Full wwPDB EM Validation Report ⓘ

Sep 3, 2024 – 02:36 am BST

PDB ID	:	9F1B
EMDB ID	:	EMD-50124
Title	:	Mammalian ternary complex of a translating 80S ribosome, NAC and NatA/E
Authors	:	Yudin, D.; Scaiola, A.; Ban, N.
Deposited on	:	2024-04-18
Resolution	:	3.01 Å(reported)

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

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

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

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

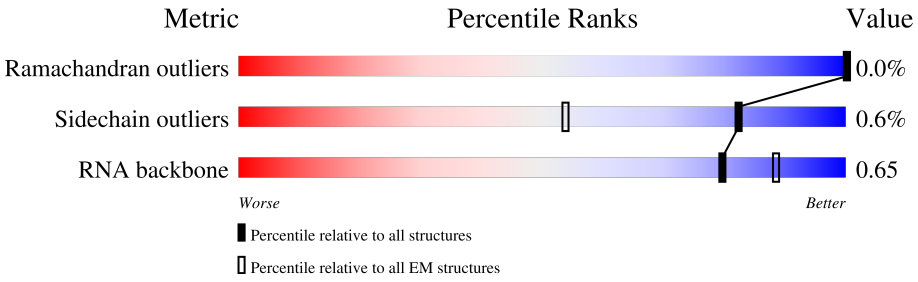
EMDB validation analysis	:	0.0.1.dev112
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.38.2

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 3.01 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	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	BP	184	83% 17%
2	Aq	135	13% 99%
3	Bo	106	99%
4	AT	76	29% 99%
5	Ar	151	19% 96%
6	Cu	162	48% 65% 35%
7	BL	211	5% 99%
8	BX	156	76% 24%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
9	Bp	92	99%
10	BQ	188	99%
11	As	145	12% 99%
12	Br	136	92% 7%
13	BR	196	5% 91% 8%
14	At	119	24% 86% 13%
15	Bs	318	62% 62% 38%
16	BG	266	10% 87% 12%
17	BU	128	6% 78% 20%
18	Av	130	98%
19	DB	915	83% 90% 9%
20	Ct	238	48% 48% 52%
21	BH	192	99%
22	BV	140	7% 99%
23	Aw	143	97%
24	B5	4808	6% 66% 11% 23%
25	BT	160	5% 99%
26	BI	214	99%
27	BW	157	31% 77% 23%
28	Ax	130	8% 95%
29	B7	119	95% 5%
30	Au	83	96%
31	BJ	178	96%
32	AZ	294	7% 74% 25%
33	Ay	124	24% 69% 31%

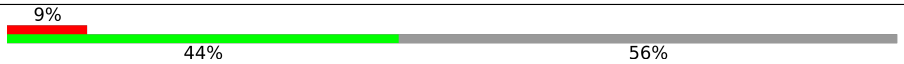
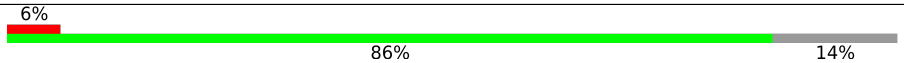
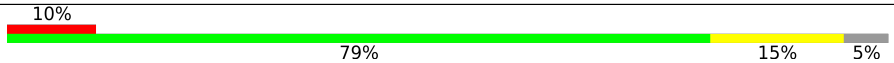
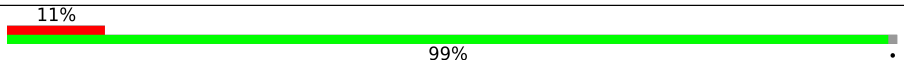
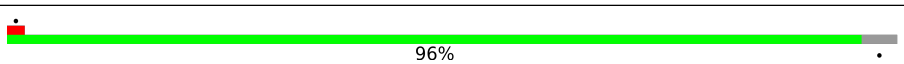
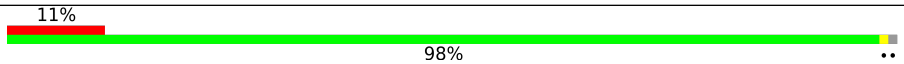
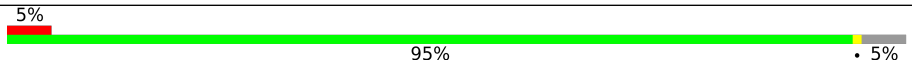
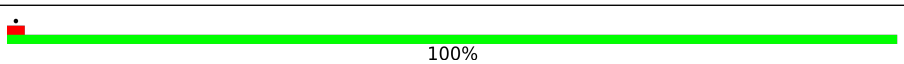
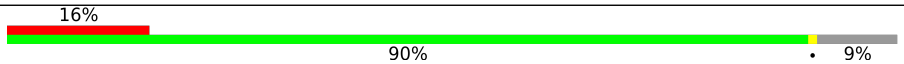
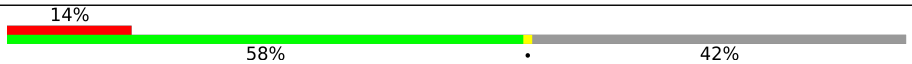
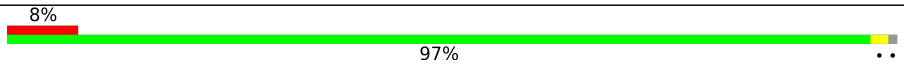
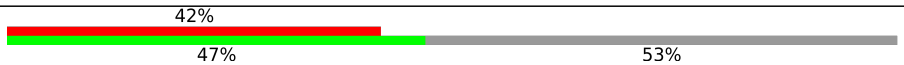
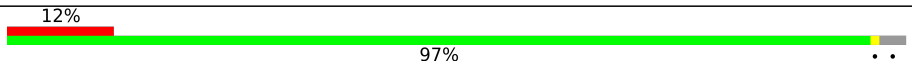
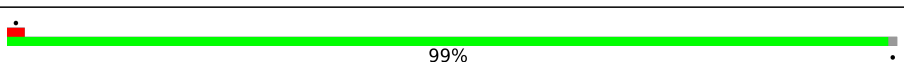
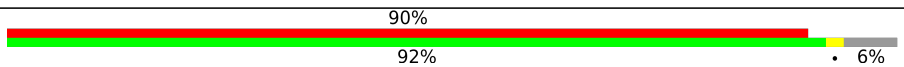
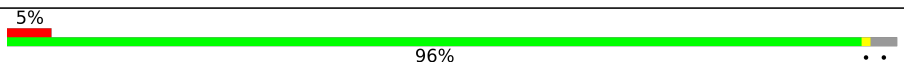
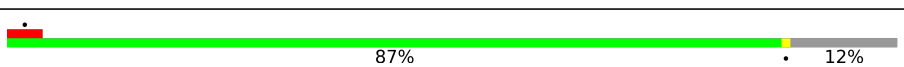
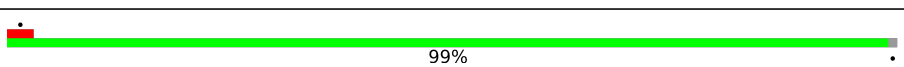
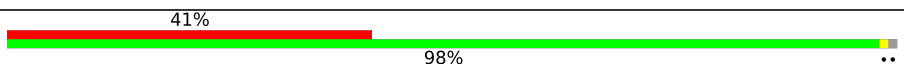
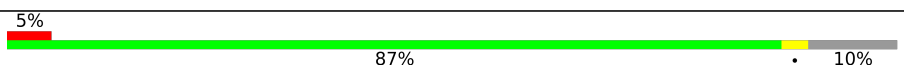
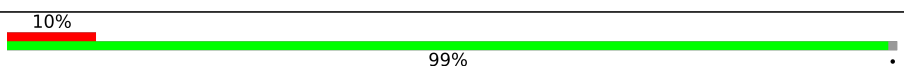
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
34	B8	158	87% 12%
35	BK	29	62% 100%
36	Aa	264	7% 84% 15%
37	Az	25	100%
38	BA	257	98%
39	Bt	165	95% 93% 5%
40	BM	218	63% 37%
41	Ab	293	74% 25%
42	BY	145	92% 8%
43	BB	403	98%
44	BS	176	100%
45	Ac	281	13% 79% 20%
46	BZ	136	99%
47	BC	412	88% 12%
48	BN	204	100%
49	Ad	263	100%
50	Ba	148	98%
51	B	297	99%
52	BO	203	97%
53	Ae	204	10% 94% 6%
54	Bb	245	7% 44% 56%
55	BE	291	9% 84% 16%
56	DA	403	38% 38% 62%
57	Af	249	17% 95% 5%
58	Bc	115	14% 94% 6%

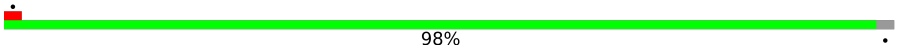
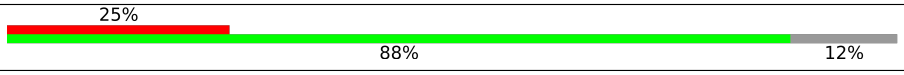
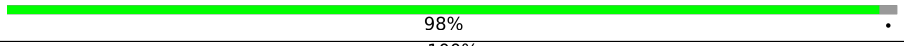
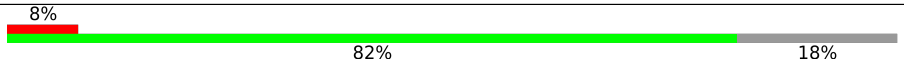
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
59	BF	247	
60	DC	235	
61	Ag	432	
62	Bd	125	
63	A2	1870	
64	Ah	208	
65	Be	135	
66	AA	84	
67	Ai	194	
68	Bf	110	
69	AB	69	
70	Aj	165	
71	Bg	115	
72	AC	156	
73	Ak	158	
74	Bh	123	
75	AD	133	
76	Al	132	
77	Bi	105	
78	AE	115	
79	Am	151	
80	Bj	97	
81	AF	317	
82	An	151	
83	Bk	70	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
84	AG	56	
85	Ao	145	
86	Bl	51	
87	AH	3	
88	Ap	172	
89	Bm	128	

2 Entry composition (i)

There are 97 unique types of molecules in this entry. The entry contains 234232 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 protein called Large ribosomal subunit protein uL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	BP	153	1242	777	241	215	9	0	0

- Molecule 2 is a protein called 40S ribosomal protein eS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	Aq	134	1080	678	201	197	4	0	0

- Molecule 3 is a protein called Large ribosomal subunit protein eL42.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	Bo	105	863	543	175	139	6	0	0

- Molecule 4 is a RNA chain called P-site tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	AT	76	939	393	11	459	76	0	0

- Molecule 5 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	Ar	148	1217	763	245	208	1	0	0

- Molecule 6 is a protein called Transcription factor BTF3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	Cu	105	813	508	152	150	3	0	0

- Molecule 7 is a protein called Large ribosomal subunit protein eL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	BL	210	Total	C	N	O	S	0	0
			1702	1065	354	279	4		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BL	74	ARG	HIS	variant	UNP G1TKB3
BL	190	ARG	HIS	variant	UNP G1TKB3

- Molecule 8 is a protein called Ribosomal_L23eN domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	BX	118	Total	C	N	O	S	0	0
			967	618	181	167	1		

- Molecule 9 is a protein called 60S ribosomal protein L37a.

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

- Molecule 10 is a protein called Large ribosomal subunit protein eL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	BQ	187	Total	C	N	O	S	0	0
			1515	946	315	250	4		

- Molecule 11 is a protein called 40S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	As	143	Total	C	N	O	S	0	0
			1113	698	214	198	3		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
As	119	GLY	TRP	variant	UNP G1TN62
As	142	ASN	LYS	variant	UNP G1TN62

- Molecule 12 is a protein called Large ribosomal subunit protein eL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	Br	126	Total	C	N	O	S	0	0
			1014	629	209	170	6		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Br	103	ARG	HIS	conflict	UNP G1U7L1

- Molecule 13 is a protein called Ribosomal protein L19.

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

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BR	38	ARG	CYS	variant	UNP G1TJR3
BR	64	ARG	GLN	variant	UNP G1TJR3
BR	94	THR	LYS	variant	UNP G1TJR3

- Molecule 14 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	At	104	Total	C	N	O	S	0	0
			822	514	156	148	4		

- Molecule 15 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	Bs	196	Total	C	N	O	S	0	0
			1507	959	263	276	9		

- Molecule 16 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	BG	233	Total	C	N	O	S	0	0
			1877	1197	361	315	4		

- Molecule 17 is a protein called 60S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	BU	102	Total	C	N	O	S	0	0
			831	531	146	152	2		

There are 5 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BU	32	GLY	ARG	variant	UNP G1TSG1
BU	36	ALA	GLU	variant	UNP G1TSG1
BU	39	PHE	SER	variant	UNP G1TSG1
BU	54	GLY	ARG	variant	UNP G1TSG1
BU	97	ARG	HIS	variant	UNP G1TSG1

- Molecule 18 is a protein called Ribosomal protein S15a.

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

- Molecule 19 is a protein called N-alpha-acetyltransferase 15, NatA auxiliary subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	DB	837	Total	C	N	O	S	0	0
			6900	4391	1192	1276	41		

There are 49 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
DB	-48	MET	-	initiating methionine	UNP Q9BXJ9
DB	-47	GLY	-	expression tag	UNP Q9BXJ9
DB	-46	SER	-	expression tag	UNP Q9BXJ9
DB	-45	SER	-	expression tag	UNP Q9BXJ9
DB	-44	HIS	-	expression tag	UNP Q9BXJ9
DB	-43	HIS	-	expression tag	UNP Q9BXJ9
DB	-42	HIS	-	expression tag	UNP Q9BXJ9
DB	-41	HIS	-	expression tag	UNP Q9BXJ9
DB	-40	HIS	-	expression tag	UNP Q9BXJ9
DB	-39	HIS	-	expression tag	UNP Q9BXJ9
DB	-38	SER	-	expression tag	UNP Q9BXJ9
DB	-37	SER	-	expression tag	UNP Q9BXJ9
DB	-36	GLY	-	expression tag	UNP Q9BXJ9
DB	-35	LEU	-	expression tag	UNP Q9BXJ9
DB	-34	VAL	-	expression tag	UNP Q9BXJ9
DB	-33	PRO	-	expression tag	UNP Q9BXJ9

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
DB	-32	ARG	-	expression tag	UNP Q9BXJ9
DB	-31	GLY	-	expression tag	UNP Q9BXJ9
DB	-30	SER	-	expression tag	UNP Q9BXJ9
DB	-29	HIS	-	expression tag	UNP Q9BXJ9
DB	-28	MET	-	expression tag	UNP Q9BXJ9
DB	-27	ALA	-	expression tag	UNP Q9BXJ9
DB	-26	SER	-	expression tag	UNP Q9BXJ9
DB	-25	MET	-	expression tag	UNP Q9BXJ9
DB	-24	THR	-	expression tag	UNP Q9BXJ9
DB	-23	GLY	-	expression tag	UNP Q9BXJ9
DB	-22	GLY	-	expression tag	UNP Q9BXJ9
DB	-21	GLN	-	expression tag	UNP Q9BXJ9
DB	-20	GLN	-	expression tag	UNP Q9BXJ9
DB	-19	MET	-	expression tag	UNP Q9BXJ9
DB	-18	GLY	-	expression tag	UNP Q9BXJ9
DB	-17	ARG	-	expression tag	UNP Q9BXJ9
DB	-16	ALA	-	expression tag	UNP Q9BXJ9
DB	-15	ARG	-	expression tag	UNP Q9BXJ9
DB	-14	GLY	-	expression tag	UNP Q9BXJ9
DB	-13	ILE	-	expression tag	UNP Q9BXJ9
DB	-12	GLN	-	expression tag	UNP Q9BXJ9
DB	-11	ARG	-	expression tag	UNP Q9BXJ9
DB	-10	PRO	-	expression tag	UNP Q9BXJ9
DB	-9	THR	-	expression tag	UNP Q9BXJ9
DB	-8	SER	-	expression tag	UNP Q9BXJ9
DB	-7	THR	-	expression tag	UNP Q9BXJ9
DB	-6	SER	-	expression tag	UNP Q9BXJ9
DB	-5	SER	-	expression tag	UNP Q9BXJ9
DB	-4	LEU	-	expression tag	UNP Q9BXJ9
DB	-3	VAL	-	expression tag	UNP Q9BXJ9
DB	-2	ALA	-	expression tag	UNP Q9BXJ9
DB	-1	ALA	-	expression tag	UNP Q9BXJ9
DB	0	ALA	-	expression tag	UNP Q9BXJ9

- Molecule 20 is a protein called Nascent polypeptide-associated complex subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	Ct	115	Total	C	N	O	S	0	0
			895	561	163	167	4		

There are 23 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Ct	-22	MET	-	initiating methionine	UNP Q13765
Ct	-21	GLY	-	expression tag	UNP Q13765
Ct	-20	SER	-	expression tag	UNP Q13765
Ct	-19	SER	-	expression tag	UNP Q13765
Ct	-18	HIS	-	expression tag	UNP Q13765
Ct	-17	HIS	-	expression tag	UNP Q13765
Ct	-16	HIS	-	expression tag	UNP Q13765
Ct	-15	HIS	-	expression tag	UNP Q13765
Ct	-14	HIS	-	expression tag	UNP Q13765
Ct	-13	HIS	-	expression tag	UNP Q13765
Ct	-12	SER	-	expression tag	UNP Q13765
Ct	-11	SER	-	expression tag	UNP Q13765
Ct	-10	GLY	-	expression tag	UNP Q13765
Ct	-9	LEU	-	expression tag	UNP Q13765
Ct	-8	GLU	-	expression tag	UNP Q13765
Ct	-7	VAL	-	expression tag	UNP Q13765
Ct	-6	LEU	-	expression tag	UNP Q13765
Ct	-5	PHE	-	expression tag	UNP Q13765
Ct	-4	GLN	-	expression tag	UNP Q13765
Ct	-3	GLY	-	expression tag	UNP Q13765
Ct	-2	PRO	-	expression tag	UNP Q13765
Ct	-1	SER	-	expression tag	UNP Q13765
Ct	0	GLY	-	expression tag	UNP Q13765

- Molecule 21 is a protein called 60S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	BH	190	Total	C	N	O	S	0	0
			1516	954	284	272	6		

- Molecule 22 is a protein called Ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	BV	139	Total	C	N	O	S	0	0
			1034	648	199	182	5		

- Molecule 23 is a protein called 40S ribosomal protein S23.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	Aw	141	Total	C	N	O	S	0	0
			1099	693	219	184	3		

- Molecule 24 is a RNA chain called 28S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	B5	3706	Total	C	N	O	P	0	0
			79525	35447	14532	25840	3706		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B5	3550	UY1	U	conflict	GB GBCN01009604.1

- Molecule 25 is a protein called 60S ribosomal protein L21.

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

- Molecule 26 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	BI	213	Total	C	N	O	S	0	0
			1717	1086	332	285	14		

- Molecule 27 is a protein called Ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	BW	121	Total	C	N	O	S	0	0
			991	619	202	166	4		

- Molecule 28 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	Ax	125	Total	C	N	O	S	0	0
			1015	642	199	169	5		

- Molecule 29 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	B7	119	Total	C	N	O	P	0	0
			2538	1131	451	837	119		

- Molecule 30 is a protein called Small ribosomal subunit protein eS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Au	83	Total	C	N	O	S	0	0
			640	394	117	124	5		

- Molecule 31 is a protein called 60S ribosomal protein L11.

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

- Molecule 32 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	AZ	221	Total	C	N	O	S	0	0
			1743	1107	305	323	8		

- Molecule 33 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	Ay	85	Total	C	N	O	S	0	0
			683	439	128	115	1		

- Molecule 34 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	B8	156	Total	C	N	O	P	0	0
			3319	1481	585	1097	156		

- Molecule 35 is a protein called Nascent chain.

Mol	Chain	Residues	Atoms				AltConf	Trace
35	BK	29	Total	C	N	O	0	0
			145	87	29	29		

- Molecule 36 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Aa	224	Total	C	N	O	S	0	0
			1815	1152	328	321	14		

- Molecule 37 is a protein called 60S ribosomal protein L41.

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

- Molecule 38 is a protein called Large ribosomal subunit protein uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	BA	253	Total	C	N	O	S	0	0
			1940	1214	396	324	6		

- Molecule 39 is a protein called 60S ribosomal protein L12.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Bt	156	Total	C	N	O	S	0	0
			1178	733	221	220	4		

- Molecule 40 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	BM	138	Total	C	N	O	S	0	0
			1137	727	221	182	7		

- Molecule 41 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Ab	220	Total	C	N	O	S	0	0
			1706	1105	292	300	9		

- Molecule 42 is a protein called Ribosomal protein L26.

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

- Molecule 43 is a protein called Ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	BB	398	Total	C	N	O	S	0	0
			3206	2042	605	546	13		

- Molecule 44 is a protein called Large ribosomal subunit protein eL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	BS	176	Total	C	N	O	S	0	0
			1457	924	288	234	11		

- Molecule 45 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	Ac	225	Total	C	N	O	S	0	0
			1751	1116	315	313	7		

- Molecule 46 is a protein called 60S ribosomal protein L27.

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

- Molecule 47 is a protein called Large ribosomal subunit protein uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	BC	362	Total	C	N	O	S	0	0
			2886	1814	577	481	14		

- Molecule 48 is a protein called Ribosomal protein L15.

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

- Molecule 49 is a protein called 40S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	Ad	262	Total	C	N	O	S	0	0
			2076	1324	386	358	8		

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Ad	25	GLY	SER	variant	UNP G1TK17
Ad	51	ARG	LYS	variant	UNP G1TK17
Ad	78	THR	ALA	variant	UNP G1TK17
Ad	156	VAL	MET	variant	UNP G1TK17

- Molecule 50 is a protein called 60S ribosomal protein L27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	Ba	147	Total	C	N	O	S	0	0
			1163	734	239	186	4		

- Molecule 51 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	B	295	Total	C	N	O	S	0	0
			2398	1516	439	429	14		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	176	SER	GLY	variant	UNP G1SZF4
B	248	ARG	GLN	variant	UNP G1SZF4

- Molecule 52 is a protein called Large ribosomal subunit protein uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	BO	199	Total	C	N	O	S	0	0
			1630	1051	319	255	5		

- Molecule 53 is a protein called Ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	Ae	191	Total	C	N	O	S	0	0
			1509	943	286	273	7		

- Molecule 54 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	Bb	108	Total	C	N	O	S	0	0
			881	548	196	134	3		

- Molecule 55 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	BE	243	Total	C	N	O	S	0	0
			1960	1258	378	321	3		

- Molecule 56 is a protein called Glutathione S-transferase class-mu 26 kDa isozyme,N-alpha-acetyltransferase 50.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	DA	155	Total	C	N	O	S	0	0
			1260	808	221	225	6		

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
DA	-15	GLY	-	linker	UNP P08515
DA	-14	SER	-	linker	UNP P08515
DA	-13	GLY	-	linker	UNP P08515
DA	-12	SER	-	linker	UNP P08515
DA	-11	GLY	-	linker	UNP P08515
DA	-10	SER	-	linker	UNP P08515
DA	-9	GLU	-	linker	UNP P08515
DA	-8	ASN	-	linker	UNP P08515
DA	-7	LEU	-	linker	UNP P08515
DA	-6	TYR	-	linker	UNP P08515
DA	-5	PHE	-	linker	UNP P08515
DA	-4	GLN	-	linker	UNP P08515
DA	-3	GLY	-	linker	UNP P08515
DA	-2	ALA	-	linker	UNP P08515
DA	-1	MET	-	linker	UNP P08515
DA	0	VAL	-	linker	UNP P08515

- Molecule 57 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	Af	237	Total	C	N	O	S	0	0
			1923	1200	387	329	7		

- Molecule 58 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	Bc	108	Total	C	N	O	S	0	0
			836	530	148	151	7		

- Molecule 59 is a protein called Ribosomal Protein uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	BF	226	Total	C	N	O	S	0	0
			1886	1211	362	304	9		

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BF	61	ARG	GLY	variant	UNP G1TUB1
BF	93	ARG	GLY	variant	UNP G1TUB1
BF	131	MET	VAL	variant	UNP G1TUB1
BF	153	ILE	VAL	variant	UNP G1TUB1

- Molecule 60 is a protein called N-alpha-acetyltransferase 10.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	DC	165	Total	C	N	O	S	0	0
			1339	844	242	242	11		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
DC	24	GLN	GLU	engineered mutation	UNP P41227
DC	26	PHE	TYR	engineered mutation	UNP P41227

- Molecule 61 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	Ag	190	Total	C	N	O	S	0	0
			1529	975	281	272	1		

- Molecule 62 is a protein called 60S ribosomal protein L31.

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

- Molecule 63 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	A2	1770	Total	C	N	O	P	0	0
			37833	16911	6781	12371	1770		

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A2	1249	B8N	C	conflict	GB GBCT01000564.1
A2	1338	4AC	C	conflict	GB GBCT01000564.1
A2	1843	4AC	C	conflict	GB GBCT01000564.1

- Molecule 64 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	Ah	206	Total	C	N	O	S	0	0
			1686	1058	332	291	5		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Ah	47	ARG	GLY	variant	UNP G1TJW1

- Molecule 65 is a protein called Ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	Be	130	Total	C	N	O	S	0	0
			1070	676	221	168	5		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Be	22	ARG	CYS	variant	UNP G1U6S0
Be	75	ARG	HIS	variant	UNP G1U6S0

- Molecule 66 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	AA	83	Total	C	N	O	S	0	0
			651	408	121	115	7		

- Molecule 67 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	Ai	185	Total	C	N	O	S	0	0
			1525	969	306	248	2		

- Molecule 68 is a protein called 60S ribosomal protein L35a.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	Bf	110	Total	C	N	O	S	0	0
			884	560	175	144	5		

- Molecule 69 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	AB	63	Total	C	N	O	S	0	0
			495	302	98	93	2		

- Molecule 70 is a protein called S10_plectin domain-containing protein.

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

- Molecule 71 is a protein called Large ribosomal subunit protein eL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	Bg	114	Total	C	N	O	S	0	0
			906	566	187	147	6		

- Molecule 72 is a protein called Ribosomal protein S27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	AC	74	Total	C	N	O	S	0	0
			610	385	117	101	7		

- Molecule 73 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	Ak	154	Total	C	N	O	S	0	0
			1262	804	236	216	6		

- Molecule 74 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	Bh	122	Total	C	N	O	S	0	0
			1013	640	204	168	1		

- Molecule 75 is a protein called 40S ribosomal protein S30.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	AD	57	Total	C	N	O	S	0	0
			457	282	101	73	1		

- Molecule 76 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	Al	124	Total	C	N	O	S	0	0
			958	600	170	179	9		

- Molecule 77 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	Bi	102	Total	C	N	O	S	0	0
			830	520	176	129	5		

- Molecule 78 is a protein called Small ribosomal subunit protein eS26.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	AE	101	Total	C	N	O	S	0	0
			814	507	170	132	5		

- Molecule 79 is a protein called 40S ribosomal protein S13.

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

- Molecule 80 is a protein called Ribosomal protein L37.

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

- Molecule 81 is a protein called Small ribosomal subunit protein RACK1.

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

- Molecule 82 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	An	136	Total	C	N	O	S	0	0
			1016	621	199	190	6		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
An	138	IAS	ASP	conflict	UNP A0AAA9WYR1

- Molecule 83 is a protein called 60S ribosomal protein L38.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Bk	24	LYS	ASN	variant	UNP G1U001

- Molecule 84 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	AG	55	Total	C	N	O	S	0	0
			459	286	94	74	5		

- Molecule 85 is a protein called 40S ribosomal protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
85	Ao	128	Total	C	N	O	S	0	0
			1048	665	197	179	7		

- Molecule 86 is a protein called 60S ribosomal protein L39-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
86	Bl	50	Total	C	N	O	S	0	0
			447	286	96	64	1		

- Molecule 87 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms				AltConf	Trace
87	AH	3	Total	C	O	P	0	0
			36	15	18	3		

- Molecule 88 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
88	Ap	141	Total	C	N	O	S	0	0
			1124	715	212	194	3		

- Molecule 89 is a protein called Ubiquitin-ribosomal protein eL40 fusion protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
89	Bm	52	Total 432	C 269	N 90	O 67	S 6	0	0

- Molecule 90 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
90	BP	1	Total 1	Mg 1	0
90	AT	3	Total 3	Mg 3	0
90	BR	1	Total 1	Mg 1	0
90	Ct	1	Total 1	Mg 1	0
90	BV	1	Total 1	Mg 1	0
90	B5	282	Total 282	Mg 282	0
90	BI	1	Total 1	Mg 1	0
90	B7	9	Total 9	Mg 9	0
90	B8	9	Total 9	Mg 9	0
90	Ba	1	Total 1	Mg 1	0
90	Af	1	Total 1	Mg 1	0
90	A2	108	Total 108	Mg 108	0
90	Bj	1	Total 1	Mg 1	0
90	An	1	Total 1	Mg 1	0

- Molecule 91 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
91	Bo	1	Total 1	Zn 1	0
91	Bp	1	Total 1	Zn 1	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
91	Bg	1	Total Zn 1 1	0
91	AC	1	Total Zn 1 1	0
91	AE	1	Total Zn 1 1	0
91	Bj	1	Total Zn 1 1	0
91	AG	1	Total Zn 1 1	0
91	Bm	1	Total Zn 1 1	0

- Molecule 92 is UNKNOWN ATOM OR ION (three-letter code: UNX) (formula: X).

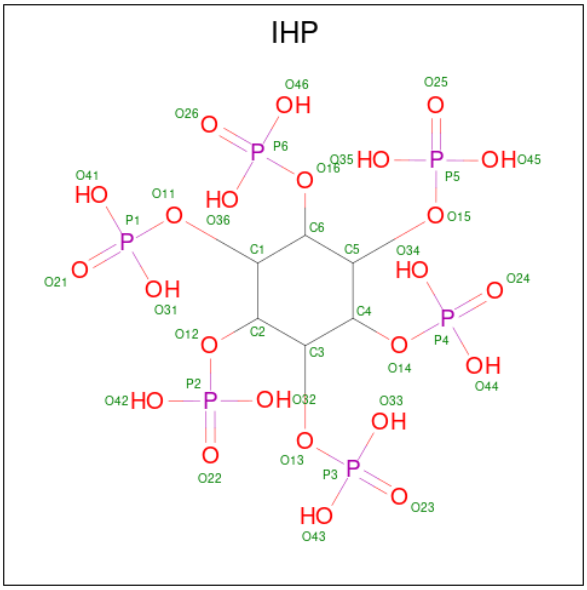
Mol	Chain	Residues	Atoms	AltConf
92	Bo	1	Total X 1 1	0
92	AT	2	Total X 2 2	0
92	Ar	1	Total X 1 1	0
92	BL	1	Total X 1 1	0
92	BQ	2	Total X 2 2	0
92	BH	1	Total X 1 1	0
92	B5	207	Total X 207 207	0
92	BT	2	Total X 2 2	0
92	BI	1	Total X 1 1	0
92	B7	6	Total X 6 6	0
92	B8	7	Total X 7 7	0
92	BA	4	Total X 4 4	0
92	BB	2	Total X 2 2	0

Continued on next page...

Continued from previous page...

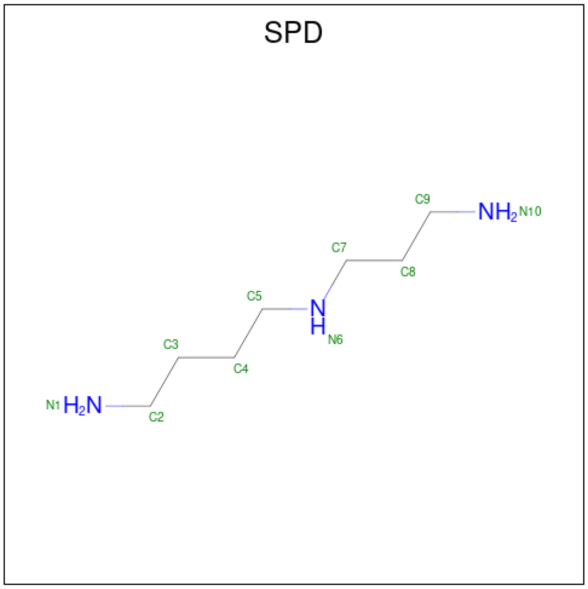
Mol	Chain	Residues	Atoms	AltConf
92	BN	1	Total X 1 1	0
92	Ae	1	Total X 1 1	0
92	Bb	2	Total X 2 2	0
92	A2	57	Total X 57 57	0
92	Be	3	Total X 3 3	0
92	Bf	1	Total X 1 1	0
92	Ak	1	Total X 1 1	0
92	Bj	1	Total X 1 1	0
92	An	1	Total X 1 1	0
92	Bl	1	Total X 1 1	0

- Molecule 93 is INOSITOL HEXAKISPHOSPHATE (three-letter code: IHP) (formula: $C_6H_{18}O_{24}P_6$).



Mol	Chain	Residues	Atoms	AltConf
93	DB	1	Total C O P 36 6 24 6	0

- Molecule 94 is SPERMIDINE (three-letter code: SPD) (formula: $C_7H_{19}N_3$).



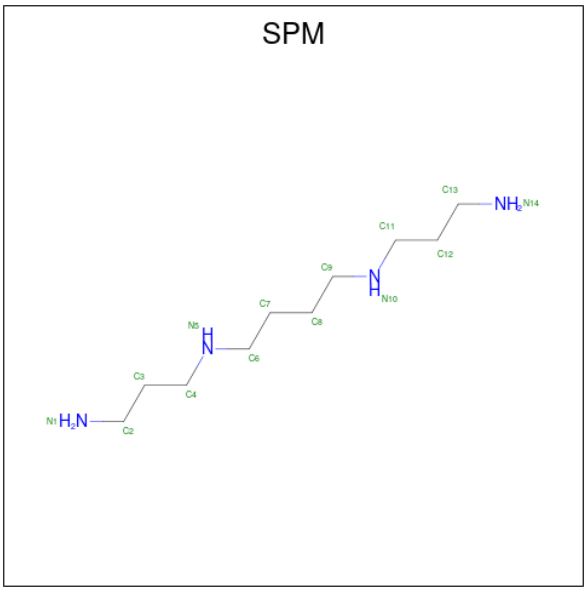
Mol	Chain	Residues	Atoms	AltConf
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0

Continued on next page...

Continued from previous page...

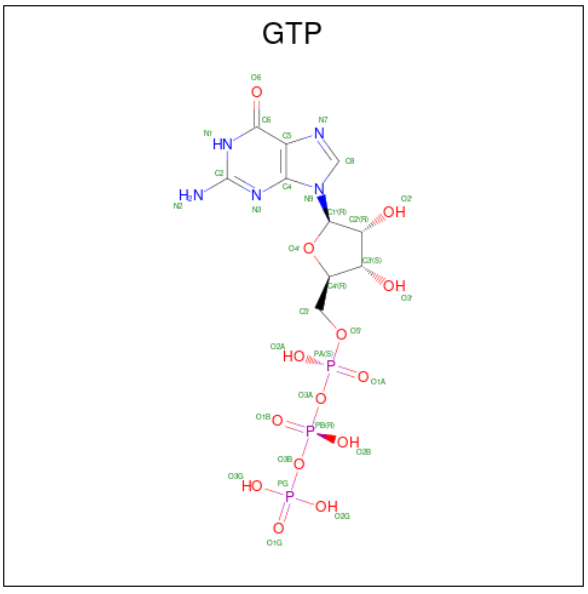
Mol	Chain	Residues	Atoms	AltConf
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	B5	1	Total C N 10 7 3	0
94	A2	1	Total C N 10 7 3	0
94	A2	1	Total C N 10 7 3	0
94	A2	1	Total C N 10 7 3	0
94	A2	1	Total C N 10 7 3	0
94	A2	1	Total C N 10 7 3	0
94	A2	1	Total C N 10 7 3	0
94	A2	1	Total C N 10 7 3	0
94	A2	1	Total C N 10 7 3	0

- Molecule 95 is SPERMINE (three-letter code: SPM) (formula: $C_{10}H_{26}N_4$).



Mol	Chain	Residues	Atoms	AltConf
95	B5	1	Total C N 14 10 4	0
95	B5	1	Total C N 14 10 4	0
95	A2	1	Total C N 14 10 4	0

- Molecule 96 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$).



Mol	Chain	Residues	Atoms					AltConf
96	B7	1	Total	C	N	O	P	0
			32	10	5	14	3	

- Molecule 97 is water.

Mol	Chain	Residues	Atoms		AltConf
97	BP	3	Total	O	0
			3	3	
97	Bo	1	Total	O	0
			1	1	
97	AT	13	Total	O	0
			13	13	
97	Ar	1	Total	O	0
			1	1	
97	BL	2	Total	O	0
			2	2	
97	BX	1	Total	O	0
			1	1	
97	As	3	Total	O	0
			3	3	
97	BR	5	Total	O	0
			5	5	
97	At	1	Total	O	0
			1	1	
97	Ct	1	Total	O	0
			1	1	
97	BH	2	Total	O	0
			2	2	
97	BV	2	Total	O	0
			2	2	
97	Aw	5	Total	O	0
			5	5	
97	B5	1383	Total	O	0
			1383	1383	
97	BI	3	Total	O	0
			3	3	
97	B7	43	Total	O	0
			43	43	
97	BJ	1	Total	O	0
			1	1	
97	B8	50	Total	O	0
			50	50	
97	Aa	2	Total	O	0
			2	2	

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
97	BA	8	Total O 8 8	0
97	BM	1	Total O 1 1	0
97	BB	9	Total O 9 9	0
97	BC	7	Total O 7 7	0
97	BN	4	Total O 4 4	0
97	Ba	8	Total O 8 8	0
97	B	1	Total O 1 1	0
97	BO	1	Total O 1 1	0
97	Af	1	Total O 1 1	0
97	BF	1	Total O 1 1	0
97	Bd	1	Total O 1 1	0
97	A2	526	Total O 526 526	0
97	Be	5	Total O 5 5	0
97	Bf	1	Total O 1 1	0
97	Bg	2	Total O 2 2	0
97	Ak	2	Total O 2 2	0
97	AE	1	Total O 1 1	0
97	Am	1	Total O 1 1	0
97	Bj	3	Total O 3 3	0
97	An	3	Total O 3 3	0
97	Bl	1	Total O 1 1	0

Continued on next page...

Continued from previous page...

