Full wwPDB EM Validation Report (i)

Dec 21, 2024 – 07:47 pm GMT

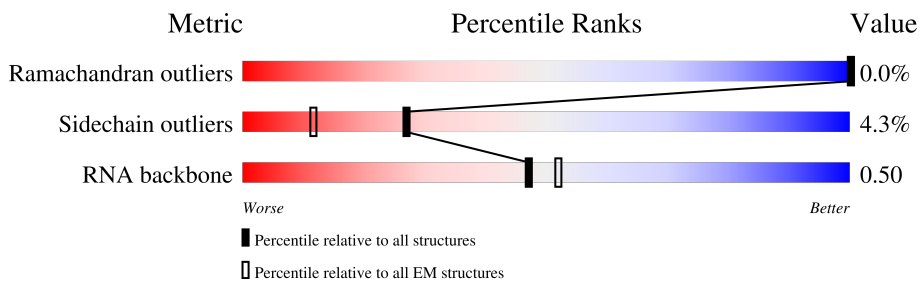|		
PDB ID	:	8QIE
EMDB ID	:	EMD-18437
Title	:	CRYO-EM STRUCTURE OF LEISHMANIA MAJOR 80S RIBOSOME : LM32Cs1C1 mutant snoRNA overexpression, class 4
Authors	:	Rajan, K.S.; Yonath, A.; Bashan, A.
Deposited on	:	2023-09-12
Resolution	:	2.43 Å(reported)

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 2.43 Å.

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

Metric	Percentile Ranks	Value
Ramachandran outliers		0.0%
Sidechain outliers		4.3%
RNA backbone		0.50

Worse   *Better*

▮ Percentile relative to all structures

▯ Percentile relative to all EM structures

Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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

Mol	Chain	Length	Quality of chain
1	1	1782	63% 26% • 10%
2	2	1526	51% 22% • 24%
3	3	216	55% 16% • 28%
4	4	184	77% 22% •
5	5	135	62% 22% • 15%
6	6	73	52% 40% 5% •
7	7	171	70% 25% • •
8	8	123	80% 16% •

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
9	A	260	97%
10	B	419	93% · 5%
11	C	373	95% · ·
12	D	188	83% · 16%
13	E	190	95% · ·
14	F	195	74% · 24%
15	G	264	84% · 14%
16	H	222	96% · ·
17	I	220	92% · 5%
18	J	139	96% · ·
19	K	175	95% · ·
20	L	145	97% · ·
21	M	204	98% ·
22	N	213	87% 6% 7%
23	O	305	89% · 10%
24	P	198	97% · ·
25	Q	254	72% · 26%
26	R	179	98% · ·
27	S	159	94% 5% ·
28	S1	2204	59% 21% · 19%
29	S4	76	32% 32% · 34%
30	SA	264	83% · 15%
31	SB	246	77% 7% 15%
32	SC	219	92% 5% ·
33	SD	190	83% 5% 12%
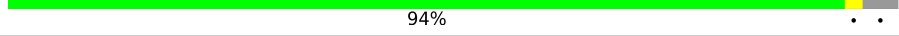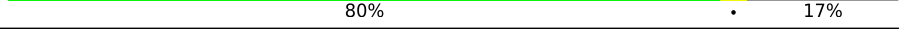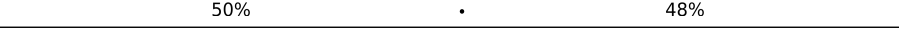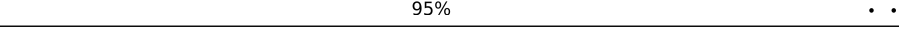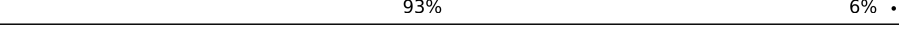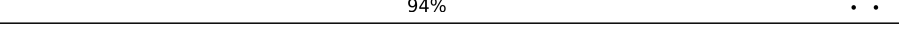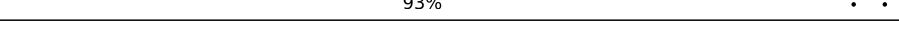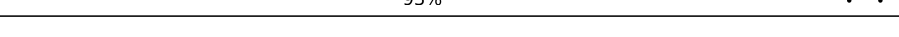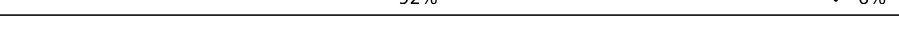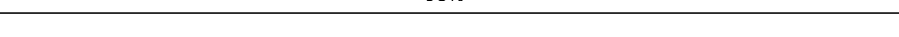
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
34	SE	273	93%　　　　　　　　5%
35	SF	265	81%　　　　　　　18%
36	SG	249	88%　　　　　　　7%
37	SH	190	92%
38	SI	200	96%
39	SJ	130	96%
40	SK	220	80%　　　　　　　17%
41	SL	149	95%
42	SM	116	84%　　　　　　　12%
43	SN	168	55%　　　　　　　41%
44	SO	144	90%　　　　　　　6%
45	SP	143	93%　　　　　　　6%
46	SQ	141	21%　　68%　　　　29%
47	SR	153	81%　　　　　　　15%
48	SS	57	96%
49	ST	151	92%　　　　　　　6%
50	SU	173	86%　　　　　　　10%
51	SV	143	48%　　　　　　　50%
52	SW	152	68%　　6%　　　26%
53	SX	161	92%　　　　　　　6%
54	SY	164	49%　　　　　　　49%
55	SZ	137	87%　　　　　　6%　7%
56	Sa	120	56%　　　　　　　41%
57	Sb	112	86%　　　　　　6%　8%
58	Sc	86	84%　　　　　　　15%
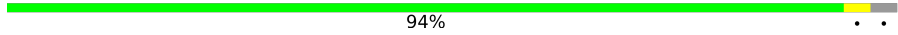
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
59	Sd	87	72% 24%
60	Se	66	73% 5% 23%
61	Sf	152	7% 20% 78%
62	Sg	312	94%
63	Sh	235	9% 52% 5% 43%
64	T	166	89% 9%
65	U	129	89% 9%
66	V	145	79% 19%
67	W	143	80% 17%
68	X	124	50% 48%
69	Y	134	95%
70	Z	147	93% 6%
71	a	127	94%
72	b	70	93%
73	c	252	89% 9%
74	d	104	83% 6% 12%
75	e	188	93%
76	f	133	92% 6%
77	g	144	98%
78	h	168	72% 24%
79	i	105	80% 16%
80	j	83	96%
81	k	83	84% 13%
82	l	51	92% 6%
83	m	128	37% 60%

Continued from previous page...

Mol	Chain	Length	Quality of chain
84	n	34	94%
85	o	92	89% 7%
86	p	106	91% 8%

2 Entry composition ⓘ

There are 91 unique types of molecules in this entry. The entry contains 206527 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 LSUa_rRNA_chain_1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1	1611	Total	C	N	O	P	0	0
			34568	15451	6340	11166	1611		

- Molecule 2 is a RNA chain called LSUb_rRNA_chain_2.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	2	1159	Total	C	N	O	P	0	0
			24802	11101	4482	8060	1159		

- Molecule 3 is a RNA chain called SR1_chain_3.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	3	156	Total	C	N	O	P	0	0
			3312	1481	576	1099	156		

- Molecule 4 is a RNA chain called SR2_chain_4.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	4	184	Total	C	N	O	P	0	0
			3937	1756	712	1285	184		

- Molecule 5 is a RNA chain called SR4_chain_5.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	5	115	Total	C	N	O	P	0	0
			2453	1094	439	805	115		

- Molecule 6 is a RNA chain called SR6_chain_6.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	6	71	Total	C	N	O	P	0	0
			1506	675	271	489	71		

- Molecule 7 is a RNA chain called 5.8S_rRNA_chain_7.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	7	164	Total	C	N	O	P	0	0
			3494	1566	621	1144	163		

- Molecule 8 is a RNA chain called 5S_rRNA_chain_8.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	8	119	Total	C	N	O	P	0	0
			2531	1132	452	828	119		

- Molecule 9 is a protein called Putative 60S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	A	255	Total	C	N	O	S	1	0
			1908	1189	390	319	10		

- Molecule 10 is a protein called Putative ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	B	399	Total	C	N	O	S	0	0
			3051	1932	599	507	13		

- Molecule 11 is a protein called Putative ribosomal protein L1a.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	C	366	Total	C	N	O	S	0	0
			2777	1740	556	466	15		

- Molecule 12 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	D	158	Total	C	N	O	S	0	0
			1008	629	203	170	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
13	E	186	Total	C	N	O	S	0	0
			1395	889	267	233	6		

- Molecule 14 is a protein called Putative 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	F	148	Total 1067	C 686	N 203	O 176	S 2	0	0

- Molecule 15 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	G	226	Total 1731	C 1097	N 344	O 283	S 7	0	0

- Molecule 16 is a protein called Putative 60S ribosomal protein L13a.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	H	220	Total 1734	C 1101	N 349	O 277	S 7	0	0

- Molecule 17 is a protein called Putative 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	I	208	Total 1603	C 1001	N 326	O 269	S 7	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
I	203	ARG	ASN	conflict	UNP E9AEA8

- Molecule 18 is a protein called Putative 60S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	J	137	Total 999	C 631	N 190	O 172	S 6	0	0

- Molecule 19 is a protein called Putative 40S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	K	170	Total 1266	C 794	N 252	O 213	S 7	0	0

- Molecule 20 is a protein called Putative 60S ribosomal protein L27A/L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	L	144	Total 1124	C 707	N 226	O 185	S 6	0	0

- Molecule 21 is a protein called Ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	M	203	Total 1696	C 1071	N 361	O 256	S 8	0	0

- Molecule 22 is a protein called Putative 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	N	199	Total 1607	C 1013	N 320	O 260	S 14	0	0

- Molecule 23 is a protein called Putative 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	O	276	Total 1975	C 1260	N 379	O 333	S 3	0	0

- Molecule 24 is a protein called 60S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	P	197	Total 1528	C 961	N 305	O 256	S 6	0	0

- Molecule 25 is a protein called Putative 60S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Q	187	Total 1433	C 892	N 316	O 219	S 6	0	0

- Molecule 26 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	R	178	Total 1413	C 904	N 273	O 231	S 5	0	0

- Molecule 27 is a protein called Putative 60S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	S	157	Total	C	N	O	S	0	0
			1234	784	240	206	4		

- Molecule 28 is a RNA chain called SSU_rRNA_chain_S1.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	S1	1787	Total	C	N	O	P	0	0
			38240	17106	6918	12429	1787		

- Molecule 29 is a RNA chain called E-site_tRNA_chain_S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	S4	50	Total	C	N	O	P	0	0
			1072	478	200	345	49		

- Molecule 30 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	SA	225	Total	C	N	O	S	1	0
			1820	1141	346	321	12		

- Molecule 31 is a protein called 40S ribosomal protein SA.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	SB	208	Total	C	N	O	S	0	0
			1627	1034	297	284	12		

- Molecule 32 is a protein called Putative 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	SC	212	Total	C	N	O	S	1	0
			1624	1029	296	286	13		

- Molecule 33 is a protein called Putative 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	SD	167	Total	C	N	O	S	0	0
			1366	863	270	225	8		

- Molecule 34 is a protein called 40S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	SE	260	Total 2050	C 1299	N 393	O 349	S 9	0	0

- Molecule 35 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	SF	218	Total 1662	C 1063	N 297	O 293	S 9	0	0

- Molecule 36 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	SG	231	Total 1831	C 1144	N 374	O 310	S 3	0	0

- Molecule 37 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	SH	182	Total 1436	C 892	N 278	O 259	S 7	0	0

- Molecule 38 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	SI	199	Total 1619	C 1032	N 313	O 267	S 7	0	0

- Molecule 39 is a protein called Putative 40S ribosomal protein S15A.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	SJ	129	Total 1021	C 646	N 188	O 179	S 8	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
40	SK	182	Total 1443	C 906	N 305	O 230	S 2	0	0

- Molecule 41 is a protein called Putative 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	SL	143	1124	724	206	191	3	0	0

- Molecule 42 is a protein called Putative ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	SM	102	796	498	145	151	2	0	0

- Molecule 43 is a protein called Putative 40S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	SN	99	808	518	141	142	7	0	0

- Molecule 44 is a protein called 40S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	SO	135	1010	624	197	181	8	0	0

- Molecule 45 is a protein called Putative 40S ribosomal protein S23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
45	SP	141	1100	694	217	186	3	0	0

- Molecule 46 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
46	SQ	100	679	419	122	133	5	0	0

- Molecule 47 is a protein called Putative 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
47	SR	130	1034	655	201	174	4	0	0

- Molecule 48 is a protein called Putative ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	SS	56	Total 452	C 279	N 94	O 73	S 6	0	0

- Molecule 49 is a protein called Putative 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	ST	142	Total 1155	C 728	N 229	O 190	S 8	0	0

- Molecule 50 is a protein called Putative 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	SU	156	Total 1253	C 796	N 247	O 205	S 5	0	0

- Molecule 51 is a protein called Putative 40S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	SV	71	Total 577	C 368	N 110	O 97	S 2	0	0

- Molecule 52 is a protein called Putative 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	SW	113	Total 907	C 578	N 172	O 153	S 4	0	0

- Molecule 53 is a protein called 40S ribosomal protein S19-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	SX	152	Total 1202	C 764	N 237	O 197	S 4	0	0

- Molecule 54 is a protein called Putative 40S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	SY	84	Total 616	C 381	N 115	O 116	S 4	0	0

- Molecule 55 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	SZ	127	Total	C	N	O	S	0	0
			1031	662	200	166	3		

- Molecule 56 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	Sa	71	Total	C	N	O	S	0	0
			558	356	99	100	3		

- Molecule 57 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	Sb	103	Total	C	N	O	S	0	0
			816	505	175	129	7		

- Molecule 58 is a protein called Putative 40S ribosomal protein S27-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	Sc	73	Total	C	N	O	S	0	0
			570	358	107	101	4		

- Molecule 59 is a protein called Putative 40S ribosomal protein S33.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	Sd	66	Total	C	N	O	S	0	0
			483	295	97	87	4		

- Molecule 60 is a protein called 40S ribosomal protein S30.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	Se	51	Total	C	N	O	S	0	0
			401	252	86	62	1		

- Molecule 61 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	Sf	33	Total	C	N	O	S	0	0
			295	193	58	43	1		

- Molecule 62 is a protein called Guanine nucleotide-binding protein subunit beta-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	Sg	300	Total 2284	C 1438	N 406	O 428	S 12	0	0

- Molecule 63 is a protein called Putative RNA binding protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	Sh	134	Total 948	C 603	N 179	O 164	S 2	0	0

- Molecule 64 is a protein called Putative 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	T	151	Total 1211	C 757	N 240	O 203	S 11	0	0

- Molecule 65 is a protein called Putative 60S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	U	118	Total 801	C 514	N 152	O 133	S 2	0	0

- Molecule 66 is a protein called Putative 60S ribosomal protein L23a.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	V	118	Total 926	C 587	N 178	O 159	S 2	0	0

- Molecule 67 is a protein called Putative 60S ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	W	118	Total 937	C 586	N 197	O 150	S 4	0	0

- Molecule 68 is a protein called Putative ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	X	64	Total 548	C 359	N 105	O 80	S 4	0	0

- Molecule 69 is a protein called 60S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	Y	132	Total 1027	C 661	N 206	O 157	S 3	0	0

- Molecule 70 is a protein called Putative 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	Z	145	Total 1095	C 671	N 234	O 185	S 5	0	0

- Molecule 71 is a protein called Putative 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	a	123	Total 1006	C 630	N 211	O 161	S 4	0	0

- Molecule 72 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms				AltConf	Trace
72	b	68	Total 546	C 335	N 125	O 86	0	0

- Molecule 73 is a protein called Putative 60S ribosomal protein L7.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	c	229	Total 1862	C 1185	N 358	O 308	S 11	0	0

- Molecule 74 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	d	92	Total 705	C 438	N 129	O 133	S 5	0	0

- Molecule 75 is a protein called Putative 60S ribosomal subunit protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	e	180	Total 1421	C 895	N 288	O 234	S 4	0	0

- Molecule 76 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	f	125	Total 1011	C 636	N 201	O 170	S 4	0	0

- Molecule 77 is a protein called Putative ribosomal protein l35a.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	g	142	Total 1142	C 710	N 239	O 188	S 5	0	0

- Molecule 78 is a protein called Putative 60S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	h	127	Total 1018	C 626	N 221	O 165	S 6	0	0

- Molecule 79 is a protein called Putative 60S Ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	i	88	Total 689	C 438	N 143	O 106	S 2	0	0

- Molecule 80 is a protein called Ribosomal protein L37.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	j	81	Total 668	C 407	N 154	O 101	S 6	0	0

- Molecule 81 is a protein called Putative ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	k	72	Total 534	C 338	N 105	O 88	S 3	0	0

- Molecule 82 is a protein called Putative 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	l	50	Total 450	C 291	N 95	O 63	S 1	0	0

- Molecule 83 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	m	51	Total 378	C 238	N 74	O 59	S 7	0	0

- Molecule 84 is a protein called 60S ribosomal protein L41.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	n	33	Total 292	C 178	N 75	O 37	S 2	0	0

- Molecule 85 is a protein called 60S ribosomal protein L37a.

Mol	Chain	Residues	Atoms					AltConf	Trace
85	o	88	Total 688	C 428	N 142	O 112	S 6	0	0

- Molecule 86 is a protein called Putative 60S ribosomal protein L44.

Mol	Chain	Residues	Atoms					AltConf	Trace
86	p	97	Total 775	C 491	N 157	O 123	S 4	0	0

- Molecule 87 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
87	1	58	Total 58	Mg 58	0
87	2	66	Total 66	Mg 66	0
87	4	3	Total 3	Mg 3	0
87	5	3	Total 3	Mg 3	0
87	6	1	Total 1	Mg 1	0
87	7	2	Total 2	Mg 2	0
87	8	1	Total 1	Mg 1	0
87	A	2	Total 2	Mg 2	0
87	J	1	Total 1	Mg 1	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms		AltConf
87	S	1	Total 1	Mg 1	0
87	S1	79	Total 79	Mg 79	0
87	SX	1	Total 1	Mg 1	0
87	Sb	1	Total 1	Mg 1	0

- Molecule 88 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms		AltConf
88	1	11	Total 11	Na 11	0
88	2	10	Total 10	Na 10	0
88	4	3	Total 3	Na 3	0
88	S1	9	Total 9	Na 9	0
88	S4	1	Total 1	Na 1	0

- Molecule 89 is POTASSIUM ION (three-letter code: K) (formula: K).

Mol	Chain	Residues	Atoms		AltConf
89	1	9	Total 9	K 9	0
89	2	3	Total 3	K 3	0
89	S1	4	Total 4	K 4	0

- Molecule 90 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
90	p	1	Total 1	Zn 1	0

- Molecule 91 is water.

Mol	Chain	Residues	Atoms		AltConf
91	1	617	Total 617	O 617	0
91	2	478	Total 478	O 478	0
91	3	21	Total 21	O 21	0
91	4	62	Total 62	O 62	0
91	5	24	Total 24	O 24	0
91	6	5	Total 5	O 5	0
91	7	43	Total 43	O 43	0
91	8	5	Total 5	O 5	0
91	A	20	Total 20	O 20	0
91	B	38	Total 38	O 38	0
91	C	18	Total 18	O 18	0
91	D	1	Total 1	O 1	0
91	F	1	Total 1	O 1	0
91	G	1	Total 1	O 1	0
91	H	9	Total 9	O 9	0
91	I	10	Total 10	O 10	0
91	J	4	Total 4	O 4	0
91	L	12	Total 12	O 12	0
91	M	22	Total 22	O 22	0
91	N	1	Total 1	O 1	0
91	P	8	Total 8	O 8	0
91	Q	2	Total 2	O 2	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms		AltConf
91	R	1	Total 1	O 1	0
91	S	2	Total 2	O 2	0
91	S1	802	Total 802	O 802	0
91	S4	3	Total 3	O 3	0
91	SA	7	Total 7	O 7	0
91	SB	1	Total 1	O 1	0
91	SC	1	Total 1	O 1	0
91	SD	4	Total 4	O 4	0
91	SE	13	Total 13	O 13	0
91	SF	6	Total 6	O 6	0
91	SG	1	Total 1	O 1	0
91	SH	6	Total 6	O 6	0
91	SJ	12	Total 12	O 12	0
91	SK	13	Total 13	O 13	0
91	SL	3	Total 3	O 3	0
91	SM	6	Total 6	O 6	0
91	SN	2	Total 2	O 2	0
91	SO	7	Total 7	O 7	0
91	SP	12	Total 12	O 12	0
91	SR	4	Total 4	O 4	0
91	SS	1	Total 1	O 1	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms		AltConf
91	ST	19	Total 19	O 19	0
91	SU	5	Total 5	O 5	0
91	SX	5	Total 5	O 5	0
91	Sa	2	Total 2	O 2	0
91	Sb	23	Total 23	O 23	0
91	Sc	5	Total 5	O 5	0
91	T	9	Total 9	O 9	0
91	V	4	Total 4	O 4	0
91	W	2	Total 2	O 2	0
91	X	2	Total 2	O 2	0
91	Z	1	Total 1	O 1	0
91	b	3	Total 3	O 3	0
91	c	5	Total 5	O 5	0
91	e	3	Total 3	O 3	0
91	f	14	Total 14	O 14	0
91	g	11	Total 11	O 11	0
91	h	7	Total 7	O 7	0
91	i	1	Total 1	O 1	0
91	j	12	Total 12	O 12	0
91	l	5	Total 5	O 5	0
91	n	5	Total 5	O 5	0

Continued from previous page...

Mol	Chain	Residues	Atoms		AltConf
91	o	8	Total 8	O 8	0
91	p	5	Total 5	O 5	0

3   Residue-property plots ⓘ

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

- Molecule 1: LSUa_rRNA_chain_1

• Molecule 2: LSUb_rRNA_chain_2
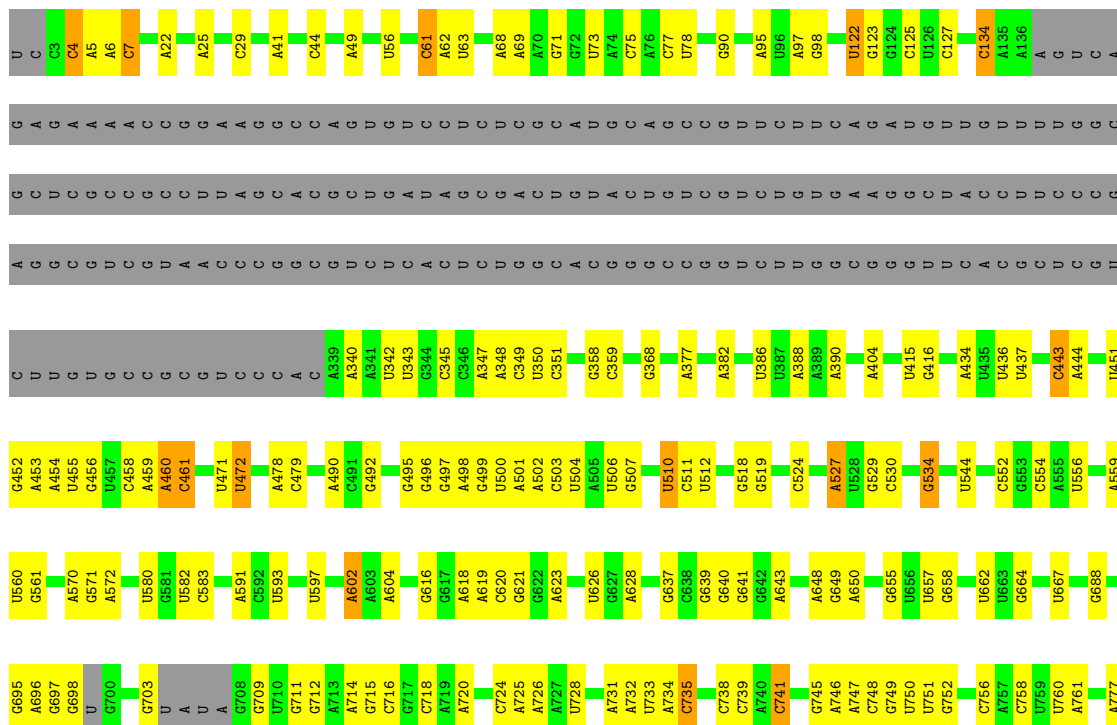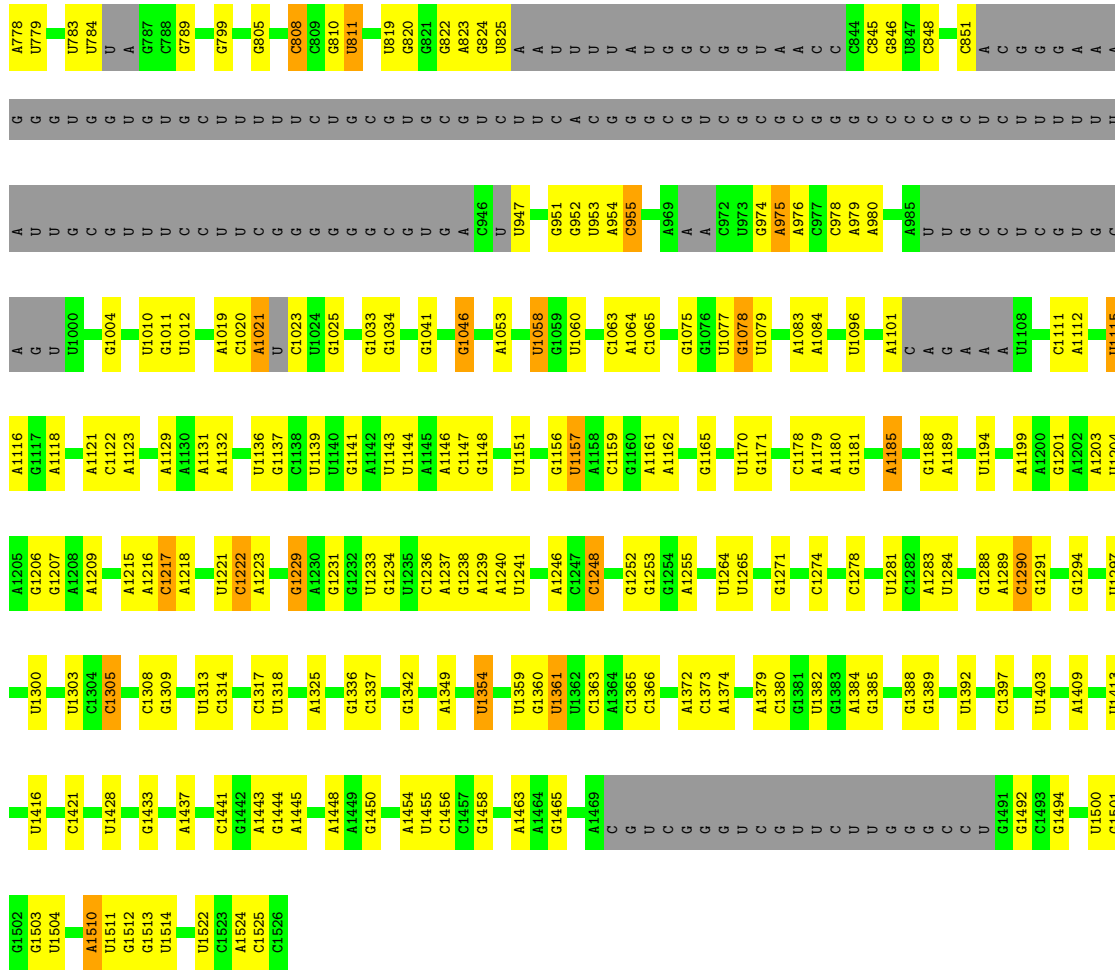
Chain 2:

• Molecule 3: SR1_chain_3

• Molecule 4: SR2_chain_4

A158 G159 C160 C161 A168 A169 G170 C173 U177 U184

• Molecule 5: SR4_chain_5

Chain 5:   62%   22%   •   15%

U U3 A4 C5 G6 C15 G24 U29 G39 C50 A51 U52 G53 U56 C A C U U61 U65 G68 C72 G A G G G C A U U A C G86 U87 C88 C89 C90 G91 A92 G99 U105 G106 G109 C110 C111

U112 G113 U117 U118 C119 C120 G123 C124 U125 C134 U A

• Molecule 6: SR6_chain_6

Chain 6:   52%   40%   5% •

U C A3 U4 C5 G6 A7 G11 C12 C15 G22 A23 C24 U25 G26 G33 U39 C40 G41 A42 G43 G44 G45 A51 G52 U53 A54 U55 A56 U57 U64 C65 A66 C67 A68 A69 G70 A71 C72 A73
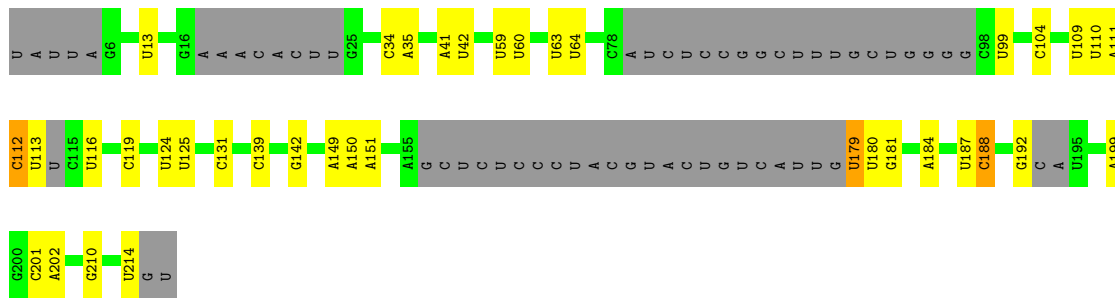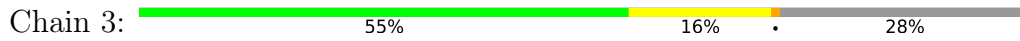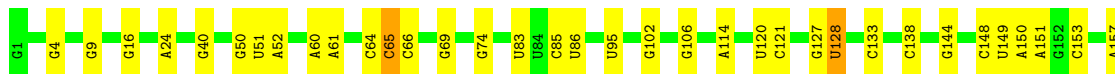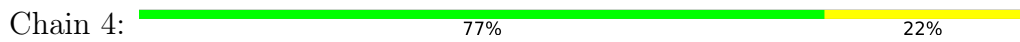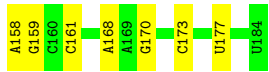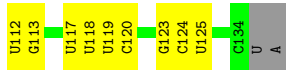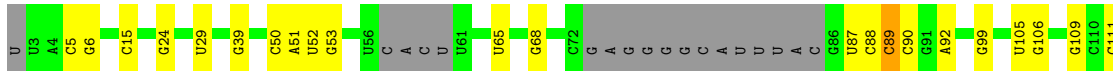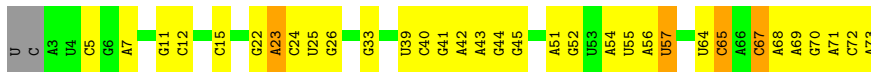
• Molecule 7: 5.8S_rRNA_chain_7

Chain 7:   70%   25%   • •

A1 A2 U5 G6 U7 A16 A19 U22 C28 C29 U30 A31 U32 U33 A43 A59 A62 G63 U69 C70 A71 A72 U73 U74 G75 A80 U C82 A83 U84 U85 C86 A87 A88 U89 U90 C93 G94 A95 A96 A103 A104 C105 A110 C111 G119

G120 C127 U128 C U A U U G134 U135 G136 U157 U158 A162 A169 A170 C
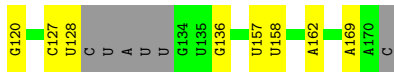
• Molecule 8: 5S_rRNA_chain_8

Chain 8:   80%   16%   •

C U U C G5 G11 A22 A26 A34 U37 C38 C39 G45 A46 G52 U57 C63 C67 A68 G69 G70 U92 G93 A94 U95 A104 G114 C123
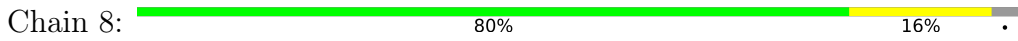
• Molecule 9: Putative 60S ribosomal protein L2

Chain A: 97%   • •

MET G2 L148 H218 R247 W256 HIS PRO GLU GLU

• Molecule 10: Putative ribosomal protein L3

Chain B: 93%   • 5%

MET SER HIS C4 S45 V73 T101 S217 K246 L283 T308 A309 K310 R402 LYS GLU ARG ALA ALA ARG ALA VAL GLU ARG LYS ALA LYS ALA ALA LYS LYS

• Molecule 11: Putative ribosomal protein L1a

Chain C: 95%

MET SER ALA R4 S13 K37 R70 M94 F121 V146 R204 T285 R289 R344 R353 K354 A355 K356 K369 SER ALA LYS GLN
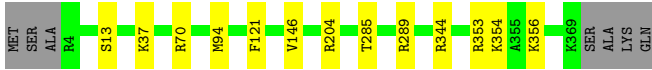
• Molecule 12: 60S ribosomal protein L11

Chain D: 83%   16%

MET VAL ALA GLU SER LYS ALA ALA N9 G26 GLU SER G29 R53 LEU THR VAL ARG THR PHE GLY ILE ARG R63 C71 E92 Y125 K177 LYS LYS LYS LYS MET ILE ARG ARG ARG ARG
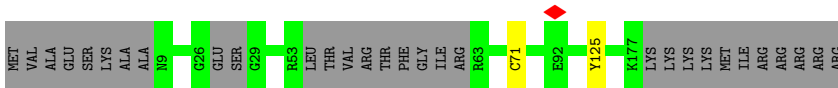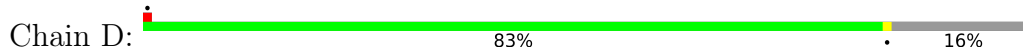
• Molecule 13: Putative 60S ribosomal protein L9

Chain E: 95%

MET V2 V18 K24 T28 R88 N108 D176 E187 GLY MET GLU

• Molecule 14: Putative 60S ribosomal protein L6

Chain F: 74%   24%

MET ALA ALA THR LYS SER SER ALA VAL SER ALA ALA LYS ARG LYS ALA ALA LYS LYS V19 K55 V91 S94 E112 K113 P114 THR LYS SER GLU GLY ASP PHE MET GLY ASP LYS GLN LYS ALA LYS ALA GLU LYS ALA ALA LYS LYS THR SER LYS ALA GLY LYS LYS T144

W195
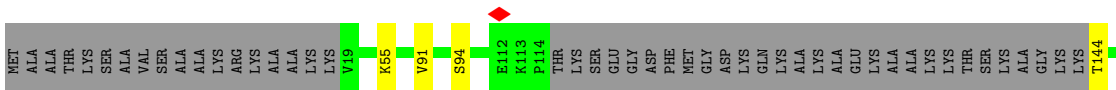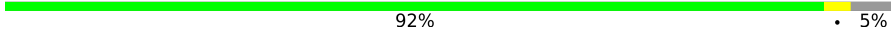
• Molecule 15: 60S ribosomal protein L7a

Chain G: 84%   14%

MET PRO GLY LYS GLU VAL LYS VAL THR GLN PRO ALA LYS ALA SER PRO TYR LYS LYS PRO ALA VAL ALA SER H27 D46 E115 GLU LYS LYS LYS ASP PRO LYS LYS THR VAL SER THR K128 D189 V219 N254 Q264
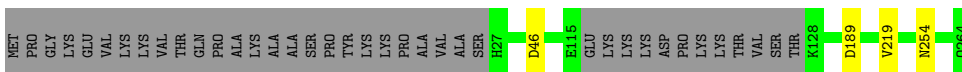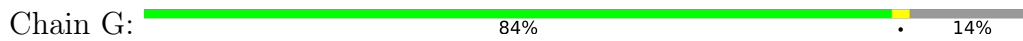
• Molecule 16: Putative 60S ribosomal protein L13a

Chain H: 96%

MET ALA F3 R79 K86 K111 T155 S184 E203 A222
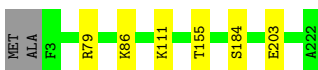
• Molecule 17: Putative 60S ribosomal protein L13

Chain I:

92%   • 5%

MET P2 K14 K15 H16 V68 P132 T152 R175 R209 LYS GLU ALA ALA LYS GLU GLU LYS THR GLY LYS

• Molecule 18: Putative 60S ribosomal protein L23

Chain J:

96%   ••

MET GLY K3 N7 K66 K122 V139
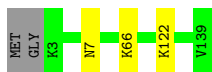
• Molecule 19: Putative 40S ribosomal protein L14

Chain K:

95%   ••

MET V2 R23 R35 K131 T135 R171 LYS ALA LYS LYS

• Molecule 20: Putative 60S ribosomal protein L27A/L29

Chain L:

97%   ••

MET P2 H60 R63 S104 A145

• Molecule 21: Ribosomal protein L15

Chain M:

98%   •

MET G2 R24 N117 D124 R189 R204

• Molecule 22: Putative 60S ribosomal protein L10

Chain N:

87%   6%   7%

MET A2 C12 D28 R32 R39 V43 D44 H51 Q71 M87 K101 MET LEU SER CYS ALA GLY ALA ASP ARG LEU GLN THR G114 V125 T140 M208 R209 M212 ALA

• Molecule 23: Putative 60S ribosomal protein L5

Chain O:

89%   •   10%

MET PRO PHE VAL K5 V53 Q66 T93 S130 K136 ASP ASP GLU GLY ASP ASP GLU E144 R202 A221 SER SER ASN PRO ASP GLU LYS CYS V230 K266 LYS ALA LYS LYS GLU GLY VAL ALA H275 L303 GLY LYS

• Molecule 24: 60S ribosomal protein L18

Chain P:

97%

MET G2 H17 K72 R106 Q118 Y144 V198

• Molecule 25: Putative 60S ribosomal protein L19

Chain Q:

72% 26%

MET V2 N36 I115 D116 R117 K179 A188 ARG ARG ASP ASP ALA ALA ALA ALA GLN LYS LYS LYS ASP ALA ALA LYS LYS SER ALA ALA PRO ALA ALA LYS SER ALA ALA PRO ALA THR LYS ALA ALA PRO ALA THR LYS ALA

ALA ALA ALA ALA PRO ALA THR LYS GLY ALA ALA PRO VAL LYS LYS SER LYS LYS

• Molecule 26: 60S ribosomal protein L18a

Chain R:

98%

MET V2 H138 R156 A179

• Molecule 27: Putative 60S ribosomal protein L21

Chain S:

94% 5%

MET VAL H3 S28 R49 R70 T84 R97 K98 Y115 V150 Y159

• Molecule 28: SSU_rRNA_chain_S1

Chain S1:

59% 21% 19%

G1 A2 U3 U8 U12 C17 C18 C25 A26 U29 U33 G34 C38 G42 U45 U46 A47 A55 C61 A65 U66 C67 A68 A73 U U U G77 U92 A98 A102 A103 U104 C109 A112 A113 U114 G117 A122

C128 U129 G133 G134 U U U C138 A144 A145 U146 U147 G148 G149 A150 U155 G158 C164 G165 C167 A168 A169 G170 C171 A174 U175 A181 A182 U194 U195 C196 U197 C198 C199 A200 C U C C A G A C G U G G G C A

A C C A U C G U C G U227 C232 G233 G234 C235 C236 A237 U247 G248 A249 G252 U253 A254 A255 C264 U267 C A C U G G C274 A275 G276 U277 A278 C283 C284 A285 G286 C287 A288 G294 A295 C298 G308 G309 U310 G311

A316 G321 C322 U U G U326 C327 C328 C329 U336 G340 A341 C349 C354 U355 A356 U357 C358 A359 G360 G364 G381 A382 C387 G396 C404 G433 A443 A444 U445 A446 G447 C451 C454 U455 G462 A463 G464 C467 A468 G469 C474

G477 C478 A479 A480 A481 U482 C486 C487 A497 A500 A501 A502 C511 A512 A516 A523 U524 A525 G528 C533 A G U C C A U U G G A U546 U547 G548 U549 C550 A551 U552 U553 C554 C555 A556 G559 U565 A566 U567 U568 U569

C2016 A2020 A2021 G2030 A2031 C2035 G2036 C2040 A2046 U2047 U2048 C2054 A2055 C2059 C2060 C2061 U2069 A2078 U2079 G2080 A2095 U2096 C2097 G2098 G2099 A2100 C2101 G2104 C G G U G U U U A U C C2117 G2118 C2119 C2120 C2121 A2125 A2134

U2135 A2136 U2137 C2140 A2144 A2145 G2151 A2152 A2158 A2159 G2160 G2163 A2169 G2170 G2171 U2172 G2182 G2183 A2184 A2185 G2195 C2196 G2197 A2198 C2199 U2202 U2203 U

• Molecule 29: E-site_tRNA_chain_S4

Chain S4:

32% 32% • 34%

G1 C2 G3 C4 G5 G6 A7 U A G C U C13 A14 G15 U16 C G G U A21 G22 C25 A26 G27 A31 U U G A A A U39 C40 C41 G44 U45 G46 U C C49 U50 U51 G52 G53 U U C C G A U U C C62 G63 A64

G65 U66 C67 C68 G69 C70 G71 C72 A73 C74 C75 A76

• Molecule 30: 40S ribosomal protein S3a

Chain SA:

83% • 15%

MET ALA LEU GLY LYS ASN LYS ARG ILE SER LYS GLY LYS LYS ARG GLY LYS LYS ALA GLN E22 D59 Q75 D110 K172 V194 R215 R221 R246 GLU VAL GLU GLU ALA VAL GLU ALA ALA PRO ALA ALA GLU LYS ALA ALA GLU

• Molecule 31: 40S ribosomal protein SA

Chain SB:

77% 7% 15%

M1 R12 M13 K14 Q19 R25 D53 R83 R88 H96 S100 F101 H102 R123 V143 E158 Y159 V160 C166 M176 R194 Y207 R208 ASP PRO ASN GLU ALA ALA GLU GLU LYS ALA ALA ALA ALA ALA PRO ALA GLU ALA GLU

