA	573	A
1	AA	576	C
1	AA	577	G
1	AA	579	A
1	AA	588	G
1	AA	595	A
1	AA	596	A
1	AA	621	A
1	AA	633	G
1	AA	650	G
1	AA	653	U
1	AA	661	G
1	AA	665	A
1	AA	687	A
1	AA	693	G
1	AA	695	A
1	AA	700	G
1	AA	702	A
1	AA	703	G
1	AA	704	A
1	AA	720	C
1	AA	721	G
1	AA	723	U
1	AA	724	G
1	AA	731	G
1	AA	734	G
1	AA	743	A
1	AA	748	G
1	AA	753	A
1	AA	755	G
1	AA	777	A

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Mol	Chain	Res	Type
1	AA	793	U
1	AA	794	A
1	AA	799	G
1	AA	802	A
1	AA	815	A
1	AA	817	C
1	AA	828	U
1	AA	829	G
1	AA	832	G
1	AA	836	G
1	AA	841	C
1	AA	842	U
1	AA	843	U
1	AA	844	G
1	AA	845	A
1	AA	846	G
1	AA	849	G
1	AA	866	C
1	AA	873	A
1	AA	887	G
1	AA	888	G
1	AA	889	A
1	AA	914	A
1	AA	926	G
1	AA	927	G
1	AA	934	C
1	AA	935	A
1	AA	942	G
1	AA	960	U
1	AA	966	2MG
1	AA	969	A
1	AA	971	G
1	AA	974	A
1	AA	975	A
1	AA	976	G
1	AA	977	A
1	AA	992	U
1	AA	993	G
1	AA	996	A
1	AA	999	C
1	AA	1004	A
1	AA	1009	U

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Mol	Chain	Res	Type
1	AA	1018	G
1	AA	1019	A
1	AA	1020	G
1	AA	1022	A
1	AA	1026	G
1	AA	1030	U
1	AA	1031	C
1	AA	1033	G
1	AA	1043	G
1	AA	1044	A
1	AA	1060	U
1	AA	1064	G
1	AA	1065	U
1	AA	1085	U
1	AA	1086	U
1	AA	1094	G
1	AA	1095	U
1	AA	1101	A
1	AA	1104	G
1	AA	1108	G
1	AA	1121	U
1	AA	1124	G
1	AA	1125	U
1	AA	1131	G
1	AA	1133	G
1	AA	1135	U
1	AA	1136	C
1	AA	1139	G
1	AA	1140	C
1	AA	1143	G
1	AA	1145	A
1	AA	1149	C
1	AA	1151	A
1	AA	1152	A
1	AA	1157	A
1	AA	1158	C
1	AA	1159	U
1	AA	1167	A
1	AA	1168	U
1	AA	1175	G
1	AA	1176	A
1	AA	1184	G

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Mol	Chain	Res	Type
1	AA	1196	A
1	AA	1197	A
1	AA	1213	A
1	AA	1227	A
1	AA	1228	C
1	AA	1237	C
1	AA	1238	A
1	AA	1257	A
1	AA	1258	G
1	AA	1260	G
1	AA	1268	G
1	AA	1273	C
1	AA	1274	A
1	AA	1275	A
1	AA	1277	C
1	AA	1279	G
1	AA	1280	A
1	AA	1285	A
1	AA	1286	U
1	AA	1287	A
1	AA	1299	A
1	AA	1300	G
1	AA	1302	C
1	AA	1305	G
1	AA	1312	G
1	AA	1317	C
1	AA	1322	C
1	AA	1323	G
1	AA	1340	A
1	AA	1346	A
1	AA	1353	G
1	AA	1364	U
1	AA	1370	G
1	AA	1378	C
1	AA	1379	G
1	AA	1381	U
1	AA	1387	G
1	AA	1397	C
1	AA	1408	A
1	AA	1419	G
1	AA	1432	G
1	AA	1441	A

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Mol	Chain	Res	Type
1	AA	1442	G
1	AA	1446	A
1	AA	1451	U
1	AA	1452	C
1	AA	1453	G
1	AA	1487	G
1	AA	1492	A
1	AA	1494	G
1	AA	1497	G
1	AA	1503	A
1	AA	1506	U
1	AA	1507	A
1	AA	1517	G
1	AA	1529	G
1	AA	1530	G
1	AA	1531	A
1	AA	1532	U
22	AV	23	C
22	AV	24	A
22	AV	25	U
22	AV	26	A
22	AV	27	C
22	AV	28	A
22	AV	29	C
22	AV	30	A
22	AV	40	A
22	AV	41	C
22	AV	42	G
22	AV	45	G
22	AV	49	G
23	AW	8	4SU
23	AW	9	G
23	AW	14	A
23	AW	16	C
23	AW	17	C
23	AW	17(A)	U
23	AW	18	G
23	AW	19	G
23	AW	20	H2U
23	AW	21	A
23	AW	47	U
23	AW	48	C

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Mol	Chain	Res	Type
23	AW	49	G
23	AW	57	A
23	AW	61	C
23	AW	70	G
23	AW	74	C
23	AW	75	C
23	AW	76	A
24	AX	2	C
24	AX	5	G
24	AX	6	G
24	AX	8	4SU
24	AX	9	A
24	AX	10	G
24	AX	17	C
24	AX	20	H2U
24	AX	22	G
24	AX	30	G
24	AX	36	A
24	AX	46	7MG
24	AX	48	C
24	AX	49	C
24	AX	50	U
24	AX	59	U
24	AX	66	U
24	AX	69	G
24	AX	70	G
24	AX	73	A
24	AX	74	C
24	AX	75	C
25	BA	10	A
25	BA	15	G
25	BA	23	G
25	BA	34	U
25	BA	35	G
25	BA	36	G
25	BA	40	U
25	BA	46	G
25	BA	51	G
25	BA	55	G
25	BA	60	G
25	BA	63	A
25	BA	71	A

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Mol	Chain	Res	Type
25	BA	74	A
25	BA	75	G
25	BA	80	G
25	BA	84	A
25	BA	96	C
25	BA	100	U
25	BA	101	A
25	BA	102	U
25	BA	110	G
25	BA	118	A
25	BA	120	U
25	BA	125	A
25	BA	135	U
25	BA	138	U
25	BA	139	U
25	BA	143	C
25	BA	144	A
25	BA	145	C
25	BA	149	A
25	BA	163	C
25	BA	181	A
25	BA	196	A
25	BA	199	A
25	BA	201	C
25	BA	204	A
25	BA	215	G
25	BA	216	A
25	BA	221	A
25	BA	222	A
25	BA	225	C
25	BA	228	C
25	BA	241	A
25	BA	248	G
25	BA	249	C
25	BA	266	G
25	BA	275	C
25	BA	276	U
25	BA	278	A
25	BA	279	A
25	BA	280	U
25	BA	282	A
25	BA	285	G

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Mol	Chain	Res	Type
25	BA	288	U
25	BA	291	G
25	BA	294	A
25	BA	302	C
25	BA	311	A
25	BA	329	G
25	BA	330	A
25	BA	352	A
25	BA	361	G
25	BA	362	A
25	BA	367	G
25	BA	369	U
25	BA	386	G
25	BA	396	G
25	BA	399	U
25	BA	401	A
25	BA	403	U
25	BA	404	A
25	BA	406	G
25	BA	411	G
25	BA	412	A
25	BA	416	U
25	BA	421	C
25	BA	424	G
25	BA	435	C
25	BA	452	G
25	BA	455	C
25	BA	457	A
25	BA	473	G
25	BA	477	A
25	BA	481	G
25	BA	489	G
25	BA	491	G
25	BA	501	A
25	BA	505	A
25	BA	509	C
25	BA	510	C
25	BA	512	G
25	BA	518	G
25	BA	529	A
25	BA	531	C
25	BA	532	A

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Mol	Chain	Res	Type
25	BA	544	G
25	BA	551	G
25	BA	563	A
25	BA	569	U
25	BA	572	A
25	BA	573	U
25	BA	575	A
25	BA	603	A
25	BA	613	A
25	BA	614	A
25	BA	615	U
25	BA	621	A
25	BA	627	A
25	BA	637	A
25	BA	645	C
25	BA	646	U
25	BA	647	G
25	BA	654	A
25	BA	655	A
25	BA	685	A
25	BA	686	U
25	BA	717	C
25	BA	726	G
25	BA	730	A
25	BA	747	5MU
25	BA	757	G
25	BA	764	A
25	BA	775	G
25	BA	776	G
25	BA	782	A
25	BA	783	A
25	BA	784	G
25	BA	785	G
25	BA	789	A
25	BA	790	U
25	BA	792	A
25	BA	805	G
25	BA	812	C
25	BA	827	U
25	BA	828	U
25	BA	831	G
25	BA	845	A

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Mol	Chain	Res	Type
25	BA	846	U
25	BA	847	U
25	BA	855	G
25	BA	859	G
25	BA	869	G
25	BA	877	A
25	BA	878	A
25	BA	881	G
25	BA	883	G
25	BA	884	U
25	BA	885	C
25	BA	886	A
25	BA	887	U
25	BA	888	C
25	BA	889	C
25	BA	890	C
25	BA	891	G
25	BA	893	C
25	BA	894	U
25	BA	895	U
25	BA	896	A
25	BA	897	C
25	BA	907	G
25	BA	909	A
25	BA	910	A
25	BA	931	U
25	BA	941	A
25	BA	945	A
25	BA	946	C
25	BA	957	C
25	BA	961	C
25	BA	973	A
25	BA	974	G
25	BA	983	A
25	BA	989	G
25	BA	996	A
25	BA	999	U
25	BA	1005	C
25	BA	1009	A
25	BA	1012	U
25	BA	1013	C
25	BA	1023	U

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Mol	Chain	Res	Type
25	BA	1025	G
25	BA	1026	G
25	BA	1033	U
25	BA	1040	A
25	BA	1046	A
25	BA	1047	G
25	BA	1048	A
25	BA	1051	G
25	BA	1057	A
25	BA	1060	U
25	BA	1063	G
25	BA	1064	C
25	BA	1065	U
25	BA	1066	U
25	BA	1070	A
25	BA	1071	G
25	BA	1073	A
25	BA	1081	U
25	BA	1083	U
25	BA	1084	A
25	BA	1087	G
25	BA	1088	A
25	BA	1098	A
25	BA	1100	C
25	BA	1101	U
25	BA	1110	G
25	BA	1111	A
25	BA	1112	G
25	BA	1116	G
25	BA	1119	U
25	BA	1128	G
25	BA	1132	U
25	BA	1133	A
25	BA	1134	A
25	BA	1135	C
25	BA	1142	A
25	BA	1151	A
25	BA	1165	A
25	BA	1168	G
25	BA	1172	C
25	BA	1173	U
25	BA	1174	U

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Mol	Chain	Res	Type
25	BA	1176	U
25	BA	1177	G
25	BA	1178	C
25	BA	1180	U
25	BA	1182	G
25	BA	1186	G
25	BA	1200	C
25	BA	1204	A
25	BA	1212	G
25	BA	1218	G
25	BA	1238	G
25	BA	1250	G
25	BA	1252	G
25	BA	1253	A
25	BA	1256	G
25	BA	1265	A
25	BA	1271	G
25	BA	1272	A
25	BA	1273	U
25	BA	1275	A
25	BA	1285	A
25	BA	1287	A
25	BA	1300	G
25	BA	1301	A
25	BA	1325	U
25	BA	1345	C
25	BA	1365	A
25	BA	1368	G
25	BA	1379	U
25	BA	1383	A
25	BA	1395	A
25	BA	1398	C
25	BA	1403	A
25	BA	1409	U
25	BA	1410	G
25	BA	1411	U
25	BA	1416	G
25	BA	1417	C
25	BA	1420	A
25	BA	1424	G
25	BA	1428	C
25	BA	1437	C

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Mol	Chain	Res	Type
25	BA	1452	G
25	BA	1453	A
25	BA	1458	U
25	BA	1460	U
25	BA	1461	C
25	BA	1467	U
25	BA	1482	G
25	BA	1490	A
25	BA	1493	C
25	BA	1494	A
25	BA	1495	A
25	BA	1497	U
25	BA	1508	A
25	BA	1509	A
25	BA	1510	G
25	BA	1515	A
25	BA	1523	U
25	BA	1524	G
25	BA	1529	G
25	BA	1530	G
25	BA	1534	U
25	BA	1535	A
25	BA	1536	C
25	BA	1537	G
25	BA	1558	C
25	BA	1566	A
25	BA	1569	A
25	BA	1578	U
25	BA	1583	A
25	BA	1584	U
25	BA	1585	C
25	BA	1586	A
25	BA	1589	U
25	BA	1590	A
25	BA	1594	U
25	BA	1607	C
25	BA	1608	A
25	BA	1610	A
25	BA	1616	A
25	BA	1629	U
25	BA	1646	C
25	BA	1647	U

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Mol	Chain	Res	Type
25	BA	1648	U
25	BA	1649	G
25	BA	1651	G
25	BA	1654	A
25	BA	1665	A
25	BA	1674	G
25	BA	1675	C
25	BA	1698	A
25	BA	1713	A
25	BA	1715	G
25	BA	1724	G
25	BA	1729	U
25	BA	1730	C
25	BA	1735	A
25	BA	1738	G
25	BA	1744	A
25	BA	1764	C
25	BA	1773	A
25	BA	1791	A
25	BA	1800	C
25	BA	1801	A
25	BA	1802	A
25	BA	1808	A
25	BA	1815	A
25	BA	1816	C
25	BA	1828	G
25	BA	1829	A
25	BA	1833	C
25	BA	1848	A
25	BA	1858	A
25	BA	1864	U
25	BA	1870	C
25	BA	1872	A
25	BA	1876	A
25	BA	1896	G
25	BA	1903	G
25	BA	1905	C
25	BA	1906	G
25	BA	1907	G
25	BA	1913	A
25	BA	1914	C
25	BA	1929	G

