Full wwPDB EM Validation Report ⓘ

Mar 8, 2026 – 03:42 PM UTC

PDB ID	:	4V5X / pdb_00004v5x
EMDB ID	:	EMD-2210
Title	:	The cryo-EM structure of a 3D DNA-origami object
Authors	:	Bai, X.C.; Martin, T.G.; Scheres, S.H.W.; Dietz, H.
Deposited on	:	2012-10-09
Resolution	:	11.50 Å(reported)

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

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

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

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

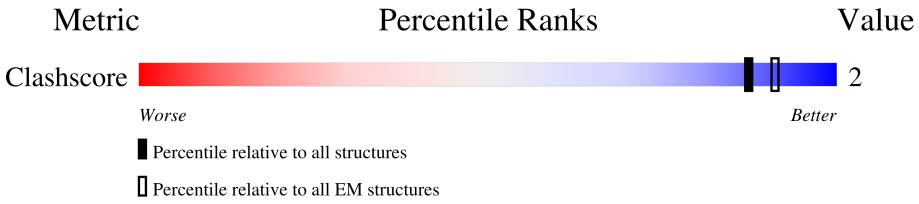
EMDB validation analysis	:	0.0.1.dev132
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh &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

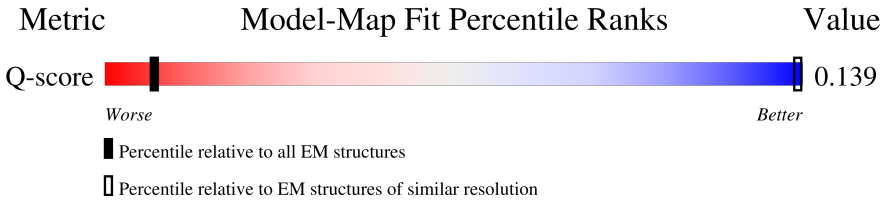
1 Overall quality at a glance

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

The reported resolution of this entry is 11.50 Å.

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





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Q-score	-	25397	117 (11.00 - 12.00)

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	AA	7249	86% 13%
2	A0	55	82% 16%
3	A1	44	73% 20% 7%
4	A2	50	76% 20%
5	A3	40	65% 32%
6	A4	48	67% 12% 21%

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Mol	Chain	Length	Quality of chain
7	A5	48	83% 12%
8	A6	50	80% 18%
9	A7	48	77% 12% 10%
10	A8	48	83% 12%
11	AB	40	95% 5%
12	AC	48	85% 10%
13	AD	50	80% 18%
14	AE	46	7% 57% 22% 22%
15	AF	48	83% 17%
16	AG	46	78% 20%
17	AH	48	79% 19%
18	AI	48	90% 10%
19	AJ	52	83% 13%
20	AK	60	72% 25%
21	AL	48	81% 17%
22	AM	50	86% 14%
23	AN	48	81% 15%
24	AO	48	85% 12%
25	AP	40	92% 8%
26	AQ	57	74% 21% 5%
27	AR	63	70% 6% 24%
28	AS	64	47% 14% 39%
29	AT	48	81% 19%
30	AU	48	77% 19%
31	AV	52	85% 12%

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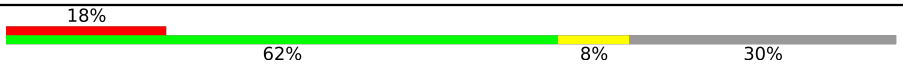
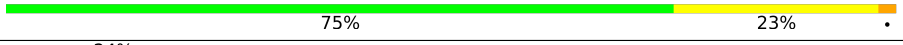
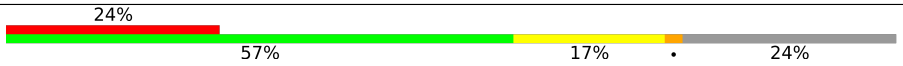
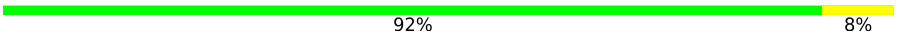
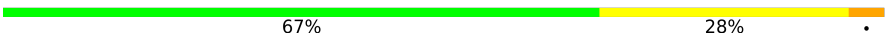
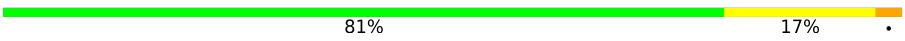
Mol	Chain	Length	Quality of chain
32	AW	50	
33	AX	48	
34	AY	42	
35	AZ	54	
36	Ab	45	
37	Ac	70	
38	Ad	48	
39	Af	48	
40	Ag	48	
41	Ah	44	
42	Ai	46	
43	Aj	62	
44	Ak	46	
45	Al	48	
46	Am	48	
47	An	48	
48	Ao	36	
49	As	48	
50	Au	48	
51	Av	48	
52	Aw	48	
53	Ax	52	
54	Ay	38	
55	Az	51	
56	B0	48	

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Mol	Chain	Length	Quality of chain
57	B1	59	64% 10% 25%
58	B2	36	75% 25%
59	B3	48	90% 10%
60	B4	48	50% 17% 31%
61	B5	40	85% 10% 5%
62	B6	50	76% 10% 10%
63	B7	44	82% 18%
64	B8	40	78% 5% 18%
65	B9	55	45% 25% 27%
66	BB	48	85% 15%
67	BC	44	84% 5% 11%
68	BD	35	74% 20% 6%
69	BE	68	71% 15% 15%
70	BF	40	85% 12%
71	BG	49	73% 22%
72	BH	42	12% 71% 5% 24%
73	BI	42	52% 12% 36%
74	BJ	58	76% 16% 9%
75	BK	44	75% 23%
76	BL	48	75% 19% 6%
77	BM	52	73% 8% 19%
78	BN	63	68% 8% 24%
79	BO	49	61% 33% 6%
80	BP	66	58% 5% 38%
81	BQ	48	77% 21%

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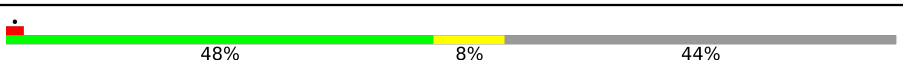
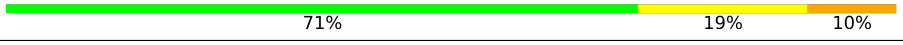
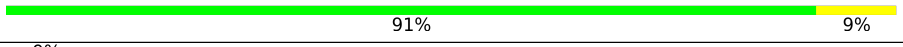
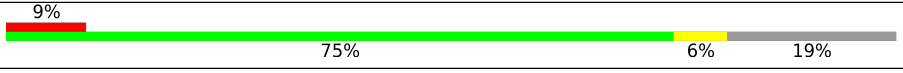
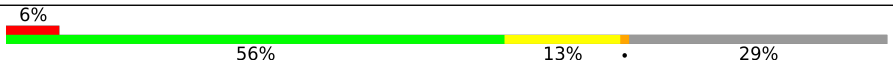
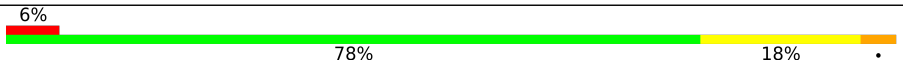
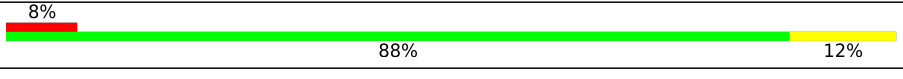
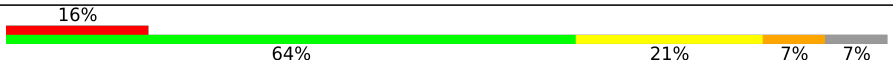
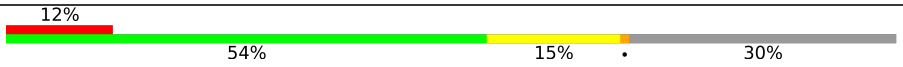
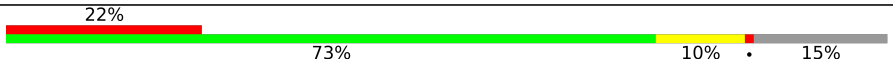
Mol	Chain	Length	Quality of chain
82	BR	64	
83	BS	48	
84	BT	52	
85	BU	55	
86	BV	44	
87	BW	53	
88	BX	48	
89	BY	48	
90	BZ	66	
91	Ba	48	
92	Bb	68	
93	Bc	50	
94	Bd	56	
95	Be	48	
96	Bf	48	
97	Bg	47	
98	Bh	48	
99	Bi	67	
100	Bj	45	
101	Bk	67	
102	Bl	48	
103	Bm	48	
104	Bn	67	
105	Bo	67	
106	Bp	48	

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Mol	Chain	Length	Quality of chain
107	Bq	58	59% 7% 34%
108	Br	51	59% 12% 29%
109	Bs	54	39% 67% 6% 28%
110	C0	41	12% 73% 24%
111	C1	51	61% 8% 29%
112	C2	56	73% 23%
113	C3	48	88% 8%
114	C4	71	69% 8% 21%
115	C5	62	77% 16% 5%
116	C6	48	75% 25%
117	C7	52	83% 15%
118	C8	44	75% 25%
119	CB	54	87% 11%
120	CC	47	85% 13%
121	CD	48	77% 17% 6%
122	CE	40	72% 22% 5%
123	CF	40	62% 35%
124	CG	44	86% 11%
125	CH	48	92% 8%
126	CI	44	68% 30%
127	CJ	59	63% 17% 20%
128	CK	48	54% 40% 6%
129	CL	48	75% 23%
130	CM	54	26% 65% 7% 28%
131	CN	41	7% 88% 12%

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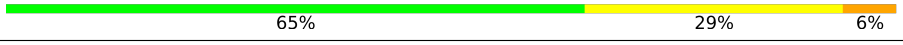
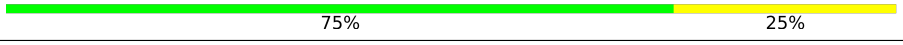
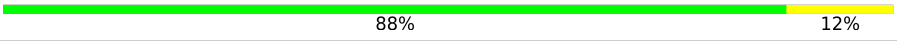
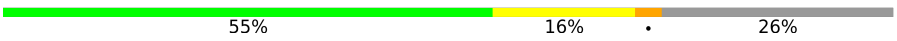
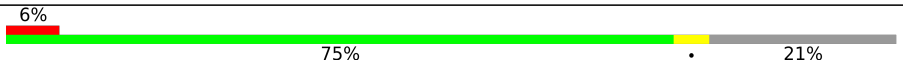
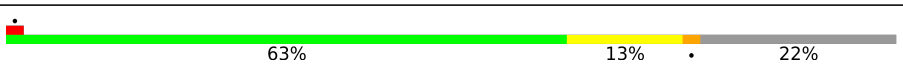
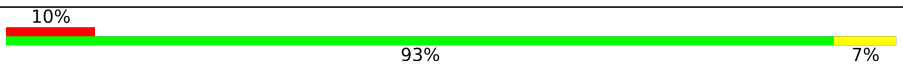
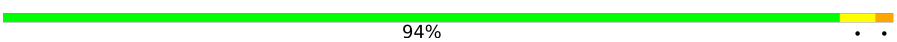
Mol	Chain	Length	Quality of chain
132	CO	48	
133	CP	56	
134	CQ	38	
135	CR	48	
136	CS	48	
137	CT	48	
138	CU	32	
139	CV	53	
140	CW	38	
141	CX	47	
142	CY	43	
143	CZ	48	
144	Cb	44	
145	Cc	62	
146	Cd	42	
147	Ce	52	
148	Cf	48	
149	Cg	46	
150	Ch	47	
151	Ck	29	
152	Cp	48	
153	Cq	40	
154	Cr	46	
155	Cs	49	
156	Ct	44	

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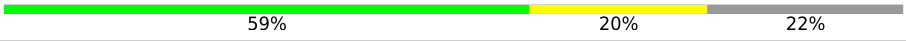
Mol	Chain	Length	Quality of chain
157	Cu	60	
158	Cv	46	
159	Cw	54	
160	Cx	46	
161	Cy	66	
162	Cz	48	

2 Entry composition (i)

There are 162 unique types of molecules in this entry. The entry contains 294953 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a DNA chain called SCAFFOLD STRAND,SCAFFOLD STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	AA	7249	147963	70960	25928	43933	7142	0	0

- Molecule 2 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	A0	55	1116	543	222	303	48	0	0

- Molecule 3 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	A1	44	884	433	167	247	37	0	0

- Molecule 4 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	A2	50	1019	494	214	267	44	0	0

- Molecule 5 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	A3	40	796	390	144	228	34	0	0

- Molecule 6 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
6	A4	38	780	377	151	216	36	0	0

- Molecule 7 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	A5	48	Total 971	C 469	N 194	O 265	P 43	0	0

- Molecule 8 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	A6	50	Total 1016	C 493	N 194	O 284	P 45	0	0

- Molecule 9 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	A7	43	Total 863	C 412	N 176	O 236	P 39	0	0

- Molecule 10 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	A8	48	Total 976	C 476	N 181	O 277	P 42	0	0

- Molecule 11 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	AB	40	Total 799	C 382	N 152	O 228	P 37	0	0

- Molecule 12 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	AC	48	Total 993	C 475	N 200	O 274	P 44	0	0

- Molecule 13 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	AD	50	Total 1018	C 485	N 202	O 284	P 47	0	0

- Molecule 14 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	AE	36	Total	C	N	O	P	0	0
			734	354	135	211	34		

- Molecule 15 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	AF	48	Total	C	N	O	P	0	0
			969	467	169	287	46		

- Molecule 16 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	AG	46	Total	C	N	O	P	0	0
			939	447	192	257	43		

- Molecule 17 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	AH	48	Total	C	N	O	P	0	0
			964	463	179	277	45		

- Molecule 18 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	AI	48	Total	C	N	O	P	0	0
			967	470	193	263	41		

- Molecule 19 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	AJ	52	Total	C	N	O	P	0	0
			1059	512	202	297	48		

- Molecule 20 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	AK	60	Total	C	N	O	P	0	0
			1202	588	219	344	51		

- Molecule 21 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	AL	48	Total 971	C 470	N 169	O 287	P 45	0	0

- Molecule 22 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	AM	50	Total 993	C 486	N 177	O 287	P 43	0	0

- Molecule 23 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	AN	48	Total 968	C 465	N 183	O 276	P 44	0	0

- Molecule 24 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	AO	48	Total 962	C 466	N 173	O 279	P 44	0	0

- Molecule 25 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	AP	40	Total 802	C 388	N 149	O 229	P 36	0	0

- Molecule 26 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	AQ	57	Total 1160	C 556	N 233	O 321	P 50	0	0

- Molecule 27 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	AR	48	Total 975	C 470	N 187	O 274	P 44	0	0

- Molecule 28 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	AS	39	Total 794	C 383	N 169	O 208	P 34	0	0

- Molecule 29 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	AT	48	Total 973	C 470	N 190	O 271	P 42	0	0

- Molecule 30 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	AU	48	Total 967	C 470	N 193	O 263	P 41	0	0

- Molecule 31 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	AV	52	Total 1051	C 510	N 201	O 294	P 46	0	0

- Molecule 32 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	AW	35	Total 701	C 342	N 120	O 206	P 33	0	0

- Molecule 33 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	AX	48	Total 959	C 465	N 186	O 266	P 42	0	0

- Molecule 34 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	AY	32	Total 645	C 309	N 126	O 181	P 29	0	0

- Molecule 35 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	AZ	54	Total	C	N	O	P	0	0
			1082	524	208	303	47		

- Molecule 36 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Ab	45	Total	C	N	O	P	0	0
			907	440	169	258	40		

- Molecule 37 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	Ac	55	Total	C	N	O	P	0	0
			1115	542	220	305	48		

- Molecule 38 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	Ad	48	Total	C	N	O	P	0	0
			958	468	171	277	42		

- Molecule 39 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Af	48	Total	C	N	O	P	0	0
			964	468	192	262	42		

- Molecule 40 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	Ag	48	Total	C	N	O	P	0	0
			979	470	187	278	44		

- Molecule 41 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Ah	44	Total	C	N	O	P	0	0
			872	427	149	257	39		

- Molecule 42 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	Ai	36	Total	C	N	O	P	0	0
			722	348	141	201	32		

- Molecule 43 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	Aj	62	Total	C	N	O	P	0	0
			1257	610	248	344	55		

- Molecule 44 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	Ak	46	Total	C	N	O	P	0	0
			946	454	197	255	40		

- Molecule 45 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	Al	48	Total	C	N	O	P	0	0
			949	467	163	278	41		

- Molecule 46 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	Am	48	Total	C	N	O	P	0	0
			963	466	182	273	42		

- Molecule 47 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	An	48	Total	C	N	O	P	0	0
			972	469	179	280	44		

- Molecule 48 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	Ao	36	Total	C	N	O	P	0	0
			724	349	140	204	31		

- Molecule 49 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	As	48	Total 971	C 476	N 172	O 281	P 42	0	0

- Molecule 50 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	Au	48	Total 963	C 468	N 168	O 283	P 44	0	0

- Molecule 51 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	Av	43	Total 869	C 419	N 172	O 240	P 38	0	0

- Molecule 52 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	Aw	48	Total 960	C 470	N 172	O 276	P 42	0	0

- Molecule 53 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	Ax	47	Total 953	C 460	N 176	O 274	P 43	0	0

- Molecule 54 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	Ay	28	Total 568	C 275	N 112	O 156	P 25	0	0

- Molecule 55 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	Az	36	Total 737	C 355	N 146	O 204	P 32	0	0

- Molecule 56 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	B0	48	Total	C	N	O	P	0	0
			977	467	184	282	44		

- Molecule 57 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	B1	44	Total	C	N	O	P	0	0
			900	434	181	245	40		

- Molecule 58 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	B2	36	Total	C	N	O	P	0	0
			734	350	148	203	33		

- Molecule 59 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	B3	48	Total	C	N	O	P	0	0
			976	469	182	280	45		

- Molecule 60 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	B4	33	Total	C	N	O	P	0	0
			664	320	130	184	30		

- Molecule 61 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	B5	40	Total	C	N	O	P	0	0
			816	392	160	227	37		

- Molecule 62 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	B6	45	Total	C	N	O	P	0	0
			929	443	187	256	43		

- Molecule 63 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	B7	44	Total	C	N	O	P	0	0
			892	432	153	266	41		

- Molecule 64 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	B8	33	Total	C	N	O	P	0	0
			653	315	120	187	31		

- Molecule 65 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	B9	40	Total	C	N	O	P	0	0
			810	393	150	231	36		

- Molecule 66 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	BB	48	Total	C	N	O	P	0	0
			982	469	191	276	46		

- Molecule 67 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	BC	39	Total	C	N	O	P	0	0
			798	385	152	224	37		

- Molecule 68 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	BD	35	Total	C	N	O	P	0	0
			727	344	151	199	33		

- Molecule 69 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	BE	58	Total	C	N	O	P	0	0
			1183	569	229	331	54		

- Molecule 70 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	BF	40	Total	C	N	O	P	0	0
			810	395	142	236	37		

- Molecule 71 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	BG	49	Total	C	N	O	P	0	0
			1007	481	203	277	46		

- Molecule 72 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	BH	32	Total	C	N	O	P	0	0
			644	312	123	180	29		

- Molecule 73 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	BI	27	Total	C	N	O	P	0	0
			544	265	98	156	25		

- Molecule 74 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	BJ	53	Total	C	N	O	P	0	0
			1076	517	200	310	49		

- Molecule 75 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	BK	44	Total	C	N	O	P	0	0
			894	433	176	245	40		

- Molecule 76 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	BL	48	Total	C	N	O	P	0	0
			966	467	172	283	44		

- Molecule 77 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	BM	42	Total 855	C 413	N 160	O 243	P 39	0	0

- Molecule 78 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	BN	48	Total 970	C 468	N 177	O 280	P 45	0	0

- Molecule 79 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	BO	49	Total 984	C 477	N 168	O 293	P 46	0	0

- Molecule 80 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	BP	41	Total 824	C 399	N 147	O 240	P 38	0	0

- Molecule 81 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	BQ	48	Total 971	C 467	N 175	O 283	P 46	0	0

- Molecule 82 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	BR	36	Total 733	C 356	N 139	O 206	P 32	0	0

- Molecule 83 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	BS	48	Total 967	C 465	N 177	O 281	P 44	0	0

- Molecule 84 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	BT	37	Total 753	C 361	N 137	O 220	P 35	0	0

- Molecule 85 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
85	BU	40	Total 813	C 395	N 145	O 237	P 36	0	0

- Molecule 86 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
86	BV	44	Total 895	C 430	N 161	O 261	P 43	0	0

- Molecule 87 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
87	BW	43	Total 874	C 421	N 158	O 254	P 41	0	0

- Molecule 88 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
88	BX	48	Total 991	C 478	N 191	O 278	P 44	0	0

- Molecule 89 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
89	BY	43	Total 871	C 421	N 161	O 249	P 40	0	0

- Molecule 90 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
90	BZ	43	Total 870	C 419	N 166	O 245	P 40	0	0

- Molecule 91 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
91	Ba	48	Total 972	C 469	N 173	O 286	P 44	0	0

- Molecule 92 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
92	Bb	48	Total 974	C 466	N 191	O 273	P 44	0	0

- Molecule 93 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
93	Bc	50	Total 1015	C 487	N 185	O 297	P 46	0	0

- Molecule 94 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
94	Bd	41	Total 836	C 400	N 155	O 242	P 39	0	0

- Molecule 95 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
95	Be	48	Total 978	C 468	N 183	O 282	P 45	0	0

- Molecule 96 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
96	Bf	48	Total 981	C 468	N 192	O 277	P 44	0	0

- Molecule 97 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
97	Bg	32	Total 646	C 312	N 120	O 185	P 29	0	0

- Molecule 98 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
98	Bh	38	Total 784	C 375	N 147	O 226	P 36	0	0

- Molecule 99 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
99	Bi	62	Total 1255	C 604	N 233	O 360	P 58	0	0

- Molecule 100 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
100	Bj	45	Total 907	C 436	N 170	O 259	P 42	0	0

- Molecule 101 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
101	Bk	47	Total 964	C 461	N 193	O 266	P 44	0	0

- Molecule 102 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
102	Bl	48	Total 986	C 468	N 201	O 272	P 45	0	0

- Molecule 103 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
103	Bm	48	Total 964	C 466	N 176	O 278	P 44	0	0

- Molecule 104 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
104	Bn	47	Total 975	C 461	N 190	O 279	P 45	0	0

- Molecule 105 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
105	Bo	57	Total	C	N	O	P	0	0
			1154	553	215	333	53		

- Molecule 106 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
106	Bp	48	Total	C	N	O	P	0	0
			985	468	198	274	45		

- Molecule 107 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
107	Bq	38	Total	C	N	O	P	0	0
			784	377	154	219	34		

- Molecule 108 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
108	Br	36	Total	C	N	O	P	0	0
			732	352	131	216	33		

- Molecule 109 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
109	Bs	39	Total	C	N	O	P	0	0
			800	380	166	218	36		

- Molecule 110 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
110	C0	31	Total	C	N	O	P	0	0
			632	303	120	180	29		

- Molecule 111 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
111	C1	36	Total	C	N	O	P	0	0
			732	354	147	198	33		

- Molecule 112 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
112	C2	56	Total	C	N	O	P	0	0
			1125	549	207	319	50		

- Molecule 113 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
113	C3	48	Total	C	N	O	P	0	0
			962	466	179	273	44		

- Molecule 114 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
114	C4	56	Total	C	N	O	P	0	0
			1133	548	208	325	52		

- Molecule 115 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
115	C5	62	Total	C	N	O	P	0	0
			1275	610	245	361	59		

- Molecule 116 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
116	C6	48	Total	C	N	O	P	0	0
			977	472	191	271	43		

- Molecule 117 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
117	C7	52	Total	C	N	O	P	0	0
			1056	515	184	309	48		

- Molecule 118 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
118	C8	44	Total	C	N	O	P	0	0
			892	433	164	256	39		

- Molecule 119 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
119	CB	54	Total	C	N	O	P	0	0
			1088	528	189	321	50		

- Molecule 120 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
120	CC	47	Total	C	N	O	P	0	0
			963	462	186	271	44		

- Molecule 121 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
121	CD	48	Total	C	N	O	P	0	0
			984	473	193	274	44		

- Molecule 122 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
122	CE	40	Total	C	N	O	P	0	0
			816	395	160	225	36		

- Molecule 123 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
123	CF	40	Total	C	N	O	P	0	0
			811	393	150	232	36		

- Molecule 124 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
124	CG	44	Total	C	N	O	P	0	0
			904	433	167	263	41		

- Molecule 125 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
125	CH	48	Total	C	N	O	P	0	0
			987	474	183	285	45		

- Molecule 126 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
126	CI	44	Total 889	C 430	N 170	O 250	P 39	0	0

- Molecule 127 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
127	CJ	47	Total 946	C 459	N 183	O 262	P 42	0	0

- Molecule 128 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
128	CK	48	Total 981	C 473	N 196	O 269	P 43	0	0

- Molecule 129 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
129	CL	48	Total 967	C 472	N 179	O 274	P 42	0	0

- Molecule 130 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
130	CM	39	Total 801	C 383	N 163	O 218	P 37	0	0

- Molecule 131 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
131	CN	41	Total 848	C 406	N 164	O 238	P 40	0	0

- Molecule 132 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
132	CO	48	Total 975	C 474	N 180	O 278	P 43	0	0

- Molecule 133 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
133	CP	56	Total	C	N	O	P	0	0
			1140	546	213	327	54		

- Molecule 134 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
134	CQ	28	Total	C	N	O	P	0	0
			557	273	105	155	24		

- Molecule 135 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
135	CR	48	Total	C	N	O	P	0	0
			969	469	170	284	46		

- Molecule 136 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
136	CS	38	Total	C	N	O	P	0	0
			773	374	145	219	35		

- Molecule 137 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
137	CT	48	Total	C	N	O	P	0	0
			982	474	189	276	43		

- Molecule 138 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
138	CU	32	Total	C	N	O	P	0	0
			648	312	123	182	31		

- Molecule 139 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
139	CV	53	Total	C	N	O	P	0	0
			1067	520	188	311	48		

- Molecule 140 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
140	CW	28	Total	C	N	O	P	0	0
			564	276	99	165	24		

- Molecule 141 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
141	CX	47	Total	C	N	O	P	0	0
			944	455	175	272	42		

- Molecule 142 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
142	CY	43	Total	C	N	O	P	0	0
			870	422	175	234	39		

- Molecule 143 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
143	CZ	48	Total	C	N	O	P	0	0
			987	474	201	267	45		

- Molecule 144 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
144	Cb	44	Total	C	N	O	P	0	0
			891	435	171	247	38		

- Molecule 145 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
145	Cc	52	Total	C	N	O	P	0	0
			1048	508	200	294	46		

- Molecule 146 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
146	Cd	42	Total	C	N	O	P	0	0
			859	417	159	243	40		

- Molecule 147 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
147	Ce	52	Total	C	N	O	P	0	0
			1049	509	199	295	46		

- Molecule 148 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
148	Cf	38	Total	C	N	O	P	0	0
			768	373	152	210	33		

- Molecule 149 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
149	Cg	36	Total	C	N	O	P	0	0
			735	354	150	199	32		

- Molecule 150 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
150	Ch	47	Total	C	N	O	P	0	0
			938	453	174	269	42		

- Molecule 151 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
151	Ck	29	Total	C	N	O	P	0	0
			585	284	100	174	27		

- Molecule 152 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
152	Cp	48	Total	C	N	O	P	0	0
			976	471	189	273	43		

- Molecule 153 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
153	Cq	40	Total	C	N	O	P	0	0
			827	395	157	236	39		

- Molecule 154 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
154	Cr	36	Total 727	C 350	N 145	O 200	P 32	0	0

- Molecule 155 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
155	Cs	49	Total 1012	C 486	N 204	O 277	P 45	0	0

- Molecule 156 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
156	Ct	44	Total 886	C 432	N 159	O 255	P 40	0	0

- Molecule 157 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
157	Cu	60	Total 1216	C 589	N 239	O 334	P 54	0	0

- Molecule 158 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
158	Cv	41	Total 823	C 402	N 141	O 243	P 37	0	0

- Molecule 159 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
159	Cw	54	Total 1098	C 528	N 213	O 308	P 49	0	0

- Molecule 160 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
160	Cx	36	Total 730	C 353	N 145	O 200	P 32	0	0

- Molecule 161 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
161	Cy	56	Total	C	N	O	P	0	0
			1145	554	223	318	50		

- Molecule 162 is a DNA chain called STAPLE STRAND.

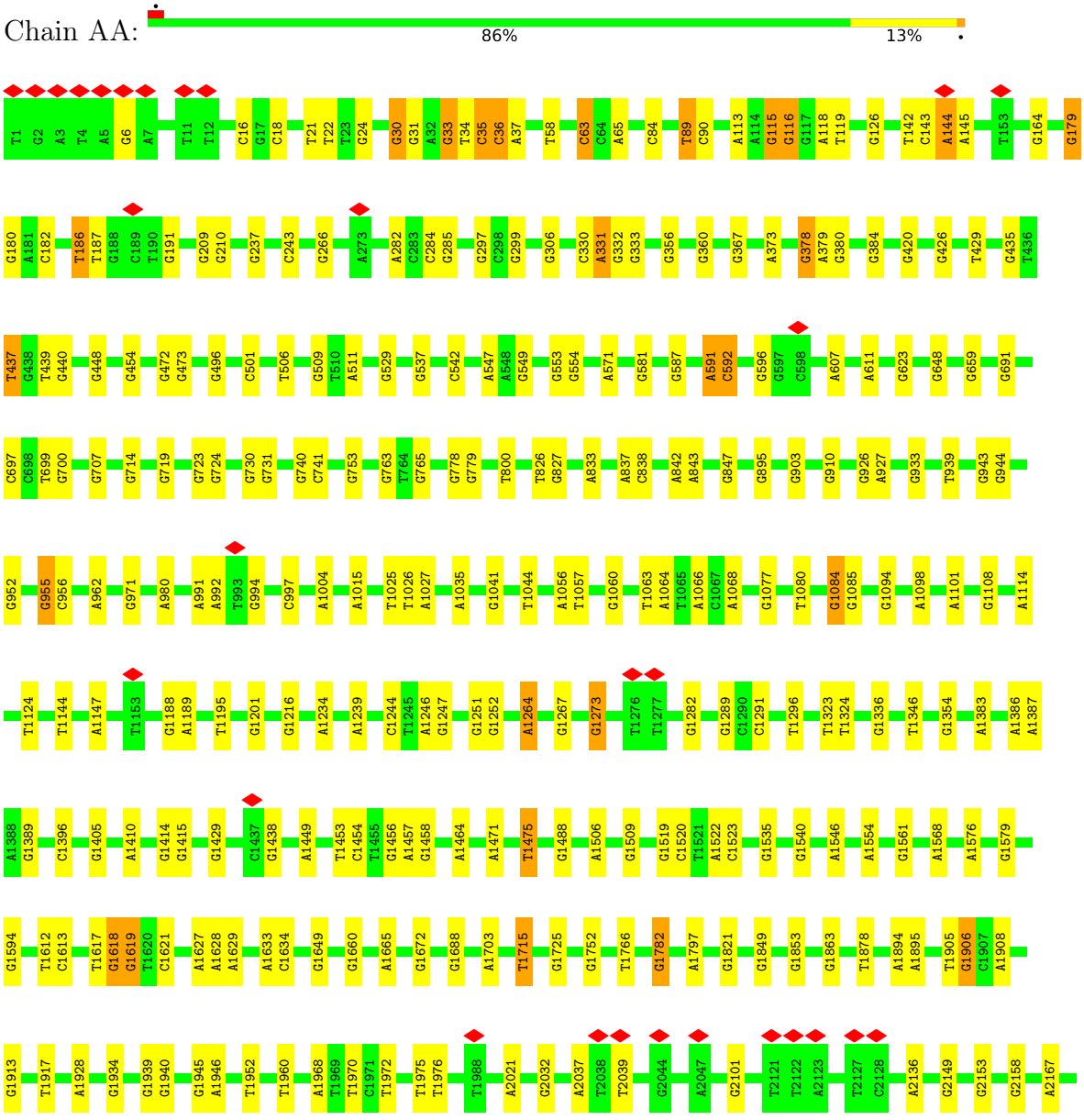
Mol	Chain	Residues	Atoms					AltConf	Trace
162	Cz	48	Total	C	N	O	P	0	0
			970	465	195	266	44		

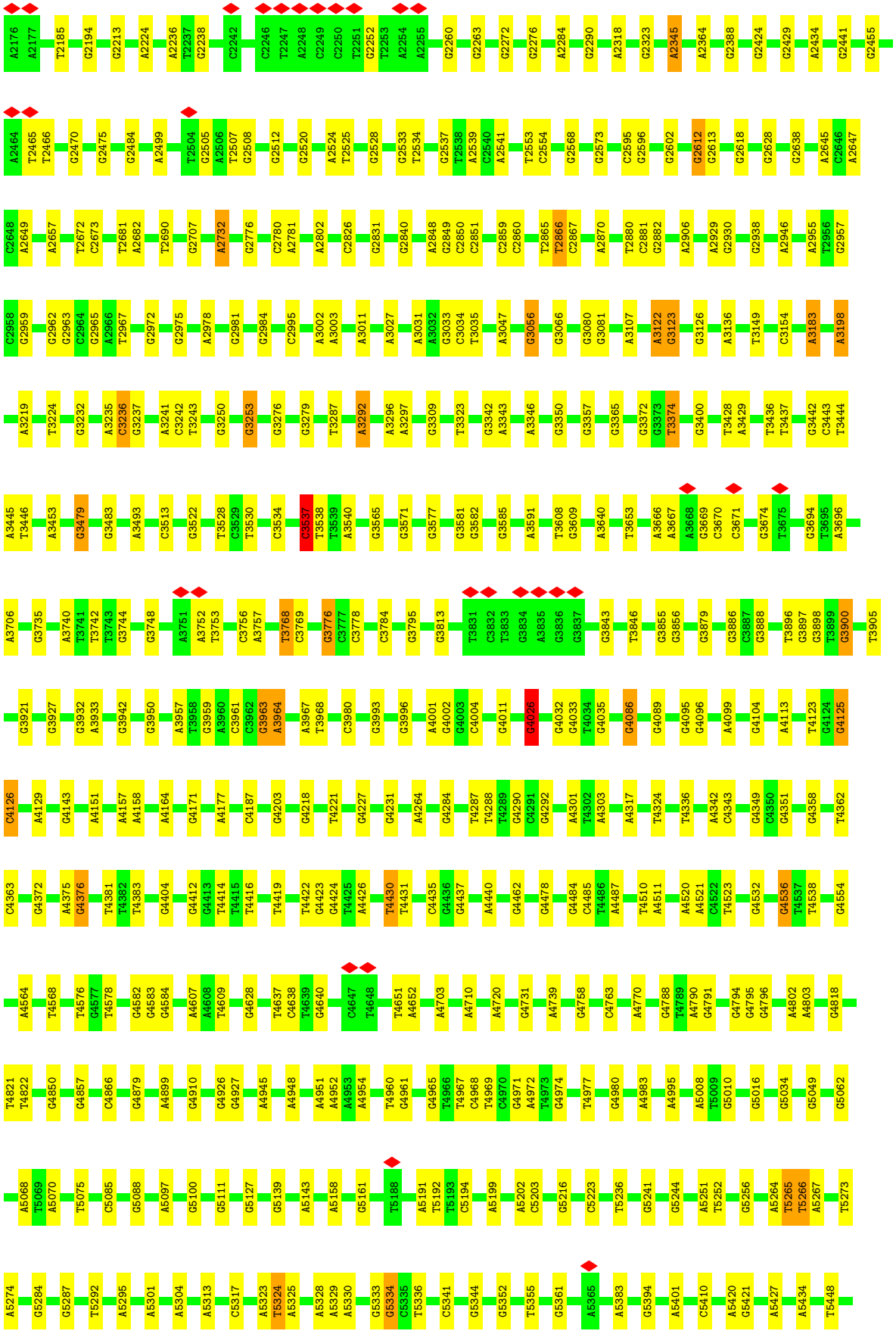
3 Residue-property plots (i)

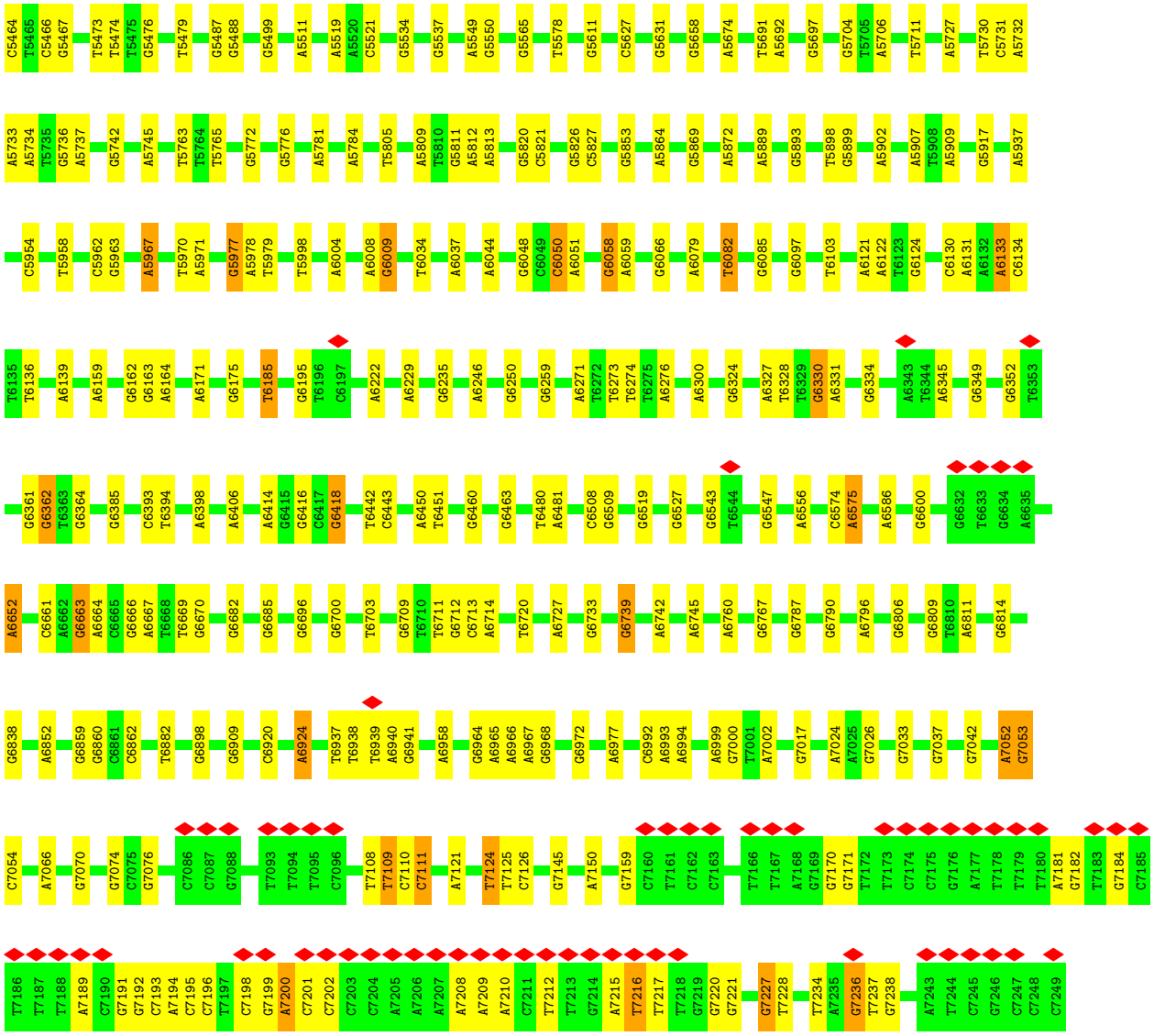
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

• Molecule 1: SCAFFOLD STRAND,SCAFFOLD STRAND

Chain AA:

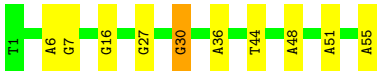



A2176 A2177 T2185 G2194 G2213 A2224 A2236 T2237 G2238 C2242 C2246 T2247 A2248 C2249 C2250 T2251 G2252 T2253 A2254 A2255 G2260 G2263 G2272 G2276 A2284 G2290 A2318 G2323 A2345 A2364 G2388 G2424 G2429 A2434 G2441 G2455
A2464 T2465 T2466 G2470 G2475 G2484 A2499 T2504 G2505 A2506 T2507 G2508 G2512 G2520 A2524 T2525 G2528 G2533 T2534 G2537 T2538 A2539 C2540 A2541 T2553 C2554 G2568 G2573 C2595 G2596 G2602 G2612 G2613 G2618 G2628 G2638 A2645 C2646 A2647
C2648 A2649 A2657 T2672 C2673 T2681 A2682 T2690 G2707 A2732 G2776 C2780 A2781 A2802 C2826 G2831 G2840 A2848 G2849 C2850 C2851 C2859 C2860 T2865 T2866 C2867 A2870 T2880 C2881 G2882 A2906 A2929 G2930 G2938 A2946 A2955 T2956 G2957
C2958 G2959 G2962 G2963 C2964 G2965 A2966 T2967 G2972 G2975 A2978 G2981 G2984 C2995 A3002 A3003 A3011 A3027 A3031 A3032 G3033 C3034 T3035 A3047 G3056 G3066 G3080 G3081 A3107 A3122 G3123 G3126 A3136 T3149 C3154 A3183 A3198
A3219 T3224 G3232 A3235 C3236 G3237 A3241 C3242 T3243 G3250 G3253 G3276 G3279 T3287 A3292 A3296 A3297 G3309 T3323 G3342 A3343 A3346 G3350 G3357 G3365 G3372 G3373 T3374 G3400 T3428 A3429 T3436 T3437 G3442 C3443 T3444
A3445 T3446 A3453 G3479 G3483 A3493 C3513 G3522 T3528 C3529 T3530 C3534 C3537 T3538 T3539 A3540 G3565 G3571 G3577 G3581 G3582 G3585 A3591 T3608 G3609 A3640 T3653 A3666 A3667 A3668 G3669 C3670 C3671 G3674 T3675 G3694 T3695 A3696
A3706 G3735 A3740 T3741 T3742 T3743 G3744 G3748 A3751 A3752 T3753 C3756 A3757 T3768 C3769 G3776 C3777 C3778 C3784 G3795 G3813 T3831 C3832 T3833 G3834 A3835 G3836 G3837 G3843 T3846 G3855 G3856 G3879 G3886 C3887 G3888 T3896 G3897 G3898 T3899 G3900 T3905
G3921 G3927 G3932 A3933 G3942 G3950 A3957 T3958 G3959 A3960 C3961 C3962 G3963 A3964 A3967 T3968 C3980 G3993 G3996 A4001 G4002 G4003 C4004 G4011 G4026 G4032 G4033 T4034 G4035 G4086 G4089 G4095 G4096 A4099 G4104 A4113 T4123 G4124 G4125
C4126 A4129 G4143 A4151 A4157 A4158 A4164 G4171 A4177 C4187 G4203 G4218 T4221 G4227 G4231 A4264 G4284 T4287 T4288 T4289 G4290 C4291 G4292 A4301 T4302 A4303 A4317 T4324 T4336 A4342 C4343 G4349 C4350 G4351 G4358 T4362
C4363 G4372 A4375 G4376 T4381 T4382 T4383 G4404 G4412 G4413 T4414 T4415 T4416 T4419 T4422 G4423 G4424 T4425 A4426 T4430 T4431 C4435 G4436 G4437 A4440 G4462 G4478 G4484 C4485 T4486 A4487 T4510 A4511 A4520 A4521 C4522 T4523 G4532 G4536 T4537 T4538 G4554
A4564 T4568 T4576 G4577 T4578 G4582 G4583 G4584 A4607 A4608 T4609 G4628 T4637 C4638 T4639 G4640 C4647 T4648 T4651 A4652 A4703 A4710 A4720 G4731 A4739 G4758 C4763 A4770 G4788 T4789 A4790 G4791 G4794 G4795 G4796 A4802 A4803 G4818
T4821 T4822 G4850 G4857 C4866 G4879 A4899 G4910 G4926 G4927 A4945 A4948 A4951 A4952 A4953 A4954 T4960 G4961 G4965 T4966 T4967 C4968 T4969 C4970 G4971 A4972 T4973 G4974 T4977 G4980 A4983 A4995 A5008 T5009 G5010 G5016 G5034 G5049 G5062
A5068 T5069 A5070 T5075 C5085 G5088 A5097 G5100 G5111 G5127 G5139 A5143 A5158 G5161 T5188 A5191 T5192 T5193 C5194 A5199 A5202 C5203 G5216 C5223 T5236 G5241 G5244 A5251 T5252 G5256 A5264 T5265 T5266 A5267 T5273
A5274 G5284 G5287 T5292 A5295 A5301 A5304 A5313 C5317 A5323 T5324 A5325 A5328 A5329 A5330 G5333 G5334 C5335 T5336 C5341 G5344 G5352 T5355 G5361 A5365 A5383 G5394 A5401 C5410 A5420 G5421 A5427 A5434 T5448



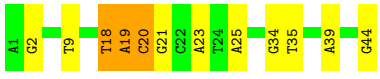
• Molecule 2: STAPLE STRAND

Chain A0:



• Molecule 3: STAPLE STRAND

Chain A1:

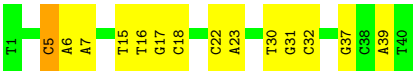


• Molecule 4: STAPLE STRAND

Chain A2:

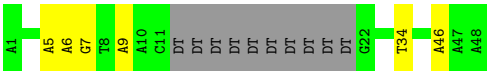
• Molecule 5: STAPLE STRAND

Chain A3:



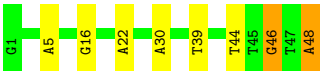
• Molecule 6: STAPLE STRAND

Chain A4:



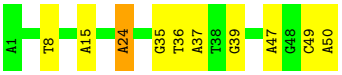
• Molecule 7: STAPLE STRAND

Chain A5:



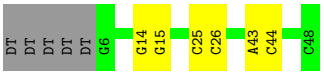
• Molecule 8: STAPLE STRAND

Chain A6:



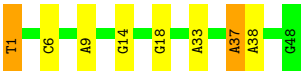
• Molecule 9: STAPLE STRAND

Chain A7:



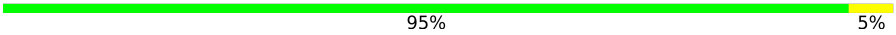
• Molecule 10: STAPLE STRAND

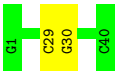
Chain A8:



• Molecule 11: STAPLE STRAND

Chain AB:



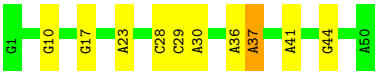


• Molecule 12: STAPLE STRAND

Chain AC:

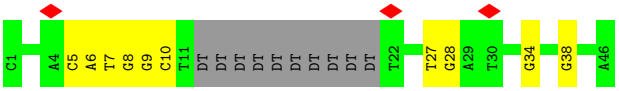
• Molecule 13: STAPLE STRAND

Chain AD:



• Molecule 14: STAPLE STRAND

Chain AE:



• Molecule 15: STAPLE STRAND

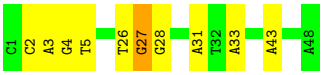
Chain AF:

• Molecule 16: STAPLE STRAND

Chain AG:

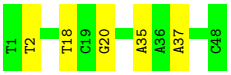
• Molecule 17: STAPLE STRAND

Chain AH:



• Molecule 18: STAPLE STRAND

Chain AI:

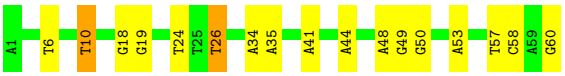


• Molecule 19: STAPLE STRAND

Chain AJ:

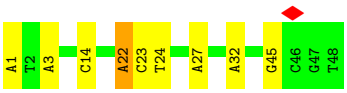
• Molecule 20: STAPLE STRAND

Chain AK:



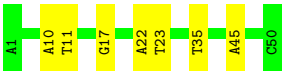
• Molecule 21: STAPLE STRAND

Chain AL:



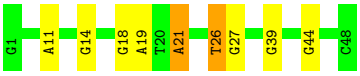
• Molecule 22: STAPLE STRAND

Chain AM:



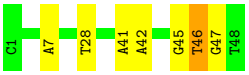
• Molecule 23: STAPLE STRAND

Chain AN:



• Molecule 24: STAPLE STRAND

Chain AO:



• Molecule 25: STAPLE STRAND

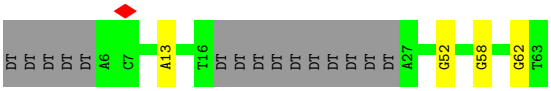
Chain AP:

• Molecule 26: STAPLE STRAND

Chain AQ:

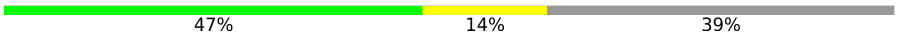
• Molecule 27: STAPLE STRAND

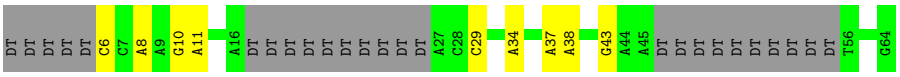
Chain AR:



• Molecule 28: STAPLE STRAND

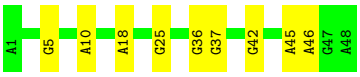
Chain AS:





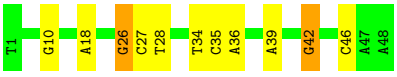
• Molecule 29: STAPLE STRAND

Chain AT:



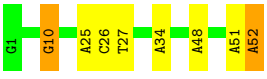
• Molecule 30: STAPLE STRAND

Chain AU:



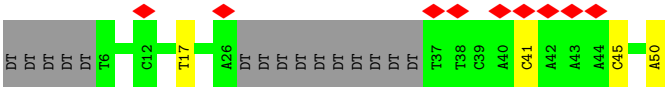
• Molecule 31: STAPLE STRAND

Chain AV:



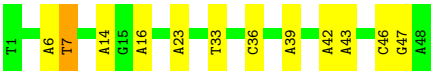
• Molecule 32: STAPLE STRAND

Chain AW:



• Molecule 33: STAPLE STRAND

Chain AX:

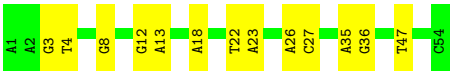


• Molecule 34: STAPLE STRAND

Chain AY:

• Molecule 35: STAPLE STRAND

Chain AZ:

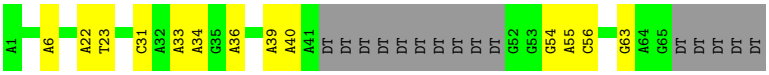


• Molecule 36: STAPLE STRAND

Chain Ab:

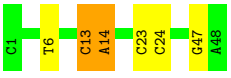
• Molecule 37: STAPLE STRAND

Chain Ac:



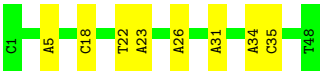
• Molecule 38: STAPLE STRAND

Chain Ad:



• Molecule 39: STAPLE STRAND

Chain Af:

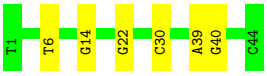


• Molecule 40: STAPLE STRAND

Chain Ag:

• Molecule 41: STAPLE STRAND

Chain Ah:

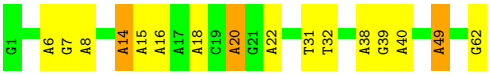


• Molecule 42: STAPLE STRAND

Chain Ai:

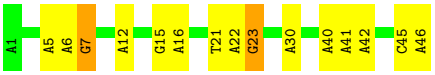
• Molecule 43: STAPLE STRAND

Chain Aj:



• Molecule 44: STAPLE STRAND

Chain Ak:

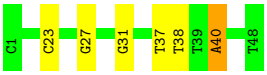


• Molecule 45: STAPLE STRAND

Chain Al:

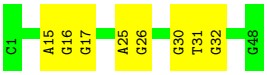
• Molecule 46: STAPLE STRAND

Chain Am:



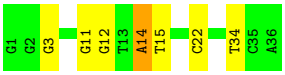
• Molecule 47: STAPLE STRAND

Chain An:



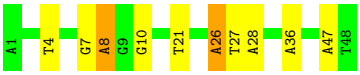
• Molecule 48: STAPLE STRAND

Chain Ao:



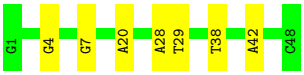
• Molecule 49: STAPLE STRAND

Chain As:



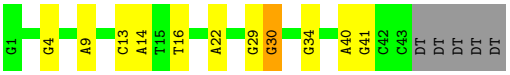
• Molecule 50: STAPLE STRAND

Chain Au:



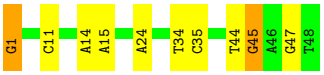
• Molecule 51: STAPLE STRAND

Chain Av:



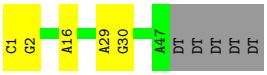
• Molecule 52: STAPLE STRAND

Chain Aw:



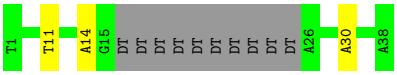
• Molecule 53: STAPLE STRAND

Chain Ax:



• Molecule 54: STAPLE STRAND

Chain Ay:

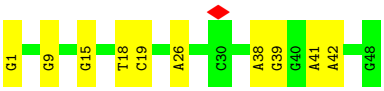


• Molecule 55: STAPLE STRAND

Chain Az:

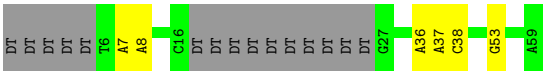
• Molecule 56: STAPLE STRAND

Chain B0:



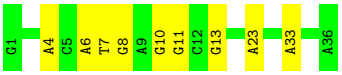
• Molecule 57: STAPLE STRAND

Chain B1:



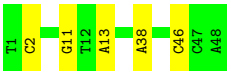
• Molecule 58: STAPLE STRAND

Chain B2:



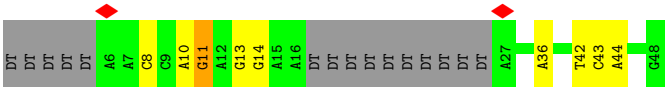
• Molecule 59: STAPLE STRAND

Chain B3:



• Molecule 60: STAPLE STRAND

Chain B4:

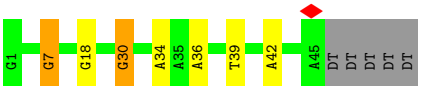


• Molecule 61: STAPLE STRAND

Chain B5:

• Molecule 62: STAPLE STRAND

Chain B6:

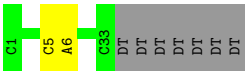


• Molecule 63: STAPLE STRAND

Chain B7:

• Molecule 64: STAPLE STRAND

Chain B8:

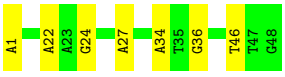


• Molecule 65: STAPLE STRAND

Chain B9:

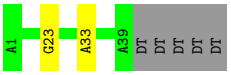
• Molecule 66: STAPLE STRAND

Chain BB:



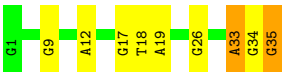
• Molecule 67: STAPLE STRAND

Chain BC:



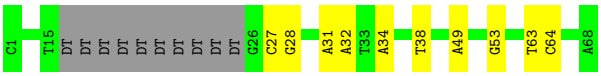
• Molecule 68: STAPLE STRAND

Chain BD:



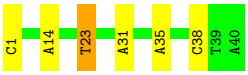
• Molecule 69: STAPLE STRAND

Chain BE:



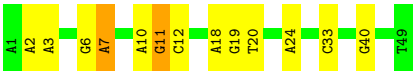
• Molecule 70: STAPLE STRAND

Chain BF:



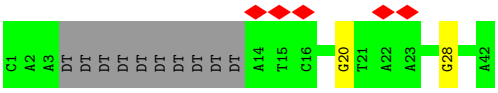
• Molecule 71: STAPLE STRAND

Chain BG:



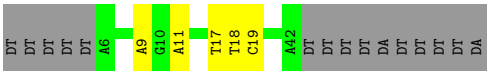
• Molecule 72: STAPLE STRAND

Chain BH:



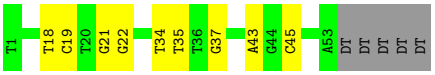
• Molecule 73: STAPLE STRAND

Chain BI:



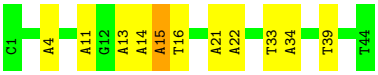
• Molecule 74: STAPLE STRAND

Chain BJ:



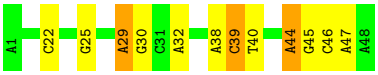
• Molecule 75: STAPLE STRAND

Chain BK:



• Molecule 76: STAPLE STRAND

Chain BL:

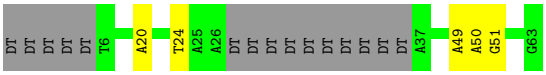


• Molecule 77: STAPLE STRAND

Chain BM:

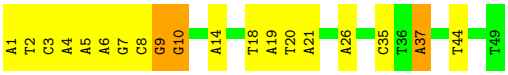
• Molecule 78: STAPLE STRAND

Chain BN:



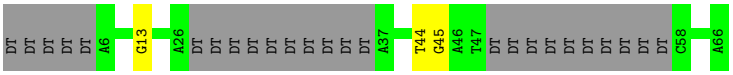
• Molecule 79: STAPLE STRAND

Chain BO:



• Molecule 80: STAPLE STRAND

Chain BP:

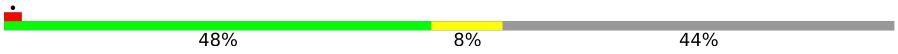


• Molecule 81: STAPLE STRAND

Chain BQ:

• Molecule 82: STAPLE STRAND

Chain BR:

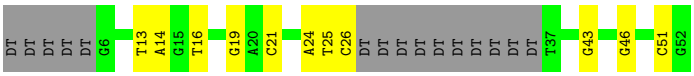


• Molecule 83: STAPLE STRAND

Chain BS:

• Molecule 84: STAPLE STRAND

Chain BT:

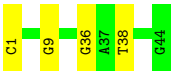


• Molecule 85: STAPLE STRAND

Chain BU:

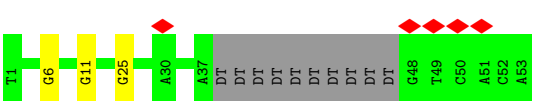
• Molecule 86: STAPLE STRAND

Chain BV:



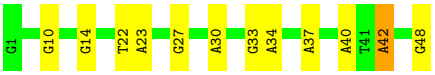
• Molecule 87: STAPLE STRAND

Chain BW:



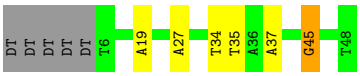
• Molecule 88: STAPLE STRAND

Chain BX:



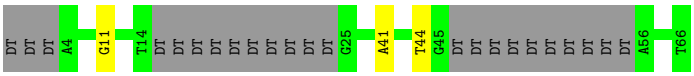
• Molecule 89: STAPLE STRAND

Chain BY:



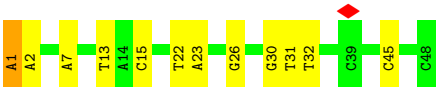
• Molecule 90: STAPLE STRAND

Chain BZ:



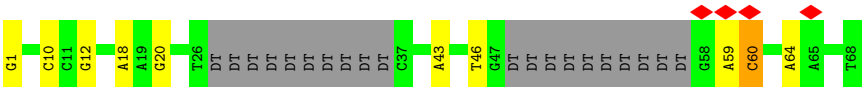
• Molecule 91: STAPLE STRAND

Chain Ba:



• Molecule 92: STAPLE STRAND

Chain Bb:

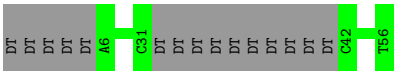


• Molecule 93: STAPLE STRAND

Chain Bc:

• Molecule 94: STAPLE STRAND

Chain Bd:

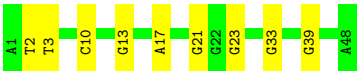


• Molecule 95: STAPLE STRAND

Chain Be:

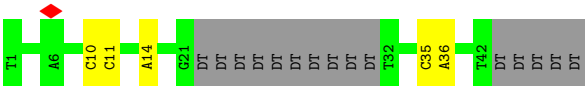
• Molecule 96: STAPLE STRAND

Chain Bf:



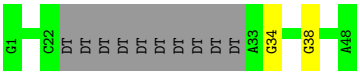
• Molecule 97: STAPLE STRAND

Chain Bg:



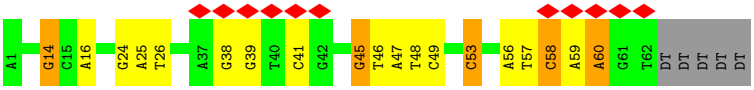
• Molecule 98: STAPLE STRAND

Chain Bh:



• Molecule 99: STAPLE STRAND

Chain Bi:

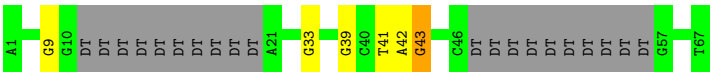


• Molecule 100: STAPLE STRAND

Chain Bj:

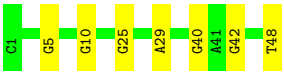
• Molecule 101: STAPLE STRAND

Chain Bk:



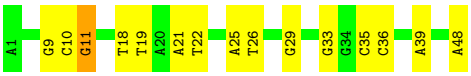
• Molecule 102: STAPLE STRAND

Chain Bl:



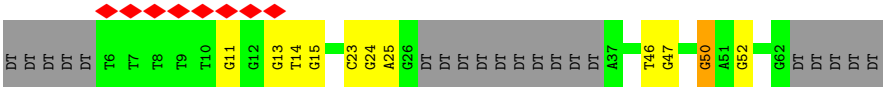
• Molecule 103: STAPLE STRAND

Chain Bm:



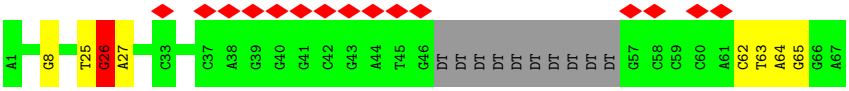
• Molecule 104: STAPLE STRAND

Chain Bn:



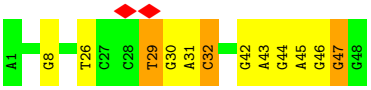
• Molecule 105: STAPLE STRAND

Chain Bo:



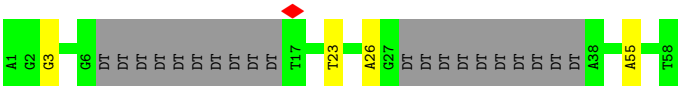
• Molecule 106: STAPLE STRAND

Chain Bp:



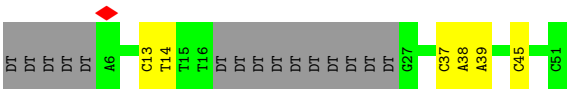
• Molecule 107: STAPLE STRAND

Chain Bq:



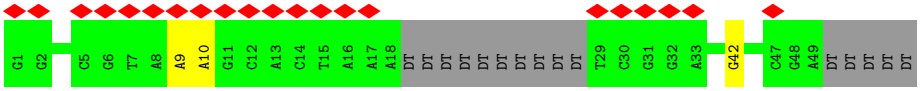
• Molecule 108: STAPLE STRAND

Chain Br:

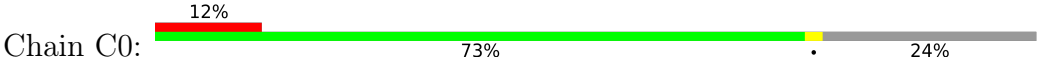


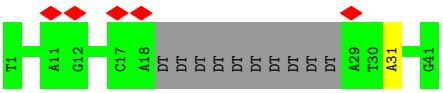
• Molecule 109: STAPLE STRAND

Chain Bs:



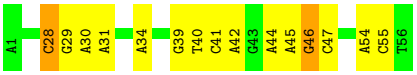
• Molecule 110: STAPLE STRAND



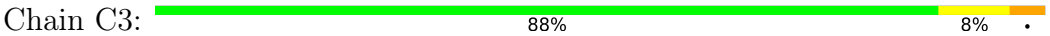


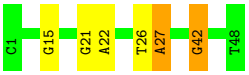
• Molecule 111: STAPLE STRAND

• Molecule 112: STAPLE STRAND

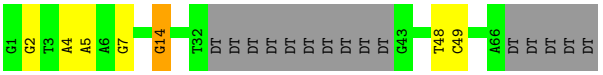


• Molecule 113: STAPLE STRAND

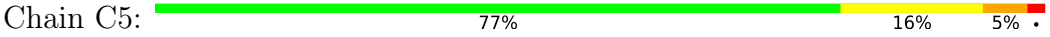




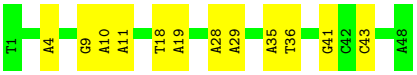
• Molecule 114: STAPLE STRAND



• Molecule 115: STAPLE STRAND

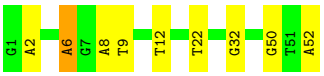


• Molecule 116: STAPLE STRAND



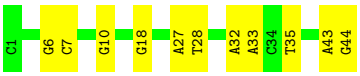
• Molecule 117: STAPLE STRAND

Chain C7:



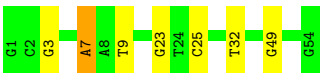
• Molecule 118: STAPLE STRAND

Chain C8:



• Molecule 119: STAPLE STRAND

Chain CB:

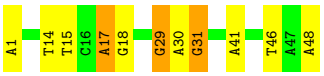


• Molecule 120: STAPLE STRAND

Chain CC:

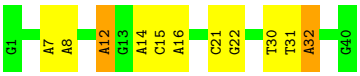
• Molecule 121: STAPLE STRAND

Chain CD:



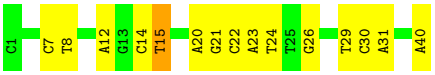
• Molecule 122: STAPLE STRAND

Chain CE:



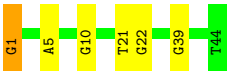
• Molecule 123: STAPLE STRAND

Chain CF:



• Molecule 124: STAPLE STRAND

Chain CG:



• Molecule 125: STAPLE STRAND

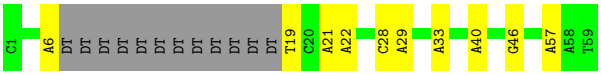
Chain CH:

• Molecule 126: STAPLE STRAND

Chain CI:

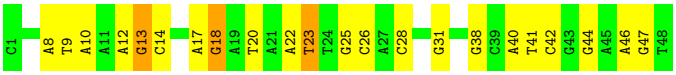
• Molecule 127: STAPLE STRAND

Chain CJ:



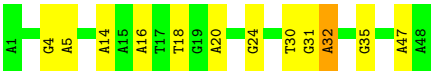
• Molecule 128: STAPLE STRAND

Chain CK:



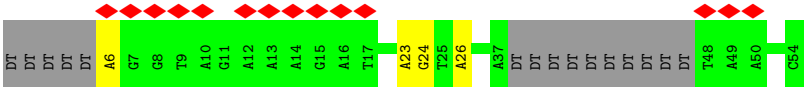
• Molecule 129: STAPLE STRAND

Chain CL:

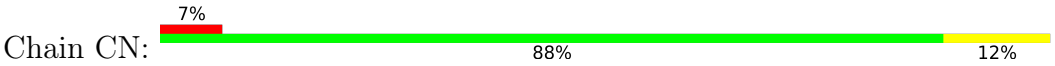


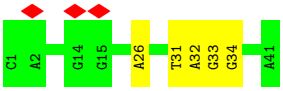
• Molecule 130: STAPLE STRAND

Chain CM:

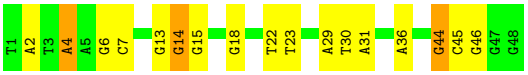


• Molecule 131: STAPLE STRAND





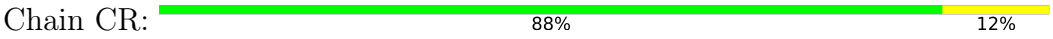
• Molecule 132: STAPLE STRAND

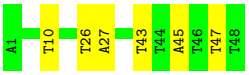


• Molecule 133: STAPLE STRAND

• Molecule 134: STAPLE STRAND

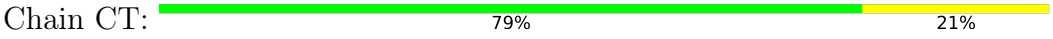
• Molecule 135: STAPLE STRAND

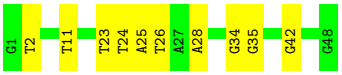




• Molecule 136: STAPLE STRAND

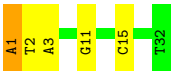
• Molecule 137: STAPLE STRAND





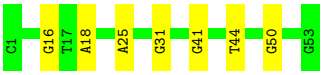
• Molecule 138: STAPLE STRAND

Chain CU:



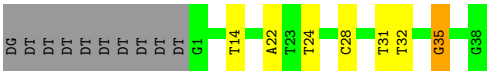
• Molecule 139: STAPLE STRAND

Chain CV:



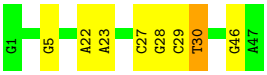
• Molecule 140: STAPLE STRAND

Chain CW:



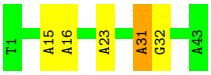
• Molecule 141: STAPLE STRAND

Chain CX:



• Molecule 142: STAPLE STRAND

Chain CY:

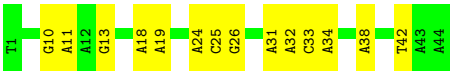


• Molecule 143: STAPLE STRAND

Chain CZ:

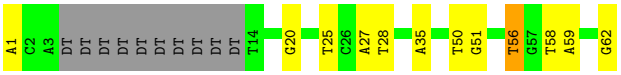
• Molecule 144: STAPLE STRAND

Chain Cb:



• Molecule 145: STAPLE STRAND

Chain Cc:

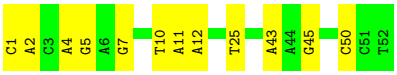


• Molecule 146: STAPLE STRAND

Chain Cd:

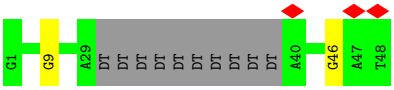
• Molecule 147: STAPLE STRAND

Chain Ce:



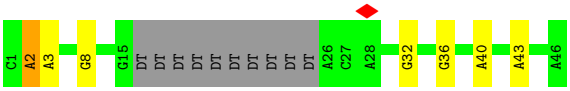
• Molecule 148: STAPLE STRAND

Chain Cf:



• Molecule 149: STAPLE STRAND

Chain Cg:

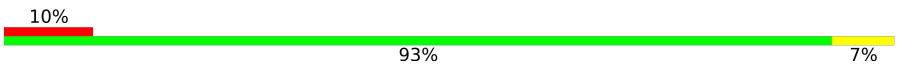


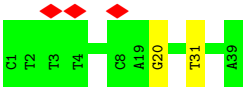
• Molecule 150: STAPLE STRAND

Chain Ch:

• Molecule 151: STAPLE STRAND

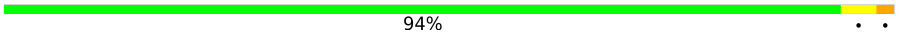
Chain Ck:





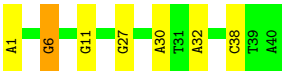
• Molecule 152: STAPLE STRAND

Chain Cp:



• Molecule 153: STAPLE STRAND

Chain Cq:

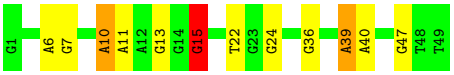


• Molecule 154: STAPLE STRAND

Chain Cr:

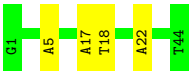
• Molecule 155: STAPLE STRAND

Chain Cs:



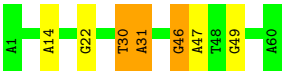
• Molecule 156: STAPLE STRAND

Chain Ct:



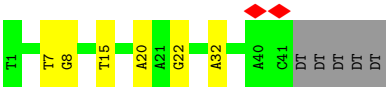
• Molecule 157: STAPLE STRAND

Chain Cu:



• Molecule 158: STAPLE STRAND

Chain Cv:



• Molecule 159: STAPLE STRAND

Chain Cw:

• Molecule 160: STAPLE STRAND

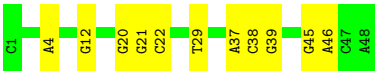
Chain Cx:

• Molecule 161: STAPLE STRAND

Chain Cy:

• Molecule 162: STAPLE STRAND

Chain Cz:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	28502	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	WIENER FILTER (RELION)	Depositor
Microscope	FEI POLARA 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	10	Depositor
Minimum defocus (nm)	890	Depositor
Maximum defocus (nm)	4460	Depositor
Magnification	39436	Depositor
Image detector	FEI FALCON I (4k x 4k)	Depositor
Maximum map value	0.509	Depositor
Minimum map value	-0.314	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.032	Depositor
Recommended contour level	0.1	Depositor
Map size (Å)	610.6, 610.6, 610.6	wwPDB
Map dimensions	172, 172, 172	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	3.55, 3.55, 3.55	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	AA	0.82	18/165646 (0.0%)	1.35	372/255486 (0.1%)
2	A0	0.76	0/1254	1.38	3/1923 (0.2%)
3	A1	0.78	0/989	1.51	7/1514 (0.5%)
4	A2	0.80	0/1149	1.45	7/1762 (0.4%)
5	A3	0.78	0/888	1.52	8/1358 (0.6%)
6	A4	0.77	0/878	1.37	2/1352 (0.1%)
7	A5	0.77	0/1091	1.41	5/1673 (0.3%)
8	A6	0.76	0/1140	1.42	6/1751 (0.3%)
9	A7	0.80	0/969	1.39	2/1484 (0.1%)
10	A8	0.76	0/1093	1.33	3/1679 (0.2%)
11	AB	0.77	0/894	1.29	1/1370 (0.1%)
12	AC	0.77	0/1118	1.33	1/1723 (0.1%)
13	AD	0.79	0/1144	1.40	5/1759 (0.3%)
14	AE	0.77	0/823	1.32	2/1267 (0.2%)
15	AF	0.78	0/1082	1.31	2/1662 (0.1%)
16	AG	0.80	0/1057	1.36	5/1625 (0.3%)
17	AH	0.78	0/1079	1.35	3/1656 (0.2%)
18	AI	0.79	0/1085	1.40	3/1661 (0.2%)
19	AJ	0.77	0/1189	1.40	4/1828 (0.2%)
20	AK	0.74	0/1342	1.37	5/2055 (0.2%)
21	AL	0.77	0/1085	1.32	1/1669 (0.1%)
22	AM	0.73	0/1107	1.26	1/1693 (0.1%)
23	AN	0.79	0/1084	1.38	4/1664 (0.2%)
24	AO	0.78	0/1075	1.38	7/1649 (0.4%)
25	AP	0.76	0/897	1.32	1/1375 (0.1%)
26	AQ	0.81	0/1302	1.49	10/1999 (0.5%)
27	AR	0.77	0/1094	1.35	2/1681 (0.1%)
28	AS	0.81	0/895	1.42	5/1372 (0.4%)
29	AT	0.79	0/1091	1.35	2/1674 (0.1%)
30	AU	0.76	0/1085	1.36	5/1661 (0.3%)
31	AV	0.74	0/1178	1.32	0/1807
32	AW	0.79	0/783	1.40	3/1202 (0.2%)
33	AX	0.78	0/1074	1.41	7/1643 (0.4%)
34	AY	0.79	0/723	1.46	6/1109 (0.5%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
35	AZ	0.78	0/1211	1.37	7/1854 (0.4%)
36	Ab	0.76	0/1015	1.36	2/1557 (0.1%)
37	Ac	0.77	0/1252	1.36	6/1920 (0.3%)
38	Ad	0.74	0/1069	1.31	4/1637 (0.2%)
39	Af	0.78	0/1082	1.41	5/1656 (0.3%)
40	Ag	0.79	0/1098	1.35	3/1689 (0.2%)
41	Ah	0.75	0/971	1.34	1/1486 (0.1%)
42	Ai	0.80	0/809	1.38	2/1239 (0.2%)
43	Aj	0.78	0/1412	1.45	13/2166 (0.6%)
44	Ak	0.79	0/1065	1.47	10/1637 (0.6%)
45	Al	0.75	0/1056	1.37	4/1614 (0.2%)
46	Am	0.76	0/1077	1.37	5/1650 (0.3%)
47	An	0.76	0/1088	1.28	1/1672 (0.1%)
48	Ao	0.77	0/810	1.35	2/1241 (0.2%)
49	As	0.75	0/1085	1.34	2/1666 (0.1%)
50	Au	0.77	0/1075	1.36	5/1650 (0.3%)
51	Av	0.76	0/975	1.28	1/1495 (0.1%)
52	Aw	0.77	0/1072	1.39	7/1642 (0.4%)
53	Ax	0.76	0/1067	1.30	1/1640 (0.1%)
54	Ay	0.77	0/638	1.31	2/979 (0.2%)
55	Az	0.78	0/828	1.36	5/1273 (0.4%)
56	B0	0.77	0/1094	1.30	1/1683 (0.1%)
57	B1	0.76	0/1013	1.31	1/1557 (0.1%)
58	B2	0.81	0/825	1.41	7/1268 (0.6%)
59	B3	0.76	0/1094	1.30	2/1683 (0.1%)
60	B4	0.78	0/745	1.38	2/1142 (0.2%)
61	B5	0.76	0/917	1.36	3/1410 (0.2%)
62	B6	0.78	0/1047	1.45	3/1614 (0.2%)
63	B7	0.77	0/996	1.33	2/1533 (0.1%)
64	B8	0.75	0/730	1.28	0/1117
65	B9	0.78	0/907	1.43	9/1393 (0.6%)
66	BB	0.78	0/1104	1.32	2/1700 (0.1%)
67	BC	0.76	0/897	1.33	0/1381
68	BD	0.77	0/820	1.37	2/1265 (0.2%)
69	BE	0.77	0/1329	1.34	3/2044 (0.1%)
70	BF	0.77	0/906	1.37	3/1393 (0.2%)
71	BG	0.79	0/1134	1.49	9/1746 (0.5%)
72	BH	0.78	0/722	1.36	0/1107
73	BI	0.76	0/609	1.34	3/935 (0.3%)
74	BJ	0.79	0/1205	1.36	4/1853 (0.2%)
75	BK	0.78	0/1005	1.48	9/1543 (0.6%)
76	BL	0.77	0/1079	1.38	7/1657 (0.4%)
77	BM	0.79	1/959 (0.1%)	1.27	0/1475

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
78	BN	0.80	0/1086	1.41	3/1669 (0.2%)
79	BO	0.76	0/1098	1.38	11/1687 (0.7%)
80	BP	0.77	0/921	1.31	1/1414 (0.1%)
81	BQ	0.78	0/1087	1.38	7/1672 (0.4%)
82	BR	0.74	0/822	1.29	1/1263 (0.1%)
83	BS	0.76	0/1081	1.30	4/1660 (0.2%)
84	BT	0.79	0/843	1.36	4/1298 (0.3%)
85	BU	0.79	0/909	1.34	4/1398 (0.3%)
86	BV	0.78	0/1003	1.35	2/1545 (0.1%)
87	BW	0.76	0/979	1.28	0/1507
88	BX	0.76	0/1114	1.34	1/1717 (0.1%)
89	BY	0.77	0/976	1.36	4/1500 (0.3%)
90	BZ	0.77	0/976	1.34	0/1499
91	Ba	0.78	0/1086	1.41	9/1670 (0.5%)
92	Bb	0.80	0/1093	1.40	5/1679 (0.3%)
93	Bc	0.76	0/1135	1.33	3/1746 (0.2%)
94	Bd	0.78	0/937	1.30	0/1443
95	Be	0.78	0/1096	1.33	3/1687 (0.2%)
96	Bf	0.81	0/1101	1.45	3/1694 (0.2%)
97	Bg	0.75	0/723	1.32	2/1110 (0.2%)
98	Bh	0.77	0/880	1.26	0/1358
99	Bi	0.77	0/1406	1.37	7/2161 (0.3%)
100	Bj	0.76	0/1016	1.37	3/1560 (0.2%)
101	Bk	0.77	0/1085	1.31	2/1670 (0.1%)
102	Bl	0.79	0/1110	1.35	3/1709 (0.2%)
103	Bm	0.77	0/1078	1.34	7/1654 (0.4%)
104	Bn	0.78	0/1096	1.29	4/1693 (0.2%)
105	Bo	0.77	0/1292	1.29	4/1986 (0.2%)
106	Bp	0.78	0/1108	1.38	6/1706 (0.4%)
107	Bq	0.76	0/881	1.29	1/1357 (0.1%)
108	Br	0.76	0/818	1.29	2/1259 (0.2%)
109	Bs	0.75	0/901	1.26	0/1386
110	C0	0.76	0/709	1.27	0/1091
111	C1	0.75	0/824	1.35	2/1265 (0.2%)
112	C2	0.74	0/1259	1.32	6/1930 (0.3%)
113	C3	0.76	0/1077	1.33	3/1651 (0.2%)
114	C4	0.76	0/1269	1.32	4/1950 (0.2%)
115	C5	0.78	0/1433	1.37	10/2209 (0.5%)
116	C6	0.75	0/1097	1.40	7/1685 (0.4%)
117	C7	0.76	0/1181	1.33	2/1817 (0.1%)
118	C8	0.78	0/998	1.36	6/1533 (0.4%)
119	CB	0.75	0/1215	1.29	2/1867 (0.1%)
120	CC	0.78	0/1082	1.39	3/1666 (0.2%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
121	CD	0.79	0/1106	1.41	8/1702 (0.5%)
122	CE	0.75	0/917	1.46	7/1409 (0.5%)
123	CF	0.74	0/908	1.37	7/1395 (0.5%)
124	CG	0.77	0/1013	1.29	2/1562 (0.1%)
125	CH	0.76	0/1107	1.31	0/1707
126	CI	0.76	0/996	1.33	5/1528 (0.3%)
127	CJ	0.77	0/1061	1.38	3/1626 (0.2%)
128	CK	0.77	0/1103	1.38	8/1695 (0.5%)
129	CL	0.76	0/1082	1.39	3/1659 (0.2%)
130	CM	0.78	0/903	1.35	3/1390 (0.2%)
131	CN	0.78	0/955	1.38	2/1474 (0.1%)
132	CO	0.76	0/1092	1.40	5/1678 (0.3%)
133	CP	0.77	0/1279	1.35	7/1969 (0.4%)
134	CQ	0.78	0/623	1.37	1/952 (0.1%)
135	CR	0.76	0/1084	1.33	4/1667 (0.2%)
136	CS	0.78	0/867	1.37	0/1333
137	CT	0.76	0/1102	1.36	4/1695 (0.2%)
138	CU	0.78	0/728	1.45	3/1119 (0.3%)
139	CV	0.78	0/1192	1.35	3/1830 (0.2%)
140	CW	0.80	0/629	1.34	3/965 (0.3%)
141	CX	0.77	0/1055	1.31	8/1618 (0.5%)
142	CY	0.77	0/979	1.42	4/1501 (0.3%)
143	CZ	0.78	0/1113	1.40	4/1713 (0.2%)
144	Cb	0.75	0/999	1.43	6/1532 (0.4%)
145	Cc	0.77	0/1174	1.32	4/1800 (0.2%)
146	Cd	0.77	0/965	1.39	2/1486 (0.1%)
147	Ce	0.76	0/1175	1.41	8/1802 (0.4%)
148	Cf	0.75	0/862	1.35	0/1321
149	Cg	0.78	0/827	1.33	2/1270 (0.2%)
150	Ch	0.78	0/1048	1.39	6/1605 (0.4%)
151	Ck	0.76	0/653	1.28	2/1004 (0.2%)
152	Cp	0.76	0/1095	1.32	1/1682 (0.1%)
153	Cq	0.78	0/930	1.35	1/1436 (0.1%)
154	Cr	0.80	0/816	1.48	8/1251 (0.6%)
155	Cs	0.77	0/1140	1.40	3/1756 (0.2%)
156	Ct	0.76	0/991	1.33	1/1521 (0.1%)
157	Cu	0.75	0/1366	1.37	4/2096 (0.2%)
158	Cv	0.77	0/918	1.36	2/1409 (0.1%)
159	Cw	0.79	0/1232	1.38	8/1893 (0.4%)
160	Cx	0.79	0/820	1.46	6/1258 (0.5%)
161	Cy	0.76	0/1286	1.33	2/1977 (0.1%)
162	Cz	0.77	0/1090	1.37	3/1672 (0.2%)
All	All	0.80	19/330437 (0.0%)	1.35	974/508627 (0.2%)

