



Full wwPDB EM Validation Report ⓘ

Mar 9, 2026 – 02:30 PM UTC

PDB ID : 7ARY / pdb_00007ary
EMDB ID : EMD-11378
Title : Twist-Tower_twist-corrected-variant
Authors : Kube, M.; Kohler, F.; Feigl, E.; Nagel-Yuksel, B.; Willner, E.M.; Funke, J.J.; Gerling, T.; Stommer, P.; Honemann, M.N.; Martin, T.G.; Scheres, S.H.W.; Dietz, H.
Deposited on : 2020-10-26
Resolution : 8.50 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

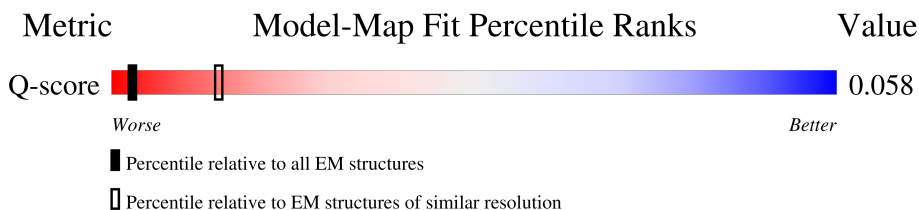
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

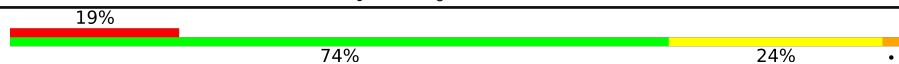
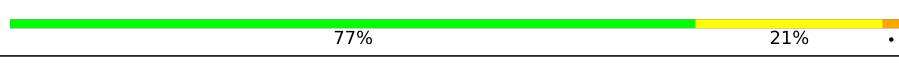





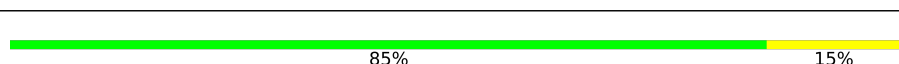


The reported resolution of this entry is 8.50 Å.

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	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Q-score	25397	328 (8.00 - 9.00)

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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	AA	8064	 19% 74% 24% .
2	AB	47	 77% 21% .
3	AC	53	 74% 26% .
4	AD	48	 69% 29% .
5	AE	48	 83% 17% .
6	AF	55	 67% 31% .
7	AG	48	 79% 85% 15% .
8	AH	31	 77% 23% .
9	AI	28	 75% 25% .
10	AJ	48	 85% 15% .



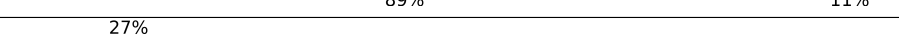


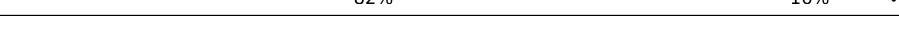


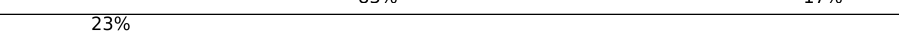


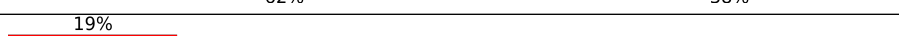


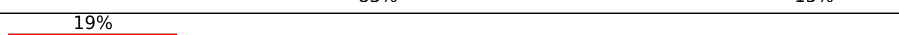





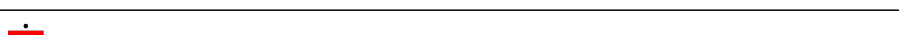


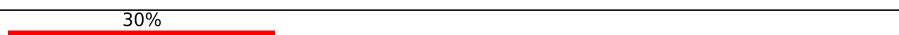

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Mol	Chain	Length	Quality of chain
11	AK	32	78% 22%
12	AL	52	27% 83% 17%
13	AM	38	95% 5%
14	AN	46	15% 83% 17%
15	AO	46	78% 20%
16	AP	48	8% 77% 23%
17	AQ	48	67% 79% 21%
18	AR	46	9% 78% 20%
19	AS	50	24% 76% 24%
20	AT	47	15% 81% 19%
21	AU	40	20% 70% 30%
22	AV	45	53% 73% 27%
23	AW	48	79% 21%
24	AX	37	8% 70% 30%
25	AY	47	6% 79% 21%
26	AZ	40	82% 18%
27	Aa	53	8% 77% 21%
28	Ab	39	10% 77% 23%
29	Ac	31	29% 84% 16%
30	Ad	45	80% 20%
31	Ae	52	37% 81% 17%
32	Af	46	80% 20%
33	Ag	30	7% 77% 23%
34	Ah	39	8% 90% 8%
35	Ai	48	65% 69% 27%

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Mol	Chain	Length	Quality of chain
36	Aj	40	 85% 12%
37	Ak	38	 11% 89% 11%
38	Al	56	 27% 80% 20%
39	Am	38	 24% 82% 16%
40	An	45	 69% 31%
41	Ao	46	 13% 83% 17%
42	Ap	48	 23% 79% 21%
43	Aq	32	 62% 38%
44	Ar	48	 19% 77% 23%
45	As	48	 23% 83% 15%
46	At	54	 19% 80% 19%
47	Au	46	 22% 80% 20%
48	Av	48	 38% 81% 15%
49	Aw	48	 83% 90% 10%
50	Ax	45	 80% 18%
51	Ay	31	 19% 81% 19%
52	Az	30	 30% 77% 23%
53	A0	32	 78% 22%
54	A1	48	 29% 79% 21%
55	A2	46	 22% 80% 20%
56	A3	30	 10% 77% 23%
57	A4	45	 13% 84% 16%
58	A5	45	 47% 87% 13%
59	A6	48	 19% 77% 21%
60	A7	48	 31% 77% 19%

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Mol	Chain	Length	Quality of chain
61	A8	60	58% 77% 22%
62	A9	38	50% 82% 18%
63	BA	48	6% 81% 19%
64	BB	31	48% 74% 26%
65	BC	60	57% 88% 12%
66	BD	53	85% 15%
67	BE	32	84% 16%
68	BF	38	11% 74% 24%
69	BG	47	9% 64% 32%
70	BH	57	53% 82% 18%
71	BI	45	80% 20%
72	BJ	45	11% 78% 22%
73	BK	48	10% 69% 31%
74	BL	45	76% 24%
75	BM	48	25% 81% 17%
76	BN	30	40% 80% 13% 7%
77	BO	45	11% 71% 29%
78	BP	45	27% 69% 29%
79	BQ	45	27% 73% 27%
80	BR	38	21% 71% 26%
81	BS	48	19% 81% 19%
82	BT	52	13% 77% 21%
83	BU	39	5% 74% 23%
84	BV	32	31% 66% 34%
85	BW	31	81% 19%

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Mol	Chain	Length	Quality of chain
86	BX	45	
87	BY	52	
88	BZ	46	
89	Ba	46	
90	Bb	38	
91	Bc	45	
92	Bd	48	
93	Be	45	
94	Bf	38	
95	Bg	38	
96	Bh	40	
97	Bi	49	
98	Bj	48	
99	Bk	30	
100	Bl	40	
101	Bm	38	
102	Bn	43	
103	Bo	45	
104	Bp	47	
105	Bq	48	
106	Br	38	
107	Bs	30	
108	Bt	45	
109	Bu	49	
110	Bv	40	







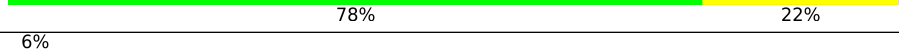
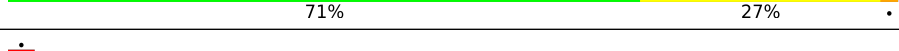
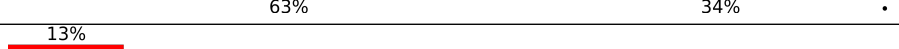
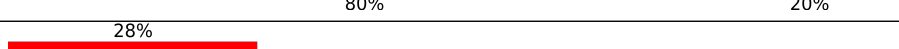
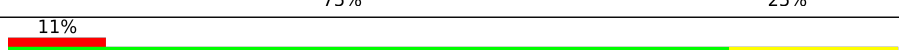

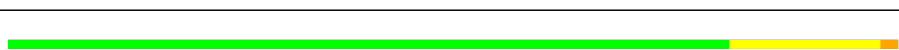

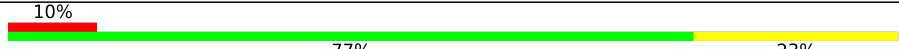





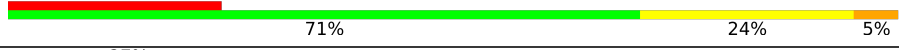
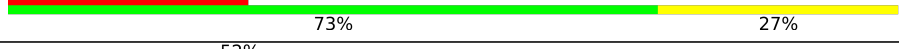



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Mol	Chain	Length	Quality of chain
111	Bw	37	46% 73% 22% 5%
112	Bx	52	35% 67% 33%
113	By	30	53% 80% 20%
114	Bz	40	38% 90% 10%
115	B0	30	30% 80% 20%
116	B1	52	27% 73% 27%
117	B2	30	33% 83% 17%
118	B3	56	11% 75% 25%
119	B4	48	19% 88% 10%
120	B5	31	29% 81% 19%
121	B6	45	24% 60% 38%
122	B7	37	16% 84% 16%
123	B8	52	27% 77% 23%
124	B9	38	21% 58% 39%
125	CA	32	31% 75% 25%
126	CB	32	6% 59% 41%
127	CC	30	40% 80% 17%
128	CD	59	59% 76% 24%
129	CE	52	12% 81% 19%
130	CF	40	15% 78% 22%
131	CG	31	68% 32%
132	CH	53	9% 68% 30%
133	CI	30	10% 80% 17%
134	CJ	49	10% 73% 27%
135	CK	56	71% 75% 23%

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Mol	Chain	Length	Quality of chain
136	CL	31	 81% 19%
137	CM	32	 69% 31%
138	CN	40	 25% 80% 20%
139	CO	30	 23% 70% 27%
140	CP	54	 22% 76% 22%
141	CQ	48	 75% 23%
142	CR	45	 38% 78% 22%
143	CS	48	 6% 71% 27%
144	CT	38	 63% 34%
145	CU	30	 13% 80% 20%
146	CV	32	 28% 75% 25%
147	CW	47	 11% 81% 19%
148	CX	48	 33% 81% 19%
149	CY	48	 81% 17%
150	CZ	46	 7% 78% 20%
151	Ca	39	 10% 77% 23%
152	Cb	45	 22% 87% 13%
153	Cc	30	 13% 53% 43%
154	Cd	38	 21% 84% 16%
155	Ce	30	 10% 63% 37%
156	Cf	40	 78% 20%
157	Cg	38	 24% 71% 24% 5%
158	Ch	45	 27% 73% 27%
159	Ci	48	 52% 73% 27%
160	Cj	54	 65% 28% 7%

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Mol	Chain	Length	Quality of chain
161	Ck	46	26% 85% 15%
162	Cl	45	9% 69% 29%
163	Cm	38	16% 79% 21%
164	Cn	45	36% 84% 16%
165	Co	37	30% 70% 30%
166	Cp	37	6% 65% 32%
167	Cq	36	6% 86% 11%
168	Cr	38	5% 71% 29%
169	Cs	39	10% 67% 31%
170	Ct	38	74% 26%
171	Cu	36	19% 83% 17%
172	Cv	37	65% 32%
173	Cw	31	26% 74% 26%
174	Cx	37	41% 78% 19%
175	Cy	45	42% 62% 38%
176	Cz	52	13% 75% 21%
177	C0	60	22% 82% 17%
178	C1	47	60% 74% 23%
179	C2	32	44% 78% 22%
180	C3	37	19% 89% 11%
181	C4	57	28% 84% 16%
182	C5	44	95% 82% 18%
183	C6	47	28% 74% 23%
184	C7	47	13% 79% 21%
185	C8	38	29% 68% 32%

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Mol	Chain	Length	Quality of chain
186	C9	37	<p>41% 76% 24%</p>
187	DA	60	<p>28% 68% 32%</p>
188	DB	43	<p>93% 79% 19%</p>
189	DC	46	<p>11% 85% 15%</p>
190	DD	38	<p>76% 24%</p>
191	DE	46	<p>76% 76% 24%</p>
192	DF	31	<p>19% 87% 13%</p>

2 Entry composition

There are 192 unique types of molecules in this entry. The entry contains 331913 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.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	AA	8064	164972	78873	29001	49035	8063	0	0

- Molecule 2 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	AB	47	972	463	191	272	46	0	0

- Molecule 3 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	AC	53	1091	520	212	307	52	0	0

- Molecule 4 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	AD	48	989	472	188	282	47	0	0

- Molecule 5 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	AE	48	971	465	171	288	47	0	0

- Molecule 6 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
6	AF	55	1131	540	216	321	54	0	0

- Molecule 7 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	AG	48	Total	C	N	O	P	0	0
			970	471	150	302	47		

- Molecule 8 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	AH	31	Total	C	N	O	P	0	0
			636	307	116	183	30		

- Molecule 9 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	AI	28	Total	C	N	O	P	0	0
			570	277	92	174	27		

- Molecule 10 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	AJ	48	Total	C	N	O	P	0	0
			977	468	177	285	47		

- Molecule 11 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	AK	32	Total	C	N	O	P	0	0
			657	312	123	191	31		

- Molecule 12 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	AL	52	Total	C	N	O	P	0	0
			1065	511	188	315	51		

- Molecule 13 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	AM	38	Total	C	N	O	P	0	0
			766	374	121	234	37		

- Molecule 14 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	AN	46	Total	C	N	O	P	0	0
			946	453	174	274	45		

- Molecule 15 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	AO	46	Total	C	N	O	P	0	0
			947	450	192	260	45		

- Molecule 16 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	AP	48	Total	C	N	O	P	0	0
			982	470	175	290	47		

- Molecule 17 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	AQ	48	Total	C	N	O	P	0	0
			972	473	157	295	47		

- Molecule 18 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	AR	46	Total	C	N	O	P	0	0
			942	451	170	276	45		

- Molecule 19 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	AS	50	Total	C	N	O	P	0	0
			1012	488	184	291	49		

- Molecule 20 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	AT	47	Total	C	N	O	P	0	0
			959	458	184	271	46		

- Molecule 21 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	AU	40	Total	C	N	O	P	0	0
			823	391	164	229	39		

- Molecule 22 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	AV	45	Total	C	N	O	P	0	0
			918	445	149	280	44		

- Molecule 23 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	AW	48	Total	C	N	O	P	0	0
			982	467	187	281	47		

- Molecule 24 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	AX	37	Total	C	N	O	P	0	0
			763	360	156	211	36		

- Molecule 25 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	AY	47	Total	C	N	O	P	0	0
			966	466	176	278	46		

- Molecule 26 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	AZ	40	Total	C	N	O	P	0	0
			813	388	152	234	39		

- Molecule 27 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	Aa	53	Total	C	N	O	P	0	0
			1086	519	204	311	52		

- Molecule 28 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	Ab	39	Total	C	N	O	P	0	0
			798	383	145	232	38		

- Molecule 29 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	Ac	31	Total	C	N	O	P	0	0
			624	300	108	186	30		

- Molecule 30 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Ad	45	Total	C	N	O	P	0	0
			927	443	187	253	44		

- Molecule 31 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	Ae	52	Total	C	N	O	P	0	0
			1056	509	175	321	51		

- Molecule 32 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	Af	46	Total	C	N	O	P	0	0
			936	449	169	273	45		

- Molecule 33 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	Ag	30	Total	C	N	O	P	0	0
			616	296	109	182	29		

- Molecule 34 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	Ah	39	Total	C	N	O	P	0	0
			801	380	157	226	38		

- Molecule 35 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	Ai	48	Total	C	N	O	P	0	0
			981	475	158	301	47		

- Molecule 36 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Aj	40	Total	C	N	O	P	0	0
			820	392	163	226	39		

- Molecule 37 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	Ak	38	Total	C	N	O	P	0	0
			775	371	145	222	37		

- Molecule 38 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	Al	56	Total	C	N	O	P	0	0
			1136	546	207	328	55		

- Molecule 39 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Am	38	Total	C	N	O	P	0	0
			772	375	126	234	37		

- Molecule 40 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	An	45	Total	C	N	O	P	0	0
			912	435	168	265	44		

- Molecule 41 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Ao	46	Total	C	N	O	P	0	0
			942	450	180	267	45		

- Molecule 42 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	Ap	48	Total	C	N	O	P	0	0
			974	470	166	291	47		

- Molecule 43 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	Aq	32	Total	C	N	O	P	0	0
			662	317	130	184	31		

- Molecule 44 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	Ar	48	Total	C	N	O	P	0	0
			988	475	179	287	47		

- Molecule 45 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	As	48	Total	C	N	O	P	0	0
			991	471	204	269	47		

- Molecule 46 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	At	54	Total	C	N	O	P	0	0
			1105	528	210	314	53		

- Molecule 47 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	Au	46	Total	C	N	O	P	0	0
			934	452	166	271	45		

- Molecule 48 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	Av	48	Total	C	N	O	P	0	0
			985	473	187	278	47		

- Molecule 49 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	Aw	48	Total	C	N	O	P	0	0
			964	466	155	296	47		

- Molecule 50 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	Ax	45	Total	C	N	O	P	0	0
			917	439	179	255	44		

- Molecule 51 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	Ay	31	Total	C	N	O	P	0	0
			643	304	131	178	30		

- Molecule 52 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	Az	30	Total	C	N	O	P	0	0
			613	293	118	173	29		

- Molecule 53 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	A0	32	Total	C	N	O	P	0	0
			647	308	124	184	31		

- Molecule 54 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	A1	48	Total	C	N	O	P	0	0
			984	471	186	280	47		

- Molecule 55 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	A2	46	Total	C	N	O	P	0	0
			941	452	181	263	45		

- Molecule 56 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	A3	30	Total	C	N	O	P	0	0
			615	294	117	175	29		

- Molecule 57 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	A4	45	Total	C	N	O	P	0	0
			914	440	166	264	44		

- Molecule 58 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	A5	45	Total	C	N	O	P	0	0
			923	447	165	267	44		

- Molecule 59 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	A6	48	Total	C	N	O	P	0	0
			994	474	198	275	47		

- Molecule 60 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	A7	48	Total	C	N	O	P	0	0
			977	474	168	288	47		

- Molecule 61 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	A8	60	Total	C	N	O	P	0	0
			1206	582	192	373	59		

- Molecule 62 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	A9	38	Total	C	N	O	P	0	0
			778	371	151	219	37		

- Molecule 63 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	BA	48	Total	C	N	O	P	0	0
			980	469	188	276	47		

- Molecule 64 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	BB	31	Total	C	N	O	P	0	0
			637	303	129	175	30		

- Molecule 65 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	BC	60	Total	C	N	O	P	0	0
			1223	583	224	357	59		

- Molecule 66 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	BD	53	Total	C	N	O	P	0	0
			1088	521	211	304	52		

- Molecule 67 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	BE	32	Total	C	N	O	P	0	0
			648	312	120	185	31		

- Molecule 68 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	BF	38	Total	C	N	O	P	0	0
			779	373	155	214	37		

- Molecule 69 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	BG	47	Total	C	N	O	P	0	0
			959	462	162	289	46		

- Molecule 70 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	BH	57	Total	C	N	O	P	0	0
			1159	563	178	362	56		

- Molecule 71 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	BI	45	Total	C	N	O	P	0	0
			917	437	172	264	44		

- Molecule 72 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	BJ	45	Total	C	N	O	P	0	0
			927	442	179	262	44		

- Molecule 73 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	BK	48	Total	C	N	O	P	0	0
			981	470	178	286	47		

- Molecule 74 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	BL	45	Total	C	N	O	P	0	0
			918	441	165	268	44		

- Molecule 75 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	BM	48	Total	C	N	O	P	0	0
			990	475	188	280	47		

- Molecule 76 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	BN	30	Total	C	N	O	P	0	0
			618	296	118	175	29		

- Molecule 77 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	BO	45	Total	C	N	O	P	0	0
			914	438	165	267	44		

- Molecule 78 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	BP	45	Total	C	N	O	P	0	0
			920	440	178	258	44		

- Molecule 79 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	BQ	45	Total	C	N	O	P	0	0
			929	443	181	261	44		

- Molecule 80 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	BR	38	Total	C	N	O	P	0	0
			770	370	134	229	37		

- Molecule 81 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	BS	48	Total	C	N	O	P	0	0
			972	471	168	286	47		

- Molecule 82 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	BT	52	Total	C	N	O	P	0	0
			1070	507	213	299	51		

- Molecule 83 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	BU	39	Total	C	N	O	P	0	0
			784	375	138	233	38		

- Molecule 84 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	BV	32	Total	C	N	O	P	0	0
			646	311	109	195	31		

- Molecule 85 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
85	BW	31	Total	C	N	O	P	0	0
			624	297	117	180	30		

- Molecule 86 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
86	BX	45	Total	C	N	O	P	0	0
			913	438	168	263	44		

- Molecule 87 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
87	BY	52	Total	C	N	O	P	0	0
			1065	512	196	306	51		

- Molecule 88 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
88	BZ	46	Total	C	N	O	P	0	0
			957	453	189	270	45		

- Molecule 89 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
89	Ba	46	Total	C	N	O	P	0	0
			952	452	190	265	45		

- Molecule 90 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
90	Bb	38	Total	C	N	O	P	0	0
			791	376	161	217	37		

- Molecule 91 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
91	Bc	45	Total	C	N	O	P	0	0
			923	444	165	270	44		

- Molecule 92 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
92	Bd	48	Total	C	N	O	P	0	0
			985	473	190	275	47		

- Molecule 93 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
93	Be	45	Total	C	N	O	P	0	0
			908	432	174	258	44		

- Molecule 94 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
94	Bf	38	Total	C	N	O	P	0	0
			776	375	138	226	37		

- Molecule 95 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
95	Bg	38	Total	C	N	O	P	0	0
			783	373	149	224	37		

- Molecule 96 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
96	Bh	40	Total	C	N	O	P	0	0
			814	388	161	226	39		

- Molecule 97 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
97	Bi	49	Total	C	N	O	P	0	0
			993	483	159	303	48		

- Molecule 98 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
98	Bj	48	Total	C	N	O	P	0	0
			991	475	194	275	47		

- Molecule 99 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
99	Bk	30	Total	C	N	O	P	0	0
			620	296	124	171	29		

- Molecule 100 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
100	Bl	40	Total	C	N	O	P	0	0
			829	394	167	229	39		

- Molecule 101 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
101	Bm	38	Total	C	N	O	P	0	0
			773	370	149	217	37		

- Molecule 102 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
102	Bn	43	Total	C	N	O	P	0	0
			878	425	154	257	42		

- Molecule 103 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
103	Bo	45	Total	C	N	O	P	0	0
			914	445	149	276	44		

- Molecule 104 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
104	Bp	47	Total	C	N	O	P	0	0
			974	463	194	271	46		

- Molecule 105 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
105	Bq	48	984	474	165	298	47	0	0

- Molecule 106 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
106	Br	38	778	375	138	228	37	0	0

- Molecule 107 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
107	Bs	30	609	296	100	184	29	0	0

- Molecule 108 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
108	Bt	45	919	445	155	275	44	0	0

- Molecule 109 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
109	Bu	49	1004	487	167	302	48	0	0

- Molecule 110 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
110	Bv	40	815	387	159	230	39	0	0

- Molecule 111 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
111	Bw	37	752	365	136	215	36	0	0

- Molecule 112 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
112	Bx	52	Total	C	N	O	P	0	0
			1059	516	168	324	51		

- Molecule 113 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
113	By	30	Total	C	N	O	P	0	0
			625	297	126	173	29		

- Molecule 114 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
114	Bz	40	Total	C	N	O	P	0	0
			821	393	162	227	39		

- Molecule 115 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
115	B0	30	Total	C	N	O	P	0	0
			613	296	112	176	29		

- Molecule 116 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
116	B1	52	Total	C	N	O	P	0	0
			1065	520	170	324	51		

- Molecule 117 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
117	B2	30	Total	C	N	O	P	0	0
			614	295	116	174	29		

- Molecule 118 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
118	B3	56	Total	C	N	O	P	0	0
			1143	545	214	329	55		

- Molecule 119 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
119	B4	48	988	468	195	278	47	0	0

- Molecule 120 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
120	B5	31	632	308	106	188	30	0	0

- Molecule 121 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
121	B6	45	929	444	171	270	44	0	0

- Molecule 122 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
122	B7	37	761	362	145	218	36	0	0

- Molecule 123 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
123	B8	52	1066	510	183	322	51	0	0

- Molecule 124 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
124	B9	38	768	370	128	233	37	0	0

- Molecule 125 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
125	CA	32	644	307	119	187	31	0	0

- Molecule 126 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
126	CB	32	Total	C	N	O	P	0	0
			656	313	122	190	31		

- Molecule 127 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
127	CC	30	Total	C	N	O	P	0	0
			624	295	125	175	29		

- Molecule 128 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
128	CD	59	Total	C	N	O	P	0	0
			1200	576	204	362	58		

- Molecule 129 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
129	CE	52	Total	C	N	O	P	0	0
			1062	511	194	306	51		

- Molecule 130 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
130	CF	40	Total	C	N	O	P	0	0
			816	387	162	228	39		

- Molecule 131 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
131	CG	31	Total	C	N	O	P	0	0
			626	296	115	185	30		

- Molecule 132 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
132	CH	53	Total	C	N	O	P	0	0
			1098	522	204	320	52		

- Molecule 133 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
133	CI	30	Total	C	N	O	P	0	0
			614	293	115	177	29		

- Molecule 134 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
134	CJ	49	Total	C	N	O	P	0	0
			988	483	144	313	48		

- Molecule 135 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
135	CK	56	Total	C	N	O	P	0	0
			1138	548	181	354	55		

- Molecule 136 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
136	CL	31	Total	C	N	O	P	0	0
			640	304	122	184	30		

- Molecule 137 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
137	CM	32	Total	C	N	O	P	0	0
			653	311	127	184	31		

- Molecule 138 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
138	CN	40	Total	C	N	O	P	0	0
			827	394	164	230	39		

- Molecule 139 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
139	CO	30	Total	C	N	O	P	0	0
			607	291	108	179	29		

- Molecule 140 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
140	CP	54	1106	527	196	330	53	0	0

- Molecule 141 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
141	CQ	48	976	465	180	284	47	0	0

- Molecule 142 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
142	CR	45	923	442	167	270	44	0	0

- Molecule 143 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
143	CS	48	983	466	185	285	47	0	0

- Molecule 144 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
144	CT	38	769	366	144	222	37	0	0

- Molecule 145 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
145	CU	30	619	294	123	173	29	0	0

- Molecule 146 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
146	CV	32	652	309	126	186	31	0	0

- Molecule 147 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
147	CW	47	970	462	183	279	46	0	0

- Molecule 148 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
148	CX	48	974	472	158	297	47	0	0

- Molecule 149 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
149	CY	48	995	468	201	279	47	0	0

- Molecule 150 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
150	CZ	46	948	456	162	285	45	0	0

- Molecule 151 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
151	Ca	39	798	380	157	223	38	0	0

- Molecule 152 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
152	Cb	45	933	441	189	259	44	0	0

- Molecule 153 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
153	Cc	30	616	293	112	182	29	0	0

- Molecule 154 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
154	Cd	38	Total	C	N	O	P	0	0
			779	368	151	223	37		

- Molecule 155 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
155	Ce	30	Total	C	N	O	P	0	0
			603	288	105	181	29		

- Molecule 156 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
156	Cf	40	Total	C	N	O	P	0	0
			803	385	149	230	39		

- Molecule 157 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
157	Cg	38	Total	C	N	O	P	0	0
			779	371	145	226	37		

- Molecule 158 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
158	Ch	45	Total	C	N	O	P	0	0
			928	441	177	266	44		

- Molecule 159 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
159	Ci	48	Total	C	N	O	P	0	0
			977	469	158	303	47		

- Molecule 160 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
160	Cj	54	Total	C	N	O	P	0	0
			1107	525	207	322	53		

- Molecule 161 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
161	Ck	46	948	451	185	267	45	0	0

- Molecule 162 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
162	Cl	45	913	435	162	272	44	0	0

- Molecule 163 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
163	Cm	38	765	369	123	236	37	0	0

- Molecule 164 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
164	Cn	45	916	437	178	257	44	0	0

- Molecule 165 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
165	Co	37	752	364	125	227	36	0	0

- Molecule 166 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
166	Cp	37	752	358	134	224	36	0	0

- Molecule 167 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
167	Cq	36	731	350	127	219	35	0	0

- Molecule 168 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
168	Cr	38	778	371	142	228	37	0	0

- Molecule 169 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
169	Cs	39	804	381	147	238	38	0	0

- Molecule 170 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
170	Ct	38	781	371	157	216	37	0	0

- Molecule 171 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
171	Cu	36	736	355	125	221	35	0	0

- Molecule 172 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
172	Cv	37	748	360	123	229	36	0	0

- Molecule 173 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
173	Cw	31	629	300	123	176	30	0	0

- Molecule 174 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
174	Cx	37	761	364	152	209	36	0	0

- Molecule 175 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
175	Cy	45	917	436	167	270	44	0	0

- Molecule 176 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
176	Cz	52	1061	510	180	320	51	0	0

- Molecule 177 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
177	C0	60	1215	590	190	376	59	0	0

- Molecule 178 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
178	C1	47	964	461	178	279	46	0	0

- Molecule 179 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
179	C2	32	660	316	125	188	31	0	0

- Molecule 180 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
180	C3	37	757	360	141	220	36	0	0

- Molecule 181 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
181	C4	57	1159	561	189	353	56	0	0

- Molecule 182 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
182	C5	44	910	435	177	255	43	0	0

- Molecule 183 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
183	C6	47	959	458	181	274	46	0	0

- Molecule 184 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
184	C7	47	957	456	186	269	46	0	0

- Molecule 185 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
185	C8	38	771	368	139	227	37	0	0

- Molecule 186 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
186	C9	37	766	366	150	214	36	0	0

- Molecule 187 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
187	DA	60	1225	589	221	356	59	0	0

- Molecule 188 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
188	DB	43	876	418	155	261	42	0	0

- Molecule 189 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
189	DC	46	952	453	195	259	45	0	0

- Molecule 190 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
190	DD	38	775	369	144	225	37	0	0

- Molecule 191 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
191	DE	46	940	446	181	268	45	0	0

- Molecule 192 is a DNA chain called STAPLE STRAND.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
192	DF	31	638	304	125	179	30	0	0

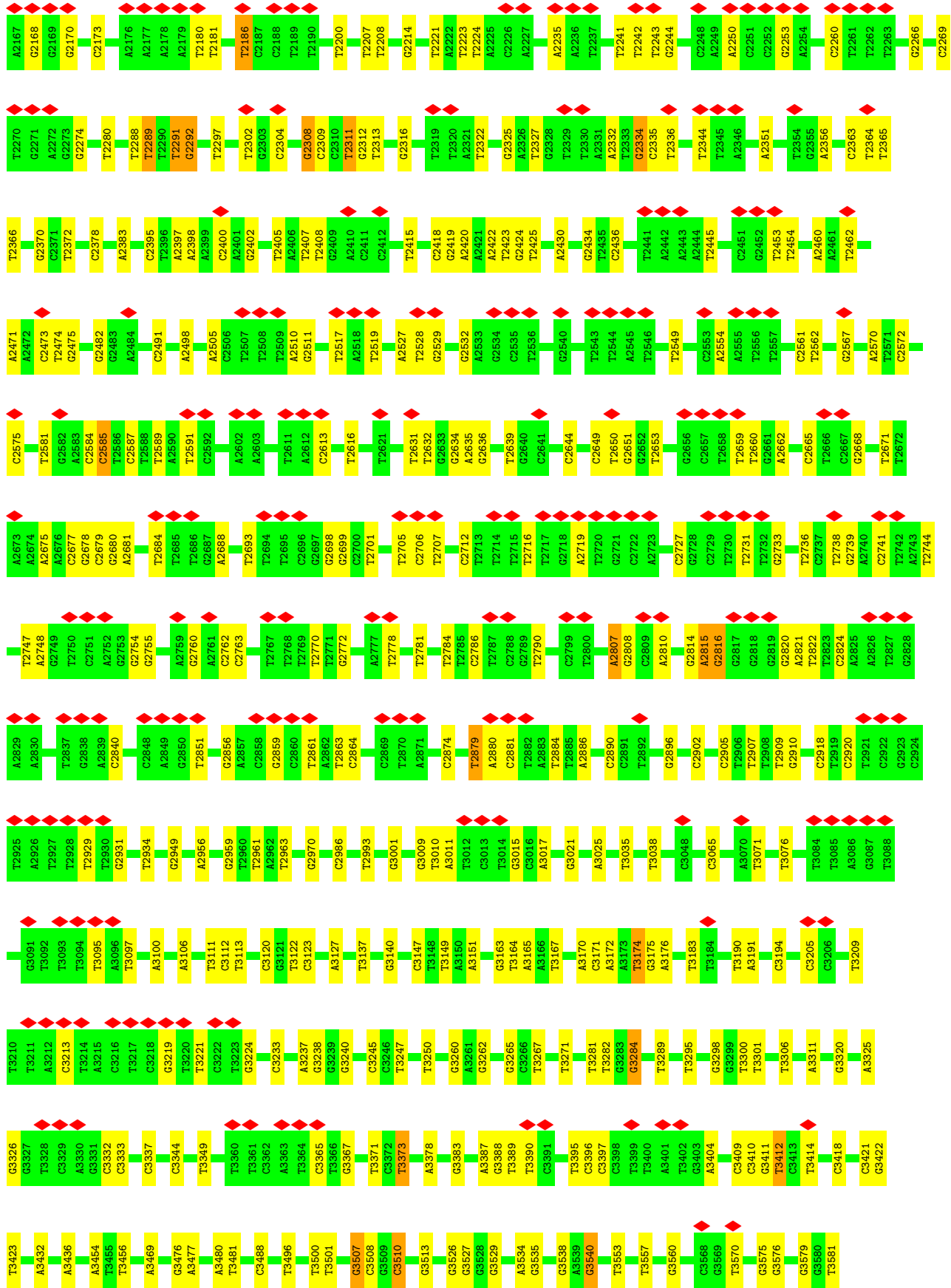
3 Residue-property plots

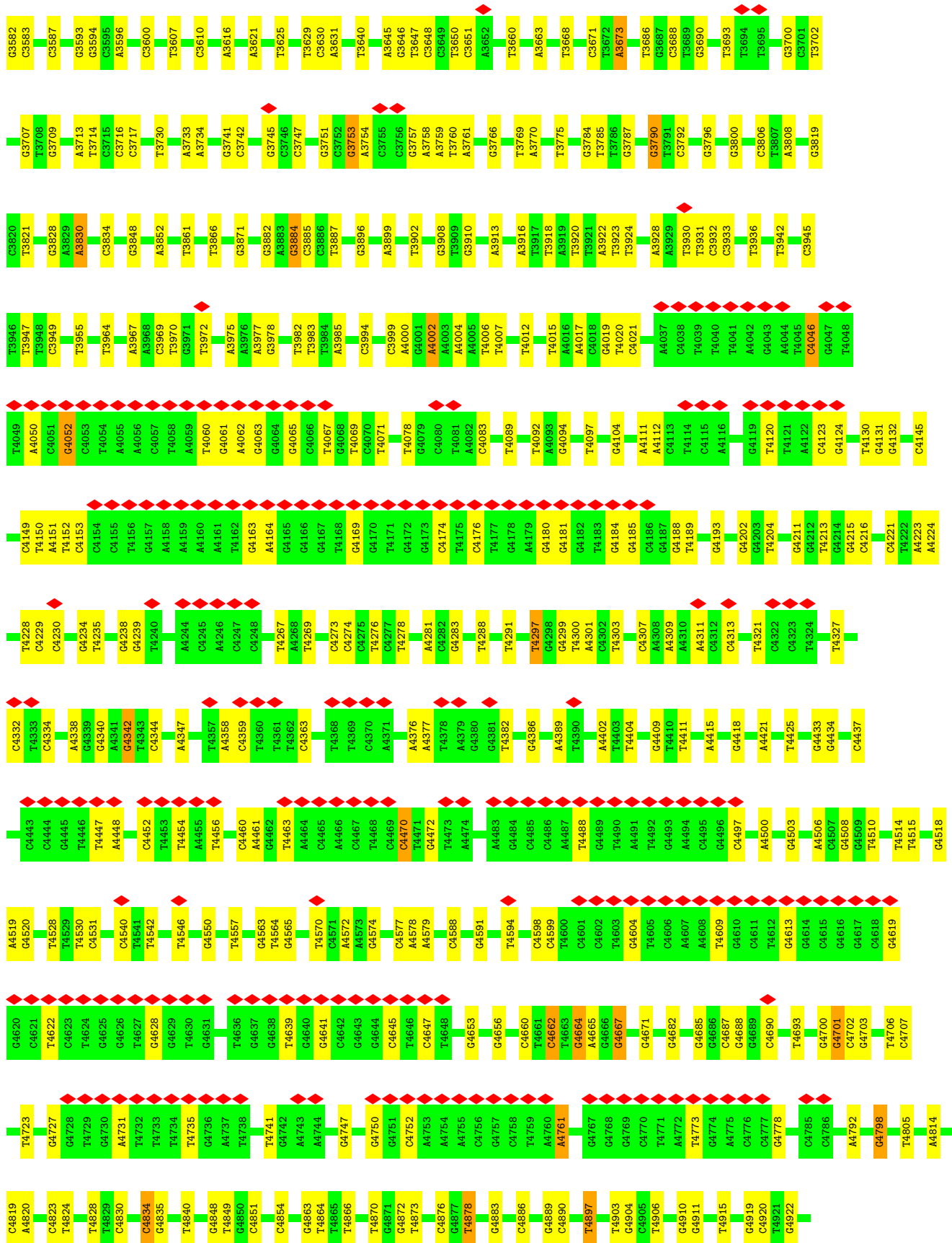
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

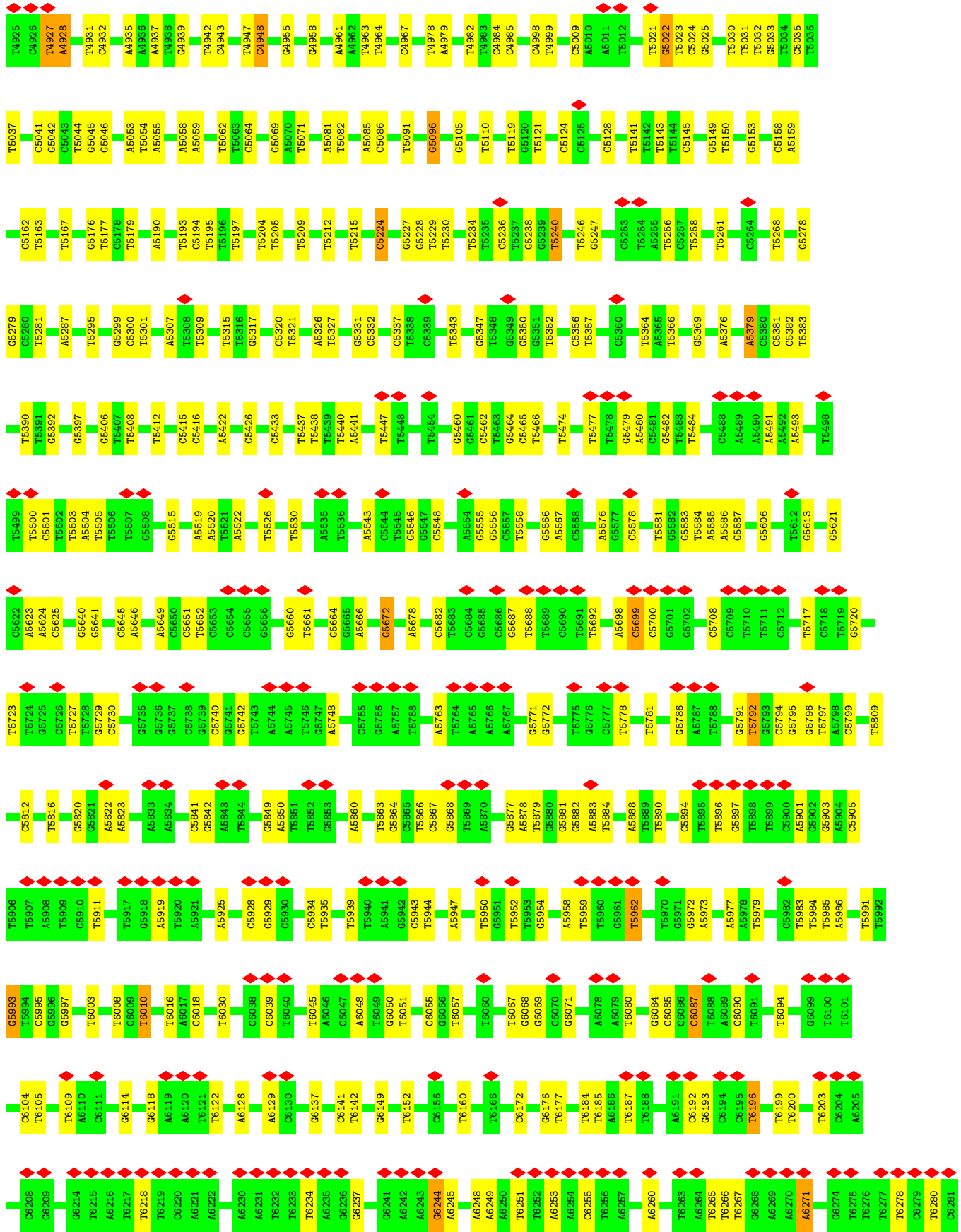
• Molecule 1: SCAFFOLD STRAND

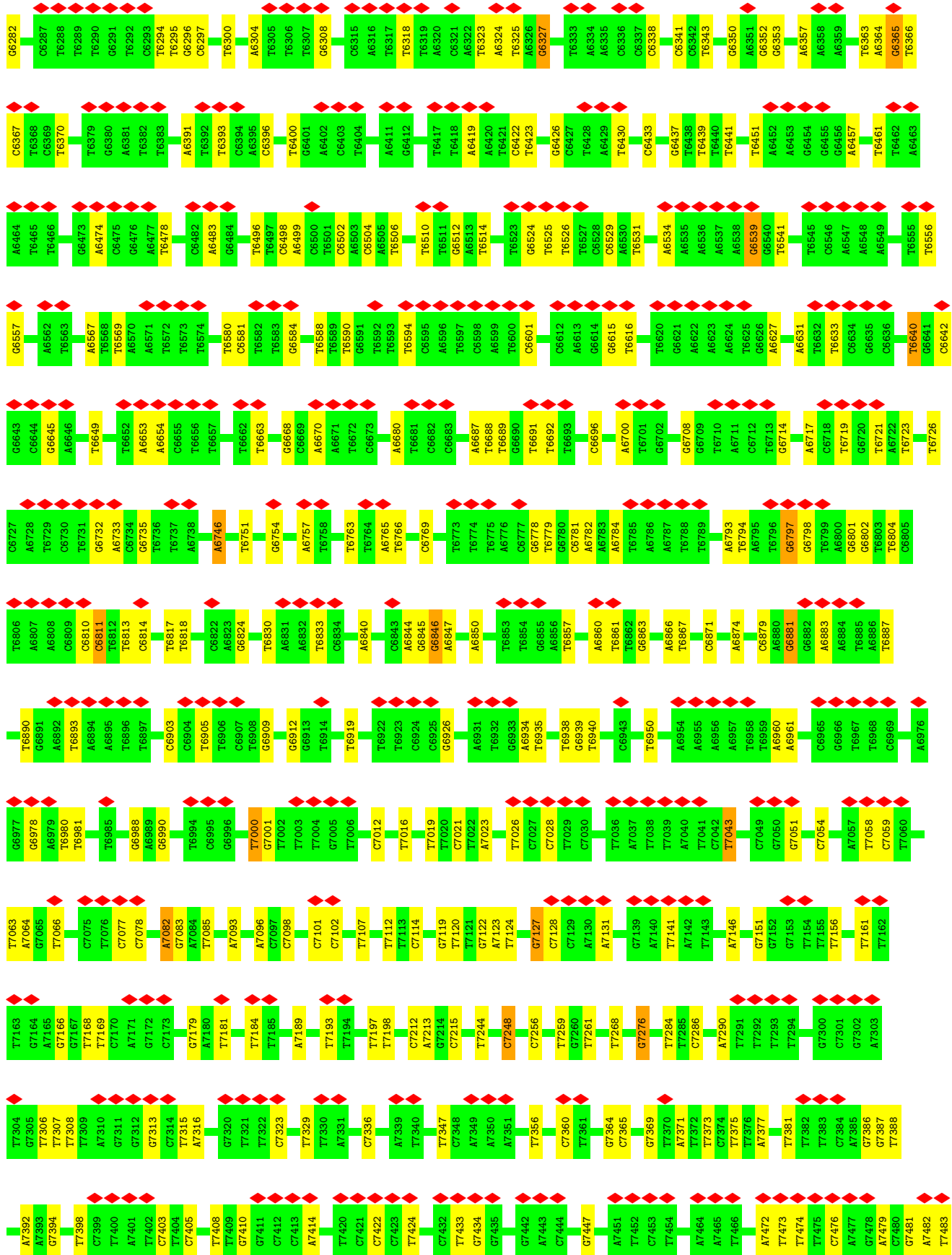


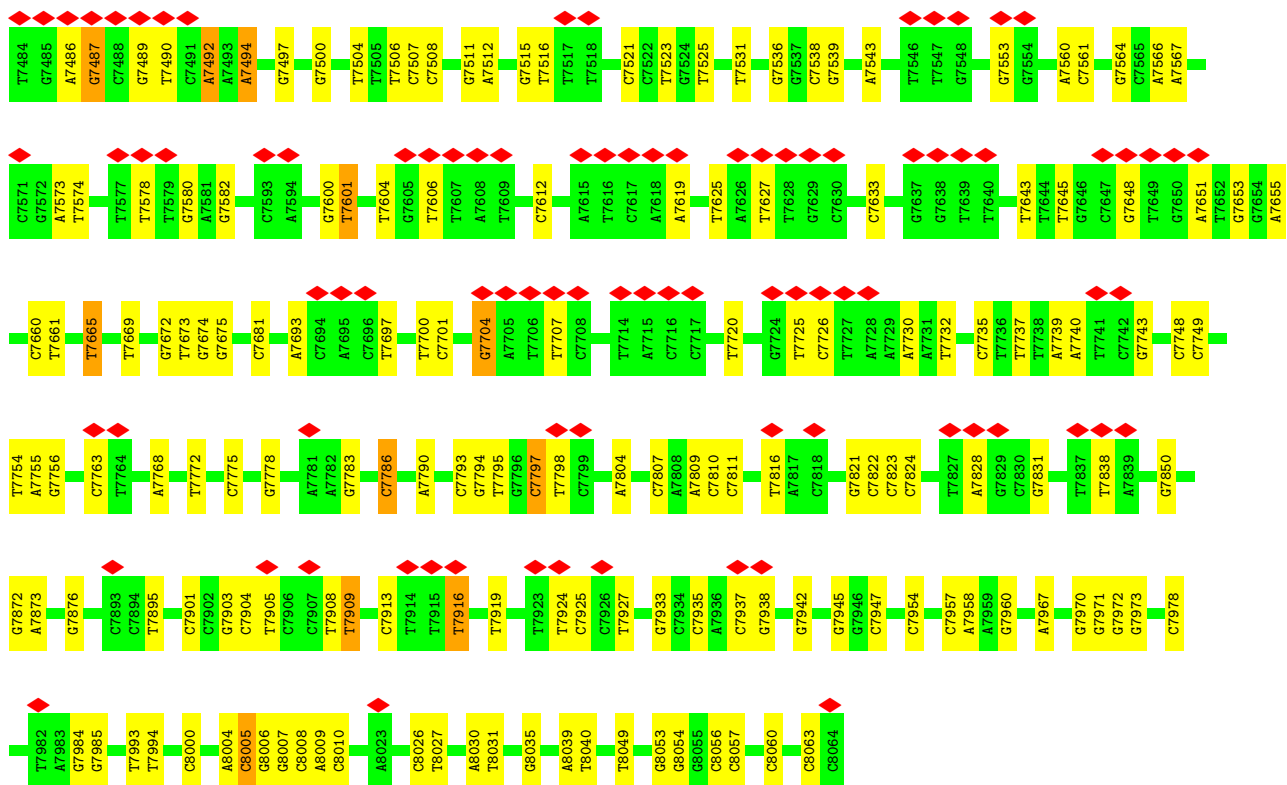




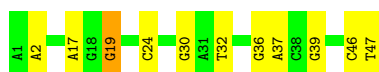
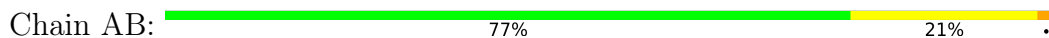




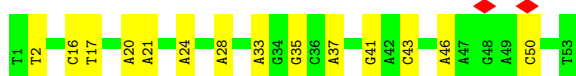




• Molecule 2: STAPLE STRAND



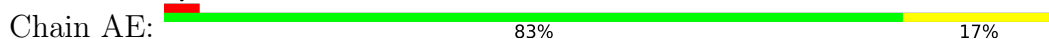
• Molecule 3: STAPLE STRAND



• Molecule 4: STAPLE STRAND



• Molecule 5: STAPLE STRAND

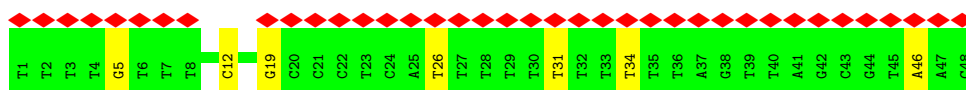
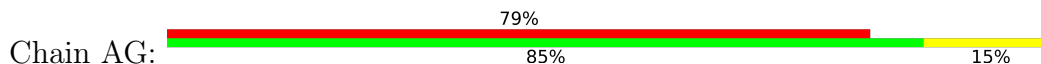