GLU GLY PHE GLY TRP VAL GLU ARG ASN ASP ASP ASN ALA TRP GLU ALA

• Molecule 32: Putative 40S ribosomal protein S3

Chain SC:

92% 5% •

MET G2 R75 K131 K142 G143 Q144 Y155 H163 K164 H173 C174 Y175 R196 N197 S200 K213 GLN ILE THR ALA SER GLU

• Molecule 33: Putative 40S ribosomal protein S9

Chain SD:

83% 5% 12%

M1 K20 E21 T60 R68 D93 S150 R153 R167 THR GLY ARG VAL LYS ARG VAL ARG ALA ALA LYS ALA ALA LYS ARG HIS ALA GLY GLY ASP ASP GLU

• Molecule 34: 40S ribosomal protein S4

Chain SE:

93%   • 5%

MET A2 L35 H68 D140 V158 K165 K261 ASN ALA PRO ALA ARG GLY ALA ARG ARG ALA ARG LYS

• Molecule 35: 40S ribosomal protein S2

Chain SF:

81%   •   18%

MET ALA ASP THR GLN PRO ALA GLN GLU GLU ALA PRO ALA THR ASP ALA PRO ALA GLU ALA GLU ASN PHE GLY ARG GLY ARG GLY ARG GLY ARG GLY ARG GLY ARG GLY ARG GLY PRO GLY GLU GLU LYS E44 E64 D80 D90 Y234 A260 E261 MET THR ALA

• Molecule 36: 40S ribosomal protein S6

Chain SG:

88%   •   7%

M1 Y7 R32 R52 S71 R89 R96 V104 D108 N149 D172 K196 K230 K231 HIS THR ARG LYS VAL HIS ALA GLN ARG ALA GLU VAL ALA ALA PHE GLN LYS LYS

• Molecule 37: 40S ribosomal protein S5

Chain SH:

92%   • •

MET S2 R25 R51 M52 F64 R67 R113 VAL GLY SER GLY VAL VAL R121 N189 R190
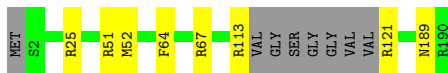
• Molecule 38: 40S ribosomal protein S7

Chain SI:

96%   •

MET Q2 L19 V54 K76 R88 K104 R141 R162 K163 R164 R200

• Molecule 39: Putative 40S ribosomal protein S15A

Chain SJ:

96%   • •

MET T2 R23 S30 D54 S118 Y130
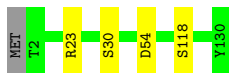
• Molecule 40: 40S ribosomal protein S8

Chain SK:

80%   •   17%

MET G2 S44 L58 V76 V81 L121 ASP ALA ASP LYS LYS SER THR LYS ALA ALA VAL ALA ALA GLU LYS LYS GLY ARG LYS SER ALA HIS ALA ALA ASP LYS TYR ASP VAL ASN LYS ALA S155 V184 K213 E216 LYS LYS LYS LYS
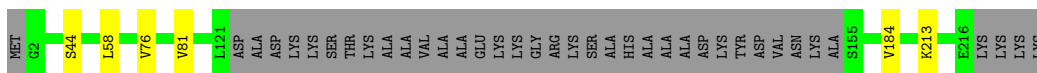
• Molecule 41: Putative 40S ribosomal protein S16

Chain SL:

95%

MET PRO ALA ASP LYS SER Y7 V27 T142 R149
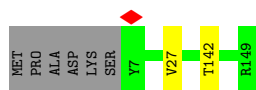
• Molecule 42: Putative ribosomal protein S20

Chain SM:

84% 12%

MET ASP TYR PRO LYS LYS ASN GLN ALA ALA PRO ALA GLU G14 Q35 T65 K97 D115 ARG
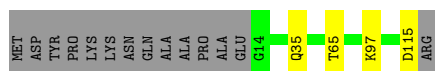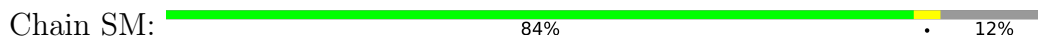
• Molecule 43: Putative 40S ribosomal protein S10

Chain SN:

55% 41%

MET S2 T3 Y4 F17 K26 V44 N60 M94 P100 SER SER VAL ASN PHE GLU LYS VAL THR GLU GLY ARG GLY ARG GLY ARG GLY ARG GLY GLY ARG GLY ARG GLY GLU GLY ARG GLY ARG GLY ARG GLY ARG GLY ARG GLY ARG GLY PHE GLY

GLY GLU ARG MET ASN TYR ARG ALA ALA ALA THR SER ASP GLY ALA ALA PRO ALA PRO ALA GLU
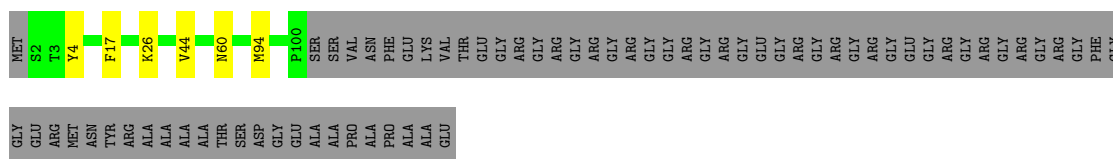
• Molecule 44: 40S ribosomal protein S14

Chain SO:

90% 6%

MET SER LYS LYS GLN GLU VAL LYS ALA Y10 K15 R77 R110 E123 T126 R135 L144

• Molecule 45: Putative 40S ribosomal protein S23

Chain SP:

93% 6%

MET T2 Q7 K37 V72 D78 F105 V118 R119 N127 R142 ASN

• Molecule 46: 40S ribosomal protein S12

21%

Chain SQ:

68% 29%

MET ALA GLU GLU THR VAL ARG VAL GLU VAL PRO ALA VAL GLU GLU ASN VAL VAL VAL ASP VAL ALA PRO GLU SER LEU E27 D28 A29 V33 A40 N41 D55 T58 C62 I63 L64 A65 D66 D67 C68 E69 D70 E71 E72 Y73 K82 Q83 G84 N85 I86 E93 R94

E95 R106 D107 VAL A109 G110 E111 V112 T113 D125 F126 G127 GLU ARG THR LYS ALA LEU ASP TYR LEU LEU SER GLN LEU HIS
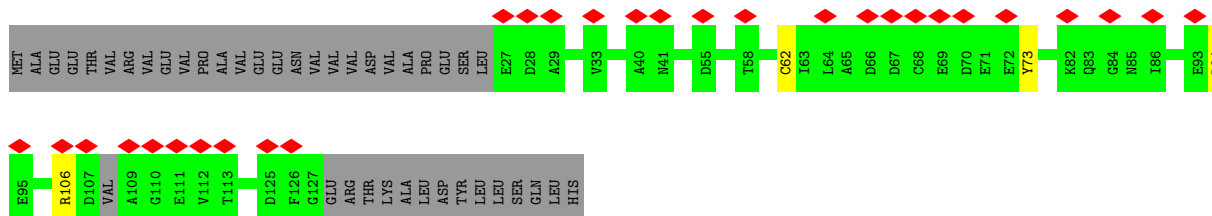
• Molecule 47: Putative 40S ribosomal protein S18

Chain SR:
81%
15%

MET S2 R32 K35 E63 E70 S100 R122 R131 VAL ARG GLY GLN HIS THR CYS THR SER GLY ARG HIS GLY LYS THR VAL GLY VAL SER ARG GLY LYS
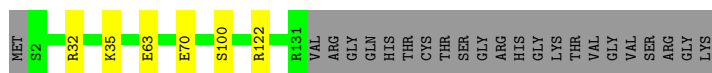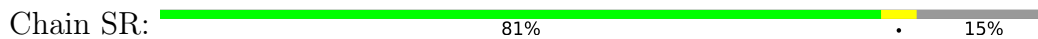
• Molecule 48: Putative ribosomal protein S29

Chain SS:
96%

MET G2 T54 R57

• Molecule 49: Putative 40S ribosomal protein S13

Chain ST:
92%
6%

MET V2 S30 R104 R124 S143 SER THR ALA SER ALA MET VAL ALA

• Molecule 50: Putative 40S ribosomal protein S11

Chain SU:
86%
10%

MET PRO V3 D14 R25 M33 K67 R82 Q116 N153 V158 SER LYS SER ALA ASP LYS MET GLY LYS LYS PHE ALA LYS ASN
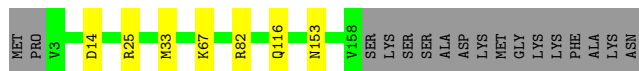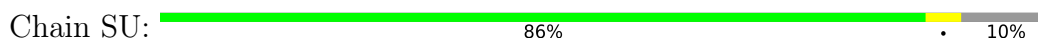
• Molecule 51: Putative 40S ribosomal protein S17

Chain SV:
48%
50%

MET G2 R5 T6 K7 D37 K72 LEU GLN GLU GLU GLU GLU ARG GLU ARG MET ASP HIS ALA PRO ALA THR SER ASP VAL ASP LYS VAL ILE GLN SER GLY VAL SER VAL ASP LYS LYS THR MET GLN MET LEU GLN ARG LEU GLU ILE GLY VAL PRO ARG GLY VAL LYS ARG

ALA ASP ALA ALA VAL THR LYS VAL LYS ALA ALA PRO ARG ARG ARG GLN GLN LYS SER SER LYS
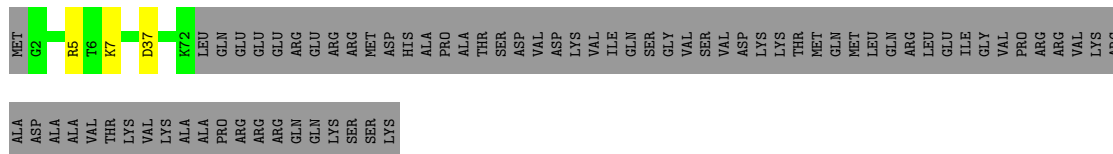
• Molecule 52: Putative 40S ribosomal protein S15

Chain SW:
68%
6%
26%

MET ALA SER ASN ILE THR ALA GLU ARG TYR GLU GLN LEU LYS LYS GLU THR PHE HIS K21 F22 V44 R50 K71 K72 H73 V74 K75 V76 G77 H107 Y130 R131 P132 V133 LEU HIS GLY ARG PRO GLY VAL GLY ALA THR HIS SER SER ARG PHE ILE PRO ILE LYS

• Molecule 53: 40S ribosomal protein S19-like protein

Chain SX:
92%
6%

MET THR ALA PRO ARG N6 L19 R26 R33 R138 G157 GLN SER LYS ALA

• Molecule 54: Putative 40S ribosomal protein S21

Chain SY:

49%   •   49%

MET ALA THR I4 N8 D15 P46 T87 GLY LYS PRO LYS ARG ALA SER LYS SER SER LYS LYS PRO ALA ALA LYS GLY ALA ALA GLY ALA ALA ALA GLN LYS GLY ALA ARG PRO PRO ALA GLN LYS GLY ALA ARG PRO PRO ALA GLN LYS GLY ALA ARG PRO PRO

ALA GLN LYS GLY ALA ARG PRO PRO ALA GLN LYS GLY ALA ALA PRO ALA ARG LYS ASN ARG ALA

• Molecule 55: 40S ribosomal protein S24

Chain SZ:

87%   6%   7%

MET VAL F3 V30 H36 V41 K55 F103 R107 R125 G126 K127 A128 K129 GLY LYS GLN VAL ALA LYS LYS

• Molecule 56: 40S ribosomal protein S25

Chain Sa:

56%   •   41%

MET PRO PRO LYS ALA GLY GLN THR LYS LYS ALA LYS MET GLU ALA ALA ASN LYS GLY ALA LYS LYS THR THR LYS LYS TRP SER LYS GLY GLN SER ARG GLU A35 L36 Q37 T46 K70 K87 V105 GLN ALA ALA PRO ALA GLU ALA ALA ALA ALA PRO ALA ALA GLU

• Molecule 57: 40S ribosomal protein S26

Chain Sb:

86%   6%   8%

MET T2 R10 N65 R70 K74 T87 V88 K103 V104 PRO PHE ARG PRO ALA GLY LYS LYS

• Molecule 58: Putative 40S ribosomal protein S27-1

Chain Sc:

84%   •   15%

MET GLY F3 F4 V36 SER CYS PRO ARG CYS ARG Q43 C57 LYS GLY CYS SER K62 D85 HIS

• Molecule 59: Putative 40S ribosomal protein S33

Chain Sd:

72%   •   24%

MET ALA ASP SER LYS LYS ASP ASN LYS LYS THR GLU GLU VAL VAL THR GLN GLY THR ASP Q20 R32 E81 L85 ARG

• Molecule 60: 40S ribosomal protein S30

Chain Se:

73%   5%   23%

MET GLY LYS ILE HIS GLY **S7** **P27** **R42** **S46** LYS THR VAL LYS PRO GLY GLU **K54** **K64** ALA GLY

• Molecule 61: Ubiquitin-60S ribosomal protein L40

Chain Sf:

MET GLN ILE PHE ILE LYS ASP ALA ALA GLY ARG SER VAL ALA VAL ARG VAL SER GLU ALA GLU ASP THR VAL GLY PHE LEU LYS ALA GLN ALA ASN VAL THR GLN GLY ASN LEU PHE PHE ALA GLY MET CYS LEU ALA GLU GLU GLU THR LEU ALA ALA TYR GLY LEU SER LYS GLU SER THR

VAL ASP VAL VAL ILE PRO VAL GLU GLY GLY LYS GLY LYS LYS LYS LYS LYS ARG **I79** **F80** **T81** **R89** **K102** **V103** THR GLU ASN ASP ASP GLY SER **Y111** **K112** **V113** **E114** **R115** **T116** **R117** **Q118** ASP CYS PRO HIS PRO GLN CYS GLY ALA GLY VAL TYR MET ALA GLN HIS LYS ASP ARG

GLN TYR CYS GLY LYS CYS HIS LEU THR TYR LYS ALA GLU SER LYS

• Molecule 62: Guanine nucleotide-binding protein subunit beta-like protein

Chain Sg:

M1 **A23** **D46** **R47** HIS SER VAL ASP **S52** **V113** **L162** GLU **H164** **N174** **N182** **L223** SER **T225** **F230** **W249** **M250** **P274** ASP GLY ALA **K278** **P279** **S280** **S309** ASP ALA GLU

• Molecule 63: Putative RNA binding protein

Chain Sh:

MET PRO ALA LYS ALA ALA LYS ALA ALA LYS PRO VAL LYS PRO ALA ALA LYS ALA ALA PRO ALA ALA LYS PRO LYS PRO ALA ASN LYS ALA PRO ALA LYS ALA ALA PRO LYS PRO VAL ALA LYS ALA ALA PRO ALA ALA ARG PRO ALA SER GLY SER SER ASN GLY **V57** **Y58** **V59** **K60**

ASN TRP GLY THR **G65** **D69** **A70** **A71** **N72** **V73** **F74** SER ALA ALA GLY LYS VAL **V81** **R87** **I92** **V93** **F94** PHE GLU ASN SER **A99** **A100** **V101** **K102** **K103** **L107** **F108** **N109** **E110** **K111** GLU VAL LEU GLY LYS **T117** **V118** **L119** **V120** **V121** **E133** **F157** ALA GLY **V160** **K161** **V162**

Y174 **A175** **Y176** LEU ASP SER PRO **A181** **A182** **A183** **K184** **K185** **E189** **E194** **F195** **R196** **E210** **A214** **R215** GLN GLU ALA ALA ASN VAL VAL ILE ALA ALA HIS ARG HIS TYR LYS THR HIS GLU ARG GLN

• Molecule 64: Putative 60S ribosomal protein L17

Chain T:

MET THR **H3** **R23** **K66** **T137** **K153** LYS GLU ARG VAL PRO ALA PRO LYS SER ALA PRO LYS LYS

• Molecule 65: Putative 60S ribosomal protein L22

Chain U:

MET V2 G37 ILE PHE SER E41 D42 V43 N73 R104 R108 F122 ASN ILE GLN ASP GLN GLU GLU

• Molecule 66: Putative 60S ribosomal protein L23a

Chain V:

79%   ·   19%

MET PRO PRO ALA GLN LYS THR ALA LYS ALA ALA PRO LYS ASP LYS ALA LYS THR LYS VAL VAL LYS VAL THR THR R27 Q34 K77 S91 V108 L144 VAL

• Molecule 67: Putative 60S ribosomal protein L26

Chain W:

80%   ·   17%

MET ALA SER ILE K5 E64 V82 V92 K107 S122 SER LYS SER ASP LYS GLY LYS LYS ILE SER ALA ALA ASP LYS ALA MET GLN GLN MET ASP

• Molecule 68: Putative ribosomal protein L24

Chain X:

50%   ·   48%

M1 R20 Y59 R64 LYS THR THR THR ASP ARG VAL ASN ARG ARG ARG ALA ALA ARG ALA VAL ARG VAL GLN ARG ALA ALA ILE VAL GLY ALA ASP LEU SER TYR ILE GLU GLN VAL ARG ALA ALA ARG GLU ASP ARG SER ALA LYS ALA VAL ARG GLU VAL ALA

GLU ARG LYS ALA ALA LYS LYS

• Molecule 69: 60S ribosomal protein L27

Chain Y:

95%   ··

MET THR K3 K9 T83 K104 R105 S106 R113 F134

• Molecule 70: Putative 60S ribosomal protein L28

Chain Z:

93%   6% ·

MET S2 R17 N35 C62 R75 V87 R113 K129 S138 R139 R146 ASN

• Molecule 71: Putative 60S ribosomal protein L35

Chain a:

94%   ··

MET SER HIS H4 C81 T92 K117 K126 ILE

• Molecule 72: 60S ribosomal protein L29

Chain b:

93%

MET A2 R18 K33 K69 ASN

• Molecule 73: Putative 60S ribosomal protein L7

Chain c:

89%   9%

MET ALA THR HIS SER VAL TYR GLY ASN ALA SER ASP MET PRO ALA VAL PRO ALA PRO GLU SER ALA ILE K24 R43 K60 K131 R225 Y237 I252
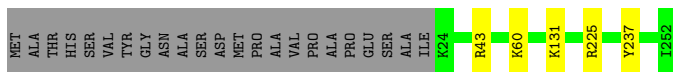
• Molecule 74: 60S ribosomal protein L30

Chain d:

83%   6%   12%

MET ALA LYS LYS THR LYS SER LYS VAL D10 K21 S22 Q38 S73 C90 V97 D101 ILE ALA ALA

• Molecule 75: Putative 60S ribosomal subunit protein L31

Chain e:

93%

MET T2 S29 R30 M45 E48 K123 R148 E156 THR THR GLU GLY ASN LYS H163 E187 GLN
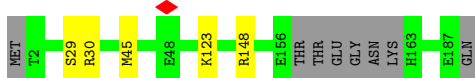
• Molecule 76: 60S ribosomal protein L32

Chain f:

92%   6%

MET V2 K3 V87 K126 LEU ARG LYS ILE ALA ASN GLN
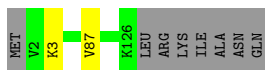
• Molecule 77: Putative ribosomal protein l35a

Chain g:

98%

MET THR T3 L14 I144
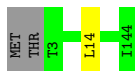
• Molecule 78: Putative 60S ribosomal protein L34

Chain h:

72%   24%

MET S2 M12 W47 H62 S69 L116 K128 GLN SER LYS LYS GLU ALA ILE ALA LYS ILE SER THR LYS THR VAL SER LYS LYS VAL PRO ALA LYS ALA THR THR ARG GLN PRO VAL GLY SER LEU VAL LYS LYS
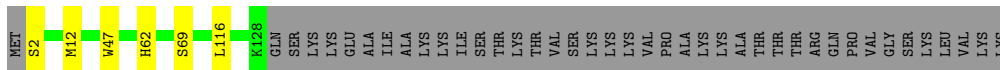
• Molecule 79: Putative 60S Ribosomal protein L36

Chain i: 80%   •   16%

MET SER A3 T21 R25 Q26 PRO SER PRO ASN ASP ARG PHE ALA VAL P36 R79 R98 H99 ALA THR LYS LYS HIS HIS
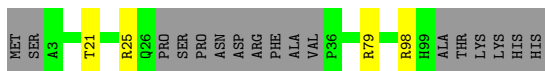
• Molecule 80: Ribosomal protein L37

Chain j: 96%   • •

MET T2 R33 K82 ALA

• Molecule 81: Putative ribosomal protein L38

Chain k: 84%   •   13%

MET P2 C15 R40 S59 P62 S73 HIS ALA LYS THR ASN ALA GLY SER LYS GLN
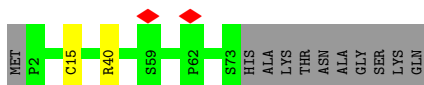
• Molecule 82: Putative 60S ribosomal protein L39

Chain l: 92%   6%   •

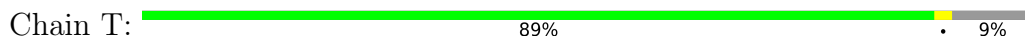MET G2 L29 W37 N38 E39 Y51
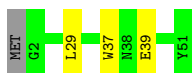
• Molecule 83: Ubiquitin-60S ribosomal protein L40

Chain m: 37%   •   60%

MET GLN ILE PHE VAL LYS THR LEU THR GLY LYS THR ILE ALA LEU GLU VAL GLU PRO SER ASP THR ILE GLU ASN VAL LYS ALA LYS ILE GLN ASP LYS GLU GLY ILE PRO PRO ASP GLN GLN ARG LEU ILE PHE ALA GLY LYS GLN LEU GLU GLU GLY ARG THR LEU SER ASP TYR ASN

ILE GLN LYS GLU SER THR LEU HIS LEU VAL LEU ARG ARG GLY GLY V77 M78 C115 G116 H117 R122 L127 ARG
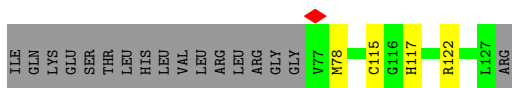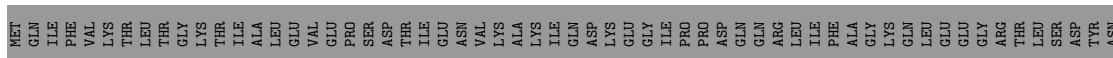
• Molecule 84: 60S ribosomal protein L41

Chain n: 94%   • •

MET G2 R27 K34
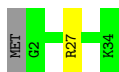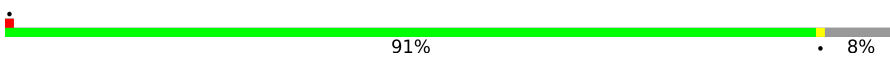
• Molecule 85: 60S ribosomal protein L37a
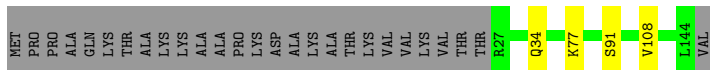
Chain o: 89%   7%   •

MET A2 M8 S40 F41 C42 F47 R80 L89 ALA LYS ILE

• Molecule 86: Putative 60S ribosomal protein L44

Chain p:

91%   •   8%

MET V2 R16 K96 K97 K98 THR GLY ASN LYS ASP PRO THR TRP
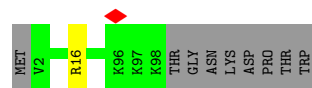
4   Experimental information   ⓘ

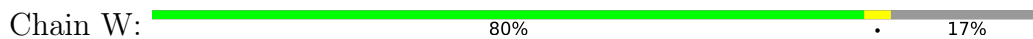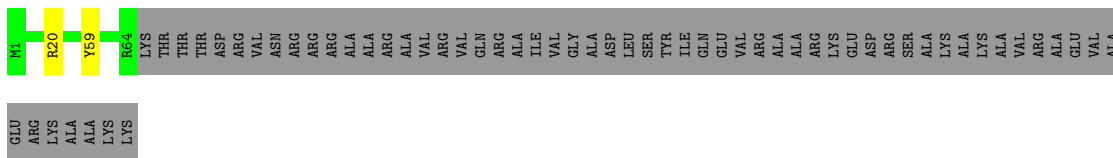| Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	178107	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	0.94	Depositor
Minimum defocus (nm)	700	Depositor
Maximum defocus (nm)	1300	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.181	Depositor
Minimum map value	-0.087	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.008	Depositor
Map size (Å)	395.76, 395.76, 395.76	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.8245, 0.8245, 0.8245	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: MG, OMC, ZN, OMG, 5MC, 7MG, OMU, A2M, MA6, PSU, B8N, K, 1MA, NA

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$|Z|$ >5	RMSZ	#$|Z|$ >5
1	1	0.40	0/37788	0.94	92/58914 (0.2%)
2	2	0.39	0/26311	0.94	66/40996 (0.2%)
3	3	0.36	0/3671	0.96	19/5704 (0.3%)
4	4	0.39	0/4376	0.92	10/6822 (0.1%)
5	5	0.40	0/2739	1.02	6/4263 (0.1%)
6	6	0.33	0/1683	0.93	5/2618 (0.2%)
7	7	0.37	0/3758	0.92	7/5847 (0.1%)
8	8	0.34	0/2829	0.87	4/4405 (0.1%)
9	A	0.28	0/1950	0.61	0/2622
10	B	0.27	0/3117	0.57	0/4212
11	C	0.28	0/2827	0.59	0/3808
12	D	0.27	0/1026	0.50	0/1395
13	E	0.27	0/1415	0.58	0/1914
14	F	0.28	0/1089	0.55	0/1486
15	G	0.26	0/1755	0.56	0/2370
16	H	0.27	0/1769	0.57	0/2381
17	I	0.31	0/1636	0.58	0/2202
18	J	0.29	0/1016	0.57	0/1375
19	K	0.27	0/1285	0.53	0/1736
20	L	0.29	0/1151	0.58	0/1538
21	M	0.29	0/1736	0.60	0/2320
22	N	0.30	0/1639	0.62	0/2194
23	O	0.29	0/2012	0.55	0/2724
24	P	0.29	0/1553	0.58	0/2080
25	Q	0.27	0/1452	0.59	0/1939
26	R	0.29	0/1447	0.53	0/1957
27	S	0.30	0/1263	0.57	0/1705
28	S1	0.33	0/41642	0.89	69/64864 (0.1%)
29	S4	0.33	0/1194	1.05	5/1850 (0.3%)
30	SA	0.27	0/1848	0.57	0/2487
31	SB	0.28	0/1660	0.58	1/2246 (0.0%)
32	SC	0.27	0/1652	0.53	0/2212

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	SD	0.26	0/1393	0.57	0/1874
34	SE	0.27	0/2088	0.58	0/2814
35	SF	0.28	0/1698	0.56	1/2301 (0.0%)
36	SG	0.28	0/1853	0.62	1/2475 (0.0%)
37	SH	0.25	0/1458	0.53	0/1955
38	SI	0.27	0/1649	0.55	0/2220
39	SJ	0.28	0/1038	0.54	0/1391
40	SK	0.27	0/1465	0.62	0/1964
41	SL	0.26	0/1145	0.50	0/1540
42	SM	0.24	0/806	0.56	0/1093
43	SN	0.27	0/831	0.53	0/1127
44	SO	0.29	0/1025	0.60	0/1377
45	SP	0.25	0/1120	0.54	0/1500
46	SQ	0.27	0/682	0.52	0/927
47	SR	0.26	0/1052	0.55	0/1414
48	SS	0.24	0/458	0.55	0/607
49	ST	0.30	0/1178	0.56	0/1580
50	SU	0.27	0/1283	0.55	0/1729
51	SV	0.26	0/584	0.52	0/777
52	SW	0.28	0/926	0.55	0/1245
53	SX	0.25	0/1233	0.52	0/1656
54	SY	0.53	1/625 (0.2%)	0.88	3/851 (0.4%)
55	SZ	0.26	0/1051	0.54	0/1399
56	Sa	0.27	0/563	0.60	0/757
57	Sb	0.32	0/833	0.61	0/1116
58	Sc	0.26	0/580	0.56	0/780
59	Sd	0.25	0/485	0.58	0/652
60	Se	1.54	1/407 (0.2%)	0.81	1/540 (0.2%)
61	Sf	0.26	0/301	0.55	0/396
62	Sg	0.26	0/2339	0.53	0/3183
63	Sh	0.28	0/957	0.55	0/1291
64	T	0.29	0/1235	0.58	0/1656
65	U	0.27	0/810	0.54	0/1086
66	V	0.27	0/941	0.56	0/1269
67	W	0.27	0/951	0.59	0/1270
68	X	0.28	0/569	0.58	0/767
69	Y	0.29	0/1048	0.57	0/1409
70	Z	0.28	0/1111	0.58	0/1492
71	a	0.28	0/1016	0.58	0/1351
72	b	0.27	0/557	0.57	0/743
73	c	0.31	0/1896	0.58	0/2540
74	d	0.28	0/715	0.54	0/968
75	e	0.27	0/1439	0.56	0/1912

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
76	f	0.30	0/1031	0.60	0/1380
77	g	0.28	0/1165	0.59	0/1563
78	h	0.28	0/1034	0.62	0/1378
79	i	0.27	0/699	0.55	0/929
80	j	0.27	0/682	0.66	0/910
81	k	0.27	0/542	0.53	0/733
82	l	0.28	0/463	0.59	0/617
83	m	0.29	0/384	0.70	1/518 (0.2%)
84	n	0.32	0/296	0.76	0/386
85	o	0.30	0/700	0.64	0/933
86	p	0.30	0/788	0.55	0/1043
All	All	0.34	2/215467 (0.0%)	0.81	291/316570 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
42	SM	0	1
49	ST	0	1
57	Sb	0	1
All	All	0	3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	Se	27	PRO	N-CD	-30.60	1.05	1.47
54	SY	46	PRO	CG-CD	-10.96	1.14	1.50

All (291) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
54	SY	46	PRO	N-CD-CG	-14.37	81.64	103.20
60	Se	27	PRO	N-CD-CG	12.94	122.61	103.20
54	SY	46	PRO	CA-CB-CG	-12.65	79.96	104.00
2	2	1236	C	N1-C2-O2	12.65	126.49	118.90
83	m	78	MET	CG-SD-CE	10.13	116.41	100.20
7	7	111	C	N1-C2-O2	9.24	124.44	118.90
2	2	602	A	O5'-P-OP1	-9.20	97.42	105.70
31	SB	53	ASP	CB-CG-OD1	8.84	126.26	118.30
35	SF	90	ASP	CB-CG-OD1	8.63	126.07	118.30

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	3	34	C	C2-N1-C1'	8.55	128.20	118.80
3	3	112	C	N1-C2-O2	8.48	123.99	118.90
1	1	447	G	O4'-C1'-N9	8.36	114.89	108.20
7	7	111	C	N3-C2-O2	-8.29	116.10	121.90
1	1	7	C	C5-C6-N1	8.26	125.13	121.00
1	1	886	G	O4'-C1'-N9	8.19	114.75	108.20
3	3	34	C	N1-C2-O2	8.01	123.70	118.90
3	3	112	C	N3-C2-O2	-7.97	116.32	121.90
7	7	111	C	C2-N1-C1'	7.78	127.36	118.80
3	3	112	C	C6-N1-C2	-7.67	117.23	120.30
1	1	1588	G	O4'-C1'-N9	7.63	114.30	108.20
1	1	1122	U	C2-N1-C1'	7.62	126.85	117.70
2	2	61	C	N1-C2-O2	7.58	123.45	118.90
2	2	1063	C	C2-N1-C1'	7.58	127.14	118.80
29	S4	70	C	C2-N1-C1'	7.49	127.04	118.80
2	2	61	C	C2-N1-C1'	7.39	126.93	118.80
3	3	112	C	C2-N1-C1'	7.29	126.82	118.80
1	1	191	U	C2-N1-C1'	7.27	126.43	117.70
28	S1	1788	U	N3-C2-O2	-7.27	117.11	122.20
1	1	1122	U	N1-C2-O2	7.27	127.89	122.80
28	S1	746	C	N3-C2-O2	-7.27	116.81	121.90
2	2	1222	C	N3-C2-O2	-7.20	116.86	121.90
2	2	1236	C	N3-C2-O2	-7.19	116.86	121.90
29	S4	41	C	N3-C2-O2	-7.17	116.88	121.90
36	SG	172	ASP	CB-CG-OD2	7.13	124.72	118.30
2	2	1063	C	N1-C2-O2	7.11	123.16	118.90
7	7	111	C	C6-N1-C2	-7.01	117.50	120.30
1	1	1746	C	O4'-C1'-N1	6.95	113.76	108.20
28	S1	1788	U	N1-C2-O2	6.94	127.66	122.80
3	3	179	U	C2-N1-C1'	6.86	125.94	117.70
28	S1	2182	G	C4-N9-C1'	6.85	135.41	126.50
28	S1	630	U	C2-N1-C1'	6.82	125.89	117.70
1	1	1122	U	N3-C2-O2	-6.79	117.45	122.20
1	1	625	C	C2-N1-C1'	6.74	126.21	118.80
1	1	1212	C	N3-C2-O2	-6.72	117.20	121.90
5	5	89	C	C6-N1-C2	-6.71	117.62	120.30
3	3	34	C	N3-C2-O2	-6.70	117.21	121.90
1	1	973	U	C2-N1-C1'	6.70	125.74	117.70
1	1	1779	G	N3-C4-N9	-6.60	122.04	126.00
1	1	1212	C	N1-C2-O2	6.59	122.86	118.90
2	2	1236	C	C2-N1-C1'	6.59	126.06	118.80
1	1	1600	U	C2-N1-C1'	6.58	125.60	117.70

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	2	978	C	N3-C2-O2	-6.57	117.30	121.90
28	S1	1510	C	N3-C2-O2	-6.49	117.36	121.90
2	2	811	U	C2-N1-C1'	6.46	125.46	117.70
1	1	348	G	O4'-C1'-N9	6.43	113.35	108.20
3	3	179	U	N1-C2-O2	6.40	127.28	122.80
7	7	28	C	C2-N1-C1'	6.37	125.80	118.80
1	1	1600	U	N1-C2-O2	6.27	127.19	122.80
28	S1	1788	U	C2-N1-C1'	6.23	125.17	117.70
28	S1	486	C	C2-N1-C1'	6.22	125.64	118.80
1	1	1514	C	N3-C2-O2	-6.22	117.55	121.90
2	2	1305	C	C2-N1-C1'	6.21	125.63	118.80
28	S1	1181	C	C2-N1-C1'	6.16	125.58	118.80
2	2	4	C	N3-C2-O2	-6.16	117.59	121.90
1	1	172	G	O4'-C1'-N9	6.16	113.12	108.20
2	2	345	C	C2-N1-C1'	6.14	125.56	118.80
4	4	161	C	N3-C2-O2	-6.14	117.60	121.90
28	S1	2135	U	N3-C2-O2	-6.12	117.91	122.20
1	1	1096	C	O4'-C1'-N1	6.12	113.10	108.20
28	S1	1987	G	O4'-C1'-N9	6.08	113.07	108.20
2	2	44	C	C2-N1-C1'	6.08	125.48	118.80
2	2	1290	C	O4'-C1'-N1	6.07	113.06	108.20
1	1	133	C	N1-C2-O2	6.07	122.54	118.90
2	2	1222	C	C2-N1-C1'	6.06	125.47	118.80
3	3	34	C	C6-N1-C1'	-6.06	113.53	120.80
2	2	756	C	C2-N1-C1'	6.05	125.46	118.80
2	2	808	C	C2-N1-C1'	6.05	125.46	118.80
2	2	1065	C	N1-C2-O2	6.05	122.53	118.90
28	S1	2040	C	C6-N1-C2	-6.05	117.88	120.30
8	8	39	C	C2-N1-C1'	6.04	125.45	118.80
2	2	1023	C	N1-C2-O2	6.04	122.52	118.90
28	S1	1510	C	N1-C2-O2	6.03	122.52	118.90
1	1	563	C	N1-C2-O2	6.01	122.50	118.90
1	1	1261	U	C2-N1-C1'	5.97	124.87	117.70
1	1	331	C	N1-C2-O2	5.94	122.47	118.90
3	3	139	C	N3-C2-O2	-5.92	117.76	121.90
28	S1	1510	C	C2-N1-C1'	5.92	125.31	118.80
3	3	179	U	N3-C2-O2	-5.92	118.06	122.20
1	1	1046	U	C2-N1-C1'	5.91	124.80	117.70
1	1	148	U	N1-C1'-C2'	-5.90	105.51	112.00
2	2	1222	C	N1-C2-O2	5.90	122.44	118.90
1	1	1089	C	C2-N1-C1'	5.88	125.27	118.80
2	2	664	G	C4-N9-C1'	-5.88	118.85	126.50

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
28	S1	782	C	N1-C2-O2	5.88	122.43	118.90
28	S1	2182	G	C8-N9-C1'	-5.87	119.37	127.00
1	1	1600	U	N3-C2-O2	-5.86	118.10	122.20
7	7	5	U	C5-C6-N1	5.86	125.63	122.70
1	1	914	U	C2-N1-C1'	5.86	124.73	117.70
2	2	61	C	N3-C2-O2	-5.85	117.81	121.90
2	2	1143	U	N3-C2-O2	-5.85	118.11	122.20
1	1	1419	C	C2-N1-C1'	5.84	125.23	118.80
28	S1	197	U	C2-N1-C1'	5.83	124.70	117.70
28	S1	1404	U	N3-C2-O2	-5.83	118.12	122.20
28	S1	511	C	C2-N1-C1'	5.82	125.20	118.80
28	S1	2040	C	N3-C2-O2	-5.82	117.83	121.90
1	1	334	G	OP1-P-O3'	5.82	118.00	105.20
29	S4	70	C	C6-N1-C1'	-5.81	113.83	120.80
4	4	177	U	N3-C2-O2	-5.80	118.14	122.20
2	2	7	C	C2-N1-C1'	5.79	125.17	118.80
3	3	188	C	C2-N1-C1'	5.78	125.16	118.80
28	S1	2182	G	O4'-C1'-N9	5.78	112.83	108.20
1	1	191	U	N1-C2-O2	5.77	126.84	122.80
2	2	955	C	N3-C2-O2	-5.76	117.87	121.90
3	3	104	C	C2-N1-C1'	5.75	125.13	118.80
1	1	423	U	N1-C1'-C2'	-5.75	105.68	112.00
2	2	1151	U	N3-C2-O2	-5.73	118.19	122.20
1	1	191	U	N3-C2-O2	-5.72	118.19	122.20
1	1	518	C	C2-N1-C1'	5.72	125.10	118.80
2	2	460	A	O4'-C1'-N9	5.72	112.78	108.20
28	S1	336	U	N3-C2-O2	-5.71	118.20	122.20
5	5	90	C	C2-N1-C1'	5.71	125.08	118.80
6	6	11	G	O4'-C1'-N9	5.71	112.76	108.20
2	2	1222	C	P-O3'-C3'	5.70	126.55	119.70
4	4	138	C	C2-N1-C1'	5.70	125.07	118.80
2	2	134	C	N1-C2-O2	5.70	122.32	118.90
28	S1	354	C	C2-N1-C1'	5.70	125.07	118.80
1	1	542	C	N1-C2-O2	5.68	122.31	118.90
2	2	44	C	N3-C2-O2	-5.68	117.92	121.90
54	SY	46	PRO	CA-N-CD	-5.67	103.56	111.50
2	2	664	G	C8-N9-C1'	5.67	134.38	127.00
8	8	123	C	C2-N1-C1'	5.67	125.04	118.80
28	S1	298	C	N1-C2-O2	5.67	122.30	118.90
2	2	735	C	N1-C2-O2	5.66	122.30	118.90
2	2	1217	C	O4'-C1'-N1	5.66	112.73	108.20
1	1	331	C	N3-C2-O2	-5.66	117.94	121.90

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	613	C	N3-C2-O2	-5.65	117.94	121.90
2	2	1456	C	C2-N1-C1'	5.65	125.02	118.80
2	2	479	C	N3-C2-O2	-5.64	117.95	121.90
1	1	1216	U	C2-N1-C1'	5.63	124.45	117.70
4	4	65	C	O4'-C1'-N1	5.62	112.70	108.20
2	2	741	C	N3-C2-O2	-5.62	117.97	121.90
2	2	134	C	C2-N1-C1'	5.60	124.96	118.80
1	1	727	C	N1-C2-O2	5.59	122.26	118.90
5	5	5	C	C2-N1-C1'	5.59	124.95	118.80
28	S1	336	U	C2-N1-C1'	5.57	124.38	117.70
2	2	1023	C	N3-C2-O2	-5.57	118.00	121.90
1	1	890	C	C2-N1-C1'	5.56	124.92	118.80
4	4	128	U	C2-N1-C1'	5.56	124.38	117.70
28	S1	1956	C	N1-C2-O2	5.55	122.23	118.90
1	1	993	U	N3-C2-O2	-5.55	118.31	122.20
28	S1	784	C	N1-C2-O2	5.53	122.22	118.90
2	2	7	C	N1-C2-O2	5.53	122.22	118.90
2	2	1063	C	C6-N1-C1'	-5.52	114.18	120.80
1	1	719	U	O4'-C1'-N1	5.51	112.61	108.20
2	2	461	C	C5-C6-N1	5.50	123.75	121.00
2	2	479	C	N1-C2-O2	5.50	122.20	118.90
3	3	131	C	C2-N1-C1'	5.50	124.85	118.80
28	S1	1572	C	C2-N1-C1'	5.50	124.85	118.80
1	1	414	A	O4'-C1'-N9	5.50	112.60	108.20
2	2	1236	C	C6-N1-C1'	-5.49	114.22	120.80
28	S1	340	G	O4'-C1'-N9	5.48	112.59	108.20
2	2	479	C	C2-N1-C1'	5.48	124.83	118.80
1	1	518	C	N1-C2-O2	5.47	122.18	118.90
1	1	793	U	C2-N1-C1'	5.47	124.26	117.70
1	1	486	C	N1-C2-O2	5.47	122.18	118.90
1	1	914	U	N3-C2-O2	-5.46	118.38	122.20
4	4	161	C	C2-N1-C1'	5.46	124.80	118.80
2	2	390	A	O4'-C1'-N9	5.43	112.55	108.20
1	1	563	C	N3-C2-O2	-5.42	118.10	121.90
28	S1	1600	C	N3-C2-O2	-5.42	118.10	121.90
1	1	1779	G	C5-C6-O6	5.42	131.85	128.60
1	1	744	C	O4'-C1'-N1	5.42	112.53	108.20
1	1	133	C	N3-C2-O2	-5.42	118.11	121.90
1	1	514	C	N3-C2-O2	-5.42	118.11	121.90
1	1	890	C	N3-C2-O2	-5.42	118.11	121.90
1	1	254	U	N3-C2-O2	-5.41	118.41	122.20
28	S1	1600	C	C2-N1-C1'	5.41	124.75	118.80

