



# Full wwPDB X-ray Structure Validation Report ⓘ

Feb 4, 2025 – 03:54 AM EST

PDB ID : 5J7L  
Title : Structure of the 70S E coli ribosome with the U1052G mutation in the 16S rRNA bound to tetracycline  
Authors : Cocozaki, A.; Ferguson, A.  
Deposited on : 2016-04-06  
Resolution : 3.00 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4.02b-467  
Mogul : 2022.3.0, CSD as543be (2022)  
Xtrriage (Phenix) : 1.21  
EDS : 3.0  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
CCP4 : 9.0.004 (Gargrove)  
Density-Fitness : 1.0.11  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.40

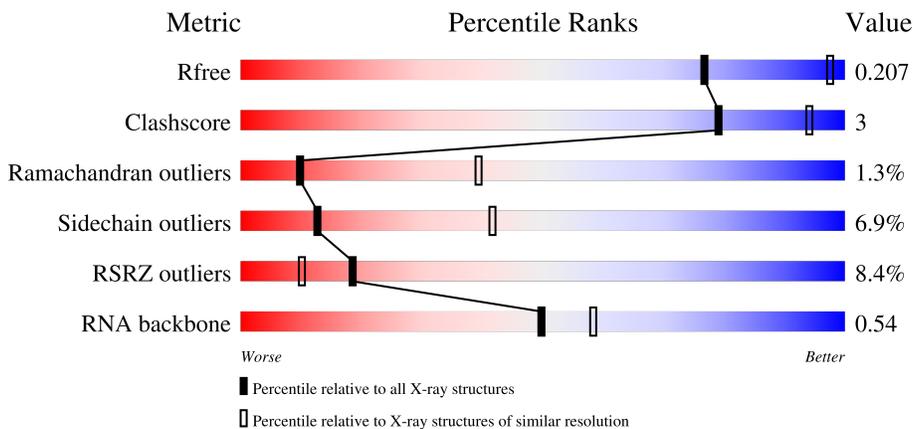
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.00 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)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	164625	2511 (3.00-3.00)
Clashscore	180529	2866 (3.00-3.00)
Ramachandran outliers	177936	2778 (3.00-3.00)
Sidechain outliers	177891	2781 (3.00-3.00)
RSRZ outliers	164620	2523 (3.00-3.00)
RNA backbone	3690	1019 (3.20-2.80)

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

Mol	Chain	Length	Quality of chain
1	AA	1534	<div style="display: flex; align-items: center;"> <div style="width: 5%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 74%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 22%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey;"></div> </div> <p style="margin-left: 20px;">5%      74%      22%      •</p>
1	BA	1534	<div style="display: flex; align-items: center;"> <div style="width: 7%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 74%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 23%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey;"></div> </div> <p style="margin-left: 20px;">7%      74%      23%      •</p>
2	AB	224	<div style="display: flex; align-items: center;"> <div style="width: 4%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 88%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey;"></div> </div> <p style="margin-left: 20px;">4%      88%      12%      •</p>
2	BB	224	<div style="display: flex; align-items: center;"> <div style="width: 8%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 88%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 10%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey;"></div> </div> <p style="margin-left: 20px;">8%      88%      10%      •</p>

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Mol	Chain	Length	Quality of chain
3	AC	206	2% 84% 15%
3	BC	206	8% 81% 19%
4	AD	205	89% 10%
4	BD	205	86% 12%
5	AE	155	2% 78% 19%
5	BE	155	4% 65% 26% 5%
6	AF	106	2% 81% 19%
6	BF	106	5% 69% 24% 6%
7	AG	151	13% 83% 16%
7	BG	151	17% 83% 17%
8	AH	129	2% 83% 16%
8	BH	129	3% 83% 17%
9	AI	127	16% 87% 13%
9	BI	127	27% 87% 12%
10	AJ	99	11% 77% 21%
10	BJ	99	33% 74% 21% 6%
11	AK	117	2% 83% 16%
11	BK	117	8% 76% 23%
12	AL	123	2% 88% 11%
12	BL	123	9% 83% 14%
13	AM	114	25% 80% 18%
13	BM	114	13% 72% 25%
14	AN	100	25% 87% 12%
14	BN	100	25% 89% 11%
15	AO	88	2% 92% 8%

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Mol	Chain	Length	Quality of chain
15	BO	88	2% 91% 8%
16	AP	82	2% 90% 10%
16	BP	82	18% 82% 17%
17	AQ	80	% 78% 21%
17	BQ	80	9% 61% 31% 6%
18	AR	55	2% 87% 13%
18	BR	55	9% 93% 7%
19	AS	79	25% 82% 16%
19	BS	79	23% 84% 14%
20	AT	86	2% 90% 7%
20	BT	86	22% 79% 15% 5%
21	AU	56	5% 88% 12%
21	BU	56	4% 88% 12%
22	C1	56	39% 84% 12%
22	D1	56	84% 16%
23	C2	51	31% 69% 27%
23	D2	51	2% 73% 25%
24	C3	46	54% 85% 15%
24	D3	46	2% 89% 11%
25	C4	64	75% 84% 16%
25	D4	64	91% 9%
26	C5	38	26% 79% 18%
26	D5	38	87% 13%
27	C0	58	17% 76% 22%
27	D0	58	83% 16%

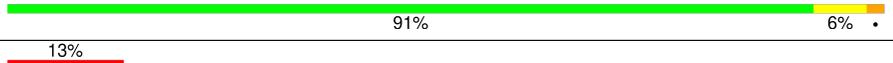
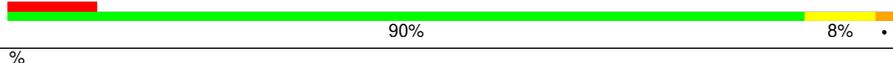
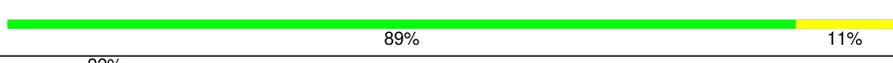
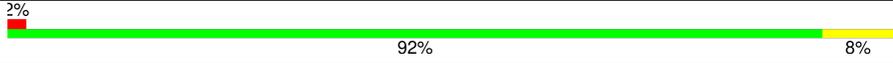
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Mol	Chain	Length	Quality of chain
28	CB	120	2% 85% 11% . .
28	DB	120	91% 8%
29	CC	271	15% 82% 16%
29	DC	271	% 90% 8%
30	CD	209	13% 88% 11%
30	DD	209	90% 10%
31	CA	2904	10% 73% 23%
32	CE	201	23% 83% 14%
32	DE	201	91% 8%
33	CF	177	7% 83% 15%
33	DF	177	% 81% 18%
34	CG	176	3% 89% 11%
34	DG	176	% 90% 10%
35	CH	149	3% 79% 20%
35	DH	149	3% 82% 18%
36	CJ	134	25% 88% 11%
36	DJ	134	30% 88% 11%
37	CK	142	7% 92% 7%
37	DK	142	94% 6%
38	CL	123	8% 85% 11% . . .
38	DL	123	87% 11%
39	CM	144	33% 79% 19%
39	DM	144	% 92% 8%
40	CN	136	6% 85% 15%
40	DN	136	84% 15%

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Mol	Chain	Length	Quality of chain
41	CO	125	
41	DO	125	
42	CP	117	
42	DP	117	
43	CQ	114	
43	DQ	114	
44	CR	117	
44	DR	117	
45	CS	103	
45	DS	103	
46	CT	110	
46	DT	110	
47	CU	93	
47	DU	93	
48	CV	102	
48	DV	102	
49	CW	94	
49	DW	94	
50	CX	76	
50	DX	76	
51	CY	77	
51	DY	77	
52	CZ	62	
52	DZ	62	
53	DI	135	

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Mol	Chain	Length	Quality of chain
54	DA	2904	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
55	MG	AA	1617	-	-	-	X
55	MG	AA	1622	-	-	-	X
55	MG	BA	1638	-	-	-	X
55	MG	CA	3122	-	-	-	X
55	MG	CA	3135	-	-	-	X
55	MG	CA	3147	-	-	-	X
55	MG	CA	3148	-	-	-	X
58	PUT	AA	1674	-	-	-	X
66	ACY	DA	3196	-	X	-	-

## 2 Entry composition i

There are 69 unique types of molecules in this entry. The entry contains 295261 atoms, of which 2 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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 16S rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	AA	1534	Total 32933	C 14695	N 6044	O 10660	P 1534	0	0	0
1	BA	1533	Total 32911	C 14685	N 6039	O 10654	P 1533	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AA	1052	G	U	engineered mutation	GB 595593103
BA	1052	G	U	engineered mutation	GB 595593103

- Molecule 2 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	AB	224	Total 1753	C 1109	N 315	O 321	S 8	0	0	0
2	BB	224	Total 1753	C 1109	N 315	O 321	S 8	0	0	0

- Molecule 3 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	AC	206	Total 1625	C 1028	N 305	O 289	S 3	0	0	0
3	BC	206	Total 1625	C 1028	N 305	O 289	S 3	0	0	0

- Molecule 4 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	AD	205	Total 1643	C 1026	N 315	O 298	S 4	0	0	0

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	BD	205	1643	1026	315	298	4	0	0	0

- Molecule 5 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	AE	155	1144	711	216	211	6	0	0	0
5	BE	150	1105	687	211	201	6	0	0	0

- Molecule 6 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
6	AF	106	862	545	156	154	7	0	0	0
6	BF	100	817	515	148	148	6	0	0	0

- Molecule 7 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
7	AG	151	1182	735	227	216	4	0	0	0
7	BG	151	1182	735	227	216	4	0	0	0

- Molecule 8 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
8	AH	129	979	616	173	184	6	0	0	0
8	BH	129	979	616	173	184	6	0	0	0

- Molecule 9 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
9	AI	127	1022	634	206	179	3	0	0	0
9	BI	127	1022	634	206	179	3	0	0	0

- Molecule 10 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
10	AJ	99	Total 796	C 498	N 152	O 145	S 1	0	0	0
10	BJ	98	Total 787	C 493	N 150	O 143	S 1	0	0	0

- Molecule 11 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
11	AK	117	Total 877	C 540	N 174	O 160	S 3	0	0	0
11	BK	117	Total 877	C 540	N 174	O 160	S 3	0	0	0

- Molecule 12 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
12	AL	123	Total 957	C 591	N 196	O 165	S 5	0	0	0
12	BL	123	Total 957	C 591	N 196	O 165	S 5	0	0	0

- Molecule 13 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
13	AM	114	Total 884	C 546	N 178	O 157	S 3	0	0	0
13	BM	114	Total 884	C 546	N 178	O 157	S 3	0	0	0

- Molecule 14 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
14	AN	100	Total 805	C 499	N 164	O 139	S 3	0	0	0
14	BN	100	Total 805	C 499	N 164	O 139	S 3	0	0	0

- Molecule 15 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
15	AO	88	Total	C	N	O	S	0	0	0
			714	439	144	130	1			
15	BO	88	Total	C	N	O	S	0	0	0
			714	439	144	130	1			

- Molecule 16 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
16	AP	82	Total	C	N	O	S	0	0	0
			649	406	128	114	1			
16	BP	82	Total	C	N	O	S	0	0	0
			649	406	128	114	1			

- Molecule 17 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
17	AQ	80	Total	C	N	O	S	0	0	0
			649	411	121	114	3			
17	BQ	80	Total	C	N	O	S	0	0	0
			649	411	121	114	3			

- Molecule 18 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
18	AR	55	Total	C	N	O	0	0	0
			456	288	86	82			
18	BR	55	Total	C	N	O	0	0	0
			456	288	86	82			

- Molecule 19 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	AS	79	Total	C	N	O	S	0	0	0
			638	408	120	108	2			
19	BS	79	Total	C	N	O	S	0	0	0
			638	408	120	108	2			

- Molecule 20 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
20	AT	86	Total	C	N	O	S	0	0	0
			670	414	138	115	3			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
20	BT	85	Total	C	N	O	S	0	0	0
			665	411	137	114	3			

- Molecule 21 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
21	AU	56	Total	C	N	O	S	0	0	0
			465	290	96	78	1			
21	BU	56	Total	C	N	O	S	0	0	0
			465	290	96	78	1			

- Molecule 22 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
22	C1	56	Total	C	N	O	S	0	0	0
			444	269	94	80	1			
22	D1	56	Total	C	N	O	S	0	0	0
			444	269	94	80	1			

- Molecule 23 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
23	C2	50	Total	C	N	O	0	0	0
			409	263	75	71			
23	D2	51	Total	C	N	O	0	0	0
			414	266	76	72			

- Molecule 24 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
24	C3	46	Total	C	N	O	S	0	0	0
			377	228	90	57	2			
24	D3	46	Total	C	N	O	S	0	0	0
			377	228	90	57	2			

- Molecule 25 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
25	C4	64	Total	C	N	O	S	0	0	0
			504	323	105	74	2			
25	D4	64	Total	C	N	O	S	0	0	0
			504	323	105	74	2			

- Molecule 26 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
26	C5	38	Total	C	N	O	S	0	0	0
			302	185	65	48	4			
26	D5	38	Total	C	N	O	S	0	0	0
			302	185	65	48	4			

- Molecule 27 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
27	C0	58	Total	C	N	O	S	0	0	0
			449	281	87	79	2			
27	D0	58	Total	C	N	O	S	0	2	0
			463	290	90	81	2			

- Molecule 28 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
28	CB	118	Total	C	N	O	P	0	0	0
			2529	1126	464	821	118			
28	DB	120	Total	C	N	O	P	0	0	0
			2569	1144	468	837	120			

- Molecule 29 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
29	CC	271	Total	C	N	O	S	0	0	0
			2083	1288	423	365	7			
29	DC	271	Total	C	N	O	S	0	0	0
			2083	1288	423	365	7			

- Molecule 30 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
30	CD	209	Total	C	N	O	S	0	0	0
			1565	979	288	294	4			
30	DD	209	Total	C	N	O	S	0	1	0
			1576	986	290	296	4			

- Molecule 31 is a RNA chain called 23S rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
31	CA	2898	62229	27768	11448	20115	2898	0	0	0

- Molecule 32 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
32	CE	201	1552	974	283	290	5	0	0	0
32	DE	201	1552	974	283	290	5	0	0	0

- Molecule 33 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
33	CF	177	1411	899	249	257	6	0	0	0
33	DF	177	1411	899	249	257	6	0	0	0

- Molecule 34 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
34	CG	176	1323	832	243	246	2	0	0	0
34	DG	176	1323	832	243	246	2	0	0	0

- Molecule 35 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
35	CH	149	1110	699	197	213	1	0	0	0
35	DH	149	1110	699	197	213	1	0	0	0

- Molecule 36 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
36	CJ	134	979	619	169	185	6	0	0	0
36	DJ	134	979	619	169	185	6	0	0	0

- Molecule 37 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
37	CK	142	Total	C	N	O	S	0	0	0
			1129	714	212	199	4			
37	DK	142	Total	C	N	O	S	0	0	0
			1129	714	212	199	4			

- Molecule 38 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
38	CL	122	Total	C	N	O	S	0	0	0
			938	587	180	165	6			
38	DL	123	Total	C	N	O	S	0	0	0
			946	593	181	166	6			

- Molecule 39 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
39	CM	144	Total	C	N	O	S	0	0	0
			1053	654	207	190	2			
39	DM	144	Total	C	N	O	S	0	0	0
			1053	654	207	190	2			

- Molecule 40 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
40	CN	136	Total	C	N	O	S	0	0	0
			1075	686	205	178	6			
40	DN	136	Total	C	N	O	S	0	2	0
			1092	696	211	179	6			

- Molecule 41 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
41	CO	120	Total	C	N	O	S	0	0	0
			960	593	196	166	5			
41	DO	125	Total	C	N	O	S	0	0	0
			993	613	202	173	5			

- Molecule 42 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace	
42	CP	116	Total	C	N	O	0	0	0	
			892	552	178	162				
42	DP	117	Total	C	N	O	S	0	0	0
			900	557	179	163	1			

- Molecule 43 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace	
43	CQ	114	Total	C	N	O	S	0	0	0
			917	574	179	163	1			
43	DQ	114	Total	C	N	O	S	0	0	0
			917	574	179	163	1			

- Molecule 44 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
44	CR	117	Total	C	N	O	0	0	0
			947	604	192	151			
44	DR	117	Total	C	N	O	0	0	0
			947	604	192	151			

- Molecule 45 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace	
45	CS	103	Total	C	N	O	S	0	0	0
			816	516	153	145	2			
45	DS	103	Total	C	N	O	S	0	0	0
			816	516	153	145	2			

- Molecule 46 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace	
46	CT	110	Total	C	N	O	S	0	0	0
			857	532	166	156	3			
46	DT	110	Total	C	N	O	S	0	0	0
			857	532	166	156	3			

- Molecule 47 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace	
47	CU	93	Total	C	N	O	S	0	0	0
			739	466	139	132	2			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
47	DU	93	Total 739	C 466	N 139	O 132	S 2	0	0	0

- Molecule 48 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
48	CV	102	Total 780	C 492	N 146	O 142	0	0	0
48	DV	102	Total 780	C 492	N 146	O 142	0	0	0

- Molecule 49 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
49	CW	94	Total 753	C 479	N 137	O 134	S 3	0	0	0
49	DW	94	Total 753	C 479	N 137	O 134	S 3	0	0	0

- Molecule 50 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
50	CX	75	Total 569	C 353	N 113	O 102	S 1	0	0	0
50	DX	76	Total 591	C 365	N 121	O 104	S 1	0	1	0

- Molecule 51 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
51	CY	77	Total 625	C 388	N 129	O 106	S 2	0	0	0
51	DY	77	Total 625	C 388	N 129	O 106	S 2	0	0	0

- Molecule 52 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
52	CZ	62	Total 501	C 308	N 98	O 94	S 1	0	0	0
52	DZ	62	Total 501	C 308	N 98	O 94	S 1	0	0	0

- Molecule 53 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
53	DI	135	1023	649	179	192	3	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
DI	85	VAL	SER	conflict	UNP P0A7J3
DI	86	THR	MET	conflict	UNP P0A7J3

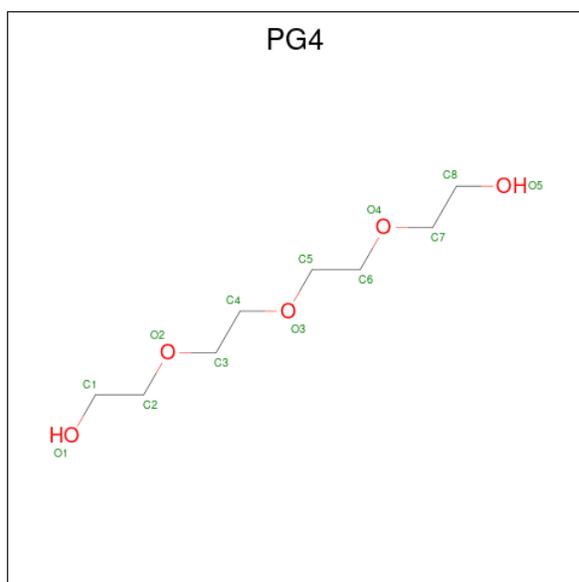
- Molecule 54 is a RNA chain called 23S rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
54	DA	2897	62423	27855	11485	20176	2907	0	11	0

- Molecule 55 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

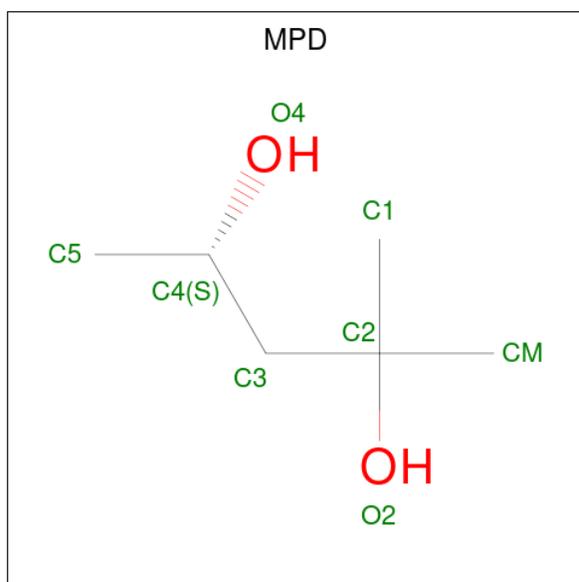
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
55	AA	72	Total 72	Mg 72	0	0
55	BA	45	Total 45	Mg 45	0	0
55	CB	3	Total 3	Mg 3	0	0
55	CA	156	Total 156	Mg 156	0	0
55	DD	1	Total 1	Mg 1	0	0
55	DM	1	Total 1	Mg 1	0	0
55	DR	2	Total 2	Mg 2	0	0
55	DB	9	Total 9	Mg 9	0	0
55	DA	183	Total 183	Mg 183	0	0

- Molecule 56 is TETRAETHYLENE GLYCOL (three-letter code: PG4) (formula: C<sub>8</sub>H<sub>18</sub>O<sub>5</sub>).



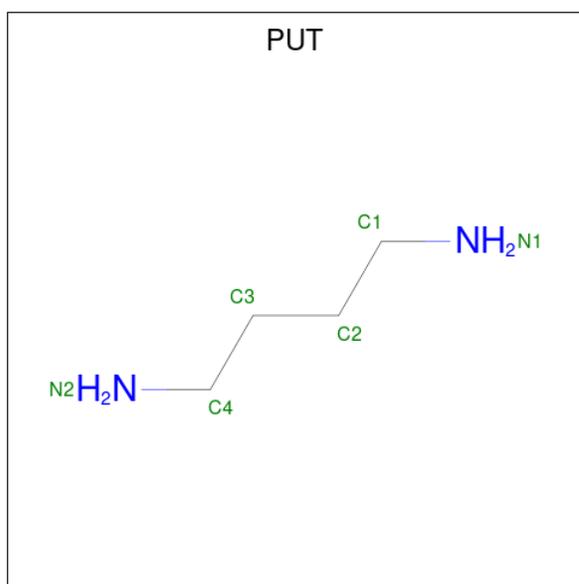
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
56	AA	1	Total C O 13 8 5	0	0
56	BA	1	Total C O 13 8 5	0	0
56	DQ	1	Total C O 13 8 5	0	0
56	DR	1	Total C O 13 8 5	0	0
56	DS	1	Total C O 13 8 5	0	0
56	DA	1	Total C O 13 8 5	0	0
56	DA	1	Total C O 13 8 5	0	0

- Molecule 57 is (4S)-2-METHYL-2,4-PENTANEDIOL (three-letter code: MPD) (formula:  $C_6H_{14}O_2$ ).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
57	AA	1	Total C O 8 6 2	0	0
57	AA	1	Total C O 8 6 2	0	0
57	DE	1	Total C O 8 6 2	0	0
57	DE	1	Total C O 8 6 2	0	0
57	DK	1	Total C O 8 6 2	0	0
57	DN	1	Total C O 8 6 2	0	0
57	DS	1	Total C O 8 6 2	0	0
57	DT	1	Total C O 8 6 2	0	0
57	DT	1	Total C O 8 6 2	0	0
57	DA	1	Total C O 8 6 2	0	0
57	DA	1	Total C O 8 6 2	0	0
57	DA	1	Total C O 8 6 2	0	0
57	DA	1	Total C O 8 6 2	0	0
57	DA	1	Total C O 8 6 2	0	0

- Molecule 58 is 1,4-DIAMINOBTUTANE (three-letter code: PUT) (formula: C<sub>4</sub>H<sub>12</sub>N<sub>2</sub>).



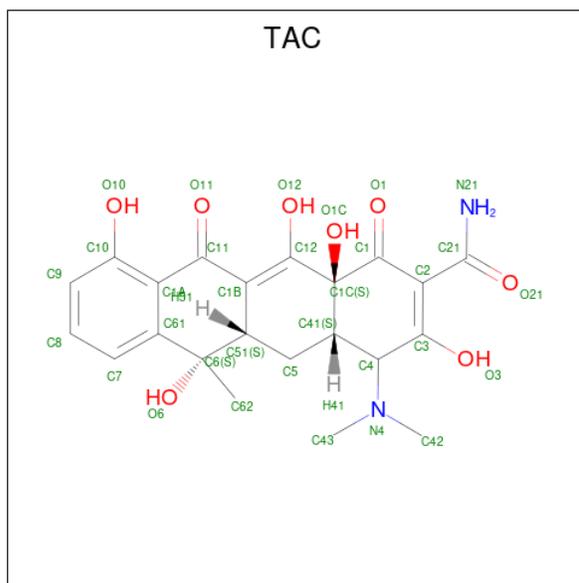
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
58	AA	1	Total C N 6 4 2	0	0
58	AA	1	Total C N 6 4 2	0	0
58	AA	1	Total C N 6 4 2	0	0
58	AA	1	Total C N 6 4 2	0	0
58	DM	1	Total C N 6 4 2	0	0
58	DA	1	Total C N 6 4 2	0	0
58	DA	1	Total C N 6 4 2	0	0
58	DA	1	Total C N 6 4 2	0	0
58	DA	1	Total C N 6 4 2	0	0
58	DA	1	Total C N 6 4 2	0	0
58	DA	1	Total C N 6 4 2	0	0
58	DA	1	Total C N 6 4 2	0	0
58	DA	1	Total C N 6 4 2	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
58	DA	1	Total C N 6 4 2	0	0
58	DA	1	Total C N 6 4 2	0	0
58	DA	1	Total C N 6 4 2	0	0

- Molecule 59 is TETRACYCLINE (three-letter code: TAC) (formula:  $C_{22}H_{24}N_2O_8$ ).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
59	AA	1	Total C N O 32 22 2 8	0	0
59	AA	1	Total C H N O 33 22 1 2 8	0	0
59	BA	1	Total C N O 32 22 2 8	0	0
59	BA	1	Total C H N O 33 22 1 2 8	0	0

- Molecule 60 is ZINC ION (three-letter code: ZN) (formula: Zn).

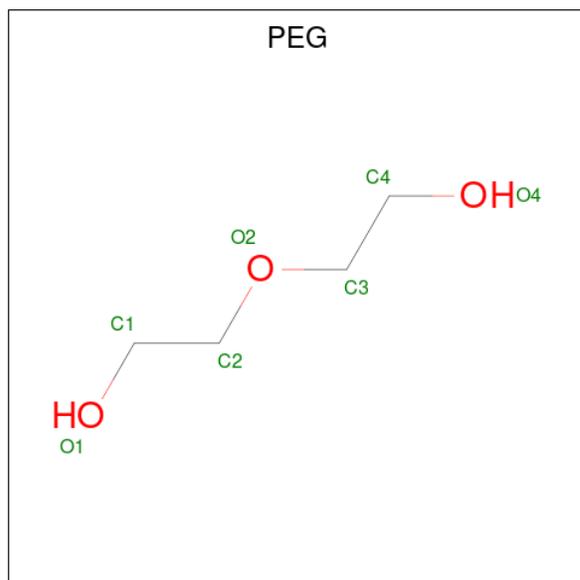
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
60	AB	1	Total Zn 1 1	0	0
60	C5	1	Total Zn 1 1	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
60	D5	1	Total	Zn	0	0
			1	1		

- Molecule 61 is DI(HYDROXYETHYL)ETHER (three-letter code: PEG) (formula: C<sub>4</sub>H<sub>10</sub>O<sub>3</sub>).



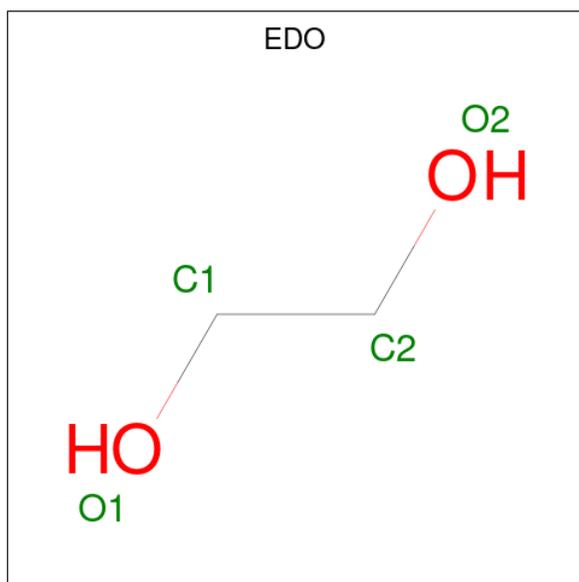
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
61	AL	1	Total	C	O	0	0
			7	4	3		
61	D1	1	Total	C	O	0	0
			7	4	3		
61	D3	1	Total	C	O	0	0
			7	4	3		
61	DL	1	Total	C	O	0	0
			7	4	3		
61	DP	1	Total	C	O	0	0
			7	4	3		
61	DQ	1	Total	C	O	0	0
			7	4	3		
61	DA	1	Total	C	O	0	0
			7	4	3		
61	DA	1	Total	C	O	0	0
			7	4	3		
61	DA	1	Total	C	O	0	0
			7	4	3		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
61	DA	1	Total	C	O	0	0
			7	4	3		

- Molecule 62 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: C<sub>2</sub>H<sub>6</sub>O<sub>2</sub>).



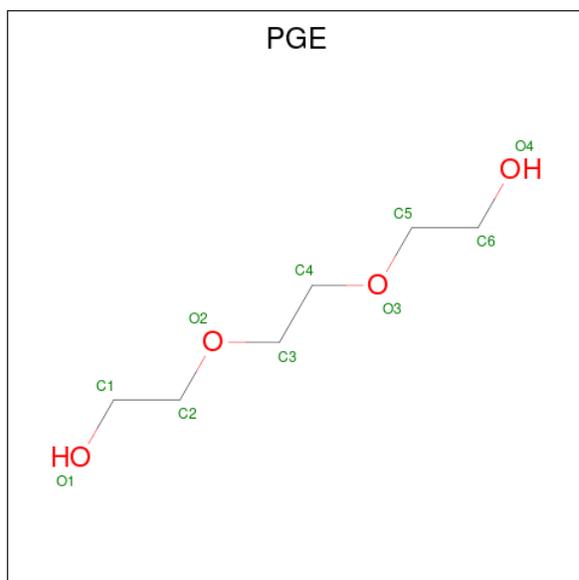
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
62	D1	1	Total	C	O	0	0
			4	2	2		
62	DB	1	Total	C	O	0	0
			4	2	2		
62	DB	1	Total	C	O	0	0
			4	2	2		
62	DB	1	Total	C	O	0	0
			4	2	2		
62	DA	1	Total	C	O	0	0
			4	2	2		
62	DA	1	Total	C	O	0	0
			4	2	2		
62	DA	1	Total	C	O	0	0
			4	2	2		
62	DA	1	Total	C	O	0	0
			4	2	2		

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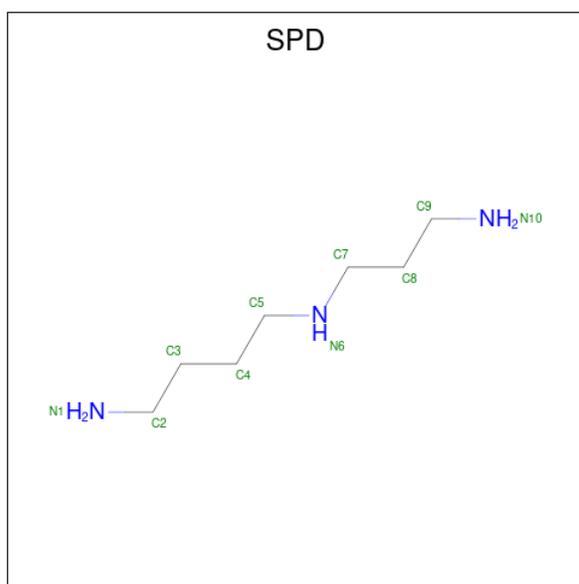
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
62	DA	1	Total C O 4 2 2	0	0
62	DA	1	Total C O 4 2 2	0	0

- Molecule 63 is TRIETHYLENE GLYCOL (three-letter code: PGE) (formula: C<sub>6</sub>H<sub>14</sub>O<sub>4</sub>).



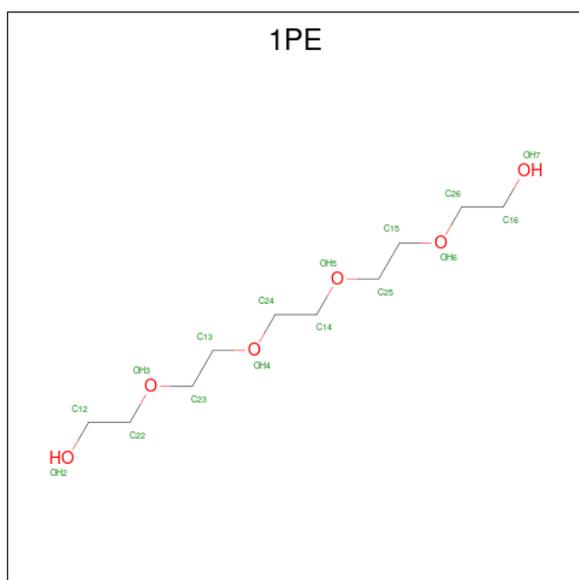
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
63	D1	1	Total C O 10 6 4	0	0
63	DS	1	Total C O 10 6 4	0	0
63	DU	1	Total C O 10 6 4	0	0
63	DA	1	Total C O 10 6 4	0	0
63	DA	1	Total C O 10 6 4	0	0
63	DA	1	Total C O 10 6 4	0	0
63	DA	1	Total C O 10 6 4	0	0
63	DA	1	Total C O 10 6 4	0	0
63	DA	1	Total C O 10 6 4	0	0

- Molecule 64 is SPERMIDINE (three-letter code: SPD) (formula:  $C_7H_{19}N_3$ ).



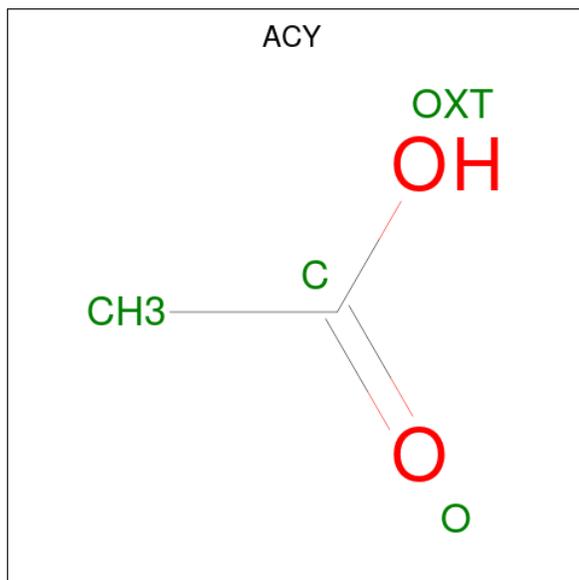
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
64	DA	1	Total C N 10 7 3	0	0
64	DA	1	Total C N 10 7 3	0	0
64	DA	1	Total C N 10 7 3	0	0
64	DA	1	Total C N 10 7 3	0	0

- Molecule 65 is PENTAETHYLENE GLYCOL (three-letter code: 1PE) (formula:  $C_{10}H_{22}O_6$ ).



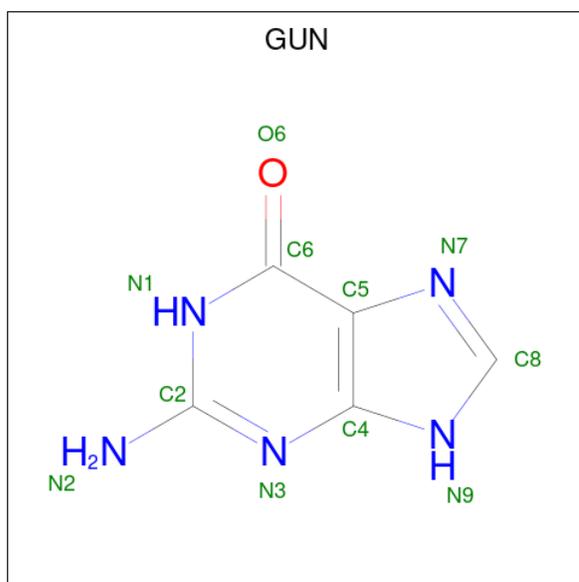
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
65	DA	1	Total	C	O	0	0
			16	10	6		
65	DA	1	Total	C	O	0	0
			16	10	6		

- Molecule 66 is ACETIC ACID (three-letter code: ACY) (formula: C<sub>2</sub>H<sub>4</sub>O<sub>2</sub>).



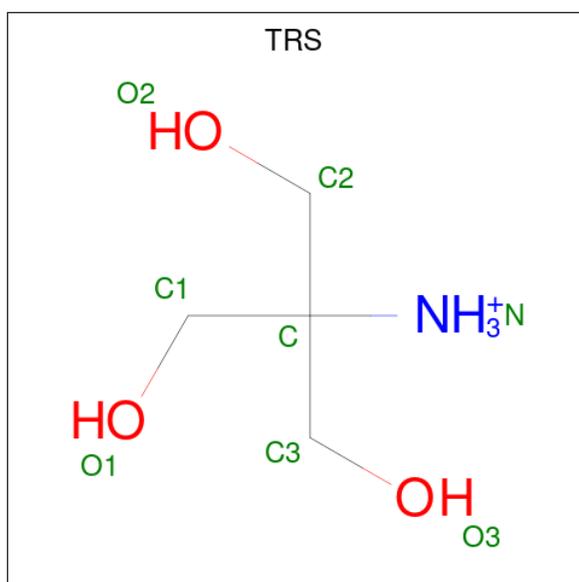
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
66	DA	1	Total	C	O	0	0
			4	2	2		
66	DA	1	Total	C	O	0	0
			4	2	2		
66	DA	1	Total	C	O	0	0
			4	2	2		

- Molecule 67 is GUANINE (three-letter code: GUN) (formula: C<sub>5</sub>H<sub>5</sub>N<sub>5</sub>O).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
67	DA	1	11	5	5	1	0	0

- Molecule 68 is 2-AMINO-2-HYDROXYMETHYL-PROPANE-1,3-DIOL (three-letter code: TRS) (formula:  $C_4H_{12}NO_3$ ).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
68	DA	1	8	4	1	3	0	0

- Molecule 69 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
69	AA	501	Total 501	O 501	0	0
69	AC	4	Total 4	O 4	0	0
69	AD	2	Total 2	O 2	0	0
69	AE	5	Total 5	O 5	0	0
69	AG	1	Total 1	O 1	0	0
69	AH	1	Total 1	O 1	0	0
69	AJ	2	Total 2	O 2	0	0
69	AK	6	Total 6	O 6	0	0
69	AL	10	Total 10	O 10	0	0
69	AM	5	Total 5	O 5	0	0
69	AN	6	Total 6	O 6	0	0
69	AO	2	Total 2	O 2	0	0
69	AP	2	Total 2	O 2	0	0
69	AR	1	Total 1	O 1	0	0
69	AT	3	Total 3	O 3	0	0
69	AU	3	Total 3	O 3	0	0
69	C3	4	Total 4	O 4	0	0
69	C4	1	Total 1	O 1	0	0
69	BA	287	Total 287	O 287	0	0
69	BD	13	Total 13	O 13	0	0
69	BE	1	Total 1	O 1	0	0
69	BF	2	Total 2	O 2	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
69	BK	2	Total 2	O 2	0	0
69	BL	4	Total 4	O 4	0	0
69	BN	2	Total 2	O 2	0	0
69	BO	1	Total 1	O 1	0	0
69	BP	3	Total 3	O 3	0	0
69	BT	2	Total 2	O 2	0	0
69	BU	2	Total 2	O 2	0	0
69	D1	43	Total 43	O 43	0	0
69	D2	6	Total 6	O 6	0	0
69	D3	22	Total 22	O 22	0	0
69	D4	39	Total 39	O 39	0	0
69	D5	8	Total 8	O 8	0	0
69	D0	24	Total 24	O 24	0	0
69	CB	13	Total 13	O 13	0	0
69	CC	10	Total 10	O 10	0	0
69	CD	6	Total 6	O 6	0	0
69	CA	691	Total 691	O 691	0	0
69	DC	100	Total 100	O 100	0	0
69	DD	98	Total 98	O 98	0	0
69	CE	5	Total 5	O 5	0	0
69	CL	1	Total 1	O 1	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
69	CM	4	Total O 4 4	0	0
69	CO	2	Total O 2 2	0	0
69	CU	3	Total O 3 3	0	0
69	CV	1	Total O 1 1	0	0
69	CW	1	Total O 1 1	0	0
69	CY	1	Total O 1 1	0	0
69	DE	61	Total O 61 61	0	0
69	DF	15	Total O 15 15	0	0
69	DG	6	Total O 6 6	0	0
69	DH	2	Total O 2 2	0	0
69	DK	65	Total O 65 65	0	0
69	DL	52	Total O 52 52	0	0
69	DM	63	Total O 63 63	0	0
69	DN	72	Total O 72 72	0	0
69	DO	44	Total O 44 44	0	0
69	DP	38	Total O 38 38	0	0
69	DQ	33	Total O 33 33	0	0
69	DR	62	Total O 62 62	0	0
69	DS	46	Total O 46 46	0	0
69	DT	69	Total O 69 69	0	0
69	DU	18	Total O 18 18	0	0

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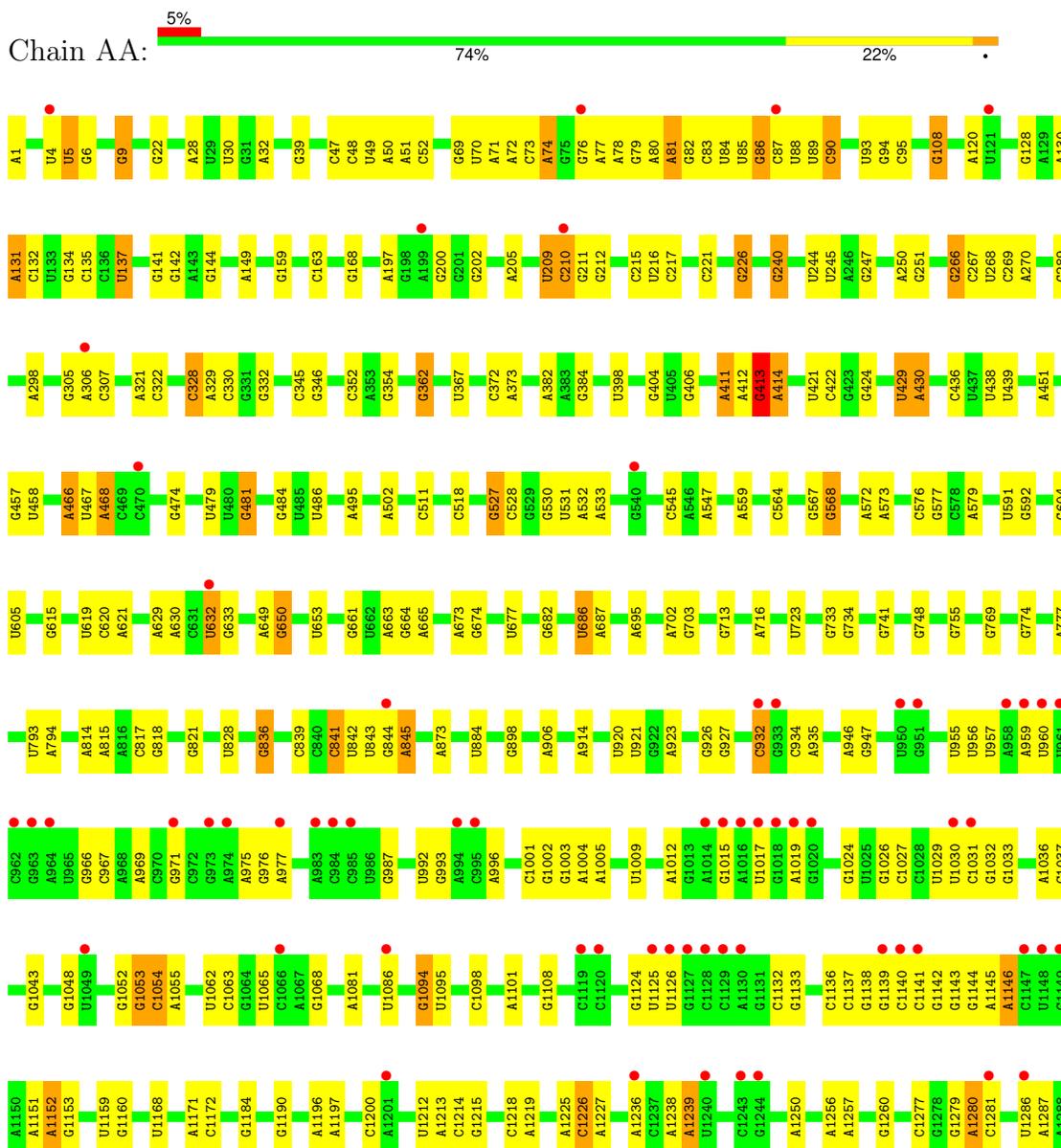
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<b>Mol</b>	<b>Chain</b>	<b>Residues</b>	<b>Atoms</b>	<b>ZeroOcc</b>	<b>AltConf</b>
69	DV	20	Total O 20 20	0	0
69	DW	31	Total O 31 31	0	0
69	DX	25	Total O 25 25	0	0
69	DY	9	Total O 9 9	0	0
69	DZ	8	Total O 8 8	0	0
69	DB	209	Total O 209 209	0	0
69	DA	4840	Total O 4840 4840	0	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 electron 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 dot above a residue indicates a poor fit to the electron density ( $RSRZ > 2$ ). 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.

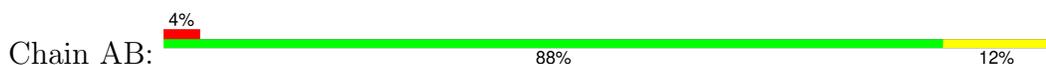
- Molecule 1: 16S rRNA



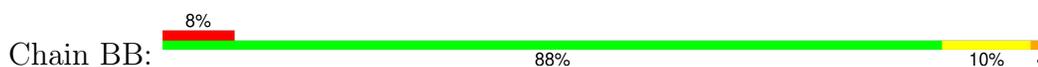




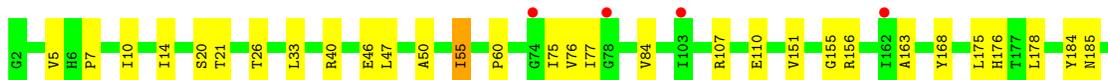
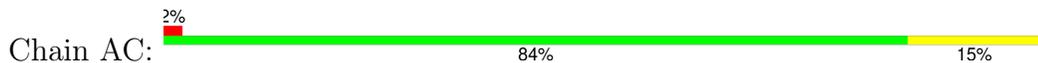
- Molecule 2: 30S ribosomal protein S2



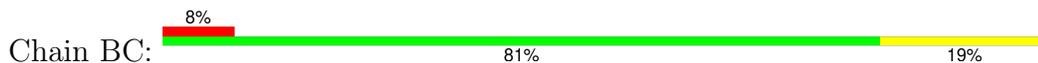
- Molecule 2: 30S ribosomal protein S2



- Molecule 3: 30S ribosomal protein S3



- Molecule 3: 30S ribosomal protein S3



- Molecule 4: 30S ribosomal protein S4

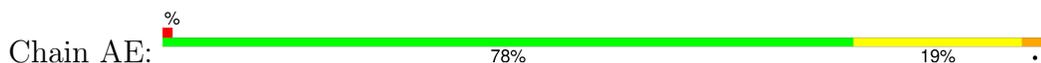




- Molecule 4: 30S ribosomal protein S4



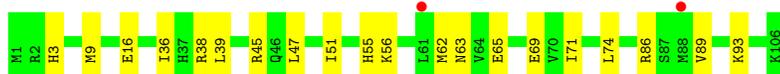
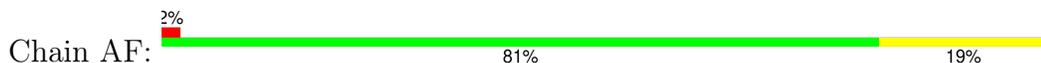
- Molecule 5: 30S ribosomal protein S5



- Molecule 5: 30S ribosomal protein S5



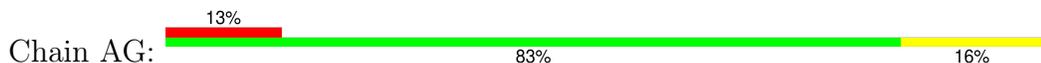
- Molecule 6: 30S ribosomal protein S6



- Molecule 6: 30S ribosomal protein S6

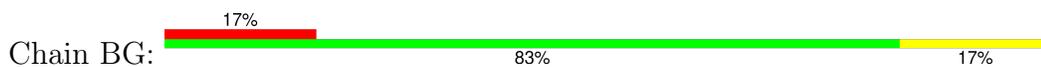


- Molecule 7: 30S ribosomal protein S7

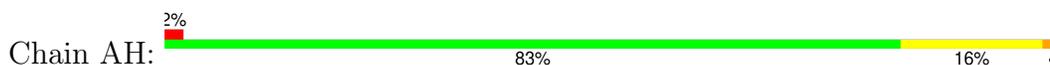




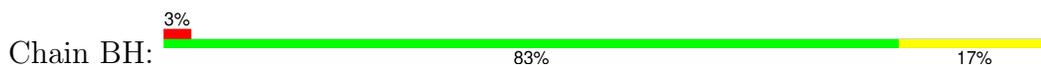
- Molecule 7: 30S ribosomal protein S7



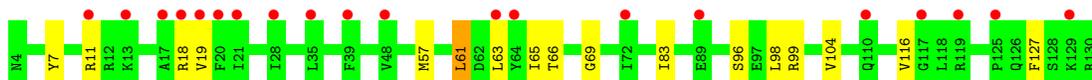
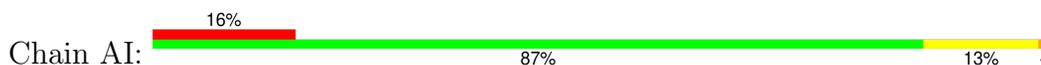
- Molecule 8: 30S ribosomal protein S8



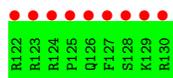
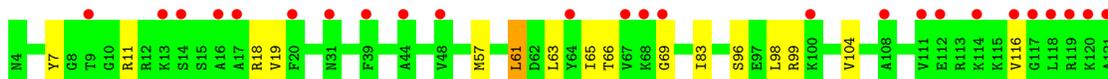
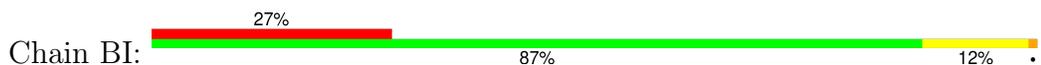
- Molecule 8: 30S ribosomal protein S8



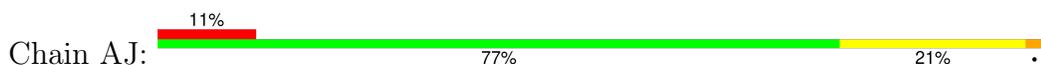
- Molecule 9: 30S ribosomal protein S9

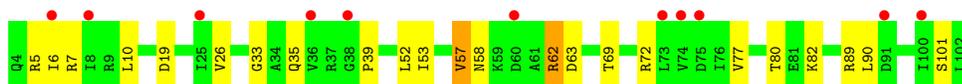


- Molecule 9: 30S ribosomal protein S9



- Molecule 10: 30S ribosomal protein S10

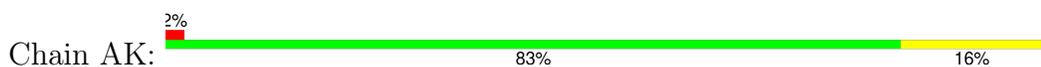




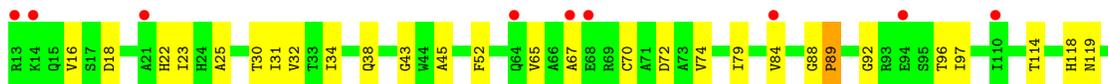
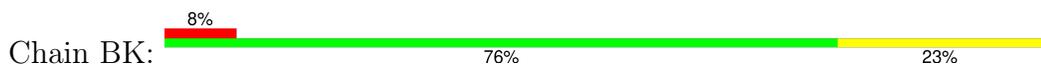
• Molecule 10: 30S ribosomal protein S10



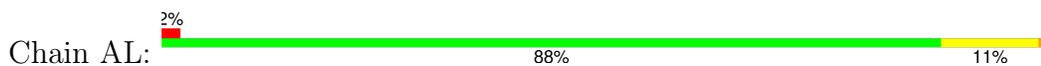
• Molecule 11: 30S ribosomal protein S11



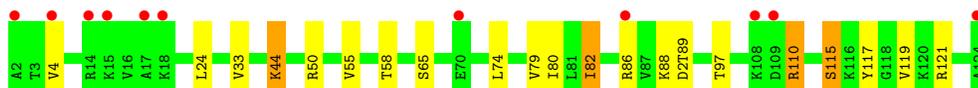
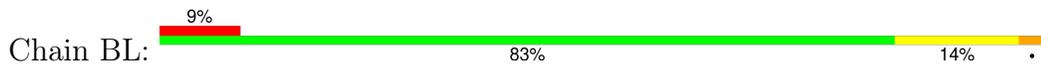
• Molecule 11: 30S ribosomal protein S11



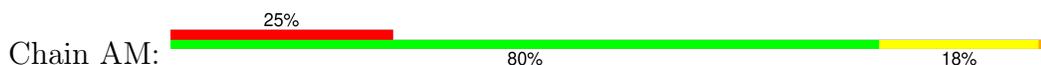
• Molecule 12: 30S ribosomal protein S12

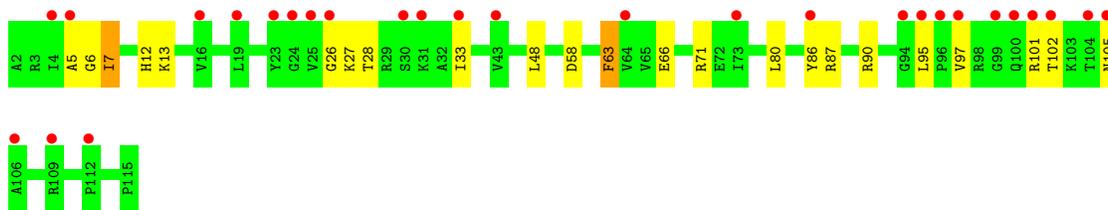


• Molecule 12: 30S ribosomal protein S12

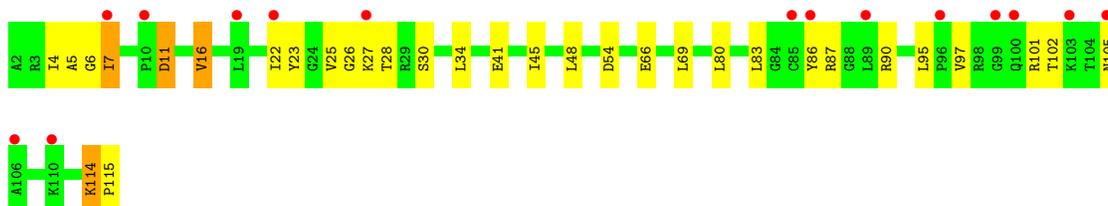
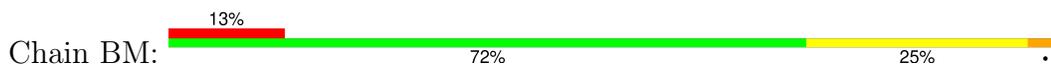


• Molecule 13: 30S ribosomal protein S13

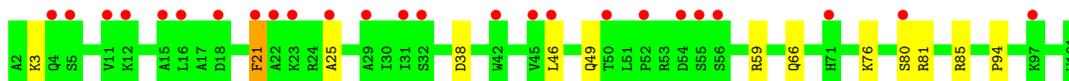
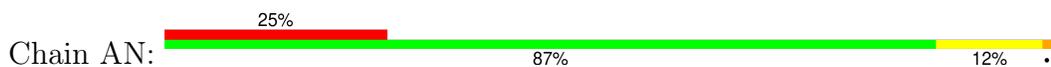




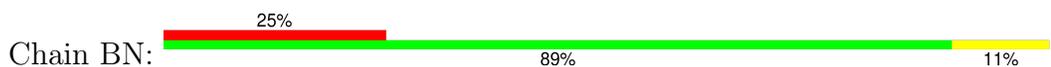
- Molecule 13: 30S ribosomal protein S13



- Molecule 14: 30S ribosomal protein S14



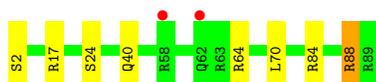
- Molecule 14: 30S ribosomal protein S14



- Molecule 15: 30S ribosomal protein S15



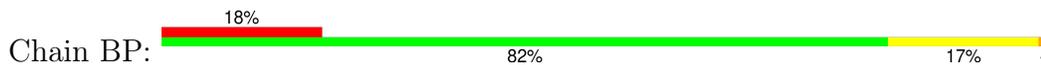
- Molecule 15: 30S ribosomal protein S15



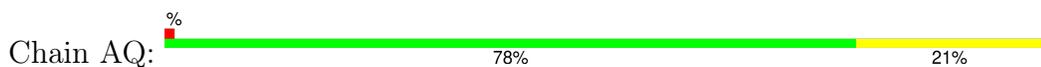
- Molecule 16: 30S ribosomal protein S16



- Molecule 16: 30S ribosomal protein S16



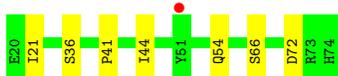
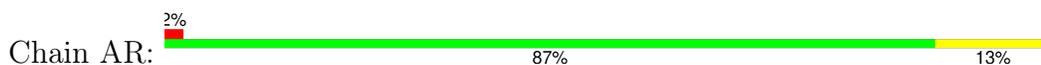
- Molecule 17: 30S ribosomal protein S17



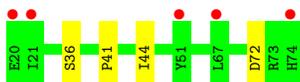
- Molecule 17: 30S ribosomal protein S17



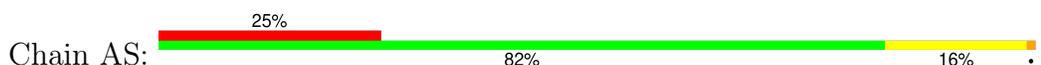
- Molecule 18: 30S ribosomal protein S18



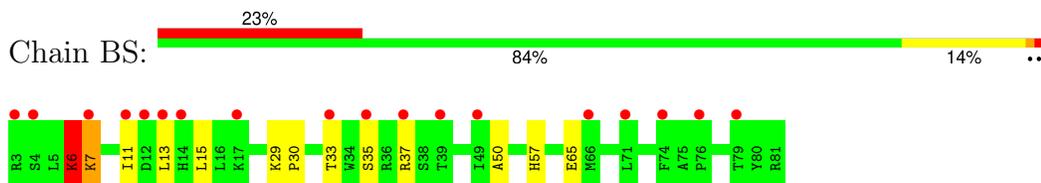
- Molecule 18: 30S ribosomal protein S18



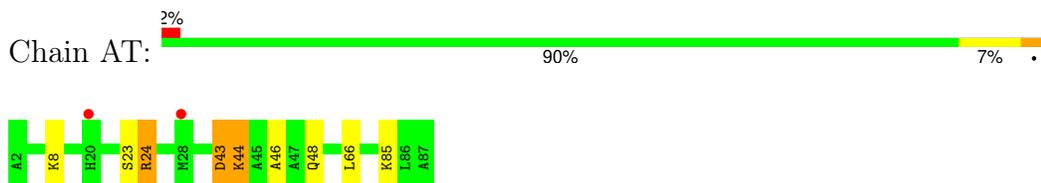
- Molecule 19: 30S ribosomal protein S19



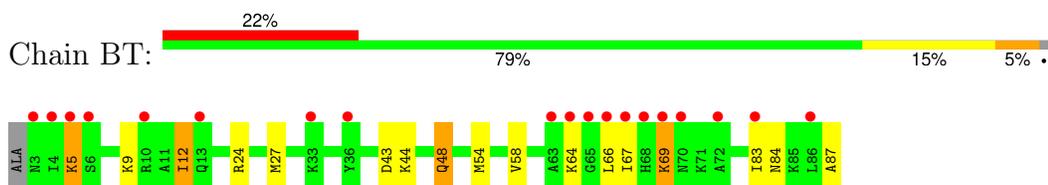
- Molecule 19: 30S ribosomal protein S19



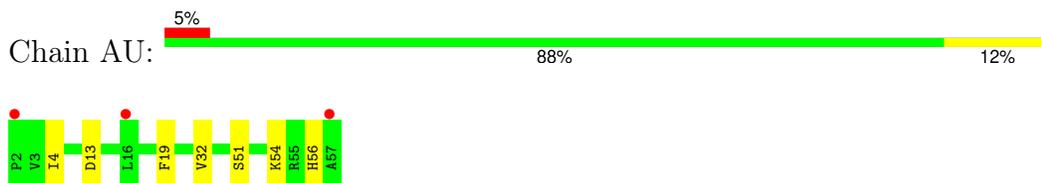
- Molecule 20: 30S ribosomal protein S20



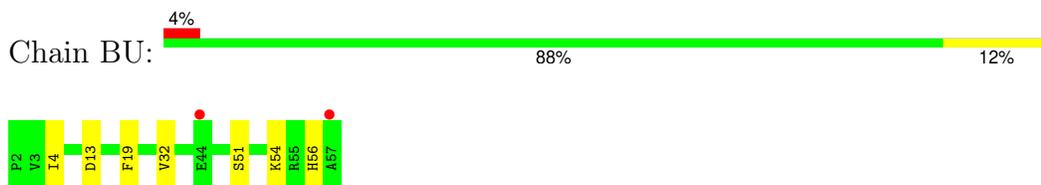
- Molecule 20: 30S ribosomal protein S20



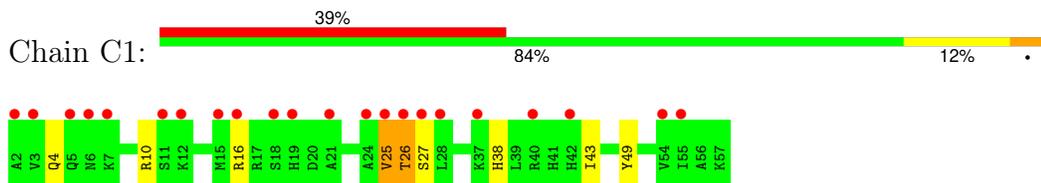
- Molecule 21: 30S ribosomal protein S21



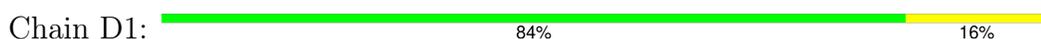
- Molecule 21: 30S ribosomal protein S21



- Molecule 22: 50S ribosomal protein L32

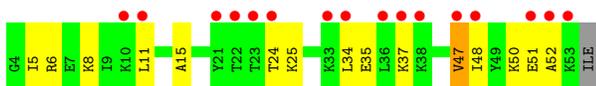


- Molecule 22: 50S ribosomal protein L32

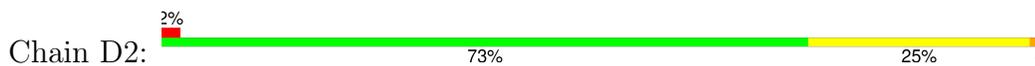




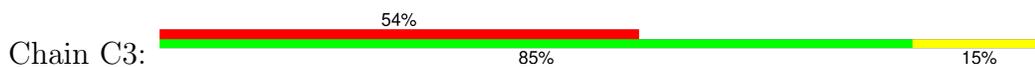
- Molecule 23: 50S ribosomal protein L33



