



## Full wwPDB EM Validation Report ⓘ

Dec 17, 2023 – 03:39 AM JST

PDB ID : 8JDM  
EMDB ID : EMD-36181  
Title : Structure of the Human cytoplasmic Ribosome with human tRNA  
Tyr(GalQ34) and mRNA(UAU) (rotated state)  
Authors : Ishiguro, K.; Yokoyama, T.; Shirouzu, M.; Suzuki, T.  
Deposited on : 2023-05-14  
Resolution : 2.67 Å (reported)  
Based on initial models : 6Y57, 6Y0G

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

We welcome your comments at [validation@mail.wwpdb.org](mailto: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>.

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

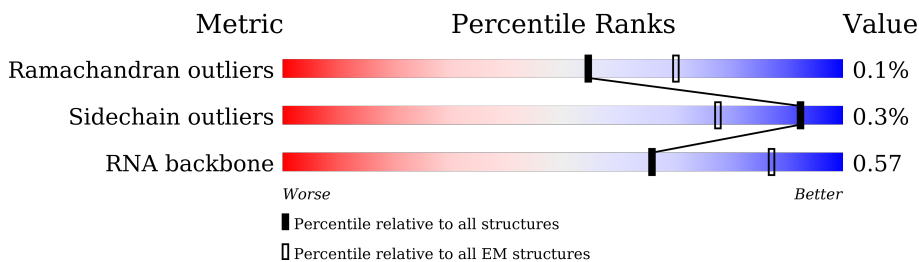
EMDB validation analysis : 0.0.1.dev70  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
MolProbity : 4.02b-467  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.9  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.36

# 1 Overall quality at a glance

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

The reported resolution of this entry is 2.67 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.




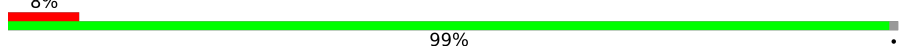

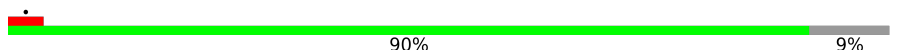

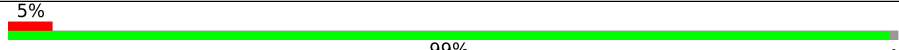
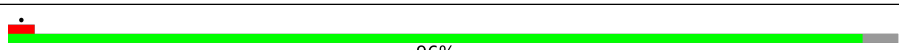
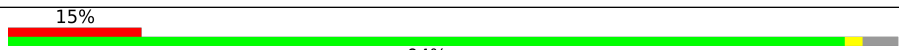
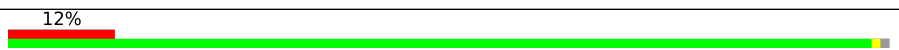
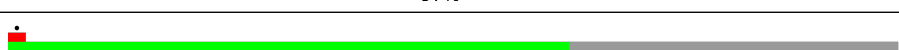
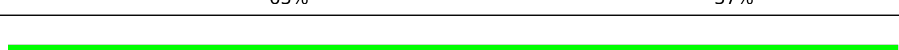
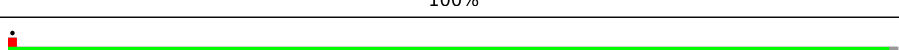
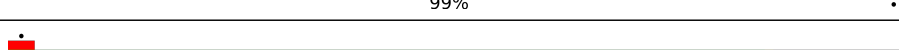
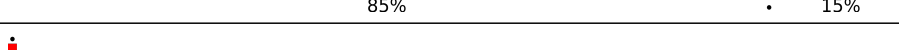
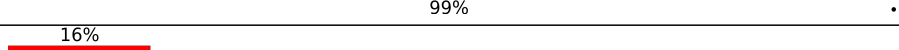
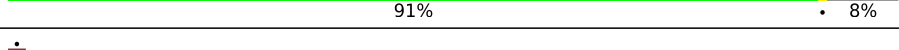
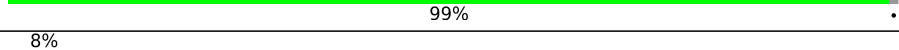
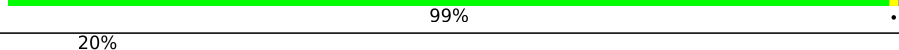

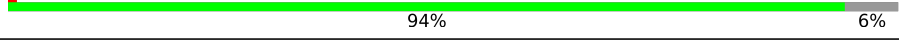

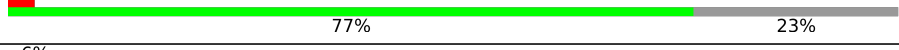
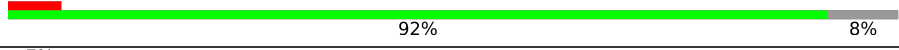
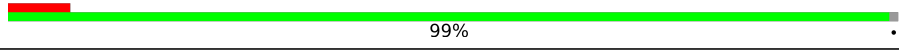
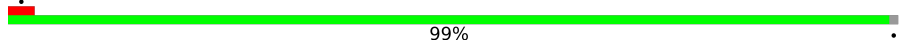
Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion  $< 40\%$ ). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	14	
2	B	76	
2	C	76	
3	D	5070	
4	E	120	
5	F	156	
6	G	257	
7	H	403	

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Mol	Chain	Length	Quality of chain
8	I	427	 84% 15%
9	J	297	 99% 8%
10	K	288	 75% 25% 9%
11	L	248	 90% 9%
12	M	266	 85% 15% 16%
13	N	192	 99% 5%
14	O	214	 96%
15	P	178	 94% 15%
16	Q	211	 97% 12%
17	R	215	 63% 37%
18	S	204	 100%
19	T	203	 99%
20	U	184	 85% 15%
21	V	188	 99%
22	W	196	 91% 8% 16%
23	X	176	 99%
24	Y	160	 99% 8%
25	Z	128	 78% 21% 20%
26	a	140	 94% 6%
27	b	157	 40% 60%
28	c	156	 77% 23%
29	d	145	 92% 8% 6%
30	e	136	 99% 7%
31	f	148	 99%
32	g	159	 64% 35% 15%

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Mol	Chain	Length	Quality of chain
33	h	115	10% 83% 16%
34	i	125	6% 85% 14%
35	j	135	95% 5%
36	k	110	99%
37	l	117	9% 96%
38	m	123	98%
39	n	105	13% 97%
40	o	97	87% 11%
41	p	70	21% 99%
42	q	51	98%
43	r	128	41% 59%
44	s	25	100%
45	t	106	13% 98%
46	u	92	99%
47	v	137	91% 9%
48	w	1869	18% 63% 24% 13%
49	x	295	30% 73% 27%
50	y	264	33% 80% 20%
51	z	293	15% 72% 28%
52	0	243	59% 87% 13%
53	1	263	73% 98%
54	2	204	61% 92% 8%
55	3	249	86% 94% 5%
56	4	194	80% 96%
57	5	208	67% 99%

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Mol	Chain	Length	Quality of chain
58	6	194	66% 93% 6%
59	7	165	55% 58% 42%
60	8	158	30% 88% 10%
61	9	151	34% 99%
62	AA	151	22% 88% 11%
63	AB	145	59% 92% 8%
64	AC	146	63% 97%
65	AD	135	73% 96% ..
66	AE	152	64% 95% 5%
67	AF	145	62% 99%
68	AG	119	64% 86% 14%
69	AH	83	39% 100%
70	AI	130	8% 98% ..
71	AJ	143	21% 99%
72	AK	133	86% 92% 8%
73	AL	125	54% 58% 42%
74	AM	115	21% 86% 14%
75	AN	84	56% 98% ..
76	AO	69	57% 88% 12%
77	AP	56	18% 80% 20%
78	AQ	59	69% 92% 7%
79	AR	317	98% 97% ..

## 2 Entry composition [i](#)

There are 82 unique types of molecules in this entry. The entry contains 209349 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 mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	A	14	288	130	40	104	14	0	0

- Molecule 2 is a RNA chain called tRNA (Tyr).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	B	73	1580	715	281	512	72	0	0
2	C	73	1580	715	281	512	72	0	0

- Molecule 3 is a RNA chain called 28S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	D	3512	75336	33585	13757	24482	3512	0	0

- Molecule 4 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	E	120	2558	1141	456	842	119	0	0

- Molecule 5 is a RNA chain called 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	F	156	3315	1481	585	1094	155	0	0

- Molecule 6 is a protein called 60S ribosomal protein L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	G	247	1891	1185	388	312	6	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	H	398	3211	2045	604	548	14	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	I	363	2884	1815	577	478	14	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	J	293	2379	1506	434	425	14	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	K	217	1751	1128	332	287	4	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	L	225	1870	1202	358	301	9	0	0

- Molecule 12 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	M	227	1832	1168	352	308	4	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
13	N	190	Total	C	N	O	S	0	0
			1518	956	284	272	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
14	O	206	Total	C	N	O	S	0	0
			1660	1053	319	275	13		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
15	P	170	Total	C	N	O	S	0	0
			1362	861	254	241	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
16	Q	208	Total	C	N	O	S	0	0
			1682	1052	348	278	4		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
17	R	136	Total	C	N	O	S	0	0
			1120	719	215	179	7		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
18	S	203	Total	C	N	O	S	0	0
			1701	1072	359	266	4		

- Molecule 19 is a protein called 60S ribosomal protein L13a.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	T	200	Total	C	N	O	S	0	0
			1641	1058	320	258	5		

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



Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	U	157	1273	797	246	221	9	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	V	187	1513	944	314	250	5	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	W	180	1508	933	328	238	9	0	0

- Molecule 23 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	X	175	1453	925	283	235	10	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	Y	159	1298	823	252	217	6	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	Z	101	821	526	143	150	2	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	a	131	979	618	184	172	5	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
27	b	63	Total	C	N	O	S	0	0
			528	337	103	85	3		

- Molecule 28 is a protein called 60S ribosomal protein L23a.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	c	120	Total	C	N	O	S	0	0
			981	628	185	167	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
29	d	134	Total	C	N	O	S	0	0
			1115	700	226	186	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
30	e	135	Total	C	N	O	S	0	0
			1107	714	208	182	3		

- Molecule 31 is a protein called 60S ribosomal protein L27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	f	147	Total	C	N	O	S	0	0
			1162	736	237	186	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
32	g	104	Total	C	N	O	S	0	0
			832	515	182	132	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
33	h	97	Total	C	N	O	S	0	0
			755	479	133	137	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
34	i	107	888	560	171	155	2	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
35	j	128	1053	667	216	165	5	0	0

- Molecule 36 is a protein called 60S ribosomal protein L35a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
36	k	109	876	555	174	144	3	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
37	l	112	888	555	183	144	6	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
38	m	121	1010	638	204	167	1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
39	n	102	832	521	177	129	5	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
40	o	86	705	434	155	111	5	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
41	p	69	Total	C	N	O	S	0	0
			569	366	103	99	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
42	q	50	Total	C	N	O	S	0	0
			444	281	98	64	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
43	r	52	Total	C	N	O	S	0	0
			429	266	90	67	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
44	s	25	Total	C	N	O	S	0	0
			239	145	64	27	3		

- Molecule 45 is a protein called 60S ribosomal protein L36a.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	t	105	Total	C	N	O	S	0	0
			862	542	175	139	6		

- Molecule 46 is a protein called 60S ribosomal protein L37a.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	u	91	Total	C	N	O	S	0	0
			708	445	136	120	7		

- Molecule 47 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	v	125	Total	C	N	O	S	0	0
			1002	622	207	168	5		

- Molecule 48 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
48	w	1634	34933	15622	6267	11411	1633	0	0

- Molecule 49 is a protein called 40S ribosomal protein SA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
49	x	215	1695	1077	297	313	8	0	0

- Molecule 50 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
50	y	212	1725	1096	308	307	14	0	0

- Molecule 51 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
51	z	212	1633	1059	279	285	10	0	0

- Molecule 52 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
52	0	212	1646	1050	299	290	7	0	0

- Molecule 53 is a protein called 40S ribosomal protein S4, X isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
53	1	262	2070	1321	383	358	8	0	0

- Molecule 54 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
54	2	187	1464	916	276	265	7	0	0

- Molecule 55 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	3	237	Total	C	N	O	S	0	0
			1917	1197	384	329	7		

- Molecule 56 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	4	187	Total	C	N	O	S	0	0
			1510	963	278	268	1		

- Molecule 57 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	5	206	Total	C	N	O	S	0	0
			1674	1049	329	291	5		

- Molecule 58 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	6	182	Total	C	N	O	S	0	0
			1506	959	300	245	2		

- Molecule 59 is a protein called 40S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	7	96	Total	C	N	O	S	0	0
			810	530	143	131	6		

- Molecule 60 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	8	142	Total	C	N	O	S	0	0
			1150	732	215	197	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
61	9	150	Total	C	N	O	S	0	0
			1208	773	229	205	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
62	AA	134	1002	612	197	187	6	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
63	AB	134	1103	703	208	185	7	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
64	AC	142	1128	717	213	195	3	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
65	AD	131	1057	665	197	191	4	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
66	AE	144	1169	731	236	201	1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
67	AF	143	1111	696	213	198	4	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
68	AG	102	799	501	153	141	4	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
69	AH	83	636	393	117	121	5	0	0

- Molecule 70 is a protein called 40S ribosomal protein S15a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
70	AI	129	1034	659	193	176	6	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
71	AJ	141	1098	693	219	183	3	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
72	AK	123	1002	634	196	167	5	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
73	AL	72	574	368	104	101	1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
74	AM	99	792	492	165	130	5	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
75	AN	83	643	402	119	115	7	0	0

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



Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
76	AO	61	479	292	95	90	2	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
77	AP	45	370	228	77	60	5	0	0

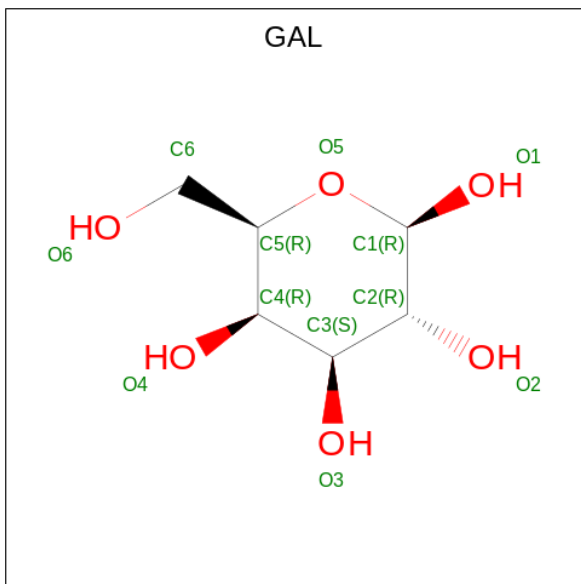
- Molecule 78 is a protein called 40S ribosomal protein S30.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
78	AQ	55	438	271	95	71	1	0	0

- Molecule 79 is a protein called Receptor of activated protein C kinase 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
79	AR	313	2436	1535	424	465	12	0	0

- Molecule 80 is beta-D-galactopyranose (three-letter code: GAL) (formula: C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
80	B	1	11	6	5	0

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Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
80	C	1	11	6	5	0

- Molecule 81 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
81	D	391	391	391	0
81	E	10	10	10	0
81	F	5	5	5	0
81	G	2	2	2	0
81	H	1	1	1	0
81	I	1	1	1	0
81	N	1	1	1	0
81	O	1	1	1	0
81	S	1	1	1	0
81	U	1	1	1	0
81	V	2	2	2	0
81	W	1	1	1	0
81	X	1	1	1	0
81	a	1	1	1	0
81	g	1	1	1	0
81	j	1	1	1	0
81	k	1	1	1	0
81	l	1	1	1	0

*Continued on next page...*

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Mol	Chain	Residues	Atoms		AltConf
81	w	93	Total 93	Mg 93	0
81	2	1	Total 1	Mg 1	0
81	AA	1	Total 1	Mg 1	0
81	AG	1	Total 1	Mg 1	0
81	AM	1	Total 1	Mg 1	0

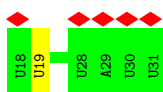
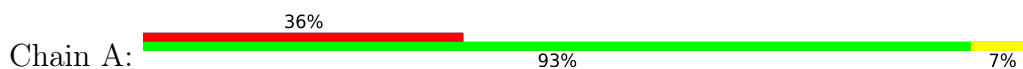
- Molecule 82 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
82	o	1	Total 1	Zn 1	0
82	r	1	Total 1	Zn 1	0
82	t	1	Total 1	Zn 1	0
82	u	1	Total 1	Zn 1	0
82	w	1	Total 1	Zn 1	0
82	AA	1	Total 1	Zn 1	0

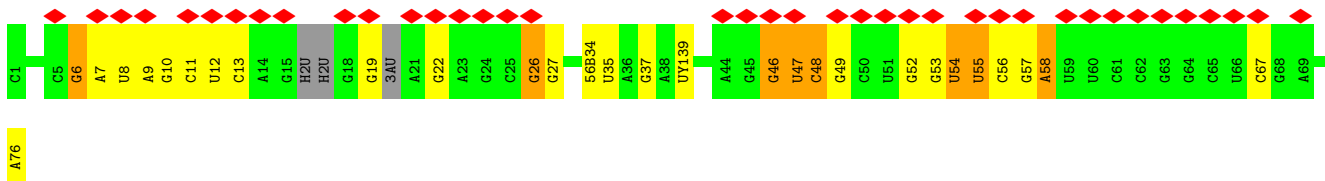
### 3 Residue-property plots [i](#)

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.

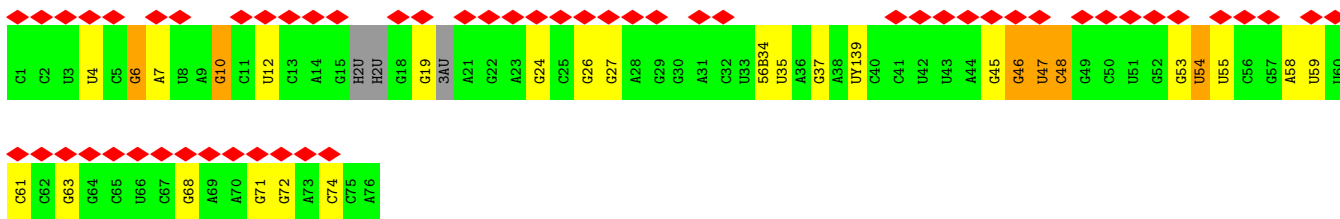
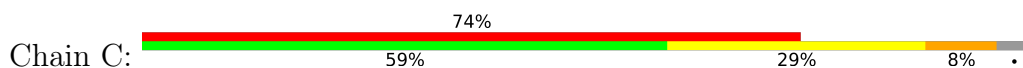
- Molecule 1: mRNA



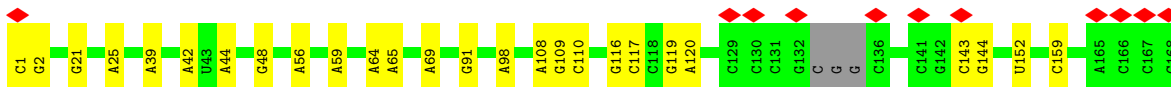
- Molecule 2: tRNA (Tyr)

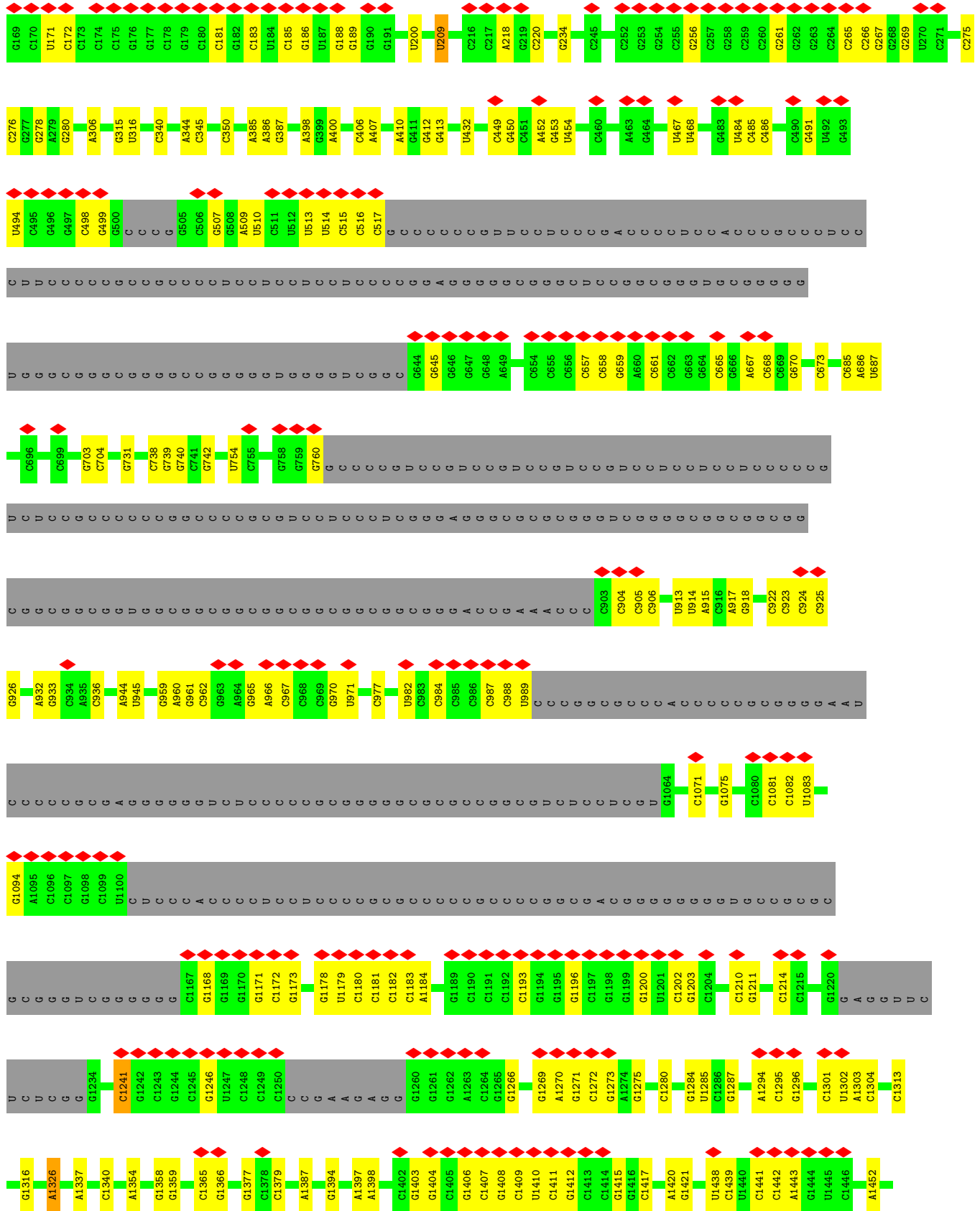


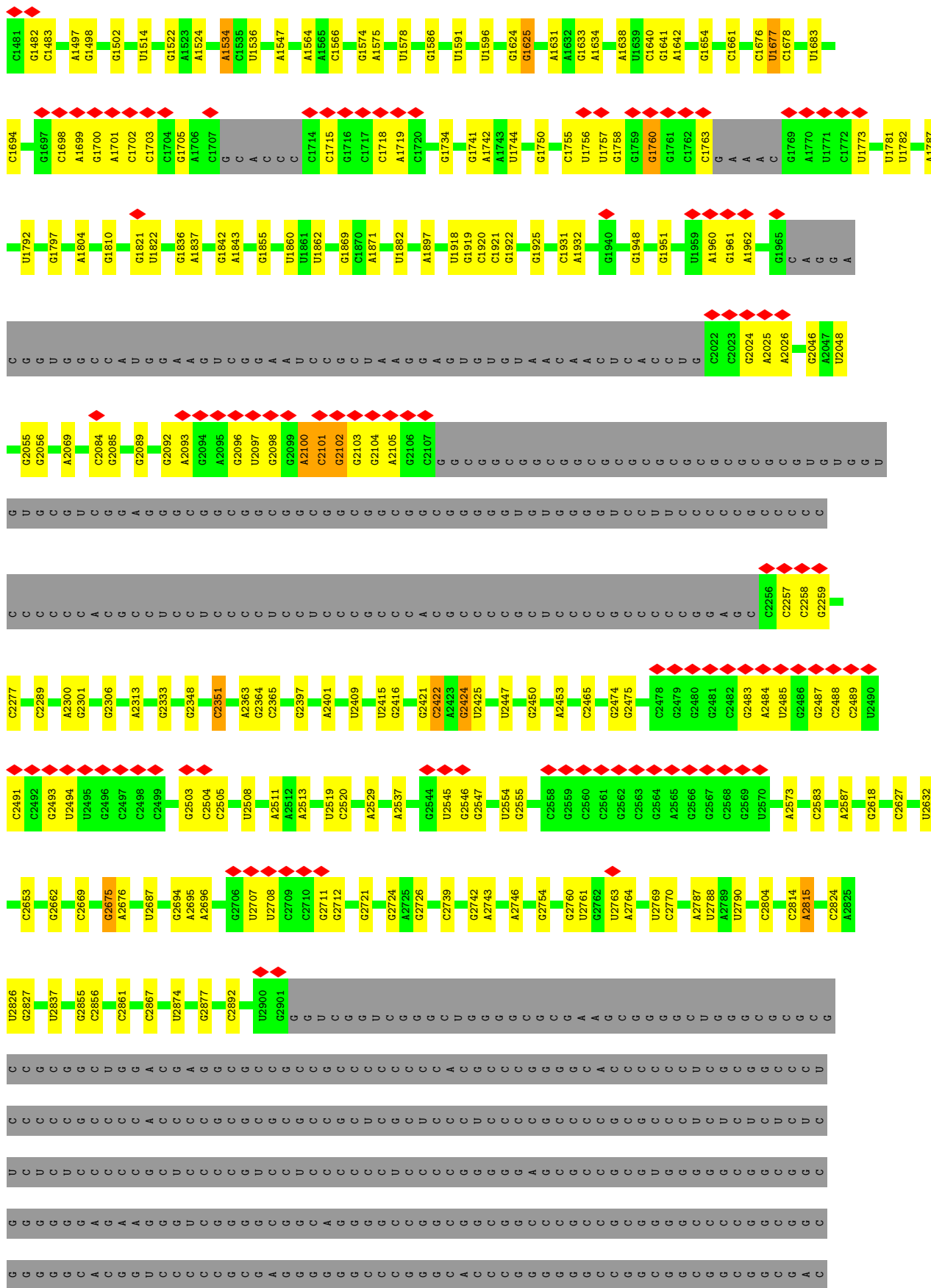
- Molecule 2: tRNA (Tyr)



- Molecule 3: 28S ribosomal RNA



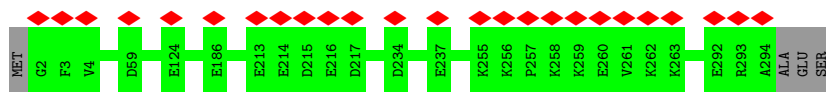




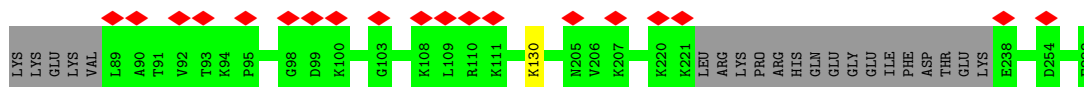
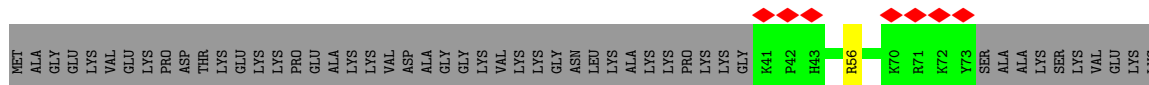
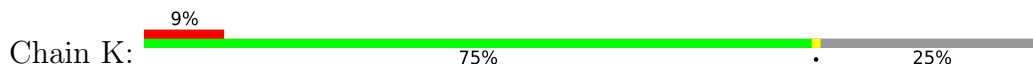








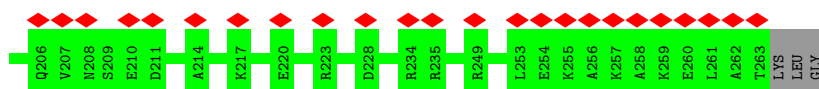
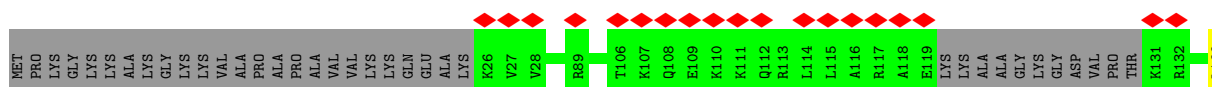
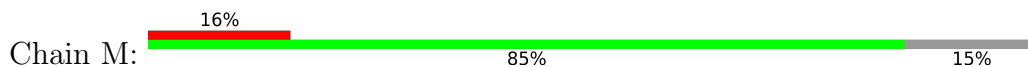
- Molecule 10: 60S ribosomal protein L6



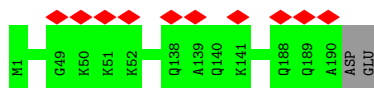
- Molecule 11: 60S ribosomal protein L7



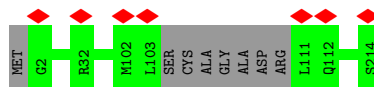
- Molecule 12: 60S ribosomal protein L7a



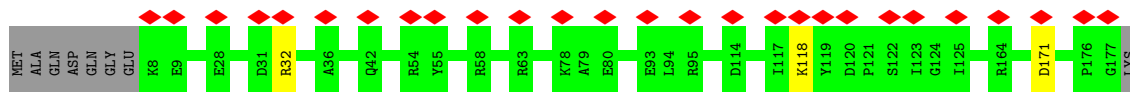
- Molecule 13: 60S ribosomal protein L9



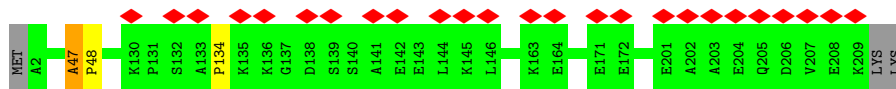
- Molecule 14: 60S ribosomal protein L10-like



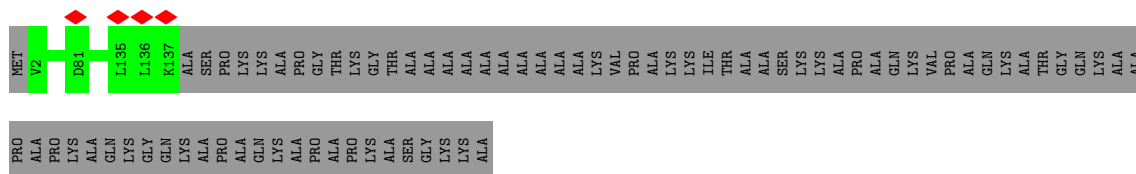
- Molecule 15: 60S ribosomal protein L11



- Molecule 16: 60S ribosomal protein L13



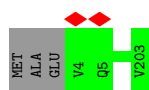
- Molecule 17: 60S ribosomal protein L14



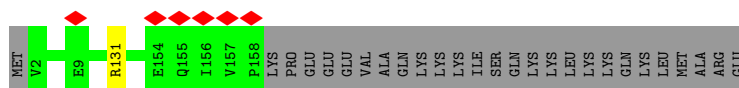
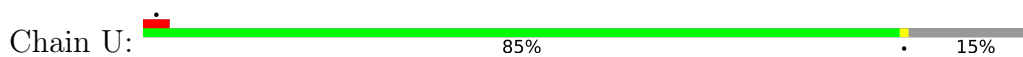
- Molecule 18: 60S ribosomal protein L15



- Molecule 19: 60S ribosomal protein L13a

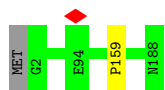


- Molecule 20: 60S ribosomal protein L17

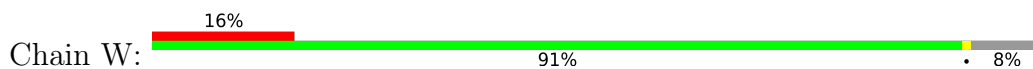


- Molecule 21: 60S ribosomal protein L18

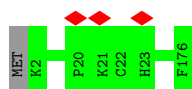




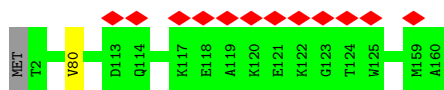
• Molecule 22: 60S ribosomal protein L19



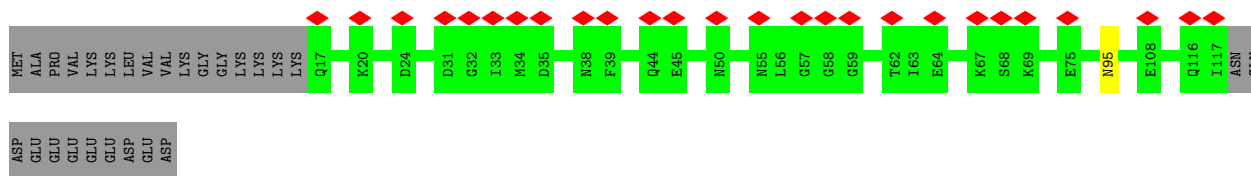
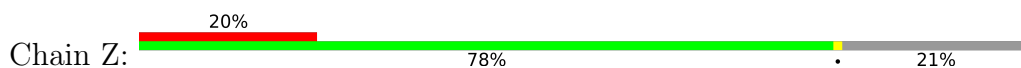
• Molecule 23: 60S ribosomal protein L18a



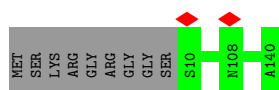
• Molecule 24: 60S ribosomal protein L21



• Molecule 25: 60S ribosomal protein L22



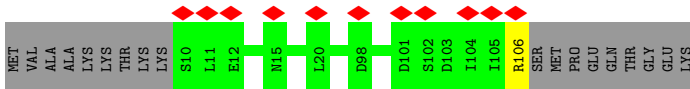
• Molecule 26: 60S ribosomal protein L23



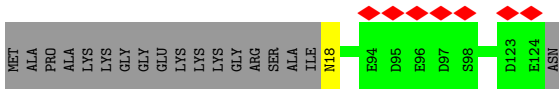
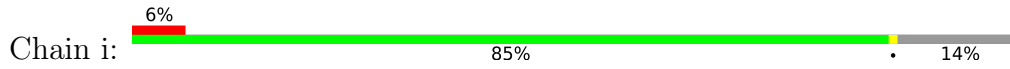
• Molecule 27: 60S ribosomal protein L24



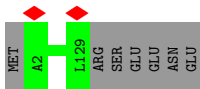




- Molecule 34: 60S ribosomal protein L31



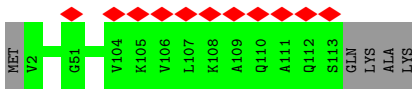
- Molecule 35: 60S ribosomal protein L32



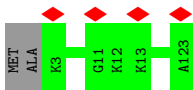
- Molecule 36: 60S ribosomal protein L35a



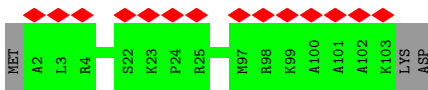
- Molecule 37: 60S ribosomal protein L34



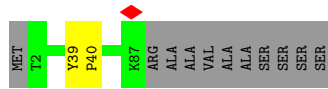
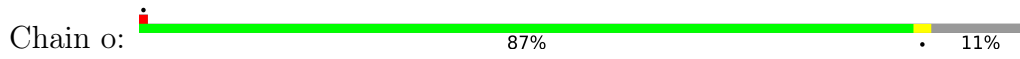
- Molecule 38: 60S ribosomal protein L35



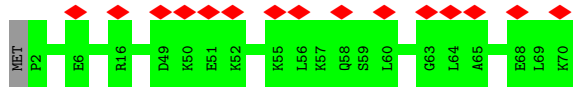
- Molecule 39: 60S ribosomal protein L36



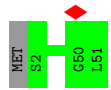
- Molecule 40: 60S ribosomal protein L37



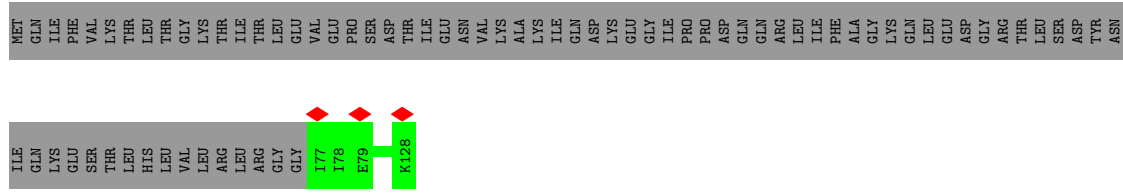
- Molecule 41: 60S ribosomal protein L38



- Molecule 42: 60S ribosomal protein L39



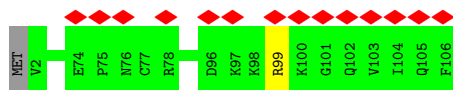
- Molecule 43: Ubiquitin-60S ribosomal protein L40



- Molecule 44: 60S ribosomal protein L41



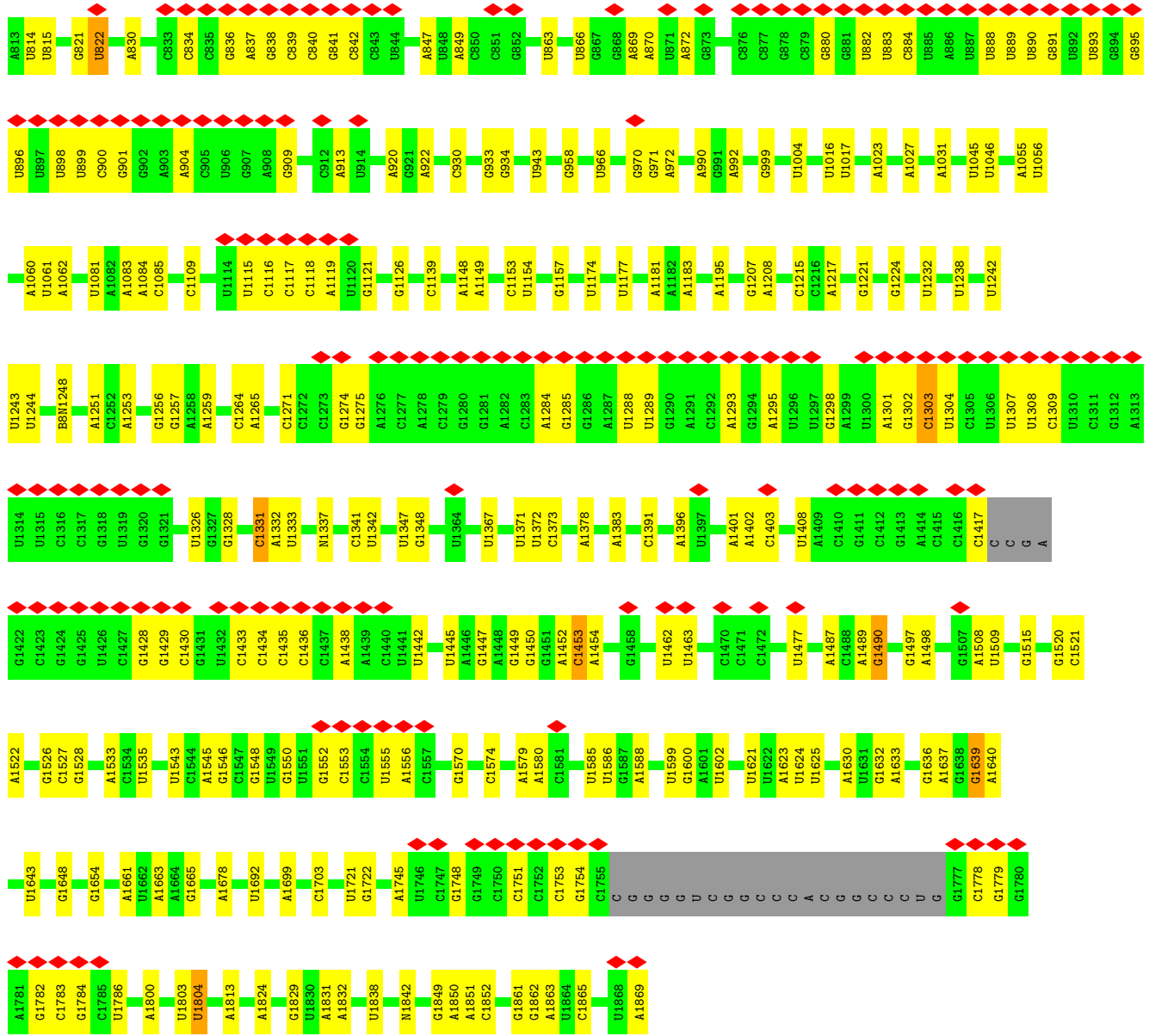
- Molecule 45: 60S ribosomal protein L36a



