Full wwPDB EM Validation Report ⓘ

Jul 20, 2025 – 08:50 am BST

PDB ID	:	9QQB / pdb_00009qqb
EMDB ID	:	EMD-53296
Title	:	Quaternary complex of a translating ribosome, NAC, NMT1, and NatA
Authors	:	Echeverria, B.; Jaskolowski, M.; Scaiola, A.; Ban, N.
Deposited on	:	2025-03-31
Resolution	:	3.43 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:

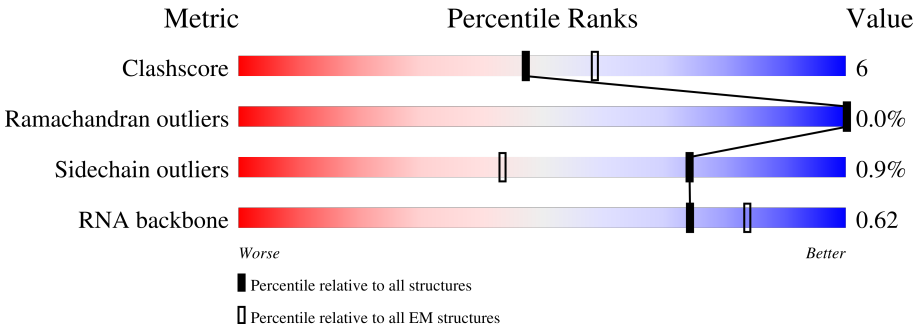
EMDB validation analysis	:	0.0.1.dev118
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0rc1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.44

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 3.43 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
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	B5	4808	53% 22% 22%
2	B7	120	75% 24%
3	B8	158	75% 21%
4	BA	257	81% 17%
5	BB	403	81% 18%
6	BC	413	77% 10% 12%
7	BD	297	85% 13%

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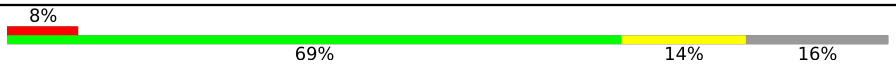
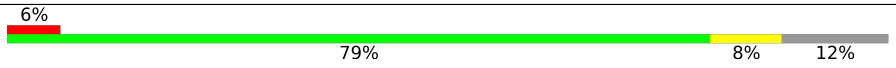
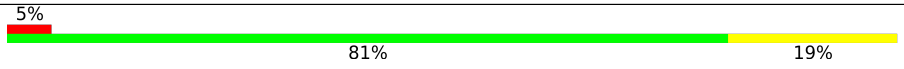
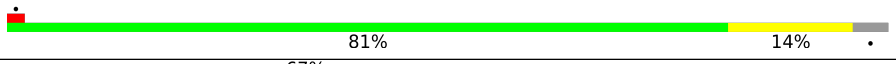
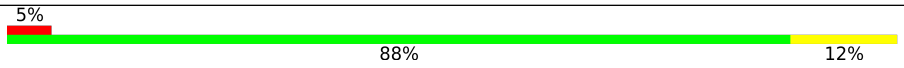
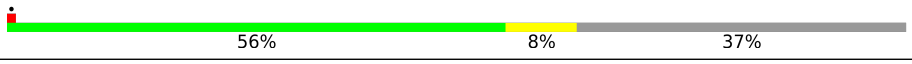
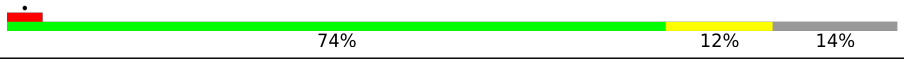
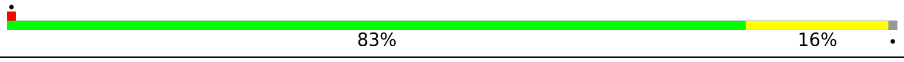
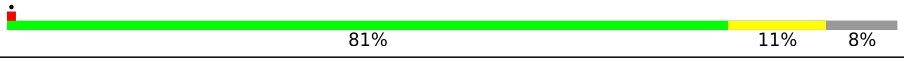
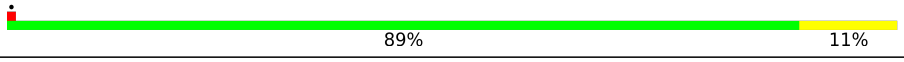
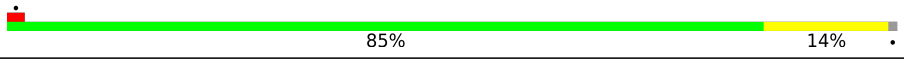
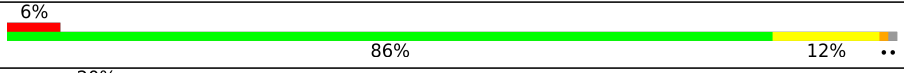
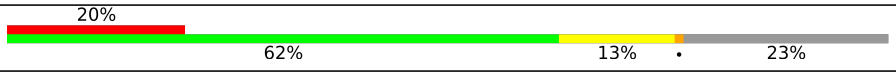
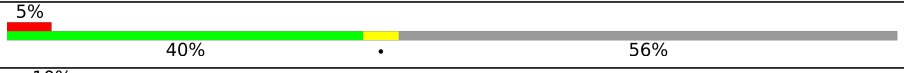
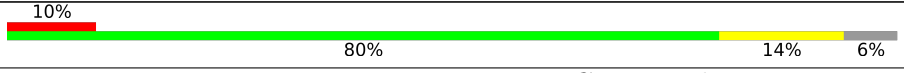
Mol	Chain	Length	Quality of chain
8	BE	291	
9	BF	247	
10	BG	266	
11	BH	192	
12	BI	214	
13	BJ	178	
14	BK	12	
15	BL	211	
16	BM	218	
17	BN	204	
18	BO	203	
19	BP	184	
20	BQ	188	
21	BR	196	
22	BS	176	
23	BT	160	
24	BU	128	
25	BV	140	
26	BW	157	
27	BX	156	
28	BY	145	
29	BZ	136	
30	Ba	148	
31	Bb	245	
32	Bc	115	

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Mol	Chain	Length	Quality of chain
33	Bd	125	5% 74% 12% 14%
34	Be	135	88% 8%
35	Bf	110	92% 8%
36	Bg	117	86% 11%
37	Bh	123	86% 13%
38	Bi	105	88% 10%
39	Bj	97	76% 12% 11%
40	Bk	70	83% 13%
41	Bl	51	73% 25%
42	Bm	128	37% 59%
43	Bo	106	81% 18%
44	Bp	92	88% 11%
45	Br	137	83% 9% 7%
46	Bs	318	56% 49% 13% 38%
47	Bt	165	83% 71% 22% 5%
48	Bv	217	90% 73% 25%
49	Nt	215	44% 33% 19% 47%
50	Nu	162	42% 37% 27% 34%
51	XA	866	79% 66% 29%
52	XB	235	64% 51% 19% 29%
53	MA	496	34% 55% 14% 31%
54	A2	1870	62% 28% 5% 5%
55	AA	84	86% 13%
56	AB	69	7% 78% 13% 9%
57	AC	156	31% 37% 10% 53%

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Mol	Chain	Length	Quality of chain
58	AD	133	6% 38% 5% 57%
59	AE	115	77% 11% 12%
60	AF	317	5% 78% 21%
61	AG	56	80% 18%
62	AT	76	11% 71% 24% 5%
63	AZ	295	63% 12% 25%
64	Aa	264	5% 72% 12% 15%
65	Ab	293	66% 9% 25%
66	Ac	281	69% 11% 20%
67	Ad	263	84% 15%
68	Ae	204	5% 79% 14% 6%
69	Af	249	5% 73% 22% 5%
70	Ag	432	38% 6% 56%
71	Ah	208	81% 18%
72	Ai	194	83% 12% 5%
73	Aj	165	47% 11% 42%
74	Ak	158	11% 90% 8%
75	Al	132	47% 81% 12% 6%
76	Am	151	89% 10%
77	An	151	70% 11% 19%
78	Ao	145	10% 77% 11% 12%
79	Ap	172	66% 16% 18%
80	Aq	135	82% 17%
81	Ar	152	6% 81% 16%
82	As	145	89% 10%

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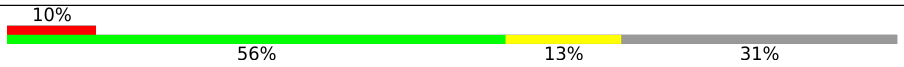
Mol	Chain	Length	Quality of chain
83	At	119	
84	Au	84	
85	Av	130	
86	Aw	143	
87	Ax	130	
88	Ay	124	
89	Az	25	

2 Entry composition (i)

There are 96 unique types of molecules in this entry. The entry contains 239026 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 28S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	B5	3764	80772	36003	14762	26243	3764	0	0

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 2 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	B7	120	2561	1141	456	844	120	0	0

- Molecule 3 is a RNA chain called 5.8S rRNA.

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

- Molecule 4 is a protein called Large ribosomal subunit protein uL2.

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

- Molecule 5 is a protein called Ribosomal protein L3.

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

- Molecule 6 is a protein called Large ribosomal subunit protein uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	BC	363	Total	C	N	O	S	0	0
			2886	1814	577	481	14		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BC	2	ACE	-	acetylation	UNP G1SVW5

- Molecule 7 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	BD	293	Total	C	N	O	S	0	0
			2391	1512	438	427	14		

- Molecule 8 is a protein called 60S ribosomal protein L6.

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

- Molecule 9 is a protein called Ribosomal Protein uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	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 10 is a protein called 60S ribosomal protein L7a.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BG	184	LEU	ILE	conflict	UNP P62424

- Molecule 11 is a protein called 60S ribosomal protein L9.

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

- Molecule 12 is a protein called 60S ribosomal protein L10.

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

- Molecule 13 is a protein called 60S ribosomal protein L11.

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

- Molecule 14 is a protein called Nascent chain.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	BK	12	Total	C	N	O	0	0
			60	36	12	12		

- Molecule 15 is a protein called Large ribosomal subunit protein eL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	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 16 is a protein called 60S ribosomal protein L14.

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

- Molecule 17 is a protein called Ribosomal protein L15.

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

- Molecule 18 is a protein called Large ribosomal subunit protein uL13.

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

- Molecule 19 is a protein called Large ribosomal subunit protein uL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	BP	159	Total	C	N	O	S	0	0
			1289	809	249	222	9		

- Molecule 20 is a protein called eL18.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BQ	134	ARG	CYS	conflict	UNP F6QKI9

- Molecule 21 is a protein called Ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	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

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

- Molecule 22 is a protein called Large ribosomal subunit protein eL20.

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

- Molecule 23 is a protein called 60S ribosomal protein L21.

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

- Molecule 24 is a protein called 60S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	BU	99	Total	C	N	O	S	0	0
			806	516	141	147	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 25 is a protein called Ribosomal protein L23.

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

- Molecule 26 is a protein called Ribosomal protein L24.

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

- Molecule 27 is a protein called Large ribosomal subunit protein uL23.

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

- Molecule 28 is a protein called Ribosomal protein L26.

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

- Molecule 29 is a protein called 60S ribosomal protein L27.

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

- Molecule 30 is a protein called 60S ribosomal protein L27a.

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

- Molecule 31 is a protein called 60S ribosomal protein L29.

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

- Molecule 32 is a protein called 60S ribosomal protein L30.

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

- Molecule 33 is a protein called 60S ribosomal protein L31.

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

- Molecule 34 is a protein called Ribosomal protein L32.

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

- Molecule 35 is a protein called 60S ribosomal protein L35a.

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

- Molecule 36 is a protein called 60S ribosomal protein L34.

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

- Molecule 37 is a protein called 60S ribosomal protein L35.

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

- Molecule 38 is a protein called 60S ribosomal protein L36.

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

- Molecule 39 is a protein called Ribosomal protein L37.

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

- Molecule 40 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	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 41 is a protein called 60S ribosomal protein L39-like.

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

- Molecule 42 is a protein called Ubiquitin-ribosomal protein eL40 fusion protein.

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

- Molecule 43 is a protein called Large ribosomal subunit protein eL42.

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

- Molecule 44 is a protein called 60S ribosomal protein L37a.

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

- Molecule 45 is a protein called [histone H4]-N-methyl-L-lysine20 N-methyltransferase KMT5B.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	Br	127	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	2	ACE	-	acetylation	UNP A0A8C0DF35

- Molecule 46 is a protein called Large ribosomal subunit protein uL10.

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

- Molecule 47 is a protein called 60S ribosomal protein L12.

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

- Molecule 48 is a protein called Ribosomal protein uL1.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	Bv	212	Total	C	N	O	S	0	0
			1707	1092	308	299	8		

- Molecule 49 is a protein called Nascent polypeptide-associated complex subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	Nt	113	Total	C	N	O	S	0	0
			879	550	160	165	4		

- Molecule 50 is a protein called Isoform 2 of Transcription factor BTF3.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	Nu	107	Total	C	N	O	S	0	0
			828	518	154	153	3		

- Molecule 51 is a protein called N-alpha-acetyltransferase 15, NatA auxiliary subunit.

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

- Molecule 52 is a protein called N-alpha-acetyltransferase 10.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	XB	168	Total	C	N	O	S	0	0
			1375	862	247	255	11		

- Molecule 53 is a protein called Glycylpeptide N-tetradecanoyltransferase 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	MA	341	Total	C	N	O	S	1	0
			2804	1821	475	492	16		

- Molecule 54 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	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 55 is a protein called Small ribosomal subunit protein eS27.

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

- Molecule 56 is a protein called Small ribosomal subunit protein eS28.

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

- Molecule 57 is a protein called Ubiquitin-ribosomal protein eS31 fusion protein.

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

- Molecule 58 is a protein called Ubiquitin-like FUBI-ribosomal protein eS30 fusion protein.

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

- Molecule 59 is a protein called eS26.

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

- Molecule 60 is a protein called Small ribosomal subunit protein RACK1.

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

- Molecule 61 is a protein called Small ribosomal subunit protein uS14.

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

- Molecule 62 is a RNA chain called P site Phe tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	AT	76	Total	C	N	O	P	0	0
			1621	724	290	531	76		

- Molecule 63 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	AZ	222	Total	C	N	O	S	0	0
			1743	1107	305	323	8		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AZ	2	ACE	-	acetylation	UNP G1TLT8

- Molecule 64 is a protein called 40S ribosomal protein S3a.

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

- Molecule 65 is a protein called 40S ribosomal protein S2.

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

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Ab	33	ILE	VAL	conflict	UNP O18789
Ab	101	ALA	SER	conflict	UNP O18789

- Molecule 66 is a protein called 40S ribosomal protein S3.

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

- Molecule 67 is a protein called 40S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	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 68 is a protein called Small ribosomal subunit protein uS7.

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

- Molecule 69 is a protein called 40S ribosomal protein S6.

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

- Molecule 70 is a protein called 40S ribosomal protein S7.

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

- Molecule 71 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	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 72 is a protein called Small ribosomal subunit protein uS4.

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

- Molecule 73 is a protein called S10_plectin domain-containing protein.

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

- Molecule 74 is a protein called Small ribosomal subunit protein uS17.

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

- Molecule 75 is a protein called Small ribosomal subunit protein eS12.

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

- Molecule 76 is a protein called Small ribosomal subunit protein uS15.

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

- Molecule 77 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	An	122	Total	C	N	O	S	0	0
			899	556	166	171	6		

- Molecule 78 is a protein called Small ribosomal subunit protein uS19.

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

- Molecule 79 is a protein called Small ribosomal subunit protein uS9.

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

- Molecule 80 is a protein called Small ribosomal subunit protein eS17.

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

- Molecule 81 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	Ar	149	Total	C	N	O	S	0	0
			1217	763	245	208	1		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Ar	2	ACE	-	acetylation	UNP G1TPG3

- Molecule 82 is a protein called 40S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	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 83 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	At	104	Total	C	N	O	S	0	0
			821	514	155	148	4		

- Molecule 84 is a protein called Small ribosomal subunit protein eS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	Au	84	Total	C	N	O	S	0	0
			640	394	117	124	5		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Au	0	ACE	-	acetylation	UNP G1TM82

- Molecule 85 is a protein called Small ribosomal subunit protein uS8.

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

- Molecule 86 is a protein called 40S ribosomal protein S23.

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

- Molecule 87 is a protein called 40S ribosomal protein S24.

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

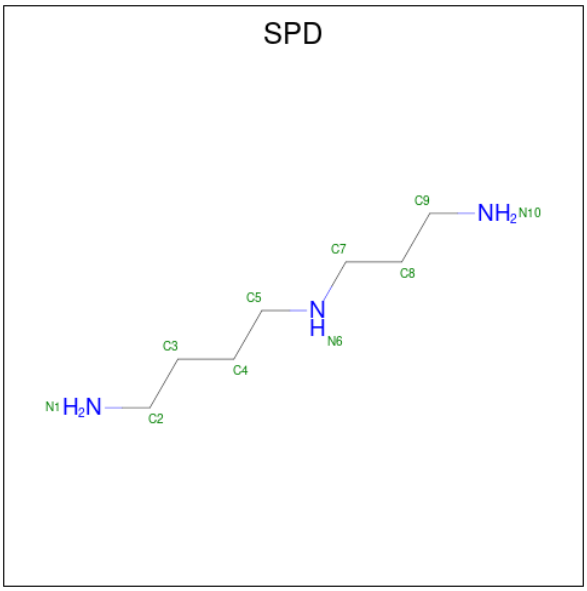
- Molecule 88 is a protein called Small ribosomal subunit protein eS25.

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

- Molecule 89 is a protein called Small ribosomal subunit protein eS32.

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

- Molecule 90 is SPERMIDINE (CCD ID: SPD) (formula: $C_7H_{19}N_3$).



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

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

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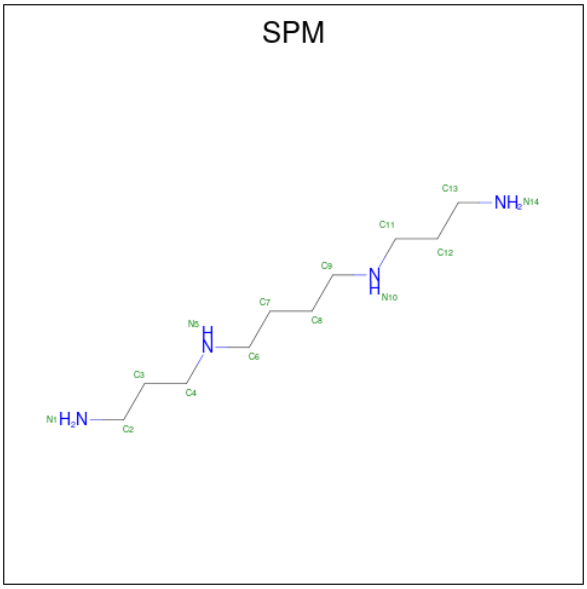
Mol	Chain	Residues	Atoms	AltConf
90	A2	1	Total C N 10 7 3	0
90	A2	1	Total C N 10 7 3	0
90	A2	1	Total C N 10 7 3	0
90	A2	1	Total C N 10 7 3	0
90	A2	1	Total C N 10 7 3	0

- Molecule 91 is SPERMINE (CCD ID: SPM) (formula: $C_{10}H_{26}N_4$).



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

- Molecule 92 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	AltConf
92	B5	278	Total Mg 278 278	0

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Mol	Chain	Residues	Atoms	AltConf
92	B7	9	Total Mg 9 9	0
92	B8	9	Total Mg 9 9	0
92	BB	2	Total Mg 2 2	0
92	BP	1	Total Mg 1 1	0
92	BR	1	Total Mg 1 1	0
92	BV	1	Total Mg 1 1	0
92	Ba	1	Total Mg 1 1	0
92	Bj	1	Total Mg 1 1	0
92	A2	108	Total Mg 108 108	0
92	Aw	1	Total Mg 1 1	0

- Molecule 93 is UNKNOWN ATOM OR ION (CCD ID: UNX) (formula: X).

Mol	Chain	Residues	Atoms	AltConf
93	B5	117	Total X 117 117	0
93	B7	3	Total X 3 3	0
93	B8	5	Total X 5 5	0
93	BA	1	Total X 1 1	0
93	BI	1	Total X 1 1	0
93	BN	1	Total X 1 1	0
93	BQ	2	Total X 2 2	0
93	BT	1	Total X 1 1	0
93	BY	1	Total X 1 1	0

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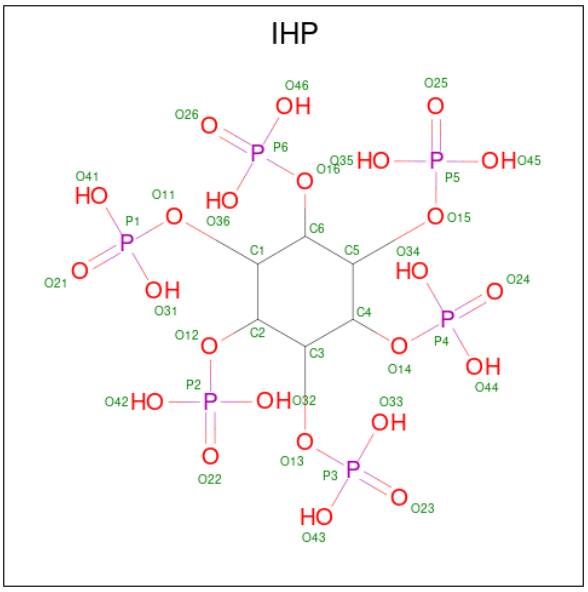
Mol	Chain	Residues	Atoms	AltConf
93	Bb	2	Total X 2 2	0
93	Be	1	Total X 1 1	0
93	Bj	1	Total X 1 1	0
93	Bo	1	Total X 1 1	0
93	A2	29	Total X 29 29	0
93	Ad	1	Total X 1 1	0
93	Ar	1	Total X 1 1	0

- Molecule 94 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	AltConf
94	Bg	1	Total Zn 1 1	0
94	Bj	1	Total Zn 1 1	0
94	Bm	1	Total Zn 1 1	0
94	Bo	1	Total Zn 1 1	0
94	Bp	1	Total Zn 1 1	0
94	AC	1	Total Zn 1 1	0
94	AE	1	Total Zn 1 1	0
94	AG	1	Total Zn 1 1	0

- Molecule 95 is INOSITOL HEXAKISPHOSPHATE (CCD ID: IHP) (formula: $C_6H_{18}O_{24}P_6$).



Mol	Chain	Residues	Atoms				AltConf
95	XA	1	Total	C	O	P	0
			36	6	24	6	

- Molecule 96 is water.

Mol	Chain	Residues	Atoms		AltConf
96	B5	1379	Total	O	0
			1379	1379	
96	B7	45	Total	O	0
			45	45	
96	B8	50	Total	O	0
			50	50	
96	BA	7	Total	O	0
			7	7	
96	BB	6	Total	O	0
			6	6	
96	BC	2	Total	O	0
			2	2	
96	BF	1	Total	O	0
			1	1	
96	BI	2	Total	O	0
			2	2	
96	BL	2	Total	O	0
			2	2	
96	BN	4	Total	O	0
			4	4	
96	BO	1	Total	O	0
			1	1	

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Mol	Chain	Residues	Atoms	AltConf
96	BP	3	Total O 3 3	0
96	BR	4	Total O 4 4	0
96	BT	1	Total O 1 1	0
96	BV	3	Total O 3 3	0
96	BX	1	Total O 1 1	0
96	Ba	5	Total O 5 5	0
96	Bd	1	Total O 1 1	0
96	Be	3	Total O 3 3	0
96	Bg	2	Total O 2 2	0
96	Bj	3	Total O 3 3	0
96	Bl	1	Total O 1 1	0
96	A2	529	Total O 529 529	0
96	AE	1	Total O 1 1	0
96	AT	1	Total O 1 1	0
96	Aa	3	Total O 3 3	0
96	Ad	1	Total O 1 1	0
96	Af	2	Total O 2 2	0
96	Ak	1	Total O 1 1	0
96	Am	1	Total O 1 1	0
96	Ap	2	Total O 2 2	0
96	As	1	Total O 1 1	0

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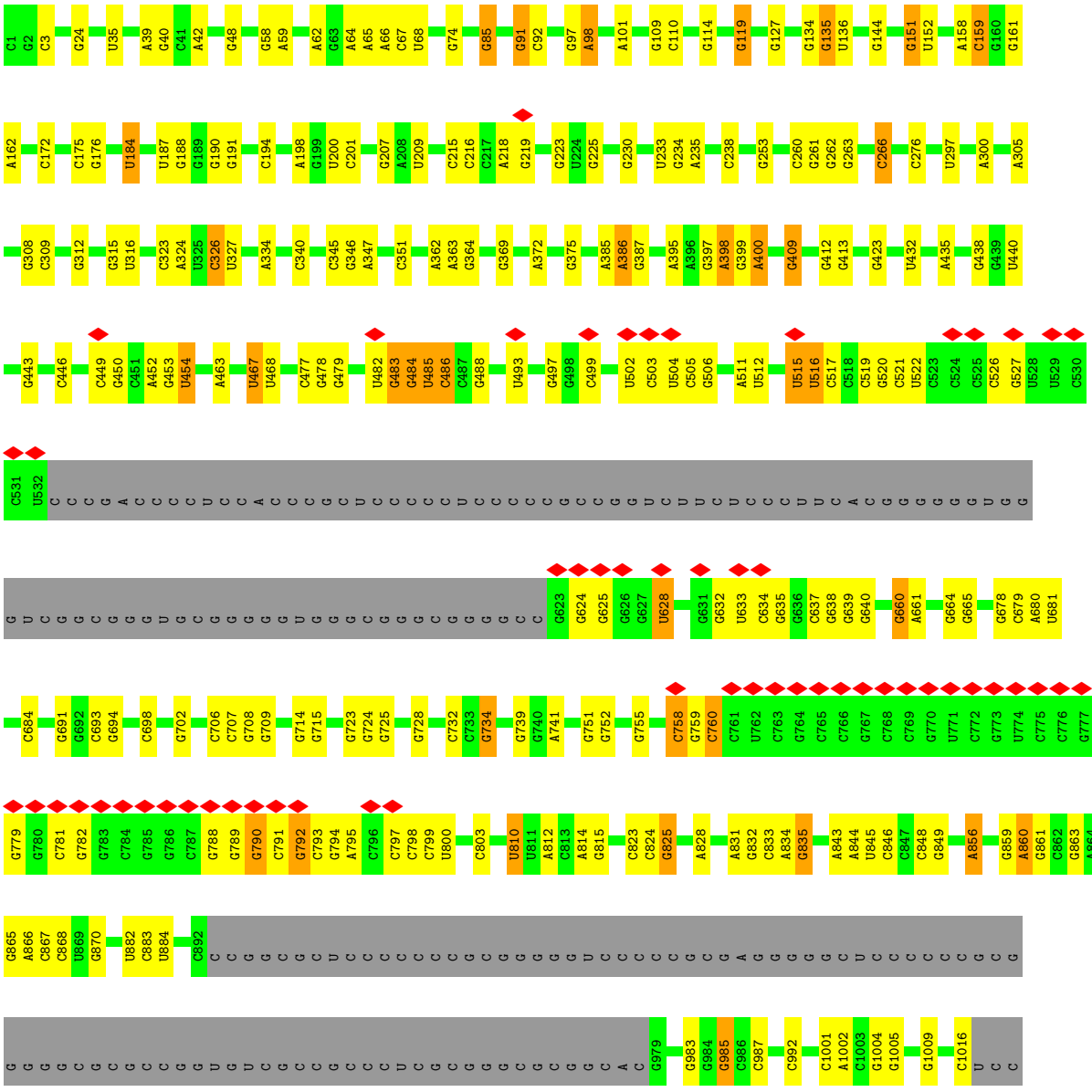
Mol	Chain	Residues	Atoms	AltConf
96	At	1	Total O 1 1	0
96	Aw	5	Total O 5 5	0

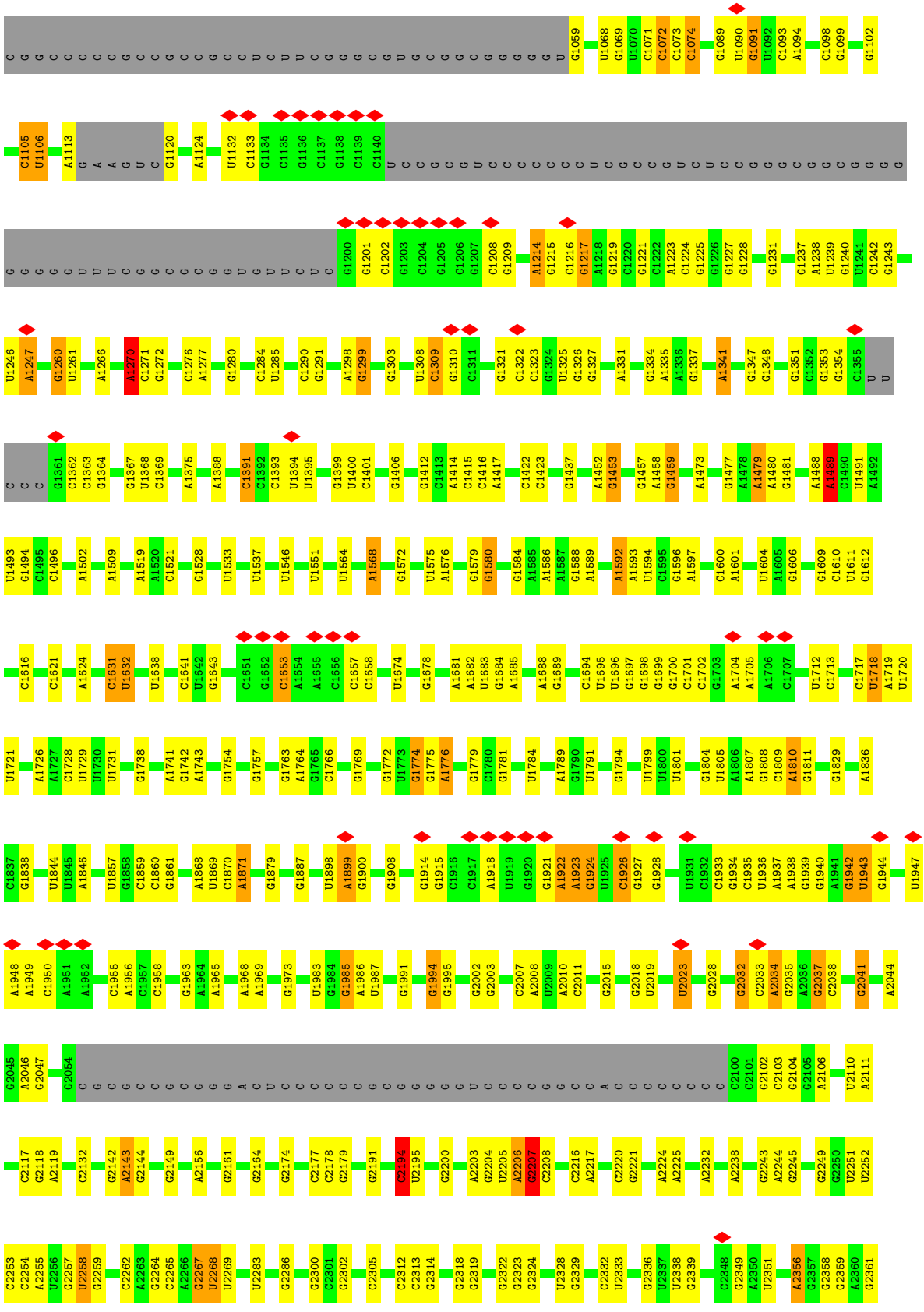
3 Residue-property plots (i)

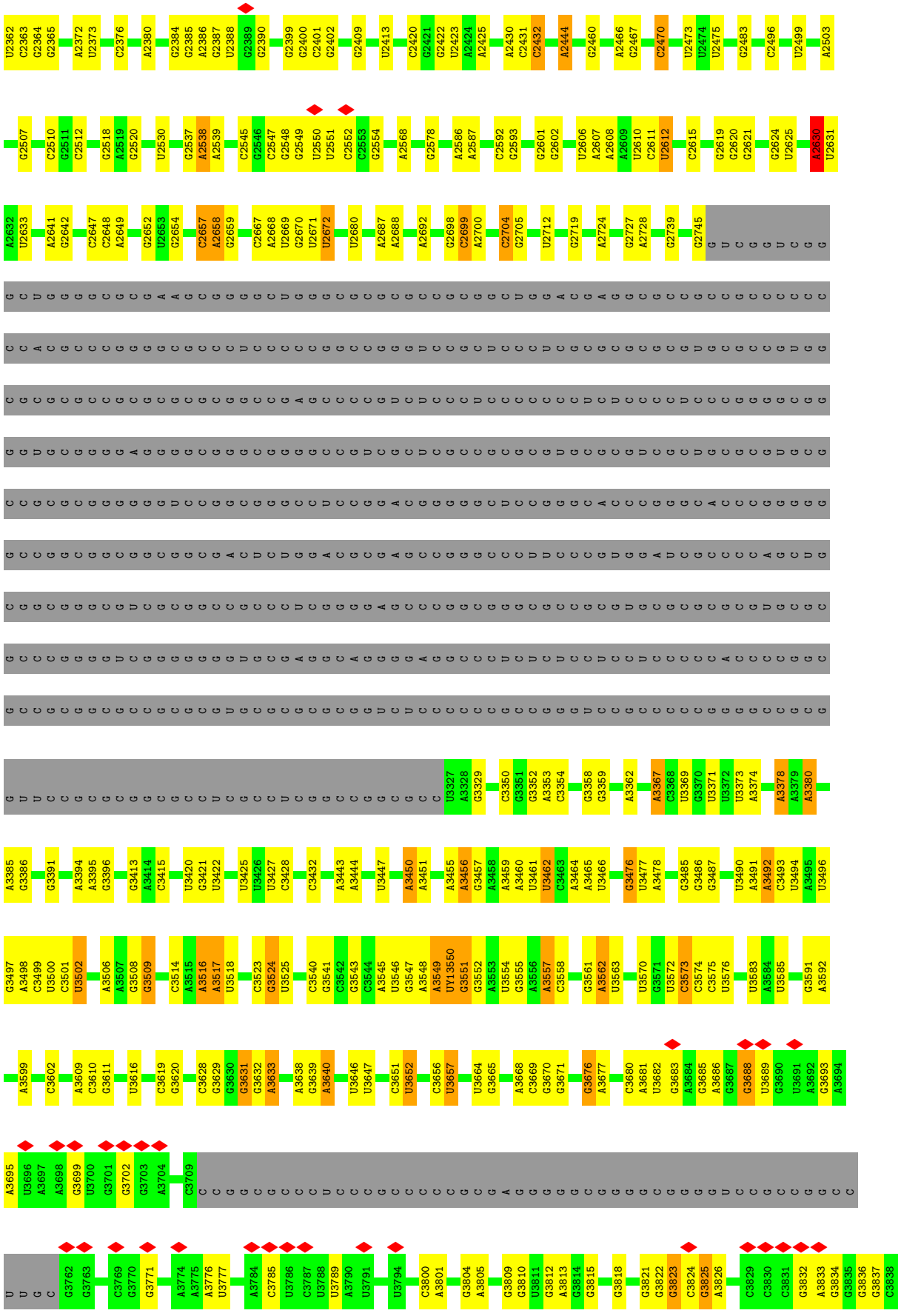
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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.

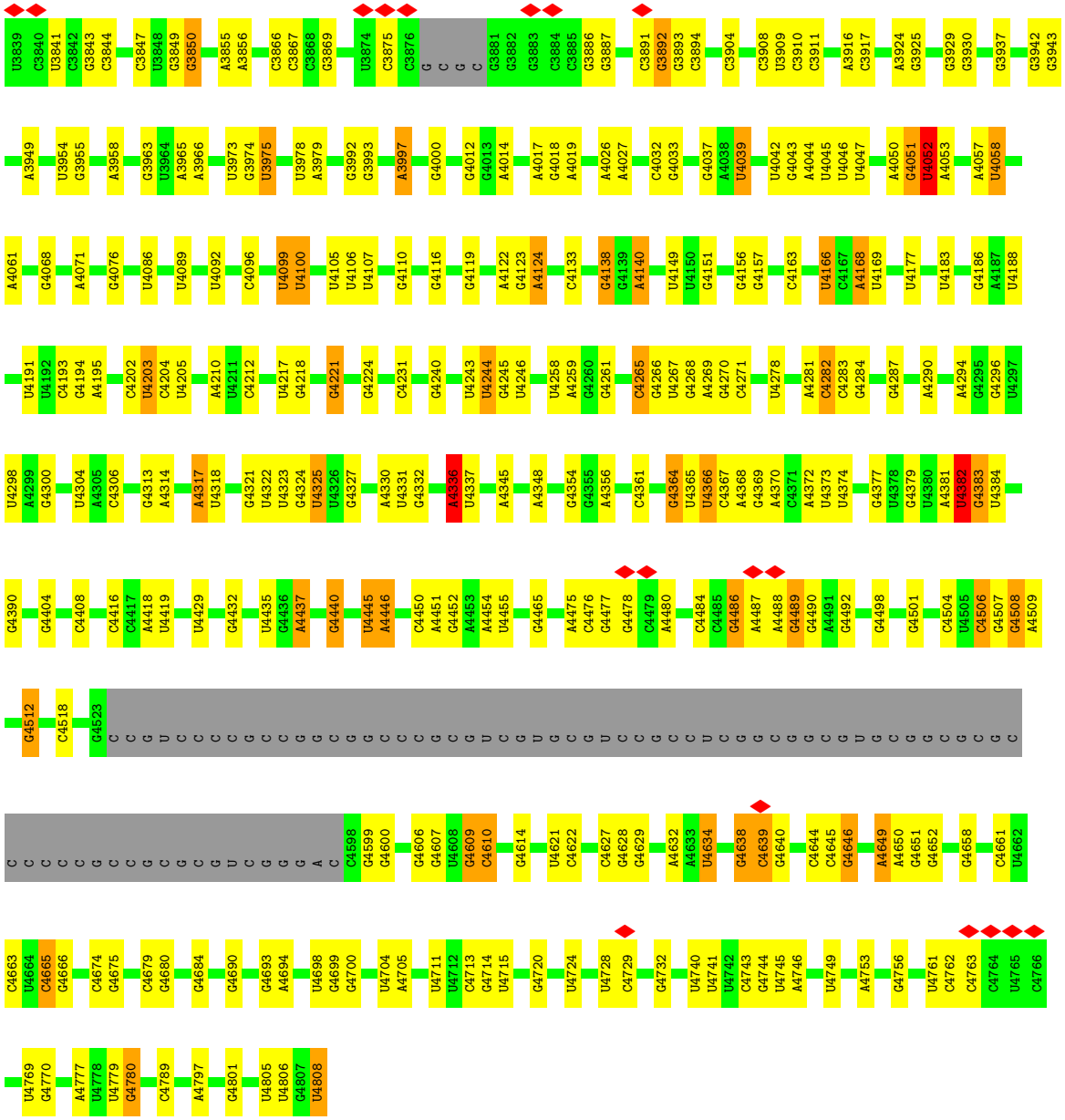
- Molecule 1: 28S rRNA

Chain B5:







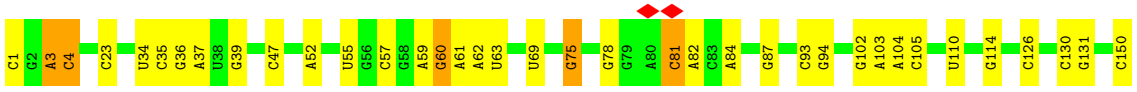


• Molecule 2: 5S rRNA

Chain B7:

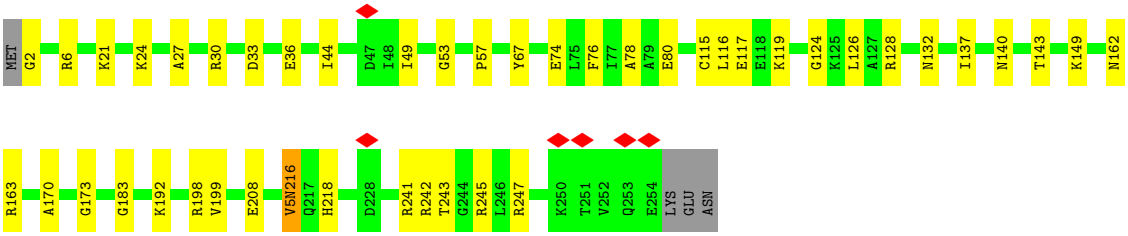
• Molecule 3: 5.8S rRNA

Chain B8:



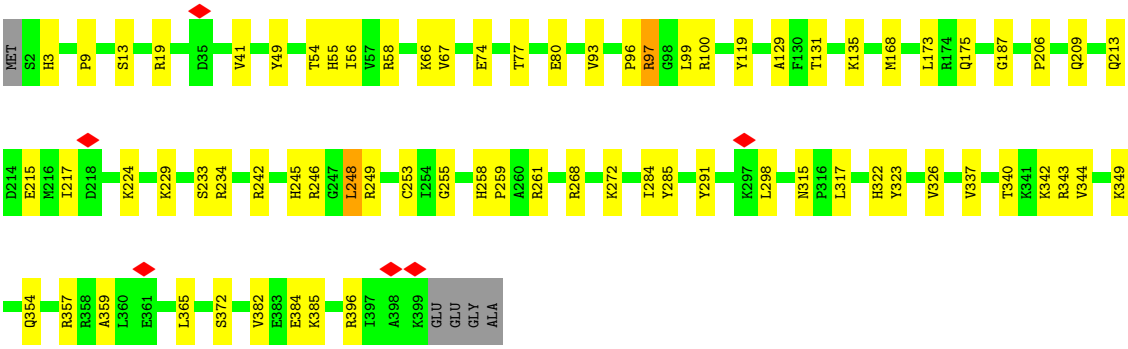
• Molecule 4: Large ribosomal subunit protein uL2

Chain BA:



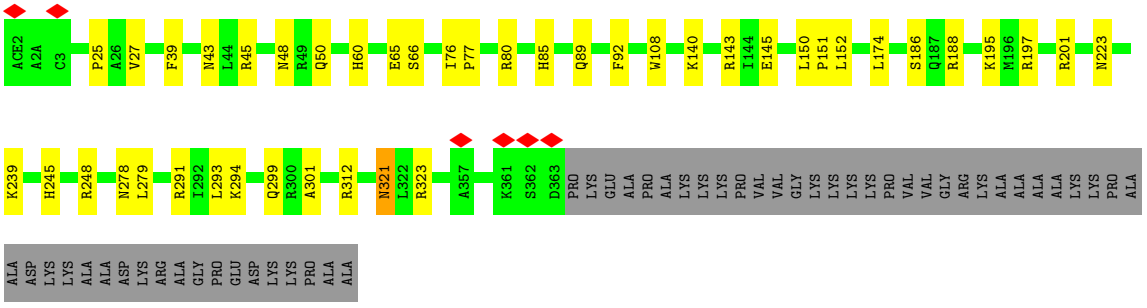
• Molecule 5: Ribosomal protein L3

Chain BB:



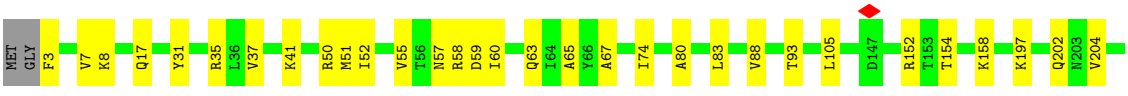
• Molecule 6: Large ribosomal subunit protein uL4

Chain BC:



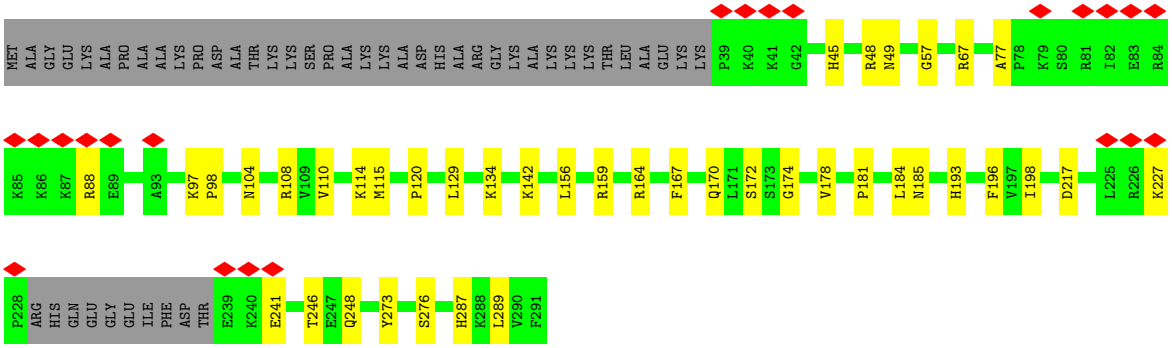
• Molecule 7: Large ribosomal subunit protein uL18

Chain BD:



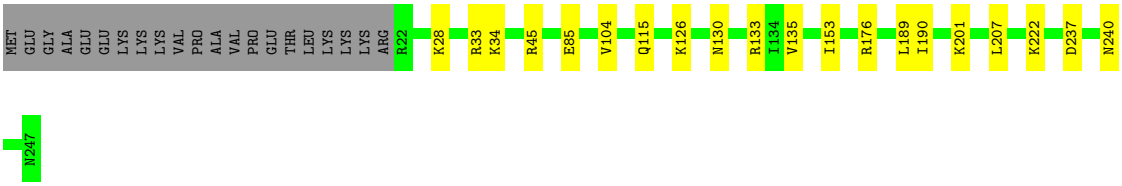
• Molecule 8: 60S ribosomal protein L6

Chain BE:



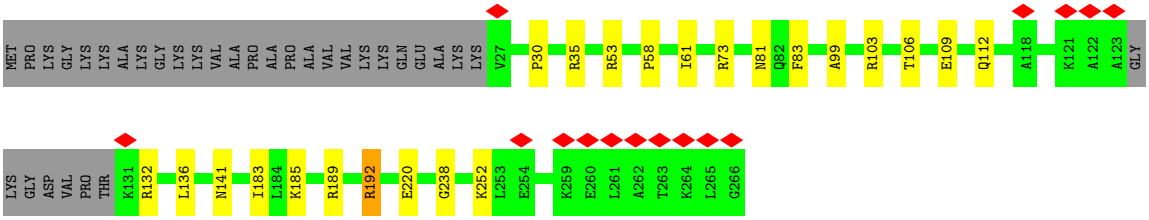
• Molecule 9: Ribosomal Protein uL30

Chain BF:



• Molecule 10: 60S ribosomal protein L7a

Chain BG:

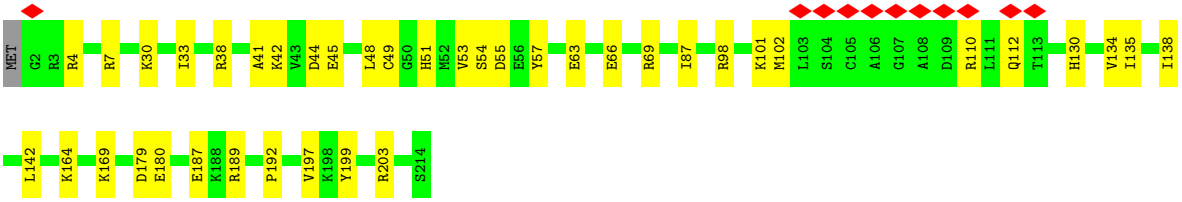


• Molecule 11: 60S ribosomal protein L9

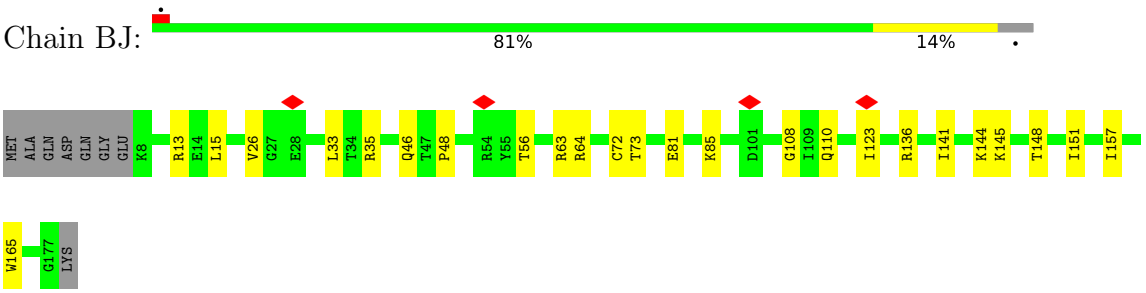
Chain BH:

• Molecule 12: 60S ribosomal protein L10

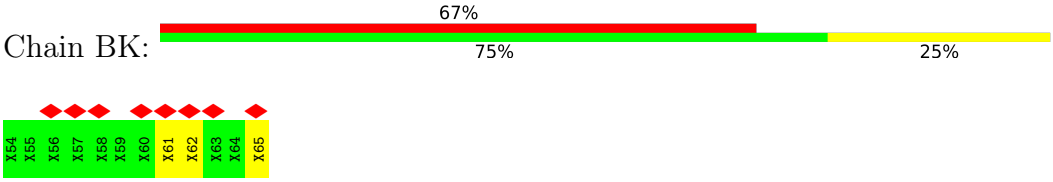
Chain BI:



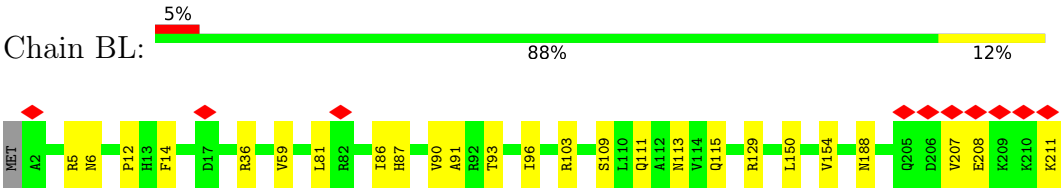
• Molecule 13: 60S ribosomal protein L11



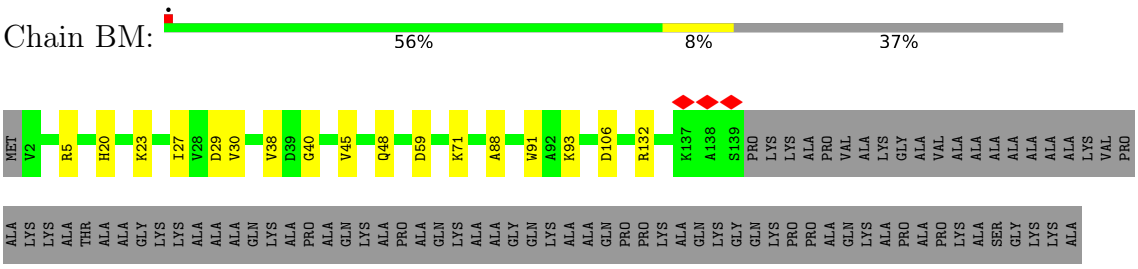
• Molecule 14: Nascent chain



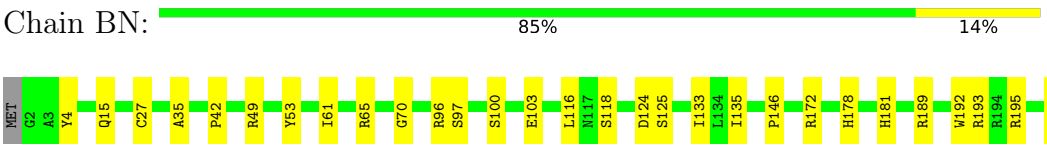
• Molecule 15: Large ribosomal subunit protein eL13



• Molecule 16: 60S ribosomal protein L14

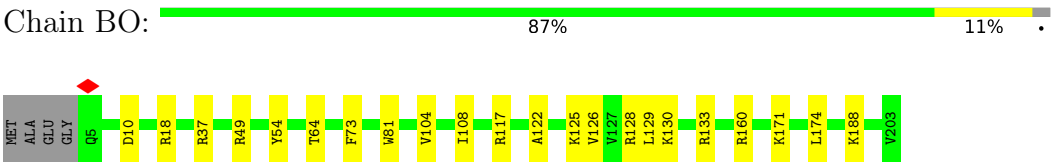


• Molecule 17: Ribosomal protein L15



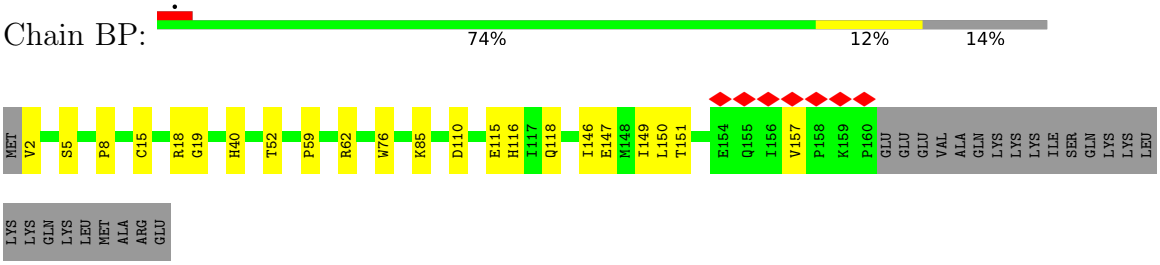
• Molecule 18: Large ribosomal subunit protein uL13

Chain BO:



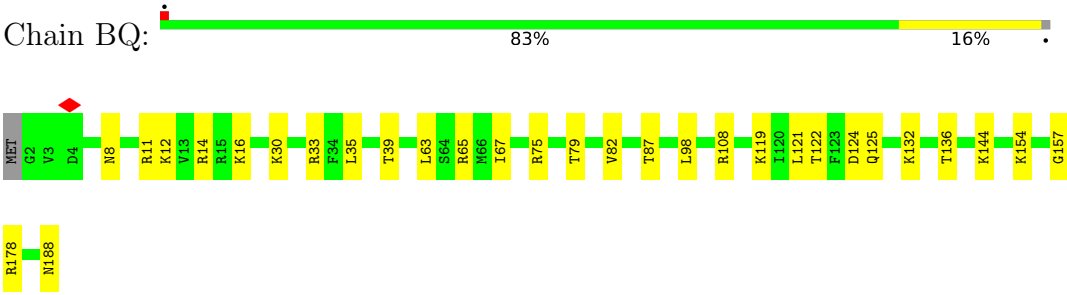
• Molecule 19: Large ribosomal subunit protein uL22

Chain BP:



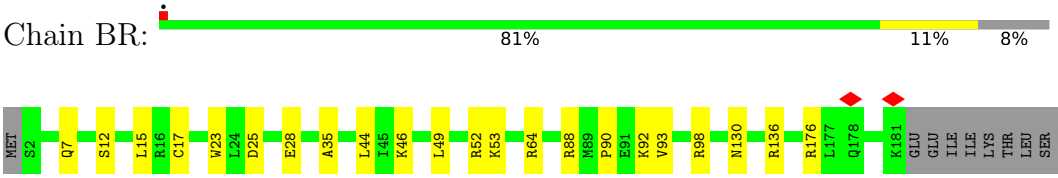
• Molecule 20: eL18

Chain BQ:



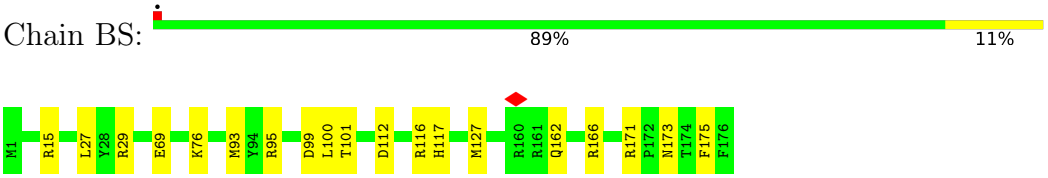
• Molecule 21: Ribosomal protein L19

Chain BR:



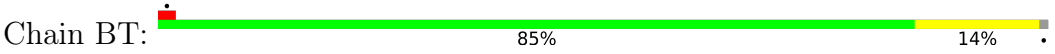
• Molecule 22: Large ribosomal subunit protein eL20

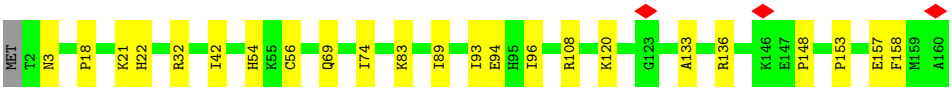
Chain BS:



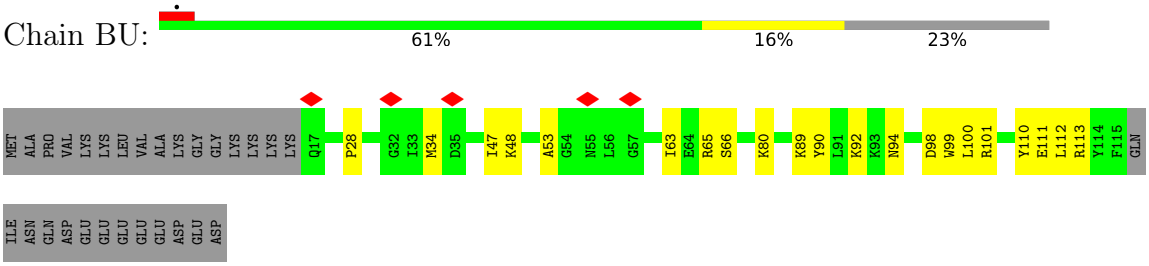
• Molecule 23: 60S ribosomal protein L21

Chain BT:

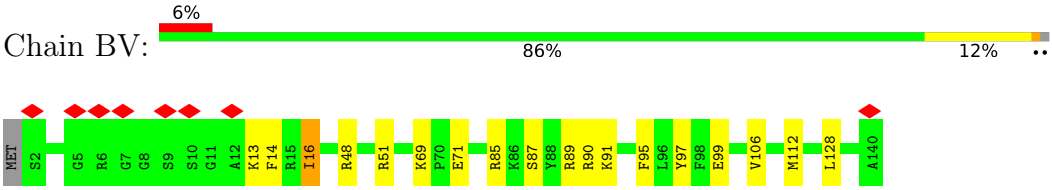




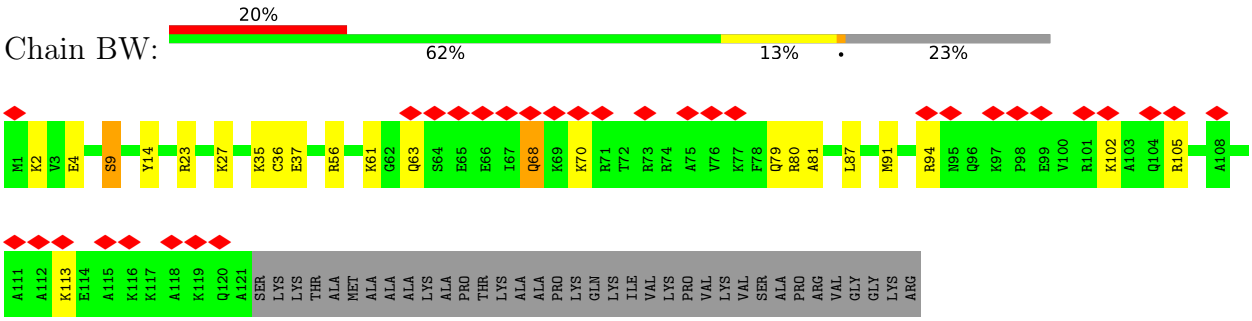
• Molecule 24: 60S ribosomal protein L22



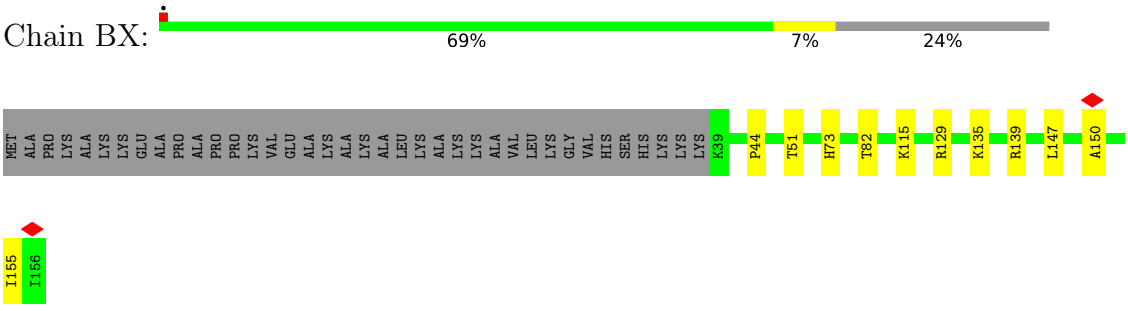
• Molecule 25: Ribosomal protein L23



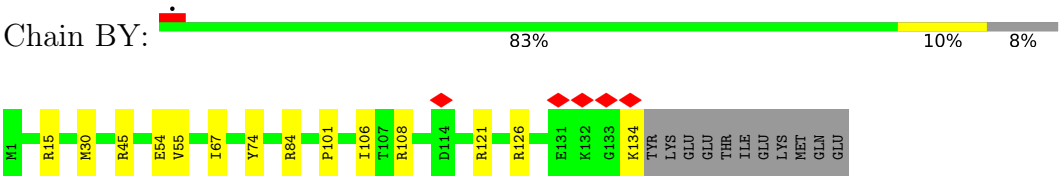
• Molecule 26: Ribosomal protein L24



• Molecule 27: Large ribosomal subunit protein uL23

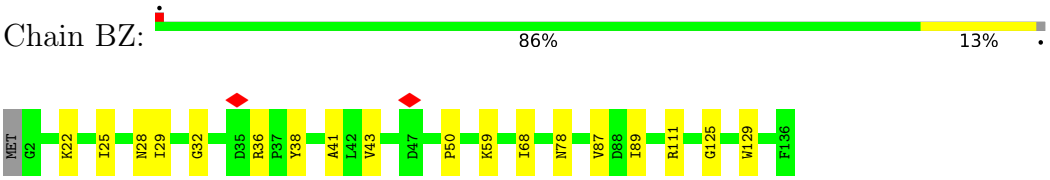


• Molecule 28: Ribosomal protein L26



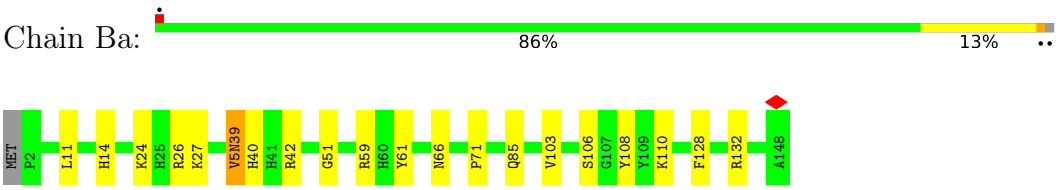
• Molecule 29: 60S ribosomal protein L27

Chain BZ:



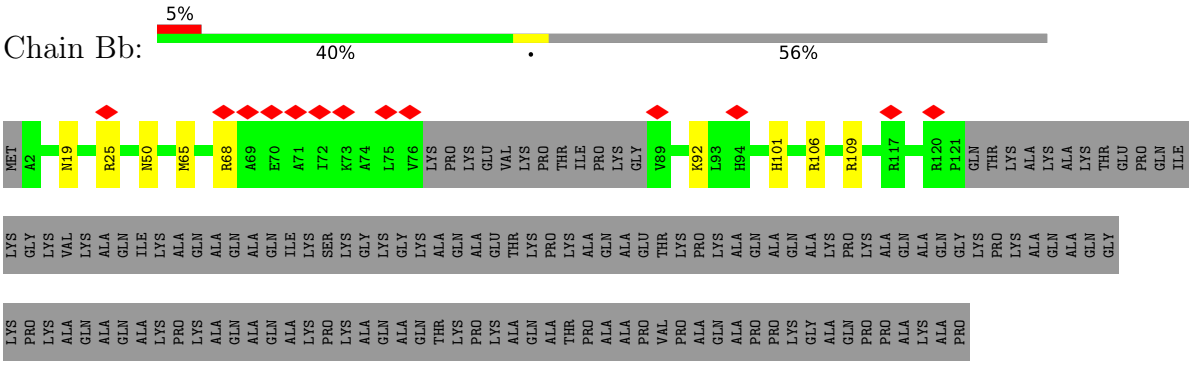
• Molecule 30: 60S ribosomal protein L27a

Chain Ba:



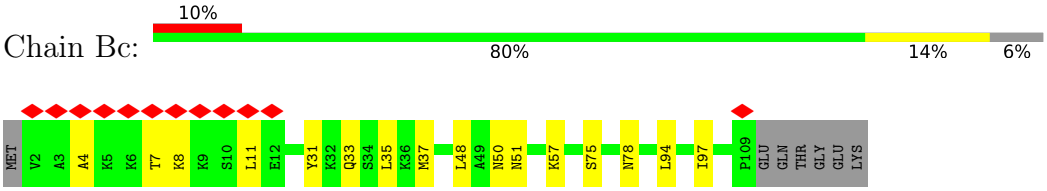
• Molecule 31: 60S ribosomal protein L29

Chain Bb:



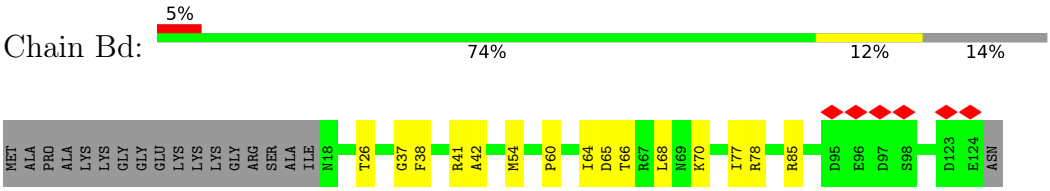
• Molecule 32: 60S ribosomal protein L30

Chain Bc:



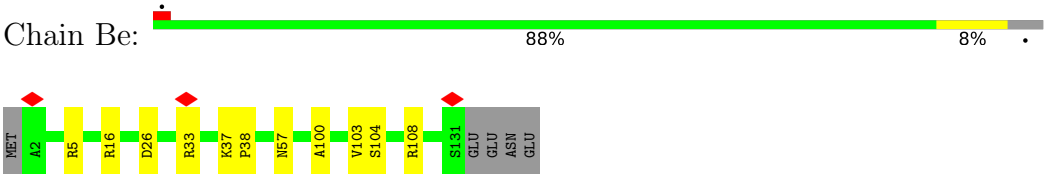
• Molecule 33: 60S ribosomal protein L31

Chain Bd:



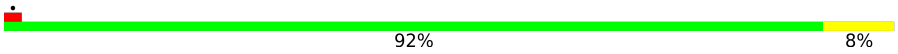
• Molecule 34: Ribosomal protein L32

Chain Be:



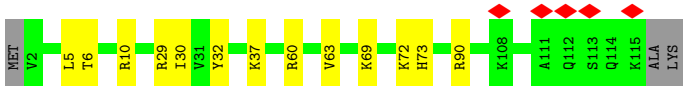
• Molecule 35: 60S ribosomal protein L35a

Chain Bf:



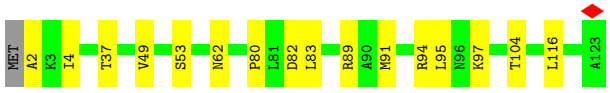
• Molecule 36: 60S ribosomal protein L34

Chain Bg:



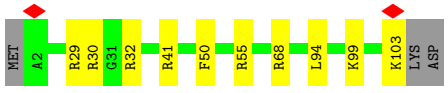
• Molecule 37: 60S ribosomal protein L35

Chain Bh:



• Molecule 38: 60S ribosomal protein L36

Chain Bi:

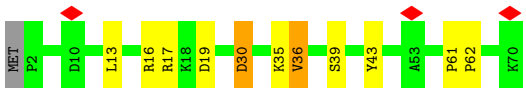


• Molecule 39: Ribosomal protein L37

Chain Bj:

