WORLDWIDE PDB

PROTEIN DATA BANK

Full wwPDB EM Validation Report (i)

Sep 23, 2025 – 01:07 pm BST

PDB ID	:	5ME0 / pdb_00005me0
EMDB ID	:	EMD-3494
Title	:	Structure of the 30S Pre-Initiation Complex 1 (30S IC-1) Stalled by GE81112
Authors	:	Lopez-Alonso, J.P.; Fabbretti, A.; Kaminishi, T.; Iturrioz, I.; Brandi, L.; Gil Carton, D.; Gualerzi, C.; Fucini, P.; Connell, S.
Deposited on	:	2016-11-14
Resolution	:	13.50 Å(reported)
Based on initial models	:	1TIF, 4YBB, 1HR0, 3JCN, 2IFE

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 13.50 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	Percentile Ranks	Value
Clashscore		20
Ramachandran outliers		0.9%
Sidechain outliers		4.2%
RNA backbone		0.52

Worse   *Better*

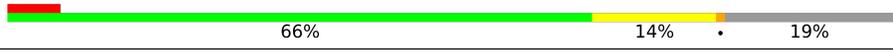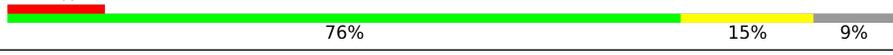▌ Percentile relative to all structures
❒ Percentile relative to all EM structures

Metric	Model-Map Fit Percentile Ranks	Value
Q-score		0.07

Worse   *Better*

▌ Percentile relative to all EM structures
❒ Percentile relative to EM structures of similar resolution

Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	74 (13.00 - 14.00)

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	A	1534	70% 24% 6%
2	B	241	5% 70% 21% · 7%
3	C	233	71% 15% · 12%

Continued on next page...

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Mol	Chain	Length	Quality of chain
4	D	206	85% · · · 14%
5	E	167	57% · 29% · 6% · 7%
6	F	131	6% · 66% · 14% · 19%
7	G	156	73% · 22% · ·
8	H	130	70% · 28% · ·
9	I	130	70% · 27% · ·
10	J	103	8% · 50% · 41% · 5% ·
11	K	129	11% · 76% · 15% · 9%
12	L	123	78% · 21% ·
13	M	118	7% · 64% · 31% · ·
14	N	101	71% · 27% · ·
15	O	89	6% · 87% · 11% · ·
16	P	102	73% · 5% · 20%
17	Q	84	75% · 18% · 5%
18	R	75	61% · 12% · 27%
19	S	92	7% · 67% · 16% · · 14%
20	T	87	82% · 17% ·
21	U	71	61% · 17% · 21%
22	V	72	15% · 65% · 17% · ·
23	W	890	6% · 36% · 19% · 44%
24	Y	171	5% · 29% · 13% · 56%
25	Z	144	26% · 25% · 9% · 37%
26	X	77	17% · 52% · 19% · 12%
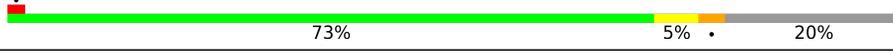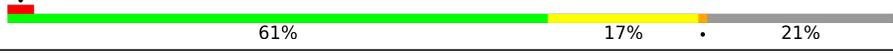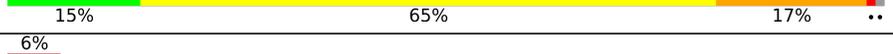
The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
26	4SU	X	8	-	-	X	-
27	FME	X	101	-	-	X	-

2 Entry composition ⓘ

There are 27 unique types of molecules in this entry. The entry contains 59063 atoms, of which 1 is hydrogen 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
1	A	1534	Total	C	N	O	P	0	0
			32930	14694	6041	10661	1534		

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	155	Total	C	N	O	S	0	0
			1144	711	216	211	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	106	Total	C	N	O	S	0	0
			862	545	156	154	7		

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	99	Total	C	N	O	S	0	0
			795	498	152	144	1		

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

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

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

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

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms				AltConf	Trace
18	R	55	Total 455	C 288	N 86	O 81	0	0

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
21	U	56	Total	C	N	O	S	0	0
			465	290	96	78	1		

- Molecule 22 is a protein called Translation initiation factor IF-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	V	71	Total	C	N	O	S	0	0
			570	362	103	103	2		

- Molecule 23 is a protein called Translation initiation factor IF-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	W	501	Total	C	N	O	S	0	0
			3781	2368	663	735	15		

- Molecule 24 is a protein called Translation initiation factor IF-3.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Y	76	Total	C	N	O	S	0	0
			623	390	119	112	2		

- Molecule 25 is a protein called Translation initiation factor IF-3.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Z	91	Total	C	N	O	S	0	0
			743	470	135	134	4		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Z	37	MET	-	initiating methionine	UNP P0A707

- Molecule 26 is a RNA chain called fMet-tRNA.

Mol	Chain	Residues	Atoms						AltConf	Trace
26	X	77	Total	C	N	O	P	S	0	0
			1643	733	297	535	77	1		

- Molecule 27 is N-FORMYLMETHIONINE (CCD ID: FME) (formula: $C_6H_{11}NO_3S$).

FME
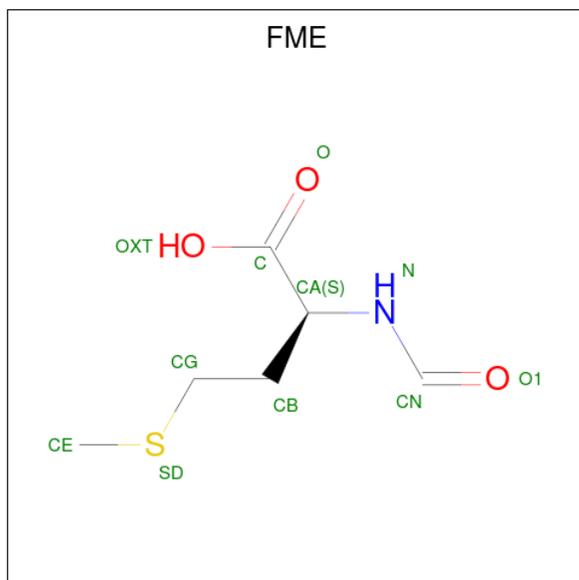
| Mol	Chain	Residues	Atoms						AltConf
27	X	1	Total	C	H	N	O	S	0
			10	6	1	1	1	1	

3   Residue-property plots ⓘ

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

• Molecule 1: 16S ribosomal RNA
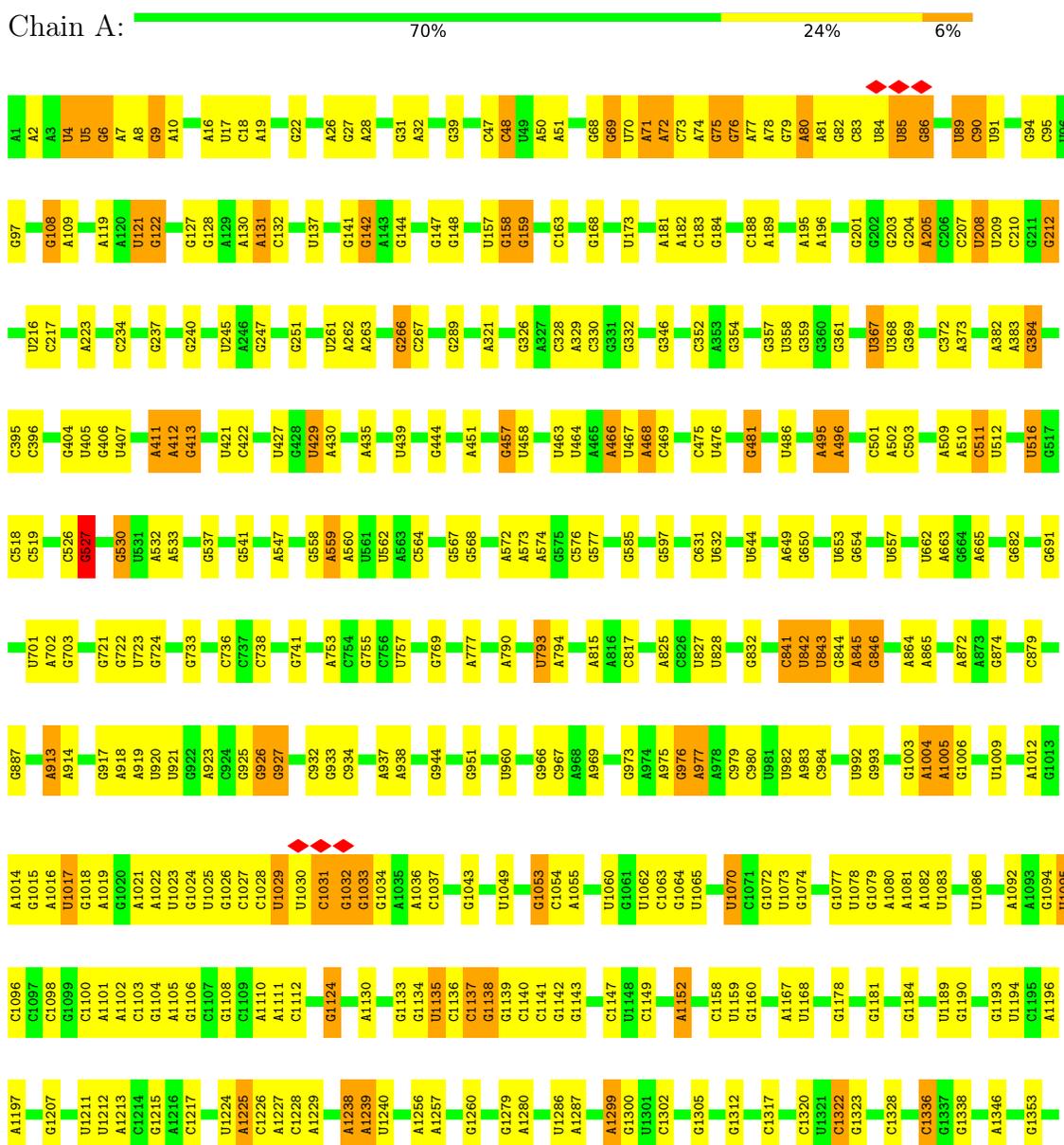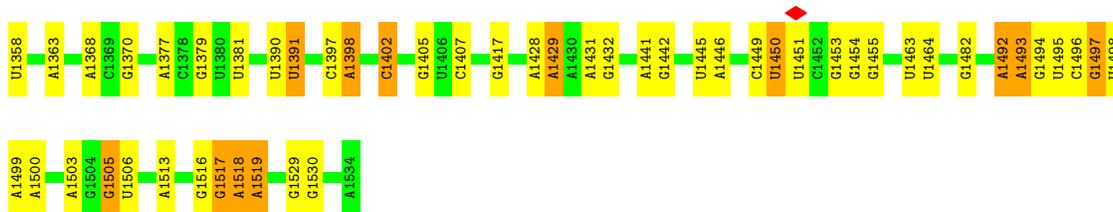
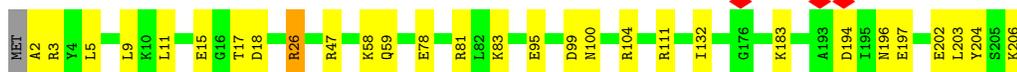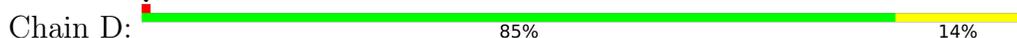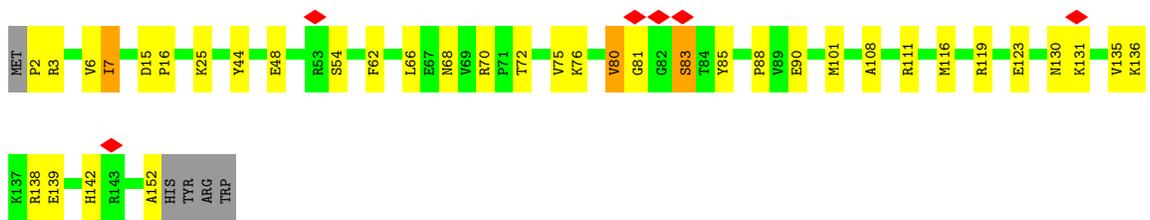• Molecule 2: 30S ribosomal protein S2

Chain B:
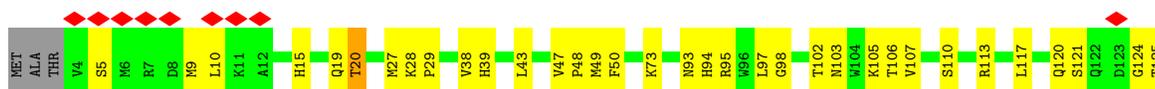
• Molecule 3: 30S ribosomal protein S3

Chain C:

• Molecule 4: 30S ribosomal protein S4

Chain D:

• Molecule 5: 30S ribosomal protein S5

Chain E:

• Molecule 6: 30S ribosomal protein S6

Chain F:

M1 R2 D13 E16 G20 E23 R24 I29 R38 W42 R45 N63 V64 E65 A66 I71 T76 R79 R86 S87 M88 V89 M90 E98 A99 M102 V103 K104 A105 K106 ASP GLU ARG GLU ARG ARG ASP PHE ALA ASN GLU THR ALA

ASP ASP ALA GLU ALA GLY ASP SER GLU GLU

• Molecule 7: 30S ribosomal protein S7

Chain G:

73%   22%

MET P2 R3 V6 I7 D15 P16 K25 Y44 E48 R53 S54 F62 L66 E67 N68 V69 R70 P71 T72 V75 K76 V80 G81 G82 S83 T84 Y85 P88 V89 E90 M101 A108 R111 M116 R119 E123 N130 K131 V135 K136

K137 R138 E139 H142 R143 A152 HIS TYR ARG TRP

• Molecule 8: 30S ribosomal protein S8

Chain H:

70%   28%

MET S2 M3 D9 R13 Q18 V25 P28 S29 K33 K41 E42 E43 G44 F45 D48 F49 G53 D54 T55 K56 P57 E60 L63 Q67 A70 V71 V72 E73 S74 I75 P93 M96 A97 G98 L99 G100 I101 S107 K108 D113 R114

R117 L121 I125 A130
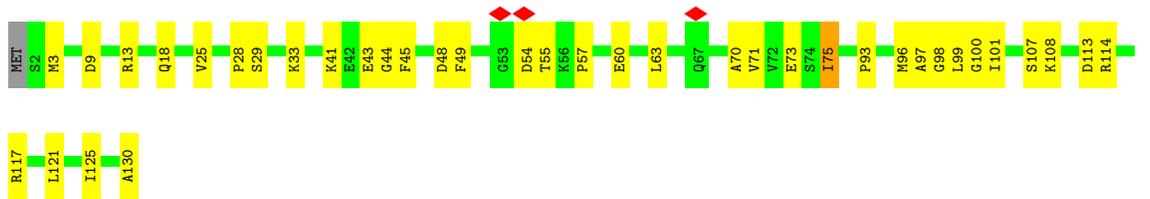
• Molecule 9: 30S ribosomal protein S9

Chain I:

70%   27%

MET ALA GLU N4 R11 R12 R18 V19 K22 P23 G24 N25 I30 E36 T43 A44 R45 M46 V47 Q50 P51 L52 E53 L54 M57 V58 E59 K60 L61 D62 I65 T66 R80 I83 T84 R85 M88 D91 E92 S93 L94 R95 L98 F103

D107 R130
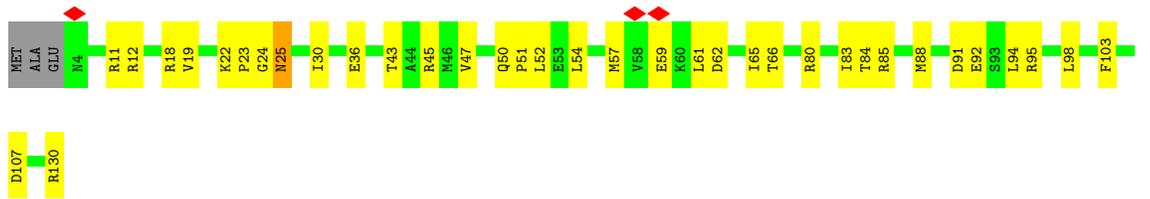
• Molecule 10: 30S ribosomal protein S10

Chain J:

8%

50%   41%   5%

MET GLN ASN Q4 R5 I6 R7 I8 R9 L10 H15 R16 L17 I18 D19 T22 E27 T28 A29 K30 R31 T32 G33 A34 Q35 V36 R37 G38 P39 I40 P41 L42 R48 F49 T50 V51 L52 I53 H56 V57 N58 A61 R62 D63 Q64 Y65 E66 I67 L71 R72 L73 I76

V77 E78 P79 T80 E81 K82 L87 M88 R89 L90 D91 L92 A93 V96 D97 V98 Q99 I100 S101 L102 GLY

• Molecule 11: 30S ribosomal protein S11

Chain K:
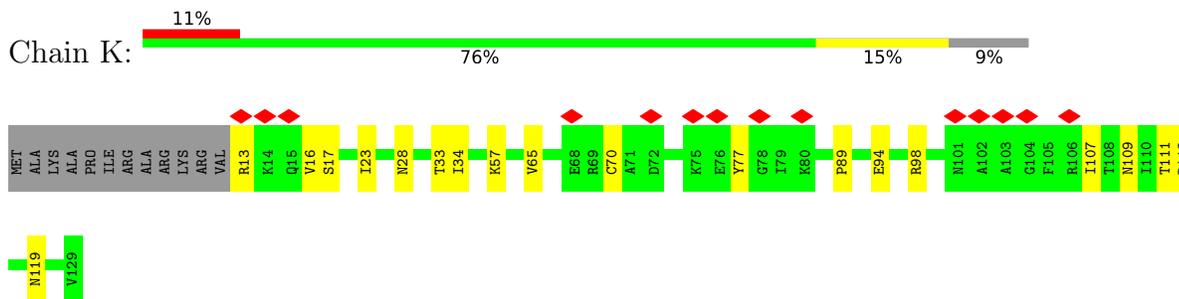
• Molecule 12: 30S ribosomal protein S12

Chain L:
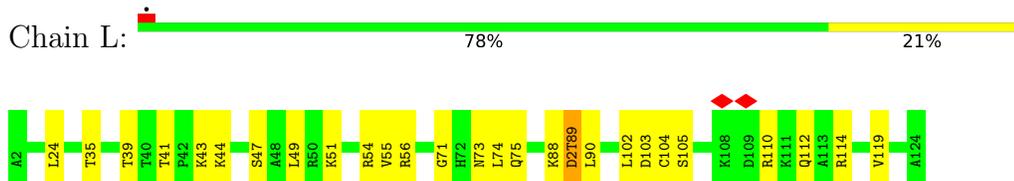
• Molecule 13: 30S ribosomal protein S13

Chain M:

• Molecule 14: 30S ribosomal protein S14

Chain N:

• Molecule 15: 30S ribosomal protein S15

Chain O:

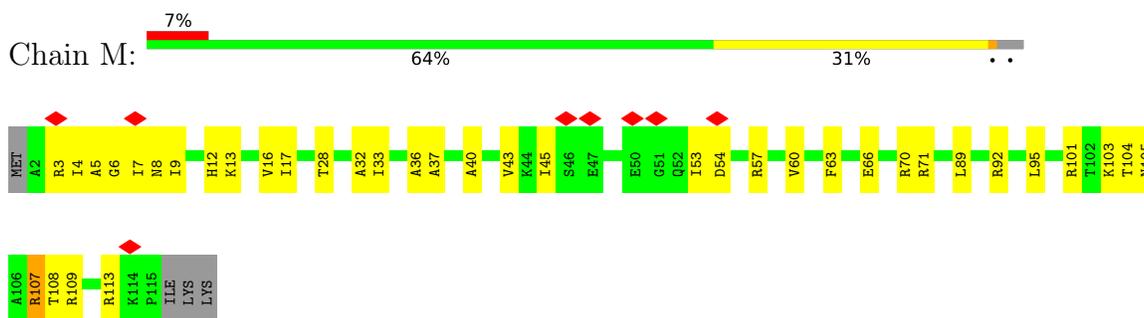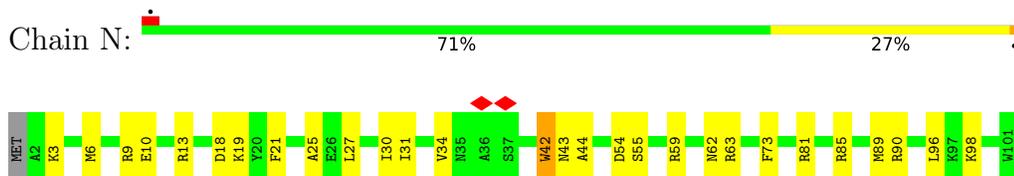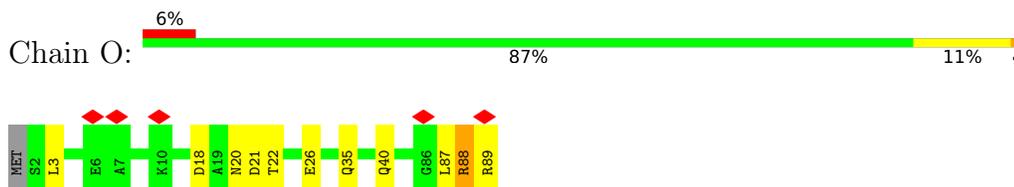• Molecule 16: 30S ribosomal protein S16

Chain P:

MET THR PRO ASP SER VAL PRO ARG TRP GLY PRO VAL VAL LEU PHE THR GLN GLU ASP VAL M1 V36 S44 E45 K46 E47 E48 G49 I75 V78 A81 A82

• Molecule 17: 30S ribosomal protein S17

Chain Q:

75% 18% 5%

MET THR ASP K4 I5 R6 T7 L8 Q9 G10 S14 I25 T42 E49 N50 V59 E60 P66 K69 L75 V76 R77 K81 A82 LEU

• Molecule 18: 30S ribosomal protein S18

Chain R:

61% 12% 27%

MET ALA ARG TYR PHE ARG ARG LYS PHE CYS ARG PHE THR ALA GLU GLY VAL GLN E20 I21 D22 Y23 K24 G37 R48 Q54 R63 Y64 R73 H74 GLN

• Molecule 19: 30S ribosomal protein S19

7%

Chain S:

67% 16% 14%

MET PRO R3 K6 K7 K18 V23 E24 S25 G26 D27 K28 K29 P30 L31 R36 I40 M44 I49 A50 H57 T63 D64 E65 L71 A75 R78 R81 GLY HIS ALA ALA ASP LYS LYS ALA LYS LYS LYS

• Molecule 20: 30S ribosomal protein S20

Chain T:

82% 17%

MET A2 E15 M27 M28 R29 K33 E40 K44 A45 I57 V58 K64 I67 H68 K69 R74 A87

• Molecule 21: 30S ribosomal protein S21

Chain U:

61% 17% 21%

MET P2 V3 I4 K5 V6 R7 E8 N9 F12 A15 R18 F19 K20 E31 V32 R33 R34 R35 A57 LYS LYS LEU ALA ARG GLU ASN ALA ARG ARG THR ARG LEU TYR

• Molecule 22: Translation initiation factor IF-1

Chain V:

15% 65% 17%

MET A1 K2 E3 K4 D5 T6 I7 R8 T9 E10 G11 T14 E15 A16 L17 P18 N19 A20 T21 F22 R23 V24 K25 D27 S28 G29 P30 E31 I32 L33 A34 Y35 I36 S37 G38 K39 M40 R41 M42 H43 Y44 I45 R46 I47 L48 P49 G50 D51 R52 V53 V54 V55 E56 I57 T58 P59 Y60

D61 P62 T63 R64 G65 R66 I67 V68 Y69 R70 K71
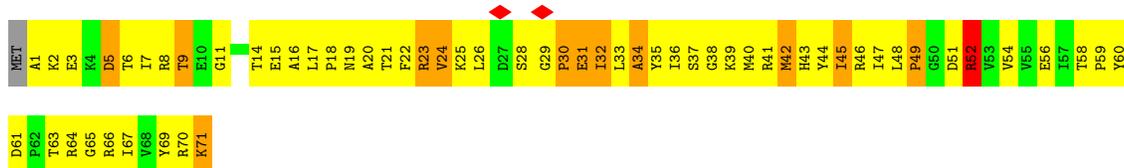
• Molecule 23: Translation initiation factor IF-2

Chain W:

6%

36%　　　19%　　　•　　　44%
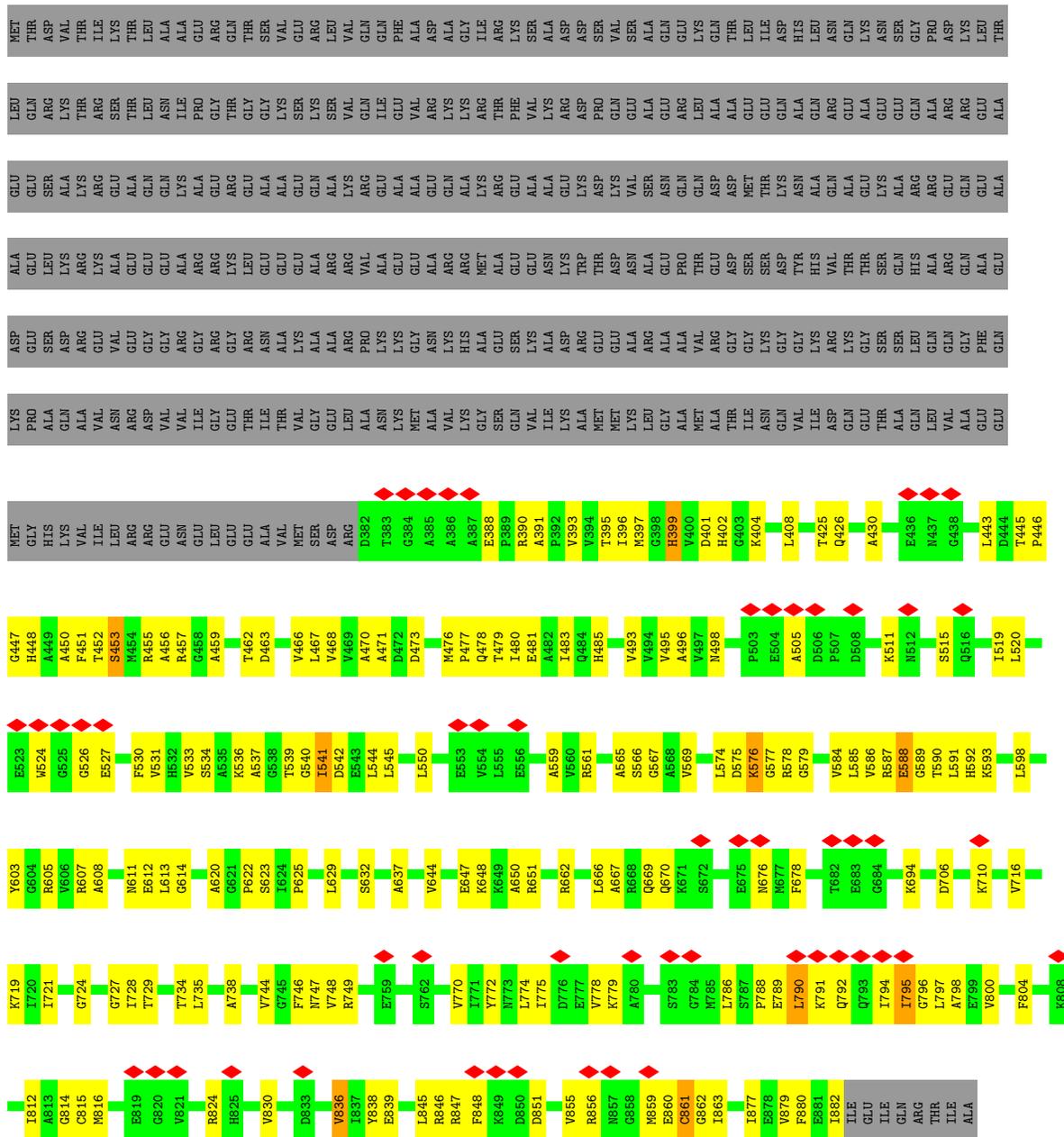
• Molecule 24: Translation initiation factor IF-3

Chain Y:

5%

29%　　　13%　　　•　　　56%
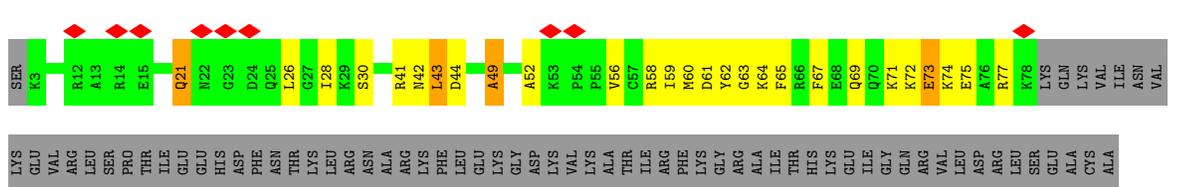
ASP ILE ALA VAL VAL GLU THR ALA PRO LYS MET ASP GLY ARG ASN MET PHE LEU VAL LEU ALA PRO LYS ASN ASP ASN LYS

• Molecule 25: Translation initiation factor IF-3

Chain Z:　　26%　　25%　　9%　•　37%
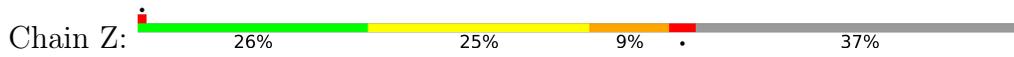
MET SER LEU ARG GLU ALA LEU GLU LYS ALA GLU GLU ALA GLY VAL ASP LEU VAL GLU ILE SER PRO ASN ALA GLU GLU PRO VAL CYS ARG ILE MET ASP TYR GLY LYS PHE LEU TYR GLU LYS SER LYS SER SER LYS GLU GLN LYS LYS GLN LYS V90 I91 Q92 V93 K94 F98

R99 P100 G101 T102 D103 E104 G105 D106 Y107 Q108 V109 K110 L111 I115 R116 F117 L118 E119 E120 G121 D122 K123 A124 K125 L128 R129 F130 R131 H137 Q138 Q139 I140 G141 M142 E143 V144 L145 N146 R147 V148 K149 D150 D151 L152 Q153 E154 L155 A156 V157 V158 E159 S160 F161 P162 T163 K164 I165

Q169 L174 A175 P176 K177 K178 K179 Q180

• Molecule 26: fMet-tRNA

Chain X:　　17%　　52%　　19%　　12%

C1 G2 G5 G6 G7 U8 G9 G10 A11 G12 C13 A14 G15 C16 C17 U17A G18 G19 U20 A21 G22 C23 U24 C25 G26 U27 C28 G29 U33 C34 A35 U36 A37 A38 C39 C40 C41 G42 A46 U47 C48 G49 U50 C51 G52 G53 U54 U55 C56 A57 A58 A59 U60 C61 C62 C63 G64

C65 C66 C67 C68 C69 G70 C71 A72 A73 C74 C75 A76

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	23112	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	JEOL 2200FSC	Depositor
Voltage (kV)	200	Depositor
Electron dose $(e^-/\text{Å}^2)$	17	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	74183	Depositor
Image detector	GATAN ULTRASCAN 4000 (4k x 4k)	Depositor
Maximum map value	0.347	Depositor
Minimum map value	-0.083	Depositor
Average map value	0.006	Depositor
Map value standard deviation	0.031	Depositor
Recommended contour level	0.0747	Depositor
Map size (Å)	363.6, 363.6, 363.6	wwPDB
Map dimensions	180, 180, 180	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	2.02, 2.02, 2.02	Depositor

5   Model quality ⓘ

5.1   Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: D2T, 5MU, H2U, 4SU, 2MG, FME, 5MC, G7M, UR3, 4OC, PSU, MA6

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$|Z|$ >5	RMSZ	#$|Z|$ >5
1	A	0.32	0/36591	0.48	0/57073
2	B	0.48	0/1784	0.82	1/2403 (0.0%)
3	C	0.47	0/1651	0.80	0/2225
4	D	0.46	0/1665	0.76	0/2227
5	E	0.59	0/1157	0.88	2/1557 (0.1%)
6	F	0.51	0/881	0.82	1/1189 (0.1%)
7	G	0.44	0/1195	0.78	0/1602
8	H	0.55	0/989	0.84	0/1326
9	I	0.48	0/1034	0.84	0/1375
10	J	0.66	0/805	0.90	0/1089
11	K	0.50	0/893	0.77	0/1205
12	L	0.59	0/960	0.79	0/1286
13	M	0.49	0/892	0.85	0/1193
14	N	0.54	0/817	0.86	1/1088 (0.1%)
15	O	0.51	0/722	0.71	0/964
16	P	0.52	0/659	0.85	0/884
17	Q	0.55	0/657	0.83	1/881 (0.1%)
18	R	0.50	0/462	0.77	0/621
19	S	0.47	0/652	0.82	2/877 (0.2%)
20	T	0.52	0/676	0.84	0/895
21	U	0.58	0/472	0.78	0/627
22	V	0.46	0/580	1.03	1/782 (0.1%)
23	W	0.33	0/3828	0.80	8/5173 (0.2%)
24	Y	0.39	0/629	0.90	3/838 (0.4%)
25	Z	1.71	5/751 (0.7%)	2.15	40/999 (4.0%)
26	X	0.25	0/1746	0.65	8/2721 (0.3%)
All	All	0.43	5/63148 (0.0%)	0.66	68/93100 (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
25	Z	0	6