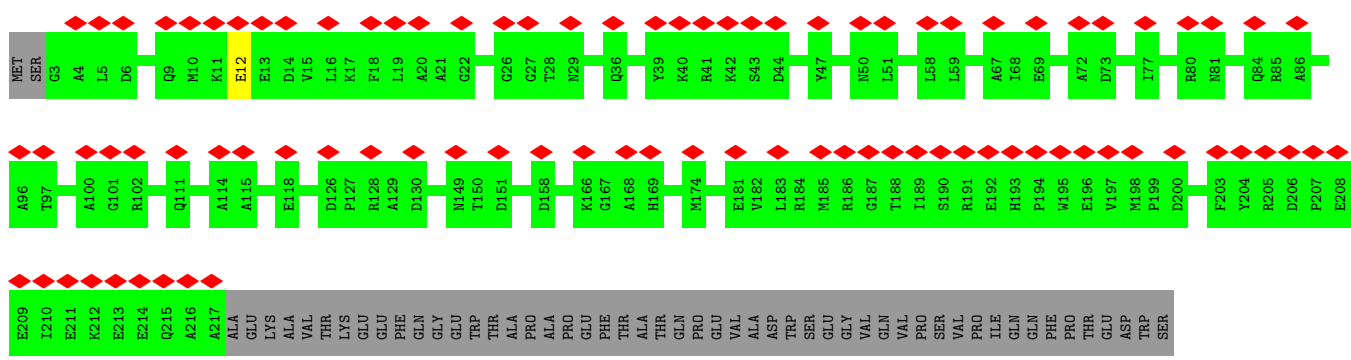
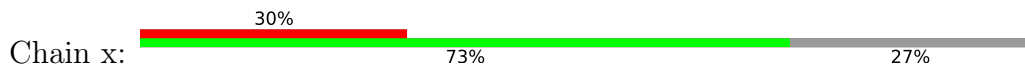
- Molecule 46: 60S ribosomal protein L37a







• Molecule 49: 40S ribosomal protein SA

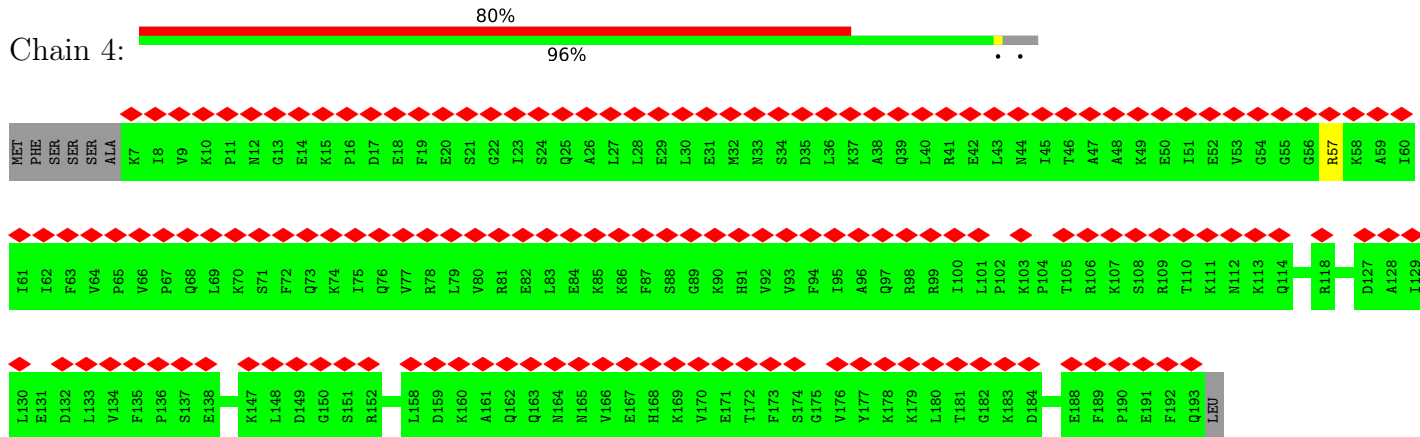




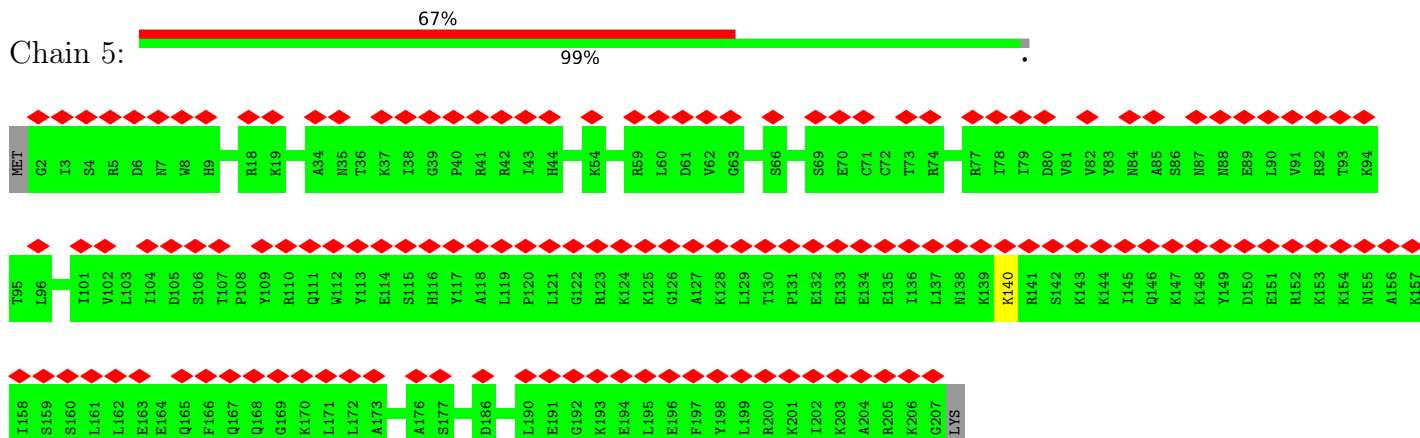




• Molecule 56: 40S ribosomal protein S7



• Molecule 57: 40S ribosomal protein S8

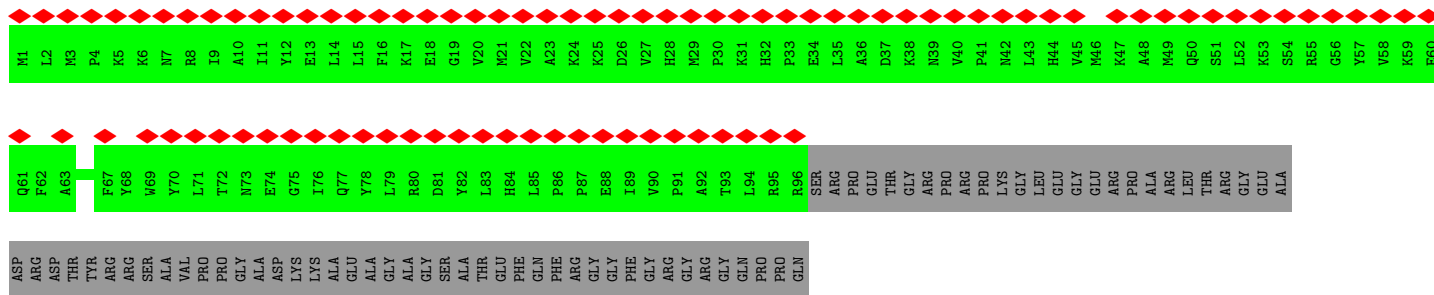


• Molecule 58: 40S ribosomal protein S9

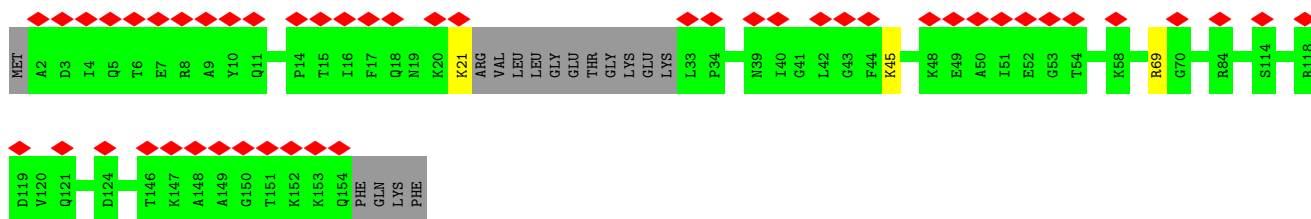
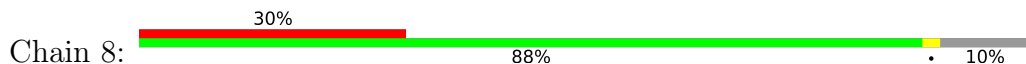


• Molecule 59: 40S ribosomal protein S10

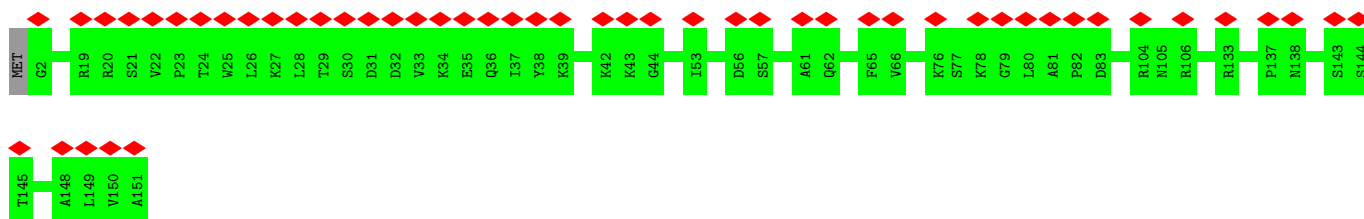




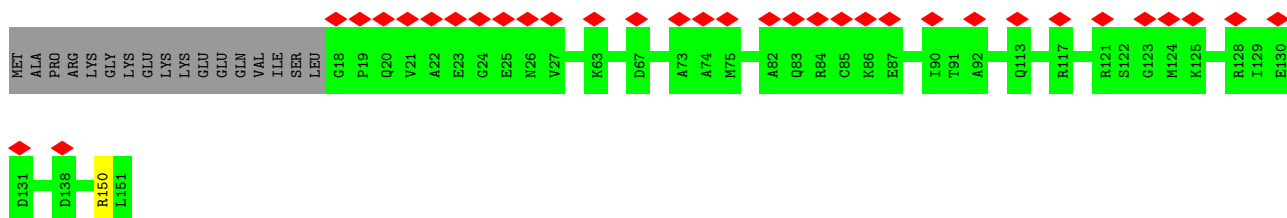
• Molecule 60: 40S ribosomal protein S11



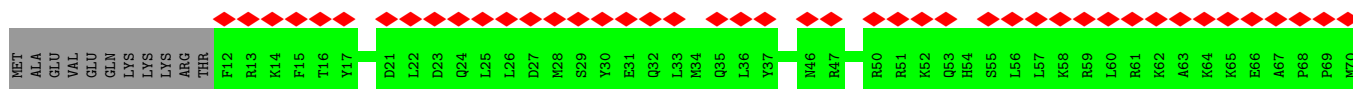
• Molecule 61: 40S ribosomal protein S13

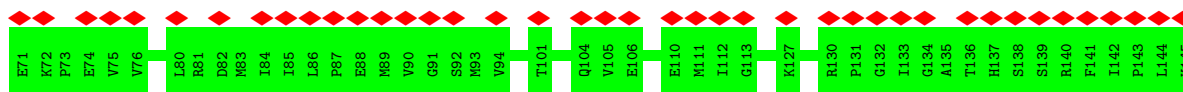


• Molecule 62: 40S ribosomal protein S14

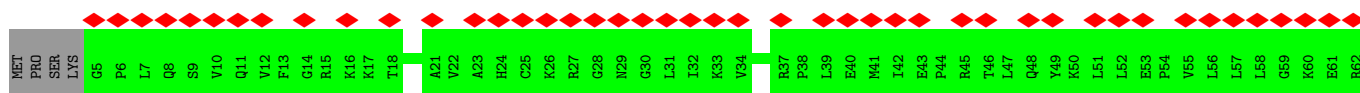


• Molecule 63: 40S ribosomal protein S15

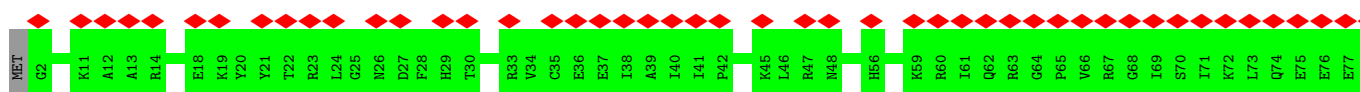
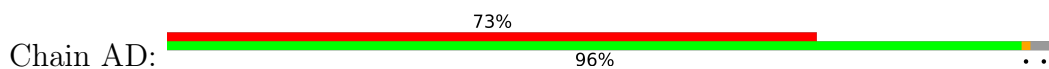




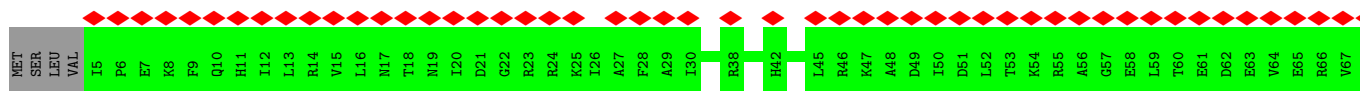
• Molecule 64: 40S ribosomal protein S16



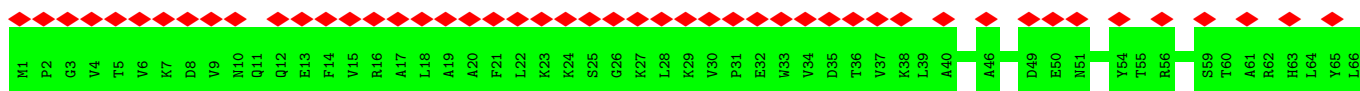
• Molecule 65: 40S ribosomal protein S17



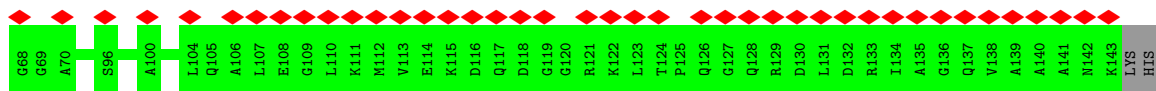
• Molecule 66: 40S ribosomal protein S18

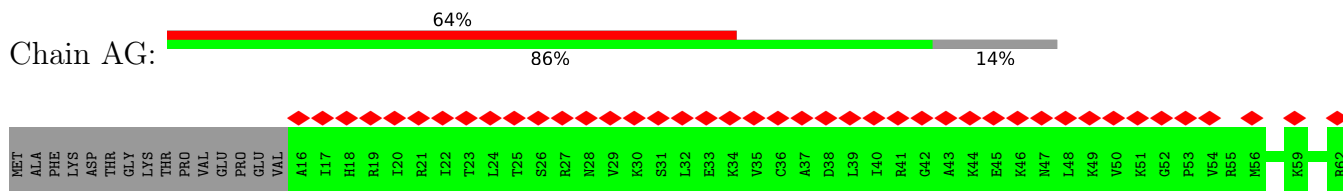


• Molecule 67: 40S ribosomal protein S19

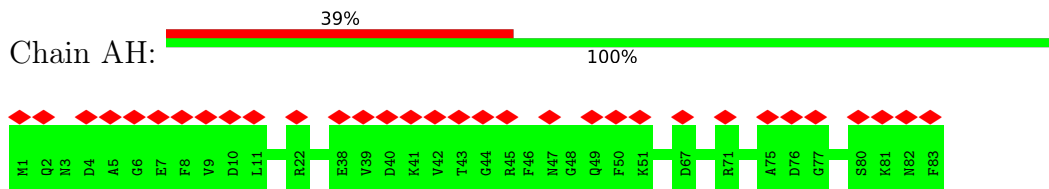


• Molecule 68: 40S ribosomal protein S20

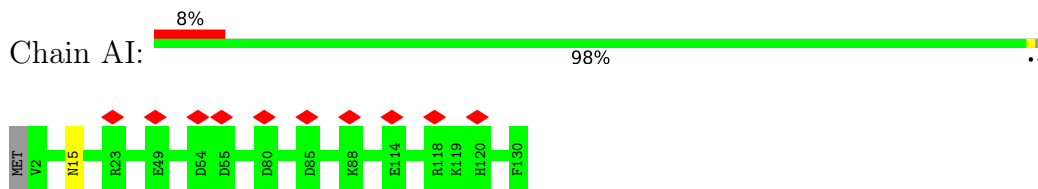




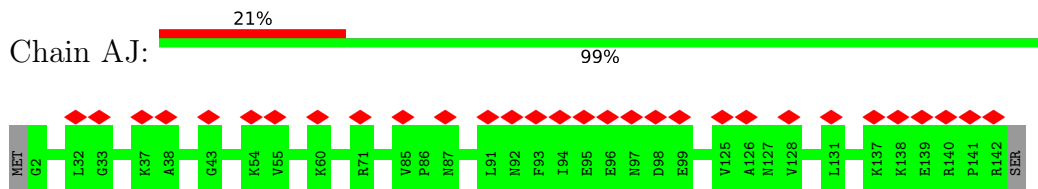
• Molecule 69: 40S ribosomal protein S21



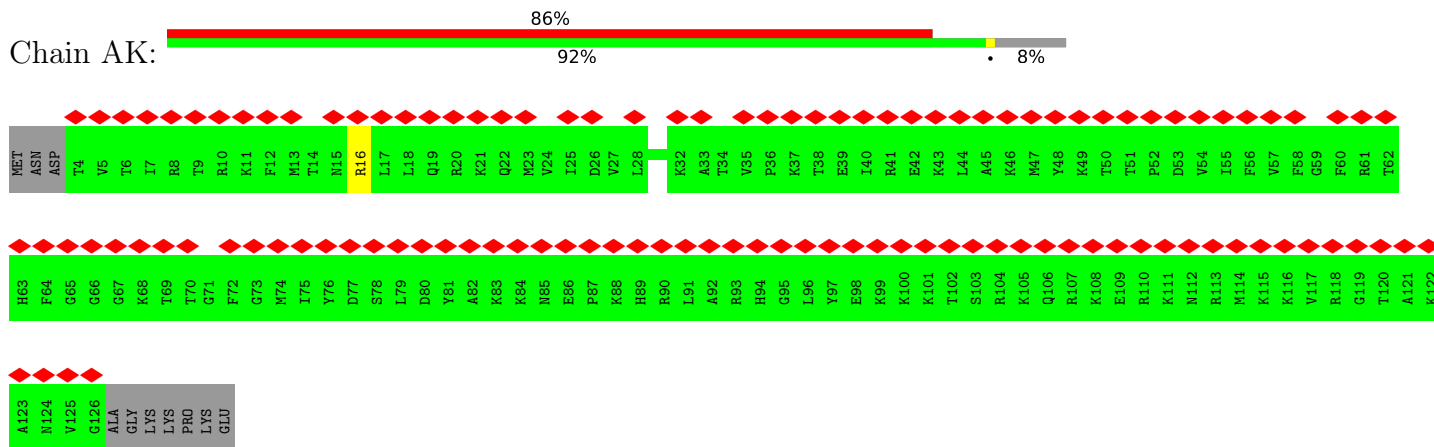
• Molecule 70: 40S ribosomal protein S15a



• Molecule 71: 40S ribosomal protein S23

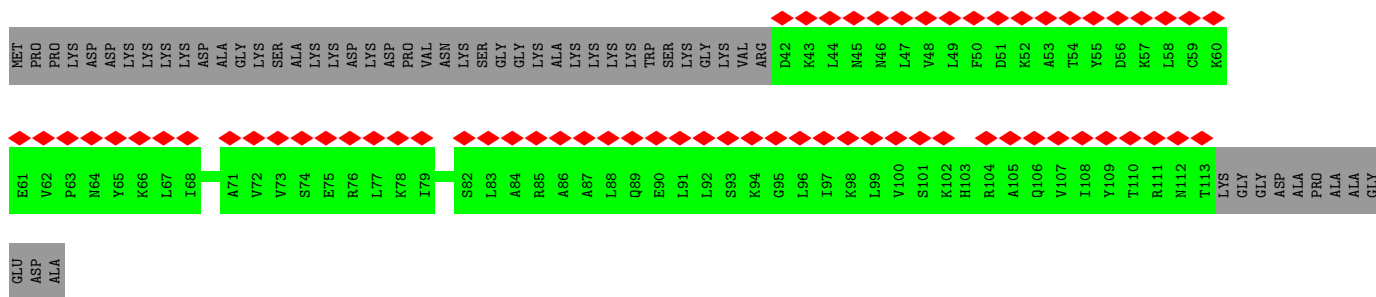


• Molecule 72: 40S ribosomal protein S24

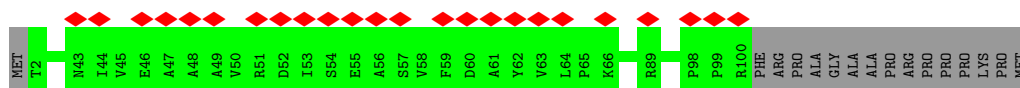
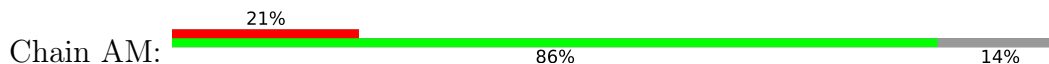


• Molecule 73: 40S ribosomal protein S25

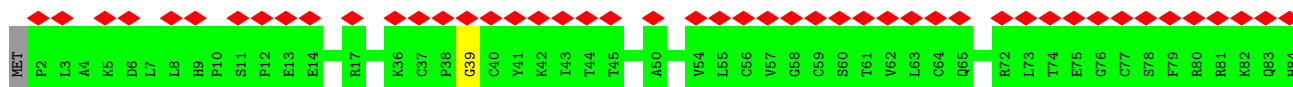




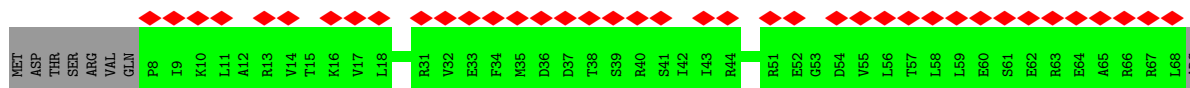
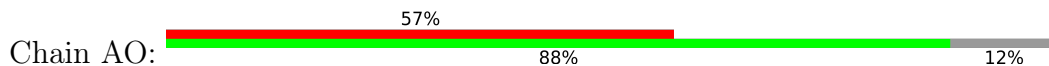
- Molecule 74: 40S ribosomal protein S26



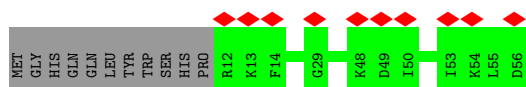
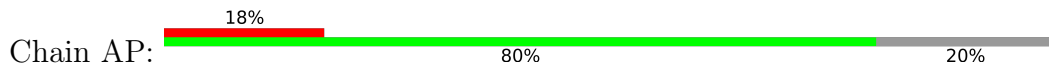
- Molecule 75: 40S ribosomal protein S27



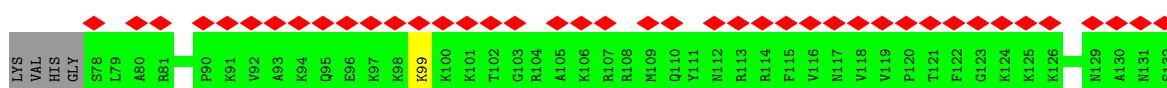
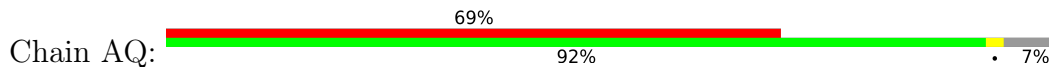
- Molecule 76: 40S ribosomal protein S28



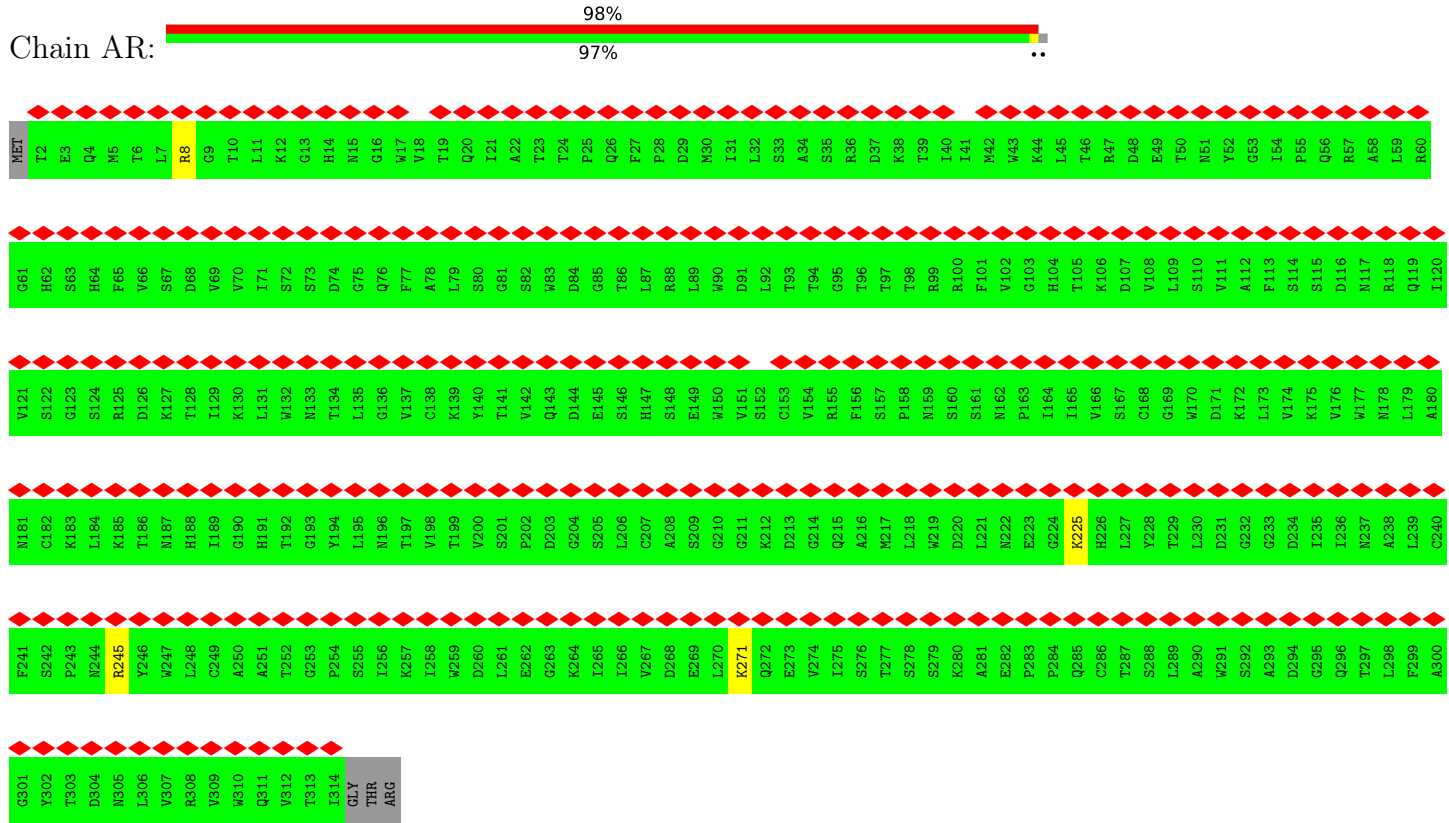
- Molecule 77: 40S ribosomal protein S29



- Molecule 78: 40S ribosomal protein S30



- Molecule 79: Receptor of activated protein C kinase 1





## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	75250	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	50	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.142	Depositor
Minimum map value	-0.042	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.0183	Depositor
Map size ( $\text{\AA}$ )	439.9, 439.9, 439.9	wwPDB
Map dimensions	530, 530, 530	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	0.83, 0.83, 0.83	Depositor

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 5MC, ZN, GAL, OMU, G7M, M2G, MG, 2MG, A2M, MA6, 1MG, UY1, H2U, OMC, 6MZ, 1MA, 56B, 5MU, B8N, 4AC, PSU, UR3, OMG

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	A	0.29	0/319	0.68	0/492
2	B	0.30	0/1401	0.69	0/2175
2	C	0.20	0/1401	0.69	0/2175
3	D	0.66	0/81567	0.75	11/127232 (0.0%)
4	E	0.67	0/2858	0.71	0/4455
5	F	0.64	0/3675	0.75	3/5725 (0.1%)
6	G	0.39	0/1929	0.51	0/2586
7	H	0.37	0/3279	0.52	1/4388 (0.0%)
8	I	0.36	0/2938	0.48	1/3946 (0.0%)
9	J	0.36	0/2425	0.47	0/3248
10	K	0.32	0/1785	0.50	0/2394
11	L	0.38	0/1905	0.48	0/2539
12	M	0.32	0/1863	0.48	1/2510 (0.0%)
13	N	0.33	0/1537	0.51	0/2066
14	O	0.35	0/1699	0.47	0/2270
15	P	0.30	0/1385	0.48	1/1852 (0.1%)
16	Q	0.34	0/1713	0.48	1/2293 (0.0%)
17	R	0.35	0/1142	0.47	0/1527
18	S	0.40	0/1746	0.45	0/2338
19	T	0.38	0/1673	0.46	0/2238
20	U	0.37	0/1300	0.47	0/1746
21	V	0.38	0/1537	0.49	0/2052
22	W	0.31	0/1524	0.45	0/2013
23	X	0.39	0/1493	0.47	0/2003
24	Y	0.38	0/1326	0.45	0/1770
25	Z	0.31	0/835	0.47	0/1122
26	a	0.36	0/993	0.48	0/1332
27	b	0.36	0/541	0.47	0/720
28	c	0.32	0/998	0.45	0/1340
29	d	0.36	0/1132	0.47	0/1504
30	e	0.36	0/1130	0.46	0/1507

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
31	f	0.38	0/1191	0.49	0/1591
32	g	0.30	0/844	0.45	0/1115
33	h	0.34	0/765	0.44	0/1027
34	i	0.36	0/903	0.45	0/1216
35	j	0.37	0/1071	0.45	0/1429
36	k	0.40	0/895	0.54	0/1198
37	l	0.37	0/898	0.48	0/1197
38	m	0.31	0/1018	0.40	0/1344
39	n	0.30	0/843	0.40	0/1115
40	o	0.38	0/720	0.50	0/952
41	p	0.35	0/575	0.52	0/761
42	q	0.33	0/454	0.40	0/599
43	r	0.34	0/435	0.53	0/575
44	s	0.27	0/240	0.35	0/305
45	t	0.36	0/876	0.48	0/1156
46	u	0.38	0/718	0.47	0/953
47	v	0.37	0/1017	0.48	0/1364
48	w	0.38	0/37158	0.73	12/57908 (0.0%)
49	x	0.28	0/1732	0.48	0/2355
50	y	0.27	0/1752	0.45	0/2345
51	z	0.30	0/1668	0.47	1/2254 (0.0%)
52	0	0.26	0/1672	0.47	0/2250
53	1	0.26	0/2112	0.47	0/2842
54	2	0.25	0/1485	0.45	0/1998
55	3	0.25	0/1940	0.45	0/2583
56	4	0.26	0/1533	0.48	0/2053
57	5	0.26	0/1703	0.47	0/2275
58	6	0.26	0/1531	0.45	0/2045
59	7	0.25	0/834	0.45	0/1125
60	8	0.29	0/1170	0.47	0/1568
61	9	0.26	0/1232	0.43	0/1656
62	AA	0.27	0/1015	0.53	0/1361
63	AB	0.27	0/1126	0.47	0/1505
64	AC	0.26	0/1146	0.44	0/1534
65	AD	0.27	0/1071	0.52	1/1438 (0.1%)
66	AE	0.25	0/1187	0.48	0/1593
67	AF	0.26	0/1130	0.44	0/1515
68	AG	0.24	0/809	0.48	0/1087
69	AH	0.27	0/643	0.50	0/860
70	AI	0.30	0/1051	0.46	0/1406
71	AJ	0.28	0/1116	0.44	0/1490
72	AK	0.26	0/1019	0.47	0/1355
73	AL	0.24	0/580	0.50	0/780

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
74	AM	0.29	0/805	0.48	0/1079
75	AN	0.28	0/657	0.49	0/883
76	AO	0.24	0/481	0.52	0/643
77	AP	0.30	0/375	0.50	0/492
78	AQ	0.25	0/443	0.45	0/582
79	AR	0.26	0/2493	0.54	0/3394
All	All	0.49	0/219181	0.65	33/321709 (0.0%)

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
6	G	0	2
7	H	0	2
8	I	0	2
10	K	0	1
11	L	0	1
16	Q	0	1
20	U	0	1
21	V	0	1
22	W	0	1
24	Y	0	1
32	g	0	1
40	o	0	1
53	1	0	2
65	AD	0	1
All	All	0	18

There are no bond length outliers.

All (33) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	2101	C	O5'-P-OP1	-28.43	76.58	110.70
3	D	2101	C	OP1-P-OP2	-26.73	79.50	119.60
3	D	2100	A	OP2-P-O3'	-14.94	72.33	105.20
3	D	2101	C	O5'-P-OP2	14.89	128.57	110.70
3	D	2100	A	OP1-P-O3'	14.42	136.93	105.20
48	w	1453	C	C2-N1-C1'	8.33	127.97	118.80
48	w	1453	C	N1-C2-O2	8.10	123.76	118.90
65	AD	119	VAL	CG1-CB-CG2	-6.55	100.42	110.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	I	316	LYS	C-N-CA	-6.52	105.39	121.70
48	w	1453	C	N3-C2-O2	-6.51	117.34	121.90
3	D	2409	U	C2-N1-C1'	6.23	125.18	117.70
3	D	209	U	C2-N1-C1'	6.12	125.05	117.70
48	w	1453	C	C6-N1-C2	-5.75	118.00	120.30
48	w	1453	C	C6-N1-C1'	-5.73	113.92	120.80
3	D	2102	G	OP1-P-O3'	5.45	117.19	105.20
48	w	1016	U	C2-N1-C1'	5.45	124.24	117.70
48	w	1016	U	N1-C2-O2	5.44	126.61	122.80
51	z	251	LEU	C-N-CA	5.43	135.29	121.70
5	F	110	U	C2-N1-C1'	5.43	124.21	117.70
3	D	2675	G	P-O3'-C3'	5.41	126.20	119.70
16	Q	134	PRO	CA-N-CD	-5.39	103.96	111.50
3	D	1241	C	C2-N1-C1'	5.35	124.69	118.80
5	F	110	U	N1-C2-O2	5.35	126.54	122.80
7	H	360	LEU	CA-CB-CG	5.35	127.60	115.30
5	F	110	U	N3-C2-O2	-5.28	118.50	122.20
48	w	1520	G	N3-C4-C5	-5.22	125.99	128.60
48	w	1303	C	N1-C2-O2	5.15	121.99	118.90
3	D	1438	U	C2-N1-C1'	5.13	123.86	117.70
48	w	1016	U	N3-C2-O2	-5.12	118.62	122.20
48	w	1331	C	P-O3'-C3'	5.09	125.81	119.70
48	w	1139	C	C2-N1-C1'	5.09	124.40	118.80
12	M	166	LEU	CA-CB-CG	5.06	126.95	115.30
15	P	171	ASP	CB-CG-OD1	5.02	122.82	118.30

There are no chirality outliers.

