Full wwPDB EM Validation Report ⓘ

Nov 20, 2022 – 04:35 am GMT

PDB ID	:	6GQ1
EMDB ID	:	EMD-0047
Title	:	Cryo-EM reconstruction of yeast 80S ribosome in complex with mRNA, tRNA and eEF2 (GMPPCP/sordarin)
Authors	:	Pellegrino, S.; Demeshkina, N.; Mancera-Martinez, E.; Melnikov, S.; Simonetti, A.; Myasnikov, A.; Yusupov, M.; Yusupova, G.; Hashem, Y.
Deposited on	:	2018-06-07
Resolution	:	4.40 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:

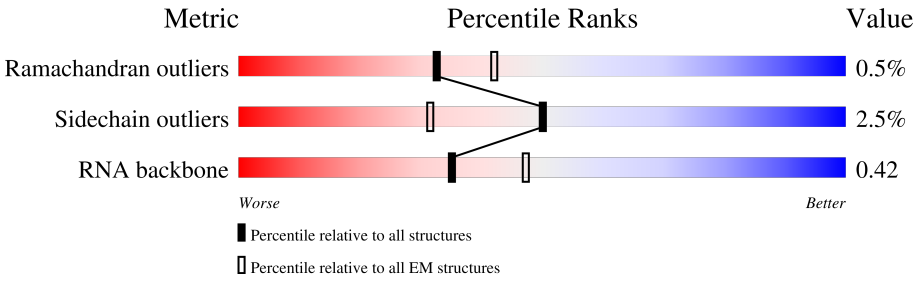
EMDB validation analysis	:	0.0.1.dev43
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 4.40 Å.

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



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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	1	3396	60% 31% • 5%
2	3	121	67% 30% •
3	4	158	65% 33% •
4	P0	189	80% 97% •
5	P2	94	84% 95% 5%
6	A	252	6% 98% •
7	B	386	98% •
8	C	361	98% •

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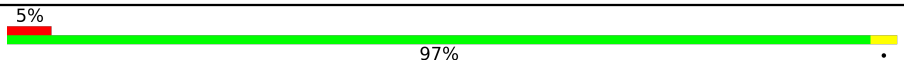
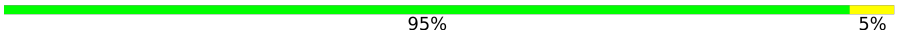
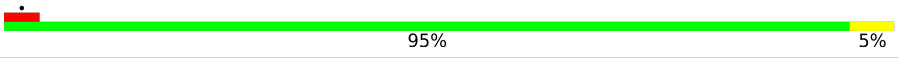
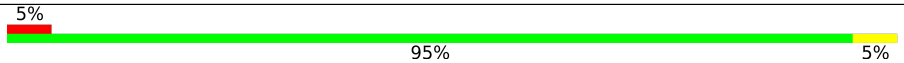
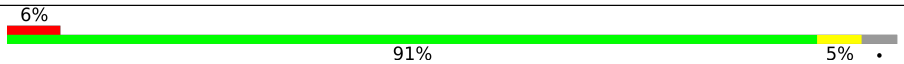
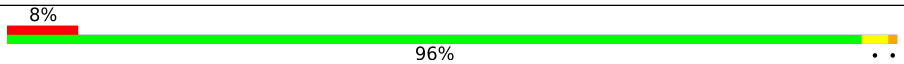
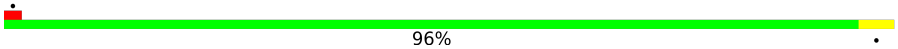
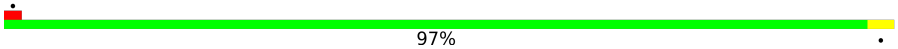
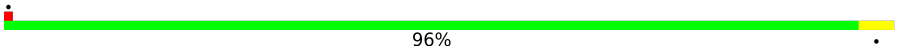
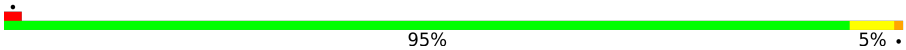
Mol	Chain	Length	Quality of chain
9	D	296	
10	E	175	
11	F	222	
12	G	233	
13	H	191	
14	I	220	
15	J	169	
16	L	193	
17	M	136	
18	N	203	
19	O	197	
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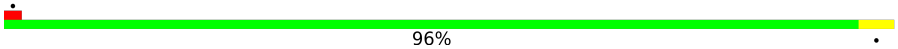
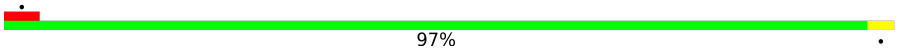
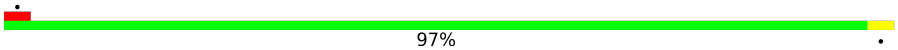
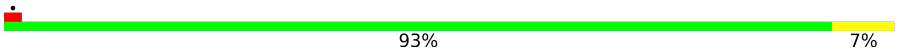
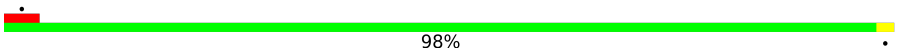
21	Q	185	
22	R	188	
23	S	172	
24	T	159	
25	U	100	
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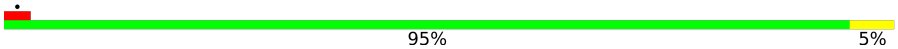
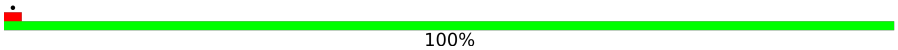
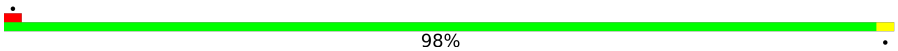
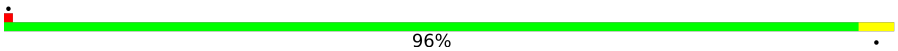
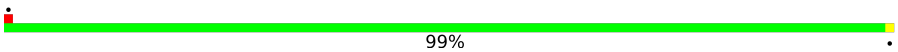
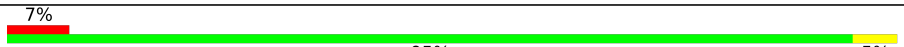
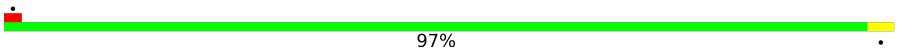
27	W	63	
28	X	121	
29	Y	126	
30	Z	135	
31	a	148	
32	b	58	
33	c	97	

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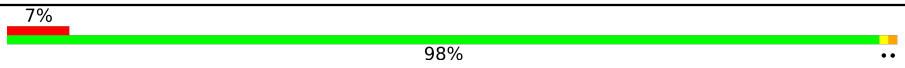
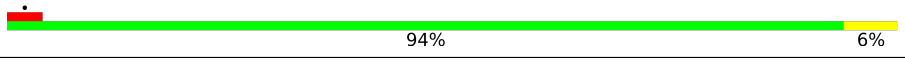
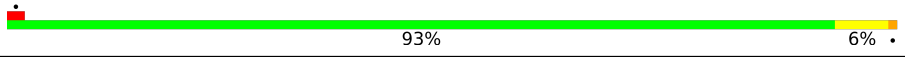
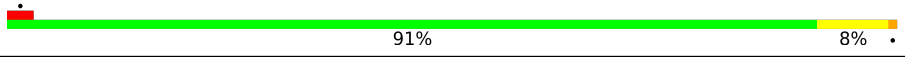
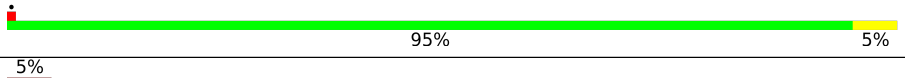
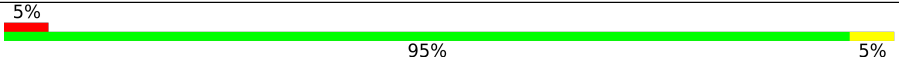
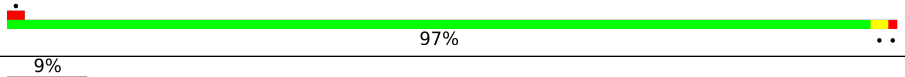
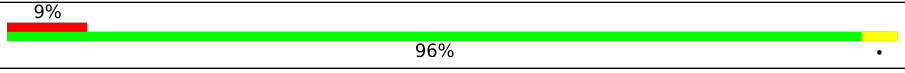
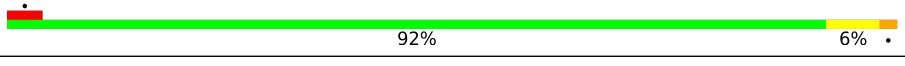
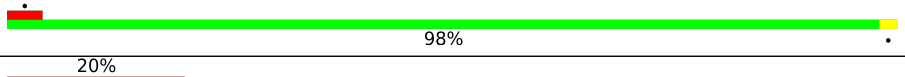
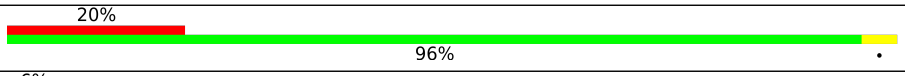
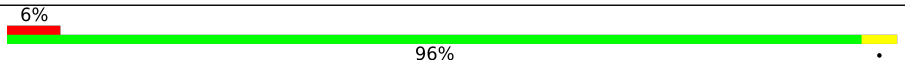
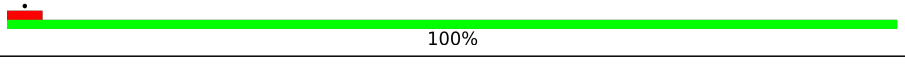
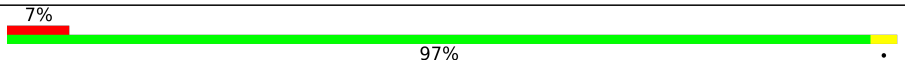
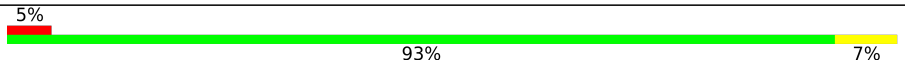
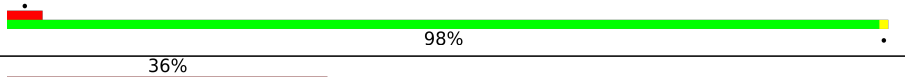
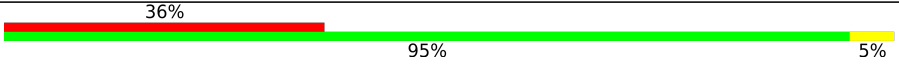
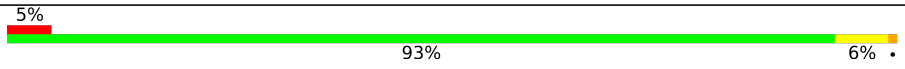
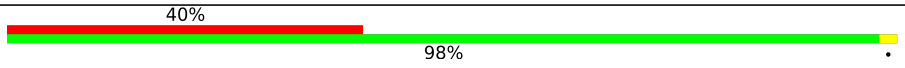
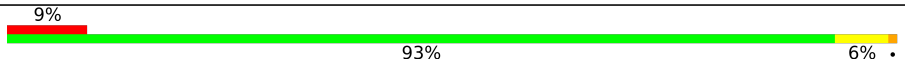
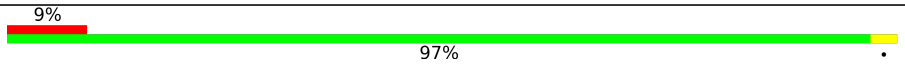
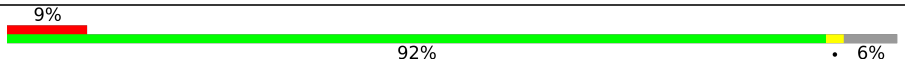
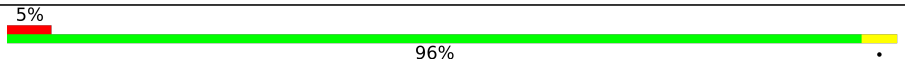
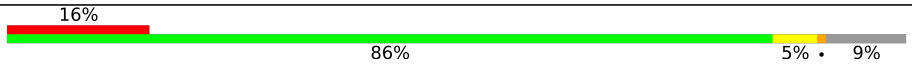
Mol	Chain	Length	Quality of chain
34	d	109	
35	e	127	
36	f	106	
37	g	112	
38	h	119	
39	i	99	
40	j	87	
41	k	77	
42	l	50	
43	m	52	
44	n	25	
45	o	105	
46	p	91	
47	2	1797	
48	q	206	
49	r	214	
50	s	217	
51	t	223	
52	u	260	
53	v	206	
54	w	223	
55	x	184	
56	y	199	
57	z	185	
58	AA	105	

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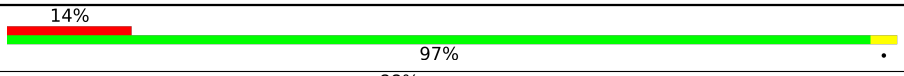
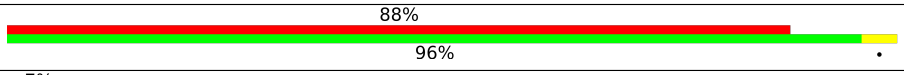
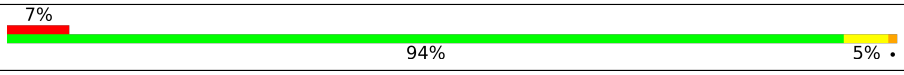
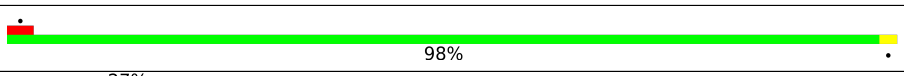
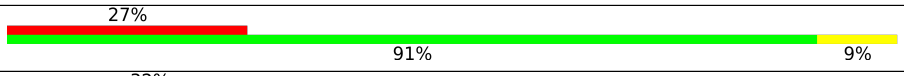
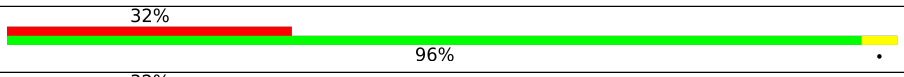
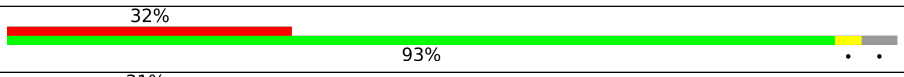
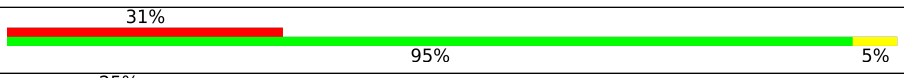
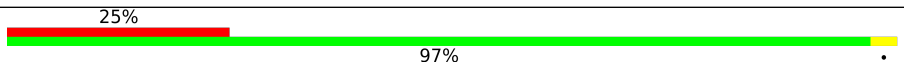
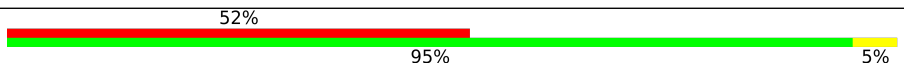
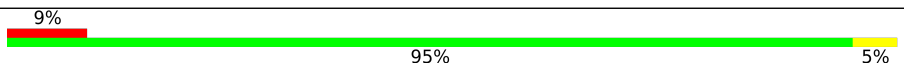
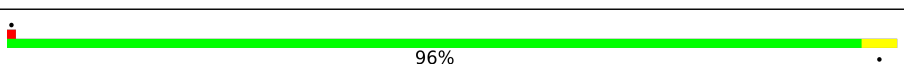
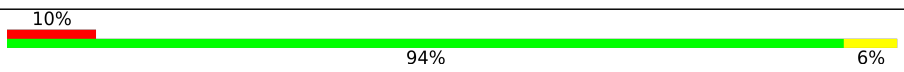
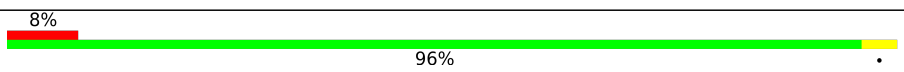
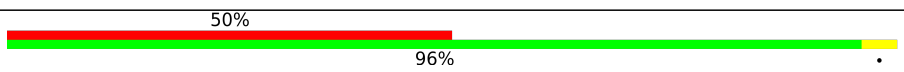
Mol	Chain	Length	Quality of chain
59	AB	153	
60	AC	124	
61	AD	150	
62	AE	127	
63	AF	124	
64	AG	141	
65	AH	125	
66	AI	145	
67	AJ	143	
68	AK	107	
69	AL	87	
70	AM	129	
71	AN	144	
72	AO	134	
73	AP	70	
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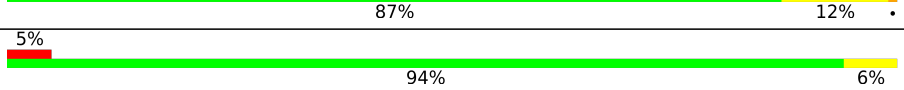
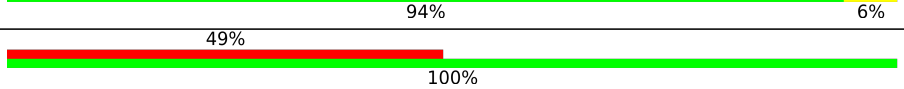
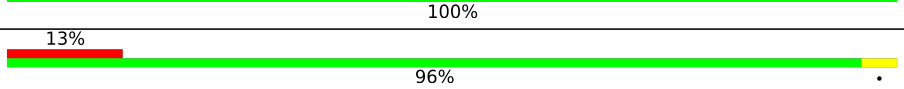
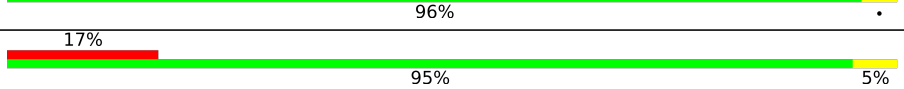
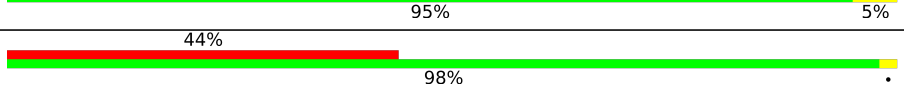
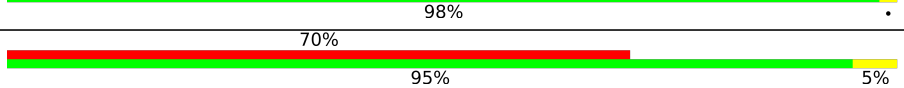
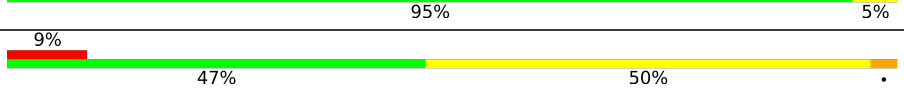
75	AR	81	
76	AS	63	
77	AT	53	
78	AU	60	
79	AV	318	
80	AW	37	
81	AX	76	
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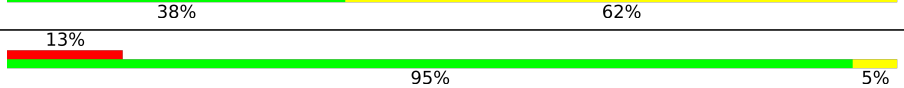
83	AZ	840	

2 Entry composition

There are 86 unique types of molecules in this entry. The entry contains 210540 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called Saccharomyces cerevisiae S288C 35S pre-ribosomal RNA (RDN37-1), miscRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	1	3223	68931	30790	12416	22502	3223	0	0

- Molecule 2 is a RNA chain called 5.8S ribosomal RNA.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	4	158	3353	1500	586	1109	158	0	0

- Molecule 4 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	P0	189	1473	942	257	270	4	0	0

- Molecule 5 is a protein called 60S ribosomal protein L12-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	P2	94	723	448	138	135	2	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	A	252	1914	1191	388	334	1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
7	B	386	Total	C	N	O	S	0	0
			3075	1950	584	533	8		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
8	C	361	Total	C	N	O	S	0	0
			2748	1729	522	494	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
9	D	296	Total	C	N	O	S	0	0
			2375	1501	414	458	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
10	E	156	Total	C	N	O	S	0	0
			1239	800	222	216	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
11	F	222	Total	C	N	O	S	0	0
			1784	1151	324	308	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
12	G	233	Total	C	N	O	S	0	0
			1804	1151	323	327	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
13	H	191	Total	C	N	O	S	0	0
			1518	963	274	277	4		

- Molecule 14 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	I	211	Total	C	N	O	S	0	0
			1705	1083	322	294	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
15	J	169	Total	C	N	O	S	0	0
			1353	847	253	249	4		

- Molecule 16 is a protein called 60S ribosomal protein L13-A.

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

- Molecule 17 is a protein called 60S ribosomal protein L14-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	M	136	Total	C	N	O	S	0	0
			1053	675	199	177	2		

- Molecule 18 is a protein called 60S ribosomal protein L15-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	N	203	Total	C	N	O	S	0	0
			1720	1077	361	281	1		

- Molecule 19 is a protein called 60S ribosomal protein L16-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	O	197	Total	C	N	O	S	0	0
			1555	1003	289	262	1		

- Molecule 20 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
20	P	183	Total	C	N	O	0	0
			1420	882	281	257		

- Molecule 21 is a protein called 60S ribosomal protein L18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	Q	185	Total	C	N	O	S	0	0
			1441	908	290	241	2		

- Molecule 22 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
22	R	188	Total	C	N	O	0	0
			1521	935	326	260		

- Molecule 23 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	S	172	Total	C	N	O	S	0	0
			1445	930	267	244	4		

- Molecule 24 is a protein called 60S ribosomal protein L21-A.

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

- Molecule 25 is a protein called 60S ribosomal protein L22-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
25	U	100	Total	C	N	O	0	0
			796	516	131	149		

- Molecule 26 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	V	136	Total	C	N	O	S	0	0
			1003	628	189	179	7		

- Molecule 27 is a protein called 60S ribosomal protein L24-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	W	63	Total	C	N	O	S	0	0
			521	336	102	82	1		

- Molecule 28 is a protein called 60S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	X	121	Total 964	C 620	N 169	O 173	S 2	0	0

- Molecule 29 is a protein called 60S ribosomal protein L26-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
29	Y	126	Total 993	C 625	N 192	O 176	0	0

- Molecule 30 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
30	Z	135	Total 1092	C 710	N 202	O 180	0	0

- Molecule 31 is a protein called 60S ribosomal protein L28.

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

- Molecule 32 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms				AltConf	Trace
32	b	58	Total 462	C 289	N 100	O 73	0	0

- Molecule 33 is a protein called 60S ribosomal protein L30.

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

- Molecule 34 is a protein called 60S ribosomal protein L31-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	d	109	Total 883	C 559	N 167	O 156	S 1	0	0

- Molecule 35 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	e	127	Total	C	N	O	S	0	0
			1020	647	205	167	1		

- Molecule 36 is a protein called 60S ribosomal protein L33-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	f	106	Total	C	N	O	S	0	0
			850	540	165	144	1		

- Molecule 37 is a protein called 60S ribosomal protein L34-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	g	112	Total	C	N	O	S	0	0
			880	545	179	152	4		

- Molecule 38 is a protein called 60S ribosomal protein L35-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	h	119	Total	C	N	O	S	0	0
			969	615	186	167	1		

- Molecule 39 is a protein called 60S ribosomal protein L36-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	i	99	Total	C	N	O	S	0	0
			771	481	156	132	2		

- Molecule 40 is a protein called 60S ribosomal protein L37-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	j	87	Total	C	N	O	S	0	0
			681	414	148	114	5		

- Molecule 41 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms				AltConf	Trace
41	k	77	Total	C	N	O	0	0
			612	391	115	106		

- Molecule 42 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	l	50	Total	C	N	O	S	0	0
			436	272	97	65	2		

- Molecule 43 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	m	52	Total	C	N	O	S	0	0
			417	259	86	67	5		

- Molecule 44 is a protein called 60S ribosomal protein L41-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	n	25	Total	C	N	O	S	0	0
			227	139	60	27	1		

- Molecule 45 is a protein called 60S ribosomal protein L42-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	o	105	Total	C	N	O	S	0	0
			847	534	170	138	5		

- Molecule 46 is a protein called 60S ribosomal protein L43-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	p	91	Total	C	N	O	S	0	0
			694	429	138	121	6		

- Molecule 47 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	2	1776	Total	C	N	O	P	0	0
			37845	16918	6702	12449	1776		

- Molecule 48 is a protein called 40S ribosomal protein S0-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	q	206	Total	C	N	O	S	0	0
			1577	1014	278	283	2		

- Molecule 49 is a protein called 40S ribosomal protein S1-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	r	214	Total	C	N	O	S	0	0
			1709	1084	310	311	4		

- Molecule 50 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	s	217	Total	C	N	O	S	0	0
			1635	1047	289	297	2		

- Molecule 51 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	t	223	Total	C	N	O	S	0	0
			1734	1101	313	314	6		

- Molecule 52 is a protein called 40S ribosomal protein S4-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	u	260	Total	C	N	O	S	0	0
			2068	1316	389	360	3		

- Molecule 53 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	v	206	Total	C	N	O	S	0	0
			1609	1007	300	299	3		

- Molecule 54 is a protein called 40S ribosomal protein S6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	w	223	Total	C	N	O	S	0	0
			1790	1123	346	318	3		

- Molecule 55 is a protein called 40S ribosomal protein S7-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
55	x	184	Total	C	N	O	0	0
			1481	951	265	265		

- Molecule 56 is a protein called 40S ribosomal protein S8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	y	188	Total	C	N	O	S	0	0
			1489	925	298	264	2		

- Molecule 57 is a protein called 40S ribosomal protein S9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	z	185	Total	C	N	O	S	0	0
			1494	943	289	261	1		

- Molecule 58 is a protein called 40S ribosomal protein S10-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	AA	96	Total	C	N	O	S	0	0
			772	499	126	145	2		

- Molecule 59 is a protein called 40S ribosomal protein S11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	AB	153	Total	C	N	O	S	0	0
			1220	780	231	206	3		

- Molecule 60 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	AC	124	Total	C	N	O	S	0	0
			890	560	156	172	2		

- Molecule 61 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	AD	150	Total	C	N	O	S	0	0
			1192	759	224	207	2		

- Molecule 62 is a protein called 40S ribosomal protein S14-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	AE	127	Total	C	N	O	S	0	0
			891	545	182	163	1		

- Molecule 63 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	AF	124	Total	C	N	O	S	0	0
			977	622	182	166	7		

- Molecule 64 is a protein called 40S ribosomal protein S16-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
64	AG	141	Total	C	N	O	0	0
			1105	708	203	194		

- Molecule 65 is a protein called 40S ribosomal protein S17-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	AH	120	Total	C	N	O	S	0	0
			926	577	177	170	2		

- Molecule 66 is a protein called 40S ribosomal protein S18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	AI	145	Total	C	N	O	S	0	0
			1192	743	237	210	2		

- Molecule 67 is a protein called 40S ribosomal protein S19-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	AJ	143	Total	C	N	O	S	0	0
			1112	694	208	208	2		

- Molecule 68 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	AK	107	Total	C	N	O	S	0	0
			855	539	156	159	1		

- Molecule 69 is a protein called 40S ribosomal protein S21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	AL	87	Total	C	N	O	S	0	0
			684	420	125	137	2		

- Molecule 70 is a protein called 40S ribosomal protein S22-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	AM	129	Total	C	N	O	S	0	0
			1021	650	188	180	3		

- Molecule 71 is a protein called 40S ribosomal protein S23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	AN	144	Total	C	N	O	S	0	0
			1121	708	220	191	2		

- Molecule 72 is a protein called 40S ribosomal protein S24-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
72	AO	134	Total	C	N	O	0	0
			1073	676	208	189		

- Molecule 73 is a protein called 40S ribosomal protein S25-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
73	AP	70	Total	C	N	O	0	0
			563	360	104	99		

- Molecule 74 is a protein called 40S ribosomal protein S26-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	AQ	97	Total	C	N	O	S	0	0
			769	475	160	129	5		

- Molecule 75 is a protein called 40S ribosomal protein S27-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	AR	81	Total	C	N	O	S	0	0
			610	382	110	113	5		

- Molecule 76 is a protein called 40S ribosomal protein S28-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	AS	63	Total	C	N	O	S	0	0
			497	306	99	91	1		

- Molecule 77 is a protein called 40S ribosomal protein S29-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	AT	53	Total	C	N	O	S	0	0
			442	274	92	72	4		

- Molecule 78 is a protein called 40S ribosomal protein S30-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	AU	60	Total	C	N	O	S	0	0
			475	299	98	77	1		

- Molecule 79 is a protein called Guanine nucleotide-binding protein subunit beta-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	AV	318	Total	C	N	O	S	0	0
			2437	1541	418	470	8		

- Molecule 80 is a protein called Ubiquitin-40S ribosomal protein S31.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	AW	37	Total	C	N	O	S	0	0
			287	177	57	49	4		

- Molecule 81 is a RNA chain called Transfer RNA - Phe.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	AX	76	Total	C	N	O	P	0	0
			1626	725	293	532	76		

- Molecule 82 is a RNA chain called Messenger RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	AY	8	Total	C	N	O	P	0	0
			164	74	23	59	8		

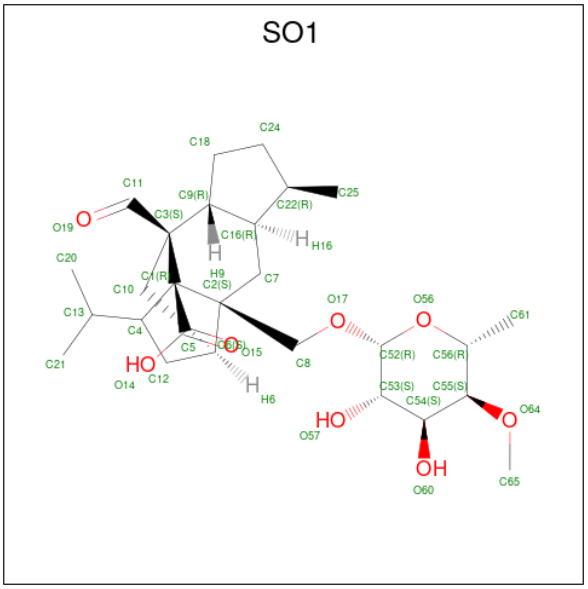
- Molecule 83 is a protein called Elongation factor 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	AZ	840	Total	C	N	O	S	0	0
			6551	4161	1124	1237	29		

- Molecule 84 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	AltConf
84	j	1	Total Zn 1 1	0
84	m	1	Total Zn 1 1	0
84	o	1	Total Zn 1 1	0
84	p	1	Total Zn 1 1	0
84	AQ	1	Total Zn 1 1	0
84	AR	1	Total Zn 1 1	0
84	AT	1	Total Zn 1 1	0
84	AW	1	Total Zn 1 1	0

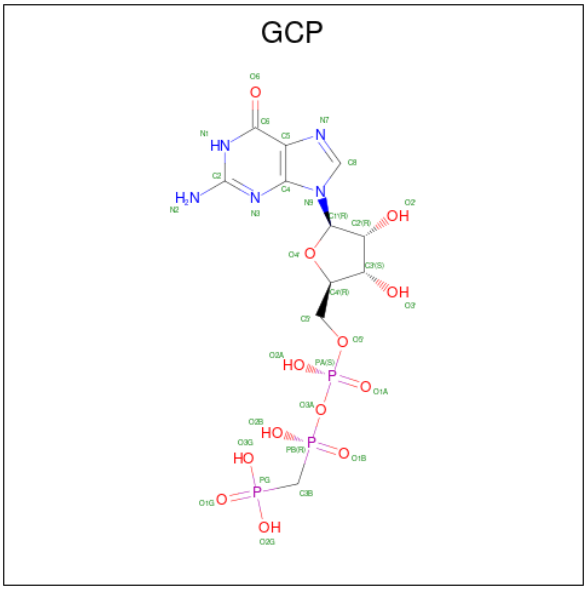
- Molecule 85 is [1R-(1.ALPHA.,3A.BETA.,4.BETA.,4A.BETA.,7.BETA.,7A.ALPHA.,8A.BETA.)]8A-[(6-DEOXY-4-O-METHYL-BETA-D-ALTROPYRANOSYLOXY)METHYL]-4-FORMYL-4,4A,5,6,7,7A,8,8A-OCTAHYDRO-7-METHYL-3-(1-METHYLETHYL)-1,4-METHANO-S-INDACENE-3A(1H)-CARBOXYLIC ACID (three-letter code: SO1) (formula: $C_{27}H_{42}O_8$).



Mol	Chain	Residues	Atoms	AltConf
85	AZ	1	Total C O 35 27 8	0

- Molecule 86 is PHOSPHOMETHYLPHOSPHONIC ACID GUANYLATE ESTER (three-

letter code: GCP) (formula: $C_{11}H_{18}N_5O_{13}P_3$).