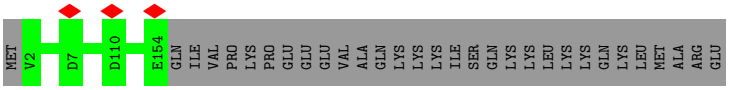
Mol	Chain	Residues	Atoms	AltConf
97	AH	5	Total O 5 5	0
97	Ap	2	Total O 2 2	0

3 Residue-property plots (i)

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

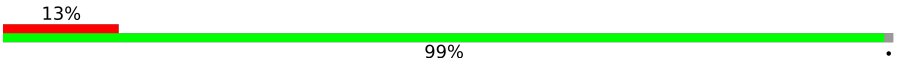
• Molecule 1: Large ribosomal subunit protein uL22

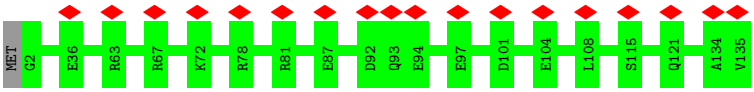
Chain BP:



• Molecule 2: 40S ribosomal protein eS17

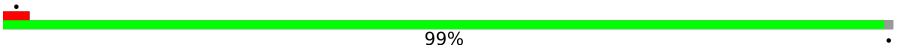
Chain Aq:

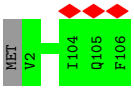




• Molecule 3: Large ribosomal subunit protein eL42

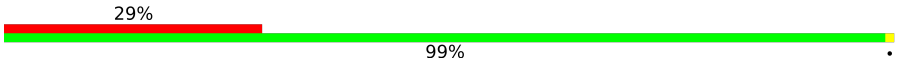
Chain Bo:

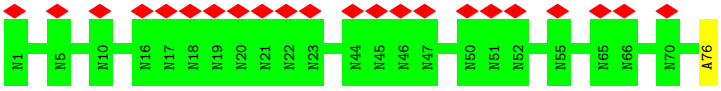




• Molecule 4: P-site tRNA

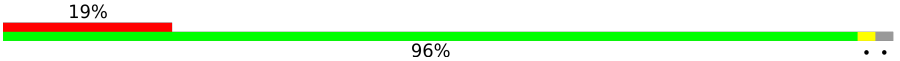
Chain AT:

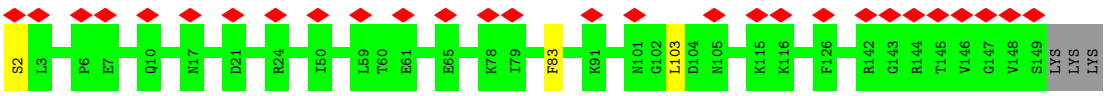




• Molecule 5: Small ribosomal subunit protein uS13

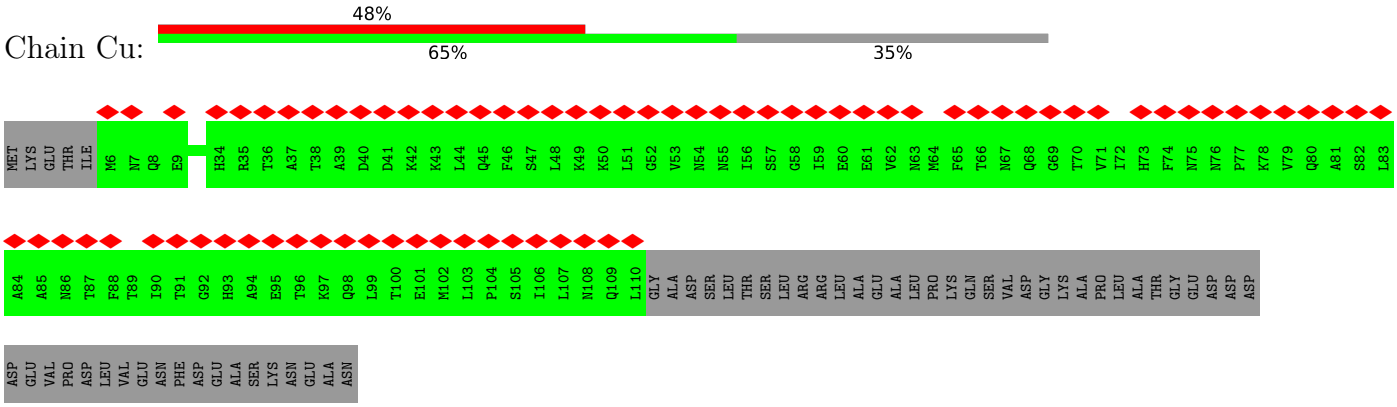
Chain Ar:





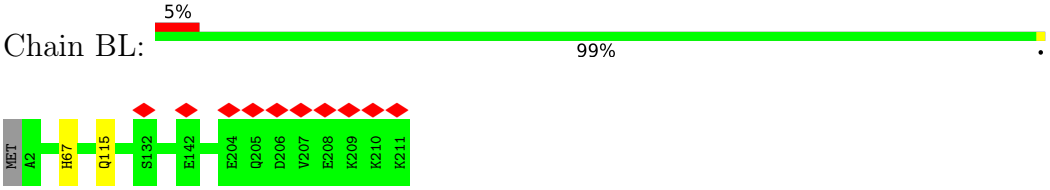
• Molecule 6: Transcription factor BTF3

Chain Cu:



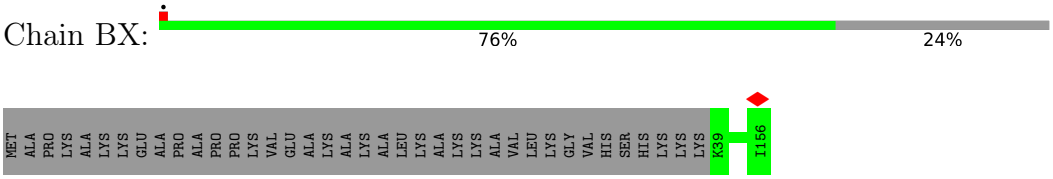
• Molecule 7: Large ribosomal subunit protein eL13

Chain BL:



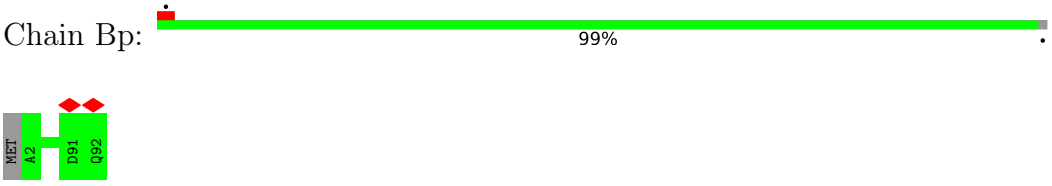
• Molecule 8: Ribosomal_L23eN domain-containing protein

Chain BX:



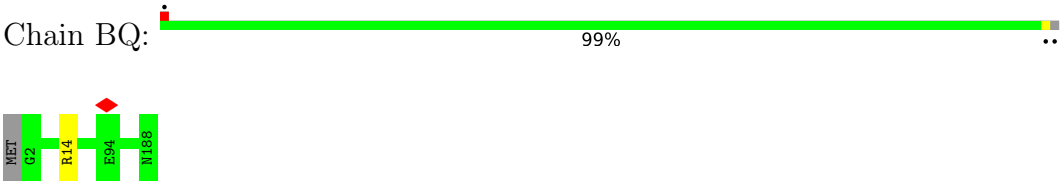
• Molecule 9: 60S ribosomal protein L37a

Chain Bp:



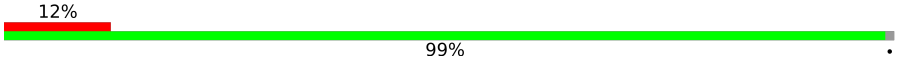
• Molecule 10: Large ribosomal subunit protein eL18

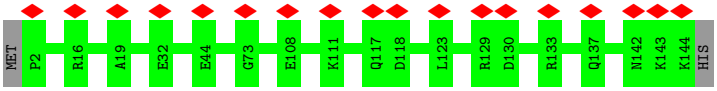
Chain BQ:



• Molecule 11: 40S ribosomal protein S19

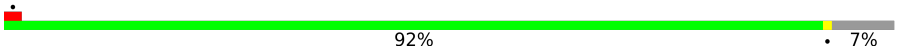
Chain As:

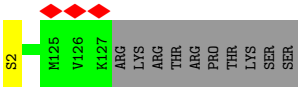




• Molecule 12: Large ribosomal subunit protein eL28

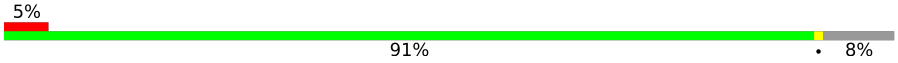
Chain Br:

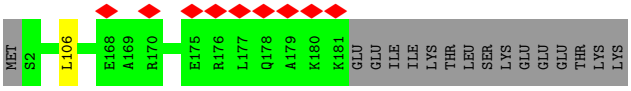




• Molecule 13: Ribosomal protein L19

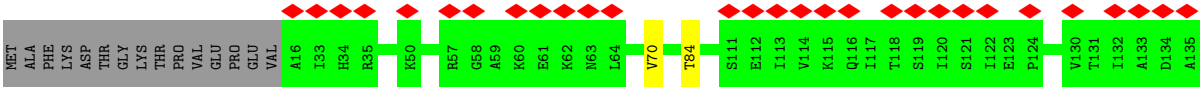
Chain BR:





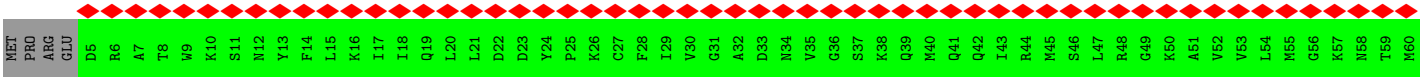
• Molecule 14: Small ribosomal subunit protein uS10

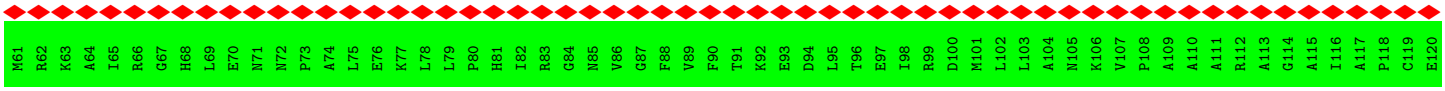
Chain At:

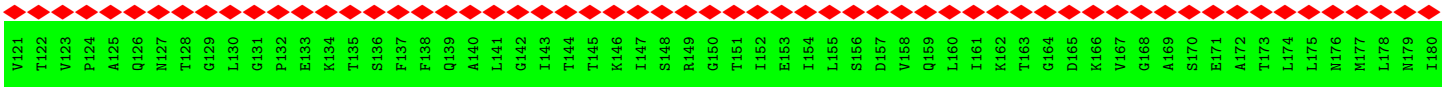


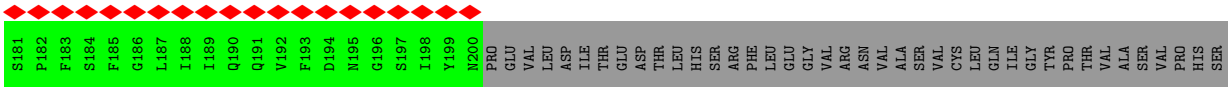
• Molecule 15: 60S acidic ribosomal protein P0

Chain Bs:



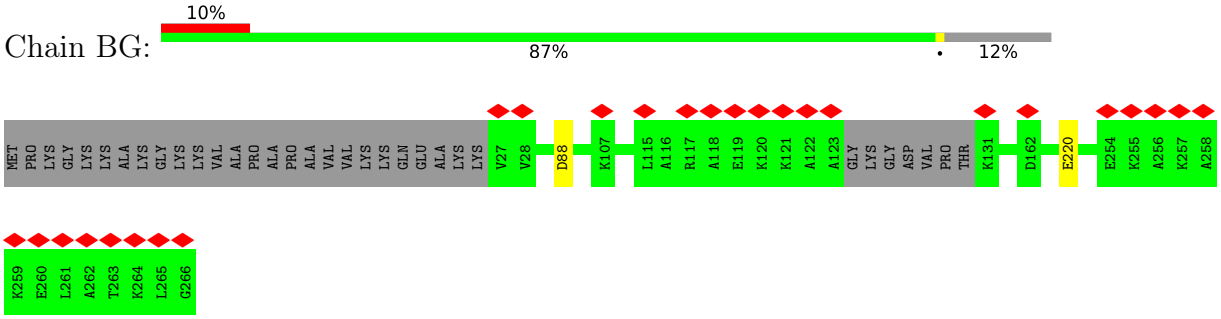






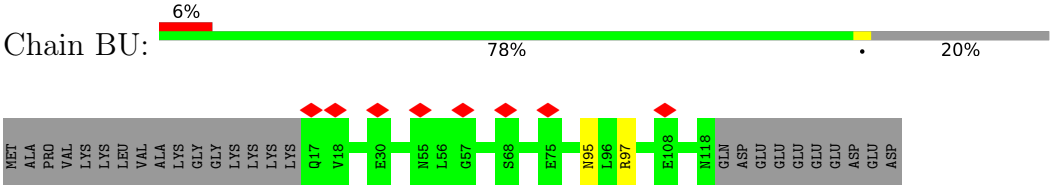
• Molecule 16: 60S ribosomal protein L7a

Chain BG:



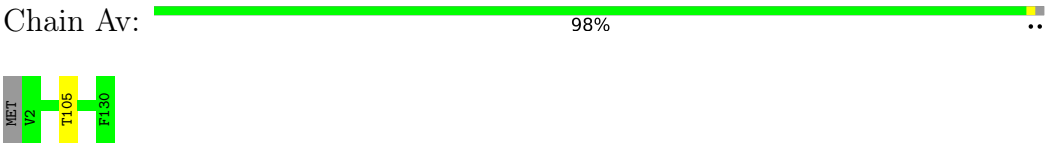
• Molecule 17: 60S ribosomal protein L22

Chain BU:



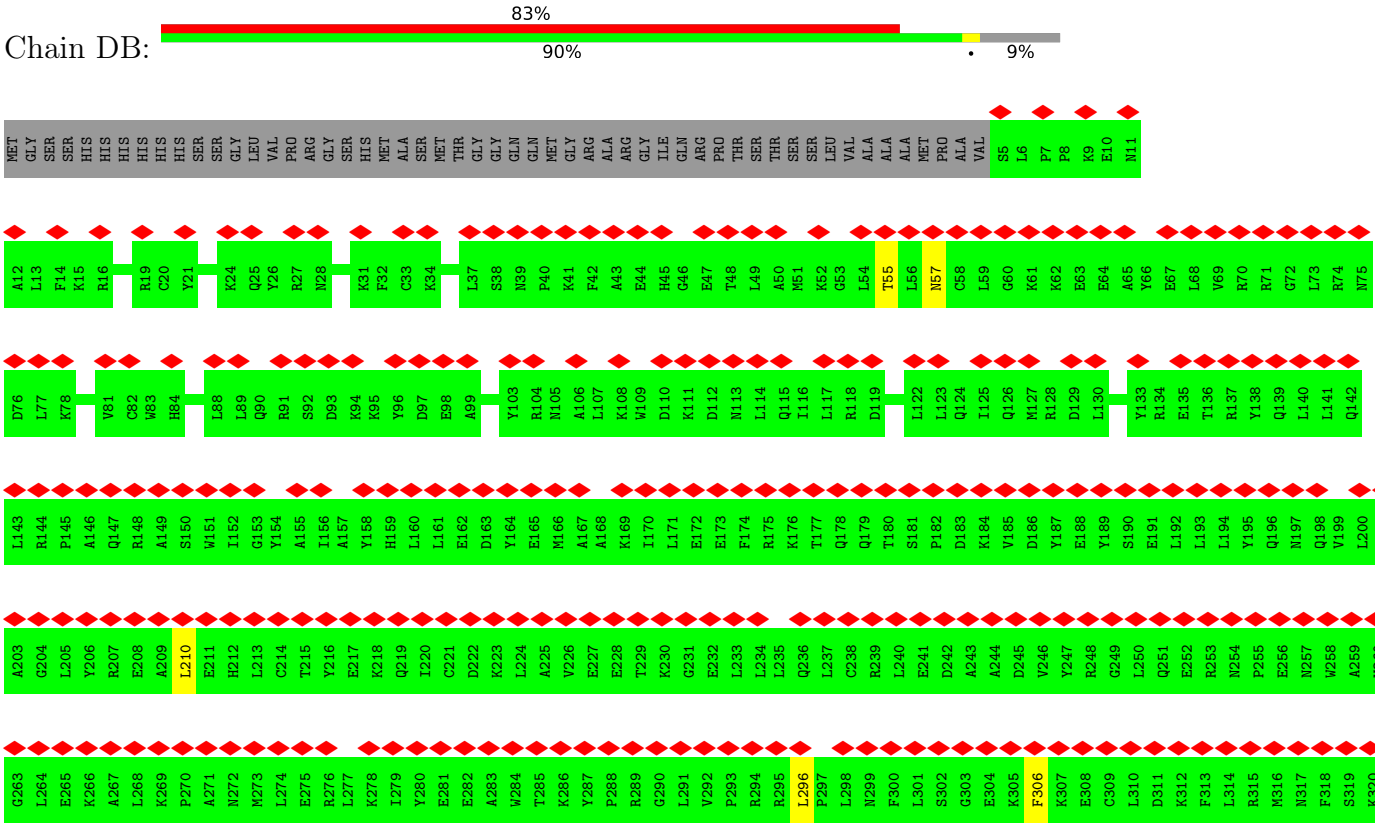
• Molecule 18: Ribosomal protein S15a

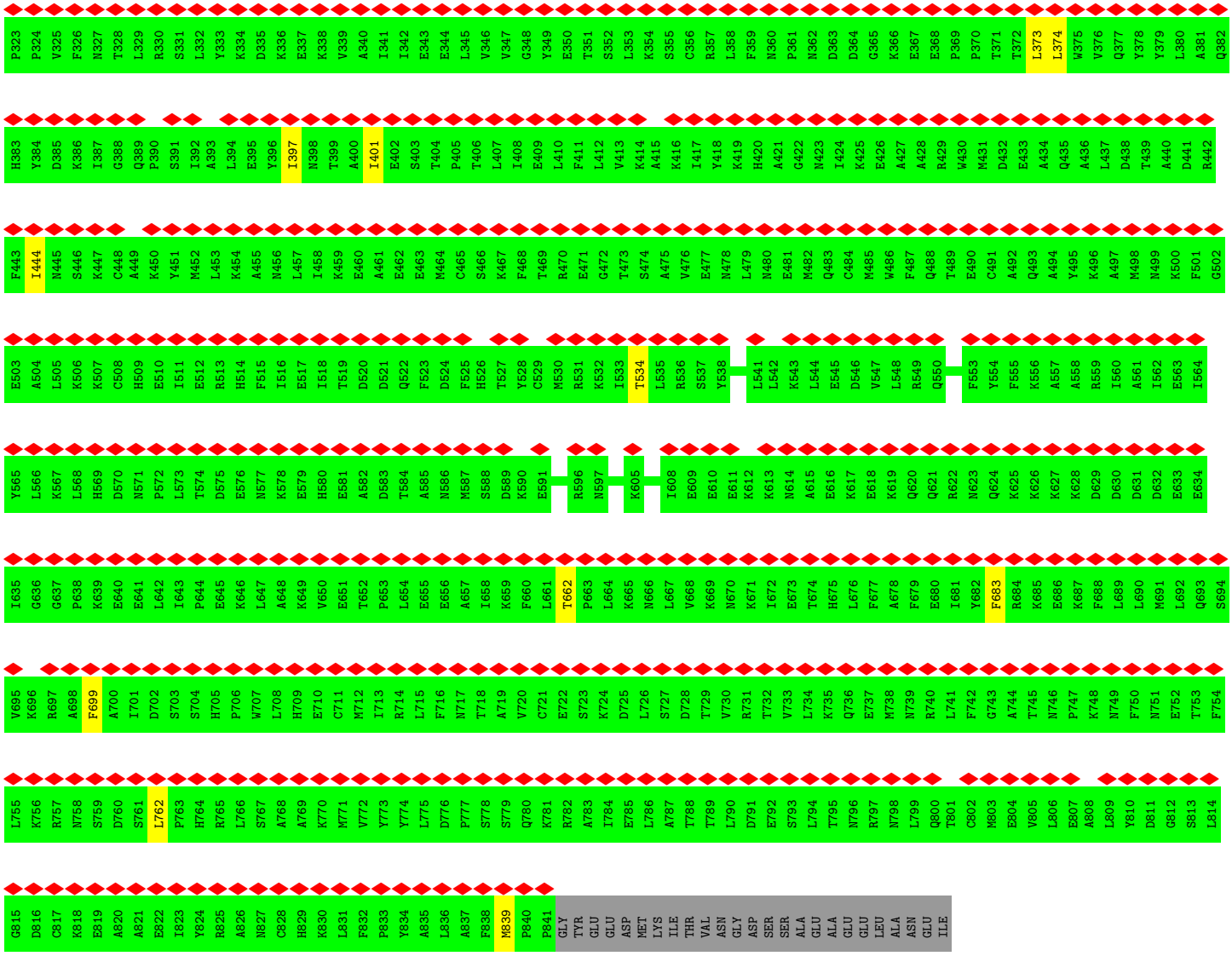
Chain Av:



• Molecule 19: N-alpha-acetyltransferase 15, NatA auxiliary subunit

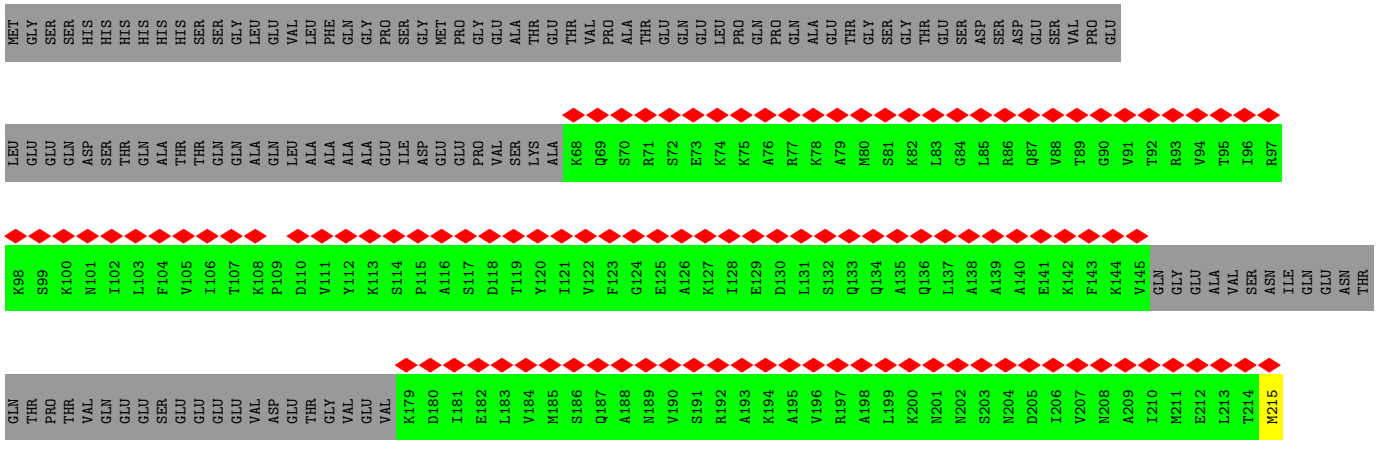
Chain DB:





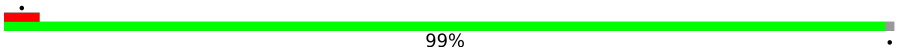
• Molecule 20: Nascent polypeptide-associated complex subunit alpha

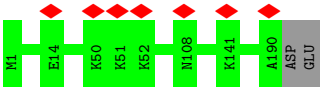
Chain Ct:



• Molecule 21: 60S ribosomal protein L9

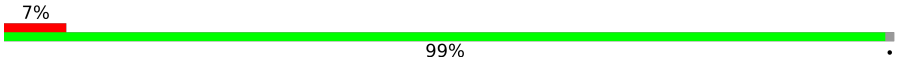
Chain BH:

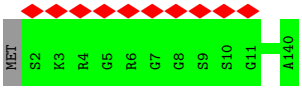




• Molecule 22: Ribosomal protein L23

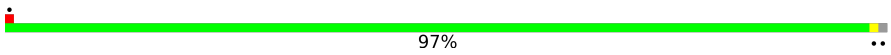
Chain BV:

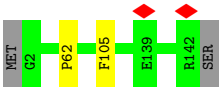




• Molecule 23: 40S ribosomal protein S23

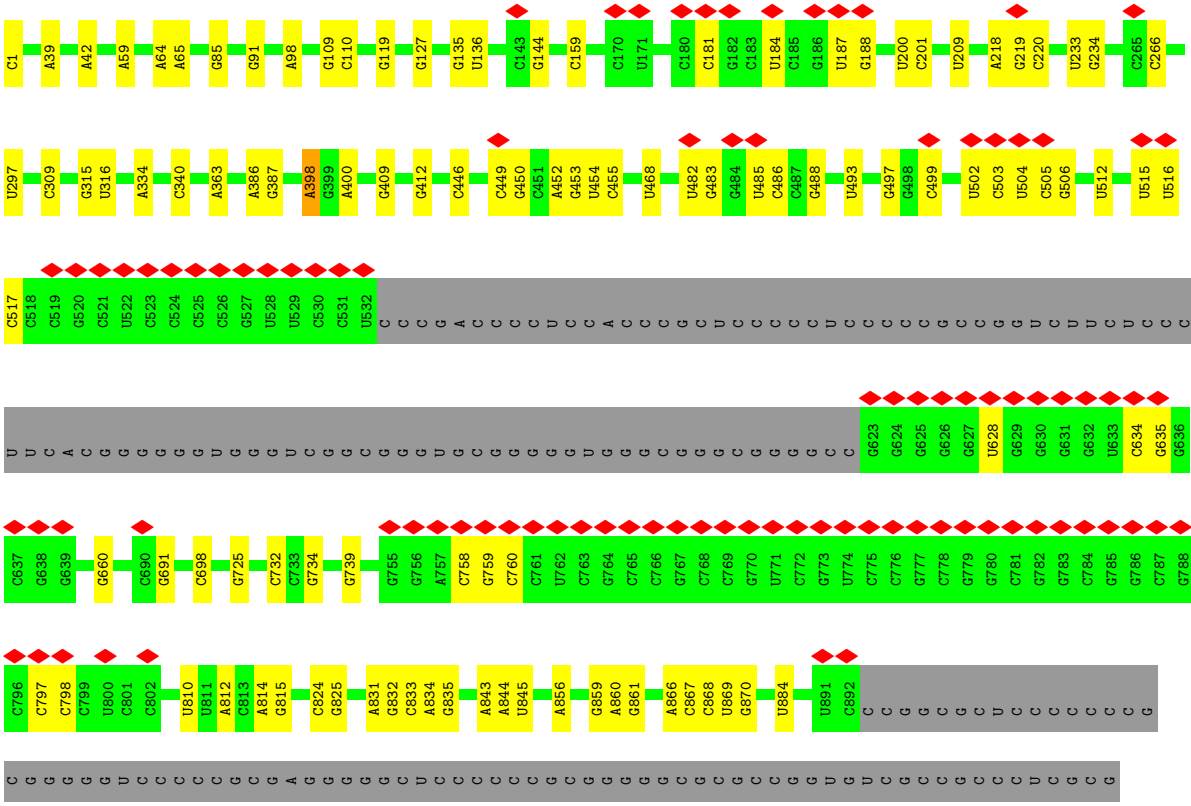
Chain Aw:

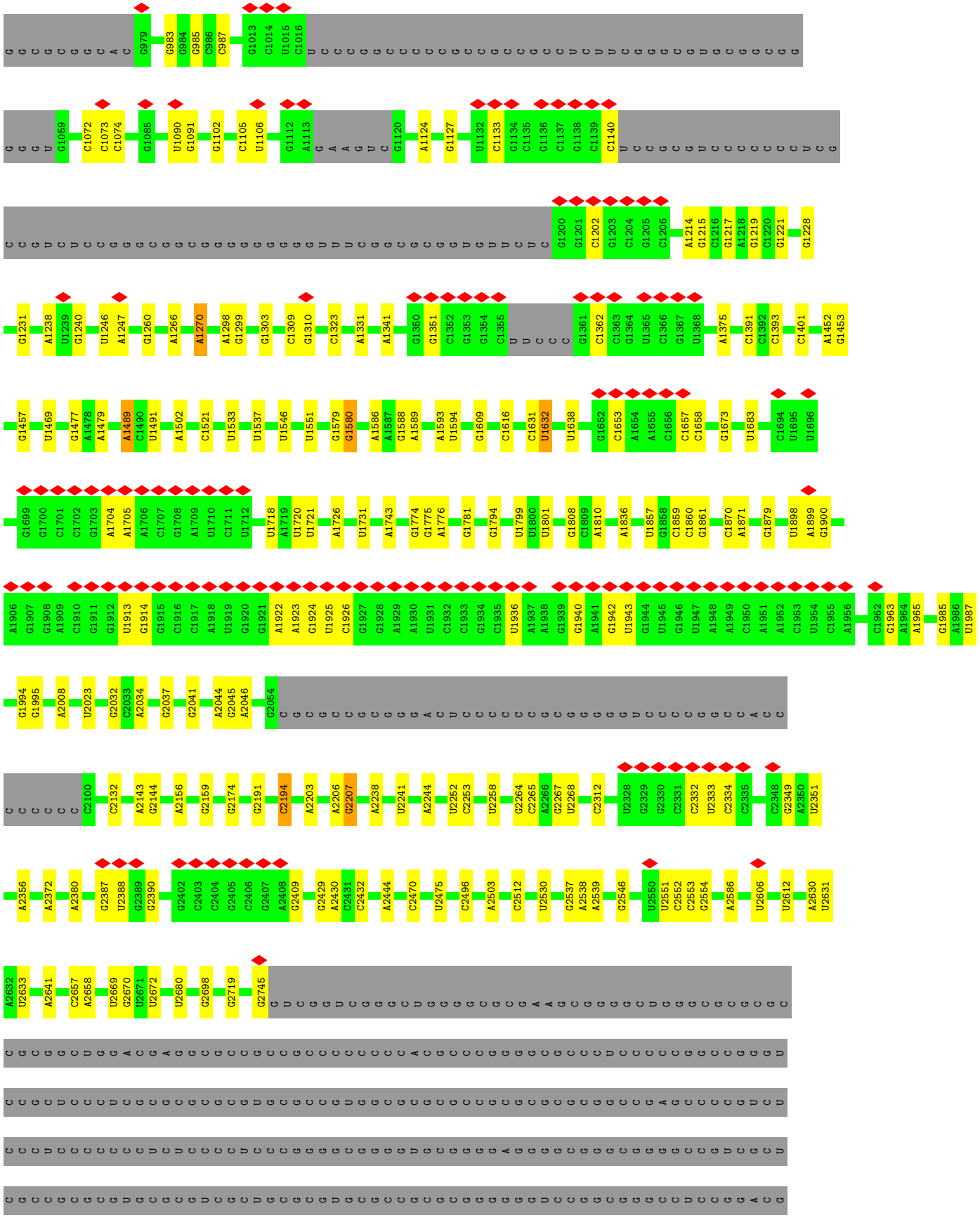


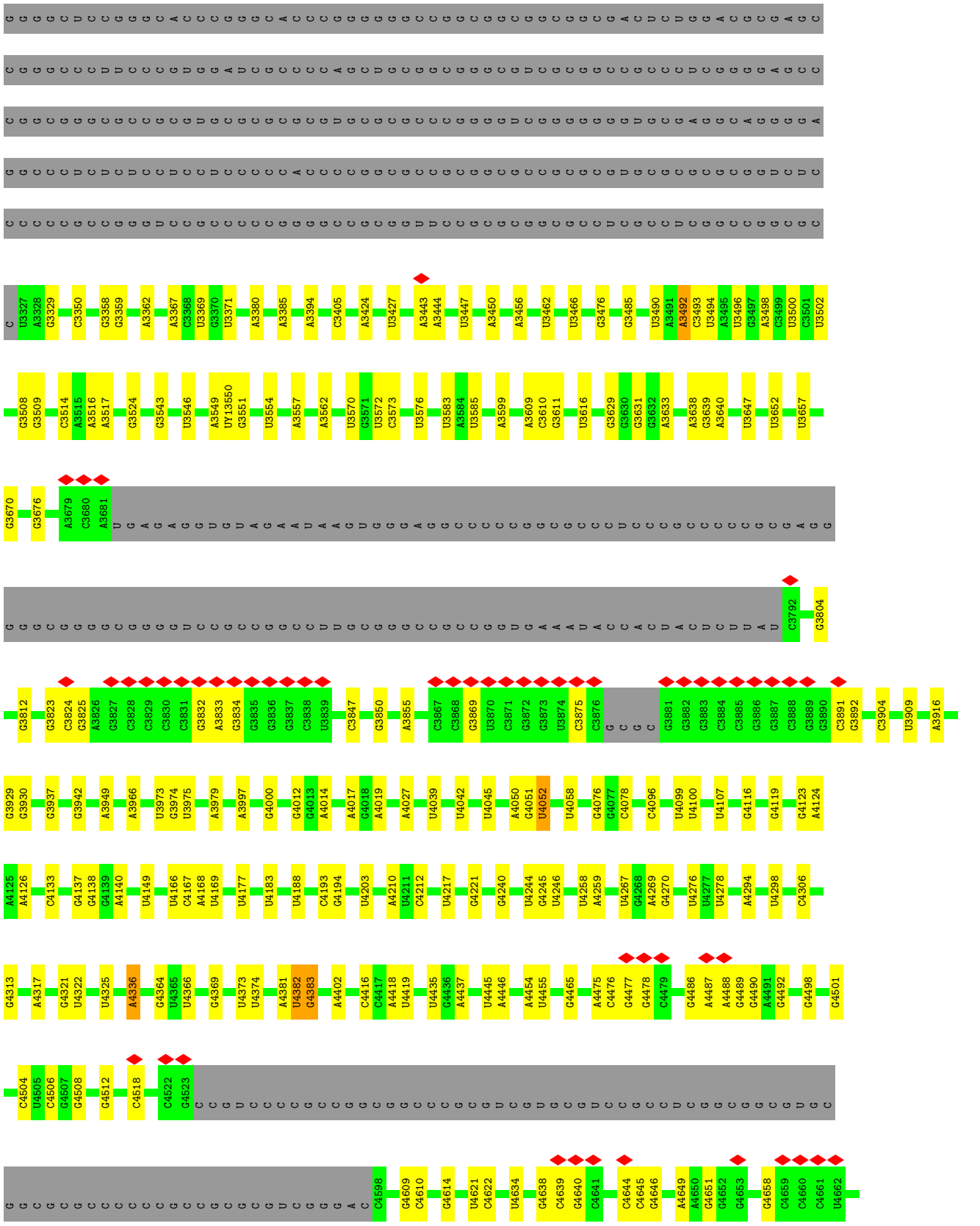


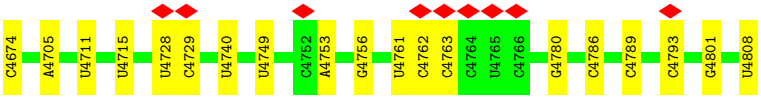
• Molecule 24: 28S rRNA

Chain B5:



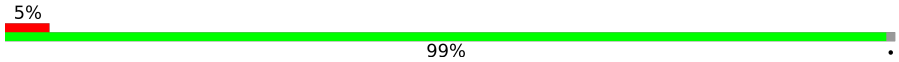


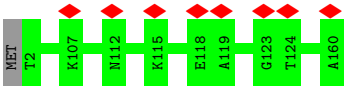




• Molecule 25: 60S ribosomal protein L21

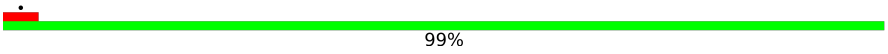
Chain BT:

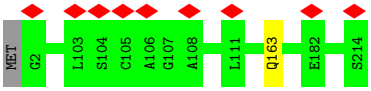




• Molecule 26: 60S ribosomal protein L10

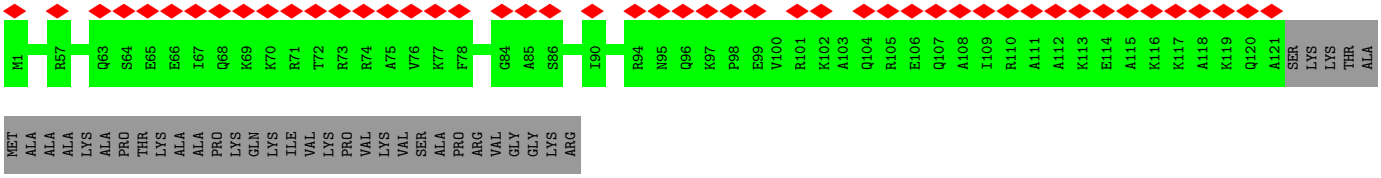
Chain BI:





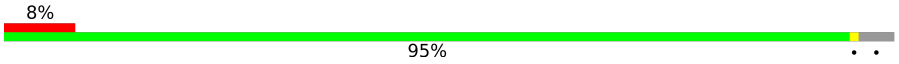
• Molecule 27: Ribosomal protein L24

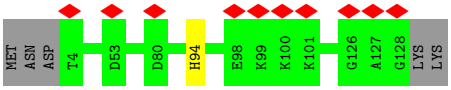
Chain BW:



• Molecule 28: 40S ribosomal protein S24

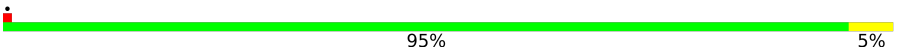
Chain Ax:





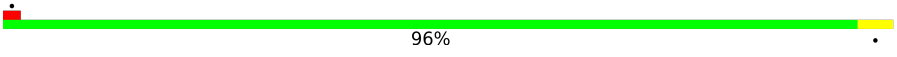
• Molecule 29: 5S rRNA

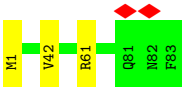
Chain B7:



• Molecule 30: Small ribosomal subunit protein eS21

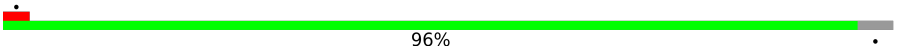
Chain Au:

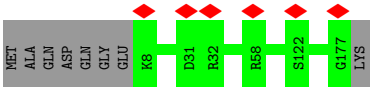




• Molecule 31: 60S ribosomal protein L11

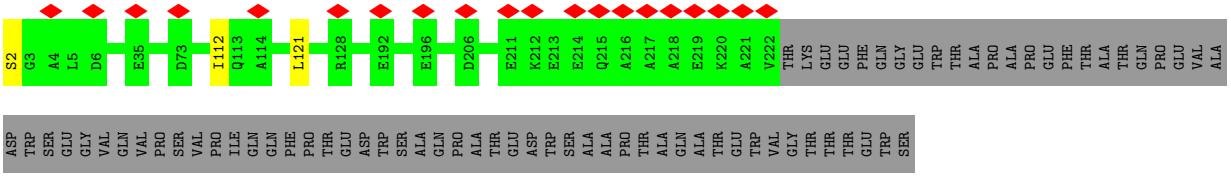
Chain BJ:





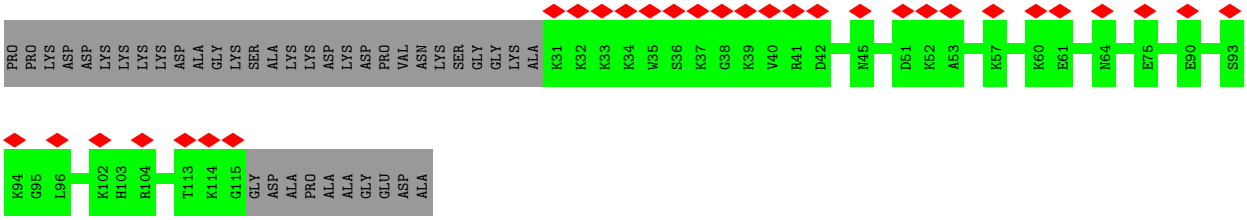
• Molecule 32: Small ribosomal subunit protein uS2

Chain AZ:



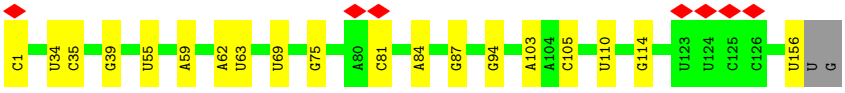
• Molecule 33: 40S ribosomal protein S25

Chain Ay:



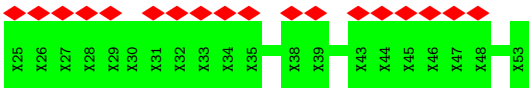
• Molecule 34: 5.8S rRNA

Chain B8:



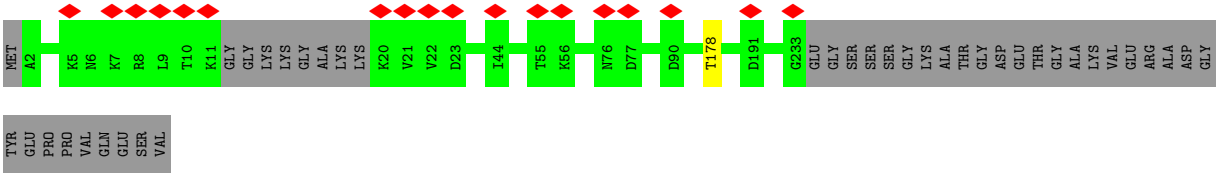
• Molecule 35: Nascent chain

Chain BK:



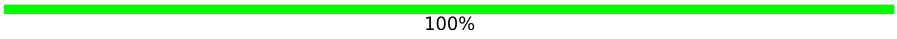
• Molecule 36: 40S ribosomal protein S3a

Chain Aa:



• Molecule 37: 60S ribosomal protein L41

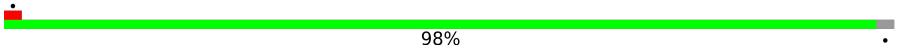
Chain Az:

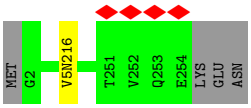


There are no outlier residues recorded for this chain.

