



Full wwPDB EM Validation Report ⓘ

Jul 21, 2025 – 08:21 PM EDT

PDB ID : 8VVV / pdb_00008vvv
EMDB ID : EMD-43570
Title : Mammalian ribosomes bound to Anisomycin in the nonrotated conformation
Authors : Loerch, S.; Petrossian, E.; Smith, P.R.; Campbell, Z.T.
Deposited on : 2024-01-31
Resolution : 3.10 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev118
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0rc1
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.44

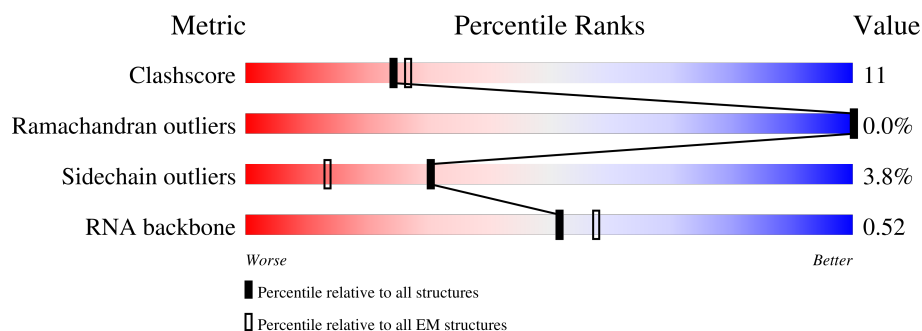
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.10 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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

Mol	Chain	Length	Quality of chain
1	A	257	
2	B	403	
3	C	413	
4	D	297	
5	E	291	
6	F	249	
7	G	319	





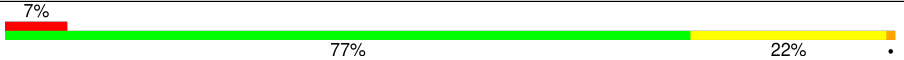
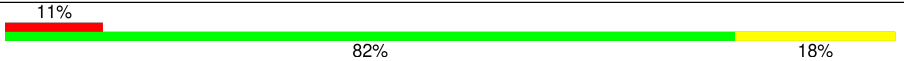
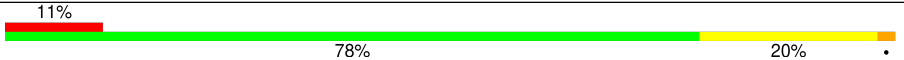
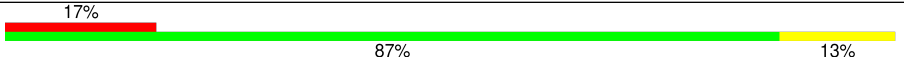
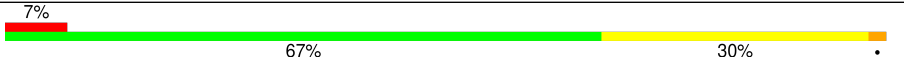
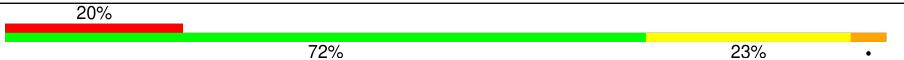
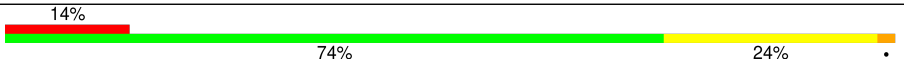
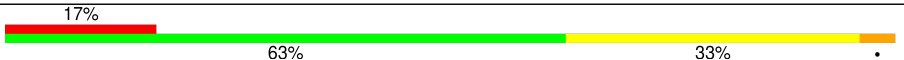


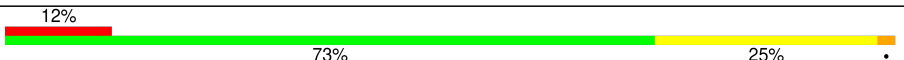
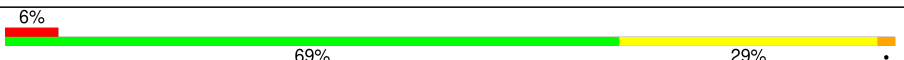



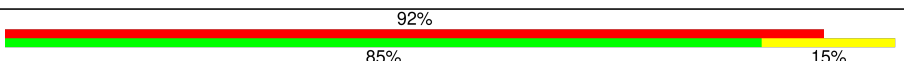
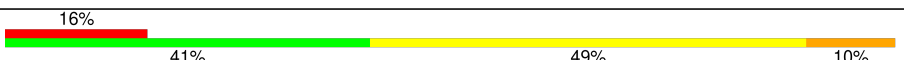

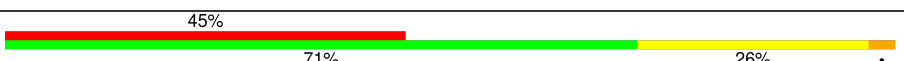


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Mol	Chain	Length	Quality of chain
8	H	192	
9	I	214	
10	J	178	
11	L	211	
12	M	218	
13	N	204	
14	O	203	
15	P	213	
16	Q	188	
17	R	212	
18	S	224	
19	T	160	
20	U	128	
21	V	140	
22	W	157	
23	X	156	
24	Y	145	
25	Z	136	
26	AA	295	
27	BB	264	
28	CC	293	
29	5	3635	
30	7	120	
31	8	156	
32	a	147	

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Mol	Chain	Length	Quality of chain
33	b	245	
34	c	98	
35	d	107	
36	e	128	
37	f	109	
38	g	114	
39	h	122	
40	i	102	
41	j	86	
42	k	69	
43	l	50	
44	m	52	
45	n	25	
46	o	103	
47	p	91	
48	r	124	
49	s	196	
50	t	153	
51	v	839	
52	w	26	
53	9	1698	
54	DD	228	
55	EE	262	
56	FF	204	
57	GG	237	


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Mol	Chain	Length	Quality of chain
58	HH	194	
59	II	206	
60	JJ	185	
61	KK	96	
62	LL	158	
63	MM	117	
64	NN	149	
65	OO	136	
66	PP	120	
67	QQ	142	
68	RR	132	
69	SS	144	
70	TT	141	
71	UU	100	
72	VV	83	
73	WW	129	
74	XX	141	
75	YY	124	
76	ZZ	75	
77	aa	101	
78	bb	83	
79	cc	62	
80	dd	55	
81	ee	55	
82	ff	68	

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Mol	Chain	Length	Quality of chain
83	gg	313	

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
29	B8H	5	3768	-	-	X	-

2 Entry composition

There are 86 unique types of molecules in this entry. The entry contains 218932 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	248	Total	C	N	O	S	0	0
			1898	1189	389	314	6		

- Molecule 2 is a protein called uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	394	Total	C	N	O	S	0	0
			3172	2020	597	542	13		

- Molecule 3 is a protein called uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	362	Total	C	N	O	S	0	0
			2884	1813	577	480	14		

- Molecule 4 is a protein called uL18.

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

- Molecule 5 is a protein called L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	216	Total	C	N	O	S	0	0
			1729	1115	329	282	3		

- Molecule 6 is a protein called uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	225	Total	C	N	O	S	0	0
			1875	1205	358	303	9		

- Molecule 7 is a protein called eL8.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	233	Total	C	N	O	S	0	0
			1879	1199	361	315	4		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	244	GLY	CYS	conflict	UNP G1STW0

- Molecule 8 is a protein called uL6.

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

- Molecule 9 is a protein called L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	205	Total	C	N	O	S	0	0
			1664	1056	321	274	13		

- Molecule 10 is a protein called uL5.

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

- Molecule 11 is a protein called eL13.

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

There are 9 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
L	46	ILE	-	insertion	UNP G1TPV0
L	47	ALA	-	insertion	UNP G1TPV0
L	48	PRO	-	insertion	UNP G1TPV0
L	49	ARG	-	insertion	UNP G1TPV0
L	50	PRO	-	insertion	UNP G1TPV0

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Chain	Residue	Modelled	Actual	Comment	Reference
L	51	ALA	-	insertion	UNP G1TPV0
L	52	ALA	-	insertion	UNP G1TPV0
L	53	GLY	-	insertion	UNP G1TPV0
L	54	PRO	-	insertion	UNP G1TPV0

- Molecule 12 is a protein called eL14.

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

- Molecule 13 is a protein called eL15.

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

- Molecule 14 is a protein called uL13.

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

- Molecule 15 is a protein called uL22.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
P	43	SER	ALA	conflict	UNP G1TVT6

- Molecule 16 is a protein called eL18.

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

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Q	4	ASP	ASN	conflict	UNP G1TFE0
Q	14	ARG	TRP	conflict	UNP G1TFE0
Q	53	MET	LEU	conflict	UNP G1TFE0
Q	58	ARG	TRP	conflict	UNP G1TFE0
Q	75	ARG	GLN	conflict	UNP G1TFE0
Q	80	ALA	PRO	conflict	UNP G1TFE0
Q	86	VAL	ILE	conflict	UNP G1TFE0
Q	104	ARG	HIS	conflict	UNP G1TFE0
Q	110	ARG	CYS	conflict	UNP G1TFE0
Q	137	VAL	GLY	conflict	UNP G1TFE0
Q	157	GLY	ARG	conflict	UNP G1TFE0
Q	181	ARG	TRP	conflict	UNP G1TFE0

- Molecule 17 is a protein called eL19.

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

- Molecule 18 is a protein called eL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	S	176	Total	C	N	O	S	0	0
			1462	930	285	236	11		

- Molecule 19 is a protein called eL21.

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

- Molecule 20 is a protein called eL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	U	99	Total	C	N	O	S	0	0
			809	519	141	147	2		

There are 11 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
U	18	LEU	VAL	conflict	UNP G1TSG1
U	32	GLY	ARG	conflict	UNP G1TSG1

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Chain	Residue	Modelled	Actual	Comment	Reference
U	36	ALA	GLU	conflict	UNP G1TSG1
U	39	PHE	SER	conflict	UNP G1TSG1
U	54	GLY	ARG	conflict	UNP G1TSG1
U	60	VAL	ALA	conflict	UNP G1TSG1
U	62	SER	THR	conflict	UNP G1TSG1
U	63	LEU	ILE	conflict	UNP G1TSG1
U	97	ARG	HIS	conflict	UNP G1TSG1
U	106	THR	SER	conflict	UNP G1TSG1
U	126	GLU	ASP	conflict	UNP G1TSG1

- Molecule 21 is a protein called L23.

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

- Molecule 22 is a protein called uL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	W	106	Total	C	N	O	S	0	0
			860	538	174	144	4		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
W	78	SER	PHE	conflict	UNP G1SE28

- Molecule 23 is a protein called uL23.

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

- Molecule 24 is a protein called L26.

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

- Molecule 25 is a protein called L27.

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

- Molecule 26 is a protein called uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	AA	217	Total	C	N	O	S	0	0
			1710	1086	300	316	8		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AA	114	THR	ALA	conflict	UNP G1TLT8

- Molecule 27 is a protein called S3A.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	BB	213	Total	C	N	O	S	0	0
			1729	1098	309	308	14		

- Molecule 28 is a protein called eS1.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	CC	221	Total	C	N	O	S	0	0
			1716	1111	295	301	9		

- Molecule 29 is a RNA chain called 28S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	5	3529	Total	C	N	O	P	0	0
			75791	33817	13856	24589	3529		

- Molecule 30 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	7	120	Total	C	N	O	P	0	0
			2558	1141	456	842	119		

There are 7 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
7	2	U	N	conflict	GB X06789.1

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Chain	Residue	Modelled	Actual	Comment	Reference
7	36	C	N	conflict	GB X06789.1
7	102	U	N	conflict	GB X06789.1
7	112	U	N	conflict	GB X06789.1
7	114	U	N	conflict	GB X06789.1
7	119	U	C	conflict	GB X06789.1
7	120	U	N	conflict	GB X06789.1

- Molecule 31 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	8	151	Total	C	N	O	P	0	0
			3209	1433	564	1062	150		

- Molecule 32 is a protein called uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	a	147	Total	C	N	O	S	0	0
			1162	734	239	185	4		

- Molecule 33 is a protein called eL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	b	104	Total	C	N	O	S	0	0
			848	527	189	129	3		

- Molecule 34 is a protein called eL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	c	98	Total	C	N	O	S	0	0
			761	481	134	140	6		

- Molecule 35 is a protein called eL31.

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

- Molecule 36 is a protein called eL32.

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

- Molecule 37 is a protein called eL33.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	f	109	Total	C	N	O	S	0	0
			876	555	174	143	4		

- Molecule 38 is a protein called eL34.

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

- Molecule 39 is a protein called uL29.

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

- Molecule 40 is a protein called eL36.

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

- Molecule 41 is a protein called eL37.

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

- Molecule 42 is a protein called eL38.

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

- Molecule 43 is a protein called eL39.

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

- Molecule 44 is a protein called eL40.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	m	52	Total	C	N	O	S	0	0
			430	267	90	67	6		

- Molecule 45 is a protein called eL41.

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

- Molecule 46 is a protein called eL42.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	o	103	Total	C	N	O	S	0	0
			842	528	172	136	6		

- Molecule 47 is a protein called eL43.

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

- Molecule 48 is a protein called eL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	r	124	Total	C	N	O	S	0	0
			994	616	205	167	6		

- Molecule 49 is a protein called uL10.

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

- Molecule 50 is a protein called eL11.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	t	153	Total	C	N	O	S	0	0
			1160	722	218	217	3		

- Molecule 51 is a protein called eukaryotic elongation factor 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	v	839	Total	C	N	O	S	0	0
			6544	4162	1122	1216	44		

- Molecule 52 is a protein called Serpine mRNA binding protein 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
52	w	26	Total	C	N	O	0	0
			216	129	43	44		

- Molecule 53 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	9	1697	Total	C	N	O	P	0	0
			36243	16181	6506	11860	1696		

- Molecule 54 is a protein called uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	DD	228	Total	C	N	O	S	0	0
			1768	1126	318	316	8		

- Molecule 55 is a protein called eS4.

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

- Molecule 56 is a protein called uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	FF	185	Total	C	N	O	S	0	0
			1471	921	277	266	7		

- Molecule 57 is a protein called eS6.

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

- Molecule 58 is a protein called eS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	HH	185	Total	C	N	O	S	0	0
			1488	952	271	264	1		

- Molecule 59 is a protein called eS8.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
II	47	ARG	GLY	conflict	UNP G1TJW1

- Molecule 60 is a protein called uS4.

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

- Molecule 61 is a protein called eS10.

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

- Molecule 62 is a protein called uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	LL	143	Total	C	N	O	S	0	0
			1175	749	222	198	6		

- Molecule 63 is a protein called eS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	MM	117	Total	C	N	O	S	0	0
			908	570	161	169	8		

- Molecule 64 is a protein called uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	NN	149	Total	C	N	O	S	0	0
			1202	770	228	203	1		

- Molecule 65 is a protein called uS11.

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

- Molecule 66 is a protein called uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	PP	120	Total	C	N	O	S	0	0
			997	635	187	168	7		

- Molecule 67 is a protein called uS9.

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

- Molecule 68 is a protein called eS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	RR	132	Total	C	N	O	S	0	0
			1068	670	199	195	4		

- Molecule 69 is a protein called uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	SS	144	Total	C	N	O	S	0	0
			1190	746	241	202	1		

- Molecule 70 is a protein called eS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	TT	141	Total	C	N	O	S	0	0
			1097	688	211	195	3		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
TT	119	GLY	TRP	conflict	UNP G1TN62

- Molecule 71 is a protein called uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	UU	100	Total	C	N	O	S	0	0
			795	498	152	141	4		

- Molecule 72 is a protein called eS21.

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

There are 7 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
VV	3	ASN	SER	conflict	UNP G1TM82
VV	4	ASP	ASN	conflict	UNP G1TM82
VV	33	GLN	PRO	conflict	UNP G1TM82
VV	50	PHE	SER	conflict	UNP G1TM82
VV	75	ALA	SER	conflict	UNP G1TM82
VV	76	ASP	HIS	conflict	UNP G1TM82
VV	81	LYS	GLN	conflict	UNP G1TM82

- Molecule 73 is a protein called uS8.

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

- Molecule 74 is a protein called uS12.

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

- Molecule 75 is a protein called eS24.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	YY	124	Total	C	N	O	S	0	0
			1011	640	198	168	5		

- Molecule 76 is a protein called eS25.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	ZZ	75	Total	C	N	O	S	0	0
			598	382	111	104	1		

- Molecule 77 is a protein called eS26.

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

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
aa	28	ARG	CYS	conflict	UNP G1TFE8
aa	56	ALA	VAL	conflict	UNP G1TFE8

- Molecule 78 is a protein called eS27.

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

- Molecule 79 is a protein called eS28.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	cc	62	Total	C	N	O	S	0	0
			488	297	97	92	2		

- Molecule 80 is a protein called uS14.

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

- Molecule 81 is a protein called eS30.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	ee	55	Total	C	N	O	S	0	0
			443	274	97	71	1		

- Molecule 82 is a protein called eS31.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	ff	68	Total	C	N	O	S	0	0
			555	351	103	94	7		

- Molecule 83 is a protein called RACK1.

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

- Molecule 84 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
84	A	1	Total	Mg	0
			1	1	
84	P	1	Total	Mg	0
			1	1	
84	V	1	Total	Mg	0
			1	1	
84	5	197	Total	Mg	0
			197	197	
84	7	6	Total	Mg	0
			6	6	
84	8	6	Total	Mg	0
			6	6	
84	a	1	Total	Mg	0
			1	1	
84	g	1	Total	Mg	0
			1	1	
84	j	1	Total	Mg	0
			1	1	
84	v	1	Total	Mg	0
			1	1	
84	9	75	Total	Mg	0
			75	75	
84	SS	1	Total	Mg	0
			1	1	

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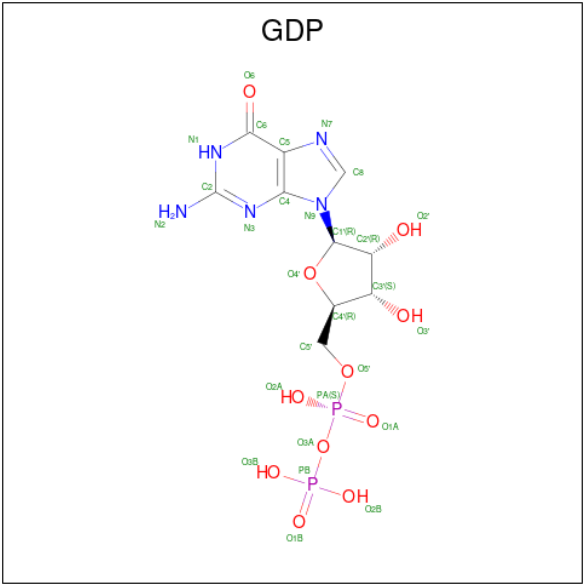
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Mol	Chain	Residues	Atoms		AltConf
84	TT	1	Total	Mg	0
			1	1	
84	dd	1	Total	Mg	0
			1	1	

- Molecule 85 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
85	g	1	Total	Zn	0
			1	1	
85	j	1	Total	Zn	0
			1	1	
85	m	1	Total	Zn	0
			1	1	
85	o	1	Total	Zn	0
			1	1	
85	p	1	Total	Zn	0
			1	1	
85	aa	1	Total	Zn	0
			1	1	
85	dd	1	Total	Zn	0
			1	1	
85	ff	1	Total	Zn	0
			1	1	

- Molecule 86 is GUANOSINE-5'-DIPHOSPHATE (CCD ID: GDP) (formula: C₁₀H₁₅N₅O₁₁P₂).

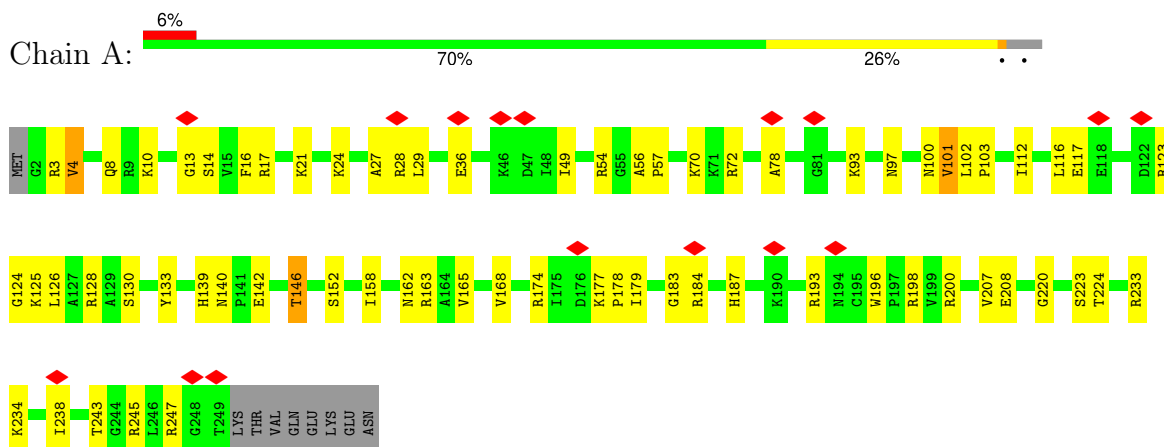


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
86	v	1	28	10	5	11	2	0

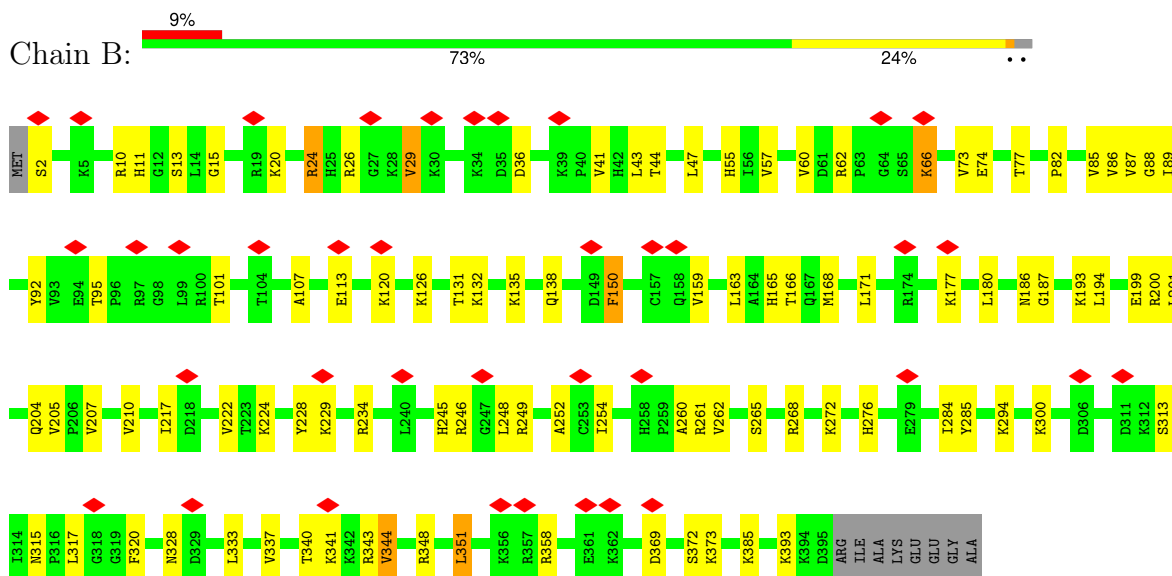
3 Residue-property plots

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

• Molecule 1: uL2

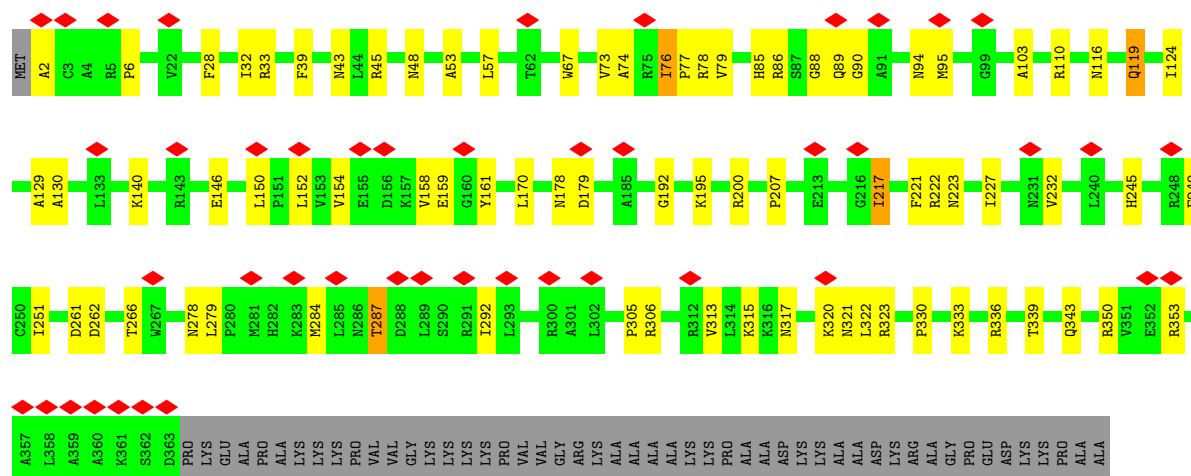


• Molecule 2: uL3

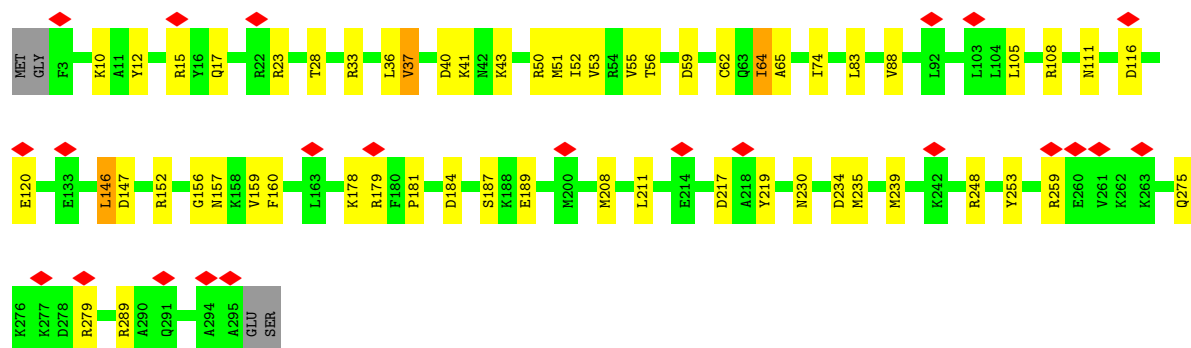
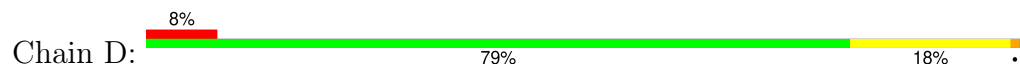


• Molecule 3: uL4

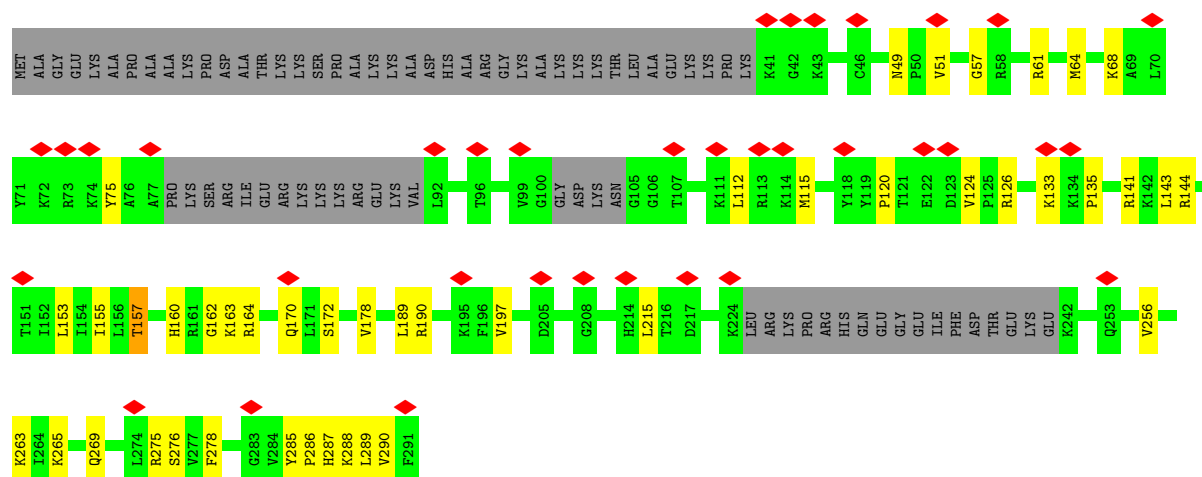




• Molecule 4: uL18

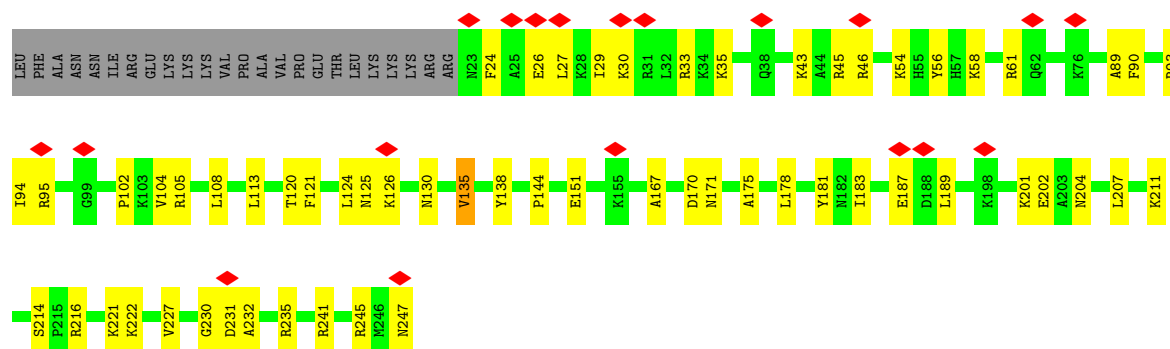


• Molecule 5: L6

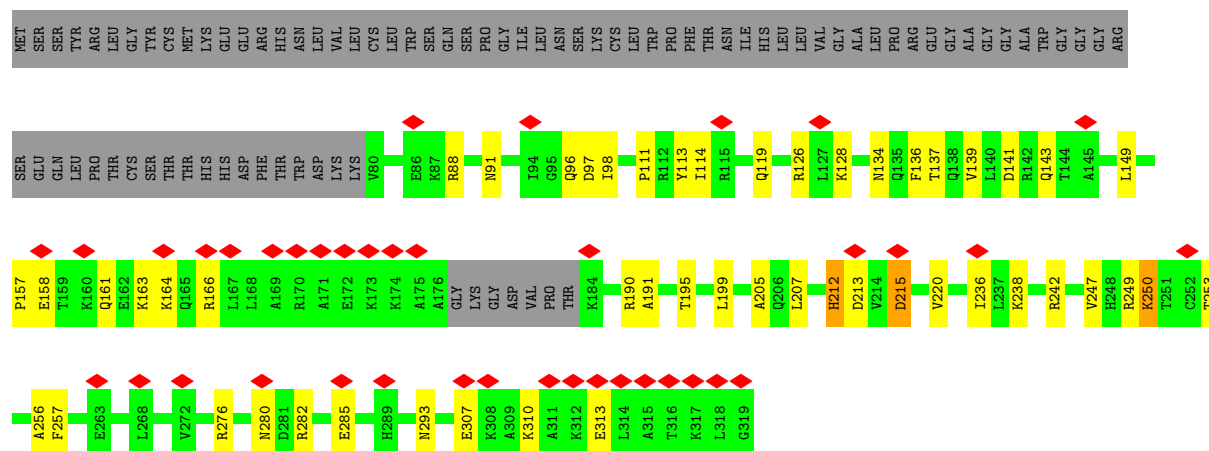


• Molecule 6: uL30

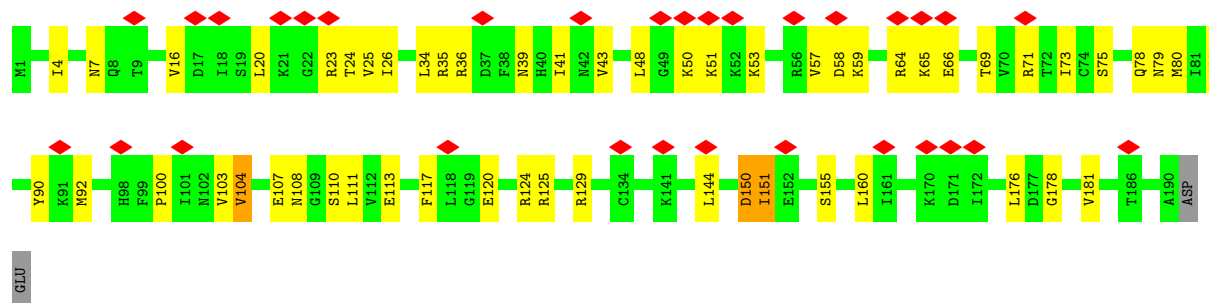




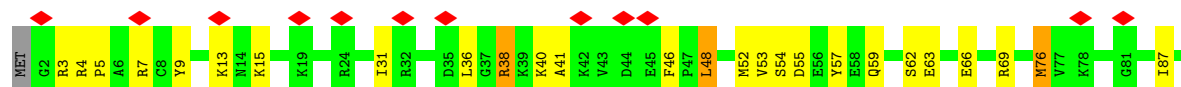
• Molecule 7: eL8

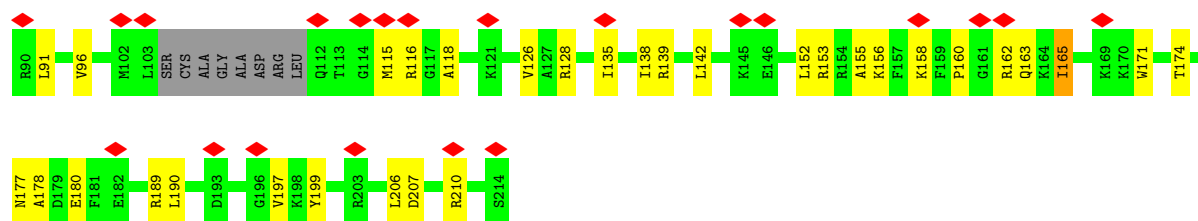


• Molecule 8: uL6

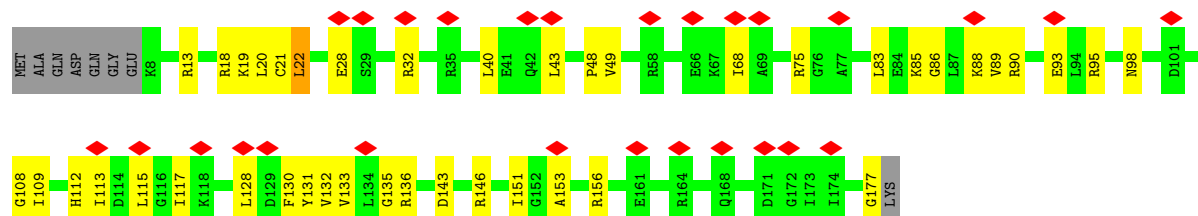


• Molecule 9: L10

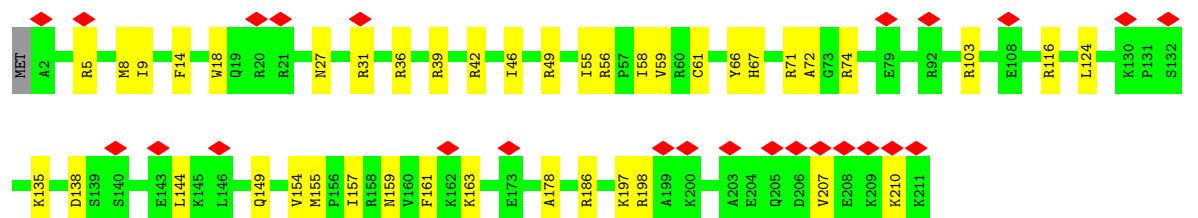
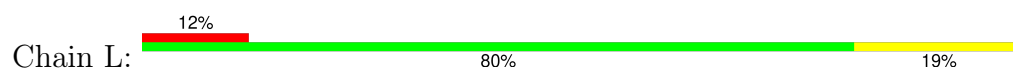