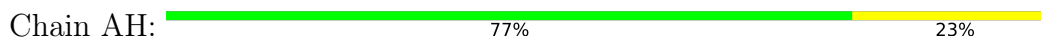
- Molecule 6: STAPLE STRAND



- Molecule 7: STAPLE STRAND



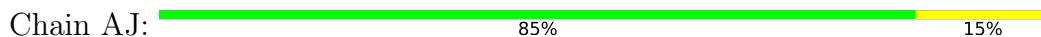
- Molecule 8: STAPLE STRAND



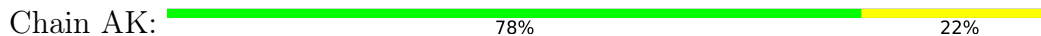
- Molecule 9: STAPLE STRAND



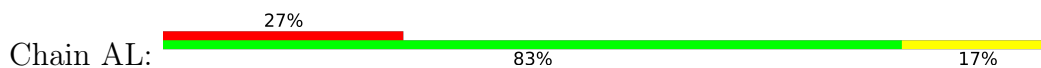
- Molecule 10: STAPLE STRAND

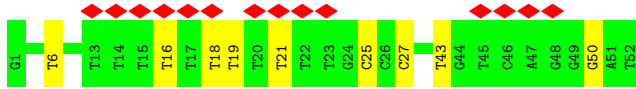


- Molecule 11: STAPLE STRAND

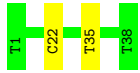


- Molecule 12: STAPLE STRAND

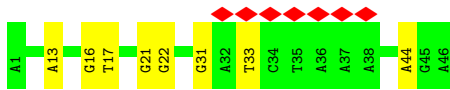
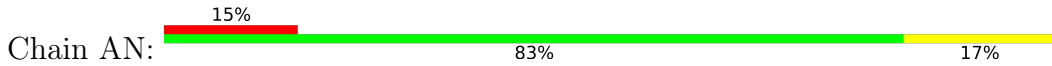




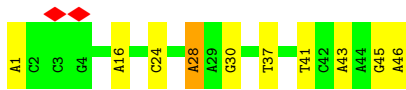
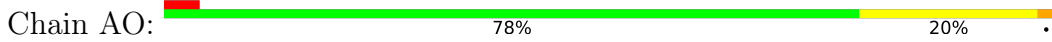
• Molecule 13: STAPLE STRAND



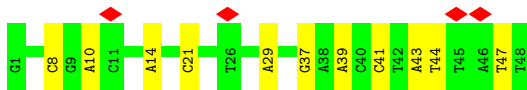
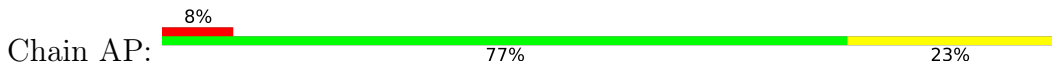
• Molecule 14: STAPLE STRAND



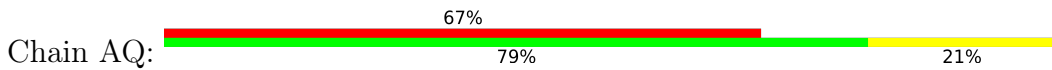
• Molecule 15: STAPLE STRAND



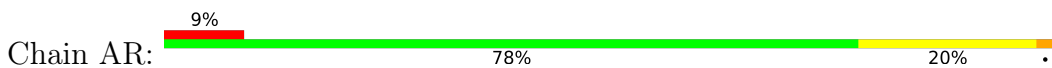
• Molecule 16: STAPLE STRAND



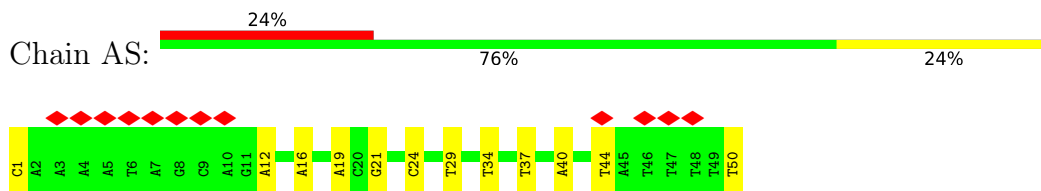
• Molecule 17: STAPLE STRAND



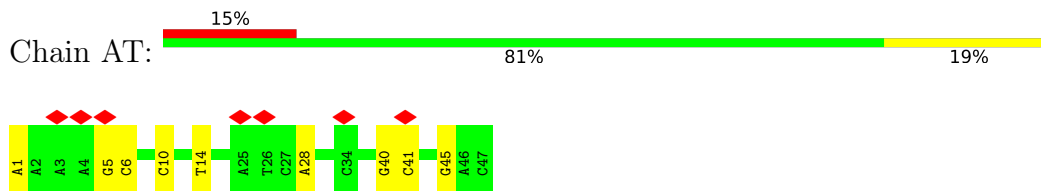
• Molecule 18: STAPLE STRAND



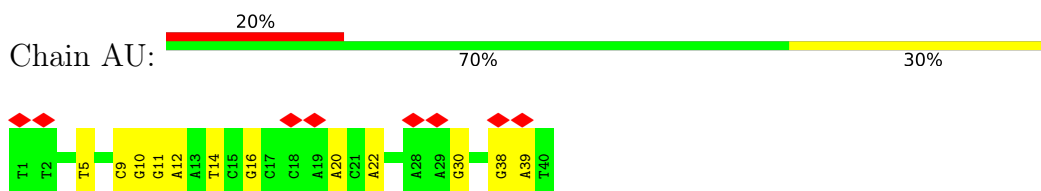
• Molecule 19: STAPLE STRAND



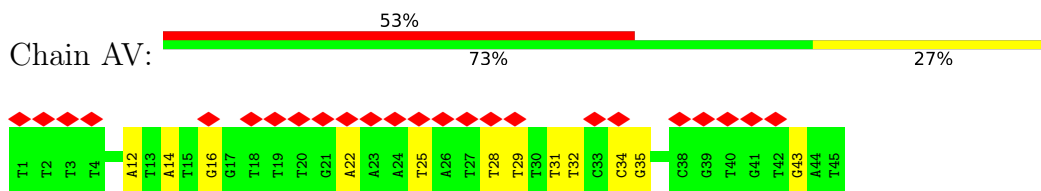
• Molecule 20: STAPLE STRAND



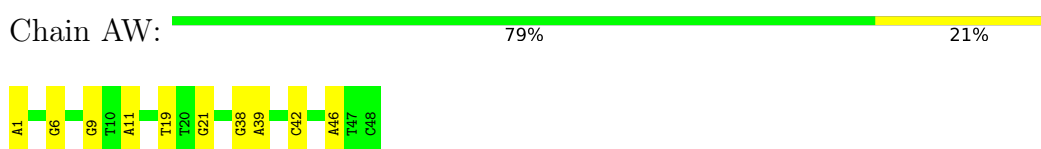
• Molecule 21: STAPLE STRAND



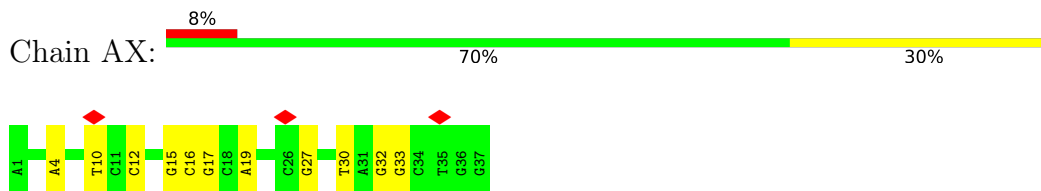
• Molecule 22: STAPLE STRAND



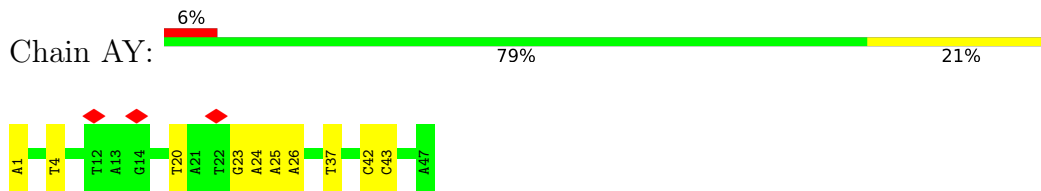
• Molecule 23: STAPLE STRAND



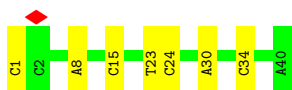
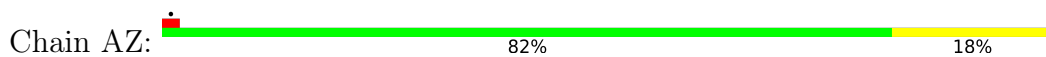
• Molecule 24: STAPLE STRAND



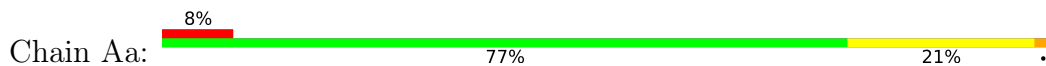
• Molecule 25: STAPLE STRAND



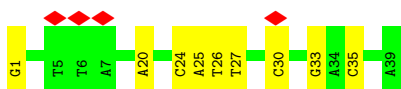
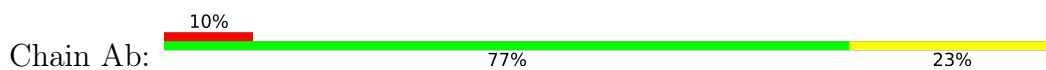
• Molecule 26: STAPLE STRAND



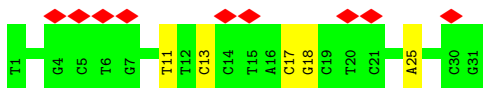
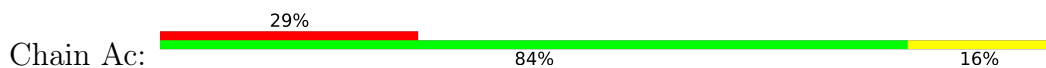
- Molecule 27: STAPLE STRAND



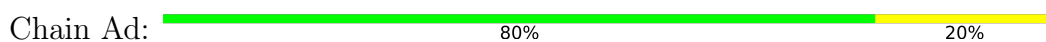
- Molecule 28: STAPLE STRAND



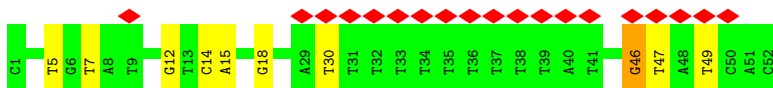
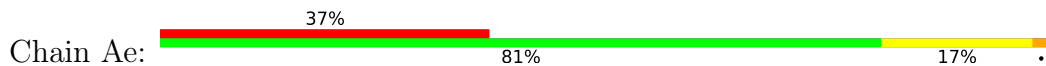
- Molecule 29: STAPLE STRAND



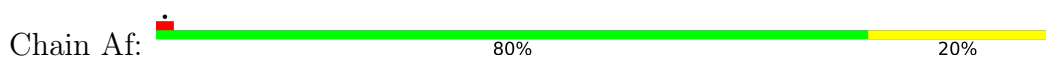
- Molecule 30: STAPLE STRAND



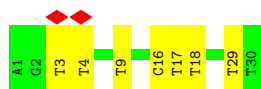
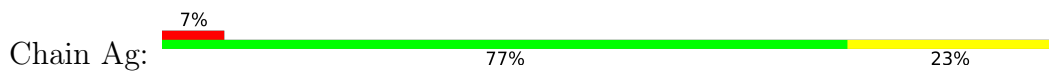
- Molecule 31: STAPLE STRAND



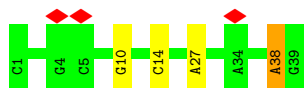
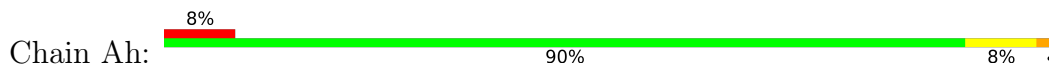
- Molecule 32: STAPLE STRAND



- Molecule 33: STAPLE STRAND



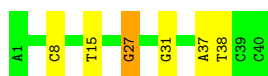
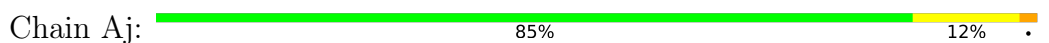
• Molecule 34: STAPLE STRAND



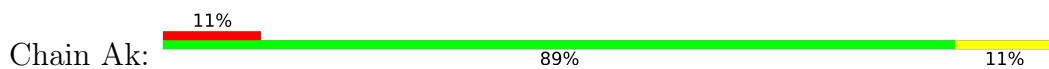
• Molecule 35: STAPLE STRAND



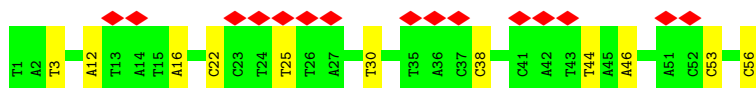
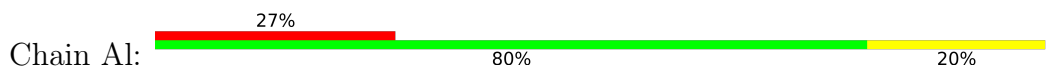
• Molecule 36: STAPLE STRAND



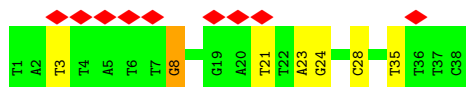
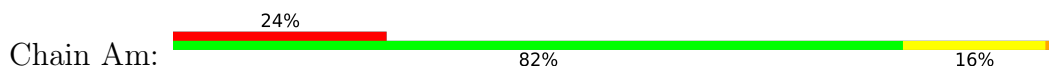
• Molecule 37: STAPLE STRAND



• Molecule 38: STAPLE STRAND



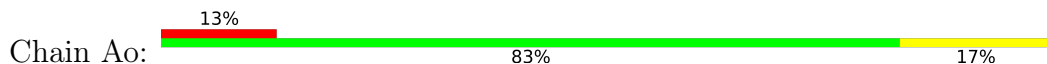
• Molecule 39: STAPLE STRAND



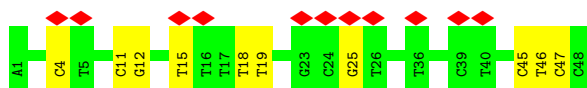
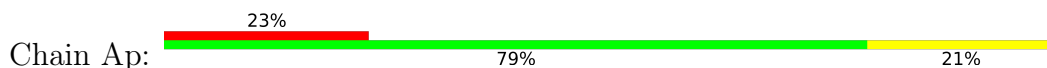
• Molecule 40: STAPLE STRAND



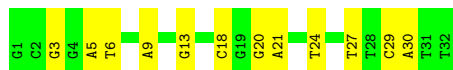
• Molecule 41: STAPLE STRAND



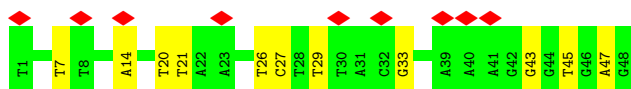
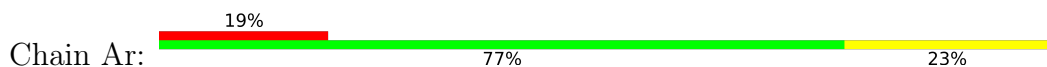
• Molecule 42: STAPLE STRAND



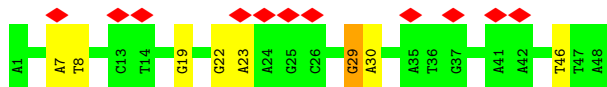
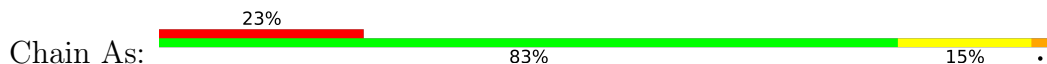
• Molecule 43: STAPLE STRAND



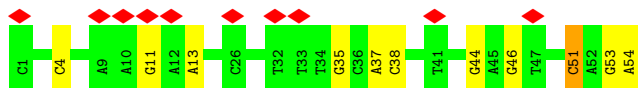
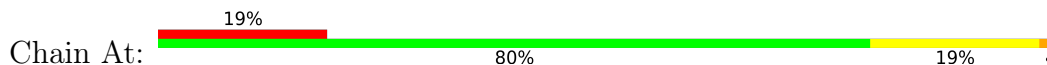
• Molecule 44: STAPLE STRAND



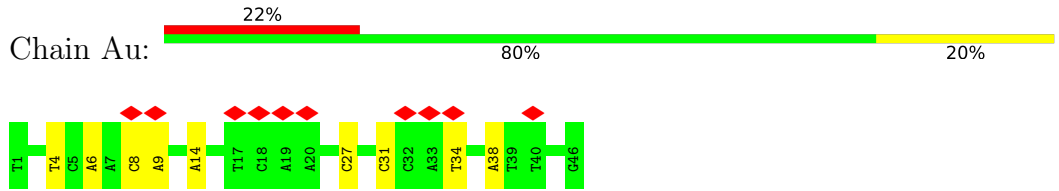
• Molecule 45: STAPLE STRAND



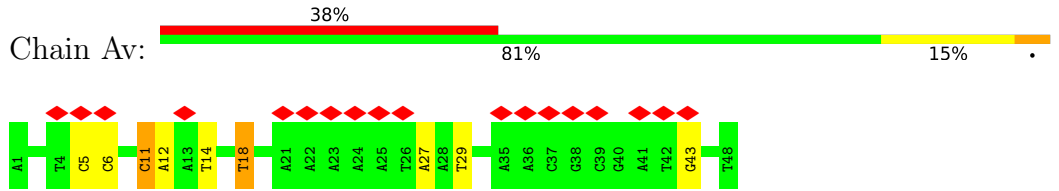
• Molecule 46: STAPLE STRAND



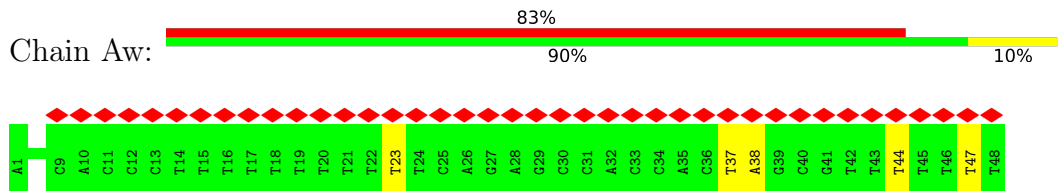
• Molecule 47: STAPLE STRAND



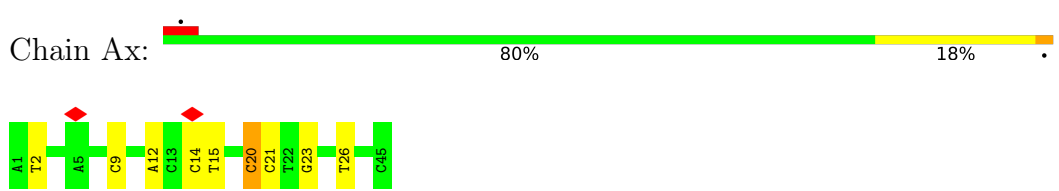
• Molecule 48: STAPLE STRAND



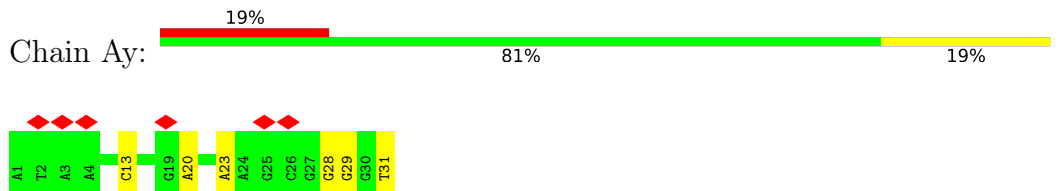
• Molecule 49: STAPLE STRAND



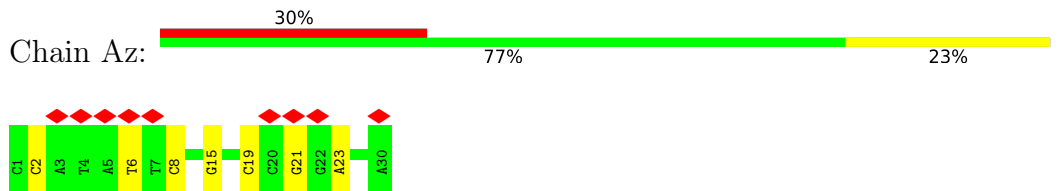
• Molecule 50: STAPLE STRAND



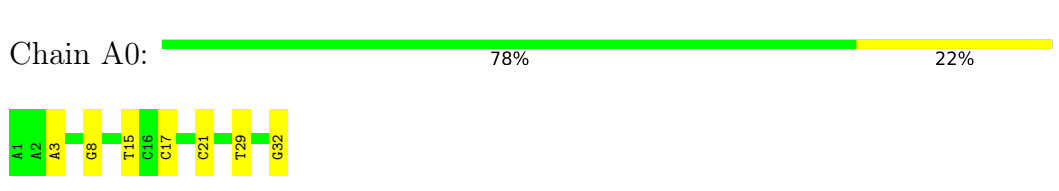
• Molecule 51: STAPLE STRAND



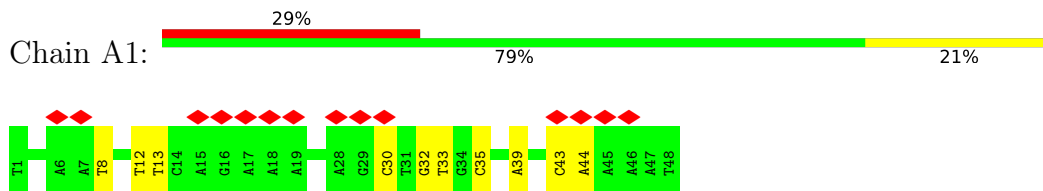
• Molecule 52: STAPLE STRAND



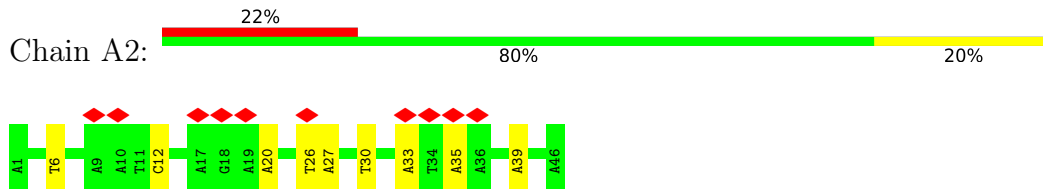
• Molecule 53: STAPLE STRAND



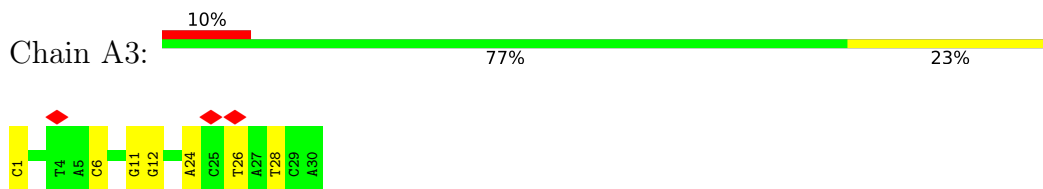
• Molecule 54: STAPLE STRAND



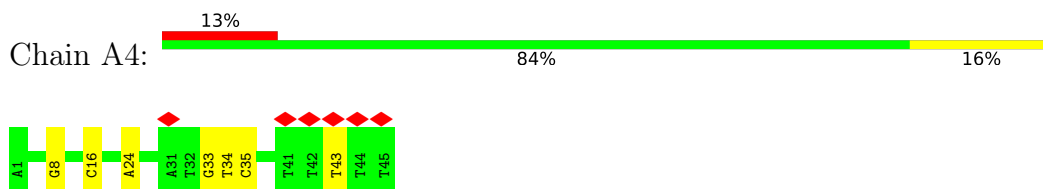
• Molecule 55: STAPLE STRAND



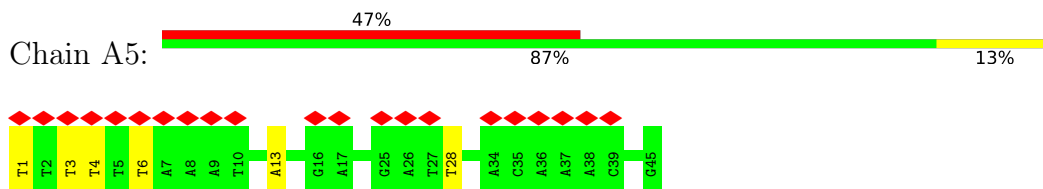
• Molecule 56: STAPLE STRAND



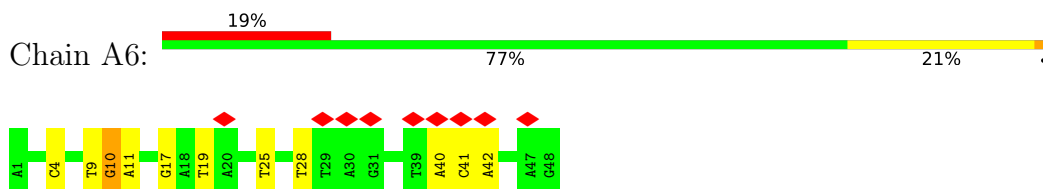
• Molecule 57: STAPLE STRAND



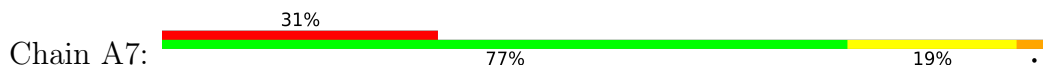
• Molecule 58: STAPLE STRAND

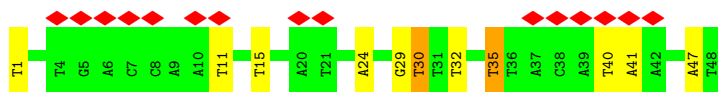


• Molecule 59: STAPLE STRAND

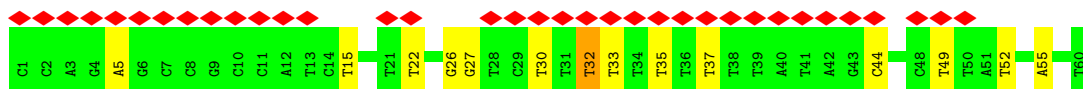
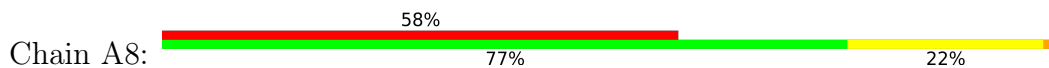


• Molecule 60: STAPLE STRAND

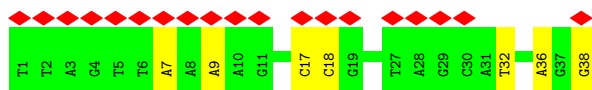
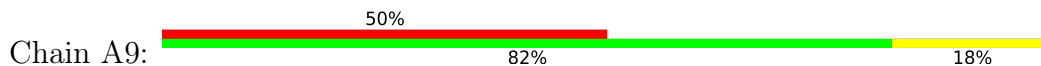




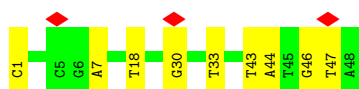
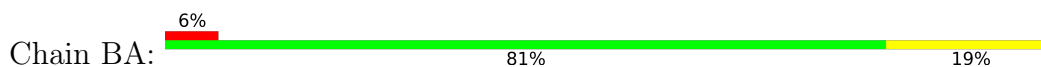
• Molecule 61: STAPLE STRAND



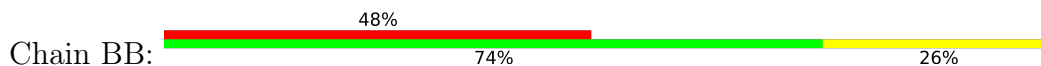
• Molecule 62: STAPLE STRAND



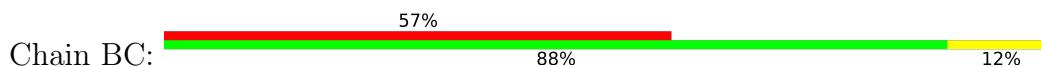
• Molecule 63: STAPLE STRAND



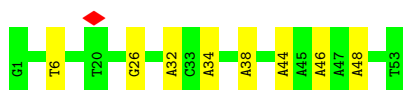
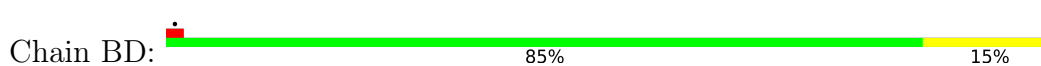
• Molecule 64: STAPLE STRAND



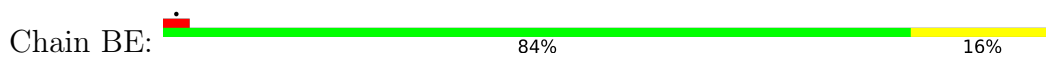
• Molecule 65: STAPLE STRAND



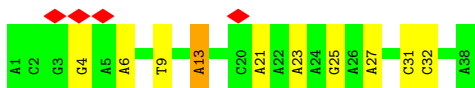
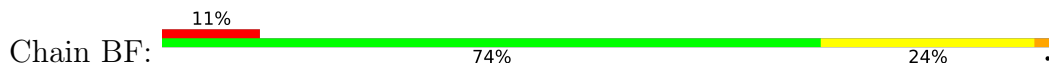
• Molecule 66: STAPLE STRAND



• Molecule 67: STAPLE STRAND



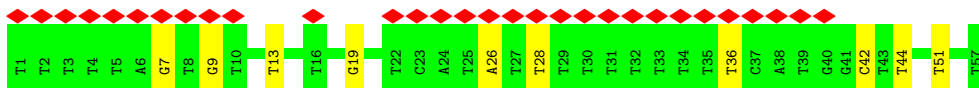
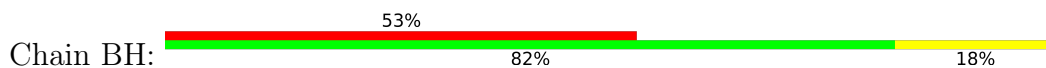
- Molecule 68: STAPLE STRAND



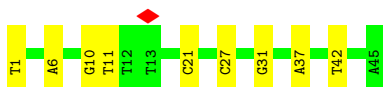
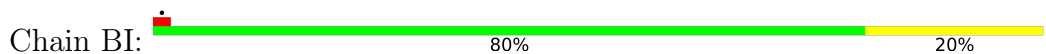
- Molecule 69: STAPLE STRAND



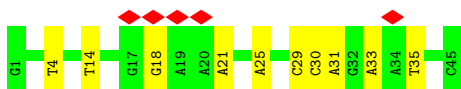
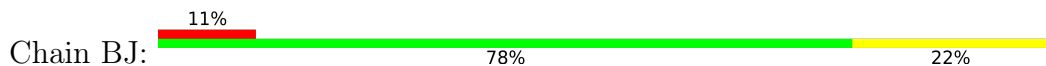
- Molecule 70: STAPLE STRAND



- Molecule 71: STAPLE STRAND



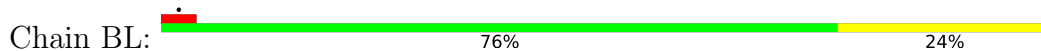
- Molecule 72: STAPLE STRAND



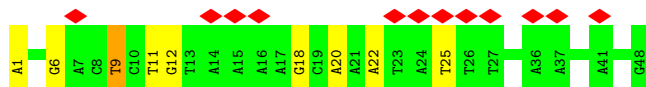
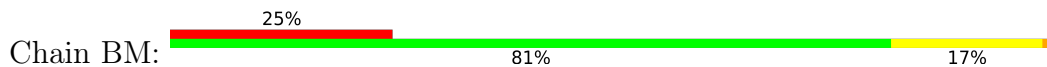
- Molecule 73: STAPLE STRAND



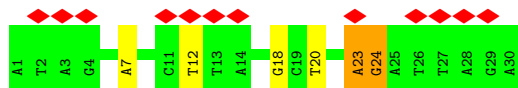
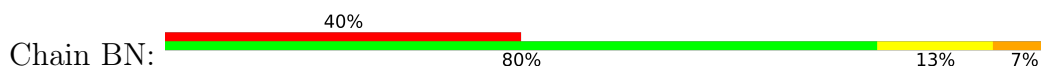
• Molecule 74: STAPLE STRAND



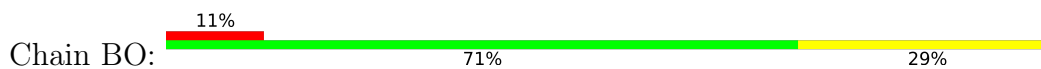
• Molecule 75: STAPLE STRAND



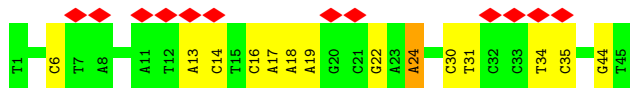
• Molecule 76: STAPLE STRAND



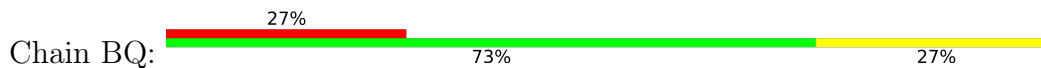
• Molecule 77: STAPLE STRAND



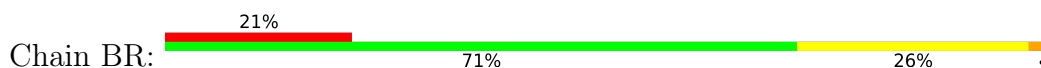
• Molecule 78: STAPLE STRAND



• Molecule 79: STAPLE STRAND

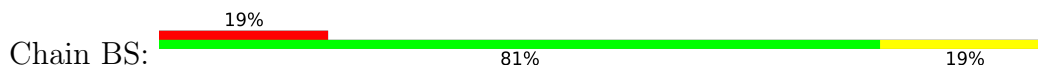


• Molecule 80: STAPLE STRAND

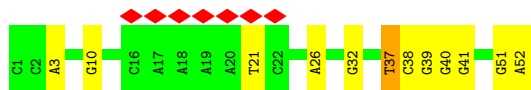
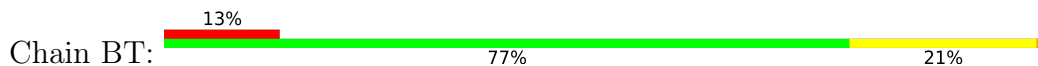




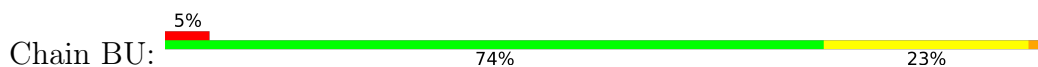
• Molecule 81: STAPLE STRAND



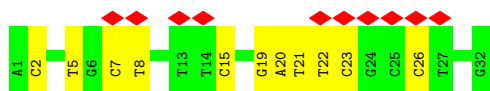
• Molecule 82: STAPLE STRAND



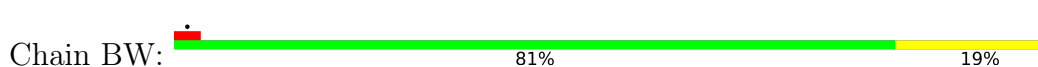
• Molecule 83: STAPLE STRAND



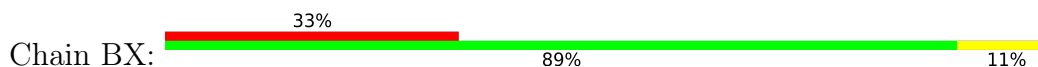
• Molecule 84: STAPLE STRAND



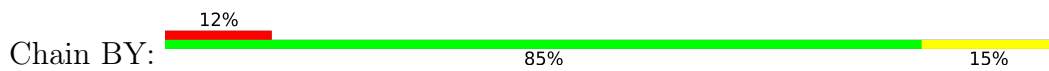
• Molecule 85: STAPLE STRAND



• Molecule 86: STAPLE STRAND



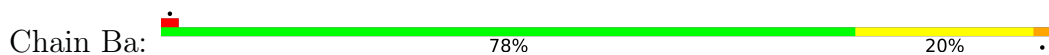
• Molecule 87: STAPLE STRAND



• Molecule 88: STAPLE STRAND



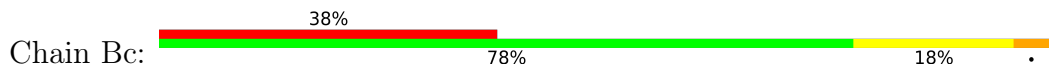
• Molecule 89: STAPLE STRAND



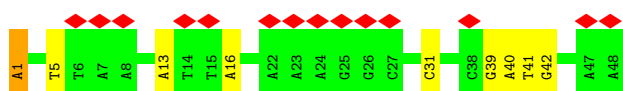
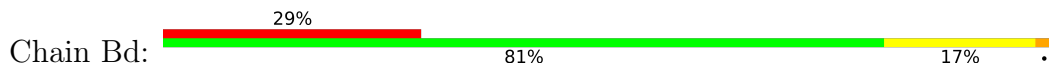
• Molecule 90: STAPLE STRAND



• Molecule 91: STAPLE STRAND



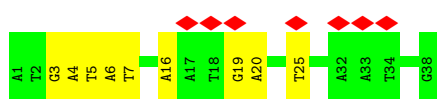
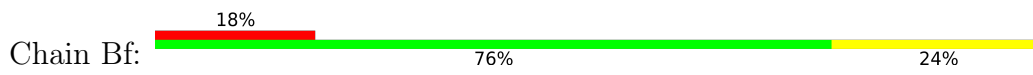
• Molecule 92: STAPLE STRAND



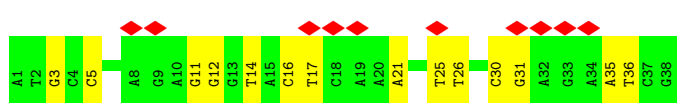
• Molecule 93: STAPLE STRAND



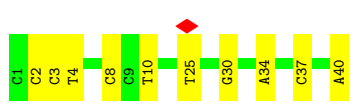
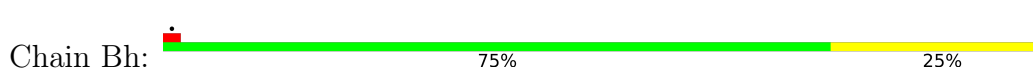
• Molecule 94: STAPLE STRAND



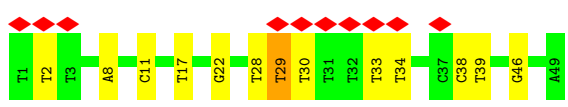
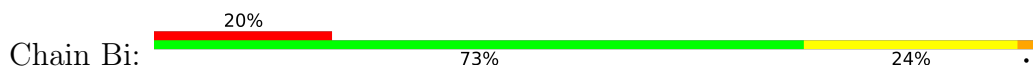
• Molecule 95: STAPLE STRAND



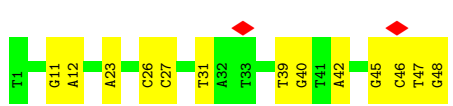
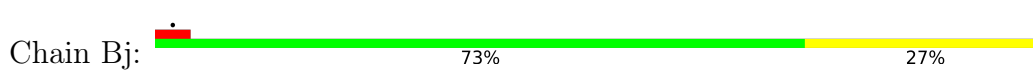
• Molecule 96: STAPLE STRAND



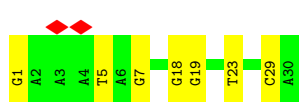
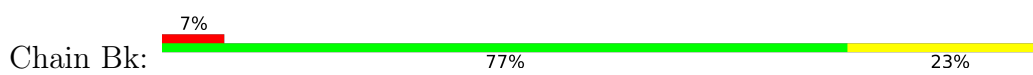
• Molecule 97: STAPLE STRAND



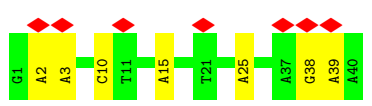
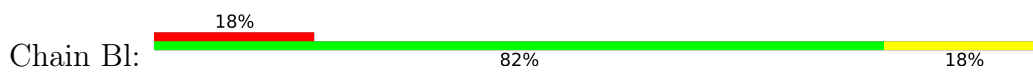
• Molecule 98: STAPLE STRAND



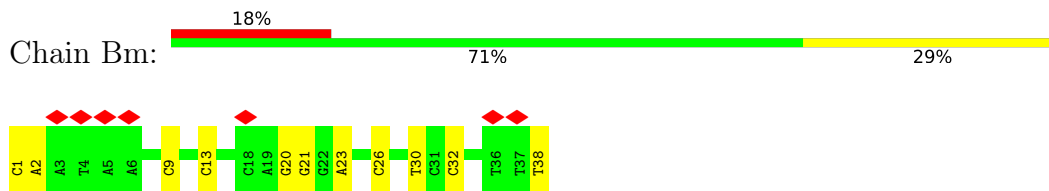
• Molecule 99: STAPLE STRAND



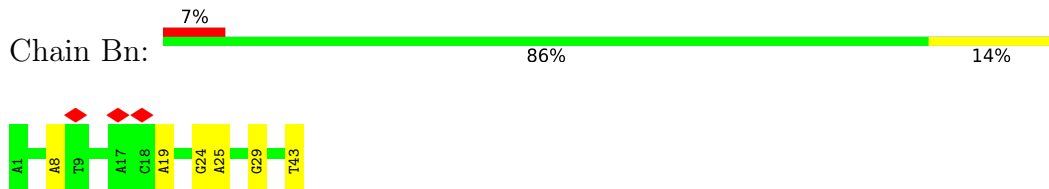
• Molecule 100: STAPLE STRAND



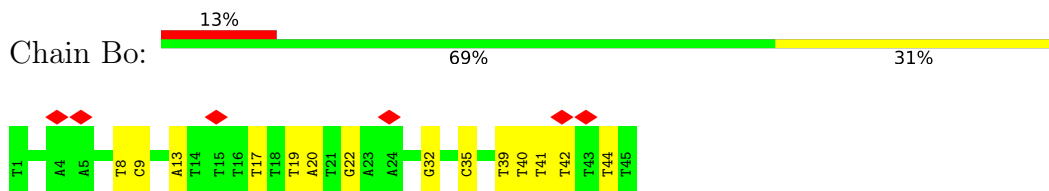
• Molecule 101: STAPLE STRAND



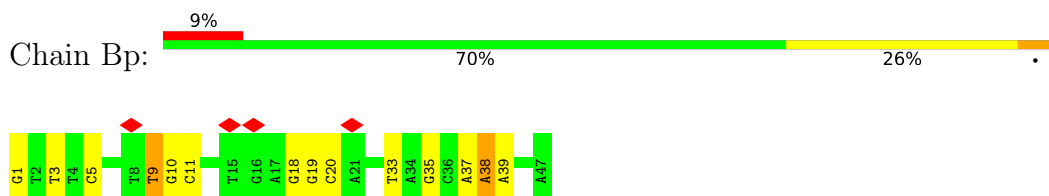
• Molecule 102: STAPLE STRAND



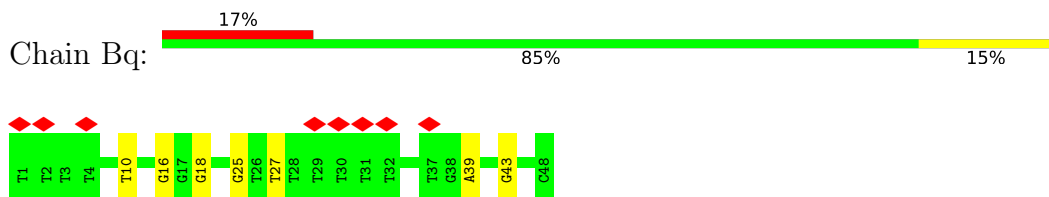
• Molecule 103: STAPLE STRAND



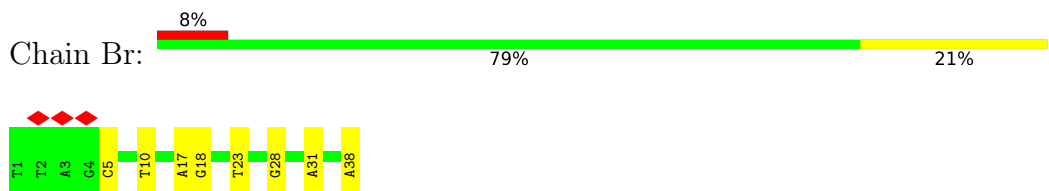
• Molecule 104: STAPLE STRAND



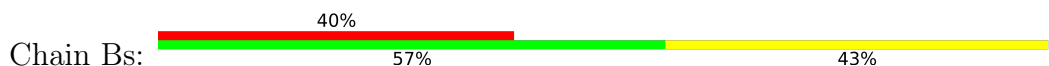
• Molecule 105: STAPLE STRAND

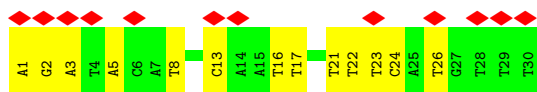


• Molecule 106: STAPLE STRAND

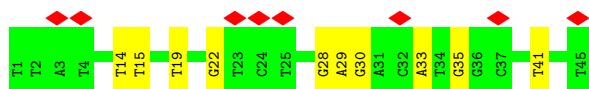
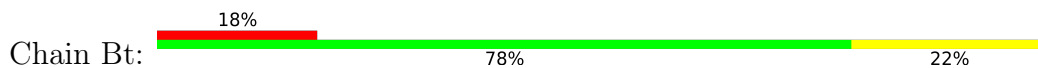


• Molecule 107: STAPLE STRAND

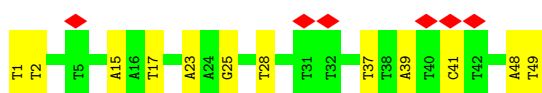
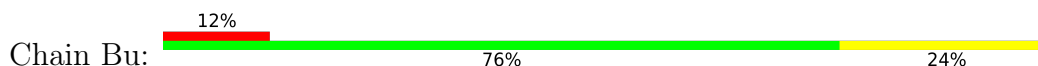




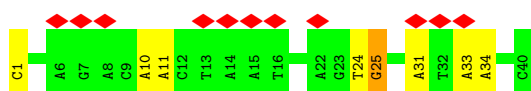
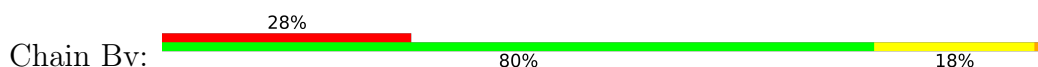
• Molecule 108: STAPLE STRAND



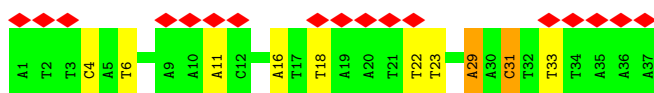
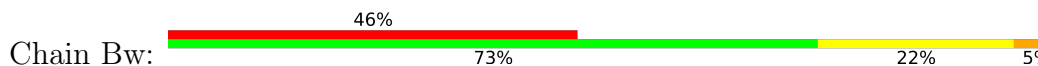
• Molecule 109: STAPLE STRAND



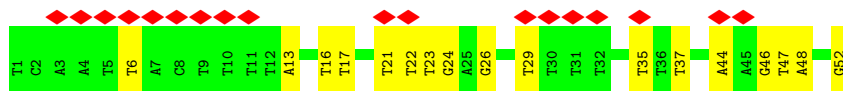
• Molecule 110: STAPLE STRAND



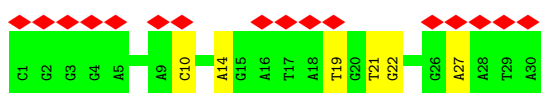
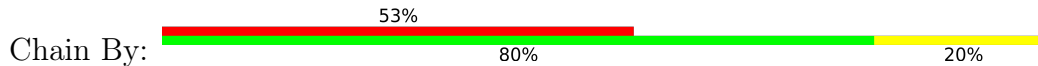
• Molecule 111: STAPLE STRAND



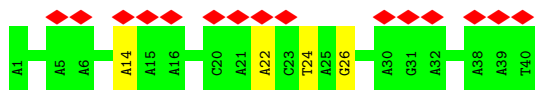
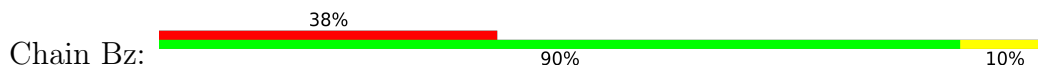
• Molecule 112: STAPLE STRAND



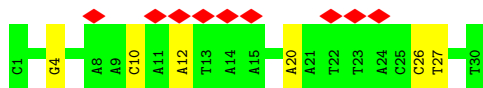
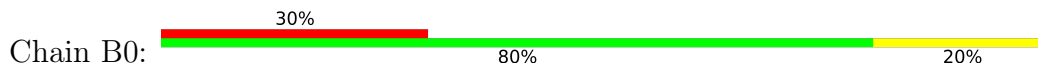
• Molecule 113: STAPLE STRAND



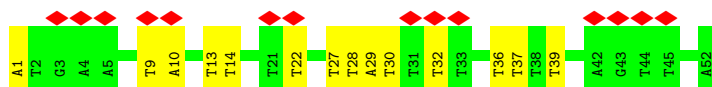
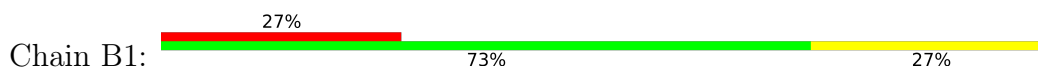
• Molecule 114: STAPLE STRAND