• Molecule 40: 60S ribosomal protein L38

Chain Bk:

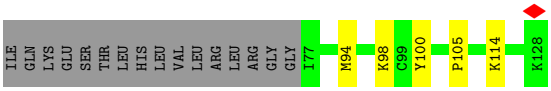


• Molecule 41: 60S ribosomal protein L39-like

Chain Bl:

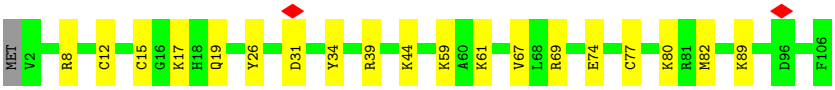
• Molecule 42: Ubiquitin-ribosomal protein eL40 fusion protein

Chain Bm:



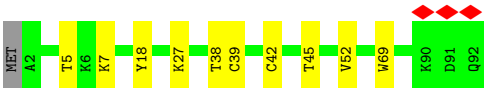
• Molecule 43: Large ribosomal subunit protein eL42

Chain Bo:



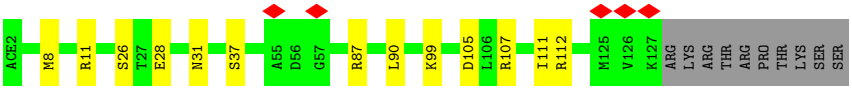
• Molecule 44: 60S ribosomal protein L37a

Chain Bp:



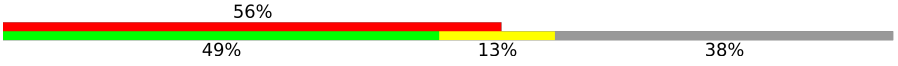
• Molecule 45: [histone H4]-N-methyl-L-lysine20 N-methyltransferase KMT5B

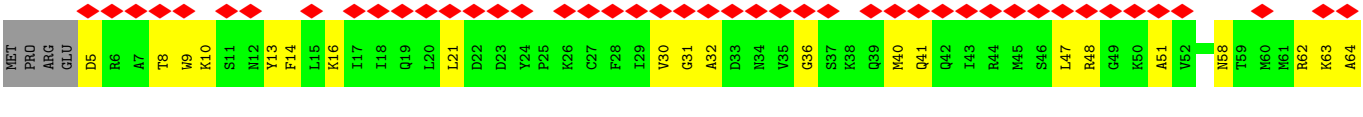
Chain Br:

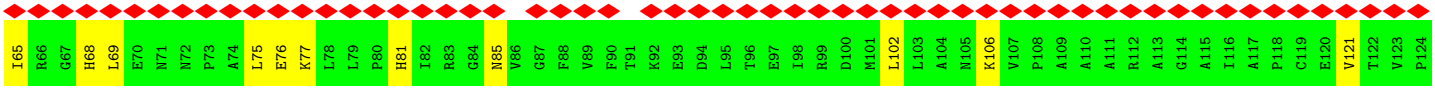


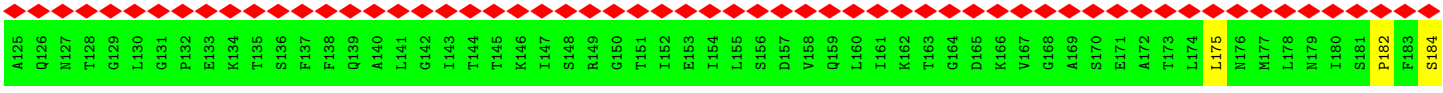
• Molecule 46: Large ribosomal subunit protein uL10

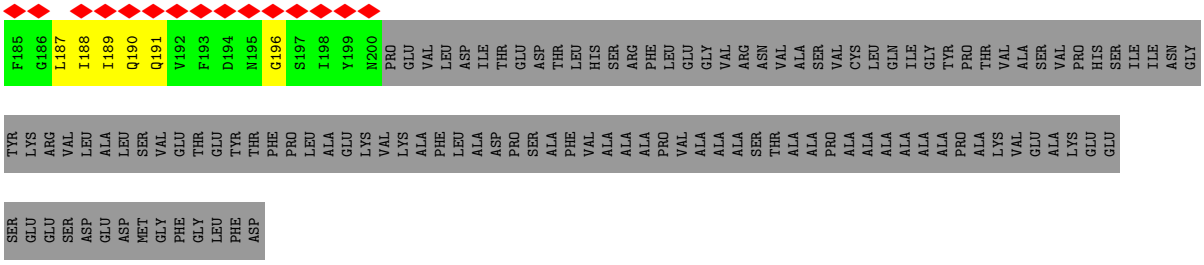
Chain Bs:



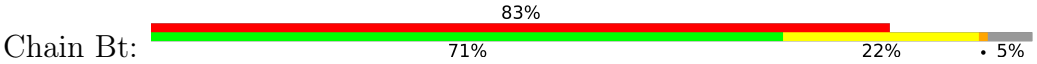


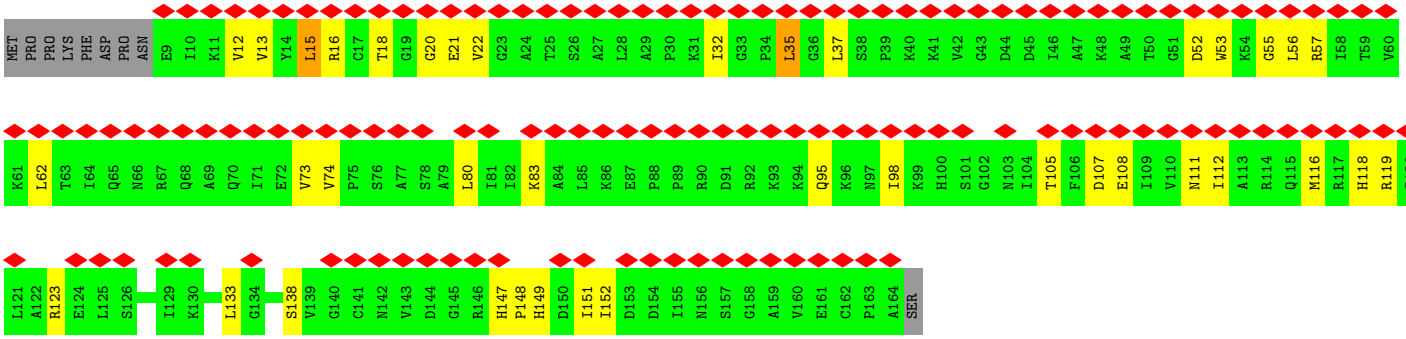




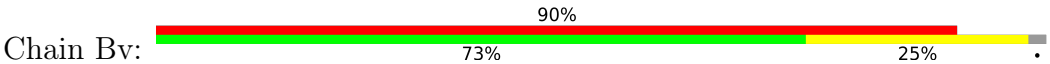


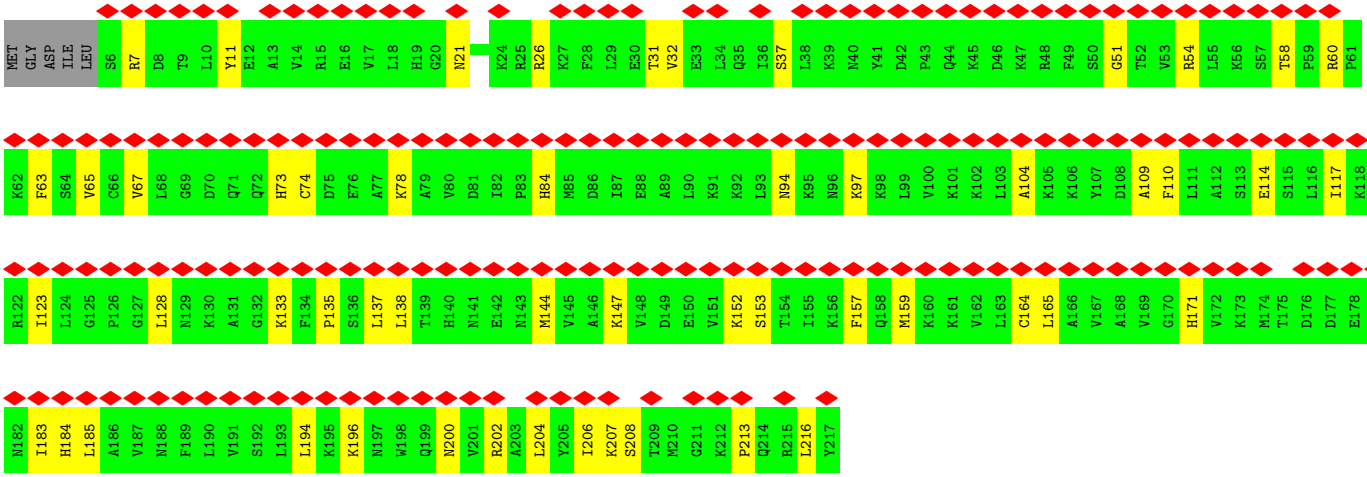
• Molecule 47: 60S ribosomal protein L12



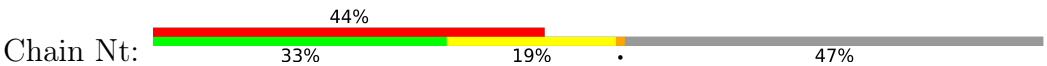


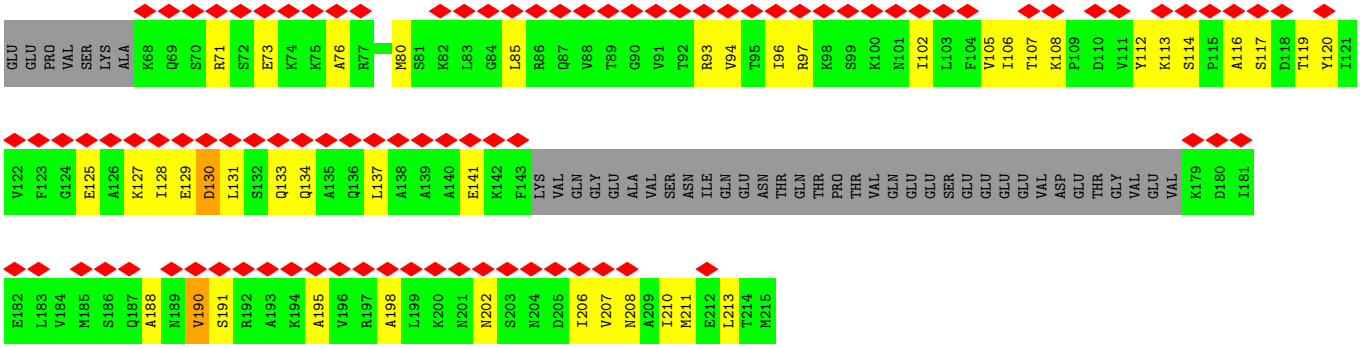
• Molecule 48: Ribosomal protein uL1





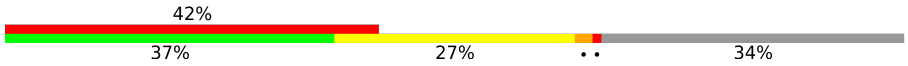
• Molecule 49: Nascent polypeptide-associated complex subunit alpha

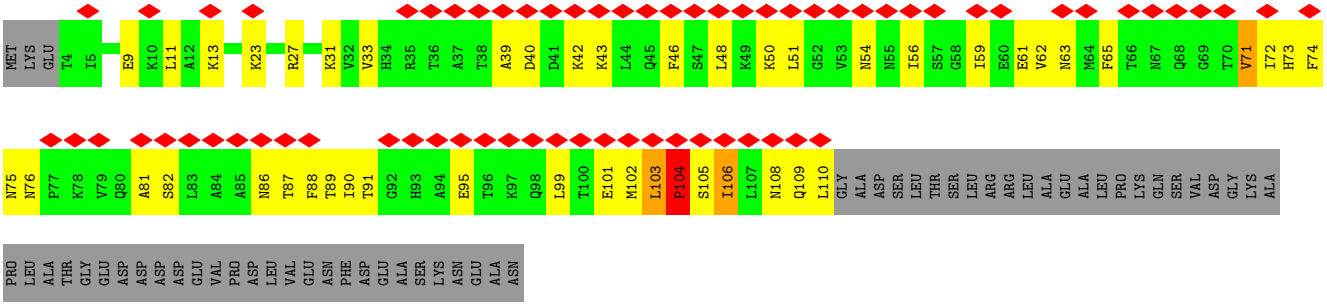




• Molecule 50: Isoform 2 of Transcription factor BTF3

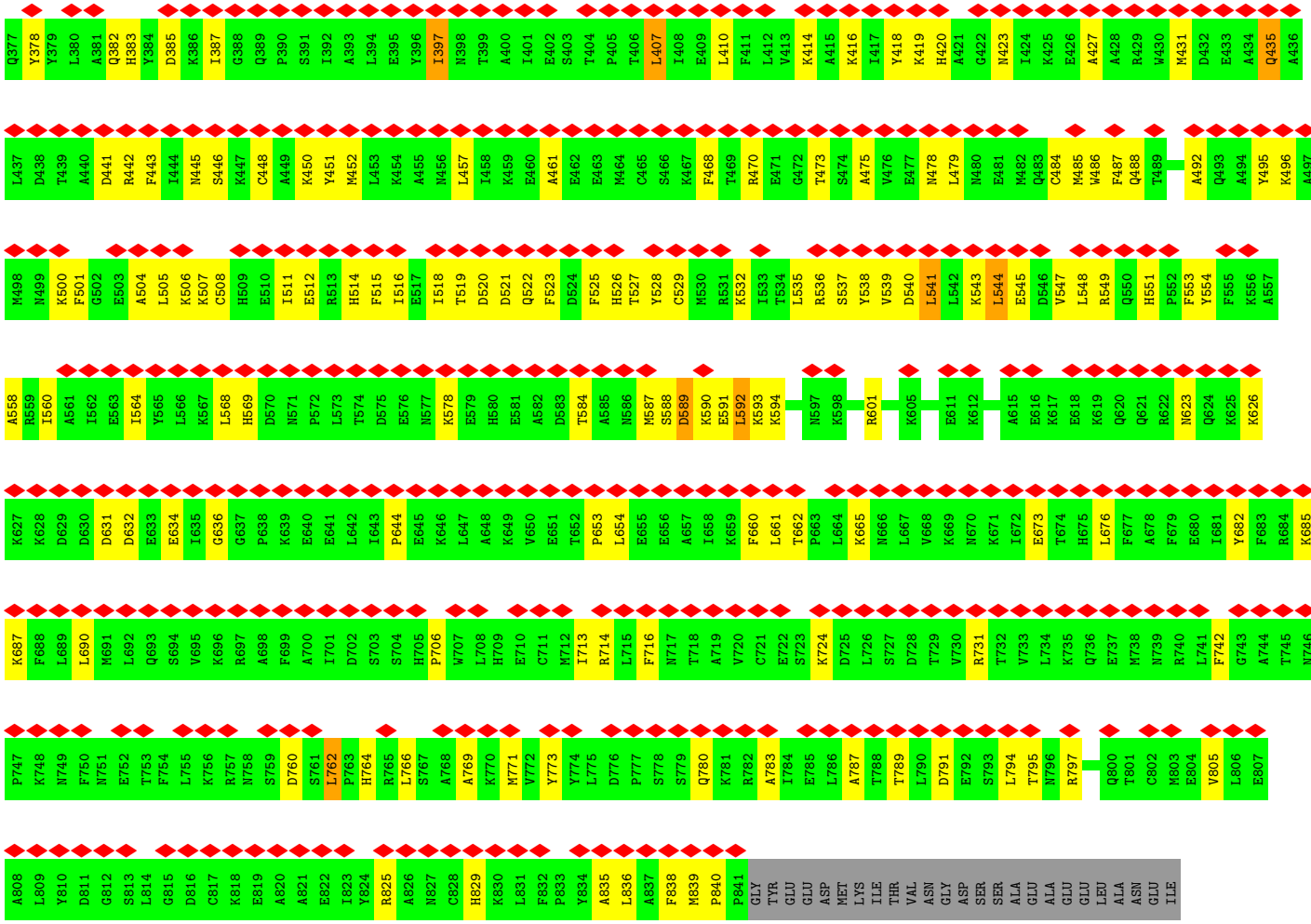
Chain Nu:





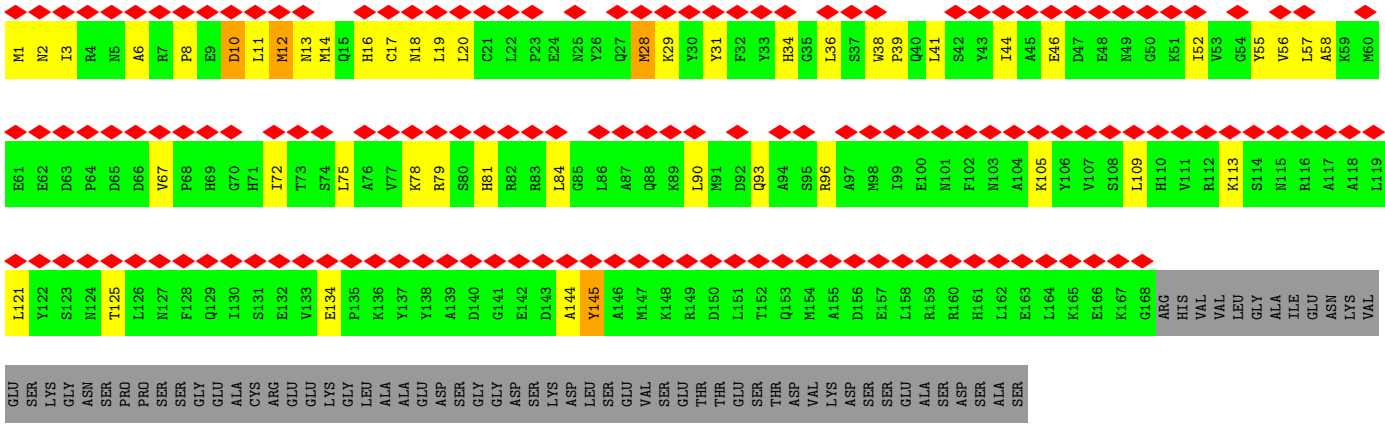
• Molecule 51: N-alpha-acetyltransferase 15, NatA auxiliary subunit

Chain XA:



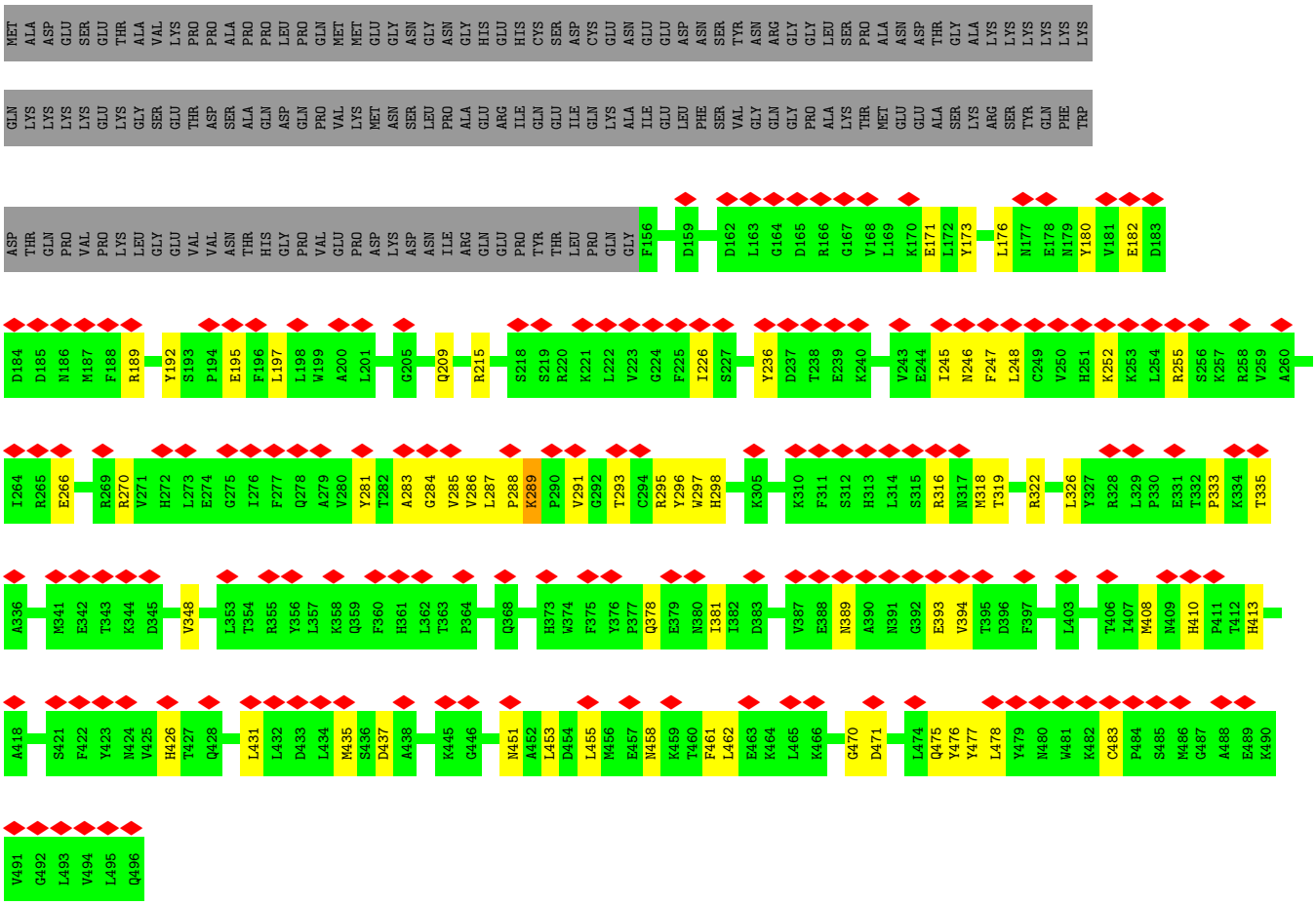
• Molecule 52: N-alpha-acetyltransferase 10

Chain XB:



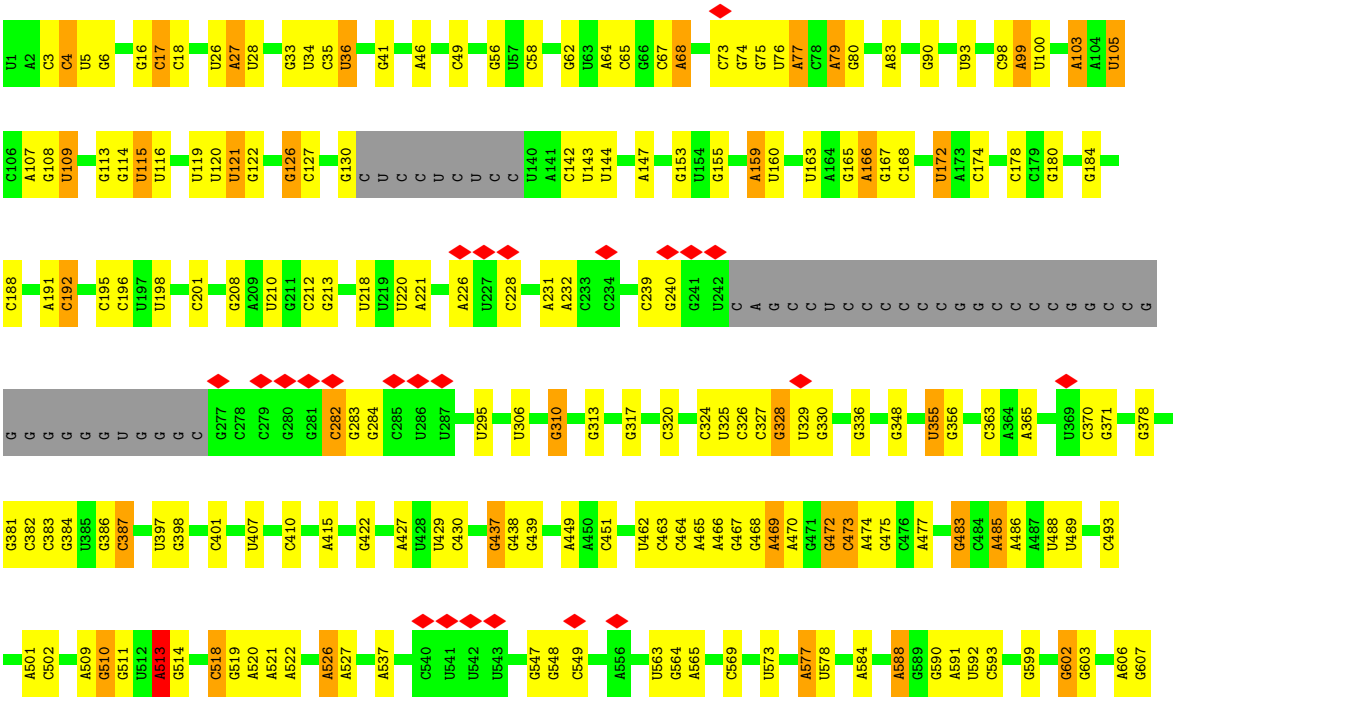
• Molecule 53: Glycylpeptide N-tetradecanoyltransferase 1

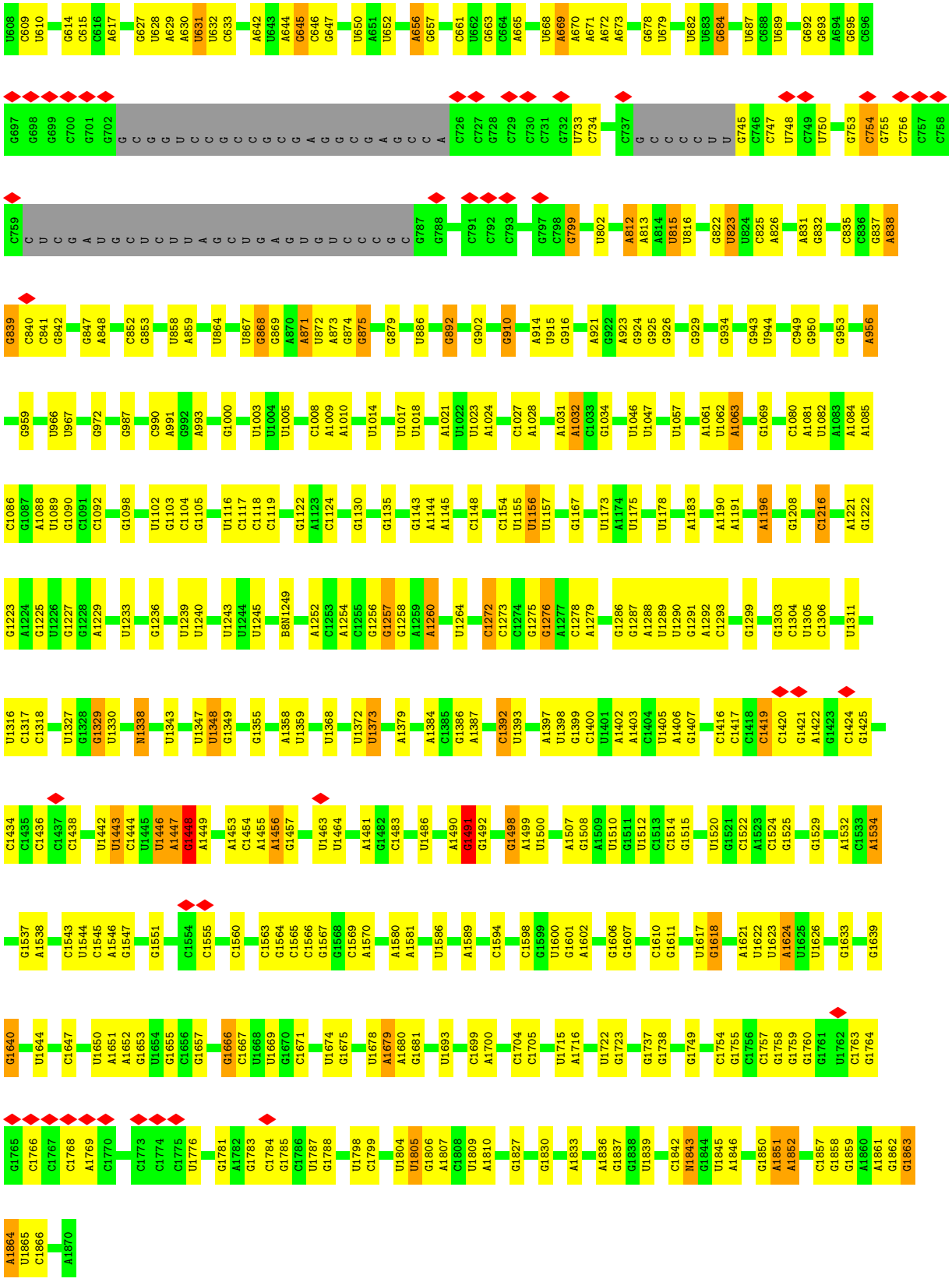
Chain MA:



• Molecule 54: 18S rRNA

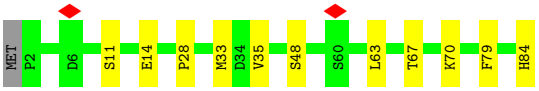
Chain A2:



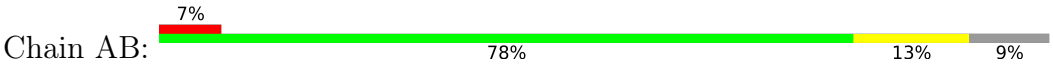


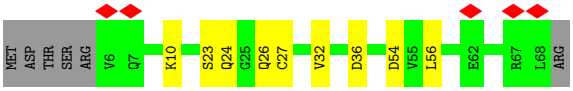
• Molecule 55: Small ribosomal subunit protein eS27

Chain AA:

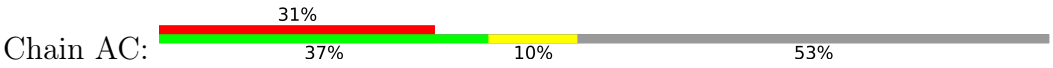


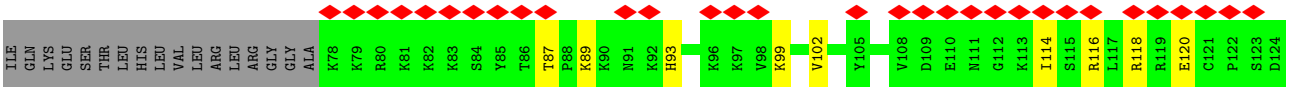
• Molecule 56: Small ribosomal subunit protein eS28

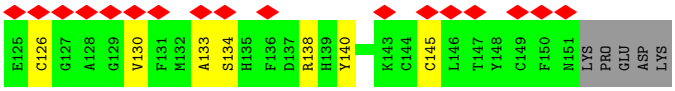




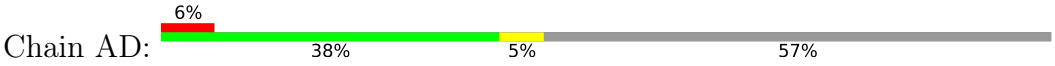
• Molecule 57: Ubiquitin-ribosomal protein eS31 fusion protein



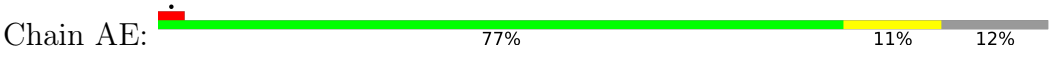


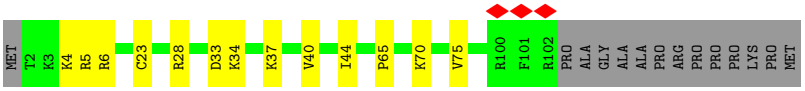


• Molecule 58: Ubiquitin-like FUBI-ribosomal protein eS30 fusion protein

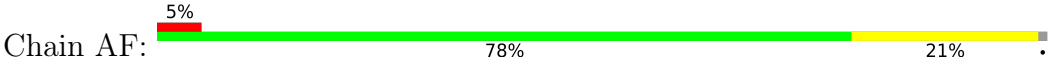


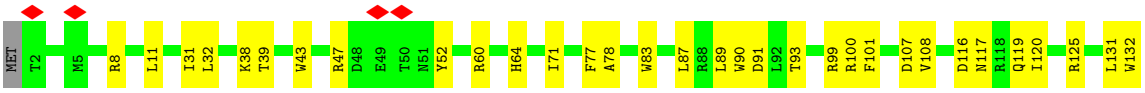
• Molecule 59: eS26

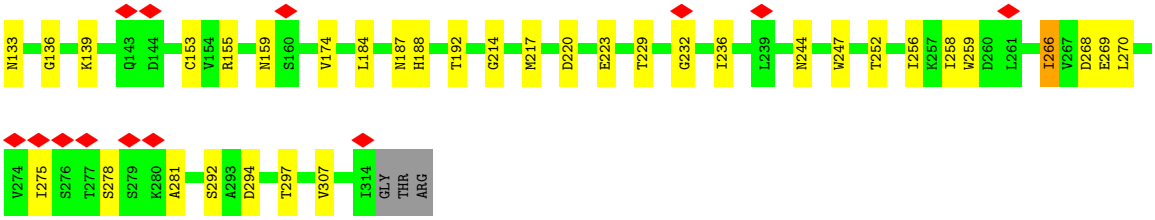




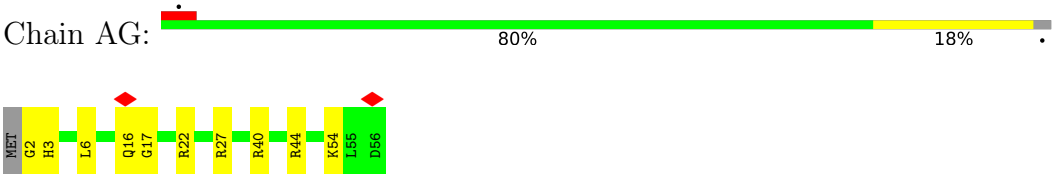
• Molecule 60: Small ribosomal subunit protein RACK1



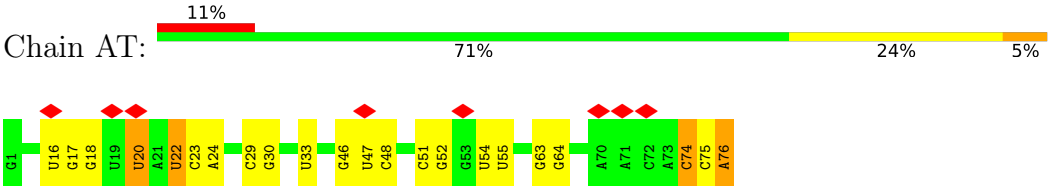




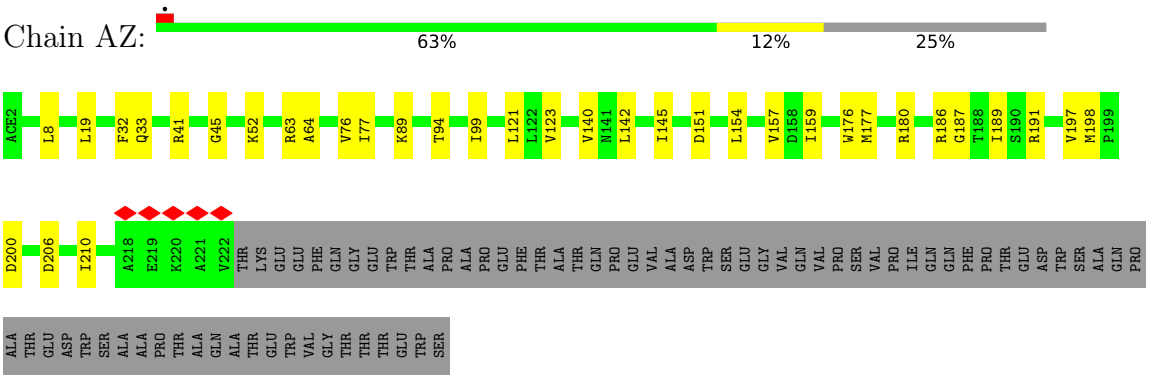
• Molecule 61: Small ribosomal subunit protein uS14



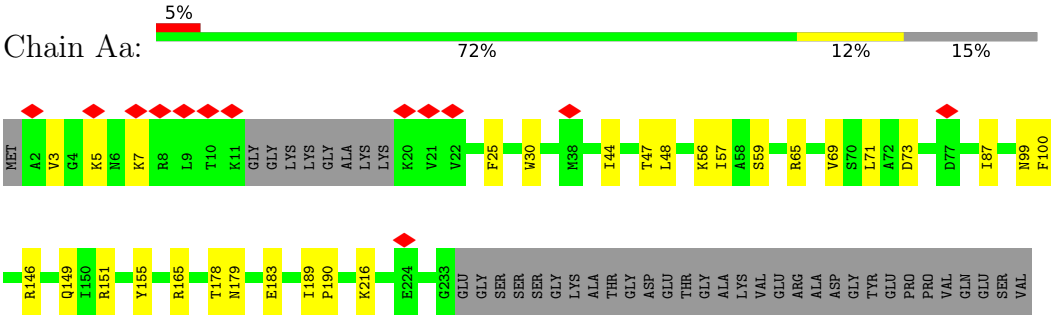
• Molecule 62: P site Phe tRNA



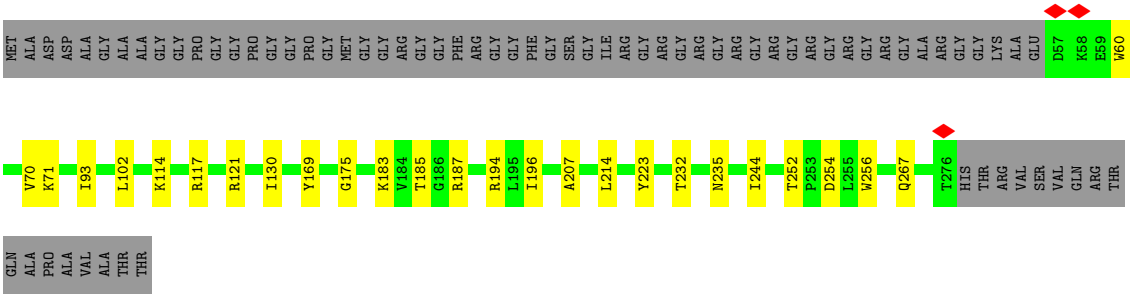
• Molecule 63: Small ribosomal subunit protein uS2



• Molecule 64: 40S ribosomal protein S3a

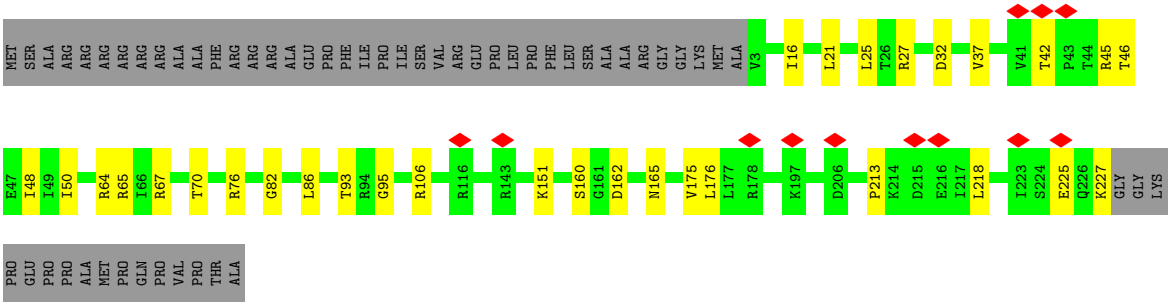


• Molecule 65: 40S ribosomal protein S2



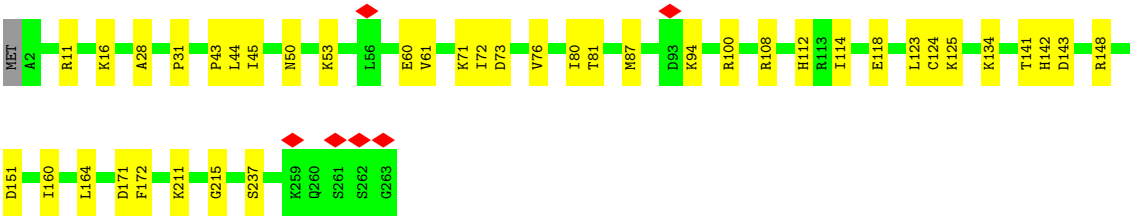
• Molecule 66: 40S ribosomal protein S3

Chain Ac:



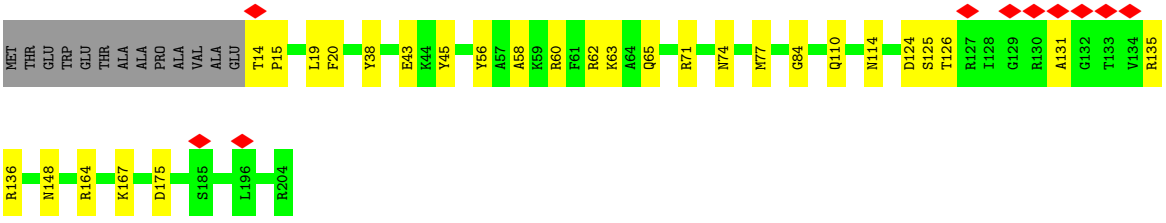
• Molecule 67: 40S ribosomal protein S4

Chain Ad:



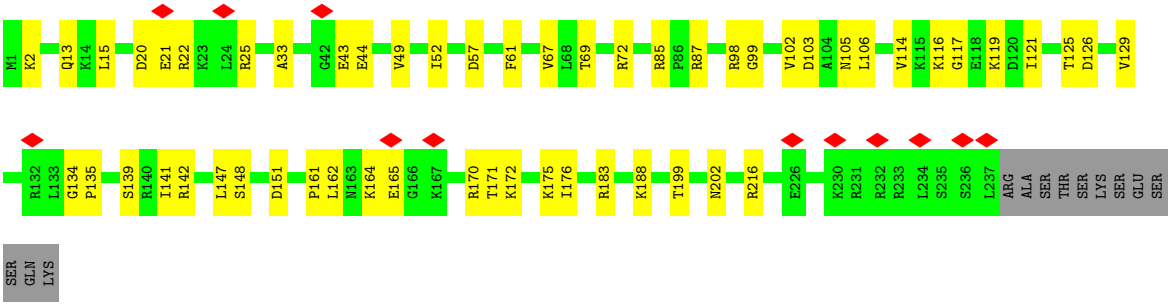
• Molecule 68: Small ribosomal subunit protein uS7

Chain Ae:



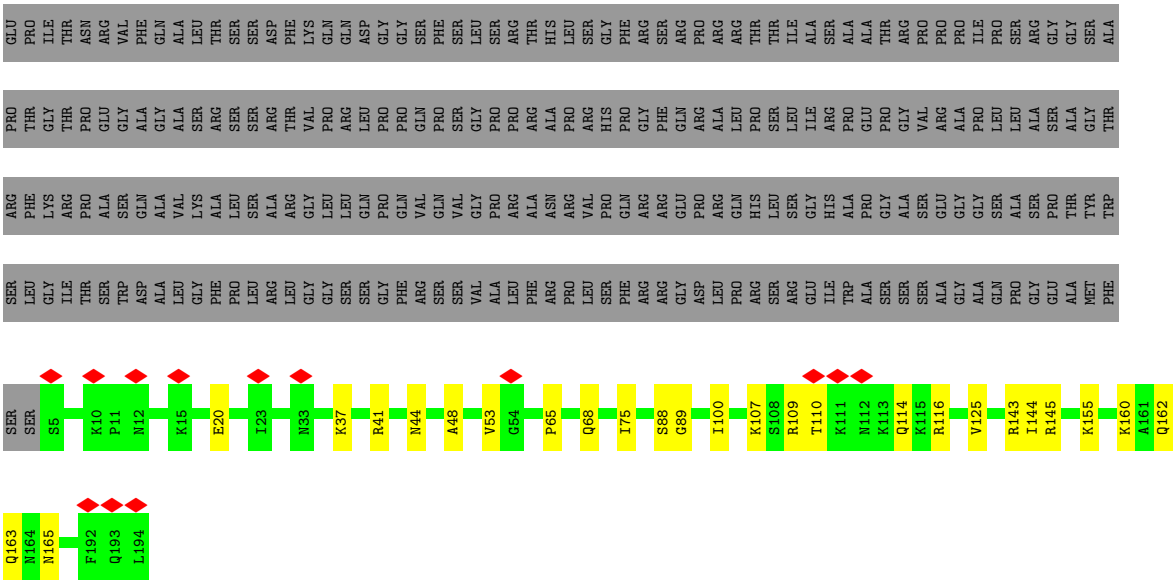
• Molecule 69: 40S ribosomal protein S6

Chain Af:



• Molecule 70: 40S ribosomal protein S7

Chain Ag:

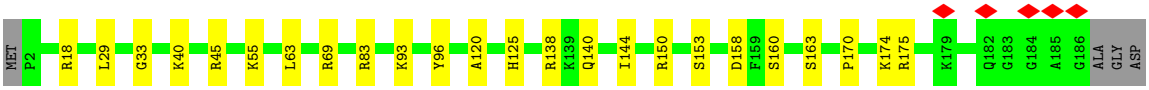


• Molecule 71: 40S ribosomal protein S8

Chain Ah:

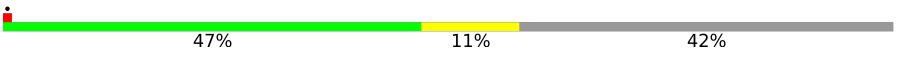
• Molecule 72: Small ribosomal subunit protein uS4

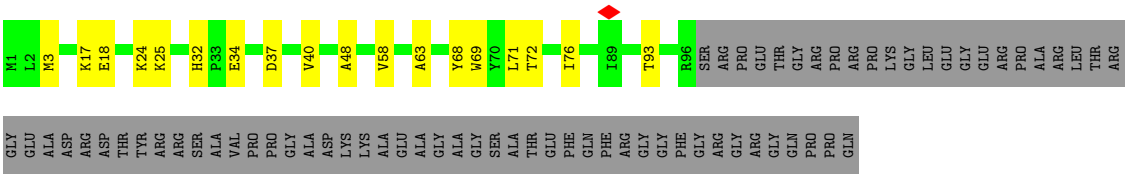
Chain Ai:



• Molecule 73: S10_plectin domain-containing protein

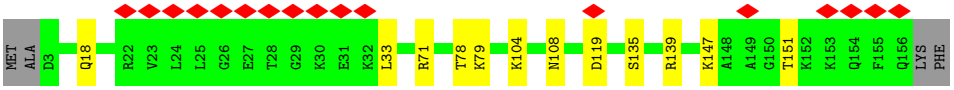
Chain Aj:





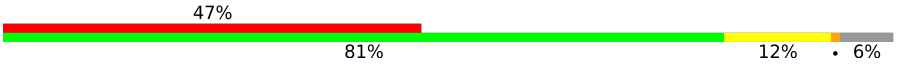
• Molecule 74: Small ribosomal subunit protein uS17

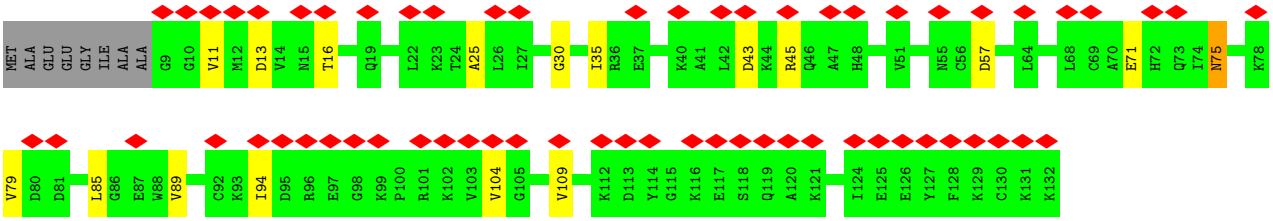
Chain Ak:



• Molecule 75: Small ribosomal subunit protein eS12

Chain Al:



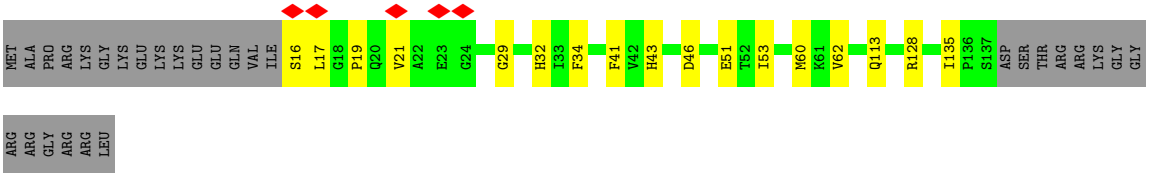


• Molecule 76: Small ribosomal subunit protein uS15

Chain Am:

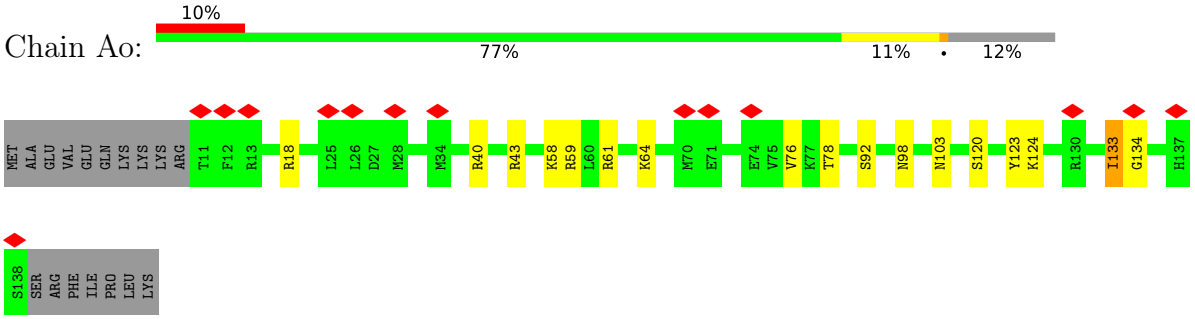
• Molecule 77: Small ribosomal subunit protein uS11

Chain An:



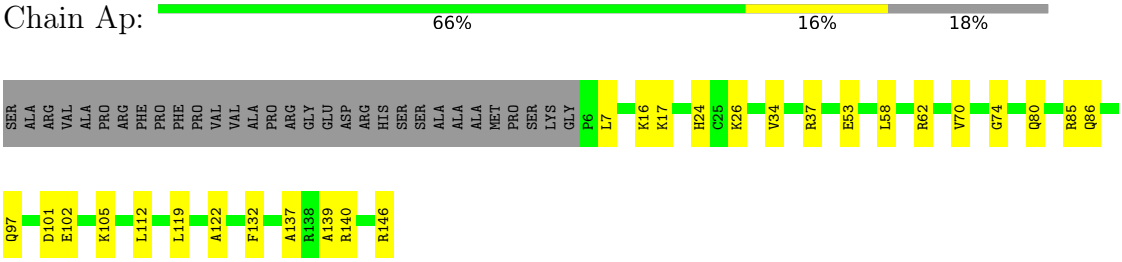
• Molecule 78: Small ribosomal subunit protein uS19

Chain Ao:



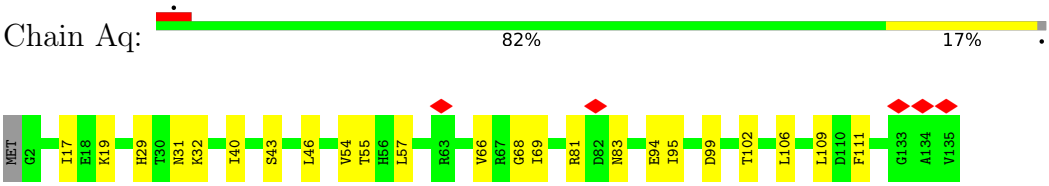
• Molecule 79: Small ribosomal subunit protein uS9

Chain Ap:



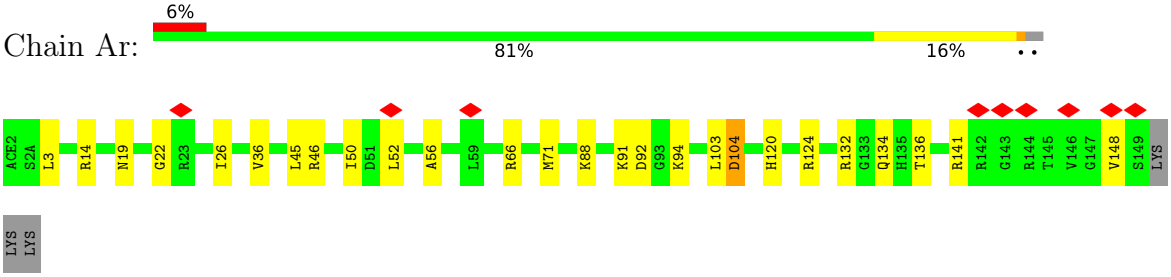
• Molecule 80: Small ribosomal subunit protein eS17

Chain Aq:



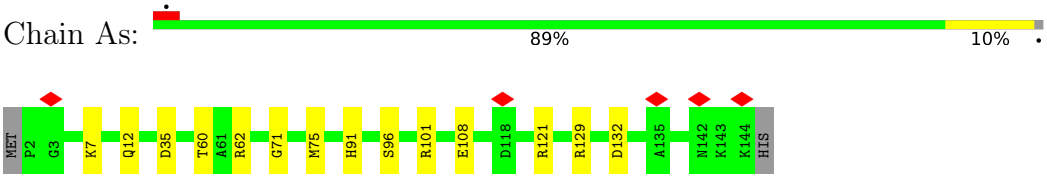
• Molecule 81: Small ribosomal subunit protein uS13

Chain Ar:



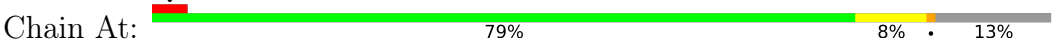
• Molecule 82: 40S ribosomal protein S19

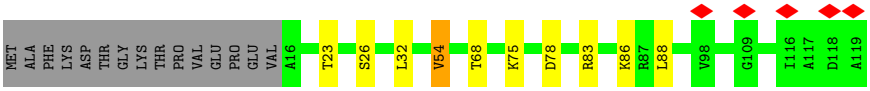
Chain As:



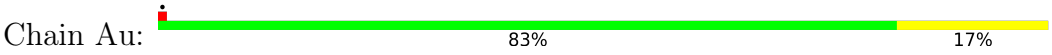
• Molecule 83: Small ribosomal subunit protein uS10

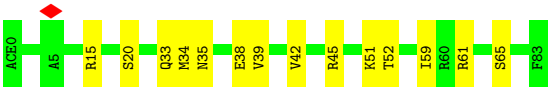
Chain At:





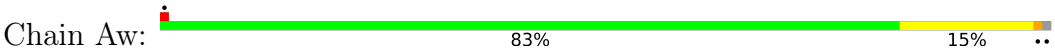
• Molecule 84: Small ribosomal subunit protein eS21

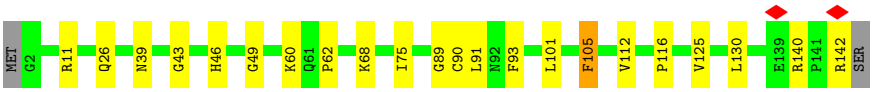




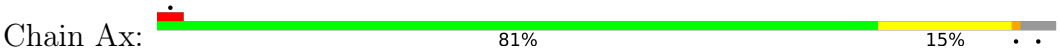
• Molecule 85: Small ribosomal subunit protein uS8

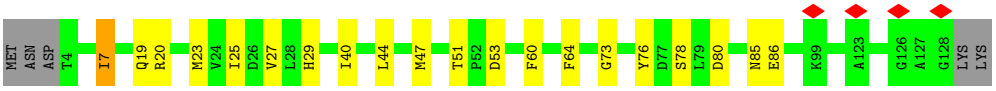
• Molecule 86: 40S ribosomal protein S23



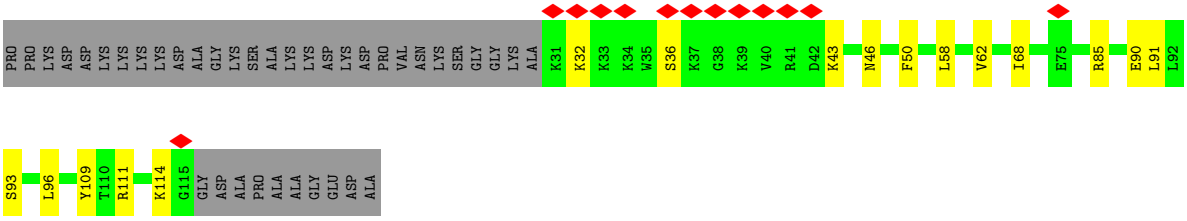


• Molecule 87: 40S ribosomal protein S24

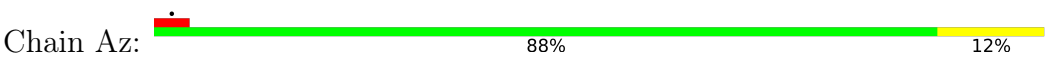


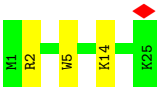


• Molecule 88: Small ribosomal subunit protein eS25



• Molecule 89: Small ribosomal subunit protein eS32




M1
R2
W5
K14
K25

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	15709	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	700	Depositor
Maximum defocus (nm)	2700	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.826	Depositor
Minimum map value	-0.395	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.039	Depositor
Recommended contour level	0.14	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: 5MU, SPD, HIC, OMG, OMU, MA6, SPM, ACE, PSU, UR3, IHP, ZN, UY1, UNX, 5MC, 1MA, B8N, M3L, MG, 6MZ, A2M, V5N, OMC, NMM, 4AC, G7M, MLZ, HY3

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	B5	0.13	1/87403 (0.0%)	0.15	0/136359
2	B7	0.13	0/2861	0.17	0/4459
3	B8	0.14	0/3635	0.17	0/5661
4	BA	0.10	0/1965	0.25	0/2633
5	BB	0.22	0/3261	0.35	1/4364 (0.0%)
6	BC	0.09	0/2938	0.21	0/3948
7	BD	0.08	0/2437	0.21	0/3264
8	BE	0.09	0/1998	0.22	0/2673
9	BF	0.09	0/1922	0.23	0/2563
10	BG	0.08	0/1908	0.22	0/2566
11	BH	0.08	0/1535	0.23	0/2063
12	BI	0.08	0/1756	0.21	0/2346
13	BJ	0.08	0/1385	0.23	0/1852
15	BL	0.09	0/1733	0.22	0/2316
16	BM	0.10	0/1158	0.22	0/1547
17	BN	0.09	0/1746	0.22	0/2338
18	BO	0.08	0/1662	0.21	0/2222
19	BP	0.08	0/1317	0.21	0/1768
20	BQ	0.09	0/1539	0.21	0/2054
21	BR	0.07	0/1524	0.18	0/2013
22	BS	0.09	0/1497	0.22	0/2008
23	BT	0.09	0/1326	0.22	0/1770
24	BU	0.08	0/820	0.23	0/1100
25	BV	0.36	0/1048	0.44	0/1402
26	BW	0.07	0/1006	0.19	0/1334
27	BX	0.08	0/984	0.22	0/1323
28	BY	0.09	0/1132	0.21	0/1504
29	BZ	0.09	0/1130	0.23	0/1507
30	Ba	0.24	0/1179	0.30	0/1572
31	Bb	0.08	0/884	0.20	0/1169
32	Bc	0.08	0/847	0.18	0/1134

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	Bd	0.10	0/903	0.21	0/1216
34	Be	0.08	0/1088	0.23	0/1451
35	Bf	0.09	0/903	0.22	0/1208
36	Bg	0.08	0/916	0.23	0/1220
37	Bh	0.07	0/1021	0.19	0/1348
38	Bi	0.07	0/841	0.20	0/1112
39	Bj	0.09	0/720	0.24	0/952
40	Bk	0.09	0/575	0.19	0/761
41	Bl	0.08	0/459	0.18	0/608
42	Bm	0.08	0/426	0.28	0/564
43	Bo	0.08	0/866	0.22	0/1141
44	Bp	0.09	0/718	0.23	0/953
45	Br	0.10	0/1027	0.24	0/1376
46	Bs	0.07	0/1530	0.20	0/2064
47	Bt	0.08	0/1193	0.22	0/1609
48	Bv	0.09	0/1735	0.28	0/2328
49	Nt	0.53	1/884 (0.1%)	0.65	0/1181
50	Nu	0.61	0/836	0.77	1/1122 (0.1%)
51	XA	0.40	0/7038	0.54	1/9468 (0.0%)
52	XB	0.08	0/1404	0.23	0/1890
53	MA	0.21	0/2884	0.31	0/3912
54	A2	0.17	1/40342 (0.0%)	0.18	0/62877
55	AA	0.08	0/665	0.22	0/891
56	AB	0.07	0/497	0.19	0/666
57	AC	0.07	0/622	0.21	0/822
58	AD	0.07	0/462	0.20	0/607
59	AE	0.09	0/828	0.22	0/1109
60	AF	0.09	0/2493	0.22	0/3394
61	AG	0.07	0/470	0.26	0/623
62	AT	0.17	0/1766	0.23	0/2749
63	AZ	0.09	0/1778	0.22	0/2416
64	Aa	0.08	0/1841	0.23	0/2459
65	Ab	0.09	0/1742	0.23	0/2354
66	Ac	0.08	0/1779	0.21	0/2395
67	Ad	0.08	0/2118	0.22	0/2849
68	Ae	0.08	0/1531	0.23	0/2059
69	Af	0.07	0/1946	0.20	0/2590
70	Ag	0.08	0/1552	0.21	0/2079
71	Ah	0.08	0/1715	0.21	0/2287
72	Ai	0.08	0/1550	0.20	0/2069
73	Aj	0.27	0/834	0.37	0/1125
74	Ak	0.09	0/1284	0.22	0/1717
75	Al	0.07	0/968	0.22	0/1296

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
76	Am	0.10	0/1232	0.21	0/1656
77	An	0.08	0/912	0.21	0/1230
78	Ao	0.07	0/1069	0.20	0/1429
79	Ap	0.09	0/1142	0.23	0/1528
80	Aq	0.23	0/1094	0.32	0/1469
81	Ar	0.08	0/1233	0.23	0/1653
82	As	0.08	0/1119	0.20	0/1498
83	At	0.10	0/831	0.20	0/1115
84	Au	0.09	0/645	0.21	0/864
85	Av	0.09	0/1051	0.20	0/1406
86	Aw	0.08	0/1107	0.21	0/1475
87	Ax	0.08	0/1032	0.21	0/1371
88	Ay	0.08	0/691	0.20	0/922
89	Az	0.06	0/240	0.15	0/305
All	All	0.15	3/247684 (0.0%)	0.22	3/361670 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
5	BB	0	2
25	BV	0	1
51	XA	0	4
All	All	0	7

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
49	Nt	130	ASP	N-CA	6.22	1.50	1.46
54	A2	577	A2M	O3'-P	5.01	1.61	1.56
1	B5	1270	A2M	O3'-P	5.00	1.61	1.56

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
51	XA	589	ASP	N-CA-C	-7.46	103.13	111.71
5	BB	255	GLY	CA-C-O	-5.20	118.12	122.33
50	Nu	104	PRO	CB-CA-C	5.09	119.96	111.56

There are no chirality outliers.

All (7) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
5	BB	100	ARG	Sidechain
5	BB	97	ARG	Sidechain
25	BV	90	ARG	Sidechain
51	XA	134	ARG	Sidechain
51	XA	137	ARG	Sidechain
51	XA	636	GLY	Peptide
51	XA	91	ARG	Sidechain

5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	B5	80772	0	40886	622	0
2	B7	2561	0	1295	22	0
3	B8	3319	0	1684	19	0
4	BA	1940	0	2029	31	0
5	BB	3206	0	3353	48	0
6	BC	2886	0	3057	31	0
7	BD	2391	0	2424	32	0
8	BE	1960	0	2153	27	0
9	BF	1886	0	2008	15	0
10	BG	1877	0	2023	15	0
11	BH	1516	0	1597	15	0
12	BI	1717	0	1764	33	0
13	BJ	1362	0	1399	15	0
14	BK	60	0	14	3	0
15	BL	1702	0	1820	18	0
16	BM	1137	0	1211	12	0
17	BN	1701	0	1749	22	0
18	BO	1630	0	1778	15	0
19	BP	1289	0	1329	13	0
20	BQ	1515	0	1634	25	0
21	BR	1508	0	1664	16	0
22	BS	1457	0	1492	15	0
23	BT	1298	0	1366	22	0
24	BU	806	0	827	17	0
25	BV	1034	0	1097	17	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
26	BW	991	0	1048	16	0
27	BX	967	0	1040	10	0
28	BY	1115	0	1205	10	0
29	BZ	1107	0	1182	12	0
30	Ba	1163	0	1202	16	0
31	Bb	881	0	957	9	0
32	Bc	836	0	888	9	0
33	Bd	888	0	930	10	0
34	Be	1070	0	1165	8	0
35	Bf	884	0	924	7	0
36	Bg	906	0	998	15	0
37	Bh	1013	0	1147	15	0
38	Bi	830	0	916	6	0
39	Bj	705	0	737	11	0
40	Bk	569	0	637	7	0
41	Bl	447	0	480	9	0
42	Bm	432	0	470	4	0
43	Bo	863	0	929	13	0
44	Bp	708	0	756	6	0
45	Br	1014	0	1083	12	0
46	Bs	1507	0	1564	30	0
47	Bt	1178	0	1235	26	0
48	Bv	1707	0	1815	39	0
49	Nt	879	0	938	45	0
50	Nu	828	0	874	46	0
51	XA	6900	0	6944	234	0
52	XB	1375	0	1348	56	0
53	MA	2804	0	2822	54	0
54	A2	37833	0	19167	302	0
55	AA	651	0	672	7	0
56	AB	495	0	523	6	0
57	AC	610	0	634	16	0
58	AD	457	0	502	9	0
59	AE	814	0	863	10	0
60	AF	2436	0	2393	41	0
61	AG	459	0	448	10	0
62	AT	1621	0	823	19	0
63	AZ	1743	0	1748	23	0
64	Aa	1815	0	1908	26	0
65	Ab	1706	0	1796	19	0
66	Ac	1751	0	1846	24	0
67	Ad	2076	0	2177	25	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
68	Ae	1509	0	1563	19	0
69	Af	1923	0	2089	41	0
70	Ag	1529	0	1627	16	0
71	Ah	1686	0	1772	27	0
72	Ai	1525	0	1640	17	0
73	Aj	810	0	836	11	0
74	Ak	1262	0	1335	9	0
75	Al	958	0	993	12	0
76	Am	1208	0	1294	12	0
77	An	899	0	912	18	0
78	Ao	1048	0	1093	13	0
79	Ap	1124	0	1193	21	0
80	Aq	1080	0	1135	16	0
81	Ar	1217	0	1279	18	0
82	As	1113	0	1145	15	0
83	At	821	0	883	9	0
84	Au	640	0	633	10	0
85	Av	1034	0	1080	16	0
86	Aw	1099	0	1162	16	0
87	Ax	1015	0	1086	15	0
88	Ay	683	0	761	11	0
89	Az	239	0	289	3	0
90	A2	80	0	152	8	0
90	B5	210	0	399	15	0
90	BS	10	0	19	1	0
91	A2	14	0	26	2	0
91	B5	28	0	52	2	0
92	A2	108	0	0	0	0
92	Aw	1	0	0	0	0
92	B5	278	0	0	0	0
92	B7	9	0	0	0	0
92	B8	9	0	0	0	0
92	BB	2	0	0	0	0
92	BP	1	0	0	0	0
92	BR	1	0	0	0	0
92	BV	1	0	0	0	0
92	Ba	1	0	0	0	0
92	Bj	1	0	0	0	0
93	A2	29	0	0	0	0
93	Ad	1	0	0	0	0
93	Ar	1	0	0	0	0
93	B5	117	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
93	B7	3	0	0	0	0
93	B8	5	0	0	0	0
93	BA	1	0	0	0	0
93	BI	1	0	0	0	0
93	BN	1	0	0	0	0
93	BQ	2	0	0	0	0
93	BT	1	0	0	0	0
93	BY	1	0	0	0	0
93	Bb	2	0	0	0	0
93	Be	1	0	0	0	0
93	Bj	1	0	0	0	0
93	Bo	1	0	0	0	0
94	AC	1	0	0	0	0
94	AE	1	0	0	0	0
94	AG	1	0	0	0	0
94	Bg	1	0	0	0	0
94	Bj	1	0	0	0	0
94	Bm	1	0	0	0	0
94	Bo	1	0	0	0	0
94	Bp	1	0	0	0	0
95	XA	36	0	6	1	0
96	A2	529	0	0	3	0
96	AE	1	0	0	0	0
96	AT	1	0	0	0	0
96	Aa	3	0	0	0	0
96	Ad	1	0	0	0	0
96	Af	2	0	0	0	0
96	Ak	1	0	0	0	0
96	Am	1	0	0	0	0
96	Ap	2	0	0	0	0
96	As	1	0	0	0	0
96	At	1	0	0	1	0
96	Aw	5	0	0	2	0
96	B5	1379	0	0	12	0
96	B7	45	0	0	0	0
96	B8	50	0	0	0	0
96	BA	7	0	0	0	0
96	BB	6	0	0	0	0
96	BC	2	0	0	0	0
96	BF	1	0	0	0	0
96	BI	2	0	0	0	0
96	BL	2	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
96	BN	4	0	0	0	0
96	BO	1	0	0	0	0
96	BP	3	0	0	0	0
96	BR	4	0	0	0	0
96	BT	1	0	0	0	0
96	BV	3	0	0	0	0
96	BX	1	0	0	0	0
96	Ba	5	0	0	0	0
96	Bd	1	0	0	0	0
96	Be	3	0	0	0	0
96	Bg	2	0	0	0	0
96	Bj	3	0	0	0	0
96	Bl	1	0	0	0	0
All	All	239026	0	179841	2217	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 6.