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
25	Z	129	ARG	CA-C	-6.48	1.46	1.53
25	Z	144	VAL	CA-C	-6.27	1.44	1.52
25	Z	143	GLU	CA-C	-5.24	1.46	1.52
25	Z	158	VAL	N-CA	-5.18	1.40	1.46
25	Z	129	ARG	N-CA	-5.08	1.40	1.47

All (68) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
25	Z	146	ASN	CA-CB-CG	12.16	124.76	112.60
25	Z	117	PHE	CA-CB-CG	-11.05	102.75	113.80
26	X	23	C	C2'-C3'-O3'	-10.62	97.76	113.70
25	Z	115	ILE	N-CA-CB	8.99	121.07	110.55
25	Z	115	ILE	CB-CA-C	-8.30	101.34	111.97
26	X	71	C	C4'-C3'-O3'	8.12	125.18	113.00
26	X	71	C	C1'-C2'-O2'	-7.87	96.59	108.40
23	W	399	HIS	N-CA-C	-7.87	97.81	110.32
23	W	453	SER	N-CA-C	7.71	119.76	111.36
25	Z	162	PRO	CA-C-N	7.65	136.14	121.54
25	Z	162	PRO	C-N-CA	7.65	136.14	121.54
26	X	58	A	C2'-C3'-O3'	-7.62	98.08	109.50
23	W	576	LYS	N-CA-C	7.54	119.58	111.36
26	X	24	U	C1'-C2'-O2'	-7.18	97.63	108.40
19	S	29	LYS	CA-C-N	-6.77	112.79	119.76
19	S	29	LYS	C-N-CA	-6.77	112.79	119.76
25	Z	152	LEU	CA-C-N	6.73	134.39	121.54
25	Z	152	LEU	C-N-CA	6.73	134.39	121.54
25	Z	163	THR	N-CA-CB	-6.72	99.14	110.49
6	F	66	ALA	N-CA-C	6.53	114.09	108.22
25	Z	139	GLN	CA-C-N	6.43	128.90	120.60
25	Z	139	GLN	C-N-CA	6.43	128.90	120.60
25	Z	157	VAL	N-CA-C	6.43	119.02	108.99
14	N	42	TRP	N-CA-C	6.40	118.26	111.28
23	W	795	ILE	N-CA-C	-6.40	104.79	111.58
23	W	450	ALA	N-CA-C	6.34	118.19	111.28
23	W	588	GLU	N-CA-C	-6.28	99.01	109.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	Z	111	LEU	N-CA-C	-6.27	104.33	112.23
25	Z	144	VAL	CA-CB-CG2	-6.26	99.75	110.40
25	Z	157	VAL	CB-CA-C	-6.25	101.90	110.90
25	Z	138	GLN	N-CA-C	-6.14	104.19	113.89
25	Z	115	ILE	CA-C-N	6.09	128.76	120.54
25	Z	115	ILE	C-N-CA	6.09	128.76	120.54
25	Z	162	PRO	CB-CA-C	-6.00	103.55	112.55
25	Z	130	PHE	CA-CB-CG	-5.93	107.87	113.80
25	Z	148	VAL	N-CA-C	-5.92	105.07	110.82
25	Z	156	ALA	CB-CA-C	-5.85	99.65	109.48
26	X	57	A	C2'-C3'-O3'	-5.83	104.96	113.70
25	Z	118	LEU	CB-CA-C	-5.80	100.82	110.68
25	Z	161	PHE	CA-CB-CG	-5.79	108.01	113.80
17	Q	81	LYS	N-CA-C	5.78	118.06	108.99
26	X	24	U	C2'-C3'-O3'	-5.73	105.11	113.70
25	Z	148	VAL	N-CA-CB	5.70	118.72	110.52
25	Z	108	GLN	N-CA-C	5.69	119.70	112.87
25	Z	103	ASP	CA-C-N	5.62	132.27	121.54
25	Z	103	ASP	C-N-CA	5.62	132.27	121.54
25	Z	123	LYS	N-CA-C	-5.59	99.62	108.73
25	Z	169	GLN	CB-CA-C	-5.55	100.78	109.72
25	Z	149	LYS	CB-CA-C	-5.54	101.94	110.81
22	V	52	ARG	N-CA-C	-5.51	100.99	109.76
26	X	71	C	N1-C1'-C2'	-5.49	103.77	112.00
25	Z	152	LEU	CB-CA-C	-5.48	98.54	109.99
5	E	123	VAL	N-CA-C	5.46	116.22	108.42
5	E	56	VAL	CB-CA-C	-5.37	108.65	114.35
25	Z	123	LYS	CB-CA-C	5.35	118.86	110.19
25	Z	144	VAL	CA-C-N	5.35	128.84	120.82
25	Z	144	VAL	C-N-CA	5.35	128.84	120.82
23	W	836	VAL	N-CA-C	5.33	116.02	107.98
25	Z	146	ASN	CB-CG-ND2	-5.19	108.62	116.40
23	W	401	ASP	N-CA-C	5.18	121.84	110.80
25	Z	143	GLU	N-CA-CB	5.15	117.54	110.07
24	Y	49	ALA	CA-C-N	5.13	124.74	119.05
24	Y	49	ALA	C-N-CA	5.13	124.74	119.05
2	B	128	LYS	N-CA-C	-5.11	100.41	108.73
25	Z	149	LYS	CG-CD-CE	5.08	122.99	111.30
25	Z	107	TYR	CA-CB-CG	5.07	123.02	113.90
24	Y	30	SER	N-CA-C	-5.05	103.38	110.50
25	Z	145	LEU	CB-CA-C	-5.04	102.37	110.74

There are no chirality outliers.

All (6) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
25	Z	103	ASP	Peptide
25	Z	107	TYR	Sidechain
25	Z	137	HIS	Peptide
25	Z	156	ALA	Peptide
25	Z	161	PHE	Peptide,Sidechain

5.2   Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	32930	0	16574	833	0
2	B	1753	0	1771	182	0
3	C	1624	0	1696	64	0
4	D	1643	0	1707	26	0
5	E	1144	0	1173	232	0
6	F	862	0	864	14	0
7	G	1181	0	1238	24	0
8	H	979	0	1029	96	0
9	I	1022	0	1070	29	0
10	J	795	0	836	40	0
11	K	877	0	887	13	0
12	L	957	0	1015	79	0
13	M	883	0	941	31	0
14	N	805	0	844	29	0
15	O	714	0	734	5	0
16	P	649	0	666	4	0
17	Q	648	0	691	10	0
18	R	455	0	478	8	0
19	S	637	0	665	15	0
20	T	670	0	719	13	0
21	U	465	0	491	9	0
22	V	570	0	594	197	0
23	W	3781	0	3831	370	0
24	Y	623	0	649	95	0
25	Z	743	0	779	208	0
26	X	1643	0	829	354	0
27	X	9	1	9	19	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	59062	1	42780	1987	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 20.

All (1987) 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)
1:A:1112:C:P	2:B:131:LYS:HB2	1.24	1.65
1:A:919:A:C2	1:A:1080:A:C2	1.85	1.64
1:A:864:A:H1'	1:A:1078:U:C5	1.32	1.60
26:X:71:C:H2'	26:X:72:A:C8	1.32	1.59
1:A:1390:U:C6	1:A:1391:U:C5	1.84	1.59
25:Z:176:PRO:CD	26:X:12:G:H4'	1.17	1.57
1:A:864:A:C1'	1:A:1078:U:C5	1.84	1.56
24:Y:49:ALA:HB2	26:X:19:G:C6	1.39	1.55
25:Z:125:LYS:NZ	26:X:26:G:C4'	1.68	1.54
12:L:105:SER:HB3	23:W:666:LEU:CD2	1.31	1.54
5:E:157:ARG:HG2	8:H:45:PHE:CE2	1.35	1.54
25:Z:176:PRO:HG2	26:X:12:G:C3'	1.34	1.52
1:A:1492:A:C2	22:V:35:TYR:HB3	1.39	1.52
24:Y:77:ARG:NH2	26:X:16:C:C5	1.77	1.52
1:A:7:A:C3'	5:E:106:ILE:HD11	1.37	1.52
24:Y:49:ALA:CB	26:X:19:G:C6	1.88	1.51
1:A:17:U:C2'	1:A:1079:G:H2'	1.04	1.50
1:A:1493:A:C8	22:V:18:PRO:O	1.64	1.50
25:Z:176:PRO:HD2	26:X:12:G:C4'	1.38	1.49
1:A:7:A:H3'	5:E:106:ILE:CD1	1.05	1.48
1:A:1110:A:C2	2:B:136:MET:HG3	1.44	1.47
1:A:7:A:C3'	5:E:106:ILE:CD1	1.90	1.46
1:A:17:U:C2'	1:A:1079:G:C2'	1.90	1.46
1:A:864:A:O2'	1:A:1078:U:C5	1.67	1.46
1:A:1106:G:OP1	2:B:113:ARG:CZ	1.64	1.46
1:A:7:A:C8	5:E:124:LEU:HD13	1.51	1.45
1:A:519:C:H5'	22:V:66:ARG:NH2	1.22	1.45
5:E:161:VAL:HB	8:H:114:ARG:NH1	1.27	1.45
1:A:18:C:H2'	1:A:1078:U:C2	1.51	1.44
1:A:864:A:C2'	1:A:1078:U:H5	1.31	1.44
5:E:153:VAL:CG1	8:H:99:LEU:HB3	1.47	1.43
1:A:925:G:C6	1:A:927:G:C6	2.06	1.43
24:Y:49:ALA:HB1	26:X:19:G:N1	1.28	1.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Z:179:LYS:CB	26:X:68:C:O2	1.67	1.43
1:A:358:U:H5"	23:W:607:ARG:NH1	1.13	1.43
1:A:1390:U:C2	1:A:1391:U:C4	2.06	1.42
24:Y:72:LYS:CE	26:X:17(A):U:H1'	1.49	1.42
24:Y:77:ARG:NH1	26:X:16:C:H41	0.95	1.41
1:A:1110:A:N3	2:B:136:MET:HG3	1.11	1.41
1:A:519:C:C5'	22:V:66:ARG:NH2	1.81	1.40
25:Z:94:LYS:CD	26:X:24:U:O2'	1.68	1.40
1:A:918:A:C2	1:A:1079:G:N1	1.87	1.40
25:Z:125:LYS:NZ	26:X:26:G:H4'	1.08	1.39
1:A:701:U:C3'	24:Y:64:LYS:H	1.35	1.38
1:A:1078:U:O2'	5:E:135:ASN:ND2	1.56	1.38
24:Y:77:ARG:NH1	26:X:16:C:N4	1.69	1.38
24:Y:49:ALA:HB2	26:X:19:G:O6	1.23	1.37
25:Z:92:GLN:HG2	26:X:12:G:N2	1.33	1.37
5:E:157:ARG:HG2	8:H:45:PHE:CZ	1.60	1.36
1:A:1493:A:C2'	22:V:21:THR:N	1.75	1.36
1:A:16:A:N3	1:A:1080:A:H2'	1.40	1.36
25:Z:90:VAL:N	26:X:22:G:N1	1.67	1.36
25:Z:179:LYS:HD3	26:X:5:G:N2	1.40	1.36
5:E:153:VAL:CG1	8:H:99:LEU:CB	2.03	1.36
1:A:358:U:O3'	23:W:579:GLY:CA	1.71	1.35
1:A:16:A:C4	1:A:1080:A:O2'	1.75	1.35
1:A:530:G:H1'	22:V:39:LYS:CD	1.54	1.35
1:A:395:C:C4'	23:W:647:GLU:OE2	1.75	1.34
5:E:156:LYS:CD	8:H:130:ALA:OXT	1.76	1.34
1:A:358:U:C5'	23:W:607:ARG:NH1	1.90	1.34
1:A:530:G:H1'	22:V:39:LYS:CE	1.56	1.34
1:A:919:A:C2	1:A:1080:A:N1	1.95	1.34
1:A:1494:G:C8	22:V:18:PRO:CA	2.10	1.33
5:E:156:LYS:HD2	8:H:130:ALA:OXT	1.24	1.33
1:A:18:C:C6	1:A:1079:G:H1'	1.09	1.33
1:A:925:G:C6	1:A:927:G:C5	2.16	1.33
25:Z:90:VAL:N	26:X:22:G:H1	0.85	1.33
1:A:6:G:C6	5:E:99:ALA:HB1	1.64	1.32
1:A:701:U:H3'	24:Y:64:LYS:N	1.01	1.32
26:X:71:C:C2'	26:X:72:A:H8	1.40	1.32
23:W:812:ILE:HG12	26:X:76:A:C1'	1.59	1.32
1:A:919:A:N3	1:A:1080:A:N1	1.78	1.32
1:A:1494:G:N7	22:V:18:PRO:CB	1.91	1.32
1:A:18:C:C6	1:A:1079:G:C1'	1.93	1.31

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:104:CYS:O	23:W:662:ARG:NH1	1.62	1.31
25:Z:91:ILE:HD13	26:X:13:C:O4'	1.26	1.31
1:A:1112:C:P	2:B:131:LYS:CB	2.17	1.31
5:E:157:ARG:CG	8:H:45:PHE:CE2	2.14	1.31
1:A:7:A:C2'	5:E:106:ILE:HD11	1.59	1.30
1:A:1494:G:N7	22:V:18:PRO:HB3	0.99	1.30
1:A:1494:G:H8	22:V:18:PRO:CA	1.41	1.30
1:A:1390:U:C2	1:A:1391:U:N3	1.99	1.30
1:A:1493:A:C2'	22:V:21:THR:H	1.34	1.30
12:L:75:GLN:HE21	23:W:669:GLN:CD	1.19	1.30
25:Z:125:LYS:NZ	26:X:26:G:C5'	1.96	1.29
1:A:1493:A:C8	22:V:19:ASN:HB2	1.67	1.29
1:A:519:C:C5'	22:V:66:ARG:HH21	1.40	1.28
1:A:925:G:C2'	1:A:927:G:H5"	1.61	1.28
1:A:16:A:H2'	1:A:1080:A:O2'	1.27	1.28
1:A:1494:G:C8	22:V:18:PRO:CB	2.15	1.28
1:A:358:U:H4'	23:W:578:ARG:C	1.58	1.28
2:B:129:LEU:CA	3:C:179:ARG:HE	1.46	1.27
1:A:358:U:H4'	23:W:578:ARG:O	1.12	1.27
23:W:814:GLY:HA3	27:X:101:FME:SD	1.73	1.27
1:A:1078:U:C4'	5:E:90:THR:OG1	1.82	1.27
1:A:7:A:C8	5:E:124:LEU:CD1	2.17	1.27
25:Z:125:LYS:HZ2	26:X:26:G:C5'	1.47	1.27
25:Z:90:VAL:HG13	26:X:22:G:O6	1.19	1.26
1:A:1105:A:OP1	2:B:144:LEU:CD2	1.83	1.26
25:Z:91:ILE:CD1	26:X:12:G:H2'	1.63	1.26
1:A:16:A:N3	1:A:1080:A:C2'	1.96	1.26
1:A:1492:A:C2	22:V:35:TYR:CB	2.18	1.26
1:A:358:U:O3'	23:W:579:GLY:HA3	1.26	1.26
1:A:1495:U:O2'	25:Z:101:GLY:HA3	1.31	1.26
25:Z:176:PRO:HG2	26:X:12:G:O3'	1.12	1.25
1:A:1494:G:C8	22:V:18:PRO:N	2.03	1.25
1:A:1494:G:C8	22:V:18:PRO:HB3	1.69	1.25
24:Y:72:LYS:HD2	26:X:17(A):U:N1	1.50	1.25
2:B:129:LEU:HA	3:C:179:ARG:NE	1.50	1.25
1:A:18:C:H6	1:A:1079:G:C1'	1.38	1.24
1:A:864:A:O2'	1:A:1078:U:H5	1.03	1.24
1:A:918:A:C2	1:A:1079:G:C2	2.24	1.24
25:Z:94:LYS:HD3	26:X:24:U:O2'	1.08	1.24
25:Z:176:PRO:CG	26:X:12:G:O3'	1.85	1.24
1:A:917:G:N2	1:A:1078:U:O4	1.71	1.24

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:51:LYS:HE3	22:V:60:TYR:CD2	1.72	1.23
23:W:791:LYS:O	23:W:880:PHE:CE1	1.92	1.23
25:Z:179:LYS:HB3	26:X:68:C:O2	1.09	1.23
1:A:16:A:C2'	1:A:1080:A:O2'	1.86	1.23
1:A:920:U:C1'	1:A:1081:A:O2'	1.86	1.23
5:E:159:LYS:CE	8:H:43:GLU:OE1	1.73	1.22
23:W:846:ARG:HB3	26:X:76:A:C2	1.74	1.22
1:A:560:A:O2'	5:E:128:TYR:HB3	1.37	1.22
25:Z:90:VAL:CG1	26:X:22:G:O6	1.85	1.22
1:A:921:U:H5'	1:A:1082:A:OP1	1.36	1.22
12:L:75:GLN:CD	23:W:669:GLN:CG	2.05	1.21
1:A:864:A:H1'	1:A:1078:U:C4	1.75	1.21
22:V:49:PRO:CD	25:Z:131:ARG:NH1	2.03	1.21
1:A:17:U:H2'	1:A:1079:G:C2'	1.53	1.21
12:L:102:LEU:O	23:W:662:ARG:CD	1.87	1.21
1:A:1390:U:O2	1:A:1391:U:C2	1.94	1.21
1:A:1110:A:C2	2:B:136:MET:CG	2.24	1.21
1:A:925:G:O6	1:A:927:G:O6	1.57	1.20
1:A:1105:A:OP1	2:B:144:LEU:HD21	1.05	1.20
1:A:7:A:H8	5:E:124:LEU:CD1	1.54	1.20
23:W:531:VAL:HG11	23:W:544:LEU:HB2	1.20	1.20
1:A:18:C:O2'	1:A:1078:U:C6	1.94	1.20
1:A:701:U:C3'	24:Y:64:LYS:N	1.97	1.19
12:L:105:SER:CB	23:W:666:LEU:HD22	1.73	1.19
25:Z:91:ILE:CD1	26:X:13:C:O4'	1.90	1.19
1:A:567:G:H4'	5:E:93:ARG:NH1	1.56	1.19
1:A:921:U:C5'	1:A:1082:A:OP1	1.91	1.19
1:A:925:G:O6	1:A:927:G:C6	1.96	1.19
1:A:1096:C:H4'	2:B:139:ARG:HH21	1.05	1.18
5:E:163:GLU:HB3	8:H:114:ARG:CZ	1.51	1.18
1:A:920:U:O2'	1:A:1081:A:O3'	1.59	1.18
1:A:1112:C:H5"	2:B:131:LYS:HG2	1.22	1.18
5:E:153:VAL:HG11	8:H:99:LEU:CB	1.67	1.18
23:W:804:PHE:HB2	23:W:812:ILE:CG2	1.73	1.18
23:W:814:GLY:CA	27:X:101:FME:SD	2.32	1.18
1:A:18:C:C2'	1:A:1078:U:C2	2.27	1.17
1:A:1110:A:N3	2:B:136:MET:CG	2.06	1.17
1:A:793:U:O4	25:Z:109:VAL:HG11	1.43	1.17
22:V:48:LEU:HA	25:Z:131:ARG:HH12	1.01	1.17
1:A:530:G:C1'	22:V:39:LYS:HE2	1.74	1.17
1:A:1111:A:O3'	2:B:131:LYS:CB	1.92	1.16

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:153:VAL:HG13	8:H:99:LEU:CB	1.71	1.16
24:Y:72:LYS:CE	26:X:17(A):U:C1'	2.23	1.16
25:Z:176:PRO:CG	26:X:12:G:H4'	1.74	1.16
2:B:128:LYS:CB	3:C:207:ILE:HD12	1.74	1.16
25:Z:91:ILE:HD12	26:X:12:G:C2'	1.74	1.16
26:X:8:4SU:S4	26:X:14:A:N7	2.19	1.16
1:A:1492:A:H2'	22:V:19:ASN:O	1.44	1.16
12:L:105:SER:CB	23:W:666:LEU:CD2	2.21	1.16
25:Z:92:GLN:CG	26:X:12:G:N2	2.06	1.16
24:Y:72:LYS:HE2	26:X:17(A):U:C1'	1.77	1.16
25:Z:179:LYS:CD	26:X:5:G:H21	1.58	1.16
1:A:1106:G:OP1	2:B:113:ARG:NH2	1.80	1.15
1:A:6:G:H2'	5:E:124:LEU:CD2	1.75	1.15
1:A:864:A:H4'	1:A:1078:U:H6	1.02	1.15
1:A:1390:U:C2	1:A:1391:U:C2	2.33	1.15
5:E:159:LYS:HD2	8:H:43:GLU:HA	1.29	1.15
1:A:926:G:C8	1:A:927:G:OP1	2.00	1.14
1:A:6:G:C1'	5:E:124:LEU:HD11	1.76	1.14
1:A:1096:C:H4'	2:B:139:ARG:NH2	1.61	1.14
5:E:157:ARG:HD3	8:H:45:PHE:HE2	1.10	1.14
5:E:148:ASN:ND2	8:H:96:MET:HE2	1.57	1.14
1:A:790:A:OP2	26:X:39:C:H4'	1.47	1.14
1:A:519:C:O2	22:V:2:LYS:HE2	1.48	1.13
12:L:104:CYS:N	23:W:662:ARG:HH22	1.45	1.13
1:A:918:A:C2	1:A:1079:G:N2	2.16	1.13
1:A:920:U:O3'	1:A:1082:A:C5'	1.96	1.13
25:Z:176:PRO:CG	26:X:12:G:C3'	2.25	1.13
5:E:159:LYS:HE3	8:H:43:GLU:OE1	1.41	1.13
25:Z:92:GLN:CG	26:X:12:G:H22	1.56	1.12
12:L:105:SER:HB3	23:W:666:LEU:HD21	1.32	1.12
24:Y:49:ALA:CB	26:X:19:G:O6	1.85	1.12
1:A:6:G:H2'	5:E:124:LEU:HD21	1.25	1.12
1:A:8:A:H1'	5:E:108:GLY:HA2	1.26	1.12
1:A:357:G:O3'	23:W:607:ARG:NE	1.81	1.12
5:E:148:ASN:ND2	8:H:96:MET:HE3	1.58	1.11
23:W:812:ILE:HG12	26:X:76:A:N9	1.63	1.11
24:Y:72:LYS:NZ	26:X:17(A):U:H1'	1.65	1.11
24:Y:77:ARG:NH2	26:X:16:C:H5	1.21	1.11
25:Z:90:VAL:HG22	26:X:22:G:C6	1.84	1.11
1:A:701:U:O2'	24:Y:62:TYR:N	1.81	1.11
1:A:864:A:C4'	1:A:1078:U:C6	2.33	1.11

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Y:72:LYS:HD2	26:X:17(A):U:C6	1.86	1.11
24:Y:77:ARG:CZ	26:X:16:C:C5	2.32	1.11
1:A:1111:A:OP2	2:B:132:LYS:NZ	1.83	1.11
1:A:1390:U:N1	1:A:1391:U:C5	1.79	1.11
1:A:1495:U:O2'	25:Z:101:GLY:CA	1.97	1.10
22:V:49:PRO:HD2	25:Z:131:ARG:HH11	1.16	1.10
1:A:702:A:C5'	24:Y:64:LYS:HD3	1.80	1.10
1:A:793:U:C4	25:Z:109:VAL:HG11	1.86	1.10
1:A:1110:A:H2	2:B:136:MET:CB	1.64	1.10
1:A:917:G:H1	1:A:1079:G:N2	1.50	1.10
1:A:918:A:C2	1:A:1080:A:N1	2.20	1.10
23:W:791:LYS:HB3	23:W:792:GLN:O	1.34	1.10
24:Y:49:ALA:HB1	26:X:19:G:C6	1.69	1.10
1:A:357:G:O3'	23:W:607:ARG:CD	2.00	1.10
23:W:789:GLU:C	23:W:792:GLN:NE2	2.10	1.10
25:Z:121:GLY:HA3	26:X:13:C:H4'	1.33	1.10
1:A:18:C:H2'	1:A:1078:U:N3	1.66	1.09
1:A:6:G:C5	5:E:99:ALA:HA	1.87	1.09
23:W:540:GLY:HA2	23:W:541:ILE:HG22	1.25	1.09
26:X:21:A:N6	26:X:48:C:OP1	1.84	1.09
25:Z:90:VAL:HB	26:X:12:G:O6	1.51	1.09
1:A:701:U:O2'	24:Y:61:ASP:C	1.96	1.09
1:A:864:A:H4'	1:A:1078:U:C6	1.87	1.09
2:B:129:LEU:C	3:C:179:ARG:HE	1.59	1.09
1:A:6:G:N7	5:E:99:ALA:HA	1.67	1.08
1:A:1096:C:C4'	2:B:139:ARG:HH21	1.66	1.08
1:A:1493:A:H8	22:V:19:ASN:CB	1.67	1.08
24:Y:72:LYS:HE2	26:X:17(A):U:H1'	1.09	1.08
1:A:925:G:C5	1:A:927:G:N7	2.21	1.08
1:A:919:A:N3	1:A:1080:A:C6	2.21	1.08
1:A:16:A:N9	1:A:1080:A:O2'	1.87	1.08
1:A:920:U:O3'	1:A:1082:A:H5"	1.54	1.08
1:A:1494:G:H8	22:V:18:PRO:HA	1.18	1.08
25:Z:180:GLN:OXT	26:X:67:C:H2'	1.54	1.08
12:L:102:LEU:O	23:W:662:ARG:HD2	0.92	1.07
1:A:790:A:OP2	26:X:39:C:C4'	2.01	1.07
22:V:49:PRO:HD3	25:Z:131:ARG:NH1	1.66	1.07
1:A:6:G:C2'	5:E:124:LEU:HD11	1.85	1.07
22:V:49:PRO:HD2	25:Z:131:ARG:NH1	1.65	1.07
1:A:357:G:C4'	23:W:607:ARG:HD2	1.82	1.07
1:A:16:A:C2	1:A:1080:A:H2'	1.88	1.06

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1078:U:C5'	5:E:90:THR:OG1	2.03	1.06
12:L:104:CYS:C	23:W:662:ARG:HH12	1.61	1.06
23:W:534:SER:CB	23:W:537:ALA:HB3	1.84	1.06
23:W:812:ILE:HG12	26:X:76:A:H1'	1.38	1.06
25:Z:176:PRO:CD	26:X:12:G:C4'	2.07	1.06
22:V:49:PRO:CD	25:Z:131:ARG:HH11	1.66	1.06
1:A:17:U:C3'	1:A:1079:G:C2'	2.20	1.06
1:A:530:G:H1'	22:V:39:LYS:HE2	1.28	1.06
1:A:923:A:OP1	5:E:26:LYS:HE2	1.56	1.06
1:A:17:U:O2'	1:A:1079:G:H2'	1.54	1.06
1:A:1110:A:H3'	2:B:132:LYS:HZ1	1.19	1.06
1:A:1390:U:C2	1:A:1391:U:C5	2.36	1.06
23:W:804:PHE:HB2	23:W:812:ILE:HG23	1.37	1.06
1:A:864:A:C2'	1:A:1078:U:C5	2.15	1.05
1:A:1106:G:OP1	2:B:113:ARG:NE	1.87	1.05
2:B:129:LEU:CA	3:C:179:ARG:NE	2.14	1.05
1:A:7:A:H3'	5:E:106:ILE:HD13	1.06	1.05
1:A:7:A:C8	5:E:124:LEU:HB3	1.92	1.05
1:A:920:U:H1'	1:A:1081:A:O2'	1.55	1.05
25:Z:176:PRO:CG	26:X:12:G:C4'	2.34	1.05
26:X:71:C:C2'	26:X:72:A:C8	2.22	1.05
1:A:702:A:C8	24:Y:64:LYS:CG	2.40	1.05
1:A:1493:A:C1'	22:V:21:THR:N	2.07	1.05
12:L:105:SER:HB3	23:W:666:LEU:HD22	1.13	1.05
1:A:1111:A:H1'	2:B:133:GLU:N	1.47	1.05
1:A:530:G:H1'	22:V:39:LYS:HD3	1.36	1.04
1:A:6:G:C6	5:E:99:ALA:CB	2.21	1.04
1:A:7:A:O2'	5:E:125:ALA:N	1.87	1.04
1:A:567:G:H4'	5:E:93:ARG:HH12	0.90	1.04
1:A:864:A:C4'	1:A:1078:U:H6	1.69	1.04
3:C:168:TYR:CE1	5:E:55:GLU:CD	2.34	1.04
24:Y:77:ARG:CZ	26:X:16:C:H41	1.70	1.04
1:A:567:G:C4'	5:E:93:ARG:HH12	1.70	1.04
2:B:128:LYS:HB2	3:C:207:ILE:HD12	1.40	1.04
23:W:591:LEU:HD12	23:W:620:ALA:HB3	1.36	1.04
25:Z:179:LYS:HD2	26:X:6:G:H1'	1.33	1.04
1:A:925:G:O3'	1:A:927:G:C5'	2.04	1.04
25:Z:179:LYS:CD	26:X:6:G:H1'	1.88	1.04
12:L:75:GLN:NE2	23:W:669:GLN:CB	2.19	1.04
1:A:6:G:C5	5:E:99:ALA:HB1	1.93	1.03
1:A:1390:U:C5	1:A:1391:U:C5	2.42	1.03

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1493:A:H2'	22:V:21:THR:H	0.87	1.03
1:A:925:G:C2	1:A:927:G:C4	2.45	1.03
1:A:7:A:H3'	5:E:106:ILE:HD12	1.40	1.03
1:A:559:A:OP2	5:E:126:LYS:NZ	1.92	1.03
5:E:159:LYS:NZ	8:H:43:GLU:OE1	1.91	1.03
1:A:918:A:N1	1:A:1080:A:C2	2.27	1.03
2:B:129:LEU:O	3:C:179:ARG:NH2	1.92	1.03
1:A:358:U:C4'	23:W:578:ARG:O	2.05	1.02
1:A:918:A:N1	1:A:1080:A:N1	2.06	1.02
23:W:540:GLY:HA2	23:W:541:ILE:CG2	1.88	1.02
25:Z:93:VAL:N	26:X:25:C:C6	2.14	1.02
1:A:1112:C:OP1	2:B:131:LYS:HB2	1.57	1.02
1:A:1492:A:N3	22:V:35:TYR:CB	2.21	1.02
12:L:39:THR:OG1	22:V:61:ASP:CB	2.07	1.02
12:L:41:THR:HG23	22:V:64:ARG:NH1	1.75	1.02
1:A:6:G:C5	5:E:99:ALA:CB	2.42	1.01
1:A:7:A:C8	5:E:124:LEU:CB	2.43	1.01
1:A:701:U:H5'	24:Y:63:GLY:HA3	1.40	1.01
1:A:925:G:C3'	1:A:927:G:H5"	1.88	1.01
1:A:918:A:N1	1:A:1079:G:N2	2.08	1.01
1:A:6:G:C5	5:E:99:ALA:CA	2.39	1.01
1:A:357:G:H4'	23:W:607:ARG:HD2	1.01	1.01
1:A:1078:U:H4'	5:E:90:THR:OG1	1.23	1.01
1:A:1112:C:OP1	2:B:131:LYS:CB	2.08	1.01
12:L:103:ASP:C	23:W:662:ARG:NH2	2.18	1.01
1:A:358:U:O3'	23:W:579:GLY:HA2	1.55	1.00
5:E:163:GLU:CB	8:H:114:ARG:CZ	2.32	1.00
1:A:790:A:OP2	26:X:39:C:C5'	2.09	1.00
1:A:1111:A:O3'	2:B:131:LYS:HB2	1.53	1.00
2:B:129:LEU:O	3:C:179:ARG:CZ	2.09	1.00
5:E:153:VAL:HG11	8:H:99:LEU:HB2	1.43	1.00
25:Z:94:LYS:HZ2	26:X:24:U:H1'	1.25	1.00
23:W:848:PHE:H	27:X:101:FME:CN	1.73	1.00
24:Y:77:ARG:HH11	26:X:16:C:H41	1.06	1.00
1:A:702:A:C8	24:Y:64:LYS:HG3	1.96	1.00
1:A:1111:A:H2'	2:B:130:THR:C	1.86	1.00
1:A:1390:U:C6	1:A:1391:U:C4	2.50	1.00
1:A:918:A:H2	1:A:1079:G:N1	1.36	1.00
1:A:1492:A:N3	22:V:35:TYR:HB2	1.76	1.00
5:E:157:ARG:HB3	8:H:43:GLU:HB3	1.38	1.00
1:A:395:C:H4'	23:W:647:GLU:OE2	0.83	0.99