• Molecule 38: Large ribosomal subunit protein uL2

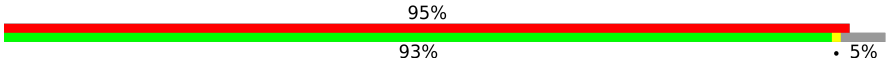
Chain BA:

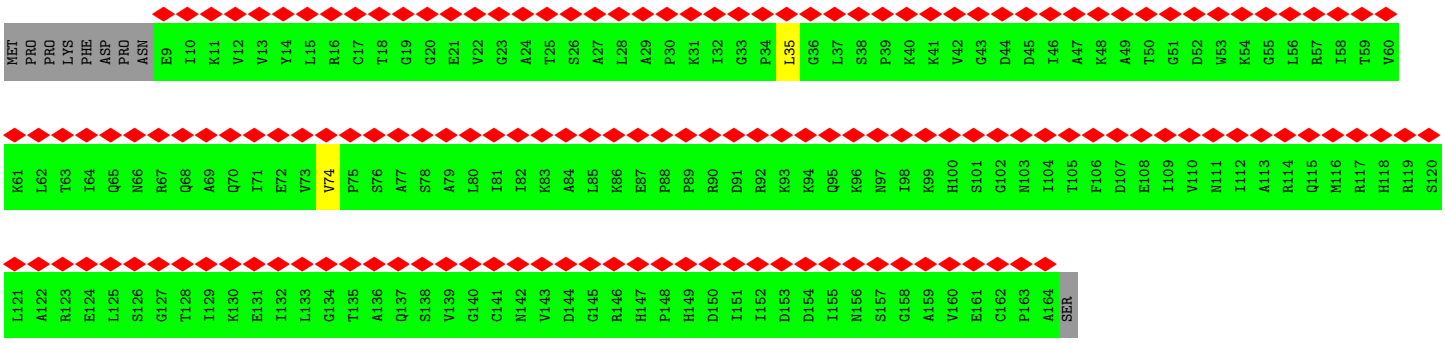




• Molecule 39: 60S ribosomal protein L12

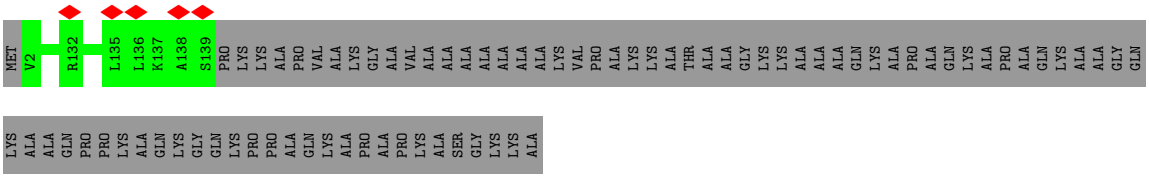
Chain Bt:





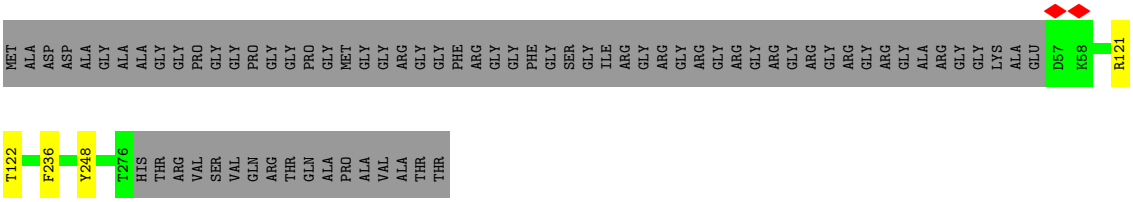
• Molecule 40: 60S ribosomal protein L14

Chain BM:



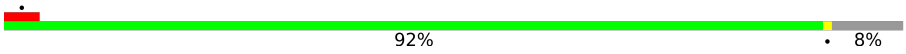
• Molecule 41: 40S ribosomal protein S2

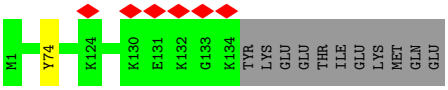
Chain Ab:



• Molecule 42: Ribosomal protein L26

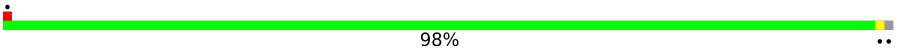
Chain BY:

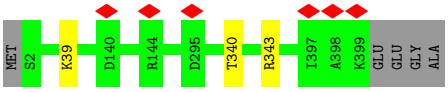




• Molecule 43: Ribosomal protein L3

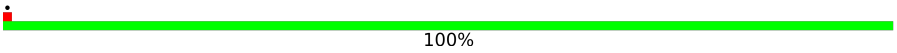
Chain BB:

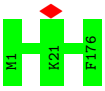




• Molecule 44: Large ribosomal subunit protein eL20

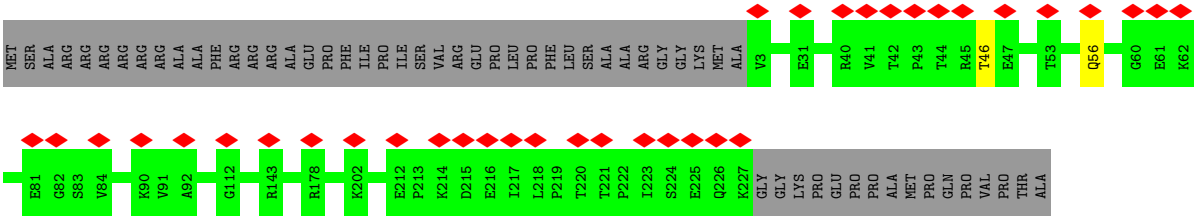
Chain BS:





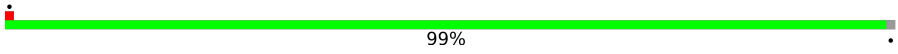
• Molecule 45: 40S ribosomal protein S3

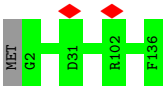
Chain Ac:



• Molecule 46: 60S ribosomal protein L27

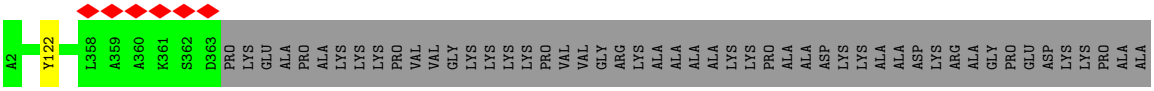
Chain BZ:





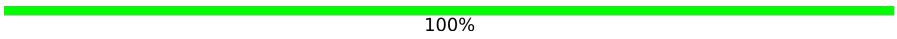
• Molecule 47: Large ribosomal subunit protein uL4

Chain BC:



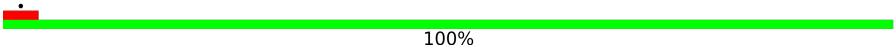
• Molecule 48: Ribosomal protein L15

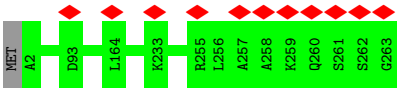
Chain BN:



• Molecule 49: 40S ribosomal protein S4

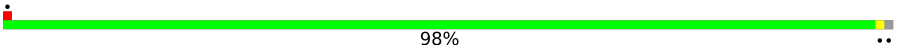
Chain Ad:

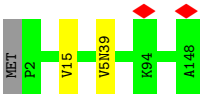




• Molecule 50: 60S ribosomal protein L27a

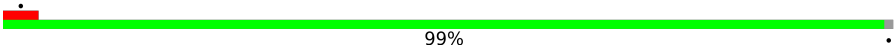
Chain Ba:

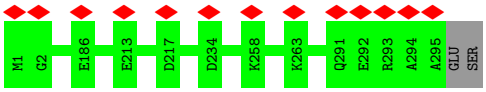




• Molecule 51: Large ribosomal subunit protein uL18

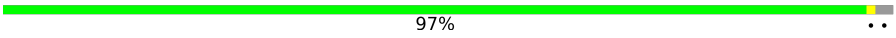
Chain B:

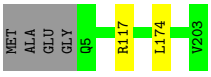




• Molecule 52: Large ribosomal subunit protein uL13

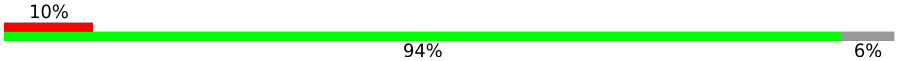
Chain BO:

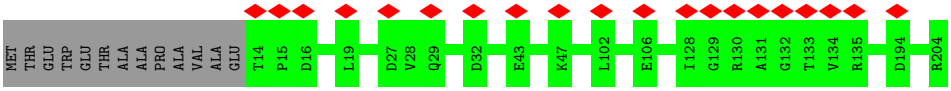




• Molecule 53: Ribosomal protein S5

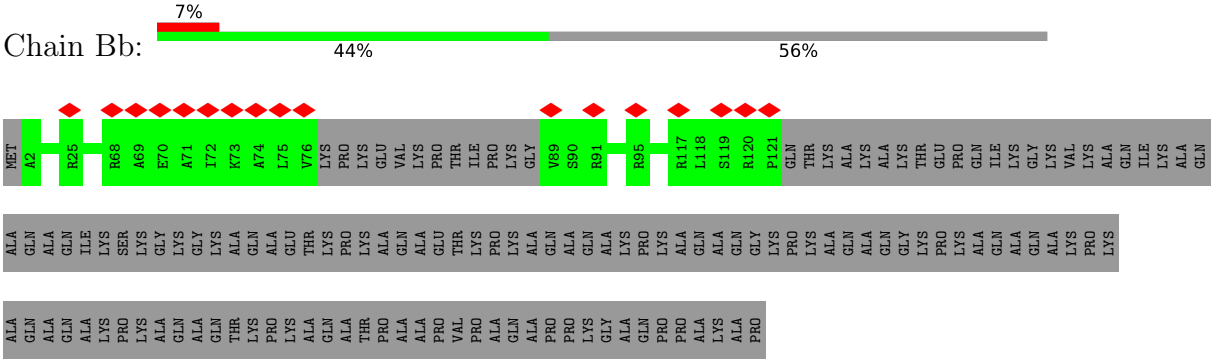
Chain Ae:





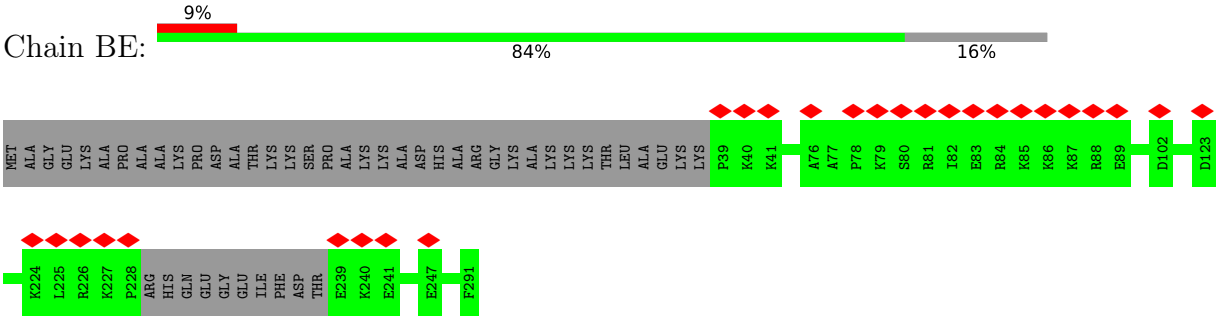
• Molecule 54: 60S ribosomal protein L29

Chain Bb:



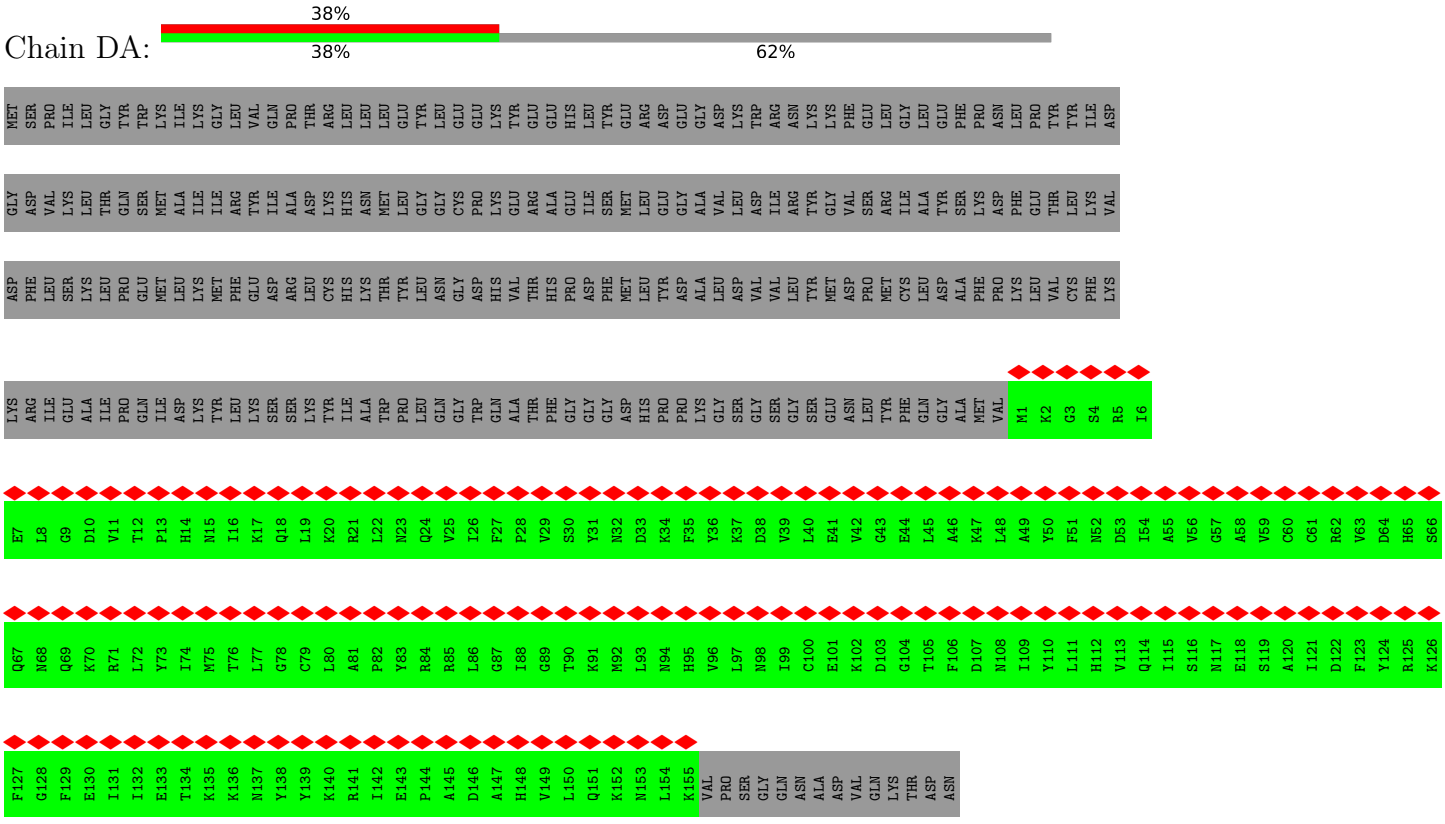
• Molecule 55: 60S ribosomal protein L6

Chain BE:



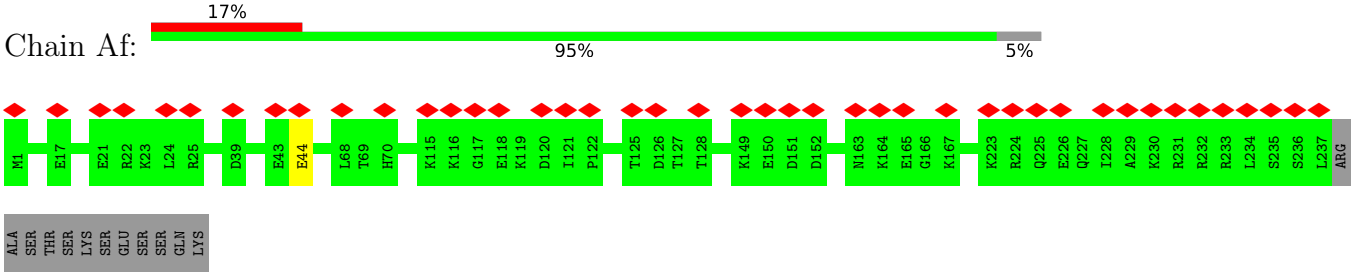
• Molecule 56: Glutathione S-transferase class-mu 26 kDa isozyme,N-alpha-acetyltransferase 50

Chain DA:



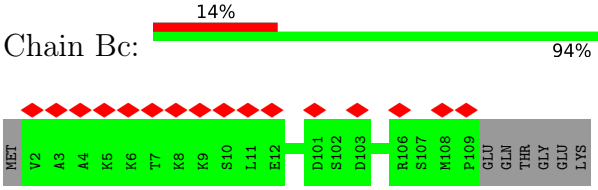
• Molecule 57: 40S ribosomal protein S6

Chain Af:



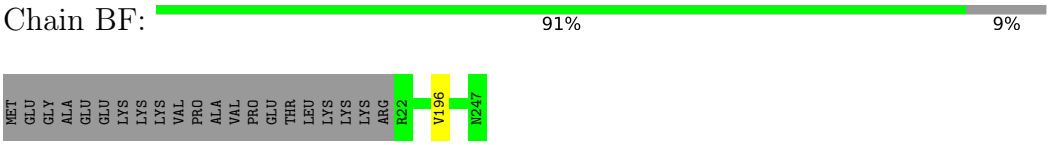
• Molecule 58: 60S ribosomal protein L30

Chain Bc:



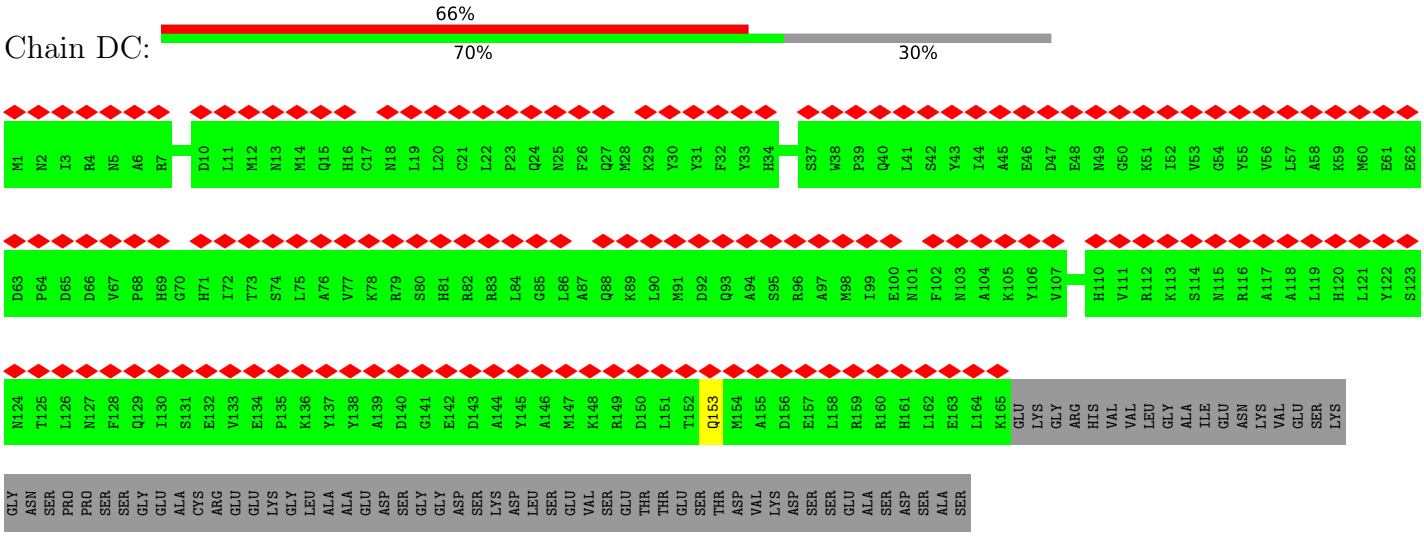
• Molecule 59: Ribosomal Protein uL30

Chain BF:



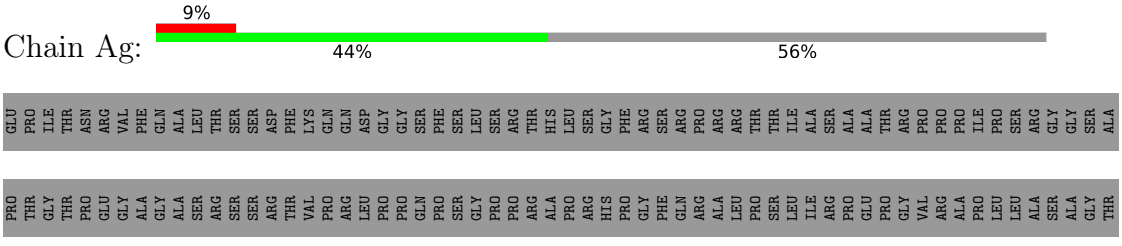
• Molecule 60: N-alpha-acetyltransferase 10

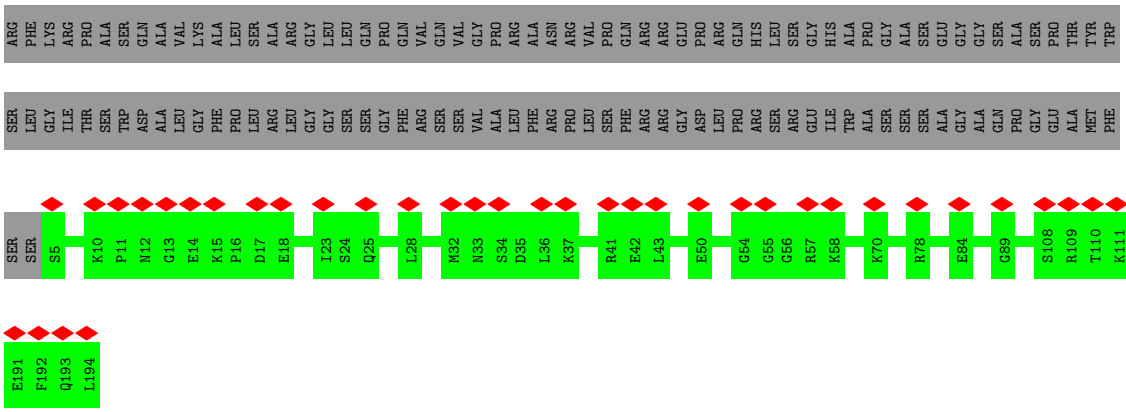
Chain DC:



• Molecule 61: 40S ribosomal protein S7

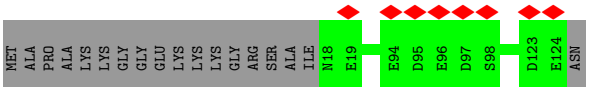
Chain Ag:





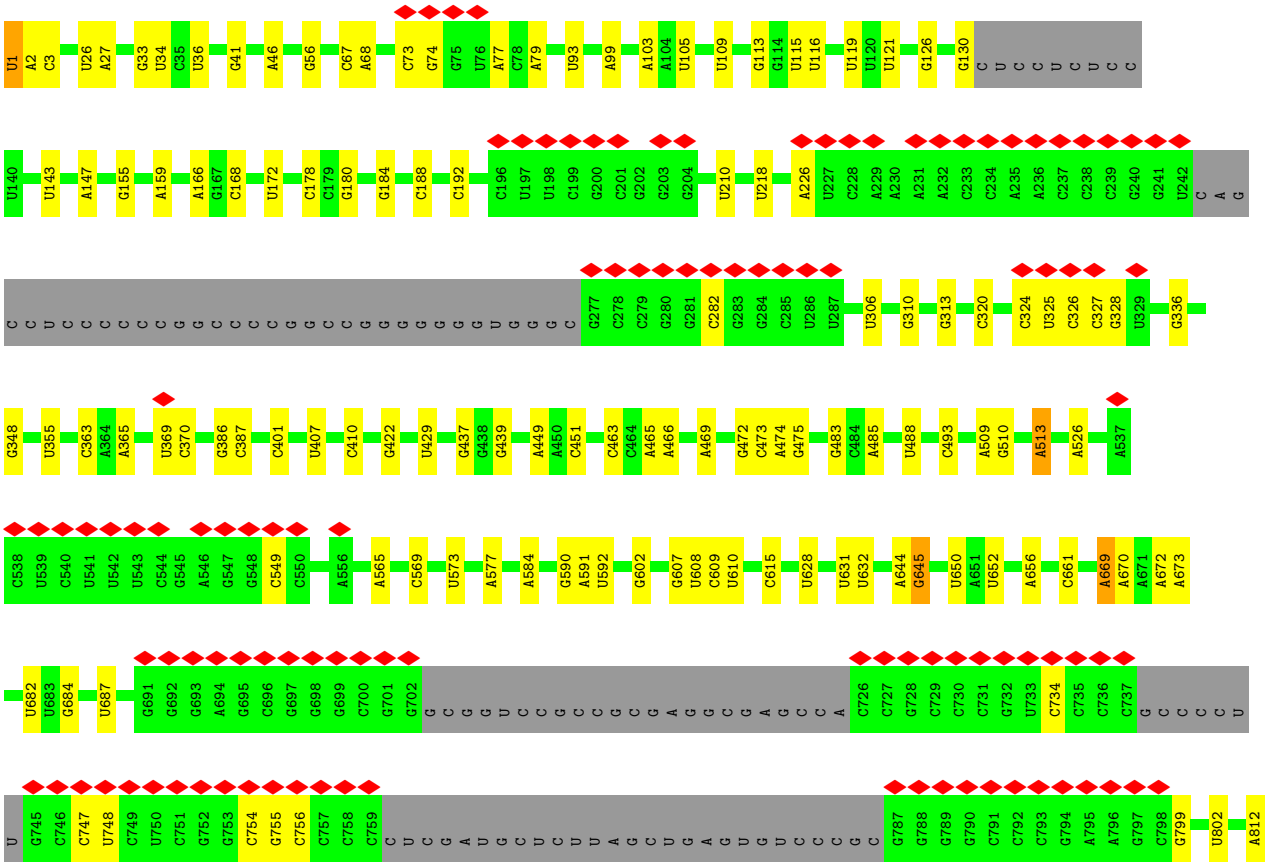
• Molecule 62: 60S ribosomal protein L31

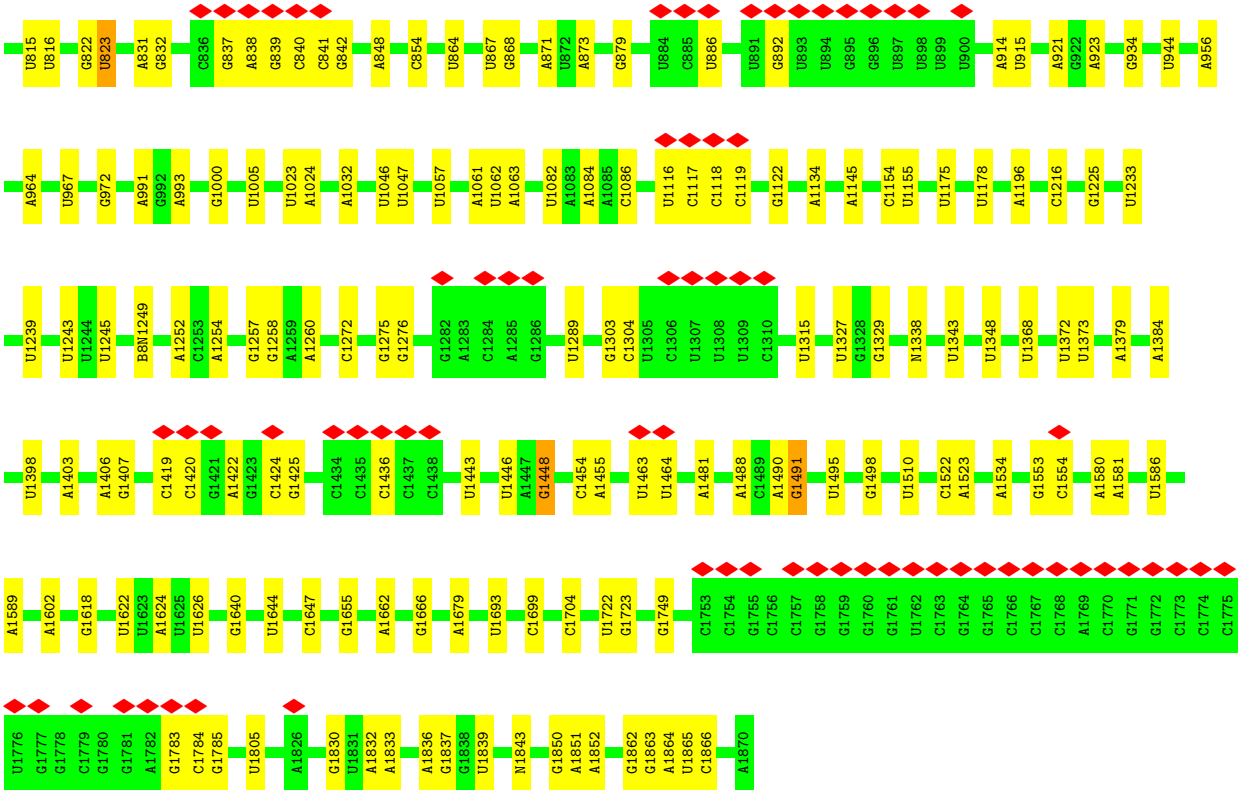
Chain Bd:



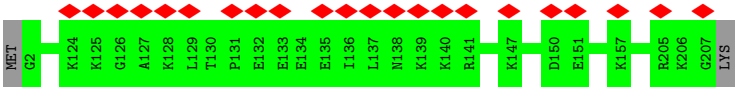
• Molecule 63: 18S rRNA

Chain A2:

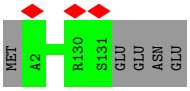




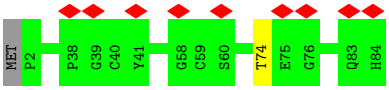
• Molecule 64: 40S ribosomal protein S8



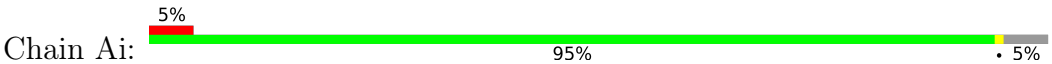
• Molecule 65: Ribosomal protein L32

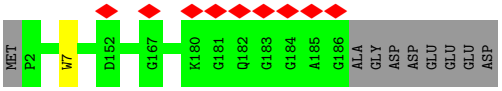


• Molecule 66: 40S ribosomal protein S27



• Molecule 67: 40S ribosomal protein S9



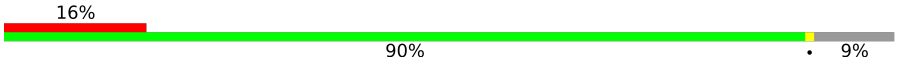


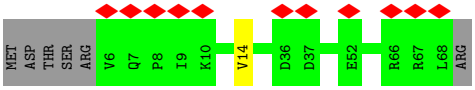
• Molecule 68: 60S ribosomal protein L35a

Chain Bf:

• Molecule 69: 40S ribosomal protein S28

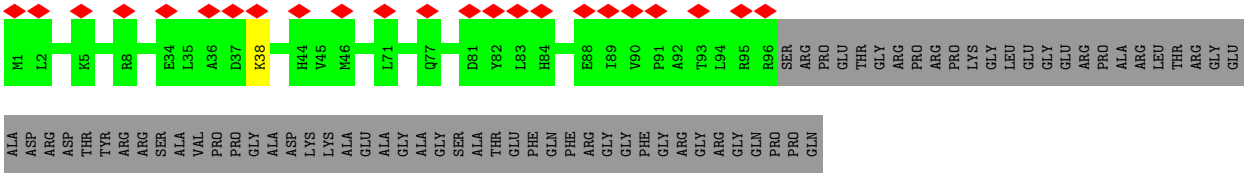
Chain AB:





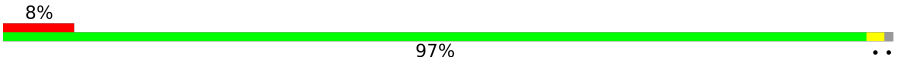
• Molecule 70: S10_plectin domain-containing protein

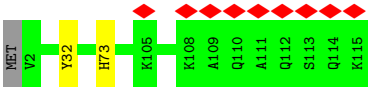
Chain Aj:



• Molecule 71: Large ribosomal subunit protein eL34

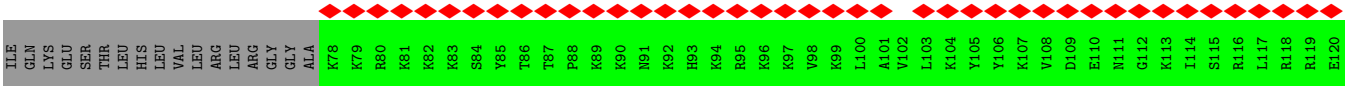
Chain Bg:

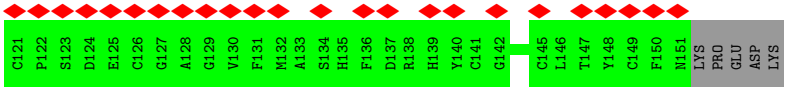




• Molecule 72: Ribosomal protein S27a

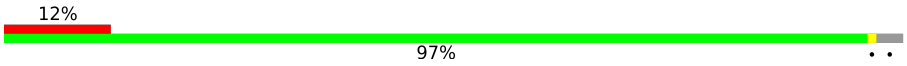
Chain AC:

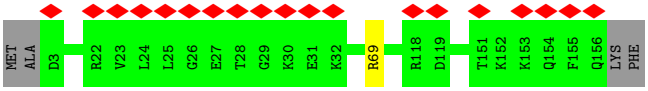




• Molecule 73: 40S ribosomal protein S11

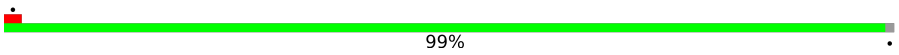
Chain Ak:





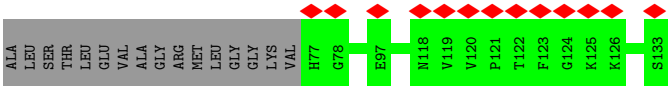
• Molecule 74: 60S ribosomal protein L35

Chain Bh:



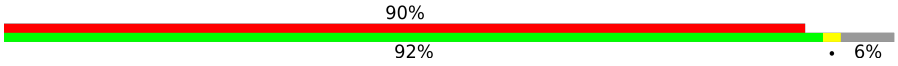
• Molecule 75: 40S ribosomal protein S30

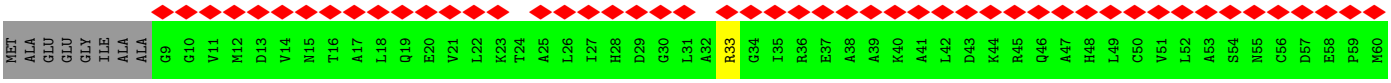
Chain AD:

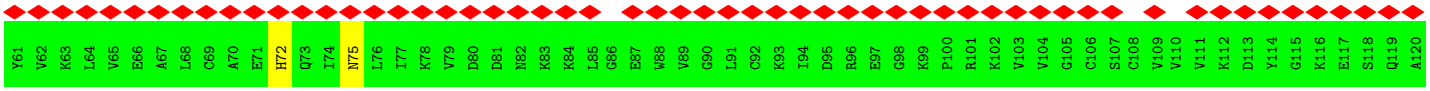


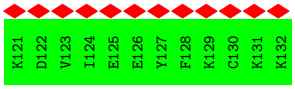
• Molecule 76: 40S ribosomal protein S12

Chain Al:



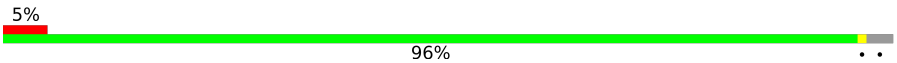


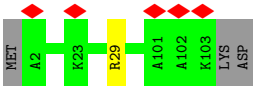




• Molecule 77: 60S ribosomal protein L36

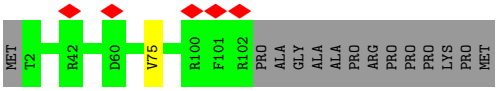
Chain Bi:





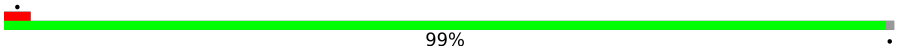
• Molecule 78: Small ribosomal subunit protein eS26

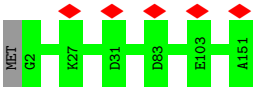
Chain AE:



• Molecule 79: 40S ribosomal protein S13

Chain Am:



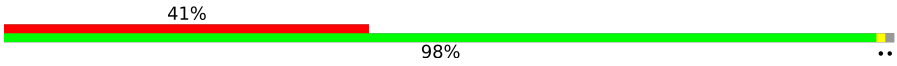


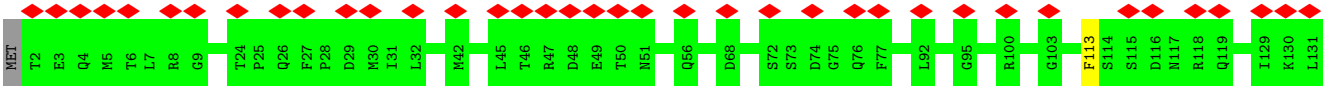
• Molecule 80: Ribosomal protein L37

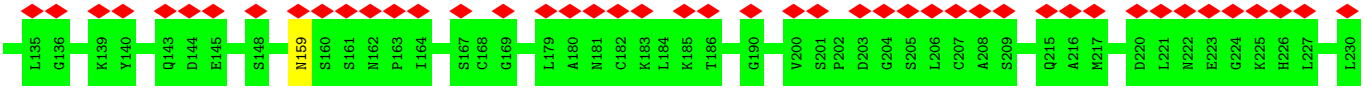
Chain Bj:

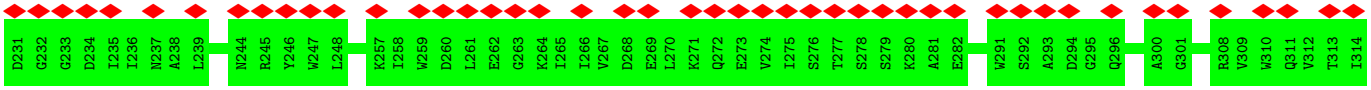
• Molecule 81: Small ribosomal subunit protein RACK1

Chain AF:



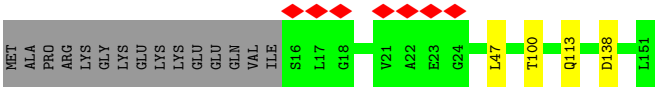






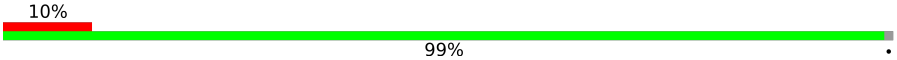
• Molecule 82: Small ribosomal subunit protein uS11

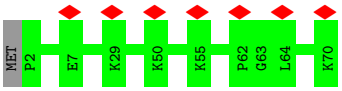
Chain An:



• Molecule 83: 60S ribosomal protein L38

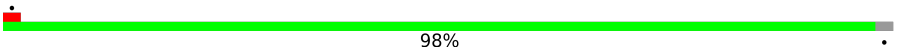
Chain Bk:





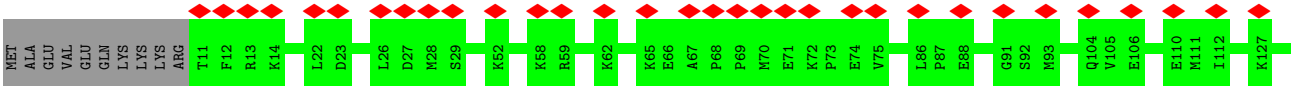
• Molecule 84: 40S ribosomal protein S29

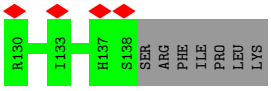
Chain AG:



• Molecule 85: 40S ribosomal protein uS19

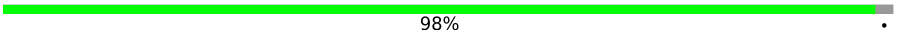
Chain Ao:





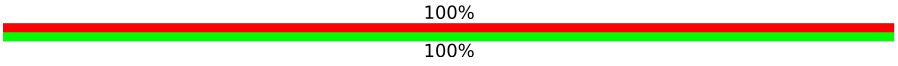
• Molecule 86: 60S ribosomal protein L39-like

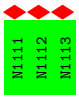
Chain Bl:



• Molecule 87: mRNA

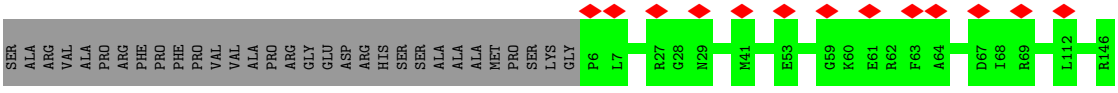
Chain AH:





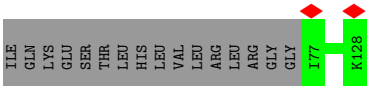
• Molecule 88: Small ribosomal subunit protein uS9

Chain Ap:



• Molecule 89: Ubiquitin-ribosomal protein eL40 fusion protein

Chain Bm:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	37182	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	2400	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	1.360	Depositor
Minimum map value	-0.419	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.055	Depositor
Recommended contour level	0.275	Depositor
Map size (Å)	593.6, 593.6, 593.6	wwPDB
Map dimensions	560, 560, 560	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.06, 1.06, 1.06	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: M3L, UNX, OMC, 4AC, IAS, HIC, GTP, HY3, A2M, NMM, 5MC, G7M, 1MA, ZN, SPD, OMG, PSU, UY1, UR3, AYA, 6MZ, OMU, IHP, MG, MA6, SPM, B8N, AME, V5N, SAC, MLZ

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	BP	0.23	0/1268	0.48	0/1700
2	Aq	0.23	0/1094	0.48	0/1469
3	Bo	0.26	0/866	0.52	0/1141
4	AT	0.13	0/68	0.67	0/103
5	Ar	0.23	0/1226	0.53	0/1643
6	Cu	0.26	0/821	0.47	0/1101
7	BL	0.24	0/1733	0.53	0/2316
8	BX	0.24	0/984	0.48	0/1323
9	Bp	0.23	0/718	0.48	0/953
10	BQ	0.24	0/1539	0.55	0/2054
11	As	0.23	0/1119	0.45	0/1498
12	Br	0.23	0/1020	0.53	0/1366
13	BR	0.22	0/1524	0.53	0/2013
14	At	0.24	0/832	0.51	0/1117
15	Bs	0.24	0/1530	0.45	0/2064
16	BG	0.23	0/1908	0.47	0/2566
17	BU	0.24	0/845	0.46	0/1134
18	Av	0.24	0/1051	0.48	0/1406
19	DB	0.24	0/7038	0.43	0/9468
20	Ct	0.27	0/900	0.47	0/1202
21	BH	0.24	0/1535	0.49	0/2063
22	BV	0.25	0/1048	0.51	0/1402
23	Aw	0.24	0/1107	0.49	0/1475
24	B5	0.15	1/86006 (0.0%)	0.67	11/134179 (0.0%)
25	BT	0.24	0/1326	0.49	0/1770
26	BI	0.24	0/1756	0.50	0/2346
27	BW	0.24	0/1006	0.49	0/1334
28	Ax	0.24	0/1032	0.50	0/1371
29	B7	0.14	0/2835	0.66	0/4418
30	Au	0.24	0/636	0.48	0/852
31	BJ	0.24	0/1385	0.51	0/1852

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
32	AZ	0.23	0/1771	0.46	0/2406
33	Ay	0.23	0/691	0.46	0/922
34	B8	0.21	1/3635 (0.0%)	0.67	0/5661
36	Aa	0.23	0/1841	0.45	0/2459
37	Az	0.22	0/240	0.65	0/305
38	BA	0.24	0/1965	0.54	0/2633
39	Bt	0.23	0/1193	0.47	0/1609
40	BM	0.24	0/1158	0.49	0/1547
41	Ab	0.24	0/1742	0.45	0/2354
42	BY	0.23	0/1132	0.51	0/1504
43	BB	0.24	0/3261	0.49	0/4364
44	BS	0.24	0/1497	0.53	0/2008
45	Ac	0.24	0/1779	0.49	0/2395
46	BZ	0.25	0/1130	0.49	0/1507
47	BC	0.23	0/2932	0.50	0/3939
48	BN	0.23	0/1746	0.54	0/2338
49	Ad	0.24	0/2118	0.50	0/2849
50	Ba	0.23	0/1179	0.50	0/1572
51	B	0.25	0/2444	0.47	0/3273
52	BO	0.24	0/1662	0.49	0/2222
53	Ae	0.23	0/1531	0.48	0/2059
54	Bb	0.23	0/884	0.51	0/1169
55	BE	0.24	0/1998	0.50	0/2673
56	DA	0.24	0/1284	0.45	0/1728
57	Af	0.23	0/1946	0.52	0/2590
58	Bc	0.24	0/847	0.42	0/1134
59	BF	0.24	0/1922	0.48	0/2563
60	DC	0.27	0/1368	0.46	0/1843
61	Ag	0.24	0/1552	0.46	0/2079
62	Bd	0.24	0/903	0.52	0/1216
63	A2	0.15	1/40342 (0.0%)	0.68	15/62877 (0.0%)
64	Ah	0.24	0/1715	0.51	0/2287
65	Be	0.23	0/1088	0.51	0/1451
66	AA	0.24	0/665	0.46	0/891
67	Ai	0.23	0/1550	0.52	0/2069
68	Bf	0.25	0/903	0.53	0/1208
69	AB	0.24	0/497	0.57	0/666
70	Aj	0.24	0/834	0.42	0/1125
71	Bg	0.23	0/916	0.53	0/1220
72	AC	0.24	0/622	0.48	0/822
73	Ak	0.24	0/1284	0.51	0/1717
74	Bh	0.23	0/1021	0.49	0/1348
75	AD	0.24	0/462	0.54	0/607

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
76	Al	0.23	0/968	0.41	0/1296
77	Bi	0.23	0/841	0.52	0/1112
78	AE	0.24	0/828	0.53	0/1109
79	Am	0.23	0/1232	0.47	0/1656
80	Bj	0.24	0/720	0.56	0/952
81	AF	0.23	0/2493	0.46	0/3394
82	An	0.24	0/1020	0.53	0/1366
83	Bk	0.24	0/575	0.45	0/761
84	AG	0.23	0/470	0.51	0/623
85	Ao	0.24	0/1069	0.48	0/1429
86	Bl	0.22	0/459	0.51	0/608
88	Ap	0.24	0/1142	0.50	0/1528
89	Bm	0.22	0/426	0.50	0/564
All	All	0.20	3/241249 (0.0%)	0.60	26/352306 (0.0%)