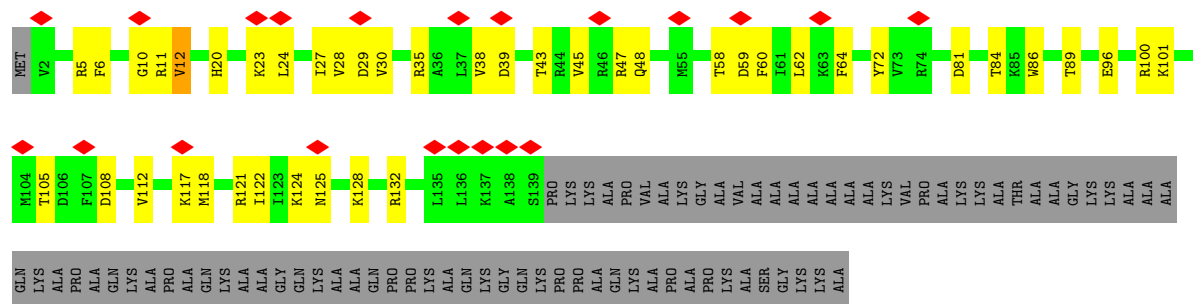
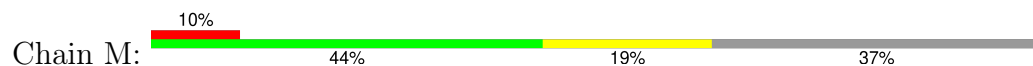
• Molecule 10: uL5



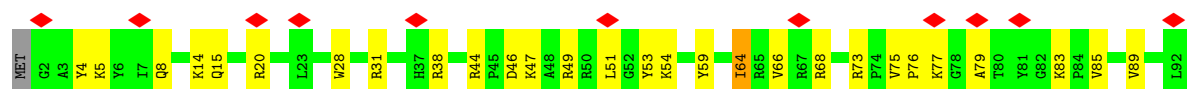
• Molecule 11: eL13

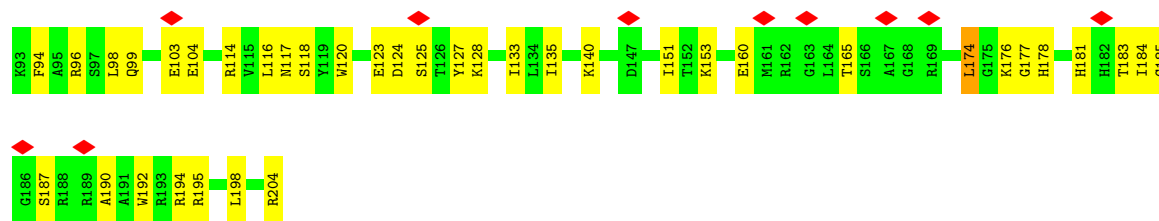


• Molecule 12: eL14

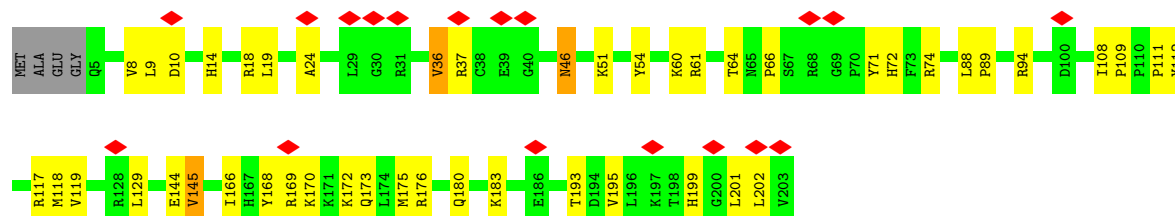
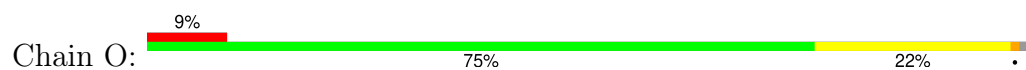


• Molecule 13: eL15

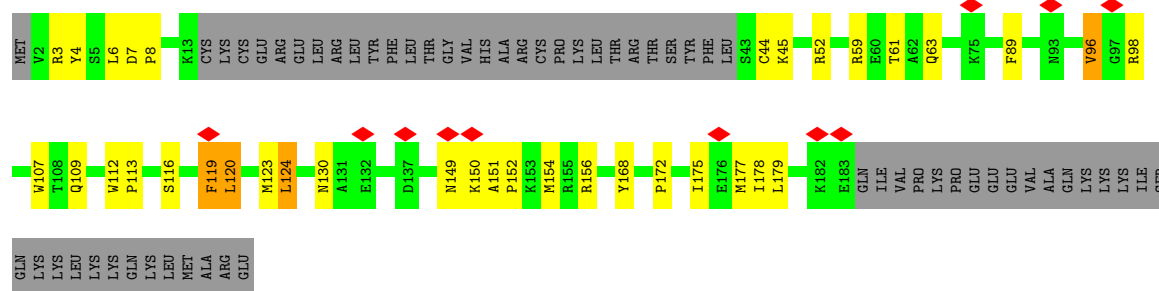




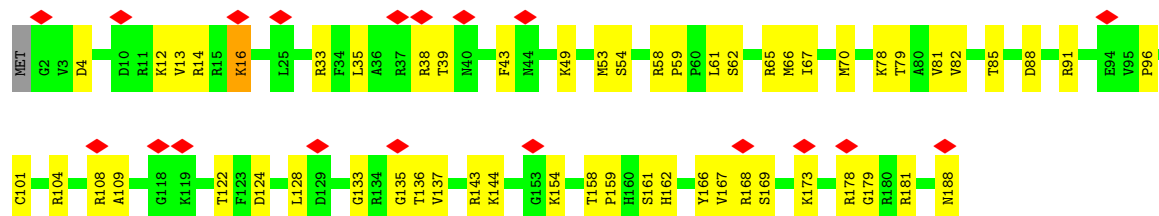
• Molecule 14: uL13



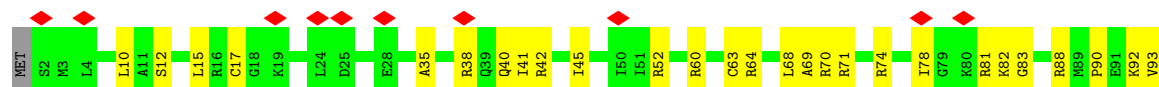
• Molecule 15: uL22



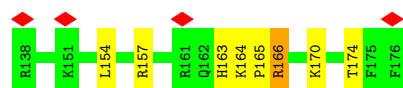
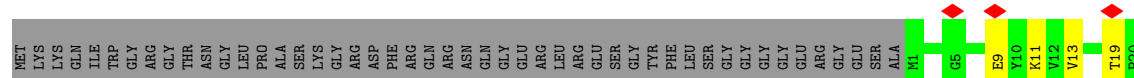
• Molecule 16: eL18



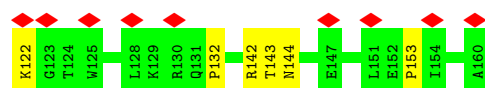
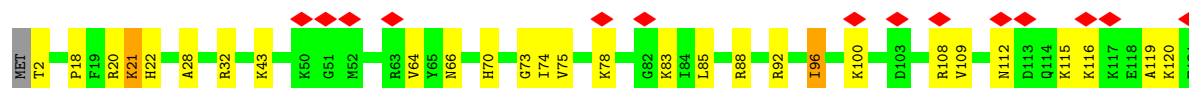
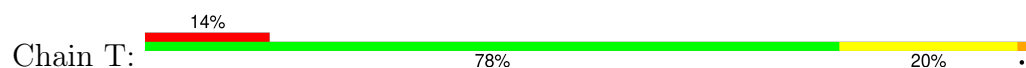
• Molecule 17: eL19



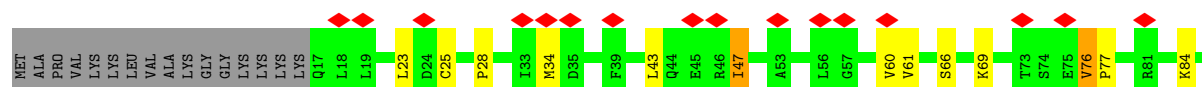
- Molecule 18: eL20



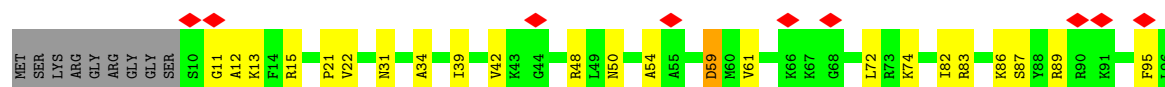
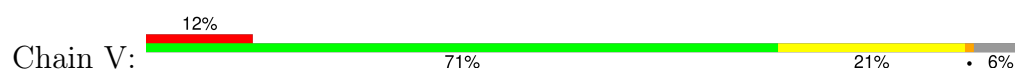
- Molecule 19: eL21



- Molecule 20: eL22

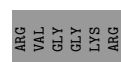
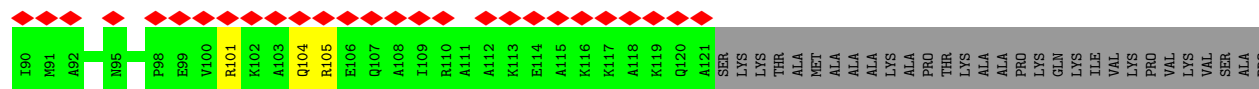
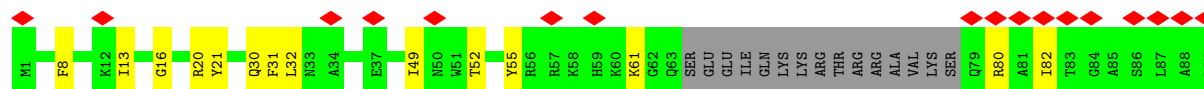


- Molecule 21: L23

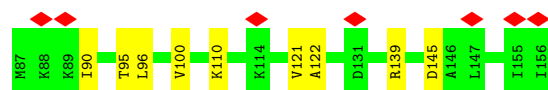
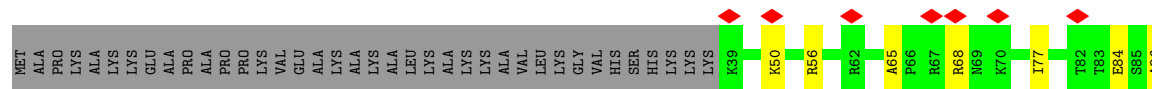




• Molecule 22: uL24



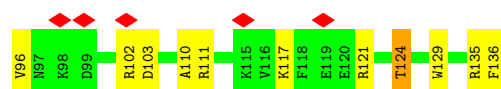
• Molecule 23: uL23



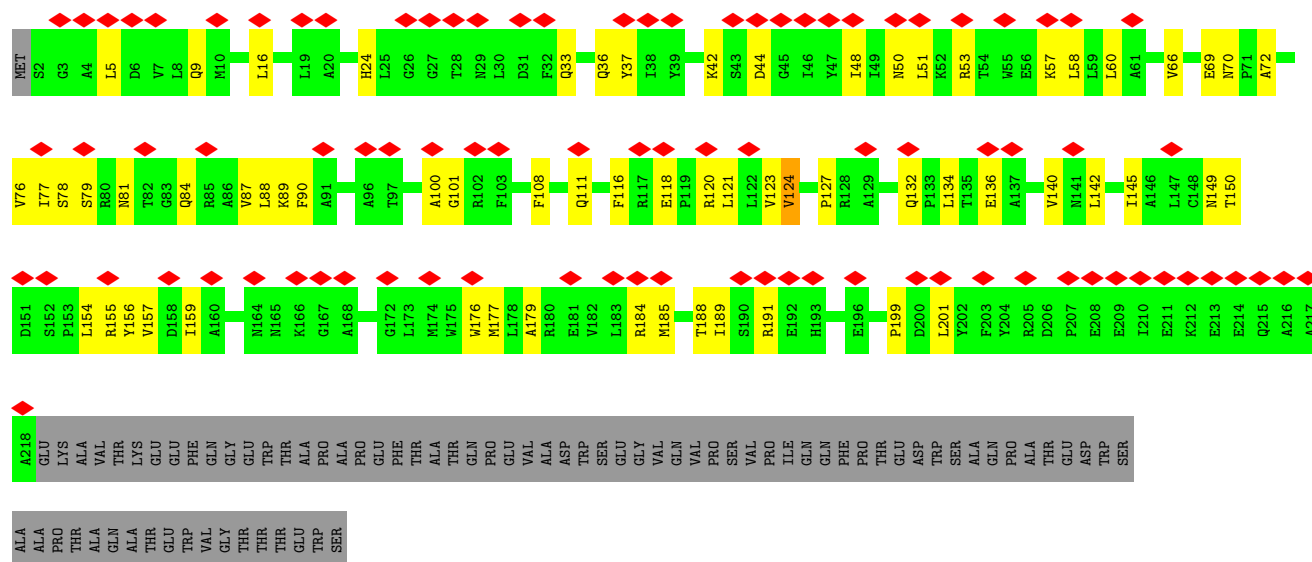
• Molecule 24: L26



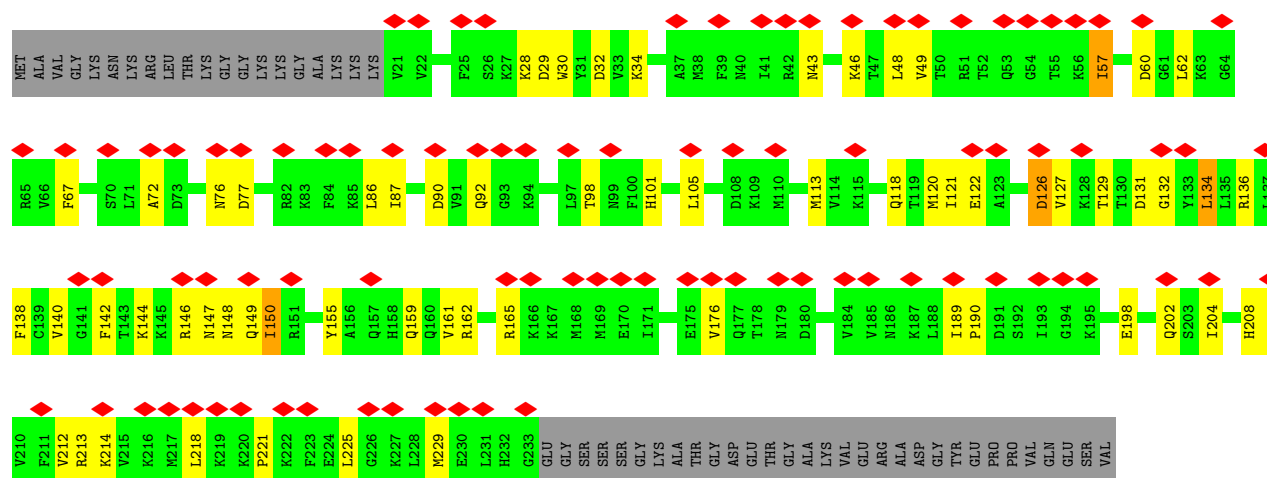
• Molecule 25: L27



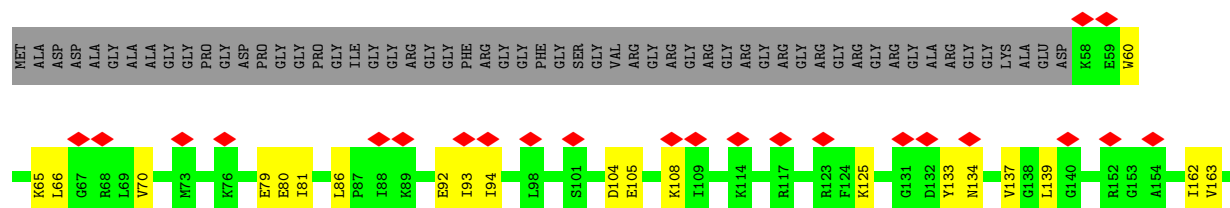
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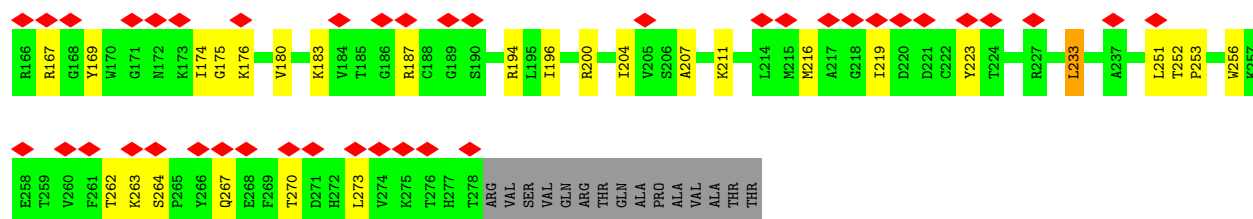


Chain BB: 

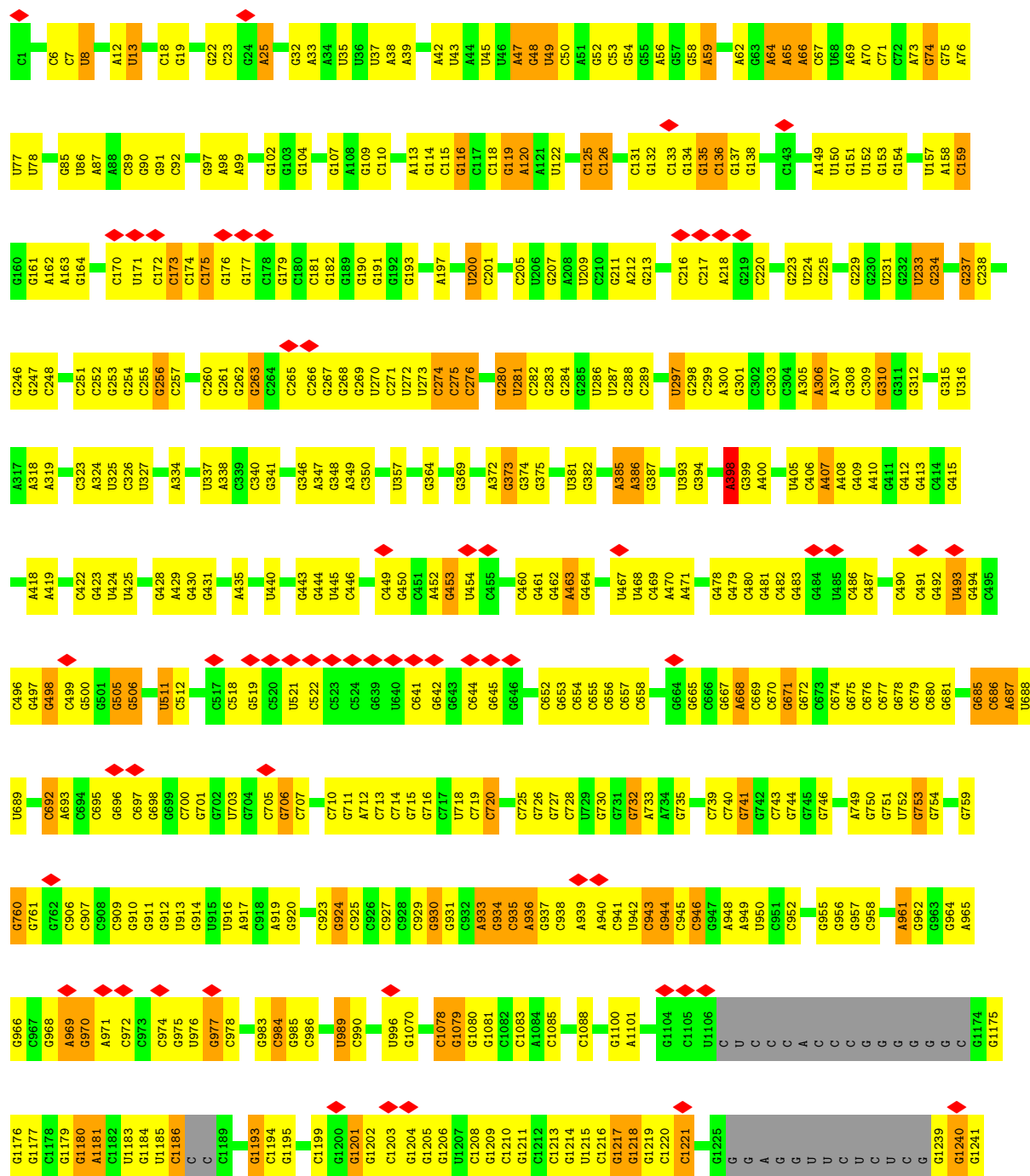
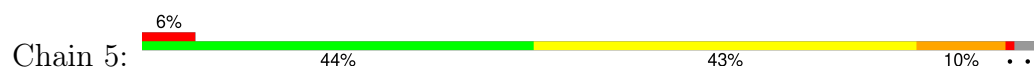


Chain CC: 





• Molecule 29: 28S rRNA



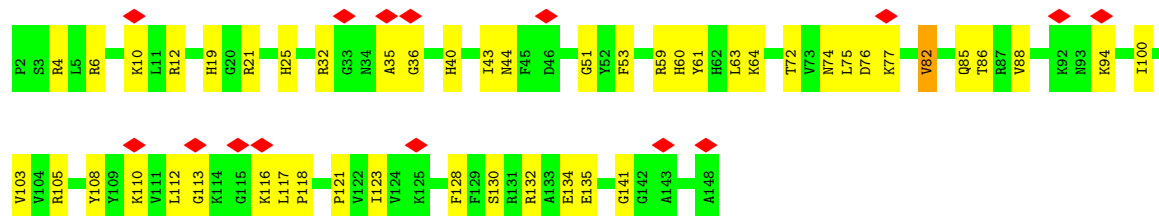
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C2343	C2344	C2345	C2346	A2347	G2351	G2354	C2357	A2366	C2367	U2368	C2369	A2369	A2370	C2371	A2376	A2380	A2381	C2382	C2383	G2386	U2390	U2391	C2392	C2393	G2395	A2396	U2397	C2398	U2399	C2401	A2402	G2405	G2406	A2407	G2408	A2409	A2410	G2411	G2412	C2416	C2417	U2500	U2501	A2508	G2509	C2510	C2511	G2512	A2513	U2514	A2519	G2520	G2521	G2522	
C2270	C2271	C2272	U2273	U2274	G2279	C2280	A2282	C2283	C2284	G2289	C2290	A2291	C2292	C2293	C2294	C2295	C2298	A2381	C2382	C2383	G2386	U2390	U2391	C2392	C2393	G2395	A2396	U2397	C2398	U2399	C2401	A2402	G2405	G2406	A2407	G2408	A2409	A2410	G2411	G2412	C2416	C2417	U2500	U2501	A2508	G2509	C2510	C2511	G2512	A2513	U2514	A2519	G2520	G2521	G2522
G2055	G2056	C2057	G2058	C2059	U2060	G2061	G2062	A2063	G2066	G2067	C2068	G2069	G2070	A2075	C2079	G2081	C2082	C2083	G2084	C2085	U2086	C2087	C2088	C2089	U2090	G2095	U2096	G2099	C2100	A2101	G2102	A2103	G2104	C2105	C2106	A2107	G2108	A2109	A2110	A2111	G2112	A2113	G2115	G2116	U2117	C2264	G2265	G2266	G2267	A2269					
G1978	G1979	U1980	G1981	G1982	C1983	C1984	U1985	U1986	G1987	G1988	A1989	A1990	G1991	U1992	G1993	G1994	G1995	A1996	U1997	U1998	C2000	G2001	C2002	U2003	G2006	G2007	A2008	G2009	U2010	G2013	U2014	A2015	A2016	C2017	A2018	U2021	C2022	G2027	A2031	A2032	A2035	A2036	U2044	G2045	A2046	A2047	G2051	G2052	A2053	U2054					
G1825	U1826	G1830	A1831	G1832	C1833	C1834	G1835	G1836	G1837	C1838	G1841	A1842	A1843	G1846	C1847	G1848	C1853	C1854	U1855	A1856	G1857	U1858	C1859	G1861	U1866	U1867	G1870	U1871	G1872	A1873	A1874	G1875	A1877	G1878	A1879	A1880	C1881	U1882	G1883	G1884	C1885	G1886	C1887	U1888	G1889	C1890	G1891	G1892	G1893	A1894					
A1897	G1901	A1902	A1903	G1910	U1911	U1912	A1913	A1914	G1915	C1920	U1924	G1925	C1926	C1927	G1928	U1933	C1934	A1935	U1936	C1937	A1938	G1939	A1940	C1944	A1945	A1946	A1947	A1948	A1949	A1950	G1951	G1954	U1955	U1956	G1957	U1960	G1961	A1962	U1963	A1964	U1965	A1966	G1967	A1970	A1973	G1974	G1975	A1976	U1977						
G1748	A1749	A1752	G1756	G1759	U1760	C1761	U1762	U1763	G1764	G1765	G1766	G1767	C1768	C1769	G1770	A1771	A1772	A1773	C1774	G1775	A1776	U1777	C1778	C1779	C1780	A1781	A1782	U1785	A1786	U1787	A1792	A1793	A1794	C1795	U1798	A1799	A1800	A1801	U1802	G1803	A1808	G1809	A1810	A1811	G1812	C1813	C1814	G1821	C1822	U1823	G1824				
A1636	A1637	G1638	A1640	C1641	U1642	A1643	A1644	A1649	C1650	C1651	A1652	G1660	C1661	U1665	U1666	C1668	C1669	U1670	A1675	G1676	U1682	U1683	U1687	A1688	U1689	A1690	G1691	C1692	U1693	G1694	G1697	C1698	C1702	C1726	G1730	U1731	U1732	U1733	U1734	A1735	U1736	C1737	G1738	G1739	G1809	A1810	A1811	G1812	C1813	C1814	G1821	C1822	U1823	G1824	
A1553	A1559	G1560	G1561	C1562	C1563	A1564	G1565	A1566	A1569	A1570	A1571	C1572	U1575	G1576	G1579	G1580	G1583	U1584	G1585	C1586	G1587	U1588	U1597	G1598	A1599	C1600	G1601	U1602	A1607	U1608	C1609	G1610	G1611	U1612	G1618	A1619	C1620	C1621	U1622	G1623	A1627	U1628	A1629	G1630	C1631	G1632	G1633	G1634	G1635						
U1479	C1480	G1481	C1482	U1483	C1484	G1485	C1486	C1487	G1488	C1489	G1490	C1491	C1492	G1493	G1496	A1497	G1498	G1499	U1500	G1501	G1502	A1503	U1504	C1505	A1506	C1507	G1508	A1509	G1510	C1511	G1512	C1513	A1514	C1515	G1516	U1517	U1519	A1521	G1522	G1523	A1524	G1528	A1529	A1530	A1531	G1536	U1537	U1538	A1539	A1540	C1541	U1542	C1547	C1548	
G1406	C1407	G1408	G1409	G1410	C1411	G	C	A1439	G1440	G1441	C1442	C1443	U1444	U1446	C1447	A1449	C1450	U1451	C1452	G1453	G1454	C1455	C1456	G1457	G1461	C1462	G1463	C1464	A1465	C1466	C1467	A1468	C1469	C1470	G1471	C1474	U1477	C1478																	
A1332	G1333	G1334	A1335	C1336	C1337	C1338	A1339	A1340	G1344	U1345	C1346	U1347	A1348	C1349	C1350	A1351	C1352	G1353	U1354	G1355	C1356	G1357	A1360	G1364	G1365	G1366	G1367	C1368	U1370	G1376	A1377	C1378	G1383	G1386	U1387	G1388	G1389	C1390	G1391	C1392	C1393	A1396	A1397	A1398	A1399	A1318	G1400	A1403	A1404	G1405					
C1242	C1243	A1244	G1250	C1251	G1252	U1253	C1254	C1255	C1256	C1257	C1258	G1277	C1278	C1279	A1280	G1281	C1282	A1285	C1286	G1287	G1288	G1289	U1290	U1291	C1292	G1293	G1296	G1297	C1298	G1299	G1302	U1303	C1304	G1305	G1306	C1307	U1308	A1309	C1310	C1311	C1312	A1313	C1314	C1315	C1316	G1317	A1318	C1319	C1320	C1321	G1322	U1323	C1324	A1328	