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	1238	C	C2-N1-C1'	5.40	124.74	118.80
2	2	41	A	O4'-C1'-N9	5.39	112.51	108.20
1	1	736	C	C6-N1-C2	-5.39	118.14	120.30
1	1	133	C	C2-N1-C1'	5.39	124.73	118.80
1	1	853	C	C2-N1-C1'	5.39	124.73	118.80
28	S1	67	C	N1-C2-O2	5.38	122.13	118.90
1	1	484	A	O4'-C1'-N9	5.38	112.51	108.20
2	2	1115	U	N3-C2-O2	-5.38	118.43	122.20
1	1	625	C	C6-N1-C1'	-5.38	114.35	120.80
5	5	111	C	C2-N1-C1'	5.38	124.71	118.80
28	S1	310	U	C2-N1-C1'	5.37	124.15	117.70
7	7	29	C	C2-N1-C1'	5.36	124.70	118.80
4	4	177	U	N1-C2-O2	5.36	126.55	122.80
1	1	1216	U	N1-C2-O2	5.36	126.55	122.80
6	6	57	U	N3-C2-O2	-5.36	118.45	122.20
28	S1	746	C	N1-C2-O2	5.36	122.11	118.90
28	S1	283	C	N1-C2-O2	5.35	122.11	118.90
28	S1	283	C	C2-N1-C1'	5.34	124.67	118.80
28	S1	133	G	C8-N9-C4	-5.33	104.27	106.40
1	1	414	A	N1-C2-N3	5.31	131.95	129.30
6	6	23	A	P-O3'-C3'	5.31	126.07	119.70
2	2	4	C	C6-N1-C1'	5.31	127.17	120.80
28	S1	1572	C	N3-C2-O2	-5.30	118.19	121.90
2	2	1115	U	N1-C2-O2	5.29	126.51	122.80
28	S1	1510	C	C6-N1-C2	-5.29	118.18	120.30
28	S1	147	U	C2-N1-C1'	5.29	124.05	117.70
2	2	1305	C	C6-N1-C2	-5.29	118.18	120.30
28	S1	589	U	C2-N1-C1'	5.29	124.04	117.70
1	1	7	C	C2-N1-C1'	5.28	124.61	118.80
28	S1	114	U	N3-C2-O2	-5.28	118.51	122.20
28	S1	133	G	N7-C8-N9	5.27	115.73	113.10
3	3	131	C	N1-C2-O2	5.26	122.06	118.90
28	S1	167	C	C2-N1-C1'	5.26	124.58	118.80
2	2	1063	C	N3-C2-O2	-5.26	118.22	121.90
6	6	67	C	N1-C2-O2	5.26	122.05	118.90
29	S4	41	C	N1-C2-O2	5.25	122.05	118.90
2	2	1065	C	N3-C2-O2	-5.24	118.23	121.90
2	2	61	C	C6-N1-C1'	-5.24	114.52	120.80
2	2	134	C	N3-C2-O2	-5.23	118.24	121.90
28	S1	1572	C	C6-N1-C2	-5.23	118.21	120.30
1	1	1728	A	O4'-C1'-N9	5.23	112.38	108.20
3	3	119	C	C2-N1-C1'	5.23	124.55	118.80

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
28	S1	1212	C	C2-N1-C1'	5.22	124.55	118.80
3	3	34	C	C6-N1-C2	-5.22	118.21	120.30
28	S1	630	U	N1-C2-O2	5.22	126.45	122.80
28	S1	155	U	C2-N1-C1'	5.22	123.96	117.70
28	S1	109	C	C2-N1-C1'	5.21	124.54	118.80
29	S4	69	G	N9-C4-C5	-5.21	103.32	105.40
28	S1	659	G	C4-N9-C1'	5.21	133.27	126.50
2	2	735	C	C2-N1-C1'	5.21	124.53	118.80
2	2	975	A	N7-C8-N9	5.20	116.40	113.80
1	1	166	G	O4'-C1'-N9	5.20	112.36	108.20
28	S1	67	C	C2-N1-C1'	5.19	124.51	118.80
1	1	1276	U	N3-C2-O2	-5.18	118.57	122.20
1	1	22	C	C2-N1-C1'	5.18	124.50	118.80
1	1	853	C	N3-C2-O2	-5.18	118.27	121.90
28	S1	2059	C	C2-N1-C1'	5.18	124.50	118.80
2	2	1021	A	N7-C8-N9	5.17	116.39	113.80
28	S1	298	C	N3-C2-O2	-5.17	118.28	121.90
2	2	1221	U	C2-N1-C1'	5.16	123.89	117.70
1	1	924	C	P-O3'-C3'	5.16	125.89	119.70
2	2	1305	C	N3-C2-O2	-5.16	118.29	121.90
1	1	483	C	C2-N1-C1'	5.15	124.47	118.80
28	S1	1273	A	N1-C6-N6	5.15	121.69	118.60
2	2	756	C	N3-C2-O2	-5.15	118.30	121.90
28	S1	1779	U	N3-C2-O2	-5.14	118.60	122.20
28	S1	1278	U	C2-N1-C1'	5.14	123.87	117.70
28	S1	784	C	C2-N1-C1'	5.13	124.44	118.80
1	1	117	G	O4'-C1'-N9	5.12	112.30	108.20
28	S1	1600	C	C6-N1-C2	-5.12	118.25	120.30
28	S1	589	U	N1-C2-O2	5.12	126.38	122.80
1	1	442	A	O4'-C1'-N9	5.11	112.29	108.20
1	1	1252	C	C2-N1-C1'	5.11	124.42	118.80
5	5	112	U	C2-N1-C1'	5.11	123.83	117.70
3	3	139	C	C2-N1-C1'	5.11	124.42	118.80
28	S1	2137	U	N1-C2-N3	5.11	117.96	114.90
1	1	563	C	C2-N1-C1'	5.10	124.41	118.80
28	S1	1973	C	N1-C2-O2	5.10	121.96	118.90
1	1	254	U	C2-N1-C1'	5.10	123.81	117.70
8	8	92	U	N3-C2-O2	-5.09	118.64	122.20
28	S1	1973	C	N3-C2-O2	-5.09	118.34	121.90
1	1	100	G	C8-N9-C1'	-5.09	120.39	127.00
28	S1	147	U	N3-C2-O2	-5.09	118.64	122.20
1	1	191	U	O4'-C1'-N1	5.08	112.27	108.20

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
28	S1	65	A	OP1-P-O3'	5.08	116.39	105.20
1	1	563	C	C6-N1-C2	-5.08	118.27	120.30
1	1	1571	C	C6-N1-C2	-5.08	118.27	120.30
1	1	1779	G	N3-C4-C5	5.08	131.14	128.60
1	1	170	U	P-O3'-C3'	5.07	125.78	119.70
1	1	1219	G	O4'-C1'-N9	5.07	112.26	108.20
4	4	95	U	C2-N1-C1'	5.06	123.77	117.70
2	2	4	C	C2-N1-C1'	-5.06	113.24	118.80
1	1	853	C	N1-C2-O2	5.05	121.93	118.90
2	2	1510	A	C8-N9-C4	5.05	107.82	105.80
28	S1	1961	G	O4'-C1'-N9	5.05	112.24	108.20
2	2	1157	U	N3-C2-O2	-5.05	118.67	122.20
1	1	1514	C	N1-C2-O2	5.04	121.92	118.90
2	2	811	U	C6-N1-C1'	-5.04	114.15	121.20
8	8	123	C	N1-C2-O2	5.03	121.92	118.90
6	6	65	C	N1-C2-O2	5.03	121.92	118.90
1	1	22	C	N1-C2-O2	5.02	121.91	118.90
1	1	613	C	C2-N1-C1'	5.02	124.32	118.80
4	4	138	C	N3-C2-O2	-5.02	118.39	121.90
5	5	125	U	O4'-C1'-N1	5.02	112.21	108.20
4	4	161	C	C4-C5-C6	5.01	119.91	117.40
1	1	100	G	C4-N9-C1'	5.01	133.02	126.50
1	1	208	C	C2-N1-C1'	5.01	124.31	118.80
28	S1	782	C	C2-N1-C1'	5.01	124.31	118.80
1	1	219	U	C2-N1-C1'	5.01	123.71	117.70
28	S1	1181	C	N1-C2-O2	5.01	121.91	118.90
1	1	727	C	C2-N1-C1'	5.01	124.31	118.80
28	S1	92	U	C2-N1-C1'	5.01	123.71	117.70
1	1	148	U	O4'-C1'-N1	5.00	112.20	108.20
28	S1	964	U	N3-C2-O2	-5.00	118.70	122.20

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
42	SM	65	THR	Peptide
49	ST	124	ARG	Sidechain
57	Sb	10	ARG	Sidechain

5.2 Too-close contacts ⓘ

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

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
9	A	254/260 (98%)	248 (98%)	6 (2%)	0	100	100
10	B	397/419 (95%)	389 (98%)	8 (2%)	0	100	100
11	C	364/373 (98%)	351 (96%)	13 (4%)	0	100	100
12	D	152/188 (81%)	143 (94%)	9 (6%)	0	100	100
13	E	184/190 (97%)	172 (94%)	12 (6%)	0	100	100
14	F	144/195 (74%)	136 (94%)	8 (6%)	0	100	100
15	G	222/264 (84%)	216 (97%)	6 (3%)	0	100	100
16	H	218/222 (98%)	217 (100%)	1 (0%)	0	100	100
17	I	206/220 (94%)	199 (97%)	5 (2%)	2 (1%)	13	13
18	J	135/139 (97%)	131 (97%)	4 (3%)	0	100	100
19	K	168/175 (96%)	162 (96%)	6 (4%)	0	100	100
20	L	142/145 (98%)	136 (96%)	6 (4%)	0	100	100
21	M	201/204 (98%)	199 (99%)	2 (1%)	0	100	100
22	N	195/213 (92%)	190 (97%)	5 (3%)	0	100	100
23	O	268/305 (88%)	261 (97%)	7 (3%)	0	100	100
24	P	195/198 (98%)	187 (96%)	8 (4%)	0	100	100
25	Q	185/254 (73%)	185 (100%)	0	0	100	100
26	R	176/179 (98%)	172 (98%)	4 (2%)	0	100	100
27	S	155/159 (98%)	151 (97%)	4 (3%)	0	100	100
30	SA	224/264 (85%)	216 (96%)	8 (4%)	0	100	100
31	SB	206/246 (84%)	194 (94%)	12 (6%)	0	100	100

Continued on next page...

W O R L D W I D E
wwPDB
PROTEIN DATA BANK

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
32	SC	211/219 (96%)	208 (99%)	3 (1%)	0	100	100
33	SD	165/190 (87%)	165 (100%)	0	0	100	100
34	SE	258/273 (94%)	253 (98%)	5 (2%)	0	100	100
35	SF	216/265 (82%)	214 (99%)	2 (1%)	0	100	100
36	SG	229/249 (92%)	224 (98%)	4 (2%)	1 (0%)	30	36
37	SH	178/190 (94%)	174 (98%)	4 (2%)	0	100	100
38	SI	197/200 (98%)	194 (98%)	3 (2%)	0	100	100
39	SJ	127/130 (98%)	126 (99%)	1 (1%)	0	100	100
40	SK	178/220 (81%)	174 (98%)	4 (2%)	0	100	100
41	SL	141/149 (95%)	137 (97%)	4 (3%)	0	100	100
42	SM	100/116 (86%)	99 (99%)	1 (1%)	0	100	100
43	SN	97/168 (58%)	92 (95%)	5 (5%)	0	100	100
44	SO	133/144 (92%)	129 (97%)	4 (3%)	0	100	100
45	SP	139/143 (97%)	137 (99%)	2 (1%)	0	100	100
46	SQ	96/141 (68%)	94 (98%)	2 (2%)	0	100	100
47	SR	128/153 (84%)	127 (99%)	1 (1%)	0	100	100
48	SS	54/57 (95%)	54 (100%)	0	0	100	100
49	ST	140/151 (93%)	135 (96%)	5 (4%)	0	100	100
50	SU	154/173 (89%)	149 (97%)	5 (3%)	0	100	100
51	SV	69/143 (48%)	66 (96%)	3 (4%)	0	100	100
52	SW	111/152 (73%)	109 (98%)	2 (2%)	0	100	100
53	SX	150/161 (93%)	144 (96%)	6 (4%)	0	100	100
54	SY	82/164 (50%)	78 (95%)	4 (5%)	0	100	100
55	SZ	125/137 (91%)	123 (98%)	2 (2%)	0	100	100
56	Sa	69/120 (58%)	69 (100%)	0	0	100	100
57	Sb	101/112 (90%)	99 (98%)	2 (2%)	0	100	100
58	Sc	67/86 (78%)	64 (96%)	3 (4%)	0	100	100
59	Sd	64/87 (74%)	63 (98%)	1 (2%)	0	100	100
60	Se	47/66 (71%)	47 (100%)	0	0	100	100
61	Sf	29/152 (19%)	26 (90%)	3 (10%)	0	100	100
62	Sg	290/312 (93%)	284 (98%)	6 (2%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
63	Sh	120/235 (51%)	113 (94%)	7 (6%)	0	100	100
64	T	149/166 (90%)	143 (96%)	6 (4%)	0	100	100
65	U	114/129 (88%)	109 (96%)	5 (4%)	0	100	100
66	V	116/145 (80%)	116 (100%)	0	0	100	100
67	W	116/143 (81%)	114 (98%)	2 (2%)	0	100	100
68	X	62/124 (50%)	61 (98%)	1 (2%)	0	100	100
69	Y	130/134 (97%)	127 (98%)	3 (2%)	0	100	100
70	Z	143/147 (97%)	140 (98%)	3 (2%)	0	100	100
71	a	121/127 (95%)	119 (98%)	2 (2%)	0	100	100
72	b	66/70 (94%)	64 (97%)	2 (3%)	0	100	100
73	c	227/252 (90%)	219 (96%)	8 (4%)	0	100	100
74	d	90/104 (86%)	88 (98%)	2 (2%)	0	100	100
75	e	176/188 (94%)	173 (98%)	3 (2%)	0	100	100
76	f	123/133 (92%)	119 (97%)	4 (3%)	0	100	100
77	g	140/144 (97%)	140 (100%)	0	0	100	100
78	h	125/168 (74%)	122 (98%)	2 (2%)	1 (1%)	16	18
79	i	84/105 (80%)	83 (99%)	1 (1%)	0	100	100
80	j	79/83 (95%)	78 (99%)	1 (1%)	0	100	100
81	k	70/83 (84%)	68 (97%)	2 (3%)	0	100	100
82	l	48/51 (94%)	47 (98%)	1 (2%)	0	100	100
83	m	49/128 (38%)	47 (96%)	2 (4%)	0	100	100
84	n	31/34 (91%)	29 (94%)	2 (6%)	0	100	100
85	o	86/92 (94%)	79 (92%)	7 (8%)	0	100	100
86	p	95/106 (90%)	92 (97%)	3 (3%)	0	100	100
All	All	11096/12926 (86%)	10802 (97%)	290 (3%)	4 (0%)	100	100

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
36	SG	172	ASP
78	h	62	HIS
17	I	16	HIS
17	I	152	THR

5.3.2 Protein sidechains ⓘ

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	
9	A	190/204 (93%)	187 (98%)	3 (2%)	58	71
10	B	303/351 (86%)	295 (97%)	8 (3%)	41	54
11	C	277/301 (92%)	264 (95%)	13 (5%)	22	30
12	D	61/162 (38%)	59 (97%)	2 (3%)	33	44
13	E	139/172 (81%)	133 (96%)	6 (4%)	25	34
14	F	99/153 (65%)	95 (96%)	4 (4%)	27	36
15	G	170/221 (77%)	166 (98%)	4 (2%)	44	57
16	H	175/188 (93%)	169 (97%)	6 (3%)	32	43
17	I	161/183 (88%)	157 (98%)	4 (2%)	42	55
18	J	100/111 (90%)	97 (97%)	3 (3%)	36	48
19	K	118/145 (81%)	114 (97%)	4 (3%)	32	43
20	L	113/114 (99%)	110 (97%)	3 (3%)	40	52
21	M	174/180 (97%)	170 (98%)	4 (2%)	45	58
22	N	166/179 (93%)	153 (92%)	13 (8%)	10	12
23	O	162/242 (67%)	157 (97%)	5 (3%)	35	47
24	P	159/164 (97%)	154 (97%)	5 (3%)	35	47
25	Q	125/198 (63%)	121 (97%)	4 (3%)	34	45
26	R	146/159 (92%)	143 (98%)	3 (2%)	48	62
27	S	126/134 (94%)	118 (94%)	8 (6%)	15	19
30	SA	197/222 (89%)	190 (96%)	7 (4%)	30	41
31	SB	173/202 (86%)	154 (89%)	19 (11%)	5	4
32	SC	170/184 (92%)	160 (94%)	10 (6%)	16	21
33	SD	144/164 (88%)	135 (94%)	9 (6%)	15	19
34	SE	215/225 (96%)	210 (98%)	5 (2%)	45	58
35	SF	174/208 (84%)	170 (98%)	4 (2%)	45	58
36	SG	189/208 (91%)	177 (94%)	12 (6%)	15	19

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
37	SH	151/159 (95%)	143 (95%)	8 (5%)	19	25
38	SI	175/186 (94%)	167 (95%)	8 (5%)	23	31
39	SJ	110/111 (99%)	106 (96%)	4 (4%)	30	41
40	SK	141/176 (80%)	135 (96%)	6 (4%)	25	34
41	SL	113/120 (94%)	111 (98%)	2 (2%)	54	67
42	SM	92/104 (88%)	89 (97%)	3 (3%)	33	44
43	SN	86/128 (67%)	80 (93%)	6 (7%)	12	15
44	SO	103/113 (91%)	97 (94%)	6 (6%)	17	21
45	SP	114/117 (97%)	106 (93%)	8 (7%)	12	15
46	SQ	58/120 (48%)	54 (93%)	4 (7%)	13	15
47	SR	107/130 (82%)	101 (94%)	6 (6%)	17	22
48	SS	47/49 (96%)	46 (98%)	1 (2%)	48	62
49	ST	124/132 (94%)	122 (98%)	2 (2%)	58	71
50	SU	132/152 (87%)	125 (95%)	7 (5%)	19	25
51	SV	62/126 (49%)	59 (95%)	3 (5%)	21	29
52	SW	95/130 (73%)	86 (90%)	9 (10%)	7	7
53	SX	121/131 (92%)	117 (97%)	4 (3%)	33	44
54	SY	64/116 (55%)	62 (97%)	2 (3%)	35	47
55	SZ	109/118 (92%)	101 (93%)	8 (7%)	11	13
56	Sa	63/95 (66%)	59 (94%)	4 (6%)	15	19
57	Sb	84/93 (90%)	78 (93%)	6 (7%)	12	14
58	Sc	60/76 (79%)	59 (98%)	1 (2%)	56	69
59	Sd	49/75 (65%)	46 (94%)	3 (6%)	15	20
60	Se	41/54 (76%)	39 (95%)	2 (5%)	21	28
61	Sf	32/126 (25%)	29 (91%)	3 (9%)	7	7
62	Sg	243/265 (92%)	236 (97%)	7 (3%)	37	49
63	Sh	80/177 (45%)	68 (85%)	12 (15%)	2	1
64	T	127/143 (89%)	124 (98%)	3 (2%)	44	57
65	U	57/114 (50%)	54 (95%)	3 (5%)	19	25
66	V	96/124 (77%)	92 (96%)	4 (4%)	25	35
67	W	99/122 (81%)	95 (96%)	4 (4%)	27	36

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
68	X	58/104 (56%)	56 (97%)	2 (3%)	32	43
69	Y	100/116 (86%)	95 (95%)	5 (5%)	20	28
70	Z	108/118 (92%)	99 (92%)	9 (8%)	9	10
71	a	106/118 (90%)	103 (97%)	3 (3%)	38	51
72	b	56/58 (97%)	53 (95%)	3 (5%)	18	24
73	c	191/209 (91%)	186 (97%)	5 (3%)	41	54
74	d	80/89 (90%)	74 (92%)	6 (8%)	11	13
75	e	148/158 (94%)	143 (97%)	5 (3%)	32	43
76	f	106/115 (92%)	104 (98%)	2 (2%)	52	65
77	g	119/121 (98%)	118 (99%)	1 (1%)	79	87
78	h	104/146 (71%)	99 (95%)	5 (5%)	21	29
79	i	68/88 (77%)	64 (94%)	4 (6%)	16	21
80	j	67/70 (96%)	66 (98%)	1 (2%)	60	73
81	k	52/74 (70%)	50 (96%)	2 (4%)	28	39
82	l	46/47 (98%)	43 (94%)	3 (6%)	14	17
83	m	37/113 (33%)	34 (92%)	3 (8%)	9	11
84	n	30/32 (94%)	29 (97%)	1 (3%)	33	44
85	o	69/74 (93%)	63 (91%)	6 (9%)	8	8
86	p	80/92 (87%)	79 (99%)	1 (1%)	65	77
All	All	8886/10798 (82%)	8502 (96%)	384 (4%)	27	34

All (384) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
9	A	148	LEU
9	A	218	HIS
9	A	247	ARG
10	B	45	SER
10	B	73	VAL
10	B	101	THR
10	B	217	SER
10	B	246	LYS
10	B	283	LEU
10	B	308	THR
10	B	310	LYS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
11	C	13	SER
11	C	37	LYS
11	C	70	ARG
11	C	94	MET
11	C	121	PHE
11	C	146	VAL
11	C	204	ARG
11	C	285	THR
11	C	289	ARG
11	C	344	ARG
11	C	353	ARG
11	C	354	LYS
11	C	356	LYS
12	D	71	CYS
12	D	125	TYR
13	E	18	VAL
13	E	24	LYS
13	E	28	THR
13	E	88	ARG
13	E	108	ASN
13	E	176	ASP
14	F	55	LYS
14	F	91	VAL
14	F	94	SER
14	F	144	THR
15	G	46	ASP
15	G	189	ASP
15	G	219	VAL
15	G	254	ASN
16	H	79	ARG
16	H	86	LYS
16	H	111	LYS
16	H	155	THR
16	H	184	SER
16	H	203	GLU
17	I	14	LYS
17	I	68	VAL
17	I	132	PRO
17	I	175	ARG
18	J	7	ASN
18	J	66	LYS
18	J	122	LYS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
19	K	23	ARG
19	K	35	ARG
19	K	131	LYS
19	K	135	THR
20	L	60	HIS
20	L	63	ARG
20	L	104	SER
21	M	24	ARG
21	M	117	ASN
21	M	124	ASP
21	M	189	ARG
22	N	12	CYS
22	N	28	ASP
22	N	32	ARG
22	N	39	ARG
22	N	43	VAL
22	N	44	ASP
22	N	51	HIS
22	N	71	GLN
22	N	87	MET
22	N	125	VAL
22	N	140	THR
22	N	208	MET
22	N	209	ARG
23	O	53	VAL
23	O	66	GLN
23	O	93	THR
23	O	130	SER
23	O	202	ARG
24	P	17	HIS
24	P	72	LYS
24	P	106	ARG
24	P	118	GLN
24	P	144	TYR
25	Q	36	ASN
25	Q	115	ILE
25	Q	117	ARG
25	Q	179	LYS
26	R	2	VAL
26	R	138	HIS
26	R	156	ARG
27	S	28	SER

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
27	S	49	ARG
27	S	70	ARG
27	S	84	THR
27	S	97	ARG
27	S	98	LYS
27	S	115	TYR
27	S	150	VAL
30	SA	59	ASP
30	SA	75	GLN
30	SA	110	ASP
30	SA	172	LYS
30	SA	194	VAL
30	SA	215	ARG
30	SA	221	ARG
31	SB	12	ARG
31	SB	14	LYS
31	SB	19	GLN
31	SB	25	ARG
31	SB	53	ASP
31	SB	83	ARG
31	SB	88	ARG
31	SB	96	HIS
31	SB	100	SER
31	SB	102	HIS
31	SB	123	ARG
31	SB	143	VAL
31	SB	158	GLU
31	SB	160	VAL
31	SB	166	CYS
31	SB	176	MET
31	SB	194	ARG
31	SB	207	TYR
31	SB	208	ARG
32	SC	75	ARG
32	SC	131	LYS
32	SC	142	LYS
32	SC	144	GLN
32	SC	155	TYR
32	SC	163	HIS
32	SC	164	LYS
32	SC	173	HIS
32	SC	175	TYR

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
32	SC	200	SER
33	SD	1	MET
33	SD	20	LYS
33	SD	21	GLU
33	SD	60	THR
33	SD	68	ARG
33	SD	93	ASP
33	SD	150	SER
33	SD	153	ARG
33	SD	167	ARG
34	SE	35	LEU
34	SE	68	HIS
34	SE	140	ASP
34	SE	158	VAL
34	SE	165	LYS
35	SF	64	GLU
35	SF	80	ASP
35	SF	90	ASP
35	SF	234	TYR
36	SG	7	TYR
36	SG	32	ARG
36	SG	52	ARG
36	SG	71	SER
36	SG	89	ARG
36	SG	96	ARG
36	SG	104	VAL
36	SG	108	ASP
36	SG	149	ASN
36	SG	172	ASP
36	SG	196	LYS
36	SG	230	LYS
37	SH	25	ARG
37	SH	51	ARG
37	SH	52	MET
37	SH	64	PHE
37	SH	67	ARG
37	SH	113	ARG
37	SH	121	ARG
37	SH	189	ASN
38	SI	19	LEU
38	SI	54	VAL
38	SI	76	LYS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
38	SI	88	ARG
38	SI	104	LYS
38	SI	141	ARG
38	SI	162	ARG
38	SI	164	ARG
39	SJ	23	ARG
39	SJ	30	SER
39	SJ	54	ASP
39	SJ	118	SER
40	SK	44	SER
40	SK	58	LEU
40	SK	76	VAL
40	SK	81	VAL
40	SK	184	VAL
40	SK	213	LYS
41	SL	27	VAL
41	SL	142	THR
42	SM	35	GLN
42	SM	97	LYS
42	SM	115	ASP
43	SN	4	TYR
43	SN	17	PHE
43	SN	26	LYS
43	SN	44	VAL
43	SN	60	ASN
43	SN	94	MET
44	SO	15	LYS
44	SO	77	ARG
44	SO	110	ARG
44	SO	123	GLU
44	SO	126	THR
44	SO	135	ARG
45	SP	7	GLN
45	SP	37	LYS
45	SP	72	VAL
45	SP	78	ASP
45	SP	105	PHE
45	SP	118	VAL
45	SP	119	ARG
45	SP	127	ASN
46	SQ	62	CYS
46	SQ	73	TYR

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	SQ	94	ARG
46	SQ	106	ARG
47	SR	32	ARG
47	SR	35	LYS
47	SR	63	GLU
47	SR	70	GLU
47	SR	100	SER
47	SR	122	ARG
48	SS	54	THR
49	ST	30	SER
49	ST	104	ARG
50	SU	14	ASP
50	SU	25	ARG
50	SU	33	MET
50	SU	67	LYS
50	SU	82	ARG
50	SU	116	GLN
50	SU	153	ASN
51	SV	5	ARG
51	SV	7	LYS
51	SV	37	ASP
52	SW	22	PHE
52	SW	44	VAL
52	SW	50	ARG
52	SW	71	LYS
52	SW	72	LYS
52	SW	73	HIS
52	SW	107	HIS
52	SW	130	TYR
52	SW	131	ARG
53	SX	19	LEU
53	SX	26	ARG
53	SX	33	ARG
53	SX	138	ARG
54	SY	8	ASN
54	SY	15	ASP
55	SZ	30	VAL
55	SZ	36	HIS
55	SZ	41	VAL
55	SZ	55	LYS
55	SZ	103	PHE
55	SZ	107	ARG

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
55	SZ	125	ARG
55	SZ	127	LYS
56	Sa	37	GLN
56	Sa	46	THR
56	Sa	70	LYS
56	Sa	87	LYS
57	Sb	65	ASN
57	Sb	70	ARG
57	Sb	74	LYS
57	Sb	87	THR
57	Sb	88	VAL
57	Sb	103	LYS
58	Sc	4	PHE
59	Sd	20	GLN
59	Sd	32	ARG
59	Sd	81	GLU
60	Se	7	SER
60	Se	42	ARG
61	Sf	81	THR
61	Sf	89	ARG
61	Sf	111	TYR
62	Sg	46	ASP
62	Sg	113	VAL
62	Sg	174	ASN
62	Sg	230	PHE
62	Sg	249	TRP
62	Sg	250	MET
62	Sg	280	SER
63	Sh	73	VAL
63	Sh	81	VAL
63	Sh	87	ARG
63	Sh	121	VAL
63	Sh	162	VAL
63	Sh	174	TYR
63	Sh	185	LYS
63	Sh	189	GLU
63	Sh	194	GLU
63	Sh	195	PHE
63	Sh	196	ARG
63	Sh	215	ARG
64	T	23	ARG
64	T	66	LYS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
64	T	137	THR
65	U	73	ASN
65	U	104	ARG
65	U	108	ARG
66	V	34	GLN
66	V	77	LYS
66	V	91	SER
66	V	108	VAL
67	W	64	GLU
67	W	82	VAL
67	W	92	VAL
67	W	107	LYS
68	X	20	ARG
68	X	59	TYR
69	Y	9	LYS
69	Y	83	THR
69	Y	104	LYS
69	Y	106	SER
69	Y	113	ARG
70	Z	17	ARG
70	Z	35	ASN
70	Z	62	CYS
70	Z	75	ARG
70	Z	87	VAL
70	Z	113	ARG
70	Z	129	LYS
70	Z	138	SER
70	Z	139	ARG
71	a	81	CYS
71	a	92	THR
71	a	117	LYS
72	b	18	ARG
72	b	33	LYS
72	b	69	LYS
73	c	43	ARG
73	c	60	LYS
73	c	131	LYS
73	c	225	ARG
73	c	237	TYR
74	d	21	LYS
74	d	22	SER
74	d	38	GLN

Continued from previous page...

Mol	Chain	Res	Type
74	d	73	SER
74	d	90	CYS
74	d	97	VAL
75	e	29	SER
75	e	30	ARG
75	e	45	MET
75	e	123	LYS
75	e	148	ARG
76	f	3	LYS
76	f	87	VAL
77	g	14	LEU
78	h	2	SER
78	h	12	MET
78	h	47	TRP
78	h	69	SER
78	h	116	LEU
79	i	21	THR
79	i	25	ARG
79	i	79	ARG
79	i	98	ARG
80	j	33	ARG
81	k	15	CYS
81	k	40	ARG
82	l	29	LEU
82	l	37	TRP
82	l	39	GLU
83	m	115	CYS
83	m	117	HIS
83	m	122	ARG
84	n	27	ARG
85	o	8	MET
85	o	40	SER
85	o	41	PHE
85	o	42	CYS
85	o	47	PHE
85	o	80	ARG
86	p	16	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
17	I	13	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
22	N	71	GLN
44	SO	13	ASN
50	SU	116	GLN
62	Sg	2	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	1600/1782 (89%)	410 (25%)	33 (2%)
2	2	1147/1526 (75%)	307 (26%)	25 (2%)
28	S1	1759/2204 (79%)	410 (23%)	25 (1%)
29	S4	45/76 (59%)	24 (53%)	1 (2%)
3	3	151/216 (69%)	31 (20%)	5 (3%)
4	4	183/184 (99%)	37 (20%)	1 (0%)
5	5	112/135 (82%)	26 (23%)	2 (1%)
6	6	70/73 (95%)	31 (44%)	3 (4%)
7	7	160/171 (93%)	34 (21%)	3 (1%)
8	8	118/123 (95%)	17 (14%)	0
All	All	5345/6490 (82%)	1327 (24%)	98 (1%)

All (1327) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	7	C
1	1	8	U
1	1	16	G
1	1	24	A
1	1	29	C
1	1	38	A
1	1	41	A
1	1	47	C
1	1	55	A
1	1	58	A
1	1	63	A
1	1	64	A
1	1	67	C
1	1	70	C
1	1	72	G
1	1	84	G
1	1	86	G
1	1	87	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	91	G
1	1	98	A
1	1	110	A
1	1	117	G
1	1	118	C
1	1	127	G
1	1	129	C
1	1	131	U
1	1	134	A
1	1	135	A
1	1	136	G
1	1	141	U
1	1	142	G
1	1	144	G
1	1	145	U
1	1	146	U
1	1	147	G
1	1	149	G
1	1	153	C
1	1	165	U
1	1	170	U
1	1	171	U
1	1	172	G
1	1	173	G
1	1	176	C
1	1	178	G
1	1	179	G
1	1	182	U
1	1	188	A
1	1	191	U
1	1	192	C
1	1	197	G
1	1	199	A
1	1	201	A
1	1	205	A
1	1	209	C
1	1	216	G
1	1	218	A
1	1	219	U
1	1	223	A
1	1	224	C
1	1	226	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	233	U
1	1	234	G
1	1	237	U
1	1	242	A
1	1	243	G
1	1	257	U
1	1	265	U
1	1	266	G
1	1	273	A
1	1	280	A
1	1	292	A
1	1	293	C
1	1	305	A2M
1	1	306	G
1	1	307	U
1	1	322	A
1	1	323	U
1	1	324	G
1	1	332	A
1	1	335	U
1	1	336	U
1	1	342	G
1	1	343	U
1	1	344	A
1	1	357	A
1	1	367	A
1	1	368	G
1	1	369	A
1	1	371	U
1	1	373	G
1	1	374	G
1	1	383	U
1	1	391	A
1	1	392	A
1	1	409	U
1	1	410	U
1	1	416	A
1	1	417	G
1	1	419	A
1	1	424	G
1	1	439	U
1	1	440	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	443	A
1	1	444	C
1	1	461	G
1	1	463	C
1	1	464	A
1	1	471	G
1	1	477	C
1	1	485	A
1	1	486	C
1	1	488	G
1	1	489	C
1	1	494	A
1	1	501	C
1	1	502	U
1	1	504	C
1	1	510	U
1	1	515	U
1	1	518	C
1	1	521	G
1	1	522	G
1	1	524	U
1	1	527	A
1	1	535	C
1	1	536	G
1	1	538	G
1	1	542	C
1	1	543	G
1	1	546	G
1	1	547	U
1	1	551	A
1	1	552	G
1	1	553	A
1	1	560	G
1	1	561	G
1	1	565	U
1	1	569	G
1	1	570	A
1	1	571	A
1	1	572	A
1	1	573	U
1	1	574	G
1	1	577	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	578	G
1	1	580	A
1	1	585	U
1	1	586	U
1	1	590	C
1	1	591	U
1	1	592	G
1	1	594	G
1	1	597	C
1	1	598	G
1	1	599	G
1	1	601	G
1	1	606	C
1	1	607	C
1	1	609	C
1	1	611	C
1	1	612	G
1	1	616	U
1	1	617	G
1	1	621	U
1	1	623	U
1	1	625	C
1	1	627	C
1	1	630	U
1	1	631	G
1	1	632	A
1	1	633	U
1	1	634	G
1	1	635	C
1	1	639	A
1	1	641	G
1	1	648	A
1	1	651	G
1	1	652	A
1	1	653	A
1	1	666	C
1	1	668	C
1	1	669	C
1	1	678	A2M
1	1	680	C
1	1	681	A2M
1	1	692	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	694	U
1	1	709	A
1	1	710	G
1	1	718	A
1	1	719	U
1	1	721	U
1	1	722	G
1	1	728	C
1	1	735	U
1	1	736	C
1	1	740	C
1	1	741	G
1	1	743	A
1	1	744	C
1	1	745	U
1	1	748	A
1	1	753	A
1	1	761	A
1	1	763	U
1	1	771	U
1	1	775	G
1	1	778	C
1	1	779	A
1	1	782	C
1	1	783	G
1	1	790	C
1	1	792	G
1	1	794	U
1	1	795	U
1	1	803	C
1	1	810	C
1	1	818	C
1	1	823	G
1	1	828	U
1	1	832	G
1	1	835	G
1	1	836	G
1	1	838	G
1	1	850	G
1	1	852	A
1	1	868	A
1	1	895	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	900	C
1	1	903	A
1	1	905	G
1	1	912	C
1	1	922	U
1	1	925	U
1	1	930	U
1	1	947	A
1	1	948	U
1	1	957	C
1	1	965	A
1	1	967	G
1	1	968	A
1	1	972	A
1	1	975	G
1	1	976	A
1	1	985	G
1	1	988	G
1	1	995	C
1	1	998	A
1	1	1011	PSU
1	1	1013	A
1	1	1025	G
1	1	1030	U
1	1	1031	A
1	1	1036	U
1	1	1045	G
1	1	1053	A
1	1	1061	G
1	1	1063	G
1	1	1064	G
1	1	1089	C
1	1	1092	U
1	1	1093	U
1	1	1094	C
1	1	1097	A
1	1	1098	A
1	1	1100	C
1	1	1108	G
1	1	1114	A
1	1	1116	A
1	1	1121	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	1122	U
1	1	1123	G
1	1	1124	C
1	1	1129	G
1	1	1133	A
1	1	1135	U
1	1	1136	G
1	1	1137	C
1	1	1141	G
1	1	1144	G
1	1	1148	A
1	1	1150	A
1	1	1153	A
1	1	1156	A
1	1	1159	A
1	1	1161	A
1	1	1162	G
1	1	1165	A
1	1	1171	PSU
1	1	1172	G
1	1	1174	G
1	1	1188	G
1	1	1196	G
1	1	1201	U
1	1	1207	A
1	1	1210	A
1	1	1216	U
1	1	1217	U
1	1	1220	G
1	1	1231	G
1	1	1239	U
1	1	1240	U
1	1	1242	U
1	1	1243	G
1	1	1249	A
1	1	1250	U
1	1	1251	U
1	1	1252	C
1	1	1253	U
1	1	1254	C
1	1	1258	A
1	1	1261	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	1262	G
1	1	1263	A
1	1	1267	G
1	1	1274	G
1	1	1280	U
1	1	1351	C
1	1	1352	C
1	1	1364	A
1	1	1367	U
1	1	1369	G
1	1	1371	OMU
1	1	1378	U
1	1	1379	A
1	1	1388	U
1	1	1389	A
1	1	1390	G
1	1	1391	U
1	1	1395	U
1	1	1401	U
1	1	1413	U
1	1	1420	G
1	1	1421	G
1	1	1422	A
1	1	1423	A
1	1	1424	A
1	1	1426	A
1	1	1427	A
1	1	1438	A
1	1	1439	A
1	1	1441	U
1	1	1445	G
1	1	1446	C
1	1	1455	U
1	1	1464	G
1	1	1465	G
1	1	1470	G
1	1	1476	A
1	1	1480	C
1	1	1489	U
1	1	1490	G
1	1	1504	A
1	1	1505	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	1508	A
1	1	1509	C
1	1	1519	G
1	1	1524	OMG
1	1	1527	OMC
1	1	1536	C
1	1	1540	OMG
1	1	1545	G
1	1	1547	U
1	1	1557	A
1	1	1560	U
1	1	1566	A
1	1	1569	U
1	1	1574	C
1	1	1575	G
1	1	1586	G
1	1	1590	G
1	1	1613	C
1	1	1636	A
1	1	1639	U
1	1	1653	U
1	1	1654	A
1	1	1655	U
1	1	1661	U
1	1	1662	G
1	1	1663	U
1	1	1666	G
1	1	1667	G
1	1	1672	U
1	1	1674	A
1	1	1676	G
1	1	1723	A
1	1	1724	C
1	1	1726	G
1	1	1727	A
1	1	1728	A
1	1	1729	A
1	1	1730	A
1	1	1731	G
1	1	1734	G
1	1	1737	A
1	1	1739	A

Continued from previous page...

Mol	Chain	Res	Type
1	1	1743	A
1	1	1744	A
1	1	1746	C
1	1	1747	U
1	1	1751	A
1	1	1757	U
1	1	1758	U
1	1	1762	A
1	1	1763	A
1	1	1766	G
1	1	1771	U
1	1	1772	G
1	1	1776	G
1	1	1780	G
2	2	4	C
2	2	5	A
2	2	6	A
2	2	7	C
2	2	22	A
2	2	25	A
2	2	29	C
2	2	49	A
2	2	61	C
2	2	62	A
2	2	63	U
2	2	68	A
2	2	69	A
2	2	75	C
2	2	77	C
2	2	90	G
2	2	97	A
2	2	98	G
2	2	122	PSU
2	2	123	G
2	2	125	C
2	2	127	C
2	2	134	C
2	2	340	A
2	2	342	U
2	2	343	U
2	2	347	A
2	2	348	A

Continued from previous page...