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
1	AA	40	448
2	A0	0	6
3	A1	1	4
4	A2	0	2
6	A4	0	2
7	A5	0	4
8	A6	0	4
9	A7	0	3
10	A8	0	5
11	AB	0	1
12	AC	0	3
13	AD	0	2
15	AF	1	4
16	AG	0	3
17	AH	1	2
18	AI	1	2
19	AJ	0	4
20	AK	0	8
21	AL	0	4
22	AM	0	1
23	AN	1	3
24	AO	2	3
25	AP	0	1
26	AQ	2	6
27	AR	0	2
28	AS	0	4
29	AT	1	4
30	AU	1	4
31	AV	1	5
33	AX	0	3
34	AY	1	4
35	AZ	2	4
36	Ab	2	2
37	Ac	0	2
38	Ad	0	2
39	Af	0	1
40	Ag	0	1
41	Ah	1	3
42	Ai	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
43	Aj	1	5
44	Ak	0	7
45	Al	1	4
46	Am	0	2
47	An	1	4
48	Ao	1	2
49	As	0	3
50	Au	1	0
51	Av	0	6
52	Aw	1	2
53	Ax	0	2
54	Ay	0	1
55	Az	0	3
56	B0	0	6
57	B1	0	1
58	B2	0	2
59	B3	1	1
60	B4	1	5
61	B5	1	2
62	B6	1	5
63	B7	0	5
65	B9	1	3
66	BB	1	3
67	BC	0	1
68	BD	0	4
69	BE	0	3
70	BF	1	2
71	BG	0	7
72	BH	0	2
73	BI	0	2
74	BJ	3	2
75	BK	0	1
76	BL	1	5
77	BM	0	1
78	BN	0	1
79	BO	0	6
80	BP	0	2
81	BQ	1	2
82	BR	0	3
83	BS	0	5
84	BT	0	3
85	BU	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
86	BV	2	1
87	BW	1	3
88	BX	0	7
89	BY	1	2
90	BZ	0	1
91	Ba	0	3
92	Bb	0	2
93	Bc	1	4
94	Bd	1	0
95	Be	1	0
96	Bf	1	4
97	Bg	1	1
98	Bh	0	2
99	Bi	0	3
100	Bj	0	1
101	Bk	0	4
102	Bl	0	3
103	Bm	1	3
104	Bn	0	5
105	Bo	1	5
106	Bp	2	7
107	Bq	0	3
108	Br	0	1
109	Bs	0	1
111	C1	0	1
112	C2	1	2
113	C3	1	4
114	C4	0	2
115	C5	3	3
116	C6	0	3
117	C7	0	4
118	C8	0	3
119	CB	0	3
120	CC	2	3
121	CD	2	3
122	CE	1	2
123	CF	0	2
124	CG	0	4
125	CH	0	4
126	CI	1	4
127	CJ	0	5
128	CK	1	5

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Mol	Chain	#Chirality outliers	#Planarity outliers
129	CL	1	5
131	CN	0	1
132	CO	1	7
133	CP	0	5
134	CQ	0	1
135	CR	2	0
136	CS	0	4
137	CT	2	5
138	CU	0	1
139	CV	0	3
140	CW	4	2
141	CX	0	3
142	CY	1	0
143	CZ	0	4
144	Cb	1	2
145	Cc	1	5
146	Cd	0	3
147	Ce	4	4
148	Cf	0	1
149	Cg	0	4
150	Ch	0	2
152	Cp	0	3
153	Cq	0	5
154	Cr	0	2
155	Cs	1	8
156	Ct	1	0
157	Cu	1	2
158	Cv	0	3
159	Cw	0	5
160	Cx	0	4
161	Cy	0	2
162	Cz	0	6
All	All	121	919

All (19) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	AA	3933	DA	O3'-P	-62.75	0.67	1.61
1	AA	437	DT	O3'-P	-43.89	0.95	1.61
1	AA	186	DT	O3'-P	-40.82	0.99	1.61
1	AA	4125	DG	O3'-P	33.14	2.10	1.61
1	AA	955	DG	O3'-P	30.77	2.07	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	AA	3768	DT	O3'-P	25.76	1.99	1.61
1	AA	1618	DG	O3'-P	-24.64	1.24	1.61
1	AA	1506	DA	O3'-P	22.90	1.95	1.61
1	AA	1346	DT	O3'-P	21.40	1.93	1.61
1	AA	4536	DG	O3'-P	-21.03	1.29	1.61
1	AA	1084	DG	O3'-P	-20.36	1.30	1.61
1	AA	511	DA	O3'-P	-17.66	1.34	1.61
1	AA	35	DC	O3'-P	16.93	1.86	1.61
1	AA	2524	DA	O3'-P	13.95	1.82	1.61
1	AA	501	DC	O3'-P	13.27	1.81	1.61
1	AA	3342	DG	O3'-P	9.51	1.75	1.61
77	BM	42	DA	O3'-P	-8.29	1.48	1.61
1	AA	378	DG	O3'-P	5.65	1.69	1.61
1	AA	1970	DT	O3'-P	5.64	1.69	1.61