All (18) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
53	1	226	PHE	Peptide
53	1	227	VAL	Peptide
65	AD	118	GLN	Peptide
6	G	123	ARG	Peptide
6	G	239	ALA	Peptide
7	H	16	PHE	Peptide
7	H	258	HIS	Peptide
8	I	110	ARG	Peptide
8	I	91	ALA	Peptide
10	K	130	LYS	Peptide
11	L	163	ASN	Peptide
16	Q	47	ALA	Peptide

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Mol	Chain	Res	Type	Group
20	U	131	ARG	Peptide
21	V	159	PRO	Peptide
22	W	102	LEU	Peptide
24	Y	80	VAL	Peptide
32	g	110	ALA	Peptide
40	o	39	TYR	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	
6	G	245/257 (95%)	227 (93%)	18 (7%)	0	100	100
7	H	396/403 (98%)	367 (93%)	29 (7%)	0	100	100
8	I	361/427 (84%)	338 (94%)	23 (6%)	0	100	100
9	J	291/297 (98%)	274 (94%)	17 (6%)	0	100	100
10	K	211/288 (73%)	191 (90%)	20 (10%)	0	100	100
11	L	223/248 (90%)	212 (95%)	11 (5%)	0	100	100
12	M	223/266 (84%)	207 (93%)	16 (7%)	0	100	100
13	N	188/192 (98%)	174 (93%)	14 (7%)	0	100	100
14	O	202/214 (94%)	186 (92%)	16 (8%)	0	100	100
15	P	168/178 (94%)	155 (92%)	13 (8%)	0	100	100
16	Q	206/211 (98%)	190 (92%)	14 (7%)	2 (1%)	15	34
17	R	134/215 (62%)	123 (92%)	11 (8%)	0	100	100
18	S	201/204 (98%)	195 (97%)	6 (3%)	0	100	100
19	T	198/203 (98%)	195 (98%)	3 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
20	U	155/184 (84%)	143 (92%)	12 (8%)	0	100	100
21	V	185/188 (98%)	176 (95%)	9 (5%)	0	100	100
22	W	178/196 (91%)	177 (99%)	1 (1%)	0	100	100
23	X	173/176 (98%)	162 (94%)	11 (6%)	0	100	100
24	Y	157/160 (98%)	148 (94%)	9 (6%)	0	100	100
25	Z	99/128 (77%)	92 (93%)	7 (7%)	0	100	100
26	a	129/140 (92%)	120 (93%)	9 (7%)	0	100	100
27	b	61/157 (39%)	60 (98%)	1 (2%)	0	100	100
28	c	118/156 (76%)	112 (95%)	6 (5%)	0	100	100
29	d	132/145 (91%)	125 (95%)	7 (5%)	0	100	100
30	e	133/136 (98%)	125 (94%)	8 (6%)	0	100	100
31	f	145/148 (98%)	130 (90%)	15 (10%)	0	100	100
32	g	100/159 (63%)	92 (92%)	6 (6%)	2 (2%)	7	17
33	h	95/115 (83%)	94 (99%)	1 (1%)	0	100	100
34	i	105/125 (84%)	101 (96%)	4 (4%)	0	100	100
35	j	126/135 (93%)	123 (98%)	3 (2%)	0	100	100
36	k	107/110 (97%)	97 (91%)	10 (9%)	0	100	100
37	l	110/117 (94%)	101 (92%)	9 (8%)	0	100	100
38	m	119/123 (97%)	116 (98%)	3 (2%)	0	100	100
39	n	100/105 (95%)	98 (98%)	2 (2%)	0	100	100
40	o	84/97 (87%)	79 (94%)	4 (5%)	1 (1%)	13	29
41	p	67/70 (96%)	60 (90%)	7 (10%)	0	100	100
42	q	48/51 (94%)	46 (96%)	2 (4%)	0	100	100
43	r	50/128 (39%)	48 (96%)	2 (4%)	0	100	100
44	s	23/25 (92%)	23 (100%)	0	0	100	100
45	t	103/106 (97%)	98 (95%)	5 (5%)	0	100	100
46	u	89/92 (97%)	83 (93%)	6 (7%)	0	100	100
47	v	123/137 (90%)	115 (94%)	8 (6%)	0	100	100
49	x	213/295 (72%)	197 (92%)	15 (7%)	1 (0%)	29	52
50	y	210/264 (80%)	198 (94%)	12 (6%)	0	100	100
51	z	210/293 (72%)	200 (95%)	10 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
52	0	210/243 (86%)	190 (90%)	20 (10%)	0	100	100
53	1	260/263 (99%)	243 (94%)	15 (6%)	2 (1%)	19	40
54	2	185/204 (91%)	171 (92%)	14 (8%)	0	100	100
55	3	235/249 (94%)	228 (97%)	7 (3%)	0	100	100
56	4	185/194 (95%)	166 (90%)	19 (10%)	0	100	100
57	5	204/208 (98%)	186 (91%)	18 (9%)	0	100	100
58	6	180/194 (93%)	171 (95%)	9 (5%)	0	100	100
59	7	94/165 (57%)	88 (94%)	6 (6%)	0	100	100
60	8	138/158 (87%)	127 (92%)	11 (8%)	0	100	100
61	9	148/151 (98%)	141 (95%)	7 (5%)	0	100	100
62	AA	132/151 (87%)	122 (92%)	10 (8%)	0	100	100
63	AB	132/145 (91%)	126 (96%)	6 (4%)	0	100	100
64	AC	140/146 (96%)	129 (92%)	11 (8%)	0	100	100
65	AD	129/135 (96%)	109 (84%)	18 (14%)	2 (2%)	9	22
66	AE	142/152 (93%)	125 (88%)	17 (12%)	0	100	100
67	AF	141/145 (97%)	132 (94%)	9 (6%)	0	100	100
68	AG	100/119 (84%)	94 (94%)	6 (6%)	0	100	100
69	AH	81/83 (98%)	72 (89%)	9 (11%)	0	100	100
70	AI	127/130 (98%)	118 (93%)	9 (7%)	0	100	100
71	AJ	139/143 (97%)	136 (98%)	3 (2%)	0	100	100
72	AK	121/133 (91%)	119 (98%)	2 (2%)	0	100	100
73	AL	70/125 (56%)	66 (94%)	4 (6%)	0	100	100
74	AM	97/115 (84%)	92 (95%)	5 (5%)	0	100	100
75	AN	81/84 (96%)	67 (83%)	13 (16%)	1 (1%)	13	29
76	AO	59/69 (86%)	53 (90%)	6 (10%)	0	100	100
77	AP	43/56 (77%)	43 (100%)	0	0	100	100
78	AQ	53/59 (90%)	51 (96%)	2 (4%)	0	100	100
79	AR	311/317 (98%)	270 (87%)	41 (13%)	0	100	100
All	All	10931/12400 (88%)	10208 (93%)	712 (6%)	11 (0%)	54	76

All (11) Ramachandran outliers are listed below:



Mol	Chain	Res	Type
16	Q	48	PRO
32	g	111	ARG
53	1	227	VAL
32	g	110	ALA
65	AD	118	GLN
53	1	228	ILE
16	Q	47	ALA
49	x	12	GLU
65	AD	119	VAL
75	AN	39	GLY
40	o	40	PRO

### 5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
6	G	189/199 (95%)	189 (100%)	0	100	100
7	H	346/349 (99%)	344 (99%)	2 (1%)	86	94
8	I	301/348 (86%)	299 (99%)	2 (1%)	84	93
9	J	245/250 (98%)	245 (100%)	0	100	100
10	K	193/252 (77%)	192 (100%)	1 (0%)	88	95
11	L	194/215 (90%)	194 (100%)	0	100	100
12	M	195/223 (87%)	195 (100%)	0	100	100
13	N	169/171 (99%)	169 (100%)	0	100	100
14	O	174/181 (96%)	174 (100%)	0	100	100
15	P	143/149 (96%)	141 (99%)	2 (1%)	67	85
16	Q	174/177 (98%)	174 (100%)	0	100	100
17	R	116/161 (72%)	116 (100%)	0	100	100
18	S	171/172 (99%)	171 (100%)	0	100	100
19	T	172/174 (99%)	172 (100%)	0	100	100
20	U	138/163 (85%)	138 (100%)	0	100	100
21	V	164/165 (99%)	164 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
22	W	159/175 (91%)	158 (99%)	1 (1%)	86	94
23	X	156/157 (99%)	156 (100%)	0	100	100
24	Y	139/140 (99%)	139 (100%)	0	100	100
25	Z	90/115 (78%)	89 (99%)	1 (1%)	73	89
26	a	101/107 (94%)	101 (100%)	0	100	100
27	b	55/126 (44%)	55 (100%)	0	100	100
28	c	107/133 (80%)	107 (100%)	0	100	100
29	d	124/135 (92%)	124 (100%)	0	100	100
30	e	117/118 (99%)	117 (100%)	0	100	100
31	f	120/121 (99%)	120 (100%)	0	100	100
32	g	81/126 (64%)	81 (100%)	0	100	100
33	h	82/97 (84%)	81 (99%)	1 (1%)	71	87
34	i	98/110 (89%)	97 (99%)	1 (1%)	76	90
35	j	114/121 (94%)	114 (100%)	0	100	100
36	k	88/89 (99%)	88 (100%)	0	100	100
37	l	96/100 (96%)	96 (100%)	0	100	100
38	m	109/110 (99%)	109 (100%)	0	100	100
39	n	86/89 (97%)	86 (100%)	0	100	100
40	o	73/80 (91%)	73 (100%)	0	100	100
41	p	64/65 (98%)	64 (100%)	0	100	100
42	q	47/48 (98%)	47 (100%)	0	100	100
43	r	48/116 (41%)	48 (100%)	0	100	100
44	s	24/24 (100%)	24 (100%)	0	100	100
45	t	93/94 (99%)	92 (99%)	1 (1%)	73	89
46	u	74/75 (99%)	74 (100%)	0	100	100
47	v	109/121 (90%)	109 (100%)	0	100	100
49	x	178/243 (73%)	178 (100%)	0	100	100
50	y	194/231 (84%)	194 (100%)	0	100	100
51	z	176/225 (78%)	176 (100%)	0	100	100
52	0	175/202 (87%)	174 (99%)	1 (1%)	86	94
53	1	223/225 (99%)	222 (100%)	1 (0%)	91	96

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
54	2	154/170 (91%)	154 (100%)	0	100	100
55	3	206/218 (94%)	204 (99%)	2 (1%)	76	90
56	4	168/174 (97%)	167 (99%)	1 (1%)	86	94
57	5	175/180 (97%)	174 (99%)	1 (1%)	86	94
58	6	160/168 (95%)	159 (99%)	1 (1%)	86	94
59	7	87/136 (64%)	87 (100%)	0	100	100
60	8	125/142 (88%)	122 (98%)	3 (2%)	49	75
61	9	130/131 (99%)	130 (100%)	0	100	100
62	AA	104/119 (87%)	103 (99%)	1 (1%)	76	90
63	AB	120/130 (92%)	120 (100%)	0	100	100
64	AC	117/121 (97%)	117 (100%)	0	100	100
65	AD	117/122 (96%)	117 (100%)	0	100	100
66	AE	119/132 (90%)	119 (100%)	0	100	100
67	AF	113/115 (98%)	113 (100%)	0	100	100
68	AG	89/107 (83%)	89 (100%)	0	100	100
69	AH	67/67 (100%)	67 (100%)	0	100	100
70	AI	112/113 (99%)	111 (99%)	1 (1%)	78	91
71	AJ	113/115 (98%)	113 (100%)	0	100	100
72	AK	106/115 (92%)	105 (99%)	1 (1%)	78	91
73	AL	64/103 (62%)	64 (100%)	0	100	100
74	AM	86/98 (88%)	86 (100%)	0	100	100
75	AN	73/76 (96%)	73 (100%)	0	100	100
76	AO	54/62 (87%)	54 (100%)	0	100	100
77	AP	39/49 (80%)	39 (100%)	0	100	100
78	AQ	45/48 (94%)	44 (98%)	1 (2%)	52	77
79	AR	272/275 (99%)	268 (98%)	4 (2%)	65	84
All	All	9499/10553 (90%)	9469 (100%)	30 (0%)	92	97

All (30) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
7	H	24	ARG
7	H	300	LYS

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Mol	Chain	Res	Type
8	I	71	ARG
8	I	188	ARG
10	K	56	ARG
15	P	32	ARG
15	P	118	LYS
22	W	153	LYS
25	Z	95	ASN
33	h	106	ARG
34	i	18	ASN
45	t	99	ARG
52	0	76	ARG
53	1	120	LYS
55	3	98	ARG
55	3	200	LYS
56	4	57	ARG
57	5	140	LYS
58	6	101	LYS
60	8	21	LYS
60	8	45	LYS
60	8	69	ARG
62	AA	150	ARG
70	AI	15	ASN
72	AK	16	ARG
78	AQ	99	LYS
79	AR	8	ARG
79	AR	225	LYS
79	AR	245	ARG
79	AR	271	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
9	J	202	GLN
52	0	74	GLN
55	3	81	HIS
55	3	110	ASN
58	6	140	GLN
59	7	50	GLN
62	AA	103	ASN
63	AB	46	ASN
66	AE	87	GLN
70	AI	15	ASN

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Mol	Chain	Res	Type
79	AR	62	HIS
79	AR	104	HIS
79	AR	143	GLN
79	AR	226	HIS

### 5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	13/14 (92%)	1 (7%)	0
2	B	68/76 (89%)	23 (33%)	1 (1%)
2	C	68/76 (89%)	20 (29%)	0
3	D	3494/5070 (68%)	606 (17%)	26 (0%)
4	E	119/120 (99%)	13 (10%)	0
48	w	1618/1869 (86%)	390 (24%)	0
5	F	155/156 (99%)	25 (16%)	1 (0%)
All	All	5535/7381 (74%)	1078 (19%)	28 (0%)

All (1078) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	19	U
2	B	6	2MG
2	B	7	A
2	B	8	U
2	B	9	A
2	B	11	C
2	B	12	U
2	B	13	C
2	B	19	G
2	B	22	G
2	B	26	M2G
2	B	46	G7M
2	B	47	H2U
2	B	48	5MC
2	B	49	G
2	B	52	G
2	B	53	G
2	B	54	5MU
2	B	55	PSU
2	B	56	C
2	B	57	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	B	58	1MA
2	B	67	C
2	B	76	A
2	C	4	U
2	C	6	2MG
2	C	7	A
2	C	10	2MG
2	C	12	U
2	C	19	G
2	C	24	G
2	C	45	G
2	C	46	G7M
2	C	47	H2U
2	C	48	5MC
2	C	53	G
2	C	54	5MU
2	C	59	U
2	C	61	C
2	C	63	G
2	C	68	G
2	C	71	G
2	C	72	G
2	C	74	C
3	D	2	G
3	D	21	G
3	D	25	A
3	D	39	A
3	D	42	A
3	D	44	A
3	D	48	G
3	D	56	A
3	D	59	A
3	D	64	A
3	D	65	A
3	D	69	A
3	D	91	G
3	D	98	A
3	D	108	A
3	D	109	G
3	D	110	C
3	D	116	G
3	D	117	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	119	G
3	D	120	A
3	D	143	C
3	D	144	G
3	D	152	U
3	D	159	C
3	D	171	U
3	D	172	C
3	D	181	C
3	D	183	C
3	D	185	C
3	D	186	G
3	D	188	G
3	D	189	G
3	D	200	U
3	D	209	U
3	D	218	A
3	D	220	C
3	D	234	G
3	D	256	G
3	D	261	G
3	D	265	C
3	D	266	C
3	D	267	G
3	D	269	G
3	D	275	C
3	D	276	C
3	D	278	G
3	D	280	G
3	D	306	A
3	D	315	G
3	D	316	U
3	D	340	C
3	D	344	A
3	D	345	C
3	D	350	C
3	D	386	A
3	D	387	G
3	D	407	A
3	D	410	A
3	D	412	G
3	D	413	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	432	U
3	D	449	C
3	D	450	G
3	D	452	A
3	D	453	G
3	D	454	U
3	D	467	U
3	D	468	U
3	D	484	U
3	D	485	C
3	D	486	C
3	D	491	G
3	D	494	U
3	D	498	C
3	D	499	G
3	D	507	G
3	D	509	A
3	D	510	U
3	D	513	U
3	D	514	U
3	D	515	C
3	D	516	C
3	D	517	C
3	D	645	G
3	D	657	C
3	D	658	C
3	D	659	G
3	D	661	C
3	D	665	C
3	D	667	A
3	D	668	C
3	D	670	G
3	D	673	C
3	D	685	C
3	D	686	A
3	D	687	U
3	D	703	G
3	D	704	C
3	D	731	G
3	D	738	C
3	D	739	G
3	D	740	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	742	G
3	D	754	U
3	D	760	G
3	D	904	C
3	D	905	C
3	D	906	C
3	D	913	U
3	D	914	U
3	D	915	A
3	D	917	A
3	D	918	G
3	D	923	C
3	D	924	C
3	D	925	C
3	D	926	G
3	D	932	A
3	D	933	G
3	D	936	C
3	D	944	A
3	D	945	U
3	D	959	G
3	D	960	A
3	D	961	G
3	D	962	C
3	D	965	G
3	D	966	A
3	D	967	C
3	D	970	G
3	D	971	U
3	D	977	C
3	D	982	U
3	D	984	C
3	D	988	C
3	D	989	U
3	D	1071	C
3	D	1075	G
3	D	1082	C
3	D	1083	U
3	D	1094	G
3	D	1168	G
3	D	1171	G
3	D	1172	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	1173	G
3	D	1178	G
3	D	1179	U
3	D	1180	C
3	D	1181	C
3	D	1182	C
3	D	1183	C
3	D	1184	A
3	D	1193	C
3	D	1196	G
3	D	1200	G
3	D	1202	C
3	D	1203	G
3	D	1210	C
3	D	1211	G
3	D	1214	C
3	D	1241	C
3	D	1246	G
3	D	1266	G
3	D	1269	G
3	D	1270	A
3	D	1271	G
3	D	1272	C
3	D	1273	G
3	D	1275	G
3	D	1280	C
3	D	1284	G
3	D	1285	U
3	D	1287	G
3	D	1294	A
3	D	1295	C
3	D	1296	G
3	D	1301	C
3	D	1302	U
3	D	1303	A
3	D	1304	C
3	D	1313	C
3	D	1326	A2M
3	D	1337	A
3	D	1354	A
3	D	1358	G
3	D	1359	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	1365	C
3	D	1366	G
3	D	1377	G
3	D	1379	C
3	D	1387	A
3	D	1394	G
3	D	1397	A
3	D	1398	A
3	D	1403	G
3	D	1404	G
3	D	1406	G
3	D	1407	C
3	D	1408	G
3	D	1409	C
3	D	1410	U
3	D	1411	C
3	D	1412	G
3	D	1415	G
3	D	1417	C
3	D	1420	A
3	D	1421	G
3	D	1439	C
3	D	1441	C
3	D	1442	C
3	D	1443	A
3	D	1452	A
3	D	1482	G
3	D	1483	C
3	D	1497	A
3	D	1498	G
3	D	1502	G
3	D	1514	U
3	D	1534	A2M
3	D	1547	A
3	D	1564	A
3	D	1566	C
3	D	1575	A
3	D	1578	U
3	D	1586	G
3	D	1591	U
3	D	1596	U
3	D	1624	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	1625	OMG
3	D	1631	A
3	D	1633	G
3	D	1634	A
3	D	1638	A
3	D	1640	C
3	D	1641	G
3	D	1642	A
3	D	1654	G
3	D	1661	C
3	D	1676	C
3	D	1677	PSU
3	D	1678	C
3	D	1694	C
3	D	1698	C
3	D	1699	A
3	D	1700	G
3	D	1701	A
3	D	1702	C
3	D	1703	C
3	D	1705	G
3	D	1715	C
3	D	1718	C
3	D	1719	A
3	D	1734	G
3	D	1741	G
3	D	1742	A
3	D	1750	G
3	D	1756	U
3	D	1757	U
3	D	1758	G
3	D	1760	OMG
3	D	1763	C
3	D	1787	A
3	D	1797	G
3	D	1804	A
3	D	1810	G
3	D	1821	G
3	D	1822	U
3	D	1836	G
3	D	1837	A
3	D	1842	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	1843	A
3	D	1855	G
3	D	1869	G
3	D	1882	U
3	D	1897	A
3	D	1918	U
3	D	1919	G
3	D	1920	C
3	D	1921	C
3	D	1922	G
3	D	1925	G
3	D	1931	C
3	D	1932	A
3	D	1948	G
3	D	1951	G
3	D	1960	A
3	D	1961	G
3	D	1962	A
3	D	2024	G
3	D	2025	A
3	D	2026	A
3	D	2046	G
3	D	2048	U
3	D	2055	G
3	D	2056	G
3	D	2069	A
3	D	2084	C
3	D	2085	G
3	D	2089	G
3	D	2092	G
3	D	2093	A
3	D	2096	G
3	D	2097	U
3	D	2098	G
3	D	2100	A
3	D	2102	G
3	D	2103	G
3	D	2104	G
3	D	2105	A
3	D	2257	C
3	D	2258	C
3	D	2259	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	2277	C
3	D	2289	C
3	D	2300	A
3	D	2301	G
3	D	2306	G
3	D	2313	A
3	D	2333	G
3	D	2348	G
3	D	2351	OMC
3	D	2397	G
3	D	2416	G
3	D	2421	G
3	D	2422	OMC
3	D	2424	OMG
3	D	2425	U
3	D	2447	U
3	D	2450	G
3	D	2453	A
3	D	2465	C
3	D	2474	G
3	D	2475	G
3	D	2483	G
3	D	2484	A
3	D	2485	U
3	D	2487	G
3	D	2488	C
3	D	2489	C
3	D	2491	C
3	D	2493	G
3	D	2494	U
3	D	2503	G
3	D	2504	C
3	D	2505	C
3	D	2511	A
3	D	2513	A
3	D	2519	U
3	D	2520	C
3	D	2529	A
3	D	2537	A
3	D	2545	U
3	D	2546	G
3	D	2547	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	2554	U
3	D	2555	G
3	D	2573	A
3	D	2583	C
3	D	2587	A
3	D	2618	G
3	D	2627	C
3	D	2653	C
3	D	2662	G
3	D	2669	C
3	D	2675	G
3	D	2676	A
3	D	2687	U
3	D	2694	G
3	D	2695	A
3	D	2696	A
3	D	2707	U
3	D	2708	U
3	D	2711	G
3	D	2712	G
3	D	2721	G
3	D	2724	G
3	D	2726	G
3	D	2739	C
3	D	2742	G
3	D	2743	A
3	D	2746	A
3	D	2754	G
3	D	2760	G
3	D	2761	U
3	D	2763	U
3	D	2764	A
3	D	2769	U
3	D	2770	C
3	D	2788	U
3	D	2790	U
3	D	2814	C
3	D	2815	A2M
3	D	2826	U
3	D	2827	G
3	D	2855	G
3	D	2856	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	2867	C
3	D	2874	U
3	D	2877	G
3	D	2892	C
3	D	3605	C
3	D	3615	G
3	D	3618	C
3	D	3626	G
3	D	3635	A
3	D	3644	U
3	D	3648	A
3	D	3662	A
3	D	3673	C
3	D	3674	G
3	D	3710	G
3	D	3711	A
3	D	3712	A
3	D	3727	A
3	D	3750	G
3	D	3756	A
3	D	3757	G
3	D	3758	PSU
3	D	3759	A
3	D	3760	A2M
3	D	3761	C
3	D	3762	PSU
3	D	3766	A
3	D	3772	U
3	D	3773	U
3	D	3774	A
3	D	3777	G
3	D	3783	A
3	D	3784	A
3	D	3786	U
3	D	3802	U
3	D	3811	G
3	D	3812	C
3	D	3814	U
3	D	3817	A
3	D	3819	G
3	D	3823	G
3	D	3838	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	3840	U
3	D	3867	A
3	D	3877	A
3	D	3878	C
3	D	3879	G
3	D	3885	G
3	D	3897	G
3	D	3901	A
3	D	3906	A
3	D	3907	G
3	D	3908	A
3	D	3915	U
3	D	3938	G
3	D	3939	G
3	D	3942	A
3	D	3943	A
3	D	3944	OMG
3	D	4068	U
3	D	4076	G
3	D	4086	G
3	D	4093	G
3	D	4094	G
3	D	4097	G
3	D	4098	A
3	D	4112	C
3	D	4113	U
3	D	4114	C
3	D	4115	G
3	D	4116	C
3	D	4119	C
3	D	4122	G
3	D	4127	A
3	D	4140	C
3	D	4142	C
3	D	4143	G
3	D	4144	C
3	D	4145	C
3	D	4150	G
3	D	4162	C
3	D	4163	U
3	D	4170	A
3	D	4183	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	4184	G
3	D	4191	G
3	D	4203	A
3	D	4222	G
3	D	4229	U
3	D	4233	A
3	D	4251	A
3	D	4254	G
3	D	4257	A
3	D	4268	A
3	D	4273	A
3	D	4281	A
3	D	4291	G
3	D	4297	G
3	D	4305	G
3	D	4306	OMU
3	D	4329	G
3	D	4330	G
3	D	4332	C
3	D	4339	A
3	D	4349	C
3	D	4373	G
3	D	4377	G
3	D	4378	A
3	D	4380	A
3	D	4387	C
3	D	4391	G
3	D	4394	A
3	D	4405	G
3	D	4422	A
3	D	4424	A
3	D	4448	G
3	D	4449	A
3	D	4452	U
3	D	4453	C
3	D	4464	A
3	D	4466	C
3	D	4475	G
3	D	4500	PSU
3	D	4512	U
3	D	4513	A
3	D	4519	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	4524	G
3	D	4548	A
3	D	4554	G
3	D	4560	C
3	D	4567	G
3	D	4573	G
3	D	4575	G
3	D	4584	A
3	D	4590	A
3	D	4600	G
3	D	4601	U
3	D	4636	U
3	D	4637	OMG
3	D	4656	A
3	D	4670	C
3	D	4672	A
3	D	4679	G
3	D	4695	C
3	D	4700	A
3	D	4708	A
3	D	4709	U
3	D	4730	C
3	D	4731	G
3	D	4732	G
3	D	4733	C
3	D	4734	A
3	D	4740	G
3	D	4741	C
3	D	4742	G
3	D	4745	G
3	D	4754	G
3	D	4757	C
3	D	4759	C
3	D	4761	G
3	D	4765	G
3	D	4774	C
3	D	4860	G
3	D	4870	G
3	D	4871	C
3	D	4875	G
3	D	4882	U
3	D	4883	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	4888	U
3	D	4889	G
3	D	4895	C
3	D	4896	G
3	D	4900	C
3	D	4901	G
3	D	4910	G
3	D	4912	G
3	D	4914	C
3	D	4927	G
3	D	4928	C
3	D	4934	A
3	D	4940	C
3	D	4941	G
3	D	4943	A
3	D	4949	G
3	D	4955	A
3	D	4960	G
3	D	4966	A
3	D	4976	U
3	D	4990	C
3	D	4991	U
3	D	5014	A
3	D	5016	A
3	D	5017	G
3	D	5023	C
3	D	5024	C
3	D	5025	C
3	D	5027	C
3	D	5028	G
3	D	5030	U
3	D	5031	G
3	D	5034	A
3	D	5041	G
3	D	5050	C
3	D	5054	C
3	D	5058	A
3	D	5060	A
3	D	5061	A
3	D	5062	G
3	D	5069	U
4	E	7	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
4	E	22	A
4	E	24	C
4	E	47	G
4	E	48	G
4	E	53	U
4	E	54	A
4	E	64	G
4	E	97	G
4	E	100	A
4	E	102	U
4	E	103	A
4	E	110	G
5	F	2	G
5	F	23	C
5	F	34	U
5	F	35	C
5	F	48	A
5	F	59	A
5	F	63	U
5	F	81	C
5	F	83	C
5	F	84	A
5	F	85	U
5	F	86	U
5	F	87	G
5	F	103	A
5	F	105	C
5	F	110	U
5	F	114	G
5	F	123	U
5	F	124	U
5	F	125	C
5	F	126	C
5	F	127	U
5	F	128	C
5	F	150	C
5	F	151	G
48	w	2	A
48	w	4	C
48	w	11	A
48	w	17	C
48	w	21	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
48	w	22	A
48	w	33	G
48	w	34	PSU
48	w	41	G
48	w	43	U
48	w	44	U
48	w	45	A
48	w	46	A
48	w	49	C
48	w	52	G
48	w	54	A
48	w	61	A
48	w	66	G
48	w	67	C
48	w	68	A
48	w	69	C
48	w	70	G
48	w	78	C
48	w	79	A
48	w	80	G
48	w	81	U
48	w	83	A
48	w	86	C
48	w	103	A
48	w	112	U
48	w	113	G
48	w	117	C
48	w	120	U
48	w	121	OMU
48	w	126	G
48	w	128	U
48	w	129	C
48	w	130	G
48	w	143	U
48	w	149	A
48	w	155	G
48	w	159	A2M
48	w	160	U
48	w	161	U
48	w	162	C
48	w	163	U
48	w	166	A2M

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
48	w	171	A
48	w	173	A
48	w	179	C
48	w	182	C
48	w	184	G
48	w	190	G
48	w	194	C
48	w	196	C
48	w	197	U
48	w	198	U
48	w	199	C
48	w	200	G
48	w	201	C
48	w	207	G
48	w	211	G
48	w	214	U
48	w	215	G
48	w	226	A
48	w	291	G
48	w	292	A
48	w	293	C
48	w	294	U
48	w	302	A
48	w	310	C
48	w	311	C
48	w	312	G
48	w	313	A
48	w	318	A
48	w	319	C
48	w	332	G
48	w	345	U
48	w	346	C
48	w	347	G
48	w	362	C
48	w	364	A
48	w	368	U
48	w	369	C
48	w	370	G
48	w	380	G
48	w	385	G
48	w	386	C
48	w	400	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
48	w	407	G
48	w	408	A
48	w	409	C
48	w	417	C
48	w	418	A
48	w	421	G
48	w	428	OMU
48	w	441	C
48	w	448	A
48	w	449	A
48	w	450	C
48	w	451	G
48	w	452	G
48	w	464	A
48	w	466	G
48	w	468	A2M
48	w	471	G
48	w	472	C
48	w	474	G
48	w	476	A
48	w	482	G
48	w	485	A
48	w	487	U
48	w	488	U
48	w	489	A
48	w	492	C
48	w	493	A
48	w	495	U
48	w	496	C
48	w	497	C
48	w	498	C
48	w	499	G
48	w	501	C
48	w	507	G
48	w	516	A
48	w	519	A
48	w	523	A
48	w	528	A
48	w	531	A
48	w	532	C
48	w	533	A
48	w	534	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
48	w	549	C
48	w	552	G
48	w	554	A
48	w	556	U
48	w	557	U
48	w	558	G
48	w	559	G
48	w	560	A
48	w	562	U
48	w	575	A
48	w	576	A2M
48	w	583	C
48	w	587	A
48	w	588	G
48	w	589	G
48	w	590	A2M
48	w	592	C
48	w	594	A
48	w	595	U
48	w	596	U
48	w	597	G
48	w	604	A
48	w	605	A
48	w	606	G
48	w	608	C
48	w	612	U
48	w	614	C
48	w	616	A
48	w	617	G
48	w	627	OMU
48	w	628	A
48	w	634	A
48	w	643	A
48	w	655	A
48	w	660	C
48	w	664	A
48	w	668	A2M
48	w	669	A
48	w	671	A
48	w	672	A
48	w	688	U
48	w	810	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
48	w	811	A
48	w	812	A
48	w	821	G
48	w	822	PSU
48	w	830	A
48	w	834	C
48	w	836	G
48	w	837	A
48	w	838	G
48	w	839	C
48	w	840	C
48	w	841	G
48	w	842	C
48	w	847	A
48	w	849	A
48	w	869	A
48	w	870	A
48	w	872	A
48	w	880	G
48	w	882	U
48	w	883	U
48	w	884	C
48	w	888	U
48	w	889	U
48	w	890	U
48	w	891	G
48	w	893	U
48	w	895	G
48	w	896	U
48	w	898	U
48	w	899	U
48	w	900	C
48	w	901	G
48	w	904	A
48	w	909	G
48	w	913	A
48	w	920	A
48	w	922	A
48	w	930	C
48	w	933	G
48	w	934	G
48	w	943	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
48	w	958	G
48	w	970	G
48	w	971	G
48	w	972	A
48	w	990	A
48	w	992	A
48	w	999	G
48	w	1017	U
48	w	1023	A
48	w	1027	A
48	w	1055	A
48	w	1060	A
48	w	1061	U
48	w	1062	A
48	w	1083	A
48	w	1084	A
48	w	1085	C
48	w	1109	C
48	w	1115	U
48	w	1116	C
48	w	1117	C
48	w	1118	C
48	w	1119	A
48	w	1121	G
48	w	1126	G
48	w	1148	A
48	w	1149	A
48	w	1153	C
48	w	1154	U
48	w	1157	G
48	w	1181	A
48	w	1183	A
48	w	1195	A
48	w	1207	G
48	w	1208	A
48	w	1215	C
48	w	1217	A
48	w	1221	G
48	w	1224	G
48	w	1242	U
48	w	1243	U
48	w	1251	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
48	w	1253	A
48	w	1256	G
48	w	1257	G
48	w	1259	A
48	w	1264	C
48	w	1265	A
48	w	1271	C
48	w	1274	G
48	w	1275	G
48	w	1284	A
48	w	1285	G
48	w	1289	U
48	w	1293	A
48	w	1295	A
48	w	1298	G
48	w	1301	A
48	w	1302	G
48	w	1303	C
48	w	1304	U
48	w	1307	U
48	w	1308	U
48	w	1309	C
48	w	1331	C
48	w	1332	A
48	w	1333	U
48	w	1341	C
48	w	1342	U
48	w	1348	G
48	w	1371	U
48	w	1372	U
48	w	1373	C
48	w	1378	A
48	w	1396	A
48	w	1401	A
48	w	1402	A
48	w	1403	C
48	w	1408	U
48	w	1417	C
48	w	1428	G
48	w	1429	G
48	w	1430	C
48	w	1433	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
48	w	1434	C
48	w	1435	C
48	w	1436	C
48	w	1438	A
48	w	1447	G
48	w	1449	G
48	w	1450	G
48	w	1452	A
48	w	1453	C
48	w	1454	A
48	w	1462	U
48	w	1463	U
48	w	1477	U
48	w	1487	A
48	w	1489	A
48	w	1490	OMG
48	w	1497	G
48	w	1498	A
48	w	1508	A
48	w	1509	U
48	w	1515	G
48	w	1521	C
48	w	1522	A
48	w	1526	G
48	w	1527	C
48	w	1528	G
48	w	1533	A
48	w	1535	U
48	w	1543	U
48	w	1545	A
48	w	1546	G
48	w	1548	G
48	w	1550	G
48	w	1552	G
48	w	1553	C
48	w	1555	U
48	w	1556	A
48	w	1570	G
48	w	1574	C
48	w	1579	A
48	w	1580	A
48	w	1585	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
48	w	1586	U
48	w	1588	A
48	w	1599	U
48	w	1600	G
48	w	1602	U
48	w	1621	U
48	w	1623	A
48	w	1624	U
48	w	1630	A
48	w	1632	G
48	w	1633	A
48	w	1636	G
48	w	1637	A
48	w	1639	G7M
48	w	1640	A
48	w	1648	G
48	w	1654	G
48	w	1661	A
48	w	1663	A
48	w	1665	G
48	w	1699	A
48	w	1721	U
48	w	1722	G
48	w	1745	A
48	w	1748	G
48	w	1751	C
48	w	1753	C
48	w	1754	G
48	w	1778	C
48	w	1779	G
48	w	1782	G
48	w	1783	C
48	w	1784	G
48	w	1786	U
48	w	1800	A
48	w	1803	U
48	w	1804	OMU
48	w	1813	A
48	w	1824	A
48	w	1829	G
48	w	1831	A
48	w	1838	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
48	w	1849	G
48	w	1852	C
48	w	1861	G
48	w	1862	G
48	w	1863	A
48	w	1865	C
48	w	1869	A

All (28) RNA pucker outliers are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	B	48	5MC
3	D	1	C
3	D	385	A
3	D	406	C
3	D	515	C
3	D	914	U
3	D	922	C
3	D	987	C
3	D	1081	C
3	D	1303	A
3	D	1574	G
3	D	1633	G
3	D	1755	C
3	D	2101	C
3	D	2102	G
3	D	2675	G
3	D	3614	G
3	D	3673	C
3	D	3773	U
3	D	4113	U
3	D	4115	G
3	D	4378	A
3	D	4600	G
3	D	4678	G
3	D	4699	U
3	D	4913	G
3	D	5016	A
5	F	86	U

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
48	PSU	w	406	48	18,21,22	1.04	1 (5%)	22,30,33	1.85	5 (22%)
48	PSU	w	801	48	18,21,22	1.08	1 (5%)	22,30,33	1.75	4 (18%)
48	PSU	w	651	48	18,21,22	1.07	1 (5%)	22,30,33	1.83	5 (22%)
48	OMG	w	509	48	18,26,27	2.79	8 (44%)	19,38,41	1.53	4 (21%)
3	PSU	D	5010	3	18,21,22	1.04	1 (5%)	22,30,33	1.85	4 (18%)
2	5MU	B	54	2	19,22,23	4.75	5 (26%)	28,32,35	3.62	9 (32%)
3	PSU	D	5001	3,81	18,21,22	1.05	1 (5%)	22,30,33	1.81	4 (18%)
3	OMC	D	2365	3,81	19,22,23	2.83	8 (42%)	26,31,34	0.72	0
3	A2M	D	4523	3,81	18,25,26	1.56	2 (11%)	18,36,39	1.06	1 (5%)
48	OMU	w	799	48	19,22,23	2.95	8 (42%)	26,31,34	1.67	5 (19%)
3	PSU	D	1781	3	18,21,22	1.02	1 (5%)	22,30,33	1.80	4 (18%)
3	PSU	D	3758	3	18,21,22	0.96	1 (5%)	22,30,33	1.86	5 (22%)
48	PSU	w	1232	48	18,21,22	1.04	1 (5%)	22,30,33	1.83	5 (22%)
48	OMC	w	462	48	19,22,23	2.98	8 (42%)	26,31,34	0.72	0
3	OMG	D	4392	3	18,26,27	2.69	8 (44%)	19,38,41	1.50	4 (21%)
3	OMG	D	3627	3	18,26,27	2.73	8 (44%)	19,38,41	1.56	4 (21%)
3	OMG	D	3744	3	18,26,27	2.75	8 (44%)	19,38,41	1.53	4 (21%)
3	PSU	D	1782	3	18,21,22	1.01	1 (5%)	22,30,33	1.81	4 (18%)
2	G7M	C	46	2	20,26,27	2.82	8 (40%)	17,39,42	1.08	1 (5%)
48	A2M	w	576	48	18,25,26	1.41	1 (5%)	18,36,39	1.07	1 (5%)
48	A2M	w	1678	48	18,25,26	1.50	1 (5%)	18,36,39	0.96	1 (5%)
3	PSU	D	4299	3	18,21,22	1.02	1 (5%)	22,30,33	1.87	4 (18%)
48	PSU	w	866	48	18,21,22	1.07	1 (5%)	22,30,33	1.84	5 (22%)
3	A2M	D	3760	3	18,25,26	1.51	1 (5%)	18,36,39	1.02	0
48	PSU	w	681	48	18,21,22	1.03	2 (11%)	22,30,33	1.84	4 (18%)
3	OMU	D	4498	3,81	19,22,23	2.77	6 (31%)	26,31,34	1.72	4 (15%)



Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
2	PSU	B	55	2	18,21,22	1.08	1 (5%)	22,30,33	1.74	6 (27%)
48	A2M	w	99	48,81	18,25,26	1.48	1 (5%)	18,36,39	1.03	1 (5%)
3	A2M	D	1534	3,81	18,25,26	1.44	1 (5%)	18,36,39	1.37	3 (16%)
2	M2G	C	27	2	20,27,28	1.47	4 (20%)	22,40,43	1.36	2 (9%)
2	2MG	B	6	2	18,26,27	2.27	5 (27%)	16,38,41	1.55	4 (25%)
48	PSU	w	649	48	18,21,22	1.04	1 (5%)	22,30,33	1.84	5 (22%)
3	PSU	D	3853	3,81	18,21,22	1.03	1 (5%)	22,30,33	1.77	4 (18%)
48	PSU	w	1244	48	18,21,22	1.05	1 (5%)	22,30,33	1.77	4 (18%)
3	PSU	D	4361	3	18,21,22	1.05	1 (5%)	22,30,33	1.78	4 (18%)
2	UY1	B	39	2	19,22,23	1.19	1 (5%)	22,31,34	0.96	1 (4%)
3	PSU	D	4500	3	18,21,22	1.04	1 (5%)	22,30,33	1.87	4 (18%)
3	PSU	D	1677	3,81	18,21,22	1.06	2 (11%)	22,30,33	1.80	4 (18%)
3	PSU	D	1536	3	18,21,22	1.06	2 (11%)	22,30,33	1.89	4 (18%)
3	OMC	D	3701	3,81	19,22,23	2.85	8 (42%)	26,31,34	0.76	0
48	PSU	w	1238	48	18,21,22	1.08	1 (5%)	22,30,33	1.73	4 (18%)
3	A2M	D	2401	3	18,25,26	1.48	1 (5%)	18,36,39	1.01	1 (5%)
48	MA6	w	1851	48	19,26,27	0.99	1 (5%)	18,38,41	1.74	3 (16%)
2	1MG	C	37	2	18,26,27	2.63	6 (33%)	19,39,42	1.44	4 (21%)
2	M2G	B	26	2	20,27,28	1.54	4 (20%)	22,40,43	1.26	2 (9%)
2	1MA	C	58	2	16,25,26	0.98	1 (6%)	18,37,40	0.84	0
3	OMU	D	2837	3	19,22,23	2.78	6 (31%)	26,31,34	1.88	5 (19%)
48	PSU	w	822	48	18,21,22	1.06	1 (5%)	22,30,33	1.84	4 (18%)
48	OMG	w	1490	48,81	18,26,27	2.77	8 (44%)	19,38,41	1.47	4 (21%)
3	PSU	D	3768	3	18,21,22	1.04	1 (5%)	22,30,33	1.75	3 (13%)
48	PSU	w	966	48	18,21,22	1.05	1 (5%)	22,30,33	1.74	4 (18%)
3	PSU	D	1792	3	18,21,22	0.99	1 (5%)	22,30,33	1.80	4 (18%)
3	OMG	D	4196	3,81	18,26,27	2.73	8 (44%)	19,38,41	1.51	4 (21%)
48	PSU	w	1692	48	18,21,22	1.03	1 (5%)	22,30,33	1.81	4 (18%)
3	PSU	D	4532	3	18,21,22	1.03	1 (5%)	22,30,33	1.79	4 (18%)
3	PSU	D	4403	3,81	18,21,22	1.04	1 (5%)	22,30,33	1.84	4 (18%)
3	A2M	D	1326	3	18,25,26	1.46	1 (5%)	18,36,39	1.04	1 (5%)
3	A2M	D	2787	3,81	18,25,26	1.52	1 (5%)	18,36,39	1.12	1 (5%)
2	5MC	C	48	2	18,22,23	3.83	8 (44%)	26,32,35	1.04	2 (7%)
3	PSU	D	4353	3	18,21,22	1.04	2 (11%)	22,30,33	1.83	4 (18%)
3	PSU	D	4312	3	18,21,22	1.02	1 (5%)	22,30,33	1.89	5 (22%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
48	PSU	w	1367	48	18,21,22	1.04	1 (5%)	22,30,33	1.84	5 (22%)
48	OMG	w	601	48	18,26,27	2.80	8 (44%)	19,38,41	1.50	4 (21%)
48	PSU	w	1045	48	18,21,22	1.03	1 (5%)	22,30,33	1.78	4 (18%)
48	OMG	w	436	48	18,26,27	2.80	8 (44%)	19,38,41	1.51	4 (21%)
3	A2M	D	1524	3	18,25,26	1.57	2 (11%)	18,36,39	1.00	1 (5%)
3	PSU	D	4579	3	18,21,22	1.05	2 (11%)	22,30,33	1.84	4 (18%)
48	OMU	w	121	48	19,22,23	2.90	8 (42%)	26,31,34	1.67	5 (19%)
48	OMG	w	644	48	18,26,27	2.83	8 (44%)	19,38,41	1.49	4 (21%)
3	PSU	D	4457	3	18,21,22	1.04	1 (5%)	22,30,33	1.78	4 (18%)
3	PSU	D	1683	3,81	18,21,22	1.04	2 (11%)	22,30,33	1.92	5 (22%)
3	PSU	D	3764	3	18,21,22	1.03	1 (5%)	22,30,33	1.78	4 (18%)
3	OMC	D	2422	3,81	19,22,23	2.87	8 (42%)	26,31,34	0.72	0
3	OMG	D	4228	3	18,26,27	2.70	8 (44%)	19,38,41	1.56	4 (21%)
48	PSU	w	815	48	18,21,22	1.08	1 (5%)	22,30,33	1.88	5 (22%)
48	PSU	w	572	48	18,21,22	1.11	1 (5%)	22,30,33	1.80	5 (22%)
3	5MC	D	4447	3,81	18,22,23	3.63	7 (38%)	26,32,35	1.15	1 (3%)
48	B8N	w	1248	48	24,29,30	0.82	0	29,42,45	0.94	2 (6%)
48	PSU	w	1174	48,81	18,21,22	1.04	1 (5%)	22,30,33	1.77	4 (18%)
48	PSU	w	1177	48	18,21,22	1.04	1 (5%)	22,30,33	1.82	4 (18%)
3	PSU	D	3639	3	18,21,22	1.04	2 (11%)	22,30,33	1.85	4 (18%)
3	PSU	D	4442	3	18,21,22	1.05	2 (11%)	22,30,33	1.89	6 (27%)
3	PSU	D	4628	3	18,21,22	1.05	1 (5%)	22,30,33	1.89	4 (18%)
3	PSU	D	4576	3	18,21,22	1.02	1 (5%)	22,30,33	1.85	5 (22%)
3	PSU	D	3770	3	18,21,22	1.06	1 (5%)	22,30,33	1.76	4 (18%)
2	56B	C	34	80,2	27,35,36	2.82	11 (40%)	28,52,55	4.84	5 (17%)
3	A2M	D	2815	3	18,25,26	1.62	1 (5%)	18,36,39	1.03	1 (5%)
3	PSU	D	3695	3	18,21,22	1.02	1 (5%)	22,30,33	1.81	4 (18%)
3	OMG	D	3899	3	18,26,27	2.70	8 (44%)	19,38,41	1.53	4 (21%)
48	PSU	w	609	48	18,21,22	1.08	1 (5%)	22,30,33	1.75	4 (18%)
48	PSU	w	1643	48,81	18,21,22	1.06	1 (5%)	22,30,33	1.81	4 (18%)
48	A2M	w	468	48	18,25,26	1.64	1 (5%)	18,36,39	1.07	1 (5%)
3	OMC	D	2351	3,81	19,22,23	2.80	7 (36%)	26,31,34	0.83	1 (3%)
48	4AC	w	1842	48	21,24,25	0.57	0	29,34,37	1.17	4 (13%)
3	OMG	D	1316	3	18,26,27	2.69	8 (44%)	19,38,41	1.58	4 (21%)
2	G7M	B	46	2	20,26,27	2.79	8 (40%)	17,39,42	1.18	2 (11%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	PSU	D	3734	3	18,21,22	1.04	1 (5%)	22,30,33	1.80	4 (18%)
3	OMU	D	2415	3	19,22,23	2.83	6 (31%)	26,31,34	1.97	6 (23%)
5	OMG	F	75	5	18,26,27	2.75	8 (44%)	19,38,41	1.51	4 (21%)
48	A2M	w	166	48	18,25,26	1.48	1 (5%)	18,36,39	1.09	1 (5%)
3	PSU	D	4296	3	18,21,22	1.05	1 (5%)	22,30,33	1.81	4 (18%)
3	A2M	D	3724	3	18,25,26	1.47	1 (5%)	18,36,39	1.10	0
3	PSU	D	4471	3	18,21,22	1.04	1 (5%)	22,30,33	1.74	4 (18%)
48	A2M	w	668	48,81	18,25,26	1.60	2 (11%)	18,36,39	0.97	1 (5%)
48	OMU	w	116	48	19,22,23	2.93	8 (42%)	26,31,34	1.69	4 (15%)
2	1MA	B	58	2	16,25,26	0.95	1 (6%)	18,37,40	0.83	0
3	OMG	D	1625	3,81	18,26,27	2.77	8 (44%)	19,38,41	1.49	4 (21%)
48	A2M	w	590	48	18,25,26	1.48	1 (5%)	18,36,39	1.03	1 (5%)
3	PSU	D	3730	3	18,21,22	1.01	1 (5%)	22,30,33	1.86	5 (22%)
3	A2M	D	1871	3,81	18,25,26	1.57	1 (5%)	18,36,39	1.16	1 (5%)
48	A2M	w	484	48	18,25,26	1.50	1 (5%)	18,36,39	1.00	1 (5%)
48	PSU	w	34	48	18,21,22	1.10	1 (5%)	22,30,33	1.79	4 (18%)
48	PSU	w	863	48	18,21,22	1.07	1 (5%)	22,30,33	1.80	4 (18%)
48	PSU	w	210	48	18,21,22	1.09	1 (5%)	22,30,33	1.77	4 (18%)
3	OMG	D	1522	3	18,26,27	2.69	8 (44%)	19,38,41	1.56	4 (21%)
3	UY1	D	3818	3,81	19,22,23	1.10	1 (5%)	22,31,34	0.93	1 (4%)
3	OMC	D	1340	3	19,22,23	2.82	8 (42%)	26,31,34	0.70	0
3	A2M	D	400	3	18,25,26	1.49	1 (5%)	18,36,39	1.01	1 (5%)
3	PSU	D	1862	3	18,21,22	1.03	1 (5%)	22,30,33	1.95	5 (22%)
3	PSU	D	4521	3,81	18,21,22	1.07	2 (11%)	22,30,33	1.88	5 (22%)
2	5MU	C	54	2	19,22,23	4.73	5 (26%)	28,32,35	3.60	9 (32%)
3	A2M	D	3718	3	18,25,26	1.48	1 (5%)	18,36,39	1.05	1 (5%)
3	PSU	D	4972	3,81	18,21,22	1.01	1 (5%)	22,30,33	1.88	5 (22%)
2	H2U	C	47	2	18,21,22	1.09	2 (11%)	21,30,33	1.38	2 (9%)
2	UY1	C	39	2	19,22,23	1.28	2 (10%)	22,31,34	0.95	1 (4%)
2	56B	B	34	80,2	27,35,36	2.81	11 (40%)	28,52,55	4.72	5 (17%)
3	PSU	D	2508	3	18,21,22	1.02	1 (5%)	22,30,33	1.85	5 (22%)
3	OMU	D	3925	3	19,22,23	2.77	6 (31%)	26,31,34	1.82	5 (19%)
3	OMU	D	4306	3	19,22,23	2.72	6 (31%)	26,31,34	1.74	5 (19%)
48	OMC	w	174	48	19,22,23	3.01	8 (42%)	26,31,34	0.71	0
48	PSU	w	814	48	18,21,22	1.06	1 (5%)	22,30,33	1.86	5 (22%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	OMC	D	4456	3	19,22,23	2.84	8 (42%)	26,31,34	0.69	0
3	OMG	D	4623	3	18,26,27	2.70	8 (44%)	19,38,41	1.50	4 (21%)
48	A2M	w	27	48	18,25,26	1.45	1 (5%)	18,36,39	1.00	1 (5%)
2	1MG	B	37	2	18,26,27	2.64	7 (38%)	19,39,42	1.44	3 (15%)
3	UR3	D	4530	3,81	19,22,23	2.64	7 (36%)	26,32,35	1.27	1 (3%)
3	PSU	D	3715	3	18,21,22	1.06	1 (5%)	22,30,33	1.81	4 (18%)
3	A2M	D	3825	3	18,25,26	1.53	1 (5%)	18,36,39	1.06	1 (5%)
48	OMU	w	1326	48	19,22,23	2.89	8 (42%)	26,31,34	1.72	4 (15%)
48	PSU	w	93	48	18,21,22	1.09	1 (5%)	22,30,33	1.75	4 (18%)
3	PSU	D	4293	3	18,21,22	1.04	1 (5%)	22,30,33	1.78	4 (18%)
48	4AC	w	1337	48	21,24,25	0.66	0	29,34,37	1.19	4 (13%)
2	H2U	B	47	2	18,21,22	1.03	2 (11%)	21,30,33	0.78	0
48	PSU	w	1347	48	18,21,22	1.01	1 (5%)	22,30,33	1.79	4 (18%)
48	OMU	w	1288	48	19,22,23	2.96	8 (42%)	26,31,34	1.69	4 (15%)
2	5MC	B	48	2	18,22,23	3.82	8 (44%)	26,32,35	1.10	2 (7%)
3	OMG	D	2364	3	18,26,27	2.70	8 (44%)	19,38,41	1.53	4 (21%)
3	PSU	D	1860	3	18,21,22	1.04	1 (5%)	22,30,33	1.81	4 (18%)
2	2MG	C	10	2	18,26,27	2.26	5 (27%)	16,38,41	1.44	3 (18%)
48	MA6	w	1850	48	19,26,27	0.99	1 (5%)	18,38,41	1.65	3 (16%)
3	A2M	D	3830	3	18,25,26	1.45	1 (5%)	18,36,39	1.07	0
3	PSU	D	4552	3	18,21,22	1.07	1 (5%)	22,30,33	1.83	4 (18%)
48	PSU	w	36	48	18,21,22	1.06	1 (5%)	22,30,33	1.81	5 (22%)
3	OMG	D	4637	3	18,26,27	2.71	8 (44%)	19,38,41	1.53	4 (21%)
3	PSU	D	3851	3	18,21,22	1.05	2 (11%)	22,30,33	1.84	4 (18%)
2	PSU	B	35	1,2	18,21,22	1.04	1 (5%)	22,30,33	1.84	5 (22%)
3	A2M	D	2363	3,81	18,25,26	1.51	2 (11%)	18,36,39	1.02	1 (5%)
48	PSU	w	1081	48	18,21,22	1.01	1 (5%)	22,30,33	1.76	5 (22%)
3	OMG	D	3792	3	18,26,27	2.72	8 (44%)	19,38,41	1.45	4 (21%)
3	OMU	D	4620	3	19,22,23	2.75	6 (31%)	26,31,34	1.79	5 (19%)
3	OMC	D	2824	3	19,22,23	2.88	8 (42%)	26,31,34	0.70	0
3	OMG	D	4494	3	18,26,27	2.74	8 (44%)	19,38,41	1.51	4 (21%)
48	A2M	w	512	48	18,25,26	1.50	1 (5%)	18,36,39	1.09	1 (5%)
3	OMC	D	3841	3	19,22,23	2.81	8 (42%)	26,31,34	0.70	0
48	6MZ	w	1832	48,81	18,25,26	2.04	3 (16%)	16,36,39	1.92	2 (12%)
48	PSU	w	1046	48	18,21,22	1.05	1 (5%)	22,30,33	1.76	4 (18%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	1MA	D	1322	3	16,25,26	0.87	0	18,37,40	0.89	0
2	2MG	C	6	2	18,26,27	2.24	5 (27%)	16,38,41	1.42	3 (18%)
3	OMU	D	4227	3	19,22,23	2.79	6 (31%)	26,31,34	1.78	4 (15%)
3	OMU	D	1773	3	19,22,23	2.96	8 (42%)	26,31,34	1.61	5 (19%)
3	PSU	D	4689	3	18,21,22	1.03	1 (5%)	22,30,33	1.81	4 (18%)
48	PSU	w	218	48	18,21,22	1.08	1 (5%)	22,30,33	1.82	4 (18%)
48	OMU	w	627	48	19,22,23	2.91	8 (42%)	26,31,34	1.68	4 (15%)
3	OMG	D	1760	3	18,26,27	2.87	8 (44%)	19,38,41	1.51	4 (21%)
3	PSU	D	4431	3	18,21,22	1.03	1 (5%)	22,30,33	1.78	4 (18%)
48	OMC	w	517	48	19,22,23	3.01	8 (42%)	26,31,34	0.72	0
3	A2M	D	398	3	18,25,26	1.50	1 (5%)	18,36,39	1.04	1 (5%)
48	PSU	w	1056	48	18,21,22	1.05	1 (5%)	22,30,33	1.82	5 (22%)
48	OMC	w	1703	48,81	19,22,23	2.94	8 (42%)	26,31,34	0.72	0
2	M2G	B	27	2	20,27,28	1.53	4 (20%)	22,40,43	1.36	2 (9%)
48	OMU	w	428	48	19,22,23	2.92	8 (42%)	26,31,34	1.72	5 (19%)
48	G7M	w	1639	48,2	20,26,27	2.75	7 (35%)	17,39,42	1.21	1 (5%)
2	M2G	C	26	2	20,27,28	1.55	4 (20%)	22,40,43	1.29	2 (9%)
2	2MG	B	10	2	18,26,27	2.23	5 (27%)	16,38,41	1.45	3 (18%)
3	PSU	D	2632	3	18,21,22	1.03	1 (5%)	22,30,33	1.81	4 (18%)
48	OMG	w	683	48	18,26,27	2.80	8 (44%)	19,38,41	1.51	4 (21%)
3	PSU	D	1744	3,81	18,21,22	1.02	1 (5%)	22,30,33	1.83	4 (18%)
48	PSU	w	686	48	18,21,22	1.07	1 (5%)	22,30,33	1.83	4 (18%)
3	PSU	D	4420	3	18,21,22	1.05	1 (5%)	22,30,33	1.84	6 (27%)
48	A2M	w	1031	48	18,25,26	1.46	1 (5%)	18,36,39	1.01	1 (5%)
2	PSU	C	55	2	18,21,22	1.08	1 (5%)	22,30,33	1.78	4 (18%)
3	A2M	D	3785	3,81	18,25,26	1.58	2 (11%)	18,36,39	1.25	1 (5%)
48	OMU	w	1804	48	19,22,23	2.90	7 (36%)	26,31,34	1.74	4 (15%)
3	OMC	D	2861	3	19,22,23	2.86	8 (42%)	26,31,34	0.67	0
48	PSU	w	119	48	18,21,22	1.07	1 (5%)	22,30,33	1.77	4 (18%)
48	A2M	w	1383	48	18,25,26	1.47	1 (5%)	18,36,39	1.13	1 (5%)
48	PSU	w	1445	48	18,21,22	1.05	1 (5%)	22,30,33	1.78	5 (22%)
3	OMG	D	2424	3	18,26,27	2.78	8 (44%)	19,38,41	1.51	4 (21%)
3	OMG	D	4499	3,2	18,26,27	2.75	8 (44%)	19,38,41	1.51	4 (21%)
3	OMC	D	3887	3	19,22,23	2.87	8 (42%)	26,31,34	0.78	0
3	OMG	D	4618	3	18,26,27	2.72	8 (44%)	19,38,41	1.47	4 (21%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
48	OMU	w	1442	48,81	19,22,23	2.91	8 (42%)	26,31,34	1.72	5 (19%)
3	OMC	D	2804	3	19,22,23	2.86	8 (42%)	26,31,34	0.68	0
48	OMC	w	1391	48	19,22,23	2.96	8 (42%)	26,31,34	0.72	0
3	6MZ	D	4220	3	18,25,26	2.00	2 (11%)	16,36,39	2.08	3 (18%)
3	PSU	D	3637	3,81	18,21,22	1.05	1 (5%)	22,30,33	1.85	2 (9%)
3	PSU	D	3762	3	18,21,22	1.05	1 (5%)	22,30,33	1.77	4 (18%)
3	OMG	D	4370	3	18,26,27	2.73	8 (44%)	19,38,41	1.50	4 (21%)
3	PSU	D	3920	3,81	18,21,22	1.07	2 (11%)	22,30,33	1.87	4 (18%)
48	PSU	w	109	48	18,21,22	1.07	1 (5%)	22,30,33	1.85	5 (22%)
48	A2M	w	159	48	18,25,26	1.56	1 (5%)	18,36,39	1.06	1 (5%)
48	OMU	w	172	48	19,22,23	2.91	7 (36%)	26,31,34	1.73	5 (19%)
3	PSU	D	4423	3	18,21,22	1.06	1 (5%)	22,30,33	1.85	4 (18%)
3	OMC	D	3808	3	19,22,23	2.84	8 (42%)	26,31,34	0.74	0
2	PSU	C	35	1,2	18,21,22	1.01	1 (5%)	22,30,33	1.81	5 (22%)
48	PSU	w	105	48	18,21,22	1.09	1 (5%)	22,30,33	1.92	5 (22%)
3	5MC	D	3782	3,81	18,22,23	3.59	8 (44%)	26,32,35	1.08	2 (7%)
3	OMG	D	3944	3	18,26,27	2.83	8 (44%)	19,38,41	1.48	4 (21%)
48	OMG	w	1328	48	18,26,27	2.83	8 (44%)	19,38,41	1.47	4 (21%)
3	OMC	D	4536	3	19,22,23	2.84	8 (42%)	26,31,34	0.72	0
48	PSU	w	1004	48	18,21,22	1.06	1 (5%)	22,30,33	1.81	4 (18%)
48	PSU	w	1625	48	18,21,22	1.08	1 (5%)	22,30,33	1.81	4 (18%)

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
48	PSU	w	406	48	-	0/7/25/26	0/2/2/2
48	PSU	w	801	48	-	0/7/25/26	0/2/2/2
48	PSU	w	651	48	-	0/7/25/26	0/2/2/2
48	OMG	w	509	48	-	1/5/27/28	0/3/3/3
3	PSU	D	5010	3	-	0/7/25/26	0/2/2/2
2	5MU	B	54	2	-	2/7/25/26	0/2/2/2
3	PSU	D	5001	3,81	-	0/7/25/26	0/2/2/2
3	OMC	D	2365	3,81	-	0/9/27/28	0/2/2/2
3	A2M	D	4523	3,81	-	0/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
48	OMU	w	799	48	-	3/9/27/28	0/2/2/2
3	PSU	D	1781	3	-	0/7/25/26	0/2/2/2
3	PSU	D	3758	3	-	2/7/25/26	0/2/2/2
48	PSU	w	1232	48	-	0/7/25/26	0/2/2/2
48	OMC	w	462	48	-	0/9/27/28	0/2/2/2
3	OMG	D	4392	3	-	0/5/27/28	0/3/3/3
3	OMG	D	3627	3	-	0/5/27/28	0/3/3/3
3	OMG	D	3744	3	-	0/5/27/28	0/3/3/3
3	PSU	D	1782	3	-	0/7/25/26	0/2/2/2
2	G7M	C	46	2	-	2/3/25/26	0/3/3/3
48	A2M	w	576	48	-	2/5/27/28	0/3/3/3
48	A2M	w	1678	48	-	1/5/27/28	0/3/3/3
3	PSU	D	4299	3	-	0/7/25/26	0/2/2/2
48	PSU	w	866	48	-	0/7/25/26	0/2/2/2
3	A2M	D	3760	3	-	0/5/27/28	0/3/3/3
48	PSU	w	681	48	-	0/7/25/26	0/2/2/2
3	OMU	D	4498	3,81	-	0/9/27/28	0/2/2/2
2	PSU	B	55	2	-	2/7/25/26	0/2/2/2
48	A2M	w	99	48,81	-	2/5/27/28	0/3/3/3
3	A2M	D	1534	3,81	-	3/5/27/28	0/3/3/3
2	M2G	C	27	2	-	0/7/29/30	0/3/3/3
2	2MG	B	6	2	-	0/5/27/28	0/3/3/3
48	PSU	w	649	48	-	0/7/25/26	0/2/2/2
3	PSU	D	3853	3,81	-	0/7/25/26	0/2/2/2
48	PSU	w	1244	48	-	0/7/25/26	0/2/2/2
3	PSU	D	4361	3	-	0/7/25/26	0/2/2/2
2	UY1	B	39	2	-	2/9/27/28	0/2/2/2
3	PSU	D	4500	3	-	5/7/25/26	0/2/2/2
3	PSU	D	1677	3,81	-	3/7/25/26	0/2/2/2
3	PSU	D	1536	3	-	0/7/25/26	0/2/2/2
3	OMC	D	3701	3,81	-	4/9/27/28	0/2/2/2
48	PSU	w	1238	48	-	2/7/25/26	0/2/2/2
3	A2M	D	2401	3	-	0/5/27/28	0/3/3/3
48	MA6	w	1851	48	-	2/7/29/30	0/3/3/3
2	1MG	C	37	2	-	0/3/25/26	0/3/3/3
2	M2G	B	26	2	-	2/7/29/30	0/3/3/3
2	1MA	C	58	2	-	0/3/25/26	0/3/3/3
3	OMU	D	2837	3	-	0/9/27/28	0/2/2/2
48	PSU	w	822	48	-	2/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
48	OMG	w	1490	48,81	-	4/5/27/28	0/3/3/3
3	PSU	D	3768	3	-	0/7/25/26	0/2/2/2
48	PSU	w	966	48	-	0/7/25/26	0/2/2/2
3	PSU	D	1792	3	-	0/7/25/26	0/2/2/2
3	OMG	D	4196	3,81	-	0/5/27/28	0/3/3/3
48	PSU	w	1692	48	-	0/7/25/26	0/2/2/2
3	PSU	D	4532	3	-	0/7/25/26	0/2/2/2
3	PSU	D	4403	3,81	-	0/7/25/26	0/2/2/2
3	A2M	D	1326	3	-	1/5/27/28	0/3/3/3
3	A2M	D	2787	3,81	-	0/5/27/28	0/3/3/3
2	5MC	C	48	2	-	2/7/25/26	0/2/2/2
3	PSU	D	4353	3	-	0/7/25/26	0/2/2/2
3	PSU	D	4312	3	-	0/7/25/26	0/2/2/2
48	PSU	w	1367	48	-	0/7/25/26	0/2/2/2
48	OMG	w	601	48	-	0/5/27/28	0/3/3/3
48	PSU	w	1045	48	-	0/7/25/26	0/2/2/2
48	OMG	w	436	48	-	0/5/27/28	0/3/3/3
3	A2M	D	1524	3	-	0/5/27/28	0/3/3/3
3	PSU	D	4579	3	-	0/7/25/26	0/2/2/2
48	OMU	w	121	48	-	0/9/27/28	0/2/2/2
48	OMG	w	644	48	-	3/5/27/28	0/3/3/3
3	PSU	D	4457	3	-	0/7/25/26	0/2/2/2
3	PSU	D	1683	3,81	-	0/7/25/26	0/2/2/2
3	PSU	D	3764	3	-	0/7/25/26	0/2/2/2
3	OMC	D	2422	3,81	-	1/9/27/28	0/2/2/2
3	OMG	D	4228	3	-	0/5/27/28	0/3/3/3
48	PSU	w	815	48	-	0/7/25/26	0/2/2/2
48	PSU	w	572	48	-	0/7/25/26	0/2/2/2
3	5MC	D	4447	3,81	-	4/7/25/26	0/2/2/2
48	B8N	w	1248	48	-	4/16/34/35	0/2/2/2
48	PSU	w	1174	48,81	-	0/7/25/26	0/2/2/2
48	PSU	w	1177	48	-	0/7/25/26	0/2/2/2
3	PSU	D	3639	3	-	0/7/25/26	0/2/2/2
3	PSU	D	4442	3	-	0/7/25/26	0/2/2/2
3	PSU	D	4628	3	-	0/7/25/26	0/2/2/2
3	PSU	D	4576	3	-	0/7/25/26	0/2/2/2
3	PSU	D	3770	3	-	0/7/25/26	0/2/2/2
2	56B	C	34	80,2	-	2/6/43/44	0/4/4/4
3	A2M	D	2815	3	-	2/5/27/28	0/3/3/3
3	PSU	D	3695	3	-	0/7/25/26	0/2/2/2
3	OMG	D	3899	3	-	0/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
48	PSU	w	609	48	-	0/7/25/26	0/2/2/2
48	PSU	w	1643	48,81	-	0/7/25/26	0/2/2/2
48	A2M	w	468	48	-	2/5/27/28	0/3/3/3
3	OMC	D	2351	3,81	-	2/9/27/28	0/2/2/2
48	4AC	w	1842	48	-	0/11/29/30	0/2/2/2
3	OMG	D	1316	3	-	0/5/27/28	0/3/3/3
2	G7M	B	46	2	-	2/3/25/26	0/3/3/3
3	PSU	D	3734	3	-	0/7/25/26	0/2/2/2
3	OMU	D	2415	3	-	1/9/27/28	0/2/2/2
5	OMG	F	75	5	-	1/5/27/28	0/3/3/3
48	A2M	w	166	48	-	3/5/27/28	0/3/3/3
3	PSU	D	4296	3	-	0/7/25/26	0/2/2/2
3	A2M	D	3724	3	-	1/5/27/28	0/3/3/3
3	PSU	D	4471	3	-	0/7/25/26	0/2/2/2
48	A2M	w	668	48,81	-	2/5/27/28	0/3/3/3
48	OMU	w	116	48	-	0/9/27/28	0/2/2/2
2	1MA	B	58	2	-	2/3/25/26	0/3/3/3
3	OMG	D	1625	3,81	-	0/5/27/28	0/3/3/3
48	A2M	w	590	48	-	2/5/27/28	0/3/3/3
3	PSU	D	3730	3	-	0/7/25/26	0/2/2/2
3	A2M	D	1871	3,81	-	0/5/27/28	0/3/3/3
48	A2M	w	484	48	-	0/5/27/28	0/3/3/3
48	PSU	w	34	48	-	3/7/25/26	0/2/2/2
48	PSU	w	863	48	-	0/7/25/26	0/2/2/2
48	PSU	w	210	48	-	0/7/25/26	0/2/2/2
3	OMG	D	1522	3	-	0/5/27/28	0/3/3/3
3	UY1	D	3818	3,81	-	4/9/27/28	0/2/2/2
3	OMC	D	1340	3	-	0/9/27/28	0/2/2/2
3	A2M	D	400	3	-	0/5/27/28	0/3/3/3
3	PSU	D	1862	3	-	0/7/25/26	0/2/2/2
3	PSU	D	4521	3,81	-	2/7/25/26	0/2/2/2
2	5MU	C	54	2	-	2/7/25/26	0/2/2/2
3	A2M	D	3718	3	-	0/5/27/28	0/3/3/3
3	PSU	D	4972	3,81	-	0/7/25/26	0/2/2/2
2	H2U	C	47	2	-	3/7/38/39	0/2/2/2
2	UY1	C	39	2	-	0/9/27/28	0/2/2/2
2	56B	B	34	80,2	-	2/6/43/44	0/4/4/4
3	PSU	D	2508	3	-	0/7/25/26	0/2/2/2
3	OMU	D	3925	3	-	1/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	OMU	D	4306	3	-	0/9/27/28	0/2/2/2
48	OMC	w	174	48	-	0/9/27/28	0/2/2/2
48	PSU	w	814	48	-	0/7/25/26	0/2/2/2
3	OMC	D	4456	3	-	0/9/27/28	0/2/2/2
3	OMG	D	4623	3	-	0/5/27/28	0/3/3/3
48	A2M	w	27	48	-	0/5/27/28	0/3/3/3
2	1MG	B	37	2	-	1/3/25/26	0/3/3/3
3	UR3	D	4530	3,81	-	0/7/25/26	0/2/2/2
3	PSU	D	3715	3	-	2/7/25/26	0/2/2/2
3	A2M	D	3825	3	-	0/5/27/28	0/3/3/3
48	OMU	w	1326	48	-	3/9/27/28	0/2/2/2
48	PSU	w	93	48	-	0/7/25/26	0/2/2/2
3	PSU	D	4293	3	-	0/7/25/26	0/2/2/2
48	4AC	w	1337	48	-	0/11/29/30	0/2/2/2
2	H2U	B	47	2	-	3/7/38/39	0/2/2/2
48	PSU	w	1347	48	-	0/7/25/26	0/2/2/2
48	OMU	w	1288	48	-	1/9/27/28	0/2/2/2
2	5MC	B	48	2	-	3/7/25/26	0/2/2/2
3	OMG	D	2364	3	-	2/5/27/28	0/3/3/3
3	PSU	D	1860	3	-	0/7/25/26	0/2/2/2
2	2MG	C	10	2	-	0/5/27/28	0/3/3/3
48	MA6	w	1850	48	-	0/7/29/30	0/3/3/3
3	A2M	D	3830	3	-	0/5/27/28	0/3/3/3
3	PSU	D	4552	3	-	0/7/25/26	0/2/2/2
48	PSU	w	36	48	-	0/7/25/26	0/2/2/2
3	OMG	D	4637	3	-	1/5/27/28	0/3/3/3
3	PSU	D	3851	3	-	0/7/25/26	0/2/2/2
2	PSU	B	35	1,2	-	0/7/25/26	0/2/2/2
3	A2M	D	2363	3,81	-	0/5/27/28	0/3/3/3
48	PSU	w	1081	48	-	0/7/25/26	0/2/2/2
3	OMG	D	3792	3	-	1/5/27/28	0/3/3/3
3	OMU	D	4620	3	-	0/9/27/28	0/2/2/2
3	OMC	D	2824	3	-	0/9/27/28	0/2/2/2
3	OMG	D	4494	3	-	0/5/27/28	0/3/3/3
48	A2M	w	512	48	-	2/5/27/28	0/3/3/3
3	OMC	D	3841	3	-	0/9/27/28	0/2/2/2
48	6MZ	w	1832	48,81	-	2/5/27/28	0/3/3/3
48	PSU	w	1046	48	-	0/7/25/26	0/2/2/2
3	1MA	D	1322	3	-	0/3/25/26	0/3/3/3
2	2MG	C	6	2	-	3/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	OMU	D	4227	3	-	0/9/27/28	0/2/2/2
3	OMU	D	1773	3	-	1/9/27/28	0/2/2/2
3	PSU	D	4689	3	-	0/7/25/26	0/2/2/2
48	PSU	w	218	48	-	0/7/25/26	0/2/2/2
48	OMU	w	627	48	-	8/9/27/28	0/2/2/2
3	OMG	D	1760	3	-	2/5/27/28	0/3/3/3
3	PSU	D	4431	3	-	0/7/25/26	0/2/2/2
48	OMC	w	517	48	-	1/9/27/28	0/2/2/2
3	A2M	D	398	3	-	0/5/27/28	0/3/3/3
48	PSU	w	1056	48	-	0/7/25/26	0/2/2/2
48	OMC	w	1703	48,81	-	2/9/27/28	0/2/2/2
2	M2G	B	27	2	-	0/7/29/30	0/3/3/3
48	OMU	w	428	48	-	7/9/27/28	0/2/2/2
48	G7M	w	1639	48,2	-	2/3/25/26	0/3/3/3
2	M2G	C	26	2	-	0/7/29/30	0/3/3/3
2	2MG	B	10	2	-	0/5/27/28	0/3/3/3
3	PSU	D	2632	3	-	0/7/25/26	0/2/2/2
48	OMG	w	683	48	-	0/5/27/28	0/3/3/3
3	PSU	D	1744	3,81	-	0/7/25/26	0/2/2/2
48	PSU	w	686	48	-	0/7/25/26	0/2/2/2
3	PSU	D	4420	3	-	0/7/25/26	0/2/2/2
48	A2M	w	1031	48	-	0/5/27/28	0/3/3/3
2	PSU	C	55	2	-	2/7/25/26	0/2/2/2
3	A2M	D	3785	3,81	-	2/5/27/28	0/3/3/3
48	OMU	w	1804	48	-	2/9/27/28	0/2/2/2
3	OMC	D	2861	3	-	0/9/27/28	0/2/2/2
48	PSU	w	119	48	-	1/7/25/26	0/2/2/2
48	A2M	w	1383	48	-	0/5/27/28	0/3/3/3
48	PSU	w	1445	48	-	0/7/25/26	0/2/2/2
3	OMG	D	2424	3	-	2/5/27/28	0/3/3/3
3	OMG	D	4499	3,2	-	0/5/27/28	0/3/3/3
3	OMC	D	3887	3	-	1/9/27/28	0/2/2/2
3	OMG	D	4618	3	-	0/5/27/28	0/3/3/3
48	OMU	w	1442	48,81	-	1/9/27/28	0/2/2/2
3	OMC	D	2804	3	-	0/9/27/28	0/2/2/2
48	OMC	w	1391	48	-	0/9/27/28	0/2/2/2
3	6MZ	D	4220	3	-	0/5/27/28	0/3/3/3
3	PSU	D	3637	3,81	-	0/7/25/26	0/2/2/2
3	PSU	D	3762	3	-	2/7/25/26	0/2/2/2
3	OMG	D	4370	3	-	0/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	PSU	D	3920	3,81	-	0/7/25/26	0/2/2/2
48	PSU	w	109	48	-	0/7/25/26	0/2/2/2
48	A2M	w	159	48	-	2/5/27/28	0/3/3/3
48	OMU	w	172	48	-	0/9/27/28	0/2/2/2
3	PSU	D	4423	3	-	0/7/25/26	0/2/2/2
3	OMC	D	3808	3	-	0/9/27/28	0/2/2/2
2	PSU	C	35	1,2	-	0/7/25/26	0/2/2/2
48	PSU	w	105	48	-	0/7/25/26	0/2/2/2
3	5MC	D	3782	3,81	-	0/7/25/26	0/2/2/2
3	OMG	D	3944	3	-	3/5/27/28	0/3/3/3
48	OMG	w	1328	48	-	0/5/27/28	0/3/3/3
3	OMC	D	4536	3	-	0/9/27/28	0/2/2/2
48	PSU	w	1004	48	-	0/7/25/26	0/2/2/2
48	PSU	w	1625	48	-	0/7/25/26	0/2/2/2