Mol	Chain	Res	Type
2	2	349	C
2	2	350	U
2	2	351	C
2	2	358	G
2	2	368	G
2	2	377	A
2	2	386	U
2	2	388	A
2	2	404	A
2	2	415	U
2	2	416	G
2	2	434	A
2	2	436	U
2	2	444	A
2	2	451	U
2	2	452	G
2	2	453	A
2	2	454	A
2	2	455	U
2	2	456	G
2	2	458	C
2	2	459	A
2	2	460	A
2	2	461	C
2	2	471	U
2	2	472	PSU
2	2	478	A
2	2	490	A
2	2	492	G
2	2	495	G
2	2	496	G
2	2	497	G
2	2	498	A
2	2	499	G
2	2	500	U
2	2	501	A
2	2	502	A
2	2	503	C
2	2	504	U
2	2	506	U
2	2	507	G
2	2	511	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	2	518	G
2	2	519	G
2	2	527	A2M
2	2	529	G
2	2	530	C
2	2	534	OMG
2	2	544	U
2	2	552	C
2	2	554	C
2	2	556	U
2	2	559	A
2	2	561	G
2	2	571	G
2	2	580	U
2	2	582	U
2	2	602	A
2	2	616	G
2	2	619	A
2	2	620	C
2	2	621	G
2	2	623	A
2	2	637	G
2	2	639	G
2	2	640	G
2	2	643	A
2	2	648	A
2	2	649	G
2	2	650	A
2	2	657	U
2	2	658	G
2	2	688	G
2	2	695	G
2	2	696	A
2	2	697	G
2	2	698	G
2	2	703	G
2	2	709	G
2	2	711	G
2	2	712	G
2	2	714	A
2	2	715	G
2	2	716	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	2	718	C
2	2	720	A
2	2	724	C
2	2	725	A
2	2	726	A
2	2	728	U
2	2	731	A
2	2	732	A
2	2	733	U
2	2	734	A
2	2	735	C
2	2	738	C
2	2	739	C
2	2	741	C
2	2	745	G
2	2	746	A
2	2	747	A
2	2	748	C
2	2	749	G
2	2	750	U
2	2	751	U
2	2	752	G
2	2	758	C
2	2	760	U
2	2	761	A
2	2	777	A
2	2	778	A
2	2	779	U
2	2	783	U
2	2	784	U
2	2	789	G
2	2	799	G
2	2	805	G
2	2	808	C
2	2	810	G
2	2	811	U
2	2	819	U
2	2	820	G
2	2	822	G
2	2	823	A
2	2	824	G
2	2	825	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	2	845	C
2	2	846	G
2	2	848	C
2	2	851	C
2	2	947	U
2	2	951	G
2	2	952	G
2	2	953	U
2	2	954	A
2	2	955	C
2	2	974	G
2	2	975	A
2	2	976	A
2	2	979	A
2	2	980	A
2	2	1004	G
2	2	1010	U
2	2	1011	G
2	2	1012	U
2	2	1019	A
2	2	1020	C
2	2	1021	A
2	2	1025	G
2	2	1033	G
2	2	1034	G
2	2	1041	G
2	2	1046	OMG
2	2	1053	A
2	2	1058	PSU
2	2	1064	A
2	2	1075	G
2	2	1078	OMG
2	2	1079	U
2	2	1083	A
2	2	1084	A
2	2	1096	U
2	2	1101	A
2	2	1111	C
2	2	1112	A
2	2	1115	U
2	2	1116	A
2	2	1118	A

Continued from previous page...

Mol	Chain	Res	Type
2	2	1121	A
2	2	1122	C
2	2	1123	A
2	2	1129	A
2	2	1132	A
2	2	1137	G
2	2	1139	U
2	2	1141	G
2	2	1147	C
2	2	1148	G
2	2	1156	G
2	2	1157	U
2	2	1161	A
2	2	1162	A
2	2	1165	G
2	2	1171	G
2	2	1178	C
2	2	1179	A
2	2	1180	A
2	2	1181	G
2	2	1185	A2M
2	2	1189	A
2	2	1199	A
2	2	1201	G
2	2	1203	A
2	2	1204	U
2	2	1206	G
2	2	1207	G
2	2	1209	A
2	2	1215	A
2	2	1216	A
2	2	1217	C
2	2	1218	A
2	2	1223	A
2	2	1229	OMG
2	2	1233	U
2	2	1234	G
2	2	1237	A
2	2	1238	G
2	2	1239	A
2	2	1240	A
2	2	1241	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	2	1246	A
2	2	1248	OMC
2	2	1252	G
2	2	1255	A
2	2	1271	G
2	2	1274	C
2	2	1278	C
2	2	1281	U
2	2	1283	A
2	2	1284	U
2	2	1288	G
2	2	1289	A
2	2	1290	C
2	2	1291	G
2	2	1294	G
2	2	1297	U
2	2	1300	U
2	2	1305	C
2	2	1309	G
2	2	1313	U
2	2	1314	C
2	2	1325	A
2	2	1336	G
2	2	1337	C
2	2	1342	G
2	2	1349	A
2	2	1354	PSU
2	2	1361	PSU
2	2	1363	C
2	2	1365	C
2	2	1366	C
2	2	1373	C
2	2	1374	A
2	2	1379	A
2	2	1380	C
2	2	1385	G
2	2	1389	G
2	2	1392	U
2	2	1409	A
2	2	1416	U
2	2	1421	C
2	2	1428	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	2	1433	G
2	2	1437	A
2	2	1441	C
2	2	1443	A
2	2	1444	G
2	2	1445	A
2	2	1448	A
2	2	1450	G
2	2	1454	A
2	2	1455	U
2	2	1458	G
2	2	1463	A
2	2	1465	G
2	2	1492	G
2	2	1494	G
2	2	1500	U
2	2	1501	G
2	2	1503	G
2	2	1504	U
2	2	1510	A
2	2	1511	U
2	2	1512	G
2	2	1513	G
2	2	1514	U
2	2	1522	U
2	2	1524	A
2	2	1525	C
3	3	35	A
3	3	41	A
3	3	42	U
3	3	59	U
3	3	60	U
3	3	63	U
3	3	64	U
3	3	99	U
3	3	109	U
3	3	110	U
3	3	111	A
3	3	112	C
3	3	113	U
3	3	116	U
3	3	124	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	3	125	U
3	3	142	G
3	3	149	A
3	3	150	A
3	3	151	A
3	3	180	U
3	3	181	G
3	3	184	A
3	3	187	U
3	3	188	C
3	3	192	G
3	3	199	A
3	3	201	C
3	3	202	A
3	3	210	G
3	3	214	U
4	4	4	G
4	4	9	G
4	4	16	G
4	4	24	A
4	4	40	G
4	4	50	G
4	4	51	U
4	4	52	A
4	4	60	A
4	4	61	A
4	4	64	C
4	4	65	C
4	4	66	C
4	4	69	G
4	4	83	U
4	4	85	C
4	4	86	U
4	4	102	G
4	4	106	G
4	4	114	A
4	4	120	U
4	4	121	C
4	4	127	G
4	4	128	U
4	4	133	C
4	4	144	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	4	148	C
4	4	149	U
4	4	150	A
4	4	151	A
4	4	153	C
4	4	157	A
4	4	158	A
4	4	159	G
4	4	168	A
4	4	170	G
4	4	173	C
5	5	6	G
5	5	15	C
5	5	24	G
5	5	29	U
5	5	39	G
5	5	50	C
5	5	51	A
5	5	52	U
5	5	53	G
5	5	65	U
5	5	68	G
5	5	87	U
5	5	88	C
5	5	89	C
5	5	92	A
5	5	99	G
5	5	105	U
5	5	106	G
5	5	109	G
5	5	113	G
5	5	117	U
5	5	118	U
5	5	119	U
5	5	120	C
5	5	123	G
5	5	124	C
6	6	5	C
6	6	7	A
6	6	12	C
6	6	15	C
6	6	22	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
6	6	24	C
6	6	25	U
6	6	26	G
6	6	33	G
6	6	39	U
6	6	40	C
6	6	41	G
6	6	42	A
6	6	43	A
6	6	44	G
6	6	45	G
6	6	51	A
6	6	52	G
6	6	54	A
6	6	55	U
6	6	56	A
6	6	57	U
6	6	64	U
6	6	65	C
6	6	67	C
6	6	68	A
6	6	69	A
6	6	70	G
6	6	71	A
6	6	72	C
6	6	73	A
7	7	2	A
7	7	5	U
7	7	6	G
7	7	16	A
7	7	19	A
7	7	22	U
7	7	31	A
7	7	33	U
7	7	43	A2M
7	7	59	A
7	7	62	A
7	7	63	G
7	7	71	A
7	7	72	A
7	7	84	U
7	7	85	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
7	7	87	A
7	7	88	A
7	7	89	U
7	7	90	U
7	7	94	G
7	7	96	A
7	7	103	A
7	7	104	A
7	7	105	C
7	7	110	A
7	7	119	G
7	7	120	G
7	7	127	C
7	7	128	U
7	7	136	G
7	7	157	U
7	7	158	U
7	7	169	A
8	8	11	G
8	8	22	A
8	8	26	A
8	8	34	A
8	8	37	U
8	8	45	G
8	8	46	A
8	8	52	G
8	8	57	U
8	8	63	C
8	8	67	C
8	8	68	A
8	8	70	G
8	8	94	A
8	8	95	U
8	8	104	A
8	8	114	G
28	S1	3	U
28	S1	17	C
28	S1	25	C
28	S1	26	A
28	S1	34	G
28	S1	42	G
28	S1	45	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
28	S1	47	A
28	S1	55	A
28	S1	61	C
28	S1	65	A
28	S1	66	U
28	S1	68	A
28	S1	98	A2M
28	S1	102	A
28	S1	103	A
28	S1	109	C
28	S1	112	A
28	S1	114	U
28	S1	117	G
28	S1	122	A
28	S1	129	U
28	S1	133	G
28	S1	144	A
28	S1	145	A
28	S1	146	U
28	S1	147	U
28	S1	149	G
28	S1	150	A
28	S1	158	G
28	S1	164	C
28	S1	165	G
28	S1	167	C
28	S1	168	A
28	S1	170	G
28	S1	171	C
28	S1	174	A
28	S1	175	U
28	S1	181	A
28	S1	182	A
28	S1	194	U
28	S1	195	U
28	S1	197	U
28	S1	198	C
28	S1	199	C
28	S1	232	C
28	S1	234	C
28	S1	235	C
28	S1	237	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
28	S1	247	U
28	S1	249	A
28	S1	252	G
28	S1	253	U
28	S1	254	A
28	S1	255	A
28	S1	264	C
28	S1	275	A
28	S1	276	G
28	S1	277	U
28	S1	278	A
28	S1	284	C
28	S1	285	A
28	S1	287	C
28	S1	288	A
28	S1	295	A
28	S1	308	C
28	S1	309	G
28	S1	310	U
28	S1	311	G
28	S1	316	A
28	S1	321	G
28	S1	327	U
28	S1	329	C
28	S1	340	G
28	S1	341	A
28	S1	349	C
28	S1	356	A
28	S1	358	C
28	S1	360	G
28	S1	364	G
28	S1	381	G
28	S1	382	A
28	S1	387	C
28	S1	396	G
28	S1	404	C
28	S1	433	G
28	S1	443	A
28	S1	444	A
28	S1	445	U
28	S1	446	A
28	S1	447	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
28	S1	451	C
28	S1	454	C
28	S1	462	G
28	S1	464	G
28	S1	467	C
28	S1	469	G
28	S1	474	C
28	S1	477	G
28	S1	481	A
28	S1	482	U
28	S1	487	C
28	S1	497	A
28	S1	500	A
28	S1	501	A
28	S1	502	A
28	S1	516	A
28	S1	523	A
28	S1	525	A
28	S1	528	G
28	S1	548	G
28	S1	551	A
28	S1	552	U
28	S1	553	U
28	S1	554	U
28	S1	555	C
28	S1	556	A
28	S1	559	G
28	S1	565	U
28	S1	566	A
28	S1	569	U
28	S1	574	C
28	S1	576	A
28	S1	580	A
28	S1	581	A
28	S1	585	C
28	S1	588	G
28	S1	590	A
28	S1	591	A
28	S1	592	C
28	S1	594	A
28	S1	606	G
28	S1	614	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
28	S1	617	G
28	S1	628	A
28	S1	631	U
28	S1	632	C
28	S1	643	A
28	S1	660	U
28	S1	668	A2M
28	S1	669	A
28	S1	671	G
28	S1	672	G
28	S1	673	G
28	S1	685	A
28	S1	688	G
28	S1	689	U
28	S1	690	G
28	S1	693	C
28	S1	698	C
28	S1	749	U
28	S1	754	G
28	S1	755	C
28	S1	757	C
28	S1	760	G
28	S1	772	A
28	S1	773	A
28	S1	775	C
28	S1	776	A
28	S1	777	A
28	S1	778	G
28	S1	782	C
28	S1	785	G
28	S1	786	G
28	S1	788	A
28	S1	790	U
28	S1	791	G
28	S1	792	G
28	S1	793	G
28	S1	794	U
28	S1	810	G
28	S1	815	U
28	S1	816	C
28	S1	818	U
28	S1	819	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
28	S1	820	C
28	S1	825	C
28	S1	826	A
28	S1	827	G
28	S1	833	G
28	S1	834	U
28	S1	839	G
28	S1	840	A
28	S1	844	U
28	S1	845	U
28	S1	856	A
28	S1	857	A
28	S1	866	G
28	S1	867	A
28	S1	868	C
28	S1	879	A
28	S1	882	U
28	S1	883	G
28	S1	886	U
28	S1	887	U
28	S1	890	A
28	S1	892	U
28	S1	895	A
28	S1	914	G
28	S1	916	G
28	S1	917	C
28	S1	918	A
28	S1	950	U
28	S1	951	U
28	S1	953	U
28	S1	954	A
28	S1	955	A
28	S1	956	A
28	S1	964	U
28	S1	965	G
28	S1	968	G
28	S1	969	A
28	S1	970	U
28	S1	972	A
28	S1	976	A
28	S1	977	G
28	S1	978	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
28	S1	984	G
28	S1	986	C
28	S1	987	A
28	S1	989	A
28	S1	990	U
28	S1	991	G
28	S1	992	C
28	S1	993	U
28	S1	994	U
28	S1	996	C
28	S1	1015	G
28	S1	1016	G
28	S1	1039	U
28	S1	1102	G
28	S1	1105	A
28	S1	1108	A
28	S1	1109	A
28	S1	1115	G
28	S1	1119	U
28	S1	1123	G
28	S1	1130	A
28	S1	1133	U
28	S1	1139	G
28	S1	1160	A
28	S1	1170	A
28	S1	1180	A
28	S1	1181	C
28	S1	1182	A
28	S1	1197	C
28	S1	1198	A
28	S1	1199	A
28	S1	1207	U
28	S1	1210	C
28	S1	1213	A
28	S1	1235	A
28	S1	1245	A
28	S1	1251	A
28	S1	1252	A
28	S1	1271	C
28	S1	1272	A
28	S1	1273	A
28	S1	1275	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
28	S1	1404	U
28	S1	1443	U
28	S1	1444	G
28	S1	1446	G
28	S1	1448	U
28	S1	1449	U
28	S1	1452	A
28	S1	1466	G
28	S1	1467	U
28	S1	1490	A
28	S1	1502	G
28	S1	1510	C
28	S1	1531	G
28	S1	1537	U
28	S1	1546	A
28	S1	1548	A
28	S1	1551	G
28	S1	1552	G
28	S1	1554	A
28	S1	1566	PSU
28	S1	1569	G
28	S1	1570	G
28	S1	1581	G
28	S1	1591	U
28	S1	1595	G
28	S1	1596	U
28	S1	1597	G
28	S1	1606	C
28	S1	1611	C
28	S1	1613	C
28	S1	1614	U
28	S1	1616	A
28	S1	1621	OMU
28	S1	1637	A
28	S1	1638	U
28	S1	1640	G
28	S1	1651	G
28	S1	1653	U
28	S1	1658	U
28	S1	1666	U
28	S1	1667	U
28	S1	1673	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
28	S1	1675	C
28	S1	1676	G
28	S1	1677	G
28	S1	1679	C
28	S1	1688	A
28	S1	1689	G
28	S1	1690	C
28	S1	1693	C
28	S1	1694	C
28	S1	1696	A
28	S1	1699	A
28	S1	1703	U
28	S1	1706	A
28	S1	1712	G
28	S1	1713	C
28	S1	1718	A
28	S1	1719	G
28	S1	1720	G
28	S1	1725	C
28	S1	1764	U
28	S1	1767	G
28	S1	1773	U
28	S1	1782	G
28	S1	1788	U
28	S1	1789	U
28	S1	1806	A
28	S1	1814	U
28	S1	1816	U
28	S1	1825	A
28	S1	1826	G
28	S1	1828	A
28	S1	1829	OMG
28	S1	1832	C
28	S1	1833	OMU
28	S1	1836	G
28	S1	1860	C
28	S1	1861	A
28	S1	1867	A
28	S1	1872	A
28	S1	1879	OMG
28	S1	1880	U
28	S1	1884	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
28	S1	1887	A
28	S1	1889	G
28	S1	1890	A
28	S1	1891	A
28	S1	1906	G
28	S1	1907	A
28	S1	1908	A
28	S1	1916	G
28	S1	1918	U
28	S1	1923	A
28	S1	1926	G
28	S1	1928	G
28	S1	1933	A
28	S1	1948	U
28	S1	1949	A
28	S1	1950	G
28	S1	1954	C
28	S1	1955	A
28	S1	1956	C
28	S1	1961	G
28	S1	1977	U
28	S1	1979	OMU
28	S1	1988	C
28	S1	1989	A
28	S1	2004	G
28	S1	2010	G
28	S1	2016	C
28	S1	2020	A
28	S1	2021	A2M
28	S1	2030	G
28	S1	2031	A
28	S1	2036	G
28	S1	2054	C
28	S1	2055	A
28	S1	2069	U
28	S1	2078	A
28	S1	2080	G
28	S1	2095	A
28	S1	2097	C
28	S1	2099	G
28	S1	2101	C
28	S1	2118	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
28	S1	2119	C
28	S1	2120	C
28	S1	2121	C
28	S1	2125	A
28	S1	2134	A
28	S1	2136	A
28	S1	2137	U
28	S1	2144	A
28	S1	2145	A
28	S1	2151	OMG
28	S1	2152	A
28	S1	2158	A
28	S1	2159	A
28	S1	2160	G
28	S1	2163	G
28	S1	2169	A
28	S1	2170	G
28	S1	2172	U
28	S1	2183	G
28	S1	2195	G
28	S1	2196	G
28	S1	2197	G
28	S1	2199	C
28	S1	2202	PSU
28	S1	2203	U
29	S4	2	C
29	S4	4	C
29	S4	5	G
29	S4	14	A
29	S4	15	G
29	S4	16	U
29	S4	22	G
29	S4	25	C
29	S4	27	G
29	S4	31	A
29	S4	44	G
29	S4	46	G
29	S4	51	U
29	S4	63	G
29	S4	64	A
29	S4	65	G
29	S4	66	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
29	S4	68	C
29	S4	69	G
29	S4	70	C
29	S4	71	G
29	S4	73	A
29	S4	74	C
29	S4	76	A

All (98) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	141	U
1	1	148	U
1	1	170	U
1	1	172	G
1	1	208	C
1	1	215	U
1	1	334	G
1	1	415	A
1	1	423	U
1	1	488	G
1	1	509	U
1	1	560	G
1	1	584	U
1	1	589	G
1	1	606	C
1	1	611	C
1	1	620	U
1	1	679	A
1	1	774	U
1	1	835	G
1	1	947	A
1	1	967	G
1	1	1011	PSU
1	1	1030	U
1	1	1044	G
1	1	1171	PSU
1	1	1390	G
1	1	1479	A
1	1	1565	A
1	1	1574	C
1	1	1662	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	1730	A
1	1	1742	G
2	2	4	C
2	2	122	PSU
2	2	350	U
2	2	443	OMC
2	2	496	G
2	2	497	G
2	2	510	PSU
2	2	618	A
2	2	696	A
2	2	748	C
2	2	1083	A
2	2	1122	C
2	2	1131	A
2	2	1136	U
2	2	1146	A
2	2	1156	G
2	2	1170	U
2	2	1188	G
2	2	1222	C
2	2	1239	A
2	2	1313	U
2	2	1388	G
2	2	1416	U
2	2	1437	A
2	2	1512	G
3	3	112	C
3	3	149	A
3	3	150	A
3	3	179	U
3	3	180	U
4	4	149	U
5	5	51	A
5	5	106	G
6	6	23	A
6	6	51	A
6	6	71	A
7	7	71	A
7	7	93	C
7	7	95	A
28	S1	65	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
28	S1	128	C
28	S1	236	C
28	S1	276	G
28	S1	284	C
28	S1	294	G
28	S1	308	C
28	S1	310	U
28	S1	328	C
28	S1	550	C
28	S1	568	U
28	S1	777	A
28	S1	790	U
28	S1	889	A
28	S1	1209	C
28	S1	1403	A
28	S1	1639	G
28	S1	1672	C
28	S1	1879	OMG
28	S1	1889	G
28	S1	1907	A
28	S1	1915	U
28	S1	2035	C
28	S1	2119	C
28	S1	2151	OMG
29	S4	13	C

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
1	OMG	1	1540	1,2	18,26,27	2.52	8 (44%)	19,38,41	1.46	4 (21%)
1	PSU	1	1664	1	18,21,22	4.56	7 (38%)	22,30,33	1.71	4 (18%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
2	OMG	2	655	2	18,26,27	2.60	8 (44%)	19,38,41	1.50	4 (21%)
1	PSU	1	239	1	18,21,22	4.52	7 (38%)	22,30,33	1.87	5 (22%)
28	OMU	S1	1833	28	19,22,23	3.02	8 (42%)	26,31,34	1.85	5 (19%)
2	PSU	2	122	2	18,21,22	4.54	8 (44%)	22,30,33	1.95	6 (27%)
28	A2M	S1	668	87,28	18,25,26	4.14	7 (38%)	18,36,39	2.83	4 (22%)
28	5MC	S1	2061	28	18,22,23	3.56	7 (38%)	26,32,35	0.99	3 (11%)
2	OMC	2	583	2	19,22,23	2.97	8 (42%)	26,31,34	0.68	0
2	PSU	2	1264	2	18,21,22	4.50	8 (44%)	22,30,33	1.75	4 (18%)
28	A2M	S1	479	28	18,25,26	4.18	7 (38%)	18,36,39	2.70	3 (16%)
7	OMG	7	75	7	18,26,27	2.55	8 (44%)	19,38,41	1.47	4 (21%)
1	OMC	1	1010	1	19,22,23	2.98	8 (42%)	26,31,34	0.73	0
2	A2M	2	628	2	18,25,26	4.19	7 (38%)	18,36,39	2.84	3 (16%)
28	OMC	S1	2140	28	19,22,23	3.01	8 (42%)	26,31,34	0.79	0
28	OMG	S1	600	28	18,26,27	2.60	8 (44%)	19,38,41	1.45	4 (21%)
28	A2M	S1	512	28	18,25,26	4.21	6 (33%)	18,36,39	2.58	3 (16%)
28	PSU	S1	1246	28	18,21,22	4.47	7 (38%)	22,30,33	1.89	5 (22%)
28	OMC	S1	1866	28	19,22,23	3.02	8 (42%)	26,31,34	0.80	0
1	A2M	1	1539	87,1,2	18,25,26	4.22	7 (38%)	18,36,39	2.75	4 (22%)
28	OMC	S1	38	28	19,22,23	2.98	8 (42%)	26,31,34	0.75	0
2	OMG	2	1229	2	18,26,27	2.58	8 (44%)	19,38,41	1.46	4 (21%)
28	PSU	S1	2202	28	18,21,22	4.50	8 (44%)	22,30,33	1.67	5 (22%)
2	OMC	2	443	2	19,22,23	3.00	8 (42%)	26,31,34	0.75	0
1	PSU	1	1402	1	18,21,22	4.45	9 (50%)	22,30,33	1.68	4 (18%)
2	A2M	2	570	1,2	18,25,26	0.61	0	18,36,39	0.87	1 (5%)
2	A2M	2	382	2	18,25,26	4.22	6 (33%)	18,36,39	2.62	3 (16%)
2	PSU	2	1144	2	18,21,22	4.49	7 (38%)	22,30,33	1.92	5 (22%)
2	OMC	2	1248	2	19,22,23	2.99	8 (42%)	26,31,34	0.84	0
28	PSU	S1	1841	28	18,21,22	4.52	8 (44%)	22,30,33	1.66	4 (18%)
2	PSU	2	1060	2	18,21,22	4.50	7 (38%)	22,30,33	1.93	5 (22%)
2	PSU	2	1318	2	18,21,22	4.50	7 (38%)	22,30,33	1.80	5 (22%)
1	OMG	1	1524	1	18,26,27	2.60	8 (44%)	19,38,41	1.55	4 (21%)
28	PSU	S1	609	28	18,21,22	4.53	7 (38%)	22,30,33	1.81	5 (22%)
4	OMG	4	74	4	18,26,27	2.56	8 (44%)	19,38,41	1.40	4 (21%)
1	OMG	1	1626	1	18,26,27	2.56	8 (44%)	19,38,41	1.45	4 (21%)
1	OMU	1	1371	1	19,22,23	3.12	8 (42%)	26,31,34	1.88	6 (23%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
1	A2M	1	235	1	18,25,26	4.23	7 (38%)	18,36,39	2.72	3 (16%)
2	A2M	2	1185	2	18,25,26	4.23	8 (44%)	18,36,39	2.72	3 (16%)
28	PSU	S1	33	28	18,21,22	4.54	7 (38%)	22,30,33	1.87	5 (22%)
1	OMU	1	1659	1	19,22,23	3.02	8 (42%)	26,31,34	1.71	5 (19%)
28	PSU	S1	2046	28	18,21,22	4.44	7 (38%)	22,30,33	1.80	5 (22%)
2	A2M	2	1372	2	18,25,26	4.26	6 (33%)	18,36,39	2.66	3 (16%)
2	PSU	2	593	2	18,21,22	4.50	8 (44%)	22,30,33	1.72	5 (22%)
1	PSU	1	1528	1	18,21,22	4.57	7 (38%)	22,30,33	1.77	5 (22%)
2	OMU	2	1077	2	19,22,23	3.06	8 (42%)	26,31,34	1.76	5 (19%)
28	OMC	S1	18	28	19,22,23	2.97	8 (42%)	26,31,34	0.76	0
28	OMG	S1	1623	87,28	18,26,27	2.59	8 (44%)	19,38,41	1.46	4 (21%)
28	PSU	S1	607	28	18,21,22	4.55	8 (44%)	22,30,33	1.69	4 (18%)
1	A2M	1	681	1	18,25,26	0.62	0	18,36,39	0.75	1 (5%)
1	OMG	1	1190	1	18,26,27	2.57	8 (44%)	19,38,41	1.52	4 (21%)
2	OMC	2	1317	2	19,22,23	2.95	8 (42%)	26,31,34	0.77	0
2	PSU	2	1354	2	18,21,22	4.49	8 (44%)	22,30,33	1.68	5 (22%)
28	PSU	S1	1566	28	18,21,22	4.54	8 (44%)	22,30,33	1.69	4 (18%)
1	OMG	1	959	1	18,26,27	2.60	8 (44%)	19,38,41	1.46	4 (21%)
28	PSU	S1	1192	28	18,21,22	4.51	7 (38%)	22,30,33	1.75	5 (22%)
1	OMC	1	695	1	19,22,23	2.97	8 (42%)	26,31,34	0.74	0
2	PSU	2	512	2	18,21,22	4.53	7 (38%)	22,30,33	1.72	5 (22%)
2	PSU	2	1382	2	18,21,22	0.87	1 (5%)	22,30,33	0.69	0
2	PSU	2	437	2	18,21,22	4.48	7 (38%)	22,30,33	1.76	4 (18%)
28	A2M	S1	98	87,28	18,25,26	4.23	8 (44%)	18,36,39	2.60	3 (16%)
1	PSU	1	1011	1,2	18,21,22	4.46	9 (50%)	22,30,33	1.71	6 (27%)
1	A2M	1	927	1	18,25,26	4.18	7 (38%)	18,36,39	2.73	3 (16%)
7	PSU	7	74	7	18,21,22	4.51	7 (38%)	22,30,33	1.76	5 (22%)
2	PSU	2	1413	2	18,21,22	4.49	7 (38%)	22,30,33	1.75	5 (22%)
2	A2M	2	572	2	18,25,26	4.18	7 (38%)	18,36,39	2.79	3 (16%)
28	7MG	S1	1995	28	22,26,27	4.32	10 (45%)	29,39,42	1.99	9 (31%)
7	A2M	7	162	1,7	18,25,26	4.20	7 (38%)	18,36,39	2.89	3 (16%)
1	OMG	1	856	1	18,26,27	2.58	8 (44%)	19,38,41	1.45	4 (21%)
1	PSU	1	1017	1	18,21,22	4.50	7 (38%)	22,30,33	1.83	5 (22%)
28	A2M	S1	2021	28	18,25,26	4.21	8 (44%)	18,36,39	2.73	3 (16%)
1	OMC	1	1527	1	19,22,23	2.97	8 (42%)	26,31,34	0.72	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
2	5MC	2	524	87,2	18,22,23	3.51	7 (38%)	26,32,35	1.01	2 (7%)
1	OMU	1	845	1	19,22,23	2.99	8 (42%)	26,31,34	2.31	8 (30%)
28	PSU	S1	12	28	18,21,22	4.49	7 (38%)	22,30,33	1.81	5 (22%)
28	PSU	S1	1533	28	18,21,22	4.53	7 (38%)	22,30,33	1.81	5 (22%)
28	MA6	S1	2185	28	18,26,27	1.16	2 (11%)	19,38,41	2.84	2 (10%)
28	OMU	S1	8	87,28	19,22,23	2.99	8 (42%)	26,31,34	1.80	5 (19%)
1	PSU	1	1533	1,2	18,21,22	4.52	7 (38%)	22,30,33	1.85	6 (27%)
1	A2M	1	305	1	18,25,26	4.10	8 (44%)	18,36,39	2.73	3 (16%)
28	OMU	S1	661	28	19,22,23	3.02	8 (42%)	26,31,34	1.70	5 (19%)
2	A2M	2	604	1,2	18,25,26	4.22	7 (38%)	18,36,39	2.67	3 (16%)
2	OMC	2	359	2	19,22,23	3.00	8 (42%)	26,31,34	0.67	0
28	OMG	S1	2151	89,28	18,26,27	2.55	8 (44%)	19,38,41	1.47	4 (21%)
2	OMC	2	1397	2	19,22,23	2.91	8 (42%)	26,31,34	0.74	0
1	A2M	1	407	1	18,25,26	4.27	7 (38%)	18,36,39	2.62	3 (16%)
2	OMU	2	667	2	19,22,23	3.03	8 (42%)	26,31,34	1.78	5 (19%)
2	OMG	2	1046	2	18,26,27	2.58	8 (44%)	19,38,41	1.46	4 (21%)
28	PSU	S1	1657	28	18,21,22	4.48	7 (38%)	22,30,33	1.75	5 (22%)
28	OMG	S1	1865	28	18,26,27	2.58	8 (44%)	19,38,41	1.47	4 (21%)
28	5MC	S1	1544	28	18,22,23	3.61	7 (38%)	26,32,35	0.99	1 (3%)
28	OMG	S1	1879	28	18,26,27	2.60	8 (44%)	19,38,41	1.49	4 (21%)
1	PSU	1	422	1	18,21,22	4.52	7 (38%)	22,30,33	1.78	5 (22%)
2	PSU	2	1303	2	18,21,22	4.50	7 (38%)	22,30,33	1.89	6 (27%)
2	OMC	2	1159	2	19,22,23	3.00	8 (42%)	26,31,34	0.84	0
2	A2M	2	527	87,2	18,25,26	4.00	7 (38%)	18,36,39	2.65	3 (16%)
2	PSU	2	1403	2	18,21,22	4.52	7 (38%)	22,30,33	1.88	6 (27%)
7	PSU	7	69	7	18,21,22	4.52	7 (38%)	22,30,33	1.91	6 (27%)
2	PSU	2	597	2	18,21,22	4.49	7 (38%)	22,30,33	1.84	5 (22%)
28	PSU	S1	104	28	18,21,22	4.52	7 (38%)	22,30,33	1.87	5 (22%)
1	PSU	1	672	87,1	18,21,22	0.87	1 (5%)	22,30,33	0.65	0
2	A2M	2	591	2	18,25,26	4.19	7 (38%)	18,36,39	2.68	3 (16%)
28	PSU	S1	1539	28	18,21,22	4.52	8 (44%)	22,30,33	1.71	4 (18%)
28	PSU	S1	455	28	18,21,22	4.50	8 (44%)	22,30,33	1.68	4 (18%)
2	PSU	2	662	87,2	18,21,22	4.51	7 (38%)	22,30,33	1.90	6 (27%)
2	5MC	2	1308	2	18,22,23	4.65	13 (72%)	26,32,35	1.35	2 (7%)
1	1MA	1	677	87,1	16,25,26	0.80	0	18,37,40	0.70	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
2	A2M	2	1384	87,2	18,25,26	0.62	0	18,36,39	0.96	1 (5%)
2	PSU	2	626	2	18,21,22	4.45	7 (38%)	22,30,33	1.73	5 (22%)
2	PSU	2	510	2	18,21,22	4.54	7 (38%)	22,30,33	1.82	5 (22%)
1	A2M	1	697	1	18,25,26	4.20	7 (38%)	18,36,39	2.60	3 (16%)
2	PSU	2	1265	2	18,21,22	4.51	7 (38%)	22,30,33	1.83	5 (22%)
2	OMG	2	1078	2	18,26,27	2.94	8 (44%)	19,38,41	1.83	6 (31%)
28	PSU	S1	1156	28	18,21,22	4.54	7 (38%)	22,30,33	1.77	5 (22%)
2	PSU	2	1058	2	18,21,22	4.45	7 (38%)	22,30,33	1.70	4 (18%)
2	PSU	2	472	2	18,21,22	4.43	7 (38%)	22,30,33	1.85	5 (22%)
28	OMG	S1	1829	87,28	18,26,27	2.57	8 (44%)	19,38,41	1.47	4 (21%)
1	A2M	1	678	1,2	18,25,26	0.60	0	18,36,39	0.73	1 (5%)
2	OMG	2	71	2	18,26,27	2.59	8 (44%)	19,38,41	1.55	4 (21%)
1	PSU	1	940	1	18,21,22	4.49	7 (38%)	22,30,33	1.91	5 (22%)
28	B8N	S1	1543	28	24,29,30	3.06	5 (20%)	29,42,45	1.72	6 (20%)
1	PSU	1	1181	1	18,21,22	4.58	8 (44%)	22,30,33	1.63	3 (13%)
28	OMU	S1	29	28	19,22,23	3.06	8 (42%)	26,31,34	1.68	5 (19%)
3	OMU	3	13	3	19,22,23	3.04	8 (42%)	26,31,34	1.68	5 (19%)
2	OMU	2	1359	2	19,22,23	3.05	8 (42%)	26,31,34	1.68	5 (19%)
1	A2M	1	858	1	18,25,26	4.19	7 (38%)	18,36,39	2.68	3 (16%)
2	OMU	2	1419	2	19,22,23	0.24	0	26,31,34	0.42	0
2	OMU	2	560	87,2	19,22,23	2.98	8 (42%)	26,31,34	2.13	7 (26%)
2	OMG	2	1253	2	18,26,27	2.59	8 (44%)	19,38,41	1.45	4 (21%)
1	PSU	1	1171	1	18,21,22	4.44	8 (44%)	22,30,33	1.77	4 (18%)
2	PSU	2	1194	2	18,21,22	4.48	7 (38%)	22,30,33	1.84	5 (22%)
28	OMG	S1	1478	28	18,26,27	2.55	8 (44%)	19,38,41	1.47	4 (21%)
2	OMG	2	1360	2	18,26,27	2.59	8 (44%)	19,38,41	1.48	4 (21%)
28	OMU	S1	1979	28	19,22,23	3.08	8 (42%)	26,31,34	1.66	5 (19%)
2	OMG	2	1231	2	18,26,27	2.58	8 (44%)	19,38,41	1.49	4 (21%)
7	OMU	7	7	1,7	19,22,23	2.99	8 (42%)	26,31,34	1.76	5 (19%)
28	OMG	S1	1550	28	18,26,27	2.60	8 (44%)	19,38,41	1.49	4 (21%)
28	OMG	S1	1647	28	18,26,27	2.60	8 (44%)	19,38,41	1.52	4 (21%)
1	OMU	1	847	1	19,22,23	3.00	8 (42%)	26,31,34	1.66	5 (19%)
2	OMU	2	56	1,2	19,22,23	3.00	8 (42%)	26,31,34	1.73	5 (19%)
28	OMU	S1	1621	28	19,22,23	3.02	8 (42%)	26,31,34	1.71	5 (19%)
2	OMU	2	73	2	19,22,23	2.97	8 (42%)	26,31,34	1.50	4 (15%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
28	MA6	S1	2184	28	18,26,27	1.16	2 (11%)	19,38,41	2.86	2 (10%)
1	OMU	1	1107	1	19,22,23	3.02	8 (42%)	26,31,34	1.78	6 (23%)
2	PSU	2	1361	2	18,21,22	4.52	7 (38%)	22,30,33	1.87	5 (22%)
2	A2M	2	95	2	18,25,26	4.30	7 (38%)	18,36,39	2.66	3 (16%)
28	PSU	S1	2048	28	18,21,22	0.86	1 (5%)	22,30,33	0.62	0
1	A2M	1	955	1	18,25,26	4.19	7 (38%)	18,36,39	2.75	3 (16%)
1	PSU	1	1039	1	18,21,22	4.52	7 (38%)	22,30,33	1.70	4 (18%)
2	PSU	2	78	2	18,21,22	4.52	7 (38%)	22,30,33	1.80	5 (22%)
2	OMG	2	641	87,2	18,26,27	2.56	8 (44%)	19,38,41	1.45	3 (15%)
2	OMG	2	534	2	18,26,27	2.60	8 (44%)	19,38,41	1.51	4 (21%)
7	A2M	7	43	7	18,25,26	4.22	7 (38%)	18,36,39	2.80	3 (16%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	OMG	1	1540	1,2	-	2/5/27/28	0/3/3/3
1	PSU	1	1664	1	-	0/7/25/26	0/2/2/2
2	OMG	2	655	2	-	1/5/27/28	0/3/3/3
1	PSU	1	239	1	-	0/7/25/26	0/2/2/2
28	OMU	S1	1833	28	-	2/9/27/28	0/2/2/2
2	PSU	2	122	2	-	2/7/25/26	0/2/2/2
28	A2M	S1	668	87,28	-	3/5/27/28	0/3/3/3
28	5MC	S1	2061	28	-	0/7/25/26	0/2/2/2
2	OMC	2	583	2	-	0/9/27/28	0/2/2/2
2	PSU	2	1264	2	-	2/7/25/26	0/2/2/2
28	A2M	S1	479	28	-	0/5/27/28	0/3/3/3
7	OMG	7	75	7	-	1/5/27/28	0/3/3/3
1	OMC	1	1010	1	-	2/9/27/28	0/2/2/2
2	A2M	2	628	2	-	0/5/27/28	0/3/3/3
28	OMC	S1	2140	28	-	0/9/27/28	0/2/2/2
28	OMG	S1	600	28	-	0/5/27/28	0/3/3/3
28	A2M	S1	512	28	-	1/5/27/28	0/3/3/3
28	PSU	S1	1246	28	-	0/7/25/26	0/2/2/2
28	OMC	S1	1866	28	-	0/9/27/28	0/2/2/2
1	A2M	1	1539	87,1,2	-	1/5/27/28	0/3/3/3
28	OMC	S1	38	28	-	0/9/27/28	0/2/2/2

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	OMG	2	1229	2	-	2/5/27/28	0/3/3/3
28	PSU	S1	2202	28	-	1/7/25/26	0/2/2/2
2	OMC	2	443	2	-	4/9/27/28	0/2/2/2
1	PSU	1	1402	1	-	0/7/25/26	0/2/2/2
2	A2M	2	570	1,2	-	1/5/27/28	0/3/3/3
2	A2M	2	382	2	-	1/5/27/28	0/3/3/3
2	PSU	2	1144	2	-	0/7/25/26	0/2/2/2
2	OMC	2	1248	2	-	2/9/27/28	0/2/2/2
28	PSU	S1	1841	28	-	2/7/25/26	0/2/2/2
2	PSU	2	1060	2	-	0/7/25/26	0/2/2/2
2	PSU	2	1318	2	-	0/7/25/26	0/2/2/2
1	OMG	1	1524	1	-	0/5/27/28	0/3/3/3
28	PSU	S1	609	28	-	0/7/25/26	0/2/2/2
4	OMG	4	74	4	-	0/5/27/28	0/3/3/3
1	OMG	1	1626	1	-	0/5/27/28	0/3/3/3
1	OMU	1	1371	1	-	3/9/27/28	0/2/2/2
1	A2M	1	235	1	-	0/5/27/28	0/3/3/3
2	A2M	2	1185	2	-	2/5/27/28	0/3/3/3
28	PSU	S1	33	28	-	0/7/25/26	0/2/2/2
1	OMU	1	1659	1	-	0/9/27/28	0/2/2/2
28	PSU	S1	2046	28	-	0/7/25/26	0/2/2/2
2	A2M	2	1372	2	-	0/5/27/28	0/3/3/3
2	PSU	2	593	2	-	0/7/25/26	0/2/2/2
1	PSU	1	1528	1	-	0/7/25/26	0/2/2/2
2	OMU	2	1077	2	-	0/9/27/28	0/2/2/2
28	OMC	S1	18	28	-	0/9/27/28	0/2/2/2
28	OMG	S1	1623	87,28	-	1/5/27/28	0/3/3/3
28	PSU	S1	607	28	-	3/7/25/26	0/2/2/2
1	A2M	1	681	1	-	3/5/27/28	0/3/3/3
1	OMG	1	1190	1	-	0/5/27/28	0/3/3/3
2	OMC	2	1317	2	-	0/9/27/28	0/2/2/2
2	PSU	2	1354	2	-	1/7/25/26	0/2/2/2
28	PSU	S1	1566	28	-	2/7/25/26	0/2/2/2
1	OMG	1	959	1	-	0/5/27/28	0/3/3/3
28	PSU	S1	1192	28	-	2/7/25/26	0/2/2/2
1	OMC	1	695	1	-	0/9/27/28	0/2/2/2
2	PSU	2	512	2	-	0/7/25/26	0/2/2/2
2	PSU	2	1382	2	-	0/7/25/26	0/2/2/2
2	PSU	2	437	2	-	0/7/25/26	0/2/2/2
28	A2M	S1	98	87,28	-	2/5/27/28	0/3/3/3