All (2217) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:XA:73:LEU:O	51:XA:77:LEU:HD12	1.26	1.30
54:A2:1338:4AC:O2'	83:At:68:THR:HG22	1.29	1.27
51:XA:73:LEU:O	51:XA:77:LEU:CD1	1.90	1.19
51:XA:89:LEU:HD12	51:XA:90:GLN:N	1.63	1.12
65:Ab:114:LYS:HD3	65:Ab:121:ARG:HH21	1.12	1.11
52:XB:6:ALA:HA	52:XB:44:ILE:HD12	1.11	1.06
49:Nt:129:GLU:HG3	49:Nt:130:ASP:H	1.12	1.06
54:A2:1338:4AC:O2'	83:At:68:THR:CG2	2.09	1.00
52:XB:6:ALA:HA	52:XB:44:ILE:CD1	1.90	0.99
52:XB:6:ALA:HB2	52:XB:44:ILE:HG13	1.43	0.97
85:Av:105:THR:CG2	85:Av:126:LEU:HD11	1.95	0.96
65:Ab:114:LYS:CD	65:Ab:121:ARG:HH21	1.79	0.96
65:Ab:114:LYS:HD3	65:Ab:121:ARG:NH2	1.83	0.93
52:XB:6:ALA:CA	52:XB:44:ILE:HD12	2.00	0.92
3:B8:81:C:HO2'	37:Bh:2:ALA:N	1.68	0.91
36:Bg:69:LYS:HG2	36:Bg:73:HIS:CE1	2.06	0.91
54:A2:1273:C:HO2'	61:AG:2:GLY:N	1.67	0.91
1:B5:3374:A:HO2'	39:Bj:2:THR:N	1.70	0.90
85:Av:105:THR:HG23	85:Av:126:LEU:HG	1.53	0.90
49:Nt:129:GLU:HG3	49:Nt:130:ASP:N	1.87	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:BI:110:ARG:HG2	62:AT:75:C:H41	1.37	0.89
36:Bg:69:LYS:O	36:Bg:73:HIS:CE1	2.27	0.87
85:Av:105:THR:CG2	85:Av:126:LEU:CD1	2.52	0.87
10:BG:106:THR:OG1	10:BG:109:GLU:HG2	1.76	0.85
60:AF:116:ASP:O	60:AF:117:ASN:OD1	1.95	0.84
66:Ac:21:LEU:CD2	66:Ac:48:ILE:HD13	2.08	0.84
36:Bg:69:LYS:O	36:Bg:73:HIS:ND1	2.11	0.83
49:Nt:130:ASP:HA	49:Nt:134:GLN:HG2	1.59	0.83
51:XA:590:LYS:HA	51:XA:593:LYS:HZ2	1.43	0.83
1:B5:4650:A:C5	5:BB:97:ARG:NH1	2.48	0.82
51:XA:518:ILE:HG12	52:XB:28:MET:HG3	1.62	0.81
85:Av:105:THR:HG21	85:Av:126:LEU:HD11	1.61	0.80
51:XA:484:CYS:HA	52:XB:19:LEU:HD13	1.64	0.79
66:Ac:21:LEU:HD21	66:Ac:48:ILE:HD13	1.64	0.78
48:Bv:58:THR:HG22	48:Bv:153:SER:N	1.99	0.78
54:A2:1092:C:HO2'	85:Av:2:VAL:N	1.81	0.77
54:A2:1034:G:H1	54:A2:1081:A:HO2'	1.30	0.77
25:BV:87:SER:HA	25:BV:97:TYR:HB3	1.67	0.77
1:B5:755:G:H1	1:B5:800:U:H3	1.32	0.77
51:XA:486:TRP:CD1	52:XB:20:LEU:HD11	2.20	0.77
52:XB:6:ALA:HB1	52:XB:44:ILE:HD11	1.65	0.76
51:XA:89:LEU:HD12	51:XA:90:GLN:H	1.50	0.76
69:Af:44:GLU:HG2	69:Af:119:LYS:HD3	1.66	0.76
52:XB:44:ILE:CG2	52:XB:52:ILE:HG21	2.15	0.76
54:A2:1758:G:H1	54:A2:1776:U:H3	1.31	0.76
52:XB:6:ALA:CB	52:XB:44:ILE:CD1	2.64	0.75
53:MA:284:GLY:HA2	53:MA:475:GLN:HG2	1.68	0.75
49:Nt:94:VAL:HB	49:Nt:106:ILE:HB	1.67	0.75
54:A2:926:G:H1	54:A2:1018:U:H3	1.34	0.75
5:BB:67:VAL:CG1	25:BV:91:LYS:HG2	2.17	0.74
25:BV:89:ARG:HA	25:BV:95:PHE:HA	1.68	0.74
52:XB:6:ALA:CA	52:XB:44:ILE:CD1	2.62	0.74
51:XA:66:TYR:HE1	51:XA:89:LEU:HD22	1.52	0.74
51:XA:501:PHE:HB3	51:XA:564:ILE:HG23	1.70	0.74
54:A2:228:C:H42	54:A2:902:G:H1'	1.54	0.73
85:Av:105:THR:HG23	85:Av:126:LEU:CG	2.19	0.73
51:XA:295:ARG:HD3	51:XA:328:THR:HG21	1.70	0.73
51:XA:496:LYS:HE3	51:XA:560:ILE:HB	1.71	0.73
1:B5:4361:C:H5"	5:BB:357:ARG:HE	1.54	0.72
1:B5:2011:C:H5"	9:BF:115:GLN:HE21	1.52	0.72
54:A2:1397:A:O2'	54:A2:1399:G:N7	2.23	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:3373:U:OP2	1:B5:3378:A:N6	2.23	0.72
46:Bs:65:ILE:HG23	46:Bs:75:LEU:HB3	1.71	0.72
51:XA:544:LEU:HD21	52:XB:12:MET:HG3	1.71	0.72
52:XB:6:ALA:CB	52:XB:44:ILE:HG13	2.18	0.71
51:XA:89:LEU:CD1	51:XA:90:GLN:N	2.51	0.71
24:BU:99:TRP:CH2	50:Nu:11:LEU:HB3	2.26	0.71
63:AZ:94:THR:HG23	63:AZ:186:ARG:HH12	1.55	0.71
1:B5:3958:A:N1	23:BT:3:ASN:ND2	2.38	0.71
51:XA:525:PHE:HA	51:XA:528:TYR:HD2	1.55	0.71
51:XA:333:TYR:HH	51:XA:383:HIS:HD1	1.36	0.71
51:XA:66:TYR:CE1	51:XA:89:LEU:HD22	2.24	0.71
51:XA:515:PHE:HA	51:XA:518:ILE:HD12	1.72	0.71
71:Ah:101:ILE:HD12	71:Ah:190:LEU:HD11	1.73	0.70
26:BW:9:SER:OG	26:BW:36:CYS:SG	2.44	0.70
25:BV:69:LYS:HG2	25:BV:71:GLU:HG2	1.72	0.70
51:XA:80:HIS:HA	51:XA:83:TRP:HD1	1.57	0.70
54:A2:695:G:H1	54:A2:733:U:H3	1.40	0.70
52:XB:44:ILE:HG23	52:XB:52:ILE:HG21	1.72	0.69
51:XA:766:LEU:HD23	51:XA:787:ALA:HB1	1.74	0.69
1:B5:680:A:OP1	51:XA:590:LYS:CE	2.41	0.69
1:B5:3353:A:HO2'	1:B5:4404:G:HO2'	1.40	0.69
1:B5:1899:A:H1'	46:Bs:63:LYS:HD3	1.74	0.69
4:BA:6:ARG:HH12	4:BA:199:VAL:H	1.40	0.69
8:BE:227:LYS:HE2	8:BE:241:GLU:H	1.58	0.69
54:A2:1861:A:N7	59:AE:34:LYS:NZ	2.41	0.68
51:XA:682:TYR:HA	51:XA:685:LYS:HB2	1.75	0.68
54:A2:64:A:H2	54:A2:83:A:H62	1.40	0.68
54:A2:835:C:O2	54:A2:839:G:N2	2.23	0.68
22:BS:112:ASP:OD1	22:BS:116:ARG:NH1	2.26	0.68
38:Bi:29:ARG:HA	38:Bi:32:ARG:HH21	1.58	0.68
1:B5:1908:G:H4'	46:Bs:36:GLY:HA2	1.75	0.68
49:Nt:129:GLU:CG	49:Nt:130:ASP:H	1.99	0.68
60:AF:133:ASN:HB3	60:AF:139:LYS:HE3	1.76	0.68
54:A2:1680:A:H2'	68:Ae:60:ARG:HD2	1.75	0.68
51:XA:193:LEU:HD13	51:XA:216:TYR:HB3	1.76	0.68
51:XA:590:LYS:HG3	51:XA:591:GLU:N	2.08	0.68
50:Nu:63:ASN:HB2	50:Nu:109:GLN:HE22	1.59	0.67
1:B5:4304:U:OP2	5:BB:246:ARG:NH2	2.28	0.67
7:BD:83:LEU:HB3	7:BD:88:VAL:HB	1.77	0.67
1:B5:1694:C:O2	7:BD:3:PHE:N	2.27	0.67
69:Af:162:LEU:HD11	69:Af:172:LYS:HG3	1.75	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:XA:253:ARG:O	52:XB:96:ARG:NH1	2.28	0.66
54:A2:1491:OMG:HM22	54:A2:1492:G:H5'	1.76	0.66
70:Ag:143:ARG:HB2	70:Ag:155:LYS:HB2	1.77	0.66
1:B5:758:C:O2'	1:B5:760:C:N4	2.27	0.66
49:Nt:107:THR:HG23	49:Nt:127:LYS:HD3	1.78	0.66
51:XA:760:ASP:HA	51:XA:794:LEU:HD22	1.76	0.66
52:XB:2:ASN:HB2	52:XB:46:GLU:HB2	1.77	0.66
55:AA:84:HIS:OXT	76:Am:19:ARG:NH1	2.28	0.66
26:BW:80:ARG:NH2	69:Af:129:VAL:O	2.28	0.66
54:A2:1392:OMC:HM22	54:A2:1393:U:H5'	1.77	0.66
60:AF:78:ALA:HB3	60:AF:90:TRP:HB2	1.77	0.66
1:B5:3978:U:O4	43:Bo:8:ARG:NH2	2.29	0.66
1:B5:1809:C:H2'	1:B5:1810:A2M:H8	1.77	0.66
79:Ap:58:LEU:HB3	79:Ap:62:ARG:HD2	1.76	0.66
1:B5:1391:C:O2'	31:Bb:106:ARG:NH2	2.28	0.66
50:Nu:99:LEU:O	50:Nu:105:SER:N	2.28	0.66
51:XA:485:MET:HE2	51:XA:515:PHE:CE1	2.31	0.66
54:A2:1675:G:N7	79:Ap:17:LYS:NZ	2.43	0.66
70:Ag:162:GLN:OE1	70:Ag:165:ASN:ND2	2.29	0.66
1:B5:3540:OMC:HM22	1:B5:3541:G:H5'	1.78	0.65
54:A2:1143:G:OP1	65:Ab:187:ARG:NH1	2.29	0.65
54:A2:1567:G:N7	82:As:101:ARG:NH2	2.45	0.65
54:A2:153:G:N3	69:Af:13:GLN:NE2	2.45	0.65
1:B5:2688:A:H61	1:B5:3575:C:H42	1.45	0.65
1:B5:4779:U:OP2	5:BB:396:ARG:NH2	2.29	0.65
78:Ao:18:ARG:NH1	81:Ar:88:LYS:O	2.28	0.65
1:B5:3555:G:N2	1:B5:3555:G:OP2	2.30	0.65
51:XA:521:ASP:CG	52:XB:29:LYS:HG3	2.21	0.65
52:XB:46:GLU:HA	52:XB:52:ILE:HA	1.77	0.65
54:A2:1600:U:OP2	88:Ay:46:ASN:ND2	2.29	0.65
1:B5:184:U:H3	1:B5:253:G:H22	1.44	0.65
48:Bv:32:VAL:HA	48:Bv:208:SER:HA	1.78	0.65
51:XA:145:PRO:O	51:XA:151:TRP:NE1	2.25	0.65
78:Ao:64:LYS:NZ	78:Ao:92:SER:OG	2.30	0.65
1:B5:3943:G:N2	62:AT:75:C:O2	2.29	0.65
8:BE:115:MET:O	45:Br:87:ARG:NH1	2.30	0.65
85:Av:105:THR:HG23	85:Av:126:LEU:CD1	2.25	0.65
43:Bo:74:GLU:HB3	43:Bo:77:CYS:HB3	1.79	0.65
1:B5:660:G:O2'	6:BC:291:ARG:NH1	2.30	0.65
20:BQ:16:LYS:O	20:BQ:33:ARG:NH2	2.30	0.65
36:Bg:69:LYS:HG2	36:Bg:73:HIS:HE1	1.58	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:XA:122:LEU:HD13	51:XA:527:THR:HG22	1.79	0.65
51:XA:164:TYR:HB2	51:XA:203:ALA:HB2	1.77	0.65
63:AZ:177:MET:SD	63:AZ:180:ARG:NH2	2.70	0.65
1:B5:1237:G:OP2	1:B5:1237:G:N2	2.26	0.64
1:B5:2267:OMG:HM22	1:B5:2268:U:H5"	1.79	0.64
1:B5:4480:A:H61	1:B5:4704:U:H3	1.43	0.64
52:XB:6:ALA:CB	52:XB:44:ILE:HD11	2.27	0.64
54:A2:437:OMG:HM22	54:A2:438:G:H5'	1.78	0.64
48:Bv:58:THR:HG22	48:Bv:153:SER:CA	2.27	0.64
51:XA:590:LYS:HG3	51:XA:591:GLU:H	1.62	0.64
67:Ad:125:LYS:H	67:Ad:142:HIS:HD2	1.44	0.64
75:Al:11:VAL:HG13	75:Al:13:ASP:H	1.62	0.64
1:B5:3693:G:O2'	1:B5:3771:G:N2	2.30	0.64
51:XA:590:LYS:HA	51:XA:593:LYS:NZ	2.13	0.64
54:A2:1508:G:N2	57:AC:87:THR:O	2.27	0.64
1:B5:2363:C:O2	1:B5:2483:G:N2	2.30	0.64
33:Bd:64:ILE:HG23	33:Bd:68:LEU:HD23	1.79	0.64
1:B5:1955:C:H2'	1:B5:1956:A:H8	1.63	0.64
1:B5:1674:U:H5'	90:B5:4918:SPD:H41	1.80	0.64
1:B5:2704:OMC:HM22	1:B5:2705:G:H5'	1.78	0.64
51:XA:193:LEU:O	51:XA:197:ASN:ND2	2.30	0.64
5:BB:261:ARG:HB2	18:BO:64:THR:HG21	1.79	0.64
12:BI:110:ARG:HH21	62:AT:74:C:P	2.21	0.64
78:Ao:59:ARG:HH11	78:Ao:76:VAL:HG13	1.63	0.64
1:B5:4300:G:N7	96:B5:5567:HOH:O	2.30	0.64
43:Bo:69:ARG:HG3	43:Bo:82:MET:HE1	1.80	0.64
54:A2:1173:U:H5"	89:Az:14:LYS:HD2	1.80	0.64
51:XA:529:CYS:HA	51:XA:538:TYR:CZ	2.33	0.64
25:BV:85:ARG:NH1	25:BV:99:GLU:O	2.31	0.63
50:Nu:103:LEU:O	50:Nu:104:PRO:C	2.41	0.63
60:AF:60:ARG:HE	79:Ap:97:GLN:HE22	1.44	0.63
1:B5:207:G:OP2	51:XA:31:LYS:NZ	2.29	0.63
54:A2:1402:A:N6	54:A2:1442:U:O2'	2.30	0.63
65:Ab:114:LYS:CD	65:Ab:121:ARG:NH2	2.51	0.63
79:Ap:132:PHE:O	79:Ap:140:ARG:NH2	2.30	0.63
1:B5:1415:C:H5"	20:BQ:144:LYS:HG2	1.79	0.63
51:XA:273:MET:SD	51:XA:276:ARG:NH1	2.71	0.63
54:A2:1355:G:N2	54:A2:1358:A:OP2	2.30	0.63
1:B5:3894:C:OP1	29:BZ:59:LYS:NZ	2.28	0.63
88:Ay:111:ARG:HD2	88:Ay:114:LYS:HE3	1.81	0.63
1:B5:2649:A:O2'	90:B5:4915:SPD:N1	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:A2:1260:A:N6	54:A2:1520:U:OP1	2.31	0.63
12:BI:38:ARG:HD2	12:BI:41:ALA:HB2	1.80	0.63
49:Nt:105:VAL:HG21	49:Nt:128:ILE:C	2.24	0.63
53:MA:281:TYR:HE2	53:MA:287:LEU:HD13	1.64	0.63
1:B5:734:G:OP2	16:BM:71:LYS:NZ	2.32	0.63
51:XA:126:GLN:HG2	51:XA:526:HIS:HD2	1.62	0.63
51:XA:522:GLN:HE22	51:XA:548:LEU:HD11	1.64	0.63
1:B5:1935:C:H42	1:B5:1939:G:H22	1.47	0.63
54:A2:1864:A:OP2	59:AE:4:LYS:NZ	2.32	0.63
60:AF:247:TRP:HB3	60:AF:258:ILE:HD11	1.81	0.63
1:B5:223:G:N3	6:BC:223:ASN:ND2	2.47	0.63
12:BI:110:ARG:NH1	62:AT:75:C:H5	1.97	0.63
54:A2:929:G:H1	54:A2:1014:U:H3	1.45	0.63
60:AF:256:ILE:HB	60:AF:270:LEU:HB2	1.81	0.63
9:BF:104:VAL:HG13	9:BF:135:VAL:HG12	1.81	0.62
54:A2:577:A2M:HM'2	54:A2:578:U:H5'	1.79	0.62
46:Bs:47:LEU:HB3	46:Bs:51:ALA:HB3	1.81	0.62
51:XA:443:PHE:HB2	52:XB:79:ARG:HE	1.65	0.62
1:B5:1341:A:HO2'	1:B5:1422:C:HO2'	1.46	0.62
1:B5:860:A:N6	8:BE:129:LEU:O	2.32	0.62
1:B5:3619:OMC:HM22	1:B5:3620:G:H5'	1.81	0.62
51:XA:623:ASN:HA	51:XA:626:LYS:HD3	1.81	0.62
1:B5:1810:A2M:HM'2	1:B5:1811:G:H5'	1.82	0.62
49:Nt:198:ALA:O	49:Nt:202:ASN:ND2	2.31	0.62
53:MA:245:ILE:HB	53:MA:281:TYR:HB3	1.81	0.62
51:XA:523:PHE:HA	51:XA:526:HIS:CD2	2.34	0.62
53:MA:410:HIS:HD2	53:MA:413:HIS:H	1.47	0.62
75:Al:79:VAL:HG11	75:Al:85:LEU:HB2	1.80	0.62
1:B5:4383:OMG:HM22	1:B5:4384:U:H5'	1.82	0.62
51:XA:508:CYS:HA	51:XA:511:ILE:HD12	1.81	0.62
53:MA:189:ARG:NH1	53:MA:408:MET:SD	2.73	0.62
54:A2:1624:A:OP2	90:A2:1903:SPD:N1	2.33	0.62
66:Ac:106:ARG:HG3	66:Ac:175:VAL:HB	1.82	0.62
1:B5:4366:OMU:HM22	1:B5:4367:C:H5'	1.82	0.61
1:B5:1757:G:N2	1:B5:1757:G:OP2	2.32	0.61
1:B5:1399:G:OP2	1:B5:1399:G:N2	2.29	0.61
9:BF:237:ASP:O	9:BF:240:ASN:ND2	2.33	0.61
67:Ad:11:ARG:HA	67:Ad:28:ALA:HB2	1.83	0.61
9:BF:189:LEU:HD21	9:BF:207:LEU:HD21	1.80	0.61
21:BR:25:ASP:OD2	50:Nu:31:LYS:NZ	2.33	0.61
47:Bt:108:GLU:HA	47:Bt:111:ASN:HD21	1.64	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:AF:184:LEU:HD23	66:Ac:227:LYS:HD2	1.82	0.61
30:Ba:24:LYS:HD2	30:Ba:26:ARG:HH21	1.66	0.61
52:XB:17:CYS:HB2	52:XB:55:TYR:HE2	1.64	0.61
66:Ac:70:THR:HG22	66:Ac:86:LEU:HD13	1.81	0.61
49:Nt:125:GLU:HB2	49:Nt:127:LYS:HE3	1.81	0.61
60:AF:116:ASP:O	60:AF:117:ASN:CG	2.42	0.61
1:B5:399:G:H2'	1:B5:400:A2M:H8	1.81	0.61
1:B5:1631:C:H41	1:B5:4124:A:H5"	1.65	0.61
1:B5:4679:C:OP1	8:BE:159:ARG:NH1	2.34	0.61
12:BI:110:ARG:HH22	62:AT:74:C:H3'	1.65	0.61
26:BW:91:MET:SD	26:BW:94:ARG:NH2	2.74	0.61
54:A2:1678:U:H2'	54:A2:1679:A2M:H8	1.82	0.61
1:B5:74:G:O6	15:BL:103:ARG:NH2	2.34	0.61
1:B5:3683:G:H1	1:B5:3789:U:H3	1.48	0.61
51:XA:791:ASP:O	51:XA:797:ARG:NH1	2.34	0.61
54:A2:430:C:O2'	54:A2:812:A:N1	2.33	0.61
1:B5:2420:C:OP1	29:BZ:111:ARG:NH1	2.34	0.60
1:B5:4202:OMC:HM22	1:B5:4203:PSU:H5"	1.82	0.60
10:BG:103:ARG:NH2	10:BG:192:ARG:O	2.34	0.60
54:A2:381:G:N1	54:A2:384:G:OP2	2.34	0.60
1:B5:1829:G:N2	1:B5:1829:G:OP2	2.30	0.60
1:B5:2568:A:N6	21:BR:88:ARG:O	2.34	0.60
48:Bv:67:VAL:HG12	48:Bv:84:HIS:HD2	1.64	0.60
49:Nt:116:ALA:HB2	50:Nu:40:ASP:HB3	1.82	0.60
51:XA:452:MET:HB2	51:XA:461:ALA:HB2	1.82	0.60
64:Aa:73:ASP:OD1	77:An:128:ARG:NH2	2.23	0.60
1:B5:2225:A:N1	1:B5:2672:U:O2'	2.33	0.60
1:B5:4336:A2M:HM'2	1:B5:4337:U:H5'	1.83	0.60
6:BC:293:LEU:O	6:BC:299:GLN:NE2	2.34	0.60
51:XA:588:SER:HB2	51:XA:590:LYS:HG2	1.83	0.60
57:AC:133:ALA:N	57:AC:140:TYR:O	2.27	0.60
32:Bc:11:LEU:HD13	32:Bc:75:SER:HB2	1.83	0.60
63:AZ:8:LEU:HD11	84:Au:39:VAL:HG11	1.82	0.60
63:AZ:89:LYS:NZ	80:Aq:83:ASN:OD1	2.35	0.60
76:Am:4:MET:SD	76:Am:124:ARG:NH2	2.75	0.60
85:Av:105:THR:CG2	85:Av:126:LEU:CG	2.78	0.60
1:B5:1918:A:N1	47:Bt:57:ARG:NH1	2.46	0.60
1:B5:4650:A:C6	5:BB:97:ARG:NH1	2.69	0.60
48:Bv:117:ILE:HD13	48:Bv:137:LEU:HD21	1.83	0.60
61:AG:44:ARG:NH1	83:At:78:ASP:OD2	2.35	0.60
1:B5:4151:G:OP2	12:BI:7:ARG:NH2	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:BM:40:GLY:HA3	16:BM:45:VAL:HB	1.82	0.60
54:A2:1021:A:N7	76:Am:70:LYS:NZ	2.49	0.60
72:Ai:170:PRO:O	72:Ai:175:ARG:NH1	2.32	0.60
1:B5:1584:G:N1	4:BA:208:GLU:OE1	2.31	0.60
3:B8:52:A:OP1	41:Bl:21:ARG:NH1	2.35	0.60
49:Nt:97:ARG:NH2	50:Nu:106:ILE:HG21	2.16	0.60
1:B5:375:G:OP2	39:Bj:52:LYS:NZ	2.33	0.60
1:B5:1924:G:H1'	1:B5:1942:G:H2'	1.83	0.60
1:B5:1260:OMG:HM22	1:B5:1261:U:H5'	1.83	0.60
1:B5:2103:C:O2	45:Br:99:LYS:NZ	2.32	0.60
1:B5:3818:G:OP1	10:BG:252:LYS:NZ	2.34	0.60
48:Bv:63:PHE:O	48:Bv:152:LYS:NZ	2.35	0.60
51:XA:73:LEU:HD12	51:XA:86:TYR:HE2	1.67	0.60
52:XB:44:ILE:CG2	52:XB:52:ILE:CG2	2.79	0.60
54:A2:1216:C:H42	54:A2:1221:A:H61	1.50	0.60
54:A2:1547:G:N2	54:A2:1671:C:O2	2.34	0.60
63:AZ:63:ARG:HH21	84:Au:38:GLU:HA	1.67	0.60
69:Af:22:ARG:HG2	69:Af:25:ARG:HH22	1.66	0.60
76:Am:136:PRO:HG2	76:Am:139:TRP:HB2	1.84	0.60
1:B5:194:C:O2	28:BY:121:ARG:NH2	2.35	0.60
1:B5:865:G:N7	9:BF:28:LYS:NZ	2.45	0.60
1:B5:4484:C:OP1	1:B5:4808:U:O2'	2.20	0.60
48:Bv:58:THR:HG21	48:Bv:152:LYS:HB2	1.83	0.60
51:XA:835:ALA:HB3	51:XA:838:PHE:HB2	1.84	0.60
54:A2:1594:C:H1'	82:As:12:GLN:HE22	1.66	0.60
46:Bs:48:ARG:HH11	47:Bt:123:ARG:HG2	1.66	0.59
81:Ar:3:LEU:HB3	88:Ay:50:PHE:HD2	1.66	0.59
52:XB:34:HIS:HD2	52:XB:57:LEU:HD13	1.67	0.59
1:B5:152:U:OP2	17:BN:49:ARG:NH2	2.35	0.59
1:B5:1473:A:OP1	30:Ba:27:LYS:NZ	2.33	0.59
11:BH:141:LYS:NZ	11:BH:142:ASP:OD2	2.34	0.59
21:BR:98:ARG:NH2	21:BR:130:ASN:OD1	2.30	0.59
64:Aa:3:VAL:HG23	77:An:62:VAL:O	2.01	0.59
69:Af:98:ARG:NH2	69:Af:103:ASP:OD1	2.34	0.59
1:B5:3909:U:H5'	1:B5:3910:C:H5"	1.85	0.59
4:BA:53:GLY:O	4:BA:192:LYS:NZ	2.35	0.59
25:BV:13:LYS:HB3	25:BV:128:LEU:HD11	1.84	0.59
46:Bs:106:LYS:HD3	46:Bs:184:SER:HB2	1.85	0.59
51:XA:423:ASN:HA	51:XA:836:LEU:HG	1.85	0.59
51:XA:441:ASP:O	51:XA:445:ASN:ND2	2.36	0.59
1:B5:1915:G:N3	47:Bt:138:SER:OG	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:2194:OMC:HM22	1:B5:2195:U:H5'	1.83	0.59
1:B5:2328:U:H3	1:B5:2336:G:H1	1.51	0.59
1:B5:2400:G:H1	1:B5:2413:U:H3	1.49	0.59
15:BL:111:GLN:O	15:BL:115:GLN:HG3	2.01	0.59
48:Bv:21:ASN:HB2	48:Bv:26:ARG:HD3	1.84	0.59
70:Ag:107:LYS:O	70:Ag:109:ARG:NH2	2.34	0.59
76:Am:99:ARG:NH2	76:Am:119:GLU:OE2	2.36	0.59
1:B5:1741:A:H5"	1:B5:1742:G:H5'	1.85	0.59
15:BL:129:ARG:NH1	37:Bh:116:LEU:O	2.35	0.59
48:Bv:74:CYS:SG	48:Bv:78:LYS:NZ	2.67	0.59
49:Nt:129:GLU:CG	50:Nu:110:LEU:C	2.76	0.59
49:Nt:129:GLU:HG2	50:Nu:110:LEU:C	2.28	0.59
69:Af:43:GLU:OE1	69:Af:44:GLU:HG3	2.02	0.59
1:B5:308:G:OP2	1:B5:308:G:N2	2.24	0.59
52:XB:18:ASN:ND2	52:XB:31:TYR:OH	2.35	0.59
52:XB:56:VAL:HG21	52:XB:90:LEU:HB3	1.84	0.59
53:MA:295:ARG:NH2	53:MA:470:GLY:O	2.35	0.59
54:A2:642:A:OP1	72:Ai:40:LYS:NZ	2.36	0.59
54:A2:668:U:O4	54:A2:1144:A:N6	2.35	0.59
1:B5:68:U:OP1	17:BN:178:HIS:ND1	2.35	0.59
1:B5:101:A:H1'	30:Ba:66:ASN:HD21	1.67	0.59
1:B5:2365:G:OP2	36:Bg:29:ARG:NH2	2.36	0.59
28:BY:67:ILE:O	28:BY:84:ARG:NH2	2.35	0.59
50:Nu:72:ILE:HG23	50:Nu:95:GLU:H	1.67	0.59
51:XA:100:ILE:HG12	51:XA:123:LEU:HB3	1.85	0.59
52:XB:10:ASP:N	52:XB:10:ASP:OD1	2.35	0.59
54:A2:1618:G:N1	54:A2:1621:A:OP2	2.36	0.59
64:Aa:30:TRP:CG	77:An:19:PRO:HB3	2.37	0.59
74:Ak:135:SER:O	74:Ak:139:ARG:NH1	2.36	0.59
51:XA:587:MET:HB3	51:XA:591:GLU:HB2	1.85	0.59
52:XB:134:GLU:HB2	52:XB:144:ALA:HB3	1.85	0.59
60:AF:174:VAL:HB	60:AF:188:HIS:HB2	1.84	0.59
64:Aa:25:PHE:CZ	77:An:53:ILE:HA	2.37	0.59
1:B5:1299:G:OP1	20:BQ:108:ARG:NH2	2.32	0.59
19:BP:118:GLN:NE2	19:BP:147:GLU:OE2	2.36	0.59
51:XA:288:PRO:O	51:XA:294:ARG:NH2	2.36	0.59
60:AF:217:MET:HG2	60:AF:229:THR:HG22	1.85	0.59
72:Ai:120:ALA:O	72:Ai:125:HIS:ND1	2.31	0.59
9:BF:85:GLU:OE2	23:BT:136:ARG:NH1	2.35	0.58
51:XA:470:ARG:O	51:XA:478:ASN:ND2	2.36	0.58
54:A2:966:U:OP1	64:Aa:7:LYS:NZ	2.30	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:A2:1290:U:H2'	54:A2:1291:G:C8	2.38	0.58
1:B5:1789:A:OP2	15:BL:5:ARG:NH2	2.35	0.58
24:BU:100:LEU:HD13	24:BU:112:LEU:HD23	1.84	0.58
26:BW:113:LYS:NZ	54:A2:329:U:OP1	2.35	0.58
29:BZ:22:LYS:NZ	29:BZ:129:TRP:O	2.34	0.58
49:Nt:105:VAL:HG21	49:Nt:129:GLU:HB2	1.84	0.58
52:XB:6:ALA:CB	52:XB:44:ILE:CG1	2.81	0.58
54:A2:1090:G:H4'	91:A2:1909:SPM:H111	1.85	0.58
54:A2:1651:A:H5"	79:Ap:139:ALA:HB2	1.85	0.58
12:BI:169:LYS:NZ	23:BT:157:GLU:OE2	2.32	0.58
13:BJ:81:GLU:OE2	13:BJ:85:LYS:NZ	2.36	0.58
22:BS:173:ASN:ND2	22:BS:175:PHE:O	2.36	0.58
53:MA:176:LEU:HD13	53:MA:192:TYR:HB2	1.85	0.58
81:Ar:36:VAL:HG21	81:Ar:71:MET:HE3	1.85	0.58
91:B5:4911:SPM:H22	20:BQ:11:ARG:HB3	1.86	0.58
2:B7:6:C:H4'	7:BD:52:ILE:HD13	1.86	0.58
1:B5:856:A:H1'	1:B5:2015:G:H5"	1.85	0.58
26:BW:2:LYS:NZ	26:BW:4:GLU:OE2	2.35	0.58
54:A2:65:C:H4'	69:Af:172:LYS:HD3	1.84	0.58
54:A2:1567:G:N2	54:A2:1570:A:OP2	2.34	0.58
1:B5:788:G:H2'	1:B5:789:G:H8	1.69	0.58
1:B5:2699:C:O2	5:BB:242:ARG:NH2	2.34	0.58
1:B5:2712:U:O2'	1:B5:2724:A:N7	2.36	0.58
20:BQ:12:LYS:HB2	20:BQ:14:ARG:NH1	2.18	0.58
51:XA:654:LEU:HB3	51:XA:685:LYS:HE2	1.85	0.58
55:AA:11:SER:OG	55:AA:14:GLU:OE1	2.20	0.58
1:B5:432:U:H1'	90:B5:4923:SPD:HN6	1.69	0.58
1:B5:2359:G:N2	96:B5:5500:HOH:O	2.36	0.58
13:BJ:13:ARG:O	13:BJ:136:ARG:NH1	2.37	0.58
51:XA:540:ASP:HA	51:XA:543:LYS:HD2	1.84	0.58
88:Ay:91:LEU:HD22	88:Ay:96:LEU:HD12	1.84	0.58
1:B5:2143:A:N7	6:BC:143:ARG:NH1	2.52	0.58
1:B5:4666:G:N2	1:B5:4666:G:OP2	2.35	0.58
12:BI:110:ARG:NH2	62:AT:74:C:OP2	2.36	0.58
51:XA:89:LEU:HD12	51:XA:90:GLN:CA	2.32	0.58
54:A2:310:G:OP2	71:Ah:55:TYR:OH	2.22	0.58
1:B5:2243:G:H21	36:Bg:6:THR:HG22	1.68	0.58
1:B5:2739:G:OP1	21:BR:136:ARG:NH1	2.37	0.58
33:Bd:54:MET:HE3	33:Bd:60:PRO:HA	1.86	0.58
51:XA:484:CYS:HB3	51:XA:487:PHE:HD2	1.69	0.58
54:A2:1031:A:H2'	54:A2:1032:A2M:H8	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:AF:153:CYS:SG	60:AF:155:ARG:NH1	2.77	0.58
1:B5:2422:G:N2	1:B5:2425:A:OP2	2.34	0.58
1:B5:2601:G:O2'	1:B5:2608:A:N3	2.32	0.58
8:BE:170:GLN:HE21	8:BE:174:GLY:HA2	1.67	0.58
53:MA:195:GLU:HB3	53:MA:381:ILE:HD11	1.85	0.58
64:Aa:189:ILE:HB	64:Aa:190:PRO:HD3	1.86	0.58
1:B5:3450:A2M:HM'2	1:B5:3451:A:H5'	1.86	0.57
1:B5:4218:G:O2'	42:Bm:100:TYR:O	2.22	0.57
4:BA:27:ALA:O	4:BA:128:ARG:NH1	2.37	0.57
11:BH:26:ILE:HG13	11:BH:35:ARG:HG2	1.86	0.57
60:AF:120:ILE:HB	60:AF:132:TRP:HB2	1.85	0.57
1:B5:375:G:N7	39:Bj:56:ARG:NH2	2.52	0.57
1:B5:1805:U:OP1	12:BI:4:ARG:NH1	2.34	0.57
12:BI:54:SER:HB2	12:BI:135:ILE:HD11	1.85	0.57
13:BJ:35:ARG:NH1	13:BJ:123:ILE:O	2.37	0.57
51:XA:766:LEU:HD21	51:XA:805:VAL:HG22	1.85	0.57
53:MA:289:LYS:HB3	53:MA:478:LEU:O	2.04	0.57
1:B5:709:G:OP1	6:BC:321:ASN:ND2	2.37	0.57
1:B5:2302:G:N2	1:B5:2305:C:OP2	2.37	0.57
5:BB:67:VAL:HG11	25:BV:91:LYS:HG2	1.86	0.57
12:BI:48:LEU:HB2	12:BI:142:LEU:HD23	1.87	0.57
46:Bs:40:MET:HE1	46:Bs:187:LEU:HD11	1.86	0.57
51:XA:54:LEU:HD21	51:XA:88:LEU:HD13	1.86	0.57
51:XA:789:THR:OG1	51:XA:797:ARG:NH2	2.37	0.57
53:MA:333:PRO:HB3	53:MA:437:ASP:HB3	1.85	0.57
54:A2:1865:U:OP2	59:AE:5:ARG:NH2	2.38	0.57
69:Af:85:ARG:O	69:Af:87:ARG:NH1	2.37	0.57
1:B5:1937:A:N3	1:B5:1958:C:O2'	2.36	0.57
52:XB:44:ILE:HG23	52:XB:52:ILE:CG2	2.33	0.57
80:Aq:94:GLU:HG2	80:Aq:95:ILE:HG13	1.86	0.57
1:B5:2376:C:OP1	27:BX:139:ARG:NH1	2.37	0.57
9:BF:130:ASN:OD1	9:BF:133:ARG:NH1	2.36	0.57
49:Nt:133:GLN:HB2	50:Nu:108:ASN:O	2.04	0.57
54:A2:1564:G:OP1	82:As:121:ARG:NH1	2.38	0.57
1:B5:3541:G:OP2	1:B5:3541:G:N2	2.37	0.57
1:B5:3963:G:N7	96:B5:5640:HOH:O	2.33	0.57
54:A2:518:OMC:HM22	54:A2:519:G:H5'	1.86	0.57
59:AE:44:ILE:HD12	59:AE:65:PRO:HG2	1.87	0.57
67:Ad:148:ARG:NH2	69:Af:202:ASN:OD1	2.37	0.57
1:B5:992:C:OP1	1:B5:1106:U:O2'	2.21	0.57
1:B5:3702:G:O2'	48:Bv:31:THR:OG1	2.22	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:4018:G:N2	1:B5:4018:G:OP2	2.35	0.57
12:BI:110:ARG:NH2	62:AT:74:C:H3'	2.18	0.57
49:Nt:73:GLU:HG2	50:Nu:86:ASN:HB2	1.85	0.57
54:A2:1522:C:OP2	81:Ar:136:THR:OG1	2.22	0.57
1:B5:680:A:OP1	51:XA:590:LYS:HE2	2.04	0.57
1:B5:1766:C:O2'	31:Bb:50:ASN:ND2	2.38	0.57
1:B5:2338:U:H2'	1:B5:2339:G:H8	1.69	0.57
21:BR:44:LEU:HD22	21:BR:49:LEU:HD12	1.86	0.57
1:B5:1493:U:H2'	1:B5:1494:G:H8	1.68	0.57
1:B5:1674:U:OP2	90:B5:4918:SPD:N6	2.36	0.57
1:B5:2545:C:OP1	24:BU:101:ARG:NH2	2.35	0.57
1:B5:3646:U:H1'	90:B5:4904:SPD:H102	1.69	0.57
1:B5:4744:G:N2	1:B5:4780:G:O2'	2.37	0.57
10:BG:58:PRO:HD2	10:BG:61:ILE:HD12	1.86	0.57
51:XA:495:TYR:HB3	51:XA:500:LYS:HB2	1.87	0.57
54:A2:1544:U:H5"	79:Ap:37:ARG:HH12	1.69	0.57
54:A2:1601:G:H4'	88:Ay:43:LYS:HE3	1.86	0.57
65:Ab:60:TRP:O	65:Ab:71:LYS:NZ	2.34	0.57
66:Ac:45:ARG:NH2	66:Ac:82:GLY:O	2.38	0.57
1:B5:2106:A:OP1	45:Br:107:ARG:NH2	2.36	0.57
20:BQ:79:THR:HB	20:BQ:136:THR:HG22	1.85	0.57
43:Bo:34:TYR:O	43:Bo:39:ARG:NH1	2.37	0.57
44:Bp:38:THR:HA	44:Bp:45:THR:HA	1.86	0.57
5:BB:317:LEU:HB2	5:BB:372:SER:HB2	1.87	0.56
13:BJ:144:LYS:O	13:BJ:148:THR:OG1	2.23	0.56
27:BX:82:THR:HG22	27:BX:155:ILE:HG23	1.87	0.56
48:Bv:207:LYS:HB3	48:Bv:213:PRO:HA	1.86	0.56
51:XA:385:ASP:HB3	51:XA:420:HIS:HD2	1.69	0.56
51:XA:762:LEU:HG	51:XA:797:ARG:HE	1.70	0.56
85:Av:105:THR:CG2	85:Av:126:LEU:HG	2.29	0.56
1:B5:62:A:OP1	17:BN:172:ARG:NH1	2.38	0.56
1:B5:3386:G:O2'	1:B5:3425:U:OP1	2.22	0.56
1:B5:3682:U:H2'	1:B5:3683:G:H8	1.70	0.56
2:B7:105:C:OP2	12:BI:203:ARG:NH1	2.38	0.56
3:B8:81:C:O2'	37:Bh:2:ALA:N	2.38	0.56
12:BI:110:ARG:NE	62:AT:74:C:OP2	2.38	0.56
51:XA:486:TRP:HD1	52:XB:20:LEU:HD11	1.65	0.56
55:AA:28:PRO:HG3	76:Am:17:PRO:HG3	1.87	0.56
62:AT:20:U:O2'	62:AT:22:U:OP1	2.23	0.56
1:B5:483:G:O2'	1:B5:486:C:OP2	2.23	0.56
1:B5:1564:U:O4	90:B5:4908:SPD:N6	2.36	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:4194:G:H5”	1:B5:4195:A:H5”	1.86	0.56
5:BB:131:THR:O	5:BB:135:LYS:NZ	2.38	0.56
17:BN:116:LEU:HD22	17:BN:135:ILE:HD11	1.87	0.56
51:XA:539:VAL:HG12	51:XA:543:LYS:HE3	1.87	0.56
51:XA:545:GLU:HA	51:XA:548:LEU:HG	1.87	0.56
53:MA:226:ILE:HD12	53:MA:248:LEU:HD13	1.87	0.56
75:Al:25:ALA:O	75:Al:30:GLY:N	2.36	0.56
1:B5:1334:G:N2	1:B5:1337:G:OP2	2.39	0.56
1:B5:2007:C:OP1	35:Bf:15:LYS:NZ	2.36	0.56
36:Bg:5:LEU:HD21	36:Bg:30:ILE:HG22	1.88	0.56
53:MA:410:HIS:CD2	53:MA:413:HIS:H	2.23	0.56
1:B5:1348:G:H1	1:B5:1368:U:H3	1.52	0.56
48:Bv:58:THR:HG22	48:Bv:152:LYS:C	2.30	0.56
50:Nu:62:VAL:HG11	50:Nu:90:ILE:HD13	1.86	0.56
54:A2:1311:U:H5”	57:AC:130:VAL:HG13	1.88	0.56
67:Ad:44:LEU:HD21	67:Ad:72:ILE:HD11	1.88	0.56
1:B5:2507:G:H4’	1:B5:2520:G:H4’	1.87	0.56
1:B5:3432:C:O2’	1:B5:3506:A:N3	2.37	0.56
15:BL:91:ALA:HB1	15:BL:96:ILE:HB	1.87	0.56
48:Bv:63:PHE:HB2	48:Bv:152:LYS:HG2	1.88	0.56
54:A2:1018:U:OP1	76:Am:62:GLN:NE2	2.37	0.56
1:B5:2258:OMU:HM22	1:B5:2259:G:H5’	1.88	0.56
1:B5:4610:C:N4	22:BS:171:ARG:O	2.39	0.56
1:B5:4724:U:OP1	5:BB:175:GLN:NE2	2.39	0.56
17:BN:146:PRO:HB2	37:Bh:104:THR:HG23	1.88	0.56
54:A2:1529:G:O2’	54:A2:1667:C:OP1	2.22	0.56
50:Nu:59:ILE:HG21	50:Nu:62:VAL:CG2	2.36	0.56
54:A2:105:PSU:OP1	90:A2:1908:SPD:N10	2.38	0.56
62:AT:33:U:OP2	79:Ap:146:ARG:NH1	2.34	0.56
75:Al:75:ASN:N	75:Al:75:ASN:OD1	2.38	0.56
88:Ay:58:LEU:HD12	88:Ay:62:VAL:HG21	1.87	0.56
35:Bf:43:LEU:O	35:Bf:109:ARG:NH1	2.38	0.56
50:Nu:39:ALA:HA	50:Nu:42:LYS:HE3	1.88	0.56
53:MA:318:MET:HG2	53:MA:322:ARG:HB2	1.88	0.56
60:AF:187:ASN:HB3	66:Ac:225:GLU:HB3	1.88	0.56
51:XA:175:ARG:HH11	51:XA:193:LEU:HD23	1.71	0.56
1:B5:3455:A:H2’	1:B5:3456:A2M:H8	1.88	0.55
50:Nu:50:LYS:O	50:Nu:50:LYS:HG2	2.06	0.55
51:XA:201:ARG:NH2	51:XA:229:THR:O	2.36	0.55
54:A2:513:A2M:HM’2	54:A2:514:G:H5’	1.88	0.55
54:A2:1569:C:OP1	82:As:96:SER:OG	2.23	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:AF:91:ASP:OD2	60:AF:93:THR:OG1	2.22	0.55
85:Av:105:THR:HG22	85:Av:110:ILE:HG12	1.86	0.55
51:XA:89:LEU:HD11	51:XA:90:GLN:HG3	1.88	0.55
65:Ab:232:THR:HG22	65:Ab:235:ASN:H	1.71	0.55
79:Ap:53:GLU:OE1	79:Ap:85:ARG:NH2	2.38	0.55
1:B5:2205:U:H2'	1:B5:2206:A2M:H8	1.88	0.55
16:BM:88:ALA:O	16:BM:93:LYS:NZ	2.38	0.55
51:XA:724:LYS:O	51:XA:731:ARG:NH2	2.40	0.55
54:A2:1329:OMG:HM22	54:A2:1330:U:H5'	1.87	0.55
60:AF:214:GLY:HA2	60:AF:236:ILE:HG13	1.88	0.55
79:Ap:101:ASP:OD1	79:Ap:102:GLU:N	2.39	0.55
1:B5:527:G:H1	1:B5:628:U:H3	1.55	0.55
1:B5:706:C:OP1	8:BE:142:LYS:NZ	2.35	0.55
1:B5:1284:OMC:HM22	1:B5:1285:U:H5'	1.87	0.55
1:B5:1924:G:N2	1:B5:1924:G:OP1	2.40	0.55
13:BJ:141:ILE:HD11	13:BJ:151:ILE:HA	1.88	0.55
51:XA:418:TYR:HB2	51:XA:427:ALA:HB2	1.87	0.55
86:Aw:93:PHE:O	86:Aw:140:ARG:NH1	2.38	0.55
1:B5:40:G:N7	90:B5:4907:SPD:N1	2.54	0.55
1:B5:1772:G:OP1	23:BT:120:LYS:NZ	2.35	0.55
1:B5:3421:G:O2'	1:B5:3550:UY1:OP2	2.23	0.55
1:B5:3699:G:N2	48:Bv:164:CYS:SG	2.80	0.55
1:B5:4092:U:O2'	43:Bo:80:LYS:O	2.25	0.55
29:BZ:36:ARG:NH1	29:BZ:38:TYR:OH	2.39	0.55
5:BB:248:LEU:HD12	5:BB:249:ARG:HG3	1.89	0.55
21:BR:12:SER:OG	21:BR:17:CYS:O	2.21	0.55
27:BX:73:HIS:CD2	27:BX:115:LYS:HD3	2.41	0.55
51:XA:452:MET:HB3	51:XA:457:LEU:HB2	1.88	0.55
51:XA:558:ALA:HA	51:XA:660:PHE:HD2	1.70	0.55
54:A2:1273:C:O2'	61:AG:2:GLY:N	2.35	0.55
74:Ak:104:LYS:O	86:Aw:11:ARG:NH2	2.35	0.55
1:B5:327:U:O2'	38:Bi:30:ARG:NH1	2.40	0.55
1:B5:1423:C:OP1	30:Ba:132:ARG:NH2	2.34	0.55
4:BA:116:LEU:HB3	4:BA:126:LEU:HB2	1.88	0.55
48:Bv:65:VAL:HG22	48:Bv:109:ALA:HB3	1.88	0.55
49:Nt:105:VAL:O	49:Nt:127:LYS:HD2	2.07	0.55
51:XA:335:ASP:HB2	51:XA:338:LYS:HE2	1.89	0.55
54:A2:745:G:N3	70:Ag:109:ARG:NH2	2.53	0.55
72:Ai:170:PRO:HB3	72:Ai:174:LYS:HE3	1.88	0.55
1:B5:1922:A:H1'	1:B5:1949:A:H4'	1.88	0.55
1:B5:3391:G:OP1	4:BA:241:ARG:NH1	2.38	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B7:48:G:OP1	7:BD:226:TYR:OH	2.24	0.55
24:BU:111:GLU:OE2	24:BU:113:ARG:NE	2.35	0.55
54:A2:1156:U:OP1	65:Ab:185:THR:OG1	2.24	0.55
54:A2:1387:A:OP2	66:Ac:160:SER:OG	2.23	0.55
1:B5:2161:G:N2	1:B5:2164:G:OP2	2.39	0.55
1:B5:2510:C:O2	21:BR:92:LYS:NZ	2.36	0.55
1:B5:3682:U:H2'	1:B5:3683:G:C8	2.42	0.55
11:BH:23:ARG:HE	11:BH:39:ASN:HA	1.71	0.55
19:BP:5:SER:OG	19:BP:116:HIS:NE2	2.40	0.55
58:AD:83:VAL:HG22	86:Aw:68:LYS:HE2	1.89	0.55
1:B5:1437:G:N7	15:BL:188:ASN:ND2	2.55	0.55
1:B5:2111:A:OP1	45:Br:11:ARG:NH2	2.32	0.55
1:B5:3476:OMG:HM22	1:B5:3477:U:H5'	1.89	0.55
1:B5:3497:G:O2'	1:B5:3499:C:N4	2.39	0.55
1:B5:3805:A:N1	1:B5:3917:C:N4	2.55	0.55
22:BS:29:ARG:HB2	23:BT:148:PRO:HB2	1.89	0.55
37:Bh:80:PRO:HD2	37:Bh:83:LEU:HD12	1.89	0.55
47:Bt:107:ASP:O	47:Bt:111:ASN:ND2	2.39	0.55
56:AB:26:GLN:NE2	68:Ae:126:THR:OG1	2.38	0.55
1:B5:2401:C:H2'	1:B5:2402:G:H8	1.73	0.54
6:BC:239:LYS:O	6:BC:248:ARG:NH1	2.35	0.54
24:BU:99:TRP:CZ2	50:Nu:11:LEU:HB3	2.42	0.54
54:A2:355:OMU:HM22	54:A2:356:G:H5'	1.89	0.54
72:Ai:93:LYS:HB2	72:Ai:96:TYR:HD1	1.71	0.54
1:B5:2178:C:H2'	1:B5:2179:G:H8	1.72	0.54
2:B7:47:G:H21	7:BD:222:GLN:HE22	1.54	0.54
4:BA:36:GLU:OE1	4:BA:163:ARG:NH1	2.33	0.54
7:BD:17:GLN:NE2	23:BT:22:HIS:O	2.37	0.54
49:Nt:129:GLU:CG	49:Nt:130:ASP:N	2.63	0.54
78:Ao:123:TYR:OH	81:Ar:124:ARG:NH1	2.41	0.54
11:BH:137:SER:HB2	11:BH:145:VAL:HG23	1.89	0.54
40:Bk:13:LEU:HD23	40:Bk:16:ARG:HH21	1.72	0.54
54:A2:191:A:H3'	54:A2:192:C:H5"	1.88	0.54
54:A2:847:G:N7	67:Ad:108:ARG:NH2	2.56	0.54
54:A2:1088:A:N6	96:A2:2227:HOH:O	2.39	0.54
54:A2:1256:G:OP1	54:A2:1257:G:O2'	2.22	0.54
78:Ao:58:LYS:HG2	78:Ao:61:ARG:HH22	1.72	0.54
22:BS:76:LYS:NZ	22:BS:100:LEU:O	2.37	0.54
24:BU:28:PRO:HB2	24:BU:34:MET:HG2	1.89	0.54
49:Nt:188:ALA:HB2	49:Nt:210:ILE:HG23	1.90	0.54
51:XA:256:GLU:HA	51:XA:292:VAL:HG21	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:MA:453:LEU:O	53:MA:458:ASN:ND2	2.39	0.54
54:A2:109:PSU:O2'	74:Ak:71:ARG:NH2	2.38	0.54
54:A2:1272:C:H42	54:A2:1512:U:H3	1.55	0.54
1:B5:835:G:OP1	16:BM:23:LYS:NZ	2.35	0.54
51:XA:89:LEU:CD1	51:XA:90:GLN:HG3	2.37	0.54
54:A2:191:A:H62	54:A2:208:G:H21	1.56	0.54
54:A2:852:C:H5"	54:A2:853:G:H5'	1.90	0.54
81:Ar:46:ARG:HH12	81:Ar:52:LEU:HD11	1.73	0.54
81:Ar:46:ARG:HG2	82:As:35:ASP:HB2	1.90	0.54
1:B5:2362:U:O2'	1:B5:2373:U:O2	2.26	0.54
4:BA:216:V5N:O2	4:BA:218:HIS:ND1	2.40	0.54
8:BE:164:ARG:O	8:BE:185:ASN:ND2	2.41	0.54
48:Bv:94:ASN:OD1	48:Bv:97:LYS:NZ	2.36	0.54
67:Ad:100:ARG:HH21	67:Ad:118:GLU:HG2	1.73	0.54
53:MA:182:GLU:OE2	53:MA:189:ARG:NH1	2.40	0.54
54:A2:1555:C:O2	73:Aj:24:LYS:NZ	2.40	0.54
63:AZ:210:ILE:HG21	80:Aq:81:ARG:HD3	1.90	0.54
64:Aa:44:ILE:HD12	64:Aa:69:VAL:HG21	1.89	0.54
1:B5:395:A:OP2	49:Nt:71:ARG:NH1	2.41	0.54
1:B5:3850:G:O3'	36:Bg:90:ARG:NH2	2.40	0.54
4:BA:140:ASN:ND2	4:BA:143:THR:OG1	2.41	0.54
20:BQ:178:ARG:H	30:Ba:51:GLY:HA2	1.73	0.54
28:BY:55:VAL:HG12	28:BY:106:ILE:HG12	1.88	0.54
51:XA:256:GLU:OE1	52:XB:93:GLN:NE2	2.41	0.54
57:AC:118:ARG:NH1	57:AC:134:SER:OG	2.40	0.54
74:Ak:147:LYS:HD2	74:Ak:151:THR:HG21	1.88	0.54
1:B5:1225:G:H5'	6:BC:323:ARG:HB2	1.90	0.54
1:B5:1592:A:H5"	1:B5:1594:U:H3	1.73	0.54
1:B5:4287:G:N2	1:B5:4290:A:OP2	2.39	0.54
51:XA:551:HIS:HB2	51:XA:554:TYR:CD1	2.43	0.54
54:A2:1805:OMU:HM22	54:A2:1806:G:H5'	1.89	0.54
75:Al:43:ASP:O	75:Al:45:ARG:NH2	2.41	0.54
1:B5:4122:A:O2'	30:Ba:42:ARG:NH1	2.41	0.54
1:B5:4282:OMC:HM22	1:B5:4283:C:H5'	1.90	0.54
1:B5:4367:C:OP1	25:BV:48:ARG:NH1	2.41	0.54
3:B8:47:C:H1'	3:B8:61:A:H2'	1.90	0.54
7:BD:31:TYR:O	7:BD:35:ARG:NH1	2.41	0.54
51:XA:543:LYS:O	51:XA:547:VAL:HG23	2.08	0.54
54:A2:1299:G:H4'	78:Ao:78:THR:HA	1.89	0.54
79:Ap:24:HIS:HE1	79:Ap:26:LYS:HD3	1.73	0.54
54:A2:4:C:O2'	72:Ai:18:ARG:NH2	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:A2:1483:C:N3	96:A2:2185:HOH:O	2.34	0.53
60:AF:11:LEU:HB2	60:AF:307:VAL:HB	1.89	0.53
67:Ad:151:ASP:OD2	69:Af:216:ARG:NH2	2.40	0.53
79:Ap:37:ARG:HG2	82:As:7:LYS:HB3	1.90	0.53
51:XA:123:LEU:HA	51:XA:126:GLN:HG3	1.89	0.53
51:XA:588:SER:CB	51:XA:590:LYS:HG2	2.38	0.53
54:A2:103:A:OP1	71:Ah:12:ARG:NH2	2.41	0.53
67:Ad:112:HIS:NE2	67:Ad:237:SER:O	2.41	0.53
69:Af:2:LYS:HB3	69:Af:15:LEU:HD11	1.88	0.53
1:B5:3557:A2M:HM'2	1:B5:3558:C:H5'	1.89	0.53
8:BE:104:ASN:OD1	8:BE:108:ARG:NH2	2.42	0.53
20:BQ:12:LYS:HB2	20:BQ:14:ARG:HH12	1.73	0.53
62:AT:29:C:H2'	62:AT:30:G:H8	1.73	0.53
52:XB:121:LEU:O	52:XB:125:THR:OG1	2.25	0.53
54:A2:1456:A:H2'	54:A2:1457:G:H8	1.72	0.53
68:Ae:124:ASP:OD1	68:Ae:125:SER:N	2.40	0.53
1:B5:3450:A2M:H8	1:B5:3450:A2M:O5'	2.09	0.53
1:B5:3518:U:OP1	1:B5:4296:G:O2'	2.22	0.53
12:BI:110:ARG:NH1	62:AT:75:C:C5	2.77	0.53
16:BM:29:ASP:OD1	16:BM:30:VAL:N	2.41	0.53
50:Nu:99:LEU:HA	50:Nu:105:SER:HB3	1.90	0.53
51:XA:496:LYS:NZ	51:XA:564:ILE:HG12	2.23	0.53
53:MA:378:GLN:HB2	53:MA:381:ILE:HB	1.89	0.53
54:A2:987:G:N2	77:An:135:ILE:HG21	2.24	0.53
80:Aq:109:LEU:HG	80:Aq:111:PHE:HD2	1.72	0.53
1:B5:4429:U:OP2	1:B5:4452:G:N1	2.34	0.53
2:B7:119:U:OP2	7:BD:259:ARG:NH2	2.42	0.53
47:Bt:18:THR:OG1	47:Bt:21:GLU:O	2.24	0.53
68:Ae:56:TYR:HB3	68:Ae:63:LYS:HA	1.91	0.53
1:B5:680:A:OP1	51:XA:590:LYS:NZ	2.42	0.53
1:B5:1308:U:OP2	15:BL:36:ARG:NH2	2.40	0.53
1:B5:3997:A:O2'	13:BJ:110:GLN:NE2	2.41	0.53
3:B8:57:C:OP2	39:Bj:68:LYS:NZ	2.41	0.53
58:AD:80:LEU:HD22	86:Aw:68:LYS:HG3	1.91	0.53
58:AD:83:VAL:HG11	86:Aw:91:LEU:HB3	1.90	0.53
76:Am:20:ARG:HH21	85:Av:56:HIS:HB3	1.72	0.53
1:B5:1772:G:N2	1:B5:1774:G:O4'	2.41	0.53
1:B5:2028:G:H1	1:B5:2038:C:H41	1.56	0.53
1:B5:2692:A:H61	1:B5:2700:A:H61	1.57	0.53
10:BG:109:GLU:O	10:BG:112:GLN:NE2	2.41	0.53
24:BU:48:LYS:HG2	24:BU:53:ALA:HB2	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:XA:418:TYR:HB3	51:XA:423:ASN:HB2	1.90	0.53
54:A2:1842:C:H2'	54:A2:1843:4AC:H6	1.91	0.53
60:AF:87:LEU:HB2	60:AF:101:PHE:HB2	1.90	0.53
75:Al:89:VAL:HG11	75:Al:109:VAL:HG11	1.89	0.53
1:B5:345:C:H2'	1:B5:346:G:H8	1.74	0.53
1:B5:2431:C:OP1	1:B5:2611:C:O2'	2.25	0.53
1:B5:2548:G:O6	21:BR:46:LYS:NZ	2.32	0.53
1:B5:3676:OMG:HM22	1:B5:3677:A:H5'	1.91	0.53
1:B5:4052:OMU:HM22	1:B5:4053:A:H5'	1.90	0.53
41:Bl:30:LYS:HB2	41:Bl:33:ASN:HB2	1.91	0.53
4:BA:30:ARG:HG2	4:BA:74:GLU:HG3	1.89	0.53
8:BE:246:THR:HG22	8:BE:248:GLN:H	1.73	0.53
15:BL:207:VAL:HG12	48:Bv:7:ARG:HH12	1.74	0.53
17:BN:181:HIS:O	17:BN:195:ARG:NH2	2.42	0.53
25:BV:69:LYS:NZ	25:BV:71:GLU:OE2	2.42	0.53
33:Bd:38:PHE:HB3	33:Bd:78:ARG:HG2	1.90	0.53
54:A2:1804:U:H2'	54:A2:1805:OMU:H6	1.91	0.53
63:AZ:33:GLN:HB3	63:AZ:154:LEU:HD12	1.91	0.53
64:Aa:71:LEU:HD11	64:Aa:189:ILE:HG23	1.90	0.53
69:Af:161:PRO:HA	69:Af:171:THR:HG22	1.91	0.53
84:Au:20:SER:HB3	84:Au:59:ILE:HD11	1.90	0.53
1:B5:3975:U:H4'	43:Bo:89:LYS:HE2	1.90	0.52
11:BH:89:ARG:NH2	11:BH:147:GLU:OE2	2.42	0.52
51:XA:151:TRP:HA	51:XA:154:TYR:CZ	2.44	0.52
51:XA:442:ARG:NH2	51:XA:468:PHE:O	2.42	0.52
54:A2:121:OMU:HM22	54:A2:122:G:H5'	1.91	0.52
1:B5:230:G:OP1	28:BY:15:ARG:NH1	2.40	0.52
1:B5:438:G:OP1	34:Be:16:ARG:NH2	2.40	0.52
1:B5:1653:C:O2'	9:BF:176:ARG:NH2	2.40	0.52
12:BI:87:ILE:HG12	12:BI:138:ILE:HG12	1.92	0.52
45:Br:26:SER:OG	45:Br:28:GLU:OE1	2.22	0.52
51:XA:151:TRP:HA	51:XA:154:TYR:CE2	2.44	0.52
51:XA:496:LYS:HE2	51:XA:504:ALA:HB1	1.91	0.52
1:B5:48:G:OP1	17:BN:192:TRP:NE1	2.41	0.52
4:BA:117:GLU:HG2	4:BA:124:GLY:H	1.73	0.52
6:BC:152:LEU:HD21	6:BC:174:LEU:HD13	1.91	0.52
47:Bt:32:ILE:HB	47:Bt:35:LEU:HD11	1.90	0.52
51:XA:397:ILE:HG21	51:XA:414:LYS:HG2	1.90	0.52
54:A2:437:OMG:OP2	54:A2:472:G:O2'	2.26	0.52
60:AF:107:ASP:HB2	60:AF:125:ARG:HH11	1.74	0.52
71:Ah:114:GLU:OE2	71:Ah:123:ARG:NH2	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:1844:U:H3	1:B5:2010:A:H61	1.56	0.52
54:A2:68:A:OP2	69:Af:164:LYS:NZ	2.35	0.52
70:Ag:44:ASN:OD1	70:Ag:68:GLN:NE2	2.32	0.52
1:B5:85:G:O2'	1:B5:97:G:O6	2.28	0.52
1:B5:519:C:H2'	1:B5:520:G:H8	1.73	0.52
1:B5:4632:A:OP1	18:BO:188:LYS:NZ	2.42	0.52
46:Bs:65:ILE:HG12	46:Bs:75:LEU:HD23	1.91	0.52
48:Bv:73:HIS:ND1	48:Bv:144:MET:SD	2.81	0.52
51:XA:486:TRP:CD2	51:XA:553:PHE:HE2	2.28	0.52
69:Af:21:GLU:OE1	69:Af:25:ARG:NH2	2.42	0.52
2:B7:6:C:O2'	7:BD:50:ARG:NH2	2.43	0.52
21:BR:28:GLU:HG3	21:BR:49:LEU:HD22	1.90	0.52
28:BY:30:MET:HB3	28:BY:101:PRO:HG2	1.91	0.52
47:Bt:13:VAL:HB	47:Bt:62:LEU:HB2	1.91	0.52
51:XA:10:GLU:OE2	51:XA:39:ASN:ND2	2.42	0.52
52:XB:17:CYS:HB2	52:XB:55:TYR:CE2	2.44	0.52
1:B5:515:U:H4'	1:B5:516:U:H5"	1.92	0.52
1:B5:1093:C:H2'	1:B5:1094:A:H8	1.74	0.52
1:B5:2207:OMG:HM22	1:B5:2208:OMC:H5"	1.92	0.52
14:BK:65:UNK:HA	62:AT:76:A:O3'	2.10	0.52
49:Nt:114:SER:OG	49:Nt:117:SER:O	2.25	0.52
50:Nu:9:GLU:HG3	50:Nu:13:LYS:HZ2	1.74	0.52
58:AD:116:PHE:HE2	72:Ai:29:LEU:HD23	1.74	0.52
1:B5:362:A:N6	41:Bl:37:TYR:O	2.41	0.52
1:B5:3422:U:O2'	1:B5:3549:A:N3	2.38	0.52
1:B5:3669:C:H1'	17:BN:125:SER:HB3	1.92	0.52
1:B5:4050:A:OP2	1:B5:4051:G:N2	2.43	0.52
51:XA:56:LEU:HD22	51:XA:61:LYS:HD2	1.91	0.52
54:A2:646:C:H2'	54:A2:647:G:H8	1.75	0.52
54:A2:825:C:H1'	72:Ai:144:ILE:HG21	1.91	0.52
54:A2:1499:A:OP2	66:Ac:27:ARG:NH2	2.36	0.52
1:B5:1223:A:OP1	8:BE:134:LYS:NZ	2.37	0.52
7:BD:65:ALA:HB2	7:BD:74:ILE:HD13	1.90	0.52
26:BW:70:LYS:NZ	69:Af:33:ALA:O	2.43	0.52
52:XB:6:ALA:HB2	52:XB:44:ILE:CG1	2.26	0.52
53:MA:281:TYR:CE2	53:MA:287:LEU:HD13	2.45	0.52
53:MA:475:GLN:HB2	53:MA:477:TYR:CE2	2.45	0.52
54:A2:4:C:H4'	65:Ab:207:ALA:HB2	1.91	0.52
54:A2:381:G:OP1	71:Ah:56:ARG:NH2	2.43	0.52
57:AC:114:ILE:HD12	75:Al:71:GLU:HG2	1.91	0.52
74:Ak:18:GLN:HG2	74:Ak:33:LEU:HD21	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
80:Aq:57:LEU:HD13	80:Aq:69:ILE:HD11	1.92	0.52
1:B5:85:G:N2	1:B5:98:A:OP2	2.33	0.52
1:B5:2432:C:HO2'	1:B5:2610:U:HO2'	1.52	0.52
18:BO:10:ASP:OD2	18:BO:37:ARG:NH2	2.43	0.52
53:MA:209:GLN:O	53:MA:270:ARG:NH1	2.42	0.52
54:A2:1551:G:H3'	54:A2:1580:A:H61	1.75	0.52
1:B5:2257:G:H2'	1:B5:2258:OMU:H6	1.91	0.51
1:B5:2363:C:H1'	1:B5:2483:G:H21	1.75	0.51
47:Bt:147:HIS:HD2	47:Bt:149:HIS:HB2	1.74	0.51
54:A2:98:C:OP2	54:A2:427:A:O2'	2.25	0.51
54:A2:1236:G:O2'	78:Ao:134:GLY:O	2.27	0.51
1:B5:512:U:OP2	30:Ba:85:GLN:NE2	2.42	0.51
1:B5:1280:G:N7	96:B5:5666:HOH:O	2.34	0.51
1:B5:1869:U:OP2	18:BO:49:ARG:NH1	2.36	0.51
2:B7:63:C:H5'	2:B7:64:G:H5"	1.92	0.51
12:BI:53:VAL:HG11	23:BT:158:PHE:HZ	1.74	0.51
20:BQ:12:LYS:HD2	20:BQ:14:ARG:HH12	1.74	0.51
32:Bc:8:LYS:NZ	54:A2:1009:A:OP2	2.28	0.51
51:XA:73:LEU:O	51:XA:77:LEU:CG	2.58	0.51
51:XA:525:PHE:HA	51:XA:528:TYR:CD2	2.42	0.51
51:XA:569:HIS:CE1	51:XA:653:PRO:HB2	2.45	0.51
54:A2:62:G:H1'	54:A2:172:OMU:HM23	1.93	0.51
54:A2:953:G:OP1	64:Aa:56:LYS:NZ	2.43	0.51
1:B5:2470:C:OP1	24:BU:92:LYS:NZ	2.33	0.51
12:BI:55:ASP:OD2	12:BI:164:LYS:NZ	2.43	0.51
29:BZ:87:VAL:HG12	29:BZ:89:ILE:HG13	1.92	0.51
46:Bs:30:VAL:HG12	46:Bs:189:ILE:HG12	1.91	0.51
50:Nu:65:PHE:HZ	50:Nu:109:GLN:HB2	1.76	0.51
51:XA:505:LEU:HG	51:XA:564:ILE:HG21	1.91	0.51
66:Ac:162:ASP:O	66:Ac:165:ASN:ND2	2.39	0.51
79:Ap:97:GLN:HB2	79:Ap:105:LYS:HG3	1.91	0.51
1:B5:4609:G:H5"	16:BM:91:TRP:CE2	2.45	0.51
5:BB:213:GLN:NE2	5:BB:285:TYR:O	2.41	0.51
51:XA:8:PRO:HA	51:XA:11:ASN:HB2	1.92	0.51
53:MA:291:VAL:N	53:MA:476:TYR:O	2.33	0.51
54:A2:90:G:OP2	90:A2:1904:SPD:N10	2.43	0.51
54:A2:1598:C:OP2	88:Ay:85:ARG:NH2	2.37	0.51
54:A2:1704:OMC:HM22	54:A2:1705:C:H5'	1.93	0.51
67:Ad:80:ILE:HG13	67:Ad:81:THR:HG23	1.91	0.51
1:B5:364:G:O6	39:Bj:55:ARG:NH2	2.36	0.51
5:BB:354:GLN:HB3	5:BB:359:ALA:HB1	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:BQ:67:ILE:HG12	20:BQ:98:LEU:HD11	1.93	0.51
25:BV:106:VAL:HG12	25:BV:112:MET:HA	1.92	0.51
48:Bv:94:ASN:O	48:Bv:97:LYS:NZ	2.43	0.51
52:XB:13:ASN:HA	52:XB:16:HIS:CD2	2.45	0.51
54:A2:521:A:O2'	54:A2:826:A:N3	2.41	0.51
64:Aa:48:LEU:O	77:An:51:GLU:HG3	2.11	0.51
66:Ac:64:ARG:NH2	73:Aj:71:LEU:O	2.44	0.51
73:Aj:3:MET:HE1	73:Aj:48:ALA:HB2	1.92	0.51
81:Ar:132:ARG:HB2	81:Ar:134:GLN:HE22	1.75	0.51
1:B5:4440:G:OP1	1:B5:4440:G:N2	2.43	0.51
5:BB:322:HIS:O	5:BB:342:LYS:NZ	2.31	0.51
9:BF:126:LYS:HB2	23:BT:133:ALA:HB3	1.92	0.51
51:XA:547:VAL:HG12	51:XA:551:HIS:CE1	2.46	0.51
68:Ae:45:TYR:OH	68:Ae:65:GLN:NE2	2.43	0.51
1:B5:409:G:OP2	19:BP:2:VAL:N	2.44	0.51
1:B5:2658:A2M:HM'2	1:B5:2659:G:H5'	1.92	0.51
1:B5:4324:G:H2'	1:B5:4325:PSU:H6	1.76	0.51
48:Bv:128:LEU:HD13	48:Bv:135:PRO:HD3	1.93	0.51
54:A2:1446:PSU:C2'	54:A2:1447:A:H5'	2.41	0.51
54:A2:1525:G:N7	81:Ar:141:ARG:NH2	2.57	0.51
60:AF:32:LEU:HB2	60:AF:71:ILE:HD11	1.92	0.51
61:AG:17:GLY:O	61:AG:27:ARG:NH1	2.44	0.51
1:B5:1208:C:H2'	1:B5:1209:G:H8	1.74	0.51
1:B5:3374:A:O2'	39:Bj:2:THR:N	2.41	0.51
1:B5:3395:A:OP1	4:BA:119:LYS:NZ	2.43	0.51
51:XA:191:GLU:HB3	51:XA:195:TYR:CZ	2.46	0.51
54:A2:166:A2M:HM'2	54:A2:167:G:H5'	1.93	0.51
68:Ae:58:ALA:HB3	68:Ae:62:ARG:HH21	1.74	0.51
1:B5:484:G:H3'	1:B5:485:U:H2'	1.93	0.51
1:B5:1528:G:OP1	21:BR:92:LYS:NZ	2.44	0.51
1:B5:4674:C:N4	1:B5:4675:G:O6	2.44	0.51
6:BC:108:TRP:O	17:BN:204:ARG:NH2	2.44	0.51
12:BI:49:CYS:SG	12:BI:51:HIS:NE2	2.81	0.51
26:BW:81:ALA:HB2	26:BW:87:LEU:HB2	1.92	0.51
48:Bv:183:ILE:HD13	48:Bv:206:ILE:HD13	1.92	0.51
53:MA:458:ASN:HA	53:MA:461:PHE:CE2	2.46	0.51
54:A2:1666:G:P	82:As:91:HIS:HE2	2.34	0.51
58:AD:109:ARG:O	58:AD:113:ASN:ND2	2.35	0.51
58:AD:112:TYR:CG	72:Ai:33:GLY:HA3	2.46	0.51
69:Af:57:ASP:OD1	69:Af:61:PHE:N	2.44	0.51
71:Ah:67:TRP:NE1	71:Ah:191:GLU:OE2	2.35	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:2658:A2M:P	1:B5:2658:A2M:H8	2.51	0.51
4:BA:30:ARG:HG3	4:BA:76:PHE:HZ	1.76	0.51
12:BI:192:PRO:HA	12:BI:197:VAL:HG12	1.93	0.51
53:MA:246:ASN:OD1	53:MA:247:PHE:N	2.44	0.51
54:A2:120:U:H2'	54:A2:121:OMU:H6	1.93	0.51
54:A2:126:G:H8	69:Af:199:THR:HG21	1.76	0.51
54:A2:1276:G:N2	54:A2:1507:A:OP2	2.43	0.51
54:A2:1534:A:OP2	68:Ae:164:ARG:NH1	2.43	0.51
63:AZ:157:VAL:O	84:Au:65:SER:OG	2.27	0.51
1:B5:91:G:OP1	43:Bo:44:LYS:NZ	2.39	0.50
1:B5:2221:G:N2	1:B5:2224:A:OP2	2.40	0.50
1:B5:4507:G:OP1	18:BO:117:ARG:NH2	2.44	0.50
15:BL:81:LEU:HD12	15:BL:86:ILE:HB	1.91	0.50
25:BV:13:LYS:HD2	25:BV:128:LEU:HD21	1.93	0.50
46:Bs:32:ALA:O	46:Bs:85:ASN:ND2	2.43	0.50
51:XA:486:TRP:HA	51:XA:486:TRP:CE3	2.46	0.50
52:XB:78:LYS:HB2	52:XB:81:HIS:HD2	1.74	0.50
54:A2:678:G:N1	54:A2:1028:A:OP2	2.34	0.50
54:A2:1787:U:H2'	54:A2:1788:G:H8	1.76	0.50
1:B5:1016:C:O2'	1:B5:1059:G:O4'	2.29	0.50
1:B5:4068:G:N2	1:B5:4071:A:OP2	2.44	0.50
8:BE:164:ARG:NH1	8:BE:276:SER:OG	2.45	0.50
43:Bo:12:CYS:HB3	43:Bo:15:CYS:HB2	1.94	0.50
50:Nu:62:VAL:HB	50:Nu:74:PHE:HB2	1.93	0.50
51:XA:73:LEU:O	51:XA:77:LEU:HD11	2.02	0.50
51:XA:713:ILE:HB	51:XA:771:MET:HE2	1.93	0.50
54:A2:49:C:H2'	54:A2:473:C:H41	1.75	0.50
54:A2:1514:C:H2'	54:A2:1515:G:H8	1.77	0.50
54:A2:1532:A:H4'	54:A2:1606:G:H4'	1.93	0.50
71:Ah:34:ALA:HB2	71:Ah:56:ARG:HD2	1.92	0.50
1:B5:2102:G:O2'	1:B5:2104:G:N2	2.44	0.50
1:B5:2499:U:OP1	29:BZ:78:ASN:ND2	2.44	0.50
1:B5:3688:G:N2	1:B5:3785:C:O2	2.44	0.50
15:BL:109:SER:O	15:BL:113:ASN:ND2	2.39	0.50
25:BV:89:ARG:HB2	25:BV:95:PHE:CE2	2.46	0.50
48:Bv:37:SER:HB2	48:Bv:202:ARG:HB2	1.93	0.50
54:A2:1486:U:OP1	66:Ac:151:LYS:NZ	2.44	0.50
54:A2:1757:C:H2'	54:A2:1758:G:C8	2.47	0.50
61:AG:22:ARG:HH11	66:Ac:16:ILE:HG21	1.77	0.50
1:B5:1458:A:H4'	1:B5:1459:G:H5'	1.94	0.50
1:B5:1921:G:N2	1:B5:1948:A:O2'	2.42	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:4089:U:O2'	43:Bo:31:ASP:OD1	2.28	0.50
7:BD:41:LYS:NZ	23:BT:32:ARG:O	2.31	0.50
54:A2:27:A2M:HM'2	54:A2:28:U:H5'	1.94	0.50
54:A2:1306:C:OP2	57:AC:93:HIS:ND1	2.44	0.50
51:XA:525:PHE:CD2	52:XB:36:LEU:HD12	2.47	0.50
54:A2:1763:C:H2'	54:A2:1764:G:C8	2.47	0.50
1:B5:2208:OMC:HM21	1:B5:2671:U:H2'	1.93	0.50
43:Bo:17:LYS:HG3	43:Bo:19:GLN:HE21	1.76	0.50
46:Bs:68:HIS:HB3	46:Bs:75:LEU:HD22	1.94	0.50
54:A2:142:C:OP2	69:Af:188:LYS:NZ	2.44	0.50
54:A2:1453:A:H4'	54:A2:1454:C:O4'	2.11	0.50
67:Ad:100:ARG:HB2	67:Ad:114:ILE:HD13	1.93	0.50
69:Af:121:ILE:N	69:Af:125:THR:OG1	2.45	0.50
71:Ah:110:ARG:HD3	71:Ah:123:ARG:HH21	1.77	0.50
1:B5:2232:A:H4'	33:Bd:70:LYS:HG3	1.93	0.50
49:Nt:195:ALA:HA	49:Nt:213:LEU:HD11	1.94	0.50
51:XA:324:PRO:HG2	52:XB:84:LEU:HG	1.94	0.50
54:A2:1566:C:OP2	82:As:101:ARG:NH1	2.44	0.50
69:Af:103:ASP:OD2	69:Af:105:ASN:ND2	2.38	0.50
78:Ao:103:ASN:ND2	78:Ao:120:SER:OG	2.45	0.50
81:Ar:26:ILE:HG13	81:Ar:45:LEU:HD21	1.93	0.50
1:B5:4138:OMG:HM21	1:B5:4140:A:H2'	1.93	0.50
1:B5:4224:G:N2	1:B5:4354:G:O2'	2.45	0.50
91:B5:4911:SPM:N5	20:BQ:8:ASN:O	2.44	0.50
36:Bg:69:LYS:C	36:Bg:73:HIS:CE1	2.90	0.50
38:Bi:50:PHE:O	38:Bi:55:ARG:NH1	2.44	0.50
48:Bv:51:GLY:O	48:Bv:157:PHE:N	2.40	0.50
54:A2:398:G:OP2	74:Ak:108:ASN:ND2	2.44	0.50
65:Ab:196:ILE:HB	65:Ab:223:TYR:HB2	1.94	0.50
70:Ag:65:PRO:HD2	70:Ag:68:GLN:HE21	1.76	0.50
71:Ah:22:HIS:ND1	71:Ah:23:LYS:O	2.41	0.50
72:Ai:138:ARG:NH1	72:Ai:153:SER:OG	2.45	0.50
1:B5:519:C:H2'	1:B5:520:G:C8	2.47	0.50
1:B5:2384:G:N7	96:B5:5681:HOH:O	2.35	0.50
1:B5:2444:A:N6	1:B5:2587:A:OP2	2.42	0.50
1:B5:3352:G:OP1	1:B5:3354:C:N4	2.45	0.50
49:Nt:113:LYS:HE2	49:Nt:120:TYR:HE2	1.77	0.50
51:XA:37:LEU:HD11	51:XA:52:LYS:HE3	1.94	0.50
54:A2:220:U:H2'	54:A2:221:A:H8	1.77	0.50
54:A2:1009:A:H2'	54:A2:1010:A:H8	1.76	0.50
1:B5:664:G:H2'	1:B5:665:G:H8	1.75	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:BQ:12:LYS:CB	20:BQ:14:ARG:NH1	2.75	0.49
49:Nt:73:GLU:OE2	50:Nu:86:ASN:ND2	2.40	0.49
53:MA:319:THR:H	53:MA:322:ARG:HD2	1.76	0.49
54:A2:144:U:OP2	69:Af:139:SER:OG	2.30	0.49
54:A2:1623:U:OP1	81:Ar:120:HIS:ND1	2.38	0.49
1:B5:135:G:N2	37:Bh:95:LEU:O	2.32	0.49
1:B5:684:C:OP1	45:Br:87:ARG:NE	2.44	0.49
1:B5:2432:C:O2'	1:B5:2610:U:O2'	2.30	0.49
7:BD:7:VAL:HG23	7:BD:8:LYS:HG3	1.93	0.49
7:BD:55:VAL:HG13	7:BD:60:ILE:HG12	1.94	0.49
8:BE:156:LEU:HD11	8:BE:198:ILE:HG13	1.94	0.49
20:BQ:119:LYS:HE3	20:BQ:121:LEU:HD21	1.93	0.49
33:Bd:65:ASP:OD1	33:Bd:66:THR:N	2.45	0.49
45:Br:105:ASP:OD1	45:Br:105:ASP:N	2.46	0.49
51:XA:558:ALA:HA	51:XA:660:PHE:CD2	2.47	0.49
57:AC:126:CYS:HB2	57:AC:130:VAL:HB	1.94	0.49
67:Ad:87:MET:HE2	67:Ad:123:LEU:HB2	1.93	0.49
87:Ax:29:HIS:ND1	87:Ax:29:HIS:O	2.45	0.49
1:B5:198:A:OP2	28:BY:126:ARG:NH2	2.45	0.49
1:B5:454:U:H1'	34:Be:5:ARG:HE	1.77	0.49
1:B5:3420:U:OP2	4:BA:198:ARG:NH2	2.37	0.49
1:B5:4061:A:OP1	23:BT:69:GLN:NE2	2.43	0.49
23:BT:94:GLU:OE1	23:BT:94:GLU:N	2.40	0.49
49:Nt:210:ILE:HB	51:XA:83:TRP:HH2	1.77	0.49
54:A2:463:OMC:HM22	54:A2:464:C:H5'	1.94	0.49
54:A2:1080:C:O2'	54:A2:1183:A:N1	2.46	0.49
54:A2:1124:C:OP1	64:Aa:151:ARG:NH2	2.46	0.49
1:B5:1224:C:O2'	6:BC:321:ASN:OD1	2.28	0.49
1:B5:2460:G:OP1	21:BR:64:ARG:NH2	2.35	0.49
5:BB:56:ILE:HD13	5:BB:365:LEU:HD22	1.95	0.49
30:Ba:39:V5N:O2	30:Ba:40:HIS:N	2.43	0.49
31:Bb:101:HIS:O	31:Bb:109:ARG:NH1	2.39	0.49
54:A2:16:G:H21	54:A2:1196:A:H62	1.59	0.49
79:Ap:34:VAL:HG22	79:Ap:70:VAL:HB	1.95	0.49
83:At:75:LYS:NZ	96:At:201:HOH:O	2.45	0.49
1:B5:435:A:O2'	34:Be:26:ASP:OD2	2.22	0.49
1:B5:1804:G:N2	1:B5:1807:A:OP2	2.45	0.49
1:B5:4698:U:H2'	1:B5:4699:G:H8	1.78	0.49
6:BC:45:ARG:O	6:BC:48:ASN:ND2	2.45	0.49
47:Bt:95:GLN:HG3	47:Bt:98:ILE:HG12	1.94	0.49
51:XA:201:ARG:HH21	51:XA:233:LEU:HD12	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:A2:1551:G:N2	54:A2:1560:C:O2	2.42	0.49
75:Al:79:VAL:HG21	75:Al:85:LEU:HD13	1.94	0.49
87:Ax:76:TYR:OH	87:Ax:85:ASN:O	2.30	0.49
1:B5:2177:C:OP2	6:BC:195:LYS:NZ	2.46	0.49
1:B5:3815:G:N7	4:BA:67:TYR:OH	2.39	0.49
50:Nu:43:LYS:HD2	50:Nu:46:PHE:HD2	1.78	0.49
51:XA:514:HIS:O	51:XA:518:ILE:HG13	2.13	0.49
54:A2:1089:U:OP1	91:A2:1909:SPM:N14	2.45	0.49
54:A2:1135:G:OP1	59:AE:6:ARG:NE	2.36	0.49
69:Af:20:ASP:OD2	69:Af:22:ARG:NH2	2.45	0.49
71:Ah:57:ALA:HB2	71:Ah:183:GLY:HA2	1.95	0.49
86:Aw:26:GLN:NE2	96:Aw:301:HOH:O	2.41	0.49
1:B5:1394:U:O2'	9:BF:33:ARG:NE	2.39	0.49
1:B5:1696:U:H2'	1:B5:1697:G:C8	2.48	0.49
1:B5:3561:G:H2'	1:B5:3562:A2M:H8	1.94	0.49
6:BC:25:PRO:HB2	6:BC:27:VAL:HG12	1.93	0.49
12:BI:51:HIS:HD1	12:BI:134:VAL:HG11	1.77	0.49
51:XA:473:THR:OG1	51:XA:478:ASN:OD1	2.31	0.49
54:A2:1148:C:OP1	59:AE:6:ARG:NH1	2.45	0.49
68:Ae:131:ALA:HB2	68:Ae:135:ARG:HH21	1.77	0.49
69:Af:164:LYS:HG2	69:Af:165:GLU:H	1.78	0.49
77:An:34:PHE:HB3	77:An:41:PHE:HB2	1.92	0.49
1:B5:35:U:O2'	1:B5:1606:G:N3	2.45	0.49
1:B5:369:G:N2	1:B5:372:A:OP2	2.38	0.49
1:B5:1208:C:H2'	1:B5:1209:G:C8	2.48	0.49
1:B5:1717:C:H2'	1:B5:1718:PSU:H6	1.77	0.49
1:B5:2466:A:OP1	24:BU:101:ARG:NE	2.37	0.49
1:B5:2652:G:O2'	1:B5:4390:G:OP1	2.31	0.49
50:Nu:103:LEU:O	50:Nu:105:SER:N	2.46	0.49
51:XA:247:TYR:CZ	51:XA:263:GLY:HA3	2.47	0.49
54:A2:665:A:O2'	54:A2:671:A:N1	2.43	0.49
54:A2:1288:A:H2'	54:A2:1316:U:O2	2.13	0.49
66:Ac:32:ASP:OD2	66:Ac:65:ARG:NH1	2.46	0.49
1:B5:788:G:H2'	1:B5:789:G:C8	2.48	0.49
1:B5:3651:C:H2'	1:B5:3652:PSU:H6	1.78	0.49
22:BS:95:ARG:NH2	22:BS:112:ASP:OD2	2.46	0.49
41:Bl:23:ILE:HG23	41:Bl:38:ASN:HB2	1.94	0.49
49:Nt:206:ILE:HB	51:XA:77:LEU:HD21	1.95	0.49
51:XA:706:PRO:HB3	51:XA:764:HIS:HA	1.95	0.49
54:A2:77:A:H2	69:Af:175:LYS:HG3	1.78	0.49
54:A2:869:G:OP2	54:A2:869:G:N2	2.31	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:Ad:211:LYS:NZ	67:Ad:215:GLY:O	2.43	0.49
70:Ag:144:ILE:HB	85:Av:52:ILE:HB	1.94	0.49
82:As:108:GLU:OE2	82:As:121:ARG:NE	2.46	0.49
87:Ax:40:ILE:HG21	87:Ax:60:PHE:HZ	1.78	0.49
1:B5:2204:G:N2	1:B5:3592:A:OP2	2.39	0.49
1:B5:3524:OMG:HM22	1:B5:3525:U:H5'	1.94	0.49
1:B5:4231:C:O2'	42:Bm:114:LYS:NZ	2.44	0.49
13:BJ:48:PRO:HB3	13:BJ:72:CYS:HB3	1.94	0.49
22:BS:69:GLU:HG2	22:BS:101:THR:HG22	1.94	0.49
35:Bf:36:ARG:HB2	35:Bf:80:ASN:HA	1.93	0.49
35:Bf:71:TRP:HD1	35:Bf:89:ARG:HH22	1.61	0.49
51:XA:151:TRP:HE3	51:XA:174:PHE:HE1	1.61	0.49
63:AZ:151:ASP:OD1	63:AZ:151:ASP:N	2.45	0.49
1:B5:1938:A:OP1	46:Bs:9:TRP:NE1	2.41	0.48
3:B8:78:G:O2'	3:B8:82:A:N1	2.46	0.48
47:Bt:133:LEU:HD11	47:Bt:151:ILE:HG13	1.95	0.48
49:Nt:93:ARG:O	50:Nu:65:PHE:N	2.36	0.48
51:XA:590:LYS:O	51:XA:592:LEU:N	2.46	0.48
54:A2:477:A:N3	54:A2:489:U:O2'	2.38	0.48
54:A2:588:A:H5'	54:A2:593:C:H41	1.78	0.48
54:A2:1293:C:H42	57:AC:138:ARG:HH21	1.61	0.48
74:Ak:78:THR:HG22	74:Ak:79:LYS:HG3	1.95	0.48
1:B5:4156:G:H2'	1:B5:4157:G:H8	1.78	0.48
47:Bt:80:LEU:HD13	47:Bt:112:ILE:HG23	1.94	0.48
51:XA:431:MET:HE2	51:XA:451:TYR:HE2	1.78	0.48
53:MA:335:THR:OG1	53:MA:437:ASP:OD2	2.28	0.48
54:A2:77:A:C2	69:Af:176:ILE:HG22	2.48	0.48
60:AF:39:THR:HG22	60:AF:60:ARG:HG2	1.95	0.48
66:Ac:50:ILE:HD11	66:Ac:86:LEU:HD23	1.95	0.48
66:Ac:213:PRO:HG3	80:Aq:19:LYS:HB3	1.95	0.48
67:Ad:160:ILE:HG22	67:Ad:172:PHE:HB3	1.94	0.48
71:Ah:141:ARG:HB3	71:Ah:145:ILE:HB	1.96	0.48
77:An:46:ASP:N	77:An:46:ASP:OD1	2.45	0.48
51:XA:25:GLN:HB3	51:XA:28:ASN:HD22	1.77	0.48
51:XA:416:LYS:HA	51:XA:419:LYS:HD2	1.95	0.48
54:A2:1286:G:O2'	57:AC:99:LYS:NZ	2.36	0.48
57:AC:116:ARG:NH1	57:AC:120:GLU:OE2	2.47	0.48
64:Aa:25:PHE:HZ	77:An:53:ILE:HA	1.77	0.48
1:B5:1784:U:OP1	31:Bb:25:ARG:NE	2.46	0.48
1:B5:3545:A:N3	1:B5:4284:G:O2'	2.43	0.48
6:BC:278:ASN:OD1	6:BC:279:LEU:N	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:XA:661:LEU:HB3	51:XA:665:LYS:HE3	1.95	0.48
54:A2:165:G:H2'	54:A2:166:A2M:H8	1.95	0.48
54:A2:1264:U:O2	61:AG:16:GLN:NE2	2.45	0.48
60:AF:244:ASN:ND2	60:AF:294:ASP:O	2.46	0.48
63:AZ:145:ILE:HG12	63:AZ:159:ILE:HB	1.95	0.48
66:Ac:42:THR:OG1	66:Ac:45:ARG:O	2.24	0.48
1:B5:1994:G:O5'	18:BO:130:LYS:NZ	2.47	0.48
1:B5:3821:G:H2'	1:B5:3822:G:H8	1.79	0.48
5:BB:80:GLU:OE1	5:BB:323:TYR:OH	2.23	0.48
12:BI:189:ARG:NH1	12:BI:199:TYR:OH	2.47	0.48
32:Bc:37:MET:HG3	32:Bc:97:ILE:HD11	1.95	0.48
52:XB:46:GLU:HG2	52:XB:52:ILE:HG23	1.96	0.48
54:A2:5:U:H2'	54:A2:6:G:H8	1.77	0.48
54:A2:1524:C:H2'	54:A2:1525:G:H8	1.78	0.48
1:B5:238:C:OP2	28:BY:45:ARG:NH2	2.46	0.48
1:B5:2399:G:H2'	1:B5:2400:G:H8	1.78	0.48
1:B5:4092:U:H5"	43:Bo:80:LYS:HE2	1.96	0.48
37:Bh:4:ILE:HD12	37:Bh:53:SER:HB3	1.95	0.48
49:Nt:107:THR:O	49:Nt:108:LYS:C	2.55	0.48
51:XA:538:TYR:CD1	52:XB:36:LEU:HD22	2.49	0.48
51:XA:714:ARG:HG3	51:XA:771:MET:HE1	1.96	0.48
54:A2:159:A2M:H8	54:A2:159:A2M:O5'	2.14	0.48
54:A2:753:G:O2'	54:A2:754:C:O2	2.28	0.48
54:A2:956:A:H5"	77:An:60:MET:HE3	1.96	0.48
69:Af:148:SER:N	69:Af:151:ASP:OD2	2.38	0.48
87:Ax:25:ILE:HD13	87:Ax:44:LEU:HD11	1.96	0.48
1:B5:1276:C:H2'	1:B5:1277:A:H8	1.78	0.48
1:B5:2200:G:N7	96:B5:5687:HOH:O	2.35	0.48
26:BW:79:GLN:NE2	26:BW:80:ARG:O	2.47	0.48
46:Bs:69:LEU:HD22	46:Bs:76:GLU:HB2	1.95	0.48
48:Bv:60:ARG:O	48:Bv:171:HIS:ND1	2.46	0.48
51:XA:569:HIS:HE1	51:XA:653:PRO:HB2	1.78	0.48
80:Aq:43:SER:OG	80:Aq:46:LEU:HB3	2.13	0.48
1:B5:684:C:OP2	8:BE:114:LYS:NZ	2.46	0.48
1:B5:2322:G:H2'	1:B5:2323:G:H8	1.78	0.48
1:B5:3461:U:H2'	1:B5:3462:PSU:H6	1.79	0.48
54:A2:1443:OMU:HM22	54:A2:1444:C:H5'	1.96	0.48
1:B5:4110:G:N7	96:B5:5699:HOH:O	2.36	0.48
1:B5:4323:U:H2'	1:B5:4324:G:C8	2.49	0.48
1:B5:4638:G:N2	1:B5:4661:C:O2	2.47	0.48
5:BB:233:SER:OG	5:BB:272:LYS:NZ	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:BJ:56:THR:OG1	13:BJ:64:ARG:N	2.46	0.48
48:Bv:204:LEU:HD22	48:Bv:216:LEU:HD23	1.94	0.48
51:XA:151:TRP:HB3	51:XA:174:PHE:CE1	2.49	0.48
54:A2:127:C:O2	67:Ad:134:LYS:NZ	2.39	0.48
54:A2:371:G:O3'	71:Ah:10:LYS:NZ	2.45	0.48
54:A2:1416:C:O2'	82:As:132:ASP:OD2	2.29	0.48
64:Aa:146:ARG:HB2	64:Aa:149:GLN:HB2	1.94	0.48
71:Ah:3:ILE:O	71:Ah:30:GLY:N	2.46	0.48
81:Ar:92:ASP:OD1	81:Ar:92:ASP:N	2.46	0.48
1:B5:2602:G:H1'	1:B5:2607:A:H2	1.79	0.48
1:B5:2667:OMC:HM22	1:B5:2668:A:H5'	1.95	0.48
5:BB:384:GLU:OE2	26:BW:14:TYR:OH	2.32	0.48
8:BE:181:PRO:HD2	8:BE:184:LEU:HD12	1.96	0.48
11:BH:56:ARG:NH2	11:BH:58:ASP:OD2	2.43	0.48
51:XA:47:GLU:O	51:XA:51:MET:HG2	2.14	0.48
51:XA:496:LYS:CE	51:XA:560:ILE:HB	2.43	0.48
51:XA:590:LYS:CG	51:XA:591:GLU:N	2.77	0.48
69:Af:135:PRO:HG2	69:Af:141:ILE:HD13	1.96	0.48
76:Am:83:ASP:OD1	76:Am:83:ASP:N	2.47	0.48
1:B5:1493:U:H2'	1:B5:1494:G:C8	2.48	0.47
1:B5:3562:A2M:HM'2	1:B5:3563:U:H5'	1.96	0.47
1:B5:4627:C:H2'	1:B5:4628:G:C8	2.49	0.47
41:Bl:42:ARG:HG3	41:Bl:47:THR:HG23	1.96	0.47
48:Bv:54:ARG:NH1	48:Bv:153:SER:OG	2.47	0.47
50:Nu:105:SER:O	50:Nu:106:ILE:C	2.56	0.47
51:XA:190:SER:HB2	51:XA:220:ILE:HG23	1.95	0.47
54:A2:192:C:H4'	54:A2:192:C:OP1	2.13	0.47
56:AB:32:VAL:HG11	56:AB:56:LEU:HD12	1.96	0.47
59:AE:23:CYS:HB3	59:AE:28:ARG:H	1.78	0.47
87:Ax:7:ILE:HG22	87:Ax:27:VAL:HG22	1.96	0.47
1:B5:778:C:H2'	1:B5:779:G:H8	1.79	0.47
1:B5:1923:A:N7	1:B5:1949:A:O2'	2.36	0.47
1:B5:3491:A:HO2'	54:A2:1827:G:HO2'	1.61	0.47
4:BA:115:CYS:HA	4:BA:128:ARG:HG2	1.95	0.47
5:BB:229:LYS:HG3	5:BB:272:LYS:HD3	1.96	0.47
51:XA:590:LYS:C	51:XA:592:LEU:N	2.71	0.47
61:AG:3:HIS:HB3	61:AG:6:LEU:HB2	1.94	0.47
68:Ae:71:ARG:NH2	68:Ae:148:ASN:OD1	2.46	0.47
70:Ag:145:ARG:NH2	85:Av:49:GLU:OE1	2.47	0.47
81:Ar:22:GLY:HA2	81:Ar:56:ALA:HB3	1.95	0.47
1:B5:985:G:OP2	8:BE:67:ARG:NH1	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:3823:G:H1	1:B5:3841:U:H3	1.60	0.47
17:BN:53:TYR:HB2	17:BN:133:ILE:HD13	1.96	0.47
30:Ba:103:VAL:HB	30:Ba:108:TYR:HB2	1.95	0.47
33:Bd:26:THR:OG1	33:Bd:85:ARG:NH1	2.39	0.47
42:Bm:94:MET:HG2	42:Bm:105:PRO:HA	1.95	0.47
46:Bs:31:GLY:N	46:Bs:188:ILE:O	2.39	0.47
51:XA:89:LEU:CD1	51:XA:90:GLN:H	2.19	0.47
54:A2:868:OMG:HM22	54:A2:869:G:H5'	1.96	0.47
63:AZ:52:LYS:HB2	80:Aq:109:LEU:HD13	1.96	0.47
64:Aa:107:ARG:NH1	77:An:135:ILE:HG12	2.29	0.47
73:Aj:17:LYS:NZ	73:Aj:18:GLU:OE2	2.46	0.47
1:B5:2262:C:N4	96:B5:5750:HOH:O	2.39	0.47
27:BX:73:HIS:HD2	27:BX:115:LYS:HD3	1.77	0.47
38:Bi:99:LYS:HG2	38:Bi:103:LYS:HE2	1.96	0.47
48:Bv:104:ALA:O	48:Bv:133:LYS:NZ	2.38	0.47
51:XA:448:CYS:O	51:XA:452:MET:HG2	2.14	0.47
51:XA:673:GLU:HA	51:XA:676:LEU:HD12	1.95	0.47
64:Aa:179:ASN:ND2	64:Aa:183:GLU:OE1	2.47	0.47
1:B5:1412:G:O2'	20:BQ:75:ARG:NH2	2.43	0.47
1:B5:1621:C:O2'	1:B5:1643:G:OP1	2.26	0.47