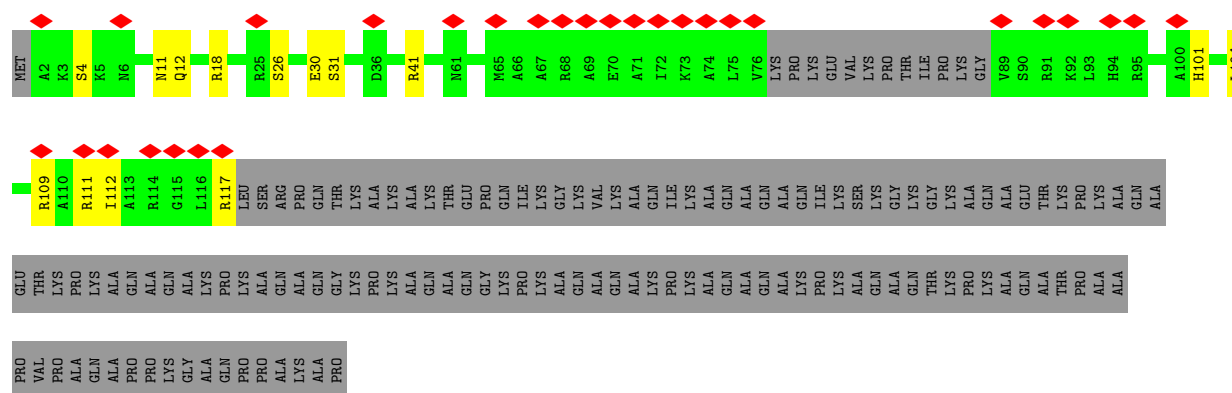
- Molecule 32: uL15

Chain a: 



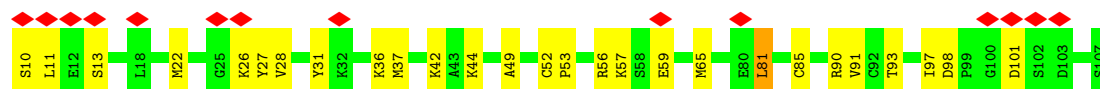
- Molecule 33: eL29

Chain b: 




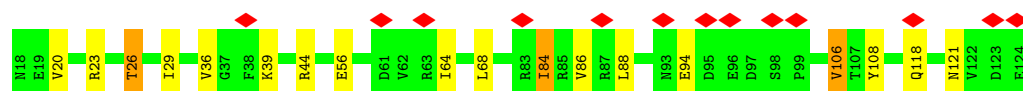
- Molecule 34: eL30

Chain c: 




- Molecule 35: eL31

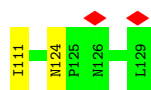
Chain d: 



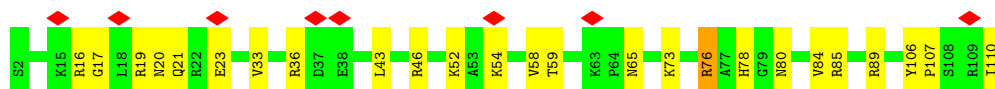
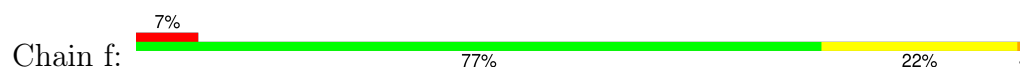
- Molecule 36: eL32

Chain e: 

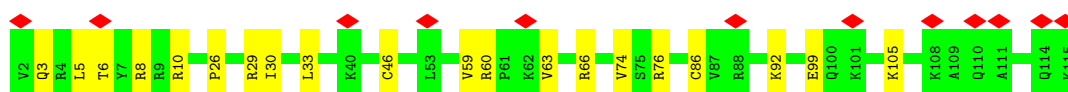
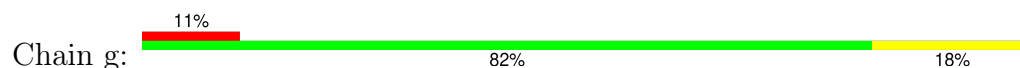




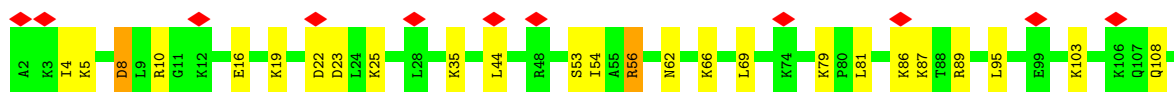
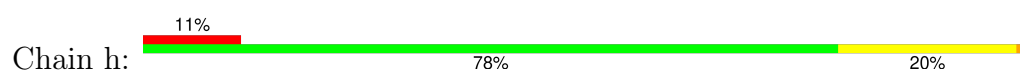
• Molecule 37: eL33



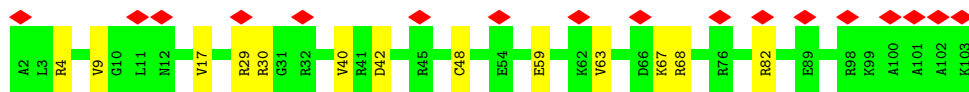
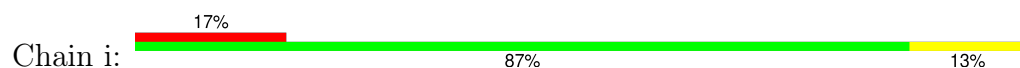
• Molecule 38: eL34



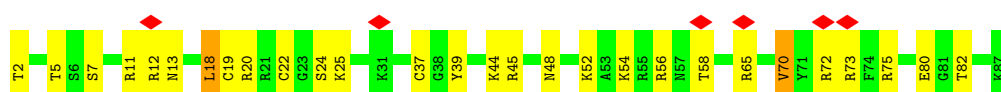
• Molecule 39: uL29



• Molecule 40: eL36



• Molecule 41: eL37

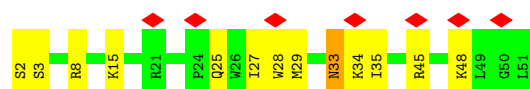


• Molecule 42: eL38





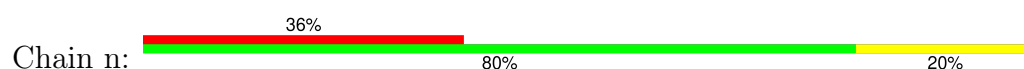
• Molecule 43: eL39



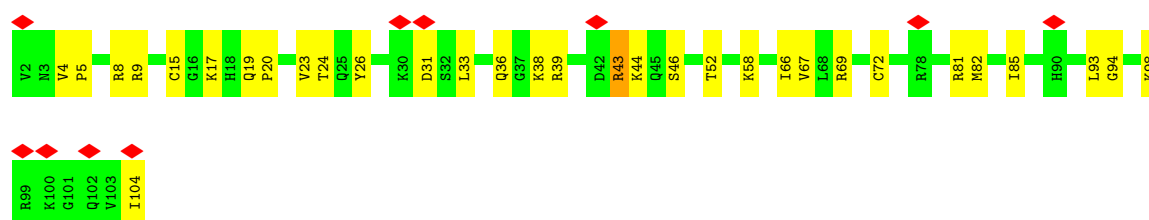
• Molecule 44: eL40



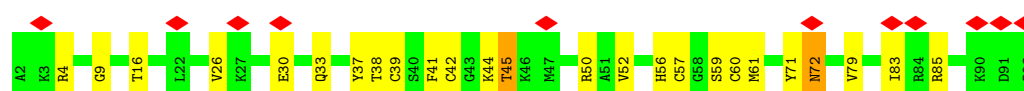
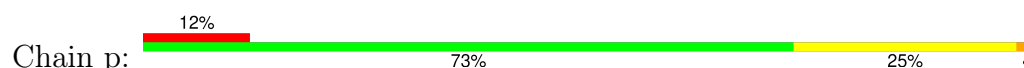
• Molecule 45: eL41



• Molecule 46: eL42

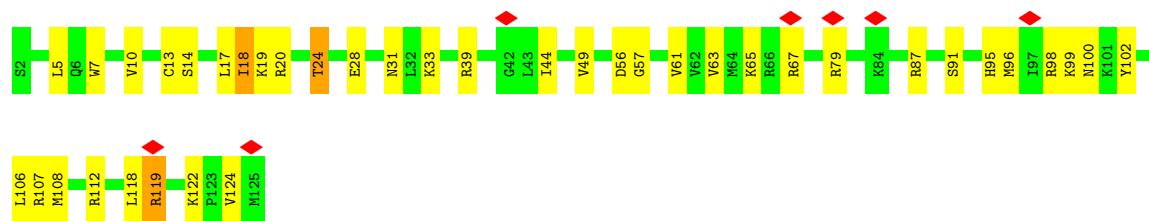


• Molecule 47: eL43

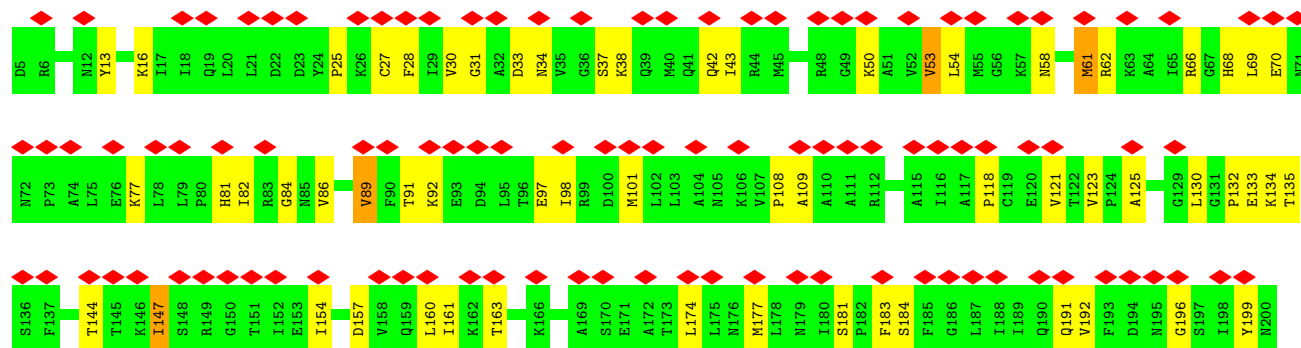


• Molecule 48: eL28

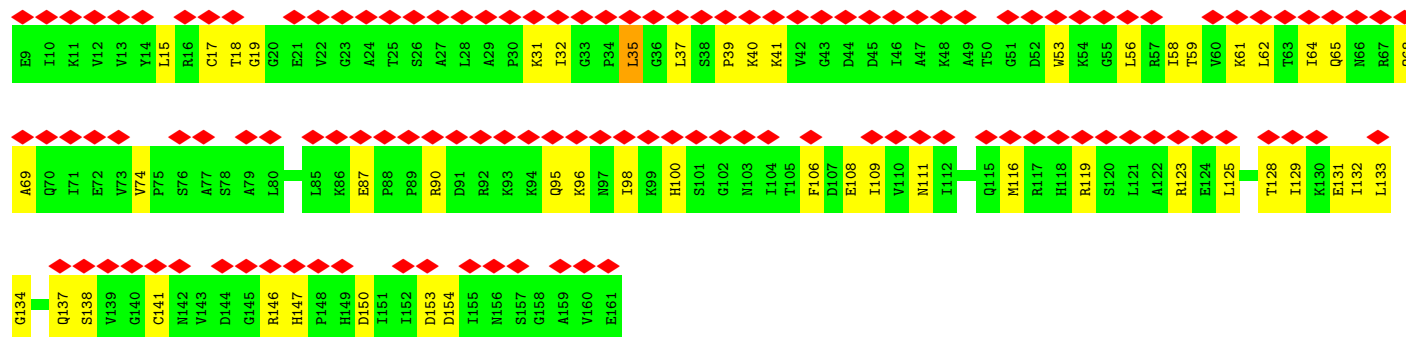
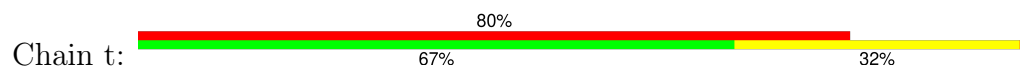




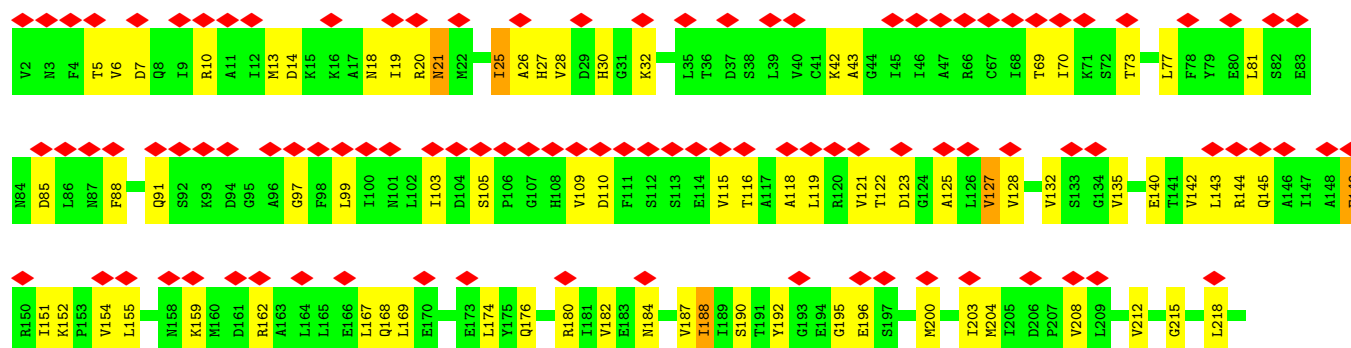
• Molecule 49: uL10

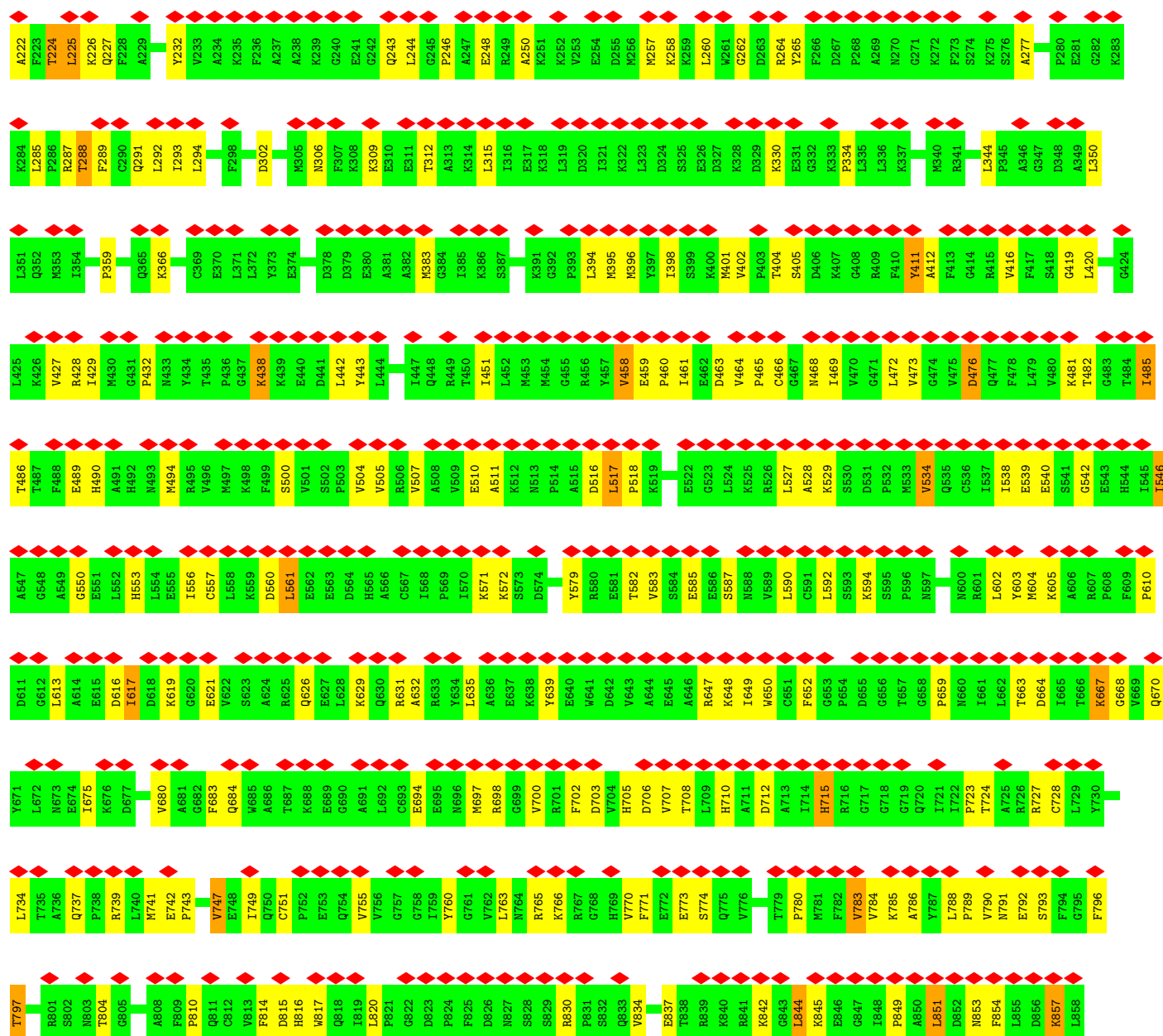


• Molecule 50: eL11

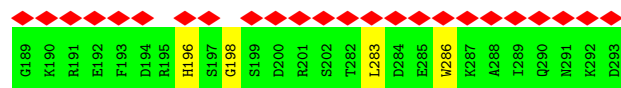
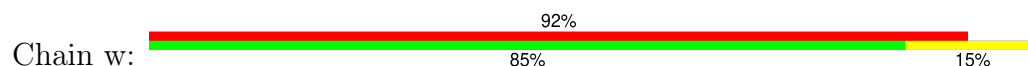


• Molecule 51: eukaryotic elongation factor 2

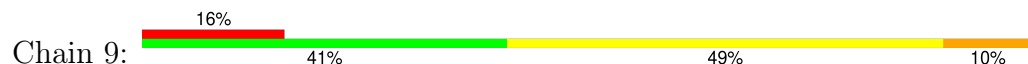




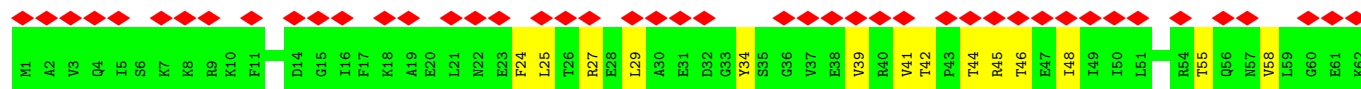
• Molecule 52: Serpine mRNA binding protein 1

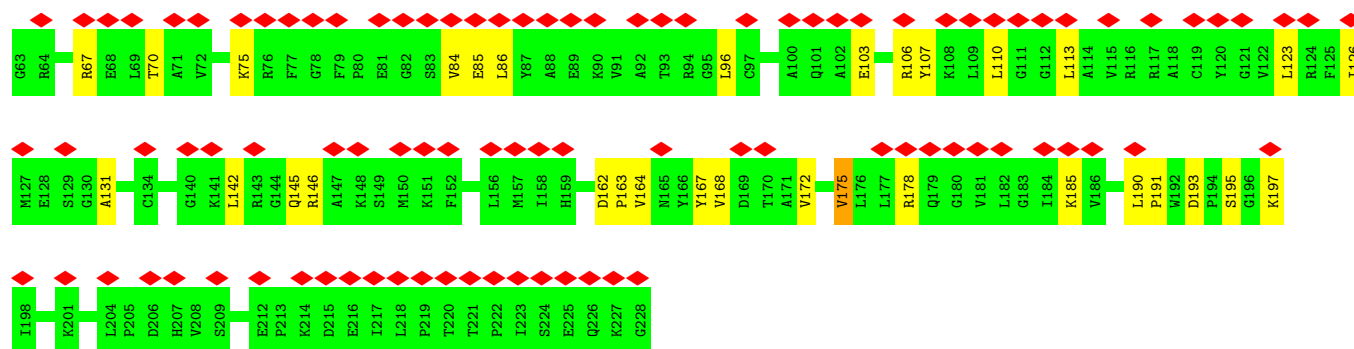


• Molecule 53: 18S rRNA

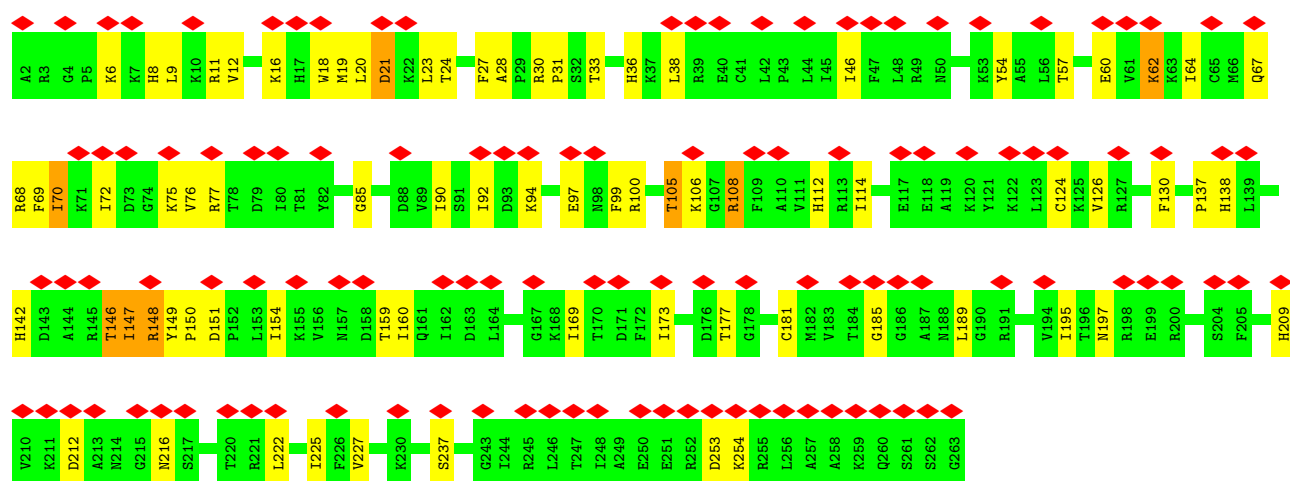




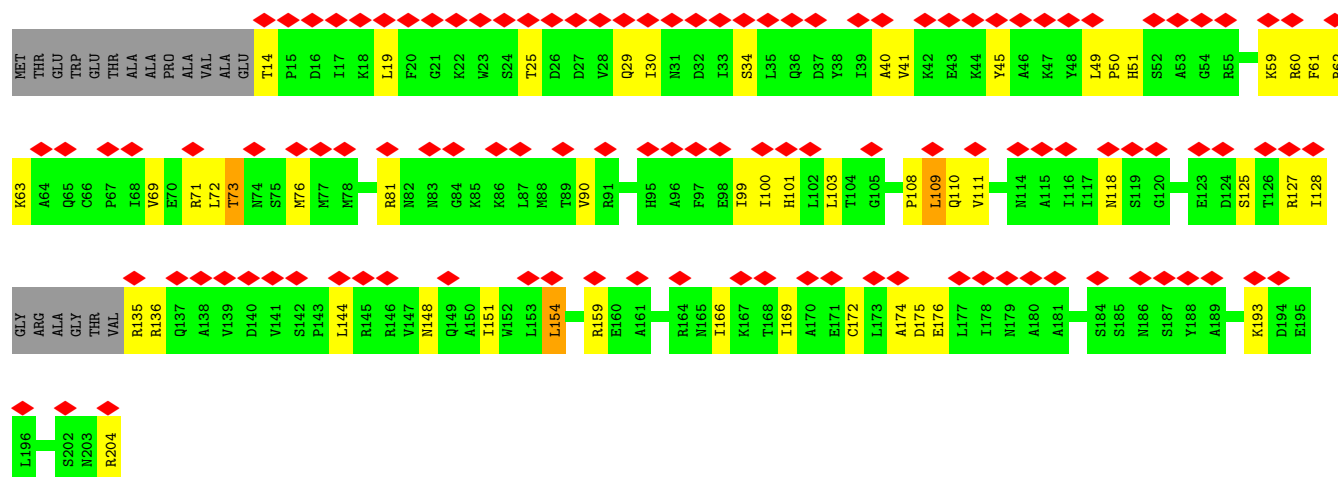




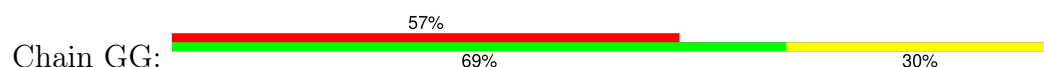
• Molecule 55: eS4

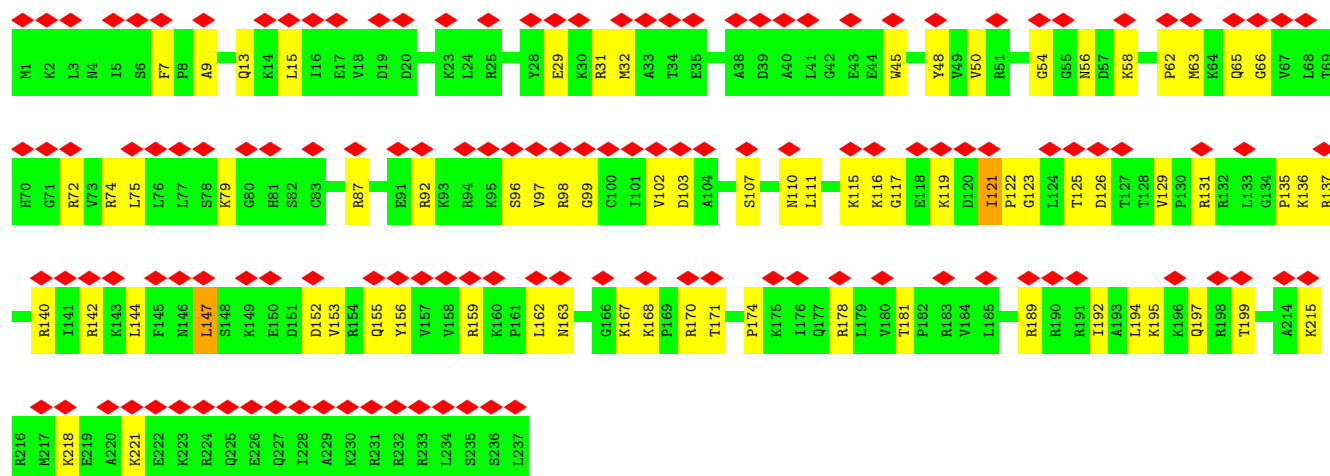


• Molecule 56: uS7

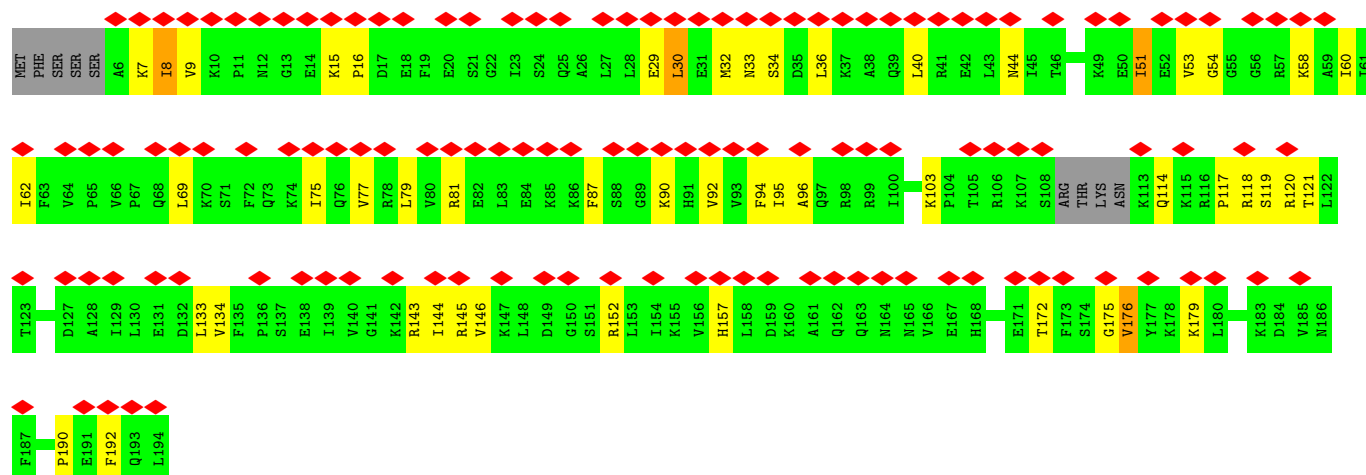


• Molecule 57: eS6

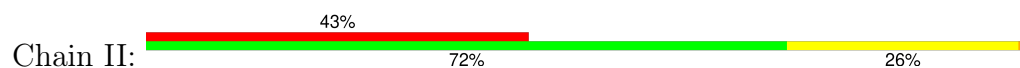




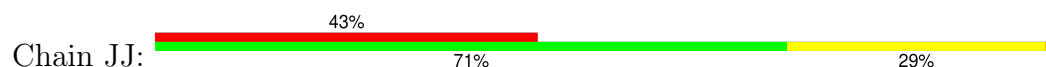
• Molecule 58: eS7

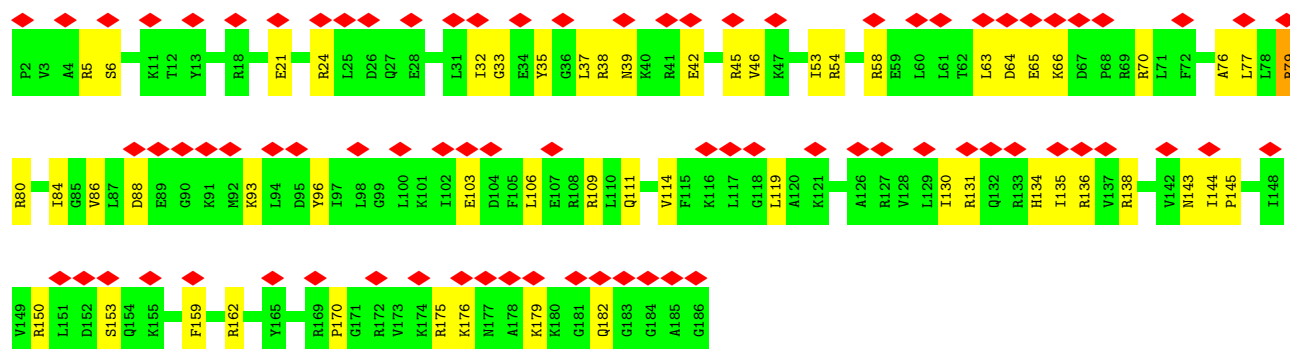


• Molecule 59: eS8

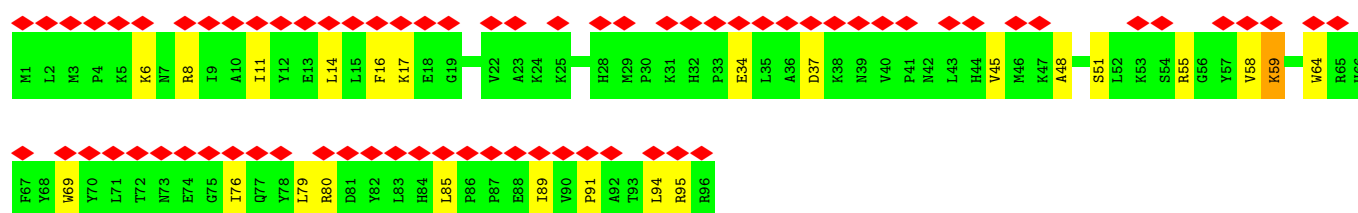
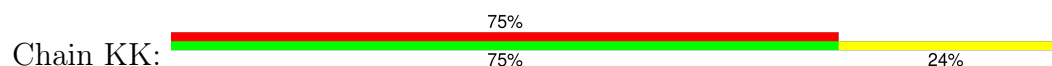