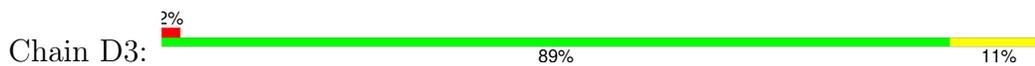
- Molecule 23: 50S ribosomal protein L33



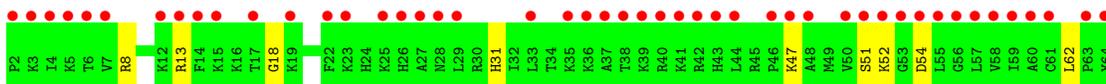
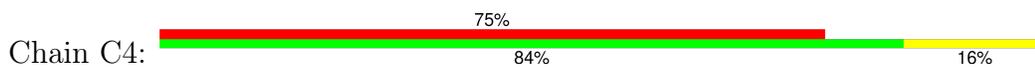
- Molecule 24: 50S ribosomal protein L34



- Molecule 24: 50S ribosomal protein L34



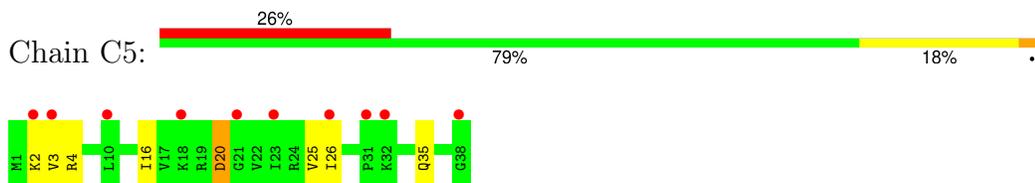
- Molecule 25: 50S ribosomal protein L35



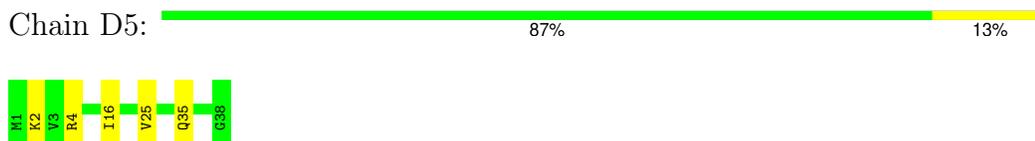
- Molecule 25: 50S ribosomal protein L35



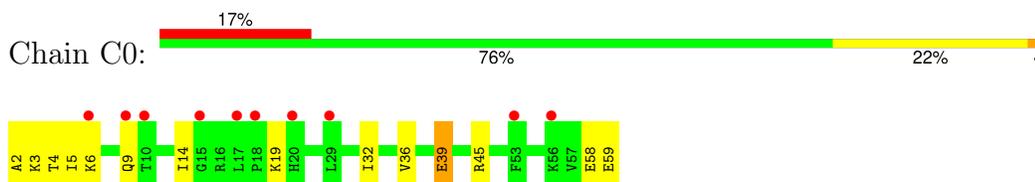
- Molecule 26: 50S ribosomal protein L36



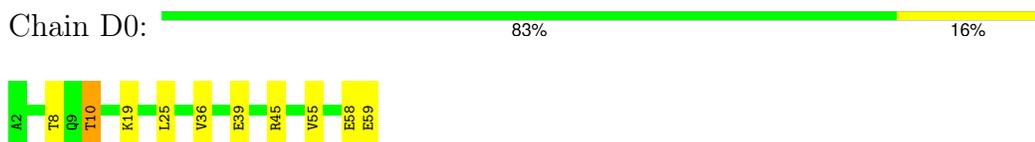
- Molecule 26: 50S ribosomal protein L36



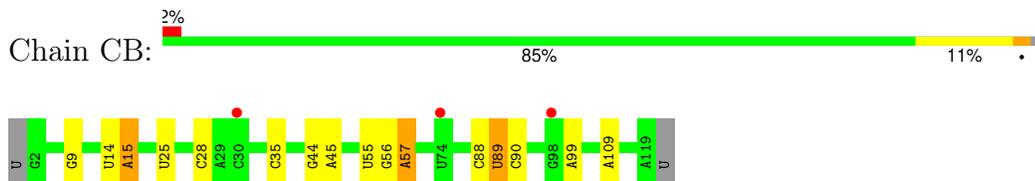
- Molecule 27: 50S ribosomal protein L30



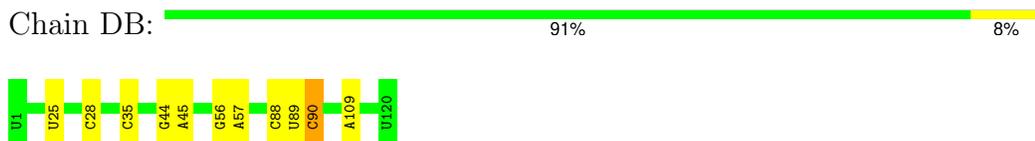
- Molecule 27: 50S ribosomal protein L30



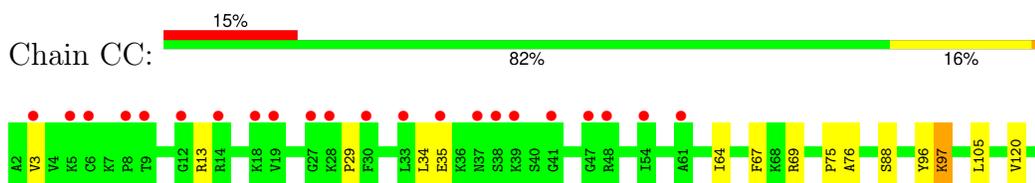
- Molecule 28: 5S rRNA

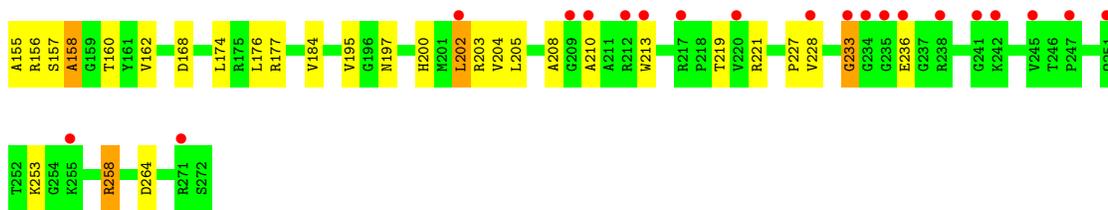


- Molecule 28: 5S rRNA



- Molecule 29: 50S ribosomal protein L2

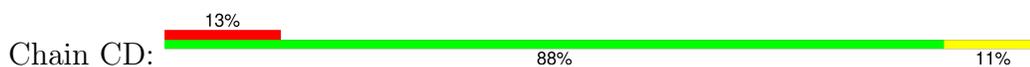




- Molecule 29: 50S ribosomal protein L2



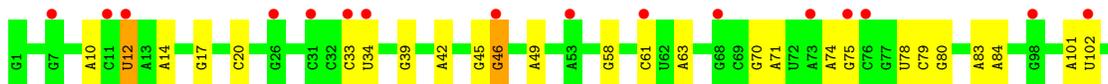
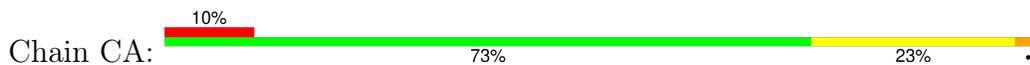
- Molecule 30: 50S ribosomal protein L3



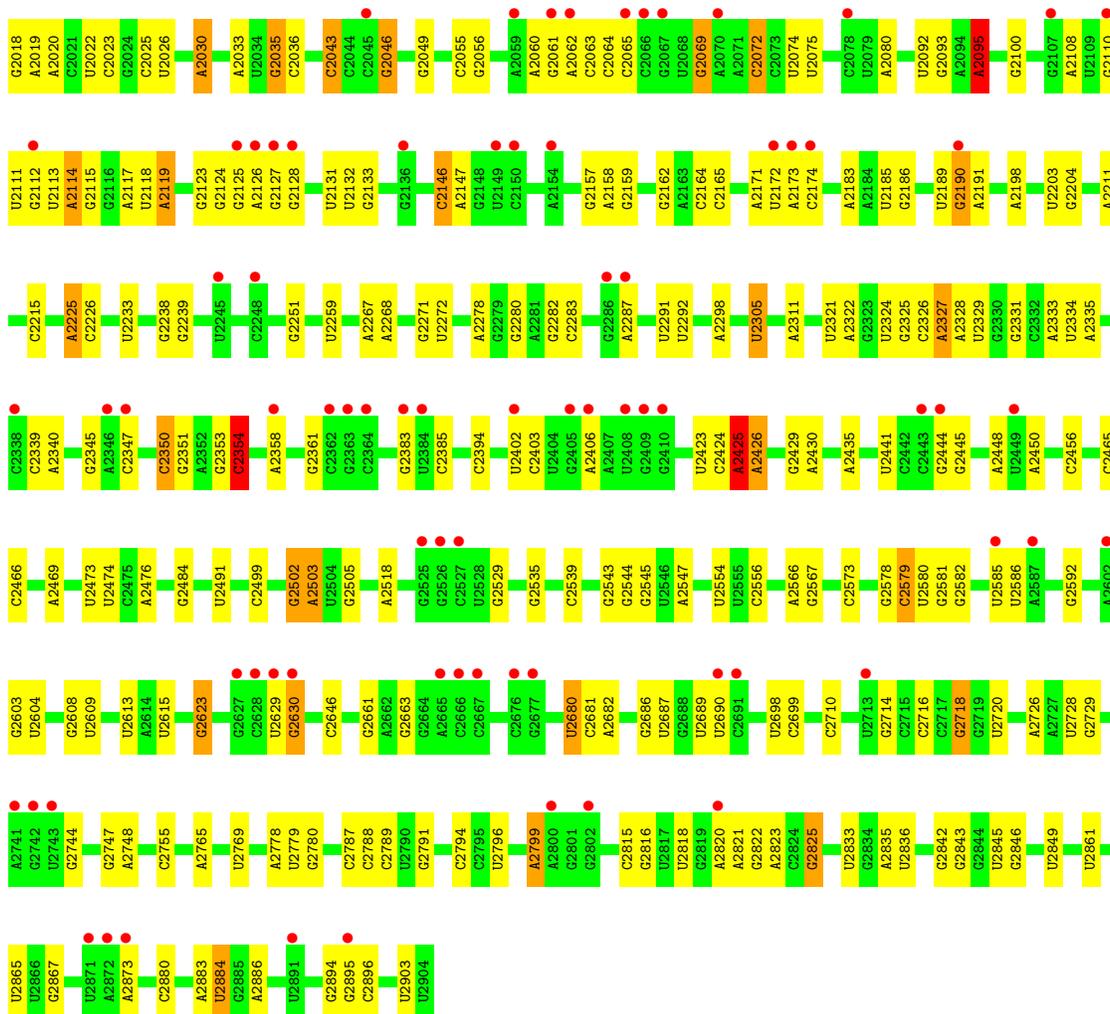
- Molecule 30: 50S ribosomal protein L3



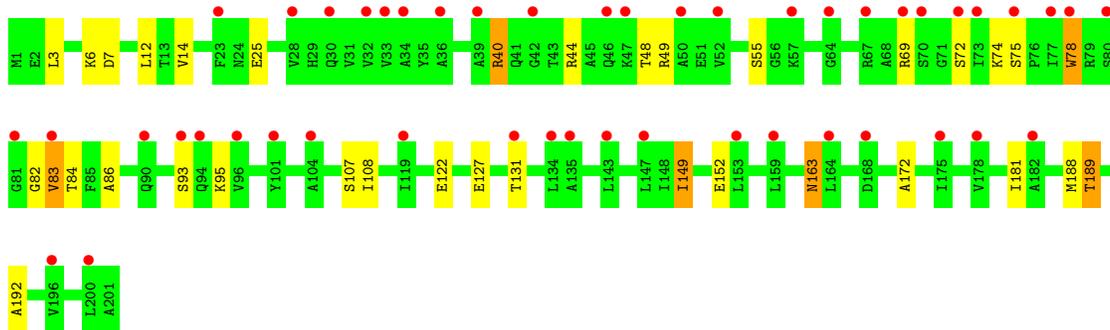
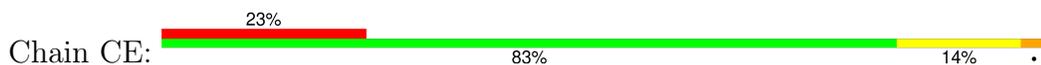
- Molecule 31: 23S rRNA







• Molecule 32: 50S ribosomal protein L4

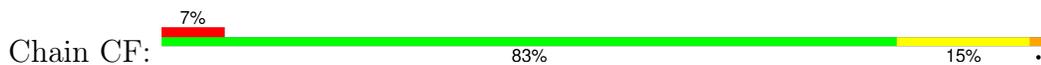


• Molecule 32: 50S ribosomal protein L4

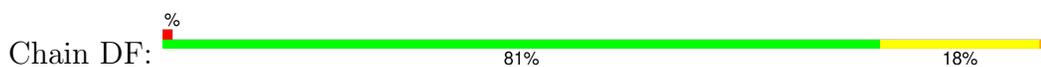




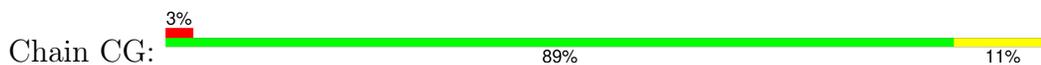
- Molecule 33: 50S ribosomal protein L5



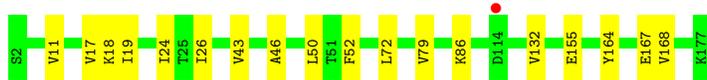
- Molecule 33: 50S ribosomal protein L5



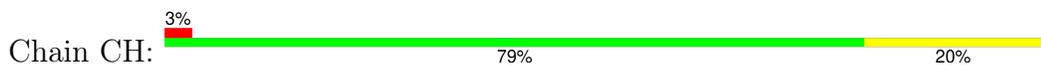
- Molecule 34: 50S ribosomal protein L6



- Molecule 34: 50S ribosomal protein L6



- Molecule 35: 50S ribosomal protein L9



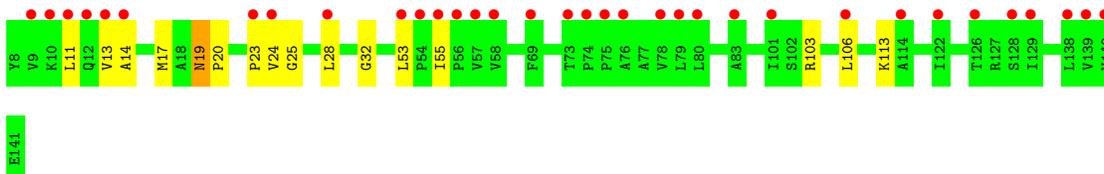
- Molecule 35: 50S ribosomal protein L9

Chain DH: 



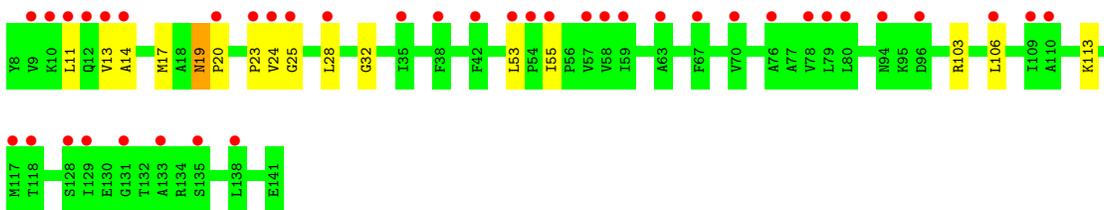
- Molecule 36: 50S ribosomal protein L11

Chain CJ: 

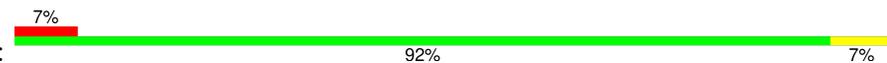


- Molecule 36: 50S ribosomal protein L11

Chain DJ: 



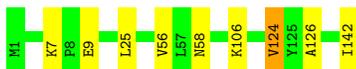
- Molecule 37: 50S ribosomal protein L13

Chain CK: 



- Molecule 37: 50S ribosomal protein L13

Chain DK: 



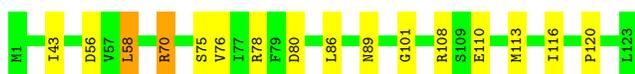
- Molecule 38: 50S ribosomal protein L14

Chain CL: 



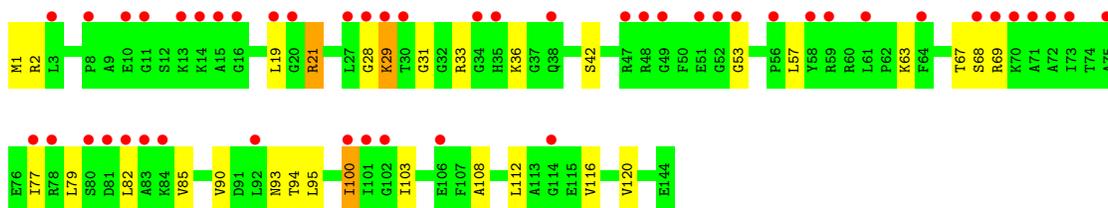
- Molecule 38: 50S ribosomal protein L14

Chain DL:  87% 11%

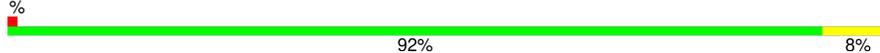


- Molecule 39: 50S ribosomal protein L15

Chain CM:  33% 79% 19%



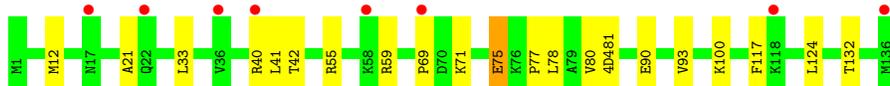
- Molecule 39: 50S ribosomal protein L15

Chain DM:  92% 8%



- Molecule 40: 50S ribosomal protein L16

Chain CN:  6% 85% 15%



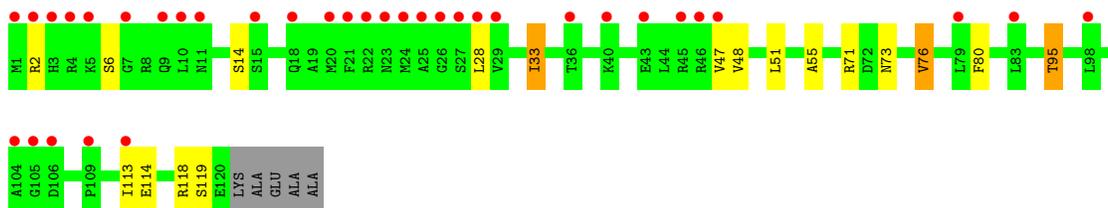
- Molecule 40: 50S ribosomal protein L16

Chain DN:  84% 15%



- Molecule 41: 50S ribosomal protein L17

Chain CO:  28% 82% 12%



- Molecule 41: 50S ribosomal protein L17

Chain DO:  91% 6%



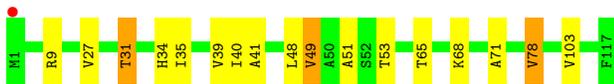
• Molecule 42: 50S ribosomal protein L18

Chain CP:  13% 87% 10%



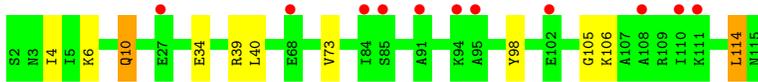
• Molecule 42: 50S ribosomal protein L18

Chain DP:  85% 12%

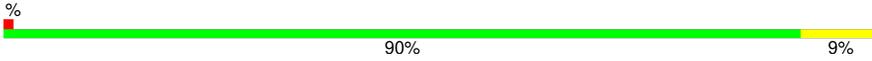


• Molecule 43: 50S ribosomal protein L19

Chain CQ:  10% 90% 8%



• Molecule 43: 50S ribosomal protein L19

Chain DQ:  90% 9%



• Molecule 44: 50S ribosomal protein L20

Chain CR:  21% 87% 13%

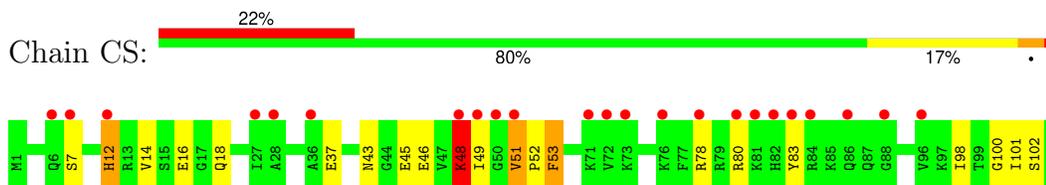


• Molecule 44: 50S ribosomal protein L20

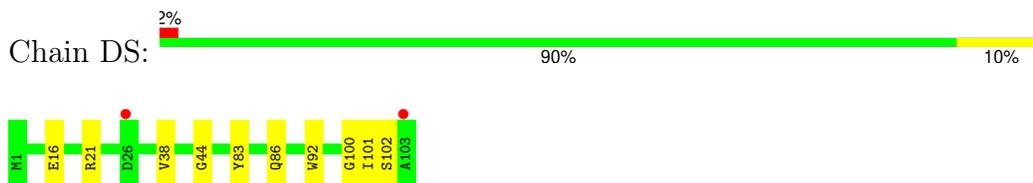
Chain DR:  89% 11%



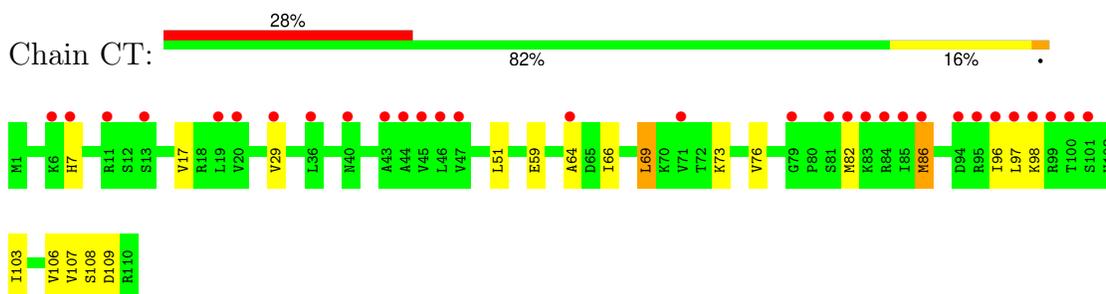
- Molecule 45: 50S ribosomal protein L21



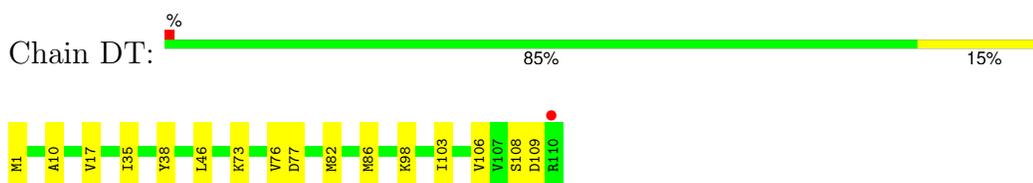
- Molecule 45: 50S ribosomal protein L21



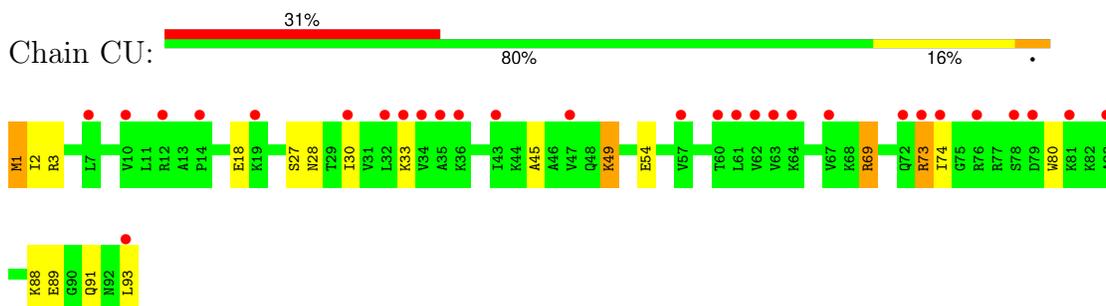
- Molecule 46: 50S ribosomal protein L22



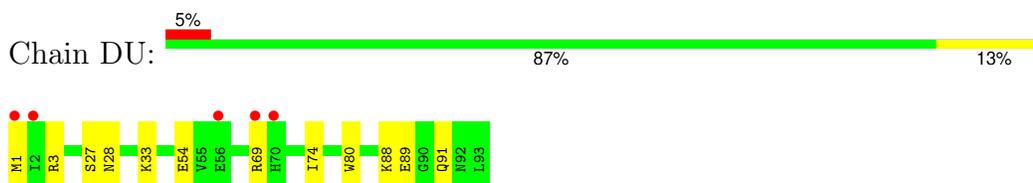
- Molecule 46: 50S ribosomal protein L22



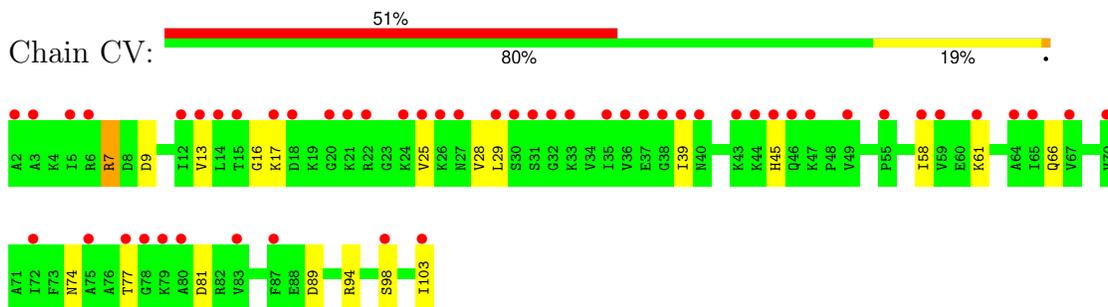
- Molecule 47: 50S ribosomal protein L23



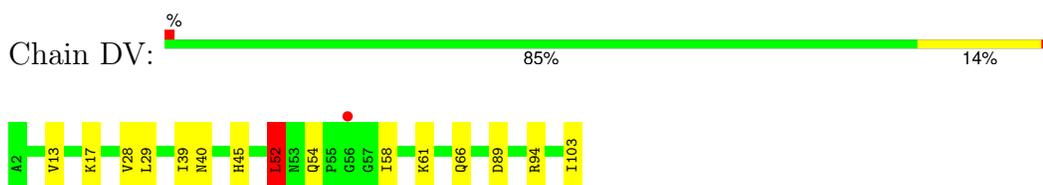
- Molecule 47: 50S ribosomal protein L23



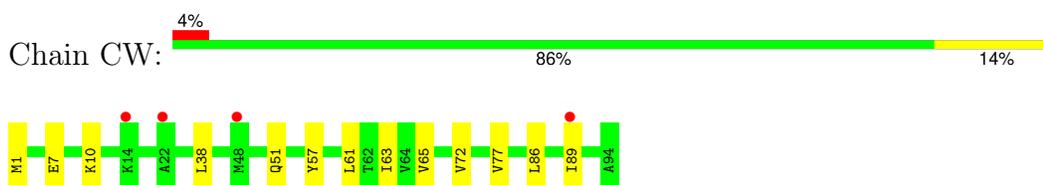
- Molecule 48: 50S ribosomal protein L24



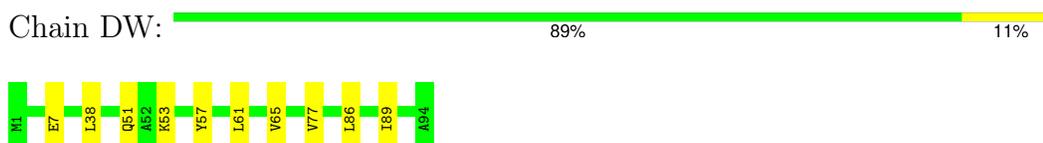
- Molecule 48: 50S ribosomal protein L24



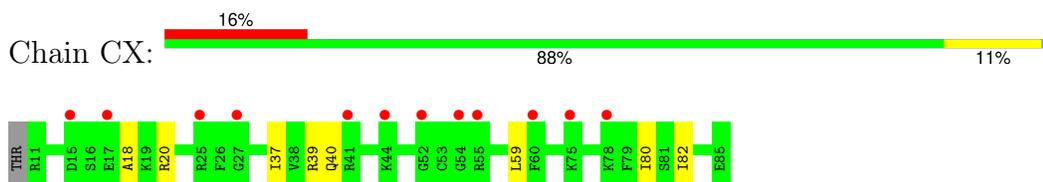
- Molecule 49: 50S ribosomal protein L25



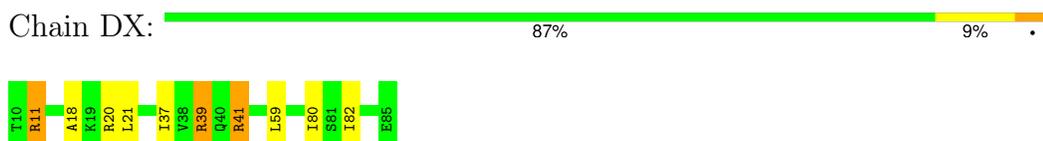
- Molecule 49: 50S ribosomal protein L25



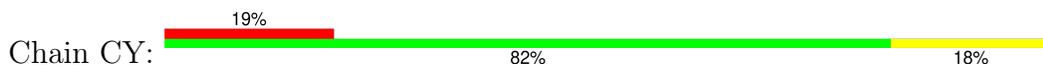
- Molecule 50: 50S ribosomal protein L27

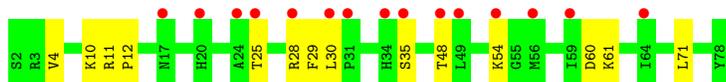


- Molecule 50: 50S ribosomal protein L27



- Molecule 51: 50S ribosomal protein L28

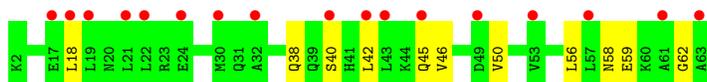
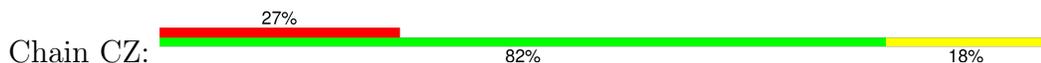




- Molecule 51: 50S ribosomal protein L28



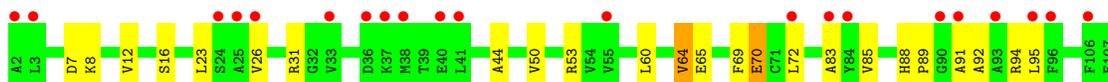
- Molecule 52: 50S ribosomal protein L29



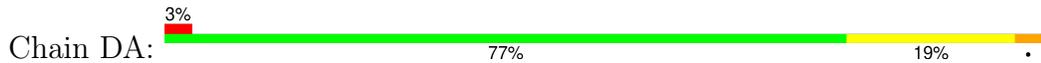
- Molecule 52: 50S ribosomal protein L29

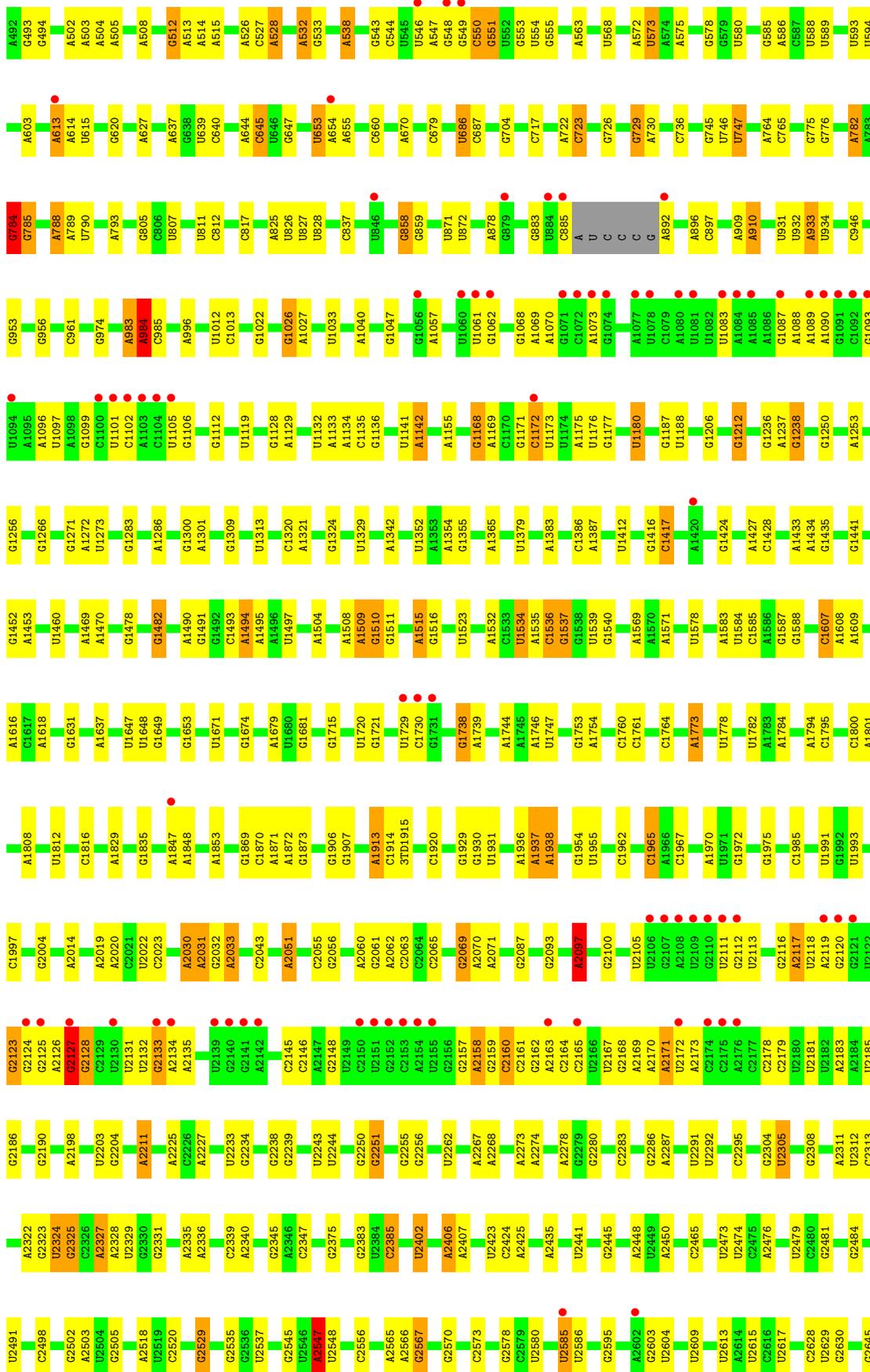


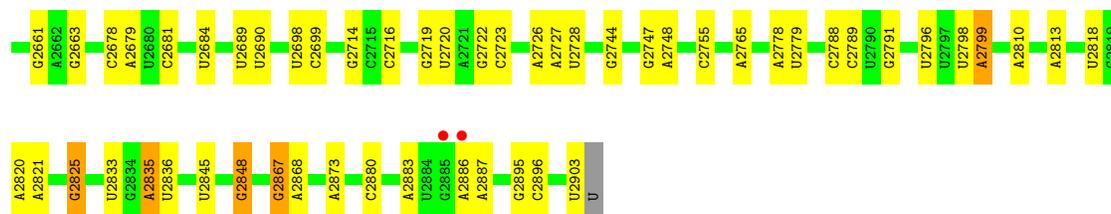
- Molecule 53: 50S ribosomal protein L10



- Molecule 54: 23S rRNA







## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	212.41Å 435.70Å 625.25Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	48.61 – 3.00 48.61 – 3.00	Depositor EDS
% Data completeness (in resolution range)	99.2 (48.61-3.00) 99.1 (48.61-3.00)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.25 (at 3.01Å)	Xtrriage
Refinement program	BUSTER-TNT 2.11.6	Depositor
R, $R_{free}$	0.172 , 0.193 0.184 , 0.207	Depositor DCC
$R_{free}$ test set	4504 reflections (0.40%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	56.5	Xtrriage
Anisotropy	0.311	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.28 , 90.1	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.47$ , $\langle L^2 \rangle = 0.30$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.93	EDS
Total number of atoms	295261	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	105.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.41% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: SPD, D2T, EDO, 1PE, TAC, PG4, 5MC, TRS, GUN, ZN, PGE, 4OC, PSU, 1MG, G7M, ACY, PUT, MEQ, OMG, MPD, 2MA, 2MG, 3TD, H2U, MG, UR3, 4D4, 6MZ, 5MU, OMU, PEG, OMC, MA6

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	AA	0.97	8/36597 (0.0%)	0.86	4/57088 (0.0%)
1	BA	0.99	13/36572 (0.0%)	0.86	7/57049 (0.0%)
2	AB	0.45	0/1784	0.64	0/2403
2	BB	0.44	0/1784	0.64	0/2403
3	AC	0.46	0/1652	0.66	0/2225
3	BC	0.45	0/1652	0.68	0/2225
4	AD	0.43	0/1665	0.66	0/2227
4	BD	0.44	0/1665	0.67	0/2227
5	AE	0.47	0/1157	0.75	0/1557
5	BE	0.50	0/1118	0.80	0/1504
6	AF	0.45	0/881	0.70	1/1189 (0.1%)
6	BF	0.46	0/835	0.79	1/1128 (0.1%)
7	AG	0.45	0/1196	0.62	0/1602
7	BG	0.45	0/1196	0.62	0/1602
8	AH	0.43	0/989	0.70	0/1326
8	BH	0.42	0/989	0.69	0/1326
9	AI	0.44	0/1034	0.65	0/1375
9	BI	0.44	0/1034	0.65	0/1375
10	AJ	0.42	0/806	0.66	0/1089
10	BJ	0.48	0/797	0.70	0/1077
11	AK	0.43	0/893	0.63	0/1205
11	BK	0.42	0/893	0.67	0/1205
12	AL	0.44	0/960	0.72	0/1286
12	BL	0.44	0/960	0.73	0/1286
13	AM	0.50	0/893	0.73	0/1193
13	BM	0.49	0/893	0.72	0/1193
14	AN	0.45	0/817	0.64	0/1088
14	BN	0.43	0/817	0.63	0/1088
15	AO	0.45	0/722	0.61	0/964
15	BO	0.43	0/722	0.61	0/964

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
16	AP	0.45	0/659	0.69	0/884
16	BP	0.48	0/659	0.76	0/884
17	AQ	0.46	0/658	0.72	0/881
17	BQ	0.50	0/658	0.76	0/881
18	AR	0.47	0/463	0.65	0/621
18	BR	0.48	0/463	0.65	0/621
19	AS	0.46	0/653	0.60	0/877
19	BS	0.46	0/653	0.61	0/877
20	AT	0.48	0/676	0.67	0/895
20	BT	0.53	0/671	0.69	0/888
21	AU	0.40	0/472	0.61	0/627
21	BU	0.38	0/472	0.62	0/627
22	C1	0.48	0/450	0.67	0/599
22	D1	0.58	0/450	0.72	0/599
23	C2	0.48	0/416	0.70	0/554
23	D2	0.47	0/421	0.69	0/561
24	C3	0.45	0/380	0.68	0/498
24	D3	0.56	0/380	0.76	0/498
25	C4	0.43	0/513	0.65	0/676
25	D4	0.50	0/513	0.68	0/676
26	C5	0.41	0/303	0.79	0/397
26	D5	0.50	0/303	0.78	0/397
27	C0	0.48	0/453	0.77	0/605
27	D0	0.62	0/467	0.79	1/623 (0.2%)
28	CB	0.91	0/2828	0.88	1/4410 (0.0%)
28	DB	1.01	0/2872	0.88	0/4478
29	CC	0.43	0/2122	0.73	0/2852
29	DC	0.48	0/2122	0.74	1/2852 (0.0%)
30	CD	0.42	0/1576	0.67	0/2119
30	DD	0.51	0/1576	0.68	0/2119
31	CA	1.02	39/69143 (0.1%)	0.87	11/107862 (0.0%)
32	CE	0.43	0/1571	0.70	0/2113
32	DE	0.49	0/1571	0.68	0/2113
33	CF	0.41	0/1435	0.67	0/1926
33	DF	0.46	0/1435	0.70	0/1926
34	CG	0.39	0/1343	0.66	0/1816
34	DG	0.43	0/1343	0.64	0/1816
35	CH	0.46	0/1121	0.68	1/1515 (0.1%)
35	DH	0.46	0/1121	0.67	0/1515
36	CJ	0.49	0/993	0.62	0/1341
36	DJ	0.49	0/993	0.62	0/1341
37	CK	0.41	0/1152	0.68	0/1551
37	DK	0.53	0/1152	0.71	0/1551

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
38	CL	0.45	0/947	0.71	0/1268
38	DL	0.51	0/955	0.72	0/1279
39	CM	0.45	0/1062	0.73	1/1413 (0.1%)
39	DM	0.47	0/1062	0.70	0/1413
40	CN	0.45	0/1081	0.72	0/1443
40	DN	0.54	0/1092	0.76	0/1457
41	CO	0.44	0/973	0.68	0/1301
41	DO	0.54	0/1006	0.74	0/1345
42	CP	0.42	0/902	0.71	0/1209
42	DP	0.49	0/910	0.71	0/1219
43	CQ	0.40	0/929	0.69	1/1242 (0.1%)
43	DQ	0.45	0/929	0.69	0/1242
44	CR	0.43	0/960	0.65	0/1278
44	DR	0.54	0/960	0.68	0/1278
45	CS	0.42	0/829	0.73	0/1107
45	DS	0.51	0/829	0.74	0/1107
46	CT	0.41	0/864	0.70	0/1156
46	DT	0.53	0/864	0.69	0/1156
47	CU	0.44	0/745	0.71	0/994
47	DU	0.48	0/745	0.72	0/994
48	CV	0.44	0/788	0.75	0/1051
48	DV	0.47	0/788	0.75	0/1051
49	CW	0.40	0/766	0.65	0/1025
49	DW	0.49	0/766	0.68	0/1025
50	CX	0.40	0/576	0.65	0/762
50	DX	0.55	0/598	0.74	0/790
51	CY	0.41	0/635	0.70	0/848
51	DY	0.46	0/635	0.70	0/848
52	CZ	0.42	0/502	0.59	0/667
52	DZ	0.45	0/502	0.59	0/667
53	DI	0.50	0/1037	0.76	1/1402 (0.1%)
54	DA	1.14	49/69364 (0.1%)	0.91	15/108207 (0.0%)
All	All	0.91	109/309249 (0.0%)	0.84	46/462175 (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
1	AA	0	3
1	BA	0	2

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Mol	Chain	#Chirality outliers	#Planarity outliers
31	CA	0	8
40	CN	0	1
40	DN	0	1
54	DA	0	41
All	All	0	56

All (109) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
31	CA	2095	A	O5'-C5'	-9.26	1.28	1.42
54	DA	12	U	C1'-N1	8.76	1.61	1.48
31	CA	1936	A	N9-C4	-8.51	1.32	1.37
54	DA	2097	A	O5'-C5'	-8.36	1.29	1.42
31	CA	2425	A	C3'-O3'	8.30	1.53	1.42
54	DA	1237	A	C3'-O3'	-7.96	1.31	1.42
31	CA	769	U	C1'-N1	7.92	1.60	1.48
31	CA	12	U	C1'-N1	7.83	1.60	1.48
31	CA	2225	A	C3'-O3'	7.82	1.53	1.42
54	DA	2585	U	C3'-O3'	7.54	1.52	1.42
31	CA	1777	U	C1'-N1	7.22	1.59	1.48
1	BA	5	U	C1'-N1	6.74	1.58	1.48
31	CA	2233	U	C1'-N1	6.72	1.58	1.48
54	DA	788	A	N7-C5	-6.68	1.35	1.39
31	CA	1379	U	C3'-O3'	6.61	1.51	1.42
1	AA	5	U	C1'-N1	6.58	1.58	1.48
31	CA	1658	C	C1'-N1	6.40	1.58	1.48
31	CA	692	C	C1'-N1	6.35	1.58	1.48
1	BA	1493	A	C3'-O3'	6.34	1.51	1.42
54	DA	1607	C	N1-C6	6.22	1.40	1.37
54	DA	12	U	P-O5'	6.16	1.66	1.59
31	CA	946	C	C1'-N1	6.15	1.57	1.48
1	AA	1354	U	C1'-N1	6.12	1.57	1.48
54	DA	1607	C	P-O5'	-6.10	1.53	1.59
54	DA	2585	U	C1'-N1	6.10	1.57	1.48
54	DA	2585	U	N1-C2	6.07	1.44	1.38
31	CA	1825	U	C1'-N1	6.07	1.57	1.48
54	DA	21	A	N3-C4	6.05	1.38	1.34
54	DA	1965	C	C3'-O3'	-6.05	1.33	1.42
31	CA	451	U	C1'-N1	5.96	1.57	1.48
54	DA	12	U	N1-C2	5.95	1.44	1.38
31	CA	404	A	C3'-O3'	5.91	1.50	1.42
1	AA	956	U	C1'-N1	5.89	1.57	1.48

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
31	CA	2017	U	C1'-N1	5.89	1.57	1.48
31	CA	546	U	C1'-N1	5.88	1.57	1.48
54	DA	2547	A	O5'-C5'	-5.83	1.33	1.42
1	BA	1008	U	O5'-C5'	-5.82	1.33	1.42
54	DA	613	A	N9-C4	5.80	1.41	1.37
1	BA	1397	C	N1-C2	5.76	1.46	1.40
31	CA	1790	C	C1'-N1	5.75	1.57	1.48
54	DA	1188	U	C3'-O3'	-5.74	1.34	1.42
54	DA	1679	A	N7-C5	-5.72	1.35	1.39
54	DA	653	U	C1'-N1	5.72	1.57	1.48
54	DA	578	G	N7-C5	-5.70	1.35	1.39
31	CA	20	C	C1'-N1	5.70	1.57	1.48
1	BA	306	A	C5-C6	5.67	1.46	1.41
1	BA	306	A	N3-C4	5.66	1.38	1.34
54	DA	2127	G	C3'-O3'	5.65	1.50	1.42
54	DA	2867	G	C3'-O3'	5.64	1.50	1.42
31	CA	1314	C	C1'-N1	5.63	1.57	1.48
54	DA	1313	U	C1'-N1	5.61	1.57	1.48
1	AA	632	U	C1'-N1	5.59	1.57	1.48
54	DA	2051	A	N7-C5	-5.59	1.35	1.39
31	CA	653	U	C1'-N1	5.58	1.57	1.48
31	CA	2146	C	C3'-O3'	5.58	1.50	1.42
1	AA	1397	C	N1-C6	5.54	1.40	1.37
1	AA	955	U	C1'-N1	5.51	1.57	1.48
31	CA	691	C	C1'-N1	5.50	1.57	1.48
1	BA	209	U	C1'-N1	5.50	1.57	1.48
54	DA	2402	U	P-O5'	5.50	1.65	1.59
1	BA	842	U	C3'-O3'	5.50	1.49	1.42
31	CA	817	C	C1'-N1	5.49	1.56	1.48
31	CA	2456	C	C1'-N1	5.47	1.56	1.48
54	DA	2402	U	N1-C2	5.46	1.43	1.38
54	DA	271	G	C3'-O3'	5.45	1.49	1.42
54	DA	784	G	C3'-O3'	5.43	1.49	1.42
54	DA	736	C	C3'-O3'	-5.42	1.34	1.42
31	CA	1376	C	C1'-N1	5.41	1.56	1.48
54	DA	1441	G	O5'-C5'	-5.41	1.34	1.42
31	CA	995	C	O5'-C5'	-5.41	1.34	1.42
1	BA	956	U	C1'-N1	5.38	1.56	1.48
1	BA	1354	U	C1'-N1	5.38	1.56	1.48
1	BA	955	U	C1'-N1	5.37	1.56	1.48
54	DA	2004	G	N3-C4	5.37	1.39	1.35
31	CA	2354	C	C1'-N1	5.36	1.56	1.48

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	BA	221	C	C1'-N1	5.30	1.56	1.48
54	DA	1571	A	N7-C5	-5.30	1.36	1.39
54	DA	538	A	N7-C5	-5.30	1.36	1.39
54	DA	2402	U	C1'-N1	5.29	1.56	1.48
31	CA	1788	C	C1'-N1	5.28	1.56	1.48
31	CA	790	U	C1'-N1	5.26	1.56	1.48
31	CA	1352	U	C1'-N1	5.23	1.56	1.48
31	CA	1994	C	C1'-N1	5.23	1.56	1.48
1	AA	221	C	C1'-N1	5.20	1.56	1.48
1	AA	532	A	N9-C4	5.19	1.41	1.37
54	DA	2211	A	C3'-O3'	5.19	1.49	1.42
31	CA	1838	C	N1-C2	5.18	1.45	1.40
31	CA	2680	U	C3'-O3'	5.18	1.49	1.42
54	DA	817	C	C3'-O3'	-5.18	1.34	1.42
54	DA	1920	C	C1'-N1	5.15	1.56	1.48
31	CA	1306	C	C1'-N1	5.14	1.56	1.48
54	DA	1534	U	C1'-N1	5.13	1.56	1.48
54	DA	2810	A	N7-C5	-5.11	1.36	1.39
54	DA	532	A	N7-C5	-5.11	1.36	1.39
31	CA	1938	A	N9-C4	5.09	1.41	1.37
54	DA	2617	U	O5'-C5'	-5.09	1.34	1.42
54	DA	275	C	C1'-N1	5.09	1.56	1.48
31	CA	1971	U	C1'-N1	5.07	1.56	1.48
54	DA	1412	U	C1'-N1	5.07	1.56	1.48
54	DA	1584	U	C1'-N1	5.06	1.56	1.48
1	BA	1067	A	C3'-O3'	5.06	1.49	1.42
31	CA	678	C	C1'-N1	5.06	1.56	1.48
54	DA	2868	A	N7-C5	-5.04	1.36	1.39
54	DA	207	A	C3'-O3'	-5.04	1.35	1.42
54	DA	2227	A	N7-C5	-5.04	1.36	1.39
31	CA	2215	C	C1'-N1	5.02	1.56	1.48
54	DA	353	C	C1'-N1	5.02	1.56	1.48
54	DA	2570	G	C6-N1	-5.00	1.36	1.39
54	DA	34	U	O3'-P	-5.00	1.55	1.61

All (46) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
28	CB	15	A	O4'-C1'-N9	10.03	116.22	108.20
54	DA	1936	A	O4'-C1'-N9	8.20	114.76	108.20
1	BA	1362	A	C1'-O4'-C4'	-7.38	104.00	109.90
1	AA	1	A	OP1-P-OP2	-7.19	108.81	119.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
31	CA	271	G	P-O3'-C3'	7.11	128.24	119.70
54	DA	892	A	OP1-P-OP2	-7.08	108.98	119.60
53	DI	132	TYR	C-N-CA	7.07	139.38	121.70
31	CA	892	A	OP1-P-OP2	-6.99	109.12	119.60
54	DA	1	G	OP1-P-OP2	-6.95	109.18	119.60
1	AA	413	G	C1'-O4'-C4'	-6.88	104.40	109.90
1	BA	2	A	OP1-P-OP2	-6.85	109.33	119.60
54	DA	2825	G	O4'-C1'-N9	6.82	113.66	108.20
54	DA	271	G	P-O3'-C3'	6.63	127.66	119.70
54	DA	784	G	P-O3'-C3'	6.62	127.65	119.70
31	CA	2035	G	C1'-O4'-C4'	-6.60	104.62	109.90
29	DC	156	ARG	CB-CG-CD	-6.40	94.96	111.60
31	CA	974	G	N9-C1'-C2'	6.39	122.31	114.00
54	DA	2406	A	C5'-C4'-O4'	-5.91	102.01	109.10
31	CA	2225	A	P-O3'-C3'	5.84	126.70	119.70
31	CA	512	G	O4'-C1'-N9	5.80	112.84	108.20
31	CA	784	G	P-O3'-C3'	5.80	126.66	119.70
31	CA	451	U	C1'-O4'-C4'	-5.70	105.34	109.90
54	DA	1985	C	O4'-C1'-N1	5.69	112.75	108.20
31	CA	1128	G	C1'-O4'-C4'	-5.59	105.42	109.90
54	DA	199	A	C1'-O4'-C4'	-5.52	105.48	109.90
27	D0	10	THR	N-CA-CB	-5.52	99.81	110.30
54	DA	1266	G	C3'-C2'-C1'	-5.46	97.13	101.50
1	BA	328	C	C1'-O4'-C4'	-5.41	105.57	109.90
54	DA	2848	G	O4'-C1'-N9	5.40	112.52	108.20
1	BA	485	U	O4'-C1'-N1	5.38	112.51	108.20
39	CM	68	SER	C-N-CA	5.37	135.13	121.70
54	DA	807	U	C4'-C3'-C2'	-5.35	97.25	102.60
6	AF	55	HIS	N-CA-C	-5.19	97.00	111.00
54	DA	512	G	O4'-C1'-N9	5.18	112.35	108.20
1	AA	841	C	P-O3'-C3'	5.15	125.88	119.70
54	DA	679	C	O4'-C1'-N1	5.15	112.32	108.20
31	CA	2680	U	P-O3'-C3'	5.11	125.83	119.70
1	AA	686	U	C1'-O4'-C4'	-5.10	105.82	109.90
54	DA	729	G	C1'-O4'-C4'	-5.10	105.82	109.90
6	BF	55	HIS	N-CA-C	-5.09	97.25	111.00
31	CA	404	A	P-O3'-C3'	5.06	125.77	119.70
43	CQ	114	LEU	CA-CB-CG	5.05	126.92	115.30
1	BA	686	U	C1'-O4'-C4'	-5.05	105.86	109.90
35	CH	8	LYS	C-N-CA	5.03	134.28	121.70
1	BA	842	U	P-O3'-C3'	5.02	125.73	119.70
1	BA	1362	A	O4'-C1'-N9	5.01	112.21	108.20

There are no chirality outliers.

All (56) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	AA	1432	G	Sidechain
1	AA	362	G	Sidechain
1	AA	898	G	Sidechain
1	BA	1432	G	Sidechain
1	BA	898	G	Sidechain
31	CA	2267	A	Sidechain
31	CA	2444	G	Sidechain
31	CA	250	G	Sidechain
31	CA	463	G	Sidechain
31	CA	555	G	Sidechain
31	CA	704	G	Sidechain
31	CA	726	G	Sidechain
31	CA	757	G	Sidechain
40	CN	69	PRO	Mainchain
54	DA	1142	A	Sidechain
54	DA	1212	G	Sidechain
54	DA	1283	G	Sidechain
54	DA	1324	G	Sidechain
54	DA	15	G	Sidechain
54	DA	1631	G	Sidechain
54	DA	1681	G	Sidechain
54	DA	1753	G	Sidechain
54	DA	1761	C	Sidechain
54	DA	177	G	Sidechain
54	DA	1937	A	Sidechain
54	DA	1938	A	Sidechain
54	DA	1954	G	Sidechain
54	DA	221	A	Sidechain
54	DA	2250	G	Sidechain
54	DA	2267	A	Sidechain
54	DA	2323	G	Sidechain
54	DA	2375	G	Sidechain
54	DA	2481	G	Sidechain
54	DA	249	C	Sidechain
54	DA	250	G	Sidechain
54	DA	2529	G	Sidechain
54	DA	2578	G	Sidechain
54	DA	2595	G	Sidechain
54	DA	2645	G	Sidechain
54	DA	2719	G	Sidechain

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Mol	Chain	Res	Type	Group
54	DA	2727	A	Sidechain
54	DA	2728	U	Sidechain
54	DA	2835	A	Sidechain
54	DA	2848	G	Sidechain
54	DA	463	G	Sidechain
54	DA	512	G	Sidechain
54	DA	515	A	Sidechain
54	DA	555	G	Sidechain
54	DA	670	A	Sidechain
54	DA	704	G	Sidechain
54	DA	726	G	Sidechain
54	DA	858	G	Sidechain
54	DA	956	G	Sidechain
54	DA	983	A	Sidechain
54	DA	984	A	Sidechain
40	DN	69	PRO	Mainchain

## 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	AA	32933	0	16592	113	0
1	BA	32911	0	16581	115	0
2	AB	1753	0	1780	7	0
2	BB	1753	0	1780	9	0
3	AC	1625	0	1696	13	0
3	BC	1625	0	1696	17	0
4	AD	1643	0	1707	11	0
4	BD	1643	0	1707	17	0
5	AE	1144	0	1185	14	0
5	BE	1105	0	1148	25	0
6	AF	862	0	864	7	0
6	BF	817	0	808	7	0
7	AG	1182	0	1238	7	0
7	BG	1182	0	1238	4	0
8	AH	979	0	1031	6	0
8	BH	979	0	1031	3	0
9	AI	1022	0	1070	8	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
9	BI	1022	0	1070	7	0
10	AJ	796	0	836	11	0
10	BJ	787	0	828	8	0
11	AK	877	0	887	13	0
11	BK	877	0	887	15	0
12	AL	957	0	1017	5	0
12	BL	957	0	1017	8	0
13	AM	884	0	941	13	0
13	BM	884	0	941	18	0
14	AN	805	0	844	8	0
14	BN	805	0	844	7	0
15	AO	714	0	734	0	0
15	BO	714	0	734	0	0
16	AP	649	0	666	2	0
16	BP	649	0	666	7	0
17	AQ	649	0	691	6	0
17	BQ	649	0	691	13	0
18	AR	456	0	478	3	0
18	BR	456	0	478	2	0
19	AS	638	0	665	4	0
19	BS	638	0	665	6	0
20	AT	670	0	719	3	0
20	BT	665	0	714	4	0
21	AU	465	0	491	3	0
21	BU	465	0	491	3	0
22	C1	444	0	458	5	0
22	D1	444	0	458	9	0
23	C2	409	0	440	6	0
23	D2	414	0	442	6	0
24	C3	377	0	418	3	0
24	D3	377	0	418	3	0
25	C4	504	0	572	2	0
25	D4	504	0	572	2	0
26	C5	302	0	340	6	0
26	D5	302	0	340	2	0
27	C0	449	0	488	3	0
27	D0	463	0	504	2	0
28	CB	2529	0	1281	6	0
28	DB	2569	0	1301	3	0
29	CC	2083	0	2154	24	0
29	DC	2083	0	2154	12	0
30	CD	1565	0	1614	15	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
30	DD	1576	0	1627	15	0
31	CA	62229	0	31318	224	0
32	CE	1552	0	1619	18	0
32	DE	1552	0	1619	9	0
33	CF	1411	0	1444	14	0
33	DF	1411	0	1444	11	0
34	CG	1323	0	1371	8	0
34	DG	1323	0	1371	8	0
35	CH	1110	0	1148	10	0
35	DH	1110	0	1148	9	0
36	CJ	979	0	1028	5	0
36	DJ	979	0	1028	5	0
37	CK	1129	0	1162	8	0
37	DK	1129	0	1162	4	0
38	CL	938	0	1012	8	0
38	DL	946	0	1023	7	0
39	CM	1053	0	1129	19	0
39	DM	1053	0	1129	6	0
40	CN	1075	0	1154	9	0
40	DN	1092	0	1177	13	0
41	CO	960	0	1000	6	0
41	DO	993	0	1034	5	0
42	CP	892	0	923	6	0
42	DP	900	0	935	11	0
43	CQ	917	0	962	6	0
43	DQ	917	0	962	7	0
44	CR	947	0	1019	11	0
44	DR	947	0	1019	13	0
45	CS	816	0	839	12	0
45	DS	816	0	839	7	0
46	CT	857	0	922	9	0
46	DT	857	0	922	9	0
47	CU	739	0	807	8	0
47	DU	739	0	807	7	0
48	CV	780	0	831	7	0
48	DV	780	0	831	6	0
49	CW	753	0	780	5	0
49	DW	753	0	780	4	0
50	CX	569	0	581	3	0
50	DX	591	0	606	10	0
51	CY	625	0	652	8	0
51	DY	625	0	652	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
52	CZ	501	0	531	3	0
52	DZ	501	0	531	2	0
53	DI	1023	0	1052	15	0
54	DA	62423	0	31411	176	0
55	AA	72	0	0	0	0
55	BA	45	0	0	0	0
55	CA	156	0	0	0	0
55	CB	3	0	0	0	0
55	DA	183	0	0	0	0
55	DB	9	0	0	0	0
55	DD	1	0	0	0	0
55	DM	1	0	0	0	0
55	DR	2	0	0	0	0
56	AA	13	0	18	1	0
56	BA	13	0	18	1	0
56	DA	26	0	36	3	0
56	DQ	13	0	18	0	0
56	DR	13	0	18	5	0
56	DS	13	0	18	3	0
57	AA	16	0	28	3	0
57	DA	40	0	70	3	0
57	DE	16	0	28	0	0
57	DK	8	0	14	0	0
57	DN	8	0	14	1	0
57	DS	8	0	14	0	0
57	DT	16	0	28	0	0
58	AA	24	0	48	0	0
58	DA	66	0	132	7	0
58	DM	6	0	12	0	0
59	AA	64	1	42	2	0
59	BA	64	1	42	0	0
60	AB	1	0	0	0	0
60	C5	1	0	0	0	0
60	D5	1	0	0	0	0
61	AL	7	0	10	0	0
61	D1	7	0	10	1	0
61	D3	7	0	10	0	0
61	DA	35	0	50	0	0
61	DL	7	0	10	0	0
61	DP	7	0	10	1	0
61	DQ	7	0	10	0	0
62	D1	4	0	6	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
62	DA	32	0	48	1	0
62	DB	12	0	18	0	0
63	D1	10	0	14	2	0
63	DA	60	0	84	4	0
63	DS	10	0	14	1	0
63	DU	10	0	14	3	0
64	DA	40	0	76	2	0
65	DA	32	0	44	1	0
66	DA	12	0	9	0	0
67	DA	11	0	5	0	0
68	DA	8	0	12	1	0
69	AA	501	0	0	0	0
69	AC	4	0	0	0	0
69	AD	2	0	0	0	0
69	AE	5	0	0	0	0
69	AG	1	0	0	0	0
69	AH	1	0	0	0	0
69	AJ	2	0	0	0	0
69	AK	6	0	0	0	0
69	AL	10	0	0	0	0
69	AM	5	0	0	2	0
69	AN	6	0	0	1	0
69	AO	2	0	0	0	0
69	AP	2	0	0	0	0
69	AR	1	0	0	0	0
69	AT	3	0	0	0	0
69	AU	3	0	0	0	0
69	BA	287	0	0	1	0
69	BD	13	0	0	0	0
69	BE	1	0	0	0	0
69	BF	2	0	0	0	0
69	BK	2	0	0	0	0
69	BL	4	0	0	0	0
69	BN	2	0	0	0	0
69	BO	1	0	0	0	0
69	BP	3	0	0	0	0
69	BT	2	0	0	0	0
69	BU	2	0	0	0	0
69	C3	4	0	0	0	0
69	C4	1	0	0	0	0
69	CA	691	0	0	3	0
69	CB	13	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
69	CC	10	0	0	0	0
69	CD	6	0	0	0	0
69	CE	5	0	0	0	0
69	CL	1	0	0	0	0
69	CM	4	0	0	0	0
69	CO	2	0	0	0	0
69	CU	3	0	0	0	0
69	CV	1	0	0	0	0
69	CW	1	0	0	0	0
69	CY	1	0	0	0	0
69	D0	24	0	0	0	0
69	D1	43	0	0	0	0
69	D2	6	0	0	0	0
69	D3	22	0	0	0	0
69	D4	39	0	0	0	0
69	D5	8	0	0	0	0
69	DA	4840	0	0	15	0
69	DB	209	0	0	1	0
69	DC	100	0	0	1	0
69	DD	98	0	0	2	0
69	DE	61	0	0	0	0
69	DF	15	0	0	0	0
69	DG	6	0	0	0	0
69	DH	2	0	0	0	0
69	DK	65	0	0	1	0
69	DL	52	0	0	1	0
69	DM	63	0	0	0	0
69	DN	72	0	0	0	0
69	DO	44	0	0	0	0
69	DP	38	0	0	0	0
69	DQ	33	0	0	0	0
69	DR	62	0	0	1	0
69	DS	46	0	0	2	0
69	DT	69	0	0	1	0
69	DU	18	0	0	0	0
69	DV	20	0	0	0	0
69	DW	31	0	0	0	0
69	DX	25	0	0	1	0
69	DY	9	0	0	0	0
69	DZ	8	0	0	0	0
All	All	295259	2	194494	1263	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 3.