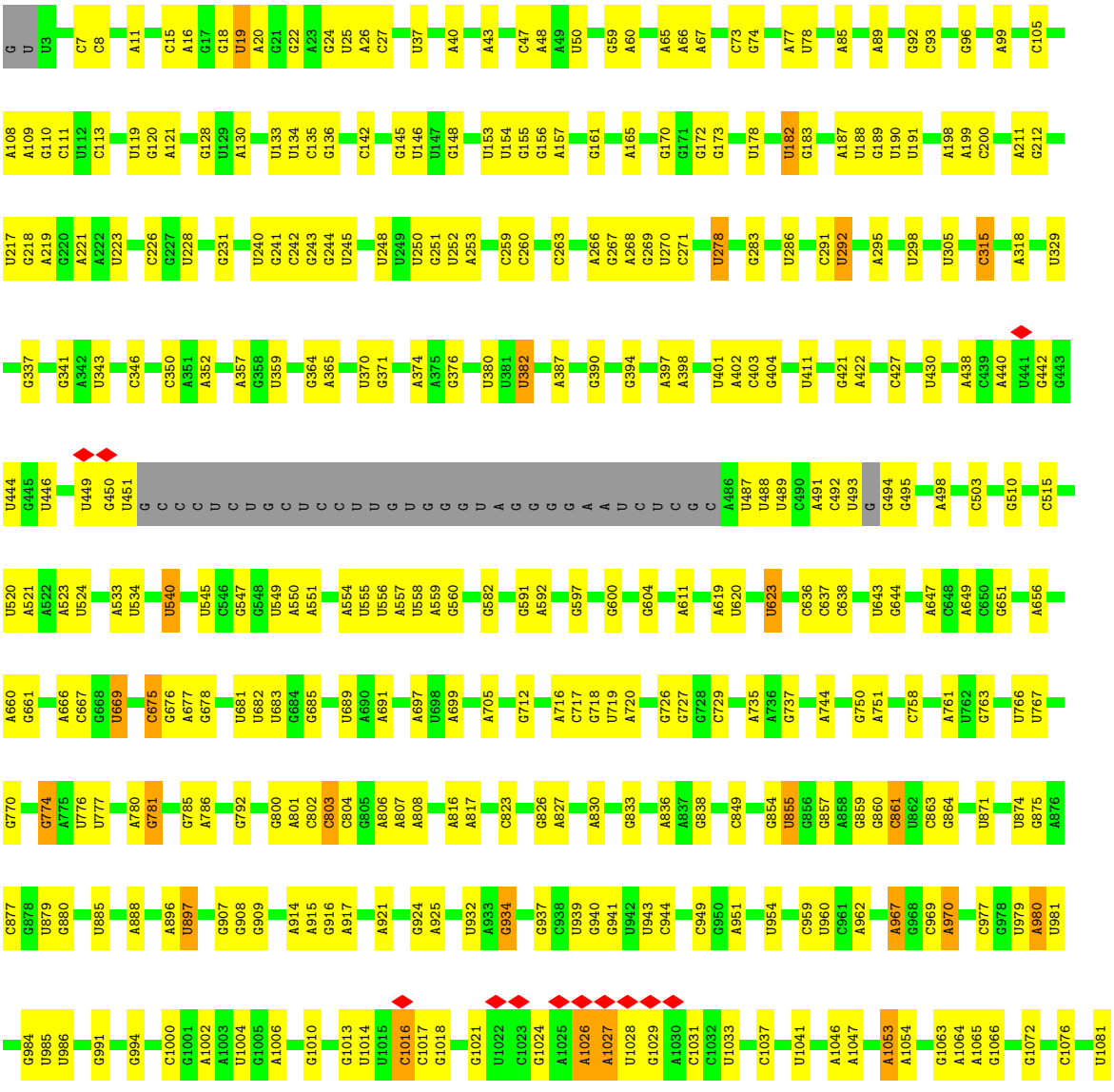
Mol	Chain	Residues	Atoms					AltConf
86	AZ	1	Total	C	N	O	P	0
			32	11	5	13	3	

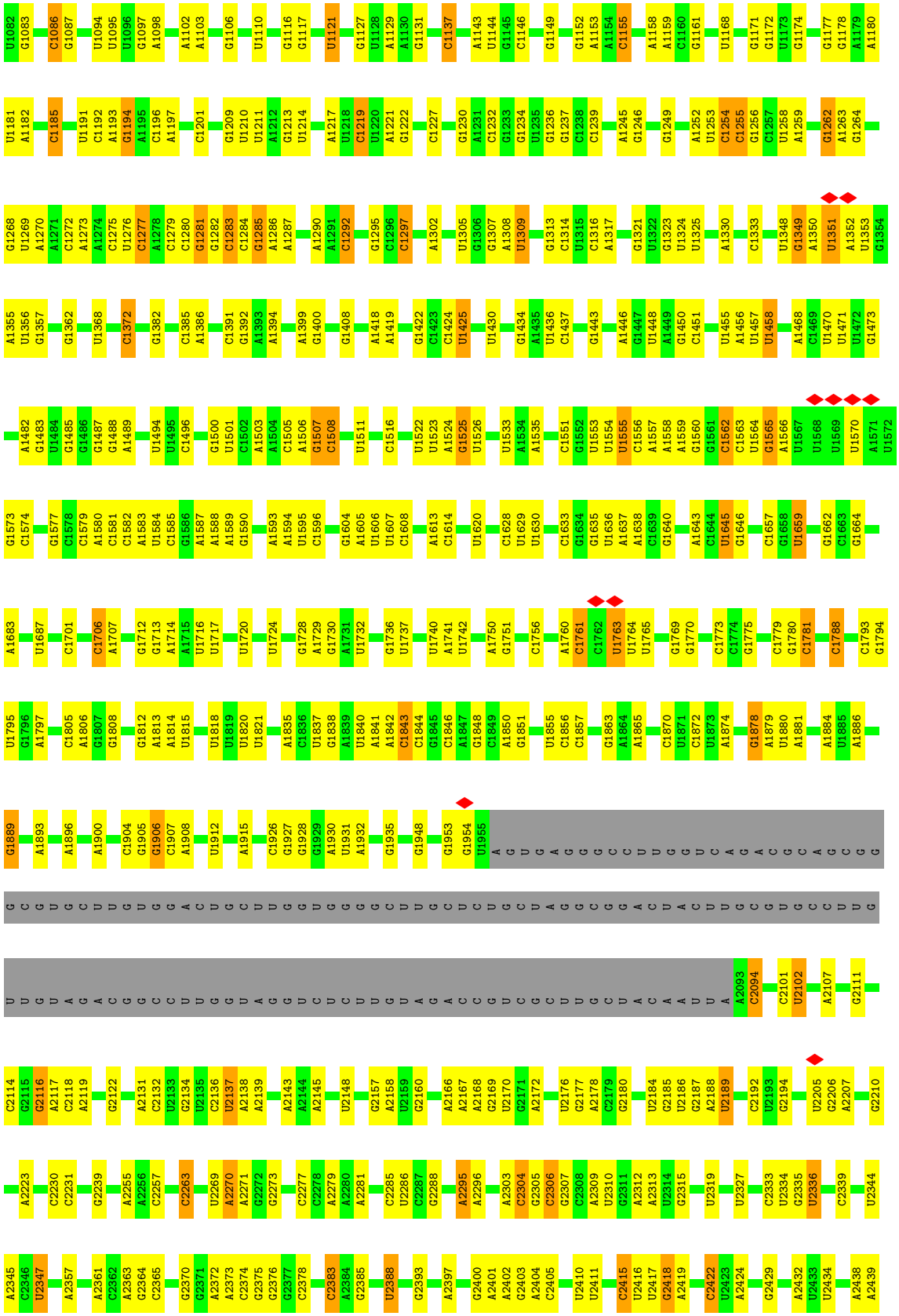
3 Residue-property plots (i)

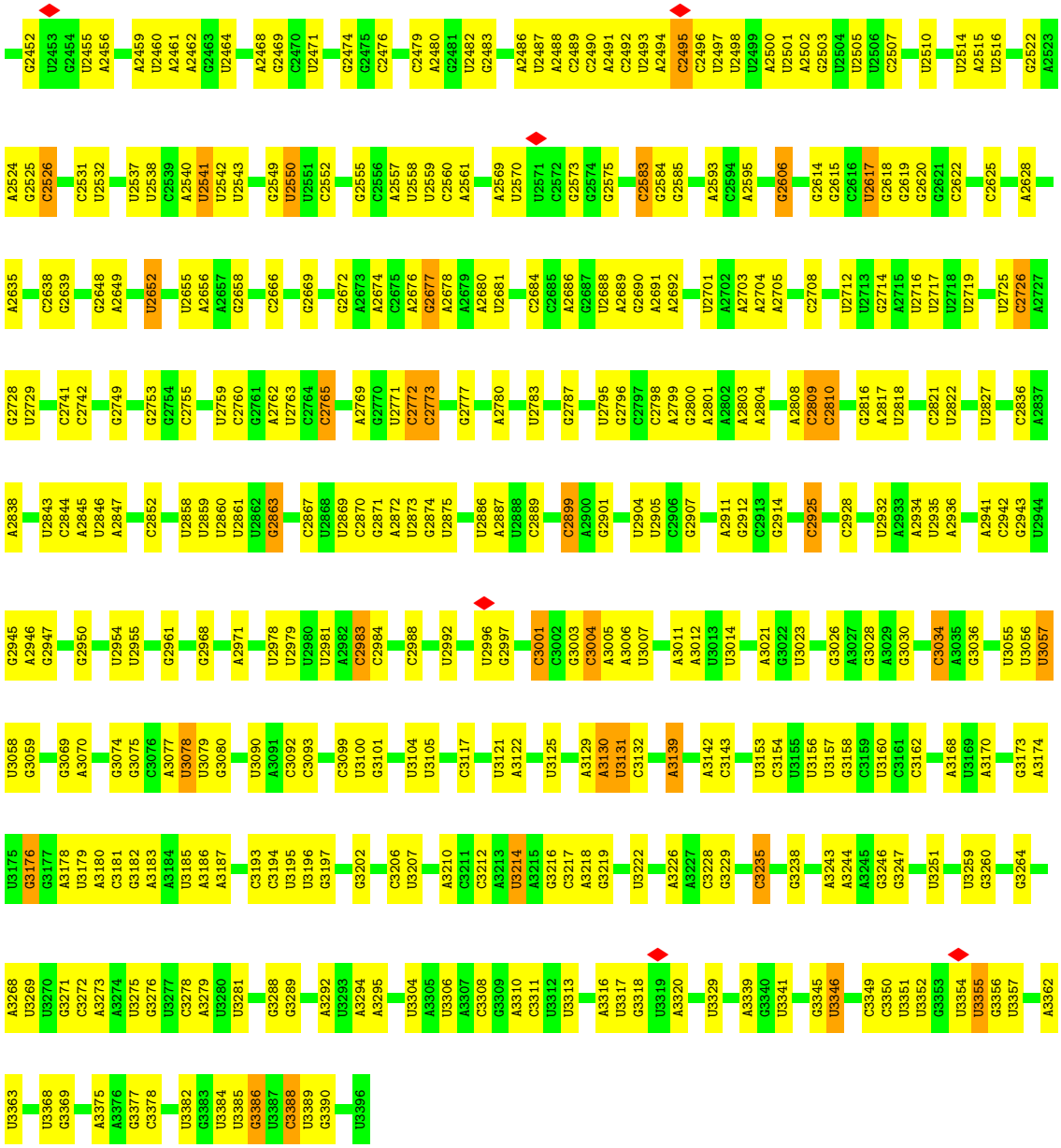
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

• Molecule 1: Saccharomyces cerevisiae S288C 35S pre-ribosomal RNA (RDN37-1), miscRNA

Chain 1:

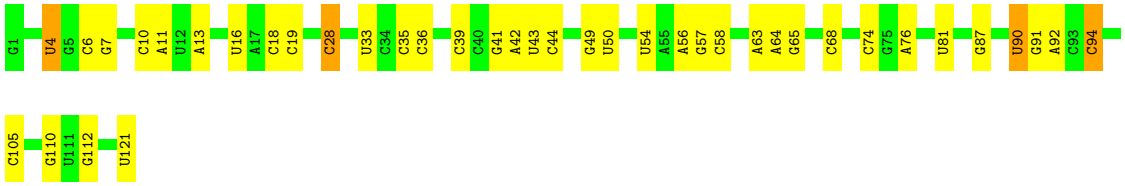






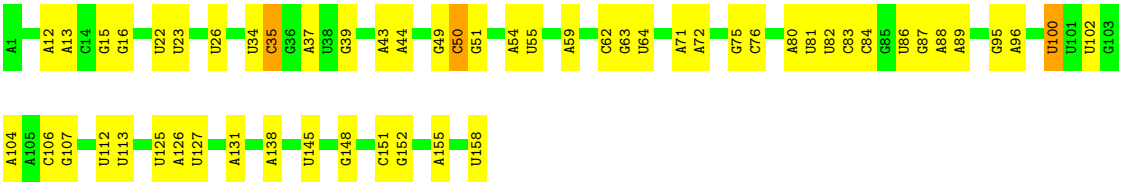
• Molecule 2: 5.8S ribosomal RNA

Chain 3:



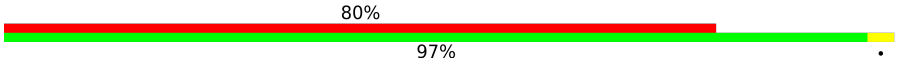
• Molecule 3: 5S ribosomal RNA

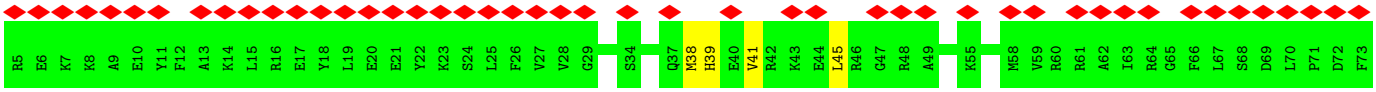
Chain 4:

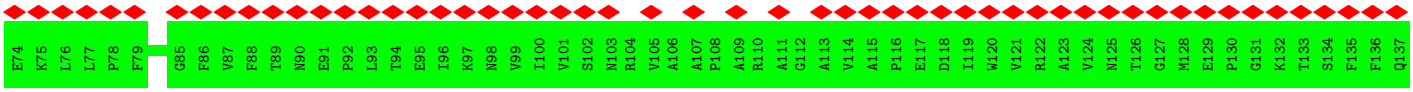


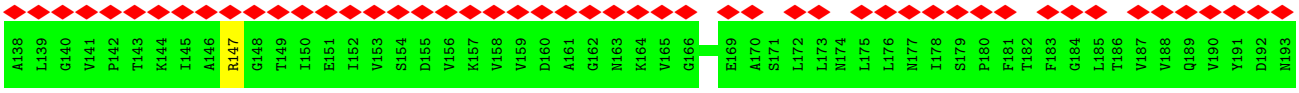
• Molecule 4: 60S acidic ribosomal protein P0

Chain P0:



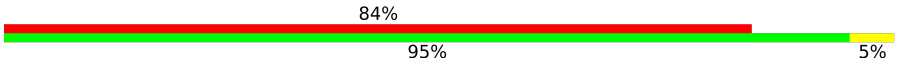


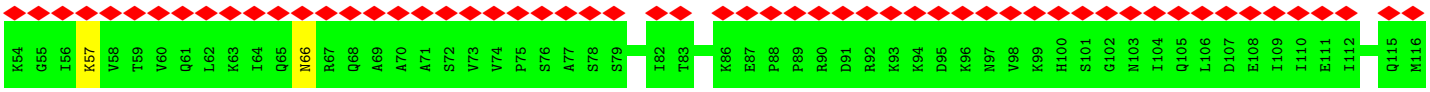


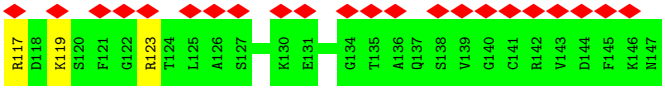


• Molecule 5: 60S ribosomal protein L12-A

Chain P2:

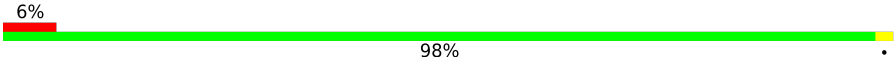


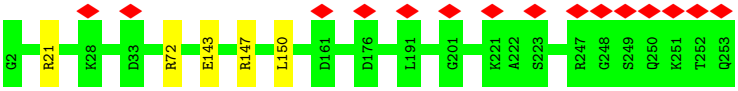




• Molecule 6: 60S ribosomal protein L2-A

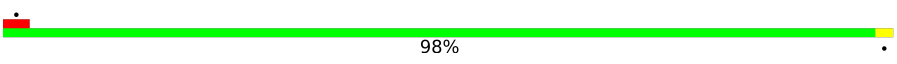
Chain A:

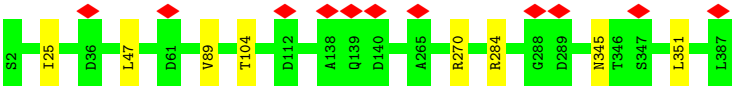




• Molecule 7: 60S ribosomal protein L3

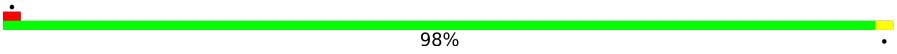
Chain B:





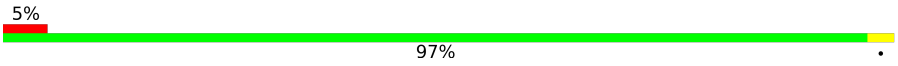
• Molecule 8: 60S ribosomal protein L4-A

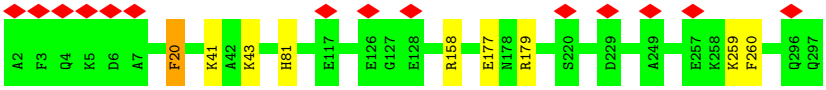
Chain C:



• Molecule 9: 60S ribosomal protein L5

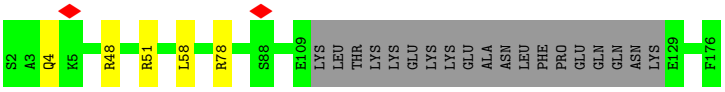
Chain D:





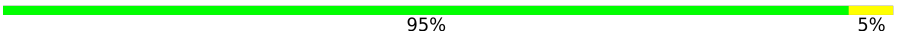
• Molecule 10: 60S ribosomal protein L6-A

Chain E:



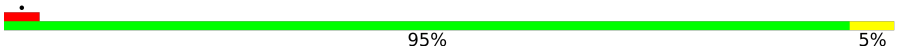
• Molecule 11: 60S ribosomal protein L7-A

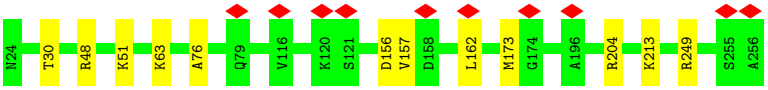
Chain F:



• Molecule 12: 60S ribosomal protein L8-A

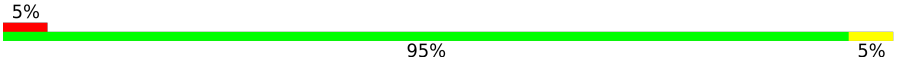
Chain G:

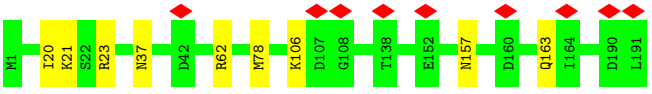




• Molecule 13: 60S ribosomal protein L9-A

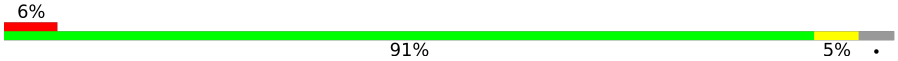
Chain H:

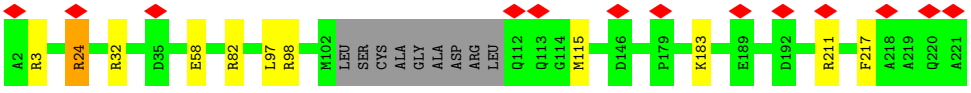




• Molecule 14: 60S ribosomal protein L10

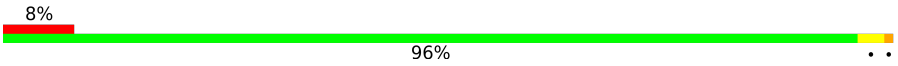
Chain I:

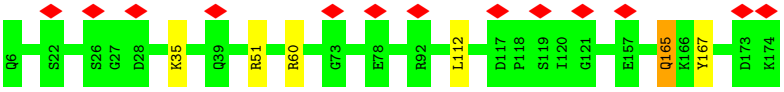




• Molecule 15: 60S ribosomal protein L11-B

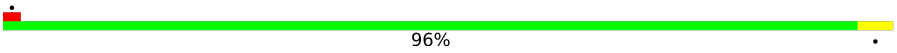
Chain J:





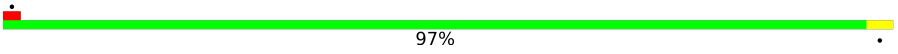
• Molecule 16: 60S ribosomal protein L13-A

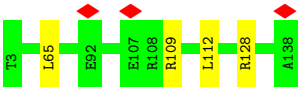
Chain L:



• Molecule 17: 60S ribosomal protein L14-A

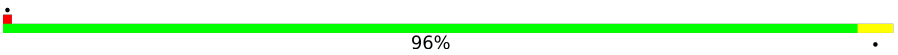
Chain M:





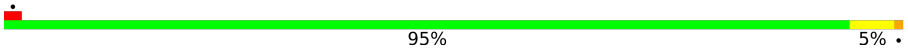
• Molecule 18: 60S ribosomal protein L15-A

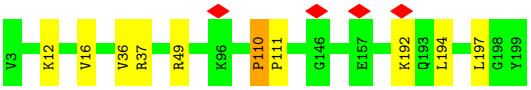
Chain N:



• Molecule 19: 60S ribosomal protein L16-A

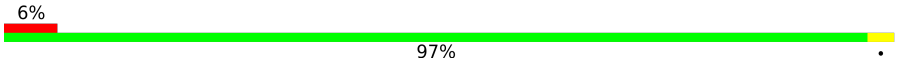
Chain O:

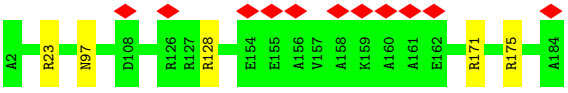




• Molecule 20: 60S ribosomal protein L17-A

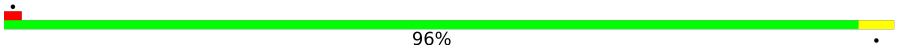
Chain P:

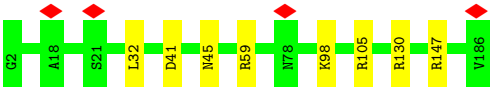




• Molecule 21: 60S ribosomal protein L18-A

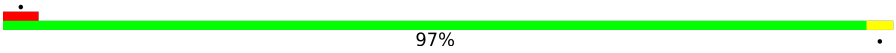
Chain Q:

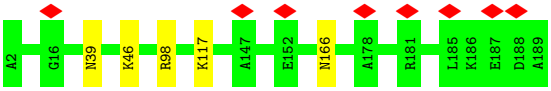




• Molecule 22: 60S ribosomal protein L19-A

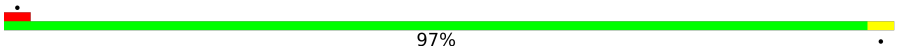
Chain R:

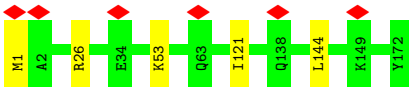




• Molecule 23: 60S ribosomal protein L20-A

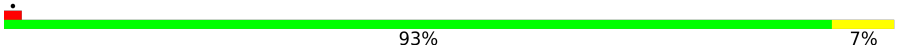
Chain S:

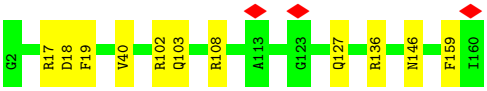




• Molecule 24: 60S ribosomal protein L21-A

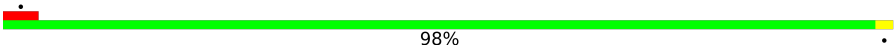
Chain T:

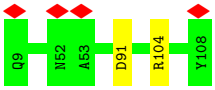




• Molecule 25: 60S ribosomal protein L22-A

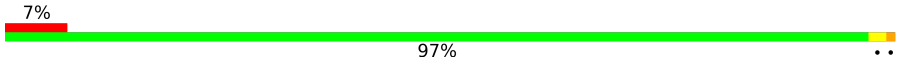
Chain U:

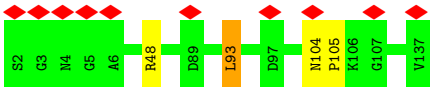




• Molecule 26: 60S ribosomal protein L23-A

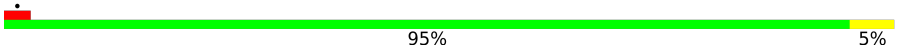
Chain V:

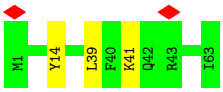




• Molecule 27: 60S ribosomal protein L24-A

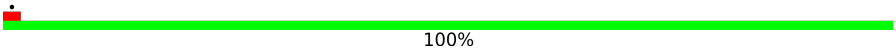
Chain W:

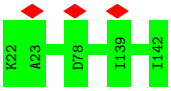




• Molecule 28: 60S ribosomal protein L25

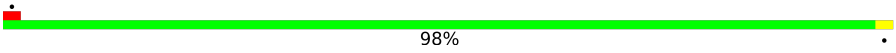
Chain X:

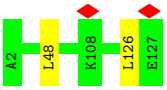




• Molecule 29: 60S ribosomal protein L26-A

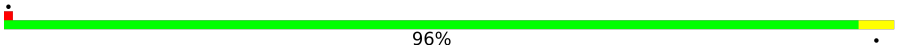
Chain Y:

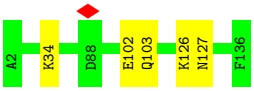




• Molecule 30: 60S ribosomal protein L27-A

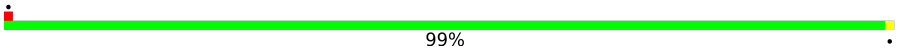
Chain Z:

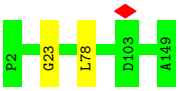




• Molecule 31: 60S ribosomal protein L28

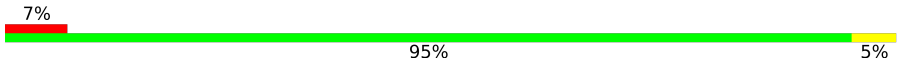
Chain a:

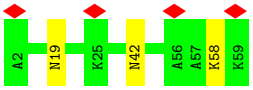




• Molecule 32: 60S ribosomal protein L29

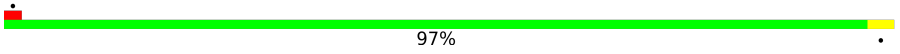
Chain b:

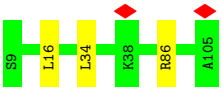




• Molecule 33: 60S ribosomal protein L30

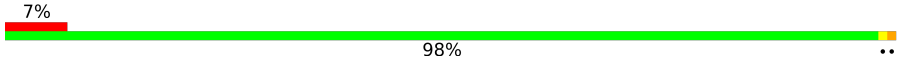
Chain c:

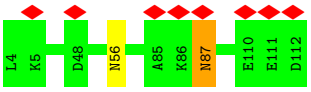




• Molecule 34: 60S ribosomal protein L31-A

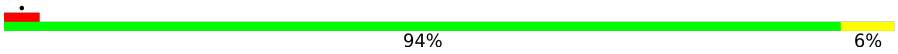
Chain d:

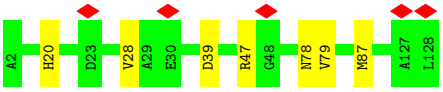




• Molecule 35: 60S ribosomal protein L32

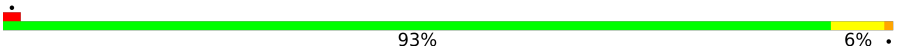
Chain e:

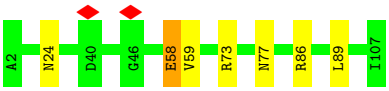




• Molecule 36: 60S ribosomal protein L33-A

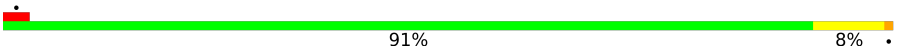
Chain f:

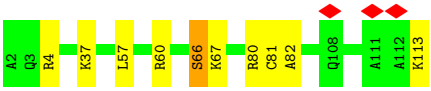




• Molecule 37: 60S ribosomal protein L34-A

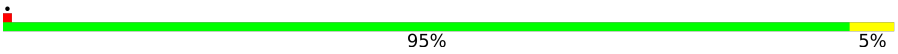
Chain g:

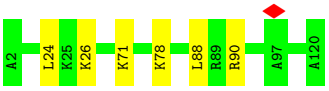




• Molecule 38: 60S ribosomal protein L35-A

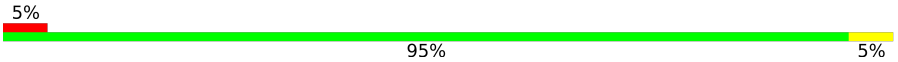
Chain h:

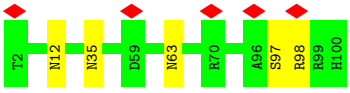




• Molecule 39: 60S ribosomal protein L36-A

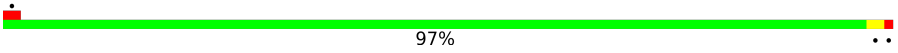
Chain i:

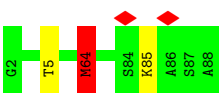




• Molecule 40: 60S ribosomal protein L37-A

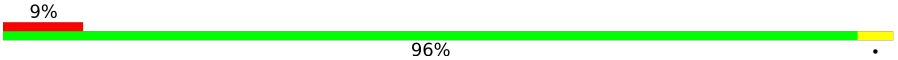
Chain j:

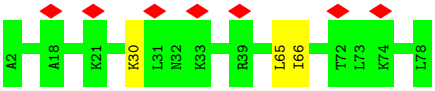




• Molecule 41: 60S ribosomal protein L38

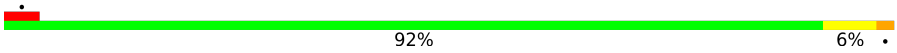
Chain k:

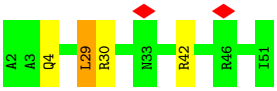




• Molecule 42: 60S ribosomal protein L39

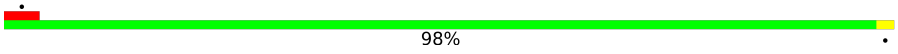
Chain l:

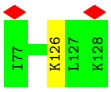




• Molecule 43: Ubiquitin-60S ribosomal protein L40

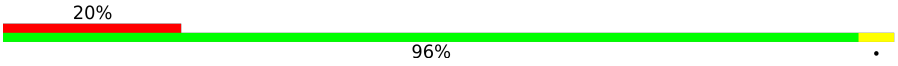
Chain m:

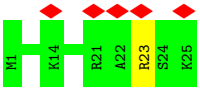




• Molecule 44: 60S ribosomal protein L41-B

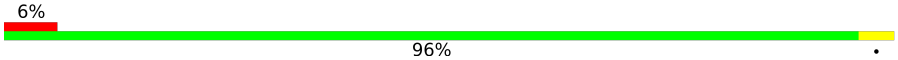
Chain n:

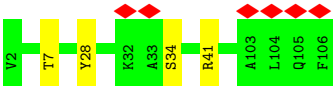




• Molecule 45: 60S ribosomal protein L42-A

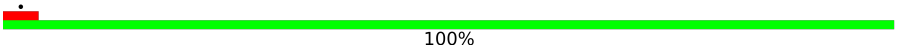
Chain o:

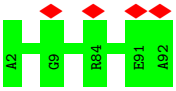




• Molecule 46: 60S ribosomal protein L43-A

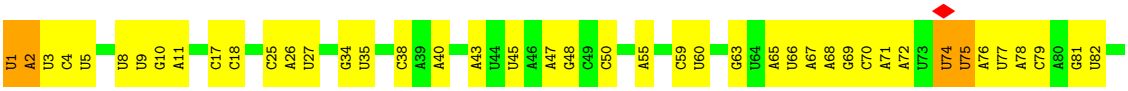
Chain p:

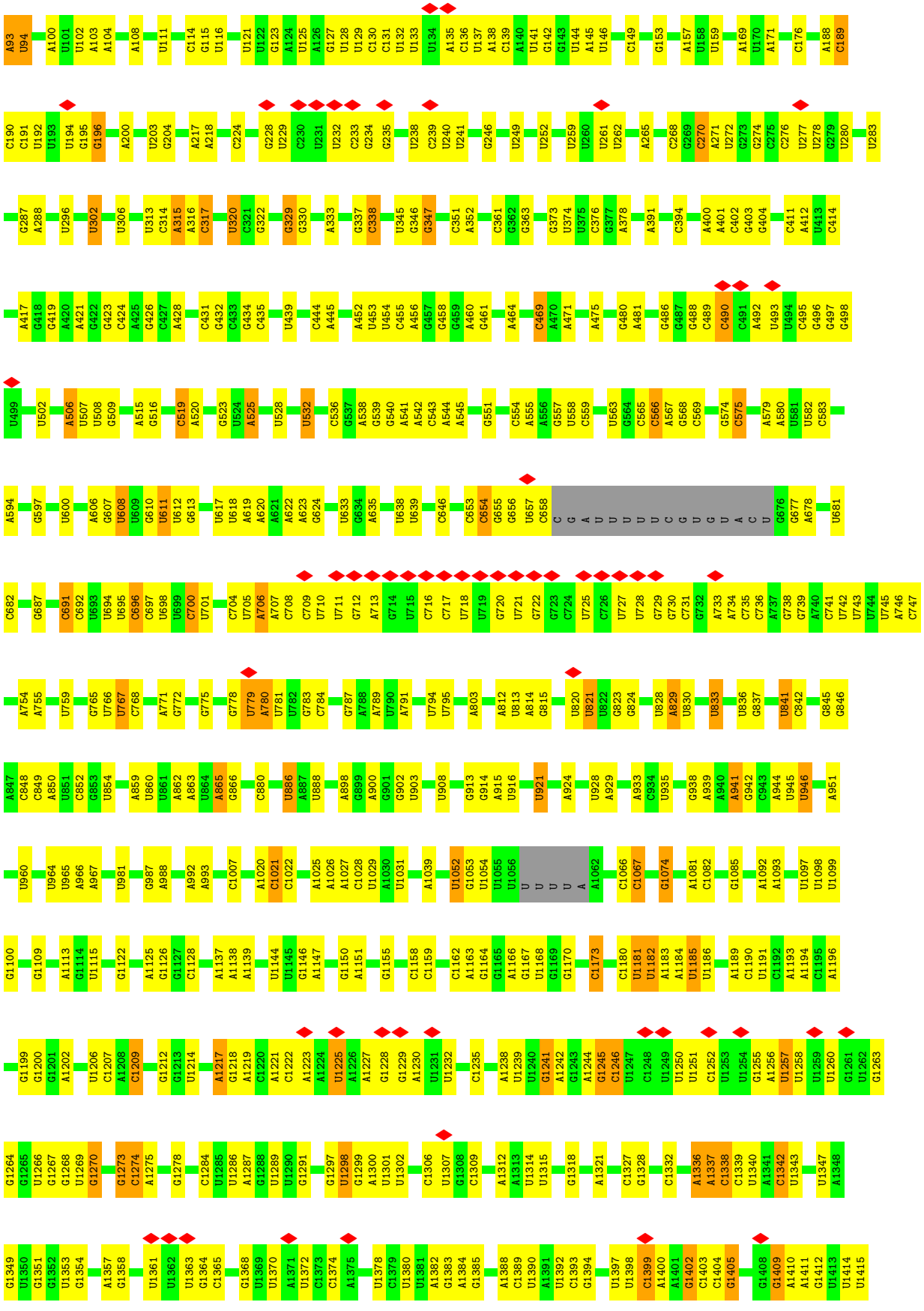


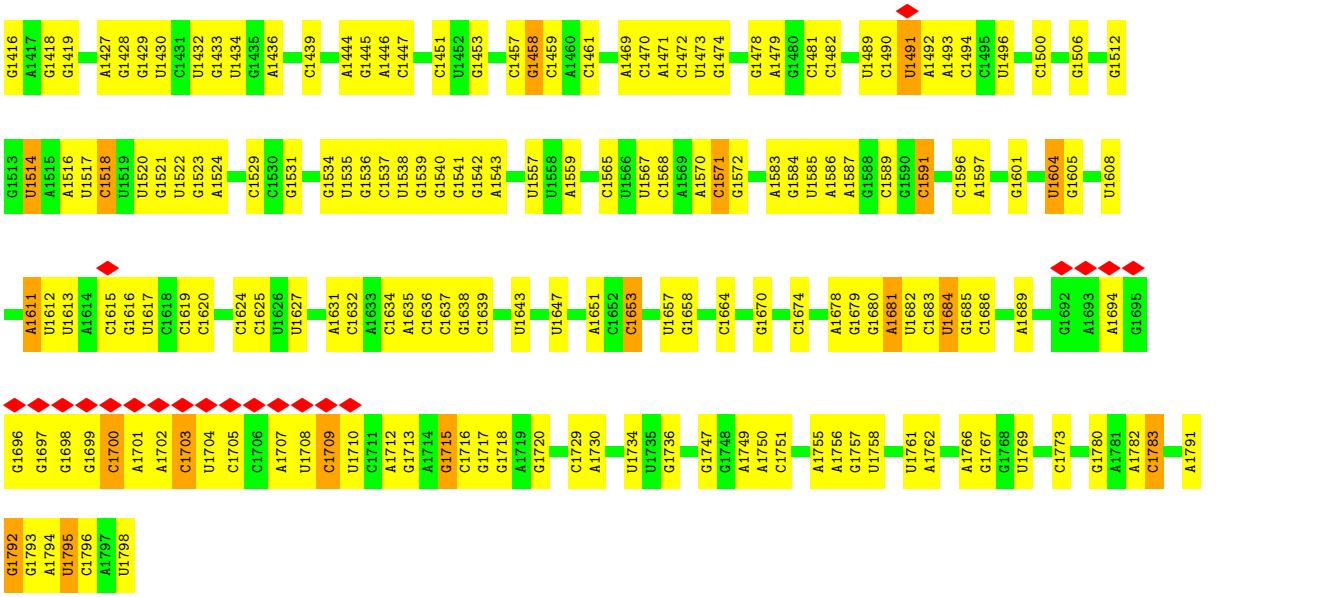


• Molecule 47: 18S ribosomal RNA

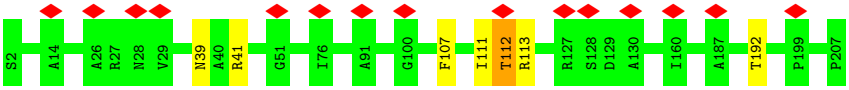
Chain 2:



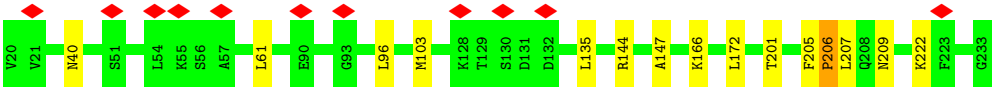




• Molecule 48: 40S ribosomal protein S0-A

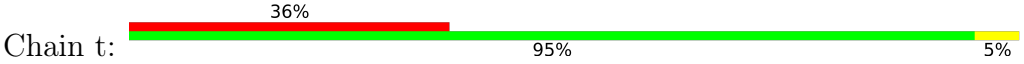


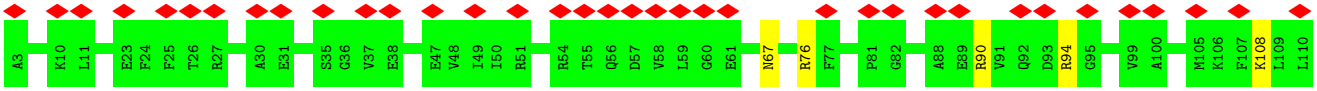
• Molecule 49: 40S ribosomal protein S1-A

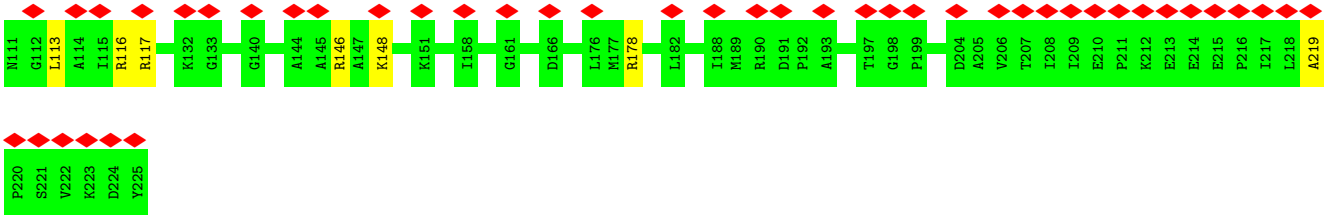


• Molecule 50: 40S ribosomal protein S2

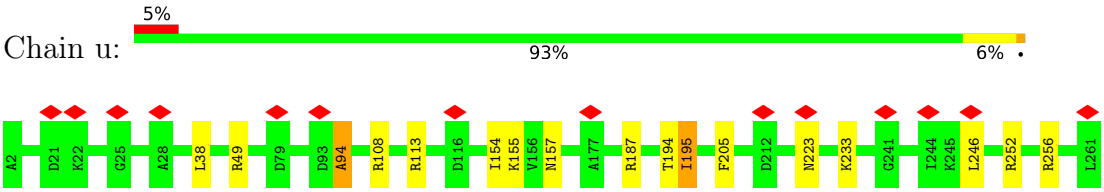
• Molecule 51: 40S ribosomal protein S3



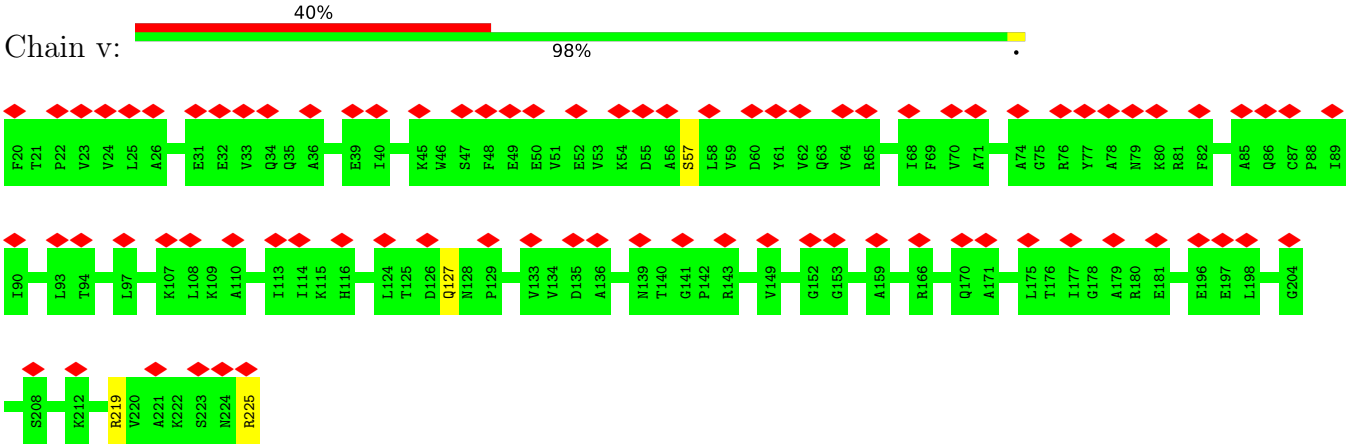




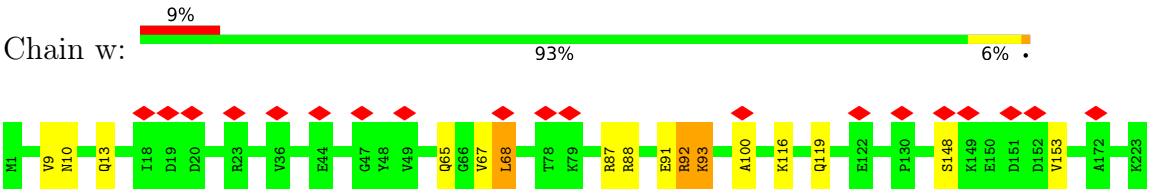
• Molecule 52: 40S ribosomal protein S4-A



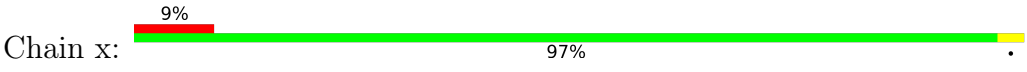
• Molecule 53: 40S ribosomal protein S5



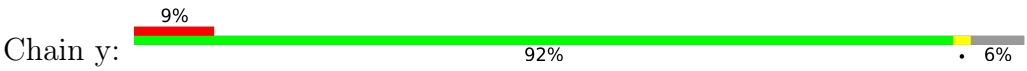
• Molecule 54: 40S ribosomal protein S6-A

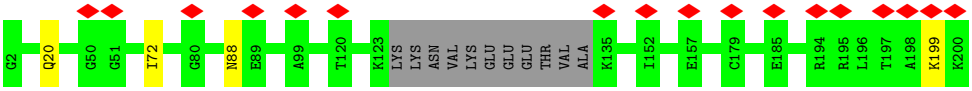


• Molecule 55: 40S ribosomal protein S7-A

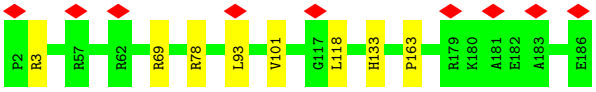


• Molecule 56: 40S ribosomal protein S8-A

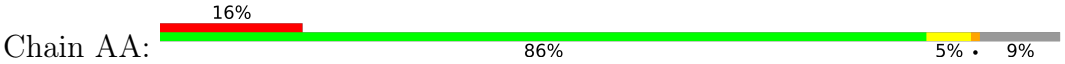


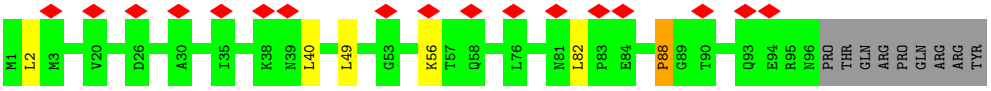


• Molecule 57: 40S ribosomal protein S9-A

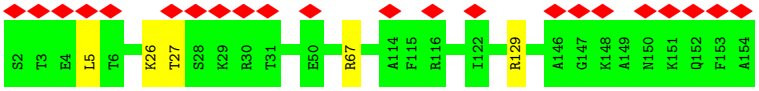


• Molecule 58: 40S ribosomal protein S10-A

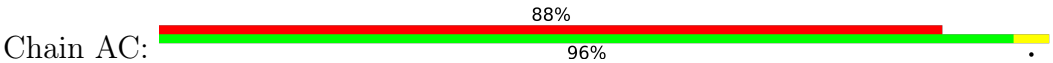


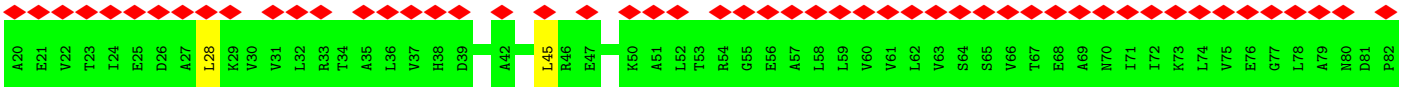


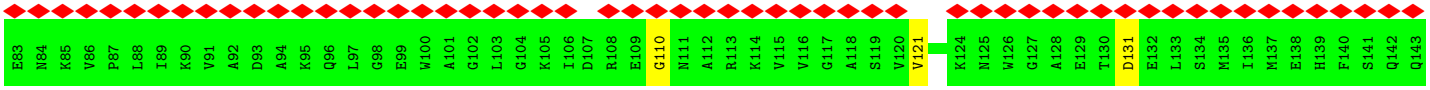
• Molecule 59: 40S ribosomal protein S11-A



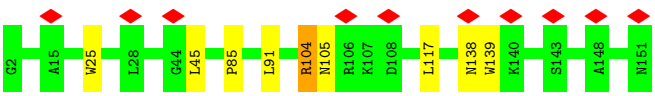
• Molecule 60: 40S ribosomal protein S12



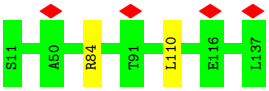




• Molecule 61: 40S ribosomal protein S13

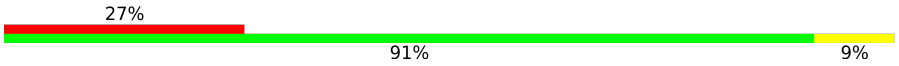


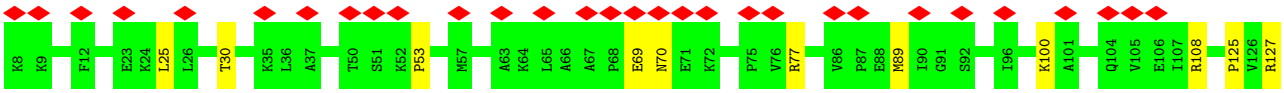
• Molecule 62: 40S ribosomal protein S14-B



• Molecule 63: 40S ribosomal protein S15

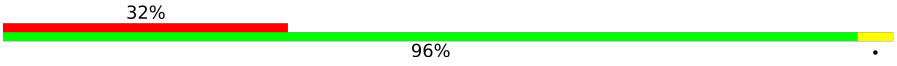
Chain AF:

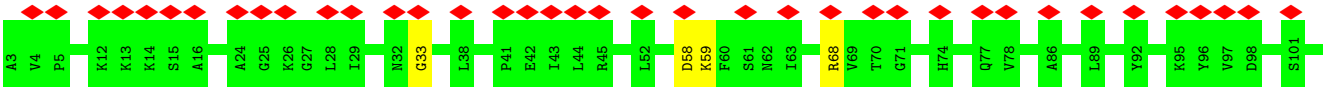


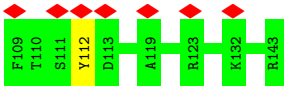


• Molecule 64: 40S ribosomal protein S16-A

Chain AG:

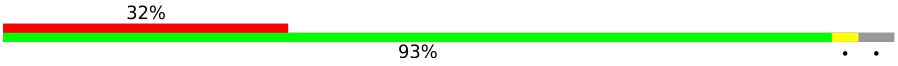


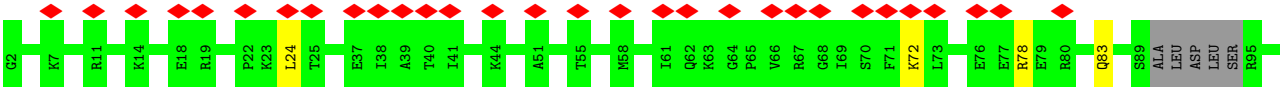


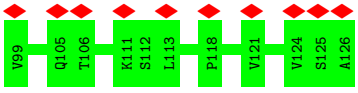


• Molecule 65: 40S ribosomal protein S17-B

Chain AH:

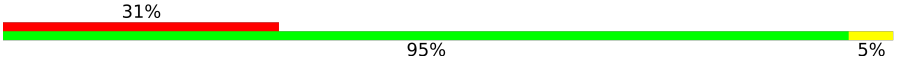


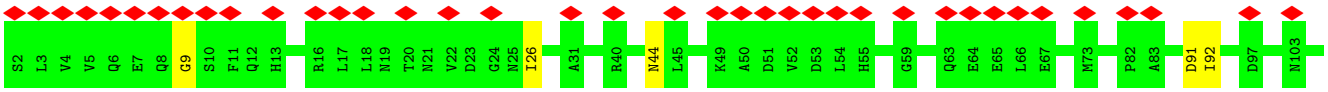


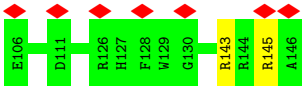


• Molecule 66: 40S ribosomal protein S18-A

Chain AI:

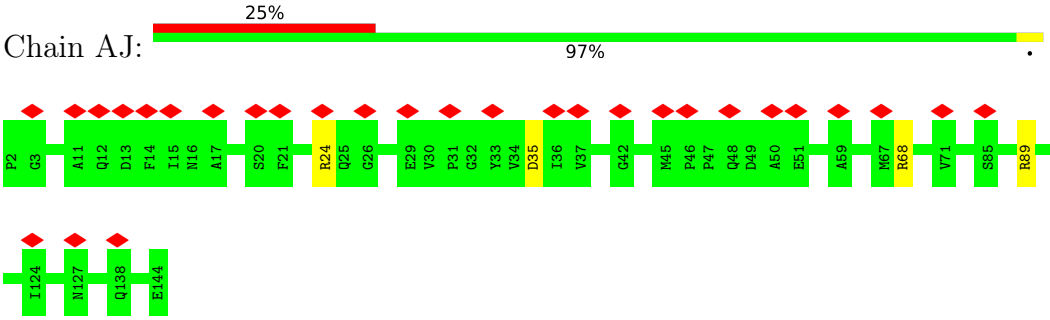






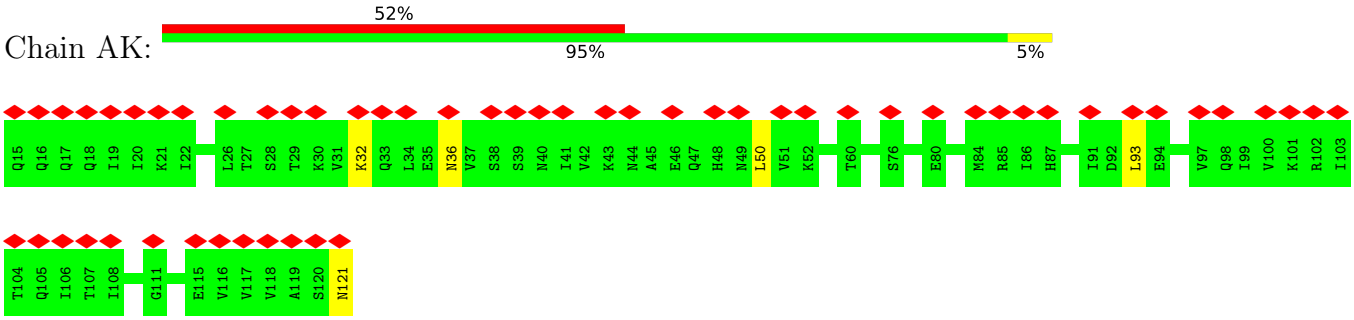
• Molecule 67: 40S ribosomal protein S19-A

Chain AJ:



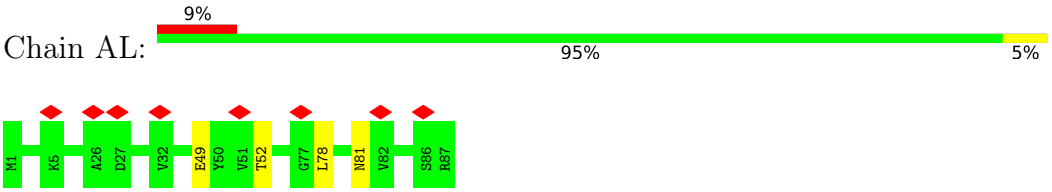
• Molecule 68: 40S ribosomal protein S20

Chain AK:



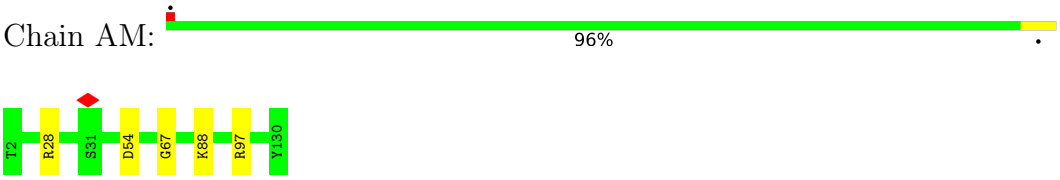
• Molecule 69: 40S ribosomal protein S21-A

Chain AL:



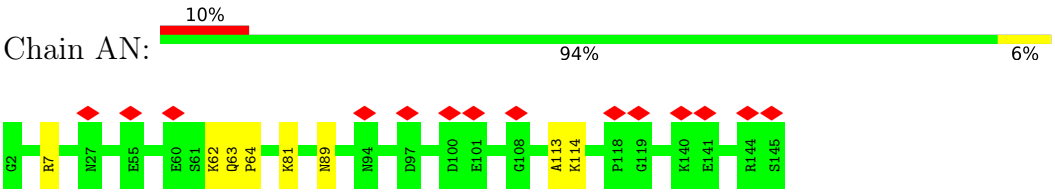
• Molecule 70: 40S ribosomal protein S22-A

Chain AM:



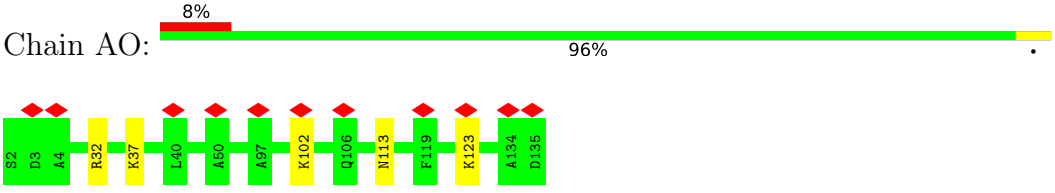
• Molecule 71: 40S ribosomal protein S23-A

Chain AN:



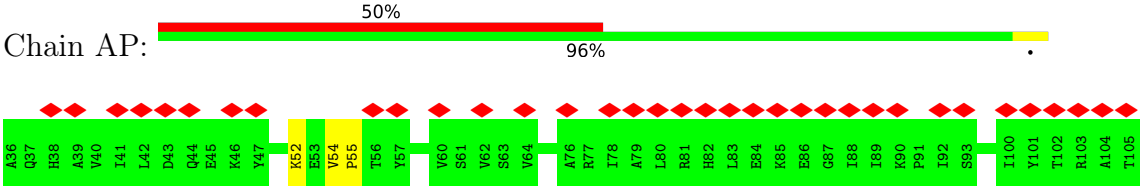
• Molecule 72: 40S ribosomal protein S24-A

Chain AO:



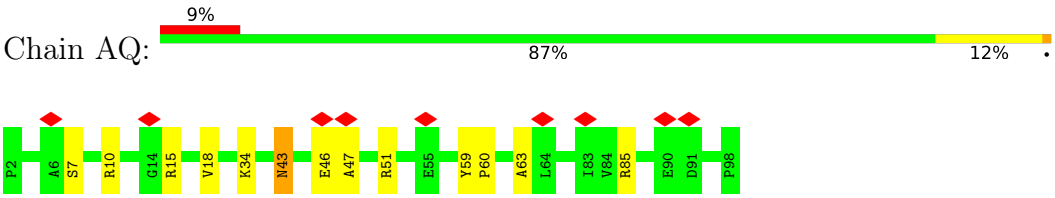
• Molecule 73: 40S ribosomal protein S25-A

Chain AP:



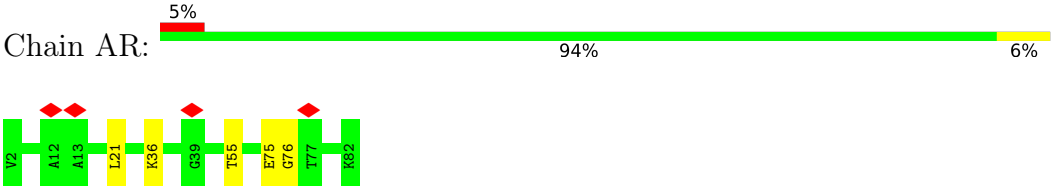
• Molecule 74: 40S ribosomal protein S26-B

Chain AQ:



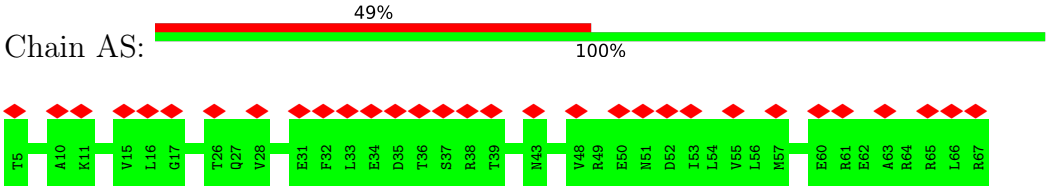
• Molecule 75: 40S ribosomal protein S27-A

Chain AR:



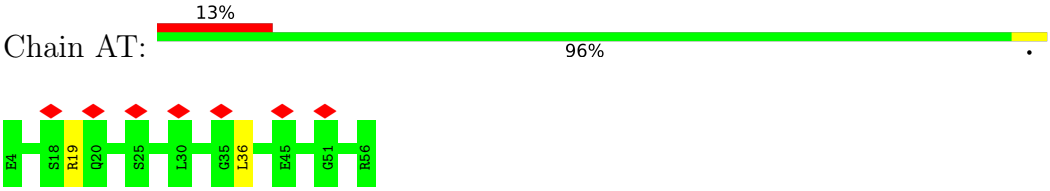
• Molecule 76: 40S ribosomal protein S28-A

Chain AS:



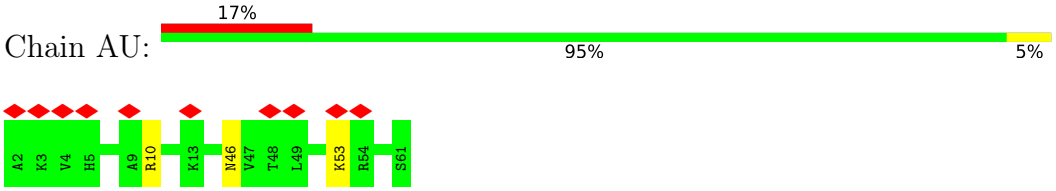
• Molecule 77: 40S ribosomal protein S29-A

Chain AT:



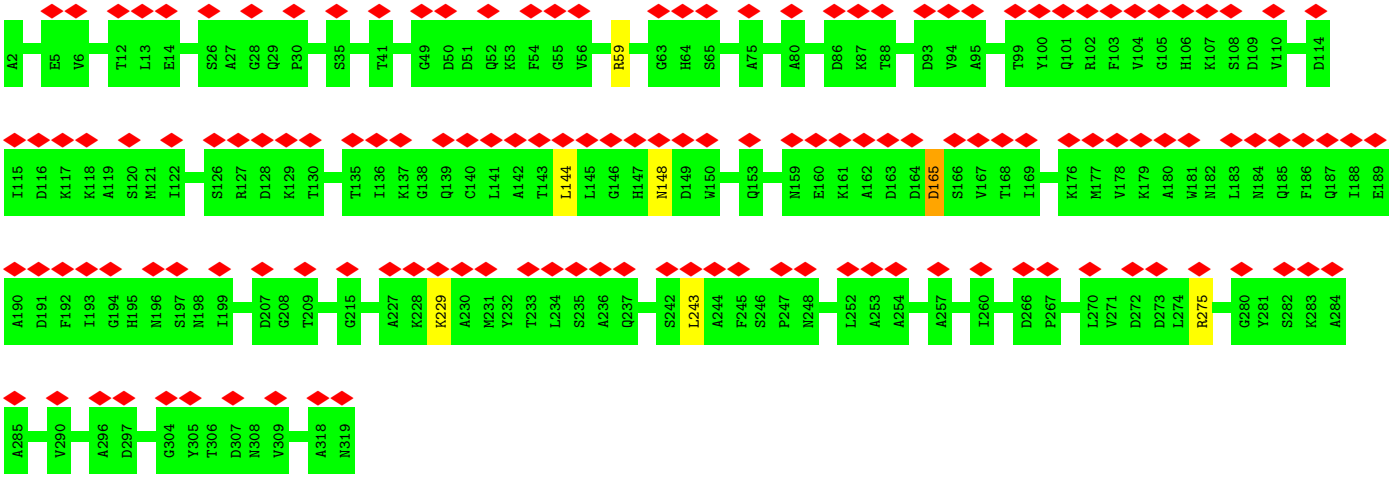
• Molecule 78: 40S ribosomal protein S30-A

Chain AU:

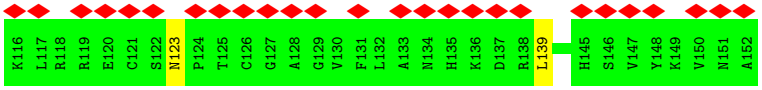


• Molecule 79: Guanine nucleotide-binding protein subunit beta-like protein

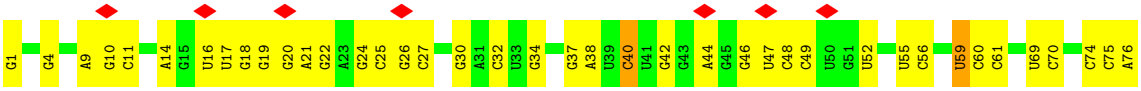
Chain AV:



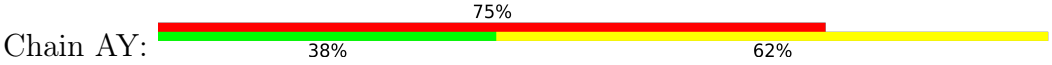
• Molecule 80: Ubiquitin-40S ribosomal protein S31

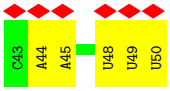


• Molecule 81: Transfer RNA - Phe

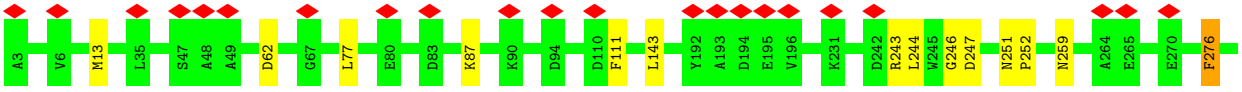


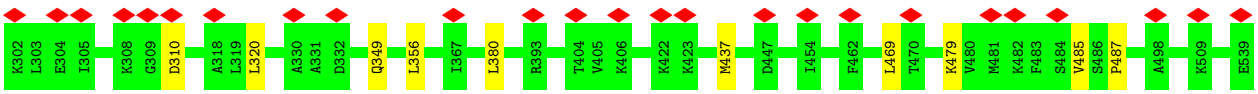
• Molecule 82: Messenger RNA

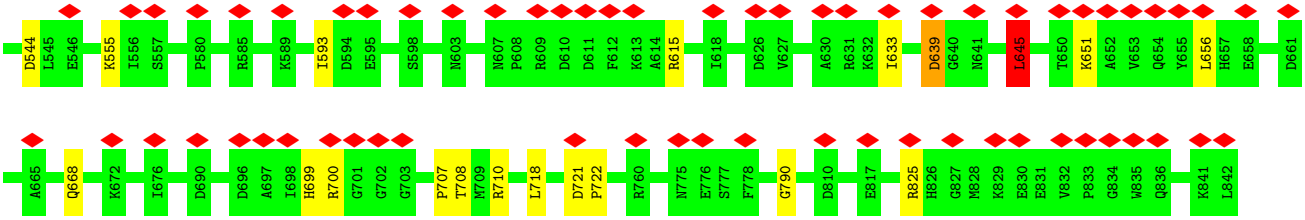




• Molecule 83: Elongation factor 2






D544 L545 E546 K555 I556 S557 P580 R585 K589 I593 D594 E595 S598 N603 N607 P608 R609 D610 D611 F612 K613 A614 R615 I618 D626 V627 A630 R631 K632 I633 D639 G640 N641 L645 T650 K651 A652 V653 Q654 Y655 L656 H657 E658 D661
A665 Q668 K672 I676 D690 D696 A697 I698 H699 R700 G701 G702 G703 P707 T708 W709 R710 L718 D721 P722 R760 N775 E776 S777 F778 G790 D810 E817 R825 H826 G827 M828 K829 E830 E831 V832 P833 G834 W835 Q836 K841 L842

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	189700	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	0.347	Depositor
Minimum map value	-0.197	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.018	Depositor
Recommended contour level	0.05	Depositor
Map size (Å)	396.0, 396.0, 396.0	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.1, 1.1, 1.1	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: SO1, ZN, GCP, DDE

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	1	0.64	0/77157	1.21	496/120295 (0.4%)
2	3	0.54	0/2883	1.17	23/4491 (0.5%)
3	4	0.61	0/3746	1.13	14/5832 (0.2%)
4	P0	0.31	0/1498	0.67	1/2025 (0.0%)
5	P2	0.28	0/728	0.68	0/975
6	A	0.43	0/1948	0.72	1/2617 (0.0%)
7	B	0.37	0/3146	0.65	1/4228 (0.0%)
8	C	0.35	0/2800	0.66	3/3790 (0.1%)
9	D	0.34	0/2425	0.62	0/3271
10	E	0.31	0/1260	0.62	0/1694
11	F	0.37	0/1821	0.66	0/2451
12	G	0.34	0/1836	0.64	1/2481 (0.0%)
13	H	0.34	0/1539	0.64	0/2073
14	I	0.37	0/1741	0.67	0/2335
15	J	0.32	0/1374	0.73	1/1842 (0.1%)
16	L	0.35	0/1568	0.65	0/2106
17	M	0.31	0/1068	0.62	1/1438 (0.1%)
18	N	0.41	0/1757	0.69	1/2354 (0.0%)
19	O	0.39	0/1585	0.66	2/2128 (0.1%)
20	P	0.35	0/1443	0.62	0/1944
21	Q	0.34	0/1465	0.65	2/1965 (0.1%)
22	R	0.32	0/1538	0.61	0/2050
23	S	0.36	0/1481	0.65	1/1990 (0.1%)
24	T	0.36	0/1300	0.68	2/1743 (0.1%)
25	U	0.35	0/812	0.67	1/1099 (0.1%)
26	V	0.38	0/1018	0.71	1/1369 (0.1%)
27	W	0.36	0/533	0.70	1/707 (0.1%)
28	X	0.36	0/979	0.66	0/1321
29	Y	0.31	0/1004	0.68	2/1341 (0.1%)
30	Z	0.36	0/1118	0.66	2/1497 (0.1%)
31	a	0.36	0/1204	0.65	0/1612
32	b	0.28	0/473	0.63	0/629

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	c	0.35	0/751	0.67	1/1008 (0.1%)
34	d	0.36	0/897	0.63	0/1205
35	e	0.32	0/1041	0.61	0/1394
36	f	0.40	0/868	0.70	1/1168 (0.1%)
37	g	0.37	0/890	0.72	2/1189 (0.2%)
38	h	0.31	0/978	0.66	2/1301 (0.2%)
39	i	0.32	0/778	0.66	0/1034
40	j	0.40	0/696	0.74	1/923 (0.1%)
41	k	0.29	0/618	0.66	1/826 (0.1%)
42	l	0.45	0/443	0.83	1/588 (0.2%)
43	m	0.35	0/423	0.63	0/562
44	n	0.28	0/228	0.60	0/293
45	o	0.35	0/860	0.65	0/1136
46	p	0.39	0/701	0.68	0/934
47	2	0.53	0/42328	1.23	349/65955 (0.5%)
48	q	0.31	0/1617	0.63	0/2215
49	r	0.33	0/1735	0.78	3/2335 (0.1%)
50	s	0.32	0/1665	0.67	1/2263 (0.0%)
51	t	0.32	0/1759	0.69	1/2368 (0.0%)
52	u	0.33	0/2109	0.76	3/2839 (0.1%)
53	v	0.30	0/1629	0.67	0/2202
54	w	0.33	0/1814	0.77	2/2425 (0.1%)
55	x	0.33	0/1506	0.73	0/2028
56	y	0.33	0/1514	0.68	0/2021
57	z	0.33	0/1519	0.70	3/2035 (0.1%)
58	AA	0.33	0/789	0.75	4/1067 (0.4%)
59	AB	0.34	0/1247	0.66	1/1681 (0.1%)
60	AC	0.29	0/898	0.72	2/1220 (0.2%)
61	AD	0.32	0/1215	0.70	1/1638 (0.1%)
62	AE	0.32	0/901	0.64	0/1217
63	AF	0.36	0/998	0.74	1/1341 (0.1%)
64	AG	0.30	0/1125	0.73	0/1510
65	AH	0.30	0/935	0.67	1/1254 (0.1%)
66	AI	0.29	0/1211	0.68	1/1628 (0.1%)
67	AJ	0.32	0/1130	0.67	1/1517 (0.1%)
68	AK	0.30	0/865	0.71	2/1169 (0.2%)
69	AL	0.38	0/693	0.78	1/935 (0.1%)
70	AM	0.36	0/1038	0.68	2/1395 (0.1%)
71	AN	0.36	0/1139	0.72	0/1518
72	AO	0.31	0/1087	0.63	0/1449
73	AP	0.32	0/571	0.73	0/768
74	AQ	0.36	0/782	0.82	2/1047 (0.2%)
75	AR	0.38	0/620	0.81	0/838

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
76	AS	0.30	0/499	0.69	0/670
77	AT	0.32	0/452	0.63	1/600 (0.2%)
78	AU	0.29	0/483	0.59	0/643
79	AV	0.30	0/2490	0.70	3/3389 (0.1%)
80	AW	0.30	0/292	0.65	0/390
81	AX	0.52	1/1818 (0.1%)	1.34	25/2831 (0.9%)
82	AY	0.30	0/181	0.97	0/278
83	AZ	0.35	0/6655	0.76	11/9009 (0.1%)
All	All	0.51	1/225729 (0.0%)	1.04	987/330942 (0.3%)

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
4	P0	0	2
5	P2	0	1
6	A	0	1
7	B	0	1
9	D	0	5
10	E	0	1
11	F	0	3
12	G	0	3
13	H	0	2
14	I	0	2
15	J	0	1
16	L	0	1
19	O	0	2
21	Q	0	1
24	T	0	2
26	V	0	2
27	W	0	1
31	a	0	1
34	d	0	2
35	e	0	2
36	f	0	1
37	g	0	3
38	h	0	1
39	i	0	3
40	j	0	1
42	l	0	1

Continued on next page...