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Mol	Chain	Res	Type
25	BA	1930	G
25	BA	1931	U
25	BA	1934	C
25	BA	1936	A
25	BA	1938	A
25	BA	1955	U
25	BA	1960	A
25	BA	1963	U
25	BA	1966	A
25	BA	1967	C
25	BA	1970	A
25	BA	1971	U
25	BA	1972	G
25	BA	1991	U
25	BA	1992	G
25	BA	1993	U
25	BA	1996	C
25	BA	1997	C
25	BA	2004	G
25	BA	2013	A
25	BA	2023	C
25	BA	2031	A
25	BA	2033	A
25	BA	2043	C
25	BA	2052	A
25	BA	2055	C
25	BA	2056	G
25	BA	2060	A
25	BA	2061	G
25	BA	2062	A
25	BA	2063	C
25	BA	2069	G7M
25	BA	2092	U
25	BA	2093	G
25	BA	2095	A
25	BA	2101	A
25	BA	2102	G
25	BA	2107	G
25	BA	2109	U
25	BA	2110	G
25	BA	2111	U
25	BA	2113	U

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Mol	Chain	Res	Type
25	BA	2115	G
25	BA	2116	G
25	BA	2117	A
25	BA	2118	U
25	BA	2119	A
25	BA	2120	G
25	BA	2121	G
25	BA	2123	G
25	BA	2124	G
25	BA	2125	G
25	BA	2126	A
25	BA	2127	G
25	BA	2129	C
25	BA	2131	U
25	BA	2132	U
25	BA	2133	G
25	BA	2135	A
25	BA	2136	G
25	BA	2137	U
25	BA	2138	G
25	BA	2139	U
25	BA	2140	G
25	BA	2148	G
25	BA	2150	C
25	BA	2157	G
25	BA	2159	G
25	BA	2162	G
25	BA	2164	C
25	BA	2165	C
25	BA	2167	U
25	BA	2169	A
25	BA	2170	A
25	BA	2171	A
25	BA	2172	U
25	BA	2173	A
25	BA	2177	C
25	BA	2181	U
25	BA	2182	U
25	BA	2183	A
25	BA	2188	U
25	BA	2189	U
25	BA	2193	G

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Mol	Chain	Res	Type
25	BA	2194	U
25	BA	2198	A
25	BA	2199	A
25	BA	2204	G
25	BA	2212	A
25	BA	2225	A
25	BA	2226	C
25	BA	2238	G
25	BA	2239	G
25	BA	2243	U
25	BA	2246	G
25	BA	2266	A
25	BA	2279	G
25	BA	2283	C
25	BA	2287	A
25	BA	2288	A
25	BA	2294	G
25	BA	2297	A
25	BA	2305	U
25	BA	2307	G
25	BA	2308	G
25	BA	2309	A
25	BA	2319	G
25	BA	2320	U
25	BA	2322	A
25	BA	2325	G
25	BA	2327	A
25	BA	2333	A
25	BA	2334	U
25	BA	2335	A
25	BA	2344	U
25	BA	2347	C
25	BA	2350	C
25	BA	2357	G
25	BA	2361	G
25	BA	2383	G
25	BA	2384	U
25	BA	2385	C
25	BA	2402	U
25	BA	2403	C
25	BA	2423	U
25	BA	2425	A

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Mol	Chain	Res	Type
25	BA	2427	C
25	BA	2429	G
25	BA	2430	A
25	BA	2435	A
25	BA	2440	C
25	BA	2441	U
25	BA	2445	2MG
25	BA	2448	A
25	BA	2469	A
25	BA	2470	G
25	BA	2476	A
25	BA	2478	A
25	BA	2481	G
25	BA	2491	U
25	BA	2498	OMC
25	BA	2502	G
25	BA	2504	PSU
25	BA	2505	G
25	BA	2513	A
25	BA	2518	A
25	BA	2520	C
25	BA	2535	G
25	BA	2542	A
25	BA	2554	U
25	BA	2556	C
25	BA	2566	A
25	BA	2567	G
25	BA	2573	C
25	BA	2585	U
25	BA	2586	U
25	BA	2602	A
25	BA	2603	G
25	BA	2609	U
25	BA	2610	C
25	BA	2613	U
25	BA	2615	U
25	BA	2629	U
25	BA	2630	G
25	BA	2637	U
25	BA	2638	G
25	BA	2639	A
25	BA	2654	A

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Mol	Chain	Res	Type
25	BA	2656	U
25	BA	2661	G
25	BA	2663	G
25	BA	2673	G
25	BA	2682	A
25	BA	2689	U
25	BA	2690	U
25	BA	2714	G
25	BA	2720	U
25	BA	2725	A
25	BA	2726	A
25	BA	2727	A
25	BA	2729	G
25	BA	2732	G
25	BA	2733	A
25	BA	2744	G
25	BA	2748	A
25	BA	2777	G
25	BA	2778	A
25	BA	2797	U
25	BA	2798	U
25	BA	2800	A
25	BA	2809	A
25	BA	2818	U
25	BA	2820	A
25	BA	2825	G
25	BA	2833	U
25	BA	2835	A
25	BA	2849	U
25	BA	2859	G
25	BA	2861	U
25	BA	2867	G
25	BA	2872	A
25	BA	2873	A
25	BA	2877	G
25	BA	2879	A
25	BA	2880	C
25	BA	2883	A
25	BA	2884	U
25	BA	2885	G
25	BA	2891	U
25	BA	2898	U

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Mol	Chain	Res	Type
25	BA	2902	C
25	BA	2903	U
26	BB	2	G
26	BB	9	G
26	BB	24	G
26	BB	35	C
26	BB	36	C
26	BB	42	C
26	BB	53	A
26	BB	56	G
26	BB	66	A
26	BB	68	C
26	BB	88	C
26	BB	89	U
26	BB	90	C
26	BB	105	G
26	BB	108	A
26	BB	109	A
26	BB	119	A

All (20) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	AA	84	U
1	AA	173	U
1	AA	530	G
1	AA	842	U
1	AA	1025	U
1	AA	1148	U
1	AA	1166	G
1	AA	1212	U
22	AV	39	A
23	AW	16	C
23	AW	47	U
24	AX	19	G
25	BA	287	G
25	BA	550	U
25	BA	784	G
25	BA	888	C
25	BA	1494	A
25	BA	2225	A
25	BA	2609	U

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Mol	Chain	Res	Type
26	BB	41	G

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
23	5MU	AW	54	23	19,22,23	1.40	6 (31%)	28,32,35	2.20	9 (32%)
25	3TD	BA	1915	25	18,22,23	4.39	9 (50%)	22,32,35	1.67	2 (9%)
25	H2U	BA	2449	25	18,21,22	2.76	5 (27%)	21,30,33	2.44	5 (23%)
1	G7M	AA	527	1	20,26,27	2.30	8 (40%)	17,39,42	1.24	3 (17%)
1	UR3	AA	1498	1	19,22,23	2.55	6 (31%)	26,32,35	1.40	3 (11%)
1	2MG	AA	966	1	18,25,27	2.50	8 (44%)	19,37,41	1.51	4 (21%)
1	MA6	AA	1518	1	19,26,27	1.37	3 (15%)	18,38,41	4.34	2 (11%)
25	2MA	BA	2503	25,62	17,25,26	2.57	6 (35%)	17,37,40	1.44	3 (17%)
25	1MG	BA	745	25	18,26,27	2.58	6 (33%)	19,39,42	1.48	4 (21%)
24	MIA	AX	37	24	22,29,32	2.88	4 (18%)	22,41,47	2.85	7 (31%)
25	2MG	BA	1835	25	18,26,27	2.21	7 (38%)	16,38,41	1.70	4 (25%)
25	5MU	BA	747	25	19,22,23	1.40	4 (21%)	28,32,35	2.11	6 (21%)
25	PSU	BA	746	25,62	18,21,22	1.08	3 (16%)	22,30,33	1.80	4 (18%)
25	6MZ	BA	1618	25	18,25,26	1.95	3 (16%)	16,36,39	2.21	4 (25%)
25	PSU	BA	1917	25	18,21,22	1.06	2 (11%)	22,30,33	1.73	4 (18%)
25	PSU	BA	2457	25	18,21,22	1.04	3 (16%)	22,30,33	1.97	5 (22%)
23	4SU	AW	8	23	18,21,22	4.05	8 (44%)	26,30,33	2.41	5 (19%)
24	PSU	AX	39	24	18,21,22	1.01	1 (5%)	22,30,33	1.78	4 (18%)
25	2MG	BA	2445	29,25	18,26,27	2.20	7 (38%)	16,38,41	1.58	4 (25%)
25	PSU	BA	2604	25,62	18,21,22	0.98	2 (11%)	22,30,33	1.69	4 (18%)
24	H2U	AX	20	24	18,21,22	3.12	5 (27%)	21,30,33	1.97	4 (19%)
24	4SU	AX	8	24	18,21,22	4.14	8 (44%)	26,30,33	2.27	4 (15%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
1	5MC	AA	967	1	18,22,23	3.95	7 (38%)	26,32,35	1.15	2 (7%)
25	PSU	BA	2605	25	18,21,22	1.04	2 (11%)	22,30,33	1.79	5 (22%)
25	OMG	BA	2251	25,23	18,26,27	2.56	8 (44%)	19,38,41	1.52	4 (21%)
25	OMU	BA	2552	25	19,22,23	2.78	7 (36%)	26,31,34	1.77	5 (19%)
24	PSU	AX	32	24	18,21,22	0.97	1 (5%)	22,30,33	1.83	5 (22%)
23	OMC	AW	32	23	19,22,23	2.91	8 (42%)	26,31,34	0.83	0
25	PSU	BA	1911	25	18,21,22	1.03	2 (11%)	22,30,33	1.93	4 (18%)
25	5MU	BA	1939	25	19,22,23	1.43	4 (21%)	28,32,35	2.34	6 (21%)
25	PSU	BA	955	25	18,21,22	1.08	3 (16%)	22,30,33	1.73	4 (18%)
12	D2T	AL	89	12	7,9,10	1.00	0	6,11,13	2.26	3 (50%)
1	2MG	AA	1207	1	18,26,27	2.34	7 (38%)	16,38,41	1.52	4 (25%)
1	MA6	AA	1519	1	19,26,27	1.35	3 (15%)	18,38,41	4.18	2 (11%)
23	PSU	AW	55	23	18,21,22	1.11	1 (5%)	22,30,33	1.77	4 (18%)
24	H2U	AX	16	24	18,21,22	3.05	5 (27%)	21,30,33	2.05	5 (23%)
23	H2U	AW	20	23	18,21,22	3.15	5 (27%)	21,30,33	2.02	5 (23%)
28	MEQ	BD	150	28	8,9,10	0.94	0	5,10,12	1.08	1 (20%)
24	3AU	AX	47	24	18,21,29	3.49	8 (44%)	26,30,43	1.62	4 (15%)
24	PSU	AX	55	24	18,21,22	1.06	2 (11%)	22,30,33	1.79	4 (18%)
25	5MC	BA	1962	25	18,22,23	3.80	7 (38%)	26,32,35	1.03	1 (3%)
25	OMC	BA	2498	25,62	18,21,23	2.81	7 (38%)	26,30,34	0.60	0
25	PSU	BA	2504	25	18,21,22	1.04	1 (5%)	22,30,33	1.84	4 (18%)
36	4D4	BN	81	36	9,11,12	2.31	2 (22%)	8,13,15	1.10	1 (12%)
1	5MC	AA	1407	1	18,22,23	3.82	7 (38%)	26,32,35	1.12	2 (7%)
24	5MU	AX	54	24	19,22,23	1.38	4 (21%)	28,32,35	2.24	6 (21%)
1	2MG	AA	1516	1	18,26,27	2.24	7 (38%)	16,38,41	1.57	4 (25%)
25	6MZ	BA	2030	25	18,25,26	1.90	4 (22%)	16,36,39	2.73	4 (25%)
1	PSU	AA	516	1,62	18,21,22	0.97	1 (5%)	22,30,33	1.80	5 (22%)
25	PSU	BA	2580	25	18,21,22	1.08	2 (11%)	22,30,33	1.98	5 (22%)
1	4OC	AA	1402	1,62	20,23,24	3.42	9 (45%)	26,32,35	0.88	1 (3%)
24	7MG	AX	46	24	20,25,27	3.22	10 (50%)	27,37,42	2.23	8 (29%)
25	G7M	BA	2069	25	20,26,27	2.21	8 (40%)	17,39,42	1.12	1 (5%)