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	PSU	1	1011	1,2	-	1/7/25/26	0/2/2/2
1	A2M	1	927	1	-	0/5/27/28	0/3/3/3
7	PSU	7	74	7	-	0/7/25/26	0/2/2/2
2	PSU	2	1413	2	-	0/7/25/26	0/2/2/2
2	A2M	2	572	2	-	0/5/27/28	0/3/3/3
28	7MG	S1	1995	28	-	2/7/37/38	0/3/3/3
7	A2M	7	162	1,7	-	1/5/27/28	0/3/3/3
1	OMG	1	856	1	-	0/5/27/28	0/3/3/3
1	PSU	1	1017	1	-	0/7/25/26	0/2/2/2
28	A2M	S1	2021	28	-	3/5/27/28	0/3/3/3
1	OMC	1	1527	1	-	1/9/27/28	0/2/2/2
2	5MC	2	524	87,2	-	0/7/25/26	0/2/2/2
1	OMU	1	845	1	-	3/9/27/28	0/2/2/2
28	PSU	S1	12	28	-	0/7/25/26	0/2/2/2
28	PSU	S1	1533	28	-	0/7/25/26	0/2/2/2
28	MA6	S1	2185	28	-	1/7/29/30	0/3/3/3
28	OMU	S1	8	87,28	-	7/9/27/28	0/2/2/2
1	PSU	1	1533	1,2	-	0/7/25/26	0/2/2/2
1	A2M	1	305	1	-	2/5/27/28	0/3/3/3
28	OMU	S1	661	28	-	0/9/27/28	0/2/2/2
2	A2M	2	604	1,2	-	0/5/27/28	0/3/3/3
2	OMC	2	359	2	-	0/9/27/28	0/2/2/2
28	OMG	S1	2151	89,28	-	2/5/27/28	0/3/3/3
2	OMC	2	1397	2	-	0/9/27/28	0/2/2/2
1	A2M	1	407	1	-	0/5/27/28	0/3/3/3
2	OMU	2	667	2	-	0/9/27/28	0/2/2/2
2	OMG	2	1046	2	-	3/5/27/28	0/3/3/3
28	PSU	S1	1657	28	-	1/7/25/26	0/2/2/2
28	OMG	S1	1865	28	-	0/5/27/28	0/3/3/3
28	5MC	S1	1544	28	-	2/7/25/26	0/2/2/2
28	OMG	S1	1879	28	-	3/5/27/28	0/3/3/3
1	PSU	1	422	1	-	0/7/25/26	0/2/2/2
2	PSU	2	1303	2	-	0/7/25/26	0/2/2/2
2	OMC	2	1159	2	-	0/9/27/28	0/2/2/2
2	A2M	2	527	87,2	-	2/5/27/28	0/3/3/3
2	PSU	2	1403	2	-	0/7/25/26	0/2/2/2
7	PSU	7	69	7	-	0/7/25/26	0/2/2/2
2	PSU	2	597	2	-	0/7/25/26	0/2/2/2
28	PSU	S1	104	28	-	0/7/25/26	0/2/2/2
1	PSU	1	672	87,1	-	0/7/25/26	0/2/2/2

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	A2M	2	591	2	-	1/5/27/28	0/3/3/3
28	PSU	S1	1539	28	-	0/7/25/26	0/2/2/2
28	PSU	S1	455	28	-	3/7/25/26	0/2/2/2
2	PSU	2	662	87,2	-	0/7/25/26	0/2/2/2
2	5MC	2	1308	2	-	4/7/25/26	0/2/2/2
1	1MA	1	677	87,1	-	0/3/25/26	0/3/3/3
2	A2M	2	1384	87,2	-	1/5/27/28	0/3/3/3
2	PSU	2	626	2	-	0/7/25/26	0/2/2/2
2	PSU	2	510	2	-	0/7/25/26	0/2/2/2
1	A2M	1	697	1	-	0/5/27/28	0/3/3/3
2	PSU	2	1265	2	-	0/7/25/26	0/2/2/2
2	OMG	2	1078	2	-	2/5/27/28	0/3/3/3
28	PSU	S1	1156	28	-	0/7/25/26	0/2/2/2
2	PSU	2	1058	2	-	2/7/25/26	0/2/2/2
2	PSU	2	472	2	-	0/7/25/26	0/2/2/2
28	OMG	S1	1829	87,28	-	1/5/27/28	0/3/3/3
1	A2M	1	678	1,2	-	2/5/27/28	0/3/3/3
2	OMG	2	71	2	-	0/5/27/28	0/3/3/3
1	PSU	1	940	1	-	0/7/25/26	0/2/2/2
28	B8N	S1	1543	28	-	9/16/34/35	0/2/2/2
1	PSU	1	1181	1	-	2/7/25/26	0/2/2/2
28	OMU	S1	29	28	-	1/9/27/28	0/2/2/2
3	OMU	3	13	3	-	0/9/27/28	0/2/2/2
2	OMU	2	1359	2	-	0/9/27/28	0/2/2/2
1	A2M	1	858	1	-	0/5/27/28	0/3/3/3
2	OMU	2	1419	2	-	0/9/27/28	0/2/2/2
2	OMU	2	560	87,2	-	2/9/27/28	0/2/2/2
2	OMG	2	1253	2	-	0/5/27/28	0/3/3/3
1	PSU	1	1171	1	-	4/7/25/26	0/2/2/2
2	PSU	2	1194	2	-	0/7/25/26	0/2/2/2
28	OMG	S1	1478	28	-	1/5/27/28	0/3/3/3
2	OMG	2	1360	2	-	1/5/27/28	0/3/3/3
28	OMU	S1	1979	28	-	3/9/27/28	0/2/2/2
2	OMG	2	1231	2	-	0/5/27/28	0/3/3/3
7	OMU	7	7	1,7	-	1/9/27/28	0/2/2/2
28	OMG	S1	1550	28	-	0/5/27/28	0/3/3/3
28	OMG	S1	1647	28	-	0/5/27/28	0/3/3/3
1	OMU	1	847	1	-	0/9/27/28	0/2/2/2
2	OMU	2	56	1,2	-	0/9/27/28	0/2/2/2
28	OMU	S1	1621	28	-	1/9/27/28	0/2/2/2

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	OMU	2	73	2	-	0/9/27/28	0/2/2/2
28	MA6	S1	2184	28	-	0/7/29/30	0/3/3/3
1	OMU	1	1107	1	-	0/9/27/28	0/2/2/2
2	PSU	2	1361	2	-	1/7/25/26	0/2/2/2
2	A2M	2	95	2	-	0/5/27/28	0/3/3/3
28	PSU	S1	2048	28	-	0/7/25/26	0/2/2/2
1	A2M	1	955	1	-	1/5/27/28	0/3/3/3
1	PSU	1	1039	1	-	0/7/25/26	0/2/2/2
2	PSU	2	78	2	-	0/7/25/26	0/2/2/2
2	OMG	2	641	87,2	-	0/5/27/28	0/3/3/3
2	OMG	2	534	2	-	2/5/27/28	0/3/3/3
7	A2M	7	43	7	-	0/5/27/28	0/3/3/3

All (1085) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	95	A2M	O4'-C1'	15.48	1.62	1.41
1	1	407	A2M	O4'-C1'	15.45	1.62	1.41
1	1	1539	A2M	O4'-C1'	15.25	1.62	1.41
7	7	43	A2M	O4'-C1'	15.25	1.62	1.41
2	2	1372	A2M	O4'-C1'	15.23	1.62	1.41
28	S1	98	A2M	O4'-C1'	15.21	1.62	1.41
2	2	604	A2M	O4'-C1'	15.17	1.62	1.41
28	S1	512	A2M	O4'-C1'	15.17	1.62	1.41
2	2	382	A2M	O4'-C1'	15.16	1.62	1.41
2	2	1185	A2M	O4'-C1'	15.14	1.62	1.41
1	1	235	A2M	O4'-C1'	15.06	1.62	1.41
1	1	697	A2M	O4'-C1'	15.06	1.62	1.41
2	2	572	A2M	O4'-C1'	15.01	1.62	1.41
28	S1	2021	A2M	O4'-C1'	15.00	1.62	1.41
1	1	955	A2M	O4'-C1'	15.00	1.62	1.41
1	1	927	A2M	O4'-C1'	14.98	1.62	1.41
2	2	628	A2M	O4'-C1'	14.97	1.62	1.41
28	S1	479	A2M	O4'-C1'	14.96	1.62	1.41
7	7	162	A2M	O4'-C1'	14.96	1.62	1.41
2	2	591	A2M	O4'-C1'	14.88	1.61	1.41
1	1	858	A2M	O4'-C1'	14.87	1.61	1.41
28	S1	668	A2M	O4'-C1'	14.59	1.61	1.41
1	1	305	A2M	O4'-C1'	14.48	1.61	1.41
2	2	527	A2M	O4'-C1'	14.15	1.60	1.41
1	1	1181	PSU	C6-C5	12.07	1.49	1.35
1	1	1664	PSU	C6-C5	11.96	1.49	1.35

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	1528	PSU	C6-C5	11.94	1.49	1.35
28	S1	1566	PSU	C6-C5	11.92	1.49	1.35
1	1	1171	PSU	C6-C5	11.91	1.49	1.35
2	2	1058	PSU	C6-C5	11.90	1.49	1.35
7	7	69	PSU	C6-C5	11.87	1.49	1.35
28	S1	607	PSU	C6-C5	11.87	1.49	1.35
2	2	510	PSU	C6-C5	11.84	1.49	1.35
2	2	1264	PSU	C6-C5	11.84	1.49	1.35
28	S1	1539	PSU	C6-C5	11.83	1.49	1.35
1	1	422	PSU	C6-C5	11.80	1.49	1.35
2	2	512	PSU	C6-C5	11.80	1.49	1.35
28	S1	609	PSU	C6-C5	11.79	1.49	1.35
28	S1	1156	PSU	C6-C5	11.78	1.49	1.35
28	S1	33	PSU	C6-C5	11.78	1.49	1.35
7	7	74	PSU	C6-C5	11.77	1.49	1.35
1	1	1017	PSU	C6-C5	11.75	1.49	1.35
28	S1	455	PSU	C6-C5	11.75	1.49	1.35
2	2	593	PSU	C6-C5	11.75	1.49	1.35
28	S1	1533	PSU	C6-C5	11.74	1.49	1.35
28	S1	1841	PSU	C6-C5	11.74	1.49	1.35
28	S1	104	PSU	C6-C5	11.73	1.49	1.35
2	2	1413	PSU	C6-C5	11.72	1.49	1.35
2	2	437	PSU	C6-C5	11.72	1.49	1.35
28	S1	1192	PSU	C6-C5	11.72	1.49	1.35
2	2	1318	PSU	C6-C5	11.71	1.49	1.35
2	2	122	PSU	C6-C5	11.70	1.48	1.35
2	2	1403	PSU	C6-C5	11.70	1.48	1.35
1	1	1039	PSU	C6-C5	11.70	1.48	1.35
1	1	1533	PSU	C6-C5	11.70	1.48	1.35
2	2	662	PSU	C6-C5	11.69	1.48	1.35
1	1	940	PSU	C6-C5	11.69	1.48	1.35
28	S1	2202	PSU	C6-C5	11.69	1.48	1.35
2	2	78	PSU	C6-C5	11.68	1.48	1.35
2	2	1354	PSU	C6-C5	11.67	1.48	1.35
28	S1	12	PSU	C6-C5	11.67	1.48	1.35
2	2	1144	PSU	C6-C5	11.66	1.48	1.35
2	2	1265	PSU	C6-C5	11.66	1.48	1.35
2	2	597	PSU	C6-C5	11.65	1.48	1.35
2	2	1060	PSU	C6-C5	11.65	1.48	1.35
2	2	1303	PSU	C6-C5	11.64	1.48	1.35
2	2	1361	PSU	C6-C5	11.63	1.48	1.35
1	1	239	PSU	C6-C5	11.63	1.48	1.35

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	1402	PSU	C6-C5	11.63	1.48	1.35
2	2	626	PSU	C6-C5	11.60	1.48	1.35
2	2	1194	PSU	C6-C5	11.60	1.48	1.35
28	S1	1246	PSU	C6-C5	11.54	1.48	1.35
1	1	1011	PSU	C6-C5	11.50	1.48	1.35
28	S1	1657	PSU	C6-C5	11.49	1.48	1.35
28	S1	2046	PSU	C6-C5	11.47	1.48	1.35
28	S1	1995	7MG	C8-N9	11.45	1.52	1.46
2	2	472	PSU	C6-C5	11.27	1.48	1.35
1	1	1181	PSU	C2-N1	9.97	1.50	1.36
1	1	1528	PSU	C2-N1	9.85	1.50	1.36
2	2	510	PSU	C2-N1	9.82	1.50	1.36
2	2	1361	PSU	C2-N1	9.82	1.50	1.36
2	2	78	PSU	C2-N1	9.80	1.50	1.36
1	1	239	PSU	C2-N1	9.79	1.50	1.36
1	1	1533	PSU	C2-N1	9.79	1.50	1.36
28	S1	33	PSU	C2-N1	9.79	1.50	1.36
28	S1	607	PSU	C2-N1	9.79	1.50	1.36
28	S1	1156	PSU	C2-N1	9.78	1.50	1.36
28	S1	104	PSU	C2-N1	9.76	1.49	1.36
28	S1	1533	PSU	C2-N1	9.75	1.49	1.36
2	2	1264	PSU	C2-N1	9.75	1.49	1.36
2	2	1403	PSU	C2-N1	9.75	1.49	1.36
2	2	512	PSU	C2-N1	9.74	1.49	1.36
1	1	1664	PSU	C2-N1	9.73	1.49	1.36
2	2	122	PSU	C2-N1	9.73	1.49	1.36
1	1	1039	PSU	C2-N1	9.72	1.49	1.36
2	2	1303	PSU	C2-N1	9.71	1.49	1.36
2	2	1318	PSU	C2-N1	9.70	1.49	1.36
1	1	940	PSU	C2-N1	9.70	1.49	1.36
28	S1	1192	PSU	C2-N1	9.70	1.49	1.36
2	2	1060	PSU	C2-N1	9.70	1.49	1.36
2	2	1194	PSU	C2-N1	9.69	1.49	1.36
28	S1	1657	PSU	C2-N1	9.69	1.49	1.36
7	7	74	PSU	C2-N1	9.69	1.49	1.36
28	S1	1995	7MG	C5-N7	9.69	1.46	1.35
28	S1	609	PSU	C2-N1	9.68	1.49	1.36
2	2	593	PSU	C2-N1	9.68	1.49	1.36
2	2	597	PSU	C2-N1	9.68	1.49	1.36
28	S1	1566	PSU	C2-N1	9.68	1.49	1.36
2	2	1265	PSU	C2-N1	9.67	1.49	1.36
28	S1	1841	PSU	C2-N1	9.65	1.49	1.36

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	1413	PSU	C2-N1	9.65	1.49	1.36
28	S1	455	PSU	C2-N1	9.65	1.49	1.36
28	S1	12	PSU	C2-N1	9.64	1.49	1.36
2	2	662	PSU	C2-N1	9.64	1.49	1.36
28	S1	2202	PSU	C2-N1	9.62	1.49	1.36
1	1	1017	PSU	C2-N1	9.60	1.49	1.36
1	1	422	PSU	C2-N1	9.60	1.49	1.36
28	S1	1246	PSU	C2-N1	9.60	1.49	1.36
2	2	1144	PSU	C2-N1	9.60	1.49	1.36
28	S1	1539	PSU	C2-N1	9.58	1.49	1.36
2	2	437	PSU	C2-N1	9.58	1.49	1.36
2	2	1354	PSU	C2-N1	9.53	1.49	1.36
2	2	472	PSU	C2-N1	9.51	1.49	1.36
1	1	1011	PSU	C2-N1	9.51	1.49	1.36
7	7	69	PSU	C2-N1	9.50	1.49	1.36
2	2	626	PSU	C2-N1	9.45	1.49	1.36
28	S1	2046	PSU	C2-N1	9.44	1.49	1.36
1	1	1402	PSU	C2-N1	9.40	1.49	1.36
28	S1	2061	5MC	C6-C5	9.28	1.49	1.34
28	S1	1544	5MC	C6-C5	9.27	1.49	1.34
2	2	1308	5MC	C6-C5	9.24	1.49	1.34
1	1	1171	PSU	C2-N1	9.12	1.49	1.36
2	2	524	5MC	C6-C5	9.04	1.49	1.34
2	2	1058	PSU	C2-N1	9.02	1.48	1.36
2	2	1308	5MC	C3'-C4'	-8.59	1.31	1.53
28	S1	1543	B8N	C6-N1	8.29	1.57	1.36
2	2	472	PSU	C2-N3	7.74	1.50	1.37
2	2	122	PSU	C2-N3	7.67	1.50	1.37
2	2	1265	PSU	C2-N3	7.66	1.50	1.37
28	S1	1533	PSU	C2-N3	7.63	1.50	1.37
2	2	662	PSU	C2-N3	7.63	1.50	1.37
1	1	1371	OMU	C2-N1	7.63	1.50	1.38
2	2	1058	PSU	C2-N3	7.62	1.50	1.37
28	S1	33	PSU	C2-N3	7.61	1.50	1.37
28	S1	1841	PSU	C2-N3	7.61	1.50	1.37
28	S1	2046	PSU	C2-N3	7.61	1.50	1.37
28	S1	1539	PSU	C2-N3	7.60	1.50	1.37
28	S1	607	PSU	C2-N3	7.58	1.50	1.37
1	1	1533	PSU	C2-N3	7.58	1.50	1.37
1	1	239	PSU	C2-N3	7.57	1.50	1.37
1	1	422	PSU	C2-N3	7.56	1.50	1.37
28	S1	609	PSU	C2-N3	7.56	1.50	1.37

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	S1	1156	PSU	C2-N3	7.56	1.50	1.37
28	S1	1566	PSU	C2-N3	7.56	1.50	1.37
1	1	1039	PSU	C2-N3	7.54	1.50	1.37
2	2	510	PSU	C2-N3	7.53	1.50	1.37
2	2	1403	PSU	C2-N3	7.53	1.50	1.37
28	S1	12	PSU	C2-N3	7.53	1.50	1.37
1	1	1171	PSU	C2-N3	7.53	1.50	1.37
28	S1	2202	PSU	C2-N3	7.53	1.50	1.37
28	S1	104	PSU	C2-N3	7.53	1.50	1.37
1	1	1011	PSU	C2-N3	7.52	1.50	1.37
1	1	1664	PSU	C2-N3	7.51	1.50	1.37
1	1	1017	PSU	C2-N3	7.51	1.50	1.37
2	2	512	PSU	C2-N3	7.51	1.50	1.37
28	S1	1192	PSU	C2-N3	7.51	1.50	1.37
2	2	1354	PSU	C2-N3	7.50	1.50	1.37
2	2	1144	PSU	C2-N3	7.50	1.50	1.37
28	S1	1246	PSU	C2-N3	7.50	1.50	1.37
7	7	69	PSU	C2-N3	7.49	1.50	1.37
1	1	845	OMU	C2-N1	7.49	1.50	1.38
2	2	1303	PSU	C2-N3	7.48	1.50	1.37
2	2	1194	PSU	C2-N3	7.48	1.50	1.37
2	2	1361	PSU	C2-N3	7.48	1.50	1.37
2	2	1060	PSU	C2-N3	7.48	1.50	1.37
1	1	1528	PSU	C2-N3	7.47	1.50	1.37
28	S1	455	PSU	C2-N3	7.46	1.50	1.37
28	S1	1657	PSU	C2-N3	7.46	1.50	1.37
7	7	74	PSU	C2-N3	7.45	1.50	1.37
2	2	597	PSU	C2-N3	7.45	1.50	1.37
1	1	1402	PSU	C2-N3	7.45	1.50	1.37
2	2	626	PSU	C2-N3	7.43	1.50	1.37
2	2	78	PSU	C2-N3	7.41	1.50	1.37
28	S1	1543	B8N	C4-N3	-7.40	1.26	1.40
2	2	437	PSU	C2-N3	7.39	1.50	1.37
2	2	1318	PSU	C2-N3	7.38	1.50	1.37
1	1	940	PSU	C2-N3	7.37	1.50	1.37
1	1	1181	PSU	C2-N3	7.36	1.50	1.37
2	2	593	PSU	C2-N3	7.35	1.50	1.37
2	2	1413	PSU	C2-N3	7.29	1.50	1.37
28	S1	1995	7MG	C4-N9	7.25	1.46	1.37
28	S1	1979	OMU	C2-N1	7.17	1.49	1.38
2	2	1264	PSU	C2-N3	7.16	1.49	1.37
2	2	1308	5MC	O4'-C4'	7.10	1.60	1.45

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	560	OMU	C2-N1	7.09	1.49	1.38
28	S1	29	OMU	C2-N1	7.08	1.49	1.38
2	2	1077	OMU	C2-N1	7.07	1.49	1.38
2	2	1359	OMU	C2-N1	7.04	1.49	1.38
28	S1	1979	OMU	C2-N3	7.00	1.50	1.38
2	2	56	OMU	C2-N1	6.98	1.49	1.38
1	1	847	OMU	C2-N1	6.98	1.49	1.38
28	S1	1833	OMU	C2-N1	6.98	1.49	1.38
3	3	13	OMU	C2-N1	6.97	1.49	1.38
1	1	1107	OMU	C2-N1	6.94	1.49	1.38
2	2	1077	OMU	C2-N3	6.91	1.50	1.38
28	S1	1833	OMU	C2-N3	6.89	1.50	1.38
1	1	1371	OMU	C2-N3	6.89	1.50	1.38
28	S1	29	OMU	C2-N3	6.86	1.50	1.38
28	S1	661	OMU	C2-N1	6.86	1.49	1.38
1	1	1659	OMU	C2-N1	6.85	1.49	1.38
1	1	1107	OMU	C2-N3	6.84	1.50	1.38
28	S1	1621	OMU	C2-N1	6.82	1.49	1.38
7	7	7	OMU	C2-N1	6.80	1.49	1.38
2	2	73	OMU	C2-N1	6.80	1.49	1.38
28	S1	668	A2M	O4'-C4'	-6.79	1.29	1.45
2	2	667	OMU	C2-N1	6.78	1.49	1.38
28	S1	8	OMU	C2-N1	6.78	1.49	1.38
3	3	13	OMU	C2-N3	6.78	1.50	1.38
1	1	1659	OMU	C2-N3	6.77	1.50	1.38
1	1	847	OMU	C2-N3	6.77	1.50	1.38
28	S1	1621	OMU	C2-N3	6.76	1.50	1.38
2	2	1359	OMU	C2-N3	6.75	1.50	1.38
2	2	667	OMU	C2-N3	6.73	1.50	1.38
28	S1	661	OMU	C2-N3	6.70	1.49	1.38
1	1	858	A2M	O4'-C4'	-6.70	1.30	1.45
7	7	7	OMU	C2-N3	6.70	1.49	1.38
2	2	1078	OMG	C2-N3	6.66	1.49	1.33
2	2	56	OMU	C2-N3	6.63	1.49	1.38
28	S1	8	OMU	C2-N3	6.58	1.49	1.38
2	2	560	OMU	C2-N3	6.58	1.49	1.38
2	2	1372	A2M	O4'-C4'	-6.57	1.30	1.45
2	2	628	A2M	O4'-C4'	-6.55	1.30	1.45
1	1	235	A2M	O4'-C4'	-6.50	1.30	1.45
28	S1	1544	5MC	C4-N3	6.48	1.45	1.34
2	2	73	OMU	C2-N3	6.48	1.49	1.38
28	S1	2140	OMC	C2-N3	6.48	1.49	1.36

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	S1	2021	A2M	O4'-C4'	-6.46	1.30	1.45
1	1	305	A2M	O4'-C4'	-6.45	1.30	1.45
2	2	591	A2M	O4'-C4'	-6.42	1.30	1.45
1	1	845	OMU	C2-N3	6.41	1.49	1.38
2	2	1185	A2M	O4'-C4'	-6.41	1.30	1.45
1	1	695	OMC	C2-N3	6.38	1.49	1.36
2	2	524	5MC	C4-N3	6.36	1.44	1.34
1	1	927	A2M	O4'-C4'	-6.36	1.30	1.45
7	7	162	A2M	O4'-C4'	-6.35	1.30	1.45
1	1	955	A2M	O4'-C4'	-6.34	1.30	1.45
1	1	1010	OMC	C2-N3	6.33	1.49	1.36
28	S1	2061	5MC	C4-N3	6.32	1.44	1.34
28	S1	1866	OMC	C2-N3	6.32	1.49	1.36
1	1	697	A2M	O4'-C4'	-6.31	1.30	1.45
28	S1	479	A2M	O4'-C4'	-6.30	1.30	1.45
2	2	95	A2M	O4'-C4'	-6.30	1.30	1.45
1	1	1539	A2M	O4'-C4'	-6.28	1.31	1.45
28	S1	18	OMC	C2-N3	6.26	1.49	1.36
2	2	359	OMC	C2-N3	6.26	1.49	1.36
2	2	572	A2M	O4'-C4'	-6.26	1.31	1.45
2	2	382	A2M	O4'-C4'	-6.25	1.31	1.45
28	S1	1995	7MG	C2-N3	6.25	1.48	1.33
2	2	604	A2M	O4'-C4'	-6.24	1.31	1.45
28	S1	98	A2M	O4'-C4'	-6.23	1.31	1.45
2	2	1078	OMG	C4-N3	6.23	1.52	1.37
2	2	443	OMC	C2-N3	6.22	1.49	1.36
28	S1	38	OMC	C2-N3	6.21	1.49	1.36
2	2	1159	OMC	C2-N3	6.20	1.48	1.36
28	S1	512	A2M	O4'-C4'	-6.18	1.31	1.45
2	2	527	A2M	O4'-C4'	-6.18	1.31	1.45
1	1	407	A2M	O4'-C4'	-6.17	1.31	1.45
2	2	583	OMC	C2-N3	6.17	1.48	1.36
2	2	1248	OMC	C2-N3	6.15	1.48	1.36
1	1	1527	OMC	C2-N3	6.13	1.48	1.36
28	S1	1544	5MC	C2-N3	6.11	1.48	1.36
2	2	1308	5MC	C4-N3	6.07	1.44	1.34
2	2	443	OMC	C6-C5	6.07	1.49	1.35
2	2	1317	OMC	C6-C5	6.05	1.49	1.35
2	2	1317	OMC	C2-N3	6.05	1.48	1.36
7	7	43	A2M	O4'-C4'	-6.04	1.31	1.45
2	2	1248	OMC	C6-C5	6.03	1.49	1.35
28	S1	38	OMC	C6-C5	6.02	1.49	1.35

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	524	5MC	C2-N3	6.02	1.48	1.36
2	2	583	OMC	C6-C5	6.00	1.49	1.35
2	2	1397	OMC	C6-C5	5.99	1.49	1.35
2	2	1159	OMC	C6-C5	5.95	1.48	1.35
28	S1	1866	OMC	C6-C5	5.94	1.48	1.35
2	2	1078	OMG	C2-N2	5.94	1.48	1.34
28	S1	18	OMC	C6-C5	5.93	1.48	1.35
2	2	359	OMC	C6-C5	5.92	1.48	1.35
1	1	1527	OMC	C6-C5	5.91	1.48	1.35
28	S1	2061	5MC	C2-N3	5.90	1.48	1.36
1	1	695	OMC	C6-C5	5.89	1.48	1.35
2	2	1397	OMC	C2-N3	5.84	1.48	1.36
28	S1	2140	OMC	C6-C5	5.84	1.48	1.35
2	2	1308	5MC	C2-N3	5.83	1.48	1.36
28	S1	1543	B8N	C2-N1	5.82	1.56	1.39
1	1	1010	OMC	C6-C5	5.80	1.48	1.35
2	2	1359	OMU	C6-C5	5.79	1.48	1.35
2	2	667	OMU	C6-C5	5.77	1.48	1.35
28	S1	8	OMU	C6-C5	5.77	1.48	1.35
2	2	73	OMU	C6-C5	5.75	1.48	1.35
28	S1	661	OMU	C6-C5	5.74	1.48	1.35
28	S1	1621	OMU	C6-C5	5.74	1.48	1.35
2	2	1077	OMU	C6-C5	5.73	1.48	1.35
3	3	13	OMU	C6-C5	5.72	1.48	1.35
1	1	1659	OMU	C6-C5	5.69	1.48	1.35
28	S1	29	OMU	C6-C5	5.69	1.48	1.35
7	7	7	OMU	C6-C5	5.68	1.48	1.35
28	S1	600	OMG	C2-N3	5.66	1.46	1.33
1	1	847	OMU	C6-C5	5.64	1.48	1.35
2	2	655	OMG	C2-N3	5.64	1.46	1.33
1	1	1181	PSU	C6-N1	5.63	1.45	1.36
2	2	534	OMG	C2-N3	5.62	1.46	1.33
28	S1	1979	OMU	C6-C5	5.61	1.48	1.35
2	2	56	OMU	C6-C5	5.60	1.48	1.35
1	1	1371	OMU	C6-C5	5.59	1.48	1.35
2	2	1360	OMG	C2-N3	5.57	1.46	1.33
2	2	71	OMG	C2-N3	5.56	1.46	1.33
28	S1	1623	OMG	C2-N3	5.56	1.46	1.33
2	2	1253	OMG	C2-N3	5.55	1.46	1.33
4	4	74	OMG	C2-N3	5.54	1.46	1.33
28	S1	1829	OMG	C2-N3	5.53	1.46	1.33
2	2	1231	OMG	C2-N3	5.53	1.46	1.33

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	S1	1550	OMG	C2-N3	5.53	1.46	1.33
1	1	856	OMG	C2-N3	5.52	1.46	1.33
28	S1	1879	OMG	C2-N3	5.51	1.46	1.33
2	2	1229	OMG	C2-N3	5.51	1.46	1.33
2	2	560	OMU	C6-C5	5.51	1.47	1.35
1	1	1107	OMU	C6-C5	5.50	1.47	1.35
2	2	1361	PSU	C6-N1	5.50	1.45	1.36
1	1	1039	PSU	C6-N1	5.48	1.45	1.36
1	1	1528	PSU	C6-N1	5.47	1.45	1.36
28	S1	1478	OMG	C2-N3	5.46	1.46	1.33
1	1	959	OMG	C2-N3	5.46	1.46	1.33
1	1	1664	PSU	C6-N1	5.46	1.45	1.36
1	1	1626	OMG	C2-N3	5.46	1.46	1.33
28	S1	1647	OMG	C2-N3	5.45	1.46	1.33
2	2	641	OMG	C2-N3	5.45	1.46	1.33
2	2	1046	OMG	C2-N3	5.44	1.46	1.33
28	S1	1865	OMG	C2-N3	5.43	1.46	1.33
1	1	1524	OMG	C2-N3	5.42	1.46	1.33
28	S1	607	PSU	C6-N1	5.42	1.45	1.36
28	S1	1156	PSU	C6-N1	5.42	1.45	1.36
2	2	78	PSU	C6-N1	5.41	1.45	1.36
2	2	1264	PSU	C6-N1	5.41	1.45	1.36
28	S1	1841	PSU	C6-N1	5.41	1.45	1.36
2	2	512	PSU	C6-N1	5.41	1.45	1.36
28	S1	1833	OMU	C6-C5	5.40	1.47	1.35
28	S1	1995	7MG	C4-N3	5.39	1.47	1.34
28	S1	1533	PSU	C6-N1	5.39	1.45	1.36
1	1	1190	OMG	C2-N3	5.39	1.46	1.33
28	S1	1192	PSU	C6-N1	5.39	1.45	1.36
28	S1	1543	B8N	C6-C5	5.37	1.42	1.34
2	2	593	PSU	C6-N1	5.37	1.45	1.36
28	S1	1566	PSU	C6-N1	5.37	1.45	1.36
28	S1	1657	PSU	C6-N1	5.36	1.45	1.36
2	2	1413	PSU	C6-N1	5.36	1.45	1.36
2	2	510	PSU	C6-N1	5.35	1.45	1.36
28	S1	33	PSU	C6-N1	5.34	1.45	1.36
28	S1	455	PSU	C6-N1	5.34	1.45	1.36
7	7	75	OMG	C2-N3	5.33	1.46	1.33
28	S1	609	PSU	C6-N1	5.33	1.45	1.36
2	2	1403	PSU	C6-N1	5.33	1.45	1.36
2	2	1318	PSU	C6-N1	5.32	1.45	1.36
7	7	69	PSU	C6-N1	5.32	1.45	1.36

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	597	PSU	C6-N1	5.31	1.45	1.36
28	S1	104	PSU	C6-N1	5.31	1.45	1.36
28	S1	12	PSU	C6-N1	5.30	1.45	1.36
28	S1	2140	OMC	C4-N3	5.30	1.45	1.34
28	S1	2151	OMG	C2-N3	5.29	1.46	1.33
1	1	1540	OMG	C2-N3	5.29	1.46	1.33
1	1	422	PSU	C6-N1	5.28	1.45	1.36
7	7	74	PSU	C6-N1	5.28	1.45	1.36
1	1	239	PSU	C6-N1	5.27	1.45	1.36
2	2	1060	PSU	C6-N1	5.26	1.45	1.36
2	2	437	PSU	C6-N1	5.26	1.45	1.36
28	S1	1539	PSU	C6-N1	5.25	1.44	1.36
2	2	1354	PSU	C6-N1	5.25	1.44	1.36
1	1	1010	OMC	C4-N3	5.24	1.45	1.34
2	2	1303	PSU	C6-N1	5.24	1.44	1.36
2	2	1265	PSU	C6-N1	5.22	1.44	1.36
2	2	359	OMC	C4-N3	5.22	1.45	1.34
28	S1	2202	PSU	C6-N1	5.22	1.44	1.36
1	1	1533	PSU	C6-N1	5.21	1.44	1.36
1	1	845	OMU	C6-C5	5.20	1.47	1.35
2	2	534	OMG	C4-N3	5.19	1.50	1.37
2	2	662	PSU	C6-N1	5.17	1.44	1.36
28	S1	600	OMG	C4-N3	5.17	1.49	1.37
2	2	655	OMG	C4-N3	5.17	1.49	1.37
2	2	443	OMC	C4-N3	5.17	1.44	1.34
1	1	940	PSU	C6-N1	5.16	1.44	1.36
2	2	1159	OMC	C4-N3	5.16	1.44	1.34
28	S1	38	OMC	C4-N3	5.16	1.44	1.34
2	2	1253	OMG	C4-N3	5.16	1.49	1.37
28	S1	1866	OMC	C4-N3	5.16	1.44	1.34
2	2	1194	PSU	C6-N1	5.15	1.44	1.36
1	1	1017	PSU	C6-N1	5.15	1.44	1.36
1	1	1011	PSU	C6-N1	5.13	1.44	1.36
2	2	1144	PSU	C6-N1	5.12	1.44	1.36
28	S1	1246	PSU	C6-N1	5.12	1.44	1.36
28	S1	18	OMC	C4-N3	5.10	1.44	1.34
28	S1	1829	OMG	C4-N3	5.09	1.49	1.37
2	2	626	PSU	C6-N1	5.09	1.44	1.36
28	S1	1623	OMG	C4-N3	5.08	1.49	1.37
2	2	472	PSU	C6-N1	5.08	1.44	1.36
2	2	71	OMG	C4-N3	5.07	1.49	1.37
28	S1	1550	OMG	C4-N3	5.07	1.49	1.37

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	1231	OMG	C4-N3	5.07	1.49	1.37
1	1	1402	PSU	C6-N1	5.07	1.44	1.36
1	1	959	OMG	C4-N3	5.07	1.49	1.37
1	1	1527	OMC	C4-N3	5.07	1.44	1.34
1	1	1626	OMG	C4-N3	5.06	1.49	1.37
4	4	74	OMG	C4-N3	5.06	1.49	1.37
2	2	122	PSU	C6-N1	5.05	1.44	1.36
1	1	856	OMG	C4-N3	5.05	1.49	1.37
2	2	1360	OMG	C4-N3	5.05	1.49	1.37
28	S1	2046	PSU	C6-N1	5.04	1.44	1.36
2	2	1229	OMG	C4-N3	5.04	1.49	1.37
2	2	1308	5MC	O4'-C1'	-5.04	1.30	1.42
1	1	1524	OMG	C4-N3	5.03	1.49	1.37
28	S1	1647	OMG	C4-N3	5.03	1.49	1.37
28	S1	1879	OMG	C4-N3	5.01	1.49	1.37
2	2	1046	OMG	C4-N3	5.00	1.49	1.37
1	1	695	OMC	C4-N3	5.00	1.44	1.34
2	2	641	OMG	C4-N3	4.99	1.49	1.37
2	2	1058	PSU	C6-N1	4.99	1.44	1.36
2	2	1248	OMC	C4-N3	4.99	1.44	1.34
7	7	75	OMG	C4-N3	4.98	1.49	1.37
1	1	1190	OMG	C4-N3	4.96	1.49	1.37
28	S1	1865	OMG	C4-N3	4.96	1.49	1.37
2	2	583	OMC	C4-N3	4.95	1.44	1.34
28	S1	1478	OMG	C4-N3	4.92	1.49	1.37
2	2	1397	OMC	C4-N3	4.91	1.44	1.34
28	S1	2151	OMG	C4-N3	4.90	1.49	1.37
1	1	1171	PSU	C6-N1	4.88	1.44	1.36
2	2	359	OMC	C4-N4	4.85	1.45	1.33
28	S1	1866	OMC	C4-N4	4.85	1.45	1.33
2	2	443	OMC	C4-N4	4.83	1.45	1.33
28	S1	38	OMC	C4-N4	4.80	1.45	1.33
28	S1	2140	OMC	C4-N4	4.79	1.45	1.33
28	S1	18	OMC	C4-N4	4.79	1.45	1.33
1	1	1524	OMG	C2-N2	4.78	1.45	1.34
2	2	1317	OMC	C4-N4	4.78	1.45	1.33
1	1	1540	OMG	C4-N3	4.78	1.49	1.37
2	2	1317	OMC	C4-N3	4.77	1.44	1.34
2	2	1360	OMG	C2-N2	4.77	1.45	1.34
28	S1	1550	OMG	C2-N2	4.77	1.45	1.34
2	2	1159	OMC	C4-N4	4.76	1.45	1.33
1	1	1527	OMC	C4-N4	4.76	1.45	1.33

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	1248	OMC	C4-N4	4.75	1.45	1.33
2	2	583	OMC	C4-N4	4.74	1.45	1.33
28	S1	1623	OMG	C2-N2	4.73	1.45	1.34
2	2	1231	OMG	C2-N2	4.73	1.45	1.34
28	S1	1544	5MC	C6-N1	4.73	1.46	1.38
28	S1	1829	OMG	C2-N2	4.73	1.45	1.34
28	S1	1879	OMG	C2-N2	4.72	1.45	1.34
2	2	71	OMG	C2-N2	4.72	1.45	1.34
1	1	1010	OMC	C4-N4	4.72	1.45	1.33
28	S1	1647	OMG	C2-N2	4.72	1.45	1.34
1	1	959	OMG	C2-N2	4.71	1.45	1.34
28	S1	1865	OMG	C2-N2	4.70	1.45	1.34
28	S1	2061	5MC	C6-N1	4.69	1.46	1.38
1	1	1190	OMG	C2-N2	4.69	1.45	1.34
2	2	1046	OMG	C2-N2	4.68	1.45	1.34
2	2	655	OMG	C2-N2	4.68	1.45	1.34
1	1	856	OMG	C2-N2	4.68	1.45	1.34
1	1	695	OMC	C4-N4	4.67	1.44	1.33
28	S1	600	OMG	C2-N2	4.67	1.45	1.34
2	2	1229	OMG	C2-N2	4.64	1.45	1.34
2	2	534	OMG	C2-N2	4.62	1.45	1.34
2	2	1397	OMC	C4-N4	4.62	1.44	1.33
7	7	75	OMG	C2-N2	4.61	1.45	1.34
2	2	1253	OMG	C2-N2	4.61	1.45	1.34
28	S1	2140	OMC	C2-N1	4.60	1.50	1.40
4	4	74	OMG	C2-N2	4.60	1.45	1.34
2	2	641	OMG	C2-N2	4.59	1.45	1.34
1	1	1626	OMG	C2-N2	4.58	1.45	1.34
28	S1	2151	OMG	C2-N2	4.58	1.45	1.34
2	2	1248	OMC	C2-N1	4.58	1.49	1.40
1	1	1540	OMG	C2-N2	4.57	1.45	1.34
28	S1	1478	OMG	C2-N2	4.57	1.45	1.34
2	2	1308	5MC	C6-N1	4.57	1.45	1.38
2	2	1159	OMC	C2-N1	4.56	1.49	1.40
1	1	940	PSU	C1'-C5	-4.52	1.39	1.50
2	2	1060	PSU	C1'-C5	-4.51	1.39	1.50
28	S1	1866	OMC	C2-N1	4.50	1.49	1.40
28	S1	1246	PSU	C1'-C5	-4.47	1.40	1.50
28	S1	1543	B8N	C1'-C5	-4.45	1.40	1.50
2	2	1144	PSU	C1'-C5	-4.45	1.40	1.50
1	1	1010	OMC	C2-N1	4.44	1.49	1.40
1	1	1527	OMC	C2-N1	4.44	1.49	1.40