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
63	A2	1	U	OP3-P	-7.64	1.51	1.61
34	B8	1	C	OP3-P	-7.58	1.52	1.61
24	B5	1	C	OP3-P	-7.57	1.52	1.61

All (26) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
24	B5	2312	C	C2-N1-C1'	9.01	128.71	118.80
24	B5	2312	C	N1-C2-O2	8.62	124.07	118.90
63	A2	1454	C	C2-N1-C1'	8.10	127.71	118.80
63	A2	631	U	C2-N1-C1'	7.95	127.24	117.70
63	A2	1454	C	N1-C2-O2	7.92	123.65	118.90
63	A2	631	U	N1-C2-O2	7.23	127.86	122.80
24	B5	2252	U	C2-N1-C1'	7.01	126.12	117.70
63	A2	631	U	N3-C2-O2	-6.81	117.43	122.20
24	B5	2312	C	N3-C2-O2	-6.77	117.16	121.90
63	A2	1315	U	C2-N1-C1'	6.73	125.77	117.70
24	B5	1594	U	C2-N1-C1'	6.45	125.44	117.70
24	B5	2252	U	N1-C2-O2	6.43	127.30	122.80
63	A2	1454	C	N3-C2-O2	-6.34	117.46	121.90
24	B5	2312	C	C6-N1-C1'	-6.34	113.20	120.80
63	A2	1315	U	N1-C2-O2	6.02	127.01	122.80
24	B5	2252	U	N3-C2-O2	-5.99	118.01	122.20
63	A2	1315	U	N3-C2-O2	-5.63	118.26	122.20

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
24	B5	2312	C	C6-N1-C2	-5.59	118.06	120.30
63	A2	326	C	C2-N1-C1'	5.56	124.92	118.80
24	B5	1594	U	N1-C2-O2	5.54	126.68	122.80
63	A2	854	C	C2-N1-C1'	5.53	124.88	118.80
63	A2	1454	C	C6-N1-C2	-5.53	118.09	120.30
63	A2	1454	C	C6-N1-C1'	-5.52	114.18	120.80
63	A2	1023	U	C2-N1-C1'	5.43	124.22	117.70
63	A2	631	U	C6-N1-C1'	-5.09	114.07	121.20
24	B5	1594	U	N3-C2-O2	-5.09	118.64	122.20

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	BP	151/184 (82%)	149 (99%)	2 (1%)	0	100	100
2	Aq	132/135 (98%)	132 (100%)	0	0	100	100
3	Bo	102/106 (96%)	100 (98%)	2 (2%)	0	100	100
5	Ar	146/151 (97%)	143 (98%)	3 (2%)	0	100	100
6	Cu	103/162 (64%)	95 (92%)	8 (8%)	0	100	100
7	BL	208/211 (99%)	204 (98%)	4 (2%)	0	100	100
8	BX	116/156 (74%)	115 (99%)	1 (1%)	0	100	100
9	Bp	89/92 (97%)	87 (98%)	2 (2%)	0	100	100
10	BQ	185/188 (98%)	182 (98%)	3 (2%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
11	As	140/145 (97%)	140 (100%)	0	0	100	100
12	Br	124/136 (91%)	122 (98%)	2 (2%)	0	100	100
13	BR	178/196 (91%)	178 (100%)	0	0	100	100
14	At	102/119 (86%)	98 (96%)	4 (4%)	0	100	100
15	Bs	194/318 (61%)	189 (97%)	5 (3%)	0	100	100
16	BG	229/266 (86%)	228 (100%)	1 (0%)	0	100	100
17	BU	100/128 (78%)	97 (97%)	3 (3%)	0	100	100
18	Av	127/130 (98%)	126 (99%)	1 (1%)	0	100	100
19	DB	835/915 (91%)	822 (98%)	13 (2%)	0	100	100
20	Ct	111/238 (47%)	110 (99%)	1 (1%)	0	100	100
21	BH	188/192 (98%)	188 (100%)	0	0	100	100
22	BV	137/140 (98%)	135 (98%)	2 (2%)	0	100	100
23	Aw	138/143 (96%)	136 (99%)	2 (1%)	0	100	100
25	BT	157/160 (98%)	155 (99%)	2 (1%)	0	100	100
26	BI	211/214 (99%)	206 (98%)	5 (2%)	0	100	100
27	BW	119/157 (76%)	118 (99%)	1 (1%)	0	100	100
28	Ax	123/130 (95%)	122 (99%)	1 (1%)	0	100	100
30	Au	81/83 (98%)	80 (99%)	1 (1%)	0	100	100
31	BJ	168/178 (94%)	167 (99%)	1 (1%)	0	100	100
32	AZ	219/294 (74%)	214 (98%)	5 (2%)	0	100	100
33	Ay	83/124 (67%)	81 (98%)	2 (2%)	0	100	100
36	Aa	220/264 (83%)	217 (99%)	3 (1%)	0	100	100
37	Az	23/25 (92%)	23 (100%)	0	0	100	100
38	BA	250/257 (97%)	240 (96%)	10 (4%)	0	100	100
39	Bt	154/165 (93%)	153 (99%)	1 (1%)	0	100	100
40	BM	136/218 (62%)	134 (98%)	2 (2%)	0	100	100
41	Ab	218/293 (74%)	218 (100%)	0	0	100	100
42	BY	132/145 (91%)	131 (99%)	1 (1%)	0	100	100
43	BB	395/403 (98%)	392 (99%)	3 (1%)	0	100	100
44	BS	174/176 (99%)	173 (99%)	1 (1%)	0	100	100
45	Ac	223/281 (79%)	221 (99%)	2 (1%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
46	BZ	133/136 (98%)	132 (99%)	1 (1%)	0	100	100
47	BC	360/412 (87%)	357 (99%)	3 (1%)	0	100	100
48	BN	201/204 (98%)	199 (99%)	2 (1%)	0	100	100
49	Ad	260/263 (99%)	256 (98%)	4 (2%)	0	100	100
50	Ba	144/148 (97%)	137 (95%)	6 (4%)	1 (1%)	19	52
51	B	293/297 (99%)	289 (99%)	4 (1%)	0	100	100
52	BO	197/203 (97%)	197 (100%)	0	0	100	100
53	Ae	189/204 (93%)	185 (98%)	4 (2%)	0	100	100
54	Bb	103/245 (42%)	97 (94%)	6 (6%)	0	100	100
55	BE	239/291 (82%)	235 (98%)	4 (2%)	0	100	100
56	DA	153/403 (38%)	152 (99%)	1 (1%)	0	100	100
57	Af	235/249 (94%)	234 (100%)	1 (0%)	0	100	100
58	Bc	106/115 (92%)	106 (100%)	0	0	100	100
59	BF	224/247 (91%)	218 (97%)	5 (2%)	1 (0%)	30	64
60	DC	163/235 (69%)	162 (99%)	1 (1%)	0	100	100
61	Ag	188/432 (44%)	185 (98%)	3 (2%)	0	100	100
62	Bd	105/125 (84%)	105 (100%)	0	0	100	100
64	Ah	204/208 (98%)	200 (98%)	4 (2%)	0	100	100
65	Be	128/135 (95%)	127 (99%)	1 (1%)	0	100	100
66	AA	81/84 (96%)	79 (98%)	2 (2%)	0	100	100
67	Ai	183/194 (94%)	179 (98%)	4 (2%)	0	100	100
68	Bf	108/110 (98%)	108 (100%)	0	0	100	100
69	AB	61/69 (88%)	61 (100%)	0	0	100	100
70	Aj	94/165 (57%)	91 (97%)	3 (3%)	0	100	100
71	Bg	112/115 (97%)	111 (99%)	1 (1%)	0	100	100
72	AC	72/156 (46%)	71 (99%)	1 (1%)	0	100	100
73	Ak	152/158 (96%)	148 (97%)	4 (3%)	0	100	100
74	Bh	120/123 (98%)	119 (99%)	1 (1%)	0	100	100
75	AD	55/133 (41%)	54 (98%)	1 (2%)	0	100	100
76	Al	122/132 (92%)	118 (97%)	4 (3%)	0	100	100
77	Bi	100/105 (95%)	99 (99%)	1 (1%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
78	AE	99/115 (86%)	98 (99%)	1 (1%)	0	100	100
79	Am	148/151 (98%)	147 (99%)	1 (1%)	0	100	100
80	Bj	84/97 (87%)	84 (100%)	0	0	100	100
81	AF	311/317 (98%)	305 (98%)	6 (2%)	0	100	100
82	An	132/151 (87%)	128 (97%)	4 (3%)	0	100	100
83	Bk	67/70 (96%)	67 (100%)	0	0	100	100
84	AG	53/56 (95%)	53 (100%)	0	0	100	100
85	Ao	126/145 (87%)	123 (98%)	3 (2%)	0	100	100
86	Bl	48/51 (94%)	48 (100%)	0	0	100	100
88	Ap	139/172 (81%)	133 (96%)	6 (4%)	0	100	100
89	Bm	49/128 (38%)	49 (100%)	0	0	100	100
All	All	13062/15567 (84%)	12867 (98%)	193 (2%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
50	Ba	15	VAL
59	BF	196	VAL

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	BP	134/163 (82%)	134 (100%)	0	100	100
2	Aq	120/121 (99%)	120 (100%)	0	100	100
3	Bo	92/93 (99%)	92 (100%)	0	100	100
5	Ar	127/130 (98%)	125 (98%)	2 (2%)	58	81
6	Cu	89/136 (65%)	89 (100%)	0	100	100
7	BL	175/176 (99%)	173 (99%)	2 (1%)	70	87
8	BX	106/134 (79%)	106 (100%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
9	Bp	74/75 (99%)	74 (100%)	0	100	100
10	BQ	164/165 (99%)	163 (99%)	1 (1%)	84	92
11	As	112/114 (98%)	112 (100%)	0	100	100
12	Br	109/119 (92%)	109 (100%)	0	100	100
13	BR	159/175 (91%)	158 (99%)	1 (1%)	84	92
14	At	94/107 (88%)	92 (98%)	2 (2%)	48	76
15	Bs	164/258 (64%)	164 (100%)	0	100	100
16	BG	199/223 (89%)	197 (99%)	2 (1%)	73	88
17	BU	91/113 (80%)	89 (98%)	2 (2%)	47	75
18	Av	112/113 (99%)	111 (99%)	1 (1%)	75	89
19	DB	746/806 (93%)	730 (98%)	16 (2%)	48	76
20	Ct	99/202 (49%)	98 (99%)	1 (1%)	73	88
21	BH	169/171 (99%)	169 (100%)	0	100	100
22	BV	106/107 (99%)	106 (100%)	0	100	100
23	Aw	112/114 (98%)	111 (99%)	1 (1%)	75	89
25	BT	139/140 (99%)	139 (100%)	0	100	100
26	BI	180/181 (99%)	179 (99%)	1 (1%)	84	92
27	BW	100/126 (79%)	100 (100%)	0	100	100
28	Ax	107/112 (96%)	106 (99%)	1 (1%)	75	89
30	Au	67/67 (100%)	65 (97%)	2 (3%)	36	68
31	BJ	143/149 (96%)	143 (100%)	0	100	100
32	AZ	182/242 (75%)	180 (99%)	2 (1%)	70	87
33	Ay	75/102 (74%)	75 (100%)	0	100	100
36	Aa	203/231 (88%)	202 (100%)	1 (0%)	86	94
37	Az	24/24 (100%)	24 (100%)	0	100	100
38	BA	194/198 (98%)	194 (100%)	0	100	100
39	Bt	128/137 (93%)	126 (98%)	2 (2%)	58	81
40	BM	117/161 (73%)	117 (100%)	0	100	100
41	Ab	185/223 (83%)	181 (98%)	4 (2%)	47	75
42	BY	124/135 (92%)	123 (99%)	1 (1%)	79	90
43	BB	344/347 (99%)	341 (99%)	3 (1%)	75	89

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
44	BS	154/154 (100%)	154 (100%)	0	100	100
45	Ac	189/232 (82%)	187 (99%)	2 (1%)	70	87
46	BZ	117/118 (99%)	117 (100%)	0	100	100
47	BC	302/336 (90%)	301 (100%)	1 (0%)	91	96
48	BN	171/172 (99%)	171 (100%)	0	100	100
49	Ad	224/225 (100%)	224 (100%)	0	100	100
50	Ba	118/119 (99%)	118 (100%)	0	100	100
51	B	247/250 (99%)	247 (100%)	0	100	100
52	BO	171/173 (99%)	169 (99%)	2 (1%)	67	85
53	Ae	161/170 (95%)	161 (100%)	0	100	100
54	Bb	87/183 (48%)	87 (100%)	0	100	100
55	BE	216/251 (86%)	216 (100%)	0	100	100
56	DA	137/355 (39%)	137 (100%)	0	100	100
57	Af	207/218 (95%)	206 (100%)	1 (0%)	86	94
58	Bc	92/98 (94%)	92 (100%)	0	100	100
59	BF	197/215 (92%)	197 (100%)	0	100	100
60	DC	141/202 (70%)	140 (99%)	1 (1%)	81	91
61	Ag	170/360 (47%)	170 (100%)	0	100	100
62	Bd	98/110 (89%)	98 (100%)	0	100	100
64	Ah	178/180 (99%)	178 (100%)	0	100	100
65	Be	116/121 (96%)	116 (100%)	0	100	100
66	AA	75/76 (99%)	74 (99%)	1 (1%)	65	84
67	Ai	161/168 (96%)	160 (99%)	1 (1%)	84	92
68	Bf	89/89 (100%)	89 (100%)	0	100	100
69	AB	56/62 (90%)	55 (98%)	1 (2%)	54	79
70	Aj	87/136 (64%)	86 (99%)	1 (1%)	70	87
71	Bg	98/99 (99%)	96 (98%)	2 (2%)	50	77
72	AC	67/140 (48%)	67 (100%)	0	100	100
73	Ak	139/142 (98%)	138 (99%)	1 (1%)	81	91
74	Bh	109/110 (99%)	109 (100%)	0	100	100
75	AD	47/106 (44%)	47 (100%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
76	Al	104/108 (96%)	101 (97%)	3 (3%)	37 69
77	Bi	86/89 (97%)	85 (99%)	1 (1%)	67 85
78	AE	88/98 (90%)	87 (99%)	1 (1%)	70 87
79	Am	130/131 (99%)	130 (100%)	0	100 100
80	Bj	73/80 (91%)	73 (100%)	0	100 100
81	AF	272/275 (99%)	270 (99%)	2 (1%)	81 91
82	An	105/118 (89%)	102 (97%)	3 (3%)	37 69
83	Bk	64/65 (98%)	64 (100%)	0	100 100
84	AG	48/49 (98%)	48 (100%)	0	100 100
85	Ao	114/130 (88%)	114 (100%)	0	100 100
86	Bl	47/48 (98%)	47 (100%)	0	100 100
88	Ap	117/140 (84%)	117 (100%)	0	100 100
89	Bm	47/115 (41%)	47 (100%)	0	100 100
All	All	11381/13206 (86%)	11309 (99%)	72 (1%)	82 92

All (72) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
5	Ar	83	PHE
5	Ar	103	LEU
7	BL	67	HIS
7	BL	115	GLN
10	BQ	14	ARG
13	BR	106	LEU
14	At	70	VAL
14	At	84	THR
16	BG	88	ASP
16	BG	220	GLU
17	BU	95	ASN
17	BU	97	ARG
18	Av	105	THR
19	DB	55	THR
19	DB	57	ASN
19	DB	210	LEU
19	DB	296	LEU
19	DB	306	PHE
19	DB	373	LEU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
19	DB	374	LEU
19	DB	397	ILE
19	DB	401	ILE
19	DB	444	ILE
19	DB	534	THR
19	DB	662	THR
19	DB	683	PHE
19	DB	699	PHE
19	DB	762	LEU
19	DB	839	MET
20	Ct	215	MET
23	Aw	105	PHE
26	BI	163	GLN
28	Ax	94	HIS
30	Au	42	VAL
30	Au	61	ARG
32	AZ	112	ILE
32	AZ	121	LEU
36	Aa	178	THR
39	Bt	35	LEU
39	Bt	74	VAL
41	Ab	121	ARG
41	Ab	122	THR
41	Ab	236	PHE
41	Ab	248	TYR
42	BY	74	TYR
43	BB	39	LYS
43	BB	340	THR
43	BB	343	ARG
45	Ac	46	THR
45	Ac	56	GLN
47	BC	122	TYR
52	BO	117	ARG
52	BO	174	LEU
57	Af	44	GLU
60	DC	153	GLN
66	AA	74	THR
67	Ai	7	TRP
69	AB	14	VAL
70	Aj	38	LYS
71	Bg	32	TYR
71	Bg	73	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
73	Ak	69	ARG
76	Al	33	ARG
76	Al	72	HIS
76	Al	75	ASN
77	Bi	29	ARG
78	AE	75	VAL
81	AF	113	PHE
81	AF	159	ASN
82	An	47	LEU
82	An	100	THR
82	An	113	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (101) such sidechains are listed below:

Mol	Chain	Res	Type
1	BP	75	GLN
1	BP	137	ASN
2	Aq	121	GLN
8	BX	73	HIS
8	BX	107	HIS
8	BX	111	GLN
11	As	12	GLN
12	Br	4	HIS
12	Br	6	GLN
13	BR	39	GLN
13	BR	40	GLN
13	BR	143	HIS
15	Bs	34	ASN
15	Bs	39	GLN
15	Bs	41	GLN
15	Bs	179	ASN
15	Bs	195	ASN
16	BG	43	GLN
16	BG	64	GLN
16	BG	81	ASN
17	BU	17	GLN
18	Av	90	GLN
19	DB	23	HIS
19	DB	124	GLN
19	DB	197	ASN
19	DB	251	GLN
19	DB	509	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
19	DB	551	HIS
19	DB	569	HIS
19	DB	705	HIS
19	DB	749	ASN
19	DB	764	HIS
20	Ct	202	ASN
21	BH	42	ASN
26	BI	59	GLN
26	BI	163	GLN
27	BW	68	GLN
27	BW	120	GLN
28	Ax	19	GLN
28	Ax	85	ASN
30	Au	2	GLN
32	AZ	113	GLN
32	AZ	141	ASN
33	Ay	64	ASN
38	BA	50	HIS
38	BA	140	ASN
39	Bt	70	GLN
39	Bt	118	HIS
40	BM	33	GLN
40	BM	34	ASN
42	BY	14	ASN
42	BY	61	HIS
43	BB	184	GLN
43	BB	289	GLN
47	BC	38	ASN
47	BC	50	GLN
47	BC	61	GLN
47	BC	310	HIS
49	Ad	98	ASN
49	Ad	142	HIS
49	Ad	157	ASN
50	Ba	60	HIS
51	B	122	GLN
52	BO	180	GLN
53	Ae	65	GLN
53	Ae	83	ASN
54	Bb	17	HIS
54	Bb	50	ASN
55	BE	131	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
56	DA	18	GLN
56	DA	23	ASN
56	DA	108	ASN
58	Bc	33	GLN
59	BF	57	HIS
60	DC	18	ASN
60	DC	24	GLN
60	DC	25	ASN
60	DC	93	GLN
60	DC	153	GLN
60	DC	161	HIS
61	Ag	91	HIS
64	Ah	7	ASN
64	Ah	167	GLN
66	AA	29	ASN
66	AA	51	GLN
70	Aj	7	ASN
70	Aj	77	GLN
71	Bg	114	GLN
75	AD	89	GLN
76	Al	28	HIS
79	Am	36	GLN
80	Bj	13	ASN
80	Bj	30	GLN
81	AF	159	ASN
83	Bk	58	GLN
84	AG	37	ASN
86	Bl	25	GLN
88	Ap	11	GLN
88	Ap	97	GLN
88	Ap	114	GLN
89	Bm	117	HIS

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
24	B5	3692/4808 (76%)	433 (11%)	2 (0%)
29	B7	118/119 (99%)	6 (5%)	0
34	B8	155/158 (98%)	15 (9%)	0
4	AT	2/76 (2%)	1 (50%)	0
63	A2	1759/1870 (94%)	207 (11%)	1 (0%)

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
87	AH	0/3	-	-
All	All	5726/7034 (81%)	662 (11%)	3 (0%)

All (662) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
4	AT	76	A
24	B5	39	A
24	B5	42	A
24	B5	59	A
24	B5	64	A
24	B5	65	A
24	B5	85	G
24	B5	91	G
24	B5	98	A
24	B5	109	G
24	B5	110	C
24	B5	119	G
24	B5	127	G
24	B5	135	G
24	B5	136	U
24	B5	144	G
24	B5	159	C
24	B5	181	C
24	B5	184	U
24	B5	187	U
24	B5	188	G
24	B5	200	U
24	B5	201	C
24	B5	209	U
24	B5	218	A
24	B5	219	G
24	B5	220	C
24	B5	233	U
24	B5	234	G
24	B5	266	C
24	B5	297	U
24	B5	309	C
24	B5	315	G
24	B5	316	U
24	B5	334	A
24	B5	340	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
24	B5	363	A
24	B5	386	A
24	B5	387	G
24	B5	398	A2M
24	B5	409	G
24	B5	412	G
24	B5	446	C
24	B5	449	C
24	B5	450	G
24	B5	452	A
24	B5	453	G
24	B5	454	U
24	B5	455	C
24	B5	468	U
24	B5	482	U
24	B5	483	G
24	B5	485	U
24	B5	486	C
24	B5	488	G
24	B5	493	U
24	B5	497	G
24	B5	499	C
24	B5	502	U
24	B5	503	C
24	B5	504	U
24	B5	505	C
24	B5	506	G
24	B5	512	U
24	B5	515	U
24	B5	516	U
24	B5	517	C
24	B5	628	U
24	B5	634	C
24	B5	635	G
24	B5	660	G
24	B5	691	G
24	B5	698	C
24	B5	725	G
24	B5	732	C
24	B5	734	G
24	B5	739	G
24	B5	758	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
24	B5	759	G
24	B5	760	C
24	B5	790	G
24	B5	791	C
24	B5	792	G
24	B5	794	G
24	B5	795	A
24	B5	797	C
24	B5	798	C
24	B5	810	U
24	B5	812	A
24	B5	814	A
24	B5	815	G
24	B5	824	C
24	B5	825	G
24	B5	831	A
24	B5	832	G
24	B5	833	C
24	B5	834	A
24	B5	835	G
24	B5	843	A
24	B5	844	A
24	B5	845	U
24	B5	856	A
24	B5	859	G
24	B5	860	A
24	B5	861	G
24	B5	866	A
24	B5	867	C
24	B5	868	C
24	B5	869	U
24	B5	870	G
24	B5	884	U
24	B5	983	G
24	B5	985	G
24	B5	987	C
24	B5	1072	C
24	B5	1073	C
24	B5	1074	C
24	B5	1090	U
24	B5	1091	G
24	B5	1102	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
24	B5	1105	C
24	B5	1106	U
24	B5	1124	A
24	B5	1127	G
24	B5	1133	C
24	B5	1140	C
24	B5	1202	C
24	B5	1214	A
24	B5	1215	G
24	B5	1217	G
24	B5	1219	G
24	B5	1221	G
24	B5	1228	G
24	B5	1231	G
24	B5	1238	A
24	B5	1240	G
24	B5	1246	U
24	B5	1247	A
24	B5	1270	A2M
24	B5	1298	A
24	B5	1299	G
24	B5	1303	G
24	B5	1309	C
24	B5	1310	G
24	B5	1323	C
24	B5	1331	A
24	B5	1341	A
24	B5	1351	G
24	B5	1362	C
24	B5	1375	A
24	B5	1391	C
24	B5	1393	C
24	B5	1401	C
24	B5	1452	A
24	B5	1453	G
24	B5	1457	G
24	B5	1469	U
24	B5	1489	A2M
24	B5	1502	A
24	B5	1521	C
24	B5	1533	U
24	B5	1546	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
24	B5	1551	U
24	B5	1579	G
24	B5	1580	OMG
24	B5	1586	A
24	B5	1588	G
24	B5	1589	A
24	B5	1593	A
24	B5	1609	G
24	B5	1616	C
24	B5	1631	C
24	B5	1632	PSU
24	B5	1653	C
24	B5	1657	C
24	B5	1658	C
24	B5	1673	G
24	B5	1704	A
24	B5	1705	A
24	B5	1726	A
24	B5	1743	A
24	B5	1774	G
24	B5	1775	G
24	B5	1776	A
24	B5	1781	G
24	B5	1794	G
24	B5	1808	G
24	B5	1836	A
24	B5	1857	U
24	B5	1859	C
24	B5	1860	C
24	B5	1861	G
24	B5	1870	C
24	B5	1871	A
24	B5	1879	G
24	B5	1898	U
24	B5	1899	A
24	B5	1900	G
24	B5	1913	U
24	B5	1914	G
24	B5	1922	A
24	B5	1923	A
24	B5	1924	G
24	B5	1925	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
24	B5	1926	C
24	B5	1936	U
24	B5	1940	G
24	B5	1942	G
24	B5	1943	U
24	B5	1963	G
24	B5	1965	A
24	B5	1985	G
24	B5	1987	U
24	B5	1994	G
24	B5	1995	G
24	B5	2008	A
24	B5	2023	U
24	B5	2032	G
24	B5	2034	A
24	B5	2037	G
24	B5	2041	G
24	B5	2044	A
24	B5	2045	G
24	B5	2046	A
24	B5	2132	C
24	B5	2143	A
24	B5	2144	G
24	B5	2156	A
24	B5	2159	G
24	B5	2174	G
24	B5	2191	G
24	B5	2194	OMC
24	B5	2203	A
24	B5	2207	OMG
24	B5	2238	A
24	B5	2241	U
24	B5	2253	C
24	B5	2264	G
24	B5	2268	U
24	B5	2332	C
24	B5	2333	U
24	B5	2334	C
24	B5	2349	G
24	B5	2356	A
24	B5	2372	A
24	B5	2380	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
24	B5	2387	G
24	B5	2388	U
24	B5	2390	G
24	B5	2409	G
24	B5	2429	G
24	B5	2430	A
24	B5	2432	C
24	B5	2444	A
24	B5	2470	C
24	B5	2496	C
24	B5	2503	A
24	B5	2512	C
24	B5	2530	U
24	B5	2537	G
24	B5	2538	A
24	B5	2539	A
24	B5	2546	G
24	B5	2551	U
24	B5	2552	C
24	B5	2553	C
24	B5	2554	G
24	B5	2586	A
24	B5	2606	U
24	B5	2612	U
24	B5	2631	U
24	B5	2633	U
24	B5	2641	A
24	B5	2657	C
24	B5	2669	U
24	B5	2670	G
24	B5	2672	U
24	B5	2698	G
24	B5	2745	G
24	B5	3329	G
24	B5	3350	C
24	B5	3358	G
24	B5	3362	A
24	B5	3367	A
24	B5	3380	A
24	B5	3385	A
24	B5	3394	A
24	B5	3405	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
24	B5	3424	A
24	B5	3443	A
24	B5	3444	A
24	B5	3485	G
24	B5	3492	A2M
24	B5	3493	C
24	B5	3498	A
24	B5	3508	G
24	B5	3509	G
24	B5	3516	A
24	B5	3543	G
24	B5	3546	U
24	B5	3549	A
24	B5	3551	G
24	B5	3570	U
24	B5	3572	U
24	B5	3609	A
24	B5	3610	C
24	B5	3611	G
24	B5	3629	G
24	B5	3633	A
24	B5	3638	A
24	B5	3639	G
24	B5	3640	A
24	B5	3647	U
24	B5	3670	G
24	B5	3804	G
24	B5	3812	G
24	B5	3823	G
24	B5	3824	C
24	B5	3825	G
24	B5	3832	G
24	B5	3833	A
24	B5	3834	G
24	B5	3847	C
24	B5	3850	G
24	B5	3855	A
24	B5	3869	G
24	B5	3875	C
24	B5	3891	C
24	B5	3892	G
24	B5	3904	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
24	B5	3909	U
24	B5	3916	A
24	B5	3929	G
24	B5	3930	G
24	B5	3937	G
24	B5	3949	A
24	B5	3975	U
24	B5	3979	A
24	B5	3997	A
24	B5	4000	G
24	B5	4012	G
24	B5	4014	A
24	B5	4017	A
24	B5	4019	A
24	B5	4027	A
24	B5	4050	A
24	B5	4051	G
24	B5	4052	OMU
24	B5	4076	G
24	B5	4078	C
24	B5	4096	C
24	B5	4100	U
24	B5	4119	G
24	B5	4123	G
24	B5	4124	A
24	B5	4126	A
24	B5	4133	C
24	B5	4137	G
24	B5	4140	A
24	B5	4167	C
24	B5	4168	A
24	B5	4183	U
24	B5	4194	G
24	B5	4210	A
24	B5	4212	C
24	B5	4221	G
24	B5	4258	U
24	B5	4259	A
24	B5	4270	G
24	B5	4294	A
24	B5	4306	C
24	B5	4313	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
24	B5	4321	G
24	B5	4336	A2M
24	B5	4373	U
24	B5	4381	A
24	B5	4382	PSU
24	B5	4383	OMG
24	B5	4402	A
24	B5	4416	C
24	B5	4418	A
24	B5	4437	A
24	B5	4446	A
24	B5	4454	A
24	B5	4455	U
24	B5	4465	G
24	B5	4475	A
24	B5	4476	C
24	B5	4477	G
24	B5	4478	G
24	B5	4486	G
24	B5	4487	A
24	B5	4488	A
24	B5	4489	G
24	B5	4490	G
24	B5	4492	G
24	B5	4498	G
24	B5	4501	G
24	B5	4504	C
24	B5	4506	C
24	B5	4508	G
24	B5	4512	G
24	B5	4518	C
24	B5	4609	G
24	B5	4610	C
24	B5	4614	G
24	B5	4621	U
24	B5	4622	C
24	B5	4634	U
24	B5	4638	G
24	B5	4639	C
24	B5	4640	G
24	B5	4644	C
24	B5	4645	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
24	B5	4646	G
24	B5	4649	A
24	B5	4651	G
24	B5	4658	G
24	B5	4674	C
24	B5	4705	A
24	B5	4715	U
24	B5	4728	U
24	B5	4729	C
24	B5	4753	A
24	B5	4756	G
24	B5	4761	U
24	B5	4762	C
24	B5	4763	C
24	B5	4780	G
24	B5	4786	C
24	B5	4789	C
24	B5	4793	C
24	B5	4801	G
24	B5	4808	U
29	B7	7	G
29	B7	53	U
29	B7	54	A
29	B7	64	G
29	B7	110	G
29	B7	120	U
34	B8	34	U
34	B8	35	C
34	B8	39	G
34	B8	59	A
34	B8	62	A
34	B8	63	U
34	B8	81	C
34	B8	84	A
34	B8	87	G
34	B8	94	G
34	B8	103	A
34	B8	105	C
34	B8	110	U
34	B8	114	G
34	B8	156	U
63	A2	2	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
63	A2	3	C
63	A2	26	U
63	A2	33	G
63	A2	41	G
63	A2	46	A
63	A2	56	G
63	A2	67	C
63	A2	68	A
63	A2	73	C
63	A2	74	G
63	A2	77	A
63	A2	79	A
63	A2	103	A
63	A2	113	G
63	A2	115	U
63	A2	126	G
63	A2	130	G
63	A2	143	U
63	A2	147	A
63	A2	155	G
63	A2	168	C
63	A2	178	C
63	A2	180	G
63	A2	184	G
63	A2	188	C
63	A2	192	C
63	A2	226	A
63	A2	282	C
63	A2	306	U
63	A2	310	G
63	A2	313	G
63	A2	320	C
63	A2	324	C
63	A2	325	U
63	A2	327	C
63	A2	328	G
63	A2	336	G
63	A2	348	G
63	A2	363	C
63	A2	365	A
63	A2	369	U
63	A2	370	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
63	A2	386	G
63	A2	387	C
63	A2	401	C
63	A2	410	C
63	A2	422	G
63	A2	439	G
63	A2	449	A
63	A2	451	C
63	A2	465	A
63	A2	466	A
63	A2	472	G
63	A2	473	C
63	A2	474	A
63	A2	475	G
63	A2	483	G
63	A2	488	U
63	A2	493	C
63	A2	509	A
63	A2	513	A2M
63	A2	526	A
63	A2	549	C
63	A2	565	A
63	A2	569	C
63	A2	584	A
63	A2	590	G
63	A2	592	U
63	A2	607	G
63	A2	608	U
63	A2	609	C
63	A2	615	C
63	A2	632	U
63	A2	644	A
63	A2	645	OMG
63	A2	656	A
63	A2	661	C
63	A2	669	A2M
63	A2	670	A
63	A2	672	A
63	A2	673	A
63	A2	734	C
63	A2	747	C
63	A2	748	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
63	A2	754	C
63	A2	755	G
63	A2	756	C
63	A2	799	G
63	A2	812	A
63	A2	822	G
63	A2	823	PSU
63	A2	831	A
63	A2	832	G
63	A2	837	G
63	A2	838	A
63	A2	839	G
63	A2	840	C
63	A2	841	C
63	A2	842	G
63	A2	848	A
63	A2	871	A
63	A2	873	A
63	A2	879	G
63	A2	886	U
63	A2	892	G
63	A2	914	A
63	A2	915	U
63	A2	921	A
63	A2	923	A
63	A2	934	G
63	A2	944	U
63	A2	956	A
63	A2	964	A
63	A2	972	G
63	A2	991	A
63	A2	993	A
63	A2	1000	G
63	A2	1024	A
63	A2	1061	A
63	A2	1062	U
63	A2	1063	A
63	A2	1084	A
63	A2	1086	C
63	A2	1116	U
63	A2	1117	C
63	A2	1118	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
63	A2	1119	C
63	A2	1122	G
63	A2	1134	A
63	A2	1145	A
63	A2	1154	C
63	A2	1155	U
63	A2	1196	A
63	A2	1216	C
63	A2	1225	G
63	A2	1243	U
63	A2	1252	A
63	A2	1254	A
63	A2	1257	G
63	A2	1258	G
63	A2	1260	A
63	A2	1272	C
63	A2	1275	G
63	A2	1276	G
63	A2	1303	G
63	A2	1304	C
63	A2	1343	U
63	A2	1372	U
63	A2	1373	U
63	A2	1379	A
63	A2	1398	U
63	A2	1403	A
63	A2	1406	A
63	A2	1407	G
63	A2	1419	C
63	A2	1420	C
63	A2	1422	A
63	A2	1424	C
63	A2	1425	G
63	A2	1436	C
63	A2	1448	OMG
63	A2	1455	A
63	A2	1463	U
63	A2	1464	U
63	A2	1481	A
63	A2	1488	A
63	A2	1490	A
63	A2	1491	OMG

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
63	A2	1495	U
63	A2	1498	G
63	A2	1510	U
63	A2	1522	C
63	A2	1523	A
63	A2	1534	A
63	A2	1553	G
63	A2	1554	C
63	A2	1580	A
63	A2	1581	A
63	A2	1586	U
63	A2	1589	A
63	A2	1602	A
63	A2	1618	G
63	A2	1622	U
63	A2	1624	A
63	A2	1647	C
63	A2	1655	G
63	A2	1662	A
63	A2	1666	G
63	A2	1699	C
63	A2	1722	U
63	A2	1723	G
63	A2	1749	G
63	A2	1783	G
63	A2	1784	C
63	A2	1785	G
63	A2	1830	G
63	A2	1832	A
63	A2	1836	A
63	A2	1837	G
63	A2	1839	U
63	A2	1850	G
63	A2	1862	G
63	A2	1863	G
63	A2	1864	A
63	A2	1865	U
63	A2	1866	C

All (3) RNA pucker outliers are listed below:

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
24	B5	1588	G
24	B5	4445	U
63	A2	1	U