1:B5:2318:G:H4'	1:B5:2319:G:H8	1.79	0.47
54:A2:990:C:OP2	64:Aa:155:TYR:OH	2.31	0.47
66:Ac:93:THR:HG22	66:Ac:95:GLY:H	1.79	0.47
1:B5:2028:G:OP2	6:BC:294:LYS:NZ	2.36	0.47
1:B5:2034:A:N6	1:B5:2035:G:O6	2.47	0.47
1:B5:4445:U:H1'	1:B5:4446:A:H5"	1.95	0.47
5:BB:77:THR:HG21	5:BB:337:VAL:HG22	1.95	0.47
16:BM:5:ARG:NE	16:BM:59:ASP:OD1	2.47	0.47
46:Bs:5:ASP:HB2	46:Bs:8:THR:HG22	1.97	0.47
54:A2:462:U:H2'	54:A2:463:OMC:H6	1.80	0.47
54:A2:1546:A:H4'	79:Ap:74:GLY:HA2	1.96	0.47
90:A2:1901:SPD:HN6	65:Ab:117:ARG:HH21	1.62	0.47
62:AT:29:C:H4'	81:Ar:148:VAL:HG11	1.96	0.47
79:Ap:86:GLN:HE22	79:Ap:122:ALA:HB2	1.78	0.47
1:B5:2110:U:OP1	45:Br:37:SER:OG	2.24	0.47
1:B5:2467:G:OP1	50:Nu:27:ARG:NH1	2.46	0.47
1:B5:2642:G:N7	96:B5:5694:HOH:O	2.35	0.47
1:B5:3455:A:OP2	38:Bi:68:ARG:NH2	2.38	0.47
1:B5:3813:A:H3'	27:BX:44:PRO:HB2	1.97	0.47
1:B5:4317:A2M:HM'2	1:B5:4318:U:H5'	1.95	0.47
1:B5:4627:C:H2'	1:B5:4628:G:H8	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:4646:G:N2	1:B5:4652:G:H2'	2.29	0.47
2:B7:27:G:O6	7:BD:58:ARG:NH2	2.46	0.47
3:B8:3:A:H3'	3:B8:4:C:H6	1.79	0.47
6:BC:150:LEU:HD12	6:BC:151:PRO:HA	1.97	0.47
24:BU:90:TYR:O	24:BU:94:ASN:ND2	2.42	0.47
39:Bj:51:ALA:HA	39:Bj:54:LYS:HE2	1.97	0.47
47:Bt:35:LEU:HD12	47:Bt:37:LEU:H	1.79	0.47
48:Bv:159:MET:HB3	48:Bv:165:LEU:HD11	1.96	0.47
51:XA:137:ARG:HH11	51:XA:157:ALA:HB2	1.80	0.47
51:XA:137:ARG:HB3	51:XA:154:TYR:HD1	1.79	0.47
51:XA:329:LEU:HD23	51:XA:332:LEU:HD12	1.96	0.47
53:MA:471:ASP:OD1	53:MA:471:ASP:N	2.48	0.47
54:A2:510:OMG:HM22	54:A2:511:G:H5'	1.96	0.47
54:A2:1104:C:H2'	54:A2:1105:G:C8	2.49	0.47
63:AZ:187:GLY:HA2	84:Au:45:ARG:HE	1.80	0.47
80:Aq:29:HIS:HA	80:Aq:32:LYS:HE2	1.95	0.47
1:B5:323:C:H2'	1:B5:324:A:C8	2.49	0.47
1:B5:4634:U:O3'	16:BM:132:ARG:NH1	2.48	0.47
18:BO:54:TYR:OH	18:BO:73:PHE:O	2.33	0.47
51:XA:194:LEU:HB3	51:XA:536:ARG:CZ	2.45	0.47
51:XA:541:LEU:O	51:XA:544:LEU:HB3	2.15	0.47
60:AF:77:PHE:HB3	60:AF:89:LEU:HD11	1.97	0.47
67:Ad:124:CYS:HB3	67:Ad:141:THR:HB	1.97	0.47
68:Ae:167:LYS:NZ	68:Ae:175:ASP:OD2	2.40	0.47
1:B5:1684:G:H2'	1:B5:1685:A:H8	1.80	0.47
1:B5:3628:C:O2'	5:BB:268:ARG:NH2	2.48	0.47
7:BD:37:VAL:HB	7:BD:67:ALA:HB2	1.96	0.47
7:BD:152:ARG:HG3	7:BD:154:THR:HG23	1.96	0.47
32:Bc:4:ALA:O	32:Bc:7:THR:OG1	2.32	0.47
51:XA:323:PRO:N	51:XA:324:PRO:HD3	2.29	0.47
54:A2:1758:G:H2'	54:A2:1759:G:H8	1.80	0.47
86:Aw:60:LYS:HG3	86:Aw:116:PRO:HG3	1.97	0.47
1:B5:478:G:H2'	1:B5:479:G:C8	2.50	0.47
1:B5:793:C:N3	1:B5:794:G:N1	2.63	0.47
1:B5:1481:G:N1	1:B5:1604:U:O4	2.48	0.47
5:BB:19:ARG:HB2	5:BB:234:ARG:HH21	1.80	0.47
6:BC:66:SER:HA	6:BC:77:PRO:HA	1.96	0.47
9:BF:153:ILE:HD12	9:BF:190:ILE:HG12	1.95	0.47
49:Nt:137:LEU:O	49:Nt:141:GLU:HG2	2.14	0.47
51:XA:73:LEU:HD22	51:XA:77:LEU:HA	1.96	0.47
78:Ao:98:ASN:ND2	78:Ao:103:ASN:HD21	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:1132:U:N3	1:B5:1201:G:OP1	2.44	0.46
1:B5:1388:A:OP2	1:B5:1406:G:N2	2.44	0.46
1:B5:1779:G:OP2	9:BF:201:LYS:NZ	2.46	0.46
1:B5:1846:A:H4'	9:BF:222:LYS:HE3	1.97	0.46
1:B5:2032:G:H4'	1:B5:2033:C:H3'	1.98	0.46
1:B5:2620:G:H5"	1:B5:2621:G:H5'	1.97	0.46
3:B8:75:OMG:OP2	28:BY:74:TYR:OH	2.29	0.46
7:BD:197:LYS:HB3	7:BD:202:GLN:HB2	1.96	0.46
19:BP:8:PRO:HG3	19:BP:149:ILE:HD13	1.96	0.46
22:BS:166:ARG:HB3	90:BS:201:SPD:H102	1.80	0.46
46:Bs:81:HIS:ND1	46:Bs:191:GLN:OE1	2.48	0.46
51:XA:277:LEU:HD21	51:XA:301:LEU:HD21	1.97	0.46
52:XB:38:TRP:HB3	52:XB:41:LEU:HD12	1.96	0.46
52:XB:67:VAL:HG11	52:XB:105:LYS:HD2	1.97	0.46
53:MA:348:VAL:HG21	53:MA:394:VAL:HB	1.97	0.46
54:A2:1256:G:O3'	61:AG:40:ARG:NH2	2.47	0.46
54:A2:1347:U:H2'	54:A2:1348:PSU:H6	1.80	0.46
64:Aa:47:THR:OG1	64:Aa:65:ARG:NH1	2.48	0.46
67:Ad:31:PRO:HG3	67:Ad:43:PRO:HG3	1.97	0.46
86:Aw:140:ARG:HE	86:Aw:142:ARG:HD3	1.80	0.46
1:B5:1270:A2M:OP2	1:B5:4191:U:O2'	2.28	0.46
1:B5:1624:A:N3	1:B5:1791:U:O2'	2.44	0.46
1:B5:4437:A:O2'	11:BH:68:ALA:O	2.33	0.46
1:B5:4713:C:N4	1:B5:4714:G:O6	2.49	0.46
46:Bs:48:ARG:HD3	47:Bt:123:ARG:HG2	1.96	0.46
52:XB:58:ALA:HB2	52:XB:72:ILE:HG13	1.97	0.46
54:A2:387:C:H5'	71:Ah:7:ASN:HD22	1.80	0.46
1:B5:1641:C:OP1	31:Bb:19:ASN:ND2	2.48	0.46
4:BA:24:LYS:HG3	4:BA:49:ILE:HD12	1.97	0.46
19:BP:52:THR:HG23	19:BP:85:LYS:HG3	1.96	0.46
54:A2:469:A2M:HM'2	54:A2:470:A:H5'	1.98	0.46
54:A2:1563:C:H2'	54:A2:1564:G:H8	1.80	0.46
60:AF:192:THR:HG23	66:Ac:218:LEU:HD22	1.96	0.46
63:AZ:198:MET:HG2	63:AZ:200:ASP:H	1.80	0.46
81:Ar:50:ILE:HD11	81:Ar:66:ARG:HH21	1.79	0.46
87:Ax:51:THR:OG1	87:Ax:53:ASP:OD1	2.28	0.46
1:B5:707:C:H2'	1:B5:708:G:H8	1.81	0.46
1:B5:1414:A:OP1	20:BQ:65:ARG:NH2	2.46	0.46
1:B5:1682:A:N1	1:B5:1728:C:O2'	2.39	0.46
1:B5:2204:G:O2'	1:B5:3591:G:O6	2.27	0.46
1:B5:4099:PSU:H5'	1:B5:4100:U:H5'	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:4331:U:H2'	1:B5:4332:G:H8	1.80	0.46
1:B5:4663:C:O2	1:B5:4665:C:N4	2.48	0.46
11:BH:41:ILE:HG22	11:BH:43:VAL:HG13	1.96	0.46
15:BL:87:HIS:HB3	15:BL:90:VAL:HG23	1.96	0.46
19:BP:40:HIS:NE2	19:BP:110:ASP:O	2.37	0.46
27:BX:82:THR:HG21	37:Bh:37:THR:HG22	1.98	0.46
51:XA:532:LYS:HB2	51:XA:538:TYR:OH	2.15	0.46
53:MA:318:MET:HA	53:MA:322:ARG:HD2	1.97	0.46
59:AE:37:LYS:HB3	59:AE:70:LYS:HZ1	1.81	0.46
80:Aq:43:SER:OG	80:Aq:46:LEU:CB	2.63	0.46
1:B5:119:G:O4'	10:BG:132:ARG:NH2	2.48	0.46
1:B5:1776:A:OP1	23:BT:108:ARG:NH1	2.48	0.46
1:B5:3818:G:N7	96:B5:5696:HOH:O	2.35	0.46
7:BD:93:THR:O	7:BD:158:LYS:NZ	2.44	0.46
8:BE:193:HIS:HB3	8:BE:196:PHE:HD2	1.80	0.46
13:BJ:56:THR:HG23	13:BJ:63:ARG:HA	1.98	0.46
18:BO:125:LYS:HG2	18:BO:129:LEU:HD12	1.98	0.46
20:BQ:122:THR:OG1	20:BQ:124:ASP:OD1	2.24	0.46
21:BR:7:GLN:NE2	21:BR:35:ALA:O	2.46	0.46
32:Bc:50:ASN:OD1	32:Bc:51:ASN:N	2.49	0.46
51:XA:118:ARG:O	51:XA:122:LEU:HG	2.16	0.46
51:XA:158:TYR:HB3	51:XA:167:ALA:HB2	1.98	0.46
51:XA:378:TYR:HH	51:XA:407:LEU:HD22	1.80	0.46
54:A2:1222:G:H2'	54:A2:1223:G:C8	2.51	0.46
89:Az:2:ARG:HD3	89:Az:5:TRP:NE1	2.31	0.46
1:B5:1926:C:H2'	1:B5:1927:G:C8	2.50	0.46
1:B5:3886:G:H2'	1:B5:3887:G:H8	1.81	0.46
1:B5:4026:A:N3	13:BJ:145:LYS:NZ	2.64	0.46
10:BG:83:PHE:HA	10:BG:183:ILE:HD13	1.98	0.46
24:BU:98:ASP:O	24:BU:99:TRP:HD1	1.98	0.46
51:XA:537:SER:HB3	52:XB:39:PRO:HB3	1.96	0.46
54:A2:220:U:H2'	54:A2:221:A:C8	2.50	0.46
54:A2:1240:U:H5"	78:Ao:124:LYS:HD3	1.96	0.46
69:Af:67:VAL:HB	69:Af:99:GLY:HA2	1.96	0.46
1:B5:2002:G:H2'	1:B5:2003:G:C8	2.51	0.46
1:B5:2358:G:OP1	36:Bg:37:LYS:NZ	2.43	0.46
1:B5:2473:U:OP1	24:BU:48:LYS:NZ	2.35	0.46
1:B5:3856:A:O2'	10:BG:35:ARG:NH1	2.47	0.46
1:B5:4166:PSU:O2	1:B5:4221:G:N2	2.49	0.46
1:B5:4281:A:H2'	1:B5:4282:OMC:H6	1.79	0.46
4:BA:57:PRO:HG2	4:BA:78:ALA:HB3	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:BC:294:LYS:HA	6:BC:299:GLN:HE21	1.81	0.46
12:BI:187:GLU:HG3	12:BI:189:ARG:HG3	1.97	0.46
31:Bb:65:MET:HG2	31:Bb:68:ARG:HH22	1.79	0.46
46:Bs:175:LEU:HD13	46:Bs:182:PRO:HG2	1.97	0.46
51:XA:137:ARG:HA	51:XA:140:LEU:HD12	1.97	0.46
51:XA:187:TYR:O	51:XA:190:SER:OG	2.32	0.46
53:MA:297:TRP:CE2	53:MA:462:LEU:HD13	2.51	0.46
81:Ar:14:ARG:NH1	81:Ar:19:ASN:OD1	2.42	0.46
1:B5:1610:C:OP2	30:Ba:26:ARG:NH1	2.49	0.46
1:B5:3415:C:OP1	4:BA:132:ASN:ND2	2.45	0.46
1:B5:4366:OMU:OP1	25:BV:51:ARG:NH1	2.49	0.46
1:B5:4609:G:OP2	16:BM:5:ARG:NH2	2.42	0.46
8:BE:49:ASN:HD21	8:BE:57:GLY:HA3	1.79	0.46
11:BH:103:VAL:HG21	11:BH:144:LEU:HD11	1.98	0.46
18:BO:122:ALA:HA	22:BS:162:GLN:HB3	1.96	0.46
23:BT:18:PRO:HG2	23:BT:21:LYS:HB2	1.97	0.46
45:Br:90:LEU:HD22	45:Br:111:ILE:HG23	1.98	0.46
48:Bv:58:THR:CG2	48:Bv:153:SER:HB3	2.46	0.46
54:A2:602:OMG:HM22	54:A2:603:G:H5'	1.97	0.46
54:A2:1537:G:H2'	54:A2:1538:A:C8	2.51	0.46
64:Aa:87:ILE:HG22	64:Aa:101:HIS:HB2	1.96	0.46
1:B5:67:C:OP2	1:B5:312:G:N2	2.46	0.46
1:B5:521:C:H2'	1:B5:522:U:C6	2.50	0.46
1:B5:1113:A:O2'	1:B5:1120:G:OP1	2.30	0.46
1:B5:3509:G:O2'	1:B5:3547:G:O6	2.27	0.46
1:B5:3668:A:OP1	90:B5:4922:SPD:N10	2.49	0.46
1:B5:3695:A:H62	1:B5:3771:G:H22	1.62	0.46
1:B5:4486:G:H2'	1:B5:4489:G:H5'	1.98	0.46
5:BB:317:LEU:HD22	5:BB:382:VAL:HG13	1.98	0.46
50:Nu:56:ILE:HG13	50:Nu:56:ILE:O	2.15	0.46
51:XA:760:ASP:O	51:XA:795:THR:N	2.47	0.46
53:MA:293:THR:OG1	53:MA:475:GLN:NE2	2.48	0.46
54:A2:99:A2M:HM'2	54:A2:100:U:H5'	1.98	0.46
63:AZ:76:VAL:HG12	63:AZ:123:VAL:HB	1.97	0.46
1:B5:1321:G:H4'	1:B5:1322:C:H3'	1.97	0.46
1:B5:1712:U:H2'	1:B5:1713:C:C6	2.51	0.46
1:B5:2401:C:H2'	1:B5:2402:G:C8	2.51	0.46
1:B5:3486:G:H2'	1:B5:3487:G:H8	1.81	0.46
1:B5:4698:U:H2'	1:B5:4699:G:C8	2.51	0.46
6:BC:85:HIS:O	6:BC:89:GLN:NE2	2.49	0.46
47:Bt:133:LEU:HD22	47:Bt:152:ILE:HD12	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:Nt:97:ARG:O	50:Nu:59:ILE:HA	2.16	0.46
51:XA:410:LEU:O	51:XA:414:LYS:HG3	2.16	0.46
51:XA:441:ASP:HB3	51:XA:443:PHE:HD2	1.80	0.46
51:XA:584:THR:HB	51:XA:592:LEU:HD11	1.98	0.46
54:A2:165:G:N2	54:A2:165:G:OP2	2.48	0.46
54:A2:1758:G:H2'	54:A2:1759:G:C8	2.51	0.46
65:Ab:256:TRP:CG	85:Av:68:ARG:HD2	2.51	0.46
1:B5:345:C:H2'	1:B5:346:G:C8	2.50	0.45
1:B5:637:C:N4	1:B5:638:G:O6	2.48	0.45
1:B5:1276:C:H2'	1:B5:1277:A:C8	2.50	0.45
1:B5:4741:U:OP2	5:BB:385:LYS:NZ	2.43	0.45
17:BN:27:CYS:SG	17:BN:124:ASP:HB3	2.56	0.45
48:Bv:114:GLU:HA	48:Bv:137:LEU:HD22	1.98	0.45
49:Nt:119:THR:HG22	50:Nu:91:THR:HG22	1.99	0.45
51:XA:548:LEU:HA	51:XA:551:HIS:CD2	2.51	0.45
54:A2:959:G:O6	64:Aa:5:LYS:NZ	2.49	0.45
54:A2:1221:A:N3	54:A2:1678:U:O2'	2.42	0.45
3:B8:3:A:H3'	3:B8:4:C:C6	2.51	0.45
22:BS:127:MET:HG2	23:BT:153:PRO:HB2	1.98	0.45
25:BV:97:TYR:OH	26:BW:37:GLU:OE2	2.25	0.45
46:Bs:77:LYS:HE2	46:Bs:196:GLY:HA2	1.99	0.45
49:Nt:105:VAL:N	49:Nt:127:LYS:O	2.36	0.45
53:MA:284:GLY:HA2	53:MA:475:GLN:CG	2.43	0.45
54:A2:656:A:H4'	54:A2:657:G:H3'	1.98	0.45
54:A2:1222:G:H2'	54:A2:1223:G:H8	1.81	0.45
63:AZ:77:ILE:HD11	63:AZ:99:ILE:HD12	1.97	0.45
68:Ae:74:ASN:HA	68:Ae:77:MET:HE2	1.98	0.45
86:Aw:90:CYS:HB3	86:Aw:130:LEU:HD11	1.98	0.45
1:B5:260:C:H2'	1:B5:261:G:C8	2.51	0.45
1:B5:308:G:H2'	38:Bi:41:ARG:HH12	1.81	0.45
1:B5:1927:G:H2'	1:B5:1928:G:H8	1.81	0.45
1:B5:1985:G:O2'	1:B5:1986:A:N7	2.46	0.45
4:BA:242:ARG:NH2	4:BA:243:THR:O	2.50	0.45
5:BB:168:MET:HE1	5:BB:173:LEU:HD12	1.97	0.45
7:BD:59:ASP:OD1	7:BD:60:ILE:N	2.49	0.45
17:BN:42:PRO:HG3	17:BN:61:ILE:HG13	1.97	0.45
23:BT:42:ILE:HD11	23:BT:74:ILE:HG21	1.97	0.45
29:BZ:25:ILE:HA	29:BZ:43:VAL:HG12	1.98	0.45
32:Bc:78:ASN:OD1	32:Bc:78:ASN:N	2.44	0.45
48:Bv:181:TYR:CZ	48:Bv:185:LEU:HD11	2.51	0.45
54:A2:631:U:O2	54:A2:631:U:H2'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:A2:1754:C:H2'	54:A2:1755:G:C8	2.52	0.45
68:Ae:110:GLN:HE21	68:Ae:114:ASN:HD21	1.63	0.45
69:Af:116:LYS:NZ	69:Af:117:GLY:O	2.49	0.45
1:B5:467:U:O2'	51:XA:601:ARG:HG2	2.16	0.45
1:B5:1093:C:H2'	1:B5:1094:A:C8	2.51	0.45
1:B5:4323:U:H2'	1:B5:4324:G:H8	1.81	0.45
1:B5:4408:C:O2'	1:B5:4743:C:OP1	2.31	0.45
1:B5:4745:U:H4'	1:B5:4746:A:H5'	1.98	0.45
3:B8:102:G:OP2	3:B8:104:A:O2'	2.31	0.45
50:Nu:48:LEU:HD11	50:Nu:89:THR:HG21	1.98	0.45
51:XA:84:HIS:CE1	51:XA:116:ILE:HG12	2.51	0.45
51:XA:540:ASP:HB2	52:XB:8:PRO:HD2	1.99	0.45
61:AG:22:ARG:NH1	66:Ac:16:ILE:HG21	2.32	0.45
69:Af:44:GLU:HG2	69:Af:119:LYS:CD	2.43	0.45
1:B5:511:A:N6	30:Ba:106:SER:OG	2.50	0.45
1:B5:3640:A:N1	14:BK:61:UNK:HA	2.32	0.45
1:B5:4314:A:O2'	1:B5:4720:G:N7	2.49	0.45
1:B5:4368:A:H4'	5:BB:13:SER:HB2	1.99	0.45
2:B7:87:G:N2	2:B7:90:A:OP2	2.48	0.45
17:BN:189:ARG:HG2	17:BN:193:ARG:HH11	1.81	0.45
20:BQ:124:ASP:OD1	20:BQ:125:GLN:N	2.49	0.45
47:Bt:53:TRP:HD1	47:Bt:56:LEU:HB2	1.81	0.45
51:XA:486:TRP:CZ2	95:XA:901:IHP:O33	2.70	0.45
54:A2:1008:C:H2'	54:A2:1009:A:C8	2.52	0.45
54:A2:1278:C:H2'	54:A2:1279:A:H8	1.82	0.45
1:B5:1488:A:H5"	1:B5:1592:A:H62	1.81	0.45
20:BQ:157:GLY:O	20:BQ:188:ASN:ND2	2.50	0.45
49:Nt:129:GLU:HG3	50:Nu:110:LEU:C	2.40	0.45
51:XA:441:ASP:HB3	51:XA:443:PHE:CD2	2.51	0.45
51:XA:495:TYR:HD2	51:XA:504:ALA:HA	1.81	0.45
54:A2:397:U:OP2	74:Ak:79:LYS:NZ	2.49	0.45
80:Aq:17:ILE:HD11	80:Aq:54:VAL:HA	1.98	0.45
1:B5:1729:U:C5	90:B5:4918:SPD:H72	2.52	0.45
1:B5:1934:G:N2	46:Bs:41:GLN:HE22	2.14	0.45
1:B5:4051:G:O5'	23:BT:83:LYS:NZ	2.49	0.45
5:BB:66:LYS:HB2	25:BV:14:PHE:CE2	2.52	0.45
7:BD:51:MET:HE3	7:BD:105:LEU:HD23	1.97	0.45
7:BD:267:ASN:OD1	7:BD:267:ASN:N	2.48	0.45
19:BP:40:HIS:CE1	19:BP:157:VAL:HB	2.52	0.45
46:Bs:10:LYS:HD2	46:Bs:63:LYS:NZ	2.32	0.45
50:Nu:75:ASN:O	50:Nu:76:ASN:C	2.60	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:XA:258:TRP:HE1	52:XB:1:MET:C	2.25	0.45
51:XA:410:LEU:HB3	51:XA:414:LYS:HE3	1.98	0.45
60:AF:78:ALA:N	60:AF:90:TRP:O	2.41	0.45
60:AF:259:TRP:HD1	60:AF:266:ILE:HA	1.81	0.45
86:Aw:49:GLY:HA2	86:Aw:75:ILE:HG13	1.99	0.45
1:B5:1804:G:OP2	12:BI:98:ARG:NH2	2.39	0.45
1:B5:3631:OMG:HM22	1:B5:3632:G:H5'	1.99	0.45
1:B5:4512:G:OP1	11:BH:23:ARG:NH1	2.49	0.45
3:B8:130:C:H2'	3:B8:131:G:H8	1.81	0.45
6:BC:39:PHE:O	6:BC:43:ASN:ND2	2.38	0.45
48:Bv:138:LEU:HD21	48:Bv:147:LYS:HG2	1.99	0.45
51:XA:209:ALA:HB3	51:XA:233:LEU:HD11	1.99	0.45
51:XA:280:TYR:HE1	51:XA:296:LEU:HD13	1.82	0.45
52:XB:72:ILE:HG21	52:XB:75:LEU:HG	1.98	0.45
53:MA:389:ASN:HD21	53:MA:393:GLU:HB2	1.82	0.45
54:A2:1289:OMU:HM23	54:A2:1289:OMU:H1'	1.69	0.45
54:A2:1400:C:OP1	60:AF:100:ARG:NH2	2.50	0.45
54:A2:1417:C:OP1	82:As:129:ARG:NH1	2.50	0.45
60:AF:64:HIS:HB3	60:AF:83:TRP:HB2	1.99	0.45
65:Ab:252:THR:OG1	65:Ab:254:ASP:OD1	2.28	0.45
1:B5:260:C:H2'	1:B5:261:G:H8	1.82	0.45
1:B5:1072:C:H1'	1:B5:1074:C:C2	2.52	0.45
1:B5:1738:G:N7	96:B5:5707:HOH:O	2.36	0.45
1:B5:2220:C:O2	1:B5:2224:A:N6	2.49	0.45
1:B5:4086:U:O2	90:B5:4907:SPD:N10	2.50	0.45
43:Bo:59:LYS:NZ	43:Bo:61:LYS:O	2.44	0.45
51:XA:590:LYS:O	51:XA:591:GLU:C	2.60	0.45
53:MA:435:MET:HG3	53:MA:461:PHE:CZ	2.52	0.45
60:AF:8:ARG:HA	60:AF:8:ARG:HH11	1.81	0.45
69:Af:52:ILE:HD13	69:Af:102:VAL:HG21	1.98	0.45
71:Ah:129:LEU:HD21	71:Ah:137:LEU:HD12	1.99	0.45
1:B5:477:C:H2'	1:B5:478:G:H8	1.82	0.45
1:B5:751:G:H2'	1:B5:752:G:C8	2.52	0.45
1:B5:1947:U:H1'	1:B5:1950:C:H5	1.82	0.45
1:B5:4163:C:N4	1:B5:4168:A:O2'	2.50	0.45
3:B8:130:C:H2'	3:B8:131:G:C8	2.52	0.45
15:BL:211:LYS:O	48:Bv:11:TYR:OH	2.32	0.45
48:Bv:58:THR:HG23	48:Bv:153:SER:HB3	1.99	0.45
51:XA:835:ALA:O	51:XA:839:MET:HG2	2.17	0.45
53:MA:281:TYR:OH	53:MA:288:PRO:HD2	2.17	0.45
54:A2:1787:U:H2'	54:A2:1788:G:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:AF:232:GLY:HA3	60:AF:252:THR:HG21	1.98	0.45
1:B5:158:A:H5”	1:B5:159:C:H2’	1.98	0.44
1:B5:1068:U:H2’	1:B5:1069:G:C8	2.52	0.44
1:B5:1769:G:H4’	31:Bb:68:ARG:NH1	2.31	0.44
12:BI:66:GLU:OE2	12:BI:69:ARG:NH2	2.50	0.44
47:Bt:118:HIS:CD2	47:Bt:119:ARG:HG2	2.51	0.44
52:XB:10:ASP:OD2	52:XB:44:ILE:HD12	2.17	0.44
52:XB:11:LEU:HA	52:XB:14:MET:HG3	1.99	0.44
53:MA:283:ALA:O	53:MA:477:TYR:HE2	1.99	0.44
54:A2:1373:U:OP1	54:A2:1386:G:N2	2.37	0.44
66:Ac:67:ARG:NE	73:Aj:93:THR:O	2.48	0.44
1:B5:1227:G:N1	1:B5:2015:G:OP1	2.39	0.44
1:B5:1347:G:H1	1:B5:1369:C:H42	1.64	0.44
1:B5:1697:G:H2’	1:B5:1698:G:C8	2.51	0.44
47:Bt:15:LEU:HD22	47:Bt:16:ARG:H	1.81	0.44
51:XA:207:ARG:HG2	51:XA:237:LEU:HD21	1.99	0.44
54:A2:689:U:OP1	70:Ag:116:ARG:NH2	2.49	0.44
54:A2:799:G:OP1	70:Ag:110:THR:OG1	2.29	0.44
54:A2:875:G:N3	70:Ag:114:GLN:NE2	2.56	0.44
54:A2:1806:G:H2’	54:A2:1807:A:C8	2.52	0.44
55:AA:33:MET:HE2	55:AA:48:SER:HA	1.98	0.44
88:Ay:68:ILE:HB	88:Ay:109:TYR:HB2	1.99	0.44
1:B5:1217:G:H4’	8:BE:77:ALA:HB2	1.99	0.44
1:B5:3413:G:OP2	4:BA:128:ARG:NH2	2.45	0.44
1:B5:3992:G:H2’	1:B5:3993:G:H8	1.82	0.44
1:B5:4224:G:O2’	1:B5:4348:A:N1	2.51	0.44
4:BA:80:GLU:HB2	4:BA:170:ALA:HA	2.00	0.44
5:BB:206:PRO:HG2	5:BB:209:GLN:HG3	1.99	0.44
51:XA:178:GLN:HB3	51:XA:189:TYR:CE2	2.51	0.44
51:XA:195:TYR:CD1	51:XA:536:ARG:HG3	2.52	0.44
54:A2:526:A:H2’	54:A2:527:A:H8	1.82	0.44
54:A2:1607:G:N2	54:A2:1633:G:H1’	2.32	0.44
1:B5:151:G:OP2	17:BN:4:TYR:OH	2.25	0.44
1:B5:781:C:H2’	1:B5:782:G:C8	2.52	0.44
1:B5:1341:A:N1	1:B5:1453:G:O2’	2.46	0.44
5:BB:224:LYS:HG2	5:BB:340:THR:HG22	1.98	0.44
15:BL:208:GLU:HB2	48:Bv:184:HIS:CD2	2.53	0.44
18:BO:130:LYS:HB2	18:BO:133:ARG:HG2	2.00	0.44
19:BP:19:GLY:N	19:BP:146:ILE:O	2.40	0.44
22:BS:127:MET:HA	23:BT:153:PRO:HD2	2.00	0.44
36:Bg:60:ARG:HB2	36:Bg:63:VAL:HG23	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:Bl:24:PRO:HB2	41:Bl:27:ILE:HG12	2.00	0.44
51:XA:506:LYS:HD2	51:XA:644:PRO:HD3	2.00	0.44
54:A2:79:A:H3'	54:A2:80:G:H8	1.83	0.44
54:A2:282:C:N4	54:A2:892:G:O5'	2.51	0.44
54:A2:464:C:O2'	54:A2:467:G:O6	2.29	0.44
54:A2:753:G:N2	54:A2:754:C:H42	2.16	0.44
60:AF:292:SER:HB2	60:AF:297:THR:HB	1.99	0.44
64:Aa:57:ILE:HG22	64:Aa:59:SER:H	1.82	0.44
71:Ah:141:ARG:HB2	71:Ah:146:GLN:HG2	1.98	0.44
1:B5:477:C:H2'	1:B5:478:G:C8	2.53	0.44
1:B5:702:G:OP1	35:Bf:89:ARG:NH2	2.50	0.44
1:B5:728:G:H22	1:B5:828:A:H2	1.66	0.44
1:B5:2249:G:N7	41:Bl:2:SER:N	2.65	0.44
1:B5:3548:A:OP1	1:B5:3550:UY1:N1	2.51	0.44
2:B7:3:C:H42	2:B7:116:G:H1	1.65	0.44
3:B8:36:G:C5	37:Bh:89:ARG:HD3	2.53	0.44
4:BA:173:GLY:O	44:Bp:69:TRP:NE1	2.49	0.44
6:BC:143:ARG:NE	6:BC:145:GLU:OE2	2.41	0.44
12:BI:30:LYS:HG2	12:BI:63:GLU:HG3	2.00	0.44
21:BR:176:ARG:NH2	54:A2:910:G:O5'	2.50	0.44
43:Bo:26:TYR:HB3	43:Bo:67:VAL:HB	2.00	0.44
46:Bs:58:ASN:O	46:Bs:62:ARG:HG3	2.17	0.44
53:MA:287:LEU:HB2	53:MA:477:TYR:CE1	2.52	0.44
54:A2:1545:C:H4'	79:Ap:80:GLN:HE22	1.83	0.44
71:Ah:116:HIS:O	71:Ah:152:ARG:NH2	2.51	0.44
1:B5:74:G:H5"	15:BL:59:VAL:HB	1.99	0.44
1:B5:639:G:H2'	1:B5:640:G:C8	2.52	0.44
1:B5:664:G:H2'	1:B5:665:G:C8	2.53	0.44
1:B5:823:C:OP1	1:B5:825:G:O2'	2.35	0.44
1:B5:1943:U:H2'	1:B5:1944:G:C8	2.52	0.44
1:B5:2612:U:C2	36:Bg:69:LYS:HB2	2.52	0.44
20:BQ:154:LYS:O	20:BQ:163:THR:OG1	2.36	0.44
37:Bh:82:ASP:OD1	37:Bh:82:ASP:N	2.50	0.44
44:Bp:39:CYS:HB3	44:Bp:42:CYS:SG	2.58	0.44
51:XA:111:LYS:HA	51:XA:112:ASP:HA	1.69	0.44
51:XA:825:ARG:O	51:XA:829:HIS:ND1	2.50	0.44
54:A2:231:A:H2'	54:A2:232:A:C8	2.52	0.44
54:A2:1009:A:H2'	54:A2:1010:A:C8	2.53	0.44
54:A2:1863:G:O6	59:AE:34:LYS:NZ	2.45	0.44
57:AC:102:VAL:HG21	75:Al:35:ILE:HG21	1.99	0.44
1:B5:848:C:H2'	1:B5:849:G:H8	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:2286:G:OP2	1:B5:2359:G:N2	2.45	0.44
49:Nt:85:LEU:HD22	49:Nt:112:TYR:HB3	1.99	0.44
53:MA:176:LEU:HA	53:MA:180:TYR:CD1	2.53	0.44
54:A2:485:A2M:HM'2	54:A2:486:A:C8	2.53	0.44
54:A2:1610:C:H2'	54:A2:1611:G:H8	1.82	0.44
54:A2:1657:G:H1	54:A2:1669:U:H3	1.65	0.44
72:Ai:83:ARG:HH21	72:Ai:150:ARG:NH1	2.16	0.44
79:Ap:112:LEU:HD22	79:Ap:119:LEU:HD13	2.00	0.44
1:B5:2473:U:O4	24:BU:89:LYS:NZ	2.47	0.44
1:B5:2647:OMC:HM22	1:B5:2648:C:H5'	1.99	0.44
1:B5:2727:G:H2'	1:B5:2728:A:C8	2.53	0.44
1:B5:2727:G:H2'	1:B5:2728:A:H8	1.83	0.44
1:B5:4777:A:OP1	26:BW:61:LYS:NZ	2.47	0.44
50:Nu:101:GLU:HG2	50:Nu:102:MET:H	1.83	0.44
51:XA:486:TRP:CD2	51:XA:553:PHE:CE2	3.06	0.44
53:MA:252:LYS:HA	53:MA:255:ARG:HG2	2.00	0.44
53:MA:298:HIS:HD1	53:MA:451:ASN:CG	2.26	0.44
54:A2:1305:U:H5'	57:AC:93:HIS:HB2	1.99	0.44
73:Aj:63:ALA:HB3	73:Aj:68:TYR:HE2	1.82	0.44
1:B5:151:G:N7	10:BG:141:ASN:ND2	2.64	0.44
1:B5:4283:C:H2'	1:B5:4284:G:C8	2.53	0.44
1:B5:4693:G:H2'	1:B5:4694:A:C8	2.53	0.44
2:B7:5:A:H1'	7:BD:63:GLN:HE22	1.83	0.44
2:B7:29:C:O2'	2:B7:50:A:N1	2.48	0.44
15:BL:90:VAL:O	15:BL:93:THR:OG1	2.35	0.44
24:BU:47:ILE:HD12	24:BU:63:ILE:HD11	1.99	0.44
51:XA:435:GLN:HE21	51:XA:448:CYS:HB2	1.83	0.44
51:XA:475:ALA:O	51:XA:479:LEU:HG	2.18	0.44
51:XA:794:LEU:HD12	51:XA:797:ARG:NH2	2.32	0.44
54:A2:462:U:H2'	54:A2:463:OMC:C6	2.52	0.44
54:A2:522:A:OP1	72:Ai:45:ARG:NH1	2.39	0.44
54:A2:1092:C:O2'	85:Av:2:VAL:N	2.49	0.44
54:A2:1419:C:O2'	54:A2:1421:G:OP2	2.34	0.44
80:Aq:31:ASN:ND2	80:Aq:55:THR:OG1	2.51	0.44
86:Aw:105:PHE:HB3	86:Aw:112:VAL:HG21	1.99	0.44
1:B5:172:C:H42	1:B5:266:C:N4	2.16	0.43
1:B5:1098:C:H2'	1:B5:1099:G:C8	2.53	0.43
1:B5:1838:G:O2'	34:Be:57:ASN:OD1	2.34	0.43
1:B5:2592:C:H2'	1:B5:2593:G:C8	2.53	0.43
1:B5:3651:C:OP1	4:BA:2:GLY:N	2.51	0.43
1:B5:3924:A:H2'	1:B5:3925:G:H8	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:4606:G:H2'	1:B5:4607:G:C8	2.53	0.43
1:B5:4769:U:H2'	1:B5:4770:G:H8	1.83	0.43
8:BE:287:HIS:ND1	35:Bf:42:TYR:OH	2.43	0.43
13:BJ:15:LEU:HD12	13:BJ:165:TRP:HB2	1.99	0.43
13:BJ:46:GLN:NE2	13:BJ:73:THR:O	2.51	0.43
23:BT:93:ILE:H	23:BT:93:ILE:HG13	1.69	0.43
32:Bc:31:TYR:CZ	32:Bc:35:LEU:HD11	2.53	0.43
32:Bc:48:LEU:HD13	32:Bc:57:LYS:HG3	2.00	0.43
50:Nu:63:ASN:HA	50:Nu:72:ILE:O	2.17	0.43
54:A2:378:G:H5'	71:Ah:98:LYS:HB3	2.00	0.43
54:A2:1069:G:N7	96:A2:2209:HOH:O	2.37	0.43
63:AZ:189:ILE:HG22	63:AZ:191:ARG:H	1.83	0.43
65:Ab:183:LYS:HD3	65:Ab:194:ARG:HH21	1.83	0.43
69:Af:49:VAL:HG23	69:Af:114:VAL:HB	2.00	0.43
70:Ag:160:LYS:HA	70:Ag:163:GLN:HB2	2.00	0.43
87:Ax:25:ILE:HD11	87:Ax:73:GLY:HA3	2.00	0.43
1:B5:741:A:N6	1:B5:810:U:O2	2.51	0.43
1:B5:2518:G:N1	32:Bc:33:GLN:OE1	2.44	0.43
27:BX:129:ARG:HD3	27:BX:135:LYS:HE3	2.00	0.43
34:Be:100:ALA:HB3	34:Be:103:VAL:HG23	1.99	0.43
46:Bs:21:LEU:HD22	46:Bs:75:LEU:HD11	1.99	0.43
47:Bt:53:TRP:CD1	47:Bt:56:LEU:HB2	2.53	0.43
51:XA:103:TYR:HB2	51:XA:120:LEU:HD12	1.99	0.43
51:XA:133:TYR:O	51:XA:134:ARG:C	2.61	0.43
54:A2:684:OMG:N2	54:A2:1023:U:OP2	2.37	0.43
54:A2:858:U:H2'	54:A2:859:A:C8	2.53	0.43
54:A2:1652:A:H2'	54:A2:1653:G:H8	1.83	0.43
70:Ag:88:SER:OG	70:Ag:89:GLY:N	2.51	0.43
1:B5:1353:G:H2'	1:B5:1354:G:C8	2.52	0.43
1:B5:4204:C:H2'	1:B5:4205:U:C6	2.53	0.43
4:BA:137:ILE:HD11	4:BA:149:LYS:HB2	2.00	0.43
6:BC:76:ILE:HD12	6:BC:77:PRO:HD2	2.00	0.43
47:Bt:52:ASP:OD1	47:Bt:52:ASP:N	2.45	0.43
51:XA:549:ARG:HA	51:XA:549:ARG:HD3	1.70	0.43
54:A2:949:C:H2'	54:A2:950:G:H8	1.84	0.43
54:A2:1229:A:OP1	88:Ay:32:LYS:NZ	2.39	0.43
54:A2:1766:C:H1'	54:A2:1769:A:H61	1.84	0.43
73:Aj:72:THR:O	73:Aj:76:ILE:HG13	2.18	0.43
84:Au:15:ARG:NH1	84:Au:33:GLN:OE1	2.52	0.43
1:B5:1701:C:H2'	1:B5:1702:C:C6	2.53	0.43
1:B5:2018:G:H2'	1:B5:2019:U:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:2232:A:H5'	33:Bd:70:LYS:HE2	2.00	0.43
1:B5:3680:C:H2'	1:B5:3681:A:C8	2.53	0.43
10:BG:99:ALA:HB1	10:BG:136:LEU:HD11	2.00	0.43
46:Bs:30:VAL:HA	46:Bs:189:ILE:HA	2.00	0.43
53:MA:426:HIS:CD2	53:MA:431:LEU:HB2	2.54	0.43
54:A2:159:A2M:HM'2	54:A2:160:U:H5'	2.01	0.43
54:A2:283:G:H2'	54:A2:284:G:H8	1.83	0.43
54:A2:563:U:H2'	54:A2:564:G:C8	2.53	0.43
62:AT:63:G:H2'	62:AT:64:G:H8	1.82	0.43
63:AZ:19:LEU:HD11	80:Aq:106:LEU:HD11	2.00	0.43
65:Ab:70:VAL:HG11	65:Ab:93:ILE:HG23	2.01	0.43
1:B5:681:U:C4	8:BE:98:PRO:HG2	2.54	0.43
1:B5:2300:G:OP1	17:BN:65:ARG:NH2	2.42	0.43
1:B5:2538:A:OP1	40:Bk:35:LYS:NZ	2.34	0.43
1:B5:3502:PSU:OP1	62:AT:24:A:O2'	2.37	0.43
1:B5:3843:G:H4'	1:B5:3844:C:H5'	1.99	0.43
16:BM:27:ILE:HD13	16:BM:38:VAL:HG12	1.99	0.43
30:Ba:11:LEU:HA	30:Ba:14:HIS:CD2	2.53	0.43
53:MA:389:ASN:OD1	53:MA:393:GLU:N	2.49	0.43
53:MA:458:ASN:O	53:MA:462:LEU:HG	2.19	0.43
54:A2:520:A:H2'	54:A2:521:A:H8	1.84	0.43
54:A2:1098:G:H4'	63:AZ:32:PHE:CD1	2.54	0.43
63:AZ:140:VAL:HG23	63:AZ:142:LEU:HB2	1.99	0.43
69:Af:126:ASP:OD1	69:Af:126:ASP:N	2.52	0.43
70:Ag:100:ILE:HG12	70:Ag:125:VAL:HG21	2.00	0.43
1:B5:161:G:H2'	1:B5:162:A:C8	2.54	0.43
1:B5:693:C:H2'	1:B5:694:G:H8	1.83	0.43
1:B5:865:G:N2	1:B5:2035:G:O2'	2.51	0.43
1:B5:1004:G:H2'	1:B5:1005:G:C8	2.54	0.43
1:B5:1868:A:C8	1:B5:1871:A:H1'	2.53	0.43
15:BL:12:PRO:HB2	15:BL:14:PHE:HD2	1.84	0.43
21:BR:90:PRO:HG2	21:BR:93:VAL:HB	2.00	0.43
23:BT:54:HIS:ND1	23:BT:56:CYS:SG	2.75	0.43
47:Bt:80:LEU:HD23	47:Bt:83:LYS:HD2	2.00	0.43
49:Nt:96:ILE:HG23	50:Nu:62:VAL:HG22	2.00	0.43
54:A2:614:G:N2	54:A2:627:G:OP1	2.48	0.43
55:AA:67:THR:OG1	55:AA:70:LYS:O	2.36	0.43
72:Ai:63:LEU:HD11	72:Ai:69:ARG:NH2	2.34	0.43
75:Al:11:VAL:HG11	75:Al:16:THR:HB	2.00	0.43
76:Am:91:LEU:HB3	76:Am:122:ILE:HG12	2.00	0.43
1:B5:1089:G:H2'	1:B5:1091:G:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:1718:PSU:H2'	1:B5:1719:A:C8	2.53	0.43
1:B5:3997:A:H5"	13:BJ:108:GLY:HA3	2.00	0.43
5:BB:291:TYR:HB3	5:BB:298:LEU:HD11	2.01	0.43
16:BM:20:HIS:CE1	16:BM:48:GLN:HE22	2.37	0.43
17:BN:96:ARG:HH21	17:BN:100:SER:HG	1.64	0.43
19:BP:18:ARG:NH1	19:BP:147:GLU:OE1	2.52	0.43
51:XA:485:MET:HE1	51:XA:511:ILE:HA	2.01	0.43
51:XA:507:LYS:HA	51:XA:507:LYS:HD3	1.83	0.43
53:MA:296:TYR:HB3	53:MA:453:LEU:HD23	2.01	0.43
54:A2:813:A:H5"	67:Ad:16:LYS:HD2	2.01	0.43
54:A2:924:G:N7	90:A2:1906:SPD:N6	2.64	0.43
60:AF:31:ILE:HG13	60:AF:43:TRP:HB2	2.00	0.43
64:Aa:99:ASN:OD1	64:Aa:100:PHE:N	2.51	0.43
67:Ad:71:LYS:HG2	67:Ad:76:VAL:HG22	2.01	0.43
67:Ad:94:LYS:NZ	87:Ax:19:GLN:HE21	2.17	0.43
70:Ag:37:LYS:O	70:Ag:41:ARG:HG3	2.19	0.43
1:B5:397:G:H3'	1:B5:398:A2M:H8	2.01	0.43
1:B5:526:C:H2'	1:B5:527:G:C8	2.54	0.43
1:B5:1811:G:O2'	1:B5:3965:A:N3	2.42	0.43
1:B5:2322:G:H2'	1:B5:2323:G:C8	2.53	0.43
1:B5:2336:G:O2'	3:B8:126:C:O2'	2.24	0.43
1:B5:2592:C:H2'	1:B5:2593:G:H8	1.84	0.43
1:B5:3954:U:H2'	1:B5:3955:G:H8	1.83	0.43
1:B5:4318:U:H5"	3:B8:1:C:H41	1.83	0.43
5:BB:258:HIS:HA	5:BB:259:PRO:C	2.44	0.43
7:BD:60:ILE:HB	7:BD:80:ALA:HB2	2.01	0.43
27:BX:150:ALA:HB1	27:BX:155:ILE:HB	2.00	0.43
51:XA:685:LYS:HD2	51:XA:687:LYS:HE3	2.00	0.43
54:A2:17:C:H2'	54:A2:18:C:C6	2.53	0.43
54:A2:987:G:H21	77:An:135:ILE:HG21	1.83	0.43
54:A2:1565:C:P	82:As:121:ARG:HH22	2.42	0.43
55:AA:35:VAL:HG21	55:AA:63:LEU:HD13	2.00	0.43
60:AF:87:LEU:HD21	60:AF:108:VAL:HG11	2.01	0.43
67:Ad:73:ASP:HA	67:Ad:164:LEU:HD13	2.00	0.43
69:Af:142:ARG:HA	69:Af:147:LEU:HB2	2.00	0.43
79:Ap:16:LYS:HG3	79:Ap:17:LYS:H	1.84	0.43
80:Aq:99:ASP:OD1	80:Aq:102:THR:N	2.47	0.43
81:Ar:104:ASP:OD1	81:Ar:104:ASP:N	2.51	0.43
82:As:60:THR:HG23	82:As:75:MET:HE2	2.00	0.43
1:B5:1568:A:H5'	4:BA:183:GLY:HA2	2.00	0.43
1:B5:1698:G:H2'	1:B5:1699:G:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:3632:G:OP1	1:B5:3633:A:O2'	2.33	0.43
2:B7:27:G:N7	7:BD:58:ARG:NH1	2.59	0.43
3:B8:60:G:O6	37:Bh:62:ASN:ND2	2.40	0.43
3:B8:93:C:OP1	39:Bj:76:HIS:NE2	2.37	0.43
5:BB:119:TYR:OH	5:BB:129:ALA:N	2.52	0.43
6:BC:60:HIS:HA	6:BC:92:PHE:HE1	1.84	0.43
13:BJ:26:VAL:HG21	13:BJ:33:LEU:HA	1.99	0.43
20:BQ:178:ARG:N	30:Ba:51:GLY:HA2	2.33	0.43
34:Be:104:SER:O	34:Be:108:ARG:HG3	2.19	0.43
47:Bt:116:MET:HA	47:Bt:118:HIS:CE1	2.54	0.43
51:XA:54:LEU:HG	51:XA:85:VAL:HG13	1.99	0.43
51:XA:383:HIS:O	51:XA:387:ILE:HG13	2.19	0.43
54:A2:142:C:N4	54:A2:330:G:OP1	2.40	0.43
54:A2:692:G:H2'	54:A2:693:G:H8	1.84	0.43
54:A2:1500:U:H4'	66:Ac:176:LEU:HD13	2.01	0.43
1:B5:423:G:OP1	19:BP:62:ARG:NH1	2.38	0.43
1:B5:1496:C:H5"	4:BA:21:LYS:HG2	2.00	0.43
1:B5:2323:G:H2'	1:B5:2324:G:H8	1.84	0.43
1:B5:2399:G:H2'	1:B5:2400:G:C8	2.54	0.43
1:B5:2423:U:P	29:BZ:36:ARG:HH22	2.42	0.43
13:BJ:136:ARG:HE	13:BJ:157:ILE:HG12	1.84	0.43
36:Bg:69:LYS:HA	36:Bg:72:LYS:HE2	2.01	0.43
51:XA:256:GLU:HB3	52:XB:3:ILE:HD12	2.01	0.43
51:XA:773:TYR:CE1	51:XA:780:GLN:HA	2.54	0.43
54:A2:537:A:N6	54:A2:547:G:O6	2.51	0.43
54:A2:599:G:O2'	54:A2:606:A:N1	2.52	0.43
54:A2:925:G:H5'	76:Am:4:MET:HE3	2.01	0.43
54:A2:1809:U:H2'	54:A2:1810:A:C8	2.54	0.43
69:Af:67:VAL:HG12	69:Af:69:THR:HG22	2.00	0.43
1:B5:1763:G:H2'	1:B5:1764:A:C8	2.54	0.42
1:B5:3432:C:H2'	1:B5:3478:A:H61	1.84	0.42
1:B5:3464:A:H2'	1:B5:3465:A:C8	2.54	0.42
1:B5:3685:G:H2'	1:B5:3686:A:C8	2.54	0.42
21:BR:23:TRP:HB2	21:BR:53:LYS:HG3	2.00	0.42
29:BZ:50:PRO:HD3	29:BZ:68:ILE:HG12	2.01	0.42
33:Bd:37:GLY:O	33:Bd:41:ARG:HG3	2.18	0.42
40:Bk:19:ASP:HB2	40:Bk:39:SER:HB2	2.00	0.42
47:Bt:20:GLY:H	47:Bt:55:GLY:N	2.18	0.42
49:Nt:105:VAL:CG2	49:Nt:128:ILE:C	2.92	0.42
51:XA:773:TYR:HE1	51:XA:780:GLN:HA	1.84	0.42
51:XA:839:MET:HE3	51:XA:840:PRO:HD2	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:MA:316:ARG:NH1	53:MA:316:ARG:HA	2.33	0.42
54:A2:115:U:O2'	54:A2:382:C:O2	2.26	0.42
54:A2:871:A:O4'	54:A2:916:G:N2	2.52	0.42
66:Ac:76:ARG:O	66:Ac:76:ARG:NH1	2.43	0.42
71:Ah:141:ARG:HD3	71:Ah:145:ILE:HG22	2.00	0.42
83:At:26:SER:HB3	83:At:32:LEU:HB2	2.01	0.42
1:B5:680:A:H2'	1:B5:680:A:N3	2.35	0.42
1:B5:1933:C:H2'	1:B5:1934:G:H8	1.84	0.42
1:B5:1940:G:N2	1:B5:1955:C:O2	2.35	0.42
1:B5:2002:G:H2'	1:B5:2003:G:H8	1.84	0.42
1:B5:2630:A2M:H8	1:B5:2630:A2M:H2'	1.86	0.42
1:B5:3821:G:H2'	1:B5:3822:G:C8	2.54	0.42
2:B7:63:C:H1'	7:BD:280:VAL:HG11	2.00	0.42
12:BI:101:LYS:NZ	12:BI:102:MET:O	2.46	0.42
15:BL:5:ARG:HB3	15:BL:6:ASN:H	1.69	0.42
39:Bj:28:HIS:HE1	39:Bj:30:GLN:HB2	1.84	0.42
40:Bk:61:PRO:HA	40:Bk:62:PRO:HD3	1.95	0.42
51:XA:520:ASP:HA	51:XA:523:PHE:CD2	2.54	0.42
51:XA:529:CYS:HA	51:XA:538:TYR:CE2	2.54	0.42
54:A2:212:C:H2'	54:A2:213:G:C8	2.54	0.42
60:AF:268:ASP:OD1	60:AF:269:GLU:N	2.52	0.42
80:Aq:109:LEU:HG	80:Aq:111:PHE:CD2	2.52	0.42
1:B5:158:A:N1	1:B5:276:C:O2'	2.48	0.42
1:B5:1575:U:H2'	1:B5:1576:A:H8	1.84	0.42
1:B5:3367:A:H61	44:Bp:18:TYR:H	1.67	0.42
1:B5:4649:A:N3	5:BB:96:PRO:HG3	2.35	0.42
2:B7:49:A:OP1	7:BD:225:GLN:HB2	2.19	0.42
6:BC:301:ALA:HB1	20:BQ:132:LYS:HE3	2.01	0.42
24:BU:99:TRP:CZ3	50:Nu:11:LEU:HD13	2.53	0.42
48:Bv:196:LYS:HD2	48:Bv:196:LYS:HA	1.87	0.42
54:A2:1227:G:N1	54:A2:1640:G7M:OP2	2.43	0.42
69:Af:162:LEU:HD12	69:Af:170:ARG:HB3	2.01	0.42
1:B5:323:C:H2'	1:B5:324:A:H8	1.84	0.42
1:B5:385:A:H4'	1:B5:386:A:H5'	2.01	0.42
1:B5:1699:G:H2'	1:B5:1700:G:H8	1.83	0.42
1:B5:2318:G:N2	27:BX:51:THR:O	2.32	0.42
1:B5:4506:C:OP2	18:BO:171:LYS:NZ	2.44	0.42
1:B5:4805:U:H2'	1:B5:4806:U:C6	2.54	0.42
7:BD:223:PHE:HB3	7:BD:226:TYR:HB2	2.01	0.42
18:BO:18:ARG:CZ	18:BO:128:ARG:HH21	2.33	0.42
23:BT:93:ILE:HA	23:BT:96:ILE:HG12	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:Bs:14:PHE:HE1	46:Bs:64:ALA:HA	1.84	0.42
51:XA:298:LEU:HA	51:XA:306:PHE:HE1	1.85	0.42
51:XA:442:ARG:NH1	51:XA:468:PHE:HB3	2.34	0.42
51:XA:553:PHE:CE1	52:XB:16:HIS:CD2	3.07	0.42
54:A2:1543:C:OP1	82:As:62:ARG:NE	2.49	0.42
54:A2:1759:G:H2'	54:A2:1760:G:C8	2.54	0.42
63:AZ:41:ARG:HE	63:AZ:45:GLY:HA2	1.84	0.42
64:Aa:30:TRP:CE2	77:An:19:PRO:HD3	2.54	0.42
1:B5:1105:C:C5	31:Bb:92:LYS:HD2	2.55	0.42
1:B5:2118:G:H2'	1:B5:2119:A:C8	2.55	0.42
4:BA:117:GLU:HB2	4:BA:162:ASN:HB3	2.02	0.42
29:BZ:29:ILE:HG22	29:BZ:32:GLY:H	1.84	0.42
44:Bp:7:LYS:O	44:Bp:27:LYS:NZ	2.45	0.42
45:Br:28:GLU:OE2	45:Br:31:ASN:ND2	2.52	0.42
46:Bs:121:VAL:HG22	46:Bs:182:PRO:HB3	2.02	0.42
51:XA:49:LEU:HD12	51:XA:72:GLY:HA2	2.01	0.42
51:XA:90:GLN:HG2	51:XA:95:LYS:HD2	2.02	0.42
51:XA:195:TYR:CD2	51:XA:535:LEU:HB2	2.54	0.42
51:XA:485:MET:HE3	51:XA:511:ILE:HG23	2.02	0.42
51:XA:687:LYS:HD3	51:XA:690:LEU:HD12	2.02	0.42
54:A2:383:C:H2'	54:A2:384:G:H8	1.84	0.42
54:A2:483:G:N1	54:A2:486:A:OP2	2.49	0.42
54:A2:1190:A:H2'	54:A2:1191:A:C8	2.55	0.42
54:A2:1498:G:N7	73:Aj:25:LYS:NZ	2.60	0.42
54:A2:1674:U:O2'	68:Ae:84:GLY:O	2.30	0.42
58:AD:83:VAL:HG21	86:Aw:91:LEU:HD23	2.01	0.42
65:Ab:169:TYR:OH	65:Ab:175:GLY:O	2.37	0.42
71:Ah:110:ARG:HA	71:Ah:121:LEU:HD23	2.02	0.42
83:At:23:THR:HG23	83:At:86:LYS:HE3	2.02	0.42
1:B5:1572:G:H1'	1:B5:2356:A:N6	2.34	0.42
1:B5:4032:C:H2'	1:B5:4033:G:C8	2.54	0.42
1:B5:4382:PSU:O2	33:Bd:78:ARG:NH2	2.52	0.42
1:B5:4732:G:H22	1:B5:4797:A:H2	1.67	0.42
2:B7:2:U:H2'	2:B7:3:C:C6	2.54	0.42
2:B7:74:A:N1	2:B7:100:A:H5"	2.34	0.42
3:B8:37:A:OP2	37:Bh:89:ARG:NH1	2.38	0.42
11:BH:92:MET:HE2	11:BH:179:ILE:HG22	2.01	0.42
49:Nt:73:GLU:CD	50:Nu:86:ASN:HD22	2.27	0.42
49:Nt:97:ARG:HH21	50:Nu:106:ILE:HG21	1.84	0.42
51:XA:175:ARG:NH1	51:XA:193:LEU:HD23	2.34	0.42
51:XA:315:ARG:HG2	51:XA:359:PHE:CD1	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:XA:492:ALA:O	51:XA:496:LYS:HG2	2.20	0.42
51:XA:713:ILE:HA	51:XA:716:PHE:CD2	2.54	0.42
54:A2:1287:G:OP1	57:AC:99:LYS:HA	2.20	0.42
54:A2:1292:A:N3	57:AC:140:TYR:OH	2.50	0.42
56:AB:10:LYS:NZ	56:AB:36:ASP:OD2	2.48	0.42
67:Ad:45:ILE:HA	67:Ad:61:VAL:HG11	2.00	0.42
78:Ao:133:ILE:H	78:Ao:133:ILE:HG13	1.53	0.42
86:Aw:46:HIS:HB3	86:Aw:101:LEU:HD11	2.02	0.42
89:Az:2:ARG:HB3	89:Az:5:TRP:CD1	2.55	0.42
1:B5:223:G:H4'	1:B5:225:G:N7	2.35	0.42
1:B5:300:A:H5"	17:BN:97:SER:HB3	2.02	0.42
1:B5:351:C:OP2	6:BC:197:ARG:NH1	2.49	0.42
1:B5:632:G:H5"	1:B5:633:U:H5'	2.01	0.42
1:B5:679:C:C6	51:XA:594:LYS:HD2	2.54	0.42
1:B5:1326:G:H2'	1:B5:1327:G:H8	1.85	0.42
1:B5:3809:G:H2'	1:B5:3810:G:C8	2.55	0.42
1:B5:4046:U:H4'	23:BT:89:ILE:HG22	2.01	0.42
1:B5:4699:G:H2'	1:B5:4700:G:H8	1.85	0.42
33:Bd:42:ALA:HB3	33:Bd:77:ILE:HG13	2.02	0.42
87:Ax:78:SER:OG	87:Ax:80:ASP:OD1	2.30	0.42
1:B5:66:A:O2'	1:B5:326:C:O2	2.32	0.42
1:B5:175:C:H2'	1:B5:176:G:C8	2.54	0.42
1:B5:790:G:O2'	1:B5:792:G:O4'	2.38	0.42
1:B5:1968:A:H2'	1:B5:1969:A:C8	2.55	0.42
1:B5:2338:U:H2'	1:B5:2339:G:C8	2.51	0.42
1:B5:2619:G:H2'	1:B5:2620:G:C8	2.55	0.42
1:B5:2652:G:OP2	90:B5:4910:SPD:N6	2.52	0.42
1:B5:3573:OMC:HM22	1:B5:3574:C:H5'	2.01	0.42
1:B5:4261:G:H5"	5:BB:3:HIS:CE1	2.54	0.42
1:B5:4345:A:N1	1:B5:4356:A:H5"	2.35	0.42
5:BB:215:GLU:OE2	5:BB:349:LYS:NZ	2.36	0.42
6:BC:140:LYS:HE3	6:BC:245:HIS:HB2	2.02	0.42
18:BO:108:ILE:HD12	18:BO:160:ARG:CZ	2.50	0.42
26:BW:102:LYS:HG2	26:BW:105:ARG:NH2	2.34	0.42
34:Be:37:LYS:HD2	34:Be:38:PRO:HD2	2.01	0.42
51:XA:431:MET:HG3	51:XA:451:TYR:CD2	2.55	0.42
54:A2:646:C:H2'	54:A2:647:G:C8	2.55	0.42
54:A2:1618:G:O6	78:Ao:40:ARG:NH2	2.53	0.42
56:AB:54:ASP:OD1	68:Ae:38:TYR:OH	2.31	0.42
65:Ab:214:LEU:HD23	65:Ab:244:ILE:HD11	2.01	0.42
73:Aj:32:HIS:CD2	73:Aj:34:GLU:HB2	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:An:29:GLY:HA2	77:An:46:ASP:O	2.19	0.42
1:B5:624:G:H2'	1:B5:625:G:C8	2.54	0.42
1:B5:3551:G:H2'	1:B5:3552:G:H8	1.85	0.42
1:B5:3836:G:H2'	1:B5:3837:G:H8	1.84	0.42
5:BB:99:LEU:HD23	5:BB:99:LEU:HA	1.84	0.42
5:BB:217:ILE:HD13	5:BB:284:ILE:HD11	2.02	0.42
6:BC:186:SER:O	6:BC:188:ARG:NH1	2.52	0.42
7:BD:204:VAL:HB	7:BD:236:MET:HE1	2.01	0.42
12:BI:44:ASP:OD1	12:BI:44:ASP:N	2.47	0.42
19:BP:59:PRO:HG3	19:BP:76:TRP:CG	2.55	0.42
51:XA:540:ASP:CB	52:XB:8:PRO:HD2	2.50	0.42
53:MA:289:LYS:HZ2	53:MA:289:LYS:HG3	1.53	0.42
54:A2:657:G:H5'	54:A2:663:G:N2	2.35	0.42
60:AF:278:SER:HB2	60:AF:281:ALA:HB3	2.01	0.42
1:B5:235:A:OP1	6:BC:201:ARG:NH2	2.45	0.42
1:B5:2385:G:H2'	1:B5:2386:A:C8	2.55	0.42
1:B5:2615:C:O3'	40:Bk:17:ARG:NH2	2.53	0.42
1:B5:3457:G:N2	1:B5:3460:A:OP2	2.53	0.42
1:B5:4043:G:H2'	1:B5:4044:A:H8	1.85	0.42
1:B5:4450:C:H2'	1:B5:4451:A:C8	2.54	0.42
6:BC:65:GLU:HB3	6:BC:80:ARG:HD3	2.01	0.42
19:BP:115:GLU:OE1	19:BP:151:THR:OG1	2.34	0.42
50:Nu:54:ASN:OD1	50:Nu:56:ILE:HG23	2.20	0.42
54:A2:1317:C:H2'	54:A2:1318:C:C6	2.54	0.42
54:A2:1617:U:OP2	78:Ao:43:ARG:NH2	2.39	0.42
60:AF:159:ASN:HD22	60:AF:159:ASN:H	1.67	0.42
71:Ah:43:ILE:HG12	71:Ah:57:ALA:HA	2.02	0.42
72:Ai:93:LYS:HB2	72:Ai:96:TYR:CD1	2.54	0.42
72:Ai:158:ASP:OD1	72:Ai:158:ASP:N	2.53	0.42
74:Ak:119:ASP:O	74:Ak:147:LYS:NZ	2.39	0.42
1:B5:114:G:N2	1:B5:158:A:H61	2.18	0.41
1:B5:1242:C:H2'	1:B5:1243:G:C8	2.55	0.41
1:B5:1335:A:H62	90:B5:4903:SPD:H102	1.68	0.41
1:B5:3825:G:H2'	1:B5:3826:A:C8	2.55	0.41
1:B5:3866:C:H2'	1:B5:3867:C:C6	2.55	0.41
1:B5:4243:U:H2'	1:B5:4244:OMU:H6	2.02	0.41
4:BA:33:ASP:OD1	4:BA:33:ASP:N	2.51	0.41
8:BE:120:PRO:O	45:Br:112:ARG:NH1	2.49	0.41
11:BH:59:LYS:HE2	11:BH:66:GLU:HB3	2.02	0.41
36:Bg:69:LYS:C	36:Bg:73:HIS:HE1	2.26	0.41
51:XA:90:GLN:CB	51:XA:99:ALA:HB2	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:XA:277:LEU:HA	51:XA:280:TYR:HD2	1.86	0.41
52:XB:14:MET:HA	52:XB:55:TYR:CZ	2.55	0.41
54:A2:107:A:H2'	54:A2:108:G:C8	2.55	0.41
54:A2:1017:U:H5"	76:Am:14:SER:HB3	2.02	0.41
54:A2:1639:G:H4'	88:Ay:36:SER:HB3	2.02	0.41
63:AZ:32:PHE:CE2	63:AZ:33:GLN:HG3	2.54	0.41
81:Ar:91:LYS:HE3	81:Ar:91:LYS:HB2	1.84	0.41
1:B5:443:G:H5"	35:Bf:54:LYS:HD3	2.01	0.41
1:B5:2023:U:C1'	20:BQ:14:ARG:HH21	2.34	0.41
5:BB:49:TYR:OH	5:BB:168:MET:SD	2.74	0.41
14:BK:61:UNK:O	14:BK:62:UNK:C	2.67	0.41
17:BN:103:GLU:OE2	17:BN:118:SER:OG	2.30	0.41
40:Bk:30:ASP:OD1	40:Bk:30:ASP:N	2.51	0.41
47:Bt:148:PRO:HA	47:Bt:151:ILE:HG12	2.01	0.41
49:Nt:76:ALA:O	49:Nt:80:MET:HG2	2.20	0.41
51:XA:713:ILE:HA	51:XA:716:PHE:HD2	1.84	0.41
51:XA:769:ALA:HB1	51:XA:783:ALA:HB1	2.03	0.41
54:A2:1085:A:OP1	54:A2:1859:G:O2'	2.34	0.41
67:Ad:171:ASP:OD1	67:Ad:172:PHE:N	2.53	0.41
68:Ae:14:THR:HB	68:Ae:15:PRO:HD3	2.01	0.41
77:An:32:HIS:HB2	77:An:43:HIS:HB3	2.01	0.41
83:At:54:VAL:HG13	83:At:88:LEU:HB2	2.02	0.41
88:Ay:90:GLU:O	88:Ay:93:SER:OG	2.32	0.41
1:B5:305:A:P	17:BN:15:GLN:HE22	2.43	0.41
1:B5:1509:A:OP1	44:Bp:5:THR:OG1	2.32	0.41
2:B7:77:A:H62	2:B7:99:G:H21	1.67	0.41
2:B7:83:A:O2'	2:B7:85:G:OP1	2.33	0.41
2:B7:92:C:H2'	2:B7:93:G:H8	1.85	0.41
5:BB:245:HIC:ND1	5:BB:246:ARG:N	2.67	0.41
8:BE:97:LYS:HD2	8:BE:110:VAL:HG21	2.01	0.41
12:BI:42:LYS:HB2	12:BI:45:GLU:HG3	2.01	0.41
28:BY:54:GLU:HB2	28:BY:108:ARG:HB3	2.02	0.41
51:XA:665:LYS:NZ	51:XA:682:TYR:OH	2.53	0.41
53:MA:173:TYR:HA	53:MA:176:LEU:HD12	2.02	0.41
53:MA:176:LEU:HD11	53:MA:197:LEU:HD11	2.02	0.41
53:MA:266:GLU:OE2	53:MA:270:ARG:NE	2.48	0.41
54:A2:1650:U:H5"	79:Ap:137:ALA:HB3	2.02	0.41
54:A2:1737:G:H2'	54:A2:1738:G:C8	2.54	0.41
61:AG:54:LYS:NZ	83:At:78:ASP:OD1	2.45	0.41
68:Ae:19:LEU:HG	68:Ae:20:PHE:CD2	2.56	0.41
70:Ag:20:GLU:HG2	70:Ag:48:ALA:HB3	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:Ah:123:ARG:NH1	71:Ah:133:GLU:OE1	2.48	0.41
1:B5:2142:G:H3'	1:B5:2143:A:H5"	2.03	0.41
1:B5:2245:G:O2'	36:Bg:10:ARG:O	2.38	0.41
1:B5:4744:G:N7	26:BW:35:LYS:NZ	2.65	0.41
90:B5:4905:SPD:N6	17:BN:70:GLY:O	2.50	0.41
4:BA:245:ARG:CZ	4:BA:247:ARG:HH21	2.34	0.41
7:BD:37:VAL:HG12	7:BD:50:ARG:HD3	2.02	0.41
8:BE:167:PHE:HA	8:BE:178:VAL:HG12	2.02	0.41
12:BI:33:ILE:HB	12:BI:69:ARG:HH12	1.85	0.41
12:BI:57:TYR:HD1	12:BI:130:HIS:HA	1.84	0.41
12:BI:179:ASP:OD1	12:BI:180:GLU:N	2.53	0.41
22:BS:15:ARG:HB3	22:BS:27:LEU:HD23	2.03	0.41
47:Bt:105:THR:HG22	47:Bt:107:ASP:H	1.83	0.41
47:Bt:118:HIS:HD2	47:Bt:119:ARG:NH1	2.18	0.41
51:XA:315:ARG:HG2	51:XA:359:PHE:CG	2.55	0.41
51:XA:496:LYS:HZ3	51:XA:564:ILE:HG12	1.83	0.41
51:XA:564:ILE:O	51:XA:568:LEU:HG	2.20	0.41
53:MA:176:LEU:HD23	53:MA:180:TYR:CE1	2.56	0.41
58:AD:83:VAL:HG12	86:Aw:89:GLY:HA2	2.02	0.41
59:AE:33:ASP:OD1	59:AE:33:ASP:N	2.53	0.41
60:AF:99:ARG:HA	60:AF:99:ARG:HH11	1.84	0.41
64:Aa:179:ASN:HB3	64:Aa:183:GLU:HB2	2.02	0.41
68:Ae:125:SER:HB3	68:Ae:136:ARG:HB3	2.00	0.41
71:Ah:76:THR:OG1	71:Ah:77:ARG:N	2.52	0.41
82:As:71:GLY:O	82:As:75:MET:HG2	2.20	0.41
1:B5:135:G:N7	37:Bh:97:LYS:HE3	2.35	0.41
1:B5:1678:G:N3	1:B5:1681:A:N6	2.68	0.41
1:B5:1688:A:H2'	1:B5:1689:G:C8	2.55	0.41
1:B5:1699:G:H2'	1:B5:1700:G:C8	2.56	0.41
1:B5:1766:C:H1'	31:Bb:50:ASN:HD21	1.85	0.41
1:B5:2283:U:H1'	1:B5:2361:G:H2'	2.02	0.41
1:B5:2687:A:O2'	1:B5:4377:G:H4'	2.20	0.41
1:B5:3380:A:H1'	1:B5:3517:A2M:N6	2.36	0.41
1:B5:3776:A:H4'	1:B5:3777:U:H5'	2.01	0.41
1:B5:4265:C:H5"	1:B5:4266:G:H5"	2.02	0.41
5:BB:41:VAL:HA	5:BB:187:GLY:HA3	2.02	0.41
8:BE:172:SER:OG	8:BE:217:ASP:OD2	2.36	0.41
18:BO:81:TRP:HB2	18:BO:104:VAL:HG21	2.02	0.41
26:BW:56:ARG:HB3	26:BW:61:LYS:HB2	2.01	0.41
42:Bm:98:M3L:HM13	42:Bm:98:M3L:HD2	1.83	0.41
46:Bs:13:TYR:HA	46:Bs:16:LYS:HE2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:A2:195:C:H2'	54:A2:196:C:C6	2.55	0.41
54:A2:1434:C:OP2	54:A2:1438:C:N4	2.54	0.41
1:B5:678:G:O6	51:XA:601:ARG:NH2	2.48	0.41
1:B5:3501:C:H2'	1:B5:3502:PSU:H6	1.85	0.41
1:B5:3664:U:H2'	1:B5:3665:G:C8	2.55	0.41
1:B5:4186:G:O3'	12:BI:112:GLN:NE2	2.54	0.41
1:B5:4599:G:H2'	1:B5:4600:G:H8	1.85	0.41
5:BB:58:ARG:HE	5:BB:74:GLU:HG3	1.86	0.41
19:BP:15:CYS:SG	19:BP:150:LEU:HB2	2.61	0.41
50:Nu:71:VAL:HG13	50:Nu:73:HIS:CE1	2.56	0.41
50:Nu:81:ALA:HB1	50:Nu:88:PHE:HD1	1.86	0.41
52:XB:113:LYS:HE2	52:XB:145:TYR:CE1	2.55	0.41
53:MA:176:LEU:HD11	53:MA:197:LEU:HD21	2.02	0.41
54:A2:328:G:H2'	54:A2:330:G:C8	2.56	0.41
54:A2:679:U:OP2	54:A2:1027:C:N4	2.45	0.41
54:A2:1102:U:H2'	54:A2:1103:G:C8	2.56	0.41
54:A2:1104:C:H2'	54:A2:1105:G:H8	1.85	0.41
54:A2:1448:OMG:HM23	54:A2:1448:OMG:H1'	1.88	0.41
56:AB:23:SER:OG	56:AB:24:GLN:OE1	2.35	0.41
60:AF:47:ARG:HG2	60:AF:52:TYR:CZ	2.56	0.41
60:AF:220:ASP:HB3	60:AF:223:GLU:HG2	2.02	0.41
65:Ab:267:GLN:OE1	84:Au:35:ASN:ND2	2.54	0.41
80:Aq:66:VAL:HG12	80:Aq:68:GLY:H	1.86	0.41
87:Ax:23:MET:N	87:Ax:23:MET:SD	2.94	0.41
1:B5:24:G:N7	39:Bj:46:LYS:NZ	2.65	0.41
1:B5:347:A:O2'	6:BC:50:GLN:NE2	2.54	0.41
1:B5:1214:A:C5	1:B5:1395:U:H1'	2.55	0.41
1:B5:1247:A:O4'	34:Be:33:ARG:NH1	2.54	0.41
1:B5:1939:G:O2'	1:B5:1940:G:N7	2.52	0.41
1:B5:1983:U:C2	5:BB:259:PRO:HG3	2.54	0.41
1:B5:2117:C:OP1	6:BC:312:ARG:N	2.52	0.41
1:B5:2384:G:H2'	1:B5:2385:G:C8	2.56	0.41
1:B5:3602:C:O3'	5:BB:261:ARG:NH1	2.54	0.41
1:B5:3656:C:H2'	1:B5:3657:OMU:H6	2.03	0.41
18:BO:128:ARG:HH11	22:BS:162:GLN:HE22	1.68	0.41
26:BW:23:ARG:HH21	26:BW:27:LYS:HD2	1.85	0.41
29:BZ:28:ASN:HA	29:BZ:41:ALA:HA	2.02	0.41
54:A2:65:C:N4	69:Af:134:GLY:O	2.50	0.41
54:A2:1014:U:OP1	54:A2:1130:G:O2'	2.35	0.41
66:Ac:25:LEU:HD12	66:Ac:37:VAL:HG11	2.02	0.41
67:Ad:60:GLU:OE1	87:Ax:20:ARG:NH2	2.52	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:Ap:7:LEU:H	79:Ap:7:LEU:HD23	1.85	0.41
1:B5:882:U:H2'	1:B5:883:C:C6	2.55	0.41
1:B5:1290:C:H2'	1:B5:1291:G:C8	2.55	0.41
1:B5:1479:A2M:HM'2	1:B5:1480:A:O5'	2.21	0.41
1:B5:2363:C:H2'	1:B5:2364:G:H8	1.83	0.41
1:B5:4628:G:H2'	1:B5:4629:G:H8	1.86	0.41
17:BN:178:HIS:HA	17:BN:181:HIS:NE2	2.36	0.41
21:BR:15:LEU:HD13	21:BR:52:ARG:HB2	2.01	0.41
22:BS:93:MET:HE1	22:BS:117:HIS:CE1	2.55	0.41
30:Ba:59:ARG:NH2	30:Ba:61:TYR:OH	2.54	0.41
30:Ba:110:LYS:HG3	30:Ba:128:PHE:HB2	2.03	0.41
46:Bs:81:HIS:O	46:Bs:190:GLN:NE2	2.51	0.41
51:XA:21:TYR:CE2	51:XA:51:MET:HE3	2.56	0.41
51:XA:590:LYS:CG	51:XA:591:GLU:H	2.31	0.41
52:XB:11:LEU:HA	52:XB:11:LEU:HD23	1.94	0.41
53:MA:289:LYS:HD2	53:MA:289:LYS:HA	1.76	0.41
54:A2:1857:C:H2'	54:A2:1858:G:C8	2.55	0.41
62:AT:51:C:H2'	62:AT:52:G:H8	1.86	0.41
67:Ad:50:ASN:O	67:Ad:53:LYS:NZ	2.37	0.41
87:Ax:76:TYR:OH	87:Ax:86:GLU:OE1	2.25	0.41
1:B5:92:C:OP1	90:B5:4907:SPD:N10	2.53	0.41
1:B5:1071:C:OP2	7:BD:286:SER:OG	2.34	0.41
1:B5:1309:C:N4	90:B5:4921:SPD:H71	2.35	0.41
1:B5:1363:C:H2'	1:B5:1364:G:C8	2.55	0.41
1:B5:1697:G:H2'	1:B5:1698:G:H8	1.85	0.41
1:B5:1698:G:H2'	1:B5:1699:G:H8	1.86	0.41
1:B5:2216:C:H2'	1:B5:2217:A:C8	2.56	0.41
1:B5:2254:C:H2'	1:B5:2255:A:C8	2.56	0.41
1:B5:3459:A:H2'	1:B5:3460:A:C8	2.56	0.41
1:B5:4037:G:H5'	1:B5:4039:PSU:C6	2.56	0.41
1:B5:4047:U:H4'	23:BT:54:HIS:CD2	2.56	0.41
1:B5:4364:OMG:HM22	1:B5:4365:U:H5'	2.02	0.41
1:B5:4379:G:N7	96:B5:5719:HOH:O	2.37	0.41
1:B5:4440:G:H4'	11:BH:71:ARG:HH12	1.86	0.41
3:B8:82:A:H1'	37:Bh:49:VAL:HG21	2.03	0.41
4:BA:116:LEU:N	4:BA:126:LEU:O	2.54	0.41
5:BB:9:PRO:HG2	25:BV:48:ARG:HH12	1.86	0.41
11:BH:40:HIS:ND1	11:BH:41:ILE:HG13	2.35	0.41
20:BQ:35:LEU:O	20:BQ:39:THR:OG1	2.28	0.41
24:BU:80:LYS:HE2	24:BU:110:TYR:CZ	2.56	0.41
25:BV:16:ILE:H	25:BV:16:ILE:HG13	1.70	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:Bh:91:MET:HA	37:Bh:94:ARG:HG3	2.03	0.41
48:Bv:94:ASN:HB2	48:Bv:123:ILE:HB	2.02	0.41
49:Nt:102:ILE:HD12	49:Nt:102:ILE:HA	1.97	0.41
49:Nt:190:VAL:HG12	49:Nt:191:SER:H	1.86	0.41
49:Nt:208:ASN:HA	49:Nt:211:MET:HB2	2.03	0.41
51:XA:14:PHE:CE1	51:XA:36:ILE:HD13	2.56	0.41
51:XA:46:GLY:HA3	51:XA:76:ASP:HB2	2.03	0.41
51:XA:256:GLU:HB2	52:XB:93:GLN:HE22	1.86	0.41
51:XA:378:TYR:OH	51:XA:410:LEU:N	2.54	0.41
51:XA:431:MET:HG3	51:XA:451:TYR:HD2	1.86	0.41
51:XA:515:PHE:O	51:XA:519:THR:HG23	2.21	0.41
51:XA:590:LYS:C	51:XA:592:LEU:H	2.28	0.41
51:XA:713:ILE:HD12	51:XA:771:MET:HG3	2.03	0.41
54:A2:35:C:H2'	54:A2:36:PSU:C6	2.56	0.41
54:A2:198:U:O2'	54:A2:201:C:N4	2.53	0.41
54:A2:317:G:H3'	69:Af:183:ARG:HH12	1.85	0.41
54:A2:415:A:OP1	54:A2:815:PSU:O2'	2.35	0.41
54:A2:617:A:H1'	58:AD:86:VAL:HG23	2.03	0.41
54:A2:838:A:C5	87:Ax:47:MET:HE3	2.55	0.41
54:A2:1851:MA6:O5'	54:A2:1851:MA6:H8	2.21	0.41
56:AB:27:CYS:SG	68:Ae:126:THR:HG21	2.61	0.41
60:AF:101:PHE:CE2	60:AF:136:GLY:HA2	2.56	0.41
63:AZ:176:TRP:HE1	63:AZ:197:VAL:HG23	1.86	0.41
64:Aa:25:PHE:CZ	77:An:53:ILE:O	2.74	0.41
65:Ab:102:LEU:HD22	65:Ab:130:ILE:HG12	2.01	0.41
73:Aj:37:ASP:OD1	73:Aj:37:ASP:N	2.54	0.41
75:Al:11:VAL:HG21	75:Al:16:THR:HG21	2.01	0.41
1:B5:680:A:OP1	51:XA:590:LYS:HD3	2.21	0.41
1:B5:1001:C:H2'	1:B5:1002:A:C8	2.56	0.41
1:B5:2323:G:H2'	1:B5:2324:G:C8	2.56	0.41
22:BS:99:ASP:OD1	22:BS:100:LEU:N	2.46	0.41
46:Bs:102:LEU:HD11	46:Bs:187:LEU:HD12	2.02	0.41
49:Nt:207:VAL:HG21	51:XA:70:ARG:O	2.21	0.41
50:Nu:82:SER:HB3	50:Nu:87:THR:HG23	2.02	0.41
50:Nu:99:LEU:CA	50:Nu:105:SER:HB3	2.51	0.41
50:Nu:101:GLU:HG2	50:Nu:102:MET:N	2.36	0.41
54:A2:468:G:O5'	69:Af:72:ARG:NH2	2.54	0.41
54:A2:1292:A:O2'	57:AC:145:CYS:SG	2.68	0.41
54:A2:1508:G:C6	57:AC:89:LYS:HB2	2.56	0.41
60:AF:38:LYS:HE3	60:AF:38:LYS:HB2	1.91	0.41
68:Ae:43:GLU:H	68:Ae:43:GLU:CD	2.29	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:Ah:8:TRP:CE3	71:Ah:20:PRO:HB3	2.56	0.41
71:Ah:65:PHE:O	71:Ah:109:TYR:OH	2.37	0.41
77:An:16:SER:OG	77:An:17:LEU:N	2.51	0.41
1:B5:215:C:H5"	1:B5:216:C:H5'	2.02	0.40
1:B5:1271:C:H2'	1:B5:1272:G:C8	2.56	0.40
1:B5:2028:G:N2	1:B5:2037:G:OP2	2.54	0.40
5:BB:315:ASN:OD1	5:BB:326:VAL:N	2.40	0.40
8:BE:45:HIS:CE1	8:BE:48:ARG:HE	2.39	0.40
30:Ba:71:PRO:HG2	30:Ba:108:TYR:HA	2.03	0.40
49:Nt:113:LYS:HE2	49:Nt:120:TYR:CE2	2.55	0.40
51:XA:551:HIS:HB2	51:XA:554:TYR:CE1	2.56	0.40
53:MA:236:TYR:HE2	53:MA:483:CYS:HB2	1.85	0.40
54:A2:239:C:H2'	54:A2:240:G:C8	2.55	0.40
54:A2:501:A:H4'	90:A2:1907:SPD:H52	2.02	0.40
54:A2:1157:U:OP1	85:Av:71:LYS:NZ	2.49	0.40
54:A2:1798:U:H2'	54:A2:1799:C:C6	2.57	0.40
60:AF:119:GLN:HB3	60:AF:131:LEU:HD11	2.03	0.40
62:AT:63:G:H2'	62:AT:64:G:C8	2.56	0.40
84:Au:33:GLN:HE21	84:Au:52:THR:HG21	1.86	0.40
87:Ax:40:ILE:HG21	87:Ax:60:PHE:CZ	2.56	0.40
1:B5:190:G:H2'	1:B5:191:G:C8	2.56	0.40
1:B5:1611:U:H2'	1:B5:1612:G:H8	1.87	0.40
1:B5:2654:G:N2	1:B5:2657:C:OP2	2.48	0.40
1:B5:3892:G:H2'	1:B5:3893:G:C8	2.56	0.40
1:B5:4057:A:H2'	1:B5:4058:PSU:H6	1.85	0.40
2:B7:49:A:H61	7:BD:57:ASN:HB3	1.86	0.40
10:BG:81:ASN:ND2	10:BG:238:GLY:HA3	2.36	0.40
20:BQ:63:LEU:N	20:BQ:87:THR:O	2.54	0.40
46:Bs:85:ASN:OD1	46:Bs:85:ASN:N	2.48	0.40
48:Bv:110:PHE:HB3	48:Bv:135:PRO:HG3	2.02	0.40
51:XA:240:LEU:HD22	51:XA:267:ALA:HA	2.02	0.40
51:XA:446:SER:O	51:XA:450:LYS:HG3	2.21	0.40
53:MA:171:GLU:OE1	53:MA:215:ARG:NH1	2.44	0.40
54:A2:1286:G:H22	75:Al:57:ASP:HB2	1.87	0.40
67:Ad:141:THR:OG1	67:Ad:143:ASP:OD1	2.32	0.40
71:Ah:206:LYS:HE3	71:Ah:206:LYS:HB3	1.81	0.40
72:Ai:140:GLN:NE2	87:Ax:64:PHE:O	2.54	0.40
73:Aj:58:VAL:HG21	73:Aj:69:TRP:HB3	2.03	0.40
79:Ap:16:LYS:HD2	79:Ap:16:LYS:HA	1.79	0.40
1:B5:262:G:H2'	1:B5:263:G:C8	2.57	0.40
1:B5:1009:G:N2	1:B5:1093:C:O2	2.41	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:1416:C:H2'	1:B5:1417:A:C8	2.55	0.40
1:B5:2041:G:H5"	9:BF:45:ARG:NH1	2.36	0.40
1:B5:2547:C:H2'	1:B5:2548:G:H8	1.86	0.40
1:B5:3825:G:H2'	1:B5:3826:A:H8	1.86	0.40
1:B5:4432:G:N2	11:BH:163:GLN:HE22	2.19	0.40
2:B7:47:G:N2	7:BD:222:GLN:HE22	2.18	0.40
10:BG:185:LYS:O	10:BG:189:ARG:NH2	2.45	0.40
20:BQ:30:LYS:NZ	45:Br:8:MET:SD	2.76	0.40
24:BU:65:ARG:HG2	24:BU:66:SER:O	2.21	0.40
26:BW:63:GLN:HG3	26:BW:68:GLN:NE2	2.36	0.40
27:BX:147:LEU:HG	53:MA:326:LEU:HD13	2.03	0.40
51:XA:326:PHE:CZ	51:XA:382:GLN:HB2	2.56	0.40
51:XA:431:MET:HB3	51:XA:448:CYS:SG	2.61	0.40
51:XA:488:GLN:HA	51:XA:507:LYS:HD2	2.02	0.40
51:XA:511:ILE:HG22	51:XA:515:PHE:CE2	2.56	0.40
53:MA:296:TYR:OH	53:MA:471:ASP:O	2.29	0.40
54:A2:953:G:H4'	77:An:51:GLU:OE1	2.21	0.40
54:A2:1063:A:OP1	90:A2:1905:SPD:H52	2.21	0.40
54:A2:1063:A:OP1	90:A2:1905:SPD:H81	2.22	0.40
54:A2:1393:U:P	83:At:83:ARG:HH22	2.44	0.40
55:AA:33:MET:HB2	55:AA:79:PHE:HB2	2.03	0.40
63:AZ:64:ALA:HB1	84:Au:34:MET:HE2	2.03	0.40
84:Au:38:GLU:OE2	84:Au:51:LYS:NZ	2.53	0.40
1:B5:714:G:H2'	1:B5:715:G:H8	1.87	0.40
1:B5:751:G:H2'	1:B5:752:G:H8	1.86	0.40
1:B5:863:G:O2'	8:BE:88:ARG:NH1	2.55	0.40
1:B5:1399:G:H2'	1:B5:1400:U:C6	2.57	0.40
1:B5:1695:U:H2'	1:B5:1696:U:C6	2.57	0.40
1:B5:2625:U:OP2	41:Bl:10:LYS:NZ	2.46	0.40
1:B5:3516:A:O2'	1:B5:3518:U:OP2	2.32	0.40
1:B5:3908:C:H5	10:BG:73:ARG:HH12	1.69	0.40
1:B5:3911:C:OP1	10:BG:53:ARG:NH2	2.54	0.40
1:B5:4508:G:H2'	1:B5:4509:A:C8	2.56	0.40
1:B5:4769:U:H2'	1:B5:4770:G:C8	2.56	0.40
8:BE:273:TYR:OH	16:BM:106:ASP:OD2	2.31	0.40
9:BF:34:LYS:HE3	9:BF:34:LYS:HB3	1.95	0.40
15:BL:150:LEU:HD23	15:BL:154:VAL:HG22	2.03	0.40
28:BY:134:LYS:HE3	28:BY:134:LYS:HB3	1.92	0.40
49:Nt:93:ARG:HG3	49:Nt:105:VAL:HG13	2.04	0.40
54:A2:1278:C:H2'	54:A2:1279:A:C8	2.57	0.40
69:Af:102:VAL:HG13	69:Af:106:LEU:HD12	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:Ai:160:SER:HB3	72:Ai:163:SER:HB2	2.03	0.40
1:B5:1489:A2M:N3	39:Bj:11:ARG:HB2	2.36	0.40
1:B5:1600:C:H2'	1:B5:1601:A:C8	2.57	0.40
1:B5:2624:G:O2'	41:Bl:3:SER:O	2.35	0.40
1:B5:3800:C:H2'	1:B5:3801:A:H8	1.86	0.40
1:B5:4105:U:H2'	1:B5:4106:U:C6	2.56	0.40
1:B5:4638:G:H5'	1:B5:4639:C:OP2	2.22	0.40
5:BB:54:THR:OG1	5:BB:55:HIS:N	2.55	0.40
10:BG:30:PRO:HB2	29:BZ:125:GLY:HA3	2.04	0.40
17:BN:35:ALA:HB2	17:BN:65:ARG:HH21	1.87	0.40
40:Bk:36:VAL:HG13	40:Bk:43:TYR:HB2	2.03	0.40
48:Bv:194:LEU:HD13	48:Bv:200:ASN:HB2	2.04	0.40
50:Nu:72:ILE:HA	50:Nu:95:GLU:O	2.22	0.40
51:XA:87:GLY:O	51:XA:88:LEU:C	2.65	0.40
51:XA:512:GLU:O	51:XA:516:ILE:HG13	2.22	0.40
54:A2:371:G:O2'	71:Ah:10:LYS:NZ	2.55	0.40
54:A2:943:G:OP1	64:Aa:216:LYS:NZ	2.44	0.40
54:A2:1514:C:H2'	54:A2:1515:G:C8	2.56	0.40
54:A2:1715:U:H2'	54:A2:1716:A:C8	2.57	0.40
54:A2:1845:U:H2'	54:A2:1846:A:C8	2.57	0.40
62:AT:51:C:H2'	62:AT:52:G:C8	2.56	0.40
64:Aa:123:ALA:HB2	64:Aa:165:ARG:HG3	2.02	0.40
86:Aw:26:GLN:NE2	96:Aw:302:HOH:O	2.53	0.40
86:Aw:39:ASN:ND2	86:Aw:43:GLY:H	2.20	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	BA	250/257 (97%)	242 (97%)	8 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	BB	395/403 (98%)	387 (98%)	8 (2%)	0	100	100
6	BC	361/413 (87%)	358 (99%)	3 (1%)	0	100	100
7	BD	291/297 (98%)	285 (98%)	6 (2%)	0	100	100
8	BE	239/291 (82%)	236 (99%)	3 (1%)	0	100	100
9	BF	224/247 (91%)	217 (97%)	7 (3%)	0	100	100
10	BG	229/266 (86%)	226 (99%)	3 (1%)	0	100	100
11	BH	188/192 (98%)	186 (99%)	2 (1%)	0	100	100
12	BI	211/214 (99%)	207 (98%)	4 (2%)	0	100	100
13	BJ	168/178 (94%)	167 (99%)	1 (1%)	0	100	100
15	BL	208/211 (99%)	205 (99%)	3 (1%)	0	100	100
16	BM	136/218 (62%)	135 (99%)	1 (1%)	0	100	100
17	BN	201/204 (98%)	197 (98%)	4 (2%)	0	100	100
18	BO	197/203 (97%)	197 (100%)	0	0	100	100
19	BP	157/184 (85%)	156 (99%)	1 (1%)	0	100	100
20	BQ	185/188 (98%)	184 (100%)	1 (0%)	0	100	100
21	BR	178/196 (91%)	178 (100%)	0	0	100	100
22	BS	174/176 (99%)	172 (99%)	2 (1%)	0	100	100
23	BT	157/160 (98%)	155 (99%)	2 (1%)	0	100	100
24	BU	97/128 (76%)	95 (98%)	2 (2%)	0	100	100
25	BV	137/140 (98%)	134 (98%)	3 (2%)	0	100	100
26	BW	119/157 (76%)	119 (100%)	0	0	100	100
27	BX	116/156 (74%)	113 (97%)	3 (3%)	0	100	100
28	BY	132/145 (91%)	129 (98%)	3 (2%)	0	100	100
29	BZ	133/136 (98%)	132 (99%)	1 (1%)	0	100	100
30	Ba	144/148 (97%)	136 (94%)	8 (6%)	0	100	100
31	Bb	103/245 (42%)	99 (96%)	4 (4%)	0	100	100
32	Bc	106/115 (92%)	106 (100%)	0	0	100	100
33	Bd	105/125 (84%)	105 (100%)	0	0	100	100
34	Be	128/135 (95%)	127 (99%)	1 (1%)	0	100	100
35	Bf	108/110 (98%)	107 (99%)	1 (1%)	0	100	100
36	Bg	112/117 (96%)	111 (99%)	1 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
37	Bh	120/123 (98%)	119 (99%)	1 (1%)	0	100	100
38	Bi	100/105 (95%)	100 (100%)	0	0	100	100
39	Bj	84/97 (87%)	83 (99%)	1 (1%)	0	100	100
40	Bk	67/70 (96%)	67 (100%)	0	0	100	100
41	Bl	48/51 (94%)	48 (100%)	0	0	100	100
42	Bm	49/128 (38%)	48 (98%)	1 (2%)	0	100	100
43	Bo	102/106 (96%)	101 (99%)	1 (1%)	0	100	100
44	Bp	89/92 (97%)	88 (99%)	1 (1%)	0	100	100
45	Br	125/137 (91%)	123 (98%)	2 (2%)	0	100	100
46	Bs	194/318 (61%)	189 (97%)	5 (3%)	0	100	100
47	Bt	154/165 (93%)	151 (98%)	3 (2%)	0	100	100
48	Bv	210/217 (97%)	200 (95%)	10 (5%)	0	100	100
49	Nt	109/215 (51%)	102 (94%)	7 (6%)	0	100	100
50	Nu	105/162 (65%)	93 (89%)	9 (9%)	3 (3%)	3	24
51	XA	835/866 (96%)	802 (96%)	33 (4%)	0	100	100
52	XB	166/235 (71%)	163 (98%)	3 (2%)	0	100	100
53	MA	340/496 (68%)	331 (97%)	9 (3%)	0	100	100
55	AA	81/84 (96%)	78 (96%)	3 (4%)	0	100	100
56	AB	61/69 (88%)	61 (100%)	0	0	100	100
57	AC	72/156 (46%)	69 (96%)	3 (4%)	0	100	100
58	AD	55/133 (41%)	55 (100%)	0	0	100	100
59	AE	99/115 (86%)	98 (99%)	1 (1%)	0	100	100
60	AF	311/317 (98%)	303 (97%)	8 (3%)	0	100	100
61	AG	53/56 (95%)	53 (100%)	0	0	100	100
63	AZ	220/295 (75%)	216 (98%)	4 (2%)	0	100	100
64	Aa	220/264 (83%)	217 (99%)	3 (1%)	0	100	100
65	Ab	218/293 (74%)	217 (100%)	1 (0%)	0	100	100
66	Ac	223/281 (79%)	221 (99%)	2 (1%)	0	100	100
67	Ad	260/263 (99%)	258 (99%)	2 (1%)	0	100	100
68	Ae	189/204 (93%)	184 (97%)	5 (3%)	0	100	100
69	Af	235/249 (94%)	235 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
70	Ag	188/432 (44%)	186 (99%)	2 (1%)	0	100	100
71	Ah	204/208 (98%)	201 (98%)	3 (2%)	0	100	100
72	Ai	183/194 (94%)	180 (98%)	3 (2%)	0	100	100
73	Aj	94/165 (57%)	89 (95%)	5 (5%)	0	100	100
74	Ak	152/158 (96%)	150 (99%)	2 (1%)	0	100	100
75	Al	122/132 (92%)	121 (99%)	1 (1%)	0	100	100
76	Am	148/151 (98%)	148 (100%)	0	0	100	100
77	An	120/151 (80%)	117 (98%)	3 (2%)	0	100	100
78	Ao	126/145 (87%)	124 (98%)	2 (2%)	0	100	100
79	Ap	139/172 (81%)	133 (96%)	6 (4%)	0	100	100
80	Aq	132/135 (98%)	128 (97%)	4 (3%)	0	100	100
81	Ar	147/152 (97%)	144 (98%)	3 (2%)	0	100	100
82	As	140/145 (97%)	139 (99%)	1 (1%)	0	100	100
83	At	102/119 (86%)	99 (97%)	3 (3%)	0	100	100
84	Au	82/84 (98%)	81 (99%)	1 (1%)	0	100	100
85	Av	127/130 (98%)	126 (99%)	1 (1%)	0	100	100
86	Aw	138/143 (96%)	137 (99%)	1 (1%)	0	100	100
87	Ax	123/130 (95%)	122 (99%)	1 (1%)	0	100	100
88	Ay	83/124 (67%)	82 (99%)	1 (1%)	0	100	100
89	Az	23/25 (92%)	23 (100%)	0	0	100	100
All	All	13456/15812 (85%)	13206 (98%)	247 (2%)	3 (0%)	100	100