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
23	5MU	AW	54	23	-	0/7/25/26	0/2/2/2
25	3TD	BA	1915	25	-	0/7/25/26	0/2/2/2
25	H2U	BA	2449	25	-	0/7/38/39	0/2/2/2
1	G7M	AA	527	1	-	1/3/25/26	0/3/3/3
1	UR3	AA	1498	1	-	0/7/25/26	0/2/2/2
1	2MG	AA	966	1	-	2/3/25/28	0/3/3/3
1	MA6	AA	1518	1	-	4/7/29/30	0/3/3/3
25	2MA	BA	2503	25,62	-	3/3/25/26	0/3/3/3
25	1MG	BA	745	25	-	0/3/25/26	0/3/3/3
24	MIA	AX	37	24	-	4/9/31/34	0/3/3/3
25	2MG	BA	1835	25	-	2/5/27/28	0/3/3/3
25	5MU	BA	747	25	-	0/7/25/26	0/2/2/2
25	PSU	BA	746	25,62	-	1/7/25/26	0/2/2/2
25	6MZ	BA	1618	25	-	5/5/27/28	0/3/3/3
25	PSU	BA	1917	25	-	0/7/25/26	0/2/2/2
25	PSU	BA	2457	25	-	0/7/25/26	0/2/2/2
23	4SU	AW	8	23	-	0/7/25/26	0/2/2/2
24	PSU	AX	39	24	-	0/7/25/26	0/2/2/2
25	2MG	BA	2445	29,25	-	2/5/27/28	0/3/3/3
25	PSU	BA	2604	25,62	-	0/7/25/26	0/2/2/2
24	H2U	AX	20	24	-	3/7/38/39	0/2/2/2
24	4SU	AX	8	24	-	3/7/25/26	0/2/2/2
1	5MC	AA	967	1	-	0/7/25/26	0/2/2/2
25	PSU	BA	2605	25	-	0/7/25/26	0/2/2/2
25	OMG	BA	2251	25,23	-	1/5/27/28	0/3/3/3
25	OMU	BA	2552	25	-	0/9/27/28	0/2/2/2
24	PSU	AX	32	24	-	0/7/25/26	0/2/2/2
23	OMC	AW	32	23	-	0/9/27/28	0/2/2/2
25	PSU	BA	1911	25	-	1/7/25/26	0/2/2/2
25	5MU	BA	1939	25	-	0/7/25/26	0/2/2/2
25	PSU	BA	955	25	-	0/7/25/26	0/2/2/2
12	D2T	AL	89	12	-	1/7/12/14	-
1	2MG	AA	1207	1	-	0/5/27/28	0/3/3/3
1	MA6	AA	1519	1	-	4/7/29/30	0/3/3/3
23	PSU	AW	55	23	-	1/7/25/26	0/2/2/2
24	H2U	AX	16	24	-	4/7/38/39	0/2/2/2
23	H2U	AW	20	23	-	1/7/38/39	0/2/2/2
28	MEQ	BD	150	28	-	1/8/9/11	-
24	3AU	AX	47	24	-	2/7/25/35	0/2/2/2
24	PSU	AX	55	24	-	1/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	5MC	BA	1962	25	-	4/7/25/26	0/2/2/2
25	OMC	BA	2498	25,62	-	2/7/25/28	0/2/2/2
25	PSU	BA	2504	25	-	2/7/25/26	0/2/2/2
36	4D4	BN	81	36	-	4/11/12/14	-
1	5MC	AA	1407	1	-	0/7/25/26	0/2/2/2
24	5MU	AX	54	24	-	0/7/25/26	0/2/2/2
1	2MG	AA	1516	1	-	0/5/27/28	0/3/3/3
25	6MZ	BA	2030	25	-	2/5/27/28	0/3/3/3
1	PSU	AA	516	1,62	-	0/7/25/26	0/2/2/2
25	PSU	BA	2580	25	-	0/7/25/26	0/2/2/2
1	4OC	AA	1402	1,62	-	2/9/29/30	0/2/2/2
24	7MG	AX	46	24	-	6/7/34/38	0/3/3/3
25	G7M	BA	2069	25	-	2/3/25/26	0/3/3/3

All (256) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
25	BA	1915	3TD	C6-C5	11.77	1.49	1.35
23	AW	20	H2U	C2-N1	9.77	1.49	1.35
24	AX	20	H2U	C2-N1	9.66	1.49	1.35
25	BA	1915	3TD	C2-N1	9.63	1.49	1.37
24	AX	37	MIA	C13-C14	9.61	1.60	1.32
1	AA	967	5MC	C6-C5	9.61	1.50	1.34
25	BA	1962	5MC	C6-C5	9.52	1.50	1.34
1	AA	1407	5MC	C6-C5	9.39	1.50	1.34
24	AX	16	H2U	C2-N1	9.31	1.48	1.35
24	AX	8	4SU	C4-N3	9.13	1.47	1.37
23	AW	8	4SU	C4-N3	9.10	1.47	1.37
24	AX	37	MIA	C6-N6	8.00	1.49	1.34
25	BA	2449	H2U	C2-N1	7.98	1.47	1.35
24	AX	8	4SU	C2-N1	7.95	1.51	1.38
24	AX	47	3AU	C2-N1	7.92	1.51	1.38
23	AW	8	4SU	C2-N1	7.74	1.50	1.38
1	AA	967	5MC	C4-N3	7.42	1.46	1.34
25	BA	745	1MG	C2-N3	7.31	1.48	1.34
24	AX	47	3AU	C6-C5	7.15	1.51	1.35
25	BA	1962	5MC	C4-N3	7.12	1.46	1.34
1	AA	1402	4OC	C4-N3	7.10	1.45	1.32
25	BA	2503	2MA	C2-N3	7.07	1.46	1.31
1	AA	1407	5MC	C4-N3	7.01	1.46	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	AA	967	5MC	C2-N3	6.80	1.50	1.36
25	BA	1618	6MZ	C6-N6	6.64	1.45	1.35
23	AW	20	H2U	C2-N3	6.61	1.49	1.38
1	AA	1407	5MC	C2-N3	6.57	1.49	1.36
25	BA	1962	5MC	C2-N3	6.55	1.49	1.36
24	AX	20	H2U	C2-N3	6.51	1.49	1.38
24	AX	16	H2U	C2-N3	6.47	1.49	1.38
24	AX	8	4SU	C2-N3	6.46	1.49	1.38
1	AA	1402	4OC	C6-C5	6.45	1.50	1.35
24	AX	47	3AU	C2-N3	6.45	1.49	1.38
25	BA	2552	OMU	C2-N3	6.44	1.49	1.38
1	AA	1498	UR3	C2-N1	6.34	1.47	1.38
23	AW	8	4SU	C2-N3	6.28	1.49	1.38
23	AW	32	OMC	C2-N3	6.23	1.49	1.36
25	BA	2030	6MZ	C6-N6	6.21	1.45	1.35
25	BA	1915	3TD	C6-N1	6.15	1.46	1.36
24	AX	8	4SU	C6-C5	6.13	1.49	1.35
24	AX	46	7MG	C4-N9	5.91	1.44	1.37
23	AW	32	OMC	C6-C5	5.91	1.48	1.35
1	AA	1498	UR3	C6-C5	5.89	1.48	1.35
25	BA	2552	OMU	C6-C5	5.89	1.48	1.35
23	AW	8	4SU	C6-C5	5.87	1.48	1.35
25	BA	2449	H2U	C2-N3	5.81	1.48	1.38
1	AA	1402	4OC	C2-N3	5.79	1.48	1.36
1	AA	966	2MG	C2-N3	5.78	1.47	1.33
24	AX	46	7MG	C2-N3	5.78	1.47	1.33
24	AX	46	7MG	C4-N3	5.74	1.47	1.34
25	BA	2498	OMC	C2-N3	5.68	1.47	1.36
36	BN	81	4D4	CZ-NE	5.65	1.44	1.33
23	AW	8	4SU	C4-S4	-5.63	1.57	1.68
25	BA	2498	OMC	C6-C5	5.61	1.48	1.35
24	AX	8	4SU	C4-S4	-5.55	1.57	1.68
24	AX	8	4SU	C5-C4	5.54	1.49	1.42
1	AA	967	5MC	C4-N4	5.34	1.48	1.34
25	BA	2251	OMG	C2-N2	5.31	1.46	1.34
1	AA	1407	5MC	C4-N4	5.28	1.47	1.34
23	AW	8	4SU	C5-C4	5.24	1.49	1.42
25	BA	1962	5MC	C4-N4	5.22	1.47	1.34
24	AX	47	3AU	C4-N3	5.19	1.47	1.38
25	BA	745	1MG	C2-N2	5.17	1.43	1.34
1	AA	967	5MC	C6-N1	5.11	1.46	1.38
25	BA	2503	2MA	C4-N3	5.05	1.49	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
23	AW	32	OMC	C4-N3	5.03	1.44	1.34
24	AX	20	H2U	C4-N3	5.00	1.46	1.37
23	AW	20	H2U	C4-N3	5.00	1.46	1.37
1	AA	1402	4OC	C4-N4	4.99	1.46	1.35
1	AA	1402	4OC	O2-C2	-4.99	1.14	1.23
25	BA	2251	OMG	C2-N3	4.98	1.45	1.33
24	AX	16	H2U	C4-N3	4.90	1.45	1.37
25	BA	1915	3TD	C1'-C5	-4.89	1.39	1.50
24	AX	46	7MG	C2-N2	4.83	1.45	1.34
1	AA	1407	5MC	C6-N1	4.80	1.46	1.38
1	AA	527	G7M	C2-N3	4.79	1.44	1.33
23	AW	32	OMC	C4-N4	4.78	1.45	1.33
25	BA	2251	OMG	C4-N3	4.76	1.48	1.37
1	AA	967	5MC	C2-N1	4.74	1.50	1.40
25	BA	2069	G7M	C2-N3	4.68	1.44	1.33
1	AA	1207	2MG	C2-N2	4.66	1.43	1.33
25	BA	1962	5MC	C6-N1	4.66	1.46	1.38
1	AA	527	G7M	C2-N2	4.65	1.45	1.34
1	AA	1498	UR3	C2-N3	4.65	1.48	1.39
1	AA	527	G7M	C4-N3	4.56	1.48	1.37
25	BA	2498	OMC	C4-N4	4.56	1.44	1.33
25	BA	2498	OMC	C4-N3	4.55	1.43	1.34
1	AA	1407	5MC	C2-N1	4.51	1.49	1.40
1	AA	1516	2MG	C2-N2	4.39	1.43	1.33
25	BA	2069	G7M	C2-N2	4.38	1.44	1.34
25	BA	2552	OMU	C2-N1	4.37	1.45	1.38
25	BA	1915	3TD	C2-N3	4.34	1.48	1.38
1	AA	1402	4OC	C5-C4	4.28	1.49	1.40
25	BA	745	1MG	C4-N3	4.25	1.47	1.37
25	BA	2445	2MG	C2-N2	4.24	1.42	1.33
25	BA	2069	G7M	C4-N3	4.21	1.47	1.37
25	BA	2449	H2U	C4-N3	4.19	1.44	1.37
24	AX	46	7MG	C5-C4	4.12	1.43	1.37
25	BA	1962	5MC	C2-N1	4.09	1.48	1.40
25	BA	1835	2MG	C2-N2	4.08	1.42	1.33
24	AX	46	7MG	C2-N1	4.07	1.47	1.37
1	AA	1207	2MG	C2-N1	4.04	1.43	1.36
1	AA	966	2MG	C2-N2	4.03	1.43	1.34
25	BA	2552	OMU	O4-C4	-4.02	1.16	1.24
1	AA	966	2MG	C4-N3	4.01	1.47	1.37
23	AW	32	OMC	C2-N1	3.99	1.48	1.40
1	AA	1207	2MG	C6-N1	3.98	1.43	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	AX	46	7MG	C5-C6	3.94	1.52	1.42
1	AA	1207	2MG	C4-N3	3.83	1.46	1.37
1	AA	966	2MG	C6-N1	3.78	1.43	1.37
25	BA	1835	2MG	C6-N1	3.77	1.43	1.37
1	AA	1516	2MG	C6-N1	3.77	1.43	1.37
1	AA	1402	4OC	C2-N1	3.76	1.48	1.40
1	AA	1402	4OC	CM4-N4	3.72	1.52	1.45
25	BA	2552	OMU	C4-N3	3.69	1.45	1.38
24	AX	46	7MG	O6-C6	-3.68	1.16	1.23
1	AA	1516	2MG	C2-N1	3.67	1.42	1.36
25	BA	2445	2MG	C2-N1	3.67	1.42	1.36
25	BA	2445	2MG	C6-N1	3.66	1.43	1.37
25	BA	1835	2MG	C2-N1	3.65	1.42	1.36
25	BA	1835	2MG	C4-N3	3.63	1.46	1.37
1	AA	1516	2MG	C4-N3	3.63	1.46	1.37
23	AW	55	PSU	C6-C5	3.58	1.39	1.35
25	BA	2251	OMG	C6-N1	3.52	1.43	1.37
25	BA	2445	2MG	C4-N3	3.52	1.45	1.37
25	BA	1835	2MG	O6-C6	-3.52	1.16	1.23
24	AX	47	3AU	C6-N1	3.51	1.46	1.38
25	BA	2552	OMU	O2-C2	-3.50	1.16	1.23
25	BA	2498	OMC	C2-N1	3.48	1.47	1.40
25	BA	2445	2MG	O6-C6	-3.42	1.16	1.23
1	AA	527	G7M	C6-N1	3.37	1.42	1.37
1	AA	1516	2MG	O6-C6	-3.37	1.16	1.23
1	AA	1207	2MG	O6-C6	-3.36	1.16	1.23
25	BA	1939	5MU	C4-N3	-3.35	1.32	1.38
1	AA	966	2MG	O6-C6	-3.30	1.16	1.23
25	BA	747	5MU	C4-N3	-3.19	1.32	1.38
25	BA	2251	OMG	C5-C4	-3.18	1.35	1.43
24	AX	46	7MG	C6-N1	3.18	1.44	1.38
25	BA	1939	5MU	C6-N1	-3.15	1.32	1.38
25	BA	2069	G7M	C6-N1	3.15	1.42	1.37
24	AX	55	PSU	C6-C5	3.11	1.39	1.35
23	AW	8	4SU	O2-C2	-3.11	1.17	1.23
1	AA	1402	4OC	C6-N1	3.10	1.45	1.38
25	BA	2498	OMC	O2-C2	-3.09	1.18	1.23
24	AX	8	4SU	C6-N1	3.09	1.45	1.38
25	BA	2503	2MA	C6-N1	3.09	1.44	1.38
25	BA	1915	3TD	C4-N3	3.08	1.47	1.40
25	BA	2030	6MZ	C5-C4	-3.08	1.32	1.40
24	AX	46	7MG	C5-N7	3.04	1.44	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	AX	8	4SU	O2-C2	-3.04	1.17	1.23
25	BA	2445	2MG	C5-C4	-3.03	1.35	1.43
24	AX	39	PSU	C6-C5	3.00	1.38	1.35
1	AA	1518	MA6	C5-C4	-2.98	1.33	1.40
25	BA	2503	2MA	C5-C4	-2.98	1.35	1.43
23	AW	8	4SU	C6-N1	2.97	1.45	1.38
1	AA	1519	MA6	C5-C4	-2.97	1.33	1.40
23	AW	32	OMC	O2-C2	-2.94	1.18	1.23
25	BA	1835	2MG	C5-C4	-2.94	1.35	1.43
25	BA	747	5MU	C6-N1	-2.90	1.33	1.38
24	AX	54	5MU	C4-N3	-2.90	1.33	1.38
1	AA	1518	MA6	C2-N3	2.90	1.36	1.32
24	AX	47	3AU	O4-C4	-2.90	1.18	1.24
25	BA	2498	OMC	C6-N1	2.89	1.45	1.38
1	AA	1516	2MG	C5-C4	-2.87	1.35	1.43
25	BA	1911	PSU	C6-C5	2.85	1.38	1.35
1	AA	1519	MA6	C2-N3	2.82	1.36	1.32
24	AX	47	3AU	C5-C4	2.81	1.49	1.43
23	AW	54	5MU	C6-N1	-2.80	1.33	1.38
25	BA	1917	PSU	C6-C5	2.79	1.38	1.35
1	AA	1519	MA6	C10-N6	2.79	1.52	1.45
23	AW	32	OMC	C6-N1	2.79	1.44	1.38
25	BA	1618	6MZ	C5-C4	-2.78	1.33	1.40
25	BA	2504	PSU	C6-C5	2.77	1.38	1.35
1	AA	1207	2MG	C5-C6	2.76	1.53	1.47
25	BA	747	5MU	C2-N3	-2.76	1.33	1.38
1	AA	966	2MG	C5-C6	2.76	1.53	1.47
25	BA	2449	H2U	O2-C2	-2.76	1.18	1.23
25	BA	1915	3TD	O2-C2	-2.74	1.18	1.23
1	AA	516	PSU	C6-C5	2.74	1.38	1.35
1	AA	1207	2MG	C5-C4	-2.73	1.36	1.43
1	AA	1518	MA6	C10-N6	2.73	1.51	1.45
24	AX	54	5MU	C6-N1	-2.71	1.33	1.38
25	BA	1939	5MU	C2-N3	-2.71	1.33	1.38
24	AX	32	PSU	C6-C5	2.71	1.38	1.35
1	AA	1407	5MC	O2-C2	-2.70	1.18	1.23
25	BA	2251	OMG	C5-C6	2.69	1.52	1.47
1	AA	966	2MG	C5-C4	-2.68	1.36	1.43
25	BA	1915	3TD	O4-C4	-2.64	1.17	1.23
23	AW	54	5MU	C4-N3	-2.64	1.33	1.38
1	AA	1516	2MG	C5-C6	2.62	1.52	1.47
25	BA	1962	5MC	O2-C2	-2.62	1.18	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	AA	527	G7M	O6-C6	-2.62	1.18	1.23
25	BA	1915	3TD	C10-N3	2.60	1.51	1.47
1	AA	527	G7M	C5-C6	2.59	1.52	1.45
1	AA	1498	UR3	O4-C4	-2.55	1.18	1.23
24	AX	37	MIA	C2-N3	2.54	1.36	1.32
36	BN	81	4D4	CZ-NH1	2.53	1.45	1.34
25	BA	2069	G7M	C5-C6	2.53	1.52	1.45
25	BA	2449	H2U	O4-C4	-2.52	1.18	1.23
25	BA	746	PSU	C6-C5	2.52	1.38	1.35
25	BA	2580	PSU	O4'-C1'	-2.50	1.40	1.43
25	BA	2069	G7M	C2-N1	2.47	1.43	1.37
24	AX	47	3AU	O2-C2	-2.47	1.18	1.23
24	AX	54	5MU	C6-C5	2.47	1.38	1.34
24	AX	37	MIA	C5-C4	-2.46	1.34	1.40
1	AA	527	G7M	C2-N1	2.45	1.43	1.37
25	BA	2605	PSU	C4-C5	-2.44	1.37	1.44
25	BA	2503	2MA	CM2-C2	2.44	1.56	1.49
1	AA	1498	UR3	O2-C2	-2.44	1.18	1.22
25	BA	955	PSU	C6-C5	2.43	1.38	1.35
25	BA	1835	2MG	C5-C6	2.41	1.52	1.47
25	BA	2251	OMG	C2-N1	2.41	1.43	1.37
25	BA	2069	G7M	O6-C6	-2.40	1.18	1.23
24	AX	16	H2U	O2-C2	-2.39	1.18	1.23
1	AA	1498	UR3	C6-N1	2.39	1.43	1.38
25	BA	2580	PSU	C4-C5	-2.38	1.37	1.44
25	BA	2605	PSU	C6-C5	2.38	1.38	1.35
25	BA	745	1MG	C5-C4	-2.37	1.37	1.43
24	AX	54	5MU	C2-N3	-2.35	1.33	1.38
24	AX	20	H2U	O2-C2	-2.34	1.18	1.23
23	AW	20	H2U	O2-C2	-2.33	1.18	1.23
25	BA	2445	2MG	C5-C6	2.31	1.52	1.47
25	BA	1618	6MZ	C2-N3	2.31	1.35	1.32
25	BA	2503	2MA	C2-N1	2.30	1.43	1.36
24	AX	16	H2U	O4-C4	-2.28	1.18	1.23
25	BA	2604	PSU	C6-C5	2.27	1.38	1.35
25	BA	746	PSU	C4-C5	-2.25	1.37	1.44
23	AW	54	5MU	C4-C5	2.25	1.48	1.44
1	AA	967	5MC	O2-C2	-2.25	1.19	1.23
23	AW	20	H2U	O4-C4	-2.24	1.18	1.23
25	BA	745	1MG	C5-C6	2.22	1.54	1.47
25	BA	955	PSU	C4-C5	-2.19	1.37	1.44
1	AA	527	G7M	C5-C4	-2.17	1.34	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	AX	20	H2U	O4-C4	-2.14	1.18	1.23
23	AW	54	5MU	C6-C5	2.13	1.38	1.34
25	BA	1939	5MU	C6-C5	2.13	1.38	1.34
25	BA	746	PSU	O4'-C1'	-2.11	1.40	1.43
25	BA	2552	OMU	C6-N1	2.11	1.43	1.38
25	BA	2457	PSU	O4'-C1'	-2.11	1.40	1.43
25	BA	2030	6MZ	C6-N1	-2.11	1.31	1.34
25	BA	2251	OMG	O6-C6	-2.10	1.19	1.23
25	BA	2604	PSU	C4-C5	-2.09	1.38	1.44
25	BA	2457	PSU	C4-C5	-2.09	1.38	1.44
23	AW	32	OMC	C5-C4	2.08	1.47	1.42
23	AW	54	5MU	C2-N3	-2.07	1.34	1.38
1	AA	966	2MG	C2-N1	2.07	1.42	1.37
25	BA	2069	G7M	C5-C4	-2.07	1.34	1.39
25	BA	1917	PSU	O4'-C1'	-2.07	1.41	1.43
24	AX	55	PSU	C4-C5	-2.05	1.38	1.44
25	BA	2030	6MZ	C2-N3	2.04	1.35	1.32
23	AW	54	5MU	C2-N1	2.04	1.41	1.38
25	BA	1911	PSU	C4-C5	-2.04	1.38	1.44
25	BA	747	5MU	C6-C5	2.03	1.37	1.34
25	BA	2457	PSU	C6-C5	2.02	1.37	1.35
25	BA	745	1MG	C6-N1	2.02	1.43	1.39
25	BA	955	PSU	O4'-C1'	-2.01	1.41	1.43