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

223 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	$\#\|Z\| > 2$
24	PSU	B5	4188	24	18,21,22	1.35	2 (11%)	22,30,33	1.90	3 (13%)
24	OMU	B5	3973	24	19,22,23	1.22	3 (15%)	26,31,34	1.70	4 (15%)
24	PSU	B5	3494	24	18,21,22	1.36	2 (11%)	22,30,33	1.90	3 (13%)
5	SAC	Ar	2	5	7,8,9	0.54	0	8,9,11	0.90	1 (12%)
63	PSU	A2	1175	63	18,21,22	1.34	2 (11%)	22,30,33	1.89	3 (13%)
63	PSU	A2	36	63	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)
24	OMG	B5	2267	24	18,26,27	0.92	1 (5%)	19,38,41	1.08	2 (10%)
63	OMU	A2	121	63	19,22,23	1.21	3 (15%)	26,31,34	1.66	4 (15%)
63	OMU	A2	355	63	19,22,23	1.23	2 (10%)	26,31,34	1.71	4 (15%)
24	PSU	B5	2475	24	18,21,22	1.34	2 (11%)	22,30,33	1.87	3 (13%)
63	A2M	A2	591	63	18,25,26	1.06	1 (5%)	18,36,39	1.23	2 (11%)
24	PSU	B5	4203	24	18,21,22	1.36	2 (11%)	22,30,33	1.86	3 (13%)
24	OMC	B5	4282	90,24	19,22,23	0.82	0	26,31,34	0.85	0
24	A2M	B5	3517	24	18,25,26	0.97	1 (5%)	18,36,39	1.33	2 (11%)
63	PSU	A2	802	63	18,21,22	1.34	2 (11%)	22,30,33	1.87	3 (13%)
24	1MA	B5	1266	90,24	16,25,26	1.58	2 (12%)	18,37,40	1.05	3 (16%)
24	PSU	B5	4058	24	18,21,22	1.35	2 (11%)	22,30,33	1.88	3 (13%)
63	PSU	A2	218	63	18,21,22	1.33	2 (11%)	22,30,33	1.88	3 (13%)
24	OMC	B5	2704	24	19,22,23	0.81	0	26,31,34	0.83	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
24	PSU	B5	1801	24	18,21,22	1.33	2 (11%)	22,30,33	1.87	3 (13%)
24	PSU	B5	4045	24	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
24	A2M	B5	1270	24	18,25,26	0.99	1 (5%)	18,36,39	1.24	2 (11%)
24	PSU	B5	1720	24	18,21,22	1.36	2 (11%)	22,30,33	1.87	3 (13%)
24	PSU	B5	3466	24	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)
24	PSU	B5	1537	24	18,21,22	1.36	2 (11%)	22,30,33	1.87	3 (13%)
24	OMG	B5	4245	24	18,26,27	0.93	1 (5%)	19,38,41	1.08	2 (10%)
63	PSU	A2	93	63	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
63	OMU	A2	172	63	19,22,23	1.20	2 (10%)	26,31,34	1.68	5 (19%)
63	A2M	A2	27	63,90	18,25,26	1.03	1 (5%)	18,36,39	1.22	2 (11%)
24	OMG	B5	4138	24	18,26,27	0.93	1 (5%)	19,38,41	1.09	2 (10%)
24	OMC	B5	2647	24	19,22,23	0.81	0	26,31,34	0.82	0
24	A2M	B5	2244	90,24	18,25,26	1.02	1 (5%)	18,36,39	1.20	2 (11%)
24	UR3	B5	4276	24	19,22,23	0.99	0	26,32,35	1.41	1 (3%)
24	OMC	B5	3619	24	19,22,23	0.81	0	26,31,34	0.84	0
24	A2M	B5	400	24	18,25,26	1.03	1 (5%)	18,36,39	1.22	2 (11%)
24	PSU	B5	1491	24	18,21,22	1.35	2 (11%)	22,30,33	1.89	3 (13%)
34	PSU	B8	69	34	18,21,22	1.36	2 (11%)	22,30,33	1.91	3 (13%)
24	A2M	B5	398	24	18,25,26	1.02	1 (5%)	18,36,39	1.23	2 (11%)
24	A2M	B5	3450	24	18,25,26	1.03	1 (5%)	18,36,39	1.20	2 (11%)
24	PSU	B5	3576	24	18,21,22	1.36	2 (11%)	22,30,33	1.87	3 (13%)
24	OMU	B5	4244	24	19,22,23	1.21	2 (10%)	26,31,34	1.70	5 (19%)
82	IAS	An	138	82	6,7,8	0.97	0	6,8,10	1.38	1 (16%)
24	PSU	B5	4267	90,24	18,21,22	1.35	2 (11%)	22,30,33	1.89	3 (13%)
63	PSU	A2	109	63	18,21,22	1.35	2 (11%)	22,30,33	1.89	3 (13%)
24	5MC	B5	4193	24	18,22,23	0.99	2 (11%)	26,32,35	1.17	2 (7%)
63	OMU	A2	1327	63,90	19,22,23	1.18	2 (10%)	26,31,34	1.71	5 (19%)
63	PSU	A2	1057	63	18,21,22	1.33	2 (11%)	22,30,33	1.87	3 (13%)
24	OMC	B5	2194	90,24	19,22,23	0.82	0	26,31,34	0.90	1 (3%)
63	OMG	A2	868	63	18,26,27	0.92	1 (5%)	19,38,41	1.09	2 (10%)
24	PSU	B5	1718	24	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)
63	PSU	A2	210	63	18,21,22	1.36	2 (11%)	22,30,33	1.85	3 (13%)
24	OMG	B5	4369	24	18,26,27	0.93	1 (5%)	19,38,41	1.10	2 (10%)
24	A2M	B5	3562	24	18,25,26	1.03	1 (5%)	18,36,39	1.21	2 (11%)
34	PSU	B8	55	34	18,21,22	1.34	2 (11%)	22,30,33	1.90	3 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
63	PSU	A2	682	63	18,21,22	1.35	2 (11%)	22,30,33	1.88	3 (13%)
63	PSU	A2	1245	63	18,21,22	1.35	2 (11%)	22,30,33	1.89	3 (13%)
63	PSU	A2	1368	63	18,21,22	1.33	2 (11%)	22,30,33	1.89	3 (13%)
63	PSU	A2	1693	63	18,21,22	1.35	2 (11%)	22,30,33	1.89	3 (13%)
24	OMC	B5	3540	24	19,22,23	0.82	0	26,31,34	0.81	0
63	A2M	A2	166	63	18,25,26	1.05	1 (5%)	18,36,39	1.26	2 (11%)
63	OMG	A2	1491	63,90	18,26,27	0.92	1 (5%)	19,38,41	1.07	2 (10%)
24	PSU	B5	4039	24	18,21,22	1.34	2 (11%)	22,30,33	1.87	3 (13%)
63	OMG	A2	645	63	18,26,27	0.93	1 (5%)	19,38,41	1.10	2 (10%)
63	PSU	A2	610	63	18,21,22	1.34	2 (11%)	22,30,33	1.89	3 (13%)
30	AME	Au	1	30	9,10,11	0.48	0	9,11,13	0.86	1 (11%)
63	OMC	A2	1704	63	19,22,23	0.82	0	26,31,34	0.85	1 (3%)
63	A2M	A2	485	63	18,25,26	1.02	1 (5%)	18,36,39	1.23	2 (11%)
24	OMG	B5	2207	24	18,26,27	0.91	1 (5%)	19,38,41	1.10	2 (10%)
24	OMG	B5	3359	24	18,26,27	0.93	1 (5%)	19,38,41	1.11	2 (10%)
24	PSU	B5	4435	24	18,21,22	1.35	2 (11%)	22,30,33	1.89	3 (13%)
24	PSU	B5	1683	24	18,21,22	1.34	2 (11%)	22,30,33	1.87	3 (13%)
50	V5N	Ba	39	50	4,11,12	0.77	0	5,14,16	1.51	1 (20%)
24	PSU	B5	1799	24	18,21,22	1.35	2 (11%)	22,30,33	1.90	3 (13%)
63	OMG	A2	510	63,90	18,26,27	0.93	1 (5%)	19,38,41	1.09	2 (10%)
24	OMC	B5	3573	24	19,22,23	0.81	0	26,31,34	0.91	1 (3%)
24	OMG	B5	4383	24	18,26,27	0.93	1 (5%)	19,38,41	1.11	2 (10%)
24	OMU	B5	2258	24	19,22,23	1.22	3 (15%)	26,31,34	1.67	4 (15%)
63	OMC	A2	518	63	19,22,23	0.82	0	26,31,34	0.81	0
89	M3L	Bm	98	89	10,11,12	0.83	0	9,14,16	0.53	0
63	PSU	A2	650	63	18,21,22	1.34	2 (11%)	22,30,33	1.89	3 (13%)
63	A2M	A2	1384	63	18,25,26	1.04	1 (5%)	18,36,39	1.23	2 (11%)
63	6MZ	A2	1833	63,90	18,25,26	0.92	1 (5%)	16,36,39	1.89	4 (25%)
24	OMG	B5	3676	24	18,26,27	0.93	1 (5%)	19,38,41	1.10	2 (10%)
63	PSU	A2	864	63	18,21,22	1.34	2 (11%)	22,30,33	1.87	3 (13%)
24	OMG	B5	4116	24	18,26,27	0.93	1 (5%)	19,38,41	1.07	2 (10%)
63	A2M	A2	469	63	18,25,26	1.04	1 (5%)	18,36,39	1.23	2 (11%)
63	4AC	A2	1843	63	21,24,25	1.11	2 (9%)	29,34,37	1.27	3 (10%)
24	OMG	B5	3974	24	18,26,27	0.91	1 (5%)	19,38,41	1.12	2 (10%)
63	A2M	A2	99	63,90	18,25,26	1.04	1 (5%)	18,36,39	1.19	2 (11%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
24	PSU	B5	4374	24	18,21,22	1.34	2 (11%)	22,30,33	1.90	3 (13%)
63	A2M	A2	669	63,90	18,25,26	0.99	1 (5%)	18,36,39	1.34	2 (11%)
63	A2M	A2	1032	63	18,25,26	1.01	1 (5%)	18,36,39	1.22	2 (11%)
63	OMU	A2	116	63	19,22,23	1.18	2 (10%)	26,31,34	1.69	5 (19%)
63	PSU	A2	119	63	18,21,22	1.35	2 (11%)	22,30,33	1.86	3 (13%)
63	PSU	A2	823	63	18,21,22	1.36	2 (11%)	22,30,33	1.88	3 (13%)
63	A2M	A2	577	63	18,25,26	1.02	1 (5%)	18,36,39	1.21	2 (11%)
24	PSU	B5	3585	90,24	18,21,22	1.34	2 (11%)	22,30,33	1.86	3 (13%)
63	PSU	A2	573	63	18,21,22	1.36	2 (11%)	22,30,33	1.86	3 (13%)
63	PSU	A2	652	63	18,21,22	1.34	2 (11%)	22,30,33	1.89	3 (13%)
63	PSU	A2	1233	63	18,21,22	1.35	2 (11%)	22,30,33	1.89	3 (13%)
63	PSU	A2	105	63	18,21,22	1.36	2 (11%)	22,30,33	1.88	3 (13%)
24	OMG	B5	1477	24	18,26,27	0.93	1 (5%)	19,38,41	1.08	2 (10%)
24	PSU	B5	3652	90,24	18,21,22	1.36	2 (11%)	22,30,33	1.88	3 (13%)
63	PSU	A2	1005	63	18,21,22	1.35	2 (11%)	22,30,33	1.86	3 (13%)
24	OMG	B5	1580	24	18,26,27	0.93	1 (5%)	19,38,41	1.08	2 (10%)
24	PSU	B5	3490	24	18,21,22	1.34	2 (11%)	22,30,33	1.89	3 (13%)
24	PSU	B5	4217	24	18,21,22	1.36	2 (11%)	22,30,33	1.88	3 (13%)
63	OMG	A2	684	63	18,26,27	0.92	1 (5%)	19,38,41	1.07	2 (10%)
63	PSU	A2	1047	63	18,21,22	1.36	2 (11%)	22,30,33	1.90	3 (13%)
12	SAC	Br	2	12	7,8,9	0.52	0	8,9,11	0.83	1 (12%)
24	A2M	B5	1489	90,24	18,25,26	1.00	1 (5%)	18,36,39	1.37	2 (11%)
24	A2M	B5	2658	90,24	18,25,26	1.01	1 (5%)	18,36,39	1.21	2 (11%)
24	OMU	B5	4052	24	19,22,23	1.22	3 (15%)	26,31,34	1.69	4 (15%)
63	OMU	A2	1805	63	19,22,23	1.22	3 (15%)	26,31,34	1.69	4 (15%)
24	A2M	B5	1810	90,24	18,25,26	1.03	1 (5%)	18,36,39	1.25	2 (11%)
63	PSU	A2	1644	63,90	18,21,22	1.34	2 (11%)	22,30,33	1.90	3 (13%)
63	MA6	A2	1852	63	18,26,27	1.09	2 (11%)	19,38,41	1.93	3 (15%)
24	OMC	B5	3433	24	19,22,23	0.79	0	26,31,34	0.75	0
24	PSU	B5	1721	24	18,21,22	1.33	2 (11%)	22,30,33	1.87	3 (13%)
24	PSU	B5	4107	24	18,21,22	1.35	2 (11%)	22,30,33	1.85	3 (13%)
63	A2M	A2	1679	63	18,25,26	1.00	1 (5%)	18,36,39	1.32	2 (11%)
24	OMG	B5	2719	24	18,26,27	0.93	1 (5%)	19,38,41	1.06	2 (10%)
63	OMG	A2	437	63	18,26,27	0.92	1 (5%)	19,38,41	1.08	2 (10%)
24	PSU	B5	3462	24	18,21,22	1.34	2 (11%)	22,30,33	1.89	3 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
24	A2M	B5	3557	24	18,25,26	1.01	1 (5%)	18,36,39	1.20	2 (11%)
24	A2M	B5	4317	24	18,25,26	1.02	1 (5%)	18,36,39	1.25	2 (11%)
24	PSU	B5	4177	24	18,21,22	1.33	2 (11%)	22,30,33	1.87	3 (13%)
24	PSU	B5	3427	24	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)
24	OMG	B5	3942	4,24	18,26,27	0.93	1 (5%)	19,38,41	1.07	2 (10%)
47	AYA	BC	2	47	6,7,8	0.71	0	5,8,10	0.36	0
24	A2M	B5	2630	90,24	18,25,26	0.99	1 (5%)	18,36,39	1.31	2 (11%)
24	A2M	B5	4269	90,24	18,25,26	1.03	1 (5%)	18,36,39	1.23	2 (11%)
24	OMG	B5	4364	24	18,26,27	0.93	1 (5%)	19,38,41	1.10	2 (10%)
24	OMC	B5	2208	90,24	19,22,23	0.81	0	26,31,34	0.83	0
24	PSU	B5	4042	24	18,21,22	1.33	2 (11%)	22,30,33	1.90	3 (13%)
11	NMM	As	67	11	9,11,12	0.60	0	6,12,14	0.43	0
24	A2M	B5	3456	24	18,25,26	1.02	1 (5%)	18,36,39	1.23	2 (11%)
63	OMG	A2	602	63	18,26,27	0.93	1 (5%)	19,38,41	1.08	2 (10%)
63	PSU	A2	1626	63	18,21,22	1.35	2 (11%)	22,30,33	1.86	3 (13%)
63	G7M	A2	1640	63	20,26,27	3.00	7 (35%)	17,39,42	0.96	1 (5%)
63	PSU	A2	867	63	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
63	A2M	A2	513	63	18,25,26	1.04	1 (5%)	18,36,39	1.20	2 (11%)
24	OMC	B5	1284	24	19,22,23	0.81	0	26,31,34	0.79	0
24	PSU	B5	3500	24	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
63	OMU	A2	1443	63,90	19,22,23	1.24	3 (15%)	26,31,34	1.69	5 (19%)
24	PSU	B5	4099	24	18,21,22	1.35	2 (11%)	22,30,33	1.88	3 (13%)
24	PSU	B5	4749	24	18,21,22	1.35	2 (11%)	22,30,33	1.88	3 (13%)
32	SAC	AZ	2	32	7,8,9	0.53	0	8,9,11	0.86	1 (12%)
24	A2M	B5	3599	24	18,25,26	1.00	1 (5%)	18,36,39	1.24	2 (11%)
24	OMG	B5	4240	24	18,26,27	0.93	1 (5%)	19,38,41	1.07	2 (10%)
24	PSU	B5	4278	24	18,21,22	1.36	2 (11%)	22,30,33	1.86	3 (13%)
24	PSU	B5	4382	24	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)
63	PSU	A2	1348	63	18,21,22	1.35	2 (11%)	22,30,33	1.88	3 (13%)
63	MA6	A2	1851	63	18,26,27	1.09	2 (11%)	19,38,41	2.02	3 (15%)
63	PSU	A2	1178	63	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)
63	OMU	A2	1289	63	19,22,23	1.23	3 (15%)	26,31,34	1.68	5 (19%)
63	OMU	A2	628	63	19,22,23	1.17	2 (10%)	26,31,34	1.69	5 (19%)
24	OMG	B5	3524	24	18,26,27	0.93	1 (5%)	19,38,41	1.06	2 (10%)
38	V5N	BA	216	38	4,11,12	0.79	0	5,14,16	1.56	1 (20%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
24	PSU	B5	4298	24	18,21,22	1.33	2 (11%)	22,30,33	1.90	3 (13%)
24	OMG	B5	3631	24	18,26,27	0.93	1 (5%)	19,38,41	1.10	2 (10%)
24	PSU	B5	3583	24	18,21,22	1.36	2 (11%)	22,30,33	1.84	3 (13%)
24	PSU	B5	3369	24	18,21,22	1.36	2 (11%)	22,30,33	1.90	3 (13%)
24	PSU	B5	4169	24	18,21,22	1.36	2 (11%)	22,30,33	1.86	3 (13%)
54	MLZ	Bb	5	54	8,9,10	0.49	0	4,9,11	0.18	0
24	PSU	B5	4322	24	18,21,22	1.35	2 (11%)	22,30,33	1.86	3 (13%)
24	PSU	B5	4246	24	18,21,22	1.34	2 (11%)	22,30,33	1.91	3 (13%)
24	OMG	B5	3476	24	18,26,27	0.93	1 (5%)	19,38,41	1.09	2 (10%)
24	OMU	B5	2680	24	19,22,23	1.21	2 (10%)	26,31,34	1.72	4 (15%)
63	OMG	A2	1329	63	18,26,27	0.93	1 (5%)	19,38,41	1.08	2 (10%)
24	PSU	B5	1731	24	18,21,22	1.34	2 (11%)	22,30,33	1.87	3 (13%)
3	MLZ	Bo	53	3	8,9,10	0.40	0	4,9,11	0.15	0
24	OMU	B5	3657	24	19,22,23	1.23	2 (10%)	26,31,34	1.71	4 (15%)
63	A2M	A2	159	63	18,25,26	1.01	1 (5%)	18,36,39	1.26	2 (11%)
24	A2M	B5	1479	24	18,25,26	1.01	1 (5%)	18,36,39	1.25	2 (11%)
43	HIC	BB	245	43	8,11,12	0.87	0	6,14,16	0.83	0
63	PSU	A2	687	63	18,21,22	1.34	2 (11%)	22,30,33	1.87	3 (13%)
63	PSU	A2	1046	63	18,21,22	1.34	2 (11%)	22,30,33	1.87	3 (13%)
24	OMG	B5	1260	24	18,26,27	0.94	1 (5%)	19,38,41	1.12	2 (10%)
63	PSU	A2	34	63	18,21,22	1.35	2 (11%)	22,30,33	1.89	3 (13%)
24	5MC	B5	3514	90,24	18,22,23	0.95	2 (11%)	26,32,35	1.14	3 (11%)
24	PSU	B5	1638	24	18,21,22	1.35	2 (11%)	22,30,33	1.89	3 (13%)
34	OMG	B8	75	34	18,26,27	0.93	1 (5%)	19,38,41	1.06	2 (10%)
24	PSU	B5	4166	24	18,21,22	1.37	2 (11%)	22,30,33	1.81	3 (13%)
63	OMU	A2	429	63	19,22,23	1.20	2 (10%)	26,31,34	1.69	4 (15%)
63	PSU	A2	816	63	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)
24	PSU	B5	4711	24	18,21,22	1.36	2 (11%)	22,30,33	1.90	3 (13%)
24	PSU	B5	3496	24	18,21,22	1.33	2 (11%)	22,30,33	1.86	3 (13%)
24	PSU	B5	3502	24	18,21,22	1.33	2 (11%)	22,30,33	1.87	3 (13%)
24	6MZ	B5	3966	24	18,25,26	0.88	1 (5%)	16,36,39	2.00	4 (25%)
24	OMC	B5	2265	90,24	19,22,23	0.82	0	26,31,34	0.90	1 (3%)
63	PSU	A2	1239	63	18,21,22	1.35	2 (11%)	22,30,33	1.88	3 (13%)
24	PSU	B5	3554	24	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
24	PSU	B5	2351	24	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
24	OMC	B5	4202	24	19,22,23	0.81	0	26,31,34	0.77	0
24	PSU	B5	4740	24	18,21,22	1.35	2 (11%)	22,30,33	1.86	3 (13%)
24	UY1	B5	3550	24	19,22,23	1.39	3 (15%)	22,31,34	1.89	5 (22%)
24	A2M	B5	2206	90,24	18,25,26	1.03	1 (5%)	18,36,39	1.21	2 (11%)
63	B8N	A2	1249	63	24,29,30	1.31	3 (12%)	29,42,45	1.30	3 (10%)
24	OMC	B5	1820	90,24	19,22,23	0.80	0	26,31,34	0.79	0
24	A2M	B5	4336	24	18,25,26	1.02	1 (5%)	18,36,39	1.23	2 (11%)
24	PSU	B5	4325	24	18,21,22	1.34	2 (11%)	22,30,33	1.87	3 (13%)
24	PSU	B5	4419	24	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)
23	HY3	Aw	62	23	6,8,9	2.06	1 (16%)	5,10,12	1.12	1 (20%)
24	PSU	B5	3371	24	18,21,22	1.36	2 (11%)	22,30,33	1.86	3 (13%)
63	OMC	A2	463	63	19,22,23	0.81	0	26,31,34	0.86	1 (3%)
24	PSU	B5	3447	24	18,21,22	1.35	2 (11%)	22,30,33	1.88	3 (13%)
24	OMC	B5	2667	24	19,22,23	0.81	0	26,31,34	0.80	0
63	PSU	A2	967	63	18,21,22	1.36	2 (11%)	22,30,33	1.87	3 (13%)
24	OMC	B5	3601	24	19,22,23	0.81	0	26,31,34	0.80	0
63	PSU	A2	407	63	18,21,22	1.34	2 (11%)	22,30,33	1.87	3 (13%)
63	PSU	A2	815	63	18,21,22	1.34	2 (11%)	22,30,33	1.87	3 (13%)
63	4AC	A2	1338	63	21,24,25	1.07	2 (9%)	29,34,37	1.21	3 (10%)
24	PSU	B5	3616	24	18,21,22	1.35	2 (11%)	22,30,33	1.91	3 (13%)
63	OMC	A2	1392	63	19,22,23	0.82	0	26,31,34	0.83	0
63	PSU	A2	1446	63	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)
63	OMC	A2	174	63,90	19,22,23	0.81	0	26,31,34	0.82	0
24	A2M	B5	3492	63,24	18,25,26	1.01	1 (5%)	18,36,39	1.38	2 (11%)
63	PSU	A2	1082	63	18,21,22	1.36	2 (11%)	22,30,33	1.84	3 (13%)
24	PSU	B5	1632	24	18,21,22	1.36	2 (11%)	22,30,33	1.87	4 (18%)
24	OMU	B5	4366	24	19,22,23	1.22	2 (10%)	26,31,34	1.71	4 (15%)
24	PSU	B5	4149	24	18,21,22	1.35	2 (11%)	22,30,33	1.91	3 (13%)
63	OMG	A2	1448	63	18,26,27	0.93	1 (5%)	19,38,41	1.09	2 (10%)

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
24	PSU	B5	4188	24	-	0/7/25/26	0/2/2/2

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
24	OMU	B5	3973	24	-	0/9/27/28	0/2/2/2
24	PSU	B5	3494	24	-	0/7/25/26	0/2/2/2
5	SAC	Ar	2	5	-	0/7/8/10	-
63	PSU	A2	1175	63	-	0/7/25/26	0/2/2/2
63	PSU	A2	36	63	-	0/7/25/26	0/2/2/2
24	OMG	B5	2267	24	-	0/5/27/28	0/3/3/3
63	OMU	A2	121	63	-	0/9/27/28	0/2/2/2
63	OMU	A2	355	63	-	1/9/27/28	0/2/2/2
24	PSU	B5	2475	24	-	0/7/25/26	0/2/2/2
63	A2M	A2	591	63	-	1/5/27/28	0/3/3/3
24	PSU	B5	4203	24	-	0/7/25/26	0/2/2/2
24	OMC	B5	4282	90,24	-	1/9/27/28	0/2/2/2
24	A2M	B5	3517	24	-	2/5/27/28	0/3/3/3
63	PSU	A2	802	63	-	0/7/25/26	0/2/2/2
24	1MA	B5	1266	90,24	-	0/3/25/26	0/3/3/3
24	PSU	B5	4058	24	-	0/7/25/26	0/2/2/2
63	PSU	A2	218	63	-	0/7/25/26	0/2/2/2
24	OMC	B5	2704	24	-	1/9/27/28	0/2/2/2
24	PSU	B5	1801	24	-	0/7/25/26	0/2/2/2
24	PSU	B5	4045	24	-	0/7/25/26	0/2/2/2
24	A2M	B5	1270	24	-	0/5/27/28	0/3/3/3
24	PSU	B5	1720	24	-	0/7/25/26	0/2/2/2
24	PSU	B5	3466	24	-	0/7/25/26	0/2/2/2
24	PSU	B5	1537	24	-	0/7/25/26	0/2/2/2
24	OMG	B5	4245	24	-	0/5/27/28	0/3/3/3
63	PSU	A2	93	63	-	0/7/25/26	0/2/2/2
63	OMU	A2	172	63	-	0/9/27/28	0/2/2/2
63	A2M	A2	27	63,90	-	1/5/27/28	0/3/3/3
24	OMG	B5	4138	24	-	1/5/27/28	0/3/3/3
24	OMC	B5	2647	24	-	0/9/27/28	0/2/2/2
24	A2M	B5	2244	90,24	-	0/5/27/28	0/3/3/3
24	UR3	B5	4276	24	-	0/7/25/26	0/2/2/2
24	OMC	B5	3619	24	-	3/9/27/28	0/2/2/2
24	A2M	B5	400	24	-	0/5/27/28	0/3/3/3
24	PSU	B5	1491	24	-	0/7/25/26	0/2/2/2
34	PSU	B8	69	34	-	0/7/25/26	0/2/2/2
24	A2M	B5	398	24	-	4/5/27/28	0/3/3/3
24	A2M	B5	3450	24	-	0/5/27/28	0/3/3/3
24	PSU	B5	3576	24	-	1/7/25/26	0/2/2/2
24	OMU	B5	4244	24	-	0/9/27/28	0/2/2/2
82	IAS	An	138	82	-	2/7/7/8	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
24	PSU	B5	4267	90,24	-	0/7/25/26	0/2/2/2
63	PSU	A2	109	63	-	0/7/25/26	0/2/2/2
24	5MC	B5	4193	24	-	4/7/25/26	0/2/2/2
63	OMU	A2	1327	63,90	-	0/9/27/28	0/2/2/2
63	PSU	A2	1057	63	-	0/7/25/26	0/2/2/2
24	OMC	B5	2194	90,24	-	2/9/27/28	0/2/2/2
63	OMG	A2	868	63	-	2/5/27/28	0/3/3/3
24	PSU	B5	1718	24	-	0/7/25/26	0/2/2/2
63	PSU	A2	210	63	-	0/7/25/26	0/2/2/2
24	OMG	B5	4369	24	-	0/5/27/28	0/3/3/3
24	A2M	B5	3562	24	-	0/5/27/28	0/3/3/3
34	PSU	B8	55	34	-	0/7/25/26	0/2/2/2
63	PSU	A2	682	63	-	0/7/25/26	0/2/2/2
63	PSU	A2	1245	63	-	0/7/25/26	0/2/2/2
63	PSU	A2	1368	63	-	0/7/25/26	0/2/2/2
63	PSU	A2	1693	63	-	0/7/25/26	0/2/2/2
24	OMC	B5	3540	24	-	0/9/27/28	0/2/2/2
63	A2M	A2	166	63	-	0/5/27/28	0/3/3/3
63	OMG	A2	1491	63,90	-	0/5/27/28	0/3/3/3
24	PSU	B5	4039	24	-	0/7/25/26	0/2/2/2
63	OMG	A2	645	63	-	3/5/27/28	0/3/3/3
63	PSU	A2	610	63	-	0/7/25/26	0/2/2/2
30	AME	Au	1	30	-	2/9/10/12	-
63	OMC	A2	1704	63	-	1/9/27/28	0/2/2/2
63	A2M	A2	485	63	-	0/5/27/28	0/3/3/3
24	OMG	B5	2207	24	-	3/5/27/28	0/3/3/3
24	OMG	B5	3359	24	-	0/5/27/28	0/3/3/3
24	PSU	B5	4435	24	-	0/7/25/26	0/2/2/2
24	PSU	B5	1683	24	-	0/7/25/26	0/2/2/2
50	V5N	Ba	39	50	-	0/5/10/12	0/1/1/1
24	PSU	B5	1799	24	-	0/7/25/26	0/2/2/2
63	OMG	A2	510	63,90	-	2/5/27/28	0/3/3/3
24	OMC	B5	3573	24	-	0/9/27/28	0/2/2/2
24	OMG	B5	4383	24	-	1/5/27/28	0/3/3/3
24	OMU	B5	2258	24	-	0/9/27/28	0/2/2/2
63	OMC	A2	518	63	-	0/9/27/28	0/2/2/2
89	M3L	Bm	98	89	-	0/9/10/12	-
63	PSU	A2	650	63	-	0/7/25/26	0/2/2/2
63	A2M	A2	1384	63	-	0/5/27/28	0/3/3/3
63	6MZ	A2	1833	63,90	-	0/5/27/28	0/3/3/3

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
24	OMG	B5	3676	24	-	2/5/27/28	0/3/3/3
63	PSU	A2	864	63	-	0/7/25/26	0/2/2/2
24	OMG	B5	4116	24	-	0/5/27/28	0/3/3/3
63	A2M	A2	469	63	-	0/5/27/28	0/3/3/3
63	4AC	A2	1843	63	-	4/11/29/30	0/2/2/2
24	OMG	B5	3974	24	-	0/5/27/28	0/3/3/3
63	A2M	A2	99	63,90	-	2/5/27/28	0/3/3/3
24	PSU	B5	4374	24	-	0/7/25/26	0/2/2/2
63	A2M	A2	669	63,90	-	2/5/27/28	0/3/3/3
63	A2M	A2	1032	63	-	0/5/27/28	0/3/3/3
63	OMU	A2	116	63	-	0/9/27/28	0/2/2/2
63	PSU	A2	119	63	-	0/7/25/26	0/2/2/2
63	PSU	A2	823	63	-	0/7/25/26	0/2/2/2
63	A2M	A2	577	63	-	2/5/27/28	0/3/3/3
24	PSU	B5	3585	90,24	-	0/7/25/26	0/2/2/2
63	PSU	A2	573	63	-	0/7/25/26	0/2/2/2
63	PSU	A2	652	63	-	0/7/25/26	0/2/2/2
63	PSU	A2	1233	63	-	0/7/25/26	0/2/2/2
63	PSU	A2	105	63	-	0/7/25/26	0/2/2/2
24	OMG	B5	1477	24	-	0/5/27/28	0/3/3/3
24	PSU	B5	3652	90,24	-	0/7/25/26	0/2/2/2
63	PSU	A2	1005	63	-	0/7/25/26	0/2/2/2
24	OMG	B5	1580	24	-	0/5/27/28	0/3/3/3
24	PSU	B5	3490	24	-	0/7/25/26	0/2/2/2
24	PSU	B5	4217	24	-	0/7/25/26	0/2/2/2
63	OMG	A2	684	63	-	1/5/27/28	0/3/3/3
63	PSU	A2	1047	63	-	0/7/25/26	0/2/2/2
12	SAC	Br	2	12	-	0/7/8/10	-
24	A2M	B5	1489	90,24	-	2/5/27/28	0/3/3/3
24	A2M	B5	2658	90,24	-	0/5/27/28	0/3/3/3
24	OMU	B5	4052	24	-	0/9/27/28	0/2/2/2
63	OMU	A2	1805	63	-	0/9/27/28	0/2/2/2
24	A2M	B5	1810	90,24	-	1/5/27/28	0/3/3/3
63	PSU	A2	1644	63,90	-	0/7/25/26	0/2/2/2
63	MA6	A2	1852	63	-	2/7/29/30	0/3/3/3
24	OMC	B5	3433	24	-	4/9/27/28	0/2/2/2
24	PSU	B5	1721	24	-	0/7/25/26	0/2/2/2
24	PSU	B5	4107	24	-	0/7/25/26	0/2/2/2
63	A2M	A2	1679	63	-	0/5/27/28	0/3/3/3
24	OMG	B5	2719	24	-	0/5/27/28	0/3/3/3

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
63	OMG	A2	437	63	-	0/5/27/28	0/3/3/3
24	PSU	B5	3462	24	-	0/7/25/26	0/2/2/2
24	A2M	B5	3557	24	-	1/5/27/28	0/3/3/3
24	A2M	B5	4317	24	-	0/5/27/28	0/3/3/3
24	PSU	B5	4177	24	-	0/7/25/26	0/2/2/2
24	PSU	B5	3427	24	-	0/7/25/26	0/2/2/2
24	OMG	B5	3942	4,24	-	0/5/27/28	0/3/3/3
47	AYA	BC	2	47	-	3/4/6/8	-
24	A2M	B5	2630	90,24	-	0/5/27/28	0/3/3/3
24	A2M	B5	4269	90,24	-	0/5/27/28	0/3/3/3
24	OMG	B5	4364	24	-	0/5/27/28	0/3/3/3
24	OMC	B5	2208	90,24	-	0/9/27/28	0/2/2/2
24	PSU	B5	4042	24	-	0/7/25/26	0/2/2/2
11	NMM	As	67	11	-	0/9/11/13	-
24	A2M	B5	3456	24	-	0/5/27/28	0/3/3/3
63	OMG	A2	602	63	-	0/5/27/28	0/3/3/3
63	PSU	A2	1626	63	-	0/7/25/26	0/2/2/2
63	G7M	A2	1640	63	-	2/3/25/26	0/3/3/3
63	PSU	A2	867	63	-	0/7/25/26	0/2/2/2
63	A2M	A2	513	63	-	2/5/27/28	0/3/3/3
24	OMC	B5	1284	24	-	1/9/27/28	0/2/2/2
24	PSU	B5	3500	24	-	0/7/25/26	0/2/2/2
63	OMU	A2	1443	63,90	-	0/9/27/28	0/2/2/2
24	PSU	B5	4099	24	-	0/7/25/26	0/2/2/2
24	PSU	B5	4749	24	-	0/7/25/26	0/2/2/2
32	SAC	AZ	2	32	-	2/7/8/10	-
24	A2M	B5	3599	24	-	0/5/27/28	0/3/3/3
24	OMG	B5	4240	24	-	0/5/27/28	0/3/3/3
24	PSU	B5	4278	24	-	0/7/25/26	0/2/2/2
24	PSU	B5	4382	24	-	4/7/25/26	0/2/2/2
63	PSU	A2	1348	63	-	0/7/25/26	0/2/2/2
63	MA6	A2	1851	63	-	0/7/29/30	0/3/3/3
63	PSU	A2	1178	63	-	0/7/25/26	0/2/2/2
63	OMU	A2	1289	63	-	0/9/27/28	0/2/2/2
63	OMU	A2	628	63	-	4/9/27/28	0/2/2/2
24	OMG	B5	3524	24	-	0/5/27/28	0/3/3/3
38	V5N	BA	216	38	-	1/5/10/12	0/1/1/1
24	PSU	B5	4298	24	-	0/7/25/26	0/2/2/2
24	OMG	B5	3631	24	-	1/5/27/28	0/3/3/3
24	PSU	B5	3583	24	-	0/7/25/26	0/2/2/2
24	PSU	B5	3369	24	-	0/7/25/26	0/2/2/2

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
24	PSU	B5	4169	24	-	0/7/25/26	0/2/2/2
54	MLZ	Bb	5	54	-	2/7/8/10	-
24	PSU	B5	4322	24	-	0/7/25/26	0/2/2/2
24	PSU	B5	4246	24	-	1/7/25/26	0/2/2/2
24	OMG	B5	3476	24	-	1/5/27/28	0/3/3/3
24	OMU	B5	2680	24	-	1/9/27/28	0/2/2/2
63	OMG	A2	1329	63	-	0/5/27/28	0/3/3/3
24	PSU	B5	1731	24	-	0/7/25/26	0/2/2/2
3	MLZ	Bo	53	3	-	1/7/8/10	-
24	OMU	B5	3657	24	-	0/9/27/28	0/2/2/2
63	A2M	A2	159	63	-	0/5/27/28	0/3/3/3
24	A2M	B5	1479	24	-	0/5/27/28	0/3/3/3
43	HIC	BB	245	43	-	2/5/6/8	0/1/1/1
63	PSU	A2	687	63	-	0/7/25/26	0/2/2/2
63	PSU	A2	1046	63	-	0/7/25/26	0/2/2/2
24	OMG	B5	1260	24	-	1/5/27/28	0/3/3/3
63	PSU	A2	34	63	-	0/7/25/26	0/2/2/2
24	5MC	B5	3514	90,24	-	0/7/25/26	0/2/2/2
24	PSU	B5	1638	24	-	0/7/25/26	0/2/2/2
34	OMG	B8	75	34	-	0/5/27/28	0/3/3/3
24	PSU	B5	4166	24	-	2/7/25/26	0/2/2/2
63	OMU	A2	429	63	-	6/9/27/28	0/2/2/2
63	PSU	A2	816	63	-	0/7/25/26	0/2/2/2
24	PSU	B5	4711	24	-	0/7/25/26	0/2/2/2
24	PSU	B5	3496	24	-	0/7/25/26	0/2/2/2
24	PSU	B5	3502	24	-	0/7/25/26	0/2/2/2
24	6MZ	B5	3966	24	-	0/5/27/28	0/3/3/3
24	OMC	B5	2265	90,24	-	1/9/27/28	0/2/2/2
63	PSU	A2	1239	63	-	0/7/25/26	0/2/2/2
24	PSU	B5	3554	24	-	0/7/25/26	0/2/2/2
24	PSU	B5	2351	24	-	0/7/25/26	0/2/2/2
24	OMC	B5	4202	24	-	0/9/27/28	0/2/2/2
24	PSU	B5	4740	24	-	0/7/25/26	0/2/2/2
24	UY1	B5	3550	24	-	1/9/27/28	0/2/2/2
24	A2M	B5	2206	90,24	-	0/5/27/28	0/3/3/3
63	B8N	A2	1249	63	-	4/16/34/35	0/2/2/2
24	OMC	B5	1820	90,24	-	1/9/27/28	0/2/2/2
24	A2M	B5	4336	24	-	1/5/27/28	0/3/3/3
24	PSU	B5	4325	24	-	0/7/25/26	0/2/2/2
24	PSU	B5	4419	24	-	0/7/25/26	0/2/2/2
23	HY3	Aw	62	23	-	1/1/12/14	0/1/1/1

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
24	PSU	B5	3371	24	-	0/7/25/26	0/2/2/2
63	OMC	A2	463	63	-	0/9/27/28	0/2/2/2
24	PSU	B5	3447	24	-	0/7/25/26	0/2/2/2
24	OMC	B5	2667	24	-	1/9/27/28	0/2/2/2
63	PSU	A2	967	63	-	0/7/25/26	0/2/2/2
24	OMC	B5	3601	24	-	0/9/27/28	0/2/2/2
63	PSU	A2	407	63	-	0/7/25/26	0/2/2/2
63	PSU	A2	815	63	-	0/7/25/26	0/2/2/2
63	4AC	A2	1338	63	-	3/11/29/30	0/2/2/2
24	PSU	B5	3616	24	-	0/7/25/26	0/2/2/2
63	OMC	A2	1392	63	-	0/9/27/28	0/2/2/2
63	PSU	A2	1446	63	-	0/7/25/26	0/2/2/2
63	OMC	A2	174	63,90	-	0/9/27/28	0/2/2/2
24	A2M	B5	3492	63,24	-	1/5/27/28	0/3/3/3
63	PSU	A2	1082	63	-	0/7/25/26	0/2/2/2
24	PSU	B5	1632	24	-	0/7/25/26	0/2/2/2
24	OMU	B5	4366	24	-	0/9/27/28	0/2/2/2
24	PSU	B5	4149	24	-	0/7/25/26	0/2/2/2
63	OMG	A2	1448	63	-	3/5/27/28	0/3/3/3

All (326) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
63	A2	1640	G7M	C5-C4	7.42	1.54	1.39
63	A2	1640	G7M	O6-C6	7.33	1.38	1.23
24	B5	1266	1MA	C2-N3	4.83	1.34	1.29
23	Aw	62	HY3	C3-CA	-4.68	1.50	1.55
63	A2	1640	G7M	C2-N2	4.47	1.44	1.34
63	A2	1640	G7M	C2-N1	3.87	1.47	1.37
24	B5	3550	UY1	C6-C5	3.73	1.39	1.35
63	A2	1640	G7M	C8-N9	3.50	1.39	1.33
63	A2	1851	MA6	C5-N7	3.39	1.52	1.39
63	A2	1852	MA6	C5-N7	3.33	1.51	1.39
24	B5	1266	1MA	C6-N6	3.30	1.35	1.27
63	A2	1640	G7M	C2-N3	3.28	1.41	1.33
63	A2	1640	G7M	C6-N1	3.26	1.42	1.37
24	B5	1632	PSU	C6-C5	3.25	1.39	1.35
24	B5	4166	PSU	C6-C5	3.25	1.39	1.35
24	B5	3583	PSU	C6-C5	3.21	1.39	1.35
63	A2	1348	PSU	C6-C5	3.21	1.39	1.35
63	A2	573	PSU	C6-C5	3.20	1.39	1.35
24	B5	3494	PSU	C6-C5	3.20	1.39	1.35

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	B5	4058	PSU	C6-C5	3.20	1.39	1.35
24	B5	4749	PSU	C6-C5	3.20	1.39	1.35
63	A2	967	PSU	C6-C5	3.19	1.39	1.35
24	B5	4740	PSU	C6-C5	3.19	1.39	1.35
24	B5	4711	PSU	C6-C5	3.19	1.39	1.35
24	B5	4203	PSU	C6-C5	3.18	1.39	1.35
63	A2	109	PSU	C6-C5	3.18	1.39	1.35
63	A2	867	PSU	C6-C5	3.18	1.39	1.35
34	B8	69	PSU	C6-C5	3.18	1.39	1.35
24	B5	3447	PSU	C6-C5	3.17	1.39	1.35
63	A2	1239	PSU	C6-C5	3.17	1.39	1.35
63	A2	823	PSU	C6-C5	3.17	1.39	1.35
63	A2	210	PSU	C6-C5	3.17	1.39	1.35
63	A2	816	PSU	C6-C5	3.17	1.39	1.35
24	B5	4188	PSU	C6-C5	3.17	1.39	1.35
24	B5	2475	PSU	C6-C5	3.16	1.39	1.35
24	B5	3576	PSU	C6-C5	3.16	1.39	1.35
63	A2	1245	PSU	C6-C5	3.16	1.39	1.35
63	A2	1082	PSU	C6-C5	3.16	1.39	1.35
63	A2	119	PSU	C6-C5	3.16	1.39	1.35
24	B5	3371	PSU	C6-C5	3.16	1.39	1.35
63	A2	1047	PSU	C6-C5	3.16	1.39	1.35
24	B5	4217	PSU	C6-C5	3.15	1.39	1.35
63	A2	1233	PSU	C6-C5	3.15	1.39	1.35
24	B5	1638	PSU	C6-C5	3.15	1.39	1.35
24	B5	4267	PSU	C6-C5	3.15	1.39	1.35
63	A2	1249	B8N	C6-C5	3.15	1.39	1.34
24	B5	1683	PSU	C6-C5	3.14	1.39	1.35
24	B5	1799	PSU	C6-C5	3.14	1.39	1.35
24	B5	4435	PSU	C6-C5	3.14	1.39	1.35
24	B5	1718	PSU	C6-C5	3.14	1.39	1.35
24	B5	1491	PSU	C6-C5	3.14	1.39	1.35
63	A2	1693	PSU	C6-C5	3.13	1.39	1.35
24	B5	4099	PSU	C6-C5	3.13	1.39	1.35
24	B5	3500	PSU	C6-C5	3.13	1.39	1.35
24	B5	4169	PSU	C6-C5	3.13	1.39	1.35
63	A2	1046	PSU	C6-C5	3.13	1.39	1.35
24	B5	3427	PSU	C6-C5	3.12	1.39	1.35
63	A2	1626	PSU	C6-C5	3.12	1.39	1.35
24	B5	4322	PSU	C6-C5	3.12	1.39	1.35
63	A2	815	PSU	C6-C5	3.12	1.39	1.35
24	B5	4045	PSU	C6-C5	3.12	1.39	1.35

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	B5	4278	PSU	C6-C5	3.12	1.39	1.35
63	A2	1005	PSU	C6-C5	3.12	1.39	1.35
63	A2	1644	PSU	C6-C5	3.12	1.39	1.35
24	B5	3652	PSU	C6-C5	3.12	1.39	1.35
63	A2	864	PSU	C6-C5	3.12	1.39	1.35
24	B5	4042	PSU	C6-C5	3.12	1.39	1.35
24	B5	3466	PSU	C6-C5	3.11	1.38	1.35
63	A2	650	PSU	C6-C5	3.11	1.38	1.35
24	B5	3462	PSU	C6-C5	3.11	1.38	1.35
63	A2	105	PSU	C6-C5	3.11	1.38	1.35
24	B5	4177	PSU	C6-C5	3.11	1.38	1.35
24	B5	1721	PSU	C6-C5	3.11	1.38	1.35
24	B5	2351	PSU	C6-C5	3.11	1.38	1.35
63	A2	687	PSU	C6-C5	3.11	1.38	1.35
63	A2	1057	PSU	C6-C5	3.11	1.38	1.35
63	A2	1175	PSU	C6-C5	3.11	1.38	1.35
63	A2	218	PSU	C6-C5	3.10	1.38	1.35
24	B5	4325	PSU	C6-C5	3.10	1.38	1.35
63	A2	1446	PSU	C6-C5	3.10	1.38	1.35
63	A2	610	PSU	C6-C5	3.10	1.38	1.35
63	A2	93	PSU	C6-C5	3.10	1.38	1.35
63	A2	36	PSU	C6-C5	3.10	1.38	1.35
24	B5	1720	PSU	C6-C5	3.10	1.38	1.35
63	A2	802	PSU	C6-C5	3.10	1.38	1.35
24	B5	3554	PSU	C6-C5	3.10	1.38	1.35
63	A2	1178	PSU	C6-C5	3.10	1.38	1.35
24	B5	1537	PSU	C6-C5	3.10	1.38	1.35
24	B5	3490	PSU	C6-C5	3.10	1.38	1.35
24	B5	1731	PSU	C6-C5	3.09	1.38	1.35
24	B5	3496	PSU	C6-C5	3.09	1.38	1.35
24	B5	4107	PSU	C6-C5	3.09	1.38	1.35
24	B5	4374	PSU	C6-C5	3.09	1.38	1.35
63	A2	1249	B8N	C4-N3	-3.09	1.34	1.40
63	A2	652	PSU	C6-C5	3.09	1.38	1.35
24	B5	4246	PSU	C6-C5	3.09	1.38	1.35
63	A2	34	PSU	C6-C5	3.08	1.38	1.35
63	A2	407	PSU	C6-C5	3.08	1.38	1.35
24	B5	4419	PSU	C6-C5	3.07	1.38	1.35
63	A2	1368	PSU	C6-C5	3.07	1.38	1.35
24	B5	4382	PSU	C6-C5	3.07	1.38	1.35
24	B5	4149	PSU	C6-C5	3.07	1.38	1.35
24	B5	3369	PSU	C6-C5	3.07	1.38	1.35