All (791) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	54	5MU	C6-N1	11.03	1.56	1.38
2	C	54	5MU	C6-N1	10.87	1.56	1.38
2	B	54	5MU	C2-N1	10.70	1.55	1.38
2	C	54	5MU	C2-N1	10.70	1.55	1.38
2	C	48	5MC	C6-C5	9.60	1.50	1.34
3	D	4447	5MC	C6-C5	9.45	1.50	1.34
2	B	48	5MC	C6-C5	9.44	1.50	1.34
2	C	54	5MU	C4-C5	9.29	1.60	1.44
2	B	54	5MU	C4-C5	9.20	1.60	1.44
3	D	3782	5MC	C6-C5	9.05	1.49	1.34
48	w	1832	6MZ	C6-N6	7.55	1.47	1.35
2	B	48	5MC	C4-N3	7.47	1.46	1.34
3	D	4220	6MZ	C6-N6	7.44	1.47	1.35
2	C	48	5MC	C4-N3	7.36	1.46	1.34
2	C	54	5MU	C4-N3	-7.29	1.25	1.38
3	D	1773	OMU	C2-N1	7.28	1.50	1.38
48	w	1288	OMU	C2-N1	7.21	1.50	1.38
2	B	54	5MU	C4-N3	-7.21	1.25	1.38
48	w	116	OMU	C2-N1	7.12	1.49	1.38
48	w	799	OMU	C2-N1	7.09	1.49	1.38
48	w	627	OMU	C2-N1	7.00	1.49	1.38
48	w	428	OMU	C2-N1	6.98	1.49	1.38
48	w	1442	OMU	C2-N1	6.97	1.49	1.38
48	w	172	OMU	C2-N1	6.94	1.49	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	3782	5MC	C4-N3	6.91	1.45	1.34
48	w	1804	OMU	C2-N1	6.91	1.49	1.38
2	C	34	56B	C14-C13	6.90	1.52	1.32
48	w	121	OMU	C2-N1	6.89	1.49	1.38
2	B	34	56B	C14-C13	6.86	1.52	1.32
48	w	1326	OMU	C2-N1	6.85	1.49	1.38
3	D	2415	OMU	C2-N1	6.81	1.49	1.38
2	B	54	5MU	C6-C5	6.76	1.45	1.34
3	D	4227	OMU	C2-N1	6.73	1.49	1.38
48	w	799	OMU	C2-N3	6.71	1.49	1.38
3	D	1773	OMU	C2-N3	6.66	1.49	1.38
3	D	4530	UR3	C2-N1	6.64	1.48	1.38
2	C	54	5MU	C6-C5	6.63	1.45	1.34
48	w	1288	OMU	C2-N3	6.63	1.49	1.38
3	D	4447	5MC	C4-N3	6.61	1.45	1.34
3	D	3925	OMU	C2-N1	6.60	1.49	1.38
48	w	428	OMU	C2-N3	6.59	1.49	1.38
48	w	627	OMU	C2-N3	6.57	1.49	1.38
2	B	48	5MC	C2-N3	6.57	1.49	1.36
48	w	172	OMU	C2-N3	6.57	1.49	1.38
2	C	46	G7M	C2-N2	6.56	1.49	1.34
48	w	1326	OMU	C2-N3	6.54	1.49	1.38
2	C	48	5MC	C2-N3	6.54	1.49	1.36
3	D	4498	OMU	C2-N1	6.54	1.48	1.38
48	w	1804	OMU	C2-N3	6.54	1.49	1.38
48	w	1442	OMU	C2-N3	6.53	1.49	1.38
48	w	121	OMU	C2-N3	6.53	1.49	1.38
48	w	116	OMU	C2-N3	6.53	1.49	1.38
2	B	46	G7M	C2-N2	6.50	1.49	1.34
48	w	1639	G7M	C2-N2	6.49	1.49	1.34
3	D	2837	OMU	C2-N1	6.47	1.48	1.38
2	B	37	1MG	C2-N3	6.36	1.46	1.34
2	C	37	1MG	C2-N3	6.35	1.46	1.34
3	D	4620	OMU	C2-N1	6.33	1.48	1.38
48	w	517	OMC	C2-N3	6.33	1.49	1.36
48	w	174	OMC	C2-N3	6.32	1.49	1.36
3	D	2837	OMU	C2-N3	6.31	1.49	1.38
48	w	462	OMC	C2-N3	6.26	1.49	1.36
3	D	4306	OMU	C2-N1	6.24	1.48	1.38
3	D	2415	OMU	C2-N3	6.22	1.49	1.38
2	C	37	1MG	C2-N2	6.20	1.45	1.34
48	w	1391	OMC	C2-N3	6.20	1.48	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	37	1MG	C2-N2	6.19	1.45	1.34
3	D	4620	OMU	C2-N3	6.14	1.48	1.38
3	D	3782	5MC	C2-N3	6.14	1.48	1.36
3	D	4227	OMU	C2-N3	6.11	1.48	1.38
3	D	4498	OMU	C2-N3	6.09	1.48	1.38
3	D	3925	OMU	C2-N3	6.09	1.48	1.38
3	D	2861	OMC	C2-N3	6.07	1.48	1.36
48	w	1703	OMC	C2-N3	6.06	1.48	1.36
48	w	174	OMC	C6-C5	6.05	1.49	1.35
3	D	4306	OMU	C2-N3	6.05	1.48	1.38
3	D	3887	OMC	C2-N3	6.03	1.48	1.36
3	D	2422	OMC	C2-N3	6.03	1.48	1.36
48	w	462	OMC	C6-C5	6.00	1.49	1.35
3	D	2824	OMC	C2-N3	5.99	1.48	1.36
3	D	4530	UR3	C6-C5	5.99	1.49	1.35
3	D	2804	OMC	C2-N3	5.98	1.48	1.36
48	w	517	OMC	C6-C5	5.98	1.48	1.35
48	w	1391	OMC	C6-C5	5.97	1.48	1.35
48	w	1703	OMC	C6-C5	5.97	1.48	1.35
3	D	4536	OMC	C2-N3	5.96	1.48	1.36
3	D	4447	5MC	C2-N3	5.95	1.48	1.36
3	D	2365	OMC	C2-N3	5.93	1.48	1.36
3	D	1760	OMG	C4-N3	5.93	1.51	1.37
3	D	3701	OMC	C6-C5	5.93	1.48	1.35
3	D	3701	OMC	C2-N3	5.91	1.48	1.36
3	D	3944	OMG	C4-N3	5.89	1.51	1.37
3	D	1340	OMC	C2-N3	5.88	1.48	1.36
3	D	3808	OMC	C2-N3	5.88	1.48	1.36
3	D	4456	OMC	C2-N3	5.87	1.48	1.36
3	D	1773	OMU	C6-C5	5.86	1.48	1.35
3	D	2351	OMC	C2-N3	5.85	1.48	1.36
48	w	172	OMU	C6-C5	5.85	1.48	1.35
48	w	1288	OMU	C6-C5	5.85	1.48	1.35
48	w	644	OMG	C4-N3	5.85	1.51	1.37
3	D	2422	OMC	C6-C5	5.84	1.48	1.35
48	w	436	OMG	C4-N3	5.84	1.51	1.37
48	w	121	OMU	C6-C5	5.84	1.48	1.35
3	D	3841	OMC	C2-N3	5.84	1.48	1.36
48	w	116	OMU	C6-C5	5.83	1.48	1.35
48	w	428	OMU	C6-C5	5.83	1.48	1.35
48	w	1328	OMG	C4-N3	5.83	1.51	1.37
3	D	2861	OMC	C6-C5	5.82	1.48	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	2824	OMC	C6-C5	5.82	1.48	1.35
48	w	799	OMU	C6-C5	5.82	1.48	1.35
2	B	46	G7M	C2-N3	5.81	1.47	1.33
48	w	1490	OMG	C4-N3	5.81	1.51	1.37
2	C	46	G7M	C2-N3	5.81	1.47	1.33
3	D	3841	OMC	C6-C5	5.81	1.48	1.35
3	D	4456	OMC	C6-C5	5.81	1.48	1.35
48	w	1442	OMU	C6-C5	5.80	1.48	1.35
3	D	4536	OMC	C6-C5	5.79	1.48	1.35
48	w	683	OMG	C4-N3	5.79	1.51	1.37
3	D	3887	OMC	C6-C5	5.78	1.48	1.35
3	D	3808	OMC	C6-C5	5.78	1.48	1.35
48	w	509	OMG	C4-N3	5.78	1.51	1.37
48	w	601	OMG	C4-N3	5.78	1.51	1.37
48	w	1326	OMU	C6-C5	5.77	1.48	1.35
3	D	2365	OMC	C6-C5	5.77	1.48	1.35
3	D	1625	OMG	C4-N3	5.76	1.51	1.37
48	w	627	OMU	C6-C5	5.76	1.48	1.35
3	D	2804	OMC	C6-C5	5.76	1.48	1.35
48	w	1639	G7M	C2-N3	5.75	1.47	1.33
3	D	1340	OMC	C6-C5	5.73	1.48	1.35
48	w	1804	OMU	C6-C5	5.71	1.48	1.35
3	D	2415	OMU	C6-C5	5.71	1.48	1.35
3	D	4494	OMG	C4-N3	5.69	1.51	1.37
3	D	4370	OMG	C4-N3	5.69	1.51	1.37
3	D	3744	OMG	C4-N3	5.69	1.51	1.37
5	F	75	OMG	C4-N3	5.67	1.51	1.37
3	D	4499	OMG	C4-N3	5.66	1.51	1.37
3	D	2351	OMC	C6-C5	5.65	1.48	1.35
3	D	3792	OMG	C4-N3	5.65	1.51	1.37
3	D	2424	OMG	C4-N3	5.65	1.51	1.37
3	D	4196	OMG	C4-N3	5.65	1.51	1.37
3	D	4618	OMG	C4-N3	5.62	1.51	1.37
3	D	4306	OMU	C6-C5	5.61	1.48	1.35
3	D	2815	A2M	O5'-C5'	-5.61	1.31	1.44
3	D	3627	OMG	C4-N3	5.61	1.51	1.37
3	D	4637	OMG	C4-N3	5.60	1.51	1.37
3	D	4498	OMU	C6-C5	5.59	1.48	1.35
3	D	4228	OMG	C4-N3	5.58	1.50	1.37
3	D	4392	OMG	C4-N3	5.58	1.50	1.37
3	D	4227	OMU	C6-C5	5.58	1.48	1.35
3	D	4620	OMU	C6-C5	5.58	1.48	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	34	56B	C11-C10	5.56	1.62	1.54
2	C	34	56B	C11-C10	5.55	1.62	1.54
3	D	3925	OMU	C6-C5	5.54	1.47	1.35
3	D	2364	OMG	C4-N3	5.54	1.50	1.37
3	D	3899	OMG	C4-N3	5.53	1.50	1.37
3	D	4623	OMG	C4-N3	5.53	1.50	1.37
3	D	2837	OMU	C6-C5	5.53	1.47	1.35
3	D	1760	OMG	C2-N3	5.52	1.46	1.33
2	C	34	56B	C2-N3	5.50	1.46	1.33
3	D	1522	OMG	C4-N3	5.50	1.50	1.37
2	B	34	56B	C2-N3	5.49	1.46	1.33
48	w	1328	OMG	C2-N3	5.46	1.46	1.33
48	w	644	OMG	C2-N3	5.46	1.46	1.33
3	D	1316	OMG	C4-N3	5.44	1.50	1.37
3	D	1625	OMG	C2-N3	5.38	1.46	1.33
48	w	509	OMG	C2-N3	5.36	1.46	1.33
3	D	3785	A2M	O5'-C5'	-5.36	1.31	1.44
48	w	436	OMG	C2-N3	5.35	1.46	1.33
3	D	3944	OMG	C2-N3	5.34	1.46	1.33
48	w	601	OMG	C2-N3	5.33	1.46	1.33
48	w	683	OMG	C2-N3	5.33	1.46	1.33
3	D	4494	OMG	C2-N3	5.30	1.46	1.33
48	w	1490	OMG	C2-N3	5.29	1.46	1.33
3	D	2424	OMG	C2-N3	5.28	1.46	1.33
3	D	4370	OMG	C2-N3	5.26	1.46	1.33
3	D	3792	OMG	C2-N3	5.25	1.45	1.33
2	C	48	5MC	C6-N1	5.24	1.47	1.38
48	w	468	A2M	O5'-C5'	-5.24	1.31	1.44
48	w	668	A2M	O5'-C5'	-5.23	1.32	1.44
3	D	4196	OMG	C2-N3	5.23	1.45	1.33
2	C	10	2MG	C4-N3	5.23	1.50	1.37
3	D	3744	OMG	C2-N3	5.22	1.45	1.33
2	C	10	2MG	C2-N1	5.22	1.45	1.36
2	B	6	2MG	C2-N1	5.21	1.45	1.36
2	B	10	2MG	C2-N1	5.21	1.45	1.36
48	w	517	OMC	C4-N3	5.20	1.45	1.34
5	F	75	OMG	C2-N3	5.19	1.45	1.33
2	C	6	2MG	C4-N3	5.18	1.49	1.37
3	D	1760	OMG	C2-N2	5.18	1.46	1.34
2	B	10	2MG	C4-N3	5.17	1.49	1.37
2	B	46	G7M	C4-N3	5.17	1.49	1.37
3	D	4499	OMG	C2-N3	5.16	1.45	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	4637	OMG	C2-N3	5.16	1.45	1.33
2	B	48	5MC	C6-N1	5.14	1.46	1.38
2	C	46	G7M	C4-N3	5.14	1.49	1.37
2	C	6	2MG	C2-N1	5.13	1.44	1.36
48	w	644	OMG	C2-N2	5.13	1.46	1.34
48	w	1328	OMG	C2-N2	5.13	1.46	1.34
3	D	2787	A2M	O5'-C5'	-5.13	1.32	1.44
3	D	3944	OMG	C2-N2	5.13	1.46	1.34
3	D	3627	OMG	C2-N3	5.12	1.45	1.33
48	w	462	OMC	C4-N3	5.12	1.44	1.34
3	D	4392	OMG	C2-N3	5.11	1.45	1.33
48	w	683	OMG	C2-N2	5.11	1.46	1.34
48	w	1490	OMG	C2-N2	5.11	1.46	1.34
3	D	1524	A2M	O5'-C5'	-5.11	1.32	1.44
3	D	4618	OMG	C2-N3	5.10	1.45	1.33
48	w	436	OMG	C2-N2	5.10	1.46	1.34
48	w	174	OMC	C4-N3	5.10	1.44	1.34
3	D	3825	A2M	O5'-C5'	-5.09	1.32	1.44
48	w	1639	G7M	C4-N3	5.09	1.49	1.37
3	D	2424	OMG	C2-N2	5.09	1.46	1.34
48	w	601	OMG	C2-N2	5.08	1.46	1.34
3	D	4623	OMG	C2-N3	5.07	1.45	1.33
3	D	4228	OMG	C2-N3	5.06	1.45	1.33
3	D	1316	OMG	C2-N3	5.06	1.45	1.33
3	D	1871	A2M	O5'-C5'	-5.05	1.32	1.44
3	D	3899	OMG	C2-N3	5.04	1.45	1.33
3	D	1522	OMG	C2-N3	5.04	1.45	1.33
3	D	2364	OMG	C2-N3	5.02	1.45	1.33
3	D	1625	OMG	C2-N2	5.01	1.46	1.34
48	w	509	OMG	C2-N2	5.00	1.46	1.34
3	D	4499	OMG	C2-N2	5.00	1.46	1.34
5	F	75	OMG	C2-N2	5.00	1.46	1.34
48	w	512	A2M	O5'-C5'	-4.99	1.32	1.44
48	w	1391	OMC	C4-N3	4.99	1.44	1.34
3	D	3830	A2M	O5'-C5'	-4.97	1.32	1.44
3	D	4447	5MC	C6-N1	4.97	1.46	1.38
3	D	4494	OMG	C2-N2	4.97	1.46	1.34
3	D	3627	OMG	C2-N2	4.96	1.46	1.34
3	D	2401	A2M	O5'-C5'	-4.96	1.32	1.44
48	w	1703	OMC	C4-N3	4.95	1.44	1.34
3	D	4370	OMG	C2-N2	4.95	1.46	1.34
3	D	3744	OMG	C2-N2	4.95	1.46	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
48	w	159	A2M	O5'-C5'	-4.94	1.32	1.44
3	D	4618	OMG	C2-N2	4.94	1.45	1.34
3	D	3792	OMG	C2-N2	4.91	1.45	1.34
3	D	400	A2M	O5'-C5'	-4.91	1.32	1.44
48	w	174	OMC	C4-N4	4.91	1.45	1.33
48	w	517	OMC	C4-N4	4.91	1.45	1.33
3	D	4196	OMG	C2-N2	4.91	1.45	1.34
3	D	398	A2M	O5'-C5'	-4.91	1.32	1.44
3	D	4623	OMG	C2-N2	4.90	1.45	1.34
48	w	1031	A2M	O5'-C5'	-4.90	1.32	1.44
2	B	37	1MG	C4-N3	4.89	1.49	1.37
3	D	3718	A2M	O5'-C5'	-4.89	1.32	1.44
3	D	1326	A2M	O5'-C5'	-4.89	1.32	1.44
3	D	4523	A2M	O5'-C5'	-4.89	1.32	1.44
48	w	1391	OMC	C4-N4	4.88	1.45	1.33
3	D	1316	OMG	C2-N2	4.88	1.45	1.34
3	D	2364	OMG	C2-N2	4.87	1.45	1.34
48	w	462	OMC	C4-N4	4.86	1.45	1.33
2	C	37	1MG	C4-N3	4.86	1.49	1.37
3	D	3899	OMG	C2-N2	4.85	1.45	1.34
3	D	4228	OMG	C2-N2	4.85	1.45	1.34
48	w	1383	A2M	O5'-C5'	-4.85	1.32	1.44
2	B	6	2MG	C4-N3	4.85	1.49	1.37
3	D	3724	A2M	O5'-C5'	-4.84	1.32	1.44
3	D	1522	OMG	C2-N2	4.84	1.45	1.34
48	w	1703	OMC	C4-N4	4.83	1.45	1.33
3	D	4637	OMG	C2-N2	4.83	1.45	1.34
3	D	2824	OMC	C4-N3	4.83	1.44	1.34
3	D	4392	OMG	C2-N2	4.82	1.45	1.34
3	D	2804	OMC	C4-N3	4.82	1.44	1.34
3	D	3887	OMC	C4-N3	4.81	1.44	1.34
3	D	2363	A2M	O5'-C5'	-4.80	1.33	1.44
2	C	34	56B	C4-N3	4.79	1.49	1.37
2	B	34	56B	C4-N3	4.78	1.49	1.37
48	w	484	A2M	O5'-C5'	-4.76	1.33	1.44
3	D	2861	OMC	C4-N3	4.75	1.44	1.34
3	D	1340	OMC	C4-N3	4.75	1.44	1.34
3	D	4530	UR3	C2-N3	4.74	1.48	1.39
3	D	2422	OMC	C4-N3	4.72	1.44	1.34
3	D	2861	OMC	C4-N4	4.72	1.45	1.33
3	D	3701	OMC	C4-N3	4.72	1.44	1.34
3	D	2422	OMC	C4-N4	4.71	1.45	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	3808	OMC	C4-N4	4.71	1.45	1.33
3	D	1340	OMC	C4-N4	4.71	1.45	1.33
3	D	3782	5MC	C6-N1	4.71	1.46	1.38
3	D	4536	OMC	C4-N3	4.70	1.44	1.34
48	w	27	A2M	O5'-C5'	-4.70	1.33	1.44
3	D	2365	OMC	C4-N3	4.70	1.44	1.34
3	D	2804	OMC	C4-N4	4.69	1.45	1.33
3	D	2824	OMC	C4-N4	4.69	1.45	1.33
3	D	3701	OMC	C4-N4	4.69	1.45	1.33
2	C	34	56B	C2-N2	4.69	1.45	1.34
3	D	3808	OMC	C4-N3	4.69	1.44	1.34
3	D	4456	OMC	C4-N3	4.69	1.44	1.34
3	D	3887	OMC	C4-N4	4.69	1.44	1.33
48	w	99	A2M	O5'-C5'	-4.68	1.33	1.44
3	D	4536	OMC	C4-N4	4.68	1.44	1.33
48	w	1678	A2M	O5'-C5'	-4.67	1.33	1.44
3	D	2365	OMC	C4-N4	4.67	1.44	1.33
3	D	3760	A2M	O5'-C5'	-4.66	1.33	1.44
3	D	4456	OMC	C4-N4	4.66	1.44	1.33
2	B	34	56B	C2-N2	4.64	1.45	1.34
3	D	3841	OMC	C4-N4	4.62	1.44	1.33
3	D	2351	OMC	C4-N3	4.57	1.43	1.34
3	D	1534	A2M	O5'-C5'	-4.57	1.33	1.44
3	D	2351	OMC	C4-N4	4.56	1.44	1.33
3	D	3841	OMC	C4-N3	4.53	1.43	1.34
48	w	576	A2M	O5'-C5'	-4.50	1.33	1.44
48	w	166	A2M	O5'-C5'	-4.49	1.33	1.44
48	w	590	A2M	O5'-C5'	-4.44	1.33	1.44
48	w	174	OMC	C2-N1	4.43	1.49	1.40
48	w	517	OMC	C2-N1	4.41	1.49	1.40
2	C	46	G7M	C6-N1	4.40	1.44	1.37
2	B	48	5MC	C2-N1	4.38	1.49	1.40
48	w	462	OMC	C2-N1	4.37	1.49	1.40
48	w	1391	OMC	C2-N1	4.36	1.49	1.40
2	B	46	G7M	C6-N1	4.32	1.44	1.37
2	C	48	5MC	C2-N1	4.30	1.49	1.40
48	w	1703	OMC	C2-N1	4.26	1.49	1.40
48	w	1639	G7M	C6-N1	4.20	1.44	1.37
2	C	48	5MC	C4-N4	4.18	1.45	1.34
3	D	2824	OMC	C2-N1	4.16	1.49	1.40
2	B	48	5MC	C4-N4	4.15	1.44	1.34
3	D	1760	OMG	C6-N1	4.15	1.44	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	2422	OMC	C2-N1	4.14	1.49	1.40
3	D	2804	OMC	C2-N1	4.14	1.49	1.40
3	D	2351	OMC	C2-N1	4.13	1.49	1.40
2	B	27	M2G	C6-N1	4.11	1.44	1.37
3	D	3808	OMC	C2-N1	4.09	1.48	1.40
3	D	3887	OMC	C2-N1	4.09	1.48	1.40
3	D	3944	OMG	C6-N1	4.06	1.43	1.37
2	B	6	2MG	C6-N1	4.01	1.43	1.37
3	D	2861	OMC	C2-N1	4.00	1.48	1.40
48	w	644	OMG	C6-N1	3.99	1.43	1.37
3	D	3782	5MC	C2-N1	3.97	1.48	1.40
3	D	4456	OMC	C2-N1	3.97	1.48	1.40
3	D	2365	OMC	C2-N1	3.95	1.48	1.40
3	D	4536	OMC	C2-N1	3.95	1.48	1.40
3	D	3701	OMC	C2-N1	3.95	1.48	1.40
3	D	3841	OMC	C2-N1	3.95	1.48	1.40
3	D	4447	5MC	C4-N4	3.94	1.44	1.34
48	w	1328	OMG	C6-N1	3.94	1.43	1.37
3	D	3782	5MC	C4-N4	3.94	1.44	1.34
48	w	683	OMG	C6-N1	3.94	1.43	1.37
48	w	601	OMG	C6-N1	3.92	1.43	1.37
3	D	1340	OMC	C2-N1	3.91	1.48	1.40
2	C	26	M2G	C6-N1	3.87	1.43	1.37
48	w	1328	OMG	C5-C6	3.87	1.55	1.47
48	w	509	OMG	C6-N1	3.86	1.43	1.37
2	C	39	UY1	C2-N1	3.83	1.41	1.36
3	D	2424	OMG	C6-N1	3.83	1.43	1.37
48	w	1490	OMG	C6-N1	3.82	1.43	1.37
3	D	1760	OMG	C5-C6	3.81	1.55	1.47
3	D	4447	5MC	C2-N1	3.80	1.48	1.40
48	w	436	OMG	C6-N1	3.79	1.43	1.37
2	C	6	2MG	C6-N1	3.78	1.43	1.37
3	D	3944	OMG	C5-C6	3.78	1.55	1.47
2	B	10	2MG	C6-N1	3.77	1.43	1.37
3	D	4499	OMG	C6-N1	3.76	1.43	1.37
5	F	75	OMG	C6-N1	3.76	1.43	1.37
2	C	10	2MG	C6-N1	3.76	1.43	1.37
48	w	644	OMG	C5-C6	3.76	1.55	1.47
48	w	436	OMG	C5-C6	3.75	1.55	1.47
48	w	509	OMG	C5-C6	3.74	1.55	1.47
3	D	1316	OMG	C5-C4	-3.69	1.33	1.43
3	D	1522	OMG	C5-C4	-3.69	1.33	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	26	M2G	C2-N3	3.67	1.35	1.30
3	D	3744	OMG	C6-N1	3.67	1.43	1.37
48	w	601	OMG	C5-C6	3.65	1.54	1.47
2	C	34	56B	C6-N1	3.65	1.43	1.37
2	C	27	M2G	C6-N1	3.63	1.43	1.37
3	D	4618	OMG	C6-N1	3.62	1.43	1.37
3	D	4196	OMG	C6-N1	3.61	1.43	1.37
3	D	1625	OMG	C6-N1	3.61	1.43	1.37
48	w	683	OMG	C5-C6	3.61	1.54	1.47
2	C	46	G7M	C5-C6	3.60	1.54	1.45
2	B	26	M2G	C6-N1	3.59	1.43	1.37
48	w	210	PSU	C6-C5	3.59	1.39	1.35
3	D	3899	OMG	C6-N1	3.59	1.43	1.37
2	B	34	56B	C6-N1	3.59	1.43	1.37
3	D	3627	OMG	C6-N1	3.59	1.43	1.37
3	D	2364	OMG	C5-C4	-3.57	1.34	1.43
3	D	4228	OMG	C6-N1	3.57	1.43	1.37
5	F	75	OMG	C5-C6	3.56	1.54	1.47
3	D	4228	OMG	C5-C4	-3.55	1.34	1.43
3	D	3899	OMG	C5-C4	-3.55	1.34	1.43
3	D	3627	OMG	C5-C4	-3.55	1.34	1.43
48	w	799	OMU	C4-N3	3.55	1.44	1.38
3	D	3744	OMG	C5-C6	3.54	1.54	1.47
3	D	2364	OMG	C6-N1	3.54	1.43	1.37
3	D	4637	OMG	C6-N1	3.54	1.43	1.37
3	D	4499	OMG	C5-C4	-3.54	1.34	1.43
3	D	4370	OMG	C6-N1	3.53	1.43	1.37
48	w	1490	OMG	C5-C6	3.53	1.54	1.47
3	D	3792	OMG	C6-N1	3.53	1.43	1.37
48	w	627	OMU	C4-N3	3.53	1.44	1.38
2	B	6	2MG	C5-C6	3.53	1.54	1.47
3	D	4623	OMG	C5-C4	-3.53	1.34	1.43
48	w	1288	OMU	C4-N3	3.52	1.44	1.38
3	D	4618	OMG	C5-C6	3.52	1.54	1.47
3	D	4370	OMG	C5-C4	-3.51	1.34	1.43
3	D	1316	OMG	C6-N1	3.51	1.43	1.37
2	B	55	PSU	C6-C5	3.51	1.39	1.35
2	B	26	M2G	C2-N3	3.51	1.35	1.30
48	w	609	PSU	C6-C5	3.50	1.39	1.35
3	D	4637	OMG	C5-C4	-3.50	1.34	1.43
3	D	4623	OMG	C6-N1	3.50	1.43	1.37
3	D	4494	OMG	C6-N1	3.50	1.43	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
48	w	218	PSU	C6-C5	3.49	1.39	1.35
3	D	3792	OMG	C5-C6	3.49	1.54	1.47
2	C	55	PSU	C6-C5	3.49	1.39	1.35
3	D	2424	OMG	C5-C4	-3.48	1.34	1.43
2	B	39	UY1	C2-N1	3.48	1.41	1.36
48	w	93	PSU	C6-C5	3.48	1.39	1.35
3	D	4499	OMG	C5-C6	3.48	1.54	1.47
3	D	2424	OMG	C5-C6	3.48	1.54	1.47
3	D	2364	OMG	C5-C6	3.48	1.54	1.47
48	w	572	PSU	C6-C5	3.48	1.39	1.35
3	D	1522	OMG	C6-N1	3.48	1.43	1.37
48	w	1804	OMU	C4-N3	3.47	1.44	1.38
2	C	27	M2G	C2-N3	3.47	1.34	1.30
2	B	46	G7M	C5-C6	3.47	1.54	1.45
48	w	801	PSU	C6-C5	3.46	1.39	1.35
3	D	4637	OMG	C5-C6	3.46	1.54	1.47
3	D	4196	OMG	C5-C4	-3.45	1.34	1.43
48	w	34	PSU	C6-C5	3.45	1.39	1.35
3	D	1625	OMG	C5-C6	3.45	1.54	1.47
3	D	4392	OMG	C5-C4	-3.45	1.34	1.43
3	D	1773	OMU	C4-N3	3.45	1.44	1.38
3	D	4228	OMG	C5-C6	3.44	1.54	1.47
3	D	4494	OMG	C5-C4	-3.44	1.34	1.43
3	D	3744	OMG	C5-C4	-3.44	1.34	1.43
5	F	75	OMG	C5-C4	-3.43	1.34	1.43
3	D	4392	OMG	C6-N1	3.43	1.43	1.37
48	w	428	OMU	C4-N3	3.43	1.44	1.38
3	D	3627	OMG	C5-C6	3.42	1.54	1.47
3	D	4196	OMG	C5-C6	3.42	1.54	1.47
48	w	1625	PSU	C6-C5	3.42	1.39	1.35
48	w	1442	OMU	C4-N3	3.41	1.44	1.38
48	w	1238	PSU	C6-C5	3.41	1.39	1.35
3	D	4623	OMG	C5-C6	3.40	1.54	1.47
2	C	6	2MG	C5-C6	3.39	1.54	1.47
48	w	815	PSU	C6-C5	3.39	1.39	1.35
3	D	3899	OMG	C5-C6	3.39	1.54	1.47
3	D	4392	OMG	C5-C6	3.39	1.54	1.47
3	D	3792	OMG	C5-C4	-3.39	1.34	1.43
48	w	119	PSU	C6-C5	3.39	1.39	1.35
48	w	866	PSU	C6-C5	3.39	1.39	1.35
3	D	4618	OMG	C5-C4	-3.39	1.34	1.43
48	w	686	PSU	C6-C5	3.38	1.39	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
48	w	121	OMU	C4-N3	3.38	1.44	1.38
48	w	172	OMU	C4-N3	3.38	1.44	1.38
48	w	105	PSU	C6-C5	3.37	1.39	1.35
3	D	4494	OMG	C5-C6	3.37	1.54	1.47
48	w	822	PSU	C6-C5	3.37	1.39	1.35
3	D	1625	OMG	C5-C4	-3.36	1.34	1.43
48	w	863	PSU	C6-C5	3.36	1.39	1.35
3	D	4370	OMG	C5-C6	3.35	1.54	1.47
48	w	116	OMU	C4-N3	3.35	1.44	1.38
3	D	3762	PSU	C6-C5	3.34	1.39	1.35
48	w	1244	PSU	C6-C5	3.34	1.39	1.35
48	w	1326	OMU	C4-N3	3.33	1.44	1.38
48	w	109	PSU	C6-C5	3.31	1.39	1.35
48	w	966	PSU	C6-C5	3.31	1.39	1.35
48	w	1445	PSU	C6-C5	3.30	1.39	1.35
48	w	36	PSU	C6-C5	3.30	1.39	1.35
2	C	10	2MG	C5-C6	3.30	1.54	1.47
48	w	601	OMG	C5-C4	-3.29	1.34	1.43
48	w	683	OMG	C5-C4	-3.29	1.34	1.43
3	D	1522	OMG	C5-C6	3.28	1.54	1.47
48	w	509	OMG	C5-C4	-3.28	1.34	1.43
3	D	3770	PSU	C6-C5	3.27	1.39	1.35
48	w	651	PSU	C6-C5	3.27	1.39	1.35
48	w	1639	G7M	C5-C6	3.27	1.53	1.45
3	D	3734	PSU	C6-C5	3.26	1.39	1.35
2	B	10	2MG	C5-C6	3.26	1.54	1.47
48	w	814	PSU	C6-C5	3.24	1.39	1.35
48	w	1056	PSU	C6-C5	3.24	1.39	1.35
3	D	3768	PSU	C6-C5	3.24	1.39	1.35
3	D	3715	PSU	C6-C5	3.23	1.39	1.35
48	w	436	OMG	C5-C4	-3.23	1.34	1.43
48	w	1004	PSU	C6-C5	3.23	1.39	1.35
48	w	644	OMG	C5-C4	-3.23	1.34	1.43
3	D	1316	OMG	C5-C6	3.22	1.54	1.47
48	w	1490	OMG	C5-C4	-3.22	1.34	1.43
3	D	3818	UY1	C2-N1	3.21	1.41	1.36
48	w	517	OMC	C6-N1	3.21	1.45	1.38
48	w	174	OMC	C6-N1	3.21	1.45	1.38
3	D	4420	PSU	C6-C5	3.20	1.39	1.35
48	w	1177	PSU	C6-C5	3.19	1.39	1.35
48	w	1643	PSU	C6-C5	3.18	1.39	1.35
2	B	35	PSU	C6-C5	3.17	1.39	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	27	M2G	C2-N3	3.17	1.34	1.30
48	w	1328	OMG	C5-C4	-3.17	1.35	1.43
3	D	4500	PSU	C6-C5	3.17	1.39	1.35
48	w	1367	PSU	C6-C5	3.17	1.39	1.35
48	w	649	PSU	C6-C5	3.17	1.39	1.35
48	w	1232	PSU	C6-C5	3.16	1.39	1.35
48	w	1045	PSU	C6-C5	3.16	1.39	1.35
48	w	462	OMC	C6-N1	3.14	1.45	1.38
3	D	3944	OMG	C5-C4	-3.14	1.35	1.43
3	D	1760	OMG	C5-C4	-3.13	1.35	1.43
3	D	2415	OMU	C4-N3	3.13	1.44	1.38
48	w	1391	OMC	C6-N1	3.11	1.45	1.38
48	w	1703	OMC	C6-N1	3.11	1.45	1.38
48	w	1046	PSU	C6-C5	3.11	1.38	1.35
48	w	1347	PSU	C6-C5	3.10	1.38	1.35
48	w	1692	PSU	C6-C5	3.10	1.38	1.35
3	D	5010	PSU	C6-C5	3.08	1.38	1.35
3	D	4423	PSU	C6-C5	3.08	1.38	1.35
3	D	4456	OMC	O2-C2	-3.07	1.18	1.23
48	w	1174	PSU	C6-C5	3.07	1.38	1.35
2	C	35	PSU	C6-C5	3.06	1.38	1.35
2	C	34	56B	C11-C12	3.06	1.58	1.53
3	D	2351	OMC	O2-C2	-3.06	1.18	1.23
3	D	1860	PSU	C6-C5	3.05	1.38	1.35
3	D	3764	PSU	C6-C5	3.05	1.38	1.35
3	D	4620	OMU	O2-C2	-3.05	1.17	1.23
48	w	406	PSU	C6-C5	3.05	1.38	1.35
3	D	4536	OMC	O2-C2	-3.05	1.18	1.23
3	D	4498	OMU	C4-N3	3.04	1.44	1.38
3	D	3925	OMU	O2-C2	-3.03	1.17	1.23
3	D	3841	OMC	O2-C2	-3.03	1.18	1.23
3	D	2837	OMU	O4-C4	-3.02	1.18	1.24
2	C	34	56B	C5-C6	3.02	1.53	1.47
3	D	4306	OMU	O2-C2	-3.02	1.17	1.23
3	D	2632	PSU	C6-C5	3.02	1.38	1.35
48	w	1081	PSU	C6-C5	3.01	1.38	1.35
3	D	4628	PSU	C6-C5	3.01	1.38	1.35
3	D	2804	OMC	C6-N1	3.01	1.45	1.38
3	D	4296	PSU	C6-C5	3.00	1.38	1.35
3	D	3925	OMU	O4-C4	-3.00	1.18	1.24
3	D	3887	OMC	C6-N1	2.99	1.45	1.38
3	D	2837	OMU	C4-N3	2.99	1.43	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	4552	PSU	C6-C5	2.98	1.38	1.35
2	C	46	G7M	C2-N1	2.98	1.45	1.37
3	D	1340	OMC	O2-C2	-2.98	1.18	1.23
3	D	4521	PSU	C6-C5	2.98	1.38	1.35
3	D	2422	OMC	C6-N1	2.97	1.45	1.38
3	D	2824	OMC	O2-C2	-2.97	1.18	1.23
3	D	1781	PSU	C6-C5	2.97	1.38	1.35
3	D	2824	OMC	C6-N1	2.97	1.45	1.38
3	D	4620	OMU	C4-N3	2.96	1.43	1.38
3	D	4227	OMU	C4-N3	2.96	1.43	1.38
3	D	2861	OMC	O2-C2	-2.96	1.18	1.23
2	B	34	56B	C5-C6	2.96	1.53	1.47
3	D	4456	OMC	C6-N1	2.96	1.45	1.38
3	D	2365	OMC	O2-C2	-2.96	1.18	1.23
3	D	3808	OMC	O2-C2	-2.96	1.18	1.23
3	D	5001	PSU	C6-C5	2.96	1.38	1.35
3	D	3887	OMC	O2-C2	-2.96	1.18	1.23
3	D	3853	PSU	C6-C5	2.95	1.38	1.35
2	B	46	G7M	C2-N1	2.95	1.45	1.37
3	D	4361	PSU	C6-C5	2.95	1.38	1.35
3	D	4498	OMU	O2-C2	-2.94	1.17	1.23
3	D	4431	PSU	C6-C5	2.94	1.38	1.35
48	w	1639	G7M	C2-N1	2.94	1.44	1.37
3	D	4620	OMU	O4-C4	-2.94	1.18	1.24
3	D	2422	OMC	O2-C2	-2.93	1.18	1.23
3	D	4227	OMU	O4-C4	-2.93	1.18	1.24
3	D	1744	PSU	C6-C5	2.93	1.38	1.35
3	D	4471	PSU	C6-C5	2.92	1.38	1.35
3	D	2861	OMC	C6-N1	2.92	1.45	1.38
3	D	1862	PSU	C6-C5	2.92	1.38	1.35
2	B	34	56B	C11-C12	2.92	1.58	1.53
3	D	3925	OMU	C4-N3	2.92	1.43	1.38
3	D	2351	OMC	C6-N1	2.92	1.45	1.38
2	B	26	M2G	C5-C6	-2.91	1.41	1.47
3	D	4442	PSU	C6-C5	2.91	1.38	1.35
3	D	2365	OMC	C6-N1	2.91	1.45	1.38
3	D	3730	PSU	C6-C5	2.90	1.38	1.35
3	D	3701	OMC	C6-N1	2.90	1.45	1.38
3	D	3808	OMC	C6-N1	2.90	1.45	1.38
3	D	4498	OMU	O4-C4	-2.90	1.18	1.24
3	D	4293	PSU	C6-C5	2.89	1.38	1.35
3	D	4306	OMU	O4-C4	-2.89	1.18	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	2837	OMU	O2-C2	-2.89	1.17	1.23
3	D	4532	PSU	C6-C5	2.89	1.38	1.35
3	D	4306	OMU	C4-N3	2.89	1.43	1.38
3	D	4353	PSU	C6-C5	2.89	1.38	1.35
3	D	4972	PSU	C6-C5	2.89	1.38	1.35
3	D	4536	OMC	C6-N1	2.88	1.44	1.38
48	w	681	PSU	C6-C5	2.87	1.38	1.35
3	D	3920	PSU	C6-C5	2.87	1.38	1.35
3	D	2804	OMC	O2-C2	-2.87	1.18	1.23
3	D	2415	OMU	O4-C4	-2.87	1.18	1.24
3	D	4689	PSU	C6-C5	2.86	1.38	1.35
48	w	1703	OMC	O2-C2	-2.86	1.18	1.23
3	D	4579	PSU	C6-C5	2.86	1.38	1.35
3	D	3841	OMC	C6-N1	2.86	1.44	1.38
3	D	3701	OMC	O2-C2	-2.86	1.18	1.23
3	D	4227	OMU	O2-C2	-2.86	1.17	1.23
3	D	1792	PSU	C6-C5	2.85	1.38	1.35
3	D	1340	OMC	C6-N1	2.84	1.44	1.38
3	D	4457	PSU	C6-C5	2.84	1.38	1.35
48	w	1851	MA6	C5-C4	-2.83	1.33	1.40
2	C	58	1MA	C2-N1	2.83	1.41	1.35
3	D	4576	PSU	C6-C5	2.82	1.38	1.35
3	D	3637	PSU	C6-C5	2.82	1.38	1.35
2	C	47	H2U	C2-N3	-2.81	1.33	1.38
3	D	4403	PSU	C6-C5	2.81	1.38	1.35
3	D	4312	PSU	C6-C5	2.81	1.38	1.35
3	D	3695	PSU	C6-C5	2.80	1.38	1.35
3	D	2415	OMU	O2-C2	-2.80	1.17	1.23
3	D	2508	PSU	C6-C5	2.80	1.38	1.35
2	B	58	1MA	C2-N1	2.80	1.41	1.35
3	D	4530	UR3	C6-N1	2.79	1.44	1.38
3	D	4299	PSU	C6-C5	2.77	1.38	1.35
3	D	1782	PSU	C6-C5	2.76	1.38	1.35
2	C	34	56B	C2-N1	2.76	1.44	1.37
2	B	27	M2G	C2-N2	2.75	1.40	1.35
2	C	26	M2G	C2-N2	2.75	1.40	1.35
3	D	3851	PSU	C6-C5	2.75	1.38	1.35
2	C	37	1MG	C5-C4	-2.75	1.36	1.43
3	D	4392	OMG	O6-C6	-2.73	1.17	1.23
3	D	4447	5MC	O2-C2	-2.73	1.18	1.23
48	w	174	OMC	O2-C2	-2.73	1.18	1.23
3	D	1522	OMG	O6-C6	-2.72	1.17	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
48	w	116	OMU	O4-C4	-2.72	1.19	1.24
48	w	1326	OMU	O4-C4	-2.71	1.19	1.24
2	B	37	1MG	C5-C4	-2.71	1.36	1.43
48	w	1850	MA6	C5-C4	-2.70	1.33	1.40
2	C	47	H2U	C4-N3	-2.70	1.33	1.37
48	w	1442	OMU	O4-C4	-2.70	1.19	1.24
48	w	1391	OMC	O2-C2	-2.70	1.18	1.23
2	B	34	56B	C2-N1	2.69	1.44	1.37
3	D	2364	OMG	O6-C6	-2.69	1.17	1.23
3	D	3899	OMG	O6-C6	-2.69	1.17	1.23
48	w	1804	OMU	O4-C4	-2.69	1.19	1.24
48	w	1804	OMU	O2-C2	-2.69	1.18	1.23
3	D	1316	OMG	O6-C6	-2.69	1.17	1.23
48	w	517	OMC	O2-C2	-2.69	1.18	1.23
48	w	428	OMU	O4-C4	-2.69	1.19	1.24
48	w	462	OMC	O2-C2	-2.68	1.18	1.23
48	w	1326	OMU	O2-C2	-2.68	1.18	1.23
48	w	1442	OMU	O2-C2	-2.67	1.18	1.23
48	w	121	OMU	O2-C2	-2.67	1.18	1.23
3	D	4228	OMG	O6-C6	-2.67	1.17	1.23
48	w	172	OMU	O4-C4	-2.67	1.19	1.24
2	B	47	H2U	C2-N3	-2.67	1.33	1.38
3	D	1683	PSU	C6-C5	2.66	1.38	1.35
3	D	1536	PSU	C6-C5	2.66	1.38	1.35
3	D	4220	6MZ	C5-C4	-2.66	1.33	1.40
3	D	3627	OMG	O6-C6	-2.66	1.17	1.23
48	w	121	OMU	O4-C4	-2.66	1.19	1.24
48	w	627	OMU	O4-C4	-2.66	1.19	1.24
3	D	3758	PSU	C6-C5	2.65	1.38	1.35
3	D	4494	OMG	O6-C6	-2.65	1.17	1.23
48	w	428	OMU	O2-C2	-2.64	1.18	1.23
3	D	3744	OMG	O6-C6	-2.64	1.17	1.23
3	D	1760	OMG	C2-N1	2.63	1.44	1.37
3	D	4623	OMG	O6-C6	-2.63	1.17	1.23
48	w	799	OMU	O4-C4	-2.63	1.19	1.24
48	w	668	A2M	O4'-C4'	-2.63	1.39	1.45
48	w	116	OMU	O2-C2	-2.63	1.18	1.23
3	D	1677	PSU	C6-C5	2.62	1.38	1.35
3	D	4637	OMG	O6-C6	-2.62	1.18	1.23
48	w	172	OMU	O2-C2	-2.61	1.18	1.23
48	w	627	OMU	O2-C2	-2.61	1.18	1.23
48	w	1288	OMU	O4-C4	-2.61	1.19	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	26	M2G	C2-N2	2.60	1.40	1.35
2	C	26	M2G	C5-C6	-2.60	1.42	1.47
3	D	4196	OMG	O6-C6	-2.59	1.18	1.23
2	C	27	M2G	C2-N2	2.59	1.40	1.35
2	B	6	2MG	C5-C4	-2.59	1.36	1.43
3	D	4499	OMG	O6-C6	-2.58	1.18	1.23
3	D	3792	OMG	O6-C6	-2.58	1.18	1.23
3	D	4370	OMG	O6-C6	-2.58	1.18	1.23
3	D	3944	OMG	C2-N1	2.58	1.44	1.37
3	D	3639	PSU	C6-C5	2.56	1.38	1.35
3	D	1773	OMU	O4-C4	-2.55	1.19	1.24
3	D	4618	OMG	O6-C6	-2.55	1.18	1.23
48	w	799	OMU	O2-C2	-2.55	1.18	1.23
3	D	1773	OMU	O2-C2	-2.54	1.18	1.23
3	D	1625	OMG	O6-C6	-2.54	1.18	1.23
48	w	1288	OMU	O2-C2	-2.53	1.18	1.23
48	w	644	OMG	C2-N1	2.53	1.43	1.37
48	w	174	OMC	C5-C4	2.53	1.48	1.42
48	w	462	OMC	C5-C4	2.52	1.48	1.42
3	D	2424	OMG	O6-C6	-2.52	1.18	1.23
2	B	47	H2U	C4-N3	-2.52	1.33	1.37
48	w	1832	6MZ	C5-C4	-2.51	1.34	1.40
48	w	517	OMC	C5-C4	2.51	1.48	1.42
5	F	75	OMG	O6-C6	-2.50	1.18	1.23
48	w	1328	OMG	C2-N1	2.49	1.43	1.37
48	w	436	OMG	C2-N1	2.48	1.43	1.37
3	D	2363	A2M	O4'-C4'	-2.47	1.39	1.45
48	w	601	OMG	C2-N1	2.46	1.43	1.37
48	w	509	OMG	O6-C6	-2.46	1.18	1.23
48	w	601	OMG	O6-C6	-2.46	1.18	1.23
48	w	683	OMG	O6-C6	-2.45	1.18	1.23
48	w	683	OMG	C2-N1	2.45	1.43	1.37
48	w	509	OMG	C2-N1	2.45	1.43	1.37
2	C	27	M2G	C5-C6	-2.44	1.42	1.47
2	B	27	M2G	C5-C6	-2.44	1.42	1.47
48	w	436	OMG	O6-C6	-2.44	1.18	1.23
48	w	1490	OMG	O6-C6	-2.43	1.18	1.23
48	w	1391	OMC	C5-C4	2.41	1.48	1.42
3	D	4530	UR3	O4-C4	-2.41	1.18	1.23
48	w	1703	OMC	C5-C4	2.41	1.48	1.42
3	D	2424	OMG	C2-N1	2.40	1.43	1.37
2	B	34	56B	C5-C4	-2.40	1.37	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
48	w	644	OMG	O6-C6	-2.40	1.18	1.23
2	C	34	56B	C5-C4	-2.40	1.37	1.40
2	B	10	2MG	C5-C4	-2.39	1.37	1.43
3	D	3785	A2M	O4'-C1'	-2.38	1.37	1.41
3	D	3782	5MC	O2-C2	-2.38	1.19	1.23
48	w	1490	OMG	C2-N1	2.38	1.43	1.37
3	D	4618	OMG	C2-N1	2.36	1.43	1.37
3	D	4499	OMG	C2-N1	2.35	1.43	1.37
3	D	1760	OMG	O6-C6	-2.34	1.18	1.23
3	D	3944	OMG	O6-C6	-2.34	1.18	1.23
2	C	6	2MG	C5-C4	-2.33	1.37	1.43
5	F	75	OMG	C2-N1	2.33	1.43	1.37
48	w	1832	6MZ	C2-N3	2.33	1.35	1.32
48	w	1328	OMG	O6-C6	-2.32	1.18	1.23
2	C	48	5MC	CM5-C5	2.32	1.56	1.50
2	B	34	56B	O6-C6	-2.32	1.18	1.23
3	D	1524	A2M	O4'-C4'	-2.31	1.39	1.45
3	D	3701	OMC	C5-C4	2.31	1.48	1.42
2	C	10	2MG	C5-C4	-2.30	1.37	1.43
3	D	4530	UR3	O2-C2	-2.30	1.18	1.22
3	D	3744	OMG	C2-N1	2.29	1.43	1.37
2	C	34	56B	O6-C6	-2.28	1.18	1.23
3	D	2824	OMC	C5-C4	2.28	1.48	1.42
3	D	1625	OMG	C2-N1	2.28	1.43	1.37
3	D	4196	OMG	C2-N1	2.28	1.43	1.37
48	w	1639	G7M	O6-C6	-2.27	1.18	1.23
2	B	48	5MC	CM5-C5	2.26	1.56	1.50
3	D	3808	OMC	C5-C4	2.26	1.48	1.42
3	D	4623	OMG	C2-N1	2.26	1.43	1.37
2	C	48	5MC	O2-C2	-2.26	1.19	1.23
3	D	4494	OMG	C2-N1	2.25	1.43	1.37
3	D	2422	OMC	C5-C4	2.24	1.48	1.42
3	D	4228	OMG	C2-N1	2.24	1.43	1.37
3	D	3627	OMG	C2-N1	2.23	1.43	1.37
2	B	48	5MC	O2-C2	-2.23	1.19	1.23
3	D	3899	OMG	C2-N1	2.23	1.43	1.37
3	D	2861	OMC	C5-C4	2.22	1.48	1.42
3	D	4456	OMC	C5-C4	2.21	1.48	1.42
3	D	3887	OMC	C5-C4	2.21	1.48	1.42
3	D	4392	OMG	C2-N1	2.21	1.43	1.37
3	D	3841	OMC	C5-C4	2.21	1.48	1.42
3	D	3792	OMG	C2-N1	2.20	1.43	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	1316	OMG	C2-N1	2.20	1.43	1.37
2	B	46	G7M	C8-N7	2.18	1.37	1.33
3	D	2804	OMC	C5-C4	2.18	1.47	1.42
3	D	4370	OMG	C2-N1	2.18	1.43	1.37
3	D	2364	OMG	C2-N1	2.17	1.43	1.37
2	B	46	G7M	O6-C6	-2.17	1.18	1.23
3	D	4536	OMC	C5-C4	2.17	1.47	1.42
3	D	2365	OMC	C5-C4	2.16	1.47	1.42
3	D	4637	OMG	C2-N1	2.15	1.43	1.37
3	D	1522	OMG	C2-N1	2.15	1.43	1.37
3	D	1536	PSU	C4-C5	-2.14	1.38	1.44
3	D	1773	OMU	C6-N1	2.13	1.43	1.38
48	w	799	OMU	C6-N1	2.13	1.43	1.38
48	w	121	OMU	C5-C4	2.11	1.48	1.43
2	C	37	1MG	C6-N1	2.10	1.43	1.39
48	w	1288	OMU	C5-C4	2.10	1.48	1.43
2	C	46	G7M	C8-N7	2.10	1.36	1.33
2	C	39	UY1	C4-N3	2.10	1.42	1.38
3	D	1340	OMC	C5-C4	2.09	1.47	1.42
3	D	3639	PSU	C4-C5	-2.09	1.38	1.44
3	D	4530	UR3	C5-C4	2.09	1.49	1.43
48	w	172	OMU	C5-C4	2.09	1.48	1.43
2	B	37	1MG	C6-N1	2.08	1.43	1.39
3	D	1773	OMU	C5-C4	2.07	1.48	1.43
48	w	1288	OMU	C6-N1	2.07	1.43	1.38
48	w	428	OMU	C5-C4	2.07	1.48	1.43
48	w	116	OMU	C6-N1	2.06	1.43	1.38
3	D	1683	PSU	C4-C5	-2.06	1.38	1.44
3	D	3851	PSU	C4-C5	-2.05	1.38	1.44
2	C	37	1MG	O6-C6	-2.05	1.18	1.22
48	w	1442	OMU	C5-C4	2.05	1.48	1.43
48	w	799	OMU	C5-C4	2.05	1.48	1.43
48	w	1326	OMU	C6-N1	2.05	1.42	1.38
3	D	4523	A2M	O4'-C4'	-2.04	1.40	1.45
48	w	116	OMU	C5-C4	2.04	1.48	1.43
48	w	121	OMU	C6-N1	2.04	1.42	1.38
48	w	627	OMU	C6-N1	2.04	1.42	1.38
2	C	46	G7M	O6-C6	-2.03	1.19	1.23
48	w	627	OMU	C5-C4	2.03	1.48	1.43
48	w	1442	OMU	C6-N1	2.02	1.42	1.38
3	D	4442	PSU	O4'-C1'	-2.02	1.41	1.43
48	w	428	OMU	C6-N1	2.01	1.42	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	3782	5MC	CM5-C5	2.01	1.55	1.50
3	D	4579	PSU	C4-C5	-2.01	1.38	1.44
2	B	37	1MG	O6-C6	-2.01	1.18	1.22
3	D	4521	PSU	C4-C5	-2.01	1.38	1.44
3	D	3920	PSU	C4-C5	-2.01	1.38	1.44
48	w	1326	OMU	C5-C4	2.01	1.48	1.43
48	w	1804	OMU	C5-C4	2.01	1.48	1.43
3	D	4353	PSU	C4-C5	-2.00	1.38	1.44
48	w	681	PSU	C4-C5	-2.00	1.38	1.44
2	B	37	1MG	C5-C6	2.00	1.53	1.47
3	D	1677	PSU	O4'-C1'	-2.00	1.41	1.43