All (203) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	1518	MA6	N1-C6-N6	-17.41	98.73	117.06
1	AA	1519	MA6	N1-C6-N6	-16.80	99.38	117.06
24	AX	37	MIA	C12-C13-C14	-8.98	109.67	127.14
25	BA	2449	H2U	C4-N3-C2	-8.53	118.71	125.79
23	AW	8	4SU	C4-N3-C2	-8.33	119.25	127.34
24	AX	8	4SU	C4-N3-C2	-7.87	119.70	127.34
24	AX	46	7MG	C5-C4-N3	-7.42	120.14	127.80
25	BA	2030	6MZ	C9-N6-C6	-7.35	116.55	122.87
24	AX	16	H2U	C4-N3-C2	-7.02	119.97	125.79
23	AW	20	H2U	C4-N3-C2	-6.83	120.13	125.79
24	AX	20	H2U	C4-N3-C2	-6.66	120.27	125.79
23	AW	8	4SU	C5-C4-N3	6.07	120.32	114.69
25	BA	1939	5MU	C4-N3-C2	-5.96	119.63	127.35
25	BA	2030	6MZ	N3-C2-N1	-5.88	119.49	128.68
24	AX	54	5MU	C4-N3-C2	-5.74	119.93	127.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
25	BA	1915	3TD	N1-C2-N3	5.49	120.47	116.14
25	BA	1939	5MU	N3-C2-N1	5.48	122.16	114.89
24	AX	8	4SU	C5-C4-N3	5.45	119.75	114.69
25	BA	2552	OMU	C4-N3-C2	-5.44	119.41	126.58
23	AW	54	5MU	C4-N3-C2	-5.44	120.31	127.35
25	BA	1618	6MZ	N3-C2-N1	-5.38	120.28	128.68
24	AX	37	MIA	N3-C2-N1	-5.36	120.30	128.68
1	AA	1518	MA6	N3-C2-N1	-5.31	120.38	128.68
24	AX	54	5MU	N3-C2-N1	5.31	121.94	114.89
25	BA	747	5MU	C4-N3-C2	-5.26	120.54	127.35
25	BA	2457	PSU	C4-N3-C2	-5.19	118.86	126.34
25	BA	1618	6MZ	C9-N6-C6	-5.14	118.45	122.87
1	AA	1519	MA6	N3-C2-N1	-5.11	120.69	128.68
25	BA	1911	PSU	C4-N3-C2	-5.03	119.10	126.34
25	BA	1939	5MU	C5-C4-N3	4.88	119.47	115.31
25	BA	2504	PSU	N1-C2-N3	4.87	120.65	115.13
25	BA	1911	PSU	N1-C2-N3	4.86	120.64	115.13
25	BA	746	PSU	C4-N3-C2	-4.84	119.36	126.34
25	BA	2457	PSU	N1-C2-N3	4.83	120.60	115.13
25	BA	747	5MU	C5-C4-N3	4.80	119.41	115.31
25	BA	2605	PSU	C4-N3-C2	-4.78	119.45	126.34
25	BA	2580	PSU	C4-N3-C2	-4.75	119.50	126.34
24	AX	54	5MU	C5-C4-N3	4.71	119.33	115.31
25	BA	2504	PSU	C4-N3-C2	-4.71	119.55	126.34
25	BA	747	5MU	N3-C2-N1	4.71	121.14	114.89
25	BA	2580	PSU	N1-C2-N3	4.66	120.41	115.13
24	AX	47	3AU	C4-N3-C2	-4.64	120.45	126.58
23	AW	54	5MU	C5-C4-N3	4.63	119.27	115.31
23	AW	54	5MU	N3-C2-N1	4.62	121.03	114.89
1	AA	516	PSU	C4-N3-C2	-4.62	119.68	126.34
25	BA	1939	5MU	C5-C6-N1	-4.62	118.59	123.34
24	AX	32	PSU	N1-C2-N3	4.59	120.33	115.13
24	AX	39	PSU	C4-N3-C2	-4.57	119.76	126.34
24	AX	37	MIA	C16-C14-C13	-4.55	109.50	122.65
1	AA	516	PSU	N1-C2-N3	4.53	120.27	115.13
25	BA	2604	PSU	C4-N3-C2	-4.52	119.82	126.34
24	AX	46	7MG	C2-N3-C4	4.50	120.31	112.30
25	BA	955	PSU	C4-N3-C2	-4.48	119.88	126.34
25	BA	1917	PSU	C4-N3-C2	-4.48	119.89	126.34
25	BA	747	5MU	O4-C4-C5	-4.45	119.74	124.90
24	AX	55	PSU	N1-C2-N3	4.45	120.17	115.13
23	AW	55	PSU	C4-N3-C2	-4.42	119.97	126.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
24	AX	32	PSU	C4-N3-C2	-4.41	119.98	126.34
24	AX	55	PSU	C4-N3-C2	-4.39	120.01	126.34
24	AX	39	PSU	N1-C2-N3	4.39	120.10	115.13
1	AA	1498	UR3	C4-N3-C2	-4.37	120.45	124.56
25	BA	746	PSU	N1-C2-N3	4.34	120.05	115.13
24	AX	54	5MU	C5-C6-N1	-4.33	118.88	123.34
23	AW	55	PSU	N1-C2-N3	4.33	120.04	115.13
25	BA	1917	PSU	N1-C2-N3	4.30	120.00	115.13
25	BA	955	PSU	N1-C2-N3	4.29	119.99	115.13
24	AX	54	5MU	O4-C4-C5	-4.20	120.03	124.90
24	AX	37	MIA	C15-C14-C13	-4.19	110.55	122.65
25	BA	2604	PSU	N1-C2-N3	4.18	119.86	115.13
25	BA	2605	PSU	N1-C2-N3	4.18	119.86	115.13
25	BA	2030	6MZ	C2-N1-C6	4.17	120.17	116.59
25	BA	747	5MU	C5-C6-N1	-4.09	119.13	123.34
25	BA	1939	5MU	O4-C4-C5	-4.09	120.16	124.90
25	BA	2552	OMU	N3-C2-N1	4.06	120.28	114.89
23	AW	8	4SU	C5-C4-S4	-4.06	119.24	124.47
23	AW	54	5MU	O4-C4-C5	-4.03	120.22	124.90
24	AX	47	3AU	N3-C2-N1	4.02	120.23	114.89
25	BA	745	1MG	C5-C6-N1	4.00	119.91	113.90
25	BA	1939	5MU	O2-C2-N1	-3.96	117.52	122.79
24	AX	8	4SU	N3-C2-N1	3.95	120.13	114.89
25	BA	1915	3TD	C4-N3-C2	-3.92	120.35	124.61
23	AW	54	5MU	C5-C6-N1	-3.91	119.31	123.34
25	BA	2449	H2U	N3-C2-N1	3.85	120.72	116.65
25	BA	2503	2MA	C5-C6-N1	3.83	120.63	114.02
25	BA	1835	2MG	CM2-N2-C2	-3.80	115.47	123.86
12	AL	89	D2T	CB1-SB-CB	3.75	109.23	102.44
23	AW	8	4SU	N3-C2-N1	3.72	119.82	114.89
1	AA	1407	5MC	C5-C6-N1	-3.67	119.57	123.34
25	BA	2580	PSU	O2-C2-N1	-3.60	118.83	122.79
25	BA	2449	H2U	O2-C2-N1	-3.55	118.65	123.11
25	BA	1835	2MG	C5-C6-N1	3.53	120.18	113.95
25	BA	2449	H2U	C5-C4-N3	3.46	120.54	116.65
25	BA	2251	OMG	C5-C6-N1	3.45	120.03	113.95
1	AA	966	2MG	C5-C6-N1	3.43	120.00	113.95
1	AA	1498	UR3	C1'-N1-C2	3.40	122.72	116.99
1	AA	1516	2MG	C5-C6-N1	3.39	119.94	113.95
25	BA	2445	2MG	C5-C6-N1	3.38	119.92	113.95
1	AA	1207	2MG	C5-C6-N1	3.38	119.91	113.95
24	AX	37	MIA	C2-N1-C6	3.36	119.47	116.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
25	BA	2552	OMU	C5-C4-N3	3.36	119.86	114.84
23	AW	20	H2U	N3-C2-N1	3.34	120.19	116.65
24	AX	8	4SU	C5-C4-S4	-3.33	120.17	124.47
25	BA	2445	2MG	CM2-N2-C2	-3.29	116.59	123.86
25	BA	1618	6MZ	C2-N1-C6	3.29	119.41	116.59
25	BA	1962	5MC	C5-C6-N1	-3.28	119.97	123.34
24	AX	46	7MG	O6-C6-C5	-3.27	119.75	127.24
23	AW	55	PSU	O2-C2-N1	-3.24	119.22	122.79
24	AX	16	H2U	N3-C2-N1	3.21	120.05	116.65
24	AX	54	5MU	O2-C2-N1	-3.21	118.52	122.79
25	BA	1911	PSU	O2-C2-N1	-3.21	119.26	122.79
24	AX	32	PSU	O2-C2-N1	-3.19	119.28	122.79
24	AX	20	H2U	N3-C2-N1	3.17	120.01	116.65
24	AX	47	3AU	C5-C4-N3	3.17	119.58	114.84
24	AX	46	7MG	C2-N1-C6	-3.12	119.40	125.10
1	AA	1516	2MG	CM2-N2-C2	-3.10	117.01	123.86
25	BA	2552	OMU	O2-C2-N1	-3.09	118.68	122.79
1	AA	967	5MC	C5-C6-N1	-3.04	120.21	123.34
25	BA	2251	OMG	C2-N1-C6	-3.03	119.51	125.10
24	AX	55	PSU	O2-C2-N1	-3.02	119.46	122.79
12	AL	89	D2T	OD2-CG-CB	3.01	119.66	113.15
25	BA	2605	PSU	O2-C2-N1	-3.01	119.48	122.79
24	AX	39	PSU	O2-C2-N1	-2.99	119.50	122.79
24	AX	16	H2U	C5-C4-N3	2.97	119.98	116.65
25	BA	2069	G7M	C2-N1-C6	-2.95	119.67	125.10
1	AA	516	PSU	O2-C2-N1	-2.92	119.58	122.79
1	AA	966	2MG	C2-N1-C6	-2.89	119.78	125.10
25	BA	955	PSU	O2-C2-N1	-2.87	119.63	122.79
25	BA	2580	PSU	C6-N1-C2	-2.87	119.75	122.68
25	BA	2251	OMG	C8-N7-C5	2.84	108.40	102.99
25	BA	2552	OMU	O4-C4-C5	-2.83	120.19	125.16
24	AX	20	H2U	C5-C6-N1	2.82	120.90	111.61
1	AA	527	G7M	C2-N1-C6	-2.81	119.93	125.10
24	AX	47	3AU	O4-C4-C5	-2.78	120.27	125.16
1	AA	1207	2MG	CM2-N2-C2	-2.78	117.72	123.86
24	AX	46	7MG	C5-C4-N9	2.75	110.52	106.68
24	AX	16	H2U	C5-C6-N1	2.75	120.67	111.61
25	BA	2503	2MA	C8-N7-C5	2.74	108.22	102.99
23	AW	20	H2U	C5-C6-N1	2.73	120.61	111.61
24	AX	32	PSU	C6-N1-C2	-2.69	119.94	122.68
1	AA	966	2MG	C8-N7-C5	2.68	108.10	102.99
25	BA	2457	PSU	O2-C2-N1	-2.68	119.84	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
24	AX	46	7MG	C5-C6-N1	2.67	120.26	112.31
25	BA	1917	PSU	O2-C2-N1	-2.66	119.86	122.79
1	AA	1516	2MG	C8-N7-C5	2.66	108.07	102.99
23	AW	54	5MU	C5M-C5-C4	2.65	121.69	118.77
24	AX	20	H2U	C5-C4-N3	2.65	119.63	116.65
25	BA	745	1MG	C8-N7-C5	2.65	108.04	102.99
1	AA	1207	2MG	C8-N7-C5	2.65	108.04	102.99
25	BA	746	PSU	O2-C2-N1	-2.65	119.88	122.79
36	BN	81	4D4	CB-CA-C	-2.63	107.58	111.77
25	BA	2504	PSU	C6-N1-C2	-2.63	120.00	122.68
25	BA	2457	PSU	C6-C5-C4	2.62	120.03	118.20
25	BA	2504	PSU	O2-C2-N1	-2.61	119.92	122.79
23	AW	20	H2U	C5-C4-N3	2.60	119.58	116.65
25	BA	2580	PSU	O4'-C1'-C2'	2.60	108.81	105.14
24	AX	46	7MG	N9-C4-N3	2.59	129.34	125.47
25	BA	2445	2MG	C8-N7-C5	2.59	107.92	102.99
23	AW	55	PSU	C6-N1-C2	-2.58	120.04	122.68
25	BA	1835	2MG	C8-N7-C5	2.57	107.89	102.99
25	BA	747	5MU	O2-C2-N1	-2.56	119.38	122.79
24	AX	16	H2U	O2-C2-N1	-2.54	119.92	123.11
25	BA	1917	PSU	C6-N1-C2	-2.50	120.12	122.68
24	AX	55	PSU	C6-N1-C2	-2.50	120.12	122.68
23	AW	54	5MU	O2-C2-N1	-2.50	119.47	122.79
24	AX	37	MIA	C1'-N9-C4	2.50	131.03	126.64
1	AA	1407	5MC	CM5-C5-C6	-2.47	119.55	122.85
25	BA	2503	2MA	CM2-C2-N1	2.45	121.68	116.23
25	BA	1835	2MG	O6-C6-C5	-2.45	119.59	124.37
23	AW	54	5MU	C5M-C5-C6	-2.41	119.63	122.85
28	BD	150	MEQ	CB-CG-CD	-2.38	107.73	113.04
1	AA	516	PSU	C6-N1-C2	-2.38	120.25	122.68
25	BA	2449	H2U	C5-C6-N1	2.36	119.39	111.61
25	BA	745	1MG	CM1-N1-C6	2.36	120.77	117.55
24	AX	37	MIA	C16-C14-C15	-2.36	109.40	114.60
25	BA	1911	PSU	C6-N1-C2	-2.35	120.28	122.68
25	BA	955	PSU	C6-N1-C2	-2.33	120.30	122.68
25	BA	746	PSU	C6-C5-C4	2.32	119.82	118.20
1	AA	1402	4OC	CM4-N4-C4	-2.31	117.94	122.45
25	BA	2445	2MG	O6-C6-C5	-2.28	119.92	124.37
25	BA	2604	PSU	O2-C2-N1	-2.25	120.31	122.79
1	AA	527	G7M	N1-C2-N3	-2.24	119.13	123.32
23	AW	20	H2U	O2-C2-N1	-2.24	120.29	123.11
1	AA	967	5MC	C1'-N1-C6	-2.24	117.40	121.12