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:128:LYS:HB3	3:C:207:ILE:HD12	1.40	0.99
5:E:161:VAL:CB	8:H:114:ARG:NH1	2.24	0.99
5:E:161:VAL:HB	8:H:114:ARG:HH12	1.25	0.99
1:A:16:A:N3	1:A:1080:A:O2'	1.88	0.99
1:A:925:G:N1	1:A:927:G:C5	2.30	0.99
5:E:148:ASN:ND2	8:H:96:MET:CE	0.84	0.99
12:L:75:GLN:CD	23:W:669:GLN:HG2	1.72	0.99
5:E:157:ARG:CD	8:H:45:PHE:HE2	1.75	0.99
22:V:14:THR:HB	22:V:23:ARG:HB3	1.40	0.99
24:Y:49:ALA:CB	26:X:19:G:N1	2.11	0.99
1:A:359:G:H5'	23:W:579:GLY:HA2	1.38	0.99
1:A:1096:C:C5'	2:B:139:ARG:HH21	1.75	0.99
1:A:1112:C:H5"	2:B:131:LYS:CG	1.81	0.99
2:B:105:LYS:HE2	5:E:66:LYS:HD3	1.45	0.99
1:A:18:C:O2'	1:A:1078:U:N1	1.94	0.98
26:X:22:G:C4	26:X:23:C:C5	2.51	0.98
1:A:6:G:N9	5:E:124:LEU:HD11	1.76	0.98
1:A:530:G:C1'	22:V:39:LYS:CE	2.23	0.98
5:E:82:GLN:O	8:H:97:ALA:HB2	1.64	0.98
24:Y:77:ARG:NH1	26:X:16:C:C4	2.32	0.98
25:Z:176:PRO:HG2	26:X:12:G:C4'	1.92	0.98
1:A:702:A:H8	24:Y:64:LYS:CG	1.77	0.97
1:A:6:G:C2'	5:E:124:LEU:CD1	2.42	0.97
5:E:157:ARG:CG	8:H:45:PHE:CZ	2.36	0.97
1:A:925:G:C5	1:A:927:G:C5	2.51	0.97
1:A:702:A:H8	24:Y:64:LYS:CD	1.76	0.97
1:A:6:G:N1	5:E:99:ALA:HB1	1.78	0.97
1:A:702:A:H8	24:Y:64:LYS:HD2	1.28	0.97
1:A:925:G:C2'	1:A:927:G:C5'	2.42	0.97
12:L:104:CYS:N	23:W:662:ARG:NH2	2.10	0.97
25:Z:176:PRO:HG2	26:X:12:G:C2'	1.93	0.97
1:A:8:A:H1'	5:E:108:GLY:CA	1.83	0.97
5:E:157:ARG:HD3	8:H:45:PHE:CE2	1.99	0.97
5:E:157:ARG:CD	8:H:45:PHE:CE2	2.47	0.96
25:Z:176:PRO:CG	26:X:12:G:O2'	2.13	0.96
2:B:128:LYS:CB	3:C:207:ILE:CD1	2.44	0.96
1:A:357:G:H4'	23:W:607:ARG:CD	1.93	0.96
1:A:16:A:C1'	1:A:1080:A:O2'	2.13	0.96
1:A:1103:C:H5'	2:B:98:GLY:N	1.80	0.96
2:B:128:LYS:O	3:C:179:ARG:HD3	1.63	0.96
26:X:76:A:O2'	27:X:101:FME:O1	1.82	0.96