All (713) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	34	56B	C8-N9-C1'	23.97	146.71	125.48
2	B	34	56B	C8-N9-C1'	23.30	146.12	125.48
2	B	54	5MU	C5-C4-N3	12.25	125.76	115.31
2	C	54	5MU	C5-C4-N3	12.01	125.56	115.31
2	B	54	5MU	C5-C6-N1	-10.00	113.05	123.34
2	C	54	5MU	C5-C6-N1	-9.97	113.08	123.34
48	w	1851	MA6	N3-C2-N1	-5.89	119.47	128.68
48	w	1850	MA6	N3-C2-N1	-5.88	119.49	128.68
3	D	2415	OMU	C4-N3-C2	-5.81	118.92	126.58
3	D	4220	6MZ	N3-C2-N1	-5.81	119.60	128.68
2	C	34	56B	C5-C6-N1	5.79	120.26	115.36
2	B	34	56B	C5-C6-N1	5.74	120.22	115.36
3	D	2837	OMU	C4-N3-C2	-5.71	119.05	126.58
48	w	1832	6MZ	N3-C2-N1	-5.68	119.80	128.68
3	D	4227	OMU	C4-N3-C2	-5.63	119.15	126.58
3	D	3925	OMU	C4-N3-C2	-5.60	119.20	126.58
3	D	4498	OMU	C4-N3-C2	-5.39	119.46	126.58
3	D	4620	OMU	C4-N3-C2	-5.37	119.49	126.58
48	w	172	OMU	C4-N3-C2	-5.36	119.51	126.58
2	B	54	5MU	O4-C4-C5	-5.36	118.69	124.90
3	D	4306	OMU	C4-N3-C2	-5.34	119.53	126.58
48	w	428	OMU	C4-N3-C2	-5.32	119.56	126.58
48	w	1804	OMU	C4-N3-C2	-5.31	119.58	126.58
48	w	1442	OMU	C4-N3-C2	-5.30	119.59	126.58
48	w	121	OMU	C4-N3-C2	-5.19	119.73	126.58
48	w	627	OMU	C4-N3-C2	-5.19	119.74	126.58
48	w	1326	OMU	C4-N3-C2	-5.16	119.77	126.58

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
48	w	116	OMU	C4-N3-C2	-5.15	119.79	126.58
48	w	1288	OMU	C4-N3-C2	-5.14	119.79	126.58
48	w	799	OMU	C4-N3-C2	-5.07	119.89	126.58
3	D	1862	PSU	N1-C2-N3	5.00	120.80	115.13
3	D	4220	6MZ	C2-N1-C6	4.99	120.87	116.59
3	D	1683	PSU	N1-C2-N3	4.96	120.75	115.13
3	D	4628	PSU	N1-C2-N3	4.96	120.75	115.13
2	C	54	5MU	O4-C4-C5	-4.95	119.16	124.90
2	C	47	H2U	C4-N3-C2	-4.95	121.69	125.79
3	D	4521	PSU	C4-N3-C2	-4.93	119.23	126.34
3	D	3637	PSU	C4-N3-C2	-4.92	119.26	126.34
3	D	1862	PSU	C4-N3-C2	-4.91	119.26	126.34
3	D	1677	PSU	C4-N3-C2	-4.91	119.27	126.34
48	w	105	PSU	N1-C2-N3	4.89	120.67	115.13
48	w	681	PSU	C4-N3-C2	-4.89	119.29	126.34
3	D	4312	PSU	C4-N3-C2	-4.89	119.30	126.34
2	B	54	5MU	C4-N3-C2	-4.87	121.04	127.35
48	w	815	PSU	C4-N3-C2	-4.87	119.32	126.34
3	D	4972	PSU	C4-N3-C2	-4.87	119.33	126.34
3	D	4299	PSU	N1-C2-N3	4.86	120.64	115.13
3	D	4312	PSU	N1-C2-N3	4.85	120.62	115.13
3	D	3758	PSU	C4-N3-C2	-4.84	119.37	126.34
3	D	1683	PSU	C4-N3-C2	-4.84	119.37	126.34
48	w	814	PSU	C4-N3-C2	-4.83	119.38	126.34
3	D	1536	PSU	N1-C2-N3	4.83	120.60	115.13
3	D	4500	PSU	C4-N3-C2	-4.82	119.40	126.34
3	D	3920	PSU	N1-C2-N3	4.82	120.59	115.13
3	D	4442	PSU	N1-C2-N3	4.80	120.57	115.13
3	D	3695	PSU	C4-N3-C2	-4.80	119.42	126.34
3	D	4972	PSU	N1-C2-N3	4.80	120.57	115.13
3	D	3639	PSU	C4-N3-C2	-4.80	119.42	126.34
3	D	1782	PSU	C4-N3-C2	-4.80	119.42	126.34
3	D	5010	PSU	C4-N3-C2	-4.80	119.42	126.34
3	D	4530	UR3	C4-N3-C2	-4.80	120.04	124.56
3	D	1773	OMU	C4-N3-C2	-4.80	120.25	126.58
3	D	4521	PSU	N1-C2-N3	4.80	120.56	115.13
2	B	35	PSU	C4-N3-C2	-4.80	119.43	126.34
3	D	2508	PSU	C4-N3-C2	-4.79	119.43	126.34
3	D	3730	PSU	C4-N3-C2	-4.79	119.43	126.34
3	D	4442	PSU	C4-N3-C2	-4.79	119.43	126.34
48	w	822	PSU	C4-N3-C2	-4.79	119.44	126.34
3	D	5001	PSU	C4-N3-C2	-4.78	119.45	126.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	3920	PSU	C4-N3-C2	-4.78	119.45	126.34
3	D	4403	PSU	C4-N3-C2	-4.78	119.45	126.34
3	D	4576	PSU	C4-N3-C2	-4.78	119.46	126.34
3	D	1536	PSU	C4-N3-C2	-4.77	119.46	126.34
48	w	649	PSU	C4-N3-C2	-4.77	119.47	126.34
3	D	4353	PSU	C4-N3-C2	-4.77	119.47	126.34
3	D	4552	PSU	N1-C2-N3	4.76	120.53	115.13
3	D	4500	PSU	N1-C2-N3	4.76	120.52	115.13
3	D	3851	PSU	C4-N3-C2	-4.76	119.48	126.34
3	D	4579	PSU	C4-N3-C2	-4.76	119.48	126.34
3	D	3637	PSU	N1-C2-N3	4.76	120.52	115.13
3	D	4299	PSU	C4-N3-C2	-4.75	119.49	126.34
3	D	3851	PSU	N1-C2-N3	4.75	120.51	115.13
3	D	4403	PSU	N1-C2-N3	4.74	120.50	115.13
48	w	1367	PSU	C4-N3-C2	-4.74	119.50	126.34
3	D	1792	PSU	C4-N3-C2	-4.74	119.51	126.34
48	w	218	PSU	C4-N3-C2	-4.74	119.51	126.34
3	D	4579	PSU	N1-C2-N3	4.74	120.50	115.13
48	w	1177	PSU	C4-N3-C2	-4.74	119.52	126.34
3	D	4689	PSU	C4-N3-C2	-4.73	119.52	126.34
2	C	54	5MU	C4-N3-C2	-4.72	121.24	127.35
48	w	1045	PSU	C4-N3-C2	-4.72	119.54	126.34
3	D	1744	PSU	C4-N3-C2	-4.72	119.54	126.34
3	D	2508	PSU	N1-C2-N3	4.72	120.47	115.13
3	D	4423	PSU	N1-C2-N3	4.72	120.47	115.13
3	D	1781	PSU	C4-N3-C2	-4.71	119.55	126.34
48	w	651	PSU	C4-N3-C2	-4.71	119.55	126.34
3	D	4296	PSU	N1-C2-N3	4.71	120.47	115.13
3	D	1744	PSU	N1-C2-N3	4.71	120.47	115.13
3	D	4628	PSU	C4-N3-C2	-4.71	119.56	126.34
48	w	109	PSU	N1-C2-N3	4.70	120.46	115.13
48	w	863	PSU	C4-N3-C2	-4.70	119.56	126.34
3	D	1860	PSU	C4-N3-C2	-4.70	119.57	126.34
3	D	4361	PSU	C4-N3-C2	-4.70	119.57	126.34
48	w	1056	PSU	N1-C2-N3	4.69	120.45	115.13
2	C	35	PSU	C4-N3-C2	-4.69	119.58	126.34
48	w	686	PSU	C4-N3-C2	-4.69	119.58	126.34
3	D	2632	PSU	C4-N3-C2	-4.69	119.59	126.34
48	w	105	PSU	C4-N3-C2	-4.69	119.59	126.34
48	w	406	PSU	C4-N3-C2	-4.68	119.60	126.34
48	w	866	PSU	C4-N3-C2	-4.68	119.60	126.34
3	D	4423	PSU	C4-N3-C2	-4.68	119.60	126.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	4457	PSU	C4-N3-C2	-4.67	119.61	126.34
3	D	5010	PSU	N1-C2-N3	4.67	120.42	115.13
48	w	1625	PSU	C4-N3-C2	-4.67	119.61	126.34
48	w	109	PSU	C4-N3-C2	-4.67	119.61	126.34
3	D	3715	PSU	C4-N3-C2	-4.67	119.61	126.34
3	D	4532	PSU	C4-N3-C2	-4.67	119.61	126.34
48	w	1692	PSU	C4-N3-C2	-4.67	119.62	126.34
3	D	4552	PSU	C4-N3-C2	-4.67	119.62	126.34
3	D	4576	PSU	N1-C2-N3	4.66	120.41	115.13
48	w	406	PSU	N1-C2-N3	4.66	120.41	115.13
48	w	686	PSU	N1-C2-N3	4.65	120.40	115.13
3	D	3639	PSU	N1-C2-N3	4.65	120.40	115.13
48	w	1177	PSU	N1-C2-N3	4.65	120.40	115.13
48	w	815	PSU	N1-C2-N3	4.65	120.40	115.13
3	D	3764	PSU	C4-N3-C2	-4.65	119.64	126.34
3	D	3768	PSU	C4-N3-C2	-4.65	119.64	126.34
3	D	1677	PSU	N1-C2-N3	4.65	120.40	115.13
3	D	4353	PSU	N1-C2-N3	4.65	120.40	115.13
3	D	4420	PSU	C4-N3-C2	-4.65	119.64	126.34
3	D	4293	PSU	C4-N3-C2	-4.64	119.65	126.34
3	D	1792	PSU	N1-C2-N3	4.64	120.39	115.13
48	w	1643	PSU	N1-C2-N3	4.64	120.39	115.13
48	w	866	PSU	N1-C2-N3	4.64	120.38	115.13
48	w	1004	PSU	C4-N3-C2	-4.64	119.66	126.34
48	w	1232	PSU	C4-N3-C2	-4.63	119.66	126.34
48	w	1367	PSU	N1-C2-N3	4.63	120.38	115.13
48	w	1174	PSU	C4-N3-C2	-4.63	119.67	126.34
3	D	4457	PSU	N1-C2-N3	4.63	120.37	115.13
3	D	4532	PSU	N1-C2-N3	4.63	120.37	115.13
3	D	1860	PSU	N1-C2-N3	4.62	120.37	115.13
48	w	1692	PSU	N1-C2-N3	4.62	120.36	115.13
3	D	4431	PSU	C4-N3-C2	-4.62	119.69	126.34
3	D	4293	PSU	N1-C2-N3	4.62	120.36	115.13
48	w	218	PSU	N1-C2-N3	4.62	120.36	115.13
3	D	4296	PSU	C4-N3-C2	-4.61	119.69	126.34
3	D	3715	PSU	N1-C2-N3	4.61	120.36	115.13
3	D	3853	PSU	C4-N3-C2	-4.61	119.69	126.34
48	w	1347	PSU	C4-N3-C2	-4.61	119.69	126.34
3	D	3730	PSU	N1-C2-N3	4.61	120.35	115.13
3	D	2632	PSU	N1-C2-N3	4.61	120.35	115.13
48	w	36	PSU	C4-N3-C2	-4.61	119.70	126.34
48	w	1232	PSU	N1-C2-N3	4.60	120.35	115.13

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
48	w	1244	PSU	C4-N3-C2	-4.60	119.71	126.34
3	D	1781	PSU	N1-C2-N3	4.60	120.34	115.13
3	D	4689	PSU	N1-C2-N3	4.60	120.34	115.13
3	D	5001	PSU	N1-C2-N3	4.59	120.33	115.13
48	w	814	PSU	N1-C2-N3	4.59	120.33	115.13
48	w	572	PSU	C4-N3-C2	-4.59	119.72	126.34
48	w	863	PSU	N1-C2-N3	4.59	120.33	115.13
3	D	3758	PSU	N1-C2-N3	4.59	120.33	115.13
48	w	1625	PSU	N1-C2-N3	4.59	120.33	115.13
48	w	651	PSU	N1-C2-N3	4.59	120.33	115.13
3	D	3853	PSU	N1-C2-N3	4.58	120.32	115.13
2	B	35	PSU	N1-C2-N3	4.57	120.31	115.13
48	w	34	PSU	N1-C2-N3	4.57	120.31	115.13
48	w	1004	PSU	N1-C2-N3	4.57	120.31	115.13
48	w	210	PSU	C4-N3-C2	-4.57	119.76	126.34
3	D	1782	PSU	N1-C2-N3	4.56	120.30	115.13
3	D	3734	PSU	N1-C2-N3	4.56	120.30	115.13
48	w	649	PSU	N1-C2-N3	4.56	120.30	115.13
48	w	36	PSU	N1-C2-N3	4.56	120.30	115.13
48	w	1643	PSU	C4-N3-C2	-4.56	119.77	126.34
3	D	4361	PSU	N1-C2-N3	4.55	120.29	115.13
48	w	681	PSU	N1-C2-N3	4.55	120.29	115.13
3	D	3695	PSU	N1-C2-N3	4.55	120.28	115.13
3	D	3770	PSU	N1-C2-N3	4.55	120.28	115.13
3	D	3762	PSU	C4-N3-C2	-4.55	119.79	126.34
48	w	1832	6MZ	C2-N1-C6	4.54	120.49	116.59
3	D	4420	PSU	N1-C2-N3	4.54	120.28	115.13
48	w	822	PSU	N1-C2-N3	4.54	120.28	115.13
48	w	572	PSU	N1-C2-N3	4.54	120.28	115.13
3	D	4431	PSU	N1-C2-N3	4.53	120.27	115.13
48	w	1046	PSU	N1-C2-N3	4.53	120.26	115.13
48	w	119	PSU	C4-N3-C2	-4.53	119.81	126.34
2	C	55	PSU	C4-N3-C2	-4.53	119.81	126.34
48	w	966	PSU	C4-N3-C2	-4.53	119.81	126.34
3	D	3734	PSU	C4-N3-C2	-4.53	119.81	126.34
3	D	4471	PSU	C4-N3-C2	-4.52	119.82	126.34
48	w	119	PSU	N1-C2-N3	4.52	120.25	115.13
48	w	1174	PSU	N1-C2-N3	4.51	120.24	115.13
3	D	3762	PSU	N1-C2-N3	4.51	120.24	115.13
2	B	54	5MU	N3-C2-N1	4.51	120.87	114.89
2	B	55	PSU	N1-C2-N3	4.51	120.24	115.13
48	w	609	PSU	C4-N3-C2	-4.51	119.85	126.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
48	w	801	PSU	C4-N3-C2	-4.50	119.85	126.34
3	D	3764	PSU	N1-C2-N3	4.50	120.23	115.13
48	w	1056	PSU	C4-N3-C2	-4.50	119.85	126.34
48	w	1046	PSU	C4-N3-C2	-4.50	119.85	126.34
2	C	35	PSU	N1-C2-N3	4.49	120.22	115.13
48	w	1445	PSU	N1-C2-N3	4.49	120.22	115.13
2	C	55	PSU	N1-C2-N3	4.49	120.22	115.13
3	D	4471	PSU	N1-C2-N3	4.49	120.22	115.13
48	w	1045	PSU	N1-C2-N3	4.49	120.21	115.13
48	w	93	PSU	N1-C2-N3	4.48	120.21	115.13
48	w	1238	PSU	N1-C2-N3	4.47	120.19	115.13
48	w	210	PSU	N1-C2-N3	4.46	120.19	115.13
48	w	801	PSU	N1-C2-N3	4.46	120.19	115.13
48	w	1347	PSU	N1-C2-N3	4.46	120.18	115.13
2	C	54	5MU	N3-C2-N1	4.46	120.81	114.89
48	w	93	PSU	C4-N3-C2	-4.45	119.92	126.34
48	w	966	PSU	N1-C2-N3	4.45	120.17	115.13
48	w	1081	PSU	C4-N3-C2	-4.45	119.93	126.34
48	w	1244	PSU	N1-C2-N3	4.44	120.17	115.13
48	w	1238	PSU	C4-N3-C2	-4.44	119.94	126.34
3	D	3770	PSU	C4-N3-C2	-4.41	119.99	126.34
48	w	609	PSU	N1-C2-N3	4.41	120.12	115.13
3	D	3768	PSU	N1-C2-N3	4.40	120.12	115.13
48	w	1445	PSU	C4-N3-C2	-4.39	120.01	126.34
48	w	1081	PSU	N1-C2-N3	4.39	120.10	115.13
48	w	34	PSU	C4-N3-C2	-4.30	120.14	126.34
2	B	55	PSU	C4-N3-C2	-4.28	120.17	126.34
3	D	2415	OMU	N3-C2-N1	4.19	120.46	114.89
3	D	2837	OMU	N3-C2-N1	4.18	120.44	114.89
3	D	4620	OMU	N3-C2-N1	4.07	120.30	114.89
3	D	3925	OMU	N3-C2-N1	4.03	120.25	114.89
2	C	37	1MG	C5-C6-N1	4.03	119.97	113.90
2	B	37	1MG	C5-C6-N1	4.01	119.93	113.90
2	C	54	5MU	C5M-C5-C6	-4.00	117.50	122.85
3	D	4306	OMU	N3-C2-N1	3.98	120.17	114.89
3	D	4447	5MC	C5-C6-N1	-3.94	119.28	123.34
3	D	4498	OMU	N3-C2-N1	3.92	120.10	114.89
48	w	172	OMU	N3-C2-N1	3.90	120.07	114.89
2	C	54	5MU	C5M-C5-C4	3.89	123.05	118.77
3	D	4227	OMU	N3-C2-N1	3.86	120.02	114.89
2	C	27	M2G	O6-C6-N1	-3.84	116.12	120.65
48	w	121	OMU	N3-C2-N1	3.82	119.96	114.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
48	w	116	OMU	N3-C2-N1	3.80	119.94	114.89
48	w	1442	OMU	N3-C2-N1	3.80	119.93	114.89
48	w	1326	OMU	N3-C2-N1	3.77	119.89	114.89
48	w	428	OMU	N3-C2-N1	3.74	119.85	114.89
3	D	4227	OMU	C5-C4-N3	3.73	120.42	114.84
3	D	1522	OMG	C5-C6-N1	3.73	120.53	113.95
2	B	27	M2G	O6-C6-N1	-3.70	116.28	120.65
48	w	1804	OMU	N3-C2-N1	3.69	119.79	114.89
48	w	799	OMU	N3-C2-N1	3.68	119.78	114.89
3	D	2364	OMG	C5-C6-N1	3.65	120.41	113.95
3	D	4196	OMG	C5-C6-N1	3.64	120.39	113.95
3	D	3627	OMG	C5-C6-N1	3.64	120.39	113.95
3	D	4392	OMG	C5-C6-N1	3.63	120.37	113.95
3	D	1316	OMG	C5-C6-N1	3.62	120.34	113.95
3	D	4370	OMG	C5-C6-N1	3.61	120.33	113.95
3	D	4637	OMG	C5-C6-N1	3.61	120.33	113.95
3	D	3744	OMG	C5-C6-N1	3.61	120.33	113.95
3	D	4228	OMG	C5-C6-N1	3.61	120.33	113.95
48	w	1337	4AC	O7-C7-N4	3.60	127.65	121.82
48	w	1288	OMU	N3-C2-N1	3.59	119.66	114.89
3	D	2415	OMU	C5-C4-N3	3.59	120.21	114.84
3	D	1625	OMG	C5-C6-N1	3.58	120.28	113.95
3	D	2424	OMG	C5-C6-N1	3.57	120.25	113.95
3	D	4494	OMG	C5-C6-N1	3.56	120.25	113.95
3	D	3899	OMG	C5-C6-N1	3.56	120.23	113.95
3	D	1773	OMU	N3-C2-N1	3.55	119.61	114.89
2	C	10	2MG	C5-C6-N1	3.55	120.22	113.95
3	D	4499	OMG	C5-C6-N1	3.55	120.22	113.95
48	w	601	OMG	C5-C6-N1	3.54	120.21	113.95
48	w	509	OMG	C5-C6-N1	3.54	120.20	113.95
5	F	75	OMG	C5-C6-N1	3.53	120.19	113.95
3	D	2837	OMU	C5-C4-N3	3.53	120.12	114.84
48	w	627	OMU	N3-C2-N1	3.52	119.57	114.89
48	w	683	OMG	C5-C6-N1	3.52	120.17	113.95
3	D	3925	OMU	C5-C4-N3	3.52	120.10	114.84
2	C	26	M2G	O6-C6-N1	-3.50	116.51	120.65
48	w	436	OMG	C5-C6-N1	3.50	120.13	113.95
3	D	3782	5MC	C5-C6-N1	-3.49	119.75	123.34
2	C	6	2MG	C5-C6-N1	3.48	120.10	113.95
48	w	644	OMG	C5-C6-N1	3.48	120.09	113.95
2	B	6	2MG	C5-C6-N1	3.47	120.07	113.95
2	B	54	5MU	C5M-C5-C6	-3.47	118.22	122.85

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	1760	OMG	C5-C6-N1	3.47	120.07	113.95
48	w	1842	4AC	O7-C7-N4	3.46	127.42	121.82
48	w	1804	OMU	C5-C4-N3	3.45	120.00	114.84
3	D	4498	OMU	C5-C4-N3	3.45	120.00	114.84
3	D	4623	OMG	C5-C6-N1	3.44	120.02	113.95
3	D	3944	OMG	C5-C6-N1	3.43	120.01	113.95
3	D	4618	OMG	C5-C6-N1	3.43	120.00	113.95
48	w	627	OMU	C5-C4-N3	3.40	119.93	114.84
3	D	3792	OMG	C5-C6-N1	3.40	119.96	113.95
48	w	1490	OMG	C5-C6-N1	3.39	119.93	113.95
48	w	1328	OMG	C5-C6-N1	3.38	119.92	113.95
2	B	10	2MG	C5-C6-N1	3.38	119.92	113.95
48	w	1442	OMU	C5-C4-N3	3.38	119.89	114.84
2	C	27	M2G	O6-C6-C5	3.38	130.96	124.37
48	w	428	OMU	C5-C4-N3	3.36	119.87	114.84
48	w	34	PSU	O2-C2-N1	-3.36	119.09	122.79
48	w	172	OMU	C5-C4-N3	3.35	119.84	114.84
48	w	1288	OMU	C5-C4-N3	3.34	119.83	114.84
2	B	27	M2G	O6-C6-C5	3.33	130.88	124.37
3	D	4306	OMU	C5-C4-N3	3.33	119.82	114.84
3	D	4620	OMU	C5-C4-N3	3.32	119.81	114.84
48	w	1326	OMU	C5-C4-N3	3.32	119.81	114.84
2	C	34	56B	C9-N10-C10	-3.32	106.12	113.35
48	w	116	OMU	C5-C4-N3	3.31	119.79	114.84
48	w	121	OMU	C5-C4-N3	3.29	119.77	114.84
2	B	26	M2G	O6-C6-N1	-3.29	116.76	120.65
48	w	799	OMU	C5-C4-N3	3.27	119.73	114.84
2	B	54	5MU	C5M-C5-C4	3.26	122.35	118.77
2	B	34	56B	C9-C7-C8	-3.23	123.13	127.67
3	D	1316	OMG	C2-N1-C6	-3.20	119.20	125.10
2	C	48	5MC	C5-C6-N1	-3.20	120.05	123.34
3	D	4196	OMG	C2-N1-C6	-3.19	119.22	125.10
3	D	4637	OMG	C2-N1-C6	-3.19	119.22	125.10
2	C	34	56B	C9-C7-C8	-3.19	123.19	127.67
2	C	26	M2G	O6-C6-C5	3.17	130.57	124.37
48	w	509	OMG	C2-N1-C6	-3.16	119.28	125.10
3	D	1625	OMG	C2-N1-C6	-3.16	119.28	125.10
3	D	1773	OMU	C5-C4-N3	3.14	119.55	114.84
3	D	4392	OMG	C2-N1-C6	-3.14	119.31	125.10
2	B	46	G7M	C2-N1-C6	-3.12	119.34	125.10
3	D	1522	OMG	C2-N1-C6	-3.12	119.35	125.10
3	D	2424	OMG	C2-N1-C6	-3.11	119.37	125.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	3899	OMG	C2-N1-C6	-3.08	119.43	125.10
3	D	4494	OMG	C2-N1-C6	-3.08	119.43	125.10
2	B	26	M2G	O6-C6-C5	3.07	130.38	124.37
2	B	48	5MC	C5-C6-N1	-3.07	120.18	123.34
3	D	3627	OMG	C2-N1-C6	-3.06	119.46	125.10
5	F	75	OMG	C2-N1-C6	-3.06	119.47	125.10
48	w	436	OMG	C2-N1-C6	-3.06	119.47	125.10
3	D	2364	OMG	C2-N1-C6	-3.05	119.49	125.10
3	D	2837	OMU	O4-C4-C5	-3.04	119.82	125.16
3	D	3944	OMG	C2-N1-C6	-3.03	119.52	125.10
3	D	3744	OMG	C2-N1-C6	-3.03	119.53	125.10
3	D	4370	OMG	C2-N1-C6	-3.02	119.53	125.10
3	D	4228	OMG	C2-N1-C6	-3.02	119.55	125.10
3	D	3792	OMG	C2-N1-C6	-3.01	119.55	125.10
48	w	683	OMG	C2-N1-C6	-3.01	119.56	125.10
48	w	1639	G7M	C2-N1-C6	-3.01	119.56	125.10
3	D	4499	OMG	C2-N1-C6	-3.00	119.57	125.10
3	D	1760	OMG	C2-N1-C6	-2.99	119.58	125.10
48	w	627	OMU	O4-C4-C5	-2.97	119.93	125.16
48	w	1328	OMG	C2-N1-C6	-2.97	119.62	125.10
3	D	4618	OMG	C2-N1-C6	-2.97	119.62	125.10
48	w	601	OMG	C2-N1-C6	-2.97	119.62	125.10
48	w	1804	OMU	O4-C4-C5	-2.97	119.93	125.16
3	D	3925	OMU	O4-C4-C5	-2.97	119.93	125.16
48	w	644	OMG	C2-N1-C6	-2.96	119.64	125.10
2	C	46	G7M	C2-N1-C6	-2.96	119.65	125.10
2	B	34	56B	C2-N1-C6	-2.96	119.66	125.10
2	C	34	56B	C2-N1-C6	-2.94	119.69	125.10
3	D	4623	OMG	C2-N1-C6	-2.94	119.69	125.10
2	B	6	2MG	C8-N7-C5	2.93	108.56	102.99
48	w	1288	OMU	O4-C4-C5	-2.92	120.03	125.16
3	D	4628	PSU	O2-C2-N1	-2.91	119.59	122.79
48	w	799	OMU	O4-C4-C5	-2.91	120.05	125.16
48	w	428	OMU	O4-C4-C5	-2.91	120.05	125.16
3	D	3730	PSU	O2-C2-N1	-2.88	119.62	122.79
48	w	436	OMG	C8-N7-C5	2.88	108.47	102.99
3	D	1683	PSU	O2-C2-N1	-2.87	119.63	122.79
48	w	1442	OMU	O4-C4-C5	-2.87	120.11	125.16
48	w	1056	PSU	O2-C2-N1	-2.86	119.64	122.79
3	D	4423	PSU	O2-C2-N1	-2.85	119.65	122.79
48	w	509	OMG	C8-N7-C5	2.85	108.43	102.99
48	w	1328	OMG	C8-N7-C5	2.85	108.43	102.99