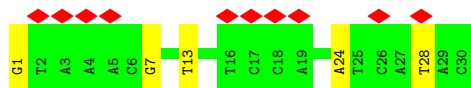
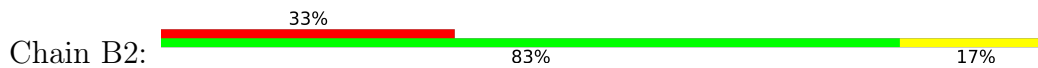
• Molecule 115: STAPLE STRAND



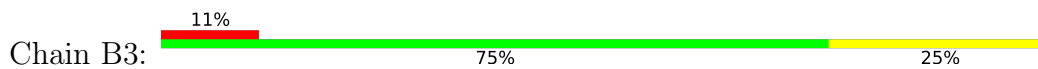
• Molecule 116: STAPLE STRAND



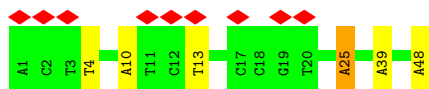
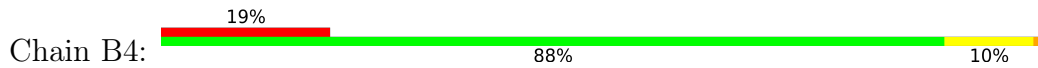
• Molecule 117: STAPLE STRAND



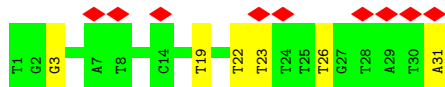
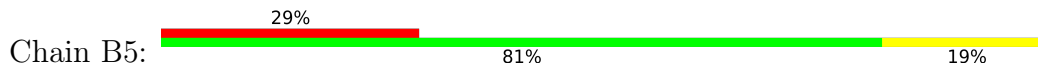
• Molecule 118: STAPLE STRAND



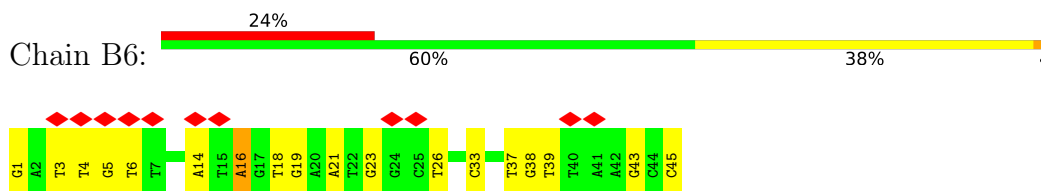
• Molecule 119: STAPLE STRAND



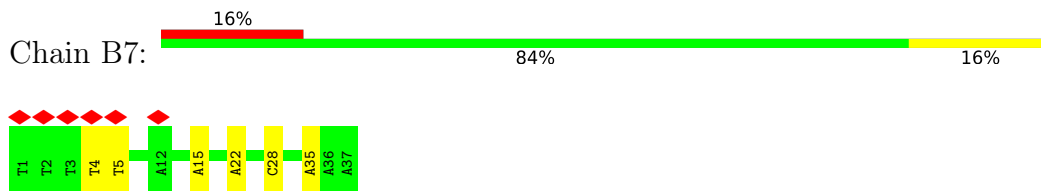
• Molecule 120: STAPLE STRAND



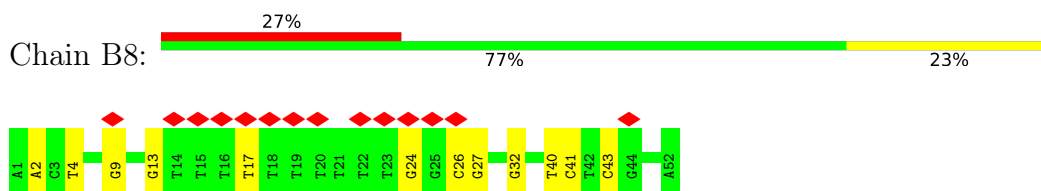
• Molecule 121: STAPLE STRAND



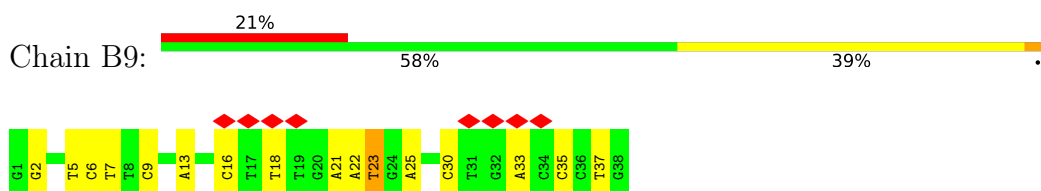
• Molecule 122: STAPLE STRAND



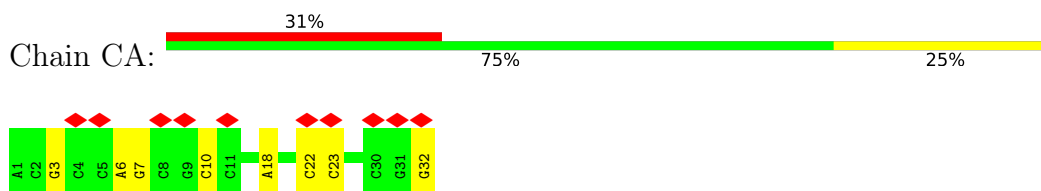
• Molecule 123: STAPLE STRAND



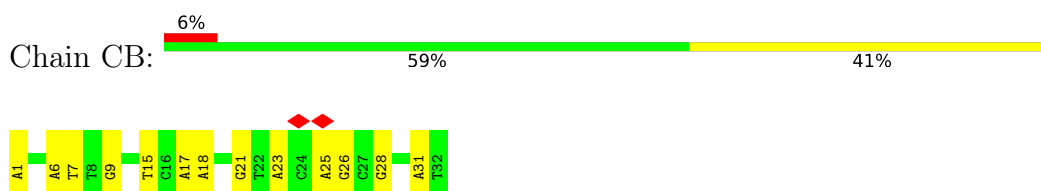
• Molecule 124: STAPLE STRAND



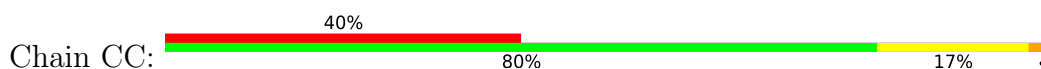
• Molecule 125: STAPLE STRAND

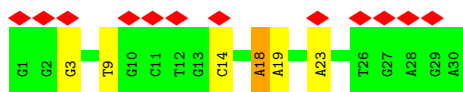


• Molecule 126: STAPLE STRAND

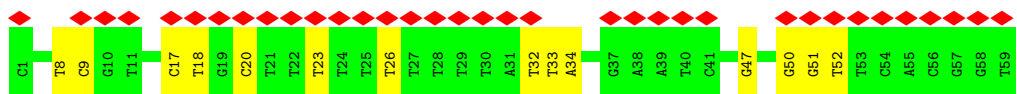
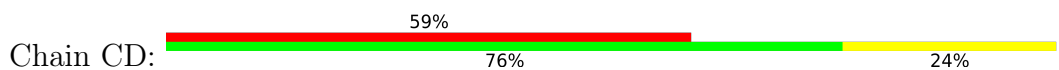


• Molecule 127: STAPLE STRAND

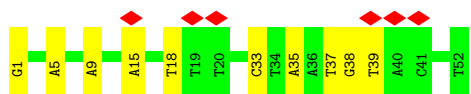
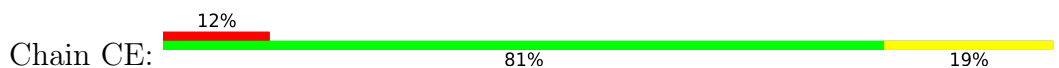




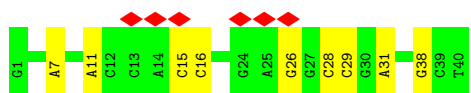
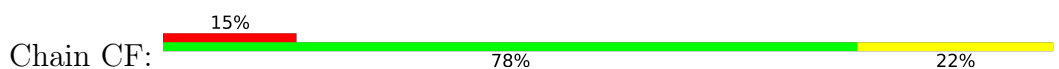
• Molecule 128: STAPLE STRAND



• Molecule 129: STAPLE STRAND



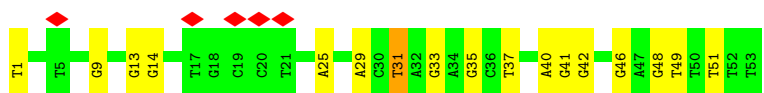
• Molecule 130: STAPLE STRAND



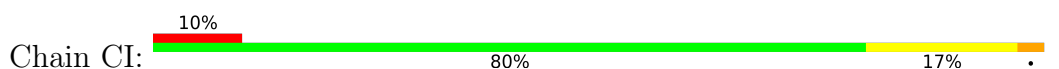
• Molecule 131: STAPLE STRAND



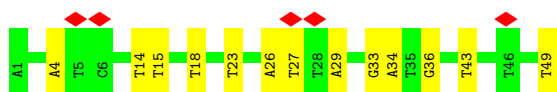
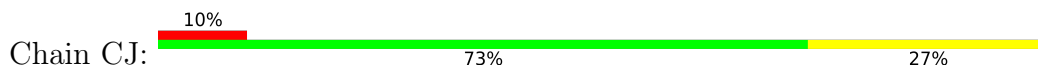
• Molecule 132: STAPLE STRAND



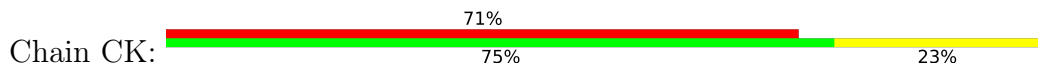
• Molecule 133: STAPLE STRAND



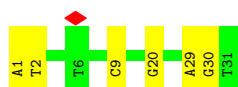
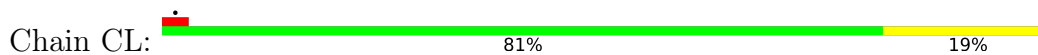
• Molecule 134: STAPLE STRAND



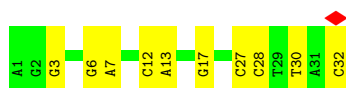
• Molecule 135: STAPLE STRAND



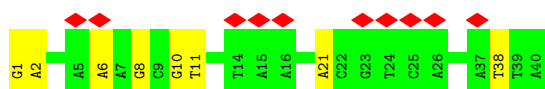
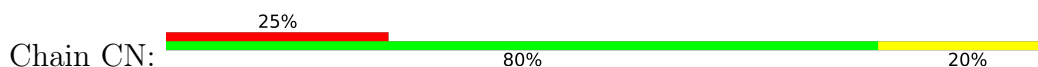
• Molecule 136: STAPLE STRAND



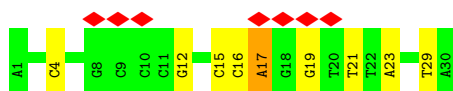
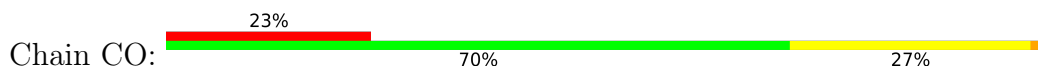
• Molecule 137: STAPLE STRAND



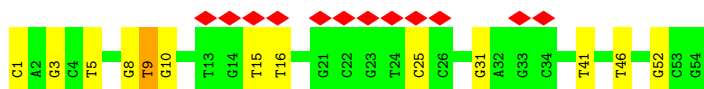
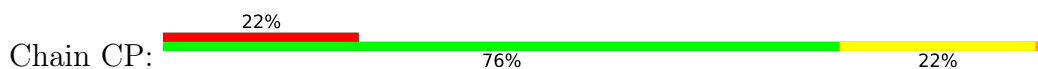
• Molecule 138: STAPLE STRAND



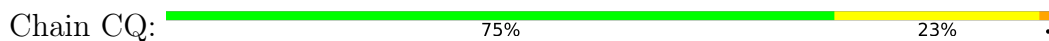
• Molecule 139: STAPLE STRAND



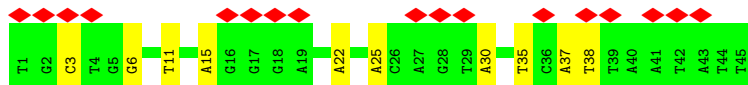
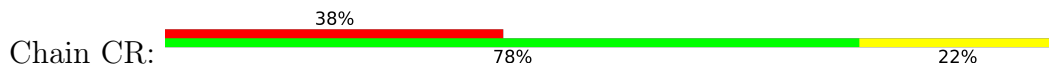
• Molecule 140: STAPLE STRAND



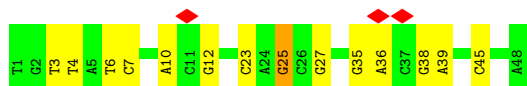
• Molecule 141: STAPLE STRAND



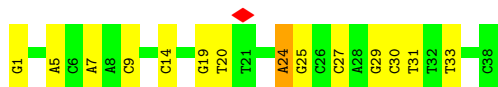
• Molecule 142: STAPLE STRAND



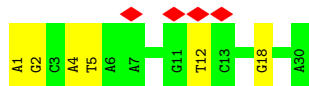
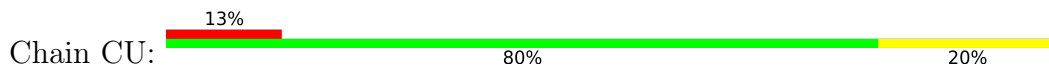
• Molecule 143: STAPLE STRAND



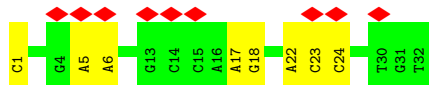
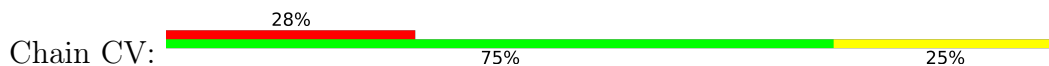
• Molecule 144: STAPLE STRAND



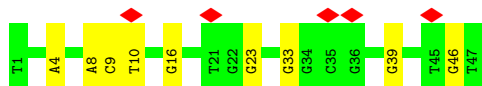
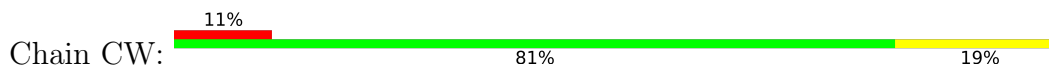
• Molecule 145: STAPLE STRAND



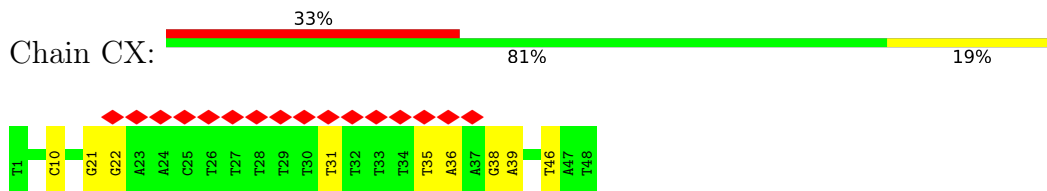
• Molecule 146: STAPLE STRAND



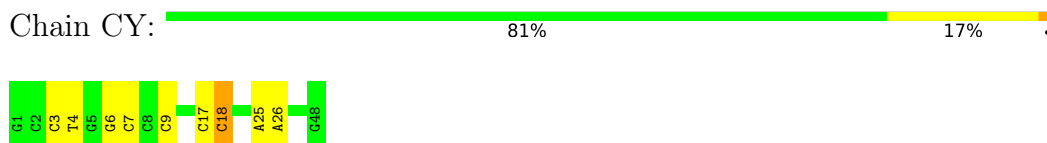
• Molecule 147: STAPLE STRAND



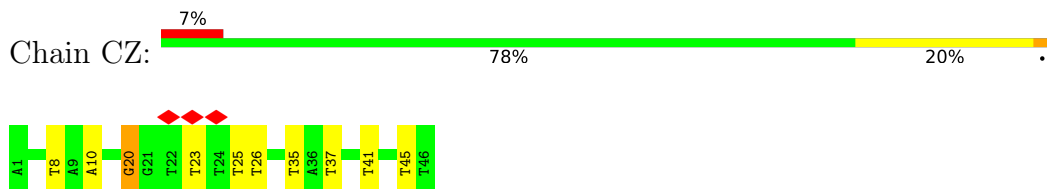
- Molecule 148: STAPLE STRAND



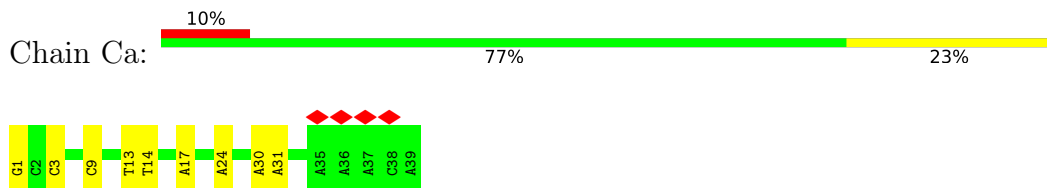
- Molecule 149: STAPLE STRAND



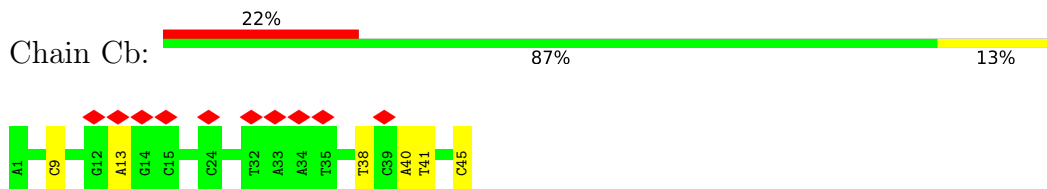
- Molecule 150: STAPLE STRAND



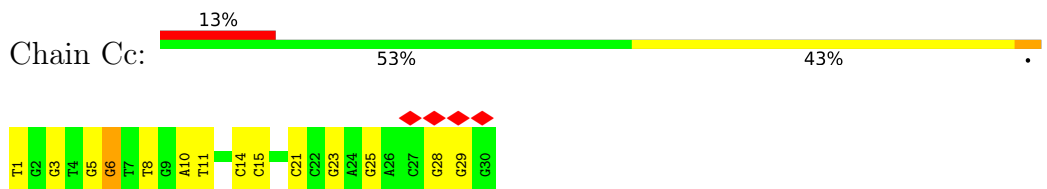
- Molecule 151: STAPLE STRAND



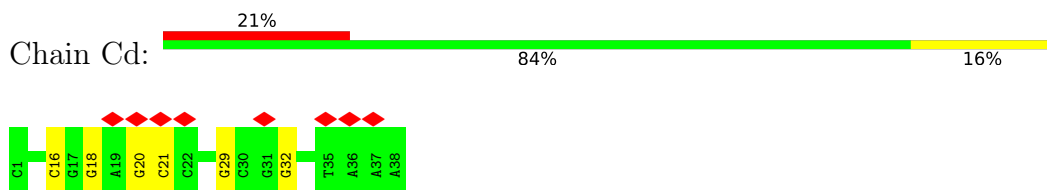
- Molecule 152: STAPLE STRAND



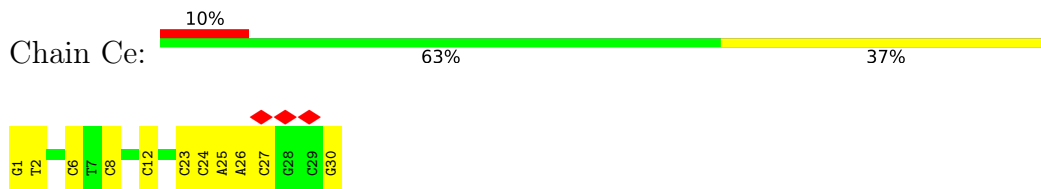
- Molecule 153: STAPLE STRAND



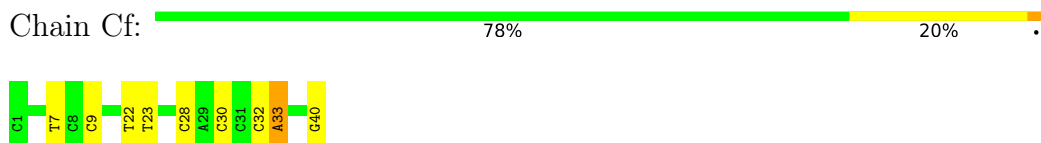
- Molecule 154: STAPLE STRAND



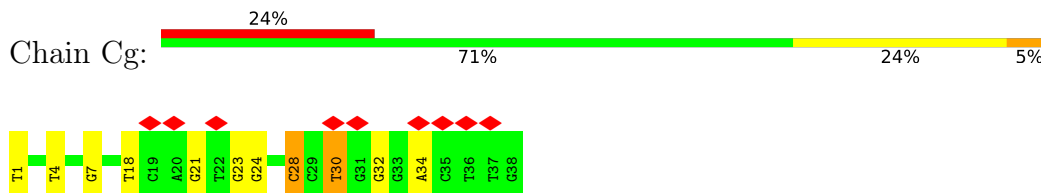
• Molecule 155: STAPLE STRAND



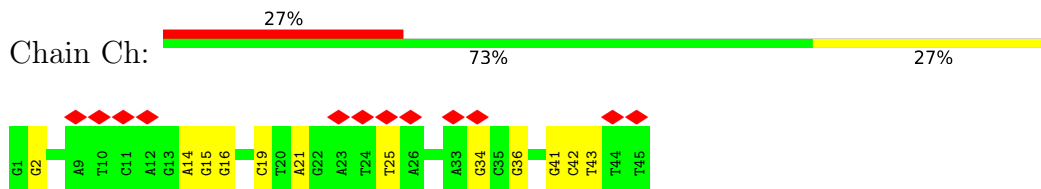
• Molecule 156: STAPLE STRAND



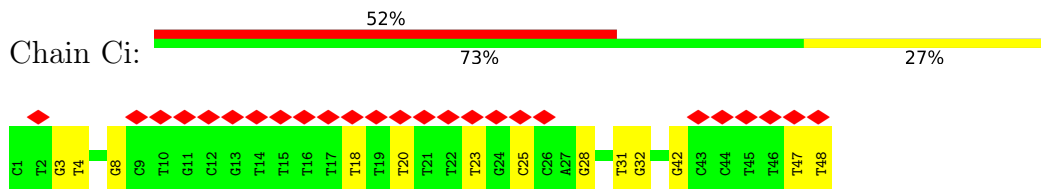
• Molecule 157: STAPLE STRAND



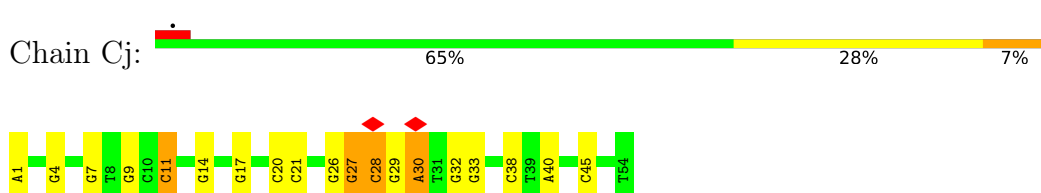
• Molecule 158: STAPLE STRAND



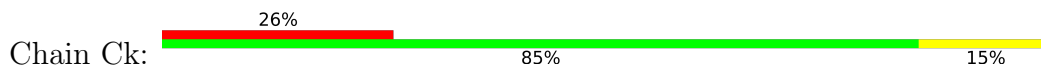
• Molecule 159: STAPLE STRAND



• Molecule 160: STAPLE STRAND



• Molecule 161: STAPLE STRAND

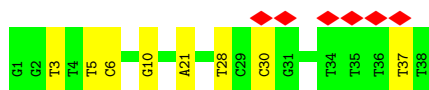
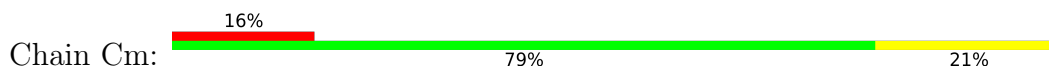




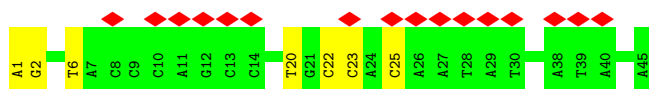
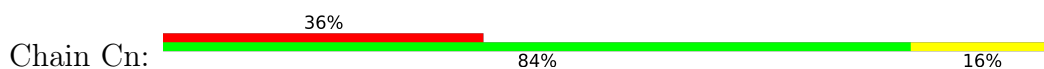
- Molecule 162: STAPLE STRAND



- Molecule 163: STAPLE STRAND



- Molecule 164: STAPLE STRAND



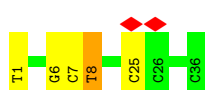
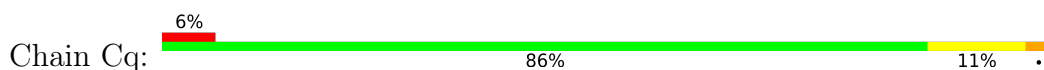
- Molecule 165: STAPLE STRAND



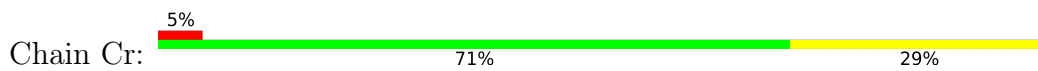
- Molecule 166: STAPLE STRAND



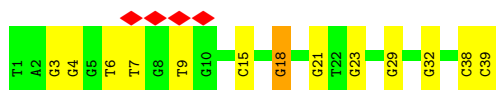
- Molecule 167: STAPLE STRAND



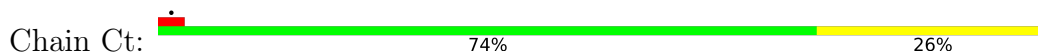
- Molecule 168: STAPLE STRAND



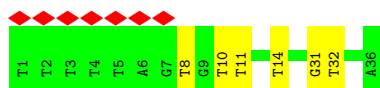
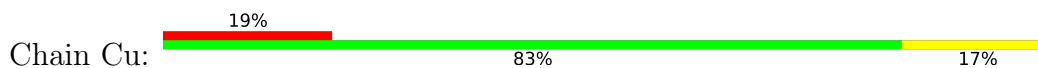
• Molecule 169: STAPLE STRAND



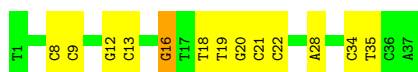
• Molecule 170: STAPLE STRAND



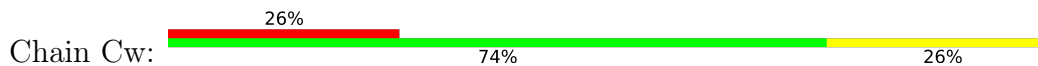
• Molecule 171: STAPLE STRAND



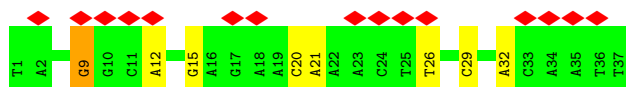
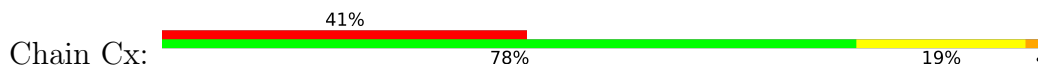
• Molecule 172: STAPLE STRAND



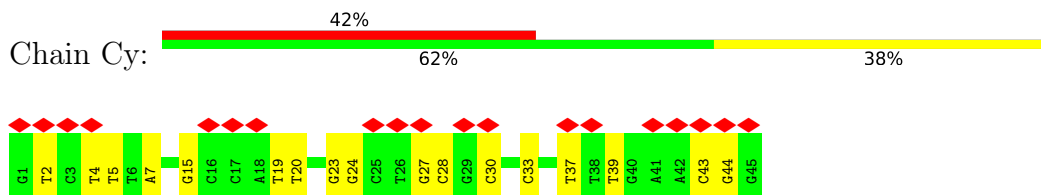
• Molecule 173: STAPLE STRAND



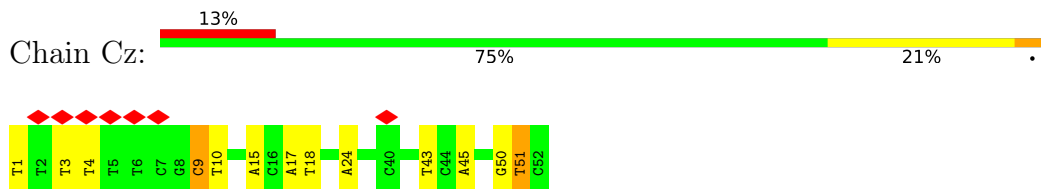
• Molecule 174: STAPLE STRAND



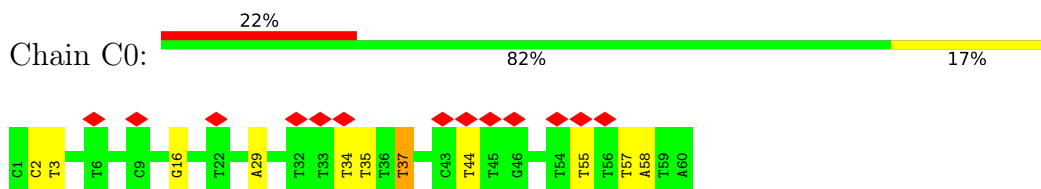
• Molecule 175: STAPLE STRAND



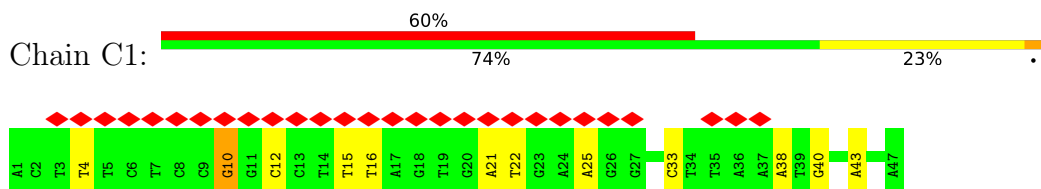
- Molecule 176: STAPLE STRAND



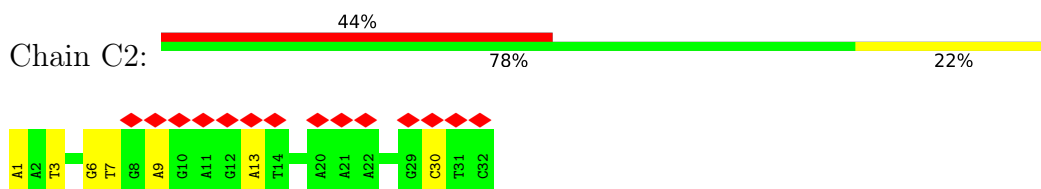
- Molecule 177: STAPLE STRAND



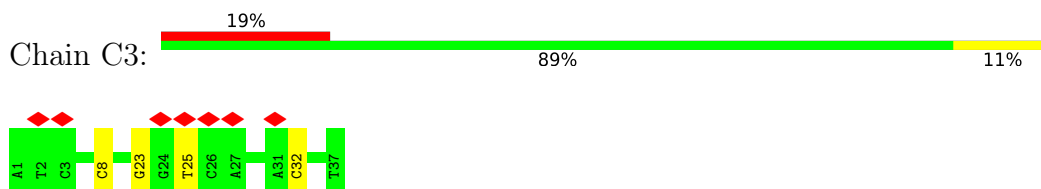
- Molecule 178: STAPLE STRAND



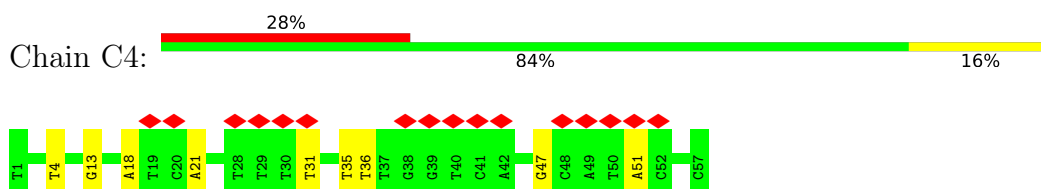
- Molecule 179: STAPLE STRAND



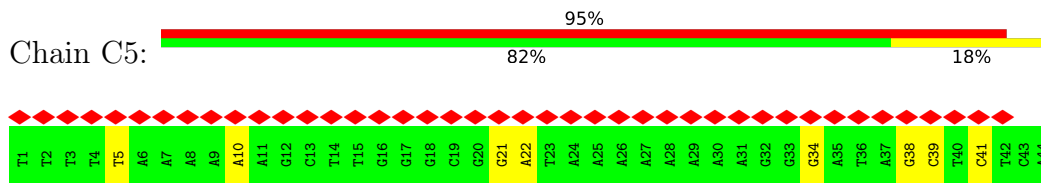
- Molecule 180: STAPLE STRAND



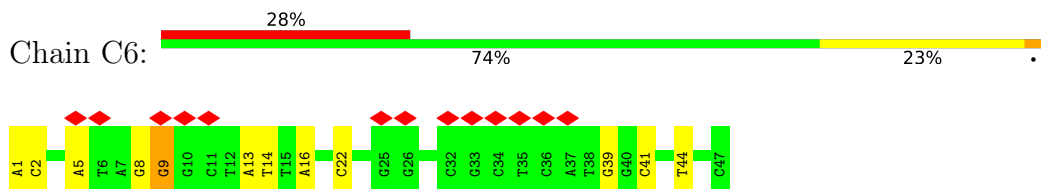
- Molecule 181: STAPLE STRAND



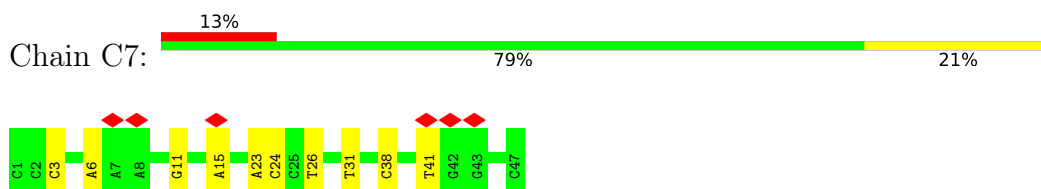
• Molecule 182: STAPLE STRAND



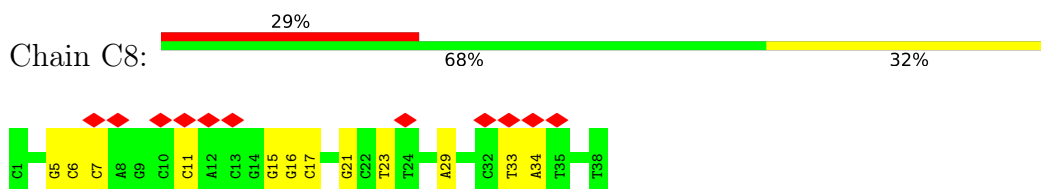
• Molecule 183: STAPLE STRAND



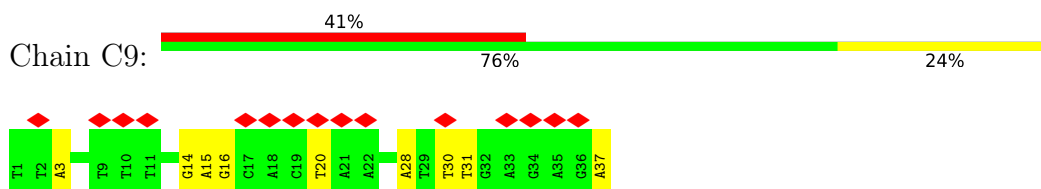
• Molecule 184: STAPLE STRAND



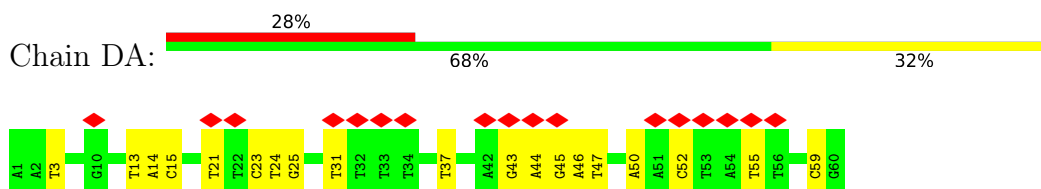
• Molecule 185: STAPLE STRAND



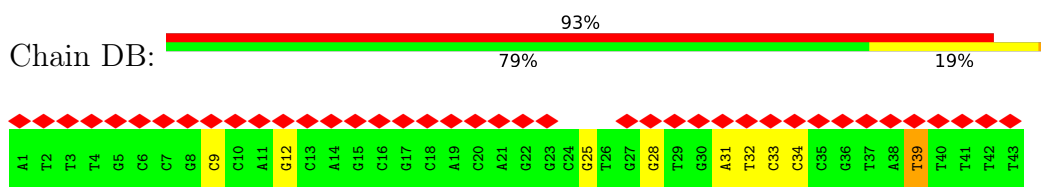
• Molecule 186: STAPLE STRAND



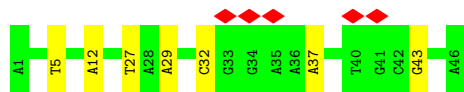
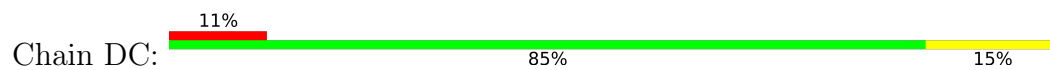
• Molecule 187: STAPLE STRAND



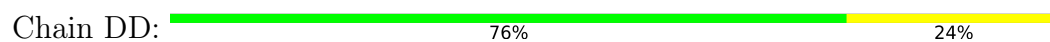
• Molecule 188: STAPLE STRAND



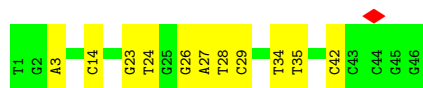
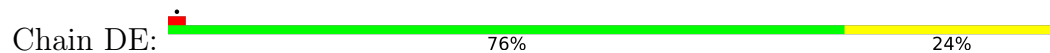
● Molecule 189: STAPLE STRAND



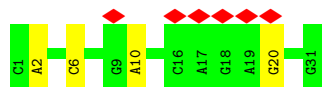
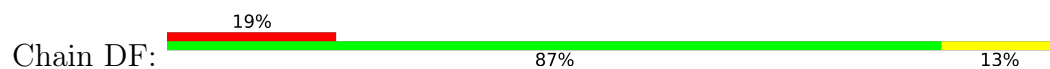
● Molecule 190: STAPLE STRAND



● Molecule 191: STAPLE STRAND



● Molecule 192: STAPLE STRAND



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	94834	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	51	Depositor
Minimum defocus (nm)	328.5	Depositor
Maximum defocus (nm)	2444.2	Depositor
Magnification	47000	Depositor
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	0.793	Depositor
Minimum map value	-0.309	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.037	Depositor
Recommended contour level	0.11	Depositor
Map size (Å)	639.39996, 639.39996, 639.39996	wwPDB
Map dimensions	230, 230, 230	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	2.7799997, 2.7799997, 2.7799997	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	0.72	0/184801	1.03	423/285260 (0.1%)
2	AB	0.73	0/1095	1.02	2/1690 (0.1%)
3	AC	0.70	0/1228	0.97	1/1894 (0.1%)
4	AD	0.71	0/1112	0.99	4/1716 (0.2%)
5	AE	0.74	0/1086	1.03	3/1672 (0.2%)
6	AF	0.71	0/1272	0.98	2/1962 (0.1%)
7	AG	0.69	0/1080	1.04	2/1665 (0.1%)
8	AH	0.71	0/714	1.04	1/1101 (0.1%)
9	AI	0.70	0/636	1.05	1/981 (0.1%)
10	AJ	0.72	0/1095	0.98	0/1687
11	AK	0.75	0/737	1.09	4/1137 (0.4%)
12	AL	0.70	0/1193	1.03	4/1841 (0.2%)
13	AM	0.67	0/854	0.98	0/1315
14	AN	0.69	0/1062	0.92	0/1639
15	AO	0.71	0/1068	0.95	3/1646 (0.2%)
16	AP	0.72	0/1100	1.01	1/1697 (0.1%)
17	AQ	0.68	0/1085	0.99	3/1672 (0.2%)
18	AR	0.70	0/1056	0.97	1/1629 (0.1%)
19	AS	0.70	0/1135	0.93	0/1746
20	AT	0.73	0/1078	0.97	1/1660 (0.1%)
21	AU	0.73	0/927	0.91	0/1429
22	AV	0.72	0/1025	1.15	7/1582 (0.4%)
23	AW	0.72	0/1103	0.93	0/1700
24	AX	0.72	0/860	1.02	2/1326 (0.2%)
25	AY	0.71	0/1085	1.02	1/1674 (0.1%)
26	AZ	0.73	0/912	1.05	0/1404
27	Aa	0.72	0/1220	0.97	1/1881 (0.1%)
28	Ab	0.71	0/895	1.02	2/1380 (0.1%)
29	Ac	0.71	0/697	1.01	1/1072 (0.1%)
30	Ad	0.70	0/1046	1.01	1/1612 (0.1%)
31	Ae	0.70	0/1179	0.97	1/1818 (0.1%)
32	Af	0.74	0/1049	1.03	0/1616
33	Ag	0.74	0/690	1.00	1/1065 (0.1%)
34	Ah	0.72	0/901	1.02	2/1389 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	Ai	0.70	0/1095	0.99	3/1691 (0.2%)
36	Aj	0.71	0/924	1.03	2/1423 (0.1%)
37	Ak	0.70	0/870	1.05	2/1340 (0.1%)
38	Al	0.73	0/1274	1.02	2/1961 (0.1%)
39	Am	0.70	0/862	1.02	2/1329 (0.2%)
40	An	0.71	0/1022	1.00	2/1573 (0.1%)
41	Ao	0.70	0/1059	0.93	1/1632 (0.1%)
42	Ap	0.70	0/1089	1.08	4/1678 (0.2%)
43	Aq	0.72	0/746	0.99	1/1151 (0.1%)
44	Ar	0.73	0/1109	1.00	0/1712
45	As	0.71	0/1119	1.01	4/1725 (0.2%)
46	At	0.72	0/1242	1.01	2/1914 (0.1%)
47	Au	0.66	0/1047	0.96	2/1612 (0.1%)
48	Av	0.69	0/1108	1.02	3/1708 (0.2%)
49	Aw	0.71	0/1074	0.94	0/1653
50	Ax	0.71	0/1032	0.98	2/1588 (0.1%)
51	Ay	0.76	0/725	0.97	0/1119
52	Az	0.71	0/689	0.99	0/1061
53	A0	0.72	0/726	0.99	2/1116 (0.2%)
54	A1	0.73	0/1106	1.02	1/1705 (0.1%)
55	A2	0.69	0/1059	0.97	1/1631 (0.1%)
56	A3	0.74	0/691	0.97	1/1065 (0.1%)
57	A4	0.70	0/1025	0.98	0/1578
58	A5	0.66	0/1036	0.95	1/1598 (0.1%)
59	A6	0.73	0/1121	1.06	3/1730 (0.2%)
60	A7	0.68	0/1094	1.03	3/1686 (0.2%)
61	A8	0.71	0/1343	1.08	6/2068 (0.3%)
62	A9	0.73	0/875	0.99	0/1348
63	BA	0.71	0/1102	1.02	2/1697 (0.1%)
64	BB	0.74	0/718	1.01	1/1106 (0.1%)
65	BC	0.71	0/1371	0.97	1/2113 (0.0%)
66	BD	0.72	0/1225	0.96	1/1888 (0.1%)
67	BE	0.70	0/727	0.97	0/1118
68	BF	0.73	0/878	0.98	1/1352 (0.1%)
69	BG	0.73	0/1072	1.05	4/1654 (0.2%)
70	BH	0.69	0/1291	1.02	0/1993
71	BI	0.75	0/1029	0.95	0/1585
72	BJ	0.72	0/1043	0.97	1/1609 (0.1%)
73	BK	0.72	0/1100	0.97	2/1696 (0.1%)
74	BL	0.72	0/1029	1.04	3/1586 (0.2%)
75	BM	0.72	0/1114	0.98	1/1719 (0.1%)
76	BN	0.71	0/695	1.00	2/1072 (0.2%)
77	BO	0.75	0/1024	1.07	2/1577 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
78	BP	0.74	0/1035	1.03	3/1594 (0.2%)
79	BQ	0.71	0/1046	0.93	0/1614
80	BR	0.72	0/861	1.02	2/1326 (0.2%)
81	BS	0.65	0/1088	0.94	1/1675 (0.1%)
82	BT	0.73	0/1205	0.96	1/1858 (0.1%)
83	BU	0.74	0/876	1.11	4/1347 (0.3%)
84	BV	0.72	0/721	1.02	2/1110 (0.2%)
85	BW	0.70	0/699	0.96	1/1074 (0.1%)
86	BX	0.73	0/1024	0.99	3/1576 (0.2%)
87	BY	0.69	0/1196	0.99	2/1844 (0.1%)
88	BZ	0.71	0/1078	0.91	0/1666
89	Ba	0.72	0/1073	0.93	1/1656 (0.1%)
90	Bb	0.74	0/893	0.98	0/1379
91	Bc	0.75	0/1035	1.04	4/1597 (0.3%)
92	Bd	0.71	0/1109	0.98	2/1709 (0.1%)
93	Be	0.71	0/1019	1.00	3/1566 (0.2%)
94	Bf	0.71	0/870	0.99	0/1341
95	Bg	0.72	0/880	1.04	3/1358 (0.2%)
96	Bh	0.71	0/916	0.97	1/1409 (0.1%)
97	Bi	0.69	0/1108	1.09	3/1708 (0.2%)
98	Bj	0.73	0/1117	1.07	5/1723 (0.3%)
99	Bk	0.72	0/699	1.02	2/1078 (0.2%)
100	Bl	0.72	0/935	0.97	2/1443 (0.1%)
101	Bm	0.70	0/869	0.98	2/1337 (0.1%)
102	Bn	0.69	0/984	0.99	0/1517
103	Bo	0.71	0/1021	1.08	3/1574 (0.2%)
104	Bp	0.74	0/1098	1.14	6/1695 (0.4%)
105	Bq	0.70	0/1100	0.97	0/1699
106	Br	0.72	0/872	1.00	1/1345 (0.1%)
107	Bs	0.70	0/680	1.06	1/1048 (0.1%)
108	Bt	0.70	0/1028	1.03	2/1586 (0.1%)
109	Bu	0.69	0/1123	1.00	1/1734 (0.1%)
110	Bv	0.73	0/916	1.00	1/1410 (0.1%)
111	Bw	0.69	0/844	0.99	3/1299 (0.2%)
112	Bx	0.68	0/1182	0.98	0/1824
113	By	0.71	0/705	1.04	2/1089 (0.2%)
114	Bz	0.71	0/925	0.97	0/1425
115	B0	0.71	0/688	0.98	0/1060
116	B1	0.67	0/1190	1.01	1/1838 (0.1%)
117	B2	0.71	0/690	0.98	1/1063 (0.1%)
118	B3	0.71	0/1283	0.93	0/1977
119	B4	0.72	0/1112	0.96	2/1715 (0.1%)
120	B5	0.69	0/707	1.02	0/1090