All (1263) 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)
45:CS:14:VAL:HG21	45:CS:98:ILE:HG13	1.27	1.10
31:CA:1005:C:O2'	37:CK:30:THR:HG21	1.61	1.00
18:AR:21:ILE:HG21	18:AR:54:GLN:HB3	1.46	0.97
31:CA:1847:A:HO2'	31:CA:1848:A:H8	0.98	0.95
31:CA:528:A:C2	31:CA:2043:C:H4'	2.00	0.95
54:DA:2796:U:H3	54:DA:2799:A:H61	1.11	0.95
54:DA:1847:A:HO2'	54:DA:1848:A:H8	0.98	0.94
26:C5:3:VAL:HG11	31:CA:2539:C:H5'	1.50	0.94
2:BB:20:THR:HA	2:BB:39:HIS:CE1	2.02	0.94
11:BK:88:GLY:H	11:BK:114:THR:HG22	1.34	0.93
31:CA:2796:U:H3	31:CA:2799:A:H61	1.14	0.93
39:CM:77:ILE:HD11	39:CM:108:ALA:HB1	1.50	0.92
31:CA:1936:A:H2	31:CA:1943:U:H3	0.96	0.91
14:AN:66:GLN:HB2	69:AN:206:HOH:O	1.70	0.90
45:CS:14:VAL:CG2	45:CS:98:ILE:HG13	2.00	0.90
1:AA:1492:A:H5''	12:AL:44:LYS:HG2	1.53	0.89
1:AA:307:C:N4	57:AA:1676:MPD:H12	1.88	0.88
12:BL:80:ILE:HD12	12:BL:97:THR:HG22	1.54	0.88
54:DA:1913:A:H4'	54:DA:1913:A:OP1	1.72	0.87
31:CA:135:U:H3	31:CA:144:A:H61	1.20	0.87
54:DA:135:U:H3	54:DA:144:A:H61	1.20	0.87
46:CT:86:MET:HB2	46:CT:96:ILE:HD11	1.54	0.86
4:BD:85:ASN:HA	5:BE:102:GLY:HA2	1.59	0.85
54:DA:2255:G:H21	68:DA:3220:TRS:H12	1.42	0.85
1:AA:1518:MA6:H103	1:AA:1519:MA6:H102	1.58	0.84
44:DR:20:GLN:HG3	56:DR:202:PG4:H42	1.58	0.84
1:BA:1518:MA6:H103	1:BA:1519:MA6:H102	1.59	0.83
13:AM:6:GLY:HA3	13:AM:66:GLU:HG3	1.61	0.82
31:CA:740:C:H5'	31:CA:1784:A:H3'	1.61	0.82
31:CA:568:U:H1'	31:CA:2030:6MZ:H9C1	1.59	0.81
45:CS:14:VAL:HG21	45:CS:98:ILE:CG1	2.10	0.81
1:BA:841:C:H3'	1:BA:842:U:H5''	1.62	0.80
1:BA:664:G:H22	1:BA:741:G:H1	1.29	0.80
2:BB:20:THR:HA	2:BB:39:HIS:HE1	1.46	0.80
31:CA:1779:U:H5	31:CA:1784:A:N7	1.80	0.79
13:BM:6:GLY:HA3	13:BM:66:GLU:HG3	1.63	0.79
1:BA:1052:G:H22	1:BA:1206:G:H1	1.30	0.79
3:BC:123:GLN:HB3	3:BC:128:VAL:HG21	1.65	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1305:G:H21	1:AA:1332:A:H2	1.32	0.78
13:AM:33:ILE:HD11	13:AM:63:PHE:HE1	1.48	0.78
44:DR:28:ARG:HD3	69:DR:302:HOH:O	1.85	0.77
1:AA:664:G:H22	1:AA:741:G:H1	1.31	0.77
31:CA:1936:A:H2	31:CA:1943:U:N3	1.80	0.77
8:BH:87:LYS:HB2	8:BH:125:ILE:HD11	1.67	0.77
13:BM:114:LYS:HB3	13:BM:115:PRO:HD3	1.67	0.76
32:DE:33:VAL:HG22	57:DA:3192:MPD:H12	1.66	0.76
17:BQ:14:SER:HB3	17:BQ:22:VAL:HG12	1.68	0.76
1:BA:1305:G:H21	1:BA:1332:A:H2	1.32	0.76
10:AJ:7:ARG:HB3	10:AJ:101:SER:HB2	1.67	0.75
1:AA:202:G:HO2'	1:AA:468:A:H8	1.33	0.75
1:BA:522:C:H5	12:BL:50:ARG:HH12	1.33	0.75
31:CA:846:U:H1'	31:CA:847:U:H5	1.52	0.74
8:AH:87:LYS:HB2	8:AH:125:ILE:HD11	1.69	0.74
30:CD:133:THR:HG22	31:CA:1993:U:H4'	1.68	0.73
54:DA:2127:G:H4'	54:DA:2128:G:OP1	1.89	0.72
1:BA:841:C:H3'	1:BA:842:U:C5'	2.19	0.72
54:DA:568:U:H1'	54:DA:2030:6MZ:H9C1	1.72	0.71
24:C3:12:ARG:HD2	24:C3:44:VAL:HG11	1.71	0.71
69:DD:443:HOH:O	54:DA:1671:U:H4'	1.90	0.71
34:CG:24:ILE:HD11	34:CG:43:VAL:HG11	1.71	0.71
31:CA:1105:U:H2'	31:CA:1106:G:H8	1.56	0.71
34:DG:24:ILE:HD11	34:DG:43:VAL:HG11	1.74	0.70
54:DA:1105:U:H2'	54:DA:1106:G:H8	1.56	0.70
4:AD:107:PHE:HB3	4:AD:145:ILE:HD11	1.74	0.70
5:AE:77:ASN:HB2	5:AE:82:GLN:NE2	2.07	0.69
22:C1:16:ARG:HA	31:CA:2046:G:H5'	1.73	0.69
1:BA:1060:U:C5	3:BC:2:GLY:HA3	2.28	0.69
34:CG:76:VAL:O	34:CG:80:THR:HG22	1.92	0.69
11:BK:89:PRO:HG3	21:BU:32:VAL:HG11	1.74	0.69
29:CC:29:PRO:HG2	29:CC:34:LEU:HD11	1.74	0.69
46:CT:59:GLU:HA	46:CT:64:ALA:HA	1.73	0.69
1:BA:502:A:OP1	12:BL:115:SER:HB2	1.93	0.68
5:BE:72:ILE:HG12	5:BE:145:GLU:HG3	1.75	0.68
35:DH:41:LYS:HA	35:DH:44:ILE:HG12	1.76	0.68
65:DA:3202:1PE:H231	69:DA:3678:HOH:O	1.92	0.68
38:DL:70:ARG:HD3	38:DL:76:VAL:HG22	1.76	0.68
6:BF:38:ARG:HH12	6:BF:99:ALA:HB3	1.59	0.68
29:DC:29:PRO:HG2	29:DC:34:LEU:HD11	1.75	0.68
4:BD:107:PHE:HB3	4:BD:145:ILE:HD11	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:502:A:OP1	12:AL:115:SER:HB2	1.94	0.67
31:CA:2291:U:H2'	31:CA:2292:U:C6	2.28	0.67
47:CU:54:GLU:HB3	47:CU:88:LYS:HD2	1.77	0.67
35:CH:41:LYS:HA	35:CH:44:ILE:HG12	1.75	0.67
29:CC:105:LEU:H	29:CC:105:LEU:HD12	1.59	0.67
12:BL:65:SER:HB2	12:BL:82:ILE:HD11	1.75	0.67
11:AK:89:PRO:HG3	21:AU:32:VAL:HG11	1.77	0.67
5:BE:77:ASN:HB2	5:BE:82:GLN:NE2	2.09	0.67
31:CA:1105:U:H2'	31:CA:1106:G:C8	2.30	0.67
54:DA:2033:A:H5'	69:DA:3362:HOH:O	1.96	0.66
13:AM:33:ILE:HD11	13:AM:63:PHE:CE1	2.29	0.66
69:DK:315:HOH:O	44:DR:93:LYS:HD2	1.93	0.66
31:CA:1394:U:H4'	31:CA:1603:A:H4'	1.78	0.66
35:CH:15:LEU:HD22	35:CH:15:LEU:H	1.60	0.66
5:AE:90:THR:HG22	5:AE:91:GLY:H	1.60	0.66
47:DU:54:GLU:HB3	47:DU:88:LYS:HD2	1.77	0.66
46:CT:73:LYS:HB2	46:CT:106:VAL:HB	1.78	0.66
5:BE:90:THR:HG22	5:BE:91:GLY:H	1.60	0.66
20:BT:9:LYS:O	20:BT:12:ILE:HG13	1.95	0.66
25:D4:8:ARG:HD3	54:DA:245:G:O6	1.96	0.66
48:CV:7:ARG:O	48:CV:25:VAL:HB	1.95	0.66
1:AA:1323:G:H2'	1:AA:1324:A:C8	2.32	0.65
5:AE:157:ARG:HD2	8:AH:43:GLU:O	1.95	0.65
42:DP:39:VAL:HB	42:DP:49:VAL:HG23	1.77	0.65
31:CA:528:A:H2	31:CA:2043:C:H4'	1.57	0.65
1:BA:1323:G:H2'	1:BA:1324:A:C8	2.32	0.65
40:CN:41:LEU:HD21	40:CN:124:LEU:HD22	1.78	0.65
54:DA:1105:U:H2'	54:DA:1106:G:C8	2.30	0.65
39:CM:21:ARG:CG	39:CM:21:ARG:HH21	2.09	0.65
31:CA:528:A:H2'	31:CA:529:A:H5''	1.77	0.65
39:CM:82:LEU:HD11	39:CM:116:VAL:HG23	1.78	0.65
31:CA:2728:U:HO2'	31:CA:2729:G:H8	1.45	0.65
1:AA:1226:C:H2'	13:AM:102:THR:HB	1.80	0.64
31:CA:674:G:H1'	32:CE:69:ARG:HH11	1.62	0.64
31:CA:1311:G:H21	31:CA:1603:A:H62	1.44	0.64
58:DA:3195:PUT:H21	69:DA:5832:HOH:O	1.96	0.64
44:DR:20:GLN:CG	56:DR:202:PG4:H42	2.26	0.64
1:BA:1226:C:H2'	13:BM:102:THR:HB	1.79	0.64
46:DT:73:LYS:HB2	46:DT:106:VAL:HB	1.79	0.64
54:DA:2128:G:H1	54:DA:2160:C:H42	1.44	0.64
26:C5:3:VAL:HG11	31:CA:2539:C:C5'	2.25	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:DN:18[B]:ARG:HG3	28:DB:90:C:H5''	1.79	0.63
16:AP:4:ILE:HG12	16:AP:21:VAL:HG22	1.80	0.63
34:CG:80:THR:HG23	34:CG:81:GLU:H	1.62	0.63
54:DA:1853:A:N1	54:DA:2087:G:H1'	2.14	0.63
1:BA:451:A:H2'	69:BA:1701:HOH:O	1.98	0.63
16:BP:20:VAL:HG13	16:BP:32:PHE:HB2	1.81	0.62
7:AG:22:LEU:HD12	7:AG:62:PHE:HE2	1.64	0.62
54:DA:45:G:H5''	54:DA:46:G:H5'	1.82	0.62
16:BP:4:ILE:HG12	16:BP:21:VAL:HG22	1.82	0.62
1:BA:1012:A:H61	1:BA:1017:U:H3	1.48	0.62
31:CA:1131:G:OP1	37:CK:82:GLY:HA2	1.99	0.61
19:BS:50:ALA:HB1	19:BS:57:HIS:HB3	1.81	0.61
33:CF:36:LEU:HD21	33:CF:91:LEU:HD11	1.82	0.61
1:AA:1012:A:H61	1:AA:1017:U:H3	1.49	0.61
48:DV:52:LEU:HB3	48:DV:54:GLN:HB2	1.81	0.61
11:BK:88:GLY:N	11:BK:114:THR:HG22	2.10	0.61
38:CL:43:ILE:HD12	38:CL:56:ASP:HB2	1.82	0.61
41:CO:33:ILE:HD12	41:CO:114:GLU:HB3	1.82	0.61
40:DN:16:ARG:HG3	40:DN:18[B]:ARG:HH11	1.64	0.61
31:CA:45:G:H5''	31:CA:46:G:H5'	1.82	0.61
31:CA:118:A:N3	31:CA:178:G:H1'	2.16	0.60
46:CT:17:VAL:HG11	46:CT:103:ILE:HG12	1.83	0.60
45:DS:83:TYR:CE1	54:DA:1187:G:H5''	2.36	0.60
31:CA:784:G:H5'	31:CA:785:G:OP1	2.01	0.60
40:DN:77:PRO:HG2	40:DN:80:VAL:HG21	1.84	0.60
46:DT:17:VAL:HG11	46:DT:103:ILE:HG12	1.83	0.60
54:DA:2256:G:H21	56:DA:3193:PG4:H31	1.67	0.60
1:AA:1218:C:H2'	1:AA:1219:A:C8	2.37	0.60
3:BC:40:ARG:HH11	3:BC:55:ILE:HG23	1.67	0.60
1:BA:1151:A:HO2'	1:BA:1152:A:H8	1.48	0.60
30:DD:114:LYS:HE2	54:DA:2681:C:OP2	2.02	0.60
17:BQ:68:SER:OG	17:BQ:71:LYS:HB3	2.02	0.60
53:DI:69:PHE:HB3	53:DI:72:LEU:HD12	1.83	0.60
19:AS:15:LEU:HD13	19:AS:33:THR:HG21	1.84	0.60
38:DL:113:MET:CE	38:DL:116:ILE:HD11	2.32	0.60
1:AA:1396:A:H3'	59:AA:1681:TAC:H433	1.84	0.59
31:CA:674:G:H1'	32:CE:69:ARG:HD2	1.85	0.59
42:DP:31:THR:HG21	28:DB:28:C:OP1	2.02	0.59
1:BA:619:U:H3	4:BD:131:ASN:HB3	1.67	0.59
1:BA:1218:C:H2'	1:BA:1219:A:C8	2.37	0.59
48:CV:13:VAL:HG21	48:CV:39:ILE:HG21	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:DL:43:ILE:HD12	38:DL:56:ASP:HB2	1.84	0.59
3:AC:40:ARG:HG2	3:AC:55:ILE:HG21	1.83	0.59
1:BA:108:G:H5''	1:BA:108:G:N3	2.18	0.59
6:BF:38:ARG:HB3	6:BF:63:ASN:HB2	1.85	0.59
53:DI:23:LEU:HD13	53:DI:89:PRO:HD3	1.84	0.59
31:CA:457:A:N1	31:CA:470:A:H5''	2.17	0.59
41:DO:33:ILE:HD12	41:DO:114:GLU:HB3	1.83	0.59
43:DQ:53:ARG:NH2	54:DA:2720:U:OP1	2.36	0.59
39:CM:79:LEU:HD11	39:CM:112:LEU:HD12	1.84	0.59
44:CR:112:LYS:HD3	45:CS:48:LYS:HG3	1.84	0.59
48:CV:45:HIS:HD2	48:CV:58:ILE:HG12	1.68	0.59
48:DV:13:VAL:HG21	48:DV:39:ILE:HG21	1.84	0.59
54:DA:2796:U:H3	54:DA:2799:A:N6	1.92	0.59
31:CA:910:A:H62	40:CN:12:MET:HA	1.67	0.59
31:CA:1638:C:H5''	31:CA:2710:C:O2'	2.03	0.59
1:AA:108:G:N3	1:AA:108:G:H5''	2.17	0.59
4:BD:201:VAL:HG11	5:BE:103:THR:HB	1.85	0.59
13:BM:83:LEU:HD21	19:BS:65:GLU:HB2	1.85	0.59
37:CK:81:ILE:HG23	37:CK:82:GLY:H	1.67	0.59
6:AF:38:ARG:HB3	6:AF:63:ASN:HB2	1.85	0.58
11:BK:23:ILE:HG22	11:BK:32:VAL:HG13	1.86	0.58
50:DX:21:LEU:HD11	50:DX:41[A]:ARG:HE	1.68	0.58
31:CA:974:G:H8	31:CA:990:A:H62	1.52	0.58
31:CA:206:U:H2'	31:CA:207:A:H8	1.69	0.58
30:DD:186:LEU:HD21	43:DQ:4:ILE:HG21	1.85	0.58
11:AK:23:ILE:HG22	11:AK:32:VAL:HG13	1.86	0.58
31:CA:2796:U:H3	31:CA:2799:A:N6	1.94	0.58
54:DA:62:U:O4'	57:DA:3204:MPD:H31	2.03	0.58
50:CX:37:ILE:HG21	50:CX:80:ILE:HG21	1.85	0.58
24:C3:2:LYS:HE2	31:CA:687:C:H5''	1.85	0.58
39:CM:77:ILE:CD1	39:CM:108:ALA:HB1	2.29	0.58
30:DD:99:GLU:HG2	30:DD:182:ALA:HB2	1.86	0.58
50:DX:41[A]:ARG:HH11	50:DX:41[A]:ARG:HG2	1.69	0.58
46:CT:82:MET:HB2	46:CT:98:LYS:HB2	1.85	0.57
48:CV:74:ASN:HD22	48:CV:77:THR:H	1.51	0.57
43:DQ:29:LYS:HB3	43:DQ:40:LEU:HD13	1.85	0.57
46:DT:82:MET:HB2	46:DT:98:LYS:HB2	1.86	0.57
47:DU:80:TRP:HB3	63:DU:101:PGE:H32	1.85	0.57
7:BG:113:ASP:HB2	7:BG:119:ARG:HG3	1.85	0.57
30:DD:140:HIS:HB3	69:DD:487:HOH:O	2.02	0.57
30:CD:4:LEU:HD22	30:CD:101:PHE:CE2	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:AB:129:LEU:HD13	2:AB:134:ALA:HB2	1.87	0.57
29:CC:227:PRO:HA	29:CC:233:GLY:HA2	1.86	0.57
35:CH:4:ILE:HD11	35:CH:44:ILE:HG22	1.86	0.57
38:CL:58:LEU:HD11	38:CL:86:LEU:HD13	1.86	0.57
1:BA:1106:G:H5''	3:BC:172:ARG:HG3	1.87	0.57
54:DA:1975:G:H21	63:DA:3225:PGE:C2	2.18	0.57
31:CA:1936:A:H62	31:CA:1963:U:H3	1.50	0.57
50:DX:59:LEU:HD12	50:DX:80:ILE:HD12	1.87	0.57
54:DA:1417:C:H5'	54:DA:1588:G:H1'	1.87	0.57
7:AG:113:ASP:HB2	7:AG:119:ARG:HG3	1.85	0.57
24:D3:19:ARG:HD3	54:DA:125:A:OP2	2.04	0.57
1:AA:1151:A:HO2'	1:AA:1152:A:H8	1.51	0.57
5:AE:38:VAL:HG11	5:AE:114:VAL:HG22	1.87	0.57
1:AA:86:G:H21	1:AA:87:C:H41	1.53	0.57
2:AB:20:THR:HG22	2:AB:39:HIS:CE1	2.40	0.57
11:AK:31:ILE:HG12	11:AK:46:THR:HG22	1.86	0.57
1:BA:1277:C:HO2'	1:BA:1279:G:H8	1.53	0.57
17:BQ:17:MET:HB3	17:BQ:20:SER:HB3	1.86	0.57
42:DP:31:THR:HG22	42:DP:34:HIS:H	1.69	0.57
1:AA:774:G:H21	56:AA:1670:PG4:H51	1.70	0.56
11:AK:67:ALA:HB2	11:AK:96:THR:HG23	1.87	0.56
42:CP:31:THR:HG22	42:CP:34:HIS:H	1.69	0.56
3:AC:77:ILE:HA	3:AC:84:VAL:HG23	1.87	0.56
1:BA:202:G:H1	1:BA:215:C:H42	1.51	0.56
1:BA:686:U:HO2'	1:BA:687:A:H8	1.52	0.56
33:CF:31:VAL:CG1	33:CF:97:TRP:CH2	2.88	0.56
1:AA:769:G:H4'	1:AA:1513:A:H4'	1.88	0.56
1:BA:9:G:H5'	5:BE:108:GLY:HA3	1.86	0.56
2:BB:129:LEU:HD13	2:BB:134:ALA:HB2	1.87	0.56
3:BC:77:ILE:HA	3:BC:84:VAL:HG23	1.87	0.56
30:CD:99:GLU:HG2	30:CD:182:ALA:HB2	1.86	0.56
31:CA:1156:A:H5''	69:CA:3399:HOH:O	2.05	0.56
50:DX:37:ILE:HG21	50:DX:80:ILE:HG21	1.87	0.56
5:BE:88:VAL:HG12	5:BE:93:ARG:HG2	1.86	0.56
31:CA:244:A:H5''	39:CM:67:THR:HG21	1.87	0.56
54:DA:1746:A:H2'	54:DA:1747:U:C6	2.41	0.56
1:AA:81:A:H61	1:AA:86:G:H1	1.54	0.56
6:BF:38:ARG:NH1	6:BF:99:ALA:HB3	2.20	0.56
11:BK:67:ALA:HB2	11:BK:96:THR:HG23	1.87	0.56
29:CC:210:ALA:HA	29:CC:213:TRP:CE2	2.40	0.56
54:DA:526:A:H2'	69:DA:3716:HOH:O	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:DA:1975:G:H21	63:DA:3225:PGE:H22	1.70	0.56
25:C4:54:ASP:HB3	39:CM:57:LEU:HD22	1.86	0.56
26:C5:3:VAL:CG1	31:CA:2539:C:H5'	2.31	0.56
11:BK:16:VAL:HG13	11:BK:79:ILE:HG13	1.88	0.56
12:BL:110:ARG:HB2	12:BL:119:VAL:HG21	1.88	0.56
22:D1:4:GLN:HA	54:DA:2615:U:C2	2.41	0.56
36:CJ:19:ASN:H	36:CJ:20:PRO:HD2	1.71	0.56
47:CU:18:GLU:H	47:CU:18:GLU:CD	2.08	0.56
23:C2:25:LYS:HD2	23:C2:52:ALA:HB1	1.87	0.56
38:DL:58:LEU:HD11	38:DL:86:LEU:HD13	1.88	0.56
1:AA:137:U:H3	1:AA:226:G:H1	1.53	0.56
1:AA:209:U:H4'	1:AA:210:C:OP2	2.06	0.56
17:BQ:19:LYS:HG2	17:BQ:49:GLU:HA	1.87	0.56
31:CA:2019:A:H4'	44:CR:34:VAL:HG21	1.88	0.56
40:CN:77:PRO:HG2	40:CN:80:VAL:HG21	1.87	0.56
5:BE:40:GLY:HA2	5:BE:45:ARG:O	2.06	0.55
22:D1:9:THR:CG2	54:DA:2020:A:H5'	2.36	0.55
30:CD:129:THR:HG23	30:CD:140:HIS:O	2.06	0.55
32:DE:189:THR:HG22	32:DE:192:ALA:H	1.71	0.55
1:AA:202:G:H1	1:AA:215:C:H42	1.54	0.55
19:AS:50:ALA:HB1	19:AS:57:HIS:HB3	1.88	0.55
48:DV:45:HIS:HD2	48:DV:58:ILE:HG12	1.71	0.55
1:BA:240:G:H4'	1:BA:240:G:OP1	2.06	0.55
31:CA:396:G:H1'	51:CY:29:PHE:HB3	1.87	0.55
31:CA:2502:G:H5''	31:CA:2503:2MA:H5''	1.89	0.55
32:DE:48:THR:HG22	32:DE:86:ALA:HB3	1.88	0.55
44:DR:6:ARG:NH1	54:DA:585:G:N7	2.53	0.55
6:BF:45:ARG:O	6:BF:56:LYS:HA	2.07	0.55
8:BH:87:LYS:HB2	8:BH:125:ILE:CD1	2.36	0.55
38:CL:35:VAL:HG12	38:CL:106:GLU:HG2	1.87	0.55
50:CX:59:LEU:HD12	50:CX:80:ILE:HD12	1.87	0.55
9:AI:116:VAL:HG21	10:AJ:62:ARG:HB2	1.89	0.55
1:BA:137:U:H3	1:BA:226:G:H1	1.54	0.55
29:CC:88:SER:HB2	29:CC:158:ALA:HB2	1.88	0.55
31:CA:460:A:H5'	47:CU:73:ARG:HH22	1.72	0.55
29:DC:227:PRO:HA	29:DC:233:GLY:HA2	1.87	0.55
36:DJ:19:ASN:H	36:DJ:20:PRO:HD2	1.71	0.55
2:BB:23:TRP:HB3	2:BB:39:HIS:CE1	2.41	0.55
40:DN:16:ARG:HG3	40:DN:18[B]:ARG:NH1	2.22	0.55
1:AA:1329:A:H5''	13:AM:26:GLY:H	1.71	0.55
10:AJ:35:GLN:HB2	10:AJ:77:VAL:HB	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:BA:374:A:H5''	1:BA:452:A:C2	2.41	0.55
12:BL:80:ILE:HD12	12:BL:97:THR:CG2	2.30	0.55
23:D2:35:GLU:HG2	23:D2:50:LYS:HG2	1.89	0.55
31:CA:1028:A:N6	31:CA:1125:G:H2'	2.22	0.55
32:CE:3:LEU:HD12	32:CE:14:VAL:HG11	1.89	0.55
22:D1:54:VAL:HG23	22:D1:55:ILE:HG12	1.89	0.54
31:CA:699:A:H2'	31:CA:700:G:O4'	2.07	0.54
46:CT:66:ILE:HA	46:CT:69:LEU:HD22	1.89	0.54
1:AA:1144:G:H21	1:AA:1146:A:H62	1.54	0.54
31:CA:247:G:H4'	31:CA:386:G:C5	2.41	0.54
31:CA:2043:C:C6	31:CA:2043:C:H5''	2.42	0.54
45:CS:78:ARG:HB2	45:CS:83:TYR:HD1	1.71	0.54
54:DA:789:A:OP1	58:DA:3222:PUT:H11	2.07	0.54
31:CA:822:G:O6	31:CA:943:A:H2	1.89	0.54
31:CA:863:A:H2'	31:CA:864:G:C8	2.42	0.54
54:DA:2065:C:H4'	54:DA:2251:OMG:HM22	1.89	0.54
54:DA:1482:G:H1'	54:DA:1509:A:H61	1.73	0.54
6:AF:45:ARG:O	6:AF:56:LYS:HA	2.07	0.54
1:BA:769:G:H4'	1:BA:1513:A:H4'	1.88	0.54
1:BA:1329:A:H5''	13:BM:26:GLY:H	1.73	0.54
5:BE:106:ILE:HD11	5:BE:124:LEU:HD23	1.88	0.54
28:CB:55:U:H1'	33:CF:26:MET:HG3	1.88	0.54
1:AA:1343:G:H2'	1:AA:1344:C:C6	2.42	0.54
1:BA:1144:G:H21	1:BA:1146:A:H62	1.54	0.54
17:BQ:76:VAL:HG12	17:BQ:77:ARG:HG3	1.89	0.54
63:D1:102:PGE:H4	69:DT:311:HOH:O	2.08	0.54
32:CE:149:ILE:HG12	32:CE:188:MET:HG2	1.90	0.54
52:CZ:56:LEU:HA	52:CZ:59:GLU:HG2	1.89	0.54
54:DA:1180:U:H5''	54:DA:1180:U:H6	1.73	0.54
22:C1:43:ILE:HG22	22:C1:49:TYR:HB2	1.89	0.54
32:DE:3:LEU:HD12	32:DE:14:VAL:HG11	1.90	0.54
41:DO:2:ARG:HG3	54:DA:1653:G:H3'	1.90	0.54
1:AA:412:A:H3'	1:AA:413:G:H5'	1.90	0.54
1:AA:307:C:N4	57:AA:1676:MPD:C1	2.68	0.53
31:CA:550:C:H2'	31:CA:551:G:H5''	1.90	0.53
10:BJ:5:ARG:HG2	10:BJ:79:PRO:HG3	1.90	0.53
30:CD:133:THR:CG2	31:CA:1993:U:H4'	2.38	0.53
31:CA:2425:A:H4'	31:CA:2426:A:O5'	2.08	0.53
31:CA:2815:C:H2'	31:CA:2816:G:O4'	2.08	0.53
33:CF:61:SER:HB2	33:CF:91:LEU:HD21	1.90	0.53
54:DA:1847:A:O2'	54:DA:1848:A:H8	1.78	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:73:C:HO2'	1:AA:74:A:H8	1.56	0.53
12:AL:110:ARG:HB2	12:AL:119:VAL:HG21	1.90	0.53
17:AQ:76:VAL:HG12	17:AQ:77:ARG:HG3	1.89	0.53
47:CU:28:ASN:HD21	47:CU:91:GLN:HB3	1.74	0.53
47:CU:69:ARG:HB2	47:CU:74:ILE:HG22	1.90	0.53
11:AK:84:VAL:HG11	11:AK:97:ILE:HG12	1.90	0.53
22:C1:4:GLN:HA	31:CA:2615:U:C2	2.43	0.53
5:BE:72:ILE:HG13	5:BE:73:ASN:N	2.23	0.53
31:CA:782:A:H5'	31:CA:783:A:C2	2.44	0.53
31:CA:2190:G:H2'	31:CA:2191:A:H8	1.73	0.53
33:DF:61:SER:HB2	33:DF:91:LEU:HD21	1.90	0.53
52:DZ:56:LEU:HA	52:DZ:59:GLU:HG2	1.89	0.53
1:BA:374:A:H5''	1:BA:452:A:N1	2.23	0.53
46:CT:69:LEU:HG	46:CT:107:VAL:HG22	1.91	0.53
22:C1:38:HIS:HE1	31:CA:2884:U:O4	1.91	0.53
1:BA:266:G:H3'	17:BQ:69:LYS:HB2	1.90	0.53
24:D3:2:LYS:HE2	54:DA:687:C:H5''	1.90	0.53
1:AA:404:G:N7	4:AD:2:ALA:HB3	2.23	0.53
7:AG:22:LEU:HD12	7:AG:62:PHE:CE2	2.42	0.53
46:CT:29:VAL:HG22	46:CT:51:LEU:HD11	1.89	0.53
33:DF:132:VAL:HG22	33:DF:152:LEU:HG	1.91	0.53
1:BA:73:C:HO2'	1:BA:74:A:H8	1.55	0.53
5:BE:90:THR:HG22	5:BE:91:GLY:N	2.23	0.53
31:CA:1363:C:H2'	31:CA:1364:G:C8	2.44	0.53
32:CE:189:THR:HG22	32:CE:192:ALA:H	1.73	0.53
33:CF:44:ILE:HG21	33:CF:79:ILE:HG22	1.91	0.53
37:DK:9:GLU:HG2	69:DA:5751:HOH:O	2.09	0.53
4:BD:85:ASN:HA	5:BE:102:GLY:CA	2.34	0.52
34:DG:17:VAL:HG11	34:DG:50:LEU:HD21	1.90	0.52
1:BA:209:U:H4'	1:BA:210:C:OP2	2.08	0.52
11:BK:84:VAL:HG11	11:BK:97:ILE:HG12	1.91	0.52
30:DD:152:PRO:HG3	30:DD:156:PHE:CZ	2.45	0.52
56:DS:202:PG4:H21	69:DS:315:HOH:O	2.09	0.52
54:DA:550:C:H2'	54:DA:551:G:H5''	1.91	0.52
10:AJ:52:LEU:HB2	14:AN:81:ARG:HD2	1.91	0.52
1:BA:12:U:H4'	1:BA:526:C:H4'	1.91	0.52
1:BA:404:G:N7	4:BD:2:ALA:HB3	2.24	0.52
9:BI:19:VAL:HG22	9:BI:65:ILE:HG22	1.91	0.52
34:CG:17:VAL:HG11	34:CG:50:LEU:HD21	1.90	0.52
5:AE:90:THR:HG22	5:AE:91:GLY:N	2.22	0.52
17:BQ:8:LEU:HD23	17:BQ:25:ILE:HG21	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:DH:4:ILE:HD11	35:DH:44:ILE:HG22	1.91	0.52
53:DI:8:LYS:O	53:DI:12:VAL:HG23	2.09	0.52
1:AA:1126:U:O2	1:AA:1280:A:H5'	2.09	0.52
41:CO:73:ASN:HA	41:CO:76:VAL:HG13	1.92	0.52
33:DF:44:ILE:HG21	33:DF:79:ILE:HG22	1.91	0.52
28:CB:28:C:OP1	42:CP:31:THR:HG21	2.10	0.52
31:CA:2718:G:OP1	43:CQ:98:TYR:HD2	1.93	0.52
32:CE:48:THR:HG22	32:CE:86:ALA:HB3	1.91	0.52
50:DX:18:ALA:HB3	50:DX:20:ARG:NH1	2.24	0.52
1:AA:1062:U:H2'	1:AA:1063:C:C6	2.44	0.52
17:BQ:8:LEU:HD13	17:BQ:73:TRP:CH2	2.45	0.52
54:DA:2291:U:H2'	54:DA:2292:U:C6	2.45	0.52
18:AR:36:SER:HA	18:AR:72:ASP:HB3	1.91	0.52
19:BS:15:LEU:HD13	19:BS:33:THR:HG21	1.91	0.52
31:CA:1274:A:N3	31:CA:1297:C:H1'	2.24	0.52
31:CA:1482:G:H1'	31:CA:1509:A:H61	1.75	0.52
54:DA:551:G:H5''	54:DA:551:G:H8	1.75	0.52
1:AA:266:G:H3'	17:AQ:69:LYS:HB2	1.91	0.52
1:BA:1126:U:O2	1:BA:1280:A:H5'	2.09	0.52
1:BA:1343:G:H2'	1:BA:1344:C:C6	2.44	0.52
31:CA:846:U:H1'	31:CA:847:U:C5	2.40	0.52
31:CA:1636:U:H2'	31:CA:1637:A:C8	2.45	0.52
38:CL:121:GLU:HG2	38:CL:122:VAL:HG23	1.92	0.52
45:DS:16:GLU:HG2	45:DS:100:GLY:HA2	1.92	0.52
9:AI:19:VAL:HG22	9:AI:65:ILE:HG22	1.91	0.51
23:C2:35:GLU:HG2	23:C2:50:LYS:HG2	1.91	0.51
31:CA:566:U:O4	45:CS:80:ARG:HD3	2.10	0.51
54:DA:837:C:H5	69:DA:6614:HOH:O	1.93	0.51
1:AA:673:A:H2'	1:AA:674:G:C8	2.45	0.51
53:DI:132:TYR:H	53:DI:133:GLU:HB2	1.75	0.51
31:CA:784:G:H3'	69:CA:3435:HOH:O	2.10	0.51
31:CA:1363:C:H2'	31:CA:1364:G:H8	1.76	0.51
51:CY:4:VAL:HG22	51:CY:11:ARG:HG3	1.91	0.51
1:AA:686:U:HO2'	1:AA:687:A:H8	1.58	0.51
1:AA:1151:A:O2'	1:AA:1152:A:H8	1.94	0.51
1:BA:1068:G:N7	1:BA:1094:G:H2'	2.25	0.51
33:CF:36:LEU:HB2	33:CF:57:LEU:HD21	1.92	0.51
33:DF:36:LEU:HB2	33:DF:57:LEU:HD21	1.92	0.51
54:DA:793:A:OP1	64:DA:3224:SPD:H81	2.10	0.51
1:AA:528:C:H5''	1:AA:528:C:H6	1.76	0.51
5:AE:107:ALA:HB2	5:AE:125:ALA:HB3	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:AH:2:SER:HB2	8:AH:4:GLN:HE21	1.76	0.51
10:BJ:52:LEU:HB2	14:BN:81:ARG:HD2	1.92	0.51
3:AC:77:ILE:HA	3:AC:84:VAL:CG2	2.40	0.51
3:BC:77:ILE:HA	3:BC:84:VAL:CG2	2.41	0.51
8:AH:87:LYS:HB2	8:AH:125:ILE:CD1	2.39	0.51
13:AM:90:ARG:HH21	13:AM:95:LEU:HB3	1.76	0.51
29:CC:208:ALA:HB2	31:CA:1790:C:O2'	2.11	0.51
39:CM:21:ARG:HH21	39:CM:21:ARG:HG2	1.75	0.51
37:DK:56:VAL:HB	37:DK:124:VAL:HB	1.93	0.51
43:DQ:52:ASN:O	54:DA:2845:U:H5''	2.10	0.51
56:DA:3216:PG4:H31	69:DA:4497:HOH:O	2.11	0.51
13:AM:12:HIS:HB3	69:AM:305:HOH:O	2.10	0.51
31:CA:1810:A:H2'	31:CA:1811:G:O4'	2.08	0.51
40:CN:40:ARG:HD3	40:CN:93:VAL:HG21	1.93	0.51
44:DR:6:ARG:HD3	54:DA:1250:G:C5'	2.41	0.51
54:DA:2273:A:H2'	54:DA:2274:A:C8	2.45	0.51
9:BI:116:VAL:HG21	10:BJ:62:ARG:HB2	1.93	0.51
31:CA:1447:C:H2'	31:CA:1448:G:C8	2.46	0.51
42:DP:68:LYS:HB3	61:DP:201:PEG:H22	1.92	0.51
26:C5:2:LYS:HE3	26:C5:4:ARG:HH11	1.76	0.51
4:BD:177:LYS:HB3	4:BD:179:GLU:HG2	1.92	0.51
53:DI:50:VAL:HG13	53:DI:85:VAL:HG22	1.93	0.51
64:DA:3224:SPD:H82	69:DA:5291:HOH:O	2.10	0.51
13:AM:86:TYR:CZ	13:AM:90:ARG:HD2	2.46	0.50
13:BM:90:ARG:HH21	13:BM:95:LEU:HB3	1.76	0.50
31:CA:2190:G:H2'	31:CA:2191:A:C8	2.47	0.50
32:CE:149:ILE:HD12	32:CE:172:ALA:HA	1.93	0.50
34:DG:164:TYR:HB2	34:DG:167:GLU:HB2	1.93	0.50
1:AA:1328:C:H5''	13:AM:28:THR:HG21	1.93	0.50
4:AD:177:LYS:HB3	4:AD:179:GLU:HG2	1.93	0.50
13:BM:22:ILE:HB	13:BM:25:VAL:HG12	1.93	0.50
41:DO:73:ASN:HA	41:DO:76:VAL:HG13	1.93	0.50
1:BA:1151:A:O2'	1:BA:1152:A:H8	1.94	0.50
1:BA:1518:MA6:H103	1:BA:1519:MA6:C10	2.39	0.50
54:DA:12:U:H6	69:DA:4057:HOH:O	1.93	0.50
1:AA:845:A:O4'	1:AA:845:A:P	2.69	0.50
6:AF:47:LEU:HD13	6:AF:51:ILE:HG12	1.94	0.50
13:AM:90:ARG:HD3	13:AM:97:VAL:HA	1.92	0.50
30:CD:152:PRO:HG3	30:CD:156:PHE:CZ	2.46	0.50
31:CA:792:A:H1'	31:CA:2072:C:O2'	2.11	0.50
33:CF:132:VAL:HG22	33:CF:152:LEU:HG	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:CA:781:A:H2'	31:CA:1777:U:O2'	2.11	0.50
30:DD:150[A]:MEQ:HE3	54:DA:2032:G:C8	2.47	0.50
37:CK:81:ILE:CG2	37:CK:82:GLY:H	2.24	0.50
34:DG:86:LYS:HG2	34:DG:132:VAL:HG22	1.93	0.50
46:DT:10:ALA:HB1	46:DT:46:LEU:HD13	1.94	0.50
54:DA:287:G:H1	54:DA:353:C:H42	1.60	0.50
31:CA:1405:U:H2'	31:CA:1406:U:C6	2.47	0.50
31:CA:1809:A:H2'	31:CA:1810:A:C8	2.45	0.50
54:DA:1738:G:HO2'	54:DA:1739:A:H8	1.58	0.50
1:BA:374:A:OP1	1:BA:452:A:N1	2.44	0.50
1:BA:1493:A:H1'	31:CA:1913:A:H61	1.77	0.50
13:BM:86:TYR:CZ	13:BM:90:ARG:HD2	2.46	0.50
31:CA:328:U:O3'	48:CV:66:GLN:HG3	2.11	0.50
35:CH:27:ARG:HH11	51:CY:60:ASP:HA	1.77	0.50
36:DJ:14:ALA:HB3	36:DJ:17:MET:HB2	1.94	0.50
54:DA:2886[A]:A:C2	54:DA:2887[A]:A:H1'	2.46	0.50
1:AA:412:A:H3'	1:AA:413:G:C5'	2.42	0.50
3:AC:155:GLY:HA2	3:AC:163:ALA:HB1	1.94	0.50
31:CA:1469:A:H2'	31:CA:1470:A:C8	2.47	0.50
38:CL:76:VAL:HG12	43:CQ:73:VAL:HB	1.93	0.50
13:BM:90:ARG:HD3	13:BM:97:VAL:HA	1.93	0.49
1:BA:202:G:O2'	1:BA:468:A:H8	1.94	0.49
5:BE:81:LEU:HB3	5:BE:147:MET:SD	2.52	0.49
35:CH:94:ILE:HB	35:CH:122:LEU:HB2	1.95	0.49
37:CK:81:ILE:HG23	37:CK:82:GLY:N	2.27	0.49
33:DF:88:LYS:HD3	54:DA:2313:C:H5''	1.93	0.49
1:BA:518:C:H2'	1:BA:530:G:C8	2.48	0.49
1:BA:1328:C:H5''	13:BM:28:THR:HG21	1.95	0.49
31:CA:593:U:H2'	31:CA:594:U:C6	2.47	0.49
54:DA:118:A:N3	54:DA:178:G:H1'	2.26	0.49
54:DA:1172:C:C5	54:DA:1173:U:H1'	2.47	0.49
54:DA:1515:A:H2'	54:DA:1516:G:O4'	2.12	0.49
31:CA:2189:U:H2'	31:CA:2190:G:H8	1.78	0.49
53:DI:64:VAL:HG22	53:DI:69:PHE:HB2	1.95	0.49
1:AA:131:A:H2'	1:AA:132:C:C6	2.48	0.49
1:BA:845:A:O5'	1:BA:845:A:H8	1.96	0.49
5:BE:72:ILE:HG13	5:BE:73:ASN:H	1.77	0.49
31:CA:1847:A:O2'	31:CA:1848:A:H8	1.78	0.49
30:DD:161:MET:HG2	69:DA:6194:HOH:O	2.12	0.49
36:CJ:14:ALA:HB3	36:CJ:17:MET:HB2	1.93	0.49
21:AU:51:SER:HA	21:AU:54:LYS:HE3	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:BA:8:A:C6	4:BD:206:LYS:HB3	2.48	0.49
26:D5:25:VAL:HB	26:D5:35:GLN:HB2	1.94	0.49
31:CA:1775:U:O4	31:CA:1789:A:H2	1.95	0.49
20:AT:43:ASP:HB3	20:AT:46:ALA:HB3	1.95	0.49
30:DD:150[A]:MEQ:HG2	69:DA:3634:HOH:O	2.13	0.49
41:CO:95:THR:HG21	41:CO:113:ILE:HD11	1.94	0.49
53:DI:126:LEU:HA	53:DI:129:LEU:HD12	1.94	0.49
54:DA:136:G:H1	54:DA:143:C:H42	1.61	0.49
54:DA:593:U:H2'	54:DA:594:U:C6	2.48	0.49
31:CA:551:G:H5''	31:CA:551:G:H8	1.76	0.49
34:CG:86:LYS:HG2	34:CG:132:VAL:HG22	1.95	0.49
38:CL:103:VAL:O	38:CL:122:VAL:HB	2.13	0.49
6:AF:3:HIS:CE1	6:AF:65:GLU:HG3	2.48	0.49
10:BJ:26:VAL:HG21	10:BJ:39:PRO:HD3	1.95	0.49
11:BK:52:PHE:HE2	11:BK:65:VAL:HG21	1.78	0.49
13:BM:16:VAL:HG13	13:BM:34:LEU:HD12	1.94	0.49
41:DO:55:ALA:HA	41:DO:80:PHE:CE2	2.48	0.49
44:DR:31:VAL:HG13	54:DA:580:U:O3'	2.13	0.49
48:DV:94:ARG:HB3	48:DV:103:ILE:HD12	1.95	0.49
54:DA:2327:A:H2'	54:DA:2328:A:C8	2.48	0.49
54:DA:2813:A:C2	54:DA:2887[B]:A:N6	2.80	0.49
1:AA:439:U:H5''	4:AD:121:LYS:HD2	1.95	0.48
1:AA:1518:MA6:H103	1:AA:1519:MA6:C10	2.37	0.48
2:AB:111:ILE:HD12	2:AB:152:LYS:HA	1.95	0.48
10:AJ:5:ARG:HE	10:AJ:77:VAL:HG22	1.78	0.48
11:AK:16:VAL:HG23	11:AK:79:ILE:HG13	1.94	0.48
1:BA:1190:G:H5'	3:BC:176:HIS:NE2	2.28	0.48
22:D1:24:ALA:HB3	63:D1:102:PGE:H5	1.95	0.48
45:CS:49:ILE:HB	45:CS:51:VAL:O	2.13	0.48
54:DA:12:U:O2	54:DA:12:U:H2'	2.13	0.48
54:DA:572:A:H5''	54:DA:573:U:OP2	2.13	0.48
54:DA:784:G:H5'	54:DA:785:G:OP1	2.13	0.48
54:DA:1536:C:H4'	54:DA:1537:G:H5''	1.94	0.48
1:AA:1277:C:HO2'	1:AA:1279:G:H8	1.61	0.48
54:DA:1773:A:H5''	69:DA:4750:HOH:O	2.12	0.48
6:AF:16:GLU:HB3	4:BD:189:SER:HA	1.95	0.48
11:AK:52:PHE:HE2	11:AK:65:VAL:HG21	1.78	0.48
1:BA:1001:C:H2'	1:BA:1002:G:H8	1.78	0.48
8:BH:2:SER:HB2	8:BH:4:GLN:HE21	1.78	0.48
29:CC:67:PHE:CD1	29:CC:105:LEU:HD11	2.48	0.48
31:CA:1379:U:H5'	31:CA:1379:U:H6	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:CA:1956:U:O2	31:CA:1985:C:H4'	2.13	0.48
40:DN:21:ALA:HB1	40:DN:100:LYS:HG2	1.95	0.48
1:AA:1001:C:H2'	1:AA:1002:G:H8	1.79	0.48
3:AC:20:SER:HB3	14:AN:94:PRO:HG3	1.95	0.48
29:CC:3:VAL:HG21	29:CC:202:LEU:HD23	1.96	0.48
31:CA:12:U:H2'	31:CA:12:U:O2	2.14	0.48
29:DC:233:GLY:HA3	69:DC:309:HOH:O	2.12	0.48
33:CF:106:ILE:HD12	33:CF:139:PRO:HG2	1.95	0.48
37:CK:56:VAL:HB	37:CK:124:VAL:HB	1.93	0.48
33:DF:131:GLY:HA3	54:DA:2305:U:H5''	1.95	0.48
35:DH:94:ILE:HB	35:DH:122:LEU:HB2	1.95	0.48
40:DN:18[B]:ARG:HG3	28:DB:90:C:C5'	2.43	0.48
1:AA:413:G:H5''	1:AA:414:A:H5'	1.96	0.48
3:BC:155:GLY:HA2	3:BC:163:ALA:HB1	1.96	0.48
32:CE:108:ILE:HG22	39:CM:1:MET:SD	2.54	0.48
36:CJ:103:ARG:HA	36:CJ:106:LEU:HD12	1.95	0.48
42:DP:35:ILE:HG21	42:DP:71:ALA:HA	1.94	0.48
54:DA:1794:A:H2'	54:DA:1795:C:C6	2.47	0.48
54:DA:2628:C:H5'	58:DA:3195:PUT:H11	1.95	0.48
1:AA:1250:A:O3'	9:AI:69:GLY:HA2	2.14	0.48
1:AA:1391:U:H2'	1:AA:1392:G:C8	2.48	0.48
21:AU:4:ILE:HG13	21:AU:19:PHE:HA	1.96	0.48
19:BS:6:LYS:HD2	19:BS:7:LYS:H	1.78	0.48
31:CA:287:G:H1	31:CA:353:C:H42	1.61	0.48
33:DF:106:ILE:HD12	33:DF:139:PRO:HG2	1.94	0.48
1:AA:1346:A:H61	1:AA:1374:A:H3'	1.77	0.48
13:AM:26:GLY:HA2	69:AM:303:HOH:O	2.13	0.48
2:BB:111:ILE:HD12	2:BB:152:LYS:HA	1.95	0.48
31:CA:747:5MU:O2	31:CA:2014:A:H1'	2.14	0.48
36:DJ:103:ARG:HA	36:DJ:106:LEU:HD12	1.95	0.48
26:C5:25:VAL:HB	26:C5:35:GLN:HB2	1.95	0.48
1:BA:131:A:H2'	1:BA:132:C:C6	2.49	0.48
31:CA:136:G:H1	31:CA:143:C:H42	1.62	0.48
31:CA:450:G:H2'	31:CA:451:U:H5''	1.96	0.48
45:CS:16:GLU:HG2	45:CS:100:GLY:HA2	1.95	0.48
53:DI:50:VAL:HG11	53:DI:92:ALA:HB2	1.94	0.48
54:DA:588:U:H2'	54:DA:589:U:C6	2.49	0.48
54:DA:2628:C:H5'	58:DA:3195:PUT:C1	2.44	0.48
1:BA:1493:A:H8	1:BA:1493:A:OP2	1.97	0.48
10:BJ:57:VAL:HG22	10:BJ:58:ASN:H	1.79	0.48
31:CA:323:C:H5'	32:CE:163:ASN:HD21	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:DS:92:TRP:CZ2	63:DS:201:PGE:H2	2.49	0.48
1:AA:451:A:H61	1:AA:481:G:H5'	1.79	0.48
13:BM:11:ASP:HA	13:BM:45:ILE:HD13	1.94	0.48
13:BM:22:ILE:HB	13:BM:25:VAL:CG1	2.44	0.48
31:CA:538:A:H4'	37:CK:7:LYS:HG2	1.96	0.48
31:CA:674:G:H2'	31:CA:804:A:H61	1.79	0.48
31:CA:796:C:H2'	31:CA:797:G:C8	2.49	0.48
54:DA:2031:A:C6	54:DA:2498:OMC:H1'	2.48	0.48
54:DA:2262:U:H4'	54:DA:2328:A:C2	2.49	0.48
54:DA:2262:U:H4'	54:DA:2328:A:H2	1.79	0.48
29:CC:228:VAL:HG21	69:CA:3410:HOH:O	2.13	0.47
31:CA:1783:A:H5'	31:CA:2608:G:H4'	1.95	0.47
31:CA:2271:G:H2'	31:CA:2272:U:C6	2.49	0.47
35:CH:82:SER:HB2	35:CH:94:ILE:HD11	1.96	0.47
48:DV:17:LYS:HE3	48:DV:40:ASN:HA	1.96	0.47
1:BA:1346:A:H61	1:BA:1374:A:H3'	1.78	0.47
21:BU:4:ILE:HG13	21:BU:19:PHE:HA	1.95	0.47
41:CO:55:ALA:HA	41:CO:80:PHE:CE2	2.49	0.47
42:CP:35:ILE:HG21	42:CP:71:ALA:HA	1.96	0.47
54:DA:1433:A:O2'	54:DA:1434:A:H5'	2.14	0.47
20:AT:24:ARG:HD3	20:AT:24:ARG:N	2.30	0.47
6:BF:47:LEU:HD13	6:BF:51:ILE:HG12	1.96	0.47
34:CG:164:TYR:HB2	34:CG:167:GLU:HB2	1.95	0.47
44:CR:58:ARG:HH11	44:CR:62:ILE:HD11	1.79	0.47
52:CZ:42:LEU:HD23	52:CZ:45:GLN:HE21	1.79	0.47
40:DN:33:LEU:HD13	40:DN:117:PHE:HB3	1.95	0.47
54:DA:1509:A:HO2'	54:DA:1510:G:H8	1.62	0.47
1:AA:1190:G:H5'	3:AC:176:HIS:NE2	2.30	0.47
11:AK:30:THR:HG21	11:AK:92:GLY:HA3	1.97	0.47
31:CA:804:A:H2'	31:CA:806:C:C4	2.49	0.47
53:DI:44:ALA:HB1	53:DI:95:LEU:HD11	1.96	0.47
1:AA:518:C:H2'	1:AA:530:G:C8	2.48	0.47
17:BQ:31:HIS:HE1	17:BQ:33:ILE:HD12	1.79	0.47
31:CA:588:U:H2'	31:CA:589:U:C6	2.49	0.47
31:CA:634:C:H2'	31:CA:635:C:C6	2.50	0.47
31:CA:2822:G:H2'	31:CA:2823:A:H5''	1.97	0.47
29:DC:3:VAL:HG21	29:DC:202:LEU:HD23	1.96	0.47
39:CM:85:VAL:HG11	39:CM:90:VAL:HG22	1.96	0.47
42:DP:9:ARG:HH22	54:DA:2295:C:P	2.38	0.47
44:DR:19:LYS:HD3	56:DR:202:PG4:H22	1.96	0.47
54:DA:2520:C:C6	54:DA:2567:G:H1'	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1305:G:HO2'	1:AA:1306:A:H8	1.63	0.47
17:AQ:15:ASP:HA	17:AQ:21:ILE:HG22	1.96	0.47
2:BB:41:ILE:HD13	2:BB:202:GLY:HA2	1.96	0.47
3:BC:26:THR:HG23	14:BN:76:LYS:HD2	1.96	0.47
22:D1:43:ILE:HG22	22:D1:49:TYR:HB2	1.95	0.47
24:D3:7:PRO:HB2	54:DA:1309:G:H4'	1.95	0.47
31:CA:70:G:H5''	31:CA:112:U:O2	2.14	0.47
31:CA:737:C:H42	31:CA:759:G:H1	1.63	0.47
31:CA:2350:C:H2'	31:CA:2351:G:O4'	2.15	0.47
31:CA:2686:G:H2'	31:CA:2687:U:C6	2.50	0.47
39:CM:19:LEU:HD23	39:CM:31:GLY:O	2.15	0.47
39:CM:28:GLY:O	39:CM:29:LYS:O	2.33	0.47
44:CR:87:SER:HB3	45:CS:52:PRO:HD3	1.96	0.47
49:CW:51:GLN:HG2	49:CW:86:LEU:HD11	1.97	0.47
54:DA:2324:U:H3'	54:DA:2325:G:H5''	1.97	0.47
1:AA:946:A:H2'	1:AA:947:G:C8	2.50	0.47
2:AB:41:ILE:HD13	2:AB:202:GLY:HA2	1.95	0.47
1:BA:10:A:OP2	5:BE:131:THR:HG21	2.15	0.47
1:BA:1391:U:H2'	1:BA:1392:G:C8	2.49	0.47
29:CC:155:ALA:HB2	29:CC:162:VAL:HG23	1.96	0.47
1:BA:214:C:H2'	1:BA:215:C:H6	1.80	0.47
1:BA:946:A:H2'	1:BA:947:G:C8	2.50	0.47
1:BA:957:U:O2	1:BA:959:A:H8	1.98	0.47
31:CA:248:G:H5'	31:CA:250:G:N7	2.29	0.47
31:CA:2623:G:H4'	31:CA:2825:G:H8	1.80	0.47
40:CN:21:ALA:HB1	40:CN:100:LYS:HG2	1.97	0.47
48:CV:94:ARG:HB3	48:CV:103:ILE:HD12	1.97	0.47
54:DA:5:A:H2'	54:DA:6:A:C8	2.50	0.47
22:D1:22:LEU:HD23	61:D1:103:PEG:H31	1.96	0.47
29:CC:75:PRO:HG2	29:CC:97:LYS:HD3	1.97	0.47
31:CA:1182:G:H2'	31:CA:1183:U:O4'	2.15	0.47
31:CA:1914:C:H2'	31:CA:1915:3TD:H6	1.96	0.47
31:CA:2025:C:H2'	31:CA:2026:U:C6	2.50	0.47
31:CA:2328:A:H2'	31:CA:2329:U:C6	2.51	0.47
41:CO:47:VAL:O	41:CO:51:LEU:HD23	2.15	0.47
39:DM:21:ARG:HA	54:DA:811:U:H2'	1.96	0.47
1:AA:620:C:H2'	1:AA:621:A:O4'	2.14	0.46
10:AJ:26:VAL:HG21	10:AJ:39:PRO:HD3	1.97	0.46
11:AK:84:VAL:HG21	11:AK:97:ILE:HG23	1.97	0.46
1:BA:1250:A:O3'	9:BI:69:GLY:HA2	2.15	0.46
1:BA:1356:G:H2'	1:BA:1357:A:C8	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:CA:976:G:H2'	31:CA:977:G:H8	1.80	0.46
31:CA:1494:A:H2'	31:CA:1495:A:C8	2.50	0.46
31:CA:2327:A:H2'	31:CA:2328:A:C8	2.50	0.46
35:DH:82:SER:HB2	35:DH:94:ILE:HD11	1.95	0.46
54:DA:933:A:H5'	54:DA:934:U:OP2	2.14	0.46
2:AB:129:LEU:H	2:AB:129:LEU:HG	1.54	0.46
1:BA:1069:C:H4'	1:BA:1192:C:O2	2.16	0.46
31:CA:443:A:H2'	32:CE:40:ARG:NH1	2.29	0.46
39:CM:21:ARG:CG	39:CM:21:ARG:NH2	2.76	0.46
54:DA:2128:G:H1	54:DA:2160:C:N4	2.12	0.46
1:AA:429:U:H1'	1:AA:430:A:H5''	1.97	0.46
7:BG:69:VAL:HG23	7:BG:100:ALA:HB1	1.98	0.46
42:CP:7:ARG:HA	42:CP:10:ARG:HE	1.79	0.46
19:AS:32:ARG:HE	19:AS:57:HIS:CE1	2.34	0.46
1:BA:411:A:P	4:BD:26:ARG:HH12	2.38	0.46
1:BA:429:U:H1'	1:BA:430:A:H5''	1.98	0.46
1:BA:1152:A:H2'	1:BA:1153:G:C8	2.51	0.46
31:CA:727:A:H2'	31:CA:728:G:C8	2.50	0.46
31:CA:833:A:H2'	31:CA:834:G:C8	2.50	0.46
29:DC:207:LYS:HB2	54:DA:729:G:C6	2.50	0.46
7:AG:132:GLY:H	7:AG:135:VAL:HG22	1.80	0.46
31:CA:933:A:H5'	31:CA:934:U:OP2	2.16	0.46
31:CA:1386:C:H2'	31:CA:1387:A:C8	2.51	0.46
34:DG:52:PHE:CD1	34:DG:52:PHE:N	2.84	0.46
38:DL:101:GLY:O	38:DL:120:PRO:HD2	2.16	0.46
54:DA:265:A:H4'	54:DA:266:G:OP1	2.16	0.46
54:DA:2895:G:H2'	54:DA:2896:C:C6	2.51	0.46
1:AA:1053:G:H4'	1:AA:1054:C:H5'	1.97	0.46
12:BL:110:ARG:NH2	12:BL:117:TYR:CE2	2.84	0.46
18:BR:36:SER:HA	18:BR:72:ASP:HB3	1.96	0.46
20:BT:44:LYS:HB3	20:BT:87:ALA:HB2	1.98	0.46
42:CP:51:ALA:HB3	42:CP:78:VAL:HG13	1.98	0.46
51:DY:10:LYS:HE3	51:DY:54:LYS:HG2	1.97	0.46
18:BR:41:PRO:HG2	18:BR:44:ILE:HD12	1.97	0.46
29:CC:35:GLU:HG3	29:CC:64:ILE:HD11	1.98	0.46
29:DC:35:GLU:HG3	29:DC:64:ILE:HD11	1.96	0.46
30:DD:121:THR:HB	30:DD:127:PHE:CD2	2.51	0.46
40:CN:33:LEU:HD13	40:CN:117:PHE:HB3	1.97	0.46
44:CR:22:LYS:HE2	44:CR:22:LYS:HA	1.97	0.46
49:DW:51:GLN:HG2	49:DW:86:LEU:HD11	1.98	0.46
54:DA:2243:U:H2'	54:DA:2244:U:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:76:G:H22	1:AA:93:U:H3	1.64	0.46
3:BC:5:VAL:HG21	3:BC:10:ILE:HD13	1.98	0.46
31:CA:686:U:H2'	31:CA:788:A:N1	2.31	0.46
31:CA:2728:U:O2'	31:CA:2729:G:H8	1.98	0.46
31:CA:2788:C:H2'	31:CA:2789:C:C6	2.51	0.46
45:CS:7:SER:HB3	45:CS:12:HIS:HE1	1.79	0.46
54:DA:1168:G:H2'	54:DA:1169:A:O4'	2.15	0.46
1:AA:619:U:C2	4:AD:132:ILE:HD11	2.51	0.46
1:AA:1239:A:H62	1:AA:1299:A:N6	2.14	0.46
14:BN:31:ILE:HG23	14:BN:42:TRP:HZ2	1.81	0.46
23:D2:10:LYS:HE3	23:D2:53:LYS:O	2.16	0.46
31:CA:493:G:H2'	31:CA:494:G:O4'	2.16	0.46
31:CA:2030:6MZ:C2	31:CA:2499:C:H5''	2.46	0.46
31:CA:2353:G:H2'	31:CA:2354:C:O4'	2.15	0.46
38:DL:76:VAL:CG2	54:DA:2684:U:H4'	2.46	0.46
54:DA:493:G:H2'	54:DA:494:G:O4'	2.16	0.46
54:DA:1738:G:O2'	54:DA:1739:A:H8	1.99	0.46
1:AA:1356:G:H2'	1:AA:1357:A:C8	2.51	0.46
31:CA:1510:G:H2'	31:CA:1511:G:O4'	2.16	0.46
31:CA:1638:C:H4'	31:CA:2710:C:O2	2.16	0.46
31:CA:2630:G:O4'	31:CA:2894:G:H1'	2.15	0.46
31:CA:2845:U:H2'	31:CA:2846:G:O4'	2.16	0.46
33:CF:31:VAL:HG11	33:CF:97:TRP:CH2	2.51	0.46
50:DX:11:ARG:HH11	54:DA:2256:G:H4'	1.81	0.46
1:AA:957:U:O2	1:AA:959:A:H8	1.98	0.45
1:AA:1289:A:H3'	1:AA:1290:G:H8	1.82	0.45
8:AH:66:PHE:CD2	8:AH:67:GLN:HG2	2.51	0.45
10:AJ:57:VAL:HG22	10:AJ:58:ASN:H	1.80	0.45
1:BA:439:U:H5''	4:BD:121:LYS:HD2	1.97	0.45
3:BC:20:SER:HB3	14:BN:94:PRO:HG3	1.97	0.45
40:DN:75:GLU:HB2	40:DN:90:GLU:HG3	1.97	0.45
54:DA:68:G:H2'	54:DA:69:C:O4'	2.16	0.45
54:DA:1510:G:H2'	54:DA:1511:G:O4'	2.16	0.45
54:DA:2133:G:H21	54:DA:2158:A:N6	2.14	0.45
3:AC:26:THR:HG23	14:AN:76:LYS:HD2	1.97	0.45
5:AE:15:LEU:HA	5:AE:37:THR:HG22	1.98	0.45
7:AG:69:VAL:HG23	7:AG:100:ALA:HB1	1.97	0.45
13:BM:6:GLY:O	13:BM:7:ILE:HG13	2.15	0.45
30:CD:25:THR:HG21	30:CD:193:VAL:HG22	1.98	0.45
51:CY:10:LYS:HE3	51:CY:54:LYS:HG2	1.96	0.45
50:DX:39:ARG:HD3	69:DX:118:HOH:O	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:DA:722:A:H2'	54:DA:723:C:O4'	2.16	0.45
3:AC:47:LEU:HB3	3:AC:50:ALA:HB3	1.98	0.45
5:BE:15:LEU:HA	5:BE:37:THR:HG22	1.98	0.45
31:CA:998:C:OP2	44:CR:58:ARG:NH2	2.49	0.45
31:CA:2095:A:H8	31:CA:2095:A:H5''	1.81	0.45
31:CA:2895:G:H2'	31:CA:2896:C:C6	2.51	0.45
54:DA:2547:A:H2'	54:DA:2548:U:C6	2.52	0.45
1:BA:76:G:H22	1:BA:93:U:H3	1.64	0.45
6:BF:99:ALA:O	6:BF:100:SER:HB3	2.16	0.45
31:CA:722:A:H2'	31:CA:723:C:O4'	2.17	0.45
31:CA:969:G:H2'	31:CA:970:U:C6	2.52	0.45
54:DA:1386:C:H2'	54:DA:1387:A:C8	2.51	0.45
54:DA:2328:A:H2'	54:DA:2329:U:C6	2.51	0.45
10:AJ:5:ARG:HG3	10:AJ:77:VAL:HA	1.99	0.45
27:D0:45:ARG:HH12	27:D0:59:GLU:CD	2.20	0.45
31:CA:1936:A:N6	31:CA:1963:U:H3	2.14	0.45
30:DD:150[B]:MEQ:HE2	54:DA:2033:A:O5'	2.16	0.45
54:DA:686:U:H2'	54:DA:788:A:N1	2.31	0.45
54:DA:788:A:H5''	58:DA:3222:PUT:H12	1.99	0.45
12:AL:110:ARG:NH2	12:AL:117:TYR:CE2	2.85	0.45
18:AR:41:PRO:HG2	18:AR:44:ILE:HD12	1.98	0.45
1:BA:451:A:H61	1:BA:481:G:H5'	1.81	0.45
1:BA:545:C:H5'	4:BD:69:GLU:HB2	1.98	0.45
1:BA:1239:A:H62	1:BA:1299:A:N6	2.14	0.45
11:BK:45:ALA:HB3	11:BK:70:CYS:HB2	1.97	0.45
20:BT:48:GLN:HE21	20:BT:83:ILE:HD13	1.81	0.45
31:CA:278:A:N3	31:CA:278:A:H2'	2.32	0.45
38:CL:101:GLY:O	38:CL:120:PRO:HD2	2.15	0.45
1:AA:604:G:H2'	1:AA:605:U:O4'	2.17	0.45
3:AC:7:PRO:HD2	3:AC:184:TYR:CD1	2.51	0.45
1:BA:328:C:H2'	1:BA:328:C:O2	2.17	0.45
4:BD:48:LEU:HD21	4:BD:56:ARG:HG3	1.97	0.45
30:CD:129:THR:CG2	30:CD:140:HIS:O	2.65	0.45
31:CA:1936:A:C2	31:CA:1943:U:N3	2.61	0.45
44:DR:34:VAL:HG21	54:DA:2019:A:H4'	1.98	0.45
54:DA:747:5MU:O2	54:DA:2014:A:H1'	2.17	0.45
54:DA:788:A:H3'	58:DA:3222:PUT:H41	1.98	0.45
54:DA:1494:A:H2'	54:DA:1495:A:C8	2.51	0.45
1:AA:411:A:P	4:AD:26:ARG:HH12	2.40	0.45
1:AA:1239:A:H62	1:AA:1299:A:H62	1.64	0.45
1:BA:972:C:H4'	10:BJ:59:LYS:HG2	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:BA:1003:G:H21	1:BA:1005:A:H5'	1.82	0.45
5:BE:76:LEU:HD21	5:BE:120:VAL:HG22	1.99	0.45
11:BK:30:THR:HG21	11:BK:92:GLY:HA3	1.98	0.45
31:CA:1324:G:H1'	31:CA:1616:A:N6	2.32	0.45
48:CV:45:HIS:CD2	48:CV:58:ILE:HG12	2.50	0.45
33:DF:121:SER:HB2	54:DA:2304:G:H5'	1.98	0.45
42:DP:51:ALA:HB3	42:DP:78:VAL:HG13	1.99	0.45
54:DA:136:G:H1	54:DA:143:C:N4	2.15	0.45
1:AA:528:C:H5''	1:AA:528:C:C6	2.52	0.45
1:BA:49:U:O2	1:BA:362:G:H1'	2.17	0.45
7:BG:132:GLY:H	7:BG:135:VAL:HG22	1.81	0.45
31:CA:639:U:H2'	31:CA:640:C:C6	2.51	0.45
40:DN:14:LYS:HE2	69:DA:3581:HOH:O	2.16	0.45
1:AA:1068:G:N7	1:AA:1094:G:H2'	2.32	0.45
9:AI:7:TYR:HE1	9:AI:18:ARG:HB2	1.82	0.45
1:BA:604:G:H2'	1:BA:605:U:O4'	2.17	0.45
1:BA:1289:A:H3'	1:BA:1290:G:H8	1.81	0.45
14:BN:28:LYS:HA	14:BN:31:ILE:HG22	1.98	0.45
31:CA:2842:G:H2'	31:CA:2843:G:O4'	2.17	0.45
54:DA:278:A:N3	54:DA:278:A:H2'	2.32	0.45
54:DA:825:A:H2'	54:DA:826:U:O4'	2.17	0.45
54:DA:2788:C:H2'	54:DA:2789:C:C6	2.52	0.45
23:C2:15:ALA:HB2	23:C2:47:VAL:HG21	1.99	0.44
1:BA:1081:A:H5'	5:BE:23:LYS:HG3	1.98	0.44
3:BC:47:LEU:HD22	3:BC:76:VAL:HG22	1.99	0.44
9:BI:7:TYR:HE1	9:BI:18:ARG:HB2	1.81	0.44
9:BI:57:MET:HG3	9:BI:61:LEU:HG	1.99	0.44
17:BQ:51:ASN:N	17:BQ:51:ASN:HD22	2.15	0.44
22:D1:25:VAL:HG11	46:DT:38:TYR:HB2	1.99	0.44
29:CC:105:LEU:HD12	29:CC:105:LEU:N	2.30	0.44
31:CA:1327:A:H2'	31:CA:1328:A:O4'	2.17	0.44
54:DA:639:U:H2'	54:DA:640:C:C6	2.52	0.44
1:AA:545:C:H5'	4:AD:69:GLU:HB2	1.98	0.44
20:BT:69:LYS:H	20:BT:69:LYS:HG3	1.54	0.44
31:CA:1214:A:H4'	31:CA:1239:G:H4'	2.00	0.44
54:DA:1101:U:H2'	54:DA:1102:C:C6	2.52	0.44
1:AA:79:G:H22	1:AA:90:C:H42	1.66	0.44
3:AC:5:VAL:HG21	3:AC:10:ILE:HD13	1.98	0.44
4:AD:48:LEU:HD21	4:AD:56:ARG:HG3	2.00	0.44
17:AQ:31:HIS:HE1	17:AQ:33:ILE:HD12	1.81	0.44
23:D2:15:ALA:HB2	23:D2:47:VAL:HG21	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:CR:58:ARG:NH1	44:CR:62:ILE:HD11	2.32	0.44
54:DA:455:C:N3	54:DA:472:A:H2'	2.31	0.44
7:AG:69:VAL:HG21	7:AG:104:ILE:HD11	1.98	0.44
1:BA:134:G:H2'	1:BA:135:C:O4'	2.18	0.44
1:BA:1069:C:O4'	1:BA:1191:A:H2	2.00	0.44
14:BN:31:ILE:HG23	14:BN:42:TRP:CZ2	2.52	0.44
23:D2:11:LEU:HD21	23:D2:34:LEU:HD23	1.99	0.44
31:CA:320:A:H4'	31:CA:322:A:N7	2.31	0.44
31:CA:1509:A:HO2'	31:CA:1510:G:H8	1.66	0.44
31:CA:2030:6MZ:N3	31:CA:2499:C:H5''	2.33	0.44
31:CA:2339:C:H2'	31:CA:2340:A:C8	2.53	0.44
40:DN:41:LEU:CD2	40:DN:125:PRO:HD2	2.47	0.44
54:DA:2722:G:H2'	54:DA:2723:C:C6	2.53	0.44
54:DA:2747:G:O6	54:DA:2755:C:H5''	2.17	0.44
1:AA:345:C:H5''	43:DQ:34:GLU:O	2.17	0.44
1:AA:1329:A:H5''	13:AM:26:GLY:N	2.33	0.44
9:AI:57:MET:HG3	9:AI:61:LEU:HG	1.99	0.44
2:BB:129:LEU:H	2:BB:129:LEU:HG	1.54	0.44
6:BF:3:HIS:H	6:BF:92:THR:HG23	1.82	0.44
31:CA:136:G:H1	31:CA:143:C:N4	2.16	0.44
34:CG:52:PHE:CD2	34:CG:52:PHE:N	2.86	0.44
40:CN:75:GLU:HB2	40:CN:90:GLU:HG3	2.00	0.44
50:DX:11:ARG:H	50:DX:11:ARG:HE	1.65	0.44
53:DI:132:TYR:N	53:DI:133:GLU:HB2	2.32	0.44
54:DA:2339:C:H2'	54:DA:2340:A:C8	2.53	0.44
11:BK:84:VAL:HG21	11:BK:97:ILE:HG23	1.99	0.44
29:CC:219:THR:O	31:CA:1789:A:H5''	2.17	0.44
31:CA:694:U:OP1	31:CA:1569:A:H1'	2.17	0.44
31:CA:1587:G:H2'	31:CA:1588:G:H8	1.83	0.44
41:CO:28:LEU:HD23	41:CO:48:VAL:HG21	1.99	0.44
39:DM:85:VAL:HB	39:DM:94:THR:HG22	1.99	0.44
45:DS:21:ARG:HH21	56:DS:202:PG4:H71	1.81	0.44
54:DA:1637:A:H5'	54:DA:1760:C:O2'	2.17	0.44
54:DA:2723:C:O5'	54:DA:2723:C:H6	2.01	0.44
1:AA:1003:G:H21	1:AA:1005:A:H5'	1.82	0.44
3:BC:47:LEU:HB3	3:BC:50:ALA:HB3	1.99	0.44
7:BG:69:VAL:HG21	7:BG:104:ILE:HD11	1.99	0.44
30:CD:121:THR:HB	30:CD:127:PHE:CD2	2.53	0.44
31:CA:17:G:H4'	44:CR:25:TYR:HE2	1.81	0.44
31:CA:1434:A:H2'	31:CA:1435:G:C8	2.52	0.44
31:CA:2298:A:C2	31:CA:2321:U:N3	2.85	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:CA:2394:C:H5''	39:CM:63:LYS:HE2	2.00	0.44
30:DD:55:LYS:HD3	30:DD:60:VAL:HG22	2.00	0.44
35:CH:104:THR:HG22	35:CH:109:GLU:HA	2.00	0.44
53:DI:50:VAL:HG22	53:DI:85:VAL:HG13	1.99	0.44
54:DA:2117:A:H61	54:DA:2171:A:H61	1.66	0.44
21:BU:51:SER:HA	21:BU:54:LYS:HE3	2.00	0.44
31:CA:142:A:H1'	47:CU:1:MET:HB3	1.99	0.44
31:CA:671:C:C5	39:CM:33:ARG:NH2	2.86	0.44
31:CA:1101:U:H2'	31:CA:1102:C:C6	2.52	0.44
31:CA:2074:U:H2'	31:CA:2075:U:C6	2.52	0.44
40:CN:42:THR:HA	40:CN:93:VAL:HG12	2.00	0.44
35:DH:104:THR:HG22	35:DH:109:GLU:HA	1.99	0.44
54:DA:2473:U:O2	54:DA:2473:U:H2'	2.18	0.44
1:AA:240:G:H4'	1:AA:240:G:OP1	2.17	0.44
1:AA:328:C:H2'	1:AA:328:C:O2	2.17	0.44
2:AB:188:ASP:HB2	2:AB:204:ASP:OD2	2.17	0.44
1:BA:677:U:H3	1:BA:713:G:H22	1.66	0.44
1:BA:1432:G:H3'	43:CQ:106:LYS:HE2	1.99	0.44
28:CB:89:U:C6	31:CA:958:U:H2'	2.52	0.44
31:CA:2747:G:O6	31:CA:2755:C:H5''	2.17	0.44
47:DU:33:LYS:HG3	47:DU:80:TRP:CE3	2.52	0.44
54:DA:352:A:H5''	54:DA:352:A:H8	1.82	0.44
1:AA:1152:A:H2'	1:AA:1153:G:C8	2.53	0.43
3:AC:47:LEU:HD22	3:AC:76:VAL:HG22	2.00	0.43
5:AE:133:PRO:O	5:AE:137:VAL:HG13	2.18	0.43
1:BA:1239:A:H62	1:BA:1299:A:H62	1.64	0.43
3:BC:22:TRP:HB3	3:BC:59:ARG:H	1.83	0.43
17:BQ:28:PHE:HD2	17:BQ:37:PHE:HB3	1.83	0.43
48:DV:66:GLN:HG3	54:DA:328:U:O3'	2.17	0.43
54:DA:142:A:H2'	54:DA:143:C:C6	2.52	0.43
54:DA:207:A:H2'	54:DA:208:C:O4'	2.17	0.43
54:DA:1180:U:H5''	54:DA:1180:U:C6	2.52	0.43
22:C1:25:VAL:HG13	22:C1:26:THR:H	1.83	0.43
1:BA:774:G:H21	56:BA:1642:PG4:H62	1.84	0.43
30:DD:25:THR:HG21	30:DD:193:VAL:HG22	2.00	0.43
38:CL:105:ARG:HH21	43:CQ:34:GLU:HG2	1.84	0.43
47:CU:33:LYS:HG3	47:CU:80:TRP:CE3	2.53	0.43
40:DN:42:THR:HG22	40:DN:93:VAL:HG12	1.99	0.43
42:DP:27:VAL:HG21	42:DP:40:ILE:HD12	2.00	0.43
44:DR:19:LYS:HB3	56:DR:202:PG4:H41	2.00	0.43
54:DA:31:C:O3'	54:DA:1238:G:H5''	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:BA:844:G:H2'	1:BA:844:G:N3	2.32	0.43
29:CC:154:LEU:HD13	29:CC:176:LEU:HD21	1.99	0.43
30:CD:35:THR:HG22	30:CD:73:VAL:HG21	1.99	0.43
35:CH:78:VAL:HG21	35:CH:103:VAL:HG22	2.00	0.43
49:DW:51:GLN:HB2	49:DW:57:TYR:OH	2.18	0.43
54:DA:553:G:H2'	54:DA:554:U:O4'	2.18	0.43
1:AA:1358:U:H3	1:AA:1363:A:H62	1.66	0.43
1:BA:1329:A:H5''	13:BM:26:GLY:N	2.33	0.43
31:CA:2473:U:O2	31:CA:2473:U:H2'	2.18	0.43
1:AA:202:G:H21	1:AA:466:A:H61	1.65	0.43
27:C0:2:ALA:CB	27:C0:39:GLU:HB3	2.49	0.43
1:BA:1152:A:H2'	1:BA:1153:G:H8	1.82	0.43
2:BB:188:ASP:HB2	2:BB:204:ASP:OD2	2.18	0.43
28:CB:57:A:C4'	33:CF:27:GLN:HG3	2.49	0.43
28:CB:57:A:O4'	33:CF:27:GLN:HG3	2.17	0.43
31:CA:142:A:H2'	31:CA:143:C:C6	2.53	0.43
31:CA:265:A:H4'	31:CA:266:G:OP1	2.19	0.43
31:CA:2114:A:N6	31:CA:2119:A:H62	2.16	0.43
32:DE:45:ALA:HB3	54:DA:38:A:H5'	2.01	0.43
40:DN:40:ARG:HD3	40:DN:93:VAL:HG21	2.00	0.43
53:DI:94:ARG:HG2	53:DI:127:ALA:HA	2.01	0.43
1:AA:923:A:OP1	5:AE:26:LYS:HG2	2.18	0.43
23:C2:11:LEU:HD21	23:C2:34:LEU:HD23	2.00	0.43
23:C2:37:LYS:HG2	23:C2:48:ILE:HG13	2.01	0.43
1:BA:8:A:H5'	5:BE:125:ALA:O	2.18	0.43
1:BA:322:C:H5	1:BA:328:C:C5	2.36	0.43
13:BM:23:TYR:HD1	13:BM:69:LEU:HD23	1.84	0.43
16:BP:20:VAL:CG1	16:BP:32:PHE:HB2	2.48	0.43
31:CA:459:U:C5	31:CA:469:G:N2	2.87	0.43
31:CA:871:U:H2'	31:CA:872:U:C6	2.53	0.43
30:DD:150[B]:MEQ:HG3	54:DA:2032:G:N3	2.33	0.43
33:CF:103:LEU:HA	33:CF:107:ALA:HB3	2.01	0.43
54:DA:26:G:H1'	54:DA:514:A:N6	2.33	0.43
1:AA:1338:G:H2'	1:AA:1339:A:C8	2.54	0.43
4:AD:27:ALA:HB3	4:AD:30:THR:HG23	2.00	0.43
5:BE:126:LYS:HG2	5:BE:128:TYR:CZ	2.54	0.43
31:CA:532:A:N1	31:CA:2020:A:H1'	2.34	0.43
31:CA:1794:A:H2'	31:CA:1795:C:C6	2.54	0.43
31:CA:2064:C:H2'	31:CA:2065:C:C6	2.53	0.43
54:DA:984:A:N3	54:DA:984:A:H2'	2.33	0.43
54:DA:1778:U:H2'	54:DA:1784:A:N6	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:216:U:H2'	1:AA:217:C:C6	2.53	0.43
11:AK:34:ILE:HG12	11:AK:70:CYS:SG	2.59	0.43
5:BE:88:VAL:CG1	5:BE:93:ARG:HG2	2.48	0.43
19:BS:29:LYS:HB3	19:BS:30:PRO:HD2	2.01	0.43
31:CA:321:U:H5''	32:CE:131:THR:HG23	2.01	0.43
29:DC:155:ALA:HB2	29:DC:162:VAL:HG23	2.00	0.43
32:DE:23:PHE:HE2	32:DE:25:GLU:HG3	1.84	0.43
33:DF:103:LEU:HA	33:DF:107:ALA:HB3	2.00	0.43
54:DA:1469:A:H2'	54:DA:1470:A:C8	2.54	0.43
54:DA:1587:G:H2'	54:DA:1588:G:H8	1.84	0.43
54:DA:2233:U:H2'	54:DA:2234:G:C8	2.54	0.43
1:AA:567:G:H2'	1:AA:568:G:O4'	2.19	0.43
4:BD:27:ALA:HB3	4:BD:30:THR:HG23	2.00	0.43
31:CA:1028:A:H61	31:CA:1125:G:H2'	1.84	0.43
32:CE:75:SER:O	32:CE:78:TRP:HB2	2.18	0.43
49:CW:77:VAL:HG23	49:CW:89:ILE:HG12	2.00	0.43
36:DJ:19:ASN:N	36:DJ:20:PRO:HD2	2.33	0.43
54:DA:644:A:H2'	54:DA:645:C:O4'	2.19	0.43
54:DA:2097:A:H8	54:DA:2097:A:H5''	1.84	0.43
17:AQ:68:SER:OG	17:AQ:71:LYS:HB2	2.19	0.43
25:C4:62:LEU:HB3	25:C4:65:ALA:HB2	2.01	0.43
1:BA:8:A:H1'	5:BE:108:GLY:HA2	2.00	0.43
1:BA:663:A:H5'	1:BA:836:G:OP1	2.19	0.43
29:CC:258:ARG:NH1	29:CC:264:ASP:OD1	2.52	0.43
31:CA:1101:U:H2'	31:CA:1102:C:H6	1.84	0.43
31:CA:1427:A:H4'	31:CA:1428:C:O4'	2.18	0.43
31:CA:1662:U:H3	31:CA:1998:A:H61	1.66	0.43
33:CF:36:LEU:HD12	33:CF:154:ILE:HG12	2.01	0.43
43:DQ:6:LYS:O	43:DQ:10:GLN:HG2	2.19	0.43
47:DU:28:ASN:OD1	47:DU:91:GLN:HB3	2.19	0.43
1:BA:1171:A:H2'	1:BA:1172:C:C6	2.53	0.42
4:BD:28:ILE:HG12	4:BD:34:ILE:HD13	2.01	0.42
29:CC:69:ARG:HB2	29:CC:129:THR:HG21	2.00	0.42
29:CC:160:THR:HG22	29:CC:177:ARG:HG2	1.99	0.42
29:CC:174:LEU:HD21	29:CC:184:VAL:HB	2.00	0.42
34:CG:19:ILE:HG12	34:CG:24:ILE:HG12	2.01	0.42
52:CZ:46:VAL:O	52:CZ:50:VAL:HG23	2.19	0.42
50:DX:41[B]:ARG:HA	50:DX:41[B]:ARG:HD3	1.77	0.42
51:DY:57:ARG:NH1	54:DA:400:G:N7	2.55	0.42
1:AA:268:U:H2'	1:AA:269:C:C6	2.54	0.42
1:AA:1081:A:H5'	5:AE:23:LYS:HG3	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1366:C:H2'	1:AA:1367:C:C6	2.54	0.42
5:AE:81:LEU:HB3	5:AE:147:MET:SD	2.59	0.42
13:AM:80:LEU:HD22	13:AM:87:ARG:HB3	2.02	0.42
1:BA:1411:C:H2'	1:BA:1412:C:C6	2.54	0.42
25:D4:13:ARG:HG3	39:DM:63:LYS:HA	2.01	0.42
28:CB:14:U:H2'	28:CB:15:A:C2	2.53	0.42
31:CA:352:A:H8	31:CA:352:A:H5''	1.84	0.42
31:CA:2543:G:H2'	31:CA:2544:G:C8	2.55	0.42
39:CM:77:ILE:HD11	39:CM:108:ALA:CB	2.35	0.42
45:CS:16:GLU:HG3	45:CS:101:ILE:HG12	1.99	0.42
51:DY:7:VAL:HG23	51:DY:51:VAL:HG12	2.00	0.42
54:DA:476:G:H4'	54:DA:502:A:N1	2.34	0.42
54:DA:1026:G:H2'	54:DA:1027:A:C8	2.54	0.42
4:AD:28:ILE:HG12	4:AD:34:ILE:HD13	2.01	0.42
8:AH:94:LYS:HB3	8:AH:117:ARG:HH22	1.85	0.42
10:BJ:10:LEU:HB2	10:BJ:72:ARG:HB2	2.01	0.42
30:DD:35:THR:HG22	30:DD:73:VAL:HG21	2.01	0.42
35:CH:3:VAL:HG12	35:CH:38:PRO:HA	2.00	0.42
45:CS:37:GLU:HB3	45:CS:53:PHE:CD1	2.54	0.42
32:DE:94:GLN:HG2	54:DA:660:C:H5''	2.02	0.42
41:DO:28:LEU:HD23	41:DO:48:VAL:HG21	2.00	0.42
54:DA:2051:A:H8	54:DA:2051:A:OP2	2.02	0.42
1:AA:134:G:H2'	1:AA:135:C:O4'	2.19	0.42
1:AA:663:A:H5'	1:AA:836:G:OP1	2.19	0.42
9:BI:19:VAL:HG11	9:BI:83:ILE:HA	2.02	0.42
9:BI:98:LEU:HB3	9:BI:104:VAL:HG13	2.01	0.42
31:CA:123:G:H4'	31:CA:1376:C:O5'	2.20	0.42
31:CA:948:C:H1'	31:CA:984:A:C8	2.54	0.42
36:CJ:19:ASN:N	36:CJ:20:PRO:HD2	2.33	0.42
37:CK:58:ASN:HA	37:CK:126:ALA:O	2.19	0.42
54:DA:2813:A:H2	54:DA:2887[B]:A:N6	2.17	0.42
1:AA:967:5MC:O3'	9:AI:127:PHE:HE1	2.03	0.42
16:BP:6:LEU:HB3	16:BP:17:TYR:HB3	2.01	0.42
29:CC:208:ALA:CB	31:CA:1790:C:H4'	2.50	0.42
31:CA:478:A:H61	31:CA:500:G:H4'	1.84	0.42
31:CA:2579:C:H2'	31:CA:2580:PSU:O4'	2.19	0.42
47:CU:45:ALA:O	47:CU:49:LYS:HG2	2.19	0.42
49:CW:38:LEU:HD21	49:CW:65:VAL:HG11	2.01	0.42
50:CX:18:ALA:HB3	50:CX:20:ARG:NH1	2.33	0.42
53:DI:130:PRO:HG2	53:DI:134:GLU:HG2	2.01	0.42
6:AF:38:ARG:HE	6:AF:63:ASN:ND2	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AK:34:ILE:HB	11:AK:74:VAL:HG11	2.02	0.42
11:BK:34:ILE:HB	11:BK:74:VAL:HG11	2.01	0.42
30:CD:55:LYS:HD3	30:CD:60:VAL:HG22	2.02	0.42
30:CD:101:PHE:O	30:CD:104:VAL:HG22	2.19	0.42
30:CD:186:LEU:HD21	43:CQ:4:ILE:HG21	2.01	0.42
31:CA:121:G:H4'	31:CA:149:A:H5'	2.02	0.42
31:CA:608:A:H2'	31:CA:609:A:C8	2.55	0.42
43:CQ:6:LYS:O	43:CQ:10:GLN:HG2	2.20	0.42
34:DG:19:ILE:HG12	34:DG:24:ILE:HG12	2.00	0.42
54:DA:191:A:H2'	54:DA:192:C:C6	2.55	0.42
19:AS:29:LYS:HB3	19:AS:30:PRO:HD2	2.02	0.42
1:BA:1338:G:H2'	1:BA:1339:A:C8	2.54	0.42
16:BP:6:LEU:HD23	16:BP:19:VAL:HB	2.00	0.42
31:CA:659:G:H4'	32:CE:95:LYS:HD3	2.02	0.42
31:CA:732:C:H2'	31:CA:733:G:O4'	2.20	0.42
31:CA:785:G:H4'	31:CA:1779:U:H4'	2.00	0.42
31:CA:1539:U:H2'	31:CA:1540:G:C8	2.55	0.42
31:CA:1957:C:H5'	31:CA:1984:G:O2'	2.20	0.42
29:DC:69:ARG:HB2	29:DC:129:THR:HG21	2.01	0.42
35:DH:116:ARG:HH21	35:DH:133:GLN:HB2	1.85	0.42
53:DI:26:VAL:HB	53:DI:83:ALA:HB3	2.00	0.42
54:DA:1168:G:H8	54:DA:1168:G:H5''	1.84	0.42
1:AA:1171:A:H2'	1:AA:1172:C:C6	2.54	0.42
27:C0:6:LYS:HB2	27:C0:58:GLU:HG3	2.02	0.42
1:BA:216:U:H2'	1:BA:217:C:C6	2.54	0.42
1:BA:923:A:OP1	5:BE:26:LYS:HG2	2.19	0.42
23:D2:6:ARG:HG2	23:D2:24:THR:HB	2.02	0.42
31:CA:191:A:H2'	31:CA:192:C:C6	2.55	0.42
31:CA:528:A:H8	31:CA:528:A:H3'	1.84	0.42
31:CA:1703:G:H2'	31:CA:1704:C:C6	2.55	0.42
42:CP:27:VAL:HG21	42:CP:40:ILE:HD12	2.00	0.42
54:DA:1236:G:N7	58:DA:3189:PUT:H41	2.35	0.42
1:AA:202:G:O2'	1:AA:468:A:H8	1.95	0.42
6:AF:9:MET:HG2	6:AF:86:ARG:HB3	2.01	0.42
9:AI:98:LEU:HB3	9:AI:104:VAL:HG13	2.01	0.42
10:AJ:10:LEU:HB2	10:AJ:72:ARG:HB2	2.01	0.42
1:BA:73:C:O2'	1:BA:74:A:H8	2.03	0.42
1:BA:216:U:H4'	1:BA:464:U:H4'	2.02	0.42
11:BK:25:ALA:HA	11:BK:30:THR:HG22	2.02	0.42
13:BM:23:TYR:CD1	13:BM:69:LEU:HD23	2.55	0.42
31:CA:246:C:O2'	31:CA:385:C:H4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:DH:78:VAL:HG21	35:DH:103:VAL:HG22	2.02	0.42
45:DS:16:GLU:HG3	45:DS:101:ILE:HG12	2.02	0.42
49:DW:38:LEU:HD21	49:DW:65:VAL:HG11	2.01	0.42
54:DA:1424:G:H21	63:DA:3214:PGE:H32	1.84	0.42
1:AA:932:C:H5'	7:AG:4:ARG:HE	1.84	0.42
1:AA:1048:G:H4'	14:AN:3:LYS:HE2	2.01	0.42
1:BA:1308:U:H2'	1:BA:1309:G:H8	1.85	0.42
31:CA:834:G:H1'	31:CA:2358:A:N3	2.35	0.42
31:CA:1141:U:H4'	31:CA:1142:A:O4'	2.20	0.42
39:DM:57:LEU:HA	39:DM:60:ARG:HG3	2.02	0.42
44:DR:6:ARG:HD3	54:DA:1250:G:H5''	2.02	0.42
54:DA:357:C:H2'	54:DA:358:U:C6	2.55	0.42
54:DA:2479:U:OP1	54:DA:2537:U:H1'	2.20	0.42
1:AA:49:U:O2	1:AA:362:G:H1'	2.20	0.41
1:AA:73:C:O2'	1:AA:74:A:H8	2.02	0.41
1:AA:1396:A:H3'	59:AA:1681:TAC:C43	2.48	0.41
23:C2:6:ARG:HG2	23:C2:24:THR:HB	2.01	0.41
24:C3:19:ARG:HD3	31:CA:125:A:OP2	2.20	0.41
26:C5:4:ARG:HB2	31:CA:2466:C:OP1	2.19	0.41
1:BA:567:G:H2'	1:BA:568:G:O4'	2.18	0.41
1:BA:1347:G:N2	1:BA:1373:G:H2'	2.35	0.41
1:BA:1366:C:H2'	1:BA:1367:C:C6	2.55	0.41
30:CD:155:VAL:HG11	30:CD:161:MET:CE	2.50	0.41
31:CA:2623:G:H4'	31:CA:2825:G:C8	2.55	0.41
32:CE:49:ARG:O	32:CE:74:LYS:HD2	2.20	0.41
32:CE:149:ILE:HG23	32:CE:188:MET:HG2	2.02	0.41
36:CJ:11:LEU:HD22	36:CJ:24:VAL:HG23	2.02	0.41
44:CR:113:ALA:O	44:CR:117:LEU:HD12	2.20	0.41
37:DK:58:ASN:HA	37:DK:126:ALA:O	2.20	0.41
40:DN:92:TRP:HE1	57:DN:201:MPD:HM1	1.83	0.41
42:DP:41:ALA:HB2	42:DP:48:LEU:HD21	2.01	0.41
44:DR:20:GLN:HG3	56:DR:202:PG4:C4	2.40	0.41
54:DA:527:C:H4'	54:DA:528:A:O5'	2.19	0.41
5:AE:76:LEU:HD11	5:AE:120:VAL:HG22	2.01	0.41
27:C0:9:GLN:HB3	27:C0:32:ILE:HA	2.03	0.41
1:BA:716:A:N3	11:BK:119:ASN:O	2.53	0.41
1:BA:1048:G:H4'	14:BN:3:LYS:HE2	2.02	0.41
17:BQ:46:VAL:HG11	17:BQ:61:ILE:CG2	2.50	0.41
17:BQ:47:HIS:HB2	17:BQ:67:LEU:HD13	2.01	0.41
29:CC:76:ALA:HB2	29:CC:96:TYR:CD1	2.55	0.41
31:CA:2544:G:H2'	31:CA:2545:G:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:DC:220:VAL:HG21	54:DA:782:A:N7	2.36	0.41
36:DJ:11:LEU:HD22	36:DJ:24:VAL:HG23	2.03	0.41
45:DS:86:GLN:HG2	69:DS:318:HOH:O	2.20	0.41
54:DA:264:C:O2'	54:DA:265:A:H2'	2.20	0.41
54:DA:871:U:H2'	54:DA:872:U:C6	2.55	0.41
1:BA:268:U:H2'	1:BA:269:C:C6	2.55	0.41
19:BS:33:THR:HG22	19:BS:35:SER:H	1.86	0.41
31:CA:826:U:O2'	39:CM:53:GLY:HA3	2.19	0.41
44:CR:76:TYR:CZ	44:CR:80:ILE:HG13	2.55	0.41
51:CY:12:PRO:HB3	51:CY:30:LEU:HD23	2.02	0.41
34:DG:26:ILE:O	34:DG:79:VAL:HG11	2.20	0.41
1:AA:77:A:H2'	1:AA:78:A:C8	2.56	0.41
1:AA:307:C:C4	57:AA:1676:MPD:H12	2.52	0.41
1:AA:438:U:H5'	4:AD:120:HIS:HB3	2.03	0.41
1:AA:716:A:N3	11:AK:119:ASN:O	2.53	0.41
1:AA:1347:G:N2	1:AA:1373:G:H2'	2.35	0.41
1:BA:79:G:H22	1:BA:90:C:H42	1.67	0.41
1:BA:1402:4OC:H2'	1:BA:1403:C:O4'	2.21	0.41
3:BC:113:ALA:O	3:BC:200:VAL:HG11	2.19	0.41
5:BE:149:SER:HB2	5:BE:151:GLU:HG2	2.02	0.41
29:DC:97:LYS:HA	29:DC:97:LYS:HD3	1.72	0.41
39:CM:95:LEU:HD22	39:CM:100:ILE:HG12	2.02	0.41
35:DH:71:LYS:HB3	35:DH:108:VAL:HG22	2.02	0.41
52:DZ:46:VAL:O	52:DZ:50:VAL:HG23	2.19	0.41
54:DA:2063:C:O2	54:DA:2450:A:N1	2.53	0.41
12:AL:36:ARG:HH11	12:AL:54:ARG:NH1	2.18	0.41
31:CA:511:U:H5''	31:CA:1235:G:H4'	2.03	0.41
29:DC:154:LEU:HD13	29:DC:176:LEU:HD21	2.01	0.41
49:CW:51:GLN:HB2	49:CW:57:TYR:OH	2.21	0.41
33:DF:34:ILE:HG12	33:DF:156:ILE:HG12	2.02	0.41
34:DG:24:ILE:HG21	34:DG:72:LEU:HD21	2.02	0.41
53:DI:65:GLU:HA	53:DI:70:GLU:HG3	2.01	0.41
1:AA:649:A:H2'	1:AA:650:G:O4'	2.20	0.41
5:AE:126:LYS:HG2	5:AE:128:TYR:CZ	2.56	0.41
17:AQ:21:ILE:HD12	17:AQ:23:VAL:CG2	2.50	0.41
1:BA:269:C:H2'	1:BA:270:A:C8	2.56	0.41
1:BA:1530:G:H2'	1:BA:1531:A:C8	2.56	0.41
5:BE:57:PRO:O	5:BE:60:ILE:HG13	2.21	0.41
11:BK:43:GLY:HA3	11:BK:74:VAL:HG12	2.03	0.41
22:D1:25:VAL:HG11	46:DT:38:TYR:CB	2.51	0.41
29:CC:174:LEU:CD2	29:CC:184:VAL:HB	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:CA:264:C:O2'	31:CA:265:A:H2'	2.20	0.41
31:CA:594:U:H2'	31:CA:595:C:C6	2.55	0.41
31:CA:729:G:H2'	31:CA:1775:U:H1'	2.02	0.41
31:CA:783:A:H2	31:CA:1778:U:H4'	1.85	0.41
31:CA:1154:G:OP1	44:CR:58:ARG:HD3	2.20	0.41
39:CM:79:LEU:O	39:CM:82:LEU:HG	2.21	0.41
35:DH:3:VAL:HG12	35:DH:38:PRO:HA	2.03	0.41
42:DP:53:THR:HB	42:DP:65:THR:HG22	2.02	0.41
54:DA:1539:U:H2'	54:DA:1540:G:C8	2.55	0.41
54:DA:2698:U:H2'	54:DA:2699:C:C6	2.56	0.41
1:AA:1152:A:H2'	1:AA:1153:G:H8	1.85	0.41
1:AA:1308:U:H2'	1:AA:1309:G:H8	1.85	0.41
10:AJ:80:THR:HG22	10:AJ:82:LYS:H	1.85	0.41
1:BA:310:G:H5''	16:BP:31:ARG:HB2	2.02	0.41
1:BA:591:U:H2'	1:BA:592:G:C8	2.55	0.41
1:BA:1108:G:H5''	3:BC:176:HIS:CE1	2.56	0.41
10:BJ:80:THR:HG22	10:BJ:82:LYS:H	1.86	0.41
27:D0:8:THR:O	27:D0:55:VAL:HA	2.21	0.41
54:DA:121:G:H4'	54:DA:149:A:H5'	2.02	0.41
1:BA:629:A:H2'	1:BA:630:A:O4'	2.21	0.41
2:BB:12:ALA:HB2	2:BB:212:LEU:HD13	2.02	0.41
13:BM:80:LEU:HD22	13:BM:87:ARG:HB3	2.03	0.41
23:D2:39:PHE:HB2	23:D2:46:HIS:CE1	2.56	0.41
31:CA:563:A:H1'	31:CA:2018:G:N2	2.36	0.41
31:CA:845:A:H61	31:CA:932:U:H3	1.68	0.41
31:CA:1779:U:C5	31:CA:1784:A:N7	2.73	0.41
43:DQ:25:THR:HB	43:DQ:88:ARG:HB3	2.03	0.41
54:DA:1720:U:H2'	54:DA:1721:G:O4'	2.20	0.41
54:DA:2070:A:H2'	54:DA:2071:A:O4'	2.21	0.41
1:AA:591:U:H2'	1:AA:592:G:C8	2.55	0.41
1:AA:1402:4OC:H2'	1:AA:1403:C:O4'	2.20	0.41
2:AB:163:VAL:HG11	2:AB:173:ILE:HD11	2.03	0.41
11:AK:25:ALA:HA	11:AK:30:THR:HG22	2.03	0.41
1:BA:202:G:H21	1:BA:466:A:H61	1.67	0.41
1:BA:438:U:H5'	4:BD:120:HIS:HB3	2.02	0.41
29:CC:200:HIS:O	29:CC:203:ARG:HG2	2.21	0.41
31:CA:357:C:H2'	31:CA:358:U:C6	2.55	0.41
31:CA:388:G:N7	31:CA:390:U:H2'	2.35	0.41
31:CA:396:G:C1'	51:CY:29:PHE:HB3	2.49	0.41
31:CA:797:G:H5''	32:CE:55:SER:HB2	2.02	0.41
31:CA:2063:C:O2	31:CA:2450:A:N1	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:CN:71:LYS:HB3	40:CN:93:VAL:O	2.20	0.41
32:DE:32:VAL:HG21	39:DM:6:LEU:HD13	2.03	0.41
32:DE:49:ARG:O	32:DE:74:LYS:HD2	2.21	0.41
49:DW:77:VAL:HG23	49:DW:89:ILE:HG12	2.03	0.41
54:DA:2123:G:H2'	54:DA:2124:G:H8	1.85	0.41
54:DA:2813:A:H2	54:DA:2887[B]:A:H61	1.66	0.41
57:DA:3207:MPD:H11	57:DA:3207:MPD:H4	1.99	0.41
1:AA:9:G:H5'	5:AE:108:GLY:HA3	2.03	0.41
1:AA:269:C:H2'	1:AA:270:A:C8	2.55	0.41
1:AA:677:U:H3	1:AA:713:G:H22	1.69	0.41
9:AI:19:VAL:HG11	9:AI:83:ILE:HA	2.02	0.41
20:AT:44:LYS:H	20:AT:44:LYS:HG3	1.54	0.41
4:BD:197:GLU:HA	4:BD:200:ILE:HD12	2.03	0.41
16:BP:40:ASN:O	16:BP:43:ALA:HB2	2.21	0.41
49:CW:63:ILE:CD1	49:CW:72:VAL:HG21	2.50	0.41
45:DS:21:ARG:HH21	56:DS:202:PG4:C7	2.34	0.41
46:DT:17:VAL:HB	46:DT:76:VAL:HG11	2.03	0.41
46:DT:77:ASP:HB3	54:DA:24:G:O2'	2.20	0.41
54:DA:2336:A:N3	54:DA:2385:C:H1'	2.36	0.41
1:AA:629:A:H2'	1:AA:630:A:O4'	2.21	0.40
31:CA:225:C:H2'	31:CA:226:A:O4'	2.21	0.40
31:CA:372:G:H5''	51:CY:61:LYS:HD3	2.03	0.40
31:CA:1181:U:H2'	31:CA:1182:G:C8	2.56	0.40
31:CA:1662:U:O2'	31:CA:2687:U:H5''	2.21	0.40
30:DD:167:ASN:HD21	62:DA:3198:EDO:H11	1.86	0.40
42:DP:103:VAL:HG23	69:DB:307:HOH:O	2.21	0.40
1:AA:322:C:H5	1:AA:328:C:C5	2.38	0.40
1:AA:1463:U:H2'	1:AA:1464:U:C6	2.56	0.40
1:BA:1463:U:H2'	1:BA:1464:U:C6	2.56	0.40
26:D5:2:LYS:HE2	26:D5:4:ARG:HH11	1.86	0.40
30:CD:63:PRO:HG3	31:CA:2787:C:H1'	2.02	0.40
31:CA:2698:U:H2'	31:CA:2699:C:C6	2.56	0.40
32:CE:108:ILE:HG21	32:CE:181:ILE:HD11	2.04	0.40
54:DA:78:U:H2'	54:DA:79:C:C6	2.57	0.40
54:DA:1093:G:H1'	54:DA:1099:G:N2	2.37	0.40
54:DA:1354:A:H2'	54:DA:1355:G:O4'	2.21	0.40
54:DA:2678:C:H2'	54:DA:2679:A:O4'	2.20	0.40
1:AA:244:U:O4	1:AA:906:A:H1'	2.22	0.40
1:AA:920:U:H2'	1:AA:921:U:C6	2.57	0.40
1:AA:1530:G:H2'	1:AA:1531:A:C8	2.56	0.40
1:BA:1411:C:H2'	1:BA:1412:C:H6	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:BL:33:VAL:HG22	12:BL:79:VAL:HG22	2.04	0.40
22:D1:24:ALA:HB1	46:DT:35:ILE:HG12	2.03	0.40
29:CC:13:ARG:HD3	31:CA:728:G:H4'	2.03	0.40
31:CA:1808:A:N1	51:CY:28:ARG:HD2	2.36	0.40
29:DC:199:GLU:O	29:DC:202:LEU:HB2	2.22	0.40
35:CH:71:LYS:HB3	35:CH:108:VAL:HG22	2.04	0.40
44:DR:76:TYR:CZ	44:DR:80:ILE:HG13	2.56	0.40
47:DU:33:LYS:HE2	63:DU:101:PGE:C2	2.52	0.40
47:DU:33:LYS:NZ	63:DU:101:PGE:H62	2.36	0.40
47:DU:69:ARG:HG3	47:DU:74:ILE:HG22	2.03	0.40
50:DX:11:ARG:HG2	56:DA:3193:PG4:H12	2.04	0.40
54:DA:909:A:O2'	54:DA:910:A:H5'	2.21	0.40
54:DA:2022:U:H1'	69:DA:3881:HOH:O	2.21	0.40
54:DA:2545:G:N3	54:DA:2565:A:H2	2.20	0.40
3:AC:151:VAL:HG12	3:AC:200:VAL:HG22	2.02	0.40
10:AJ:53:ILE:HG13	14:AN:85:ARG:HD2	2.04	0.40
14:AN:21:PHE:HA	14:AN:25:ALA:HB3	2.02	0.40
14:AN:46:LEU:HA	14:AN:49:GLN:HE21	1.86	0.40
16:AP:6:LEU:HB3	16:AP:17:TYR:HB3	2.02	0.40
1:BA:649:A:H2'	1:BA:650:G:O4'	2.21	0.40
1:BA:1108:G:H5''	3:BC:176:HIS:ND1	2.37	0.40
31:CA:78:U:H2'	31:CA:79:C:C6	2.57	0.40
31:CA:586:A:H5'	32:CE:84:THR:HG21	2.02	0.40
31:CA:2185:U:H2'	31:CA:2186:G:C8	2.57	0.40
31:CA:2305:U:H5''	33:CF:131:GLY:HA3	2.04	0.40
46:CT:17:VAL:HB	46:CT:76:VAL:HG11	2.03	0.40
38:DL:78:ARG:HD3	69:DL:308:HOH:O	2.21	0.40
54:DA:340:A:H2'	54:DA:341:C:O4'	2.22	0.40
63:DA:3001:PGE:H52	69:DA:5960:HOH:O	2.22	0.40
1:AA:1108:G:H5''	3:AC:176:HIS:ND1	2.37	0.40
33:DF:14:LYS:O	33:DF:18:THR:HG22	2.21	0.40
37:DK:7:LYS:HG2	54:DA:538:A:H4'	2.03	0.40
39:DM:123:ARG:HG3	39:DM:143:GLU:HG3	2.04	0.40
54:DA:364:C:H2'	54:DA:365:U:C6	2.57	0.40
54:DA:2324:U:H3'	54:DA:2325:G:C5'	2.52	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles

### 5.3.1 Protein backbone

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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	
2	AB	222/224 (99%)	207 (93%)	11 (5%)	4 (2%)	7	32
2	BB	222/224 (99%)	208 (94%)	10 (4%)	4 (2%)	7	32
3	AC	204/206 (99%)	193 (95%)	10 (5%)	1 (0%)	25	61
3	BC	204/206 (99%)	194 (95%)	7 (3%)	3 (2%)	8	36
4	AD	203/205 (99%)	196 (97%)	6 (3%)	1 (0%)	25	61
4	BD	203/205 (99%)	196 (97%)	6 (3%)	1 (0%)	25	61
5	AE	153/155 (99%)	145 (95%)	7 (5%)	1 (1%)	19	54
5	BE	148/155 (96%)	134 (90%)	8 (5%)	6 (4%)	2	13
6	AF	104/106 (98%)	100 (96%)	4 (4%)	0	100	100
6	BF	98/106 (92%)	93 (95%)	1 (1%)	4 (4%)	2	13
7	AG	149/151 (99%)	134 (90%)	14 (9%)	1 (1%)	19	54
7	BG	149/151 (99%)	137 (92%)	11 (7%)	1 (1%)	19	54
8	AH	127/129 (98%)	122 (96%)	4 (3%)	1 (1%)	16	51
8	BH	127/129 (98%)	121 (95%)	4 (3%)	2 (2%)	8	34
9	AI	125/127 (98%)	111 (89%)	14 (11%)	0	100	100
9	BI	125/127 (98%)	111 (89%)	14 (11%)	0	100	100
10	AJ	97/99 (98%)	89 (92%)	6 (6%)	2 (2%)	5	28
10	BJ	96/99 (97%)	76 (79%)	14 (15%)	6 (6%)	1	6
11	AK	115/117 (98%)	106 (92%)	8 (7%)	1 (1%)	14	49
11	BK	115/117 (98%)	102 (89%)	12 (10%)	1 (1%)	14	49
12	AL	120/123 (98%)	115 (96%)	5 (4%)	0	100	100
12	BL	120/123 (98%)	116 (97%)	3 (2%)	1 (1%)	16	51
13	AM	112/114 (98%)	100 (89%)	9 (8%)	3 (3%)	4	22
13	BM	112/114 (98%)	99 (88%)	8 (7%)	5 (4%)	2	12
14	AN	98/100 (98%)	86 (88%)	10 (10%)	2 (2%)	6	29

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
14	BN	98/100 (98%)	88 (90%)	9 (9%)	1 (1%)	13	46
15	AO	86/88 (98%)	83 (96%)	3 (4%)	0	100	100
15	BO	86/88 (98%)	82 (95%)	3 (4%)	1 (1%)	11	41
16	AP	80/82 (98%)	69 (86%)	10 (12%)	1 (1%)	10	39
16	BP	80/82 (98%)	67 (84%)	11 (14%)	2 (2%)	4	24
17	AQ	78/80 (98%)	71 (91%)	6 (8%)	1 (1%)	10	39
17	BQ	78/80 (98%)	67 (86%)	7 (9%)	4 (5%)	1	10
18	AR	53/55 (96%)	51 (96%)	2 (4%)	0	100	100
18	BR	53/55 (96%)	50 (94%)	3 (6%)	0	100	100
19	AS	77/79 (98%)	68 (88%)	9 (12%)	0	100	100
19	BS	77/79 (98%)	66 (86%)	10 (13%)	1 (1%)	10	39
20	AT	84/86 (98%)	81 (96%)	2 (2%)	1 (1%)	11	41
20	BT	83/86 (96%)	79 (95%)	2 (2%)	2 (2%)	5	25
21	AU	54/56 (96%)	51 (94%)	3 (6%)	0	100	100
21	BU	54/56 (96%)	51 (94%)	3 (6%)	0	100	100
22	C1	54/56 (96%)	47 (87%)	4 (7%)	3 (6%)	1	8
22	D1	54/56 (96%)	52 (96%)	2 (4%)	0	100	100
23	C2	48/51 (94%)	44 (92%)	2 (4%)	2 (4%)	2	13
23	D2	49/51 (96%)	48 (98%)	1 (2%)	0	100	100
24	C3	44/46 (96%)	42 (96%)	1 (2%)	1 (2%)	5	26
24	D3	44/46 (96%)	43 (98%)	1 (2%)	0	100	100
25	C4	62/64 (97%)	59 (95%)	2 (3%)	1 (2%)	8	34
25	D4	62/64 (97%)	59 (95%)	2 (3%)	1 (2%)	8	34
26	C5	36/38 (95%)	34 (94%)	1 (3%)	1 (3%)	4	21
26	D5	36/38 (95%)	36 (100%)	0	0	100	100
27	C0	56/58 (97%)	53 (95%)	1 (2%)	2 (4%)	3	16
27	D0	57/58 (98%)	53 (93%)	4 (7%)	0	100	100
29	CC	269/271 (99%)	250 (93%)	15 (6%)	4 (2%)	8	36
29	DC	269/271 (99%)	250 (93%)	17 (6%)	2 (1%)	19	54
30	CD	206/209 (99%)	195 (95%)	11 (5%)	0	100	100
30	DD	206/209 (99%)	197 (96%)	9 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
32	CE	199/201 (99%)	187 (94%)	9 (4%)	3 (2%)	8	36
32	DE	199/201 (99%)	192 (96%)	6 (3%)	1 (0%)	25	61
33	CF	175/177 (99%)	164 (94%)	10 (6%)	1 (1%)	22	57
33	DF	175/177 (99%)	166 (95%)	7 (4%)	2 (1%)	12	44
34	CG	174/176 (99%)	160 (92%)	10 (6%)	4 (2%)	5	26
34	DG	174/176 (99%)	162 (93%)	11 (6%)	1 (1%)	22	57
35	CH	147/149 (99%)	128 (87%)	14 (10%)	5 (3%)	3	17
35	DH	147/149 (99%)	130 (88%)	15 (10%)	2 (1%)	9	37
36	CJ	132/134 (98%)	125 (95%)	3 (2%)	4 (3%)	3	20
36	DJ	132/134 (98%)	125 (95%)	3 (2%)	4 (3%)	3	20
37	CK	140/142 (99%)	134 (96%)	4 (3%)	2 (1%)	9	37
37	DK	140/142 (99%)	136 (97%)	3 (2%)	1 (1%)	19	54
38	CL	120/123 (98%)	112 (93%)	6 (5%)	2 (2%)	7	33
38	DL	121/123 (98%)	115 (95%)	4 (3%)	2 (2%)	7	33
39	CM	142/144 (99%)	132 (93%)	7 (5%)	3 (2%)	5	28
39	DM	142/144 (99%)	136 (96%)	5 (4%)	1 (1%)	19	54
40	CN	133/136 (98%)	125 (94%)	8 (6%)	0	100	100
40	DN	134/136 (98%)	131 (98%)	3 (2%)	0	100	100
41	CO	118/125 (94%)	111 (94%)	5 (4%)	2 (2%)	7	33
41	DO	123/125 (98%)	117 (95%)	6 (5%)	0	100	100
42	CP	114/117 (97%)	111 (97%)	3 (3%)	0	100	100
42	DP	115/117 (98%)	113 (98%)	2 (2%)	0	100	100
43	CQ	112/114 (98%)	107 (96%)	4 (4%)	1 (1%)	14	49
43	DQ	112/114 (98%)	107 (96%)	4 (4%)	1 (1%)	14	49
44	CR	115/117 (98%)	114 (99%)	1 (1%)	0	100	100
44	DR	115/117 (98%)	114 (99%)	1 (1%)	0	100	100
45	CS	101/103 (98%)	90 (89%)	8 (8%)	3 (3%)	3	20
45	DS	101/103 (98%)	94 (93%)	6 (6%)	1 (1%)	13	46
46	CT	108/110 (98%)	102 (94%)	6 (6%)	0	100	100
46	DT	108/110 (98%)	105 (97%)	3 (3%)	0	100	100
47	CU	91/93 (98%)	85 (93%)	5 (6%)	1 (1%)	12	44

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
47	DU	91/93 (98%)	84 (92%)	6 (7%)	1 (1%)	12	44
48	CV	100/102 (98%)	89 (89%)	7 (7%)	4 (4%)	2	14
48	DV	100/102 (98%)	94 (94%)	4 (4%)	2 (2%)	6	29
49	CW	92/94 (98%)	88 (96%)	4 (4%)	0	100	100
49	DW	92/94 (98%)	88 (96%)	4 (4%)	0	100	100
50	CX	73/76 (96%)	71 (97%)	2 (3%)	0	100	100
50	DX	75/76 (99%)	73 (97%)	2 (3%)	0	100	100
51	CY	75/77 (97%)	73 (97%)	2 (3%)	0	100	100
51	DY	75/77 (97%)	74 (99%)	1 (1%)	0	100	100
52	CZ	60/62 (97%)	58 (97%)	1 (2%)	1 (2%)	7	33
52	DZ	60/62 (97%)	59 (98%)	1 (2%)	0	100	100
53	DI	133/135 (98%)	115 (86%)	12 (9%)	6 (4%)	2	12
All	All	11406/11629 (98%)	10673 (94%)	590 (5%)	143 (1%)	10	39

All (143) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	AB	126	PHE
3	AC	156	ARG
10	AJ	57	VAL
13	AM	5	ALA
17	AQ	82	ALA
23	C2	5	ILE
27	C0	4	THR
2	BB	126	PHE
3	BC	156	ARG
6	BF	98	GLU
10	BJ	38	GLY
10	BJ	57	VAL
10	BJ	91	ASP
13	BM	7	ILE
16	BP	80	LYS
17	BQ	82	ALA
29	CC	158	ALA
32	CE	82	GLY
32	CE	83	VAL
34	CG	119	ALA
34	CG	175	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
34	CG	176	LYS
35	CH	10	ALA
36	CJ	19	ASN
37	CK	81	ILE
38	CL	35	VAL
39	CM	29	LYS
39	CM	69	ARG
48	CV	7	ARG
48	CV	16	GLY
35	DH	11	ASN
36	DJ	19	ASN
48	DV	52	LEU
53	DI	91	ALA
7	AG	56	LYS
13	AM	7	ILE
13	AM	105	ASN
14	AN	38	ASP
22	C1	25	VAL
22	C1	27	SER
27	C0	14	ILE
2	BB	95	ARG
3	BC	61	ALA
5	BE	51	GLY
5	BE	103	THR
6	BF	92	THR
12	BL	44	LYS
13	BM	5	ALA
13	BM	105	ASN
13	BM	114	LYS
14	BN	38	ASP
15	BO	88	ARG
19	BS	6	LYS
20	BT	5	LYS
29	CC	233	GLY
29	CC	253	LYS
29	DC	233	GLY
29	DC	253	LYS
34	CG	46	ALA
36	CJ	25	GLY
38	CL	108	ARG
47	CU	89	GLU
48	CV	17	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
48	CV	89	ASP
34	DG	46	ALA
36	DJ	25	GLY
38	DL	108	ARG
43	DQ	105	GLY
48	DV	89	ASP
2	AB	95	ARG
4	AD	197	GLU
5	AE	162	GLU
8	AH	66	PHE
11	AK	89	PRO
23	C2	51	GLU
24	C3	45	SER
26	C5	20	ASP
2	BB	127	ASP
5	BE	110	ALA
5	BE	157	ARG
8	BH	66	PHE
10	BJ	36	VAL
10	BJ	95	GLY
11	BK	89	PRO
13	BM	4	ILE
17	BQ	17	MET
17	BQ	70	THR
20	BT	43	ASP
29	CC	197	ASN
32	CE	6	LYS
35	CH	11	ASN
39	CM	36	LYS
41	CO	118	ARG
41	CO	119	SER
32	DE	6	LYS
53	DI	70	GLU
53	DI	109	LYS
53	DI	130	PRO
2	AB	125	THR
2	AB	127	ASP
16	AP	45	GLU
22	C1	26	THR
2	BB	125	THR
4	BD	197	GLU
5	BE	24	THR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
6	BF	99	ALA
16	BP	44	SER
35	CH	9	VAL
36	CJ	23	PRO
37	CK	25	LEU
43	CQ	105	GLY
45	CS	43	ASN
45	CS	48	LYS
36	DJ	23	PRO
38	DL	75	SER
45	DS	44	GLY
53	DI	88	HIS
14	AN	21	PHE
20	AT	43	ASP
8	BH	67	GLN
17	BQ	18	GLU
35	CH	8	LYS
52	CZ	62	GLY
37	DK	25	LEU
39	DM	36	LYS
47	DU	89	GLU
53	DI	108	VAL
3	BC	127	ARG
6	BF	94	HIS
7	BG	56	LYS
10	BJ	93	ALA
45	CS	53	PHE
5	BE	105	ILE
35	CH	118	PRO
36	CJ	32	GLY
35	DH	118	PRO
36	DJ	32	GLY
10	AJ	33	GLY
33	CF	62	GLY
33	DF	62	GLY
25	D4	18	GLY
33	DF	176	PRO
25	C4	18	GLY

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

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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	
2	AB	186/186 (100%)	172 (92%)	14 (8%)	11	38
2	BB	186/186 (100%)	172 (92%)	14 (8%)	11	38
3	AC	170/170 (100%)	156 (92%)	14 (8%)	9	34
3	BC	170/170 (100%)	156 (92%)	14 (8%)	9	34
4	AD	172/172 (100%)	165 (96%)	7 (4%)	26	60
4	BD	172/172 (100%)	163 (95%)	9 (5%)	19	52
5	AE	118/118 (100%)	103 (87%)	15 (13%)	3	17
5	BE	113/118 (96%)	91 (80%)	22 (20%)	1	6
6	AF	92/92 (100%)	84 (91%)	8 (9%)	8	32
6	BF	87/92 (95%)	73 (84%)	14 (16%)	2	10
7	AG	124/124 (100%)	109 (88%)	15 (12%)	4	18
7	BG	124/124 (100%)	106 (86%)	18 (14%)	2	13
8	AH	104/104 (100%)	90 (86%)	14 (14%)	3	14
8	BH	104/104 (100%)	88 (85%)	16 (15%)	2	11
9	AI	105/105 (100%)	99 (94%)	6 (6%)	17	49
9	BI	105/105 (100%)	99 (94%)	6 (6%)	17	49
10	AJ	87/87 (100%)	80 (92%)	7 (8%)	10	35
10	BJ	86/87 (99%)	76 (88%)	10 (12%)	4	20
11	AK	90/90 (100%)	90 (100%)	0	100	100
11	BK	90/90 (100%)	84 (93%)	6 (7%)	13	43
12	AL	102/102 (100%)	93 (91%)	9 (9%)	8	31
12	BL	102/102 (100%)	90 (88%)	12 (12%)	4	19
13	AM	92/92 (100%)	84 (91%)	8 (9%)	8	32
13	BM	92/92 (100%)	84 (91%)	8 (9%)	8	32
14	AN	83/83 (100%)	81 (98%)	2 (2%)	44	74
14	BN	83/83 (100%)	80 (96%)	3 (4%)	30	64