• Molecule 60: uS4

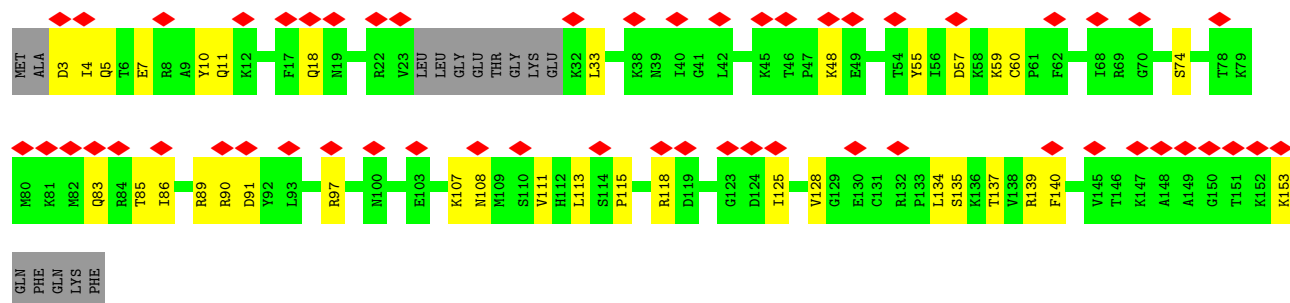




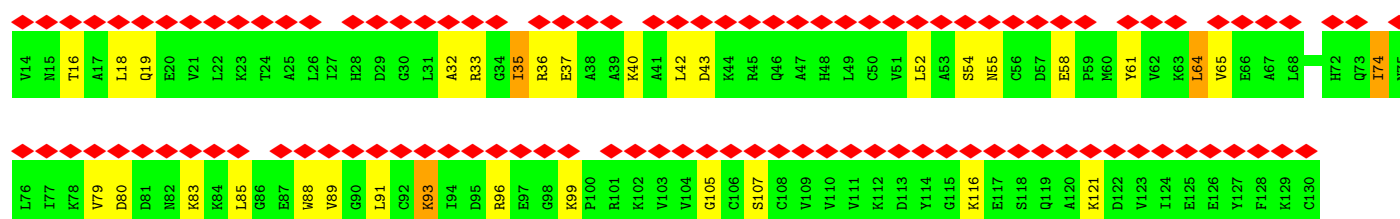
- Molecule 61: eS10



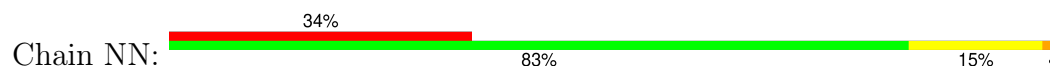
- Molecule 62: uS17

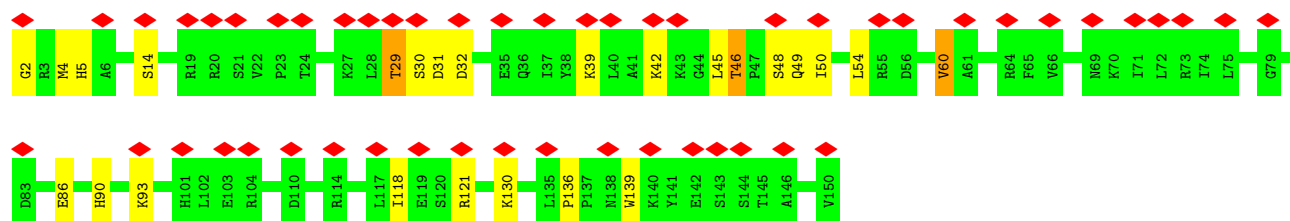


- Molecule 63: eS12

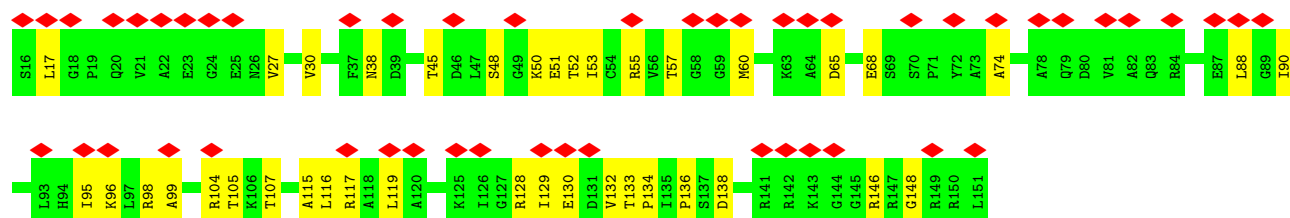
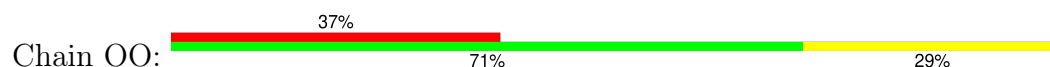


- Molecule 64: uS15

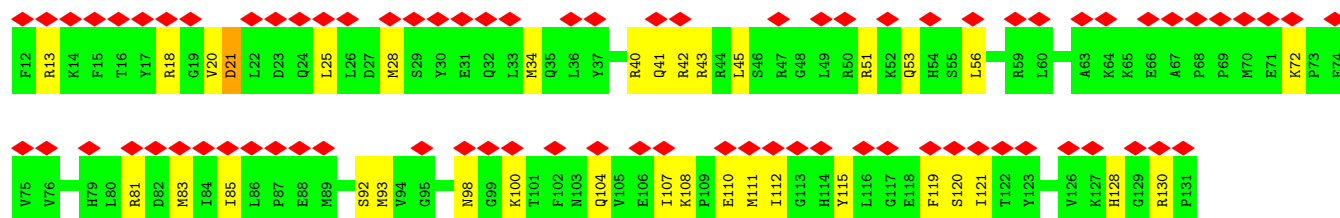
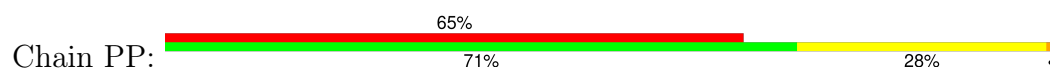




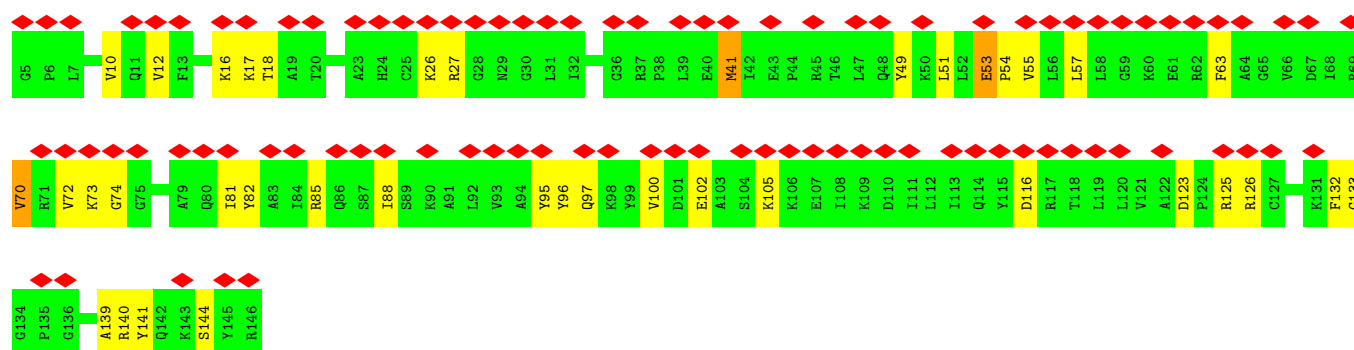
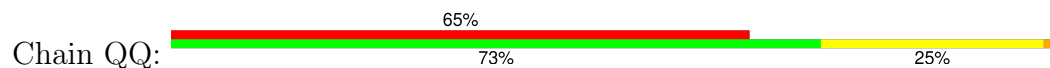
• Molecule 65: uS11



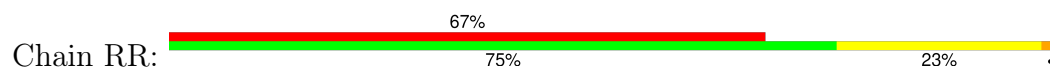
• Molecule 66: uS19

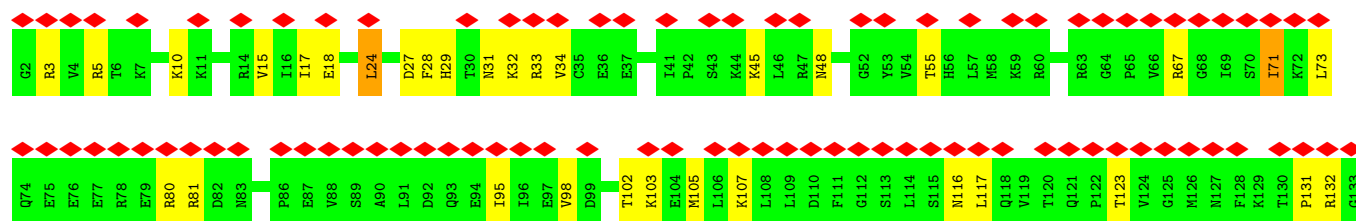


• Molecule 67: uS9

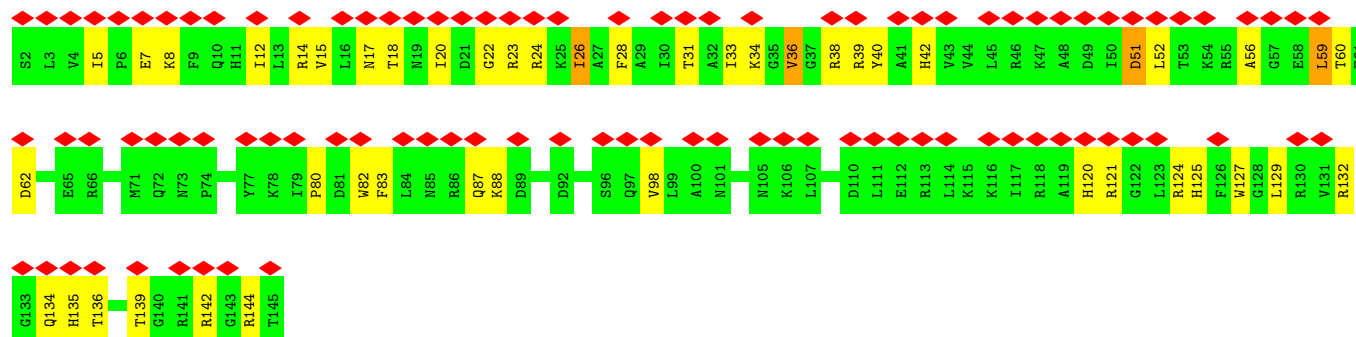


• Molecule 68: eS17

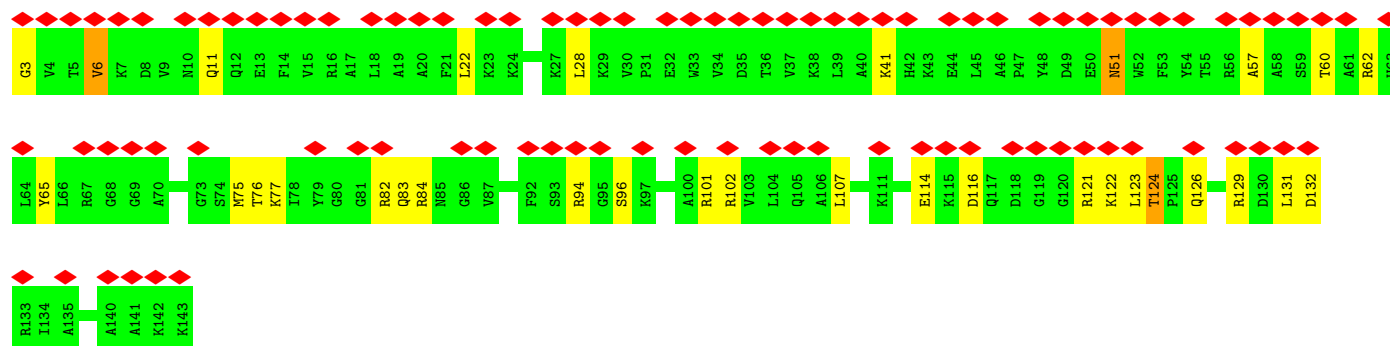
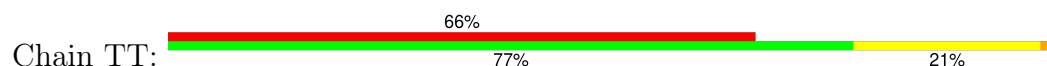




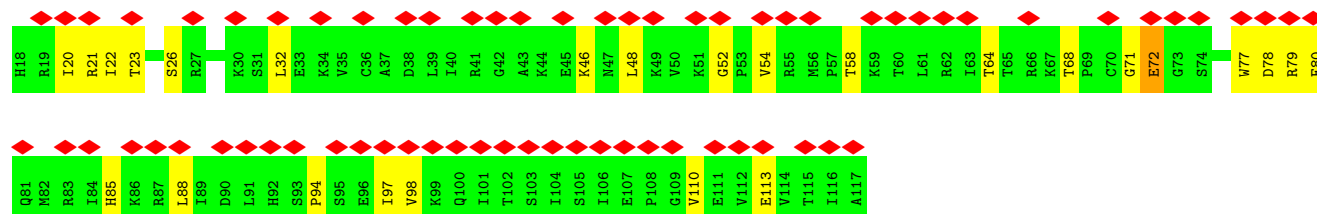
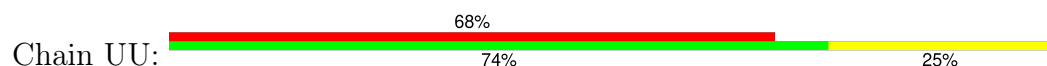
• Molecule 69: uS13



• Molecule 70: eS19

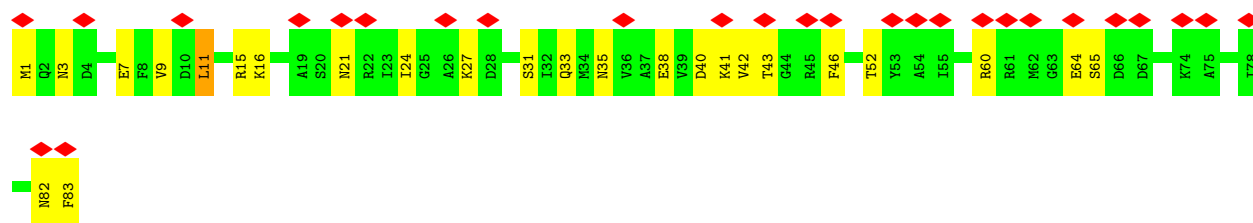


• Molecule 71: uS10

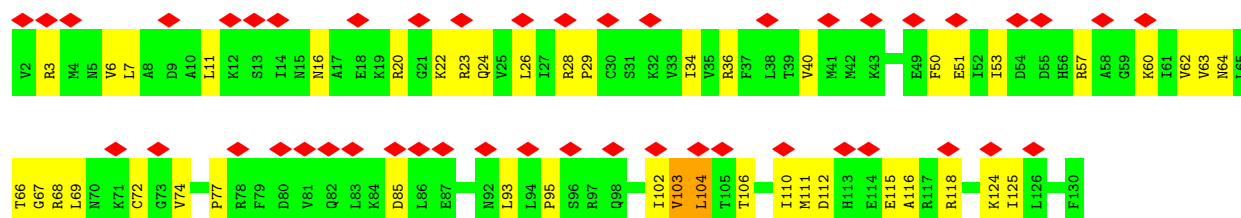
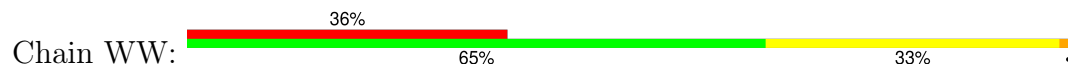


• Molecule 72: eS21

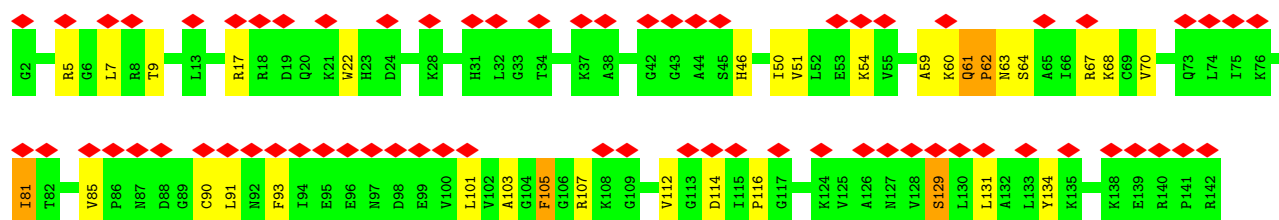
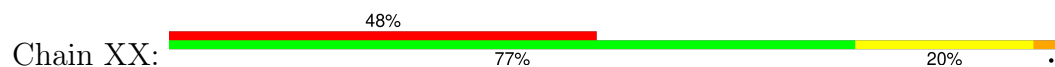




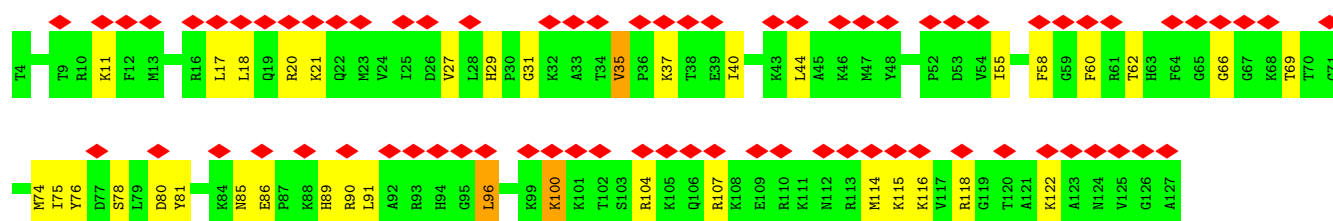
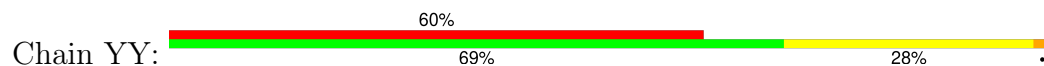
• Molecule 73: uS8



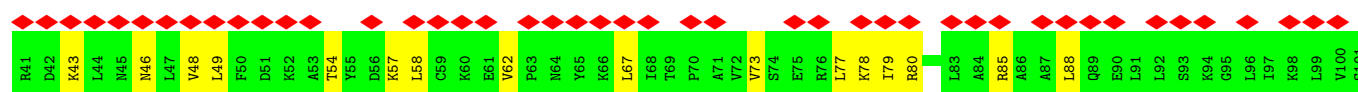
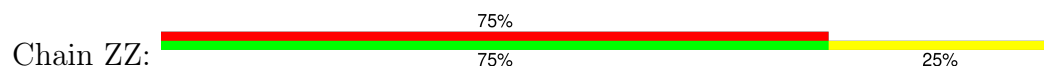
• Molecule 74: uS12

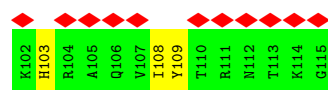


• Molecule 75: eS24

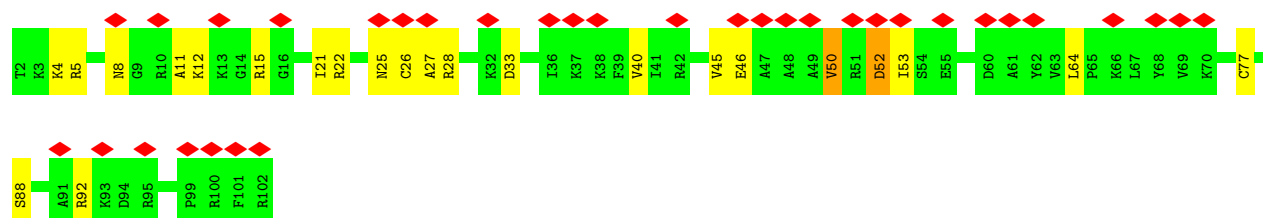
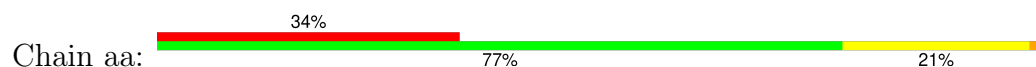


• Molecule 76: eS25

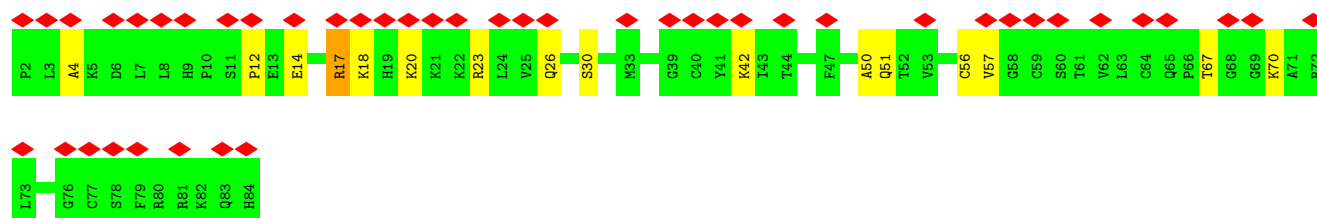
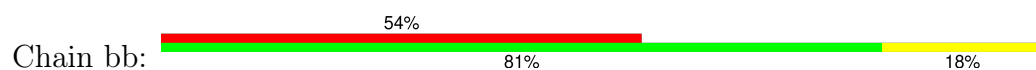




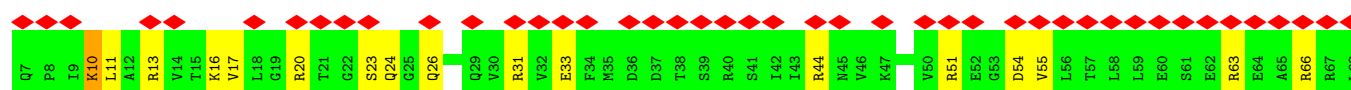
• Molecule 77: eS26



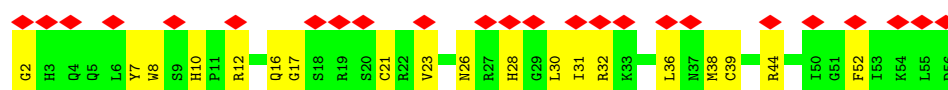
• Molecule 78: eS27



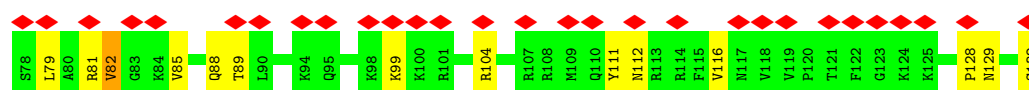
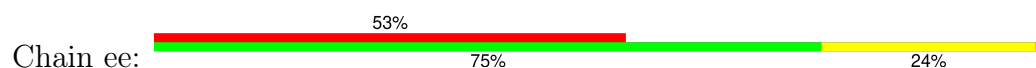
• Molecule 79: eS28



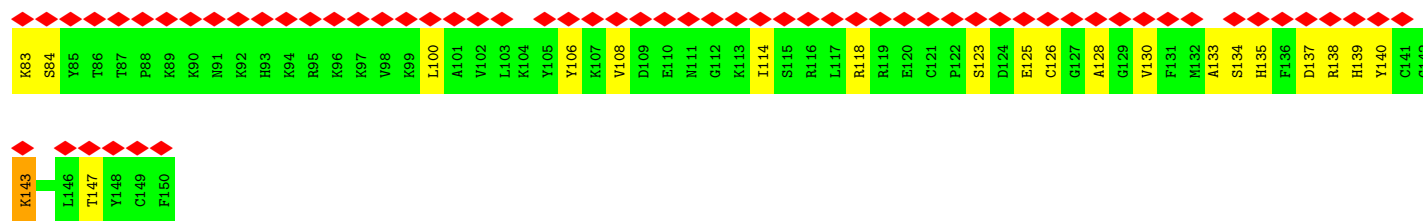
• Molecule 80: uS14



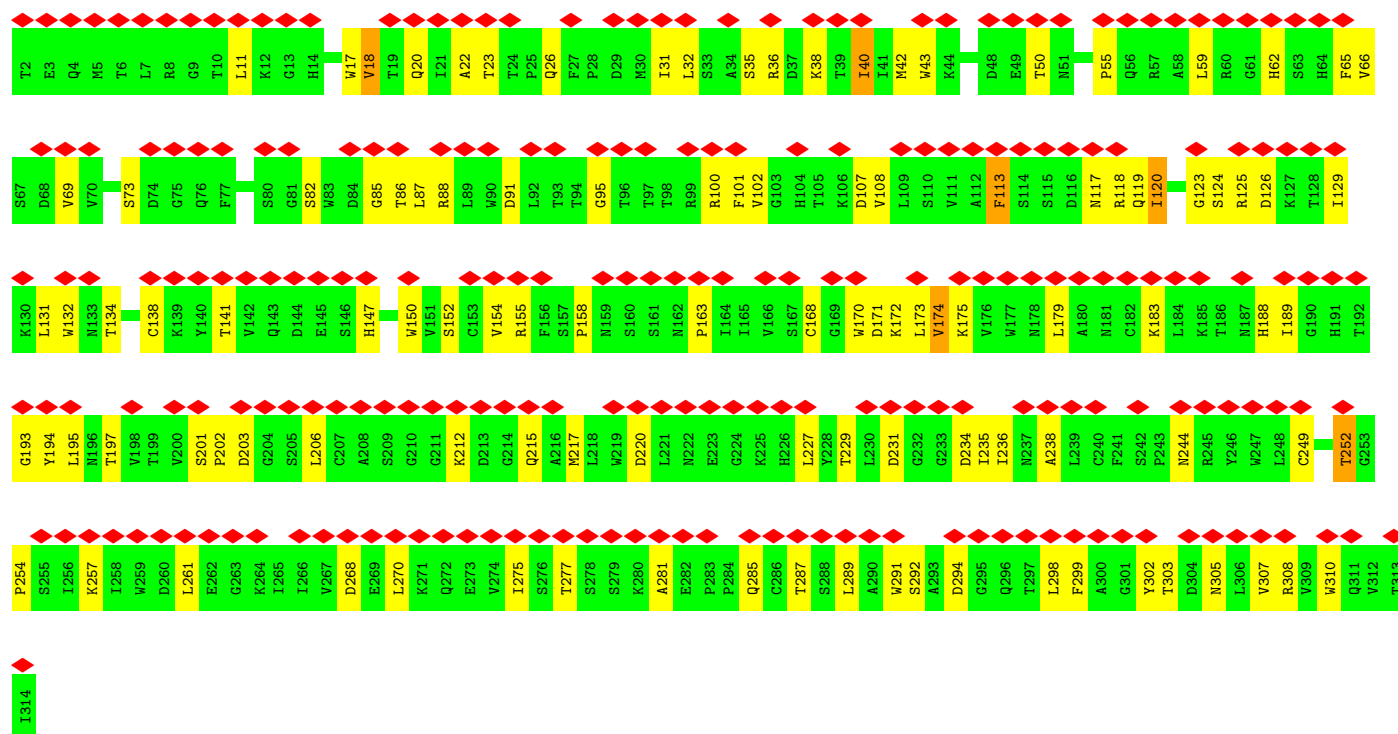
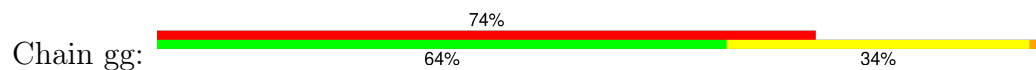
• Molecule 81: eS30



• Molecule 82: eS31



• Molecule 83: RACK1



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	3313	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	1	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	32.579	Depositor
Minimum map value	-19.958	Depositor
Average map value	0.002	Depositor
Map value standard deviation	1.653	Depositor
Recommended contour level	6.2	Depositor
Map size (Å)	686.87994, 686.87994, 686.87994	wwPDB
Map dimensions	648, 648, 648	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.06, 1.06, 1.06	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: E6G, OMC, A2M, 5MC, B8K, 6MZ, MG, P4U, OMU, 1MA, BGH, 5MU, I4U, GDP, B8T, JMH, UR3, PSU, 2MG, 7MG, B9B, DDE, P7G, E7G, B8H, 4AC, MLZ, B8W, M7A, B9H, ZN, MHG, B8N, OMG

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# $ Z > 5$	RMSZ	# $ Z > 5$
1	A	0.10	0/1936	0.26	0/2596
2	B	0.10	0/3240	0.24	0/4339
3	C	0.09	0/2927	0.21	0/3932
4	D	0.08	0/2437	0.21	0/3264
5	E	0.08	0/1762	0.22	0/2362
6	F	0.09	0/1911	0.23	0/2549
7	G	0.09	0/1910	0.24	0/2569
8	H	0.10	0/1535	0.25	0/2063
9	I	0.09	0/1702	0.20	0/2272
10	J	0.09	0/1385	0.22	0/1852
11	L	0.08	0/1733	0.22	0/2316
12	M	0.13	0/1158	0.26	0/1547
13	N	0.10	0/1746	0.22	0/2338
14	O	0.09	0/1662	0.22	0/2222
15	P	0.09	0/1268	0.25	0/1700
16	Q	0.09	0/1539	0.24	0/2054
17	R	0.08	0/1524	0.22	0/2013
18	S	0.10	0/1501	0.25	0/2012
19	T	0.09	0/1326	0.22	0/1770
20	U	0.10	0/823	0.28	0/1104
21	V	0.09	0/993	0.23	0/1332
22	W	0.08	0/873	0.24	0/1158
23	X	0.08	0/984	0.22	0/1323
24	Y	0.09	0/1132	0.22	0/1504
25	Z	0.08	0/1130	0.23	0/1507
26	AA	0.08	0/1747	0.22	0/2374
27	BB	0.08	0/1756	0.23	0/2350
28	CC	0.09	0/1753	0.23	0/2369
29	5	0.13	0/82204	0.25	0/128128
30	7	0.10	0/2858	0.21	0/4455

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
31	8	0.13	0/3559	0.23	0/5543
32	a	0.10	0/1191	0.22	0/1590
33	b	0.08	0/861	0.19	0/1138
34	c	0.09	0/771	0.20	0/1034
35	d	0.10	0/903	0.23	0/1216
36	e	0.08	0/1071	0.22	0/1429
37	f	0.09	0/895	0.24	0/1198
38	g	0.09	0/916	0.20	0/1220
39	h	0.07	0/1021	0.19	0/1348
40	i	0.08	0/841	0.22	0/1112
41	j	0.09	0/720	0.25	0/952
42	k	0.09	0/575	0.23	0/761
43	l	0.09	0/459	0.26	0/608
44	m	0.12	0/425	0.33	0/561
45	n	0.08	0/240	0.18	0/305
46	o	0.09	0/855	0.22	0/1128
47	p	0.09	0/718	0.21	0/953
48	r	0.09	0/1010	0.27	0/1354
49	s	0.09	0/1530	0.26	0/2064
50	t	0.10	0/1174	0.30	0/1582
51	v	0.10	0/6651	0.31	0/8982
52	w	0.06	0/218	0.15	0/287
53	9	0.15	4/40371 (0.0%)	0.34	14/62907 (0.0%)
54	DD	0.10	0/1796	0.25	0/2417
55	EE	0.08	0/2118	0.22	0/2849
56	FF	0.08	0/1492	0.26	0/2005
57	GG	0.07	0/1946	0.23	0/2590
58	HH	0.08	0/1510	0.22	0/2022
59	II	0.10	0/1715	0.25	0/2287
60	JJ	0.07	0/1550	0.20	0/2069
61	KK	0.09	0/834	0.31	0/1125
62	LL	0.07	0/1195	0.20	0/1597
63	MM	0.09	0/918	0.31	0/1233
64	NN	0.07	0/1226	0.21	0/1649
65	OO	0.08	0/1029	0.22	0/1380
66	PP	0.08	0/1017	0.26	0/1358
67	QQ	0.09	0/1146	0.25	0/1534
68	RR	0.08	0/1082	0.20	0/1452
69	SS	0.08	0/1208	0.24	0/1618
70	TT	0.08	0/1115	0.21	0/1493
71	UU	0.07	0/805	0.22	0/1081
72	VV	0.07	0/643	0.21	0/860
73	WW	0.09	0/1051	0.23	0/1406