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	S1	104	PSU	C1'-C5	-4.44	1.40	1.50
2	2	524	5MC	C6-N1	4.40	1.45	1.38
1	1	695	OMC	C2-N1	4.39	1.49	1.40
1	1	239	PSU	C1'-C5	-4.39	1.40	1.50
28	S1	33	PSU	C1'-C5	-4.38	1.40	1.50
2	2	122	PSU	C1'-C5	-4.38	1.40	1.50
7	7	69	PSU	C1'-C5	-4.37	1.40	1.50
2	2	1303	PSU	C1'-C5	-4.37	1.40	1.50
2	2	1317	OMC	C2-N1	4.36	1.49	1.40
2	2	662	PSU	C1'-C5	-4.36	1.40	1.50
28	S1	18	OMC	C2-N1	4.36	1.49	1.40
28	S1	1544	5MC	C4-N4	4.35	1.45	1.34
28	S1	609	PSU	C1'-C5	-4.35	1.40	1.50
2	2	583	OMC	C2-N1	4.35	1.49	1.40
2	2	472	PSU	C1'-C5	-4.34	1.40	1.50
28	S1	2061	5MC	C4-N4	4.34	1.45	1.34
2	2	359	OMC	C2-N1	4.34	1.49	1.40
28	S1	1533	PSU	C1'-C5	-4.33	1.40	1.50
28	S1	1833	OMU	C4-N3	4.32	1.46	1.38
2	2	1403	PSU	C1'-C5	-4.31	1.40	1.50
28	S1	1657	PSU	C1'-C5	-4.31	1.40	1.50
2	2	1194	PSU	C1'-C5	-4.31	1.40	1.50
1	1	422	PSU	C1'-C5	-4.29	1.40	1.50
2	2	510	PSU	C1'-C5	-4.29	1.40	1.50
7	7	74	PSU	C1'-C5	-4.28	1.40	1.50
2	2	1361	PSU	C1'-C5	-4.28	1.40	1.50
1	1	1107	OMU	C4-N3	4.27	1.46	1.38
28	S1	2046	PSU	C1'-C5	-4.27	1.40	1.50
28	S1	1979	OMU	C4-N3	4.26	1.46	1.38
28	S1	1544	5MC	C2-N1	4.26	1.49	1.40
28	S1	1156	PSU	C1'-C5	-4.25	1.40	1.50
2	2	597	PSU	C1'-C5	-4.25	1.40	1.50
2	2	443	OMC	C2-N1	4.25	1.49	1.40
2	2	1308	5MC	C4-N4	4.24	1.45	1.34
1	1	1017	PSU	C1'-C5	-4.24	1.40	1.50
28	S1	1621	OMU	C4-N3	4.24	1.46	1.38
1	1	1533	PSU	C1'-C5	-4.24	1.40	1.50
2	2	524	5MC	C4-N4	4.23	1.45	1.34
2	2	437	PSU	C1'-C5	-4.22	1.40	1.50
2	2	78	PSU	C1'-C5	-4.22	1.40	1.50
1	1	1039	PSU	C1'-C5	-4.22	1.40	1.50
2	2	1265	PSU	C1'-C5	-4.21	1.40	1.50

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	S1	38	OMC	C2-N1	4.21	1.49	1.40
2	2	1397	OMC	C2-N1	4.21	1.49	1.40
2	2	1413	PSU	C1'-C5	-4.18	1.40	1.50
2	2	1318	PSU	C1'-C5	-4.17	1.40	1.50
28	S1	2202	PSU	C1'-C5	-4.17	1.40	1.50
2	2	1354	PSU	C1'-C5	-4.17	1.40	1.50
28	S1	29	OMU	C4-N3	4.17	1.46	1.38
2	2	593	PSU	C1'-C5	-4.17	1.40	1.50
1	1	1659	OMU	C4-N3	4.16	1.46	1.38
2	2	1058	PSU	C4-N3	4.16	1.46	1.38
28	S1	12	PSU	C1'-C5	-4.16	1.40	1.50
1	1	1528	PSU	C1'-C5	-4.15	1.40	1.50
2	2	1077	OMU	C4-N3	4.14	1.46	1.38
28	S1	1841	PSU	C1'-C5	-4.12	1.40	1.50
2	2	626	PSU	C1'-C5	-4.12	1.40	1.50
28	S1	607	PSU	C1'-C5	-4.11	1.40	1.50
28	S1	1192	PSU	C1'-C5	-4.11	1.40	1.50
3	3	13	OMU	C4-N3	4.11	1.45	1.38
2	2	1359	OMU	C4-N3	4.11	1.45	1.38
2	2	667	OMU	C4-N3	4.11	1.45	1.38
1	1	1664	PSU	C1'-C5	-4.09	1.40	1.50
28	S1	1539	PSU	C1'-C5	-4.07	1.40	1.50
2	2	524	5MC	C2-N1	4.07	1.48	1.40
2	2	512	PSU	C1'-C5	-4.06	1.40	1.50
28	S1	1539	PSU	C4-N3	4.04	1.46	1.38
2	2	626	PSU	C4-N3	4.03	1.46	1.38
2	2	512	PSU	C4-N3	4.02	1.46	1.38
1	1	1371	OMU	C4-N3	4.02	1.45	1.38
28	S1	1566	PSU	C4-N3	4.02	1.46	1.38
28	S1	455	PSU	C1'-C5	-4.02	1.41	1.50
28	S1	661	OMU	C4-N3	4.02	1.45	1.38
1	1	1402	PSU	C1'-C5	-4.02	1.41	1.50
1	1	1171	PSU	C4-N3	4.00	1.46	1.38
2	2	56	OMU	C4-N3	3.99	1.45	1.38
28	S1	609	PSU	C4-N3	3.99	1.46	1.38
28	S1	2061	5MC	C2-N1	3.98	1.48	1.40
28	S1	607	PSU	C4-N3	3.98	1.46	1.38
28	S1	1841	PSU	C4-N3	3.98	1.46	1.38
28	S1	1566	PSU	C1'-C5	-3.97	1.41	1.50
2	2	1308	5MC	C2-N1	3.97	1.48	1.40
1	1	1011	PSU	C4-N3	3.96	1.46	1.38
1	1	1011	PSU	C1'-C5	-3.95	1.41	1.50

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	S1	2046	PSU	C4-N3	3.95	1.46	1.38
28	S1	1657	PSU	C4-N3	3.94	1.46	1.38
2	2	122	PSU	C4-N3	3.93	1.46	1.38
2	2	662	PSU	C4-N3	3.93	1.46	1.38
2	2	1265	PSU	C4-N3	3.93	1.46	1.38
2	2	472	PSU	C4-N3	3.93	1.46	1.38
28	S1	8	OMU	C4-N3	3.93	1.45	1.38
7	7	7	OMU	C4-N3	3.92	1.45	1.38
1	1	1039	PSU	C4-N3	3.92	1.46	1.38
28	S1	1533	PSU	C4-N3	3.91	1.46	1.38
28	S1	455	PSU	C4-N3	3.91	1.46	1.38
1	1	1402	PSU	C4-N3	3.90	1.46	1.38
28	S1	104	PSU	C4-N3	3.90	1.46	1.38
28	S1	1156	PSU	C4-N3	3.89	1.46	1.38
28	S1	1192	PSU	C4-N3	3.89	1.46	1.38
1	1	1181	PSU	C1'-C5	-3.89	1.41	1.50
1	1	1017	PSU	C4-N3	3.89	1.46	1.38
2	2	1264	PSU	C1'-C5	-3.88	1.41	1.50
1	1	239	PSU	C4-N3	3.87	1.46	1.38
2	2	560	OMU	C4-N3	3.87	1.45	1.38
1	1	422	PSU	C4-N3	3.87	1.46	1.38
2	2	1318	PSU	C4-N3	3.87	1.46	1.38
2	2	1354	PSU	C4-N3	3.87	1.46	1.38
2	2	1303	PSU	C4-N3	3.87	1.46	1.38
1	1	1533	PSU	C4-N3	3.86	1.46	1.38
28	S1	33	PSU	C4-N3	3.86	1.46	1.38
7	7	74	PSU	C4-N3	3.86	1.46	1.38
2	2	1194	PSU	C4-N3	3.86	1.46	1.38
28	S1	1246	PSU	C4-N3	3.86	1.46	1.38
2	2	510	PSU	C4-N3	3.84	1.46	1.38
2	2	1144	PSU	C4-N3	3.83	1.45	1.38
2	2	437	PSU	C4-N3	3.83	1.45	1.38
2	2	1413	PSU	C4-N3	3.81	1.45	1.38
7	7	69	PSU	C4-N3	3.80	1.45	1.38
1	1	1664	PSU	C4-N3	3.80	1.45	1.38
1	1	1528	PSU	C4-N3	3.80	1.45	1.38
28	S1	12	PSU	C4-N3	3.80	1.45	1.38
2	2	78	PSU	C4-N3	3.80	1.45	1.38
2	2	1361	PSU	C4-N3	3.78	1.45	1.38
28	S1	2202	PSU	C4-N3	3.78	1.45	1.38
2	2	593	PSU	C4-N3	3.77	1.45	1.38
2	2	597	PSU	C4-N3	3.77	1.45	1.38

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	1403	PSU	C4-N3	3.76	1.45	1.38
2	2	73	OMU	C4-N3	3.76	1.45	1.38
2	2	1060	PSU	C4-N3	3.76	1.45	1.38
1	1	847	OMU	C4-N3	3.75	1.45	1.38
28	S1	1647	OMG	C6-N1	3.75	1.43	1.37
28	S1	1995	7MG	C6-N1	3.73	1.45	1.38
2	2	1264	PSU	C4-N3	3.73	1.45	1.38
28	S1	1623	OMG	C6-N1	3.71	1.43	1.37
1	1	1181	PSU	C4-N3	3.71	1.45	1.38
28	S1	2151	OMG	C6-N1	3.69	1.43	1.37
1	1	1524	OMG	C6-N1	3.69	1.43	1.37
28	S1	1865	OMG	C6-N1	3.67	1.43	1.37
2	2	1046	OMG	C6-N1	3.65	1.43	1.37
1	1	940	PSU	C4-N3	3.65	1.45	1.38
1	1	959	OMG	C6-N1	3.64	1.43	1.37
1	1	1190	OMG	C6-N1	3.64	1.43	1.37
1	1	1540	OMG	C6-N1	3.63	1.43	1.37
28	S1	1879	OMG	C6-N1	3.62	1.43	1.37
1	1	845	OMU	O2-C2	-3.61	1.16	1.23
28	S1	1995	7MG	C2-N1	3.60	1.46	1.37
28	S1	1550	OMG	C6-N1	3.59	1.43	1.37
7	7	75	OMG	C6-N1	3.59	1.43	1.37
28	S1	600	OMG	C6-N1	3.57	1.43	1.37
28	S1	1478	OMG	C6-N1	3.55	1.43	1.37
2	2	534	OMG	C6-N1	3.54	1.43	1.37
28	S1	1829	OMG	C6-N1	3.54	1.43	1.37
2	2	1360	OMG	C6-N1	3.54	1.43	1.37
28	S1	1995	7MG	C5-C6	3.53	1.52	1.43
2	2	1058	PSU	C1'-C5	-3.51	1.42	1.50
1	1	1626	OMG	C6-N1	3.49	1.43	1.37
2	2	1229	OMG	C6-N1	3.49	1.43	1.37
2	2	1253	OMG	C6-N1	3.47	1.43	1.37
1	1	856	OMG	C6-N1	3.47	1.43	1.37
2	2	655	OMG	C6-N1	3.45	1.43	1.37
4	4	74	OMG	C6-N1	3.45	1.43	1.37
2	2	71	OMG	C6-N1	3.42	1.43	1.37
2	2	1231	OMG	C6-N1	3.41	1.42	1.37
2	2	641	OMG	C6-N1	3.39	1.42	1.37
2	2	1317	OMC	C6-N1	3.38	1.46	1.38
1	1	672	PSU	C6-C5	3.38	1.39	1.35
28	S1	1866	OMC	C6-N1	3.38	1.46	1.38
2	2	1382	PSU	C6-C5	3.37	1.39	1.35

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	1159	OMC	C6-N1	3.35	1.46	1.38
1	1	1527	OMC	C6-N1	3.35	1.46	1.38
2	2	1397	OMC	C6-N1	3.35	1.46	1.38
28	S1	1995	7MG	C2-N2	3.35	1.42	1.34
2	2	583	OMC	C6-N1	3.34	1.46	1.38
28	S1	2048	PSU	C6-C5	3.33	1.39	1.35
1	1	1171	PSU	C1'-C5	-3.33	1.42	1.50
1	1	695	OMC	C6-N1	3.31	1.46	1.38
2	2	359	OMC	C6-N1	3.29	1.45	1.38
28	S1	38	OMC	C6-N1	3.29	1.45	1.38
2	2	1248	OMC	C6-N1	3.27	1.45	1.38
28	S1	18	OMC	C6-N1	3.25	1.45	1.38
2	2	443	OMC	C6-N1	3.24	1.45	1.38
28	S1	1833	OMU	O4-C4	-3.23	1.18	1.24
1	1	959	OMG	C5-C6	3.21	1.53	1.47
7	7	162	A2M	O2'-C2'	3.21	1.50	1.42
1	1	1540	OMG	C5-C6	3.19	1.53	1.47
2	2	560	OMU	O4-C4	-3.18	1.18	1.24
1	1	235	A2M	O3'-C3'	-3.16	1.35	1.43
2	2	667	OMU	O4-C4	-3.16	1.18	1.24
1	1	845	OMU	C4-N3	3.15	1.44	1.38
28	S1	2140	OMC	C6-N1	3.15	1.45	1.38
28	S1	2021	A2M	C6-N6	3.15	1.45	1.34
1	1	1626	OMG	C5-C6	3.15	1.53	1.47
7	7	162	A2M	O3'-C3'	-3.14	1.35	1.43
1	1	235	A2M	C6-N6	3.14	1.45	1.34
2	2	56	OMU	O4-C4	-3.13	1.18	1.24
2	2	95	A2M	C6-N6	3.13	1.45	1.34
1	1	845	OMU	O4-C4	-3.13	1.18	1.24
28	S1	1550	OMG	C5-C6	3.13	1.53	1.47
2	2	641	OMG	C5-C6	3.12	1.53	1.47
28	S1	1879	OMG	C5-C6	3.11	1.53	1.47
28	S1	8	OMU	O4-C4	-3.11	1.18	1.24
7	7	162	A2M	C6-N6	3.11	1.45	1.34
2	2	591	A2M	O3'-C3'	-3.11	1.35	1.43
2	2	655	OMG	C5-C6	3.11	1.53	1.47
2	2	1372	A2M	C6-N6	3.11	1.45	1.34
2	2	1046	OMG	C5-C6	3.11	1.53	1.47
1	1	305	A2M	C6-N6	3.11	1.45	1.34
1	1	927	A2M	C6-N6	3.11	1.45	1.34
28	S1	98	A2M	C6-N6	3.10	1.45	1.34
1	1	1010	OMC	C6-N1	3.10	1.45	1.38

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	S1	1995	7MG	O6-C6	-3.10	1.17	1.23
7	7	43	A2M	C6-N6	3.10	1.45	1.34
28	S1	479	A2M	C6-N6	3.10	1.45	1.34
2	2	572	A2M	C6-N6	3.10	1.45	1.34
2	2	591	A2M	C6-N6	3.10	1.45	1.34
28	S1	2151	OMG	C5-C6	3.10	1.53	1.47
1	1	1539	A2M	C6-N6	3.10	1.45	1.34
1	1	1524	OMG	C5-C6	3.09	1.53	1.47
28	S1	668	A2M	C6-N6	3.09	1.45	1.34
28	S1	661	OMU	O4-C4	-3.09	1.18	1.24
1	1	407	A2M	C6-N6	3.09	1.45	1.34
2	2	1253	OMG	C5-C6	3.09	1.53	1.47
28	S1	512	A2M	C6-N6	3.09	1.45	1.34
2	2	604	A2M	C6-N6	3.08	1.45	1.34
2	2	1185	A2M	C6-N6	3.08	1.45	1.34
7	7	43	A2M	O3'-C3'	-3.08	1.35	1.43
28	S1	2021	A2M	O2'-C2'	3.08	1.50	1.42
1	1	858	A2M	C6-N6	3.07	1.45	1.34
2	2	95	A2M	O3'-C3'	-3.07	1.35	1.43
28	S1	1865	OMG	C5-C6	3.07	1.53	1.47
2	2	73	OMU	O4-C4	-3.06	1.18	1.24
1	1	1107	OMU	O4-C4	-3.06	1.18	1.24
1	1	1371	OMU	O4-C4	-3.06	1.18	1.24
1	1	1190	OMG	C5-C6	3.05	1.53	1.47
1	1	856	OMG	C5-C6	3.05	1.53	1.47
3	3	13	OMU	O4-C4	-3.05	1.18	1.24
2	2	382	A2M	C6-N6	3.05	1.45	1.34
1	1	697	A2M	C6-N6	3.04	1.45	1.34
2	2	628	A2M	C6-N6	3.04	1.45	1.34
2	2	1359	OMU	C6-N1	3.04	1.45	1.38
2	2	1308	5MC	O2'-C2'	-3.04	1.35	1.43
2	2	1078	OMG	C6-N1	3.03	1.42	1.37
28	S1	1647	OMG	C5-C6	3.02	1.53	1.47
1	1	847	OMU	O4-C4	-3.02	1.18	1.24
1	1	955	A2M	C6-N6	3.02	1.45	1.34
2	2	73	OMU	C6-N1	3.02	1.45	1.38
1	1	407	A2M	O3'-C3'	-3.01	1.35	1.43
7	7	7	OMU	C6-N1	3.01	1.45	1.38
2	2	1231	OMG	C5-C6	3.01	1.53	1.47
2	2	667	OMU	C6-N1	3.01	1.45	1.38
2	2	1229	OMG	C5-C6	3.01	1.53	1.47
28	S1	98	A2M	O3'-C3'	-3.00	1.35	1.43

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	S1	29	OMU	C6-N1	3.00	1.45	1.38
2	2	382	A2M	O2'-C2'	3.00	1.50	1.42
2	2	1359	OMU	O4-C4	-3.00	1.18	1.24
1	1	1659	OMU	C6-N1	2.99	1.45	1.38
7	7	75	OMG	C5-C6	2.99	1.53	1.47
2	2	1185	A2M	O3'-C3'	-2.99	1.35	1.43
3	3	13	OMU	C6-N1	2.99	1.45	1.38
28	S1	1621	OMU	O4-C4	-2.99	1.18	1.24
2	2	443	OMC	O2-C2	-2.98	1.18	1.23
28	S1	1979	OMU	C6-N1	2.98	1.45	1.38
28	S1	661	OMU	C6-N1	2.98	1.45	1.38
2	2	95	A2M	O2'-C2'	2.97	1.50	1.42
4	4	74	OMG	C5-C6	2.97	1.53	1.47
1	1	955	A2M	O3'-C3'	-2.97	1.36	1.43
2	2	1077	OMU	C6-N1	2.97	1.45	1.38
28	S1	1621	OMU	C6-N1	2.96	1.45	1.38
2	2	1360	OMG	C5-C6	2.96	1.53	1.47
28	S1	600	OMG	C5-C6	2.96	1.53	1.47
7	7	7	OMU	O4-C4	-2.96	1.18	1.24
2	2	382	A2M	O3'-C3'	-2.96	1.36	1.43
28	S1	29	OMU	O4-C4	-2.96	1.18	1.24
28	S1	1478	OMG	C5-C6	2.96	1.53	1.47
1	1	1659	OMU	O4-C4	-2.95	1.18	1.24
1	1	1371	OMU	C6-N1	2.95	1.45	1.38
28	S1	668	A2M	O2'-C2'	2.94	1.50	1.42
1	1	847	OMU	C6-N1	2.94	1.45	1.38
28	S1	1623	OMG	C5-C6	2.94	1.53	1.47
2	2	572	A2M	O3'-C3'	-2.93	1.36	1.43
1	1	235	A2M	O2'-C2'	2.92	1.50	1.42
1	1	858	A2M	O3'-C3'	-2.92	1.36	1.43
28	S1	1829	OMG	C5-C6	2.92	1.53	1.47
28	S1	1979	OMU	O4-C4	-2.91	1.18	1.24
2	2	1077	OMU	O4-C4	-2.90	1.18	1.24
2	2	1264	PSU	O4-C4	-2.89	1.18	1.23
1	1	927	A2M	O3'-C3'	-2.89	1.36	1.43
2	2	71	OMG	C5-C6	2.88	1.53	1.47
28	S1	8	OMU	C6-N1	2.88	1.44	1.38
2	2	78	PSU	O4-C4	-2.87	1.18	1.23
2	2	527	A2M	C6-N6	2.87	1.44	1.34
2	2	56	OMU	C6-N1	2.86	1.44	1.38
2	2	1372	A2M	O3'-C3'	-2.86	1.36	1.43
2	2	604	A2M	O3'-C3'	-2.86	1.36	1.43

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	S1	479	A2M	O2'-C2'	2.86	1.49	1.42
2	2	1397	OMC	O2-C2	-2.86	1.18	1.23
28	S1	2021	A2M	O3'-C3'	-2.85	1.36	1.43
28	S1	512	A2M	O3'-C3'	-2.85	1.36	1.43
2	2	1317	OMC	O2-C2	-2.85	1.18	1.23
2	2	527	A2M	C5-C4	-2.85	1.33	1.40
2	2	534	OMG	C5-C6	2.84	1.53	1.47
2	2	560	OMU	C6-N1	2.84	1.44	1.38
1	1	697	A2M	O3'-C3'	-2.84	1.36	1.43
2	2	628	A2M	O3'-C3'	-2.84	1.36	1.43
2	2	572	A2M	C5-C4	-2.83	1.33	1.40
1	1	858	A2M	O2'-C2'	2.83	1.49	1.42
2	2	591	A2M	O2'-C2'	2.83	1.49	1.42
2	2	604	A2M	O2'-C2'	2.83	1.49	1.42
1	1	697	A2M	O2'-C2'	2.83	1.49	1.42
1	1	1527	OMC	O2-C2	-2.83	1.18	1.23
28	S1	479	A2M	O3'-C3'	-2.81	1.36	1.43
1	1	305	A2M	O3'-C3'	-2.81	1.36	1.43
1	1	955	A2M	O2'-C2'	2.80	1.49	1.42
28	S1	38	OMC	O2-C2	-2.80	1.18	1.23
2	2	359	OMC	O2-C2	-2.80	1.18	1.23
28	S1	98	A2M	O2'-C2'	2.79	1.49	1.42
28	S1	2185	MA6	C5-C4	-2.79	1.33	1.40
2	2	583	OMC	O2-C2	-2.79	1.18	1.23
28	S1	668	A2M	O3'-C3'	-2.79	1.36	1.43
2	2	1248	OMC	O2-C2	-2.78	1.18	1.23
2	2	1308	5MC	O2-C2	-2.78	1.18	1.23
7	7	43	A2M	O2'-C2'	2.78	1.49	1.42
2	2	626	PSU	O4-C4	-2.78	1.18	1.23
2	2	527	A2M	O2'-C2'	2.78	1.49	1.42
2	2	1372	A2M	O2'-C2'	2.78	1.49	1.42
2	2	628	A2M	C5-C4	-2.78	1.33	1.40
2	2	1078	OMG	C5-C6	2.78	1.53	1.47
1	1	1539	A2M	O3'-C3'	-2.77	1.36	1.43
28	S1	1833	OMU	C6-N1	2.77	1.44	1.38
1	1	1107	OMU	C6-N1	2.77	1.44	1.38
1	1	858	A2M	C5-C4	-2.76	1.33	1.40
2	2	1159	OMC	O2-C2	-2.76	1.18	1.23
28	S1	512	A2M	O2'-C2'	2.76	1.49	1.42
1	1	235	A2M	C5-C4	-2.76	1.33	1.40
1	1	1664	PSU	O4-C4	-2.76	1.18	1.23
2	2	1372	A2M	C5-C4	-2.75	1.33	1.40

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	239	PSU	O4-C4	-2.75	1.18	1.23
1	1	697	A2M	C5-C4	-2.75	1.33	1.40
2	2	572	A2M	O2'-C2'	2.75	1.49	1.42
28	S1	18	OMC	O2-C2	-2.75	1.18	1.23
1	1	407	A2M	C5-C4	-2.75	1.33	1.40
2	2	437	PSU	O4-C4	-2.75	1.18	1.23
1	1	305	A2M	C5-C4	-2.74	1.33	1.40
1	1	1181	PSU	O4-C4	-2.74	1.18	1.23
28	S1	512	A2M	C5-C4	-2.74	1.33	1.40
28	S1	1866	OMC	O2-C2	-2.74	1.18	1.23
1	1	927	A2M	C5-C4	-2.73	1.33	1.40
2	2	1185	A2M	O2'-C2'	2.73	1.49	1.42
1	1	1528	PSU	O4-C4	-2.73	1.18	1.23
1	1	695	OMC	O2-C2	-2.73	1.18	1.23
1	1	927	A2M	O2'-C2'	2.72	1.49	1.42
28	S1	2061	5MC	O2-C2	-2.72	1.18	1.23
28	S1	1865	OMG	C2-N1	2.72	1.44	1.37
2	2	628	A2M	O2'-C2'	2.72	1.49	1.42
2	2	1413	PSU	O4-C4	-2.72	1.18	1.23
28	S1	1879	OMG	C2-N1	2.71	1.44	1.37
7	7	43	A2M	C5-C4	-2.71	1.33	1.40
2	2	1403	PSU	O4-C4	-2.71	1.18	1.23
2	2	524	5MC	O2-C2	-2.71	1.18	1.23
2	2	591	A2M	C5-C4	-2.71	1.33	1.40
2	2	604	A2M	C5-C4	-2.71	1.33	1.40
28	S1	1623	OMG	C2-N1	2.70	1.44	1.37
2	2	1046	OMG	C2-N1	2.70	1.44	1.37
2	2	1360	OMG	C2-N1	2.70	1.44	1.37
1	1	959	OMG	C2-N1	2.69	1.44	1.37
1	1	1539	A2M	O2'-C2'	2.69	1.49	1.42
1	1	955	A2M	C5-C4	-2.69	1.33	1.40
28	S1	1829	OMG	C2-N1	2.69	1.44	1.37
7	7	162	A2M	C5-C4	-2.69	1.33	1.40
2	2	662	PSU	O4-C4	-2.68	1.18	1.23
28	S1	1478	OMG	C2-N1	2.68	1.44	1.37
28	S1	668	A2M	C5-C4	-2.68	1.33	1.40
28	S1	1647	OMG	C2-N1	2.68	1.44	1.37
28	S1	2021	A2M	C5-C4	-2.68	1.33	1.40
28	S1	98	A2M	C5-C4	-2.68	1.33	1.40
1	1	1010	OMC	O2-C2	-2.68	1.18	1.23
1	1	407	A2M	O2'-C2'	2.68	1.49	1.42
1	1	1524	OMG	C2-N1	2.68	1.44	1.37

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	1308	5MC	O3'-C3'	2.67	1.49	1.43
28	S1	2046	PSU	O4-C4	-2.67	1.18	1.23
28	S1	1544	5MC	O2-C2	-2.67	1.18	1.23
2	2	593	PSU	O4-C4	-2.67	1.18	1.23
1	1	1533	PSU	O4-C4	-2.66	1.18	1.23
2	2	1361	PSU	O4-C4	-2.66	1.18	1.23
1	1	1524	OMG	C5-C4	-2.66	1.36	1.43
2	2	382	A2M	C5-C4	-2.66	1.33	1.40
2	2	1318	PSU	O4-C4	-2.65	1.18	1.23
1	1	1540	OMG	C2-N1	2.65	1.44	1.37
2	2	1229	OMG	C2-N1	2.65	1.44	1.37
2	2	1185	A2M	C5-C4	-2.65	1.33	1.40
1	1	1171	PSU	O4-C4	-2.65	1.18	1.23
1	1	1190	OMG	C5-C4	-2.64	1.36	1.43
2	2	534	OMG	C2-N1	2.64	1.44	1.37
1	1	1017	PSU	O4-C4	-2.63	1.18	1.23
1	1	1539	A2M	C5-C4	-2.63	1.34	1.40
28	S1	600	OMG	C2-N1	2.63	1.44	1.37
28	S1	1657	PSU	O4-C4	-2.63	1.18	1.23
2	2	583	OMC	C5-C4	2.63	1.48	1.42
7	7	75	OMG	C2-N1	2.63	1.44	1.37
2	2	1144	PSU	O4-C4	-2.63	1.18	1.23
7	7	69	PSU	O4-C4	-2.63	1.18	1.23
1	1	305	A2M	O2'-C2'	2.63	1.49	1.42
28	S1	1550	OMG	C2-N1	2.63	1.44	1.37
2	2	71	OMG	C2-N1	2.63	1.44	1.37
2	2	1253	OMG	C2-N1	2.63	1.44	1.37
1	1	1039	PSU	O4-C4	-2.63	1.18	1.23
2	2	1194	PSU	O4-C4	-2.62	1.18	1.23
1	1	422	PSU	O4-C4	-2.62	1.18	1.23
2	2	71	OMG	C5-C4	-2.62	1.36	1.43
1	1	1402	PSU	O4-C4	-2.62	1.18	1.23
28	S1	479	A2M	C5-C4	-2.62	1.34	1.40
2	2	1354	PSU	O4-C4	-2.61	1.18	1.23
7	7	74	PSU	O4-C4	-2.61	1.18	1.23
2	2	1303	PSU	O4-C4	-2.61	1.18	1.23
1	1	856	OMG	C2-N1	2.60	1.44	1.37
2	2	641	OMG	C2-N1	2.60	1.44	1.37
2	2	597	PSU	O4-C4	-2.60	1.18	1.23
2	2	95	A2M	C5-C4	-2.60	1.34	1.40
2	2	443	OMC	C5-C4	2.59	1.48	1.42
28	S1	2151	OMG	C2-N1	2.59	1.44	1.37

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	1248	OMC	C5-C4	2.59	1.48	1.42
28	S1	2140	OMC	O2-C2	-2.59	1.18	1.23
28	S1	2184	MA6	C5-C4	-2.59	1.34	1.40
2	2	641	OMG	C5-C4	-2.58	1.36	1.43
2	2	1231	OMG	C2-N1	2.58	1.44	1.37
2	2	527	A2M	O3'-C3'	-2.58	1.36	1.43
4	4	74	OMG	C2-N1	2.58	1.44	1.37
2	2	122	PSU	O4-C4	-2.58	1.18	1.23
1	1	940	PSU	O4-C4	-2.58	1.18	1.23
28	S1	33	PSU	O4-C4	-2.58	1.18	1.23
2	2	655	OMG	C2-N1	2.57	1.44	1.37
2	2	1231	OMG	C5-C4	-2.57	1.36	1.43
2	2	1060	PSU	O4-C4	-2.57	1.18	1.23
28	S1	1647	OMG	C5-C4	-2.57	1.36	1.43
2	2	122	PSU	O4'-C1'	-2.57	1.40	1.43
28	S1	455	PSU	O4-C4	-2.57	1.18	1.23
7	7	75	OMG	C5-C4	-2.56	1.36	1.43
28	S1	12	PSU	O4-C4	-2.56	1.18	1.23
28	S1	2202	PSU	O4-C4	-2.56	1.18	1.23
28	S1	1866	OMC	C5-C4	2.55	1.48	1.42
1	1	1626	OMG	C2-N1	2.55	1.44	1.37
28	S1	1865	OMG	C5-C4	-2.55	1.36	1.43
2	2	1397	OMC	C5-C4	2.55	1.48	1.42
1	1	1190	OMG	C2-N1	2.55	1.44	1.37
1	1	856	OMG	C5-C4	-2.55	1.36	1.43
2	2	1046	OMG	C5-C4	-2.54	1.36	1.43
2	2	1058	PSU	O4-C4	-2.54	1.18	1.23
2	2	359	OMC	C5-C4	2.54	1.48	1.42
1	1	1626	OMG	C5-C4	-2.54	1.36	1.43
28	S1	1841	PSU	O4-C4	-2.53	1.18	1.23
28	S1	607	PSU	O4-C4	-2.53	1.18	1.23
28	S1	1550	OMG	C5-C4	-2.53	1.36	1.43
2	2	512	PSU	O4-C4	-2.53	1.18	1.23
28	S1	38	OMC	C5-C4	2.53	1.48	1.42
2	2	472	PSU	O4-C4	-2.52	1.18	1.23
2	2	1159	OMC	C5-C4	2.52	1.48	1.42
2	2	1360	OMG	C5-C4	-2.52	1.36	1.43
28	S1	1192	PSU	O4-C4	-2.52	1.18	1.23
28	S1	1246	PSU	O4-C4	-2.52	1.18	1.23
2	2	1265	PSU	O4-C4	-2.52	1.18	1.23
1	1	1371	OMU	O2-C2	-2.51	1.18	1.23
28	S1	1478	OMG	C5-C4	-2.51	1.36	1.43

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	S1	609	PSU	O4-C4	-2.51	1.18	1.23
1	1	1010	OMC	C5-C4	2.51	1.48	1.42
28	S1	1829	OMG	C5-C4	-2.51	1.36	1.43
28	S1	2151	OMG	C5-C4	-2.51	1.36	1.43
2	2	1253	OMG	C5-C4	-2.50	1.36	1.43
2	2	510	PSU	O4-C4	-2.50	1.18	1.23
2	2	1317	OMC	C5-C4	2.49	1.48	1.42
2	2	667	OMU	C5-C4	2.49	1.49	1.43
28	S1	8	OMU	C5-C4	2.49	1.49	1.43
28	S1	1566	PSU	O4-C4	-2.49	1.18	1.23
28	S1	1621	OMU	C5-C4	2.49	1.49	1.43
28	S1	1533	PSU	O4-C4	-2.48	1.18	1.23
28	S1	1539	PSU	O4-C4	-2.48	1.18	1.23
1	1	305	A2M	O5'-C5'	-2.48	1.38	1.44
1	1	959	OMG	C5-C4	-2.48	1.36	1.43
28	S1	1156	PSU	O4-C4	-2.48	1.18	1.23
28	S1	661	OMU	C5-C4	2.47	1.49	1.43
2	2	1359	OMU	C5-C4	2.47	1.49	1.43
1	1	1011	PSU	O4-C4	-2.47	1.18	1.23
2	2	534	OMG	C5-C4	-2.47	1.36	1.43
1	1	1527	OMC	C5-C4	2.46	1.48	1.42
1	1	1659	OMU	O2-C2	-2.46	1.18	1.23
2	2	1077	OMU	C5-C4	2.45	1.49	1.43
1	1	1540	OMG	C5-C4	-2.45	1.36	1.43
28	S1	1879	OMG	C5-C4	-2.45	1.36	1.43
1	1	1107	OMU	C5-C4	2.45	1.49	1.43
2	2	1229	OMG	C5-C4	-2.45	1.36	1.43
1	1	695	OMC	C5-C4	2.44	1.48	1.42
28	S1	1623	OMG	C5-C4	-2.44	1.36	1.43
28	S1	104	PSU	O4-C4	-2.44	1.19	1.23
2	2	1078	OMG	C2-N1	2.44	1.43	1.37
4	4	74	OMG	C5-C4	-2.43	1.36	1.43
2	2	1078	OMG	O6-C6	-2.42	1.18	1.23
28	S1	18	OMC	C5-C4	2.42	1.48	1.42
1	1	1171	PSU	O4'-C1'	-2.40	1.40	1.43
28	S1	600	OMG	C5-C4	-2.40	1.37	1.43
3	3	13	OMU	C5-C4	2.40	1.48	1.43
28	S1	29	OMU	C5-C4	2.40	1.48	1.43
2	2	1253	OMG	O6-C6	-2.40	1.18	1.23
2	2	73	OMU	C5-C4	2.40	1.48	1.43
2	2	73	OMU	O2-C2	-2.40	1.18	1.23
2	2	56	OMU	C5-C4	2.40	1.48	1.43

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	3	13	OMU	O2-C2	-2.40	1.18	1.23
28	S1	661	OMU	O2-C2	-2.40	1.18	1.23
1	1	1659	OMU	C5-C4	2.39	1.48	1.43
2	2	71	OMG	O6-C6	-2.39	1.18	1.23
7	7	7	OMU	C5-C4	2.38	1.48	1.43
2	2	655	OMG	C5-C4	-2.38	1.37	1.43
7	7	7	OMU	O2-C2	-2.37	1.18	1.23
1	1	845	OMU	C6-N1	2.37	1.43	1.38
1	1	856	OMG	O6-C6	-2.36	1.18	1.23
2	2	534	OMG	O6-C6	-2.36	1.18	1.23
2	2	667	OMU	O2-C2	-2.35	1.18	1.23
2	2	527	A2M	O5'-C5'	-2.35	1.39	1.44
1	1	847	OMU	O2-C2	-2.35	1.18	1.23
2	2	1077	OMU	O2-C2	-2.35	1.18	1.23
2	2	1078	OMG	C5-C4	-2.35	1.37	1.43
2	2	95	A2M	C2-N3	2.34	1.35	1.32
28	S1	2140	OMC	C5-C4	2.34	1.48	1.42
2	2	1231	OMG	O6-C6	-2.34	1.18	1.23
2	2	56	OMU	O2-C2	-2.33	1.18	1.23
2	2	655	OMG	O6-C6	-2.32	1.18	1.23
2	2	1229	OMG	O6-C6	-2.32	1.18	1.23
28	S1	1979	OMU	C5-C4	2.32	1.48	1.43
28	S1	8	OMU	O2-C2	-2.32	1.18	1.23
2	2	560	OMU	O2-C2	-2.31	1.18	1.23
1	1	1011	PSU	O4'-C1'	-2.31	1.40	1.43
28	S1	1550	OMG	O6-C6	-2.29	1.18	1.23
2	2	641	OMG	O6-C6	-2.29	1.18	1.23
4	4	74	OMG	O6-C6	-2.28	1.18	1.23
1	1	1371	OMU	C5-C4	2.28	1.48	1.43
1	1	847	OMU	C5-C4	2.28	1.48	1.43
2	2	1359	OMU	O2-C2	-2.27	1.18	1.23
1	1	1107	OMU	O2-C2	-2.27	1.18	1.23
2	2	1360	OMG	O6-C6	-2.26	1.18	1.23
1	1	1011	PSU	C4-C5	2.26	1.50	1.44
28	S1	1647	OMG	O6-C6	-2.25	1.18	1.23
28	S1	1833	OMU	C5-C4	2.25	1.48	1.43
1	1	1626	OMG	O6-C6	-2.25	1.18	1.23
2	2	1046	OMG	O6-C6	-2.25	1.18	1.23
28	S1	29	OMU	O2-C2	-2.24	1.18	1.23
28	S1	1979	OMU	O2-C2	-2.24	1.18	1.23
28	S1	600	OMG	O6-C6	-2.24	1.18	1.23
2	2	628	A2M	O5'-C5'	-2.24	1.39	1.44

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	S1	1623	OMG	O6-C6	-2.23	1.18	1.23
28	S1	2184	MA6	C2-N3	2.23	1.35	1.32
1	1	959	OMG	O6-C6	-2.23	1.18	1.23
28	S1	1833	OMU	O2-C2	-2.22	1.19	1.23
28	S1	1478	OMG	O6-C6	-2.21	1.18	1.23
1	1	1540	OMG	O6-C6	-2.21	1.18	1.23
28	S1	1865	OMG	O6-C6	-2.21	1.18	1.23
2	2	560	OMU	C5-C4	2.20	1.48	1.43
1	1	1190	OMG	O6-C6	-2.20	1.18	1.23
28	S1	1621	OMU	O2-C2	-2.20	1.19	1.23
7	7	75	OMG	O6-C6	-2.19	1.18	1.23
28	S1	1566	PSU	C4-C5	2.19	1.50	1.44
1	1	845	OMU	C5-C4	2.19	1.48	1.43
28	S1	2151	OMG	O6-C6	-2.18	1.18	1.23
28	S1	479	A2M	C2-N3	2.17	1.35	1.32
1	1	1524	OMG	O6-C6	-2.16	1.18	1.23
28	S1	1879	OMG	O6-C6	-2.16	1.18	1.23
1	1	1402	PSU	C4-C5	2.16	1.50	1.44
1	1	955	A2M	O5'-C5'	-2.15	1.39	1.44
7	7	43	A2M	O5'-C5'	-2.14	1.39	1.44
28	S1	668	A2M	O5'-C5'	-2.14	1.39	1.44
28	S1	607	PSU	C4-C5	2.13	1.50	1.44
28	S1	1829	OMG	O6-C6	-2.12	1.19	1.23
28	S1	455	PSU	C4-C5	2.12	1.50	1.44
2	2	1354	PSU	C4-C5	2.12	1.50	1.44
2	2	604	A2M	C2-N3	2.10	1.35	1.32
1	1	927	A2M	O5'-C5'	-2.09	1.39	1.44
28	S1	2202	PSU	C4-C5	2.09	1.50	1.44
2	2	1308	5MC	O5'-C5'	-2.08	1.39	1.44
1	1	1539	A2M	O5'-C5'	-2.08	1.39	1.44
2	2	591	A2M	O5'-C5'	-2.08	1.39	1.44
7	7	162	A2M	O5'-C5'	-2.08	1.39	1.44
28	S1	98	A2M	C2-N3	2.07	1.35	1.32
2	2	1185	A2M	O5'-C5'	-2.07	1.39	1.44
1	1	858	A2M	O5'-C5'	-2.06	1.39	1.44
28	S1	2185	MA6	C2-N3	2.05	1.35	1.32
1	1	235	A2M	C2-N3	2.05	1.35	1.32
28	S1	2021	A2M	C2-N3	2.05	1.35	1.32
28	S1	1539	PSU	C4-C5	2.05	1.50	1.44
2	2	572	A2M	O5'-C5'	-2.05	1.39	1.44
1	1	305	A2M	C2-N3	2.03	1.35	1.32
28	S1	2021	A2M	O5'-C5'	-2.03	1.39	1.44

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	407	A2M	C2-N3	2.02	1.35	1.32
2	2	593	PSU	C4-C5	2.02	1.49	1.44
2	2	1185	A2M	C2-N3	2.02	1.35	1.32
28	S1	98	A2M	O5'-C5'	-2.02	1.39	1.44
1	1	697	A2M	C2-N3	2.01	1.35	1.32
28	S1	1841	PSU	C4-C5	2.01	1.49	1.44
2	2	1264	PSU	C4-C5	2.01	1.49	1.44
1	1	1402	PSU	O4'-C1'	-2.01	1.41	1.43
1	1	1181	PSU	C4-C5	2.00	1.49	1.44