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:W:812:ILE:CD1	26:X:76:A:C4	2.48	0.95
1:A:358:U:C5'	23:W:607:ARG:HH11	1.63	0.95
2:B:129:LEU:HA	3:C:179:ARG:CZ	1.96	0.95
1:A:368:U:H5''	23:W:593:LYS:HE3	1.48	0.95
1:A:7:A:H2'	5:E:106:ILE:HD11	1.49	0.95
1:A:530:G:C1'	22:V:39:LYS:CD	2.43	0.95
24:Y:72:LYS:CD	26:X:17(A):U:N1	2.30	0.95
25:Z:125:LYS:HZ2	26:X:26:G:C4'	1.54	0.95
5:E:156:LYS:O	8:H:44:GLY:O	1.84	0.95
1:A:1494:G:O2'	22:V:16:ALA:O	1.69	0.95
25:Z:179:LYS:HD3	26:X:5:G:H21	0.96	0.95
1:A:1111:A:O5'	2:B:132:LYS:HE3	1.67	0.94
1:A:701:U:H3'	24:Y:63:GLY:C	1.87	0.94
1:A:1103:C:H5'	2:B:98:GLY:H	1.32	0.94
2:B:129:LEU:O	3:C:179:ARG:NE	2.00	0.94
1:A:925:G:C4	1:A:927:G:C8	2.55	0.94
1:A:1494:G:C8	22:V:18:PRO:CD	2.49	0.94
1:A:1518:MA6:H103	1:A:1519:MA6:H102	1.50	0.94
1:A:925:G:N1	1:A:927:G:C6	2.35	0.94
1:A:518:C:O2'	22:V:38:GLY:HA3	1.66	0.94
1:A:701:U:H5'	24:Y:63:GLY:CA	1.97	0.94
12:L:51:LYS:CE	22:V:60:TYR:CD2	2.50	0.94
24:Y:77:ARG:CZ	26:X:16:C:H5	1.77	0.93
1:A:1105:A:H5''	2:B:113:ARG:HG2	1.49	0.93
1:A:702:A:OP2	24:Y:61:ASP:CB	2.03	0.93
1:A:1110:A:H3'	2:B:132:LYS:NZ	1.84	0.93
23:W:727:GLY:HA2	23:W:748:VAL:HG23	1.49	0.93
24:Y:49:ALA:HB1	26:X:19:G:H1	1.22	0.93
1:A:530:G:C1'	22:V:39:LYS:HD3	1.99	0.93
1:A:7:A:H8	5:E:124:LEU:HD13	0.76	0.93
24:Y:77:ARG:CZ	26:X:16:C:N4	2.28	0.93
1:A:16:A:H2'	1:A:1080:A:C2'	1.87	0.92
1:A:1110:A:C2	2:B:136:MET:CB	2.52	0.92
1:A:1078:U:H4'	5:E:90:THR:HG1	0.94	0.92
1:A:702:A:C8	24:Y:64:LYS:HD2	2.04	0.92
3:C:168:TYR:CD1	5:E:55:GLU:OE1	2.23	0.92
1:A:359:G:C5'	23:W:579:GLY:HA2	2.00	0.92
5:E:157:ARG:NH2	8:H:100:GLY:O	2.02	0.92
25:Z:94:LYS:HZ2	26:X:24:U:C1'	1.82	0.92
25:Z:179:LYS:C	26:X:68:C:O2	2.12	0.92
12:L:39:THR:OG1	22:V:61:ASP:HB2	1.67	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1074:G:O4'	2:B:103:ASN:CG	2.13	0.92
25:Z:94:LYS:CE	26:X:24:U:O2'	2.17	0.92
1:A:8:A:H5"	5:E:125:ALA:O	1.68	0.92
1:A:926:G:P	1:A:927:G:C5'	2.57	0.92
24:Y:77:ARG:NH1	26:X:16:C:C5	2.38	0.92
1:A:1073:U:O2'	2:B:105:LYS:HG2	1.70	0.91
1:A:1078:U:H5'	5:E:90:THR:OG1	1.71	0.91
1:A:925:G:O2'	1:A:927:G:H5"	1.69	0.91
1:A:1105:A:P	2:B:144:LEU:HD21	2.09	0.91
1:A:359:G:O4'	23:W:576:LYS:O	1.86	0.91
25:Z:179:LYS:HA	26:X:69:C:C1'	2.01	0.91
1:A:6:G:H2'	5:E:124:LEU:CD1	2.01	0.91
1:A:358:U:O2'	23:W:579:GLY:N	2.03	0.91
23:W:812:ILE:HD13	26:X:76:A:C4	2.05	0.91
26:X:22:G:HO2'	26:X:23:C:H6	0.93	0.91
1:A:519:C:C2	22:V:2:LYS:HE2	2.05	0.91
12:L:105:SER:HA	23:W:662:ARG:NH1	1.86	0.90
1:A:1110:A:H2'	2:B:132:LYS:HE3	1.54	0.90
12:L:75:GLN:NE2	23:W:669:GLN:CG	0.79	0.90
1:A:864:A:C1'	1:A:1078:U:C6	2.54	0.90
1:A:864:A:O4'	1:A:1078:U:C6	2.24	0.90
1:A:790:A:OP2	26:X:39:C:H5'	1.69	0.90
1:A:361:G:OP1	23:W:729:THR:HB	1.71	0.90
12:L:75:GLN:HE21	23:W:669:GLN:CG	0.43	0.90
1:A:919:A:H2	1:A:1080:A:C2	1.60	0.89
23:W:565:ALA:HB2	23:W:590:THR:CG2	2.03	0.89
23:W:812:ILE:HD12	23:W:863:ILE:O	1.72	0.89
25:Z:156:ALA:HB1	25:Z:174:LEU:HD11	1.54	0.89
25:Z:179:LYS:HB3	26:X:68:C:C2	2.07	0.89
22:V:48:LEU:HA	25:Z:131:ARG:NH1	1.86	0.89
1:A:1492:A:H2	22:V:35:TYR:HB3	1.07	0.89
11:K:94:GLU:OE2	11:K:98:ARG:NH2	2.06	0.89
24:Y:72:LYS:HD2	26:X:17(A):U:C2	2.08	0.89
25:Z:93:VAL:O	26:X:24:U:H2'	1.72	0.89
1:A:10:A:OP2	5:E:131:THR:OG1	1.90	0.89
1:A:790:A:H5"	26:X:39:C:H5'	1.52	0.89
23:W:531:VAL:HG21	23:W:544:LEU:HA	1.54	0.89
25:Z:180:GLN:NE2	26:X:69:C:OP2	2.05	0.89
22:V:48:LEU:CA	25:Z:131:ARG:HH12	1.84	0.88
1:A:925:G:O3'	1:A:927:G:H5"	1.69	0.88
1:A:927:G:N1	1:A:1391:U:O2	2.05	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:W:812:ILE:HG21	26:X:76:A:O4'	1.73	0.88
1:A:1493:A:H8	22:V:19:ASN:HB2	0.77	0.88
22:V:45:ILE:HD13	22:V:70:ARG:HD3	1.55	0.88
25:Z:90:VAL:HG22	26:X:22:G:N1	1.87	0.88
1:A:1390:U:C6	1:A:1391:U:H5	1.60	0.88
2:B:129:LEU:C	3:C:179:ARG:HH21	1.80	0.88
5:E:157:ARG:HH21	8:H:100:GLY:C	1.82	0.88
1:A:1130:A:OP1	9:I:18:ARG:NH1	2.07	0.88
25:Z:94:LYS:NZ	26:X:24:U:O2'	2.07	0.88
1:A:357:G:O3'	23:W:607:ARG:CZ	2.22	0.88
1:A:1493:A:N9	22:V:18:PRO:O	2.07	0.88
1:A:917:G:N1	1:A:1079:G:N2	2.20	0.87
1:A:519:C:C4'	22:V:66:ARG:NH2	2.37	0.87
1:A:925:G:C3'	1:A:927:G:C5'	2.51	0.87
3:C:168:TYR:CE1	5:E:55:GLU:OE2	2.27	0.87
1:A:368:U:H5"	23:W:593:LYS:CE	2.05	0.87
26:X:71:C:C4	26:X:72:A:C5	2.63	0.87
2:B:128:LYS:HB2	3:C:207:ILE:CD1	2.02	0.87
11:K:13:ARG:NH2	11:K:77:TYR:OH	2.07	0.87
1:A:702:A:O5'	24:Y:64:LYS:HD3	1.74	0.87
12:L:39:THR:OG1	22:V:61:ASP:OD2	1.92	0.87
5:E:148:ASN:ND2	8:H:96:MET:HE1	1.21	0.87
5:E:156:LYS:NZ	8:H:73:GLU:HB2	1.89	0.86
23:W:540:GLY:HA2	23:W:541:ILE:CB	2.05	0.86
2:B:133:GLU:CB	3:C:179:ARG:HH22	1.88	0.86
3:C:168:TYR:CZ	5:E:55:GLU:OE2	2.28	0.86
25:Z:91:ILE:O	26:X:11:A:N1	2.08	0.86
1:A:8:A:C5'	5:E:125:ALA:O	2.22	0.86
1:A:519:C:C5'	22:V:66:ARG:CZ	2.52	0.86
12:L:104:CYS:C	23:W:662:ARG:HH22	1.83	0.86
1:A:927:G:C2	1:A:1391:U:O2	2.29	0.86
12:L:104:CYS:O	23:W:662:ARG:CZ	2.23	0.86
1:A:701:U:C5'	24:Y:63:GLY:HA3	2.05	0.86
1:A:358:U:H5"	23:W:607:ARG:HH12	1.33	0.86
25:Z:179:LYS:HD3	26:X:5:G:C2	2.10	0.86
1:A:1493:A:H2'	22:V:21:THR:N	1.60	0.86
26:X:11:A:N6	26:X:24:U:O4	2.08	0.86
1:A:19:A:C8	1:A:1078:U:N3	2.37	0.85
1:A:1390:U:N3	1:A:1391:U:N3	2.09	0.85
3:C:132:ARG:HH12	4:D:47:ARG:NH2	1.73	0.85
22:V:48:LEU:HD23	25:Z:131:ARG:CZ	2.06	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1111:A:O5'	2:B:132:LYS:CE	2.25	0.85
25:Z:92:GLN:HG2	26:X:12:G:H21	1.34	0.85
1:A:358:U:O2'	23:W:577:GLY:C	2.19	0.85
23:W:534:SER:OG	23:W:537:ALA:CB	2.25	0.85
1:A:358:U:C4'	23:W:578:ARG:C	2.47	0.85
24:Y:77:ARG:CZ	26:X:16:C:C4	2.59	0.85
1:A:358:U:H5"	23:W:607:ARG:HH11	1.02	0.85
1:A:920:U:O4'	1:A:1081:A:O2'	1.95	0.85
25:Z:91:ILE:HD11	26:X:13:C:C5'	2.06	0.84
25:Z:94:LYS:NZ	26:X:24:U:C1'	2.39	0.84
1:A:919:A:H1'	1:A:1080:A:H61	1.41	0.84
1:A:1074:G:O4'	2:B:103:ASN:CB	2.25	0.84
1:A:1111:A:C2'	2:B:130:THR:C	2.50	0.84
23:W:728:ILE:HG13	23:W:748:VAL:HG21	1.56	0.84
24:Y:72:LYS:CD	26:X:17(A):U:C2	2.61	0.84
23:W:789:GLU:CA	23:W:792:GLN:HE21	1.90	0.84
1:A:530:G:C8	22:V:39:LYS:N	2.46	0.84
12:L:103:ASP:C	23:W:662:ARG:HH22	1.83	0.84
1:A:368:U:H3'	23:W:593:LYS:NZ	1.93	0.83
1:A:918:A:H2	1:A:1079:G:C2	1.74	0.83
23:W:531:VAL:HG11	23:W:544:LEU:CB	2.06	0.83
22:V:17:LEU:HB3	22:V:18:PRO:HD2	1.60	0.83
26:X:71:C:C6	26:X:72:A:N7	2.47	0.83
1:A:6:G:H2'	5:E:124:LEU:HD11	1.59	0.83
1:A:8:A:C4	5:E:107:ALA:O	2.31	0.83
1:A:920:U:O3'	1:A:1082:A:H5'	1.78	0.83
2:B:133:GLU:HB2	3:C:179:ARG:NH2	1.94	0.83
5:E:156:LYS:CE	8:H:130:ALA:OXT	2.27	0.83
1:A:1111:A:H1'	2:B:133:GLU:H	1.41	0.83
22:V:25:LYS:HA	22:V:31:GLU:HB3	1.61	0.83
5:E:163:GLU:HG3	8:H:98:GLY:O	1.79	0.82
2:B:128:LYS:HB3	3:C:207:ILE:CD1	2.08	0.82
1:A:518:C:OP2	22:V:39:LYS:HE2	1.78	0.82
1:A:702:A:OP2	24:Y:61:ASP:HB3	1.77	0.82
1:A:1072:G:OP1	5:E:62:LYS:NZ	2.07	0.82
25:Z:176:PRO:CB	26:X:12:G:O3'	2.26	0.82
23:W:534:SER:HB3	23:W:537:ALA:HB3	1.61	0.82
12:L:75:GLN:HE21	23:W:669:GLN:CB	1.82	0.82
26:X:22:G:N3	26:X:23:C:C6	2.47	0.82
12:L:56:ARG:NH1	23:W:738:ALA:HB2	1.95	0.82
1:A:920:U:C3'	1:A:1082:A:H5'	2.09	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:925:G:H2'	1:A:927:G:C5'	2.10	0.82
25:Z:94:LYS:NZ	26:X:24:U:H1'	1.95	0.82
26:X:71:C:C2	26:X:72:A:C8	2.67	0.82
12:L:73:ASN:HB3	23:W:670:GLN:HG3	1.62	0.82
23:W:789:GLU:HB2	23:W:792:GLN:NE2	1.93	0.82
24:Y:73:GLU:OE1	26:X:17(A):U:O2	1.98	0.82
1:A:1390:U:C2	1:A:1391:U:C6	2.58	0.81
20:T:28:MET:HE1	20:T:67:ILE:HD13	1.62	0.81
1:A:1492:A:H2	22:V:35:TYR:CB	1.76	0.81
5:E:156:LYS:NZ	8:H:130:ALA:OXT	2.13	0.81
23:W:426:GLN:HE22	23:W:770:VAL:HB	1.44	0.81
23:W:790:LEU:N	23:W:792:GLN:NE2	2.28	0.81
23:W:795:ILE:HG22	23:W:879:VAL:HG13	1.61	0.81
1:A:359:G:P	23:W:579:GLY:HA2	2.19	0.81
1:A:926:G:OP2	1:A:927:G:H5'	1.79	0.81
5:E:153:VAL:HG13	8:H:99:LEU:HB3	0.82	0.81
22:V:15:GLU:HB3	22:V:23:ARG:HB2	1.62	0.81
25:Z:92:GLN:HG2	26:X:12:G:H22	1.01	0.81
25:Z:179:LYS:CG	26:X:5:G:H21	1.93	0.81
1:A:1194:U:H5'	5:E:27:GLY:HA2	1.62	0.81
1:A:702:A:H5'	24:Y:64:LYS:HD3	1.62	0.81
12:L:105:SER:HB3	23:W:666:LEU:HD23	1.59	0.81
1:A:1074:G:O4'	2:B:103:ASN:HB2	1.80	0.81
12:L:39:THR:OG1	22:V:61:ASP:CG	2.24	0.81
26:X:8:4SU:H6	26:X:21:A:H2	1.45	0.80
23:W:812:ILE:HD11	26:X:76:A:N3	1.96	0.80
23:W:795:ILE:CG2	23:W:879:VAL:HG13	2.11	0.80
1:A:1496:C:H5'	25:Z:100:PRO:O	1.82	0.80
22:V:52:ARG:HH11	22:V:52:ARG:HB2	1.44	0.80
25:Z:91:ILE:HD13	26:X:13:C:C1'	2.12	0.80
1:A:7:A:N9	5:E:124:LEU:HB3	1.97	0.80
1:A:357:G:O3'	23:W:607:ARG:HD3	1.79	0.80
1:A:927:G:N2	1:A:1391:U:O2	2.15	0.80
12:L:71:GLY:HA2	22:V:60:TYR:OH	1.80	0.80
23:W:589:GLY:HA3	23:W:622:PRO:N	1.97	0.80
22:V:48:LEU:HD23	25:Z:131:ARG:NH2	1.97	0.80
1:A:926:G:H8	1:A:927:G:OP1	1.60	0.79
1:A:1110:A:H3'	2:B:132:LYS:CE	2.12	0.79
26:X:69:C:C2'	26:X:70:G:H5'	2.12	0.79
1:A:865:A:C4'	1:A:1077:G:O2'	2.29	0.79
12:L:104:CYS:CA	23:W:662:ARG:HH22	1.96	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:V:15:GLU:H	22:V:23:ARG:HB2	1.47	0.79
1:A:518:C:O2'	22:V:38:GLY:CA	2.30	0.79
1:A:920:U:O2'	1:A:1081:A:O2'	2.00	0.79
25:Z:179:LYS:HB2	26:X:68:C:O2	1.79	0.79
1:A:925:G:N1	1:A:927:G:C4	2.50	0.79
1:A:1494:G:O2'	22:V:16:ALA:C	2.25	0.79
2:B:128:LYS:HG2	3:C:207:ILE:HG13	1.64	0.79
12:L:73:ASN:HB3	23:W:670:GLN:CG	2.12	0.79
24:Y:58:ARG:HD2	24:Y:60:MET:HE2	1.63	0.79
25:Z:176:PRO:HG3	26:X:12:G:O2'	1.81	0.79
1:A:864:A:O2'	1:A:1078:U:C6	2.35	0.79
4:D:100:ASN:OD1	4:D:111:ARG:NH1	2.16	0.79
1:A:926:G:C8	1:A:927:G:P	2.77	0.78
1:A:1111:A:C1'	2:B:133:GLU:N	2.38	0.78
1:A:358:U:C5'	23:W:607:ARG:CZ	2.62	0.78
1:A:519:C:O2	22:V:2:LYS:CE	2.30	0.78
1:A:127:G:O2'	17:Q:6:ARG:NH1	2.15	0.78
5:E:156:LYS:HZ3	8:H:73:GLU:HB2	1.45	0.78
1:A:368:U:H3'	23:W:593:LYS:HZ1	1.48	0.78
1:A:7:A:C2'	5:E:124:LEU:HB3	2.14	0.78
1:A:701:U:H5'	24:Y:63:GLY:C	2.09	0.78
1:A:926:G:P	1:A:927:G:H5'	2.24	0.78
1:A:1078:U:C4'	5:E:90:THR:HG1	1.77	0.78
1:A:1110:A:H2	2:B:136:MET:CG	1.80	0.78
12:L:47:SER:OG	22:V:35:TYR:CE1	2.35	0.78
22:V:34:ALA:HA	22:V:65:GLY:O	1.84	0.78
25:Z:180:GLN:CD	26:X:69:C:OP2	2.27	0.78
7:G:68:ASN:O	7:G:138:ARG:NH1	2.17	0.77
12:L:51:LYS:HE3	22:V:60:TYR:CG	2.19	0.77
1:A:359:G:C5'	23:W:575:ASP:O	2.32	0.77
23:W:565:ALA:HB2	23:W:590:THR:HG23	1.66	0.77
25:Z:180:GLN:OXT	26:X:67:C:C2'	2.30	0.77
25:Z:91:ILE:HD11	26:X:13:C:O5'	1.83	0.77
23:W:812:ILE:CG1	26:X:76:A:N9	2.46	0.77
5:E:82:GLN:O	8:H:97:ALA:CB	2.31	0.77
25:Z:90:VAL:CG2	26:X:22:G:C6	2.66	0.77
1:A:18:C:C2'	1:A:1078:U:N1	2.46	0.77
1:A:1105:A:OP1	2:B:144:LEU:CG	2.32	0.77
1:A:1110:A:C2'	2:B:132:LYS:HE3	2.15	0.77
1:A:1111:A:P	2:B:132:LYS:NZ	2.57	0.77
1:A:864:A:O4'	1:A:1078:U:C5	2.35	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:129:LEU:C	3:C:179:ARG:NE	2.31	0.77
1:A:1147:C:O2	9:I:18:ARG:NH2	2.18	0.77
23:W:537:ALA:HB3	23:W:539:THR:HG23	1.65	0.77
23:W:789:GLU:CB	23:W:792:GLN:NE2	2.47	0.77
24:Y:72:LYS:NZ	26:X:17(A):U:C1'	2.41	0.77
1:A:920:U:C2'	1:A:1081:A:O2'	2.33	0.77
26:X:71:C:N1	26:X:72:A:C8	2.53	0.77
1:A:1100:C:N4	2:B:95:ARG:NE	2.34	0.76
1:A:1111:A:O3'	2:B:131:LYS:CA	2.33	0.76
1:A:920:U:O2'	1:A:1081:A:C3'	2.33	0.76
1:A:1493:A:N7	22:V:18:PRO:O	2.18	0.76
23:W:613:LEU:HD12	23:W:614:GLY:N	1.99	0.76
25:Z:179:LYS:CA	26:X:68:C:O2	2.32	0.76
26:X:18:G:O2'	26:X:19:G:H5'	1.85	0.76
1:A:919:A:H1'	1:A:1080:A:N6	1.99	0.76
12:L:75:GLN:CD	23:W:669:GLN:HG3	1.87	0.76
1:A:357:G:C4'	23:W:607:ARG:CD	2.59	0.76
7:G:111:ARG:NH1	7:G:123:GLU:OE2	2.19	0.76
23:W:791:LYS:O	23:W:880:PHE:CZ	2.39	0.76
23:W:534:SER:OG	23:W:537:ALA:HB3	1.85	0.76
23:W:812:ILE:CG1	26:X:76:A:C1'	2.54	0.75
25:Z:125:LYS:HZ3	26:X:26:G:C5'	1.97	0.75
1:A:790:A:C5'	26:X:38:A:O3'	2.33	0.75
1:A:7:A:C8	5:E:124:LEU:CG	2.70	0.75
1:A:919:A:N1	1:A:1080:A:C2	2.51	0.75
1:A:560:A:H2'	5:E:128:TYR:CD1	2.21	0.75
1:A:920:U:O2'	1:A:1082:A:H5'	1.85	0.75
1:A:1103:C:C5'	2:B:98:GLY:N	2.49	0.75
23:W:791:LYS:CB	23:W:792:GLN:O	2.04	0.75
23:W:814:GLY:HA2	27:X:101:FME:CB	2.16	0.75
1:A:1073:U:HO2'	2:B:105:LYS:HG2	1.48	0.75
22:V:40:MET:HE3	22:V:70:ARG:HB3	1.67	0.75
23:W:540:GLY:CA	23:W:541:ILE:HG22	2.13	0.75
1:A:530:G:O4'	22:V:39:LYS:HE2	1.85	0.75
25:Z:92:GLN:CD	26:X:12:G:H22	1.95	0.75
26:X:8:4SU:H1'	26:X:21:A:C2	2.22	0.75
1:A:359:G:P	23:W:579:GLY:CA	2.75	0.75
1:A:925:G:C4	1:A:927:G:N7	2.54	0.75
22:V:54:VAL:HB	22:V:69:TYR:HB2	1.69	0.75
1:A:368:U:P	23:W:607:ARG:HA	2.26	0.74
2:B:128:LYS:O	3:C:179:ARG:CD	2.35	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:41:THR:HG23	22:V:64:ARG:HH11	1.52	0.74
25:Z:94:LYS:HA	26:X:25:C:C4'	2.17	0.74
1:A:518:C:OP2	22:V:39:LYS:CE	2.35	0.74
25:Z:92:GLN:NE2	26:X:12:G:H22	1.85	0.74
1:A:530:G:O6	22:V:42:MET:HE3	1.88	0.74
25:Z:180:GLN:CB	26:X:69:C:OP2	2.27	0.74
1:A:8:A:C5'	5:E:107:ALA:HA	2.15	0.74
1:A:17:U:H2'	1:A:1079:G:H2'	0.76	0.74
3:C:40:ARG:NH1	3:C:55:ILE:O	2.21	0.74
22:V:52:ARG:HB2	22:V:52:ARG:NH1	2.02	0.74
1:A:1493:A:C8	22:V:19:ASN:CB	2.54	0.74
23:W:812:ILE:CG1	26:X:76:A:H1'	2.14	0.74
1:A:8:A:N9	5:E:107:ALA:O	2.14	0.73
24:Y:72:LYS:CD	26:X:17(A):U:C1'	2.65	0.73
1:A:1492:A:N3	22:V:35:TYR:HB3	1.87	0.73
1:A:925:G:H2'	1:A:927:G:O4'	1.89	0.73
25:Z:90:VAL:CB	26:X:12:G:O6	2.34	0.73
25:Z:179:LYS:HA	26:X:69:C:H1'	1.69	0.73
26:X:58:A:O2'	26:X:60:U:H5	1.72	0.73
1:A:519:C:H5'	22:V:66:ARG:HH21	0.60	0.73
26:X:41:C:H3'	26:X:42:G:H5"	1.71	0.73
22:V:25:LYS:HE3	22:V:29:GLY:O	1.89	0.73
25:Z:94:LYS:CG	26:X:24:U:O2'	2.36	0.73
1:A:6:G:C1'	5:E:124:LEU:CD1	2.61	0.73
1:A:7:A:H2'	5:E:124:LEU:HB3	1.71	0.73
25:Z:90:VAL:CA	26:X:22:G:H1	1.99	0.73
1:A:702:A:C8	24:Y:64:LYS:CD	2.61	0.72
1:A:1110:A:H2	2:B:136:MET:HB3	1.53	0.72
5:E:156:LYS:HD3	8:H:130:ALA:OXT	1.87	0.72
12:L:105:SER:OG	23:W:666:LEU:HD22	1.86	0.72
26:X:71:C:C5	26:X:72:A:C5	2.77	0.72
1:A:18:C:C6	1:A:1079:G:C2'	2.72	0.72
22:V:48:LEU:CD2	25:Z:131:ARG:CZ	2.68	0.72
23:W:550:LEU:HD23	23:W:550:LEU:C	2.14	0.72
26:X:8:4SU:H6	26:X:21:A:C2	2.23	0.72
5:E:156:LYS:NZ	8:H:130:ALA:C	2.48	0.72
26:X:17:C:H2'	26:X:17(A):U:H5	1.55	0.72
1:A:8:A:C1'	5:E:108:GLY:CA	2.59	0.71
1:A:1390:U:C2	1:A:1391:U:N1	2.58	0.71
5:E:161:VAL:HB	8:H:114:ARG:HH11	1.50	0.71
1:A:519:C:H4'	22:V:66:ARG:NH2	2.04	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1070:U:OP1	5:E:25:VAL:HG11	1.91	0.71
25:Z:91:ILE:O	26:X:11:A:C6	2.43	0.71
1:A:7:A:N7	5:E:124:LEU:CD1	2.53	0.71
23:W:812:ILE:HD12	23:W:863:ILE:C	2.15	0.71
25:Z:94:LYS:CA	26:X:25:C:C4'	2.69	0.71
24:Y:71:LYS:O	24:Y:75:GLU:HG2	1.91	0.71
1:A:920:U:H4'	1:A:1082:A:H5'	1.73	0.71
1:A:1111:A:O3'	2:B:131:LYS:C	2.31	0.71
1:A:1518:MA6:H103	1:A:1519:MA6:C10	2.21	0.71
1:A:396:C:OP1	23:W:648:LYS:HB2	1.90	0.70
23:W:716:VAL:HG21	23:W:786:LEU:HD21	1.73	0.70
23:W:804:PHE:CB	23:W:812:ILE:CG2	2.64	0.70
6:F:102:MET:HE1	18:R:24:LYS:HB3	1.72	0.70
23:W:812:ILE:HD13	26:X:76:A:C5	2.26	0.70
25:Z:91:ILE:CD1	26:X:13:C:O5'	2.38	0.70
25:Z:179:LYS:CD	26:X:5:G:N2	2.27	0.70
1:A:920:U:C1'	1:A:1081:A:HO2'	1.99	0.70
25:Z:94:LYS:CA	26:X:25:C:H4'	2.21	0.70
1:A:927:G:OP1	1:A:1505:G:N2	2.24	0.70
22:V:15:GLU:H	22:V:23:ARG:CB	2.04	0.70
25:Z:90:VAL:N	26:X:22:G:C2	2.57	0.70
25:Z:92:GLN:O	26:X:11:A:H2	1.73	0.70
1:A:6:G:H2'	5:E:124:LEU:CG	2.22	0.70
1:A:359:G:H5'	23:W:575:ASP:O	1.91	0.70
1:A:790:A:C5'	26:X:39:C:H5'	2.21	0.70
9:I:12:ARG:NH2	9:I:107:ASP:OD2	2.24	0.70
1:A:5:U:O2'	5:E:100:SER:HB3	1.90	0.70
1:A:6:G:C2'	5:E:124:LEU:HD21	2.14	0.70
26:X:58:A:H1'	26:X:60:U:O4	1.92	0.70
1:A:16:A:C2	1:A:1080:A:C2'	2.60	0.70
1:A:1492:A:C2'	22:V:19:ASN:O	2.32	0.70
23:W:848:PHE:H	27:X:101:FME:HCN	1.54	0.70
1:A:1073:U:P	5:E:66:LYS:NZ	2.65	0.70
3:C:132:ARG:NH1	4:D:47:ARG:NH2	2.39	0.70
3:C:168:TYR:CE1	5:E:55:GLU:OE1	2.44	0.70
25:Z:91:ILE:HD12	26:X:12:G:H2'	0.78	0.70
2:B:129:LEU:C	3:C:179:ARG:NH2	2.45	0.69
5:E:83:HIS:CG	8:H:96:MET:HA	2.27	0.69
23:W:812:ILE:CD1	26:X:76:A:N3	2.55	0.69
22:V:45:ILE:CD1	22:V:70:ARG:HD3	2.22	0.69
1:A:17:U:HO2'	1:A:1080:A:P	2.15	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:75:GLN:NE2	23:W:669:GLN:CD	1.90	0.69
22:V:52:ARG:HH11	22:V:52:ARG:CB	2.05	0.69
23:W:544:LEU:HD23	23:W:544:LEU:C	2.17	0.69
1:A:845:A:O3'	18:R:48:ARG:NH2	2.25	0.69
23:W:846:ARG:CB	26:X:76:A:C2	2.65	0.69
1:A:921:U:H5'	1:A:1082:A:P	2.31	0.69
23:W:533:VAL:HG12	23:W:541:ILE:H	1.57	0.69
26:X:20:H2U:H4'	26:X:21:A:OP2	1.87	0.69
1:A:8:A:H5'	5:E:107:ALA:HA	1.74	0.69
26:X:70:G:H2'	26:X:71:C:C6	2.27	0.69
1:A:702:A:O4'	24:Y:64:LYS:CD	2.40	0.69
22:V:48:LEU:CD2	25:Z:131:ARG:NH1	2.56	0.69
23:W:797:LEU:HD23	23:W:798:ALA:N	2.08	0.69
1:A:1111:A:O3'	2:B:131:LYS:HB3	1.90	0.69
25:Z:121:GLY:CA	26:X:13:C:H4'	2.18	0.68
21:U:31:GLU:OE2	21:U:34:ARG:NH2	2.25	0.68
26:X:20:H2U:O5'	26:X:21:A:OP2	2.12	0.68
1:A:1494:G:H8	22:V:18:PRO:N	1.63	0.68
24:Y:72:LYS:HD2	26:X:17(A):U:C1'	2.24	0.68
1:A:7:A:O2'	5:E:124:LEU:C	2.35	0.68
1:A:921:U:P	1:A:1082:A:H5"	2.32	0.68
1:A:1074:G:C1'	2:B:103:ASN:HB2	2.23	0.68
1:A:738:C:OP1	6:F:2:ARG:NH2	2.27	0.68
1:A:1110:A:H2'	2:B:132:LYS:CE	2.23	0.68
25:Z:125:LYS:NZ	26:X:26:G:O5'	2.09	0.68
1:A:701:U:C4'	24:Y:63:GLY:HA3	2.24	0.68
1:A:357:G:C3'	23:W:607:ARG:CD	2.71	0.68
12:L:104:CYS:C	23:W:662:ARG:NH2	2.51	0.68
25:Z:94:LYS:HA	26:X:25:C:C5'	2.23	0.68
1:A:1112:C:OP1	2:B:131:LYS:CG	2.41	0.68
1:A:1111:A:C2'	2:B:131:LYS:N	2.54	0.68
23:W:848:PHE:N	27:X:101:FME:CN	2.55	0.68
1:A:8:A:C8	5:E:107:ALA:N	2.62	0.67
1:A:925:G:H2'	1:A:927:G:H5"	1.62	0.67
1:A:980:C:O3'	14:N:13:ARG:NH2	2.27	0.67
5:E:163:GLU:HB3	8:H:114:ARG:NH1	2.08	0.67
23:W:426:GLN:HE22	23:W:770:VAL:CB	2.06	0.67
25:Z:178:LYS:O	26:X:69:C:O4'	2.12	0.67
25:Z:180:GLN:NE2	26:X:69:C:P	2.67	0.67
26:X:22:G:C4	26:X:23:C:C6	2.82	0.67
1:A:412:A:H1'	1:A:413:G:H5'	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:919:A:H2	1:A:1080:A:N3	1.93	0.67
23:W:790:LEU:HD23	23:W:790:LEU:O	1.94	0.67
23:W:796:GLY:O	23:W:879:VAL:HG12	1.94	0.67
1:A:1110:A:C3'	2:B:132:LYS:CE	2.72	0.67
1:A:18:C:H6	1:A:1079:G:C2'	2.03	0.67
5:E:161:VAL:HB	8:H:114:ARG:CZ	2.18	0.67
23:W:789:GLU:CB	23:W:792:GLN:HE21	2.06	0.67
23:W:812:ILE:HG12	26:X:76:A:C4	2.30	0.67
24:Y:21:GLN:HE21	24:Y:21:GLN:H	1.40	0.67
24:Y:77:ARG:HH12	26:X:16:C:N4	1.82	0.67
25:Z:94:LYS:HZ1	26:X:24:U:C4'	2.07	0.67
5:E:94:VAL:HG22	5:E:111:MET:HE3	1.74	0.67
1:A:6:G:C2	5:E:99:ALA:HB1	2.29	0.67
1:A:530:G:C2'	22:V:39:LYS:HD3	2.25	0.67
23:W:396:ILE:CG2	23:W:404:LYS:HG3	2.25	0.67
23:W:396:ILE:HG22	23:W:404:LYS:HG3	1.77	0.67
1:A:920:U:C4'	1:A:1082:A:H5'	2.25	0.67
23:W:789:GLU:HB2	23:W:792:GLN:HE21	1.60	0.67
1:A:6:G:C2'	5:E:124:LEU:CD2	2.66	0.66
25:Z:94:LYS:HA	26:X:25:C:H5'	1.77	0.66
1:A:1073:U:C2	2:B:106:THR:HG21	2.30	0.66
22:V:66:ARG:HB3	22:V:66:ARG:NH1	2.10	0.66
23:W:589:GLY:HA3	23:W:622:PRO:CD	2.25	0.66
23:W:847:ARG:HA	27:X:101:FME:CN	2.26	0.66
1:A:920:U:C4'	1:A:1081:A:O2'	2.44	0.66
2:B:105:LYS:CE	5:E:66:LYS:HD3	2.22	0.66
7:G:138:ARG:NH2	7:G:139:GLU:OE2	2.29	0.66
13:M:4:ILE:O	13:M:6:GLY:N	2.28	0.66
22:V:48:LEU:HD23	25:Z:131:ARG:NH1	2.09	0.66
25:Z:123:LYS:HB2	26:X:12:G:C1'	2.26	0.66
23:W:789:GLU:CA	23:W:792:GLN:NE2	2.52	0.66
25:Z:90:VAL:HG21	26:X:9:G:N7	2.11	0.66
1:A:1494:G:C8	22:V:17:LEU:C	2.72	0.66
22:V:15:GLU:CB	22:V:23:ARG:HB2	2.25	0.66
1:A:1112:C:OP1	2:B:131:LYS:HG3	1.95	0.66
23:W:540:GLY:CA	23:W:542:ASP:H	2.08	0.66
25:Z:156:ALA:CB	25:Z:174:LEU:HD11	2.26	0.66
5:E:157:ARG:C	8:H:44:GLY:HA3	2.21	0.66
12:L:105:SER:CA	23:W:662:ARG:HH12	2.08	0.66
13:M:4:ILE:O	13:M:7:ILE:N	2.26	0.66
25:Z:178:LYS:C	26:X:68:C:O2'	2.39	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:179:ARG:NH1	3:C:206:GLU:OE1	2.29	0.65
12:L:102:LEU:O	23:W:662:ARG:NH2	2.29	0.65
25:Z:91:ILE:HG13	26:X:12:G:H3'	1.78	0.65
1:A:368:U:O5'	23:W:607:ARG:HA	1.95	0.65
1:A:793:U:N3	25:Z:109:VAL:HG11	2.11	0.65
1:A:1110:A:C3'	2:B:132:LYS:HE3	2.27	0.65
1:A:263:A:OP2	20:T:74:ARG:NH1	2.29	0.65
1:A:17:U:O2'	1:A:1079:G:C2'	2.25	0.65
3:C:19:ASN:ND2	14:N:90:ARG:O	2.29	0.65
23:W:393:VAL:HG12	23:W:462:THR:HG22	1.79	0.65
23:W:569:VAL:HG22	23:W:584:VAL:HG22	1.78	0.65
25:Z:91:ILE:CG1	26:X:12:G:H2'	2.27	0.65
26:X:58:A:HO2'	26:X:60:U:H5	1.36	0.65
26:X:69:C:O2'	26:X:70:G:H5'	1.96	0.65
2:B:133:GLU:CB	3:C:179:ARG:NH2	2.53	0.65
2:B:128:LYS:C	3:C:179:ARG:HD3	2.21	0.65
2:B:133:GLU:HG3	3:C:179:ARG:NH2	2.11	0.65
1:A:1073:U:O5'	5:E:66:LYS:NZ	2.28	0.65
23:W:814:GLY:C	27:X:101:FME:SD	2.79	0.65
1:A:1494:G:C8	22:V:18:PRO:HA	2.05	0.65
5:E:158:GLY:HA3	8:H:44:GLY:HA3	1.78	0.65
12:L:103:ASP:C	23:W:662:ARG:HH21	2.02	0.65
23:W:565:ALA:HB2	23:W:590:THR:HG22	1.77	0.65
23:W:855:VAL:HG11	23:W:861:CYS:CB	2.27	0.65
9:I:22:LYS:O	9:I:62:ASP:N	2.29	0.65
1:A:8:A:H5'	5:E:125:ALA:O	1.97	0.64
14:N:89:MET:HE1	14:N:98:LYS:HD2	1.79	0.64
23:W:468:VAL:HB	23:W:498:ASN:HD21	1.63	0.64
1:A:358:U:C3'	23:W:579:GLY:CA	2.76	0.64
1:A:1096:C:C5'	2:B:139:ARG:NH2	2.55	0.64
2:B:133:GLU:CG	3:C:179:ARG:HH22	2.09	0.64
23:W:533:VAL:HG12	23:W:541:ILE:N	2.11	0.64
25:Z:91:ILE:CD1	26:X:12:G:C2'	2.52	0.64
25:Z:94:LYS:HA	26:X:25:C:H4'	1.79	0.64
1:A:368:U:C5'	23:W:593:LYS:CE	2.75	0.64
1:A:530:G:H1'	22:V:39:LYS:CG	2.26	0.64
5:E:79:GLY:O	5:E:121:HIS:N	2.28	0.64
22:V:70:ARG:C	22:V:71:LYS:HD2	2.23	0.64
23:W:797:LEU:HD23	23:W:797:LEU:C	2.23	0.64
1:A:845:A:O2'	18:R:48:ARG:NH2	2.31	0.64
25:Z:94:LYS:HD3	26:X:24:U:C2'	2.24	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:701:U:O2	24:Y:44:ASP:OD2	2.16	0.64
8:H:54:ASP:OD1	8:H:55:THR:N	2.30	0.64
23:W:855:VAL:HG13	23:W:859:MET:HE3	1.78	0.64
25:Z:90:VAL:CB	26:X:22:G:O6	2.45	0.64
1:A:8:A:C6	4:D:206:LYS:HB3	2.33	0.64
1:A:919:A:C4	1:A:1080:A:N1	2.64	0.64
26:X:66:C:H2’	26:X:67:C:C6	2.32	0.64
1:A:6:G:C8	5:E:124:LEU:HD11	2.32	0.64
11:K:119:ASN:OD1	21:U:35:ARG:NH1	2.31	0.64
24:Y:52:ALA:HB2	26:X:19:G:H1	1.62	0.64
5:E:157:ARG:NH2	8:H:100:GLY:C	2.55	0.64
26:X:22:G:O2’	26:X:23:C:O5’	2.15	0.64
2:B:137:ARG:HH22	3:C:206:GLU:CD	2.06	0.64
1:A:702:A:O4’	24:Y:64:LYS:HD3	1.98	0.63
1:A:1494:G:C8	22:V:18:PRO:HD3	2.33	0.63
1:A:918:A:C2	1:A:1080:A:C6	2.87	0.63
5:E:157:ARG:C	8:H:44:GLY:CA	2.71	0.63
23:W:848:PHE:N	27:X:101:FME:O1	2.27	0.63
25:Z:176:PRO:HD2	26:X:12:G:H4’	0.63	0.63
26:X:67:C:H2’	26:X:68:C:C6	2.33	0.63
23:W:814:GLY:HA2	27:X:101:FME:HB2	1.79	0.63
1:A:7:A:N7	5:E:124:LEU:HD12	2.14	0.63
23:W:812:ILE:CG1	26:X:76:A:C4	2.81	0.63
25:Z:128:LEU:HD11	25:Z:141:GLY:HA2	1.81	0.63
26:X:8:4SU:H5”	26:X:8:4SU:O2	1.98	0.63
1:A:919:A:C2	1:A:1080:A:H2	1.99	0.63
1:A:925:G:H2’	1:A:927:G:C8	2.33	0.63
1:A:1096:C:H5”	2:B:139:ARG:HH21	1.62	0.63
19:S:36:ARG:NH2	19:S:75:ALA:O	2.32	0.63
25:Z:92:GLN:HE21	26:X:12:G:H22	1.44	0.63
1:A:1110:A:H2	2:B:136:MET:HB2	1.63	0.63
1:A:1112:C:O5’	2:B:131:LYS:HB2	1.69	0.63
26:X:51:C:H2’	26:X:52:G:C8	2.34	0.63
26:X:71:C:C5	26:X:72:A:N7	2.66	0.63
23:W:716:VAL:CG2	23:W:786:LEU:HD21	2.29	0.63
26:X:8:4SU:H1’	26:X:21:A:N1	2.14	0.63
26:X:22:G:N3	26:X:23:C:C5	2.66	0.63
26:X:41:C:C3’	26:X:42:G:H5”	2.28	0.63
1:A:1492:A:H2	22:V:35:TYR:CA	2.11	0.63
5:E:156:LYS:HZ3	8:H:130:ALA:C	2.06	0.63
20:T:28:MET:HE3	20:T:58:VAL:HG12	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:X:22:G:C5	26:X:23:C:C5	2.86	0.63
1:A:6:G:C4	5:E:99:ALA:HB1	2.33	0.63
1:A:1493:A:C8	22:V:18:PRO:C	2.67	0.63
23:W:814:GLY:HA2	27:X:101:FME:SD	2.36	0.63
23:W:847:ARG:HA	27:X:101:FME:HCN	1.79	0.63
5:E:157:ARG:HD3	8:H:101:ILE:HG12	1.81	0.62
22:V:5:ASP:O	22:V:59:PRO:HD3	1.99	0.62
1:A:921:U:C4'	1:A:1082:A:OP1	2.47	0.62
22:V:36:ILE:O	22:V:41:ARG:HD2	1.98	0.62
23:W:830:VAL:HG22	23:W:877:ILE:HG12	1.81	0.62
12:L:41:THR:CG2	22:V:64:ARG:HH11	2.12	0.62
1:A:359:G:C4'	23:W:576:LYS:HA	2.29	0.62
1:A:925:G:C2	1:A:927:G:C5	2.83	0.62
23:W:540:GLY:HA3	23:W:542:ASP:H	1.63	0.62
1:A:17:U:O3'	1:A:1080:A:C5'	2.21	0.62
2:B:128:LYS:HB3	3:C:207:ILE:CG1	2.29	0.62
23:W:537:ALA:CB	23:W:539:THR:HG23	2.29	0.62
25:Z:176:PRO:HD2	26:X:12:G:C5'	2.23	0.62
26:X:8:4SU:O2	26:X:8:4SU:H3'	1.99	0.62