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
25	BA	2030	6MZ	C4-C5-N7	-2.24	107.07	109.40
1	AA	1516	2MG	O6-C6-C5	-2.23	120.02	124.37
1	AA	527	G7M	N2-C2-N1	2.20	121.40	116.71
1	AA	1498	UR3	C6-N1-C2	-2.20	119.82	121.79
25	BA	2251	OMG	O6-C6-C5	-2.19	120.10	124.37
25	BA	1618	6MZ	C3'-C2'-C1'	2.17	104.25	100.98
25	BA	745	1MG	O6-C6-C5	-2.16	120.37	124.19
24	AX	39	PSU	C6-N1-C2	-2.15	120.48	122.68
25	BA	2605	PSU	C6-N1-C2	-2.14	120.49	122.68
23	AW	54	5MU	C1'-N1-C6	-2.14	117.56	121.12
12	AL	89	D2T	OD2-CG-OD1	-2.13	119.25	124.09
1	AA	966	2MG	O6-C6-C5	-2.12	120.23	124.37
1	AA	516	PSU	O4'-C1'-C2'	2.09	108.09	105.14
23	AW	8	4SU	C1'-N1-C2	2.09	121.35	117.57
1	AA	1207	2MG	O6-C6-C5	-2.08	120.30	124.37
24	AX	32	PSU	C6-C5-C4	2.07	119.64	118.20
25	BA	2604	PSU	C6-N1-C2	-2.05	120.59	122.68
25	BA	2457	PSU	O4'-C1'-C2'	2.03	108.01	105.14
24	AX	46	7MG	C4-C5-N7	2.02	110.07	106.13
25	BA	2605	PSU	O4-C4-C5	-2.01	118.79	124.05

There are no chirality outliers.

All (71) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	AA	1518	MA6	O4'-C4'-C5'-O5'
1	AA	1519	MA6	O4'-C4'-C5'-O5'
12	AL	89	D2T	CG-CB-SB-CB1
24	AX	8	4SU	C3'-C4'-C5'-O5'
24	AX	8	4SU	O4'-C4'-C5'-O5'
24	AX	16	H2U	O4'-C1'-N1-C6
24	AX	37	MIA	C5-C6-N6-C12
24	AX	37	MIA	N1-C6-N6-C12
24	AX	37	MIA	C12-C13-C14-C16
24	AX	46	7MG	O4'-C4'-C5'-O5'
24	AX	46	7MG	C3'-C4'-C5'-O5'
25	BA	1618	6MZ	N1-C6-N6-C9
25	BA	1618	6MZ	O4'-C4'-C5'-O5'
25	BA	1618	6MZ	C3'-C4'-C5'-O5'
25	BA	2445	2MG	C3'-C4'-C5'-O5'
25	BA	2498	OMC	O4'-C4'-C5'-O5'
25	BA	2504	PSU	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
25	BA	2504	PSU	O4'-C4'-C5'-O5'
36	BN	81	4D4	N-CA-CB-CG
24	AX	46	7MG	C4'-C5'-O5'-P
1	AA	1518	MA6	C3'-C4'-C5'-O5'
1	AA	1519	MA6	C3'-C4'-C5'-O5'
25	BA	2030	6MZ	C3'-C4'-C5'-O5'
25	BA	2503	2MA	O4'-C4'-C5'-O5'
28	BD	150	MEQ	CA-CB-CG-CD
24	AX	16	H2U	C2'-C1'-N1-C6
25	BA	2445	2MG	O4'-C4'-C5'-O5'
25	BA	2498	OMC	C3'-C4'-C5'-O5'
25	BA	1962	5MC	C2'-C1'-N1-C6
24	AX	16	H2U	C2'-C1'-N1-C2
25	BA	1962	5MC	C2'-C1'-N1-C2
24	AX	46	7MG	O4'-C1'-N9-C4
1	AA	1402	4OC	O4'-C4'-C5'-O5'
25	BA	1835	2MG	O4'-C4'-C5'-O5'
25	BA	2030	6MZ	O4'-C4'-C5'-O5'
1	AA	1518	MA6	C5-C6-N6-C10
1	AA	1519	MA6	C5-C6-N6-C10
25	BA	1835	2MG	C3'-C4'-C5'-O5'
24	AX	46	7MG	O4'-C1'-N9-C8
25	BA	1618	6MZ	C5-C6-N6-C9
36	BN	81	4D4	C-CA-CB-OB
24	AX	47	3AU	O4'-C4'-C5'-O5'
25	BA	1962	5MC	O4'-C1'-N1-C6
36	BN	81	4D4	C-CA-CB-CG
25	BA	1962	5MC	O4'-C1'-N1-C2
1	AA	527	G7M	C4'-C5'-O5'-P
1	AA	1518	MA6	C5-C6-N6-C9
24	AX	20	H2U	C4'-C5'-O5'-P
23	AW	20	H2U	C3'-C4'-C5'-O5'
24	AX	16	H2U	O4'-C1'-N1-C2
1	AA	966	2MG	C4'-C5'-O5'-P
25	BA	2503	2MA	C4'-C5'-O5'-P
25	BA	2069	G7M	C4'-C5'-O5'-P
24	AX	47	3AU	C3'-C4'-C5'-O5'
24	AX	37	MIA	N6-C12-C13-C14
25	BA	2503	2MA	C3'-C4'-C5'-O5'
24	AX	55	PSU	O4'-C1'-C5-C4
25	BA	1911	PSU	O4'-C1'-C5-C4
1	AA	1519	MA6	C4'-C5'-O5'-P

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Mol	Chain	Res	Type	Atoms
1	AA	1402	4OC	C3'-C4'-C5'-O5'
25	BA	2251	OMG	C3'-C4'-C5'-O5'
23	AW	55	PSU	O4'-C1'-C5-C6
25	BA	746	PSU	O4'-C1'-C5-C6
24	AX	46	7MG	C2'-C1'-N9-C8
24	AX	20	H2U	C2'-C1'-N1-C2
24	AX	8	4SU	C2'-C1'-N1-C2
36	BN	81	4D4	N-CA-CB-OB
1	AA	966	2MG	C3'-C4'-C5'-O5'
25	BA	2069	G7M	O4'-C4'-C5'-O5'
24	AX	20	H2U	C2'-C1'-N1-C6
25	BA	1618	6MZ	C4'-C5'-O5'-P

There are no ring outliers.