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
74	XX	0.09	0/1116	0.25	0/1490
75	YY	0.07	0/1028	0.22	0/1366
76	ZZ	0.10	0/604	0.21	0/810
77	aa	0.09	0/828	0.25	0/1109
78	bb	0.07	0/665	0.21	0/891
79	cc	0.08	0/490	0.23	0/656
80	dd	0.08	0/470	0.22	0/623
81	ee	0.07	0/447	0.22	0/587
82	ff	0.07	0/567	0.21	0/753
83	gg	0.08	0/2493	0.25	0/3394
All	All	0.12	4/231534 (0.0%)	0.27	14/338350 (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
74	XX	0	1

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
53	9	1284	A	N9-C4	9.42	1.56	1.37
53	9	1286	G	N9-C8	-9.38	1.19	1.37
53	9	1286	G	N9-C4	9.35	1.56	1.38
53	9	1284	A	N9-C8	-9.35	1.19	1.37

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
53	9	1284	A	N7-C8-N9	-23.91	42.09	113.80
53	9	1286	G	N7-C8-N9	-23.71	41.97	113.10
53	9	1286	G	C4-C5-N7	-23.09	41.53	110.80
53	9	1284	A	C4-C5-N7	-22.92	41.94	110.70
53	9	1286	G	C8-N9-C4	-20.32	45.44	106.40
53	9	1284	A	C8-N9-C4	-20.25	45.04	105.80
53	9	1286	G	C6-C5-N7	8.59	156.16	130.40
53	9	1284	A	C4-N9-C1'	7.93	150.10	126.30
53	9	1284	A	C6-C5-N7	7.87	155.91	132.30
53	9	1286	G	C8-N9-C1'	-7.73	103.81	127.00
53	9	1286	G	C4-N9-C1'	7.58	149.25	126.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
53	9	1284	A	C8-N9-C1'	-7.54	105.07	127.70
53	9	1286	G	C5-N7-C8	6.33	123.28	104.30
53	9	1284	A	C5-N7-C8	6.13	122.30	103.90

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
74	XX	61	GLN	Peptide

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	A	1898	0	1993	59	0
2	B	3172	0	3310	80	0
3	C	2884	0	3054	61	0
4	D	2391	0	2424	43	0
5	E	1729	0	1887	30	0
6	F	1875	0	1995	43	0
7	G	1879	0	2027	36	0
8	H	1516	0	1595	40	0
9	I	1664	0	1712	39	0
10	J	1362	0	1399	24	0
11	L	1702	0	1820	32	0
12	M	1137	0	1208	31	0
13	N	1701	0	1749	51	0
14	O	1630	0	1778	38	0
15	P	1242	0	1274	30	0
16	Q	1515	0	1634	46	0
17	R	1508	0	1664	34	0
18	S	1462	0	1508	29	0
19	T	1298	0	1366	28	0
20	U	809	0	833	13	0
21	V	979	0	1039	21	0
22	W	860	0	903	14	0
23	X	967	0	1040	11	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
24	Y	1115	0	1205	34	0
25	Z	1107	0	1182	25	0
26	AA	1710	0	1708	39	0
27	BB	1729	0	1803	45	0
28	CC	1716	0	1806	33	0
29	5	75791	0	38047	1469	0
30	7	2558	0	1296	28	0
31	8	3209	0	1631	72	0
32	a	1162	0	1209	45	0
33	b	848	0	920	13	0
34	c	761	0	794	20	0
35	d	888	0	930	12	0
36	e	1053	0	1147	19	0
37	f	876	0	912	20	0
38	g	906	0	998	13	0
39	h	1013	0	1147	22	0
40	i	830	0	916	8	0
41	j	705	0	737	30	0
42	k	569	0	637	11	0
43	l	447	0	480	11	0
44	m	430	0	466	14	0
45	n	239	0	289	3	0
46	o	842	0	912	21	0
47	p	708	0	756	21	0
48	r	994	0	1051	31	0
49	s	1507	0	1564	34	0
50	t	1160	0	1218	33	0
51	v	6544	0	6638	179	0
52	w	216	0	199	6	0
53	9	36243	0	18277	779	0
54	DD	1768	0	1866	28	0
55	EE	2076	0	2177	55	0
56	FF	1471	0	1522	36	0
57	GG	1923	0	2089	58	0
58	HH	1488	0	1582	33	0
59	II	1686	0	1772	41	0
60	JJ	1525	0	1640	42	0
61	KK	810	0	836	18	0
62	LL	1175	0	1249	23	0
63	MM	908	0	939	23	0
64	NN	1202	0	1289	20	0
65	OO	1016	0	1039	28	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
66	PP	997	0	1045	28	0
67	QQ	1128	0	1195	27	0
68	RR	1068	0	1121	21	0
69	SS	1190	0	1248	33	0
70	TT	1097	0	1132	26	0
71	UU	795	0	862	19	0
72	VV	636	0	637	19	0
73	WW	1034	0	1080	34	0
74	XX	1098	0	1167	23	0
75	YY	1011	0	1083	31	0
76	ZZ	598	0	656	17	0
77	aa	814	0	864	17	0
78	bb	651	0	672	12	0
79	cc	488	0	514	14	0
80	dd	459	0	448	19	0
81	ee	443	0	492	16	0
82	ff	555	0	563	19	0
83	gg	2436	0	2393	68	0
84	5	197	0	0	0	0
84	7	6	0	0	0	0
84	8	6	0	0	0	0
84	9	75	0	0	0	0
84	A	1	0	0	0	0
84	P	1	0	0	0	0
84	SS	1	0	0	0	0
84	TT	1	0	0	0	0
84	V	1	0	0	0	0
84	a	1	0	0	0	0
84	dd	1	0	0	0	0
84	g	1	0	0	0	0
84	j	1	0	0	0	0
84	v	1	0	0	0	0
85	aa	1	0	0	0	0
85	dd	1	0	0	0	0
85	ff	1	0	0	0	0
85	g	1	0	0	0	0
85	j	1	0	0	0	0
85	m	1	0	0	0	0
85	o	1	0	0	0	0
85	p	1	0	0	0	0
86	v	28	0	12	3	0
All	All	218932	0	165271	3990	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 11.