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
121	B6	0.72	0/1043	1.02	2/1611 (0.1%)
122	B7	0.72	0/855	0.99	1/1319 (0.1%)
123	B8	0.73	0/1192	0.98	0/1841
124	B9	0.74	0/857	1.02	3/1320 (0.2%)
125	CA	0.73	0/721	1.03	3/1108 (0.3%)
126	CB	0.72	0/736	1.02	0/1135
127	CC	0.74	0/703	1.01	1/1086 (0.1%)
128	CD	0.74	0/1341	1.05	2/2068 (0.1%)
129	CE	0.71	0/1192	0.99	1/1837 (0.1%)
130	CF	0.73	0/918	0.98	2/1413 (0.1%)
131	CG	0.77	0/700	1.06	3/1077 (0.3%)
132	CH	0.73	0/1233	1.08	4/1906 (0.2%)
133	CI	0.73	0/689	1.08	3/1062 (0.3%)
134	CJ	0.70	0/1098	1.05	2/1693 (0.1%)
135	CK	0.72	0/1268	1.08	4/1957 (0.2%)
136	CL	0.71	0/719	1.01	2/1110 (0.2%)
137	CM	0.73	0/734	1.00	1/1130 (0.1%)
138	CN	0.72	0/932	0.97	0/1438
139	CO	0.71	0/679	1.01	3/1045 (0.3%)
140	CP	0.74	0/1238	1.02	2/1911 (0.1%)
141	CQ	0.73	0/1094	0.99	2/1685 (0.1%)
142	CR	0.72	0/1035	0.95	1/1597 (0.1%)
143	CS	0.73	0/1103	1.06	6/1701 (0.4%)
144	CT	0.73	0/862	1.08	4/1326 (0.3%)
145	CU	0.74	0/697	0.95	0/1075
146	CV	0.71	0/732	0.93	1/1127 (0.1%)
147	CW	0.71	0/1090	0.95	0/1683
148	CX	0.70	0/1087	1.04	1/1676 (0.1%)
149	CY	0.75	0/1121	0.99	1/1731 (0.1%)
150	CZ	0.71	0/1061	0.99	1/1640 (0.1%)
151	Ca	0.72	0/898	0.91	0/1383
152	Cb	0.73	0/1052	0.91	1/1624 (0.1%)
153	Cc	0.71	0/690	0.99	1/1065 (0.1%)
154	Cd	0.72	0/875	0.93	2/1349 (0.1%)
155	Ce	0.72	0/673	0.97	1/1035 (0.1%)
156	Cf	0.73	0/900	1.08	3/1382 (0.2%)
157	Cg	0.72	0/874	0.99	2/1348 (0.1%)
158	Ch	0.72	0/1043	0.95	1/1610 (0.1%)
159	Ci	0.73	0/1089	1.14	5/1681 (0.3%)
160	Cj	0.77	0/1242	1.05	5/1916 (0.3%)
161	Ck	0.72	0/1067	0.98	1/1646 (0.1%)
162	Cl	0.75	0/1021	1.07	4/1573 (0.3%)
163	Cm	0.72	0/852	1.06	1/1312 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
164	Cn	0.70	0/1030	0.94	0/1585
165	Co	0.70	0/840	1.12	3/1295 (0.2%)
166	Cp	0.75	0/841	1.03	3/1296 (0.2%)
167	Cq	0.74	0/817	1.03	2/1259 (0.2%)
168	Cr	0.74	0/872	1.02	0/1345
169	Cs	0.73	0/901	0.95	2/1392 (0.1%)
170	Ct	0.74	0/880	1.02	1/1356 (0.1%)
171	Cu	0.74	0/823	1.07	1/1270 (0.1%)
172	Cv	0.76	0/834	1.11	3/1285 (0.2%)
173	Cw	0.71	0/707	0.99	1/1087 (0.1%)
174	Cx	0.71	0/858	1.00	1/1322 (0.1%)
175	Cy	0.74	0/1027	0.98	1/1583 (0.1%)
176	Cz	0.72	0/1186	1.03	2/1830 (0.1%)
177	C0	0.68	0/1354	1.04	1/2088 (0.0%)
178	C1	0.70	0/1082	0.94	1/1669 (0.1%)
179	C2	0.71	0/742	1.01	2/1145 (0.2%)
180	C3	0.74	0/849	1.05	2/1309 (0.2%)
181	C4	0.70	0/1294	1.01	1/1996 (0.1%)
182	C5	0.70	0/1025	1.01	1/1582 (0.1%)
183	C6	0.72	0/1077	1.02	3/1659 (0.2%)
184	C7	0.71	0/1076	0.99	2/1656 (0.1%)
185	C8	0.70	0/863	0.95	3/1329 (0.2%)
186	C9	0.71	0/863	0.96	2/1332 (0.2%)
187	DA	0.70	0/1374	1.02	3/2118 (0.1%)
188	DB	0.73	0/980	1.00	5/1511 (0.3%)
189	DC	0.71	0/1075	0.93	1/1658 (0.1%)
190	DD	0.70	0/869	0.95	0/1339
191	DE	0.71	0/1056	0.97	1/1627 (0.1%)
192	DF	0.70	0/718	0.97	0/1107
All	All	0.72	0/372075	1.02	748/573956 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	AA	26	1811
2	AB	0	10
3	AC	0	13
4	AD	0	12
5	AE	0	5

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Mol	Chain	#Chirality outliers	#Planarity outliers
6	AF	0	17
7	AG	0	5
8	AH	0	6
9	AI	0	6
10	AJ	0	7
11	AK	0	4
12	AL	0	5
13	AM	0	2
14	AN	0	8
15	AO	0	8
16	AP	0	10
17	AQ	0	7
18	AR	0	10
19	AS	0	12
20	AT	0	8
21	AU	0	12
22	AV	0	6
23	AW	0	10
24	AX	0	9
25	AY	0	9
26	AZ	0	7
27	Aa	0	12
28	Ab	0	7
29	Ac	0	4
30	Ad	0	8
31	Ae	0	10
32	Af	0	9
33	Ag	0	6
34	Ah	0	3
35	Ai	0	14
36	Aj	0	5
37	Ak	0	2
38	Al	0	9
39	Am	0	6
40	An	0	12
41	Ao	0	7
42	Ap	0	6
43	Aq	0	11
44	Ar	0	11
45	As	0	5
46	At	0	10
47	Au	0	7

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Mol	Chain	#Chirality outliers	#Planarity outliers
48	Av	0	8
49	Aw	0	5
50	Ax	0	9
51	Ay	0	6
52	Az	0	7
53	A0	0	5
54	A1	0	9
55	A2	0	8
56	A3	0	6
57	A4	0	7
58	A5	0	5
59	A6	0	9
60	A7	0	10
61	A8	0	11
62	A9	0	7
63	BA	0	7
64	BB	0	7
65	BC	0	6
66	BD	0	7
67	BE	0	5
68	BF	0	10
69	BG	0	15
70	BH	0	10
71	BI	0	9
72	BJ	0	9
73	BK	0	13
74	BL	0	8
75	BM	0	9
76	BN	0	6
77	BO	0	11
78	BP	0	12
79	BQ	0	12
80	BR	0	10
81	BS	0	8
82	BT	0	12
83	BU	0	7
84	BV	0	9
85	BW	0	5
86	BX	0	2
87	BY	0	6
88	BZ	0	4
89	Ba	0	10

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Mol	Chain	#Chirality outliers	#Planarity outliers
90	Bb	0	16
91	Bc	0	8
92	Bd	0	8
93	Be	0	9
94	Bf	0	9
95	Bg	0	11
96	Bh	0	9
97	Bi	0	11
98	Bj	0	9
99	Bk	0	5
100	Bl	0	5
101	Bm	0	9
102	Bn	0	6
103	Bo	0	11
104	Bp	0	12
105	Bq	0	7
106	Br	0	7
107	Bs	0	12
108	Bt	0	8
109	Bu	0	11
110	Bv	0	8
111	Bw	0	9
112	Bx	0	17
113	By	0	4
114	Bz	0	4
115	B0	0	6
116	B1	0	13
117	B2	0	4
118	B3	0	14
119	B4	0	5
120	B5	0	6
121	B6	0	17
122	B7	0	5
123	B8	0	12
124	B9	0	14
125	CA	0	5
126	CB	0	13
127	CC	0	6
128	CD	0	12
129	CE	0	9
130	CF	0	7
131	CG	0	7

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Mol	Chain	#Chirality outliers	#Planarity outliers
132	CH	0	14
133	CI	0	4
134	CJ	0	11
135	CK	0	11
136	CL	0	4
137	CM	0	9
138	CN	0	8
139	CO	0	7
140	CP	0	12
141	CQ	0	11
142	CR	0	9
143	CS	0	11
144	CT	0	11
145	CU	0	6
146	CV	0	7
147	CW	0	9
148	CX	0	8
149	CY	0	9
150	CZ	0	10
151	Ca	0	9
152	Cb	0	5
153	Cc	0	14
154	Cd	0	4
155	Ce	0	10
156	Cf	0	7
157	Cg	0	11
158	Ch	0	11
159	Ci	0	8
160	Cj	0	18
161	Ck	0	6
162	Cl	0	11
163	Cm	0	7
164	Cn	0	7
165	Co	0	8
166	Cp	0	11
167	Cq	0	4
168	Cr	0	11
169	Cs	0	12
170	Ct	0	9
171	Cu	0	5
172	Cv	0	11
173	Cw	0	7

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Mol	Chain	#Chirality outliers	#Planarity outliers
174	Cx	0	8
175	Cy	0	16
176	Cz	0	13
177	C0	0	11
178	C1	0	12
179	C2	0	6
180	C3	0	2
181	C4	0	8
182	C5	0	7
183	C6	0	11
184	C7	0	8
185	C8	0	9
186	C9	0	7
187	DA	0	16
188	DB	0	5
189	DC	0	6
190	DD	0	9
191	DE	0	10
192	DF	0	4
All	All	26	3449

There are no bond length outliers.

All (748) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	1068	DG	P-O3'-C3'	12.57	139.06	120.20
1	AA	1599	DT	P-O3'-C3'	12.48	138.92	120.20
160	Cj	27	DG	P-O3'-C3'	11.94	138.10	120.20
1	AA	645	DA	P-O3'-C3'	11.64	137.65	120.20
1	AA	5153	DG	P-O3'-C3'	11.57	137.55	120.20
108	Bt	15	DT	P-O3'-C3'	11.53	137.49	120.20
1	AA	7508	DC	P-O3'-C3'	11.45	137.37	120.20
136	CL	29	DA	P-O3'-C3'	11.40	137.30	120.20
165	Co	28	DT	P-O3'-C3'	11.35	137.22	120.20
1	AA	7704	DG	P-O3'-C3'	11.34	137.21	120.20
22	AV	12	DA	P-O3'-C3'	11.18	136.97	120.20
1	AA	1378	DG	P-O3'-C3'	11.15	136.93	120.20
1	AA	1508	DG	P-O3'-C3'	11.00	136.70	120.20
24	AX	17	DG	P-O3'-C3'	10.99	136.69	120.20
1	AA	7098	DC	P-O3'-C3'	10.88	136.52	120.20
1	AA	6327	DG	P-O3'-C3'	10.83	136.45	120.20
1	AA	2880	DA	P-O3'-C3'	10.80	136.40	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	4461	DA	P-O3'-C3'	10.80	136.40	120.20
1	AA	5150	DT	P-O3'-C3'	10.79	136.38	120.20
129	CE	9	DA	P-O3'-C3'	10.74	136.32	120.20
60	A7	35	DT	P-O3'-C3'	10.72	136.29	120.20
1	AA	6935	DT	P-O3'-C3'	10.70	136.25	120.20
76	BN	24	DG	P-O3'-C3'	10.69	136.24	120.20
34	Ah	38	DA	P-O3'-C3'	10.64	136.16	120.20
104	Bp	38	DA	P-O3'-C3'	10.55	136.03	120.20
11	AK	14	DG	P-O3'-C3'	10.54	136.01	120.20
98	Bj	31	DT	P-O3'-C3'	10.50	135.95	120.20
1	AA	794	DG	P-O3'-C3'	10.46	135.89	120.20
132	CH	42	DG	P-O3'-C3'	10.40	135.80	120.20
61	A8	49	DT	P-O3'-C3'	10.38	135.77	120.20
180	C3	32	DC	P-O3'-C3'	10.34	135.70	120.20
1	AA	6396	DC	P-O3'-C3'	10.32	135.68	120.20
1	AA	1660	DG	P-O3'-C3'	10.31	135.66	120.20
1	AA	692	DG	P-O3'-C3'	10.27	135.61	120.20
1	AA	7434	DG	P-O3'-C3'	10.26	135.59	120.20
1	AA	2043	DG	P-O3'-C3'	10.26	135.58	120.20
1	AA	3830	DA	P-O3'-C3'	10.23	135.55	120.20
1	AA	3409	DC	P-O3'-C3'	10.22	135.53	120.20
6	AF	29	DA	P-O3'-C3'	10.21	135.52	120.20
37	Ak	29	DA	P-O3'-C3'	10.21	135.51	120.20
98	Bj	27	DC	P-O3'-C3'	10.21	135.51	120.20
1	AA	2235	DA	P-O3'-C3'	10.21	135.51	120.20
149	CY	18	DC	P-O3'-C3'	10.20	135.50	120.20
42	Ap	11	DC	P-O3'-C3'	10.17	135.45	120.20
110	Bv	25	DG	P-O3'-C3'	10.16	135.44	120.20
141	CQ	34	DC	P-O3'-C3'	10.16	135.44	120.20
1	AA	4622	DT	P-O3'-C3'	10.16	135.44	120.20
1	AA	1826	DA	P-O3'-C3'	10.15	135.42	120.20
1	AA	4470	DC	P-O3'-C3'	10.15	135.42	120.20
159	Ci	32	DG	P-O3'-C3'	10.13	135.40	120.20
1	AA	834	DG	P-O3'-C3'	10.13	135.39	120.20
36	Aj	27	DG	P-O3'-C3'	10.12	135.38	120.20
1	AA	1479	DC	P-O3'-C3'	10.09	135.33	120.20
1	AA	3387	DA	P-O3'-C3'	10.07	135.31	120.20
1	AA	3213	DC	P-O3'-C3'	10.04	135.26	120.20
180	C3	8	DC	P-O3'-C3'	10.02	135.24	120.20
59	A6	42	DA	P-O3'-C3'	10.01	135.21	120.20
1	AA	5792	DT	P-O3'-C3'	10.00	135.21	120.20
1	AA	2807	DA	P-O3'-C3'	9.96	135.15	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
83	BU	9	DA	P-O3'-C3'	9.93	135.09	120.20
1	AA	6708	DG	P-O3'-C3'	9.93	135.09	120.20
1	AA	6184	DT	P-O3'-C3'	9.91	135.07	120.20
74	BL	21	DA	P-O3'-C3'	9.90	135.06	120.20
1	AA	4897	DT	P-O3'-C3'	9.89	135.04	120.20
1	AA	3540	DG	P-O3'-C3'	9.89	135.03	120.20
1	AA	561	DC	P-O3'-C3'	9.87	135.00	120.20
1	AA	1402	DG	P-O3'-C3'	9.87	135.00	120.20
59	A6	10	DG	P-O3'-C3'	9.85	134.97	120.20
69	BG	39	DC	P-O3'-C3'	9.83	134.95	120.20
1	AA	532	DA	P-O3'-C3'	9.78	134.87	120.20
1	AA	5822	DA	P-O3'-C3'	9.77	134.86	120.20
1	AA	1679	DT	P-O3'-C3'	9.76	134.84	120.20
5	AE	34	DG	P-O3'-C3'	9.76	134.84	120.20
1	AA	4572	DA	P-O3'-C3'	9.75	134.83	120.20
1	AA	6271	DA	P-O3'-C3'	9.74	134.82	120.20
1	AA	6324	DA	P-O3'-C3'	9.72	134.78	120.20
8	AH	15	DG	P-O3'-C3'	9.66	134.69	120.20
1	AA	3396	DC	P-O3'-C3'	9.65	134.67	120.20
135	CK	48	DC	P-O3'-C3'	9.64	134.66	120.20
1	AA	1114	DC	P-O3'-C3'	9.64	134.66	120.20
1	AA	4342	DG	P-O3'-C3'	9.62	134.63	120.20
1	AA	7972	DG	P-O3'-C3'	9.62	134.63	120.20
80	BR	14	DT	P-O3'-C3'	9.60	134.60	120.20
1	AA	4761	DA	P-O3'-C3'	9.59	134.58	120.20
1	AA	3240	DG	P-O3'-C3'	9.57	134.56	120.20
1	AA	3526	DG	P-O3'-C3'	9.57	134.55	120.20
1	AA	5666	DA	P-O3'-C3'	9.56	134.54	120.20
1	AA	7066	DT	P-O3'-C3'	9.56	134.54	120.20
143	CS	23	DC	P-O3'-C3'	9.54	134.50	120.20
1	AA	2810	DA	P-O3'-C3'	9.47	134.41	120.20
157	Cg	30	DT	P-O3'-C3'	9.47	134.40	120.20
63	BA	47	DT	P-O3'-C3'	9.44	134.36	120.20
78	BP	17	DA	P-O3'-C3'	9.43	134.35	120.20
169	Cs	4	DG	P-O3'-C3'	9.43	134.34	120.20
122	B7	5	DT	P-O3'-C3'	9.40	134.29	120.20
1	AA	4297	DT	P-O3'-C3'	9.38	134.28	120.20
30	Ad	31	DA	P-O3'-C3'	9.37	134.25	120.20
1	AA	3388	DG	P-O3'-C3'	9.35	134.22	120.20
1	AA	93	DG	P-O3'-C3'	9.33	134.20	120.20
1	AA	426	DG	P-O3'-C3'	9.33	134.20	120.20
1	AA	5786	DG	P-O3'-C3'	9.33	134.20	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	1329	DG	P-O3'-C3'	9.31	134.17	120.20
1	AA	7392	DA	P-O3'-C3'	9.23	134.04	120.20
1	AA	5024	DC	P-O3'-C3'	9.22	134.03	120.20
1	AA	1036	DG	P-O3'-C3'	9.21	134.01	120.20
1	AA	4702	DC	P-O3'-C3'	9.17	133.96	120.20
119	B4	25	DA	P-O3'-C3'	9.17	133.95	120.20
172	Cv	16	DG	P-O3'-C3'	9.17	133.95	120.20
1	AA	7286	DC	P-O3'-C3'	9.14	133.92	120.20
1	AA	568	DT	P-O3'-C3'	9.08	133.83	120.20
119	B4	10	DA	P-O3'-C3'	9.07	133.81	120.20
54	A1	43	DC	P-O3'-C3'	9.03	133.74	120.20
1	AA	4667	DG	P-O3'-C3'	9.02	133.73	120.20
1	AA	5433	DC	P-O3'-C3'	9.01	133.72	120.20
1	AA	949	DT	P-O3'-C3'	9.01	133.71	120.20
1	AA	259	DC	P-O3'-C3'	8.99	133.68	120.20
174	Cx	9	DG	P-O3'-C3'	8.98	133.67	120.20
1	AA	1281	DG	P-O3'-C3'	8.95	133.63	120.20
1	AA	4520	DG	P-O3'-C3'	8.95	133.62	120.20
131	CG	18	DG	P-O3'-C3'	8.95	133.62	120.20
132	CH	41	DG	P-O3'-C3'	8.94	133.62	120.20
1	AA	2316	DG	P-O3'-C3'	8.94	133.62	120.20
1	AA	4006	DT	P-O3'-C3'	8.94	133.61	120.20
1	AA	82	DA	P-O3'-C3'	8.91	133.57	120.20
42	Ap	47	DC	P-O3'-C3'	8.91	133.57	120.20
1	AA	3583	DC	P-O3'-C3'	8.91	133.56	120.20
97	Bi	38	DC	P-O3'-C3'	8.90	133.56	120.20
1	AA	2200	DT	P-O3'-C3'	8.89	133.54	120.20
1	AA	4002	DA	P-O3'-C3'	8.86	133.50	120.20
1	AA	2325	DG	P-O3'-C3'	8.85	133.47	120.20
1	AA	2425	DT	P-O3'-C3'	8.84	133.46	120.20
1	AA	1345	DG	P-O3'-C3'	8.83	133.44	120.20
134	CJ	18	DT	P-O3'-C3'	8.82	133.43	120.20
48	Av	12	DA	P-O3'-C3'	8.81	133.42	120.20
160	Cj	30	DA	P-O3'-C3'	8.81	133.42	120.20
1	AA	7388	DT	P-O3'-C3'	8.80	133.40	120.20
22	AV	34	DC	P-O3'-C3'	8.79	133.39	120.20
1	AA	3575	DG	P-O3'-C3'	8.77	133.36	120.20
140	CP	9	DT	P-O3'-C3'	8.74	133.32	120.20
1	AA	4703	DG	P-O3'-C3'	8.73	133.29	120.20
1	AA	6556	DT	P-O3'-C3'	8.73	133.29	120.20
99	Bk	29	DC	P-O3'-C3'	8.72	133.29	120.20
22	AV	16	DG	P-O3'-C3'	8.68	133.22	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	425	DC	P-O3'-C3'	8.67	133.20	120.20
133	CI	22	DG	P-O3'-C3'	8.64	133.16	120.20
1	AA	3284	DG	P-O3'-C3'	8.63	133.15	120.20
171	Cu	8	DT	P-O3'-C3'	8.62	133.12	120.20
1	AA	690	DC	P-O3'-C3'	8.61	133.11	120.20
11	AK	26	DC	P-O3'-C3'	8.60	133.10	120.20
177	C0	37	DT	P-O3'-C3'	8.60	133.10	120.20
1	AA	4094	DG	P-O3'-C3'	8.59	133.08	120.20
1	AA	7539	DG	P-O3'-C3'	8.59	133.08	120.20
1	AA	7377	DA	P-O3'-C3'	8.54	133.01	120.20
179	C2	7	DT	P-O3'-C3'	8.51	132.96	120.20
53	A0	29	DT	P-O3'-C3'	8.50	132.95	120.20
1	AA	7276	DG	P-O3'-C3'	8.49	132.94	120.20
1	AA	3015	DG	P-O3'-C3'	8.48	132.92	120.20
1	AA	4510	DT	P-O3'-C3'	8.47	132.90	120.20
156	Cf	32	DC	P-O3'-C3'	8.46	132.89	120.20
1	AA	1620	DC	P-O3'-C3'	8.46	132.88	120.20
1	AA	2678	DG	P-O3'-C3'	8.45	132.88	120.20
116	B1	28	DT	P-O3'-C3'	8.45	132.87	120.20
74	BL	26	DG	P-O3'-C3'	8.43	132.85	120.20
183	C6	9	DG	P-O3'-C3'	8.43	132.85	120.20
1	AA	7574	DT	P-O3'-C3'	8.40	132.80	120.20
103	Bo	39	DT	P-O3'-C3'	8.39	132.78	120.20
1	AA	2243	DT	P-O3'-C3'	8.38	132.78	120.20
1	AA	2398	DA	P-O3'-C3'	8.37	132.76	120.20
1	AA	4447	DT	P-O3'-C3'	8.36	132.74	120.20
98	Bj	47	DT	P-O3'-C3'	8.35	132.73	120.20
143	CS	35	DG	P-O3'-C3'	8.35	132.73	120.20
139	CO	17	DA	P-O3'-C3'	8.31	132.66	120.20
1	AA	3930	DT	P-O3'-C3'	8.29	132.64	120.20
130	CF	29	DC	P-O3'-C3'	8.29	132.63	120.20
1	AA	3560	DG	P-O3'-C3'	8.28	132.61	120.20
132	CH	31	DT	P-O3'-C3'	8.23	132.55	120.20
162	Cl	37	DA	P-O3'-C3'	8.22	132.53	120.20
1	AA	5167	DT	P-O3'-C3'	8.22	132.52	120.20
1	AA	1409	DC	P-O3'-C3'	8.21	132.52	120.20
1	AA	527	DC	P-O3'-C3'	8.21	132.51	120.20
1	AA	404	DA	P-O3'-C3'	8.20	132.50	120.20
1	AA	7954	DC	P-O3'-C3'	8.20	132.49	120.20
1	AA	1961	DC	P-O3'-C3'	8.19	132.48	120.20
1	AA	2289	DT	P-O3'-C3'	8.17	132.46	120.20
1	AA	4878	DT	P-O3'-C3'	8.11	132.37	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	5797	DT	P-O3'-C3'	8.10	132.35	120.20
1	AA	6200	DT	P-O3'-C3'	8.09	132.33	120.20
65	BC	51	DC	P-O3'-C3'	8.08	132.31	120.20
77	BO	16	DC	P-O3'-C3'	8.07	132.31	120.20
83	BU	23	DG	P-O3'-C3'	8.06	132.29	120.20
1	AA	6797	DG	P-O3'-C3'	8.04	132.27	120.20
1	AA	5962	DT	P-O3'-C3'	8.04	132.25	120.20
1	AA	6234	DT	P-O3'-C3'	8.04	132.25	120.20
1	AA	4943	DC	P-O3'-C3'	8.03	132.25	120.20
1	AA	5240	DT	P-O3'-C3'	8.02	132.24	120.20
130	CF	7	DA	P-O3'-C3'	8.02	132.23	120.20
1	AA	3673	DA	P-O3'-C3'	8.01	132.22	120.20
184	C7	38	DC	P-O3'-C3'	8.00	132.20	120.20
1	AA	2291	DT	P-O3'-C3'	7.99	132.19	120.20
1	AA	291	DC	P-O3'-C3'	7.99	132.18	120.20
103	Bo	17	DT	P-O3'-C3'	7.96	132.15	120.20
1	AA	4609	DT	P-O3'-C3'	7.96	132.14	120.20
1	AA	4123	DC	P-O3'-C3'	7.96	132.13	120.20
1	AA	5901	DA	P-O3'-C3'	7.94	132.12	120.20
165	Co	34	DT	P-O3'-C3'	7.94	132.11	120.20
39	Am	24	DG	P-O3'-C3'	7.94	132.11	120.20
59	A6	4	DC	P-O3'-C3'	7.94	132.11	120.20
1	AA	1698	DC	P-O3'-C3'	7.92	132.08	120.20
1	AA	3510	DC	P-O3'-C3'	7.92	132.08	120.20
1	AA	595	DA	P-O3'-C3'	7.90	132.05	120.20
1	AA	1817	DT	P-O3'-C3'	7.90	132.05	120.20
28	Ab	1	DG	P-O3'-C3'	7.89	132.03	120.20
121	B6	16	DA	P-O3'-C3'	7.86	131.99	120.20
159	Ci	20	DT	P-O3'-C3'	7.86	131.98	120.20
1	AA	2668	DG	P-O3'-C3'	7.85	131.98	120.20
1	AA	3281	DT	P-O3'-C3'	7.85	131.98	120.20
176	Cz	9	DC	P-O3'-C3'	7.84	131.96	120.20
1	AA	7474	DT	P-O3'-C3'	7.83	131.94	120.20
133	CI	11	DC	P-O3'-C3'	7.82	131.93	120.20
9	AI	10	DA	P-O3'-C3'	7.81	131.92	120.20
183	C6	22	DC	P-O3'-C3'	7.80	131.90	120.20
31	Ae	46	DG	P-O3'-C3'	7.79	131.89	120.20
40	An	41	DT	P-O3'-C3'	7.76	131.85	120.20
1	AA	8005	DC	P-O3'-C3'	7.75	131.82	120.20
63	BA	1	DC	P-O3'-C3'	7.74	131.80	120.20
172	Cv	20	DG	P-O3'-C3'	7.72	131.79	120.20
1	AA	3373	DT	P-O3'-C3'	7.72	131.78	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	2002	DT	P-O3'-C3'	7.72	131.78	120.20
156	Cf	33	DA	P-O3'-C3'	7.71	131.77	120.20
1	AA	6881	DG	P-O3'-C3'	7.71	131.76	120.20
1	AA	7804	DA	P-O3'-C3'	7.69	131.74	120.20
162	Cl	35	DT	P-O3'-C3'	7.68	131.72	120.20
1	AA	2587	DC	P-O5'-C5'	7.66	131.49	120.00
1	AA	2650	DT	P-O3'-C3'	7.65	131.68	120.20
1	AA	5058	DA	P-O3'-C3'	7.65	131.68	120.20
144	CT	20	DT	P-O3'-C3'	7.64	131.66	120.20
17	AQ	45	DT	P-O3'-C3'	7.62	131.63	120.20
1	AA	6323	DT	P-O3'-C3'	7.61	131.62	120.20
1	AA	4386	DG	P-O3'-C3'	7.61	131.61	120.20
134	CJ	14	DT	P-O3'-C3'	7.60	131.60	120.20
1	AA	6094	DT	P-O3'-C3'	7.58	131.58	120.20
50	Ax	20	DC	P-O3'-C3'	7.52	131.48	120.20
1	AA	2130	DC	P-O3'-C3'	7.52	131.48	120.20
1	AA	1878	DT	P-O3'-C3'	7.50	131.46	120.20
48	Av	18	DT	P-O3'-C3'	7.50	131.44	120.20
35	Ai	37	DA	P-O3'-C3'	7.50	131.44	120.20
132	CH	48	DG	P-O3'-C3'	7.48	131.43	120.20
95	Bg	21	DA	P-O3'-C3'	7.46	131.39	120.20
186	C9	31	DT	P-O3'-C3'	7.46	131.39	120.20
1	AA	6818	DT	P-O3'-C3'	7.45	131.37	120.20
189	DC	32	DC	P-O3'-C3'	7.45	131.37	120.20
1	AA	5124	DC	P-O3'-C3'	7.43	131.35	120.20
187	DA	13	DT	P-O3'-C3'	7.42	131.34	120.20
1	AA	4886	DC	P-O3'-C3'	7.42	131.33	120.20
1	AA	7476	DC	P-O3'-C3'	7.41	131.31	120.20
56	A3	6	DC	P-O3'-C3'	7.41	131.31	120.20
76	BN	23	DA	P-O3'-C3'	7.39	131.29	120.20
1	AA	513	DC	P-O3'-C3'	7.39	131.28	120.20
1	AA	3928	DA	P-O3'-C3'	7.37	131.26	120.20
113	By	19	DT	P-O3'-C3'	7.37	131.26	120.20
1	AA	5796	DG	P-O3'-C3'	7.35	131.22	120.20
1	AA	7487	DG	P-O3'-C3'	7.34	131.22	120.20
46	At	51	DC	P-O3'-C3'	7.34	131.21	120.20
111	Bw	31	DC	P-O3'-C3'	7.34	131.21	120.20
69	BG	2	DT	P-O3'-C3'	7.33	131.20	120.20
1	AA	5672	DG	P-O3'-C3'	7.33	131.19	120.20
80	BR	33	DC	P-O3'-C3'	7.32	131.18	120.20
170	Ct	1	DA	P-O3'-C3'	7.32	131.17	120.20
188	DB	25	DG	P-O3'-C3'	7.28	131.12	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
22	AV	31	DT	P-O3'-C3'	7.27	131.11	120.20
1	AA	3630	DC	P-O3'-C3'	7.26	131.09	120.20
1	AA	2706	DC	P-O3'-C3'	7.25	131.08	120.20
1	AA	537	DG	P-O3'-C3'	7.24	131.05	120.20
1	AA	1576	DG	P-O3'-C3'	7.23	131.04	120.20
1	AA	7096	DA	P-O3'-C3'	7.22	131.03	120.20
1	AA	1980	DT	P-O3'-C3'	7.22	131.03	120.20
1	AA	7360	DC	P-O3'-C3'	7.22	131.03	120.20
178	C1	10	DG	P-O3'-C3'	7.21	131.02	120.20
1	AA	2214	DG	P-O3'-C3'	7.21	131.01	120.20
140	CP	46	DT	P-O3'-C3'	7.20	131.00	120.20
1	AA	365	DA	P-O3'-C3'	7.18	130.97	120.20
24	AX	12	DC	P-O5'-C5'	7.17	130.76	120.00
187	DA	37	DT	P-O3'-C3'	7.17	130.95	120.20
1	AA	8057	DC	P-O3'-C3'	7.14	130.91	120.20
87	BY	14	DA	P-O3'-C3'	7.14	130.91	120.20
4	AD	33	DC	P-O3'-C3'	7.13	130.89	120.20
36	Aj	38	DT	P-O3'-C3'	7.12	130.89	120.20
125	CA	22	DC	P-O5'-C5'	7.12	130.68	120.00
1	AA	5699	DC	P-O3'-C3'	7.11	130.87	120.20
1	AA	3999	DC	P-O3'-C3'	7.11	130.86	120.20
1	AA	4948	DC	P-O3'-C3'	7.11	130.86	120.20
1	AA	7665	DT	P-O3'-C3'	7.10	130.86	120.20
111	Bw	29	DA	P-O3'-C3'	7.09	130.83	120.20
1	AA	5315	DT	P-O3'-C3'	7.08	130.82	120.20
1	AA	2931	DG	P-O3'-C3'	7.06	130.79	120.20
1	AA	7909	DT	P-O3'-C3'	7.06	130.79	120.20
1	AA	7482	DA	P-O3'-C3'	7.06	130.78	120.20
1	AA	1454	DC	P-O3'-C3'	7.05	130.78	120.20
101	Bm	9	DC	P-O3'-C3'	7.05	130.78	120.20
128	CD	33	DT	P-O3'-C3'	7.04	130.76	120.20
11	AK	21	DC	P-O5'-C5'	7.04	130.56	120.00
1	AA	4230	DC	P-O3'-C3'	7.03	130.75	120.20
160	Cj	11	DC	P-O3'-C3'	7.03	130.74	120.20
1	AA	6746	DA	P-O3'-C3'	7.01	130.72	120.20
93	Be	2	DG	P-O3'-C3'	7.01	130.72	120.20
1	AA	6297	DC	P-O3'-C3'	6.98	130.67	120.20
169	Cs	18	DG	P-O3'-C3'	6.98	130.67	120.20
1	AA	2762	DC	P-O3'-C3'	6.97	130.66	120.20
1	AA	541	DA	P-O3'-C3'	6.97	130.66	120.20
107	Bs	16	DT	P-O3'-C3'	6.97	130.66	120.20
48	Av	11	DC	P-O3'-C3'	6.95	130.63	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	4662	DC	P-O5'-C5'	6.95	130.42	120.00
2	AB	2	DA	P-O3'-C3'	6.94	130.61	120.20
1	AA	4927	DT	P-O3'-C3'	6.93	130.59	120.20
60	A7	30	DT	P-O3'-C3'	6.93	130.59	120.20
113	By	27	DA	P-O3'-C3'	6.92	130.58	120.20
1	AA	4830	DC	P-O5'-C5'	6.92	130.38	120.00
1	AA	1340	DC	P-O5'-C5'	6.91	130.36	120.00
186	C9	20	DT	P-O3'-C3'	6.90	130.55	120.20
1	AA	6640	DT	P-O3'-C3'	6.90	130.54	120.20
1	AA	1917	DA	P-O3'-C3'	6.89	130.54	120.20
1	AA	1971	DC	P-O3'-C3'	6.89	130.53	120.20
1	AA	6903	DC	P-O3'-C3'	6.88	130.52	120.20
1	AA	1930	DT	P-O3'-C3'	6.88	130.52	120.20
17	AQ	19	DT	P-O3'-C3'	6.88	130.52	120.20
117	B2	13	DT	P-O3'-C3'	6.87	130.50	120.20
159	Ci	42	DG	P-O3'-C3'	6.86	130.49	120.20
39	Am	8	DG	P-O3'-C3'	6.86	130.49	120.20
1	AA	3076	DT	P-O3'-C3'	6.86	130.49	120.20
1	AA	430	DC	P-O3'-C3'	6.86	130.48	120.20
148	CX	10	DC	P-O3'-C3'	6.86	130.48	120.20
1	AA	5055	DA	P-O3'-C3'	6.85	130.48	120.20
1	AA	1879	DA	P-O3'-C3'	6.83	130.45	120.20
1	AA	1677	DG	P-O3'-C3'	6.83	130.45	120.20
1	AA	517	DG	P-O3'-C3'	6.82	130.43	120.20
1	AA	7872	DG	P-O3'-C3'	6.82	130.43	120.20
7	AG	46	DA	P-O3'-C3'	6.81	130.41	120.20
15	AO	28	DA	P-O3'-C3'	6.79	130.39	120.20
1	AA	2879	DT	P-O3'-C3'	6.79	130.38	120.20
68	BF	13	DA	P-O3'-C3'	6.79	130.38	120.20
1	AA	1587	DT	P-O5'-C5'	6.78	130.17	120.00
1	AA	3112	DC	P-O5'-C5'	6.77	130.15	120.00
1	AA	4915	DT	P-O3'-C3'	6.77	130.35	120.20
42	Ap	45	DC	P-O5'-C5'	6.76	130.14	120.00
165	Co	1	DT	P-O3'-C3'	6.75	130.33	120.20
1	AA	1589	DC	P-O3'-C3'	6.73	130.30	120.20
15	AO	24	DC	P-O5'-C5'	6.73	130.10	120.00
27	Aa	9	DA	P-O3'-C3'	6.72	130.28	120.20
1	AA	4870	DT	P-O3'-C3'	6.70	130.25	120.20
25	AY	23	DG	P-O3'-C3'	6.68	130.23	120.20
22	AV	35	DG	P-O3'-C3'	6.68	130.22	120.20
1	AA	2816	DG	P-O3'-C3'	6.68	130.22	120.20
188	DB	39	DT	P-O3'-C3'	6.67	130.21	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	593	DG	P-O5'-C5'	6.67	130.00	120.00
104	Bp	9	DT	P-O3'-C3'	6.66	130.19	120.20
128	CD	20	DC	P-O3'-C3'	6.66	130.19	120.20
84	BV	23	DC	P-O3'-C3'	6.65	130.17	120.20
1	AA	7077	DC	P-O5'-C5'	6.64	129.96	120.00
1	AA	5581	DT	P-O3'-C3'	6.60	130.11	120.20
1	AA	2308	DG	P-O5'-C5'	6.60	129.90	120.00
1	AA	1493	DC	P-O3'-C3'	6.58	130.07	120.20
1	AA	6717	DA	P-O3'-C3'	6.58	130.07	120.20
1	AA	267	DG	P-O3'-C3'	6.58	130.06	120.20
1	AA	2905	DC	P-O5'-C5'	6.57	129.86	120.00
131	CG	29	DC	P-O5'-C5'	6.57	129.86	120.00
95	Bg	16	DC	P-O3'-C3'	6.57	130.05	120.20
1	AA	1585	DC	P-O5'-C5'	6.56	129.84	120.00
150	CZ	20	DG	P-O5'-C5'	6.54	129.81	120.00
38	Al	38	DC	P-O3'-C3'	6.53	130.00	120.20
45	As	7	DA	P-O3'-C3'	6.53	129.99	120.20
125	CA	23	DC	P-O5'-C5'	6.52	129.79	120.00
1	AA	1621	DT	P-O3'-C3'	6.51	129.97	120.20
1	AA	7811	DC	P-O3'-C3'	6.51	129.97	120.20
11	AK	21	DC	P-O3'-C3'	6.51	129.97	120.20
163	Cm	30	DC	P-O3'-C3'	6.51	129.96	120.20
144	CT	27	DC	P-O5'-C5'	6.49	129.73	120.00
1	AA	1848	DA	P-O3'-C3'	6.48	129.92	120.20
61	A8	37	DT	P-O3'-C3'	6.47	129.91	120.20
1	AA	971	DC	P-O3'-C3'	6.46	129.89	120.20
1	AA	1267	DC	P-O5'-C5'	6.46	129.69	120.00
1	AA	6696	DC	P-O5'-C5'	6.41	129.62	120.00
95	Bg	36	DT	P-O3'-C3'	6.39	129.78	120.20
1	AA	2336	DT	P-O3'-C3'	6.38	129.77	120.20
1	AA	3761	DA	P-O3'-C3'	6.38	129.77	120.20
160	Cj	21	DC	P-O5'-C5'	6.38	129.56	120.00
1	AA	5278	DG	P-O3'-C3'	6.36	129.74	120.20
1	AA	5021	DT	P-O3'-C3'	6.34	129.71	120.20
131	CG	5	DG	P-O3'-C3'	6.33	129.70	120.20
157	Cg	28	DC	P-O5'-C5'	6.31	129.46	120.00
1	AA	6244	DG	P-O3'-C3'	6.30	129.65	120.20
1	AA	5224	DC	P-O5'-C5'	6.30	129.45	120.00
1	AA	7633	DC	P-O5'-C5'	6.30	129.45	120.00
1	AA	3920	DT	P-O3'-C3'	6.27	129.61	120.20
139	CO	15	DC	P-O3'-C3'	6.27	129.60	120.20
38	Al	46	DA	P-O3'-C3'	6.25	129.58	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	4376	DA	P-O5'-C5'	6.24	129.36	120.00
166	Cp	11	DC	P-O3'-C3'	6.23	129.54	120.20
1	AA	1646	DC	P-O3'-C3'	6.22	129.53	120.20
166	Cp	24	DA	P-O3'-C3'	6.21	129.52	120.20
1	AA	3866	DT	P-O3'-C3'	6.21	129.52	120.20
92	Bd	1	DA	P-O3'-C3'	6.21	129.51	120.20
141	CQ	14	DT	P-O3'-C3'	6.17	129.46	120.20
1	AA	7000	DT	P-O3'-C3'	6.17	129.45	120.20
1	AA	6087	DC	P-O5'-C5'	6.16	129.25	120.00
93	Be	35	DC	P-O5'-C5'	6.16	129.24	120.00
159	Ci	18	DT	P-O3'-C3'	6.16	129.44	120.20
12	AL	25	DC	P-O3'-C3'	6.16	129.43	120.20
1	AA	4052	DG	P-O5'-C5'	6.15	129.23	120.00
1	AA	2335	DC	C2-N1-C1'	6.15	128.92	119.70
1	AA	5934	DC	P-O5'-C5'	6.14	129.21	120.00
22	AV	43	DG	P-O3'-C3'	6.13	129.40	120.20
1	AA	2363	DC	P-O5'-C5'	6.12	129.19	120.00
104	Bp	38	DA	O4'-C1'-N9	6.12	117.58	108.40
42	Ap	18	DT	P-O3'-C3'	6.10	129.35	120.20
1	AA	7127	DG	P-O3'-C3'	6.10	129.35	120.20
1	AA	2269	DC	P-O5'-C5'	6.09	129.13	120.00
1	AA	6721	DT	P-O3'-C3'	6.09	129.33	120.20
83	BU	1	DC	P-O3'-C3'	6.08	129.32	120.20
191	DE	29	DC	P-O5'-C5'	6.07	129.11	120.00
125	CA	18	DA	P-O3'-C3'	6.07	129.30	120.20
1	AA	1619	DA	P-O3'-C3'	6.06	129.29	120.20
182	C5	22	DA	P-O3'-C3'	6.05	129.28	120.20
1	AA	1696	DC	P-O5'-C5'	6.05	129.07	120.00
1	AA	2786	DC	P-O5'-C5'	6.04	129.06	120.00
6	AF	40	DT	P-O3'-C3'	6.04	129.26	120.20
1	AA	2639	DT	P-O3'-C3'	6.03	129.25	120.20
33	Ag	4	DT	P-O3'-C3'	6.03	129.24	120.20
1	AA	7078	DC	P-O5'-C5'	6.03	129.04	120.00
64	BB	22	DC	P-O3'-C3'	6.03	129.24	120.20
172	Cv	8	DC	P-O5'-C5'	6.02	129.03	120.00
61	A8	49	DT	O4'-C1'-C2'	-6.01	97.38	106.40
1	AA	8010	DC	P-O3'-C3'	6.01	129.21	120.20
1	AA	7284	DT	P-O3'-C3'	6.00	129.19	120.20
1	AA	3213	DC	C2-N1-C1'	5.97	128.65	119.70
1	AA	1924	DT	P-O3'-C3'	5.96	129.14	120.20
1	AA	7701	DC	P-O5'-C5'	5.96	128.93	120.00
4	AD	39	DC	P-O5'-C5'	5.96	128.93	120.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	3790	DG	P-O3'-C3'	5.95	129.12	120.20
1	AA	4176	DC	P-O5'-C5'	5.95	128.92	120.00
1	AA	1943	DA	P-O3'-C3'	5.94	129.12	120.20
97	Bi	30	DT	P-O3'-C3'	5.94	129.11	120.20
1	AA	1186	DG	P-O3'-C3'	5.94	129.10	120.20
1	AA	3172	DA	P-O3'-C3'	5.93	129.09	120.20
45	As	22	DG	P-O3'-C3'	5.93	129.09	120.20
100	Bl	10	DC	P-O5'-C5'	5.92	128.88	120.00
1	AA	3651	DC	P-O3'-C3'	5.91	129.06	120.20
1	AA	3396	DC	O4'-C1'-C2'	-5.90	97.55	106.40
1	AA	7797	DC	P-O5'-C5'	5.90	128.85	120.00
35	Ai	11	DC	P-O3'-C3'	5.89	129.03	120.20
61	A8	32	DT	O4'-C1'-C2'	-5.89	97.56	106.40
160	Cj	28	DC	P-O5'-C5'	5.88	128.82	120.00
78	BP	34	DT	P-O5'-C5'	5.87	128.80	120.00
1	AA	6903	DC	P-O5'-C5'	5.85	128.78	120.00
111	Bw	18	DT	P-O3'-C3'	5.84	128.95	120.20
1	AA	1409	DC	O4'-C1'-C2'	-5.83	97.65	106.40
1	AA	61	DT	P-O3'-C3'	5.83	128.94	120.20
1	AA	4046	DC	P-O3'-C3'	5.82	128.94	120.20
84	BV	7	DC	P-O3'-C3'	5.82	128.93	120.20
1	AA	4752	DC	P-O3'-C3'	5.82	128.93	120.20
1	AA	6781	DC	P-O3'-C3'	5.82	128.93	120.20
86	BX	17	DC	P-O5'-C5'	5.80	128.70	120.00
1	AA	1303	DT	P-O3'-C3'	5.79	128.89	120.20
1	AA	779	DT	P-O3'-C3'	5.79	128.88	120.20
124	B9	22	DA	P-O3'-C3'	5.78	128.87	120.20
15	AO	43	DA	P-O3'-C3'	5.77	128.86	120.20
1	AA	3213	DC	C6-N1-C1'	-5.77	111.05	119.70
1	AA	328	DG	P-O3'-C3'	5.76	128.84	120.20
1	AA	1319	DT	P-O3'-C3'	5.76	128.84	120.20
2	AB	19	DG	P-O3'-C3'	5.76	128.84	120.20
73	BK	10	DA	P-O3'-C3'	5.75	128.83	120.20
1	AA	2335	DC	C6-N1-C1'	-5.75	111.07	119.70
166	Cp	33	DT	P-O5'-C5'	5.75	128.63	120.00
12	AL	50	DG	P-O3'-C3'	5.75	128.82	120.20
1	AA	2186	DT	P-O3'-C3'	5.75	128.82	120.20
45	As	29	DG	P-O5'-C5'	5.75	128.62	120.00
142	CR	37	DA	P-O3'-C3'	5.74	128.81	120.20
1	AA	285	DG	P-O3'-C3'	5.74	128.80	120.20
1	AA	3412	DT	P-O5'-C5'	5.72	128.58	120.00
1	AA	979	DC	P-O5'-C5'	5.72	128.58	120.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	AE	25	DA	P-O3'-C3'	5.72	128.78	120.20
1	AA	1955	DA	P-O3'-C3'	5.71	128.77	120.20
1	AA	5096	DG	P-O3'-C3'	5.71	128.77	120.20
1	AA	4599	DC	P-O5'-C5'	5.71	128.56	120.00
1	AA	7937	DC	P-O5'-C5'	5.70	128.56	120.00
87	BY	9	DT	P-O5'-C5'	5.70	128.55	120.00
1	AA	4984	DC	P-O5'-C5'	5.70	128.54	120.00
7	AG	12	DC	P-O3'-C3'	5.70	128.74	120.20
1	AA	2095	DC	P-O3'-C3'	5.69	128.74	120.20
1	AA	759	DA	P-O3'-C3'	5.68	128.73	120.20
1	AA	3800	DG	P-O3'-C3'	5.67	128.71	120.20
109	Bu	25	DG	P-O3'-C3'	5.67	128.70	120.20
1	AA	6810	DC	P-O5'-C5'	5.66	128.49	120.00
47	Au	27	DC	P-O5'-C5'	5.66	128.49	120.00
156	Cf	30	DC	P-O3'-C3'	5.65	128.67	120.20
176	Cz	51	DT	P-O3'-C3'	5.65	128.67	120.20
72	BJ	25	DA	P-O3'-C3'	5.64	128.66	120.20
1	AA	4701	DG	P-O3'-C3'	5.63	128.65	120.20
46	At	38	DC	P-O5'-C5'	5.63	128.45	120.00
47	Au	6	DA	P-O3'-C3'	5.63	128.65	120.20
69	BG	26	DG	P-O3'-C3'	5.63	128.65	120.20
1	AA	5698	DA	P-O3'-C3'	5.63	128.64	120.20
77	BO	14	DC	P-O5'-C5'	5.62	128.44	120.00
137	CM	13	DA	P-O5'-C5'	5.61	128.41	120.00
1	AA	5867	DC	O4'-C1'-C2'	-5.60	98.00	106.40
1	AA	6642	DC	P-O5'-C5'	5.59	128.39	120.00
1	AA	1605	DC	P-O3'-C3'	5.59	128.59	120.20
1	AA	7365	DC	P-O5'-C5'	5.58	128.37	120.00
1	AA	3390	DT	P-O3'-C3'	5.58	128.57	120.20
1	AA	7248	DC	P-O5'-C5'	5.58	128.36	120.00
1	AA	1680	DC	P-O5'-C5'	5.57	128.35	120.00
60	A7	1	DT	O4'-C1'-C2'	-5.56	98.06	106.40
34	Ah	10	DG	P-O3'-C3'	5.56	128.54	120.20
1	AA	2815	DA	P-O3'-C3'	5.55	128.52	120.20
1	AA	3147	DC	P-O5'-C5'	5.55	128.32	120.00
12	AL	16	DT	P-O3'-C3'	5.54	128.51	120.20
97	Bi	29	DT	P-O5'-C5'	5.54	128.31	120.00
1	AA	7492	DA	P-O3'-C3'	5.54	128.51	120.20
1	AA	2288	DT	C4'-C3'-O3'	5.53	118.30	110.00
1	AA	6539	DG	P-O3'-C3'	5.53	128.50	120.20
1	AA	7256	DC	P-O5'-C5'	5.53	128.29	120.00
167	Cq	6	DG	P-O3'-C3'	5.53	128.50	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
185	C8	5	DG	P-O5'-C5'	5.51	128.27	120.00
37	Ak	35	DC	P-O5'-C5'	5.51	128.26	120.00
179	C2	7	DT	O4'-C1'-C2'	-5.51	98.14	106.40
185	C8	17	DC	P-O3'-C3'	5.51	128.46	120.20
1	AA	3741	DG	P-O5'-C5'	5.51	128.26	120.00
1	AA	6357	DA	P-O3'-C3'	5.50	128.46	120.20
4	AD	35	DG	P-O3'-C3'	5.50	128.45	120.20
1	AA	1933	DT	P-O3'-C3'	5.50	128.44	120.20
1	AA	5162	DC	P-O5'-C5'	5.49	128.23	120.00
1	AA	2288	DT	P-O3'-C3'	5.49	128.43	120.20
1	AA	5708	DC	P-O5'-C5'	5.49	128.23	120.00
1	AA	3610	DC	O4'-C1'-C2'	-5.48	98.18	106.40
1	AA	5578	DC	P-O3'-C3'	5.48	128.42	120.20
73	BK	42	DC	P-O5'-C5'	5.48	128.22	120.00
1	AA	6529	DC	P-O5'-C5'	5.47	128.21	120.00
1	AA	1741	DG	P-O5'-C5'	5.46	128.19	120.00
1	AA	4664	DG	P-O3'-C3'	5.46	128.39	120.20
35	Ai	39	DG	P-O3'-C3'	5.45	128.38	120.20
155	Ce	25	DA	P-O3'-C3'	5.45	128.38	120.20
184	C7	3	DC	P-O5'-C5'	5.45	128.18	120.00
1	AA	6844	DA	P-O3'-C3'	5.44	128.36	120.20
1	AA	7749	DC	P-O5'-C5'	5.44	128.16	120.00
1	AA	5416	DC	P-O3'-C3'	5.44	128.36	120.20
92	Bd	40	DA	C4-N9-C1'	5.44	135.20	127.05
1	AA	5868	DG	O4'-C4'-C3'	-5.43	97.25	105.40
1	AA	7023	DA	O4'-C4'-C3'	-5.42	97.27	105.40
1	AA	1124	DG	P-O3'-C3'	5.41	128.32	120.20
1	AA	6457	DA	P-O3'-C3'	5.41	128.32	120.20
1	AA	807	DG	P-O3'-C3'	5.39	128.29	120.20
1	AA	1102	DC	P-O5'-C5'	5.39	128.08	120.00
152	Cb	41	DT	P-O5'-C5'	5.39	128.08	120.00
66	BD	44	DA	P-O5'-C5'	5.38	128.07	120.00
1	AA	807	DG	P-O5'-C5'	5.38	128.07	120.00
162	Cl	9	DC	P-O3'-C3'	5.38	128.27	120.20
1	AA	1630	DC	P-O5'-C5'	5.38	128.06	120.00
43	Aq	29	DC	P-O5'-C5'	5.38	128.06	120.00
183	C6	22	DC	P-O5'-C5'	5.38	128.06	120.00
108	Bt	22	DG	P-O3'-C3'	5.37	128.26	120.20
1	AA	650	DC	P-O5'-C5'	5.37	128.06	120.00
12	AL	18	DT	P-O5'-C5'	5.37	128.06	120.00
1	AA	2585	DC	P-O5'-C5'	5.37	128.05	120.00
153	Cc	6	DG	C1'-O4'-C4'	-5.35	101.67	109.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	949	DT	O4'-C1'-C2'	-5.35	98.38	106.40
1	AA	7521	DC	P-O5'-C5'	5.35	128.02	120.00
1	AA	4363	DC	P-O5'-C5'	5.34	128.02	120.00
1	AA	450	DG	P-O3'-C3'	5.34	128.20	120.20
1	AA	4510	DT	O4'-C1'-C2'	-5.33	98.40	106.40
1	AA	2748	DA	P-O3'-C3'	5.33	128.20	120.20
53	A0	21	DC	P-O3'-C3'	5.33	128.20	120.20
1	AA	6846	DG	P-O3'-C3'	5.33	128.19	120.20
86	BX	29	DC	P-O5'-C5'	5.32	127.98	120.00
103	Bo	44	DT	P-O5'-C5'	5.32	127.98	120.00
1	AA	789	DC	P-O5'-C5'	5.32	127.98	120.00
1	AA	7043	DT	P-O5'-C5'	5.32	127.98	120.00
1	AA	1268	DT	P-O5'-C5'	5.32	127.97	120.00
91	Bc	39	DG	P-O3'-C3'	5.31	128.17	120.20
124	B9	30	DC	P-O5'-C5'	5.31	127.97	120.00
187	DA	24	DT	P-O3'-C3'	5.31	128.17	120.20
1	AA	5379	DA	P-O3'-C3'	5.31	128.17	120.20
1	AA	1998	DG	P-O5'-C5'	5.31	127.96	120.00
1	AA	6735	DG	C1'-O4'-C4'	-5.31	101.74	109.70
1	AA	4004	DA	P-O3'-C3'	5.31	128.16	120.20
1	AA	7725	DT	P-O5'-C5'	5.31	127.96	120.00
1	AA	2311	DT	P-O5'-C5'	5.31	127.96	120.00
1	AA	1457	DG	O4'-C1'-C2'	-5.30	98.44	106.40
1	AA	6811	DC	P-O5'-C5'	5.30	127.95	120.00
1	AA	7778	DG	O4'-C1'-C2'	-5.30	98.45	106.40
1	AA	3955	DT	P-O5'-C5'	5.30	127.95	120.00
1	AA	4928	DA	P-O3'-C3'	5.30	128.15	120.20
1	AA	6746	DA	P-O5'-C5'	5.30	127.94	120.00
124	B9	23	DT	P-O3'-C3'	5.30	128.14	120.20
1	AA	2291	DT	O4'-C1'-C2'	-5.29	98.46	106.40
1	AA	68	DC	P-O5'-C5'	5.29	127.94	120.00
175	Cy	43	DC	P-O5'-C5'	5.29	127.94	120.00
1	AA	5465	DC	P-O3'-C3'	5.29	128.14	120.20
1	AA	6504	DC	P-O3'-C3'	5.28	128.12	120.20
143	CS	25	DG	P-O3'-C3'	5.28	128.13	120.20
135	CK	39	DC	P-O3'-C3'	5.28	128.12	120.20
98	Bj	39	DT	P-O3'-C3'	5.27	128.11	120.20
78	BP	24	DA	P-O5'-C5'	5.27	127.91	120.00
188	DB	28	DG	P-O3'-C3'	5.27	128.11	120.20
55	A2	35	DA	P-O5'-C5'	5.27	127.91	120.00
1	AA	7935	DC	P-O3'-C3'	5.27	128.10	120.20
154	Cd	18	DG	O4'-C4'-C3'	-5.26	97.50	105.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
58	A5	1	DT	O4'-C4'-C3'	-5.26	97.51	105.40
1	AA	6879	DC	P-O5'-C5'	5.26	127.89	120.00
1	AA	836	DC	P-O5'-C5'	5.26	127.89	120.00
1	AA	2020	DT	P-O5'-C5'	5.25	127.88	120.00
1	AA	2425	DT	O4'-C1'-C2'	-5.25	98.52	106.40
1	AA	2430	DA	C1'-O4'-C4'	-5.25	101.82	109.70
1	AA	2114	DC	P-O3'-C3'	5.25	128.08	120.20
1	AA	2856	DG	P-O3'-C3'	5.25	128.08	120.20
1	AA	3834	DC	P-O5'-C5'	5.25	127.88	120.00
1	AA	5124	DC	P-O5'-C5'	5.25	127.88	120.00
1	AA	6251	DT	O4'-C1'-C2'	-5.25	98.52	106.40
104	Bp	19	DG	P-O5'-C5'	5.25	127.87	120.00
1	AA	7490	DT	P-O5'-C5'	5.25	127.87	120.00
1	AA	2136	DC	C4'-C3'-O3'	5.24	117.87	110.00
1	AA	7916	DT	P-O5'-C5'	5.24	127.86	120.00
61	A8	44	DC	P-O5'-C5'	5.24	127.86	120.00
74	BL	17	DT	O4'-C1'-C2'	-5.23	98.56	106.40
85	BW	3	DC	P-O5'-C5'	5.23	127.84	120.00
45	As	19	DG	P-O5'-C5'	5.23	127.84	120.00
121	B6	18	DT	P-O3'-C3'	5.23	128.04	120.20
1	AA	4332	DC	P-O5'-C5'	5.23	127.84	120.00
1	AA	533	DG	C1'-O4'-C4'	-5.22	101.86	109.70
1	AA	84	DC	P-O5'-C5'	5.22	127.83	120.00
1	AA	2260	DC	P-O5'-C5'	5.22	127.83	120.00
1	AA	5894	DC	P-O5'-C5'	5.22	127.83	120.00
1	AA	5474	DT	O4'-C4'-C3'	-5.22	97.57	105.40
167	Cq	8	DT	P-O3'-C3'	5.22	128.03	120.20
143	CS	35	DG	O4'-C1'-C2'	-5.21	98.58	106.40
1	AA	1477	DG	P-O3'-C3'	5.21	128.02	120.20
106	Br	17	DA	P-O3'-C3'	5.21	128.02	120.20
1	AA	1677	DG	C4'-C3'-O3'	5.21	117.82	110.00
1	AA	2292	DG	O4'-C1'-C2'	-5.21	98.58	106.40
1	AA	3389	DT	P-O3'-C3'	5.21	128.01	120.20
1	AA	4848	DG	O4'-C1'-C2'	-5.21	98.59	106.40
1	AA	1445	DC	P-O3'-C3'	5.20	128.01	120.20
1	AA	6769	DC	P-O5'-C5'	5.20	127.81	120.00
188	DB	34	DC	P-O5'-C5'	5.20	127.80	120.00
16	AP	10	DA	P-O3'-C3'	5.19	127.99	120.20
50	Ax	20	DC	P-O5'-C5'	5.19	127.79	120.00
136	CL	20	DG	P-O3'-C3'	5.19	127.98	120.20
1	AA	7213	DA	P-O3'-C3'	5.18	127.97	120.20
89	Ba	38	DA	C4'-C3'-O3'	5.18	117.78	110.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	3365	DC	P-O5'-C5'	5.18	127.77	120.00
1	AA	6365	DG	O4'-C1'-C2'	-5.18	98.63	106.40
1	AA	7058	DT	P-O5'-C5'	5.18	127.77	120.00
173	Cw	19	DC	P-O5'-C5'	5.18	127.77	120.00
127	CC	18	DA	P-O5'-C5'	5.17	127.76	120.00
1	AA	4798	DG	P-O5'-C5'	5.17	127.76	120.00
1	AA	6192	DC	P-O5'-C5'	5.17	127.76	120.00
96	Bh	8	DC	P-O5'-C5'	5.17	127.75	120.00
1	AA	3507	DG	P-O5'-C5'	5.17	127.75	120.00
1	AA	1311	DG	P-O5'-C5'	5.16	127.74	120.00
75	BM	9	DT	O4'-C1'-C2'	-5.16	98.66	106.40
1	AA	3456	DT	P-O3'-C3'	5.15	127.93	120.20
144	CT	24	DA	P-O3'-C3'	5.15	127.93	120.20
144	CT	1	DG	O4'-C4'-C3'	-5.15	97.68	105.40
1	AA	2918	DC	P-O5'-C5'	5.14	127.72	120.00
101	Bm	30	DT	P-O3'-C3'	5.14	127.91	120.20
1	AA	1298	DC	P-O5'-C5'	5.14	127.71	120.00
1	AA	6090	DC	P-O5'-C5'	5.14	127.71	120.00
5	AE	12	DC	P-O5'-C5'	5.14	127.71	120.00
22	AV	35	DG	C4'-C3'-O3'	5.13	117.70	110.00
1	AA	3753	DG	P-O3'-C3'	5.13	127.90	120.20
81	BS	32	DC	P-O5'-C5'	5.13	127.70	120.00
1	AA	6601	DC	P-O5'-C5'	5.13	127.70	120.00
69	BG	29	DG	P-O3'-C3'	5.13	127.90	120.20
158	Ch	2	DG	P-O3'-C3'	5.13	127.90	120.20
1	AA	2223	DT	P-O5'-C5'	5.13	127.69	120.00
1	AA	6196	DT	P-O3'-C3'	5.13	127.89	120.20
1	AA	7098	DC	O4'-C1'-C2'	-5.13	98.71	106.40
1	AA	7373	DT	P-O5'-C5'	5.13	127.69	120.00
3	AC	24	DA	C4'-C3'-O3'	5.13	117.69	110.00
40	An	3	DC	P-O5'-C5'	5.13	127.69	120.00
91	Bc	6	DT	P-O3'-C3'	5.12	127.89	120.20
146	CV	23	DC	P-O5'-C5'	5.12	127.69	120.00
185	C8	11	DC	P-O5'-C5'	5.12	127.68	120.00
1	AA	1418	DC	C4'-C3'-O3'	5.12	117.67	110.00
1	AA	4052	DG	P-O3'-C3'	5.12	127.87	120.20
1	AA	775	DC	P-O5'-C5'	5.11	127.67	120.00
104	Bp	38	DA	C1'-O4'-C4'	-5.11	102.03	109.70
1	AA	6018	DC	P-O5'-C5'	5.11	127.67	120.00
1	AA	6084	DG	O4'-C1'-C2'	-5.11	98.74	106.40
1	AA	6255	DC	P-O5'-C5'	5.11	127.66	120.00
1	AA	7958	DA	P-O3'-C3'	5.11	127.86	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AA	123	DG	P-O5'-C5'	5.10	127.66	120.00
41	Ao	34	DC	P-O5'-C5'	5.10	127.65	120.00
1	AA	7601	DT	P-O5'-C5'	5.10	127.65	120.00
91	Bc	17	DA	P-O3'-C3'	5.10	127.85	120.20
181	C4	13	DG	O4'-C4'-C3'	-5.09	97.76	105.40
1	AA	7919	DT	P-O3'-C3'	5.09	127.84	120.20
1	AA	5993	DG	C1'-O4'-C4'	-5.09	102.07	109.70
1	AA	6010	DT	P-O5'-C5'	5.09	127.63	120.00
1	AA	1279	DC	P-O5'-C5'	5.09	127.63	120.00
82	BT	37	DT	C4'-C3'-O3'	5.09	117.63	110.00
86	BX	7	DA	P-O5'-C5'	5.09	127.63	120.00
1	AA	1304	DA	P-O3'-C3'	5.08	127.82	120.20
1	AA	6581	DC	P-O5'-C5'	5.08	127.62	120.00
1	AA	7494	DA	P-O3'-C3'	5.08	127.82	120.20
1	AA	7786	DC	P-O5'-C5'	5.08	127.62	120.00
1	AA	397	DG	P-O5'-C5'	5.08	127.62	120.00
83	BU	31	DC	P-O5'-C5'	5.08	127.62	120.00
135	CK	15	DG	P-O3'-C3'	5.08	127.82	120.20
1	AA	1834	DC	P-O5'-C5'	5.08	127.61	120.00
1	AA	3884	DG	P-O3'-C3'	5.08	127.81	120.20
1	AA	468	DC	P-O3'-C3'	5.07	127.81	120.20
1	AA	2241	DT	P-O3'-C3'	-5.07	112.59	120.20
1	AA	4834	DC	P-O5'-C5'	5.07	127.61	120.00
93	Be	21	DC	P-O5'-C5'	5.07	127.61	120.00
143	CS	23	DC	P-O5'-C5'	5.07	127.60	120.00
1	AA	3456	DT	O4'-C4'-C3'	-5.06	97.81	105.40
18	AR	8	DG	P-O3'-C3'	5.06	127.79	120.20
143	CS	7	DC	P-O5'-C5'	5.06	127.59	120.00
1	AA	404	DA	O4'-C1'-C2'	-5.06	98.81	106.40
1	AA	5356	DC	P-O5'-C5'	5.06	127.59	120.00
20	AT	40	DG	O4'-C1'-C2'	-5.06	98.82	106.40
1	AA	522	DC	P-O3'-C3'	5.05	127.78	120.20
1	AA	5867	DC	C2-N1-C1'	5.05	127.28	119.70
133	CI	27	DC	P-O5'-C5'	5.05	127.57	120.00
135	CK	52	DT	P-O3'-C3'	5.05	127.77	120.20
98	Bj	31	DT	O4'-C1'-C2'	-5.05	98.83	106.40
1	AA	2334	DG	P-O3'-C3'	5.04	127.77	120.20
4	AD	29	DT	P-O3'-C3'	5.04	127.77	120.20
1	AA	5105	DG	P-O3'-C3'	5.04	127.76	120.20
17	AQ	37	DC	O4'-C1'-C2'	-5.04	98.85	106.40
1	AA	1679	DT	O4'-C1'-C2'	-5.03	98.85	106.40
29	Ac	13	DC	P-O5'-C5'	5.03	127.55	120.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
100	Bf	15	DA	P-O5'-C5'	5.03	127.55	120.00
188	DB	32	DT	P-O5'-C5'	5.03	127.55	120.00
162	Cl	38	DC	O4'-C1'-C2'	-5.03	98.86	106.40
99	Bk	23	DT	O4'-C4'-C3'	-5.02	97.87	105.40
1	AA	7082	DA	P-O3'-C3'	5.01	127.72	120.20
61	A8	32	DT	C1'-O4'-C4'	-5.01	102.18	109.70
91	Bc	44	DG	P-O3'-C3'	5.01	127.72	120.20
154	Cd	16	DC	C1'-O4'-C4'	-5.01	102.18	109.70
161	Ck	21	DC	P-O3'-C3'	5.01	127.72	120.20
1	AA	284	DC	P-O5'-C5'	5.01	127.51	120.00
159	Ci	28	DG	P-O5'-C5'	5.01	127.51	120.00
1	AA	5022	DG	C4'-C3'-C2'	-5.01	94.89	102.40
1	AA	3174	DT	O4'-C1'-C2'	-5.01	98.89	106.40
28	Ab	30	DC	P-O5'-C5'	5.00	127.51	120.00
1	AA	3373	DT	O4'-C1'-C2'	-5.00	98.89	106.40
139	CO	16	DC	P-O5'-C5'	5.00	127.50	120.00
104	Bp	5	DC	P-O5'-C5'	5.00	127.50	120.00