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	B5	4039	PSU	C6-C5	3.06	1.38	1.35
34	B8	55	PSU	C6-C5	3.06	1.38	1.35
24	B5	3502	PSU	C6-C5	3.06	1.38	1.35
24	B5	1801	PSU	C6-C5	3.05	1.38	1.35
24	B5	4298	PSU	C6-C5	3.05	1.38	1.35
24	B5	3616	PSU	C6-C5	3.04	1.38	1.35
24	B5	3585	PSU	C6-C5	3.04	1.38	1.35
63	A2	682	PSU	C6-C5	3.03	1.38	1.35
63	A2	1843	4AC	C4-N4	-2.99	1.35	1.39
24	B5	4193	5MC	C6-C5	2.84	1.39	1.34
63	A2	1338	4AC	C4-N4	-2.82	1.35	1.39
24	B5	3514	5MC	C6-C5	2.76	1.39	1.34
63	A2	652	PSU	C4-N3	-2.73	1.33	1.38
24	B5	3369	PSU	C4-N3	-2.73	1.33	1.38
24	B5	4042	PSU	C4-N3	-2.72	1.33	1.38
24	B5	3550	UY1	C2-N1	2.71	1.40	1.36
24	B5	3652	PSU	C4-N3	-2.71	1.33	1.38
24	B5	3616	PSU	C4-N3	-2.71	1.33	1.38
24	B5	4149	PSU	C4-N3	-2.71	1.33	1.38
24	B5	4711	PSU	C4-N3	-2.70	1.33	1.38
24	B5	4107	PSU	C4-N3	-2.70	1.33	1.38
24	B5	3500	PSU	C4-N3	-2.69	1.33	1.38
34	B8	69	PSU	C4-N3	-2.69	1.33	1.38
24	B5	4169	PSU	C4-N3	-2.69	1.33	1.38
63	A2	682	PSU	C4-N3	-2.69	1.33	1.38
24	B5	1721	PSU	C4-N3	-2.69	1.33	1.38
24	B5	4267	PSU	C4-N3	-2.68	1.33	1.38
24	B5	4740	PSU	C4-N3	-2.68	1.33	1.38
34	B8	55	PSU	C4-N3	-2.68	1.33	1.38
24	B5	1720	PSU	C4-N3	-2.68	1.33	1.38
63	A2	1005	PSU	C4-N3	-2.68	1.33	1.38
24	B5	4039	PSU	C4-N3	-2.68	1.33	1.38
63	A2	867	PSU	C4-N3	-2.68	1.33	1.38
63	A2	93	PSU	C4-N3	-2.68	1.33	1.38
63	A2	1233	PSU	C4-N3	-2.68	1.33	1.38
63	A2	105	PSU	C4-N3	-2.68	1.33	1.38
24	B5	4246	PSU	C4-N3	-2.68	1.33	1.38
24	B5	3371	PSU	C4-N3	-2.67	1.33	1.38
24	B5	4435	PSU	C4-N3	-2.67	1.33	1.38
63	A2	1245	PSU	C4-N3	-2.67	1.33	1.38
24	B5	4374	PSU	C4-N3	-2.67	1.33	1.38
24	B5	1801	PSU	C4-N3	-2.67	1.33	1.38

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	B5	3427	PSU	C4-N3	-2.67	1.33	1.38
63	A2	34	PSU	C4-N3	-2.67	1.33	1.38
24	B5	3554	PSU	C4-N3	-2.67	1.33	1.38
63	A2	407	PSU	C4-N3	-2.67	1.33	1.38
24	B5	3583	PSU	C4-N3	-2.67	1.33	1.38
24	B5	4203	PSU	C4-N3	-2.67	1.33	1.38
24	B5	4382	PSU	C4-N3	-2.67	1.33	1.38
24	B5	1731	PSU	C4-N3	-2.66	1.33	1.38
63	A2	1239	PSU	C4-N3	-2.66	1.33	1.38
24	B5	3462	PSU	C4-N3	-2.66	1.33	1.38
63	A2	1626	PSU	C4-N3	-2.66	1.33	1.38
24	B5	1718	PSU	C4-N3	-2.66	1.33	1.38
63	A2	573	PSU	C4-N3	-2.66	1.33	1.38
24	B5	4045	PSU	C4-N3	-2.66	1.33	1.38
63	A2	650	PSU	C4-N3	-2.66	1.33	1.38
63	A2	1693	PSU	C4-N3	-2.66	1.33	1.38
24	B5	3490	PSU	C4-N3	-2.65	1.33	1.38
24	B5	1683	PSU	C4-N3	-2.65	1.33	1.38
24	B5	4419	PSU	C4-N3	-2.65	1.33	1.38
63	A2	109	PSU	C4-N3	-2.65	1.33	1.38
24	B5	1491	PSU	C4-N3	-2.65	1.33	1.38
24	B5	1638	PSU	C4-N3	-2.65	1.33	1.38
24	B5	3576	PSU	C4-N3	-2.65	1.33	1.38
24	B5	4177	PSU	C4-N3	-2.65	1.33	1.38
63	A2	1082	PSU	C4-N3	-2.65	1.33	1.38
24	B5	2475	PSU	C4-N3	-2.65	1.33	1.38
24	B5	4278	PSU	C4-N3	-2.65	1.33	1.38
63	A2	119	PSU	C4-N3	-2.65	1.33	1.38
63	A2	1644	PSU	C4-N3	-2.65	1.33	1.38
63	A2	1348	PSU	C4-N3	-2.65	1.33	1.38
63	A2	610	PSU	C4-N3	-2.65	1.33	1.38
24	B5	4188	PSU	C4-N3	-2.65	1.33	1.38
24	B5	4298	PSU	C4-N3	-2.64	1.33	1.38
24	B5	3585	PSU	C4-N3	-2.64	1.33	1.38
24	B5	1537	PSU	C4-N3	-2.64	1.33	1.38
24	B5	4749	PSU	C4-N3	-2.64	1.33	1.38
24	B5	4322	PSU	C4-N3	-2.64	1.33	1.38
24	B5	4217	PSU	C4-N3	-2.64	1.33	1.38
63	A2	1046	PSU	C4-N3	-2.64	1.33	1.38
63	A2	1178	PSU	C4-N3	-2.64	1.33	1.38
63	A2	815	PSU	C4-N3	-2.64	1.33	1.38
24	B5	3502	PSU	C4-N3	-2.63	1.33	1.38

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
63	A2	1446	PSU	C4-N3	-2.63	1.33	1.38
63	A2	36	PSU	C4-N3	-2.63	1.34	1.38
24	B5	2351	PSU	C4-N3	-2.63	1.34	1.38
63	A2	1368	PSU	C4-N3	-2.63	1.34	1.38
63	A2	1047	PSU	C4-N3	-2.63	1.34	1.38
63	A2	1175	PSU	C4-N3	-2.63	1.34	1.38
24	B5	4325	PSU	C4-N3	-2.63	1.34	1.38
24	B5	1799	PSU	C4-N3	-2.63	1.34	1.38
63	A2	1057	PSU	C4-N3	-2.63	1.34	1.38
63	A2	687	PSU	C4-N3	-2.62	1.34	1.38
63	A2	816	PSU	C4-N3	-2.62	1.34	1.38
24	B5	4058	PSU	C4-N3	-2.62	1.34	1.38
63	A2	218	PSU	C4-N3	-2.62	1.34	1.38
63	A2	802	PSU	C4-N3	-2.62	1.34	1.38
63	A2	864	PSU	C4-N3	-2.62	1.34	1.38
24	B5	3447	PSU	C4-N3	-2.61	1.34	1.38
24	B5	4099	PSU	C4-N3	-2.61	1.34	1.38
63	A2	967	PSU	C4-N3	-2.61	1.34	1.38
24	B5	1632	PSU	C4-N3	-2.60	1.34	1.38
24	B5	3496	PSU	C4-N3	-2.60	1.34	1.38
24	B5	3466	PSU	C4-N3	-2.60	1.34	1.38
24	B5	3494	PSU	C4-N3	-2.59	1.34	1.38
63	A2	823	PSU	C4-N3	-2.59	1.34	1.38
63	A2	210	PSU	C4-N3	-2.58	1.34	1.38
24	B5	3657	OMU	C4-N3	-2.58	1.33	1.38
63	A2	591	A2M	C5-C4	2.57	1.47	1.40
24	B5	4244	OMU	C4-N3	-2.56	1.34	1.38
24	B5	4366	OMU	C4-N3	-2.56	1.34	1.38
63	A2	355	OMU	C4-N3	-2.54	1.34	1.38
24	B5	2258	OMU	C4-N3	-2.53	1.34	1.38
63	A2	1249	B8N	C2-N3	-2.53	1.34	1.38
63	A2	1289	OMU	C4-N3	-2.52	1.34	1.38
24	B5	4052	OMU	C4-N3	-2.51	1.34	1.38
63	A2	429	OMU	C4-N3	-2.50	1.34	1.38
24	B5	2680	OMU	C4-N3	-2.50	1.34	1.38
24	B5	4166	PSU	C4-N3	-2.50	1.34	1.38
24	B5	3973	OMU	C4-N3	-2.49	1.34	1.38
24	B5	3492	A2M	C5-C4	2.49	1.47	1.40
24	B5	2719	OMG	C6-N1	-2.48	1.34	1.37
63	A2	99	A2M	C5-C4	2.48	1.47	1.40
63	A2	1443	OMU	C4-N3	-2.48	1.34	1.38
63	A2	469	A2M	C5-C4	2.48	1.47	1.40

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
63	A2	1833	6MZ	C5-C4	2.48	1.47	1.40
24	B5	400	A2M	C5-C4	2.47	1.47	1.40
24	B5	3942	OMG	C6-N1	-2.47	1.34	1.37
24	B5	4138	OMG	C6-N1	-2.47	1.34	1.37
63	A2	513	A2M	C5-C4	2.47	1.47	1.40
24	B5	4317	A2M	C5-C4	2.47	1.47	1.40
63	A2	172	OMU	C4-N3	-2.47	1.34	1.38
63	A2	159	A2M	C5-C4	2.47	1.47	1.40
63	A2	121	OMU	C4-N3	-2.47	1.34	1.38
24	B5	1479	A2M	C5-C4	2.46	1.47	1.40
24	B5	1580	OMG	C6-N1	-2.46	1.34	1.37
63	A2	1384	A2M	C5-C4	2.46	1.47	1.40
24	B5	398	A2M	C5-C4	2.46	1.47	1.40
24	B5	2244	A2M	C5-C4	2.46	1.47	1.40
63	A2	166	A2M	C5-C4	2.46	1.47	1.40
24	B5	2206	A2M	C5-C4	2.45	1.47	1.40
63	A2	485	A2M	C5-C4	2.45	1.47	1.40
63	A2	577	A2M	C5-C4	2.45	1.47	1.40
24	B5	3456	A2M	C5-C4	2.45	1.47	1.40
24	B5	3562	A2M	C5-C4	2.45	1.47	1.40
24	B5	3599	A2M	C5-C4	2.45	1.47	1.40
63	A2	1805	OMU	C4-N3	-2.44	1.34	1.38
24	B5	3476	OMG	C6-N1	-2.44	1.34	1.37
63	A2	669	A2M	C5-C4	2.44	1.47	1.40
24	B5	2630	A2M	C5-C4	2.44	1.47	1.40
63	A2	27	A2M	C5-C4	2.44	1.47	1.40
24	B5	3524	OMG	C6-N1	-2.44	1.34	1.37
24	B5	3450	A2M	C5-C4	2.44	1.47	1.40
24	B5	4369	OMG	C6-N1	-2.44	1.34	1.37
24	B5	3359	OMG	C6-N1	-2.44	1.34	1.37
24	B5	4116	OMG	C6-N1	-2.44	1.34	1.37
63	A2	116	OMU	C4-N3	-2.44	1.34	1.38
24	B5	1810	A2M	C5-C4	2.43	1.47	1.40
24	B5	2267	OMG	C6-N1	-2.43	1.34	1.37
24	B5	3966	6MZ	C5-C4	2.43	1.47	1.40
24	B5	1260	OMG	C6-N1	-2.43	1.34	1.37
63	A2	645	OMG	C6-N1	-2.43	1.34	1.37
24	B5	1477	OMG	C6-N1	-2.43	1.34	1.37
24	B5	2658	A2M	C5-C4	2.42	1.47	1.40
24	B5	3557	A2M	C5-C4	2.42	1.47	1.40
63	A2	1327	OMU	C4-N3	-2.42	1.34	1.38
63	A2	1491	OMG	C6-N1	-2.42	1.34	1.37

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	B5	4240	OMG	C6-N1	-2.42	1.34	1.37
24	B5	1270	A2M	C5-C4	2.42	1.47	1.40
24	B5	4336	A2M	C5-C4	2.41	1.47	1.40
34	B8	75	OMG	C6-N1	-2.41	1.34	1.37
63	A2	510	OMG	C6-N1	-2.41	1.34	1.37
63	A2	628	OMU	C4-N3	-2.41	1.34	1.38
24	B5	3974	OMG	C6-N1	-2.40	1.34	1.37
24	B5	4245	OMG	C6-N1	-2.40	1.34	1.37
63	A2	1032	A2M	C5-C4	2.40	1.47	1.40
24	B5	4269	A2M	C5-C4	2.40	1.47	1.40
24	B5	1489	A2M	C5-C4	2.39	1.47	1.40
63	A2	684	OMG	C6-N1	-2.39	1.34	1.37
63	A2	602	OMG	C6-N1	-2.39	1.34	1.37
63	A2	1679	A2M	C5-C4	2.39	1.47	1.40
63	A2	1329	OMG	C6-N1	-2.39	1.34	1.37
24	B5	2207	OMG	C6-N1	-2.38	1.34	1.37
24	B5	3631	OMG	C6-N1	-2.38	1.34	1.37
24	B5	4364	OMG	C6-N1	-2.38	1.34	1.37
24	B5	4383	OMG	C6-N1	-2.37	1.34	1.37
63	A2	437	OMG	C6-N1	-2.36	1.34	1.37
24	B5	3517	A2M	C5-C4	2.36	1.47	1.40
24	B5	3676	OMG	C6-N1	-2.35	1.34	1.37
63	A2	1448	OMG	C6-N1	-2.35	1.34	1.37
63	A2	868	OMG	C6-N1	-2.31	1.34	1.37
24	B5	3514	5MC	C6-N1	-2.24	1.34	1.38
24	B5	3550	UY1	C6-N1	-2.23	1.32	1.36
24	B5	4193	5MC	C6-N1	-2.21	1.34	1.38
63	A2	355	OMU	C2-N3	-2.21	1.34	1.38
24	B5	3657	OMU	C2-N3	-2.21	1.34	1.38
63	A2	1443	OMU	C2-N1	2.20	1.42	1.38
24	B5	4366	OMU	C2-N3	-2.20	1.34	1.38
63	A2	1843	4AC	C7-N4	-2.19	1.33	1.37
63	A2	1289	OMU	C2-N1	2.19	1.42	1.38
24	B5	3973	OMU	C2-N3	-2.16	1.34	1.38
24	B5	2680	OMU	C2-N3	-2.16	1.34	1.38
63	A2	429	OMU	C2-N3	-2.15	1.34	1.38
63	A2	1327	OMU	C2-N3	-2.15	1.34	1.38
24	B5	4052	OMU	C2-N3	-2.15	1.34	1.38
63	A2	121	OMU	C2-N3	-2.14	1.34	1.38
24	B5	4244	OMU	C2-N3	-2.14	1.34	1.38
63	A2	172	OMU	C2-N3	-2.14	1.34	1.38
63	A2	628	OMU	C2-N3	-2.13	1.34	1.38

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
63	A2	1443	OMU	C2-N3	-2.13	1.34	1.38
24	B5	2258	OMU	C2-N3	-2.11	1.34	1.38
63	A2	1805	OMU	C2-N3	-2.10	1.34	1.38
63	A2	1289	OMU	C2-N3	-2.09	1.34	1.38
63	A2	116	OMU	C2-N3	-2.09	1.34	1.38
63	A2	1805	OMU	C2-N1	2.09	1.41	1.38
63	A2	1851	MA6	C4-N3	-2.08	1.32	1.35
24	B5	2258	OMU	C2-N1	2.08	1.41	1.38
24	B5	4052	OMU	C2-N1	2.07	1.41	1.38
24	B5	3973	OMU	C2-N1	2.06	1.41	1.38
63	A2	121	OMU	C5-C4	-2.05	1.39	1.43
63	A2	1338	4AC	C7-N4	-2.01	1.33	1.37
63	A2	1852	MA6	C4-N3	-2.01	1.32	1.35

All (541) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
24	B5	3494	PSU	N1-C2-N3	6.11	122.06	115.13
24	B5	4149	PSU	N1-C2-N3	6.09	122.03	115.13
24	B5	3616	PSU	N1-C2-N3	6.07	122.01	115.13
34	B8	69	PSU	N1-C2-N3	6.06	122.00	115.13
24	B5	3369	PSU	N1-C2-N3	6.06	122.00	115.13
24	B5	4246	PSU	N1-C2-N3	6.05	121.99	115.13
24	B5	1799	PSU	N1-C2-N3	6.04	121.98	115.13
63	A2	1047	PSU	N1-C2-N3	6.04	121.98	115.13
34	B8	55	PSU	N1-C2-N3	6.04	121.98	115.13
63	A2	1644	PSU	N1-C2-N3	6.04	121.97	115.13
24	B5	4374	PSU	N1-C2-N3	6.03	121.96	115.13
24	B5	4711	PSU	N1-C2-N3	6.03	121.96	115.13
63	A2	1239	PSU	N1-C2-N3	6.02	121.95	115.13
63	A2	610	PSU	N1-C2-N3	6.02	121.95	115.13
63	A2	109	PSU	N1-C2-N3	6.02	121.95	115.13
63	A2	105	PSU	N1-C2-N3	6.02	121.94	115.13
24	B5	1491	PSU	N1-C2-N3	6.01	121.94	115.13
24	B5	1638	PSU	N1-C2-N3	6.01	121.94	115.13
24	B5	4382	PSU	N1-C2-N3	6.01	121.94	115.13
63	A2	682	PSU	N1-C2-N3	6.01	121.94	115.13
63	A2	823	PSU	N1-C2-N3	6.01	121.94	115.13
63	A2	1446	PSU	N1-C2-N3	6.01	121.94	115.13
24	B5	4217	PSU	N1-C2-N3	6.00	121.93	115.13
24	B5	4188	PSU	N1-C2-N3	6.00	121.93	115.13
63	A2	34	PSU	N1-C2-N3	6.00	121.92	115.13

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
24	B5	4298	PSU	N1-C2-N3	6.00	121.92	115.13
24	B5	1537	PSU	N1-C2-N3	5.99	121.92	115.13
24	B5	3490	PSU	N1-C2-N3	5.99	121.92	115.13
63	A2	1175	PSU	N1-C2-N3	5.99	121.92	115.13
24	B5	3652	PSU	N1-C2-N3	5.99	121.92	115.13
24	B5	3447	PSU	N1-C2-N3	5.99	121.92	115.13
63	A2	816	PSU	N1-C2-N3	5.99	121.92	115.13
63	A2	1368	PSU	N1-C2-N3	5.99	121.92	115.13
24	B5	3427	PSU	N1-C2-N3	5.99	121.92	115.13
24	B5	3466	PSU	N1-C2-N3	5.99	121.91	115.13
63	A2	1233	PSU	N1-C2-N3	5.99	121.91	115.13
24	B5	4099	PSU	N1-C2-N3	5.98	121.91	115.13
24	B5	1720	PSU	N1-C2-N3	5.98	121.91	115.13
24	B5	4749	PSU	N1-C2-N3	5.98	121.91	115.13
63	A2	1245	PSU	N1-C2-N3	5.98	121.91	115.13
63	A2	815	PSU	N1-C2-N3	5.98	121.91	115.13
24	B5	4435	PSU	N1-C2-N3	5.98	121.90	115.13
63	A2	1178	PSU	N1-C2-N3	5.98	121.90	115.13
63	A2	687	PSU	N1-C2-N3	5.98	121.90	115.13
63	A2	1693	PSU	N1-C2-N3	5.98	121.90	115.13
24	B5	4419	PSU	N1-C2-N3	5.97	121.90	115.13
24	B5	4042	PSU	N1-C2-N3	5.97	121.90	115.13
63	A2	650	PSU	N1-C2-N3	5.97	121.89	115.13
24	B5	4267	PSU	N1-C2-N3	5.97	121.89	115.13
63	A2	652	PSU	N1-C2-N3	5.97	121.89	115.13
24	B5	3576	PSU	N1-C2-N3	5.97	121.89	115.13
24	B5	4169	PSU	N1-C2-N3	5.97	121.89	115.13
24	B5	4058	PSU	N1-C2-N3	5.97	121.89	115.13
24	B5	3462	PSU	N1-C2-N3	5.96	121.89	115.13
24	B5	2475	PSU	N1-C2-N3	5.96	121.89	115.13
24	B5	4278	PSU	N1-C2-N3	5.96	121.89	115.13
63	A2	1348	PSU	N1-C2-N3	5.96	121.89	115.13
24	B5	2351	PSU	N1-C2-N3	5.96	121.88	115.13
63	A2	36	PSU	N1-C2-N3	5.96	121.88	115.13
63	A2	864	PSU	N1-C2-N3	5.96	121.88	115.13
63	A2	967	PSU	N1-C2-N3	5.96	121.88	115.13
63	A2	407	PSU	N1-C2-N3	5.95	121.88	115.13
24	B5	3500	PSU	N1-C2-N3	5.95	121.88	115.13
24	B5	3554	PSU	N1-C2-N3	5.95	121.88	115.13
24	B5	4322	PSU	N1-C2-N3	5.95	121.88	115.13
24	B5	4045	PSU	N1-C2-N3	5.95	121.87	115.13
63	A2	802	PSU	N1-C2-N3	5.95	121.87	115.13

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
24	B5	3371	PSU	N1-C2-N3	5.95	121.87	115.13
63	A2	218	PSU	N1-C2-N3	5.95	121.87	115.13
63	A2	573	PSU	N1-C2-N3	5.94	121.86	115.13
24	B5	4177	PSU	N1-C2-N3	5.94	121.86	115.13
24	B5	1721	PSU	N1-C2-N3	5.94	121.86	115.13
24	B5	4740	PSU	N1-C2-N3	5.94	121.86	115.13
24	B5	1731	PSU	N1-C2-N3	5.94	121.86	115.13
24	B5	1801	PSU	N1-C2-N3	5.94	121.86	115.13
63	A2	867	PSU	N1-C2-N3	5.94	121.86	115.13
63	A2	1057	PSU	N1-C2-N3	5.93	121.85	115.13
63	A2	93	PSU	N1-C2-N3	5.93	121.85	115.13
24	B5	1718	PSU	N1-C2-N3	5.93	121.85	115.13
24	B5	1683	PSU	N1-C2-N3	5.93	121.85	115.13
24	B5	4325	PSU	N1-C2-N3	5.93	121.85	115.13
24	B5	1632	PSU	N1-C2-N3	5.93	121.84	115.13
63	A2	1046	PSU	N1-C2-N3	5.93	121.84	115.13
24	B5	4039	PSU	N1-C2-N3	5.92	121.84	115.13
24	B5	3585	PSU	N1-C2-N3	5.92	121.84	115.13
63	A2	1626	PSU	N1-C2-N3	5.92	121.84	115.13
63	A2	119	PSU	N1-C2-N3	5.92	121.84	115.13
63	A2	210	PSU	N1-C2-N3	5.92	121.84	115.13
63	A2	1005	PSU	N1-C2-N3	5.92	121.83	115.13
24	B5	3502	PSU	N1-C2-N3	5.91	121.83	115.13
24	B5	4203	PSU	N1-C2-N3	5.90	121.82	115.13
24	B5	3966	6MZ	C2-N1-C6	5.89	121.64	116.59
24	B5	3496	PSU	N1-C2-N3	5.88	121.79	115.13
24	B5	3583	PSU	N1-C2-N3	5.87	121.78	115.13
24	B5	4107	PSU	N1-C2-N3	5.86	121.77	115.13
63	A2	1082	PSU	N1-C2-N3	5.85	121.76	115.13
63	A2	1851	MA6	C4-C5-N7	-5.81	103.34	109.40
63	A2	1833	6MZ	C2-N1-C6	5.77	121.54	116.59
24	B5	4276	UR3	C4-N3-C2	-5.77	119.13	124.56
24	B5	4166	PSU	N1-C2-N3	5.75	121.64	115.13
63	A2	1852	MA6	C4-C5-N7	-5.57	103.59	109.40
24	B5	3550	UY1	C4-N3-C2	-5.22	118.83	126.34
63	A2	1843	4AC	N4-C4-N3	4.68	121.71	113.85
63	A2	1327	OMU	C4-N3-C2	-4.52	120.62	126.58
63	A2	628	OMU	C4-N3-C2	-4.51	120.63	126.58
63	A2	1851	MA6	C1'-N9-C4	-4.51	118.72	126.64
24	B5	2680	OMU	C4-N3-C2	-4.48	120.67	126.58
63	A2	1338	4AC	N4-C4-N3	4.47	121.35	113.85
24	B5	3657	OMU	C4-N3-C2	-4.47	120.69	126.58

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
24	B5	4244	OMU	C4-N3-C2	-4.45	120.71	126.58
63	A2	355	OMU	C4-N3-C2	-4.45	120.72	126.58
24	B5	3973	OMU	C4-N3-C2	-4.44	120.72	126.58
63	A2	429	OMU	C4-N3-C2	-4.42	120.76	126.58
63	A2	172	OMU	C4-N3-C2	-4.41	120.77	126.58
63	A2	116	OMU	C4-N3-C2	-4.39	120.79	126.58
24	B5	4366	OMU	C4-N3-C2	-4.39	120.80	126.58
63	A2	1851	MA6	N3-C2-N1	-4.33	121.91	128.68
24	B5	2258	OMU	C4-N3-C2	-4.32	120.89	126.58
24	B5	4052	OMU	C4-N3-C2	-4.31	120.89	126.58
63	A2	1805	OMU	C4-N3-C2	-4.31	120.89	126.58
63	A2	121	OMU	C4-N3-C2	-4.29	120.92	126.58
63	A2	1443	OMU	C4-N3-C2	-4.26	120.95	126.58
63	A2	1289	OMU	C4-N3-C2	-4.24	120.99	126.58
24	B5	3550	UY1	N1-C2-N3	4.24	119.93	115.13
63	A2	1852	MA6	N3-C2-N1	-4.20	122.12	128.68
63	A2	1327	OMU	N3-C2-N1	4.15	120.40	114.89
63	A2	429	OMU	N3-C2-N1	4.14	120.39	114.89
63	A2	1852	MA6	C1'-N9-C4	-4.14	119.37	126.64
24	B5	4366	OMU	N3-C2-N1	4.14	120.38	114.89
24	B5	2680	OMU	N3-C2-N1	4.13	120.37	114.89
24	B5	3973	OMU	N3-C2-N1	4.12	120.36	114.89
63	A2	355	OMU	N3-C2-N1	4.11	120.35	114.89
24	B5	4244	OMU	N3-C2-N1	4.10	120.34	114.89
24	B5	3657	OMU	N3-C2-N1	4.10	120.34	114.89
63	A2	628	OMU	N3-C2-N1	4.07	120.30	114.89
63	A2	116	OMU	N3-C2-N1	4.07	120.29	114.89
24	B5	2258	OMU	N3-C2-N1	4.04	120.25	114.89
63	A2	1805	OMU	N3-C2-N1	4.04	120.25	114.89
63	A2	172	OMU	N3-C2-N1	4.03	120.23	114.89
24	B5	4052	OMU	N3-C2-N1	4.02	120.23	114.89
24	B5	4188	PSU	C4-N3-C2	-3.99	120.59	126.34
63	A2	1443	OMU	N3-C2-N1	3.99	120.19	114.89
24	B5	4149	PSU	C4-N3-C2	-3.97	120.61	126.34
63	A2	1289	OMU	N3-C2-N1	3.97	120.16	114.89
34	B8	69	PSU	C4-N3-C2	-3.96	120.63	126.34
24	B5	3616	PSU	C4-N3-C2	-3.96	120.63	126.34
24	B5	4267	PSU	C4-N3-C2	-3.95	120.64	126.34
24	B5	4042	PSU	C4-N3-C2	-3.95	120.65	126.34
63	A2	1644	PSU	C4-N3-C2	-3.95	120.65	126.34
63	A2	1233	PSU	C4-N3-C2	-3.95	120.65	126.34
63	A2	121	OMU	N3-C2-N1	3.94	120.12	114.89

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
63	A2	1047	PSU	C4-N3-C2	-3.94	120.66	126.34
24	B5	4298	PSU	C4-N3-C2	-3.94	120.66	126.34
24	B5	3369	PSU	C4-N3-C2	-3.94	120.67	126.34
63	A2	1175	PSU	C4-N3-C2	-3.94	120.67	126.34
34	B8	55	PSU	C4-N3-C2	-3.94	120.67	126.34
24	B5	1491	PSU	C4-N3-C2	-3.93	120.67	126.34
24	B5	3490	PSU	C4-N3-C2	-3.93	120.67	126.34
63	A2	610	PSU	C4-N3-C2	-3.93	120.67	126.34
24	B5	4374	PSU	C4-N3-C2	-3.93	120.68	126.34
24	B5	4711	PSU	C4-N3-C2	-3.93	120.68	126.34
24	B5	4246	PSU	C4-N3-C2	-3.92	120.69	126.34
24	B5	1801	PSU	C4-N3-C2	-3.91	120.70	126.34
24	B5	4099	PSU	C4-N3-C2	-3.91	120.70	126.34
63	A2	652	PSU	C4-N3-C2	-3.91	120.70	126.34
24	B5	1799	PSU	C4-N3-C2	-3.91	120.70	126.34
63	A2	650	PSU	C4-N3-C2	-3.91	120.70	126.34
63	A2	1245	PSU	C4-N3-C2	-3.91	120.71	126.34
24	B5	4419	PSU	C4-N3-C2	-3.91	120.71	126.34
63	A2	218	PSU	C4-N3-C2	-3.91	120.71	126.34
63	A2	1178	PSU	C4-N3-C2	-3.90	120.71	126.34
24	B5	3462	PSU	C4-N3-C2	-3.90	120.72	126.34
24	B5	1731	PSU	C4-N3-C2	-3.90	120.72	126.34
24	B5	4325	PSU	C4-N3-C2	-3.90	120.72	126.34
63	A2	1693	PSU	C4-N3-C2	-3.90	120.72	126.34
24	B5	2351	PSU	C4-N3-C2	-3.90	120.73	126.34
24	B5	3466	PSU	C4-N3-C2	-3.89	120.73	126.34
63	A2	1368	PSU	C4-N3-C2	-3.89	120.73	126.34
24	B5	1638	PSU	C4-N3-C2	-3.89	120.73	126.34
24	B5	4217	PSU	C4-N3-C2	-3.89	120.73	126.34
24	B5	3576	PSU	C4-N3-C2	-3.89	120.73	126.34
63	A2	867	PSU	C4-N3-C2	-3.89	120.73	126.34
63	A2	34	PSU	C4-N3-C2	-3.89	120.74	126.34
24	B5	1721	PSU	C4-N3-C2	-3.89	120.74	126.34
24	B5	4058	PSU	C4-N3-C2	-3.89	120.74	126.34
24	B5	3427	PSU	C4-N3-C2	-3.88	120.74	126.34
24	B5	1718	PSU	C4-N3-C2	-3.88	120.74	126.34
24	B5	4177	PSU	C4-N3-C2	-3.88	120.74	126.34
63	A2	816	PSU	C4-N3-C2	-3.88	120.75	126.34
24	B5	3447	PSU	C4-N3-C2	-3.88	120.75	126.34
63	A2	815	PSU	C4-N3-C2	-3.88	120.75	126.34
63	A2	407	PSU	C4-N3-C2	-3.88	120.75	126.34
63	A2	682	PSU	C4-N3-C2	-3.88	120.75	126.34

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
63	A2	1348	PSU	C4-N3-C2	-3.88	120.75	126.34
24	B5	4749	PSU	C4-N3-C2	-3.87	120.76	126.34
63	A2	1046	PSU	C4-N3-C2	-3.87	120.76	126.34
63	A2	109	PSU	C4-N3-C2	-3.87	120.76	126.34
24	B5	2475	PSU	C4-N3-C2	-3.87	120.77	126.34
24	B5	3502	PSU	C4-N3-C2	-3.87	120.77	126.34
63	A2	1446	PSU	C4-N3-C2	-3.87	120.77	126.34
63	A2	1239	PSU	C4-N3-C2	-3.87	120.77	126.34
63	A2	93	PSU	C4-N3-C2	-3.86	120.77	126.34
24	B5	1683	PSU	C4-N3-C2	-3.86	120.77	126.34
24	B5	4435	PSU	C4-N3-C2	-3.86	120.78	126.34
24	B5	3496	PSU	C4-N3-C2	-3.86	120.78	126.34
63	A2	802	PSU	C4-N3-C2	-3.86	120.78	126.34
63	A2	105	PSU	C4-N3-C2	-3.86	120.78	126.34
63	A2	864	PSU	C4-N3-C2	-3.86	120.78	126.34
24	B5	4045	PSU	C4-N3-C2	-3.85	120.79	126.34
24	B5	4039	PSU	C4-N3-C2	-3.85	120.79	126.34
63	A2	687	PSU	C4-N3-C2	-3.85	120.79	126.34
24	B5	3500	PSU	C4-N3-C2	-3.85	120.79	126.34
24	B5	3652	PSU	C4-N3-C2	-3.85	120.79	126.34
63	A2	36	PSU	C4-N3-C2	-3.84	120.81	126.34
63	A2	1005	PSU	C4-N3-C2	-3.84	120.81	126.34
63	A2	823	PSU	C4-N3-C2	-3.84	120.81	126.34
24	B5	3494	PSU	C4-N3-C2	-3.84	120.81	126.34
24	B5	4740	PSU	C4-N3-C2	-3.84	120.81	126.34
63	A2	573	PSU	C4-N3-C2	-3.83	120.82	126.34
63	A2	1057	PSU	C4-N3-C2	-3.83	120.82	126.34
24	B5	3585	PSU	C4-N3-C2	-3.83	120.83	126.34
24	B5	4193	5MC	C5-C6-N1	-3.82	119.41	123.34
24	B5	3554	PSU	C4-N3-C2	-3.82	120.83	126.34
63	A2	119	PSU	C4-N3-C2	-3.82	120.83	126.34
24	B5	1720	PSU	C4-N3-C2	-3.82	120.84	126.34
24	B5	4203	PSU	C4-N3-C2	-3.81	120.85	126.34
24	B5	4107	PSU	C4-N3-C2	-3.81	120.85	126.34
24	B5	3583	PSU	C4-N3-C2	-3.81	120.86	126.34
63	A2	967	PSU	C4-N3-C2	-3.80	120.86	126.34
24	B5	4169	PSU	C4-N3-C2	-3.80	120.86	126.34
24	B5	1537	PSU	C4-N3-C2	-3.80	120.87	126.34
63	A2	1626	PSU	C4-N3-C2	-3.79	120.87	126.34
24	B5	4382	PSU	C4-N3-C2	-3.79	120.87	126.34
24	B5	4322	PSU	C4-N3-C2	-3.78	120.89	126.34
24	B5	3371	PSU	C4-N3-C2	-3.78	120.89	126.34

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
24	B5	4278	PSU	C4-N3-C2	-3.77	120.90	126.34
63	A2	1082	PSU	C4-N3-C2	-3.74	120.94	126.34
63	A2	210	PSU	C4-N3-C2	-3.73	120.97	126.34
24	B5	1632	PSU	C4-N3-C2	-3.72	120.98	126.34
24	B5	4244	OMU	C5-C4-N3	3.61	120.24	114.84
63	A2	628	OMU	C5-C4-N3	3.58	120.20	114.84
24	B5	2680	OMU	C5-C4-N3	3.58	120.20	114.84
24	B5	3973	OMU	C5-C4-N3	3.56	120.16	114.84
63	A2	355	OMU	C5-C4-N3	3.56	120.16	114.84
24	B5	3494	PSU	O2-C2-N1	-3.55	118.88	122.79
24	B5	3657	OMU	C5-C4-N3	3.55	120.16	114.84
63	A2	116	OMU	C5-C4-N3	3.55	120.15	114.84
63	A2	429	OMU	C5-C4-N3	3.53	120.12	114.84
63	A2	1327	OMU	C5-C4-N3	3.53	120.12	114.84
24	B5	2258	OMU	C5-C4-N3	3.53	120.12	114.84
63	A2	1443	OMU	C5-C4-N3	3.52	120.11	114.84
24	B5	4435	PSU	O2-C2-N1	-3.51	118.92	122.79
63	A2	1289	OMU	C5-C4-N3	3.51	120.10	114.84
24	B5	4052	OMU	C5-C4-N3	3.51	120.09	114.84
63	A2	172	OMU	C5-C4-N3	3.51	120.09	114.84
63	A2	121	OMU	C5-C4-N3	3.51	120.09	114.84
24	B5	4366	OMU	C5-C4-N3	3.51	120.09	114.84
63	A2	1805	OMU	C5-C4-N3	3.51	120.08	114.84
24	B5	4382	PSU	O2-C2-N1	-3.50	118.94	122.79
24	B5	4166	PSU	C4-N3-C2	-3.49	121.31	126.34
34	B8	55	PSU	O2-C2-N1	-3.49	118.94	122.79
24	B5	4246	PSU	O2-C2-N1	-3.47	118.97	122.79
63	A2	1047	PSU	O2-C2-N1	-3.47	118.97	122.79
63	A2	802	PSU	O2-C2-N1	-3.46	118.98	122.79
63	A2	1368	PSU	O2-C2-N1	-3.46	118.98	122.79
24	B5	1799	PSU	O2-C2-N1	-3.46	118.98	122.79
24	B5	3462	PSU	O2-C2-N1	-3.46	118.99	122.79
63	A2	36	PSU	O2-C2-N1	-3.46	118.99	122.79
63	A2	967	PSU	O2-C2-N1	-3.45	118.99	122.79
24	B5	1720	PSU	O2-C2-N1	-3.45	119.00	122.79
24	B5	4058	PSU	O2-C2-N1	-3.44	119.00	122.79
24	B5	4298	PSU	O2-C2-N1	-3.44	119.00	122.79
63	A2	1693	PSU	O2-C2-N1	-3.44	119.00	122.79
63	A2	109	PSU	O2-C2-N1	-3.44	119.00	122.79
24	B5	1638	PSU	O2-C2-N1	-3.44	119.00	122.79
24	B5	1491	PSU	O2-C2-N1	-3.43	119.01	122.79
63	A2	1446	PSU	O2-C2-N1	-3.43	119.01	122.79

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
24	B5	1683	PSU	O2-C2-N1	-3.43	119.01	122.79
63	A2	34	PSU	O2-C2-N1	-3.43	119.02	122.79
24	B5	1632	PSU	O2-C2-N1	-3.42	119.02	122.79
63	A2	1057	PSU	O2-C2-N1	-3.42	119.02	122.79
24	B5	4374	PSU	O2-C2-N1	-3.42	119.02	122.79
24	B5	4278	PSU	O2-C2-N1	-3.42	119.02	122.79
63	A2	1175	PSU	O2-C2-N1	-3.42	119.02	122.79
24	B5	3514	5MC	C5-C6-N1	-3.42	119.82	123.34
24	B5	1718	PSU	O2-C2-N1	-3.41	119.03	122.79
24	B5	4322	PSU	O2-C2-N1	-3.41	119.03	122.79
63	A2	687	PSU	O2-C2-N1	-3.41	119.03	122.79
24	B5	3554	PSU	O2-C2-N1	-3.41	119.03	122.79
24	B5	4188	PSU	O2-C2-N1	-3.41	119.03	122.79
63	A2	1348	PSU	O2-C2-N1	-3.41	119.04	122.79
63	A2	1626	PSU	O2-C2-N1	-3.41	119.04	122.79
24	B5	3427	PSU	O2-C2-N1	-3.41	119.04	122.79
63	A2	1178	PSU	O2-C2-N1	-3.41	119.04	122.79
63	A2	210	PSU	O2-C2-N1	-3.41	119.04	122.79
24	B5	3502	PSU	O2-C2-N1	-3.40	119.05	122.79
63	A2	1245	PSU	O2-C2-N1	-3.40	119.05	122.79
24	B5	3500	PSU	O2-C2-N1	-3.40	119.05	122.79
24	B5	4149	PSU	O2-C2-N1	-3.40	119.05	122.79
24	B5	4419	PSU	O2-C2-N1	-3.40	119.05	122.79
63	A2	650	PSU	O2-C2-N1	-3.39	119.05	122.79
63	A2	407	PSU	O2-C2-N1	-3.39	119.06	122.79
24	B5	3616	PSU	O2-C2-N1	-3.39	119.06	122.79
63	A2	823	PSU	O2-C2-N1	-3.39	119.06	122.79
63	A2	1005	PSU	O2-C2-N1	-3.39	119.06	122.79
24	B5	3466	PSU	O2-C2-N1	-3.39	119.06	122.79
24	B5	3585	PSU	O2-C2-N1	-3.39	119.06	122.79
24	B5	4749	PSU	O2-C2-N1	-3.39	119.06	122.79
63	A2	864	PSU	O2-C2-N1	-3.38	119.07	122.79
24	B5	4166	PSU	O2-C2-N1	-3.38	119.07	122.79
63	A2	1239	PSU	O2-C2-N1	-3.38	119.07	122.79
24	B5	4267	PSU	O2-C2-N1	-3.38	119.07	122.79
24	B5	1537	PSU	O2-C2-N1	-3.38	119.07	122.79
63	A2	652	PSU	O2-C2-N1	-3.38	119.07	122.79
63	A2	1644	PSU	O2-C2-N1	-3.38	119.07	122.79
24	B5	3447	PSU	O2-C2-N1	-3.38	119.07	122.79
24	B5	4177	PSU	O2-C2-N1	-3.38	119.07	122.79
63	A2	1046	PSU	O2-C2-N1	-3.38	119.07	122.79
63	A2	105	PSU	O2-C2-N1	-3.37	119.08	122.79