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Mol	Chain	#Chirality outliers	#Planarity outliers
45	o	0	3
48	q	0	4
49	r	0	4
51	t	0	1
52	u	0	5
53	v	0	2
54	w	0	11
55	x	0	2
56	y	0	1
57	z	0	2
59	AB	0	1
60	AC	0	1
61	AD	0	3
63	AF	0	2
64	AG	0	3
65	AH	0	2
66	AI	0	1
69	AL	0	2
71	AN	0	1
72	AO	0	1
73	AP	0	1
74	AQ	0	7
75	AR	0	2
79	AV	0	1
83	AZ	0	14
All	All	0	123

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
81	AX	1	G	OP3-P	-10.59	1.48	1.61

All (987) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
47	2	94	U	C2-N3-C4	22.19	140.31	127.00
47	2	654	C	N1-C2-O2	13.09	126.75	118.90
47	2	654	C	C2-N1-C1'	12.26	132.29	118.80
47	2	94	U	N3-C4-C5	12.07	121.84	114.60
47	2	453	U	C2-N1-C1'	11.67	131.70	117.70
1	1	2094	C	N1-C2-O2	11.61	125.86	118.90
47	2	654	C	N3-C2-O2	-11.54	113.83	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
47	2	453	U	N1-C2-O2	11.35	130.75	122.80
47	2	767	U	N1-C2-O2	11.23	130.66	122.80
47	2	453	U	N3-C2-O2	-11.06	114.46	122.20
47	2	767	U	N3-C2-O2	-10.92	114.56	122.20
47	2	1342	C	N1-C2-O2	10.74	125.35	118.90
47	2	490	C	N3-C2-O2	-10.56	114.50	121.90
47	2	767	U	C2-N1-C1'	10.53	130.33	117.70
1	1	2094	C	N3-C2-O2	-10.42	114.60	121.90
1	1	2836	C	N1-C2-O2	10.37	125.12	118.90
47	2	654	C	C6-N1-C2	-10.20	116.22	120.30
1	1	1856	C	N3-C2-O2	-10.18	114.78	121.90
1	1	3235	C	N3-C2-O2	-10.06	114.86	121.90
1	1	2230	C	N1-C2-O2	9.75	124.75	118.90
1	1	1155	C	N3-C2-O2	-9.43	115.30	121.90
1	1	1137	C	N1-C2-O2	9.37	124.52	118.90
47	2	1052	U	N3-C2-O2	-9.36	115.65	122.20
47	2	1246	C	N1-C2-O2	9.33	124.50	118.90
47	2	1052	U	N1-C2-O2	9.23	129.26	122.80
1	1	823	C	C2-N1-C1'	9.20	128.92	118.80
1	1	1496	C	C2-N1-C1'	9.16	128.87	118.80
47	2	490	C	N1-C2-O2	9.09	124.35	118.90
1	1	1763	U	N1-C2-O2	9.05	129.13	122.80
47	2	1389	C	C6-N1-C2	-9.04	116.69	120.30
1	1	2405	C	N1-C2-O2	9.03	124.32	118.90
1	1	3355	U	N1-C2-O2	8.84	128.99	122.80
1	1	1281	G	C8-N9-C1'	-8.84	115.51	127.00
47	2	1342	C	C2-N1-C1'	8.84	128.52	118.80
1	1	1645	U	N3-C2-O2	-8.83	116.02	122.20
25	U	91	ASP	CB-CG-OD1	8.83	126.25	118.30
1	1	1309	U	N1-C2-O2	8.82	128.98	122.80
1	1	1194	G	N3-C4-N9	8.71	131.23	126.00
47	2	1374	C	C6-N1-C2	-8.70	116.82	120.30
1	1	2783	U	N3-C2-O2	-8.69	116.11	122.20
1	1	1309	U	N3-C2-O2	-8.69	116.12	122.20
1	1	1194	G	C8-N9-C1'	-8.66	115.74	127.00
1	1	3235	C	N1-C2-O2	8.64	124.09	118.90
1	1	1763	U	N3-C2-O2	-8.58	116.19	122.20
47	2	94	U	C2-N1-C1'	8.57	127.98	117.70
67	AJ	35	ASP	CB-CG-OD1	8.55	126.00	118.30
83	AZ	62	ASP	CB-CG-OD1	8.55	125.99	118.30
1	1	3355	U	C2-N1-C1'	8.55	127.95	117.70
1	1	1281	G	C4-N9-C1'	8.53	137.59	126.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
47	2	1246	C	C2-N1-C1'	8.54	128.19	118.80
2	3	94	C	C2-N1-C1'	8.53	128.18	118.80
1	1	1194	G	C4-N9-C1'	8.43	137.46	126.50
1	1	1645	U	N1-C2-O2	8.43	128.70	122.80
1	1	1280	C	N3-C2-O2	-8.39	116.03	121.90
1	1	1281	G	N3-C4-N9	8.39	131.03	126.00
1	1	3355	U	N3-C2-O2	-8.34	116.36	122.20
47	2	1342	C	N3-C2-O2	-8.32	116.08	121.90
1	1	78	U	N3-C2-O2	-8.30	116.39	122.20
59	AB	5	LEU	CA-CB-CG	8.28	134.35	115.30
4	P0	45	LEU	CA-CB-CG	8.27	134.32	115.30
1	1	524	U	N1-C2-O2	8.26	128.59	122.80
47	2	1389	C	N3-C2-O2	-8.26	116.11	121.90
47	2	1393	C	C5-C6-N1	8.24	125.12	121.00
1	1	2836	C	C2-N1-C1'	8.24	127.86	118.80
47	2	908	U	N1-C2-O2	8.21	128.54	122.80
1	1	226	C	N3-C2-O2	-8.20	116.16	121.90
47	2	1389	C	N1-C2-O2	8.20	123.82	118.90
47	2	190	C	N3-C2-O2	-8.19	116.17	121.90
1	1	1763	U	C2-N1-C1'	8.18	127.51	117.70
47	2	908	U	N3-C2-O2	-8.18	116.48	122.20
47	2	497	G	N3-C4-N9	8.15	130.89	126.00
65	AH	24	LEU	CA-CB-CG	8.14	134.03	115.30
47	2	1246	C	N3-C2-O2	-8.12	116.22	121.90
47	2	532	U	N3-C2-O2	-8.11	116.52	122.20
47	2	908	U	C2-N1-C1'	8.09	127.41	117.70
47	2	1653	C	C2-N1-C1'	8.09	127.69	118.80
37	g	81	CYS	CA-CB-SG	8.08	128.54	114.00
1	1	2652	U	N3-C2-O2	-8.06	116.56	122.20
1	1	1219	C	N1-C2-O2	8.05	123.73	118.90
1	1	3023	U	N3-C2-O2	-8.03	116.58	122.20
47	2	654	C	C6-N1-C1'	-8.02	111.18	120.80
1	1	292	U	C2-N1-C1'	8.00	127.31	117.70
1	1	2230	C	N3-C2-O2	-8.00	116.30	121.90
1	1	1856	C	N1-C2-O2	7.93	123.66	118.90
1	1	1857	C	C2-N1-C1'	7.93	127.52	118.80
1	1	2531	C	N1-C2-O2	7.90	123.64	118.90
47	2	965	U	C2-N1-C1'	7.89	127.17	117.70
1	1	2405	C	N3-C2-O2	-7.89	116.38	121.90
47	2	1571	C	N3-C2-O2	-7.88	116.38	121.90
47	2	1389	C	C2-N1-C1'	7.88	127.46	118.80
47	2	75	U	O5'-P-OP1	-7.87	98.61	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
81	AX	59	U	N1-C2-O2	7.86	128.30	122.80
1	1	1706	C	N1-C2-O2	7.85	123.61	118.90
1	1	2230	C	C2-N1-C1'	7.85	127.44	118.80
47	2	682	C	N1-C2-O2	7.81	123.59	118.90
47	2	431	C	C6-N1-C2	-7.80	117.18	120.30
47	2	1571	C	N1-C2-O2	7.80	123.58	118.90
1	1	3214	U	N1-C2-O2	7.80	128.26	122.80
1	1	1149	G	N3-C4-N9	-7.80	121.32	126.00
42	l	29	LEU	CA-CB-CG	7.80	133.23	115.30
1	1	2836	C	N3-C2-O2	-7.79	116.45	121.90
1	1	2305	G	N3-C4-C5	-7.77	124.72	128.60
47	2	1700	C	N1-C2-O2	7.76	123.56	118.90
81	AX	40	C	C2-N1-C1'	7.75	127.32	118.80
1	1	823	C	C6-N1-C2	-7.75	117.20	120.30
47	2	431	C	C2-N1-C1'	7.71	127.29	118.80
47	2	829	A	O4'-C1'-N9	7.71	114.37	108.20
81	AX	59	U	C2-N1-C1'	7.71	126.95	117.70
1	1	1551	C	N3-C2-O2	-7.71	116.50	121.90
1	1	3235	C	C6-N1-C2	-7.71	117.22	120.30
1	1	2765	C	C5-C6-N1	7.69	124.84	121.00
47	2	302	U	C2-N1-C1'	7.69	126.92	117.70
1	1	2132	C	C6-N1-C2	-7.66	117.23	120.30
47	2	646	C	C6-N1-C2	-7.65	117.24	120.30
1	1	1837	U	C2-N1-C1'	7.64	126.87	117.70
1	1	524	U	N3-C2-O2	-7.62	116.86	122.20
1	1	1281	G	N9-C4-C5	-7.61	102.36	105.40
47	2	498	G	N7-C8-N9	7.60	116.90	113.10
47	2	302	U	N1-C2-O2	7.55	128.09	122.80
1	1	638	C	C5-C6-N1	7.55	124.78	121.00
1	1	861	C	C2-N1-C1'	7.54	127.09	118.80
1	1	3034	C	N1-C2-O2	7.54	123.42	118.90
27	W	39	LEU	CA-CB-CG	7.53	132.61	115.30
47	2	1783	C	C5-C6-N1	7.51	124.76	121.00
1	1	1281	G	C6-C5-N7	-7.50	125.90	130.40
47	2	489	C	N1-C2-O2	7.49	123.39	118.90
47	2	1052	U	C2-N1-C1'	7.48	126.68	117.70
47	2	1773	C	C2-N1-C1'	7.48	127.03	118.80
1	1	2765	C	C6-N1-C2	-7.48	117.31	120.30
47	2	176	C	N1-C2-O2	7.47	123.38	118.90
47	2	453	U	C6-N1-C1'	-7.46	110.76	121.20
1	1	2263	C	C2-N1-C1'	7.43	126.97	118.80
1	1	3214	U	N3-C2-O2	-7.41	117.01	122.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
47	2	302	U	N3-C2-O2	-7.41	117.02	122.20
47	2	82	U	C2-N1-C1'	7.40	126.58	117.70
6	A	150	LEU	CA-CB-CG	7.39	132.30	115.30
1	1	19	U	C2-N1-C1'	7.38	126.55	117.70
69	AL	78	LEU	CA-CB-CG	7.37	132.25	115.30
1	1	1496	C	C6-N1-C2	-7.35	117.36	120.30
1	1	2333	C	N3-C2-O2	-7.34	116.76	121.90
1	1	2677	G	C4-N9-C1'	7.34	136.05	126.50
47	2	946	U	N1-C2-O2	7.31	127.92	122.80
1	1	2652	U	N1-C2-O2	7.29	127.90	122.80
1	1	1372	C	N1-C2-O2	7.28	123.27	118.90
1	1	1487	G	N3-C4-N9	-7.27	121.64	126.00
1	1	2783	U	N1-C2-O2	7.26	127.88	122.80
1	1	1137	C	N3-C2-O2	-7.26	116.82	121.90
7	B	351	LEU	CA-CB-CG	7.24	131.96	115.30
1	1	1525	G	C4-N9-C1'	7.22	135.89	126.50
1	1	1585	C	C2-N1-C1'	7.21	126.73	118.80
47	2	682	C	N3-C2-O2	-7.21	116.86	121.90
47	2	469	C	N1-C2-O2	7.20	123.22	118.90
47	2	70	C	C2-N1-C1'	7.20	126.72	118.80
1	1	1659	U	N3-C2-O2	-7.20	117.16	122.20
60	AC	28	LEU	CA-CB-CG	7.18	131.82	115.30
81	AX	59	U	N3-C2-O2	-7.18	117.17	122.20
1	1	1507	G	C4-N9-C1'	7.17	135.81	126.50
47	2	1470	C	C6-N1-C2	-7.16	117.44	120.30
1	1	2489	C	N1-C2-O2	7.16	123.20	118.90
47	2	706	A	P-O3'-C3'	7.14	128.27	119.70
47	2	94	U	N3-C2-O2	-7.14	117.20	122.20
1	1	1194	G	C6-C5-N7	-7.13	126.12	130.40
47	2	489	C	C6-N1-C2	-7.12	117.45	120.30
47	2	532	U	N1-C2-O2	7.11	127.77	122.80
1	1	2305	G	N3-C4-N9	7.10	130.26	126.00
1	1	1281	G	C4-C5-N7	7.10	113.64	110.80
1	1	1280	C	C6-N1-C2	-7.09	117.47	120.30
1	1	142	C	N1-C2-O2	7.08	123.15	118.90
1	1	3023	U	C2-N1-C1'	7.08	126.19	117.70
1	1	2415	C	C6-N1-C2	-7.07	117.47	120.30
81	AX	56	C	C2-N1-C1'	7.05	126.56	118.80
1	1	1155	C	N1-C2-O2	7.04	123.12	118.90
2	3	81	U	C2-N1-C1'	7.03	126.14	117.70
1	1	260	C	N3-C2-O2	-7.02	116.99	121.90
47	2	228	G	N3-C4-N9	7.00	130.20	126.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	19	U	N1-C2-O2	7.00	127.70	122.80
47	2	828	U	N3-C2-O2	-6.99	117.31	122.20
47	2	1674	C	C2-N1-C1'	6.99	126.49	118.80
47	2	654	C	C5-C6-N1	6.99	124.49	121.00
57	z	93	LEU	CA-CB-CG	6.97	131.34	115.30
1	1	1121	U	C2-N1-C1'	6.97	126.06	117.70
81	AX	40	C	N1-C2-O2	6.96	123.07	118.90
1	1	2606	G	N3-C4-N9	6.95	130.17	126.00
1	1	1297	C	N1-C2-O2	6.94	123.06	118.90
1	1	524	U	C2-N1-C1'	6.93	126.02	117.70
1	1	2336	U	N3-C2-O2	-6.92	117.35	122.20
47	2	841	U	C5-C6-N1	6.91	126.16	122.70
1	1	2305	G	C4-N9-C1'	6.91	135.48	126.50
1	1	1496	C	N1-C2-O2	6.90	123.04	118.90
47	2	767	U	C6-N1-C1'	-6.90	111.54	121.20
1	1	2550	U	N3-C2-O2	-6.90	117.37	122.20
29	Y	126	LEU	CA-CB-CG	6.89	131.16	115.30
47	2	1338	C	P-O3'-C3'	6.89	127.97	119.70
47	2	1470	C	C5-C6-N1	6.89	124.45	121.00
47	2	1458	G	C4-N9-C1'	6.89	135.46	126.50
3	4	100	U	C2-N1-C1'	6.89	125.96	117.70
1	1	1194	G	N9-C4-C5	-6.88	102.65	105.40
81	AX	56	C	C5-C6-N1	6.88	124.44	121.00
1	1	1857	C	C6-N1-C2	-6.88	117.55	120.30
1	1	2677	G	N3-C4-C5	-6.87	125.17	128.60
1	1	2950	G	C4-N9-C1'	6.87	135.43	126.50
1	1	1551	C	N1-C2-O2	6.86	123.02	118.90
47	2	1185	U	C2-N1-C1'	6.86	125.93	117.70
47	2	1783	C	C2-N1-C1'	6.86	126.34	118.80
1	1	1564	U	C5-C6-N1	6.85	126.13	122.70
47	2	498	G	N1-C2-N2	-6.85	110.03	116.20
1	1	2950	G	N3-C4-C5	-6.84	125.18	128.60
47	2	532	U	C2-N1-C1'	6.84	125.91	117.70
1	1	934	G	C4-N9-C1'	6.84	135.39	126.50
83	AZ	77	LEU	CA-CB-CG	6.84	131.03	115.30
1	1	1297	C	C2-N1-C1'	6.83	126.32	118.80
1	1	3023	U	N1-C2-O2	6.83	127.58	122.80
47	2	489	C	N3-C2-O2	-6.83	117.12	121.90
1	1	1137	C	C2-N1-C1'	6.83	126.31	118.80
1	1	1349	G	C4-N9-C1'	6.83	135.38	126.50
1	1	2263	C	C5-C6-N1	6.82	124.41	121.00
1	1	3034	C	N3-C2-O2	-6.82	117.13	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
29	Y	48	LEU	CA-CB-CG	6.82	130.98	115.30
47	2	176	C	N3-C2-O2	-6.81	117.13	121.90
83	AZ	143	LEU	CA-CB-CG	6.81	130.96	115.30
1	1	2230	C	C6-N1-C2	-6.79	117.58	120.30
47	2	270	C	C2-N1-C1'	6.79	126.27	118.80
40	j	64	MET	CA-CB-CG	6.79	124.84	113.30
1	1	1878	G	C4-N9-C1'	6.77	135.31	126.50
1	1	1907	C	N1-C2-O2	6.76	122.96	118.90
1	1	2498	U	C2-N1-C1'	6.76	125.81	117.70
1	1	1781	C	C2-N1-C1'	6.76	126.23	118.80
1	1	2606	G	N3-C4-C5	-6.75	125.22	128.60
47	2	82	U	N1-C2-O2	6.75	127.52	122.80
47	2	1257	U	N3-C2-O2	-6.74	117.48	122.20
1	1	2102	U	N3-C2-O2	-6.72	117.49	122.20
1	1	1458	U	N3-C2-O2	-6.71	117.50	122.20
1	1	823	C	C5-C6-N1	6.71	124.36	121.00
47	2	17	C	C5-C6-N1	6.71	124.35	121.00
1	1	1275	C	C6-N1-C2	-6.70	117.62	120.30
47	2	646	C	C5-C6-N1	6.70	124.35	121.00
47	2	946	U	C2-N1-C1'	6.69	125.73	117.70
8	C	219	LEU	CA-CB-CG	6.69	130.69	115.30
1	1	1562	C	N1-C2-O2	6.69	122.91	118.90
1	1	2583	C	C2-N1-C1'	6.68	126.15	118.80
1	1	1168	U	N3-C2-O2	-6.68	117.52	122.20
47	2	946	U	N3-C2-O2	-6.68	117.53	122.20
47	2	1173	C	C2-N1-C1'	6.68	126.15	118.80
1	1	1659	U	N1-C2-O2	6.66	127.46	122.80
8	C	182	LEU	CA-CB-CG	6.66	130.62	115.30
1	1	1525	G	C8-N9-C1'	-6.66	118.34	127.00
47	2	1715	G	C4-N9-C1'	6.66	135.16	126.50
1	1	3078	U	P-O3'-C3'	6.65	127.68	119.70
1	1	2405	C	C2-N1-C1'	6.64	126.11	118.80
1	1	1496	C	C5-C6-N1	6.64	124.32	121.00
1	1	2846	U	N3-C2-O2	-6.64	117.55	122.20
1	1	2102	U	N1-C2-O2	6.61	127.42	122.80
47	2	1327	C	C2-N1-C1'	6.60	126.06	118.80
47	2	1715	G	N3-C4-N9	6.60	129.96	126.00
47	2	842	C	C6-N1-C2	-6.59	117.66	120.30
1	1	2677	G	N3-C4-N9	6.59	129.95	126.00
47	2	1222	C	N1-C2-O2	6.58	122.85	118.90
47	2	1540	G	C4-N9-C1'	6.58	135.06	126.50
47	2	94	U	N1-C2-N3	6.58	118.85	114.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	2132	C	N3-C2-O2	-6.57	117.30	121.90
47	2	376	C	C2-N1-C1'	6.57	126.03	118.80
1	1	2415	C	C2-N1-C1'	6.57	126.02	118.80
47	2	2	A	O5'-P-OP1	-6.57	99.79	105.70
47	2	1332	C	C2-N1-C1'	6.54	126.00	118.80
47	2	296	U	N1-C2-O2	6.54	127.38	122.80
1	1	1219	C	N3-C2-O2	-6.54	117.32	121.90
1	1	2773	C	C6-N1-C2	-6.54	117.69	120.30
1	1	2378	C	C2-N1-C1'	6.53	125.98	118.80
1	1	1659	U	C2-N1-C1'	6.53	125.53	117.70
2	3	81	U	N1-C2-O2	6.52	127.37	122.80
81	AX	40	C	C6-N1-C2	-6.51	117.69	120.30
1	1	3346	U	C2-N1-C1'	6.51	125.51	117.70
47	2	1374	C	N3-C2-O2	-6.51	117.34	121.90
1	1	1292	C	C2-N1-C1'	6.50	125.95	118.80
1	1	1590	G	N3-C4-N9	6.50	129.90	126.00
1	1	2867	C	N3-C2-O2	-6.50	117.35	121.90
47	2	320	U	N1-C2-O2	6.50	127.35	122.80
49	r	61	LEU	CA-CB-CG	6.50	130.25	115.30
1	1	1525	G	N3-C4-N9	6.49	129.89	126.00
47	2	1709	C	N1-C2-O2	6.49	122.79	118.90
58	AA	88	PRO	N-CA-CB	6.49	111.08	103.30
47	2	431	C	N1-C2-O2	6.48	122.79	118.90
1	1	2765	C	C2-N1-C1'	6.47	125.92	118.80
1	1	1227	C	C5-C6-N1	6.47	124.23	121.00
1	1	1507	G	N3-C4-N9	6.46	129.88	126.00
1	1	2846	U	C2-N1-C1'	6.46	125.45	117.70
47	2	497	G	N9-C4-C5	-6.45	102.82	105.40
1	1	492	C	C2-N1-C1'	6.44	125.89	118.80
47	2	1734	U	N3-C2-O2	-6.43	117.70	122.20
81	AX	56	C	C6-N1-C2	-6.43	117.73	120.30
1	1	1027	A	C2-N3-C4	6.43	113.81	110.60
1	1	1309	U	C2-N1-C1'	6.43	125.41	117.70
47	2	1697	G	C4-N9-C1'	6.43	134.85	126.50
1	1	1219	C	C6-N1-C2	-6.42	117.73	120.30
47	2	1389	C	C5-C6-N1	6.42	124.21	121.00
1	1	1590	G	C4-N9-C1'	6.42	134.85	126.50
1	1	1194	G	N3-C2-N2	6.41	124.39	119.90
1	1	1277	C	N1-C2-O2	6.41	122.75	118.90
1	1	1706	C	N3-C2-O2	-6.41	117.41	121.90
1	1	623	U	N1-C2-O2	6.41	127.28	122.80
47	2	700	C	N1-C2-O2	6.39	122.74	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	3	94	C	C6-N1-C2	-6.39	117.74	120.30
47	2	296	U	N3-C2-O2	-6.39	117.73	122.20
1	1	2347	U	N1-C2-O2	6.38	127.27	122.80
1	1	2726	C	C2-N1-C1'	6.38	125.82	118.80
3	4	64	U	N3-C2-O2	-6.38	117.73	122.20
81	AX	25	C	N1-C2-O2	6.38	122.73	118.90
1	1	623	U	N3-C2-O2	-6.37	117.74	122.20
2	3	81	U	N3-C2-O2	-6.37	117.74	122.20
47	2	1029	U	N3-C2-O2	-6.37	117.74	122.20
54	w	68	LEU	CA-CB-CG	6.37	129.94	115.30
47	2	1393	C	C6-N1-C2	-6.36	117.75	120.30
1	1	1234	G	C5-C6-O6	6.36	132.42	128.60
47	2	70	C	N1-C2-O2	6.36	122.72	118.90
1	1	3181	C	C2-N1-C1'	6.36	125.79	118.80
1	1	492	C	C5-C6-N1	6.36	124.18	121.00
1	1	2617	U	N3-C2-O2	-6.36	117.75	122.20
47	2	1624	C	C2-N1-C1'	6.35	125.79	118.80
47	2	583	C	C6-N1-C2	-6.35	117.76	120.30
1	1	278	U	N1-C2-O2	6.35	127.24	122.80
1	1	1121	U	N1-C2-O2	6.34	127.24	122.80
1	1	2383	C	N1-C2-O2	6.34	122.71	118.90
1	1	2531	C	N3-C2-O2	-6.34	117.46	121.90
1	1	2638	C	N1-C2-O2	6.34	122.71	118.90
47	2	1620	C	N1-C2-O2	6.34	122.70	118.90
1	1	1507	G	C8-N9-C1'	-6.33	118.78	127.00
47	2	1653	C	C6-N1-C2	-6.32	117.77	120.30
47	2	1773	C	N1-C2-O2	6.31	122.69	118.90
1	1	638	C	C6-N1-C2	-6.30	117.78	120.30
1	1	1843	C	N1-C2-O2	6.30	122.68	118.90
1	1	2347	U	C2-N1-C1'	6.30	125.27	117.70
47	2	608	U	N3-C2-O2	-6.30	117.79	122.20
47	2	656	G	N3-C4-C5	-6.30	125.45	128.60
81	AX	32	C	N1-C2-O2	6.29	122.68	118.90
1	1	1194	G	C4-C5-N7	6.29	113.31	110.80
47	2	431	C	C5-C6-N1	6.29	124.14	121.00
47	2	411	C	C2-N1-C1'	6.28	125.71	118.80
1	1	3214	U	C2-N1-C1'	6.28	125.23	117.70
2	3	94	C	C5-C6-N1	6.28	124.14	121.00
1	1	1155	C	C6-N1-C2	-6.28	117.79	120.30
47	2	35	U	N3-C2-O2	-6.27	117.81	122.20
47	2	696	C	N1-C2-O2	6.27	122.66	118.90
81	AX	70	C	C5-C6-N1	6.26	124.13	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	27	C	N1-C2-O2	6.26	122.66	118.90
47	2	317	C	C5-C6-N1	6.26	124.13	121.00
1	1	1262	G	C4-N9-C1'	6.26	134.64	126.50
47	2	583	C	C2-N1-C1'	6.26	125.68	118.80
1	1	1349	G	N3-C4-N9	6.25	129.75	126.00
1	1	8	C	C5-C6-N1	6.24	124.12	121.00
1	1	19	U	N3-C2-O2	-6.24	117.83	122.20
47	2	1439	C	C5-C6-N1	6.24	124.12	121.00
50	s	235	LEU	CA-CB-CG	6.24	129.64	115.30
1	1	1333	C	C2-N1-C1'	6.24	125.66	118.80
47	2	1246	C	C6-N1-C2	-6.23	117.81	120.30
47	2	94	U	C5-C4-O4	-6.23	122.16	125.90
1	1	1372	C	N3-C2-O2	-6.23	117.54	121.90
58	AA	2	LEU	CA-CB-CG	6.22	129.61	115.30
52	u	38	LEU	CA-CB-CG	6.22	129.60	115.30
1	1	3057	U	N1-C2-O2	6.22	127.15	122.80
47	2	453	U	C5-C6-N1	6.21	125.81	122.70
1	1	2132	C	N1-C2-O2	6.21	122.63	118.90
1	1	2846	U	N1-C2-O2	6.21	127.14	122.80
1	1	1857	C	N3-C2-O2	-6.20	117.56	121.90
83	AZ	639	ASP	CB-CG-OD1	6.20	123.88	118.30
47	2	633	U	N3-C2-O2	-6.20	117.86	122.20
1	1	382	U	C2-N1-C1'	6.19	125.12	117.70
1	1	2498	U	N1-C2-O2	6.19	127.13	122.80
1	1	2677	G	C8-N9-C1'	-6.18	118.97	127.00
83	AZ	320	LEU	CA-CB-CG	6.17	129.50	115.30
1	1	492	C	C6-N1-C2	-6.17	117.83	120.30
1	1	855	U	C2-N1-C1'	6.17	125.10	117.70
47	2	1591	C	C6-N1-C2	-6.16	117.84	120.30
1	1	986	U	N3-C2-O2	-6.16	117.89	122.20
1	1	430	U	N1-C2-O2	6.15	127.11	122.80
1	1	669	U	C2-N1-C1'	6.15	125.08	117.70
1	1	1275	C	N1-C2-O2	6.14	122.59	118.90
47	2	836	U	C5-C6-N1	6.14	125.77	122.70
1	1	2418	G	C4-N9-C1'	6.14	134.48	126.50
1	1	669	U	N1-C2-O2	6.13	127.09	122.80
47	2	1518	C	N1-C2-O2	6.13	122.58	118.90
1	1	2550	U	N1-C2-O2	6.13	127.09	122.80
1	1	1590	G	C8-N9-C1'	-6.12	119.04	127.00
79	AV	144	LEU	CA-CB-CG	6.12	129.39	115.30
1	1	3001	C	C2-N1-C1'	6.12	125.53	118.80
1	1	1121	U	N3-C2-O2	-6.12	117.92	122.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	2763	U	N3-C2-O2	-6.11	117.92	122.20
47	2	1697	G	N3-C4-N9	6.11	129.67	126.00
1	1	3388	C	C6-N1-C2	-6.10	117.86	120.30
47	2	1342	C	C6-N1-C2	-6.10	117.86	120.30
47	2	1700	C	N3-C2-O2	-6.09	117.63	121.90
47	2	497	G	C8-N9-C1'	-6.09	119.08	127.00
47	2	608	U	N1-C2-O2	6.09	127.06	122.80
47	2	1029	U	N1-C2-O2	6.08	127.06	122.80
2	3	4	U	C2-N1-C1'	6.08	124.99	117.70
47	2	528	U	N1-C2-O2	6.08	127.05	122.80
1	1	78	U	N1-C2-O2	6.07	127.05	122.80
1	1	1555	U	N1-C2-O2	6.07	127.05	122.80
1	1	1907	C	N3-C2-O2	-6.07	117.65	121.90
47	2	1168	U	N3-C2-O2	-6.07	117.95	122.20
1	1	2531	C	C2-N1-C1'	6.06	125.47	118.80
1	1	2622	C	C6-N1-C2	-6.05	117.88	120.30
1	1	2899	C	C2-N1-C1'	6.05	125.45	118.80
1	1	2383	C	C6-N1-C2	-6.04	117.88	120.30
1	1	954	U	N3-C2-O2	-6.04	117.97	122.20
1	1	1645	U	C2-N1-C1'	6.04	124.95	117.70
47	2	1342	C	C6-N1-C1'	-6.03	113.56	120.80
47	2	1518	C	C2-N1-C1'	6.03	125.43	118.80
47	2	1337	A	O4'-C1'-N9	6.03	113.02	108.20
1	1	2383	C	N3-C2-O2	-6.02	117.69	121.90
1	1	3057	U	N3-C2-O2	-6.01	117.99	122.20
47	2	1729	C	C2-N1-C1'	6.01	125.41	118.80
1	1	3131	U	C2-N1-C1'	6.00	124.90	117.70
1	1	3346	U	N3-C2-O2	-6.00	118.00	122.20
1	1	3346	U	N1-C2-O2	6.00	127.00	122.80
1	1	2983	C	N1-C2-O2	5.99	122.50	118.90
1	1	1507	G	O5'-P-OP2	-5.99	100.31	105.70
1	1	2763	U	N1-C2-O2	5.99	126.99	122.80
81	AX	25	C	N3-C2-O2	-5.99	117.71	121.90
1	1	2541	U	P-O3'-C3'	5.99	126.89	119.70
1	1	3034	C	C6-N1-C2	-5.99	117.90	120.30
1	1	1037	C	C2-N1-C1'	5.98	125.38	118.80
1	1	1604	G	C4-N9-C1'	5.98	134.28	126.50
47	2	1336	A	C8-N9-C4	-5.98	103.41	105.80
47	2	489	C	C5-C6-N1	5.98	123.99	121.00
1	1	1608	C	C2-N1-C1'	5.98	125.38	118.80
1	1	2666	C	N1-C2-O2	5.97	122.48	118.90
1	1	3057	U	C2-N1-C1'	5.97	124.87	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	1555	U	N3-C2-O2	-5.97	118.02	122.20
1	1	1878	G	C8-N9-C1'	-5.97	119.23	127.00
21	Q	41	ASP	CB-CG-OD1	5.97	123.67	118.30
2	3	4	U	N3-C2-O2	-5.97	118.02	122.20
47	2	734	A	C2-N3-C4	5.97	113.58	110.60
1	1	669	U	N3-C2-O2	-5.96	118.03	122.20
68	AK	50	LEU	CA-CB-CG	5.95	128.98	115.30
1	1	1889	G	C4-N9-C1'	5.95	134.23	126.50
2	3	105	C	N1-C2-O2	5.95	122.47	118.90
47	2	1214	U	N1-C2-O2	5.95	126.96	122.80
1	1	1137	C	C6-N1-C2	-5.94	117.92	120.30
1	1	492	C	N1-C2-O2	5.94	122.47	118.90
47	2	1703	C	N1-C2-O2	5.94	122.47	118.90
47	2	1729	C	N1-C2-O2	5.94	122.46	118.90
47	2	1751	C	C2-N1-C1'	5.94	125.33	118.80
1	1	1508	C	C6-N1-C1'	5.94	127.92	120.80
1	1	1496	C	C6-N1-C1'	-5.93	113.68	120.80
47	2	528	U	N3-C2-O2	-5.93	118.05	122.20
70	AM	54	ASP	CB-CG-OD1	5.93	123.64	118.30
1	1	1168	U	N1-C2-O2	5.93	126.95	122.80
1	1	2726	C	N1-C2-O2	5.93	122.46	118.90
47	2	908	U	C5-C6-N1	5.93	125.67	122.70
47	2	18	C	C6-N1-C2	-5.93	117.93	120.30
47	2	1624	C	C6-N1-C2	-5.93	117.93	120.30
47	2	1273	G	P-O3'-C3'	5.92	126.81	119.70
15	J	112	LEU	CA-CB-CG	5.92	128.92	115.30
1	1	1279	C	C5-C6-N1	5.92	123.96	121.00
47	2	1115	U	C2-N1-C1'	5.92	124.80	117.70
1	1	1149	G	N3-C4-C5	5.91	131.56	128.60
1	1	1516	C	N1-C2-O2	5.91	122.45	118.90
1	1	1806	A	N7-C8-N9	5.91	116.75	113.80
1	1	142	C	N3-C2-O2	-5.91	117.77	121.90
3	4	64	U	C2-N1-C1'	5.91	124.79	117.70
1	1	863	C	C2-N1-C1'	5.90	125.29	118.80
47	2	656	G	C4-N9-C1'	5.90	134.17	126.50
47	2	1697	G	C8-N9-C1'	-5.90	119.33	127.00
1	1	1565	G	N3-C4-N9	5.89	129.54	126.00
1	1	2606	G	C4-N9-C1'	5.89	134.16	126.50
47	2	759	U	N3-C2-O2	-5.89	118.07	122.20
47	2	611	U	P-O3'-C3'	5.89	126.77	119.70
1	1	1349	G	C8-N9-C1'	-5.89	119.34	127.00
47	2	1374	C	C5-C6-N1	5.88	123.94	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	823	C	C6-N1-C1'	-5.88	113.75	120.80
47	2	902	G	C6-C5-N7	-5.87	126.88	130.40
47	2	1439	C	C6-N1-C2	-5.87	117.95	120.30
1	1	2263	C	C6-N1-C2	-5.87	117.95	120.30
3	4	26	U	C5-C6-N1	5.87	125.63	122.70
47	2	1173	C	C6-N1-C2	-5.87	117.95	120.30
47	2	497	G	C4-N9-C1'	5.87	134.13	126.50
51	t	113	LEU	CA-CB-CG	5.87	128.79	115.30
47	2	1332	C	C6-N1-C2	-5.86	117.95	120.30
1	1	2773	C	N3-C2-O2	-5.86	117.80	121.90
1	1	1907	C	C6-N1-C2	-5.86	117.96	120.30
47	2	1270	G	C8-N9-C1'	5.86	134.62	127.00
63	AF	69	GLU	C-N-CA	5.86	136.35	121.70
1	1	855	U	N3-C2-O2	-5.86	118.10	122.20
47	2	1773	C	C6-N1-C2	-5.85	117.96	120.30
47	2	394	C	C6-N1-C2	-5.85	117.96	120.30
1	1	2388	U	N3-C2-O2	-5.85	118.11	122.20
47	2	575	C	N1-C2-O2	5.85	122.41	118.90