1:A:702:A:C4'	24:Y:64:LYS:HD3	2.30	0.62
12:L:105:SER:CB	23:W:666:LEU:HD21	2.07	0.62
23:W:483:ILE:HD12	23:W:519:ILE:HG21	1.82	0.62
23:W:534:SER:OG	23:W:537:ALA:HB2	1.99	0.62
1:A:1105:A:H5"	2:B:113:ARG:CG	2.25	0.62
22:V:36:ILE:HG22	22:V:41:ARG:HG3	1.80	0.62
1:A:359:G:H1'	23:W:576:LYS:HG3	1.81	0.62
1:A:921:U:H5"	1:A:1082:A:OP1	1.94	0.62
26:X:71:C:C4	26:X:72:A:C6	2.88	0.62
17:Q:60:GLU:OE1	17:Q:77:ARG:NE	2.33	0.61
22:V:66:ARG:HB3	22:V:66:ARG:HH11	1.65	0.61
26:X:56:C:O2'	26:X:57:A:H5'	2.00	0.61
1:A:7:A:C8	5:E:124:LEU:HD12	2.32	0.61
1:A:918:A:N3	1:A:1079:G:N1	2.19	0.61
1:A:919:A:C2	1:A:1080:A:C6	2.78	0.61
25:Z:90:VAL:N	26:X:22:G:C6	2.65	0.61
25:Z:91:ILE:CG1	26:X:12:G:C2'	2.77	0.61
25:Z:123:LYS:HB2	26:X:12:G:H1'	1.81	0.61
5:E:153:VAL:CG1	8:H:99:LEU:HB2	2.07	0.61
22:V:5:ASP:HB2	22:V:59:PRO:HG3	1.82	0.61
23:W:611:ASN:O	23:W:612:GLU:HG2	2.00	0.61
26:X:8:4SU:C6	26:X:21:A:H2	2.13	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:405:U:OP2	4:D:3:ARG:NH1	2.32	0.61
1:A:925:G:O3'	1:A:927:G:O5'	2.14	0.61
1:A:1073:U:O2	2:B:106:THR:HB	2.01	0.61
1:A:1112:C:H6	2:B:130:THR:O	1.81	0.61
1:A:1225:A:H2'	1:A:1226:C:C5	2.35	0.61
5:E:85:VAL:HG13	5:E:96:MET:HE3	1.82	0.61
5:E:161:VAL:C	8:H:114:ARG:NH2	2.58	0.61
1:A:17:U:O3'	1:A:1080:A:H5'	1.68	0.61
1:A:411:A:OP2	4:D:26:ARG:NH2	2.33	0.61
11:K:112:ASP:HB3	21:U:2:PRO:HG2	1.83	0.61
13:M:3:ARG:O	13:M:57:ARG:NH2	2.33	0.61
2:B:120:GLN:O	2:B:125:THR:N	2.34	0.61
12:L:41:THR:CG2	22:V:64:ARG:NH1	2.58	0.61
25:Z:91:ILE:CD1	26:X:13:C:C5'	2.78	0.61
1:A:358:U:H5'	23:W:607:ARG:NH1	2.07	0.61
1:A:359:G:H5"	23:W:574:LEU:HD11	1.83	0.61
1:A:519:C:N3	22:V:2:LYS:HE2	2.14	0.60
1:A:920:U:O2'	1:A:1081:A:C2'	2.47	0.60
1:A:1103:C:O2'	2:B:97:LEU:HD12	2.01	0.60
18:R:37:GLY:O	18:R:63:ARG:NH2	2.34	0.60
1:A:368:U:OP2	23:W:607:ARG:HG2	2.01	0.60
1:A:1111:A:H3'	2:B:132:LYS:HD2	1.82	0.60
1:A:1193:G:O2'	5:E:27:GLY:HA3	2.01	0.60
10:J:63:ASP:HB3	10:J:65:TYR:CE1	2.36	0.60
26:X:33:U:N3	26:X:36:U:OP2	2.34	0.60
22:V:45:ILE:HG23	22:V:71:LYS:HE3	1.82	0.60
1:A:359:G:C1'	23:W:576:LYS:O	2.48	0.60
1:A:844:G:H2'	1:A:844:G:N3	2.16	0.60
12:L:110:ARG:NH1	12:L:112:GLN:O	2.34	0.60
1:A:1110:A:C2'	2:B:132:LYS:CE	2.79	0.60
23:W:531:VAL:CG1	23:W:544:LEU:HB2	2.14	0.60
26:X:6:G:O2'	26:X:7:G:H5'	2.02	0.60
1:A:6:G:O2'	5:E:124:LEU:HD13	2.01	0.60
2:B:128:LYS:CG	3:C:207:ILE:HG13	2.31	0.60
9:I:88:MET:SD	9:I:95:ARG:HG2	2.42	0.60
9:I:95:ARG:O	9:I:98:LEU:N	2.35	0.60
1:A:560:A:H2'	5:E:128:TYR:HD1	1.65	0.60
23:W:855:VAL:HG11	23:W:861:CYS:HB3	1.82	0.60
25:Z:91:ILE:HD13	26:X:13:C:C6	2.36	0.60
1:A:10:A:OP2	5:E:131:THR:CB	2.50	0.60
1:A:17:U:O2'	1:A:1079:G:C3'	2.49	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1178:G:N2	1:A:1181:G:OP2	2.34	0.60
25:Z:90:VAL:HG13	26:X:22:G:C6	2.25	0.60
25:Z:178:LYS:O	26:X:68:C:O2'	2.19	0.60
1:A:17:U:O2'	1:A:1080:A:P	2.60	0.60
1:A:19:A:H1'	1:A:1078:U:O4	1.90	0.60
25:Z:179:LYS:HA	26:X:69:C:O4'	2.02	0.60
1:A:1073:U:P	5:E:66:LYS:HZ2	2.25	0.59
7:G:90:GLU:N	7:G:90:GLU:OE2	2.34	0.59
12:L:104:CYS:C	23:W:662:ARG:NH1	2.36	0.59
23:W:855:VAL:HG13	23:W:859:MET:CE	2.32	0.59
1:A:359:G:H5'	23:W:579:GLY:CA	2.25	0.59
1:A:530:G:N7	22:V:38:GLY:HA3	2.16	0.59
5:E:159:LYS:HD2	8:H:43:GLU:CA	2.18	0.59
22:V:45:ILE:HG12	22:V:70:ARG:HH11	1.68	0.59
23:W:471:ALA:HB3	23:W:505:ALA:HB1	1.84	0.59
26:X:71:C:C2	26:X:72:A:N9	2.70	0.59
23:W:789:GLU:C	23:W:792:GLN:HE21	1.92	0.59
1:A:8:A:N6	4:D:202:GLU:O	2.34	0.59
1:A:567:G:C4'	5:E:93:ARG:NH1	2.45	0.59
1:A:703:G:N7	24:Y:61:ASP:OD2	2.35	0.59
19:S:29:LYS:HB3	19:S:30:PRO:HD2	1.85	0.59
25:Z:94:LYS:C	26:X:25:C:H4'	2.27	0.59
14:N:31:ILE:HA	14:N:34:VAL:HG23	1.84	0.59
1:A:925:G:N1	1:A:927:G:N1	2.51	0.59
5:E:157:ARG:HB3	8:H:43:GLU:CB	2.24	0.59
5:E:161:VAL:HG12	5:E:162:GLU:H	1.67	0.59
24:Y:73:GLU:OE1	26:X:17(A):U:C2	2.56	0.59
25:Z:91:ILE:O	26:X:24:U:C4	2.56	0.59
1:A:368:U:C5'	23:W:593:LYS:HE2	2.32	0.59
16:P:1:MET:SD	16:P:1:MET:N	2.64	0.59
1:A:7:A:H2'	5:E:124:LEU:CB	2.32	0.58
1:A:1496:C:H4'	25:Z:99:ARG:NE	2.18	0.58
4:D:78:GLU:OE2	4:D:81:ARG:NH2	2.36	0.58
23:W:399:HIS:CB	23:W:402:HIS:HE1	2.17	0.58
23:W:586:VAL:HG23	23:W:622:PRO:HA	1.86	0.58
5:E:156:LYS:NZ	8:H:73:GLU:CB	2.63	0.58
10:J:48:ARG:NH1	10:J:66:GLU:OE1	2.37	0.58
12:L:39:THR:CG2	22:V:61:ASP:HB2	2.33	0.58
24:Y:21:GLN:H	24:Y:21:GLN:NE2	2.01	0.58
1:A:1228:C:P	13:M:107:ARG:HH22	2.26	0.58
8:H:113:ASP:OD1	8:H:117:ARG:NH2	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:358:U:H5'	23:W:607:ARG:HH11	1.61	0.58
1:A:359:G:O4'	23:W:576:LYS:HA	2.03	0.58
1:A:359:G:H4'	23:W:575:ASP:O	2.04	0.58
25:Z:90:VAL:CG2	26:X:22:G:O6	2.51	0.58
26:X:73:A:C2	26:X:74:C:N3	2.72	0.58
1:A:80:A:C2	1:A:90:C:N3	2.71	0.58
1:A:1073:U:O3'	2:B:105:LYS:HD3	2.03	0.58
23:W:848:PHE:N	27:X:101:FME:HCN	2.18	0.58
1:A:1096:C:H5''	2:B:139:ARG:NH2	2.19	0.58
23:W:448:HIS:HD2	23:W:772:TYR:OH	1.85	0.58
25:Z:179:LYS:HB3	26:X:5:G:N2	2.18	0.58
1:A:865:A:H4'	1:A:1077:G:O2'	2.02	0.58
12:L:43:LYS:HE2	12:L:89:D2T:H7	1.85	0.58
14:N:21:PHE:HA	14:N:25:ALA:HB3	1.85	0.58
22:V:20:ALA:HB1	22:V:36:ILE:HD12	1.84	0.58
22:V:25:LYS:HA	22:V:31:GLU:CB	2.34	0.58
23:W:396:ILE:HG12	23:W:466:VAL:HB	1.86	0.58
23:W:789:GLU:C	23:W:792:GLN:HE22	2.08	0.58
26:X:71:C:C2'	26:X:72:A:O5'	2.51	0.58
1:A:395:C:C3'	23:W:647:GLU:OE2	2.51	0.58
25:Z:180:GLN:HE21	26:X:69:C:P	2.26	0.58
26:X:20:H2U:C4'	26:X:21:A:OP2	2.51	0.58
1:A:530:G:N7	22:V:38:GLY:C	2.62	0.58
12:L:51:LYS:HE3	22:V:60:TYR:HD2	1.56	0.58
1:A:1495:U:HO2'	25:Z:101:GLY:CA	2.16	0.57
26:X:56:C:H2'	26:X:57:A:C8	2.38	0.57
1:A:1111:A:P	2:B:132:LYS:HZ1	2.22	0.57
2:B:27:MET:HE2	2:B:188:ASP:O	2.04	0.57
1:A:16:A:C4	1:A:1080:A:C2'	2.61	0.57
1:A:825:A:O2'	8:H:13:ARG:NH1	2.37	0.57
1:A:567:G:C5'	5:E:93:ARG:HH12	2.17	0.57
1:A:1060:U:OP1	14:N:85:ARG:NH2	2.37	0.57
1:A:1110:A:C3'	2:B:132:LYS:HZ1	2.07	0.57
10:J:57:VAL:HG22	10:J:58:ASN:H	1.70	0.57
23:W:746:PHE:O	23:W:747:ASN:OD1	2.22	0.57
1:A:207:C:N4	1:A:212:G:O6	2.37	0.57
1:A:701:U:HO2'	24:Y:62:TYR:N	1.98	0.57
3:C:132:ARG:HH12	4:D:47:ARG:HH21	1.50	0.57
3:C:135:LYS:HE2	5:E:57:PRO:HG3	1.87	0.57
12:L:104:CYS:O	23:W:662:ARG:NH2	2.37	0.57
2:B:129:LEU:CA	3:C:179:ARG:NH2	2.68	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:85:VAL:CG1	5:E:96:MET:HE3	2.34	0.57
25:Z:91:ILE:CD1	26:X:13:C:C4'	2.83	0.57
26:X:17:C:H2'	26:X:17(A):U:C5	2.37	0.57
26:X:19:G:O2'	26:X:20:H2U:OP2	2.17	0.57
1:A:1517:G:C5	25:Z:106:ASP:OD1	2.58	0.57
2:B:133:GLU:HG3	3:C:179:ARG:HH22	1.69	0.57
8:H:96:MET:HE3	8:H:130:ALA:CB	2.35	0.57
22:V:25:LYS:CA	22:V:31:GLU:HB3	2.31	0.57
23:W:544:LEU:HD23	23:W:544:LEU:O	2.05	0.57
26:X:69:C:H2'	26:X:70:G:H5'	1.84	0.57
1:A:865:A:OP1	1:A:1077:G:C5'	2.53	0.57
2:B:126:PHE:C	2:B:128:LYS:H	2.13	0.57
23:W:399:HIS:CD2	23:W:476:MET:CB	2.88	0.57
1:A:18:C:O2	1:A:1078:U:C4	2.58	0.56
3:C:142:MET:HE2	3:C:170:GLU:HG3	1.85	0.56
5:E:157:ARG:HD2	8:H:43:GLU:HB3	1.85	0.56
12:L:56:ARG:NH1	23:W:738:ALA:CB	2.66	0.56
1:A:261:U:OP2	20:T:74:ARG:NH2	2.38	0.56
1:A:558:G:H5"	5:E:126:LYS:HE3	1.87	0.56
1:A:701:U:C3'	24:Y:63:GLY:C	2.59	0.56
1:A:925:G:C4	1:A:927:G:C5	2.93	0.56
1:A:1189:U:OP1	14:N:98:LYS:NZ	2.39	0.56
2:B:129:LEU:CA	3:C:179:ARG:HH21	2.18	0.56
25:Z:94:LYS:NZ	26:X:24:U:O4'	2.38	0.56
26:X:57:A:O2'	26:X:58:A:O5'	2.20	0.56
1:A:559:A:P	5:E:126:LYS:NZ	2.78	0.56
12:L:103:ASP:CA	23:W:662:ARG:HH21	2.18	0.56
12:L:105:SER:N	23:W:662:ARG:HH12	2.03	0.56
23:W:727:GLY:O	23:W:728:ILE:HG13	2.05	0.56
23:W:791:LYS:O	23:W:880:PHE:CD1	2.54	0.56
1:A:427:U:O2'	1:A:541:G:OP1	2.21	0.56
1:A:925:G:C2	1:A:927:G:N3	2.74	0.56
1:A:1104:G:H4'	2:B:110:SER:CB	2.35	0.56
1:A:1217:C:P	14:N:9:ARG:HH21	2.29	0.56
9:I:85:ARG:HA	9:I:88:MET:HE3	1.88	0.56
10:J:7:ARG:HG2	10:J:101:SER:HB2	1.87	0.56
23:W:815:CYS:SG	23:W:861:CYS:C	2.89	0.56
25:Z:176:PRO:CG	26:X:12:G:C2'	2.66	0.56
26:X:71:C:C6	26:X:72:A:C8	2.94	0.56
23:W:721:ILE:HG22	23:W:735:LEU:HD21	1.86	0.56
23:W:748:VAL:HG22	23:W:749:ARG:N	2.21	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Y:72:LYS:CE	26:X:17(A):U:N1	2.60	0.56
1:A:1494:G:N9	22:V:18:PRO:HD3	2.21	0.56
23:W:457:ARG:HH12	23:W:637:ALA:HB3	1.71	0.56
23:W:589:GLY:HA3	23:W:622:PRO:HD3	1.86	0.56
1:A:1100:C:H41	2:B:95:ARG:NE	2.02	0.56
3:C:126:ARG:O	3:C:127:ARG:HB2	2.05	0.56
26:X:23:C:O2'	26:X:24:U:O5'	2.24	0.56
8:H:48:ASP:OD1	8:H:49:PHE:N	2.38	0.55
1:A:7:A:HO2'	5:E:125:ALA:N	2.02	0.55
1:A:203:G:N2	1:A:204:G:O6	2.39	0.55
1:A:1135:U:N3	1:A:1137:C:O2	2.39	0.55
9:I:84:THR:HG21	9:I:103:PHE:HB3	1.87	0.55
23:W:399:HIS:HB3	23:W:402:HIS:CE1	2.41	0.55
25:Z:179:LYS:CE	26:X:6:G:H1'	2.36	0.55
25:Z:91:ILE:O	26:X:24:U:O4	2.23	0.55
25:Z:93:VAL:O	26:X:24:U:C2'	2.50	0.55
1:A:357:G:C3'	23:W:607:ARG:HD2	2.33	0.55
1:A:925:G:C3'	1:A:927:G:H5'	2.36	0.55
1:A:925:G:H2'	1:A:927:G:H8	1.71	0.55
11:K:16:VAL:HG23	11:K:17:SER:H	1.72	0.55
23:W:694:LYS:HG2	23:W:724:GLY:HA3	1.88	0.55
1:A:519:C:H4'	22:V:66:ARG:CZ	2.36	0.55
23:W:397:MET:HE1	23:W:459:ALA:HB2	1.88	0.55
1:A:358:U:C3'	23:W:579:GLY:HA3	2.31	0.55
3:C:7:PRO:HG2	3:C:184:TYR:CG	2.42	0.55
13:M:95:LEU:C	13:M:109:ARG:HG2	2.32	0.55
1:A:407:U:OP1	4:D:3:ARG:NH2	2.40	0.55
1:A:1226:C:N4	13:M:103:LYS:HE3	2.22	0.55
1:A:1110:A:C2	2:B:136:MET:HB3	2.33	0.55
1:A:1111:A:C1'	2:B:133:GLU:H	2.12	0.55
10:J:40:ILE:CG1	10:J:73:LEU:HB3	2.37	0.55
13:M:6:GLY:CA	13:M:66:GLU:HG3	2.37	0.55
1:A:18:C:HO2'	1:A:1078:U:N1	1.45	0.55
2:B:105:LYS:HB3	5:E:69:ARG:CZ	2.36	0.55
22:V:58:THR:CG2	22:V:60:TYR:HB2	2.37	0.55
6:F:88:MET:SD	6:F:90:MET:HE2	2.46	0.55
23:W:467:LEU:HB2	23:W:495:VAL:HG12	1.88	0.55
1:A:7:A:C3'	5:E:106:ILE:HD13	1.98	0.54
1:A:369:G:C5'	23:W:593:LYS:HZ1	2.20	0.54
1:A:530:G:N7	22:V:39:LYS:N	2.56	0.54
1:A:1074:G:H5'	2:B:103:ASN:HA	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:157:ARG:HG2	8:H:45:PHE:CD2	2.24	0.54
10:J:40:ILE:HG12	10:J:73:LEU:HB3	1.89	0.54
1:A:18:C:O2	1:A:1078:U:O4	2.25	0.54
1:A:842:U:H3'	1:A:843:U:C5'	2.37	0.54
1:A:925:G:N1	1:A:927:G:C2	2.75	0.54
1:A:951:G:OP2	13:M:101:ARG:NH2	2.41	0.54
23:W:567:GLY:HA2	23:W:587:ARG:HG3	1.88	0.54
1:A:359:G:C4'	23:W:575:ASP:O	2.56	0.54
1:A:865:A:C5'	1:A:1077:G:O2'	2.55	0.54
23:W:613:LEU:HD12	23:W:613:LEU:C	2.32	0.54
1:A:359:G:H4'	23:W:576:LYS:HA	1.90	0.54
25:Z:118:LEU:HD22	25:Z:156:ALA:HB2	1.89	0.54
1:A:530:G:H8	22:V:39:LYS:HG2	1.72	0.54
22:V:61:ASP:OD1	22:V:63:THR:HB	2.06	0.54
23:W:830:VAL:O	23:W:836:VAL:HG23	2.08	0.54
1:A:923:A:OP1	5:E:26:LYS:CE	2.43	0.54
5:E:156:LYS:HB3	8:H:45:PHE:CE1	2.41	0.54
22:V:31:GLU:H	22:V:31:GLU:CD	2.16	0.54
23:W:611:ASN:C	23:W:612:GLU:HG2	2.33	0.54
25:Z:93:VAL:O	26:X:25:C:C6	2.60	0.54
23:W:882:ILE:O	23:W:882:ILE:HG13	2.07	0.54
25:Z:93:VAL:HG22	25:Z:123:LYS:HD3	1.89	0.54
12:L:75:GLN:HE22	23:W:669:GLN:CB	2.00	0.54
23:W:589:GLY:N	23:W:622:PRO:HB3	2.22	0.54
26:X:8:4SU:HO2'	26:X:9:G:C5'	2.21	0.54
1:A:404:G:N7	4:D:2:ALA:HB3	2.23	0.54
5:E:156:LYS:HZ1	8:H:73:GLU:HB2	1.70	0.54
15:O:20:ASN:O	15:O:22:THR:N	2.41	0.54
25:Z:94:LYS:HZ2	26:X:24:U:C2'	2.20	0.54
26:X:56:C:H2'	26:X:57:A:H8	1.74	0.54
2:B:129:LEU:HA	3:C:179:ARG:NH2	2.22	0.53
26:X:71:C:N3	26:X:72:A:C4	2.76	0.53
1:A:7:A:O5'	5:E:124:LEU:HD22	2.08	0.53
1:A:1096:C:H5''	2:B:139:ARG:HE	1.72	0.53
1:A:1494:G:C8	22:V:18:PRO:CG	2.87	0.53
1:A:1495:U:O2'	25:Z:101:GLY:HA2	2.04	0.53
23:W:795:ILE:HG23	23:W:796:GLY:N	2.23	0.53
24:Y:72:LYS:HE2	26:X:17(A):U:O4'	2.08	0.53
25:Z:180:GLN:OE1	26:X:68:C:P	2.66	0.53
1:A:367:U:H4'	23:W:605:ARG:HD2	1.91	0.53
22:V:15:GLU:HG3	22:V:17:LEU:HG	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:19:A:OP1	5:E:135:ASN:ND2	2.40	0.53
1:A:843:U:OP1	1:A:846:G:N2	2.42	0.53
1:A:976:G:OP2	1:A:1358:U:O2'	2.25	0.53
1:A:1032:G:H2'	1:A:1033:G:H4'	1.90	0.53
1:A:1124:G:H5'	10:J:37:ARG:HH11	1.73	0.53
1:A:1379:G:N7	7:G:2:PRO:HB2	2.24	0.53
23:W:846:ARG:HB3	26:X:76:A:N3	2.18	0.53
1:A:1060:U:H4'	10:J:53:ILE:HG23	1.91	0.53
2:B:133:GLU:OE2	2:B:137:ARG:NH1	2.39	0.53
13:M:12:HIS:ND1	13:M:45:ILE:HG13	2.24	0.53
22:V:58:THR:HG22	22:V:60:TYR:HB2	1.90	0.53
23:W:540:GLY:HA2	23:W:541:ILE:HB	1.88	0.53
1:A:6:G:C8	5:E:124:LEU:CD1	2.92	0.53
1:A:1493:A:H3'	22:V:18:PRO:C	1.98	0.53
13:M:8:ASN:OD1	13:M:9:ILE:N	2.42	0.53
1:A:526:C:C2'	1:A:527:G7M:H5'	2.39	0.53
1:A:702:A:C8	24:Y:64:LYS:HG2	2.39	0.53
1:A:702:A:O4'	24:Y:64:LYS:HD2	2.07	0.53
1:A:790:A:H5"	26:X:38:A:O3'	2.07	0.53
1:A:938:A:H5'	7:G:76:LYS:NZ	2.23	0.53
10:J:6:ILE:HG13	10:J:76:ILE:HB	1.91	0.53
22:V:49:PRO:CD	25:Z:131:ARG:HH12	1.99	0.53
23:W:395:THR:HB	23:W:462:THR:HG21	1.90	0.53
26:X:26:G:H2'	26:X:27:U:H5'	1.91	0.53
1:A:769:G:H4'	1:A:1513:A:H4'	1.90	0.53
5:E:149:SER:HB3	5:E:152:MET:CG	2.39	0.53
22:V:15:GLU:N	22:V:23:ARG:HB2	2.19	0.53
26:X:51:C:H1'	26:X:64:G:N2	2.24	0.53
1:A:790:A:OP1	26:X:38:A:O2'	2.27	0.53
1:A:920:U:C2'	1:A:1082:A:H5'	2.38	0.53
1:A:926:G:H8	1:A:927:G:P	2.26	0.53
5:E:156:LYS:HD3	8:H:71:VAL:O	2.09	0.53
5:E:156:LYS:HZ1	8:H:73:GLU:CD	2.16	0.53
22:V:44:TYR:O	22:V:45:ILE:HB	2.07	0.53
23:W:566:SER:HB3	23:W:588:GLU:OE1	2.08	0.53
1:A:19:A:C8	1:A:1078:U:C2	2.96	0.52
8:H:3:MET:SD	8:H:3:MET:N	2.73	0.52
24:Y:49:ALA:HB3	24:Y:56:VAL:HB	1.90	0.52
25:Z:91:ILE:HD11	26:X:13:C:H5"	1.89	0.52
1:A:701:U:OP2	24:Y:67:PHE:HB2	2.09	0.52
9:I:85:ARG:HA	9:I:88:MET:CE	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:26:GLU:OE1	15:O:26:GLU:N	2.34	0.52
25:Z:94:LYS:HE3	26:X:24:U:H4'	1.90	0.52
26:X:14:A:H2'	26:X:15:G:O4'	2.09	0.52
26:X:54:5MU:H71	26:X:55:PSU:O2	2.09	0.52
1:A:691:G:O6	11:K:57:LYS:NZ	2.33	0.52
23:W:812:ILE:HG23	23:W:812:ILE:O	2.08	0.52
23:W:847:ARG:HG3	23:W:847:ARG:O	2.09	0.52
25:Z:93:VAL:O	26:X:25:C:H6	1.93	0.52
1:A:181:A:N6	1:A:195:A:OP2	2.43	0.52
9:I:130:ARG:HH22	26:X:34:C:H4'	1.73	0.52
10:J:65:TYR:HB3	14:N:96:LEU:HD11	1.91	0.52
13:M:12:HIS:HA	13:M:45:ILE:CG1	2.39	0.52
23:W:399:HIS:CD2	23:W:476:MET:HB3	2.44	0.52
12:L:75:GLN:NE2	23:W:669:GLN:HG3	0.85	0.52
12:L:75:GLN:HE22	23:W:669:GLN:CG	1.17	0.52
23:W:391:ALA:HB3	23:W:623:SER:HB2	1.91	0.52
1:A:702:A:O5'	24:Y:64:LYS:CD	2.38	0.52
1:A:741:G:OP1	15:O:35:GLN:NE2	2.43	0.52
1:A:1111:A:C2'	2:B:130:THR:O	2.57	0.52
23:W:585:LEU:HD23	23:W:625:PRO:HB3	1.90	0.52
23:W:800:VAL:HG12	23:W:815:CYS:HB3	1.91	0.52
26:X:59:A:H2'	26:X:60:U:O4'	2.10	0.52
1:A:537:G:OP1	12:L:110:ARG:NH2	2.43	0.52
1:A:722:G:H3'	1:A:722:G:N3	2.25	0.52
2:B:49:MET:HE1	2:B:199:VAL:HG13	1.91	0.52
23:W:855:VAL:HG11	23:W:861:CYS:HB2	1.91	0.52
25:Z:92:GLN:O	26:X:11:A:C2	2.60	0.52
25:Z:98:PHE:HB3	25:Z:144:VAL:HG11	1.91	0.52
1:A:558:G:C5'	5:E:126:LYS:HE3	2.40	0.52
1:A:1428:A:H2'	1:A:1429:A:O4'	2.10	0.52
3:C:132:ARG:HH22	4:D:47:ARG:HH21	1.57	0.52
1:A:559:A:P	5:E:126:LYS:HZ2	2.33	0.52
1:A:1073:U:P	5:E:66:LYS:HZ3	2.32	0.52
1:A:157:U:C2'	1:A:158:G:H5'	2.40	0.52
1:A:411:A:P	4:D:26:ARG:HH22	2.33	0.52
1:A:1103:C:O2'	2:B:107:VAL:HG13	2.09	0.52
1:A:1449:C:C2'	1:A:1450:U:H5'	2.40	0.52
23:W:612:GLU:HG3	23:W:613:LEU:N	2.24	0.52
26:X:53:G:N1	26:X:61:C:N3	2.51	0.52
1:A:359:G:O4'	23:W:576:LYS:C	2.53	0.51
26:X:10:G:N2	26:X:26:G:H1'	2.25	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:V:32:ILE:H	22:V:32:ILE:HD13	1.75	0.51
23:W:744:VAL:HG21	23:W:774:LEU:HD13	1.92	0.51
25:Z:92:GLN:C	26:X:11:A:C2	2.88	0.51
25:Z:94:LYS:NZ	26:X:24:U:C4'	2.73	0.51
25:Z:94:LYS:HZ1	26:X:24:U:H4'	1.75	0.51
26:X:22:G:C2	26:X:23:C:C4	2.98	0.51
22:V:7:ILE:HG22	22:V:8:ARG:N	2.25	0.51
22:V:17:LEU:HB3	22:V:18:PRO:CD	2.37	0.51
23:W:816:MET:SD	23:W:860:GLU:HA	2.49	0.51
1:A:368:U:H5'	23:W:593:LYS:HE2	1.91	0.51
1:A:1299:A:N3	1:A:1299:A:H2'	2.26	0.51
23:W:804:PHE:HB2	23:W:812:ILE:HG22	1.80	0.51
26:X:1:C:OP2	26:X:2:G:H3'	2.11	0.51
7:G:88:PRO:HG2	7:G:152:ALA:HB2	1.93	0.51
14:N:27:LEU:O	14:N:31:ILE:HG12	2.11	0.51
26:X:22:G:C2	26:X:23:C:C5	2.99	0.51
1:A:9:G:H5'	5:E:108:GLY:HA3	1.93	0.51
10:J:15:HIS:CE1	10:J:16:ARG:HD3	2.46	0.51
14:N:42:TRP:HD1	14:N:44:ALA:N	2.09	0.51
22:V:1:ALA:O	22:V:2:LYS:HB2	2.10	0.51
26:X:49:G:N2	26:X:66:C:H1'	2.26	0.51
6:F:29:ILE:HD13	6:F:64:VAL:HG11	1.93	0.51
13:M:12:HIS:HA	13:M:45:ILE:HG12	1.93	0.51
23:W:812:ILE:CD1	23:W:863:ILE:O	2.54	0.51
23:W:447:GLY:HA2	23:W:455:ARG:HD3	1.93	0.51
1:A:121:U:H5"	1:A:122:G:OP2	2.11	0.51
1:A:184:G:O2'	20:T:69:LYS:NZ	2.36	0.51
1:A:1073:U:C2'	2:B:105:LYS:HG2	2.41	0.51
25:Z:91:ILE:CD1	26:X:13:C:C6	2.94	0.51
1:A:216:U:H2'	1:A:217:C:C6	2.46	0.51
1:A:395:C:C5'	23:W:647:GLU:OE2	2.55	0.51
23:W:795:ILE:CG2	23:W:796:GLY:N	2.74	0.51
1:A:5:U:O2'	5:E:100:SER:CB	2.59	0.50
1:A:701:U:C5'	24:Y:63:GLY:C	2.81	0.50
1:A:736:C:H5'	6:F:88:MET:HE2	1.93	0.50
1:A:918:A:N1	1:A:1080:A:H2	2.04	0.50
1:A:1111:A:P	2:B:132:LYS:CE	2.99	0.50
6:F:38:ARG:HB3	6:F:63:ASN:HB2	1.91	0.50
19:S:29:LYS:HB3	19:S:30:PRO:CD	2.41	0.50
22:V:2:LYS:NZ	22:V:2:LYS:HB3	2.26	0.50
1:A:516:PSU:O3'	22:V:2:LYS:HE3	2.09	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:865:A:O4'	1:A:1077:G:O2'	2.26	0.50
1:A:920:U:H4'	1:A:1082:A:C5'	2.40	0.50
5:E:162:GLU:N	8:H:114:ARG:NH2	2.59	0.50
1:A:7:A:C1'	5:E:124:LEU:HB3	2.41	0.50
1:A:17:U:H2'	1:A:1079:G:C1'	2.36	0.50
23:W:727:GLY:O	23:W:748:VAL:HG21	2.11	0.50
24:Y:72:LYS:HG2	26:X:17(A):U:C2	2.47	0.50
1:A:18:C:C2'	1:A:1078:U:N3	2.56	0.50
1:A:412:A:H1'	1:A:413:G:C5'	2.39	0.50
19:S:50:ALA:HB1	19:S:57:HIS:HB3	1.93	0.50
25:Z:125:LYS:HZ3	26:X:26:G:H5'	1.68	0.50
1:A:7:A:H2'	5:E:124:LEU:HD22	1.93	0.50
1:A:358:U:C5'	23:W:578:ARG:O	2.59	0.50
1:A:457:G:N2	1:A:476:U:O2	2.45	0.50
1:A:1105:A:OP2	2:B:143:LYS:NZ	2.33	0.50
2:B:117:LEU:HA	2:B:120:GLN:HG2	1.93	0.50
8:H:9:ASP:OD2	8:H:13:ARG:HD2	2.12	0.50
23:W:812:ILE:CD1	23:W:863:ILE:C	2.85	0.50
23:W:814:GLY:HA2	27:X:101:FME:HB3	1.94	0.50
1:A:530:G:H8	22:V:39:LYS:H	1.58	0.50
5:E:159:LYS:NZ	8:H:43:GLU:CD	2.64	0.50
23:W:795:ILE:HG23	23:W:879:VAL:HG13	1.94	0.50
1:A:204:G:C3'	1:A:205:A:H5"	2.42	0.50
4:D:99:ASP:OD1	4:D:100:ASN:N	2.45	0.50
26:X:71:C:C4	26:X:72:A:C4	2.99	0.50
1:A:1016:A:H2'	1:A:1016:A:N3	2.26	0.50
6:F:76:THR:O	6:F:79:ARG:N	2.44	0.50
1:A:369:G:H5'	23:W:593:LYS:HZ1	1.76	0.49
1:A:841:C:C5	1:A:843:U:H5'	2.47	0.49
22:V:48:LEU:HD22	25:Z:131:ARG:NH1	2.27	0.49
26:X:58:A:O2'	26:X:60:U:C5	2.51	0.49
1:A:701:U:C2	24:Y:44:ASP:OD2	2.65	0.49
1:A:920:U:O2'	1:A:1082:A:P	2.68	0.49
1:A:1096:C:H5"	2:B:139:ARG:NE	2.27	0.49
1:A:1111:A:C3'	2:B:132:LYS:HD2	2.42	0.49
1:A:1493:A:C8	22:V:19:ASN:CA	2.93	0.49
2:B:128:LYS:CB	3:C:207:ILE:CG1	2.89	0.49
5:E:83:HIS:HB3	8:H:97:ALA:N	2.27	0.49
13:M:16:VAL:HG12	13:M:17:ILE:HD12	1.93	0.49
20:T:44:LYS:HG3	20:T:45:ALA:N	2.27	0.49
22:V:31:GLU:CD	22:V:31:GLU:N	2.70	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:W:452:THR:HG23	23:W:453:SER:N	2.27	0.49
23:W:544:LEU:C	23:W:544:LEU:CD2	2.85	0.49
23:W:591:LEU:HD12	23:W:620:ALA:CB	2.24	0.49
23:W:612:GLU:HG3	23:W:613:LEU:H	1.76	0.49
23:W:728:ILE:HG22	23:W:729:THR:N	2.27	0.49
1:A:1005:A:H3'	1:A:1006:G:C8	2.47	0.49
26:X:8:4SU:O2'	26:X:9:G:O5'	2.28	0.49
26:X:18:G:O2'	26:X:19:G:C5'	2.57	0.49
26:X:51:C:H42	26:X:62:C:H42	1.60	0.49
10:J:53:ILE:HG13	14:N:85:ARG:CZ	2.42	0.49
23:W:399:HIS:CD2	23:W:476:MET:HB2	2.48	0.49
1:A:793:U:O4	25:Z:109:VAL:CG1	2.36	0.49
12:L:39:THR:CB	22:V:61:ASP:HB2	2.42	0.49
23:W:789:GLU:HG3	23:W:789:GLU:O	2.12	0.49
23:W:797:LEU:C	23:W:797:LEU:CD2	2.86	0.49
2:B:15:HIS:HB3	2:B:43:LEU:HD11	1.95	0.49
5:E:156:LYS:HZ2	8:H:130:ALA:C	2.20	0.49
5:E:158:GLY:CA	8:H:44:GLY:HA3	2.43	0.49
5:E:163:GLU:CB	8:H:114:ARG:NE	2.75	0.49
22:V:7:ILE:HG22	22:V:9:THR:H	1.78	0.49
1:A:147:G:H2'	1:A:148:G:C8	2.47	0.49
1:A:973:G:H1'	10:J:56:HIS:HD2	1.78	0.49
1:A:1390:U:O2	1:A:1391:U:N1	2.39	0.49
2:B:27:MET:HE1	2:B:187:VAL:O	2.13	0.49
23:W:519:ILE:HG12	23:W:520:LEU:HD12	1.95	0.49
23:W:539:THR:O	23:W:541:ILE:HB	2.13	0.49
23:W:795:ILE:CG2	23:W:879:VAL:CG1	2.88	0.49
1:A:526:C:H2'	1:A:527:G7M:H5'	1.93	0.49
1:A:702:A:OP2	24:Y:64:LYS:HE2	2.13	0.49
1:A:865:A:C4'	1:A:1077:G:HO2'	2.25	0.49
6:F:86:ARG:NH1	18:R:64:TYR:O	2.46	0.49
8:H:18:GLN:CG	8:H:70:ALA:HB1	2.42	0.49
11:K:16:VAL:HG23	11:K:17:SER:N	2.28	0.49
23:W:778:VAL:HG23	23:W:779:LYS:N	2.27	0.49
1:A:567:G:C5'	5:E:93:ARG:NH1	2.75	0.49
2:B:129:LEU:N	3:C:179:ARG:HE	2.08	0.49
13:M:40:ALA:HB3	13:M:43:VAL:CG2	2.43	0.49
23:W:550:LEU:C	23:W:550:LEU:CD2	2.85	0.49
1:A:18:C:H2'	1:A:1078:U:C4	2.45	0.49
1:A:109:A:C6	1:A:326:G:C6	3.00	0.49
1:A:1194:U:C5'	5:E:27:GLY:HA2	2.38	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:56:VAL:N	5:E:57:PRO:HD2	2.28	0.49
24:Y:21:GLN:HE22	24:Y:41:ARG:HH11	1.59	0.49
25:Z:123:LYS:HB2	26:X:12:G:O4'	2.12	0.49
1:A:16:A:H2'	1:A:1080:A:C4'	2.35	0.48
1:A:429:U:H5'	4:D:9:LEU:HD12	1.95	0.48
1:A:920:U:H4'	1:A:1082:A:C4'	2.43	0.48
18:R:21:ILE:HG21	18:R:54:GLN:HB3	1.95	0.48
23:W:727:GLY:C	23:W:728:ILE:HG13	2.38	0.48
3:C:185:ASN:OD1	3:C:186:THR:N	2.45	0.48
10:J:76:ILE:CD1	10:J:87:LEU:HD11	2.42	0.48
26:X:58:A:C6	26:X:61:C:H1'	2.47	0.48
1:A:1016:A:C2	1:A:1017:U:H4'	2.48	0.48
1:A:1062:U:H2'	1:A:1063:C:C6	2.48	0.48
9:I:52:LEU:HD13	9:I:57:MET:HE2	1.94	0.48
22:V:44:TYR:N	22:V:44:TYR:CD1	2.82	0.48
1:A:237:G:OP1	17:Q:42:THR:OG1	2.30	0.48
1:A:383:A:C5	1:A:384:G:H1'	2.49	0.48
1:A:1102:A:H2	2:B:103:ASN:HD22	1.61	0.48
1:A:1111:A:H2'	2:B:130:THR:CB	2.44	0.48
25:Z:176:PRO:HG3	26:X:12:G:HO2'	1.77	0.48
1:A:1100:C:N4	2:B:95:ARG:CZ	2.77	0.48
1:A:1137:C:H1'	1:A:1138:G:N2	2.28	0.48
3:C:132:ARG:NH1	4:D:47:ARG:HH21	2.08	0.48
7:G:25:LYS:CB	7:G:101:MET:HE1	2.44	0.48
1:A:925:G:N2	1:A:927:G:N3	2.61	0.48
1:A:1238:A:H5'	1:A:1336:C:H41	1.77	0.48
5:E:156:LYS:O	8:H:44:GLY:C	2.56	0.48
12:L:75:GLN:NE2	23:W:669:GLN:HG2	0.81	0.48
13:M:107:ARG:HH21	13:M:113:ARG:HB3	1.79	0.48
25:Z:91:ILE:HG13	26:X:12:G:C3'	2.42	0.48
25:Z:92:GLN:C	26:X:11:A:H2	2.22	0.48
1:A:7:A:C3'	5:E:106:ILE:HD12	2.14	0.48
1:A:19:A:H8	1:A:1078:U:C2	2.32	0.48
1:A:71:A:O2'	1:A:72:A:OP2	2.27	0.48
1:A:266:G:H3'	17:Q:69:LYS:HB2	1.95	0.48
1:A:518:C:O2'	22:V:38:GLY:N	2.47	0.48
1:A:1003:G:N2	1:A:1004:A:O2'	2.46	0.48
4:D:17:THR:HG22	4:D:18:ASP:N	2.29	0.48
10:J:8:ILE:HA	10:J:99:GLN:O	2.14	0.48
22:V:45:ILE:HG22	22:V:45:ILE:O	2.14	0.48
23:W:812:ILE:CG2	26:X:76:A:O4'	2.52	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:26:A:H2'	1:A:27:G:H5'	1.95	0.48
1:A:530:G:C8	22:V:39:LYS:HG2	2.48	0.48
1:A:1100:C:H41	2:B:95:ARG:CD	2.27	0.48
1:A:1111:A:P	2:B:132:LYS:HE3	2.53	0.48
23:W:772:TYR:HA	23:W:775:ILE:HG22	1.96	0.48
25:Z:91:ILE:HG22	26:X:11:A:C2	2.49	0.48
26:X:53:G:O2'	26:X:54:5MU:O5'	2.26	0.48
1:A:207:C:H2'	1:A:208:U:C2	2.49	0.48
5:E:162:GLU:HG3	5:E:163:GLU:N	2.28	0.48
10:J:53:ILE:CG2	10:J:61:ALA:HB1	2.44	0.48
25:Z:179:LYS:HE2	26:X:6:G:O4'	2.14	0.48
26:X:54:5MU:C5	26:X:55:PSU:C2	3.01	0.48
22:V:23:ARG:O	22:V:24:VAL:C	2.57	0.48
1:A:7:A:C8	5:E:124:LEU:HB2	2.43	0.47
1:A:76:G:N3	1:A:76:G:H2'	2.29	0.47
10:J:7:ARG:CG	10:J:101:SER:HB2	2.44	0.47
22:V:15:GLU:CD	22:V:16:ALA:H	2.21	0.47
25:Z:118:LEU:HD21	25:Z:176:PRO:HA	1.96	0.47
25:Z:178:LYS:O	26:X:69:C:C4'	2.61	0.47
12:L:56:ARG:NH2	23:W:734:THR:HG22	2.29	0.47
14:N:10:GLU:HG3	14:N:63:ARG:HD2	1.96	0.47
23:W:836:VAL:O	23:W:836:VAL:HG13	2.12	0.47
1:A:8:A:O3'	5:E:108:GLY:CA	2.63	0.47
1:A:75:G:C2	1:A:76:G:H1'	2.50	0.47
1:A:560:A:C8	5:E:128:TYR:CE1	3.03	0.47
1:A:1016:A:N1	1:A:1017:U:O2'	2.44	0.47
9:I:23:PRO:HA	9:I:61:LEU:HA	1.95	0.47
12:L:104:CYS:C	23:W:662:ARG:CZ	2.81	0.47
23:W:591:LEU:O	23:W:592:HIS:CG	2.68	0.47
26:X:8:4SU:S4	26:X:14:A:C8	3.02	0.47
23:W:611:ASN:O	23:W:612:GLU:CG	2.62	0.47
23:W:847:ARG:CA	27:X:101:FME:HCN	2.45	0.47
24:Y:28:ILE:N	24:Y:28:ILE:HD12	2.29	0.47
1:A:1074:G:O4'	2:B:103:ASN:OD1	2.31	0.47
1:A:1103:C:C5'	2:B:97:LEU:C	2.58	0.47
23:W:804:PHE:C	23:W:812:ILE:HG22	2.40	0.47
1:A:19:A:H8	1:A:1078:U:O2	1.97	0.47
1:A:367:U:O5'	23:W:605:ARG:NH2	2.47	0.47