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
50	Nu	104	PRO
50	Nu	106	ILE
50	Nu	103	LEU

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
4	BA	194/198 (98%)	193 (100%)	1 (0%)	86 92
5	BB	344/347 (99%)	339 (98%)	5 (2%)	60 77
6	BC	302/336 (90%)	301 (100%)	1 (0%)	91 96
7	BD	247/250 (99%)	247 (100%)	0	100 100
8	BE	216/251 (86%)	215 (100%)	1 (0%)	86 92
9	BF	197/215 (92%)	197 (100%)	0	100 100
10	BG	199/223 (89%)	197 (99%)	2 (1%)	73 84
11	BH	169/171 (99%)	169 (100%)	0	100 100
12	BI	180/181 (99%)	180 (100%)	0	100 100
13	BJ	143/149 (96%)	143 (100%)	0	100 100
15	BL	175/176 (99%)	175 (100%)	0	100 100
16	BM	117/161 (73%)	117 (100%)	0	100 100
17	BN	171/172 (99%)	171 (100%)	0	100 100
18	BO	171/173 (99%)	169 (99%)	2 (1%)	67 81
19	BP	140/163 (86%)	140 (100%)	0	100 100
20	BQ	164/165 (99%)	163 (99%)	1 (1%)	84 91
21	BR	159/175 (91%)	159 (100%)	0	100 100
22	BS	154/154 (100%)	154 (100%)	0	100 100
23	BT	139/140 (99%)	139 (100%)	0	100 100
24	BU	88/113 (78%)	88 (100%)	0	100 100
25	BV	106/107 (99%)	105 (99%)	1 (1%)	75 86
26	BW	100/126 (79%)	98 (98%)	2 (2%)	50 72
27	BX	106/134 (79%)	106 (100%)	0	100 100
28	BY	124/135 (92%)	124 (100%)	0	100 100
29	BZ	117/118 (99%)	117 (100%)	0	100 100
30	Ba	118/119 (99%)	118 (100%)	0	100 100
31	Bb	87/183 (48%)	87 (100%)	0	100 100
32	Bc	92/98 (94%)	91 (99%)	1 (1%)	70 82
33	Bd	98/110 (89%)	98 (100%)	0	100 100
34	Be	116/121 (96%)	116 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
35	Bf	89/89 (100%)	89 (100%)	0	100 100
36	Bg	98/100 (98%)	97 (99%)	1 (1%)	73 84
37	Bh	109/110 (99%)	109 (100%)	0	100 100
38	Bi	86/89 (97%)	85 (99%)	1 (1%)	67 81
39	Bj	73/80 (91%)	73 (100%)	0	100 100
40	Bk	64/65 (98%)	62 (97%)	2 (3%)	35 63
41	Bl	47/48 (98%)	47 (100%)	0	100 100
42	Bm	47/115 (41%)	47 (100%)	0	100 100
43	Bo	92/93 (99%)	92 (100%)	0	100 100
44	Bp	74/75 (99%)	73 (99%)	1 (1%)	62 79
45	Br	110/120 (92%)	110 (100%)	0	100 100
46	Bs	164/258 (64%)	164 (100%)	0	100 100
47	Bt	128/137 (93%)	122 (95%)	6 (5%)	22 51
48	Bv	191/195 (98%)	191 (100%)	0	100 100
49	Nt	97/183 (53%)	95 (98%)	2 (2%)	48 71
50	Nu	91/136 (67%)	85 (93%)	6 (7%)	14 41
51	XA	746/769 (97%)	719 (96%)	27 (4%)	30 58
52	XB	147/202 (73%)	142 (97%)	5 (3%)	32 60
53	MA	311/443 (70%)	307 (99%)	4 (1%)	65 80
55	AA	75/76 (99%)	75 (100%)	0	100 100
56	AB	56/62 (90%)	56 (100%)	0	100 100
57	AC	67/140 (48%)	67 (100%)	0	100 100
58	AD	47/106 (44%)	47 (100%)	0	100 100
59	AE	88/98 (90%)	86 (98%)	2 (2%)	45 69
60	AF	272/275 (99%)	270 (99%)	2 (1%)	81 89
61	AG	48/49 (98%)	48 (100%)	0	100 100
63	AZ	183/243 (75%)	181 (99%)	2 (1%)	70 82
64	Aa	203/231 (88%)	201 (99%)	2 (1%)	73 84
65	Ab	185/223 (83%)	185 (100%)	0	100 100
66	Ac	189/232 (82%)	188 (100%)	1 (0%)	86 92
67	Ad	224/225 (100%)	224 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
68	Ae	161/170 (95%)	161 (100%)	0	100	100
69	Af	207/218 (95%)	207 (100%)	0	100	100
70	Ag	170/360 (47%)	168 (99%)	2 (1%)	67	81
71	Ah	178/180 (99%)	177 (99%)	1 (1%)	84	91
72	Ai	161/168 (96%)	160 (99%)	1 (1%)	84	91
73	Aj	87/136 (64%)	86 (99%)	1 (1%)	70	82
74	Ak	139/142 (98%)	139 (100%)	0	100	100
75	Al	104/108 (96%)	101 (97%)	3 (3%)	37	64
76	Am	130/131 (99%)	130 (100%)	0	100	100
77	An	95/119 (80%)	93 (98%)	2 (2%)	48	71
78	Ao	114/130 (88%)	113 (99%)	1 (1%)	75	86
79	Ap	117/140 (84%)	117 (100%)	0	100	100
80	Aq	120/121 (99%)	119 (99%)	1 (1%)	79	88
81	Ar	128/131 (98%)	125 (98%)	3 (2%)	45	69
82	As	112/114 (98%)	112 (100%)	0	100	100
83	At	94/107 (88%)	93 (99%)	1 (1%)	70	82
84	Au	68/68 (100%)	66 (97%)	2 (3%)	37	64
85	Av	112/113 (99%)	112 (100%)	0	100	100
86	Aw	112/114 (98%)	110 (98%)	2 (2%)	54	74
87	Ax	107/112 (96%)	106 (99%)	1 (1%)	75	86
88	Ay	75/102 (74%)	75 (100%)	0	100	100
89	Az	24/24 (100%)	24 (100%)	0	100	100
All	All	11749/13439 (87%)	11647 (99%)	102 (1%)	74	86