1	1	1507	G	N3-C4-C5	-5.85	125.68	128.60
47	2	1458	G	C8-N9-C1'	-5.85	119.40	127.00
1	1	934	G	C8-N9-C1'	-5.84	119.40	127.00
1	1	2347	U	N3-C2-O2	-5.84	118.11	122.20
1	1	1280	C	N1-C2-O2	5.84	122.40	118.90
1	1	292	U	C5-C6-N1	5.83	125.62	122.70
1	1	2493	U	C2-N1-C1'	5.83	124.69	117.70
47	2	1066	C	N3-C2-O2	-5.82	117.83	121.90
47	2	1409	G	O4'-C1'-N9	5.82	112.85	108.20
1	1	1351	U	C2-N1-C1'	5.81	124.67	117.70
47	2	1327	C	C6-N1-C2	-5.81	117.98	120.30
47	2	1715	G	C8-N9-C1'	-5.81	119.45	127.00
1	1	1239	C	C2-N1-C1'	5.81	125.19	118.80
1	1	380	U	C2-N1-C1'	5.81	124.67	117.70
47	2	1783	C	C6-N1-C2	-5.81	117.98	120.30
1	1	2950	G	N3-C4-N9	5.80	129.48	126.00
1	1	1843	C	C2-N1-C1'	5.79	125.17	118.80
1	1	2305	G	C8-N9-C1'	-5.79	119.47	127.00
1	1	2189	U	N1-C2-O2	5.79	126.85	122.80
47	2	489	C	C2-N1-C1'	5.79	125.17	118.80
1	1	8	C	C2-N1-C1'	5.79	125.16	118.80
30	Z	103	GLN	CA-CB-CG	5.79	126.13	113.40
47	2	38	C	C6-N1-C2	-5.79	117.99	120.30
3	4	64	U	N1-C2-O2	5.78	126.85	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
47	2	453	U	C6-N1-C2	-5.78	117.53	121.00
79	AV	165	ASP	CB-CG-OD1	5.78	123.50	118.30
47	2	296	U	C2-N1-C1'	5.78	124.64	117.70
47	2	1458	G	N3-C4-N9	5.78	129.47	126.00
47	2	1225	U	N1-C2-O2	5.78	126.84	122.80
1	1	2822	U	N3-C2-O2	-5.78	118.16	122.20
1	1	3004	C	P-O3'-C3'	5.78	126.63	119.70
18	N	51	LEU	CA-CB-CG	5.78	128.58	115.30
1	1	2495	C	N1-C2-O2	5.77	122.36	118.90
1	1	2306	C	P-O3'-C3'	5.77	126.62	119.70
1	1	2943	G	N3-C4-N9	5.76	129.46	126.00
1	1	2263	C	N1-C2-O2	5.76	122.36	118.90
1	1	804	C	C6-N1-C2	-5.75	118.00	120.30
1	1	3181	C	N1-C2-O2	5.75	122.35	118.90
1	1	2822	U	N1-C2-O2	5.74	126.82	122.80
1	1	885	U	N3-C2-O2	-5.74	118.18	122.20
1	1	1234	G	N1-C6-O6	-5.74	116.45	119.90
47	2	1591	C	C5-C6-N1	5.74	123.87	121.00
1	1	1857	C	N1-C2-O2	5.74	122.34	118.90
47	2	347	G	C4-N9-C1'	5.74	133.96	126.50
47	2	1565	C	C6-N1-C2	-5.74	118.01	120.30
1	1	1016	C	C6-N1-C2	-5.73	118.01	120.30
47	2	519	C	C6-N1-C2	-5.73	118.01	120.30
1	1	2726	C	N3-C2-O2	-5.73	117.89	121.90
1	1	3105	U	N3-C2-O2	-5.73	118.19	122.20
47	2	1298	U	P-O3'-C3'	5.73	126.57	119.70
47	2	833	U	N3-C4-O4	-5.73	115.39	119.40
1	1	3078	U	OP2-P-O3'	5.72	117.79	105.20
1	1	2836	C	C6-N1-C1'	-5.72	113.94	120.80
2	3	4	U	N1-C2-O2	5.72	126.80	122.80
47	2	768	C	N1-C2-O2	5.72	122.33	118.90
1	1	3130	A	O4'-C1'-N9	5.71	112.77	108.20
1	1	1779	C	C6-N1-C2	-5.71	118.02	120.30
47	2	1246	C	C6-N1-C1'	-5.71	113.95	120.80
1	1	1086	C	C6-N1-C2	-5.71	118.02	120.30
1	1	1562	C	N3-C2-O2	-5.70	117.91	121.90
2	3	28	C	N1-C2-O2	5.70	122.32	118.90
47	2	1734	U	N1-C2-O2	5.70	126.79	122.80
47	2	780	A	O5'-P-OP1	-5.69	100.58	105.70
47	2	1029	U	C2-N1-C1'	5.69	124.53	117.70
52	u	94	ALA	C-N-CA	5.69	135.93	121.70
3	4	50	C	C6-N1-C2	-5.69	118.02	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
47	2	828	U	N1-C2-O2	5.69	126.78	122.80
47	2	1115	U	N3-C2-O2	-5.69	118.22	122.20
47	2	315	A	P-O3'-C3'	5.68	126.52	119.70
1	1	774	G	C4-N9-C1'	5.68	133.88	126.50
47	2	17	C	C2-N1-C1'	5.68	125.05	118.80
47	2	1342	C	C5-C6-N1	5.68	123.84	121.00
1	1	2583	C	N1-C2-O2	5.67	122.30	118.90
1	1	1779	C	N1-C2-O2	5.67	122.30	118.90
1	1	2950	G	C8-N9-C4	-5.67	104.13	106.40
2	3	94	C	C6-N1-C1'	-5.67	113.99	120.80
47	2	1585	U	N1-C2-O2	5.67	126.77	122.80
83	AZ	645	LEU	CA-CB-CG	5.67	128.34	115.30
1	1	2189	U	C2-N1-C1'	5.67	124.50	117.70
1	1	861	C	C6-N1-C2	-5.66	118.03	120.30
1	1	3104	U	N3-C2-O2	-5.66	118.23	122.20
47	2	1608	U	C2-N1-C1'	5.66	124.49	117.70
1	1	278	U	N3-C2-O2	-5.66	118.24	122.20
1	1	1283	C	P-O3'-C3'	5.66	126.49	119.70
47	2	18	C	C5-C6-N1	5.66	123.83	121.00
81	AX	44	A	C2-N3-C4	5.66	113.43	110.60
1	1	2102	U	C2-N1-C1'	5.65	124.48	117.70
1	1	7	C	N3-C2-O2	-5.65	117.94	121.90
47	2	965	U	C6-N1-C1'	-5.65	113.28	121.20
2	3	58	C	C2-N1-C1'	5.65	125.02	118.80
47	2	108	A	N7-C8-N9	5.65	116.63	113.80
1	1	1086	C	C2-N1-C1'	5.65	125.01	118.80
47	2	320	U	N3-C2-O2	-5.65	118.25	122.20
1	1	1565	G	N3-C4-C5	-5.65	125.78	128.60
47	2	35	U	N1-C2-O2	5.65	126.75	122.80
47	2	908	U	C6-N1-C2	-5.64	117.61	121.00
74	AQ	18	VAL	C-N-CA	5.64	135.81	121.70
47	2	320	U	C2-N1-C1'	5.64	124.47	117.70
81	AX	32	C	N3-C2-O2	-5.64	117.95	121.90
1	1	3386	G	C4-N9-C1'	5.64	133.83	126.50
47	2	1674	C	C6-N1-C2	-5.64	118.05	120.30
47	2	1491	U	P-O3'-C3'	5.63	126.46	119.70
1	1	2230	C	C5-C6-N1	5.63	123.81	121.00
47	2	841	U	C2-N1-C1'	5.63	124.45	117.70
47	2	1270	G	C4-N9-C1'	-5.63	119.19	126.50
1	1	1281	G	C5-C6-O6	-5.62	125.23	128.60
1	1	2726	C	C6-N1-C2	-5.62	118.05	120.30
81	AX	40	C	C5-C6-N1	5.62	123.81	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
47	2	74	U	OP1-P-O3'	5.62	117.57	105.20
1	1	774	G	C8-N9-C1'	-5.62	119.69	127.00
1	1	8	C	C6-N1-C2	-5.61	118.06	120.30
2	3	18	C	C2-N1-C1'	5.61	124.98	118.80
47	2	1611	A	P-O3'-C3'	5.61	126.44	119.70
1	1	1856	C	C6-N1-C2	-5.61	118.06	120.30
47	2	1620	C	C2-N1-C1'	5.61	124.97	118.80
36	f	89	LEU	CA-CB-CG	5.61	128.19	115.30
47	2	270	C	N1-C2-O2	5.61	122.26	118.90
47	2	1067	C	C5-C6-N1	5.61	123.80	121.00
3	4	55	U	N3-C2-O2	-5.61	118.28	122.20
47	2	633	U	N1-C2-O2	5.61	126.72	122.80
47	2	1289	U	N3-C2-O2	-5.61	118.28	122.20
83	AZ	356	LEU	CA-CB-CG	5.60	128.19	115.30
1	1	855	U	N1-C2-O2	5.60	126.72	122.80
1	1	1279	C	C6-N1-C2	-5.60	118.06	120.30
1	1	986	U	N1-C2-O2	5.59	126.72	122.80
49	r	96	LEU	CA-CB-CG	5.59	128.17	115.30
47	2	1128	C	C6-N1-C2	-5.59	118.06	120.30
1	1	1604	G	C8-N9-C1'	-5.59	119.73	127.00
1	1	226	C	N1-C2-N3	5.59	123.11	119.20
1	1	774	G	N3-C4-N9	5.59	129.35	126.00
47	2	376	C	C5-C6-N1	5.59	123.79	121.00
47	2	779	U	P-O3'-C3'	5.58	126.40	119.70
47	2	497	G	C4-C5-N7	5.58	113.03	110.80
3	4	50	C	C2-N1-C1'	5.58	124.94	118.80
47	2	1494	C	C2-N1-C1'	5.58	124.94	118.80
47	2	1514	U	N1-C2-O2	5.58	126.70	122.80
1	1	781	G	N3-C4-C5	-5.58	125.81	128.60
47	2	74	U	P-O3'-C3'	5.58	126.39	119.70
47	2	411	C	C6-N1-C2	-5.57	118.07	120.30
47	2	1700	C	C2-N1-C1'	5.57	124.93	118.80
1	1	540	U	N3-C2-O2	-5.57	118.30	122.20
1	1	1585	C	N1-C2-O2	5.56	122.24	118.90
47	2	941	A	P-O3'-C3'	5.56	126.37	119.70
81	AX	1	G	OP1-P-OP2	5.56	127.94	119.60
1	1	1292	C	N1-C2-O2	5.55	122.23	118.90
24	T	19	PHE	C-N-CA	5.55	135.57	121.70
1	1	2378	C	C6-N1-C2	-5.54	118.08	120.30
47	2	1684	U	N1-C2-O2	5.54	126.68	122.80
58	AA	49	LEU	CA-CB-CG	5.54	128.04	115.30
68	AK	93	LEU	CA-CB-CG	5.54	128.03	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
47	2	1585	U	N3-C2-O2	-5.53	118.33	122.20
1	1	259	C	N1-C2-O2	5.53	122.22	118.90
1	1	1878	G	N3-C4-N9	5.53	129.32	126.00
1	1	3355	U	C6-N1-C1'	-5.53	113.46	121.20
47	2	569	C	N1-C2-O2	5.52	122.21	118.90
47	2	1405	G	C4-C5-N7	5.52	113.01	110.80
1	1	675	C	C2-N1-C1'	5.52	124.87	118.80
1	1	1255	C	C5-C6-N1	5.52	123.76	121.00
61	AD	45	LEU	CA-CB-CG	5.52	127.99	115.30
47	2	196	G	N1-C2-N2	-5.51	111.24	116.20
47	2	376	C	C6-N1-C2	-5.51	118.09	120.30
1	1	967	A	N7-C8-N9	5.51	116.55	113.80
57	z	101	VAL	C-N-CA	5.51	135.47	121.70
1	1	142	C	C6-N1-C2	-5.50	118.10	120.30
1	1	934	G	N3-C4-C5	-5.50	125.85	128.60
1	1	1907	C	C2-N1-C1'	5.50	124.85	118.80
1	1	2210	G	N3-C4-C5	-5.50	125.85	128.60
47	2	497	G	C6-C5-N7	-5.50	127.10	130.40
47	2	1399	C	P-O3'-C3'	5.50	126.30	119.70
1	1	1053	A	P-O3'-C3'	5.50	126.30	119.70
47	2	1270	G	N3-C4-N9	-5.50	122.70	126.00
1	1	1487	G	C5-C6-O6	5.50	131.90	128.60
47	2	176	C	C2-N1-C1'	5.50	124.85	118.80
47	2	780	A	C2-N3-C4	5.50	113.35	110.60
1	1	1805	C	C6-N1-C2	-5.50	118.10	120.30
1	1	7	C	N1-C2-O2	5.49	122.19	118.90
1	1	1211	U	N3-C2-O2	-5.49	118.36	122.20
47	2	921	U	C2-N1-C1'	5.49	124.29	117.70
47	2	1632	C	N1-C2-O2	5.49	122.19	118.90
79	AV	243	LEU	CA-CB-CG	5.48	127.91	115.30
1	1	524	U	C5-C6-N1	5.48	125.44	122.70
1	1	315	C	C2-N1-C1'	5.48	124.83	118.80
1	1	1262	G	C8-N9-C1'	-5.48	119.88	127.00
47	2	1585	U	C2-N1-C1'	5.48	124.27	117.70
1	1	1706	C	C2-N1-C1'	5.47	124.82	118.80
47	2	1327	C	C5-C6-N1	5.47	123.74	121.00
83	AZ	718	LEU	CA-CB-CG	5.47	127.89	115.30
1	1	1275	C	N3-C2-O2	-5.47	118.07	121.90
19	O	194	LEU	CA-CB-CG	5.47	127.88	115.30
12	G	162	LEU	CA-CB-CG	5.46	127.87	115.30
1	1	2772	C	N1-C2-O2	5.46	122.18	118.90
3	4	55	U	N1-C2-O2	5.46	126.62	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	3	94	C	N1-C2-O2	5.46	122.17	118.90
1	1	2606	G	C8-N9-C1'	-5.45	119.91	127.00
47	2	229	U	C5-C6-N1	5.45	125.43	122.70
1	1	877	C	N1-C2-O2	5.45	122.17	118.90
1	1	2836	C	C6-N1-C2	-5.45	118.12	120.30
47	2	302	U	C5-C6-N1	5.45	125.42	122.70
1	1	2192	C	C2-N1-C1'	5.45	124.79	118.80
1	1	3176	G	O5'-P-OP1	-5.45	100.80	105.70
1	1	1843	C	N3-C2-O2	-5.44	118.09	121.90
1	1	1878	G	N3-C4-C5	-5.44	125.88	128.60
1	1	2189	U	N3-C2-O2	-5.44	118.39	122.20
1	1	2516	U	N3-C2-O2	-5.44	118.39	122.20
1	1	1565	G	C4-N9-C1'	5.44	133.57	126.50
1	1	2617	U	N1-C2-O2	5.44	126.61	122.80
47	2	469	C	N3-C2-O2	-5.44	118.09	121.90
1	1	1633	C	N1-C2-O2	5.44	122.16	118.90
47	2	1604	U	C5-C6-N1	5.43	125.42	122.70
47	2	1620	C	C6-N1-C2	-5.43	118.13	120.30
1	1	954	U	N1-C2-O2	5.43	126.60	122.80
1	1	2137	U	C2-N1-C1'	5.43	124.22	117.70
1	1	3311	C	C2-N1-C1'	5.43	124.78	118.80
26	V	93	LEU	CA-CB-CG	5.43	127.79	115.30
47	2	1225	U	N3-C2-O2	-5.43	118.40	122.20
47	2	1066	C	N1-C2-O2	5.43	122.16	118.90
1	1	1277	C	N3-C2-O2	-5.43	118.10	121.90
1	1	370	U	C2-N1-C1'	5.42	124.21	117.70
1	1	3105	U	N1-C2-O2	5.42	126.59	122.80
1	1	1194	G	N1-C2-N2	-5.42	111.32	116.20
1	1	2137	U	N3-C2-O2	-5.42	118.41	122.20
81	AX	56	C	N1-C2-O2	5.42	122.15	118.90
1	1	3001	C	C6-N1-C2	-5.42	118.13	120.30
1	1	1275	C	C5-C6-N1	5.41	123.71	121.00
1	1	1349	G	N3-C4-C5	-5.41	125.89	128.60
47	2	1155	G	N3-C4-N9	5.41	129.25	126.00
1	1	2961	G	C6-C5-N7	-5.41	127.15	130.40
47	2	79	C	C6-N1-C2	-5.41	118.14	120.30
47	2	1147	A	N7-C8-N9	5.41	116.50	113.80
1	1	2304	C	N1-C2-O2	5.41	122.15	118.90
74	AQ	60	PRO	C-N-CA	5.41	135.22	121.70
1	1	2336	U	N1-C2-O2	5.40	126.58	122.80
1	1	1732	U	N1-C2-O2	5.40	126.58	122.80
1	1	1732	U	N3-C2-O2	-5.40	118.42	122.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	2810	C	C6-N1-C2	-5.40	118.14	120.30
47	2	70	C	C6-N1-C2	-5.40	118.14	120.30
77	AT	36	LEU	CA-CB-CG	5.40	127.72	115.30
1	1	540	U	N1-C2-O2	5.40	126.58	122.80
2	3	68	C	C6-N1-C2	-5.40	118.14	120.30
47	2	1021	C	N3-C2-O2	-5.40	118.12	121.90
1	1	315	C	C6-N1-C2	-5.40	118.14	120.30
1	1	2809	C	C6-N1-C2	-5.40	118.14	120.30
23	S	144	LEU	CA-CB-CG	5.40	127.71	115.30
1	1	940	G	N3-C4-N9	-5.39	122.76	126.00
1	1	1219	C	C5-C6-N1	5.39	123.70	121.00
1	1	3132	C	C5-C6-N1	5.39	123.69	121.00
1	1	3311	C	N1-C2-O2	5.39	122.13	118.90
19	O	197	LEU	CA-CB-CG	5.39	127.69	115.30
41	k	65	LEU	CA-CB-CG	5.39	127.69	115.30
47	2	1624	C	N1-C2-O2	5.39	122.13	118.90
1	1	969	C	C5-C6-N1	5.39	123.69	121.00
83	AZ	247	ASP	C-N-CA	5.39	135.17	121.70
1	1	969	C	C6-N1-C2	-5.38	118.15	120.30
1	1	1026	A	C8-N9-C4	-5.38	103.65	105.80
1	1	2495	C	C2-N1-C1'	5.38	124.72	118.80
1	1	2666	C	N3-C2-O2	-5.38	118.13	121.90
47	2	1620	C	N3-C2-O2	-5.38	118.13	121.90
21	Q	32	LEU	CA-CB-CG	5.37	127.65	115.30
1	1	1425	U	N3-C2-O2	-5.37	118.44	122.20
1	1	3235	C	C2-N1-C1'	5.37	124.70	118.80
1	1	3251	U	N3-C2-O2	-5.37	118.44	122.20
47	2	965	U	N1-C2-O2	5.36	126.56	122.80
1	1	271	C	C6-N1-C2	-5.36	118.16	120.30
47	2	1653	C	C6-N1-C1'	-5.36	114.37	120.80
24	T	18	ASP	CB-CG-OD1	5.36	123.12	118.30
1	1	2132	C	C2-N1-C1'	5.35	124.69	118.80
38	h	24	LEU	CA-CB-CG	5.34	127.59	115.30
47	2	1245	G	O5'-P-OP1	-5.34	100.89	105.70
47	2	196	G	N1-C6-O6	-5.34	116.70	119.90
47	2	1773	C	N3-C2-O2	-5.34	118.16	121.90
1	1	2925	C	C6-N1-C2	-5.34	118.17	120.30
1	1	2684	C	C2-N1-C1'	5.34	124.67	118.80
1	1	2347	U	C5-C6-N1	5.33	125.36	122.70
47	2	1529	C	C5-C6-N1	5.33	123.67	121.00
47	2	833	U	C5-C4-O4	5.33	129.10	125.90
54	w	92	ARG	C-N-CA	5.33	135.02	121.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
81	AX	44	A	C4-N9-C1'	5.33	135.89	126.30
1	1	1614	C	C6-N1-C2	-5.33	118.17	120.30
1	1	1906	G	N3-C4-N9	5.32	129.19	126.00
1	1	2742	C	C2-N1-C1'	5.32	124.66	118.80
47	2	1458	G	C6-C5-N7	-5.32	127.21	130.40
47	2	82	U	C6-N1-C1'	-5.32	113.75	121.20
47	2	656	G	N3-C4-N9	5.32	129.19	126.00
47	2	1674	C	N1-C2-O2	5.32	122.09	118.90
47	2	1604	U	C2-N1-C1'	5.32	124.08	117.70
1	1	2763	U	C2-N1-C1'	5.31	124.07	117.70
47	2	1783	C	N1-C2-O2	5.31	122.09	118.90
1	1	2137	U	N1-C2-O2	5.31	126.51	122.80
1	1	226	C	C6-N1-C2	-5.30	118.18	120.30
1	1	1314	C	N1-C2-O2	5.30	122.08	118.90
47	2	1168	U	N1-C2-O2	5.30	126.51	122.80
47	2	525	A	N9-C4-C5	-5.30	103.68	105.80
1	1	1788	C	C2-N1-C1'	5.29	124.62	118.80
47	2	1627	U	N3-C2-O2	-5.29	118.50	122.20
47	2	1751	C	C6-N1-C2	-5.29	118.18	120.30
1	1	1870	C	N3-C2-O2	-5.29	118.20	121.90
1	1	2773	C	N1-C2-O2	5.29	122.07	118.90
1	1	1254	C	O4'-C1'-N1	5.29	112.43	108.20
47	2	1500	C	N1-C2-O2	5.29	122.07	118.90
1	1	651	G	C6-C5-N7	-5.28	127.23	130.40
1	1	2870	C	C6-N1-C2	-5.28	118.19	120.30
47	2	1697	G	N3-C4-C5	-5.28	125.96	128.60
47	2	93	A	C4-N9-C1'	5.28	135.80	126.30
47	2	82	U	N3-C2-O2	-5.28	118.51	122.20
47	2	1540	G	C8-N9-C1'	-5.28	120.14	127.00
1	1	2415	C	C5-C6-N1	5.27	123.64	121.00
1	1	1837	U	C6-N1-C1'	-5.27	113.82	121.20
1	1	803	C	C6-N1-C2	-5.26	118.19	120.30
47	2	1715	G	C6-C5-N7	-5.26	127.24	130.40
2	3	43	U	C2-N1-C1'	5.26	124.01	117.70
1	1	2550	U	C2-N1-C1'	5.26	124.01	117.70
1	1	823	C	N1-C2-O2	5.26	122.05	118.90
1	1	3251	U	N1-C2-O2	5.26	126.48	122.80
3	4	145	U	C2-N1-C1'	5.26	124.01	117.70
47	2	1181	U	P-O3'-C3'	5.26	126.01	119.70
81	AX	52	U	N3-C2-O2	-5.26	118.52	122.20
83	AZ	310	ASP	CB-CG-OD2	5.26	123.03	118.30
47	2	1182	U	C5-C6-N1	5.25	125.33	122.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	1255	C	C2-N1-C1'	5.25	124.58	118.80
47	2	317	C	C6-N1-C2	-5.25	118.20	120.30
47	2	1405	G	C6-C5-N7	-5.25	127.25	130.40
1	1	271	C	N1-C2-O2	5.25	122.05	118.90
47	2	497	G	N3-C2-N2	5.25	123.57	119.90
47	2	1643	U	N1-C2-O2	5.25	126.47	122.80
1	1	1779	C	C5-C6-N1	5.25	123.62	121.00
1	1	2498	U	C5-C6-N1	5.24	125.32	122.70
47	2	1540	G	N3-C4-C5	-5.24	125.98	128.60
1	1	897	U	C2-N1-C1'	5.24	123.98	117.70
47	2	498	G	C8-N9-C4	-5.24	104.31	106.40
47	2	1632	C	N3-C2-O2	-5.23	118.24	121.90
1	1	934	G	N3-C4-N9	5.23	129.14	126.00
1	1	2652	U	C2-N1-C1'	5.23	123.98	117.70
38	h	88	LEU	CA-CB-CG	5.23	127.33	115.30
81	AX	44	A	N3-C4-N9	5.23	131.58	127.40
1	1	781	G	C2-N3-C4	5.22	114.51	111.90
1	1	3139	A	N3-C4-N9	5.22	131.57	127.40
1	1	980	A	P-O3'-C3'	5.22	125.96	119.70
1	1	2983	C	N3-C2-O2	-5.22	118.25	121.90
1	1	182	U	N1-C2-O2	5.21	126.45	122.80
47	2	516	G	N3-C4-N9	5.21	129.13	126.00
1	1	411	U	N3-C2-O2	-5.21	118.55	122.20
1	1	2319	U	N3-C2-O2	-5.21	118.55	122.20
58	AA	40	LEU	CA-CB-CG	5.21	127.29	115.30
1	1	27	C	N3-C2-O2	-5.21	118.25	121.90
1	1	1906	G	C8-N9-C1'	-5.21	120.23	127.00
2	3	35	C	C6-N1-C2	-5.21	118.22	120.30
1	1	1889	G	C8-N9-C1'	-5.21	120.23	127.00
1	1	781	G	C4-N9-C1'	5.21	133.27	126.50
47	2	414	C	N3-C2-O2	-5.20	118.26	121.90
47	2	1795	U	C5-C6-N1	5.20	125.30	122.70
1	1	1027	A	C4-N9-C1'	5.20	135.65	126.30
47	2	190	C	N1-C2-O2	5.20	122.02	118.90
47	2	865	A	P-O3'-C3'	5.20	125.93	119.70
70	AM	28	ARG	C-N-CD	-5.20	109.17	120.60
1	1	1857	C	C6-N1-C1'	-5.19	114.57	120.80
47	2	981	U	N3-C2-O2	-5.19	118.56	122.20
47	2	821	U	N1-C2-O2	5.19	126.43	122.80
47	2	1684	U	N3-C2-O2	-5.18	118.57	122.20
47	2	17	C	C6-N1-C2	-5.18	118.23	120.30
47	2	1402	G	N3-C4-N9	5.18	129.11	126.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
47	2	1653	C	N1-C2-O2	5.18	122.01	118.90
81	AX	70	C	C6-N1-C2	-5.18	118.23	120.30
1	1	1285	G	C8-N9-C4	-5.18	104.33	106.40
1	1	2418	G	C8-N9-C1'	-5.18	120.27	127.00
1	1	3104	U	N1-C2-O2	5.18	126.43	122.80
3	4	35	C	N3-C2-O2	-5.18	118.27	121.90
47	2	338	C	C2-N1-C1'	5.18	124.50	118.80
1	1	2277	C	C6-N1-C2	-5.18	118.23	120.30
47	2	270	C	C5-C6-N1	5.18	123.59	121.00
1	1	1333	C	N1-C2-O2	5.18	122.01	118.90
1	1	1585	C	C6-N1-C1'	-5.18	114.59	120.80
1	1	2422	C	C6-N1-C2	-5.17	118.23	120.30
47	2	149	C	C2-N1-C1'	5.17	124.49	118.80
47	2	1514	U	N3-C2-O2	-5.17	118.58	122.20
47	2	1274	C	P-O3'-C3'	5.17	125.90	119.70
1	1	1254	C	N3-C2-O2	-5.17	118.28	121.90
47	2	696	C	N3-C2-O2	-5.17	118.28	121.90
1	1	2405	C	C6-N1-C2	-5.16	118.23	120.30
3	4	50	C	N3-C2-O2	-5.16	118.29	121.90
47	2	1	U	N3-C2-O2	-5.16	118.59	122.20
47	2	583	C	C5-C6-N1	5.16	123.58	121.00
1	1	2708	C	C2-N1-C1'	5.16	124.47	118.80
47	2	1674	C	N3-C2-O2	-5.15	118.29	121.90
1	1	1906	G	C4-N9-C1'	5.15	133.20	126.50
1	1	651	G	C4-C5-N7	5.15	112.86	110.80
1	1	2422	C	C2-N1-C1'	5.15	124.46	118.80
47	2	1144	U	N3-C2-O2	-5.15	118.60	122.20
1	1	3306	U	C2-N1-C1'	5.15	123.88	117.70
1	1	1425	U	N1-C2-O2	5.14	126.40	122.80
47	2	317	C	N1-C2-O2	5.14	121.99	118.90
47	2	842	C	C5-C6-N1	5.14	123.57	121.00
81	AX	25	C	C6-N1-C2	-5.14	118.24	120.30
47	2	747	C	N1-C2-O2	5.14	121.98	118.90
1	1	370	U	N3-C2-O2	-5.14	118.60	122.20
81	AX	52	U	N1-C2-O2	5.14	126.39	122.80
1	1	1761	C	C6-N1-C2	-5.13	118.25	120.30
1	1	1372	C	C2-N1-C1'	5.13	124.44	118.80
47	2	506	A	C2-N3-C4	5.13	113.17	110.60
66	AI	26	ILE	CG1-CB-CG2	-5.13	100.11	111.40
47	2	1274	C	N1-C2-O2	5.12	121.97	118.90
1	1	2765	C	N1-C2-O2	5.12	121.97	118.90
47	2	196	G	N3-C2-N2	5.12	123.48	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	r	135	LEU	CA-CB-CG	5.12	127.07	115.30
1	1	1279	C	N1-C2-O2	5.12	121.97	118.90
1	1	3386	G	C8-N9-C1'	-5.12	120.35	127.00
81	AX	52	U	C2-N1-C1'	5.12	123.84	117.70
1	1	2928	C	N3-C2-O2	-5.11	118.32	121.90
1	1	986	U	C2-N1-C1'	5.11	123.83	117.70
47	2	1146	G	C4-N9-C1'	5.11	133.15	126.50
2	3	35	C	N1-C2-O2	5.10	121.96	118.90
47	2	563	U	N3-C2-O2	-5.10	118.63	122.20
3	4	50	C	N1-C2-O2	5.10	121.96	118.90
1	1	2943	G	N3-C4-C5	-5.10	126.05	128.60
30	Z	102	GLU	C-N-CA	5.10	134.45	121.70
1	1	1185	C	C6-N1-C2	-5.10	118.26	120.30
1	1	1590	G	C6-C5-N7	-5.10	127.34	130.40
1	1	2836	C	C5-C6-N1	5.10	123.55	121.00
2	3	36	C	N1-C2-O2	5.10	121.96	118.90
47	2	1074	G	C4-N9-C1'	5.10	133.13	126.50
47	2	1185	U	N1-C2-O2	5.10	126.37	122.80
1	1	427	C	N1-C2-O2	5.09	121.96	118.90
47	2	1214	U	N3-C2-O2	-5.09	118.63	122.20
1	1	142	C	C2-N1-C1'	5.09	124.40	118.80
1	1	1137	C	C5-C6-N1	5.09	123.55	121.00
1	1	1640	G	C4-N9-C1'	5.09	133.12	126.50
47	2	924	A	N7-C8-N9	5.09	116.35	113.80
1	1	292	U	C6-N1-C1'	-5.09	114.08	121.20
47	2	320	U	C5-C6-N1	5.09	125.24	122.70
47	2	1700	C	C6-N1-C2	-5.09	118.27	120.30
83	AZ	380	LEU	CA-CB-CG	5.09	127.00	115.30
37	g	57	LEU	CA-CB-CG	5.08	127.00	115.30
1	1	1037	C	C6-N1-C2	-5.08	118.27	120.30
1	1	2863	G	N3-C4-C5	-5.08	126.06	128.60
1	1	3385	U	C2-N1-C1'	5.08	123.80	117.70
3	4	76	C	C6-N1-C2	-5.08	118.27	120.30
1	1	2526	C	C6-N1-C2	-5.08	118.27	120.30
47	2	1128	C	C2-N1-C1'	5.08	124.38	118.80
47	2	566	C	N1-C2-O2	5.07	121.94	118.90
2	3	28	C	C2-N1-C1'	5.07	124.38	118.80
47	2	1393	C	C2-N1-C1'	5.07	124.38	118.80
1	1	2638	C	N3-C2-O2	-5.07	118.35	121.90
47	2	111	U	N1-C2-O2	5.07	126.35	122.80
47	2	189	C	N1-C2-O2	5.07	121.94	118.90
47	2	1209	C	C5-C6-N1	5.07	123.53	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
47	2	1405	G	N7-C8-N9	5.07	115.63	113.10
1	1	2950	G	C8-N9-C1'	-5.07	120.41	127.00
1	1	270	U	N3-C2-O2	-5.06	118.66	122.20
1	1	729	C	N1-C2-O2	5.06	121.94	118.90
1	1	1889	G	N3-C4-N9	5.06	129.04	126.00
1	1	2503	G	C4-C5-N7	5.06	112.83	110.80
47	2	1439	C	C2-N1-C1'	5.06	124.37	118.80
1	1	2270	A	P-O3'-C3'	5.06	125.77	119.70
1	1	2416	U	N3-C2-O2	-5.06	118.66	122.20
1	1	1254	C	C6-N1-C1'	5.06	126.87	120.80
1	1	2295	A	P-O3'-C3'	5.05	125.76	119.70
1	1	489	U	N1-C2-O2	5.05	126.34	122.80
1	1	19	U	C5-C6-N1	5.05	125.23	122.70
47	2	1241	G	O4'-C1'-N9	5.05	112.24	108.20
1	1	278	U	C2-N1-C1'	5.05	123.76	117.70
47	2	1365	C	C6-N1-C2	-5.05	118.28	120.30
1	1	178	U	C2-N1-C1'	5.05	123.76	117.70
1	1	1781	C	N1-C2-O2	5.05	121.93	118.90
47	2	1715	G	N3-C4-C5	-5.05	126.08	128.60
1	1	2116	G	N3-C4-N9	5.04	129.03	126.00
57	z	118	LEU	CA-CB-CG	5.04	126.90	115.30
1	1	1505	C	C2-N1-C1'	5.04	124.35	118.80
1	1	2464	U	C5-C6-N1	5.04	125.22	122.70
47	2	886	U	N1-C2-O2	5.04	126.33	122.80
47	2	1792	G	N3-C4-N9	5.04	129.03	126.00
52	u	246	LEU	CA-CB-CG	5.04	126.89	115.30
1	1	1555	U	C2-N1-C1'	5.04	123.75	117.70
1	1	1701	C	C2-N1-C1'	5.04	124.34	118.80
1	1	2516	U	N1-C2-O2	5.04	126.33	122.80
1	1	1872	C	N1-C2-O2	5.04	121.92	118.90
60	AC	45	LEU	CA-CB-CG	5.04	126.89	115.30
1	1	1146	C	C6-N1-C2	-5.04	118.28	120.30
2	3	39	C	C6-N1-C2	-5.04	118.28	120.30
47	2	691	C	C2-N1-C1'	5.04	124.34	118.80
1	1	970	A	C6-C5-N7	-5.04	128.78	132.30
1	1	861	C	C6-N1-C1'	-5.03	114.76	120.80
1	1	1496	C	N3-C2-O2	-5.03	118.38	121.90
1	1	2305	G	C2-N3-C4	5.03	114.42	111.90
1	1	1146	C	C2-N1-C1'	5.03	124.33	118.80
1	1	1254	C	C5-C4-N4	5.02	123.72	120.20
47	2	329	G	C4-N9-C1'	5.02	133.03	126.50
1	1	1149	G	C8-N9-C1'	5.02	133.53	127.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	1837	U	C5-C4-O4	-5.02	122.89	125.90
33	c	16	LEU	CA-CB-CG	5.02	126.85	115.30
2	3	90	U	C6-N1-C1'	5.02	128.22	121.20
1	1	1562	C	C6-N1-C2	-5.01	118.29	120.30
47	2	1217	A	N3-C4-N9	5.01	131.41	127.40
17	M	65	LEU	C-N-CA	5.01	134.22	121.70
47	2	1681	A	N7-C8-N9	5.01	116.31	113.80
8	C	318	LEU	CB-CG-CD2	-5.01	102.49	111.00
47	2	1529	C	C2-N1-C1'	5.01	124.31	118.80
1	1	3139	A	N9-C4-C5	-5.00	103.80	105.80
47	2	1357	A	N9-C4-C5	-5.00	103.80	105.80
47	2	283	U	N3-C2-O2	-5.00	118.70	122.20
1	1	2899	C	N1-C2-O2	5.00	121.90	118.90
47	2	1518	C	C6-N1-C1'	-5.00	114.80	120.80

There are no chirality outliers.