26 monomers are involved in 36 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
23	AW	54	5MU	2	0
1	AA	1498	UR3	1	0
1	AA	1518	MA6	1	0
25	BA	2503	2MA	2	0
25	BA	745	1MG	1	0
25	BA	1618	6MZ	1	0
25	BA	1917	PSU	1	0
24	AX	20	H2U	2	0
25	BA	2605	PSU	1	0
25	BA	2251	OMG	1	0
25	BA	2552	OMU	2	0
23	AW	32	OMC	1	0
12	AL	89	D2T	2	0
1	AA	1207	2MG	2	0
1	AA	1519	MA6	1	0
24	AX	16	H2U	1	0
23	AW	20	H2U	2	0
28	BD	150	MEQ	3	0
24	AX	47	3AU	1	0
36	BN	81	4D4	1	0
1	AA	1407	5MC	1	0
1	AA	1516	2MG	1	0
25	BA	2030	6MZ	2	0
1	AA	1402	4OC	2	0
24	AX	46	7MG	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
25	BA	2069	G7M	1	0

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 445 ligands modelled in this entry, 444 are monoatomic - leaving 1 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	$\#\|Z\| > 2$
63	PHE	AX	102	24	10,11,12	0.53	0	10,13,15	0.28	0

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
63	PHE	AX	102	24	-	4/5/6/8	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
63	AX	102	PHE	N-CA-CB-CG
63	AX	102	PHE	CA-CB-CG-CD1
63	AX	102	PHE	CA-CB-CG-CD2
63	AX	102	PHE	C-CA-CB-CG

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
63	AX	102	PHE	1	0

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

The following chains have linkage breaks:

Mol	Chain	Number of breaks
59	CD	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	CD	1357:ILE	C	1358:PRO	N	1.15

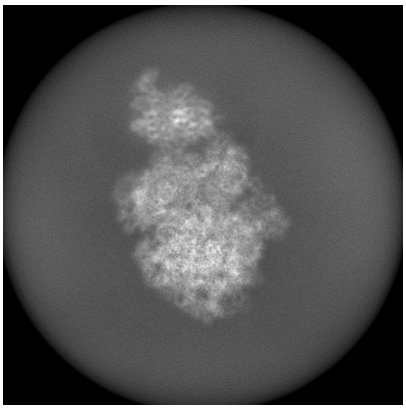
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-11419. These allow visual inspection of the internal detail of the map and identification of artifacts.

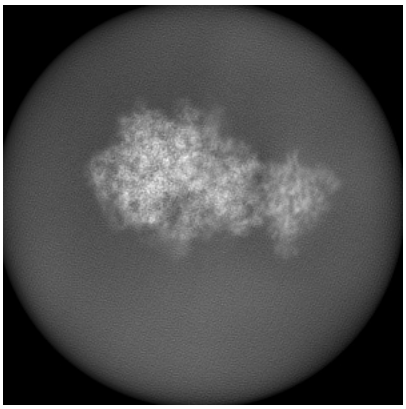
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

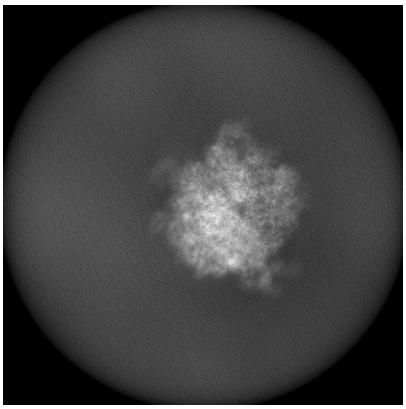
6.1.1 Primary map



X

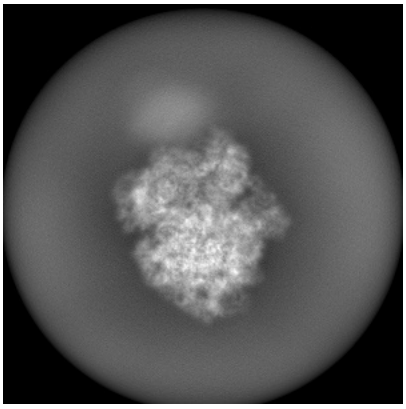


Y

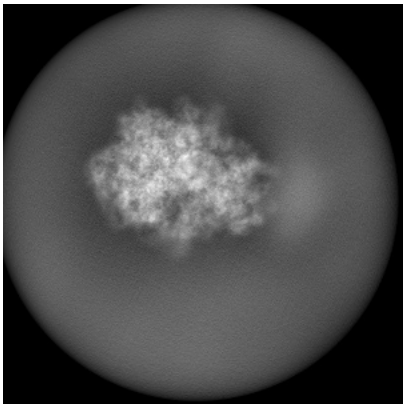


Z

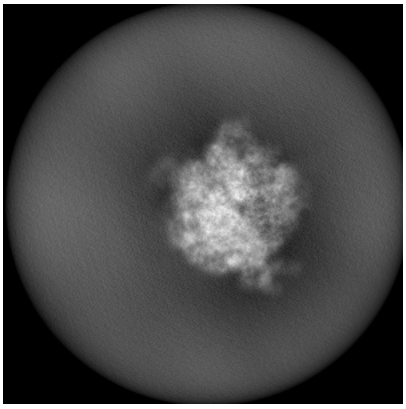
6.1.2 Raw map



X



Y

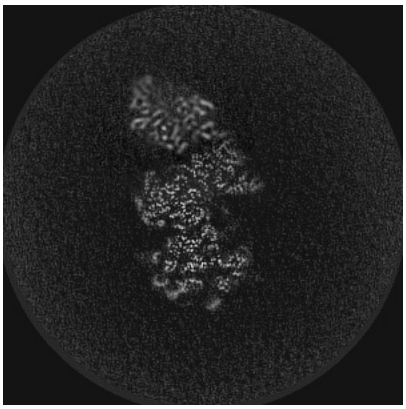


Z

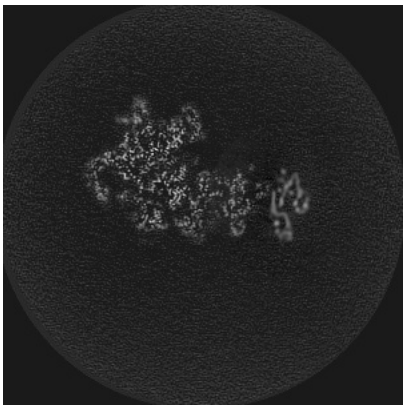
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

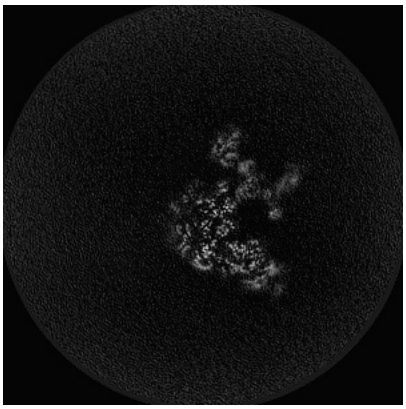
6.2.1 Primary map



X Index: 256

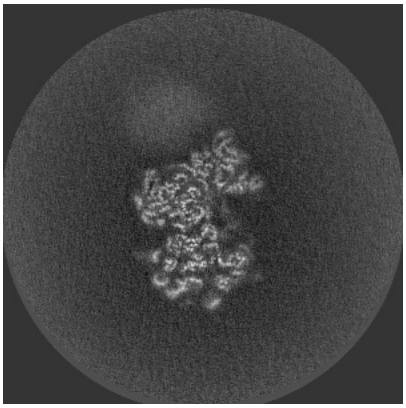


Y Index: 256

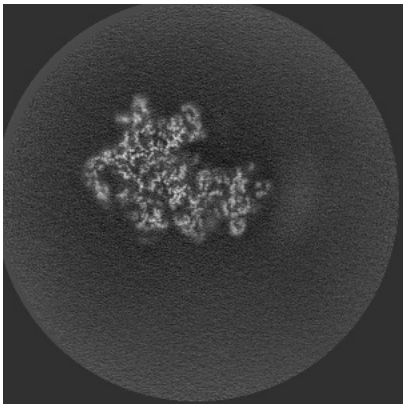


Z Index: 256

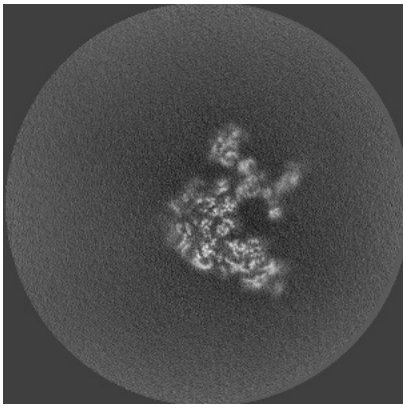
6.2.2 Raw map



X Index: 256



Y Index: 256

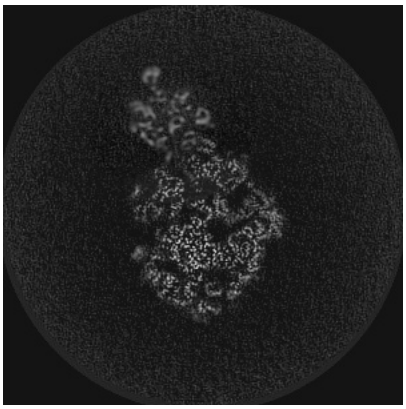


Z Index: 256

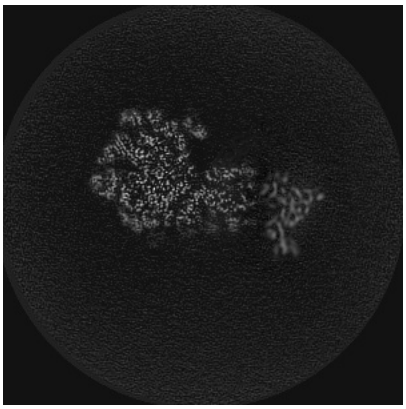
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

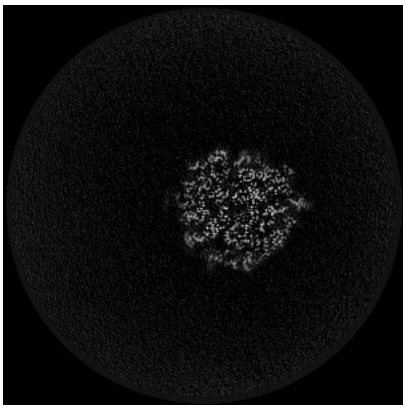
6.3.1 Primary map



X Index: 279

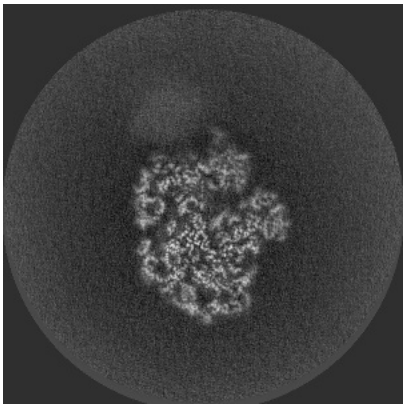


Y Index: 242

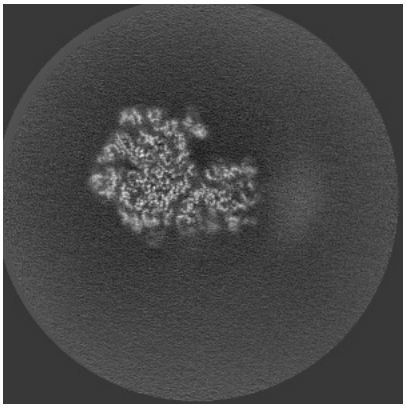


Z Index: 180

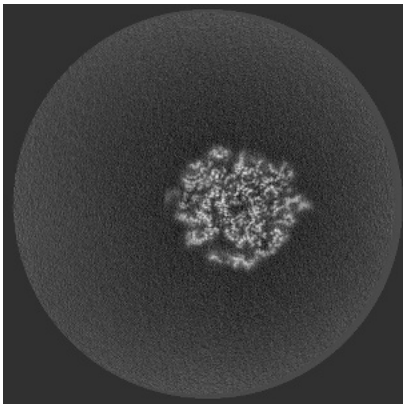
6.3.2 Raw map



X Index: 291



Y Index: 242



Z Index: 176

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

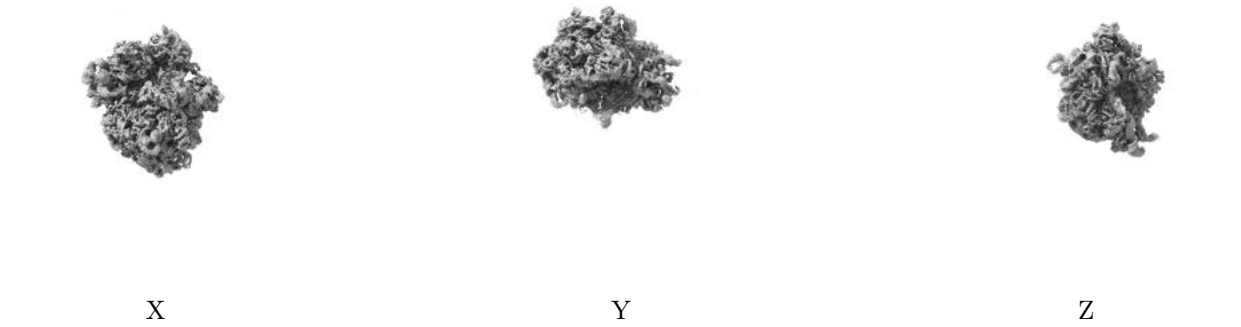
6.4 Orthogonal surface views (i)