All (102) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	BA	44	ILE
5	BB	93	VAL
5	BB	248	LEU
5	BB	253	CYS
5	BB	343	ARG
5	BB	344	VAL
6	BC	321	ASN

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Mol	Chain	Res	Type
8	BE	289	LEU
10	BG	192	ARG
10	BG	220	GLU
18	BO	126	VAL
18	BO	174	LEU
20	BQ	82	VAL
25	BV	16	ILE
26	BW	9	SER
26	BW	68	GLN
32	Bc	94	LEU
36	Bg	32	TYR
38	Bi	94	LEU
40	Bk	30	ASP
40	Bk	36	VAL
44	Bp	52	VAL
47	Bt	12	VAL
47	Bt	15	LEU
47	Bt	22	VAL
47	Bt	35	LEU
47	Bt	73	VAL
47	Bt	74	VAL
49	Nt	131	LEU
49	Nt	190	VAL
50	Nu	23	LYS
50	Nu	33	VAL
50	Nu	51	LEU
50	Nu	61	GLU
50	Nu	71	VAL
50	Nu	104	PRO
51	XA	45	HIS
51	XA	123	LEU
51	XA	135	GLU
51	XA	137	ARG
51	XA	139	GLN
51	XA	140	LEU
51	XA	141	LEU
51	XA	154	TYR
51	XA	161	LEU
51	XA	210	LEU
51	XA	233	LEU
51	XA	264	LEU
51	XA	296	LEU

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Mol	Chain	Res	Type
51	XA	397	ILE
51	XA	407	LEU
51	XA	435	GLN
51	XA	541	LEU
51	XA	544	LEU
51	XA	578	LYS
51	XA	589	ASP
51	XA	592	LEU
51	XA	631	ASP
51	XA	632	ASP
51	XA	634	GLU
51	XA	662	THR
51	XA	742	PHE
51	XA	762	LEU
52	XB	10	ASP
52	XB	12	MET
52	XB	28	MET
52	XB	109	LEU
52	XB	145	TYR
53	MA	285	VAL
53	MA	286	VAL
53	MA	289	LYS
53	MA	455	LEU
59	AE	40	VAL
59	AE	75	VAL
60	AF	266	ILE
60	AF	275	ILE
63	AZ	121	LEU
63	AZ	206	ASP
64	Aa	127	VAL
64	Aa	178	THR
66	Ac	46	THR
70	Ag	53	VAL
70	Ag	75	ILE
71	Ah	46	VAL
72	Ai	55	LYS
73	Aj	40	VAL
75	Al	75	ASN
75	Al	94	ILE
75	Al	104	VAL
77	An	21	VAL
77	An	113	GLN

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Mol	Chain	Res	Type
78	Ao	133	ILE
80	Aq	40	ILE
81	Ar	94	LYS
81	Ar	103	LEU
81	Ar	104	ASP
83	At	54	VAL
84	Au	42	VAL
84	Au	61	ARG
86	Aw	105	PHE
86	Aw	125	VAL
87	Ax	7	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (178) such sidechains are listed below:

Mol	Chain	Res	Type
4	BA	22	HIS
4	BA	50	HIS
4	BA	97	ASN
4	BA	140	ASN
4	BA	205	ASN
5	BB	121	ASN
5	BB	179	HIS
5	BB	184	GLN
5	BB	186	ASN
5	BB	289	GLN
5	BB	354	GLN
6	BC	21	ASN
6	BC	48	ASN
6	BC	50	GLN
6	BC	61	GLN
6	BC	89	GLN
6	BC	119	GLN
6	BC	212	ASN
6	BC	276	ASN
6	BC	310	HIS
6	BC	329	ASN
6	BC	347	HIS
7	BD	63	GLN
7	BD	222	GLN
7	BD	282	GLN
8	BE	170	GLN
8	BE	269	GLN

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Mol	Chain	Res	Type
9	BF	191	HIS
9	BF	199	HIS
9	BF	204	ASN
10	BG	64	GLN
11	BH	138	GLN
12	BI	163	GLN
13	BJ	42	GLN
13	BJ	97	ASN
16	BM	33	GLN
16	BM	48	GLN
16	BM	125	ASN
17	BN	8	GLN
17	BN	15	GLN
18	BO	143	HIS
18	BO	180	GLN
19	BP	137	ASN
20	BQ	45	GLN
20	BQ	57	ASN
20	BQ	77	ASN
21	BR	39	GLN
21	BR	40	GLN
21	BR	86	ASN
21	BR	143	HIS
22	BS	146	HIS
24	BU	17	GLN
26	BW	48	GLN
26	BW	79	GLN
26	BW	120	GLN
27	BX	73	HIS
27	BX	107	HIS
27	BX	111	GLN
27	BX	151	ASN
28	BY	18	HIS
30	Ba	14	HIS
30	Ba	19	HIS
31	Bb	11	ASN
31	Bb	12	GLN
31	Bb	50	ASN
32	Bc	40	GLN
33	Bd	18	ASN
33	Bd	34	HIS
33	Bd	116	ASN

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Mol	Chain	Res	Type
34	Be	34	ASN
34	Be	80	HIS
35	Bf	21	GLN
35	Bf	56	ASN
35	Bf	80	ASN
36	Bg	114	GLN
38	Bi	15	HIS
39	Bj	66	HIS
40	Bk	58	GLN
41	Bl	17	GLN
41	Bl	25	GLN
43	Bo	19	GLN
43	Bo	102	GLN
46	Bs	34	ASN
46	Bs	41	GLN
46	Bs	71	ASN
46	Bs	195	ASN
47	Bt	70	GLN
47	Bt	111	ASN
47	Bt	118	HIS
47	Bt	137	GLN
48	Bv	188	ASN
49	Nt	69	GLN
49	Nt	133	GLN
51	XA	28	ASN
51	XA	75	ASN
51	XA	84	HIS
51	XA	126	GLN
51	XA	147	GLN
51	XA	420	HIS
51	XA	435	GLN
51	XA	445	ASN
51	XA	480	ASN
51	XA	488	GLN
51	XA	551	HIS
51	XA	569	HIS
51	XA	586	ASN
51	XA	709	HIS
51	XA	758	ASN
51	XA	764	HIS
52	XB	15	GLN
52	XB	16	HIS

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Mol	Chain	Res	Type
52	XB	18	ASN
52	XB	34	HIS
52	XB	81	HIS
53	MA	321	GLN
53	MA	410	HIS
53	MA	413	HIS
53	MA	428	GLN
53	MA	473	ASN
53	MA	475	GLN
55	AA	29	ASN
55	AA	51	GLN
58	AD	89	GLN
59	AE	72	HIS
60	AF	159	ASN
60	AF	196	ASN
61	AG	3	HIS
61	AG	28	HIS
63	AZ	113	GLN
63	AZ	169	HIS
64	Aa	40	ASN
64	Aa	76	ASN
64	Aa	158	HIS
64	Aa	186	ASN
65	Ab	267	GLN
66	Ac	145	GLN
67	Ad	50	ASN
67	Ad	142	HIS
67	Ad	157	ASN
67	Ad	201	HIS
68	Ae	65	GLN
68	Ae	110	GLN
68	Ae	118	ASN
69	Af	177	GLN
71	Ah	7	ASN
71	Ah	167	GLN
73	Aj	7	ASN
73	Aj	77	GLN
74	Ak	11	GLN
74	Ak	18	GLN
74	Ak	39	ASN
74	Ak	108	ASN
75	Al	28	HIS

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Mol	Chain	Res	Type
76	Am	5	HIS
76	Am	13	GLN
76	Am	36	GLN
77	An	113	GLN
78	Ao	54	HIS
78	Ao	103	ASN
79	Ap	11	GLN
79	Ap	24	HIS
79	Ap	80	GLN
79	Ap	86	GLN
79	Ap	97	GLN
79	Ap	142	GLN
80	Aq	31	ASN
80	Aq	56	HIS
82	As	12	GLN
84	Au	2	GLN
84	Au	35	ASN
85	Av	90	GLN
85	Av	91	ASN
85	Av	120	HIS
86	Aw	16	HIS
86	Aw	31	HIS
87	Ax	19	GLN
87	Ax	85	ASN
88	Ay	112	ASN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	B5	3752/4808 (78%)	462 (12%)	3 (0%)
2	B7	119/120 (99%)	6 (5%)	0
3	B8	155/158 (98%)	20 (12%)	0
54	A2	1764/1870 (94%)	228 (12%)	0
62	AT	75/76 (98%)	11 (14%)	0
All	All	5865/7032 (83%)	727 (12%)	3 (0%)

All (727) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	B5	3	C
1	B5	39	A

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Mol	Chain	Res	Type
1	B5	42	A
1	B5	58	G
1	B5	59	A
1	B5	64	A
1	B5	65	A
1	B5	85	G
1	B5	91	G
1	B5	98	A
1	B5	109	G
1	B5	110	C
1	B5	119	G
1	B5	127	G
1	B5	134	G
1	B5	135	G
1	B5	136	U
1	B5	144	G
1	B5	151	G
1	B5	159	C
1	B5	184	U
1	B5	187	U
1	B5	188	G
1	B5	200	U
1	B5	201	C
1	B5	209	U
1	B5	218	A
1	B5	219	G
1	B5	233	U
1	B5	234	G
1	B5	266	C
1	B5	297	U
1	B5	309	C
1	B5	315	G
1	B5	316	U
1	B5	326	C
1	B5	334	A
1	B5	340	C
1	B5	363	A
1	B5	386	A
1	B5	387	G
1	B5	409	G
1	B5	412	G
1	B5	413	G

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Mol	Chain	Res	Type
1	B5	440	U
1	B5	446	C
1	B5	449	C
1	B5	450	G
1	B5	452	A
1	B5	453	G
1	B5	454	U
1	B5	463	A
1	B5	467	U
1	B5	468	U
1	B5	482	U
1	B5	483	G
1	B5	484	G
1	B5	485	U
1	B5	486	C
1	B5	488	G
1	B5	493	U
1	B5	497	G
1	B5	499	C
1	B5	502	U
1	B5	503	C
1	B5	504	U
1	B5	505	C
1	B5	506	G
1	B5	515	U
1	B5	516	U
1	B5	517	C
1	B5	628	U
1	B5	634	C
1	B5	635	G
1	B5	660	G
1	B5	661	A
1	B5	691	G
1	B5	698	C
1	B5	723	G
1	B5	724	G
1	B5	725	G
1	B5	732	C
1	B5	734	G
1	B5	739	G
1	B5	758	C
1	B5	759	G

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Mol	Chain	Res	Type
1	B5	760	C
1	B5	790	G
1	B5	791	C
1	B5	792	G
1	B5	795	A
1	B5	797	C
1	B5	798	C
1	B5	799	C
1	B5	803	C
1	B5	810	U
1	B5	812	A
1	B5	814	A
1	B5	815	G
1	B5	824	C
1	B5	825	G
1	B5	831	A
1	B5	832	G
1	B5	833	C
1	B5	834	A
1	B5	835	G
1	B5	843	A
1	B5	844	A
1	B5	845	U
1	B5	846	C
1	B5	856	A
1	B5	859	G
1	B5	860	A
1	B5	861	G
1	B5	866	A
1	B5	867	C
1	B5	868	C
1	B5	870	G
1	B5	884	U
1	B5	983	G
1	B5	985	G
1	B5	987	C
1	B5	1072	C
1	B5	1073	C
1	B5	1074	C
1	B5	1090	U
1	B5	1091	G
1	B5	1102	G

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Mol	Chain	Res	Type
1	B5	1105	C
1	B5	1106	U
1	B5	1124	A
1	B5	1133	C
1	B5	1202	C
1	B5	1214	A
1	B5	1215	G
1	B5	1216	C
1	B5	1217	G
1	B5	1219	G
1	B5	1221	G
1	B5	1228	G
1	B5	1231	G
1	B5	1238	A
1	B5	1239	U
1	B5	1240	G
1	B5	1246	U
1	B5	1247	A
1	B5	1270	A2M
1	B5	1298	A
1	B5	1299	G
1	B5	1303	G
1	B5	1309	C
1	B5	1310	G
1	B5	1323	C
1	B5	1325	U
1	B5	1331	A
1	B5	1341	A
1	B5	1351	G
1	B5	1362	C
1	B5	1367	G
1	B5	1375	A
1	B5	1391	C
1	B5	1393	C
1	B5	1401	C
1	B5	1452	A
1	B5	1453	G
1	B5	1457	G
1	B5	1459	G
1	B5	1489	A2M
1	B5	1502	A
1	B5	1519	A

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Mol	Chain	Res	Type
1	B5	1521	C
1	B5	1533	U
1	B5	1546	U
1	B5	1551	U
1	B5	1568	A
1	B5	1579	G
1	B5	1580	OMG
1	B5	1586	A
1	B5	1588	G
1	B5	1589	A
1	B5	1592	A
1	B5	1593	A
1	B5	1596	G
1	B5	1597	A
1	B5	1609	G
1	B5	1616	C
1	B5	1631	C
1	B5	1632	PSU
1	B5	1653	C
1	B5	1657	C
1	B5	1658	C
1	B5	1704	A
1	B5	1705	A
1	B5	1726	A
1	B5	1743	A
1	B5	1754	G
1	B5	1774	G
1	B5	1775	G
1	B5	1776	A
1	B5	1781	G
1	B5	1794	G
1	B5	1808	G
1	B5	1836	A
1	B5	1857	U
1	B5	1859	C
1	B5	1860	C
1	B5	1861	G
1	B5	1870	C
1	B5	1871	A
1	B5	1879	G
1	B5	1887	G
1	B5	1898	U

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Mol	Chain	Res	Type
1	B5	1899	A
1	B5	1900	G
1	B5	1914	G
1	B5	1922	A
1	B5	1923	A
1	B5	1924	G
1	B5	1926	C
1	B5	1936	U
1	B5	1942	G
1	B5	1943	U
1	B5	1963	G
1	B5	1965	A
1	B5	1973	G
1	B5	1985	G
1	B5	1987	U
1	B5	1991	G
1	B5	1994	G
1	B5	1995	G
1	B5	2008	A
1	B5	2023	U
1	B5	2032	G
1	B5	2034	A
1	B5	2037	G
1	B5	2041	G
1	B5	2044	A
1	B5	2046	A
1	B5	2047	G
1	B5	2132	C
1	B5	2143	A
1	B5	2144	G
1	B5	2149	G
1	B5	2156	A
1	B5	2174	G
1	B5	2191	G
1	B5	2194	OMC
1	B5	2203	A
1	B5	2207	OMG
1	B5	2238	A
1	B5	2251	U
1	B5	2252	U
1	B5	2253	C
1	B5	2264	G

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Mol	Chain	Res	Type
1	B5	2268	U
1	B5	2269	U
1	B5	2312	C
1	B5	2313	C
1	B5	2314	G
1	B5	2329	G
1	B5	2332	C
1	B5	2333	U
1	B5	2349	G
1	B5	2356	A
1	B5	2372	A
1	B5	2380	A
1	B5	2387	G
1	B5	2388	U
1	B5	2390	G
1	B5	2409	G
1	B5	2430	A
1	B5	2432	C
1	B5	2444	A
1	B5	2470	C
1	B5	2496	C
1	B5	2503	A
1	B5	2512	C
1	B5	2530	U
1	B5	2537	G
1	B5	2538	A
1	B5	2539	A
1	B5	2549	G
1	B5	2550	U
1	B5	2551	U
1	B5	2552	C
1	B5	2554	G
1	B5	2578	G
1	B5	2586	A
1	B5	2606	U
1	B5	2612	U
1	B5	2630	A2M
1	B5	2631	U
1	B5	2633	U
1	B5	2641	A
1	B5	2657	C
1	B5	2669	U

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Mol	Chain	Res	Type
1	B5	2670	G
1	B5	2672	U
1	B5	2698	G
1	B5	2699	C
1	B5	2745	G
1	B5	3329	G
1	B5	3350	C
1	B5	3358	G
1	B5	3362	A
1	B5	3367	A
1	B5	3378	A
1	B5	3380	A
1	B5	3385	A
1	B5	3394	A
1	B5	3396	G
1	B5	3428	C
1	B5	3443	A
1	B5	3444	A
1	B5	3485	G
1	B5	3492	A2M
1	B5	3493	C
1	B5	3498	A
1	B5	3508	G
1	B5	3509	G
1	B5	3516	A
1	B5	3523	C
1	B5	3543	G
1	B5	3546	U
1	B5	3549	A
1	B5	3551	G
1	B5	3570	U
1	B5	3572	U
1	B5	3609	A
1	B5	3610	C
1	B5	3611	G
1	B5	3629	G
1	B5	3633	A
1	B5	3638	A
1	B5	3639	G
1	B5	3640	A
1	B5	3647	U
1	B5	3670	G

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Mol	Chain	Res	Type
1	B5	3671	G
1	B5	3688	G
1	B5	3689	U
1	B5	3804	G
1	B5	3812	G
1	B5	3823	G
1	B5	3824	C
1	B5	3825	G
1	B5	3832	G
1	B5	3833	A
1	B5	3834	G
1	B5	3847	C
1	B5	3849	G
1	B5	3850	G
1	B5	3855	A
1	B5	3869	G
1	B5	3875	C
1	B5	3891	C
1	B5	3892	G
1	B5	3904	C
1	B5	3916	A
1	B5	3929	G
1	B5	3930	G
1	B5	3937	G
1	B5	3949	A
1	B5	3975	U
1	B5	3979	A
1	B5	3997	A
1	B5	4000	G
1	B5	4012	G
1	B5	4014	A
1	B5	4017	A
1	B5	4019	A
1	B5	4027	A
1	B5	4051	G
1	B5	4052	OMU
1	B5	4076	G
1	B5	4096	C
1	B5	4100	U
1	B5	4119	G
1	B5	4123	G
1	B5	4124	A

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Mol	Chain	Res	Type
1	B5	4133	C
1	B5	4140	A
1	B5	4168	A
1	B5	4183	U
1	B5	4210	A
1	B5	4212	C
1	B5	4221	G
1	B5	4258	U
1	B5	4259	A
1	B5	4265	C
1	B5	4268	G
1	B5	4270	G
1	B5	4271	C
1	B5	4294	A
1	B5	4306	C
1	B5	4313	G
1	B5	4321	G
1	B5	4327	G
1	B5	4330	A
1	B5	4336	A2M
1	B5	4370	A
1	B5	4372	A
1	B5	4373	U
1	B5	4381	A
1	B5	4382	PSU
1	B5	4416	C
1	B5	4418	A
1	B5	4437	A
1	B5	4440	G
1	B5	4446	A
1	B5	4454	A
1	B5	4455	U
1	B5	4465	G
1	B5	4475	A
1	B5	4476	C
1	B5	4477	G
1	B5	4478	G
1	B5	4486	G
1	B5	4487	A
1	B5	4488	A
1	B5	4489	G
1	B5	4490	G

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Mol	Chain	Res	Type
1	B5	4492	G
1	B5	4498	G
1	B5	4501	G
1	B5	4504	C
1	B5	4506	C
1	B5	4508	G
1	B5	4512	G
1	B5	4518	C
1	B5	4609	G
1	B5	4610	C
1	B5	4614	G
1	B5	4621	U
1	B5	4622	C
1	B5	4634	U
1	B5	4638	G
1	B5	4639	C
1	B5	4640	G
1	B5	4644	C
1	B5	4645	C
1	B5	4646	G
1	B5	4649	A
1	B5	4651	G
1	B5	4658	G
1	B5	4665	C
1	B5	4680	G
1	B5	4684	G
1	B5	4690	G
1	B5	4705	A
1	B5	4715	U
1	B5	4728	U
1	B5	4729	C
1	B5	4753	A
1	B5	4756	G
1	B5	4761	U
1	B5	4762	C
1	B5	4763	C
1	B5	4780	G
1	B5	4789	C
1	B5	4801	G
1	B5	4808	U
2	B7	7	G
2	B7	53	U

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Mol	Chain	Res	Type
2	B7	54	A
2	B7	64	G
2	B7	110	G
2	B7	120	U
3	B8	3	A
3	B8	4	C
3	B8	23	C
3	B8	34	U
3	B8	35	C
3	B8	39	G
3	B8	59	A
3	B8	60	G
3	B8	62	A
3	B8	63	U
3	B8	81	C
3	B8	84	A
3	B8	87	G
3	B8	94	G
3	B8	103	A
3	B8	105	C
3	B8	110	U
3	B8	114	G
3	B8	150	C
3	B8	156	U
54	A2	3	C
54	A2	4	C
54	A2	17	C
54	A2	26	U
54	A2	33	G
54	A2	41	G
54	A2	46	A
54	A2	56	G
54	A2	58	C
54	A2	67	C
54	A2	68	A
54	A2	73	C
54	A2	74	G
54	A2	75	G
54	A2	76	U
54	A2	77	A
54	A2	79	A
54	A2	103	A

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Mol	Chain	Res	Type
54	A2	113	G
54	A2	114	G
54	A2	115	U
54	A2	126	G
54	A2	130	G
54	A2	143	U
54	A2	147	A
54	A2	155	G
54	A2	163	U
54	A2	168	C
54	A2	178	C
54	A2	180	G
54	A2	184	G
54	A2	188	C
54	A2	192	C
54	A2	226	A
54	A2	282	C
54	A2	295	U
54	A2	306	U
54	A2	310	G
54	A2	313	G
54	A2	320	C
54	A2	324	C
54	A2	325	U
54	A2	326	C
54	A2	327	C
54	A2	328	G
54	A2	336	G
54	A2	348	G
54	A2	363	C
54	A2	365	A
54	A2	370	C
54	A2	386	G
54	A2	387	C
54	A2	401	C
54	A2	410	C
54	A2	422	G
54	A2	439	G
54	A2	449	A
54	A2	451	C
54	A2	465	A
54	A2	466	A

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Mol	Chain	Res	Type
54	A2	472	G
54	A2	473	C
54	A2	474	A
54	A2	475	G
54	A2	483	G
54	A2	488	U
54	A2	493	C
54	A2	502	C
54	A2	509	A
54	A2	513	A2M
54	A2	526	A
54	A2	548	G
54	A2	549	C
54	A2	565	A
54	A2	569	C
54	A2	584	A
54	A2	588	A
54	A2	590	G
54	A2	592	U
54	A2	607	G
54	A2	609	C
54	A2	615	C
54	A2	629	A
54	A2	630	A
54	A2	631	U
54	A2	632	U
54	A2	633	C
54	A2	644	A
54	A2	645	OMG
54	A2	656	A
54	A2	661	C
54	A2	669	A2M
54	A2	670	A
54	A2	672	A
54	A2	673	A
54	A2	734	C
54	A2	747	C
54	A2	748	U
54	A2	750	U
54	A2	754	C
54	A2	755	G
54	A2	756	C

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Mol	Chain	Res	Type
54	A2	799	G
54	A2	812	A
54	A2	822	G
54	A2	823	PSU
54	A2	831	A
54	A2	832	G
54	A2	837	G
54	A2	838	A
54	A2	839	G
54	A2	840	C
54	A2	841	C
54	A2	842	G
54	A2	848	A
54	A2	871	A
54	A2	872	U
54	A2	873	A
54	A2	874	G
54	A2	875	G
54	A2	879	G
54	A2	886	U
54	A2	892	G
54	A2	910	G
54	A2	914	A
54	A2	915	U
54	A2	921	A
54	A2	923	A
54	A2	934	G
54	A2	944	U
54	A2	956	A
54	A2	972	G
54	A2	991	A
54	A2	993	A
54	A2	1000	G
54	A2	1003	U
54	A2	1024	A
54	A2	1061	A
54	A2	1062	U
54	A2	1063	A
54	A2	1084	A
54	A2	1086	C
54	A2	1116	U
54	A2	1117	C

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Mol	Chain	Res	Type
54	A2	1118	C
54	A2	1119	C
54	A2	1122	G
54	A2	1145	A
54	A2	1154	C
54	A2	1155	U
54	A2	1156	U
54	A2	1167	G
54	A2	1196	A
54	A2	1208	G
54	A2	1216	C
54	A2	1225	G
54	A2	1243	U
54	A2	1252	A
54	A2	1254	A
54	A2	1257	G
54	A2	1258	G
54	A2	1260	A
54	A2	1272	C
54	A2	1275	G
54	A2	1276	G
54	A2	1303	G
54	A2	1304	C
54	A2	1343	U
54	A2	1349	G
54	A2	1359	U
54	A2	1372	U
54	A2	1373	U
54	A2	1379	A
54	A2	1398	U
54	A2	1403	A
54	A2	1405	U
54	A2	1406	A
54	A2	1407	G
54	A2	1419	C
54	A2	1420	C
54	A2	1422	A
54	A2	1424	C
54	A2	1425	G
54	A2	1436	C
54	A2	1447	A
54	A2	1448	OMG

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Mol	Chain	Res	Type
54	A2	1449	A
54	A2	1455	A
54	A2	1456	A
54	A2	1463	U
54	A2	1464	U
54	A2	1481	A
54	A2	1490	A
54	A2	1491	OMG
54	A2	1498	G
54	A2	1510	U
54	A2	1534	A
54	A2	1581	A
54	A2	1586	U
54	A2	1589	A
54	A2	1602	A
54	A2	1618	G
54	A2	1622	U
54	A2	1624	A
54	A2	1647	C
54	A2	1655	G
54	A2	1666	G
54	A2	1681	G
54	A2	1699	C
54	A2	1700	A
54	A2	1722	U
54	A2	1723	G
54	A2	1749	G
54	A2	1768	C
54	A2	1781	G
54	A2	1783	G
54	A2	1784	C
54	A2	1785	G
54	A2	1830	G
54	A2	1836	A
54	A2	1837	G
54	A2	1839	U
54	A2	1850	G
54	A2	1852	MA6
54	A2	1862	G
54	A2	1863	G
54	A2	1864	A
54	A2	1866	C

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Mol	Chain	Res	Type
62	AT	16	U
62	AT	17	G
62	AT	18	G
62	AT	20	U
62	AT	22	U
62	AT	23	C
62	AT	46	G
62	AT	47	U
62	AT	48	C
62	AT	74	C
62	AT	76	A

All (3) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	B5	1588	G
1	B5	4372	A
1	B5	4445	U

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
1	OMU	B5	3657	1	19,22,23	1.21	2 (10%)	26,31,34	1.73	5 (19%)
1	PSU	B5	1632	1	18,21,22	1.35	2 (11%)	22,30,33	1.88	4 (18%)
1	A2M	B5	3450	1	18,25,26	1.03	1 (5%)	18,36,39	1.16	2 (11%)
62	PSU	AT	55	62	18,21,22	1.33	2 (11%)	22,30,33	1.85	3 (13%)
54	OMU	A2	116	54	19,22,23	1.19	2 (10%)	26,31,34	1.70	4 (15%)
5	HIC	BB	245	5	8,11,12	0.88	0	6,14,16	0.85	0
1	A2M	B5	4269	92,1	18,25,26	0.61	0	18,36,39	0.84	1 (5%)
4	V5N	BA	216	4	4,11,12	0.77	0	5,14,16	1.53	1 (20%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
54	PSU	A2	1644	92,54	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
1	OMG	B5	4245	1	18,26,27	0.93	1 (5%)	19,38,41	1.06	2 (10%)
1	OMU	B5	4052	1	19,22,23	1.22	3 (15%)	26,31,34	1.72	4 (15%)
54	4AC	A2	1843	54	21,24,25	1.11	2 (9%)	29,34,37	1.28	3 (10%)
1	PSU	B5	4419	1	18,21,22	0.88	1 (5%)	22,30,33	0.67	0
54	PSU	A2	36	54	18,21,22	1.33	2 (11%)	22,30,33	1.92	3 (13%)
1	OMC	B5	3573	1	19,22,23	0.82	0	26,31,34	0.84	1 (3%)
1	PSU	B5	3576	1	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
1	A2M	B5	3557	1	18,25,26	1.01	1 (5%)	18,36,39	1.21	2 (11%)
1	OMC	B5	3601	1	19,22,23	0.81	0	26,31,34	0.80	0
1	PSU	B5	4039	1	18,21,22	1.34	2 (11%)	22,30,33	1.90	3 (13%)
1	PSU	B5	4045	1	18,21,22	1.35	2 (11%)	22,30,33	1.86	3 (13%)
1	OMG	B5	4369	1	18,26,27	1.00	2 (11%)	19,38,41	0.74	0
1	PSU	B5	4166	1	18,21,22	1.37	2 (11%)	22,30,33	1.84	3 (13%)
1	OMG	B5	4240	1	18,26,27	0.94	1 (5%)	19,38,41	1.07	2 (10%)
1	OMG	B5	3476	1	18,26,27	0.94	1 (5%)	19,38,41	1.08	2 (10%)
54	OMU	A2	121	54	19,22,23	1.22	3 (15%)	26,31,34	1.71	4 (15%)
1	OMG	B5	1260	1	18,26,27	0.95	1 (5%)	19,38,41	1.10	2 (10%)
1	A2M	B5	4336	1	18,25,26	1.02	1 (5%)	18,36,39	1.22	2 (11%)
1	OMU	B5	2680	1	19,22,23	1.22	2 (10%)	26,31,34	1.71	4 (15%)
54	PSU	A2	407	54	18,21,22	1.35	2 (11%)	22,30,33	1.89	3 (13%)
54	OMU	A2	1289	54	19,22,23	0.20	0	26,31,34	0.35	0
54	OMG	A2	1491	92,54	18,26,27	0.94	1 (5%)	19,38,41	1.07	2 (10%)
1	OMG	B5	3676	1	18,26,27	0.93	1 (5%)	19,38,41	1.09	2 (10%)
1	OMU	B5	4366	1	19,22,23	1.21	2 (10%)	26,31,34	1.72	5 (19%)
54	A2M	A2	1384	54	18,25,26	1.04	1 (5%)	18,36,39	1.21	2 (11%)
54	A2M	A2	1679	54	18,25,26	1.02	1 (5%)	18,36,39	1.29	2 (11%)
1	A2M	B5	2658	92,1	18,25,26	1.02	1 (5%)	18,36,39	1.18	2 (11%)
54	OMU	A2	1443	92,54	19,22,23	1.25	3 (15%)	26,31,34	1.70	5 (19%)
54	A2M	A2	591	54	18,25,26	1.03	1 (5%)	18,36,39	1.25	2 (11%)
3	PSU	B8	69	3	18,21,22	1.34	2 (11%)	22,30,33	1.87	3 (13%)
54	OMU	A2	355	54	19,22,23	1.22	2 (10%)	26,31,34	1.72	4 (15%)
1	PSU	B5	4177	1	18,21,22	1.35	2 (11%)	22,30,33	1.90	3 (13%)
54	OMG	A2	684	54	18,26,27	0.92	1 (5%)	19,38,41	1.09	2 (10%)
43	MLZ	Bo	53	43	8,9,10	0.49	0	4,9,11	0.11	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
54	PSU	A2	967	54	18,21,22	1.36	2 (11%)	22,30,33	1.87	3 (13%)
54	PSU	A2	1626	54	18,21,22	1.36	2 (11%)	22,30,33	1.89	3 (13%)
1	PSU	B5	1799	1	18,21,22	1.35	2 (11%)	22,30,33	1.91	3 (13%)
1	OMU	B5	2258	1	19,22,23	1.23	3 (15%)	26,31,34	1.68	4 (15%)
54	OMG	A2	868	54	18,26,27	0.93	1 (5%)	19,38,41	1.07	2 (10%)
1	PSU	B5	1801	1	18,21,22	1.34	2 (11%)	22,30,33	1.91	3 (13%)
1	PSU	B5	3462	1	18,21,22	1.34	2 (11%)	22,30,33	1.85	3 (13%)
1	OMG	B5	3524	1	18,26,27	0.94	1 (5%)	19,38,41	1.07	2 (10%)
54	OMU	A2	1327	92,54	19,22,23	1.18	2 (10%)	26,31,34	1.71	5 (19%)
1	PSU	B5	3652	92,1	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
30	V5N	Ba	39	30	4,11,12	0.76	0	5,14,16	1.48	1 (20%)
54	PSU	A2	610	54	18,21,22	1.34	2 (11%)	22,30,33	1.89	3 (13%)
1	OMC	B5	3540	1	19,22,23	0.81	0	26,31,34	0.80	0
54	PSU	A2	682	54	18,21,22	1.34	2 (11%)	22,30,33	1.90	3 (13%)
82	NMM	As	67	82	9,11,12	0.59	0	6,12,14	0.34	0
54	PSU	A2	1239	54	18,21,22	1.36	2 (11%)	22,30,33	1.86	3 (13%)
1	UY1	B5	3550	1	19,22,23	1.39	3 (15%)	22,31,34	1.87	5 (22%)
1	6MZ	B5	3966	1	18,25,26	0.89	1 (5%)	16,36,39	1.98	4 (25%)
1	A2M	B5	2206	92,1	18,25,26	1.02	1 (5%)	18,36,39	1.22	2 (11%)
1	OMC	B5	2265	92,1	19,22,23	0.83	0	26,31,34	0.86	1 (3%)
1	A2M	B5	3456	1	18,25,26	1.02	1 (5%)	18,36,39	1.22	2 (11%)
1	UR3	B5	4276	1	19,22,23	0.28	0	26,32,35	0.70	0
54	PSU	A2	867	54	18,21,22	1.35	2 (11%)	22,30,33	1.89	3 (13%)
54	A2M	A2	669	92,54	18,25,26	0.99	1 (5%)	18,36,39	1.32	2 (11%)
1	PSU	B5	1721	1	18,21,22	1.32	2 (11%)	22,30,33	1.88	3 (13%)
54	PSU	A2	1178	54	18,21,22	1.34	2 (11%)	22,30,33	1.90	3 (13%)
54	PSU	A2	1693	54	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
54	PSU	A2	864	54	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
1	PSU	B5	4740	1	18,21,22	1.36	2 (11%)	22,30,33	1.86	3 (13%)
1	PSU	B5	4149	1	18,21,22	1.33	2 (11%)	22,30,33	1.89	3 (13%)
54	A2M	A2	485	54	18,25,26	1.02	1 (5%)	18,36,39	1.25	2 (11%)
1	PSU	B5	2475	1	18,21,22	1.35	2 (11%)	22,30,33	1.89	3 (13%)
54	PSU	A2	109	54	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
54	PSU	A2	105	54	18,21,22	1.35	2 (11%)	22,30,33	1.88	3 (13%)
1	OMC	B5	1820	92,1	19,22,23	0.80	0	26,31,34	0.80	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
1	PSU	B5	3496	1	18,21,22	1.34	2 (11%)	22,30,33	1.86	3 (13%)
54	PSU	A2	823	54	18,21,22	1.37	2 (11%)	22,30,33	1.87	3 (13%)
1	PSU	B5	4107	1	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
86	HY3	Aw	62	86	6,8,9	6.44	4 (66%)	5,10,12	0.96	0
54	PSU	A2	1005	54	18,21,22	1.33	2 (11%)	22,30,33	1.90	3 (13%)
1	PSU	B5	3369	1	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)
1	PSU	B5	3371	1	18,21,22	1.35	2 (11%)	22,30,33	1.86	3 (13%)
1	PSU	B5	3466	1	18,21,22	1.35	2 (11%)	22,30,33	1.89	3 (13%)
1	OMG	B5	4364	1	18,26,27	0.93	1 (5%)	19,38,41	1.09	2 (10%)
1	PSU	B5	4058	1	18,21,22	1.34	2 (11%)	22,30,33	1.86	3 (13%)
1	PSU	B5	3616	1	18,21,22	1.33	2 (11%)	22,30,33	1.89	3 (13%)
54	A2M	A2	27	92,54	18,25,26	1.02	1 (5%)	18,36,39	1.19	2 (11%)
54	A2M	A2	469	54	18,25,26	1.05	1 (5%)	18,36,39	1.24	2 (11%)
1	OMG	B5	4116	1	18,26,27	0.92	1 (5%)	19,38,41	1.07	2 (10%)
1	OMG	B5	4383	1	18,26,27	0.93	1 (5%)	19,38,41	1.10	2 (10%)
54	PSU	A2	652	54	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)
1	PSU	B5	4042	1	18,21,22	1.33	2 (11%)	22,30,33	1.92	4 (18%)
1	OMG	B5	3974	1	18,26,27	0.90	1 (5%)	19,38,41	1.12	2 (10%)
54	OMG	A2	510	92,54	18,26,27	0.92	1 (5%)	19,38,41	1.09	2 (10%)
1	A2M	B5	400	1	18,25,26	1.02	1 (5%)	18,36,39	1.20	2 (11%)
1	A2M	B5	4317	1	18,25,26	1.02	1 (5%)	18,36,39	1.23	2 (11%)
1	A2M	B5	1270	1	18,25,26	0.99	1 (5%)	18,36,39	1.23	2 (11%)
54	PSU	A2	815	54	18,21,22	1.35	2 (11%)	22,30,33	1.86	3 (13%)
1	PSU	B5	3494	1	18,21,22	1.36	2 (11%)	22,30,33	1.89	3 (13%)
54	A2M	A2	159	54	18,25,26	1.03	1 (5%)	18,36,39	1.22	2 (11%)
1	OMC	B5	2208	92,1	19,22,23	0.81	0	26,31,34	0.84	0
1	PSU	B5	4278	1	18,21,22	0.86	1 (5%)	22,30,33	0.61	0
1	PSU	B5	4374	1	18,21,22	0.84	1 (5%)	22,30,33	0.57	0
1	PSU	B5	3502	1	18,21,22	1.33	2 (11%)	22,30,33	1.89	3 (13%)
1	PSU	B5	4382	1	18,21,22	1.34	2 (11%)	22,30,33	1.87	3 (13%)
3	PSU	B8	55	3	18,21,22	1.34	2 (11%)	22,30,33	1.90	3 (13%)
3	OMG	B8	75	3	18,26,27	0.94	1 (5%)	19,38,41	1.08	2 (10%)
54	PSU	A2	1245	54	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)
1	A2M	B5	398	1	18,25,26	1.02	1 (5%)	18,36,39	1.24	2 (11%)
54	6MZ	A2	1833	92,54	18,25,26	0.91	1 (5%)	16,36,39	1.94	4 (25%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
1	OMG	B5	3631	92,1	18,26,27	0.93	1 (5%)	19,38,41	1.10	2 (10%)
54	OMG	A2	645	54	18,26,27	0.93	1 (5%)	19,38,41	1.08	2 (10%)
54	PSU	A2	119	54	18,21,22	1.33	2 (11%)	22,30,33	1.88	3 (13%)
1	OMG	B5	3359	1	18,26,27	0.93	1 (5%)	19,38,41	1.09	2 (10%)
62	5MU	AT	54	62	19,22,23	1.40	5 (26%)	28,32,35	2.03	6 (21%)
54	PSU	A2	573	54	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)
54	PSU	A2	1082	54	18,21,22	1.33	2 (11%)	22,30,33	1.86	3 (13%)
54	PSU	A2	1175	54	18,21,22	1.32	2 (11%)	22,30,33	1.87	3 (13%)
54	OMC	A2	174	92,54	19,22,23	0.82	0	26,31,34	0.85	1 (3%)
54	PSU	A2	1348	54	18,21,22	1.32	2 (11%)	22,30,33	1.89	3 (13%)
54	A2M	A2	577	54	18,25,26	1.01	1 (5%)	18,36,39	1.21	2 (11%)
1	5MC	B5	3514	92,1	18,22,23	0.97	2 (11%)	26,32,35	1.16	3 (11%)
54	PSU	A2	687	54	18,21,22	1.36	2 (11%)	22,30,33	1.85	3 (13%)
1	PSU	B5	4203	1	18,21,22	1.36	2 (11%)	22,30,33	1.86	3 (13%)
1	OMG	B5	3942	62,1	18,26,27	0.94	1 (5%)	19,38,41	1.07	2 (10%)
54	OMC	A2	463	54	19,22,23	0.82	0	26,31,34	0.83	0
1	PSU	B5	3447	1	18,21,22	1.36	2 (11%)	22,30,33	1.86	3 (13%)
54	MA6	A2	1851	54	18,26,27	1.09	2 (11%)	19,38,41	2.00	3 (15%)
1	OMC	B5	2667	1	19,22,23	0.80	0	26,31,34	0.77	0
54	PSU	A2	34	54	18,21,22	1.34	2 (11%)	22,30,33	1.87	3 (13%)
1	OMC	B5	3433	1	19,22,23	0.79	0	26,31,34	0.77	0
1	PSU	B5	4169	1	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
54	OMG	A2	1448	54	18,26,27	1.00	2 (11%)	19,38,41	0.85	0
1	PSU	B5	1718	1	18,21,22	1.34	2 (11%)	22,30,33	1.87	3 (13%)
54	PSU	A2	1046	54	18,21,22	1.33	2 (11%)	22,30,33	1.90	3 (13%)
54	OMU	A2	429	54	19,22,23	1.20	3 (15%)	26,31,34	1.68	4 (15%)
1	A2M	B5	1489	92,1	18,25,26	0.99	1 (5%)	18,36,39	1.39	2 (11%)
1	A2M	B5	2630	92,1	18,25,26	0.99	1 (5%)	18,36,39	1.37	2 (11%)
1	A2M	B5	2244	92,1	18,25,26	1.02	1 (5%)	18,36,39	1.22	2 (11%)
54	OMG	A2	437	54	18,26,27	0.93	1 (5%)	19,38,41	1.09	2 (10%)
54	PSU	A2	1057	54	18,21,22	1.35	2 (11%)	22,30,33	1.88	3 (13%)
1	PSU	B5	2351	1	18,21,22	1.36	2 (11%)	22,30,33	1.87	3 (13%)
1	OMC	B5	1284	1	19,22,23	0.81	0	26,31,34	0.81	0
54	PSU	A2	210	54	18,21,22	1.35	2 (11%)	22,30,33	1.84	3 (13%)
1	PSU	B5	3585	92,1	18,21,22	1.37	2 (11%)	22,30,33	1.88	3 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
1	PSU	B5	4711	1	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)
1	PSU	B5	1638	1	18,21,22	1.35	2 (11%)	22,30,33	1.88	3 (13%)
54	A2M	A2	166	54	18,25,26	1.05	1 (5%)	18,36,39	1.27	2 (11%)
1	OMG	B5	1580	92,1	18,26,27	0.93	1 (5%)	19,38,41	1.09	2 (10%)
54	PSU	A2	816	54	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
1	PSU	B5	4246	1	18,21,22	1.34	2 (11%)	22,30,33	1.92	4 (18%)
1	PSU	B5	4435	1	18,21,22	1.34	2 (11%)	22,30,33	1.91	3 (13%)
1	PSU	B5	3583	1	18,21,22	1.36	2 (11%)	22,30,33	1.87	3 (13%)
1	PSU	B5	1537	1	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)
1	A2M	B5	3599	1	18,25,26	1.00	1 (5%)	18,36,39	1.25	2 (11%)
54	OMC	A2	518	54	19,22,23	0.82	0	26,31,34	0.84	1 (3%)
54	4AC	A2	1338	54	21,24,25	1.07	1 (4%)	29,34,37	1.18	3 (10%)
54	OMC	A2	1704	54	19,22,23	0.80	0	26,31,34	0.77	0
1	PSU	B5	4267	1	18,21,22	0.85	1 (5%)	22,30,33	0.69	0
54	PSU	A2	1446	54	18,21,22	1.36	2 (11%)	22,30,33	1.90	3 (13%)
1	PSU	B5	3554	1	18,21,22	1.35	2 (11%)	22,30,33	1.86	3 (13%)
1	OMG	B5	2719	1	18,26,27	0.93	1 (5%)	19,38,41	1.07	2 (10%)
54	PSU	A2	650	54	18,21,22	1.35	2 (11%)	22,30,33	1.89	3 (13%)
1	A2M	B5	1810	92,1	18,25,26	1.03	1 (5%)	18,36,39	1.23	2 (11%)
1	OMG	B5	4138	1	18,26,27	0.93	1 (5%)	19,38,41	1.09	2 (10%)
54	OMU	A2	1805	54	19,22,23	1.23	3 (15%)	26,31,34	1.70	5 (19%)
1	PSU	B5	4298	1	18,21,22	1.35	2 (11%)	22,30,33	1.91	3 (13%)
1	OMC	B5	3619	1	19,22,23	0.81	0	26,31,34	0.82	0
1	PSU	B5	4322	1	18,21,22	1.34	2 (11%)	22,30,33	1.87	3 (13%)
54	A2M	A2	513	54	18,25,26	1.04	1 (5%)	18,36,39	1.20	2 (11%)
54	PSU	A2	93	54	18,21,22	1.35	2 (11%)	22,30,33	1.91	4 (18%)
1	OMC	B5	4202	1	19,22,23	0.82	0	26,31,34	0.85	0
1	A2M	B5	3517	1	18,25,26	0.97	1 (5%)	18,36,39	1.32	2 (11%)
1	PSU	B5	4749	1	18,21,22	1.34	2 (11%)	22,30,33	1.90	3 (13%)
54	OMU	A2	628	54	19,22,23	1.17	2 (10%)	26,31,34	1.71	5 (19%)
1	PSU	B5	1683	1	18,21,22	1.34	2 (11%)	22,30,33	1.91	3 (13%)
54	OMC	A2	1392	54	19,22,23	0.82	0	26,31,34	0.86	1 (3%)
1	1MA	B5	1266	92,1	16,25,26	1.58	2 (12%)	18,37,40	1.05	3 (16%)
1	PSU	B5	1720	1	18,21,22	1.34	2 (11%)	22,30,33	1.90	3 (13%)
1	OMC	B5	4282	92,1	19,22,23	0.83	0	26,31,34	0.86	1 (3%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
1	PSU	B5	4188	1	18,21,22	1.36	2 (11%)	22,30,33	1.87	3 (13%)
54	PSU	A2	1047	54	18,21,22	1.35	2 (11%)	22,30,33	1.89	3 (13%)
1	OMC	B5	2194	92,1	19,22,23	0.82	0	26,31,34	0.89	1 (3%)
54	G7M	A2	1640	62,54	20,26,27	2.99	7 (35%)	17,39,42	0.97	1 (5%)
54	PSU	A2	802	54	18,21,22	1.34	2 (11%)	22,30,33	1.86	3 (13%)
31	MLZ	Bb	5	31	8,9,10	0.48	0	4,9,11	0.17	0
1	OMU	B5	3973	1	19,22,23	1.23	3 (15%)	26,31,34	1.69	4 (15%)
1	PSU	B5	1491	1	18,21,22	1.36	2 (11%)	22,30,33	1.91	3 (13%)
1	OMU	B5	4244	1	19,22,23	1.21	2 (10%)	26,31,34	1.69	5 (19%)
1	A2M	B5	1479	1	18,25,26	1.01	1 (5%)	18,36,39	1.24	2 (11%)
54	B8N	A2	1249	54	24,29,30	1.31	3 (12%)	29,42,45	1.26	3 (10%)
1	PSU	B5	1731	1	18,21,22	1.35	2 (11%)	22,30,33	1.90	3 (13%)
1	PSU	B5	3490	1	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
1	PSU	B5	4217	1	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
1	PSU	B5	4099	1	18,21,22	1.35	2 (11%)	22,30,33	1.88	3 (13%)
1	OMC	B5	2647	1	19,22,23	0.81	0	26,31,34	0.82	0
1	5MC	B5	4193	1	18,22,23	0.94	2 (11%)	26,32,35	1.21	3 (11%)
54	OMG	A2	602	54	18,26,27	0.94	1 (5%)	19,38,41	1.07	2 (10%)
1	OMC	B5	2704	1	19,22,23	0.81	0	26,31,34	0.84	1 (3%)
1	OMG	B5	1477	1	18,26,27	0.94	1 (5%)	19,38,41	1.10	2 (10%)
1	PSU	B5	4325	1	18,21,22	1.33	2 (11%)	22,30,33	1.87	3 (13%)
1	PSU	B5	3500	1	18,21,22	1.35	2 (11%)	22,30,33	1.87	3 (13%)
54	OMU	A2	172	54	19,22,23	1.20	3 (15%)	26,31,34	1.72	5 (19%)
42	M3L	Bm	98	42	10,11,12	0.83	0	9,14,16	0.59	0
54	PSU	A2	1368	54	18,21,22	1.35	2 (11%)	22,30,33	1.91	3 (13%)
54	MA6	A2	1852	54	18,26,27	1.10	2 (11%)	19,38,41	1.93	3 (15%)
1	OMG	B5	2267	1	18,26,27	0.93	1 (5%)	19,38,41	1.07	2 (10%)
54	A2M	A2	99	92,54	18,25,26	1.04	1 (5%)	18,36,39	1.20	2 (11%)
1	A2M	B5	3562	1	18,25,26	1.03	1 (5%)	18,36,39	1.19	2 (11%)
1	A2M	B5	3492	1,54	18,25,26	1.00	1 (5%)	18,36,39	1.36	2 (11%)
1	PSU	B5	3427	1	18,21,22	1.34	2 (11%)	22,30,33	1.88	3 (13%)
54	PSU	A2	1233	54	18,21,22	1.36	2 (11%)	22,30,33	1.92	3 (13%)
54	A2M	A2	1032	54	18,25,26	1.01	1 (5%)	18,36,39	1.20	2 (11%)
54	OMG	A2	1329	54	18,26,27	0.93	1 (5%)	19,38,41	1.08	2 (10%)
1	OMG	B5	2207	1	18,26,27	0.93	1 (5%)	19,38,41	1.09	2 (10%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
54	PSU	A2	218	54	18,21,22	1.33	2 (11%)	22,30,33	1.87	3 (13%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	OMU	B5	3657	1	-	1/9/27/28	0/2/2/2
1	PSU	B5	1632	1	-	0/7/25/26	0/2/2/2
1	A2M	B5	3450	1	-	0/5/27/28	0/3/3/3
62	PSU	AT	55	62	-	0/7/25/26	0/2/2/2
54	OMU	A2	116	54	-	0/9/27/28	0/2/2/2
5	HIC	BB	245	5	-	2/5/6/8	0/1/1/1
1	A2M	B5	4269	92,1	-	0/5/27/28	0/3/3/3
4	V5N	BA	216	4	-	1/5/10/12	0/1/1/1
54	PSU	A2	1644	92,54	-	0/7/25/26	0/2/2/2
1	OMG	B5	4245	1	-	0/5/27/28	0/3/3/3
1	OMU	B5	4052	1	-	0/9/27/28	0/2/2/2
54	4AC	A2	1843	54	-	2/11/29/30	0/2/2/2
1	PSU	B5	4419	1	-	0/7/25/26	0/2/2/2
54	PSU	A2	36	54	-	0/7/25/26	0/2/2/2
1	OMC	B5	3573	1	-	0/9/27/28	0/2/2/2
1	PSU	B5	3576	1	-	1/7/25/26	0/2/2/2
1	A2M	B5	3557	1	-	0/5/27/28	0/3/3/3
1	OMC	B5	3601	1	-	0/9/27/28	0/2/2/2
1	PSU	B5	4039	1	-	0/7/25/26	0/2/2/2
1	PSU	B5	4045	1	-	0/7/25/26	0/2/2/2
1	OMG	B5	4369	1	-	0/5/27/28	0/3/3/3
1	PSU	B5	4166	1	-	0/7/25/26	0/2/2/2
1	OMG	B5	4240	1	-	0/5/27/28	0/3/3/3
1	OMG	B5	3476	1	-	1/5/27/28	0/3/3/3
54	OMU	A2	121	54	-	0/9/27/28	0/2/2/2
1	OMG	B5	1260	1	-	0/5/27/28	0/3/3/3
1	A2M	B5	4336	1	-	1/5/27/28	0/3/3/3
1	OMU	B5	2680	1	-	1/9/27/28	0/2/2/2
54	PSU	A2	407	54	-	0/7/25/26	0/2/2/2
54	OMU	A2	1289	54	-	1/9/27/28	0/2/2/2
54	OMG	A2	1491	92,54	-	0/5/27/28	0/3/3/3
1	OMG	B5	3676	1	-	0/5/27/28	0/3/3/3
1	OMU	B5	4366	1	-	0/9/27/28	0/2/2/2
54	A2M	A2	1384	54	-	0/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
54	A2M	A2	1679	54	-	0/5/27/28	0/3/3/3
1	A2M	B5	2658	92,1	-	0/5/27/28	0/3/3/3
54	OMU	A2	1443	92,54	-	1/9/27/28	0/2/2/2
54	A2M	A2	591	54	-	0/5/27/28	0/3/3/3
3	PSU	B8	69	3	-	0/7/25/26	0/2/2/2
54	OMU	A2	355	54	-	1/9/27/28	0/2/2/2
1	PSU	B5	4177	1	-	0/7/25/26	0/2/2/2
54	OMG	A2	684	54	-	2/5/27/28	0/3/3/3
43	MLZ	Bo	53	43	-	0/7/8/10	-
54	PSU	A2	967	54	-	0/7/25/26	0/2/2/2
54	PSU	A2	1626	54	-	0/7/25/26	0/2/2/2
1	PSU	B5	1799	1	-	0/7/25/26	0/2/2/2
1	OMU	B5	2258	1	-	0/9/27/28	0/2/2/2
54	OMG	A2	868	54	-	1/5/27/28	0/3/3/3
1	PSU	B5	1801	1	-	0/7/25/26	0/2/2/2
1	PSU	B5	3462	1	-	0/7/25/26	0/2/2/2
1	OMG	B5	3524	1	-	0/5/27/28	0/3/3/3
54	OMU	A2	1327	92,54	-	0/9/27/28	0/2/2/2
1	PSU	B5	3652	92,1	-	0/7/25/26	0/2/2/2
30	V5N	Ba	39	30	-	0/5/10/12	0/1/1/1
54	PSU	A2	610	54	-	0/7/25/26	0/2/2/2
1	OMC	B5	3540	1	-	0/9/27/28	0/2/2/2
54	PSU	A2	682	54	-	0/7/25/26	0/2/2/2
82	NMM	As	67	82	-	0/9/11/13	-
54	PSU	A2	1239	54	-	0/7/25/26	0/2/2/2
1	UY1	B5	3550	1	-	1/9/27/28	0/2/2/2
1	6MZ	B5	3966	1	-	0/5/27/28	0/3/3/3
1	A2M	B5	2206	92,1	-	0/5/27/28	0/3/3/3
1	OMC	B5	2265	92,1	-	0/9/27/28	0/2/2/2
1	A2M	B5	3456	1	-	0/5/27/28	0/3/3/3
1	UR3	B5	4276	1	-	0/7/25/26	0/2/2/2
54	PSU	A2	867	54	-	0/7/25/26	0/2/2/2
54	A2M	A2	669	92,54	-	2/5/27/28	0/3/3/3
1	PSU	B5	1721	1	-	0/7/25/26	0/2/2/2
54	PSU	A2	1178	54	-	0/7/25/26	0/2/2/2
54	PSU	A2	1693	54	-	0/7/25/26	0/2/2/2
54	PSU	A2	864	54	-	0/7/25/26	0/2/2/2
1	PSU	B5	4740	1	-	0/7/25/26	0/2/2/2
1	PSU	B5	4149	1	-	0/7/25/26	0/2/2/2
54	A2M	A2	485	54	-	0/5/27/28	0/3/3/3
1	PSU	B5	2475	1	-	0/7/25/26	0/2/2/2
54	PSU	A2	109	54	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
54	PSU	A2	105	54	-	0/7/25/26	0/2/2/2
1	OMC	B5	1820	92,1	-	1/9/27/28	0/2/2/2
1	PSU	B5	3496	1	-	0/7/25/26	0/2/2/2
54	PSU	A2	823	54	-	0/7/25/26	0/2/2/2
1	PSU	B5	4107	1	-	0/7/25/26	0/2/2/2
86	HY3	Aw	62	86	-	1/1/12/14	0/1/1/1
54	PSU	A2	1005	54	-	0/7/25/26	0/2/2/2
1	PSU	B5	3369	1	-	0/7/25/26	0/2/2/2
1	PSU	B5	3371	1	-	0/7/25/26	0/2/2/2
1	PSU	B5	3466	1	-	0/7/25/26	0/2/2/2
1	OMG	B5	4364	1	-	0/5/27/28	0/3/3/3
1	PSU	B5	4058	1	-	0/7/25/26	0/2/2/2
1	PSU	B5	3616	1	-	0/7/25/26	0/2/2/2
54	A2M	A2	27	92,54	-	1/5/27/28	0/3/3/3
54	A2M	A2	469	54	-	0/5/27/28	0/3/3/3
1	OMG	B5	4116	1	-	0/5/27/28	0/3/3/3
1	OMG	B5	4383	1	-	0/5/27/28	0/3/3/3
54	PSU	A2	652	54	-	0/7/25/26	0/2/2/2
1	PSU	B5	4042	1	-	0/7/25/26	0/2/2/2
1	OMG	B5	3974	1	-	0/5/27/28	0/3/3/3
54	OMG	A2	510	92,54	-	2/5/27/28	0/3/3/3
1	A2M	B5	400	1	-	0/5/27/28	0/3/3/3
1	A2M	B5	4317	1	-	0/5/27/28	0/3/3/3
1	A2M	B5	1270	1	-	0/5/27/28	0/3/3/3
54	PSU	A2	815	54	-	0/7/25/26	0/2/2/2
1	PSU	B5	3494	1	-	1/7/25/26	0/2/2/2
54	A2M	A2	159	54	-	1/5/27/28	0/3/3/3
1	OMC	B5	2208	92,1	-	0/9/27/28	0/2/2/2
1	PSU	B5	4278	1	-	0/7/25/26	0/2/2/2
1	PSU	B5	4374	1	-	0/7/25/26	0/2/2/2
1	PSU	B5	3502	1	-	0/7/25/26	0/2/2/2
1	PSU	B5	4382	1	-	4/7/25/26	0/2/2/2
3	PSU	B8	55	3	-	0/7/25/26	0/2/2/2
3	OMG	B8	75	3	-	0/5/27/28	0/3/3/3
54	PSU	A2	1245	54	-	0/7/25/26	0/2/2/2
1	A2M	B5	398	1	-	4/5/27/28	0/3/3/3
54	6MZ	A2	1833	92,54	-	0/5/27/28	0/3/3/3
1	OMG	B5	3631	92,1	-	2/5/27/28	0/3/3/3
54	OMG	A2	645	54	-	3/5/27/28	0/3/3/3
54	PSU	A2	119	54	-	0/7/25/26	0/2/2/2
1	OMG	B5	3359	1	-	0/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
62	5MU	AT	54	62	-	0/7/25/26	0/2/2/2
54	PSU	A2	573	54	-	0/7/25/26	0/2/2/2
54	PSU	A2	1082	54	-	1/7/25/26	0/2/2/2
54	PSU	A2	1175	54	-	0/7/25/26	0/2/2/2
54	OMC	A2	174	92,54	-	0/9/27/28	0/2/2/2
54	PSU	A2	1348	54	-	0/7/25/26	0/2/2/2
54	A2M	A2	577	54	-	0/5/27/28	0/3/3/3
1	5MC	B5	3514	92,1	-	0/7/25/26	0/2/2/2
54	PSU	A2	687	54	-	0/7/25/26	0/2/2/2
1	PSU	B5	4203	1	-	0/7/25/26	0/2/2/2
1	OMG	B5	3942	62,1	-	0/5/27/28	0/3/3/3
54	OMC	A2	463	54	-	0/9/27/28	0/2/2/2
1	PSU	B5	3447	1	-	0/7/25/26	0/2/2/2
54	MA6	A2	1851	54	-	0/7/29/30	0/3/3/3
1	OMC	B5	2667	1	-	1/9/27/28	0/2/2/2
54	PSU	A2	34	54	-	0/7/25/26	0/2/2/2
1	OMC	B5	3433	1	-	4/9/27/28	0/2/2/2
1	PSU	B5	4169	1	-	0/7/25/26	0/2/2/2
54	OMG	A2	1448	54	-	2/5/27/28	0/3/3/3
1	PSU	B5	1718	1	-	0/7/25/26	0/2/2/2
54	PSU	A2	1046	54	-	0/7/25/26	0/2/2/2
54	OMU	A2	429	54	-	4/9/27/28	0/2/2/2
1	A2M	B5	1489	92,1	-	2/5/27/28	0/3/3/3
1	A2M	B5	2630	92,1	-	0/5/27/28	0/3/3/3
1	A2M	B5	2244	92,1	-	0/5/27/28	0/3/3/3
54	OMG	A2	437	54	-	0/5/27/28	0/3/3/3
54	PSU	A2	1057	54	-	0/7/25/26	0/2/2/2
1	PSU	B5	2351	1	-	0/7/25/26	0/2/2/2
1	OMC	B5	1284	1	-	2/9/27/28	0/2/2/2
54	PSU	A2	210	54	-	0/7/25/26	0/2/2/2
1	PSU	B5	3585	92,1	-	0/7/25/26	0/2/2/2
1	PSU	B5	4711	1	-	0/7/25/26	0/2/2/2
1	PSU	B5	1638	1	-	0/7/25/26	0/2/2/2
54	A2M	A2	166	54	-	0/5/27/28	0/3/3/3
1	OMG	B5	1580	92,1	-	0/5/27/28	0/3/3/3
54	PSU	A2	816	54	-	0/7/25/26	0/2/2/2
1	PSU	B5	4246	1	-	3/7/25/26	0/2/2/2
1	PSU	B5	4435	1	-	0/7/25/26	0/2/2/2
1	PSU	B5	3583	1	-	0/7/25/26	0/2/2/2
1	PSU	B5	1537	1	-	0/7/25/26	0/2/2/2
1	A2M	B5	3599	1	-	0/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
54	OMC	A2	518	54	-	0/9/27/28	0/2/2/2
54	4AC	A2	1338	54	-	4/11/29/30	0/2/2/2
54	OMC	A2	1704	54	-	1/9/27/28	0/2/2/2
1	PSU	B5	4267	1	-	0/7/25/26	0/2/2/2
54	PSU	A2	1446	54	-	0/7/25/26	0/2/2/2
1	PSU	B5	3554	1	-	0/7/25/26	0/2/2/2
1	OMG	B5	2719	1	-	0/5/27/28	0/3/3/3
54	PSU	A2	650	54	-	0/7/25/26	0/2/2/2
1	A2M	B5	1810	92,1	-	1/5/27/28	0/3/3/3
1	OMG	B5	4138	1	-	0/5/27/28	0/3/3/3
54	OMU	A2	1805	54	-	0/9/27/28	0/2/2/2
1	PSU	B5	4298	1	-	0/7/25/26	0/2/2/2
1	OMC	B5	3619	1	-	2/9/27/28	0/2/2/2
1	PSU	B5	4322	1	-	0/7/25/26	0/2/2/2
54	A2M	A2	513	54	-	2/5/27/28	0/3/3/3
54	PSU	A2	93	54	-	0/7/25/26	0/2/2/2
1	OMC	B5	4202	1	-	0/9/27/28	0/2/2/2
1	A2M	B5	3517	1	-	2/5/27/28	0/3/3/3
1	PSU	B5	4749	1	-	0/7/25/26	0/2/2/2
54	OMU	A2	628	54	-	4/9/27/28	0/2/2/2
1	PSU	B5	1683	1	-	0/7/25/26	0/2/2/2
54	OMC	A2	1392	54	-	0/9/27/28	0/2/2/2
1	1MA	B5	1266	92,1	-	0/3/25/26	0/3/3/3
1	PSU	B5	1720	1	-	0/7/25/26	0/2/2/2
1	OMC	B5	4282	92,1	-	0/9/27/28	0/2/2/2
1	PSU	B5	4188	1	-	0/7/25/26	0/2/2/2
54	PSU	A2	1047	54	-	0/7/25/26	0/2/2/2
1	OMC	B5	2194	92,1	-	1/9/27/28	0/2/2/2
54	G7M	A2	1640	62,54	-	0/3/25/26	0/3/3/3
54	PSU	A2	802	54	-	0/7/25/26	0/2/2/2
31	MLZ	Bb	5	31	-	2/7/8/10	-
1	OMU	B5	3973	1	-	0/9/27/28	0/2/2/2
1	PSU	B5	1491	1	-	0/7/25/26	0/2/2/2
1	OMU	B5	4244	1	-	0/9/27/28	0/2/2/2
1	A2M	B5	1479	1	-	0/5/27/28	0/3/3/3
54	B8N	A2	1249	54	-	4/16/34/35	0/2/2/2
1	PSU	B5	1731	1	-	0/7/25/26	0/2/2/2
1	PSU	B5	3490	1	-	0/7/25/26	0/2/2/2
1	PSU	B5	4217	1	-	0/7/25/26	0/2/2/2
1	PSU	B5	4099	1	-	0/7/25/26	0/2/2/2
1	OMC	B5	2647	1	-	0/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	5MC	B5	4193	1	-	4/7/25/26	0/2/2/2
54	OMG	A2	602	54	-	0/5/27/28	0/3/3/3
1	OMC	B5	2704	1	-	0/9/27/28	0/2/2/2
1	OMG	B5	1477	1	-	0/5/27/28	0/3/3/3
1	PSU	B5	4325	1	-	0/7/25/26	0/2/2/2
1	PSU	B5	3500	1	-	0/7/25/26	0/2/2/2
54	OMU	A2	172	54	-	0/9/27/28	0/2/2/2
42	M3L	Bm	98	42	-	0/9/10/12	-
54	PSU	A2	1368	54	-	0/7/25/26	0/2/2/2
54	MA6	A2	1852	54	-	3/7/29/30	0/3/3/3
1	OMG	B5	2267	1	-	1/5/27/28	0/3/3/3
54	A2M	A2	99	92,54	-	0/5/27/28	0/3/3/3
1	A2M	B5	3562	1	-	0/5/27/28	0/3/3/3
1	A2M	B5	3492	1,54	-	1/5/27/28	0/3/3/3
1	PSU	B5	3427	1	-	0/7/25/26	0/2/2/2
54	PSU	A2	1233	54	-	0/7/25/26	0/2/2/2
54	A2M	A2	1032	54	-	1/5/27/28	0/3/3/3
54	OMG	A2	1329	54	-	0/5/27/28	0/3/3/3
1	OMG	B5	2207	1	-	2/5/27/28	0/3/3/3
54	PSU	A2	218	54	-	0/7/25/26	0/2/2/2