All (974) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	35	DC	O3'-P-O5'	-59.32	15.02	104.00
1	AA	378	DG	O3'-P-O5'	-57.21	18.19	104.00
1	AA	378	DG	P-O3'-C3'	-55.18	37.43	120.20
1	AA	35	DC	P-O3'-C3'	-47.32	49.22	120.20
1	AA	511	DA	P-O3'-C3'	-42.47	56.49	120.20
1	AA	437	DT	O3'-P-O5'	-35.40	50.91	104.00
1	AA	2524	DA	O3'-P-O5'	-34.86	51.70	104.00
1	AA	4536	DG	P-O3'-C3'	-34.29	68.77	120.20
1	AA	3342	DG	P-O3'-C3'	-31.66	72.71	120.20
1	AA	2524	DA	P-O3'-C3'	-30.03	75.16	120.20
1	AA	1970	DT	P-O3'-C3'	29.68	164.72	120.20
1	AA	4536	DG	O3'-P-O5'	-29.31	60.03	104.00
1	AA	3933	DA	OP2-P-O3'	-28.03	23.91	108.00
1	AA	511	DA	O3'-P-O5'	-27.75	62.38	104.00
1	AA	3236	DC	O3'-P-O5'	-27.11	63.34	104.00
1	AA	3342	DG	O3'-P-O5'	-26.70	63.95	104.00
1	AA	437	DT	P-O3'-C3'	-24.67	83.20	120.20
1	AA	116	DG	P-O3'-C3'	22.63	154.14	120.20
1	AA	116	DG	O3'-P-O5'	-20.62	73.06	104.00
1	AA	3768	DT	O3'-P-O5'	20.58	134.87	104.00
1	AA	1506	DA	P-O3'-C3'	20.15	150.43	120.20
1	AA	186	DT	P-O3'-C3'	-17.80	93.50	120.20
1	AA	3236	DC	P-O3'-C3'	-17.62	93.77	120.20
1	AA	501	DC	O3'-P-O5'	-17.52	77.72	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	511	DA	OP2-P-O3'	17.52	160.55	108.00
1	AA	511	DA	OP1-P-O3'	-17.24	56.29	108.00
1	AA	5266	DT	P-O3'-C3'	-16.53	95.41	120.20
1	AA	3236	DC	OP2-P-O3'	16.28	156.85	108.00
142	CY	15	DA	P-O3'-C3'	15.89	144.04	120.20
1	AA	116	DG	OP2-P-O3'	15.64	154.92	108.00
34	AY	11	DA	P-O3'-C3'	15.48	143.42	120.20
52	Aw	1	DG	P-O3'-C3'	15.21	143.02	120.20
46	Am	23	DC	P-O3'-C3'	14.81	142.42	120.20
76	BL	39	DC	P-O3'-C3'	14.76	142.34	120.20
1	AA	1346	DT	O3'-P-O5'	-14.53	82.20	104.00
23	AN	11	DA	P-O3'-C3'	14.52	141.98	120.20
63	B7	27	DA	P-O3'-C3'	14.14	141.41	120.20
1	AA	7052	DA	P-O3'-C3'	14.13	141.39	120.20
1	AA	1970	DT	OP2-P-O3'	-14.10	65.70	108.00
155	Cs	15	DG	P-O3'-C3'	14.08	141.33	120.20
5	A3	31	DG	P-O3'-C3'	13.54	140.52	120.20
1	AA	4125	DG	P-O3'-C3'	13.48	140.41	120.20
8	A6	24	DA	P-O3'-C3'	13.27	140.10	120.20
43	Aj	31	DT	P-O3'-C3'	13.26	140.09	120.20
1	AA	955	DG	P-O3'-C3'	13.10	139.85	120.20
10	A8	1	DT	P-O3'-C3'	13.02	139.73	120.20
1	AA	1913	DG	P-O5'-C5'	13.00	139.50	120.00
95	Be	3	DC	P-O3'-C3'	12.94	139.61	120.20
147	Ce	1	DC	P-O3'-C3'	12.92	139.57	120.20
1	AA	186	DT	O3'-P-O5'	-12.90	84.65	104.00
44	Ak	41	DA	P-O3'-C3'	12.79	139.39	120.20
1	AA	6739	DG	P-O3'-C3'	12.54	139.01	120.20
1	AA	4802	DA	P-O3'-C3'	12.53	138.99	120.20
3	A1	19	DA	P-O3'-C3'	12.46	138.90	120.20
26	AQ	47	DG	P-O3'-C3'	12.40	138.81	120.20
27	AR	62	DG	P-O3'-C3'	12.32	138.68	120.20
1	AA	501	DC	P-O3'-C3'	-12.26	101.81	120.20
150	Ch	11	DA	P-O3'-C3'	12.19	138.48	120.20
129	CL	47	DA	P-O3'-C3'	12.11	138.36	120.20
144	Cb	19	DA	P-O3'-C3'	12.07	138.31	120.20
1	AA	5763	DT	P-O3'-C3'	11.90	138.06	120.20
7	A5	39	DT	P-O3'-C3'	11.90	138.05	120.20
70	BF	1	DC	P-O3'-C3'	11.82	137.94	120.20
1	AA	6667	DA	P-O3'-C3'	11.75	137.83	120.20
38	Ad	23	DC	P-O3'-C3'	11.72	137.78	120.20
65	B9	1	DA	P-O3'-C3'	11.68	137.72	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
20	AK	35	DA	P-O3'-C3'	11.62	137.63	120.20
116	C6	11	DA	P-O3'-C3'	11.60	137.60	120.20
132	CO	31	DA	P-O3'-C3'	11.60	137.59	120.20
1	AA	4652	DA	P-O3'-C3'	11.52	137.47	120.20
5	A3	23	DA	P-O3'-C3'	11.43	137.35	120.20
154	Cr	42	DG	P-O3'-C3'	11.40	137.30	120.20
5	A3	39	DA	P-O3'-C3'	11.39	137.29	120.20
1	AA	1618	DG	OP1-P-O3'	-11.32	74.03	108.00
160	Cx	41	DA	P-O3'-C3'	11.29	137.14	120.20
26	AQ	31	DA	P-O3'-C3'	11.29	137.13	120.20
1	AA	4536	DG	OP2-P-O3'	11.14	141.43	108.00
114	C4	14	DG	P-O3'-C3'	10.93	136.60	120.20
86	BV	1	DC	P-O3'-C3'	10.91	136.57	120.20
50	Au	38	DT	P-O3'-C3'	10.90	136.55	120.20
69	BE	63	DT	P-O3'-C3'	10.78	136.37	120.20
138	CU	1	DA	P-O3'-C3'	10.76	136.35	120.20
141	CX	27	DC	P-O3'-C3'	10.67	136.21	120.20
161	Cy	15	DA	P-O3'-C3'	10.66	136.19	120.20
5	A3	15	DT	P-O3'-C3'	10.65	136.18	120.20
62	B6	30	DG	P-O3'-C3'	10.57	136.06	120.20
1	AA	3933	DA	OP1-P-O3'	10.56	139.67	108.00
1	AA	6543	DG	P-O3'-C3'	10.46	135.89	120.20
1	AA	6162	DG	P-O3'-C3'	10.39	135.78	120.20
1	AA	5100	DG	P-O3'-C3'	10.38	135.78	120.20
1	AA	5266	DT	O3'-P-O5'	-10.37	88.45	104.00
34	AY	12	DG	P-O3'-C3'	10.26	135.59	120.20
142	CY	31	DA	P-O3'-C3'	10.21	135.52	120.20
1	AA	6508	DC	P-O3'-C3'	10.15	135.42	120.20
43	Aj	39	DG	P-O3'-C3'	10.13	135.40	120.20
114	C4	2	DG	P-O3'-C3'	10.10	135.36	120.20
58	B2	7	DT	P-O3'-C3'	10.10	135.35	120.20
146	Cd	26	DA	P-O3'-C3'	10.08	135.32	120.20
79	BO	19	DA	P-O3'-C3'	10.00	135.20	120.20
1	AA	1660	DG	P-O3'-C3'	9.97	135.16	120.20
48	Ao	15	DT	P-O3'-C3'	9.95	135.13	120.20
137	CT	11	DT	P-O3'-C3'	9.93	135.09	120.20
1	AA	4424	DG	P-O3'-C3'	9.91	135.07	120.20
1	AA	426	DG	P-O3'-C3'	9.90	135.05	120.20
91	Ba	23	DA	P-O3'-C3'	9.89	135.03	120.20
1	AA	1782	DG	P-O3'-C3'	9.87	135.00	120.20
46	Am	31	DG	P-O3'-C3'	9.84	134.95	120.20
1	AA	6418	DG	P-O5'-C5'	9.80	134.70	120.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
160	Cx	44	DA	P-O3'-C3'	9.79	134.89	120.20
1	AA	5325	DA	P-O5'-C5'	9.79	134.69	120.00
1	AA	179	DG	P-O3'-C3'	9.75	134.82	120.20
1	AA	3540	DA	P-O3'-C3'	9.74	134.80	120.20
1	AA	356	DG	P-O3'-C3'	9.70	134.75	120.20
1	AA	3342	DG	OP1-P-O3'	9.67	137.01	108.00
19	AJ	40	DC	P-O3'-C3'	9.65	134.68	120.20
1	AA	6050	DC	P-O3'-C3'	9.65	134.67	120.20
1	AA	2534	DT	P-O3'-C3'	9.59	134.59	120.20
1	AA	164	DG	P-O3'-C3'	9.56	134.54	120.20
26	AQ	17	DG	P-O3'-C3'	9.50	134.45	120.20
1	AA	4794	DG	P-O3'-C3'	9.45	134.38	120.20
1	AA	6034	DT	P-O3'-C3'	9.44	134.37	120.20
1	AA	6246	DA	P-O3'-C3'	9.41	134.31	120.20
60	B4	11	DG	P-O3'-C3'	9.40	134.30	120.20
1	AA	437	DT	OP1-P-O3'	9.32	135.96	108.00
1	AA	6450	DA	P-O5'-C5'	9.32	133.98	120.00
1	AA	6048	DG	P-O3'-C3'	9.32	134.18	120.20
158	Cv	7	DT	P-O3'-C3'	9.29	134.14	120.20
154	Cr	43	DG	P-O3'-C3'	9.27	134.10	120.20
158	Cv	15	DT	P-O3'-C3'	9.21	134.02	120.20
26	AQ	18	DG	P-O3'-C3'	9.21	134.01	120.20
71	BG	3	DA	P-O3'-C3'	9.20	133.99	120.20
1	AA	4796	DG	P-O3'-C3'	9.19	133.99	120.20
154	Cr	40	DC	P-O3'-C3'	9.19	133.99	120.20
1	AA	16	DC	P-O3'-C3'	9.18	133.97	120.20
1	AA	6222	DA	P-O3'-C3'	9.17	133.96	120.20
1	AA	4376	DG	P-O3'-C3'	9.17	133.95	120.20
85	BU	40	DA	P-O3'-C3'	9.16	133.95	120.20
1	AA	4422	DT	P-O3'-C3'	9.14	133.91	120.20
39	Af	31	DA	P-O3'-C3'	9.10	133.84	120.20
1	AA	4731	DG	P-O3'-C3'	9.04	133.76	120.20
1	AA	5284	DG	P-O3'-C3'	9.01	133.71	120.20
1	AA	3350	DG	P-O3'-C3'	8.98	133.67	120.20
1	AA	1618	DG	OP2-P-O3'	8.95	134.84	108.00
156	Ct	18	DT	P-O3'-C3'	8.94	133.62	120.20
1	AA	6273	DT	P-O3'-C3'	8.90	133.55	120.20
154	Cr	4	DA	P-O3'-C3'	8.82	133.43	120.20
40	Ag	7	DA	P-O3'-C3'	8.77	133.36	120.20
1	AA	4264	DA	P-O3'-C3'	8.77	133.35	120.20
1	AA	331	DA	P-O3'-C3'	8.77	133.35	120.20
1	AA	116	DG	OP1-P-O3'	-8.75	81.76	108.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
93	Bc	8	DC	P-O3'-C3'	8.72	133.28	120.20
68	BD	9	DG	P-O3'-C3'	8.68	133.21	120.20
1	AA	1970	DT	O3'-P-O5'	8.66	116.99	104.00
45	Al	26	DT	P-O5'-C5'	8.62	132.93	120.00
1	AA	5070	DA	P-O5'-C5'	8.62	132.93	120.00
1	AA	1618	DG	P-O3'-C3'	-8.61	107.28	120.20
119	CB	7	DA	P-O3'-C3'	8.58	133.06	120.20
89	BY	34	DT	P-O3'-C3'	8.57	133.06	120.20
83	BS	15	DC	P-O3'-C3'	8.54	133.02	120.20
1	AA	2194	DG	P-O3'-C3'	8.52	132.98	120.20
96	Bf	10	DC	P-O3'-C3'	8.52	132.98	120.20
1	AA	7217	DT	P-O3'-C3'	8.47	132.90	120.20
1	AA	2826	DC	P-O3'-C3'	8.47	132.90	120.20
116	C6	43	DC	P-O3'-C3'	8.41	132.81	120.20
81	BQ	6	DA	O3'-P-O5'	-8.40	91.40	104.00
26	AQ	15	DC	P-O3'-C3'	8.39	132.78	120.20
1	AA	6463	DG	P-O3'-C3'	8.35	132.72	120.20
26	AQ	50	DG	P-O3'-C3'	8.34	132.71	120.20
1	AA	4324	DT	P-O3'-C3'	8.32	132.68	120.20
1	AA	3483	DG	P-O5'-C5'	8.31	132.47	120.00
123	CF	15	DT	P-O3'-C3'	8.31	132.66	120.20
27	AR	13	DA	P-O3'-C3'	8.28	132.62	120.20
1	AA	5692	DA	P-O3'-C3'	8.27	132.60	120.20
43	Aj	49	DA	P-O3'-C3'	8.21	132.52	120.20
1	AA	5977	DG	P-O5'-C5'	8.19	132.29	120.00
1	AA	186	DT	OP2-P-O3'	8.19	132.57	108.00
1	AA	7194	DA	P-O3'-C3'	8.17	132.45	120.20
117	C7	12	DT	P-O3'-C3'	8.10	132.35	120.20
99	Bi	45	DG	P-O3'-C3'	8.08	132.32	120.20
13	AD	36	DA	P-O3'-C3'	8.06	132.29	120.20
1	AA	1346	DT	OP2-P-O3'	8.05	132.15	108.00
1	AA	4794	DG	O3'-P-O5'	-8.03	91.95	104.00
1	AA	952	DG	P-O3'-C3'	7.94	132.11	120.20
143	CZ	34	DG	P-O3'-C3'	7.93	132.10	120.20
1	AA	1554	DA	P-O3'-C3'	7.92	132.09	120.20
1	AA	7111	DC	P-O3'-C3'	7.89	132.04	120.20
1	AA	2781	DA	P-O3'-C3'	7.87	132.00	120.20
1	AA	37	DA	P-O5'-C5'	7.80	131.70	120.00
1	AA	4971	DG	P-O5'-C5'	7.78	131.68	120.00
1	AA	5336	DT	P-O3'-C3'	7.75	131.82	120.20
1	AA	3236	DC	OP1-P-O3'	-7.72	84.83	108.00
1	AA	1612	DT	P-O3'-C3'	7.71	131.76	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
29	AT	46	DA	P-O3'-C3'	7.68	131.72	120.20
1	AA	5805	DT	P-O5'-C5'	7.68	131.52	120.00
92	Bb	18	DA	P-O3'-C3'	7.67	131.71	120.20
1	AA	5324	DT	P-O5'-C5'	7.66	131.49	120.00
108	Br	13	DC	P-O3'-C3'	7.64	131.66	120.20
1	AA	2508	DG	P-O3'-C3'	7.64	131.66	120.20
1	AA	1970	DT	OP1-P-O3'	7.62	130.86	108.00
78	BN	20	DA	P-O3'-C3'	7.60	131.61	120.20
19	AJ	24	DT	P-O3'-C3'	7.58	131.58	120.20
133	CP	28	DC	P-O3'-C3'	7.55	131.53	120.20
26	AQ	51	DA	P-O3'-C3'	7.53	131.49	120.20
1	AA	33	DG	P-O3'-C3'	7.52	131.47	120.20
1	AA	2938	DG	P-O3'-C3'	7.52	131.47	120.20
1	AA	6066	DG	P-O3'-C3'	7.50	131.45	120.20
1	AA	2236	DA	P-O3'-C3'	7.50	131.44	120.20
24	AO	42	DA	P-O3'-C3'	7.46	131.40	120.20
1	AA	6324	DG	O5'-C5'-C4'	-7.45	99.62	110.80
147	Ce	50	DC	C5'-C4'-C3'	-7.45	103.72	114.90
60	B4	8	DC	P-O3'-C3'	7.42	131.34	120.20
147	Ce	10	DT	O3'-P-O5'	-7.40	92.89	104.00
1	AA	2946	DA	P-O3'-C3'	7.38	131.27	120.20
28	AS	11	DA	P-O3'-C3'	7.38	131.27	120.20
1	AA	6882	DT	P-O3'-C3'	7.37	131.25	120.20
130	CM	24	DG	P-O3'-C3'	7.37	131.25	120.20
1	AA	2595	DC	P-O3'-C3'	7.36	131.24	120.20
1	AA	2851	DC	P-O5'-C5'	7.33	131.00	120.00
1	AA	6136	DT	P-O3'-C3'	7.32	131.19	120.20
79	BO	9	DG	P-O3'-C3'	7.32	131.18	120.20
5	A3	5	DC	P-O3'-C3'	7.29	131.14	120.20
1	AA	5978	DA	P-O5'-C5'	7.29	130.93	120.00
141	CX	30	DT	C5'-C4'-C3'	-7.28	103.98	114.90
74	BJ	19	DC	P-O3'-C3'	7.27	131.10	120.20
1	AA	3011	DA	P-O5'-C5'	7.27	130.90	120.00
1	AA	5772	DG	P-O3'-C3'	7.26	131.09	120.20
1	AA	3027	DA	P-O5'-C5'	7.22	130.83	120.00
1	AA	5267	DA	P-O5'-C5'	-7.20	109.20	120.00
1	AA	5317	DC	P-O5'-C5'	7.18	130.77	120.00
160	Cx	42	DA	P-O3'-C3'	7.18	130.97	120.20
17	AH	43	DA	P-O5'-C5'	7.17	130.76	120.00
1	AA	1506	DA	O3'-P-O5'	7.17	114.76	104.00
105	Bo	65	DG	P-O3'-C3'	7.15	130.92	120.20
1	AA	6924	DA	P-O3'-C3'	7.15	130.92	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	4821	DT	P-O3'-C3'	7.13	130.90	120.20
75	BK	15	DA	C5'-C4'-C3'	-7.13	104.20	114.90
102	Bl	10	DG	P-O3'-C3'	7.12	130.88	120.20
1	AA	5971	DA	P-O5'-C5'	7.09	130.64	120.00
4	A2	10	DA	P-O3'-C3'	7.08	130.83	120.20
1	AA	5410	DC	P-O3'-C3'	7.07	130.81	120.20
1	AA	3297	DA	P-O5'-C5'	7.06	130.59	120.00
1	AA	2524	DA	OP2-P-O3'	7.05	129.16	108.00
45	Al	43	DT	P-O3'-C3'	7.05	130.78	120.20
159	Cw	26	DG	P-O3'-C3'	7.04	130.76	120.20
1	AA	1063	DT	P-O3'-C3'	7.04	130.76	120.20
144	Cb	11	DA	P-O3'-C3'	7.04	130.75	120.20
43	Aj	32	DT	P-O5'-C5'	-7.03	109.45	120.00
75	BK	14	DA	P-O3'-C3'	7.03	130.74	120.20
50	Au	4	DG	P-O5'-C5'	7.03	130.54	120.00
20	AK	48	DA	P-O5'-C5'	7.02	130.53	120.00
14	AE	34	DG	P-O3'-C3'	7.02	130.73	120.20
157	Cu	30	DT	O3'-P-O5'	-7.01	93.49	104.00
1	AA	607	DA	P-O3'-C3'	7.00	130.69	120.20
128	CK	31	DG	P-O3'-C3'	6.98	130.67	120.20
147	Ce	43	DA	P-O3'-C3'	6.98	130.67	120.20
46	Am	40	DA	P-O3'-C3'	6.96	130.64	120.20
79	BO	9	DG	O3'-P-O5'	-6.94	93.58	104.00
1	AA	2554	DC	P-O3'-C3'	6.91	130.56	120.20
91	Ba	31	DT	C5'-C4'-C3'	-6.91	104.54	114.90
1	AA	3776	DG	P-O3'-C3'	6.90	130.54	120.20
1	AA	4638	DC	C5'-C4'-C3'	-6.89	104.56	114.90
1	AA	2780	DC	P-O3'-C3'	6.88	130.52	120.20
106	Bp	31	DA	C1'-O4'-C4'	-6.88	99.38	109.70
1	AA	5085	DC	P-O5'-C5'	6.87	130.31	120.00
1	AA	34	DT	P-O3'-C3'	6.87	130.50	120.20
24	AO	28	DT	P-O5'-C5'	6.87	130.30	120.00
32	AW	41	DC	P-O3'-C3'	6.87	130.50	120.20
92	Bb	59	DA	P-O3'-C3'	6.85	130.48	120.20
37	Ac	36	DA	P-O3'-C3'	6.84	130.47	120.20
103	Bm	26	DT	P-O3'-C3'	6.83	130.44	120.20
89	BY	19	DA	P-O5'-C5'	-6.82	109.76	120.00
127	CJ	21	DA	P-O3'-C3'	6.82	130.43	120.20
71	BG	7	DA	P-O3'-C3'	6.81	130.41	120.20
43	Aj	6	DA	O3'-P-O5'	-6.80	93.80	104.00
159	Cw	33	DA	P-O3'-C3'	6.80	130.40	120.20
40	Ag	13	DG	P-O3'-C3'	6.76	130.34	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
124	CG	1	DG	P-O3'-C3'	6.76	130.34	120.20
1	AA	6058	DG	P-O3'-C3'	6.75	130.33	120.20
1	AA	4125	DG	O3'-P-O5'	6.75	114.13	104.00
1	AA	2596	DG	P-O3'-C3'	6.75	130.32	120.20
1	AA	6163	DG	P-O3'-C3'	6.75	130.32	120.20
105	Bo	25	DT	P-O3'-C3'	6.73	130.30	120.20
1	AA	6162	DG	P-O5'-C5'	-6.73	109.91	120.00
12	AC	19	DG	P-O3'-C3'	6.72	130.28	120.20
75	BK	33	DT	P-O3'-C3'	6.72	130.28	120.20
1	AA	5427	DA	P-O5'-C5'	6.72	130.08	120.00
65	B9	47	DA	P-O3'-C3'	6.72	130.28	120.20
24	AO	41	DA	P-O3'-C3'	6.71	130.27	120.20
121	CD	14	DT	P-O3'-C3'	6.71	130.27	120.20
1	AA	3756	DC	P-O3'-C3'	6.70	130.25	120.20
1	AA	3122	DA	P-O3'-C3'	6.67	130.20	120.20
9	A7	44	DC	P-O3'-C3'	6.66	130.20	120.20
91	Ba	31	DT	O5'-C5'-C4'	-6.64	100.84	110.80
55	Az	42	DC	P-O3'-C3'	6.63	130.14	120.20
32	AW	17	DT	P-O3'-C3'	6.62	130.13	120.20
15	AF	2	DC	P-O3'-C3'	6.62	130.12	120.20
1	AA	3933	DA	P-O3'-C3'	-6.61	110.28	120.20
118	C8	7	DC	P-O5'-C5'	6.61	129.91	120.00
91	Ba	15	DC	O5'-C5'-C4'	-6.60	100.91	110.80
4	A2	12	DA	P-O3'-C3'	6.59	130.09	120.20
144	Cb	24	DA	P-O3'-C3'	6.56	130.04	120.20
1	AA	3757	DA	P-O3'-C3'	6.55	130.03	120.20
1	AA	5812	DA	P-O5'-C5'	6.55	129.82	120.00
1	AA	5394	DG	P-O3'-C3'	6.54	130.01	120.20
92	Bb	60	DC	P-O3'-C3'	6.54	130.01	120.20
22	AM	17	DG	P-O3'-C3'	6.53	130.00	120.20
154	Cr	41	DC	P-O3'-C3'	6.51	129.97	120.20
1	AA	1617	DT	P-O3'-C3'	6.50	129.95	120.20
155	Cs	39	DA	O5'-C5'-C4'	-6.48	101.08	110.80
140	CW	35	DG	P-O3'-C3'	6.48	129.92	120.20
123	CF	7	DC	C5'-C4'-C3'	-6.47	105.19	114.90
71	BG	11	DG	C5'-C4'-C3'	-6.46	105.21	114.90
1	AA	429	DT	P-O3'-C3'	6.46	129.88	120.20
1	AA	1044	DT	P-O3'-C3'	6.45	129.88	120.20
103	Bm	36	DC	P-O3'-C3'	6.45	129.88	120.20
8	A6	24	DA	O3'-P-O5'	-6.44	94.34	104.00
141	CX	46	DG	P-O3'-C3'	6.42	129.83	120.20
1	AA	2345	DA	P-O3'-C3'	6.41	129.81	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
105	Bo	63	DT	P-O3'-C3'	6.40	129.79	120.20
50	Au	7	DG	P-O3'-C3'	6.39	129.79	120.20
7	A5	48	DA	P-O5'-C5'	6.39	129.58	120.00
1	AA	3927	DG	P-O3'-C3'	6.38	129.78	120.20
65	B9	22	DC	P-O3'-C3'	6.38	129.77	120.20
3	A1	20	DC	P-O3'-C3'	6.37	129.76	120.20
37	Ac	33	DA	P-O3'-C3'	6.36	129.74	120.20
1	AA	6664	DA	P-O3'-C3'	6.35	129.73	120.20
161	Cy	32	DC	P-O3'-C3'	6.35	129.73	120.20
58	B2	33	DA	P-O3'-C3'	6.35	129.72	120.20
1	AA	1546	DA	P-O3'-C3'	6.34	129.72	120.20
1	AA	6185	DT	P-O3'-C3'	6.34	129.71	120.20
157	Cu	31	DA	O5'-C5'-C4'	-6.34	101.29	110.80
63	B7	28	DA	P-O3'-C3'	6.32	129.69	120.20
1	AA	3253	DG	P-O3'-C3'	6.30	129.66	120.20
4	A2	39	DA	P-O3'-C3'	6.30	129.65	120.20
1	AA	5733	DA	P-O5'-C5'	6.30	129.45	120.00
17	AH	27	DG	O5'-C5'-C4'	-6.30	101.35	110.80
1	AA	4637	DT	O3'-P-O5'	-6.29	94.57	104.00
45	Al	25	DC	O3'-P-O5'	-6.27	94.59	104.00
1	AA	6669	DT	P-O5'-C5'	-6.27	110.60	120.00
128	CK	8	DA	C5'-C4'-C3'	-6.26	105.51	114.90
147	Ce	50	DC	P-O5'-C5'	-6.25	110.62	120.00
65	B9	46	DG	P-O3'-C3'	6.25	129.58	120.20
121	CD	31	DG	C5'-C4'-C3'	-6.25	105.53	114.90
149	Cg	36	DG	P-O3'-C3'	6.24	129.56	120.20
1	AA	1968	DA	P-O3'-C3'	6.24	129.56	120.20
29	AT	45	DA	P-O3'-C3'	6.23	129.55	120.20
1	AA	1506	DA	OP1-P-O3'	-6.22	89.33	108.00
16	AG	3	DG	P-O3'-C3'	6.22	129.53	120.20
35	AZ	47	DT	P-O5'-C5'	-6.21	110.68	120.00
162	Cz	39	DG	C5'-C4'-C3'	-6.21	105.58	114.90
1	AA	6330	DG	P-O3'-C3'	6.20	129.50	120.20
3	A1	35	DT	P-O3'-C3'	6.20	129.50	120.20
7	A5	5	DA	O3'-P-O5'	-6.20	94.70	104.00
151	Ck	31	DT	P-O5'-C5'	6.20	129.29	120.00
132	CO	23	DT	C5'-C4'-C3'	-6.19	105.62	114.90
131	CN	34	DG	P-O3'-C3'	6.18	129.47	120.20
159	Cw	44	DT	P-O3'-C3'	6.18	129.47	120.20
30	AU	46	DC	P-O3'-C3'	6.17	129.45	120.20
1	AA	3066	DG	P-O3'-C3'	6.16	129.45	120.20
78	BN	49	DA	P-O3'-C3'	6.16	129.44	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	7053	DG	P-O3'-C3'	6.16	129.44	120.20
50	Au	38	DT	O3'-P-O5'	-6.15	94.77	104.00
159	Cw	3	DA	P-O5'-C5'	-6.15	110.77	120.00
75	BK	14	DA	O3'-P-O5'	-6.15	94.78	104.00
1	AA	3374	DT	P-O3'-C3'	6.14	129.42	120.20
137	CT	26	DT	P-O3'-C3'	6.14	129.41	120.20
1	AA	5010	DG	P-O3'-C3'	6.14	129.41	120.20
1	AA	115	DG	P-O3'-C3'	6.14	129.41	120.20
1	AA	3493	DA	P-O3'-C3'	6.13	129.40	120.20
65	B9	21	DA	P-O3'-C3'	6.13	129.40	120.20
1	AA	5864	DA	P-O3'-C3'	6.13	129.39	120.20
1	AA	4866	DC	P-O3'-C3'	6.12	129.38	120.20
79	BO	37	DA	P-O3'-C3'	6.11	129.37	120.20
133	CP	29	DT	P-O5'-C5'	-6.11	110.83	120.00
143	CZ	11	DG	C5'-C4'-C3'	-6.11	105.74	114.90
1	AA	1621	DC	P-O3'-C3'	6.10	129.35	120.20
76	BL	30	DG	O3'-P-O5'	-6.09	94.86	104.00
33	AX	23	DA	P-O3'-C3'	6.09	129.33	120.20
118	C8	43	DA	P-O3'-C3'	6.09	129.33	120.20
1	AA	1766	DT	P-O3'-C3'	6.09	129.33	120.20
35	AZ	18	DA	P-O3'-C3'	6.08	129.32	120.20
1	AA	21	DT	P-O3'-C3'	6.08	129.32	120.20
84	BT	13	DT	O3'-P-O5'	-6.08	94.88	104.00
1	AA	1084	DG	O3'-P-O5'	6.08	113.12	104.00
150	Ch	38	DA	P-O3'-C3'	6.08	129.31	120.20
100	Bj	39	DA	P-O3'-C3'	6.07	129.31	120.20
1	AA	2466	DT	P-O5'-C5'	6.07	129.10	120.00
99	Bi	56	DA	P-O3'-C3'	6.07	129.30	120.20
42	Ai	9	DG	P-O3'-C3'	6.06	129.29	120.20
152	Cp	24	DA	P-O3'-C3'	6.06	129.28	120.20
141	CX	30	DT	P-O5'-C5'	-6.04	110.94	120.00
159	Cw	28	DA	P-O3'-C3'	6.04	129.26	120.20
96	Bf	23	DG	P-O3'-C3'	6.04	129.25	120.20
8	A6	36	DT	P-O3'-C3'	6.04	129.25	120.20
1	AA	3198	DA	P-O5'-C5'	-6.03	110.95	120.00
56	B0	1	DG	P-O3'-C3'	6.03	129.25	120.20
1	AA	2962	DG	C4-N9-C1'	-6.03	117.96	127.00
1	AA	2657	DA	P-O5'-C5'	6.02	129.03	120.00
81	BQ	27	DA	P-O3'-C3'	6.02	129.23	120.20
13	AD	36	DA	O3'-P-O5'	-6.02	94.97	104.00
1	AA	5265	DT	P-O3'-C3'	6.01	129.22	120.20
7	A5	46	DG	P-O3'-C3'	-6.01	111.18	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
70	BF	38	DC	O3'-P-O5'	-6.01	94.99	104.00
37	Ac	31	DC	P-O3'-C3'	6.00	129.21	120.20
86	BV	9	DG	P-O3'-C3'	6.00	129.20	120.20
99	Bi	53	DC	P-O3'-C3'	6.00	129.20	120.20
133	CP	35	DT	O5'-C5'-C4'	-6.00	101.80	110.80
141	CX	27	DC	O3'-P-O5'	-5.99	95.01	104.00
1	AA	5963	DG	P-O5'-C5'	5.97	128.96	120.00
1	AA	5062	DG	P-O3'-C3'	5.95	129.13	120.20
1	AA	1396	DC	P-O3'-C3'	5.94	129.11	120.20
1	AA	3346	DA	P-O3'-C3'	5.94	129.11	120.20
150	Ch	37	DA	P-O3'-C3'	5.94	129.11	120.20
43	Aj	20	DA	P-O5'-C5'	5.94	128.90	120.00
126	CI	19	DA	P-O3'-C3'	5.93	129.10	120.20
44	Ak	5	DA	P-O3'-C3'	5.93	129.10	120.20
13	AD	37	DA	C5'-C4'-C3'	-5.93	106.01	114.90
1	AA	1952	DT	P-O3'-C3'	5.93	129.09	120.20
28	AS	38	DA	P-O3'-C3'	5.93	129.09	120.20
44	Ak	21	DT	C5'-C4'-C3'	-5.93	106.01	114.90
1	AA	2867	DC	P-O5'-C5'	5.92	128.88	120.00
39	Af	26	DA	P-O3'-C3'	5.92	129.08	120.20
145	Cc	27	DA	P-O3'-C3'	5.91	129.06	120.20
95	Be	22	DC	P-O3'-C3'	5.90	129.04	120.20
127	CJ	22	DA	P-O3'-C3'	5.89	129.04	120.20
1	AA	1520	DC	P-O5'-C5'	5.89	128.83	120.00
1	AA	6652	DA	P-O3'-C3'	5.88	129.03	120.20
1	AA	2859	DC	P-O5'-C5'	5.88	128.82	120.00
92	Bb	1	DG	P-O3'-C3'	5.88	129.02	120.20
122	CE	21	DC	O3'-P-O5'	-5.88	95.18	104.00
1	AA	4187	DC	P-O5'-C5'	5.87	128.81	120.00
1	AA	648	DG	P-O3'-C3'	5.86	128.98	120.20
1	AA	89	DT	C5'-C4'-C3'	5.85	123.67	114.90
1	AA	333	DG	P-O3'-C3'	5.84	128.96	120.20
115	C5	41	DC	O5'-C5'-C4'	-5.84	102.04	110.80
28	AS	29	DC	P-O3'-C3'	5.84	128.95	120.20
122	CE	32	DA	P-O3'-C3'	5.84	128.95	120.20
120	CC	14	DG	C5'-C4'-C3'	-5.83	106.15	114.90
91	Ba	13	DT	O3'-P-O5'	-5.83	95.25	104.00
1	AA	3653	DT	P-O3'-C3'	5.82	128.93	120.20
1	AA	2525	DT	O4'-C1'-C2'	-5.81	97.68	106.40
149	Cg	43	DA	P-O3'-C3'	5.81	128.92	120.20
92	Bb	64	DA	P-O3'-C3'	5.81	128.92	120.20
1	AA	3967	DA	P-O3'-C3'	5.81	128.91	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
30	AU	35	DC	P-O3'-C3'	5.81	128.91	120.20
39	Af	34	DA	P-O3'-C3'	5.81	128.91	120.20
142	CY	16	DA	P-O3'-C3'	5.81	128.91	120.20
1	AA	378	DG	OP2-P-O3'	5.80	125.41	108.00
115	C5	23	DT	O3'-P-O5'	-5.80	95.30	104.00
151	Ck	20	DG	P-O3'-C3'	5.80	128.90	120.20
1	AA	2962	DG	C8-N9-C1'	5.79	135.69	127.00
1	AA	3428	DT	P-O3'-C3'	5.79	128.89	120.20
45	Al	17	DC	P-O3'-C3'	-5.79	111.52	120.20
1	AA	6273	DT	O3'-P-O5'	-5.79	95.32	104.00
35	AZ	4	DT	C5'-C4'-C3'	5.78	123.57	114.90
116	C6	35	DA	C5'-C4'-C3'	-5.78	106.23	114.90
128	CK	44	DG	P-O5'-C5'	5.78	128.67	120.00
1	AA	2290	DG	P-O3'-C3'	5.77	128.85	120.20
1	AA	6082	DT	P-O3'-C3'	5.76	128.84	120.20
106	Bp	30	DG	C5'-C4'-C3'	5.76	123.53	114.90
1	AA	3537	DC	P-O5'-C5'	5.75	128.63	120.00
1	AA	4822	DT	C5'-C4'-C3'	-5.75	106.27	114.90
70	BF	23	DT	P-O5'-C5'	-5.75	111.37	120.00
115	C5	52	DT	P-O3'-C3'	5.75	128.83	120.20
1	AA	18	DC	P-O3'-C3'	5.74	128.81	120.20
79	BO	35	DC	C5'-C4'-C3'	-5.74	106.30	114.90
1	AA	2978	DA	P-O3'-C3'	5.73	128.80	120.20
18	AI	20	DG	C2'-C3'-O3'	5.73	120.10	111.50
8	A6	35	DG	P-O3'-C3'	5.72	128.79	120.20
81	BQ	7	DA	O5'-C5'-C4'	-5.72	102.22	110.80
44	Ak	40	DA	C2'-C3'-O3'	5.72	120.08	111.50
1	AA	3577	DG	P-O5'-C5'	5.71	128.57	120.00
42	Ai	14	DG	P-O3'-C3'	5.71	128.77	120.20
123	CF	23	DA	P-O5'-C5'	-5.71	111.43	120.00
100	Bj	35	DT	C5'-C4'-C3'	-5.71	106.33	114.90
1	AA	5301	DA	P-O5'-C5'	5.71	128.56	120.00
123	CF	26	DG	P-O5'-C5'	-5.71	111.44	120.00
133	CP	5	DA	P-O3'-C3'	5.71	128.76	120.20
71	BG	6	DG	P-O3'-C3'	5.70	128.75	120.20
1	AA	3534	DC	P-O3'-C3'	5.69	128.74	120.20
83	BS	22	DG	P-O3'-C3'	-5.68	111.67	120.20
55	Az	5	DA	P-O3'-C3'	5.68	128.72	120.20
51	Av	13	DC	P-O3'-C3'	5.68	128.72	120.20
108	Br	45	DC	P-O3'-C3'	-5.68	111.68	120.20
147	Ce	50	DC	P-O3'-C3'	-5.68	111.68	120.20
1	AA	4126	DC	P-O5'-C5'	-5.68	111.48	120.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
33	AX	7	DT	C5'-C4'-C3'	-5.68	106.39	114.90
50	Au	42	DA	P-O3'-C3'	5.67	128.71	120.20
76	BL	44	DA	O3'-P-O5'	-5.67	95.49	104.00
129	CL	5	DA	P-O3'-C3'	5.67	128.71	120.20
24	AO	46	DT	P-O3'-C3'	-5.67	111.70	120.20
39	Af	35	DC	P-O5'-C5'	-5.66	111.50	120.00
4	A2	11	DG	P-O3'-C3'	5.66	128.69	120.20
140	CW	28	DC	P-O3'-C3'	5.66	128.69	120.20
1	AA	1449	DA	P-O5'-C5'	5.66	128.49	120.00
1	AA	4419	DT	P-O3'-C3'	5.64	128.66	120.20
162	Cz	38	DC	P-O3'-C3'	5.64	128.66	120.20
160	Cx	42	DA	P-O5'-C5'	-5.63	111.56	120.00
3	A1	9	DT	P-O5'-C5'	-5.62	111.56	120.00
14	AE	38	DG	P-O3'-C3'	5.62	128.63	120.20
112	C2	44	DA	P-O5'-C5'	5.62	128.43	120.00
1	AA	3436	DT	P-O3'-C3'	5.62	128.62	120.20
132	CO	22	DT	P-O3'-C3'	5.62	128.62	120.20
6	A4	5	DA	P-O3'-C3'	5.61	128.62	120.20
143	CZ	14	DA	P-O3'-C3'	5.61	128.61	120.20
49	As	4	DT	P-O5'-C5'	-5.60	111.60	120.00
157	Cu	46	DG	O3'-P-O5'	-5.60	95.60	104.00
1	AA	2866	DT	P-O5'-C5'	5.60	128.40	120.00
61	B5	6	DT	P-O3'-C3'	5.60	128.59	120.20
37	Ac	40	DA	P-O3'-C3'	5.59	128.59	120.20
69	BE	64	DC	P-O5'-C5'	-5.59	111.61	120.00
104	Bn	14	DT	P-O5'-C5'	-5.59	111.61	120.00
102	Bl	29	DA	P-O3'-C3'	5.59	128.58	120.20
1	AA	2860	DC	P-O5'-C5'	5.58	128.38	120.00
62	B6	42	DA	P-O3'-C3'	5.58	128.57	120.20
138	CU	15	DC	O5'-C5'-C4'	-5.58	102.42	110.80
154	Cr	44	DA	P-O3'-C3'	5.58	128.58	120.20
1	AA	5737	DA	P-O5'-C5'	5.58	128.37	120.00
115	C5	40	DT	O3'-P-O5'	-5.58	95.63	104.00
32	AW	45	DC	P-O3'-C3'	5.58	128.56	120.20
57	B1	36	DA	P-O5'-C5'	5.57	128.35	120.00
55	Az	13	DA	P-O3'-C3'	5.57	128.55	120.20
1	AA	1189	DA	P-O3'-C3'	5.56	128.55	120.20
44	Ak	42	DA	P-O3'-C3'	5.56	128.54	120.20
1	AA	5765	DT	P-O3'-C3'	5.56	128.54	120.20
135	CR	43	DT	P-O3'-C3'	5.55	128.53	120.20
1	AA	1273	DG	P-O3'-C3'	5.55	128.53	120.20
1	AA	4763	DC	C1'-O4'-C4'	-5.55	101.37	109.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	5742	DG	P-O5'-C5'	5.55	128.32	120.00
69	BE	38	DT	C5'-C4'-C3'	-5.54	106.59	114.90
91	Ba	1	DA	C8-N9-C1'	5.54	135.36	127.05
101	Bk	43	DG	P-O5'-C5'	-5.54	111.69	120.00
13	AD	17	DG	P-O3'-C3'	5.54	128.50	120.20
1	AA	4129	DA	P-O3'-C3'	5.53	128.50	120.20
1	AA	6862	DC	P-O3'-C3'	5.53	128.50	120.20
4	A2	35	DA	P-O3'-C3'	5.53	128.50	120.20
113	C3	27	DA	P-O3'-C3'	5.53	128.50	120.20
1	AA	838	DC	P-O5'-C5'	5.53	128.29	120.00
17	AH	5	DT	P-O5'-C5'	5.53	128.29	120.00
16	AG	42	DA	P-O3'-C3'	5.52	128.49	120.20
84	BT	16	DT	P-O3'-C3'	5.52	128.49	120.20
1	AA	3224	DT	P-O3'-C3'	5.51	128.47	120.20
1	AA	36	DC	C5'-C4'-C3'	-5.51	106.63	114.90
1	AA	3437	DT	P-O5'-C5'	-5.51	111.73	120.00
111	C1	11	DA	P-O5'-C5'	-5.51	111.74	120.00
1	AA	2732	DA	N1-C6-N6	5.51	127.26	119.00
2	A0	30	DG	P-O3'-C3'	5.50	128.46	120.20
26	AQ	56	DC	P-O3'-C3'	5.50	128.46	120.20
82	BR	14	DT	P-O3'-C3'	-5.50	111.94	120.20
106	Bp	31	DA	O4'-C1'-N9	5.50	116.65	108.40
1	AA	2647	DA	N1-C6-N6	5.50	127.25	119.00
1	AA	5241	DG	P-O5'-C5'	5.49	128.24	120.00
105	Bo	26	DG	P-O3'-C3'	5.49	128.44	120.20
123	CF	8	DT	P-O5'-C5'	-5.49	111.77	120.00
33	AX	6	DA	O3'-P-O5'	-5.49	95.77	104.00
37	Ac	34	DA	P-O5'-C5'	-5.49	111.77	120.00
85	BU	45	DG	P-O3'-C3'	-5.49	111.97	120.20
59	B3	2	DC	P-O3'-C3'	5.48	128.42	120.20
1	AA	3980	DC	P-O3'-C3'	5.48	128.42	120.20
65	B9	16	DA	P-O3'-C3'	5.48	128.42	120.20
73	BI	19	DC	P-O5'-C5'	-5.48	111.78	120.00
1	AA	6124	DG	P-O3'-C3'	5.47	128.41	120.20
81	BQ	23	DG	O5'-C5'-C4'	-5.47	102.59	110.80
1	AA	5434	DA	P-O5'-C5'	5.47	128.20	120.00
1	AA	2507	DT	P-O3'-C3'	5.46	128.40	120.20
106	Bp	31	DA	C8-N9-C1'	5.46	135.25	127.05
1	AA	3968	DT	P-O3'-C3'	5.46	128.39	120.20
44	Ak	45	DC	P-O3'-C3'	5.46	128.39	120.20
52	Aw	47	DG	P-O5'-C5'	5.46	128.19	120.00
114	C4	49	DC	P-O5'-C5'	-5.46	111.81	120.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	542	DC	P-O3'-C3'	5.46	128.38	120.20
1	AA	7121	DA	P-O3'-C3'	5.46	128.38	120.20
5	A3	32	DC	P-O5'-C5'	-5.46	111.82	120.00
81	BQ	39	DT	O5'-C5'-C4'	-5.45	102.62	110.80
146	Cd	30	DA	P-O3'-C3'	5.45	128.38	120.20
1	AA	1264	DA	P-O3'-C3'	5.45	128.37	120.20
1	AA	5978	DA	N1-C6-N6	5.45	127.17	119.00
47	An	31	DT	O5'-C5'-C4'	-5.45	102.63	110.80
118	C8	33	DA	O3'-P-O5'	-5.45	95.83	104.00
1	AA	2649	DA	P-O5'-C5'	5.45	128.17	120.00
30	AU	36	DA	N1-C6-N6	5.45	127.17	119.00
160	Cx	13	DT	P-O3'-C3'	5.44	128.36	120.20
99	Bi	25	DA	P-O3'-C3'	5.44	128.36	120.20
1	AA	1101	DA	C1'-O4'-C4'	-5.44	101.54	109.70
11	AB	29	DC	P-O3'-C3'	5.44	128.35	120.20
58	B2	4	DA	N1-C6-N6	5.43	127.15	119.00
118	C8	35	DT	C5'-C4'-C3'	-5.43	106.75	114.90
97	Bg	14	DA	P-O3'-C3'	5.43	128.35	120.20
34	AY	9	DA	P-O3'-C3'	5.43	128.35	120.20
46	Am	37	DT	P-O3'-C3'	5.43	128.34	120.20
128	CK	23	DT	P-O5'-C5'	-5.43	111.86	120.00
54	Ay	11	DT	P-O3'-C3'	5.42	128.34	120.20
1	AA	332	DG	P-O3'-C3'	5.42	128.33	120.20
1	AA	58	DT	P-O3'-C3'	5.42	128.33	120.20
1	AA	5223	DC	P-O5'-C5'	5.42	128.13	120.00
35	AZ	26	DA	P-O3'-C3'	5.42	128.33	120.20
1	AA	6713	DC	O3'-P-O5'	-5.41	95.88	104.00
104	Bn	47	DG	P-O5'-C5'	5.41	128.12	120.00
119	CB	9	DT	C5'-C4'-C3'	-5.41	106.78	114.90
1	AA	2906	DA	P-O3'-C3'	5.41	128.32	120.20
126	CI	35	DG	P-O3'-C3'	5.41	128.31	120.20
73	BI	18	DT	P-O5'-C5'	5.41	128.11	120.00
61	B5	15	DA	N1-C6-N6	5.40	127.11	119.00
96	Bf	39	DG	P-O3'-C3'	5.40	128.30	120.20
30	AU	36	DA	P-O3'-C3'	5.40	128.30	120.20
13	AD	23	DA	P-O3'-C3'	5.40	128.30	120.20
142	CY	15	DA	C2'-C3'-O3'	5.40	119.59	111.50
1	AA	115	DG	O3'-P-O5'	-5.39	95.91	104.00
1	AA	7054	DC	P-O3'-C3'	5.39	128.29	120.20
23	AN	27	DG	O5'-C5'-C4'	-5.39	102.71	110.80
55	Az	10	DA	P-O3'-C3'	5.39	128.29	120.20
147	Ce	12	DA	N1-C6-N6	5.39	127.08	119.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
38	Ad	14	DA	N1-C6-N6	5.38	127.08	119.00
44	Ak	21	DT	P-O5'-C5'	-5.38	111.92	120.00
76	BL	47	DA	C5'-C4'-C3'	-5.38	106.82	114.90
106	Bp	47	DG	O5'-C5'-C4'	-5.38	102.72	110.80
1	AA	3444	DT	P-O3'-C3'	5.38	128.27	120.20
91	Ba	26	DG	P-O3'-C3'	5.38	128.27	120.20
107	Bq	23	DT	P-O3'-C3'	5.38	128.27	120.20
133	CP	6	DC	P-O3'-C3'	5.38	128.27	120.20
121	CD	29	DG	O3'-P-O5'	-5.38	95.94	104.00
24	AO	42	DA	P-O5'-C5'	-5.37	111.94	120.00
122	CE	12	DA	N1-C6-N6	5.37	127.06	119.00
53	Ax	1	DC	P-O3'-C3'	5.37	128.26	120.20
80	BP	44	DT	P-O5'-C5'	5.37	128.06	120.00
104	Bn	23	DC	P-O3'-C3'	5.37	128.26	120.20
4	A2	45	DA	N1-C6-N6	5.37	127.06	119.00
1	AA	596	DG	C5'-C4'-C3'	-5.37	106.85	114.90
1	AA	6481	DA	P-O3'-C3'	5.37	128.25	120.20
66	BB	1	DA	P-O3'-C3'	5.37	128.25	120.20
1	AA	2290	DG	O3'-P-O5'	-5.37	95.95	104.00
52	Aw	1	DG	C2'-C3'-O3'	5.36	119.54	111.50
99	Bi	26	DT	P-O3'-C3'	5.36	128.24	120.20
113	C3	26	DT	O4'-C1'-C2'	-5.36	98.36	106.40
1	AA	3154	DC	P-O3'-C3'	5.36	128.23	120.20
103	Bm	9	DG	O3'-P-O5'	-5.35	95.97	104.00
43	Aj	20	DA	N1-C6-N6	5.35	127.03	119.00
122	CE	7	DA	N1-C6-N6	5.35	127.03	119.00
126	CI	26	DG	P-O3'-C3'	5.35	128.22	120.20
20	AK	6	DT	P-O5'-C5'	-5.35	111.98	120.00
16	AG	21	DA	P-O3'-C3'	5.34	128.21	120.20
38	Ad	47	DG	P-O3'-C3'	5.34	128.21	120.20
43	Aj	18	DA	N1-C6-N6	5.34	127.01	119.00
103	Bm	21	DA	P-O3'-C3'	5.33	128.20	120.20
115	C5	43	DA	P-O3'-C3'	5.33	128.20	120.20
1	AA	1144	DT	C5'-C4'-C3'	-5.33	106.91	114.90
1	AA	4795	DG	P-O5'-C5'	5.33	128.00	120.00
1	AA	3003	DA	P-O5'-C5'	5.33	127.99	120.00
135	CR	10	DT	C5'-C4'-C3'	5.33	122.89	114.90
34	AY	11	DA	C2'-C3'-O3'	5.32	119.48	111.50
1	AA	2870	DA	N1-C6-N6	5.32	126.98	119.00
58	B2	23	DA	P-O3'-C3'	5.32	128.18	120.20
33	AX	39	DA	N1-C6-N6	5.32	126.97	119.00
81	BQ	22	DT	O3'-P-O5'	-5.31	96.03	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
46	Am	23	DC	C2'-C3'-O3'	5.31	119.47	111.50
75	BK	4	DA	N1-C6-N6	5.31	126.96	119.00
121	CD	1	DA	P-O3'-C3'	5.31	128.17	120.20
1	AA	5049	DG	P-O3'-C3'	5.31	128.16	120.20
89	BY	45	DG	P-O3'-C3'	5.31	128.16	120.20
159	Cw	27	DA	P-O3'-C3'	5.30	128.16	120.20
76	BL	44	DA	N1-C6-N6	5.30	126.95	119.00
1	AA	1613	DC	C5'-C4'-C3'	-5.30	106.95	114.90
20	AK	10	DT	P-O5'-C5'	-5.30	112.05	120.00
126	CI	42	DA	P-O3'-C3'	5.30	128.15	120.20
1	AA	2645	DA	N1-C6-N6	5.30	126.94	119.00
71	BG	7	DA	P-O5'-C5'	-5.30	112.06	120.00
9	A7	25	DC	P-O3'-C3'	5.29	128.14	120.20
1	AA	2470	DG	P-O3'-C3'	5.29	128.14	120.20
140	CW	22	DA	P-O3'-C3'	5.29	128.14	120.20
3	A1	23	DA	P-O3'-C3'	5.29	128.13	120.20
144	Cb	32	DA	N1-C6-N6	5.29	126.93	119.00
101	Bk	41	DT	P-O3'-C3'	5.29	128.13	120.20
104	Bn	50	DG	P-O5'-C5'	-5.28	112.08	120.00
1	AA	5266	DT	O4'-C1'-C2'	-5.28	98.48	106.40
65	B9	17	DG	P-O3'-C3'	5.28	128.12	120.20
40	Ag	46	DC	O3'-P-O5'	-5.28	96.09	104.00
1	AA	6414	DA	P-O5'-C5'	5.27	127.91	120.00
120	CC	24	DA	P-O3'-C3'	5.27	128.11	120.20
1	AA	4510	DT	P-O3'-C3'	5.27	128.11	120.20
121	CD	15	DT	C5'-C4'-C3'	-5.27	107.00	114.90
34	AY	13	DA	C2'-C3'-O3'	5.27	119.40	111.50
154	Cr	43	DG	C2'-C3'-O3'	5.27	119.40	111.50
1	AA	5812	DA	N1-C6-N6	5.26	126.89	119.00
26	AQ	55	DG	P-O3'-C3'	5.26	128.09	120.20
141	CX	22	DA	N1-C6-N6	5.26	126.89	119.00
1	AA	5967	DA	N1-C6-N6	5.26	126.89	119.00
65	B9	5	DA	P-O3'-C3'	5.26	128.09	120.20
1	AA	2612	DG	P-O3'-C3'	5.26	128.09	120.20
43	Aj	8	DA	N1-C6-N6	5.26	126.89	119.00
18	AI	37	DA	P-O3'-C3'	5.25	128.08	120.20
24	AO	7	DA	C8-N9-C1'	5.25	134.93	127.05
162	Cz	37	DA	O3'-P-O5'	-5.25	96.12	104.00
1	AA	5733	DA	N1-C6-N6	5.25	126.88	119.00
1	AA	6965	DA	N1-C6-N6	5.25	126.88	119.00
1	AA	6082	DT	C4'-C3'-O3'	5.25	117.87	110.00
71	BG	10	DA	P-O5'-C5'	-5.25	112.13	120.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
122	CE	8	DA	N1-C6-N6	5.25	126.87	119.00
6	A4	6	DA	P-O3'-C3'	5.24	128.07	120.20
33	AX	36	DC	P-O5'-C5'	5.24	127.86	120.00
145	Cc	28	DT	P-O3'-C3'	5.24	128.07	120.20
147	Ce	2	DA	P-O5'-C5'	-5.24	112.14	120.00
159	Cw	45	DA	P-O3'-C3'	5.24	128.06	120.20
8	A6	49	DC	O4'-C1'-N1	5.24	116.26	108.40
33	AX	43	DA	N1-C6-N6	5.24	126.86	119.00
128	CK	8	DA	P-O5'-C5'	-5.24	112.14	120.00
84	BT	51	DC	O3'-P-O5'	-5.24	96.15	104.00
128	CK	22	DA	P-O5'-C5'	-5.24	112.15	120.00
85	BU	12	DT	P-O3'-C3'	5.23	128.05	120.20
1	AA	144	DA	P-O5'-C5'	5.23	127.85	120.00
75	BK	13	DA	O3'-P-O5'	-5.23	96.15	104.00
103	Bm	22	DT	P-O5'-C5'	-5.23	112.15	120.00
1	AA	3436	DT	P-O5'-C5'	-5.23	112.16	120.00
1	AA	4640	DG	P-O3'-C3'	5.23	128.04	120.20
118	C8	32	DA	N1-C6-N6	5.23	126.85	119.00
1	AA	5329	DA	N1-C6-N6	5.23	126.84	119.00
54	Ay	30	DA	P-O3'-C3'	5.23	128.04	120.20
79	BO	20	DT	P-O5'-C5'	-5.23	112.16	120.00
145	Cc	50	DT	P-O5'-C5'	-5.23	112.16	120.00
21	AL	14	DC	C2-N1-C1'	5.23	127.54	119.70
75	BK	21	DA	N1-C6-N6	5.22	126.83	119.00
1	AA	4651	DT	C1'-O4'-C4'	-5.22	101.87	109.70
68	BD	18	DT	O5'-C5'-C4'	-5.22	102.97	110.80
1	AA	5194	DC	P-O3'-C3'	5.22	128.03	120.20
4	A2	38	DA	N1-C6-N6	5.21	126.82	119.00
8	A6	24	DA	C5'-C4'-C3'	-5.21	107.08	114.90
1	AA	2850	DC	P-O5'-C5'	5.21	127.82	120.00
1	AA	3846	DT	P-O3'-C3'	5.21	128.02	120.20
76	BL	40	DT	P-O5'-C5'	-5.21	112.18	120.00
1	AA	2252	DG	P-O5'-C5'	-5.21	112.18	120.00
3	A1	18	DT	O4'-C1'-C2'	-5.21	98.58	106.40
52	Aw	24	DA	P-O5'-C5'	5.21	127.82	120.00
153	Cq	30	DA	C5'-C4'-C3'	-5.21	107.09	114.90
1	AA	6663	DG	P-O3'-C3'	5.20	128.00	120.20
75	BK	11	DA	N1-C6-N6	5.20	126.81	119.00
93	Bc	24	DT	P-O3'-C3'	5.20	128.00	120.20
1	AA	1853	DG	P-O5'-C5'	5.20	127.80	120.00
1	AA	4487	DA	N1-C6-N6	5.20	126.80	119.00
139	CV	44	DT	P-O3'-C3'	5.20	128.00	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	2528	DG	P-O3'-C3'	5.20	128.00	120.20
48	Ao	14	DA	N1-C6-N6	5.20	126.80	119.00
115	C5	44	DA	P-O3'-C3'	5.20	128.00	120.20
7	A5	5	DA	P-O3'-C3'	5.20	128.00	120.20
58	B2	11	DG	P-O5'-C5'	5.20	127.80	120.00
1	AA	3591	DA	N1-C6-N6	5.19	126.79	119.00
1	AA	6037	DA	N1-C6-N6	5.19	126.79	119.00
75	BK	33	DT	O3'-P-O5'	-5.19	96.21	104.00
20	AK	41	DA	N1-C6-N6	5.19	126.79	119.00
44	Ak	41	DA	N1-C6-N6	5.19	126.79	119.00
85	BU	14	DG	P-O3'-C3'	5.19	127.99	120.20
135	CR	27	DA	P-O3'-C3'	5.19	127.99	120.20
143	CZ	9	DA	O3'-P-O5'	-5.19	96.21	104.00
1	AA	1354	DG	P-O3'-C3'	5.19	127.99	120.20
1	AA	5521	DC	C1'-O4'-C4'	-5.19	101.92	109.70
23	AN	26	DT	O3'-P-O5'	-5.19	96.22	104.00
1	AA	3047	DA	N1-C6-N6	5.19	126.78	119.00
135	CR	26	DT	O4'-C1'-C2'	-5.19	98.62	106.40
1	AA	1244	DC	P-O3'-C3'	5.18	127.98	120.20
1	AA	3964	DA	P-O3'-C3'	5.18	127.97	120.20
1	AA	6714	DA	O5'-C5'-C4'	-5.18	103.04	110.80
1	AA	3031	DA	N1-C6-N6	5.17	126.76	119.00
79	BO	6	DA	N1-C6-N6	5.17	126.76	119.00
1	AA	4951	DA	N1-C6-N6	5.17	126.76	119.00
137	CT	26	DT	O3'-P-O5'	-5.17	96.24	104.00
1	AA	22	DT	P-O3'-C3'	5.17	127.96	120.20
1	AA	7200	DA	P-O3'-C3'	5.17	127.96	120.20
49	As	8	DA	P-O5'-C5'	5.17	127.76	120.00
115	C5	25	DG	O5'-C5'-C4'	-5.17	103.04	110.80
128	CK	28	DC	P-O5'-C5'	5.17	127.76	120.00
137	CT	28	DA	N1-C6-N6	5.17	126.76	119.00
111	C1	30	DA	P-O3'-C3'	5.17	127.95	120.20
1	AA	1464	DA	N1-C6-N6	5.17	126.75	119.00
112	C2	55	DC	C5'-C4'-C3'	-5.17	107.15	114.90
1	AA	1057	DT	P-O5'-C5'	-5.17	112.25	120.00
123	CF	12	DA	P-O5'-C5'	5.16	127.75	120.00
1	AA	6968	DG	P-O3'-C3'	5.16	127.94	120.20
127	CJ	28	DC	P-O3'-C3'	5.16	127.94	120.20
118	C8	18	DG	C5'-C4'-C3'	-5.16	107.16	114.90
139	CV	25	DA	P-O3'-C3'	5.16	127.94	120.20
141	CX	29	DC	P-O3'-C3'	-5.16	112.47	120.20
1	AA	4412	DG	P-O3'-C3'	5.15	127.93	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	7037	DG	P-O3'-C3'	5.15	127.93	120.20
154	Cr	39	DG	P-O3'-C3'	5.15	127.93	120.20
1	AA	5784	DA	N1-C6-N6	5.15	126.72	119.00
144	Cb	31	DA	N1-C6-N6	5.15	126.72	119.00
1	AA	997	DC	P-O3'-C3'	5.15	127.92	120.20
38	Ad	24	DC	P-O5'-C5'	-5.15	112.28	120.00
1	AA	2995	DC	P-O5'-C5'	5.14	127.72	120.00
133	CP	48	DC	P-O3'-C3'	5.14	127.92	120.20
1	AA	5809	DA	N1-C6-N6	5.14	126.71	119.00
1	AA	7236	DG	P-O3'-C3'	5.14	127.91	120.20
83	BS	39	DG	C5'-C4'-C3'	-5.14	107.19	114.90
128	CK	40	DA	N1-C6-N6	5.14	126.71	119.00
1	AA	591	DA	N1-C6-N6	5.14	126.71	119.00
1	AA	1594	DG	C4-N9-C1'	-5.14	119.29	127.00
36	Ab	32	DC	P-O5'-C5'	-5.14	112.29	120.00
52	Aw	14	DA	N1-C6-N6	5.14	126.71	119.00
62	B6	7	DG	C5'-C4'-C3'	-5.14	107.20	114.90
102	Bl	48	DT	P-O5'-C5'	5.14	127.70	120.00
123	CF	20	DA	N1-C6-N6	5.14	126.70	119.00
37	Ac	39	DA	P-O3'-C3'	5.13	127.90	120.20
43	Aj	14	DA	N1-C6-N6	5.13	126.70	119.00
79	BO	4	DA	N1-C6-N6	5.13	126.70	119.00
1	AA	5565	DG	P-O5'-C5'	-5.13	112.30	120.00
52	Aw	11	DC	P-O3'-C3'	5.13	127.90	120.20
1	AA	3219	DA	N1-C6-N6	5.13	126.70	119.00
76	BL	32	DA	N1-C6-N6	5.13	126.70	119.00
1	AA	3279	DG	C1'-O4'-C4'	-5.13	102.00	109.70
1	AA	4026	DG	O4'-C4'-C3'	-5.13	97.70	105.40
1	AA	6920	DC	C1'-O4'-C4'	-5.13	102.01	109.70
133	CP	13	DA	P-O3'-C3'	5.13	127.89	120.20
1	AA	2272	DG	P-O3'-C3'	5.13	127.89	120.20
35	AZ	22	DT	P-O3'-C3'	5.13	127.89	120.20
43	Aj	22	DA	P-O5'-C5'	-5.12	112.31	120.00
131	CN	31	DT	O5'-C5'-C4'	-5.12	103.11	110.80
1	AA	6703	DT	C5'-C4'-C3'	5.12	122.59	114.90
5	A3	16	DT	P-O3'-C3'	5.12	127.88	120.20
122	CE	16	DA	N1-C6-N6	5.12	126.69	119.00
1	AA	3292	DA	N1-C6-N6	5.12	126.68	119.00
1	AA	6159	DA	O4'-C1'-C2'	-5.12	98.72	106.40
71	BG	12	DC	C5'-C4'-C3'	-5.12	107.22	114.90
1	AA	65	DA	P-O3'-C3'	5.12	127.88	120.20
1	AA	5070	DA	N1-C6-N6	5.12	126.68	119.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	5191	DA	N1-C6-N6	5.12	126.68	119.00
114	C4	48	DT	P-O3'-C3'	5.12	127.88	120.20
1	AA	4123	DT	C1'-O4'-C4'	-5.12	102.03	109.70
1	AA	4221	DT	P-O3'-C3'	5.12	127.88	120.20
19	AJ	15	DA	N1-C6-N6	5.12	126.68	119.00
97	Bg	36	DA	N1-C6-N6	5.12	126.67	119.00
99	Bi	60	DA	N1-C6-N6	5.12	126.67	119.00
121	CD	30	DA	O3'-P-O5'	-5.11	96.33	104.00
1	AA	6274	DT	C5'-C4'-C3'	-5.11	107.23	114.90
100	Bj	34	DA	O4'-C4'-C3'	-5.11	97.74	105.40
1	AA	84	DC	P-O5'-C5'	-5.11	112.34	120.00
71	BG	19	DG	P-O3'-C3'	5.11	127.86	120.20
95	Be	15	DA	P-O3'-C3'	5.11	127.86	120.20
132	CO	36	DA	N1-C6-N6	5.11	126.66	119.00
1	AA	6398	DA	N1-C6-N6	5.10	126.65	119.00
113	C3	22	DA	P-O3'-C3'	5.10	127.85	120.20
41	Ah	6	DT	C5'-C4'-C3'	5.10	122.55	114.90
91	Ba	1	DA	C4-N9-C1'	-5.10	119.41	127.05
1	AA	6044	DA	N1-C6-N6	5.10	126.64	119.00
10	A8	9	DA	N1-C6-N6	5.10	126.64	119.00
1	AA	3107	DA	N1-C6-N6	5.09	126.64	119.00
138	CU	15	DC	C5'-C4'-C3'	-5.09	107.26	114.90
1	AA	1035	DA	N1-C6-N6	5.09	126.64	119.00
1	AA	1568	DA	N1-C6-N6	5.09	126.64	119.00
18	AI	20	DG	P-O3'-C3'	5.09	127.84	120.20
115	C5	56	DT	P-O3'-C3'	5.09	127.84	120.20
1	AA	5781	DA	N1-C6-N6	5.09	126.63	119.00
1	AA	6050	DC	C4'-C3'-O3'	5.09	117.63	110.00
89	BY	35	DT	P-O5'-C5'	-5.09	112.37	120.00
1	AA	3183	DA	P-O3'-C3'	5.09	127.83	120.20
1	AA	4004	DC	P-O3'-C3'	5.09	127.83	120.20
121	CD	17	DA	N1-C6-N6	5.09	126.63	119.00
126	CI	17	DT	P-O3'-C3'	5.09	127.83	120.20
150	Ch	22	DG	P-O3'-C3'	5.09	127.83	120.20
155	Cs	10	DA	N1-C6-N6	5.09	126.63	119.00
122	CE	30	DT	C5'-C4'-C3'	5.08	122.52	114.90
141	CX	23	DA	N1-C6-N6	5.08	126.62	119.00
1	AA	30	DG	P-O3'-C3'	5.08	127.82	120.20
1	AA	3900	DG	P-O5'-C5'	-5.08	112.38	120.00
78	BN	24	DT	P-O3'-C3'	5.08	127.82	120.20
112	C2	34	DA	N1-C6-N6	5.08	126.62	119.00
1	AA	2946	DA	C4'-C3'-O3'	5.08	117.62	110.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
43	Aj	40	DA	N1-C6-N6	5.08	126.62	119.00
1	AA	243	DC	O4'-C1'-C2'	-5.08	98.78	106.40
16	AG	27	DG	P-O3'-C3'	5.08	127.82	120.20
33	AX	42	DA	O3'-P-O5'	-5.08	96.38	104.00
58	B2	13	DG	O3'-P-O5'	-5.08	96.39	104.00
1	AA	843	DA	N1-C6-N6	5.07	126.61	119.00
1	AA	5199	DA	N1-C6-N6	5.07	126.61	119.00
1	AA	5313	DA	N1-C6-N6	5.07	126.61	119.00
1	AA	5251	DA	N1-C6-N6	5.07	126.61	119.00
1	AA	1063	DT	O3'-P-O5'	-5.07	96.39	104.00
116	C6	28	DA	N1-C6-N6	5.07	126.60	119.00
1	AA	3232	DG	O5'-C5'-C4'	-5.07	103.20	110.80
1	AA	4099	DA	C1'-O4'-C4'	-5.07	102.10	109.70
1	AA	6450	DA	N1-C6-N6	5.07	126.60	119.00
5	A3	37	DG	C5'-C4'-C3'	5.07	122.50	114.90
65	B9	22	DC	P-O5'-C5'	-5.07	112.40	120.00
103	Bm	10	DC	O3'-P-O5'	-5.07	96.40	104.00
129	CL	20	DA	N1-C6-N6	5.07	126.60	119.00
10	A8	37	DA	N1-C6-N6	5.07	126.60	119.00
44	Ak	5	DA	N1-C6-N6	5.06	126.59	119.00
74	BJ	22	DG	P-O3'-C3'	5.06	127.80	120.20
115	C5	38	DA	N1-C6-N6	5.06	126.59	119.00
1	AA	2263	DG	C1'-O4'-C4'	-5.06	102.11	109.70
1	AA	4945	DA	N1-C6-N6	5.06	126.59	119.00
2	A0	36	DA	O3'-P-O5'	-5.06	96.41	104.00
73	BI	11	DA	P-O3'-C3'	5.06	127.79	120.20
159	Cw	44	DT	P-O5'-C5'	-5.06	112.41	120.00
52	Aw	15	DA	N1-C6-N6	5.06	126.59	119.00
43	Aj	16	DA	N1-C6-N6	5.06	126.58	119.00
35	AZ	26	DA	N1-C6-N6	5.05	126.58	119.00
61	B5	8	DG	C5'-C4'-C3'	-5.05	107.32	114.90
160	Cx	40	DC	C2'-C3'-O3'	5.05	119.08	111.50
39	Af	5	DA	N1-C6-N6	5.05	126.58	119.00
1	AA	1454	DC	P-O5'-C5'	5.05	127.57	120.00
1	AA	4972	DA	N1-C6-N6	5.05	126.58	119.00
55	Az	36	DG	P-O3'-C3'	5.05	127.77	120.20
83	BS	46	DG	O4'-C4'-C3'	-5.05	97.83	105.40
1	AA	501	DC	OP2-P-O3'	5.05	123.14	108.00
2	A0	51	DA	N1-C6-N6	5.05	126.57	119.00
28	AS	10	DG	P-O3'-C3'	5.05	127.77	120.20
84	BT	21	DC	P-O3'-C3'	5.05	127.77	120.20
112	C2	44	DA	N1-C6-N6	5.05	126.57	119.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
36	Ab	45	DA	N1-C6-N6	5.04	126.56	119.00
66	BB	22	DA	N1-C6-N6	5.04	126.56	119.00
71	BG	12	DC	P-O5'-C5'	-5.04	112.44	120.00
103	Bm	11	DG	O5'-C5'-C4'	-5.04	103.23	110.80
1	AA	4086	DG	P-O3'-C3'	5.04	127.76	120.20
150	Ch	20	DC	P-O3'-C3'	5.04	127.76	120.20
1	AA	3778	DC	P-O3'-C3'	5.04	127.76	120.20
1	AA	4342	DA	O4'-C4'-C3'	-5.04	97.84	105.40
1	AA	5734	DA	N1-C6-N6	5.04	126.56	119.00
30	AU	39	DA	N1-C6-N6	5.04	126.56	119.00
19	AJ	40	DC	O3'-P-O5'	-5.04	96.44	104.00
1	AA	5448	DT	O3'-P-O5'	-5.04	96.45	104.00
74	BJ	45	DC	P-O5'-C5'	-5.04	112.44	120.00
124	CG	5	DA	P-O3'-C3'	5.04	127.75	120.20
28	AS	37	DA	P-O3'-C3'	5.03	127.75	120.20
112	C2	54	DA	O3'-P-O5'	-5.03	96.45	104.00
116	C6	29	DA	N1-C6-N6	5.03	126.55	119.00
120	CC	20	DA	O3'-P-O5'	-5.03	96.45	104.00
117	C7	2	DA	N1-C6-N6	5.03	126.55	119.00
1	AA	1457	DA	N1-C6-N6	5.03	126.55	119.00
1	AA	5813	DA	N1-C6-N6	5.03	126.55	119.00
1	AA	6406	DA	N1-C6-N6	5.03	126.55	119.00
44	Ak	16	DA	N1-C6-N6	5.03	126.54	119.00
81	BQ	7	DA	P-O5'-C5'	5.03	127.54	120.00
134	CQ	14	DA	N1-C6-N6	5.03	126.54	119.00
1	AA	4948	DA	N1-C6-N6	5.03	126.54	119.00
1	AA	5821	DC	P-O5'-C5'	5.03	127.54	120.00
58	B2	8	DG	P-O3'-C3'	5.03	127.74	120.20
91	Ba	7	DA	N1-C6-N6	5.03	126.54	119.00
1	AA	2613	DG	P-O3'-C3'	5.03	127.74	120.20
23	AN	21	DA	P-O5'-C5'	-5.03	112.46	120.00
88	BX	42	DA	P-O3'-C3'	5.03	127.74	120.20
1	AA	6324	DG	C5'-C4'-C3'	-5.02	107.36	114.90
26	AQ	49	DG	P-O3'-C3'	5.02	127.74	120.20
59	B3	38	DA	O3'-P-O5'	-5.02	96.46	104.00
139	CV	41	DG	P-O3'-C3'	5.02	127.73	120.20
121	CD	46	DT	O3'-P-O5'	-5.02	96.47	104.00
130	CM	6	DA	N1-C6-N6	5.02	126.53	119.00
145	Cc	28	DT	P-O5'-C5'	-5.02	112.47	120.00
79	BO	5	DA	N1-C6-N6	5.02	126.53	119.00
116	C6	19	DA	C5'-C4'-C3'	-5.02	107.37	114.90
25	AP	40	DT	P-O5'-C5'	5.02	127.53	120.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
74	BJ	34	DT	O4'-C1'-C2'	-5.02	98.87	106.40
79	BO	10	DG	O3'-P-O5'	-5.02	96.47	104.00
132	CO	4	DA	P-O5'-C5'	-5.02	112.47	120.00
1	AA	3748	DG	P-O3'-C3'	5.02	127.72	120.20
93	Bc	25	DG	C5'-C4'-C3'	-5.02	107.38	114.90
106	Bp	32	DC	O4'-C1'-C2'	-5.02	98.88	106.40
150	Ch	16	DA	N1-C6-N6	5.02	126.52	119.00
24	AO	46	DT	O4'-C1'-C2'	-5.01	98.88	106.40
35	AZ	27	DC	O3'-P-O5'	-5.01	96.48	104.00
99	Bi	58	DC	O4'-C1'-C2'	-5.01	98.88	106.40
1	AA	5068	DA	P-O5'-C5'	5.01	127.52	120.00
79	BO	26	DA	P-O3'-C3'	-5.01	112.68	120.20
116	C6	36	DT	P-O5'-C5'	-5.01	112.48	120.00
1	AA	5273	DT	P-O3'-C3'	5.01	127.72	120.20
16	AG	44	DC	P-O3'-C3'	5.01	127.71	120.20
130	CM	23	DA	P-O3'-C3'	5.01	127.72	120.20
157	Cu	47	DA	O5'-C5'-C4'	-5.01	103.29	110.80
1	AA	119	DT	P-O5'-C5'	-5.01	112.49	120.00
1	AA	3479	DG	P-O5'-C5'	5.01	127.51	120.00
34	AY	3	DG	O5'-C5'-C4'	-5.01	103.29	110.80
115	C5	40	DT	P-O3'-C3'	5.01	127.71	120.20
1	AA	5427	DA	N1-C6-N6	5.00	126.51	119.00
144	Cb	38	DA	N1-C6-N6	5.00	126.51	119.00
112	C2	28	DC	P-O5'-C5'	5.00	127.50	120.00
3	A1	39	DA	P-O5'-C5'	-5.00	112.50	120.00
15	AF	34	DT	O4'-C1'-C2'	-5.00	98.90	106.40