6.4.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.5. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.4.2 Raw map



X Y Z

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

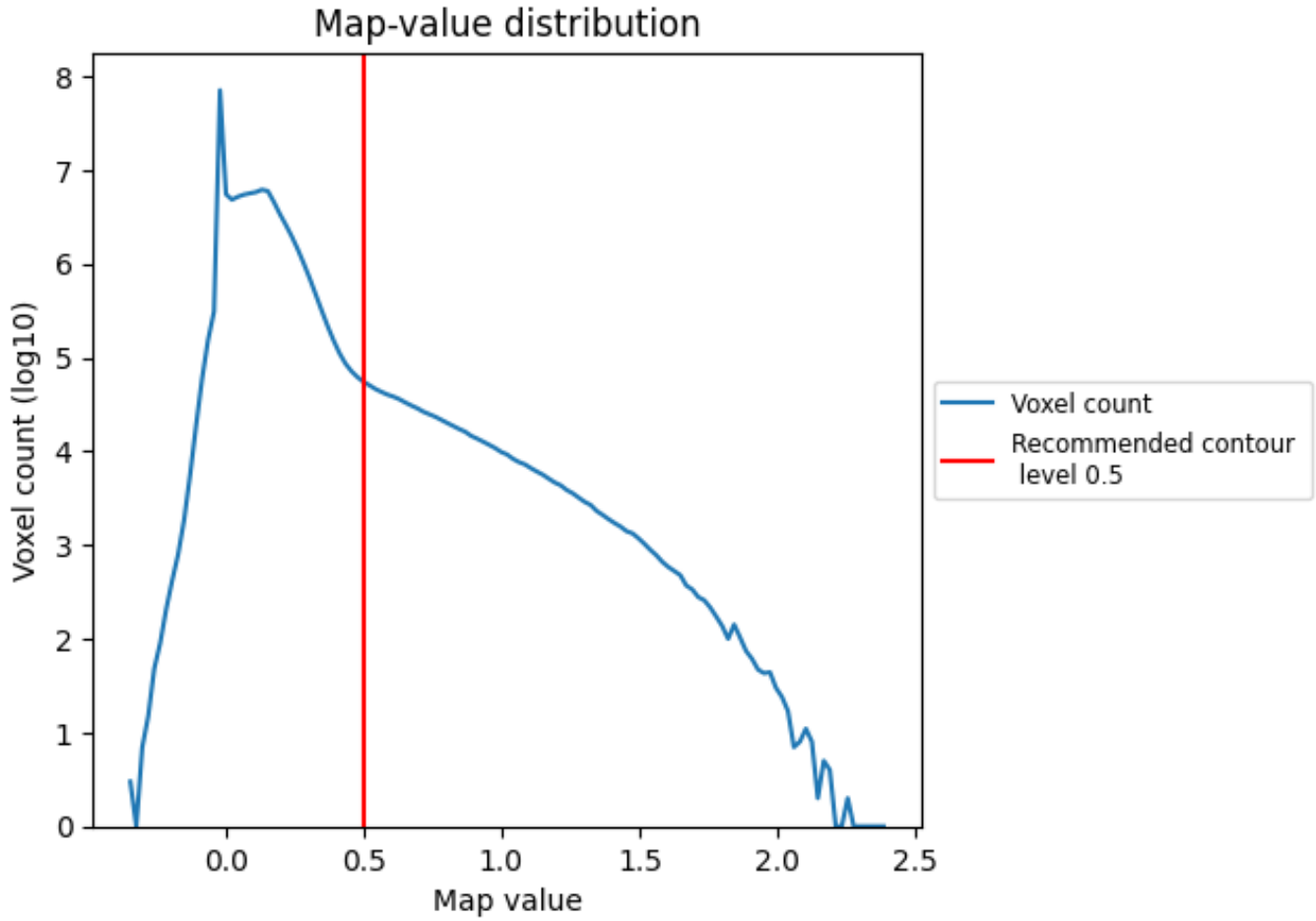
6.5 Mask visualisation (i)

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

7 Map analysis

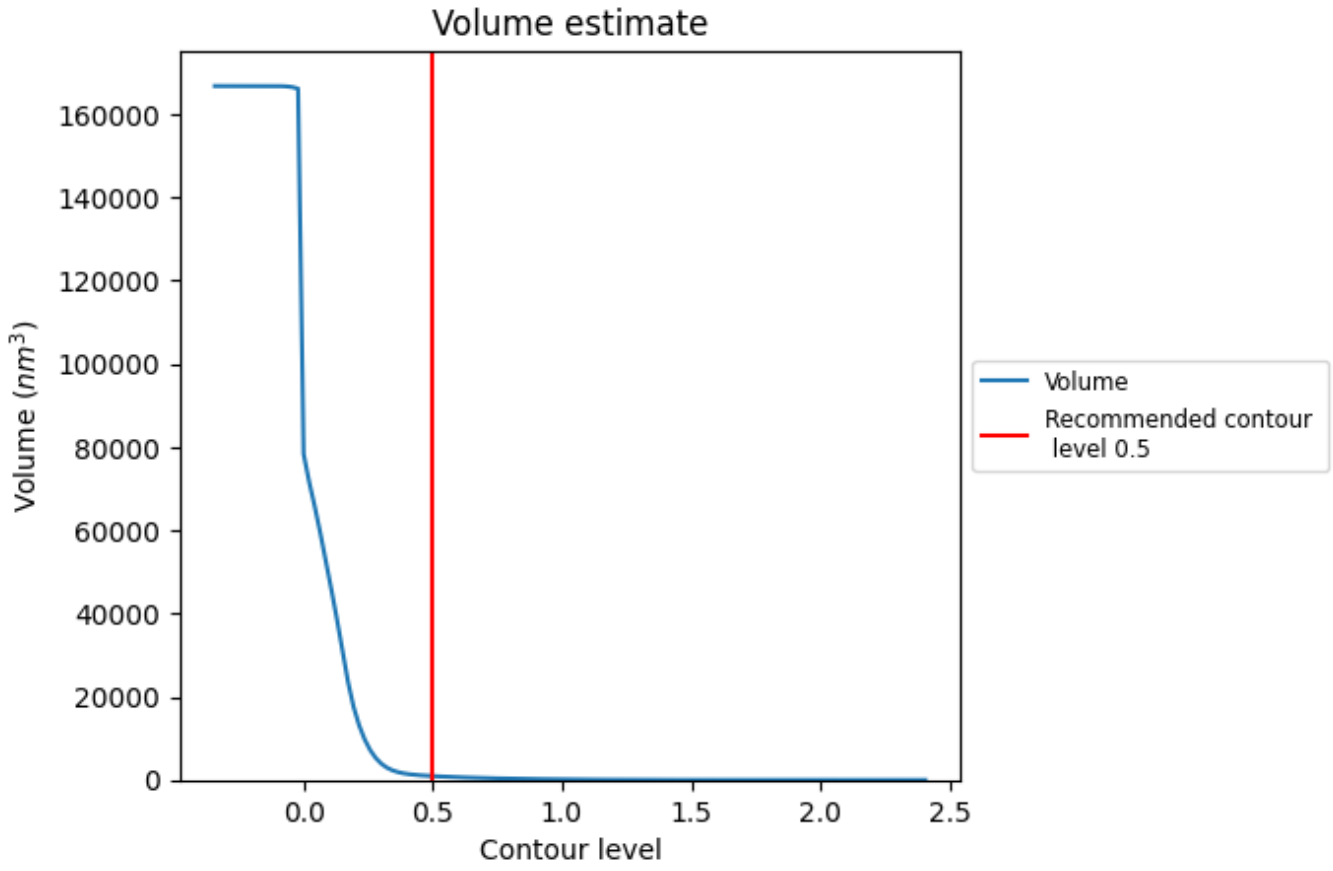
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

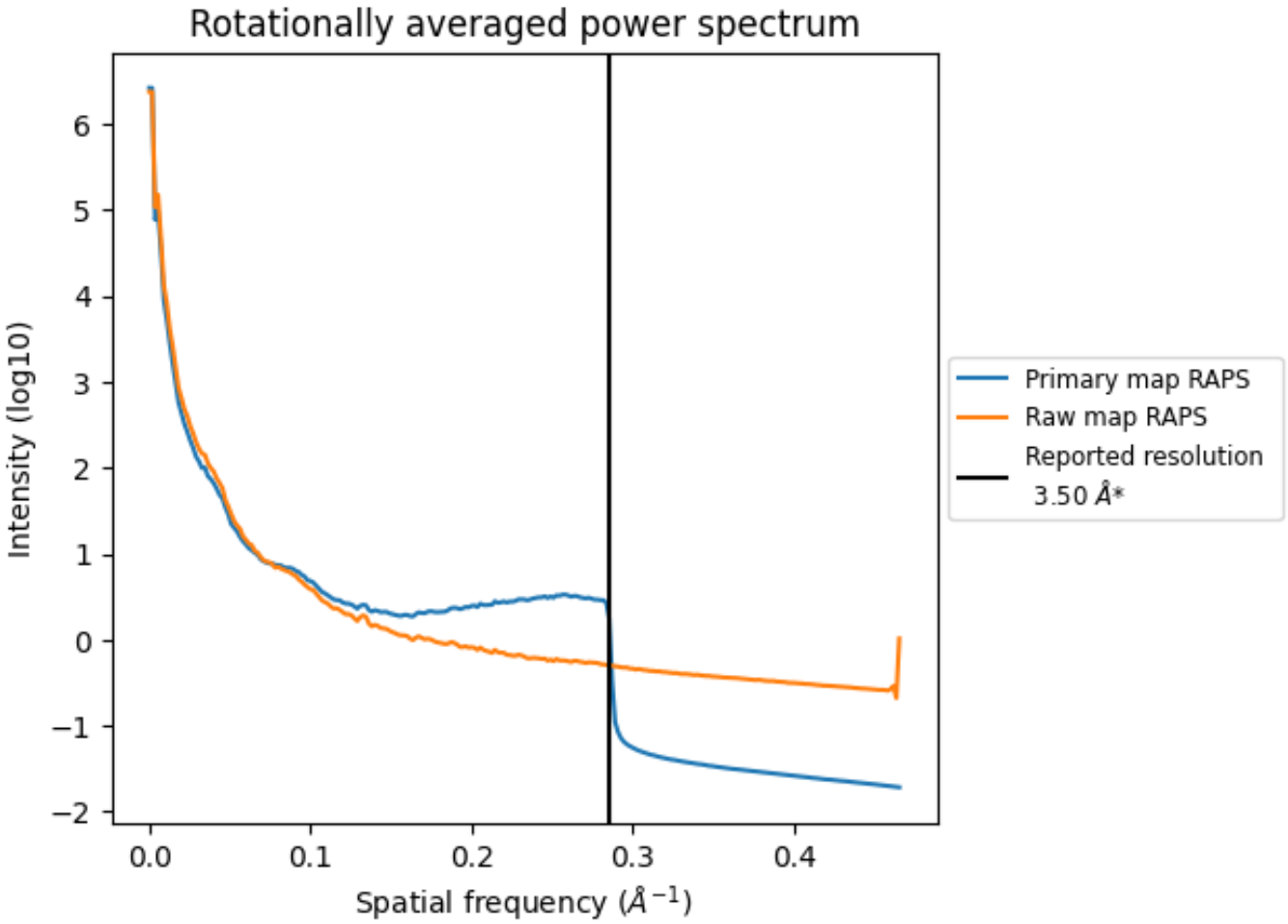
7.2 Volume estimate



The volume at the recommended contour level is 931 nm^3; this corresponds to an approximate mass of 841 kDa.