All (568) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
28	S1	2184	MA6	N1-C6-N6	-10.93	105.55	117.06
28	S1	2185	MA6	N1-C6-N6	-10.76	105.73	117.06
7	7	162	A2M	C5-C6-N6	8.44	133.18	120.35
28	S1	668	A2M	C5-C6-N6	8.33	133.01	120.35
2	2	628	A2M	C5-C6-N6	8.23	132.86	120.35
7	7	43	A2M	C5-C6-N6	8.22	132.84	120.35
1	1	1539	A2M	C5-C6-N6	8.21	132.82	120.35
1	1	955	A2M	C5-C6-N6	8.12	132.69	120.35
1	1	927	A2M	C5-C6-N6	8.11	132.68	120.35
2	2	572	A2M	C5-C6-N6	8.08	132.63	120.35
2	2	1185	A2M	C5-C6-N6	8.01	132.52	120.35
28	S1	479	A2M	C5-C6-N6	7.99	132.50	120.35
1	1	305	A2M	C5-C6-N6	7.99	132.49	120.35
2	2	591	A2M	C5-C6-N6	7.99	132.49	120.35
28	S1	2021	A2M	C5-C6-N6	7.94	132.42	120.35
2	2	604	A2M	C5-C6-N6	7.91	132.37	120.35
1	1	235	A2M	C5-C6-N6	7.88	132.33	120.35
1	1	858	A2M	C5-C6-N6	7.87	132.31	120.35
2	2	95	A2M	C5-C6-N6	7.83	132.26	120.35
28	S1	98	A2M	C5-C6-N6	7.77	132.16	120.35
1	1	407	A2M	C5-C6-N6	7.72	132.08	120.35
2	2	1372	A2M	C5-C6-N6	7.71	132.07	120.35
2	2	382	A2M	C5-C6-N6	7.67	132.01	120.35
28	S1	512	A2M	C5-C6-N6	7.67	132.01	120.35
1	1	697	A2M	C5-C6-N6	7.58	131.87	120.35
2	2	527	A2M	C5-C6-N6	7.53	131.80	120.35
1	1	845	OMU	C4-N3-C2	-6.29	118.29	126.58
2	2	572	A2M	N3-C2-N1	-5.96	119.37	128.68
7	7	43	A2M	N3-C2-N1	-5.89	119.47	128.68

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	7	162	A2M	N3-C2-N1	-5.83	119.57	128.68
2	2	591	A2M	N3-C2-N1	-5.81	119.61	128.68
2	2	628	A2M	N3-C2-N1	-5.79	119.63	128.68
1	1	697	A2M	N3-C2-N1	-5.78	119.64	128.68
1	1	845	OMU	N3-C2-N1	5.77	122.55	114.89
2	2	1372	A2M	N3-C2-N1	-5.73	119.73	128.68
1	1	235	A2M	N3-C2-N1	-5.72	119.73	128.68
1	1	927	A2M	N3-C2-N1	-5.69	119.79	128.68
2	2	560	OMU	C4-N3-C2	-5.69	119.08	126.58
28	S1	1833	OMU	C4-N3-C2	-5.68	119.08	126.58
28	S1	2021	A2M	N3-C2-N1	-5.65	119.84	128.68
28	S1	512	A2M	N3-C2-N1	-5.63	119.87	128.68
1	1	858	A2M	N3-C2-N1	-5.62	119.90	128.68
2	2	604	A2M	N3-C2-N1	-5.61	119.90	128.68
2	2	527	A2M	N3-C2-N1	-5.60	119.92	128.68
28	S1	668	A2M	N3-C2-N1	-5.60	119.93	128.68
1	1	407	A2M	N3-C2-N1	-5.58	119.95	128.68
28	S1	2184	MA6	N3-C2-N1	-5.58	119.95	128.68
1	1	955	A2M	N3-C2-N1	-5.58	119.96	128.68
28	S1	479	A2M	N3-C2-N1	-5.55	120.01	128.68
28	S1	98	A2M	N3-C2-N1	-5.53	120.03	128.68
1	1	1107	OMU	C4-N3-C2	-5.52	119.29	126.58
2	2	1185	A2M	N3-C2-N1	-5.52	120.05	128.68
2	2	667	OMU	C4-N3-C2	-5.51	119.31	126.58
1	1	305	A2M	N3-C2-N1	-5.49	120.09	128.68
28	S1	668	A2M	N6-C6-N1	-5.48	107.19	118.57
7	7	162	A2M	N6-C6-N1	-5.48	107.21	118.57
7	7	7	OMU	C4-N3-C2	-5.47	119.36	126.58
2	2	56	OMU	C4-N3-C2	-5.47	119.36	126.58
2	2	1077	OMU	C4-N3-C2	-5.47	119.37	126.58
28	S1	8	OMU	C4-N3-C2	-5.46	119.37	126.58
1	1	1539	A2M	N6-C6-N1	-5.46	107.25	118.57
2	2	628	A2M	N6-C6-N1	-5.46	107.25	118.57
2	2	382	A2M	N3-C2-N1	-5.45	120.16	128.68
1	1	1539	A2M	N3-C2-N1	-5.40	120.23	128.68
28	S1	2185	MA6	N3-C2-N1	-5.39	120.25	128.68
7	7	43	A2M	N6-C6-N1	-5.38	107.40	118.57
28	S1	661	OMU	C4-N3-C2	-5.38	119.48	126.58
1	1	955	A2M	N6-C6-N1	-5.37	107.42	118.57
1	1	1659	OMU	C4-N3-C2	-5.36	119.50	126.58
28	S1	1621	OMU	C4-N3-C2	-5.35	119.52	126.58
2	2	572	A2M	N6-C6-N1	-5.32	107.54	118.57

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
28	S1	479	A2M	N6-C6-N1	-5.31	107.54	118.57
2	2	1185	A2M	N6-C6-N1	-5.31	107.55	118.57
2	2	604	A2M	N6-C6-N1	-5.27	107.62	118.57
28	S1	2021	A2M	N6-C6-N1	-5.27	107.64	118.57
1	1	235	A2M	N6-C6-N1	-5.26	107.65	118.57
2	2	95	A2M	N6-C6-N1	-5.25	107.67	118.57
2	2	95	A2M	N3-C2-N1	-5.22	120.52	128.68
1	1	305	A2M	N6-C6-N1	-5.21	107.75	118.57
1	1	927	A2M	N6-C6-N1	-5.20	107.77	118.57
1	1	858	A2M	N6-C6-N1	-5.20	107.78	118.57
2	2	1359	OMU	C4-N3-C2	-5.17	119.76	126.58
2	2	382	A2M	N6-C6-N1	-5.15	107.88	118.57
2	2	527	A2M	N6-C6-N1	-5.14	107.91	118.57
28	S1	29	OMU	C4-N3-C2	-5.10	119.86	126.58
1	1	407	A2M	N6-C6-N1	-5.08	108.02	118.57
2	2	591	A2M	N6-C6-N1	-5.08	108.03	118.57
28	S1	98	A2M	N6-C6-N1	-5.08	108.03	118.57
3	3	13	OMU	C4-N3-C2	-5.07	119.89	126.58
1	1	1371	OMU	C4-N3-C2	-5.01	119.97	126.58
28	S1	512	A2M	N6-C6-N1	-5.00	108.20	118.57
28	S1	1543	B8N	C5-C4-N3	4.98	125.40	116.17
28	S1	1979	OMU	C4-N3-C2	-4.98	120.01	126.58
1	1	847	OMU	C4-N3-C2	-4.98	120.01	126.58
2	2	1372	A2M	N6-C6-N1	-4.94	108.33	118.57
28	S1	1995	7MG	C5-C6-N1	4.93	119.67	110.99
1	1	697	A2M	N6-C6-N1	-4.91	108.38	118.57
2	2	78	PSU	C4-N3-C2	-4.72	119.53	126.34
2	2	1361	PSU	C4-N3-C2	-4.71	119.55	126.34
1	1	239	PSU	C4-N3-C2	-4.69	119.58	126.34
2	2	1318	PSU	C4-N3-C2	-4.67	119.61	126.34
2	2	437	PSU	C4-N3-C2	-4.67	119.61	126.34
28	S1	33	PSU	C4-N3-C2	-4.66	119.62	126.34
2	2	1403	PSU	C4-N3-C2	-4.65	119.63	126.34
2	2	1144	PSU	C4-N3-C2	-4.65	119.64	126.34
7	7	69	PSU	C4-N3-C2	-4.64	119.66	126.34
1	1	1017	PSU	C4-N3-C2	-4.64	119.66	126.34
2	2	1060	PSU	C4-N3-C2	-4.63	119.67	126.34
28	S1	1657	PSU	C4-N3-C2	-4.63	119.67	126.34
2	2	662	PSU	C4-N3-C2	-4.60	119.70	126.34
1	1	1533	PSU	C4-N3-C2	-4.58	119.73	126.34
2	2	1264	PSU	C4-N3-C2	-4.56	119.77	126.34
28	S1	104	PSU	C4-N3-C2	-4.55	119.79	126.34

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	2	73	OMU	C4-N3-C2	-4.54	120.59	126.58
1	1	940	PSU	C4-N3-C2	-4.54	119.80	126.34
2	2	597	PSU	C4-N3-C2	-4.51	119.84	126.34
7	7	74	PSU	C4-N3-C2	-4.50	119.85	126.34
28	S1	12	PSU	C4-N3-C2	-4.50	119.85	126.34
2	2	1060	PSU	N1-C2-N3	4.50	120.23	115.13
2	2	1144	PSU	N1-C2-N3	4.50	120.22	115.13
28	S1	1246	PSU	C4-N3-C2	-4.48	119.89	126.34
2	2	1194	PSU	C4-N3-C2	-4.48	119.89	126.34
1	1	1664	PSU	C4-N3-C2	-4.47	119.90	126.34
2	2	1303	PSU	C4-N3-C2	-4.46	119.91	126.34
1	1	422	PSU	C4-N3-C2	-4.46	119.92	126.34
28	S1	1533	PSU	C4-N3-C2	-4.45	119.92	126.34
2	2	1413	PSU	C4-N3-C2	-4.44	119.94	126.34
7	7	69	PSU	N1-C2-N3	4.44	120.16	115.13
2	2	510	PSU	C4-N3-C2	-4.43	119.95	126.34
1	1	940	PSU	N1-C2-N3	4.43	120.15	115.13
1	1	1528	PSU	C4-N3-C2	-4.42	119.97	126.34
2	2	626	PSU	C4-N3-C2	-4.40	120.01	126.34
28	S1	1156	PSU	C4-N3-C2	-4.38	120.02	126.34
2	2	1265	PSU	N1-C2-N3	4.38	120.09	115.13
2	2	1361	PSU	N1-C2-N3	4.36	120.07	115.13
2	2	593	PSU	C4-N3-C2	-4.36	120.06	126.34
28	S1	609	PSU	C4-N3-C2	-4.36	120.06	126.34
2	2	472	PSU	C4-N3-C2	-4.36	120.06	126.34
2	2	1194	PSU	N1-C2-N3	4.35	120.06	115.13
28	S1	1192	PSU	C4-N3-C2	-4.34	120.08	126.34
28	S1	104	PSU	N1-C2-N3	4.34	120.05	115.13
2	2	512	PSU	C4-N3-C2	-4.33	120.10	126.34
28	S1	1246	PSU	N1-C2-N3	4.33	120.03	115.13
28	S1	2046	PSU	C4-N3-C2	-4.33	120.11	126.34
28	S1	1995	7MG	C2-N3-C4	4.33	120.01	112.30
2	2	122	PSU	C4-N3-C2	-4.31	120.13	126.34
1	1	1017	PSU	N1-C2-N3	4.31	120.01	115.13
28	S1	33	PSU	N1-C2-N3	4.31	120.01	115.13
2	2	597	PSU	N1-C2-N3	4.31	120.01	115.13
28	S1	1566	PSU	C4-N3-C2	-4.30	120.14	126.34
2	2	1308	5MC	C5-C6-N1	-4.29	118.92	123.34
2	2	1303	PSU	N1-C2-N3	4.29	119.99	115.13
1	1	1039	PSU	C4-N3-C2	-4.29	120.16	126.34
2	2	122	PSU	N1-C2-N3	4.28	119.98	115.13
2	2	662	PSU	N1-C2-N3	4.28	119.98	115.13

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	2	472	PSU	N1-C2-N3	4.26	119.96	115.13
2	2	1265	PSU	C4-N3-C2	-4.25	120.22	126.34
1	1	239	PSU	N1-C2-N3	4.24	119.94	115.13
2	2	1403	PSU	N1-C2-N3	4.23	119.92	115.13
1	1	1533	PSU	N1-C2-N3	4.22	119.91	115.13
28	S1	2046	PSU	N1-C2-N3	4.21	119.90	115.13
28	S1	609	PSU	N1-C2-N3	4.21	119.90	115.13
28	S1	2202	PSU	C4-N3-C2	-4.21	120.28	126.34
2	2	1354	PSU	C4-N3-C2	-4.19	120.30	126.34
28	S1	607	PSU	C4-N3-C2	-4.19	120.30	126.34
2	2	1318	PSU	N1-C2-N3	4.19	119.87	115.13
28	S1	12	PSU	N1-C2-N3	4.17	119.86	115.13
28	S1	1539	PSU	C4-N3-C2	-4.16	120.35	126.34
28	S1	1543	B8N	C4-N3-C2	-4.16	120.20	125.46
28	S1	1192	PSU	N1-C2-N3	4.15	119.84	115.13
1	1	1181	PSU	C4-N3-C2	-4.15	120.36	126.34
28	S1	455	PSU	C4-N3-C2	-4.15	120.36	126.34
1	1	1402	PSU	C4-N3-C2	-4.14	120.38	126.34
28	S1	1156	PSU	N1-C2-N3	4.13	119.81	115.13
28	S1	1841	PSU	C4-N3-C2	-4.12	120.40	126.34
7	7	74	PSU	N1-C2-N3	4.11	119.79	115.13
1	1	1528	PSU	N1-C2-N3	4.11	119.79	115.13
1	1	845	OMU	C1'-N1-C2	4.11	125.01	117.57
28	S1	1533	PSU	N1-C2-N3	4.11	119.78	115.13
1	1	422	PSU	N1-C2-N3	4.11	119.78	115.13
2	2	1413	PSU	N1-C2-N3	4.10	119.78	115.13
2	2	78	PSU	N1-C2-N3	4.10	119.78	115.13
2	2	1264	PSU	N1-C2-N3	4.09	119.76	115.13
1	1	1171	PSU	C6-N1-C2	-4.08	118.51	122.68
2	2	510	PSU	N1-C2-N3	4.06	119.72	115.13
28	S1	1657	PSU	N1-C2-N3	4.05	119.72	115.13
28	S1	2202	PSU	N1-C2-N3	4.05	119.72	115.13
28	S1	1539	PSU	N1-C2-N3	4.05	119.71	115.13
28	S1	1833	OMU	C5-C4-N3	4.04	120.89	114.84
2	2	1077	OMU	N3-C2-N1	4.03	120.25	114.89
1	1	1011	PSU	C4-N3-C2	-4.02	120.54	126.34
2	2	593	PSU	N1-C2-N3	4.02	119.69	115.13
28	S1	1566	PSU	N1-C2-N3	4.01	119.67	115.13
2	2	626	PSU	N1-C2-N3	4.00	119.67	115.13
28	S1	607	PSU	N1-C2-N3	3.98	119.64	115.13
28	S1	455	PSU	N1-C2-N3	3.97	119.62	115.13
2	2	1354	PSU	N1-C2-N3	3.96	119.61	115.13

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	1371	OMU	C1'-N1-C2	3.95	124.73	117.57
1	1	1402	PSU	N1-C2-N3	3.95	119.61	115.13
2	2	512	PSU	N1-C2-N3	3.95	119.61	115.13
1	1	1664	PSU	N1-C2-N3	3.94	119.59	115.13
1	1	1011	PSU	N1-C2-N3	3.93	119.59	115.13
2	2	1078	OMG	N2-C2-N3	3.93	127.39	119.74
2	2	437	PSU	N1-C2-N3	3.92	119.57	115.13
1	1	1039	PSU	N1-C2-N3	3.91	119.56	115.13
2	2	1078	OMG	C5-C6-N1	3.91	120.85	113.95
2	2	560	OMU	C2'-C1'-N1	-3.90	106.64	114.22
1	1	1659	OMU	N3-C2-N1	3.89	120.06	114.89
28	S1	1841	PSU	N1-C2-N3	3.89	119.54	115.13
2	2	1359	OMU	N3-C2-N1	3.89	120.05	114.89
2	2	1058	PSU	C4-N3-C2	-3.85	120.79	126.34
28	S1	1995	7MG	C5-C4-N3	-3.84	120.82	128.13
28	S1	661	OMU	N3-C2-N1	3.84	119.98	114.89
2	2	667	OMU	N3-C2-N1	3.84	119.98	114.89
7	7	7	OMU	N3-C2-N1	3.82	119.97	114.89
28	S1	1833	OMU	O4-C4-C5	-3.82	118.44	125.16
1	1	1181	PSU	N1-C2-N3	3.80	119.43	115.13
1	1	847	OMU	N3-C2-N1	3.77	119.89	114.89
2	2	560	OMU	N3-C2-N1	3.76	119.88	114.89
1	1	1171	PSU	C4-N3-C2	-3.74	120.95	126.34
28	S1	8	OMU	N3-C2-N1	3.72	119.82	114.89
28	S1	29	OMU	N3-C2-N1	3.67	119.76	114.89
2	2	1058	PSU	C6-N1-C2	-3.62	118.98	122.68
2	2	56	OMU	N3-C2-N1	3.62	119.70	114.89
1	1	1371	OMU	N3-C2-N1	3.62	119.69	114.89
28	S1	1621	OMU	N3-C2-N1	3.62	119.69	114.89
2	2	1058	PSU	N1-C2-N3	3.61	119.22	115.13
2	2	1060	PSU	C6-C5-C4	3.61	120.72	118.20
28	S1	8	OMU	C5-C4-N3	3.60	120.22	114.84
2	2	534	OMG	C5-C6-N1	3.60	120.30	113.95
2	2	56	OMU	C5-C4-N3	3.59	120.22	114.84
2	2	1231	OMG	C5-C6-N1	3.59	120.30	113.95
1	1	1107	OMU	C5-C4-N3	3.59	120.21	114.84
1	1	1171	PSU	N1-C2-N3	3.59	119.19	115.13
7	7	7	OMU	C5-C4-N3	3.58	120.20	114.84
2	2	560	OMU	C5-C4-N3	3.56	120.16	114.84
28	S1	1621	OMU	C5-C4-N3	3.55	120.14	114.84
2	2	71	OMG	C5-C6-N1	3.53	120.19	113.95
2	2	655	OMG	C5-C6-N1	3.53	120.18	113.95

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
28	S1	1246	PSU	C6-C5-C4	3.53	120.66	118.20
2	2	667	OMU	C5-C4-N3	3.52	120.11	114.84
28	S1	1550	OMG	C5-C6-N1	3.52	120.17	113.95
3	3	13	OMU	N3-C2-N1	3.52	119.56	114.89
2	2	524	5MC	C5-C6-N1	-3.50	119.73	123.34
28	S1	2046	PSU	C6-N1-C2	-3.50	119.10	122.68
28	S1	661	OMU	C5-C4-N3	3.50	120.08	114.84
2	2	472	PSU	C6-N1-C2	-3.50	119.10	122.68
2	2	1253	OMG	C5-C6-N1	3.48	120.09	113.95
28	S1	1979	OMU	N3-C2-N1	3.48	119.50	114.89
1	1	1107	OMU	N3-C2-N1	3.47	119.49	114.89
2	2	122	PSU	C6-N1-C2	-3.46	119.14	122.68
2	2	1265	PSU	C6-N1-C2	-3.46	119.14	122.68
28	S1	1544	5MC	C5-C6-N1	-3.46	119.78	123.34
2	2	1303	PSU	C6-C5-C4	3.46	120.61	118.20
28	S1	1623	OMG	C5-C6-N1	3.44	120.02	113.95
2	2	73	OMU	N3-C2-N1	3.44	119.45	114.89
3	3	13	OMU	C5-C4-N3	3.43	119.98	114.84
1	1	940	PSU	C6-C5-C4	3.42	120.59	118.20
1	1	1626	OMG	C5-C6-N1	3.42	119.98	113.95
28	S1	2061	5MC	C5-C6-N1	-3.40	119.84	123.34
28	S1	1865	OMG	C5-C6-N1	3.40	119.95	113.95
2	2	1046	OMG	C5-C6-N1	3.39	119.94	113.95
28	S1	1879	OMG	C5-C6-N1	3.38	119.92	113.95
1	1	959	OMG	C5-C6-N1	3.38	119.92	113.95
1	1	1524	OMG	C5-C6-N1	3.38	119.91	113.95
1	1	1659	OMU	C5-C4-N3	3.37	119.89	114.84
1	1	1190	OMG	C5-C6-N1	3.37	119.91	113.95
1	1	856	OMG	C5-C6-N1	3.37	119.91	113.95
28	S1	600	OMG	C5-C6-N1	3.37	119.91	113.95
28	S1	1647	OMG	C5-C6-N1	3.37	119.90	113.95
2	2	1144	PSU	C6-C5-C4	3.36	120.54	118.20
2	2	1360	OMG	C5-C6-N1	3.35	119.86	113.95
28	S1	1979	OMU	C5-C4-N3	3.34	119.84	114.84
28	S1	1478	OMG	C5-C6-N1	3.34	119.85	113.95
28	S1	1829	OMG	C5-C6-N1	3.34	119.85	113.95
2	2	1229	OMG	C5-C6-N1	3.33	119.84	113.95
2	2	1359	OMU	C5-C4-N3	3.33	119.83	114.84
2	2	662	PSU	C6-C5-C4	3.33	120.53	118.20
28	S1	29	OMU	C5-C4-N3	3.33	119.82	114.84
7	7	75	OMG	C5-C6-N1	3.32	119.81	113.95
1	1	845	OMU	C6-C5-C4	3.32	124.05	119.52

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	2	1077	OMU	C5-C4-N3	3.32	119.80	114.84
1	1	1371	OMU	C5-C4-N3	3.30	119.77	114.84
1	1	1540	OMG	C5-C6-N1	3.26	119.70	113.95
2	2	534	OMG	C2-N1-C6	-3.25	119.12	125.10
2	2	1403	PSU	C6-C5-C4	3.25	120.47	118.20
2	2	1308	5MC	C4'-O4'-C1'	-3.24	102.32	109.47
4	4	74	OMG	C5-C6-N1	3.24	119.67	113.95
7	7	69	PSU	C6-C5-C4	3.23	120.46	118.20
28	S1	2151	OMG	C5-C6-N1	3.22	119.64	113.95
2	2	641	OMG	C5-C6-N1	3.22	119.64	113.95
2	2	560	OMU	O3'-C3'-C4'	3.20	120.31	111.05
28	S1	104	PSU	C6-C5-C4	3.19	120.43	118.20
2	2	655	OMG	C2-N1-C6	-3.19	119.23	125.10
1	1	1107	OMU	O4-C4-C5	-3.18	119.57	125.16
28	S1	1539	PSU	C6-N1-C2	-3.15	119.46	122.68
28	S1	1995	7MG	C4-C5-N7	3.15	109.91	105.53
28	S1	1995	7MG	C5-C4-N9	3.15	110.44	106.35
2	2	1046	OMG	C2-N1-C6	-3.15	119.30	125.10
28	S1	1833	OMU	N3-C2-N1	3.13	119.05	114.89
2	2	73	OMU	C5-C4-N3	3.13	119.53	114.84
1	1	847	OMU	C5-C4-N3	3.12	119.51	114.84
2	2	1194	PSU	C6-N1-C2	-3.12	119.49	122.68
1	1	239	PSU	C6-C5-C4	3.12	120.38	118.20
1	1	845	OMU	O2-C2-N3	-3.11	115.72	121.50
28	S1	1192	PSU	C6-N1-C2	-3.11	119.51	122.68
2	2	71	OMG	C2-N1-C6	-3.08	119.43	125.10
28	S1	600	OMG	C2-N1-C6	-3.08	119.43	125.10
28	S1	609	PSU	C6-N1-C2	-3.07	119.55	122.68
28	S1	1841	PSU	C6-N1-C2	-3.06	119.55	122.68
2	2	1253	OMG	C2-N1-C6	-3.06	119.47	125.10
2	2	1265	PSU	C6-C5-C4	3.06	120.34	118.20
28	S1	1533	PSU	C6-C5-C4	3.06	120.34	118.20
28	S1	1879	OMG	C2-N1-C6	-3.05	119.48	125.10
1	1	1540	OMG	C2-N1-C6	-3.04	119.50	125.10
28	S1	1829	OMG	C2-N1-C6	-3.04	119.51	125.10
2	2	1229	OMG	C2-N1-C6	-3.03	119.52	125.10
28	S1	1550	OMG	C2-N1-C6	-3.03	119.52	125.10
1	1	1039	PSU	C6-N1-C2	-3.02	119.59	122.68
28	S1	1979	OMU	O4-C4-C5	-3.02	119.85	125.16
28	S1	607	PSU	C6-N1-C2	-3.02	119.60	122.68
2	2	1360	OMG	C2-N1-C6	-3.02	119.55	125.10
28	S1	1623	OMG	C2-N1-C6	-3.02	119.55	125.10

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	2	1231	OMG	C2-N1-C6	-3.01	119.56	125.10
1	1	959	OMG	C2-N1-C6	-2.99	119.60	125.10
1	1	940	PSU	C6-N1-C2	-2.98	119.63	122.68
28	S1	33	PSU	C6-C5-C4	2.98	120.28	118.20
28	S1	1478	OMG	C2-N1-C6	-2.98	119.61	125.10
28	S1	1647	OMG	C2-N1-C6	-2.98	119.61	125.10
1	1	1402	PSU	C6-N1-C2	-2.97	119.64	122.68
1	1	1011	PSU	C6-N1-C2	-2.97	119.65	122.68
2	2	641	OMG	C8-N7-C5	2.96	108.63	102.99
1	1	1524	OMG	C2-N1-C6	-2.96	119.65	125.10
1	1	1626	OMG	C2-N1-C6	-2.96	119.66	125.10
28	S1	1543	B8N	N3-C2-N1	2.95	120.93	116.76
2	2	641	OMG	C2-N1-C6	-2.95	119.67	125.10
28	S1	1621	OMU	O4-C4-C5	-2.95	119.98	125.16
28	S1	1865	OMG	C2-N1-C6	-2.94	119.69	125.10
28	S1	455	PSU	C6-N1-C2	-2.94	119.68	122.68
1	1	856	OMG	C2-N1-C6	-2.93	119.70	125.10
1	1	1371	OMU	O4-C4-C5	-2.93	120.00	125.16
28	S1	2202	PSU	C6-N1-C2	-2.91	119.71	122.68
2	2	1361	PSU	C6-N1-C2	-2.90	119.72	122.68
2	2	472	PSU	O2-C2-N1	-2.90	119.60	122.79
28	S1	29	OMU	O4-C4-C5	-2.89	120.08	125.16
28	S1	1156	PSU	C6-N1-C2	-2.89	119.73	122.68
7	7	75	OMG	C2-N1-C6	-2.89	119.78	125.10
1	1	1533	PSU	C6-C5-C4	2.89	120.22	118.20
2	2	597	PSU	C6-C5-C4	2.89	120.22	118.20
4	4	74	OMG	C2-N1-C6	-2.89	119.78	125.10
2	2	1303	PSU	C6-N1-C2	-2.89	119.73	122.68
3	3	13	OMU	O4-C4-C5	-2.88	120.09	125.16
1	1	1528	PSU	C6-N1-C2	-2.88	119.74	122.68
2	2	1144	PSU	C6-N1-C2	-2.87	119.74	122.68
28	S1	1246	PSU	C6-N1-C2	-2.87	119.75	122.68
2	2	597	PSU	C6-N1-C2	-2.87	119.75	122.68
28	S1	104	PSU	C6-N1-C2	-2.87	119.75	122.68
2	2	1060	PSU	C6-N1-C2	-2.86	119.76	122.68
28	S1	33	PSU	C6-N1-C2	-2.85	119.77	122.68
2	2	560	OMU	O4-C4-C5	-2.84	120.16	125.16
2	2	1078	OMG	N1-C2-N3	-2.84	118.02	123.32
1	1	1533	PSU	C6-N1-C2	-2.83	119.79	122.68
2	2	1354	PSU	C6-N1-C2	-2.83	119.79	122.68
1	1	1190	OMG	C2-N1-C6	-2.83	119.89	125.10
1	1	1181	PSU	C6-N1-C2	-2.82	119.80	122.68

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
28	S1	609	PSU	C6-C5-C4	2.82	120.17	118.20
2	2	667	OMU	O4-C4-C5	-2.82	120.21	125.16
28	S1	2151	OMG	C2-N1-C6	-2.81	119.92	125.10
2	2	510	PSU	C6-N1-C2	-2.80	119.82	122.68
1	1	1659	OMU	O4-C4-C5	-2.80	120.24	125.16
2	2	1077	OMU	O4-C4-C5	-2.80	120.24	125.16
2	2	1058	PSU	O2-C2-N1	-2.79	119.72	122.79
1	1	422	PSU	C6-N1-C2	-2.79	119.83	122.68
2	2	122	PSU	C6-C5-C4	2.79	120.15	118.20
1	1	856	OMG	C8-N7-C5	2.79	108.31	102.99
28	S1	1995	7MG	C2-N1-C6	-2.78	120.02	125.10
2	2	1361	PSU	C6-C5-C4	2.78	120.14	118.20
1	1	1017	PSU	C6-N1-C2	-2.78	119.84	122.68
28	S1	12	PSU	C6-N1-C2	-2.78	119.84	122.68
28	S1	1995	7MG	O6-C6-C5	-2.78	120.72	127.54
28	S1	1533	PSU	C6-N1-C2	-2.78	119.84	122.68
28	S1	1657	PSU	C6-C5-C4	2.77	120.13	118.20
28	S1	12	PSU	C6-C5-C4	2.77	120.13	118.20
2	2	56	OMU	O4-C4-C5	-2.77	120.30	125.16
2	2	512	PSU	C6-N1-C2	-2.76	119.86	122.68
2	2	1413	PSU	C6-N1-C2	-2.76	119.87	122.68
2	2	626	PSU	C6-N1-C2	-2.75	119.87	122.68
2	2	662	PSU	C6-N1-C2	-2.75	119.88	122.68
2	2	1194	PSU	C6-C5-C4	2.75	120.12	118.20
28	S1	1647	OMG	C8-N7-C5	2.74	108.20	102.99
1	1	1190	OMG	C8-N7-C5	2.74	108.20	102.99
28	S1	1566	PSU	C6-N1-C2	-2.73	119.89	122.68
28	S1	8	OMU	O4-C4-C5	-2.73	120.36	125.16
7	7	69	PSU	C6-N1-C2	-2.73	119.90	122.68
1	1	239	PSU	C6-N1-C2	-2.72	119.90	122.68
1	1	1626	OMG	C8-N7-C5	2.72	108.17	102.99
2	2	1265	PSU	O2-C2-N1	-2.72	119.80	122.79
7	7	7	OMU	O4-C4-C5	-2.71	120.40	125.16
7	7	75	OMG	C8-N7-C5	2.70	108.14	102.99
1	1	1540	OMG	C8-N7-C5	2.70	108.14	102.99
2	2	122	PSU	O2-C2-N1	-2.70	119.82	122.79
7	7	74	PSU	C6-N1-C2	-2.70	119.92	122.68
2	2	662	PSU	O2-C2-N1	-2.70	119.82	122.79
28	S1	1829	OMG	C8-N7-C5	2.69	108.12	102.99
1	1	847	OMU	O4-C4-C5	-2.68	120.44	125.16
2	2	655	OMG	C8-N7-C5	2.68	108.10	102.99
28	S1	1543	B8N	O4-C4-N3	-2.68	115.43	119.98

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	1524	OMG	C8-N7-C5	2.67	108.08	102.99
28	S1	2046	PSU	O2-C2-N1	-2.67	119.85	122.79
2	2	510	PSU	C6-C5-C4	2.66	120.06	118.20
28	S1	1539	PSU	O2-C2-N1	-2.65	119.87	122.79
28	S1	1550	OMG	C8-N7-C5	2.65	108.05	102.99
28	S1	1156	PSU	C6-C5-C4	2.65	120.05	118.20
1	1	1664	PSU	C6-N1-C2	-2.65	119.97	122.68
2	2	626	PSU	O2-C2-N1	-2.64	119.88	122.79
2	2	1359	OMU	O4-C4-C5	-2.63	120.53	125.16
1	1	1017	PSU	C6-C5-C4	2.63	120.04	118.20
2	2	593	PSU	C6-N1-C2	-2.62	120.00	122.68
2	2	1360	OMG	C8-N7-C5	2.62	107.98	102.99
28	S1	661	OMU	O4-C4-C5	-2.62	120.55	125.16
1	1	422	PSU	C6-C5-C4	2.61	120.02	118.20
2	2	1253	OMG	C8-N7-C5	2.61	107.96	102.99
2	2	1229	OMG	C8-N7-C5	2.61	107.96	102.99
2	2	1046	OMG	C8-N7-C5	2.61	107.96	102.99
28	S1	1478	OMG	C8-N7-C5	2.61	107.95	102.99
1	1	1528	PSU	C6-C5-C4	2.59	120.01	118.20
1	1	1533	PSU	O2-C2-N1	-2.59	119.94	122.79
2	2	71	OMG	C8-N7-C5	2.59	107.92	102.99
1	1	959	OMG	C8-N7-C5	2.59	107.92	102.99
28	S1	1879	OMG	C8-N7-C5	2.58	107.91	102.99
28	S1	2151	OMG	C8-N7-C5	2.58	107.91	102.99
2	2	1403	PSU	C6-N1-C2	-2.58	120.04	122.68
2	2	437	PSU	C6-C5-C4	2.58	120.00	118.20
28	S1	1657	PSU	C6-N1-C2	-2.58	120.05	122.68
2	2	1264	PSU	C6-N1-C2	-2.58	120.05	122.68
4	4	74	OMG	C8-N7-C5	2.58	107.90	102.99
2	2	1231	OMG	C8-N7-C5	2.57	107.89	102.99
2	2	1318	PSU	C6-C5-C4	2.57	120.00	118.20
1	1	1011	PSU	O2-C2-N1	-2.57	119.96	122.79
2	2	667	OMU	O2-C2-N1	-2.57	119.37	122.79
2	2	1144	PSU	O2-C2-N1	-2.57	119.96	122.79
2	2	1194	PSU	O2-C2-N1	-2.57	119.97	122.79
28	S1	1623	OMG	C8-N7-C5	2.55	107.85	102.99
28	S1	600	OMG	C8-N7-C5	2.55	107.85	102.99
2	2	534	OMG	O6-C6-C5	-2.55	119.40	124.37
1	1	1171	PSU	O2-C2-N1	-2.54	119.99	122.79
28	S1	1865	OMG	C8-N7-C5	2.54	107.82	102.99
1	1	1659	OMU	O2-C2-N1	-2.53	119.43	122.79
2	2	1318	PSU	C6-N1-C2	-2.52	120.10	122.68

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	2	472	PSU	C6-C5-C4	2.52	119.96	118.20
2	2	71	OMG	O6-C6-C5	-2.52	119.46	124.37
2	2	534	OMG	C8-N7-C5	2.51	107.78	102.99
7	7	7	OMU	O2-C2-N1	-2.51	119.45	122.79
28	S1	1246	PSU	O2-C2-N1	-2.50	120.04	122.79
28	S1	609	PSU	O2-C2-N1	-2.49	120.04	122.79
2	2	1078	OMG	O6-C6-C5	-2.49	119.50	124.37
7	7	74	PSU	C6-C5-C4	2.48	119.93	118.20
2	2	78	PSU	C6-N1-C2	-2.48	120.15	122.68
2	2	1078	OMG	C8-N7-C5	2.47	107.69	102.99
28	S1	1621	OMU	O2-C2-N1	-2.47	119.51	122.79
28	S1	1829	OMG	O6-C6-C5	-2.46	119.57	124.37
28	S1	2202	PSU	C6-C5-C4	2.46	119.92	118.20
2	2	78	PSU	C6-C5-C4	2.45	119.91	118.20
28	S1	8	OMU	O2-C2-N1	-2.43	119.56	122.79
2	2	122	PSU	C3'-C2'-C1'	2.42	104.46	101.64
2	2	560	OMU	CM2-O2'-C2'	-2.42	108.17	114.52
1	1	940	PSU	O2-C2-N1	-2.42	120.13	122.79
1	1	239	PSU	O2-C2-N1	-2.42	120.13	122.79
2	2	1077	OMU	O2-C2-N1	-2.40	119.59	122.79
2	2	73	OMU	O4-C4-C5	-2.39	120.95	125.16
2	2	1354	PSU	O2-C2-N1	-2.39	120.16	122.79
28	S1	1865	OMG	O6-C6-C5	-2.38	119.72	124.37
28	S1	600	OMG	O6-C6-C5	-2.38	119.72	124.37
2	2	593	PSU	C6-C5-C4	2.38	119.86	118.20
1	1	1107	OMU	O2-C2-N1	-2.38	119.63	122.79
28	S1	33	PSU	O2-C2-N1	-2.37	120.18	122.79
28	S1	1841	PSU	O2-C2-N1	-2.37	120.18	122.79
28	S1	1623	OMG	O6-C6-C5	-2.37	119.74	124.37
28	S1	1543	B8N	C32-C31-N3	-2.37	107.56	112.00
28	S1	1657	PSU	O2-C2-N1	-2.36	120.19	122.79
2	2	1360	OMG	O6-C6-C5	-2.36	119.77	124.37
28	S1	104	PSU	O2-C2-N1	-2.35	120.20	122.79
1	1	1402	PSU	O2-C2-N1	-2.35	120.21	122.79
2	2	1403	PSU	O2-C2-N1	-2.34	120.21	122.79
1	1	422	PSU	O2-C2-N1	-2.34	120.22	122.79
2	2	1229	OMG	O6-C6-C5	-2.33	119.82	124.37
1	1	1017	PSU	O2-C2-N1	-2.33	120.23	122.79
28	S1	1647	OMG	O6-C6-C5	-2.32	119.84	124.37
28	S1	1192	PSU	C6-C5-C4	2.32	119.82	118.20
28	S1	661	OMU	O2-C2-N1	-2.32	119.70	122.79
28	S1	1533	PSU	O2-C2-N1	-2.32	120.24	122.79

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	1524	OMG	O6-C6-C5	-2.31	119.86	124.37
1	1	1011	PSU	O4'-C1'-C2'	2.31	108.40	105.14
2	2	570	A2M	C5-C6-N6	2.31	123.86	120.35
28	S1	1478	OMG	O6-C6-C5	-2.31	119.87	124.37
2	2	1384	A2M	C5-C6-N6	2.30	123.85	120.35
1	1	845	OMU	C5-C4-N3	2.30	118.28	114.84
2	2	1413	PSU	C6-C5-C4	2.30	119.80	118.20
28	S1	12	PSU	O2-C2-N1	-2.29	120.27	122.79
28	S1	607	PSU	O2-C2-N1	-2.29	120.27	122.79
2	2	1303	PSU	O2-C2-N1	-2.29	120.27	122.79
2	2	512	PSU	O2-C2-N1	-2.29	120.27	122.79
2	2	1318	PSU	O2-C2-N1	-2.28	120.28	122.79
2	2	1078	OMG	C2-N1-C6	-2.28	120.90	125.10
2	2	510	PSU	O2-C2-N1	-2.27	120.29	122.79
28	S1	1192	PSU	O2-C2-N1	-2.27	120.29	122.79
1	1	681	A2M	C5-C6-N6	2.27	123.80	120.35
1	1	678	A2M	C5-C6-N6	2.27	123.80	120.35
2	2	1046	OMG	O6-C6-C5	-2.26	119.95	124.37
4	4	74	OMG	O6-C6-C5	-2.26	119.95	124.37
2	2	597	PSU	O2-C2-N1	-2.26	120.31	122.79
2	2	1264	PSU	O4'-C1'-C2'	2.25	108.32	105.14
28	S1	1995	7MG	N9-C8-N7	2.25	106.60	103.38
7	7	69	PSU	O2-C2-N1	-2.25	120.32	122.79
2	2	1231	OMG	O6-C6-C5	-2.25	119.98	124.37
28	S1	2202	PSU	O2-C2-N1	-2.24	120.32	122.79
1	1	1371	OMU	C1'-N1-C6	-2.23	115.97	120.84
2	2	512	PSU	C6-C5-C4	2.23	119.76	118.20
1	1	1190	OMG	O6-C6-C5	-2.23	120.02	124.37
1	1	847	OMU	O2-C2-N1	-2.23	119.83	122.79
7	7	75	OMG	O6-C6-C5	-2.23	120.02	124.37
7	7	69	PSU	O4'-C1'-C2'	2.22	108.28	105.14
28	S1	1879	OMG	O6-C6-C5	-2.22	120.04	124.37
2	2	1253	OMG	O6-C6-C5	-2.22	120.05	124.37
2	2	1303	PSU	O4'-C1'-C2'	2.21	108.26	105.14
2	2	655	OMG	O6-C6-C5	-2.20	120.08	124.37
28	S1	1995	7MG	N9-C4-N3	2.19	128.74	125.47
3	3	13	OMU	O2-C2-N1	-2.19	119.87	122.79
2	2	1359	OMU	O2-C2-N1	-2.19	119.87	122.79
28	S1	1156	PSU	O2-C2-N1	-2.19	120.38	122.79
2	2	437	PSU	C6-N1-C2	-2.18	120.46	122.68
28	S1	1550	OMG	O6-C6-C5	-2.17	120.13	124.37
2	2	1060	PSU	O2-C2-N1	-2.16	120.41	122.79

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
28	S1	1566	PSU	O2-C2-N1	-2.16	120.42	122.79
1	1	959	OMG	O6-C6-C5	-2.14	120.19	124.37
2	2	1403	PSU	O4'-C1'-C2'	2.14	108.16	105.14
1	1	1039	PSU	O2-C2-N1	-2.13	120.44	122.79
28	S1	2151	OMG	O6-C6-C5	-2.12	120.23	124.37
28	S1	2046	PSU	C6-C5-C4	2.12	119.68	118.20
2	2	524	5MC	CM5-C5-C6	-2.10	120.04	122.85
2	2	662	PSU	O4'-C1'-C2'	2.10	108.11	105.14
28	S1	29	OMU	O2-C2-N1	-2.10	119.99	122.79
2	2	593	PSU	O2-C2-N1	-2.10	120.48	122.79
28	S1	2061	5MC	CM5-C5-C6	-2.09	120.05	122.85
1	1	1626	OMG	O6-C6-C5	-2.09	120.30	124.37
2	2	626	PSU	C6-C5-C4	2.08	119.65	118.20
1	1	1540	OMG	O6-C6-C5	-2.08	120.31	124.37
7	7	74	PSU	O2-C2-N1	-2.08	120.50	122.79
1	1	1664	PSU	C6-C5-C4	2.08	119.65	118.20
2	2	1361	PSU	O2-C2-N1	-2.08	120.51	122.79
1	1	1528	PSU	O2-C2-N1	-2.07	120.51	122.79
28	S1	1979	OMU	C1'-N1-C2	2.06	121.30	117.57
2	2	1413	PSU	O2-C2-N1	-2.06	120.53	122.79
28	S1	668	A2M	C3'-C2'-C1'	2.05	106.75	102.89
28	S1	455	PSU	O2-C2-N1	-2.04	120.54	122.79
2	2	78	PSU	O2-C2-N1	-2.04	120.55	122.79
1	1	1107	OMU	C2'-C1'-N1	-2.04	110.27	114.22
1	1	1533	PSU	O4'-C1'-C2'	2.04	108.02	105.14
2	2	1354	PSU	C6-C5-C4	2.03	119.62	118.20
1	1	1011	PSU	C6-C5-C4	2.03	119.62	118.20
2	2	56	OMU	O2-C2-N1	-2.03	120.09	122.79
1	1	1539	A2M	C5'-C4'-C3'	-2.03	107.59	115.18
1	1	845	OMU	C5-C6-N1	-2.02	118.42	121.81
1	1	845	OMU	C6-N1-C2	-2.02	118.41	120.99
28	S1	2061	5MC	C5-C4-N3	-2.02	119.50	121.67
1	1	856	OMG	O6-C6-C5	-2.01	120.45	124.37
28	S1	1543	B8N	O36-C34-C33	2.01	120.22	113.38
28	S1	1833	OMU	O2-C2-N1	-2.01	120.12	122.79

There are no chirality outliers.