2:B:120:GLN:HG3	2:B:121:SER:N	2.28	0.47
8:H:28:PRO:O	8:H:33:LYS:NZ	2.38	0.47
9:I:19:VAL:HG13	9:I:65:ILE:HG22	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:6:GLY:HA3	13:M:66:GLU:HG3	1.97	0.47
19:S:7:LYS:H	19:S:7:LYS:HD2	1.79	0.47
22:V:20:ALA:HB1	22:V:36:ILE:CG1	2.45	0.47
22:V:36:ILE:CG2	22:V:41:ARG:HG3	2.44	0.47
23:W:727:GLY:C	23:W:748:VAL:HG21	2.38	0.47
25:Z:130:PHE:CE1	25:Z:137:HIS:CD2	3.03	0.47
26:X:8:4SU:H3'	26:X:8:4SU:C2	2.44	0.47
1:A:159:G:H8	1:A:159:G:H5"	1.79	0.47
12:L:75:GLN:HE22	23:W:669:GLN:CA	2.27	0.47
14:N:42:TRP:CD1	14:N:43:ASN:N	2.83	0.47
1:A:369:G:C5'	23:W:593:LYS:NZ	2.78	0.47
1:A:1073:U:O2	2:B:106:THR:CB	2.60	0.47
10:J:42:LEU:HB2	10:J:71:LEU:HB3	1.96	0.47
10:J:51:VAL:HB	14:N:81:ARG:HB2	1.96	0.47
22:V:20:ALA:HB1	22:V:36:ILE:CD1	2.44	0.47
23:W:590:THR:O	23:W:591:LEU:HG	2.15	0.47
1:A:131:A:H2'	1:A:132:C:C6	2.49	0.47
1:A:793:U:N3	25:Z:109:VAL:CG1	2.77	0.47
8:H:96:MET:HE3	8:H:130:ALA:HB1	1.96	0.47
1:A:1096:C:C4'	2:B:139:ARG:NH2	2.41	0.46
1:A:1103:C:O2'	2:B:107:VAL:CG1	2.64	0.46
3:C:123:GLN:HG2	3:C:128:VAL:HG21	1.97	0.46
13:M:32:ALA:O	13:M:36:ALA:N	2.47	0.46
1:A:701:U:O2'	24:Y:61:ASP:CA	2.61	0.46
1:A:913:A:OP1	12:L:88:LYS:NZ	2.47	0.46
1:A:937:A:O2'	7:G:76:LYS:NZ	2.38	0.46
1:A:1111:A:H2'	2:B:130:THR:O	2.12	0.46
1:A:1492:A:H4'	12:L:44:LYS:HE2	1.97	0.46
5:E:94:VAL:CG2	5:E:111:MET:HE3	2.44	0.46
22:V:38:GLY:O	22:V:39:LYS:C	2.58	0.46
24:Y:43:LEU:HD23	24:Y:59:ILE:HG22	1.98	0.46
26:X:66:C:H2'	26:X:67:C:H6	1.76	0.46
1:A:872:A:C8	1:A:874:G:C8	3.04	0.46
1:A:925:G:H2'	1:A:927:G:C4'	2.45	0.46
5:E:80:THR:OG1	5:E:122:ASN:O	2.32	0.46
22:V:17:LEU:HD11	22:V:23:ARG:NH1	2.31	0.46
23:W:526:GLY:O	23:W:527:GLU:HG2	2.15	0.46
25:Z:92:GLN:HE21	26:X:12:G:N2	2.13	0.46
26:X:71:C:N4	26:X:72:A:C6	2.83	0.46
1:A:109:A:H2'	1:A:326:G:N2	2.31	0.46
5:E:156:LYS:HZ1	8:H:73:GLU:CB	2.27	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:130:ASN:HA	7:G:135:VAL:HG11	1.96	0.46
13:M:33:ILE:HD11	13:M:63:PHE:CE2	2.50	0.46
19:S:44:MET:HE2	19:S:49:ILE:HD13	1.97	0.46
26:X:62:C:H2'	26:X:63:G:O4'	2.16	0.46
1:A:361:G:OP1	23:W:729:THR:CB	2.54	0.46
1:A:451:A:H61	1:A:481:G:H5'	1.80	0.46
8:H:108:LYS:HG3	8:H:121:LEU:HD11	1.97	0.46
22:V:66:ARG:NH1	22:V:66:ARG:CB	2.77	0.46
25:Z:93:VAL:C	26:X:24:U:H2'	2.39	0.46
2:B:20:THR:HG22	2:B:39:HIS:CE1	2.50	0.46
4:D:58:LYS:HD2	4:D:204:TYR:OH	2.16	0.46
12:L:75:GLN:HE22	23:W:669:GLN:HG3	0.86	0.46
22:V:37:SER:HB3	22:V:67:ILE:O	2.15	0.46
26:X:71:C:C5	26:X:72:A:C6	3.03	0.46
1:A:468:A:C8	1:A:469:C:C6	3.03	0.46
1:A:1072:G:H4'	5:E:62:LYS:HE2	1.84	0.46
25:Z:94:LYS:CE	26:X:24:U:H4'	2.45	0.46
26:X:71:C:C1'	26:X:72:A:C8	2.97	0.46
1:A:2:A:O2'	4:D:83:LYS:NZ	2.43	0.46
1:A:1111:A:H2'	2:B:130:THR:HG22	1.98	0.46
1:A:1112:C:C5'	2:B:131:LYS:HG2	2.14	0.46
1:A:1228:C:P	13:M:107:ARG:NH2	2.88	0.46
1:A:1492:A:C2	22:V:35:TYR:CA	2.89	0.46
1:A:1493:A:C4	22:V:18:PRO:O	2.69	0.46
2:B:129:LEU:HD22	2:B:134:ALA:HB2	1.97	0.46
6:F:42:TRP:CH2	6:F:102:MET:HE3	2.51	0.46
14:N:21:PHE:HA	14:N:25:ALA:CB	2.45	0.46
22:V:32:ILE:HD13	22:V:32:ILE:N	2.29	0.46
23:W:430:ALA:HB2	23:W:443:LEU:HD13	1.98	0.46
23:W:727:GLY:CA	23:W:748:VAL:HG23	2.33	0.46
25:Z:90:VAL:CG2	26:X:12:G:O6	2.63	0.46
26:X:71:C:H2'	26:X:72:A:O5'	2.16	0.46
26:X:73:A:N3	26:X:74:C:N3	2.64	0.46
1:A:864:A:C4'	1:A:1078:U:C5	2.84	0.46
11:K:111:THR:HG23	21:U:3:VAL:HG22	1.98	0.46
22:V:54:VAL:CB	22:V:69:TYR:HB2	2.43	0.46
23:W:786:LEU:N	23:W:786:LEU:HD23	2.30	0.46
25:Z:93:VAL:N	26:X:25:C:C2	2.67	0.46
1:A:702:A:OP2	24:Y:61:ASP:HB2	2.06	0.46
2:B:10:LEU:HD12	2:B:15:HIS:ND1	2.31	0.46
12:L:73:ASN:CB	23:W:670:GLN:CG	2.86	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:102:LEU:C	23:W:662:ARG:HH21	2.21	0.46
20:T:44:LYS:HB3	20:T:87:ALA:HB3	1.98	0.46
26:X:22:G:C6	26:X:23:C:N4	2.82	0.46
5:E:153:VAL:HG11	8:H:100:GLY:N	2.10	0.45
25:Z:91:ILE:HD12	26:X:13:C:O5'	2.15	0.45
1:A:405:U:O4	4:D:2:ALA:N	2.50	0.45
1:A:1074:G:H1'	2:B:103:ASN:HB2	1.99	0.45
1:A:1081:A:OP1	5:E:21:VAL:HB	2.15	0.45
7:G:16:PRO:HB3	9:I:43:THR:HG23	1.99	0.45
9:I:19:VAL:HG11	9:I:83:ILE:HA	1.98	0.45
10:J:15:HIS:CG	10:J:16:ARG:N	2.84	0.45
10:J:35:GLN:HG3	10:J:78:GLU:HG2	1.98	0.45
14:N:21:PHE:HB2	14:N:55:SER:O	2.16	0.45
1:A:5:U:H3'	1:A:5:U:H6	1.81	0.45
1:A:8:A:O3'	5:E:108:GLY:HA3	2.16	0.45
1:A:1018:G:N3	1:A:1018:G:H2'	2.30	0.45
1:A:1074:G:H4'	2:B:102:THR:O	2.17	0.45
1:A:1152:A:H5"	10:J:15:HIS:HB2	1.98	0.45
1:A:1229:A:OP2	13:M:113:ARG:NH1	2.48	0.45
1:A:1390:U:C6	1:A:1391:U:C6	2.62	0.45
5:E:82:GLN:CD	5:E:150:PRO:HD3	2.41	0.45
7:G:25:LYS:HB3	7:G:101:MET:HE1	1.99	0.45
7:G:83:SER:HB2	7:G:85:TYR:CE2	2.51	0.45
12:L:71:GLY:HA2	22:V:60:TYR:HH	1.80	0.45
22:V:25:LYS:HD2	22:V:30:PRO:O	2.16	0.45
23:W:456:ALA:HA	23:W:485:HIS:HD2	1.82	0.45
23:W:534:SER:CB	23:W:539:THR:HG23	2.46	0.45
24:Y:72:LYS:CG	26:X:17(A):U:C2	2.98	0.45
25:Z:94:LYS:HG2	26:X:24:U:O2'	2.14	0.45
26:X:22:G:N1	26:X:23:C:C4	2.84	0.45
1:A:369:G:H5"	23:W:593:LYS:NZ	2.31	0.45
1:A:1074:G:C4'	2:B:103:ASN:HB2	2.45	0.45
10:J:6:ILE:CG1	10:J:76:ILE:HB	2.46	0.45
14:N:18:ASP:OD1	14:N:19:LYS:N	2.49	0.45
23:W:728:ILE:C	23:W:729:THR:CG2	2.89	0.45
1:A:196:A:OP1	20:T:64:LYS:NZ	2.47	0.45
1:A:657:U:O2	15:O:22:THR:HG23	2.16	0.45
1:A:790:A:P	26:X:39:C:H5'	2.54	0.45
1:A:1134:G:H2'	1:A:1135:U:C6	2.51	0.45
1:A:1322:C:P	19:S:78:ARG:HH22	2.40	0.45
1:A:1494:G:O2'	22:V:16:ALA:HB3	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:74:VAL:HG22	5:E:76:LEU:HD23	1.99	0.45
5:E:94:VAL:HG13	5:E:111:MET:HE1	1.98	0.45
12:L:110:ARG:HB2	12:L:119:VAL:HG21	1.98	0.45
23:W:396:ILE:HG21	23:W:404:LYS:HG3	1.96	0.45
23:W:666:LEU:HD12	23:W:667:ALA:N	2.32	0.45
1:A:864:A:H4'	1:A:1078:U:O5'	2.17	0.45
7:G:62:PHE:HE1	7:G:66:LEU:HD22	1.81	0.45
23:W:496:ALA:HB2	23:W:544:LEU:HD12	1.97	0.45
1:A:31:G:O2'	1:A:48:C:N4	2.50	0.45
1:A:85:U:H6	1:A:86:G:N1	2.15	0.45
1:A:368:U:C3'	23:W:593:LYS:HZ1	2.26	0.45
1:A:1029:U:O2'	1:A:1032:G:N1	2.49	0.45
1:A:1328:C:H5"	13:M:28:THR:HG21	1.99	0.45
10:J:52:LEU:HD23	10:J:62:ARG:HD3	1.97	0.45
13:M:54:ASP:HA	13:M:57:ARG:HD2	1.98	0.45
1:A:495:A:C2	1:A:496:A:C6	3.05	0.45
6:F:102:MET:CE	18:R:24:LYS:HB3	2.45	0.45
10:J:67:ILE:HG13	14:N:96:LEU:HD13	1.99	0.45
22:V:6:THR:HG22	22:V:7:ILE:N	2.32	0.45
24:Y:77:ARG:HG3	26:X:16:C:N4	2.32	0.45
26:X:16:C:H4'	26:X:60:U:O2'	2.17	0.45
26:X:18:G:H4'	26:X:60:U:O2	2.17	0.45
26:X:22:G:C2	26:X:23:C:C6	3.04	0.45
1:A:368:U:H3'	23:W:593:LYS:HZ2	1.78	0.45
1:A:757:U:O2'	1:A:879:C:O2	2.34	0.45
1:A:1031:C:O2'	1:A:1032:G:OP2	2.26	0.45
3:C:150:LYS:HB3	3:C:169:ARG:CG	2.46	0.45
10:J:22:THR:CG2	10:J:39:PRO:HB3	2.46	0.45
19:S:29:LYS:CB	19:S:30:PRO:HD2	2.46	0.45
23:W:396:ILE:HD12	23:W:408:LEU:HD11	1.98	0.45
23:W:399:HIS:HB2	23:W:479:THR:HG23	1.99	0.45
23:W:481:GLU:O	23:W:485:HIS:ND1	2.45	0.45
26:X:8:4SU:H1'	26:X:21:A:H2	1.74	0.45
26:X:22:G:C6	26:X:23:C:C4	3.05	0.45
1:A:1111:A:C2'	2:B:133:GLU:H	2.30	0.45
3:C:77:ILE:HA	3:C:84:VAL:CG2	2.47	0.45
3:C:132:ARG:NH2	4:D:47:ARG:HH21	2.14	0.45
22:V:58:THR:HG22	22:V:60:TYR:H	1.82	0.45
25:Z:123:LYS:N	26:X:12:G:H1'	2.32	0.45
1:A:6:G:H1'	5:E:124:LEU:CD1	2.45	0.44
2:B:121:SER:HA	2:B:126:PHE:CE1	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:6:HIS:CG	14:N:89:MET:HB3	2.52	0.44
3:C:42:TYR:CZ	3:C:90:VAL:HG21	2.53	0.44
3:C:83:ASP:HA	3:C:86:LYS:HG2	1.99	0.44
23:W:586:VAL:HG23	23:W:586:VAL:O	2.17	0.44
5:E:156:LYS:HZ3	8:H:73:GLU:CB	2.21	0.44
26:X:21:A:O2'	26:X:22:G:C8	2.70	0.44
1:A:1312:G:C5'	19:S:6:LYS:HE2	2.47	0.44
25:Z:128:LEU:CD1	25:Z:141:GLY:HA2	2.45	0.44
26:X:54:5MU:C4	26:X:55:PSU:O2	2.70	0.44
2:B:133:GLU:CG	3:C:179:ARG:NH2	2.72	0.44
5:E:153:VAL:HG11	8:H:99:LEU:CA	2.02	0.44
10:J:10:LEU:CD2	10:J:98:VAL:HG12	2.48	0.44
10:J:28:THR:O	10:J:32:THR:HG22	2.18	0.44
22:V:40:MET:SD	22:V:67:ILE:HG22	2.57	0.44
1:A:865:A:P	1:A:1077:G:H5"	2.57	0.44
1:A:927:G:N1	1:A:1391:U:C2	2.72	0.44
1:A:944:G:N1	1:A:1338:G:OP2	2.41	0.44
2:B:9:MET:CE	2:B:50:PHE:HD2	2.31	0.44
6:F:90:MET:HE1	18:R:23:TYR:CZ	2.52	0.44
13:M:66:GLU:OE1	13:M:70:ARG:NH2	2.48	0.44
14:N:21:PHE:CD1	14:N:55:SER:HB3	2.52	0.44
26:X:24:U:H2'	26:X:25:C:H6	1.83	0.44
1:A:158:G:H2'	1:A:159:G:H5"	1.99	0.44
1:A:530:G:N7	22:V:38:GLY:CA	2.78	0.44
2:B:213:TYR:O	2:B:217:VAL:HG23	2.18	0.44
11:K:34:ILE:HG12	11:K:70:CYS:SG	2.58	0.44
20:T:44:LYS:HG3	20:T:45:ALA:H	1.83	0.44
23:W:511:LYS:HG3	23:W:530:PHE:HE2	1.83	0.44
1:A:502:A:H2'	1:A:503:C:O4'	2.18	0.44
1:A:1111:A:O2'	2:B:133:GLU:N	2.49	0.44
1:A:1517:G:N7	25:Z:106:ASP:OD1	2.50	0.44
2:B:129:LEU:O	2:B:130:THR:OG1	2.33	0.44
2:B:217:VAL:O	2:B:221:VAL:HG23	2.17	0.44
12:L:73:ASN:HB2	23:W:666:LEU:HB2	2.00	0.44
20:T:27:MET:CE	20:T:57:ILE:HG12	2.48	0.44
23:W:515:SER:OG	23:W:524:TRP:CZ3	2.70	0.44
23:W:716:VAL:HG21	23:W:786:LEU:CD2	2.46	0.44
25:Z:179:LYS:HE2	26:X:6:G:C1'	2.48	0.44
26:X:56:C:OP1	26:X:56:C:C6	2.70	0.44
1:A:18:C:O2'	1:A:1078:U:C2'	2.66	0.44
1:A:1494:G:C1'	22:V:16:ALA:C	2.62	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:105:ILE:HG23	5:E:123:VAL:HG23	2.00	0.44
5:E:149:SER:O	8:H:99:LEU:HB3	2.17	0.44
13:M:4:ILE:CG2	13:M:60:VAL:HG11	2.48	0.44
13:M:107:ARG:HH11	13:M:107:ARG:HG2	1.83	0.44
14:N:30:ILE:O	14:N:34:VAL:HG23	2.17	0.44
23:W:846:ARG:HA	23:W:851:ASP:HA	2.00	0.44
25:Z:94:LYS:NZ	26:X:24:U:H4'	2.33	0.44
1:A:75:G:C4	1:A:76:G:C8	3.06	0.44
1:A:560:A:C2'	5:E:128:TYR:HB3	2.39	0.44
1:A:1463:U:H2'	1:A:1464:U:C6	2.53	0.44
7:G:135:VAL:HG23	7:G:136:LYS:N	2.33	0.44
8:H:25:VAL:HG22	8:H:63:LEU:HD21	1.99	0.44
17:Q:7:THR:HG21	17:Q:60:GLU:CG	2.48	0.44
17:Q:8:LEU:HD13	17:Q:25:ILE:HG13	1.99	0.44
23:W:838:TYR:CZ	23:W:839:GLU:O	2.71	0.44
25:Z:176:PRO:HB2	26:X:12:G:O3'	2.14	0.44
1:A:918:A:H2	1:A:1080:A:C6	2.35	0.43
1:A:921:U:O2'	5:E:24:THR:O	2.27	0.43
1:A:1014:A:OP1	19:S:18:LYS:NZ	2.51	0.43
1:A:1031:C:H4'	1:A:1032:G:O5'	2.17	0.43
23:W:856:ARG:H	23:W:859:MET:HE2	1.83	0.43
25:Z:91:ILE:O	26:X:24:U:N3	2.46	0.43
25:Z:92:GLN:NE2	26:X:12:G:H1	2.15	0.43
25:Z:128:LEU:HD22	25:Z:130:PHE:CE1	2.53	0.43
25:Z:158:VAL:HA	25:Z:174:LEU:HA	1.99	0.43
25:Z:179:LYS:HB3	26:X:5:G:H22	1.83	0.43
1:A:464:U:C2	1:A:466:A:H5"	2.53	0.43
1:A:1102:A:O2'	2:B:98:GLY:HA3	2.18	0.43
7:G:80:VAL:HG12	7:G:81:GLY:N	2.34	0.43
8:H:41:LYS:HD2	8:H:48:ASP:HA	2.00	0.43
12:L:47:SER:OG	22:V:35:TYR:CZ	2.71	0.43
17:Q:49:GLU:O	17:Q:50:ASN:HB2	2.18	0.43
23:W:647:GLU:O	23:W:651:ARG:HG3	2.18	0.43
25:Z:123:LYS:HG3	26:X:11:A:O2'	2.18	0.43
26:X:71:C:H2'	26:X:72:A:H8	0.48	0.43
1:A:7:A:C2'	5:E:106:ILE:CD1	2.52	0.43
2:B:138:THR:O	2:B:142:GLU:N	2.42	0.43
5:E:83:HIS:HB3	8:H:97:ALA:HB2	2.00	0.43
8:H:93:PRO:HG3	8:H:125:ILE:HD13	2.00	0.43
10:J:5:ARG:HG2	10:J:77:VAL:HA	1.99	0.43
23:W:451:PHE:CD1	23:W:451:PHE:N	2.86	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:W:575:ASP:OD1	23:W:576:LYS:N	2.51	0.43
1:A:1111:A:H4'	2:B:131:LYS:C	2.41	0.43
1:A:1493:A:C5	22:V:18:PRO:O	2.72	0.43
2:B:19:GLN:HA	2:B:38:VAL:HA	2.01	0.43
2:B:28:LYS:N	2:B:29:PRO:CD	2.81	0.43
2:B:49:MET:HE1	2:B:199:VAL:CG1	2.48	0.43
2:B:126:PHE:CG	2:B:127:ASP:N	2.84	0.43
9:I:36:GLU:HA	9:I:45:ARG:HE	1.83	0.43
9:I:91:ASP:O	9:I:92:GLU:CB	2.67	0.43
23:W:796:GLY:H	23:W:879:VAL:HG13	1.83	0.43
25:Z:149:LYS:HE3	25:Z:158:VAL:HG21	1.99	0.43
1:A:7:A:H2'	5:E:124:LEU:CD2	2.47	0.43
1:A:80:A:N6	1:A:89:U:O4	2.45	0.43
4:D:95:GLU:OE2	4:D:104:ARG:CZ	2.67	0.43
7:G:72:THR:HG22	7:G:142:HIS:NE2	2.33	0.43
10:J:53:ILE:HG22	10:J:61:ALA:O	2.18	0.43
21:U:6:VAL:HG22	21:U:15:ALA:HB1	1.99	0.43
23:W:390:ARG:HD3	23:W:559:ALA:HB2	2.01	0.43
23:W:666:LEU:HD12	23:W:666:LEU:C	2.43	0.43
26:X:29:G:H1	26:X:41:C:H42	1.66	0.43
1:A:701:U:H3'	24:Y:64:LYS:H	0.60	0.43
1:A:1103:C:C5'	2:B:98:GLY:H	2.14	0.43
1:A:1494:G:N9	22:V:18:PRO:CD	2.77	0.43
5:E:95:PHE:CZ	5:E:97:GLN:HG3	2.54	0.43
7:G:111:ARG:O	7:G:119:ARG:NH2	2.48	0.43
9:I:50:GLN:N	9:I:51:PRO:HD2	2.34	0.43
13:M:89:LEU:HD23	13:M:92:ARG:HH21	1.84	0.43
22:V:17:LEU:HB2	22:V:21:THR:HB	2.00	0.43
26:X:76:A:C2'	27:X:101:FME:O1	2.64	0.43
1:A:1111:A:O5'	2:B:132:LYS:CD	2.67	0.43
14:N:54:ASP:OD1	14:N:59:ARG:NE	2.47	0.43
23:W:390:ARG:NH1	23:W:463:ASP:OD2	2.52	0.43
23:W:534:SER:C	23:W:536:LYS:H	2.26	0.43
23:W:566:SER:O	23:W:587:ARG:N	2.50	0.43
23:W:790:LEU:O	23:W:791:LYS:HD3	2.19	0.43
23:W:794:ILE:HA	23:W:880:PHE:HB3	2.00	0.43
26:X:22:G:O2'	26:X:23:C:P	2.77	0.43
26:X:51:C:H1'	26:X:64:G:H22	1.83	0.43
26:X:51:C:H42	26:X:62:C:N4	2.16	0.43
1:A:920:U:O2'	1:A:1082:A:C5'	2.61	0.43
1:A:1496:C:H4'	25:Z:99:ARG:HE	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1497:G:OP1	25:Z:99:ARG:CD	2.66	0.43
23:W:644:VAL:HG21	23:W:650:ALA:HB2	2.01	0.43
23:W:790:LEU:N	23:W:792:GLN:CD	2.77	0.43
23:W:794:ILE:HA	23:W:880:PHE:CB	2.48	0.43
25:Z:179:LYS:HG2	26:X:69:C:O2	2.19	0.43
1:A:982:U:H5"	14:N:6:MET:HE2	2.01	0.43
1:A:1152:A:H5"	10:J:15:HIS:CD2	2.54	0.43
5:E:90:THR:HG22	5:E:91:GLY:N	2.34	0.43
11:K:107:ILE:HG13	21:U:12:PHE:CE1	2.54	0.43
20:T:27:MET:HE1	20:T:57:ILE:CG1	2.49	0.43
22:V:33:LEU:O	22:V:34:ALA:O	2.36	0.43
23:W:470:ALA:HB3	23:W:473:ASP:HB2	2.01	0.43
25:Z:144:VAL:O	25:Z:148:VAL:HG23	2.19	0.43
1:A:157:U:H2'	1:A:158:G:H5'	2.01	0.43
3:C:155:GLY:HA2	3:C:163:ALA:HB1	2.00	0.43
10:J:56:HIS:O	10:J:57:VAL:HG12	2.19	0.43
24:Y:65:PHE:O	24:Y:69:GLN:HG2	2.19	0.43
1:A:1102:A:O2'	2:B:98:GLY:CA	2.67	0.42
4:D:58:LYS:HD3	4:D:203:LEU:HD23	2.01	0.42
5:E:94:VAL:HG13	5:E:111:MET:CE	2.49	0.42
5:E:132:ASN:OD1	5:E:134:ILE:HG22	2.18	0.42
19:S:63:THR:HG22	19:S:65:GLU:H	1.84	0.42
22:V:7:ILE:O	22:V:56:GLU:HA	2.19	0.42
22:V:22:PHE:HE1	22:V:36:ILE:HD11	1.84	0.42
26:X:2:G:H2'	26:X:2:G:N3	2.33	0.42
1:A:141:G:H2'	1:A:142:G:H5"	2.01	0.42
1:A:358:U:O2'	23:W:578:ARG:C	2.61	0.42
1:A:518:C:OP2	22:V:39:LYS:HE3	2.17	0.42
1:A:920:U:O3'	1:A:1082:A:C4'	2.65	0.42
1:A:1078:U:C5'	5:E:90:THR:HG1	2.12	0.42
1:A:1494:G:N7	22:V:18:PRO:CG	2.77	0.42
2:B:47:VAL:N	2:B:48:PRO:HD2	2.34	0.42
5:E:94:VAL:HG22	5:E:111:MET:CE	2.45	0.42
16:P:75:ILE:HA	16:P:78:VAL:HG12	2.01	0.42
23:W:445:THR:OG1	23:W:446:PRO:HD2	2.19	0.42
23:W:812:ILE:HG12	26:X:76:A:O4'	2.10	0.42
25:Z:94:LYS:NZ	26:X:24:U:C2'	2.81	0.42
26:X:46:A:O2'	26:X:47:U:H5"	2.19	0.42
2:B:94:HIS:O	2:B:95:ARG:C	2.62	0.42
2:B:124:GLY:O	2:B:125:THR:HG22	2.19	0.42
3:C:156:ARG:H	3:C:163:ALA:HA	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:161:VAL:CB	8:H:114:ARG:HH12	2.13	0.42
8:H:29:SER:HB3	8:H:57:PRO:HB2	2.00	0.42
10:J:22:THR:HG21	10:J:39:PRO:CB	2.49	0.42
22:V:46:ARG:C	22:V:47:ILE:HG13	2.44	0.42
23:W:396:ILE:HA	23:W:466:VAL:O	2.19	0.42
23:W:540:GLY:CA	23:W:542:ASP:N	2.81	0.42
1:A:1193:G:O2'	5:E:27:GLY:CA	2.67	0.42
9:I:24:GLY:N	9:I:61:LEU:HA	2.34	0.42
11:K:28:ASN:O	11:K:57:LYS:HD3	2.20	0.42
14:N:54:ASP:HA	14:N:59:ARG:HD3	2.02	0.42
24:Y:49:ALA:HB2	26:X:19:G:C5	2.28	0.42
26:X:2:G:N3	26:X:2:G:C2'	2.82	0.42
26:X:41:C:C2'	26:X:42:G:H5"	2.49	0.42
4:D:11:LEU:O	4:D:15:GLU:HG2	2.20	0.42
5:E:157:ARG:CD	8:H:101:ILE:HG12	2.45	0.42
6:F:99:ALA:HB1	6:F:103:VAL:HB	2.01	0.42
10:J:29:ALA:HA	10:J:32:THR:HG22	2.00	0.42
23:W:495:VAL:HG11	23:W:520:LEU:HD11	2.01	0.42
25:Z:176:PRO:HD2	26:X:12:G:O4'	2.08	0.42
26:X:23:C:O2'	26:X:24:U:P	2.78	0.42
1:A:7:A:O2'	5:E:124:LEU:CA	2.67	0.42
1:A:1111:A:C5'	2:B:132:LYS:HE3	2.48	0.42
5:E:11:LEU:C	5:E:11:LEU:HD12	2.44	0.42
5:E:163:GLU:CG	8:H:98:GLY:O	2.61	0.42
12:L:74:LEU:HD21	12:L:104:CYS:SG	2.60	0.42
22:V:66:ARG:CZ	22:V:66:ARG:CB	2.98	0.42
23:W:578:ARG:HB3	23:W:629:LEU:HD11	2.01	0.42
1:A:68:G:C5	1:A:69:G:H1'	2.55	0.42
1:A:475:C:H2'	1:A:476:U:O4'	2.19	0.42
1:A:501:C:OP1	12:L:114:ARG:NH2	2.52	0.42
1:A:925:G:N9	1:A:927:G:C8	2.88	0.42
1:A:1431:A:C6	1:A:1432:G:C6	3.08	0.42
5:E:157:ARG:HG3	8:H:45:PHE:CZ	2.42	0.42
5:E:161:VAL:O	5:E:164:ILE:N	2.47	0.42
13:M:103:LYS:HG2	13:M:104:THR:HG23	2.01	0.42
22:V:25:LYS:HD2	22:V:25:LYS:C	2.43	0.42
23:W:477:PRO:HA	23:W:480:ILE:HG22	2.01	0.42
26:X:20:H2U:O2	26:X:20:H2U:H2'	2.19	0.42
1:A:1417:G:C6	1:A:1482:G:C6	3.08	0.42
25:Z:90:VAL:CG2	26:X:22:G:N1	2.69	0.42
26:X:38:A:H2'	26:X:39:C:O4'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:X:53:G:H2'	26:X:54:5MU:O4'	2.20	0.42
1:A:1082:A:H2'	1:A:1083:U:O4'	2.20	0.42
1:A:1494:G:H1'	22:V:17:LEU:HA	1.26	0.42
10:J:93:ALA:HB3	10:J:96:VAL:HG23	2.01	0.42
20:T:29:ARG:O	20:T:33:LYS:HG3	2.20	0.42
22:V:43:HIS:O	22:V:45:ILE:HG13	2.20	0.42
23:W:748:VAL:CG2	23:W:749:ARG:N	2.81	0.42
23:W:778:VAL:CG2	23:W:779:LYS:N	2.82	0.42
9:I:24:GLY:H	9:I:61:LEU:HA	1.84	0.42
23:W:598:LEU:HD12	23:W:650:ALA:HB1	2.01	0.42
23:W:774:LEU:O	23:W:778:VAL:HG13	2.20	0.42
1:A:16:A:C2'	1:A:1080:A:C2'	2.70	0.41
1:A:368:U:C5	23:W:608:ALA:HB2	2.55	0.41
1:A:865:A:P	1:A:1077:G:C5'	3.08	0.41
1:A:933:G:O6	7:G:3:ARG:NH1	2.49	0.41
1:A:1064:G:H1'	1:A:1190:G:N2	2.35	0.41
1:A:1377:A:N3	7:G:2:PRO:HG3	2.35	0.41
1:A:1397:C:O2'	1:A:1398:A:OP1	2.34	0.41
23:W:493:VAL:HG11	23:W:519:ILE:HD11	2.01	0.41
23:W:796:GLY:O	23:W:879:VAL:CG1	2.65	0.41
23:W:838:TYR:CG	23:W:839:GLU:N	2.87	0.41
23:W:838:TYR:CE2	23:W:839:GLU:O	2.74	0.41
1:A:1217:C:OP2	14:N:9:ARG:NH2	2.43	0.41
7:G:44:TYR:O	7:G:48:GLU:N	2.40	0.41
8:H:75:ILE:HG23	8:H:75:ILE:O	2.19	0.41
9:I:30:ILE:HA	9:I:65:ILE:HG13	2.02	0.41
9:I:57:MET:HG3	9:I:61:LEU:H	1.85	0.41
9:I:80:ARG:O	9:I:84:THR:HG23	2.20	0.41
23:W:404:LYS:NZ	23:W:445:THR:O	2.46	0.41
1:A:585:G:N3	1:A:879:C:H4'	2.34	0.41
1:A:662:U:H2'	1:A:663:A:C8	2.56	0.41
1:A:736:C:C5'	6:F:88:MET:HE2	2.51	0.41
1:A:842:U:H3'	1:A:843:U:H4'	2.02	0.41
1:A:1074:G:C4'	2:B:103:ASN:CB	2.97	0.41
1:A:1096:C:C5'	2:B:139:ARG:HE	2.31	0.41
3:C:85:GLU:HB2	3:C:88:ARG:NH2	2.36	0.41
7:G:6:VAL:HG12	7:G:7:ILE:N	2.36	0.41
10:J:35:GLN:HB2	10:J:77:VAL:HB	2.01	0.41
13:M:6:GLY:HA2	13:M:66:GLU:HG3	2.01	0.41
22:V:70:ARG:O	22:V:71:LYS:HD2	2.19	0.41
23:W:388:GLU:HG3	23:W:561:ARG:HG2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Y:28:ILE:HD12	24:Y:28:ILE:H	1.84	0.41
1:A:1402:4OC:HM42	1:A:1500:A:H61	1.85	0.41
1:A:1405:G:O4'	1:A:1519:MA6:H4'	2.20	0.41
13:M:107:ARG:NH2	13:M:113:ARG:HB3	2.35	0.41
15:O:87:LEU:O	15:O:88:ARG:CB	2.68	0.41
22:V:23:ARG:HH21	22:V:33:LEU:CD2	2.33	0.41
23:W:794:ILE:HA	23:W:880:PHE:HA	2.03	0.41
1:A:367:U:H4'	23:W:605:ARG:HH21	1.85	0.41
13:M:12:HIS:HA	13:M:45:ILE:HG13	2.02	0.41
23:W:399:HIS:CD2	23:W:478:GLN:HB3	2.55	0.41
23:W:862:GLY:HA2	27:X:101:FME:HB2	2.02	0.41
1:A:263:A:P	20:T:74:ARG:HH11	2.43	0.41
1:A:510:A:H5"	1:A:511:C:P	2.61	0.41
1:A:977:A:O2'	1:A:979:C:OP2	2.39	0.41
16:P:48:GLU:HG2	16:P:49:GLY:H	1.85	0.41
1:A:920:U:C4'	1:A:1081:A:HO2'	2.28	0.41
1:A:925:G:C2	1:A:927:G:N9	2.86	0.41
5:E:107:ALA:HB2	5:E:125:ALA:HB3	2.02	0.41
10:J:65:TYR:CB	14:N:96:LEU:HD11	2.50	0.41
13:M:33:ILE:O	13:M:37:ALA:N	2.46	0.41
22:V:26:LEU:N	22:V:30:PRO:O	2.53	0.41
22:V:40:MET:HB3	22:V:40:MET:HE2	1.80	0.41
23:W:540:GLY:CA	23:W:541:ILE:CB	2.85	0.41
23:W:545:LEU:HD12	23:W:545:LEU:HA	1.83	0.41
23:W:676:ASN:ND2	23:W:678:PHE:O	2.53	0.41
1:A:1224:U:H3'	1:A:1225:A:H5'	2.03	0.41
1:A:1449:C:C2	1:A:1455:G:C2	3.08	0.41
4:D:58:LYS:NZ	4:D:59:GLN:OE1	2.48	0.41
7:G:108:ALA:HB3	7:G:116:MET:HE1	2.01	0.41
16:P:44:SER:C	16:P:46:LYS:H	2.29	0.41
23:W:396:ILE:HG22	23:W:404:LYS:CG	2.50	0.41
23:W:603:TYR:O	23:W:632:SER:OG	2.34	0.41
24:Y:77:ARG:HH22	26:X:16:C:H5	0.66	0.41
1:A:18:C:O2'	1:A:1078:U:C1'	2.66	0.41
1:A:108:G:H5'	1:A:108:G:N3	2.36	0.41
1:A:108:G:N3	1:A:108:G:C5'	2.84	0.41
1:A:501:C:H2'	1:A:502:A:C8	2.55	0.41
1:A:841:C:C6	1:A:843:U:H5'	2.55	0.41
1:A:925:G:N7	1:A:927:G:N7	2.64	0.41
1:A:1095:U:H2'	1:A:1096:C:C6	2.56	0.41
1:A:1152:A:H5'	10:J:72:ARG:HH22	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:30:ILE:HB	9:I:65:ILE:HD11	2.03	0.41
10:J:48:ARG:C	10:J:49:PHE:CD1	2.99	0.41
17:Q:10:GLY:HA3	17:Q:25:ILE:HD13	2.03	0.41
19:S:40:ILE:HD11	19:S:71:LEU:HD23	2.03	0.41
23:W:706:ASP:O	23:W:710:LYS:HG3	2.21	0.41
25:Z:90:VAL:N	26:X:22:G:N2	2.69	0.41
25:Z:179:LYS:CB	26:X:5:G:N2	2.83	0.41
26:X:22:G:O2'	26:X:23:C:C5'	2.69	0.41
1:A:17:U:O2'	1:A:1080:A:O5'	2.14	0.41
1:A:188:C:H2'	1:A:189:A:O4'	2.21	0.41
1:A:358:U:H5'	23:W:607:ARG:CZ	2.49	0.41
1:A:597:G:C2	1:A:644:U:C2	3.09	0.41
1:A:1053:G:H5"	1:A:1055:A:OP1	2.21	0.41
4:D:95:GLU:OE2	4:D:104:ARG:NH1	2.53	0.41
5:E:149:SER:H	5:E:152:MET:HG3	1.86	0.41
9:I:50:GLN:C	9:I:52:LEU:N	2.79	0.41
12:L:49:LEU:O	12:L:51:LYS:NZ	2.48	0.41
17:Q:59:VAL:HG21	17:Q:75:LEU:HD13	2.03	0.41
19:S:31:LEU:N	19:S:31:LEU:HD12	2.36	0.41
22:V:6:THR:HG21	22:V:56:GLU:HG2	2.03	0.41
22:V:11:GLY:HA3	22:V:26:LEU:HA	2.03	0.41
23:W:589:GLY:H	23:W:622:PRO:HB3	1.85	0.41
23:W:824:ARG:HE	23:W:845:LEU:HB3	1.86	0.41
1:A:6:G:H1'	5:E:124:LEU:HD11	1.85	0.40
1:A:234:C:H4'	17:Q:66:PRO:HG3	2.03	0.40
1:A:925:G:C2'	1:A:927:G:O4'	2.64	0.40
1:A:1049:U:H2'	14:N:3:LYS:HE3	2.03	0.40
1:A:1149:C:OP2	9:I:11:ARG:NH2	2.54	0.40
1:A:1239:A:H62	1:A:1299:A:N6	2.19	0.40
21:U:4:ILE:HG23	21:U:18:ARG:NH1	2.36	0.40
23:W:425:THR:O	23:W:446:PRO:HB3	2.21	0.40
23:W:728:ILE:CG2	23:W:729:THR:N	2.84	0.40
23:W:815:CYS:N	27:X:101:FME:SD	2.93	0.40
26:X:47:U:C4	26:X:50:U:H5"	2.56	0.40
1:A:18:C:O2'	1:A:1078:U:H3'	2.22	0.40
1:A:182:A:N1	1:A:223:A:O2'	2.53	0.40
7:G:131:LYS:HA	7:G:135:VAL:HG21	2.02	0.40
9:I:19:VAL:HA	9:I:65:ILE:HG22	2.02	0.40
22:V:25:LYS:HD2	22:V:26:LEU:N	2.37	0.40
23:W:541:ILE:O	23:W:542:ASP:C	2.64	0.40
23:W:727:GLY:C	23:W:748:VAL:CG2	2.94	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4:U:C2'	1:A:5:U:OP2	2.69	0.40
1:A:925:G:N3	1:A:927:G:N9	2.68	0.40
1:A:983:A:H5"	1:A:984:C:OP2	2.22	0.40
1:A:1095:U:H2'	1:A:1096:C:O4'	2.21	0.40
6:F:45:ARG:HH21	6:F:102:MET:HG3	1.87	0.40
11:K:89:PRO:HG3	21:U:32:VAL:HG11	2.02	0.40
11:K:109:ASN:ND2	21:U:5:LYS:HB3	2.36	0.40
19:S:29:LYS:CB	19:S:30:PRO:CD	2.99	0.40
22:V:20:ALA:CB	22:V:36:ILE:HD12	2.49	0.40
25:Z:123:LYS:HB3	26:X:11:A:C2	2.55	0.40
1:A:702:A:P	24:Y:64:LYS:HE2	2.62	0.40
1:A:1072:G:H21	2:B:106:THR:C	2.30	0.40
1:A:1096:C:H5"	2:B:139:ARG:CZ	2.52	0.40
1:A:1111:A:C5	2:B:130:THR:HG21	2.57	0.40
1:A:1312:G:H5'	19:S:6:LYS:CE	2.51	0.40
5:E:161:VAL:HG12	5:E:162:GLU:N	2.35	0.40
9:I:25:ASN:C	9:I:59:GLU:HA	2.47	0.40
9:I:54:LEU:HD12	9:I:54:LEU:N	2.36	0.40
23:W:716:VAL:CG2	23:W:786:LEU:CD2	2.98	0.40
23:W:728:ILE:C	23:W:729:THR:HG23	2.47	0.40
1:A:568:G:O2'	1:A:574:A:N1	2.49	0.40
1:A:1390:U:H4'	1:A:1391:U:H5'	1.61	0.40
1:A:1449:C:H2'	1:A:1450:U:H5'	2.03	0.40
5:E:57:PRO:HA	5:E:60:ILE:CG1	2.51	0.40
10:J:18:ILE:CG2	10:J:19:ASP:N	2.85	0.40
14:N:62:ASN:HB3	14:N:73:PHE:CD2	2.56	0.40
23:W:719:LYS:HG3	23:W:721:ILE:HD11	2.04	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	B	222/241 (92%)	209 (94%)	11 (5%)	2 (1%)	14	52
3	C	204/233 (88%)	193 (95%)	10 (5%)	1 (0%)	25	64
4	D	203/206 (98%)	199 (98%)	4 (2%)	0	100	100
5	E	153/167 (92%)	145 (95%)	8 (5%)	0	100	100
6	F	104/131 (79%)	96 (92%)	8 (8%)	0	100	100
7	G	149/156 (96%)	138 (93%)	10 (7%)	1 (1%)	19	57
8	H	127/130 (98%)	119 (94%)	8 (6%)	0	100	100
9	I	125/130 (96%)	111 (89%)	13 (10%)	1 (1%)	16	55
10	J	97/103 (94%)	88 (91%)	8 (8%)	1 (1%)	13	49
11	K	115/129 (89%)	104 (90%)	11 (10%)	0	100	100
12	L	120/123 (98%)	111 (92%)	9 (8%)	0	100	100
13	M	112/118 (95%)	101 (90%)	8 (7%)	3 (3%)	4	25
14	N	98/101 (97%)	91 (93%)	7 (7%)	0	100	100
15	O	86/89 (97%)	80 (93%)	3 (4%)	3 (4%)	3	20
16	P	80/102 (78%)	72 (90%)	7 (9%)	1 (1%)	10	43
17	Q	78/84 (93%)	73 (94%)	5 (6%)	0	100	100
18	R	53/75 (71%)	51 (96%)	1 (2%)	1 (2%)	6	32
19	S	77/92 (84%)	69 (90%)	7 (9%)	1 (1%)	10	43
20	T	84/87 (97%)	83 (99%)	1 (1%)	0	100	100
21	U	54/71 (76%)	53 (98%)	1 (2%)	0	100	100
22	V	69/72 (96%)	47 (68%)	14 (20%)	8 (12%)	0	5
23	W	497/890 (56%)	479 (96%)	17 (3%)	1 (0%)	44	78
24	Y	74/171 (43%)	73 (99%)	1 (1%)	0	100	100
25	Z	89/144 (62%)	76 (85%)	10 (11%)	3 (3%)	3	21
All	All	3070/3845 (80%)	2861 (93%)	182 (6%)	27 (1%)	17	52