All (123) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
6	A	143	GLU	Peptide
59	AB	27	THR	Peptide
60	AC	110	GLY	Peptide
61	AD	104	ARG	Peptide
61	AD	138	ASN	Peptide
61	AD	25	TRP	Peptide
63	AF	100	LYS	Peptide
63	AF	89	MET	Peptide
64	AG	112	TYR	Peptide
64	AG	58	ASP	Peptide
64	AG	68	ARG	Peptide
65	AH	78	ARG	Peptide
65	AH	83	GLN	Peptide
66	AI	91	ASP	Peptide
69	AL	49	GLU	Peptide
69	AL	52	THR	Peptide
71	AN	113	ALA	Peptide
72	AO	37	LYS	Peptide
73	AP	54	VAL	Peptide
74	AQ	34	LYS	Peptide
74	AQ	43	ASN	Peptide
74	AQ	46	GLU	Peptide
74	AQ	47	ALA	Peptide

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Mol	Chain	Res	Type	Group
74	AQ	59	TYR	Peptide
74	AQ	63	ALA	Peptide
74	AQ	7	SER	Peptide
75	AR	55	THR	Peptide
75	AR	75	GLU	Peptide
79	AV	275	ARG	Peptide
83	AZ	111	PHE	Peptide
83	AZ	244	LEU	Peptide
83	AZ	246	GLY	Peptide
83	AZ	251	ASN	Peptide
83	AZ	276	PHE	Peptide
83	AZ	485	VAL	Peptide
83	AZ	487	PRO	Peptide
83	AZ	544	ASP	Peptide
83	AZ	645	LEU	Peptide
83	AZ	656	LEU	Peptide
83	AZ	668	GLN	Peptide
83	AZ	707	PRO	Peptide
83	AZ	721	ASP	Peptide
83	AZ	790	GLY	Peptide
7	B	25	ILE	Peptide
9	D	177	GLU	Peptide
9	D	20	PHE	Peptide
9	D	260	PHE	Peptide
9	D	43	LYS	Peptide
9	D	81	HIS	Peptide
10	E	58	LEU	Peptide
11	F	110	ARG	Peptide
11	F	157	ASN	Peptide
11	F	214	TRP	Peptide
12	G	156	ASP	Peptide
12	G	30	THR	Peptide
12	G	76	ALA	Peptide
13	H	20	ILE	Peptide
13	H	21	LYS	Peptide
14	I	217	PHE	Peptide
14	I	58	GLU	Peptide
15	J	167	TYR	Peptide
16	L	47	ALA	Peptide
19	O	110	PRO	Peptide
19	O	36	VAL	Peptide
4	P0	39	HIS	Peptide

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Mol	Chain	Res	Type	Group
4	P0	41	VAL	Peptide
5	P2	117	ARG	Peptide
21	Q	59	ARG	Peptide
24	T	103	GLN	Peptide
24	T	17	ARG	Peptide
26	V	104	ASN	Peptide
26	V	93	LEU	Peptide
27	W	14	TYR	Peptide
31	a	23	GLY	Peptide
34	d	56	ASN	Peptide
34	d	87	ASN	Peptide
35	e	20	HIS	Peptide
35	e	39	ASP	Peptide
36	f	58	GLU	Peptide
37	g	66	SER	Peptide
37	g	80	ARG	Peptide
37	g	82	ALA	Peptide
38	h	90	ARG	Peptide
39	i	12	ASN	Peptide
39	i	63	ASN	Peptide
39	i	97	SER	Peptide
40	j	5	THR	Peptide
42	l	29	LEU	Peptide
45	o	28	TYR	Peptide
45	o	34	SER	Peptide
45	o	7	THR	Peptide
48	q	107	PHE	Peptide
48	q	111	ILE	Peptide
48	q	112	THR	Peptide
48	q	192	THR	Peptide
49	r	147	ALA	Peptide
49	r	205	PHE	Peptide
49	r	206	PRO	Peptide
49	r	40	ASN	Peptide
51	t	219	ALA	Peptide
52	u	154	ILE	Peptide
52	u	194	THR	Peptide
52	u	195	ILE	Peptide
52	u	233	LYS	Peptide
52	u	94	ALA	Peptide
53	v	127	GLN	Peptide
53	v	57	SER	Peptide

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Mol	Chain	Res	Type	Group
54	w	100	ALA	Peptide
54	w	119	GLN	Peptide
54	w	13	GLN	Peptide
54	w	148	SER	Peptide
54	w	153	VAL	Peptide
54	w	67	VAL	Peptide
54	w	88	ARG	Peptide
54	w	9	VAL	Peptide
54	w	91	GLU	Peptide
54	w	92	ARG	Peptide
54	w	93	LYS	Peptide
55	x	110	GLN	Peptide
55	x	36	ALA	Peptide
56	y	20	GLN	Peptide
57	z	133	HIS	Peptide
57	z	163	PRO	Peptide

5.2 Too-close contacts (i)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	P0	187/189 (99%)	151 (81%)	36 (19%)	0	100	100
5	P2	92/94 (98%)	71 (77%)	21 (23%)	0	100	100
6	A	250/252 (99%)	212 (85%)	38 (15%)	0	100	100
7	B	384/386 (100%)	337 (88%)	47 (12%)	0	100	100
8	C	359/361 (99%)	307 (86%)	52 (14%)	0	100	100
9	D	294/296 (99%)	257 (87%)	35 (12%)	2 (1%)	22	62

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
10	E	152/175 (87%)	135 (89%)	17 (11%)	0	100	100
11	F	220/222 (99%)	184 (84%)	34 (16%)	2 (1%)	17	56
12	G	231/233 (99%)	199 (86%)	31 (13%)	1 (0%)	34	72
13	H	189/191 (99%)	159 (84%)	30 (16%)	0	100	100
14	I	207/220 (94%)	182 (88%)	24 (12%)	1 (0%)	29	68
15	J	167/169 (99%)	135 (81%)	31 (19%)	1 (1%)	25	65
16	L	191/193 (99%)	155 (81%)	34 (18%)	2 (1%)	15	54
17	M	134/136 (98%)	119 (89%)	15 (11%)	0	100	100
18	N	201/203 (99%)	171 (85%)	30 (15%)	0	100	100
19	O	195/197 (99%)	170 (87%)	22 (11%)	3 (2%)	10	46
20	P	181/183 (99%)	161 (89%)	20 (11%)	0	100	100
21	Q	183/185 (99%)	162 (88%)	21 (12%)	0	100	100
22	R	186/188 (99%)	173 (93%)	13 (7%)	0	100	100
23	S	170/172 (99%)	147 (86%)	23 (14%)	0	100	100
24	T	157/159 (99%)	137 (87%)	19 (12%)	1 (1%)	25	65
25	U	98/100 (98%)	85 (87%)	13 (13%)	0	100	100
26	V	134/136 (98%)	114 (85%)	19 (14%)	1 (1%)	22	62
27	W	61/63 (97%)	55 (90%)	6 (10%)	0	100	100
28	X	119/121 (98%)	103 (87%)	16 (13%)	0	100	100
29	Y	124/126 (98%)	112 (90%)	12 (10%)	0	100	100
30	Z	133/135 (98%)	111 (84%)	22 (16%)	0	100	100
31	a	146/148 (99%)	117 (80%)	28 (19%)	1 (1%)	22	62
32	b	56/58 (97%)	48 (86%)	8 (14%)	0	100	100
33	c	95/97 (98%)	84 (88%)	11 (12%)	0	100	100
34	d	107/109 (98%)	91 (85%)	16 (15%)	0	100	100
35	e	125/127 (98%)	111 (89%)	12 (10%)	2 (2%)	9	45
36	f	104/106 (98%)	82 (79%)	20 (19%)	2 (2%)	8	41
37	g	110/112 (98%)	99 (90%)	9 (8%)	2 (2%)	8	42
38	h	117/119 (98%)	103 (88%)	14 (12%)	0	100	100
39	i	97/99 (98%)	78 (80%)	19 (20%)	0	100	100
40	j	85/87 (98%)	65 (76%)	19 (22%)	1 (1%)	13	50

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
41	k	75/77 (97%)	67 (89%)	8 (11%)	0	100 100
42	l	48/50 (96%)	36 (75%)	11 (23%)	1 (2%)	7 39
43	m	50/52 (96%)	45 (90%)	5 (10%)	0	100 100
44	n	23/25 (92%)	23 (100%)	0	0	100 100
45	o	103/105 (98%)	78 (76%)	25 (24%)	0	100 100
46	p	89/91 (98%)	78 (88%)	11 (12%)	0	100 100
48	q	204/206 (99%)	169 (83%)	33 (16%)	2 (1%)	15 54
49	r	212/214 (99%)	161 (76%)	49 (23%)	2 (1%)	17 56
50	s	215/217 (99%)	183 (85%)	32 (15%)	0	100 100
51	t	221/223 (99%)	182 (82%)	39 (18%)	0	100 100
52	u	258/260 (99%)	200 (78%)	56 (22%)	2 (1%)	19 60
53	v	204/206 (99%)	164 (80%)	40 (20%)	0	100 100
54	w	221/223 (99%)	157 (71%)	61 (28%)	3 (1%)	11 47
55	x	182/184 (99%)	150 (82%)	31 (17%)	1 (0%)	29 68
56	y	184/199 (92%)	141 (77%)	43 (23%)	0	100 100
57	z	183/185 (99%)	153 (84%)	30 (16%)	0	100 100
58	AA	94/105 (90%)	77 (82%)	16 (17%)	1 (1%)	14 52
59	AB	151/153 (99%)	125 (83%)	26 (17%)	0	100 100
60	AC	122/124 (98%)	98 (80%)	23 (19%)	1 (1%)	19 60
61	AD	148/150 (99%)	129 (87%)	15 (10%)	4 (3%)	5 34
62	AE	125/127 (98%)	105 (84%)	20 (16%)	0	100 100
63	AF	122/124 (98%)	85 (70%)	33 (27%)	4 (3%)	4 30
64	AG	139/141 (99%)	111 (80%)	26 (19%)	2 (1%)	11 47
65	AH	116/125 (93%)	97 (84%)	19 (16%)	0	100 100
66	AI	143/145 (99%)	122 (85%)	19 (13%)	2 (1%)	11 47
67	AJ	141/143 (99%)	124 (88%)	17 (12%)	0	100 100
68	AK	105/107 (98%)	91 (87%)	14 (13%)	0	100 100
69	AL	85/87 (98%)	64 (75%)	20 (24%)	1 (1%)	13 50
70	AM	127/129 (98%)	114 (90%)	12 (9%)	1 (1%)	19 60
71	AN	142/144 (99%)	114 (80%)	26 (18%)	2 (1%)	11 47
72	AO	132/134 (98%)	112 (85%)	20 (15%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
73	AP	68/70 (97%)	46 (68%)	21 (31%)	1 (2%)	10 46
74	AQ	95/97 (98%)	65 (68%)	30 (32%)	0	100 100
75	AR	79/81 (98%)	57 (72%)	21 (27%)	1 (1%)	12 48
76	AS	61/63 (97%)	54 (88%)	7 (12%)	0	100 100
77	AT	51/53 (96%)	46 (90%)	5 (10%)	0	100 100
78	AU	58/60 (97%)	49 (84%)	9 (16%)	0	100 100
79	AV	316/318 (99%)	254 (80%)	61 (19%)	1 (0%)	41 76
80	AW	35/37 (95%)	26 (74%)	9 (26%)	0	100 100
83	AZ	837/840 (100%)	676 (81%)	157 (19%)	4 (0%)	29 68
All	All	12005/12221 (98%)	10010 (83%)	1937 (16%)	58 (0%)	32 68

All (58) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
19	O	111	PRO
48	q	113	ARG
49	r	207	LEU
54	w	10	ASN
54	w	68	LEU
58	AA	88	PRO
61	AD	105	ASN
64	AG	59	LYS
16	L	48	PRO
16	L	77	LEU
26	V	105	PRO
35	e	79	VAL
36	f	58	GLU
36	f	59	VAL
42	l	30	ARG
49	r	206	PRO
52	u	195	ILE
54	w	93	LYS
71	AN	114	LYS
75	AR	76	GLY
11	F	159	GLN
24	T	159	PHE
48	q	112	THR
55	x	111	LYS
61	AD	85	PRO

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Mol	Chain	Res	Type
63	AF	30	THR
63	AF	53	PRO
73	AP	55	PRO
83	AZ	252	PRO
83	AZ	708	THR
83	AZ	722	PRO
11	F	158	LYS
14	I	24	ARG
19	O	37	ARG
31	a	78	LEU
37	g	66	SER
40	j	64	MET
52	u	155	LYS
61	AD	139	TRP
69	AL	81	ASN
79	AV	165	ASP
9	D	259	LYS
19	O	110	PRO
35	e	78	ASN
37	g	67	LYS
60	AC	131	ASP
61	AD	104	ARG
63	AF	125	PRO
83	AZ	639	ASP
9	D	20	PHE
15	J	165	GLN
63	AF	70	ASN
66	AI	9	GLY
12	G	157	VAL
71	AN	64	PRO
64	AG	33	GLY
66	AI	92	ILE
70	AM	67	GLY

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
4	P0	160/160 (100%)	158 (99%)	2 (1%)	69 82
5	P2	81/81 (100%)	77 (95%)	4 (5%)	25 51
6	A	193/194 (100%)	190 (98%)	3 (2%)	62 79
7	B	321/322 (100%)	315 (98%)	6 (2%)	57 75
8	C	288/288 (100%)	283 (98%)	5 (2%)	60 78
9	D	244/244 (100%)	241 (99%)	3 (1%)	71 84
10	E	134/152 (88%)	130 (97%)	4 (3%)	41 63
11	F	186/186 (100%)	181 (97%)	5 (3%)	44 66
12	G	187/191 (98%)	180 (96%)	7 (4%)	34 59
13	H	171/171 (100%)	164 (96%)	7 (4%)	30 56
14	I	177/186 (95%)	168 (95%)	9 (5%)	24 50
15	J	147/147 (100%)	143 (97%)	4 (3%)	44 66
16	L	154/154 (100%)	150 (97%)	4 (3%)	46 67
17	M	107/107 (100%)	104 (97%)	3 (3%)	43 65
18	N	175/175 (100%)	168 (96%)	7 (4%)	31 56
19	O	160/160 (100%)	156 (98%)	4 (2%)	47 68
20	P	140/145 (97%)	135 (96%)	5 (4%)	35 60
21	Q	150/150 (100%)	145 (97%)	5 (3%)	38 61
22	R	153/153 (100%)	148 (97%)	5 (3%)	38 61
23	S	156/156 (100%)	152 (97%)	4 (3%)	46 67
24	T	136/136 (100%)	130 (96%)	6 (4%)	28 54
25	U	87/87 (100%)	86 (99%)	1 (1%)	73 85
26	V	104/104 (100%)	103 (99%)	1 (1%)	76 86
27	W	55/55 (100%)	54 (98%)	1 (2%)	59 77
28	X	104/105 (99%)	104 (100%)	0	100 100
29	Y	109/109 (100%)	109 (100%)	0	100 100
30	Z	115/115 (100%)	112 (97%)	3 (3%)	46 67
31	a	118/118 (100%)	118 (100%)	0	100 100
32	b	46/46 (100%)	43 (94%)	3 (6%)	17 44
33	c	81/81 (100%)	79 (98%)	2 (2%)	47 68
34	d	94/96 (98%)	93 (99%)	1 (1%)	73 85
35	e	109/109 (100%)	106 (97%)	3 (3%)	43 65

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
36	f	90/90 (100%)	86 (96%)	4 (4%)	28	54
37	g	95/95 (100%)	91 (96%)	4 (4%)	30	55
38	h	104/104 (100%)	101 (97%)	3 (3%)	42	64
39	i	81/81 (100%)	79 (98%)	2 (2%)	47	68
40	j	70/70 (100%)	68 (97%)	2 (3%)	42	64
41	k	68/68 (100%)	66 (97%)	2 (3%)	42	64
42	l	45/45 (100%)	43 (96%)	2 (4%)	28	54
43	m	47/47 (100%)	46 (98%)	1 (2%)	53	72
44	n	22/23 (96%)	21 (96%)	1 (4%)	27	54
45	o	90/90 (100%)	89 (99%)	1 (1%)	73	85
46	p	71/71 (100%)	71 (100%)	0	100	100
48	q	164/173 (95%)	162 (99%)	2 (1%)	71	84
49	r	191/191 (100%)	184 (96%)	7 (4%)	34	59
50	s	176/176 (100%)	172 (98%)	4 (2%)	50	70
51	t	182/182 (100%)	172 (94%)	10 (6%)	21	49
52	u	221/221 (100%)	212 (96%)	9 (4%)	30	56
53	v	173/173 (100%)	171 (99%)	2 (1%)	71	84
54	w	189/191 (99%)	186 (98%)	3 (2%)	62	79
55	x	165/165 (100%)	163 (99%)	2 (1%)	71	84
56	y	150/160 (94%)	147 (98%)	3 (2%)	55	73
57	z	158/158 (100%)	155 (98%)	3 (2%)	57	75
58	AA	77/98 (79%)	75 (97%)	2 (3%)	46	67
59	AB	133/134 (99%)	130 (98%)	3 (2%)	50	70
60	AC	88/100 (88%)	87 (99%)	1 (1%)	73	85
61	AD	127/127 (100%)	125 (98%)	2 (2%)	62	79
62	AE	81/96 (84%)	79 (98%)	2 (2%)	47	68
63	AF	101/104 (97%)	97 (96%)	4 (4%)	31	56
64	AG	117/117 (100%)	117 (100%)	0	100	100
65	AH	94/113 (83%)	93 (99%)	1 (1%)	73	85
66	AI	128/128 (100%)	125 (98%)	3 (2%)	50	70
67	AJ	115/115 (100%)	112 (97%)	3 (3%)	46	67

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
68	AK	100/100 (100%)	97 (97%)	3 (3%)	41 63
69	AL	74/74 (100%)	74 (100%)	0	100 100
70	AM	110/110 (100%)	108 (98%)	2 (2%)	59 77
71	AN	119/119 (100%)	114 (96%)	5 (4%)	30 55
72	AO	112/112 (100%)	108 (96%)	4 (4%)	35 60
73	AP	61/61 (100%)	60 (98%)	1 (2%)	62 79
74	AQ	83/83 (100%)	78 (94%)	5 (6%)	19 46
75	AR	70/70 (100%)	68 (97%)	2 (3%)	42 64
76	AS	56/56 (100%)	56 (100%)	0	100 100
77	AT	47/47 (100%)	46 (98%)	1 (2%)	53 72
78	AU	51/51 (100%)	48 (94%)	3 (6%)	19 47
79	AV	259/261 (99%)	256 (99%)	3 (1%)	71 84
80	AW	31/31 (100%)	29 (94%)	2 (6%)	17 44
83	AZ	711/712 (100%)	693 (98%)	18 (2%)	47 68
All	All	10139/10276 (99%)	9885 (98%)	254 (2%)	50 68

All (254) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	P0	38	MET
4	P0	147	ARG
5	P2	57	LYS
5	P2	66	ASN
5	P2	119	LYS
5	P2	123	ARG
6	A	21	ARG
6	A	72	ARG
6	A	147	ARG
7	B	47	LEU
7	B	89	VAL
7	B	104	THR
7	B	270	ARG
7	B	284	ARG
7	B	345	ASN
8	C	43	ASN
8	C	99	MET
8	C	154	THR

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Mol	Chain	Res	Type
8	C	197	ARG
8	C	221	ASN
9	D	41	LYS
9	D	158	ARG
9	D	179	ARG
10	E	4	GLN
10	E	48	ARG
10	E	51	ARG
10	E	78	ARG
11	F	93	ASN
11	F	145	ARG
11	F	160	ARG
11	F	199	ASN
11	F	232	ARG
12	G	48	ARG
12	G	51	LYS
12	G	63	LYS
12	G	173	MET
12	G	204	ARG
12	G	213	LYS
12	G	249	ARG
13	H	23	ARG
13	H	37	ASN
13	H	62	ARG
13	H	78	MET
13	H	106	LYS
13	H	157	ASN
13	H	163	GLN
14	I	3	ARG
14	I	24	ARG
14	I	32	ARG
14	I	82	ARG
14	I	97	LEU
14	I	98	ARG
14	I	115	MET
14	I	183	LYS
14	I	211	ARG
15	J	35	LYS
15	J	51	ARG
15	J	60	ARG
15	J	165	GLN
16	L	42	ARG

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Mol	Chain	Res	Type
16	L	66	ASN
16	L	100	ARG
16	L	186	ARG
17	M	109	ARG
17	M	112	LEU
17	M	128	ARG
18	N	7	LEU
18	N	68	ARG
18	N	71	ARG
18	N	99	ARG
18	N	109	ARG
18	N	115	VAL
18	N	121	VAL
19	O	12	LYS
19	O	16	VAL
19	O	49	ARG
19	O	192	LYS
20	P	23	ARG
20	P	97	ASN
20	P	128	ARG
20	P	171	ARG
20	P	175	ARG
21	Q	45	ASN
21	Q	98	LYS
21	Q	105	ARG
21	Q	130	ARG
21	Q	147	ARG
22	R	39	ASN
22	R	46	LYS
22	R	98	ARG
22	R	117	LYS
22	R	166	ASN
23	S	1	MET
23	S	26	ARG
23	S	53	LYS
23	S	121	ILE
24	T	40	VAL
24	T	102	ARG
24	T	108	ARG
24	T	127	GLN
24	T	136	ARG
24	T	146	ASN

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Mol	Chain	Res	Type
25	U	104	ARG
26	V	48	ARG
27	W	41	LYS
30	Z	34	LYS
30	Z	126	LYS
30	Z	127	ASN
32	b	19	ASN
32	b	42	ASN
32	b	58	LYS
33	c	34	LEU
33	c	86	ARG
34	d	87	ASN
35	e	28	VAL
35	e	47	ARG
35	e	87	MET
36	f	24	ASN
36	f	73	ARG
36	f	77	ASN
36	f	86	ARG
37	g	4	ARG
37	g	37	LYS
37	g	60	ARG
37	g	113	LYS
38	h	26	LYS
38	h	71	LYS
38	h	78	LYS
39	i	35	ASN
39	i	98	ARG
40	j	64	MET
40	j	85	LYS
41	k	30	LYS
41	k	66	ILE
42	l	4	GLN
42	l	42	ARG
43	m	126	LYS
44	n	23	ARG
45	o	41	ARG
48	q	39	ASN
48	q	41	ARG
49	r	103	MET
49	r	144	ARG
49	r	166	LYS

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Mol	Chain	Res	Type
49	r	172	LEU
49	r	201	THR
49	r	209	ASN
49	r	222	LYS
50	s	73	LEU
50	s	81	MET
50	s	140	ARG
50	s	235	LEU
51	t	67	ASN
51	t	76	ARG
51	t	90	ARG
51	t	94	ARG
51	t	108	LYS
51	t	116	ARG
51	t	117	ARG
51	t	146	ARG
51	t	148	LYS
51	t	178	ARG
52	u	49	ARG
52	u	108	ARG
52	u	113	ARG
52	u	157	ASN
52	u	187	ARG
52	u	205	PHE
52	u	223	ASN
52	u	252	ARG
52	u	256	ARG
53	v	219	ARG
53	v	225	ARG
54	w	65	GLN
54	w	87	ARG
54	w	116	LYS
55	x	76	LYS
55	x	107	ARG
56	y	72	ILE
56	y	88	ASN
56	y	199	LYS
57	z	3	ARG
57	z	69	ARG
57	z	78	ARG
58	AA	56	LYS
58	AA	82	LEU

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Mol	Chain	Res	Type
59	AB	26	LYS
59	AB	67	ARG
59	AB	129	ARG
60	AC	121	VAL
61	AD	91	LEU
61	AD	117	LEU
62	AE	84	ARG
62	AE	110	LEU
63	AF	25	LEU
63	AF	77	ARG
63	AF	108	ARG
63	AF	127	ARG
65	AH	72	LYS
66	AI	44	ASN
66	AI	143	ARG
66	AI	145	ARG
67	AJ	24	ARG
67	AJ	68	ARG
67	AJ	89	ARG
68	AK	32	LYS
68	AK	36	ASN
68	AK	121	ASN
70	AM	88	LYS
70	AM	97	ARG
71	AN	7	ARG
71	AN	62	LYS
71	AN	63	GLN
71	AN	81	LYS
71	AN	89	ASN
72	AO	32	ARG
72	AO	102	LYS
72	AO	113	ASN
72	AO	123	LYS
73	AP	52	LYS
74	AQ	10	ARG
74	AQ	15	ARG
74	AQ	43	ASN
74	AQ	51	ARG
74	AQ	85	ARG
75	AR	21	LEU
75	AR	36	LYS
77	AT	19	ARG

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Mol	Chain	Res	Type
78	AU	10	ARG
78	AU	46	ASN
78	AU	53	LYS
79	AV	59	ARG
79	AV	148	ASN
79	AV	229	LYS
80	AW	123	ASN
80	AW	139	LEU
83	AZ	13	MET
83	AZ	87	LYS
83	AZ	243	ARG
83	AZ	259	ASN
83	AZ	276	PHE
83	AZ	349	GLN
83	AZ	437	MET
83	AZ	469	LEU
83	AZ	479	LYS
83	AZ	555	LYS
83	AZ	593	ILE
83	AZ	615	ARG
83	AZ	633	ILE
83	AZ	645	LEU
83	AZ	651	LYS
83	AZ	700	ARG
83	AZ	710	ARG
83	AZ	825	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (124) such sidechains are listed below:

Mol	Chain	Res	Type
4	P0	36	GLN
5	P2	66	ASN
6	A	205	ASN
7	B	109	HIS
7	B	177	HIS
7	B	345	ASN
7	B	377	HIS
8	C	43	ASN
8	C	59	GLN
8	C	140	HIS
8	C	291	ASN
9	D	4	GLN

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Mol	Chain	Res	Type
9	D	39	GLN
9	D	40	HIS
9	D	63	GLN
9	D	90	HIS
9	D	178	ASN
9	D	264	GLN
9	D	297	GLN
10	E	172	HIS
11	F	93	ASN
11	F	199	ASN
12	G	221	ASN
12	G	252	ASN
13	H	37	ASN
14	I	14	ASN
14	I	133	GLN
15	J	101	ASN
18	N	37	HIS
19	O	29	ASN
19	O	182	ASN
19	O	193	GLN
20	P	97	ASN
20	P	145	HIS
21	Q	45	ASN
22	R	27	ASN
22	R	39	ASN
22	R	166	ASN
23	S	88	HIS
24	T	54	HIS
24	T	146	ASN
26	V	98	ASN
28	X	85	GLN
29	Y	42	GLN
30	Z	36	HIS
30	Z	57	HIS
30	Z	78	ASN
30	Z	127	ASN
31	a	14	HIS
31	a	38	GLN
31	a	64	GLN
31	a	74	ASN
32	b	19	ASN
32	b	42	ASN

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Mol	Chain	Res	Type
34	d	87	ASN
36	f	24	ASN
36	f	77	ASN
37	g	61	GLN
39	i	12	ASN
40	j	76	ASN
42	l	4	GLN
45	o	82	GLN
48	q	39	ASN
48	q	46	HIS
49	r	42	ASN
49	r	199	ASN
49	r	209	ASN
50	s	199	GLN
50	s	220	ASN
51	t	174	HIS
52	u	98	ASN
52	u	223	ASN
52	u	259	GLN
53	v	72	HIS
53	v	86	GLN
53	v	95	ASN
53	v	104	ASN
53	v	128	ASN
53	v	131	GLN
53	v	158	GLN
54	w	56	ASN
54	w	139	ASN
55	x	110	GLN
56	y	88	ASN
57	z	139	GLN
57	z	176	ASN
58	AA	28	ASN
59	AB	8	GLN
61	AD	78	ASN
63	AF	15	HIS
63	AF	98	ASN
63	AF	103	ASN
64	AG	77	GLN
65	AH	31	ASN
65	AH	48	ASN
66	AI	44	ASN

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Mol	Chain	Res	Type
66	AI	63	GLN
67	AJ	43	ASN
68	AK	36	ASN
68	AK	48	HIS
68	AK	87	HIS
68	AK	105	GLN
68	AK	121	ASN
69	AL	70	ASN
70	AM	15	ASN
70	AM	16	ASN
70	AM	24	GLN
70	AM	42	GLN
71	AN	79	ASN
72	AO	113	ASN
73	AP	98	GLN
76	AS	51	ASN
78	AU	17	GLN
78	AU	46	ASN
79	AV	66	HIS
80	AW	123	ASN
83	AZ	27	HIS
83	AZ	201	GLN
83	AZ	224	GLN
83	AZ	251	ASN
83	AZ	259	ASN
83	AZ	274	ASN
83	AZ	409	GLN
83	AZ	452	ASN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	3220/3396 (94%)	1049 (32%)	18 (0%)
2	3	120/121 (99%)	31 (25%)	0
3	4	157/158 (99%)	50 (31%)	2 (1%)
47	2	1774/1797 (98%)	665 (37%)	23 (1%)
81	AX	75/76 (98%)	33 (44%)	1 (1%)
82	AY	7/8 (87%)	5 (71%)	0
All	All	5353/5556 (96%)	1833 (34%)	44 (0%)

All (1833) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	11	A
1	1	15	C
1	1	16	A
1	1	18	G
1	1	19	U
1	1	20	A
1	1	22	G
1	1	24	G
1	1	25	U
1	1	26	A
1	1	37	U
1	1	40	A
1	1	43	A
1	1	47	C
1	1	48	A
1	1	50	U
1	1	59	G
1	1	60	A
1	1	65	A
1	1	66	A
1	1	67	A
1	1	73	C
1	1	74	G
1	1	77	A
1	1	85	A
1	1	89	A
1	1	92	G
1	1	93	C
1	1	96	G
1	1	99	A
1	1	105	C
1	1	108	A
1	1	109	A
1	1	110	G
1	1	111	C
1	1	113	C
1	1	119	U
1	1	120	G
1	1	121	A
1	1	128	G
1	1	130	A
1	1	133	U
1	1	134	U

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Mol	Chain	Res	Type
1	1	135	C
1	1	136	G
1	1	145	G
1	1	146	U
1	1	148	G
1	1	153	U
1	1	154	U
1	1	155	G
1	1	156	G
1	1	157	A
1	1	161	G
1	1	165	A
1	1	170	G
1	1	172	G
1	1	173	G
1	1	182	U
1	1	183	G
1	1	187	A
1	1	188	U
1	1	189	G
1	1	190	U
1	1	191	U
1	1	198	A
1	1	199	A
1	1	200	C
1	1	211	A
1	1	212	G
1	1	217	U
1	1	218	G
1	1	219	A
1	1	221	A
1	1	223	U
1	1	228	U
1	1	231	G
1	1	240	U
1	1	241	G
1	1	242	C
1	1	243	G
1	1	244	G
1	1	245	U
1	1	248	U
1	1	250	U

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Mol	Chain	Res	Type
1	1	251	G
1	1	252	U
1	1	253	A
1	1	263	C
1	1	266	A
1	1	267	G
1	1	268	A
1	1	269	G
1	1	278	U
1	1	283	G
1	1	286	U
1	1	291	C
1	1	292	U
1	1	295	A
1	1	298	U
1	1	305	U
1	1	315	C
1	1	318	A
1	1	329	U
1	1	337	G
1	1	341	G
1	1	343	U
1	1	346	C
1	1	350	C
1	1	352	A
1	1	357	A
1	1	359	U
1	1	364	G
1	1	365	A
1	1	371	G
1	1	374	A
1	1	376	G
1	1	382	U
1	1	387	A
1	1	390	G
1	1	394	G
1	1	397	A
1	1	398	A
1	1	401	U
1	1	402	A
1	1	403	C
1	1	404	G

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Mol	Chain	Res	Type
1	1	421	G
1	1	422	A
1	1	438	A
1	1	440	A
1	1	442	G
1	1	444	U
1	1	446	U
1	1	449	U
1	1	450	G
1	1	451	U
1	1	487	U
1	1	488	U
1	1	491	A
1	1	493	U
1	1	494	G
1	1	495	G
1	1	498	A
1	1	503	C
1	1	510	G
1	1	515	C
1	1	520	U
1	1	521	A
1	1	523	A
1	1	533	A
1	1	534	U
1	1	540	U
1	1	545	U
1	1	547	G
1	1	549	U
1	1	550	A
1	1	551	A
1	1	554	A
1	1	555	U
1	1	556	U
1	1	557	A
1	1	558	U
1	1	559	A
1	1	560	G
1	1	582	G
1	1	591	G
1	1	592	A
1	1	597	G

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Mol	Chain	Res	Type
1	1	600	G
1	1	604	G
1	1	611	A
1	1	619	A
1	1	620	U
1	1	623	U
1	1	636	C
1	1	637	C
1	1	643	U
1	1	644	G
1	1	647	A
1	1	649	A
1	1	656	A
1	1	660	A
1	1	661	G
1	1	666	A
1	1	667	C
1	1	669	U
1	1	675	C
1	1	676	G
1	1	677	A
1	1	678	G
1	1	681	U
1	1	682	U
1	1	683	U
1	1	685	G
1	1	689	U
1	1	691	A
1	1	697	A
1	1	699	A
1	1	705	A
1	1	712	G
1	1	716	A
1	1	717	C
1	1	718	G
1	1	719	U
1	1	720	A
1	1	726	G
1	1	727	G
1	1	735	A
1	1	737	G
1	1	744	A

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Mol	Chain	Res	Type
1	1	750	G
1	1	751	A
1	1	758	C
1	1	761	A
1	1	763	G
1	1	766	U
1	1	767	U
1	1	770	G
1	1	774	G
1	1	776	U
1	1	777	U
1	1	780	A
1	1	781	G
1	1	785	G
1	1	786	A
1	1	792	G
1	1	800	G
1	1	801	A
1	1	802	C
1	1	803	C
1	1	806	A
1	1	807	A
1	1	808	A
1	1	816	A
1	1	817	A
1	1	826	G
1	1	827	A
1	1	830	A
1	1	833	G
1	1	836	A
1	1	838	G
1	1	849	C
1	1	854	G
1	1	855	U
1	1	857	G
1	1	859	G
1	1	860	G
1	1	861	C
1	1	864	G
1	1	871	U
1	1	874	U
1	1	875	G

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Mol	Chain	Res	Type
1	1	879	U
1	1	880	G
1	1	888	A
1	1	896	A
1	1	897	U
1	1	907	G
1	1	908	G
1	1	909	G
1	1	914	A
1	1	915	A
1	1	916	G
1	1	917	A
1	1	921	A
1	1	924	G
1	1	925	A
1	1	932	U
1	1	934	G
1	1	937	G
1	1	939	U
1	1	941	G
1	1	943	U
1	1	944	C
1	1	949	C
1	1	951	A
1	1	959	C
1	1	960	U
1	1	962	A
1	1	967	A
1	1	970	A
1	1	977	C
1	1	979	U
1	1	980	A
1	1	981	U
1	1	984	G
1	1	985	U
1	1	991	G
1	1	994	G
1	1	1000	C
1	1	1002	A
1	1	1004	U
1	1	1006	A
1	1	1010	G