All (121) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	AA	89	DT	C3'
1	AA	186	DT	C3'
1	AA	437	DT	C3'
1	AA	506	DT	C3'
1	AA	826	DT	C3'
1	AA	1266	DT	C3'
1	AA	1426	DT	C3'
1	AA	1733	DT	C3'
1	AA	1970	DT	C3'
1	AA	2251	DT	C3'
1	AA	2465	DT	C4',C3'
1	AA	2553	DT	C4',C3'

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Mol	Chain	Res	Type	Atom
1	AA	2787	DT	C3’
1	AA	3149	DT	C3’
1	AA	3528	DT	C3’
1	AA	3539	DT	C3’
1	AA	3768	DT	C3’
1	AA	4288	DT	C3’
1	AA	4430	DT	C3’
1	AA	4730	DT	C3’
1	AA	4904	DT	C3’
1	AA	5064	DT	C3’
1	AA	5144	DT	C3’
1	AA	5266	DT	C3’
1	AA	6185	DT	C4’,C3’
1	AA	6492	DT	C3’
1	AA	6502	DT	C3’
1	AA	6703	DT	C3’
1	AA	6938	DT	C3’
1	AA	7108	DT	C1’
1	AA	7109	DT	C4’,C3’
1	AA	7153	DT	C3’
1	AA	7212	DT	C1’
1	AA	7216	DT	C1’,C4’
1	AA	7225	DT	C3’
3	A1	18	DT	C3’
15	AF	34	DT	C3’
17	AH	26	DT	C3’
18	AI	10	DT	C3’
23	AN	26	DT	C3’
24	AO	6	DT	C3’
24	AO	46	DT	C3’
26	AQ	14	DT	C3’
26	AQ	30	DT	C3’
29	AT	2	DT	C3’
30	AU	34	DT	C3’
31	AV	50	DT	C3’
34	AY	2	DT	C3’
35	AZ	4	DT	C3’
35	AZ	20	DT	C3’
36	Ab	27	DT	C3’
36	Ab	43	DT	C3’
41	Ah	6	DT	C3’
43	Aj	54	DT	C3’

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Mol	Chain	Res	Type	Atom
45	Al	2	DT	C3’
47	An	14	DT	C3’
48	Ao	30	DT	C3’
50	Au	6	DT	C3’
52	Aw	10	DT	C3’
59	B3	22	DT	C3’
60	B4	42	DT	C3’
61	B5	14	DT	C3’
62	B6	13	DT	C3’
65	B9	10	DT	C3’
66	BB	46	DT	C3’
70	BF	22	DT	C3’
74	BJ	18	DT	C4’,C3’
74	BJ	34	DT	C3’
76	BL	14	DT	C3’
81	BQ	22	DT	C3’
86	BV	38	DT	C4’,C3’
87	BW	13	DT	C3’
89	BY	34	DT	C3’
93	Bc	48	DT	C3’
94	Bd	54	DT	C3’
95	Be	10	DT	C3’
96	Bf	2	DT	C3’
97	Bg	2	DT	C3’
103	Bm	26	DT	C3’
105	Bo	14	DT	C3’
106	Bp	29	DT	C1’,C4’
112	C2	14	DT	C3’
113	C3	26	DT	C3’
115	C5	24	DT	C3’
115	C5	40	DT	C3’
115	C5	56	DT	C3’
120	CC	29	DT	C3’
120	CC	45	DT	C3’
121	CD	14	DT	C3’
121	CD	46	DT	C3’
122	CE	30	DT	C3’
126	CI	14	DT	C3’
128	CK	30	DT	C3’
129	CL	30	DT	C3’
132	CO	30	DT	C3’
135	CR	10	DT	C3’

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Mol	Chain	Res	Type	Atom
135	CR	26	DT	C3’
137	CT	10	DT	C3’
137	CT	26	DT	C3’
140	CW	24	DT	C4’,C3’
140	CW	32	DT	C4’,C3’
142	CY	14	DT	C3’
144	Cb	42	DT	C3’
145	Cc	56	DT	C3’
147	Ce	10	DT	C3’
147	Ce	25	DT	C1’,C4’
147	Ce	42	DT	C3’
155	Cs	22	DT	C3’
156	Ct	18	DT	C3’
157	Cu	30	DT	C3’

All (919) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	A0	16	DG	Sidechain
2	A0	27	DG	Sidechain
2	A0	30	DG	Sidechain
2	A0	44	DT	Sidechain
2	A0	55	DA	Sidechain
2	A0	7	DG	Sidechain
3	A1	2	DG	Sidechain
3	A1	21	DG	Sidechain
3	A1	34	DG	Sidechain
3	A1	44	DG	Sidechain
4	A2	12	DA	Sidechain
4	A2	19	DG	Sidechain
6	A4	34	DT	Sidechain
6	A4	7	DG	Sidechain
7	A5	16	DG	Sidechain
7	A5	22	DA	Sidechain
7	A5	44	DT	Sidechain
7	A5	46	DG	Sidechain
8	A6	15	DA	Sidechain
8	A6	39	DG	Sidechain
8	A6	50	DA	Sidechain
8	A6	8	DT	Sidechain
9	A7	14	DG	Sidechain
9	A7	15	DG	Sidechain

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Mol	Chain	Res	Type	Group
9	A7	43	DA	Sidechain
10	A8	1	DT	Sidechain
10	A8	14	DG	Sidechain
10	A8	18	DG	Sidechain
10	A8	37	DA	Sidechain
10	A8	38	DA	Sidechain
1	AA	1041	DG	Sidechain
1	AA	1068	DA	Sidechain
1	AA	1077	DG	Sidechain
1	AA	1080	DT	Sidechain
1	AA	1084	DG	Sidechain
1	AA	1085	DG	Sidechain
1	AA	1094	DG	Sidechain
1	AA	1108	DG	Sidechain
1	AA	1124	DT	Sidechain
1	AA	1147	DA	Sidechain
1	AA	115	DG	Sidechain
1	AA	116	DG	Sidechain
1	AA	118	DA	Sidechain
1	AA	1188	DG	Sidechain
1	AA	1195	DT	Sidechain
1	AA	1201	DG	Sidechain
1	AA	1216	DG	Sidechain
1	AA	1247	DG	Sidechain
1	AA	1251	DG	Sidechain
1	AA	1252	DG	Sidechain
1	AA	126	DG	Sidechain
1	AA	1273	DG	Sidechain
1	AA	1282	DG	Sidechain
1	AA	1289	DG	Sidechain
1	AA	1291	DC	Sidechain
1	AA	1296	DT	Sidechain
1	AA	1323	DT	Sidechain
1	AA	1324	DT	Sidechain
1	AA	1336	DG	Sidechain
1	AA	1383	DA	Sidechain
1	AA	1389	DG	Sidechain
1	AA	1405	DG	Sidechain
1	AA	1414	DG	Sidechain
1	AA	1415	DG	Sidechain
1	AA	1429	DG	Sidechain
1	AA	1438	DG	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	1453	DT	Sidechain
1	AA	1456	DG	Sidechain
1	AA	1458	DG	Sidechain
1	AA	1475	DT	Sidechain
1	AA	1488	DG	Sidechain
1	AA	1509	DG	Sidechain
1	AA	1519	DG	Sidechain
1	AA	1535	DG	Sidechain
1	AA	1540	DG	Sidechain
1	AA	1561	DG	Sidechain
1	AA	1579	DG	Sidechain
1	AA	1619	DG	Sidechain
1	AA	1649	DG	Sidechain
1	AA	1672	DG	Sidechain
1	AA	1688	DG	Sidechain
1	AA	1715	DT	Sidechain
1	AA	1725	DG	Sidechain
1	AA	1752	DG	Sidechain
1	AA	1782	DG	Sidechain
1	AA	180	DG	Sidechain
1	AA	1821	DG	Sidechain
1	AA	1849	DG	Sidechain
1	AA	1863	DG	Sidechain
1	AA	1878	DT	Sidechain
1	AA	1895	DA	Sidechain
1	AA	1906	DG	Sidechain
1	AA	1908	DA	Sidechain
1	AA	191	DG	Sidechain
1	AA	1917	DT	Sidechain
1	AA	1928	DA	Sidechain
1	AA	1934	DG	Sidechain
1	AA	1939	DG	Sidechain
1	AA	1940	DG	Sidechain
1	AA	1945	DG	Sidechain
1	AA	1946	DA	Sidechain
1	AA	1972	DT	Sidechain
1	AA	2032	DG	Sidechain
1	AA	2039	DT	Sidechain
1	AA	209	DG	Sidechain
1	AA	210	DG	Sidechain
1	AA	2101	DG	Sidechain
1	AA	2149	DG	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	2153	DG	Sidechain
1	AA	2158	DG	Sidechain
1	AA	2185	DT	Sidechain
1	AA	2213	DG	Sidechain
1	AA	2238	DG	Sidechain
1	AA	2260	DG	Sidechain
1	AA	2276	DG	Sidechain
1	AA	2318	DA	Sidechain
1	AA	2323	DG	Sidechain
1	AA	2388	DG	Sidechain
1	AA	24	DG	Sidechain
1	AA	2424	DG	Sidechain
1	AA	2429	DG	Sidechain
1	AA	2441	DG	Sidechain
1	AA	2455	DG	Sidechain
1	AA	2475	DG	Sidechain
1	AA	2484	DG	Sidechain
1	AA	2505	DG	Sidechain
1	AA	2512	DG	Sidechain
1	AA	2520	DG	Sidechain
1	AA	2533	DG	Sidechain
1	AA	2537	DG	Sidechain
1	AA	2541	DA	Sidechain
1	AA	2568	DG	Sidechain
1	AA	2573	DG	Sidechain
1	AA	2602	DG	Sidechain
1	AA	2612	DG	Sidechain
1	AA	2618	DG	Sidechain
1	AA	2628	DG	Sidechain
1	AA	2638	DG	Sidechain
1	AA	266	DG	Sidechain
1	AA	2690	DT	Sidechain
1	AA	2707	DG	Sidechain
1	AA	2732	DA	Sidechain
1	AA	2776	DG	Sidechain
1	AA	2802	DA	Sidechain
1	AA	2831	DG	Sidechain
1	AA	2840	DG	Sidechain
1	AA	2849	DG	Sidechain
1	AA	285	DG	Sidechain
1	AA	2880	DT	Sidechain
1	AA	2881	DC	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	2882	DG	Sidechain
1	AA	2929	DA	Sidechain
1	AA	2930	DG	Sidechain
1	AA	2957	DG	Sidechain
1	AA	2959	DG	Sidechain
1	AA	2963	DG	Sidechain
1	AA	2965	DG	Sidechain
1	AA	2967	DT	Sidechain
1	AA	297	DG	Sidechain
1	AA	2972	DG	Sidechain
1	AA	2975	DG	Sidechain
1	AA	2981	DG	Sidechain
1	AA	2984	DG	Sidechain
1	AA	299	DG	Sidechain
1	AA	30	DG	Sidechain
1	AA	3002	DA	Sidechain
1	AA	3056	DG	Sidechain
1	AA	306	DG	Sidechain
1	AA	31	DG	Sidechain
1	AA	3123	DG	Sidechain
1	AA	3126	DG	Sidechain
1	AA	3136	DA	Sidechain
1	AA	3149	DT	Sidechain
1	AA	3250	DG	Sidechain
1	AA	3253	DG	Sidechain
1	AA	3276	DG	Sidechain
1	AA	3287	DT	Sidechain
1	AA	3292	DA	Sidechain
1	AA	3296	DA	Sidechain
1	AA	3309	DG	Sidechain
1	AA	3323	DT	Sidechain
1	AA	3357	DG	Sidechain
1	AA	3365	DG	Sidechain
1	AA	3372	DG	Sidechain
1	AA	3374	DT	Sidechain
1	AA	3400	DG	Sidechain
1	AA	3479	DG	Sidechain
1	AA	3513	DC	Sidechain
1	AA	3522	DG	Sidechain
1	AA	3537	DC	Sidechain
1	AA	3538	DT	Sidechain
1	AA	3565	DG	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	3571	DG	Sidechain
1	AA	3581	DG	Sidechain
1	AA	3582	DG	Sidechain
1	AA	3585	DG	Sidechain
1	AA	360	DG	Sidechain
1	AA	3608	DT	Sidechain
1	AA	3609	DG	Sidechain
1	AA	367	DG	Sidechain
1	AA	3674	DG	Sidechain
1	AA	3694	DG	Sidechain
1	AA	3696	DA	Sidechain
1	AA	3706	DA	Sidechain
1	AA	3735	DG	Sidechain
1	AA	3744	DG	Sidechain
1	AA	3795	DG	Sidechain
1	AA	3813	DG	Sidechain
1	AA	384	DG	Sidechain
1	AA	3843	DG	Sidechain
1	AA	3855	DG	Sidechain
1	AA	3879	DG	Sidechain
1	AA	3886	DG	Sidechain
1	AA	3888	DG	Sidechain
1	AA	3898	DG	Sidechain
1	AA	3900	DG	Sidechain
1	AA	3905	DT	Sidechain
1	AA	3921	DG	Sidechain
1	AA	3932	DG	Sidechain
1	AA	3942	DG	Sidechain
1	AA	3950	DG	Sidechain
1	AA	3959	DG	Sidechain
1	AA	3963	DG	Sidechain
1	AA	3993	DG	Sidechain
1	AA	3996	DG	Sidechain
1	AA	4001	DA	Sidechain
1	AA	4002	DG	Sidechain
1	AA	4011	DG	Sidechain
1	AA	4026	DG	Sidechain
1	AA	4032	DG	Sidechain
1	AA	4033	DG	Sidechain
1	AA	4035	DG	Sidechain
1	AA	4086	DG	Sidechain
1	AA	4089	DG	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	4095	DG	Sidechain
1	AA	4096	DG	Sidechain
1	AA	4104	DG	Sidechain
1	AA	4143	DG	Sidechain
1	AA	4171	DG	Sidechain
1	AA	420	DG	Sidechain
1	AA	4203	DG	Sidechain
1	AA	4218	DG	Sidechain
1	AA	4227	DG	Sidechain
1	AA	4231	DG	Sidechain
1	AA	4284	DG	Sidechain
1	AA	4287	DT	Sidechain
1	AA	4288	DT	Sidechain
1	AA	4290	DG	Sidechain
1	AA	4292	DG	Sidechain
1	AA	4336	DT	Sidechain
1	AA	4343	DC	Sidechain
1	AA	4349	DG	Sidechain
1	AA	4351	DG	Sidechain
1	AA	4358	DG	Sidechain
1	AA	4372	DG	Sidechain
1	AA	4381	DT	Sidechain
1	AA	4383	DT	Sidechain
1	AA	440	DG	Sidechain
1	AA	4404	DG	Sidechain
1	AA	4423	DG	Sidechain
1	AA	4430	DT	Sidechain
1	AA	4462	DG	Sidechain
1	AA	4478	DG	Sidechain
1	AA	448	DG	Sidechain
1	AA	4521	DA	Sidechain
1	AA	4523	DT	Sidechain
1	AA	4532	DG	Sidechain
1	AA	4536	DG	Sidechain
1	AA	454	DG	Sidechain
1	AA	4554	DG	Sidechain
1	AA	4568	DT	Sidechain
1	AA	4578	DT	Sidechain
1	AA	4582	DG	Sidechain
1	AA	4583	DG	Sidechain
1	AA	4584	DG	Sidechain
1	AA	4609	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	4628	DG	Sidechain
1	AA	472	DG	Sidechain
1	AA	473	DG	Sidechain
1	AA	4739	DA	Sidechain
1	AA	4758	DG	Sidechain
1	AA	4788	DG	Sidechain
1	AA	4791	DG	Sidechain
1	AA	4803	DA	Sidechain
1	AA	4818	DG	Sidechain
1	AA	4850	DG	Sidechain
1	AA	4857	DG	Sidechain
1	AA	4879	DG	Sidechain
1	AA	4910	DG	Sidechain
1	AA	4926	DG	Sidechain
1	AA	4927	DG	Sidechain
1	AA	4952	DA	Sidechain
1	AA	4954	DA	Sidechain
1	AA	496	DG	Sidechain
1	AA	4960	DT	Sidechain
1	AA	4961	DG	Sidechain
1	AA	4965	DG	Sidechain
1	AA	4974	DG	Sidechain
1	AA	4977	DT	Sidechain
1	AA	4980	DG	Sidechain
1	AA	5034	DG	Sidechain
1	AA	506	DT	Sidechain
1	AA	5075	DT	Sidechain
1	AA	5088	DG	Sidechain
1	AA	509	DG	Sidechain
1	AA	5111	DG	Sidechain
1	AA	5127	DG	Sidechain
1	AA	5139	DG	Sidechain
1	AA	5158	DA	Sidechain
1	AA	5161	DG	Sidechain
1	AA	5216	DG	Sidechain
1	AA	5236	DT	Sidechain
1	AA	5244	DG	Sidechain
1	AA	5252	DT	Sidechain
1	AA	5256	DG	Sidechain
1	AA	5266	DT	Sidechain
1	AA	5287	DG	Sidechain
1	AA	529	DG	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	5292	DT	Sidechain
1	AA	5295	DA	Sidechain
1	AA	5304	DA	Sidechain
1	AA	5328	DA	Sidechain
1	AA	5330	DA	Sidechain
1	AA	5334	DG	Sidechain
1	AA	5344	DG	Sidechain
1	AA	5352	DG	Sidechain
1	AA	5361	DG	Sidechain
1	AA	537	DG	Sidechain
1	AA	5401	DA	Sidechain
1	AA	5467	DG	Sidechain
1	AA	547	DA	Sidechain
1	AA	5476	DG	Sidechain
1	AA	5479	DT	Sidechain
1	AA	5487	DG	Sidechain
1	AA	5488	DG	Sidechain
1	AA	549	DG	Sidechain
1	AA	5499	DG	Sidechain
1	AA	553	DG	Sidechain
1	AA	5534	DG	Sidechain
1	AA	5537	DG	Sidechain
1	AA	554	DG	Sidechain
1	AA	5550	DG	Sidechain
1	AA	5578	DT	Sidechain
1	AA	5611	DG	Sidechain
1	AA	5627	DC	Sidechain
1	AA	5631	DG	Sidechain
1	AA	5658	DG	Sidechain
1	AA	5674	DA	Sidechain
1	AA	5691	DT	Sidechain
1	AA	5697	DG	Sidechain
1	AA	5704	DG	Sidechain
1	AA	5706	DA	Sidechain
1	AA	5711	DT	Sidechain
1	AA	5727	DA	Sidechain
1	AA	5730	DT	Sidechain
1	AA	5736	DG	Sidechain
1	AA	5776	DG	Sidechain
1	AA	581	DG	Sidechain
1	AA	5811	DG	Sidechain
1	AA	5820	DG	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	5853	DG	Sidechain
1	AA	5869	DG	Sidechain
1	AA	587	DG	Sidechain
1	AA	5889	DA	Sidechain
1	AA	5893	DG	Sidechain
1	AA	5898	DT	Sidechain
1	AA	5899	DG	Sidechain
1	AA	5917	DG	Sidechain
1	AA	592	DC	Sidechain
1	AA	5954	DC	Sidechain
1	AA	5958	DT	Sidechain
1	AA	5962	DC	Sidechain
1	AA	5967	DA	Sidechain
1	AA	5970	DT	Sidechain
1	AA	5977	DG	Sidechain
1	AA	5979	DT	Sidechain
1	AA	5998	DT	Sidechain
1	AA	6	DG	Sidechain
1	AA	6009	DG	Sidechain
1	AA	6082	DT	Sidechain
1	AA	6085	DG	Sidechain
1	AA	6097	DG	Sidechain
1	AA	6103	DT	Sidechain
1	AA	6133	DA	Sidechain
1	AA	6164	DA	Sidechain
1	AA	6175	DG	Sidechain
1	AA	6195	DG	Sidechain
1	AA	623	DG	Sidechain
1	AA	6235	DG	Sidechain
1	AA	6250	DG	Sidechain
1	AA	6259	DG	Sidechain
1	AA	63	DC	Sidechain
1	AA	6300	DA	Sidechain
1	AA	6330	DG	Sidechain
1	AA	6334	DG	Sidechain
1	AA	6349	DG	Sidechain
1	AA	6352	DG	Sidechain
1	AA	6362	DG	Sidechain
1	AA	6364	DG	Sidechain
1	AA	6385	DG	Sidechain
1	AA	6416	DG	Sidechain
1	AA	6418	DG	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	6451	DT	Sidechain
1	AA	6460	DG	Sidechain
1	AA	6509	DG	Sidechain
1	AA	6519	DG	Sidechain
1	AA	6527	DG	Sidechain
1	AA	6547	DG	Sidechain
1	AA	6575	DA	Sidechain
1	AA	659	DG	Sidechain
1	AA	6600	DG	Sidechain
1	AA	6666	DG	Sidechain
1	AA	6670	DG	Sidechain
1	AA	6682	DG	Sidechain
1	AA	6685	DG	Sidechain
1	AA	6696	DG	Sidechain
1	AA	6700	DG	Sidechain
1	AA	6711	DT	Sidechain
1	AA	6712	DG	Sidechain
1	AA	6720	DT	Sidechain
1	AA	6733	DG	Sidechain
1	AA	6739	DG	Sidechain
1	AA	6767	DG	Sidechain
1	AA	6787	DG	Sidechain
1	AA	6790	DG	Sidechain
1	AA	6806	DG	Sidechain
1	AA	6809	DG	Sidechain
1	AA	6814	DG	Sidechain
1	AA	6838	DG	Sidechain
1	AA	6859	DG	Sidechain
1	AA	6860	DG	Sidechain
1	AA	6898	DG	Sidechain
1	AA	6909	DG	Sidechain
1	AA	691	DG	Sidechain
1	AA	6964	DG	Sidechain
1	AA	6972	DG	Sidechain
1	AA	700	DG	Sidechain
1	AA	7000	DG	Sidechain
1	AA	7002	DA	Sidechain
1	AA	7017	DG	Sidechain
1	AA	7026	DG	Sidechain
1	AA	7033	DG	Sidechain
1	AA	7042	DG	Sidechain
1	AA	707	DG	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	7070	DG	Sidechain
1	AA	7074	DG	Sidechain
1	AA	7076	DG	Sidechain
1	AA	7124	DT	Sidechain
1	AA	714	DG	Sidechain
1	AA	7145	DG	Sidechain
1	AA	7159	DG	Sidechain
1	AA	7170	DG	Sidechain
1	AA	7171	DG	Sidechain
1	AA	719	DG	Sidechain
1	AA	7202	DC	Sidechain
1	AA	7227	DG	Sidechain
1	AA	723	DG	Sidechain
1	AA	7234	DT	Sidechain
1	AA	724	DG	Sidechain
1	AA	730	DG	Sidechain
1	AA	731	DG	Sidechain
1	AA	740	DG	Sidechain
1	AA	753	DG	Sidechain
1	AA	763	DG	Sidechain
1	AA	765	DG	Sidechain
1	AA	778	DG	Sidechain
1	AA	779	DG	Sidechain
1	AA	800	DT	Sidechain
1	AA	842	DA	Sidechain
1	AA	847	DG	Sidechain
1	AA	895	DG	Sidechain
1	AA	903	DG	Sidechain
1	AA	910	DG	Sidechain
1	AA	933	DG	Sidechain
1	AA	943	DG	Sidechain
1	AA	944	DG	Sidechain
1	AA	971	DG	Sidechain
1	AA	994	DG	Sidechain
11	AB	30	DG	Sidechain
12	AC	19	DG	Sidechain
12	AC	2	DA	Sidechain
12	AC	23	DG	Sidechain
13	AD	10	DG	Sidechain
13	AD	44	DG	Sidechain
15	AF	10	DC	Sidechain
15	AF	30	DG	Sidechain

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Mol	Chain	Res	Type	Group
15	AF	38	DG	Sidechain
15	AF	47	DG	Sidechain
16	AG	23	DG	Sidechain
16	AG	26	DG	Sidechain
16	AG	8	DG	Sidechain
17	AH	27	DG	Sidechain
17	AH	28	DG	Sidechain
18	AI	18	DT	Sidechain
18	AI	35	DA	Sidechain
19	AJ	15	DA	Sidechain
19	AJ	16	DA	Sidechain
19	AJ	26	DG	Sidechain
19	AJ	48	DG	Sidechain
20	AK	18	DG	Sidechain
20	AK	19	DG	Sidechain
20	AK	24	DT	Sidechain
20	AK	26	DT	Sidechain
20	AK	34	DA	Sidechain
20	AK	49	DG	Sidechain
20	AK	50	DG	Sidechain
20	AK	60	DG	Sidechain
21	AL	22	DA	Sidechain
21	AL	27	DA	Sidechain
21	AL	32	DA	Sidechain
21	AL	45	DG	Sidechain
22	AM	45	DA	Sidechain
23	AN	14	DG	Sidechain
23	AN	39	DG	Sidechain
23	AN	44	DG	Sidechain
24	AO	45	DG	Sidechain
24	AO	46	DT	Sidechain
24	AO	47	DG	Sidechain
25	AP	29	DG	Sidechain
26	AQ	21	DC	Sidechain
26	AQ	38	DG	Sidechain
26	AQ	46	DG	Sidechain
26	AQ	47	DG	Sidechain
26	AQ	54	DA	Sidechain
26	AQ	56	DC	Sidechain
27	AR	52	DG	Sidechain
27	AR	58	DG	Sidechain
28	AS	34	DA	Sidechain

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Mol	Chain	Res	Type	Group
28	AS	43	DG	Sidechain
28	AS	6	DC	Sidechain
28	AS	8	DA	Sidechain
29	AT	25	DG	Sidechain
29	AT	36	DG	Sidechain
29	AT	37	DG	Sidechain
29	AT	42	DG	Sidechain
30	AU	18	DA	Sidechain
30	AU	26	DG	Sidechain
30	AU	34	DT	Sidechain
30	AU	42	DG	Sidechain
31	AV	10	DG	Sidechain
31	AV	25	DA	Sidechain
31	AV	34	DA	Sidechain
31	AV	48	DA	Sidechain
31	AV	52	DA	Sidechain
33	AX	16	DA	Sidechain
33	AX	33	DT	Sidechain
33	AX	7	DT	Sidechain
34	AY	13	DA	Sidechain
34	AY	14	DG	Sidechain
34	AY	5	DG	Sidechain
34	AY	7	DG	Sidechain
35	AZ	3	DG	Sidechain
35	AZ	35	DA	Sidechain
35	AZ	36	DG	Sidechain
35	AZ	8	DG	Sidechain
36	Ab	25	DG	Sidechain
36	Ab	3	DC	Sidechain
37	Ac	6	DA	Sidechain
37	Ac	63	DG	Sidechain
38	Ad	13	DC	Sidechain
38	Ad	6	DT	Sidechain
39	Af	18	DC	Sidechain
40	Ag	18	DG	Sidechain
41	Ah	14	DG	Sidechain
41	Ah	22	DG	Sidechain
41	Ah	30	DC	Sidechain
42	Ai	46	DG	Sidechain
43	Aj	14	DA	Sidechain
43	Aj	15	DA	Sidechain
43	Aj	20	DA	Sidechain

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Mol	Chain	Res	Type	Group
43	Aj	38	DA	Sidechain
43	Aj	62	DG	Sidechain
44	Ak	12	DA	Sidechain
44	Ak	15	DG	Sidechain
44	Ak	23	DG	Sidechain
44	Ak	30	DA	Sidechain
44	Ak	46	DA	Sidechain
44	Ak	6	DA	Sidechain
44	Ak	7	DG	Sidechain
45	Al	18	DA	Sidechain
45	Al	33	DA	Sidechain
45	Al	37	DG	Sidechain
45	Al	5	DC	Sidechain
46	Am	27	DG	Sidechain
46	Am	38	DT	Sidechain
47	An	17	DG	Sidechain
47	An	26	DG	Sidechain
47	An	30	DG	Sidechain
47	An	32	DG	Sidechain
48	Ao	3	DG	Sidechain
48	Ao	34	DT	Sidechain
49	As	10	DG	Sidechain
49	As	21	DT	Sidechain
49	As	26	DA	Sidechain
51	Av	14	DA	Sidechain
51	Av	29	DG	Sidechain
51	Av	30	DG	Sidechain
51	Av	34	DG	Sidechain
51	Av	4	DG	Sidechain
51	Av	41	DG	Sidechain
52	Aw	1	DG	Sidechain
52	Aw	45	DG	Sidechain
53	Ax	2	DG	Sidechain
53	Ax	30	DG	Sidechain
54	Ay	14	DA	Sidechain
55	Az	11	DG	Sidechain
55	Az	37	DG	Sidechain
55	Az	4	DG	Sidechain
56	B0	15	DG	Sidechain
56	B0	26	DA	Sidechain
56	B0	39	DG	Sidechain
56	B0	41	DA	Sidechain

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Mol	Chain	Res	Type	Group
56	B0	42	DA	Sidechain
56	B0	9	DG	Sidechain
57	B1	53	DG	Sidechain
58	B2	10	DG	Sidechain
58	B2	6	DA	Sidechain
59	B3	11	DG	Sidechain
60	B4	10	DA	Sidechain
60	B4	11	DG	Sidechain
60	B4	13	DG	Sidechain
60	B4	14	DG	Sidechain
60	B4	36	DA	Sidechain
61	B5	30	DG	Sidechain
61	B5	6	DT	Sidechain
62	B6	18	DG	Sidechain
62	B6	30	DG	Sidechain
62	B6	36	DA	Sidechain
62	B6	39	DT	Sidechain
62	B6	7	DG	Sidechain
63	B7	14	DG	Sidechain
63	B7	21	DG	Sidechain
63	B7	23	DG	Sidechain
63	B7	26	DA	Sidechain
63	B7	44	DT	Sidechain
65	B9	17	DG	Sidechain
65	B9	43	DT	Sidechain
65	B9	49	DG	Sidechain
66	BB	24	DG	Sidechain
66	BB	36	DG	Sidechain
66	BB	46	DT	Sidechain
67	BC	23	DG	Sidechain
68	BD	17	DG	Sidechain
68	BD	26	DG	Sidechain
68	BD	33	DA	Sidechain
68	BD	35	DG	Sidechain
69	BE	28	DG	Sidechain
69	BE	49	DA	Sidechain
69	BE	53	DG	Sidechain
70	BF	14	DA	Sidechain
70	BF	23	DT	Sidechain
71	BG	11	DG	Sidechain
71	BG	18	DA	Sidechain
71	BG	2	DA	Sidechain

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Mol	Chain	Res	Type	Group
71	BG	20	DT	Sidechain
71	BG	33	DC	Sidechain
71	BG	40	DG	Sidechain
71	BG	7	DA	Sidechain
72	BH	20	DG	Sidechain
72	BH	28	DG	Sidechain
73	BI	17	DT	Sidechain
73	BI	9	DA	Sidechain
74	BJ	21	DG	Sidechain
74	BJ	37	DG	Sidechain
75	BK	22	DA	Sidechain
76	BL	25	DG	Sidechain
76	BL	29	DA	Sidechain
76	BL	44	DA	Sidechain
76	BL	45	DG	Sidechain
76	BL	46	DC	Sidechain
77	BM	3	DT	Sidechain
78	BN	51	DG	Sidechain
79	BO	1	DA	Sidechain
79	BO	10	DG	Sidechain
79	BO	44	DT	Sidechain
79	BO	7	DG	Sidechain
79	BO	8	DC	Sidechain
79	BO	9	DG	Sidechain
80	BP	13	DG	Sidechain
80	BP	45	DG	Sidechain
81	BQ	18	DG	Sidechain
81	BQ	41	DG	Sidechain
82	BR	12	DT	Sidechain
82	BR	21	DG	Sidechain
82	BR	42	DG	Sidechain
83	BS	17	DT	Sidechain
83	BS	30	DG	Sidechain
83	BS	35	DG	Sidechain
83	BS	39	DG	Sidechain
83	BS	47	DC	Sidechain
84	BT	19	DG	Sidechain
84	BT	43	DG	Sidechain
84	BT	46	DG	Sidechain
85	BU	45	DG	Sidechain
86	BV	36	DG	Sidechain
87	BW	11	DG	Sidechain

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Mol	Chain	Res	Type	Group
87	BW	25	DG	Sidechain
87	BW	6	DG	Sidechain
88	BX	10	DG	Sidechain
88	BX	14	DG	Sidechain
88	BX	27	DG	Sidechain
88	BX	30	DA	Sidechain
88	BX	37	DA	Sidechain
88	BX	40	DA	Sidechain
88	BX	48	DG	Sidechain
89	BY	37	DA	Sidechain
89	BY	45	DG	Sidechain
90	BZ	11	DG	Sidechain
91	Ba	30	DG	Sidechain
91	Ba	32	DT	Sidechain
91	Ba	45	DC	Sidechain
92	Bb	20	DG	Sidechain
92	Bb	46	DT	Sidechain
93	Bc	25	DG	Sidechain
93	Bc	41	DG	Sidechain
93	Bc	47	DG	Sidechain
93	Bc	49	DT	Sidechain
96	Bf	13	DG	Sidechain
96	Bf	17	DA	Sidechain
96	Bf	21	DG	Sidechain
96	Bf	33	DG	Sidechain
97	Bg	35	DC	Sidechain
98	Bh	34	DG	Sidechain
98	Bh	38	DG	Sidechain
99	Bi	14	DG	Sidechain
99	Bi	24	DG	Sidechain
99	Bi	45	DG	Sidechain
100	Bj	34	DA	Sidechain
101	Bk	33	DG	Sidechain
101	Bk	39	DG	Sidechain
101	Bk	43	DG	Sidechain
101	Bk	9	DG	Sidechain
102	Bl	25	DG	Sidechain
102	Bl	40	DG	Sidechain
102	Bl	42	DG	Sidechain
103	Bm	25	DA	Sidechain
103	Bm	29	DG	Sidechain
103	Bm	33	DG	Sidechain

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Mol	Chain	Res	Type	Group
104	Bn	24	DG	Sidechain
104	Bn	25	DA	Sidechain
104	Bn	46	DT	Sidechain
104	Bn	50	DG	Sidechain
104	Bn	52	DG	Sidechain
105	Bo	26	DG	Sidechain
105	Bo	27	DA	Sidechain
105	Bo	62	DC	Sidechain
105	Bo	64	DA	Sidechain
105	Bo	8	DG	Sidechain
106	Bp	26	DT	Sidechain
106	Bp	29	DT	Sidechain
106	Bp	42	DG	Sidechain
106	Bp	45	DA	Sidechain
106	Bp	46	DG	Sidechain
106	Bp	47	DG	Sidechain
106	Bp	8	DG	Sidechain
107	Bq	26	DA	Sidechain
107	Bq	3	DG	Sidechain
107	Bq	55	DA	Sidechain
108	Br	39	DA	Sidechain
109	Bs	42	DG	Sidechain
111	C1	14	DG	Sidechain
112	C2	31	DA	Sidechain
112	C2	46	DG	Sidechain
113	C3	15	DG	Sidechain
113	C3	21	DG	Sidechain
113	C3	27	DA	Sidechain
113	C3	42	DG	Sidechain
114	C4	14	DG	Sidechain
114	C4	7	DG	Sidechain
115	C5	11	DG	Sidechain
115	C5	25	DG	Sidechain
115	C5	40	DT	Sidechain
116	C6	10	DA	Sidechain
116	C6	41	DG	Sidechain
116	C6	9	DG	Sidechain
117	C7	22	DT	Sidechain
117	C7	32	DG	Sidechain
117	C7	50	DG	Sidechain
117	C7	6	DA	Sidechain
118	C8	10	DG	Sidechain

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Mol	Chain	Res	Type	Group
118	C8	44	DG	Sidechain
118	C8	6	DG	Sidechain
119	CB	23	DG	Sidechain
119	CB	3	DG	Sidechain
119	CB	49	DG	Sidechain
120	CC	14	DG	Sidechain
120	CC	43	DG	Sidechain
120	CC	44	DA	Sidechain
121	CD	29	DG	Sidechain
121	CD	31	DG	Sidechain
121	CD	48	DA	Sidechain
122	CE	12	DA	Sidechain
122	CE	22	DG	Sidechain
123	CF	24	DT	Sidechain
123	CF	40	DA	Sidechain
124	CG	1	DG	Sidechain
124	CG	10	DG	Sidechain
124	CG	22	DG	Sidechain
124	CG	39	DG	Sidechain
125	CH	19	DG	Sidechain
125	CH	22	DG	Sidechain
125	CH	3	DG	Sidechain
125	CH	43	DG	Sidechain
126	CI	13	DA	Sidechain
126	CI	22	DG	Sidechain
126	CI	26	DG	Sidechain
126	CI	34	DG	Sidechain
127	CJ	19	DT	Sidechain
127	CJ	33	DA	Sidechain
127	CJ	40	DA	Sidechain
127	CJ	46	DG	Sidechain
127	CJ	57	DA	Sidechain
128	CK	13	DG	Sidechain
128	CK	18	DG	Sidechain
128	CK	20	DT	Sidechain
128	CK	23	DT	Sidechain
128	CK	38	DG	Sidechain
129	CL	18	DT	Sidechain
129	CL	24	DG	Sidechain
129	CL	32	DA	Sidechain
129	CL	35	DG	Sidechain
129	CL	4	DG	Sidechain

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Mol	Chain	Res	Type	Group
131	CN	33	DG	Sidechain
132	CO	13	DG	Sidechain
132	CO	14	DG	Sidechain
132	CO	18	DG	Sidechain
132	CO	29	DA	Sidechain
132	CO	44	DG	Sidechain
132	CO	46	DG	Sidechain
132	CO	6	DG	Sidechain
133	CP	20	DT	Sidechain
133	CP	23	DG	Sidechain
133	CP	52	DA	Sidechain
133	CP	56	DG	Sidechain
133	CP	7	DG	Sidechain
134	CQ	33	DC	Sidechain
136	CS	16	DG	Sidechain
136	CS	17	DG	Sidechain
136	CS	30	DT	Sidechain
136	CS	35	DG	Sidechain
137	CT	2	DT	Sidechain
137	CT	23	DT	Sidechain
137	CT	34	DG	Sidechain
137	CT	35	DG	Sidechain
137	CT	42	DG	Sidechain
138	CU	11	DG	Sidechain
139	CV	16	DG	Sidechain
139	CV	31	DG	Sidechain
139	CV	50	DG	Sidechain
140	CW	31	DT	Sidechain
140	CW	35	DG	Sidechain
141	CX	28	DG	Sidechain
141	CX	30	DT	Sidechain
141	CX	5	DG	Sidechain
143	CZ	11	DG	Sidechain
143	CZ	31	DG	Sidechain
143	CZ	36	DG	Sidechain
143	CZ	9	DA	Sidechain
144	Cb	10	DG	Sidechain
144	Cb	13	DG	Sidechain
145	Cc	1	DA	Sidechain
145	Cc	20	DG	Sidechain
145	Cc	51	DG	Sidechain
145	Cc	56	DT	Sidechain