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	3734	PSU	O2-C2-N1	-2.85	119.66	122.79
48	w	686	PSU	O2-C2-N1	-2.84	119.66	122.79
48	w	1851	MA6	N1-C6-N6	-2.84	114.06	117.06
3	D	4227	OMU	O4-C4-C5	-2.84	120.16	125.16
3	D	3920	PSU	O2-C2-N1	-2.84	119.67	122.79
3	D	3762	PSU	O2-C2-N1	-2.83	119.67	122.79
48	w	1232	PSU	O2-C2-N1	-2.83	119.67	122.79
48	w	644	OMG	C8-N7-C5	2.83	108.38	102.99
2	B	6	2MG	CM2-N2-C2	-2.83	117.62	123.86
48	w	116	OMU	O4-C4-C5	-2.81	120.21	125.16
3	D	4499	OMG	C8-N7-C5	2.81	108.35	102.99
48	w	1490	OMG	C2-N1-C6	-2.80	119.94	125.10
48	w	1326	OMU	O4-C4-C5	-2.80	120.23	125.16
3	D	1522	OMG	C8-N7-C5	2.80	108.32	102.99
48	w	105	PSU	C6-C5-C4	2.80	120.16	118.20
48	w	1081	PSU	O2-C2-N1	-2.80	119.71	122.79
3	D	4420	PSU	O2-C2-N1	-2.79	119.72	122.79
3	D	4500	PSU	O2-C2-N1	-2.79	119.72	122.79
48	w	406	PSU	O2-C2-N1	-2.79	119.72	122.79
3	D	2415	OMU	O4-C4-C5	-2.79	120.26	125.16
3	D	1760	OMG	C8-N7-C5	2.79	108.30	102.99
48	w	172	OMU	O4-C4-C5	-2.78	120.26	125.16
3	D	4228	OMG	C8-N7-C5	2.78	108.29	102.99
48	w	683	OMG	C8-N7-C5	2.78	108.28	102.99
3	D	3744	OMG	C8-N7-C5	2.78	108.28	102.99
3	D	4628	PSU	C6-N1-C2	-2.78	119.84	122.68
5	F	75	OMG	C8-N7-C5	2.77	108.27	102.99
3	D	4623	OMG	C8-N7-C5	2.77	108.26	102.99
3	D	1744	PSU	O2-C2-N1	-2.77	119.75	122.79
3	D	4296	PSU	O2-C2-N1	-2.75	119.76	122.79
3	D	4620	OMU	O4-C4-C5	-2.75	120.33	125.16
3	D	1862	PSU	O2-C2-N1	-2.75	119.77	122.79
3	D	4442	PSU	O2-C2-N1	-2.74	119.77	122.79
48	w	109	PSU	O2-C2-N1	-2.74	119.77	122.79
3	D	4498	OMU	O4-C4-C5	-2.74	120.34	125.16
3	D	1860	PSU	O2-C2-N1	-2.74	119.78	122.79
2	C	6	2MG	C8-N7-C5	2.73	108.20	102.99
2	C	55	PSU	O2-C2-N1	-2.73	119.78	122.79
3	D	1536	PSU	O2-C2-N1	-2.73	119.78	122.79
3	D	1534	A2M	C3'-C2'-C1'	-2.73	97.76	102.89
48	w	601	OMG	C8-N7-C5	2.73	108.19	102.99
3	D	4972	PSU	O2-C2-N1	-2.73	119.79	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	10	2MG	C8-N7-C5	2.72	108.18	102.99
3	D	4312	PSU	O2-C2-N1	-2.72	119.79	122.79
3	D	3944	OMG	C8-N7-C5	2.72	108.17	102.99
2	B	37	1MG	C8-N7-C5	2.72	108.17	102.99
48	w	572	PSU	O2-C2-N1	-2.71	119.80	122.79
3	D	4370	OMG	C8-N7-C5	2.71	108.16	102.99
2	C	37	1MG	C8-N7-C5	2.71	108.16	102.99
3	D	4637	OMG	C8-N7-C5	2.71	108.16	102.99
3	D	4306	OMU	O4-C4-C5	-2.71	120.39	125.16
3	D	2364	OMG	C8-N7-C5	2.70	108.14	102.99
48	w	1004	PSU	O2-C2-N1	-2.70	119.82	122.79
3	D	4392	OMG	C8-N7-C5	2.70	108.13	102.99
3	D	4494	OMG	C8-N7-C5	2.70	108.13	102.99
48	w	119	PSU	O2-C2-N1	-2.69	119.83	122.79
3	D	3770	PSU	O2-C2-N1	-2.69	119.83	122.79
3	D	1625	OMG	C8-N7-C5	2.69	108.11	102.99
3	D	3899	OMG	C8-N7-C5	2.68	108.11	102.99
48	w	866	PSU	O2-C2-N1	-2.68	119.84	122.79
2	B	34	56B	C9-N10-C10	-2.68	107.52	113.35
3	D	3627	OMG	C8-N7-C5	2.68	108.09	102.99
3	D	3639	PSU	O2-C2-N1	-2.68	119.84	122.79
48	w	1445	PSU	O2-C2-N1	-2.68	119.84	122.79
3	D	1773	OMU	O4-C4-C5	-2.67	120.47	125.16
48	w	1692	PSU	O2-C2-N1	-2.67	119.85	122.79
2	C	35	PSU	O2-C2-N1	-2.66	119.86	122.79
3	D	4576	PSU	O2-C2-N1	-2.66	119.86	122.79
3	D	1316	OMG	C8-N7-C5	2.66	108.06	102.99
3	D	4299	PSU	O2-C2-N1	-2.66	119.86	122.79
3	D	3792	OMG	C8-N7-C5	2.66	108.05	102.99
3	D	2424	OMG	C8-N7-C5	2.66	108.05	102.99
48	w	121	OMU	O4-C4-C5	-2.65	120.49	125.16
3	D	4618	OMG	C8-N7-C5	2.65	108.04	102.99
2	C	10	2MG	C8-N7-C5	2.65	108.04	102.99
48	w	649	PSU	O2-C2-N1	-2.65	119.87	122.79
3	D	3758	PSU	O2-C2-N1	-2.65	119.87	122.79
48	w	1625	PSU	O2-C2-N1	-2.64	119.88	122.79
48	w	863	PSU	O2-C2-N1	-2.64	119.88	122.79
48	w	93	PSU	O2-C2-N1	-2.64	119.88	122.79
3	D	1677	PSU	O2-C2-N1	-2.63	119.89	122.79
48	w	1643	PSU	O2-C2-N1	-2.63	119.90	122.79
3	D	1781	PSU	O2-C2-N1	-2.62	119.90	122.79
3	D	3764	PSU	O2-C2-N1	-2.62	119.91	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
48	w	34	PSU	C6-N1-C2	-2.61	120.02	122.68
3	D	3695	PSU	O2-C2-N1	-2.60	119.93	122.79
2	B	54	5MU	O2-C2-N1	-2.60	119.33	122.79
48	w	815	PSU	O2-C2-N1	-2.60	119.93	122.79
3	D	4196	OMG	C8-N7-C5	2.59	107.92	102.99
3	D	3715	PSU	O2-C2-N1	-2.59	119.94	122.79
48	w	1490	OMG	C8-N7-C5	2.59	107.92	102.99
48	w	822	PSU	O2-C2-N1	-2.58	119.95	122.79
2	B	35	PSU	O2-C2-N1	-2.58	119.95	122.79
48	w	609	PSU	O2-C2-N1	-2.58	119.95	122.79
48	w	36	PSU	O2-C2-N1	-2.58	119.95	122.79
3	D	4220	6MZ	C4-C5-N7	-2.57	106.72	109.40
3	D	1534	A2M	O2'-C2'-C1'	2.57	114.19	109.09
48	w	1177	PSU	O2-C2-N1	-2.57	119.96	122.79
48	w	966	PSU	O2-C2-N1	-2.57	119.97	122.79
3	D	4403	PSU	O2-C2-N1	-2.56	119.97	122.79
3	D	4431	PSU	O2-C2-N1	-2.56	119.97	122.79
3	D	4689	PSU	O2-C2-N1	-2.56	119.97	122.79
48	w	1056	PSU	C6-N1-C2	-2.56	120.07	122.68
3	D	1536	PSU	C6-N1-C2	-2.56	120.07	122.68
48	w	1347	PSU	O2-C2-N1	-2.55	119.98	122.79
3	D	4552	PSU	O2-C2-N1	-2.55	119.98	122.79
3	D	2508	PSU	O2-C2-N1	-2.55	119.98	122.79
3	D	2632	PSU	O2-C2-N1	-2.55	119.98	122.79
48	w	210	PSU	O2-C2-N1	-2.55	119.98	122.79
3	D	3768	PSU	O2-C2-N1	-2.55	119.98	122.79
48	w	814	PSU	O2-C2-N1	-2.55	119.99	122.79
48	w	1244	PSU	O2-C2-N1	-2.55	119.99	122.79
3	D	4579	PSU	O2-C2-N1	-2.54	119.99	122.79
2	C	10	2MG	O6-C6-C5	-2.54	119.41	124.37
3	D	5010	PSU	O2-C2-N1	-2.54	119.99	122.79
48	w	801	PSU	O2-C2-N1	-2.53	120.00	122.79
48	w	1367	PSU	O2-C2-N1	-2.53	120.00	122.79
48	w	105	PSU	C6-N1-C2	-2.53	120.10	122.68
48	w	1046	PSU	O2-C2-N1	-2.53	120.01	122.79
2	C	54	5MU	O4-C4-N3	-2.53	115.28	120.12
3	D	4532	PSU	O2-C2-N1	-2.52	120.01	122.79
48	w	1238	PSU	O2-C2-N1	-2.52	120.01	122.79
3	D	1683	PSU	C6-N1-C2	-2.50	120.12	122.68
3	D	3851	PSU	O2-C2-N1	-2.50	120.04	122.79
3	D	4353	PSU	O2-C2-N1	-2.49	120.05	122.79
3	D	3853	PSU	O2-C2-N1	-2.49	120.05	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
48	w	1337	4AC	CM7-C7-N4	-2.49	110.98	115.29
48	w	105	PSU	O2-C2-N1	-2.49	120.05	122.79
3	D	4620	OMU	O2-C2-N1	-2.49	119.48	122.79
48	w	1643	PSU	C6-N1-C2	-2.49	120.14	122.68
3	D	4299	PSU	C6-N1-C2	-2.48	120.15	122.68
48	w	681	PSU	O2-C2-N1	-2.47	120.07	122.79
3	D	3770	PSU	C6-N1-C2	-2.47	120.16	122.68
3	D	4293	PSU	O2-C2-N1	-2.47	120.08	122.79
3	D	1316	OMG	O6-C6-C5	-2.47	119.56	124.37
48	w	218	PSU	O2-C2-N1	-2.46	120.08	122.79
3	D	2837	OMU	O2-C2-N1	-2.46	119.52	122.79
48	w	1174	PSU	O2-C2-N1	-2.45	120.09	122.79
3	D	4457	PSU	C6-N1-C2	-2.45	120.18	122.68
3	D	3782	5MC	CM5-C5-C6	-2.44	119.59	122.85
3	D	4423	PSU	C6-N1-C2	-2.44	120.19	122.68
3	D	3920	PSU	C6-N1-C2	-2.43	120.19	122.68
2	B	55	PSU	C6-N1-C2	-2.43	120.20	122.68
2	C	37	1MG	O6-C6-C5	-2.43	119.89	124.19
3	D	4552	PSU	C6-N1-C2	-2.43	120.20	122.68
3	D	4361	PSU	O2-C2-N1	-2.42	120.13	122.79
48	w	1851	MA6	C4-C5-N7	-2.42	106.88	109.40
3	D	1782	PSU	O2-C2-N1	-2.42	120.13	122.79
3	D	1522	OMG	O6-C6-C5	-2.42	119.65	124.37
3	D	2424	OMG	O6-C6-C5	-2.42	119.65	124.37
48	w	815	PSU	C6-C5-C4	2.42	119.89	118.20
48	w	1842	4AC	C5-C4-N4	-2.41	118.73	122.92
3	D	3851	PSU	C6-N1-C2	-2.41	120.22	122.68
3	D	4457	PSU	O2-C2-N1	-2.41	120.14	122.79
3	D	4196	OMG	O6-C6-C5	-2.40	119.69	124.37
2	C	54	5MU	O2-C2-N1	-2.40	119.60	122.79
3	D	1862	PSU	C6-C5-C4	2.39	119.87	118.20
48	w	1046	PSU	C6-N1-C2	-2.39	120.24	122.68
2	B	54	5MU	O4-C4-N3	-2.38	115.55	120.12
48	w	93	PSU	C6-N1-C2	-2.38	120.25	122.68
3	D	4442	PSU	C6-N1-C2	-2.38	120.25	122.68
3	D	3899	OMG	O6-C6-C5	-2.38	119.73	124.37
3	D	1625	OMG	O6-C6-C5	-2.37	119.73	124.37
3	D	3734	PSU	C6-N1-C2	-2.37	120.26	122.68
3	D	4499	OMG	O6-C6-C5	-2.37	119.74	124.37
3	D	4293	PSU	C6-N1-C2	-2.37	120.26	122.68
48	w	119	PSU	C6-N1-C2	-2.37	120.26	122.68
48	w	109	PSU	C6-N1-C2	-2.37	120.26	122.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	1744	PSU	C6-N1-C2	-2.37	120.26	122.68
3	D	4579	PSU	C6-N1-C2	-2.37	120.26	122.68
3	D	4370	OMG	O6-C6-C5	-2.37	119.75	124.37
48	w	406	PSU	C6-N1-C2	-2.37	120.26	122.68
48	w	1045	PSU	O2-C2-N1	-2.36	120.19	122.79
48	w	1337	4AC	C5-C4-N4	-2.36	118.82	122.92
48	w	651	PSU	O2-C2-N1	-2.36	120.19	122.79
5	F	75	OMG	O6-C6-C5	-2.36	119.77	124.37
2	B	10	2MG	O6-C6-C5	-2.36	119.77	124.37
3	D	1860	PSU	C6-N1-C2	-2.35	120.28	122.68
3	D	4296	PSU	C6-N1-C2	-2.35	120.28	122.68
3	D	1862	PSU	C6-N1-C2	-2.35	120.28	122.68
3	D	4637	OMG	O6-C6-C5	-2.35	119.78	124.37
3	D	4392	OMG	O6-C6-C5	-2.35	119.79	124.37
3	D	2415	OMU	O3'-C3'-C2'	2.34	117.82	111.17
48	w	1490	OMG	O6-C6-C5	-2.34	119.81	124.37
3	D	4521	PSU	O2-C2-N1	-2.34	120.22	122.79
48	w	1238	PSU	C6-N1-C2	-2.33	120.30	122.68
3	D	4420	PSU	O4'-C1'-C2'	2.33	108.43	105.14
3	D	5001	PSU	O2-C2-N1	-2.33	120.23	122.79
48	w	1445	PSU	C6-N1-C2	-2.32	120.31	122.68
3	D	4494	OMG	O6-C6-C5	-2.32	119.84	124.37
48	w	509	OMG	O6-C6-C5	-2.32	119.84	124.37
3	D	4431	PSU	C6-N1-C2	-2.32	120.31	122.68
48	w	1004	PSU	C6-N1-C2	-2.31	120.32	122.68
3	D	4471	PSU	O2-C2-N1	-2.31	120.25	122.79
3	D	3853	PSU	C6-N1-C2	-2.31	120.32	122.68
3	D	4532	PSU	C6-N1-C2	-2.31	120.32	122.68
2	B	48	5MC	CM5-C5-C6	-2.31	119.77	122.85
2	B	37	1MG	O6-C6-C5	-2.31	120.11	124.19
3	D	4403	PSU	C6-N1-C2	-2.31	120.33	122.68
3	D	4972	PSU	C6-N1-C2	-2.30	120.33	122.68
3	D	3792	OMG	O6-C6-C5	-2.30	119.88	124.37
2	C	6	2MG	O6-C6-C5	-2.30	119.88	124.37
3	D	2364	OMG	O6-C6-C5	-2.30	119.88	124.37
48	w	683	OMG	O6-C6-C5	-2.30	119.88	124.37
3	D	3627	OMG	O6-C6-C5	-2.30	119.88	124.37
3	D	4471	PSU	C6-N1-C2	-2.30	120.33	122.68
48	w	1692	PSU	C6-N1-C2	-2.30	120.33	122.68
48	w	1842	4AC	C4-N3-C2	-2.30	116.99	120.12
48	w	36	PSU	C6-N1-C2	-2.29	120.34	122.68
48	w	686	PSU	C6-N1-C2	-2.29	120.34	122.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
48	w	601	OMG	O6-C6-C5	-2.29	119.90	124.37
3	D	3944	OMG	O6-C6-C5	-2.27	119.93	124.37
3	D	1760	OMG	O6-C6-C5	-2.27	119.93	124.37
3	D	2787	A2M	C2-N1-C6	-2.27	114.87	118.75
3	D	3785	A2M	C2-N1-C6	-2.27	114.87	118.75
48	w	1081	PSU	C6-N1-C2	-2.27	120.36	122.68
3	D	3715	PSU	C6-N1-C2	-2.27	120.37	122.68
3	D	4228	OMG	O6-C6-C5	-2.26	119.95	124.37
48	w	1842	4AC	CM7-C7-N4	-2.26	111.38	115.29
48	w	866	PSU	C6-N1-C2	-2.26	120.37	122.68
48	w	572	PSU	C6-N1-C2	-2.26	120.37	122.68
2	C	47	H2U	O4-C4-N3	2.26	123.86	120.28
48	w	609	PSU	C6-N1-C2	-2.25	120.38	122.68
3	D	1773	OMU	C1'-N1-C2	2.25	121.65	117.57
3	D	3730	PSU	C6-C5-C4	2.25	119.77	118.20
2	C	39	UY1	O4-C4-N3	-2.24	115.82	120.12
48	w	1232	PSU	C6-N1-C2	-2.24	120.39	122.68
3	D	4521	PSU	C6-N1-C2	-2.24	120.40	122.68
3	D	3639	PSU	C6-N1-C2	-2.24	120.40	122.68
3	D	3762	PSU	C6-N1-C2	-2.23	120.40	122.68
48	w	966	PSU	C6-N1-C2	-2.23	120.40	122.68
3	D	2632	PSU	C6-N1-C2	-2.23	120.40	122.68
48	w	644	OMG	O6-C6-C5	-2.23	120.02	124.37
3	D	4353	PSU	C6-N1-C2	-2.23	120.41	122.68
3	D	4361	PSU	C6-N1-C2	-2.23	120.41	122.68
48	w	1445	PSU	C6-C5-C4	2.22	119.75	118.20
2	C	55	PSU	C6-N1-C2	-2.22	120.41	122.68
3	D	4306	OMU	O2-C2-N1	-2.22	119.83	122.79
3	D	1871	A2M	C3'-C2'-C1'	-2.22	98.71	102.89
48	w	801	PSU	C6-N1-C2	-2.22	120.41	122.68
48	w	1174	PSU	C6-N1-C2	-2.22	120.41	122.68
48	w	172	OMU	O2-C2-N1	-2.22	119.84	122.79
3	D	1524	A2M	C2-N1-C6	-2.22	114.96	118.75
3	D	4500	PSU	C6-N1-C2	-2.22	120.42	122.68
3	D	5010	PSU	C6-N1-C2	-2.21	120.42	122.68
3	D	4689	PSU	C6-N1-C2	-2.21	120.42	122.68
3	D	2508	PSU	C6-N1-C2	-2.21	120.43	122.68
3	D	2363	A2M	C2-N1-C6	-2.21	114.98	118.75
3	D	1792	PSU	O2-C2-N1	-2.21	120.36	122.79
48	w	863	PSU	C6-N1-C2	-2.21	120.43	122.68
3	D	4523	A2M	C2-N1-C6	-2.20	114.98	118.75
3	D	3744	OMG	O6-C6-C5	-2.20	120.07	124.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	39	UY1	O4-C4-N3	-2.20	115.90	120.12
48	w	814	PSU	C6-C5-C4	2.20	119.73	118.20
48	w	1177	PSU	C6-N1-C2	-2.19	120.44	122.68
3	D	1534	A2M	C2-N1-C6	-2.19	115.00	118.75
3	D	4312	PSU	C6-N1-C2	-2.19	120.45	122.68
2	B	6	2MG	O6-C6-C5	-2.19	120.10	124.37
3	D	2415	OMU	O2-C2-N1	-2.18	119.88	122.79
3	D	4623	OMG	O6-C6-C5	-2.18	120.11	124.37
48	w	651	PSU	C6-C5-C4	2.18	119.72	118.20
48	w	1367	PSU	C6-C5-C4	2.18	119.72	118.20
48	w	36	PSU	C6-C5-C4	2.18	119.72	118.20
3	D	4618	OMG	O6-C6-C5	-2.18	120.12	124.37
3	D	3818	UY1	O4-C4-N3	-2.18	115.95	120.12
48	w	1081	PSU	O4'-C1'-C2'	2.18	108.21	105.14
3	D	4576	PSU	C6-N1-C2	-2.17	120.46	122.68
3	D	3758	PSU	C6-N1-C2	-2.17	120.46	122.68
3	D	4420	PSU	C6-N1-C2	-2.17	120.47	122.68
48	w	1850	MA6	C4-C5-N7	-2.17	107.14	109.40
2	B	55	PSU	C6-C5-C4	2.16	119.71	118.20
2	C	48	5MC	CM5-C5-C6	-2.16	119.96	122.85
3	D	1781	PSU	C6-N1-C2	-2.16	120.47	122.68
48	w	166	A2M	C2-N1-C6	-2.16	115.06	118.75
48	w	822	PSU	O4'-C1'-C2'	2.16	108.19	105.14
3	D	2815	A2M	C2-N1-C6	-2.16	115.06	118.75
48	w	406	PSU	C6-C5-C4	2.16	119.71	118.20
3	D	4576	PSU	C6-C5-C4	2.15	119.70	118.20
48	w	1244	PSU	C6-N1-C2	-2.15	120.48	122.68
48	w	866	PSU	C6-C5-C4	2.15	119.70	118.20
48	w	651	PSU	C6-N1-C2	-2.15	120.48	122.68
3	D	4442	PSU	O4'-C1'-C2'	2.15	108.17	105.14
3	D	400	A2M	C2-N1-C6	-2.14	115.09	118.75
48	w	436	OMG	O6-C6-C5	-2.14	120.19	124.37
48	w	1678	A2M	C2-N1-C6	-2.14	115.09	118.75
3	D	3764	PSU	C6-N1-C2	-2.14	120.50	122.68
3	D	3730	PSU	C6-N1-C2	-2.14	120.50	122.68
48	w	159	A2M	C2-N1-C6	-2.13	115.11	118.75
48	w	484	A2M	C2-N1-C6	-2.13	115.11	118.75
48	w	1347	PSU	C6-N1-C2	-2.13	120.51	122.68
3	D	1677	PSU	C6-C5-C4	2.13	119.69	118.20
48	w	1383	A2M	C3'-C2'-C1'	-2.13	98.89	102.89
48	w	1850	MA6	N1-C6-N6	-2.13	114.82	117.06
48	w	1367	PSU	C6-N1-C2	-2.12	120.51	122.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	1782	PSU	C6-N1-C2	-2.12	120.51	122.68
48	w	649	PSU	C6-C5-C4	2.12	119.68	118.20
3	D	3695	PSU	C6-N1-C2	-2.12	120.52	122.68
3	D	4442	PSU	C6-C5-C4	2.12	119.68	118.20
48	w	210	PSU	C6-N1-C2	-2.11	120.52	122.68
3	D	2401	A2M	C2-N1-C6	-2.11	115.14	118.75
48	w	1248	B8N	O4'-C1'-C2'	2.11	108.12	105.14
2	C	35	PSU	C6-N1-C2	-2.11	120.53	122.68
3	D	1792	PSU	C6-N1-C2	-2.11	120.53	122.68
2	B	46	G7M	C3'-C2'-C1'	2.11	104.15	100.98
48	w	468	A2M	C2-N1-C6	-2.11	115.15	118.75
3	D	3825	A2M	C2-N1-C6	-2.10	115.15	118.75
48	w	814	PSU	C6-N1-C2	-2.10	120.53	122.68
48	w	109	PSU	C6-C5-C4	2.10	119.67	118.20
3	D	1326	A2M	C2-N1-C6	-2.10	115.16	118.75
3	D	5001	PSU	C6-N1-C2	-2.10	120.54	122.68
48	w	218	PSU	C6-N1-C2	-2.10	120.54	122.68
48	w	1248	B8N	C32-C33-C34	-2.10	105.31	110.30
48	w	121	OMU	O2-C2-N1	-2.09	120.00	122.79
2	B	35	PSU	C6-C5-C4	2.09	119.66	118.20
48	w	649	PSU	C6-N1-C2	-2.09	120.55	122.68
48	w	668	A2M	C2-N1-C6	-2.09	115.19	118.75
48	w	1232	PSU	C6-C5-C4	2.08	119.65	118.20
48	w	1328	OMG	O6-C6-C5	-2.07	120.33	124.37
48	w	99	A2M	C2-N1-C6	-2.07	115.22	118.75
2	B	35	PSU	C6-N1-C2	-2.07	120.57	122.68
48	w	428	OMU	O2-C2-N1	-2.07	120.04	122.79
48	w	1625	PSU	C6-N1-C2	-2.06	120.57	122.68
3	D	1683	PSU	C6-C5-C4	2.06	119.64	118.20
2	C	35	PSU	C6-C5-C4	2.06	119.64	118.20
3	D	398	A2M	C2-N1-C6	-2.06	115.24	118.75
3	D	3718	A2M	C2-N1-C6	-2.06	115.24	118.75
48	w	681	PSU	C6-N1-C2	-2.06	120.58	122.68
48	w	512	A2M	C2-N1-C6	-2.06	115.24	118.75
48	w	27	A2M	C2-N1-C6	-2.05	115.24	118.75
2	B	55	PSU	O2-C2-N1	-2.05	120.53	122.79
48	w	799	OMU	O2-C2-N1	-2.05	120.06	122.79
48	w	590	A2M	C2-N1-C6	-2.05	115.25	118.75
3	D	3758	PSU	C6-C5-C4	2.04	119.62	118.20
2	C	37	1MG	CM1-N1-C6	2.04	120.33	117.55
3	D	4972	PSU	C6-C5-C4	2.03	119.62	118.20
48	w	1442	OMU	O2-C2-N1	-2.03	120.09	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	4312	PSU	C6-C5-C4	2.03	119.61	118.20
48	w	576	A2M	C2-N1-C6	-2.03	115.29	118.75
48	w	1045	PSU	C6-N1-C2	-2.02	120.61	122.68
48	w	815	PSU	C6-N1-C2	-2.02	120.62	122.68
48	w	1031	A2M	C2-N1-C6	-2.02	115.30	118.75
3	D	2351	OMC	O2-C2-N3	-2.02	119.05	122.33
48	w	1056	PSU	C6-C5-C4	2.02	119.61	118.20
3	D	3925	OMU	O2-C2-N1	-2.01	120.11	122.79
48	w	572	PSU	C6-C5-C4	2.01	119.60	118.20
48	w	1337	4AC	C5-C4-N3	2.01	125.83	122.59
2	B	55	PSU	O4'-C1'-C2'	2.00	107.97	105.14
3	D	4420	PSU	C6-C5-C4	2.00	119.60	118.20
3	D	4521	PSU	O4'-C1'-C2'	2.00	107.97	105.14
3	D	2508	PSU	C6-C5-C4	2.00	119.60	118.20

There are no chirality outliers.

All (165) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	26	M2G	C3'-C4'-C5'-O5'
2	B	34	56B	C11-C10-N10-C9
2	B	39	UY1	C3'-C4'-C5'-O5'
2	B	39	UY1	O4'-C4'-C5'-O5'
2	C	46	G7M	C3'-C4'-C5'-O5'
2	B	47	H2U	C3'-C4'-C5'-O5'
2	C	47	H2U	O4'-C4'-C5'-O5'
2	B	48	5MC	O4'-C4'-C5'-O5'
2	B	48	5MC	C3'-C4'-C5'-O5'
2	C	54	5MU	O4'-C4'-C5'-O5'
2	B	58	1MA	O4'-C4'-C5'-O5'
3	D	1534	A2M	C1'-C2'-O2'-CM'
3	D	1760	OMG	C3'-C4'-C5'-O5'
3	D	2415	OMU	C1'-C2'-O2'-CM2
3	D	2424	OMG	O4'-C4'-C5'-O5'
3	D	2424	OMG	C3'-C4'-C5'-O5'
3	D	2815	A2M	C3'-C4'-C5'-O5'
3	D	3724	A2M	C1'-C2'-O2'-CM'
3	D	3762	PSU	C3'-C4'-C5'-O5'
3	D	3785	A2M	O4'-C4'-C5'-O5'
3	D	3818	UY1	C3'-C4'-C5'-O5'
3	D	3925	OMU	C1'-C2'-O2'-CM2
3	D	4500	PSU	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
3	D	4500	PSU	O4'-C4'-C5'-O5'
3	D	4637	OMG	C1'-C2'-O2'-CM2
5	F	75	OMG	C1'-C2'-O2'-CM2
48	w	34	PSU	C3'-C4'-C5'-O5'
48	w	159	A2M	C3'-C4'-C5'-O5'
48	w	428	OMU	C2'-C1'-N1-C2
48	w	428	OMU	C2'-C1'-N1-C6
48	w	428	OMU	C1'-C2'-O2'-CM2
48	w	468	A2M	O4'-C4'-C5'-O5'
48	w	468	A2M	C3'-C4'-C5'-O5'
48	w	509	OMG	C1'-C2'-O2'-CM2
48	w	517	OMC	C1'-C2'-O2'-CM2
48	w	576	A2M	C3'-C4'-C5'-O5'
48	w	644	OMG	C3'-C4'-C5'-O5'
48	w	799	OMU	C1'-C2'-O2'-CM2
48	w	799	OMU	O4'-C4'-C5'-O5'
48	w	1248	B8N	C31-C32-C33-C34
48	w	1248	B8N	C31-C32-C33-N34
48	w	1442	OMU	C1'-C2'-O2'-CM2
48	w	1490	OMG	C1'-C2'-O2'-CM2
48	w	1678	A2M	C1'-C2'-O2'-CM'
48	w	1804	OMU	C3'-C4'-C5'-O5'
48	w	1832	6MZ	C5-C6-N6-C9
48	w	1832	6MZ	N1-C6-N6-C9
48	w	1851	MA6	O4'-C4'-C5'-O5'
2	C	6	2MG	O4'-C4'-C5'-O5'
2	C	46	G7M	O4'-C4'-C5'-O5'
2	C	54	5MU	C3'-C4'-C5'-O5'
2	B	58	1MA	C3'-C4'-C5'-O5'
3	D	1534	A2M	O4'-C4'-C5'-O5'
3	D	2364	OMG	O4'-C4'-C5'-O5'
3	D	2815	A2M	O4'-C4'-C5'-O5'
3	D	3762	PSU	O4'-C4'-C5'-O5'
3	D	3785	A2M	C3'-C4'-C5'-O5'
3	D	3818	UY1	O4'-C4'-C5'-O5'
48	w	159	A2M	O4'-C4'-C5'-O5'
48	w	166	A2M	O4'-C4'-C5'-O5'
48	w	166	A2M	C3'-C4'-C5'-O5'
48	w	428	OMU	C3'-C4'-C5'-O5'
48	w	627	OMU	O4'-C4'-C5'-O5'
48	w	668	A2M	O4'-C4'-C5'-O5'
48	w	668	A2M	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
48	w	1851	MA6	C3'-C4'-C5'-O5'
2	C	6	2MG	C3'-C4'-C5'-O5'
2	B	47	H2U	O4'-C4'-C5'-O5'
2	C	47	H2U	C3'-C4'-C5'-O5'
3	D	1760	OMG	O4'-C4'-C5'-O5'
48	w	34	PSU	O4'-C4'-C5'-O5'
48	w	99	A2M	O4'-C4'-C5'-O5'
48	w	428	OMU	O4'-C4'-C5'-O5'
48	w	512	A2M	C3'-C4'-C5'-O5'
48	w	576	A2M	O4'-C4'-C5'-O5'
48	w	799	OMU	C3'-C4'-C5'-O5'
48	w	1238	PSU	C3'-C4'-C5'-O5'
48	w	1238	PSU	O4'-C4'-C5'-O5'
48	w	1639	G7M	O4'-C4'-C5'-O5'
48	w	1639	G7M	C3'-C4'-C5'-O5'
48	w	1804	OMU	O4'-C4'-C5'-O5'
3	D	3701	OMC	C2'-C1'-N1-C6
3	D	4447	5MC	C2'-C1'-N1-C6
3	D	2364	OMG	C3'-C4'-C5'-O5'
3	D	3944	OMG	C3'-C4'-C5'-O5'
3	D	4447	5MC	C2'-C1'-N1-C2
2	B	26	M2G	O4'-C4'-C5'-O5'
2	B	54	5MU	C3'-C4'-C5'-O5'
2	C	55	PSU	C3'-C4'-C5'-O5'
2	C	48	5MC	C3'-C4'-C5'-O5'
2	B	54	5MU	O4'-C4'-C5'-O5'
3	D	1677	PSU	O4'-C4'-C5'-O5'
3	D	3944	OMG	O4'-C4'-C5'-O5'
48	w	512	A2M	O4'-C4'-C5'-O5'
48	w	644	OMG	O4'-C4'-C5'-O5'
48	w	1490	OMG	O4'-C4'-C5'-O5'
48	w	1703	OMC	O4'-C4'-C5'-O5'
2	C	55	PSU	O4'-C4'-C5'-O5'
48	w	1490	OMG	C3'-C4'-C5'-O5'
3	D	3701	OMC	C2'-C1'-N1-C2
48	w	1490	OMG	C4'-C5'-O5'-P
48	w	627	OMU	C2'-C1'-N1-C6
48	w	1248	B8N	N34-C33-C34-O36
2	C	34	56B	O4'-C4'-C5'-O5'
48	w	590	A2M	C3'-C4'-C5'-O5'
48	w	627	OMU	C3'-C4'-C5'-O5'
48	w	822	PSU	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
48	w	1248	B8N	N34-C33-C34-O35
3	D	3701	OMC	O4'-C1'-N1-C6
48	w	590	A2M	O4'-C4'-C5'-O5'
48	w	627	OMU	C1'-C2'-O2'-CM2
3	D	4447	5MC	O4'-C1'-N1-C2
3	D	4500	PSU	C4'-C5'-O5'-P
48	w	644	OMG	C4'-C5'-O5'-P
2	B	46	G7M	C3'-C4'-C5'-O5'
3	D	1677	PSU	C3'-C4'-C5'-O5'
3	D	4447	5MC	O4'-C1'-N1-C6
2	B	55	PSU	C4'-C5'-O5'-P
3	D	3944	OMG	C4'-C5'-O5'-P
2	B	48	5MC	C4'-C5'-O5'-P
3	D	3701	OMC	O4'-C1'-N1-C2
48	w	428	OMU	O4'-C1'-N1-C2
2	C	34	56B	C3'-C4'-C5'-O5'
48	w	428	OMU	O4'-C1'-N1-C6
2	C	6	2MG	C4'-C5'-O5'-P
48	w	166	A2M	C4'-C5'-O5'-P
48	w	627	OMU	O4'-C1'-N1-C6
48	w	1326	OMU	O4'-C1'-N1-C6
48	w	627	OMU	C3'-C2'-O2'-CM2
2	C	47	H2U	C4'-C5'-O5'-P
2	C	48	5MC	C4'-C5'-O5'-P
3	D	1534	A2M	C4'-C5'-O5'-P
2	B	34	56B	C14-C10-N10-C9
48	w	34	PSU	C4'-C5'-O5'-P
48	w	627	OMU	O4'-C1'-N1-C2
48	w	1326	OMU	O4'-C1'-N1-C2
3	D	3715	PSU	O4'-C1'-C5-C4
3	D	3758	PSU	O4'-C1'-C5-C4
3	D	3818	UY1	O4'-C1'-C5-C4
3	D	4500	PSU	O4'-C1'-C5-C4
3	D	4521	PSU	O4'-C1'-C5-C4
48	w	627	OMU	C2'-C1'-N1-C2
2	B	46	G7M	O4'-C4'-C5'-O5'
48	w	99	A2M	C3'-C4'-C5'-O5'
48	w	119	PSU	C3'-C4'-C5'-O5'
3	D	2351	OMC	C2'-C1'-N1-C2
2	B	37	1MG	O4'-C4'-C5'-O5'
48	w	822	PSU	C3'-C4'-C5'-O5'
48	w	1703	OMC	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
3	D	3792	OMG	C1'-C2'-O2'-CM2
48	w	1326	OMU	C2'-C1'-N1-C2
3	D	1677	PSU	O4'-C1'-C5-C6
3	D	3715	PSU	O4'-C1'-C5-C6
3	D	3758	PSU	O4'-C1'-C5-C6
3	D	3818	UY1	O4'-C1'-C5-C6
3	D	4500	PSU	O4'-C1'-C5-C6
3	D	4521	PSU	O4'-C1'-C5-C6
3	D	1773	OMU	C2'-C1'-N1-C2
2	B	47	H2U	C4'-C5'-O5'-P
3	D	3887	OMC	C4'-C5'-O5'-P
2	B	55	PSU	C3'-C4'-C5'-O5'
3	D	2422	OMC	O4'-C4'-C5'-O5'
3	D	1326	A2M	C3'-C4'-C5'-O5'
3	D	2351	OMC	O4'-C4'-C5'-O5'
48	w	1288	OMU	C2'-C1'-N1-C2

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 528 ligands modelled in this entry, 526 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
80	GAL	B	101	2	11,11,12	1.89	2 (18%)	15,15,17	1.99	6 (40%)
80	GAL	C	101	2	11,11,12	1.96	3 (27%)	15,15,17	1.82	6 (40%)

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
80	GAL	B	101	2	-	2/2/19/22	0/1/1/1
80	GAL	C	101	2	-	2/2/19/22	0/1/1/1

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
80	B	101	GAL	O5-C1	-3.65	1.37	1.43
80	C	101	GAL	O5-C1	-3.34	1.38	1.43
80	C	101	GAL	C2-C3	3.09	1.57	1.52
80	B	101	GAL	C2-C3	2.79	1.56	1.52
80	C	101	GAL	C4-C5	2.40	1.58	1.53

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
80	C	101	GAL	O2-C2-C3	-3.37	103.39	110.14
80	B	101	GAL	O4-C4-C5	-3.33	101.04	109.30
80	B	101	GAL	O2-C2-C3	-3.26	103.61	110.14
80	B	101	GAL	C6-C5-C4	-3.16	105.60	113.00
80	B	101	GAL	C2-C3-C4	-2.65	106.31	110.89
80	C	101	GAL	O4-C4-C5	-2.62	102.80	109.30
80	C	101	GAL	C2-C3-C4	-2.60	106.40	110.89
80	B	101	GAL	C1-C2-C3	-2.51	106.58	109.67
80	C	101	GAL	O3-C3-C4	-2.33	104.96	110.35
80	C	101	GAL	C1-C2-C3	-2.14	107.03	109.67
80	B	101	GAL	O3-C3-C4	-2.10	105.49	110.35
80	C	101	GAL	C6-C5-C4	-2.06	108.18	113.00

There are no chirality outliers.

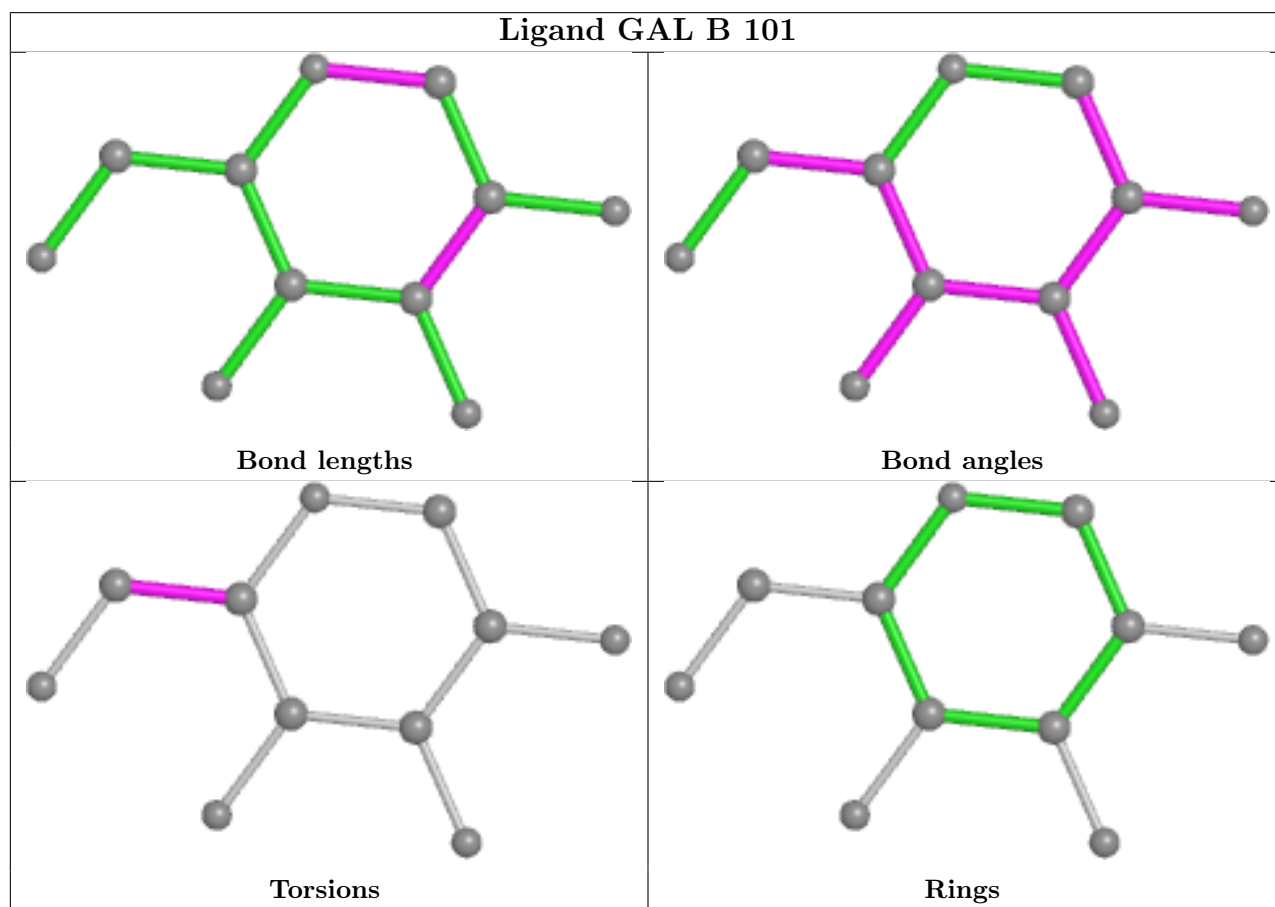
All (4) torsion outliers are listed below:

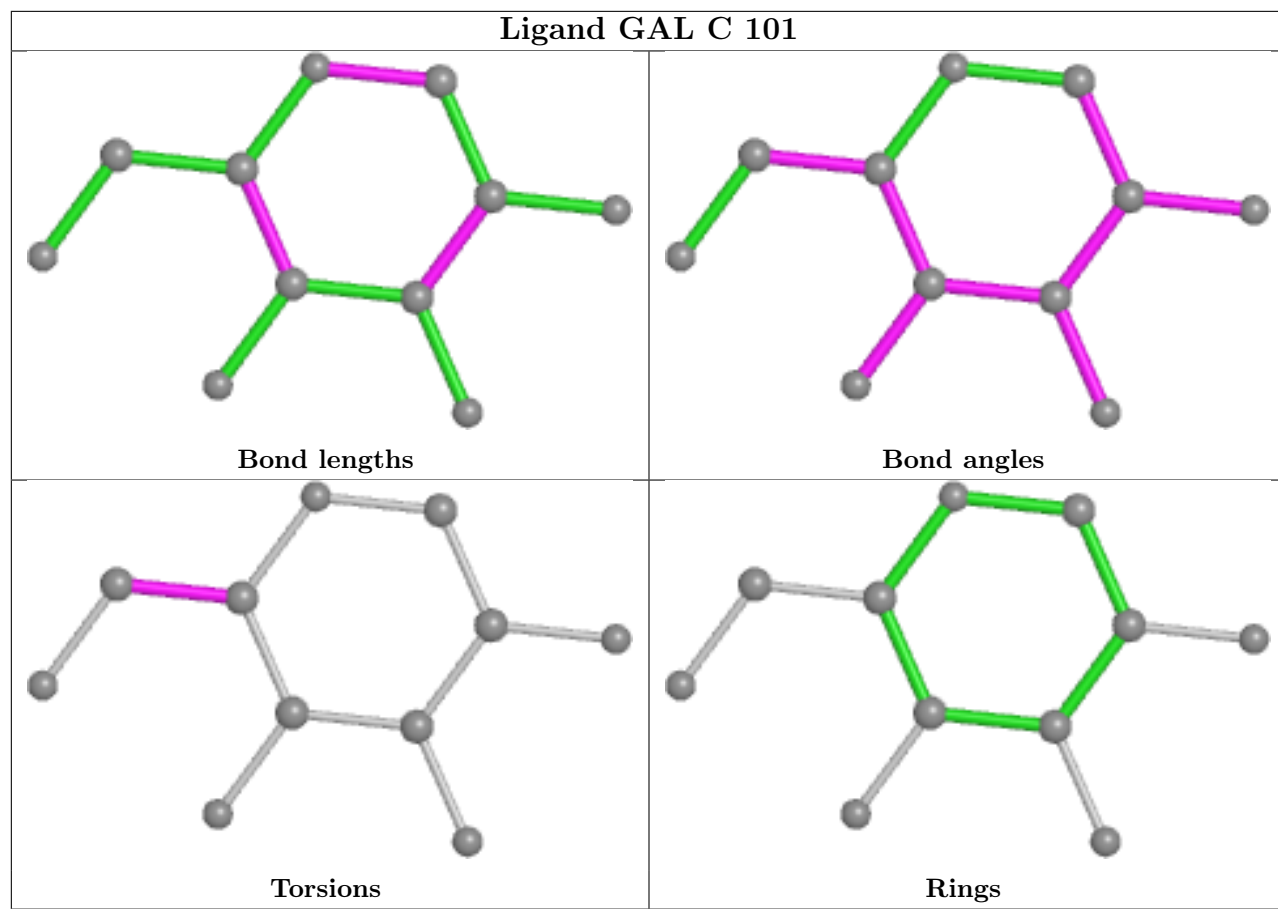
Mol	Chain	Res	Type	Atoms
80	C	101	GAL	O5-C5-C6-O6
80	C	101	GAL	C4-C5-C6-O6
80	B	101	GAL	O5-C5-C6-O6
80	B	101	GAL	C4-C5-C6-O6

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 than 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.





## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

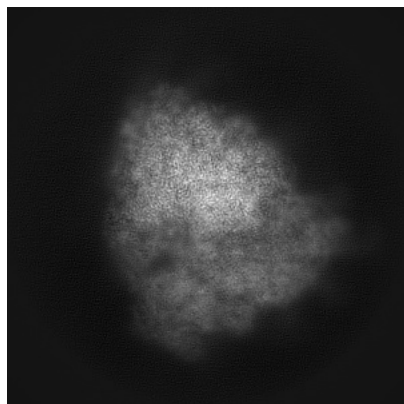
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-36181. These allow visual inspection of the internal detail of the map and identification of artifacts.