All (3990) 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)
29:5:4089:5MU:C4	29:5:4089:5MU:C5	1.83	1.63
29:5:1866:B8H:C4	29:5:1866:B8H:C5	1.83	1.56
29:5:3768:B8H:C4	29:5:3768:B8H:C5	1.83	1.56
29:5:4302:B8H:C4	29:5:4302:B8H:C5	1.83	1.56
29:5:1866:B8H:C6	29:5:1866:B8H:N1	1.67	1.56
29:5:4089:5MU:C6	29:5:4089:5MU:N1	1.68	1.54
29:5:3768:B8H:C6	29:5:3768:B8H:N1	1.68	1.53
29:5:4302:B8H:C6	29:5:4302:B8H:N1	1.68	1.49
29:5:3905:BGH:C4'	29:5:3905:BGH:O4'	1.66	1.17
29:5:2013:G:H21	29:5:2018:A:N6	1.46	1.14
29:5:2013:G:N2	29:5:2018:A:H62	1.46	1.13
29:5:2851:A:H61	29:5:3849:C:N4	1.54	1.05
53:9:110:U:H3	53:9:351:G:H1	1.08	1.01
53:9:442:C:N4	53:9:449:A:H62	1.59	1.00
29:5:2851:A:N6	29:5:3849:C:H42	1.60	0.97
53:9:442:C:H42	53:9:449:A:N6	1.62	0.97
53:9:925:G:H1	53:9:1017:U:H3	1.00	0.95
53:9:1351:G:H1	53:9:1360:U:H3	1.09	0.95
53:9:1743:G:H21	53:9:1791:A:H62	1.10	0.94
53:9:1652:G:H1	53:9:1672:U:H3	1.12	0.94
29:5:1866:B8H:C5	29:5:1866:B8H:N1	2.37	0.86
29:5:462:G:H2'	29:5:463:A:H8	1.40	0.85
29:5:4741:G:H1	29:5:4971:U:H3	1.23	0.84
53:9:1324:G:H1	53:9:1504:U:H3	0.88	0.84
53:9:1743:G:N2	53:9:1791:A:H62	1.75	0.84
29:5:3768:B8H:C5	29:5:3768:B8H:N1	2.36	0.83
29:5:2851:A:H61	29:5:3849:C:H42	0.84	0.83
29:5:4089:5MU:C6	29:5:4089:5MU:C2	2.66	0.82
53:9:122:G:H21	55:EE:146:THR:HG21	1.44	0.82
53:9:1218:C:H1'	53:9:1683:C:H42	1.45	0.81
29:5:1610:G:H2'	29:5:1611:7MG:H82	1.63	0.81
53:9:1096:G:H1	53:9:1136:U:H3	1.28	0.80
29:5:462:G:H2'	29:5:463:A:C8	2.17	0.79
53:9:957:A:H3'	53:9:958:G:H21	1.46	0.79
59:II:178:ARG:HE	59:II:181:GLN:HG3	1.48	0.79
53:9:1563:G:H5''	70:TT:121:ARG:HH12	1.48	0.78
29:5:1876:C:H2'	29:5:1877:A2M:H8	1.64	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:v:710:HIS:HD1	51:v:715:DDE:HD2	1.49	0.78
53:9:1656:G:H1	53:9:1668:U:H3	1.33	0.77
26:AA:155:ARG:NH1	53:9:1138:C:OP1	2.18	0.77
53:9:1743:G:H21	53:9:1791:A:N6	1.80	0.76
29:5:3728:G:H2'	29:5:3729:A2M:H8	1.68	0.76
53:9:153:G:N3	57:GG:13:GLN:NE2	2.33	0.76
53:9:1016:U:H5''	64:NN:14:SER:HB2	1.68	0.76
29:5:743:C:H42	29:5:925:C:H42	1.34	0.76
29:5:2563:G:H1	29:5:2576:U:H3	0.82	0.75
29:5:1279:G:H5''	33:b:117:ARG:HD2	1.68	0.75
2:B:10:ARG:HH12	2:B:265:SER:HB2	1.52	0.75
53:9:1364:U:O4	53:9:1375:G:N2	2.19	0.75
66:PP:108:LYS:HD3	66:PP:110:GLU:H	1.51	0.75
29:5:2579:A:H62	29:5:2767:U:H3	1.35	0.74
10:J:18:ARG:HG3	10:J:135:GLY:HA3	1.70	0.74
29:5:3647:U:OP2	29:5:3652:A:N6	2.21	0.74
53:9:903:A:H2'	53:9:904:A:H8	1.52	0.74
26:AA:76:VAL:HG12	26:AA:123:VAL:HB	1.70	0.74
2:B:249:ARG:NH1	29:5:2843:U:OP1	2.21	0.73
29:5:1450:G:N2	29:5:2117:U:O4	2.21	0.73
53:9:677:G:H21	53:9:1028:A:H62	1.36	0.73
29:5:4547:G:N2	29:5:4550:A:OP2	2.21	0.73
29:5:3765:A:N6	29:5:3771:G:O2'	2.22	0.73
29:5:518:C:H2'	29:5:519:G:H8	1.54	0.73
56:FF:118:ASN:O	56:FF:193:LYS:NZ	2.21	0.73
29:5:754:G:H1	29:5:913:U:H3	1.35	0.73
1:A:183:GLY:HA2	29:5:1619:A:H5''	1.70	0.73
63:MM:32:ALA:HB1	63:MM:37:GLU:HB3	1.70	0.72
29:5:2802:G:H5'	43:l:45:ARG:HH21	1.54	0.72
65:OO:99:ALA:H	65:OO:133:THR:HG22	1.54	0.72
29:5:4676:C:O2'	29:5:4678:A:OP2	2.08	0.72
53:9:649:U:H2'	53:9:650:A:H8	1.55	0.72
29:5:3768:B8H:C6	29:5:3768:B8H:C2	2.66	0.72
53:9:16:G:H5'	53:9:669:A:H61	1.55	0.72
54:DD:70:THR:HG22	54:DD:86:LEU:HD13	1.72	0.72
48:r:28:GLU:HG3	48:r:31:ASN:HB2	1.71	0.72
55:EE:68:ARG:HG3	55:EE:76:VAL:HG11	1.71	0.72
29:5:1208:C:H2'	29:5:1209:G:H8	1.55	0.71
29:5:1765:G:H1	29:5:1779:U:H3	1.36	0.71
29:5:996:U:H3	29:5:1070:G:H1	1.38	0.71
29:5:4089:5MU:C6	29:5:4089:5MU:C1'	2.74	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:P:52:ARG:NH1	15:P:154:MET:SD	2.64	0.71
29:5:1667:C:OP1	36:e:36:ARG:NH1	2.22	0.71
69:SS:23:ARG:HB2	76:ZZ:48:VAL:HG21	1.72	0.71
1:A:116:LEU:HB3	1:A:126:LEU:HB2	1.72	0.71
46:o:19:GLN:NE2	46:o:72:CYS:SG	2.64	0.71
17:R:151:ARG:HH12	62:LL:118:ARG:HB3	1.55	0.71
29:5:2526:C:O2	29:5:2646:G:N2	2.24	0.71
71:UU:80:PHE:HB3	80:dd:52:PHE:HB3	1.73	0.71
24:Y:74:TYR:OH	31:8:75:G:OP2	2.08	0.71
29:5:744:G:H22	29:5:924:G:H1	1.39	0.71
29:5:4626:OMU:OP2	29:5:4676:C:N4	2.24	0.71
3:C:78:ARG:HB3	3:C:88:GLY:HA2	1.71	0.71
3:C:223:ASN:ND2	29:5:223:G:N3	2.39	0.71
53:9:15:U:O2'	53:9:669:A:N6	2.24	0.71
24:Y:112:ASP:H	24:Y:115:ARG:HB3	1.55	0.70
29:5:260:C:H2'	29:5:261:G:C8	2.26	0.70
59:II:12:ARG:HE	59:II:18:ARG:HB3	1.55	0.70
68:RR:27:ASP:O	68:RR:31:ASN:ND2	2.23	0.70
11:L:56:ARG:O	11:L:116:ARG:NH1	2.24	0.70
3:C:2:ALA:N	29:5:668:A:N7	2.38	0.70
29:5:308:G:N2	29:5:308:G:OP2	2.22	0.70
29:5:3768:B8H:C6	29:5:3768:B8H:CN1	2.70	0.70
5:E:275:ARG:NH2	29:5:4890:G:N7	2.40	0.70
53:9:377:G:H5'	59:II:98:LYS:HB3	1.74	0.70
53:9:1627:C:OP1	70:TT:83:GLN:NE2	2.23	0.70
29:5:1866:B8H:C6	29:5:1866:B8H:C2	2.66	0.70
29:5:2607:A:N6	29:5:2750:A:OP2	2.25	0.70
34:c:37:MET:SD	34:c:42:LYS:NZ	2.64	0.70
82:ff:143:LYS:HE3	82:ff:143:LYS:H	1.56	0.70
29:5:4302:B8H:C6	29:5:4302:B8H:CN1	2.70	0.70
29:5:5063:C:H2'	29:5:5064:A:C8	2.27	0.70
29:5:102:G:HO2'	29:5:1387:U:HO2'	1.33	0.70
29:5:3781:A:O2'	29:5:3782:G:O4'	2.10	0.70
1:A:117:GLU:HB3	1:A:162:ASN:HB2	1.74	0.69
53:9:1566:G:O3'	53:9:1567:G:N2	2.24	0.69
11:L:8:MET:HG3	16:Q:166:TYR:HB3	1.72	0.69
29:5:1396:G:N2	29:5:1399:G:OP2	2.24	0.69
7:G:215:ASP:OD1	7:G:215:ASP:N	2.18	0.69
15:P:109:GLN:OE1	29:5:3898:U:O2'	2.08	0.69
53:9:318:A:H3'	53:9:319:C:H5''	1.72	0.69
53:9:1596:U:OP2	76:ZZ:85:ARG:NH1	2.25	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:36:GLU:OE1	1:A:163:ARG:NH1	2.25	0.69
29:5:262:G:H2'	29:5:263:G:H8	1.57	0.69
57:GG:58:LYS:HA	57:GG:107:SER:HB2	1.74	0.69
3:C:195:LYS:HE2	29:5:2339:G:H5''	1.74	0.69
29:5:1388:G:H2'	29:5:1389:G:H8	1.58	0.69
29:5:3723:A:H2'	29:5:3724:A2M:H8	1.74	0.69
8:H:7:ASN:HB3	8:H:58:ASP:HB3	1.74	0.69
10:J:68:ILE:HD11	29:5:4264:C:H5'	1.75	0.69
53:9:190:G:O2'	53:9:209:A:N6	2.24	0.69
1:A:179:ILE:O	29:5:3659:A:O2'	2.11	0.69
29:5:4302:B8H:C6	29:5:4302:B8H:C2	2.67	0.69
46:o:15:CYS:SG	46:o:19:GLN:NE2	2.65	0.69
51:v:155:LEU:HD21	51:v:212:VAL:HG12	1.75	0.69
29:5:4754:U:H5''	37:f:54:LYS:HE2	1.73	0.69
47:p:57:CYS:SG	47:p:60:CYS:HB2	2.31	0.69
61:KK:80:ARG:HG3	61:KK:85:LEU:HB2	1.73	0.69
29:5:4921:G:H2'	29:5:4922:G:H8	1.58	0.69
53:9:943:U:H2'	53:9:944:A:C8	2.28	0.69
55:EE:18:TRP:HB3	55:EE:20:LEU:HD13	1.75	0.69
1:A:208:GLU:HG2	29:5:1635:G:H1	1.57	0.68
29:5:652:C:H2'	29:5:653:G:H8	1.56	0.68
4:D:28:THR:O	29:5:4286:A:N6	2.25	0.68
53:9:442:C:H42	53:9:449:A:H62	0.80	0.68
77:aa:11:ALA:O	77:aa:15:ARG:NH1	2.26	0.68
29:5:4741:G:N2	29:5:4971:U:O2	2.26	0.68
27:BB:146:ARG:NH1	53:9:1122:A:N3	2.41	0.68
53:9:380:G:N3	59:II:5:ARG:NH1	2.40	0.68
50:t:65:GLN:NE2	50:t:68:GLN:O	2.27	0.68
53:9:1103:C:H2'	53:9:1104:G:C8	2.29	0.68
24:Y:8:THR:OG1	29:5:346:G:OP1	2.11	0.68
53:9:110:U:O2	53:9:351:G:N2	2.24	0.68
58:HH:87:PHE:HB3	58:HH:90:LYS:HE2	1.76	0.68
30:7:28:C:H1'	30:7:54:A:H61	1.58	0.68
53:9:1566:G:N7	70:TT:101:ARG:NH2	2.41	0.68
62:LL:5:GLN:NE2	62:LL:11:GLN:O	2.26	0.68
9:I:54:SER:HB2	9:I:135:ILE:HD11	1.75	0.68
53:9:1545:A:H2'	53:9:1546:G:C8	2.29	0.68
53:9:1781:A:H2'	53:9:1782:G:C8	2.28	0.68
8:H:113:GLU:HG2	8:H:125:ARG:HG2	1.75	0.68
53:9:561:A:O2'	60:JJ:134:HIS:NE2	2.24	0.68
53:9:1101:U:H2'	53:9:1102:G:H8	1.59	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:PP:34:MET:HB3	66:PP:42:ARG:HG3	1.75	0.68
59:II:129:LEU:HG	59:II:131:PRO:HD2	1.74	0.67
1:A:200:ARG:NH1	29:5:3657:A:OP2	2.27	0.67
29:5:1945:A:H5'	29:5:1946:G:H4'	1.74	0.67
51:v:737:GLN:HB2	51:v:739:ARG:HH12	1.60	0.67
53:9:1351:G:O6	53:9:1360:U:O4	2.11	0.67
83:gg:107:ASP:HB2	83:gg:125:ARG:HD2	1.75	0.67
29:5:1866:B8H:C6	29:5:1866:B8H:CN1	2.70	0.67
53:9:1498:A:OP2	54:DD:27:ARG:NH2	2.27	0.67
24:Y:103:LYS:NZ	29:5:200:U:O4	2.26	0.67
5:E:64:MET:HG3	5:E:68:LYS:HE3	1.77	0.67
7:G:111:PRO:HD2	7:G:114:ILE:HD12	1.76	0.67
53:9:1213:C:H2'	53:9:1214:A:C8	2.29	0.67
14:O:169:ARG:HH11	29:5:4866:G:H5'	1.59	0.67
25:Z:54:THR:H	25:Z:57:MET:HE2	1.60	0.67
26:AA:81:ASN:HA	26:AA:84:GLN:HB2	1.77	0.67
53:9:642:U:O2'	53:9:643:A:O5'	2.12	0.67
36:e:30:LYS:HG3	36:e:31:ILE:HD12	1.77	0.67
53:9:350:C:O2'	53:9:383:G:N1	2.28	0.67
53:9:1670:C:H2'	53:9:1671:G:H8	1.58	0.67
4:D:23:ARG:NH1	29:5:4286:A:OP2	2.27	0.67
29:5:2419:U:H2'	29:5:2420:G:H8	1.60	0.67
29:5:4479:A:O2'	44:m:96:ARG:NH2	2.28	0.67
56:FF:127:ARG:O	79:cc:26:GLN:NE2	2.27	0.67
57:GG:121:ILE:HG13	57:GG:123:GLY:H	1.60	0.67
29:5:1808:A:H5''	29:5:1809:G:H5'	1.76	0.66
29:5:2744:C:O2'	29:5:2746:U:O2	2.12	0.66
51:v:518:PRO:HB3	74:XX:50:ILE:HG21	1.77	0.66
51:v:652:PHE:O	51:v:684:GLN:NE2	2.27	0.66
29:5:2324:G:N2	29:5:2327:G:OP2	2.23	0.66
51:v:401:MET:HG3	51:v:412:ALA:HA	1.77	0.66
53:9:903:A:H2'	53:9:904:A:C8	2.30	0.66
1:A:29:LEU:O	1:A:123:ARG:NH1	2.28	0.66
9:I:55:ASP:OD2	9:I:162:ARG:NH1	2.29	0.66
17:R:92:LYS:NZ	29:5:1579:G:OP1	2.28	0.66
24:Y:8:THR:HG22	24:Y:10:ASP:H	1.59	0.66
51:v:140:GLU:HG2	51:v:188:ILE:HD12	1.77	0.66
57:GG:45:TRP:HE1	57:GG:121:ILE:HD13	1.60	0.66
29:5:375:G:N7	41:j:56:ARG:NH2	2.43	0.66
53:9:1599:U:OP2	76:ZZ:46:ASN:ND2	2.28	0.66
3:C:195:LYS:NZ	29:5:2340:C:OP2	2.27	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:1117:C:O2'	53:9:1118:C:O2	2.12	0.66
53:9:1213:C:H2'	53:9:1214:A:H8	1.59	0.66
29:5:753:G:H3'	29:5:754:G:H8	1.60	0.66
53:9:1086:G:OP2	77:aa:12:LYS:NZ	2.29	0.66
28:CC:204:ILE:O	28:CC:211:LYS:NZ	2.28	0.66
29:5:32:G:H21	29:5:50:C:H5	1.42	0.66
29:5:710:C:OP1	37:f:89:ARG:NH2	2.29	0.66
29:5:2495:C:O2'	29:5:2497:C:N4	2.29	0.66
52:w:196:HIS:O	53:9:1331:C:N4	2.28	0.66
9:I:46:PHE:HB3	9:I:139:ARG:HG2	1.76	0.66
29:5:700:C:H2'	29:5:701:G:H8	1.61	0.66
29:5:2523:A:O2'	38:g:66:ARG:NH2	2.29	0.66
53:9:1597:C:OP2	76:ZZ:85:ARG:NH2	2.29	0.66
83:gg:20:GLN:HG2	83:gg:69:VAL:H	1.61	0.66
83:gg:174:VAL:HG23	83:gg:188:HIS:HB2	1.77	0.66
3:C:159:GLU:HA	3:C:217:ILE:HB	1.77	0.66
53:9:1217:A:H2'	53:9:1218:C:H6	1.59	0.66
11:L:197:LYS:HD2	29:5:4364:U:H4'	1.77	0.65
29:5:674:C:H2'	29:5:675:G:H8	1.62	0.65
29:5:1204:G:H2'	29:5:1205:G:C8	2.31	0.65
29:5:1745:G:N3	29:5:1748:A:N6	2.44	0.65
58:HH:53:VAL:HG21	58:HH:172:THR:HA	1.78	0.65
60:JJ:42:GLU:HA	60:JJ:45:ARG:HG2	1.78	0.65
73:WW:111:MET:HE3	73:WW:116:ALA:HA	1.78	0.65
1:A:220:GLY:O	29:5:3755:C:O2'	2.14	0.65
13:N:68:ARG:NH2	29:5:303:C:OP2	2.29	0.65
29:5:2528:7MG:OP1	38:g:29:ARG:NH1	2.29	0.65
53:9:106:C:H2'	53:9:107:A:H8	1.61	0.65
53:9:1745:A:O3'	57:GG:31:ARG:NH1	2.29	0.65
75:YY:55:ILE:HG22	75:YY:75:ILE:HG23	1.76	0.65
5:E:115:MET:O	48:r:87:ARG:NH1	2.30	0.65
8:H:107:GLU:HG3	8:H:110:SER:HB2	1.78	0.65
27:BB:134:LEU:HD22	27:BB:218:LEU:HD12	1.78	0.65
7:G:139:VAL:HG21	7:G:238:LYS:HG3	1.76	0.65
29:5:1933:U:OP1	29:5:1955:U:O2'	2.09	0.65
29:5:4743:G:H5''	29:5:5075:U:H3'	1.79	0.65
68:RR:71:ILE:HD13	68:RR:73:LEU:HB3	1.78	0.65
82:ff:123:SER:OG	82:ff:126:CYS:SG	2.55	0.65
6:F:189:LEU:HD21	6:F:207:LEU:HD21	1.79	0.65
29:5:1564:A:H2'	29:5:1565:G:H8	1.62	0.65
29:5:2417:C:H2'	29:5:2418:A:H8	1.61	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:v:302:ASP:OD1	51:v:306:ASN:ND2	2.30	0.65
53:9:165:G:N2	53:9:165:G:OP2	2.29	0.65
53:9:818:A:OP1	60:JJ:80:ARG:NH1	2.29	0.65
5:E:141:ARG:NH1	5:E:172:SER:O	2.30	0.65
9:I:158:LYS:NZ	29:5:4435:C:N3	2.45	0.65
29:5:1332:A2M:H8	29:5:1332:A2M:H5''	1.79	0.65
41:j:2:THR:O	41:j:7:SER:OG	2.15	0.65
53:9:1337:4AC:OP1	80:dd:44:ARG:NH2	2.29	0.65
53:9:1536:G:H2'	53:9:1537:A:H8	1.61	0.65
6:F:227:VAL:HG13	18:S:39:VAL:HG23	1.78	0.65
7:G:247:VAL:HG21	7:G:249:ARG:HH21	1.61	0.65
9:I:116:ARG:NH2	29:5:4200:I4U:O2'	2.29	0.65
28:CC:194:ARG:NH1	53:9:1156:U:O4	2.30	0.65
29:5:33:A:H3'	29:5:47:A:H61	1.62	0.65
29:5:2527:G:H2'	29:5:2528:7MG:H82	1.77	0.65
31:8:14:OMU:H2'	31:8:15:G:C8	2.31	0.65
48:r:10:VAL:HG13	48:r:14:SER:HB3	1.78	0.65
53:9:551:U:H2'	53:9:552:G:C8	2.32	0.65
53:9:943:U:H2'	53:9:944:A:H8	1.60	0.65
53:9:1616:U:OP2	66:PP:43:ARG:NH2	2.30	0.65
26:AA:145:ILE:HG13	26:AA:159:ILE:HB	1.79	0.65
53:9:1658:G:OP2	53:9:1660:C:N4	2.30	0.65
54:DD:67:ARG:NH1	61:KK:95:ARG:O	2.30	0.64
19:T:88:ARG:NH2	33:b:30:GLU:OE2	2.31	0.64
53:9:992:A:N7	77:aa:15:ARG:NH2	2.44	0.64
2:B:47:LEU:HD21	2:B:344:VAL:HG23	1.78	0.64
7:G:96:GLN:O	29:5:4130:G:N2	2.30	0.64
60:JJ:170:PRO:O	60:JJ:175:ARG:NH1	2.30	0.64
66:PP:85:ILE:HG22	66:PP:112:ILE:HD13	1.78	0.64
6:F:241:ARG:NE	29:5:946:C:OP2	2.26	0.64
31:8:96:C:H5''	39:h:66:LYS:HD3	1.79	0.64
53:9:1310:U:OP1	63:MM:36:ARG:NH1	2.30	0.64
53:9:1372:U:OP1	53:9:1385:G:N2	2.26	0.64
29:5:1830:G:H2'	29:5:1831:A:C8	2.33	0.64
51:v:428:ARG:HH12	51:v:438:LYS:HZ1	1.45	0.64
11:L:5:ARG:HH12	29:5:1855:U:H3'	1.62	0.64
17:R:35:ALA:O	17:R:40:GLN:NE2	2.30	0.64
29:5:2783:G:H5''	29:5:2784:G:H5'	1.80	0.64
49:s:135:THR:HG21	51:v:187:VAL:HG21	1.80	0.64
53:9:1139:C:H41	53:9:1149:A:H62	1.45	0.64
53:9:1325:G:O2'	53:9:1327:G:OP1	2.15	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:1374:5MC:O2'	53:9:1464:C:O2	2.16	0.64
56:FF:14:THR:N	67:QQ:57:LEU:O	2.30	0.64
1:A:93:LYS:NZ	29:5:4121:G:OP1	2.30	0.64
1:A:117:GLU:HG3	1:A:124:GLY:H	1.63	0.64
53:9:1662:U:O4	53:9:1663:A:N6	2.31	0.64
53:9:1839:U:O4	77:aa:28:ARG:NH2	2.30	0.64
69:SS:80:PRO:HB2	69:SS:82:TRP:CD1	2.33	0.64
83:gg:40:ILE:HG23	83:gg:59:LEU:HB2	1.79	0.64
3:C:146:GLU:OE2	3:C:178:ASN:ND2	2.30	0.64
14:O:9:LEU:HD23	14:O:118:MET:HB2	1.80	0.64
53:9:1104:G:H2'	53:9:1105:G:H8	1.61	0.64
7:G:157:PRO:HG3	7:G:247:VAL:HG12	1.80	0.64
19:T:112:ASN:HA	19:T:115:LYS:HG2	1.79	0.64
29:5:4180:U:H2'	29:5:4181:G:H8	1.62	0.64
53:9:57:U:O2'	53:9:499:G:N3	2.31	0.64
53:9:379:C:H5''	59:II:56:ARG:HH12	1.63	0.64
53:9:1261:C:O2'	80:dd:10:HIS:NE2	2.29	0.64
55:EE:105:THR:HG23	55:EE:106:LYS:HD2	1.79	0.64
8:H:129:ARG:HH21	8:H:160:LEU:HD11	1.63	0.64
14:O:72:HIS:N	29:5:4592:G:OP1	2.31	0.64
27:BB:30:TRP:NE1	65:OO:17:LEU:O	2.30	0.64
29:5:1675:A:OP1	33:b:18:ARG:NH2	2.31	0.64
29:5:3625:G:H22	29:5:3630:A:H1'	1.62	0.64
29:5:4902:G:H2'	29:5:4903:G:H8	1.63	0.64
51:v:626:GLN:O	51:v:631:ARG:NH2	2.31	0.64
56:FF:204:ARG:O	65:OO:117:ARG:NH2	2.30	0.64
72:VV:1:MET:N	72:VV:1:MET:SD	2.71	0.64
15:P:98:ARG:NH1	29:5:4986:C:N3	2.46	0.63
16:Q:65:ARG:NH2	29:5:1465:A:OP1	2.31	0.63
50:t:141:CYS:O	50:t:146:ARG:NH1	2.26	0.63
53:9:611:G:H22	53:9:633:C:H42	1.47	0.63
55:EE:112:HIS:NE2	55:EE:237:SER:O	2.31	0.63
72:VV:41:LYS:HG3	72:VV:42:VAL:HG13	1.79	0.63
8:H:43:VAL:O	29:5:4770:A:O2'	2.16	0.63
29:5:2006:G:O2'	29:5:2007:G:N7	2.32	0.63
53:9:643:A:OP2	60:JJ:38:ARG:NH1	2.32	0.63
11:L:116:ARG:NH2	11:L:155:MET:O	2.31	0.63
29:5:4280:A:H2'	29:5:4281:G:H8	1.64	0.63
65:OO:27:VAL:HB	65:OO:90:ILE:HA	1.80	0.63
24:Y:59:ARG:HB2	24:Y:103:LYS:HG2	1.80	0.63
29:5:1338:C:H2'	29:5:1339:A:H8	1.64	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:e:44:ARG:HG3	36:e:49:PHE:HD2	1.62	0.63
39:h:87:LYS:NZ	41:j:80:GLU:OE1	2.30	0.63
2:B:55:HIS:HB2	2:B:369:ASP:HB3	1.80	0.63
28:CC:174:ILE:O	28:CC:200:ARG:NH2	2.32	0.63
29:5:1333:C:H2'	29:5:1334:G:H8	1.64	0.63
29:5:3659:A:C2	29:5:3698:A:H4'	2.34	0.63
53:9:1542:C:H5''	70:TT:62:ARG:HH12	1.61	0.63
53:9:1661:A:OP2	80:dd:32:ARG:NH1	2.31	0.63
62:LL:135:SER:O	62:LL:139:ARG:NH1	2.32	0.63
28:CC:264:SER:H	28:CC:267:GLN:HE21	1.47	0.63
29:5:3616:A:H2'	29:5:3617:A:H8	1.62	0.63
29:5:4955:G:H4'	29:5:4956:U:H5'	1.81	0.63
49:s:50:LYS:NZ	49:s:101:MET:SD	2.67	0.63
71:UU:94:PRO:HD2	71:UU:97:ILE:HD12	1.81	0.63
83:gg:18:VAL:HA	83:gg:35:SER:HA	1.79	0.63
5:E:265:LYS:NZ	29:5:4939:C:OP2	2.32	0.63
53:9:43:U:OP2	53:9:485:A:N6	2.25	0.63
53:9:1100:A:O5'	68:RR:132:ARG:NH2	2.32	0.63
10:J:146:ARG:NH2	30:7:27:G:OP1	2.32	0.63
22:W:104:GLN:NE2	57:GG:156:TYR:OH	2.32	0.63
51:v:394:LEU:HA	51:v:419:GLY:HA3	1.79	0.63
51:v:510:GLU:HB2	51:v:571:LYS:HB2	1.81	0.63
65:OO:57:THR:H	65:OO:60:MET:HE3	1.64	0.63
1:A:13:GLY:O	1:A:17:ARG:NH1	2.32	0.62
5:E:143:LEU:HD21	5:E:170:GLN:HB2	1.81	0.62
29:5:261:G:H2'	29:5:262:G:C8	2.34	0.62
53:9:1533:A:N6	53:9:1602:U:N3	2.47	0.62
69:SS:38:ARG:O	69:SS:42:HIS:ND1	2.30	0.62
8:H:104:VAL:HG13	8:H:113:GLU:HB2	1.80	0.62
29:5:4758:U:O4	37:f:52:LYS:NZ	2.31	0.62
53:9:912:C:H3'	53:9:913:A:H3'	1.81	0.62
54:DD:106:ARG:HG2	54:DD:175:VAL:HB	1.81	0.62
60:JJ:130:ILE:HG12	60:JJ:135:ILE:HD11	1.80	0.62
63:MM:58:GLU:HB3	63:MM:61:TYR:HB3	1.80	0.62
6:F:95:ARG:NH2	29:5:1901:G:OP1	2.32	0.62
10:J:90:ARG:NH1	10:J:108:GLY:O	2.31	0.62
29:5:2751:A:H2'	29:5:2752:A:H8	1.65	0.62
51:v:116:THR:OG1	51:v:145:GLN:NE2	2.32	0.62
66:PP:56:LEU:HD22	66:PP:83:MET:HE3	1.80	0.62
73:WW:26:LEU:HD13	73:WW:62:VAL:HG22	1.81	0.62
18:S:95:ARG:NH1	29:5:1957:G:O2'	2.32	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:FF:169:ILE:HA	56:FF:172:CYS:HB2	1.79	0.62
59:II:137:LEU:O	59:II:141:ARG:NH2	2.32	0.62
16:Q:154:LYS:NZ	16:Q:159:PRO:O	2.32	0.62
18:S:34:ALA:HB1	18:S:39:VAL:HG13	1.81	0.62
29:5:1569:A:H2'	29:5:1570:A:C8	2.34	0.62
31:8:47:C:H1'	31:8:61:A:H2'	1.81	0.62
53:9:587:A:H5'	53:9:592:C:H41	1.63	0.62
53:9:1745:A:H1'	57:GG:66:GLY:HA2	1.80	0.62
57:GG:121:ILE:HD12	57:GG:122:PRO:HD2	1.81	0.62
58:HH:53:VAL:HG23	58:HH:175:GLY:HA3	1.81	0.62
16:Q:14:ARG:NH2	29:5:2089:C:OP2	2.32	0.62
29:5:4950:C:N4	37:f:58:VAL:O	2.33	0.62
31:8:126:C:O2'	31:8:127:U:O5'	2.18	0.62
34:c:44:LYS:NZ	34:c:97:ILE:O	2.30	0.62
53:9:913:A:N6	58:HH:119:SER:O	2.32	0.62
53:9:981:A:H2'	53:9:982:G:C8	2.34	0.62
9:I:160:PRO:O	9:I:163:GLN:NE2	2.33	0.62
26:AA:136:GLU:OE2	53:9:1378:A:N6	2.32	0.62
29:5:4089:5MU:C5	29:5:4089:5MU:C2	2.84	0.62
29:5:4350:U:H3	29:5:4374:G:H1	1.46	0.62
49:s:25:PRO:HD2	49:s:92:LYS:HD2	1.81	0.62
49:s:33:ASP:OD2	49:s:34:ASN:ND2	2.33	0.62
51:v:155:LEU:HD11	51:v:182:VAL:HG12	1.82	0.62
53:9:532:C:H2'	53:9:533:A:C8	2.34	0.62
53:9:924:G:H1	53:9:1018:U:H3	1.46	0.62
53:9:1101:U:H3	53:9:1131:G:H1	1.45	0.62
55:EE:197:ASN:HB3	55:EE:209:HIS:HB2	1.81	0.62
2:B:317:LEU:HB2	2:B:372:SER:HB2	1.81	0.62
29:5:518:C:H2'	29:5:519:G:C8	2.33	0.62
29:5:692:C:H2'	29:5:693:A:C8	2.35	0.62
34:c:56:ARG:HA	34:c:59:GLU:HG2	1.81	0.62
51:v:587:SER:O	51:v:605:LYS:NZ	2.33	0.62
83:gg:31:ILE:HG22	83:gg:43:TRP:HB2	1.80	0.62
3:C:245:HIS:ND1	48:r:13:CYS:SG	2.72	0.62
27:BB:122:GLU:O	27:BB:165:ARG:NH1	2.32	0.62
29:5:2266:C:O2	48:r:99:LYS:NZ	2.28	0.62
53:9:1403:C:OP2	53:9:1405:A:N6	2.30	0.62
74:XX:67:ARG:HH12	74:XX:114:ASP:HB2	1.64	0.62
83:gg:244:ASN:ND2	83:gg:294:ASP:O	2.32	0.62
3:C:350:ARG:NH2	29:5:935:C:OP2	2.33	0.62
6:F:201:LYS:NZ	29:5:1846:G:OP2	2.32	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:N:98:LEU:HD12	13:N:128:LYS:HE2	1.82	0.62
14:O:166:ILE:HG23	14:O:169:ARG:HH21	1.65	0.62
29:5:67:C:OP2	29:5:312:G:N2	2.29	0.62
29:5:1346:C:OP2	32:a:6:ARG:NH1	2.32	0.62
29:5:1522:G:OP1	32:a:32:ARG:NH1	2.33	0.62
53:9:98:C:OP2	53:9:426:A:O2'	2.17	0.62
69:SS:124:ARG:HE	69:SS:129:LEU:HB2	1.65	0.62
83:gg:152:SER:OG	83:gg:168:CYS:SG	2.58	0.62
10:J:20:LEU:HD13	10:J:132:VAL:HG22	1.82	0.61
29:5:1675:A:N3	29:5:1858:U:O2'	2.30	0.61
50:t:15:LEU:HD23	50:t:62:LEU:HD23	1.80	0.61
53:9:1599:U:OP1	76:ZZ:80:ARG:NH1	2.33	0.61
29:5:1321:C:OP1	36:e:44:ARG:NH2	2.32	0.61
29:5:1792:A:O2'	29:5:1794:A:OP2	2.13	0.61
29:5:4600:U:H2'	29:5:4601:G:H8	1.63	0.61
49:s:62:ARG:NH2	49:s:82:ILE:O	2.32	0.61
51:v:208:VAL:HB	51:v:258:LYS:HA	1.81	0.61
51:v:505:VAL:HB	51:v:797:THR:HG21	1.81	0.61
51:v:617:ILE:HG12	51:v:659:PRO:HB3	1.82	0.61
53:9:1385:G:H4'	53:9:1484:A:H5'	1.81	0.61
76:ZZ:58:LEU:HD12	76:ZZ:62:VAL:HG21	1.82	0.61
83:gg:23:THR:HG22	83:gg:31:ILE:HD11	1.82	0.61
7:G:191:ALA:O	7:G:195:THR:OG1	2.16	0.61
18:S:174:THR:HG1	29:5:4769:U:HO2'	1.45	0.61
29:5:1083:C:OP1	29:5:1221:C:O2'	2.18	0.61
29:5:1661:C:O2	29:5:4396:A:O2'	2.17	0.61
29:5:1801:A:N3	30:7:79:U:O2'	2.34	0.61
43:l:33:ASN:HD22	43:l:35:ILE:H	1.48	0.61
53:9:919:A:N1	53:9:1020:A:O2'	2.28	0.61
53:9:1453:C:OP1	68:RR:48:ASN:ND2	2.30	0.61
2:B:246:ARG:NH1	29:5:4531:C:OP1	2.33	0.61
9:I:13:LYS:NZ	29:5:1873:A:OP1	2.32	0.61
16:Q:78:LYS:HG2	16:Q:137:VAL:HG23	1.81	0.61
29:5:135:G:OP2	39:h:87:LYS:NZ	2.33	0.61
29:5:968:G:O2'	29:5:969:A:H8	1.82	0.61
29:5:2368:U:H2'	29:5:2369:A2M:H8	1.81	0.61
51:v:70:ILE:HG22	51:v:404:THR:HA	1.81	0.61
53:9:220:U:H2'	53:9:221:A:C8	2.35	0.61
53:9:980:A:H2'	53:9:981:A:C8	2.35	0.61
53:9:1415:C:O2'	70:TT:132:ASP:OD2	2.14	0.61
53:9:1566:G:N2	53:9:1569:A:OP2	2.31	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:W:61:LYS:NZ	29:5:5044:A:OP1	2.31	0.61
29:5:4648:U:H2'	29:5:4649:G:H8	1.65	0.61
53:9:831:G:O6	75:YY:11:LYS:NZ	2.34	0.61
53:9:1036:A:N3	53:9:1844:U:O2'	2.33	0.61
71:UU:78:ASP:OD2	80:dd:44:ARG:NH1	2.33	0.61
29:5:1824:G:O2'	29:5:1826:U:OP2	2.17	0.61
29:5:4575:U:OP1	29:5:4988:A:O2'	2.18	0.61
53:9:525:A:HO2'	81:ee:104:ARG:HH22	1.47	0.61
53:9:1033:G:N1	53:9:1080:A:O2'	2.30	0.61
53:9:1693:G:N2	53:9:1834:A:H8	1.99	0.61
58:HH:69:LEU:HG	58:HH:96:ALA:HB2	1.83	0.61
1:A:130:SER:OG	1:A:174:ARG:NH2	2.32	0.61
7:G:158:GLU:OE1	7:G:166:ARG:NH1	2.33	0.61
16:Q:108:ARG:HH21	29:5:1360:A:H5'	1.66	0.61
18:S:13:VAL:HG23	18:S:62:VAL:HB	1.82	0.61
29:5:453:G:O2'	29:5:706:G:OP1	2.18	0.61
31:8:67:U:H2'	31:8:68:G:H8	1.64	0.61
46:o:4:VAL:O	46:o:94:GLY:N	2.34	0.61
53:9:18:C:O2'	74:XX:107:ARG:NH2	2.34	0.61
53:9:678:U:OP2	53:9:1026:C:N4	2.31	0.61
9:I:57:TYR:OH	9:I:128:ARG:NH2	2.33	0.61
13:N:181:HIS:O	13:N:195:ARG:NH2	2.33	0.61
29:5:2328:G:OP1	36:e:36:ARG:NH2	2.31	0.61
29:5:4245:A:H2'	29:5:4246:G:H8	1.66	0.61
53:9:1262:C:O2	80:dd:17:GLY:N	2.33	0.61
57:GG:48:TYR:OH	57:GG:119:LYS:O	2.19	0.61
60:JJ:32:ILE:HG22	60:JJ:37:LEU:HD12	1.83	0.61
16:Q:91:ARG:NH2	29:5:1507:C:O3'	2.34	0.61
21:V:74:LYS:NZ	29:5:3804:U:OP2	2.29	0.61
29:5:1323:U:OP1	32:a:21:ARG:NH2	2.34	0.61
58:HH:7:LYS:NZ	58:HH:40:LEU:O	2.34	0.61
2:B:126:LYS:NZ	29:5:4972:A:OP2	2.33	0.61
21:V:15:ARG:HB2	29:5:4624:G:H5''	1.83	0.61
26:AA:79:SER:HA	26:AA:101:GLY:HA2	1.81	0.61
53:9:1674:G:OP1	56:FF:51:HIS:NE2	2.29	0.61
1:A:200:ARG:NH2	29:5:3656:C:OP1	2.34	0.60
15:P:4:TYR:HE2	15:P:45:LYS:HB3	1.66	0.60
20:U:28:PRO:HB2	20:U:34:MET:HG2	1.83	0.60
29:5:4874:G:O2'	29:5:4878:2MG:OP1	2.18	0.60
31:8:98:C:O2'	41:j:65:ARG:NH2	2.34	0.60