All (128) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
7	7	7	OMU	C1'-C2'-O2'-CM2
7	7	75	OMG	C1'-C2'-O2'-CM2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
7	7	162	A2M	C1'-C2'-O2'-CM'
1	1	681	A2M	O4'-C4'-C5'-O5'
1	1	681	A2M	C3'-C4'-C5'-O5'
1	1	845	OMU	O4'-C1'-N1-C2
1	1	845	OMU	O4'-C1'-N1-C6
1	1	845	OMU	C1'-C2'-O2'-CM2
1	1	955	A2M	C1'-C2'-O2'-CM'
1	1	1011	PSU	C2'-C1'-C5-C4
1	1	1171	PSU	C3'-C4'-C5'-O5'
1	1	1171	PSU	O4'-C4'-C5'-O5'
1	1	1371	OMU	O4'-C1'-N1-C2
1	1	1371	OMU	O4'-C1'-N1-C6
1	1	1540	OMG	O4'-C4'-C5'-O5'
2	2	122	PSU	O4'-C4'-C5'-O5'
2	2	382	A2M	C1'-C2'-O2'-CM'
2	2	443	OMC	C2'-C1'-N1-C6
2	2	534	OMG	O4'-C4'-C5'-O5'
2	2	534	OMG	C3'-C4'-C5'-O5'
2	2	570	A2M	C1'-C2'-O2'-CM'
2	2	591	A2M	C1'-C2'-O2'-CM'
2	2	1046	OMG	C1'-C2'-O2'-CM2
2	2	1058	PSU	C3'-C4'-C5'-O5'
2	2	1229	OMG	O4'-C4'-C5'-O5'
2	2	1229	OMG	C3'-C4'-C5'-O5'
2	2	1248	OMC	C1'-C2'-O2'-CM2
2	2	1264	PSU	O4'-C1'-C5-C4
2	2	1264	PSU	O4'-C1'-C5-C6
2	2	1384	A2M	C1'-C2'-O2'-CM'
28	S1	29	OMU	C1'-C2'-O2'-CM2
28	S1	455	PSU	C2'-C1'-C5-C4
28	S1	455	PSU	O4'-C1'-C5-C4
28	S1	455	PSU	O4'-C1'-C5-C6
28	S1	607	PSU	O4'-C1'-C5-C4
28	S1	607	PSU	O4'-C1'-C5-C6
28	S1	668	A2M	C1'-C2'-O2'-CM'
28	S1	1543	B8N	O4'-C4'-C5'-O5'
28	S1	1543	B8N	C3'-C4'-C5'-O5'
28	S1	1543	B8N	N3-C31-C32-C33
28	S1	1543	B8N	C31-C32-C33-C34
28	S1	1543	B8N	C31-C32-C33-N34
28	S1	1566	PSU	C3'-C4'-C5'-O5'
28	S1	1566	PSU	O4'-C4'-C5'-O5'

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
28	S1	1623	OMG	C1'-C2'-O2'-CM2
28	S1	1841	PSU	C3'-C4'-C5'-O5'
28	S1	1879	OMG	O4'-C4'-C5'-O5'
28	S1	1879	OMG	C3'-C4'-C5'-O5'
28	S1	1879	OMG	C1'-C2'-O2'-CM2
28	S1	2021	A2M	C3'-C4'-C5'-O5'
28	S1	2021	A2M	C1'-C2'-O2'-CM'
28	S1	2151	OMG	C3'-C4'-C5'-O5'
2	2	443	OMC	C2'-C1'-N1-C2
1	1	305	A2M	O4'-C4'-C5'-O5'
1	1	678	A2M	O4'-C4'-C5'-O5'
1	1	1181	PSU	C3'-C4'-C5'-O5'
1	1	1540	OMG	C3'-C4'-C5'-O5'
2	2	122	PSU	C3'-C4'-C5'-O5'
2	2	527	A2M	O4'-C4'-C5'-O5'
2	2	1046	OMG	O4'-C4'-C5'-O5'
28	S1	668	A2M	O4'-C4'-C5'-O5'
28	S1	668	A2M	C3'-C4'-C5'-O5'
28	S1	1621	OMU	O4'-C4'-C5'-O5'
28	S1	1841	PSU	O4'-C4'-C5'-O5'
1	1	678	A2M	C3'-C4'-C5'-O5'
1	1	1181	PSU	O4'-C4'-C5'-O5'
2	2	527	A2M	C3'-C4'-C5'-O5'
2	2	1046	OMG	C3'-C4'-C5'-O5'
2	2	1058	PSU	O4'-C4'-C5'-O5'
28	S1	98	A2M	O4'-C4'-C5'-O5'
28	S1	2021	A2M	O4'-C4'-C5'-O5'
2	2	1308	5MC	C2'-C1'-N1-C6
28	S1	8	OMU	C2'-C1'-N1-C6
2	2	1078	OMG	C3'-C4'-C5'-O5'
2	2	1078	OMG	O4'-C4'-C5'-O5'
28	S1	1544	5MC	O4'-C4'-C5'-O5'
28	S1	2151	OMG	O4'-C4'-C5'-O5'
1	1	305	A2M	C3'-C4'-C5'-O5'
2	2	1185	A2M	C3'-C4'-C5'-O5'
28	S1	1979	OMU	C3'-C4'-C5'-O5'
28	S1	1543	B8N	N34-C33-C34-O35
1	1	1010	OMC	O4'-C4'-C5'-O5'
2	2	1248	OMC	C4'-C5'-O5'-P
2	2	1361	PSU	C4'-C5'-O5'-P
28	S1	1829	OMG	C4'-C5'-O5'-P
28	S1	8	OMU	O4'-C1'-N1-C6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
28	S1	8	OMU	O4'-C4'-C5'-O5'
28	S1	98	A2M	C3'-C4'-C5'-O5'
28	S1	1192	PSU	C3'-C4'-C5'-O5'
28	S1	1995	7MG	O4'-C4'-C5'-O5'
2	2	1308	5MC	C2'-C1'-N1-C2
2	2	443	OMC	O4'-C1'-N1-C6
2	2	1308	5MC	O4'-C1'-N1-C6
1	1	681	A2M	C4'-C5'-O5'-P
2	2	560	OMU	C4'-C5'-O5'-P
2	2	1185	A2M	C4'-C5'-O5'-P
28	S1	1192	PSU	O4'-C4'-C5'-O5'
28	S1	1979	OMU	O4'-C4'-C5'-O5'
2	2	443	OMC	O4'-C1'-N1-C2
28	S1	1833	OMU	C4'-C5'-O5'-P
28	S1	2185	MA6	C4'-C5'-O5'-P
2	2	1354	PSU	C4'-C5'-O5'-P
28	S1	1995	7MG	C3'-C4'-C5'-O5'
2	2	1308	5MC	O4'-C1'-N1-C2
28	S1	8	OMU	O4'-C1'-N1-C2
28	S1	1543	B8N	C32-C33-C34-O35
1	1	1171	PSU	O4'-C1'-C5-C4
28	S1	1657	PSU	O4'-C1'-C5-C4
2	2	655	OMG	C3'-C2'-O2'-CM2
28	S1	8	OMU	C3'-C2'-O2'-CM2
28	S1	8	OMU	C2'-C1'-N1-C2
28	S1	1543	B8N	N34-C33-C34-O36
28	S1	1544	5MC	C3'-C4'-C5'-O5'
2	2	560	OMU	C3'-C4'-C5'-O5'
28	S1	1979	OMU	C2'-C1'-N1-C2
1	1	1527	OMC	O4'-C4'-C5'-O5'
28	S1	1543	B8N	C32-C33-C34-O36
1	1	1171	PSU	O4'-C1'-C5-C6
28	S1	2202	PSU	O4'-C1'-C5-C6
1	1	1010	OMC	C3'-C4'-C5'-O5'
28	S1	512	A2M	O4'-C4'-C5'-O5'
28	S1	1478	OMG	C3'-C4'-C5'-O5'
28	S1	1833	OMU	O4'-C4'-C5'-O5'
1	1	1539	A2M	C3'-C2'-O2'-CM'
2	2	1360	OMG	C3'-C2'-O2'-CM2
1	1	1371	OMU	C4'-C5'-O5'-P
28	S1	607	PSU	C4'-C5'-O5'-P
28	S1	8	OMU	C3'-C4'-C5'-O5'

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 270 ligands modelled in this entry, 270 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

The following chains have linkage breaks:

Mol	Chain	Number of breaks
7	7	1
28	S1	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	7	169:A	O3'	170:A	P	4.55
1	S1	1543:B8N	O3'	1544:5MC	P	4.07

6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-18437. These allow visual inspection of the internal detail of the map and identification of artifacts.

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

6.1 Orthogonal projections ⓘ

6.1.1 Primary map

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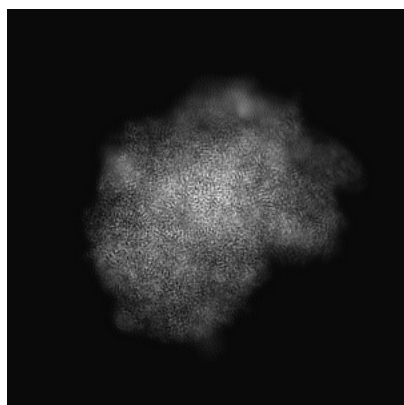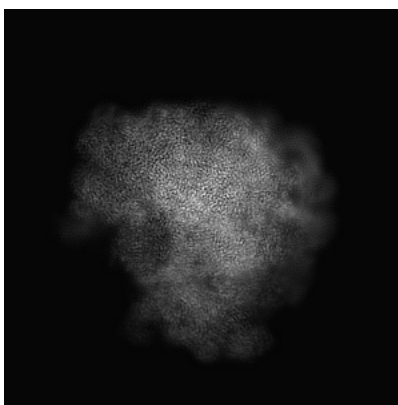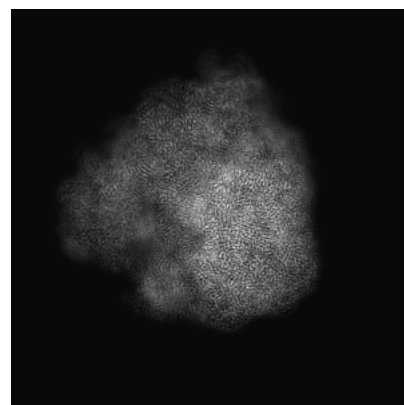
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ
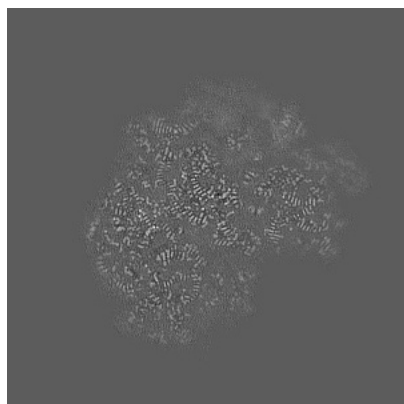
6.2.1 Primary map
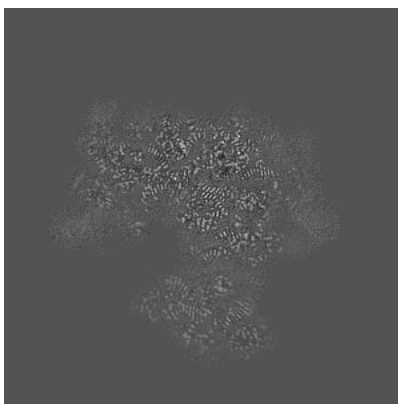
| X Index: 240 | Y Index: 240 | Z Index: 240 |
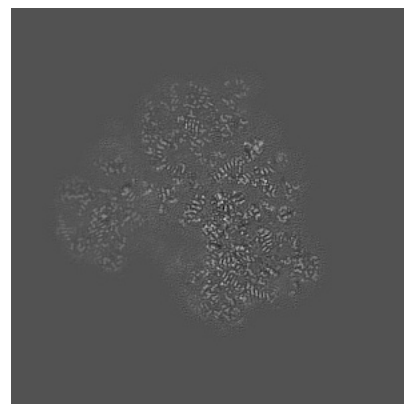
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices ⓘ
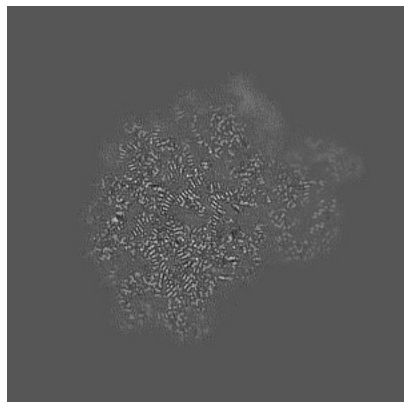
6.3.1 Primary map
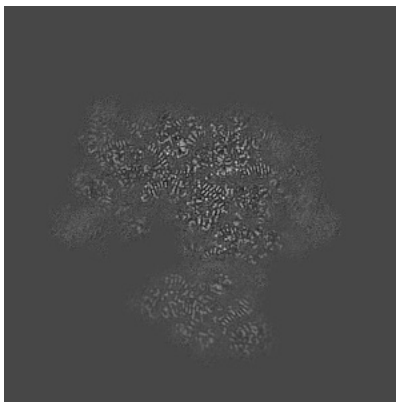
| X Index: 276 | Y Index: 241 | Z Index: 253 |
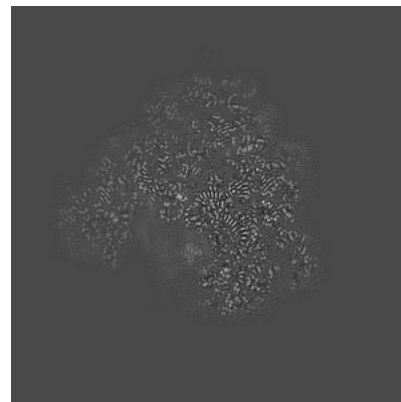
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map

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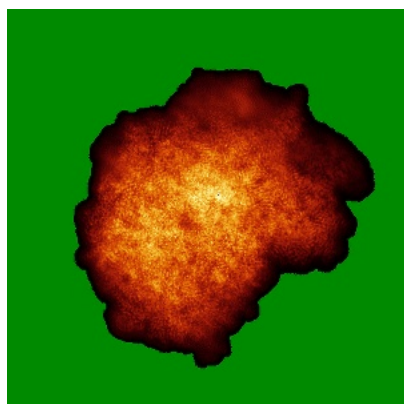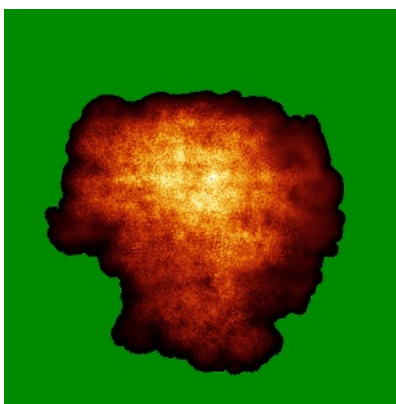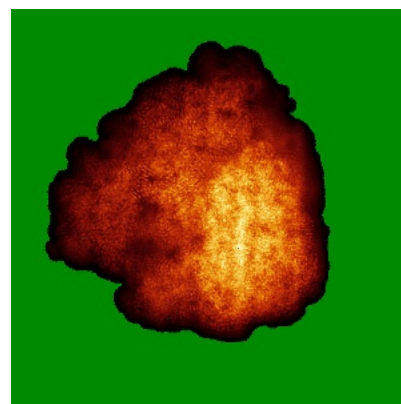
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views ⓘ
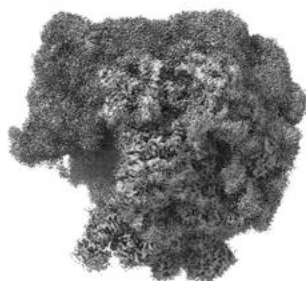
6.5.1 Primary map

| X | Y | Z |

The images above show the 3D surface view of the map at the recommended contour level 0.008. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.6 Mask visualisation ⓘ

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

7   Map analysis ⓘ

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

7.1   Map-value distribution ⓘ

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

7.2 Volume estimate ⓘ
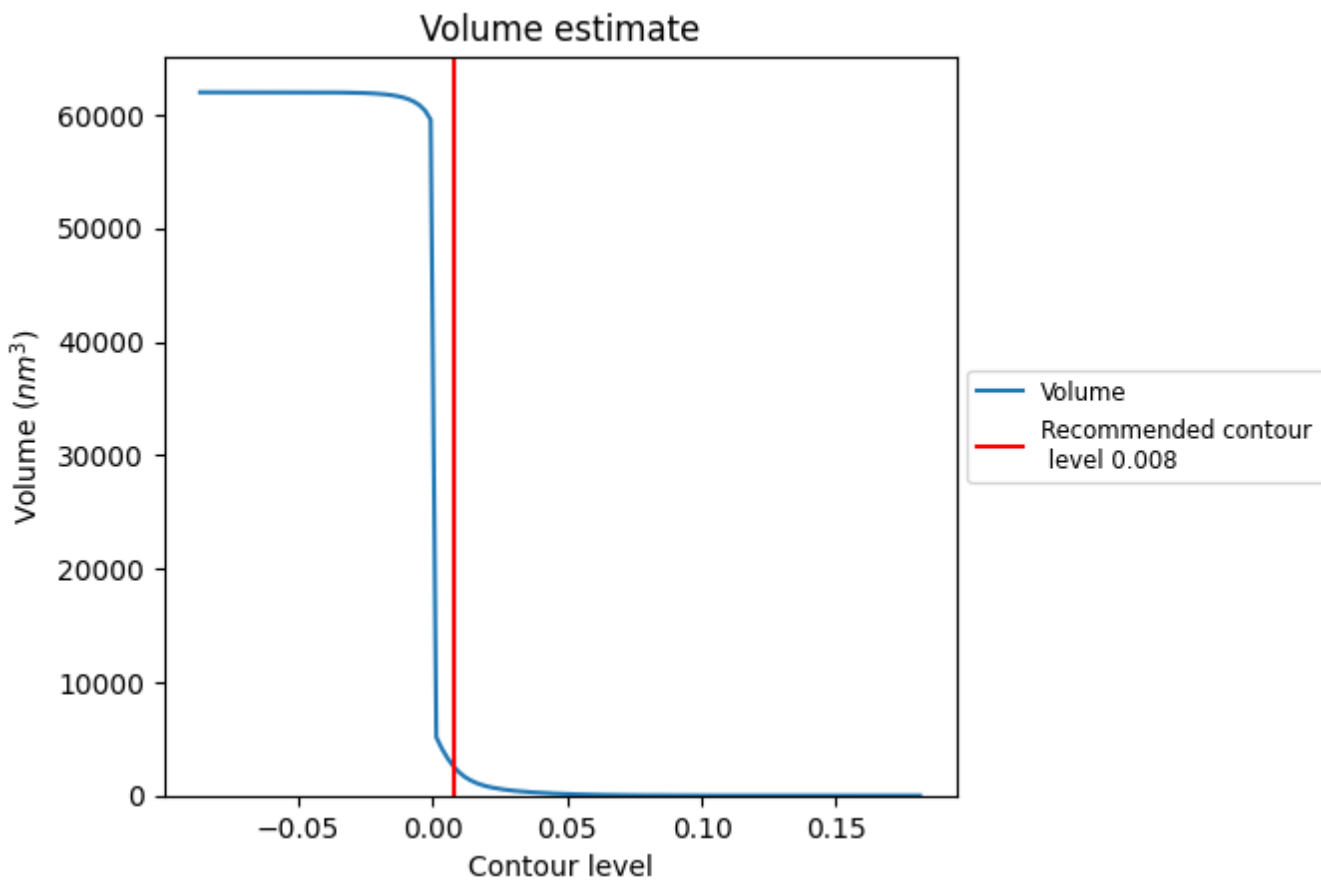
The volume at the recommended contour level is 2508 nm³; this corresponds to an approximate mass of 2266 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ
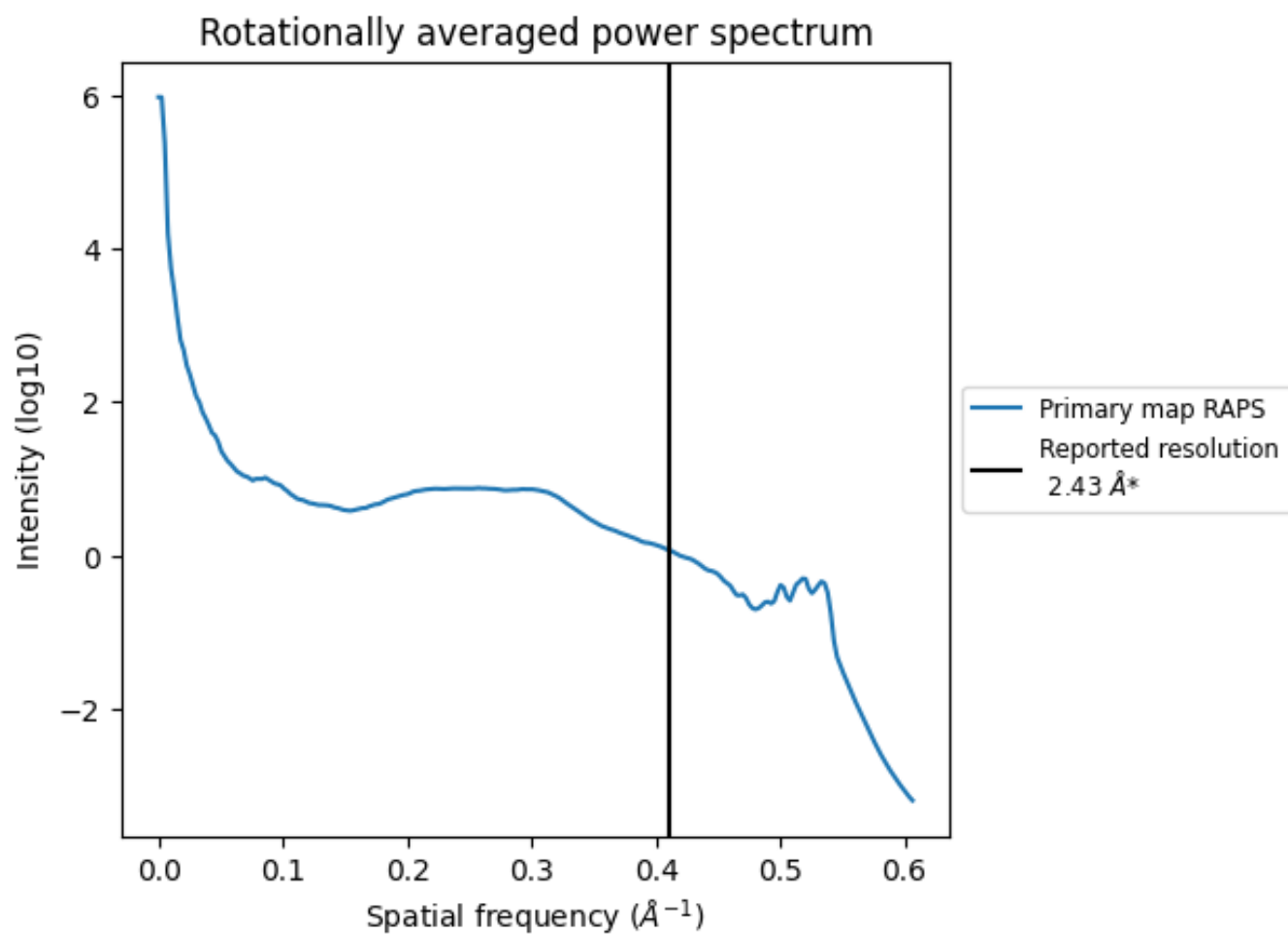
*Reported resolution corresponds to spatial frequency of 0.412 Å^{-1}

8   Fourier-Shell correlation ⓘ

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

8.1   FSC ⓘ
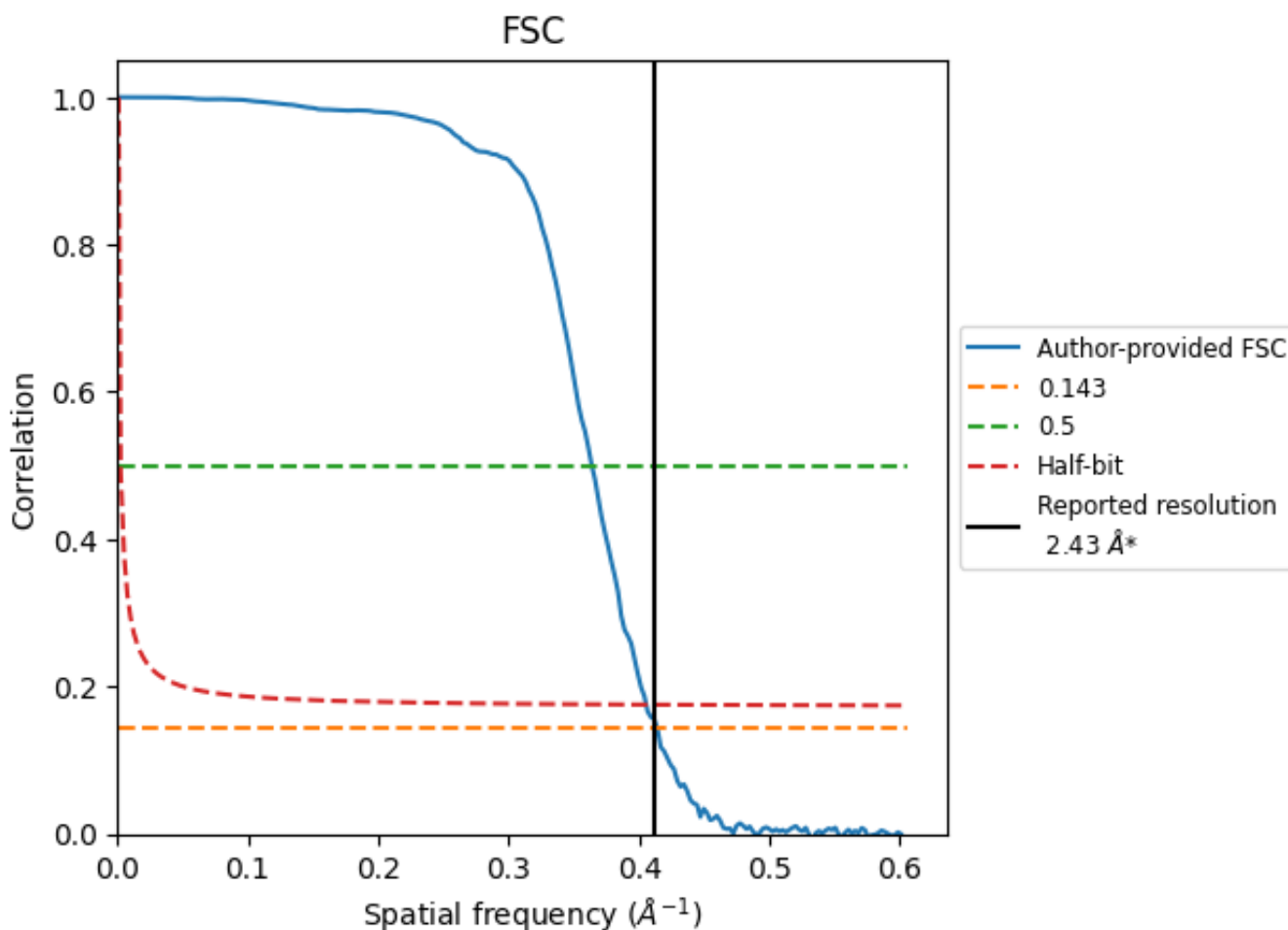
*Reported resolution corresponds to spatial frequency of 0.412 Å^{-1}

8.2   Resolution estimates ⓘ

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.43	-	-
Author-provided FSC curve	2.41	2.75	2.46
Unmasked-calculated*	-	-	-

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

9　Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-18437 and PDB model 8QIE. Per-residue inclusion information can be found in section 3 on page 25.

9.1　Map-model overlay ⓘ

X　　　　　　　　　　　Y　　　　　　　　　　　Z
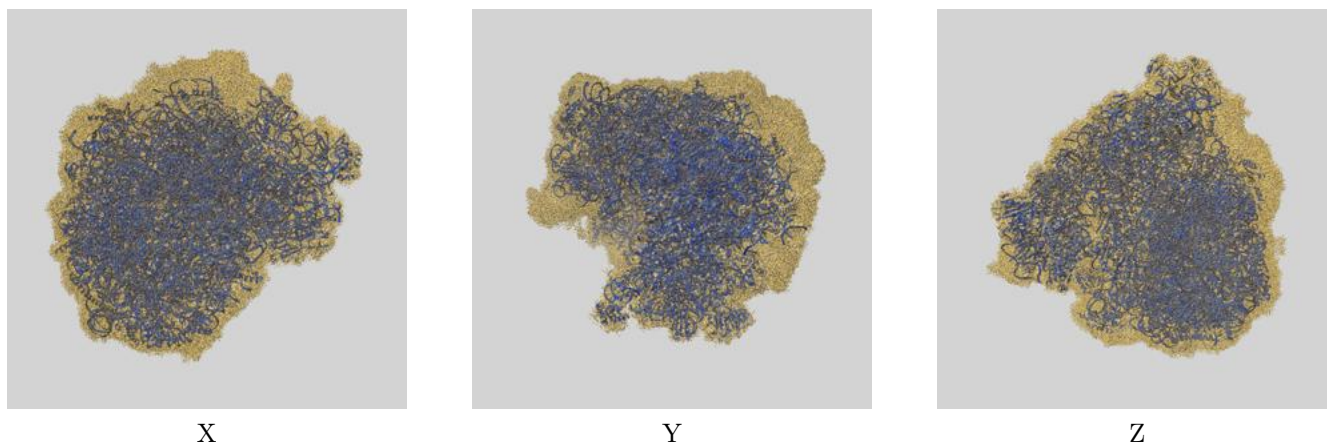
The images above show the 3D surface view of the map at the recommended contour level 0.008 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2　Q-score mapped to coordinate model ⓘ

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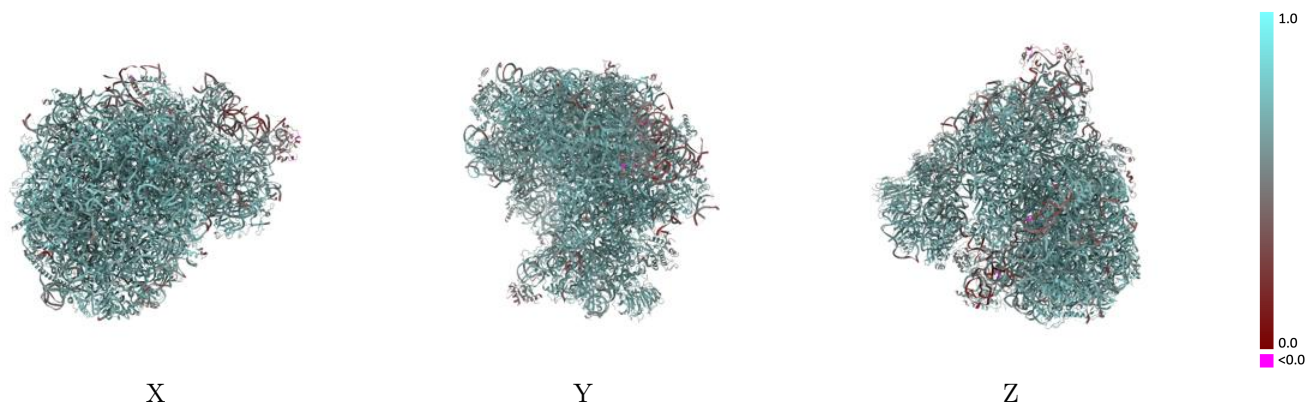
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3　Atom inclusion mapped to coordinate model ⓘ

X	Y	Z
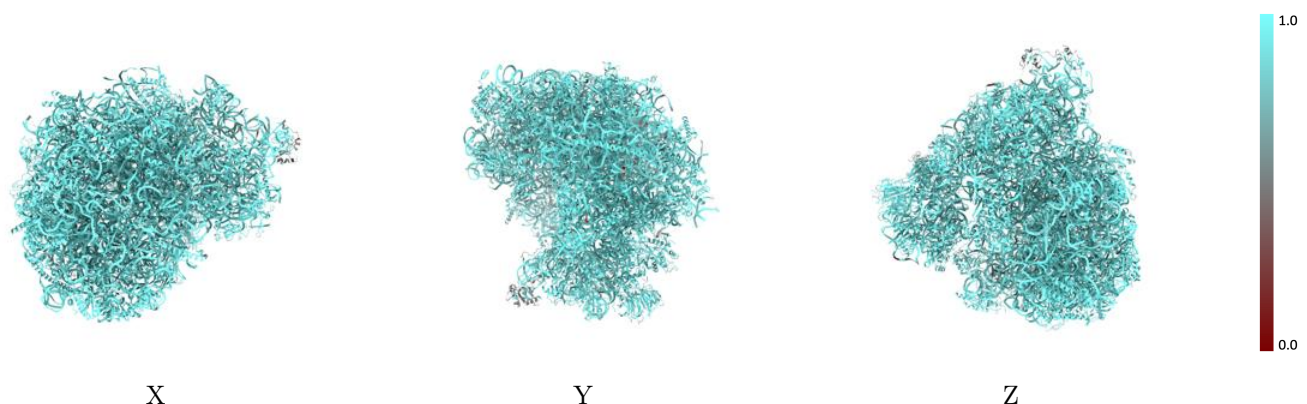
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.008).

9.4 Atom inclusion ⓘ
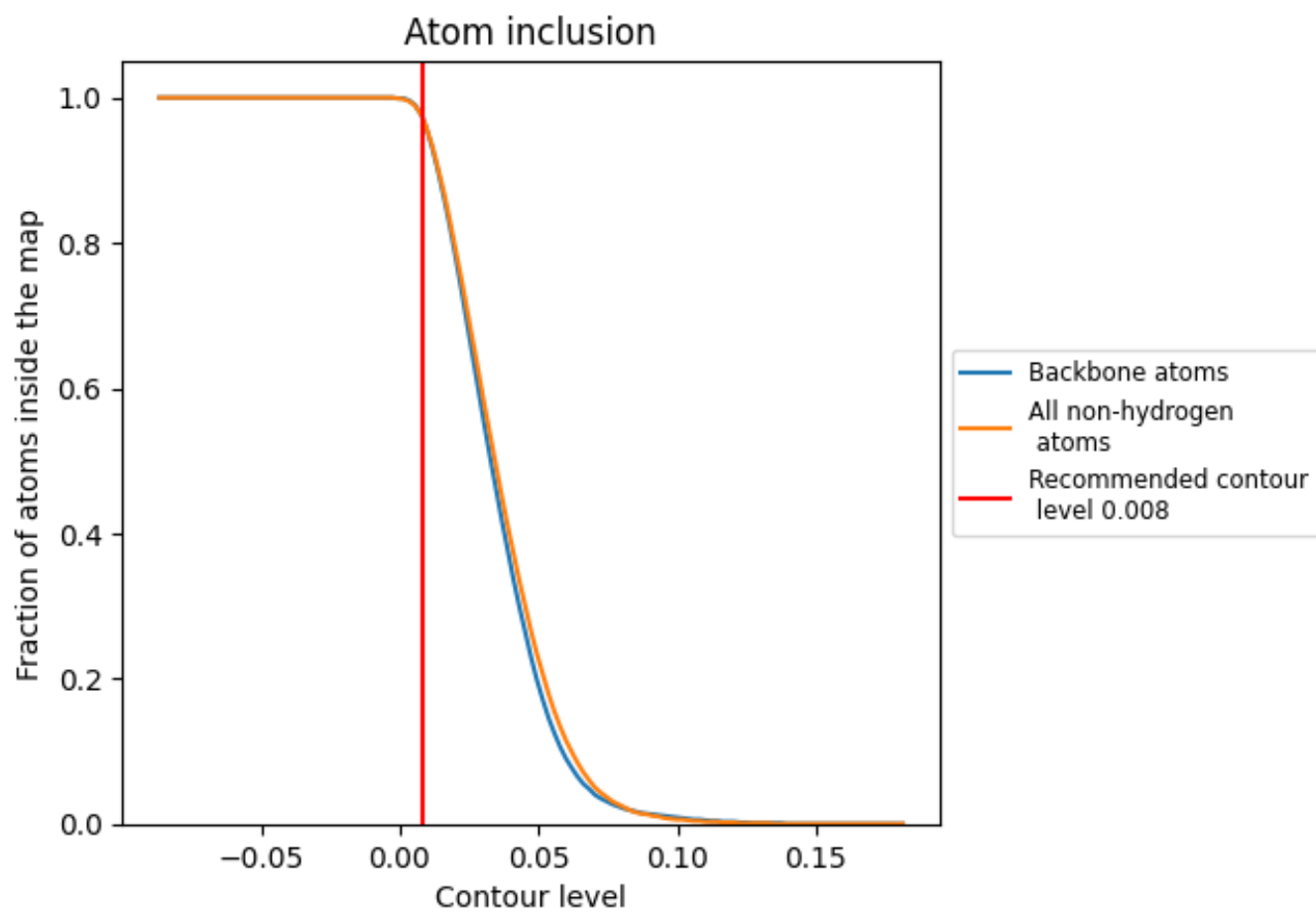
At the recommended contour level, 98% of all backbone atoms, 98% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.008) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9750	0.6550
1	0.9840	0.6640
2	0.9790	0.6420
3	0.9870	0.6550
4	0.9860	0.6700
5	0.9770	0.6550
6	0.9680	0.6310
7	0.9890	0.6700
8	0.9970	0.6660
A	0.9980	0.7320
B	0.9960	0.7300
C	0.9930	0.6930
D	0.9650	0.5600
E	0.9830	0.6460
F	0.9780	0.6620
G	0.9930	0.6890
H	0.9960	0.7200
I	0.9880	0.6780
J	0.9930	0.7180
K	0.9750	0.6560
L	0.9950	0.7090
M	0.9990	0.7250
N	0.9740	0.6390
O	0.9830	0.6470
P	0.9980	0.7030
Q	0.9960	0.6880
R	0.9960	0.7110
S	0.9840	0.6840
S1	0.9720	0.6350
S4	0.7840	0.2720
SA	0.9780	0.6600
SB	0.9400	0.5660
SC	0.9420	0.6230
SD	0.9840	0.6660
SE	0.9760	0.6720

1.0

0.0
<0.0

Continued on next page...

W O R L D W I D E
wwPDB
PROTEIN DATA BANK

Continued from previous page...

Chain	Atom inclusion	Q-score
SF	0.9640	0.6660
SG	0.9690	0.6430
SH	0.9830	0.6710
SI	0.9740	0.6510
SJ	0.9910	0.7100
SK	0.9800	0.6710
SL	0.9850	0.6770
SM	0.9270	0.6290
SN	0.9390	0.6280
SO	0.9930	0.6870
SP	0.9900	0.6980
SQ	0.5530	0.4310
SR	0.9460	0.6300
SS	0.9890	0.6740
ST	0.9960	0.6970
SU	0.9850	0.6900
SV	0.9840	0.6580
SW	0.9170	0.6200
SX	0.9640	0.6570
SY	0.9440	0.6040
SZ	0.9770	0.6560
Sa	0.9500	0.6400
Sb	0.9910	0.7050
Sc	0.9510	0.6630
Sd	0.9640	0.6320
Se	0.9950	0.6520
Sf	0.5610	0.4380
Sg	0.9430	0.6280
Sh	0.7140	0.4000
T	0.9960	0.7300
U	0.9350	0.5420
V	0.9980	0.7070
W	0.9950	0.6870
X	0.9980	0.7150
Y	0.9930	0.6540
Z	0.9820	0.6660
a	0.9870	0.6650
b	0.9850	0.6810
c	0.9930	0.7020
d	0.9930	0.6750
e	0.9790	0.6840
f	0.9970	0.7070

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
g	0.9920	0.7010
h	0.9650	0.6540
i	0.9870	0.6600
j	0.9950	0.7250
k	0.9540	0.6040
l	0.9930	0.7130
m	0.9400	0.5970
n	0.9960	0.6810
o	0.9920	0.7150
p	0.9710	0.6610