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Mol	Chain	Res	Type	Group
145	Cc	62	DG	Sidechain
146	Cd	18	DA	Sidechain
146	Cd	22	DG	Sidechain
146	Cd	38	DG	Sidechain
147	Ce	4	DA	Sidechain
147	Ce	45	DG	Sidechain
147	Ce	5	DG	Sidechain
147	Ce	7	DG	Sidechain
148	Cf	46	DG	Sidechain
149	Cg	2	DA	Sidechain
149	Cg	32	DG	Sidechain
149	Cg	40	DA	Sidechain
149	Cg	8	DG	Sidechain
150	Ch	10	DA	Sidechain
150	Ch	30	DG	Sidechain
152	Cp	19	DG	Sidechain
152	Cp	24	DA	Sidechain
152	Cp	48	DG	Sidechain
153	Cq	11	DG	Sidechain
153	Cq	27	DG	Sidechain
153	Cq	32	DA	Sidechain
153	Cq	38	DC	Sidechain
153	Cq	6	DG	Sidechain
154	Cr	33	DG	Sidechain
154	Cr	7	DG	Sidechain
155	Cs	13	DG	Sidechain
155	Cs	15	DG	Sidechain
155	Cs	22	DT	Sidechain
155	Cs	24	DG	Sidechain
155	Cs	36	DG	Sidechain
155	Cs	47	DG	Sidechain
155	Cs	6	DA	Sidechain
155	Cs	7	DG	Sidechain
157	Cu	46	DG	Sidechain
157	Cu	49	DG	Sidechain
158	Cv	22	DG	Sidechain
158	Cv	32	DA	Sidechain
158	Cv	8	DG	Sidechain
159	Cw	12	DG	Sidechain
159	Cw	16	DG	Sidechain
159	Cw	5	DG	Sidechain
159	Cw	50	DG	Sidechain

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Mol	Chain	Res	Type	Group
159	Cw	7	DG	Sidechain
160	Cx	11	DG	Sidechain
160	Cx	32	DG	Sidechain
160	Cx	34	DG	Sidechain
160	Cx	45	DA	Sidechain
161	Cy	63	DG	Sidechain
161	Cy	7	DG	Sidechain
162	Cz	12	DG	Sidechain
162	Cz	20	DG	Sidechain
162	Cz	21	DG	Sidechain
162	Cz	22	DC	Sidechain
162	Cz	29	DT	Sidechain
162	Cz	4	DA	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	AA	147963	0	82380	494	0
2	A0	1116	0	632	2	0
3	A1	884	0	511	23	0
4	A2	1019	0	570	6	0
5	A3	796	0	464	8	0
6	A4	780	0	433	2	0
7	A5	971	0	546	3	0
8	A6	1016	0	574	3	0
9	A7	863	0	482	1	0
10	A8	976	0	557	2	0
11	AB	799	0	450	0	0
12	AC	993	0	546	5	0
13	AD	1018	0	562	4	0
14	AE	734	0	411	28	0
15	AF	969	0	548	1	0
16	AG	939	0	516	3	0
17	AH	964	0	543	7	0
18	AI	967	0	551	2	0
19	AJ	1059	0	594	12	0
20	AK	1202	0	697	5	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
21	AL	971	0	551	10	0
22	AM	993	0	579	4	0
23	AN	968	0	545	9	0
24	AO	962	0	549	0	0
25	AP	802	0	457	1	0
26	AQ	1160	0	649	9	0
27	AR	975	0	547	0	0
28	AS	794	0	443	0	0
29	AT	973	0	550	4	0
30	AU	967	0	551	10	0
31	AV	1051	0	597	15	0
32	AW	701	0	402	1	0
33	AX	959	0	548	5	0
34	AY	645	0	362	0	0
35	AZ	1082	0	618	5	0
36	Ab	907	0	517	3	0
37	Ac	1115	0	632	39	0
38	Ad	958	0	555	2	0
39	Af	964	0	547	6	0
40	Ag	979	0	547	0	0
41	Ah	872	0	509	1	0
42	Ai	722	0	409	0	0
43	Aj	1257	0	710	2	0
44	Ak	946	0	525	3	0
45	Al	949	0	559	4	0
46	Am	963	0	550	1	0
47	An	972	0	549	2	0
48	Ao	724	0	412	4	0
49	As	971	0	560	5	0
50	Au	963	0	552	2	0
51	Av	869	0	490	5	0
52	Aw	960	0	556	2	0
53	Ax	953	0	538	2	0
54	Ay	568	0	320	0	0
55	Az	737	0	412	1	0
56	B0	977	0	545	2	0
57	B1	900	0	501	2	0
58	B2	734	0	406	0	0
59	B3	976	0	546	3	0
60	B4	664	0	374	2	0
61	B5	816	0	454	3	0
62	B6	929	0	507	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
63	B7	892	0	507	1	0
64	B8	653	0	372	1	0
65	B9	810	0	460	5	0
66	BB	982	0	541	2	0
67	BC	798	0	444	1	0
68	BD	727	0	393	11	0
69	BE	1183	0	659	3	0
70	BF	810	0	462	2	0
71	BG	1007	0	553	1	0
72	BH	644	0	365	0	0
73	BI	544	0	310	0	0
74	BJ	1076	0	604	2	0
75	BK	894	0	502	13	0
76	BL	966	0	550	5	0
77	BM	855	0	480	4	0
78	BN	970	0	547	2	0
79	BO	984	0	562	15	0
80	BP	824	0	469	0	0
81	BQ	971	0	545	4	0
82	BR	733	0	415	1	0
83	BS	967	0	547	24	0
84	BT	753	0	421	4	0
85	BU	813	0	463	0	0
86	BV	895	0	499	0	0
87	BW	874	0	490	0	0
88	BX	991	0	551	7	0
89	BY	871	0	491	1	0
90	BZ	870	0	488	2	0
91	Ba	972	0	551	5	0
92	Bb	974	0	543	3	0
93	Bc	1015	0	571	5	0
94	Bd	836	0	465	0	0
95	Be	978	0	545	4	0
96	Bf	981	0	543	10	0
97	Bg	646	0	366	2	0
98	Bh	784	0	433	0	0
99	Bi	1255	0	704	35	0
100	Bj	907	0	510	16	0
101	Bk	964	0	531	1	0
102	Bl	986	0	539	1	0
103	Bm	964	0	548	17	0
104	Bn	975	0	530	9	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
105	Bo	1154	0	647	1	0
106	Bp	985	0	540	2	0
107	Bq	784	0	434	0	0
108	Br	732	0	413	4	0
109	Bs	800	0	438	17	0
110	C0	632	0	352	1	0
111	C1	732	0	409	2	0
112	C2	1125	0	645	17	0
113	C3	962	0	547	1	0
114	C4	1133	0	640	1	0
115	C5	1275	0	703	16	0
116	C6	977	0	549	2	0
117	C7	1056	0	602	4	0
118	C8	892	0	508	1	0
119	CB	1088	0	621	3	0
120	CC	963	0	534	2	0
121	CD	984	0	547	2	0
122	CE	816	0	458	6	0
123	CF	811	0	460	10	0
124	CG	904	0	503	1	0
125	CH	987	0	549	0	0
126	CI	889	0	504	8	0
127	CJ	946	0	537	2	0
128	CK	981	0	548	7	0
129	CL	967	0	555	13	0
130	CM	801	0	439	1	0
131	CN	848	0	464	2	0
132	CO	975	0	554	10	0
133	CP	1140	0	633	5	0
134	CQ	557	0	323	1	0
135	CR	969	0	548	2	0
136	CS	773	0	435	6	0
137	CT	982	0	551	1	0
138	CU	648	0	361	2	0
139	CV	1067	0	612	1	0
140	CW	564	0	327	7	0
141	CX	944	0	537	0	0
142	CY	870	0	489	2	0
143	CZ	987	0	543	8	0
144	Cb	891	0	509	4	0
145	Cc	1048	0	595	4	0
146	Cd	859	0	481	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
147	Ce	1049	0	597	1	0
148	Cf	768	0	436	1	0
149	Cg	735	0	410	3	0
150	Ch	938	0	536	0	0
151	Ck	585	0	334	0	0
152	Cp	976	0	549	0	0
153	Cq	827	0	453	2	0
154	Cr	727	0	409	9	0
155	Cs	1012	0	558	3	0
156	Ct	886	0	507	3	0
157	Cu	1216	0	685	5	0
158	Cv	823	0	475	1	0
159	Cw	1098	0	615	4	0
160	Cx	730	0	411	0	0
161	Cy	1145	0	643	3	0
162	Cz	970	0	541	1	0
All	All	294953	0	165169	913	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 2.

All (913) 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)
3:A1:18:DT:C5'	3:A1:19:DA:H2"	1.16	1.61
1:AA:378:DG:H5"	1:AA:379:DA:C2'	1.33	1.57
3:A1:18:DT:H5"	3:A1:19:DA:C2'	1.32	1.57
37:Ac:22:DA:C2'	37:Ac:23:DT:H5"	1.29	1.55
1:AA:3666:DA:C5'	14:AE:7:DT:C7	1.81	1.54
1:AA:3666:DA:C5'	14:AE:7:DT:H72	1.02	1.48
39:Af:22:DT:H3'	39:Af:23:DA:C5'	1.50	1.42
1:AA:378:DG:H4'	1:AA:379:DA:C3'	1.47	1.41
3:A1:19:DA:H3'	154:Cr:3:DA:C5'	1.51	1.39
1:AA:3666:DA:H5'	14:AE:7:DT:C7	1.45	1.37
99:Bi:38:DG:H4'	109:Bs:9:DA:OP2	1.24	1.35
1:AA:378:DG:C4'	1:AA:379:DA:H3'	1.56	1.33
1:AA:699:DT:OP1	1:AA:6709:DG:C5'	1.77	1.33
37:Ac:22:DA:C3'	37:Ac:23:DT:H5"	1.61	1.30
1:AA:378:DG:C5'	1:AA:379:DA:C2'	2.14	1.26
1:AA:4430:DT:OP2	1:AA:4431:DT:OP2	1.54	1.25
1:AA:7109:DT:O5'	1:AA:7110:DC:H2"	1.35	1.25

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
100:Bj:2:DG:OP2	100:Bj:4:DG:H5"	1.36	1.24
3:A1:19:DA:C3'	154:Cr:3:DA:H5'	1.66	1.23
1:AA:142:DT:OP1	1:AA:145:DA:H3'	1.05	1.22
99:Bi:39:DG:H5"	109:Bs:9:DA:C3'	1.69	1.22
1:AA:699:DT:OP1	1:AA:6709:DG:H5'	1.33	1.22
1:AA:7216:DT:OP2	1:AA:7237:DT:H5"	1.06	1.22
37:Ac:22:DA:C2'	37:Ac:23:DT:C5'	2.18	1.21
35:AZ:12:DG:O3'	35:AZ:13:DA:H5'	1.36	1.21
1:AA:1026:DT:O5'	77:BM:16:DA:C2	1.93	1.20
1:AA:378:DG:C5'	1:AA:379:DA:H2'	1.70	1.20
1:AA:3442:DG:H5"	1:AA:3446:DT:OP2	1.40	1.20
39:Af:22:DT:C3'	39:Af:23:DA:C5'	2.15	1.19
1:AA:3768:DT:O3'	1:AA:3769:DC:P	1.99	1.19
1:AA:7216:DT:C7	1:AA:7236:DG:H3'	1.74	1.18
37:Ac:54:DG:C2'	37:Ac:55:DA:H5"	1.73	1.18
99:Bi:59:DA:OP2	104:Bn:11:DG:H5"	1.02	1.17
1:AA:1026:DT:O5'	77:BM:16:DA:N3	1.76	1.17
1:AA:3442:DG:C5'	1:AA:3446:DT:OP2	1.91	1.17
1:AA:3528:DT:O3'	1:AA:3530:DT:H5"	1.43	1.17
1:AA:7216:DT:OP2	1:AA:7237:DT:C5'	1.91	1.16
1:AA:237:DG:OP2	1:AA:7181:DA:C5'	1.94	1.15
99:Bi:39:DG:H5'	109:Bs:10:DA:OP2	1.35	1.15
19:AJ:17:DA:H5"	23:AN:19:DA:H5'	1.29	1.15
99:Bi:39:DG:H5"	109:Bs:9:DA:H3'	1.15	1.14
1:AA:237:DG:OP2	1:AA:7181:DA:H4'	1.44	1.14
1:AA:3666:DA:OP1	14:AE:7:DT:H71	1.49	1.13
39:Af:22:DT:C3'	39:Af:23:DA:H5"	1.70	1.13
1:AA:237:DG:P	1:AA:7181:DA:H5"	1.87	1.12
99:Bi:59:DA:OP2	104:Bn:11:DG:C5'	1.96	1.12
1:AA:955:DG:O3'	1:AA:956:DC:P	2.07	1.11
37:Ac:22:DA:H2'	37:Ac:23:DT:H5"	1.30	1.11
1:AA:142:DT:OP1	1:AA:145:DA:C3'	1.97	1.11
99:Bi:39:DG:C5'	109:Bs:9:DA:H3'	1.81	1.11
99:Bi:39:DG:C5'	109:Bs:10:DA:OP2	1.95	1.11
1:AA:3666:DA:H5'	14:AE:7:DT:H73	1.33	1.10
37:Ac:22:DA:H3'	37:Ac:23:DT:C5'	1.80	1.10
1:AA:3528:DT:H2'	1:AA:3530:DT:OP1	1.53	1.09
1:AA:330:DC:H2"	1:AA:331:DA:O5'	1.51	1.09
37:Ac:54:DG:H3'	37:Ac:55:DA:H5"	1.35	1.09
39:Af:22:DT:H3'	39:Af:23:DA:H5'	1.18	1.09
99:Bi:53:DC:OP1	105:Bo:26:DG:OP2	1.71	1.09

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:3442:DG:H5”	1:AA:3446:DT:P	1.93	1.08
3:A1:18:DT:H5’	3:A1:20:DC:OP2	1.51	1.08
96:Bf:2:DT:H2’	96:Bf:3:DT:C4’	1.81	1.08
99:Bi:58:DC:H2’	104:Bn:11:DG:OP1	1.50	1.08
1:AA:3528:DT:C6	1:AA:3530:DT:OP1	2.06	1.08
30:AU:42:DG:P	112:C2:30:DA:O3’	2.11	1.08
37:Ac:54:DG:H2’	37:Ac:55:DA:H5”	1.32	1.08
1:AA:3528:DT:O3’	1:AA:3530:DT:C5’	2.02	1.08
1:AA:3666:DA:H5”	14:AE:7:DT:C7	1.60	1.08
1:AA:4125:DG:O3’	1:AA:4126:DC:P	2.10	1.08
1:AA:1618:DG:H4’	1:AA:1619:DG:OP2	1.41	1.08
1:AA:7124:DT:H1’	1:AA:7125:DT:H2’	1.32	1.07
37:Ac:54:DG:C3’	37:Ac:55:DA:H5”	1.82	1.07
1:AA:7209:DA:OP2	99:Bi:60:DA:N6	1.86	1.07
1:AA:237:DG:P	1:AA:7181:DA:C5’	2.43	1.07
1:AA:3528:DT:H6	1:AA:3530:DT:OP1	1.34	1.07
83:BS:46:DG:H2”	91:Ba:22:DT:O3’	1.54	1.07
1:AA:3443:DC:H5	1:AA:3445:DA:OP1	1.37	1.07
37:Ac:22:DA:C3’	37:Ac:23:DT:C5’	2.31	1.07
99:Bi:39:DG:H3’	109:Bs:9:DA:H5”	1.30	1.06
1:AA:3666:DA:O5’	14:AE:7:DT:H72	1.53	1.06
1:AA:237:DG:OP2	1:AA:7181:DA:C4’	2.02	1.06
1:AA:186:DT:H5”	1:AA:187:DT:H2’	1.31	1.05
136:CS:42:DT:H3’	136:CS:43:DA:H5”	1.13	1.05
1:AA:699:DT:OP1	1:AA:6709:DG:H5”	1.51	1.05
1:AA:4430:DT:OP2	1:AA:4431:DT:P	2.14	1.04
1:AA:330:DC:C2’	1:AA:331:DA:O5’	2.06	1.04
1:AA:7216:DT:H71	1:AA:7236:DG:H3’	1.07	1.03
1:AA:3443:DC:C5	1:AA:3445:DA:OP1	2.11	1.03
99:Bi:38:DG:C4’	109:Bs:9:DA:OP2	2.05	1.03
1:AA:378:DG:H5”	1:AA:379:DA:H2”	1.38	1.03
1:AA:699:DT:P	1:AA:6709:DG:H5’	1.96	1.03
129:CL:30:DT:O3’	129:CL:31:DG:H3’	1.58	1.03
129:CL:30:DT:H5”	129:CL:32:DA:OP1	1.58	1.02
21:AL:22:DA:C3’	21:AL:24:DT:OP1	2.06	1.02
75:BK:39:DT:H5’	115:C5:49:DA:H5’	1.36	1.02
133:CP:10:DA:H3’	133:CP:11:DA:O5’	1.58	1.02
19:AJ:16:DA:H5”	19:AJ:17:DA:H2’	1.40	1.02
1:AA:3667:DA:P	1:AA:3671:DC:H42	1.83	1.02
1:AA:7124:DT:H1’	1:AA:7125:DT:C2’	1.88	1.02
37:Ac:22:DA:H2’	37:Ac:23:DT:C5’	1.83	1.01