All (26) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	AA	1155	DG	C3'
1	AA	1417	DA	C3',C4'
1	AA	3394	DT	C3'
1	AA	3534	DA	C3',C4'
1	AA	3922	DA	C3',C4'
1	AA	5656	DG	C4'
1	AA	5657	DC	C4'
1	AA	5866	DT	C4'
1	AA	5867	DC	C4'
1	AA	6273	DA	C4'
1	AA	6318	DT	C4'
1	AA	6319	DT	C4'
1	AA	6714	DG	C4'
1	AA	6715	DT	C4'
1	AA	6759	DT	C4'
1	AA	6760	DT	C4'
1	AA	7381	DT	C4',C1'
1	AA	7382	DT	C4'
1	AA	7483	DT	C3',C4'
1	AA	7575	DA	C4'
1	AA	7801	DT	C3'

All (3449) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
53	A0	15	DT	Sidechain
53	A0	17	DC	Sidechain
53	A0	3	DA	Sidechain
53	A0	32	DG	Sidechain
53	A0	8	DG	Sidechain
54	A1	12	DT	Sidechain
54	A1	13	DT	Sidechain
54	A1	30	DC	Sidechain
54	A1	32	DG	Sidechain
54	A1	33	DT	Sidechain
54	A1	35	DC	Sidechain
54	A1	39	DA	Sidechain
54	A1	44	DA	Sidechain
54	A1	8	DT	Sidechain
55	A2	12	DC	Sidechain
55	A2	20	DA	Sidechain
55	A2	26	DT	Sidechain
55	A2	27	DA	Sidechain
55	A2	30	DT	Sidechain
55	A2	33	DA	Sidechain
55	A2	39	DA	Sidechain
55	A2	6	DT	Sidechain
56	A3	1	DC	Sidechain
56	A3	11	DG	Sidechain
56	A3	12	DG	Sidechain
56	A3	24	DA	Sidechain
56	A3	26	DT	Sidechain
56	A3	28	DT	Sidechain
57	A4	16	DC	Sidechain
57	A4	24	DA	Sidechain
57	A4	33	DG	Sidechain
57	A4	34	DT	Sidechain
57	A4	35	DC	Sidechain
57	A4	43	DT	Sidechain
57	A4	8	DG	Sidechain
58	A5	13	DA	Sidechain
58	A5	28	DT	Sidechain
58	A5	3	DT	Sidechain
58	A5	4	DT	Sidechain
58	A5	6	DT	Sidechain
59	A6	10	DG	Sidechain
59	A6	11	DA	Sidechain