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
24	B5	3369	PSU	O2-C2-N1	-3.37	119.08	122.79
24	B5	4711	PSU	O2-C2-N1	-3.37	119.08	122.79
24	B5	4045	PSU	O2-C2-N1	-3.36	119.09	122.79
24	B5	4203	PSU	O2-C2-N1	-3.36	119.09	122.79
24	B5	1731	PSU	O2-C2-N1	-3.36	119.09	122.79
24	B5	3496	PSU	O2-C2-N1	-3.36	119.09	122.79
63	A2	218	PSU	O2-C2-N1	-3.36	119.09	122.79
63	A2	610	PSU	O2-C2-N1	-3.36	119.09	122.79
24	B5	3652	PSU	O2-C2-N1	-3.36	119.09	122.79
63	A2	573	PSU	O2-C2-N1	-3.36	119.09	122.79
24	B5	3576	PSU	O2-C2-N1	-3.36	119.10	122.79
24	B5	4099	PSU	O2-C2-N1	-3.36	119.10	122.79
24	B5	4169	PSU	O2-C2-N1	-3.36	119.10	122.79
24	B5	1801	PSU	O2-C2-N1	-3.35	119.10	122.79
63	A2	93	PSU	O2-C2-N1	-3.35	119.10	122.79
63	A2	119	PSU	O2-C2-N1	-3.35	119.10	122.79
34	B8	69	PSU	O2-C2-N1	-3.35	119.10	122.79
24	B5	2475	PSU	O2-C2-N1	-3.35	119.10	122.79
24	B5	2351	PSU	O2-C2-N1	-3.35	119.10	122.79
24	B5	3490	PSU	O2-C2-N1	-3.35	119.11	122.79
63	A2	1233	PSU	O2-C2-N1	-3.35	119.11	122.79
63	A2	682	PSU	O2-C2-N1	-3.34	119.11	122.79
63	A2	867	PSU	O2-C2-N1	-3.34	119.12	122.79
63	A2	816	PSU	O2-C2-N1	-3.34	119.12	122.79
24	B5	4042	PSU	O2-C2-N1	-3.33	119.12	122.79
24	B5	4740	PSU	O2-C2-N1	-3.33	119.13	122.79
24	B5	4039	PSU	O2-C2-N1	-3.32	119.13	122.79
24	B5	3583	PSU	O2-C2-N1	-3.32	119.14	122.79
63	A2	815	PSU	O2-C2-N1	-3.31	119.14	122.79
24	B5	3371	PSU	O2-C2-N1	-3.31	119.15	122.79
63	A2	1679	A2M	N3-C2-N1	-3.31	123.50	128.68
24	B5	1721	PSU	O2-C2-N1	-3.30	119.16	122.79
24	B5	4217	PSU	O2-C2-N1	-3.30	119.16	122.79
24	B5	4325	PSU	O2-C2-N1	-3.29	119.17	122.79
24	B5	4107	PSU	O2-C2-N1	-3.28	119.17	122.79
24	B5	4336	A2M	N3-C2-N1	-3.26	123.58	128.68
63	A2	1032	A2M	N3-C2-N1	-3.25	123.59	128.68
63	A2	1249	B8N	C4-N3-C2	-3.24	121.36	125.46
24	B5	3456	A2M	N3-C2-N1	-3.24	123.61	128.68
24	B5	3966	6MZ	C9-N6-C6	-3.24	120.08	122.87
24	B5	1489	A2M	N3-C2-N1	-3.24	123.61	128.68
63	A2	166	A2M	N3-C2-N1	-3.24	123.61	128.68

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
63	A2	1082	PSU	O2-C2-N1	-3.22	119.24	122.79
24	B5	398	A2M	N3-C2-N1	-3.22	123.65	128.68
24	B5	1810	A2M	N3-C2-N1	-3.22	123.65	128.68
24	B5	3517	A2M	N3-C2-N1	-3.22	123.65	128.68
24	B5	3599	A2M	N3-C2-N1	-3.22	123.65	128.68
24	B5	3492	A2M	N3-C2-N1	-3.21	123.66	128.68
24	B5	4269	A2M	N3-C2-N1	-3.20	123.67	128.68
24	B5	2244	A2M	N3-C2-N1	-3.20	123.67	128.68
24	B5	3562	A2M	N3-C2-N1	-3.19	123.69	128.68
24	B5	2206	A2M	N3-C2-N1	-3.19	123.69	128.68
63	A2	591	A2M	N3-C2-N1	-3.19	123.69	128.68
63	A2	469	A2M	N3-C2-N1	-3.18	123.70	128.68
63	A2	99	A2M	N3-C2-N1	-3.18	123.70	128.68
24	B5	3557	A2M	N3-C2-N1	-3.18	123.71	128.68
63	A2	27	A2M	N3-C2-N1	-3.18	123.71	128.68
63	A2	1384	A2M	N3-C2-N1	-3.17	123.73	128.68
24	B5	1270	A2M	N3-C2-N1	-3.16	123.73	128.68
24	B5	4317	A2M	N3-C2-N1	-3.16	123.73	128.68
63	A2	513	A2M	N3-C2-N1	-3.16	123.74	128.68
63	A2	577	A2M	N3-C2-N1	-3.15	123.75	128.68
24	B5	1479	A2M	N3-C2-N1	-3.15	123.76	128.68
63	A2	159	A2M	N3-C2-N1	-3.14	123.77	128.68
63	A2	669	A2M	N3-C2-N1	-3.13	123.78	128.68
24	B5	400	A2M	N3-C2-N1	-3.13	123.78	128.68
24	B5	3450	A2M	N3-C2-N1	-3.13	123.79	128.68
24	B5	2658	A2M	N3-C2-N1	-3.13	123.79	128.68
24	B5	3966	6MZ	N3-C2-N1	-3.12	123.80	128.68
63	A2	485	A2M	N3-C2-N1	-3.12	123.81	128.68
24	B5	2630	A2M	N3-C2-N1	-3.12	123.81	128.68
63	A2	1833	6MZ	N3-C2-N1	-3.07	123.88	128.68
63	A2	116	OMU	O4-C4-C5	-3.06	119.78	125.16
24	B5	4244	OMU	O4-C4-C5	-3.05	119.79	125.16
63	A2	1805	OMU	O4-C4-C5	-3.00	119.88	125.16
63	A2	1289	OMU	O4-C4-C5	-3.00	119.89	125.16
63	A2	1249	B8N	N3-C2-N1	2.99	120.97	116.76
63	A2	1443	OMU	O4-C4-C5	-2.98	119.92	125.16
24	B5	2680	OMU	O4-C4-C5	-2.97	119.93	125.16
63	A2	1640	G7M	C2-N1-C6	-2.97	119.64	125.10
24	B5	4366	OMU	O4-C4-C5	-2.97	119.94	125.16
63	A2	429	OMU	O4-C4-C5	-2.96	119.95	125.16
24	B5	2258	OMU	O4-C4-C5	-2.96	119.95	125.16
24	B5	3657	OMU	O4-C4-C5	-2.96	119.96	125.16

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
63	A2	628	OMU	O4-C4-C5	-2.95	119.96	125.16
63	A2	172	OMU	O4-C4-C5	-2.95	119.97	125.16
63	A2	355	OMU	O4-C4-C5	-2.95	119.97	125.16
63	A2	121	OMU	O4-C4-C5	-2.94	119.98	125.16
24	B5	4052	OMU	O4-C4-C5	-2.94	119.99	125.16
63	A2	1327	OMU	O4-C4-C5	-2.94	119.99	125.16
24	B5	3973	OMU	O4-C4-C5	-2.94	119.99	125.16
24	B5	1489	A2M	C4-C5-N7	-2.80	106.49	109.40
63	A2	513	A2M	C4-C5-N7	-2.78	106.50	109.40
24	B5	2206	A2M	C4-C5-N7	-2.76	106.53	109.40
82	An	138	IAS	OD1-CG-CB	-2.75	117.42	125.43
24	B5	4336	A2M	C4-C5-N7	-2.74	106.55	109.40
63	A2	166	A2M	C4-C5-N7	-2.73	106.56	109.40
63	A2	159	A2M	C4-C5-N7	-2.72	106.56	109.40
24	B5	3450	A2M	C4-C5-N7	-2.71	106.57	109.40
24	B5	400	A2M	C4-C5-N7	-2.71	106.57	109.40
63	A2	1679	A2M	C4-C5-N7	-2.71	106.57	109.40
63	A2	577	A2M	C4-C5-N7	-2.71	106.58	109.40
24	B5	1810	A2M	C4-C5-N7	-2.70	106.59	109.40
24	B5	4269	A2M	C4-C5-N7	-2.69	106.59	109.40
24	B5	2658	A2M	C4-C5-N7	-2.69	106.60	109.40
63	A2	27	A2M	C4-C5-N7	-2.69	106.60	109.40
24	B5	3456	A2M	C4-C5-N7	-2.68	106.61	109.40
24	B5	2244	A2M	C4-C5-N7	-2.68	106.61	109.40
24	B5	3562	A2M	C4-C5-N7	-2.67	106.61	109.40
24	B5	398	A2M	C4-C5-N7	-2.67	106.61	109.40
24	B5	4317	A2M	C4-C5-N7	-2.67	106.61	109.40
63	A2	669	A2M	C4-C5-N7	-2.67	106.61	109.40
63	A2	469	A2M	C4-C5-N7	-2.66	106.63	109.40
24	B5	1479	A2M	C4-C5-N7	-2.65	106.63	109.40
63	A2	1384	A2M	C4-C5-N7	-2.65	106.64	109.40
24	B5	3557	A2M	C4-C5-N7	-2.64	106.64	109.40
63	A2	99	A2M	C4-C5-N7	-2.63	106.65	109.40
63	A2	485	A2M	C4-C5-N7	-2.63	106.66	109.40
63	A2	1032	A2M	C4-C5-N7	-2.63	106.66	109.40
24	B5	1270	A2M	C4-C5-N7	-2.62	106.67	109.40
24	B5	3514	5MC	C5-C4-N3	-2.61	118.86	121.67
24	B5	3599	A2M	C4-C5-N7	-2.61	106.68	109.40
24	B5	3966	6MZ	C4-C5-N7	-2.59	106.70	109.40
63	A2	1833	6MZ	C9-N6-C6	-2.58	120.65	122.87
24	B5	3517	A2M	C4-C5-N7	-2.56	106.73	109.40
24	B5	2630	A2M	C4-C5-N7	-2.56	106.73	109.40

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
63	A2	1843	4AC	C5-C4-N4	-2.55	118.48	122.92
24	B5	3492	A2M	C4-C5-N7	-2.54	106.75	109.40
24	B5	3550	UY1	CM2-O2'-C2'	-2.52	107.91	114.52
38	BA	216	V5N	O-C-CA	-2.52	118.18	124.78
63	A2	591	A2M	C4-C5-N7	-2.51	106.78	109.40
63	A2	1338	4AC	C6-C5-C4	2.47	119.99	116.96
24	B5	4193	5MC	C5-C4-N3	-2.47	119.01	121.67
30	Au	1	AME	O-C-CA	-2.46	118.33	124.78
24	B5	3550	UY1	C6-C5-C4	2.44	119.90	118.20
5	Ar	2	SAC	O-C-CA	-2.42	118.45	124.78
63	A2	1443	OMU	C1'-N1-C2	2.40	121.91	117.57
24	B5	4383	OMG	C8-N7-C5	2.39	107.55	102.99
24	B5	2207	OMG	C8-N7-C5	2.39	107.54	102.99
63	A2	1833	6MZ	C4-C5-N7	-2.39	106.91	109.40
24	B5	1260	OMG	C8-N7-C5	2.38	107.53	102.99
63	A2	1329	OMG	C8-N7-C5	2.38	107.52	102.99
24	B5	4369	OMG	C8-N7-C5	2.38	107.52	102.99
63	A2	645	OMG	C8-N7-C5	2.37	107.50	102.99
63	A2	868	OMG	C8-N7-C5	2.37	107.50	102.99
63	A2	684	OMG	C8-N7-C5	2.36	107.49	102.99
24	B5	3476	OMG	C8-N7-C5	2.36	107.48	102.99
63	A2	602	OMG	C8-N7-C5	2.36	107.48	102.99
63	A2	437	OMG	C8-N7-C5	2.35	107.47	102.99
63	A2	1448	OMG	C8-N7-C5	2.35	107.46	102.99
24	B5	1266	1MA	C8-N7-C5	2.34	107.46	102.99
32	AZ	2	SAC	O-C-CA	-2.34	118.64	124.78
24	B5	3359	OMG	C8-N7-C5	2.34	107.45	102.99
24	B5	4138	OMG	C8-N7-C5	2.34	107.44	102.99
24	B5	4364	OMG	C8-N7-C5	2.34	107.44	102.99
24	B5	3942	OMG	C8-N7-C5	2.34	107.44	102.99
63	A2	510	OMG	C8-N7-C5	2.33	107.43	102.99
24	B5	3974	OMG	C8-N7-C5	2.33	107.43	102.99
24	B5	4116	OMG	C8-N7-C5	2.33	107.43	102.99
24	B5	2719	OMG	C5-C6-N1	2.33	118.07	113.95
24	B5	3550	UY1	O2-C2-N1	-2.33	120.23	122.79
24	B5	1477	OMG	C5-C6-N1	2.33	118.06	113.95
24	B5	4138	OMG	C5-C6-N1	2.33	118.06	113.95
24	B5	4383	OMG	C5-C6-N1	2.33	118.06	113.95
24	B5	3676	OMG	C8-N7-C5	2.32	107.42	102.99
50	Ba	39	V5N	O-C-CA	-2.32	118.69	124.78
24	B5	1477	OMG	C8-N7-C5	2.32	107.42	102.99
24	B5	4245	OMG	C8-N7-C5	2.32	107.42	102.99

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
24	B5	3631	OMG	C8-N7-C5	2.32	107.41	102.99
24	B5	2267	OMG	C5-C6-N1	2.32	118.05	113.95
63	A2	602	OMG	C5-C6-N1	2.31	118.04	113.95
24	B5	2265	OMC	O2-C2-N3	-2.31	118.57	122.33
24	B5	4245	OMG	C5-C6-N1	2.31	118.03	113.95
24	B5	2719	OMG	C8-N7-C5	2.31	107.39	102.99
24	B5	3476	OMG	C5-C6-N1	2.31	118.03	113.95
24	B5	4240	OMG	C5-C6-N1	2.31	118.03	113.95
63	A2	645	OMG	C5-C6-N1	2.31	118.03	113.95
34	B8	75	OMG	C8-N7-C5	2.31	107.39	102.99
24	B5	3524	OMG	C8-N7-C5	2.31	107.38	102.99
24	B5	3676	OMG	C5-C6-N1	2.30	118.02	113.95
63	A2	1843	4AC	C6-C5-C4	2.30	119.78	116.96
34	B8	75	OMG	C5-C6-N1	2.30	118.02	113.95
24	B5	2207	OMG	C5-C6-N1	2.30	118.02	113.95
24	B5	3573	OMC	O2-C2-N3	-2.30	118.59	122.33
24	B5	3524	OMG	C5-C6-N1	2.30	118.02	113.95
63	A2	868	OMG	C5-C6-N1	2.30	118.01	113.95
24	B5	1266	1MA	C5-C6-N1	2.30	117.33	113.90
63	A2	1289	OMU	C1'-N1-C2	2.30	121.73	117.57
24	B5	4240	OMG	C8-N7-C5	2.30	107.36	102.99
63	A2	510	OMG	C5-C6-N1	2.29	118.00	113.95
24	B5	3631	OMG	C5-C6-N1	2.29	118.00	113.95
24	B5	2267	OMG	C8-N7-C5	2.29	107.36	102.99
24	B5	4364	OMG	C5-C6-N1	2.29	118.00	113.95
63	A2	1491	OMG	C5-C6-N1	2.29	118.00	113.95
63	A2	437	OMG	C5-C6-N1	2.29	117.99	113.95
63	A2	1329	OMG	C5-C6-N1	2.29	117.99	113.95
24	B5	1580	OMG	C8-N7-C5	2.29	107.34	102.99
24	B5	3942	OMG	C5-C6-N1	2.29	117.99	113.95
24	B5	3359	OMG	C5-C6-N1	2.28	117.98	113.95
24	B5	3974	OMG	C5-C6-N1	2.28	117.98	113.95
24	B5	4369	OMG	C5-C6-N1	2.28	117.98	113.95
63	A2	1448	OMG	C5-C6-N1	2.28	117.98	113.95
24	B5	1580	OMG	C5-C6-N1	2.28	117.98	113.95
63	A2	1491	OMG	C8-N7-C5	2.28	107.33	102.99
24	B5	1260	OMG	C5-C6-N1	2.28	117.97	113.95
63	A2	684	OMG	C5-C6-N1	2.27	117.97	113.95
24	B5	4116	OMG	C5-C6-N1	2.27	117.96	113.95
63	A2	628	OMU	O2-C2-N1	-2.27	119.77	122.79
63	A2	1338	4AC	C5-C4-N4	-2.26	119.00	122.92
12	Br	2	SAC	O-C-CA	-2.23	118.92	124.78

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
23	Aw	62	HY3	O-C-CA	-2.22	118.64	124.83
24	B5	2194	OMC	O2-C2-N3	-2.19	118.77	122.33
63	A2	1327	OMU	O2-C2-N1	-2.18	119.89	122.79
63	A2	1249	B8N	C5-C4-N3	2.16	120.17	116.17
24	B5	4244	OMU	O2-C2-N1	-2.13	119.95	122.79
63	A2	463	OMC	O2-C2-N3	-2.08	118.95	122.33
24	B5	1632	PSU	O4'-C1'-C2'	2.07	108.06	105.14
24	B5	3514	5MC	O2-C2-N3	-2.05	119.00	122.33
63	A2	1704	OMC	O2-C2-N3	-2.02	119.05	122.33
63	A2	172	OMU	O2-C2-N1	-2.02	120.11	122.79
63	A2	116	OMU	O2-C2-N1	-2.01	120.11	122.79
24	B5	1266	1MA	N1-C2-N3	-2.00	123.69	126.02

There are no chirality outliers.

All (115) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	Bo	53	MLZ	O-C-CA-CB
24	B5	3433	OMC	C2'-C1'-N1-C2
24	B5	3433	OMC	C2'-C1'-N1-C6
24	B5	3517	A2M	O4'-C4'-C5'-O5'
24	B5	4166	PSU	C2'-C1'-C5-C4
24	B5	4166	PSU	C2'-C1'-C5-C6
24	B5	4193	5MC	C2'-C1'-N1-C6
24	B5	4336	A2M	C4'-C5'-O5'-P
24	B5	4382	PSU	O4'-C1'-C5-C4
24	B5	4382	PSU	O4'-C1'-C5-C6
24	B5	4382	PSU	C3'-C4'-C5'-O5'
38	BA	216	V5N	O-C-CA-CB
43	BB	245	HIC	CA-CB-CG-ND1
63	A2	429	OMU	C2'-C1'-N1-C2
63	A2	429	OMU	C2'-C1'-N1-C6
63	A2	513	A2M	O4'-C4'-C5'-O5'
63	A2	645	OMG	O4'-C4'-C5'-O5'
63	A2	1448	OMG	C3'-C4'-C5'-O5'
63	A2	1249	B8N	N34-C33-C34-O35
63	A2	1338	4AC	O7-C7-N4-C4
63	A2	1338	4AC	CM7-C7-N4-C4
63	A2	1843	4AC	N3-C4-N4-C7
63	A2	1843	4AC	C5-C4-N4-C7
63	A2	1843	4AC	O7-C7-N4-C4
63	A2	1843	4AC	CM7-C7-N4-C4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
47	BC	2	AYA	OT-CT-N-CA
47	BC	2	AYA	CM-CT-N-CA
24	B5	398	A2M	O4'-C4'-C5'-O5'
24	B5	398	A2M	C3'-C4'-C5'-O5'
24	B5	1489	A2M	O4'-C4'-C5'-O5'
24	B5	2207	OMG	O4'-C4'-C5'-O5'
63	A2	513	A2M	C3'-C4'-C5'-O5'
63	A2	645	OMG	C3'-C4'-C5'-O5'
63	A2	669	A2M	O4'-C4'-C5'-O5'
63	A2	669	A2M	C3'-C4'-C5'-O5'
30	Au	1	AME	CT2-CT1-N-CA
30	Au	1	AME	OT-CT1-N-CA
63	A2	1249	B8N	N34-C33-C34-O36
24	B5	2207	OMG	C3'-C4'-C5'-O5'
24	B5	3517	A2M	C3'-C4'-C5'-O5'
24	B5	4382	PSU	O4'-C4'-C5'-O5'
63	A2	99	A2M	O4'-C4'-C5'-O5'
63	A2	628	OMU	C2'-C1'-N1-C6
24	B5	4193	5MC	C2'-C1'-N1-C2
24	B5	1489	A2M	C3'-C4'-C5'-O5'
63	A2	577	A2M	C3'-C4'-C5'-O5'
63	A2	1448	OMG	O4'-C4'-C5'-O5'
63	A2	1852	MA6	C5-C6-N6-C9
63	A2	628	OMU	C2'-C1'-N1-C2
63	A2	1640	G7M	O4'-C4'-C5'-O5'
63	A2	628	OMU	O4'-C1'-N1-C6
63	A2	99	A2M	C3'-C4'-C5'-O5'
63	A2	577	A2M	O4'-C4'-C5'-O5'
63	A2	429	OMU	O4'-C4'-C5'-O5'
63	A2	429	OMU	O4'-C1'-N1-C6
63	A2	1249	B8N	C32-C33-C34-O36
47	BC	2	AYA	C-CA-N-CT
24	B5	3576	PSU	C4'-C5'-O5'-P
63	A2	645	OMG	C4'-C5'-O5'-P
63	A2	1852	MA6	C4'-C5'-O5'-P
24	B5	3550	UY1	C4'-C5'-O5'-P
63	A2	1640	G7M	C3'-C4'-C5'-O5'
32	AZ	2	SAC	C-CA-N-C1A
32	AZ	2	SAC	CB-CA-N-C1A
63	A2	429	OMU	O4'-C1'-N1-C2
24	B5	1260	OMG	C3'-C2'-O2'-CM2
24	B5	1284	OMC	C3'-C2'-O2'-CM2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
24	B5	1810	A2M	C3'-C2'-O2'-CM'
24	B5	2680	OMU	C3'-C2'-O2'-CM2
24	B5	3631	OMG	C3'-C2'-O2'-CM2
63	A2	1448	OMG	C3'-C2'-O2'-CM2
63	A2	1338	4AC	N3-C4-N4-C7
82	An	138	IAS	C-CA-CB-CG
54	Bb	5	MLZ	N-CA-CB-CG
63	A2	591	A2M	C3'-C4'-C5'-O5'
63	A2	1249	B8N	C32-C33-C34-O35
24	B5	4193	5MC	O4'-C1'-N1-C2
24	B5	4246	PSU	C4'-C5'-O5'-P
63	A2	628	OMU	O4'-C1'-N1-C2
24	B5	4193	5MC	O4'-C1'-N1-C6
24	B5	3433	OMC	O4'-C1'-N1-C6
24	B5	398	A2M	C3'-C2'-O2'-CM'
24	B5	3557	A2M	C3'-C2'-O2'-CM'
24	B5	4282	OMC	C3'-C2'-O2'-CM2
24	B5	4383	OMG	C3'-C2'-O2'-CM2
63	A2	355	OMU	C3'-C2'-O2'-CM2
24	B5	3619	OMC	C4'-C5'-O5'-P
63	A2	429	OMU	C3'-C4'-C5'-O5'
24	B5	2207	OMG	C3'-C2'-O2'-CM2
24	B5	2265	OMC	C3'-C2'-O2'-CM2
24	B5	2667	OMC	C3'-C2'-O2'-CM2
24	B5	2704	OMC	C3'-C2'-O2'-CM2
24	B5	3619	OMC	C3'-C2'-O2'-CM2
24	B5	4138	OMG	C3'-C2'-O2'-CM2
63	A2	868	OMG	C3'-C2'-O2'-CM2
63	A2	684	OMG	O4'-C4'-C5'-O5'
54	Bb	5	MLZ	C-CA-CB-CG
24	B5	398	A2M	C1'-C2'-O2'-CM'
24	B5	3619	OMC	C1'-C2'-O2'-CM2
24	B5	3676	OMG	C1'-C2'-O2'-CM2
63	A2	510	OMG	C1'-C2'-O2'-CM2
63	A2	868	OMG	C1'-C2'-O2'-CM2
24	B5	1820	OMC	C3'-C2'-O2'-CM2
24	B5	3676	OMG	C3'-C2'-O2'-CM2
24	B5	2194	OMC	O4'-C4'-C5'-O5'
23	Aw	62	HY3	O-C-CA-C3
24	B5	3433	OMC	O4'-C1'-N1-C2
24	B5	3492	A2M	O4'-C4'-C5'-O5'
82	An	138	IAS	N-CA-CB-CG

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
24	B5	3476	OMG	C3'-C2'-O2'-CM2
63	A2	27	A2M	C3'-C2'-O2'-CM'
63	A2	510	OMG	C3'-C2'-O2'-CM2
63	A2	1704	OMC	C3'-C2'-O2'-CM2
43	BB	245	HIC	CA-CB-CG-CD2
24	B5	2194	OMC	C2'-C1'-N1-C2

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 769 ligands modelled in this entry, 428 are monoatomic and 306 are unknown - leaving 35 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
93	IHP	DB	901	-	36,36,36	1.55	6 (16%)	54,60,60	1.09	3 (5%)
94	SPD	A2	1964	-	9,9,9	0.15	0	8,8,8	0.17	0
95	SPM	B5	5061	-	13,13,13	0.15	0	12,12,12	0.14	0
94	SPD	A2	1950	-	9,9,9	0.15	0	8,8,8	0.19	0
94	SPD	B5	5165	-	9,9,9	0.16	0	8,8,8	0.19	0
96	GTP	B7	216	29	26,34,34	0.95	2 (7%)	32,54,54	0.78	0
94	SPD	A2	1978	-	9,9,9	0.15	0	8,8,8	0.20	0
94	SPD	A2	1986	-	9,9,9	0.16	0	8,8,8	0.18	0
94	SPD	B5	4945	-	9,9,9	0.16	0	8,8,8	0.19	0
94	SPD	B5	5123	-	9,9,9	0.15	0	8,8,8	0.18	0
94	SPD	B5	5144	-	9,9,9	0.15	0	8,8,8	0.22	0
94	SPD	B5	5103	-	9,9,9	0.15	0	8,8,8	0.17	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
94	SPD	B5	4933	-	9,9,9	0.15	0	8,8,8	0.17	0
94	SPD	B5	5263	-	9,9,9	0.16	0	8,8,8	0.15	0
95	SPM	B5	5018	-	13,13,13	0.15	0	12,12,12	0.22	0
94	SPD	A2	1985	-	9,9,9	0.16	0	8,8,8	0.17	0
94	SPD	B5	5205	-	9,9,9	0.15	0	8,8,8	0.18	0
94	SPD	B5	5302	-	9,9,9	0.15	0	8,8,8	0.15	0
94	SPD	B5	4997	-	9,9,9	0.15	0	8,8,8	0.18	0
94	SPD	B5	5405	-	9,9,9	0.16	0	8,8,8	0.18	0
94	SPD	A2	1957	-	9,9,9	0.15	0	8,8,8	0.19	0
94	SPD	A2	1971	-	9,9,9	0.15	0	8,8,8	0.19	0
94	SPD	A2	1943	-	9,9,9	0.15	0	8,8,8	0.17	0
94	SPD	B5	5082	-	9,9,9	0.15	0	8,8,8	0.17	0
94	SPD	B5	5322	-	9,9,9	0.15	0	8,8,8	0.18	0
94	SPD	B5	5363	-	9,9,9	0.16	0	8,8,8	0.19	0
94	SPD	B5	4975	-	9,9,9	0.16	0	8,8,8	0.19	0
94	SPD	B5	5343	-	9,9,9	0.15	0	8,8,8	0.17	0
94	SPD	B5	5041	-	9,9,9	0.14	0	8,8,8	0.20	0
94	SPD	B5	5385	-	9,9,9	0.15	0	8,8,8	0.18	0
94	SPD	B5	5224	-	9,9,9	0.16	0	8,8,8	0.18	0
95	SPM	A2	1994	-	13,13,13	0.15	0	12,12,12	0.16	0
94	SPD	B5	5244	-	9,9,9	0.15	0	8,8,8	0.18	0
94	SPD	B5	4912	-	9,9,9	0.16	0	8,8,8	0.17	0
94	SPD	B5	4954	-	9,9,9	0.15	0	8,8,8	0.18	0

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
93	IHP	DB	901	-	-	8/30/54/54	0/1/1/1
94	SPD	A2	1964	-	-	0/7/7/7	-
95	SPM	B5	5061	-	-	0/11/11/11	-
94	SPD	A2	1950	-	-	0/7/7/7	-
94	SPD	B5	5165	-	-	1/7/7/7	-
96	GTP	B7	216	29	-	0/18/38/38	0/3/3/3
94	SPD	A2	1978	-	-	1/7/7/7	-
94	SPD	A2	1986	-	-	0/7/7/7	-
94	SPD	B5	4945	-	-	0/7/7/7	-
94	SPD	B5	5123	-	-	0/7/7/7	-
94	SPD	B5	5144	-	-	0/7/7/7	-
94	SPD	B5	5103	-	-	0/7/7/7	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
94	SPD	B5	4933	-	-	0/7/7/7	-
94	SPD	B5	5263	-	-	1/7/7/7	-
95	SPM	B5	5018	-	-	1/11/11/11	-
94	SPD	A2	1985	-	-	1/7/7/7	-
94	SPD	B5	5205	-	-	0/7/7/7	-
94	SPD	B5	5302	-	-	1/7/7/7	-
94	SPD	B5	4997	-	-	0/7/7/7	-
94	SPD	B5	5405	-	-	1/7/7/7	-
94	SPD	A2	1957	-	-	0/7/7/7	-
94	SPD	A2	1971	-	-	0/7/7/7	-
94	SPD	A2	1943	-	-	0/7/7/7	-
94	SPD	B5	5082	-	-	0/7/7/7	-
94	SPD	B5	5322	-	-	1/7/7/7	-
94	SPD	B5	5363	-	-	0/7/7/7	-
94	SPD	B5	4975	-	-	2/7/7/7	-
94	SPD	B5	5343	-	-	1/7/7/7	-
94	SPD	B5	5041	-	-	0/7/7/7	-
94	SPD	B5	5385	-	-	1/7/7/7	-
94	SPD	B5	5224	-	-	1/7/7/7	-
95	SPM	A2	1994	-	-	2/11/11/11	-
94	SPD	B5	5244	-	-	0/7/7/7	-
94	SPD	B5	4912	-	-	0/7/7/7	-
94	SPD	B5	4954	-	-	0/7/7/7	-

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
93	DB	901	IHP	P2-O12	3.53	1.66	1.59
93	DB	901	IHP	P5-O15	3.43	1.65	1.59
93	DB	901	IHP	P1-O11	3.25	1.65	1.59
93	DB	901	IHP	P6-O16	3.24	1.65	1.59
93	DB	901	IHP	P4-O14	3.18	1.65	1.59
93	DB	901	IHP	P3-O13	3.12	1.65	1.59
96	B7	216	GTP	C5-C6	-2.60	1.42	1.47
96	B7	216	GTP	C8-N7	-2.07	1.31	1.35

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
93	DB	901	IHP	C6-C5-C4	4.26	119.74	110.41
93	DB	901	IHP	C5-C4-C3	3.49	118.05	110.41
93	DB	901	IHP	C5-C6-C1	3.40	117.86	110.41

There are no chirality outliers.

All (23) torsion outliers are listed below:

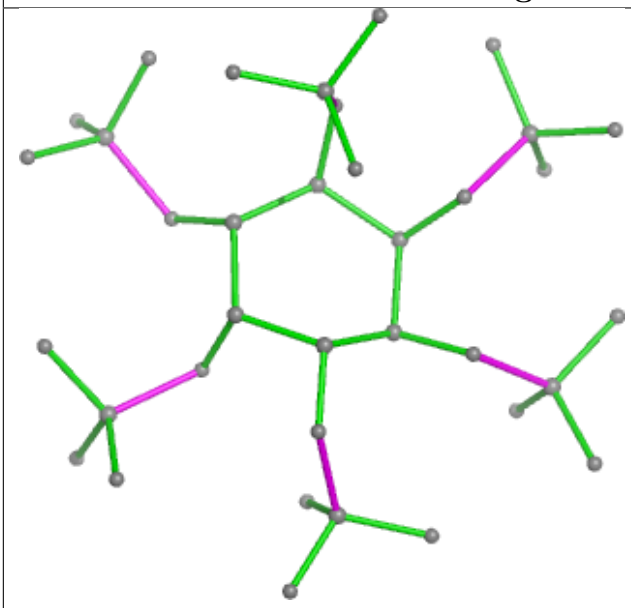
Mol	Chain	Res	Type	Atoms
93	DB	901	IHP	C1-C2-O12-P2
93	DB	901	IHP	C4-C5-O15-P5
93	DB	901	IHP	C4-O14-P4-O24
95	A2	1994	SPM	C8-C9-N10-C11
93	DB	901	IHP	C2-O12-P2-O32
93	DB	901	IHP	C2-O12-P2-O42
95	A2	1994	SPM	C12-C11-N10-C9
94	B5	5263	SPD	C2-C3-C4-C5
93	DB	901	IHP	C1-O11-P1-O21
94	B5	5224	SPD	C2-C3-C4-C5
94	B5	5322	SPD	C2-C3-C4-C5
94	B5	5405	SPD	C2-C3-C4-C5
94	A2	1978	SPD	C2-C3-C4-C5
93	DB	901	IHP	C5-O15-P5-O45
93	DB	901	IHP	C6-O16-P6-O36
94	B5	5343	SPD	C2-C3-C4-C5
94	A2	1985	SPD	C2-C3-C4-C5
94	B5	5385	SPD	C2-C3-C4-C5
94	B5	4975	SPD	C4-C5-N6-C7
95	B5	5018	SPM	C8-C9-N10-C11
94	B5	5302	SPD	C2-C3-C4-C5
94	B5	4975	SPD	C2-C3-C4-C5
94	B5	5165	SPD	C2-C3-C4-C5

There are no ring outliers.

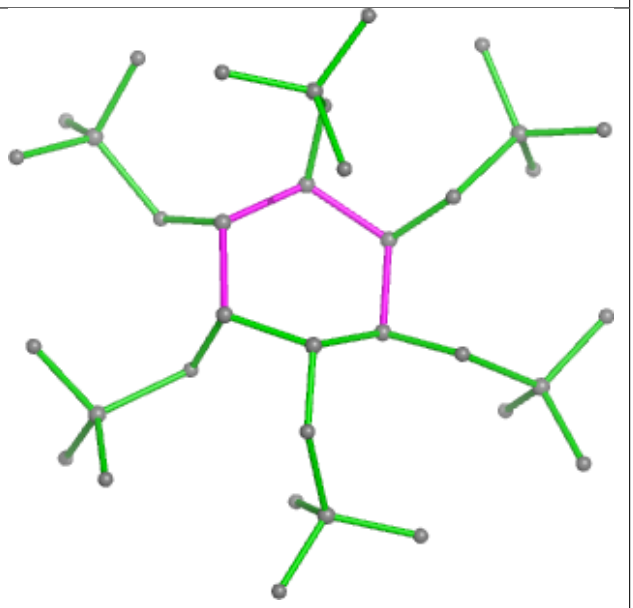
No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

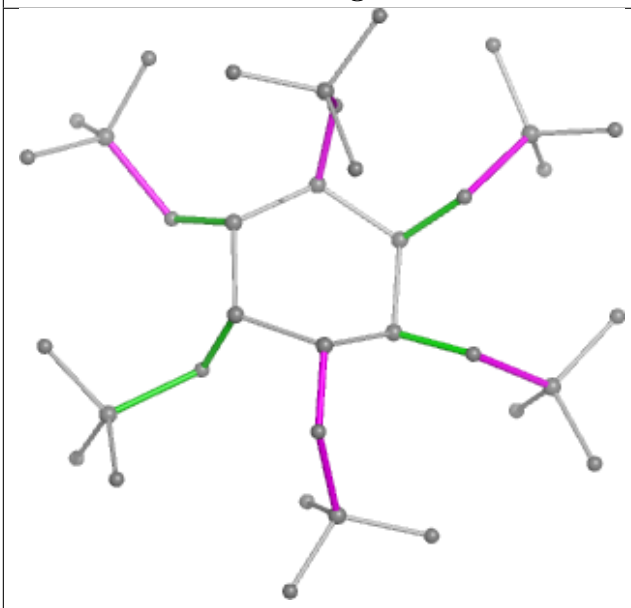
Ligand IHP DB 901



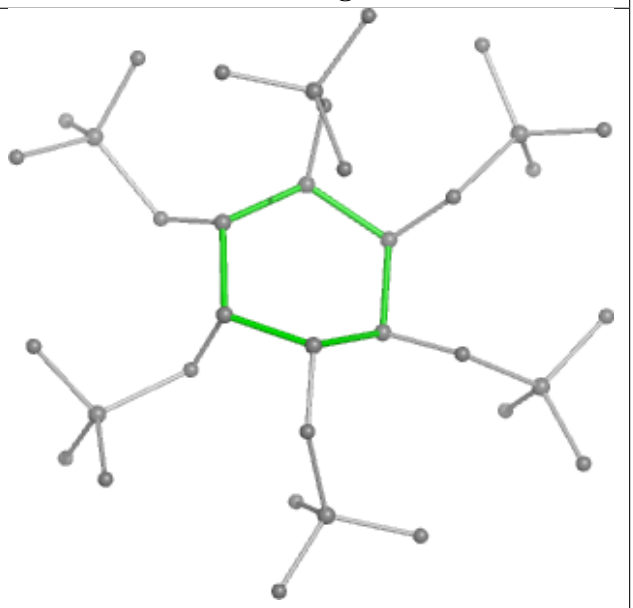
Bond lengths



Bond angles

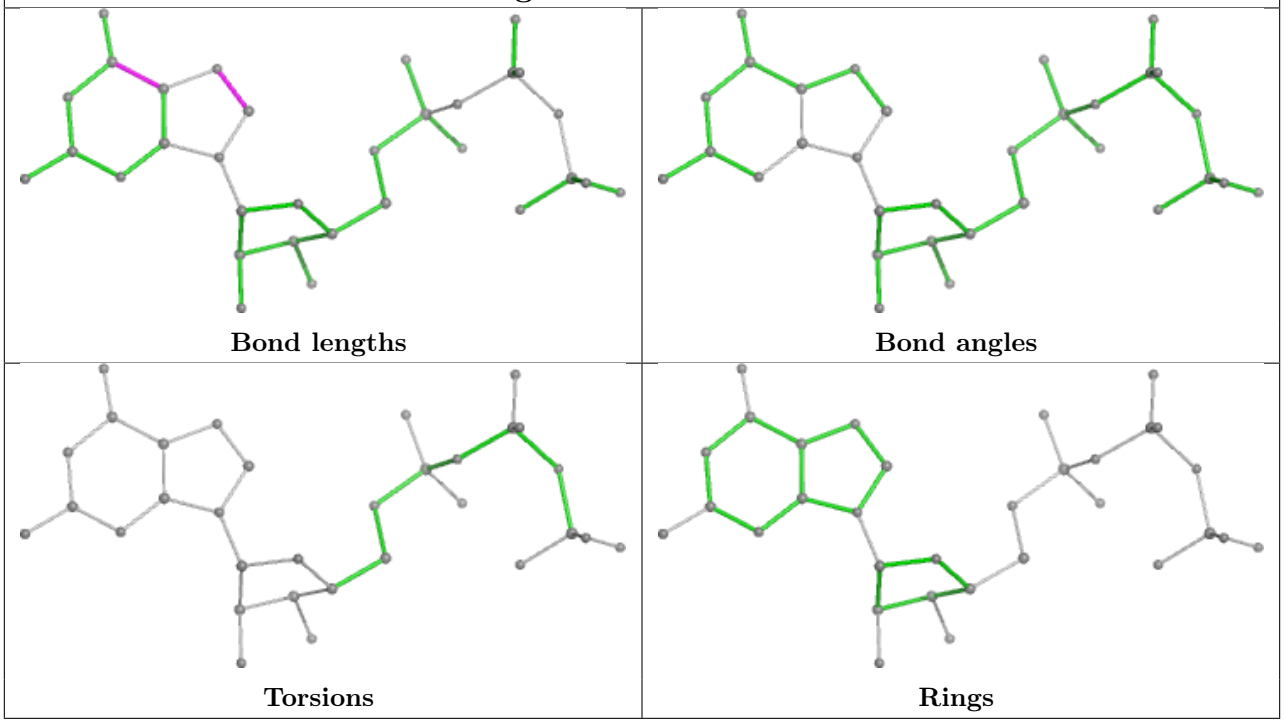


Torsions



Rings

Ligand GTP B7 216



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

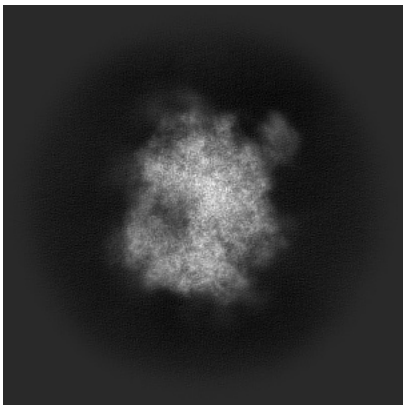
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-50124. These allow visual inspection of the internal detail of the map and identification of artifacts.