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:7109:DT:P	1:AA:7110:DC:H2”	1.99	1.01
3:A1:18:DT:OP1	3:A1:20:DC:O5’	1.77	1.01
79:BO:2:DT:H2’	112:C2:46:DG:OP2	1.60	1.01
1:AA:1025:DT:H72	1:AA:1027:DA:H62	1.26	1.01
1:AA:7109:DT:O5’	1:AA:7110:DC:C2’	2.09	1.01
1:AA:7209:DA:C8	1:AA:7210:DA:N7	2.29	1.01
26:AQ:38:DG:H3’	26:AQ:39:DT:C5’	1.90	1.00
37:Ac:54:DG:H3’	37:Ac:55:DA:C5’	1.92	1.00
1:AA:3442:DG:C5’	1:AA:3445:DA:H3’	1.89	1.00
3:A1:18:DT:C5’	3:A1:19:DA:C2’	2.08	1.00
68:BD:33:DA:H5”	68:BD:35:DG:OP2	1.61	1.00
37:Ac:22:DA:H2”	37:Ac:23:DT:H5”	1.41	0.99
1:AA:7192:DG:OP2	1:AA:7195:DC:O5’	1.79	0.99
1:AA:7200:DA:OP1	1:AA:7220:DG:H2’	1.63	0.99
3:A1:18:DT:H5’	3:A1:19:DA:H2”	1.43	0.99
1:AA:89:DT:O3’	1:AA:90:DC:P	2.21	0.99
1:AA:3236:DC:H2”	1:AA:3237:DG:OP1	1.49	0.98
136:CS:42:DT:C3’	136:CS:43:DA:H5”	1.92	0.98
1:AA:3896:DT:O3’	1:AA:3897:DG:P	2.22	0.98
37:Ac:22:DA:H3’	37:Ac:23:DT:H3’	1.46	0.98
96:Bf:2:DT:H6	96:Bf:3:DT:H5”	1.25	0.98
1:AA:3442:DG:H5”	1:AA:3445:DA:H3’	1.45	0.97
15:AF:26:DA:O3’	15:AF:27:DT:P	2.23	0.97
100:Bj:4:DG:OP2	103:Bm:48:DA:C2’	2.11	0.97
1:AA:7193:DC:C5	1:AA:7195:DC:P	2.58	0.97
37:Ac:54:DG:H3’	37:Ac:55:DA:H3’	1.46	0.96
1:AA:3666:DA:OP1	14:AE:7:DT:C7	2.12	0.96
1:AA:5464:DC:P	1:AA:5466:DC:OP2	2.23	0.96
1:AA:3666:DA:H5”	14:AE:7:DT:H72	1.11	0.96
1:AA:330:DC:C3’	1:AA:331:DA:O5’	2.13	0.95
69:BE:27:DC:OP2	90:BZ:44:DT:OP2	1.83	0.95
1:AA:7109:DT:H4’	1:AA:7110:DC:H1’	1.48	0.95
1:AA:7124:DT:H2’	1:AA:7125:DT:C6	2.01	0.95
96:Bf:2:DT:C6	96:Bf:3:DT:H5”	2.02	0.95
1:AA:3667:DA:H2”	14:AE:10:DC:H42	1.30	0.94
19:AJ:17:DA:H5”	23:AN:19:DA:C5’	1.98	0.94
1:AA:7124:DT:HO3’	1:AA:7126:DC:H5	1.03	0.94
26:AQ:38:DG:C3’	26:AQ:39:DT:H5”	1.95	0.94
1:AA:3666:DA:H5”	14:AE:7:DT:C5	2.02	0.94
3:A1:18:DT:OP1	3:A1:20:DC:P	2.26	0.94
100:Bj:2:DG:OP2	100:Bj:4:DG:C5’	2.15	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:AC:2:DA:H3'	12:AC:4:DC:OP1	1.66	0.93
68:BD:33:DA:H2"	68:BD:34:DG:H5"	1.50	0.93
96:Bf:2:DT:H2'	96:Bf:3:DT:C3'	1.99	0.93
99:Bi:46:DT:O3'	99:Bi:48:DT:C5'	2.08	0.93
1:AA:3667:DA:H2"	14:AE:10:DC:N4	1.83	0.92
1:AA:3442:DG:H5"	1:AA:3445:DA:C3'	1.99	0.92
1:AA:7209:DA:C4	1:AA:7210:DA:C8	2.57	0.92
97:Bg:10:DC:H2"	97:Bg:11:DC:H5'	1.50	0.92
100:Bj:2:DG:P	100:Bj:4:DG:H5"	2.09	0.91
1:AA:3241:DA:H2'	1:AA:3243:DT:C5'	1.99	0.91
1:AA:7209:DA:C4	1:AA:7210:DA:H8	1.88	0.91
1:AA:7200:DA:OP1	1:AA:7220:DG:C2'	2.18	0.91
96:Bf:2:DT:H2'	96:Bf:3:DT:H4'	1.51	0.91
21:AL:22:DA:H3'	21:AL:24:DT:OP1	1.69	0.90
100:Bj:4:DG:OP2	103:Bm:48:DA:H2'	1.70	0.90
1:AA:3442:DG:H5'	1:AA:3446:DT:OP2	1.71	0.90
1:AA:3666:DA:H3'	14:AE:8:DG:O6	1.72	0.90
35:AZ:12:DG:O3'	35:AZ:13:DA:C5'	2.20	0.90
37:Ac:54:DG:H2'	37:Ac:55:DA:C5'	2.00	0.90
1:AA:330:DC:O3'	1:AA:331:DA:O5'	1.59	0.90
26:AQ:38:DG:C3'	26:AQ:39:DT:C5'	2.50	0.89
75:BK:39:DT:H5'	115:C5:49:DA:C5'	2.02	0.89
136:CS:42:DT:OP2	136:CS:43:DA:O5'	1.90	0.89
1:AA:378:DG:H5"	1:AA:379:DA:H2'	0.90	0.89
75:BK:39:DT:C5'	115:C5:49:DA:H5'	2.02	0.89
1:AA:378:DG:H5'	1:AA:380:DG:OP2	1.73	0.89
1:AA:6133:DA:O5'	140:CW:14:DT:H72	1.71	0.88
1:AA:3667:DA:OP1	1:AA:3670:DC:C2	2.22	0.88
83:BS:14:DC:HO3'	83:BS:15:DC:HO5'	0.89	0.88
154:Cr:38:DT:O3'	154:Cr:39:DG:H3'	1.74	0.88
1:AA:7216:DT:H71	1:AA:7236:DG:C3'	2.00	0.87
21:AL:22:DA:O3'	21:AL:24:DT:OP1	1.90	0.87
3:A1:18:DT:OP1	3:A1:20:DC:OP2	1.93	0.87
96:Bf:2:DT:C2'	96:Bf:3:DT:H4'	2.04	0.87
19:AJ:16:DA:H2"	23:AN:18:DG:C2'	2.05	0.87
22:AM:10:DA:O3'	22:AM:11:DT:O5'	1.80	0.87
1:AA:378:DG:C4'	1:AA:379:DA:C3'	2.29	0.87
30:AU:42:DG:O5'	112:C2:30:DA:O3'	1.93	0.87
1:AA:3667:DA:P	1:AA:3671:DC:N4	2.47	0.86
37:Ac:54:DG:H3'	37:Ac:55:DA:C3'	2.06	0.86
83:BS:46:DG:H3'	83:BS:47:DC:H4'	1.56	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:63:DC:H5'	1:AA:7227:DG:O3'	1.76	0.85
1:AA:1026:DT:O5'	77:BM:16:DA:H2	1.56	0.85
1:AA:7109:DT:C4'	1:AA:7110:DC:H1'	2.07	0.84
1:AA:237:DG:OP2	1:AA:7181:DA:H5'	1.75	0.84
1:AA:7209:DA:N9	1:AA:7210:DA:C8	2.46	0.84
39:Af:22:DT:O3'	39:Af:23:DA:H5"	1.78	0.84
103:Bm:18:DT:O3'	103:Bm:19:DT:H4'	1.77	0.84
1:AA:7109:DT:C5'	1:AA:7110:DC:H1'	2.06	0.83
22:AM:10:DA:HO3'	22:AM:11:DT:HO5'	1.02	0.83
1:AA:3666:DA:P	14:AE:7:DT:H72	2.18	0.83
1:AA:7124:DT:C1'	1:AA:7125:DT:H2'	2.09	0.83
1:AA:6008:DA:O3'	1:AA:6009:DG:H5'	1.77	0.83
30:AU:42:DG:P	112:C2:30:DA:HO3'	1.93	0.83
1:AA:3666:DA:C3'	14:AE:8:DG:O6	2.26	0.83
26:AQ:38:DG:H3'	26:AQ:39:DT:H5'	1.58	0.83
37:Ac:22:DA:H3'	37:Ac:23:DT:C3'	2.09	0.82
83:BS:46:DG:C3'	83:BS:47:DC:H4'	2.09	0.82
1:AA:186:DT:H5"	1:AA:187:DT:C2'	2.09	0.82
1:AA:7209:DA:N7	1:AA:7210:DA:N7	2.28	0.81
93:Bc:16:DT:OP2	93:Bc:17:DC:H5"	1.79	0.81
1:AA:3666:DA:C5'	14:AE:7:DT:H73	1.97	0.81
4:A2:24:DT:O3'	30:AU:26:DG:O3'	1.97	0.81
1:AA:6008:DA:HO3'	1:AA:6009:DG:C5'	1.93	0.81
21:AL:22:DA:O5'	21:AL:24:DT:OP1	1.99	0.81
1:AA:3241:DA:H2'	1:AA:3243:DT:H5'	1.62	0.81
128:CK:46:DA:O3'	128:CK:47:DG:H5"	1.81	0.80
1:AA:6938:DT:OP2	1:AA:6941:DG:OP1	1.98	0.80
1:AA:6992:DC:H6	1:AA:6994:DA:OP1	1.62	0.80
1:AA:3442:DG:OP2	1:AA:3445:DA:OP2	1.98	0.80
1:AA:7124:DT:C2'	1:AA:7125:DT:C6	2.65	0.80
83:BS:46:DG:O5'	83:BS:47:DC:H5"	1.81	0.80
68:BD:33:DA:O3'	68:BD:34:DG:H5"	1.80	0.79
1:AA:3442:DG:O5'	1:AA:3445:DA:H3'	1.80	0.79
68:BD:33:DA:C2'	68:BD:34:DG:H5"	2.12	0.79
1:AA:378:DG:C5'	1:AA:379:DA:C3'	2.55	0.78
1:AA:7124:DT:H2'	1:AA:7125:DT:C5	2.19	0.78
1:AA:7198:DC:H5"	99:Bi:49:DC:H5	1.47	0.78
25:AP:2:DG:H4'	44:Ak:22:DA:H3'	1.66	0.78
112:C2:45:DA:H5"	112:C2:47:DC:C5'	2.13	0.78
1:AA:3667:DA:C5'	14:AE:9:DG:H1	1.97	0.78
1:AA:3667:DA:OP1	1:AA:3671:DC:C4	2.37	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:AQ:38:DG:H3'	26:AQ:39:DT:H5"	1.60	0.78
133:CP:10:DA:C3'	133:CP:11:DA:O5'	2.32	0.77
37:Ac:22:DA:C3'	37:Ac:23:DT:H3'	2.15	0.77
88:BX:22:DT:C5'	88:BX:23:DA:O5'	2.30	0.77
1:AA:3241:DA:H2'	1:AA:3243:DT:H5"	1.64	0.77
1:AA:186:DT:OP1	1:AA:187:DT:C6	2.38	0.77
1:AA:5464:DC:OP1	1:AA:5466:DC:OP2	2.01	0.77
31:AV:26:DC:H3'	31:AV:27:DT:C5'	2.14	0.77
1:AA:7209:DA:C8	1:AA:7210:DA:C8	2.72	0.77
75:BK:39:DT:C4'	115:C5:49:DA:H5'	2.15	0.76
1:AA:3667:DA:OP1	1:AA:3670:DC:C6	2.22	0.76
35:AZ:12:DG:C3'	35:AZ:13:DA:H5'	2.15	0.76
1:AA:4430:DT:P	1:AA:4431:DT:OP2	2.44	0.76
99:Bi:46:DT:O3'	99:Bi:48:DT:H5"	1.85	0.76
1:AA:697:DC:H4'	1:AA:699:DT:OP2	1.85	0.75
129:CL:30:DT:H5"	129:CL:32:DA:P	2.26	0.75
1:AA:35:DC:C6	1:AA:36:DC:OP2	2.40	0.75
21:AL:22:DA:O5'	21:AL:24:DT:P	2.44	0.75
1:AA:237:DG:P	1:AA:7181:DA:H5'	2.25	0.75
12:AC:2:DA:OP2	12:AC:4:DC:H5"	1.86	0.75
1:AA:378:DG:C5'	1:AA:379:DA:H3'	2.16	0.74
12:AC:2:DA:O3'	12:AC:3:DA:H5"	1.87	0.74
1:AA:7109:DT:H4'	1:AA:7110:DC:C1'	2.15	0.74
1:AA:7216:DT:P	1:AA:7237:DT:H5"	2.26	0.74
26:AQ:38:DG:O3'	26:AQ:39:DT:C5'	2.35	0.74
99:Bi:39:DG:OP2	109:Bs:9:DA:H3'	1.87	0.74
83:BS:46:DG:C2'	91:Ba:22:DT:O3'	2.35	0.74
1:AA:330:DC:C3'	1:AA:331:DA:HO5'	1.99	0.73
37:Ac:54:DG:C3'	37:Ac:55:DA:H3'	2.18	0.73
123:CF:30:DC:H3'	123:CF:31:DA:H4'	1.69	0.73
1:AA:6992:DC:OP2	1:AA:6994:DA:H5"	1.88	0.73
1:AA:3666:DA:H2"	1:AA:3670:DC:H41	1.53	0.73
26:AQ:38:DG:O3'	26:AQ:39:DT:H5"	1.88	0.72
1:AA:63:DC:H5'	1:AA:7228:DT:P	2.29	0.72
1:AA:3236:DC:C2'	1:AA:3237:DG:OP1	2.11	0.72
3:A1:18:DT:P	3:A1:20:DC:OP2	2.46	0.72
37:Ac:54:DG:O5'	37:Ac:55:DA:H3'	1.89	0.72
1:AA:3667:DA:H5"	14:AE:9:DG:H1	1.54	0.72
1:AA:7193:DC:C5	1:AA:7195:DC:OP1	2.42	0.72
83:BS:46:DG:O3'	83:BS:47:DC:H4'	1.89	0.72
1:AA:3640:DA:H5"	1:AA:3856:DG:OP2	1.89	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:6938:DT:H73	1:AA:6939:DT:H5”	1.71	0.72
1:AA:186:DT:OP2	1:AA:187:DT:H72	1.89	0.71
1:AA:437:DT:OP2	1:AA:439:DT:P	2.48	0.71
1:AA:6008:DA:O3’	1:AA:6009:DG:C5’	2.37	0.71
1:AA:3666:DA:P	14:AE:7:DT:C7	2.76	0.71
99:Bi:47:DA:H5’	103:Bm:35:DC:H5’	1.70	0.71
1:AA:378:DG:C4’	1:AA:379:DA:C2’	2.64	0.71
1:AA:4435:DC:C2’	1:AA:4437:DG:OP2	2.39	0.70
3:A1:18:DT:C5’	3:A1:20:DC:OP2	2.37	0.70
154:Cr:38:DT:H2”	154:Cr:39:DG:H5”	1.73	0.70
1:AA:5464:DC:OP2	1:AA:5466:DC:OP2	2.09	0.70
75:BK:39:DT:H5’	115:C5:49:DA:C4’	2.21	0.70
126:CI:14:DT:H4’	126:CI:15:DA:H3’	1.73	0.70
3:A1:18:DT:H5’	3:A1:20:DC:P	2.32	0.70
79:BO:2:DT:C2’	112:C2:46:DG:OP2	2.39	0.70
37:Ac:54:DG:H3’	37:Ac:55:DA:C4’	2.21	0.70
1:AA:6992:DC:C6	1:AA:6994:DA:OP1	2.43	0.70
136:CS:42:DT:H3’	136:CS:43:DA:C5’	2.07	0.70
1:AA:3528:DT:OP2	1:AA:3530:DT:H3’	1.91	0.69
5:A3:5:DC:H3’	5:A3:7:DA:H5”	1.74	0.69
133:CP:10:DA:H3’	133:CP:11:DA:C5’	2.22	0.69
1:AA:7208:DA:OP1	99:Bi:59:DA:OP2	2.10	0.69
1:AA:4125:DG:HO3’	1:AA:4126:DC:P	2.15	0.69
1:AA:437:DT:P	1:AA:439:DT:OP1	2.51	0.69
1:AA:6992:DC:H2’	1:AA:6993:DA:H5”	1.74	0.69
1:AA:7108:DT:O3’	1:AA:7111:DC:OP2	2.10	0.69
21:AL:22:DA:O3’	21:AL:23:DC:H5”	1.93	0.68
99:Bi:39:DG:P	109:Bs:9:DA:H3’	2.32	0.68
13:AD:28:DC:H3’	13:AD:30:DA:OP1	1.93	0.68
122:CE:14:DA:H5”	122:CE:15:DC:H2’	1.76	0.68
18:AI:2:DT:O3’	29:AT:18:DA:H8	1.76	0.68
37:Ac:22:DA:H3’	37:Ac:23:DT:O5’	1.93	0.68
96:Bf:2:DT:H2’	96:Bf:3:DT:C5’	2.23	0.68
26:AQ:38:DG:C3’	26:AQ:39:DT:H5’	2.21	0.67
99:Bi:39:DG:C3’	109:Bs:9:DA:H5”	2.16	0.67
14:AE:6:DA:OP1	14:AE:28:DG:OP1	2.12	0.67
30:AU:42:DG:OP2	112:C2:30:DA:O3’	2.05	0.67
99:Bi:46:DT:H5”	99:Bi:48:DT:H3’	1.76	0.67
1:AA:6133:DA:O5’	140:CW:14:DT:C7	2.43	0.67
1:AA:63:DC:OP2	1:AA:7227:DG:H5”	1.95	0.67
1:AA:378:DG:C4’	1:AA:379:DA:H2’	2.25	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
92:Bb:10:DC:H2'	92:Bb:12:DG:OP1	1.95	0.66
3:A1:19:DA:C3'	154:Cr:3:DA:C5'	2.47	0.66
49:As:26:DA:OP1	49:As:28:DA:OP2	2.13	0.66
122:CE:14:DA:H5"	122:CE:15:DC:C2'	2.26	0.66
3:A1:18:DT:C4'	3:A1:19:DA:C2'	2.74	0.66
108:Br:37:DC:O3'	108:Br:38:DA:O4'	2.11	0.66
132:CO:14:DG:H5"	132:CO:15:DG:O5'	1.94	0.66
1:AA:3528:DT:O3'	1:AA:3530:DT:H5'	1.90	0.66
1:AA:7200:DA:OP1	1:AA:7220:DG:C1'	2.44	0.66
99:Bi:14:DG:O3'	99:Bi:16:DA:OP1	2.14	0.66
1:AA:3056:DG:O3'	1:AA:5016:DG:H2"	1.96	0.66
1:AA:3236:DC:C1'	1:AA:3237:DG:P	2.75	0.66
117:C7:6:DA:H3'	117:C7:8:DA:OP2	1.95	0.66
1:AA:7109:DT:C4'	1:AA:7110:DC:O3'	2.44	0.66
103:Bm:18:DT:C4'	103:Bm:19:DT:H5'	2.26	0.66
1:AA:7216:DT:OP2	1:AA:7237:DT:C4'	2.44	0.65
68:BD:33:DA:O3'	68:BD:34:DG:C5'	2.44	0.65
1:AA:7193:DC:H5	1:AA:7195:DC:OP1	1.78	0.65
4:A2:24:DT:O3'	30:AU:26:DG:C3'	2.43	0.65
79:BO:18:DT:H2'	83:BS:14:DC:C3'	2.25	0.65
1:AA:3236:DC:H1'	1:AA:3237:DG:P	2.37	0.65
1:AA:6937:DT:O5'	1:AA:6940:DA:H3'	1.97	0.65
37:Ac:54:DG:P	37:Ac:55:DA:O5'	2.54	0.65
1:AA:437:DT:O5'	1:AA:439:DT:OP1	2.13	0.65
18:AI:2:DT:O3'	29:AT:18:DA:C8	2.49	0.65
37:Ac:22:DA:H3'	37:Ac:23:DT:C4'	2.26	0.65
1:AA:826:DT:O3'	1:AA:827:DG:C5'	2.45	0.64
103:Bm:18:DT:H4'	103:Bm:19:DT:H5'	1.78	0.64
31:AV:26:DC:C2'	31:AV:27:DT:H5'	2.26	0.64
37:Ac:54:DG:P	37:Ac:55:DA:H2'	2.37	0.64
79:BO:2:DT:C3'	79:BO:3:DC:O5'	2.45	0.64
1:AA:3667:DA:OP1	1:AA:3671:DC:N3	2.29	0.64
19:AJ:16:DA:H2"	23:AN:18:DG:H2"	1.79	0.64
1:AA:3442:DG:H5"	1:AA:3445:DA:O3'	1.97	0.64
1:AA:3666:DA:C2'	1:AA:3670:DC:H41	1.97	0.64
1:AA:1960:DT:H71	1:AA:6008:DA:H3'	1.79	0.64
37:Ac:54:DG:OP2	37:Ac:55:DA:O5'	2.12	0.64
1:AA:7209:DA:C5	1:AA:7210:DA:C8	2.85	0.64
31:AV:26:DC:C3'	31:AV:27:DT:H5'	2.28	0.64
99:Bi:39:DG:OP2	109:Bs:9:DA:C3'	2.45	0.63
126:CI:15:DA:H5"	145:Cc:25:DT:H4'	1.79	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:237:DG:C8	1:AA:7182:DG:OP1	2.52	0.63
1:AA:6130:DC:H6	1:AA:6134:DC:OP2	1.81	0.63
1:AA:7209:DA:C5	1:AA:7210:DA:N7	2.67	0.63
1:AA:7124:DT:H1'	1:AA:7125:DT:C1'	2.29	0.62
1:AA:3241:DA:C8	1:AA:3243:DT:OP1	2.51	0.62
3:A1:19:DA:H3'	154:Cr:3:DA:H5'	0.72	0.62
99:Bi:39:DG:O5'	109:Bs:9:DA:H3'	1.98	0.62
122:CE:14:DA:H2"	157:Cu:22:DG:O3'	1.99	0.62
104:Bn:13:DG:C8	109:Bs:10:DA:OP2	2.53	0.62
129:CL:30:DT:O5'	129:CL:32:DA:OP2	2.18	0.62
1:AA:7209:DA:H1'	1:AA:7210:DA:H2'	1.81	0.62
1:AA:63:DC:OP2	1:AA:7227:DG:C5'	2.46	0.62
4:A2:24:DT:O3'	30:AU:26:DG:H3'	1.99	0.62
99:Bi:39:DG:OP2	109:Bs:9:DA:C2'	2.48	0.62
1:AA:7193:DC:C5	1:AA:7195:DC:OP2	2.53	0.61
68:BD:33:DA:C3'	68:BD:34:DG:H5"	2.29	0.61
1:AA:3528:DT:C2'	1:AA:3530:DT:OP1	2.38	0.61
1:AA:3528:DT:C3'	1:AA:3530:DT:H5"	2.30	0.61
83:BS:46:DG:H2"	91:Ba:22:DT:HO3'	1.65	0.61
88:BX:22:DT:H5"	88:BX:23:DA:O5'	2.00	0.61
1:AA:143:DC:H2'	1:AA:144:DA:P	2.40	0.61
129:CL:30:DT:O3'	129:CL:31:DG:C3'	2.43	0.61
1:AA:63:DC:H5'	1:AA:7228:DT:OP1	1.99	0.61
1:AA:7124:DT:C6	1:AA:7125:DT:C6	2.89	0.61
1:AA:7200:DA:OP1	1:AA:7220:DG:C8	2.54	0.61
1:AA:6008:DA:H4'	1:AA:6009:DG:O5'	2.00	0.61
1:AA:3667:DA:OP1	1:AA:3670:DC:N1	2.33	0.60
1:AA:6992:DC:O3'	1:AA:6993:DA:H5'	2.02	0.60
1:AA:3667:DA:P	1:AA:3671:DC:C4	2.94	0.60
79:BO:18:DT:H3'	83:BS:14:DC:H6	1.67	0.60
75:BK:39:DT:C5'	115:C5:49:DA:C4'	2.80	0.60
126:CI:14:DT:H3'	126:CI:15:DA:H2'	1.84	0.60
132:CO:14:DG:H4'	143:CZ:2:DA:H3'	1.82	0.60
1:AA:7193:DC:H5	1:AA:7195:DC:P	2.16	0.59
1:AA:3528:DT:O5'	1:AA:3530:DT:H5"	2.01	0.59
1:AA:3742:DT:OP1	12:AC:5:DG:OP2	2.20	0.59
79:BO:2:DT:C3'	79:BO:3:DC:HO5'	2.09	0.59
1:AA:7200:DA:C8	1:AA:7220:DG:OP2	2.55	0.59
1:AA:3667:DA:O3'	14:AE:10:DC:C4	2.55	0.59
3:A1:18:DT:H5"	3:A1:19:DA:C1'	2.27	0.59
14:AE:6:DA:OP2	14:AE:27:DT:H4'	2.03	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:AX:46:DC:O3'	33:AX:47:DG:O5'	2.20	0.59
1:AA:955:DG:HO3'	1:AA:956:DC:P	2.26	0.58
1:AA:7200:DA:OP1	1:AA:7220:DG:O4'	2.20	0.58
112:C2:45:DA:H5"	112:C2:47:DC:H5'	1.85	0.58
1:AA:7109:DT:H5"	1:AA:7110:DC:H1'	1.84	0.58
100:Bj:2:DG:H2'	100:Bj:3:DC:C5'	2.33	0.58
1:AA:282:DA:OP2	1:AA:284:DC:C5	2.57	0.58
1:AA:6130:DC:C6	1:AA:6134:DC:OP2	2.55	0.58
96:Bf:2:DT:H6	96:Bf:3:DT:C5'	2.09	0.58
1:AA:3443:DC:C6	1:AA:3445:DA:OP1	2.55	0.58
1:AA:4430:DT:P	1:AA:4431:DT:P	3.02	0.58
1:AA:4511:DA:C2	2:A0:48:DA:C2	2.92	0.58
79:BO:2:DT:H71	112:C2:46:DG:OP1	2.04	0.57
103:Bm:18:DT:O3'	103:Bm:19:DT:C4'	2.50	0.57
129:CL:30:DT:C5'	129:CL:32:DA:OP1	2.44	0.57
37:Ac:54:DG:O5'	37:Ac:55:DA:C3'	2.51	0.57
88:BX:22:DT:C5'	88:BX:23:DA:HO5'	2.13	0.57
31:AV:10:DG:O3'	33:AX:14:DA:H2"	2.05	0.57
1:AA:7200:DA:OP1	1:AA:7220:DG:C4'	2.51	0.57
126:CI:14:DT:H4'	126:CI:16:DA:OP2	2.05	0.57
1:AA:3752:DA:H2"	1:AA:3753:DT:H3'	1.87	0.57
83:BS:46:DG:P	83:BS:47:DC:H5"	2.45	0.56
1:AA:3666:DA:H5'	14:AE:7:DT:H72	1.10	0.56
1:AA:3667:DA:P	1:AA:3671:DC:N3	2.79	0.56
1:AA:3667:DA:OP2	1:AA:3671:DC:N4	2.33	0.56
1:AA:4435:DC:H2'	1:AA:4437:DG:OP2	2.04	0.56
1:AA:6130:DC:H2'	1:AA:6134:DC:OP1	2.05	0.56
1:AA:7109:DT:H6	1:AA:7110:DC:H4'	1.70	0.56
123:CF:30:DC:H3'	123:CF:31:DA:C4'	2.36	0.56
1:AA:7198:DC:H5"	99:Bi:49:DC:C5	2.35	0.56
19:AJ:16:DA:H5"	19:AJ:17:DA:C2'	2.25	0.56
75:BK:39:DT:C5'	115:C5:49:DA:H4'	2.36	0.56
37:Ac:54:DG:C2'	37:Ac:55:DA:C5'	2.63	0.56
83:BS:46:DG:H3'	83:BS:47:DC:C5'	2.36	0.56
1:AA:7192:DG:H2'	1:AA:7195:DC:OP2	2.06	0.56
88:BX:22:DT:O3'	88:BX:23:DA:C3'	2.35	0.55
1:AA:237:DG:OP1	1:AA:7181:DA:C5'	2.53	0.55
1:AA:5264:DA:H2'	1:AA:5265:DT:H72	1.89	0.55
1:AA:7189:DA:H4'	99:Bi:41:DC:OP2	2.06	0.55
75:BK:39:DT:C4'	115:C5:49:DA:C5'	2.84	0.55
1:AA:7124:DT:C2'	1:AA:7125:DT:N1	2.70	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
97:Bg:10:DC:C2'	97:Bg:11:DC:H5'	2.31	0.55
1:AA:6133:DA:P	140:CW:14:DT:H72	2.46	0.55
1:AA:833:DA:OP1	1:AA:939:DT:OP2	2.24	0.55
1:AA:7201:DC:H5	99:Bi:57:DT:OP2	1.90	0.55
44:Ak:7:DG:C8	144:Cb:42:DT:H1'	2.42	0.55
100:Bj:4:DG:OP2	103:Bm:48:DA:C3'	2.55	0.55
154:Cr:38:DT:C2'	154:Cr:39:DG:H5"	2.35	0.55
1:AA:330:DC:H2"	1:AA:331:DA:C5'	2.36	0.55
1:AA:3667:DA:OP1	1:AA:3671:DC:N4	2.40	0.55
1:AA:6924:DA:C2	62:B6:34:DA:C2	2.95	0.55
68:BD:33:DA:H2"	68:BD:34:DG:C5'	2.30	0.55
1:AA:1665:DA:C2	79:BO:21:DA:C2	2.95	0.54
31:AV:26:DC:H3'	31:AV:27:DT:H5'	1.86	0.54
99:Bi:47:DA:C5'	103:Bm:35:DC:H5'	2.38	0.54
103:Bm:18:DT:C3'	103:Bm:19:DT:H5'	2.37	0.54
1:AA:63:DC:C5'	1:AA:7228:DT:OP1	2.55	0.54
1:AA:7184:DG:C8	104:Bn:15:DG:OP1	2.60	0.54
38:Ad:13:DC:H3'	48:Ao:22:DC:O3'	2.08	0.54
1:AA:7184:DG:N7	104:Bn:15:DG:OP1	2.41	0.54
1:AA:4607:DA:C2	47:An:25:DA:C2	2.95	0.54
44:Ak:22:DA:H5"	44:Ak:23:DG:O5'	2.08	0.54
1:AA:3429:DA:C2	35:AZ:23:DA:C2	2.96	0.54
3:A1:19:DA:H3'	154:Cr:3:DA:H5"	1.75	0.54
31:AV:26:DC:C3'	31:AV:27:DT:C5'	2.85	0.54
1:AA:3443:DC:H5	1:AA:3445:DA:P	2.30	0.53
1:AA:6008:DA:HO3'	1:AA:6009:DG:H5'	1.61	0.53
1:AA:6937:DT:P	1:AA:6940:DA:H3'	2.49	0.53
1:AA:6992:DC:C2'	1:AA:6993:DA:H5"	2.37	0.53
1:AA:7200:DA:OP1	1:AA:7220:DG:H8	1.91	0.53
1:AA:7200:DA:H5"	1:AA:7220:DG:H3'	1.89	0.53
1:AA:7209:DA:OP1	1:AA:7212:DT:O4	2.27	0.53
1:AA:7216:DT:H72	1:AA:7236:DG:H3'	1.78	0.53
1:AA:571:DA:C2	83:BS:41:DA:C2	2.97	0.53
1:AA:7109:DT:H72	1:AA:7110:DC:H5"	1.90	0.53
1:AA:6938:DT:C5	1:AA:6940:DA:OP1	2.62	0.53
1:AA:6977:DA:C2	61:B5:36:DA:C2	2.95	0.53
5:A3:6:DA:C2'	7:A5:30:DA:H3'	2.38	0.53
52:Aw:34:DT:HO3'	52:Aw:35:DC:HO5'	1.56	0.53
1:AA:7109:DT:C5'	1:AA:7110:DC:C1'	2.82	0.53
1:AA:237:DG:OP1	1:AA:7181:DA:H5"	2.05	0.52
1:AA:378:DG:H4'	1:AA:379:DA:H3'	0.64	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:6992:DC:O3'	1:AA:6993:DA:C5'	2.57	0.52
1:AA:3666:DA:H5"	14:AE:7:DT:C4	2.43	0.52
1:AA:7199:DG:OP1	1:AA:7221:DG:O6	2.26	0.52
1:AA:4426:DA:C2	53:Ax:16:DA:C2	2.98	0.52
1:AA:6937:DT:OP2	1:AA:6940:DA:OP2	2.27	0.52
1:AA:7124:DT:O3'	1:AA:7126:DC:H5	1.81	0.52
19:AJ:16:DA:C5'	19:AJ:17:DA:H2'	2.27	0.52
1:AA:4435:DC:H2"	1:AA:4437:DG:OP2	2.08	0.52
1:AA:1025:DT:C7	1:AA:1027:DA:H62	2.10	0.52
56:B0:18:DT:H5"	56:B0:19:DC:O5'	2.10	0.52
57:B1:37:DA:O3'	57:B1:38:DC:O4'	2.28	0.52
123:CF:30:DC:C3'	123:CF:31:DA:H4'	2.39	0.52
143:CZ:18:DG:H2"	143:CZ:19:DA:O5'	2.09	0.52
1:AA:5745:DA:C2	121:CD:41:DA:C2	2.98	0.52
112:C2:45:DA:H5"	112:C2:47:DC:O5'	2.10	0.52
129:CL:30:DT:H3'	129:CL:31:DG:H5"	1.92	0.52
1:AA:113:DA:C2	103:Bm:39:DA:C2	2.98	0.51
1:AA:611:DA:C2	119:CB:7:DA:C2	2.98	0.51
1:AA:3667:DA:C2'	14:AE:10:DC:N4	2.66	0.51
1:AA:7109:DT:O4'	1:AA:7110:DC:O3'	2.28	0.51
129:CL:14:DA:O3'	129:CL:16:DA:OP1	2.25	0.51
79:BO:2:DT:C7	112:C2:46:DG:OP1	2.58	0.51
1:AA:1064:DA:C2	132:CO:4:DA:C2	2.99	0.51
1:AA:7124:DT:O2	1:AA:7125:DT:H3'	2.11	0.51
1:AA:6130:DC:H2'	1:AA:6134:DC:P	2.51	0.51
19:AJ:16:DA:H2"	23:AN:18:DG:H2'	1.88	0.51
31:AV:26:DC:O3'	31:AV:27:DT:H4'	2.11	0.51
38:Ad:14:DA:H3'	48:Ao:22:DC:H4'	1.92	0.51
1:AA:6004:DA:C2	111:C1:36:DA:C2	2.99	0.51
1:AA:6992:DC:O3'	1:AA:6993:DA:H4'	2.11	0.51
100:Bj:2:DG:H2'	100:Bj:3:DC:H5'	1.92	0.51
1:AA:1264:DA:C2	69:BE:34:DA:C2	2.99	0.51
1:AA:3442:DG:C5'	1:AA:3446:DT:P	2.78	0.51
83:BS:46:DG:H3'	83:BS:47:DC:C4'	2.34	0.51
59:B3:46:DC:H2'	123:CF:14:DC:O3'	2.10	0.51
1:AA:980:DA:C2	56:B0:38:DA:C2	2.99	0.51
1:AA:1098:DA:C2	88:BX:42:DA:C2	2.99	0.51
1:AA:6133:DA:H3'	140:CW:14:DT:H71	1.93	0.51
37:Ac:54:DG:O3'	37:Ac:56:DC:OP1	2.29	0.51
45:Al:3:DA:H1'	45:Al:4:DA:C8	2.45	0.51
149:Cg:2:DA:C5'	149:Cg:3:DA:H5"	2.41	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:7109:DT:O4'	1:AA:7111:DC:O5'	2.28	0.50
31:AV:26:DC:H3'	31:AV:27:DT:H4'	1.92	0.50
78:BN:50:DA:C8	157:Cu:30:DT:H1'	2.46	0.50
37:Ac:22:DA:C3'	37:Ac:23:DT:C3'	2.85	0.50
79:BO:18:DT:H2'	83:BS:14:DC:O3'	2.11	0.50
132:CO:14:DG:HO3'	143:CZ:2:DA:H3'	1.76	0.50
1:AA:2955:DA:C2	3:A1:25:DA:C2	2.99	0.50
126:CI:14:DT:H3'	126:CI:15:DA:O5'	2.11	0.50
1:AA:3080:DG:H2"	1:AA:3081:DG:C8	2.46	0.50
1:AA:3198:DA:C2	117:C7:52:DA:C2	3.00	0.50
1:AA:6992:DC:P	1:AA:6994:DA:H5"	2.51	0.50
75:BK:39:DT:H4'	115:C5:49:DA:C5'	2.42	0.50
99:Bi:38:DG:H4'	109:Bs:9:DA:P	2.41	0.50
1:AA:1410:DA:C2	122:CE:32:DA:C2	2.99	0.50
1:AA:5097:DA:C2	161:Cy:17:DA:C2	3.00	0.50
37:Ac:54:DG:C3'	37:Ac:55:DA:C5'	2.63	0.50
129:CL:30:DT:C3'	129:CL:31:DG:H5"	2.42	0.50
137:CT:24:DT:H2"	137:CT:25:DA:C8	2.46	0.50
1:AA:1004:DA:C2	75:BK:34:DA:C2	3.00	0.50
17:AH:2:DC:O3'	17:AH:3:DA:H3'	2.12	0.50
123:CF:14:DC:H5"	123:CF:15:DT:O5'	2.12	0.50
132:CO:14:DG:O3'	143:CZ:2:DA:H3'	2.12	0.50
20:AK:10:DT:HO3'	31:AV:26:DC:H6	1.60	0.49
1:AA:6556:DA:C2	68:BD:12:DA:C2	3.00	0.49
1:AA:7184:DG:N7	104:Bn:15:DG:P	2.85	0.49
37:Ac:54:DG:OP2	37:Ac:55:DA:H2'	2.12	0.49
1:AA:1114:DA:C2	66:BB:34:DA:C2	3.00	0.49
1:AA:6661:DC:O3'	1:AA:6663:DG:C8	2.63	0.49
1:AA:2364:DA:C2	146:Cd:6:DA:C2	3.01	0.49
1:AA:7124:DT:C6	1:AA:7125:DT:H6	2.30	0.49
8:A6:24:DA:C8	147:Ce:11:DA:H5"	2.47	0.49
68:BD:33:DA:O3'	68:BD:34:DG:H3'	2.11	0.49
96:Bf:2:DT:H2'	96:Bf:3:DT:H5"	1.94	0.49
1:AA:6760:DA:C2	79:BO:37:DA:C2	3.01	0.49
19:AJ:17:DA:H5"	23:AN:19:DA:O5'	2.13	0.49
1:AA:4303:DA:C2	21:AL:1:DA:C2	3.01	0.49
1:AA:6742:DA:C2	120:CC:10:DA:C2	3.01	0.49
1:AA:7052:DA:C2	101:Bk:42:DA:C2	3.00	0.49
1:AA:6058:DG:H1'	1:AA:6059:DA:C8	2.48	0.49
1:AA:7109:DT:H4'	1:AA:7110:DC:C4'	2.43	0.49
21:AL:22:DA:OP2	21:AL:24:DT:O5'	2.31	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:Ac:54:DG:O5'	37:Ac:55:DA:H2'	2.12	0.49
76:BL:38:DA:O3'	76:BL:39:DC:H2"	2.13	0.49
59:B3:46:DC:H3'	123:CF:14:DC:H2"	1.94	0.49
75:BK:39:DT:C5'	115:C5:49:DA:C5'	2.75	0.49
1:AA:1960:DT:C7	1:AA:6008:DA:H3'	2.42	0.48
1:AA:4317:DA:C2	13:AD:41:DA:C2	3.01	0.48
1:AA:6796:DA:C2	59:B3:13:DA:C2	3.01	0.48
1:AA:378:DG:C5'	1:AA:379:DA:H2"	2.15	0.48
1:AA:3241:DA:H8	1:AA:3242:DC:O3'	1.96	0.48
1:AA:3241:DA:C2'	1:AA:3243:DT:H5'	2.39	0.48
1:AA:4720:DA:C2	6:A4:46:DA:C2	3.01	0.48
1:AA:5473:DT:H1'	159:Cw:1:DG:H21	1.78	0.48
79:BO:2:DT:H2"	79:BO:3:DC:O5'	2.13	0.48
99:Bi:46:DT:C5'	99:Bi:48:DT:H3'	2.43	0.48
1:AA:5909:DA:C2	159:Cw:45:DA:C2	3.01	0.48
126:CI:1:DA:C2	126:CI:2:DA:C2	3.01	0.48
1:AA:3640:DA:H3'	1:AA:3856:DG:P	2.53	0.48
1:AA:4301:DA:C2	21:AL:3:DA:C2	3.02	0.48
1:AA:6999:DA:C2	65:B9:24:DA:C2	3.02	0.48
1:AA:7124:DT:C1'	1:AA:7125:DT:C6	2.95	0.48
1:AA:35:DC:OP2	1:AA:36:DC:OP1	2.32	0.48
1:AA:282:DA:H5"	1:AA:284:DC:H2'	1.94	0.48
1:AA:7192:DG:H5"	1:AA:7196:DC:OP1	2.13	0.48
1:AA:6271:DA:C2	156:Ct:17:DA:C2	3.01	0.48
1:AA:5872:DA:C2	126:CI:18:DA:C2	3.01	0.48
3:A1:18:DT:H4'	3:A1:19:DA:C2'	2.43	0.48
1:AA:699:DT:OP2	1:AA:6709:DG:H5'	2.14	0.48
1:AA:2865:DT:H2"	1:AA:2866:DT:C6	2.49	0.48
1:AA:6937:DT:C5'	1:AA:6941:DG:OP2	2.61	0.48
1:AA:7109:DT:H4'	1:AA:7110:DC:O3'	2.13	0.48
3:A1:18:DT:H5"	3:A1:19:DA:H2"	0.51	0.48
14:AE:5:DC:H5"	14:AE:28:DG:OP2	2.14	0.48
1:AA:1975:DT:O3'	1:AA:1976:DT:H3'	2.14	0.48
1:AA:6331:DA:N6	84:BT:25:DT:OP1	2.44	0.47
1:AA:6131:DA:H2'	1:AA:6134:DC:H5"	1.96	0.47
60:B4:42:DT:H5"	60:B4:44:DA:OP2	2.14	0.47
83:BS:30:DG:H4'	83:BS:31:DC:H5'	1.96	0.47
1:AA:1618:DG:C4'	1:AA:1619:DG:OP2	2.29	0.47
1:AA:2345:DA:C2	67:BC:33:DA:C2	3.02	0.47
1:AA:3241:DA:C8	1:AA:3242:DC:O3'	2.68	0.47
1:AA:6229:DA:C2	2:A0:6:DA:C2	3.02	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:6727:DA:C2	81:BQ:34:DA:C2	3.03	0.47
1:AA:1056:DA:C2	115:C5:46:DA:C2	3.02	0.47
1:AA:3343:DA:H5"	1:AA:4431:DT:H4'	1.95	0.47
1:AA:3640:DA:C5'	1:AA:3856:DG:OP2	2.62	0.47
1:AA:1576:DA:C2	79:BO:14:DA:C2	3.02	0.47
1:AA:3235:DA:C2	6:A4:9:DA:C2	3.02	0.47
1:AA:6008:DA:O3'	1:AA:6009:DG:O5'	2.25	0.47
13:AD:28:DC:H2'	13:AD:29:DC:O3'	2.14	0.47
35:AZ:12:DG:C3'	35:AZ:13:DA:C5'	2.88	0.47
39:Af:22:DT:OP1	39:Af:23:DA:H8	1.97	0.47
65:B9:41:DC:H1'	65:B9:42:DT:C6	2.49	0.47
83:BS:46:DG:C2'	91:Ba:22:DT:HO3'	2.24	0.47
1:AA:4564:DA:C2	36:Ab:17:DA:C2	3.03	0.47
1:AA:6134:DC:OP1	140:CW:14:DT:O4	2.32	0.47
48:Ao:11:DG:H2"	48:Ao:12:DG:C8	2.49	0.47
1:AA:4983:DA:C2	51:Av:9:DA:C2	3.03	0.47
1:AA:7200:DA:H8	1:AA:7220:DG:OP2	1.97	0.47
75:BK:39:DT:H4'	115:C5:49:DA:H4'	1.96	0.47
1:AA:1960:DT:H71	1:AA:6008:DA:C3'	2.44	0.47
1:AA:2021:DA:C2	146:Cd:29:DA:C2	3.03	0.47
1:AA:5902:DA:C2	159:Cw:52:DA:C2	3.03	0.47
83:BS:30:DG:O3'	95:Be:2:DA:C2'	2.63	0.47
100:Bj:2:DG:C2'	108:Br:37:DC:H2"	2.44	0.47
122:CE:14:DA:O3'	157:Cu:22:DG:H2"	2.15	0.47
1:AA:3776:DG:H1	16:AG:3:DG:H21	1.63	0.46
1:AA:3784:DC:H4'	12:AC:22:DT:H4'	1.98	0.46
1:AA:7109:DT:O5'	1:AA:7110:DC:O3'	2.33	0.46
17:AH:2:DC:H4'	17:AH:4:DG:OP1	2.14	0.46
60:B4:42:DT:H3'	60:B4:43:DC:H5"	1.97	0.46
65:B9:42:DT:C6	74:BJ:35:DT:H5"	2.50	0.46
79:BO:2:DT:C2'	79:BO:3:DC:O5'	2.63	0.46
1:AA:1025:DT:H2'	1:AA:1027:DA:C8	2.50	0.46
5:A3:5:DC:H3'	5:A3:7:DA:C5'	2.41	0.46
14:AE:6:DA:OP1	14:AE:28:DG:P	2.73	0.46
84:BT:26:DC:OP2	127:CJ:29:DA:H2"	2.16	0.46
1:AA:35:DC:N1	1:AA:36:DC:OP2	2.48	0.46
1:AA:7124:DT:N1	1:AA:7125:DT:C6	2.84	0.46
37:Ac:54:DG:O5'	37:Ac:55:DA:C2'	2.63	0.46
83:BS:30:DG:O3'	95:Be:2:DA:H2'	2.16	0.46
1:AA:237:DG:O5'	1:AA:7181:DA:H5"	2.15	0.46
10:A8:6:DC:O3'	132:CO:30:DT:H2'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
129:CL:14:DA:O3'	129:CL:16:DA:P	2.73	0.46
1:AA:330:DC:O3'	1:AA:331:DA:H2'	2.16	0.46
1:AA:5383:DA:C2	136:CS:45:DA:C2	3.03	0.46
1:AA:6276:DA:C2	156:Ct:22:DA:C2	3.03	0.46
1:AA:6937:DT:H5"	1:AA:6941:DG:OP2	2.15	0.46
13:AD:37:DA:C8	23:AN:26:DT:H1'	2.51	0.46
143:CZ:18:DG:O3'	143:CZ:19:DA:H3'	2.15	0.46
1:AA:4710:DA:C2	36:Ab:9:DA:C2	3.04	0.46
1:AA:5937:DA:C2	78:BN:50:DA:C2	3.04	0.46
1:AA:837:DA:C2	76:BL:29:DA:C2	3.04	0.46
1:AA:3237:DG:OP2	1:AA:4538:DT:OP2	2.32	0.46
144:Cb:18:DA:H2"	157:Cu:14:DA:H4'	1.97	0.46
1:AA:1239:DA:C2	138:CU:3:DA:C2	3.04	0.46
1:AA:1797:DA:C2	156:Ct:5:DA:C2	3.03	0.46
1:AA:3667:DA:C5'	14:AE:9:DG:N1	2.72	0.46
1:AA:4164:DA:C2	19:AJ:22:DA:C2	3.04	0.46
149:Cg:2:DA:H5'	149:Cg:3:DA:H5"	1.98	0.46
1:AA:35:DC:C1'	1:AA:36:DC:OP2	2.59	0.46
1:AA:2681:DT:H2"	1:AA:2682:DA:C8	2.50	0.46
1:AA:5202:DA:H2"	1:AA:5203:DC:C6	2.50	0.46
31:AV:26:DC:H3'	31:AV:27:DT:C4'	2.46	0.46
61:B5:30:DG:H1'	74:BJ:43:DA:C8	2.51	0.46
1:AA:4968:DC:C6	1:AA:4969:DT:H71	2.51	0.45
1:AA:6130:DC:C2'	1:AA:6134:DC:OP1	2.63	0.45
1:AA:4995:DA:C2	161:Cy:65:DA:C2	3.04	0.45
17:AH:2:DC:H5"	17:AH:4:DG:P	2.56	0.45
117:C7:6:DA:C3'	117:C7:8:DA:OP2	2.63	0.45
69:BE:31:DA:C2	69:BE:32:DA:C2	3.05	0.45
79:BO:18:DT:H3'	83:BS:14:DC:C6	2.50	0.45
1:AA:1066:DA:C2	132:CO:2:DA:C2	3.04	0.45
1:AA:2224:DA:C2	131:CN:32:DA:C2	3.05	0.45
1:AA:3667:DA:OP2	1:AA:3671:DC:N3	2.49	0.45
83:BS:30:DG:H5"	83:BS:31:DC:O5'	2.17	0.45
112:C2:45:DA:C5'	112:C2:47:DC:C5'	2.89	0.45
1:AA:1618:DG:O3'	1:AA:6328:DT:H4'	2.16	0.45
129:CL:30:DT:C5'	129:CL:32:DA:P	3.02	0.45
1:AA:373:DA:C2	92:Bb:43:DA:C2	3.04	0.45
5:A3:6:DA:H2'	7:A5:30:DA:H3'	1.98	0.45
20:AK:57:DT:H2"	20:AK:58:DC:C5	2.52	0.45
49:As:26:DA:H5"	49:As:27:DT:H5"	1.97	0.45
76:BL:38:DA:O3'	76:BL:39:DC:C2'	2.64	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1703:DA:C2	82:BR:19:DA:C2	3.05	0.45
1:AA:4484:DG:H2"	1:AA:4485:DC:C5	2.52	0.45
1:AA:186:DT:OP2	1:AA:187:DT:C7	2.61	0.45
1:AA:5355:DT:C2	142:CY:23:DA:C2	3.05	0.45
1:AA:6574:DC:H2"	1:AA:6575:DA:C8	2.52	0.45
1:AA:6745:DA:C2	120:CC:7:DA:C2	3.04	0.45
1:AA:7193:DC:C6	1:AA:7195:DC:OP2	2.70	0.45
1:AA:3666:DA:C2'	1:AA:3670:DC:N4	2.72	0.45
1:AA:5511:DA:C2	43:Aj:49:DA:C2	3.05	0.45
1:AA:7109:DT:O5'	1:AA:7110:DC:C1'	2.64	0.45
21:AL:22:DA:P	21:AL:24:DT:O5'	2.75	0.45
31:AV:26:DC:C3'	31:AV:27:DT:H4'	2.47	0.45
1:AA:4967:DT:H2"	1:AA:4968:DC:C5	2.53	0.44
1:AA:6327:DA:C2	84:BT:24:DA:C2	3.05	0.44
20:AK:26:DT:H3'	45:Al:18:DA:H4'	2.00	0.44
1:AA:1628:DA:C2	1:AA:1629:DA:C2	3.05	0.44
1:AA:2167:DA:C2	153:Cq:1:DA:C2	3.05	0.44
1:AA:7109:DT:H4'	1:AA:7110:DC:C3'	2.47	0.44
37:Ac:22:DA:H2'	37:Ac:23:DT:O5'	2.16	0.44
128:CK:17:DA:H2"	128:CK:18:DG:C8	2.52	0.44
52:Aw:44:DT:H2"	52:Aw:45:DG:C8	2.53	0.44
96:Bf:2:DT:H2'	96:Bf:3:DT:H3'	1.94	0.44
100:Bj:2:DG:H2'	108:Br:37:DC:H2"	1.99	0.44
1:AA:7191:DG:H3'	1:AA:7195:DC:C2'	2.48	0.44
132:CO:14:DG:H4'	143:CZ:2:DA:C3'	2.45	0.44
1:AA:330:DC:HO3'	1:AA:331:DA:HO5'	0.92	0.44
1:AA:2434:DA:C2	158:Cv:20:DA:C2	3.05	0.44
1:AA:6133:DA:O5'	140:CW:14:DT:C5	2.70	0.44
100:Bj:2:DG:H2'	100:Bj:3:DC:H5"	1.98	0.44
1:AA:962:DA:C2	65:B9:8:DA:C2	3.06	0.44
1:AA:1634:DC:H4'	81:BQ:18:DG:H4'	2.00	0.44
1:AA:4414:DT:H3'	1:AA:4416:DT:H72	2.00	0.44
1:AA:5549:DA:C2	136:CS:39:DA:C2	3.06	0.44
1:AA:6361:DG:H1'	1:AA:6362:DG:C8	2.53	0.44
1:AA:7215:DA:OP2	1:AA:7238:DG:OP2	2.36	0.44
43:Aj:7:DG:H5"	116:C6:18:DT:C6	2.53	0.44
1:AA:6480:DT:C2	157:Cu:31:DA:C2	3.05	0.44
1:AA:7209:DA:H3'	1:AA:7212:DT:H73	1.99	0.44
31:AV:51:DA:C2	31:AV:52:DA:C4	3.06	0.44
100:Bj:4:DG:P	103:Bm:48:DA:H2"	2.57	0.44
19:AJ:16:DA:H2"	23:AN:18:DG:C3'	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:AM:35:DT:H5'	29:AT:10:DA:C8	2.53	0.43
111:C1:11:DA:C2	111:C1:12:DA:C2	3.05	0.43
114:C4:4:DA:C2	114:C4:5:DA:C2	3.05	0.43
1:AA:2136:DA:C2	130:CM:26:DA:C2	3.06	0.43
1:AA:4790:DA:C2	50:Au:20:DA:C2	3.06	0.43
1:AA:5420:DA:H2"	1:AA:5421:DG:C8	2.53	0.43
1:AA:5907:DA:C2	159:Cw:47:DA:C2	3.06	0.43
1:AA:6938:DT:C6	1:AA:6940:DA:OP1	2.71	0.43
1:AA:7124:DT:H1'	1:AA:7125:DT:C3'	2.46	0.43
1:AA:7124:DT:H2"	1:AA:7126:DC:C5	2.52	0.43
31:AV:26:DC:H2'	31:AV:27:DT:H5'	2.00	0.43
37:Ac:54:DG:C5'	37:Ac:55:DA:H3'	2.48	0.43
1:AA:1522:DA:O3'	1:AA:1523:DC:H5"	2.17	0.43
1:AA:3033:DG:H2"	1:AA:3034:DC:C5	2.53	0.43
1:AA:7052:DA:C2	1:AA:7053:DG:C5	3.07	0.43
45:Al:18:DA:OP2	45:Al:19:DC:H3'	2.18	0.43
1:AA:3122:DA:H1'	1:AA:3123:DG:C8	2.53	0.43
1:AA:3236:DC:H1'	1:AA:3237:DG:OP2	2.18	0.43
1:AA:4899:DA:C2	8:A6:47:DA:C2	3.07	0.43
5:A3:17:DG:H2"	5:A3:18:DC:C6	2.53	0.43
31:AV:10:DG:C2'	33:AX:14:DA:O3'	2.67	0.43
144:Cb:33:DC:H2"	144:Cb:34:DA:C8	2.54	0.43
1:AA:1633:DA:C2	81:BQ:17:DA:C2	3.07	0.43
1:AA:6139:DA:C2	134:CQ:29:DA:C2	3.06	0.43
1:AA:6586:DA:C2	66:BB:27:DA:C2	3.07	0.43
88:BX:22:DT:H4'	88:BX:23:DA:H3'	1.99	0.43
1:AA:7024:DA:C2	93:Bc:29:DA:C2	3.06	0.43
5:A3:30:DT:H2'	48:Ao:14:DA:H4'	1.99	0.43
37:Ac:22:DA:O3'	37:Ac:23:DT:H3'	2.19	0.43
100:Bj:4:DG:OP2	103:Bm:48:DA:H2"	2.11	0.43
115:C5:40:DT:H1'	132:CO:7:DC:C6	2.54	0.43
128:CK:25:DG:H2"	128:CK:26:DC:C6	2.54	0.43
1:AA:4770:DA:C2	7:A5:48:DA:C2	3.07	0.43
1:AA:6937:DT:O5'	1:AA:6941:DG:OP2	2.36	0.43
1:AA:2037:DA:C2	110:C0:31:DA:C2	3.06	0.43
1:AA:3443:DC:C5	1:AA:3445:DA:P	3.10	0.43
1:AA:7109:DT:H5"	1:AA:7110:DC:O2	2.19	0.43
3:A1:18:DT:C4'	3:A1:19:DA:H2'	2.47	0.43
63:B7:35:DT:C6	115:C5:56:DT:H1'	2.54	0.43
99:Bi:58:DC:OP2	104:Bn:11:DG:OP2	2.37	0.43
1:AA:3537:DC:C6	1:AA:4026:DG:H1'	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:6938:DT:C7	1:AA:6939:DT:H5”	2.46	0.43
3:A1:19:DA:C2’	154:Cr:3:DA:H5’	2.43	0.43
76:BL:22:DC:H3’	93:Bc:48:DT:H3’	2.01	0.43
123:CF:14:DC:C5’	123:CF:15:DT:O5’	2.67	0.43
144:Cb:25:DC:C5	144:Cb:26:DG:C6	3.07	0.43
1:AA:991:DA:H2”	1:AA:992:DA:C4	2.54	0.42
1:AA:3453:DA:C2	55:Az:7:DA:C2	3.07	0.42
1:AA:4157:DA:C2	1:AA:4158:DA:C2	3.07	0.42
1:AA:6079:DA:C2	20:AK:53:DA:C2	3.07	0.42
1:AA:6811:DA:C2	81:BQ:46:DA:C2	3.07	0.42
1:AA:1475:DT:C2	70:BF:31:DA:C2	3.07	0.42
1:AA:6171:DA:C2	139:CV:18:DA:C2	3.08	0.42
17:AH:2:DC:H5”	17:AH:4:DG:OP2	2.19	0.42
122:CE:31:DT:H4’	122:CE:32:DA:H5’	2.01	0.42
133:CP:10:DA:C3’	133:CP:11:DA:C5’	2.96	0.42
4:A2:17:DC:C6	51:Av:30:DG:H1’	2.54	0.42
100:Bj:4:DG:P	103:Bm:48:DA:C2’	3.06	0.42
112:C2:39:DG:H2’	112:C2:40:DT:H72	2.00	0.42
1:AA:1267:DG:C2	90:BZ:41:DA:C2	3.08	0.42
1:AA:3957:DA:C2	17:AH:33:DA:C2	3.08	0.42
128:CK:41:DT:H2”	128:CK:42:DC:C6	2.54	0.42
1:AA:378:DG:H2”	1:AA:379:DA:H5”	1.22	0.42
1:AA:6652:DA:C2	135:CR:45:DA:C2	3.07	0.42
49:As:7:DG:H2”	49:As:8:DA:C8	2.53	0.42
68:BD:33:DA:H1’	143:CZ:19:DA:C8	2.54	0.42
76:BL:38:DA:H2”	128:CK:14:DC:H4’	2.01	0.42
88:BX:33:DG:C2	88:BX:34:DA:C2	3.08	0.42
115:C5:44:DA:C2	115:C5:45:DT:C2	3.07	0.42
1:AA:182:DC:H4’	108:Br:14:DT:H71	2.02	0.42
1:AA:741:DC:H5’	95:Be:5:DT:H4’	2.01	0.42
1:AA:6121:DA:C2	1:AA:6122:DA:C2	3.08	0.42
1:AA:7124:DT:O2	1:AA:7125:DT:C3’	2.67	0.42
17:AH:26:DT:H1’	19:AJ:41:DA:C8	2.54	0.42
47:An:15:DA:H1’	47:An:16:DG:C8	2.54	0.42
1:AA:3740:DA:C2	32:AW:50:DA:C2	3.08	0.42
1:AA:3963:DG:C2	1:AA:3964:DA:C2	3.08	0.42
1:AA:5473:DT:H2’	1:AA:5474:DT:C4	2.54	0.42
5:A3:22:DC:O3’	33:AX:46:DC:H2”	2.19	0.42
31:AV:10:DG:H2’	33:AX:14:DA:O3’	2.20	0.42
37:Ac:54:DG:O3’	37:Ac:56:DC:P	2.77	0.42
123:CF:21:DG:H2”	123:CF:22:DC:C5	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:3034:DC:C5	1:AA:3035:DT:C4	3.08	0.42
1:AA:5143:DA:C2	4:A2:27:DA:C2	3.08	0.42
1:AA:6852:DA:C2	100:Bj:31:DA:C2	3.08	0.42
26:AQ:38:DG:H2'	129:CL:14:DA:H5"	2.00	0.42
41:Ah:39:DA:H2'	41:Ah:40:DG:C8	2.55	0.42
75:BK:15:DA:H2'	75:BK:16:DT:H72	2.02	0.42
103:Bm:18:DT:O3'	103:Bm:19:DT:C5'	2.68	0.42
121:CD:17:DA:H2"	121:CD:18:DG:C8	2.55	0.42
129:CL:14:DA:HO3'	129:CL:16:DA:P	2.41	0.42
1:AA:237:DG:OP1	1:AA:7181:DA:H5'	2.19	0.42
1:AA:1015:DA:C2	89:BY:27:DA:C2	3.07	0.42
1:AA:1234:DA:C2	68:BD:19:DA:C2	3.08	0.42
1:AA:6958:DA:C2	61:B5:23:DA:C2	3.07	0.42
30:AU:27:DC:H2'	30:AU:28:DT:H72	2.01	0.42
99:Bi:58:DC:H3'	104:Bn:11:DG:O5'	2.19	0.42
1:AA:1627:DA:C2	84:BT:14:DA:C2	3.08	0.42
1:AA:6966:DA:C2	1:AA:6967:DA:C2	3.07	0.42
1:AA:7209:DA:H3'	1:AA:7212:DT:C7	2.50	0.42
30:AU:42:DG:OP1	112:C2:30:DA:C2'	2.68	0.42
51:Av:22:DA:C4	161:Cy:59:DA:H1'	2.53	0.42
93:Bc:24:DT:C6	103:Bm:11:DG:H5"	2.54	0.42
1:AA:1905:DT:H2"	1:AA:1906:DG:C8	2.55	0.41
4:A2:37:DA:C2	4:A2:38:DA:C2	3.07	0.41
123:CF:29:DT:H3'	123:CF:31:DA:H5"	2.02	0.41
1:AA:926:DG:H1'	1:AA:927:DA:C8	2.54	0.41
1:AA:3961:DC:H4'	17:AH:31:DA:H4'	2.02	0.41
118:C8:27:DA:C2	118:C8:28:DT:C2	3.08	0.41
126:CI:1:DA:H4'	126:CI:2:DA:H5'	2.01	0.41
1:AA:591:DA:H2"	1:AA:592:DC:C5	2.56	0.41
1:AA:2284:DA:C2	131:CN:26:DA:C2	3.08	0.41
1:AA:4113:DA:C2	53:Ax:29:DA:C2	3.09	0.41
1:AA:6393:DC:C5	1:AA:6394:DT:C4	3.09	0.41
1:AA:2539:DA:C2	145:Cc:59:DA:C2	3.09	0.41
1:AA:4151:DA:C2	29:AT:5:DG:C2	3.08	0.41
1:AA:4440:DA:C2	51:Av:40:DA:C2	3.08	0.41
1:AA:7192:DG:C5'	1:AA:7196:DC:OP1	2.68	0.41
128:CK:12:DA:H2"	128:CK:13:DG:C8	2.55	0.41
149:Cg:2:DA:H5"	149:Cg:3:DA:H5"	2.02	0.41
1:AA:1027:DA:C2	77:BM:5:DA:C2	3.08	0.41
1:AA:5333:DG:H2"	1:AA:5334:DG:C8	2.56	0.41
1:AA:5731:DC:H2'	1:AA:5732:DA:C5	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:6050:DC:H1'	1:AA:6051:DA:C8	2.56	0.41
1:AA:7066:DA:C2	102:Bl:5:DG:C2	3.08	0.41
1:AA:6131:DA:H62	140:CW:14:DT:H3	1.67	0.41
1:AA:7193:DC:C6	1:AA:7195:DC:P	3.10	0.41
22:AM:22:DA:C2	22:AM:23:DT:C2	3.09	0.41
50:Au:28:DA:H2"	50:Au:29:DT:H71	2.03	0.41
1:AA:179:DG:H5'	106:Bp:32:DC:H41	1.84	0.41
1:AA:435:DG:C6	65:B9:11:DA:C2	3.08	0.41
1:AA:2499:DA:C2	145:Cc:35:DA:C2	3.09	0.41
1:AA:5323:DA:H2"	1:AA:5324:DT:C5	2.55	0.41
1:AA:6442:DT:H2"	1:AA:6443:DC:C5	2.55	0.41
106:Bp:43:DA:C2	106:Bp:44:DG:C2	3.09	0.41
133:CP:10:DA:H3'	133:CP:11:DA:H5'	1.99	0.41
138:CU:1:DA:H4'	138:CU:2:DT:H5'	2.02	0.41
1:AA:33:DG:H22	92:Bb:60:DC:H42	1.67	0.41
1:AA:2848:DA:C2	20:AK:44:DA:C2	3.09	0.41
1:AA:3667:DA:H5'	1:AA:3669:DG:C5	2.52	0.41
1:AA:5519:DA:C2	10:A8:33:DA:C2	3.08	0.41
1:AA:5826:DG:H2"	1:AA:5827:DC:C6	2.56	0.41
155:Cs:39:DA:H2"	155:Cs:40:DA:C8	2.56	0.41
1:AA:282:DA:OP1	1:AA:284:DC:C6	2.74	0.41
1:AA:1246:DA:C2	71:BG:24:DA:C2	3.09	0.41
1:AA:3183:DA:C2	8:A6:37:DA:C2	3.08	0.41
1:AA:4157:DA:C2	16:AG:37:DA:C2	3.09	0.41
1:AA:4177:DA:C2	23:AN:21:DA:C2	3.09	0.41
1:AA:4375:DA:H2"	1:AA:4376:DG:C5	2.56	0.41
1:AA:6345:DA:C2	127:CJ:6:DA:C2	3.09	0.41
83:BS:28:DC:H2"	83:BS:29:DC:C5	2.56	0.41
93:Bc:16:DT:O3'	93:Bc:18:DG:P	2.79	0.41
113:C3:42:DG:H1'	155:Cs:15:DG:C8	2.55	0.41
142:CY:31:DA:H4'	142:CY:32:DG:H5'	2.03	0.41
143:CZ:35:DA:C8	153:Cq:6:DG:H2"	2.56	0.41
145:Cc:56:DT:OP2	145:Cc:58:DT:C2'	2.54	0.41
155:Cs:10:DA:C2	155:Cs:11:DA:C2	3.09	0.41
1:AA:5008:DA:C2	51:Av:16:DT:C2	3.09	0.41
1:AA:7200:DA:OP1	1:AA:7220:DG:C3'	2.69	0.41
112:C2:28:DC:H2"	112:C2:29:DG:C8	2.56	0.41
1:AA:1060:DG:C2	115:C5:42:DA:C2	3.09	0.40
1:AA:5192:DT:OP1	1:AA:5341:DC:H3'	2.21	0.40
5:A3:5:DC:C3'	5:A3:7:DA:H5"	2.47	0.40
9:A7:26:DC:OP2	30:AU:10:DG:H2"	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
112:C2:41:DC:H2”	112:C2:42:DA:C8	2.56	0.40
1:AA:1471:DA:C2	70:BF:35:DA:C2	3.10	0.40
1:AA:6652:DA:H4’	135:CR:47:DT:H4’	2.02	0.40
1:AA:7193:DC:C6	1:AA:7195:DC:OP1	2.73	0.40
99:Bi:39:DG:C5’	109:Bs:9:DA:C3’	2.57	0.40
100:Bj:4:DG:OP2	103:Bm:48:DA:H3’	2.20	0.40
112:C2:45:DA:H4’	112:C2:47:DC:H5’	2.02	0.40
119:CB:32:DT:H2’	148:Cf:9:DG:C3’	2.51	0.40
132:CO:44:DG:H2”	132:CO:45:DC:C5	2.55	0.40
1:AA:1386:DA:C2	1:AA:1387:DA:C8	3.09	0.40
1:AA:4576:DT:C2	49:As:36:DA:C2	3.09	0.40
1:AA:4703:DA:C2	49:As:47:DA:C2	3.10	0.40
16:AG:2:DA:C2	16:AG:3:DG:C2	3.09	0.40
57:B1:7:DA:C2	57:B1:8:DA:C2	3.09	0.40
64:B8:5:DC:C5	64:B8:6:DA:C6	3.09	0.40
117:C7:8:DA:C2	117:C7:9:DT:C2	3.09	0.40
162:Cz:45:DG:H2”	162:Cz:46:DA:C8	2.56	0.40
1:AA:1715:DT:H4’	124:CG:21:DT:H5’	2.03	0.40
1:AA:1894:DA:C2	116:C6:4:DA:N3	2.90	0.40
1:AA:3640:DA:C4’	1:AA:3856:DG:OP2	2.69	0.40
1:AA:4362:DT:H2”	1:AA:4363:DC:C5	2.56	0.40
1:AA:4520:DA:C2	36:Ab:29:DA:C2	3.09	0.40
1:AA:6937:DT:OP1	1:AA:6940:DA:H3’	2.21	0.40
1:AA:7109:DT:O5’	1:AA:7111:DC:P	2.80	0.40
1:AA:7200:DA:H5”	1:AA:7220:DG:H5”	1.71	0.40
45:Al:16:DT:H2”	45:Al:17:DC:C5	2.56	0.40
83:BS:6:DC:C6	119:CB:25:DC:H5”	2.56	0.40
128:CK:9:DT:H2”	128:CK:10:DA:C8	2.56	0.40
1:AA:2672:DT:H1’	1:AA:2673:DC:C5	2.56	0.40
1:AA:4375:DA:H2”	1:AA:4376:DG:C4	2.57	0.40
1:AA:5274:DA:C2	46:Am:40:DA:C2	3.10	0.40
1:AA:7150:DA:C2	95:Be:31:DA:C2	3.09	0.40
83:BS:46:DG:OP2	83:BS:47:DC:H5”	2.22	0.40
91:Ba:1:DA:H4’	91:Ba:2:DA:H5’	2.04	0.40
123:CF:30:DC:H3’	123:CF:31:DA:C5’	2.52	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