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Mol	Chain	Res	Type	Group
59	A6	17	DG	Sidechain
59	A6	19	DT	Sidechain
59	A6	25	DT	Sidechain
59	A6	28	DT	Sidechain
59	A6	40	DA	Sidechain
59	A6	41	DC	Sidechain
59	A6	9	DT	Sidechain
60	A7	11	DT	Sidechain
60	A7	15	DT	Sidechain
60	A7	24	DA	Sidechain
60	A7	29	DG	Sidechain
60	A7	30	DT	Sidechain
60	A7	32	DT	Sidechain
60	A7	35	DT	Sidechain
60	A7	40	DT	Sidechain
60	A7	41	DA	Sidechain
60	A7	47	DA	Sidechain
61	A8	15	DT	Sidechain
61	A8	22	DT	Sidechain
61	A8	26	DG	Sidechain
61	A8	27	DG	Sidechain
61	A8	30	DT	Sidechain
61	A8	32	DT	Sidechain
61	A8	33	DT	Sidechain
61	A8	35	DT	Sidechain
61	A8	5	DA	Sidechain
61	A8	52	DT	Sidechain
61	A8	55	DA	Sidechain
62	A9	17	DC	Sidechain
62	A9	18	DC	Sidechain
62	A9	32	DT	Sidechain
62	A9	36	DA	Sidechain
62	A9	38	DG	Sidechain
62	A9	7	DA	Sidechain
62	A9	9	DA	Sidechain
1	AA	1	DT	Sidechain
1	AA	10	DG	Sidechain
1	AA	1001	DC	Sidechain
1	AA	101	DC	Sidechain
1	AA	1011	DG	Sidechain
1	AA	1012	DA	Sidechain
1	AA	1017	DC	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	1018	DT	Sidechain
1	AA	1022	DG	Sidechain
1	AA	1028	DG	Sidechain
1	AA	1029	DG	Sidechain
1	AA	1034	DC	Sidechain
1	AA	1039	DA	Sidechain
1	AA	1041	DG	Sidechain
1	AA	1042	DA	Sidechain
1	AA	1053	DC	Sidechain
1	AA	1055	DG	Sidechain
1	AA	1062	DT	Sidechain
1	AA	1063	DT	Sidechain
1	AA	1065	DG	Sidechain
1	AA	1070	DA	Sidechain
1	AA	108	DT	Sidechain
1	AA	1091	DA	Sidechain
1	AA	1099	DC	Sidechain
1	AA	1107	DC	Sidechain
1	AA	1112	DG	Sidechain
1	AA	1114	DC	Sidechain
1	AA	1117	DC	Sidechain
1	AA	1120	DG	Sidechain
1	AA	1121	DT	Sidechain
1	AA	1122	DG	Sidechain
1	AA	1124	DG	Sidechain
1	AA	1126	DC	Sidechain
1	AA	1129	DT	Sidechain
1	AA	1130	DT	Sidechain
1	AA	1139	DA	Sidechain
1	AA	1152	DG	Sidechain
1	AA	1155	DG	Sidechain
1	AA	1161	DA	Sidechain
1	AA	117	DG	Sidechain
1	AA	1174	DC	Sidechain
1	AA	1182	DA	Sidechain
1	AA	1186	DG	Sidechain
1	AA	1194	DA	Sidechain
1	AA	1202	DT	Sidechain
1	AA	1207	DC	Sidechain
1	AA	1209	DG	Sidechain
1	AA	121	DT	Sidechain
1	AA	1216	DC	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	1217	DT	Sidechain
1	AA	1218	DG	Sidechain
1	AA	1222	DC	Sidechain
1	AA	1223	DT	Sidechain
1	AA	1227	DT	Sidechain
1	AA	123	DG	Sidechain
1	AA	124	DC	Sidechain
1	AA	1245	DC	Sidechain
1	AA	1246	DT	Sidechain
1	AA	1254	DG	Sidechain
1	AA	1256	DA	Sidechain
1	AA	1260	DA	Sidechain
1	AA	1261	DG	Sidechain
1	AA	1262	DT	Sidechain
1	AA	1263	DC	Sidechain
1	AA	1272	DA	Sidechain
1	AA	1279	DC	Sidechain
1	AA	1280	DC	Sidechain
1	AA	1285	DC	Sidechain
1	AA	1288	DG	Sidechain
1	AA	1332	DT	Sidechain
1	AA	1334	DT	Sidechain
1	AA	1341	DC	Sidechain
1	AA	1349	DG	Sidechain
1	AA	135	DA	Sidechain
1	AA	1356	DC	Sidechain
1	AA	1357	DT	Sidechain
1	AA	1358	DC	Sidechain
1	AA	1364	DG	Sidechain
1	AA	1368	DG	Sidechain
1	AA	1372	DC	Sidechain
1	AA	1378	DG	Sidechain
1	AA	1384	DT	Sidechain
1	AA	1389	DA	Sidechain
1	AA	14	DT	Sidechain
1	AA	1410	DT	Sidechain
1	AA	1415	DT	Sidechain
1	AA	1417	DA	Sidechain
1	AA	1424	DT	Sidechain
1	AA	1428	DT	Sidechain
1	AA	1434	DT	Sidechain
1	AA	1437	DA	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	144	DA	Sidechain
1	AA	1441	DC	Sidechain
1	AA	1443	DT	Sidechain
1	AA	1444	DC	Sidechain
1	AA	1446	DC	Sidechain
1	AA	1448	DC	Sidechain
1	AA	1455	DC	Sidechain
1	AA	146	DA	Sidechain
1	AA	1461	DG	Sidechain
1	AA	1467	DT	Sidechain
1	AA	1469	DG	Sidechain
1	AA	1471	DG	Sidechain
1	AA	1472	DA	Sidechain
1	AA	1474	DG	Sidechain
1	AA	1478	DC	Sidechain
1	AA	1481	DG	Sidechain
1	AA	1483	DA	Sidechain
1	AA	1494	DT	Sidechain
1	AA	1495	DT	Sidechain
1	AA	1503	DG	Sidechain
1	AA	1507	DC	Sidechain
1	AA	151	DA	Sidechain
1	AA	1532	DT	Sidechain
1	AA	1536	DC	Sidechain
1	AA	1538	DG	Sidechain
1	AA	1541	DT	Sidechain
1	AA	1542	DT	Sidechain
1	AA	1551	DA	Sidechain
1	AA	1553	DA	Sidechain
1	AA	1555	DG	Sidechain
1	AA	1556	DC	Sidechain
1	AA	1561	DC	Sidechain
1	AA	1564	DG	Sidechain
1	AA	1567	DA	Sidechain
1	AA	1568	DG	Sidechain
1	AA	157	DG	Sidechain
1	AA	1570	DT	Sidechain
1	AA	1573	DC	Sidechain
1	AA	1577	DA	Sidechain
1	AA	1579	DT	Sidechain
1	AA	158	DC	Sidechain
1	AA	1587	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	1588	DC	Sidechain
1	AA	1593	DG	Sidechain
1	AA	1594	DG	Sidechain
1	AA	1598	DA	Sidechain
1	AA	1599	DT	Sidechain
1	AA	160	DT	Sidechain
1	AA	1600	DA	Sidechain
1	AA	1602	DT	Sidechain
1	AA	1604	DT	Sidechain
1	AA	1613	DC	Sidechain
1	AA	1620	DC	Sidechain
1	AA	1621	DT	Sidechain
1	AA	1622	DG	Sidechain
1	AA	1623	DG	Sidechain
1	AA	1624	DC	Sidechain
1	AA	1629	DG	Sidechain
1	AA	1631	DA	Sidechain
1	AA	1632	DC	Sidechain
1	AA	1634	DG	Sidechain
1	AA	1635	DT	Sidechain
1	AA	1644	DG	Sidechain
1	AA	1653	DC	Sidechain
1	AA	1656	DC	Sidechain
1	AA	1659	DC	Sidechain
1	AA	1665	DC	Sidechain
1	AA	1670	DC	Sidechain
1	AA	1671	DC	Sidechain
1	AA	1677	DG	Sidechain
1	AA	1681	DA	Sidechain
1	AA	1692	DT	Sidechain
1	AA	170	DA	Sidechain
1	AA	1700	DC	Sidechain
1	AA	1704	DG	Sidechain
1	AA	1705	DA	Sidechain
1	AA	1713	DG	Sidechain
1	AA	1714	DG	Sidechain
1	AA	1715	DG	Sidechain
1	AA	1717	DT	Sidechain
1	AA	1718	DG	Sidechain
1	AA	172	DC	Sidechain
1	AA	1723	DT	Sidechain
1	AA	1726	DC	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	1734	DT	Sidechain
1	AA	1736	DA	Sidechain
1	AA	1741	DG	Sidechain
1	AA	1742	DA	Sidechain
1	AA	1749	DC	Sidechain
1	AA	175	DG	Sidechain
1	AA	1751	DG	Sidechain
1	AA	1753	DC	Sidechain
1	AA	1760	DA	Sidechain
1	AA	1785	DT	Sidechain
1	AA	1790	DT	Sidechain
1	AA	1791	DT	Sidechain
1	AA	1794	DT	Sidechain
1	AA	1797	DT	Sidechain
1	AA	1798	DG	Sidechain
1	AA	18	DC	Sidechain
1	AA	1805	DA	Sidechain
1	AA	1808	DT	Sidechain
1	AA	1810	DA	Sidechain
1	AA	1811	DG	Sidechain
1	AA	1815	DA	Sidechain
1	AA	1818	DT	Sidechain
1	AA	1820	DA	Sidechain
1	AA	1826	DA	Sidechain
1	AA	1828	DT	Sidechain
1	AA	1832	DT	Sidechain
1	AA	1833	DG	Sidechain
1	AA	1834	DC	Sidechain
1	AA	1841	DT	Sidechain
1	AA	1848	DA	Sidechain
1	AA	185	DC	Sidechain
1	AA	1854	DA	Sidechain
1	AA	1862	DA	Sidechain
1	AA	1869	DA	Sidechain
1	AA	1870	DT	Sidechain
1	AA	1877	DT	Sidechain
1	AA	1879	DA	Sidechain
1	AA	1883	DA	Sidechain
1	AA	1884	DA	Sidechain
1	AA	1886	DC	Sidechain
1	AA	1887	DT	Sidechain
1	AA	1889	DC	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	189	DC	Sidechain
1	AA	1893	DT	Sidechain
1	AA	1905	DT	Sidechain
1	AA	1908	DT	Sidechain
1	AA	1912	DT	Sidechain
1	AA	1914	DT	Sidechain
1	AA	1917	DA	Sidechain
1	AA	1920	DG	Sidechain
1	AA	1922	DG	Sidechain
1	AA	1923	DG	Sidechain
1	AA	1924	DT	Sidechain
1	AA	1928	DT	Sidechain
1	AA	1932	DA	Sidechain
1	AA	1934	DT	Sidechain
1	AA	1936	DA	Sidechain
1	AA	1937	DC	Sidechain
1	AA	1947	DT	Sidechain
1	AA	1951	DG	Sidechain
1	AA	1952	DA	Sidechain
1	AA	1955	DA	Sidechain
1	AA	1956	DC	Sidechain
1	AA	196	DT	Sidechain
1	AA	1961	DC	Sidechain
1	AA	1963	DT	Sidechain
1	AA	1964	DC	Sidechain
1	AA	1966	DA	Sidechain
1	AA	1967	DT	Sidechain
1	AA	1968	DT	Sidechain
1	AA	1970	DT	Sidechain
1	AA	1975	DT	Sidechain
1	AA	198	DT	Sidechain
1	AA	1981	DC	Sidechain
1	AA	1986	DC	Sidechain
1	AA	1992	DG	Sidechain
1	AA	1998	DG	Sidechain
1	AA	1999	DA	Sidechain
1	AA	2001	DC	Sidechain
1	AA	2018	DT	Sidechain
1	AA	2019	DC	Sidechain
1	AA	2020	DT	Sidechain
1	AA	2030	DA	Sidechain
1	AA	2032	DC	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	2040	DT	Sidechain
1	AA	205	DG	Sidechain
1	AA	2052	DT	Sidechain
1	AA	2053	DT	Sidechain
1	AA	2055	DT	Sidechain
1	AA	2059	DC	Sidechain
1	AA	2064	DA	Sidechain
1	AA	2066	DG	Sidechain
1	AA	2080	DT	Sidechain
1	AA	2082	DG	Sidechain
1	AA	2083	DA	Sidechain
1	AA	2090	DT	Sidechain
1	AA	2093	DG	Sidechain
1	AA	21	DT	Sidechain
1	AA	2101	DC	Sidechain
1	AA	2106	DC	Sidechain
1	AA	2108	DT	Sidechain
1	AA	2115	DC	Sidechain
1	AA	2116	DC	Sidechain
1	AA	2117	DT	Sidechain
1	AA	2118	DT	Sidechain
1	AA	2124	DT	Sidechain
1	AA	2127	DT	Sidechain
1	AA	2129	DA	Sidechain
1	AA	213	DG	Sidechain
1	AA	2132	DT	Sidechain
1	AA	2133	DA	Sidechain
1	AA	2135	DA	Sidechain
1	AA	2137	DA	Sidechain
1	AA	2141	DC	Sidechain
1	AA	2145	DG	Sidechain
1	AA	2152	DC	Sidechain
1	AA	2168	DG	Sidechain
1	AA	2170	DG	Sidechain
1	AA	2173	DC	Sidechain
1	AA	2180	DT	Sidechain
1	AA	2181	DT	Sidechain
1	AA	2186	DT	Sidechain
1	AA	220	DG	Sidechain
1	AA	2207	DT	Sidechain
1	AA	2208	DT	Sidechain
1	AA	2221	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	2224	DT	Sidechain
1	AA	2242	DT	Sidechain
1	AA	2244	DG	Sidechain
1	AA	2250	DA	Sidechain
1	AA	2253	DG	Sidechain
1	AA	2266	DG	Sidechain
1	AA	227	DG	Sidechain
1	AA	2274	DG	Sidechain
1	AA	2280	DT	Sidechain
1	AA	2289	DT	Sidechain
1	AA	2291	DT	Sidechain
1	AA	2292	DG	Sidechain
1	AA	2297	DT	Sidechain
1	AA	2302	DT	Sidechain
1	AA	2304	DC	Sidechain
1	AA	2308	DG	Sidechain
1	AA	2309	DC	Sidechain
1	AA	2311	DT	Sidechain
1	AA	2312	DG	Sidechain
1	AA	2313	DT	Sidechain
1	AA	2322	DT	Sidechain
1	AA	2327	DT	Sidechain
1	AA	2332	DA	Sidechain
1	AA	2334	DG	Sidechain
1	AA	2344	DT	Sidechain
1	AA	2351	DA	Sidechain
1	AA	2356	DA	Sidechain
1	AA	2364	DT	Sidechain
1	AA	2365	DT	Sidechain
1	AA	2366	DT	Sidechain
1	AA	2370	DG	Sidechain
1	AA	2372	DT	Sidechain
1	AA	2378	DC	Sidechain
1	AA	2383	DA	Sidechain
1	AA	2395	DC	Sidechain
1	AA	2397	DA	Sidechain
1	AA	2400	DC	Sidechain
1	AA	2402	DG	Sidechain
1	AA	2405	DT	Sidechain
1	AA	2407	DT	Sidechain
1	AA	2408	DT	Sidechain
1	AA	2415	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	2418	DC	Sidechain
1	AA	2419	DG	Sidechain
1	AA	242	DA	Sidechain
1	AA	2420	DA	Sidechain
1	AA	2422	DA	Sidechain
1	AA	2423	DT	Sidechain
1	AA	2424	DG	Sidechain
1	AA	2434	DG	Sidechain
1	AA	2436	DC	Sidechain
1	AA	2445	DT	Sidechain
1	AA	2453	DT	Sidechain
1	AA	2454	DT	Sidechain
1	AA	2460	DA	Sidechain
1	AA	2462	DT	Sidechain
1	AA	2471	DA	Sidechain
1	AA	2473	DC	Sidechain
1	AA	2474	DT	Sidechain
1	AA	2475	DG	Sidechain
1	AA	2482	DG	Sidechain
1	AA	2491	DC	Sidechain
1	AA	2498	DA	Sidechain
1	AA	2505	DA	Sidechain
1	AA	2510	DA	Sidechain
1	AA	2511	DG	Sidechain
1	AA	2517	DT	Sidechain
1	AA	2519	DT	Sidechain
1	AA	2527	DA	Sidechain
1	AA	2528	DT	Sidechain
1	AA	2529	DG	Sidechain
1	AA	253	DG	Sidechain
1	AA	2532	DG	Sidechain
1	AA	254	DA	Sidechain
1	AA	2549	DT	Sidechain
1	AA	2554	DA	Sidechain
1	AA	2561	DC	Sidechain
1	AA	2562	DT	Sidechain
1	AA	2567	DG	Sidechain
1	AA	257	DA	Sidechain
1	AA	2570	DA	Sidechain
1	AA	2572	DC	Sidechain
1	AA	2575	DC	Sidechain
1	AA	2581	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	2584	DC	Sidechain
1	AA	2585	DC	Sidechain
1	AA	2589	DT	Sidechain
1	AA	2591	DT	Sidechain
1	AA	2613	DC	Sidechain
1	AA	2616	DT	Sidechain
1	AA	2631	DT	Sidechain
1	AA	2632	DT	Sidechain
1	AA	2634	DG	Sidechain
1	AA	2635	DA	Sidechain
1	AA	2636	DG	Sidechain
1	AA	2644	DC	Sidechain
1	AA	2649	DC	Sidechain
1	AA	2651	DG	Sidechain
1	AA	2653	DT	Sidechain
1	AA	2659	DT	Sidechain
1	AA	266	DG	Sidechain
1	AA	2660	DT	Sidechain
1	AA	2662	DA	Sidechain
1	AA	2665	DC	Sidechain
1	AA	2671	DT	Sidechain
1	AA	2675	DA	Sidechain
1	AA	2677	DC	Sidechain
1	AA	2679	DC	Sidechain
1	AA	2680	DG	Sidechain
1	AA	2681	DA	Sidechain
1	AA	2684	DT	Sidechain
1	AA	2688	DA	Sidechain
1	AA	269	DG	Sidechain
1	AA	2693	DT	Sidechain
1	AA	2698	DG	Sidechain
1	AA	2699	DG	Sidechain
1	AA	2701	DT	Sidechain
1	AA	2705	DT	Sidechain
1	AA	2707	DT	Sidechain
1	AA	2712	DC	Sidechain
1	AA	2716	DT	Sidechain
1	AA	2719	DA	Sidechain
1	AA	2727	DC	Sidechain
1	AA	2731	DT	Sidechain
1	AA	2733	DG	Sidechain
1	AA	2736	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	2738	DT	Sidechain
1	AA	2739	DG	Sidechain
1	AA	274	DA	Sidechain
1	AA	2741	DC	Sidechain
1	AA	2744	DT	Sidechain
1	AA	2747	DT	Sidechain
1	AA	2754	DG	Sidechain
1	AA	2755	DG	Sidechain
1	AA	276	DA	Sidechain
1	AA	2760	DG	Sidechain
1	AA	2763	DC	Sidechain
1	AA	277	DC	Sidechain
1	AA	2770	DT	Sidechain
1	AA	2772	DG	Sidechain
1	AA	2778	DT	Sidechain
1	AA	2781	DT	Sidechain
1	AA	2784	DT	Sidechain
1	AA	2790	DT	Sidechain
1	AA	28	DT	Sidechain
1	AA	280	DA	Sidechain
1	AA	2807	DA	Sidechain
1	AA	2808	DG	Sidechain
1	AA	281	DA	Sidechain
1	AA	2814	DG	Sidechain
1	AA	2815	DA	Sidechain
1	AA	2816	DG	Sidechain
1	AA	282	DA	Sidechain
1	AA	2820	DG	Sidechain
1	AA	2821	DA	Sidechain
1	AA	2822	DT	Sidechain
1	AA	2824	DC	Sidechain
1	AA	2840	DC	Sidechain
1	AA	2851	DT	Sidechain
1	AA	2859	DG	Sidechain
1	AA	2861	DT	Sidechain
1	AA	2863	DT	Sidechain
1	AA	2864	DC	Sidechain
1	AA	2874	DC	Sidechain
1	AA	2879	DT	Sidechain
1	AA	2881	DC	Sidechain
1	AA	2884	DT	Sidechain
1	AA	2886	DA	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	2890	DC	Sidechain
1	AA	2896	DG	Sidechain
1	AA	2902	DC	Sidechain
1	AA	2907	DT	Sidechain
1	AA	2909	DT	Sidechain
1	AA	2910	DG	Sidechain
1	AA	2920	DC	Sidechain
1	AA	2929	DT	Sidechain
1	AA	2934	DT	Sidechain
1	AA	2949	DG	Sidechain
1	AA	2956	DA	Sidechain
1	AA	2959	DG	Sidechain
1	AA	2961	DT	Sidechain
1	AA	2963	DT	Sidechain
1	AA	2970	DG	Sidechain
1	AA	2986	DC	Sidechain
1	AA	2993	DT	Sidechain
1	AA	3	DA	Sidechain
1	AA	30	DG	Sidechain
1	AA	3001	DG	Sidechain
1	AA	3009	DG	Sidechain
1	AA	3010	DT	Sidechain
1	AA	3011	DA	Sidechain
1	AA	3017	DA	Sidechain
1	AA	302	DG	Sidechain
1	AA	3021	DG	Sidechain
1	AA	3025	DA	Sidechain
1	AA	3035	DT	Sidechain
1	AA	3038	DT	Sidechain
1	AA	306	DG	Sidechain
1	AA	3065	DC	Sidechain
1	AA	307	DA	Sidechain
1	AA	3071	DT	Sidechain
1	AA	308	DT	Sidechain
1	AA	3095	DT	Sidechain
1	AA	3097	DT	Sidechain
1	AA	3100	DA	Sidechain
1	AA	3106	DA	Sidechain
1	AA	3111	DT	Sidechain
1	AA	3113	DT	Sidechain
1	AA	312	DT	Sidechain
1	AA	3120	DC	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	3122	DT	Sidechain
1	AA	3123	DC	Sidechain
1	AA	3127	DA	Sidechain
1	AA	3137	DT	Sidechain
1	AA	3140	DG	Sidechain
1	AA	3149	DT	Sidechain
1	AA	3151	DA	Sidechain
1	AA	3163	DG	Sidechain
1	AA	3164	DT	Sidechain
1	AA	3165	DA	Sidechain
1	AA	3167	DT	Sidechain
1	AA	3170	DA	Sidechain
1	AA	3171	DC	Sidechain
1	AA	3174	DT	Sidechain
1	AA	3175	DG	Sidechain
1	AA	3176	DA	Sidechain
1	AA	3183	DT	Sidechain
1	AA	319	DA	Sidechain
1	AA	3190	DT	Sidechain
1	AA	3191	DA	Sidechain
1	AA	3194	DC	Sidechain
1	AA	3205	DC	Sidechain
1	AA	3209	DT	Sidechain
1	AA	3219	DG	Sidechain
1	AA	3221	DT	Sidechain
1	AA	3224	DG	Sidechain
1	AA	3233	DC	Sidechain
1	AA	3237	DA	Sidechain
1	AA	3238	DG	Sidechain
1	AA	3245	DC	Sidechain
1	AA	3247	DT	Sidechain
1	AA	3250	DT	Sidechain
1	AA	3260	DG	Sidechain
1	AA	3262	DG	Sidechain
1	AA	3265	DG	Sidechain
1	AA	3267	DT	Sidechain
1	AA	3271	DT	Sidechain
1	AA	3282	DT	Sidechain
1	AA	3284	DG	Sidechain
1	AA	3289	DT	Sidechain
1	AA	329	DA	Sidechain
1	AA	3295	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	3298	DG	Sidechain
1	AA	3300	DT	Sidechain
1	AA	3301	DT	Sidechain
1	AA	3306	DT	Sidechain
1	AA	3311	DA	Sidechain
1	AA	332	DG	Sidechain
1	AA	3320	DG	Sidechain
1	AA	3325	DA	Sidechain
1	AA	3326	DG	Sidechain
1	AA	3332	DC	Sidechain
1	AA	3333	DC	Sidechain
1	AA	3337	DC	Sidechain
1	AA	334	DT	Sidechain
1	AA	3344	DC	Sidechain
1	AA	3349	DT	Sidechain
1	AA	3367	DG	Sidechain
1	AA	3371	DT	Sidechain
1	AA	3373	DT	Sidechain
1	AA	3378	DA	Sidechain
1	AA	3383	DG	Sidechain
1	AA	3395	DT	Sidechain
1	AA	3397	DC	Sidechain
1	AA	3404	DA	Sidechain
1	AA	3410	DC	Sidechain
1	AA	3411	DG	Sidechain
1	AA	3412	DT	Sidechain
1	AA	3414	DT	Sidechain
1	AA	3418	DC	Sidechain
1	AA	3421	DC	Sidechain
1	AA	3422	DG	Sidechain
1	AA	3423	DT	Sidechain
1	AA	3432	DA	Sidechain
1	AA	3436	DA	Sidechain
1	AA	3454	DA	Sidechain
1	AA	3469	DA	Sidechain
1	AA	3476	DG	Sidechain
1	AA	3477	DA	Sidechain
1	AA	3480	DA	Sidechain
1	AA	3481	DT	Sidechain
1	AA	3488	DC	Sidechain
1	AA	349	DG	Sidechain
1	AA	3496	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	350	DC	Sidechain
1	AA	3500	DT	Sidechain
1	AA	3501	DT	Sidechain
1	AA	3507	DG	Sidechain
1	AA	3508	DC	Sidechain
1	AA	3510	DC	Sidechain
1	AA	3513	DG	Sidechain
1	AA	3527	DG	Sidechain
1	AA	3529	DG	Sidechain
1	AA	3535	DG	Sidechain
1	AA	3538	DG	Sidechain
1	AA	354	DC	Sidechain
1	AA	3540	DG	Sidechain
1	AA	355	DA	Sidechain
1	AA	3553	DT	Sidechain
1	AA	3557	DT	Sidechain
1	AA	357	DT	Sidechain
1	AA	3570	DT	Sidechain
1	AA	3576	DG	Sidechain
1	AA	3579	DG	Sidechain
1	AA	3581	DT	Sidechain
1	AA	3582	DG	Sidechain
1	AA	3587	DC	Sidechain
1	AA	3593	DG	Sidechain
1	AA	3594	DG	Sidechain
1	AA	3596	DA	Sidechain
1	AA	3600	DC	Sidechain
1	AA	3607	DT	Sidechain
1	AA	3616	DA	Sidechain
1	AA	3621	DA	Sidechain
1	AA	3625	DT	Sidechain
1	AA	3629	DT	Sidechain
1	AA	3631	DA	Sidechain
1	AA	3640	DT	Sidechain
1	AA	3645	DA	Sidechain
1	AA	3646	DG	Sidechain
1	AA	3647	DT	Sidechain
1	AA	3648	DC	Sidechain
1	AA	3650	DT	Sidechain
1	AA	3660	DT	Sidechain
1	AA	3663	DA	Sidechain
1	AA	3668	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	3671	DC	Sidechain
1	AA	3673	DA	Sidechain
1	AA	3686	DT	Sidechain
1	AA	3688	DC	Sidechain
1	AA	3690	DG	Sidechain
1	AA	3693	DT	Sidechain
1	AA	370	DA	Sidechain
1	AA	3700	DG	Sidechain
1	AA	3702	DT	Sidechain
1	AA	3707	DG	Sidechain
1	AA	3709	DG	Sidechain
1	AA	3713	DA	Sidechain
1	AA	3714	DT	Sidechain
1	AA	3716	DC	Sidechain
1	AA	3717	DC	Sidechain
1	AA	3730	DT	Sidechain
1	AA	3733	DA	Sidechain
1	AA	3734	DA	Sidechain
1	AA	3742	DC	Sidechain
1	AA	3745	DG	Sidechain
1	AA	3747	DC	Sidechain
1	AA	3751	DG	Sidechain
1	AA	3753	DG	Sidechain
1	AA	3754	DA	Sidechain
1	AA	3757	DG	Sidechain
1	AA	3758	DA	Sidechain
1	AA	3759	DA	Sidechain
1	AA	3760	DT	Sidechain
1	AA	3766	DG	Sidechain
1	AA	3769	DT	Sidechain
1	AA	377	DT	Sidechain
1	AA	3770	DA	Sidechain
1	AA	3775	DT	Sidechain
1	AA	3784	DG	Sidechain
1	AA	3785	DT	Sidechain
1	AA	3787	DG	Sidechain
1	AA	3790	DG	Sidechain
1	AA	3792	DC	Sidechain
1	AA	3796	DG	Sidechain
1	AA	3806	DC	Sidechain
1	AA	3808	DA	Sidechain
1	AA	3819	DG	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	3821	DT	Sidechain
1	AA	3828	DG	Sidechain
1	AA	3830	DA	Sidechain
1	AA	3848	DG	Sidechain
1	AA	385	DC	Sidechain
1	AA	3852	DA	Sidechain
1	AA	3861	DT	Sidechain
1	AA	387	DC	Sidechain
1	AA	3871	DG	Sidechain
1	AA	3882	DG	Sidechain
1	AA	3884	DG	Sidechain
1	AA	3885	DC	Sidechain
1	AA	3887	DT	Sidechain
1	AA	389	DC	Sidechain
1	AA	3896	DG	Sidechain
1	AA	3899	DA	Sidechain
1	AA	3902	DT	Sidechain
1	AA	3908	DG	Sidechain
1	AA	3910	DG	Sidechain
1	AA	3913	DA	Sidechain
1	AA	3916	DA	Sidechain
1	AA	3918	DT	Sidechain
1	AA	3923	DT	Sidechain
1	AA	3924	DT	Sidechain
1	AA	3931	DT	Sidechain
1	AA	3932	DC	Sidechain
1	AA	3933	DC	Sidechain
1	AA	3936	DT	Sidechain
1	AA	3942	DT	Sidechain
1	AA	3945	DC	Sidechain
1	AA	3947	DT	Sidechain
1	AA	3949	DC	Sidechain
1	AA	396	DG	Sidechain
1	AA	3964	DT	Sidechain
1	AA	3967	DA	Sidechain
1	AA	3969	DC	Sidechain
1	AA	3970	DT	Sidechain
1	AA	3972	DT	Sidechain
1	AA	3975	DA	Sidechain
1	AA	3977	DA	Sidechain
1	AA	3978	DG	Sidechain
1	AA	3982	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	3983	DT	Sidechain
1	AA	3985	DA	Sidechain
1	AA	3994	DC	Sidechain
1	AA	40	DT	Sidechain
1	AA	4000	DA	Sidechain
1	AA	4002	DA	Sidechain
1	AA	4007	DT	Sidechain
1	AA	4012	DT	Sidechain
1	AA	4015	DT	Sidechain
1	AA	4017	DA	Sidechain
1	AA	4019	DG	Sidechain
1	AA	402	DC	Sidechain
1	AA	4020	DT	Sidechain
1	AA	4021	DC	Sidechain
1	AA	403	DC	Sidechain
1	AA	4046	DC	Sidechain
1	AA	4050	DA	Sidechain
1	AA	4052	DG	Sidechain
1	AA	4060	DT	Sidechain
1	AA	4061	DG	Sidechain
1	AA	4062	DA	Sidechain
1	AA	4063	DG	Sidechain
1	AA	4065	DG	Sidechain
1	AA	4067	DT	Sidechain
1	AA	4069	DT	Sidechain
1	AA	407	DC	Sidechain
1	AA	4071	DT	Sidechain
1	AA	4078	DT	Sidechain
1	AA	4083	DC	Sidechain
1	AA	4089	DT	Sidechain
1	AA	4092	DT	Sidechain
1	AA	4097	DT	Sidechain
1	AA	4104	DG	Sidechain
1	AA	4111	DA	Sidechain
1	AA	4112	DA	Sidechain
1	AA	4120	DT	Sidechain
1	AA	4124	DG	Sidechain
1	AA	413	DA	Sidechain
1	AA	4130	DT	Sidechain
1	AA	4131	DG	Sidechain
1	AA	4132	DG	Sidechain
1	AA	4145	DC	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	4149	DC	Sidechain
1	AA	4150	DT	Sidechain
1	AA	4151	DA	Sidechain
1	AA	4152	DT	Sidechain
1	AA	4153	DC	Sidechain
1	AA	4163	DG	Sidechain
1	AA	4164	DA	Sidechain
1	AA	4169	DG	Sidechain
1	AA	4174	DC	Sidechain
1	AA	4180	DG	Sidechain
1	AA	4181	DG	Sidechain
1	AA	4184	DG	Sidechain
1	AA	4185	DG	Sidechain
1	AA	4188	DG	Sidechain
1	AA	4189	DT	Sidechain
1	AA	4193	DG	Sidechain
1	AA	4202	DG	Sidechain
1	AA	4204	DT	Sidechain
1	AA	4211	DG	Sidechain
1	AA	4213	DT	Sidechain
1	AA	4215	DG	Sidechain
1	AA	4216	DC	Sidechain
1	AA	4221	DC	Sidechain
1	AA	4223	DA	Sidechain
1	AA	4224	DA	Sidechain
1	AA	4228	DT	Sidechain
1	AA	4229	DC	Sidechain
1	AA	4234	DG	Sidechain
1	AA	4235	DT	Sidechain
1	AA	4238	DG	Sidechain
1	AA	4239	DG	Sidechain
1	AA	425	DC	Sidechain
1	AA	4267	DT	Sidechain
1	AA	4269	DT	Sidechain
1	AA	427	DG	Sidechain
1	AA	4273	DC	Sidechain
1	AA	4274	DC	Sidechain
1	AA	4276	DT	Sidechain
1	AA	4278	DT	Sidechain
1	AA	4281	DA	Sidechain
1	AA	4283	DG	Sidechain
1	AA	4288	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	429	DT	Sidechain
1	AA	4291	DT	Sidechain
1	AA	4297	DT	Sidechain
1	AA	4299	DG	Sidechain
1	AA	4300	DT	Sidechain
1	AA	4301	DA	Sidechain
1	AA	4303	DT	Sidechain
1	AA	4307	DC	Sidechain
1	AA	4309	DA	Sidechain
1	AA	4311	DA	Sidechain
1	AA	4313	DC	Sidechain
1	AA	432	DT	Sidechain
1	AA	4321	DT	Sidechain
1	AA	4327	DT	Sidechain
1	AA	4334	DC	Sidechain
1	AA	4338	DA	Sidechain
1	AA	4340	DG	Sidechain
1	AA	4342	DG	Sidechain
1	AA	4344	DC	Sidechain
1	AA	4347	DA	Sidechain
1	AA	4358	DA	Sidechain
1	AA	4359	DC	Sidechain
1	AA	4377	DA	Sidechain
1	AA	4382	DT	Sidechain
1	AA	4389	DA	Sidechain
1	AA	439	DT	Sidechain
1	AA	44	DT	Sidechain
1	AA	4402	DA	Sidechain
1	AA	4404	DT	Sidechain
1	AA	4409	DG	Sidechain
1	AA	4411	DT	Sidechain
1	AA	4415	DA	Sidechain
1	AA	4418	DG	Sidechain
1	AA	4421	DA	Sidechain
1	AA	4425	DT	Sidechain
1	AA	4433	DG	Sidechain
1	AA	4434	DG	Sidechain
1	AA	4437	DC	Sidechain
1	AA	444	DA	Sidechain
1	AA	4448	DA	Sidechain
1	AA	4452	DC	Sidechain
1	AA	4454	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	4456	DT	Sidechain
1	AA	4460	DC	Sidechain
1	AA	4463	DT	Sidechain
1	AA	4470	DC	Sidechain
1	AA	4472	DG	Sidechain
1	AA	4488	DT	Sidechain
1	AA	4497	DC	Sidechain
1	AA	45	DT	Sidechain
1	AA	450	DG	Sidechain
1	AA	4500	DA	Sidechain
1	AA	4503	DG	Sidechain
1	AA	4506	DA	Sidechain
1	AA	4508	DG	Sidechain
1	AA	4514	DT	Sidechain
1	AA	4515	DT	Sidechain
1	AA	4518	DG	Sidechain
1	AA	4519	DA	Sidechain
1	AA	4528	DT	Sidechain
1	AA	4530	DT	Sidechain
1	AA	4531	DC	Sidechain
1	AA	4540	DC	Sidechain
1	AA	4542	DT	Sidechain
1	AA	4546	DT	Sidechain
1	AA	4550	DG	Sidechain
1	AA	4557	DT	Sidechain
1	AA	4563	DG	Sidechain
1	AA	4564	DT	Sidechain
1	AA	4565	DG	Sidechain
1	AA	4570	DT	Sidechain
1	AA	4574	DG	Sidechain
1	AA	4577	DC	Sidechain
1	AA	4578	DA	Sidechain
1	AA	4579	DA	Sidechain
1	AA	4588	DC	Sidechain
1	AA	4591	DG	Sidechain
1	AA	4594	DT	Sidechain
1	AA	4598	DC	Sidechain
1	AA	4604	DG	Sidechain
1	AA	461	DA	Sidechain
1	AA	4613	DG	Sidechain
1	AA	4619	DG	Sidechain
1	AA	4628	DG	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	4639	DT	Sidechain
1	AA	4641	DG	Sidechain
1	AA	4645	DC	Sidechain
1	AA	4647	DC	Sidechain
1	AA	4653	DG	Sidechain
1	AA	4656	DG	Sidechain
1	AA	466	DC	Sidechain
1	AA	4660	DC	Sidechain
1	AA	4662	DC	Sidechain
1	AA	4664	DG	Sidechain
1	AA	4665	DA	Sidechain
1	AA	4667	DG	Sidechain
1	AA	4671	DG	Sidechain
1	AA	4682	DG	Sidechain
1	AA	4685	DG	Sidechain
1	AA	4687	DC	Sidechain
1	AA	4688	DG	Sidechain
1	AA	4690	DC	Sidechain
1	AA	4693	DT	Sidechain
1	AA	4700	DG	Sidechain
1	AA	4701	DG	Sidechain
1	AA	4706	DT	Sidechain
1	AA	4707	DC	Sidechain
1	AA	4723	DT	Sidechain
1	AA	4727	DG	Sidechain
1	AA	473	DG	Sidechain
1	AA	4731	DA	Sidechain
1	AA	4735	DT	Sidechain
1	AA	474	DA	Sidechain
1	AA	4741	DT	Sidechain
1	AA	4747	DG	Sidechain
1	AA	4750	DG	Sidechain
1	AA	4761	DA	Sidechain
1	AA	4773	DT	Sidechain
1	AA	4778	DG	Sidechain
1	AA	4792	DA	Sidechain
1	AA	4798	DG	Sidechain
1	AA	4805	DT	Sidechain
1	AA	4814	DA	Sidechain
1	AA	4819	DC	Sidechain
1	AA	4820	DA	Sidechain
1	AA	4823	DC	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	4824	DT	Sidechain
1	AA	4828	DT	Sidechain
1	AA	483	DT	Sidechain
1	AA	4834	DC	Sidechain
1	AA	4835	DG	Sidechain
1	AA	484	DG	Sidechain
1	AA	4840	DT	Sidechain
1	AA	4849	DT	Sidechain
1	AA	4851	DC	Sidechain
1	AA	4854	DC	Sidechain
1	AA	4863	DG	Sidechain
1	AA	4864	DT	Sidechain
1	AA	4866	DT	Sidechain
1	AA	4872	DG	Sidechain
1	AA	4873	DT	Sidechain
1	AA	4876	DC	Sidechain
1	AA	4878	DT	Sidechain
1	AA	488	DA	Sidechain
1	AA	4883	DG	Sidechain
1	AA	4889	DG	Sidechain
1	AA	489	DT	Sidechain
1	AA	4890	DC	Sidechain
1	AA	4897	DT	Sidechain
1	AA	4903	DT	Sidechain
1	AA	4904	DG	Sidechain
1	AA	4906	DT	Sidechain
1	AA	4910	DG	Sidechain
1	AA	4911	DG	Sidechain
1	AA	4919	DG	Sidechain
1	AA	492	DT	Sidechain
1	AA	4920	DC	Sidechain
1	AA	4922	DG	Sidechain
1	AA	4927	DT	Sidechain
1	AA	4928	DA	Sidechain
1	AA	4931	DT	Sidechain
1	AA	4932	DC	Sidechain
1	AA	4935	DA	Sidechain
1	AA	4937	DA	Sidechain
1	AA	4939	DG	Sidechain
1	AA	494	DA	Sidechain
1	AA	4942	DT	Sidechain
1	AA	4947	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	4948	DC	Sidechain
1	AA	4955	DG	Sidechain
1	AA	4958	DG	Sidechain
1	AA	4961	DA	Sidechain
1	AA	4963	DT	Sidechain
1	AA	4964	DT	Sidechain
1	AA	4967	DC	Sidechain
1	AA	4978	DT	Sidechain
1	AA	4979	DA	Sidechain
1	AA	4982	DT	Sidechain
1	AA	4985	DC	Sidechain
1	AA	499	DT	Sidechain
1	AA	4998	DC	Sidechain
1	AA	4999	DT	Sidechain
1	AA	50	DG	Sidechain
1	AA	5009	DC	Sidechain
1	AA	5022	DG	Sidechain
1	AA	5023	DT	Sidechain
1	AA	5025	DG	Sidechain
1	AA	5030	DT	Sidechain
1	AA	5031	DT	Sidechain
1	AA	5032	DT	Sidechain
1	AA	5033	DG	Sidechain
1	AA	5035	DC	Sidechain
1	AA	5037	DT	Sidechain
1	AA	504	DG	Sidechain
1	AA	5041	DC	Sidechain
1	AA	5042	DG	Sidechain
1	AA	5044	DT	Sidechain
1	AA	5045	DG	Sidechain
1	AA	5046	DG	Sidechain
1	AA	505	DC	Sidechain
1	AA	5053	DA	Sidechain
1	AA	5054	DT	Sidechain
1	AA	5059	DA	Sidechain
1	AA	506	DT	Sidechain
1	AA	5062	DT	Sidechain
1	AA	5064	DC	Sidechain
1	AA	5069	DG	Sidechain
1	AA	5071	DT	Sidechain
1	AA	508	DG	Sidechain
1	AA	5081	DA	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	5082	DT	Sidechain
1	AA	5085	DA	Sidechain
1	AA	5086	DC	Sidechain
1	AA	509	DG	Sidechain
1	AA	5091	DT	Sidechain
1	AA	5096	DG	Sidechain
1	AA	510	DT	Sidechain
1	AA	5110	DT	Sidechain
1	AA	5119	DT	Sidechain
1	AA	5121	DT	Sidechain
1	AA	5128	DC	Sidechain
1	AA	5141	DT	Sidechain
1	AA	5143	DT	Sidechain
1	AA	5145	DC	Sidechain
1	AA	5149	DG	Sidechain
1	AA	5158	DC	Sidechain
1	AA	5159	DA	Sidechain
1	AA	516	DG	Sidechain
1	AA	5163	DT	Sidechain
1	AA	517	DG	Sidechain
1	AA	5176	DG	Sidechain
1	AA	5177	DT	Sidechain
1	AA	5179	DT	Sidechain
1	AA	519	DA	Sidechain
1	AA	5190	DA	Sidechain
1	AA	5193	DT	Sidechain
1	AA	5194	DC	Sidechain
1	AA	5195	DT	Sidechain
1	AA	5197	DT	Sidechain
1	AA	520	DT	Sidechain
1	AA	5204	DT	Sidechain
1	AA	5205	DT	Sidechain
1	AA	5209	DT	Sidechain
1	AA	5212	DT	Sidechain
1	AA	5215	DT	Sidechain
1	AA	5224	DC	Sidechain
1	AA	5227	DG	Sidechain
1	AA	5228	DG	Sidechain
1	AA	5229	DT	Sidechain
1	AA	5230	DT	Sidechain
1	AA	5234	DT	Sidechain
1	AA	5236	DC	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	5238	DG	Sidechain
1	AA	524	DC	Sidechain
1	AA	5240	DT	Sidechain
1	AA	5246	DT	Sidechain
1	AA	5247	DG	Sidechain
1	AA	525	DA	Sidechain
1	AA	5256	DT	Sidechain
1	AA	5258	DT	Sidechain
1	AA	5261	DT	Sidechain
1	AA	5268	DT	Sidechain
1	AA	5279	DG	Sidechain
1	AA	5281	DT	Sidechain
1	AA	5287	DA	Sidechain
1	AA	5295	DT	Sidechain
1	AA	5299	DG	Sidechain
1	AA	530	DT	Sidechain
1	AA	5300	DC	Sidechain
1	AA	5301	DT	Sidechain
1	AA	5307	DA	Sidechain
1	AA	5309	DT	Sidechain
1	AA	531	DG	Sidechain
1	AA	5317	DG	Sidechain
1	AA	5320	DC	Sidechain
1	AA	5321	DT	Sidechain
1	AA	5326	DA	Sidechain
1	AA	5327	DT	Sidechain
1	AA	5331	DG	Sidechain
1	AA	5332	DC	Sidechain
1	AA	5337	DC	Sidechain
1	AA	534	DG	Sidechain
1	AA	5343	DT	Sidechain
1	AA	5347	DG	Sidechain
1	AA	535	DA	Sidechain
1	AA	5350	DG	Sidechain
1	AA	5352	DT	Sidechain
1	AA	5357	DT	Sidechain
1	AA	536	DG	Sidechain
1	AA	5364	DT	Sidechain
1	AA	5366	DT	Sidechain
1	AA	5369	DG	Sidechain
1	AA	537	DG	Sidechain
1	AA	5376	DA	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	5379	DA	Sidechain
1	AA	5381	DC	Sidechain
1	AA	5382	DC	Sidechain
1	AA	5383	DT	Sidechain
1	AA	5390	DT	Sidechain
1	AA	5392	DG	Sidechain
1	AA	5397	DG	Sidechain
1	AA	5406	DG	Sidechain
1	AA	5408	DT	Sidechain
1	AA	541	DA	Sidechain
1	AA	5412	DT	Sidechain
1	AA	5415	DC	Sidechain
1	AA	5422	DA	Sidechain
1	AA	5426	DC	Sidechain
1	AA	543	DG	Sidechain
1	AA	5437	DT	Sidechain
1	AA	5438	DT	Sidechain
1	AA	5440	DT	Sidechain
1	AA	5441	DA	Sidechain
1	AA	5447	DT	Sidechain
1	AA	5460	DG	Sidechain
1	AA	5462	DC	Sidechain
1	AA	5464	DG	Sidechain
1	AA	5466	DT	Sidechain
1	AA	5477	DT	Sidechain
1	AA	5479	DG	Sidechain
1	AA	5480	DA	Sidechain
1	AA	5482	DG	Sidechain
1	AA	5484	DT	Sidechain
1	AA	5491	DA	Sidechain
1	AA	5493	DA	Sidechain
1	AA	5500	DT	Sidechain
1	AA	5501	DC	Sidechain
1	AA	5503	DT	Sidechain
1	AA	5504	DA	Sidechain
1	AA	5505	DT	Sidechain
1	AA	551	DA	Sidechain
1	AA	5515	DG	Sidechain
1	AA	5519	DA	Sidechain
1	AA	5520	DA	Sidechain
1	AA	5522	DA	Sidechain
1	AA	5526	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	5530	DT	Sidechain
1	AA	5543	DA	Sidechain
1	AA	5546	DG	Sidechain
1	AA	5548	DC	Sidechain
1	AA	555	DC	Sidechain
1	AA	5555	DG	Sidechain
1	AA	5556	DG	Sidechain
1	AA	5558	DT	Sidechain
1	AA	5566	DG	Sidechain
1	AA	5567	DA	Sidechain
1	AA	5576	DA	Sidechain
1	AA	5583	DG	Sidechain
1	AA	5584	DT	Sidechain
1	AA	5585	DA	Sidechain
1	AA	5586	DA	Sidechain
1	AA	5587	DG	Sidechain
1	AA	5606	DG	Sidechain
1	AA	5613	DG	Sidechain
1	AA	5621	DG	Sidechain
1	AA	5623	DA	Sidechain
1	AA	5624	DA	Sidechain
1	AA	5625	DC	Sidechain
1	AA	5640	DG	Sidechain
1	AA	5641	DG	Sidechain
1	AA	5645	DC	Sidechain
1	AA	5646	DA	Sidechain
1	AA	5649	DA	Sidechain
1	AA	565	DT	Sidechain
1	AA	5651	DC	Sidechain
1	AA	5652	DT	Sidechain
1	AA	5660	DG	Sidechain
1	AA	5661	DT	Sidechain
1	AA	5664	DG	Sidechain
1	AA	5672	DG	Sidechain
1	AA	5678	DA	Sidechain
1	AA	5682	DC	Sidechain
1	AA	5687	DG	Sidechain
1	AA	5688	DT	Sidechain
1	AA	5692	DT	Sidechain
1	AA	5699	DC	Sidechain
1	AA	5700	DC	Sidechain
1	AA	5717	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	5720	DG	Sidechain
1	AA	5723	DT	Sidechain
1	AA	5727	DT	Sidechain
1	AA	5729	DG	Sidechain
1	AA	5730	DC	Sidechain
1	AA	5740	DC	Sidechain
1	AA	5742	DG	Sidechain
1	AA	5748	DA	Sidechain
1	AA	5763	DA	Sidechain
1	AA	5771	DG	Sidechain
1	AA	5772	DG	Sidechain
1	AA	5778	DT	Sidechain
1	AA	5781	DT	Sidechain
1	AA	5791	DG	Sidechain
1	AA	5792	DT	Sidechain
1	AA	5794	DC	Sidechain
1	AA	5795	DG	Sidechain
1	AA	5799	DC	Sidechain
1	AA	5809	DT	Sidechain
1	AA	5812	DC	Sidechain
1	AA	5816	DT	Sidechain
1	AA	5820	DG	Sidechain
1	AA	5823	DA	Sidechain
1	AA	584	DT	Sidechain
1	AA	5841	DC	Sidechain
1	AA	5842	DG	Sidechain
1	AA	5849	DG	Sidechain
1	AA	5850	DA	Sidechain
1	AA	5860	DA	Sidechain
1	AA	5863	DT	Sidechain
1	AA	5864	DG	Sidechain
1	AA	5866	DT	Sidechain
1	AA	587	DG	Sidechain
1	AA	5877	DG	Sidechain
1	AA	5878	DA	Sidechain
1	AA	5879	DT	Sidechain
1	AA	5881	DG	Sidechain
1	AA	5882	DG	Sidechain
1	AA	5883	DA	Sidechain
1	AA	5884	DT	Sidechain
1	AA	5888	DA	Sidechain
1	AA	5890	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	5896	DT	Sidechain
1	AA	5897	DG	Sidechain
1	AA	5903	DG	Sidechain
1	AA	5905	DC	Sidechain
1	AA	5911	DT	Sidechain
1	AA	5919	DA	Sidechain
1	AA	592	DT	Sidechain
1	AA	5925	DA	Sidechain
1	AA	5928	DC	Sidechain
1	AA	5929	DG	Sidechain
1	AA	5935	DT	Sidechain
1	AA	5939	DT	Sidechain
1	AA	5943	DC	Sidechain
1	AA	5944	DT	Sidechain
1	AA	5947	DA	Sidechain
1	AA	595	DA	Sidechain
1	AA	5950	DT	Sidechain
1	AA	5952	DT	Sidechain
1	AA	5954	DG	Sidechain
1	AA	5958	DA	Sidechain
1	AA	5959	DT	Sidechain
1	AA	5962	DT	Sidechain
1	AA	5972	DG	Sidechain
1	AA	5973	DA	Sidechain
1	AA	5977	DA	Sidechain
1	AA	5979	DT	Sidechain
1	AA	598	DC	Sidechain
1	AA	5983	DT	Sidechain
1	AA	5984	DT	Sidechain
1	AA	5985	DT	Sidechain
1	AA	5986	DA	Sidechain
1	AA	5991	DT	Sidechain
1	AA	5993	DG	Sidechain
1	AA	5995	DC	Sidechain
1	AA	5997	DG	Sidechain
1	AA	600	DG	Sidechain
1	AA	6003	DT	Sidechain
1	AA	6008	DT	Sidechain
1	AA	6010	DT	Sidechain
1	AA	6016	DT	Sidechain
1	AA	602	DC	Sidechain
1	AA	6030	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	6039	DC	Sidechain
1	AA	6045	DT	Sidechain
1	AA	6048	DA	Sidechain
1	AA	6050	DG	Sidechain
1	AA	6051	DT	Sidechain
1	AA	6055	DC	Sidechain
1	AA	6057	DT	Sidechain
1	AA	6067	DT	Sidechain
1	AA	6068	DG	Sidechain
1	AA	6069	DG	Sidechain
1	AA	6071	DG	Sidechain
1	AA	6080	DT	Sidechain
1	AA	6085	DC	Sidechain
1	AA	6087	DC	Sidechain
1	AA	61	DT	Sidechain
1	AA	610	DT	Sidechain
1	AA	6104	DC	Sidechain
1	AA	6105	DT	Sidechain
1	AA	6109	DT	Sidechain
1	AA	6114	DG	Sidechain
1	AA	6118	DG	Sidechain
1	AA	6122	DT	Sidechain
1	AA	6126	DA	Sidechain
1	AA	6129	DA	Sidechain
1	AA	6137	DG	Sidechain
1	AA	6141	DC	Sidechain
1	AA	6142	DT	Sidechain
1	AA	6149	DG	Sidechain
1	AA	6152	DT	Sidechain
1	AA	6160	DT	Sidechain
1	AA	617	DC	Sidechain
1	AA	6172	DC	Sidechain
1	AA	6176	DG	Sidechain
1	AA	6177	DT	Sidechain
1	AA	6185	DT	Sidechain
1	AA	6187	DT	Sidechain
1	AA	6193	DG	Sidechain
1	AA	6196	DT	Sidechain
1	AA	6199	DT	Sidechain
1	AA	620	DA	Sidechain
1	AA	6203	DT	Sidechain
1	AA	621	DG	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	6218	DT	Sidechain
1	AA	6237	DG	Sidechain
1	AA	624	DC	Sidechain
1	AA	6244	DG	Sidechain
1	AA	6245	DA	Sidechain
1	AA	6248	DA	Sidechain
1	AA	6249	DA	Sidechain
1	AA	6253	DA	Sidechain
1	AA	626	DA	Sidechain
1	AA	6260	DA	Sidechain
1	AA	6265	DT	Sidechain
1	AA	6266	DT	Sidechain
1	AA	6267	DT	Sidechain
1	AA	6271	DA	Sidechain
1	AA	6278	DT	Sidechain
1	AA	6280	DT	Sidechain
1	AA	6282	DG	Sidechain
1	AA	6294	DT	Sidechain
1	AA	6295	DT	Sidechain
1	AA	6296	DG	Sidechain
1	AA	6300	DT	Sidechain
1	AA	6304	DA	Sidechain
1	AA	6308	DG	Sidechain
1	AA	6318	DT	Sidechain
1	AA	6325	DT	Sidechain
1	AA	6327	DG	Sidechain
1	AA	633	DG	Sidechain
1	AA	6338	DC	Sidechain
1	AA	6341	DC	Sidechain
1	AA	6343	DT	Sidechain
1	AA	635	DA	Sidechain
1	AA	6350	DG	Sidechain
1	AA	6352	DG	Sidechain
1	AA	6353	DG	Sidechain
1	AA	636	DC	Sidechain
1	AA	6363	DT	Sidechain
1	AA	6364	DA	Sidechain
1	AA	6365	DG	Sidechain
1	AA	6366	DT	Sidechain
1	AA	6367	DC	Sidechain
1	AA	6370	DT	Sidechain
1	AA	6391	DA	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	6393	DT	Sidechain
1	AA	6400	DT	Sidechain
1	AA	641	DG	Sidechain
1	AA	6419	DA	Sidechain
1	AA	6422	DC	Sidechain
1	AA	6423	DT	Sidechain
1	AA	6426	DG	Sidechain
1	AA	6430	DT	Sidechain
1	AA	6433	DC	Sidechain
1	AA	6437	DG	Sidechain
1	AA	6439	DT	Sidechain
1	AA	6441	DT	Sidechain
1	AA	6451	DT	Sidechain
1	AA	6461	DT	Sidechain
1	AA	6474	DA	Sidechain
1	AA	6478	DT	Sidechain
1	AA	6483	DA	Sidechain
1	AA	6496	DT	Sidechain
1	AA	6498	DC	Sidechain
1	AA	6499	DA	Sidechain
1	AA	6502	DC	Sidechain
1	AA	6506	DT	Sidechain
1	AA	6510	DT	Sidechain
1	AA	6512	DG	Sidechain
1	AA	6514	DT	Sidechain
1	AA	6524	DG	Sidechain
1	AA	6525	DT	Sidechain
1	AA	6526	DT	Sidechain
1	AA	6531	DT	Sidechain
1	AA	6534	DA	Sidechain
1	AA	6539	DG	Sidechain
1	AA	6541	DT	Sidechain
1	AA	6557	DG	Sidechain
1	AA	6567	DA	Sidechain
1	AA	6569	DT	Sidechain
1	AA	6580	DT	Sidechain
1	AA	6584	DG	Sidechain
1	AA	6588	DT	Sidechain
1	AA	6590	DT	Sidechain
1	AA	6594	DT	Sidechain
1	AA	661	DA	Sidechain
1	AA	6615	DG	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	6616	DT	Sidechain
1	AA	6627	DA	Sidechain
1	AA	6631	DA	Sidechain
1	AA	6633	DT	Sidechain
1	AA	664	DG	Sidechain
1	AA	6640	DT	Sidechain
1	AA	6645	DG	Sidechain
1	AA	6649	DT	Sidechain
1	AA	6653	DA	Sidechain
1	AA	6654	DA	Sidechain
1	AA	6663	DT	Sidechain
1	AA	6668	DG	Sidechain
1	AA	6670	DA	Sidechain
1	AA	668	DG	Sidechain
1	AA	6680	DA	Sidechain
1	AA	6687	DA	Sidechain
1	AA	6688	DT	Sidechain
1	AA	6689	DT	Sidechain
1	AA	669	DA	Sidechain
1	AA	6691	DT	Sidechain
1	AA	6692	DT	Sidechain
1	AA	67	DA	Sidechain
1	AA	670	DT	Sidechain
1	AA	6700	DA	Sidechain
1	AA	6714	DG	Sidechain
1	AA	6719	DT	Sidechain
1	AA	6723	DT	Sidechain
1	AA	6726	DT	Sidechain
1	AA	6732	DG	Sidechain
1	AA	6733	DA	Sidechain
1	AA	674	DG	Sidechain
1	AA	6746	DA	Sidechain
1	AA	6751	DT	Sidechain
1	AA	6754	DG	Sidechain
1	AA	6757	DA	Sidechain
1	AA	676	DG	Sidechain
1	AA	6763	DT	Sidechain
1	AA	6765	DA	Sidechain
1	AA	6766	DT	Sidechain
1	AA	6778	DG	Sidechain
1	AA	6779	DT	Sidechain
1	AA	678	DG	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	6782	DA	Sidechain
1	AA	6784	DA	Sidechain
1	AA	6793	DA	Sidechain
1	AA	6794	DT	Sidechain
1	AA	6797	DG	Sidechain
1	AA	6798	DG	Sidechain
1	AA	6801	DG	Sidechain
1	AA	6802	DG	Sidechain
1	AA	6804	DT	Sidechain
1	AA	6811	DC	Sidechain
1	AA	6813	DT	Sidechain
1	AA	6814	DC	Sidechain
1	AA	6817	DT	Sidechain
1	AA	6824	DG	Sidechain
1	AA	683	DG	Sidechain
1	AA	6830	DT	Sidechain
1	AA	6833	DT	Sidechain
1	AA	684	DG	Sidechain
1	AA	6840	DA	Sidechain
1	AA	6845	DG	Sidechain
1	AA	6846	DG	Sidechain
1	AA	6847	DA	Sidechain
1	AA	6850	DA	Sidechain
1	AA	6857	DT	Sidechain
1	AA	6860	DA	Sidechain
1	AA	6861	DT	Sidechain
1	AA	6863	DG	Sidechain
1	AA	6866	DA	Sidechain
1	AA	6867	DT	Sidechain
1	AA	6871	DC	Sidechain
1	AA	6874	DA	Sidechain
1	AA	6881	DG	Sidechain
1	AA	6883	DA	Sidechain
1	AA	6887	DT	Sidechain
1	AA	6890	DT	Sidechain
1	AA	6893	DT	Sidechain
1	AA	690	DC	Sidechain
1	AA	6905	DT	Sidechain
1	AA	6909	DG	Sidechain
1	AA	691	DT	Sidechain
1	AA	6912	DG	Sidechain
1	AA	6919	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	692	DG	Sidechain
1	AA	6926	DG	Sidechain
1	AA	693	DG	Sidechain
1	AA	6934	DA	Sidechain
1	AA	6938	DT	Sidechain
1	AA	6939	DG	Sidechain
1	AA	6940	DT	Sidechain
1	AA	695	DT	Sidechain
1	AA	6950	DT	Sidechain
1	AA	6960	DA	Sidechain
1	AA	6961	DA	Sidechain
1	AA	6978	DG	Sidechain
1	AA	6980	DT	Sidechain
1	AA	6981	DT	Sidechain
1	AA	6988	DG	Sidechain
1	AA	6990	DG	Sidechain
1	AA	700	DG	Sidechain
1	AA	7000	DT	Sidechain
1	AA	7001	DG	Sidechain
1	AA	701	DT	Sidechain
1	AA	7012	DC	Sidechain
1	AA	7016	DT	Sidechain
1	AA	7019	DT	Sidechain
1	AA	7021	DC	Sidechain
1	AA	7026	DT	Sidechain
1	AA	7028	DC	Sidechain
1	AA	7043	DT	Sidechain
1	AA	7051	DG	Sidechain
1	AA	7054	DC	Sidechain
1	AA	7059	DC	Sidechain
1	AA	7063	DT	Sidechain
1	AA	7064	DA	Sidechain
1	AA	7082	DA	Sidechain
1	AA	7083	DG	Sidechain
1	AA	7085	DT	Sidechain
1	AA	7093	DA	Sidechain
1	AA	71	DG	Sidechain
1	AA	7101	DC	Sidechain
1	AA	7102	DC	Sidechain
1	AA	7107	DT	Sidechain
1	AA	7112	DT	Sidechain
1	AA	7114	DC	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	7119	DG	Sidechain
1	AA	7120	DT	Sidechain
1	AA	7122	DG	Sidechain
1	AA	7123	DA	Sidechain
1	AA	7124	DT	Sidechain
1	AA	7127	DG	Sidechain
1	AA	7128	DC	Sidechain
1	AA	7131	DA	Sidechain
1	AA	714	DG	Sidechain
1	AA	7141	DT	Sidechain
1	AA	7146	DA	Sidechain
1	AA	7151	DG	Sidechain
1	AA	7156	DT	Sidechain
1	AA	7161	DT	Sidechain
1	AA	7166	DG	Sidechain
1	AA	7168	DT	Sidechain
1	AA	7169	DT	Sidechain
1	AA	717	DG	Sidechain
1	AA	7179	DG	Sidechain
1	AA	7181	DT	Sidechain
1	AA	7184	DT	Sidechain
1	AA	7189	DA	Sidechain
1	AA	7193	DT	Sidechain
1	AA	7197	DT	Sidechain
1	AA	7198	DT	Sidechain
1	AA	7212	DC	Sidechain
1	AA	7215	DC	Sidechain
1	AA	7244	DT	Sidechain
1	AA	7248	DC	Sidechain
1	AA	7259	DT	Sidechain
1	AA	7261	DT	Sidechain
1	AA	7268	DT	Sidechain
1	AA	7276	DG	Sidechain
1	AA	7290	DA	Sidechain
1	AA	7306	DT	Sidechain
1	AA	7307	DT	Sidechain
1	AA	7308	DT	Sidechain
1	AA	7313	DG	Sidechain
1	AA	7315	DT	Sidechain
1	AA	7316	DA	Sidechain
1	AA	7323	DC	Sidechain
1	AA	7329	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	7336	DC	Sidechain
1	AA	7347	DT	Sidechain
1	AA	7356	DT	Sidechain
1	AA	7364	DG	Sidechain
1	AA	7369	DG	Sidechain
1	AA	7371	DA	Sidechain
1	AA	7375	DT	Sidechain
1	AA	7386	DG	Sidechain
1	AA	7387	DG	Sidechain
1	AA	7394	DG	Sidechain
1	AA	7398	DT	Sidechain
1	AA	7403	DC	Sidechain
1	AA	7405	DC	Sidechain
1	AA	7408	DT	Sidechain
1	AA	7410	DG	Sidechain
1	AA	7414	DA	Sidechain
1	AA	7422	DC	Sidechain
1	AA	7424	DT	Sidechain
1	AA	7433	DT	Sidechain
1	AA	744	DG	Sidechain
1	AA	7447	DG	Sidechain
1	AA	746	DG	Sidechain
1	AA	747	DT	Sidechain
1	AA	7472	DA	Sidechain
1	AA	7473	DT	Sidechain
1	AA	7479	DA	Sidechain
1	AA	7481	DG	Sidechain
1	AA	7486	DA	Sidechain
1	AA	7487	DG	Sidechain
1	AA	7489	DG	Sidechain
1	AA	7492	DA	Sidechain
1	AA	7494	DA	Sidechain
1	AA	7497	DG	Sidechain
1	AA	750	DG	Sidechain
1	AA	7500	DG	Sidechain
1	AA	7504	DT	Sidechain
1	AA	7506	DT	Sidechain
1	AA	7507	DC	Sidechain
1	AA	7511	DG	Sidechain
1	AA	7512	DA	Sidechain
1	AA	7515	DG	Sidechain
1	AA	7516	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	7523	DT	Sidechain
1	AA	7525	DT	Sidechain
1	AA	7531	DT	Sidechain
1	AA	7536	DG	Sidechain
1	AA	7538	DC	Sidechain
1	AA	7543	DA	Sidechain
1	AA	755	DG	Sidechain
1	AA	7553	DG	Sidechain
1	AA	7560	DA	Sidechain
1	AA	7561	DC	Sidechain
1	AA	7564	DG	Sidechain
1	AA	7566	DA	Sidechain
1	AA	7567	DA	Sidechain
1	AA	7573	DA	Sidechain
1	AA	7578	DT	Sidechain
1	AA	758	DT	Sidechain
1	AA	7580	DG	Sidechain
1	AA	7582	DG	Sidechain
1	AA	76	DA	Sidechain
1	AA	760	DT	Sidechain
1	AA	7600	DG	Sidechain
1	AA	7601	DT	Sidechain
1	AA	7604	DT	Sidechain
1	AA	7606	DT	Sidechain
1	AA	7612	DC	Sidechain
1	AA	7619	DA	Sidechain
1	AA	762	DA	Sidechain
1	AA	7625	DT	Sidechain
1	AA	7627	DT	Sidechain
1	AA	7643	DT	Sidechain
1	AA	7645	DT	Sidechain
1	AA	7648	DG	Sidechain
1	AA	7651	DA	Sidechain
1	AA	7653	DG	Sidechain
1	AA	7655	DA	Sidechain
1	AA	7660	DC	Sidechain
1	AA	7661	DT	Sidechain
1	AA	7665	DT	Sidechain
1	AA	7669	DT	Sidechain
1	AA	7672	DG	Sidechain
1	AA	7673	DT	Sidechain
1	AA	7674	DG	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	7675	DG	Sidechain
1	AA	7681	DC	Sidechain
1	AA	7693	DA	Sidechain
1	AA	7697	DT	Sidechain
1	AA	7700	DT	Sidechain
1	AA	7704	DG	Sidechain
1	AA	7707	DT	Sidechain
1	AA	771	DG	Sidechain
1	AA	772	DA	Sidechain
1	AA	7720	DT	Sidechain
1	AA	7726	DC	Sidechain
1	AA	7730	DA	Sidechain
1	AA	7732	DT	Sidechain
1	AA	7735	DC	Sidechain
1	AA	7737	DT	Sidechain
1	AA	7739	DA	Sidechain
1	AA	774	DA	Sidechain
1	AA	7740	DA	Sidechain
1	AA	7743	DG	Sidechain
1	AA	7748	DC	Sidechain
1	AA	775	DC	Sidechain
1	AA	7754	DT	Sidechain
1	AA	7755	DA	Sidechain
1	AA	7756	DG	Sidechain
1	AA	7763	DC	Sidechain
1	AA	7768	DA	Sidechain
1	AA	7772	DT	Sidechain
1	AA	7775	DC	Sidechain
1	AA	7783	DG	Sidechain
1	AA	7786	DC	Sidechain
1	AA	7790	DA	Sidechain
1	AA	7793	DC	Sidechain
1	AA	7794	DG	Sidechain
1	AA	7795	DT	Sidechain
1	AA	7797	DC	Sidechain
1	AA	7798	DT	Sidechain
1	AA	7807	DC	Sidechain
1	AA	7809	DA	Sidechain
1	AA	7810	DC	Sidechain
1	AA	7816	DT	Sidechain
1	AA	7821	DG	Sidechain
1	AA	7822	DC	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	7823	DC	Sidechain
1	AA	7824	DC	Sidechain
1	AA	7828	DA	Sidechain
1	AA	7831	DG	Sidechain
1	AA	7838	DT	Sidechain
1	AA	7850	DG	Sidechain
1	AA	7873	DA	Sidechain
1	AA	7876	DG	Sidechain
1	AA	789	DC	Sidechain
1	AA	7895	DT	Sidechain
1	AA	7901	DC	Sidechain
1	AA	7903	DG	Sidechain
1	AA	7904	DC	Sidechain
1	AA	7905	DT	Sidechain
1	AA	7908	DT	Sidechain
1	AA	7909	DT	Sidechain
1	AA	7913	DC	Sidechain
1	AA	7916	DT	Sidechain
1	AA	7924	DT	Sidechain
1	AA	7925	DC	Sidechain
1	AA	7927	DT	Sidechain
1	AA	7933	DG	Sidechain
1	AA	7938	DG	Sidechain
1	AA	794	DG	Sidechain
1	AA	7942	DG	Sidechain
1	AA	7945	DG	Sidechain
1	AA	7947	DC	Sidechain
1	AA	7957	DC	Sidechain
1	AA	796	DA	Sidechain
1	AA	7960	DG	Sidechain
1	AA	7967	DA	Sidechain
1	AA	7970	DG	Sidechain
1	AA	7971	DG	Sidechain
1	AA	7973	DG	Sidechain
1	AA	7978	DC	Sidechain
1	AA	7984	DG	Sidechain
1	AA	7985	DG	Sidechain
1	AA	7993	DT	Sidechain
1	AA	7994	DT	Sidechain
1	AA	8000	DC	Sidechain
1	AA	8004	DA	Sidechain
1	AA	8005	DC	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	8006	DG	Sidechain
1	AA	8007	DG	Sidechain
1	AA	8008	DC	Sidechain
1	AA	8009	DA	Sidechain
1	AA	802	DA	Sidechain
1	AA	8026	DC	Sidechain
1	AA	8027	DT	Sidechain
1	AA	803	DC	Sidechain
1	AA	8030	DA	Sidechain
1	AA	8031	DT	Sidechain
1	AA	8035	DG	Sidechain
1	AA	8039	DA	Sidechain
1	AA	8040	DT	Sidechain
1	AA	8049	DT	Sidechain
1	AA	805	DG	Sidechain
1	AA	8053	DG	Sidechain
1	AA	8054	DG	Sidechain
1	AA	8056	DC	Sidechain
1	AA	8060	DC	Sidechain
1	AA	8063	DC	Sidechain
1	AA	807	DG	Sidechain
1	AA	808	DA	Sidechain
1	AA	813	DG	Sidechain
1	AA	814	DC	Sidechain
1	AA	818	DT	Sidechain
1	AA	824	DA	Sidechain
1	AA	827	DC	Sidechain
1	AA	828	DG	Sidechain
1	AA	834	DG	Sidechain
1	AA	836	DC	Sidechain
1	AA	837	DG	Sidechain
1	AA	839	DA	Sidechain
1	AA	840	DT	Sidechain
1	AA	844	DG	Sidechain
1	AA	847	DC	Sidechain
1	AA	849	DA	Sidechain
1	AA	85	DC	Sidechain
1	AA	851	DA	Sidechain
1	AA	854	DG	Sidechain
1	AA	856	DC	Sidechain
1	AA	866	DC	Sidechain
1	AA	87	DT	Sidechain

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Mol	Chain	Res	Type	Group
1	AA	871	DT	Sidechain
1	AA	873	DA	Sidechain
1	AA	874	DT	Sidechain
1	AA	878	DG	Sidechain
1	AA	879	DG	Sidechain
1	AA	886	DC	Sidechain
1	AA	895	DA	Sidechain
1	AA	896	DG	Sidechain
1	AA	897	DC	Sidechain
1	AA	900	DG	Sidechain
1	AA	901	DT	Sidechain
1	AA	907	DG	Sidechain
1	AA	908	DG	Sidechain
1	AA	910	DA	Sidechain
1	AA	912	DG	Sidechain
1	AA	927	DG	Sidechain
1	AA	93	DG	Sidechain
1	AA	930	DG	Sidechain
1	AA	931	DC	Sidechain
1	AA	936	DG	Sidechain
1	AA	939	DA	Sidechain
1	AA	94	DG	Sidechain
1	AA	947	DG	Sidechain
1	AA	95	DG	Sidechain
1	AA	951	DG	Sidechain
1	AA	954	DG	Sidechain
1	AA	955	DC	Sidechain
1	AA	96	DC	Sidechain
1	AA	961	DA	Sidechain
1	AA	966	DA	Sidechain
1	AA	967	DG	Sidechain
1	AA	974	DG	Sidechain
1	AA	976	DT	Sidechain
1	AA	978	DA	Sidechain
1	AA	980	DG	Sidechain
1	AA	981	DT	Sidechain
1	AA	99	DT	Sidechain
1	AA	997	DC	Sidechain
1	AA	998	DG	Sidechain
1	AA	999	DT	Sidechain
2	AB	17	DA	Sidechain
2	AB	19	DG	Sidechain

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Mol	Chain	Res	Type	Group
2	AB	24	DC	Sidechain
2	AB	30	DG	Sidechain
2	AB	32	DT	Sidechain
2	AB	36	DG	Sidechain
2	AB	37	DA	Sidechain
2	AB	39	DG	Sidechain
2	AB	46	DC	Sidechain
2	AB	47	DT	Sidechain
3	AC	16	DC	Sidechain
3	AC	17	DT	Sidechain
3	AC	2	DT	Sidechain
3	AC	20	DA	Sidechain
3	AC	21	DA	Sidechain
3	AC	28	DA	Sidechain
3	AC	33	DA	Sidechain
3	AC	35	DG	Sidechain
3	AC	37	DA	Sidechain
3	AC	41	DG	Sidechain
3	AC	43	DC	Sidechain
3	AC	46	DA	Sidechain
3	AC	50	DC	Sidechain
4	AD	13	DG	Sidechain
4	AD	17	DT	Sidechain
4	AD	18	DA	Sidechain
4	AD	21	DC	Sidechain
4	AD	3	DG	Sidechain
4	AD	30	DA	Sidechain
4	AD	33	DC	Sidechain
4	AD	4	DA	Sidechain
4	AD	40	DG	Sidechain
4	AD	47	DG	Sidechain
4	AD	6	DA	Sidechain
4	AD	9	DT	Sidechain
5	AE	1	DC	Sidechain
5	AE	37	DT	Sidechain
5	AE	38	DA	Sidechain
5	AE	4	DA	Sidechain
5	AE	8	DT	Sidechain
6	AF	1	DG	Sidechain
6	AF	12	DA	Sidechain
6	AF	17	DT	Sidechain
6	AF	2	DT	Sidechain

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Mol	Chain	Res	Type	Group
6	AF	23	DA	Sidechain
6	AF	25	DT	Sidechain
6	AF	26	DC	Sidechain
6	AF	27	DC	Sidechain
6	AF	33	DT	Sidechain
6	AF	39	DA	Sidechain
6	AF	40	DT	Sidechain
6	AF	42	DT	Sidechain
6	AF	46	DC	Sidechain
6	AF	47	DG	Sidechain
6	AF	48	DG	Sidechain
6	AF	5	DT	Sidechain
6	AF	6	DC	Sidechain
7	AG	19	DG	Sidechain
7	AG	26	DT	Sidechain
7	AG	31	DT	Sidechain
7	AG	34	DT	Sidechain
7	AG	5	DG	Sidechain
8	AH	1	DA	Sidechain
8	AH	2	DG	Sidechain
8	AH	23	DT	Sidechain
8	AH	7	DT	Sidechain
8	AH	8	DA	Sidechain
8	AH	9	DG	Sidechain
9	AI	21	DA	Sidechain
9	AI	24	DT	Sidechain
9	AI	26	DT	Sidechain
9	AI	28	DT	Sidechain
9	AI	4	DT	Sidechain
9	AI	8	DT	Sidechain
10	AJ	1	DG	Sidechain
10	AJ	11	DC	Sidechain
10	AJ	37	DG	Sidechain
10	AJ	38	DA	Sidechain
10	AJ	40	DT	Sidechain
10	AJ	41	DA	Sidechain
10	AJ	42	DA	Sidechain
11	AK	29	DT	Sidechain
11	AK	30	DA	Sidechain
11	AK	7	DA	Sidechain
11	AK	8	DG	Sidechain
12	AL	19	DT	Sidechain

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Mol	Chain	Res	Type	Group
12	AL	21	DT	Sidechain
12	AL	27	DC	Sidechain
12	AL	43	DT	Sidechain
12	AL	6	DT	Sidechain
13	AM	22	DC	Sidechain
13	AM	35	DT	Sidechain
14	AN	13	DA	Sidechain
14	AN	16	DG	Sidechain
14	AN	17	DT	Sidechain
14	AN	21	DG	Sidechain
14	AN	22	DG	Sidechain
14	AN	31	DG	Sidechain
14	AN	33	DT	Sidechain
14	AN	44	DA	Sidechain
15	AO	1	DA	Sidechain
15	AO	16	DA	Sidechain
15	AO	28	DA	Sidechain
15	AO	30	DG	Sidechain
15	AO	37	DT	Sidechain
15	AO	41	DT	Sidechain
15	AO	45	DG	Sidechain
15	AO	46	DA	Sidechain
16	AP	14	DA	Sidechain
16	AP	21	DC	Sidechain
16	AP	29	DA	Sidechain
16	AP	37	DG	Sidechain
16	AP	39	DA	Sidechain
16	AP	41	DC	Sidechain
16	AP	43	DA	Sidechain
16	AP	44	DT	Sidechain
16	AP	47	DT	Sidechain
16	AP	8	DC	Sidechain
17	AQ	14	DT	Sidechain
17	AQ	28	DC	Sidechain
17	AQ	32	DC	Sidechain
17	AQ	42	DT	Sidechain
17	AQ	43	DT	Sidechain
17	AQ	46	DT	Sidechain
17	AQ	5	DT	Sidechain
18	AR	19	DC	Sidechain
18	AR	20	DT	Sidechain
18	AR	25	DC	Sidechain

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Mol	Chain	Res	Type	Group
18	AR	28	DT	Sidechain
18	AR	30	DT	Sidechain
18	AR	32	DC	Sidechain
18	AR	37	DG	Sidechain
18	AR	46	DT	Sidechain
18	AR	8	DG	Sidechain
18	AR	9	DG	Sidechain
19	AS	1	DC	Sidechain
19	AS	12	DA	Sidechain
19	AS	16	DA	Sidechain
19	AS	19	DA	Sidechain
19	AS	21	DG	Sidechain
19	AS	24	DC	Sidechain
19	AS	29	DT	Sidechain
19	AS	34	DT	Sidechain
19	AS	37	DT	Sidechain
19	AS	40	DA	Sidechain
19	AS	44	DT	Sidechain
19	AS	50	DT	Sidechain
20	AT	1	DA	Sidechain
20	AT	10	DC	Sidechain
20	AT	14	DT	Sidechain
20	AT	28	DA	Sidechain
20	AT	41	DC	Sidechain
20	AT	45	DG	Sidechain
20	AT	5	DG	Sidechain
20	AT	6	DC	Sidechain
21	AU	10	DG	Sidechain
21	AU	11	DG	Sidechain
21	AU	12	DA	Sidechain
21	AU	14	DT	Sidechain
21	AU	16	DG	Sidechain
21	AU	20	DA	Sidechain
21	AU	22	DA	Sidechain
21	AU	30	DG	Sidechain
21	AU	38	DG	Sidechain
21	AU	39	DA	Sidechain
21	AU	5	DT	Sidechain
21	AU	9	DC	Sidechain
22	AV	14	DA	Sidechain
22	AV	22	DA	Sidechain
22	AV	25	DT	Sidechain