All (27) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	130	THR
3	C	127	ARG
9	I	25	ASN
10	J	57	VAL
13	M	5	ALA
22	V	24	VAL

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Mol	Chain	Res	Type
22	V	28	SER
22	V	34	ALA
25	Z	153	GLN
25	Z	163	THR
13	M	13	LYS
15	O	88	ARG
22	V	9	THR
25	Z	105	GLY
2	B	126	PHE
16	P	48	GLU
18	R	73	ARG
22	V	30	PRO
7	G	80	VAL
15	O	18	ASP
15	O	21	ASP
22	V	3	GLU
13	M	105	ASN
23	W	788	PRO
19	S	29	LYS
22	V	45	ILE
22	V	49	PRO

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	B	186/199 (94%)	181 (97%)	5 (3%)	40	58
3	C	170/190 (90%)	160 (94%)	10 (6%)	16	37
4	D	172/173 (99%)	165 (96%)	7 (4%)	26	47
5	E	118/126 (94%)	109 (92%)	9 (8%)	11	30
6	F	92/112 (82%)	88 (96%)	4 (4%)	25	46
7	G	124/129 (96%)	118 (95%)	6 (5%)	21	43
8	H	104/105 (99%)	101 (97%)	3 (3%)	37	56
9	I	105/107 (98%)	102 (97%)	3 (3%)	37	56

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
10	J	87/90 (97%)	80 (92%)	7 (8%)	10	29
11	K	90/99 (91%)	87 (97%)	3 (3%)	33	52
12	L	102/102 (100%)	97 (95%)	5 (5%)	21	42
13	M	92/96 (96%)	88 (96%)	4 (4%)	25	46
14	N	83/84 (99%)	83 (100%)	0	100	100
15	O	76/77 (99%)	73 (96%)	3 (4%)	27	48
16	P	65/84 (77%)	62 (95%)	3 (5%)	23	44
17	Q	74/78 (95%)	70 (95%)	4 (5%)	18	40
18	R	48/65 (74%)	48 (100%)	0	100	100
19	S	70/79 (89%)	69 (99%)	1 (1%)	62	75
20	T	65/66 (98%)	63 (97%)	2 (3%)	35	54
21	U	48/61 (79%)	46 (96%)	2 (4%)	25	46
22	V	62/63 (98%)	54 (87%)	8 (13%)	3	14
23	W	402/713 (56%)	399 (99%)	3 (1%)	81	87
24	Y	66/149 (44%)	60 (91%)	6 (9%)	7	24
25	Z	81/128 (63%)	71 (88%)	10 (12%)	4	15
All	All	2582/3175 (81%)	2474 (96%)	108 (4%)	27	46

All (108) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	5	SER
2	B	20	THR
2	B	73	LYS
2	B	93	ASN
2	B	129	LEU
3	C	20	SER
3	C	58	GLU
3	C	64	ILE
3	C	85	GLU
3	C	101	ILE
3	C	121	THR
3	C	123	GLN
3	C	125	GLU
3	C	151	VAL
3	C	186	THR

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Mol	Chain	Res	Type
4	D	5	LEU
4	D	26	ARG
4	D	132	ILE
4	D	183	LYS
4	D	194	ASP
4	D	196	ASN
4	D	197	GLU
5	E	22	SER
5	E	60	ILE
5	E	74	VAL
5	E	76	LEU
5	E	80	THR
5	E	94	VAL
5	E	105	ILE
5	E	152	MET
5	E	163	GLU
6	F	71	ILE
6	F	89	VAL
6	F	90	MET
6	F	98	GLU
7	G	7	ILE
7	G	15	ASP
7	G	54	SER
7	G	70	ARG
7	G	75	VAL
7	G	83	SER
8	H	60	GLU
8	H	75	ILE
8	H	107	SER
9	I	47	VAL
9	I	66	THR
9	I	94	LEU
10	J	7	ARG
10	J	8	ILE
10	J	19	ASP
10	J	27	GLU
10	J	35	GLN
10	J	80	THR
10	J	100	ILE
11	K	23	ILE
11	K	33	THR
11	K	65	VAL

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Mol	Chain	Res	Type
12	L	24	LEU
12	L	35	THR
12	L	54	ARG
12	L	55	VAL
12	L	90	LEU
13	M	53	ILE
13	M	71	ARG
13	M	107	ARG
13	M	108	THR
15	O	3	LEU
15	O	40	GLN
15	O	89	ARG
16	P	1	MET
16	P	36	VAL
16	P	44	SER
17	Q	5	ILE
17	Q	14	SER
17	Q	42	THR
17	Q	59	VAL
19	S	18	LYS
20	T	15	GLU
20	T	40	GLU
21	U	4	ILE
21	U	20	LYS
22	V	5	ASP
22	V	23	ARG
22	V	31	GLU
22	V	32	ILE
22	V	42	MET
22	V	51	ASP
22	V	52	ARG
22	V	71	LYS
23	W	541	ILE
23	W	790	LEU
23	W	861	CYS
24	Y	21	GLN
24	Y	26	LEU
24	Y	42	ASN
24	Y	43	LEU
24	Y	73	GLU
24	Y	74	LYS
25	Z	108	GLN

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Mol	Chain	Res	Type
25	Z	118	LEU
25	Z	123	LYS
25	Z	128	LEU
25	Z	148	VAL
25	Z	150	ASP
25	Z	152	LEU
25	Z	155	LEU
25	Z	165	ILE
25	Z	174	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (29) such sidechains are listed below:

Mol	Chain	Res	Type
2	B	51	ASN
3	C	41	GLN
3	C	139	GLN
4	D	36	GLN
5	E	73	ASN
6	F	3	HIS
7	G	148	ASN
10	J	58	ASN
12	L	75	GLN
14	N	43	ASN
15	O	50	HIS
16	P	9	HIS
16	P	63	GLN
20	T	48	GLN
23	W	399	HIS
23	W	402	HIS
23	W	426	GLN
23	W	437	ASN
23	W	448	HIS
23	W	484	GLN
23	W	498	ASN
23	W	551	GLN
23	W	825	HIS
23	W	853	ASN
24	Y	21	GLN
24	Y	70	GLN
25	Z	92	GLN
25	Z	137	HIS
25	Z	180	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1533/1534 (99%)	260 (16%)	9 (0%)
26	X	76/77 (98%)	25 (32%)	11 (14%)
All	All	1609/1611 (99%)	285 (17%)	20 (1%)

All (285) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	5	U
1	A	6	G
1	A	9	G
1	A	22	G
1	A	28	A
1	A	32	A
1	A	39	G
1	A	47	C
1	A	48	C
1	A	50	A
1	A	51	A
1	A	69	G
1	A	70	U
1	A	71	A
1	A	72	A
1	A	73	C
1	A	74	A
1	A	75	G
1	A	76	G
1	A	77	A
1	A	78	A
1	A	79	G
1	A	80	A
1	A	81	A
1	A	82	G
1	A	83	C
1	A	84	U
1	A	85	U
1	A	86	G
1	A	89	U
1	A	90	C
1	A	91	U
1	A	94	G
1	A	95	C

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Mol	Chain	Res	Type
1	A	97	G
1	A	108	G
1	A	119	A
1	A	121	U
1	A	122	G
1	A	128	G
1	A	130	A
1	A	131	A
1	A	137	U
1	A	142	G
1	A	144	G
1	A	158	G
1	A	159	G
1	A	163	C
1	A	168	G
1	A	173	U
1	A	183	C
1	A	201	G
1	A	205	A
1	A	208	U
1	A	209	U
1	A	210	C
1	A	212	G
1	A	240	G
1	A	245	U
1	A	247	G
1	A	251	G
1	A	262	A
1	A	266	G
1	A	267	C
1	A	289	G
1	A	321	A
1	A	328	C
1	A	329	A
1	A	330	C
1	A	332	G
1	A	346	G
1	A	352	C
1	A	354	G
1	A	367	U
1	A	372	C
1	A	373	A

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Mol	Chain	Res	Type
1	A	382	A
1	A	384	G
1	A	406	G
1	A	411	A
1	A	412	A
1	A	413	G
1	A	421	U
1	A	422	C
1	A	429	U
1	A	430	A
1	A	435	A
1	A	439	U
1	A	444	G
1	A	457	G
1	A	458	U
1	A	463	U
1	A	466	A
1	A	467	U
1	A	468	A
1	A	481	G
1	A	486	U
1	A	495	A
1	A	496	A
1	A	509	A
1	A	511	C
1	A	512	U
1	A	527	G7M
1	A	530	G
1	A	532	A
1	A	533	A
1	A	547	A
1	A	559	A
1	A	562	U
1	A	564	C
1	A	572	A
1	A	573	A
1	A	576	C
1	A	577	G
1	A	631	C
1	A	632	U
1	A	649	A
1	A	650	G

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Mol	Chain	Res	Type
1	A	653	U
1	A	654	G
1	A	665	A
1	A	682	G
1	A	721	G
1	A	723	U
1	A	724	G
1	A	733	G
1	A	753	A
1	A	755	G
1	A	777	A
1	A	793	U
1	A	794	A
1	A	815	A
1	A	817	C
1	A	827	U
1	A	828	U
1	A	832	G
1	A	841	C
1	A	842	U
1	A	843	U
1	A	845	A
1	A	846	G
1	A	887	G
1	A	913	A
1	A	914	A
1	A	926	G
1	A	927	G
1	A	932	C
1	A	934	C
1	A	960	U
1	A	969	A
1	A	975	A
1	A	976	G
1	A	977	A
1	A	992	U
1	A	993	G
1	A	1004	A
1	A	1005	A
1	A	1009	U
1	A	1012	A
1	A	1015	G

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Mol	Chain	Res	Type
1	A	1017	U
1	A	1019	A
1	A	1021	A
1	A	1022	A
1	A	1023	U
1	A	1025	U
1	A	1026	G
1	A	1027	C
1	A	1028	C
1	A	1029	U
1	A	1030	U
1	A	1031	C
1	A	1032	G
1	A	1033	G
1	A	1034	G
1	A	1036	A
1	A	1037	C
1	A	1043	G
1	A	1053	G
1	A	1054	C
1	A	1065	U
1	A	1070	U
1	A	1086	U
1	A	1092	A
1	A	1094	G
1	A	1095	U
1	A	1098	C
1	A	1101	A
1	A	1108	G
1	A	1124	G
1	A	1133	G
1	A	1135	U
1	A	1136	C
1	A	1137	C
1	A	1138	G
1	A	1139	G
1	A	1140	C
1	A	1141	C
1	A	1142	G
1	A	1143	G
1	A	1152	A
1	A	1158	C

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Mol	Chain	Res	Type
1	A	1159	U
1	A	1160	G
1	A	1167	A
1	A	1168	U
1	A	1184	G
1	A	1196	A
1	A	1197	A
1	A	1212	U
1	A	1213	A
1	A	1215	G
1	A	1225	A
1	A	1227	A
1	A	1238	A
1	A	1239	A
1	A	1240	U
1	A	1256	A
1	A	1257	A
1	A	1260	G
1	A	1279	G
1	A	1280	A
1	A	1286	U
1	A	1287	A
1	A	1299	A
1	A	1300	G
1	A	1302	C
1	A	1305	G
1	A	1317	C
1	A	1320	C
1	A	1322	C
1	A	1323	G
1	A	1336	C
1	A	1346	A
1	A	1353	G
1	A	1363	A
1	A	1368	A
1	A	1370	G
1	A	1381	U
1	A	1391	U
1	A	1398	A
1	A	1429	A
1	A	1441	A
1	A	1442	G

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Mol	Chain	Res	Type
1	A	1445	U
1	A	1446	A
1	A	1450	U
1	A	1451	U
1	A	1453	G
1	A	1454	G
1	A	1492	A
1	A	1493	A
1	A	1497	G
1	A	1499	A
1	A	1503	A
1	A	1505	G
1	A	1506	U
1	A	1517	G
1	A	1529	G
1	A	1530	G
26	X	8	4SU
26	X	9	G
26	X	16	C
26	X	17(A)	U
26	X	19	G
26	X	20	H2U
26	X	21	A
26	X	22	G
26	X	23	C
26	X	24	U
26	X	42	G
26	X	48	C
26	X	49	G
26	X	53	G
26	X	54	5MU
26	X	55	PSU
26	X	56	C
26	X	57	A
26	X	58	A
26	X	59	A
26	X	70	G
26	X	71	C
26	X	74	C
26	X	75	C
26	X	76	A

All (20) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	4	U
1	A	209	U
1	A	412	A
1	A	429	U
1	A	653	U
1	A	793	U
1	A	1024	G
1	A	1031	C
1	A	1211	U
26	X	8	4SU
26	X	19	G
26	X	20	H2U
26	X	21	A
26	X	22	G
26	X	23	C
26	X	55	PSU
26	X	56	C
26	X	57	A
26	X	58	A
26	X	70	G

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
1	5MC	A	1407	1	18,22,23	1.06	2 (11%)	26,32,35	1.14	2 (7%)
1	2MG	A	1207	1	18,26,27	0.85	1 (5%)	16,38,41	1.25	4 (25%)
1	4OC	A	1402	1	20,23,24	0.78	0	26,32,35	0.95	1 (3%)
1	MA6	A	1518	1	18,26,27	0.95	1 (5%)	19,38,41	1.16	3 (15%)
1	G7M	A	527	1	20,26,27	1.18	2 (10%)	17,39,42	1.00	0
1	2MG	A	966	1	18,26,27	0.86	0	16,38,41	1.28	3 (18%)
1	2MG	A	1516	1	18,26,27	0.79	1 (5%)	16,38,41	1.37	3 (18%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
1	MA6	A	1519	1	18,26,27	0.93	0	19,38,41	1.45	4 (21%)
12	D2T	L	89	12	7,9,10	1.52	1 (14%)	6,11,13	1.56	2 (33%)
26	4SU	X	8	26	18,21,22	1.86	5 (27%)	26,30,33	2.53	11 (42%)
1	UR3	A	1498	1	19,22,23	0.97	1 (5%)	26,32,35	1.64	4 (15%)
26	5MU	X	54	26	19,22,23	1.42	6 (31%)	28,32,35	2.16	7 (25%)
26	PSU	X	55	26	18,21,22	1.30	2 (11%)	22,30,33	2.05	4 (18%)
1	5MC	A	967	1	18,22,23	0.99	1 (5%)	26,32,35	1.12	2 (7%)
1	PSU	A	516	1	18,21,22	0.94	2 (11%)	22,30,33	1.88	3 (13%)
26	H2U	X	20	26	18,21,22	0.80	0	21,30,33	1.13	2 (9%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	5MC	A	1407	1	-	0/7/25/26	0/2/2/2
1	2MG	A	1207	1	-	0/5/27/28	0/3/3/3
1	4OC	A	1402	1	-	0/9/29/30	0/2/2/2
1	MA6	A	1518	1	-	0/7/29/30	0/3/3/3
1	G7M	A	527	1	-	0/3/25/26	0/3/3/3
1	2MG	A	966	1	-	2/5/27/28	0/3/3/3
1	2MG	A	1516	1	-	0/5/27/28	0/3/3/3
1	MA6	A	1519	1	-	1/7/29/30	0/3/3/3
12	D2T	L	89	12	-	1/7/12/14	-
26	4SU	X	8	26	-	3/7/25/26	0/2/2/2
1	UR3	A	1498	1	-	0/7/25/26	0/2/2/2
26	5MU	X	54	26	-	3/7/25/26	0/2/2/2
26	PSU	X	55	26	-	1/7/25/26	0/2/2/2
1	5MC	A	967	1	-	0/7/25/26	0/2/2/2
1	PSU	A	516	1	-	0/7/25/26	0/2/2/2
26	H2U	X	20	26	-	3/7/38/39	0/2/2/2

All (25) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
26	X	8	4SU	C4-S4	-4.41	1.60	1.68
26	X	8	4SU	C4-N3	-3.78	1.33	1.37
26	X	55	PSU	C6-C5	3.22	1.39	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1407	5MC	C6-C5	3.00	1.39	1.34
1	A	967	5MC	C6-C5	2.97	1.39	1.34
1	A	527	G7M	C5-C4	2.83	1.44	1.39
26	X	54	5MU	C6-C5	2.75	1.39	1.34
12	L	89	D2T	CB-SB	2.74	1.85	1.82
1	A	516	PSU	C6-C5	2.63	1.38	1.35
26	X	55	PSU	C4-N3	-2.57	1.34	1.38
26	X	54	5MU	C4-N3	-2.54	1.34	1.38
26	X	8	4SU	C2-N3	-2.48	1.33	1.38
26	X	8	4SU	C2-N1	2.46	1.42	1.38
26	X	54	5MU	C4-C5	2.46	1.48	1.44
1	A	527	G7M	C6-N1	-2.44	1.34	1.37
26	X	8	4SU	C5-C4	-2.39	1.39	1.42
1	A	1518	MA6	C5-C4	2.33	1.47	1.40
1	A	1207	2MG	C6-N1	-2.20	1.34	1.37
26	X	54	5MU	C6-N1	-2.19	1.34	1.38
1	A	516	PSU	C4-C5	-2.18	1.38	1.44
26	X	54	5MU	C2-N1	2.07	1.41	1.38
1	A	1516	2MG	C6-N1	-2.06	1.34	1.37
1	A	1498	UR3	C6-C5	2.03	1.39	1.35
26	X	54	5MU	C2-N3	-2.00	1.34	1.38
1	A	1407	5MC	C6-N1	-2.00	1.34	1.38

All (55) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
26	X	8	4SU	C4-N3-C2	-6.59	120.94	127.34
1	A	1498	UR3	C4-N3-C2	-6.03	118.88	124.56
26	X	55	PSU	N1-C2-N3	5.95	121.87	115.13
26	X	8	4SU	C5-C4-N3	5.66	119.94	114.69
26	X	54	5MU	C4-N3-C2	-5.20	120.62	127.35
1	A	516	PSU	C4-N3-C2	-4.90	119.28	126.34
26	X	54	5MU	N3-C2-N1	4.89	121.39	114.89
26	X	8	4SU	N3-C2-N1	4.45	120.79	114.89
26	X	54	5MU	C5-C4-N3	4.43	119.09	115.31
1	A	516	PSU	O2-C2-N1	-4.35	118.00	122.79
1	A	516	PSU	N1-C2-N3	4.31	120.01	115.13
26	X	55	PSU	C4-N3-C2	-4.02	120.55	126.34
26	X	54	5MU	C5-C6-N1	-3.90	119.33	123.34
26	X	54	5MU	O4-C4-C5	-3.80	120.50	124.90
1	A	1519	MA6	N3-C2-N1	-3.56	123.11	128.68
1	A	967	5MC	C5-C6-N1	-3.53	119.71	123.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
26	X	55	PSU	C3'-C2'-C1'	3.52	105.74	101.64
26	X	8	4SU	C5-C4-S4	-3.47	120.00	124.47
1	A	1407	5MC	C5-C4-N3	-3.44	117.97	121.67
26	X	55	PSU	O2-C2-N1	-3.33	119.12	122.79
26	X	8	4SU	O3'-C3'-C4'	3.26	120.47	111.05
1	A	1407	5MC	C5-C6-N1	-3.21	120.04	123.34
1	A	1519	MA6	C4-C5-N7	-3.19	106.08	109.40
1	A	1498	UR3	C3U-N3-C2	3.07	122.69	117.31
1	A	1498	UR3	C1'-N1-C2	3.06	122.15	116.99
26	X	20	H2U	C4-N3-C2	-2.89	123.39	125.79
1	A	1518	MA6	N3-C2-N1	-2.86	124.20	128.68
1	A	1516	2MG	O6-C6-C5	-2.82	118.87	124.37
1	A	1516	2MG	C5-C6-N1	2.76	118.82	113.95
26	X	8	4SU	O3'-C3'-C2'	2.72	120.61	111.82
26	X	8	4SU	O4'-C4'-C3'	-2.64	99.89	105.11
26	X	54	5MU	O2-C2-N1	-2.61	119.31	122.79
26	X	8	4SU	C3'-C2'-C1'	-2.56	96.55	101.43
26	X	8	4SU	C1'-N1-C2	2.50	122.10	117.57
1	A	1402	4OC	CM4-N4-C4	-2.49	117.59	122.45
1	A	966	2MG	CM2-N2-C2	-2.44	118.47	123.86
26	X	54	5MU	C3'-C2'-C1'	2.43	106.04	101.43
12	L	89	D2T	OD1-CG-CB	-2.43	117.35	122.44
1	A	1519	MA6	C1'-N9-C4	-2.34	122.54	126.64
26	X	20	H2U	C3'-C2'-C1'	2.33	105.86	101.43
1	A	1498	UR3	C6-N1-C2	-2.33	119.70	121.79
1	A	966	2MG	C8-N7-C5	2.32	107.40	102.99
1	A	1207	2MG	CM2-N2-C2	-2.31	118.75	123.86
26	X	8	4SU	O2-C2-N3	-2.29	117.24	121.50
1	A	1518	MA6	C4-C5-N7	-2.27	107.03	109.40
1	A	1207	2MG	C8-N7-C5	2.26	107.29	102.99
12	L	89	D2T	CB-CA-N	2.21	113.82	109.10
1	A	1207	2MG	C5-C6-N1	2.21	117.86	113.95
1	A	966	2MG	O6-C6-C5	-2.20	120.07	124.37
1	A	1207	2MG	O6-C6-C5	-2.18	120.11	124.37
1	A	1516	2MG	C8-N7-C5	2.15	107.08	102.99
1	A	967	5MC	C5-C4-N3	-2.10	119.41	121.67
1	A	1518	MA6	N1-C6-N6	2.04	119.21	117.06
26	X	8	4SU	O4'-C1'-N1	2.03	113.01	108.36
1	A	1519	MA6	N1-C6-N6	2.01	119.17	117.06

There are no chirality outliers.

All (14) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	966	2MG	N1-C2-N2-CM2
1	A	966	2MG	N3-C2-N2-CM2
26	X	8	4SU	O4'-C1'-N1-C2
26	X	8	4SU	O4'-C1'-N1-C6
26	X	20	H2U	O4'-C1'-N1-C6
26	X	8	4SU	O4'-C4'-C5'-O5'
26	X	54	5MU	O4'-C1'-N1-C6
12	L	89	D2T	CG-CB-SB-CB1
26	X	20	H2U	O4'-C1'-N1-C2
26	X	54	5MU	O4'-C1'-N1-C2
1	A	1519	MA6	O4'-C4'-C5'-O5'
26	X	55	PSU	O4'-C1'-C5-C6
26	X	20	H2U	O4'-C4'-C5'-O5'
26	X	54	5MU	C2'-C1'-N1-C2

There are no ring outliers.

10 monomers are involved in 31 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	1402	4OC	1	0
1	A	1518	MA6	2	0
1	A	527	G7M	2	0
1	A	1519	MA6	3	0
12	L	89	D2T	1	0
26	X	8	4SU	13	0
26	X	54	5MU	5	0
26	X	55	PSU	3	0
1	A	516	PSU	1	0
26	X	20	H2U	5	0

5.5　Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6　Ligand geometry ⓘ

1 ligand is 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	#$|Z| > 2$
27	FME	X	101	26	8,8,10	0.39	0	7,8,11	0.93	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
27	FME	X	101	26	-	0/7/7/11	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 19 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
27	X	101	FME	19	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
1	A	2
23	W	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	W	791:LYS	C	792:GLN	N	5.71
1	A	926:G	O3'	927:G	P	2.61
1	A	1390:U	O3'	1391:U	P	2.53

6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-3494. 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 ⓘ
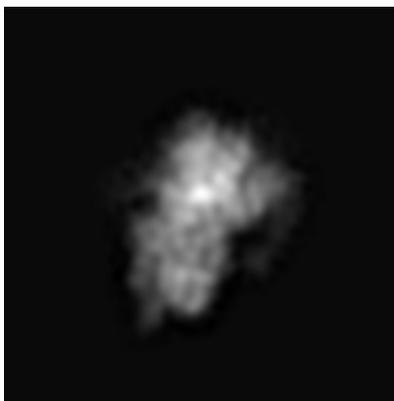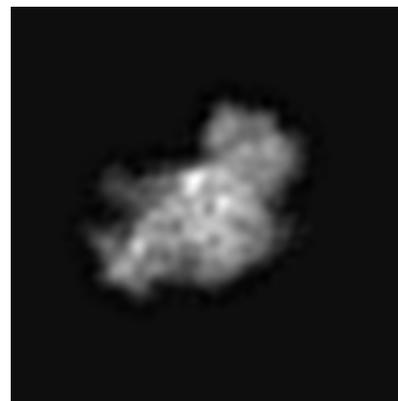
6.1.1 Primary map

X   Y   Z

6.1.2 Raw map

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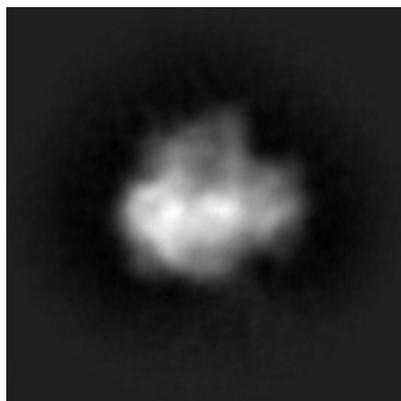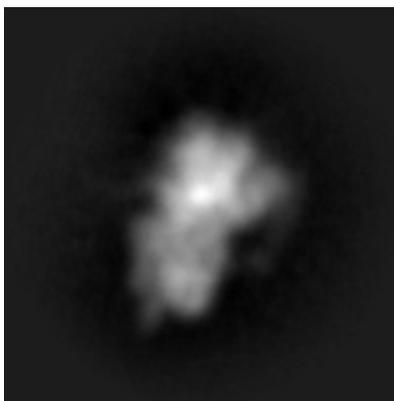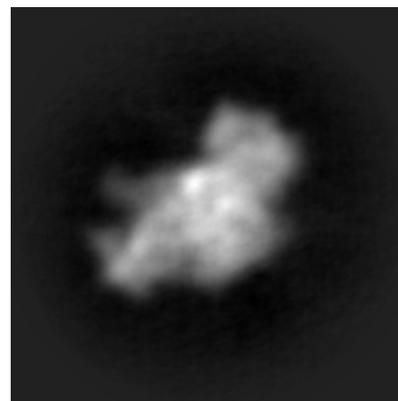
The images above show the map projected in three orthogonal directions.