53:9:170:A:OP2	57:GG:140:ARG:NH1	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:931:C:H2'	53:9:932:G:C8	2.34	0.60
53:9:1858:G:OP2	65:OO:146:ARG:NH2	2.34	0.60
53:9:72:C:O2'	53:9:74:G:OP2	2.19	0.60
53:9:1614:A:OP2	66:PP:42:ARG:NH2	2.35	0.60
14:O:109:PRO:HB2	14:O:111:PRO:HD2	1.82	0.60
15:P:45:LYS:HG2	15:P:178:ILE:HG12	1.84	0.60
29:5:1455:C:O2	29:5:2111:A:O2'	2.14	0.60
51:v:604:MET:HE2	51:v:702:PHE:HB3	1.84	0.60
51:v:697:MET:N	51:v:697:MET:SD	2.74	0.60
53:9:928:G:H2'	53:9:929:G:C8	2.36	0.60
53:9:1536:G:H2'	53:9:1537:A:C8	2.36	0.60
55:EE:90:ILE:HG23	55:EE:99:PHE:HB2	1.84	0.60
75:YY:44:LEU:HD11	75:YY:55:ILE:HD13	1.83	0.60
27:BB:90:ASP:OD2	27:BB:92:GLN:NE2	2.30	0.60
29:5:2412:G:N7	43:l:2:SER:N	2.50	0.60
29:5:2463:G:HO2'	29:5:3678:G:HO2'	1.45	0.60
53:9:610:G:O6	53:9:634:A:N1	2.35	0.60
53:9:1533:A:N6	53:9:1602:U:C2	2.70	0.60
83:gg:249:CYS:SG	83:gg:291:TRP:NE1	2.72	0.60
2:B:268:ARG:NH2	29:5:3902:C:O2	2.35	0.60
29:5:1536:G:O2'	41:j:45:ARG:NH2	2.33	0.60
29:5:2315:G:O2'	31:8:18:U:O2	2.19	0.60
53:9:1291:A:O2'	82:ff:140:TYR:OH	2.18	0.60
55:EE:137:PRO:HB2	55:EE:150:PRO:HD2	1.83	0.60
61:KK:11:ILE:HD11	61:KK:45:VAL:HG22	1.83	0.60
75:YY:20:ARG:NH2	75:YY:76:TYR:OH	2.35	0.60
2:B:15:GLY:O	29:5:4593:G:N2	2.34	0.60
2:B:199:GLU:OE2	2:B:200:ARG:NH1	2.35	0.60
11:L:8:MET:HE3	16:Q:168:ARG:HB3	1.84	0.60
29:5:2779:OMG:HM22	29:5:2780:C:H5'	1.82	0.60
53:9:1228:A:H2'	53:9:1229:G:C8	2.37	0.60
57:GG:98:ARG:NH2	57:GG:103:ASP:OD1	2.34	0.60
17:R:10:LEU:HB3	17:R:41:ILE:HD13	1.82	0.60
21:V:50:ASN:ND2	29:5:4463:U:OP1	2.35	0.60
29:5:1808:A:O2'	29:5:1843:A:OP1	2.19	0.60
29:5:2765:G:O2'	29:5:2766:G:O4'	2.17	0.60
45:n:10:MET:HE2	53:9:1172:U:H5'	1.84	0.60
53:9:1014:G:N2	78:bb:51:GLN:OE1	2.35	0.60
69:SS:51:ASP:OD1	69:SS:51:ASP:N	2.34	0.60
83:gg:158:PRO:HG2	83:gg:202:PRO:HA	1.84	0.60
83:gg:197:THR:HG21	83:gg:238:ALA:HA	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:192:GLY:O	3:C:195:LYS:NZ	2.34	0.60
16:Q:61:LEU:HD21	16:Q:66:MET:HB3	1.84	0.60
29:5:19:G:OP2	39:h:89:ARG:NH2	2.35	0.60
29:5:137:G:H2'	29:5:138:G:H8	1.66	0.60
29:5:4201:G:O2'	29:5:4448:PSU:OP1	2.16	0.60
29:5:4641:A:H2	29:5:4669:G:H21	1.49	0.60
39:h:103:LYS:O	39:h:108:GLN:NE2	2.35	0.60
55:EE:11:ARG:HD2	55:EE:20:LEU:HB3	1.84	0.60
55:EE:21:ASP:OD1	55:EE:21:ASP:N	2.29	0.60
56:FF:71:ARG:NH2	56:FF:148:ASN:OD1	2.35	0.60
1:A:27:ALA:O	1:A:128:ARG:NH2	2.34	0.60
4:D:83:LEU:HB3	4:D:88:VAL:HB	1.83	0.60
13:N:5:LYS:HG3	40:i:40:VAL:HG11	1.84	0.60
16:Q:61:LEU:HD22	16:Q:82:VAL:HG21	1.83	0.60
29:5:37:U:H4'	32:a:32:ARG:HG3	1.82	0.60
29:5:4458:U:H3	29:5:4537:PSU:HN3	1.49	0.60
29:5:4743:G:H1	29:5:4968:C:H42	1.50	0.60
57:GG:215:LYS:HA	57:GG:218:LYS:HE2	1.84	0.60
15:P:130:ASN:OD1	29:5:399:G:N2	2.32	0.60
26:AA:157:VAL:O	72:VV:65:SER:OG	2.20	0.60
27:BB:72:ALA:HB3	65:OO:128:ARG:HH22	1.67	0.60
29:5:4767:G:H2'	29:5:4768:A:H8	1.66	0.60
29:5:4998:G:H2'	29:5:4999:G:H8	1.66	0.60
53:9:124:U:OP1	55:EE:148:ARG:NE	2.31	0.60
53:9:571:U:H5''	75:YY:37:LYS:HG3	1.84	0.60
53:9:929:G:N2	53:9:1013:U:O2	2.34	0.60
8:H:41:ILE:HD11	8:H:69:THR:HB	1.84	0.59
9:I:171:TRP:HB2	9:I:178:ALA:HA	1.83	0.59
17:R:70:ARG:HH22	29:5:2816:U:H5''	1.67	0.59
29:5:4318:U:H2'	29:5:4319:A:H8	1.67	0.59
53:9:984:C:H2'	53:9:985:G:C8	2.37	0.59
53:9:1863:A:OP2	77:aa:4:LYS:NZ	2.31	0.59
58:HH:15:LYS:HD3	58:HH:16:PRO:HD2	1.82	0.59
67:QQ:85:ARG:NH2	67:QQ:116:ASP:OD2	2.35	0.59
2:B:2:SER:N	29:5:4526:G:OP2	2.34	0.59
3:C:336:ARG:NH2	29:5:952:C:OP1	2.31	0.59
6:F:104:VAL:HG13	6:F:135:VAL:HG13	1.84	0.59
11:L:18:TRP:NE1	29:5:1522:G:O2'	2.35	0.59
16:Q:188:ASN:ND2	29:5:4313:A:OP1	2.35	0.59
29:5:2406:G:H21	38:g:6:THR:HG22	1.66	0.59
29:5:3867:A:H2'	29:5:3868:A:H8	1.67	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:EE:181:CYS:HA	55:EE:227:VAL:HA	1.84	0.59
1:A:97:ASN:OD1	1:A:100:ASN:ND2	2.35	0.59
9:I:152:LEU:HD12	9:I:165:ILE:HD13	1.83	0.59
29:5:435:A:O2'	36:e:26:ASP:OD2	2.20	0.59
29:5:3923:A:H2'	29:5:3924:G:H8	1.65	0.59
29:5:5061:G:N2	35:d:118:GLN:OE1	2.35	0.59
53:9:1648:G:N2	53:9:1675:A:OP2	2.29	0.59
83:gg:73:SER:OG	83:gg:117:ASN:ND2	2.34	0.59
29:5:1676:G:OP1	33:b:12:GLN:NE2	2.33	0.59
29:5:2563:G:O6	29:5:2576:U:O4	2.21	0.59
53:9:94:G:OP1	55:EE:6:LYS:NZ	2.36	0.59
53:9:963:A:H2'	53:9:964:A:C8	2.37	0.59
57:GG:116:LYS:NZ	57:GG:117:GLY:O	2.35	0.59
60:JJ:114:VAL:HG13	60:JJ:119:LEU:HB2	1.84	0.59
2:B:228:TYR:O	29:5:2841:A:O2'	2.19	0.59
5:E:153:LEU:HD13	5:E:197:VAL:HG11	1.84	0.59
5:E:269:GLN:HG2	29:5:4936:C:H5'	1.83	0.59
22:W:8:PHE:HZ	22:W:49:ILE:HD12	1.67	0.59
29:5:3852:C:H2'	29:5:3853:C:H6	1.67	0.59
51:v:632:ALA:HB2	51:v:647:ARG:HA	1.85	0.59
60:JJ:136:ARG:NH1	60:JJ:159:PHE:O	2.35	0.59
83:gg:38:LYS:NZ	83:gg:62:HIS:O	2.30	0.59
8:H:64:ARG:NH2	29:5:4699:C:OP1	2.35	0.59
35:d:64:ILE:HG23	35:d:68:LEU:HD23	1.84	0.59
53:9:687:C:N3	58:HH:118:ARG:NH2	2.50	0.59
53:9:1824:A:N7	53:9:1825:A:O2'	2.34	0.59
8:H:79:ASN:HB3	8:H:151:ILE:HD11	1.82	0.59
12:M:11:ARG:NH1	12:M:58:THR:O	2.33	0.59
29:5:1946:G:N2	29:5:4440:C:OP1	2.34	0.59
66:PP:93:MET:SD	66:PP:104:GLN:NE2	2.76	0.59
68:RR:103:LYS:HE3	68:RR:107:LYS:HE2	1.84	0.59
29:5:1506:A:H5''	29:5:1507:C:H5'	1.84	0.59
29:5:4921:G:H2'	29:5:4922:G:C8	2.38	0.59
32:a:103:VAL:HG22	32:a:108:TYR:HB2	1.84	0.59
53:9:1332:A:O2'	54:DD:145:GLN:O	2.21	0.59
53:9:1854:U:H2'	53:9:1855:G:H8	1.66	0.59
24:Y:18:HIS:O	24:Y:78:TYR:OH	2.21	0.59
29:5:3613:U:H2'	29:5:3614:A:H8	1.68	0.59
51:v:528:ALA:HA	51:v:534:VAL:HG12	1.85	0.59
58:HH:192:PHE:HB2	78:bb:12:PRO:HB3	1.85	0.59
3:C:33:ARG:NH1	29:5:1357:G:OP1	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:AA:77:ILE:HB	26:AA:124:VAL:HG23	1.85	0.59
29:5:1332:A2M:OP2	29:5:4451:U:O2'	2.20	0.59
29:5:5002:C:H2'	29:5:5003:G:H8	1.68	0.59
53:9:302:A:H1'	59:II:73:THR:HG23	1.82	0.59
53:9:551:U:H2'	53:9:552:G:H8	1.68	0.59
53:9:1324:G:O6	53:9:1504:U:O4	2.21	0.59
53:9:1567:G:H21	53:9:1567:G:P	2.26	0.59
59:II:81:VAL:HG22	59:II:102:VAL:HG12	1.85	0.59
75:YY:21:LYS:HG3	75:YY:75:ILE:HB	1.85	0.59
4:D:33:ARG:NE	30:7:7:G:OP1	2.36	0.58
9:I:87:ILE:HG12	9:I:138:ILE:HG12	1.85	0.58
28:CC:264:SER:HB3	28:CC:267:GLN:HG2	1.85	0.58
29:5:956:G:H2'	29:5:957:G:H8	1.68	0.58
29:5:1569:A:N6	53:9:1028:A:N1	2.51	0.58
29:5:2520:G:O2'	29:5:2749:A:N6	2.35	0.58
29:5:4742:C:H2'	29:5:4743:G:C8	2.37	0.58
29:5:4867:G:H2'	29:5:4868:G:H8	1.67	0.58
53:9:1545:A:N3	53:9:1671:G:O2'	2.33	0.58
74:XX:68:LYS:HE3	81:ee:82:VAL:HB	1.85	0.58
2:B:373:LYS:HD2	29:5:4633:U:H4'	1.85	0.58
6:F:33:ARG:NH1	29:5:1446:U:OP2	2.36	0.58
9:I:118:ALA:O	29:5:1870:G:O2'	2.21	0.58
12:M:48:GLN:HB3	29:5:942:U:H5'	1.84	0.58
16:Q:179:GLY:H	32:a:51:GLY:H	1.52	0.58
29:5:70:A:OP2	32:a:64:LYS:NZ	2.34	0.58
29:5:85:G:O2'	29:5:97:G:O6	2.21	0.58
29:5:677:C:H2'	29:5:678:G:H8	1.68	0.58
29:5:680:C:H2'	29:5:681:G:H8	1.66	0.58
29:5:1079:G:H1	29:5:1244:A:H2	1.51	0.58
29:5:1180:G:H2'	29:5:1181:A:C8	2.38	0.58
2:B:249:ARG:NH2	29:5:3851:A:OP2	2.36	0.58
2:B:300:LYS:HG2	2:B:313:SER:HB3	1.84	0.58
6:F:126:LYS:O	6:F:130:ASN:ND2	2.30	0.58
15:P:150:LYS:O	31:8:13:G:O2'	2.20	0.58
28:CC:125:LYS:NZ	53:9:1356:G:O3'	2.36	0.58
29:5:1836:G:H2'	29:5:1837:G:H8	1.66	0.58
29:5:2401:A:N6	29:5:2826:C:O2	2.35	0.58
29:5:4528:G:O2'	29:5:4531:C:OP2	2.21	0.58
48:r:17:LEU:HD11	48:r:19:LYS:HE3	1.84	0.58
53:9:1314:U:O2'	61:KK:8:ARG:NH2	2.36	0.58
53:9:1637:A:H4'	53:9:1638:G:O5'	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:aa:45:VAL:HG11	77:aa:53:ILE:HD12	1.85	0.58
1:A:177:LYS:O	29:5:2745:C:N4	2.34	0.58
2:B:217:ILE:HD11	2:B:333:LEU:HD21	1.85	0.58
29:5:1687:G:OP2	29:5:1859:G:N1	2.36	0.58
29:5:2594:C:OP1	29:5:2774:C:O2'	2.22	0.58
31:8:94:G:OP2	41:j:72:ARG:NH1	2.36	0.58
53:9:191:A:H3'	53:9:192:C:H5''	1.85	0.58
59:II:64:ASN:OD1	59:II:73:THR:OG1	2.17	0.58
65:OO:105:THR:HG22	65:OO:107:THR:H	1.67	0.58
21:V:112:MET:SD	21:V:135:ASN:ND2	2.70	0.58
29:5:1651:C:H2'	29:5:1652:A:C8	2.38	0.58
29:5:1811:A:N6	33:b:26:SER:O	2.30	0.58
29:5:1861:G:O6	29:5:1886:G:N2	2.37	0.58
29:5:3914:A:N7	29:5:4455:A:N6	2.50	0.58
29:5:4278:G:N2	29:5:4278:G:OP2	2.35	0.58
50:t:53:TRP:HE3	50:t:56:LEU:HD12	1.68	0.58
51:v:476:ASP:O	51:v:529:LYS:NZ	2.36	0.58
53:9:980:A:H2'	53:9:981:A:H8	1.69	0.58
67:QQ:51:LEU:HD21	67:QQ:81:ILE:HB	1.86	0.58
9:I:66:GLU:HG3	9:I:69:ARG:HH21	1.69	0.58
29:5:1338:C:H2'	29:5:1339:A:C8	2.39	0.58
29:5:1764:G:H2'	29:5:1765:G:H8	1.69	0.58
29:5:4280:A:H2'	29:5:4281:G:C8	2.39	0.58
29:5:4710:C:H2'	29:5:4711:A:H8	1.68	0.58
29:5:4998:G:H2'	29:5:4999:G:C8	2.37	0.58
32:a:75:LEU:HG	32:a:113:GLY:HA2	1.85	0.58
53:9:307:G:H1'	59:II:45:THR:HG22	1.85	0.58
53:9:1165:G:OP2	53:9:1165:G:N2	2.22	0.58
53:9:1491:G:H2'	53:9:1492:U:C6	2.38	0.58
74:XX:61:GLN:O	74:XX:63:ASN:N	2.36	0.58
4:D:184:ASP:OD2	4:D:187:SER:OG	2.22	0.58
13:N:124:ASP:OD1	29:5:3943:C:O2'	2.21	0.58
27:BB:132:GLY:HA3	27:BB:221:PRO:HB3	1.85	0.58
29:5:115:C:O2'	29:5:276:C:OP1	2.20	0.58
29:5:3669:A:N6	29:5:4174:G:O2'	2.36	0.58
29:5:3845:G:N2	29:5:3849:C:O2'	2.36	0.58
29:5:4342:A:H5''	29:5:4343:C:H5'	1.85	0.58
51:v:13:MET:HE1	51:v:465:PRO:HD2	1.85	0.58
53:9:183:G:O2'	53:9:184:G:O5'	2.22	0.58
53:9:346:C:H5''	55:EE:38:LEU:HB2	1.85	0.58
53:9:969:U:OP1	53:9:970:G:O2'	2.17	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:1834:A:H2	53:9:1837:G:H1	1.52	0.58
54:DD:45:ARG:NH1	54:DD:85:GLU:OE2	2.35	0.58
67:QQ:132:PHE:O	67:QQ:140:ARG:NH1	2.36	0.58
68:RR:80:ARG:HG3	68:RR:81:ARG:HD2	1.84	0.58
6:F:93:ARG:NH1	6:F:95:ARG:O	2.37	0.58
6:F:231:ASP:OD1	6:F:235:ARG:NH1	2.36	0.58
12:M:5:ARG:HE	12:M:59:ASP:HB3	1.69	0.58
17:R:64:ARG:NH2	29:5:2639:U:OP1	2.37	0.58
29:5:3623:G:O2'	29:5:3626:G:N7	2.36	0.58
38:g:3:GLN:NE2	38:g:30:ILE:O	2.37	0.58
51:v:103:ILE:HD12	51:v:118:ALA:HB1	1.86	0.58
51:v:105:SER:HB2	51:v:115:VAL:HG22	1.85	0.58
3:C:323:ARG:HB2	29:5:1287:G:H5'	1.84	0.58
4:D:17:GLN:NE2	19:T:22:HIS:O	2.37	0.58
4:D:50:ARG:NH1	4:D:147:ASP:OD2	2.36	0.58
14:O:46:ASN:OD1	14:O:46:ASN:N	2.31	0.58
24:Y:73:VAL:HG13	24:Y:80:ILE:HG22	1.84	0.58
29:5:1529:A:N3	29:5:4395:C:O2'	2.37	0.58
29:5:4245:A:H2'	29:5:4246:G:C8	2.38	0.58
48:r:119:ARG:HA	48:r:122:LYS:HE3	1.85	0.58
51:v:123:ASP:HA	51:v:151:ILE:HG13	1.86	0.58
51:v:710:HIS:ND1	51:v:715:DDE:HD2	2.17	0.58
53:9:618:C:H4'	53:9:632:C:H5'	1.84	0.58
53:9:1228:A:H2'	53:9:1229:G:H8	1.68	0.58
56:FF:125:SER:HB2	56:FF:136:ARG:HB3	1.86	0.58
69:SS:36:VAL:HG23	69:SS:40:TYR:HB3	1.86	0.58
83:gg:17:TRP:HE1	83:gg:36:ARG:HH21	1.52	0.58
9:I:76:MET:HG3	9:I:87:ILE:HD11	1.86	0.58
17:R:172:ARG:NH2	53:9:909:G:OP2	2.36	0.58
27:BB:113:MET:HE3	27:BB:209:ASP:HB3	1.86	0.58
28:CC:81:ILE:HG23	28:CC:86:LEU:HB2	1.86	0.58
29:5:2762:G:H2'	29:5:2763:A:C8	2.39	0.58
29:5:4484:G:O2'	29:5:4608:A:N1	2.34	0.58
53:9:792:C:H2'	53:9:793:G:H8	1.68	0.58
54:DD:193:ASP:OD2	54:DD:195:SER:OG	2.21	0.58
65:OO:96:LYS:NZ	65:OO:130:GLU:OE2	2.36	0.58
83:gg:138:CYS:SG	83:gg:141:THR:OG1	2.62	0.58
1:A:14:SER:OG	29:5:1634:C:OP1	2.20	0.57
2:B:261:ARG:NH1	29:5:3876:C:O3'	2.36	0.57
8:H:75:SER:OG	29:5:4697:A:OP1	2.21	0.57
9:I:4:ARG:NH1	29:5:1872:UR3:OP1	2.28	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:1631:OMG:N1	29:5:3924:G:OP1	2.37	0.57
29:5:1785:U:H2'	29:5:1786:A:C8	2.38	0.57
29:5:2491:U:H2'	29:5:2492:G:C8	2.39	0.57
29:5:3670:G:H2'	29:5:3671:G:H8	1.68	0.57
29:5:3771:G:OP1	29:5:3816:C:N4	2.37	0.57
30:7:92:C:H2'	30:7:93:G:H8	1.69	0.57
31:8:111:U:O4	43:1:8:ARG:NH2	2.37	0.57
52:w:283:LEU:HD22	61:KK:16:PHE:HB3	1.84	0.57
53:9:929:G:H21	53:9:1104:G:H4'	1.69	0.57
83:gg:107:ASP:OD2	83:gg:125:ARG:NH1	2.35	0.57
6:F:241:ARG:NH2	29:5:945:C:OP1	2.37	0.57
16:Q:79:THR:HB	16:Q:136:THR:HG22	1.85	0.57
17:R:88:ARG:O	29:5:2731:A:N6	2.37	0.57
29:5:480:C:OP1	48:r:67:ARG:NH1	2.37	0.57
29:5:961:A:H1'	29:5:2082:G:H5''	1.85	0.57
53:9:629:A:O2'	53:9:631:U:OP1	2.21	0.57
53:9:694:G:H1	53:9:732:U:H3	1.50	0.57
65:OO:74:ALA:HB1	65:OO:115:ALA:HB2	1.86	0.57
66:PP:81:ARG:NH1	66:PP:120:SER:OG	2.37	0.57
2:B:246:ARG:NH2	29:5:4564:U:OP2	2.37	0.57
11:L:14:PHE:HE1	13:N:198:LEU:HD11	1.69	0.57
18:S:163:HIS:O	29:5:1925:G:N2	2.36	0.57
29:5:62:A:N3	29:5:77:U:O2'	2.31	0.57
29:5:300:A:H2'	29:5:301:G:H8	1.68	0.57
29:5:652:C:H2'	29:5:653:G:C8	2.39	0.57
29:5:1689:PSU:OP1	32:a:44:ASN:ND2	2.37	0.57
29:5:2008:A:N6	50:t:138:SER:OG	2.36	0.57
29:5:3659:A:N1	29:5:3698:A:H4'	2.19	0.57
51:v:774:SER:HB2	51:v:783:VAL:HG23	1.86	0.57
53:9:596:U:O2'	53:9:645:C:O2	2.22	0.57
53:9:1679:A:OP1	79:cc:20:ARG:NH2	2.36	0.57
71:UU:20:ILE:HG12	71:UU:98:VAL:HG11	1.85	0.57
29:5:1469:C:H5''	33:b:31:SER:HB3	1.85	0.57
29:5:4160:G:H2'	29:5:4161:C:C6	2.39	0.57
53:9:1373:C:O2'	68:RR:10:LYS:NZ	2.28	0.57
56:FF:59:LYS:H	56:FF:62:ARG:HD2	1.67	0.57
59:II:128:LYS:NZ	59:II:129:LEU:O	2.37	0.57
9:I:15:LYS:NZ	29:5:4218:A:OP2	2.37	0.57
16:Q:178:ARG:HD3	32:a:53:PHE:HB2	1.85	0.57
21:V:21:PRO:HA	21:V:54:ALA:HA	1.86	0.57
29:5:2630:G:H1	29:5:2638:U:H3	1.51	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:2850:A:N6	29:5:3845:G:O2'	2.37	0.57
49:s:132:PRO:HB3	49:s:147:ILE:HD12	1.86	0.57
53:9:915:G:N2	53:9:915:G:OP2	2.37	0.57
54:DD:103:GLU:OE1	54:DD:106:ARG:NH2	2.35	0.57
60:JJ:109:ARG:NH1	60:JJ:111:GLN:OE1	2.37	0.57
83:gg:113:PHE:HA	83:gg:120:ILE:HG22	1.86	0.57
1:A:234:LYS:HG2	1:A:238:ILE:HD12	1.86	0.57
13:N:116:LEU:HD22	13:N:135:ILE:HD11	1.86	0.57
19:T:119:ALA:HA	19:T:122:LYS:HD3	1.85	0.57
29:5:253:G:H2'	29:5:254:G:H8	1.70	0.57
29:5:3701:U:H3	29:5:3826:G:H1	1.52	0.57
29:5:4299:PSU:O2'	46:o:81:ARG:NH2	2.38	0.57
53:9:603:C:N4	53:9:620:G:O6	2.37	0.57
29:5:1939:G:H2'	29:5:1940:A:C8	2.40	0.57
29:5:1956:U:H2'	29:5:1957:G:H8	1.68	0.57
29:5:3667:G:H4'	29:5:3668:A:H5'	1.86	0.57
51:v:631:ARG:HD2	51:v:649:ILE:HD11	1.87	0.57
53:9:1605:G:OP1	70:TT:84:ARG:NH2	2.37	0.57
1:A:54:ARG:NH2	29:5:3686:U:OP1	2.30	0.57
27:BB:140:VAL:HB	27:BB:213:ARG:HD3	1.86	0.57
29:5:2854:G:O2'	29:5:3844:U:O4	2.22	0.57
53:9:1513:C:H2'	53:9:1514:G:H8	1.68	0.57
4:D:120:GLU:O	4:D:248:ARG:NH2	2.33	0.57
9:I:36:LEU:HD11	9:I:69:ARG:HH11	1.70	0.57
21:V:22:VAL:HG21	29:5:4500:OMG:HM21	1.87	0.57
29:5:4360:U:O4	32:a:61:TYR:N	2.35	0.57
51:v:849:PRO:HB2	51:v:853:ASN:HD21	1.70	0.57
53:9:70:G:N2	53:9:71:G:O6	2.38	0.57
53:9:1333:U:OP1	54:DD:146:ARG:NH1	2.38	0.57
58:HH:144:ILE:HG21	58:HH:152:ARG:HH21	1.70	0.57
61:KK:48:ALA:O	61:KK:51:SER:OG	2.20	0.57
79:cc:10:LYS:HD3	79:cc:11:LEU:H	1.70	0.57
2:B:41:VAL:HA	2:B:187:GLY:HA3	1.87	0.57
21:V:86:LYS:NZ	29:5:4677:B8T:O2	2.38	0.57
29:5:1509:A:H4'	29:5:1510:G:H5'	1.87	0.57
29:5:1564:A:H2'	29:5:1565:G:C8	2.40	0.57
29:5:1675:A:OP1	33:b:11:ASN:ND2	2.36	0.57
29:5:4756:G:H2'	29:5:4757:G:C8	2.40	0.57
47:p:38:THR:HA	47:p:45:THR:HA	1.86	0.57
51:v:663:THR:OG1	51:v:703:ASP:OD1	2.22	0.57
53:9:523:A:OP2	60:JJ:38:ARG:NE	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:1393:G:H2'	53:9:1394:G:C8	2.40	0.57
57:GG:56:ASN:HD22	57:GG:62:PRO:HA	1.69	0.57
58:HH:117:PRO:HG2	58:HH:120:ARG:HD3	1.85	0.57
5:E:126:ARG:NH2	29:5:977:G:O6	2.38	0.56
29:5:2523:A:N3	29:5:2545:C:O2'	2.38	0.56
29:5:3613:U:H2'	29:5:3614:A:C8	2.40	0.56
53:9:828:G:OP1	60:JJ:6:SER:OG	2.21	0.56
53:9:851:C:H5''	53:9:852:G:H5'	1.86	0.56
1:A:117:GLU:O	1:A:162:ASN:ND2	2.38	0.56
4:D:152:ARG:NH2	29:5:4245:A:O2'	2.38	0.56
29:5:22:G:OP1	41:j:44:LYS:N	2.35	0.56
49:s:62:ARG:HG3	49:s:66:ARG:HH22	1.70	0.56
53:9:1199:A:H2'	53:9:1200:A:C8	2.40	0.56
58:HH:8:ILE:HD13	58:HH:16:PRO:HG3	1.85	0.56
1:A:4:VAL:HG23	1:A:8:GLN:HB2	1.86	0.56
15:P:156:ARG:HB2	15:P:168:TYR:HB3	1.86	0.56
18:S:95:ARG:NH2	18:S:112:ASP:OD2	2.37	0.56
29:5:675:G:H2'	29:5:676:C:H6	1.70	0.56
29:5:2418:A:H2'	29:5:2419:U:C6	2.40	0.56
29:5:2903:G:H2'	29:5:2904:G:H8	1.69	0.56
29:5:3738:A:H2'	29:5:3739:A:C8	2.41	0.56
29:5:4238:U:H4'	29:5:4239:A:O5'	2.06	0.56
29:5:4302:B8H:C5	29:5:4302:B8H:N1	2.36	0.56
31:8:132:G:H2'	31:8:133:G:H8	1.70	0.56
51:v:262:GLY:O	51:v:264:ARG:NE	2.38	0.56
51:v:710:HIS:ND1	51:v:712:ASP:OD2	2.37	0.56
51:v:760:TYR:HA	51:v:763:LEU:HB2	1.87	0.56
53:9:671:A:H4'	53:9:672:A:H5''	1.87	0.56
53:9:812:A:H5'	55:EE:16:LYS:HD2	1.87	0.56
53:9:1361:G:OP2	53:9:1362:U:O2'	2.23	0.56
53:9:1566:G:OP2	70:TT:102:ARG:NH2	2.38	0.56
63:MM:116:LYS:HB3	63:MM:121:LYS:HG2	1.86	0.56
13:N:114:ARG:NH1	13:N:153:LYS:O	2.33	0.56
26:AA:24:HIS:HB3	26:AA:51:LEU:HD21	1.88	0.56
28:CC:180:VAL:HG22	28:CC:219:ILE:HD13	1.88	0.56
28:CC:267:GLN:OE1	72:VV:35:ASN:ND2	2.38	0.56
29:5:2589:C:OP2	38:g:76:ARG:NH2	2.38	0.56
29:5:4094:C:H2'	29:5:4095:G:H8	1.69	0.56
29:5:4513:A:H2'	29:5:4514:C:C6	2.41	0.56
51:v:594:LYS:O	51:v:727:ARG:NH2	2.37	0.56
53:9:530:U:H2'	53:9:531:A:H8	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:925:G:N2	53:9:1017:U:O2	2.24	0.56
11:L:186:ARG:HE	40:i:9:VAL:HG11	1.71	0.56
16:Q:67:ILE:HD12	16:Q:96:PRO:HD2	1.88	0.56
25:Z:36:ARG:NH1	25:Z:38:TYR:OH	2.35	0.56
32:a:72:THR:HG22	32:a:110:LYS:HB3	1.86	0.56
51:v:694:GLU:O	51:v:842:LYS:NZ	2.39	0.56
53:9:1455:A:OP1	68:RR:5:ARG:NH2	2.38	0.56
1:A:198:ARG:NH2	29:5:3694:U:OP2	2.39	0.56
8:H:51:LYS:HG3	8:H:53:LYS:HG3	1.88	0.56
8:H:120:GLU:OE2	8:H:124:ARG:NH1	2.37	0.56
26:AA:36:GLN:O	26:AA:53:ARG:NH1	2.39	0.56
29:5:1924:U:O2	29:5:2070:G:O6	2.23	0.56
29:5:2594:C:H5''	29:5:2595:C:H5''	1.86	0.56
29:5:4328:G:N2	29:5:4331:A:OP2	2.32	0.56
37:f:59:THR:OG1	37:f:65:ASN:OD1	2.22	0.56
50:t:153:ASP:OD1	50:t:154:ASP:N	2.39	0.56
53:9:5:U:H2'	53:9:6:G:C8	2.41	0.56
66:PP:130:ARG:NH1	66:PP:130:ARG:O	2.38	0.56
75:YY:78:SER:OG	75:YY:80:ASP:OD1	2.20	0.56
9:I:91:LEU:HD12	9:I:135:ILE:HG23	1.87	0.56
10:J:151:ILE:O	30:7:55:A:O2'	2.23	0.56
20:U:84:LYS:HG2	20:U:88:LYS:HE2	1.88	0.56
27:BB:105:LEU:HD23	27:BB:213:ARG:HA	1.87	0.56
29:5:418:A:H4'	29:5:2317:C:H5'	1.87	0.56
29:5:4159:C:H2'	29:5:4160:G:C8	2.41	0.56
53:9:145:G:H2'	53:9:146:G:C8	2.41	0.56
9:I:52:MET:HE3	9:I:152:LEU:HD22	1.87	0.56
17:R:71:ARG:NH1	29:5:3611:C:OP2	2.39	0.56
29:5:1901:G:O2'	29:5:1913:A:N3	2.33	0.56
29:5:4244:G:H2'	29:5:4245:A:H8	1.71	0.56
29:5:4266:U:H2'	29:5:4267:C:H6	1.70	0.56
51:v:749:ILE:HG22	51:v:810:PRO:HA	1.88	0.56
52:w:198:GLY:H	53:9:1331:C:H5	1.53	0.56
53:9:1266:C:N3	53:9:1517:G:N2	2.54	0.56
53:9:1491:G:H1'	71:UU:72:GLU:HG2	1.87	0.56
53:9:1520:G:N3	53:9:1520:G:H2'	2.21	0.56
83:gg:163:PRO:HB2	83:gg:179:LEU:HB2	1.87	0.56
7:G:91:ASN:ND2	7:G:96:GLN:OE1	2.39	0.56
7:G:149:LEU:HD11	7:G:242:ARG:HE	1.70	0.56
8:H:41:ILE:HG21	8:H:73:ILE:HD11	1.87	0.56
13:N:76:PRO:HG2	13:N:79:ALA:HB3	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Z:11:VAL:HG22	25:Z:82:PRO:HA	1.87	0.56
29:5:2301:C:H2'	29:5:2302:G:H8	1.71	0.56
51:v:507:VAL:HG23	51:v:546:ILE:HG23	1.88	0.56
2:B:47:LEU:HD22	2:B:166:THR:HG21	1.87	0.56
25:Z:51:ARG:HB3	25:Z:65:ARG:HH21	1.68	0.56
29:5:1810:A:H4'	29:5:1811:A:O5'	2.05	0.56
29:5:2884:G:OP2	29:5:2885:A:O2'	2.23	0.56
51:v:69:THR:O	51:v:405:SER:OG	2.21	0.56
51:v:557:CYS:HA	51:v:561:LEU:HD23	1.87	0.56
51:v:583:VAL:HG22	51:v:700:VAL:HG12	1.88	0.56
53:9:1650:A:H5''	67:QQ:139:ALA:HB2	1.87	0.56
62:LL:3:ASP:N	62:LL:3:ASP:OD1	2.37	0.56
68:RR:98:VAL:HG21	68:RR:117:LEU:HD13	1.87	0.56
7:G:190:ARG:HB2	7:G:256:ALA:HB3	1.88	0.55
29:5:1203:C:H2'	29:5:1204:G:C8	2.41	0.55
29:5:3706:C:H2'	29:5:3752:A:H61	1.72	0.55
53:9:84:A:H5''	75:YY:122:LYS:HG3	1.86	0.55
53:9:948:C:H2'	53:9:949:G:H8	1.69	0.55
59:II:83:TYR:HB3	59:II:101:ILE:HD12	1.87	0.55
11:L:42:ARG:NH1	29:5:107:G:OP1	2.39	0.55
14:O:89:PRO:HD3	29:5:1920:C:H4'	1.87	0.55
29:5:67:C:N4	29:5:325:U:O2'	2.37	0.55
29:5:2417:C:H2'	29:5:2418:A:C8	2.40	0.55
38:g:46:CYS:HB2	38:g:86:CYS:SG	2.46	0.55
53:9:1010:G:H2'	53:9:1011:A:C8	2.42	0.55
60:JJ:176:LYS:HA	60:JJ:179:LYS:HE2	1.88	0.55
2:B:95:THR:HG22	29:5:4916:A:H4'	1.87	0.55
8:H:23:ARG:HH21	29:5:4770:A:H3'	1.71	0.55
12:M:132:ARG:NH1	29:5:4901:C:O2	2.28	0.55
18:S:174:THR:OG1	29:5:4769:U:O2'	2.17	0.55
24:Y:54:GLU:OE2	24:Y:108:ARG:NH2	2.40	0.55
53:9:1670:C:H2'	53:9:1671:G:C8	2.41	0.55
6:F:30:LYS:NZ	29:5:2114:G:OP2	2.37	0.55
6:F:105:ARG:NH2	16:Q:4:ASP:OD1	2.39	0.55
25:Z:57:MET:HE3	25:Z:62:ILE:HG22	1.88	0.55
27:BB:120:MET:HG3	27:BB:142:PHE:HE1	1.71	0.55
29:5:686:C:O2'	29:5:687:A:O4'	2.24	0.55
29:5:1213:C:H2'	29:5:1214:G:H8	1.70	0.55
29:5:4895:G:H2'	29:5:4896:G:H8	1.71	0.55
34:c:28:VAL:HG11	34:c:37:MET:HG3	1.88	0.55
43:l:33:ASN:ND2	43:l:35:ILE:H	2.03	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:943:U:O2'	65:OO:136:PRO:HA	2.06	0.55
1:A:178:PRO:HD2	47:p:26:VAL:HG22	1.88	0.55
29:5:4543:C:H2'	29:5:4544:G:H8	1.72	0.55
49:s:109:ALA:O	49:s:181:SER:OG	2.17	0.55
51:v:534:VAL:HG23	51:v:553:HIS:HE1	1.71	0.55
53:9:1204:A:O2'	53:9:1700:C:OP2	2.25	0.55
55:EE:11:ARG:NH1	55:EE:21:ASP:O	2.40	0.55
83:gg:22:ALA:HB3	83:gg:32:LEU:HB3	1.88	0.55
83:gg:285:GLN:N	83:gg:303:THR:OG1	2.40	0.55
2:B:20:LYS:HD3	29:5:4723:A:H4'	1.89	0.55
2:B:224:LYS:NZ	29:5:4673:C:OP1	2.38	0.55
29:5:135:G:N2	39:h:95:LEU:O	2.30	0.55
29:5:1310:C:H2'	29:5:1311:C:H6	1.72	0.55
29:5:2347:A:OP2	32:a:4:ARG:NH2	2.38	0.55
29:5:2489:G:H22	29:5:2501:U:H3	1.53	0.55
51:v:18:ASN:ND2	51:v:97:GLY:O	2.40	0.55
53:9:170:A:H2'	53:9:171:A:C8	2.41	0.55
53:9:1413:G:H2'	53:9:1414:A:H8	1.71	0.55
6:F:178:LEU:HB3	6:F:183:ILE:HB	1.89	0.55
17:R:90:PRO:HG2	17:R:93:VAL:HB	1.88	0.55
24:Y:59:ARG:NH1	29:5:200:U:O2'	2.35	0.55
29:5:4741:G:N1	29:5:4971:U:N3	2.36	0.55
51:v:20:ARG:NH2	51:v:91:GLN:OE1	2.39	0.55
51:v:582:THR:HG21	51:v:741:MET:HE3	1.89	0.55
53:9:963:A:H2'	53:9:964:A:H8	1.72	0.55
53:9:1534:C:H4'	53:9:1535:U:H5''	1.88	0.55
4:D:41:LYS:NZ	19:T:32:ARG:O	2.33	0.55
29:5:90:G:OP2	29:5:92:C:N4	2.39	0.55
29:5:1446:U:O2'	29:5:1447:C:OP1	2.25	0.55
51:v:412:ALA:HB3	51:v:472:LEU:HB2	1.88	0.55
53:9:1474:A:H3'	53:9:1475:G:H21	1.71	0.55
59:II:73:THR:O	59:II:74:ARG:NH1	2.37	0.55
6:F:216:ARG:NH1	29:5:719:C:OP1	2.38	0.55
17:R:69:ALA:HB1	17:R:74:ARG:HB2	1.89	0.55
29:5:260:C:H2'	29:5:261:G:H8	1.72	0.55
29:5:955:G:H2'	29:5:956:G:H8	1.72	0.55
29:5:1175:G:H2'	29:5:1176:G:H8	1.72	0.55