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Mol	Chain	Res	Type	Group
22	AV	28	DT	Sidechain
22	AV	29	DT	Sidechain
22	AV	32	DT	Sidechain
23	AW	1	DA	Sidechain
23	AW	11	DA	Sidechain
23	AW	19	DT	Sidechain
23	AW	21	DG	Sidechain
23	AW	38	DG	Sidechain
23	AW	39	DA	Sidechain
23	AW	42	DC	Sidechain
23	AW	46	DA	Sidechain
23	AW	6	DG	Sidechain
23	AW	9	DG	Sidechain
24	AX	10	DT	Sidechain
24	AX	15	DG	Sidechain
24	AX	16	DC	Sidechain
24	AX	19	DA	Sidechain
24	AX	27	DG	Sidechain
24	AX	30	DT	Sidechain
24	AX	32	DG	Sidechain
24	AX	33	DG	Sidechain
24	AX	4	DA	Sidechain
25	AY	1	DA	Sidechain
25	AY	20	DT	Sidechain
25	AY	24	DA	Sidechain
25	AY	25	DA	Sidechain
25	AY	26	DA	Sidechain
25	AY	37	DT	Sidechain
25	AY	4	DT	Sidechain
25	AY	42	DC	Sidechain
25	AY	43	DC	Sidechain
26	AZ	1	DC	Sidechain
26	AZ	15	DC	Sidechain
26	AZ	23	DT	Sidechain
26	AZ	24	DC	Sidechain
26	AZ	30	DA	Sidechain
26	AZ	34	DC	Sidechain
26	AZ	8	DA	Sidechain
27	Aa	1	DT	Sidechain
27	Aa	10	DA	Sidechain
27	Aa	11	DC	Sidechain
27	Aa	12	DG	Sidechain

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Mol	Chain	Res	Type	Group
27	Aa	15	DG	Sidechain
27	Aa	20	DG	Sidechain
27	Aa	21	DC	Sidechain
27	Aa	23	DG	Sidechain
27	Aa	34	DT	Sidechain
27	Aa	35	DC	Sidechain
27	Aa	51	DA	Sidechain
27	Aa	9	DA	Sidechain
28	Ab	20	DA	Sidechain
28	Ab	24	DC	Sidechain
28	Ab	25	DA	Sidechain
28	Ab	26	DT	Sidechain
28	Ab	27	DT	Sidechain
28	Ab	33	DG	Sidechain
28	Ab	35	DC	Sidechain
29	Ac	11	DT	Sidechain
29	Ac	17	DC	Sidechain
29	Ac	18	DG	Sidechain
29	Ac	25	DA	Sidechain
30	Ad	15	DG	Sidechain
30	Ad	2	DA	Sidechain
30	Ad	23	DT	Sidechain
30	Ad	25	DA	Sidechain
30	Ad	29	DT	Sidechain
30	Ad	33	DA	Sidechain
30	Ad	38	DT	Sidechain
30	Ad	9	DC	Sidechain
31	Ae	12	DG	Sidechain
31	Ae	14	DC	Sidechain
31	Ae	15	DA	Sidechain
31	Ae	18	DG	Sidechain
31	Ae	30	DT	Sidechain
31	Ae	46	DG	Sidechain
31	Ae	47	DT	Sidechain
31	Ae	49	DT	Sidechain
31	Ae	5	DT	Sidechain
31	Ae	7	DT	Sidechain
32	Af	18	DC	Sidechain
32	Af	20	DT	Sidechain
32	Af	26	DA	Sidechain
32	Af	29	DT	Sidechain
32	Af	31	DC	Sidechain

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Mol	Chain	Res	Type	Group
32	Af	35	DG	Sidechain
32	Af	36	DC	Sidechain
32	Af	6	DT	Sidechain
32	Af	9	DA	Sidechain
33	Ag	16	DC	Sidechain
33	Ag	17	DT	Sidechain
33	Ag	18	DT	Sidechain
33	Ag	29	DT	Sidechain
33	Ag	3	DT	Sidechain
33	Ag	9	DT	Sidechain
34	Ah	14	DC	Sidechain
34	Ah	27	DA	Sidechain
34	Ah	38	DA	Sidechain
35	Ai	1	DT	Sidechain
35	Ai	11	DC	Sidechain
35	Ai	12	DA	Sidechain
35	Ai	14	DG	Sidechain
35	Ai	2	DT	Sidechain
35	Ai	22	DT	Sidechain
35	Ai	25	DT	Sidechain
35	Ai	3	DT	Sidechain
35	Ai	30	DT	Sidechain
35	Ai	33	DT	Sidechain
35	Ai	37	DA	Sidechain
35	Ai	4	DT	Sidechain
35	Ai	42	DG	Sidechain
35	Ai	7	DA	Sidechain
36	Aj	15	DT	Sidechain
36	Aj	27	DG	Sidechain
36	Aj	31	DG	Sidechain
36	Aj	37	DA	Sidechain
36	Aj	8	DC	Sidechain
37	Ak	12	DA	Sidechain
37	Ak	23	DT	Sidechain
38	Al	12	DA	Sidechain
38	Al	16	DA	Sidechain
38	Al	22	DC	Sidechain
38	Al	25	DT	Sidechain
38	Al	3	DT	Sidechain
38	Al	30	DT	Sidechain
38	Al	44	DT	Sidechain
38	Al	53	DC	Sidechain

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Mol	Chain	Res	Type	Group
38	Al	56	DC	Sidechain
39	Am	21	DT	Sidechain
39	Am	23	DA	Sidechain
39	Am	28	DC	Sidechain
39	Am	3	DT	Sidechain
39	Am	35	DT	Sidechain
39	Am	8	DG	Sidechain
40	An	10	DC	Sidechain
40	An	12	DG	Sidechain
40	An	13	DC	Sidechain
40	An	15	DG	Sidechain
40	An	17	DA	Sidechain
40	An	18	DA	Sidechain
40	An	2	DA	Sidechain
40	An	20	DA	Sidechain
40	An	24	DC	Sidechain
40	An	35	DG	Sidechain
40	An	39	DT	Sidechain
40	An	6	DT	Sidechain
41	Ao	15	DT	Sidechain
41	Ao	19	DT	Sidechain
41	Ao	2	DA	Sidechain
41	Ao	40	DA	Sidechain
41	Ao	44	DA	Sidechain
41	Ao	7	DT	Sidechain
41	Ao	9	DA	Sidechain
42	Ap	12	DG	Sidechain
42	Ap	15	DT	Sidechain
42	Ap	19	DT	Sidechain
42	Ap	25	DG	Sidechain
42	Ap	4	DC	Sidechain
42	Ap	46	DT	Sidechain
43	Aq	13	DG	Sidechain
43	Aq	18	DC	Sidechain
43	Aq	20	DG	Sidechain
43	Aq	21	DA	Sidechain
43	Aq	24	DT	Sidechain
43	Aq	27	DT	Sidechain
43	Aq	3	DG	Sidechain
43	Aq	30	DA	Sidechain
43	Aq	5	DA	Sidechain
43	Aq	6	DT	Sidechain

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Mol	Chain	Res	Type	Group
43	Aq	9	DA	Sidechain
44	Ar	14	DA	Sidechain
44	Ar	20	DT	Sidechain
44	Ar	21	DT	Sidechain
44	Ar	26	DT	Sidechain
44	Ar	27	DC	Sidechain
44	Ar	29	DT	Sidechain
44	Ar	33	DG	Sidechain
44	Ar	43	DG	Sidechain
44	Ar	45	DT	Sidechain
44	Ar	47	DA	Sidechain
44	Ar	7	DT	Sidechain
45	As	23	DA	Sidechain
45	As	29	DG	Sidechain
45	As	30	DA	Sidechain
45	As	46	DT	Sidechain
45	As	8	DT	Sidechain
46	At	11	DG	Sidechain
46	At	13	DA	Sidechain
46	At	35	DG	Sidechain
46	At	37	DA	Sidechain
46	At	4	DC	Sidechain
46	At	44	DG	Sidechain
46	At	46	DG	Sidechain
46	At	51	DC	Sidechain
46	At	53	DG	Sidechain
46	At	54	DA	Sidechain
47	Au	14	DA	Sidechain
47	Au	31	DC	Sidechain
47	Au	34	DT	Sidechain
47	Au	38	DA	Sidechain
47	Au	4	DT	Sidechain
47	Au	8	DC	Sidechain
47	Au	9	DA	Sidechain
48	Av	11	DC	Sidechain
48	Av	14	DT	Sidechain
48	Av	18	DT	Sidechain
48	Av	27	DA	Sidechain
48	Av	29	DT	Sidechain
48	Av	43	DG	Sidechain
48	Av	5	DC	Sidechain
48	Av	6	DC	Sidechain

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Mol	Chain	Res	Type	Group
49	Aw	23	DT	Sidechain
49	Aw	37	DT	Sidechain
49	Aw	38	DA	Sidechain
49	Aw	44	DT	Sidechain
49	Aw	47	DT	Sidechain
50	Ax	12	DA	Sidechain
50	Ax	14	DC	Sidechain
50	Ax	15	DT	Sidechain
50	Ax	2	DT	Sidechain
50	Ax	20	DC	Sidechain
50	Ax	21	DC	Sidechain
50	Ax	23	DG	Sidechain
50	Ax	26	DT	Sidechain
50	Ax	9	DC	Sidechain
51	Ay	13	DC	Sidechain
51	Ay	20	DA	Sidechain
51	Ay	23	DA	Sidechain
51	Ay	28	DG	Sidechain
51	Ay	29	DG	Sidechain
51	Ay	31	DT	Sidechain
52	Az	15	DG	Sidechain
52	Az	19	DC	Sidechain
52	Az	2	DC	Sidechain
52	Az	21	DG	Sidechain
52	Az	23	DA	Sidechain
52	Az	6	DT	Sidechain
52	Az	8	DC	Sidechain
115	B0	10	DC	Sidechain
115	B0	12	DA	Sidechain
115	B0	20	DA	Sidechain
115	B0	26	DC	Sidechain
115	B0	27	DT	Sidechain
115	B0	4	DG	Sidechain
116	B1	1	DA	Sidechain
116	B1	10	DA	Sidechain
116	B1	13	DT	Sidechain
116	B1	14	DT	Sidechain
116	B1	22	DT	Sidechain
116	B1	27	DT	Sidechain
116	B1	29	DA	Sidechain
116	B1	30	DT	Sidechain
116	B1	32	DT	Sidechain

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Mol	Chain	Res	Type	Group
116	B1	36	DT	Sidechain
116	B1	37	DT	Sidechain
116	B1	39	DT	Sidechain
116	B1	9	DT	Sidechain
117	B2	1	DG	Sidechain
117	B2	24	DA	Sidechain
117	B2	28	DT	Sidechain
117	B2	7	DG	Sidechain
118	B3	1	DC	Sidechain
118	B3	11	DT	Sidechain
118	B3	12	DT	Sidechain
118	B3	22	DC	Sidechain
118	B3	23	DT	Sidechain
118	B3	25	DA	Sidechain
118	B3	28	DG	Sidechain
118	B3	30	DT	Sidechain
118	B3	35	DG	Sidechain
118	B3	4	DA	Sidechain
118	B3	46	DA	Sidechain
118	B3	47	DA	Sidechain
118	B3	55	DA	Sidechain
118	B3	9	DT	Sidechain
119	B4	13	DT	Sidechain
119	B4	25	DA	Sidechain
119	B4	39	DA	Sidechain
119	B4	4	DT	Sidechain
119	B4	48	DA	Sidechain
120	B5	19	DT	Sidechain
120	B5	22	DT	Sidechain
120	B5	23	DT	Sidechain
120	B5	26	DT	Sidechain
120	B5	3	DG	Sidechain
120	B5	31	DA	Sidechain
121	B6	1	DG	Sidechain
121	B6	14	DA	Sidechain
121	B6	16	DA	Sidechain
121	B6	19	DG	Sidechain
121	B6	21	DA	Sidechain
121	B6	23	DG	Sidechain
121	B6	26	DT	Sidechain
121	B6	3	DT	Sidechain
121	B6	33	DC	Sidechain

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Mol	Chain	Res	Type	Group
121	B6	37	DT	Sidechain
121	B6	38	DG	Sidechain
121	B6	39	DT	Sidechain
121	B6	4	DT	Sidechain
121	B6	43	DG	Sidechain
121	B6	45	DC	Sidechain
121	B6	5	DG	Sidechain
121	B6	6	DT	Sidechain
122	B7	15	DA	Sidechain
122	B7	22	DA	Sidechain
122	B7	28	DC	Sidechain
122	B7	35	DA	Sidechain
122	B7	4	DT	Sidechain
123	B8	13	DG	Sidechain
123	B8	17	DT	Sidechain
123	B8	2	DA	Sidechain
123	B8	24	DG	Sidechain
123	B8	26	DC	Sidechain
123	B8	27	DG	Sidechain
123	B8	32	DG	Sidechain
123	B8	4	DT	Sidechain
123	B8	40	DT	Sidechain
123	B8	41	DC	Sidechain
123	B8	43	DC	Sidechain
123	B8	9	DG	Sidechain
124	B9	13	DA	Sidechain
124	B9	16	DC	Sidechain
124	B9	18	DT	Sidechain
124	B9	2	DG	Sidechain
124	B9	21	DA	Sidechain
124	B9	23	DT	Sidechain
124	B9	25	DA	Sidechain
124	B9	33	DA	Sidechain
124	B9	35	DC	Sidechain
124	B9	37	DT	Sidechain
124	B9	5	DT	Sidechain
124	B9	6	DC	Sidechain
124	B9	7	DT	Sidechain
124	B9	9	DC	Sidechain
63	BA	18	DT	Sidechain
63	BA	30	DG	Sidechain
63	BA	33	DT	Sidechain

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Mol	Chain	Res	Type	Group
63	BA	43	DT	Sidechain
63	BA	44	DA	Sidechain
63	BA	46	DG	Sidechain
63	BA	7	DA	Sidechain
64	BB	11	DC	Sidechain
64	BB	13	DC	Sidechain
64	BB	16	DA	Sidechain
64	BB	20	DG	Sidechain
64	BB	21	DT	Sidechain
64	BB	24	DG	Sidechain
64	BB	29	DA	Sidechain
65	BC	11	DA	Sidechain
65	BC	19	DT	Sidechain
65	BC	22	DG	Sidechain
65	BC	23	DA	Sidechain
65	BC	31	DT	Sidechain
65	BC	32	DT	Sidechain
66	BD	26	DG	Sidechain
66	BD	32	DA	Sidechain
66	BD	34	DA	Sidechain
66	BD	38	DA	Sidechain
66	BD	46	DA	Sidechain
66	BD	48	DA	Sidechain
66	BD	6	DT	Sidechain
67	BE	1	DT	Sidechain
67	BE	20	DA	Sidechain
67	BE	23	DA	Sidechain
67	BE	28	DG	Sidechain
67	BE	29	DT	Sidechain
68	BF	13	DA	Sidechain
68	BF	21	DA	Sidechain
68	BF	23	DA	Sidechain
68	BF	25	DG	Sidechain
68	BF	27	DA	Sidechain
68	BF	31	DC	Sidechain
68	BF	32	DC	Sidechain
68	BF	4	DG	Sidechain
68	BF	6	DA	Sidechain
68	BF	9	DT	Sidechain
69	BG	16	DT	Sidechain
69	BG	2	DT	Sidechain
69	BG	22	DG	Sidechain

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Mol	Chain	Res	Type	Group
69	BG	24	DG	Sidechain
69	BG	25	DA	Sidechain
69	BG	27	DA	Sidechain
69	BG	30	DC	Sidechain
69	BG	32	DT	Sidechain
69	BG	36	DT	Sidechain
69	BG	39	DC	Sidechain
69	BG	40	DA	Sidechain
69	BG	44	DA	Sidechain
69	BG	45	DG	Sidechain
69	BG	47	DA	Sidechain
69	BG	5	DT	Sidechain
70	BH	13	DT	Sidechain
70	BH	19	DG	Sidechain
70	BH	26	DA	Sidechain
70	BH	28	DT	Sidechain
70	BH	36	DT	Sidechain
70	BH	42	DC	Sidechain
70	BH	44	DT	Sidechain
70	BH	51	DT	Sidechain
70	BH	7	DG	Sidechain
70	BH	9	DG	Sidechain
71	BI	1	DT	Sidechain
71	BI	10	DG	Sidechain
71	BI	11	DT	Sidechain
71	BI	21	DC	Sidechain
71	BI	27	DC	Sidechain
71	BI	31	DG	Sidechain
71	BI	37	DA	Sidechain
71	BI	42	DT	Sidechain
71	BI	6	DA	Sidechain
72	BJ	14	DT	Sidechain
72	BJ	18	DG	Sidechain
72	BJ	21	DA	Sidechain
72	BJ	29	DC	Sidechain
72	BJ	30	DC	Sidechain
72	BJ	31	DA	Sidechain
72	BJ	33	DA	Sidechain
72	BJ	35	DT	Sidechain
72	BJ	4	DT	Sidechain
73	BK	1	DG	Sidechain
73	BK	11	DA	Sidechain

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Mol	Chain	Res	Type	Group
73	BK	22	DT	Sidechain
73	BK	28	DC	Sidechain
73	BK	29	DC	Sidechain
73	BK	3	DT	Sidechain
73	BK	34	DC	Sidechain
73	BK	36	DG	Sidechain
73	BK	37	DG	Sidechain
73	BK	39	DC	Sidechain
73	BK	46	DT	Sidechain
73	BK	5	DA	Sidechain
73	BK	9	DC	Sidechain
74	BL	1	DT	Sidechain
74	BL	3	DA	Sidechain
74	BL	30	DA	Sidechain
74	BL	36	DA	Sidechain
74	BL	38	DT	Sidechain
74	BL	4	DA	Sidechain
74	BL	5	DT	Sidechain
74	BL	8	DA	Sidechain
75	BM	1	DA	Sidechain
75	BM	11	DT	Sidechain
75	BM	12	DG	Sidechain
75	BM	18	DG	Sidechain
75	BM	20	DA	Sidechain
75	BM	22	DA	Sidechain
75	BM	25	DT	Sidechain
75	BM	6	DG	Sidechain
75	BM	9	DT	Sidechain
76	BN	12	DT	Sidechain
76	BN	18	DG	Sidechain
76	BN	20	DT	Sidechain
76	BN	23	DA	Sidechain
76	BN	24	DG	Sidechain
76	BN	7	DA	Sidechain
77	BO	1	DT	Sidechain
77	BO	17	DA	Sidechain
77	BO	21	DG	Sidechain
77	BO	26	DA	Sidechain
77	BO	29	DT	Sidechain
77	BO	3	DA	Sidechain
77	BO	35	DC	Sidechain
77	BO	37	DC	Sidechain

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Mol	Chain	Res	Type	Group
77	BO	40	DG	Sidechain
77	BO	43	DT	Sidechain
77	BO	5	DT	Sidechain
78	BP	13	DA	Sidechain
78	BP	14	DC	Sidechain
78	BP	16	DC	Sidechain
78	BP	18	DA	Sidechain
78	BP	19	DA	Sidechain
78	BP	22	DG	Sidechain
78	BP	24	DA	Sidechain
78	BP	30	DC	Sidechain
78	BP	31	DT	Sidechain
78	BP	35	DC	Sidechain
78	BP	44	DG	Sidechain
78	BP	6	DC	Sidechain
79	BQ	10	DC	Sidechain
79	BQ	11	DT	Sidechain
79	BQ	15	DG	Sidechain
79	BQ	20	DG	Sidechain
79	BQ	21	DA	Sidechain
79	BQ	26	DA	Sidechain
79	BQ	29	DC	Sidechain
79	BQ	3	DT	Sidechain
79	BQ	31	DA	Sidechain
79	BQ	37	DA	Sidechain
79	BQ	4	DC	Sidechain
79	BQ	45	DA	Sidechain
80	BR	10	DT	Sidechain
80	BR	13	DA	Sidechain
80	BR	15	DT	Sidechain
80	BR	23	DC	Sidechain
80	BR	28	DG	Sidechain
80	BR	29	DT	Sidechain
80	BR	31	DA	Sidechain
80	BR	33	DC	Sidechain
80	BR	34	DA	Sidechain
80	BR	4	DT	Sidechain
81	BS	13	DG	Sidechain
81	BS	14	DT	Sidechain
81	BS	23	DC	Sidechain
81	BS	27	DG	Sidechain
81	BS	3	DT	Sidechain

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Mol	Chain	Res	Type	Group
81	BS	33	DA	Sidechain
81	BS	35	DA	Sidechain
81	BS	9	DC	Sidechain
82	BT	10	DG	Sidechain
82	BT	21	DT	Sidechain
82	BT	26	DA	Sidechain
82	BT	3	DA	Sidechain
82	BT	32	DG	Sidechain
82	BT	37	DT	Sidechain
82	BT	38	DC	Sidechain
82	BT	39	DG	Sidechain
82	BT	40	DG	Sidechain
82	BT	41	DG	Sidechain
82	BT	51	DG	Sidechain
82	BT	52	DA	Sidechain
83	BU	1	DC	Sidechain
83	BU	13	DG	Sidechain
83	BU	2	DC	Sidechain
83	BU	24	DA	Sidechain
83	BU	25	DA	Sidechain
83	BU	35	DT	Sidechain
83	BU	36	DT	Sidechain
84	BV	15	DC	Sidechain
84	BV	19	DG	Sidechain
84	BV	2	DC	Sidechain
84	BV	20	DA	Sidechain
84	BV	21	DT	Sidechain
84	BV	22	DT	Sidechain
84	BV	26	DC	Sidechain
84	BV	5	DT	Sidechain
84	BV	8	DT	Sidechain
85	BW	13	DC	Sidechain
85	BW	22	DG	Sidechain
85	BW	29	DT	Sidechain
85	BW	31	DC	Sidechain
85	BW	8	DG	Sidechain
86	BX	4	DC	Sidechain
86	BX	8	DT	Sidechain
87	BY	15	DT	Sidechain
87	BY	23	DG	Sidechain
87	BY	27	DG	Sidechain
87	BY	28	DA	Sidechain

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Mol	Chain	Res	Type	Group
87	BY	33	DT	Sidechain
87	BY	44	DA	Sidechain
88	BZ	12	DC	Sidechain
88	BZ	13	DG	Sidechain
88	BZ	22	DC	Sidechain
88	BZ	43	DG	Sidechain
89	Ba	10	DG	Sidechain
89	Ba	19	DG	Sidechain
89	Ba	20	DA	Sidechain
89	Ba	26	DA	Sidechain
89	Ba	28	DA	Sidechain
89	Ba	32	DA	Sidechain
89	Ba	37	DC	Sidechain
89	Ba	38	DA	Sidechain
89	Ba	39	DC	Sidechain
89	Ba	4	DT	Sidechain
90	Bb	1	DA	Sidechain
90	Bb	10	DC	Sidechain
90	Bb	11	DG	Sidechain
90	Bb	13	DA	Sidechain
90	Bb	16	DG	Sidechain
90	Bb	2	DA	Sidechain
90	Bb	21	DG	Sidechain
90	Bb	27	DA	Sidechain
90	Bb	28	DT	Sidechain
90	Bb	29	DT	Sidechain
90	Bb	31	DA	Sidechain
90	Bb	32	DA	Sidechain
90	Bb	33	DG	Sidechain
90	Bb	4	DG	Sidechain
90	Bb	7	DC	Sidechain
90	Bb	9	DA	Sidechain
91	Bc	10	DT	Sidechain
91	Bc	13	DT	Sidechain
91	Bc	19	DT	Sidechain
91	Bc	23	DA	Sidechain
91	Bc	32	DA	Sidechain
91	Bc	44	DG	Sidechain
91	Bc	6	DT	Sidechain
91	Bc	7	DG	Sidechain
92	Bd	1	DA	Sidechain
92	Bd	13	DA	Sidechain

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Mol	Chain	Res	Type	Group
92	Bd	16	DA	Sidechain
92	Bd	31	DC	Sidechain
92	Bd	39	DG	Sidechain
92	Bd	41	DT	Sidechain
92	Bd	42	DG	Sidechain
92	Bd	5	DT	Sidechain
93	Be	11	DT	Sidechain
93	Be	12	DC	Sidechain
93	Be	13	DA	Sidechain
93	Be	20	DT	Sidechain
93	Be	24	DG	Sidechain
93	Be	26	DA	Sidechain
93	Be	27	DC	Sidechain
93	Be	32	DA	Sidechain
93	Be	42	DA	Sidechain
94	Bf	16	DA	Sidechain
94	Bf	19	DG	Sidechain
94	Bf	20	DA	Sidechain
94	Bf	25	DT	Sidechain
94	Bf	3	DG	Sidechain
94	Bf	4	DA	Sidechain
94	Bf	5	DT	Sidechain
94	Bf	6	DA	Sidechain
94	Bf	7	DT	Sidechain
95	Bg	11	DG	Sidechain
95	Bg	12	DG	Sidechain
95	Bg	14	DT	Sidechain
95	Bg	17	DT	Sidechain
95	Bg	25	DT	Sidechain
95	Bg	26	DT	Sidechain
95	Bg	3	DG	Sidechain
95	Bg	30	DC	Sidechain
95	Bg	31	DG	Sidechain
95	Bg	35	DA	Sidechain
95	Bg	5	DC	Sidechain
96	Bh	10	DT	Sidechain
96	Bh	2	DC	Sidechain
96	Bh	25	DT	Sidechain
96	Bh	3	DC	Sidechain
96	Bh	30	DG	Sidechain
96	Bh	34	DA	Sidechain
96	Bh	37	DC	Sidechain

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Mol	Chain	Res	Type	Group
96	Bh	4	DT	Sidechain
96	Bh	40	DA	Sidechain
97	Bi	11	DC	Sidechain
97	Bi	17	DT	Sidechain
97	Bi	2	DT	Sidechain
97	Bi	22	DG	Sidechain
97	Bi	28	DT	Sidechain
97	Bi	29	DT	Sidechain
97	Bi	33	DT	Sidechain
97	Bi	34	DT	Sidechain
97	Bi	39	DT	Sidechain
97	Bi	46	DG	Sidechain
97	Bi	8	DA	Sidechain
98	Bj	11	DG	Sidechain
98	Bj	12	DA	Sidechain
98	Bj	23	DA	Sidechain
98	Bj	26	DC	Sidechain
98	Bj	40	DG	Sidechain
98	Bj	42	DA	Sidechain
98	Bj	45	DG	Sidechain
98	Bj	46	DC	Sidechain
98	Bj	48	DG	Sidechain
99	Bk	1	DG	Sidechain
99	Bk	18	DG	Sidechain
99	Bk	19	DG	Sidechain
99	Bk	5	DT	Sidechain
99	Bk	7	DG	Sidechain
100	Bl	2	DA	Sidechain
100	Bl	25	DA	Sidechain
100	Bl	3	DA	Sidechain
100	Bl	38	DG	Sidechain
100	Bl	39	DA	Sidechain
101	Bm	1	DC	Sidechain
101	Bm	13	DC	Sidechain
101	Bm	2	DA	Sidechain
101	Bm	20	DG	Sidechain
101	Bm	21	DG	Sidechain
101	Bm	23	DA	Sidechain
101	Bm	26	DC	Sidechain
101	Bm	32	DC	Sidechain
101	Bm	38	DT	Sidechain
102	Bn	19	DA	Sidechain

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Mol	Chain	Res	Type	Group
102	Bn	24	DG	Sidechain
102	Bn	25	DA	Sidechain
102	Bn	29	DG	Sidechain
102	Bn	43	DT	Sidechain
102	Bn	8	DA	Sidechain
103	Bo	13	DA	Sidechain
103	Bo	19	DT	Sidechain
103	Bo	20	DA	Sidechain
103	Bo	22	DG	Sidechain
103	Bo	32	DG	Sidechain
103	Bo	35	DC	Sidechain
103	Bo	40	DT	Sidechain
103	Bo	41	DT	Sidechain
103	Bo	42	DT	Sidechain
103	Bo	8	DT	Sidechain
103	Bo	9	DC	Sidechain
104	Bp	1	DG	Sidechain
104	Bp	10	DG	Sidechain
104	Bp	11	DC	Sidechain
104	Bp	18	DG	Sidechain
104	Bp	20	DC	Sidechain
104	Bp	3	DT	Sidechain
104	Bp	33	DT	Sidechain
104	Bp	35	DG	Sidechain
104	Bp	37	DA	Sidechain
104	Bp	38	DA	Sidechain
104	Bp	39	DA	Sidechain
104	Bp	9	DT	Sidechain
105	Bq	10	DT	Sidechain
105	Bq	16	DG	Sidechain
105	Bq	18	DG	Sidechain
105	Bq	25	DG	Sidechain
105	Bq	27	DT	Sidechain
105	Bq	39	DA	Sidechain
105	Bq	43	DG	Sidechain
106	Br	10	DT	Sidechain
106	Br	18	DG	Sidechain
106	Br	23	DT	Sidechain
106	Br	28	DG	Sidechain
106	Br	31	DA	Sidechain
106	Br	38	DA	Sidechain
106	Br	5	DC	Sidechain

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Mol	Chain	Res	Type	Group
107	Bs	1	DA	Sidechain
107	Bs	13	DC	Sidechain
107	Bs	17	DT	Sidechain
107	Bs	2	DG	Sidechain
107	Bs	21	DT	Sidechain
107	Bs	22	DT	Sidechain
107	Bs	23	DT	Sidechain
107	Bs	24	DC	Sidechain
107	Bs	26	DT	Sidechain
107	Bs	3	DA	Sidechain
107	Bs	5	DA	Sidechain
107	Bs	8	DT	Sidechain
108	Bt	14	DT	Sidechain
108	Bt	19	DT	Sidechain
108	Bt	28	DG	Sidechain
108	Bt	29	DA	Sidechain
108	Bt	30	DG	Sidechain
108	Bt	33	DA	Sidechain
108	Bt	35	DG	Sidechain
108	Bt	41	DT	Sidechain
109	Bu	1	DT	Sidechain
109	Bu	15	DA	Sidechain
109	Bu	17	DT	Sidechain
109	Bu	2	DT	Sidechain
109	Bu	23	DA	Sidechain
109	Bu	28	DT	Sidechain
109	Bu	37	DT	Sidechain
109	Bu	39	DA	Sidechain
109	Bu	41	DC	Sidechain
109	Bu	48	DA	Sidechain
109	Bu	49	DT	Sidechain
110	Bv	1	DC	Sidechain
110	Bv	10	DA	Sidechain
110	Bv	11	DA	Sidechain
110	Bv	24	DT	Sidechain
110	Bv	25	DG	Sidechain
110	Bv	31	DA	Sidechain
110	Bv	33	DA	Sidechain
110	Bv	34	DA	Sidechain
111	Bw	11	DA	Sidechain
111	Bw	16	DA	Sidechain
111	Bw	22	DT	Sidechain

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Mol	Chain	Res	Type	Group
111	Bw	23	DT	Sidechain
111	Bw	29	DA	Sidechain
111	Bw	31	DC	Sidechain
111	Bw	33	DT	Sidechain
111	Bw	4	DC	Sidechain
111	Bw	6	DT	Sidechain
112	Bx	13	DA	Sidechain
112	Bx	16	DT	Sidechain
112	Bx	17	DT	Sidechain
112	Bx	21	DT	Sidechain
112	Bx	22	DT	Sidechain
112	Bx	23	DT	Sidechain
112	Bx	24	DG	Sidechain
112	Bx	26	DG	Sidechain
112	Bx	29	DT	Sidechain
112	Bx	35	DT	Sidechain
112	Bx	37	DT	Sidechain
112	Bx	44	DA	Sidechain
112	Bx	46	DG	Sidechain
112	Bx	47	DT	Sidechain
112	Bx	48	DA	Sidechain
112	Bx	52	DG	Sidechain
112	Bx	6	DT	Sidechain
113	By	10	DC	Sidechain
113	By	14	DA	Sidechain
113	By	21	DT	Sidechain
113	By	22	DG	Sidechain
114	Bz	14	DA	Sidechain
114	Bz	22	DA	Sidechain
114	Bz	24	DT	Sidechain
114	Bz	26	DG	Sidechain
177	C0	16	DG	Sidechain
177	C0	2	DC	Sidechain
177	C0	29	DA	Sidechain
177	C0	3	DT	Sidechain
177	C0	34	DT	Sidechain
177	C0	35	DT	Sidechain
177	C0	37	DT	Sidechain
177	C0	44	DT	Sidechain
177	C0	55	DT	Sidechain
177	C0	57	DT	Sidechain
177	C0	58	DA	Sidechain

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Mol	Chain	Res	Type	Group
178	C1	10	DG	Sidechain
178	C1	12	DC	Sidechain
178	C1	15	DT	Sidechain
178	C1	16	DT	Sidechain
178	C1	21	DA	Sidechain
178	C1	22	DT	Sidechain
178	C1	25	DA	Sidechain
178	C1	33	DC	Sidechain
178	C1	38	DA	Sidechain
178	C1	4	DT	Sidechain
178	C1	40	DG	Sidechain
178	C1	43	DA	Sidechain
179	C2	1	DA	Sidechain
179	C2	13	DA	Sidechain
179	C2	3	DT	Sidechain
179	C2	30	DC	Sidechain
179	C2	6	DG	Sidechain
179	C2	9	DA	Sidechain
180	C3	23	DG	Sidechain
180	C3	25	DT	Sidechain
181	C4	18	DA	Sidechain
181	C4	21	DA	Sidechain
181	C4	31	DT	Sidechain
181	C4	35	DT	Sidechain
181	C4	36	DT	Sidechain
181	C4	4	DT	Sidechain
181	C4	47	DG	Sidechain
181	C4	51	DA	Sidechain
182	C5	10	DA	Sidechain
182	C5	21	DG	Sidechain
182	C5	34	DG	Sidechain
182	C5	38	DG	Sidechain
182	C5	39	DC	Sidechain
182	C5	41	DC	Sidechain
182	C5	5	DT	Sidechain
183	C6	1	DA	Sidechain
183	C6	13	DA	Sidechain
183	C6	14	DT	Sidechain
183	C6	16	DA	Sidechain
183	C6	2	DC	Sidechain
183	C6	39	DG	Sidechain
183	C6	41	DC	Sidechain

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Mol	Chain	Res	Type	Group
183	C6	44	DT	Sidechain
183	C6	5	DA	Sidechain
183	C6	8	DG	Sidechain
183	C6	9	DG	Sidechain
184	C7	11	DG	Sidechain
184	C7	15	DA	Sidechain
184	C7	23	DA	Sidechain
184	C7	24	DC	Sidechain
184	C7	26	DT	Sidechain
184	C7	31	DT	Sidechain
184	C7	41	DT	Sidechain
184	C7	6	DA	Sidechain
185	C8	15	DG	Sidechain
185	C8	16	DG	Sidechain
185	C8	21	DG	Sidechain
185	C8	23	DT	Sidechain
185	C8	29	DA	Sidechain
185	C8	33	DT	Sidechain
185	C8	34	DA	Sidechain
185	C8	6	DC	Sidechain
185	C8	7	DC	Sidechain
186	C9	14	DG	Sidechain
186	C9	15	DA	Sidechain
186	C9	16	DG	Sidechain
186	C9	28	DA	Sidechain
186	C9	3	DA	Sidechain
186	C9	30	DT	Sidechain
186	C9	37	DA	Sidechain
125	CA	10	DC	Sidechain
125	CA	3	DG	Sidechain
125	CA	32	DG	Sidechain
125	CA	6	DA	Sidechain
125	CA	7	DG	Sidechain
126	CB	1	DA	Sidechain
126	CB	15	DT	Sidechain
126	CB	17	DA	Sidechain
126	CB	18	DA	Sidechain
126	CB	21	DG	Sidechain
126	CB	23	DA	Sidechain
126	CB	25	DA	Sidechain
126	CB	26	DG	Sidechain
126	CB	28	DG	Sidechain

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Mol	Chain	Res	Type	Group
126	CB	31	DA	Sidechain
126	CB	6	DA	Sidechain
126	CB	7	DT	Sidechain
126	CB	9	DG	Sidechain
127	CC	14	DC	Sidechain
127	CC	18	DA	Sidechain
127	CC	19	DA	Sidechain
127	CC	23	DA	Sidechain
127	CC	3	DG	Sidechain
127	CC	9	DT	Sidechain
128	CD	17	DC	Sidechain
128	CD	18	DT	Sidechain
128	CD	23	DT	Sidechain
128	CD	26	DT	Sidechain
128	CD	32	DT	Sidechain
128	CD	34	DA	Sidechain
128	CD	47	DG	Sidechain
128	CD	50	DG	Sidechain
128	CD	51	DG	Sidechain
128	CD	52	DT	Sidechain
128	CD	8	DT	Sidechain
128	CD	9	DC	Sidechain
129	CE	1	DG	Sidechain
129	CE	15	DA	Sidechain
129	CE	18	DT	Sidechain
129	CE	33	DC	Sidechain
129	CE	35	DA	Sidechain
129	CE	37	DT	Sidechain
129	CE	38	DG	Sidechain
129	CE	39	DT	Sidechain
129	CE	5	DA	Sidechain
130	CF	11	DA	Sidechain
130	CF	15	DC	Sidechain
130	CF	16	DC	Sidechain
130	CF	26	DG	Sidechain
130	CF	28	DC	Sidechain
130	CF	31	DA	Sidechain
130	CF	38	DG	Sidechain
131	CG	10	DG	Sidechain
131	CG	12	DT	Sidechain
131	CG	13	DC	Sidechain
131	CG	24	DG	Sidechain

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Mol	Chain	Res	Type	Group
131	CG	3	DG	Sidechain
131	CG	6	DC	Sidechain
131	CG	8	DA	Sidechain
132	CH	1	DT	Sidechain
132	CH	13	DG	Sidechain
132	CH	14	DG	Sidechain
132	CH	25	DA	Sidechain
132	CH	29	DA	Sidechain
132	CH	31	DT	Sidechain
132	CH	33	DG	Sidechain
132	CH	35	DG	Sidechain
132	CH	37	DT	Sidechain
132	CH	40	DA	Sidechain
132	CH	46	DG	Sidechain
132	CH	49	DT	Sidechain
132	CH	51	DT	Sidechain
132	CH	9	DG	Sidechain
133	CI	1	DC	Sidechain
133	CI	22	DG	Sidechain
133	CI	23	DA	Sidechain
133	CI	9	DA	Sidechain
134	CJ	15	DT	Sidechain
134	CJ	23	DT	Sidechain
134	CJ	26	DA	Sidechain
134	CJ	27	DT	Sidechain
134	CJ	29	DA	Sidechain
134	CJ	33	DG	Sidechain
134	CJ	34	DA	Sidechain
134	CJ	36	DG	Sidechain
134	CJ	4	DA	Sidechain
134	CJ	43	DT	Sidechain
134	CJ	49	DT	Sidechain
135	CK	10	DT	Sidechain
135	CK	15	DG	Sidechain
135	CK	19	DT	Sidechain
135	CK	21	DT	Sidechain
135	CK	23	DT	Sidechain
135	CK	29	DT	Sidechain
135	CK	44	DG	Sidechain
135	CK	50	DT	Sidechain
135	CK	53	DT	Sidechain
135	CK	54	DT	Sidechain

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Mol	Chain	Res	Type	Group
135	CK	6	DG	Sidechain
136	CL	1	DA	Sidechain
136	CL	2	DT	Sidechain
136	CL	30	DG	Sidechain
136	CL	9	DC	Sidechain
137	CM	12	DC	Sidechain
137	CM	17	DG	Sidechain
137	CM	27	DC	Sidechain
137	CM	28	DC	Sidechain
137	CM	3	DG	Sidechain
137	CM	30	DT	Sidechain
137	CM	32	DC	Sidechain
137	CM	6	DG	Sidechain
137	CM	7	DA	Sidechain
138	CN	1	DG	Sidechain
138	CN	10	DG	Sidechain
138	CN	11	DT	Sidechain
138	CN	2	DA	Sidechain
138	CN	21	DA	Sidechain
138	CN	38	DT	Sidechain
138	CN	6	DA	Sidechain
138	CN	8	DG	Sidechain
139	CO	12	DG	Sidechain
139	CO	17	DA	Sidechain
139	CO	19	DG	Sidechain
139	CO	21	DT	Sidechain
139	CO	23	DA	Sidechain
139	CO	29	DT	Sidechain
139	CO	4	DC	Sidechain
140	CP	1	DC	Sidechain
140	CP	10	DG	Sidechain
140	CP	15	DT	Sidechain
140	CP	16	DT	Sidechain
140	CP	25	DC	Sidechain
140	CP	3	DG	Sidechain
140	CP	31	DG	Sidechain
140	CP	41	DT	Sidechain
140	CP	5	DT	Sidechain
140	CP	52	DG	Sidechain
140	CP	8	DG	Sidechain
140	CP	9	DT	Sidechain
141	CQ	1	DG	Sidechain

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Mol	Chain	Res	Type	Group
141	CQ	10	DG	Sidechain
141	CQ	14	DT	Sidechain
141	CQ	15	DC	Sidechain
141	CQ	2	DT	Sidechain
141	CQ	21	DT	Sidechain
141	CQ	31	DC	Sidechain
141	CQ	35	DC	Sidechain
141	CQ	48	DA	Sidechain
141	CQ	7	DG	Sidechain
141	CQ	9	DT	Sidechain
142	CR	11	DT	Sidechain
142	CR	15	DA	Sidechain
142	CR	22	DA	Sidechain
142	CR	25	DA	Sidechain
142	CR	3	DC	Sidechain
142	CR	30	DA	Sidechain
142	CR	35	DT	Sidechain
142	CR	38	DT	Sidechain
142	CR	6	DG	Sidechain
143	CS	10	DA	Sidechain
143	CS	12	DG	Sidechain
143	CS	25	DG	Sidechain
143	CS	27	DG	Sidechain
143	CS	3	DT	Sidechain
143	CS	36	DA	Sidechain
143	CS	38	DG	Sidechain
143	CS	39	DA	Sidechain
143	CS	4	DT	Sidechain
143	CS	45	DC	Sidechain
143	CS	6	DT	Sidechain
144	CT	14	DC	Sidechain
144	CT	19	DG	Sidechain
144	CT	24	DA	Sidechain
144	CT	25	DG	Sidechain
144	CT	29	DG	Sidechain
144	CT	30	DC	Sidechain
144	CT	31	DT	Sidechain
144	CT	33	DT	Sidechain
144	CT	5	DA	Sidechain
144	CT	7	DA	Sidechain
144	CT	9	DC	Sidechain
145	CU	1	DA	Sidechain

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Mol	Chain	Res	Type	Group
145	CU	12	DT	Sidechain
145	CU	18	DG	Sidechain
145	CU	2	DG	Sidechain
145	CU	4	DA	Sidechain
145	CU	5	DT	Sidechain
146	CV	1	DC	Sidechain
146	CV	17	DA	Sidechain
146	CV	18	DG	Sidechain
146	CV	22	DA	Sidechain
146	CV	24	DC	Sidechain
146	CV	5	DA	Sidechain
146	CV	6	DA	Sidechain
147	CW	10	DT	Sidechain
147	CW	16	DG	Sidechain
147	CW	23	DG	Sidechain
147	CW	33	DG	Sidechain
147	CW	39	DG	Sidechain
147	CW	4	DA	Sidechain
147	CW	46	DG	Sidechain
147	CW	8	DA	Sidechain
147	CW	9	DC	Sidechain
148	CX	21	DG	Sidechain
148	CX	22	DG	Sidechain
148	CX	31	DT	Sidechain
148	CX	35	DT	Sidechain
148	CX	36	DA	Sidechain
148	CX	38	DG	Sidechain
148	CX	39	DA	Sidechain
148	CX	46	DT	Sidechain
149	CY	17	DC	Sidechain
149	CY	18	DC	Sidechain
149	CY	25	DA	Sidechain
149	CY	26	DA	Sidechain
149	CY	3	DC	Sidechain
149	CY	4	DT	Sidechain
149	CY	6	DG	Sidechain
149	CY	7	DC	Sidechain
149	CY	9	DC	Sidechain
150	CZ	10	DA	Sidechain
150	CZ	20	DG	Sidechain
150	CZ	23	DT	Sidechain
150	CZ	25	DT	Sidechain

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Mol	Chain	Res	Type	Group
150	CZ	26	DT	Sidechain
150	CZ	35	DT	Sidechain
150	CZ	37	DT	Sidechain
150	CZ	41	DT	Sidechain
150	CZ	45	DT	Sidechain
150	CZ	8	DT	Sidechain
151	Ca	1	DG	Sidechain
151	Ca	13	DT	Sidechain
151	Ca	14	DT	Sidechain
151	Ca	17	DA	Sidechain
151	Ca	24	DA	Sidechain
151	Ca	3	DC	Sidechain
151	Ca	30	DA	Sidechain
151	Ca	31	DA	Sidechain
151	Ca	9	DC	Sidechain
152	Cb	13	DA	Sidechain
152	Cb	38	DT	Sidechain
152	Cb	40	DA	Sidechain
152	Cb	45	DC	Sidechain
152	Cb	9	DC	Sidechain
153	Cc	1	DT	Sidechain
153	Cc	10	DA	Sidechain
153	Cc	11	DT	Sidechain
153	Cc	14	DC	Sidechain
153	Cc	15	DC	Sidechain
153	Cc	21	DC	Sidechain
153	Cc	23	DG	Sidechain
153	Cc	25	DG	Sidechain
153	Cc	28	DG	Sidechain
153	Cc	29	DG	Sidechain
153	Cc	3	DG	Sidechain
153	Cc	5	DG	Sidechain
153	Cc	6	DG	Sidechain
153	Cc	8	DT	Sidechain
154	Cd	20	DG	Sidechain
154	Cd	21	DC	Sidechain
154	Cd	29	DG	Sidechain
154	Cd	32	DG	Sidechain
155	Ce	1	DG	Sidechain
155	Ce	12	DC	Sidechain
155	Ce	2	DT	Sidechain
155	Ce	23	DC	Sidechain

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Mol	Chain	Res	Type	Group
155	Ce	24	DC	Sidechain
155	Ce	26	DA	Sidechain
155	Ce	27	DC	Sidechain
155	Ce	30	DG	Sidechain
155	Ce	6	DC	Sidechain
155	Ce	8	DC	Sidechain
156	Cf	22	DT	Sidechain
156	Cf	23	DT	Sidechain
156	Cf	28	DC	Sidechain
156	Cf	33	DA	Sidechain
156	Cf	40	DG	Sidechain
156	Cf	7	DT	Sidechain
156	Cf	9	DC	Sidechain
157	Cg	1	DT	Sidechain
157	Cg	18	DT	Sidechain
157	Cg	21	DG	Sidechain
157	Cg	23	DG	Sidechain
157	Cg	24	DG	Sidechain
157	Cg	28	DC	Sidechain
157	Cg	30	DT	Sidechain
157	Cg	32	DG	Sidechain
157	Cg	34	DA	Sidechain
157	Cg	4	DT	Sidechain
157	Cg	7	DG	Sidechain
158	Ch	14	DA	Sidechain
158	Ch	15	DG	Sidechain
158	Ch	16	DG	Sidechain
158	Ch	19	DC	Sidechain
158	Ch	21	DA	Sidechain
158	Ch	25	DT	Sidechain
158	Ch	34	DG	Sidechain
158	Ch	36	DG	Sidechain
158	Ch	41	DG	Sidechain
158	Ch	42	DC	Sidechain
158	Ch	43	DT	Sidechain
159	Ci	23	DT	Sidechain
159	Ci	25	DC	Sidechain
159	Ci	3	DG	Sidechain
159	Ci	31	DT	Sidechain
159	Ci	4	DT	Sidechain
159	Ci	47	DT	Sidechain
159	Ci	48	DT	Sidechain

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Mol	Chain	Res	Type	Group
159	Ci	8	DG	Sidechain
160	Cj	1	DA	Sidechain
160	Cj	11	DC	Sidechain
160	Cj	14	DG	Sidechain
160	Cj	17	DG	Sidechain
160	Cj	20	DC	Sidechain
160	Cj	26	DG	Sidechain
160	Cj	27	DG	Sidechain
160	Cj	28	DC	Sidechain
160	Cj	29	DG	Sidechain
160	Cj	30	DA	Sidechain
160	Cj	32	DG	Sidechain
160	Cj	33	DG	Sidechain
160	Cj	38	DC	Sidechain
160	Cj	4	DG	Sidechain
160	Cj	40	DA	Sidechain
160	Cj	45	DC	Sidechain
160	Cj	7	DG	Sidechain
160	Cj	9	DG	Sidechain
161	Ck	27	DA	Sidechain
161	Ck	32	DA	Sidechain
161	Ck	38	DG	Sidechain
161	Ck	4	DT	Sidechain
161	Ck	44	DC	Sidechain
161	Ck	9	DG	Sidechain
162	Cl	1	DG	Sidechain
162	Cl	12	DA	Sidechain
162	Cl	22	DA	Sidechain
162	Cl	26	DA	Sidechain
162	Cl	28	DT	Sidechain
162	Cl	38	DC	Sidechain
162	Cl	39	DG	Sidechain
162	Cl	43	DG	Sidechain
162	Cl	44	DT	Sidechain
162	Cl	45	DG	Sidechain
162	Cl	6	DC	Sidechain
163	Cm	10	DG	Sidechain
163	Cm	21	DA	Sidechain
163	Cm	28	DT	Sidechain
163	Cm	3	DT	Sidechain
163	Cm	37	DT	Sidechain
163	Cm	5	DT	Sidechain