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
15	AO	76/76 (100%)	69 (91%)	7 (9%)	7	29
15	BO	76/76 (100%)	68 (90%)	8 (10%)	5	23
16	AP	65/65 (100%)	62 (95%)	3 (5%)	23	56
16	BP	65/65 (100%)	61 (94%)	4 (6%)	15	45
17	AQ	74/74 (100%)	66 (89%)	8 (11%)	5	22
17	BQ	74/74 (100%)	63 (85%)	11 (15%)	2	12
18	AR	48/48 (100%)	47 (98%)	1 (2%)	48	77
18	BR	48/48 (100%)	48 (100%)	0	100	100
19	AS	70/70 (100%)	62 (89%)	8 (11%)	4	20
19	BS	70/70 (100%)	65 (93%)	5 (7%)	12	40
20	AT	65/65 (100%)	58 (89%)	7 (11%)	5	22
20	BT	65/65 (100%)	53 (82%)	12 (18%)	1	7
21	AU	48/48 (100%)	46 (96%)	2 (4%)	25	59
21	BU	48/48 (100%)	46 (96%)	2 (4%)	25	59
22	C1	47/47 (100%)	46 (98%)	1 (2%)	48	77
22	D1	47/47 (100%)	47 (100%)	0	100	100
23	C2	45/46 (98%)	43 (96%)	2 (4%)	24	58
23	D2	45/46 (98%)	42 (93%)	3 (7%)	13	43
24	C3	38/38 (100%)	36 (95%)	2 (5%)	19	51
24	D3	38/38 (100%)	36 (95%)	2 (5%)	19	51
25	C4	51/51 (100%)	45 (88%)	6 (12%)	4	19
25	D4	51/51 (100%)	48 (94%)	3 (6%)	16	47
26	C5	34/34 (100%)	31 (91%)	3 (9%)	8	31
26	D5	34/34 (100%)	33 (97%)	1 (3%)	37	70
27	C0	48/48 (100%)	41 (85%)	7 (15%)	2	12
27	D0	49/48 (102%)	43 (88%)	6 (12%)	4	18
29	CC	216/216 (100%)	203 (94%)	13 (6%)	16	47
29	DC	216/216 (100%)	208 (96%)	8 (4%)	29	63
30	CD	163/163 (100%)	159 (98%)	4 (2%)	42	73
30	DD	163/163 (100%)	160 (98%)	3 (2%)	54	80
32	CE	165/165 (100%)	149 (90%)	16 (10%)	6	27

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
32	DE	165/165 (100%)	159 (96%)	6 (4%)	30	64
33	CF	148/148 (100%)	134 (90%)	14 (10%)	7	28
33	DF	148/148 (100%)	134 (90%)	14 (10%)	7	28
34	CG	137/137 (100%)	134 (98%)	3 (2%)	47	76
34	DG	137/137 (100%)	133 (97%)	4 (3%)	37	70
35	CH	114/114 (100%)	102 (90%)	12 (10%)	5	23
35	DH	114/114 (100%)	105 (92%)	9 (8%)	10	35
36	CJ	104/104 (100%)	99 (95%)	5 (5%)	21	55
36	DJ	104/104 (100%)	99 (95%)	5 (5%)	21	55
37	CK	116/116 (100%)	112 (97%)	4 (3%)	32	66
37	DK	116/116 (100%)	113 (97%)	3 (3%)	41	72
38	CL	103/104 (99%)	95 (92%)	8 (8%)	10	36
38	DL	104/104 (100%)	99 (95%)	5 (5%)	21	55
39	CM	103/103 (100%)	95 (92%)	8 (8%)	10	36
39	DM	103/103 (100%)	100 (97%)	3 (3%)	37	70
40	CN	108/108 (100%)	103 (95%)	5 (5%)	23	56
40	DN	109/108 (101%)	104 (95%)	5 (5%)	23	56
41	CO	100/102 (98%)	93 (93%)	7 (7%)	12	41
41	DO	102/102 (100%)	97 (95%)	5 (5%)	21	54
42	CP	86/87 (99%)	80 (93%)	6 (7%)	12	41
42	DP	87/87 (100%)	84 (97%)	3 (3%)	32	66
43	CQ	99/99 (100%)	95 (96%)	4 (4%)	27	61
43	DQ	99/99 (100%)	98 (99%)	1 (1%)	73	88
44	CR	89/89 (100%)	85 (96%)	4 (4%)	23	57
44	DR	89/89 (100%)	85 (96%)	4 (4%)	23	57
45	CS	84/84 (100%)	77 (92%)	7 (8%)	9	34
45	DS	84/84 (100%)	82 (98%)	2 (2%)	44	74
46	CT	93/93 (100%)	87 (94%)	6 (6%)	14	43
46	DT	93/93 (100%)	89 (96%)	4 (4%)	25	58
47	CU	80/80 (100%)	71 (89%)	9 (11%)	4	21
47	DU	80/80 (100%)	77 (96%)	3 (4%)	28	62

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
48	CV	83/83 (100%)	77 (93%)	6 (7%)	12	39
48	DV	83/83 (100%)	79 (95%)	4 (5%)	21	55
49	CW	78/78 (100%)	74 (95%)	4 (5%)	20	53
49	DW	78/78 (100%)	75 (96%)	3 (4%)	28	62
50	CX	56/58 (97%)	53 (95%)	3 (5%)	18	50
50	DX	58/58 (100%)	53 (91%)	5 (9%)	8	32
51	CY	67/67 (100%)	63 (94%)	4 (6%)	16	47
51	DY	67/67 (100%)	65 (97%)	2 (3%)	36	69
52	CZ	54/54 (100%)	50 (93%)	4 (7%)	11	38
52	DZ	54/54 (100%)	53 (98%)	1 (2%)	52	79
53	DI	103/103 (100%)	96 (93%)	7 (7%)	13	42
All	All	9460/9477 (100%)	8810 (93%)	650 (7%)	13	42

All (650) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	AB	23	TRP
2	AB	73	LYS
2	AB	93	ASN
2	AB	105	LYS
2	AB	108	ARG
2	AB	125	THR
2	AB	129	LEU
2	AB	130	THR
2	AB	135	LEU
2	AB	137	ARG
2	AB	147	SER
2	AB	161	LEU
2	AB	205	ASP
2	AB	212	LEU
3	AC	14	ILE
3	AC	21	THR
3	AC	33	LEU
3	AC	46	GLU
3	AC	55	ILE
3	AC	60	PRO
3	AC	75	ILE
3	AC	107	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	AC	110	GLU
3	AC	168	TYR
3	AC	175	LEU
3	AC	178	LEU
3	AC	185	ASN
3	AC	207	ILE
4	AD	10	LYS
4	AD	17	THR
4	AD	22	LYS
4	AD	26	ARG
4	AD	28	ILE
4	AD	143	VAL
4	AD	194	ASP
5	AE	11	LEU
5	AE	14	LYS
5	AE	43	ASN
5	AE	46	VAL
5	AE	76	LEU
5	AE	78	ASN
5	AE	82	GLN
5	AE	94	VAL
5	AE	101	GLU
5	AE	106	ILE
5	AE	123	VAL
5	AE	126	LYS
5	AE	137	VAL
5	AE	148	ASN
5	AE	149	SER
6	AF	36	ILE
6	AF	39	LEU
6	AF	62	MET
6	AF	69	GLU
6	AF	71	ILE
6	AF	74	LEU
6	AF	89	VAL
6	AF	93	LYS
7	AG	18	PHE
7	AG	22	LEU
7	AG	23	LEU
7	AG	30	LEU
7	AG	36	LYS
7	AG	59	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
7	AG	63	GLU
7	AG	76	LYS
7	AG	83	SER
7	AG	92	ARG
7	AG	95	ARG
7	AG	120	LEU
7	AG	131	LYS
7	AG	133	THR
7	AG	142	HIS
8	AH	3	MET
8	AH	13	ARG
8	AH	38	ASN
8	AH	47	GLU
8	AH	52	GLU
8	AH	54	ASP
8	AH	60	GLU
8	AH	63	LEU
8	AH	76	GLN
8	AH	90	ASP
8	AH	96	MET
8	AH	107	SER
8	AH	117	ARG
8	AH	129	VAL
9	AI	11	ARG
9	AI	61	LEU
9	AI	63	LEU
9	AI	66	THR
9	AI	96	SER
9	AI	99	ARG
10	AJ	6	ILE
10	AJ	19	ASP
10	AJ	62	ARG
10	AJ	63	ASP
10	AJ	69	THR
10	AJ	89	ARG
10	AJ	90	LEU
12	AL	24	LEU
12	AL	55	VAL
12	AL	74	LEU
12	AL	82	ILE
12	AL	86	ARG
12	AL	88	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
12	AL	110	ARG
12	AL	115	SER
12	AL	121	ARG
13	AM	7	ILE
13	AM	13	LYS
13	AM	27	LYS
13	AM	48	LEU
13	AM	58	ASP
13	AM	63	PHE
13	AM	71	ARG
13	AM	101	ARG
14	AN	59	ARG
14	AN	80	SER
15	AO	2	SER
15	AO	24	SER
15	AO	40	GLN
15	AO	70	LEU
15	AO	84	ARG
15	AO	88	ARG
15	AO	89	ARG
16	AP	36	VAL
16	AP	48	GLU
16	AP	54	LEU
17	AQ	5	ILE
17	AQ	16	LYS
17	AQ	26	GLU
17	AQ	33	ILE
17	AQ	38	ILE
17	AQ	51	ASN
17	AQ	75	LEU
17	AQ	83	VAL
18	AR	66	SER
19	AS	5	LEU
19	AS	7	LYS
19	AS	11	ILE
19	AS	13	LEU
19	AS	27	ASP
19	AS	33	THR
19	AS	37	ARG
19	AS	56	GLN
20	AT	8	LYS
20	AT	23	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
20	AT	24	ARG
20	AT	44	LYS
20	AT	48	GLN
20	AT	66	LEU
20	AT	85	LYS
21	AU	13	ASP
21	AU	56	HIS
22	C1	10	ARG
23	C2	8	LYS
23	C2	47	VAL
24	C3	1	MET
24	C3	15	SER
25	C4	8	ARG
25	C4	13	ARG
25	C4	31	HIS
25	C4	47	LYS
25	C4	51	SER
25	C4	52	LYS
26	C5	16	ILE
26	C5	20	ASP
26	C5	26	ILE
27	C0	3	LYS
27	C0	5	ILE
27	C0	19	LYS
27	C0	36	VAL
27	C0	39	GLU
27	C0	45	ARG
27	C0	59	GLU
2	BB	23	TRP
2	BB	73	LYS
2	BB	93	ASN
2	BB	105	LYS
2	BB	108	ARG
2	BB	125	THR
2	BB	129	LEU
2	BB	130	THR
2	BB	135	LEU
2	BB	137	ARG
2	BB	147	SER
2	BB	161	LEU
2	BB	205	ASP
2	BB	212	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	BC	3	GLN
3	BC	14	ILE
3	BC	21	THR
3	BC	33	LEU
3	BC	37	PHE
3	BC	38	LYS
3	BC	46	GLU
3	BC	75	ILE
3	BC	107	ARG
3	BC	110	GLU
3	BC	152	GLU
3	BC	168	TYR
3	BC	185	ASN
3	BC	207	ILE
4	BD	10	LYS
4	BD	17	THR
4	BD	22	LYS
4	BD	26	ARG
4	BD	28	ILE
4	BD	143	VAL
4	BD	173	VAL
4	BD	194	ASP
4	BD	206	LYS
5	BE	11	LEU
5	BE	14	LYS
5	BE	19	ASN
5	BE	24	THR
5	BE	43	ASN
5	BE	46	VAL
5	BE	76	LEU
5	BE	81	LEU
5	BE	82	GLN
5	BE	88	VAL
5	BE	94	VAL
5	BE	101	GLU
5	BE	103	THR
5	BE	114	VAL
5	BE	115	LEU
5	BE	123	VAL
5	BE	126	LYS
5	BE	137	VAL
5	BE	148	ASN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	BE	149	SER
5	BE	151	GLU
5	BE	159	LYS
6	BF	14	GLN
6	BF	16	GLU
6	BF	36	ILE
6	BF	39	LEU
6	BF	53	LYS
6	BF	62	MET
6	BF	68	GLN
6	BF	69	GLU
6	BF	71	ILE
6	BF	74	LEU
6	BF	79	ARG
6	BF	84	VAL
6	BF	89	VAL
6	BF	93	LYS
7	BG	4	ARG
7	BG	5	ARG
7	BG	10	ARG
7	BG	18	PHE
7	BG	23	LEU
7	BG	30	LEU
7	BG	36	LYS
7	BG	48	GLU
7	BG	50	LEU
7	BG	59	LEU
7	BG	63	GLU
7	BG	92	ARG
7	BG	95	ARG
7	BG	109	ARG
7	BG	120	LEU
7	BG	131	LYS
7	BG	133	THR
7	BG	142	HIS
8	BH	3	MET
8	BH	13	ARG
8	BH	38	ASN
8	BH	47	GLU
8	BH	51	VAL
8	BH	52	GLU
8	BH	60	GLU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
8	BH	76	GLN
8	BH	77	ARG
8	BH	80	ARG
8	BH	83	LEU
8	BH	90	ASP
8	BH	96	MET
8	BH	107	SER
8	BH	117	ARG
8	BH	129	VAL
9	BI	11	ARG
9	BI	61	LEU
9	BI	63	LEU
9	BI	66	THR
9	BI	96	SER
9	BI	99	ARG
10	BJ	5	ARG
10	BJ	6	ILE
10	BJ	19	ASP
10	BJ	59	LYS
10	BJ	62	ARG
10	BJ	63	ASP
10	BJ	69	THR
10	BJ	78	GLU
10	BJ	89	ARG
10	BJ	90	LEU
11	BK	18	ASP
11	BK	22	HIS
11	BK	31	ILE
11	BK	38	GLN
11	BK	72	ASP
11	BK	118	HIS
12	BL	4	VAL
12	BL	24	LEU
12	BL	44	LYS
12	BL	55	VAL
12	BL	58	THR
12	BL	74	LEU
12	BL	82	ILE
12	BL	86	ARG
12	BL	88	LYS
12	BL	110	ARG
12	BL	115	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
12	BL	121	ARG
13	BM	11	ASP
13	BM	16	VAL
13	BM	27	LYS
13	BM	30	SER
13	BM	41	GLU
13	BM	48	LEU
13	BM	54	ASP
13	BM	101	ARG
14	BN	26	GLU
14	BN	59	ARG
14	BN	80	SER
15	BO	2	SER
15	BO	17	ARG
15	BO	24	SER
15	BO	40	GLN
15	BO	64	ARG
15	BO	70	LEU
15	BO	84	ARG
15	BO	88	ARG
16	BP	19	VAL
16	BP	36	VAL
16	BP	46	LYS
16	BP	76	LYS
17	BQ	17	MET
17	BQ	20	SER
17	BQ	21	ILE
17	BQ	26	GLU
17	BQ	28	PHE
17	BQ	33	ILE
17	BQ	38	ILE
17	BQ	40	ARG
17	BQ	51	ASN
17	BQ	67	LEU
17	BQ	75	LEU
19	BS	6	LYS
19	BS	7	LYS
19	BS	11	ILE
19	BS	13	LEU
19	BS	37	ARG
20	BT	5	LYS
20	BT	12	ILE

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
20	BT	24	ARG
20	BT	27	MET
20	BT	48	GLN
20	BT	54	MET
20	BT	58	VAL
20	BT	64	LYS
20	BT	66	LEU
20	BT	67	ILE
20	BT	69	LYS
20	BT	84	ASN
21	BU	13	ASP
21	BU	56	HIS
23	D2	5	ILE
23	D2	8	LYS
23	D2	47	VAL
24	D3	1	MET
24	D3	15	SER
25	D4	31	HIS
25	D4	47	LYS
25	D4	52	LYS
26	D5	16	ILE
27	D0	10	THR
27	D0	19	LYS
27	D0	25	LEU
27	D0	36	VAL
27	D0	39	GLU
27	D0	58	GLU
29	CC	97	LYS
29	CC	120	VAL
29	CC	130	LEU
29	CC	156	ARG
29	CC	157	SER
29	CC	168	ASP
29	CC	195	VAL
29	CC	202	LEU
29	CC	204	VAL
29	CC	205	LEU
29	CC	221	ARG
29	CC	236	GLU
29	CC	258	ARG
30	CD	4	LEU
30	CD	18	ASP

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
30	CD	32	ASN
30	CD	95	SER
29	DC	70	ASN
29	DC	97	LYS
29	DC	117	GLN
29	DC	120	VAL
29	DC	130	LEU
29	DC	182	ARG
29	DC	202	LEU
29	DC	236	GLU
30	DD	18	ASP
30	DD	32	ASN
30	DD	95	SER
32	CE	7	ASP
32	CE	12	LEU
32	CE	25	GLU
32	CE	40	ARG
32	CE	44	ARG
32	CE	72	SER
32	CE	78	TRP
32	CE	83	VAL
32	CE	93	SER
32	CE	107	SER
32	CE	122	GLU
32	CE	127	GLU
32	CE	149	ILE
32	CE	152	GLU
32	CE	163	ASN
32	CE	189	THR
33	CF	35	THR
33	CF	36	LEU
33	CF	57	LEU
33	CF	72	LYS
33	CF	80	ARG
33	CF	94	GLU
33	CF	117	LEU
33	CF	123	ASP
33	CF	134	GLU
33	CF	136	ILE
33	CF	141	ILE
33	CF	149	VAL
33	CF	152	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
33	CF	174	ASP
34	CG	11	VAL
34	CG	18	LYS
34	CG	155	GLU
35	CH	7	ASP
35	CH	15	LEU
35	CH	21	VAL
35	CH	48	GLU
35	CH	51	ARG
35	CH	53	GLU
35	CH	54	LEU
35	CH	55	GLU
35	CH	58	LEU
35	CH	89	LYS
35	CH	127	GLU
35	CH	145	ASN
36	CJ	13	VAL
36	CJ	28	LEU
36	CJ	53	LEU
36	CJ	55	ILE
36	CJ	113	LYS
37	CK	5	THR
37	CK	106	LYS
37	CK	124	VAL
37	CK	142	ILE
38	CL	35	VAL
38	CL	58	LEU
38	CL	70	ARG
38	CL	76	VAL
38	CL	80	ASP
38	CL	89	ASN
38	CL	108	ARG
38	CL	113	MET
39	CM	2	ARG
39	CM	21	ARG
39	CM	42	SER
39	CM	93	ASN
39	CM	94	THR
39	CM	100	ILE
39	CM	103	ILE
39	CM	120	VAL
40	CN	55	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
40	CN	59	ARG
40	CN	75	GLU
40	CN	78	LEU
40	CN	132	THR
41	CO	2	ARG
41	CO	6	SER
41	CO	14	SER
41	CO	33	ILE
41	CO	71	ARG
41	CO	76	VAL
41	CO	95	THR
42	CP	18	LEU
42	CP	31	THR
42	CP	38	GLN
42	CP	48	LEU
42	CP	49	VAL
42	CP	78	VAL
43	CQ	10	GLN
43	CQ	39	ARG
43	CQ	40	LEU
43	CQ	114	LEU
44	CR	5	LYS
44	CR	9	ILE
44	CR	51	ARG
44	CR	52	GLN
45	CS	12	HIS
45	CS	18	GLN
45	CS	45	GLU
45	CS	46	GLU
45	CS	48	LYS
45	CS	51	VAL
45	CS	102	SER
46	CT	7	HIS
46	CT	69	LEU
46	CT	86	MET
46	CT	97	LEU
46	CT	108	SER
46	CT	109	ASP
47	CU	1	MET
47	CU	2	ILE
47	CU	3	ARG
47	CU	27	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
47	CU	30	ILE
47	CU	49	LYS
47	CU	69	ARG
47	CU	73	ARG
47	CU	93	LEU
48	CV	9	ASP
48	CV	28	VAL
48	CV	29	LEU
48	CV	61	LYS
48	CV	81	ASP
48	CV	98	SER
49	CW	1	MET
49	CW	7	GLU
49	CW	10	LYS
49	CW	61	LEU
50	CX	39	ARG
50	CX	40	GLN
50	CX	82	ILE
51	CY	25	THR
51	CY	35	SER
51	CY	48	THR
51	CY	71	LEU
52	CZ	18	LEU
52	CZ	38	GLN
52	CZ	40	SER
52	CZ	58	ASN
32	DE	12	LEU
32	DE	25	GLU
32	DE	107	SER
32	DE	127	GLU
32	DE	163	ASN
32	DE	189	THR
33	DF	10	ASP
33	DF	35	THR
33	DF	57	LEU
33	DF	72	LYS
33	DF	94	GLU
33	DF	117	LEU
33	DF	120	LYS
33	DF	134	GLU
33	DF	136	ILE
33	DF	141	ILE

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
33	DF	149	VAL
33	DF	152	LEU
33	DF	158	THR
33	DF	174	ASP
34	DG	11	VAL
34	DG	18	LYS
34	DG	155	GLU
34	DG	168	VAL
35	DH	7	ASP
35	DH	15	LEU
35	DH	21	VAL
35	DH	48	GLU
35	DH	53	GLU
35	DH	54	LEU
35	DH	58	LEU
35	DH	127	GLU
35	DH	145	ASN
36	DJ	13	VAL
36	DJ	28	LEU
36	DJ	53	LEU
36	DJ	55	ILE
36	DJ	113	LYS
37	DK	106	LYS
37	DK	124	VAL
37	DK	142	ILE
38	DL	58	LEU
38	DL	70	ARG
38	DL	80	ASP
38	DL	89	ASN
38	DL	110	GLU
39	DM	2	ARG
39	DM	60	ARG
39	DM	120	VAL
40	DN	6	ARG
40	DN	75	GLU
40	DN	100	LYS
40	DN	126	ILE
40	DN	132	THR
41	DO	2	ARG
41	DO	6	SER
41	DO	14	SER
41	DO	33	ILE

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
41	DO	76	VAL
42	DP	31	THR
42	DP	49	VAL
42	DP	78	VAL
43	DQ	40	LEU
44	DR	5	LYS
44	DR	9	ILE
44	DR	13	ARG
44	DR	51	ARG
45	DS	38	VAL
45	DS	102	SER
46	DT	1	MET
46	DT	86	MET
46	DT	108	SER
46	DT	109	ASP
47	DU	1	MET
47	DU	3	ARG
47	DU	27	SER
48	DV	28	VAL
48	DV	29	LEU
48	DV	52	LEU
48	DV	61	LYS
49	DW	7	GLU
49	DW	53	LYS
49	DW	61	LEU
50	DX	11	ARG
50	DX	39	ARG
50	DX	41[A]	ARG
50	DX	41[B]	ARG
50	DX	82	ILE
51	DY	25	THR
51	DY	71	LEU
52	DZ	38	GLN
53	DI	7	ASP
53	DI	16	SER
53	DI	31	ARG
53	DI	53	ARG
53	DI	60	LEU
53	DI	64	VAL
53	DI	117	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (43) such sidechains are listed below:

Mol	Chain	Res	Type
2	AB	93	ASN
2	AB	120	GLN
2	AB	146	ASN
4	AD	136	GLN
5	AE	89	HIS
6	AF	63	ASN
7	AG	97	ASN
7	AG	142	HIS
8	AH	4	GLN
10	AJ	58	ASN
16	AP	9	HIS
17	AQ	51	ASN
19	AS	57	HIS
20	AT	52	ASN
22	C1	38	HIS
2	BB	39	HIS
2	BB	93	ASN
2	BB	120	GLN
2	BB	146	ASN
3	BC	3	GLN
5	BE	70	ASN
5	BE	89	HIS
6	BF	3	HIS
7	BG	97	ASN
8	BH	4	GLN
16	BP	9	HIS
17	BQ	45	HIS
17	BQ	51	ASN
20	BT	48	GLN
20	BT	52	ASN
32	CE	115	GLN
32	CE	163	ASN
34	CG	38	ASN
36	CJ	43	ASN
45	CS	12	HIS
48	CV	74	ASN
50	CX	57	HIS
52	CZ	45	GLN
34	DG	116	GLN
36	DJ	43	ASN
41	DO	31	HIS
48	DV	54	GLN
53	DI	122	GLN

5.3.3 RNA 

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	AA	1530/1534 (99%)	255 (16%)	32 (2%)
1	BA	1529/1534 (99%)	255 (16%)	36 (2%)
28	CB	117/120 (97%)	12 (10%)	1 (0%)
28	DB	119/120 (99%)	10 (8%)	0
31	CA	2892/2904 (99%)	468 (16%)	79 (2%)
54	DA	2880/2904 (99%)	397 (13%)	60 (2%)
All	All	9067/9116 (99%)	1397 (15%)	208 (2%)

All (1397) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	AA	4	U
1	AA	5	U
1	AA	6	G
1	AA	9	G
1	AA	22	G
1	AA	28	A
1	AA	32	A
1	AA	39	G
1	AA	47	C
1	AA	48	C
1	AA	50	A
1	AA	51	A
1	AA	52	C
1	AA	69	G
1	AA	70	U
1	AA	71	A
1	AA	72	A
1	AA	74	A
1	AA	80	A
1	AA	81	A
1	AA	82	G
1	AA	83	C
1	AA	84	U
1	AA	85	U
1	AA	86	G
1	AA	88	U
1	AA	89	U
1	AA	90	C
1	AA	94	G
1	AA	95	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	AA	108	G
1	AA	120	A
1	AA	128	G
1	AA	130	A
1	AA	131	A
1	AA	137	U
1	AA	141	G
1	AA	142	G
1	AA	144	G
1	AA	149	A
1	AA	159	G
1	AA	163	C
1	AA	168	G
1	AA	197	A
1	AA	200	G
1	AA	205	A
1	AA	210	C
1	AA	211	G
1	AA	212	G
1	AA	226	G
1	AA	240	G
1	AA	245	U
1	AA	247	G
1	AA	250	A
1	AA	251	G
1	AA	266	G
1	AA	267	C
1	AA	289	G
1	AA	298	A
1	AA	306	A
1	AA	321	A
1	AA	328	C
1	AA	329	A
1	AA	330	C
1	AA	332	G
1	AA	346	G
1	AA	352	C
1	AA	354	G
1	AA	367	U
1	AA	372	C
1	AA	373	A
1	AA	382	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	AA	384	G
1	AA	398	U
1	AA	406	G
1	AA	411	A
1	AA	413	G
1	AA	414	A
1	AA	421	U
1	AA	422	C
1	AA	424	G
1	AA	429	U
1	AA	430	A
1	AA	436	C
1	AA	457	G
1	AA	458	U
1	AA	466	A
1	AA	467	U
1	AA	468	A
1	AA	474	G
1	AA	479	U
1	AA	481	G
1	AA	484	G
1	AA	486	U
1	AA	495	A
1	AA	511	C
1	AA	527	G7M
1	AA	531	U
1	AA	533	A
1	AA	547	A
1	AA	559	A
1	AA	564	C
1	AA	568	G
1	AA	572	A
1	AA	573	A
1	AA	576	C
1	AA	577	G
1	AA	579	A
1	AA	615	G
1	AA	632	U
1	AA	633	G
1	AA	650	G
1	AA	653	U
1	AA	661	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	AA	665	A
1	AA	682	G
1	AA	695	A
1	AA	702	A
1	AA	703	G
1	AA	723	U
1	AA	734	G
1	AA	748	G
1	AA	755	G
1	AA	777	A
1	AA	793	U
1	AA	794	A
1	AA	814	A
1	AA	815	A
1	AA	817	C
1	AA	818	G
1	AA	821	G
1	AA	828	U
1	AA	836	G
1	AA	839	C
1	AA	841	C
1	AA	842	U
1	AA	843	U
1	AA	844	G
1	AA	845	A
1	AA	873	A
1	AA	914	A
1	AA	926	G
1	AA	927	G
1	AA	932	C
1	AA	934	C
1	AA	935	A
1	AA	960	U
1	AA	966	2MG
1	AA	969	A
1	AA	971	G
1	AA	975	A
1	AA	976	G
1	AA	977	A
1	AA	987	G
1	AA	992	U
1	AA	993	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	AA	996	A
1	AA	1004	A
1	AA	1009	U
1	AA	1015	G
1	AA	1019	A
1	AA	1024	G
1	AA	1026	G
1	AA	1027	C
1	AA	1029	U
1	AA	1030	U
1	AA	1031	C
1	AA	1032	G
1	AA	1033	G
1	AA	1036	A
1	AA	1037	C
1	AA	1043	G
1	AA	1052	G
1	AA	1053	G
1	AA	1054	C
1	AA	1055	A
1	AA	1065	U
1	AA	1086	U
1	AA	1094	G
1	AA	1095	U
1	AA	1098	C
1	AA	1101	A
1	AA	1124	G
1	AA	1125	U
1	AA	1132	C
1	AA	1133	G
1	AA	1136	C
1	AA	1137	C
1	AA	1138	G
1	AA	1139	G
1	AA	1140	C
1	AA	1141	C
1	AA	1142	G
1	AA	1143	G
1	AA	1145	A
1	AA	1146	A
1	AA	1152	A
1	AA	1159	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	AA	1160	G
1	AA	1168	U
1	AA	1184	G
1	AA	1196	A
1	AA	1197	A
1	AA	1200	C
1	AA	1212	U
1	AA	1213	A
1	AA	1214	C
1	AA	1215	G
1	AA	1225	A
1	AA	1226	C
1	AA	1227	A
1	AA	1236	A
1	AA	1238	A
1	AA	1239	A
1	AA	1256	A
1	AA	1257	A
1	AA	1260	G
1	AA	1280	A
1	AA	1281	C
1	AA	1286	U
1	AA	1287	A
1	AA	1300	G
1	AA	1302	C
1	AA	1305	G
1	AA	1312	G
1	AA	1317	C
1	AA	1320	C
1	AA	1323	G
1	AA	1346	A
1	AA	1353	G
1	AA	1363	A
1	AA	1370	G
1	AA	1379	G
1	AA	1381	U
1	AA	1397	C
1	AA	1398	A
1	AA	1429	A
1	AA	1441	A
1	AA	1446	A
1	AA	1447	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	AA	1448	C
1	AA	1451	U
1	AA	1452	C
1	AA	1453	G
1	AA	1475	G
1	AA	1487	G
1	AA	1492	A
1	AA	1497	G
1	AA	1503	A
1	AA	1506	U
1	AA	1507	A
1	AA	1517	G
1	AA	1529	G
1	AA	1530	G
1	AA	1534	A
1	BA	4	U
1	BA	5	U
1	BA	6	G
1	BA	9	G
1	BA	22	G
1	BA	28	A
1	BA	32	A
1	BA	39	G
1	BA	47	C
1	BA	48	C
1	BA	50	A
1	BA	51	A
1	BA	52	C
1	BA	69	G
1	BA	70	U
1	BA	71	A
1	BA	72	A
1	BA	74	A
1	BA	80	A
1	BA	82	G
1	BA	83	C
1	BA	84	U
1	BA	85	U
1	BA	87	C
1	BA	88	U
1	BA	89	U
1	BA	90	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	BA	94	G
1	BA	95	C
1	BA	108	G
1	BA	120	A
1	BA	130	A
1	BA	131	A
1	BA	137	U
1	BA	141	G
1	BA	142	G
1	BA	144	G
1	BA	149	A
1	BA	159	G
1	BA	163	C
1	BA	168	G
1	BA	197	A
1	BA	200	G
1	BA	205	A
1	BA	210	C
1	BA	211	G
1	BA	212	G
1	BA	226	G
1	BA	240	G
1	BA	245	U
1	BA	247	G
1	BA	250	A
1	BA	251	G
1	BA	266	G
1	BA	267	C
1	BA	289	G
1	BA	298	A
1	BA	306	A
1	BA	321	A
1	BA	328	C
1	BA	329	A
1	BA	330	C
1	BA	332	G
1	BA	346	G
1	BA	352	C
1	BA	354	G
1	BA	367	U
1	BA	372	C
1	BA	373	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	BA	382	A
1	BA	384	G
1	BA	398	U
1	BA	406	G
1	BA	412	A
1	BA	413	G
1	BA	414	A
1	BA	421	U
1	BA	422	C
1	BA	424	G
1	BA	429	U
1	BA	430	A
1	BA	436	C
1	BA	457	G
1	BA	458	U
1	BA	467	U
1	BA	468	A
1	BA	474	G
1	BA	481	G
1	BA	484	G
1	BA	486	U
1	BA	495	A
1	BA	511	C
1	BA	527	G7M
1	BA	528	C
1	BA	531	U
1	BA	532	A
1	BA	533	A
1	BA	547	A
1	BA	559	A
1	BA	562	U
1	BA	564	C
1	BA	568	G
1	BA	572	A
1	BA	573	A
1	BA	576	C
1	BA	577	G
1	BA	579	A
1	BA	615	G
1	BA	632	U
1	BA	633	G
1	BA	650	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	BA	653	U
1	BA	661	G
1	BA	665	A
1	BA	682	G
1	BA	695	A
1	BA	702	A
1	BA	703	G
1	BA	723	U
1	BA	734	G
1	BA	748	G
1	BA	755	G
1	BA	777	A
1	BA	793	U
1	BA	794	A
1	BA	812	G
1	BA	814	A
1	BA	815	A
1	BA	817	C
1	BA	818	G
1	BA	821	G
1	BA	828	U
1	BA	836	G
1	BA	839	C
1	BA	840	C
1	BA	841	C
1	BA	842	U
1	BA	843	U
1	BA	844	G
1	BA	845	A
1	BA	846	G
1	BA	873	A
1	BA	914	A
1	BA	926	G
1	BA	927	G
1	BA	934	C
1	BA	935	A
1	BA	960	U
1	BA	966	2MG
1	BA	969	A
1	BA	975	A
1	BA	976	G
1	BA	977	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	BA	987	G
1	BA	992	U
1	BA	993	G
1	BA	996	A
1	BA	1004	A
1	BA	1008	U
1	BA	1009	U
1	BA	1015	G
1	BA	1019	A
1	BA	1024	G
1	BA	1026	G
1	BA	1027	C
1	BA	1030	U
1	BA	1031	C
1	BA	1032	G
1	BA	1033	G
1	BA	1036	A
1	BA	1037	C
1	BA	1043	G
1	BA	1053	G
1	BA	1054	C
1	BA	1055	A
1	BA	1065	U
1	BA	1086	U
1	BA	1094	G
1	BA	1095	U
1	BA	1098	C
1	BA	1101	A
1	BA	1124	G
1	BA	1125	U
1	BA	1132	C
1	BA	1133	G
1	BA	1136	C
1	BA	1137	C
1	BA	1138	G
1	BA	1139	G
1	BA	1140	C
1	BA	1141	C
1	BA	1142	G
1	BA	1143	G
1	BA	1145	A
1	BA	1146	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	BA	1152	A
1	BA	1159	U
1	BA	1160	G
1	BA	1168	U
1	BA	1196	A
1	BA	1197	A
1	BA	1200	C
1	BA	1212	U
1	BA	1213	A
1	BA	1214	C
1	BA	1215	G
1	BA	1225	A
1	BA	1226	C
1	BA	1227	A
1	BA	1236	A
1	BA	1238	A
1	BA	1239	A
1	BA	1256	A
1	BA	1257	A
1	BA	1260	G
1	BA	1280	A
1	BA	1281	C
1	BA	1286	U
1	BA	1287	A
1	BA	1300	G
1	BA	1302	C
1	BA	1305	G
1	BA	1312	G
1	BA	1317	C
1	BA	1320	C
1	BA	1323	G
1	BA	1346	A
1	BA	1353	G
1	BA	1362	A
1	BA	1363	A
1	BA	1370	G
1	BA	1379	G
1	BA	1381	U
1	BA	1397	C
1	BA	1398	A
1	BA	1419	G
1	BA	1429	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	BA	1441	A
1	BA	1446	A
1	BA	1447	A
1	BA	1448	C
1	BA	1451	U
1	BA	1452	C
1	BA	1453	G
1	BA	1475	G
1	BA	1487	G
1	BA	1493	A
1	BA	1497	G
1	BA	1503	A
1	BA	1506	U
1	BA	1507	A
1	BA	1517	G
1	BA	1529	G
1	BA	1530	G
1	BA	1534	A
28	CB	9	G
28	CB	25	U
28	CB	35	C
28	CB	44	G
28	CB	45	A
28	CB	56	G
28	CB	57	A
28	CB	88	C
28	CB	89	U
28	CB	90	C
28	CB	99	A
28	CB	109	A
31	CA	10	A
31	CA	14	A
31	CA	34	U
31	CA	39	G
31	CA	42	A
31	CA	46	G
31	CA	49	A
31	CA	58	G
31	CA	61	C
31	CA	63	A
31	CA	71	A
31	CA	74	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
31	CA	75	G
31	CA	80	G
31	CA	83	A
31	CA	84	A
31	CA	101	A
31	CA	102	U
31	CA	118	A
31	CA	119	A
31	CA	120	U
31	CA	125	A
31	CA	138	U
31	CA	139	U
31	CA	140	C
31	CA	141	G
31	CA	142	A
31	CA	143	C
31	CA	165	A
31	CA	177	G
31	CA	178	G
31	CA	188	G
31	CA	196	A
31	CA	197	A
31	CA	199	A
31	CA	215	G
31	CA	216	A
31	CA	221	A
31	CA	222	A
31	CA	248	G
31	CA	264	C
31	CA	265	A
31	CA	266	G
31	CA	272	A
31	CA	276	U
31	CA	277	G
31	CA	278	A
31	CA	279	A
31	CA	285	G
31	CA	311	A
31	CA	329	G
31	CA	330	A
31	CA	343	C
31	CA	346	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
31	CA	352	A
31	CA	353	C
31	CA	362	A
31	CA	370	G
31	CA	371	A
31	CA	372	G
31	CA	385	C
31	CA	386	G
31	CA	399	U
31	CA	404	A
31	CA	405	U
31	CA	411	G
31	CA	412	A
31	CA	420	C
31	CA	424	G
31	CA	451	U
31	CA	455	C
31	CA	480	A
31	CA	481	G
31	CA	491	G
31	CA	503	A
31	CA	504	A
31	CA	505	A
31	CA	508	A
31	CA	513	A
31	CA	532	A
31	CA	543	G
31	CA	544	C
31	CA	546	U
31	CA	547	A
31	CA	549	G
31	CA	550	C
31	CA	551	G
31	CA	555	G
31	CA	556	A
31	CA	563	A
31	CA	573	U
31	CA	575	A
31	CA	586	A
31	CA	603	A
31	CA	613	A
31	CA	614	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
31	CA	615	U
31	CA	622	G
31	CA	627	A
31	CA	637	A
31	CA	645	C
31	CA	647	G
31	CA	653	U
31	CA	654	A
31	CA	655	A
31	CA	670	A
31	CA	684	G
31	CA	685	A
31	CA	686	U
31	CA	695	G
31	CA	717	C
31	CA	723	C
31	CA	730	A
31	CA	740	C
31	CA	747	5MU
31	CA	775	G
31	CA	776	G
31	CA	782	A
31	CA	784	G
31	CA	785	G
31	CA	792	A
31	CA	798	G
31	CA	802	A
31	CA	805	G
31	CA	812	C
31	CA	819	A
31	CA	827	U
31	CA	828	U
31	CA	845	A
31	CA	846	U
31	CA	847	U
31	CA	858	G
31	CA	859	G
31	CA	878	A
31	CA	883	G
31	CA	896	A
31	CA	897	C
31	CA	910	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
31	CA	931	U
31	CA	932	U
31	CA	941	A
31	CA	946	C
31	CA	953	G
31	CA	961	C
31	CA	974	G
31	CA	983	A
31	CA	984	A
31	CA	985	C
31	CA	995	C
31	CA	996	A
31	CA	1005	C
31	CA	1012	U
31	CA	1013	C
31	CA	1022	G
31	CA	1026	G
31	CA	1033	U
31	CA	1040	A
31	CA	1046	A
31	CA	1047	G
31	CA	1057	A
31	CA	1061	U
31	CA	1062	G
31	CA	1070	A
31	CA	1073	A
31	CA	1083	U
31	CA	1088	A
31	CA	1089	A
31	CA	1090	A
31	CA	1096	A
31	CA	1097	U
31	CA	1111	A
31	CA	1112	G
31	CA	1119	U
31	CA	1122	G
31	CA	1128	G
31	CA	1129	A
31	CA	1132	U
31	CA	1133	A
31	CA	1134	A
31	CA	1135	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
31	CA	1136	G
31	CA	1142	A
31	CA	1168	G
31	CA	1169	A
31	CA	1170	C
31	CA	1175	A
31	CA	1176	U
31	CA	1177	G
31	CA	1179	G
31	CA	1180	U
31	CA	1186	G
31	CA	1206	G
31	CA	1210	G
31	CA	1212	G
31	CA	1227	G
31	CA	1236	G
31	CA	1238	G
31	CA	1253	A
31	CA	1256	G
31	CA	1262	A
31	CA	1266	G
31	CA	1271	G
31	CA	1272	A
31	CA	1273	U
31	CA	1300	G
31	CA	1301	A
31	CA	1313	U
31	CA	1321	A
31	CA	1329	U
31	CA	1342	A
31	CA	1344	U
31	CA	1352	U
31	CA	1365	A
31	CA	1379	U
31	CA	1380	G
31	CA	1383	A
31	CA	1395	A
31	CA	1416	G
31	CA	1417	C
31	CA	1419	A
31	CA	1420	A
31	CA	1428	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
31	CA	1437	C
31	CA	1438	U
31	CA	1452	G
31	CA	1453	A
31	CA	1460	U
31	CA	1478	G
31	CA	1482	G
31	CA	1490	A
31	CA	1491	G
31	CA	1493	C
31	CA	1494	A
31	CA	1497	U
31	CA	1504	A
31	CA	1509	A
31	CA	1510	G
31	CA	1515	A
31	CA	1523	U
31	CA	1532	A
31	CA	1534	U
31	CA	1535	A
31	CA	1536	C
31	CA	1537	G
31	CA	1565	C
31	CA	1567	G
31	CA	1568	G
31	CA	1569	A
31	CA	1578	U
31	CA	1583	A
31	CA	1585	C
31	CA	1607	C
31	CA	1608	A
31	CA	1609	A
31	CA	1611	C
31	CA	1616	A
31	CA	1632	A
31	CA	1647	U
31	CA	1648	U
31	CA	1649	G
31	CA	1669	A
31	CA	1674	G
31	CA	1675	C
31	CA	1715	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
31	CA	1729	U
31	CA	1730	C
31	CA	1738	G
31	CA	1744	A
31	CA	1750	G
31	CA	1754	A
31	CA	1764	C
31	CA	1773	A
31	CA	1782	U
31	CA	1800	C
31	CA	1801	A
31	CA	1808	A
31	CA	1812	U
31	CA	1816	C
31	CA	1823	G
31	CA	1828	G
31	CA	1829	A
31	CA	1834	U
31	CA	1869	G
31	CA	1870	C
31	CA	1871	A
31	CA	1872	A
31	CA	1873	G
31	CA	1882	U
31	CA	1900	A
31	CA	1903	G
31	CA	1906	G
31	CA	1907	G
31	CA	1914	C
31	CA	1929	G
31	CA	1930	G
31	CA	1931	U
31	CA	1937	A
31	CA	1938	A
31	CA	1955	U
31	CA	1967	C
31	CA	1970	A
31	CA	1972	G
31	CA	1975	G
31	CA	1991	U
31	CA	1993	U
31	CA	1997	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
31	CA	2006	C
31	CA	2022	U
31	CA	2023	C
31	CA	2033	A
31	CA	2035	G
31	CA	2036	C
31	CA	2043	C
31	CA	2046	G
31	CA	2049	G
31	CA	2055	C
31	CA	2056	G
31	CA	2060	A
31	CA	2061	G
31	CA	2062	A
31	CA	2069	G7M
31	CA	2072	C
31	CA	2080	A
31	CA	2092	U
31	CA	2093	G
31	CA	2095	A
31	CA	2100	G
31	CA	2108	A
31	CA	2110	G
31	CA	2111	U
31	CA	2112	G
31	CA	2113	U
31	CA	2114	A
31	CA	2115	G
31	CA	2117	A
31	CA	2118	U
31	CA	2119	A
31	CA	2123	G
31	CA	2124	G
31	CA	2125	G
31	CA	2126	A
31	CA	2127	G
31	CA	2128	G
31	CA	2131	U
31	CA	2132	U
31	CA	2133	G
31	CA	2146	C
31	CA	2147	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
31	CA	2157	G
31	CA	2158	A
31	CA	2159	G
31	CA	2162	G
31	CA	2164	C
31	CA	2165	C
31	CA	2171	A
31	CA	2172	U
31	CA	2173	A
31	CA	2174	C
31	CA	2183	A
31	CA	2190	G
31	CA	2198	A
31	CA	2203	U
31	CA	2204	G
31	CA	2211	A
31	CA	2225	A
31	CA	2226	C
31	CA	2238	G
31	CA	2239	G
31	CA	2259	U
31	CA	2268	A
31	CA	2278	A
31	CA	2280	G
31	CA	2283	C
31	CA	2287	A
31	CA	2305	U
31	CA	2311	A
31	CA	2322	A
31	CA	2325	G
31	CA	2326	C
31	CA	2327	A
31	CA	2331	G
31	CA	2333	A
31	CA	2334	U
31	CA	2335	A
31	CA	2345	G
31	CA	2347	C
31	CA	2350	C
31	CA	2354	C
31	CA	2361	G
31	CA	2383	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
31	CA	2385	C
31	CA	2402	U
31	CA	2403	C
31	CA	2406	A
31	CA	2424	C
31	CA	2425	A
31	CA	2426	A
31	CA	2429	G
31	CA	2430	A
31	CA	2435	A
31	CA	2441	U
31	CA	2448	A
31	CA	2465	C
31	CA	2469	A
31	CA	2474	U
31	CA	2476	A
31	CA	2484	G
31	CA	2491	U
31	CA	2502	G
31	CA	2505	G
31	CA	2518	A
31	CA	2529	G
31	CA	2535	G
31	CA	2547	A
31	CA	2554	U
31	CA	2556	C
31	CA	2566	A
31	CA	2567	G
31	CA	2573	C
31	CA	2578	G
31	CA	2579	C
31	CA	2582	G
31	CA	2585	U
31	CA	2586	U
31	CA	2592	G
31	CA	2603	G
31	CA	2609	U
31	CA	2613	U
31	CA	2623	G
31	CA	2629	U
31	CA	2630	G
31	CA	2646	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
31	CA	2661	G
31	CA	2663	G
31	CA	2681	C
31	CA	2682	A
31	CA	2689	U
31	CA	2690	U
31	CA	2714	G
31	CA	2716	C
31	CA	2718	G
31	CA	2720	U
31	CA	2726	A
31	CA	2744	G
31	CA	2748	A
31	CA	2765	A
31	CA	2769	U
31	CA	2778	A
31	CA	2779	U
31	CA	2780	G
31	CA	2791	G
31	CA	2794	C
31	CA	2799	A
31	CA	2818	U
31	CA	2820	A
31	CA	2821	A
31	CA	2825	G
31	CA	2833	U
31	CA	2835	A
31	CA	2836	U
31	CA	2861	U
31	CA	2865	U
31	CA	2867	G
31	CA	2880	C
31	CA	2883	A
31	CA	2884	U
31	CA	2886	A
31	CA	2903	U
28	DB	25	U
28	DB	35	C
28	DB	44	G
28	DB	45	A
28	DB	56	G
28	DB	57	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
28	DB	88	C
28	DB	89	U
28	DB	90	C
28	DB	109	A
54	DA	10	A
54	DA	12	U
54	DA	14	A
54	DA	15	G
54	DA	34	U
54	DA	39	G
54	DA	42	A
54	DA	46	G
54	DA	58	G
54	DA	61	C
54	DA	63	A
54	DA	71	A
54	DA	74	A
54	DA	75	G
54	DA	84	A
54	DA	101	A
54	DA	102	U
54	DA	118	A
54	DA	119	A
54	DA	120	U
54	DA	125	A
54	DA	138	U
54	DA	139	U
54	DA	140	C
54	DA	141	G
54	DA	142	A
54	DA	143	C
54	DA	165	A
54	DA	196	A
54	DA	197	A
54	DA	199	A
54	DA	200	U
54	DA	215	G
54	DA	216	A
54	DA	221	A
54	DA	222	A
54	DA	248	G
54	DA	264	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
54	DA	265	A
54	DA	266	G
54	DA	272	A
54	DA	276	U
54	DA	277	G
54	DA	278	A
54	DA	279	A
54	DA	285	G
54	DA	302	C
54	DA	311	A
54	DA	329	G
54	DA	330	A
54	DA	343	C
54	DA	352	A
54	DA	353	C
54	DA	362	A
54	DA	370	G
54	DA	372	G
54	DA	385	C
54	DA	386	G
54	DA	399	U
54	DA	411	G
54	DA	412	A
54	DA	420	C
54	DA	424	G
54	DA	451	U
54	DA	480	A
54	DA	481	G
54	DA	491	G
54	DA	504	A
54	DA	505	A
54	DA	508	A
54	DA	513	A
54	DA	528	A
54	DA	532	A
54	DA	533	G
54	DA	543	G
54	DA	544	C
54	DA	546	U
54	DA	547	A
54	DA	548	G
54	DA	549	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
54	DA	550	C
54	DA	551	G
54	DA	563	A
54	DA	573	U
54	DA	575	A
54	DA	586	A
54	DA	603	A
54	DA	613	A
54	DA	614	A
54	DA	615	U
54	DA	627	A
54	DA	637	A
54	DA	645	C
54	DA	647	G
54	DA	653	U
54	DA	654	A
54	DA	655	A
54	DA	686	U
54	DA	717	C
54	DA	723	C
54	DA	730	A
54	DA	747	5MU
54	DA	764	A
54	DA	765	C
54	DA	775	G
54	DA	776	G
54	DA	782	A
54	DA	784	G
54	DA	785	G
54	DA	790	U
54	DA	805	G
54	DA	812	C
54	DA	827	U
54	DA	828	U
54	DA	858	G
54	DA	859	G
54	DA	878	A
54	DA	883	G
54	DA	885	C
54	DA	896	A
54	DA	897	C
54	DA	910	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
54	DA	931	U
54	DA	932	U
54	DA	933	A
54	DA	946	C
54	DA	953	G
54	DA	961	C
54	DA	974	G
54	DA	983	A
54	DA	985	C
54	DA	996	A
54	DA	1012	U
54	DA	1013	C
54	DA	1022	G
54	DA	1026	G
54	DA	1033	U
54	DA	1040	A
54	DA	1047	G
54	DA	1057	A
54	DA	1061	U
54	DA	1062	G
54	DA	1068	G
54	DA	1070	A
54	DA	1073	A
54	DA	1083	U
54	DA	1088	A
54	DA	1089	A
54	DA	1090	A
54	DA	1096	A
54	DA	1097	U
54	DA	1112	G
54	DA	1119	U
54	DA	1128	G
54	DA	1129	A
54	DA	1132	U
54	DA	1133	A
54	DA	1134	A
54	DA	1135	C
54	DA	1136	G
54	DA	1142	A
54	DA	1155	A
54	DA	1168	G
54	DA	1171	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
54	DA	1172	C
54	DA	1176	U
54	DA	1177	G
54	DA	1180	U
54	DA	1206	G
54	DA	1212	G
54	DA	1238	G
54	DA	1253	A
54	DA	1256	G
54	DA	1271	G
54	DA	1272	A
54	DA	1273	U
54	DA	1300	G
54	DA	1301	A
54	DA	1321	A
54	DA	1329	U
54	DA	1342	A
54	DA	1352	U
54	DA	1365	A
54	DA	1379	U
54	DA	1383	A
54	DA	1416	G
54	DA	1417	C
54	DA	1427	A
54	DA	1428	C
54	DA	1435	G
54	DA	1452	G
54	DA	1453	A
54	DA	1460	U
54	DA	1478	G
54	DA	1482	G
54	DA	1490	A
54	DA	1491	G
54	DA	1493	C
54	DA	1494	A
54	DA	1497	U
54	DA	1504	A
54	DA	1508	A
54	DA	1509	A
54	DA	1510	G
54	DA	1515	A
54	DA	1523	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
54	DA	1532	A
54	DA	1534	U
54	DA	1535	A
54	DA	1536	C
54	DA	1537	G
54	DA	1569	A
54	DA	1578	U
54	DA	1583	A
54	DA	1585	C
54	DA	1607	C
54	DA	1608	A
54	DA	1609	A
54	DA	1616	A
54	DA	1647	U
54	DA	1648	U
54	DA	1649	G
54	DA	1674	G
54	DA	1715	G
54	DA	1729	U
54	DA	1730	C
54	DA	1738	G
54	DA	1744	A
54	DA	1754	A
54	DA	1764	C
54	DA	1773	A
54	DA	1782	U
54	DA	1800	C
54	DA	1801	A
54	DA	1808	A
54	DA	1812	U
54	DA	1816	C
54	DA	1829	A
54	DA	1869	G
54	DA	1870	C
54	DA	1871	A
54	DA	1872	A
54	DA	1873	G
54	DA	1906	G
54	DA	1907	G
54	DA	1913	A
54	DA	1914	C
54	DA	1929	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
54	DA	1930	G
54	DA	1931	U
54	DA	1937	A
54	DA	1938	A
54	DA	1955	U
54	DA	1965	C
54	DA	1967	C
54	DA	1970	A
54	DA	1972	G
54	DA	1991	U
54	DA	1993	U
54	DA	1997	C
54	DA	2023	C
54	DA	2031	A
54	DA	2033	A
54	DA	2043	C
54	DA	2055	C
54	DA	2056	G
54	DA	2060	A
54	DA	2061	G
54	DA	2062	A
54	DA	2069	G7M
54	DA	2093	G
54	DA	2097	A
54	DA	2100	G
54	DA	2105	U
54	DA	2111	U
54	DA	2112	G
54	DA	2113	U
54	DA	2116	G
54	DA	2117	A
54	DA	2118	U
54	DA	2119	A
54	DA	2120	G
54	DA	2123	G
54	DA	2125	G
54	DA	2126	A
54	DA	2128	G
54	DA	2131	U
54	DA	2132	U
54	DA	2133	G
54	DA	2134	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
54	DA	2135	A
54	DA	2145	C
54	DA	2146	C
54	DA	2148	G
54	DA	2158	A
54	DA	2159	G
54	DA	2160	C
54	DA	2161	C
54	DA	2162	G
54	DA	2163	A
54	DA	2164	C
54	DA	2165	C
54	DA	2167	U
54	DA	2168	G
54	DA	2169	A
54	DA	2170	A
54	DA	2171	A
54	DA	2172	U
54	DA	2173	A
54	DA	2178	C
54	DA	2179	C
54	DA	2181	U
54	DA	2183	A
54	DA	2185	U
54	DA	2186	G
54	DA	2190	G
54	DA	2198	A
54	DA	2203	U
54	DA	2204	G
54	DA	2211	A
54	DA	2225	A
54	DA	2238	G
54	DA	2239	G
54	DA	2268	A
54	DA	2278	A
54	DA	2280	G
54	DA	2283	C
54	DA	2286	G
54	DA	2287	A
54	DA	2305	U
54	DA	2308	G
54	DA	2312	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
54	DA	2322	A
54	DA	2324	U
54	DA	2325	G
54	DA	2327	A
54	DA	2331	G
54	DA	2335	A
54	DA	2345	G
54	DA	2347	C
54	DA	2383	G
54	DA	2385	C
54	DA	2402	U
54	DA	2406	A
54	DA	2407	A
54	DA	2424	C
54	DA	2425	A
54	DA	2435	A
54	DA	2441	U
54	DA	2448	A
54	DA	2465	C
54	DA	2474	U
54	DA	2476	A
54	DA	2484	G
54	DA	2491	U
54	DA	2502	G
54	DA	2505	G
54	DA	2518	A
54	DA	2529	G
54	DA	2535	G
54	DA	2547	A
54	DA	2556	C
54	DA	2566	A
54	DA	2567	G
54	DA	2573	C
54	DA	2585	U
54	DA	2586	U
54	DA	2603	G
54	DA	2609	U
54	DA	2613	U
54	DA	2629	U
54	DA	2630	G
54	DA	2661	G
54	DA	2663	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
54	DA	2689	U
54	DA	2690	U
54	DA	2714	G
54	DA	2716	C
54	DA	2726	A
54	DA	2744	G
54	DA	2748	A
54	DA	2765	A
54	DA	2778	A
54	DA	2791	G
54	DA	2798	U
54	DA	2799	A
54	DA	2818	U
54	DA	2820	A
54	DA	2821	A
54	DA	2825	G
54	DA	2833	U
54	DA	2835	A
54	DA	2836	U
54	DA	2867	G
54	DA	2880	C
54	DA	2883	A
54	DA	2903	U

All (208) RNA pucker outliers are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	AA	5	U
1	AA	30	U
1	AA	70	U
1	AA	88	U
1	AA	89	U
1	AA	209	U
1	AA	305	G
1	AA	367	U
1	AA	413	G
1	AA	422	C
1	AA	429	U
1	AA	576	C
1	AA	653	U
1	AA	702	A
1	AA	733	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	AA	793	U
1	AA	841	C
1	AA	884	U
1	AA	992	U
1	AA	1086	U
1	AA	1094	G
1	AA	1137	C
1	AA	1139	G
1	AA	1140	C
1	AA	1141	C
1	AA	1225	A
1	AA	1281	C
1	AA	1299	A
1	AA	1301	U
1	AA	1397	C
1	AA	1447	A
1	AA	1452	C
1	BA	5	U
1	BA	70	U
1	BA	86	G
1	BA	89	U
1	BA	209	U
1	BA	305	G
1	BA	367	U
1	BA	422	C
1	BA	429	U
1	BA	559	A
1	BA	560	A
1	BA	561	U
1	BA	576	C
1	BA	653	U
1	BA	702	A
1	BA	733	G
1	BA	793	U
1	BA	842	U
1	BA	844	G
1	BA	884	U
1	BA	992	U
1	BA	1008	U
1	BA	1086	U
1	BA	1137	C
1	BA	1139	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	BA	1140	C
1	BA	1141	C
1	BA	1225	A
1	BA	1281	C
1	BA	1299	A
1	BA	1301	U
1	BA	1362	A
1	BA	1363	A
1	BA	1397	C
1	BA	1447	A
1	BA	1452	C
28	CB	89	U
31	CA	33	C
31	CA	83	A
31	CA	138	U
31	CA	141	G
31	CA	177	G
31	CA	196	A
31	CA	199	A
31	CA	221	A
31	CA	271	G
31	CA	278	A
31	CA	310	A
31	CA	371	A
31	CA	403	U
31	CA	404	A
31	CA	411	G
31	CA	503	A
31	CA	527	C
31	CA	555	G
31	CA	620	G
31	CA	764	A
31	CA	775	G
31	CA	784	G
31	CA	827	U
31	CA	846	U
31	CA	973	A
31	CA	984	A
31	CA	1045	C
31	CA	1046	A
31	CA	1061	U
31	CA	1069	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
31	CA	1070	A
31	CA	1088	A
31	CA	1089	A
31	CA	1128	G
31	CA	1132	U
31	CA	1133	A
31	CA	1253	A
31	CA	1286	A
31	CA	1300	G
31	CA	1320	C
31	CA	1329	U
31	CA	1379	U
31	CA	1452	G
31	CA	1490	A
31	CA	1497	U
31	CA	1509	A
31	CA	1535	A
31	CA	1536	C
31	CA	1567	G
31	CA	1607	C
31	CA	1609	A
31	CA	1647	U
31	CA	1870	C
31	CA	1871	A
31	CA	1900	A
31	CA	1929	G
31	CA	1970	A
31	CA	2035	G
31	CA	2095	A
31	CA	2119	A
31	CA	2126	A
31	CA	2146	C
31	CA	2157	G
31	CA	2164	C
31	CA	2172	U
31	CA	2225	A
31	CA	2282	G
31	CA	2324	U
31	CA	2326	C
31	CA	2423	U
31	CA	2425	A
31	CA	2581	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
31	CA	2680	U
31	CA	2681	C
31	CA	2778	A
31	CA	2779	U
31	CA	2820	A
31	CA	2849	U
31	CA	2873	A
54	DA	138	U
54	DA	141	G
54	DA	196	A
54	DA	199	A
54	DA	271	G
54	DA	278	A
54	DA	310	A
54	DA	370	G
54	DA	371	A
54	DA	403	U
54	DA	503	A
54	DA	620	G
54	DA	764	A
54	DA	784	G
54	DA	984	A
54	DA	1061	U
54	DA	1069	A
54	DA	1070	A
54	DA	1087	G
54	DA	1089	A
54	DA	1128	G
54	DA	1133	A
54	DA	1141	U
54	DA	1142	A
54	DA	1171	G
54	DA	1175	A
54	DA	1253	A
54	DA	1286	A
54	DA	1300	G
54	DA	1301	A
54	DA	1320	C
54	DA	1490	A
54	DA	1497	U
54	DA	1508	A
54	DA	1509	A

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Mol	Chain	Res	Type
54	DA	1535	A
54	DA	1607	C
54	DA	1609	A
54	DA	1647	U
54	DA	1870	C
54	DA	1871	A
54	DA	2062	A
54	DA	2097	A
54	DA	2119	A
54	DA	2127	G
54	DA	2146	C
54	DA	2157	G
54	DA	2158	A
54	DA	2164	C
54	DA	2172	U
54	DA	2286	G
54	DA	2311	A
54	DA	2324	U
54	DA	2406	A
54	DA	2423	U
54	DA	2585	U
54	DA	2779	U
54	DA	2798	U
54	DA	2820	A
54	DA	2873	A