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

7.3 Rotationally averaged power spectrum (i)

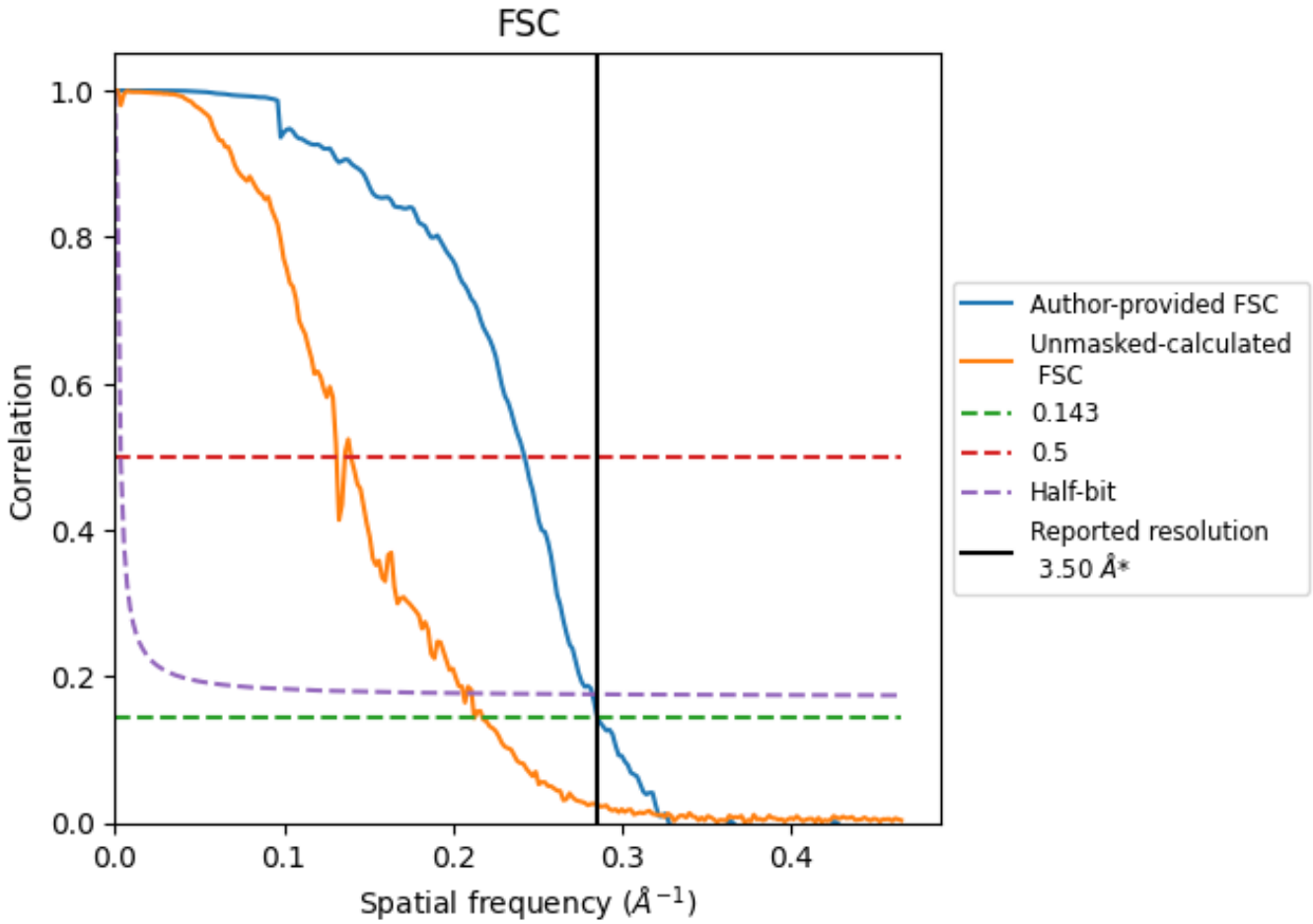


*Reported resolution corresponds to spatial frequency of 0.286 Å^{-1}

8 Fourier-Shell correlation

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



*Reported resolution corresponds to spatial frequency of 0.286 Å^{-1}

8.2 Resolution estimates (i)

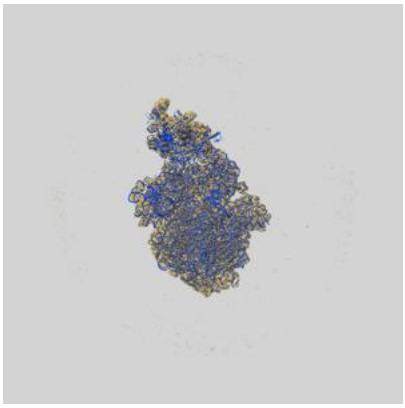
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.50	-	-
Author-provided FSC curve	3.50	4.13	3.54
Unmasked-calculated*	4.70	7.63	4.85

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.70 differs from the reported value 3.5 by more than 10 %

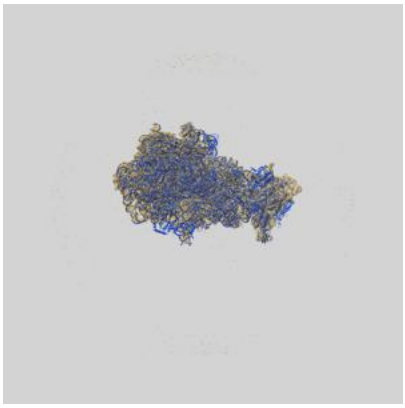
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-11419 and PDB model 6ZTL. Per-residue inclusion information can be found in section 3 on page 17.

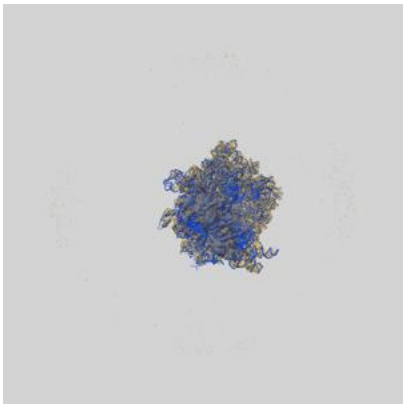
9.1 Map-model overlay



X



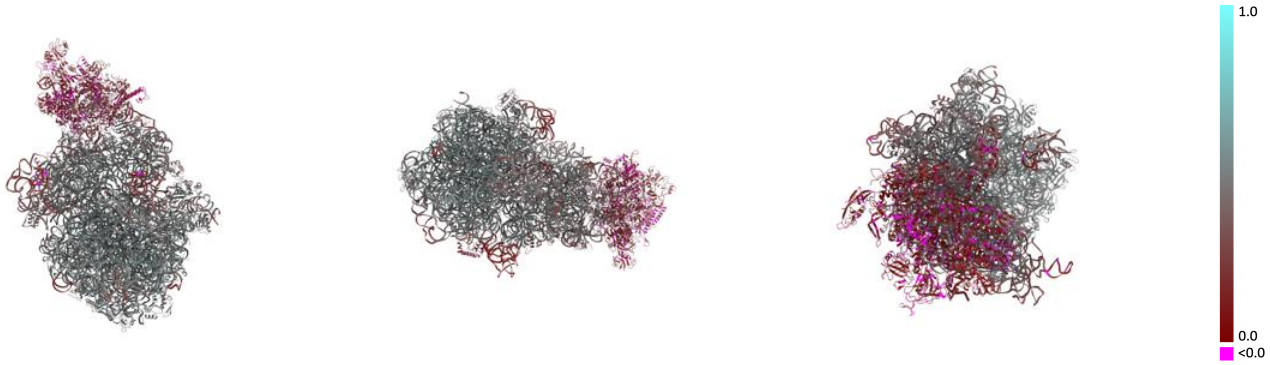
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.5 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

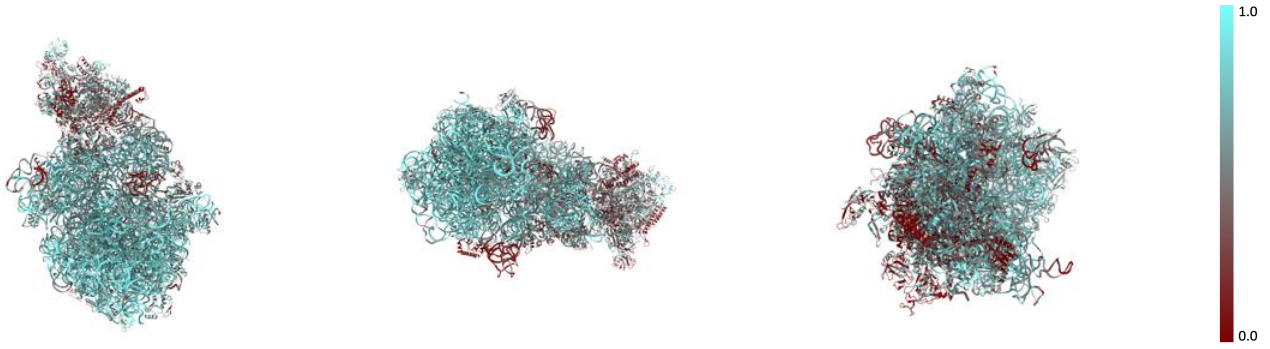
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

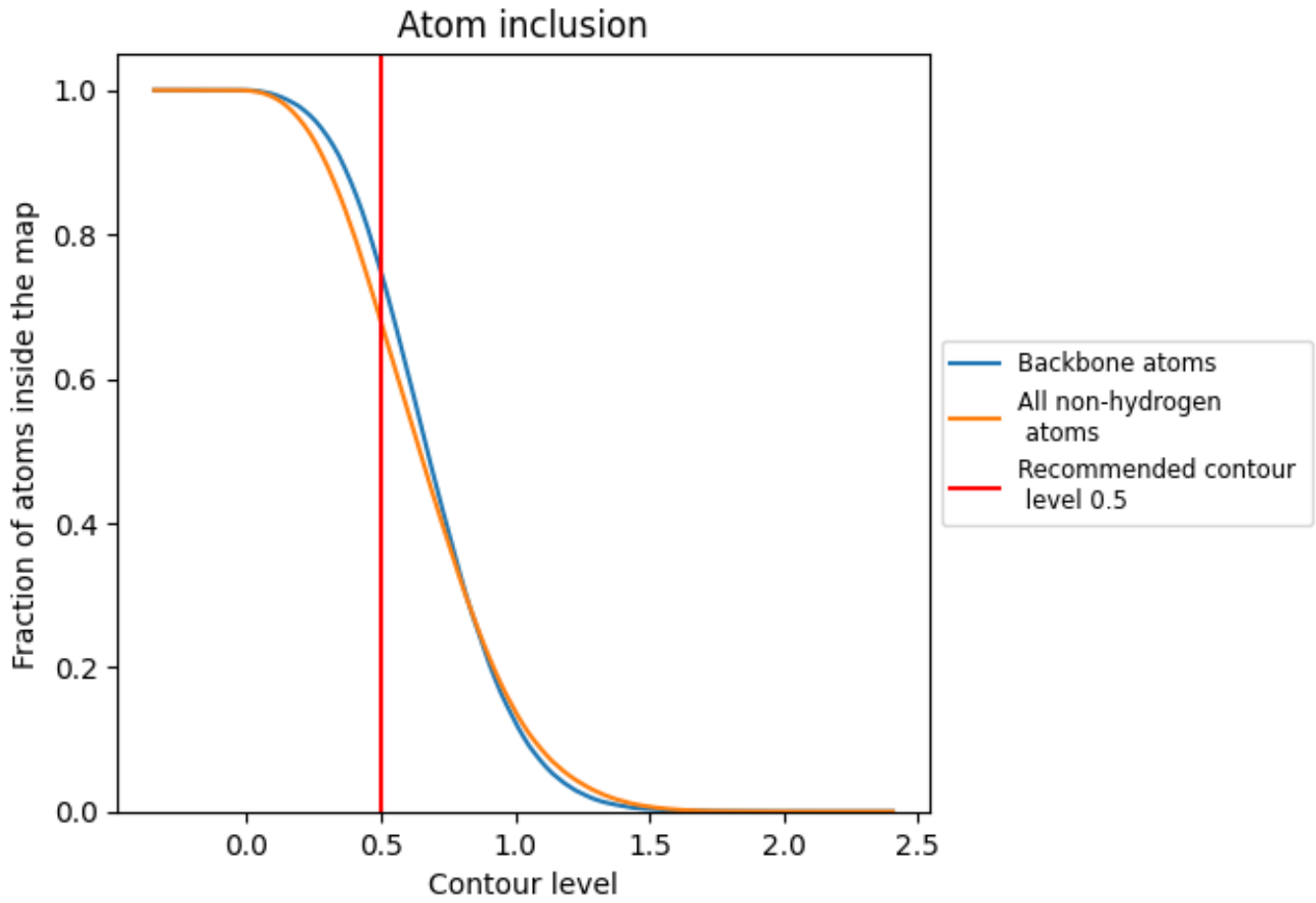
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.5).

9.4 Atom inclusion (i)



At the recommended contour level, 75% of all backbone atoms, 68% 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 (0.5) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6795	0.4150
AA	0.7884	0.4470
AB	0.2245	0.4050
AC	0.5246	0.4820
AD	0.3509	0.4310
AE	0.5888	0.5060
AF	0.5586	0.4430
AG	0.4710	0.4440
AH	0.5990	0.4930
AI	0.5263	0.4430
AJ	0.4343	0.4450
AK	0.5662	0.4800
AL	0.6082	0.5130
AM	0.4651	0.4140
AN	0.5729	0.4810
AO	0.6132	0.4610
AP	0.5064	0.4590
AQ	0.5696	0.4790
AR	0.5516	0.4620
AS	0.5078	0.4600
AT	0.5435	0.4380
AU	0.1929	0.3420
AV	0.4028	0.2650
AW	0.6620	0.4200
AX	0.4979	0.4040
B1	0.6934	0.5260
B2	0.6799	0.5010
B3	0.2560	0.4410
B4	0.7437	0.5450
B5	0.7291	0.5430
B6	0.6952	0.5390
BA	0.8275	0.4750
BB	0.8095	0.4450
BC	0.7305	0.5440
BD	0.7028	0.5270

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Chain	Atom inclusion	Q-score
BE	0.6612	0.5070
BF	0.4584	0.4430
BG	0.5540	0.4580
BH	0.0739	0.2620
BK	0.7255	0.5230
BL	0.6276	0.5250
BM	0.7048	0.5300
BN	0.6702	0.5250
BO	0.7740	0.5290
BP	0.6062	0.4640
BQ	0.6277	0.5130
BR	0.7536	0.5330
BS	0.7327	0.5260
BT	0.6974	0.5250
BU	0.6262	0.4920
BV	0.6558	0.4900
BW	0.6450	0.4970
BX	0.7014	0.5350
BY	0.6922	0.5230
BZ	0.6196	0.4600
CA	0.4221	0.1470
CB	0.2900	0.1330
CC	0.4467	0.1460
CD	0.3382	0.1240
CE	0.0000	-0.0350
CF	0.0207	0.0280
CN	0.4029	0.1810
CT	0.5660	0.2190