6.2   Central slices ⓘ

6.2.1   Primary map

| X Index: 90 | Y Index: 90 | Z Index: 90 |

6.2.2   Raw map
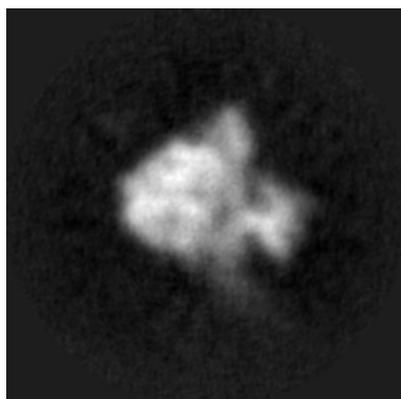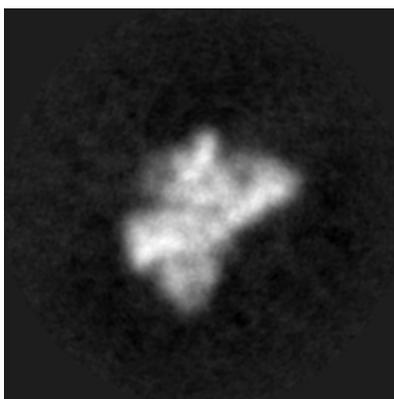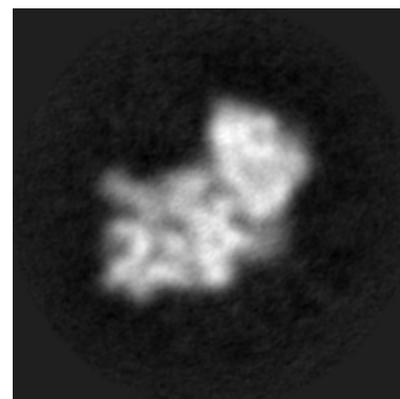
| X Index: 90 | Y Index: 90 | Z Index: 90 |

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

6.3 Largest variance slices ⓘ

6.3.1 Primary map
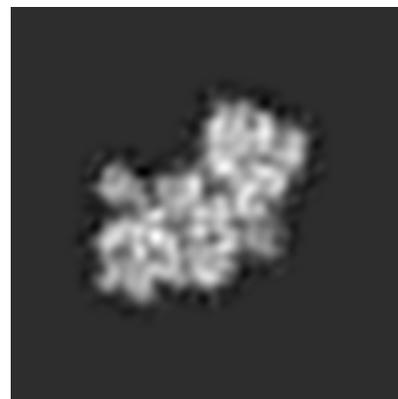
| X Index: 95 | Y Index: 74 | Z Index: 86 |

6.3.2 Raw map
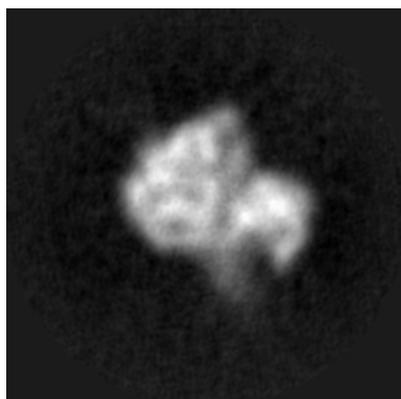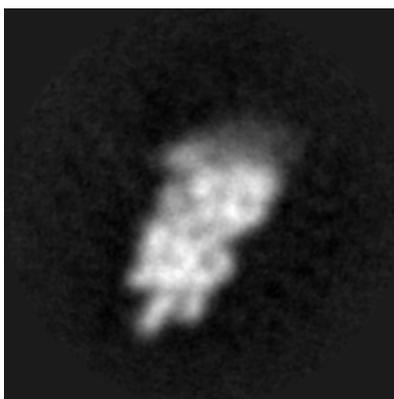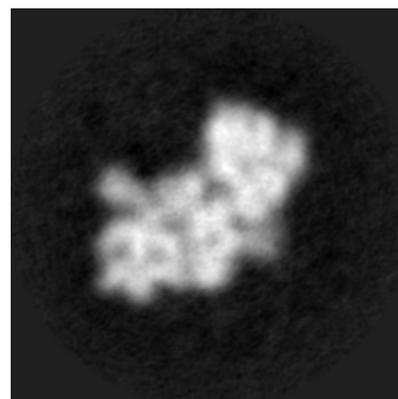
| X Index: 96 | Y Index: 74 | Z Index: 87 |

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

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

6.4.1 Primary map
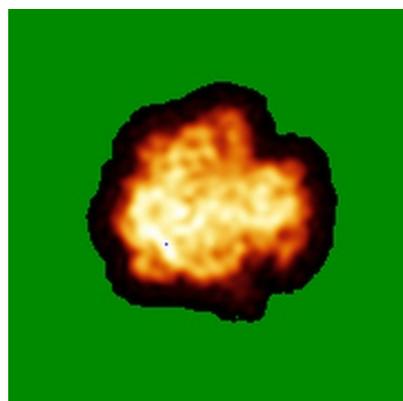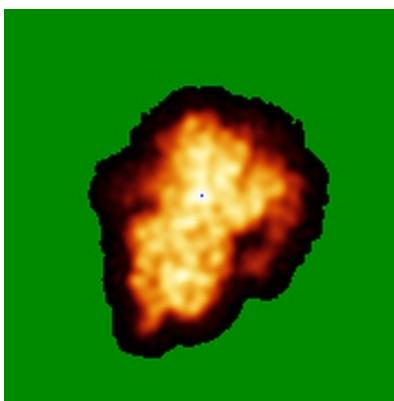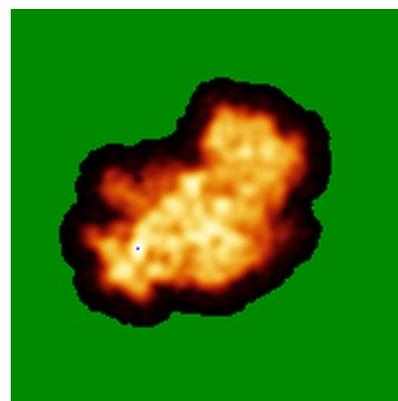
X   Y   Z

6.4.2 Raw map

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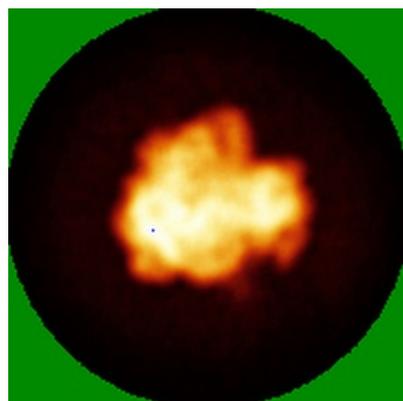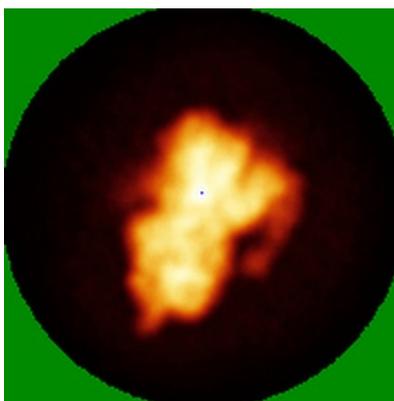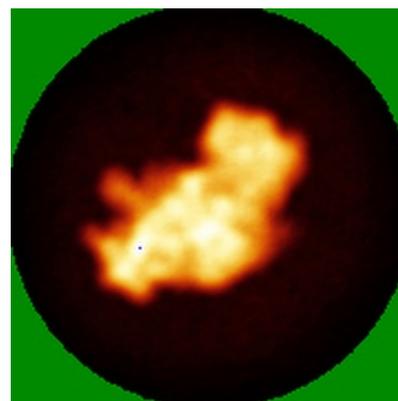
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views ⓘ

6.5.1 Primary map

| X | Y | Z |
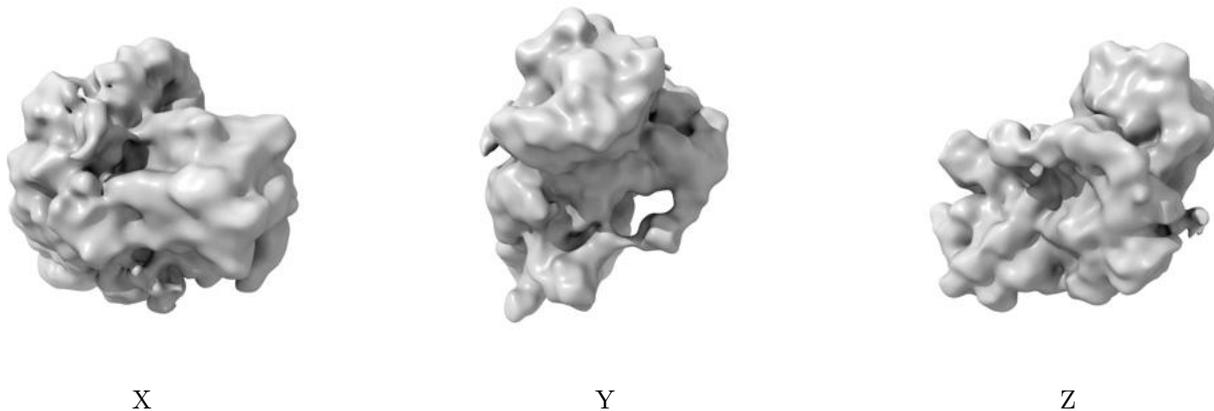
The images above show the 3D surface view of the map at the recommended contour level 0.0747. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

| 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.

6.6 Mask visualisation (i)

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

A mask typically either:

- Encompasses the whole structure

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

6.6.1 emd_3494_msk_1.map (i)

X   Y   Z
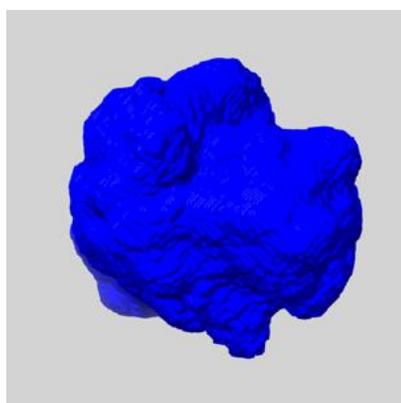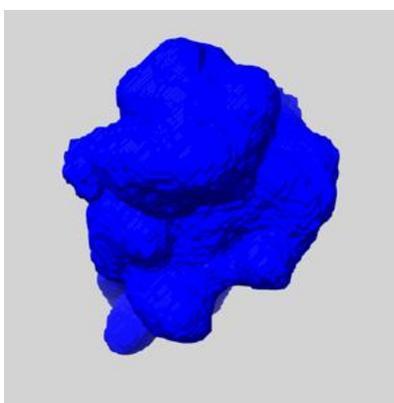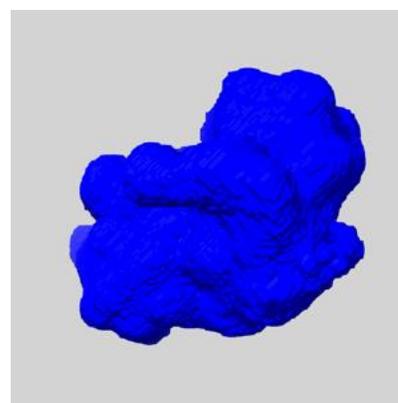
7 Map analysis ⓘ

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

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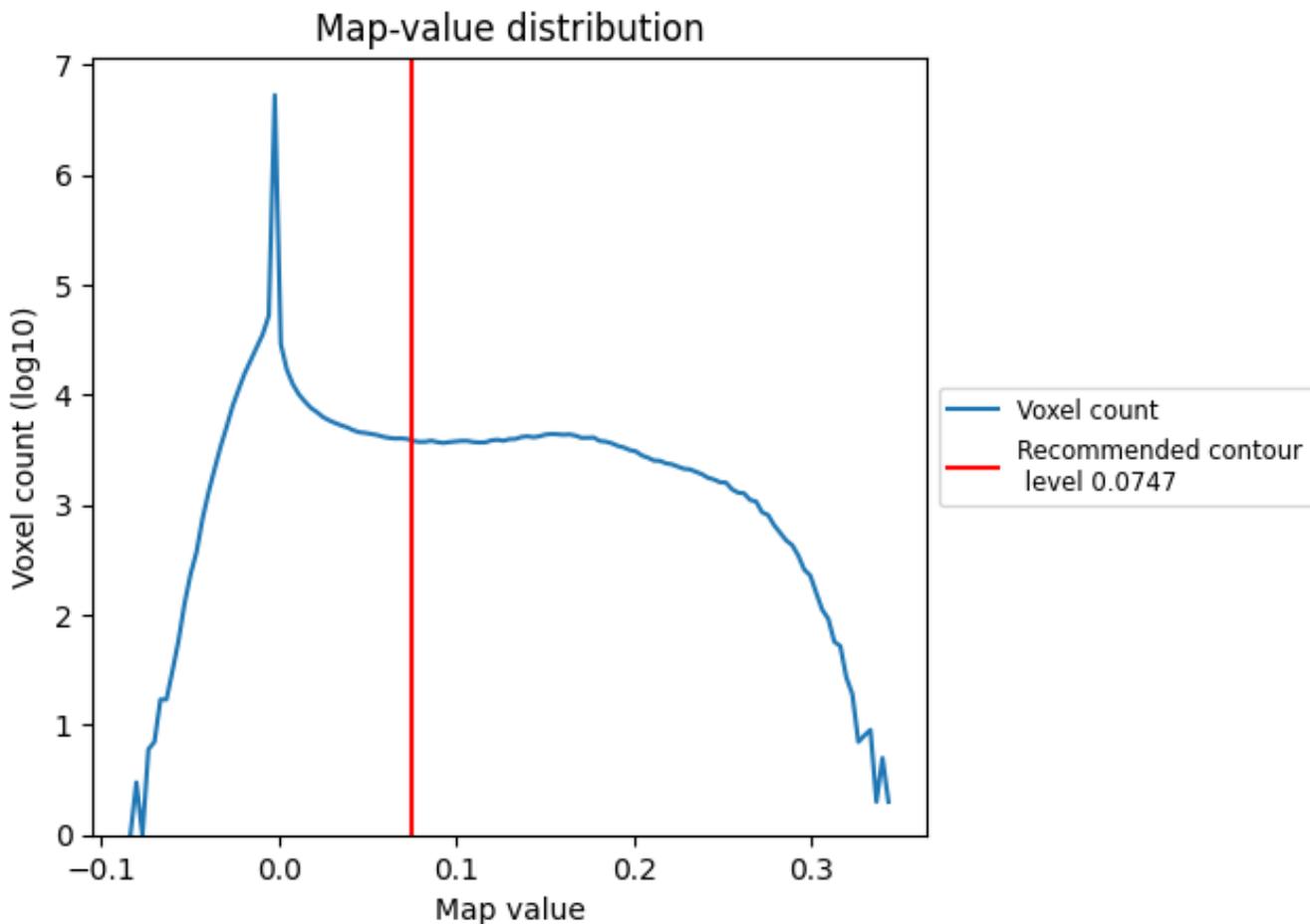
The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

7.2 Volume estimate ⓘ
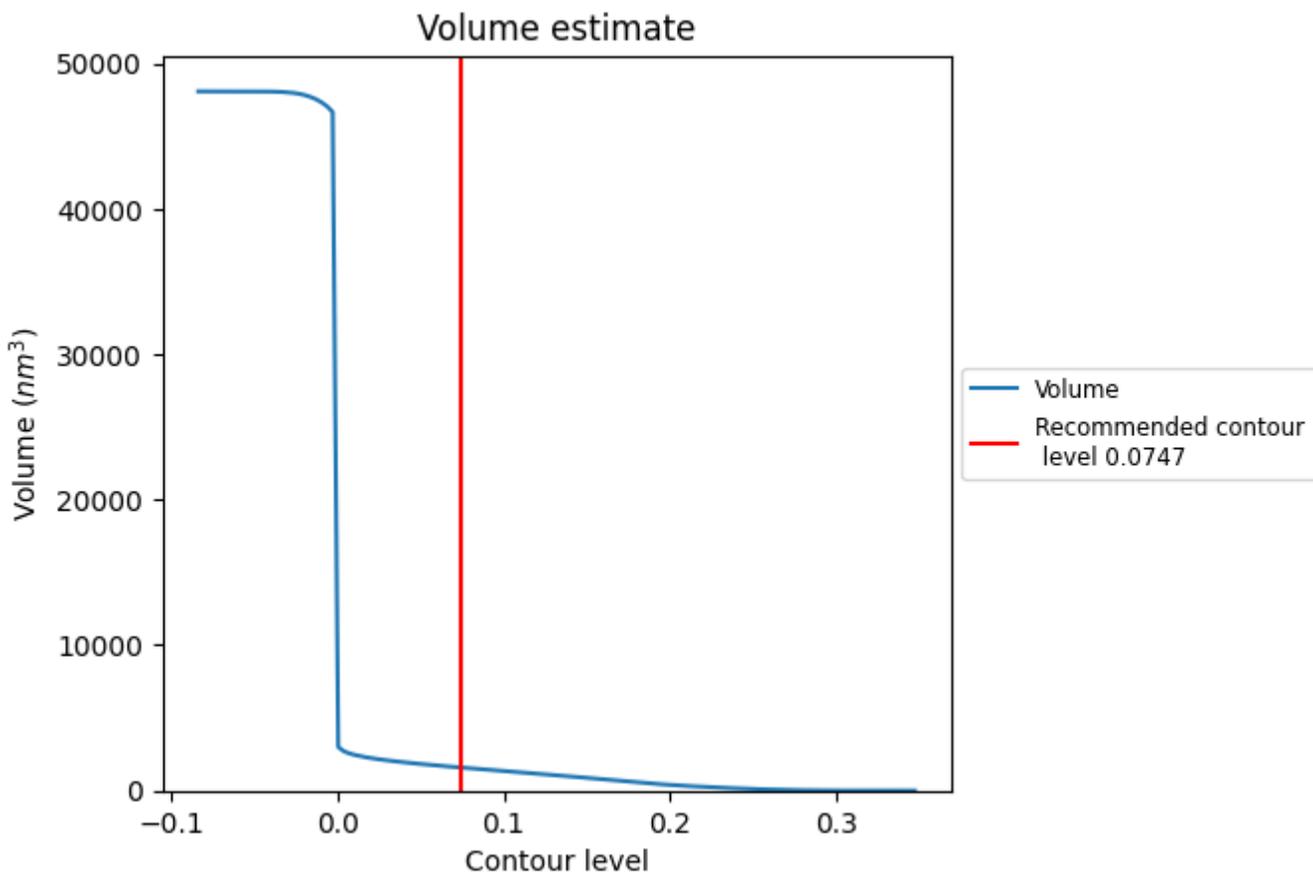
The volume at the recommended contour level is 1582 nm^3; this corresponds to an approximate mass of 1429 kDa.

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

7.3　Rotationally averaged power spectrum　ⓘ
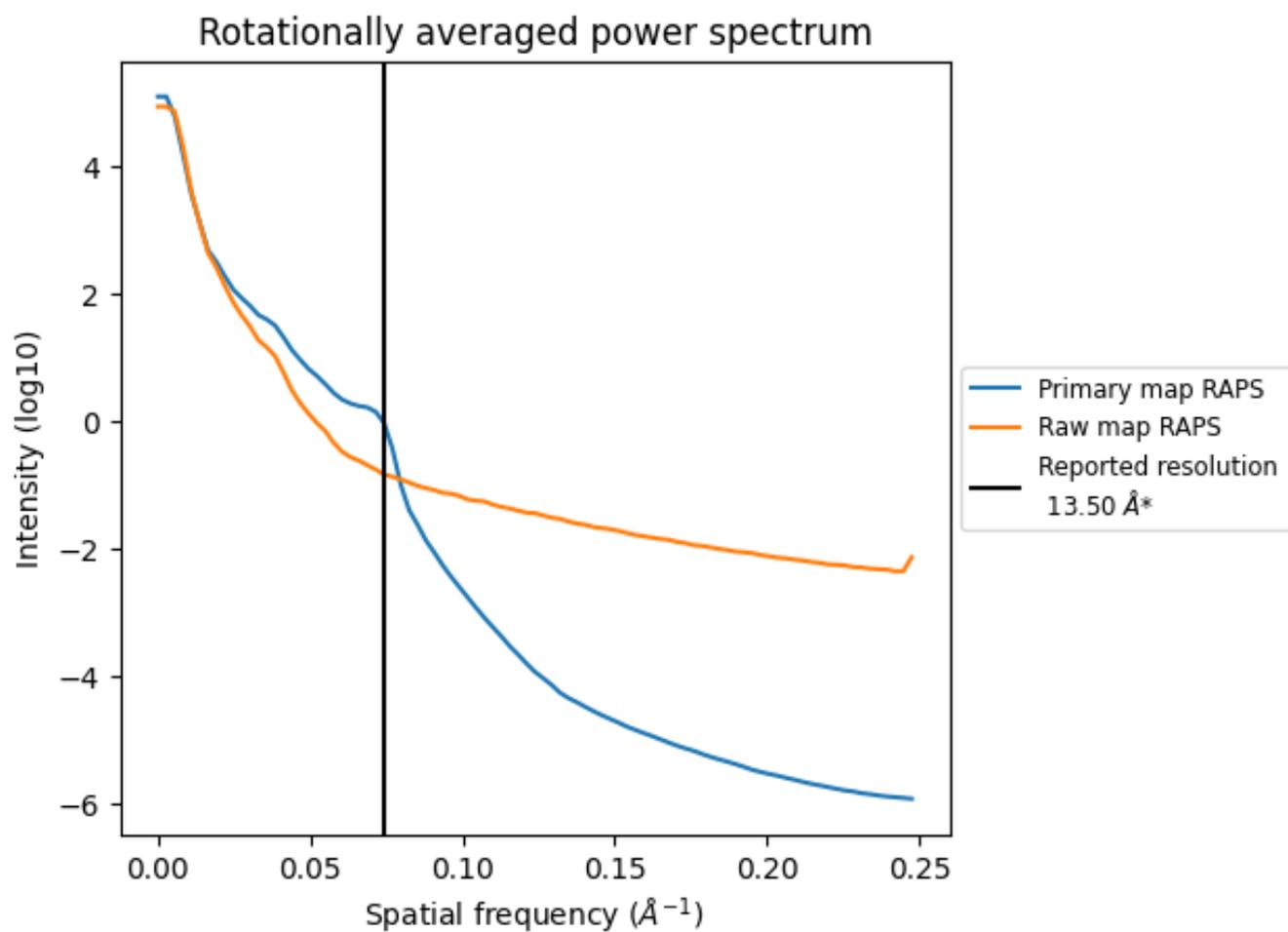
*Reported resolution corresponds to spatial frequency of 0.074 Å^{-1}

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 ⓘ
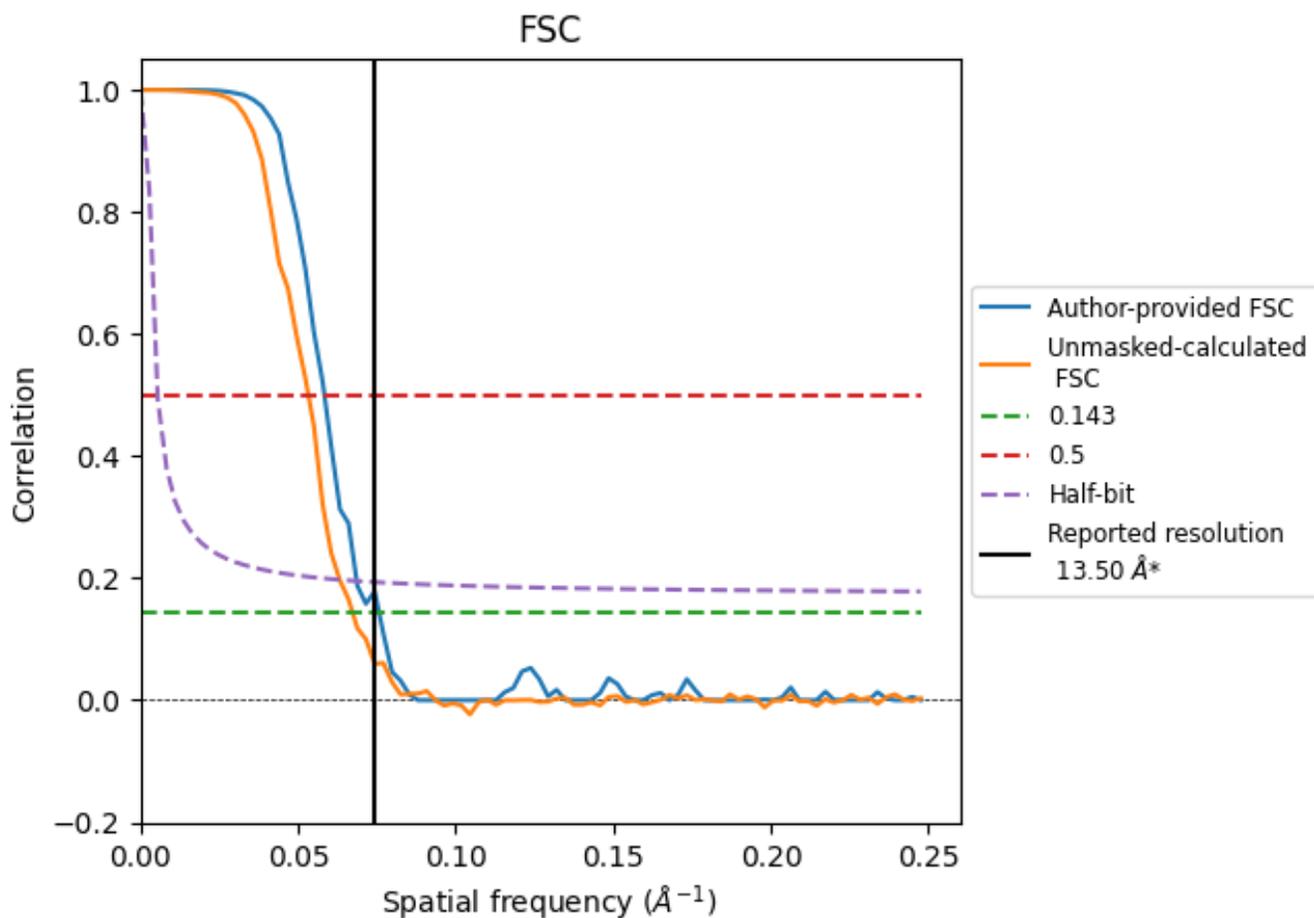
*Reported resolution corresponds to spatial frequency of 0.074 Å^{-1}

8.2   Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	13.50	-	-
Author-provided FSC curve	13.21	17.15	14.58
Unmasked-calculated*	14.86	18.80	15.85

*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 14.86 differs from the reported value 13.5 by more than 10 %

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-3494 and PDB model 5ME0. Per-residue inclusion information can be found in section 3 on page 10.

## 9.1 Map-model overlay ⓘ
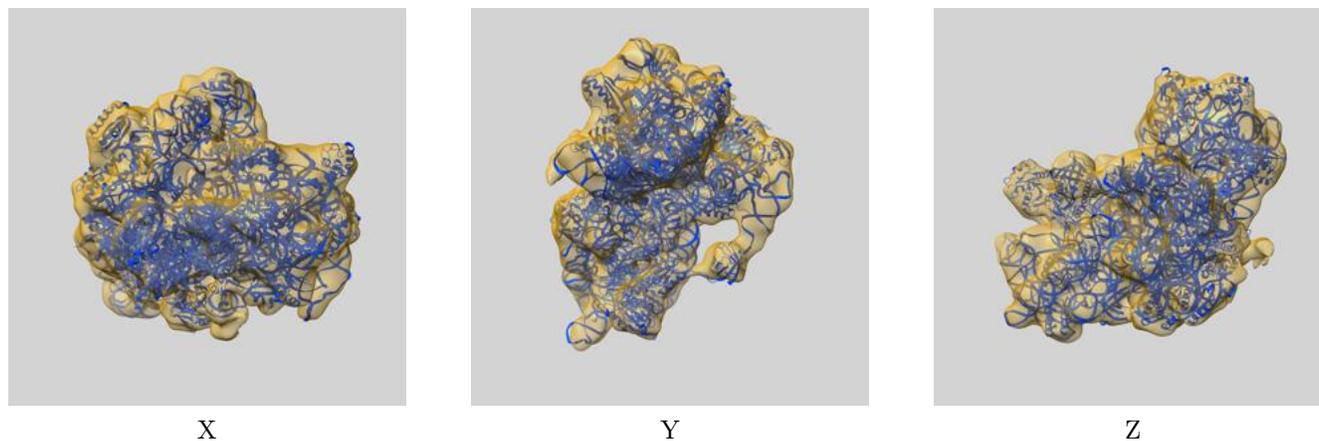
X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.0747 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 ⓘ

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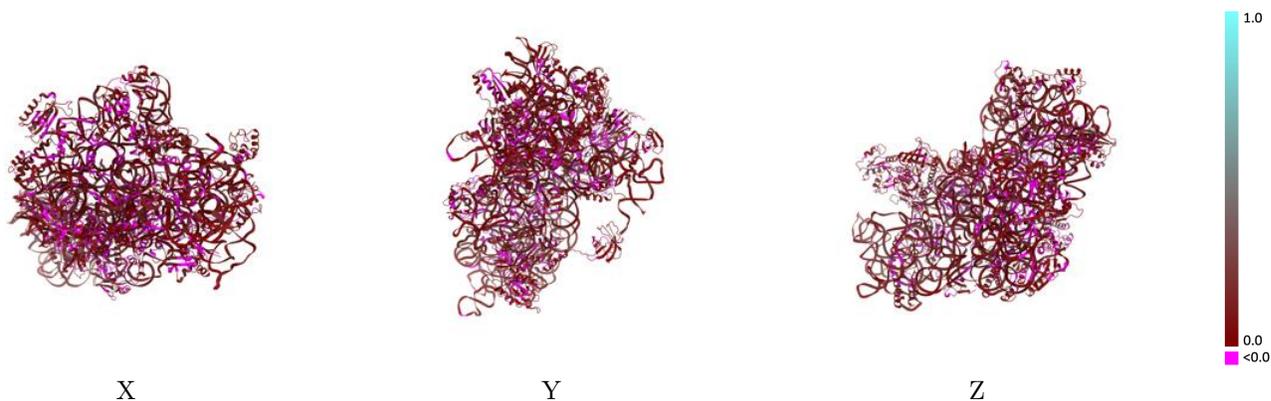
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

X   Y   Z
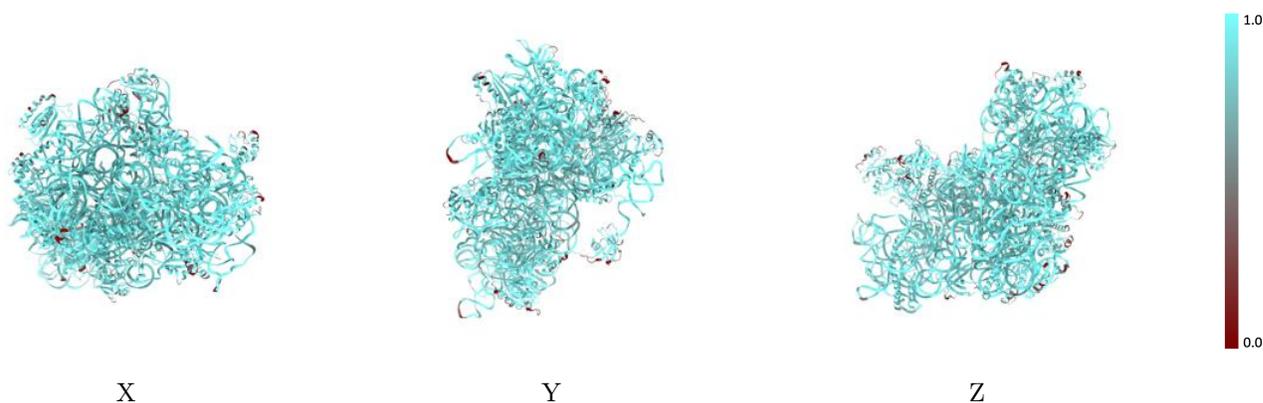
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0747).

9.4 Atom inclusion ⓘ
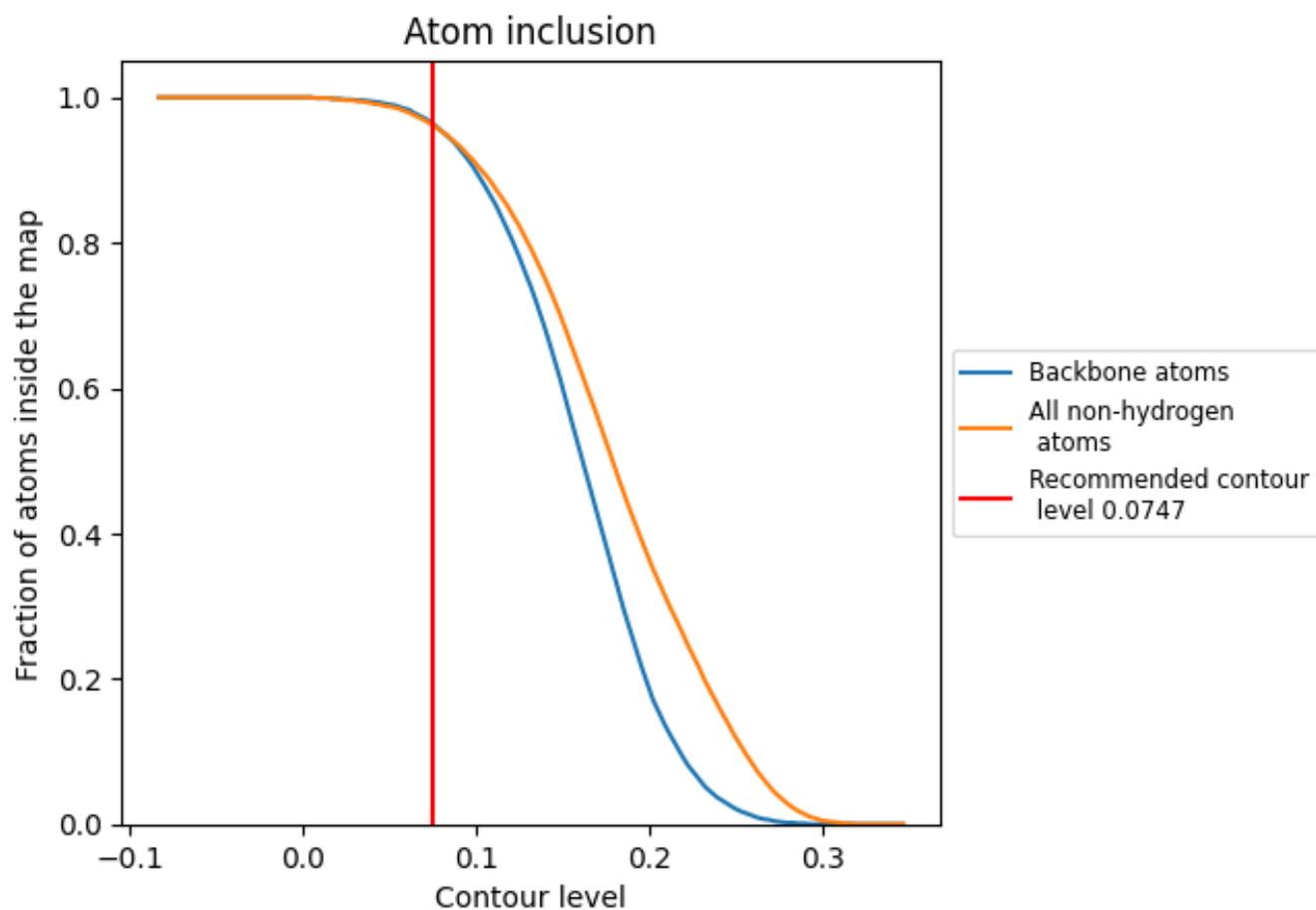
At the recommended contour level, 96% of all backbone atoms, 96% of all non-hydrogen atoms, are inside the map.

9.5   Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.0747) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9620	0.0700
A	0.9860	0.0860
B	0.9260	0.0470
C	0.9840	0.0550
D	0.9680	0.0250
E	0.9960	0.0510
F	0.8930	0.0700
G	0.9420	0.0680
H	0.9780	0.0370
I	0.9640	0.0300
J	0.8960	-0.0080
K	0.8460	0.0450
L	0.9810	-0.0010
M	0.8710	0.0590
N	0.9640	0.0350
O	0.9130	0.0800
P	0.9760	0.0180
Q	0.9560	0.0560
R	0.9930	0.0220
S	0.8990	0.0490
T	0.9620	0.0140
U	0.9300	0.0160
V	0.9640	0.0680
W	0.8530	0.0730
X	0.9720	0.0980
Y	0.8470	0.0610
Z	0.9320	0.0570

1.0

0.0
<0.0