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

77 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
31	PSU	CA	1917	31	18,21,22	0.32	0	21,30,33	0.50	0
1	2MG	AA	1207	1	18,26,27	0.91	0	16,38,41	0.60	0
1	2MG	BA	1207	1	18,26,27	0.83	1 (5%)	16,38,41	0.57	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
40	4D4	DN	81[B]	-	9,11,12	1.62	2 (22%)	7,13,15	2.83	2 (28%)
54	3TD	DA	1915	54	19,22,23	0.46	0	23,32,35	0.85	1 (4%)
1	5MC	BA	1407	1	19,22,23	0.48	0	26,32,35	0.47	0
31	6MZ	CA	1618	31	17,25,26	1.08	0	15,36,39	0.92	1 (6%)
31	5MC	CA	1962	31	19,22,23	0.28	0	26,32,35	0.42	0
31	3TD	CA	1915	31	19,22,23	0.48	0	23,32,35	0.83	1 (4%)
54	6MZ	DA	1618	54	17,25,26	0.97	1 (5%)	15,36,39	0.86	0
31	PSU	CA	2604	31	18,21,22	1.81	2 (11%)	21,30,33	1.48	3 (14%)
54	G7M	DA	2069	54	20,26,27	0.93	1 (5%)	16,39,42	1.43	1 (6%)
1	G7M	AA	527	1	20,26,27	0.77	0	16,39,42	1.95	1 (6%)
31	OMG	CA	2251	31	19,26,27	0.83	1 (5%)	21,38,41	0.66	0
40	4D4	DN	81[A]	-	9,11,12	2.22	2 (22%)	7,13,15	2.66	2 (28%)
54	2MA	DA	2503	55,54	17,25,26	0.98	2 (11%)	16,37,40	2.30	1 (6%)
1	MA6	BA	1519	1	19,26,27	0.91	0	18,38,41	1.31	2 (11%)
54	PSU	DA	2457	54	18,21,22	0.52	0	21,30,33	0.48	0
1	2MG	BA	1516	1	18,26,27	0.85	0	16,38,41	0.64	0
31	OMU	CA	2552	31	19,22,23	0.30	0	25,31,34	0.29	0
54	1MG	DA	745	54	19,26,27	1.17	2 (10%)	18,39,42	0.85	1 (5%)
1	MA6	AA	1519	1	19,26,27	0.92	0	18,38,41	1.38	2 (11%)
54	5MC	DA	1962	54	19,22,23	0.63	1 (5%)	26,32,35	0.47	0
54	PSU	DA	1917	54	18,21,22	0.44	0	21,30,33	0.56	0
1	5MC	BA	967	1	19,22,23	0.26	0	26,32,35	0.37	0
31	PSU	CA	2580	31	18,21,22	0.47	0	21,30,33	0.63	0
12	D2T	BL	89	12	8,9,10	1.09	1 (12%)	6,11,13	1.23	0
40	4D4	CN	81	40	9,11,12	2.18	2 (22%)	7,13,15	2.57	2 (28%)
31	2MG	CA	1835	31	18,26,27	1.02	2 (11%)	16,38,41	0.53	0
1	2MG	AA	1516	1	18,26,27	0.89	1 (5%)	16,38,41	0.68	0
54	PSU	DA	2580	54	18,21,22	0.81	1 (5%)	21,30,33	0.76	1 (4%)
54	2MG	DA	1835	54	18,26,27	1.04	2 (11%)	16,38,41	0.59	0
31	PSU	CA	1911	31	18,21,22	0.26	0	21,30,33	0.39	0
31	5MU	CA	1939	31	19,22,23	0.52	0	27,32,35	0.36	0
1	G7M	BA	527	1	20,26,27	0.78	1 (5%)	16,39,42	1.90	1 (6%)
1	5MC	AA	1407	1	19,22,23	0.52	0	26,32,35	0.49	0
12	D2T	AL	89	12	8,9,10	1.43	2 (25%)	6,11,13	1.29	0
54	PSU	DA	955	54	18,21,22	0.54	0	21,30,33	0.66	0
1	4OC	BA	1402	1	20,23,24	0.38	0	25,32,35	0.44	0
31	PSU	CA	955	31	18,21,22	0.34	0	21,30,33	0.55	0
31	PSU	CA	2457	31	18,21,22	0.62	0	21,30,33	0.44	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
31	5MU	CA	747	31	19,22,23	0.31	0	27,32,35	0.31	0
54	2MG	DA	2445	54	18,26,27	1.04	1 (5%)	16,38,41	0.80	0
54	5MU	DA	1939	54	19,22,23	0.63	0	27,32,35	0.48	0
30	MEQ	DD	150[B]	30	8,9,10	1.35	1 (12%)	5,10,12	0.84	0
1	PSU	BA	516	1	18,21,22	0.42	0	21,30,33	0.46	0
54	PSU	DA	2504	54	18,21,22	0.47	0	21,30,33	0.41	0
54	PSU	DA	2605	54	18,21,22	0.62	0	21,30,33	0.67	0
31	PSU	CA	2504	31	18,21,22	0.38	0	21,30,33	0.43	0
1	PSU	AA	516	55,1	18,21,22	0.36	0	21,30,33	0.48	0
54	5MU	DA	747	54	19,22,23	0.39	0	27,32,35	0.39	0
31	PSU	CA	2605	31	18,21,22	0.40	0	21,30,33	0.61	0
31	2MA	CA	2503	31	17,25,26	0.90	0	16,37,40	2.31	1 (6%)
54	PSU	DA	1911	54	18,21,22	0.31	0	21,30,33	0.37	0
1	2MG	BA	966	1	18,26,27	0.85	1 (5%)	16,38,41	0.55	0
54	PSU	DA	2604	54	18,21,22	0.94	1 (5%)	21,30,33	0.67	0
31	PSU	CA	746	55,31	18,21,22	0.58	1 (5%)	21,30,33	0.39	0
30	MEQ	DD	150[A]	30	8,9,10	0.47	0	5,10,12	0.48	0
1	2MG	AA	966	1	18,26,27	0.76	0	16,38,41	0.66	0
31	G7M	CA	2069	31	20,26,27	0.92	1 (5%)	16,39,42	1.49	1 (6%)
54	OMG	DA	2251	54	19,26,27	1.07	2 (10%)	21,38,41	0.64	0
54	6MZ	DA	2030	54	17,25,26	1.26	3 (17%)	15,36,39	1.19	1 (6%)
30	MEQ	CD	150	30	7,8,10	0.44	0	4,9,12	0.41	0
54	OMU	DA	2552	54	19,22,23	0.52	0	25,31,34	0.31	0
1	UR3	BA	1498	1	19,22,23	0.41	0	26,32,35	0.39	0
1	4OC	AA	1402	1	20,23,24	0.34	0	25,32,35	0.42	0
31	1MG	CA	745	31	19,26,27	1.17	2 (10%)	18,39,42	0.88	1 (5%)
31	6MZ	CA	2030	31	17,25,26	0.91	0	15,36,39	1.01	1 (6%)
1	UR3	AA	1498	1	19,22,23	0.69	0	26,32,35	0.46	0
31	OMC	CA	2498	55,31	19,22,23	0.41	0	25,31,34	0.50	0
54	PSU	DA	746	55,54	18,21,22	0.98	2 (11%)	21,30,33	0.34	0
1	MA6	BA	1518	1	19,26,27	0.83	0	18,38,41	1.23	2 (11%)
54	OMC	DA	2498	55,54	19,22,23	0.54	0	25,31,34	0.54	0
1	MA6	AA	1518	1	19,26,27	0.90	0	18,38,41	1.24	2 (11%)
1	5MC	AA	967	1	19,22,23	0.28	0	26,32,35	0.37	0
54	H2U	DA	2449	54	18,21,22	0.58	0	19,30,33	0.53	0
31	2MG	CA	2445	31	18,26,27	0.93	2 (11%)	16,38,41	0.69	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
31	PSU	CA	1917	31	-	0/7/25/26	0/2/2/2
1	2MG	AA	1207	1	-	0/5/27/28	0/3/3/3
1	2MG	BA	1207	1	-	0/5/27/28	0/3/3/3
40	4D4	DN	81[B]	-	-	6/11/12/14	-
54	3TD	DA	1915	54	-	0/7/25/26	0/2/2/2
1	5MC	BA	1407	1	-	0/7/25/26	0/2/2/2
31	6MZ	CA	1618	31	-	1/5/27/28	0/3/3/3
31	5MC	CA	1962	31	-	0/7/25/26	0/2/2/2
31	3TD	CA	1915	31	-	0/7/25/26	0/2/2/2
54	6MZ	DA	1618	54	-	0/5/27/28	0/3/3/3
31	PSU	CA	2604	31	-	0/7/25/26	0/2/2/2
54	G7M	DA	2069	54	-	0/3/25/26	0/3/3/3
1	G7M	AA	527	1	-	2/3/25/26	0/3/3/3
31	OMG	CA	2251	31	-	0/5/27/28	0/3/3/3
40	4D4	DN	81[A]	-	-	2/11/12/14	-
54	2MA	DA	2503	55,54	-	0/3/25/26	0/3/3/3
1	MA6	BA	1519	1	-	3/7/29/30	0/3/3/3
54	PSU	DA	2457	54	-	0/7/25/26	0/2/2/2
1	2MG	BA	1516	1	-	0/5/27/28	0/3/3/3
31	OMU	CA	2552	31	-	0/9/27/28	0/2/2/2
54	1MG	DA	745	54	-	0/3/25/26	0/3/3/3
1	MA6	AA	1519	1	-	3/7/29/30	0/3/3/3
54	5MC	DA	1962	54	-	2/7/25/26	0/2/2/2
54	PSU	DA	1917	54	-	0/7/25/26	0/2/2/2
1	5MC	BA	967	1	-	0/7/25/26	0/2/2/2
31	PSU	CA	2580	31	-	0/7/25/26	0/2/2/2
12	D2T	BL	89	12	-	4/7/12/14	-
40	4D4	CN	81	40	-	2/11/12/14	-
31	2MG	CA	1835	31	-	2/5/27/28	0/3/3/3
1	2MG	AA	1516	1	-	0/5/27/28	0/3/3/3
54	PSU	DA	2580	54	-	0/7/25/26	0/2/2/2
54	2MG	DA	1835	54	-	2/5/27/28	0/3/3/3
31	PSU	CA	1911	31	-	0/7/25/26	0/2/2/2
31	5MU	CA	1939	31	-	0/7/25/26	0/2/2/2
1	G7M	BA	527	1	-	2/3/25/26	0/3/3/3
1	5MC	AA	1407	1	-	0/7/25/26	0/2/2/2
12	D2T	AL	89	12	-	1/7/12/14	-
54	PSU	DA	955	54	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	4OC	BA	1402	1	-	1/9/29/30	0/2/2/2
31	PSU	CA	955	31	-	0/7/25/26	0/2/2/2
31	PSU	CA	2457	31	-	0/7/25/26	0/2/2/2
31	5MU	CA	747	31	-	1/7/25/26	0/2/2/2
54	2MG	DA	2445	54	-	2/5/27/28	0/3/3/3
54	5MU	DA	1939	54	-	0/7/25/26	0/2/2/2
30	MEQ	DD	150[B]	30	-	3/8/9/11	-
1	PSU	BA	516	1	-	0/7/25/26	0/2/2/2
54	PSU	DA	2504	54	-	0/7/25/26	0/2/2/2
54	PSU	DA	2605	54	-	0/7/25/26	0/2/2/2
31	PSU	CA	2504	31	-	0/7/25/26	0/2/2/2
1	PSU	AA	516	55,1	-	0/7/25/26	0/2/2/2
54	5MU	DA	747	54	-	2/7/25/26	0/2/2/2
31	PSU	CA	2605	31	-	0/7/25/26	0/2/2/2
31	2MA	CA	2503	31	-	0/3/25/26	0/3/3/3
54	PSU	DA	1911	54	-	0/7/25/26	0/2/2/2
1	2MG	BA	966	1	-	0/5/27/28	0/3/3/3
54	PSU	DA	2604	54	-	0/7/25/26	0/2/2/2
31	PSU	CA	746	55,31	-	2/7/25/26	0/2/2/2
30	MEQ	DD	150[A]	30	-	4/8/9/11	-
1	2MG	AA	966	1	-	0/5/27/28	0/3/3/3
31	G7M	CA	2069	31	-	0/3/25/26	0/3/3/3
54	OMG	DA	2251	54	-	0/5/27/28	0/3/3/3
54	6MZ	DA	2030	54	-	1/5/27/28	0/3/3/3
30	MEQ	CD	150	30	-	3/6/7/11	-
54	OMU	DA	2552	54	-	0/9/27/28	0/2/2/2
1	UR3	BA	1498	1	-	0/7/25/26	0/2/2/2
1	4OC	AA	1402	1	-	0/9/29/30	0/2/2/2
31	1MG	CA	745	31	-	0/3/25/26	0/3/3/3
31	6MZ	CA	2030	31	-	1/5/27/28	0/3/3/3
1	UR3	AA	1498	1	-	0/7/25/26	0/2/2/2
31	OMC	CA	2498	55,31	-	0/9/27/28	0/2/2/2
54	PSU	DA	746	55,54	-	2/7/25/26	0/2/2/2
1	MA6	BA	1518	1	-	1/7/29/30	0/3/3/3
54	OMC	DA	2498	55,54	-	0/9/27/28	0/2/2/2
1	MA6	AA	1518	1	-	1/7/29/30	0/3/3/3
1	5MC	AA	967	1	-	0/7/25/26	0/2/2/2
54	H2U	DA	2449	54	-	1/7/38/39	0/2/2/2
31	2MG	CA	2445	31	-	0/5/27/28	0/3/3/3

All (44) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
31	CA	2604	PSU	C2-N1	6.14	1.44	1.36
40	CN	81	4D4	CZ-NE	5.94	1.44	1.33
40	DN	81[A]	4D4	CZ-NE	5.93	1.44	1.33
40	DN	81[B]	4D4	CZ-NE	4.08	1.41	1.33
31	CA	745	1MG	C2-N1	3.78	1.44	1.37
30	DD	150[B]	MEQ	CB-CA	3.62	1.59	1.53
54	DA	2069	G7M	C1'-N9	-3.31	1.41	1.50
54	DA	2251	OMG	C5-C6	-3.22	1.41	1.47
31	CA	2069	G7M	C1'-N9	-3.21	1.41	1.50
54	DA	746	PSU	O4'-C1'	-3.10	1.39	1.43
31	CA	2604	PSU	C6-C5	2.82	1.38	1.35
12	AL	89	D2T	CB-SB	2.81	1.85	1.82
40	DN	81[A]	4D4	CZ-NH1	2.70	1.44	1.34
54	DA	2030	6MZ	O4'-C1'	-2.69	1.37	1.40
54	DA	745	1MG	C2-N1	2.59	1.42	1.37
54	DA	745	1MG	O3'-C3'	-2.57	1.36	1.43
12	BL	89	D2T	CB-CG	2.50	1.56	1.52
40	CN	81	4D4	CZ-NH1	2.39	1.43	1.34
54	DA	2604	PSU	O3'-C3'	-2.38	1.37	1.43
54	DA	746	PSU	C2'-C1'	-2.35	1.50	1.53
54	DA	1835	2MG	C5-C4	-2.34	1.37	1.43
40	DN	81[B]	4D4	CZ-NH1	2.30	1.42	1.34
54	DA	2030	6MZ	C6-C5	-2.25	1.41	1.44
54	DA	1962	5MC	O5'-C5'	-2.24	1.37	1.44
31	CA	2445	2MG	O4'-C1'	2.24	1.43	1.40
1	AA	1516	2MG	C5-C4	-2.20	1.37	1.43
54	DA	2580	PSU	O4'-C1'	-2.20	1.40	1.43
31	CA	1835	2MG	C8-N7	-2.17	1.31	1.34
54	DA	1835	2MG	C8-N7	-2.17	1.31	1.34
31	CA	2251	OMG	O4'-C1'	2.16	1.43	1.40
54	DA	2030	6MZ	C1'-N9	-2.14	1.44	1.49
54	DA	2445	2MG	O3'-C3'	-2.13	1.37	1.43
54	DA	2503	2MA	C8-N7	-2.13	1.31	1.34
54	DA	2251	OMG	C8-N7	-2.11	1.31	1.34
54	DA	2503	2MA	C5-C4	-2.11	1.37	1.43
31	CA	745	1MG	C8-N7	-2.09	1.31	1.34
1	BA	1207	2MG	C8-N7	-2.05	1.31	1.34
54	DA	1618	6MZ	C8-N7	-2.05	1.30	1.34
31	CA	2445	2MG	C8-N7	-2.05	1.31	1.34
12	AL	89	D2T	CB-CG	2.05	1.55	1.52
1	BA	527	G7M	C1'-N9	-2.03	1.44	1.50
31	CA	1835	2MG	C5-C4	-2.02	1.38	1.43
1	BA	966	2MG	C8-N7	-2.02	1.31	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
31	CA	746	PSU	O4'-C1'	-2.01	1.41	1.43

All (31) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
31	CA	2503	2MA	C4-N3-C2	-8.99	116.40	123.30
54	DA	2503	2MA	C4-N3-C2	-8.97	116.42	123.30
1	AA	527	G7M	O4'-C1'-N9	7.26	118.38	108.75
1	BA	527	G7M	O4'-C1'-N9	7.23	118.33	108.75
40	DN	81[B]	4D4	NE-CZ-NH2	6.09	131.13	120.67
40	DN	81[A]	4D4	NE-CZ-NH2	5.90	130.81	120.67
40	CN	81	4D4	NE-CZ-NH2	5.75	130.54	120.67
54	DA	2069	G7M	O4'-C1'-N9	5.24	115.70	108.75
31	CA	2069	G7M	O4'-C1'-N9	5.23	115.69	108.75
31	CA	2604	PSU	C6-C5-C4	4.24	121.04	118.17
1	AA	1519	MA6	N1-C6-N6	-4.19	111.99	116.83
40	DN	81[B]	4D4	NH1-CZ-NE	-4.07	110.01	119.27
1	BA	1519	MA6	N1-C6-N6	-3.85	112.39	116.83
1	AA	1518	MA6	N1-C6-N6	-3.48	112.81	116.83
1	BA	1518	MA6	N1-C6-N6	-3.48	112.81	116.83
31	CA	2604	PSU	C6-N1-C2	-3.47	119.47	122.69
54	DA	1915	3TD	C1'-C5-C4	3.43	122.81	117.61
31	CA	1915	3TD	C1'-C5-C4	3.34	122.68	117.61
40	DN	81[A]	4D4	NH1-CZ-NE	-3.34	111.68	119.27
31	CA	745	1MG	N2-C2-N1	-3.14	116.26	118.79
40	CN	81	4D4	NH1-CZ-NE	-2.90	112.67	119.27
54	DA	745	1MG	N2-C2-N1	-2.90	116.46	118.79
54	DA	2030	6MZ	C2-N1-C6	2.76	118.74	116.60
31	CA	1618	6MZ	C2-N1-C6	2.50	118.53	116.60
31	CA	2604	PSU	O2-C2-N1	2.45	125.31	122.79
1	AA	1518	MA6	C2-N1-C6	-2.32	114.56	116.84
1	BA	1518	MA6	C2-N1-C6	-2.30	114.58	116.84
1	AA	1519	MA6	C2-N1-C6	-2.28	114.60	116.84
1	BA	1519	MA6	C2-N1-C6	-2.16	114.72	116.84
31	CA	2030	6MZ	C2-N1-C6	2.11	118.24	116.60
54	DA	2580	PSU	O4'-C1'-C2'	2.10	108.05	105.15

There are no chirality outliers.

All (57) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	AA	527	G7M	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
1	AA	1519	MA6	C5-C6-N6-C9
1	BA	527	G7M	O4'-C4'-C5'-O5'
1	BA	1519	MA6	C5-C6-N6-C9
40	DN	81[B]	4D4	C-CA-CB-OB
40	DN	81[B]	4D4	C-CA-CB-CG
40	DN	81[B]	4D4	N-CA-CB-CG
40	DN	81[B]	4D4	CA-CB-CG-CD
30	CD	150	MEQ	C-CA-CB-CG
30	DD	150[A]	MEQ	C-CA-CB-CG
30	DD	150[B]	MEQ	N-CA-CB-CG
30	DD	150[B]	MEQ	C-CA-CB-CG
1	AA	527	G7M	C3'-C4'-C5'-O5'
1	BA	527	G7M	C3'-C4'-C5'-O5'
1	AA	1519	MA6	O4'-C4'-C5'-O5'
1	BA	1519	MA6	O4'-C4'-C5'-O5'
30	CD	150	MEQ	CA-CB-CG-CD
40	DN	81[B]	4D4	OB-CB-CG-CD
30	DD	150[A]	MEQ	OE1-CD-CG-CB
30	DD	150[B]	MEQ	CA-CB-CG-CD
30	DD	150[A]	MEQ	NE2-CD-CG-CB
54	DA	747	5MU	C3'-C4'-C5'-O5'
31	CA	747	5MU	C3'-C4'-C5'-O5'
1	AA	1519	MA6	C3'-C4'-C5'-O5'
1	BA	1519	MA6	C3'-C4'-C5'-O5'
54	DA	2445	2MG	C3'-C4'-C5'-O5'
12	AL	89	D2T	CG-CB-SB-CB1
12	BL	89	D2T	CG-CB-SB-CB1
30	CD	150	MEQ	N-CA-CB-CG
30	DD	150[A]	MEQ	N-CA-CB-CG
1	AA	1518	MA6	C5-C6-N6-C9
1	BA	1518	MA6	C5-C6-N6-C9
31	CA	1835	2MG	C3'-C4'-C5'-O5'
40	DN	81[A]	4D4	CG-CD-NE-CZ
54	DA	1835	2MG	C3'-C4'-C5'-O5'
54	DA	2030	6MZ	O4'-C4'-C5'-O5'
12	BL	89	D2T	SB-CB-CG-OD2
54	DA	2449	H2U	C4'-C5'-O5'-P
31	CA	1835	2MG	O4'-C4'-C5'-O5'
31	CA	746	PSU	O4'-C1'-C5-C6
54	DA	746	PSU	O4'-C1'-C5-C6
12	BL	89	D2T	CA-CB-CG-OD1
12	BL	89	D2T	CA-CB-CG-OD2

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Mol	Chain	Res	Type	Atoms
31	CA	746	PSU	C2'-C1'-C5-C6
40	DN	81[B]	4D4	N-CA-CB-OB
54	DA	746	PSU	C2'-C1'-C5-C6
54	DA	2445	2MG	O4'-C4'-C5'-O5'
54	DA	1962	5MC	O4'-C1'-N1-C6
54	DA	1962	5MC	C2'-C1'-N1-C6
40	CN	81	4D4	O-C-CA-CB
40	DN	81[A]	4D4	O-C-CA-CB
1	BA	1402	4OC	O4'-C4'-C5'-O5'
54	DA	1835	2MG	O4'-C4'-C5'-O5'
31	CA	1618	6MZ	C4'-C5'-O5'-P
40	CN	81	4D4	CG-CD-NE-CZ
31	CA	2030	6MZ	O4'-C4'-C5'-O5'
54	DA	747	5MU	O4'-C4'-C5'-O5'

There are no ring outliers.

18 monomers are involved in 22 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
31	CA	1915	3TD	1	0
1	BA	1519	MA6	2	0
1	AA	1519	MA6	2	0
31	CA	2580	PSU	1	0
1	BA	1402	4OC	1	0
31	CA	747	5MU	1	0
30	DD	150[B]	MEQ	2	0
54	DA	747	5MU	1	0
31	CA	2503	2MA	1	0
30	DD	150[A]	MEQ	2	0
54	DA	2251	OMG	1	0
54	DA	2030	6MZ	1	0
1	AA	1402	4OC	1	0
31	CA	2030	6MZ	3	0
1	BA	1518	MA6	2	0
54	DA	2498	OMC	1	0
1	AA	1518	MA6	2	0
1	AA	967	5MC	1	0

## 5.5 Carbohydrates

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry

Of 559 ligands modelled in this entry, 475 are monoatomic - leaving 84 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
57	MPD	DS	203	-	7,7,7	0.23	0	9,10,10	0.39	0
58	PUT	AA	1672	-	5,5,5	0.25	0	4,4,4	0.30	0
62	EDO	DA	3003	-	3,3,3	0.56	0	2,2,2	0.26	0
56	PG4	AA	1670	-	12,12,12	0.33	0	11,11,11	0.41	0
56	PG4	DA	3216	-	12,12,12	0.18	0	11,11,11	0.23	0
66	ACY	DA	3191	-	3,3,3	0.96	0	3,3,3	0.99	0
68	TRS	DA	3220	-	7,7,7	0.34	0	9,9,9	0.37	0
66	ACY	DA	3201	-	3,3,3	0.66	0	3,3,3	1.03	0
61	PEG	DA	3218	-	6,6,6	0.25	0	5,5,5	0.09	0
58	PUT	DA	3184	-	5,5,5	0.44	0	4,4,4	0.29	0
57	MPD	DA	3204	-	7,7,7	0.76	0	9,10,10	0.67	0
59	TAC	AA	1681	55	34,35,35	0.56	0	43,58,58	0.94	3 (6%)
58	PUT	AA	1675	-	5,5,5	0.18	0	4,4,4	0.10	0
61	PEG	DP	201	-	6,6,6	0.30	0	5,5,5	0.16	0
61	PEG	AL	201	-	6,6,6	0.32	0	5,5,5	0.17	0
57	MPD	DT	202	-	7,7,7	0.73	0	9,10,10	0.38	0
58	PUT	DA	3213	-	5,5,5	0.20	0	4,4,4	0.25	0
57	MPD	DN	201	-	7,7,7	0.88	0	9,10,10	0.54	0
57	MPD	AA	1676	-	7,7,7	0.71	0	9,10,10	0.76	0
64	SPD	DA	3187	-	9,9,9	0.19	0	8,8,8	0.33	0
61	PEG	DA	3200	-	6,6,6	0.39	0	5,5,5	0.22	0
63	PGE	DU	101	-	9,9,9	0.21	0	8,8,8	0.13	0
61	PEG	DQ	201	-	6,6,6	0.18	0	5,5,5	0.17	0
59	TAC	BA	1644	55	34,35,35	0.58	0	43,58,58	0.92	2 (4%)
56	PG4	DQ	202	-	12,12,12	0.21	0	11,11,11	0.16	0
65	IPE	DA	3185	-	15,15,15	0.20	0	14,14,14	0.36	0
58	PUT	DA	3221	-	5,5,5	0.21	0	4,4,4	0.17	0
57	MPD	DE	301	-	7,7,7	0.73	0	9,10,10	0.56	0
56	PG4	BA	1642	-	12,12,12	0.23	0	11,11,11	0.17	0
62	EDO	DA	3197	-	3,3,3	0.70	0	2,2,2	0.13	0
58	PUT	DA	3219	-	5,5,5	0.20	0	4,4,4	0.12	0
58	PUT	AA	1674	-	5,5,5	0.16	0	4,4,4	0.12	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
63	PGE	DA	3225	-	9,9,9	0.17	0	8,8,8	0.15	0
59	TAC	AA	1680	55	34,35,35	0.53	0	43,58,58	1.12	2 (4%)
62	EDO	DA	3198	-	3,3,3	0.54	0	2,2,2	0.41	0
63	PGE	DA	3203	-	9,9,9	0.31	0	8,8,8	0.27	0
63	PGE	DA	3217	-	9,9,9	0.19	0	8,8,8	0.25	0
57	MPD	DA	3190	-	7,7,7	0.33	0	9,10,10	0.44	0
57	MPD	DK	201	-	7,7,7	0.48	0	9,10,10	0.25	0
58	PUT	DA	3189	-	5,5,5	0.25	0	4,4,4	0.39	0
62	EDO	DA	3209	-	3,3,3	0.59	0	2,2,2	0.31	0
57	MPD	AA	1671	-	7,7,7	0.60	0	9,10,10	0.56	0
58	PUT	DA	3222	-	5,5,5	0.53	0	4,4,4	0.74	0
63	PGE	DA	3001	-	9,9,9	0.32	0	8,8,8	0.32	0
61	PEG	DA	3199	-	6,6,6	0.23	0	5,5,5	0.16	0
58	PUT	DM	201	-	5,5,5	0.14	0	4,4,4	0.06	0
64	SPD	DA	3183	-	9,9,9	0.10	0	8,8,8	0.14	0
57	MPD	DA	3207	-	7,7,7	0.75	0	9,10,10	0.51	0
61	PEG	DL	201	-	6,6,6	0.10	0	5,5,5	0.14	0
64	SPD	DA	3206	-	9,9,9	0.25	0	8,8,8	0.26	0
62	EDO	DB	212	-	3,3,3	0.71	0	2,2,2	0.13	0
57	MPD	DT	201	-	7,7,7	0.48	0	9,10,10	0.25	0
61	PEG	D3	101	-	6,6,6	0.29	0	5,5,5	0.29	0
62	EDO	D1	101	-	3,3,3	0.67	0	2,2,2	0.08	0
62	EDO	DB	211	-	3,3,3	0.60	0	2,2,2	0.22	0
63	PGE	DA	3214	-	9,9,9	0.30	0	8,8,8	0.41	0
57	MPD	DE	302	-	7,7,7	0.85	0	9,10,10	0.59	0
59	TAC	BA	1643	55	34,35,35	0.47	0	43,58,58	0.99	3 (6%)
62	EDO	DA	3208	-	3,3,3	0.59	0	2,2,2	0.29	0
58	PUT	DA	3212	-	5,5,5	0.25	0	4,4,4	0.07	0
62	EDO	DA	3215	-	3,3,3	0.71	0	2,2,2	0.17	0
56	PG4	DR	202	-	12,12,12	0.29	0	11,11,11	0.38	0
58	PUT	DA	3188	-	5,5,5	0.24	0	4,4,4	0.12	0
56	PG4	DA	3193	-	12,12,12	0.41	0	11,11,11	0.34	0
61	PEG	D1	103	-	6,6,6	0.38	0	5,5,5	0.19	0
62	EDO	DA	3002	-	3,3,3	0.56	0	2,2,2	0.39	0
64	SPD	DA	3224	-	9,9,9	0.24	0	8,8,8	0.48	0
66	ACY	DA	3196	-	3,3,3	2.46	1 (33%)	3,3,3	2.20	2 (66%)
58	PUT	DA	3223	-	5,5,5	0.24	0	4,4,4	0.16	0
56	PG4	DS	202	-	12,12,12	0.41	0	11,11,11	0.34	0
65	1PE	DA	3202	-	15,15,15	0.36	0	14,14,14	0.36	0
57	MPD	DA	3192	-	7,7,7	0.38	0	9,10,10	0.70	0
58	PUT	AA	1673	-	5,5,5	0.13	0	4,4,4	0.09	0
63	PGE	DA	3186	-	9,9,9	0.38	0	8,8,8	0.44	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
62	EDO	DB	201	-	3,3,3	0.62	0	2,2,2	0.20	0
63	PGE	D1	102	-	9,9,9	0.24	0	8,8,8	0.22	0
58	PUT	DA	3205	-	5,5,5	0.20	0	4,4,4	0.21	0
62	EDO	DA	3194	-	3,3,3	0.88	0	2,2,2	0.12	0
57	MPD	DA	3210	-	7,7,7	0.72	0	9,10,10	0.32	0
58	PUT	DA	3195	-	5,5,5	0.39	0	4,4,4	0.65	0
63	PGE	DS	201	-	9,9,9	0.40	0	8,8,8	0.31	0
61	PEG	DA	3226	-	6,6,6	0.45	0	5,5,5	0.19	0
61	PEG	DA	3227	-	6,6,6	0.27	0	5,5,5	0.17	0
67	GUN	DA	3211	-	7,12,12	0.40	0	8,17,17	0.69	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
57	MPD	DS	203	-	-	0/5/5/5	-
58	PUT	AA	1672	-	-	0/3/3/3	-
62	EDO	DA	3003	-	-	1/1/1/1	-
56	PG4	AA	1670	-	-	4/10/10/10	-
56	PG4	DA	3216	-	-	4/10/10/10	-
68	TRS	DA	3220	-	-	0/9/9/9	-
61	PEG	DA	3218	-	-	2/4/4/4	-
58	PUT	DA	3184	-	-	0/3/3/3	-
57	MPD	DA	3204	-	-	4/5/5/5	-
59	TAC	AA	1681	55	-	6/8/74/74	0/4/4/4
58	PUT	AA	1675	-	-	1/3/3/3	-
61	PEG	DP	201	-	-	3/4/4/4	-
61	PEG	AL	201	-	-	2/4/4/4	-
57	MPD	DT	202	-	-	3/5/5/5	-
58	PUT	DA	3213	-	-	0/3/3/3	-
57	MPD	DN	201	-	-	3/5/5/5	-
57	MPD	AA	1676	-	-	2/5/5/5	-
64	SPD	DA	3187	-	-	2/7/7/7	-
61	PEG	DA	3200	-	-	2/4/4/4	-
63	PGE	DU	101	-	-	3/7/7/7	-
61	PEG	DQ	201	-	-	1/4/4/4	-
59	TAC	BA	1644	55	-	6/8/74/74	0/4/4/4

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
56	PG4	DQ	202	-	-	3/10/10/10	-
65	1PE	DA	3185	-	-	5/13/13/13	-
58	PUT	DA	3221	-	-	0/3/3/3	-
57	MPD	DE	301	-	-	3/5/5/5	-
56	PG4	BA	1642	-	-	0/10/10/10	-
62	EDO	DA	3197	-	-	1/1/1/1	-
58	PUT	DA	3219	-	-	0/3/3/3	-
58	PUT	AA	1674	-	-	0/3/3/3	-
63	PGE	DA	3225	-	-	5/7/7/7	-
59	TAC	AA	1680	55	-	1/8/74/74	0/4/4/4
62	EDO	DA	3198	-	-	0/1/1/1	-
63	PGE	DA	3203	-	-	4/7/7/7	-
63	PGE	DA	3217	-	-	2/7/7/7	-
57	MPD	DA	3190	-	-	1/5/5/5	-
57	MPD	DK	201	-	-	3/5/5/5	-
58	PUT	DA	3189	-	-	0/3/3/3	-
62	EDO	DA	3209	-	-	0/1/1/1	-
57	MPD	AA	1671	-	-	1/5/5/5	-
58	PUT	DA	3222	-	-	0/3/3/3	-
63	PGE	DA	3001	-	-	4/7/7/7	-
61	PEG	DA	3199	-	-	1/4/4/4	-
58	PUT	DM	201	-	-	0/3/3/3	-
64	SPD	DA	3183	-	-	1/7/7/7	-
57	MPD	DA	3207	-	-	3/5/5/5	-
61	PEG	DL	201	-	-	1/4/4/4	-
64	SPD	DA	3206	-	-	2/7/7/7	-
62	EDO	DB	212	-	-	1/1/1/1	-
57	MPD	DT	201	-	-	3/5/5/5	-
61	PEG	D3	101	-	-	2/4/4/4	-
62	EDO	D1	101	-	-	0/1/1/1	-
62	EDO	DB	211	-	-	0/1/1/1	-
63	PGE	DA	3214	-	-	3/7/7/7	-
57	MPD	DE	302	-	-	2/5/5/5	-
59	TAC	BA	1643	55	-	8/8/74/74	0/4/4/4
62	EDO	DA	3208	-	-	1/1/1/1	-
58	PUT	DA	3212	-	-	1/3/3/3	-
62	EDO	DA	3215	-	-	0/1/1/1	-
56	PG4	DR	202	-	-	5/10/10/10	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
58	PUT	DA	3188	-	-	0/3/3/3	-
56	PG4	DA	3193	-	-	7/10/10/10	-
61	PEG	D1	103	-	-	1/4/4/4	-
62	EDO	DA	3002	-	-	1/1/1/1	-
64	SPD	DA	3224	-	-	3/7/7/7	-
58	PUT	DA	3223	-	-	1/3/3/3	-
56	PG4	DS	202	-	-	4/10/10/10	-
65	1PE	DA	3202	-	-	7/13/13/13	-
57	MPD	DA	3192	-	-	2/5/5/5	-
58	PUT	AA	1673	-	-	0/3/3/3	-
63	PGE	DA	3186	-	-	2/7/7/7	-
62	EDO	DB	201	-	-	0/1/1/1	-
63	PGE	D1	102	-	-	5/7/7/7	-
58	PUT	DA	3205	-	-	0/3/3/3	-
62	EDO	DA	3194	-	-	0/1/1/1	-
57	MPD	DA	3210	-	-	0/5/5/5	-
58	PUT	DA	3195	-	-	0/3/3/3	-
63	PGE	DS	201	-	-	2/7/7/7	-
61	PEG	DA	3226	-	-	3/4/4/4	-
61	PEG	DA	3227	-	-	0/4/4/4	-
67	GUN	DA	3211	-	-	-	0/2/2/2

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
66	DA	3196	ACY	O-C	4.09	1.40	1.22

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
59	AA	1680	TAC	C5-C41-C4	-5.44	105.87	113.73
59	BA	1643	TAC	C5-C41-C4	-3.96	108.01	113.73
59	AA	1681	TAC	C5-C41-C4	-3.29	108.98	113.73
59	BA	1644	TAC	O3-C3-C2	-3.13	117.69	122.93
59	BA	1644	TAC	C5-C41-C4	-2.96	109.46	113.73
66	DA	3196	ACY	OXT-C-CH3	2.80	126.81	115.05
59	AA	1681	TAC	O3-C3-C2	-2.76	118.32	122.93
66	DA	3196	ACY	O-C-CH3	-2.57	112.00	122.53
59	BA	1643	TAC	O3-C3-C2	-2.25	119.16	122.93
59	AA	1681	TAC	C42-N4-C4	2.22	119.17	114.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
59	AA	1680	TAC	O3-C3-C2	-2.16	119.32	122.93
59	BA	1643	TAC	C11-C1B-C12	2.10	120.46	118.80

There are no chirality outliers.

All (154) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
57	AA	1676	MPD	C2-C3-C4-C5
59	AA	1681	TAC	C1-C2-C21-O21
59	AA	1681	TAC	C3-C2-C21-O21
59	AA	1681	TAC	C3-C2-C21-N21
59	AA	1681	TAC	C41-C4-N4-C42
59	BA	1643	TAC	C1-C2-C21-O21
59	BA	1643	TAC	C1-C2-C21-N21
59	BA	1643	TAC	C3-C4-N4-C42
59	BA	1643	TAC	C3-C4-N4-C43
59	BA	1643	TAC	C41-C4-N4-C42
59	BA	1644	TAC	C1-C2-C21-O21
59	BA	1644	TAC	C1-C2-C21-N21
59	BA	1644	TAC	C3-C4-N4-C43
59	BA	1644	TAC	C41-C4-N4-C42
65	DA	3202	1PE	OH4-C13-C23-OH3
65	DA	3202	1PE	OH5-C14-C24-OH4
56	DR	202	PG4	O2-C3-C4-O3
63	DU	101	PGE	O3-C5-C6-O4
63	DA	3186	PGE	O3-C5-C6-O4
63	DA	3203	PGE	O3-C5-C6-O4
63	DU	101	PGE	O1-C1-C2-O2
63	DA	3001	PGE	O3-C5-C6-O4
63	DA	3203	PGE	O2-C3-C4-O3
56	DQ	202	PG4	O1-C1-C2-O2
56	DS	202	PG4	O1-C1-C2-O2
63	DA	3214	PGE	O3-C5-C6-O4
64	DA	3224	SPD	C4-C5-N6-C7
63	DA	3186	PGE	O1-C1-C2-O2
64	DA	3206	SPD	C8-C7-N6-C5
64	DA	3183	SPD	C2-C3-C4-C5
56	DS	202	PG4	O4-C7-C8-O5
61	D1	103	PEG	O2-C3-C4-O4
61	DA	3226	PEG	O1-C1-C2-O2
65	DA	3202	1PE	OH2-C12-C22-OH3
63	DA	3225	PGE	O2-C3-C4-O3

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Mol	Chain	Res	Type	Atoms
62	DA	3197	EDO	O1-C1-C2-O2
63	DA	3225	PGE	O3-C5-C6-O4
58	AA	1675	PUT	C1-C2-C3-C4
58	DA	3223	PUT	C1-C2-C3-C4
56	DA	3193	PG4	O3-C5-C6-O4
56	DQ	202	PG4	O2-C3-C4-O3
64	DA	3187	SPD	C2-C3-C4-C5
61	DP	201	PEG	O1-C1-C2-O2
61	DA	3200	PEG	C1-C2-O2-C3
65	DA	3185	1PE	C24-C14-OH5-C25
61	DP	201	PEG	C4-C3-O2-C2
56	DA	3216	PG4	C3-C4-O3-C5
56	DR	202	PG4	C4-C3-O2-C2
63	DA	3203	PGE	C3-C4-O3-C5
56	DA	3216	PG4	C1-C2-O2-C3
61	DA	3226	PEG	C4-C3-O2-C2
65	DA	3202	1PE	C12-C22-OH3-C23
61	DA	3199	PEG	C4-C3-O2-C2
56	DA	3193	PG4	C6-C5-O3-C4
56	DS	202	PG4	C5-C6-O4-C7
56	DA	3193	PG4	C4-C3-O2-C2
63	DA	3203	PGE	C4-C3-O2-C2
63	D1	102	PGE	C4-C3-O2-C2
56	DA	3193	PG4	O1-C1-C2-O2
65	DA	3185	1PE	C12-C22-OH3-C23
64	DA	3206	SPD	C4-C5-N6-C7
61	DA	3218	PEG	C1-C2-O2-C3
61	DA	3226	PEG	C1-C2-O2-C3
63	DA	3001	PGE	C3-C4-O3-C5
65	DA	3185	1PE	C13-C23-OH3-C22
61	D3	101	PEG	C1-C2-O2-C3
61	DA	3200	PEG	C4-C3-O2-C2
63	DA	3225	PGE	C1-C2-O2-C3
63	D1	102	PGE	C3-C4-O3-C5
57	DN	201	MPD	O2-C2-C3-C4
57	DT	201	MPD	O2-C2-C3-C4
57	DA	3204	MPD	O2-C2-C3-C4
56	DR	202	PG4	C6-C5-O3-C4
64	DA	3224	SPD	C8-C7-N6-C5
57	DE	302	MPD	C2-C3-C4-O4
57	DA	3192	MPD	C2-C3-C4-O4
63	DU	101	PGE	C6-C5-O3-C4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>Atoms</b>
63	DA	3214	PGE	C4-C3-O2-C2
63	D1	102	PGE	O1-C1-C2-O2
65	DA	3202	1PE	OH7-C16-C26-OH6
57	DT	201	MPD	C1-C2-C3-C4
57	DT	201	MPD	CM-C2-C3-C4
57	DA	3207	MPD	C1-C2-C3-C4
59	AA	1680	TAC	C3-C4-N4-C43
59	AA	1681	TAC	C3-C4-N4-C43
59	BA	1643	TAC	C41-C4-N4-C43
59	BA	1644	TAC	C3-C2-C21-N21
63	DA	3217	PGE	C1-C2-O2-C3
59	BA	1644	TAC	C3-C2-C21-O21
56	AA	1670	PG4	O1-C1-C2-O2
56	AA	1670	PG4	C4-C3-O2-C2
57	DE	301	MPD	C2-C3-C4-C5
57	DN	201	MPD	C2-C3-C4-C5
57	DT	202	MPD	C2-C3-C4-C5
57	DA	3190	MPD	C2-C3-C4-C5
57	DA	3204	MPD	C2-C3-C4-C5
57	DA	3207	MPD	C2-C3-C4-C5
59	AA	1681	TAC	C1-C2-C21-N21
61	AL	201	PEG	C4-C3-O2-C2
65	DA	3185	1PE	C16-C26-OH6-C15
65	DA	3202	1PE	C23-C13-OH4-C24
61	AL	201	PEG	C1-C2-O2-C3
63	DS	201	PGE	C6-C5-O3-C4
58	DA	3212	PUT	C1-C2-C3-C4
56	DS	202	PG4	C1-C2-O2-C3
64	DA	3224	SPD	C7-C8-C9-N10
63	DA	3001	PGE	C4-C3-O2-C2
63	DA	3217	PGE	C4-C3-O2-C2
63	DA	3001	PGE	C1-C2-O2-C3
56	DA	3216	PG4	O1-C1-C2-O2
63	D1	102	PGE	O2-C3-C4-O3
61	DQ	201	PEG	C1-C2-O2-C3
61	DP	201	PEG	C1-C2-O2-C3
64	DA	3187	SPD	N6-C7-C8-C9
62	DA	3002	EDO	O1-C1-C2-O2
61	DL	201	PEG	O1-C1-C2-O2
56	DA	3193	PG4	C3-C4-O3-C5
63	DA	3225	PGE	O1-C1-C2-O2
63	DA	3225	PGE	C3-C4-O3-C5

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Mol	Chain	Res	Type	Atoms
62	DA	3003	EDO	O1-C1-C2-O2
62	DA	3208	EDO	O1-C1-C2-O2
56	DA	3216	PG4	O4-C7-C8-O5
63	DA	3214	PGE	O2-C3-C4-O3
63	D1	102	PGE	C1-C2-O2-C3
63	DS	201	PGE	C1-C2-O2-C3
56	AA	1670	PG4	C1-C2-O2-C3
65	DA	3185	1PE	OH4-C13-C23-OH3
65	DA	3202	1PE	C14-C24-OH4-C13
57	AA	1671	MPD	O2-C2-C3-C4
57	DK	201	MPD	O2-C2-C3-C4
57	DT	202	MPD	O2-C2-C3-C4
56	AA	1670	PG4	C8-C7-O4-C6
57	DE	301	MPD	C2-C3-C4-O4
57	DK	201	MPD	C2-C3-C4-O4
57	DN	201	MPD	C2-C3-C4-O4
57	DT	202	MPD	C2-C3-C4-O4
57	DA	3204	MPD	C2-C3-C4-O4
61	D3	101	PEG	O1-C1-C2-O2
57	AA	1676	MPD	C1-C2-C3-C4
57	DE	301	MPD	C1-C2-C3-C4
57	DE	302	MPD	C1-C2-C3-C4
57	DK	201	MPD	C1-C2-C3-C4
57	DA	3192	MPD	CM-C2-C3-C4
57	DA	3204	MPD	CM-C2-C3-C4
57	DA	3207	MPD	CM-C2-C3-C4
59	BA	1643	TAC	C3-C2-C21-N21
56	DA	3193	PG4	O2-C3-C4-O3
56	DQ	202	PG4	C5-C6-O4-C7
59	BA	1643	TAC	C3-C2-C21-O21
56	DR	202	PG4	O3-C5-C6-O4
61	DA	3218	PEG	O1-C1-C2-O2
56	DR	202	PG4	C8-C7-O4-C6
62	DB	212	EDO	O1-C1-C2-O2
56	DA	3193	PG4	C1-C2-O2-C3

There are no ring outliers.

27 monomers are involved in 46 short contacts:

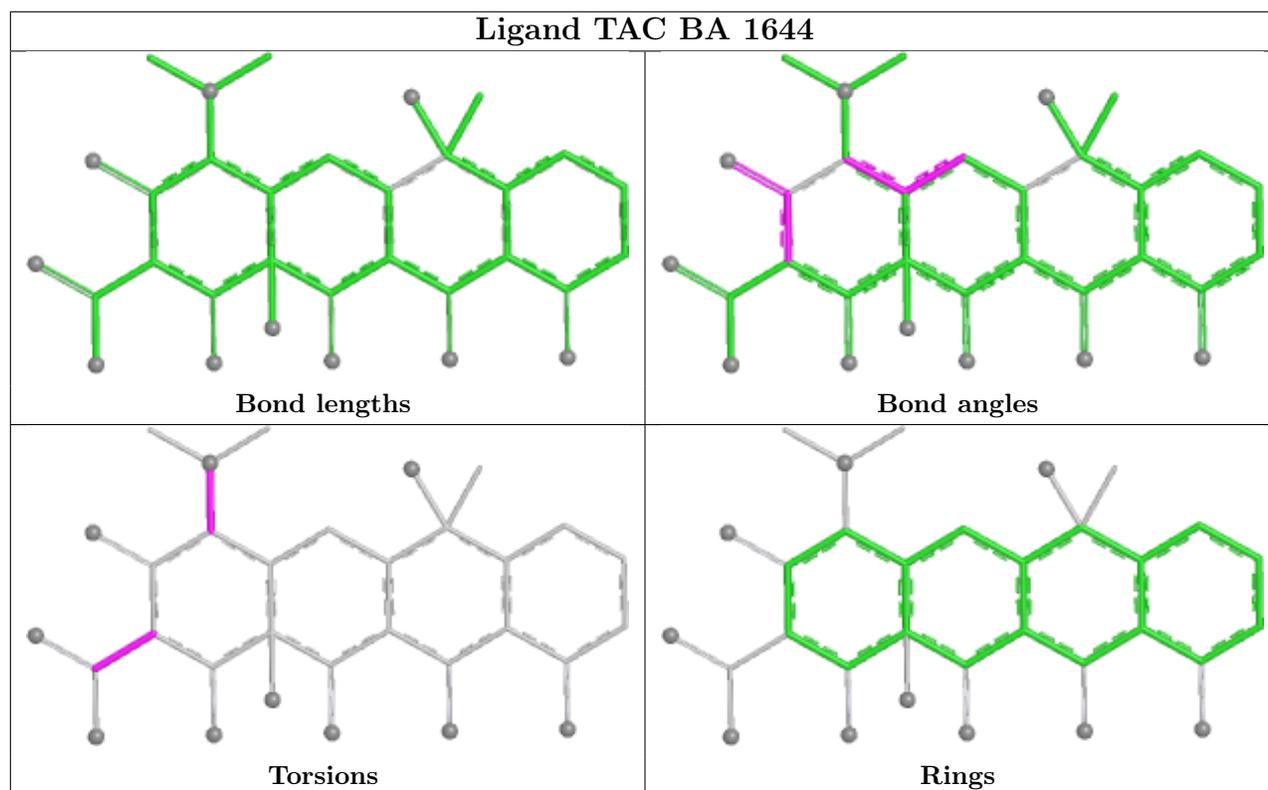
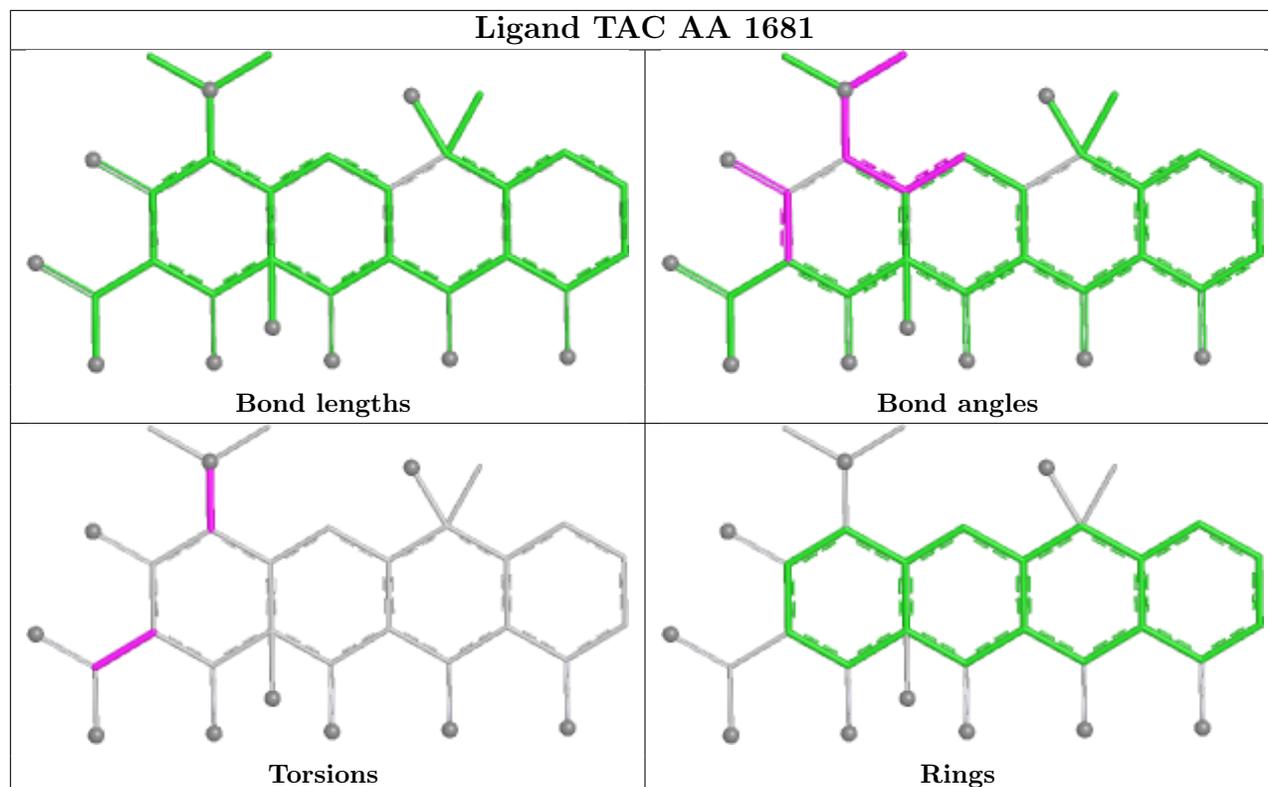
Mol	Chain	Res	Type	Clashes	Symm-Clashes
56	AA	1670	PG4	1	0
56	DA	3216	PG4	1	0

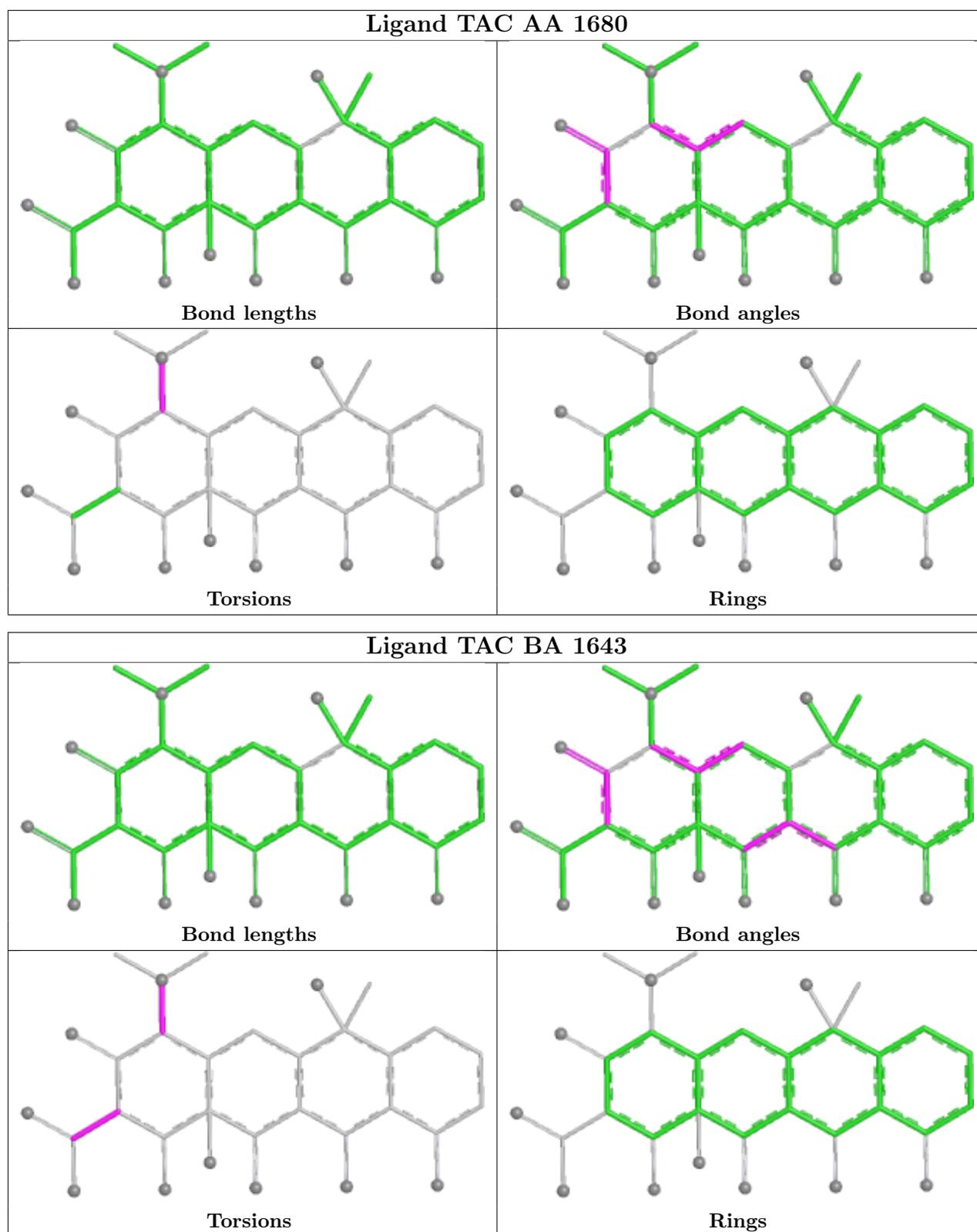
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Mol	Chain	Res	Type	Clashes	Symm-Clashes
68	DA	3220	TRS	1	0
57	DA	3204	MPD	1	0
59	AA	1681	TAC	2	0
61	DP	201	PEG	1	0
57	DN	201	MPD	1	0
57	AA	1676	MPD	3	0
63	DU	101	PGE	3	0
56	BA	1642	PG4	1	0
63	DA	3225	PGE	2	0
62	DA	3198	EDO	1	0
58	DA	3189	PUT	1	0
58	DA	3222	PUT	3	0
63	DA	3001	PGE	1	0
57	DA	3207	MPD	1	0
63	DA	3214	PGE	1	0
56	DR	202	PG4	5	0
56	DA	3193	PG4	2	0
61	D1	103	PEG	1	0
64	DA	3224	SPD	2	0
56	DS	202	PG4	3	0
65	DA	3202	1PE	1	0
57	DA	3192	MPD	1	0
63	D1	102	PGE	2	0
58	DA	3195	PUT	3	0
63	DS	201	PGE	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 than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.