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Mol	Chain	Res	Type
1	1	1013	G
1	1	1014	U
1	1	1016	C
1	1	1017	C
1	1	1018	G
1	1	1021	G
1	1	1024	G
1	1	1026	A
1	1	1027	A
1	1	1028	U
1	1	1029	G
1	1	1031	C
1	1	1033	U
1	1	1041	U
1	1	1046	A
1	1	1047	A
1	1	1054	A
1	1	1063	G
1	1	1064	A
1	1	1065	A
1	1	1066	G
1	1	1072	G
1	1	1076	C
1	1	1081	U
1	1	1083	G
1	1	1086	C
1	1	1087	G
1	1	1094	U
1	1	1095	U
1	1	1097	G
1	1	1098	A
1	1	1102	A
1	1	1103	A
1	1	1106	G
1	1	1110	U
1	1	1116	G
1	1	1117	G
1	1	1121	U
1	1	1127	G
1	1	1129	A
1	1	1131	G
1	1	1137	C

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Mol	Chain	Res	Type
1	1	1143	A
1	1	1144	U
1	1	1152	G
1	1	1153	A
1	1	1155	C
1	1	1158	A
1	1	1159	A
1	1	1161	G
1	1	1171	G
1	1	1172	G
1	1	1174	G
1	1	1177	G
1	1	1178	G
1	1	1180	A
1	1	1181	U
1	1	1182	A
1	1	1185	C
1	1	1191	U
1	1	1192	C
1	1	1193	A
1	1	1194	G
1	1	1196	C
1	1	1197	A
1	1	1201	C
1	1	1209	G
1	1	1210	U
1	1	1213	G
1	1	1214	U
1	1	1217	A
1	1	1219	C
1	1	1221	A
1	1	1222	G
1	1	1230	G
1	1	1232	C
1	1	1236	G
1	1	1237	G
1	1	1245	A
1	1	1246	G
1	1	1249	G
1	1	1252	A
1	1	1253	U
1	1	1254	C

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Mol	Chain	Res	Type
1	1	1255	C
1	1	1256	G
1	1	1258	U
1	1	1259	A
1	1	1262	G
1	1	1263	A
1	1	1264	G
1	1	1268	G
1	1	1269	U
1	1	1270	A
1	1	1272	C
1	1	1273	A
1	1	1276	U
1	1	1277	C
1	1	1281	G
1	1	1282	G
1	1	1284	C
1	1	1285	G
1	1	1286	A
1	1	1287	A
1	1	1290	A
1	1	1292	C
1	1	1295	G
1	1	1297	C
1	1	1302	A
1	1	1305	U
1	1	1307	G
1	1	1308	A
1	1	1309	U
1	1	1313	G
1	1	1316	C
1	1	1317	A
1	1	1321	G
1	1	1323	G
1	1	1324	U
1	1	1325	U
1	1	1330	A
1	1	1348	U
1	1	1349	G
1	1	1350	A
1	1	1351	U
1	1	1352	A

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Mol	Chain	Res	Type
1	1	1353	U
1	1	1355	A
1	1	1356	U
1	1	1357	G
1	1	1362	G
1	1	1368	U
1	1	1372	C
1	1	1382	G
1	1	1385	C
1	1	1386	A
1	1	1391	C
1	1	1392	G
1	1	1394	A
1	1	1399	A
1	1	1400	G
1	1	1408	G
1	1	1418	A
1	1	1419	A
1	1	1422	G
1	1	1424	C
1	1	1425	U
1	1	1430	U
1	1	1434	G
1	1	1436	U
1	1	1437	C
1	1	1443	G
1	1	1446	A
1	1	1448	U
1	1	1450	G
1	1	1451	C
1	1	1455	U
1	1	1456	A
1	1	1457	U
1	1	1458	U
1	1	1468	A
1	1	1470	U
1	1	1471	U
1	1	1473	G
1	1	1482	A
1	1	1483	G
1	1	1485	G
1	1	1488	G

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Mol	Chain	Res	Type
1	1	1489	A
1	1	1494	U
1	1	1500	G
1	1	1501	U
1	1	1503	A
1	1	1507	G
1	1	1508	C
1	1	1511	U
1	1	1522	U
1	1	1523	U
1	1	1524	A
1	1	1525	G
1	1	1526	U
1	1	1533	U
1	1	1535	A
1	1	1553	U
1	1	1554	U
1	1	1555	U
1	1	1556	C
1	1	1557	A
1	1	1558	A
1	1	1559	A
1	1	1560	G
1	1	1562	C
1	1	1563	C
1	1	1565	G
1	1	1566	A
1	1	1570	U
1	1	1573	G
1	1	1574	C
1	1	1577	G
1	1	1579	C
1	1	1580	A
1	1	1581	C
1	1	1582	C
1	1	1583	A
1	1	1584	U
1	1	1587	A
1	1	1588	A
1	1	1589	A
1	1	1593	A
1	1	1595	U

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Mol	Chain	Res	Type
1	1	1596	C
1	1	1605	A
1	1	1606	U
1	1	1607	U
1	1	1613	A
1	1	1620	U
1	1	1628	C
1	1	1630	U
1	1	1635	G
1	1	1636	U
1	1	1637	A
1	1	1638	A
1	1	1643	A
1	1	1645	U
1	1	1646	G
1	1	1657	C
1	1	1659	U
1	1	1662	G
1	1	1664	G
1	1	1683	A
1	1	1687	U
1	1	1706	C
1	1	1707	A
1	1	1712	G
1	1	1713	G
1	1	1714	A
1	1	1716	U
1	1	1717	U
1	1	1720	U
1	1	1724	U
1	1	1728	G
1	1	1729	A
1	1	1730	G
1	1	1736	G
1	1	1737	U
1	1	1740	U
1	1	1741	A
1	1	1742	U
1	1	1750	A
1	1	1751	G
1	1	1756	C
1	1	1760	A

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Mol	Chain	Res	Type
1	1	1761	C
1	1	1763	U
1	1	1764	U
1	1	1765	U
1	1	1769	G
1	1	1770	G
1	1	1773	C
1	1	1775	G
1	1	1780	G
1	1	1781	C
1	1	1788	C
1	1	1793	C
1	1	1794	G
1	1	1795	U
1	1	1797	A
1	1	1808	G
1	1	1812	G
1	1	1813	A
1	1	1814	A
1	1	1815	U
1	1	1818	U
1	1	1820	U
1	1	1821	U
1	1	1835	A
1	1	1838	G
1	1	1840	U
1	1	1841	A
1	1	1842	A
1	1	1843	C
1	1	1844	C
1	1	1846	C
1	1	1848	G
1	1	1850	A
1	1	1851	G
1	1	1855	U
1	1	1863	G
1	1	1865	A
1	1	1874	A
1	1	1878	G
1	1	1879	A
1	1	1880	U
1	1	1881	A

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Mol	Chain	Res	Type
1	1	1884	A
1	1	1886	A
1	1	1889	G
1	1	1893	A
1	1	1896	A
1	1	1900	A
1	1	1904	C
1	1	1905	G
1	1	1906	G
1	1	1908	A
1	1	1912	U
1	1	1915	A
1	1	1926	C
1	1	1927	G
1	1	1928	G
1	1	1930	A
1	1	1931	U
1	1	1932	A
1	1	1935	G
1	1	1948	G
1	1	1953	G
1	1	1954	G
1	1	2094	C
1	1	2101	C
1	1	2102	U
1	1	2107	A
1	1	2111	G
1	1	2114	C
1	1	2116	G
1	1	2117	A
1	1	2118	C
1	1	2119	A
1	1	2122	G
1	1	2131	A
1	1	2134	G
1	1	2136	C
1	1	2137	U
1	1	2138	A
1	1	2139	A
1	1	2143	A
1	1	2145	A
1	1	2148	U

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Mol	Chain	Res	Type
1	1	2157	G
1	1	2158	A
1	1	2160	G
1	1	2166	A
1	1	2167	A
1	1	2168	A
1	1	2169	G
1	1	2170	U
1	1	2172	A
1	1	2176	U
1	1	2177	G
1	1	2178	A
1	1	2180	G
1	1	2184	U
1	1	2185	G
1	1	2186	U
1	1	2187	G
1	1	2188	A
1	1	2189	U
1	1	2194	G
1	1	2205	U
1	1	2206	G
1	1	2207	A
1	1	2223	A
1	1	2231	C
1	1	2239	G
1	1	2255	A
1	1	2257	C
1	1	2263	C
1	1	2269	U
1	1	2270	A
1	1	2271	A
1	1	2273	G
1	1	2279	A
1	1	2281	A
1	1	2285	C
1	1	2286	U
1	1	2288	G
1	1	2295	A
1	1	2296	A
1	1	2303	A
1	1	2304	C

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Mol	Chain	Res	Type
1	1	2306	C
1	1	2307	G
1	1	2309	A
1	1	2310	U
1	1	2312	A
1	1	2313	A
1	1	2315	G
1	1	2327	U
1	1	2334	U
1	1	2335	G
1	1	2336	U
1	1	2339	C
1	1	2344	U
1	1	2345	A
1	1	2347	U
1	1	2357	A
1	1	2361	A
1	1	2363	A
1	1	2364	G
1	1	2365	C
1	1	2370	G
1	1	2372	A
1	1	2373	A
1	1	2374	C
1	1	2375	G
1	1	2376	G
1	1	2383	C
1	1	2385	G
1	1	2388	U
1	1	2393	G
1	1	2397	A
1	1	2400	G
1	1	2401	A
1	1	2402	A
1	1	2403	G
1	1	2404	A
1	1	2410	U
1	1	2411	U
1	1	2415	C
1	1	2417	U
1	1	2418	G
1	1	2419	A

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Mol	Chain	Res	Type
1	1	2422	C
1	1	2424	A
1	1	2429	G
1	1	2432	A
1	1	2434	U
1	1	2438	A
1	1	2439	A
1	1	2452	G
1	1	2455	U
1	1	2456	A
1	1	2459	A
1	1	2460	U
1	1	2461	A
1	1	2462	A
1	1	2468	A
1	1	2469	G
1	1	2471	U
1	1	2474	G
1	1	2476	C
1	1	2479	C
1	1	2480	A
1	1	2482	U
1	1	2483	G
1	1	2486	A
1	1	2487	U
1	1	2488	A
1	1	2490	C
1	1	2491	A
1	1	2492	C
1	1	2494	A
1	1	2495	C
1	1	2496	C
1	1	2497	U
1	1	2500	A
1	1	2501	U
1	1	2502	A
1	1	2505	U
1	1	2507	C
1	1	2510	U
1	1	2514	U
1	1	2515	A
1	1	2522	G

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Mol	Chain	Res	Type
1	1	2524	A
1	1	2525	G
1	1	2526	C
1	1	2532	U
1	1	2537	U
1	1	2538	U
1	1	2540	A
1	1	2541	U
1	1	2542	U
1	1	2543	U
1	1	2549	G
1	1	2550	U
1	1	2552	C
1	1	2555	G
1	1	2557	A
1	1	2558	U
1	1	2559	U
1	1	2560	C
1	1	2561	A
1	1	2569	A
1	1	2570	U
1	1	2573	G
1	1	2575	G
1	1	2583	C
1	1	2584	G
1	1	2585	G
1	1	2593	A
1	1	2595	A
1	1	2606	G
1	1	2614	G
1	1	2615	G
1	1	2617	U
1	1	2618	G
1	1	2619	G
1	1	2620	G
1	1	2625	C
1	1	2628	A
1	1	2635	A
1	1	2639	G
1	1	2648	G
1	1	2649	A
1	1	2652	U

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Mol	Chain	Res	Type
1	1	2655	U
1	1	2656	A
1	1	2658	G
1	1	2669	G
1	1	2672	G
1	1	2674	A
1	1	2676	A
1	1	2677	G
1	1	2678	A
1	1	2680	A
1	1	2681	U
1	1	2686	A
1	1	2688	U
1	1	2689	A
1	1	2690	G
1	1	2691	A
1	1	2692	A
1	1	2701	U
1	1	2703	A
1	1	2704	A
1	1	2705	A
1	1	2712	U
1	1	2714	G
1	1	2716	U
1	1	2717	U
1	1	2719	U
1	1	2725	U
1	1	2726	C
1	1	2728	G
1	1	2729	U
1	1	2741	C
1	1	2749	G
1	1	2753	G
1	1	2755	C
1	1	2759	U
1	1	2760	C
1	1	2762	A
1	1	2765	C
1	1	2769	A
1	1	2771	U
1	1	2772	C
1	1	2773	C

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Mol	Chain	Res	Type
1	1	2777	G
1	1	2780	A
1	1	2787	G
1	1	2795	U
1	1	2796	G
1	1	2798	C
1	1	2799	A
1	1	2800	G
1	1	2801	A
1	1	2803	A
1	1	2804	A
1	1	2808	A
1	1	2809	C
1	1	2810	C
1	1	2816	G
1	1	2817	A
1	1	2818	U
1	1	2821	C
1	1	2827	U
1	1	2838	A
1	1	2843	U
1	1	2844	C
1	1	2845	A
1	1	2847	A
1	1	2852	C
1	1	2858	U
1	1	2859	U
1	1	2860	U
1	1	2861	U
1	1	2863	G
1	1	2869	U
1	1	2871	G
1	1	2872	A
1	1	2873	U
1	1	2875	U
1	1	2886	U
1	1	2887	A
1	1	2889	C
1	1	2899	C
1	1	2901	G
1	1	2904	U
1	1	2905	U

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Mol	Chain	Res	Type
1	1	2907	G
1	1	2911	A
1	1	2912	G
1	1	2914	G
1	1	2925	C
1	1	2932	U
1	1	2934	A
1	1	2935	U
1	1	2936	A
1	1	2941	A
1	1	2942	C
1	1	2945	G
1	1	2946	A
1	1	2947	G
1	1	2954	U
1	1	2955	U
1	1	2968	G
1	1	2971	A
1	1	2978	U
1	1	2979	U
1	1	2981	U
1	1	2983	C
1	1	2984	C
1	1	2988	C
1	1	2992	U
1	1	2996	U
1	1	2997	G
1	1	3001	C
1	1	3003	G
1	1	3005	A
1	1	3006	A
1	1	3007	U
1	1	3011	A
1	1	3012	A
1	1	3014	U
1	1	3021	A
1	1	3026	G
1	1	3028	G
1	1	3030	G
1	1	3034	C
1	1	3036	G
1	1	3055	U

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Mol	Chain	Res	Type
1	1	3056	U
1	1	3057	U
1	1	3058	U
1	1	3059	G
1	1	3069	G
1	1	3070	A
1	1	3074	G
1	1	3075	G
1	1	3077	A
1	1	3078	U
1	1	3079	U
1	1	3080	G
1	1	3090	U
1	1	3092	C
1	1	3093	C
1	1	3099	C
1	1	3100	U
1	1	3101	G
1	1	3117	C
1	1	3122	A
1	1	3125	U
1	1	3129	A
1	1	3130	A
1	1	3131	U
1	1	3139	A
1	1	3142	A
1	1	3143	C
1	1	3153	U
1	1	3154	C
1	1	3156	U
1	1	3157	U
1	1	3158	G
1	1	3160	U
1	1	3162	C
1	1	3168	A
1	1	3170	A
1	1	3173	G
1	1	3174	A
1	1	3176	G
1	1	3178	A
1	1	3179	U
1	1	3180	A

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Mol	Chain	Res	Type
1	1	3182	G
1	1	3183	A
1	1	3185	U
1	1	3186	A
1	1	3187	A
1	1	3193	C
1	1	3194	C
1	1	3195	U
1	1	3196	U
1	1	3197	G
1	1	3202	G
1	1	3206	C
1	1	3207	U
1	1	3210	A
1	1	3212	C
1	1	3214	U
1	1	3216	G
1	1	3217	C
1	1	3218	A
1	1	3219	G
1	1	3222	U
1	1	3226	A
1	1	3228	C
1	1	3229	G
1	1	3235	C
1	1	3238	G
1	1	3243	A
1	1	3244	A
1	1	3246	G
1	1	3247	G
1	1	3259	U
1	1	3260	G
1	1	3264	G
1	1	3268	A
1	1	3269	U
1	1	3271	G
1	1	3272	C
1	1	3273	A
1	1	3275	U
1	1	3276	G
1	1	3278	C
1	1	3279	A

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Mol	Chain	Res	Type
1	1	3281	U
1	1	3288	G
1	1	3289	G
1	1	3292	A
1	1	3294	A
1	1	3295	A
1	1	3304	U
1	1	3308	C
1	1	3310	A
1	1	3313	U
1	1	3316	A
1	1	3317	U
1	1	3318	G
1	1	3320	A
1	1	3329	U
1	1	3339	A
1	1	3341	U
1	1	3345	G
1	1	3346	U
1	1	3349	C
1	1	3350	C
1	1	3351	U
1	1	3352	U
1	1	3354	U
1	1	3355	U
1	1	3356	G
1	1	3357	U
1	1	3362	A
1	1	3363	U
1	1	3368	U
1	1	3369	G
1	1	3375	A
1	1	3377	G
1	1	3378	C
1	1	3382	U
1	1	3384	U
1	1	3386	G
1	1	3388	C
1	1	3389	U
1	1	3390	G
2	3	4	U
2	3	6	C

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Mol	Chain	Res	Type
2	3	7	G
2	3	10	C
2	3	11	A
2	3	13	A
2	3	16	U
2	3	19	C
2	3	28	C
2	3	33	U
2	3	41	G
2	3	42	A
2	3	44	C
2	3	49	G
2	3	50	U
2	3	54	U
2	3	56	A
2	3	57	G
2	3	63	A
2	3	64	A
2	3	65	G
2	3	74	C
2	3	76	A
2	3	87	G
2	3	90	U
2	3	91	G
2	3	92	A
2	3	94	C
2	3	110	G
2	3	112	G
2	3	121	U
3	4	12	A
3	4	13	A
3	4	15	G
3	4	16	G
3	4	22	U
3	4	23	U
3	4	34	U
3	4	35	C
3	4	37	A
3	4	39	G
3	4	43	A
3	4	44	A
3	4	49	G

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Mol	Chain	Res	Type
3	4	50	C
3	4	51	G
3	4	54	A
3	4	59	A
3	4	62	C
3	4	63	G
3	4	71	A
3	4	72	A
3	4	75	G
3	4	80	A
3	4	81	U
3	4	82	U
3	4	83	C
3	4	84	C
3	4	86	U
3	4	87	G
3	4	88	A
3	4	89	A
3	4	95	G
3	4	96	A
3	4	100	U
3	4	102	U
3	4	104	A
3	4	106	C
3	4	107	G
3	4	112	U
3	4	113	U
3	4	125	U
3	4	126	A
3	4	127	U
3	4	131	A
3	4	138	A
3	4	148	G
3	4	151	C
3	4	152	G
3	4	155	A
3	4	158	U
47	2	2	A
47	2	3	U
47	2	4	C
47	2	5	U
47	2	8	U

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Mol	Chain	Res	Type
47	2	9	U
47	2	10	G
47	2	11	A
47	2	25	C
47	2	26	A
47	2	27	U
47	2	34	G
47	2	40	A
47	2	43	A
47	2	45	U
47	2	47	A
47	2	48	G
47	2	50	C
47	2	55	A
47	2	59	C
47	2	60	U
47	2	63	G
47	2	65	A
47	2	66	U
47	2	67	A
47	2	68	A
47	2	69	G
47	2	71	A
47	2	72	A
47	2	74	U
47	2	75	U
47	2	76	A
47	2	77	U
47	2	78	A
47	2	81	G
47	2	93	A
47	2	94	U
47	2	100	A
47	2	102	U
47	2	103	A
47	2	104	A
47	2	114	C
47	2	115	G
47	2	116	U
47	2	121	U
47	2	123	G
47	2	125	U

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Mol	Chain	Res	Type
47	2	127	G
47	2	128	U
47	2	129	U
47	2	130	C
47	2	131	C
47	2	132	U
47	2	133	U
47	2	135	A
47	2	136	C
47	2	137	U
47	2	138	A
47	2	139	C
47	2	141	U
47	2	142	G
47	2	144	U
47	2	145	A
47	2	146	U
47	2	153	G
47	2	157	A
47	2	159	U
47	2	169	A
47	2	171	A
47	2	188	A
47	2	189	C
47	2	191	C
47	2	192	U
47	2	194	U
47	2	195	G
47	2	196	G
47	2	200	A
47	2	203	U
47	2	204	G
47	2	217	A
47	2	218	A
47	2	224	C
47	2	232	U
47	2	233	C
47	2	234	G
47	2	235	G
47	2	238	U
47	2	239	C
47	2	240	U

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Mol	Chain	Res	Type
47	2	241	U
47	2	246	G
47	2	249	U
47	2	252	U
47	2	259	U
47	2	261	U
47	2	262	U
47	2	265	A
47	2	268	C
47	2	270	C
47	2	271	A
47	2	272	U
47	2	274	G
47	2	276	C
47	2	277	U
47	2	278	U
47	2	280	U
47	2	287	G
47	2	288	A
47	2	302	U
47	2	306	U
47	2	313	U
47	2	314	C
47	2	316	A
47	2	317	C
47	2	320	U
47	2	322	G
47	2	329	G
47	2	330	G
47	2	333	A
47	2	337	G
47	2	338	C
47	2	345	U
47	2	346	G
47	2	347	G
47	2	351	C
47	2	352	A
47	2	361	C
47	2	363	G
47	2	373	G
47	2	374	U
47	2	378	A

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Mol	Chain	Res	Type
47	2	391	A
47	2	400	A
47	2	401	A
47	2	402	C
47	2	403	G
47	2	404	G
47	2	412	A
47	2	417	A
47	2	419	G
47	2	421	A
47	2	423	G
47	2	424	C
47	2	426	G
47	2	428	A
47	2	432	G
47	2	434	G
47	2	435	C
47	2	439	U
47	2	444	C
47	2	445	A
47	2	452	A
47	2	454	U
47	2	455	C
47	2	456	A
47	2	458	G
47	2	460	A
47	2	461	G
47	2	464	A
47	2	469	C
47	2	471	A
47	2	475	A
47	2	480	G
47	2	481	A
47	2	486	G
47	2	488	G
47	2	490	C
47	2	492	A
47	2	493	U
47	2	495	C
47	2	496	G
47	2	502	U
47	2	506	A

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Mol	Chain	Res	Type
47	2	507	U
47	2	508	U
47	2	509	G
47	2	515	A
47	2	519	C
47	2	520	A
47	2	523	G
47	2	525	A
47	2	532	U
47	2	536	C
47	2	538	A
47	2	539	G
47	2	540	G
47	2	541	A
47	2	542	A
47	2	543	C
47	2	544	A
47	2	545	A
47	2	551	G
47	2	554	C
47	2	555	A
47	2	557	G
47	2	558	U
47	2	559	C
47	2	565	C
47	2	566	C
47	2	567	A
47	2	568	G
47	2	574	G
47	2	575	C
47	2	579	A
47	2	580	A
47	2	582	U
47	2	594	A
47	2	597	G
47	2	600	U
47	2	606	A
47	2	607	G
47	2	608	U
47	2	610	G
47	2	611	U
47	2	612	U

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Mol	Chain	Res	Type
47	2	613	G
47	2	617	U
47	2	618	U
47	2	619	A
47	2	620	A
47	2	622	A
47	2	623	A
47	2	624	G
47	2	635	A
47	2	638	U
47	2	639	U
47	2	653	C
47	2	654	C
47	2	655	G
47	2	657	U
47	2	658	C
47	2	677	G
47	2	678	A
47	2	681	U
47	2	687	G
47	2	691	C
47	2	692	C
47	2	694	U
47	2	695	U
47	2	696	C
47	2	697	C
47	2	698	U
47	2	700	C
47	2	701	U
47	2	704	C
47	2	705	U
47	2	706	A
47	2	707	A
47	2	708	C
47	2	709	C
47	2	710	U
47	2	711	U
47	2	712	G
47	2	713	A
47	2	716	C
47	2	717	C
47	2	718	U

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Mol	Chain	Res	Type
47	2	720	G
47	2	721	U
47	2	722	G
47	2	725	U
47	2	727	U
47	2	728	U
47	2	729	G
47	2	730	G
47	2	731	C
47	2	733	A
47	2	735	C
47	2	736	C
47	2	738	G
47	2	739	G
47	2	741	C
47	2	742	U
47	2	743	U
47	2	745	U
47	2	746	A
47	2	754	A
47	2	755	A
47	2	765	G
47	2	766	U
47	2	767	U
47	2	771	A
47	2	772	G
47	2	775	G
47	2	778	G
47	2	779	U
47	2	780	A
47	2	781	U
47	2	783	G
47	2	784	C
47	2	787	G
47	2	789	A
47	2	791	A
47	2	794	U
47	2	795	U
47	2	803	A
47	2	812	A
47	2	813	U
47	2	814	A

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Mol	Chain	Res	Type
47	2	815	G
47	2	820	U
47	2	821	U
47	2	823	G
47	2	824	G
47	2	829	A
47	2	830	U
47	2	833	U
47	2	837	G
47	2	841	U
47	2	845	G
47	2	846	G
47	2	848	C
47	2	849	C
47	2	850	A
47	2	852	C
47	2	854	U
47	2	859	A
47	2	860	U
47	2	862	A
47	2	863	A
47	2	865	A
47	2	866	G
47	2	880	C
47	2	886	U
47	2	888	U
47	2	898	A
47	2	900	A
47	2	903	U
47	2	913	G
47	2	914	G
47	2	915	A
47	2	916	U
47	2	921	U
47	2	928	U
47	2	929	A
47	2	933	A
47	2	935	U
47	2	938	G
47	2	939	A
47	2	942	G
47	2	944	A

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Mol	Chain	Res	Type
47	2	945	U
47	2	946	U
47	2	951	A
47	2	960	U
47	2	964	U
47	2	966	A
47	2	967	A
47	2	987	G
47	2	988	A
47	2	992	A
47	2	993	A
47	2	1007	C
47	2	1020	A
47	2	1021	C
47	2	1022	C
47	2	1025	A
47	2	1026	A
47	2	1027	A
47	2	1028	C
47	2	1031	U
47	2	1039	A
47	2	1052	U
47	2	1053	G
47	2	1054	U
47	2	1067	C
47	2	1074	G
47	2	1081	A
47	2	1082	C
47	2	1085	G
47	2	1092	A
47	2	1093	A
47	2	1097	U
47	2	1098	U
47	2	1099	U
47	2	1100	G
47	2	1109	G
47	2	1113	A
47	2	1122	G
47	2	1125	A
47	2	1126	G
47	2	1137	A
47	2	1138	A

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Mol	Chain	Res	Type
47	2	1139	A
47	2	1150	G
47	2	1151	A
47	2	1158	C
47	2	1159	C
47	2	1162	C
47	2	1163	A
47	2	1164	G
47	2	1166	A
47	2	1167	G
47	2	1170	G
47	2	1173	C
47	2	1180	C
47	2	1181	U
47	2	1182	U
47	2	1183	A
47	2	1184	A
47	2	1185	U
47	2	1186	U
47	2	1189	A
47	2	1190	C
47	2	1191	U
47	2	1193	A
47	2	1194	A
47	2	1196	A
47	2	1199	G
47	2	1200	G
47	2	1202	A
47	2	1206	U
47	2	1207	C
47	2	1209	C
47	2	1212	G
47	2	1217	A
47	2	1218	G
47	2	1219	A
47	2	1221	A
47	2	1223	A
47	2	1225	U
47	2	1227	A
47	2	1228	G
47	2	1229	G
47	2	1230	A

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Mol	Chain	Res	Type
47	2	1232	U
47	2	1235	C
47	2	1238	A
47	2	1239	U
47	2	1241	G
47	2	1242	A
47	2	1244	A
47	2	1245	G
47	2	1246	C
47	2	1250	U
47	2	1251	U
47	2	1252	C
47	2	1255	G
47	2	1256	A
47	2	1257	U
47	2	1258	U
47	2	1260	U
47	2	1263	G
47	2	1264	G
47	2	1266	U
47	2	1267	G
47	2	1268	G
47	2	1269	U
47	2	1270	G
47	2	1273	G
47	2	1274	C
47	2	1275	A
47	2	1278	G
47	2	1284	C
47	2	1286	U
47	2	1287	A
47	2	1291	G
47	2	1297	G
47	2	1298	U
47	2	1299	G
47	2	1300	A
47	2	1301	U
47	2	1302	U
47	2	1306	C
47	2	1307	U
47	2	1309	C
47	2	1312	A

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Mol	Chain	Res	Type
47	2	1314	U
47	2	1315	U
47	2	1318	G
47	2	1321	A
47	2	1328	G
47	2	1336	A
47	2	1337	A
47	2	1339	C
47	2	1340	U
47	2	1342	C
47	2	1343	U
47	2	1347	U
47	2	1349	G
47	2	1351	G
47	2	1353	U
47	2	1354	G
47	2	1358	G
47	2	1361	U
47	2	1363	U
47	2	1364	G
47	2	1368	G
47	2	1370	U
47	2	1372	U
47	2	1378	U
47	2	1380	U
47	2	1382	A
47	2	1383	G
47	2	1384	A
47	2	1385	G
47	2	1388	A
47	2	1390	U
47	2	1392	U
47	2	1394	G
47	2	1397	U
47	2	1398	U
47	2	1399	C
47	2	1400	A
47	2	1402	G
47	2	1403	C
47	2	1404	C
47	2	1405	G
47	2	1409	G

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Mol	Chain	Res	Type
47	2	1410	A
47	2	1411	A
47	2	1412	G
47	2	1414	U
47	2	1415	U
47	2	1416	G
47	2	1418	G
47	2	1419	G
47	2	1427	A
47	2	1428	G
47	2	1429	G
47	2	1430	U
47	2	1432	U
47	2	1433	G
47	2	1434	U
47	2	1436	A
47	2	1444	A
47	2	1445	G
47	2	1446	A
47	2	1447	C
47	2	1451	C
47	2	1453	G
47	2	1457	C
47	2	1458	G
47	2	1459	C
47	2	1461	C
47	2	1469	A
47	2	1471	A
47	2	1472	C
47	2	1473	U
47	2	1474	G
47	2	1478	G
47	2	1479	A
47	2	1481	C
47	2	1482	C
47	2	1489	U
47	2	1490	C
47	2	1491	U
47	2	1492	A
47	2	1493	A
47	2	1496	U
47	2	1506	G

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Mol	Chain	Res	Type
47	2	1512	G
47	2	1514	U
47	2	1516	A
47	2	1517	U
47	2	1518	C
47	2	1520	U
47	2	1521	G
47	2	1522	U
47	2	1523	G
47	2	1524	A
47	2	1531	G
47	2	1534	G
47	2	1535	U
47	2	1536	G
47	2	1537	C
47	2	1538	U
47	2	1539	G
47	2	1541	G
47	2	1542	G
47	2	1543	A
47	2	1557	U
47	2	1559	A
47	2	1567	U
47	2	1568	C
47	2	1570	A
47	2	1571	C
47	2	1572	G
47	2	1583	A
47	2	1584	G
47	2	1586	A
47	2	1587	A
47	2	1589	C
47	2	1591	C
47	2	1596	C
47	2	1597	A
47	2	1601	G
47	2	1604	U
47	2	1605	G
47	2	1612	U
47	2	1613	U
47	2	1615	C
47	2	1616	G

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Mol	Chain	Res	Type
47	2	1617	U
47	2	1619	C
47	2	1625	C
47	2	1631	A
47	2	1634	C
47	2	1635	A
47	2	1636	C
47	2	1637	C
47	2	1638	G
47	2	1639	C
47	2	1647	U
47	2	1651	A
47	2	1653	C
47	2	1657	U
47	2	1658	G
47	2	1664	C
47	2	1670	G
47	2	1678	A
47	2	1679	G
47	2	1680	G
47	2	1681	A
47	2	1682	U
47	2	1683	C
47	2	1684	U
47	2	1685	G
47	2	1686	C
47	2	1689	A
47	2	1694	A
47	2	1696	G
47	2	1698	G
47	2	1699	G
47	2	1700	C
47	2	1701	A
47	2	1702	A
47	2	1703	C
47	2	1704	U
47	2	1705	C
47	2	1707	A
47	2	1708	U
47	2	1709	C
47	2	1710	U
47	2	1712	A

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Mol	Chain	Res	Type
47	2	1713	G
47	2	1715	G
47	2	1716	C
47	2	1717	G
47	2	1718	G
47	2	1720	G
47	2	1730	A
47	2	1736	G
47	2	1747	G
47	2	1749	A
47	2	1750	A
47	2	1755	A
47	2	1756	A
47	2	1757	G
47	2	1758	U
47	2	1761	U
47	2	1762	A
47	2	1766	A
47	2	1767	G
47	2	1769	U
47	2	1780	G
47	2	1782	A
47	2	1783	C
47	2	1791	A
47	2	1792	G
47	2	1793	G
47	2	1794	A
47	2	1795	U
47	2	1796	C
47	2	1798	U
81	AX	4	G
81	AX	9	A
81	AX	10	G
81	AX	11	C
81	AX	14	A
81	AX	16	U
81	AX	17	U
81	AX	18	G
81	AX	19	G
81	AX	20	G
81	AX	21	A
81	AX	22	G

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Mol	Chain	Res	Type
81	AX	24	G
81	AX	26	G
81	AX	27	C
81	AX	30	G
81	AX	34	G
81	AX	37	G
81	AX	38	A
81	AX	40	C
81	AX	42	G
81	AX	46	G
81	AX	47	U
81	AX	48	C
81	AX	49	C
81	AX	55	U
81	AX	59	U
81	AX	60	C
81	AX	61	C
81	AX	69	U
81	AX	74	C
81	AX	75	C
81	AX	76	A
82	AY	44	A
82	AY	45	A
82	AY	48	U
82	AY	49	U
82	AY	50	U

All (44) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	980	A
1	1	1053	A
1	1	1283	C
1	1	1285	G
1	1	1506	A
1	1	1562	C
1	1	1594	A
1	1	1629	U
1	1	2270	A
1	1	2295	A
1	1	2306	C
1	1	2461	A

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Mol	Chain	Res	Type
1	1	2541	U
1	1	2549	G
1	1	2874	G
1	1	3004	C
1	1	3078	U
1	1	3121	U
3	4	22	U
3	4	88	A
47	2	1	U
47	2	74	U
47	2	315	A
47	2	507	U
47	2	611	U
47	2	706	A
47	2	779	U
47	2	780	A
47	2	865	A
47	2	941	A
47	2	1138	A
47	2	1244	A
47	2	1273	G
47	2	1274	C
47	2	1298	U
47	2	1338	C
47	2	1399	C
47	2	1491	U
47	2	1536	G
47	2	1611	A
47	2	1637	C
47	2	1684	U
47	2	1756	A
81	AX	19	G

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

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

RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
83	DDE	AZ	699	83	14,20,21	1.97	3 (21%)	14,28,30	2.18	5 (35%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
83	DDE	AZ	699	83	-	7/20/21/23	0/1/1/1

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
83	AZ	699	DDE	CBI-NAD	5.69	1.47	1.32
83	AZ	699	DDE	CAT-CE1	3.25	1.54	1.50
83	AZ	699	DDE	OAG-CBI	-2.11	1.19	1.23

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
83	AZ	699	DDE	CBW-CBI-NAD	5.22	121.94	115.28
83	AZ	699	DDE	CAC-NCB-CAB	3.55	117.80	108.10
83	AZ	699	DDE	OAG-CBI-NAD	-2.80	118.14	123.00
83	AZ	699	DDE	CAU-CBW-CBI	-2.27	106.70	111.20
83	AZ	699	DDE	CG-ND1-CE1	2.01	108.99	103.05

There are no chirality outliers.