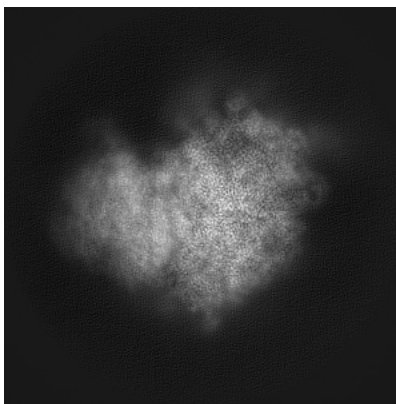
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

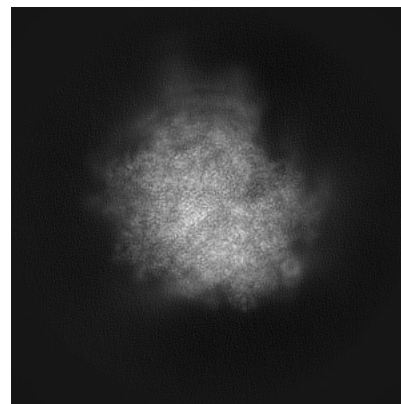
#### 6.1.1 Primary map



X

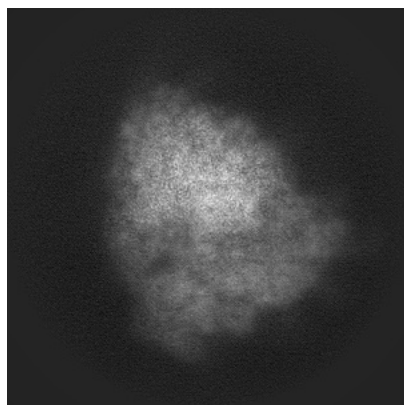


Y

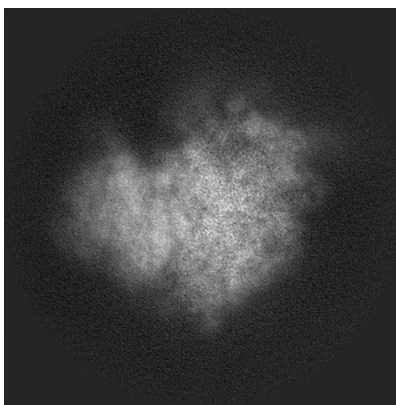


Z

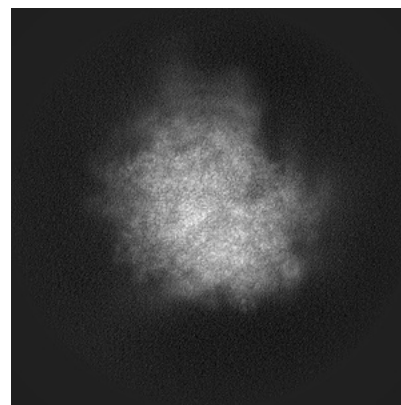
#### 6.1.2 Raw map



X



Y



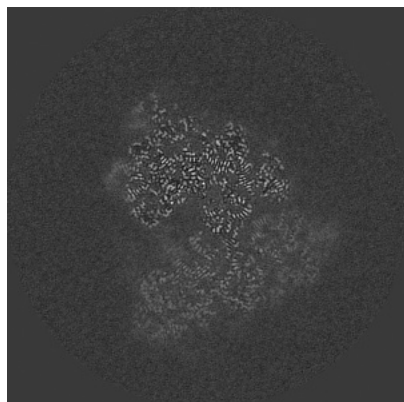
Z

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

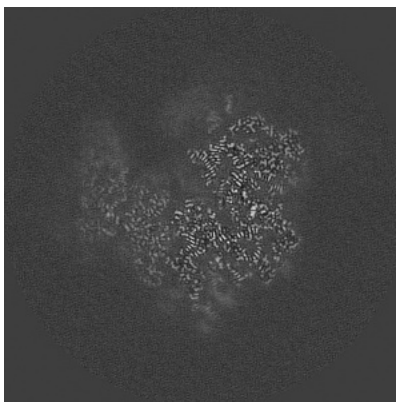


## 6.2 Central slices [i](#)

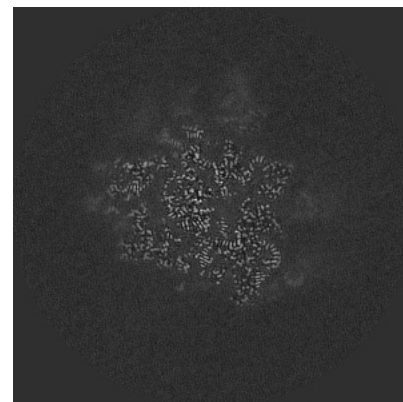
### 6.2.1 Primary map



X Index: 265

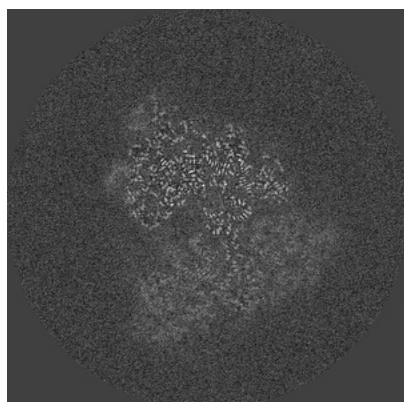


Y Index: 265

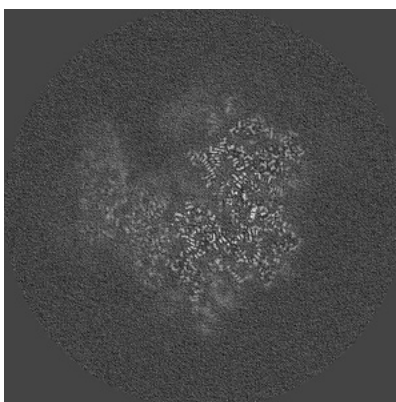


Z Index: 265

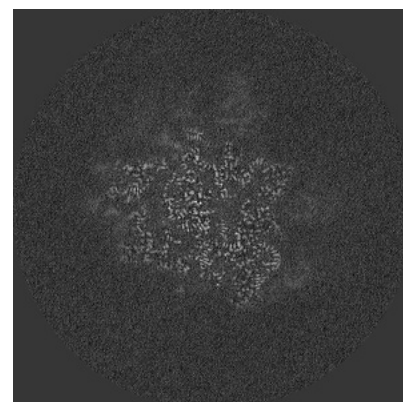
### 6.2.2 Raw map



X Index: 265



Y Index: 265

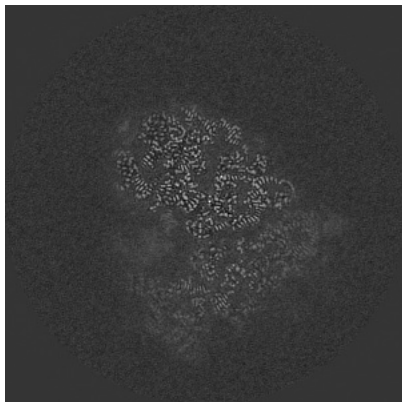


Z Index: 265

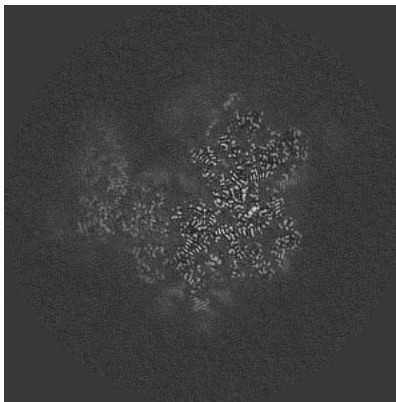
The images above show central slices of the map in three orthogonal directions.

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

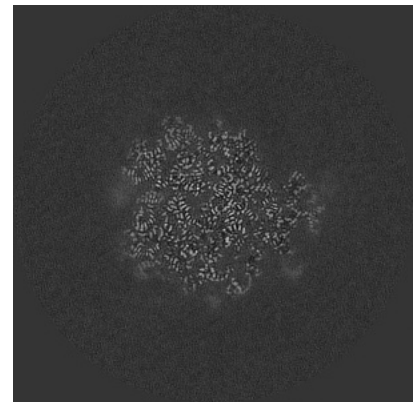
### 6.3.1 Primary map



X Index: 245

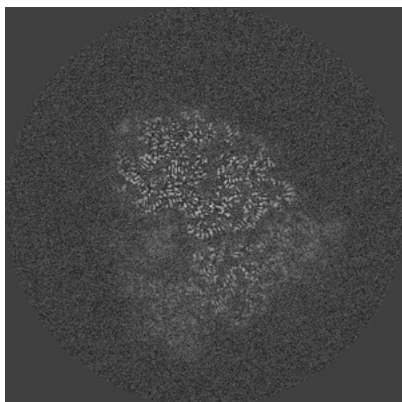


Y Index: 261

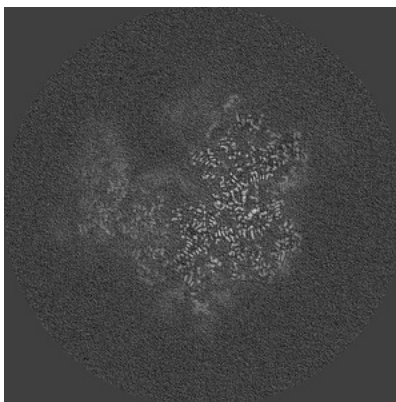


Z Index: 302

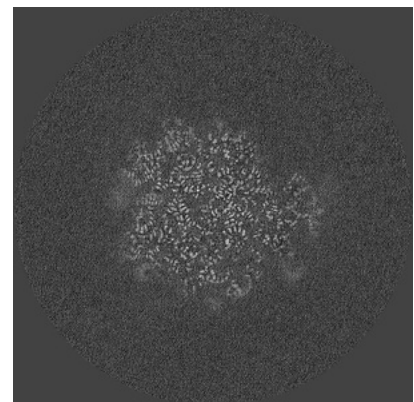
### 6.3.2 Raw map



X Index: 248



Y Index: 261

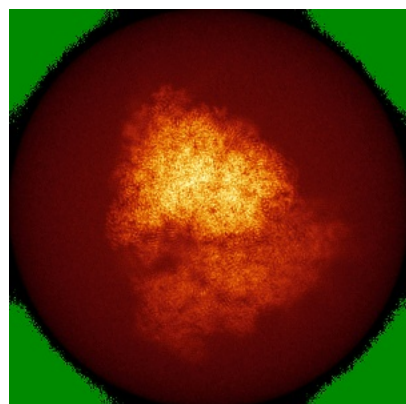


Z Index: 302

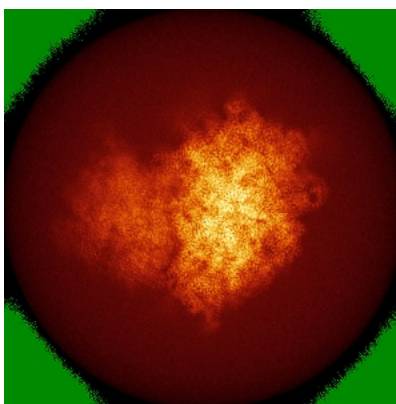
The images above show the largest variance slices of the map in three orthogonal directions.

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

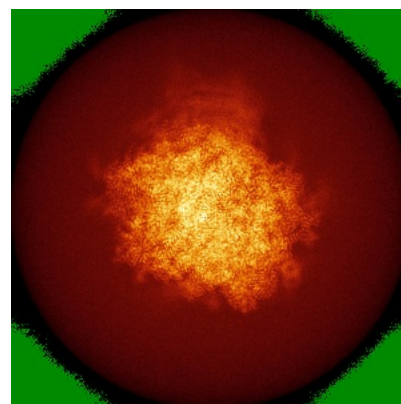
### 6.4.1 Primary map



X

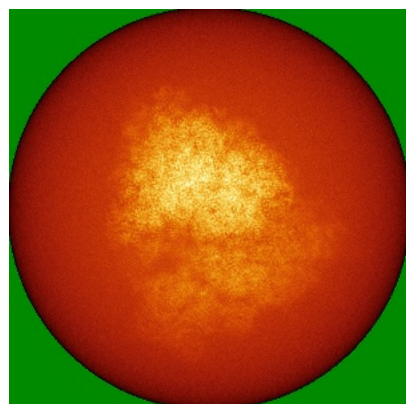


Y

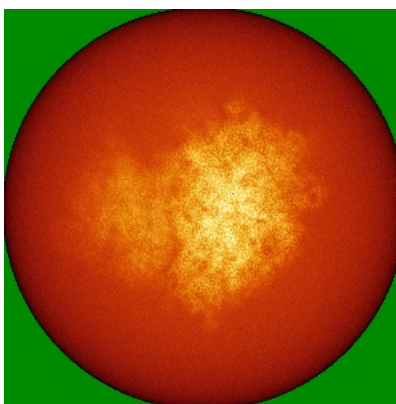


Z

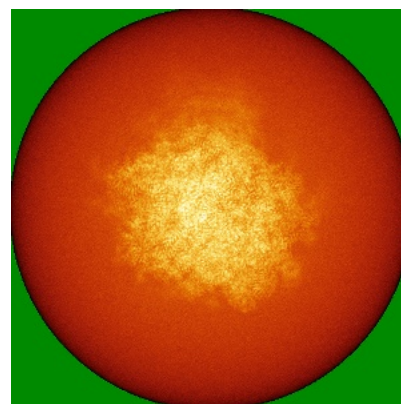
### 6.4.2 Raw map



X



Y



Z

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

## 6.5 Orthogonal surface views [i](#)

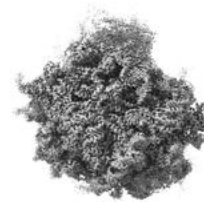
### 6.5.1 Primary map



X



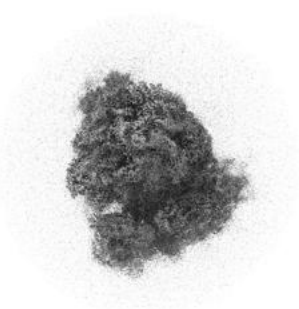
Y



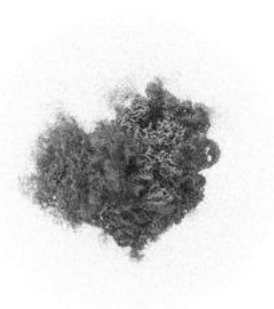
Z

The images above show the 3D surface view of the map at the recommended contour level 0.0183. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

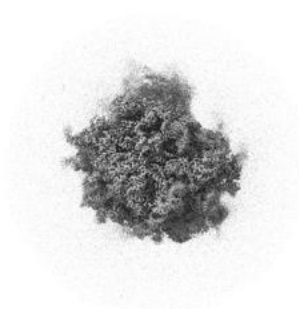
### 6.5.2 Raw map



X



Y



Z

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

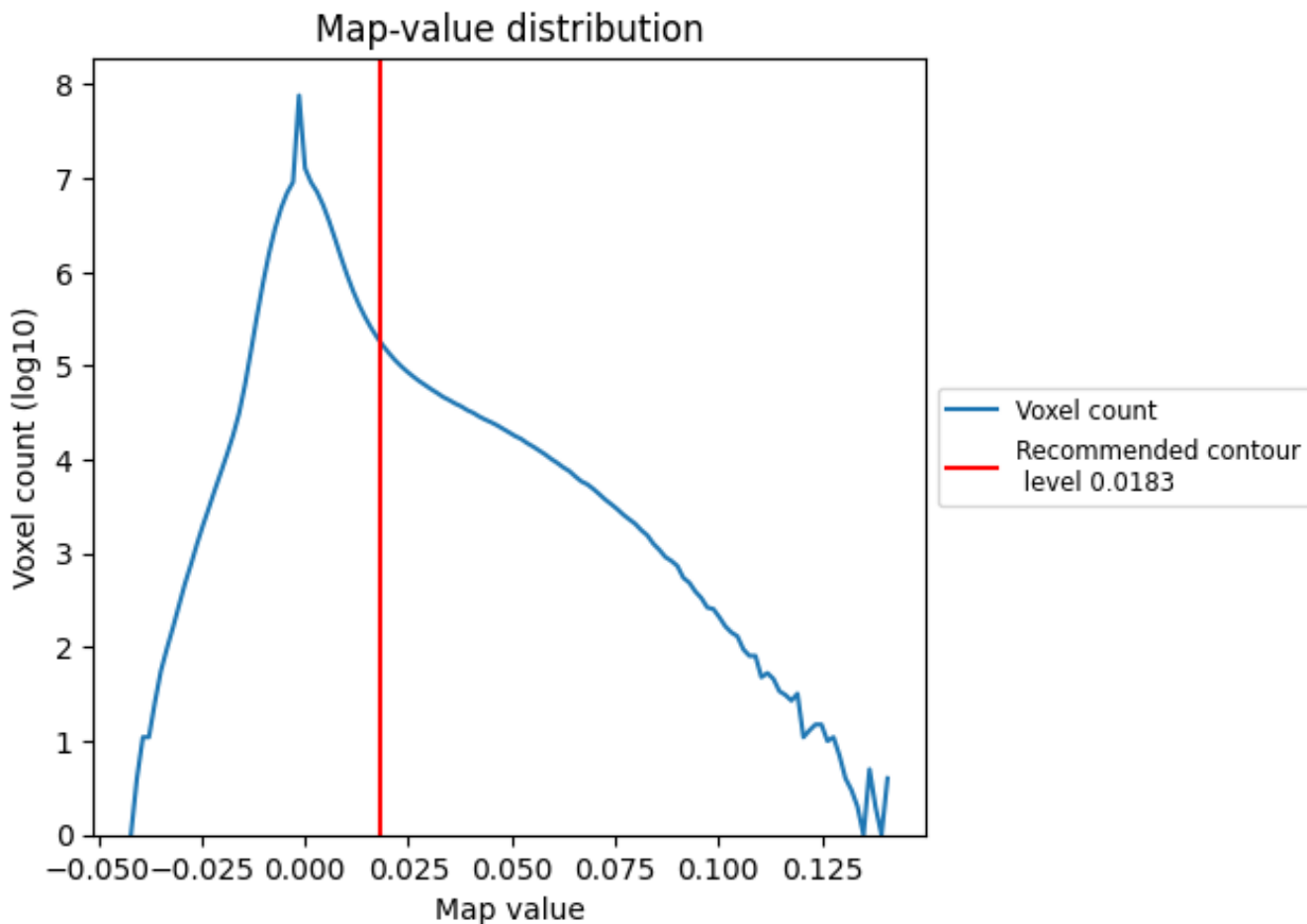
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

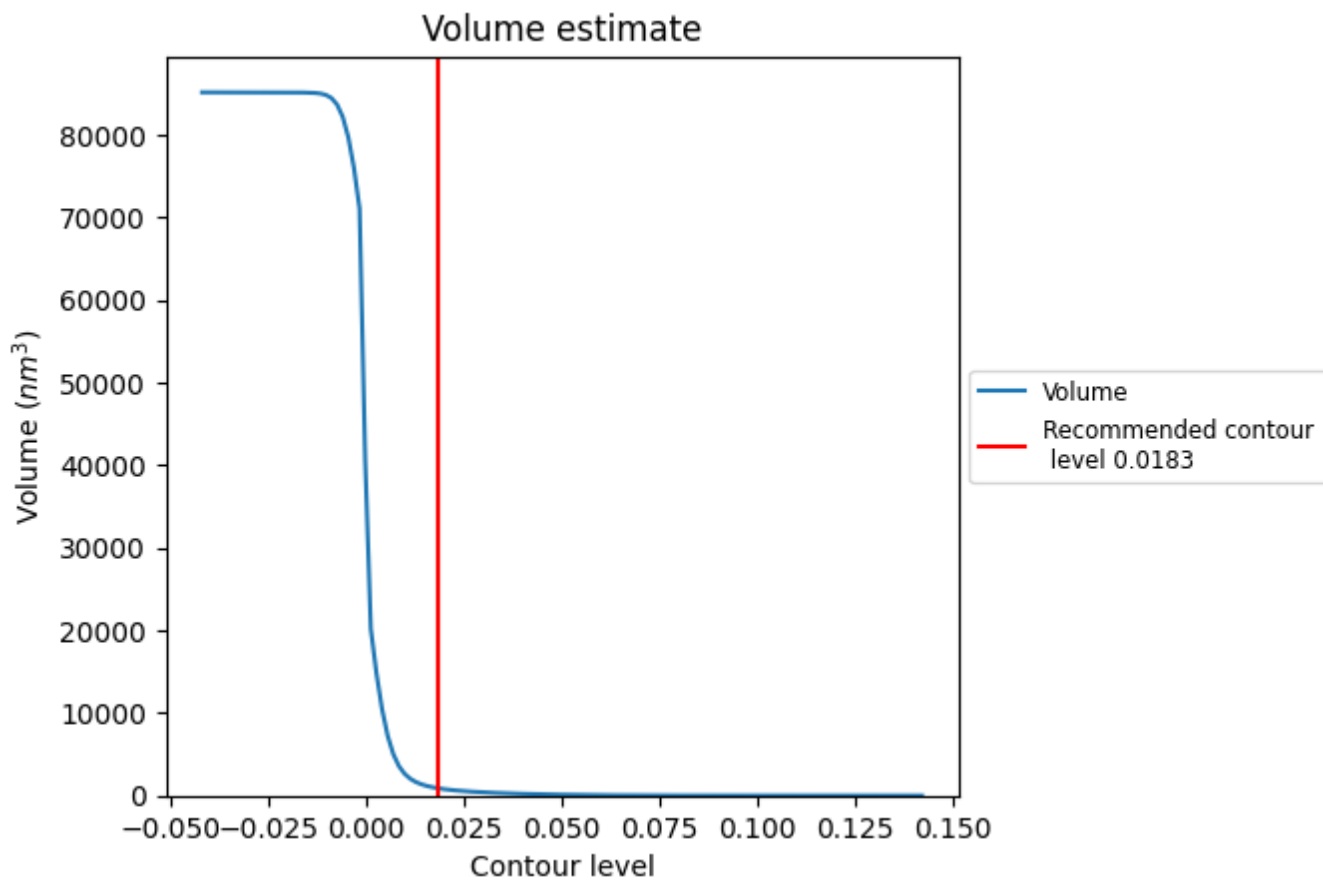
This section contains the results of statistical analysis of the map.

### 7.1 Map-value distribution [i](#)



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

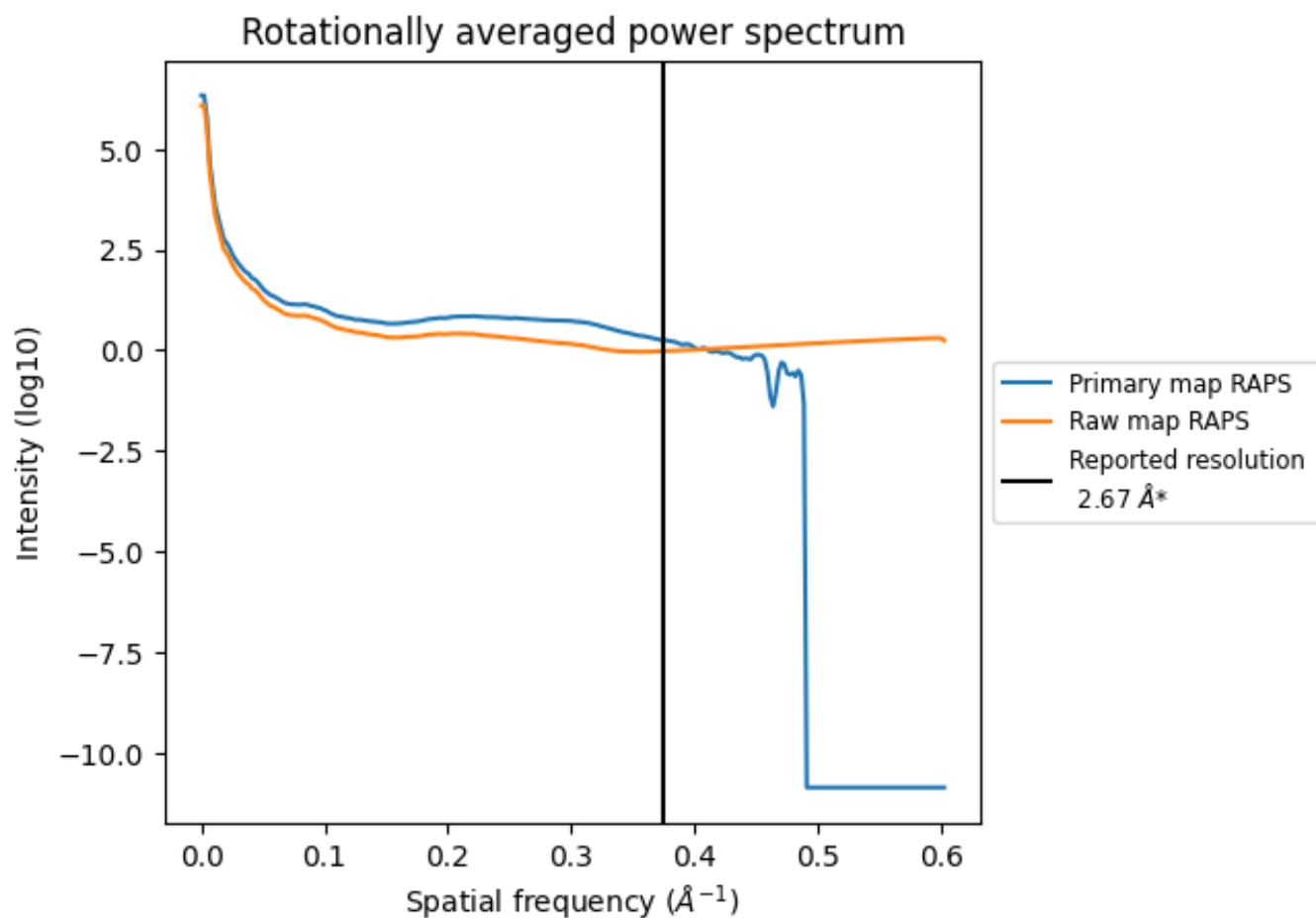
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 889  $\text{nm}^3$ ; this corresponds to an approximate mass of 803 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](#)

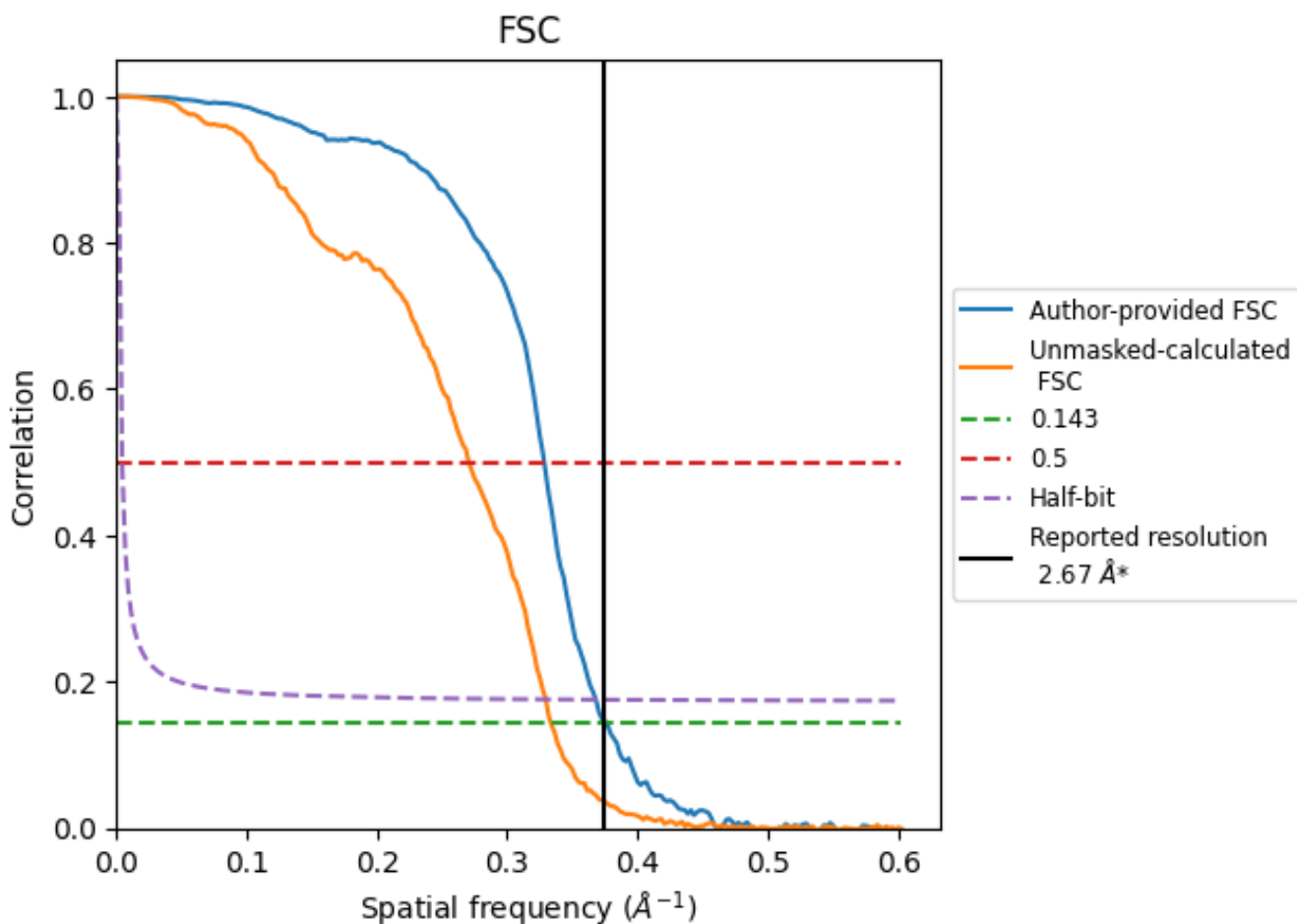


\*Reported resolution corresponds to spatial frequency of 0.375 Å<sup>-1</sup>

## 8 Fourier-Shell correlation [i](#)

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

### 8.1 FSC [i](#)



\*Reported resolution corresponds to spatial frequency of 0.375 Å<sup>-1</sup>



## 8.2 Resolution estimates [i](#)

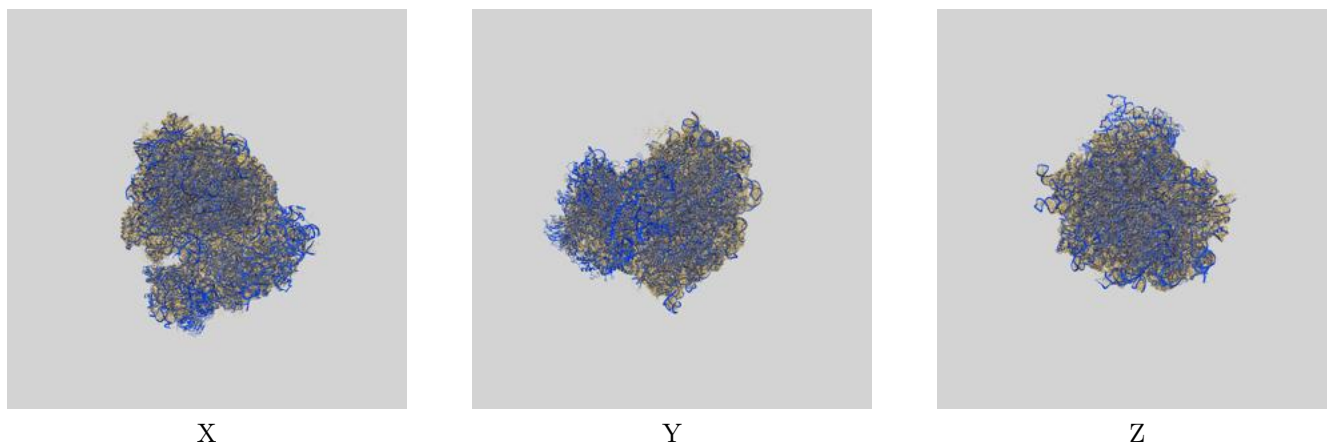
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.67	-	-
Author-provided FSC curve	2.66	3.05	2.72
Unmasked-calculated*	3.00	3.70	3.03

\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.00 differs from the reported value 2.67 by more than 10 %

## 9 Map-model fit [i](#)

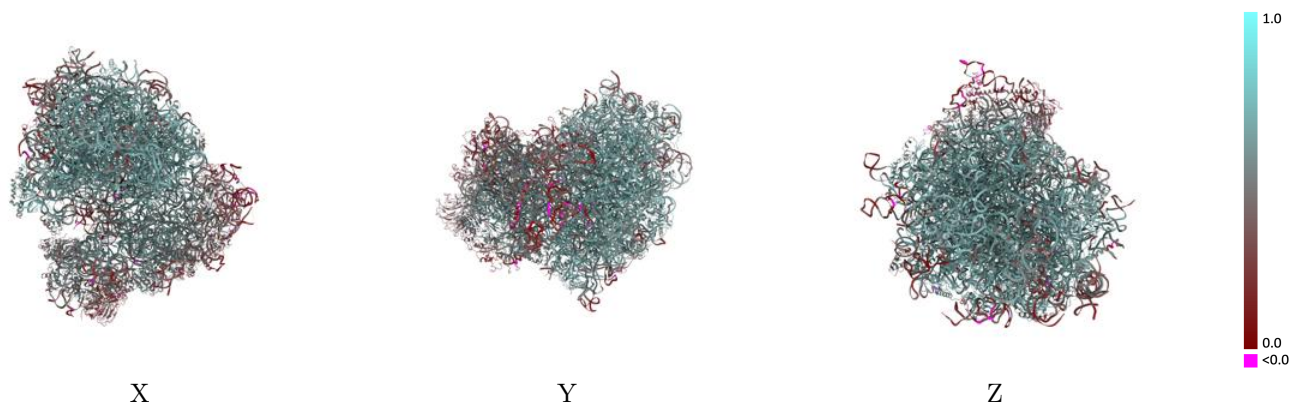
This section contains information regarding the fit between EMDB map EMD-36181 and PDB model 8JDM. Per-residue inclusion information can be found in section 3 on page 20.

### 9.1 Map-model overlay [i](#)



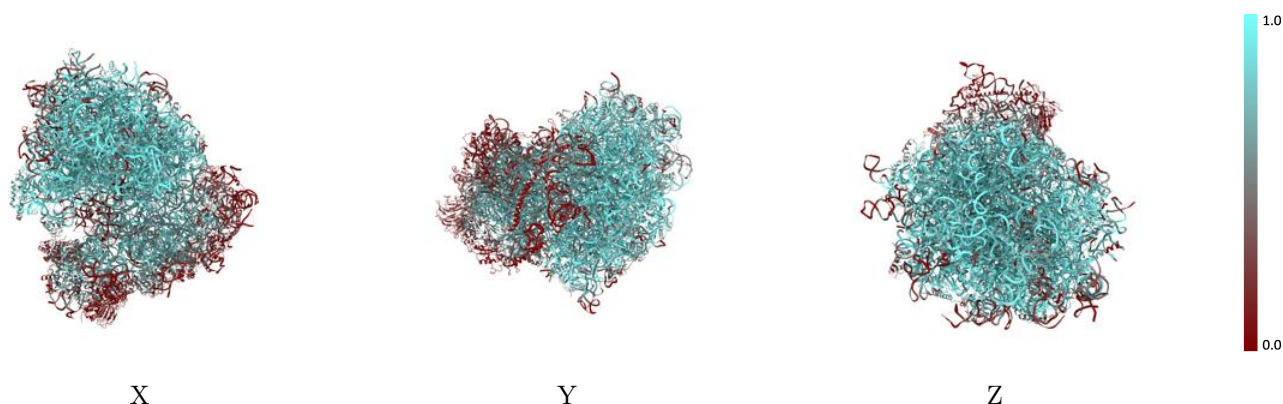
The images above show the 3D surface view of the map at the recommended contour level 0.0183 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



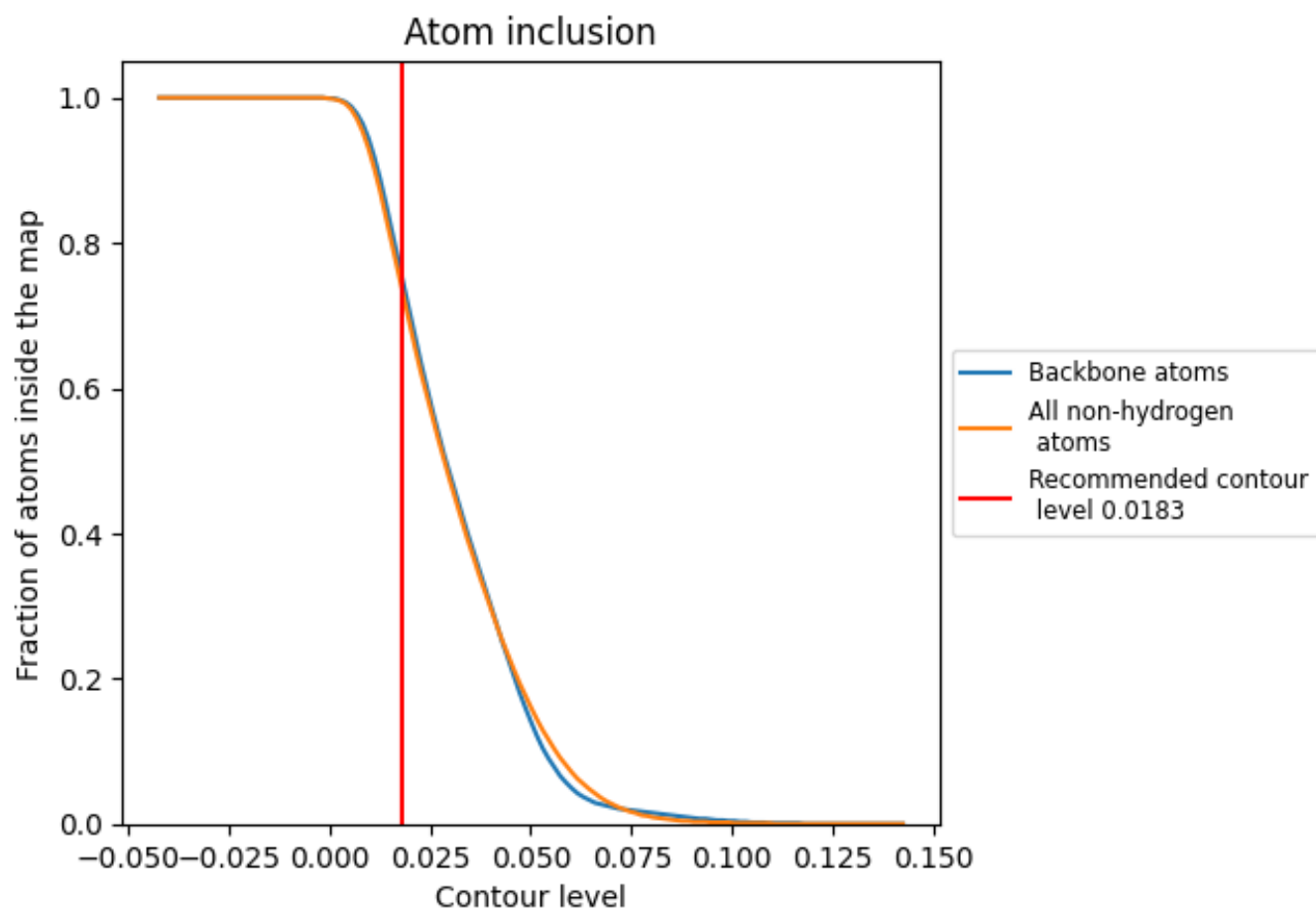
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

## 9.3 Atom inclusion mapped to coordinate model [i](#)



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 (0.0183).







































































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 75% of all backbone atoms, 73% 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 (0.0183) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7290	 0.5570
0	 0.2850	 0.4030
1	 0.2820	 0.4000
2	 0.3330	 0.4450
3	 0.1340	 0.2970
4	 0.1880	 0.3550
5	 0.2830	 0.3820
6	 0.3140	 0.4030
7	 0.1250	 0.3230
8	 0.5370	 0.5070
9	 0.5530	 0.5220
A	 0.6390	 0.4810
AA	 0.6000	 0.5160
AB	 0.3450	 0.4440
AC	 0.3380	 0.4510
AD	 0.2440	 0.3960
AE	 0.3440	 0.4500
AF	 0.3400	 0.4600
AG	 0.2430	 0.3470
AH	 0.4820	 0.5130
AI	 0.6960	 0.5720
AJ	 0.6390	 0.5460
AK	 0.1460	 0.3490
AL	 0.1360	 0.3880
AM	 0.6730	 0.5470
AN	 0.3770	 0.4270
AO	 0.2780	 0.4160
AP	 0.6050	 0.5410
AQ	 0.2670	 0.3780
AR	 0.0550	 0.2820
B	 0.4160	 0.3640
C	 0.2080	 0.3570
D	 0.8570	 0.5990
E	 0.9720	 0.6550
F	 0.9020	 0.6160











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Chain	Atom inclusion	Q-score
G	0.9470	0.6630
H	0.8740	0.6420
I	0.8890	0.6290
J	0.7820	0.5920
K	0.7550	0.5800
L	0.8980	0.6460
M	0.6930	0.5620
N	0.8040	0.6070
O	0.8480	0.6130
P	0.6540	0.5270
Q	0.7910	0.5920
R	0.8300	0.6060
S	0.9580	0.6670
T	0.9120	0.6530
U	0.8800	0.6420
V	0.9340	0.6560
W	0.7500	0.5740
X	0.9140	0.6490
Y	0.8550	0.6230
Z	0.5770	0.5140
a	0.8900	0.6460
b	0.8490	0.6200
c	0.8160	0.6050
d	0.8150	0.6020
e	0.7800	0.5940
f	0.9070	0.6490
g	0.7090	0.5380
h	0.7780	0.5940
i	0.8200	0.6110
j	0.9180	0.6600
k	0.9310	0.6540
l	0.8330	0.6120
m	0.8070	0.6050
n	0.7430	0.5910
o	0.9450	0.6600
p	0.6440	0.5400
q	0.9120	0.6390
r	0.8630	0.6290
s	0.8440	0.6250
t	0.7940	0.5960
u	0.8840	0.6480
v	0.8860	0.6240

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Chain	Atom inclusion	Q-score
w	 0.6900	 0.5140
x	 0.4430	 0.5020
y	 0.4980	 0.5220
z	 0.6020	 0.5380