## 5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

## 6 Fit of model and data i

### 6.1 Protein, DNA and RNA chains i

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
1	AA	1523/1534 (99%)	0.09	76 (4%) 35 20	37, 86, 227, 287	0
1	BA	1522/1534 (99%)	0.55	111 (7%) 22 12	58, 109, 255, 271	0
2	AB	224/224 (100%)	0.38	8 (3%) 46 27	65, 117, 185, 228	0
2	BB	224/224 (100%)	0.74	18 (8%) 20 11	89, 139, 197, 228	0
3	AC	206/206 (100%)	0.12	5 (2%) 59 37	67, 98, 127, 149	0
3	BC	206/206 (100%)	0.64	17 (8%) 19 10	90, 138, 170, 184	0
4	AD	205/205 (100%)	0.07	1 (0%) 87 75	63, 92, 129, 160	0
4	BD	205/205 (100%)	-0.13	0 100 100	53, 77, 106, 132	0
5	AE	155/155 (100%)	-0.11	1 (0%) 85 71	54, 75, 108, 159	0
5	BE	150/155 (96%)	0.45	6 (4%) 43 25	61, 92, 129, 201	0
6	AF	106/106 (100%)	0.18	2 (1%) 66 44	63, 93, 120, 134	0
6	BF	100/106 (94%)	0.40	5 (5%) 35 20	77, 117, 140, 153	0
7	AG	151/151 (100%)	1.13	20 (13%) 8 5	95, 136, 160, 174	0
7	BG	151/151 (100%)	1.14	25 (16%) 5 3	136, 196, 213, 220	0
8	AH	129/129 (100%)	0.03	3 (2%) 61 39	59, 82, 107, 122	0
8	BH	129/129 (100%)	0.50	4 (3%) 51 30	85, 110, 137, 152	0
9	AI	127/127 (100%)	1.14	20 (15%) 6 4	74, 135, 164, 171	0
9	BI	127/127 (100%)	1.45	34 (26%) 2 2	133, 164, 201, 210	0
10	AJ	99/99 (100%)	0.94	11 (11%) 12 7	83, 118, 141, 147	0
10	BJ	98/99 (98%)	1.70	33 (33%) 1 1	134, 168, 189, 195	0
11	AK	117/117 (100%)	0.28	2 (1%) 69 47	44, 100, 129, 139	0
11	BK	117/117 (100%)	0.51	9 (7%) 21 12	59, 104, 132, 163	0
12	AL	122/123 (99%)	-0.16	3 (2%) 58 36	43, 60, 92, 130	0
12	BL	122/123 (99%)	0.74	11 (9%) 17 9	65, 86, 114, 137	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
13	AM	114/114 (100%)	1.41	28 (24%) 2 2	108, 130, 165, 171	0
13	BM	114/114 (100%)	1.15	15 (13%) 8 5	195, 230, 238, 247	0
14	AN	100/100 (100%)	1.40	25 (25%) 2 2	77, 117, 178, 184	0
14	BN	100/100 (100%)	1.54	25 (25%) 2 2	124, 178, 216, 222	0
15	AO	88/88 (100%)	0.06	1 (1%) 77 58	54, 84, 107, 129	0
15	BO	88/88 (100%)	0.42	2 (2%) 61 39	75, 109, 133, 153	0
16	AP	82/82 (100%)	0.30	2 (2%) 59 37	55, 75, 121, 140	0
16	BP	82/82 (100%)	1.29	15 (18%) 4 3	81, 98, 148, 155	0
17	AQ	80/80 (100%)	0.08	1 (1%) 74 54	58, 78, 113, 129	0
17	BQ	80/80 (100%)	1.02	7 (8%) 17 9	83, 120, 145, 157	0
18	AR	55/55 (100%)	0.18	1 (1%) 67 45	63, 89, 130, 153	0
18	BR	55/55 (100%)	0.38	5 (9%) 16 9	65, 86, 129, 168	0
19	AS	79/79 (100%)	1.49	20 (25%) 2 2	114, 135, 155, 163	0
19	BS	79/79 (100%)	1.30	18 (22%) 2 2	210, 226, 239, 245	0
20	AT	86/86 (100%)	0.27	2 (2%) 61 39	54, 77, 108, 129	0
20	BT	85/86 (98%)	1.44	19 (22%) 3 2	93, 119, 147, 159	0
21	AU	56/56 (100%)	0.36	3 (5%) 32 18	66, 107, 153, 165	0
21	BU	56/56 (100%)	0.42	2 (3%) 46 27	63, 95, 134, 143	0
22	C1	56/56 (100%)	1.76	22 (39%) 1 1	78, 133, 163, 173	0
22	D1	56/56 (100%)	-0.77	0 100 100	18, 37, 65, 104	0
23	C2	50/51 (98%)	1.73	16 (32%) 1 1	131, 157, 168, 196	0
23	D2	51/51 (100%)	-0.23	1 (1%) 64 43	46, 60, 87, 104	0
24	C3	46/46 (100%)	2.23	25 (54%) 0 0	90, 117, 130, 138	0
24	D3	46/46 (100%)	-0.61	1 (2%) 62 40	23, 31, 48, 112	0
25	C4	64/64 (100%)	2.78	48 (75%) 0 0	96, 120, 140, 154	0
25	D4	64/64 (100%)	-0.68	0 100 100	23, 35, 48, 61	0
26	C5	38/38 (100%)	1.67	10 (26%) 2 2	91, 114, 127, 138	0
26	D5	38/38 (100%)	-0.49	0 100 100	30, 44, 62, 80	0
27	C0	58/58 (100%)	1.11	10 (17%) 5 3	90, 111, 135, 139	0
27	D0	58/58 (100%)	-0.63	0 100 100	21, 29, 53, 80	2 (3%)
28	CB	118/120 (98%)	0.61	3 (2%) 58 36	102, 170, 229, 238	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
28	DB	120/120 (100%)	-0.75	0 <span style="border: 1px solid blue; padding: 2px;">100</span> <span style="border: 1px solid blue; padding: 2px;">100</span>	29, 53, 95, 122	0
29	CC	271/271 (100%)	0.82	42 (15%) <span style="border: 1px solid red; padding: 2px;">6</span> <span style="border: 1px solid red; padding: 2px;">4</span>	71, 94, 116, 128	0
29	DC	271/271 (100%)	-0.53	3 (1%) <span style="border: 1px solid blue; padding: 2px;">77</span> <span style="border: 1px solid blue; padding: 2px;">58</span>	22, 49, 76, 92	0
30	CD	208/209 (99%)	0.99	27 (12%) <span style="border: 1px solid red; padding: 2px;">9</span> <span style="border: 1px solid red; padding: 2px;">5</span>	73, 111, 141, 155	0
30	DD	208/209 (99%)	-0.73	1 (0%) <span style="border: 1px solid blue; padding: 2px;">87</span> <span style="border: 1px solid blue; padding: 2px;">75</span>	13, 34, 66, 93	0
31	CA	2875/2904 (99%)	0.93	285 (9%) <span style="border: 1px solid red; padding: 2px;">14</span> <span style="border: 1px solid red; padding: 2px;">8</span>	61, 127, 244, 289	0
32	CE	201/201 (100%)	1.44	47 (23%) <span style="border: 1px solid red; padding: 2px;">2</span> <span style="border: 1px solid red; padding: 2px;">2</span>	85, 153, 183, 194	0
32	DE	201/201 (100%)	-0.54	0 <span style="border: 1px solid blue; padding: 2px;">100</span> <span style="border: 1px solid blue; padding: 2px;">100</span>	19, 50, 96, 132	0
33	CF	177/177 (100%)	0.86	13 (7%) <span style="border: 1px solid red; padding: 2px;">22</span> <span style="border: 1px solid red; padding: 2px;">12</span>	193, 211, 219, 227	0
33	DF	177/177 (100%)	-0.06	1 (0%) <span style="border: 1px solid blue; padding: 2px;">85</span> <span style="border: 1px solid blue; padding: 2px;">71</span>	44, 75, 117, 142	0
34	CG	176/176 (100%)	0.67	6 (3%) <span style="border: 1px solid red; padding: 2px;">48</span> <span style="border: 1px solid red; padding: 2px;">28</span>	130, 159, 185, 198	0
34	DG	176/176 (100%)	-0.22	1 (0%) <span style="border: 1px solid blue; padding: 2px;">85</span> <span style="border: 1px solid blue; padding: 2px;">71</span>	38, 66, 97, 123	0
35	CH	149/149 (100%)	0.55	5 (3%) <span style="border: 1px solid red; padding: 2px;">48</span> <span style="border: 1px solid red; padding: 2px;">28</span>	79, 144, 170, 184	0
35	DH	149/149 (100%)	0.56	4 (2%) <span style="border: 1px solid blue; padding: 2px;">56</span> <span style="border: 1px solid blue; padding: 2px;">34</span>	55, 142, 179, 198	0
36	CJ	134/134 (100%)	1.46	34 (25%) <span style="border: 1px solid red; padding: 2px;">2</span> <span style="border: 1px solid red; padding: 2px;">2</span>	235, 251, 263, 270	0
36	DJ	134/134 (100%)	1.60	40 (29%) <span style="border: 1px solid red; padding: 2px;">1</span> <span style="border: 1px solid red; padding: 2px;">1</span>	200, 227, 240, 245	0
37	CK	142/142 (100%)	0.83	10 (7%) <span style="border: 1px solid red; padding: 2px;">24</span> <span style="border: 1px solid red; padding: 2px;">13</span>	84, 101, 127, 139	0
37	DK	142/142 (100%)	-0.81	0 <span style="border: 1px solid blue; padding: 2px;">100</span> <span style="border: 1px solid blue; padding: 2px;">100</span>	18, 30, 57, 82	0
38	CL	122/123 (99%)	0.87	10 (8%) <span style="border: 1px solid red; padding: 2px;">19</span> <span style="border: 1px solid red; padding: 2px;">10</span>	73, 101, 135, 154	0
38	DL	123/123 (100%)	-0.73	0 <span style="border: 1px solid blue; padding: 2px;">100</span> <span style="border: 1px solid blue; padding: 2px;">100</span>	20, 38, 66, 94	0
39	CM	144/144 (100%)	1.53	48 (33%) <span style="border: 1px solid red; padding: 2px;">1</span> <span style="border: 1px solid red; padding: 2px;">1</span>	88, 144, 181, 214	0
39	DM	144/144 (100%)	-0.51	1 (0%) <span style="border: 1px solid blue; padding: 2px;">84</span> <span style="border: 1px solid blue; padding: 2px;">68</span>	10, 45, 79, 102	0
40	CN	135/136 (99%)	0.66	8 (5%) <span style="border: 1px solid red; padding: 2px;">29</span> <span style="border: 1px solid red; padding: 2px;">16</span>	71, 104, 130, 165	0
40	DN	135/136 (99%)	-0.79	0 <span style="border: 1px solid blue; padding: 2px;">100</span> <span style="border: 1px solid blue; padding: 2px;">100</span>	13, 34, 63, 95	1 (0%)
41	CO	120/125 (96%)	1.56	35 (29%) <span style="border: 1px solid red; padding: 2px;">1</span> <span style="border: 1px solid red; padding: 2px;">1</span>	94, 117, 139, 180	0
41	DO	125/125 (100%)	-0.69	0 <span style="border: 1px solid blue; padding: 2px;">100</span> <span style="border: 1px solid blue; padding: 2px;">100</span>	16, 32, 66, 128	0
42	CP	116/117 (99%)	0.75	15 (12%) <span style="border: 1px solid red; padding: 2px;">9</span> <span style="border: 1px solid red; padding: 2px;">5</span>	133, 156, 174, 184	0
42	DP	117/117 (100%)	-0.43	1 (0%) <span style="border: 1px solid blue; padding: 2px;">81</span> <span style="border: 1px solid blue; padding: 2px;">63</span>	34, 52, 82, 94	0
43	CQ	114/114 (100%)	0.99	11 (9%) <span style="border: 1px solid red; padding: 2px;">15</span> <span style="border: 1px solid red; padding: 2px;">8</span>	98, 114, 134, 148	0
43	DQ	114/114 (100%)	-0.53	1 (0%) <span style="border: 1px solid blue; padding: 2px;">81</span> <span style="border: 1px solid blue; padding: 2px;">63</span>	26, 43, 75, 116	0
44	CR	117/117 (100%)	1.23	25 (21%) <span style="border: 1px solid red; padding: 2px;">3</span> <span style="border: 1px solid red; padding: 2px;">2</span>	81, 103, 125, 141	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
44	DR	117/117 (100%)	-0.88	0 100 100	14, 25, 43, 75	0
45	CS	103/103 (100%)	1.25	23 (22%) 3 2	101, 121, 157, 167	0
45	DS	103/103 (100%)	-0.72	2 (1%) 66 44	15, 39, 68, 94	0
46	CT	110/110 (100%)	1.60	31 (28%) 1 2	98, 120, 152, 162	0
46	DT	110/110 (100%)	-0.72	1 (0%) 81 63	15, 28, 56, 111	0
47	CU	93/93 (100%)	1.70	29 (31%) 1 1	124, 146, 173, 182	0
47	DU	93/93 (100%)	-0.05	5 (5%) 32 18	27, 52, 110, 129	0
48	CV	102/102 (100%)	2.00	52 (50%) 0 0	124, 156, 188, 199	0
48	DV	102/102 (100%)	-0.32	1 (0%) 79 60	36, 56, 101, 131	0
49	CW	94/94 (100%)	0.64	4 (4%) 40 23	111, 134, 151, 161	0
49	DW	94/94 (100%)	-0.51	0 100 100	32, 48, 80, 91	0
50	CX	75/76 (98%)	1.08	12 (16%) 6 4	86, 118, 132, 172	0
50	DX	76/76 (100%)	-0.55	0 100 100	16, 36, 62, 104	1 (1%)
51	CY	77/77 (100%)	1.34	15 (19%) 4 2	78, 113, 143, 160	0
51	DY	77/77 (100%)	-0.45	1 (1%) 74 54	24, 50, 85, 112	0
52	CZ	62/62 (100%)	1.55	17 (27%) 2 2	123, 162, 179, 190	0
52	DZ	62/62 (100%)	-0.03	1 (1%) 70 49	41, 67, 104, 131	0
53	DI	135/135 (100%)	1.26	26 (19%) 4 2	75, 153, 204, 213	1 (0%)
54	DA	2873/2904 (98%)	-0.76	89 (3%) 51 30	15, 39, 206, 298	11 (0%)
All	All	20632/20745 (99%)	0.35	1735 (8%) 18 10	10, 100, 227, 298	16 (0%)

All (1735) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
7	AG	5	ARG	11.1
1	AA	121	U	8.8
10	BJ	74	VAL	8.4
54	DA	1731	G	7.7
54	DA	2120	G	7.2
31	CA	2172	U	7.0
9	BI	68	LYS	6.8
30	CD	126	ASN	6.7
7	BG	4	ARG	6.7
9	BI	16	ALA	6.4
31	CA	331	C	6.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
12	AL	124	ALA	6.3
10	BJ	41	PRO	6.3
25	C4	36	LYS	6.2
20	BT	4	ILE	6.2
14	AN	21	PHE	6.1
31	CA	2402	U	6.1
39	CM	81	ASP	6.1
47	CU	43	ILE	6.1
47	CU	36	LYS	6.1
48	CV	31	SER	6.0
25	C4	28	ASN	6.0
36	DJ	54	PRO	6.0
21	BU	57	ALA	5.9
7	AG	4	ARG	5.9
9	BI	124	ARG	5.9
17	BQ	70	THR	5.8
7	BG	5	ARG	5.8
10	BJ	8	ILE	5.8
22	C1	2	ALA	5.7
19	BS	12	ASP	5.7
23	C2	24	THR	5.7
10	BJ	75	ASP	5.7
1	AA	1030	U	5.7
48	CV	80	ALA	5.6
32	CE	104	ALA	5.6
54	DA	2172	U	5.5
20	BT	5	LYS	5.5
25	C4	37	ALA	5.5
41	CO	46	ARG	5.4
5	BE	91	GLY	5.4
36	CJ	23	PRO	5.4
37	CK	81	ILE	5.4
9	AI	20	PHE	5.4
18	BR	20	GLU	5.4
1	BA	121	U	5.3
32	CE	32	VAL	5.2
1	BA	632	U	5.2
36	CJ	13	VAL	5.2
45	CS	78	ARG	5.1
53	DI	38	MET	5.1
1	BA	1242	G	5.1
37	CK	111	LYS	5.1

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
36	DJ	135	SER	5.0
25	C4	41	LYS	5.0
1	BA	983	A	5.0
25	C4	40	ARG	5.0
31	CA	12	U	4.9
1	AA	1019	A	4.9
54	DA	2886[A]	A	4.9
41	CO	25	ALA	4.9
1	AA	1364	U	4.9
46	CT	82	MET	4.9
29	CC	242	LYS	4.9
32	CE	33	VAL	4.9
24	C3	24	THR	4.9
1	AA	984	C	4.8
52	CZ	45	GLN	4.8
31	CA	2800	A	4.8
9	BI	116	VAL	4.8
48	CV	13	VAL	4.8
45	CS	73	LYS	4.8
1	AA	962	C	4.8
31	CA	2383	G	4.8
9	BI	119	ARG	4.8
1	BA	307	C	4.7
21	AU	57	ALA	4.7
24	D3	46	LYS	4.7
25	C4	60	ALA	4.7
46	CT	43	ALA	4.7
7	AG	109	ARG	4.7
46	CT	97	LEU	4.7
13	BM	96	PRO	4.7
1	BA	1243	C	4.7
54	DA	1087	G	4.6
47	DU	70	HIS	4.6
39	CM	14	LYS	4.6
44	CR	9	ILE	4.6
1	AA	1148	U	4.6
43	DQ	2	SER	4.6
48	CV	35	ILE	4.6
13	AM	105	ASN	4.5
9	BI	128	SER	4.5
1	AA	1127	G	4.5
31	CA	1984	G	4.5

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
23	C2	22	THR	4.5
12	BL	70	GLU	4.5
48	CV	5	ILE	4.5
18	BR	51	TYR	4.4
1	BA	1305	G	4.4
19	AS	71	LEU	4.4
31	CA	329	G	4.4
44	CR	8	VAL	4.4
54	DA	2141	G	4.4
7	BG	62	PHE	4.4
27	C0	56	LYS	4.4
31	CA	1068	G	4.4
20	BT	13	GLN	4.4
53	DI	126	LEU	4.4
1	AA	959	A	4.4
13	AM	30	SER	4.4
31	CA	2174	C	4.4
32	CE	73	ILE	4.4
10	AJ	75	ASP	4.4
24	C3	23	ALA	4.4
1	AA	963	G	4.4
7	AG	32	VAL	4.3
48	CV	36	VAL	4.3
20	BT	6	SER	4.3
54	DA	2152	G	4.3
25	C4	29	LEU	4.3
44	CR	28	ARG	4.3
2	AB	30	PHE	4.3
48	CV	30	SER	4.3
10	BJ	39	PRO	4.3
41	CO	23	ASN	4.3
46	CT	84	ARG	4.3
10	BJ	76	ILE	4.3
13	AM	19	LEU	4.3
36	DJ	138	LEU	4.3
9	BI	125	PRO	4.2
38	CL	122	VAL	4.2
6	BF	100	SER	4.2
1	BA	4	U	4.2
36	DJ	13	VAL	4.2
48	CV	3	ALA	4.2
53	DI	93	ALA	4.2

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
36	DJ	12	GLN	4.2
14	BN	47	LYS	4.2
31	CA	931	U	4.2
48	CV	39	ILE	4.2
25	C4	39	LYS	4.2
1	AA	1128	C	4.2
31	CA	183	C	4.2
36	DJ	24	VAL	4.2
38	CL	35	VAL	4.2
1	AA	1286	U	4.2
31	CA	776	G	4.2
24	C3	42	LEU	4.2
10	BJ	73	LEU	4.2
1	BA	108	G	4.1
33	CF	156	ILE	4.1
54	DA	1090	A	4.1
16	BP	57	ILE	4.1
31	CA	1238	G	4.1
11	BK	14	LYS	4.1
1	BA	211	G	4.1
54	DA	1089	A	4.1
7	AG	106	GLU	4.1
13	AM	24	GLY	4.1
32	CE	178	VAL	4.1
53	DI	36	ASP	4.1
19	BS	37	ARG	4.1
1	BA	201	G	4.1
32	CE	164	LEU	4.1
1	BA	306	A	4.1
1	BA	1364	U	4.0
31	CA	2666	C	4.0
2	BB	132	LYS	4.0
14	BN	97	LYS	4.0
45	DS	103	ALA	4.0
53	DI	83	ALA	4.0
36	CJ	11	LEU	4.0
13	BM	106	ALA	4.0
53	DI	131	THR	4.0
13	BM	89	LEU	4.0
31	CA	2690	U	4.0
54	DA	1091	G	4.0
54	DA	1847	A	4.0

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
25	C4	25	LYS	4.0
47	CU	33	LYS	4.0
1	BA	212	G	4.0
22	C1	21	ALA	4.0
13	AM	33	ILE	3.9
25	C4	57	LEU	3.9
46	CT	85	ILE	3.9
1	BA	1241	G	3.9
19	BS	76	PRO	3.9
25	C4	38	THR	3.9
29	CC	30	PHE	3.9
16	BP	17	TYR	3.9
1	BA	1201	A	3.9
44	CR	13	ARG	3.9
31	CA	1215	G	3.9
54	DA	2110	G	3.9
33	CF	32	GLU	3.9
2	BB	131	LYS	3.9
25	C4	7	VAL	3.9
51	CY	20	HIS	3.9
29	CC	12	GLY	3.9
36	CJ	76	ALA	3.9
46	CT	94	ASP	3.9
54	DA	277	G	3.9
10	BJ	69	THR	3.9
19	AS	39	THR	3.9
31	CA	332	A	3.9
25	C4	61	CYS	3.9
39	CM	8	PRO	3.8
31	CA	326	G	3.8
25	C4	3	LYS	3.8
39	CM	15	ALA	3.8
50	CX	44	LYS	3.8
36	DJ	53	LEU	3.8
45	CS	81	LYS	3.8
46	CT	44	ALA	3.8
1	AA	951	G	3.8
1	AA	961	U	3.8
31	CA	75	G	3.8
31	CA	327	G	3.8
31	CA	386	G	3.8
54	DA	1729	U	3.8

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
10	AJ	6	ILE	3.8
22	C1	27	SER	3.8
36	DJ	55	ILE	3.8
1	AA	1020	G	3.8
44	CR	11	ARG	3.8
31	CA	513	A	3.8
29	CC	251	GLN	3.8
19	BS	49	ILE	3.8
50	CX	54	GLY	3.8
20	BT	69	LYS	3.7
23	C2	37	LYS	3.7
31	CA	2363	G	3.7
41	CO	105	GLY	3.7
45	CS	82	HIS	3.7
9	BI	126	GLN	3.7
39	DM	104	GLN	3.7
9	AI	129	LYS	3.7
36	DJ	133	ALA	3.7
7	AG	23	LEU	3.7
1	BA	1218	C	3.7
9	BI	117	GLY	3.7
36	DJ	38	PHE	3.7
26	C5	32	LYS	3.7
48	CV	26	LYS	3.7
31	CA	515	A	3.7
39	CM	100	ILE	3.7
41	CO	104	ALA	3.6
2	AB	27	MET	3.6
49	CW	48	MET	3.6
1	AA	977	A	3.6
46	CT	83	LYS	3.6
53	DI	106	PHE	3.6
31	CA	805	G	3.6
43	CQ	84	ILE	3.6
52	CZ	49	ASP	3.6
43	CQ	111	LYS	3.6
52	DZ	63	ALA	3.6
47	CU	61	LEU	3.6
1	AA	1240	U	3.6
23	C2	23	THR	3.6
36	CJ	56	PRO	3.6
31	CA	1104	C	3.6

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
35	DH	12	LEU	3.6
36	DJ	80	LEU	3.6
46	CT	46	LEU	3.6
11	BK	84	VAL	3.6
36	DJ	58	VAL	3.6
10	BJ	44	THR	3.6
9	BI	121	ALA	3.6
23	C2	34	LEU	3.6
31	CA	765	C	3.6
1	AA	1441	A	3.5
37	CK	42	ALA	3.5
31	CA	328	U	3.5
54	DA	1078	U	3.5
7	AG	26	PHE	3.5
31	CA	411	G	3.5
14	BN	60	GLN	3.5
7	AG	62	PHE	3.5
9	BI	127	PHE	3.5
29	CC	47	GLY	3.5
1	BA	250	A	3.5
29	CC	3	VAL	3.5
31	CA	330	A	3.5
36	CJ	122	ILE	3.5
31	CA	335	C	3.5
31	CA	1547	C	3.5
24	C3	1	MET	3.5
32	CE	30	GLN	3.5
41	CO	9	GLN	3.5
44	CR	59	GLN	3.5
14	BN	12	LYS	3.5
20	BT	67	ILE	3.5
1	AA	958	A	3.5
31	CA	829	A	3.5
31	CA	1067	A	3.5
1	AA	1086	U	3.5
44	CR	3	ARG	3.5
22	C1	5	GLN	3.5
1	AA	973	G	3.5
31	CA	2127	G	3.5
47	CU	62	VAL	3.5
25	C4	15	LYS	3.5
47	CU	74	ILE	3.5

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
39	CM	59	ARG	3.5
39	CM	61	LEU	3.4
54	DA	2153	C	3.4
23	C2	21	TYR	3.4
2	BB	187	VAL	3.4
1	AA	983	A	3.4
1	BA	1126	U	3.4
1	BA	1321	U	3.4
31	CA	1216	G	3.4
7	AG	42	ILE	3.4
10	BJ	25	ILE	3.4
45	CS	27	ILE	3.4
9	AI	89	GLU	3.4
43	CQ	68	GLU	3.4
25	C4	27	ALA	3.4
1	AA	1140	C	3.4
26	C5	2	LYS	3.4
29	CC	233	GLY	3.4
31	CA	257	C	3.4
48	CV	24	LYS	3.4
1	AA	1492	A	3.4
1	BA	1236	A	3.4
1	BA	1362	A	3.4
54	DA	892	A	3.4
53	DI	95	LEU	3.4
31	CA	2525	G	3.4
3	BC	71	ALA	3.4
46	CT	45	VAL	3.4
9	AI	117	GLY	3.4
43	CQ	110	ILE	3.4
31	CA	1958	C	3.4
1	BA	219	U	3.4
34	CG	175	LYS	3.4
29	CC	234	GLY	3.4
42	CP	30	ARG	3.4
47	CU	73	ARG	3.4
8	AH	2	SER	3.4
54	DA	549	G	3.4
1	AA	985	C	3.4
47	DU	1	MET	3.4
52	CZ	32	ALA	3.4
32	CE	67	ARG	3.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
31	CA	1393	A	3.4
22	C1	11	SER	3.4
35	DH	11	ASN	3.3
36	CJ	12	GLN	3.3
31	CA	1106	G	3.3
48	CV	44	LYS	3.3
19	AS	74	PHE	3.3
9	BI	122	ARG	3.3
48	DV	56	GLY	3.3
31	CA	1986	C	3.3
54	DA	1730	C	3.3
14	AN	55	SER	3.3
14	AN	97	LYS	3.3
31	CA	675	A	3.3
31	CA	1085	A	3.3
31	CA	2346	A	3.3
30	CD	23	PRO	3.3
38	CL	94	PRO	3.3
32	CE	175	ILE	3.3
1	AA	1018	G	3.3
54	DA	2107	G	3.3
14	BN	96	LEU	3.3
1	BA	1302	C	3.3
16	BP	27	ALA	3.3
44	CR	2	ALA	3.3
1	AA	994	A	3.3
1	BA	609	A	3.3
31	CA	1084	A	3.3
7	AG	7	ILE	3.3
25	C4	4	ILE	3.3
29	CC	241	GLY	3.3
2	BB	147	SER	3.3
31	CA	481	G	3.3
1	BA	631	C	3.3
31	CA	1105	U	3.3
20	BT	68	HIS	3.3
1	BA	949	A	3.3
20	BT	66	LEU	3.3
53	DI	72	LEU	3.3
9	BI	120	LYS	3.3
24	C3	43	THR	3.3
9	AI	119	ARG	3.3

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
46	CT	95	ARG	3.3
12	BL	124	ALA	3.3
48	CV	83	VAL	3.3
9	BI	14	SER	3.3
36	DJ	94	ASN	3.3
3	AC	207	ILE	3.3
32	CE	77	ILE	3.3
10	BJ	38	GLY	3.3
33	CF	131	GLY	3.3
1	AA	1015	G	3.3
1	BA	633	G	3.3
39	CM	84	LYS	3.2
11	BK	94	GLU	3.2
54	DA	2108	A	3.2
33	CF	31	VAL	3.2
32	CE	36	ALA	3.2
48	CV	75	ALA	3.2
14	BN	70	PRO	3.2
38	CL	48	PRO	3.2
20	BT	64	LYS	3.2
25	C4	52	LYS	3.2
44	CR	22	LYS	3.2
25	C4	43	HIS	3.2
1	BA	1049	U	3.2
31	CA	2895	G	3.2
36	CJ	24	VAL	3.2
30	CD	57	ALA	3.2
1	BA	1067	A	3.2
54	DA	613	A	3.2
13	AM	112	PRO	3.2
14	BN	93	ILE	3.2
41	CO	40	LYS	3.2
39	CM	80	SER	3.2
19	AS	3	ARG	3.2
50	CX	17	GLU	3.2
2	BB	136	MET	3.2
19	BS	33	THR	3.2
36	CJ	55	ILE	3.2
3	BC	155	GLY	3.2
31	CA	2410	G	3.2
39	CM	49	GLY	3.2
54	DA	2125	G	3.2

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
35	CH	27	ARG	3.2
50	CX	55	ARG	3.2
19	AS	60	VAL	3.2
25	C4	14	PHE	3.2
1	AA	1017	U	3.2
31	CA	1217	U	3.2
45	CS	49	ILE	3.2
48	CV	29	LEU	3.2
45	DS	26	ASP	3.2
43	CQ	85	SER	3.2
1	AA	971	G	3.2
1	AA	1016	A	3.2
39	CM	51	GLU	3.2
1	AA	1305	G	3.2
31	CA	2067	G	3.2
20	BT	63	ALA	3.2
23	C2	10	LYS	3.2
25	C4	55	LEU	3.2
51	CY	64	ILE	3.2
12	BL	86	ARG	3.1
1	BA	982	U	3.1
19	BS	35	SER	3.1
41	CO	24	MET	3.1
7	BG	35	LYS	3.1
24	C3	40	ALA	3.1
25	C4	65	ALA	3.1
31	CA	76	C	3.1
31	CA	105	C	3.1
54	DA	2174	C	3.1
32	CE	143	LEU	3.1
33	CF	152	LEU	3.1
31	CA	508	A	3.1
31	CA	2602	A	3.1
39	CM	30	THR	3.1
19	AS	55	ARG	3.1
44	CR	33	ARG	3.1
45	CS	86	GLN	3.1
39	CM	35	HIS	3.1
44	CR	4	VAL	3.1
54	DA	1061	U	3.1
8	BH	2	SER	3.1
20	BT	36	TYR	3.1

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
52	CZ	17	GLU	3.1
42	CP	7	ARG	3.1
1	BA	470	C	3.1
54	DA	2175	C	3.1
54	DA	654	A	3.1
10	BJ	26	VAL	3.1
36	CJ	140	VAL	3.1
1	AA	1353	G	3.1
10	BJ	102	LEU	3.1
13	BM	86	TYR	3.1
11	AK	110	ILE	3.1
41	CO	43	GLU	3.1
25	C4	2	PRO	3.1
36	CJ	74	PRO	3.1
36	DJ	118	THR	3.1
26	C5	21	GLY	3.1
39	CM	11	GLY	3.1
22	C1	12	LYS	3.1
14	AN	71	HIS	3.1
1	BA	1219	A	3.1
31	CA	514	A	3.1
30	CD	192	ALA	3.1
36	CJ	79	LEU	3.1
38	CL	33	ALA	3.1
51	CY	49	LEU	3.1
41	CO	22	ARG	3.1
46	CT	96	ILE	3.1
29	CC	236	GLU	3.1
32	CE	93	SER	3.1
54	DA	2151	U	3.1
26	C5	38	GLY	3.1
31	CA	1381	G	3.1
39	CM	53	GLY	3.1
25	C4	35	LYS	3.1
30	CD	8	LYS	3.1
22	C1	3	VAL	3.1
25	C4	33	LEU	3.1
52	CZ	57	LEU	3.1
24	C3	35	ARG	3.1
47	CU	35	ALA	3.1
1	AA	1031	C	3.1
25	C4	54	ASP	3.0

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
29	CC	213	TRP	3.0
32	CE	75	SER	3.0
53	DI	24	SER	3.0
54	DA	1077	A	3.0
54	DA	1084	A	3.0
30	CD	10	GLY	3.0
31	CA	767	U	3.0
54	DA	2109	U	3.0
7	BG	43	VAL	3.0
10	AJ	74	VAL	3.0
19	AS	56	GLN	3.0
33	CF	132	VAL	3.0
53	DI	33	VAL	3.0
26	C5	10	LEU	3.0
36	CJ	80	LEU	3.0
39	CM	19	LEU	3.0
30	CD	128	ARG	3.0
31	CA	26	G	3.0
31	CA	68	G	3.0
53	DI	96	PHE	3.0
22	C1	24	ALA	3.0
39	CM	101	ILE	3.0
32	CE	101	TYR	3.0
36	DJ	96	ASP	3.0
2	AB	132	LYS	3.0
45	CS	88	GLY	3.0
46	CT	100	THR	3.0
2	BB	135	LEU	3.0
19	AS	5	LEU	3.0
32	CE	134	LEU	3.0
32	CE	200	LEU	3.0
46	CT	99	ARG	3.0
1	BA	1235	U	3.0
16	BP	42	ILE	3.0
39	CM	72	ALA	3.0
14	AN	12	LYS	3.0
1	AA	1331	G	3.0
31	CA	1210	G	3.0
14	AN	32	SER	3.0
31	CA	2364	C	3.0
32	CE	135	ALA	3.0
36	DJ	129	ILE	3.0

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
44	CR	38	ALA	3.0
1	AA	1049	U	3.0
48	CV	17	LYS	3.0
25	C4	46	PRO	3.0
36	CJ	54	PRO	3.0
14	AN	18	ASP	3.0
14	AN	54	ASP	3.0
29	CC	202	LEU	3.0
24	C3	13	ASN	3.0
54	DA	2150	C	3.0
31	CA	2070	A	3.0
19	AS	73	GLU	3.0
29	CC	212	ARG	3.0
10	BJ	40	ILE	3.0
17	BQ	5	ILE	3.0
13	BM	27	LYS	2.9
47	CU	19	LYS	2.9
1	AA	933	G	2.9
1	AA	1139	G	2.9
1	BA	202	G	2.9
28	CB	98	G	2.9
31	CA	2677	G	2.9
45	CS	83	TYR	2.9
9	AI	125	PRO	2.9
22	C1	15	MET	2.9
13	AM	25	VAL	2.9
39	CM	10	GLU	2.9
47	CU	93	LEU	2.9
51	CY	30	LEU	2.9
54	DA	1172	C	2.9
2	BB	134	ALA	2.9
3	BC	192	THR	2.9
14	AN	50	THR	2.9
16	BP	46	LYS	2.9
23	C2	38	LYS	2.9
36	CJ	14	ALA	2.9
39	CM	29	LYS	2.9
33	CF	93	GLY	2.9
36	DJ	117	MET	2.9
51	CY	28	ARG	2.9
25	C4	56	GLY	2.9
19	AS	9	PRO	2.9

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
19	AS	58	VAL	2.9
29	CC	245	VAL	2.9
32	CE	153	LEU	2.9
7	BG	7	ILE	2.9
9	AI	21	ILE	2.9
18	BR	21	ILE	2.9
19	AS	49	ILE	2.9
25	C4	47	LYS	2.9
39	CM	77	ILE	2.9
1	BA	1244	G	2.9
30	CD	132	ALA	2.9
31	CA	318	C	2.9
31	CA	325	G	2.9
31	CA	1764	C	2.9
31	CA	2409	G	2.9
54	DA	2140	G	2.9
54	DA	2885[A]	G	2.9
1	AA	974	A	2.9
30	CD	200	ASP	2.9
31	CA	1548	A	2.9
31	CA	2173	A	2.9
54	DA	1103	A	2.9
32	CE	72	SER	2.9
41	CO	11	ASN	2.9
46	CT	11	ARG	2.9
26	C5	3	VAL	2.9
27	C0	18	PRO	2.9
40	CN	69	PRO	2.9
16	AP	39	PHE	2.9
24	C3	11	LYS	2.9
17	AQ	53	CYS	2.9
30	CD	131	ASP	2.9
22	C1	18	SER	2.9
52	CZ	40	SER	2.9
1	AA	1149	C	2.9
31	CA	2126	A	2.9
24	C3	10	LEU	2.9
31	CA	2444	G	2.9
41	CO	28	LEU	2.9
7	AG	8	GLY	2.9
27	C0	15	GLY	2.9
14	BN	7	LYS	2.9

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
25	C4	19	LYS	2.9
26	C5	18	LYS	2.9
30	CD	160	LYS	2.9
44	CR	5	LYS	2.9
7	BG	39	ALA	2.9
20	BT	72	ALA	2.9
52	CZ	61	ALA	2.9
24	C3	14	ARG	2.9
27	C0	9	GLN	2.9
13	AM	95	LEU	2.9
29	CC	38	SER	2.9
32	CE	70	SER	2.9
36	CJ	106	LEU	2.9
36	DJ	79	LEU	2.9
38	CL	28	SER	2.9
52	CZ	18	LEU	2.9
9	AI	19	VAL	2.9
39	CM	16	GLY	2.9
48	CV	32	GLY	2.9
48	CV	67	VAL	2.9
1	BA	1125	U	2.9
25	C4	63	PRO	2.9
51	CY	54	LYS	2.9
54	DA	1101	U	2.9
1	BA	222	C	2.9
1	BA	325	A	2.9
31	CA	53	A	2.9
31	CA	2406	A	2.9
3	BC	196	ILE	2.9
9	AI	28	ILE	2.9
32	CE	119	ILE	2.9
31	CA	2627	G	2.8
43	CQ	95	ALA	2.8
33	CF	130	MET	2.8
41	CO	1	MET	2.8
24	C3	46	LYS	2.8
39	CM	70	LYS	2.8
41	CO	3	HIS	2.8
48	CV	12	ILE	2.8
1	BA	208	U	2.8
31	CA	150	U	2.8
31	CA	1325	U	2.8

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	BA	1145	A	2.8
31	CA	1214	A	2.8
39	CM	48	ARG	2.8
19	BS	71	LEU	2.8
36	DJ	106	LEU	2.8
51	CY	56	MET	2.8
1	BA	1304	G	2.8
31	CA	1324	G	2.8
34	CG	172	LYS	2.8
36	DJ	9	VAL	2.8
36	DJ	10	LYS	2.8
48	CV	49	VAL	2.8
50	CX	78	LYS	2.8
54	DA	283	G	2.8
54	DA	2127	G	2.8
10	AJ	60	ASP	2.8
41	CO	26	GLY	2.8
26	C5	23	ILE	2.8
13	AM	101	ARG	2.8
15	BO	58	ARG	2.8
45	CS	80	ARG	2.8
24	C3	31	LEU	2.8
1	AA	1281	C	2.8
1	AA	1306	A	2.8
1	BA	196	A	2.8
31	CA	2665	A	2.8
36	CJ	78	VAL	2.8
39	CM	38	GLN	2.8
13	AM	96	PRO	2.8
36	CJ	129	ILE	2.8
41	CO	21	PHE	2.8
9	BI	17	ALA	2.8
14	AN	22	ALA	2.8
18	AR	51	TYR	2.8
31	CA	1026	G	2.8
54	DA	879	G	2.8
2	BB	129	LEU	2.8
38	CL	66	LYS	2.8
48	CV	33	LYS	2.8
46	CT	20	VAL	2.8
47	CU	34	VAL	2.8
48	CV	59	VAL	2.8

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
24	C3	4	THR	2.8
31	CA	2629	U	2.8
3	BC	158	GLY	2.8
19	BS	11	ILE	2.8
30	CD	156	PHE	2.8
1	AA	306	A	2.8
1	AA	1243	C	2.8
1	BA	948	C	2.8
14	BN	9	ARG	2.8
54	DA	2154	A	2.8
31	CA	1518	C	2.8
54	DA	1102	C	2.8
2	BB	34	ALA	2.8
8	BH	90	ASP	2.8
29	CC	61	ALA	2.8
46	CT	81	SER	2.8
53	DI	2	ALA	2.8
35	CH	35	LYS	2.8
36	DJ	11	LEU	2.8
48	CV	61	LYS	2.8
53	DI	40	GLU	2.8
36	CJ	9	VAL	2.8
1	BA	1386	G	2.8
7	AG	38	THR	2.8
53	DI	90	GLY	2.8
11	BK	110	ILE	2.8
13	AM	109	ARG	2.7
41	CO	4	ARG	2.7
1	BA	1240	U	2.7
31	CA	2449	U	2.7
9	BI	100	LYS	2.7
10	BJ	59	LYS	2.7
19	BS	13	LEU	2.7
25	C4	44	LEU	2.7
31	CA	1103	A	2.7
1	BA	1317	C	2.7
14	BN	11	VAL	2.7
45	CS	72	VAL	2.7
29	CC	9	THR	2.7
48	CV	20	GLY	2.7
51	CY	48	THR	2.7
14	AN	15	ALA	2.7

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
12	BL	18	LYS	2.7
31	CA	474	G	2.7
31	CA	830	G	2.7
13	BM	19	LEU	2.7
31	CA	1963	U	2.7
29	DC	272	SER	2.7
9	BI	111	VAL	2.7
52	CZ	24	GLU	2.7
1	AA	1014	A	2.7
31	CA	2062	A	2.7
31	CA	2358	A	2.7
10	AJ	25	ILE	2.7
10	BJ	100	ILE	2.7
22	C1	55	ILE	2.7
31	CA	433	C	2.7
31	CA	1606	C	2.7
31	CA	1732	C	2.7
25	C4	6	THR	2.7
48	CV	77	THR	2.7
14	AN	23	LYS	2.7
32	CE	90	GLN	2.7
39	CM	75	ALA	2.7
14	AN	46	LEU	2.7
2	BB	163	VAL	2.7
9	BI	67	VAL	2.7
25	C4	58	VAL	2.7
1	AA	4	U	2.7
31	CA	2149	U	2.7
31	CA	2245	U	2.7
39	CM	106	GLU	2.7
47	DU	56	GLU	2.7
10	BJ	7	ARG	2.7
44	CR	30	ARG	2.7
13	AM	94	GLY	2.7
26	C5	26	ILE	2.7
3	BC	26	THR	2.7
27	C0	10	THR	2.7
29	CC	39	LYS	2.7
31	CA	311	A	2.7
31	CA	480	A	2.7
31	CA	482	A	2.7
42	CP	4	LYS	2.7

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
51	CY	31	PRO	2.7
47	CU	72	GLN	2.7
53	DI	111	ALA	2.7
1	AA	87	C	2.7
1	BA	979	C	2.7
10	BJ	52	LEU	2.7
31	CA	225	C	2.7
54	DA	2165	C	2.7
41	CO	27	SER	2.7
1	BA	1086	U	2.7
31	CA	1779	U	2.7
50	CX	52	GLY	2.7
54	DA	884	U	2.7
9	BI	44	ALA	2.7
54	DA	1056	G	2.7
54	DA	1093	G	2.7
1	BA	630	A	2.7
16	BP	60	TRP	2.7
31	CA	1205	A	2.7
31	CA	1321	A	2.7
54	DA	1085	A	2.7
47	CU	47	VAL	2.7
47	CU	63	VAL	2.7
1	AA	1317	C	2.7
5	BE	157	ARG	2.7
19	BS	3	ARG	2.7
54	DA	1092	C	2.7
13	AM	73	ILE	2.6
25	C4	59	ILE	2.6
30	CD	118	PHE	2.6
45	CS	7	SER	2.6
36	CJ	28	LEU	2.6
36	DJ	76	ALA	2.6
47	CU	14	PRO	2.6
7	BG	38	THR	2.6
13	AM	102	THR	2.6
38	CL	3	GLN	2.6
22	C1	25	VAL	2.6
1	AA	1244	G	2.6
54	DA	2133	G	2.6
10	AJ	8	ILE	2.6
3	AC	78	GLY	2.6

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
45	CS	50	GLY	2.6
1	BA	634	C	2.6
1	BA	1217	C	2.6
14	AN	56	SER	2.6
31	CA	1167	C	2.6
46	CT	101	SER	2.6
54	DA	885	C	2.6
6	BF	39	LEU	2.6
11	BK	21	ALA	2.6
42	CP	6	ALA	2.6
2	BB	130	THR	2.6
11	BK	13	ARG	2.6
14	AN	4	GLN	2.6
16	BP	25	ARG	2.6
19	AS	37	ARG	2.6
29	CC	19	VAL	2.6
54	DA	2585	U	2.6
9	BI	114	LYS	2.6
23	C2	53	LYS	2.6
40	CN	118	LYS	2.6
50	CX	75	LYS	2.6
14	BN	10	GLU	2.6
43	CQ	27	GLU	2.6
9	AI	63	LEU	2.6
9	BI	118	LEU	2.6
10	BJ	42	LEU	2.6
3	BC	30	ALA	2.6
7	BG	45	SER	2.6
21	AU	2	PRO	2.6
31	CA	1653	G	2.6
31	CA	2107	G	2.6
31	CA	2125	G	2.6
36	DJ	23	PRO	2.6
51	CY	35	SER	2.6
54	DA	2163	A	2.6
54	DA	1062	G	2.6
54	DA	2124	G	2.6
8	BH	3	MET	2.6
10	BJ	48	ARG	2.6
14	BN	61	ARG	2.6
19	BS	66	MET	2.6
22	C1	19	HIS	2.6

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
25	C4	26	HIS	2.6
31	CA	2000	C	2.6
40	CN	136	MET	2.6
50	CX	41	ARG	2.6
51	DY	20	HIS	2.6
54	DA	1104	C	2.6
13	AM	16	VAL	2.6
14	AN	45	VAL	2.6
41	CO	29	VAL	2.6
9	AI	13	LYS	2.6
32	CE	78	TRP	2.6
41	CO	5	LYS	2.6
47	CU	64	LYS	2.6
47	CU	81	LYS	2.6
48	CV	79	LYS	2.6
9	BI	69	GLY	2.6
29	CC	27	GLY	2.6
41	CO	83	LEU	2.6
32	CE	182	ALA	2.6
48	CV	64	ALA	2.6
13	AM	43	VAL	2.6
37	CK	47	HIS	2.6
37	CK	48	VAL	2.6
1	BA	974	A	2.6
16	BP	12	LYS	2.6
54	DA	2602	A	2.6
41	CO	18	GLN	2.6
44	CR	37	GLN	2.6
1	AA	995	C	2.6
1	BA	207	C	2.6
1	BA	220	G	2.6
1	BA	1220	G	2.6
1	BA	1221	G	2.6
1	BA	1322	C	2.6
48	CV	65	ILE	2.6
54	DA	143	C	2.6
3	BC	159	GLY	2.6
5	BE	109	GLY	2.6
20	BT	86	LEU	2.6
23	C2	36	LEU	2.6
29	CC	41	GLY	2.6
29	CC	235	GLY	2.6

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
31	CA	1396	U	2.6
30	CD	168	GLU	2.6
47	CU	12	ARG	2.6
7	AG	105	VAL	2.6
22	C1	7	LYS	2.6
10	BJ	6	ILE	2.5
44	CR	52	GLN	2.5
14	BN	101	TRP	2.5
1	AA	1201	A	2.5
9	AI	64	TYR	2.5
54	DA	1080	A	2.5
1	BA	136	C	2.5
1	BA	932	C	2.5
31	CA	128	C	2.5
13	AM	5	ALA	2.5
13	AM	106	ALA	2.5
30	CD	65	ALA	2.5
44	CR	21	ALA	2.5
1	BA	200	G	2.5
1	BA	213	G	2.5
1	BA	954	G	2.5
1	BA	1355	G	2.5
11	BK	68	GLU	2.5
13	BM	10	PRO	2.5
31	CA	317	G	2.5
31	CA	801	G	2.5
31	CA	2286	G	2.5
35	DH	87	GLU	2.5
1	AA	950	U	2.5
25	C4	23	LYS	2.5
48	CV	70	VAL	2.5
13	BM	22	ILE	2.5
33	CF	154	ILE	2.5
36	DJ	35	ILE	2.5
6	AF	61	LEU	2.5
23	C2	11	LEU	2.5
36	DJ	28	LEU	2.5
42	CP	48	LEU	2.5
13	AM	86	TYR	2.5
16	BP	10	GLY	2.5
39	CM	114	GLY	2.5
24	C3	41	ARG	2.5

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
23	C2	52	ALA	2.5
1	BA	1363	A	2.5
31	CA	1808	A	2.5
54	DA	2142	A	2.5
9	BI	112	GLU	2.5
43	CQ	94	LYS	2.5
45	CS	71	LYS	2.5
10	BJ	77	VAL	2.5
29	CC	228	VAL	2.5
30	CD	122	VAL	2.5
1	BA	962	C	2.5
1	BA	209	U	2.5
7	BG	42	ILE	2.5
10	BJ	50	THR	2.5
14	AN	31	ILE	2.5
39	CM	73	ILE	2.5
41	CO	113	ILE	2.5
54	DA	546	U	2.5
1	BA	976	G	2.5
13	AM	99	GLY	2.5
35	DH	25	TYR	2.5
20	BT	33	LYS	2.5
29	CC	255	LYS	2.5
52	CZ	30	MET	2.5
26	C5	31	PRO	2.5
32	CE	52	VAL	2.5
36	DJ	78	VAL	2.5
37	CK	9	GLU	2.5
31	CA	654	A	2.5
31	CA	878	A	2.5
31	CA	2872	A	2.5
54	DA	2134	A	2.5
3	BC	162	ILE	2.5
14	BN	82	ILE	2.5
23	C2	48	ILE	2.5
23	D2	54	ILE	2.5
9	AI	35	LEU	2.5
36	DJ	67	PHE	2.5
1	AA	1120	C	2.5
1	BA	1320	C	2.5
1	BA	1183	U	2.5
15	BO	62	GLN	2.5

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
24	C3	28	ARG	2.5
31	CA	1985	C	2.5
31	CA	2045	C	2.5
39	CM	69	ARG	2.5
31	CA	224	U	2.5
31	CA	790	U	2.5
31	CA	1468	U	2.5
35	CH	11	ASN	2.5
45	CS	6	GLN	2.5
10	AJ	38	GLY	2.5
13	BM	99	GLY	2.5
39	CM	28	GLY	2.5
39	CM	58	TYR	2.5
49	CW	14	LYS	2.5
53	DI	25	ALA	2.5
31	CA	107	G	2.5
31	CA	1107	G	2.5
31	CA	1311	G	2.5
31	CA	2110	G	2.5
14	AN	11	VAL	2.5
32	CE	28	VAL	2.5
40	CN	36	VAL	2.5
17	BQ	21	ILE	2.5
47	CU	30	ILE	2.5
41	CO	10	LEU	2.5
46	CT	19	LEU	2.5
6	BF	91	ARG	2.5
10	BJ	45	ARG	2.5
39	CM	78	ARG	2.5
1	AA	1236	A	2.5
31	CA	504	A	2.5
31	CA	1322	A	2.5
31	CA	1469	A	2.5
31	CA	1525	A	2.5
10	BJ	46	LYS	2.5
30	CD	208	LYS	2.5
37	CK	39	LYS	2.5
44	CR	29	SER	2.5
45	CS	76	LYS	2.5
46	CT	79	GLY	2.5
2	AB	42	ASN	2.5
7	BG	150	ALA	2.5

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
48	CV	2	ALA	2.5
1	BA	328	C	2.5
2	AB	9	MET	2.5
31	CA	444	C	2.5
31	CA	1466	U	2.5
54	DA	102	U	2.5
54	DA	1094	U	2.5
36	CJ	58	VAL	2.5
23	C2	51	GLU	2.5
37	CK	142	ILE	2.4
48	CV	58	ILE	2.4
10	BJ	87	LEU	2.4
22	C1	28	LEU	2.4
1	BA	102	G	2.4
31	CA	312	G	2.4
31	CA	1087	G	2.4
19	BS	79	THR	2.4
41	CO	36	THR	2.4
45	CS	48	LYS	2.4
47	CU	60	THR	2.4
39	CM	34	GLY	2.4
2	AB	136	MET	2.4
7	BG	134	ALA	2.4
49	CW	22	ALA	2.4
1	BA	65	A	2.4
2	BB	210	VAL	2.4
9	BI	48	VAL	2.4
29	CC	220	VAL	2.4
32	CE	83	VAL	2.4
51	CY	17	ASN	2.4
52	CZ	53	VAL	2.4
54	DA	2119	A	2.4
2	AB	201	PRO	2.4
29	CC	8	PRO	2.4
36	DJ	20	PRO	2.4
31	CA	235	U	2.4
31	CA	355	U	2.4
54	DA	846[A]	U	2.4
20	BT	83	ILE	2.4
31	CA	968	C	2.4
36	DJ	109	ILE	2.4
14	BN	53	ARG	2.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
39	CM	82	LEU	2.4
39	CM	92	LEU	2.4
48	CV	14	LEU	2.4
48	CV	45	HIS	2.4
36	DJ	131	GLY	2.4
6	AF	88	MET	2.4
9	AI	17	ALA	2.4
14	BN	4	GLN	2.4
29	DC	251	GLN	2.4
1	BA	1356	G	2.4
10	BJ	84	VAL	2.4
13	AM	97	VAL	2.4
14	AN	5	SER	2.4
23	C2	47	VAL	2.4
31	CA	117	G	2.4
35	CH	108	VAL	2.4
36	DJ	57	VAL	2.4
7	BG	93	PRO	2.4
29	CC	217	ARG	2.4
36	DJ	59	ILE	2.4
41	CO	98	LEU	2.4
42	CP	87	ILE	2.4
31	CA	676	A	2.4
1	BA	981	U	2.4
1	BA	1307	U	2.4
30	CD	62	LYS	2.4
31	CA	276	U	2.4
31	CA	2585	U	2.4
46	CT	98	LYS	2.4
48	CV	47	LYS	2.4
25	C4	53	GLY	2.4
48	CV	15	THR	2.4
14	BN	6	MET	2.4
29	CC	210	ALA	2.4
24	C3	9	VAL	2.4
30	CD	26	VAL	2.4
41	CO	47	VAL	2.4
47	CU	57	VAL	2.4
14	AN	80	SER	2.4
42	CP	32	PRO	2.4
12	BL	14	ARG	2.4
12	BL	109	ASP	2.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
34	DG	114	ASP	2.4
36	CJ	53	LEU	2.4
39	CM	27	LEU	2.4
42	CP	93	ASP	2.4
1	BA	1343	G	2.4
6	BF	8	PHE	2.4
31	CA	2405	G	2.4
39	CM	64	PHE	2.4
54	DA	1071	G	2.4
19	BS	14	HIS	2.4
31	CA	354	A	2.4
31	CA	1307	A	2.4
42	CP	29	HIS	2.4
3	BC	44	THR	2.4
14	AN	25	ALA	2.4
36	CJ	73	THR	2.4
47	CU	67	VAL	2.4
1	BA	1369	C	2.4
31	CA	33	C	2.4
42	CP	5	SER	2.4
48	CV	103	ILE	2.4
2	BB	82	ASP	2.4
25	C4	5	LYS	2.4
20	BT	70	ASN	2.4
48	CV	40	ASN	2.4
3	BC	37	PHE	2.4
29	CC	6	CYS	2.4
44	CR	35	ALA	2.4
7	BG	32	VAL	2.4
17	BQ	29	VAL	2.4
22	C1	54	VAL	2.4
47	CU	10	VAL	2.4
53	DI	55	VAL	2.4
31	CA	619	G	2.4
1	BA	471	U	2.4
22	C1	16	ARG	2.4
31	CA	1213	A	2.4
31	CA	1572	A	2.4
31	CA	2587	A	2.4
31	CA	2713	U	2.4
31	CA	2871	U	2.4
31	CA	2873	A	2.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
32	CE	69	ARG	2.4
3	BC	193	TYR	2.3
16	BP	52	LEU	2.3
32	CE	147	LEU	2.3
32	CE	47	LYS	2.3
34	CG	103	ILE	2.3
47	CU	32	LEU	2.3
24	C3	25	LYS	2.3
19	BS	4	SER	2.3
25	C4	22	PHE	2.3
47	CU	78	SER	2.3
31	CA	11	C	2.3
31	CA	336	C	2.3
31	CA	343	C	2.3
31	CA	623	C	2.3
31	CA	2667	C	2.3
31	CA	2676	C	2.3
30	CD	6	GLY	2.3
32	CE	50	ALA	2.3
39	CM	71	ALA	2.3
46	CT	29	VAL	2.3
3	BC	179	ARG	2.3
14	BN	59	ARG	2.3
10	BJ	64	GLN	2.3
12	AL	15	LYS	2.3
48	CV	21	LYS	2.3
16	AP	41	PRO	2.3
25	C4	64	TYR	2.3
1	BA	205	A	2.3
31	CA	615	U	2.3
31	CA	2154	A	2.3
54	DA	2111	U	2.3
1	BA	953	G	2.3
31	CA	46	G	2.3
31	CA	488	G	2.3
31	CA	512	G	2.3
31	CA	729	G	2.3
31	CA	1382	G	2.3
31	CA	2128	G	2.3
31	CA	2526	G	2.3
42	DP	1	MET	2.3
1	AA	1147	C	2.3

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	BA	210	C	2.3
12	AL	2	ALA	2.3
12	BL	4	VAL	2.3
20	AT	20	HIS	2.3
20	BT	65	GLY	2.3
30	DD	54	ALA	2.3
31	CA	184	C	2.3
31	CA	1092	C	2.3
31	CA	2066	C	2.3
32	CE	39	ALA	2.3
43	CQ	108	ALA	2.3
46	CT	71	VAL	2.3
50	CX	27	GLY	2.3
7	BG	36	LYS	2.3
33	CF	117	LEU	2.3
9	BI	64	TYR	2.3
2	BB	126	PHE	2.3
31	CA	1066	U	2.3
1	BA	532	A	2.3
8	AH	3	MET	2.3
17	BQ	63	GLU	2.3
31	CA	1134	A	2.3
3	BC	197	GLY	2.3
11	BK	67	ALA	2.3
24	C3	20	ALA	2.3
29	CC	209	GLY	2.3
32	CE	64	GLY	2.3
32	CE	81	GLY	2.3
48	CV	6	ARG	2.3
1	BA	933	G	2.3
10	AJ	73	LEU	2.3
13	BM	85	CYS	2.3
25	C4	12	LYS	2.3
31	CA	185	G	2.3
31	CA	333	G	2.3
31	CA	583	G	2.3
31	CA	1622	G	2.3
31	CA	2061	G	2.3
32	CE	159	LEU	2.3
52	CZ	21	LEU	2.3
1	AA	1141	C	2.3
1	BA	984	C	2.3

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
30	CD	121	THR	2.3
31	CA	876	C	2.3
31	CA	1161	C	2.3
31	CA	1607	C	2.3
31	CA	2527	C	2.3
31	CA	2691	C	2.3
51	CY	25	THR	2.3
46	CT	86	MET	2.3
47	DU	69	ARG	2.3
12	BL	17	ALA	2.3
19	AS	7	LYS	2.3
19	AS	50	ALA	2.3
24	C3	27	GLY	2.3
32	CE	96	VAL	2.3
36	DJ	63	ALA	2.3
39	CM	20	GLY	2.3
41	CO	7	GLY	2.3
45	CS	36	ALA	2.3
1	AA	632	U	2.3
1	AA	1126	U	2.3
1	BA	1286	U	2.3
27	C0	17	LEU	2.3
31	CA	1880	U	2.3
31	CA	1971	U	2.3
31	CA	1237	A	2.3
22	C1	26	THR	2.3
24	C3	7	PRO	2.3
29	CC	247	PRO	2.3
7	BG	151	PHE	2.3
11	BK	64	GLN	2.3
27	C0	53	PHE	2.3
1	AA	844	G	2.3
1	BA	326	G	2.3
1	BA	1064	G	2.3
1	BA	1260	G	2.3
13	AM	23	TYR	2.3
48	CV	46	GLN	2.3
31	CA	252	G	2.3
31	CA	1236	G	2.3
31	CA	1444	G	2.3
31	CA	1573	G	2.3
31	CA	2630	G	2.3

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
31	CA	61	C	2.3
31	CA	2628	C	2.3
29	CC	5	LYS	2.3
36	CJ	10	LYS	2.3
42	CP	103	VAL	2.3
48	CV	43	LYS	2.3
3	BC	2	GLY	2.3
8	AH	91	GLU	2.3
41	CO	79	LEU	2.3
14	BN	54	ASP	2.2
36	CJ	101	ILE	2.2
45	CS	12	HIS	2.2
1	BA	458	U	2.2
31	CA	288	U	2.2
54	DA	1060	U	2.2
13	AM	104	THR	2.2
33	CF	157	THR	2.2
50	CX	60	PHE	2.2
1	BA	101	A	2.2
41	CO	45	ARG	2.2
9	BI	129	LYS	2.2
29	CC	18	LYS	2.2
45	CS	51	VAL	2.2
48	CV	25	VAL	2.2
32	CE	42	GLY	2.2
34	CG	33	LEU	2.2
48	CV	38	GLY	2.2
1	AA	210	C	2.2
1	AA	540	G	2.2
1	BA	942	G	2.2
1	BA	985	C	2.2
1	BA	1222	G	2.2
31	CA	517	C	2.2
31	CA	1252	G	2.2
31	CA	1319	C	2.2
31	CA	1708	C	2.2
31	CA	2065	C	2.2
43	CQ	102	GLU	2.2
16	BP	4	ILE	2.2
32	CE	80	SER	2.2
10	BJ	60	ASP	2.2
36	CJ	69	PHE	2.2

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
39	CM	56	PRO	2.2
36	CJ	126	THR	2.2
31	CA	2891	U	2.2
32	CE	46	GLN	2.2
40	CN	22	GLN	2.2
40	CN	40	ARG	2.2
7	BG	76	LYS	2.2
19	BS	7	LYS	2.2
22	C1	37	LYS	2.2
39	CM	13	LYS	2.2
30	CD	9	VAL	2.2
1	AA	199	A	2.2
1	AA	1130	A	2.2
1	BA	977	A	2.2
1	BA	1251	A	2.2
9	BI	108	ALA	2.2
31	CA	457	A	2.2
31	CA	2741	A	2.2
33	DF	117	LEU	2.2
38	CL	16	ALA	2.2
53	DI	91	ALA	2.2
54	DA	1073	A	2.2
9	AI	72	ILE	2.2
19	AS	11	ILE	2.2
47	DU	2	ILE	2.2
22	C1	42	HIS	2.2
7	AG	41	SER	2.2
41	CO	15	SER	2.2
1	BA	1066	C	2.2
9	BI	20	PHE	2.2
9	BI	31	ASN	2.2
16	BP	32	PHE	2.2
22	C1	6	ASN	2.2
31	CA	455	C	2.2
48	CV	27	ASN	2.2
25	C4	42	ARG	2.2
41	CO	2	ARG	2.2
47	CU	76	ARG	2.2
1	BA	203	G	2.2
13	BM	103	LYS	2.2
27	C0	6	LYS	2.2
31	CA	409	G	2.2

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
31	CA	1309	G	2.2
54	DA	1074	G	2.2
54	DA	2121	G	2.2
3	BC	168	TYR	2.2
20	AT	28	MET	2.2
7	AG	94	VAL	2.2
9	AI	48	VAL	2.2
46	CT	47	VAL	2.2
53	DI	26	VAL	2.2
14	BN	16	LEU	2.2
12	BL	2	ALA	2.2
14	BN	2	ALA	2.2
31	CA	234	U	2.2
36	CJ	114	ALA	2.2
39	CM	83	ALA	2.2
53	DI	112	ALA	2.2
10	BJ	67	ILE	2.2
29	CC	54	ILE	2.2
1	AA	964	A	2.2
1	AA	1289	A	2.2
27	C0	20	HIS	2.2
31	CA	614	A	2.2
31	CA	764	A	2.2
31	CA	877	A	2.2
31	CA	2287	A	2.2
54	DA	2176	A	2.2
9	AI	11	ARG	2.2
15	AO	72	ARG	2.2
20	BT	10	ARG	2.2
36	CJ	75	PRO	2.2
44	CR	6	ARG	2.2
48	CV	55	PRO	2.2
20	BT	3	ASN	2.2
16	BP	23	ASP	2.2
5	BE	103	THR	2.2
19	AS	77	THR	2.2
25	C4	17	THR	2.2
31	CA	426	C	2.2
33	CF	25	VAL	2.2
44	CR	18	LEU	2.2
54	DA	1072	C	2.2
48	CV	78	GLY	2.2

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
3	AC	103	ILE	2.2
31	CA	289	G	2.2
31	CA	408	G	2.2
31	CA	1514	G	2.2
31	CA	2802	G	2.2
1	BA	1065	U	2.2
31	CA	1390	U	2.2
31	CA	2408	U	2.2
54	DA	138	U	2.2
21	BU	44	GLU	2.2
2	BB	162	PHE	2.2
7	BG	109	ARG	2.2
22	C1	40	ARG	2.2
34	CG	32	GLU	2.2
29	CC	28	LYS	2.2
30	CD	157	LYS	2.2
42	CP	97	PHE	2.2
46	CT	6	LYS	2.2
7	AG	2	PRO	2.2
31	CA	73	A	2.2
31	CA	222	A	2.2
31	CA	472	A	2.2
29	CC	37	ASN	2.2
46	CT	40	ASN	2.2
32	CE	131	THR	2.2
53	DI	41	LEU	2.2
25	C4	48	ALA	2.1
36	DJ	25	GLY	2.1
10	AJ	100	ILE	2.1
31	CA	237	C	2.1
31	CA	456	C	2.1
31	CA	1005	C	2.1
31	CA	2150	C	2.1
31	CA	2248	C	2.1
31	CA	2338	C	2.1
31	CA	2443	C	2.1
9	BI	123	ARG	2.1
24	C3	33	ARG	2.1
25	C4	13	ARG	2.1
29	CC	14	ARG	2.1
9	BI	13	LYS	2.1
19	BS	17	LYS	2.1

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
32	CE	57	LYS	2.1
34	CG	176	LYS	2.1
51	CY	34	HIS	2.1
1	BA	218	U	2.1
31	CA	448	U	2.1
31	CA	810	U	2.1
54	DA	2106	U	2.1
31	CA	7	G	2.1
31	CA	1524	G	2.1
31	CA	2190	G	2.1
54	DA	141	G	2.1
13	AM	64	VAL	2.1
14	AN	16	LEU	2.1
21	AU	16	LEU	2.1
29	CC	33	LEU	2.1
39	CM	68	SER	2.1
2	AB	46	THR	2.1
30	CD	133	THR	2.1
5	BE	127	ALA	2.1
1	BA	109	A	2.1
13	BM	100	GLN	2.1
24	C3	32	ALA	2.1
32	CE	168	ASP	2.1
42	CP	2	ASP	2.1
3	AC	74	GLY	2.1
13	AM	4	ILE	2.1
38	CL	68	GLY	2.1
51	CY	59	ILE	2.1
24	C3	19	ARG	2.1
48	CV	22	ARG	2.1
19	BS	74	PHE	2.1
24	C3	16	HIS	2.1
48	CV	37	GLU	2.1
1	BA	135	C	2.1
28	CB	30	C	2.1
31	CA	2078	C	2.1
31	CA	2362	C	2.1
41	CO	109	PRO	2.1
54	DA	1100	C	2.1
7	AG	116	MET	2.1
7	BG	13	LEU	2.1
7	BG	124	LEU	2.1

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
36	CJ	138	LEU	2.1
41	CO	20	MET	2.1
47	CU	7	LEU	2.1
52	CZ	43	LEU	2.1
25	C4	50	VAL	2.1
1	AA	960	U	2.1
1	BA	114	U	2.1
31	CA	686	U	2.1
31	CA	1406	U	2.1
54	DA	12	U	2.1
54	DA	2155	U	2.1
48	CV	98	SER	2.1
44	CR	99	ALA	2.1
3	AC	162	ILE	2.1
13	AM	100	GLN	2.1
1	AA	1290	G	2.1
1	BA	260	G	2.1
3	BC	118	ASP	2.1
7	AG	25	LYS	2.1
9	BI	130	ARG	2.1
29	CC	48	ARG	2.1
31	CA	124	G	2.1
31	CA	214	G	2.1
31	CA	1093	G	2.1
31	CA	2742	G	2.1
39	CM	52	GLY	2.1
47	CU	79	ASP	2.1
50	CX	15	ASP	2.1
13	BM	110	LYS	2.1
39	CM	47	ARG	2.1
9	AI	39	PHE	2.1
9	BI	39	PHE	2.1
31	CA	227	A	2.1
48	CV	87	PHE	2.1
7	AG	50	LEU	2.1
7	AG	59	LEU	2.1
14	BN	52	PRO	2.1
19	AS	69	HIS	2.1
39	CM	3	LEU	2.1
46	CT	36	LEU	2.1
2	BB	70	VAL	2.1
32	CE	196	VAL	2.1

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	AA	470	C	2.1
1	AA	1066	C	2.1
16	BP	82	ALA	2.1
31	CA	31	C	2.1
31	CA	236	C	2.1
31	CA	672	C	2.1
31	CA	2347	C	2.1
43	CQ	91	ALA	2.1
47	CU	83	ALA	2.1
7	BG	41	SER	2.1
14	BN	32	SER	2.1
19	AS	79	THR	2.1
49	CW	89	ILE	2.1
53	DI	123	ILE	2.1
29	CC	271	ARG	2.1
31	CA	102	U	2.1
40	CN	17	ASN	2.1
54	DA	2130	U	2.1
16	BP	53	ASP	2.1
1	AA	76	G	2.1
8	BH	121	LEU	2.1
27	C0	29	LEU	2.1
31	CA	250	G	2.1
31	CA	338	G	2.1
31	CA	777	G	2.1
31	CA	989	G	2.1
31	CA	1300	G	2.1
31	CA	2112	G	2.1
54	DA	2112	G	2.1
1	BA	199	A	2.1
1	BA	1288	A	2.1
10	BJ	57	VAL	2.1
30	CD	60	VAL	2.1
35	CH	144	VAL	2.1
36	CJ	139	VAL	2.1
36	DJ	70	VAL	2.1
54	DA	1420	A	2.1
51	CY	24	ALA	2.1
12	BL	15	LYS	2.1
30	CD	59	ARG	2.1
30	CD	116	LYS	2.1
44	CR	78	LYS	2.1