All (7) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
83	AZ	699	DDE	N-CA-CB-CG
83	AZ	699	DDE	C-CA-CB-CG
83	AZ	699	DDE	CAT-CAU-CBW-CBI
83	AZ	699	DDE	CAT-CAU-CBW-NCB
83	AZ	699	DDE	CE1-CAT-CAU-CBW
83	AZ	699	DDE	NAD-CBI-CBW-NCB
83	AZ	699	DDE	OAG-CBI-CBW-NCB

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 10 ligands modelled in this entry, 8 are monoatomic - leaving 2 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
85	SO1	AZ	901	-	35,39,39	0.20	0	39,64,64	0.85	2 (5%)
86	GCP	AZ	902	-	27,34,34	1.18	4 (14%)	34,54,54	2.22	10 (29%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
85	SO1	AZ	901	-	-	9/21/104/104	0/7/5/5
86	GCP	AZ	902	-	-	6/15/38/38	0/3/3/3

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
86	AZ	902	GCP	C6-N1	3.06	1.38	1.33
86	AZ	902	GCP	PB-O2B	-2.73	1.50	1.56
86	AZ	902	GCP	PG-O1G	2.17	1.54	1.50
86	AZ	902	GCP	PG-O3G	-2.15	1.50	1.54

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
86	AZ	902	GCP	C5-C6-N1	-8.16	112.27	123.43
86	AZ	902	GCP	C2-N1-C6	5.76	125.08	115.93
85	AZ	901	SO1	C18-C9-C16	-4.13	97.73	103.64
86	AZ	902	GCP	O2B-PB-C3B	3.94	122.68	106.58
86	AZ	902	GCP	N3-C2-N1	-2.94	123.30	127.22
86	AZ	902	GCP	O3G-PG-C3B	2.58	112.66	106.40
86	AZ	902	GCP	O1G-PG-C3B	-2.41	106.06	111.24
86	AZ	902	GCP	C2-N3-C4	-2.37	112.66	115.36
86	AZ	902	GCP	C4-C5-C6	-2.28	118.62	120.80
85	AZ	901	SO1	C7-C2-C6	2.27	116.47	112.17
86	AZ	902	GCP	PB-O3A-PA	-2.25	125.41	132.56
86	AZ	902	GCP	O2G-PG-O1G	-2.06	106.95	112.39

There are no chirality outliers.

All (15) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
86	AZ	902	GCP	PG-C3B-PB-O1B
86	AZ	902	GCP	PG-C3B-PB-O3A
85	AZ	901	SO1	C56-C55-O64-C65
85	AZ	901	SO1	C2-C1-C5-O14
85	AZ	901	SO1	C2-C1-C5-O15
86	AZ	902	GCP	C4'-C5'-O5'-PA
85	AZ	901	SO1	C3-C1-C5-O15
85	AZ	901	SO1	C3-C1-C5-O14
85	AZ	901	SO1	O19-C11-C3-C1
86	AZ	902	GCP	PB-C3B-PG-O1G
86	AZ	902	GCP	C5'-O5'-PA-O3A
86	AZ	902	GCP	C5'-O5'-PA-O2A
85	AZ	901	SO1	C20-C13-C4-C1
85	AZ	901	SO1	C1-C2-C8-O17
85	AZ	901	SO1	C54-C55-O64-C65

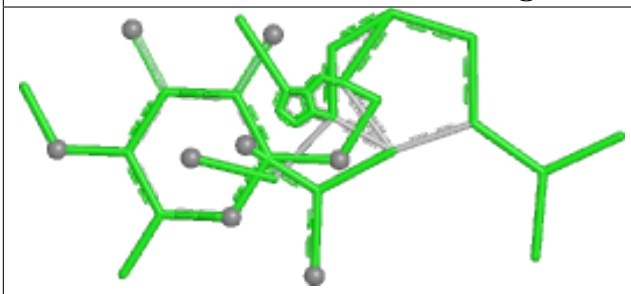
There are no ring outliers.

No monomer is involved in short contacts.

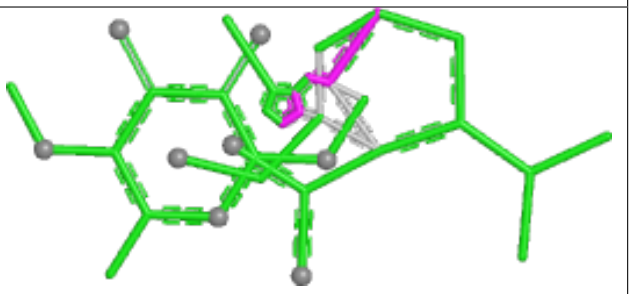
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring

in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

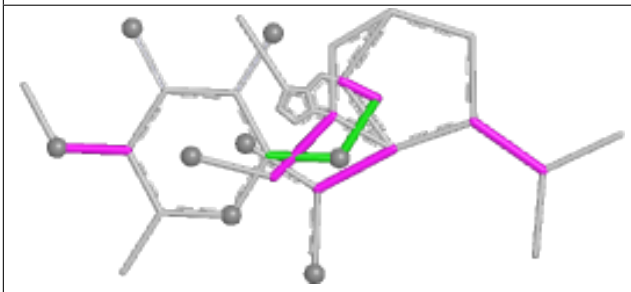
Ligand SO1 AZ 901



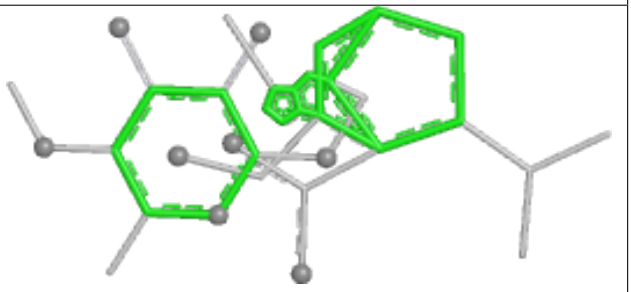
Bond lengths



Bond angles

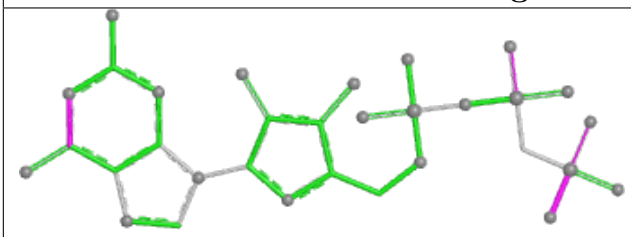


Torsions

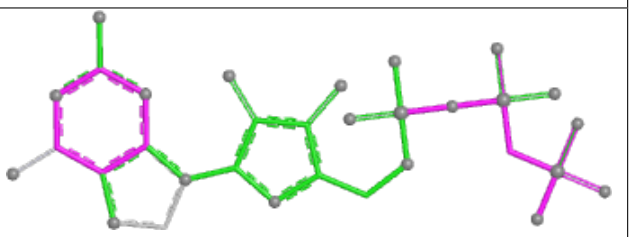


Rings

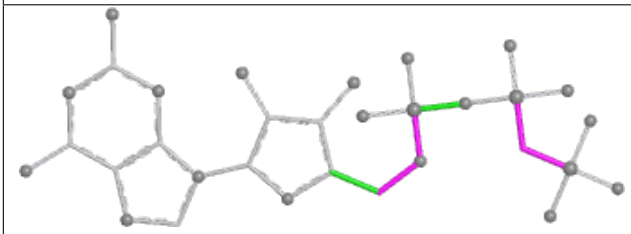
Ligand GCP AZ 902



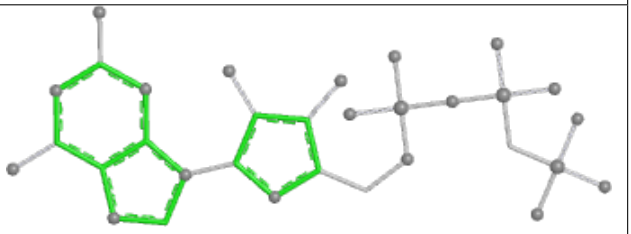
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

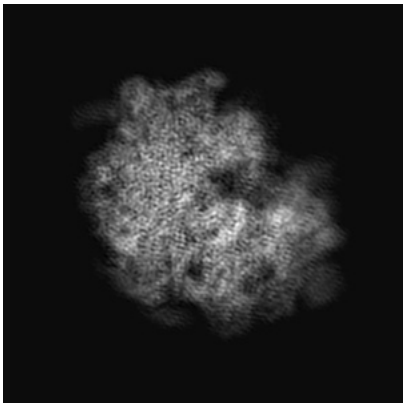
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-0047. These allow visual inspection of the internal detail of the map and identification of artifacts.

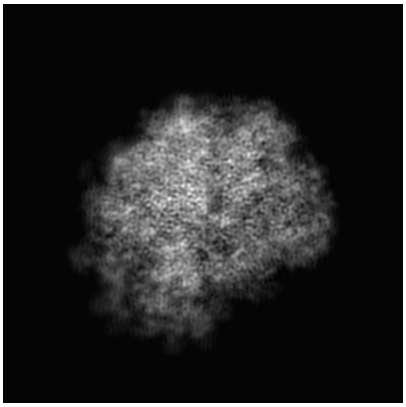
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

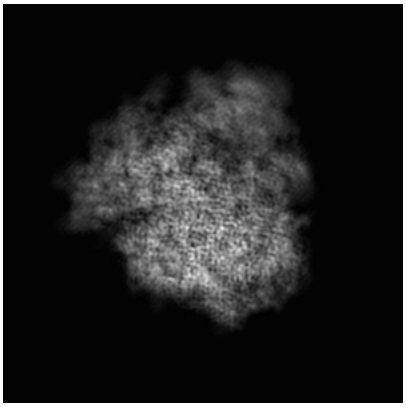
6.1.1 Primary map



X



Y

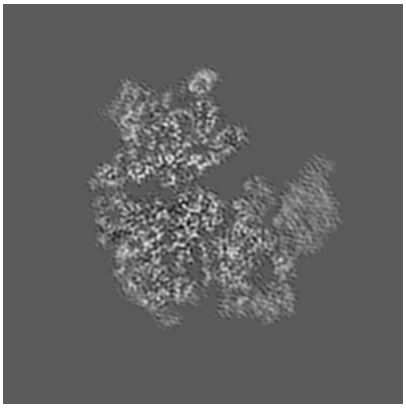


Z

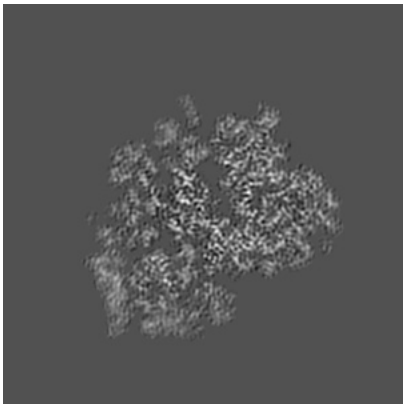
The images above show the map projected in three orthogonal directions.

6.2 Central slices

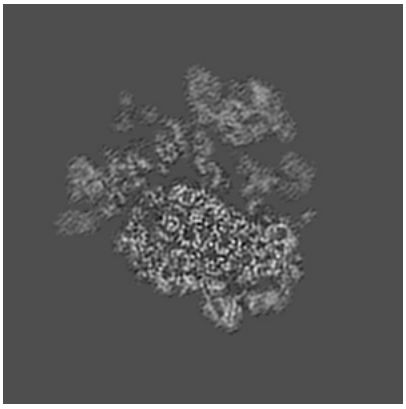
6.2.1 Primary map



X Index: 180



Y Index: 180

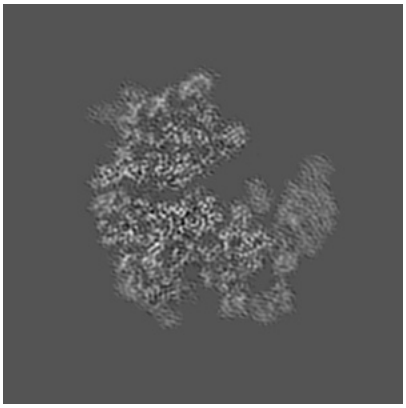


Z Index: 180

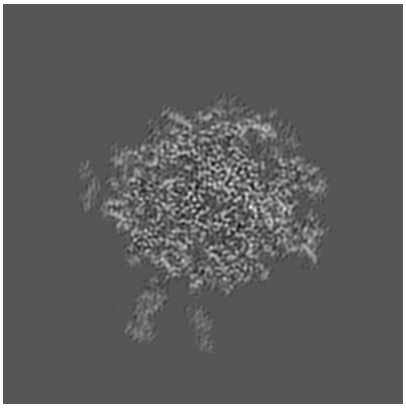
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

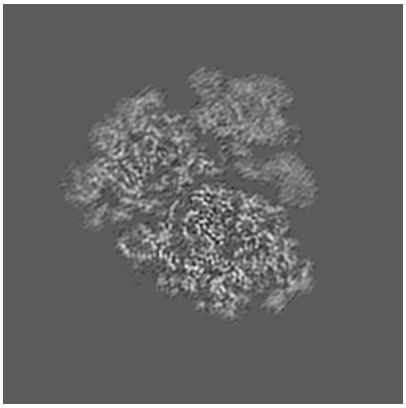
6.3.1 Primary map



X Index: 183



Y Index: 156



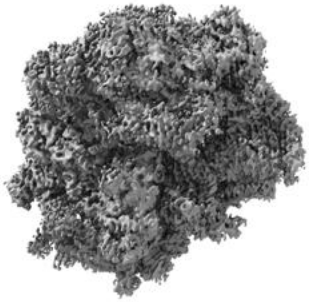
Z Index: 166

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

6.4 Orthogonal surface views (i)

6.4.1 Primary map

X



Y

Z

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

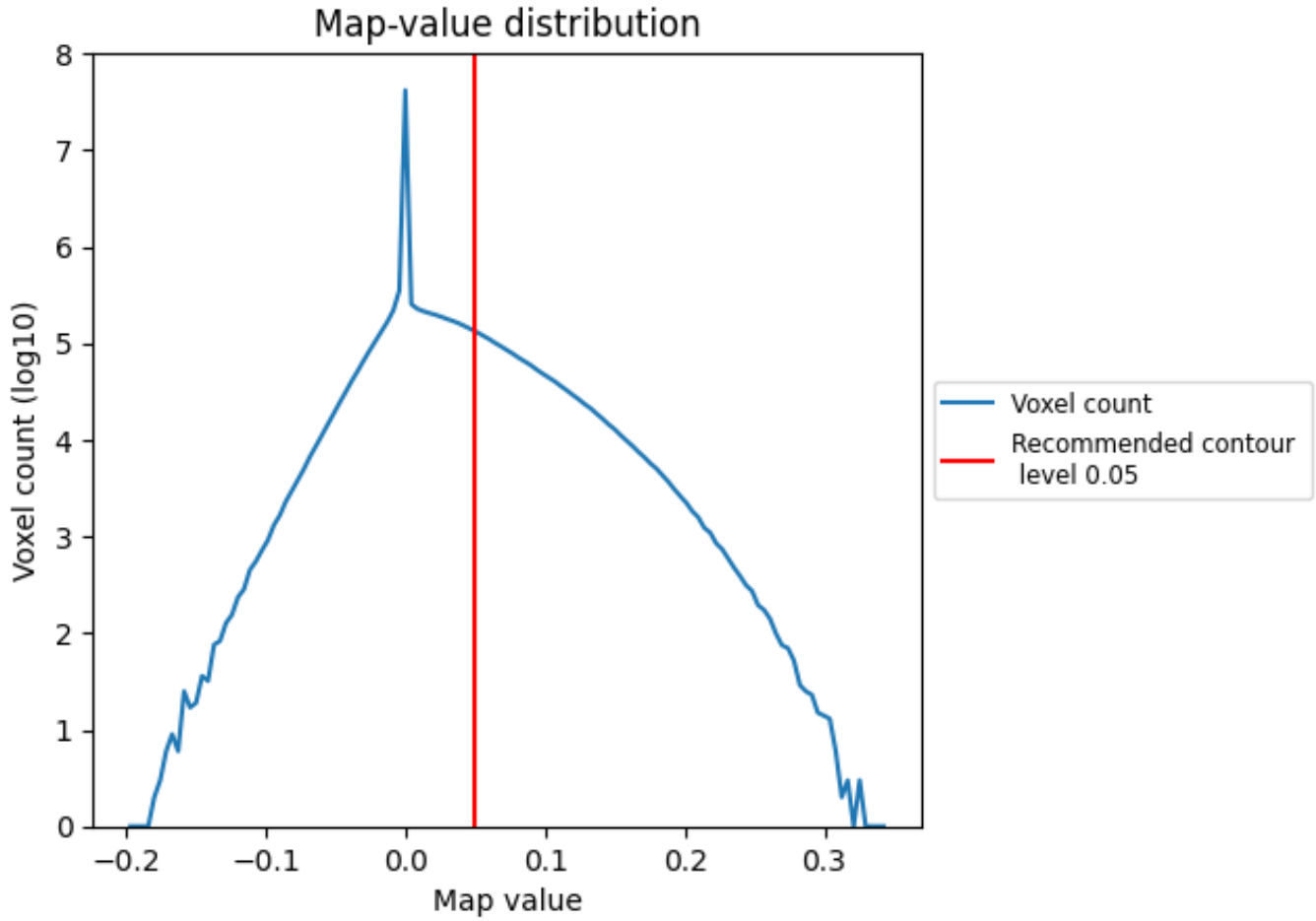
6.5 Mask visualisation (i)

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

7 Map analysis

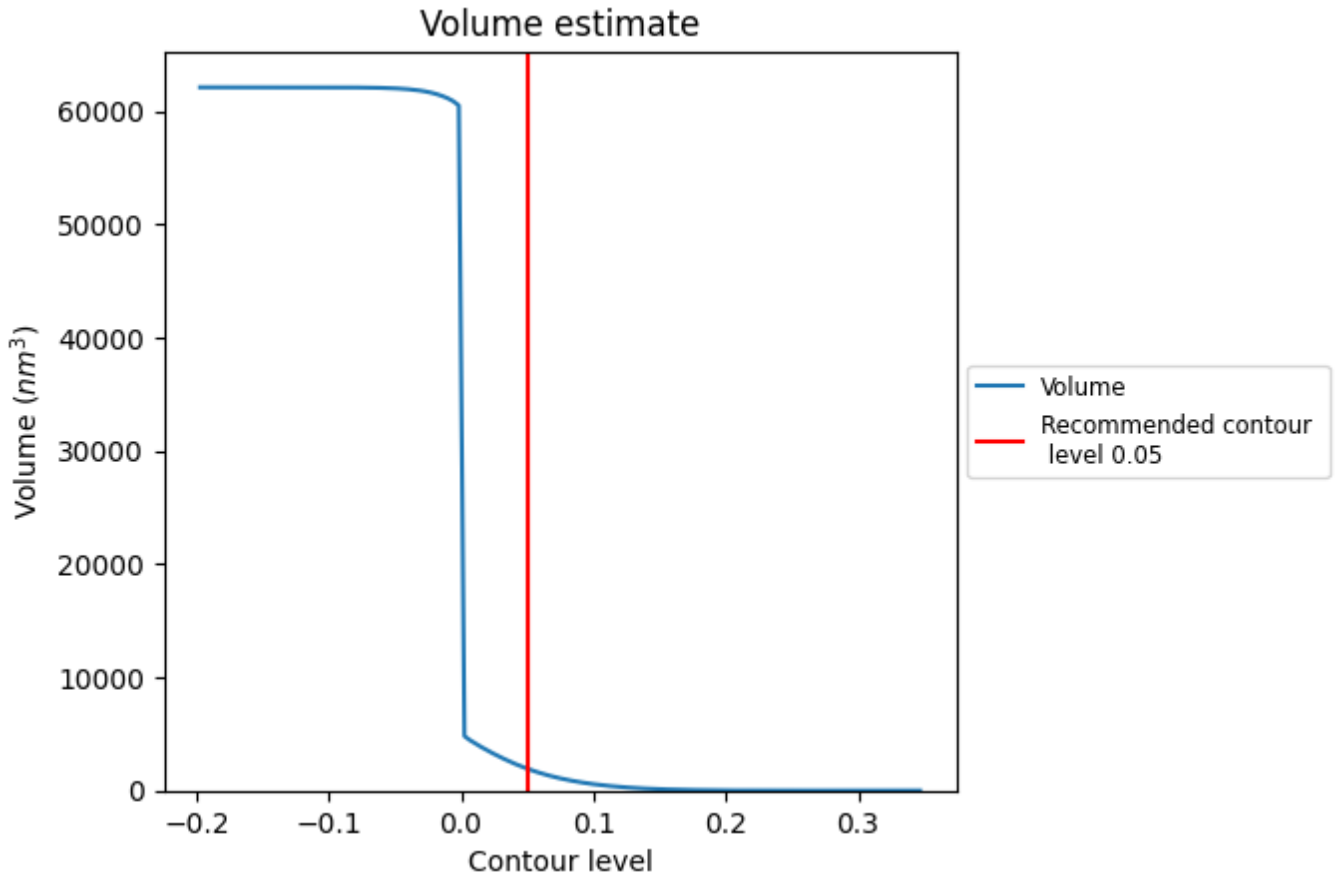
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

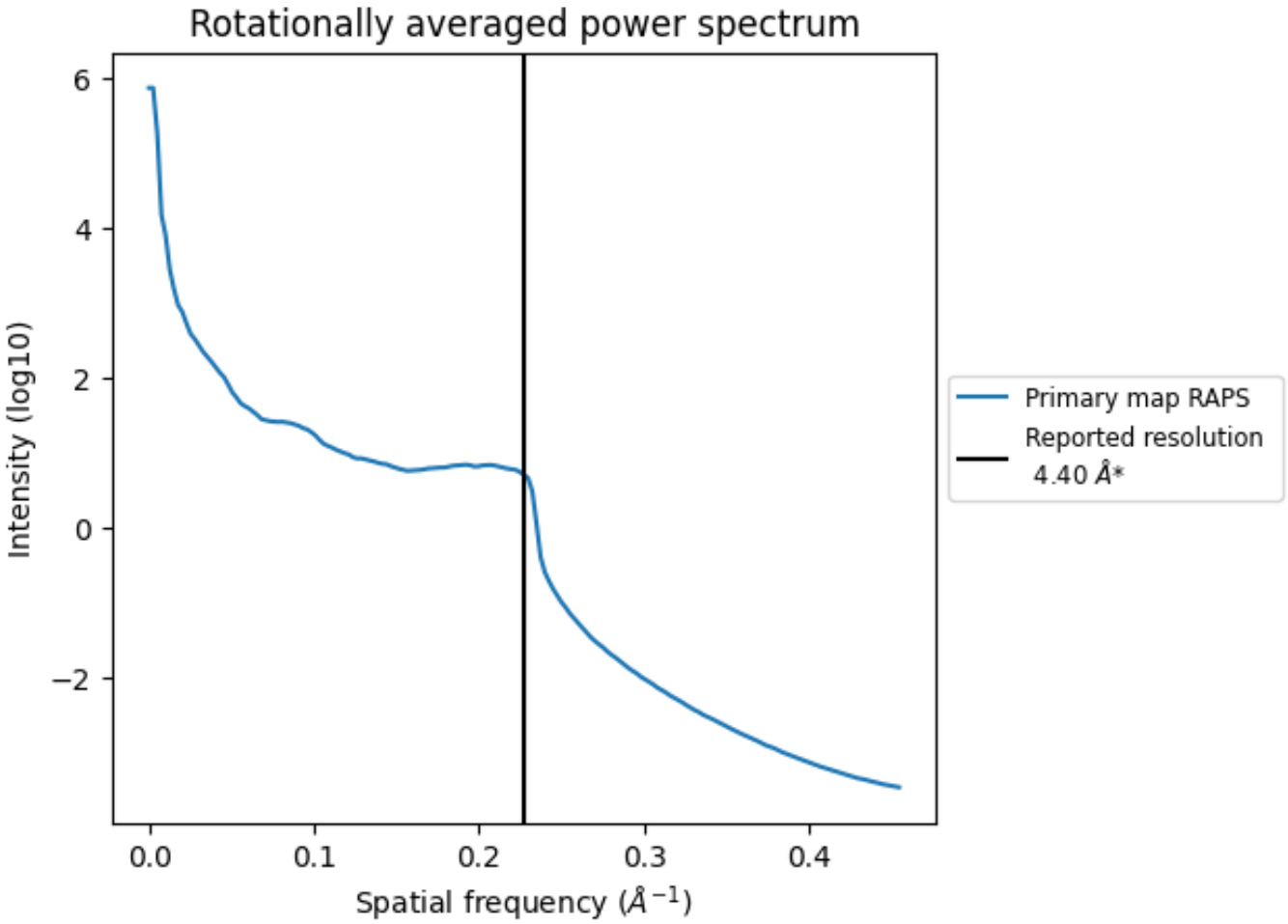
7.2 Volume estimate



The volume at the recommended contour level is 1936 nm^3; this corresponds to an approximate mass of 1749 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 0.227 $Å^{-1}$

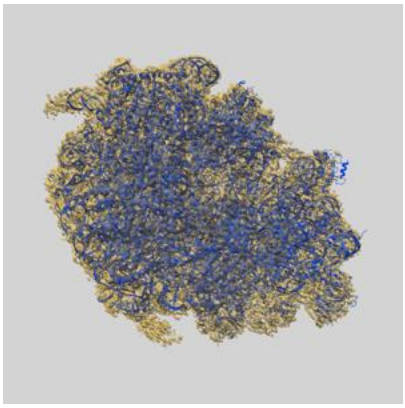
8 Fourier-Shell correlation

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

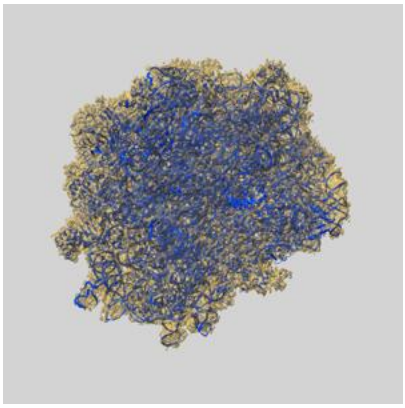
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-0047 and PDB model 6GQ1. Per-residue inclusion information can be found in section 3 on page 20.

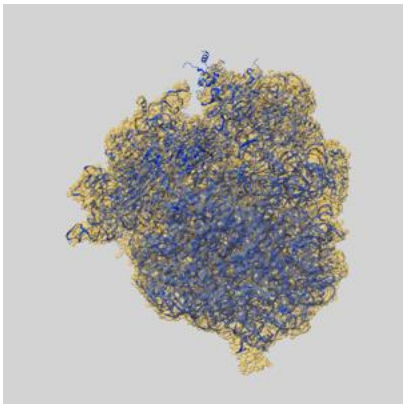
9.1 Map-model overlay



X



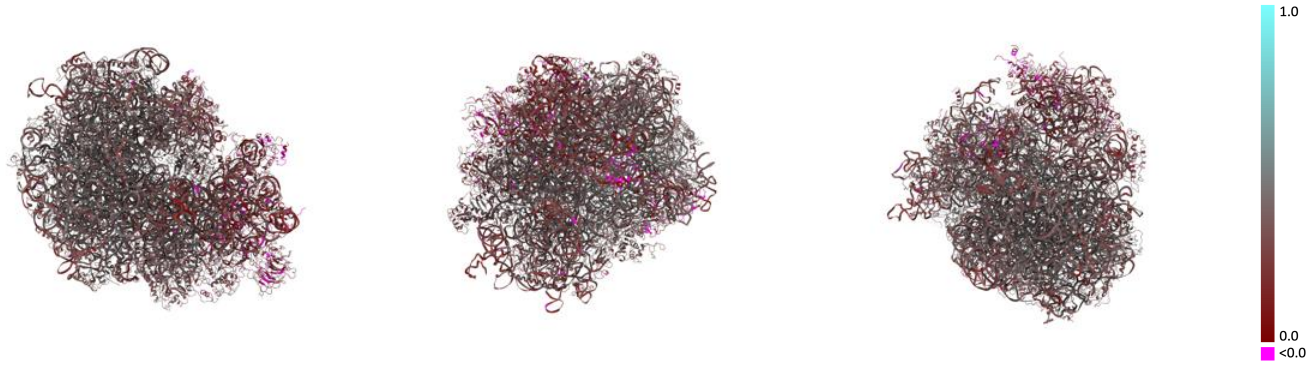
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.05 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

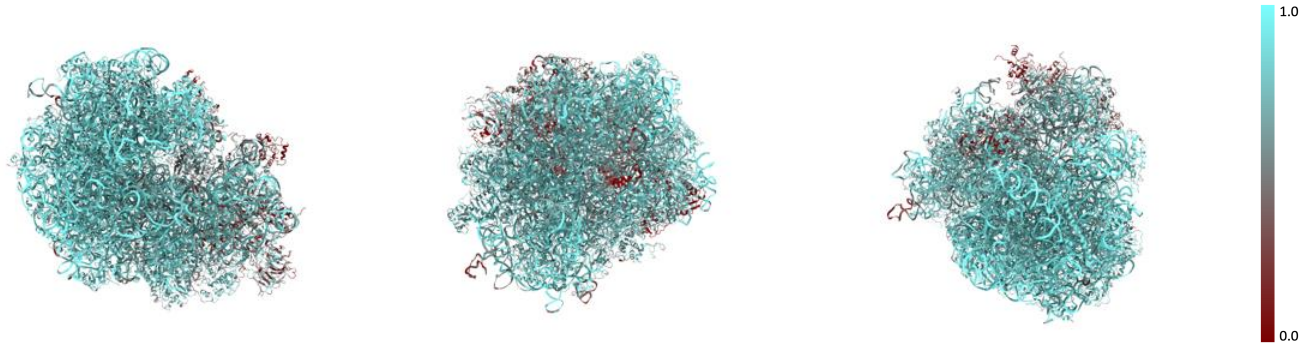
9.2 Q-score mapped to coordinate model



X Y Z

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

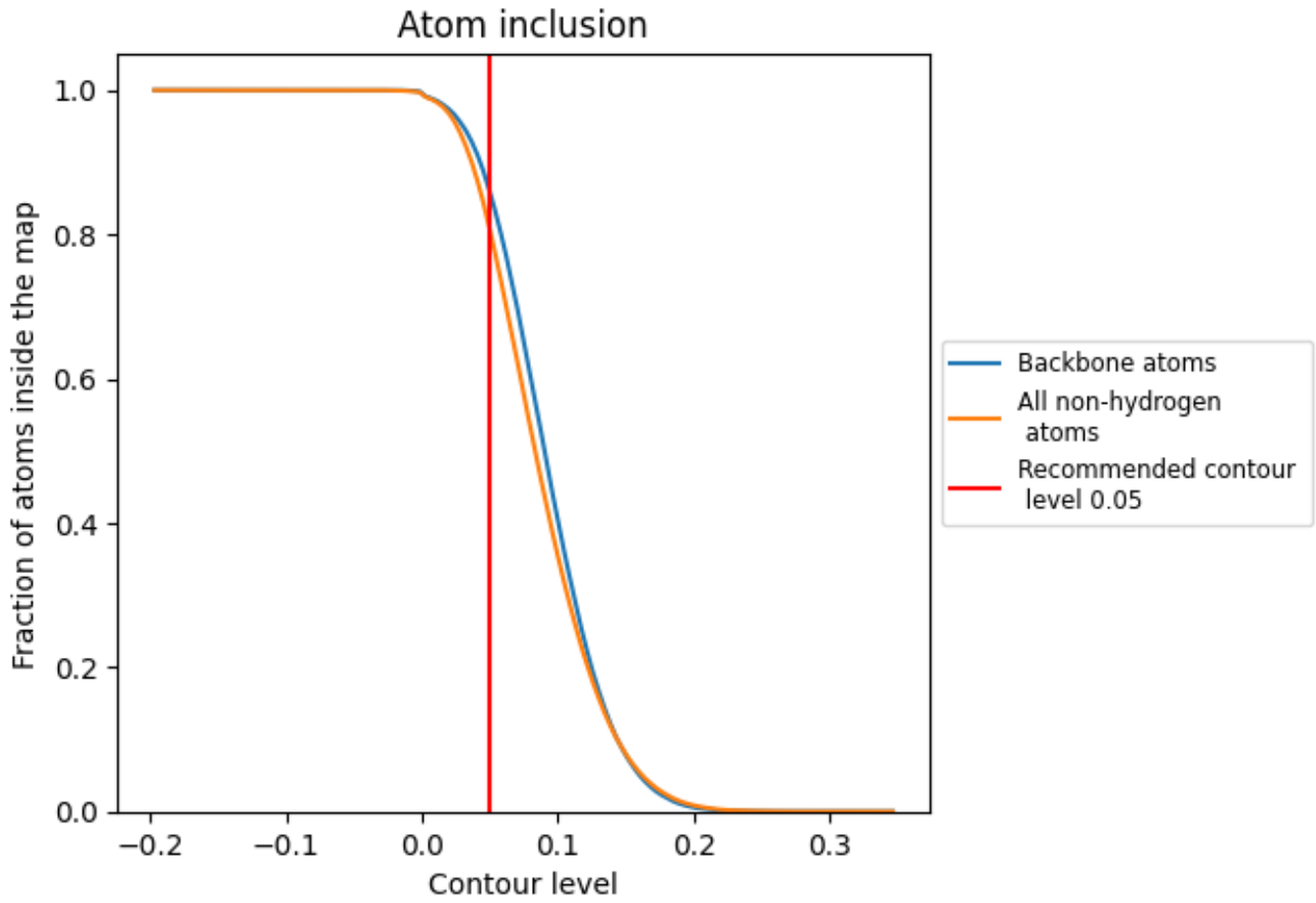
9.3 Atom inclusion mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.05).

9.4 Atom inclusion (i)



At the recommended contour level, 86% of all backbone atoms, 81% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

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

Chain	Atom inclusion	Q-score
All	0.8060	0.3570
1	0.9111	0.3810
2	0.8438	0.3240
3	0.9356	0.3530
4	0.9344	0.3930
A	0.7740	0.4380
AA	0.6570	0.2610
AB	0.6779	0.3880
AC	0.1068	0.1250
AD	0.7697	0.3720
AE	0.7993	0.3800
AF	0.5996	0.2770
AG	0.5533	0.2570
AH	0.5300	0.2530
AI	0.5572	0.2540
AJ	0.5782	0.2420
AK	0.3583	0.2170
AL	0.7108	0.3380
AM	0.7655	0.3910
AN	0.6984	0.3920
AO	0.7464	0.3370
AP	0.3711	0.1990
AQ	0.7459	0.3600
AR	0.7475	0.3620
AS	0.4109	0.2240
AT	0.7028	0.2720
AU	0.6253	0.3360
AV	0.4710	0.2100
AW	0.3214	0.1830
AX	0.6667	0.2570
AY	0.2988	0.3080
AZ	0.6606	0.3520
B	0.8064	0.4140
C	0.8276	0.4080
D	0.7764	0.3260

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Chain	Atom inclusion	Q-score
E	0.8087	0.3660
F	0.8175	0.3970
G	0.7980	0.3630
H	0.7725	0.3940
I	0.7785	0.4000
J	0.7445	0.3430
L	0.8117	0.3950
M	0.8109	0.3730
N	0.8332	0.4160
O	0.8137	0.3990
P	0.8198	0.4120
P0	0.1918	0.1770
P2	0.1749	0.1810
Q	0.8151	0.4190
R	0.7978	0.3970
S	0.8031	0.4050
T	0.7976	0.4070
U	0.7558	0.3640
V	0.7365	0.4370
W	0.7861	0.4210
X	0.7834	0.4060
Y	0.8323	0.4070
Z	0.8170	0.3910
a	0.8345	0.4160
b	0.7633	0.4150
c	0.7975	0.3830
d	0.7526	0.4080
e	0.8159	0.4230
f	0.8027	0.4150
g	0.7861	0.4240
h	0.7837	0.3870
i	0.7946	0.3630
j	0.8552	0.4370
k	0.7462	0.3910
l	0.7904	0.4110
m	0.7772	0.4180
n	0.6298	0.4360
o	0.7720	0.4100
p	0.7627	0.4320
q	0.7252	0.3320
r	0.7528	0.3650
s	0.7289	0.3740

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Chain	Atom inclusion	Q-score
t	0.5027	0.2530
u	0.7383	0.3500
v	0.4736	0.2470
w	0.7182	0.3120
x	0.7032	0.3170
y	0.7326	0.3570
z	0.7559	0.3450