All (331) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
86	Aw	62	HY3	C4-C3	-11.18	1.33	1.52
86	Aw	62	HY3	C3-CA	10.32	1.65	1.55
54	A2	1640	G7M	C5-C4	7.43	1.54	1.39
54	A2	1640	G7M	O6-C6	7.27	1.38	1.23
1	B5	1266	1MA	C2-N3	4.88	1.34	1.29
54	A2	1640	G7M	C2-N2	4.45	1.44	1.34
54	A2	1640	G7M	C2-N1	3.83	1.47	1.37
1	B5	3550	UY1	C6-C5	3.62	1.39	1.35
54	A2	1640	G7M	C8-N9	3.52	1.39	1.33
54	A2	1851	MA6	C5-N7	3.36	1.51	1.39
1	B5	4419	PSU	C6-C5	3.36	1.39	1.35
1	B5	4278	PSU	C6-C5	3.35	1.39	1.35
54	A2	1852	MA6	C5-N7	3.31	1.51	1.39
1	B5	4267	PSU	C6-C5	3.28	1.39	1.35
54	A2	1640	G7M	C2-N3	3.27	1.41	1.33
1	B5	1266	1MA	C6-N6	3.26	1.35	1.27
1	B5	4374	PSU	C6-C5	3.24	1.39	1.35
54	A2	967	PSU	C6-C5	3.23	1.39	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
54	A2	1239	PSU	C6-C5	3.23	1.39	1.35
54	A2	210	PSU	C6-C5	3.22	1.39	1.35
54	A2	1626	PSU	C6-C5	3.21	1.39	1.35
1	B5	4166	PSU	C6-C5	3.21	1.39	1.35
54	A2	1640	G7M	C6-N1	3.20	1.42	1.37
54	A2	867	PSU	C6-C5	3.19	1.39	1.35
1	B5	1632	PSU	C6-C5	3.19	1.39	1.35
54	A2	1178	PSU	C6-C5	3.18	1.39	1.35
54	A2	1446	PSU	C6-C5	3.18	1.39	1.35
1	B5	4740	PSU	C6-C5	3.17	1.39	1.35
1	B5	1799	PSU	C6-C5	3.16	1.39	1.35
1	B5	3554	PSU	C6-C5	3.16	1.39	1.35
1	B5	3447	PSU	C6-C5	3.16	1.39	1.35
1	B5	3494	PSU	C6-C5	3.15	1.39	1.35
1	B5	4099	PSU	C6-C5	3.15	1.39	1.35
1	B5	4749	PSU	C6-C5	3.15	1.39	1.35
3	B8	69	PSU	C6-C5	3.15	1.39	1.35
1	B5	3490	PSU	C6-C5	3.15	1.39	1.35
1	B5	3466	PSU	C6-C5	3.14	1.39	1.35
54	A2	109	PSU	C6-C5	3.14	1.39	1.35
1	B5	1718	PSU	C6-C5	3.14	1.39	1.35
54	A2	687	PSU	C6-C5	3.14	1.39	1.35
1	B5	2351	PSU	C6-C5	3.14	1.39	1.35
62	AT	55	PSU	C6-C5	3.13	1.39	1.35
1	B5	4298	PSU	C6-C5	3.13	1.39	1.35
1	B5	4246	PSU	C6-C5	3.13	1.39	1.35
1	B5	3500	PSU	C6-C5	3.13	1.39	1.35
1	B5	4188	PSU	C6-C5	3.13	1.39	1.35
54	A2	652	PSU	C6-C5	3.12	1.39	1.35
54	A2	823	PSU	C6-C5	3.12	1.39	1.35
1	B5	4382	PSU	C6-C5	3.12	1.39	1.35
54	A2	1644	PSU	C6-C5	3.12	1.39	1.35
54	A2	1249	B8N	C4-N3	-3.12	1.34	1.40
54	A2	1047	PSU	C6-C5	3.12	1.39	1.35
54	A2	1057	PSU	C6-C5	3.12	1.39	1.35
1	B5	3462	PSU	C6-C5	3.11	1.38	1.35
54	A2	34	PSU	C6-C5	3.11	1.38	1.35
1	B5	1731	PSU	C6-C5	3.11	1.38	1.35
1	B5	2475	PSU	C6-C5	3.11	1.38	1.35
1	B5	4203	PSU	C6-C5	3.11	1.38	1.35
54	A2	1233	PSU	C6-C5	3.11	1.38	1.35
54	A2	1693	PSU	C6-C5	3.11	1.38	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B5	4177	PSU	C6-C5	3.10	1.38	1.35
1	B5	3371	PSU	C6-C5	3.10	1.38	1.35
54	A2	650	PSU	C6-C5	3.10	1.38	1.35
86	Aw	62	HY3	C4-C5	3.09	1.57	1.53
54	A2	93	PSU	C6-C5	3.09	1.38	1.35
1	B5	1491	PSU	C6-C5	3.09	1.38	1.35
1	B5	4107	PSU	C6-C5	3.09	1.38	1.35
54	A2	610	PSU	C6-C5	3.09	1.38	1.35
54	A2	105	PSU	C6-C5	3.09	1.38	1.35
1	B5	1638	PSU	C6-C5	3.08	1.38	1.35
54	A2	816	PSU	C6-C5	3.08	1.38	1.35
54	A2	1368	PSU	C6-C5	3.08	1.38	1.35
1	B5	1537	PSU	C6-C5	3.08	1.38	1.35
1	B5	3369	PSU	C6-C5	3.08	1.38	1.35
54	A2	1245	PSU	C6-C5	3.08	1.38	1.35
1	B5	4058	PSU	C6-C5	3.08	1.38	1.35
54	A2	864	PSU	C6-C5	3.08	1.38	1.35
54	A2	573	PSU	C6-C5	3.07	1.38	1.35
1	B5	1801	PSU	C6-C5	3.07	1.38	1.35
54	A2	1249	B8N	C6-C5	3.07	1.39	1.34
1	B5	4169	PSU	C6-C5	3.07	1.38	1.35
1	B5	4322	PSU	C6-C5	3.07	1.38	1.35
54	A2	1005	PSU	C6-C5	3.07	1.38	1.35
1	B5	3585	PSU	C6-C5	3.07	1.38	1.35
54	A2	218	PSU	C6-C5	3.07	1.38	1.35
1	B5	3652	PSU	C6-C5	3.07	1.38	1.35
1	B5	4711	PSU	C6-C5	3.07	1.38	1.35
1	B5	1720	PSU	C6-C5	3.06	1.38	1.35
3	B8	55	PSU	C6-C5	3.06	1.38	1.35
1	B5	3427	PSU	C6-C5	3.06	1.38	1.35
54	A2	815	PSU	C6-C5	3.06	1.38	1.35
54	A2	407	PSU	C6-C5	3.06	1.38	1.35
1	B5	4045	PSU	C6-C5	3.06	1.38	1.35
1	B5	3502	PSU	C6-C5	3.06	1.38	1.35
54	A2	119	PSU	C6-C5	3.05	1.38	1.35
1	B5	1683	PSU	C6-C5	3.04	1.38	1.35
54	A2	1082	PSU	C6-C5	3.04	1.38	1.35
1	B5	3576	PSU	C6-C5	3.04	1.38	1.35
1	B5	4039	PSU	C6-C5	3.04	1.38	1.35
1	B5	3583	PSU	C6-C5	3.04	1.38	1.35
1	B5	3496	PSU	C6-C5	3.04	1.38	1.35
54	A2	802	PSU	C6-C5	3.03	1.38	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B5	4217	PSU	C6-C5	3.03	1.38	1.35
1	B5	4435	PSU	C6-C5	3.02	1.38	1.35
54	A2	1046	PSU	C6-C5	3.01	1.38	1.35
54	A2	1175	PSU	C6-C5	3.01	1.38	1.35
1	B5	4042	PSU	C6-C5	3.00	1.38	1.35
54	A2	36	PSU	C6-C5	3.00	1.38	1.35
54	A2	1348	PSU	C6-C5	2.99	1.38	1.35
1	B5	1721	PSU	C6-C5	2.99	1.38	1.35
1	B5	4325	PSU	C6-C5	2.99	1.38	1.35
1	B5	3616	PSU	C6-C5	2.99	1.38	1.35
54	A2	682	PSU	C6-C5	2.98	1.38	1.35
1	B5	4149	PSU	C6-C5	2.97	1.38	1.35
54	A2	1843	4AC	C4-N4	-2.96	1.35	1.39
54	A2	1338	4AC	C4-N4	-2.87	1.35	1.39
1	B5	3550	UY1	C2-N1	2.82	1.40	1.36
54	A2	650	PSU	C4-N3	-2.74	1.33	1.38
1	B5	3371	PSU	C4-N3	-2.72	1.33	1.38
1	B5	1491	PSU	C4-N3	-2.71	1.33	1.38
54	A2	1233	PSU	C4-N3	-2.71	1.33	1.38
1	B5	1801	PSU	C4-N3	-2.71	1.33	1.38
54	A2	93	PSU	C4-N3	-2.71	1.33	1.38
1	B5	4740	PSU	C4-N3	-2.70	1.33	1.38
1	B5	2351	PSU	C4-N3	-2.70	1.33	1.38
1	B5	1731	PSU	C4-N3	-2.70	1.33	1.38
1	B5	3576	PSU	C4-N3	-2.70	1.33	1.38
54	A2	1446	PSU	C4-N3	-2.70	1.33	1.38
1	B5	4039	PSU	C4-N3	-2.70	1.33	1.38
1	B5	3583	PSU	C4-N3	-2.70	1.33	1.38
1	B5	4099	PSU	C4-N3	-2.70	1.33	1.38
1	B5	3514	5MC	C6-C5	2.70	1.39	1.34
1	B5	4042	PSU	C4-N3	-2.69	1.33	1.38
1	B5	4325	PSU	C4-N3	-2.69	1.33	1.38
54	A2	1644	PSU	C4-N3	-2.69	1.33	1.38
1	B5	3585	PSU	C4-N3	-2.69	1.33	1.38
54	A2	105	PSU	C4-N3	-2.69	1.33	1.38
54	A2	815	PSU	C4-N3	-2.69	1.33	1.38
1	B5	3616	PSU	C4-N3	-2.69	1.33	1.38
1	B5	4045	PSU	C4-N3	-2.68	1.33	1.38
54	A2	823	PSU	C4-N3	-2.68	1.33	1.38
1	B5	4058	PSU	C4-N3	-2.68	1.33	1.38
54	A2	1046	PSU	C4-N3	-2.68	1.33	1.38
54	A2	36	PSU	C4-N3	-2.68	1.33	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B5	1638	PSU	C4-N3	-2.68	1.33	1.38
1	B5	4298	PSU	C4-N3	-2.68	1.33	1.38
54	A2	218	PSU	C4-N3	-2.68	1.33	1.38
54	A2	802	PSU	C4-N3	-2.68	1.33	1.38
62	AT	54	5MU	C6-C5	2.68	1.39	1.34
54	A2	682	PSU	C4-N3	-2.68	1.33	1.38
54	A2	816	PSU	C4-N3	-2.68	1.33	1.38
3	B8	69	PSU	C4-N3	-2.67	1.33	1.38
1	B5	4435	PSU	C4-N3	-2.67	1.33	1.38
54	A2	407	PSU	C4-N3	-2.67	1.33	1.38
1	B5	3369	PSU	C4-N3	-2.67	1.33	1.38
54	A2	1082	PSU	C4-N3	-2.67	1.33	1.38
1	B5	3502	PSU	C4-N3	-2.67	1.33	1.38
1	B5	3500	PSU	C4-N3	-2.67	1.33	1.38
1	B5	4246	PSU	C4-N3	-2.67	1.33	1.38
1	B5	3427	PSU	C4-N3	-2.67	1.33	1.38
1	B5	4107	PSU	C4-N3	-2.67	1.33	1.38
54	A2	109	PSU	C4-N3	-2.67	1.33	1.38
1	B5	1537	PSU	C4-N3	-2.66	1.33	1.38
54	A2	1047	PSU	C4-N3	-2.66	1.33	1.38
54	A2	1368	PSU	C4-N3	-2.66	1.33	1.38
54	A2	652	PSU	C4-N3	-2.66	1.33	1.38
1	B5	3652	PSU	C4-N3	-2.66	1.33	1.38
1	B5	4169	PSU	C4-N3	-2.66	1.33	1.38
1	B5	4369	OMG	C5-C6	-2.66	1.42	1.47
1	B5	4177	PSU	C4-N3	-2.66	1.33	1.38
54	A2	1178	PSU	C4-N3	-2.66	1.33	1.38
1	B5	4749	PSU	C4-N3	-2.66	1.33	1.38
3	B8	55	PSU	C4-N3	-2.66	1.33	1.38
1	B5	1720	PSU	C4-N3	-2.66	1.33	1.38
1	B5	4217	PSU	C4-N3	-2.65	1.33	1.38
1	B5	4193	5MC	C6-C5	2.65	1.39	1.34
54	A2	610	PSU	C4-N3	-2.65	1.33	1.38
1	B5	1632	PSU	C4-N3	-2.65	1.33	1.38
1	B5	3496	PSU	C4-N3	-2.65	1.33	1.38
54	A2	1005	PSU	C4-N3	-2.65	1.33	1.38
1	B5	4149	PSU	C4-N3	-2.65	1.33	1.38
1	B5	1721	PSU	C4-N3	-2.65	1.33	1.38
54	A2	864	PSU	C4-N3	-2.65	1.33	1.38
54	A2	1175	PSU	C4-N3	-2.64	1.33	1.38
54	A2	867	PSU	C4-N3	-2.64	1.33	1.38
54	A2	1348	PSU	C4-N3	-2.64	1.33	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
54	A2	1057	PSU	C4-N3	-2.64	1.33	1.38
1	B5	2475	PSU	C4-N3	-2.64	1.33	1.38
1	B5	4188	PSU	C4-N3	-2.64	1.33	1.38
1	B5	3466	PSU	C4-N3	-2.64	1.33	1.38
1	B5	4382	PSU	C4-N3	-2.64	1.33	1.38
1	B5	1799	PSU	C4-N3	-2.64	1.33	1.38
54	A2	1693	PSU	C4-N3	-2.64	1.33	1.38
1	B5	3462	PSU	C4-N3	-2.63	1.33	1.38
54	A2	34	PSU	C4-N3	-2.63	1.33	1.38
1	B5	1718	PSU	C4-N3	-2.63	1.34	1.38
1	B5	4711	PSU	C4-N3	-2.63	1.34	1.38
1	B5	4203	PSU	C4-N3	-2.63	1.34	1.38
54	A2	1239	PSU	C4-N3	-2.63	1.34	1.38
54	A2	967	PSU	C4-N3	-2.63	1.34	1.38
1	B5	1683	PSU	C4-N3	-2.63	1.34	1.38
54	A2	119	PSU	C4-N3	-2.62	1.34	1.38
54	A2	1448	OMG	C5-C6	-2.62	1.42	1.47
1	B5	3494	PSU	C4-N3	-2.62	1.34	1.38
1	B5	3554	PSU	C4-N3	-2.62	1.34	1.38
54	A2	1245	PSU	C4-N3	-2.62	1.34	1.38
54	A2	1626	PSU	C4-N3	-2.62	1.34	1.38
1	B5	3490	PSU	C4-N3	-2.61	1.34	1.38
1	B5	4322	PSU	C4-N3	-2.61	1.34	1.38
54	A2	687	PSU	C4-N3	-2.61	1.34	1.38
1	B5	3447	PSU	C4-N3	-2.60	1.34	1.38
54	A2	573	PSU	C4-N3	-2.59	1.34	1.38
1	B5	4166	PSU	C4-N3	-2.59	1.34	1.38
62	AT	54	5MU	C4-N3	-2.59	1.34	1.38
62	AT	55	PSU	C4-N3	-2.59	1.34	1.38
1	B5	4052	OMU	C4-N3	-2.58	1.33	1.38
54	A2	210	PSU	C4-N3	-2.58	1.34	1.38
1	B5	3657	OMU	C4-N3	-2.56	1.34	1.38
1	B5	2258	OMU	C4-N3	-2.54	1.34	1.38
54	A2	1443	OMU	C4-N3	-2.53	1.34	1.38
54	A2	121	OMU	C4-N3	-2.53	1.34	1.38
54	A2	1491	OMG	C6-N1	-2.53	1.34	1.37
1	B5	2680	OMU	C4-N3	-2.53	1.34	1.38
1	B5	4244	OMU	C4-N3	-2.53	1.34	1.38
54	A2	591	A2M	C5-C4	2.52	1.47	1.40
1	B5	4138	OMG	C6-N1	-2.52	1.34	1.37
1	B5	3973	OMU	C4-N3	-2.52	1.34	1.38
54	A2	355	OMU	C4-N3	-2.51	1.34	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B5	2719	OMG	C6-N1	-2.50	1.34	1.37
1	B5	1260	OMG	C6-N1	-2.50	1.34	1.37
1	B5	3524	OMG	C6-N1	-2.49	1.34	1.37
1	B5	3359	OMG	C6-N1	-2.48	1.34	1.37
1	B5	4366	OMU	C4-N3	-2.48	1.34	1.38
1	B5	3942	OMG	C6-N1	-2.48	1.34	1.37
54	A2	159	A2M	C5-C4	2.47	1.47	1.40
54	A2	172	OMU	C4-N3	-2.47	1.34	1.38
54	A2	1805	OMU	C4-N3	-2.47	1.34	1.38
1	B5	2267	OMG	C6-N1	-2.47	1.34	1.37
1	B5	4240	OMG	C6-N1	-2.47	1.34	1.37
1	B5	3450	A2M	C5-C4	2.47	1.47	1.40
54	A2	469	A2M	C5-C4	2.47	1.47	1.40
1	B5	3492	A2M	C5-C4	2.47	1.47	1.40
1	B5	4245	OMG	C6-N1	-2.47	1.34	1.37
1	B5	3562	A2M	C5-C4	2.46	1.47	1.40
54	A2	628	OMU	C4-N3	-2.46	1.34	1.38
1	B5	3631	OMG	C6-N1	-2.46	1.34	1.37
54	A2	602	OMG	C6-N1	-2.46	1.34	1.37
54	A2	1249	B8N	C2-N3	-2.46	1.34	1.38
54	A2	1384	A2M	C5-C4	2.46	1.47	1.40
1	B5	3599	A2M	C5-C4	2.46	1.47	1.40
54	A2	645	OMG	C6-N1	-2.45	1.34	1.37
54	A2	1833	6MZ	C5-C4	2.45	1.47	1.40
1	B5	400	A2M	C5-C4	2.45	1.47	1.40
3	B8	75	OMG	C6-N1	-2.45	1.34	1.37
1	B5	4383	OMG	C6-N1	-2.45	1.34	1.37
54	A2	437	OMG	C6-N1	-2.45	1.34	1.37
1	B5	2658	A2M	C5-C4	2.45	1.47	1.40
54	A2	429	OMU	C4-N3	-2.45	1.34	1.38
54	A2	1327	OMU	C4-N3	-2.45	1.34	1.38
1	B5	1477	OMG	C6-N1	-2.45	1.34	1.37
1	B5	2207	OMG	C6-N1	-2.45	1.34	1.37
1	B5	4317	A2M	C5-C4	2.45	1.47	1.40
1	B5	1580	OMG	C6-N1	-2.45	1.34	1.37
1	B5	398	A2M	C5-C4	2.45	1.47	1.40
1	B5	1479	A2M	C5-C4	2.45	1.47	1.40
54	A2	485	A2M	C5-C4	2.44	1.47	1.40
54	A2	166	A2M	C5-C4	2.44	1.47	1.40
1	B5	2630	A2M	C5-C4	2.44	1.47	1.40
54	A2	513	A2M	C5-C4	2.44	1.47	1.40
1	B5	3456	A2M	C5-C4	2.44	1.47	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B5	1270	A2M	C5-C4	2.43	1.47	1.40
54	A2	99	A2M	C5-C4	2.43	1.47	1.40
1	B5	2206	A2M	C5-C4	2.43	1.47	1.40
54	A2	577	A2M	C5-C4	2.43	1.47	1.40
1	B5	4116	OMG	C6-N1	-2.43	1.34	1.37
54	A2	510	OMG	C6-N1	-2.42	1.34	1.37
1	B5	2244	A2M	C5-C4	2.42	1.47	1.40
1	B5	3476	OMG	C6-N1	-2.42	1.34	1.37
54	A2	669	A2M	C5-C4	2.42	1.47	1.40
1	B5	1810	A2M	C5-C4	2.42	1.47	1.40
54	A2	1032	A2M	C5-C4	2.41	1.47	1.40
1	B5	3966	6MZ	C5-C4	2.41	1.47	1.40
54	A2	116	OMU	C4-N3	-2.41	1.34	1.38
54	A2	684	OMG	C6-N1	-2.41	1.34	1.37
54	A2	27	A2M	C5-C4	2.41	1.47	1.40
54	A2	1679	A2M	C5-C4	2.41	1.47	1.40
1	B5	3557	A2M	C5-C4	2.40	1.47	1.40
1	B5	3974	OMG	C6-N1	-2.40	1.34	1.37
1	B5	4336	A2M	C5-C4	2.39	1.47	1.40
54	A2	868	OMG	C6-N1	-2.39	1.34	1.37
54	A2	1329	OMG	C6-N1	-2.38	1.34	1.37
1	B5	4364	OMG	C6-N1	-2.37	1.34	1.37
1	B5	1489	A2M	C5-C4	2.37	1.47	1.40
86	Aw	62	HY3	C5-N	2.36	1.57	1.49
1	B5	3517	A2M	C5-C4	2.36	1.47	1.40
1	B5	3676	OMG	C6-N1	-2.36	1.34	1.37
1	B5	3514	5MC	C6-N1	-2.35	1.34	1.38
62	AT	54	5MU	C4-C5	2.33	1.48	1.44
54	A2	1443	OMU	C2-N1	2.28	1.42	1.38
62	AT	54	5MU	C2-N1	2.25	1.42	1.38
62	AT	54	5MU	C6-N1	-2.22	1.34	1.38
54	A2	1805	OMU	C2-N1	2.21	1.42	1.38
1	B5	4193	5MC	C6-N1	-2.20	1.34	1.38
1	B5	3657	OMU	C2-N3	-2.19	1.34	1.38
1	B5	3550	UY1	C6-N1	-2.17	1.32	1.36
54	A2	1805	OMU	C2-N3	-2.16	1.34	1.38
54	A2	1843	4AC	C7-N4	-2.16	1.33	1.37
1	B5	3973	OMU	C2-N3	-2.15	1.34	1.38
1	B5	4244	OMU	C2-N3	-2.15	1.34	1.38
54	A2	355	OMU	C2-N3	-2.15	1.34	1.38
54	A2	1443	OMU	C2-N3	-2.15	1.34	1.38
1	B5	4366	OMU	C2-N3	-2.14	1.34	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B5	2680	OMU	C2-N3	-2.14	1.34	1.38
1	B5	4052	OMU	C2-N3	-2.14	1.34	1.38
1	B5	2258	OMU	C2-N3	-2.13	1.34	1.38
54	A2	1327	OMU	C2-N3	-2.12	1.34	1.38
54	A2	121	OMU	C2-N3	-2.12	1.34	1.38
54	A2	172	OMU	C2-N3	-2.10	1.34	1.38
1	B5	3973	OMU	C2-N1	2.09	1.41	1.38
54	A2	1851	MA6	C4-N3	-2.08	1.32	1.35
1	B5	4369	OMG	C8-N7	-2.08	1.31	1.35
54	A2	429	OMU	C2-N1	2.08	1.41	1.38
54	A2	628	OMU	C2-N3	-2.08	1.34	1.38
54	A2	1852	MA6	C4-N3	-2.07	1.32	1.35
54	A2	1448	OMG	C8-N7	-2.07	1.31	1.35
1	B5	2258	OMU	C2-N1	2.07	1.41	1.38
54	A2	116	OMU	C2-N3	-2.06	1.34	1.38
54	A2	429	OMU	C2-N3	-2.06	1.34	1.38
54	A2	172	OMU	C2-N1	2.03	1.41	1.38
1	B5	4052	OMU	C5-C4	-2.02	1.39	1.43
54	A2	121	OMU	C2-N1	2.01	1.41	1.38

All (530) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
54	A2	1233	PSU	N1-C2-N3	6.09	122.03	115.13
54	A2	1368	PSU	N1-C2-N3	6.08	122.02	115.13
1	B5	1683	PSU	N1-C2-N3	6.07	122.01	115.13
1	B5	1799	PSU	N1-C2-N3	6.06	122.00	115.13
54	A2	36	PSU	N1-C2-N3	6.05	121.99	115.13
1	B5	1801	PSU	N1-C2-N3	6.05	121.98	115.13
1	B5	4435	PSU	N1-C2-N3	6.05	121.98	115.13
54	A2	407	PSU	N1-C2-N3	6.05	121.98	115.13
1	B5	1491	PSU	N1-C2-N3	6.04	121.97	115.13
54	A2	1178	PSU	N1-C2-N3	6.04	121.97	115.13
1	B5	3494	PSU	N1-C2-N3	6.04	121.97	115.13
54	A2	1005	PSU	N1-C2-N3	6.04	121.97	115.13
54	A2	1446	PSU	N1-C2-N3	6.04	121.97	115.13
1	B5	4246	PSU	N1-C2-N3	6.03	121.97	115.13
54	A2	682	PSU	N1-C2-N3	6.03	121.97	115.13
3	B8	55	PSU	N1-C2-N3	6.03	121.97	115.13
54	A2	1047	PSU	N1-C2-N3	6.03	121.96	115.13
1	B5	4042	PSU	N1-C2-N3	6.03	121.96	115.13
1	B5	4298	PSU	N1-C2-N3	6.03	121.96	115.13

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
54	A2	93	PSU	N1-C2-N3	6.02	121.95	115.13
54	A2	1626	PSU	N1-C2-N3	6.02	121.95	115.13
1	B5	4177	PSU	N1-C2-N3	6.02	121.94	115.13
1	B5	1720	PSU	N1-C2-N3	6.01	121.94	115.13
1	B5	4749	PSU	N1-C2-N3	6.01	121.94	115.13
1	B5	3576	PSU	N1-C2-N3	6.00	121.93	115.13
1	B5	3585	PSU	N1-C2-N3	5.99	121.92	115.13
54	A2	823	PSU	N1-C2-N3	5.99	121.92	115.13
1	B5	4039	PSU	N1-C2-N3	5.99	121.92	115.13
1	B5	1731	PSU	N1-C2-N3	5.99	121.92	115.13
54	A2	610	PSU	N1-C2-N3	5.99	121.92	115.13
1	B5	2475	PSU	N1-C2-N3	5.99	121.91	115.13
54	A2	867	PSU	N1-C2-N3	5.98	121.91	115.13
54	A2	1057	PSU	N1-C2-N3	5.98	121.91	115.13
54	A2	967	PSU	N1-C2-N3	5.98	121.91	115.13
1	B5	3583	PSU	N1-C2-N3	5.98	121.91	115.13
54	A2	1245	PSU	N1-C2-N3	5.98	121.91	115.13
1	B5	4169	PSU	N1-C2-N3	5.98	121.90	115.13
54	A2	573	PSU	N1-C2-N3	5.98	121.90	115.13
1	B5	3466	PSU	N1-C2-N3	5.98	121.90	115.13
1	B5	4217	PSU	N1-C2-N3	5.98	121.90	115.13
54	A2	105	PSU	N1-C2-N3	5.98	121.90	115.13
1	B5	3447	PSU	N1-C2-N3	5.97	121.90	115.13
1	B5	3427	PSU	N1-C2-N3	5.97	121.89	115.13
1	B5	1638	PSU	N1-C2-N3	5.97	121.89	115.13
1	B5	3502	PSU	N1-C2-N3	5.96	121.89	115.13
1	B5	4099	PSU	N1-C2-N3	5.96	121.89	115.13
54	A2	1046	PSU	N1-C2-N3	5.96	121.89	115.13
54	A2	1239	PSU	N1-C2-N3	5.96	121.89	115.13
1	B5	3369	PSU	N1-C2-N3	5.96	121.89	115.13
54	A2	650	PSU	N1-C2-N3	5.96	121.88	115.13
54	A2	34	PSU	N1-C2-N3	5.96	121.88	115.13
1	B5	1537	PSU	N1-C2-N3	5.96	121.88	115.13
1	B5	4149	PSU	N1-C2-N3	5.96	121.88	115.13
54	A2	816	PSU	N1-C2-N3	5.96	121.88	115.13
54	A2	1348	PSU	N1-C2-N3	5.96	121.88	115.13
1	B5	3616	PSU	N1-C2-N3	5.95	121.88	115.13
1	B5	4740	PSU	N1-C2-N3	5.95	121.87	115.13
1	B5	3500	PSU	N1-C2-N3	5.95	121.87	115.13
1	B5	4322	PSU	N1-C2-N3	5.95	121.87	115.13
1	B5	4203	PSU	N1-C2-N3	5.95	121.87	115.13
54	A2	119	PSU	N1-C2-N3	5.95	121.87	115.13

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
54	A2	864	PSU	N1-C2-N3	5.95	121.87	115.13
1	B5	1718	PSU	N1-C2-N3	5.94	121.86	115.13
54	A2	1693	PSU	N1-C2-N3	5.94	121.86	115.13
1	B5	4711	PSU	N1-C2-N3	5.94	121.86	115.13
54	A2	1644	PSU	N1-C2-N3	5.94	121.86	115.13
1	B5	3490	PSU	N1-C2-N3	5.94	121.86	115.13
54	A2	652	PSU	N1-C2-N3	5.94	121.86	115.13
1	B5	4382	PSU	N1-C2-N3	5.93	121.85	115.13
1	B5	1721	PSU	N1-C2-N3	5.93	121.85	115.13
1	B5	3652	PSU	N1-C2-N3	5.93	121.85	115.13
1	B5	4107	PSU	N1-C2-N3	5.93	121.85	115.13
1	B5	2351	PSU	N1-C2-N3	5.93	121.85	115.13
1	B5	3554	PSU	N1-C2-N3	5.92	121.84	115.13
1	B5	1632	PSU	N1-C2-N3	5.92	121.84	115.13
1	B5	3371	PSU	N1-C2-N3	5.92	121.84	115.13
1	B5	4188	PSU	N1-C2-N3	5.92	121.84	115.13
1	B5	3496	PSU	N1-C2-N3	5.91	121.83	115.13
1	B5	4045	PSU	N1-C2-N3	5.91	121.83	115.13
54	A2	815	PSU	N1-C2-N3	5.91	121.82	115.13
54	A2	109	PSU	N1-C2-N3	5.91	121.82	115.13
54	A2	218	PSU	N1-C2-N3	5.90	121.81	115.13
54	A2	1175	PSU	N1-C2-N3	5.89	121.81	115.13
1	B5	3462	PSU	N1-C2-N3	5.89	121.81	115.13
54	A2	687	PSU	N1-C2-N3	5.89	121.81	115.13
1	B5	4058	PSU	N1-C2-N3	5.89	121.80	115.13
3	B8	69	PSU	N1-C2-N3	5.88	121.79	115.13
62	AT	55	PSU	N1-C2-N3	5.88	121.79	115.13
1	B5	4325	PSU	N1-C2-N3	5.87	121.79	115.13
54	A2	802	PSU	N1-C2-N3	5.87	121.78	115.13
54	A2	210	PSU	N1-C2-N3	5.86	121.77	115.13
1	B5	4166	PSU	N1-C2-N3	5.85	121.76	115.13
54	A2	1082	PSU	N1-C2-N3	5.85	121.76	115.13
1	B5	3966	6MZ	C2-N1-C6	5.80	121.56	116.59
54	A2	1851	MA6	C4-C5-N7	-5.68	103.48	109.40
54	A2	1833	6MZ	C2-N1-C6	5.66	121.45	116.59
54	A2	1852	MA6	C4-C5-N7	-5.49	103.67	109.40
1	B5	3550	UY1	C4-N3-C2	-5.26	118.76	126.34
62	AT	54	5MU	C4-N3-C2	-5.01	120.86	127.35
54	A2	1843	4AC	N4-C4-N3	4.80	121.91	113.85
62	AT	54	5MU	N3-C2-N1	4.75	121.20	114.89
54	A2	1851	MA6	C1'-N9-C4	-4.60	118.56	126.64
1	B5	3657	OMU	C4-N3-C2	-4.58	120.53	126.58

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
54	A2	628	OMU	C4-N3-C2	-4.54	120.60	126.58
54	A2	1327	OMU	C4-N3-C2	-4.53	120.60	126.58
54	A2	355	OMU	C4-N3-C2	-4.52	120.61	126.58
1	B5	4366	OMU	C4-N3-C2	-4.51	120.63	126.58
1	B5	2680	OMU	C4-N3-C2	-4.47	120.68	126.58
54	A2	116	OMU	C4-N3-C2	-4.46	120.69	126.58
1	B5	4244	OMU	C4-N3-C2	-4.43	120.73	126.58
54	A2	121	OMU	C4-N3-C2	-4.41	120.76	126.58
54	A2	172	OMU	C4-N3-C2	-4.41	120.77	126.58
1	B5	4052	OMU	C4-N3-C2	-4.41	120.77	126.58
62	AT	54	5MU	C5-C4-N3	4.40	119.06	115.31
1	B5	3973	OMU	C4-N3-C2	-4.39	120.79	126.58
54	A2	429	OMU	C4-N3-C2	-4.35	120.85	126.58
1	B5	2258	OMU	C4-N3-C2	-4.33	120.86	126.58
54	A2	1805	OMU	C4-N3-C2	-4.33	120.88	126.58
54	A2	1851	MA6	N3-C2-N1	-4.27	122.00	128.68
1	B5	3657	OMU	N3-C2-N1	4.25	120.53	114.89
54	A2	1338	4AC	N4-C4-N3	4.23	120.96	113.85
54	A2	1443	OMU	C4-N3-C2	-4.23	121.00	126.58
54	A2	1852	MA6	C1'-N9-C4	-4.18	119.29	126.64
1	B5	4366	OMU	N3-C2-N1	4.18	120.44	114.89
54	A2	1852	MA6	N3-C2-N1	-4.17	122.17	128.68
54	A2	1327	OMU	N3-C2-N1	4.15	120.40	114.89
54	A2	355	OMU	N3-C2-N1	4.14	120.39	114.89
54	A2	1805	OMU	N3-C2-N1	4.13	120.37	114.89
1	B5	2258	OMU	N3-C2-N1	4.12	120.36	114.89
1	B5	4244	OMU	N3-C2-N1	4.12	120.36	114.89
1	B5	4052	OMU	N3-C2-N1	4.11	120.35	114.89
54	A2	628	OMU	N3-C2-N1	4.10	120.33	114.89
54	A2	116	OMU	N3-C2-N1	4.09	120.32	114.89
1	B5	3550	UY1	N1-C2-N3	4.09	119.76	115.13
1	B5	2680	OMU	N3-C2-N1	4.07	120.30	114.89
54	A2	121	OMU	N3-C2-N1	4.07	120.29	114.89
1	B5	4246	PSU	C4-N3-C2	-4.06	120.49	126.34
1	B5	4039	PSU	C4-N3-C2	-4.05	120.51	126.34
54	A2	172	OMU	N3-C2-N1	4.04	120.26	114.89
1	B5	4042	PSU	C4-N3-C2	-4.04	120.51	126.34
54	A2	1348	PSU	C4-N3-C2	-4.03	120.53	126.34
1	B5	3973	OMU	N3-C2-N1	4.03	120.23	114.89
54	A2	93	PSU	C4-N3-C2	-4.02	120.54	126.34
54	A2	1443	OMU	N3-C2-N1	4.02	120.23	114.89
54	A2	1046	PSU	C4-N3-C2	-4.02	120.55	126.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
54	A2	429	OMU	N3-C2-N1	4.02	120.22	114.89
54	A2	36	PSU	C4-N3-C2	-4.01	120.55	126.34
54	A2	682	PSU	C4-N3-C2	-4.01	120.56	126.34
1	B5	1799	PSU	C4-N3-C2	-4.00	120.57	126.34
1	B5	1491	PSU	C4-N3-C2	-4.00	120.58	126.34
1	B5	3466	PSU	C4-N3-C2	-4.00	120.58	126.34
54	A2	1233	PSU	C4-N3-C2	-4.00	120.58	126.34
1	B5	4298	PSU	C4-N3-C2	-3.99	120.59	126.34
1	B5	1720	PSU	C4-N3-C2	-3.99	120.59	126.34
1	B5	1801	PSU	C4-N3-C2	-3.99	120.59	126.34
54	A2	1178	PSU	C4-N3-C2	-3.98	120.60	126.34
1	B5	1731	PSU	C4-N3-C2	-3.98	120.61	126.34
1	B5	4435	PSU	C4-N3-C2	-3.97	120.61	126.34
1	B5	3616	PSU	C4-N3-C2	-3.97	120.62	126.34
54	A2	1005	PSU	C4-N3-C2	-3.96	120.63	126.34
54	A2	1368	PSU	C4-N3-C2	-3.95	120.64	126.34
1	B5	1537	PSU	C4-N3-C2	-3.95	120.65	126.34
1	B5	1683	PSU	C4-N3-C2	-3.95	120.65	126.34
1	B5	4749	PSU	C4-N3-C2	-3.94	120.66	126.34
1	B5	4177	PSU	C4-N3-C2	-3.94	120.66	126.34
3	B8	55	PSU	C4-N3-C2	-3.94	120.66	126.34
1	B5	4149	PSU	C4-N3-C2	-3.94	120.66	126.34
1	B5	1721	PSU	C4-N3-C2	-3.93	120.67	126.34
54	A2	1047	PSU	C4-N3-C2	-3.93	120.67	126.34
1	B5	3502	PSU	C4-N3-C2	-3.93	120.67	126.34
54	A2	650	PSU	C4-N3-C2	-3.93	120.68	126.34
54	A2	119	PSU	C4-N3-C2	-3.93	120.68	126.34
54	A2	407	PSU	C4-N3-C2	-3.93	120.68	126.34
54	A2	573	PSU	C4-N3-C2	-3.93	120.68	126.34
54	A2	1446	PSU	C4-N3-C2	-3.93	120.68	126.34
54	A2	1644	PSU	C4-N3-C2	-3.93	120.68	126.34
1	B5	4325	PSU	C4-N3-C2	-3.92	120.69	126.34
1	B5	2351	PSU	C4-N3-C2	-3.92	120.69	126.34
62	AT	54	5MU	O4-C4-C5	-3.92	120.36	124.90
1	B5	2475	PSU	C4-N3-C2	-3.92	120.70	126.34
54	A2	652	PSU	C4-N3-C2	-3.91	120.70	126.34
54	A2	867	PSU	C4-N3-C2	-3.91	120.70	126.34
1	B5	4099	PSU	C4-N3-C2	-3.91	120.71	126.34
1	B5	4711	PSU	C4-N3-C2	-3.91	120.71	126.34
54	A2	1626	PSU	C4-N3-C2	-3.91	120.71	126.34
1	B5	1638	PSU	C4-N3-C2	-3.91	120.71	126.34
1	B5	4107	PSU	C4-N3-C2	-3.91	120.71	126.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B5	3369	PSU	C4-N3-C2	-3.90	120.72	126.34
54	A2	610	PSU	C4-N3-C2	-3.90	120.72	126.34
54	A2	802	PSU	C4-N3-C2	-3.90	120.72	126.34
54	A2	218	PSU	C4-N3-C2	-3.90	120.72	126.34
1	B5	3427	PSU	C4-N3-C2	-3.89	120.73	126.34
54	A2	1693	PSU	C4-N3-C2	-3.88	120.74	126.34
1	B5	3583	PSU	C4-N3-C2	-3.88	120.74	126.34
54	A2	109	PSU	C4-N3-C2	-3.88	120.75	126.34
54	A2	864	PSU	C4-N3-C2	-3.87	120.76	126.34
54	A2	1082	PSU	C4-N3-C2	-3.87	120.76	126.34
54	A2	34	PSU	C4-N3-C2	-3.87	120.76	126.34
54	A2	1245	PSU	C4-N3-C2	-3.87	120.76	126.34
54	A2	105	PSU	C4-N3-C2	-3.87	120.77	126.34
62	AT	55	PSU	C4-N3-C2	-3.87	120.77	126.34
1	B5	4058	PSU	C4-N3-C2	-3.86	120.77	126.34
1	B5	3576	PSU	C4-N3-C2	-3.86	120.77	126.34
1	B5	4169	PSU	C4-N3-C2	-3.86	120.77	126.34
1	B5	1718	PSU	C4-N3-C2	-3.86	120.77	126.34
1	B5	3500	PSU	C4-N3-C2	-3.86	120.77	126.34
3	B8	69	PSU	C4-N3-C2	-3.86	120.78	126.34
54	A2	1175	PSU	C4-N3-C2	-3.86	120.78	126.34
54	A2	1057	PSU	C4-N3-C2	-3.86	120.78	126.34
1	B5	3652	PSU	C4-N3-C2	-3.86	120.78	126.34
1	B5	3494	PSU	C4-N3-C2	-3.85	120.79	126.34
1	B5	4322	PSU	C4-N3-C2	-3.85	120.79	126.34
1	B5	3585	PSU	C4-N3-C2	-3.85	120.80	126.34
1	B5	3554	PSU	C4-N3-C2	-3.84	120.80	126.34
54	A2	816	PSU	C4-N3-C2	-3.84	120.80	126.34
1	B5	3490	PSU	C4-N3-C2	-3.84	120.80	126.34
1	B5	4188	PSU	C4-N3-C2	-3.84	120.81	126.34
1	B5	4217	PSU	C4-N3-C2	-3.84	120.81	126.34
1	B5	3371	PSU	C4-N3-C2	-3.83	120.82	126.34
1	B5	3496	PSU	C4-N3-C2	-3.83	120.82	126.34
54	A2	967	PSU	C4-N3-C2	-3.83	120.83	126.34
1	B5	4740	PSU	C4-N3-C2	-3.82	120.83	126.34
54	A2	815	PSU	C4-N3-C2	-3.82	120.83	126.34
1	B5	4382	PSU	C4-N3-C2	-3.81	120.85	126.34
54	A2	1239	PSU	C4-N3-C2	-3.81	120.85	126.34
1	B5	3462	PSU	C4-N3-C2	-3.80	120.86	126.34
1	B5	4045	PSU	C4-N3-C2	-3.80	120.87	126.34
1	B5	4203	PSU	C4-N3-C2	-3.80	120.87	126.34
1	B5	3447	PSU	C4-N3-C2	-3.79	120.88	126.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
54	A2	687	PSU	C4-N3-C2	-3.77	120.90	126.34
1	B5	1632	PSU	C4-N3-C2	-3.76	120.93	126.34
54	A2	210	PSU	C4-N3-C2	-3.74	120.95	126.34
54	A2	823	PSU	C4-N3-C2	-3.74	120.95	126.34
1	B5	4166	PSU	C4-N3-C2	-3.64	121.09	126.34
54	A2	628	OMU	C5-C4-N3	3.61	120.24	114.84
54	A2	355	OMU	C5-C4-N3	3.61	120.24	114.84
1	B5	3973	OMU	C5-C4-N3	3.60	120.23	114.84
1	B5	2680	OMU	C5-C4-N3	3.60	120.22	114.84
54	A2	116	OMU	C5-C4-N3	3.58	120.20	114.84
54	A2	121	OMU	C5-C4-N3	3.58	120.20	114.84
1	B5	3657	OMU	C5-C4-N3	3.58	120.20	114.84
1	B5	4052	OMU	C5-C4-N3	3.56	120.17	114.84
54	A2	172	OMU	C5-C4-N3	3.56	120.17	114.84
1	B5	4244	OMU	C5-C4-N3	3.55	120.16	114.84
54	A2	429	OMU	C5-C4-N3	3.55	120.16	114.84
54	A2	1327	OMU	C5-C4-N3	3.54	120.14	114.84
54	A2	1233	PSU	O2-C2-N1	-3.54	118.89	122.79
1	B5	4366	OMU	C5-C4-N3	3.54	120.13	114.84
1	B5	3585	PSU	O2-C2-N1	-3.52	118.91	122.79
1	B5	4149	PSU	O2-C2-N1	-3.51	118.93	122.79
3	B8	55	PSU	O2-C2-N1	-3.49	118.94	122.79
1	B5	1683	PSU	O2-C2-N1	-3.49	118.95	122.79
62	AT	54	5MU	C5-C6-N1	-3.49	119.75	123.34
1	B5	4435	PSU	O2-C2-N1	-3.49	118.95	122.79
54	A2	36	PSU	O2-C2-N1	-3.49	118.95	122.79
1	B5	3514	5MC	C5-C6-N1	-3.49	119.75	123.34
1	B5	2258	OMU	C5-C4-N3	3.49	120.05	114.84
54	A2	1805	OMU	C5-C4-N3	3.48	120.05	114.84
1	B5	3494	PSU	O2-C2-N1	-3.48	118.96	122.79
54	A2	823	PSU	O2-C2-N1	-3.48	118.96	122.79
54	A2	1443	OMU	C5-C4-N3	3.47	120.03	114.84
1	B5	2475	PSU	O2-C2-N1	-3.46	118.98	122.79
1	B5	1720	PSU	O2-C2-N1	-3.46	118.98	122.79
1	B5	3616	PSU	O2-C2-N1	-3.46	118.98	122.79
1	B5	4042	PSU	O2-C2-N1	-3.46	118.98	122.79
54	A2	1175	PSU	O2-C2-N1	-3.46	118.99	122.79
1	B5	4045	PSU	O2-C2-N1	-3.45	118.99	122.79
1	B5	4322	PSU	O2-C2-N1	-3.45	118.99	122.79
1	B5	1491	PSU	O2-C2-N1	-3.45	118.99	122.79
54	A2	1368	PSU	O2-C2-N1	-3.45	118.99	122.79
54	A2	1446	PSU	O2-C2-N1	-3.45	119.00	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
54	A2	867	PSU	O2-C2-N1	-3.44	119.00	122.79
54	A2	1626	PSU	O2-C2-N1	-3.44	119.00	122.79
1	B5	4749	PSU	O2-C2-N1	-3.44	119.00	122.79
1	B5	3496	PSU	O2-C2-N1	-3.44	119.00	122.79
1	B5	1801	PSU	O2-C2-N1	-3.43	119.01	122.79
1	B5	4188	PSU	O2-C2-N1	-3.43	119.01	122.79
54	A2	105	PSU	O2-C2-N1	-3.43	119.01	122.79
54	A2	1057	PSU	O2-C2-N1	-3.43	119.01	122.79
1	B5	1799	PSU	O2-C2-N1	-3.43	119.01	122.79
1	B5	4298	PSU	O2-C2-N1	-3.43	119.01	122.79
54	A2	218	PSU	O2-C2-N1	-3.43	119.01	122.79
1	B5	4382	PSU	O2-C2-N1	-3.42	119.02	122.79
1	B5	4203	PSU	O2-C2-N1	-3.42	119.03	122.79
54	A2	652	PSU	O2-C2-N1	-3.42	119.03	122.79
1	B5	1718	PSU	O2-C2-N1	-3.42	119.03	122.79
1	B5	4177	PSU	O2-C2-N1	-3.42	119.03	122.79
54	A2	407	PSU	O2-C2-N1	-3.42	119.03	122.79
54	A2	1047	PSU	O2-C2-N1	-3.42	119.03	122.79
1	B5	1632	PSU	O2-C2-N1	-3.42	119.03	122.79
1	B5	1537	PSU	O2-C2-N1	-3.41	119.03	122.79
1	B5	3490	PSU	O2-C2-N1	-3.41	119.04	122.79
54	A2	815	PSU	O2-C2-N1	-3.41	119.04	122.79
1	B5	4217	PSU	O2-C2-N1	-3.41	119.04	122.79
54	A2	610	PSU	O2-C2-N1	-3.41	119.04	122.79
1	B5	4325	PSU	O2-C2-N1	-3.40	119.05	122.79
54	A2	1245	PSU	O2-C2-N1	-3.40	119.05	122.79
1	B5	4107	PSU	O2-C2-N1	-3.39	119.05	122.79
54	A2	1239	PSU	O2-C2-N1	-3.39	119.05	122.79
54	A2	1005	PSU	O2-C2-N1	-3.39	119.06	122.79
1	B5	3427	PSU	O2-C2-N1	-3.39	119.06	122.79
54	A2	109	PSU	O2-C2-N1	-3.39	119.06	122.79
54	A2	650	PSU	O2-C2-N1	-3.39	119.06	122.79
54	A2	682	PSU	O2-C2-N1	-3.39	119.06	122.79
1	B5	3502	PSU	O2-C2-N1	-3.39	119.06	122.79
54	A2	34	PSU	O2-C2-N1	-3.39	119.06	122.79
54	A2	864	PSU	O2-C2-N1	-3.39	119.06	122.79
54	A2	816	PSU	O2-C2-N1	-3.39	119.06	122.79
1	B5	4711	PSU	O2-C2-N1	-3.39	119.06	122.79
1	B5	1638	PSU	O2-C2-N1	-3.38	119.06	122.79
1	B5	4246	PSU	O2-C2-N1	-3.38	119.06	122.79
1	B5	1731	PSU	O2-C2-N1	-3.38	119.07	122.79
1	B5	3554	PSU	O2-C2-N1	-3.38	119.07	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
54	A2	573	PSU	O2-C2-N1	-3.38	119.07	122.79
54	A2	1178	PSU	O2-C2-N1	-3.38	119.07	122.79
1	B5	3447	PSU	O2-C2-N1	-3.38	119.07	122.79
1	B5	3576	PSU	O2-C2-N1	-3.38	119.07	122.79
1	B5	4169	PSU	O2-C2-N1	-3.37	119.08	122.79
54	A2	210	PSU	O2-C2-N1	-3.37	119.08	122.79
54	A2	93	PSU	O2-C2-N1	-3.37	119.08	122.79
54	A2	687	PSU	O2-C2-N1	-3.37	119.08	122.79
1	B5	3652	PSU	O2-C2-N1	-3.37	119.08	122.79
54	A2	119	PSU	O2-C2-N1	-3.37	119.08	122.79
1	B5	1721	PSU	O2-C2-N1	-3.37	119.08	122.79
3	B8	69	PSU	O2-C2-N1	-3.37	119.08	122.79
1	B5	3462	PSU	O2-C2-N1	-3.36	119.09	122.79
54	A2	1046	PSU	O2-C2-N1	-3.36	119.09	122.79
54	A2	1348	PSU	O2-C2-N1	-3.36	119.09	122.79
54	A2	967	PSU	O2-C2-N1	-3.35	119.10	122.79
54	A2	1693	PSU	O2-C2-N1	-3.35	119.10	122.79
1	B5	4166	PSU	O2-C2-N1	-3.35	119.11	122.79
1	B5	3371	PSU	O2-C2-N1	-3.34	119.11	122.79
1	B5	3500	PSU	O2-C2-N1	-3.33	119.13	122.79
1	B5	3369	PSU	O2-C2-N1	-3.32	119.13	122.79
1	B5	3466	PSU	O2-C2-N1	-3.32	119.14	122.79
1	B5	4740	PSU	O2-C2-N1	-3.32	119.14	122.79
1	B5	4099	PSU	O2-C2-N1	-3.31	119.14	122.79
54	A2	1644	PSU	O2-C2-N1	-3.29	119.16	122.79
1	B5	4039	PSU	O2-C2-N1	-3.29	119.17	122.79
1	B5	4058	PSU	O2-C2-N1	-3.28	119.18	122.79
1	B5	2351	PSU	O2-C2-N1	-3.28	119.18	122.79
1	B5	3583	PSU	O2-C2-N1	-3.28	119.18	122.79
54	A2	802	PSU	O2-C2-N1	-3.27	119.19	122.79
1	B5	1489	A2M	N3-C2-N1	-3.26	123.58	128.68
54	A2	1833	6MZ	C9-N6-C6	-3.26	120.06	122.87
54	A2	1679	A2M	N3-C2-N1	-3.26	123.59	128.68
54	A2	1032	A2M	N3-C2-N1	-3.25	123.61	128.68
54	A2	1082	PSU	O2-C2-N1	-3.24	119.22	122.79
62	AT	55	PSU	O2-C2-N1	-3.24	119.22	122.79
1	B5	3966	6MZ	C9-N6-C6	-3.23	120.09	122.87
54	A2	591	A2M	N3-C2-N1	-3.22	123.64	128.68
1	B5	3517	A2M	N3-C2-N1	-3.22	123.64	128.68
1	B5	4336	A2M	N3-C2-N1	-3.22	123.64	128.68
1	B5	398	A2M	N3-C2-N1	-3.22	123.65	128.68
54	A2	513	A2M	N3-C2-N1	-3.21	123.66	128.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B5	3456	A2M	N3-C2-N1	-3.21	123.66	128.68
54	A2	166	A2M	N3-C2-N1	-3.21	123.66	128.68
1	B5	4317	A2M	N3-C2-N1	-3.18	123.70	128.68
54	A2	1249	B8N	C4-N3-C2	-3.18	121.44	125.46
1	B5	3492	A2M	N3-C2-N1	-3.18	123.71	128.68
54	A2	469	A2M	N3-C2-N1	-3.17	123.72	128.68
1	B5	1810	A2M	N3-C2-N1	-3.17	123.72	128.68
1	B5	3557	A2M	N3-C2-N1	-3.17	123.72	128.68
54	A2	485	A2M	N3-C2-N1	-3.17	123.73	128.68
1	B5	2244	A2M	N3-C2-N1	-3.17	123.73	128.68
1	B5	2206	A2M	N3-C2-N1	-3.16	123.73	128.68
54	A2	99	A2M	N3-C2-N1	-3.16	123.73	128.68
1	B5	400	A2M	N3-C2-N1	-3.16	123.74	128.68
1	B5	3599	A2M	N3-C2-N1	-3.16	123.74	128.68
54	A2	27	A2M	N3-C2-N1	-3.15	123.75	128.68
54	A2	159	A2M	N3-C2-N1	-3.15	123.76	128.68
54	A2	669	A2M	N3-C2-N1	-3.14	123.77	128.68
1	B5	3966	6MZ	N3-C2-N1	-3.13	123.78	128.68
1	B5	2630	A2M	N3-C2-N1	-3.13	123.78	128.68
54	A2	1384	A2M	N3-C2-N1	-3.13	123.79	128.68
54	A2	577	A2M	N3-C2-N1	-3.12	123.80	128.68
54	A2	1833	6MZ	N3-C2-N1	-3.11	123.81	128.68
1	B5	3562	A2M	N3-C2-N1	-3.11	123.82	128.68
1	B5	1270	A2M	N3-C2-N1	-3.10	123.83	128.68
1	B5	1479	A2M	N3-C2-N1	-3.07	123.89	128.68
1	B5	3450	A2M	N3-C2-N1	-3.06	123.89	128.68
1	B5	2658	A2M	N3-C2-N1	-3.06	123.90	128.68
1	B5	2680	OMU	O4-C4-C5	-3.05	119.80	125.16
54	A2	429	OMU	O4-C4-C5	-3.03	119.84	125.16
54	A2	628	OMU	O4-C4-C5	-3.02	119.85	125.16
54	A2	116	OMU	O4-C4-C5	-3.02	119.85	125.16
54	A2	121	OMU	O4-C4-C5	-3.01	119.88	125.16
54	A2	172	OMU	O4-C4-C5	-2.99	119.90	125.16
1	B5	4366	OMU	O4-C4-C5	-2.99	119.91	125.16
1	B5	4244	OMU	O4-C4-C5	-2.98	119.92	125.16
1	B5	4052	OMU	O4-C4-C5	-2.98	119.92	125.16
1	B5	4193	5MC	C5-C6-N1	-2.97	120.28	123.34
54	A2	355	OMU	O4-C4-C5	-2.96	119.95	125.16
1	B5	3973	OMU	O4-C4-C5	-2.96	119.96	125.16
1	B5	3657	OMU	O4-C4-C5	-2.94	119.98	125.16
54	A2	1640	G7M	C2-N1-C6	-2.94	119.68	125.10
54	A2	1327	OMU	O4-C4-C5	-2.94	120.00	125.16

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
54	A2	1443	OMU	O4-C4-C5	-2.92	120.02	125.16
1	B5	2258	OMU	O4-C4-C5	-2.91	120.03	125.16
1	B5	1489	A2M	C4-C5-N7	-2.91	106.37	109.40
54	A2	1805	OMU	O4-C4-C5	-2.91	120.05	125.16
54	A2	1249	B8N	N3-C2-N1	2.89	120.85	116.76
54	A2	166	A2M	C4-C5-N7	-2.76	106.53	109.40
1	B5	2206	A2M	C4-C5-N7	-2.75	106.53	109.40
54	A2	1679	A2M	C4-C5-N7	-2.74	106.55	109.40
54	A2	469	A2M	C4-C5-N7	-2.72	106.56	109.40
1	B5	4193	5MC	O2-C2-N3	-2.71	117.92	122.33
54	A2	669	A2M	C4-C5-N7	-2.71	106.58	109.40
1	B5	2244	A2M	C4-C5-N7	-2.71	106.58	109.40
1	B5	4336	A2M	C4-C5-N7	-2.69	106.59	109.40
1	B5	1810	A2M	C4-C5-N7	-2.69	106.59	109.40
1	B5	1270	A2M	C4-C5-N7	-2.69	106.60	109.40
54	A2	485	A2M	C4-C5-N7	-2.68	106.61	109.40
54	A2	1843	4AC	C5-C4-N4	-2.68	118.27	122.92
1	B5	4193	5MC	C5-C4-N3	-2.67	118.79	121.67
1	B5	3557	A2M	C4-C5-N7	-2.67	106.62	109.40
1	B5	4317	A2M	C4-C5-N7	-2.67	106.62	109.40
54	A2	27	A2M	C4-C5-N7	-2.67	106.62	109.40
54	A2	577	A2M	C4-C5-N7	-2.67	106.62	109.40
1	B5	2658	A2M	C4-C5-N7	-2.66	106.63	109.40
1	B5	3562	A2M	C4-C5-N7	-2.66	106.63	109.40
54	A2	99	A2M	C4-C5-N7	-2.65	106.63	109.40
54	A2	1384	A2M	C4-C5-N7	-2.65	106.64	109.40
1	B5	3599	A2M	C4-C5-N7	-2.64	106.65	109.40
54	A2	1032	A2M	C4-C5-N7	-2.63	106.66	109.40
54	A2	513	A2M	C4-C5-N7	-2.62	106.66	109.40
54	A2	159	A2M	C4-C5-N7	-2.61	106.68	109.40
1	B5	3450	A2M	C4-C5-N7	-2.61	106.68	109.40
1	B5	398	A2M	C4-C5-N7	-2.60	106.69	109.40
1	B5	3492	A2M	C4-C5-N7	-2.60	106.69	109.40
1	B5	3456	A2M	C4-C5-N7	-2.60	106.69	109.40
1	B5	1479	A2M	C4-C5-N7	-2.59	106.70	109.40
1	B5	3517	A2M	C4-C5-N7	-2.58	106.71	109.40
1	B5	2630	A2M	C4-C5-N7	-2.56	106.73	109.40
1	B5	400	A2M	C4-C5-N7	-2.55	106.75	109.40
1	B5	3966	6MZ	C4-C5-N7	-2.54	106.75	109.40
1	B5	3514	5MC	C5-C4-N3	-2.50	118.97	121.67
54	A2	591	A2M	C4-C5-N7	-2.49	106.80	109.40
54	A2	1443	OMU	C1'-N1-C2	2.49	122.08	117.57

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
54	A2	1338	4AC	C6-C5-C4	2.44	119.94	116.96
54	A2	1833	6MZ	C4-C5-N7	-2.44	106.86	109.40
4	BA	216	V5N	O-C-CA	-2.43	118.41	124.78
54	A2	628	OMU	O2-C2-N1	-2.42	119.56	122.79
1	B5	3550	UY1	C6-C5-C4	2.41	119.88	118.20
1	B5	1477	OMG	C8-N7-C5	2.40	107.56	102.99
1	B5	3676	OMG	C8-N7-C5	2.39	107.54	102.99
54	A2	437	OMG	C8-N7-C5	2.39	107.54	102.99
1	B5	3550	UY1	CM2-O2'-C2'	-2.38	108.27	114.52
1	B5	2207	OMG	C5-C6-N1	2.37	118.14	113.95
54	A2	645	OMG	C8-N7-C5	2.37	107.51	102.99
54	A2	684	OMG	C8-N7-C5	2.37	107.50	102.99
1	B5	4383	OMG	C8-N7-C5	2.36	107.49	102.99
1	B5	3476	OMG	C8-N7-C5	2.36	107.49	102.99
1	B5	4364	OMG	C8-N7-C5	2.36	107.48	102.99
1	B5	4138	OMG	C5-C6-N1	2.36	118.11	113.95
54	A2	510	OMG	C8-N7-C5	2.35	107.47	102.99
54	A2	1329	OMG	C8-N7-C5	2.35	107.47	102.99
1	B5	4245	OMG	C8-N7-C5	2.35	107.46	102.99
1	B5	3631	OMG	C5-C6-N1	2.35	118.09	113.95
1	B5	2207	OMG	C8-N7-C5	2.34	107.46	102.99
1	B5	1260	OMG	C8-N7-C5	2.34	107.45	102.99
30	Ba	39	V5N	O-C-CA	-2.34	118.64	124.78
1	B5	3974	OMG	C8-N7-C5	2.34	107.45	102.99
1	B5	1266	1MA	C8-N7-C5	2.34	107.45	102.99
1	B5	1580	OMG	C8-N7-C5	2.33	107.44	102.99
54	A2	437	OMG	C5-C6-N1	2.33	118.07	113.95
1	B5	3631	OMG	C8-N7-C5	2.33	107.43	102.99
1	B5	3524	OMG	C5-C6-N1	2.33	118.06	113.95
1	B5	3359	OMG	C8-N7-C5	2.33	107.43	102.99
54	A2	1491	OMG	C5-C6-N1	2.32	118.05	113.95
3	B8	75	OMG	C8-N7-C5	2.32	107.41	102.99
1	B5	2719	OMG	C5-C6-N1	2.32	118.05	113.95
1	B5	3524	OMG	C8-N7-C5	2.32	107.41	102.99
1	B5	2719	OMG	C8-N7-C5	2.32	107.40	102.99
1	B5	3942	OMG	C5-C6-N1	2.32	118.04	113.95
1	B5	4116	OMG	C5-C6-N1	2.32	118.04	113.95
1	B5	2267	OMG	C8-N7-C5	2.31	107.39	102.99
1	B5	4240	OMG	C8-N7-C5	2.31	107.39	102.99
54	A2	602	OMG	C5-C6-N1	2.31	118.03	113.95
1	B5	1477	OMG	C5-C6-N1	2.31	118.03	113.95
1	B5	1266	1MA	C5-C6-N1	2.31	117.34	113.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B5	2267	OMG	C5-C6-N1	2.31	118.03	113.95
1	B5	3476	OMG	C5-C6-N1	2.31	118.03	113.95
1	B5	3942	OMG	C8-N7-C5	2.31	107.38	102.99
1	B5	4138	OMG	C8-N7-C5	2.30	107.38	102.99
3	B8	75	OMG	C5-C6-N1	2.30	118.02	113.95
1	B5	4383	OMG	C5-C6-N1	2.30	118.02	113.95
54	A2	684	OMG	C5-C6-N1	2.30	118.01	113.95
54	A2	1327	OMU	O2-C2-N1	-2.30	119.73	122.79
1	B5	3974	OMG	C5-C6-N1	2.30	118.01	113.95
54	A2	868	OMG	C8-N7-C5	2.30	107.36	102.99
1	B5	4240	OMG	C5-C6-N1	2.30	118.00	113.95
54	A2	510	OMG	C5-C6-N1	2.29	118.00	113.95
54	A2	602	OMG	C8-N7-C5	2.29	107.36	102.99
1	B5	3359	OMG	C5-C6-N1	2.29	118.00	113.95
54	A2	645	OMG	C5-C6-N1	2.29	117.99	113.95
54	A2	1491	OMG	C8-N7-C5	2.29	107.35	102.99
1	B5	3676	OMG	C5-C6-N1	2.28	117.98	113.95
54	A2	1329	OMG	C5-C6-N1	2.28	117.98	113.95
1	B5	1580	OMG	C5-C6-N1	2.28	117.98	113.95
1	B5	1260	OMG	C5-C6-N1	2.28	117.98	113.95
1	B5	4245	OMG	C5-C6-N1	2.28	117.98	113.95
54	A2	868	OMG	C5-C6-N1	2.27	117.97	113.95
1	B5	4364	OMG	C5-C6-N1	2.27	117.96	113.95
1	B5	4116	OMG	C8-N7-C5	2.27	107.31	102.99
54	A2	1843	4AC	C6-C5-C4	2.25	119.72	116.96
1	B5	3550	UY1	O2-C2-N1	-2.22	120.35	122.79
54	A2	1805	OMU	C1'-N1-C2	2.19	121.53	117.57
54	A2	1249	B8N	C5-C4-N3	2.17	120.19	116.17
1	B5	4269	A2M	C5-C6-N6	2.16	123.64	120.35
1	B5	3514	5MC	O2-C2-N3	-2.15	118.83	122.33
62	AT	54	5MU	O2-C2-N1	-2.15	119.93	122.79
1	B5	4244	OMU	O2-C2-N1	-2.14	119.94	122.79
1	B5	2194	OMC	O2-C2-N3	-2.12	118.88	122.33
54	A2	1338	4AC	C5-C4-N4	-2.10	119.26	122.92
1	B5	2704	OMC	O2-C2-N3	-2.09	118.93	122.33
54	A2	172	OMU	C1'-N1-C2	2.09	121.36	117.57
1	B5	2265	OMC	O2-C2-N3	-2.08	118.95	122.33
1	B5	4246	PSU	C5-C6-N1	-2.07	119.00	122.11
54	A2	93	PSU	C5-C6-N1	-2.07	119.00	122.11
1	B5	3657	OMU	O2-C2-N1	-2.04	120.07	122.79
1	B5	1632	PSU	O4'-C1'-C2'	2.04	108.02	105.14
1	B5	4042	PSU	C5-C6-N1	-2.04	119.06	122.11

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B5	4282	OMC	O2-C2-N3	-2.04	119.02	122.33
54	A2	1392	OMC	O2-C2-N3	-2.01	119.06	122.33
54	A2	518	OMC	O2-C2-N3	-2.01	119.06	122.33
1	B5	3573	OMC	O2-C2-N3	-2.01	119.06	122.33
1	B5	1266	1MA	N1-C2-N3	-2.01	123.68	126.02
1	B5	4366	OMU	O2-C2-N1	-2.01	120.12	122.79
54	A2	174	OMC	O2-C2-N3	-2.00	119.08	122.33

There are no chirality outliers.