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Mol	Chain	Res	Type	Group
163	Cm	6	DC	Sidechain
164	Cn	1	DA	Sidechain
164	Cn	2	DG	Sidechain
164	Cn	20	DT	Sidechain
164	Cn	22	DC	Sidechain
164	Cn	23	DC	Sidechain
164	Cn	25	DC	Sidechain
164	Cn	6	DT	Sidechain
165	Co	13	DT	Sidechain
165	Co	25	DT	Sidechain
165	Co	26	DT	Sidechain
165	Co	27	DA	Sidechain
165	Co	31	DT	Sidechain
165	Co	33	DT	Sidechain
165	Co	36	DC	Sidechain
165	Co	8	DT	Sidechain
166	Cp	1	DG	Sidechain
166	Cp	12	DT	Sidechain
166	Cp	14	DG	Sidechain
166	Cp	17	DG	Sidechain
166	Cp	19	DG	Sidechain
166	Cp	22	DC	Sidechain
166	Cp	29	DA	Sidechain
166	Cp	3	DG	Sidechain
166	Cp	33	DT	Sidechain
166	Cp	34	DC	Sidechain
166	Cp	36	DT	Sidechain
167	Cq	1	DT	Sidechain
167	Cq	25	DC	Sidechain
167	Cq	7	DC	Sidechain
167	Cq	8	DT	Sidechain
168	Cr	14	DT	Sidechain
168	Cr	25	DC	Sidechain
168	Cr	26	DT	Sidechain
168	Cr	28	DT	Sidechain
168	Cr	30	DA	Sidechain
168	Cr	31	DG	Sidechain
168	Cr	34	DT	Sidechain
168	Cr	36	DA	Sidechain
168	Cr	37	DG	Sidechain
168	Cr	38	DC	Sidechain
168	Cr	4	DC	Sidechain

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Mol	Chain	Res	Type	Group
169	Cs	15	DC	Sidechain
169	Cs	18	DG	Sidechain
169	Cs	21	DG	Sidechain
169	Cs	23	DG	Sidechain
169	Cs	29	DG	Sidechain
169	Cs	3	DG	Sidechain
169	Cs	32	DG	Sidechain
169	Cs	38	DC	Sidechain
169	Cs	39	DC	Sidechain
169	Cs	6	DT	Sidechain
169	Cs	7	DT	Sidechain
169	Cs	9	DT	Sidechain
170	Ct	22	DA	Sidechain
170	Ct	25	DG	Sidechain
170	Ct	27	DA	Sidechain
170	Ct	28	DG	Sidechain
170	Ct	31	DC	Sidechain
170	Ct	35	DG	Sidechain
170	Ct	4	DA	Sidechain
170	Ct	6	DT	Sidechain
170	Ct	9	DC	Sidechain
171	Cu	10	DT	Sidechain
171	Cu	11	DT	Sidechain
171	Cu	14	DT	Sidechain
171	Cu	31	DG	Sidechain
171	Cu	32	DT	Sidechain
172	Cv	12	DG	Sidechain
172	Cv	13	DC	Sidechain
172	Cv	16	DG	Sidechain
172	Cv	18	DT	Sidechain
172	Cv	19	DT	Sidechain
172	Cv	21	DC	Sidechain
172	Cv	22	DC	Sidechain
172	Cv	28	DA	Sidechain
172	Cv	34	DC	Sidechain
172	Cv	35	DT	Sidechain
172	Cv	9	DC	Sidechain
173	Cw	18	DC	Sidechain
173	Cw	22	DT	Sidechain
173	Cw	25	DG	Sidechain
173	Cw	28	DC	Sidechain
173	Cw	3	DG	Sidechain

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Mol	Chain	Res	Type	Group
173	Cw	31	DC	Sidechain
173	Cw	7	DC	Sidechain
174	Cx	12	DA	Sidechain
174	Cx	15	DG	Sidechain
174	Cx	20	DC	Sidechain
174	Cx	21	DA	Sidechain
174	Cx	26	DT	Sidechain
174	Cx	29	DC	Sidechain
174	Cx	32	DA	Sidechain
174	Cx	9	DG	Sidechain
175	Cy	15	DG	Sidechain
175	Cy	19	DT	Sidechain
175	Cy	2	DT	Sidechain
175	Cy	20	DT	Sidechain
175	Cy	23	DG	Sidechain
175	Cy	24	DG	Sidechain
175	Cy	27	DG	Sidechain
175	Cy	28	DC	Sidechain
175	Cy	30	DC	Sidechain
175	Cy	33	DC	Sidechain
175	Cy	37	DT	Sidechain
175	Cy	39	DT	Sidechain
175	Cy	4	DT	Sidechain
175	Cy	44	DG	Sidechain
175	Cy	5	DT	Sidechain
175	Cy	7	DA	Sidechain
176	Cz	1	DT	Sidechain
176	Cz	10	DT	Sidechain
176	Cz	15	DA	Sidechain
176	Cz	17	DA	Sidechain
176	Cz	18	DT	Sidechain
176	Cz	24	DA	Sidechain
176	Cz	3	DT	Sidechain
176	Cz	4	DT	Sidechain
176	Cz	43	DT	Sidechain
176	Cz	45	DA	Sidechain
176	Cz	50	DG	Sidechain
176	Cz	51	DT	Sidechain
176	Cz	9	DC	Sidechain
187	DA	14	DA	Sidechain
187	DA	15	DC	Sidechain
187	DA	21	DT	Sidechain

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Mol	Chain	Res	Type	Group
187	DA	23	DC	Sidechain
187	DA	25	DG	Sidechain
187	DA	3	DT	Sidechain
187	DA	31	DT	Sidechain
187	DA	43	DG	Sidechain
187	DA	44	DA	Sidechain
187	DA	45	DG	Sidechain
187	DA	46	DA	Sidechain
187	DA	47	DT	Sidechain
187	DA	50	DA	Sidechain
187	DA	52	DC	Sidechain
187	DA	55	DT	Sidechain
187	DA	59	DC	Sidechain
188	DB	12	DG	Sidechain
188	DB	31	DA	Sidechain
188	DB	33	DC	Sidechain
188	DB	39	DT	Sidechain
188	DB	9	DC	Sidechain
189	DC	12	DA	Sidechain
189	DC	27	DT	Sidechain
189	DC	29	DA	Sidechain
189	DC	37	DA	Sidechain
189	DC	43	DG	Sidechain
189	DC	5	DT	Sidechain
190	DD	1	DG	Sidechain
190	DD	14	DG	Sidechain
190	DD	18	DT	Sidechain
190	DD	26	DT	Sidechain
190	DD	27	DG	Sidechain
190	DD	3	DA	Sidechain
190	DD	32	DT	Sidechain
190	DD	4	DA	Sidechain
190	DD	9	DG	Sidechain
191	DE	14	DC	Sidechain
191	DE	23	DG	Sidechain
191	DE	24	DT	Sidechain
191	DE	26	DG	Sidechain
191	DE	27	DA	Sidechain
191	DE	28	DT	Sidechain
191	DE	3	DA	Sidechain
191	DE	34	DT	Sidechain
191	DE	35	DT	Sidechain

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Mol	Chain	Res	Type	Group
191	DE	42	DC	Sidechain
192	DF	10	DA	Sidechain
192	DF	2	DA	Sidechain
192	DF	20	DG	Sidechain
192	DF	6	DC	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	164972	0	91297	0	0
2	AB	972	0	529	0	0
3	AC	1091	0	596	0	0
4	AD	989	0	542	0	0
5	AE	971	0	543	0	0
6	AF	1131	0	620	0	0
7	AG	970	0	554	0	0
8	AH	636	0	354	0	0
9	AI	570	0	324	0	0
10	AJ	977	0	543	0	0
11	AK	657	0	361	0	0
12	AL	1065	0	592	0	0
13	AM	766	0	439	0	0
14	AN	946	0	522	0	0
15	AO	947	0	514	0	0
16	AP	982	0	545	0	0
17	AQ	972	0	553	0	0
18	AR	942	0	522	0	0
19	AS	1012	0	566	0	0
20	AT	959	0	528	0	0
21	AU	823	0	448	0	0
22	AV	918	0	519	0	0
23	AW	982	0	539	0	0
24	AX	763	0	412	0	0
25	AY	966	0	536	0	0
26	AZ	813	0	450	0	0
27	Aa	1086	0	598	0	0
28	Ab	798	0	443	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
29	Ac	624	0	352	0	0
30	Ad	927	0	505	0	0
31	Ae	1056	0	595	0	0
32	Af	936	0	521	0	0
33	Ag	616	0	343	0	0
34	Ah	801	0	437	0	0
35	Ai	981	0	554	0	0
36	Aj	820	0	449	0	0
37	Ak	775	0	429	0	0
38	Al	1136	0	633	0	0
39	Am	772	0	438	0	0
40	An	912	0	506	0	0
41	Ao	942	0	518	0	0
42	Ap	974	0	548	0	0
43	Aq	662	0	362	0	0
44	Ar	988	0	547	0	0
45	As	991	0	536	0	0
46	At	1105	0	608	0	0
47	Au	934	0	524	0	0
48	Av	985	0	543	0	0
49	Aw	964	0	549	0	0
50	Ax	917	0	505	0	0
51	Ay	643	0	347	0	0
52	Az	613	0	338	0	0
53	A0	647	0	358	0	0
54	A1	984	0	542	0	0
55	A2	941	0	519	0	0
56	A3	615	0	339	0	0
57	A4	914	0	510	0	0
58	A5	923	0	515	0	0
59	A6	994	0	540	0	0
60	A7	977	0	550	0	0
61	A8	1206	0	686	0	0
62	A9	778	0	427	0	0
63	BA	980	0	540	0	0
64	BB	637	0	347	0	0
65	BC	1223	0	676	0	0
66	BD	1088	0	597	0	0
67	BE	648	0	362	0	0
68	BF	779	0	427	0	0
69	BG	959	0	538	0	0
70	BH	1159	0	660	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
71	BI	917	0	506	0	0
72	BJ	927	0	507	0	0
73	BK	981	0	544	0	0
74	BL	918	0	511	0	0
75	BM	990	0	544	0	0
76	BN	618	0	340	0	0
77	BO	914	0	509	0	0
78	BP	920	0	506	0	0
79	BQ	929	0	507	0	0
80	BR	770	0	432	0	0
81	BS	972	0	548	0	0
82	BT	1070	0	581	0	0
83	BU	784	0	440	0	0
84	BV	646	0	365	0	0
85	BW	624	0	347	0	0
86	BX	913	0	508	0	0
87	BY	1065	0	590	0	0
88	BZ	957	0	517	0	0
89	Ba	952	0	516	0	0
90	Bb	791	0	427	0	0
91	Bc	923	0	513	0	0
92	Bd	985	0	542	0	0
93	Be	908	0	502	0	0
94	Bf	776	0	434	0	0
95	Bg	783	0	429	0	0
96	Bh	814	0	447	0	0
97	Bi	993	0	565	0	0
98	Bj	991	0	542	0	0
99	Bk	620	0	338	0	0
100	Bl	829	0	449	0	0
101	Bm	773	0	427	0	0
102	Bn	878	0	492	0	0
103	Bo	914	0	519	0	0
104	Bp	974	0	528	0	0
105	Bq	984	0	551	0	0
106	Br	778	0	434	0	0
107	Bs	609	0	346	0	0
108	Bt	919	0	517	0	0
109	Bu	1004	0	565	0	0
110	Bv	815	0	447	0	0
111	Bw	752	0	422	0	0
112	Bx	1059	0	602	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
113	By	625	0	338	0	0
114	Bz	821	0	450	0	0
115	B0	613	0	342	0	0
116	B1	1065	0	604	0	0
117	B2	614	0	340	0	0
118	B3	1143	0	630	0	0
119	B4	988	0	537	0	0
120	B5	632	0	358	0	0
121	B6	929	0	511	0	0
122	B7	761	0	417	0	0
123	B8	1066	0	593	0	0
124	B9	768	0	434	0	0
125	CA	644	0	359	0	0
126	CB	656	0	362	0	0
127	CC	624	0	337	0	0
128	CD	1200	0	672	0	0
129	CE	1062	0	590	0	0
130	CF	816	0	446	0	0
131	CG	626	0	347	0	0
132	CH	1098	0	600	0	0
133	CI	614	0	339	0	0
134	CJ	988	0	570	0	0
135	CK	1138	0	643	0	0
136	CL	640	0	350	0	0
137	CM	653	0	359	0	0
138	CN	827	0	450	0	0
139	CO	607	0	340	0	0
140	CP	1106	0	612	0	0
141	CQ	976	0	540	0	0
142	CR	923	0	511	0	0
143	CS	983	0	539	0	0
144	CT	769	0	426	0	0
145	CU	619	0	337	0	0
146	CV	652	0	358	0	0
147	CW	970	0	531	0	0
148	CX	974	0	552	0	0
149	CY	995	0	535	0	0
150	CZ	948	0	528	0	0
151	Ca	798	0	437	0	0
152	Cb	933	0	503	0	0
153	Cc	616	0	340	0	0
154	Cd	779	0	425	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
155	Ce	603	0	339	0	0
156	Cf	803	0	449	0	0
157	Cg	779	0	429	0	0
158	Ch	928	0	507	0	0
159	Ci	977	0	550	0	0
160	Cj	1107	0	607	0	0
161	Ck	948	0	517	0	0
162	Cl	913	0	508	0	0
163	Cm	765	0	435	0	0
164	Cn	916	0	504	0	0
165	Co	752	0	425	0	0
166	Cp	752	0	418	0	0
167	Cq	731	0	409	0	0
168	Cr	778	0	430	0	0
169	Cs	804	0	441	0	0
170	Ct	781	0	425	0	0
171	Cu	736	0	413	0	0
172	Cv	748	0	423	0	0
173	Cw	629	0	347	0	0
174	Cx	761	0	416	0	0
175	Cy	917	0	507	0	0
176	Cz	1061	0	594	0	0
177	C0	1215	0	692	0	0
178	C1	964	0	532	0	0
179	C2	660	0	363	0	0
180	C3	757	0	417	0	0
181	C4	1159	0	655	0	0
182	C5	910	0	497	0	0
183	C6	959	0	529	0	0
184	C7	957	0	526	0	0
185	C8	771	0	429	0	0
186	C9	766	0	418	0	0
187	DA	1225	0	681	0	0
188	DB	876	0	487	0	0
189	DC	952	0	515	0	0
190	DD	775	0	428	0	0
191	DE	940	0	515	0	0
192	DF	638	0	349	0	0
All	All	331913	0	183783	0	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). Clashscore could not be calculated for this entry.

There are no clashes within the asymmetric unit.

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

There are no protein molecules in this entry.

5.3.2 Protein sidechains [i](#)

There are no protein molecules in this entry.

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

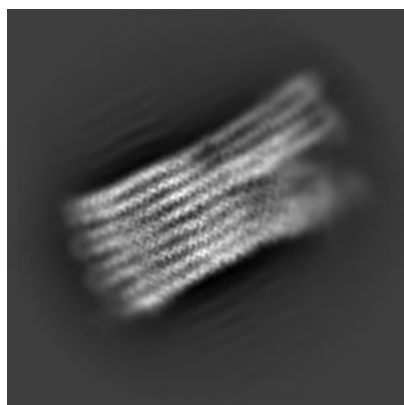
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-11378. These allow visual inspection of the internal detail of the map and identification of artifacts.

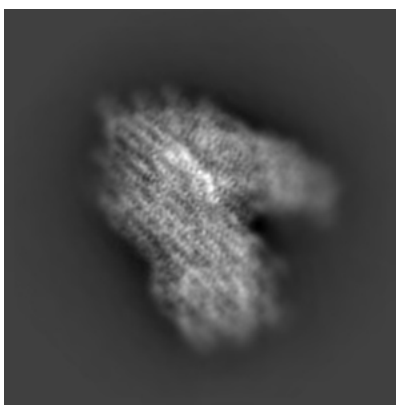
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

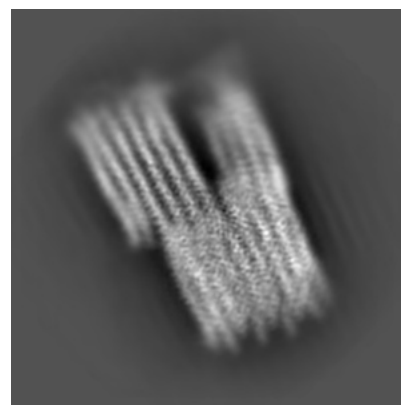
6.1.1 Primary map



X



Y



Z

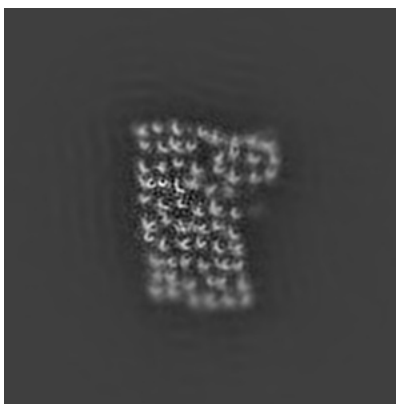
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

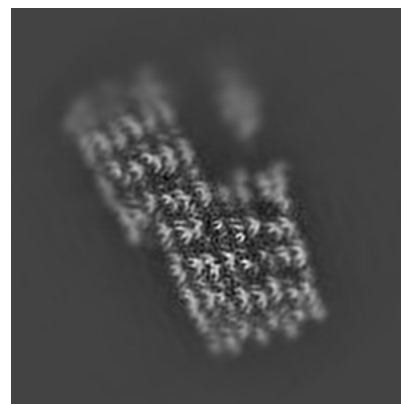
6.2.1 Primary map



X Index: 115



Y Index: 115



Z Index: 115

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

6.3 Largest variance slices [\(i\)](#)

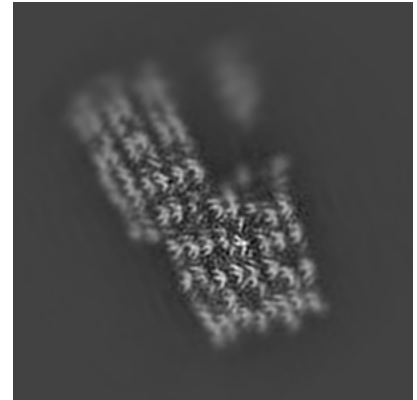
6.3.1 Primary map



X Index: 130



Y Index: 97

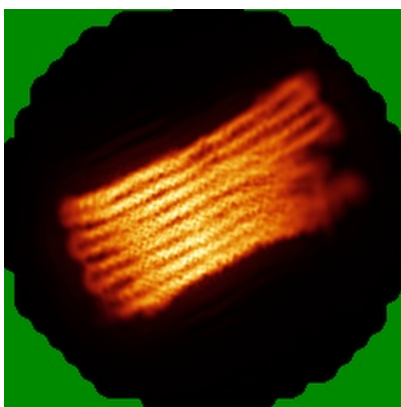


Z Index: 119

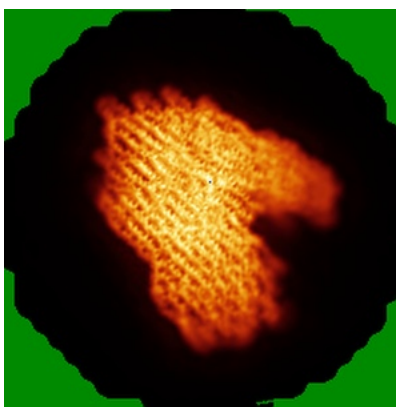
The images above show the largest variance slices of the map in three orthogonal directions.

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

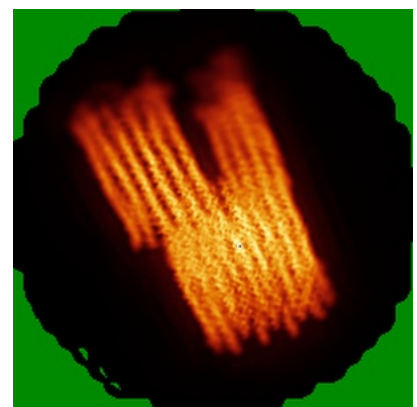
6.4.1 Primary map



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

This section was not generated.

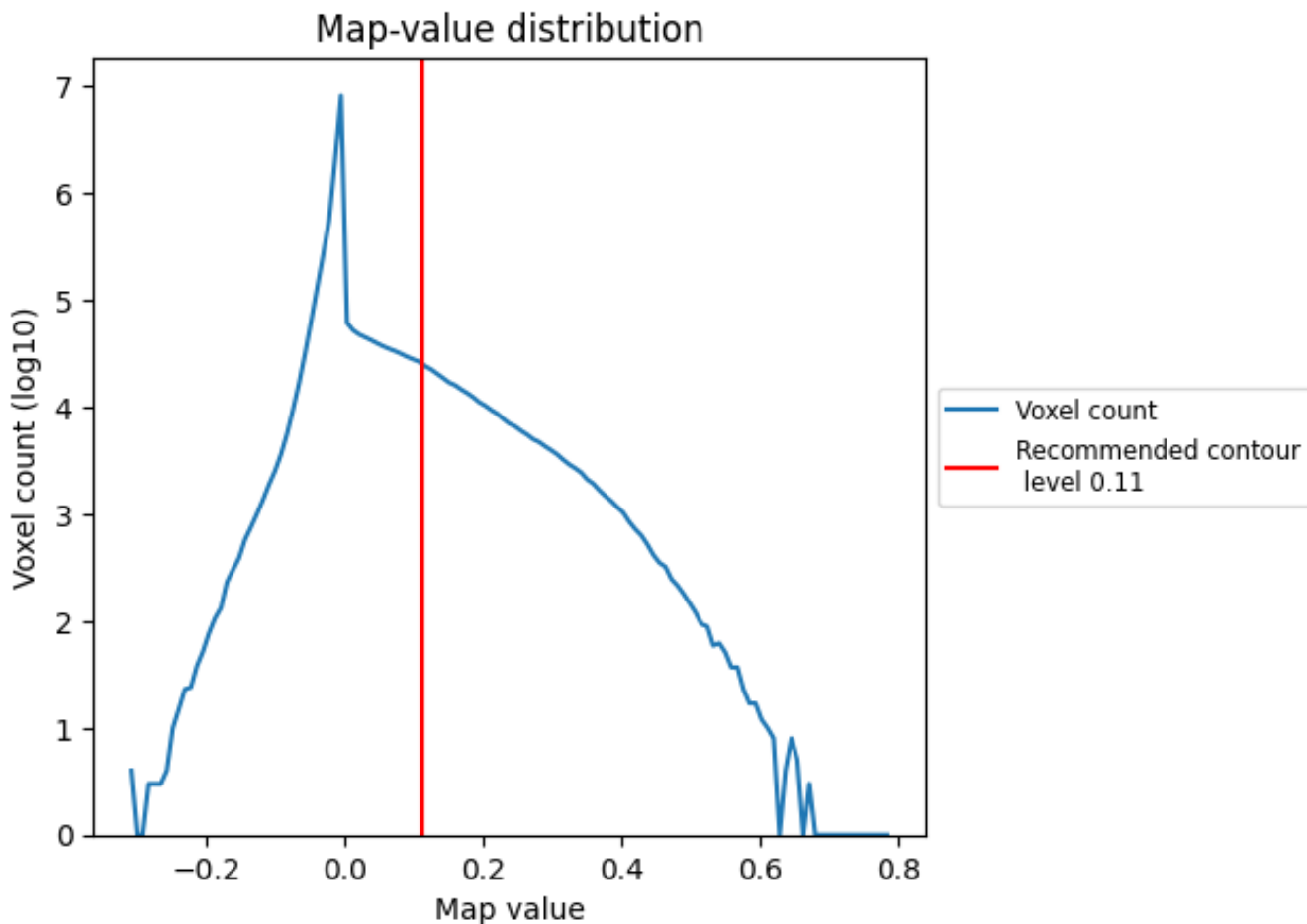
6.6 Mask visualisation

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

7 Map analysis [i](#)

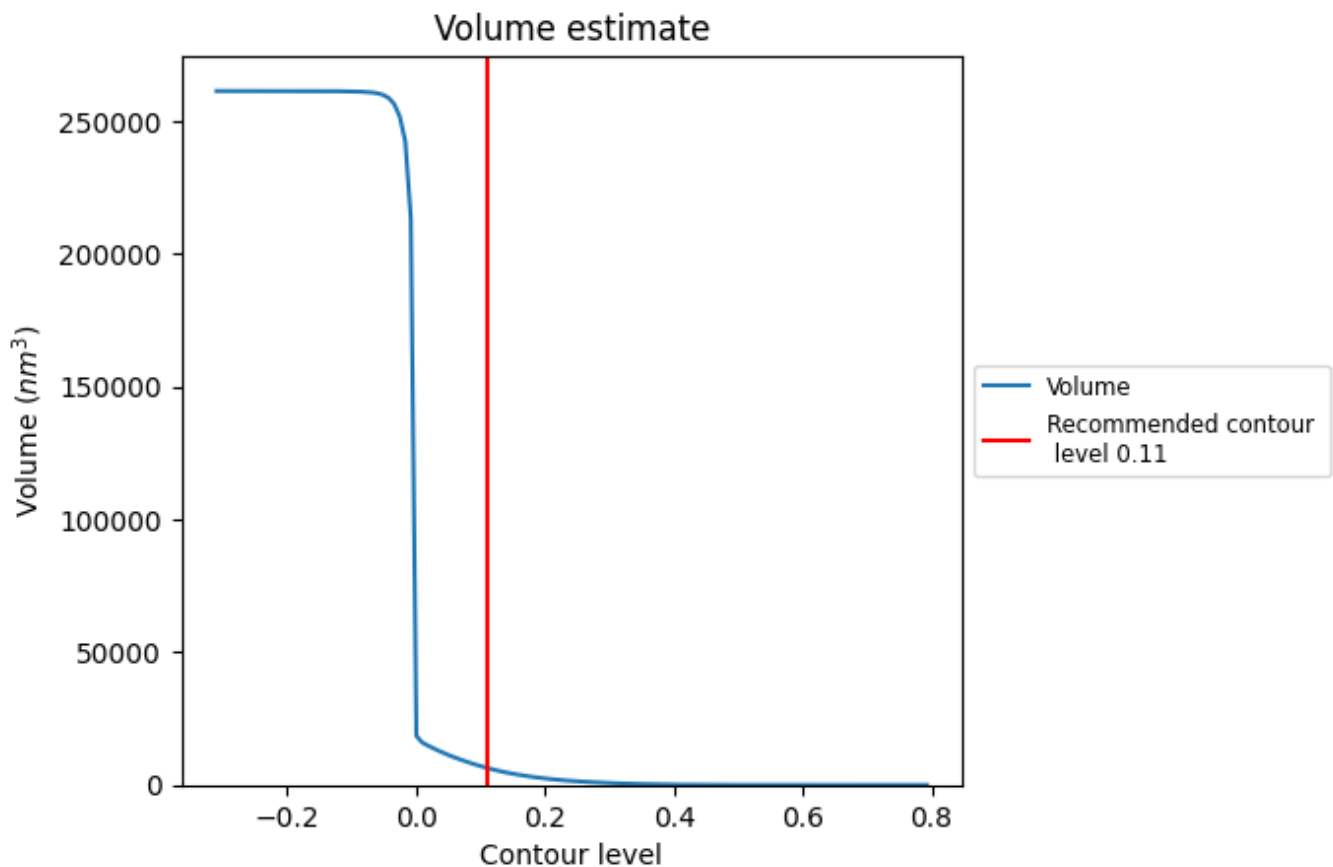
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

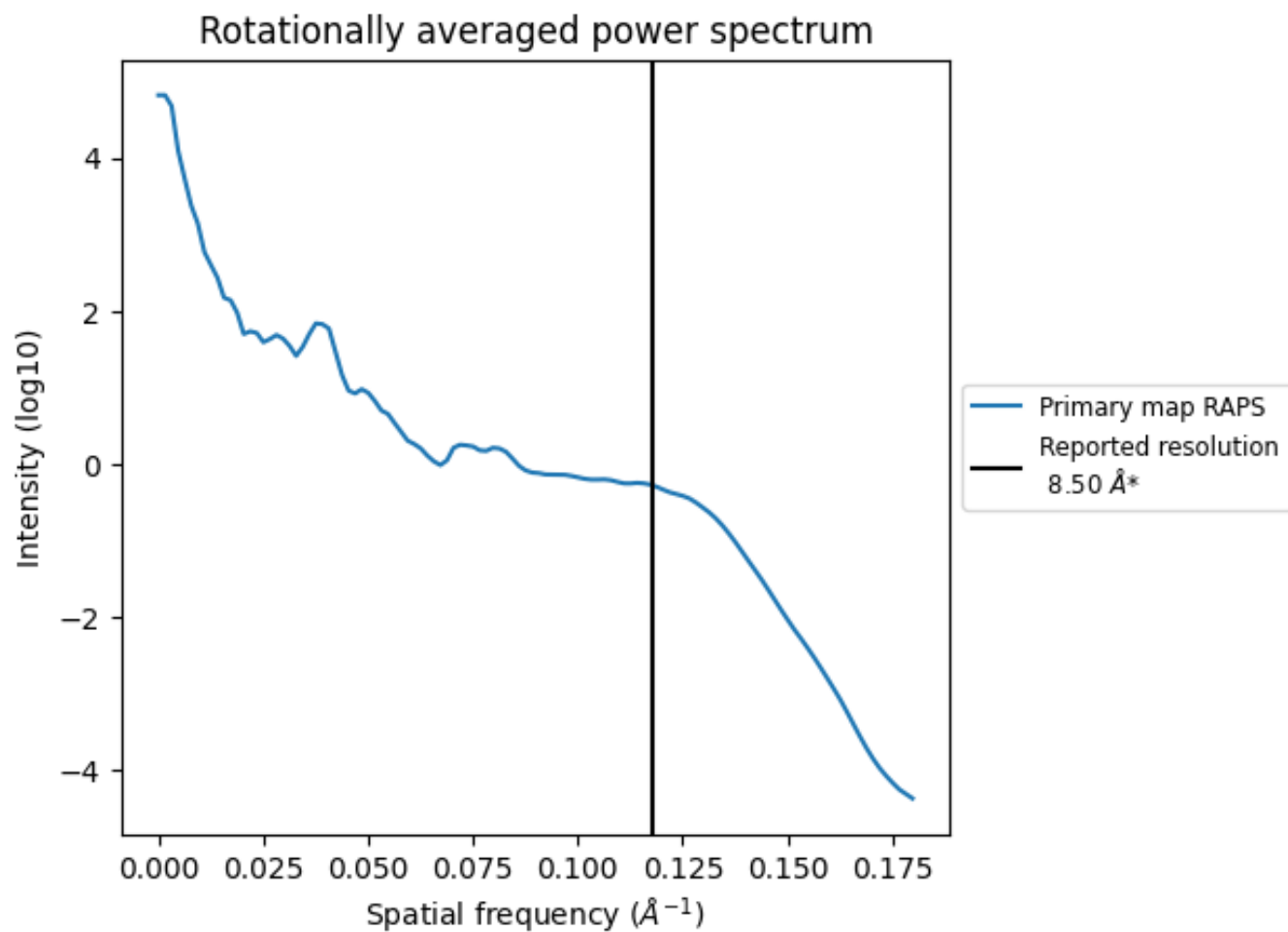
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 6439 nm^3 ; this corresponds to an approximate mass of 5817 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 [\(i\)](#)

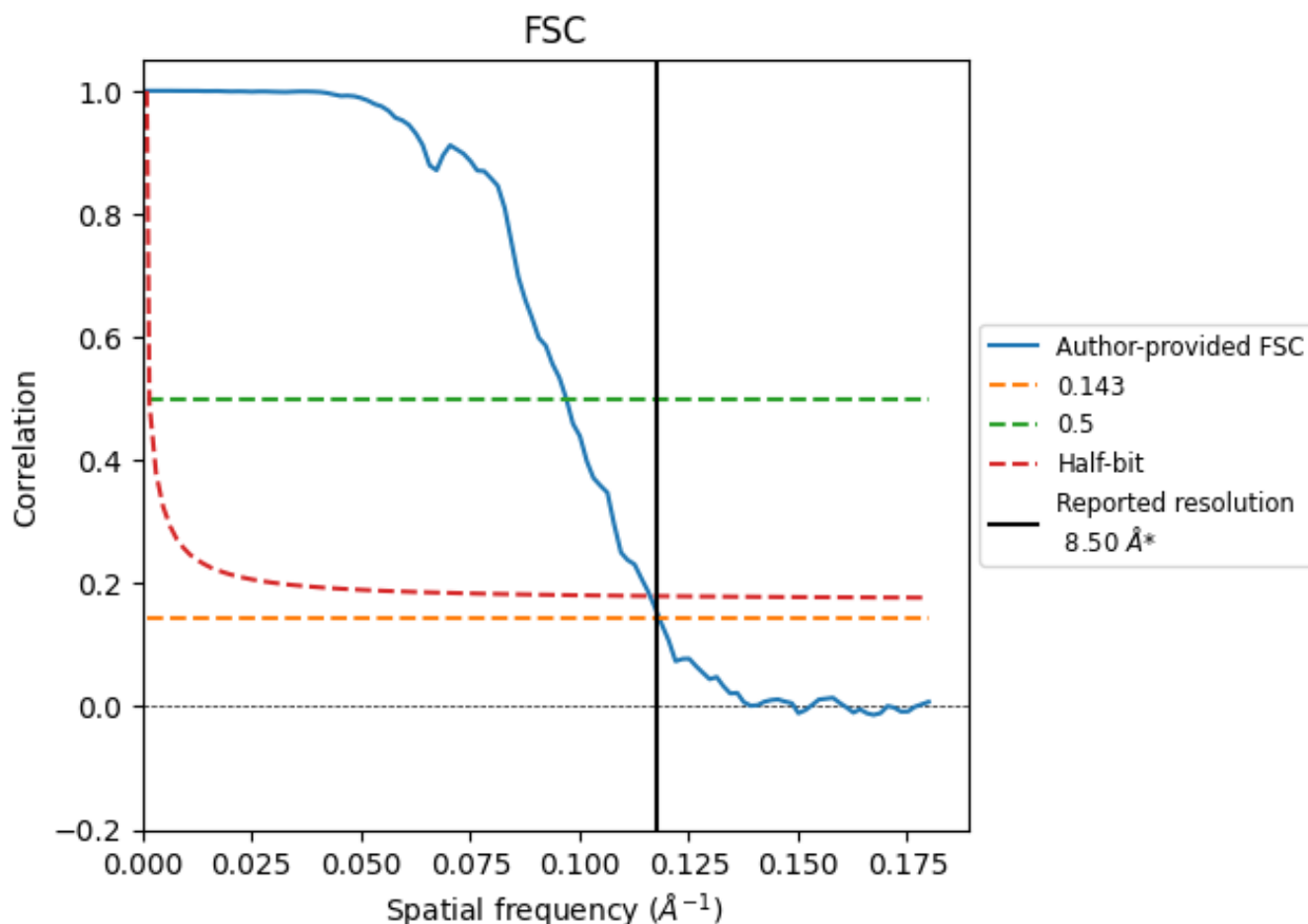


*Reported resolution corresponds to spatial frequency of 0.118 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.118 \AA^{-1}

8.2 Resolution estimates [i](#)

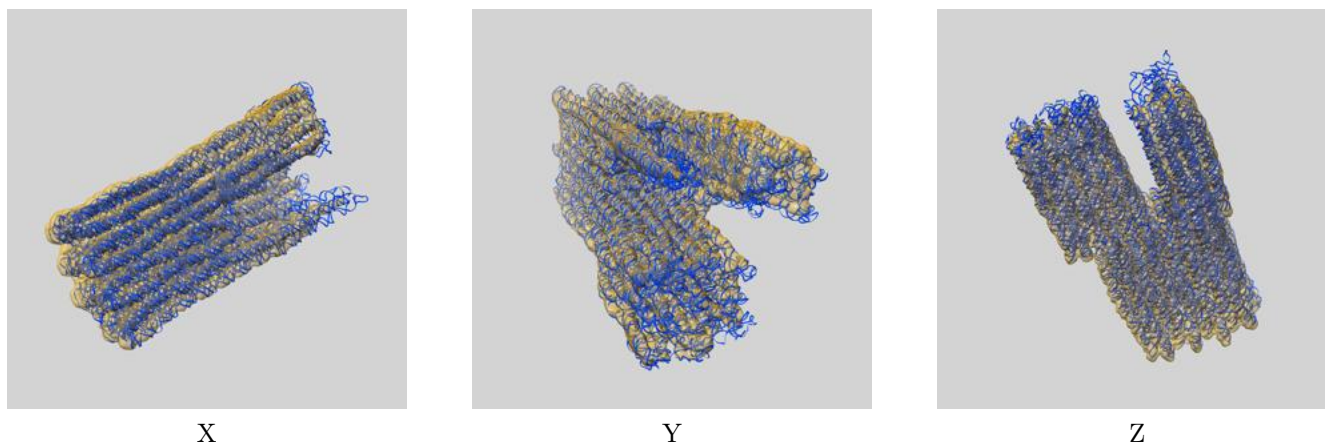
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	8.50	-	-
Author-provided FSC curve	8.45	10.32	8.61
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit [i](#)

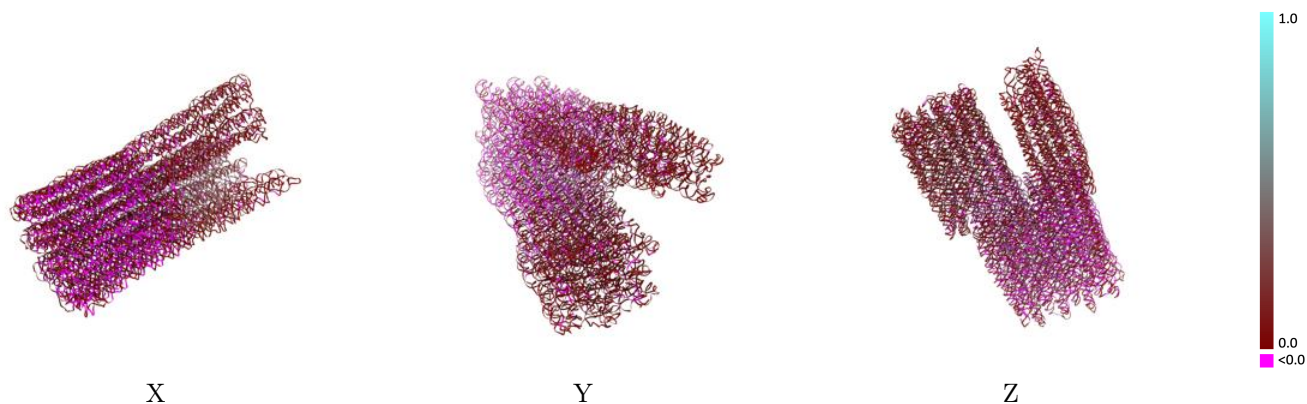
This section contains information regarding the fit between EMDB map EMD-11378 and PDB model 7ARY. Per-residue inclusion information can be found in section 3 on page 39.

9.1 Map-model overlay [i](#)



The images above show the 3D surface view of the map at the recommended contour level 0.11 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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

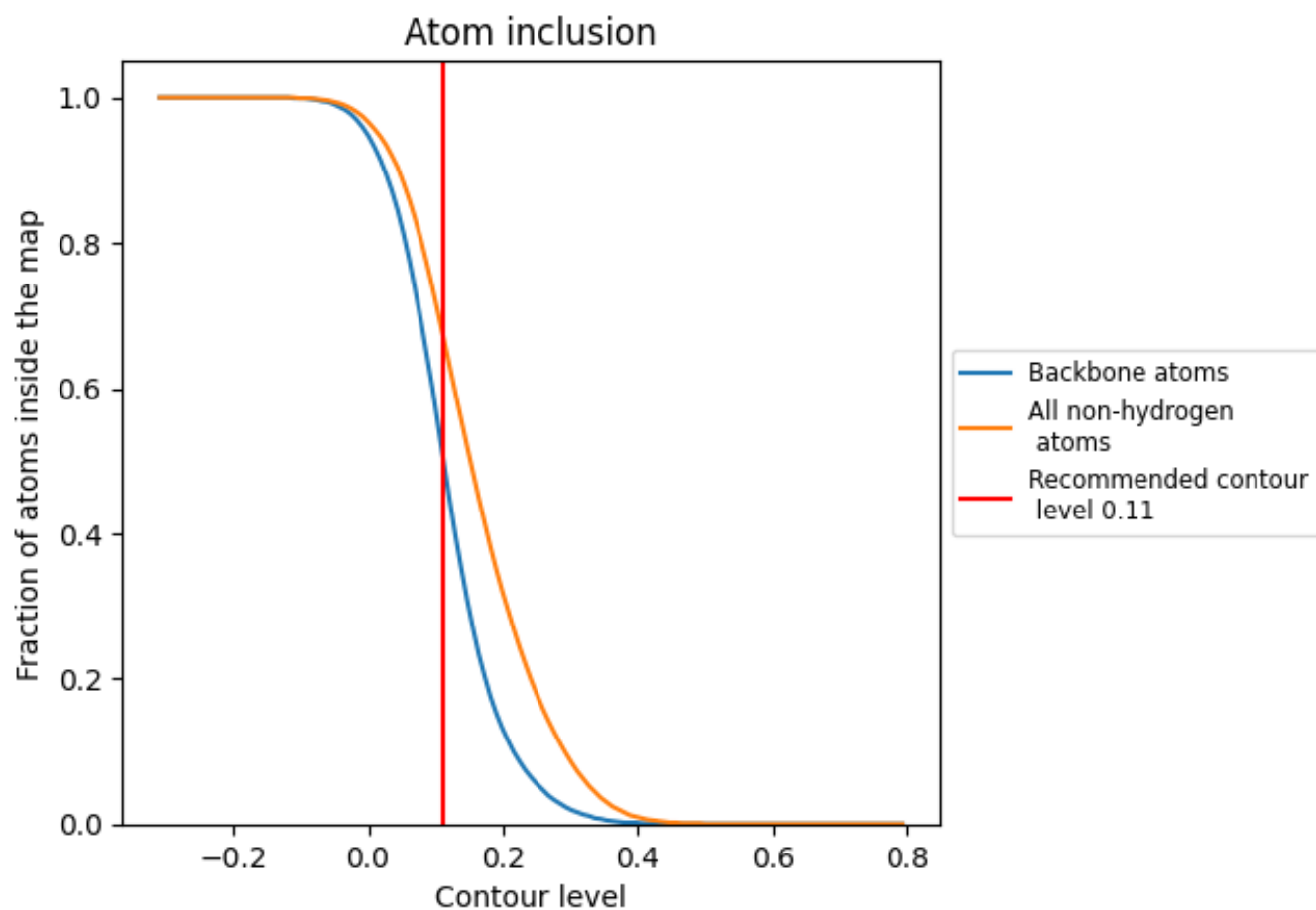


The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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, 51% of all backbone atoms, 68% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary





















































































The table lists the average atom inclusion at the recommended contour level (0.11) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6780	0.0580
A0	0.8550	0.1060
A1	0.5980	0.0140
A2	0.7400	0.0490
A3	0.7590	0.0710
A4	0.6680	0.0520
A5	0.4760	0.0360
A6	0.6170	-0.0000
A7	0.6120	0.0430
A8	0.3730	0.0680
A9	0.4450	0.0240
AA	0.6840	0.0600
AB	0.8700	0.1090
AC	0.8140	0.0630
AD	0.8060	0.1160
AE	0.8550	0.1230
AF	0.8890	0.1220
AG	0.2020	0.0360
AH	0.9010	0.1400
AI	0.9650	0.1160
AJ	0.8650	0.1110
AK	0.8220	0.1140
AL	0.6630	0.1040
AM	0.8190	0.1220
AN	0.6670	0.1010
AO	0.8400	0.1190
AP	0.7230	0.0610
AQ	0.2900	0.0590
AR	0.7690	0.1110
AS	0.6650	0.0970
AT	0.6810	0.0330
AU	0.6570	0.0050
AV	0.4060	0.0420
AW	0.8460	0.1020
AX	0.7650	0.0960























































































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Chain	Atom inclusion	Q-score
AY	 0.7920	 0.0770
AZ	 0.7720	 0.0930
Aa	 0.8570	 0.1100
Ab	 0.7470	 0.0480
Ac	 0.6440	 0.0640
Ad	 0.8450	 0.1220
Ae	 0.5220	 0.0940
Af	 0.8070	 0.1280
Ag	 0.8150	 0.0990
Ah	 0.7230	 0.0650
Ai	 0.3440	 0.0860
Aj	 0.8500	 0.0930
Ak	 0.7060	 0.0570
Al	 0.6080	 0.0240
Am	 0.6540	 0.0500
An	 0.8780	 0.1200
Ao	 0.7960	 0.0750
Ap	 0.7110	 0.0560
Aq	 0.7480	 0.0800
Ar	 0.6370	 0.0290
As	 0.6340	 0.0240
At	 0.6830	 0.0410
Au	 0.7260	 0.0430
Av	 0.6040	 0.0430
Aw	 0.1160	 0.0240
Ax	 0.8090	 0.1020
Ay	 0.6560	 0.0470
Az	 0.5660	 0.0260
B0	 0.6310	 0.0080
B1	 0.6580	 0.0520
B2	 0.5550	 -0.0010
B3	 0.6760	 0.0380
B4	 0.6680	 0.0010
B5	 0.5540	 0.0290
B6	 0.6440	 0.0150
B7	 0.6870	 0.0860
B8	 0.5610	 0.0620
B9	 0.5850	 -0.0160
BA	 0.6610	 0.0170
BB	 0.4650	 0.0220
BC	 0.3790	 0.0820
BD	 0.8560	 0.1140





















































































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Chain	Atom inclusion	Q-score
BE	 0.7900	 0.0670
BF	 0.7750	 0.0750
BG	 0.6570	 0.0320
BH	 0.4030	 0.0890
BI	 0.7500	 0.0860
BJ	 0.7470	 0.0600
BK	 0.6900	 0.0400
BL	 0.8210	 0.1110
BM	 0.5830	 0.0170
BN	 0.5000	 -0.0140
BO	 0.7240	 0.0630
BP	 0.5730	 0.0050
BQ	 0.6020	 0.0110
BR	 0.7330	 0.0380
BS	 0.6750	 0.0550
BT	 0.7310	 0.1090
BU	 0.7250	 0.0500
BV	 0.5620	 0.0100
BW	 0.7550	 0.0920
BX	 0.6070	 0.0120
BY	 0.7170	 0.1210
BZ	 0.7810	 0.0910
Ba	 0.8440	 0.0950
Bb	 0.7140	 0.0280
Bc	 0.5620	 0.0030
Bd	 0.6420	 0.0350
Be	 0.8580	 0.1080
Bf	 0.6600	 0.0200
Bg	 0.6360	 0.0320
Bh	 0.7590	 0.0940
Bi	 0.7060	 0.1080
Bj	 0.7430	 0.0600
Bk	 0.8110	 0.1170
Bl	 0.6710	 0.0280
Bm	 0.7140	 0.0460
Bn	 0.7880	 0.0590
Bo	 0.7470	 0.0690
Bp	 0.7500	 0.0380
Bq	 0.6970	 0.0910
Br	 0.7350	 0.0600
Bs	 0.5160	 -0.0120
Bt	 0.7030	 0.0520

































































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Chain	Atom inclusion	Q-score
Bu	 0.7740	 0.0540
Bv	 0.6170	 0.0200
Bw	 0.5070	 -0.0270
Bx	 0.6070	 0.0450
By	 0.4670	 0.0030
Bz	 0.5250	 -0.0130
C0	 0.6630	 0.0450
C1	 0.3830	 0.0790
C2	 0.4500	 0.0660
C3	 0.6300	 -0.0260
C4	 0.6760	 0.0480
C5	 0.0360	 0.0450
C6	 0.5930	 -0.0190
C7	 0.7190	 0.0550
C8	 0.6710	 0.0330
C9	 0.5470	 0.0090
CA	 0.5500	 -0.0200
CB	 0.8340	 0.0750
CC	 0.5420	 -0.0490
CD	 0.3680	 0.0680
CE	 0.7230	 0.0340
CF	 0.6760	 0.0180
CG	 0.8070	 0.0820
CH	 0.7800	 0.0720
CI	 0.6380	 0.0110
CJ	 0.8120	 0.0470
CK	 0.2560	 0.0630
CL	 0.7870	 0.0990
CM	 0.7150	 0.0240
CN	 0.5940	 0.0070
CO	 0.6850	 0.0170
CP	 0.6960	 0.0910
CQ	 0.8160	 0.0860
CR	 0.5300	 -0.0420
CS	 0.7650	 0.0690
CT	 0.7700	 0.0710
CU	 0.6690	 -0.0130
CV	 0.6170	 -0.0110
CW	 0.7570	 0.0300
CX	 0.6180	 0.0940
CY	 0.8870	 0.1010
CZ	 0.8150	 0.0750

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Chain	Atom inclusion	Q-score
Ca	 0.7360	 0.0130
Cb	 0.6820	 0.0370
Cc	 0.8080	 0.1150
Cd	 0.6980	 0.0180
Ce	 0.8230	 0.0970
Cf	 0.8970	 0.1070
Cg	 0.6280	 0.0170
Ch	 0.6980	 0.0180
Ci	 0.4550	 0.0710
Cj	 0.7990	 0.0630
Ck	 0.6740	 0.0020
Cl	 0.8220	 0.0660
Cm	 0.7110	 0.0120
Cn	 0.6060	 -0.0180
Co	 0.5900	 -0.0170
Cp	 0.8510	 0.0740
Cq	 0.7990	 0.0680
Cr	 0.7930	 0.0530
Cs	 0.7900	 0.0800
Ct	 0.8410	 0.0970
Cu	 0.7470	 0.0940
Cv	 0.8540	 0.0820
Cw	 0.6150	 0.0080
Cx	 0.5300	 -0.0350
Cy	 0.5060	 -0.0220
Cz	 0.6930	 0.0410
DA	 0.6510	 0.0330
DB	 0.0430	 0.0530
DC	 0.7870	 0.0510
DD	 0.9080	 0.1270
DE	 0.8670	 0.1060
DF	 0.6630	 0.0020