There are no protein molecules in this entry.

5.3.2 Protein sidechains

There are no protein molecules in this entry.

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

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	AA	23
15	AF	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	AA	2465:DT	O3'	2466:DT	P	5.78
1	AA	6158:DC	O3'	6159:DA	P	3.30
1	AA	62:DT	O3'	63:DC	P	3.28
1	AA	590:DA	O3'	591:DA	P	3.28
1	AA	4430:DT	O3'	4431:DT	P	3.28
1	AA	143:DC	O3'	144:DA	P	3.21
1	AF	26:DA	O3'	27:DT	P	2.23
1	AA	3896:DT	O3'	3897:DG	P	2.22
1	AA	89:DT	O3'	90:DC	P	2.21
1	AA	4125:DG	O3'	4126:DC	P	2.10
1	AA	955:DG	O3'	956:DC	P	2.07
1	AA	3768:DT	O3'	3769:DC	P	1.99
1	AA	1506:DA	O3'	1507:DT	P	1.95
1	AA	1346:DT	O3'	1347:DA	P	1.93
1	AA	35:DC	O3'	36:DC	P	1.86
1	AA	2524:DA	O3'	2525:DT	P	1.82
1	AA	501:DC	O3'	502:DG	P	1.81
1	AA	511:DA	O3'	512:DC	P	1.34
1	AA	1084:DG	O3'	1085:DG	P	1.30
1	AA	4536:DG	O3'	4537:DT	P	1.29
1	AA	1618:DG	O3'	1619:DG	P	1.24
1	AA	186:DT	O3'	187:DT	P	0.99
1	AA	437:DT	O3'	438:DG	P	0.95
1	AA	3933:DA	O3'	3934:DT	P	0.67

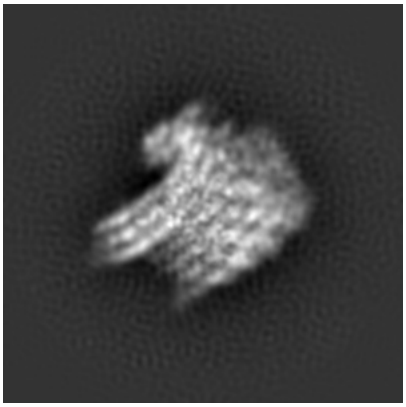
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-2210. These allow visual inspection of the internal detail of the map and identification of artifacts.

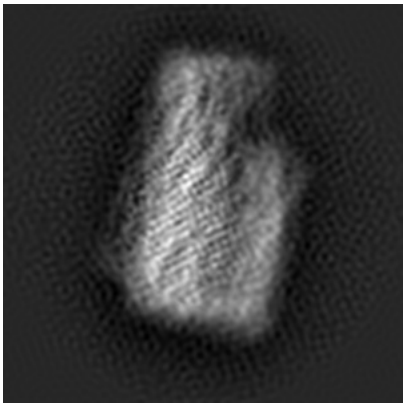
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

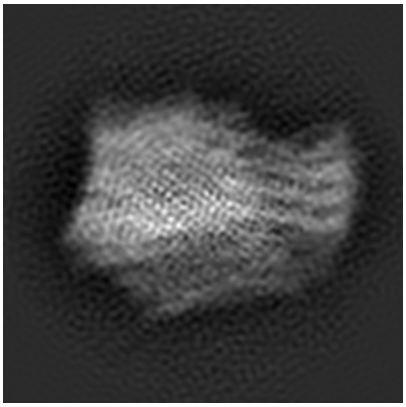
6.1.1 Primary map



X



Y

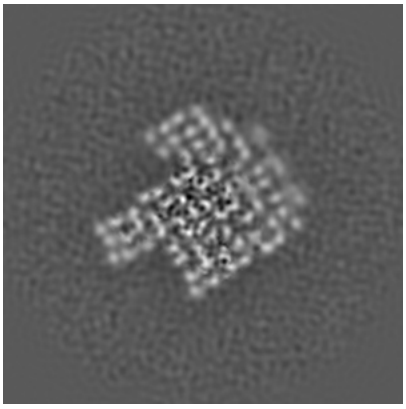


Z

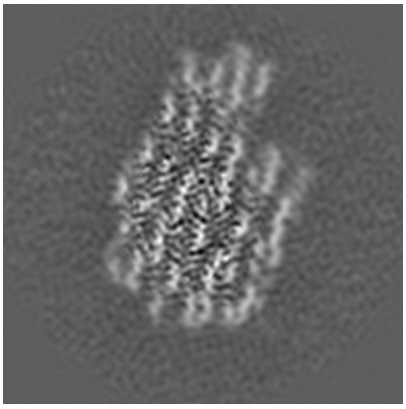
The images above show the map projected in three orthogonal directions.

6.2 Central slices

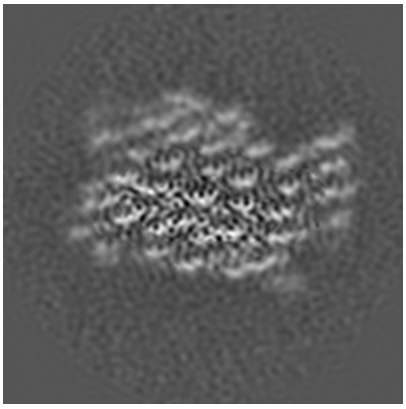
6.2.1 Primary map



X Index: 86



Y Index: 86

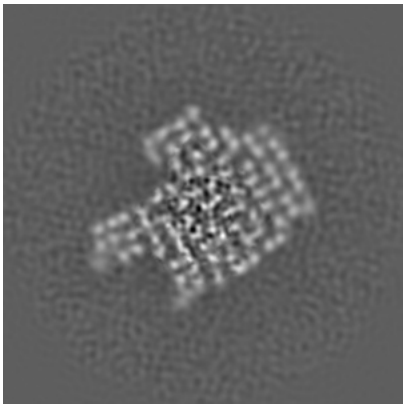


Z Index: 86

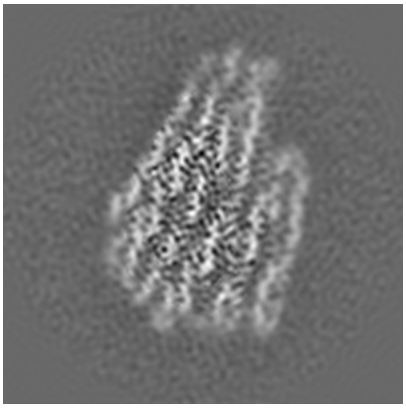
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

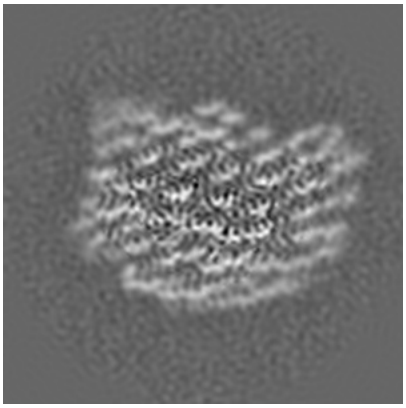
6.3.1 Primary map



X Index: 71



Y Index: 82

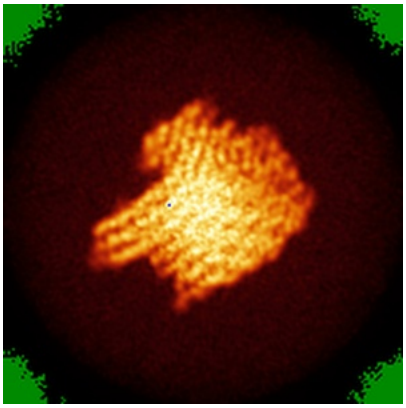


Z Index: 78

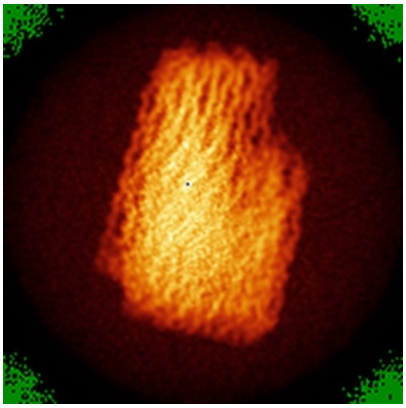
The images above show the largest variance slices of the map in three orthogonal directions.

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

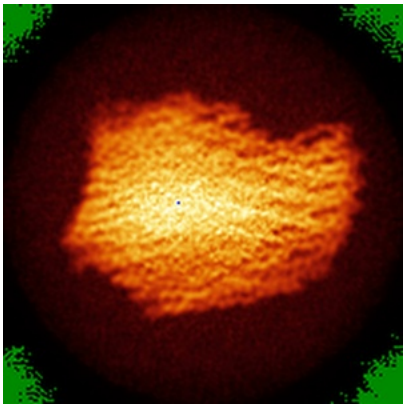
6.4.1 Primary map



X



Y

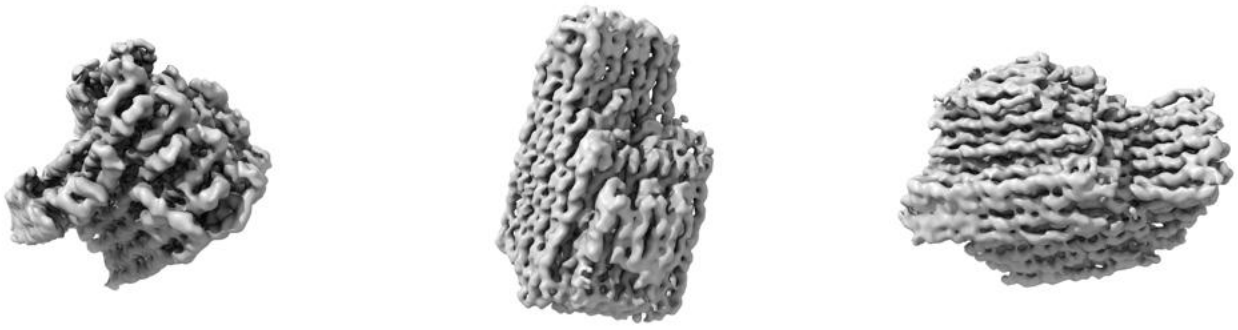


Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.1. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

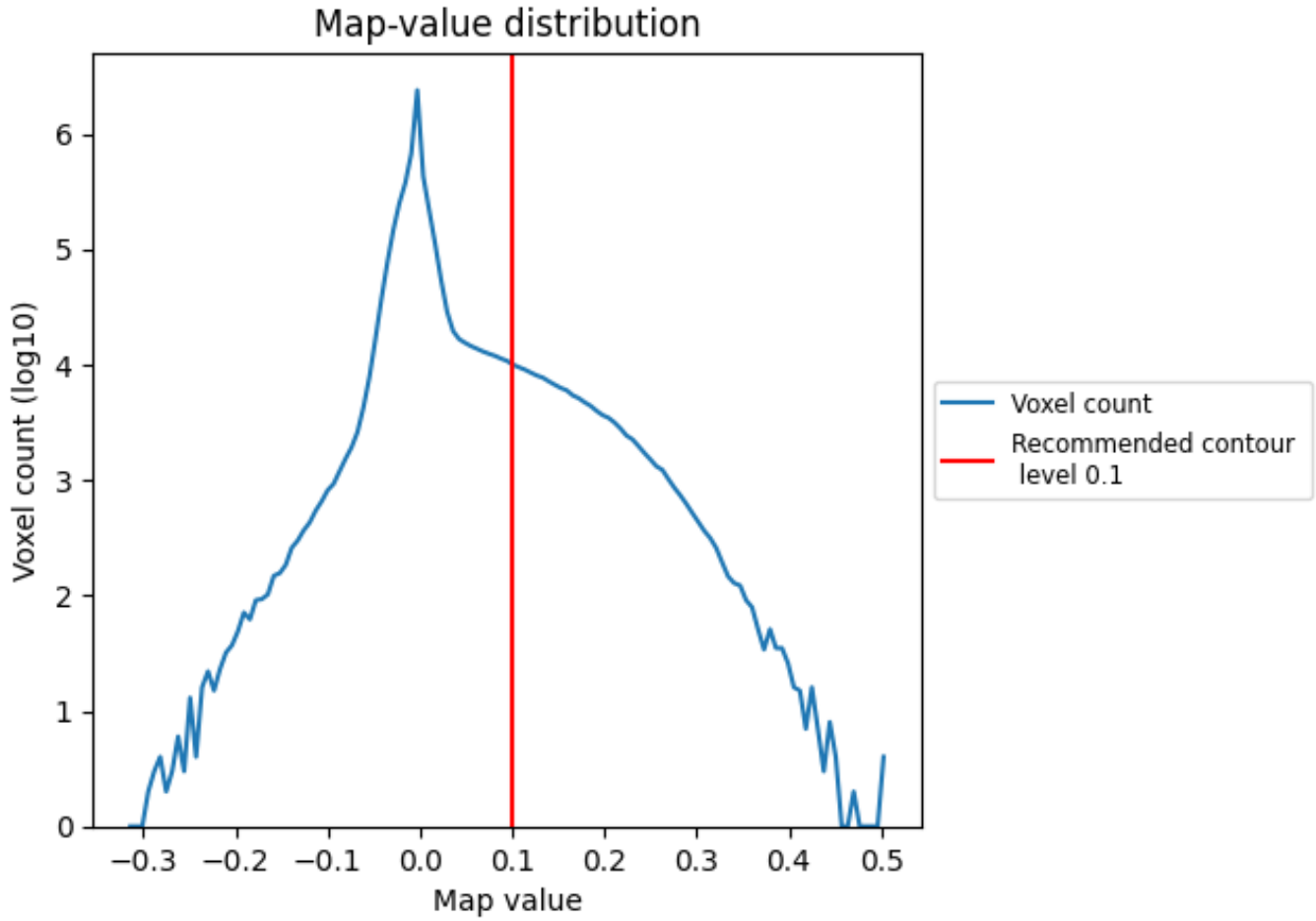
6.6 Mask visualisation (i)

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

7 Map analysis

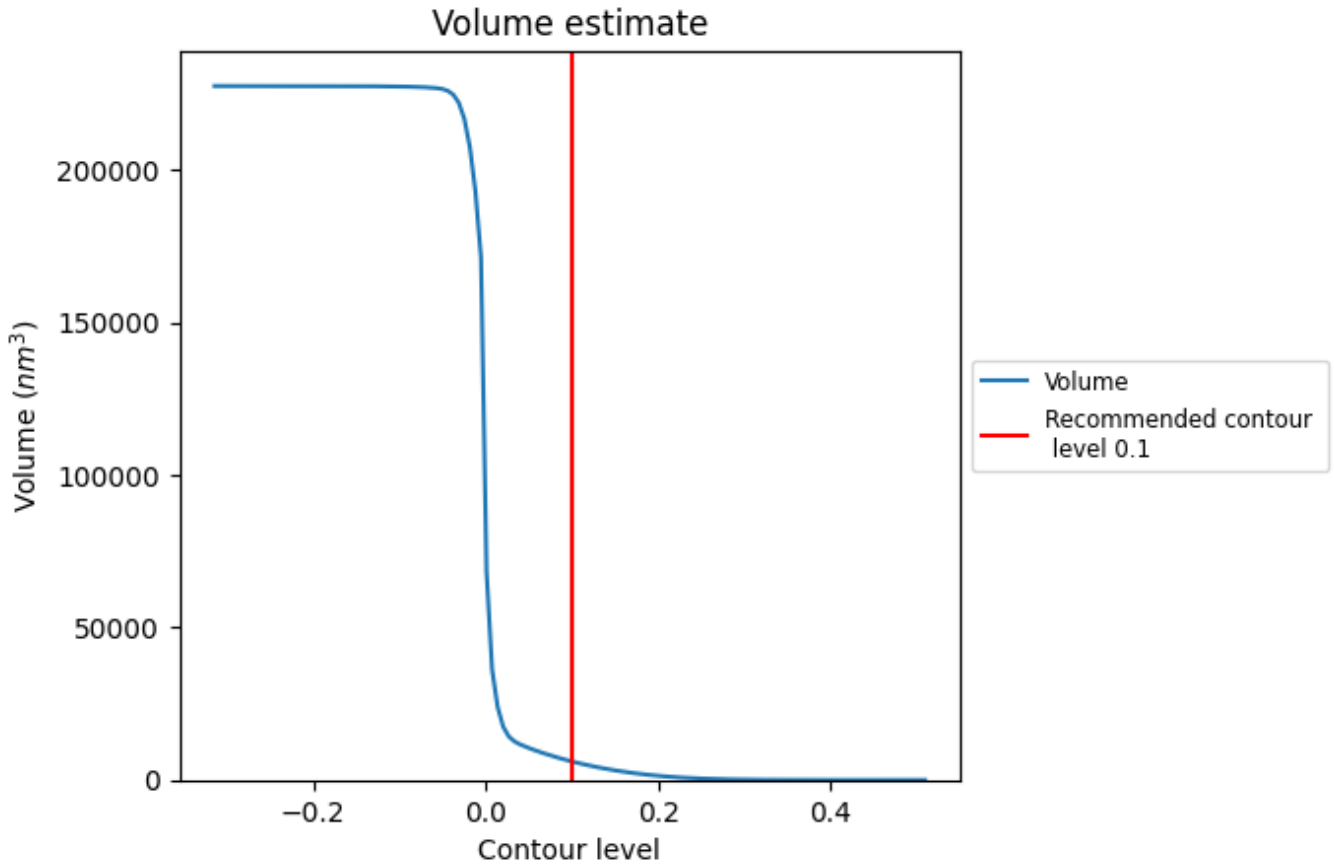
This section contains the results of statistical analysis of the map.

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.

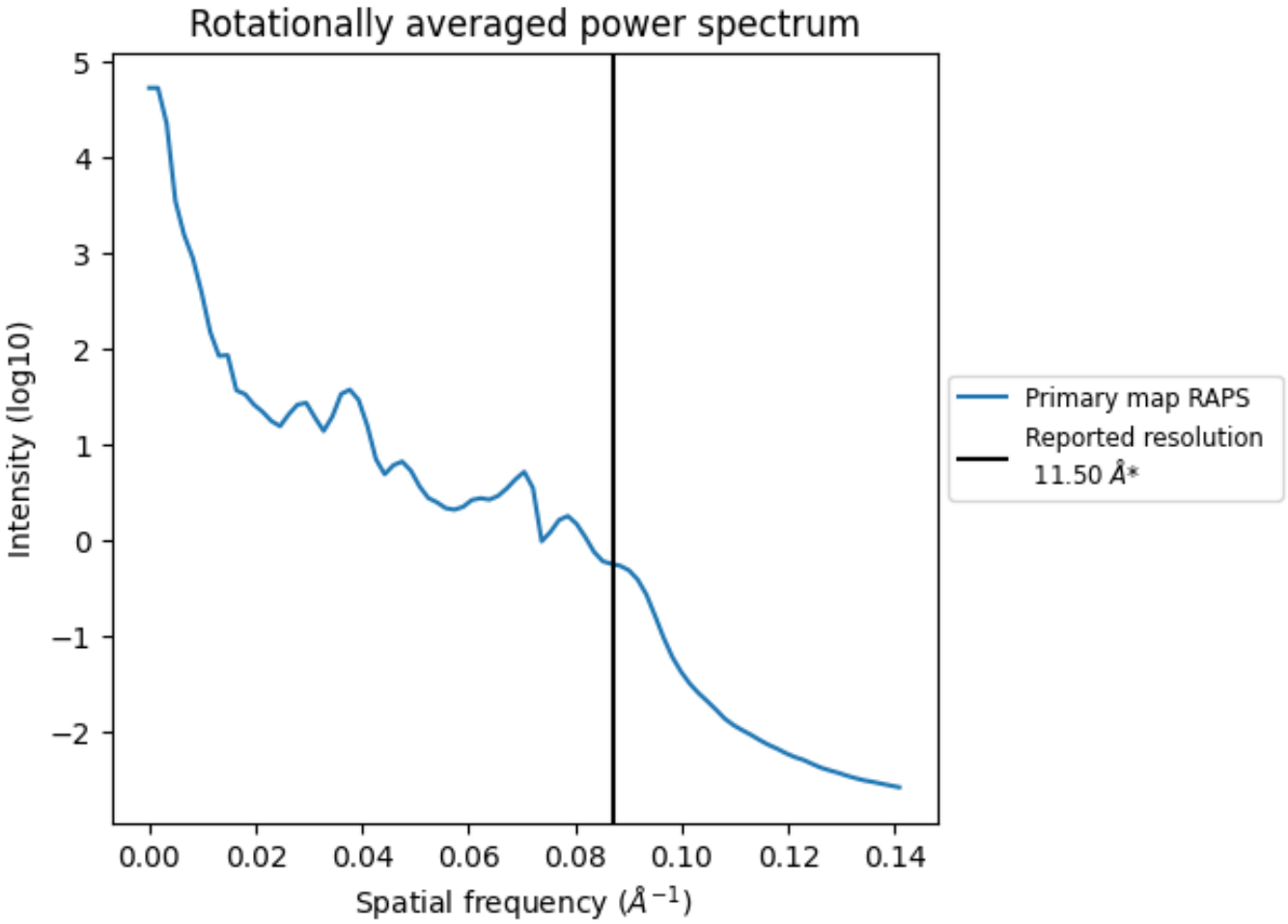
7.2 Volume estimate



The volume at the recommended contour level is 6064 nm^3; this corresponds to an approximate mass of 5477 kDa.

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

7.3 Rotationally averaged power spectrum (i)



*Reported resolution corresponds to spatial frequency of 0.087 Å^{-1}

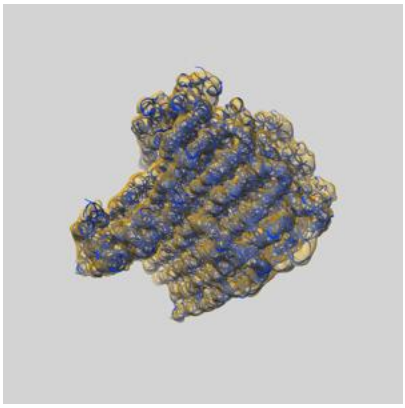
8 Fourier-Shell correlation

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

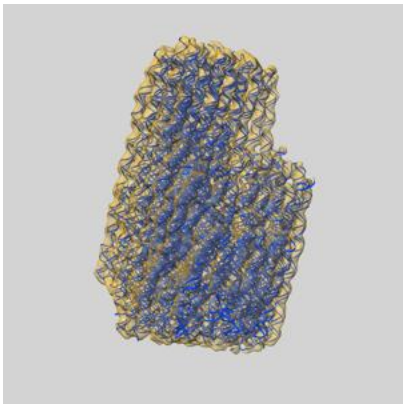
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-2210 and PDB model 4V5X. Per-residue inclusion information can be found in section 3 on page 34.

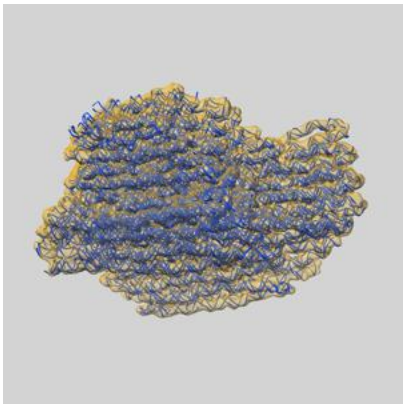
9.1 Map-model overlay



X



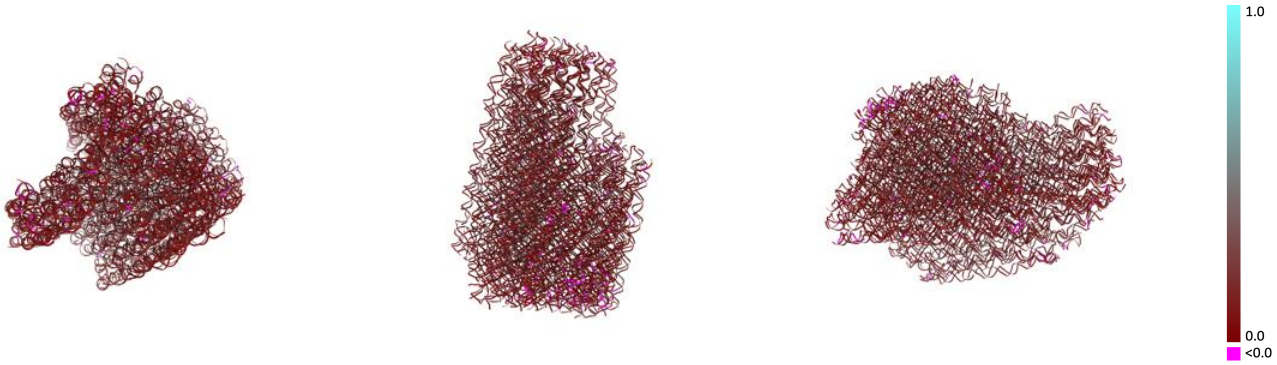
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.1 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model (i)



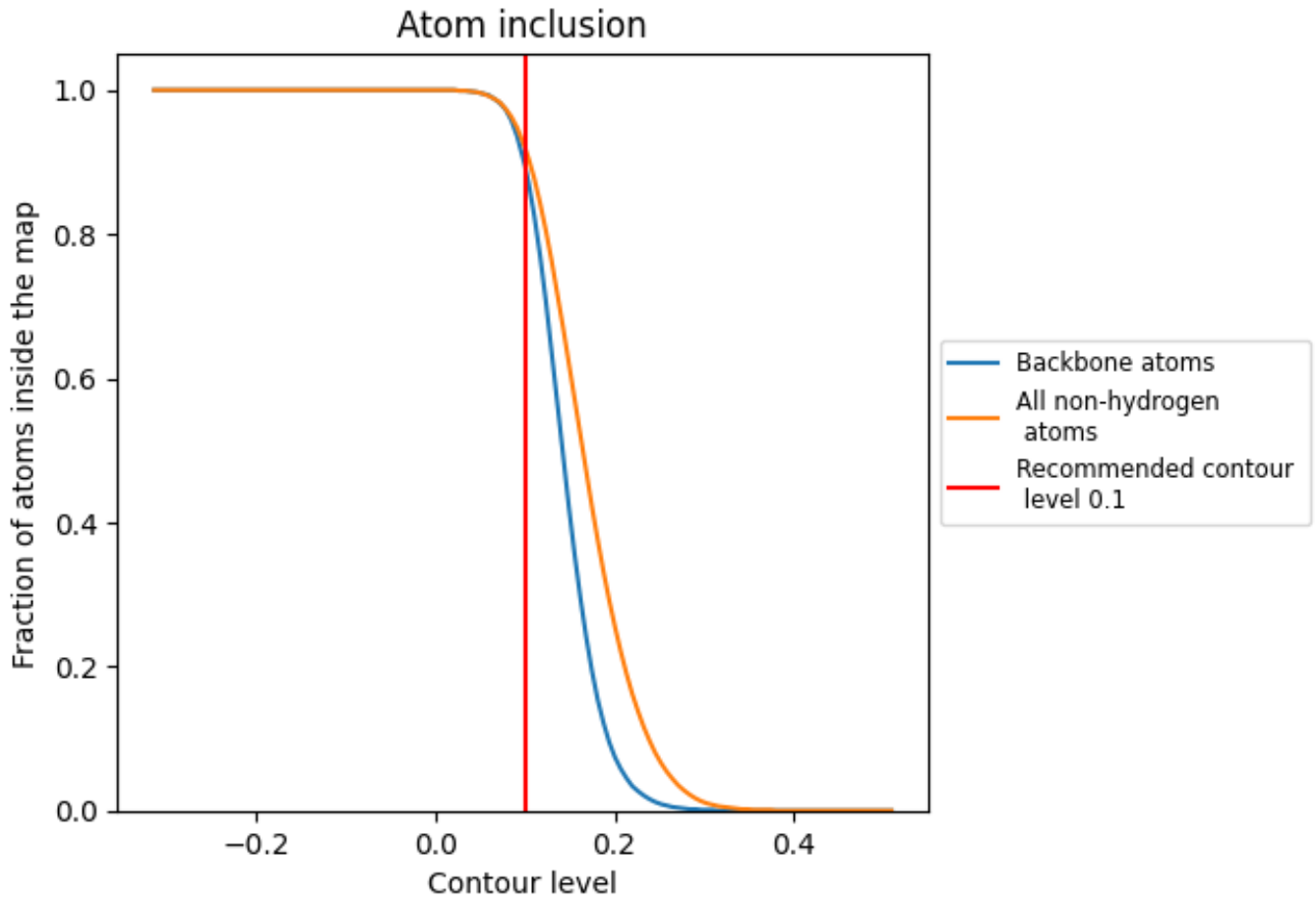
X Y Z

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

9.3 Atom inclusion mapped to coordinate model (i)

This section was not generated.

9.4 Atom inclusion (i)



At the recommended contour level, 90% of all backbone atoms, 92% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9200	0.1390
A0	0.9750	0.1650
A1	0.9730	0.1160
A2	0.9500	0.1680
A3	0.9810	0.1910
A4	0.9170	0.1090
A5	0.9780	0.1690
A6	0.9750	0.1390
A7	0.9570	0.1600
A8	0.9530	0.1710
AA	0.9190	0.1390
AB	0.9250	0.1300
AC	0.9850	0.1360
AD	0.9540	0.1260
AE	0.7830	0.1020
AF	0.9590	0.1230
AG	0.9610	0.1300
AH	0.9640	0.1260
AI	0.9610	0.1770
AJ	0.9650	0.1350
AK	0.9830	0.1950
AL	0.8990	0.1240
AM	0.9680	0.1610
AN	0.9650	0.1490
AO	0.9600	0.1310
AP	0.9810	0.1650
AQ	0.9630	0.1460
AR	0.8960	0.0980
AS	0.9690	0.1330
AT	0.9550	0.1490
AU	0.9700	0.1810
AV	0.9740	0.1680
AW	0.6690	0.0820
AX	0.9780	0.1860
AY	0.6640	0.1140

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Chain	Atom inclusion	Q-score
AZ	0.9510	0.1310
Ab	0.9750	0.1520
Ac	0.9470	0.1410
Ad	0.9530	0.1720
Af	0.9620	0.1480
Ag	0.9620	0.1400
Ah	0.9470	0.1490
Ai	0.9330	0.1140
Aj	0.9610	0.1830
Ak	0.9560	0.1720
Al	0.9310	0.1720
Am	0.9320	0.1580
An	0.9540	0.1620
Ao	0.9490	0.1940
As	0.9700	0.1700
Au	0.9900	0.1540
Av	0.9660	0.1540
Aw	0.9560	0.1800
Ax	0.9410	0.1190
Ay	0.7590	0.0960
Az	0.9310	0.1090
B0	0.9430	0.1420
B1	0.9520	0.1370
B2	0.9440	0.1720
B3	0.9480	0.1590
B4	0.8390	0.1140
B5	0.8950	0.1190
B6	0.9210	0.1270
B7	0.9500	0.1290
B8	0.8650	0.1230
B9	0.9010	0.1080
BB	0.9630	0.1340
BC	0.9620	0.1410
BD	0.9530	0.1370
BE	0.8990	0.1040
BF	0.9490	0.1520
BG	0.9360	0.1280
BH	0.7640	0.1060
BI	0.9210	0.1220
BJ	0.9200	0.1400
BK	0.9510	0.1780
BL	0.9420	0.1700

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Chain	Atom inclusion	Q-score
BM	0.9590	0.1590
BN	0.9170	0.1100
BO	0.9470	0.1490
BP	0.9370	0.1130
BQ	0.9530	0.1370
BR	0.8610	0.1210
BS	0.9450	0.1840
BT	0.9390	0.1130
BU	0.9310	0.1250
BV	0.9150	0.0910
BW	0.7950	0.1120
BX	0.9580	0.1220
BY	0.9510	0.1340
BZ	0.8980	0.1250
Ba	0.9010	0.1480
Bb	0.7870	0.1130
Bc	0.8590	0.1350
Bd	0.9150	0.1250
Be	0.8790	0.1320
Bf	0.9400	0.1310
Bg	0.8420	0.1060
Bh	0.9000	0.1280
Bi	0.7510	0.0910
Bj	0.9600	0.1380
Bk	0.8800	0.1160
Bl	0.8580	0.1270
Bm	0.9230	0.1150
Bn	0.7090	0.1140
Bo	0.6550	0.0850
Bp	0.8620	0.1140
Bq	0.8890	0.1020
Br	0.8370	0.1200
Bs	0.3910	0.0700
C0	0.7610	0.1340
C1	0.9400	0.1270
C2	0.9440	0.1860
C3	0.9690	0.1520
C4	0.8910	0.1190
C5	0.9530	0.1460
C6	0.8810	0.1630
C7	0.9410	0.1270
C8	0.9610	0.1770

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Chain	Atom inclusion	Q-score
CB	0.9490	0.1510
CC	0.9700	0.1600
CD	0.9680	0.1690
CE	0.9190	0.1720
CF	0.9350	0.1850
CG	0.9680	0.1290
CH	0.9570	0.1620
CI	0.9800	0.1260
CJ	0.9250	0.1290
CK	0.9500	0.2000
CL	0.9660	0.1410
CM	0.5360	0.0950
CN	0.7980	0.1110
CO	0.9490	0.1820
CP	0.9410	0.1290
CQ	0.9030	0.1200
CR	0.9600	0.1340
CS	0.9290	0.1260
CT	0.9530	0.1990
CU	0.9380	0.1320
CV	0.9720	0.1260
CW	0.9680	0.1130
CX	0.9420	0.1630
CY	0.9470	0.1500
CZ	0.9000	0.1370
Cb	0.9200	0.1760
Cc	0.9460	0.1060
Cd	0.9320	0.1100
Ce	0.9510	0.1410
Cf	0.8710	0.1170
Cg	0.9020	0.1130
Ch	0.9630	0.1550
Ck	0.8070	0.1020
Cp	0.9580	0.1620
Cq	0.9210	0.1390
Cr	0.9400	0.1120
Cs	0.9590	0.1400
Ct	0.9220	0.1240
Cu	0.9420	0.1600
Cv	0.9160	0.1130
Cw	0.9540	0.1240
Cx	0.9110	0.1090

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Chain	Atom inclusion	Q-score
Cy	0.9620	0.1480
Cz	0.9410	0.1430