All (93) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	B5	2207	OMG	O4'-C4'-C5'-O5'
1	B5	3433	OMC	C2'-C1'-N1-C2
1	B5	3433	OMC	C2'-C1'-N1-C6
1	B5	4193	5MC	O4'-C1'-N1-C2
1	B5	4193	5MC	O4'-C1'-N1-C6
1	B5	4336	A2M	C4'-C5'-O5'-P
1	B5	4382	PSU	O4'-C1'-C5-C4
1	B5	4382	PSU	O4'-C1'-C5-C6
1	B5	4382	PSU	C3'-C4'-C5'-O5'
4	BA	216	V5N	O-C-CA-CB
5	BB	245	HIC	CA-CB-CG-ND1
54	A2	429	OMU	C2'-C1'-N1-C2
54	A2	429	OMU	C2'-C1'-N1-C6
54	A2	513	A2M	O4'-C4'-C5'-O5'
54	A2	628	OMU	C2'-C1'-N1-C6
54	A2	645	OMG	O4'-C4'-C5'-O5'
54	A2	645	OMG	C3'-C4'-C5'-O5'
54	A2	1289	OMU	C1'-C2'-O2'-CM2
86	Aw	62	HY3	O-C-CA-C3
54	A2	1249	B8N	N34-C33-C34-O35
54	A2	1338	4AC	N3-C4-N4-C7
54	A2	1338	4AC	O7-C7-N4-C4
54	A2	1338	4AC	CM7-C7-N4-C4
54	A2	1843	4AC	N3-C4-N4-C7
54	A2	1843	4AC	C5-C4-N4-C7
1	B5	4193	5MC	C2'-C1'-N1-C6
54	A2	628	OMU	C2'-C1'-N1-C2
1	B5	2207	OMG	C3'-C4'-C5'-O5'
1	B5	3517	A2M	O4'-C4'-C5'-O5'
1	B5	3517	A2M	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
54	A2	513	A2M	C3'-C4'-C5'-O5'
54	A2	669	A2M	O4'-C4'-C5'-O5'
54	A2	1448	OMG	C3'-C4'-C5'-O5'
54	A2	429	OMU	O4'-C1'-N1-C2
54	A2	1249	B8N	N34-C33-C34-O36
1	B5	1489	A2M	O4'-C4'-C5'-O5'
54	A2	669	A2M	C3'-C4'-C5'-O5'
54	A2	1448	OMG	O4'-C4'-C5'-O5'
1	B5	4193	5MC	C2'-C1'-N1-C2
54	A2	429	OMU	O4'-C1'-N1-C6
1	B5	4382	PSU	O4'-C4'-C5'-O5'
31	Bb	5	MLZ	C-CA-CB-CG
54	A2	1852	MA6	C5-C6-N6-C9
54	A2	1249	B8N	C32-C33-C34-O36
1	B5	398	A2M	O4'-C4'-C5'-O5'
54	A2	684	OMG	O4'-C4'-C5'-O5'
1	B5	398	A2M	C1'-C2'-O2'-CM'
1	B5	3631	OMG	C1'-C2'-O2'-CM2
1	B5	3433	OMC	O4'-C1'-N1-C6
1	B5	3576	PSU	C4'-C5'-O5'-P
54	A2	1852	MA6	C4'-C5'-O5'-P
54	A2	628	OMU	O4'-C1'-N1-C2
1	B5	3619	OMC	C3'-C2'-O2'-CM2
54	A2	510	OMG	C3'-C2'-O2'-CM2
1	B5	1489	A2M	C3'-C4'-C5'-O5'
31	Bb	5	MLZ	N-CA-CB-CG
54	A2	1249	B8N	C32-C33-C34-O35
54	A2	628	OMU	O4'-C1'-N1-C6
1	B5	3433	OMC	O4'-C1'-N1-C2
1	B5	3619	OMC	C4'-C5'-O5'-P
1	B5	4246	PSU	C4'-C5'-O5'-P
54	A2	1852	MA6	C5-C6-N6-C10
54	A2	645	OMG	C4'-C5'-O5'-P
1	B5	3550	UY1	C4'-C5'-O5'-P
1	B5	398	A2M	C3'-C2'-O2'-CM'
1	B5	3657	OMU	C3'-C2'-O2'-CM2
54	A2	355	OMU	C3'-C2'-O2'-CM2
1	B5	4246	PSU	O4'-C1'-C5-C4
1	B5	1820	OMC	C3'-C2'-O2'-CM2
1	B5	2267	OMG	C3'-C2'-O2'-CM2
1	B5	2680	OMU	C3'-C2'-O2'-CM2
54	A2	868	OMG	C3'-C2'-O2'-CM2

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Mol	Chain	Res	Type	Atoms
54	A2	1032	A2M	O4'-C4'-C5'-O5'
54	A2	1704	OMC	O4'-C4'-C5'-O5'
54	A2	1443	OMU	C2'-C1'-N1-C2
1	B5	3631	OMG	C3'-C2'-O2'-CM2
1	B5	2194	OMC	O4'-C4'-C5'-O5'
1	B5	3494	PSU	C3'-C4'-C5'-O5'
1	B5	4246	PSU	O4'-C1'-C5-C6
1	B5	1284	OMC	O4'-C4'-C5'-O5'
1	B5	3492	A2M	O4'-C4'-C5'-O5'
54	A2	27	A2M	O4'-C4'-C5'-O5'
1	B5	1284	OMC	C3'-C2'-O2'-CM2
1	B5	1810	A2M	C3'-C2'-O2'-CM'
1	B5	2667	OMC	C3'-C2'-O2'-CM2
1	B5	3476	OMG	C3'-C2'-O2'-CM2
1	B5	398	A2M	C3'-C4'-C5'-O5'
54	A2	159	A2M	O4'-C4'-C5'-O5'
54	A2	510	OMG	O4'-C4'-C5'-O5'
54	A2	684	OMG	C3'-C4'-C5'-O5'
5	BB	245	HIC	CA-CB-CG-CD2
54	A2	1338	4AC	C5-C4-N4-C7
54	A2	1082	PSU	C4'-C5'-O5'-P

There are no ring outliers.

97 monomers are involved in 114 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	B5	3657	OMU	1	0
1	B5	3450	A2M	2	0
5	BB	245	HIC	1	0
4	BA	216	V5N	1	0
1	B5	4052	OMU	1	0
54	A2	1843	4AC	1	0
54	A2	36	PSU	1	0
1	B5	3573	OMC	1	0
1	B5	3557	A2M	1	0
1	B5	4039	PSU	1	0
1	B5	4166	PSU	1	0
1	B5	3476	OMG	1	0
54	A2	121	OMU	2	0
1	B5	1260	OMG	1	0
1	B5	4336	A2M	1	0
54	A2	1289	OMU	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
54	A2	1491	OMG	1	0
1	B5	3676	OMG	1	0
1	B5	4366	OMU	2	0
54	A2	1679	A2M	1	0
1	B5	2658	A2M	2	0
54	A2	1443	OMU	1	0
54	A2	355	OMU	1	0
54	A2	684	OMG	1	0
1	B5	2258	OMU	2	0
54	A2	868	OMG	1	0
1	B5	3462	PSU	1	0
1	B5	3524	OMG	1	0
1	B5	3652	PSU	1	0
30	Ba	39	V5N	1	0
1	B5	3540	OMC	1	0
1	B5	3550	UY1	2	0
1	B5	2206	A2M	1	0
1	B5	3456	A2M	1	0
54	A2	485	A2M	1	0
54	A2	109	PSU	1	0
54	A2	105	PSU	1	0
1	B5	4364	OMG	1	0
1	B5	4058	PSU	1	0
54	A2	27	A2M	1	0
54	A2	469	A2M	1	0
1	B5	4383	OMG	1	0
54	A2	510	OMG	1	0
1	B5	400	A2M	1	0
1	B5	4317	A2M	1	0
1	B5	1270	A2M	1	0
54	A2	815	PSU	1	0
54	A2	159	A2M	2	0
1	B5	2208	OMC	2	0
1	B5	3502	PSU	2	0
1	B5	4382	PSU	1	0
3	B8	75	OMG	1	0
1	B5	398	A2M	1	0
1	B5	3631	OMG	1	0
54	A2	1348	PSU	1	0
54	A2	577	A2M	1	0
1	B5	4203	PSU	1	0
54	A2	463	OMC	3	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
54	A2	1851	MA6	1	0
1	B5	2667	OMC	1	0
54	A2	1448	OMG	1	0
1	B5	1718	PSU	2	0
1	B5	1489	A2M	1	0
1	B5	2630	A2M	1	0
54	A2	437	OMG	2	0
1	B5	1284	OMC	1	0
54	A2	166	A2M	2	0
54	A2	518	OMC	1	0
54	A2	1338	4AC	2	0
54	A2	1704	OMC	1	0
54	A2	1446	PSU	1	0
1	B5	1810	A2M	2	0
1	B5	4138	OMG	1	0
54	A2	1805	OMU	2	0
1	B5	3619	OMC	1	0
54	A2	513	A2M	1	0
1	B5	4202	OMC	1	0
1	B5	3517	A2M	1	0
54	A2	1392	OMC	1	0
1	B5	4282	OMC	2	0
1	B5	2194	OMC	1	0
54	A2	1640	G7M	1	0
1	B5	4244	OMU	1	0
1	B5	1479	A2M	1	0
1	B5	4099	PSU	1	0
1	B5	2647	OMC	1	0
54	A2	602	OMG	1	0
1	B5	2704	OMC	1	0
1	B5	4325	PSU	1	0
54	A2	172	OMU	1	0
42	Bm	98	M3L	1	0
1	B5	2267	OMG	1	0
54	A2	99	A2M	1	0
1	B5	3562	A2M	2	0
54	A2	1032	A2M	1	0
54	A2	1329	OMG	1	0
1	B5	2207	OMG	1	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 622 ligands modelled in this entry, 420 are monoatomic and 168 are unknown - leaving 34 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	$\#\|Z\| > 2$
90	SPD	A2	1907	-	9,9,9	0.15	0	8,8,8	0.17	0
90	SPD	B5	4909	-	9,9,9	0.15	0	8,8,8	0.19	0
91	SPM	B5	4911	-	13,13,13	0.15	0	12,12,12	0.23	0
90	SPD	A2	1904	-	9,9,9	0.16	0	8,8,8	0.18	0
90	SPD	B5	4915	-	9,9,9	0.15	0	8,8,8	0.18	0
90	SPD	B5	4916	-	9,9,9	0.15	0	8,8,8	0.18	0
90	SPD	B5	4920	-	9,9,9	0.15	0	8,8,8	0.17	0
90	SPD	A2	1906	-	9,9,9	0.15	0	8,8,8	0.18	0
90	SPD	B5	4913	-	9,9,9	0.15	0	8,8,8	0.18	0
90	SPD	BS	201	-	9,9,9	0.15	0	8,8,8	0.18	0
90	SPD	B5	4918	-	9,9,9	0.15	0	8,8,8	0.18	0
90	SPD	B5	4905	-	9,9,9	0.16	0	8,8,8	0.18	0
90	SPD	A2	1908	-	9,9,9	0.16	0	8,8,8	0.18	0
90	SPD	B5	4907	-	9,9,9	0.15	0	8,8,8	0.17	0
90	SPD	B5	4908	-	9,9,9	0.16	0	8,8,8	0.17	0
90	SPD	A2	1901	-	9,9,9	0.16	0	8,8,8	0.18	0
90	SPD	B5	4923	-	9,9,9	0.15	0	8,8,8	0.16	0
90	SPD	B5	4910	-	9,9,9	0.15	0	8,8,8	0.17	0
91	SPM	A2	1909	-	13,13,13	0.14	0	12,12,12	0.14	0
90	SPD	B5	4912	-	9,9,9	0.15	0	8,8,8	0.19	0
95	IHP	XA	901	-	36,36,36	1.52	6 (16%)	54,60,60	0.92	3 (5%)
90	SPD	B5	4919	-	9,9,9	0.16	0	8,8,8	0.20	0
90	SPD	B5	4903	-	9,9,9	0.16	0	8,8,8	0.19	0
90	SPD	B5	4921	-	9,9,9	0.16	0	8,8,8	0.19	0
90	SPD	B5	4917	-	9,9,9	0.16	0	8,8,8	0.18	0
90	SPD	A2	1905	-	9,9,9	0.16	0	8,8,8	0.18	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
90	SPD	B5	4902	-	9,9,9	0.16	0	8,8,8	0.18	0
91	SPM	B5	4914	-	13,13,13	0.15	0	12,12,12	0.14	0
90	SPD	A2	1902	-	9,9,9	0.15	0	8,8,8	0.17	0
90	SPD	A2	1903	-	9,9,9	0.15	0	8,8,8	0.21	0
90	SPD	B5	4901	-	9,9,9	0.15	0	8,8,8	0.15	0
90	SPD	B5	4904	-	9,9,9	0.16	0	8,8,8	0.17	0
90	SPD	B5	4906	-	9,9,9	0.15	0	8,8,8	0.19	0
90	SPD	B5	4922	-	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
90	SPD	A2	1907	-	-	1/7/7/7	-
90	SPD	B5	4909	-	-	1/7/7/7	-
91	SPM	B5	4911	-	-	1/11/11/11	-
90	SPD	A2	1904	-	-	0/7/7/7	-
90	SPD	B5	4915	-	-	0/7/7/7	-
90	SPD	B5	4916	-	-	0/7/7/7	-
90	SPD	B5	4920	-	-	0/7/7/7	-
90	SPD	A2	1906	-	-	0/7/7/7	-
90	SPD	B5	4913	-	-	0/7/7/7	-
90	SPD	BS	201	-	-	1/7/7/7	-
90	SPD	B5	4918	-	-	0/7/7/7	-
90	SPD	B5	4905	-	-	1/7/7/7	-
90	SPD	A2	1908	-	-	0/7/7/7	-
90	SPD	B5	4907	-	-	0/7/7/7	-
90	SPD	B5	4908	-	-	0/7/7/7	-
90	SPD	A2	1901	-	-	1/7/7/7	-
90	SPD	B5	4923	-	-	1/7/7/7	-
90	SPD	B5	4910	-	-	0/7/7/7	-
91	SPM	A2	1909	-	-	1/11/11/11	-
90	SPD	B5	4912	-	-	0/7/7/7	-
95	IHP	XA	901	-	-	6/30/54/54	0/1/1/1
90	SPD	B5	4919	-	-	0/7/7/7	-
90	SPD	B5	4903	-	-	1/7/7/7	-
90	SPD	B5	4921	-	-	1/7/7/7	-
90	SPD	B5	4917	-	-	0/7/7/7	-
90	SPD	A2	1905	-	-	0/7/7/7	-
90	SPD	B5	4902	-	-	1/7/7/7	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
91	SPM	B5	4914	-	-	0/11/11/11	-
90	SPD	A2	1902	-	-	0/7/7/7	-
90	SPD	A2	1903	-	-	0/7/7/7	-
90	SPD	B5	4901	-	-	1/7/7/7	-
90	SPD	B5	4904	-	-	0/7/7/7	-
90	SPD	B5	4906	-	-	0/7/7/7	-
90	SPD	B5	4922	-	-	0/7/7/7	-

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
95	XA	901	IHP	P4-O14	3.54	1.66	1.59
95	XA	901	IHP	P3-O13	3.22	1.65	1.59
95	XA	901	IHP	P5-O15	3.20	1.65	1.59
95	XA	901	IHP	P2-O12	3.20	1.65	1.59
95	XA	901	IHP	P6-O16	3.17	1.65	1.59
95	XA	901	IHP	P1-O11	3.11	1.65	1.59

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
95	XA	901	IHP	C4-C3-C2	3.55	118.19	110.41
95	XA	901	IHP	C5-C4-C3	3.51	118.10	110.41
95	XA	901	IHP	C3-C2-C1	2.39	115.65	110.41

There are no chirality outliers.

All (18) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
95	XA	901	IHP	C5-C4-O14-P4
95	XA	901	IHP	C5-O15-P5-O35
91	A2	1909	SPM	C8-C9-N10-C11
95	XA	901	IHP	C4-O14-P4-O44
95	XA	901	IHP	C4-C5-O15-P5
90	B5	4909	SPD	C4-C5-N6-C7
90	B5	4921	SPD	C2-C3-C4-C5
90	B5	4923	SPD	C2-C3-C4-C5
90	A2	1907	SPD	C2-C3-C4-C5
90	B5	4901	SPD	C2-C3-C4-C5
90	A2	1901	SPD	C2-C3-C4-C5
95	XA	901	IHP	C4-O14-P4-O34

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Mol	Chain	Res	Type	Atoms
95	XA	901	IHP	C5-O15-P5-O45
90	B5	4902	SPD	C2-C3-C4-C5
91	B5	4911	SPM	C6-C7-C8-C9
90	B5	4905	SPD	C2-C3-C4-C5
90	BS	201	SPD	C2-C3-C4-C5
90	B5	4903	SPD	C2-C3-C4-C5

There are no ring outliers.

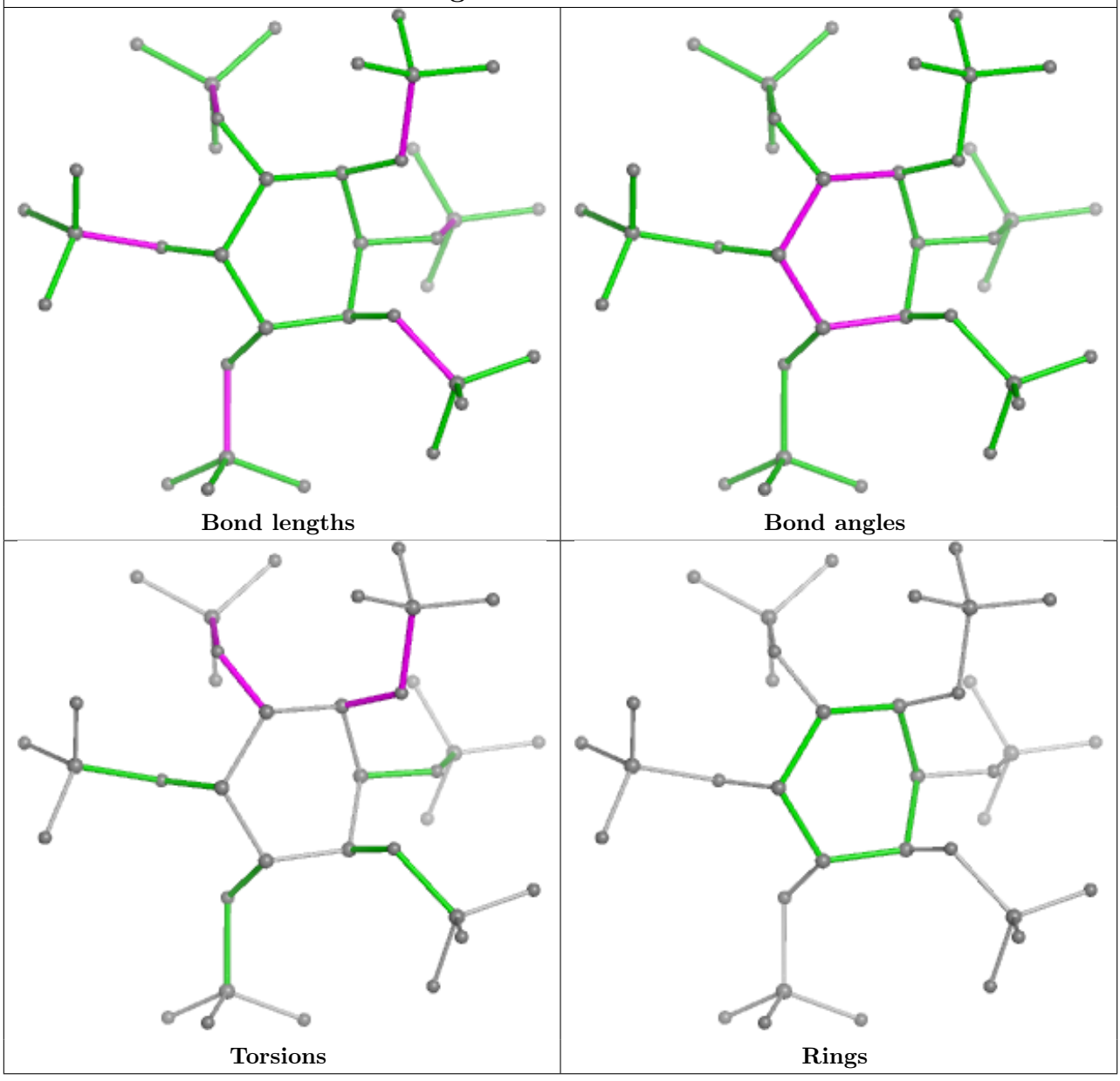
22 monomers are involved in 29 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
90	A2	1907	SPD	1	0
91	B5	4911	SPM	2	0
90	A2	1904	SPD	1	0
90	B5	4915	SPD	1	0
90	A2	1906	SPD	1	0
90	BS	201	SPD	1	0
90	B5	4918	SPD	3	0
90	B5	4905	SPD	1	0
90	A2	1908	SPD	1	0
90	B5	4907	SPD	3	0
90	B5	4908	SPD	1	0
90	A2	1901	SPD	1	0
90	B5	4923	SPD	1	0
90	B5	4910	SPD	1	0
91	A2	1909	SPM	2	0
95	XA	901	IHP	1	0
90	B5	4903	SPD	1	0
90	B5	4921	SPD	1	0
90	A2	1905	SPD	2	0
90	A2	1903	SPD	1	0
90	B5	4904	SPD	1	0
90	B5	4922	SPD	1	0

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 XA 901



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.

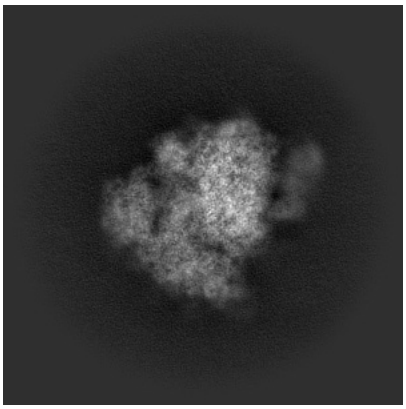
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-53296. These allow visual inspection of the internal detail of the map and identification of artifacts.

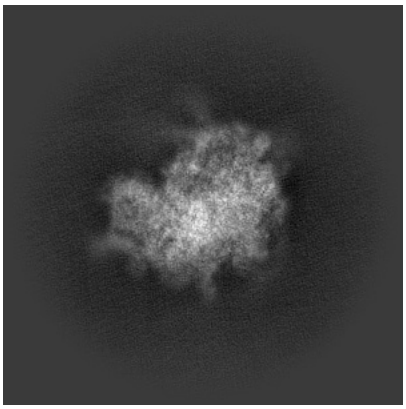
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

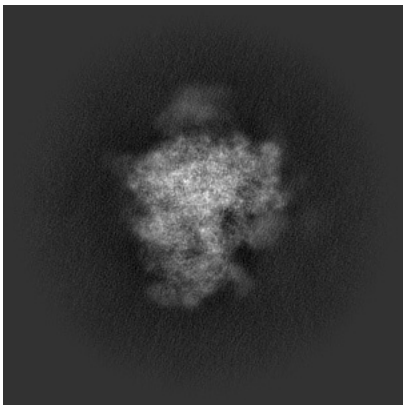
6.1.1 Primary map



X

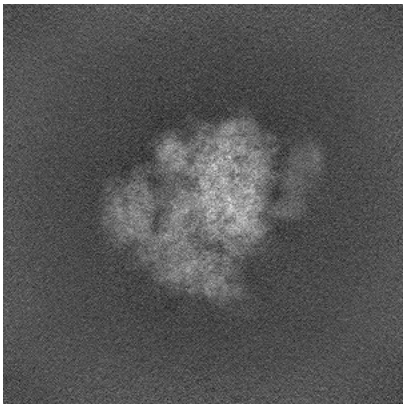


Y

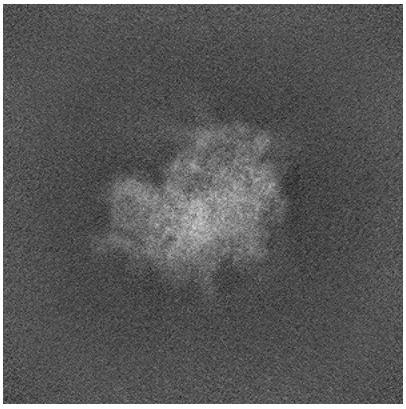


Z

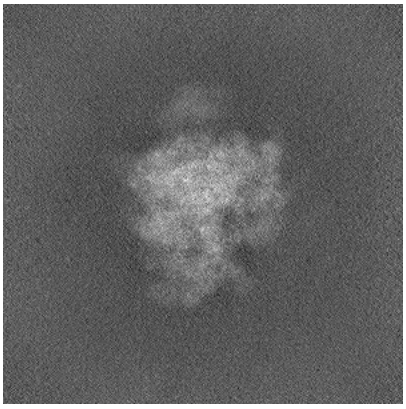
6.1.2 Raw map



X



Y

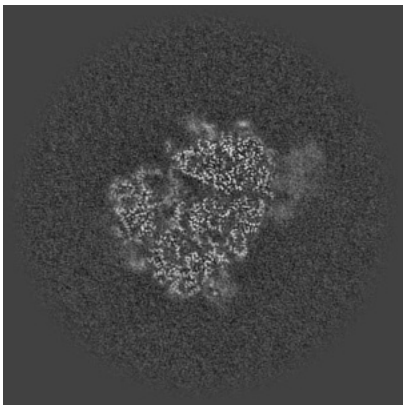


Z

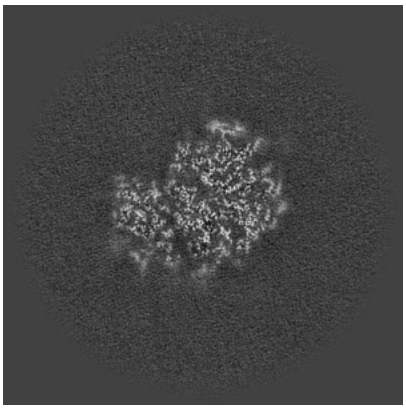
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

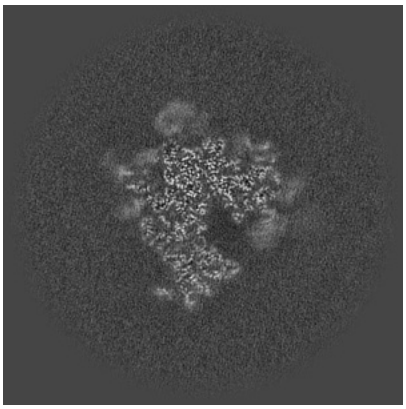
6.2.1 Primary map



X Index: 280

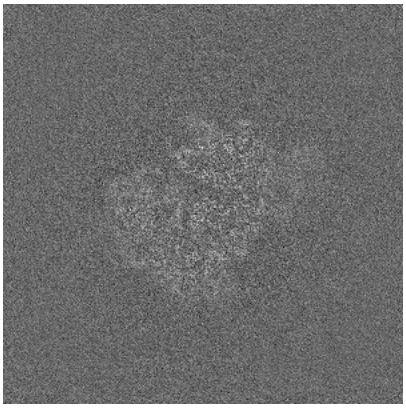


Y Index: 280

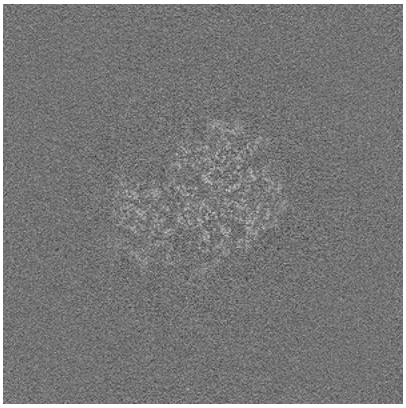


Z Index: 280

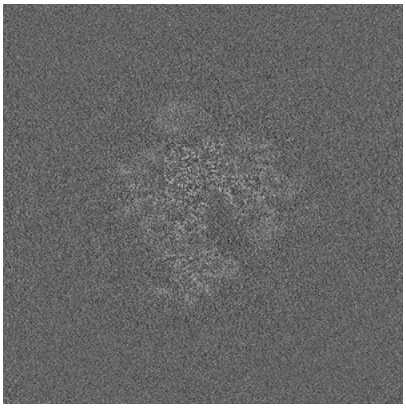
6.2.2 Raw map



X Index: 280



Y Index: 280

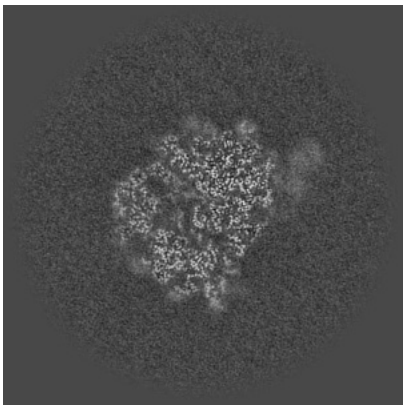


Z Index: 280

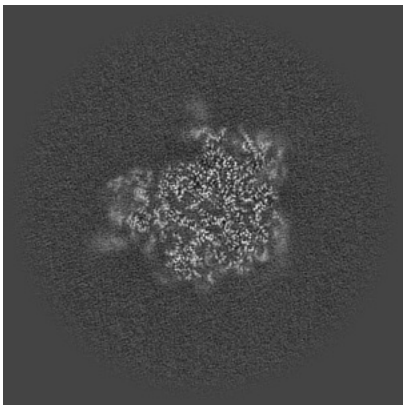
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

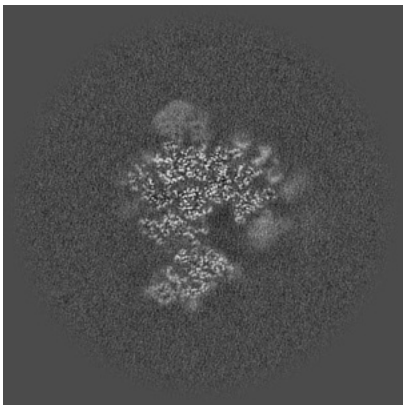
6.3.1 Primary map



X Index: 287

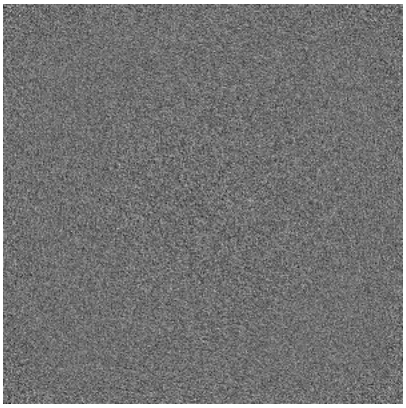


Y Index: 314

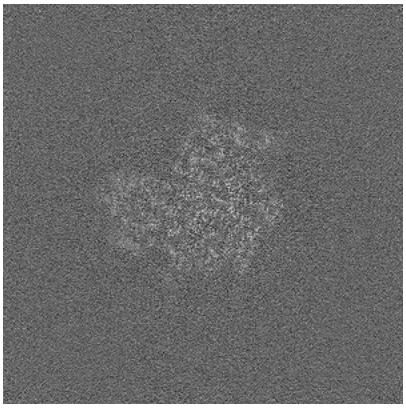


Z Index: 272

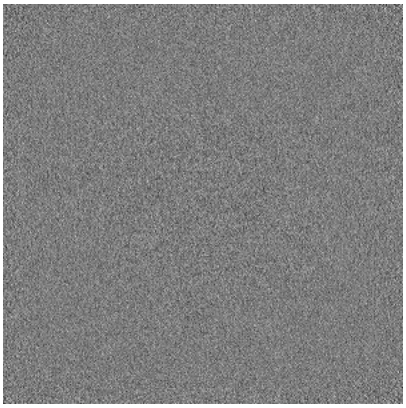
6.3.2 Raw map



X Index: 0



Y Index: 295

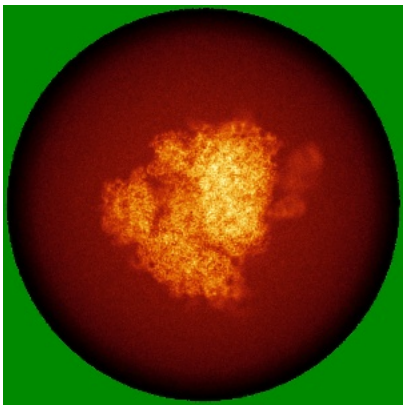


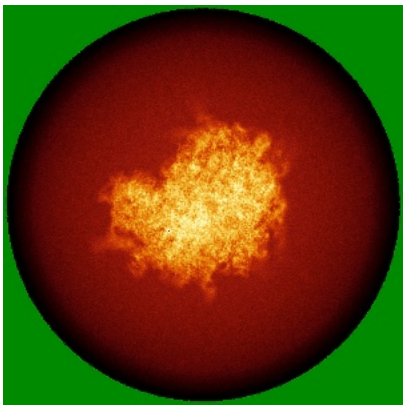
Z Index: 0

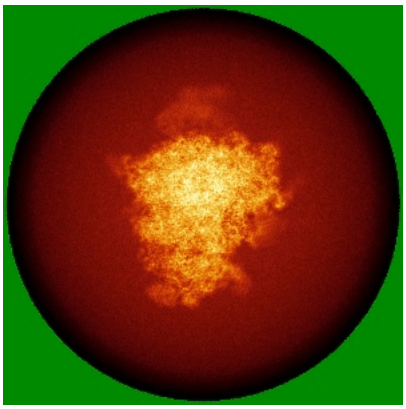
The images above show the largest variance slices of the map in three orthogonal directions.

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

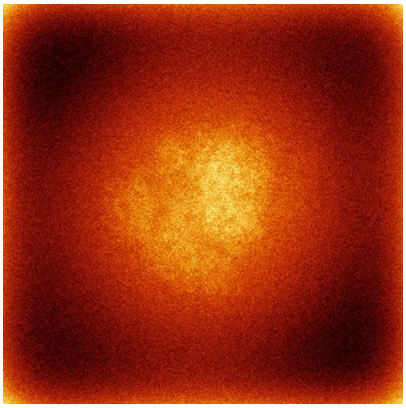
6.4.1 Primary map

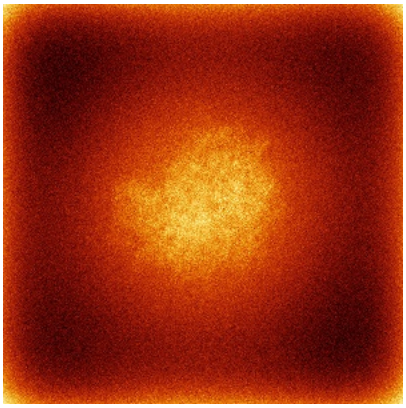

X

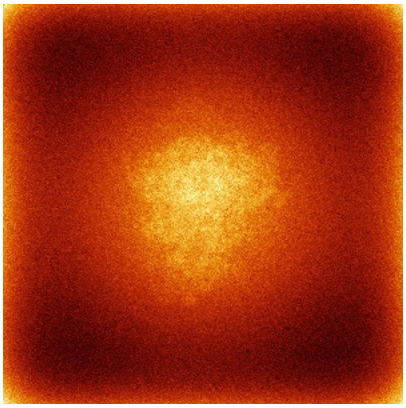

Y


Z

6.4.2 Raw map


X

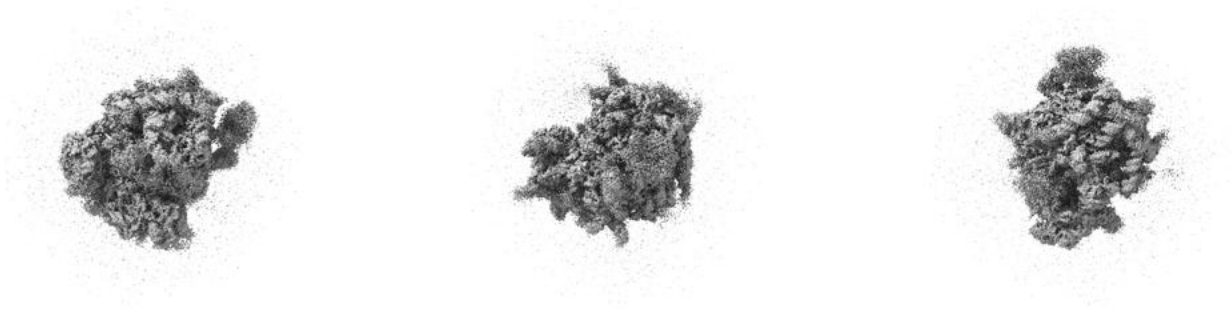

Y


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)

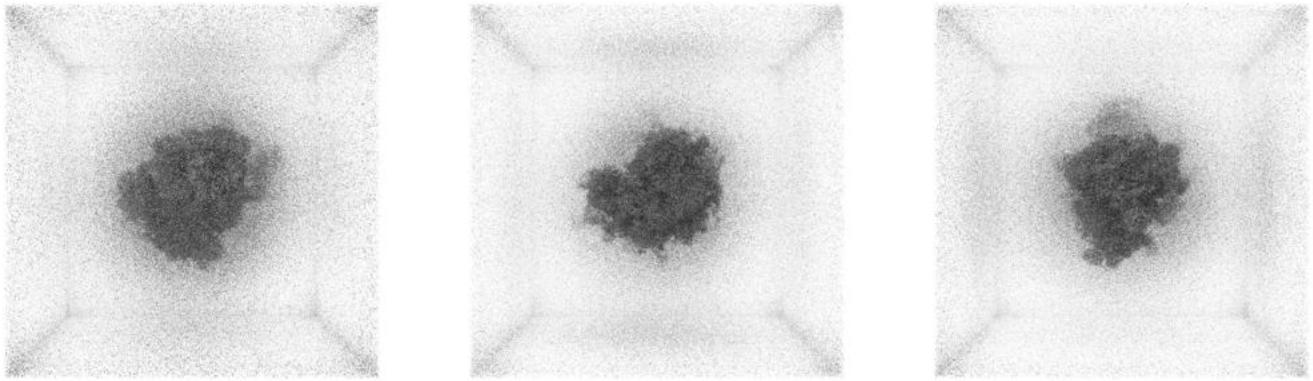
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.14. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

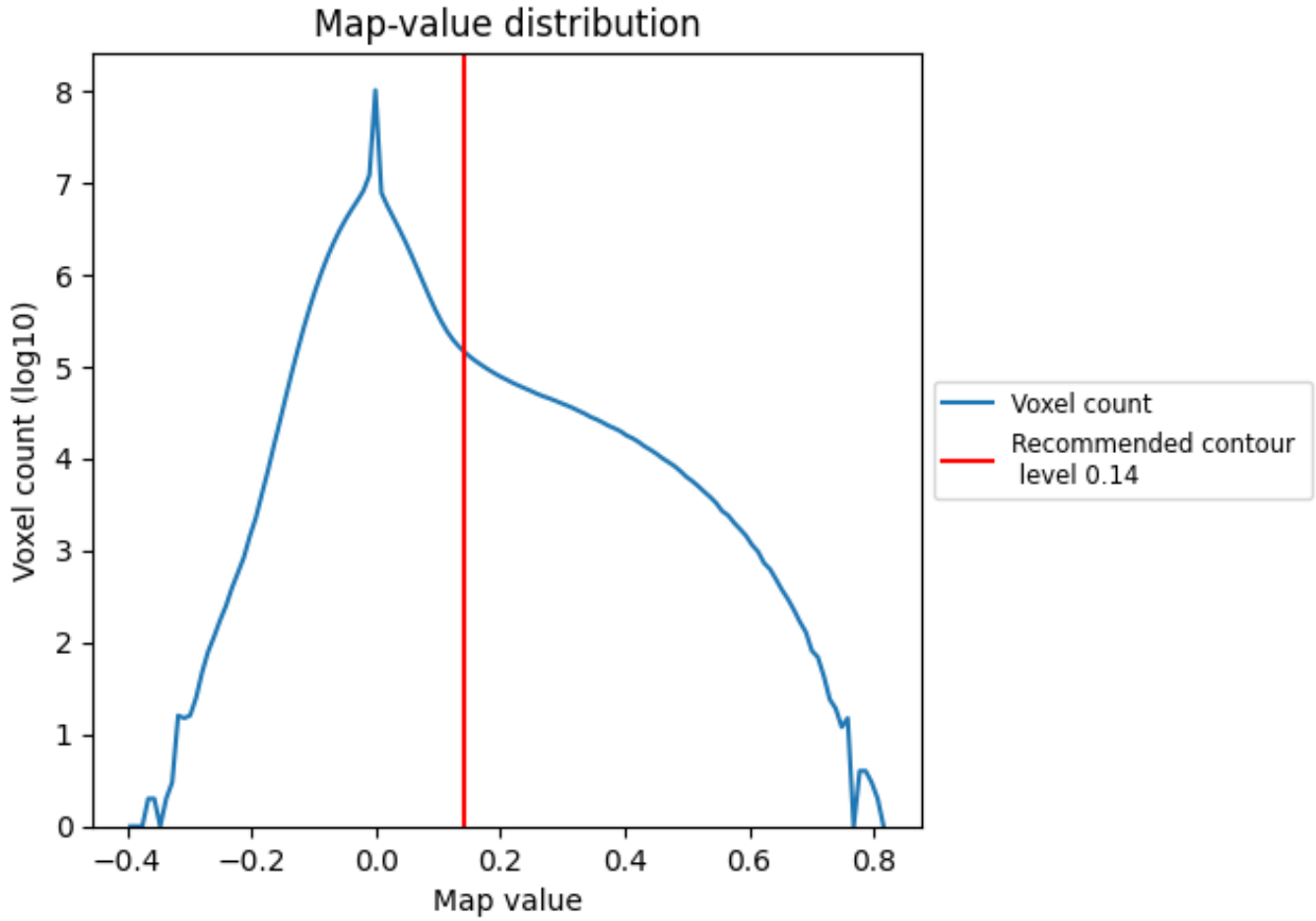
6.6 Mask visualisation (i)

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

7 Map analysis

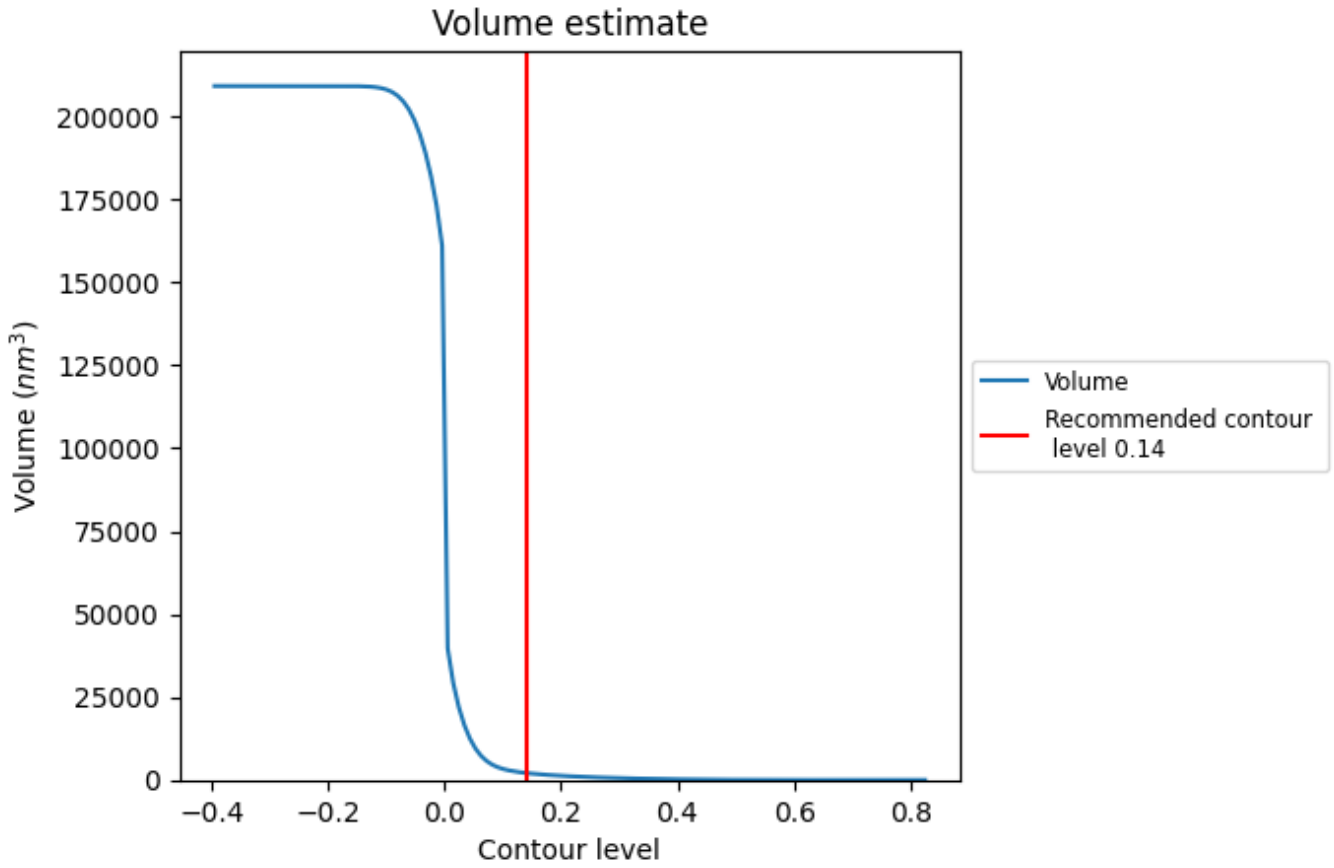
This section contains the results of statistical analysis of the map.

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.

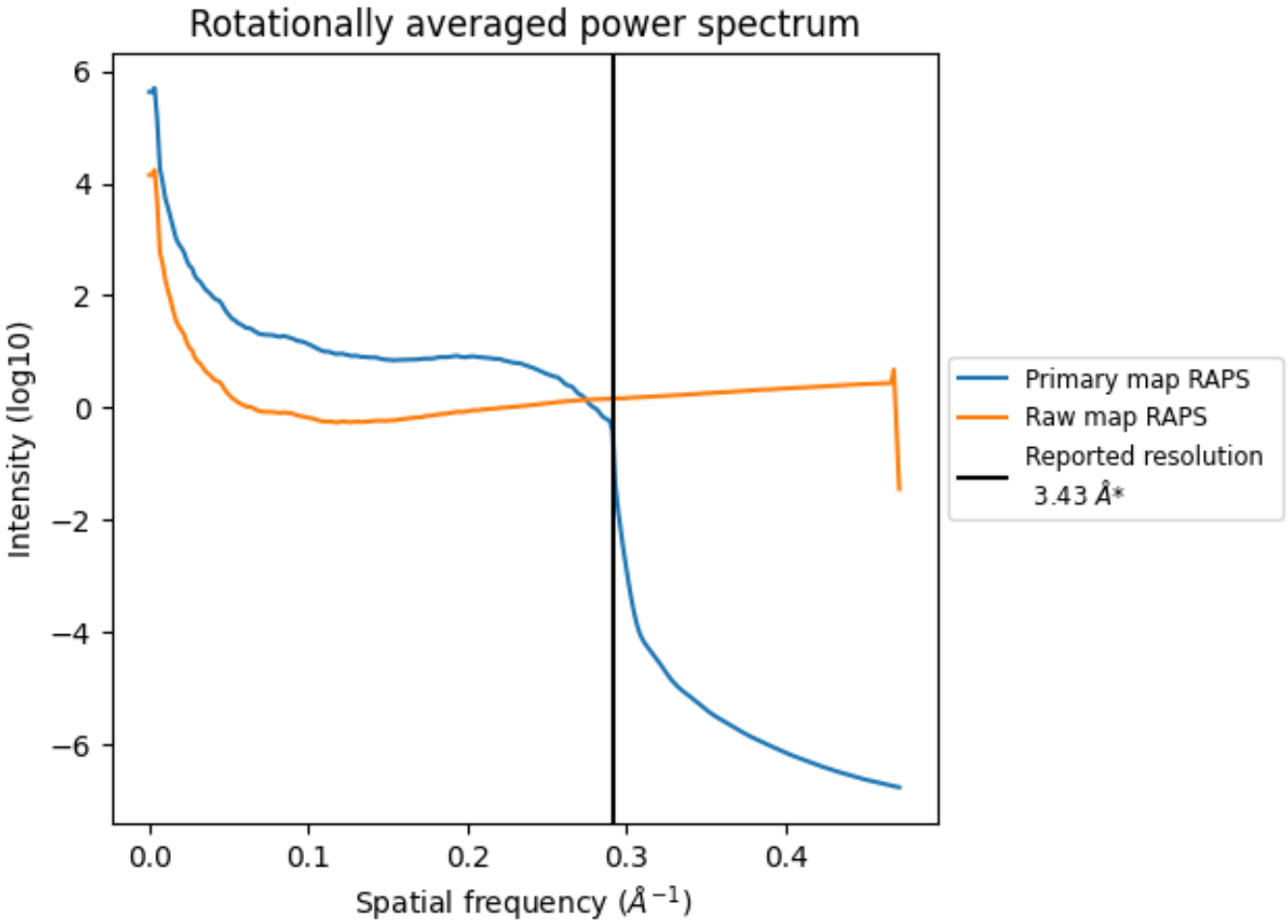
7.2 Volume estimate



The volume at the recommended contour level is 2097 nm^3; this corresponds to an approximate mass of 1894 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)

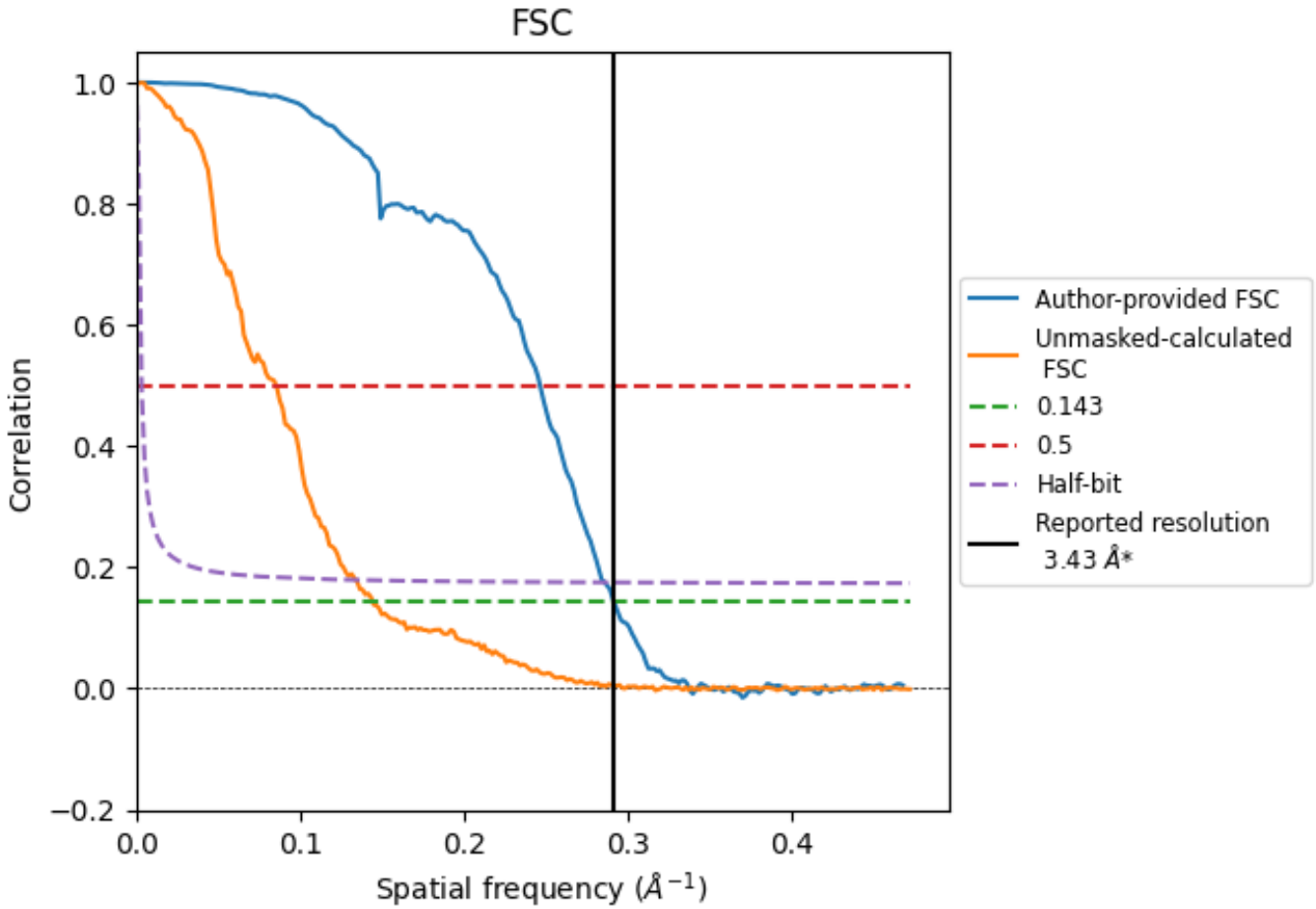


*Reported resolution corresponds to spatial frequency of 0.292 Å^{-1}

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 0.292 Å^{-1}

8.2 Resolution estimates (i)

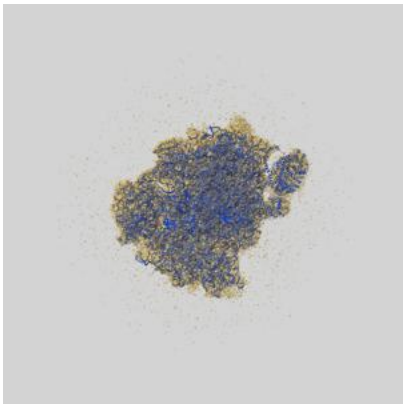
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.43	-	-
Author-provided FSC curve	3.43	4.06	3.50
Unmasked-calculated*	6.93	11.72	7.47

*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 6.93 differs from the reported value 3.43 by more than 10 %

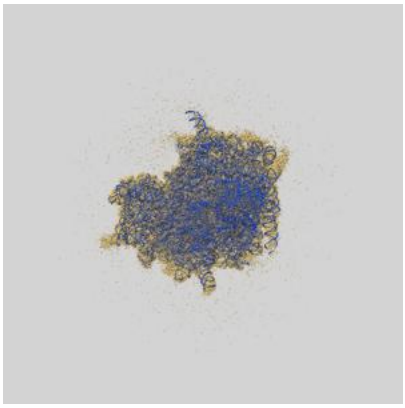
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-53296 and PDB model 9QQB. Per-residue inclusion information can be found in section 3 on page 30.

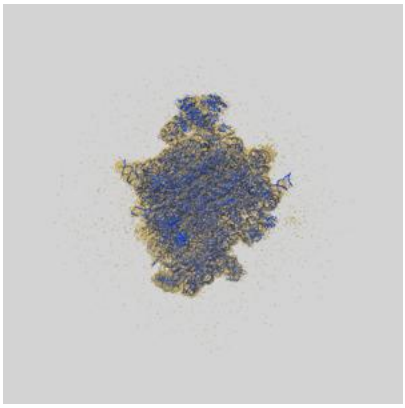
9.1 Map-model overlay



X



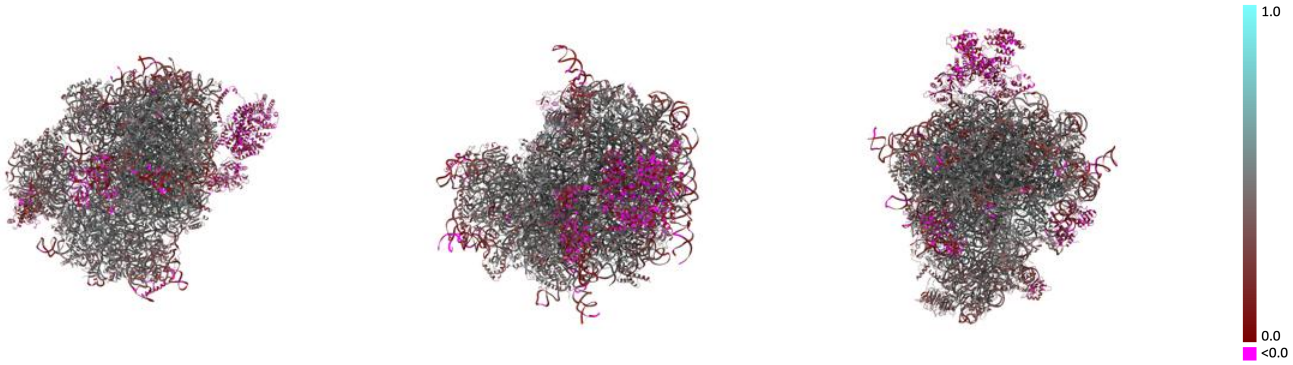
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.14 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

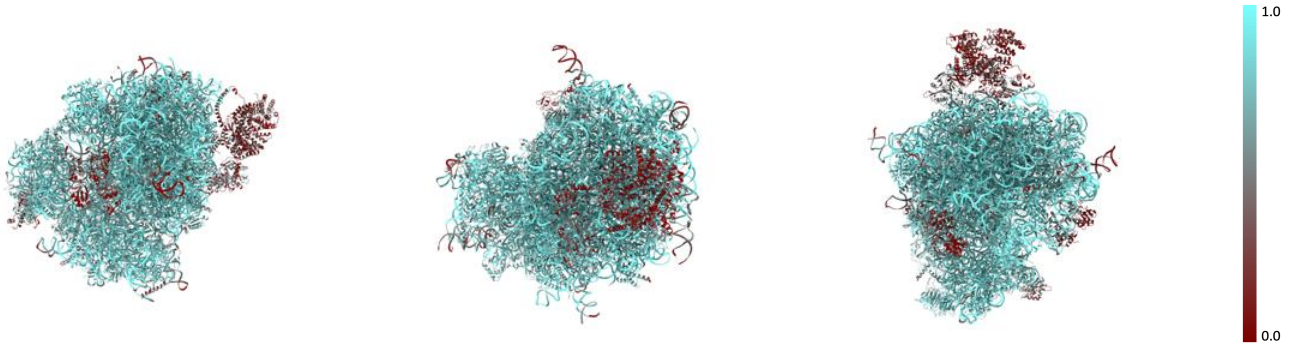
9.2 Q-score mapped to coordinate model (i)



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.

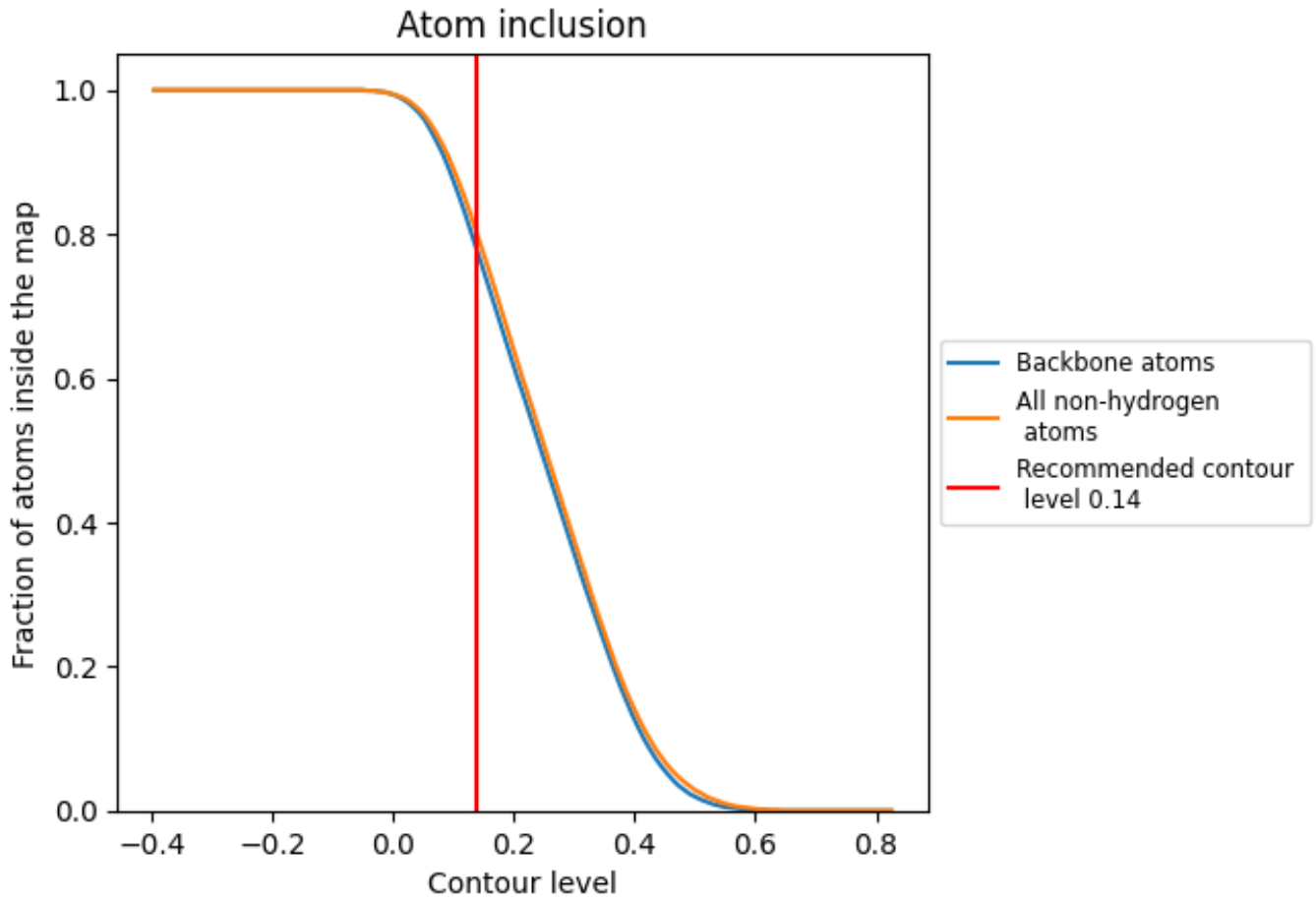
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.14).

9.4 Atom inclusion (i)



At the recommended contour level, 78% of all backbone atoms, 80% 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 (0.14) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7990	0.3920
A2	0.9050	0.4020
AA	0.7840	0.4090
AB	0.6960	0.4110
AC	0.3130	0.1190
AD	0.6840	0.3950
AE	0.8150	0.4490
AF	0.7530	0.3270
AG	0.8030	0.4080
AT	0.6590	0.3300
AZ	0.8120	0.4230
Aa	0.7580	0.4170
Ab	0.7970	0.4460
Ac	0.7300	0.3720
Ad	0.8190	0.4360
Ae	0.7400	0.4010
Af	0.7430	0.3410
Ag	0.7480	0.3750
Ah	0.7710	0.4340
Ai	0.8120	0.4310
Aj	0.7570	0.3430
Ak	0.7260	0.4320
Al	0.3820	0.1540
Am	0.7890	0.4380
An	0.7630	0.4280
Ao	0.7210	0.3370
Ap	0.8050	0.4200
Aq	0.7540	0.3840
Ar	0.7650	0.3740
As	0.8070	0.3930
At	0.7410	0.3810
Au	0.8100	0.4390
Av	0.8000	0.4750
Aw	0.8050	0.4680
Ax	0.8090	0.4050

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Chain	Atom inclusion	Q-score
Ay	0.6730	0.3460
Az	0.7890	0.4760
B5	0.8930	0.4090
B7	0.9750	0.4620
B8	0.9340	0.4360
BA	0.7910	0.4850
BB	0.8210	0.4780
BC	0.8280	0.4760
BD	0.8370	0.4400
BE	0.7810	0.4100
BF	0.8150	0.4730
BG	0.7680	0.4180
BH	0.8110	0.4590
BI	0.7830	0.4580
BJ	0.7980	0.4300
BK	0.3330	0.2880
BL	0.8040	0.4470
BM	0.8280	0.4470
BN	0.8500	0.4980
BO	0.8280	0.4760
BP	0.7900	0.4710
BQ	0.8310	0.4900
BR	0.7960	0.4330
BS	0.8350	0.4780
BT	0.7980	0.4660
BU	0.7750	0.3960
BV	0.7390	0.4560
BW	0.6200	0.3080
BX	0.7910	0.4540
BY	0.7870	0.4580
BZ	0.8260	0.4460
Ba	0.8710	0.4900
Bb	0.7230	0.3860
Bc	0.7360	0.4080
Bd	0.7930	0.4610
Be	0.8130	0.4820
Bf	0.8320	0.4880
Bg	0.7900	0.4500
Bh	0.8120	0.4430
Bi	0.7780	0.4250
Bj	0.8860	0.4960
Bk	0.7680	0.3970

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Chain	Atom inclusion	Q-score
Bl	0.7960	0.4690
Bm	0.7920	0.4640
Bo	0.8060	0.4670
Bp	0.7720	0.4630
Br	0.8280	0.4670
Bs	0.1180	0.0830
Bt	0.1250	0.0630
Bv	0.1120	0.0800
MA	0.4410	0.1180
Nt	0.1820	0.0790
Nu	0.3500	0.1910
XA	0.2050	0.0750
XB	0.1720	0.0640