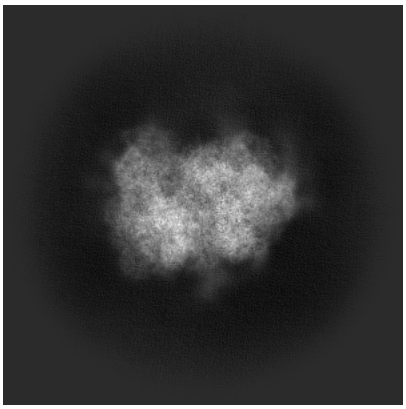
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

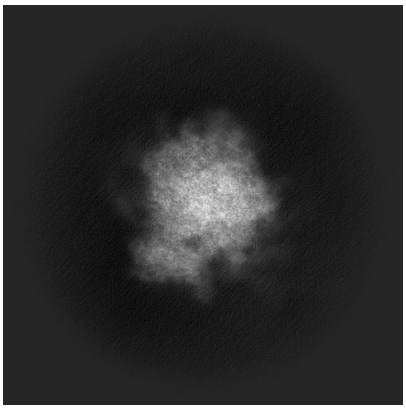
6.1.1 Primary map



X

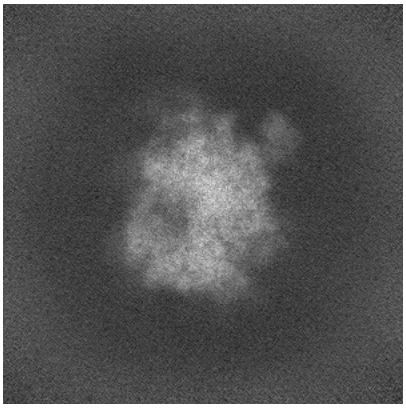


Y

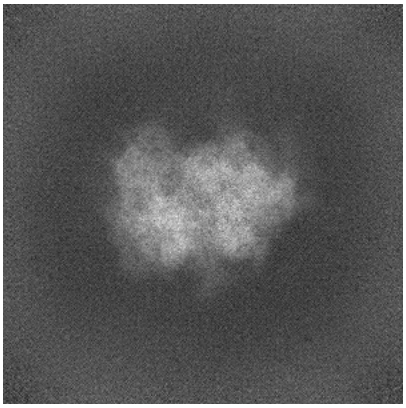


Z

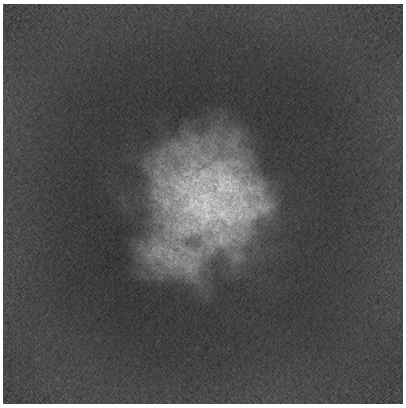
6.1.2 Raw map



X



Y

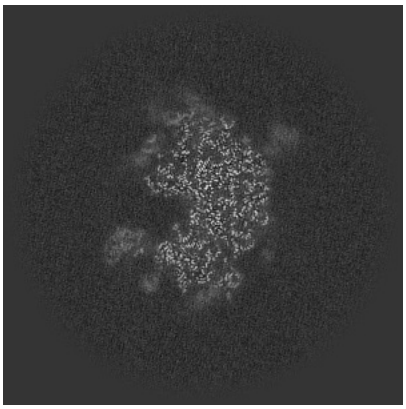


Z

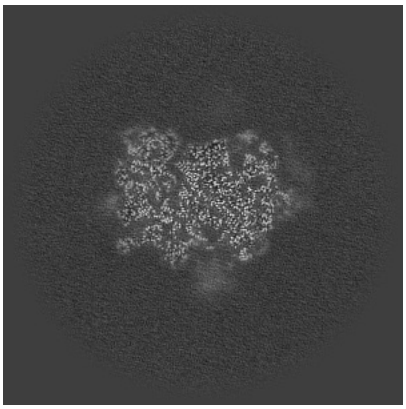
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

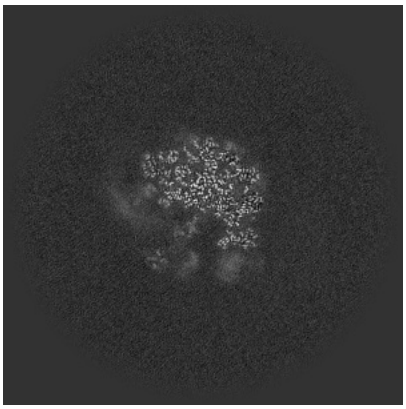
6.2.1 Primary map



X Index: 280

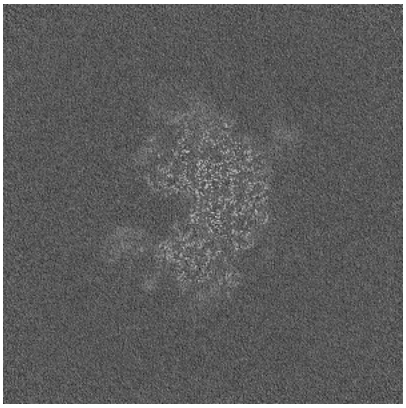


Y Index: 280

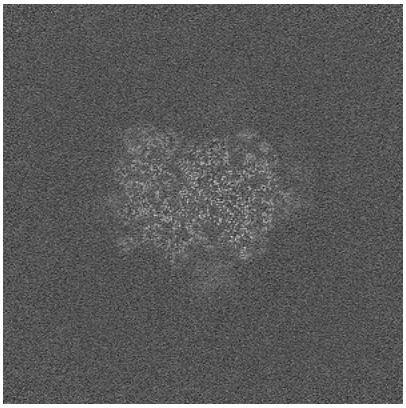


Z Index: 280

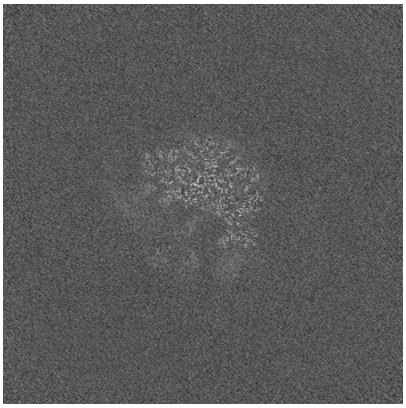
6.2.2 Raw map



X Index: 280



Y Index: 280

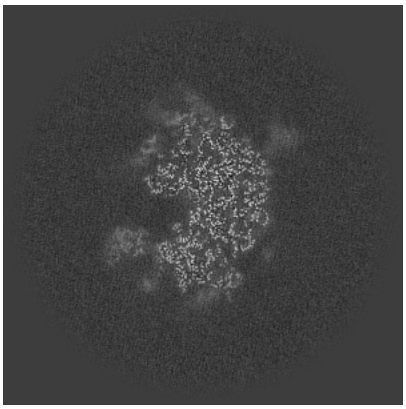


Z Index: 280

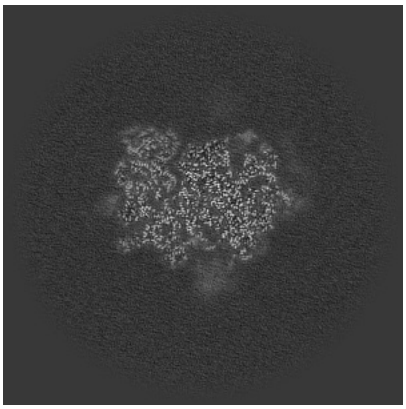
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

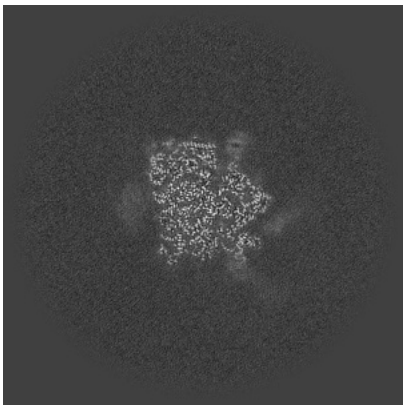
6.3.1 Primary map



X Index: 279

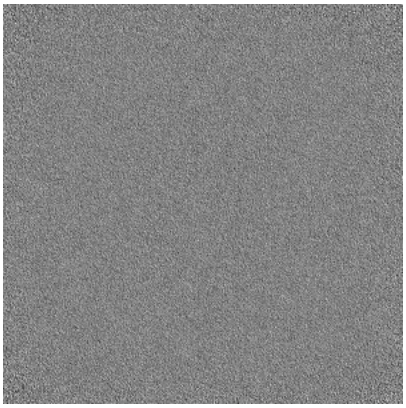


Y Index: 281

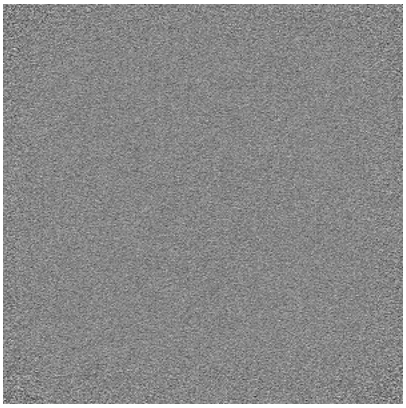


Z Index: 309

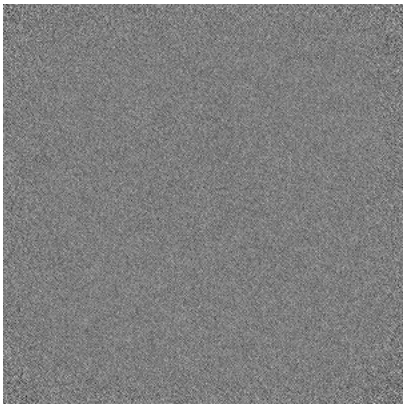
6.3.2 Raw map



X Index: 0



Y Index: 0

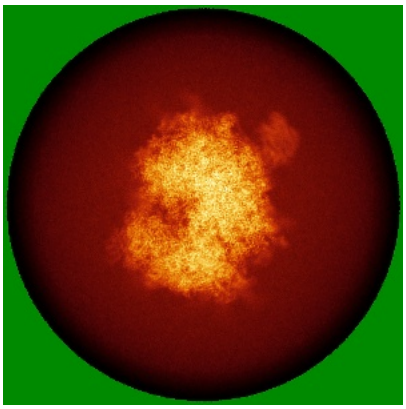


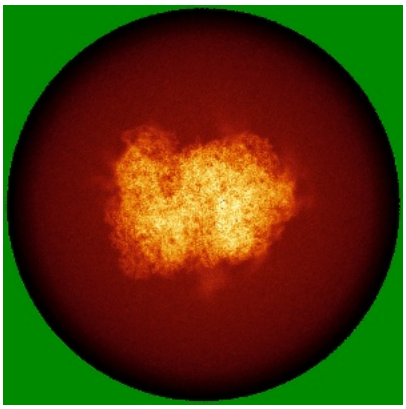
Z Index: 0

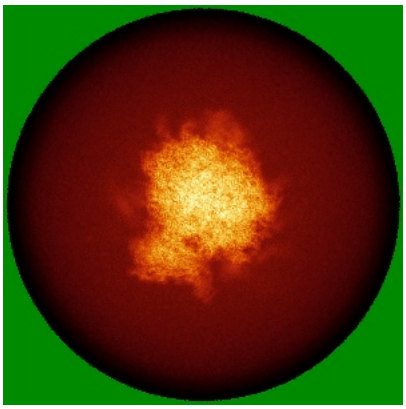
The images above show the largest variance slices of the map in three orthogonal directions.

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

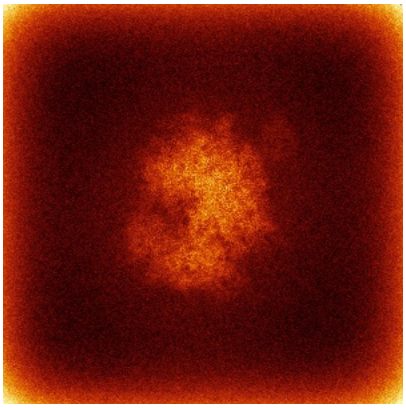
6.4.1 Primary map

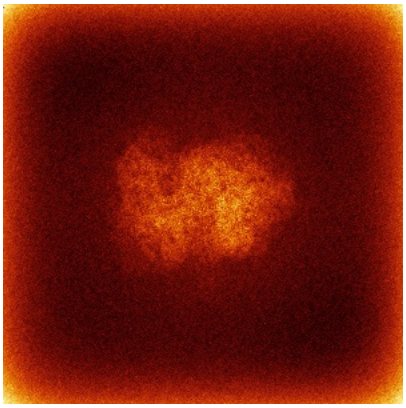

X

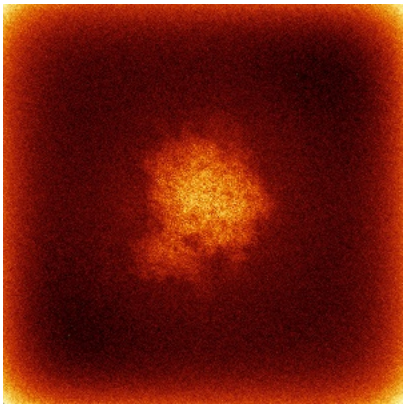

Y


Z

6.4.2 Raw map


X


Y


Z

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

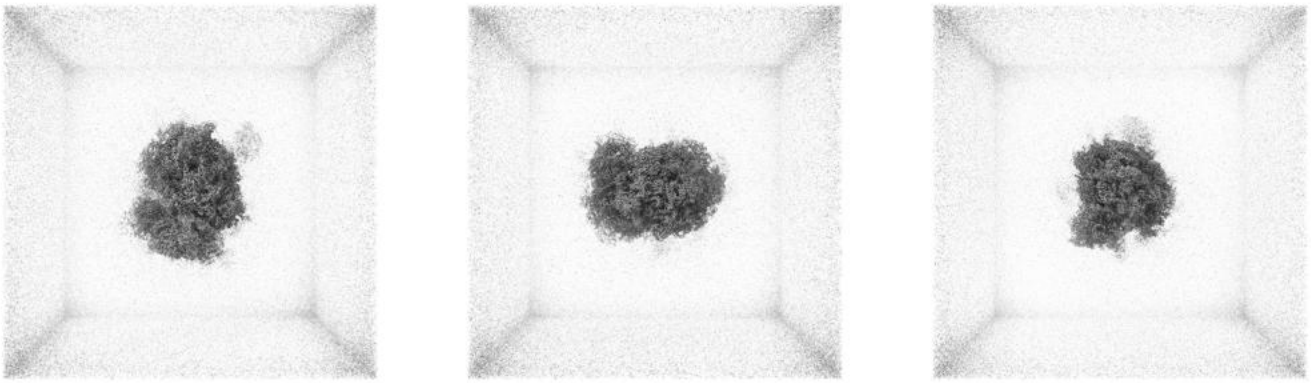
6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.275. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

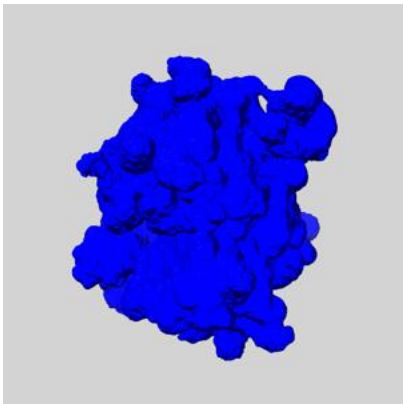
6.6 Mask visualisation

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

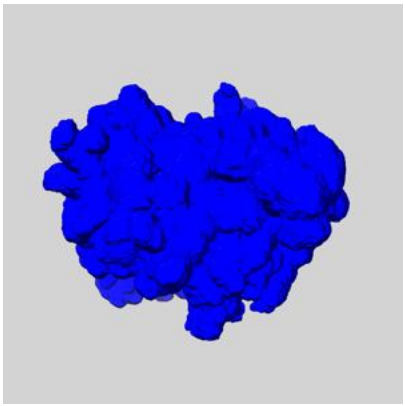
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

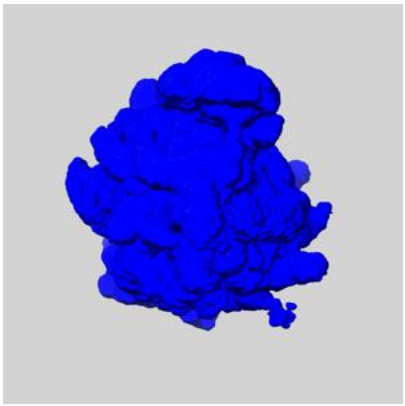
6.6.1 emd_50124_msk_1.map



X

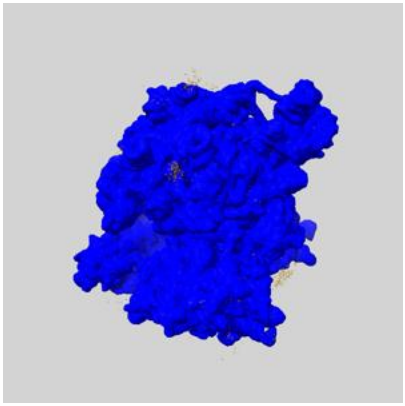


Y

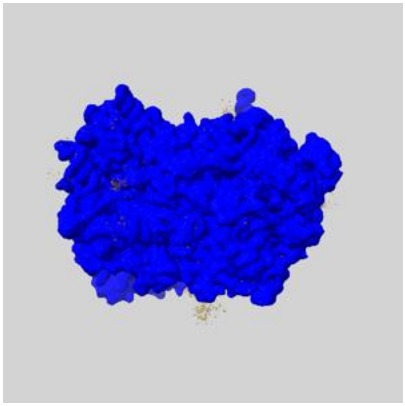


Z

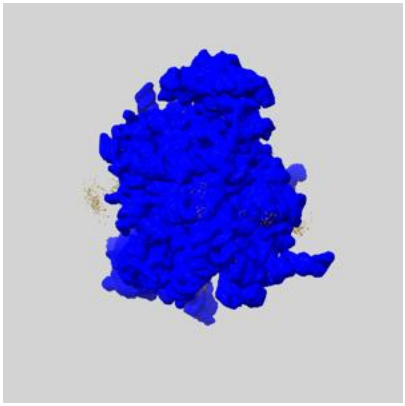
6.6.2 emd_50124_msk_2.map



X



Y

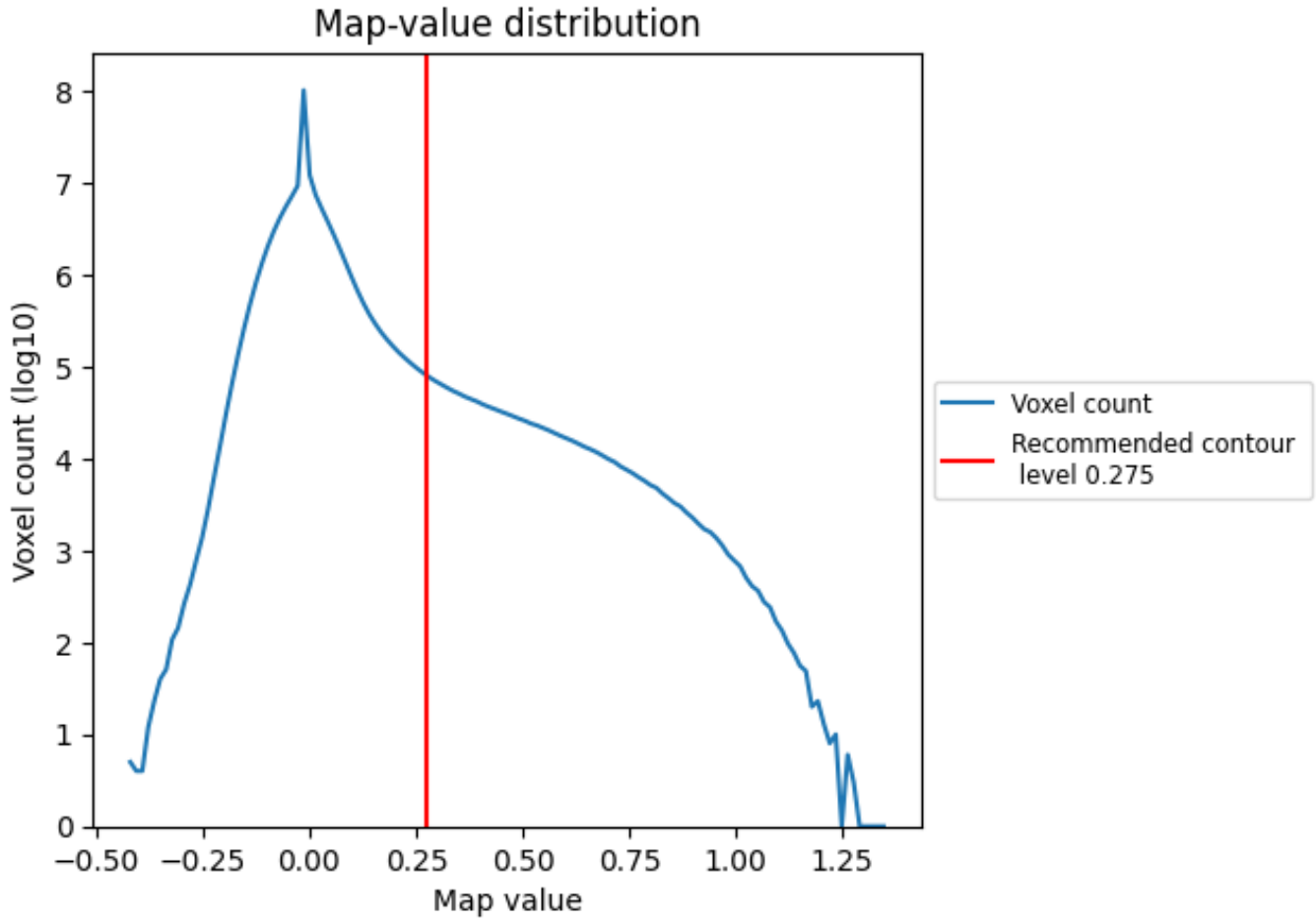


Z

7 Map analysis

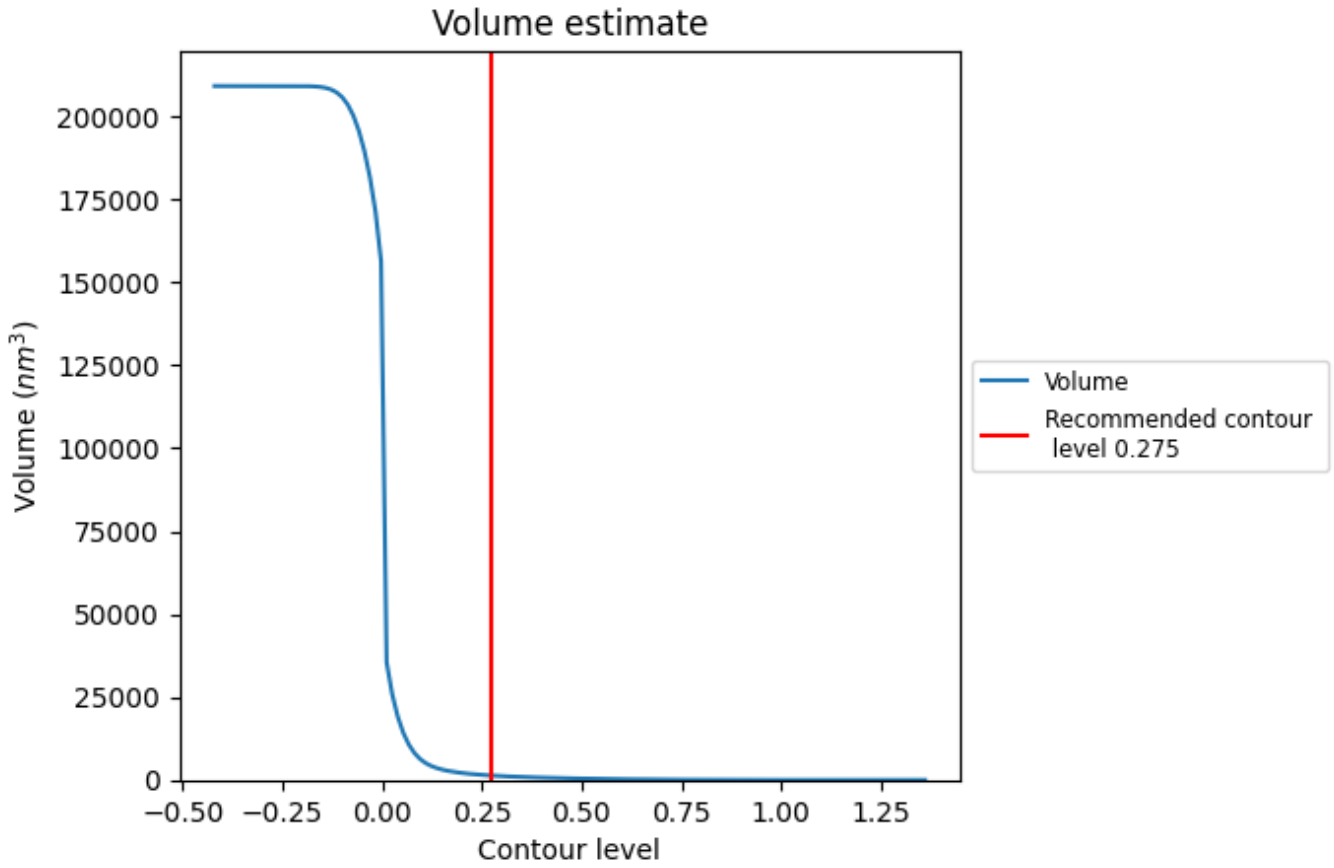
This section contains the results of statistical analysis of the map.

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.

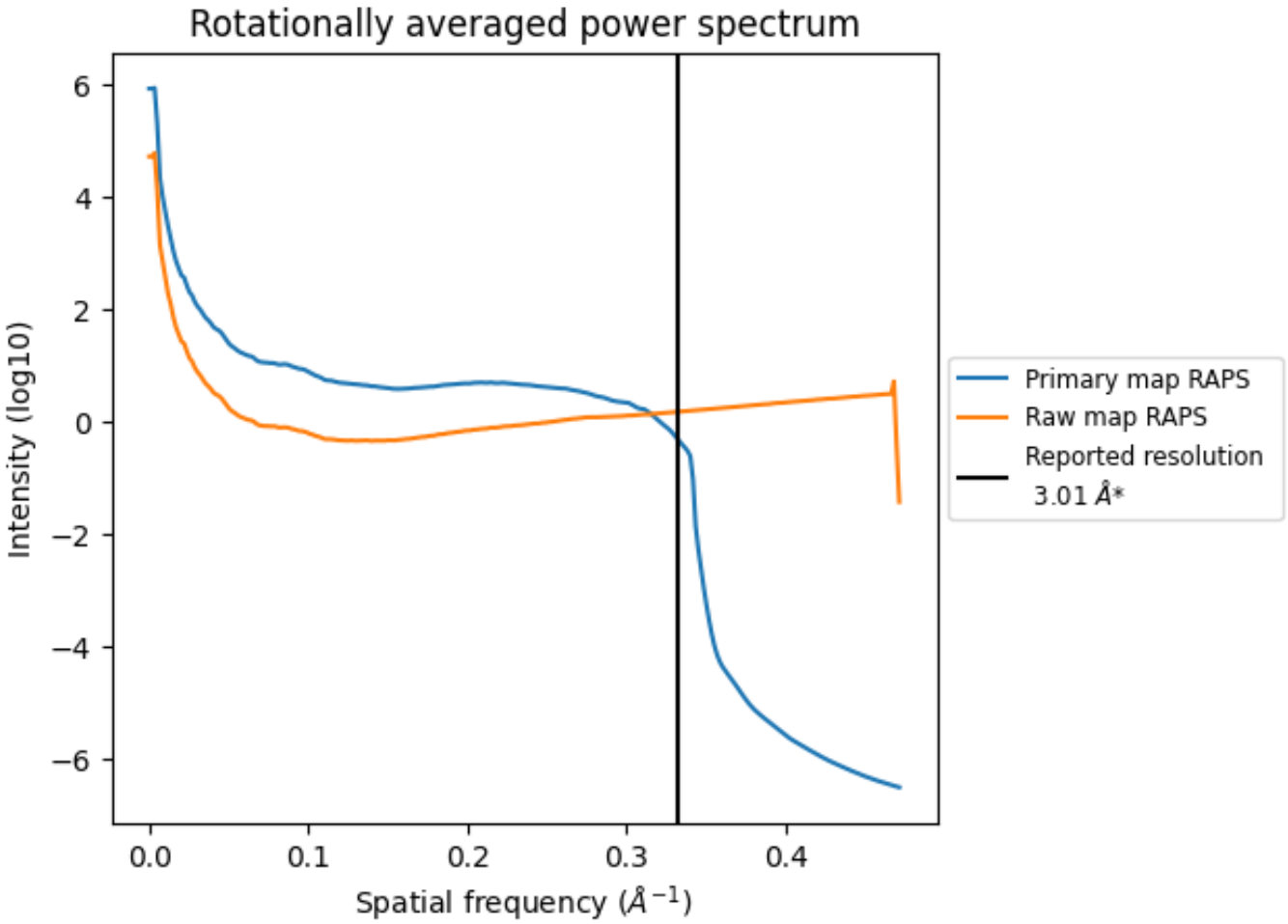
7.2 Volume estimate



The volume at the recommended contour level is 1330 nm^3; this corresponds to an approximate mass of 1201 kDa.

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

7.3 Rotationally averaged power spectrum (i)

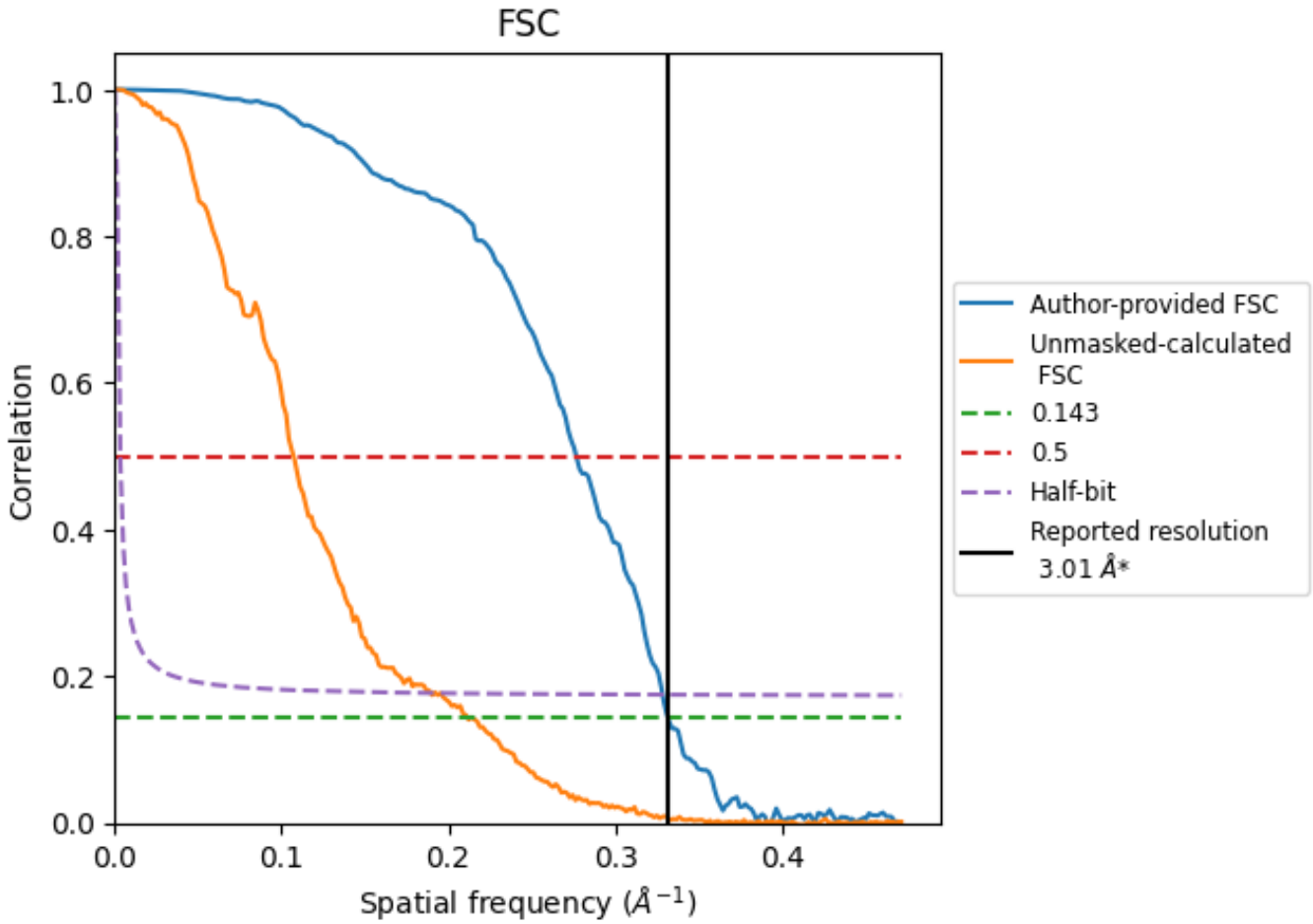


*Reported resolution corresponds to spatial frequency of 0.332 Å^{-1}

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 0.332 Å^{-1}

8.2 Resolution estimates (i)

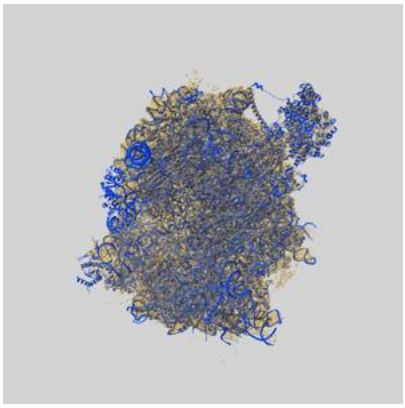
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.01	-	-
Author-provided FSC curve	3.01	3.61	3.04
Unmasked-calculated*	4.73	9.33	5.27

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.73 differs from the reported value 3.01 by more than 10 %

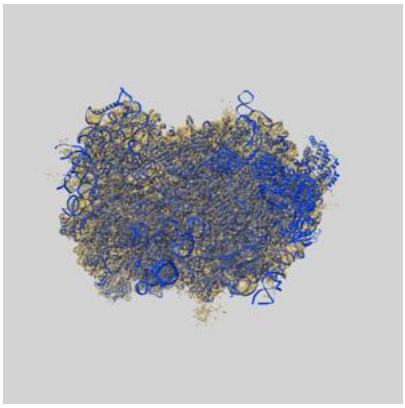
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-50124 and PDB model 9F1B. Per-residue inclusion information can be found in section 3 on page 33.

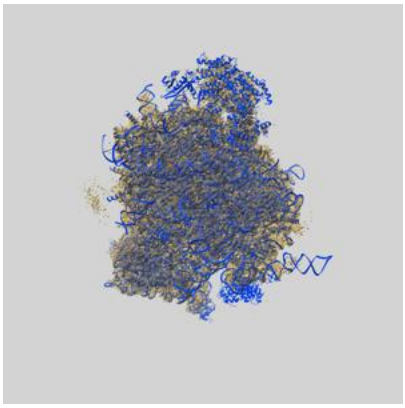
9.1 Map-model overlay



X



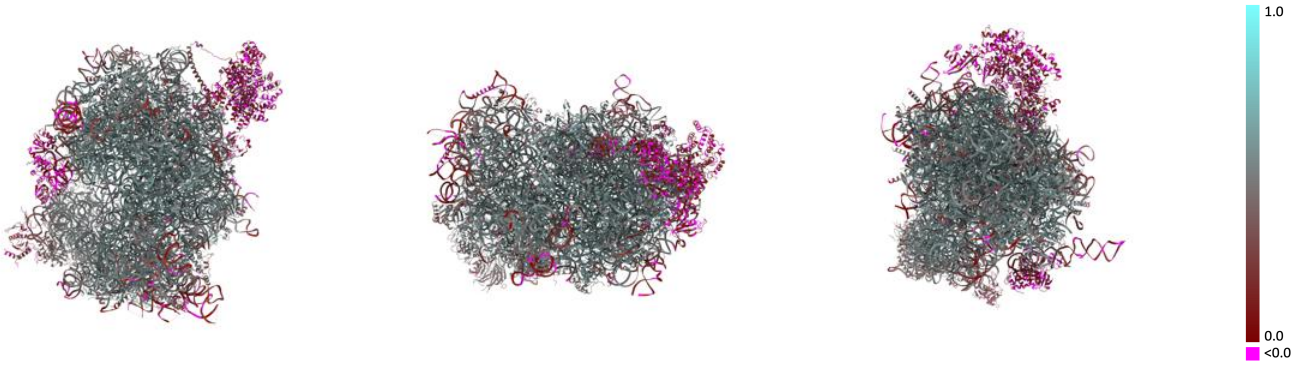
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.275 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.

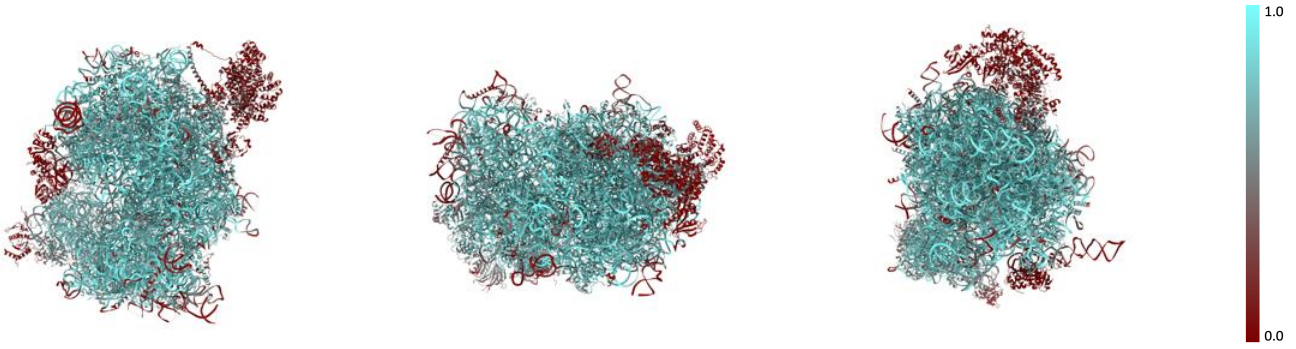
9.2 Q-score mapped to coordinate model



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.

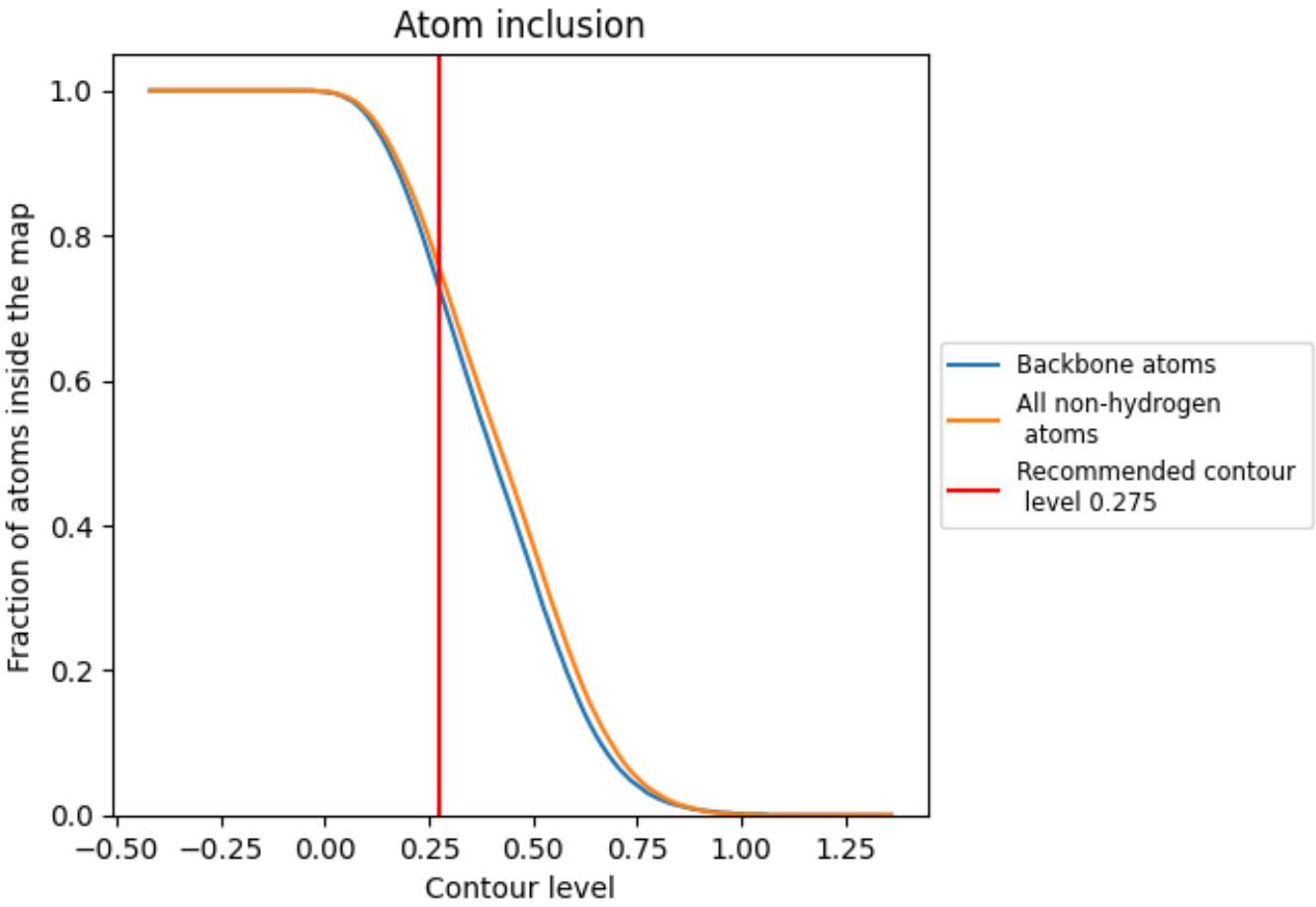
9.3 Atom inclusion mapped to coordinate model



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 (0.275).

9.4 Atom inclusion (i)



At the recommended contour level, 73% of all backbone atoms, 76% 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 (0.275) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7550	0.4750
A2	0.8340	0.4770
AA	0.6760	0.4940
AB	0.6040	0.4780
AC	0.1580	0.2200
AD	0.5770	0.4370
AE	0.7980	0.5180
AF	0.4480	0.3760
AG	0.8120	0.4960
AH	0.1110	0.3930
AT	0.5350	0.4300
AZ	0.7000	0.5000
Aa	0.6880	0.5030
Ab	0.7800	0.5250
Ac	0.6100	0.4320
Ad	0.7770	0.5190
Ae	0.6640	0.4740
Af	0.6150	0.4160
Ag	0.5810	0.4320
Ah	0.7380	0.5060
Ai	0.7500	0.4960
Aj	0.5520	0.3920
Ak	0.7490	0.5000
Al	0.0760	0.1840
Am	0.7700	0.5270
An	0.7710	0.5310
Ao	0.5590	0.4140
Ap	0.7010	0.4760
Aq	0.6430	0.4560
Ar	0.6120	0.4400
As	0.6700	0.4420
At	0.6020	0.4150
Au	0.7330	0.5060
Av	0.8070	0.5460
Aw	0.8050	0.5450

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
Ax	0.7070	0.4830
Ay	0.5010	0.3960
Az	0.7390	0.5400
B	0.7510	0.5210
B5	0.8560	0.5010
B7	0.9420	0.5520
B8	0.9030	0.5280
BA	0.8510	0.5690
BB	0.8300	0.5580
BC	0.8460	0.5570
BE	0.7190	0.4990
BF	0.8490	0.5600
BG	0.7080	0.4880
BH	0.7620	0.5330
BI	0.7880	0.5470
BJ	0.6930	0.5030
BK	0.3310	0.3920
BL	0.7930	0.5170
BM	0.7900	0.5200
BN	0.9040	0.5760
BO	0.8470	0.5610
BP	0.8530	0.5640
BQ	0.8600	0.5680
BR	0.7950	0.5200
BS	0.8660	0.5670
BT	0.7900	0.5340
BU	0.6780	0.4800
BV	0.7760	0.5450
BW	0.5410	0.3730
BX	0.8060	0.5380
BY	0.7740	0.5400
BZ	0.7880	0.5270
Ba	0.8760	0.5730
Bb	0.6860	0.4710
Bc	0.6760	0.4860
Bd	0.8030	0.5370
Be	0.8540	0.5620
Bf	0.8500	0.5750
Bg	0.7930	0.5360
Bh	0.7850	0.5290
Bi	0.7700	0.5150
Bj	0.9140	0.5780

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
Bk	0.6550	0.4820
Bl	0.8760	0.5530
Bm	0.8190	0.5500
Bo	0.7960	0.5480
Bp	0.7920	0.5460
Br	0.8380	0.5520
Bs	0.0050	0.0570
Bt	0.0020	0.0470
Ct	0.1020	0.1340
Cu	0.2310	0.2170
DA	0.0050	0.0410
DB	0.1280	0.1010
DC	0.1200	0.0860