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
53	DI	37	LYS	2.1
19	BS	39	THR	2.1
25	C4	51	SER	2.1
29	DC	38	SER	2.1
33	CF	128	TYR	2.1
36	CJ	128	SER	2.1
31	CA	264	C	2.1
31	CA	510	C	2.1
1	AA	1354	U	2.1
1	BA	1121	U	2.1
28	CB	74	U	2.1
31	CA	2384	U	2.1
54	DA	139	U	2.1
54	DA	360	U	2.1
54	DA	1081	U	2.1
7	BG	59	LEU	2.1
17	BQ	44	LEU	2.1
10	AJ	36	VAL	2.1
14	AN	52	PRO	2.1
18	BR	74	HIS	2.1
44	CR	31	VAL	2.1
29	CC	35	GLU	2.1
14	AN	42	TRP	2.0
10	BJ	9	ARG	2.0
7	BG	104	ILE	2.0
13	AM	31	LYS	2.0
32	CE	34	ALA	2.0
40	CN	58	LYS	2.0
50	CX	25	ARG	2.0
48	CV	72	ILE	2.0
1	BA	1280	A	2.0
31	CA	483	A	2.0
31	CA	626	A	2.0
31	CA	2059	A	2.0
31	CA	2820	A	2.0
1	BA	1124	G	2.0
31	CA	277	G	2.0
31	CA	308	G	2.0
31	CA	974	G	2.0
31	CA	1099	G	2.0
31	CA	1341	G	2.0
17	BQ	42	THR	2.0

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
53	DI	84	TYR	2.0
14	BN	56	SER	2.0
36	DJ	128	SER	2.0
46	CT	13	SER	2.0
36	DJ	42	PHE	2.0
13	BM	105	ASN	2.0
4	AD	21	LEU	2.0
41	CO	106	ASP	2.0
48	CV	18	ASP	2.0
52	CZ	19	LEU	2.0
52	CZ	22	LEU	2.0
53	DI	3	LEU	2.0
1	AA	1125	U	2.0
31	CA	791	C	2.0
31	CA	1526	C	2.0
31	CA	2743	U	2.0
36	CJ	57	VAL	2.0
1	AA	1129	C	2.0
31	CA	151	C	2.0
37	CK	40	HIS	2.0
46	CT	7	HIS	2.0
9	AI	18	ARG	2.0
23	C2	33	LYS	2.0
29	CC	238	ARG	2.0
42	CP	16	ARG	2.0
42	CP	20	GLU	2.0
5	BE	110	ALA	2.0
11	AK	66	ALA	2.0
19	AS	75	ALA	2.0
36	CJ	83	ALA	2.0
36	DJ	110	ALA	2.0
45	CS	28	ALA	2.0
46	CT	64	ALA	2.0
39	CM	102	GLY	2.0
9	BI	9	THR	2.0
9	AI	110	GLN	2.0
32	CE	23	PHE	2.0
32	CE	94	GLN	2.0
1	BA	468	A	2.0
31	CA	182	A	2.0
31	CA	432	A	2.0
31	CA	735	A	2.0

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
14	BN	51	LEU	2.0
18	BR	67	LEU	2.0
52	CZ	42	LEU	2.0
7	BG	135	VAL	2.0
10	AJ	91	ASP	2.0
31	CA	98	G	2.0
31	CA	356	G	2.0
31	CA	530	G	2.0
31	CA	1239	G	2.0
31	CA	1388	G	2.0
31	CA	1407	G	2.0
31	CA	1627	G	2.0
31	CA	2136	G	2.0
45	CS	96	VAL	2.0
54	DA	548	G	2.0
7	BG	71	PRO	2.0
6	BF	93	LYS	2.0
10	BJ	68	ARG	2.0
12	BL	108	LYS	2.0
37	CK	116	ARG	2.0
45	CS	84	ARG	2.0
46	DT	110	ARG	2.0
1	AA	1307	U	2.0
2	BB	164	ILE	2.0
5	AE	164	ILE	2.0
13	BM	7	ILE	2.0
14	AN	29	ALA	2.0
31	CA	34	U	2.0
31	CA	392	U	2.0
31	CA	431	U	2.0
31	CA	1647	U	2.0
36	DJ	14	ALA	2.0
44	CR	27	ALA	2.0
52	CZ	63	ALA	2.0
54	DA	1083	U	2.0
54	DA	1105	U	2.0
54	DA	2139	U	2.0
1	AA	932	C	2.0
1	AA	1119	C	2.0
1	BA	611	C	2.0
2	BB	98	GLY	2.0
13	AM	26	GLY	2.0

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Mol	Chain	Res	Type	RSRZ
31	CA	357	C	2.0
31	CA	1934	C	2.0

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

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q<0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
1	2MG	BA	1207	24/25	0.63	0.12	158,159,162,165	0
1	2MG	BA	966	24/25	0.66	0.15	149,153,160,161	0
1	5MC	BA	967	21/22	0.74	0.15	148,154,156,157	0
31	PSU	CA	1917	20/21	0.76	0.11	118,126,134,134	0
31	2MA	CA	2503	23/24	0.84	0.18	90,96,102,102	0
1	2MG	AA	1207	24/25	0.85	0.12	113,117,120,122	0
31	3TD	CA	1915	21/22	0.85	0.09	146,150,155,155	0
31	PSU	CA	1911	20/21	0.86	0.08	111,128,131,132	0
31	PSU	CA	746	20/21	0.86	0.12	93,99,101,102	0
31	PSU	CA	2504	20/21	0.86	0.16	78,86,90,91	0
31	PSU	CA	2457	20/21	0.87	0.12	79,83,85,85	0
31	6MZ	CA	1618	23/24	0.87	0.13	98,107,108,109	0
31	PSU	CA	955	20/21	0.87	0.12	84,89,90,90	0
31	PSU	CA	2580	20/21	0.87	0.11	77,86,88,89	0
1	PSU	BA	516	20/21	0.88	0.10	91,96,99,102	0
31	6MZ	CA	2030	23/24	0.88	0.14	78,86,97,99	0
12	D2T	BL	89	10/11	0.89	0.16	81,86,96,96	0
54	3TD	DA	1915	21/22	0.89	0.10	86,90,102,103	0
30	MEQ	CD	150	9/11	0.89	0.19	81,87,117,120	0
1	2MG	AA	966	24/25	0.90	0.11	78,87,97,97	0
54	PSU	DA	1917	20/21	0.91	0.09	63,73,79,79	0
31	5MC	CA	1962	21/22	0.91	0.14	67,72,76,76	0
31	5MU	CA	1939	21/22	0.92	0.12	69,74,80,82	0
31	1MG	CA	745	24/25	0.92	0.12	85,87,90,93	0
12	D2T	AL	89	10/11	0.92	0.12	47,53,67,70	0
40	4D4	CN	81	12/13	0.92	0.12	83,89,102,103	0
31	G7M	CA	2069	24/25	0.92	0.16	78,83,88,88	0
31	2MG	CA	2445	24/25	0.92	0.17	66,75,80,83	0
31	2MG	CA	1835	24/25	0.92	0.11	60,73,76,78	0
1	UR3	BA	1498	21/22	0.93	0.10	78,80,84,84	0
31	5MU	CA	747	21/22	0.93	0.10	93,100,102,105	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
31	OMC	CA	2498	21/22	0.93	0.12	77,80,86,87	0
1	PSU	AA	516	20/21	0.93	0.08	68,72,78,78	0
1	5MC	BA	1407	21/22	0.93	0.11	81,95,99,100	0
1	G7M	BA	527	24/25	0.94	0.09	80,85,91,93	0
1	5MC	AA	967	21/22	0.94	0.10	76,93,96,97	0
31	OMG	CA	2251	24/25	0.94	0.13	67,73,75,77	0
1	2MG	BA	1516	24/25	0.94	0.09	61,67,78,80	0
31	OMU	CA	2552	21/22	0.94	0.17	78,81,85,89	0
1	MA6	BA	1518	24/25	0.95	0.09	67,74,79,79	0
31	PSU	CA	2605	20/21	0.95	0.09	74,75,78,80	0
31	PSU	CA	2604	20/21	0.95	0.08	65,71,84,84	0
54	PSU	DA	1911	20/21	0.96	0.06	67,74,75,75	0
1	UR3	AA	1498	21/22	0.96	0.08	51,53,57,59	0
1	4OC	BA	1402	22/23	0.96	0.07	74,79,81,82	0
1	G7M	AA	527	24/25	0.96	0.08	53,59,62,65	0
1	MA6	BA	1519	24/25	0.96	0.09	68,73,77,78	0
40	4D4	DN	81[A]	12/13	0.97	0.10	26,33,49,50	9
40	4D4	DN	81[B]	12/13	0.97	0.10	11,21,28,29	9
54	2MG	DA	1835	24/25	0.97	0.07	31,42,47,48	0
1	4OC	AA	1402	22/23	0.97	0.07	48,55,61,62	0
1	2MG	AA	1516	24/25	0.97	0.08	44,49,52,53	0
1	MA6	AA	1518	24/25	0.97	0.08	44,46,50,53	0
54	PSU	DA	2604	20/21	0.97	0.08	32,36,47,47	0
1	MA6	AA	1519	24/25	0.97	0.08	46,48,50,54	0
1	5MC	AA	1407	21/22	0.97	0.06	43,47,52,53	0
54	2MA	DA	2503	23/24	0.98	0.06	15,28,32,41	0
54	PSU	DA	2504	20/21	0.98	0.06	31,33,36,38	0
54	OMU	DA	2552	21/22	0.98	0.07	22,26,30,35	0
54	5MU	DA	747	21/22	0.98	0.06	20,25,31,38	0
54	PSU	DA	2605	20/21	0.98	0.07	26,34,37,38	0
54	5MU	DA	1939	21/22	0.98	0.07	25,30,36,40	0
30	MEQ	DD	150[A]	10/11	0.98	0.07	11,18,25,27	10
30	MEQ	DD	150[B]	10/11	0.98	0.07	19,28,34,35	10
54	5MC	DA	1962	21/22	0.98	0.07	28,37,39,42	0
54	PSU	DA	2457	20/21	0.99	0.05	22,25,26,29	0
54	OMC	DA	2498	21/22	0.99	0.05	18,21,24,27	0
54	PSU	DA	955	20/21	0.99	0.06	20,23,26,26	0
54	6MZ	DA	1618	23/24	0.99	0.05	17,24,27,28	0
54	PSU	DA	746	20/21	0.99	0.06	18,23,26,30	0
54	PSU	DA	2580	20/21	0.99	0.06	17,21,28,29	0
54	1MG	DA	745	24/25	0.99	0.05	16,22,28,30	0
54	6MZ	DA	2030	23/24	0.99	0.05	15,20,26,28	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
54	G7M	DA	2069	24/25	0.99	0.06	20,28,31,33	0
54	OMG	DA	2251	24/25	0.99	0.05	21,25,34,42	0
54	2MG	DA	2445	24/25	0.99	0.06	16,22,24,25	0
54	H2U	DA	2449	20/21	0.99	0.05	19,22,24,26	0

### 6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

### 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
55	MG	AA	1622	1/1	0.29	0.42	116,116,116,116	0
55	MG	BA	1646	1/1	0.31	0.34	141,141,141,141	0
55	MG	CA	3154	1/1	0.31	0.34	136,136,136,136	0
55	MG	CA	3075	1/1	0.33	0.35	221,221,221,221	0
55	MG	CA	3005	1/1	0.46	0.23	239,239,239,239	0
55	MG	BA	1641	1/1	0.48	0.30	121,121,121,121	0
55	MG	CA	3122	1/1	0.52	0.58	106,106,106,106	0
55	MG	CA	3038	1/1	0.55	0.12	258,258,258,258	0
55	MG	BA	1603	1/1	0.55	0.12	279,279,279,279	0
55	MG	CA	3155	1/1	0.55	0.24	152,152,152,152	0
55	MG	CA	3067	1/1	0.56	0.19	277,277,277,277	0
55	MG	DA	3168	1/1	0.56	0.32	106,106,106,106	0
55	MG	CA	3146	1/1	0.59	0.25	164,164,164,164	0
55	MG	CA	3124	1/1	0.60	0.21	124,124,124,124	0
55	MG	CA	3034	1/1	0.62	0.26	244,244,244,244	0
55	MG	AA	1628	1/1	0.62	0.22	110,110,110,110	0
55	MG	BA	1607	1/1	0.64	0.27	203,203,203,203	0
55	MG	BA	1638	1/1	0.65	0.52	107,107,107,107	0
55	MG	CA	3135	1/1	0.65	0.50	107,107,107,107	0
55	MG	AA	1677	1/1	0.66	0.15	138,138,138,138	0
55	MG	BA	1606	1/1	0.66	0.25	251,251,251,251	0
55	MG	CA	3077	1/1	0.67	0.21	232,232,232,232	0
55	MG	AA	1678	1/1	0.68	0.28	76,76,76,76	0
55	MG	CA	3060	1/1	0.69	0.17	234,234,234,234	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
55	MG	CA	3061	1/1	0.69	0.11	225,225,225,225	0
55	MG	BA	1624	1/1	0.69	0.13	249,249,249,249	0
55	MG	CA	3148	1/1	0.70	0.44	46,46,46,46	1
55	MG	CA	3139	1/1	0.70	0.20	83,83,83,83	0
55	MG	CA	3132	1/1	0.71	0.24	97,97,97,97	0
55	MG	CA	3110	1/1	0.72	0.23	102,102,102,102	0
55	MG	CA	3002	1/1	0.73	0.15	258,258,258,258	0
55	MG	CA	3104	1/1	0.73	0.21	254,254,254,254	0
55	MG	CA	3123	1/1	0.73	0.14	115,115,115,115	0
57	MPD	DE	301	8/8	0.73	0.25	123,126,129,129	0
59	TAC	BA	1644	32/32	0.73	0.22	139,152,159,159	0
55	MG	DA	3144	1/1	0.74	0.26	107,107,107,107	0
55	MG	CA	3152	1/1	0.74	0.14	145,145,145,145	0
55	MG	CA	3147	1/1	0.74	0.51	51,51,51,51	1
55	MG	BA	1639	1/1	0.74	0.27	93,93,93,93	0
61	PEG	DQ	201	7/7	0.74	0.24	104,108,109,109	0
55	MG	BA	1636	1/1	0.75	0.38	91,91,91,91	0
55	MG	AA	1660	1/1	0.75	0.18	281,281,281,281	0
55	MG	CA	3003	1/1	0.75	0.32	270,270,270,270	0
55	MG	CA	3125	1/1	0.76	0.28	98,98,98,98	0
55	MG	AA	1624	1/1	0.76	0.31	93,93,93,93	0
55	MG	CA	3047	1/1	0.76	0.38	238,238,238,238	0
55	MG	CA	3009	1/1	0.76	0.26	240,240,240,240	0
55	MG	AA	1617	1/1	0.76	0.71	147,147,147,147	0
62	EDO	DA	3003	4/4	0.76	0.29	89,89,89,89	0
66	ACY	DA	3196	4/4	0.76	0.28	72,76,77,77	0
55	MG	CA	3111	1/1	0.77	0.19	76,76,76,76	0
58	PUT	AA	1673	6/6	0.77	0.17	92,93,93,94	0
55	MG	AA	1654	1/1	0.77	0.40	259,259,259,259	0
55	MG	CA	3156	1/1	0.77	0.16	218,218,218,218	0
55	MG	CA	3032	1/1	0.77	0.12	244,244,244,244	0
55	MG	AA	1616	1/1	0.77	0.34	87,87,87,87	0
55	MG	CA	3129	1/1	0.78	0.20	89,89,89,89	0
55	MG	BA	1625	1/1	0.78	0.19	251,251,251,251	0
57	MPD	DK	201	8/8	0.78	0.21	96,98,100,100	0
55	MG	DA	3147	1/1	0.78	0.22	104,104,104,104	0
55	MG	CA	3134	1/1	0.79	0.28	126,126,126,126	0
55	MG	CA	3073	1/1	0.79	0.19	229,229,229,229	0
61	PEG	DP	201	7/7	0.79	0.20	90,91,93,95	0
55	MG	CA	3001	1/1	0.79	0.29	296,296,296,296	0
55	MG	CA	3021	1/1	0.79	0.39	261,261,261,261	0
55	MG	AA	1626	1/1	0.79	0.21	113,113,113,113	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
55	MG	BA	1647	1/1	0.80	0.19	86,86,86,86	0
55	MG	CA	3137	1/1	0.80	0.18	123,123,123,123	0
55	MG	BA	1640	1/1	0.80	0.35	94,94,94,94	0
55	MG	CA	3014	1/1	0.80	0.16	200,200,200,200	0
58	PUT	AA	1674	6/6	0.80	0.44	128,131,132,133	0
55	MG	BA	1604	1/1	0.81	0.12	187,187,187,187	0
57	MPD	DN	201	8/8	0.81	0.22	84,91,101,101	0
55	MG	CA	3007	1/1	0.81	0.11	214,214,214,214	0
55	MG	CA	3133	1/1	0.81	0.26	83,83,83,83	0
58	PUT	AA	1675	6/6	0.81	0.29	106,107,108,109	0
57	MPD	AA	1676	8/8	0.82	0.35	102,115,118,121	0
55	MG	DA	3111	1/1	0.82	0.38	292,292,292,292	0
55	MG	DA	3133	1/1	0.82	0.19	78,78,78,78	0
55	MG	CA	3115	1/1	0.82	0.27	72,72,72,72	0
55	MG	CA	3150	1/1	0.82	0.15	74,74,74,74	0
55	MG	CA	3028	1/1	0.82	0.13	274,274,274,274	0
55	MG	CA	3068	1/1	0.83	0.14	205,205,205,205	0
55	MG	AA	1601	1/1	0.83	0.55	76,76,76,76	0
55	MG	CA	3113	1/1	0.83	0.54	79,79,79,79	0
55	MG	DA	3130	1/1	0.83	0.38	99,99,99,99	0
55	MG	CA	3131	1/1	0.83	0.17	83,83,83,83	0
55	MG	AA	1608	1/1	0.83	0.32	78,78,78,78	0
55	MG	CA	3120	1/1	0.83	0.19	137,137,137,137	0
55	MG	BA	1623	1/1	0.83	0.24	254,254,254,254	0
55	MG	DA	3176	1/1	0.83	0.29	97,97,97,97	0
55	MG	DA	3180	1/1	0.83	0.22	95,95,95,95	0
55	MG	BA	1648	1/1	0.83	0.25	68,68,68,68	0
67	GUN	DA	3211	11/11	0.83	0.18	82,84,86,86	0
55	MG	CA	3151	1/1	0.84	0.31	81,81,81,81	0
58	PUT	AA	1672	6/6	0.84	0.37	90,93,95,95	0
55	MG	CA	3094	1/1	0.84	0.19	126,126,126,126	0
55	MG	CA	3142	1/1	0.84	0.12	71,71,71,71	0
55	MG	CA	3026	1/1	0.84	0.17	111,111,111,111	0
59	TAC	BA	1643	32/32	0.84	0.14	146,150,152,152	0
58	PUT	DA	3205	6/6	0.85	0.35	77,82,89,91	0
55	MG	DA	3163	1/1	0.85	0.24	84,84,84,84	0
55	MG	CA	3116	1/1	0.85	0.33	75,75,75,75	0
57	MPD	DT	201	8/8	0.85	0.30	84,87,99,100	0
55	MG	CA	3119	1/1	0.85	0.30	86,86,86,86	0
55	MG	BA	1633	1/1	0.85	0.17	241,241,241,241	0
55	MG	AA	1661	1/1	0.85	0.12	139,139,139,139	0
55	MG	AA	1609	1/1	0.85	0.35	88,88,88,88	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
55	MG	CA	3105	1/1	0.86	0.28	260,260,260,260	0
55	MG	DA	3121	1/1	0.86	0.35	70,70,70,70	0
57	MPD	DA	3190	8/8	0.86	0.17	78,82,85,89	0
55	MG	CA	3109	1/1	0.86	0.15	62,62,62,62	0
55	MG	AA	1611	1/1	0.86	0.30	94,94,94,94	0
55	MG	AA	1655	1/1	0.86	0.08	151,151,151,151	0
55	MG	CA	3128	1/1	0.86	0.12	82,82,82,82	0
55	MG	CA	3062	1/1	0.86	0.10	190,190,190,190	0
58	PUT	DA	3222	6/6	0.86	0.22	41,43,47,47	0
55	MG	CA	3130	1/1	0.86	0.28	76,76,76,76	0
55	MG	CA	3083	1/1	0.86	0.15	203,203,203,203	0
55	MG	CA	3090	1/1	0.86	0.13	170,170,170,170	0
56	PG4	AA	1670	13/13	0.86	0.12	64,79,91,92	0
55	MG	CA	3117	1/1	0.86	0.28	69,69,69,69	0
63	PGE	D1	102	10/10	0.86	0.26	107,117,119,119	0
55	MG	CA	3008	1/1	0.86	0.20	147,147,147,147	0
55	MG	BA	1612	1/1	0.86	0.23	159,159,159,159	0
58	PUT	DA	3195	6/6	0.87	0.30	76,81,86,87	0
55	MG	BA	1630	1/1	0.87	0.14	160,160,160,160	0
57	MPD	DE	302	8/8	0.87	0.31	71,76,83,85	0
55	MG	CA	3093	1/1	0.87	0.10	84,84,84,84	0
55	MG	DA	3062	1/1	0.87	0.14	211,211,211,211	0
55	MG	CA	3138	1/1	0.87	0.20	84,84,84,84	0
55	MG	DA	3173	1/1	0.87	0.32	100,100,100,100	0
55	MG	DA	3120	1/1	0.87	0.30	81,81,81,81	0
55	MG	BA	1616	1/1	0.87	0.19	162,162,162,162	0
55	MG	CA	3010	1/1	0.87	0.19	245,245,245,245	0
55	MG	AA	1605	1/1	0.87	0.45	80,80,80,80	0
55	MG	CA	3080	1/1	0.88	0.16	119,119,119,119	0
55	MG	AA	1604	1/1	0.88	0.23	50,50,50,50	0
55	MG	CA	3108	1/1	0.88	0.21	73,73,73,73	0
55	MG	AA	1618	1/1	0.88	0.57	86,86,86,86	0
61	PEG	D3	101	7/7	0.88	0.53	83,89,94,95	0
57	MPD	DA	3204	8/8	0.88	0.29	117,118,124,125	0
55	MG	DA	3127	1/1	0.88	0.35	71,71,71,71	0
55	MG	CA	3118	1/1	0.88	0.29	64,64,64,64	0
62	EDO	DA	3198	4/4	0.88	0.26	76,79,79,79	0
55	MG	AA	1606	1/1	0.88	0.33	83,83,83,83	0
55	MG	AA	1623	1/1	0.88	0.11	62,62,62,62	0
66	ACY	DA	3201	4/4	0.88	0.20	66,68,68,69	0
55	MG	CA	3112	1/1	0.88	0.08	62,62,62,62	0
55	MG	CA	3107	1/1	0.89	0.28	65,65,65,65	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
55	MG	AA	1603	1/1	0.89	0.24	81,81,81,81	0
55	MG	AA	1619	1/1	0.89	0.31	93,93,93,93	0
55	MG	CA	3136	1/1	0.89	0.37	87,87,87,87	0
55	MG	CA	3064	1/1	0.89	0.19	260,260,260,260	0
55	MG	AA	1621	1/1	0.89	0.69	97,97,97,97	0
55	MG	BA	1629	1/1	0.89	0.24	184,184,184,184	0
56	PG4	DQ	202	13/13	0.89	0.10	53,59,69,71	0
56	PG4	DR	202	13/13	0.89	0.29	97,109,121,121	0
55	MG	CA	3141	1/1	0.89	0.32	66,66,66,66	0
55	MG	CA	3072	1/1	0.89	0.12	249,249,249,249	0
55	MG	CA	3099	1/1	0.89	0.11	156,156,156,156	0
61	PEG	DA	3226	7/7	0.89	0.20	57,62,74,75	0
55	MG	CA	3022	1/1	0.89	0.24	206,206,206,206	0
55	MG	AA	1615	1/1	0.89	0.48	84,84,84,84	0
55	MG	DA	3138	1/1	0.89	0.56	38,38,38,38	1
63	PGE	DS	201	10/10	0.89	0.14	65,78,83,83	0
63	PGE	DA	3001	10/10	0.89	0.18	75,85,99,101	0
55	MG	DA	3142	1/1	0.89	0.42	84,84,84,84	0
55	MG	CA	3106	1/1	0.89	0.22	75,75,75,75	0
57	MPD	DA	3210	8/8	0.89	0.24	87,89,92,94	0
61	PEG	D1	103	7/7	0.90	0.29	76,77,78,78	0
56	PG4	DA	3193	13/13	0.90	0.21	65,77,93,94	0
55	MG	CA	3126	1/1	0.90	0.29	85,85,85,85	0
55	MG	DA	3171	1/1	0.90	0.09	74,74,74,74	0
55	MG	DA	3141	1/1	0.90	0.12	40,40,40,40	0
62	EDO	DB	211	4/4	0.90	0.31	88,88,90,90	0
62	EDO	DA	3002	4/4	0.90	0.40	71,74,79,82	0
55	MG	CA	3016	1/1	0.90	0.22	164,164,164,164	0
55	MG	CA	3071	1/1	0.90	0.09	152,152,152,152	0
55	MG	DA	3146	1/1	0.90	0.20	70,70,70,70	0
55	MG	CA	3145	1/1	0.90	0.19	62,62,62,62	0
63	PGE	DU	101	10/10	0.90	0.17	79,84,91,92	0
59	TAC	AA	1681	32/32	0.90	0.13	94,106,109,110	0
66	ACY	DA	3191	4/4	0.90	0.21	80,82,82,82	0
55	MG	DA	3137	1/1	0.90	0.35	80,80,80,80	0
57	MPD	DA	3207	8/8	0.90	0.17	86,86,88,89	0
61	PEG	AL	201	7/7	0.90	0.15	79,79,85,86	0
68	TRS	DA	3220	8/8	0.90	0.16	94,100,107,109	0
55	MG	CA	3076	1/1	0.91	0.08	132,132,132,132	0
55	MG	BA	1614	1/1	0.91	0.12	137,137,137,137	0
55	MG	CA	3153	1/1	0.91	0.17	59,59,59,59	0
57	MPD	DT	202	8/8	0.91	0.26	105,107,109,109	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
55	MG	AA	1636	1/1	0.91	0.12	113,113,113,113	0
57	MPD	DA	3192	8/8	0.91	0.23	69,77,79,80	0
55	MG	AA	1664	1/1	0.91	0.10	199,199,199,199	0
55	MG	AA	1625	1/1	0.91	0.16	68,68,68,68	0
56	PG4	DA	3216	13/13	0.91	0.15	77,89,96,96	0
55	MG	DA	3170	1/1	0.91	0.27	90,90,90,90	0
61	PEG	DL	201	7/7	0.91	0.12	66,69,70,71	0
55	MG	CA	3149	1/1	0.91	0.22	63,63,63,63	0
55	MG	CA	3012	1/1	0.91	0.08	84,84,84,84	0
61	PEG	DA	3199	7/7	0.91	0.19	79,84,92,93	0
55	MG	CA	3121	1/1	0.92	0.16	65,65,65,65	0
55	MG	CA	3056	1/1	0.92	0.63	78,78,78,78	0
55	MG	DA	3169	1/1	0.92	0.36	66,66,66,66	0
55	MG	DA	3123	1/1	0.92	0.31	81,81,81,81	0
55	MG	CA	3140	1/1	0.92	0.11	75,75,75,75	0
55	MG	DA	3172	1/1	0.92	0.40	81,81,81,81	0
55	MG	AA	1602	1/1	0.92	0.23	75,75,75,75	0
55	MG	BA	1637	1/1	0.92	0.19	86,86,86,86	0
61	PEG	DA	3227	7/7	0.92	0.21	75,79,86,87	0
55	MG	CA	3143	1/1	0.92	0.07	67,67,67,67	0
55	MG	CA	3037	1/1	0.92	0.21	146,146,146,146	0
56	PG4	BA	1642	13/13	0.92	0.11	84,86,94,96	0
55	MG	AA	1614	1/1	0.92	0.22	79,79,79,79	0
62	EDO	DA	3209	4/4	0.92	0.26	93,94,95,95	0
55	MG	DA	3012	1/1	0.92	0.13	153,153,153,153	0
56	PG4	DS	202	13/13	0.92	0.11	52,54,63,64	0
55	MG	DA	3037	1/1	0.92	0.18	22,22,22,22	0
58	PUT	DA	3212	6/6	0.92	0.19	54,63,66,70	0
63	PGE	DA	3203	10/10	0.92	0.17	68,72,76,76	0
63	PGE	DA	3225	10/10	0.92	0.17	73,81,92,92	0
65	1PE	DA	3202	16/16	0.92	0.17	55,64,72,72	0
55	MG	CA	3039	1/1	0.92	0.10	158,158,158,158	0
59	TAC	AA	1680	32/32	0.92	0.13	70,81,96,96	0
55	MG	BA	1609	1/1	0.92	0.09	168,168,168,168	0
55	MG	DA	3152	1/1	0.92	0.42	94,94,94,94	0
55	MG	DA	3158	1/1	0.92	0.18	63,63,63,63	0
55	MG	DA	3129	1/1	0.93	0.34	67,67,67,67	0
55	MG	AA	1630	1/1	0.93	0.11	105,105,105,105	0
55	MG	DA	3131	1/1	0.93	0.26	63,63,63,63	0
62	EDO	DA	3208	4/4	0.93	0.23	69,71,72,72	0
55	MG	AA	1665	1/1	0.93	0.12	136,136,136,136	0
62	EDO	DA	3215	4/4	0.93	0.15	67,71,74,74	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
55	MG	CA	3035	1/1	0.93	0.21	89,89,89,89	0
55	MG	CA	3054	1/1	0.93	0.07	118,118,118,118	0
55	MG	DA	3119	1/1	0.93	0.17	69,69,69,69	0
55	MG	CA	3036	1/1	0.93	0.10	133,133,133,133	0
55	MG	CA	3102	1/1	0.93	0.08	104,104,104,104	0
58	PUT	DA	3188	6/6	0.93	0.13	43,50,50,51	0
64	SPD	DA	3183	10/10	0.93	0.16	60,70,74,75	0
64	SPD	DA	3206	10/10	0.93	0.25	86,93,96,96	0
58	PUT	DA	3189	6/6	0.93	0.14	40,44,47,47	0
55	MG	CA	3078	1/1	0.93	0.10	153,153,153,153	0
61	PEG	DA	3200	7/7	0.93	0.33	65,68,77,77	0
55	MG	DA	3124	1/1	0.93	0.35	76,76,76,76	0
55	MG	AA	1642	1/1	0.93	0.10	89,89,89,89	0
58	PUT	DA	3213	6/6	0.93	0.23	83,85,91,93	0
55	MG	DA	3160	1/1	0.94	0.51	81,81,81,81	0
55	MG	AA	1610	1/1	0.94	0.22	95,95,95,95	0
55	MG	DA	3164	1/1	0.94	0.20	59,59,59,59	0
55	MG	DA	3167	1/1	0.94	0.30	90,90,90,90	0
55	MG	AA	1607	1/1	0.94	0.26	70,70,70,70	0
55	MG	CA	3019	1/1	0.94	0.09	58,58,58,58	0
55	MG	BA	1634	1/1	0.94	0.12	129,129,129,129	0
55	MG	CA	3084	1/1	0.94	0.10	167,167,167,167	0
62	EDO	D1	101	4/4	0.94	0.08	56,57,60,60	0
55	MG	AA	1669	1/1	0.94	0.10	172,172,172,172	0
62	EDO	DB	212	4/4	0.94	0.14	70,72,73,73	0
55	MG	CA	3023	1/1	0.94	0.12	159,159,159,159	0
55	MG	AA	1612	1/1	0.94	0.18	57,57,57,57	0
55	MG	DA	3177	1/1	0.94	0.26	67,67,67,67	0
55	MG	DA	3178	1/1	0.94	0.25	69,69,69,69	0
55	MG	DA	3179	1/1	0.94	0.19	101,101,101,101	0
55	MG	CA	3127	1/1	0.94	0.24	65,65,65,65	0
55	MG	DB	207	1/1	0.94	0.11	80,80,80,80	0
55	MG	DB	209	1/1	0.94	0.20	65,65,65,65	0
55	MG	DB	210	1/1	0.94	0.15	76,76,76,76	0
55	MG	CA	3114	1/1	0.94	0.14	57,57,57,57	0
58	PUT	DA	3219	6/6	0.94	0.14	63,64,65,66	0
63	PGE	DA	3214	10/10	0.94	0.14	56,58,66,66	0
58	PUT	DA	3221	6/6	0.94	0.20	113,116,117,118	0
55	MG	CA	3048	1/1	0.94	0.08	91,91,91,91	0
58	PUT	DA	3223	6/6	0.94	0.17	54,55,62,64	0
64	SPD	DA	3224	10/10	0.94	0.14	30,40,57,60	0
55	MG	AA	1627	1/1	0.94	0.28	72,72,72,72	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
55	MG	DA	3080	1/1	0.94	0.11	149,149,149,149	0
57	MPD	AA	1671	8/8	0.94	0.21	83,86,89,90	0
55	MG	DA	3149	1/1	0.94	0.06	47,47,47,47	0
55	MG	AA	1679	1/1	0.94	0.24	62,62,62,62	0
55	MG	CA	3058	1/1	0.94	0.21	138,138,138,138	0
62	EDO	DA	3194	4/4	0.95	0.16	61,63,64,65	0
55	MG	DA	3153	1/1	0.95	0.25	53,53,53,53	0
55	MG	DA	3154	1/1	0.95	0.21	62,62,62,62	0
55	MG	BA	1627	1/1	0.95	0.13	126,126,126,126	0
55	MG	CA	3063	1/1	0.95	0.14	118,118,118,118	0
55	MG	DA	3161	1/1	0.95	0.21	62,62,62,62	0
55	MG	CA	3079	1/1	0.95	0.06	116,116,116,116	0
55	MG	DA	3132	1/1	0.95	0.13	54,54,54,54	0
55	MG	DA	3165	1/1	0.95	0.17	47,47,47,47	0
58	PUT	DA	3184	6/6	0.95	0.15	53,55,60,60	0
55	MG	AA	1634	1/1	0.95	0.09	144,144,144,144	0
55	MG	CA	3082	1/1	0.95	0.16	112,112,112,112	0
55	MG	BA	1617	1/1	0.95	0.06	105,105,105,105	0
61	PEG	DA	3218	7/7	0.95	0.21	99,105,110,112	0
55	MG	AA	1656	1/1	0.95	0.08	140,140,140,140	0
65	1PE	DA	3185	16/16	0.95	0.11	37,52,80,82	0
55	MG	CA	3055	1/1	0.95	0.07	135,135,135,135	0
55	MG	AA	1663	1/1	0.95	0.06	94,94,94,94	0
55	MG	BA	1645	1/1	0.95	0.10	94,94,94,94	0
55	MG	CA	3074	1/1	0.95	0.07	101,101,101,101	0
55	MG	BA	1635	1/1	0.95	0.09	113,113,113,113	0
55	MG	AA	1658	1/1	0.95	0.12	101,101,101,101	0
62	EDO	DB	201	4/4	0.96	0.16	72,75,76,76	0
55	MG	CB	202	1/1	0.96	0.11	113,113,113,113	0
55	MG	CB	203	1/1	0.96	0.07	133,133,133,133	0
55	MG	DA	3117	1/1	0.96	0.27	62,62,62,62	0
55	MG	BA	1619	1/1	0.96	0.07	79,79,79,79	0
55	MG	CA	3088	1/1	0.96	0.06	67,67,67,67	0
62	EDO	DA	3197	4/4	0.96	0.09	51,51,53,53	0
55	MG	CA	3046	1/1	0.96	0.10	117,117,117,117	0
55	MG	CA	3092	1/1	0.96	0.06	125,125,125,125	0
55	MG	CA	3024	1/1	0.96	0.10	81,81,81,81	0
55	MG	DA	3125	1/1	0.96	0.30	58,58,58,58	0
55	MG	DA	3126	1/1	0.96	0.32	57,57,57,57	0
55	MG	CA	3011	1/1	0.96	0.06	70,70,70,70	0
55	MG	CA	3049	1/1	0.96	0.05	57,57,57,57	0
55	MG	CA	3053	1/1	0.96	0.10	81,81,81,81	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
63	PGE	DA	3186	10/10	0.96	0.09	33,40,41,41	0
60	ZN	C5	101	1/1	0.96	0.07	149,149,149,149	0
55	MG	AA	1633	1/1	0.96	0.06	128,128,128,128	0
63	PGE	DA	3217	10/10	0.96	0.15	67,71,76,76	0
55	MG	DR	203	1/1	0.96	0.13	140,140,140,140	0
55	MG	CA	3031	1/1	0.96	0.06	73,73,73,73	0
55	MG	DB	208	1/1	0.96	0.09	77,77,77,77	0
55	MG	AA	1657	1/1	0.96	0.10	105,105,105,105	0
55	MG	DA	3175	1/1	0.96	0.14	68,68,68,68	0
55	MG	DA	3140	1/1	0.96	0.17	68,68,68,68	0
55	MG	CA	3057	1/1	0.96	0.07	106,106,106,106	0
55	MG	AA	1647	1/1	0.96	0.09	149,149,149,149	0
55	MG	DA	3143	1/1	0.96	0.11	50,50,50,50	0
55	MG	CA	3018	1/1	0.96	0.07	90,90,90,90	0
55	MG	CB	201	1/1	0.96	0.06	159,159,159,159	0
55	MG	DA	3095	1/1	0.97	0.09	74,74,74,74	0
55	MG	AA	1613	1/1	0.97	0.35	59,59,59,59	0
55	MG	CA	3051	1/1	0.97	0.04	73,73,73,73	0
55	MG	CA	3066	1/1	0.97	0.08	110,110,110,110	0
55	MG	DA	3145	1/1	0.97	0.11	78,78,78,78	0
55	MG	CA	3025	1/1	0.97	0.05	87,87,87,87	0
55	MG	CA	3006	1/1	0.97	0.07	143,143,143,143	0
55	MG	DA	3181	1/1	0.97	0.21	70,70,70,70	0
55	MG	DA	3148	1/1	0.97	0.30	62,62,62,62	0
55	MG	CA	3069	1/1	0.97	0.09	110,110,110,110	0
55	MG	DA	3151	1/1	0.97	0.14	30,30,30,30	0
55	MG	CA	3070	1/1	0.97	0.04	87,87,87,87	0
55	MG	DB	206	1/1	0.97	0.16	64,64,64,64	0
55	MG	CA	3089	1/1	0.97	0.13	54,54,54,54	0
55	MG	DA	3155	1/1	0.97	0.27	60,60,60,60	0
55	MG	DA	3156	1/1	0.97	0.25	72,72,72,72	0
55	MG	DA	3157	1/1	0.97	0.21	54,54,54,54	0
55	MG	CA	3020	1/1	0.97	0.07	86,86,86,86	0
55	MG	DA	3128	1/1	0.97	0.52	62,62,62,62	0
55	MG	CA	3029	1/1	0.97	0.17	114,114,114,114	0
55	MG	DA	3162	1/1	0.97	0.11	57,57,57,57	0
55	MG	CA	3042	1/1	0.97	0.06	82,82,82,82	0
55	MG	CA	3043	1/1	0.97	0.07	86,86,86,86	0
55	MG	AA	1620	1/1	0.97	0.16	63,63,63,63	0
55	MG	DA	3043	1/1	0.97	0.09	32,32,32,32	0
55	MG	DA	3134	1/1	0.97	0.15	95,95,95,95	0
55	MG	DA	3044	1/1	0.97	0.06	70,70,70,70	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
55	MG	BA	1605	1/1	0.97	0.05	146,146,146,146	0
55	MG	DA	3139	1/1	0.97	0.08	55,55,55,55	0
55	MG	BA	1601	1/1	0.97	0.09	130,130,130,130	0
55	MG	CA	3065	1/1	0.98	0.07	72,72,72,72	0
55	MG	DA	3079	1/1	0.98	0.04	124,124,124,124	0
55	MG	CA	3085	1/1	0.98	0.04	69,69,69,69	0
55	MG	DA	3082	1/1	0.98	0.05	72,72,72,72	0
55	MG	CA	3086	1/1	0.98	0.06	59,59,59,59	0
55	MG	AA	1651	1/1	0.98	0.05	69,69,69,69	0
55	MG	CA	3144	1/1	0.98	0.03	63,63,63,63	0
55	MG	CA	3027	1/1	0.98	0.06	68,68,68,68	0
55	MG	AA	1635	1/1	0.98	0.09	104,104,104,104	0
55	MG	CA	3091	1/1	0.98	0.06	80,80,80,80	0
57	MPD	DS	203	8/8	0.98	0.14	47,50,57,58	0
55	MG	DA	3122	1/1	0.98	0.27	46,46,46,46	0
55	MG	CA	3013	1/1	0.98	0.06	99,99,99,99	0
55	MG	CA	3030	1/1	0.98	0.05	64,64,64,64	0
55	MG	CA	3052	1/1	0.98	0.06	71,71,71,71	0
55	MG	CA	3095	1/1	0.98	0.04	69,69,69,69	0
55	MG	CA	3098	1/1	0.98	0.04	78,78,78,78	0
55	MG	BA	1608	1/1	0.98	0.05	86,86,86,86	0
55	MG	DA	3166	1/1	0.98	0.11	88,88,88,88	0
55	MG	CA	3101	1/1	0.98	0.04	97,97,97,97	0
55	MG	AA	1659	1/1	0.98	0.05	74,74,74,74	0
55	MG	CA	3103	1/1	0.98	0.04	90,90,90,90	0
58	PUT	DM	201	6/6	0.98	0.10	40,48,52,56	0
55	MG	BA	1610	1/1	0.98	0.06	93,93,93,93	0
55	MG	BA	1626	1/1	0.98	0.04	85,85,85,85	0
55	MG	AA	1668	1/1	0.98	0.10	59,59,59,59	0
55	MG	DA	3136	1/1	0.98	0.09	43,43,43,43	0
55	MG	BA	1628	1/1	0.98	0.04	92,92,92,92	0
55	MG	BA	1613	1/1	0.98	0.10	79,79,79,79	0
55	MG	AA	1644	1/1	0.98	0.15	87,87,87,87	0
55	MG	DA	3008	1/1	0.98	0.07	87,87,87,87	0
55	MG	BA	1632	1/1	0.98	0.10	78,78,78,78	0
64	SPD	DA	3187	10/10	0.98	0.09	30,41,47,48	0
55	MG	DA	3015	1/1	0.98	0.05	40,40,40,40	0
55	MG	DA	3026	1/1	0.98	0.06	92,92,92,92	0
55	MG	DA	3182	1/1	0.98	0.22	52,52,52,52	0
55	MG	DA	3230	1/1	0.98	0.06	48,48,48,48	0
55	MG	DA	3231	1/1	0.98	0.13	36,36,36,36	0
55	MG	CA	3081	1/1	0.98	0.04	84,84,84,84	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
60	ZN	AB	301	1/1	0.98	0.06	150,150,150,150	0
55	MG	AA	1641	1/1	0.98	0.06	65,65,65,65	0
55	MG	CA	3045	1/1	0.98	0.07	107,107,107,107	0
55	MG	DA	3064	1/1	0.99	0.11	49,49,49,49	0
55	MG	DA	3070	1/1	0.99	0.04	62,62,62,62	0
55	MG	DA	3072	1/1	0.99	0.07	55,55,55,55	0
55	MG	DA	3159	1/1	0.99	0.06	76,76,76,76	0
55	MG	DA	3074	1/1	0.99	0.05	47,47,47,47	0
55	MG	DA	3078	1/1	0.99	0.05	52,52,52,52	0
55	MG	BA	1602	1/1	0.99	0.05	84,84,84,84	0
55	MG	CA	3040	1/1	0.99	0.04	83,83,83,83	0
55	MG	BA	1631	1/1	0.99	0.03	45,45,45,45	0
55	MG	DA	3083	1/1	0.99	0.05	45,45,45,45	0
55	MG	DA	3085	1/1	0.99	0.03	50,50,50,50	0
55	MG	BA	1615	1/1	0.99	0.04	65,65,65,65	0
55	MG	DA	3098	1/1	0.99	0.06	87,87,87,87	0
55	MG	DA	3101	1/1	0.99	0.03	45,45,45,45	0
55	MG	CA	3044	1/1	0.99	0.07	59,59,59,59	0
60	ZN	D5	101	1/1	0.99	0.02	55,55,55,55	0
55	MG	DA	3113	1/1	0.99	0.06	52,52,52,52	0
55	MG	DA	3114	1/1	0.99	0.04	39,39,39,39	0
55	MG	AA	1639	1/1	0.99	0.04	89,89,89,89	0
55	MG	DA	3174	1/1	0.99	0.07	70,70,70,70	0
55	MG	DA	3118	1/1	0.99	0.07	36,36,36,36	0
55	MG	AA	1645	1/1	0.99	0.04	46,46,46,46	0
55	MG	CA	3096	1/1	0.99	0.02	64,64,64,64	0
55	MG	CA	3004	1/1	0.99	0.06	106,106,106,106	0
55	MG	BA	1618	1/1	0.99	0.03	69,69,69,69	0
55	MG	CA	3100	1/1	0.99	0.07	73,73,73,73	0
55	MG	AA	1629	1/1	0.99	0.04	71,71,71,71	0
55	MG	CA	3050	1/1	0.99	0.03	54,54,54,54	0
55	MG	DA	3228	1/1	0.99	0.07	36,36,36,36	0
55	MG	DR	201	1/1	0.99	0.08	32,32,32,32	0
55	MG	BA	1620	1/1	0.99	0.04	113,113,113,113	0
55	MG	DB	202	1/1	0.99	0.07	52,52,52,52	0
55	MG	DB	204	1/1	0.99	0.04	37,37,37,37	0
55	MG	BA	1621	1/1	0.99	0.14	36,36,36,36	0
55	MG	BA	1622	1/1	0.99	0.06	99,99,99,99	0
55	MG	AA	1667	1/1	0.99	0.07	41,41,41,41	0
55	MG	AA	1648	1/1	0.99	0.04	60,60,60,60	0
55	MG	AA	1649	1/1	0.99	0.04	57,57,57,57	0
55	MG	DA	3135	1/1	0.99	0.04	78,78,78,78	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
55	MG	DA	3006	1/1	0.99	0.04	75,75,75,75	0
55	MG	DA	3007	1/1	0.99	0.06	88,88,88,88	0
55	MG	CA	3033	1/1	0.99	0.11	91,91,91,91	0
55	MG	AA	1650	1/1	0.99	0.03	79,79,79,79	0
55	MG	CA	3059	1/1	0.99	0.03	74,74,74,74	0
55	MG	DA	3016	1/1	0.99	0.05	43,43,43,43	0
55	MG	AA	1638	1/1	0.99	0.04	86,86,86,86	0
55	MG	DA	3028	1/1	0.99	0.04	56,56,56,56	0
55	MG	DA	3030	1/1	0.99	0.04	42,42,42,42	0
55	MG	DA	3035	1/1	0.99	0.08	32,32,32,32	0
55	MG	AA	1653	1/1	0.99	0.05	61,61,61,61	0
55	MG	CA	3017	1/1	0.99	0.07	75,75,75,75	0
55	MG	CA	3087	1/1	0.99	0.03	59,59,59,59	0
55	MG	DA	3047	1/1	0.99	0.06	58,58,58,58	0
55	MG	DA	3150	1/1	0.99	0.05	50,50,50,50	0
55	MG	DA	3049	1/1	0.99	0.03	39,39,39,39	0
55	MG	DA	3052	1/1	0.99	0.03	70,70,70,70	0
55	MG	DA	3054	1/1	0.99	0.05	70,70,70,70	0
55	MG	AA	1662	1/1	0.99	0.04	73,73,73,73	0
55	MG	DA	3063	1/1	0.99	0.04	85,85,85,85	0
55	MG	CA	3097	1/1	1.00	0.05	83,83,83,83	0
55	MG	DA	3086	1/1	1.00	0.02	29,29,29,29	0
55	MG	DA	3087	1/1	1.00	0.01	34,34,34,34	0
55	MG	DA	3088	1/1	1.00	0.02	42,42,42,42	0
55	MG	DA	3089	1/1	1.00	0.04	23,23,23,23	0
55	MG	DA	3229	1/1	1.00	0.04	36,36,36,36	0
55	MG	DA	3090	1/1	1.00	0.04	30,30,30,30	0
55	MG	DA	3091	1/1	1.00	0.05	17,17,17,17	0
55	MG	DA	3092	1/1	1.00	0.02	21,21,21,21	0
55	MG	DA	3093	1/1	1.00	0.07	23,23,23,23	0
55	MG	DA	3094	1/1	1.00	0.07	20,20,20,20	0
55	MG	DA	3017	1/1	1.00	0.01	20,20,20,20	0
55	MG	DA	3096	1/1	1.00	0.05	36,36,36,36	0
55	MG	DA	3097	1/1	1.00	0.03	26,26,26,26	0
55	MG	DA	3018	1/1	1.00	0.02	43,43,43,43	0
55	MG	DA	3099	1/1	1.00	0.04	23,23,23,23	0
55	MG	DA	3100	1/1	1.00	0.02	26,26,26,26	0
55	MG	DA	3019	1/1	1.00	0.15	8,8,8,8	0
55	MG	DA	3102	1/1	1.00	0.02	30,30,30,30	0
55	MG	DA	3103	1/1	1.00	0.02	35,35,35,35	0
55	MG	DA	3104	1/1	1.00	0.05	34,34,34,34	0
55	MG	DA	3105	1/1	1.00	0.07	31,31,31,31	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
55	MG	DA	3106	1/1	1.00	0.10	41,41,41,41	0
55	MG	DA	3107	1/1	1.00	0.02	35,35,35,35	0
55	MG	DA	3108	1/1	1.00	0.05	30,30,30,30	0
55	MG	DA	3109	1/1	1.00	0.02	23,23,23,23	0
55	MG	DA	3110	1/1	1.00	0.05	35,35,35,35	0
55	MG	DA	3020	1/1	1.00	0.04	45,45,45,45	0
55	MG	DA	3112	1/1	1.00	0.04	24,24,24,24	0
55	MG	DA	3021	1/1	1.00	0.04	27,27,27,27	0
55	MG	DA	3022	1/1	1.00	0.07	21,21,21,21	0
55	MG	DA	3115	1/1	1.00	0.02	37,37,37,37	0
55	MG	DA	3116	1/1	1.00	0.02	34,34,34,34	0
55	MG	DA	3023	1/1	1.00	0.04	20,20,20,20	0
55	MG	DA	3024	1/1	1.00	0.07	36,36,36,36	0
55	MG	DA	3025	1/1	1.00	0.02	31,31,31,31	0
55	MG	AA	1637	1/1	1.00	0.04	53,53,53,53	0
55	MG	DA	3027	1/1	1.00	0.03	33,33,33,33	0
55	MG	AA	1631	1/1	1.00	0.04	47,47,47,47	0
55	MG	DA	3029	1/1	1.00	0.10	29,29,29,29	0
55	MG	DB	203	1/1	1.00	0.03	30,30,30,30	0
55	MG	DA	3031	1/1	1.00	0.02	27,27,27,27	0
55	MG	DA	3032	1/1	1.00	0.06	23,23,23,23	0
55	MG	DA	3033	1/1	1.00	0.05	26,26,26,26	0
55	MG	DA	3034	1/1	1.00	0.02	16,16,16,16	0
55	MG	AA	1643	1/1	1.00	0.02	53,53,53,53	0
55	MG	DA	3036	1/1	1.00	0.06	25,25,25,25	0
55	MG	DB	205	1/1	1.00	0.03	46,46,46,46	0
55	MG	DA	3038	1/1	1.00	0.01	19,19,19,19	0
55	MG	DA	3039	1/1	1.00	0.05	23,23,23,23	0
55	MG	DA	3040	1/1	1.00	0.04	36,36,36,36	0
55	MG	DA	3041	1/1	1.00	0.12	11,11,11,11	0
55	MG	DA	3042	1/1	1.00	0.03	29,29,29,29	0
55	MG	AA	1632	1/1	1.00	0.02	65,65,65,65	0
55	MG	CA	3015	1/1	1.00	0.13	57,57,57,57	0
55	MG	DA	3045	1/1	1.00	0.04	49,49,49,49	0
55	MG	DA	3046	1/1	1.00	0.03	31,31,31,31	0
55	MG	AA	1640	1/1	1.00	0.05	52,52,52,52	0
55	MG	DA	3048	1/1	1.00	0.03	26,26,26,26	0
55	MG	AA	1666	1/1	1.00	0.04	47,47,47,47	0
55	MG	DA	3050	1/1	1.00	0.02	18,18,18,18	0
55	MG	DA	3051	1/1	1.00	0.02	14,14,14,14	0
55	MG	BA	1611	1/1	1.00	0.04	56,56,56,56	0
55	MG	DA	3053	1/1	1.00	0.04	44,44,44,44	0

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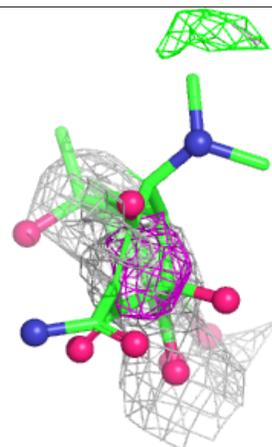
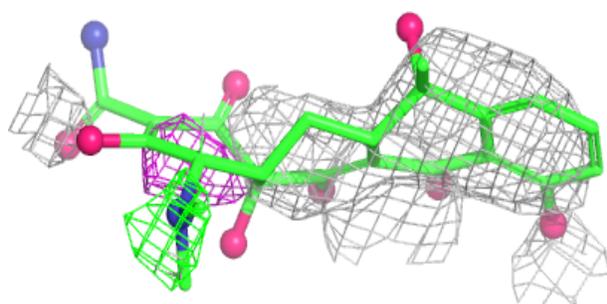
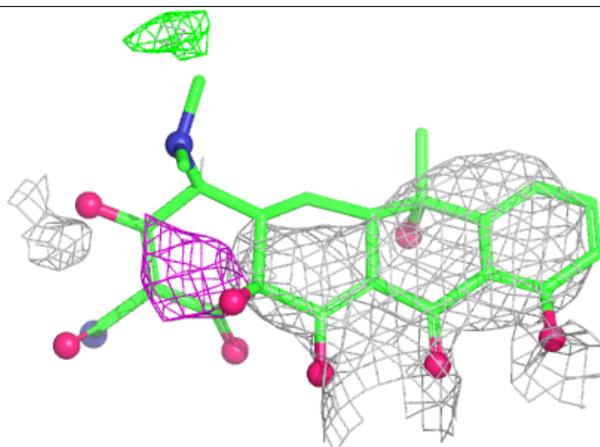
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
55	MG	DA	3004	1/1	1.00	0.03	60,60,60,60	0
55	MG	DA	3055	1/1	1.00	0.06	24,24,24,24	0
55	MG	DA	3056	1/1	1.00	0.03	42,42,42,42	0
55	MG	DA	3057	1/1	1.00	0.03	13,13,13,13	0
55	MG	DA	3058	1/1	1.00	0.02	32,32,32,32	0
55	MG	DA	3059	1/1	1.00	0.01	23,23,23,23	0
55	MG	DA	3060	1/1	1.00	0.04	21,21,21,21	0
55	MG	DA	3061	1/1	1.00	0.03	30,30,30,30	0
55	MG	DA	3005	1/1	1.00	0.07	60,60,60,60	0
55	MG	AA	1652	1/1	1.00	0.14	21,21,21,21	0
55	MG	AA	1646	1/1	1.00	0.02	49,49,49,49	0
55	MG	DA	3065	1/1	1.00	0.03	19,19,19,19	0
55	MG	DA	3066	1/1	1.00	0.07	40,40,40,40	0
55	MG	DA	3067	1/1	1.00	0.03	36,36,36,36	0
55	MG	DA	3068	1/1	1.00	0.05	35,35,35,35	0
55	MG	DA	3069	1/1	1.00	0.09	46,46,46,46	0
55	MG	CA	3041	1/1	1.00	0.04	50,50,50,50	0
55	MG	DA	3071	1/1	1.00	0.07	34,34,34,34	0
55	MG	DA	3009	1/1	1.00	0.03	23,23,23,23	0
55	MG	DA	3073	1/1	1.00	0.01	31,31,31,31	0
55	MG	DA	3010	1/1	1.00	0.04	17,17,17,17	0
55	MG	DA	3075	1/1	1.00	0.04	37,37,37,37	0
55	MG	DA	3076	1/1	1.00	0.02	23,23,23,23	0
55	MG	DA	3077	1/1	1.00	0.01	30,30,30,30	0
55	MG	DA	3011	1/1	1.00	0.02	33,33,33,33	0
55	MG	DD	301	1/1	1.00	0.04	40,40,40,40	0
55	MG	DA	3013	1/1	1.00	0.04	19,19,19,19	0
55	MG	DA	3081	1/1	1.00	0.04	45,45,45,45	0
55	MG	DA	3014	1/1	1.00	0.02	14,14,14,14	0
55	MG	DM	202	1/1	1.00	0.05	34,34,34,34	0
55	MG	DA	3084	1/1	1.00	0.06	35,35,35,35	0

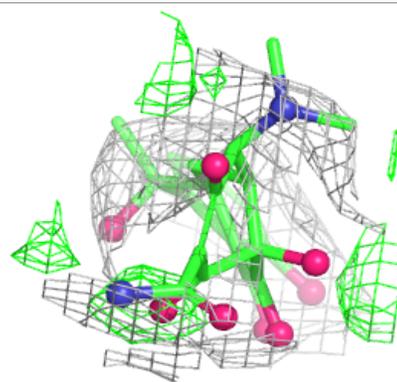
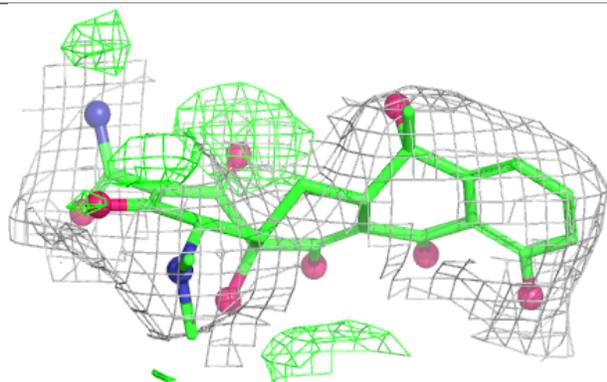
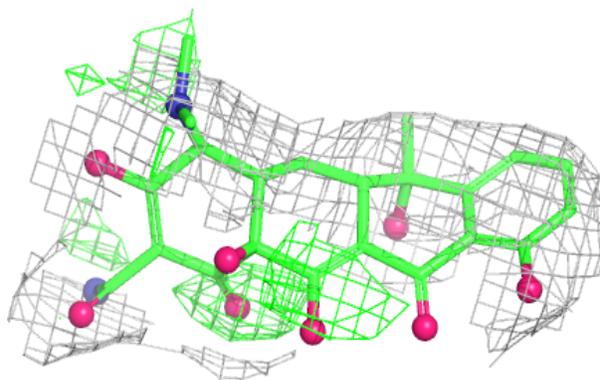
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

**Electron density around TAC BA 1644:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

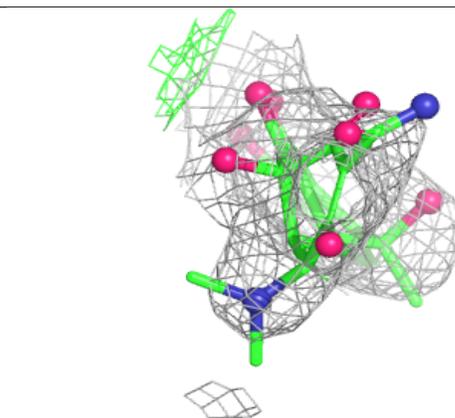
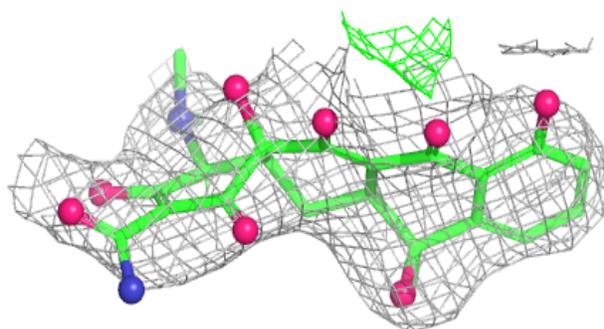
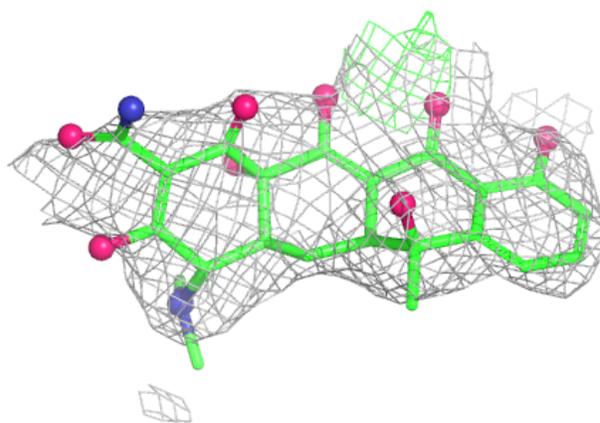
**Electron density around TAC BA 1643:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

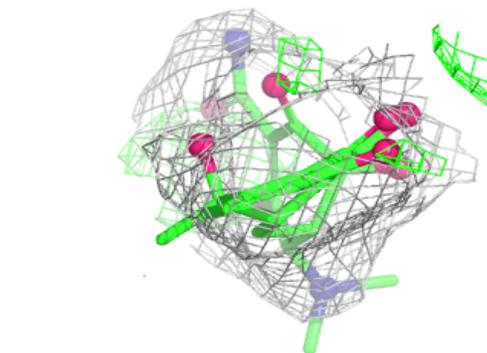
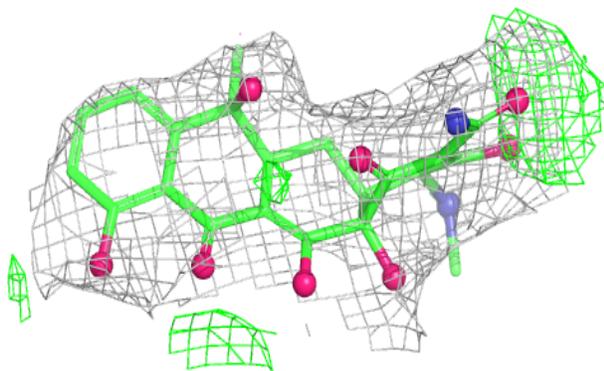
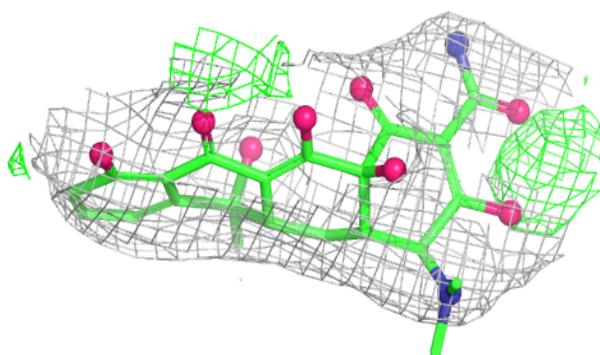


**Electron density around TAC AA 1681:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

**Electron density around TAC AA 1680:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



## 6.5 Other polymers [i](#)

There are no such residues in this entry.