29:5:1180:G:H2'	29:5:1181:A:H8	1.71	0.55
35:d:23:ARG:HG3	35:d:121:ASN:HA	1.89	0.55
36:e:85:LEU:HD11	36:e:111:ILE:HG23	1.89	0.55
51:v:225:LEU:HD13	51:v:257:MET:HG3	1.86	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:v:724:THR:HA	51:v:727:ARG:HH21	1.72	0.55
53:9:1144:A:H2'	53:9:1145:A:C8	2.41	0.55
53:9:1503:C:H2'	53:9:1504:U:H6	1.72	0.55
53:9:1797:U:H2'	53:9:1798:C:C6	2.42	0.55
58:HH:146:VAL:HG22	58:HH:152:ARG:HG2	1.88	0.55
60:JJ:179:LYS:HA	60:JJ:182:GLN:HG2	1.89	0.55
73:WW:69:LEU:HD21	73:WW:72:CYS:HB2	1.89	0.55
1:A:28:ARG:HB3	1:A:123:ARG:HD3	1.89	0.55
22:W:20:ARG:HE	22:W:30:GLN:HE22	1.55	0.55
28:CC:134:ASN:OD1	28:CC:167:ARG:NH2	2.40	0.55
29:5:1824:G:OP2	29:5:1824:G:N2	2.40	0.55
29:5:5053:C:O2'	29:5:5056:C:OP2	2.23	0.55
53:9:508:A:H3'	53:9:509:G:H8	1.72	0.55
53:9:1416:C:O2	70:TT:3:GLY:N	2.40	0.55
53:9:1533:A:O2'	56:FF:81:ARG:NH1	2.40	0.55
53:9:1560:U:HO2'	53:9:1583:C:HO2'	1.53	0.55
53:9:1620:A:OP1	66:PP:115:TYR:OH	2.24	0.55
55:EE:8:HIS:O	55:EE:30:ARG:NH1	2.40	0.55
59:II:107:THR:HG22	59:II:110:ARG:HH21	1.72	0.55
2:B:276:HIS:ND1	29:5:4722:C:OP1	2.39	0.54
29:5:942:U:H2'	29:5:943:C:C6	2.42	0.54
29:5:2291:A:H2'	29:5:2292:G:H8	1.71	0.54
53:9:521:A:OP1	60:JJ:45:ARG:NH1	2.40	0.54
53:9:530:U:H2'	53:9:531:A:C8	2.42	0.54
73:WW:60:LYS:NZ	78:bb:23:ARG:O	2.38	0.54
83:gg:289:LEU:HB2	83:gg:298:LEU:HD21	1.89	0.54
17:R:60:ARG:NH1	29:5:2622:C:OP1	2.40	0.54
29:5:675:G:H2'	29:5:676:C:C6	2.42	0.54
29:5:944:G:H2'	29:5:945:C:H6	1.71	0.54
29:5:1490:G:O2'	29:5:1492:C:OP2	2.25	0.54
29:5:1749:A:N1	29:5:1795:C:O2'	2.35	0.54
29:5:1912:U:H2'	29:5:1913:A:H8	1.72	0.54
29:5:3604:C:H2'	29:5:3605:A:C8	2.42	0.54
29:5:3727:U:H2'	29:5:3728:G:H8	1.71	0.54
29:5:3861:C:H2'	29:5:3862:A:H8	1.72	0.54
29:5:4420:A:H2'	29:5:4428:A:C2	2.42	0.54
31:8:148:A:H2'	31:8:149:G:C8	2.42	0.54
34:c:90:ARG:HH12	47:p:44:LYS:HG2	1.72	0.54
37:f:78:HIS:HB2	37:f:85:ARG:HG3	1.89	0.54
53:9:919:A:O2'	53:9:1020:A:N1	2.34	0.54
53:9:975:G:H21	65:OO:50:LYS:HA	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:NN:45:LEU:HD23	64:NN:50:ILE:HG22	1.89	0.54
83:gg:292:SER:HB2	83:gg:299:PHE:HE1	1.70	0.54
1:A:223:SER:HG	29:5:3754:A:HO2'	1.54	0.54
1:A:233:ARG:HB2	29:5:4190:G:H5'	1.88	0.54
14:O:18:ARG:NH2	29:5:2059:C:O3'	2.37	0.54
23:X:68:ARG:NH2	31:8:60:G:OP1	2.39	0.54
28:CC:176:LYS:O	28:CC:200:ARG:NH2	2.38	0.54
29:5:4132:C:H5''	29:5:4133:A:H5''	1.88	0.54
29:5:4941:C:H2'	29:5:4942:G:C8	2.43	0.54
53:9:1104:G:H2'	53:9:1105:G:C8	2.42	0.54
13:N:104:GLU:HA	13:N:160:GLU:HG3	1.89	0.54
18:S:19:THR:HG23	18:S:22:CYS:H	1.72	0.54
25:Z:14:LEU:HD21	38:g:92:LYS:HD3	1.90	0.54
28:CC:108:LYS:HB2	28:CC:233:LEU:HG	1.89	0.54
29:5:4941:C:H2'	29:5:4942:G:H8	1.72	0.54
31:8:137:A:H2'	31:8:138:C:C6	2.42	0.54
53:9:5:U:H2'	53:9:6:G:H8	1.71	0.54
53:9:1633:A:O2'	69:SS:142:ARG:NH1	2.40	0.54
53:9:1761:U:O2	53:9:1771:G:N2	2.40	0.54
55:EE:151:ASP:HB3	55:EE:154:ILE:HG13	1.89	0.54
2:B:217:ILE:HD13	2:B:284:ILE:HD11	1.89	0.54
8:H:58:ASP:OD1	8:H:58:ASP:N	2.40	0.54
9:I:9:TYR:O	9:I:59:GLN:NE2	2.38	0.54
23:X:84:GLU:OE2	29:5:2532:C:N4	2.41	0.54
29:5:711:G:H2'	29:5:712:A:H8	1.72	0.54
29:5:2498:C:H2'	29:5:2499:G:C8	2.43	0.54
50:t:128:THR:HA	50:t:131:GLU:HG2	1.88	0.54
53:9:1010:G:H2'	53:9:1011:A:H8	1.70	0.54
67:QQ:97:GLN:HB2	67:QQ:105:LYS:HG3	1.89	0.54
13:N:49:ARG:HH12	29:5:152:U:P	2.30	0.54
24:Y:47:MET:HE3	24:Y:48:PRO:HD2	1.89	0.54
29:5:1441:G:O2'	29:5:2111:A:N1	2.36	0.54
29:5:2449:G:OP2	29:5:2522:G:N2	2.39	0.54
53:9:104:A:H62	53:9:356:C:H5	1.56	0.54
73:WW:11:LEU:HD12	73:WW:74:VAL:HB	1.90	0.54
3:C:322:LEU:N	29:5:1286:C:O2'	2.40	0.54
13:N:44:ARG:NH1	29:5:280:G:OP2	2.37	0.54
17:R:96:MET:HE1	29:5:2613:C:H5''	1.89	0.54
24:Y:82:ILE:HD12	24:Y:85:VAL:HG21	1.90	0.54
29:5:64:A:H1'	29:5:76:A:H1'	1.90	0.54
29:5:2264:C:H5''	29:5:2265:G:C8	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:3729:A2M:OP2	40:i:68:ARG:NH2	2.33	0.54
29:5:3922:G:H2'	29:5:3923:A:C8	2.43	0.54
51:v:127:VAL:HG23	51:v:155:LEU:HA	1.90	0.54
53:9:1270:G:O2'	53:9:1301:A:N7	2.40	0.54
61:KK:85:LEU:HB3	61:KK:89:ILE:HD11	1.89	0.54
1:A:152:SER:OG	29:5:3667:G:N7	2.37	0.54
5:E:144:ARG:NE	37:f:110:ILE:OXT	2.40	0.54
9:I:7:ARG:NH2	29:5:4411:G:OP2	2.39	0.54
11:L:198:ARG:HH12	29:5:1491:C:H2'	1.72	0.54
13:N:73:ARG:NH1	29:5:32:G:OP1	2.41	0.54
13:N:174:LEU:HA	13:N:183:THR:HG21	1.90	0.54
25:Z:103:ASP:OD1	25:Z:103:ASP:N	2.39	0.54
29:5:933:A:H3'	29:5:934:G:H8	1.73	0.54
29:5:1474:C:OP1	32:a:132:ARG:NH2	2.37	0.54
29:5:1611:7MG:H2'	29:5:1612:U:O4'	2.08	0.54
29:5:2463:G:O2'	29:5:3678:G:O2'	2.22	0.54
29:5:3859:U:O2'	29:5:4985:A:N3	2.41	0.54
29:5:3876:C:H2'	29:5:3877:A:H8	1.73	0.54
29:5:4667:G:N2	29:5:5010:C:O3'	2.40	0.54
53:9:486:A:H1'	53:9:513:G:H22	1.73	0.54
2:B:348:ARG:HH22	2:B:351:LEU:HD11	1.73	0.54
10:J:143:ASP:N	10:J:143:ASP:OD1	2.40	0.54
26:AA:121:LEU:HD21	26:AA:145:ILE:HD13	1.89	0.54
29:5:369:G:N2	29:5:372:A:OP2	2.36	0.54
53:9:1136:U:H2'	53:9:1137:U:C6	2.43	0.54
53:9:1261:C:HO2'	80:dd:10:HIS:HE2	1.42	0.54
54:DD:42:THR:OG1	54:DD:45:ARG:O	2.23	0.54
56:FF:29:GLN:N	56:FF:110:GLN:OE1	2.35	0.54
69:SS:28:PHE:O	69:SS:31:THR:OG1	2.21	0.54
72:VV:82:ASN:OD1	72:VV:83:PHE:N	2.40	0.54
73:WW:36:ARG:HG3	73:WW:110:ILE:HD13	1.90	0.54
8:H:69:THR:HG22	29:5:4706:A:H2	1.73	0.54
14:O:193:THR:HG23	14:O:202:LEU:HD23	1.90	0.54
17:R:60:ARG:NH2	17:R:63:CYS:SG	2.81	0.54
24:Y:27:ARG:NE	31:8:71:A:OP1	2.34	0.54
29:5:1204:G:H2'	29:5:1205:G:H8	1.73	0.54
53:9:907:G:H2'	53:9:908:A:C8	2.42	0.54
53:9:1511:U:H2'	53:9:1512:C:H6	1.73	0.54
55:EE:11:ARG:HA	55:EE:28:ALA:HB2	1.90	0.54
64:NN:136:PRO:HG2	64:NN:139:TRP:HB2	1.89	0.54
66:PP:21:ASP:N	66:PP:21:ASP:OD1	2.30	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:cc:54:ASP:N	79:cc:54:ASP:OD1	2.42	0.54
3:C:28:PHE:HA	3:C:129:ALA:HA	1.89	0.53
4:D:56:THR:OG1	4:D:59:ASP:OD1	2.26	0.53
13:N:104:GLU:OE2	29:5:2466:A:O2'	2.20	0.53
13:N:114:ARG:NH1	13:N:151:ILE:O	2.40	0.53
14:O:61:ARG:HD2	14:O:66:PRO:HB3	1.90	0.53
24:Y:11:ARG:HG3	29:5:229:G:H5''	1.89	0.53
25:Z:84:ARG:NH1	38:g:99:GLU:OE1	2.41	0.53
27:BB:67:PHE:HE1	65:OO:48:SER:HB2	1.74	0.53
29:5:2465:G:N2	29:5:2468:C:OP2	2.39	0.53
29:5:3838:U:H2'	29:5:3839:C:H6	1.73	0.53
29:5:4094:C:H2'	29:5:4095:G:C8	2.42	0.53
29:5:4742:C:H2'	29:5:4743:G:H8	1.72	0.53
46:o:9:ARG:HA	46:o:20:PRO:HA	1.90	0.53
53:9:1262:C:O2'	80:dd:12:ARG:NH1	2.41	0.53
65:OO:65:ASP:HA	65:OO:68:GLU:HG3	1.90	0.53
3:C:261:ASP:OD1	3:C:262:ASP:N	2.41	0.53
3:C:333:MLZ:HCM3	5:E:57:GLY:H	1.72	0.53
4:D:52:ILE:HD13	30:7:6:C:H4'	1.90	0.53
7:G:139:VAL:HG11	7:G:238:LYS:HE2	1.89	0.53
12:M:6:PHE:O	12:M:11:ARG:NE	2.40	0.53
16:Q:62:SER:OG	29:5:1508:G:OP2	2.24	0.53
23:X:77:ILE:HA	23:X:100:VAL:HG12	1.90	0.53
29:5:2272:C:O2	48:r:39:ARG:NH2	2.42	0.53
32:a:85:GLN:HA	32:a:88:VAL:HG22	1.89	0.53
53:9:152:U:H2'	53:9:153:G:C8	2.44	0.53
60:JJ:38:ARG:HA	81:ee:104:ARG:HB3	1.89	0.53
69:SS:127:TRP:O	69:SS:144:ARG:NH1	2.42	0.53
83:gg:118:ARG:NH2	83:gg:134:THR:OG1	2.41	0.53
29:5:944:G:H2'	29:5:945:C:C6	2.44	0.53
29:5:1080:G:H2'	29:5:1081:G:C8	2.43	0.53
29:5:1987:G:H2'	29:5:1988:G:C8	2.43	0.53
29:5:2850:A:O2'	29:5:4637:G:H4'	2.08	0.53
29:5:3879:G:H2'	29:5:3880:G:C8	2.43	0.53
29:5:4194:U:H2'	29:5:4195:U:C6	2.44	0.53
53:9:373:G:OP1	62:LL:137:THR:OG1	2.17	0.53
53:9:611:G:H21	81:ee:89:THR:HG22	1.73	0.53
53:9:996:A:H2'	53:9:997:A:C8	2.44	0.53
53:9:1198:G:H2'	53:9:1199:A:C8	2.44	0.53
53:9:1593:C:OP1	76:ZZ:103:HIS:NE2	2.41	0.53
69:SS:132:ARG:HB2	69:SS:134:GLN:HE22	1.72	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:112:HIS:HD2	10:J:117:ILE:HG21	1.73	0.53
27:BB:127:VAL:HG11	27:BB:176:VAL:HG11	1.90	0.53
29:5:419:A:N3	29:5:1338:C:O2'	2.42	0.53
29:5:2645:U:H2'	29:5:2700:G:H1	1.74	0.53
31:8:38:U:H5'	39:h:81:LEU:HD13	1.89	0.53
53:9:223:C:H2'	53:9:224:A:C8	2.43	0.53
53:9:380:G:H1'	59:II:5:ARG:HH11	1.73	0.53
53:9:1271:C:H42	53:9:1511:U:H3	1.56	0.53
55:EE:9:LEU:HB2	55:EE:30:ARG:HD3	1.90	0.53
56:FF:50:PRO:HG2	56:FF:90:VAL:HG12	1.91	0.53
73:WW:93:LEU:HB3	73:WW:102:ILE:HD11	1.90	0.53
29:5:161:G:H2'	29:5:162:A:H8	1.73	0.53
29:5:299:C:H2'	29:5:300:A:H8	1.74	0.53
29:5:1217:G:H2'	29:5:1218:G:H8	1.72	0.53
29:5:1991:G:N2	29:5:2009:G:O2'	2.42	0.53
29:5:3664:C:H2'	29:5:3665:G:H8	1.73	0.53
29:5:4610:G:N2	29:5:4613:A:OP2	2.41	0.53
29:5:4635:U:H2'	29:5:4636:G:H8	1.74	0.53
29:5:4939:C:H2'	29:5:4940:A:C8	2.43	0.53
53:9:555:A:N6	53:9:589:G:N3	2.57	0.53
53:9:925:G:OP1	64:NN:121:ARG:NH1	2.41	0.53
53:9:1198:G:H2'	53:9:1199:A:H8	1.73	0.53
68:RR:17:ILE:HG12	68:RR:24:LEU:HD23	1.90	0.53
76:ZZ:73:VAL:HG21	76:ZZ:88:LEU:HD11	1.89	0.53
6:F:125:ASN:HB2	19:T:132:PRO:HB2	1.90	0.53
13:N:53:TYR:HB2	13:N:133:ILE:HD13	1.89	0.53
14:O:10:ASP:HB2	14:O:117:ARG:HB3	1.90	0.53
15:P:96:VAL:O	15:P:109:GLN:NE2	2.41	0.53
21:V:31:ASN:ND2	21:V:115:SER:OG	2.39	0.53
29:5:373:OMG:HM21	29:5:1651:C:H4'	1.89	0.53
29:5:1528:OMG:HN1	29:5:1661:C:H42	1.55	0.53
29:5:2047:A:N7	29:5:4440:C:O2'	2.41	0.53
29:5:2264:C:H5''	29:5:2265:G:H8	1.74	0.53
29:5:2492:G:H2'	29:5:2493:G:C8	2.44	0.53
29:5:2696:C:H2'	29:5:2697:U:H6	1.72	0.53
29:5:2759:G:H2'	29:5:2760:B9B:C4	2.39	0.53
29:5:3604:C:H2'	29:5:3605:A:H8	1.72	0.53
29:5:4867:G:H2'	29:5:4868:G:C8	2.44	0.53
46:o:36:GLN:OE1	46:o:39:ARG:NH2	2.41	0.53
53:9:792:C:H2'	53:9:793:G:C8	2.44	0.53
53:9:944:A:H2'	53:9:945:U:H6	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:FF:49:LEU:HD23	67:QQ:49:TYR:HB2	1.91	0.53
13:N:103:GLU:OE2	13:N:165:THR:OG1	2.26	0.53
29:5:48:G:H4'	29:5:49:U:O5'	2.09	0.53
29:5:2055:G:H2'	29:5:2056:OMG:C8	2.44	0.53
29:5:4386:A:OP1	46:o:58:LYS:NZ	2.38	0.53
29:5:5018:G:O2'	29:5:5020:A:OP1	2.23	0.53
39:h:16:GLU:HA	39:h:19:LYS:HG2	1.91	0.53
51:v:712:ASP:HB2	51:v:715:DDE:HB3	1.91	0.53
51:v:734:LEU:HD23	51:v:851:LEU:HD23	1.91	0.53
53:9:658:U:O2	74:XX:17:ARG:NH1	2.41	0.53
53:9:1808:U:H2'	53:9:1809:A:H8	1.73	0.53
59:II:67:TRP:NE1	59:II:191:GLU:OE2	2.33	0.53
2:B:168:MET:HA	2:B:171:LEU:HD12	1.90	0.53
19:T:70:HIS:NE2	29:5:4333:C:OP1	2.42	0.53
20:U:23:LEU:HG	20:U:110:TYR:HB2	1.90	0.53
28:CC:65:LYS:HD3	28:CC:273:LEU:HD13	1.89	0.53
28:CC:70:VAL:HG11	28:CC:93:ILE:HG12	1.90	0.53
29:5:1409:G:H2'	29:5:1410:G:H8	1.74	0.53
29:5:2729:U:H2'	29:5:2730:G:C8	2.44	0.53
51:v:215:GLY:HA3	51:v:222:ALA:HA	1.90	0.53
53:9:640:A:H2'	53:9:641:A:C8	2.44	0.53
53:9:1256:G:H1	80:dd:31:ILE:HG13	1.72	0.53
53:9:1545:A:H4'	67:QQ:74:GLY:HA2	1.91	0.53
83:gg:43:TRP:HA	83:gg:55:PRO:HA	1.90	0.53
83:gg:236:ILE:HG12	83:gg:252:THR:HG23	1.89	0.53
2:B:77:THR:HG21	2:B:337:VAL:HG22	1.89	0.53
4:D:12:TYR:OH	29:5:4271:U:OP1	2.26	0.53
4:D:40:ASP:HB2	4:D:43:LYS:HG2	1.91	0.53
7:G:207:LEU:HB3	7:G:257:PHE:HB2	1.90	0.53
12:M:12:VAL:HG22	12:M:60:PHE:HB2	1.91	0.53
17:R:78:ILE:HG22	17:R:81:ARG:HH21	1.73	0.53
20:U:60:VAL:HG23	20:U:61:VAL:HG23	1.91	0.53
24:Y:30:MET:HB3	24:Y:101:PRO:HG2	1.91	0.53
24:Y:34:LEU:HD23	24:Y:38:LEU:HB3	1.90	0.53
29:5:2473:U:H4'	29:5:2474:U:H5'	1.91	0.53
29:5:2495:C:H4'	29:5:2496:U:H5	1.72	0.53
29:5:4710:C:H2'	29:5:4711:A:C8	2.43	0.53
29:5:4741:G:O6	29:5:4971:U:O4	2.27	0.53
53:9:1489:A:O2'	53:9:1490:G:OP1	2.25	0.53
53:9:1628:C:H2'	53:9:1629:C:H6	1.74	0.53
53:9:1786:U:H2'	53:9:1787:G:H8	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:JJ:21:GLU:OE1	60:JJ:24:ARG:N	2.29	0.53
66:PP:72:LYS:HD3	66:PP:93:MET:HE3	1.91	0.53
83:gg:215:GLN:NE2	83:gg:231:ASP:OD1	2.41	0.53
19:T:66:ASN:O	19:T:73:GLY:N	2.40	0.53
29:5:176:G:H2'	29:5:177:G:C8	2.43	0.53
29:5:270:U:H2'	29:5:271:C:H6	1.74	0.53
29:5:1747:G:N2	29:5:1787:U:OP1	2.35	0.53
29:5:1948:A:OP2	29:5:2046:A:N6	2.35	0.53
29:5:2471:C:H1'	29:5:3678:G:H22	1.74	0.53
29:5:2787:G:O2'	43:l:3:SER:O	2.26	0.53
29:5:3917:C:H2'	29:5:3918:U:H6	1.73	0.53
29:5:4302:B8H:C5	29:5:4302:B8H:C2	2.85	0.53
29:5:4464:C:H2'	29:5:4465:U:C6	2.44	0.53
29:5:4478:B8W:O2'	44:m:74:TYR:O	2.27	0.53
29:5:5002:C:H4'	35:d:26:THR:HG23	1.90	0.53
33:b:101:HIS:CD2	33:b:104:LEU:H	2.27	0.53
49:s:160:LEU:HG	49:s:161:ILE:HG12	1.90	0.53
51:v:260:LEU:HD13	51:v:293:ILE:HD11	1.91	0.53
53:9:492:C:OP2	75:YY:107:ARG:NH2	2.42	0.53
53:9:1809:A:H2'	53:9:1810:U:C6	2.44	0.53
57:GG:63:MET:HG2	57:GG:98:ARG:HD3	1.90	0.53
83:gg:174:VAL:HG13	83:gg:195:LEU:HD13	1.91	0.53
3:C:74:ALA:H	3:C:78:ARG:HH21	1.57	0.52
4:D:37:VAL:HG12	4:D:50:ARG:HD3	1.91	0.52
6:F:93:ARG:HE	6:F:108:LEU:HD13	1.73	0.52
12:M:122:ILE:HA	12:M:125:ASN:HD21	1.73	0.52
27:BB:146:ARG:HH22	53:9:1112:U:H1'	1.73	0.52
28:CC:163:VAL:HB	72:VV:27:LYS:HE2	1.91	0.52
29:5:253:G:H2'	29:5:254:G:C8	2.43	0.52
29:5:714:C:H2'	29:5:715:G:H8	1.73	0.52
29:5:1333:C:H2'	29:5:1334:G:C8	2.43	0.52
53:9:1798:C:H2'	53:9:1799:G:O4'	2.10	0.52
8:H:151:ILE:H	8:H:151:ILE:HD12	1.73	0.52
14:O:37:ARG:HH11	14:O:108:ILE:HD11	1.74	0.52
29:5:735:G:H22	29:5:933:A:H62	1.57	0.52
29:5:2099:G:H22	29:5:2268:G:H1	1.57	0.52
29:5:4893:C:H42	29:5:4938:U:H3	1.58	0.52
31:8:33:G:H5''	31:8:34:U:OP1	2.09	0.52
48:r:19:LYS:HG2	48:r:24:THR:HB	1.91	0.52
51:v:149:GLU:HB3	51:v:151:ILE:HD13	1.91	0.52
53:9:639:C:H2'	53:9:640:A:H8	1.73	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:1215:C:N3	53:9:1219:JMH:N4	2.57	0.52
75:YY:114:MET:HE3	75:YY:122:LYS:HB3	1.90	0.52
77:aa:25:ASN:HD21	77:aa:77:CYS:HB3	1.74	0.52
16:Q:135:GLY:N	29:5:1436:C:OP1	2.42	0.52
29:5:4465:U:H2'	29:5:4466:U:C6	2.44	0.52
29:5:4590:A:H2'	29:5:4591:U:O4'	2.10	0.52
46:o:33:LEU:HA	46:o:38:LYS:HG2	1.89	0.52
51:v:647:ARG:HD2	51:v:648:LYS:HB2	1.90	0.52
53:9:380:G:N1	53:9:383:G:OP2	2.41	0.52
53:9:1337:4AC:HO2'	71:UU:68:THR:HG1	1.52	0.52
59:II:22:HIS:ND1	59:II:23:LYS:O	2.41	0.52
3:C:6:PRO:HB3	29:5:669:C:H4'	1.91	0.52
5:E:190:ARG:NH1	29:5:4945:C:OP1	2.42	0.52
13:N:31:ARG:NH2	13:N:124:ASP:OD2	2.38	0.52
14:O:94:ARG:HD2	29:5:1315:C:H5''	1.92	0.52
22:W:82:ILE:HG22	57:GG:131:ARG:HB2	1.92	0.52
29:5:3738:A:H2'	29:5:3739:A:H8	1.73	0.52
29:5:4895:G:C6	29:5:4937:G:C6	2.98	0.52
51:v:610:PRO:HD2	51:v:613:LEU:HD21	1.91	0.52
56:FF:25:THR:OG1	56:FF:41:VAL:O	2.22	0.52
74:XX:61:GLN:HG3	74:XX:62:PRO:HD3	1.91	0.52
2:B:261:ARG:HB2	14:O:64:THR:HG21	1.91	0.52
17:R:102:LEU:HD22	17:R:138:LEU:HD13	1.91	0.52
24:Y:59:ARG:HH12	29:5:200:U:HO2'	1.54	0.52
27:BB:225:LEU:HD11	27:BB:229:MET:HE2	1.92	0.52
29:5:4648:U:H2'	29:5:4649:G:C8	2.44	0.52
29:5:5062:A:H2'	29:5:5063:C:C6	2.45	0.52
30:7:35:U:O2	30:7:45:U:O2'	2.26	0.52
34:c:90:ARG:H	34:c:90:ARG:HD2	1.74	0.52
39:h:86:LYS:N	41:j:80:GLU:OE2	2.42	0.52
46:o:26:TYR:HB3	46:o:67:VAL:HB	1.91	0.52
53:9:1515:G:H2'	53:9:1516:G:H8	1.74	0.52
63:MM:116:LYS:HD2	63:MM:121:LYS:HE2	1.90	0.52
2:B:234:ARG:NH2	2:B:268:ARG:O	2.28	0.52
18:S:23:ARG:NH1	29:5:1205:G:O3'	2.42	0.52
25:Z:95:VAL:HG13	25:Z:96:VAL:HG23	1.89	0.52
25:Z:136:PHE:OXT	29:5:4128:G:O2'	2.28	0.52
27:BB:34:LYS:NZ	27:BB:43:ASN:OD1	2.37	0.52
29:5:273:U:H2'	29:5:274:C:C6	2.44	0.52
29:5:710:C:H5''	37:f:46:ARG:HH22	1.74	0.52
29:5:2526:C:H2'	29:5:2527:G:H8	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:4290:C:H2'	29:5:4291:U:H6	1.73	0.52
51:v:224:THR:HG23	51:v:226:LYS:HG2	1.91	0.52
53:9:389:A:H2'	53:9:390:C:C6	2.45	0.52
53:9:677:G:N2	53:9:1028:A:H62	2.04	0.52
59:II:6:ASP:O	59:II:9:HIS:ND1	2.41	0.52
3:C:315:LYS:HD2	6:F:167:ALA:HB1	1.91	0.52
7:G:282:ARG:HG2	7:G:285:GLU:HB2	1.92	0.52
16:Q:162:HIS:ND1	29:5:1503:A:OP2	2.34	0.52
28:CC:70:VAL:HG21	28:CC:93:ILE:HG23	1.92	0.52
29:5:1208:C:H2'	29:5:1209:G:C8	2.41	0.52
29:5:1793:A:N3	29:5:4216:U:O2'	2.42	0.52
29:5:4543:C:H2'	29:5:4544:G:C8	2.44	0.52
31:8:65:A:O2'	39:h:10:ARG:NH2	2.42	0.52
51:v:19:ILE:HG22	51:v:99:LEU:HB3	1.91	0.52
51:v:511:ALA:HB1	51:v:516:ASP:HB3	1.91	0.52
53:9:1479:G:H2'	53:9:1480:A:H8	1.74	0.52
53:9:1488:C:O2'	53:9:1490:G:OP2	2.20	0.52
71:UU:26:SER:HB3	71:UU:32:LEU:HD22	1.92	0.52
1:A:187:HIS:NE2	29:5:1619:A:OP2	2.35	0.52
5:E:135:PRO:HG3	29:5:1293:G:C2	2.44	0.52
9:I:31:ILE:HB	9:I:66:GLU:HB2	1.92	0.52
29:5:66:A:O2'	29:5:326:C:O2	2.24	0.52
29:5:1893:G:OP2	37:f:19:ARG:NH2	2.39	0.52
29:5:3605:A:H2'	29:5:3606:G:C8	2.45	0.52
29:5:3916:C:H2'	29:5:3917:C:C6	2.44	0.52
29:5:4234:G:O2'	29:5:4379:G:O6	2.25	0.52
29:5:4705:U:H1'	29:5:4706:A:H5''	1.91	0.52
31:8:137:A:H2'	31:8:138:C:H6	1.75	0.52
50:t:87:GLU:OE2	50:t:100:HIS:ND1	2.38	0.52
53:9:944:A:H2'	53:9:945:U:C6	2.45	0.52
53:9:1016:U:OP2	78:bb:20:LYS:NZ	2.41	0.52
57:GG:142:ARG:HA	57:GG:147:LEU:HD23	1.91	0.52
9:I:153:ARG:HA	9:I:156:LYS:HE2	1.91	0.52
20:U:84:LYS:HB2	20:U:110:TYR:CE2	2.45	0.52
29:5:1079:G:H22	29:5:1244:A:H2	1.57	0.52
29:5:1217:G:O2'	29:5:1218:G:OP1	2.25	0.52
29:5:2751:A:H2'	29:5:2752:A:C8	2.42	0.52
29:5:3916:C:H2'	29:5:3917:C:H6	1.74	0.52
53:9:544:G:H2'	53:9:545:A:C8	2.45	0.52
53:9:1079:C:O2'	53:9:1182:A:N1	2.42	0.52
53:9:1354:G:N2	53:9:1357:A:OP2	2.26	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:GG:218:LYS:HA	57:GG:221:LYS:HG2	1.92	0.52
1:A:247:ARG:HB3	53:9:1069:U:H4'	1.92	0.52
8:H:103:VAL:HG11	8:H:144:LEU:HD21	1.92	0.52
29:5:957:G:H2'	29:5:958:C:C6	2.46	0.52
29:5:1639:G:O6	29:5:3924:G:O2'	2.28	0.52
29:5:3648:A:HO2'	41:j:2:THR:N	2.08	0.52
29:5:3658:A:H2'	29:5:3659:A:C8	2.45	0.52
29:5:5012:U:H4'	29:5:5013:A:H5'	1.91	0.52
31:8:9:A:H2'	31:8:10:G:H8	1.75	0.52
31:8:67:U:H2'	31:8:68:G:C8	2.44	0.52
50:t:90:ARG:HH12	50:t:98:ILE:HB	1.74	0.52
51:v:585:GLU:OE1	51:v:737:GLN:NE2	2.35	0.52
51:v:857:LYS:H	51:v:857:LYS:HD2	1.75	0.52
53:9:17:C:H2'	53:9:18:C:C6	2.45	0.52
53:9:162:C:H5''	57:GG:87:ARG:HH22	1.75	0.52
53:9:1240:A:H62	66:PP:100:LYS:HB2	1.74	0.52
66:PP:92:SER:HB3	66:PP:107:ILE:HD13	1.90	0.52
72:VV:38:GLU:OE1	72:VV:38:GLU:N	2.43	0.52
75:YY:58:PHE:HE1	75:YY:74:MET:HE1	1.74	0.52
8:H:111:LEU:HD21	8:H:125:ARG:HB3	1.91	0.51
29:5:3695:G:O2'	29:5:3824:U:OP2	2.28	0.51
29:5:3734:A:OP2	29:5:3735:PSU:N1	2.44	0.51
29:5:4159:C:H2'	29:5:4160:G:H8	1.75	0.51
51:v:143:LEU:HD23	51:v:188:ILE:HD13	1.92	0.51
51:v:395:MET:HA	51:v:486:THR:HG22	1.91	0.51
53:9:687:C:O3'	58:HH:121:THR:OG1	2.28	0.51
56:FF:50:PRO:HB3	56:FF:69:VAL:HG22	1.91	0.51
63:MM:33:ARG:HD3	63:MM:89:VAL:HG21	1.91	0.51
2:B:260:ALA:O	29:5:3904:G:N2	2.34	0.51
3:C:221:PHE:HB3	3:C:227:ILE:HG21	1.92	0.51
5:E:155:ILE:O	5:E:162:GLY:N	2.36	0.51
12:M:35:ARG:NH2	18:S:99:ASP:OD1	2.43	0.51
16:Q:122:THR:OG1	16:Q:124:ASP:OD1	2.21	0.51
27:BB:121:ILE:HD11	27:BB:161:VAL:HG22	1.92	0.51
29:5:678:G:H2'	29:5:679:C:H6	1.76	0.51
29:5:1205:G:H2'	29:5:1206:G:H8	1.76	0.51
29:5:4410:U:O2'	29:5:4412:U:O4	2.20	0.51
29:5:4600:U:H2'	29:5:4601:G:C8	2.45	0.51
31:8:124:U:H4'	31:8:125:C:O5'	2.10	0.51
32:a:132:ARG:HA	32:a:135:GLU:HG2	1.93	0.51
36:e:99:ILE:HB	36:e:124:ASN:HD21	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:s:125:ALA:N	49:s:157:ASP:OD1	2.41	0.51
51:v:25:ILE:HG21	51:v:125:ALA:HB1	1.92	0.51
53:9:801:U:H2'	53:9:802:A:H8	1.75	0.51
53:9:1259:A:O2'	53:9:1263:U:O4	2.28	0.51
73:WW:20:ARG:HD3	73:WW:22:LYS:HE2	1.92	0.51
76:ZZ:88:LEU:HB3	76:ZZ:109:TYR:HE2	1.74	0.51
9:I:189:ARG:NH2	9:I:199:TYR:OH	2.43	0.51
16:Q:12:LYS:HG2	29:5:2088:G:H5'	1.93	0.51
16:Q:70:MET:HE1	16:Q:78:LYS:HB3	1.93	0.51
29:5:1217:G:H2'	29:5:1218:G:C8	2.44	0.51
29:5:1979:G:H2'	29:5:1980:U:C5	2.46	0.51
29:5:1988:G:N2	29:5:2015:A:O2'	2.30	0.51
29:5:2001:G:HO2'	50:t:123:ARG:HB2	1.76	0.51
29:5:2007:G:O6	29:5:2009:G:N2	2.43	0.51
29:5:2572:G:H2'	29:5:2573:G:H8	1.74	0.51
51:v:88:PHE:HB3	51:v:250:ALA:HB1	1.91	0.51
53:9:557:U:H2'	53:9:558:G:H8	1.76	0.51
53:9:1131:G:H2'	53:9:1132:C:H6	1.76	0.51
64:NN:39:LYS:HA	64:NN:42:LYS:HG2	1.91	0.51
83:gg:212:LYS:HA	83:gg:235:ILE:HG13	1.92	0.51
1:A:116:LEU:N	1:A:126:LEU:O	2.43	0.51
10:J:40:LEU:HD11	10:J:48:PRO:HB3	1.91	0.51
15:P:3:ARG:NH1	15:P:4:TYR:O	2.44	0.51
18:S:9:GLU:OE2	18:S:31:ARG:NH1	2.44	0.51
27:BB:146:ARG:HB2	27:BB:149:GLN:HB2	1.92	0.51
29:5:431:G:H1'	29:5:3895:G:H5'	1.91	0.51
29:5:492:G:O2'	29:5:493:U:O3'	2.27	0.51
29:5:665:G:O2'	29:5:669:C:N4	2.34	0.51
29:5:1251:C:N4	29:5:1252:G:O6	2.44	0.51
29:5:1986:U:H3	29:5:1989:A:H2'	1.74	0.51
29:5:2291:A:H2'	29:5:2292:G:C8	2.45	0.51
29:5:3794:C:N4	29:5:3818:C:O4'	2.44	0.51
29:5:3899:C:H2'	29:5:3900:A:H8	1.75	0.51
29:5:4420:A:P	29:5:4428:A:H61	2.33	0.51
29:5:4972:A:H2'	29:5:4973:A:C8	2.46	0.51
34:c:90:ARG:NH1	47:p:44:LYS:HG2	2.26	0.51
53:9:1137:U:O2'	53:9:1138:C:OP1	2.26	0.51
53:9:1588:A:H2	53:9:1654:G:H1'	1.75	0.51
57:GG:162:LEU:N	57:GG:170:ARG:O	2.34	0.51
3:C:305:PRO:HB3	16:Q:38:ARG:HH12	1.75	0.51
11:L:36:ARG:HH22	29:5:1370:U:H5'	1.74	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:T:18:PRO:HB2	19:T:21:LYS:HG3	1.92	0.51
21:V:48:ARG:NH1	29:5:4627:C:OP1	2.41	0.51
25:Z:22:LYS:NZ	25:Z:129:TRP:O	2.39	0.51
29:5:1999:C:H1'	50:t:137:GLN:HE21	1.74	0.51
29:5:2419:U:H2'	29:5:2420:G:C8	2.41	0.51
30:7:28:C:O2'	30:7:54:A:N1	2.44	0.51
32:a:117:LEU:HD12	32:a:118:PRO:HD2	1.92	0.51
45:n:1:MET:HB2	53:9:1706:G:H5'	1.92	0.51
53:9:382:C:H2'	53:9:383:G:C8	2.46	0.51
53:9:430:C:H2'	53:9:431:G:C8	2.45	0.51
53:9:941:C:H2'	53:9:942:G:C8	2.46	0.51
13:N:177:GLY:HA2	29:5:67:C:O3'	2.11	0.51
29:5:1990:A:C5	29:5:2017:C:H4'	2.46	0.51
29:5:2001:G:O2'	50:t:123:ARG:HB2	2.11	0.51
47:p:39:CYS:HB3	47:p:42:CYS:SG	2.51	0.51
53:9:29:G:H4'	74:XX:129:SER:HB3	1.92	0.51
53:9:681:U:H4'	74:XX:9:THR:HG22	1.93	0.51
83:gg:87:LEU:HB2	83:gg:101:PHE:HB2	1.92	0.51
1:A:57:PRO:HG2	1:A:78:ALA:HB3	1.91	0.51
16:Q:143:ARG:NH1	29:5:1698:C:O3'	2.42	0.51
27:BB:87:ILE:HG22	27:BB:101:HIS:HB2	1.92	0.51
29:5:86:U:H2'	29:5:87:A:H8	1.75	0.51
29:5:2099:G:N2	29:5:2268:G:H1	2.08	0.51
29:5:3616:A:H2'	29:5:3617:A:C8	2.44	0.51
29:5:4515:U:H2'	29:5:4516:A:H2'	1.93	0.51
29:5:4686:G:H2'	29:5:4687:A:C8	2.46	0.51
31:8:8:U:H2'	31:8:9:A:C8	2.45	0.51
53:9:56:G:OP2	75:YY:115:LYS:NZ	2.36	0.51
53:9:432:G:H2'	53:9:433:A:H8	1.76	0.51
53:9:1007:C:H2'	53:9:1008:A:C8	2.46	0.51
54:DD:75:LYS:NZ	61:KK:34:GLU:OE2	2.36	0.51
55:EE:64:ILE:HD11	75:YY:18:LEU:HD11	1.92	0.51
63:MM:40:LYS:HE2	82:ff:130:VAL:HA	1.91	0.51
65:OO:53:ILE:HG23	65:OO:88:LEU:HD22	1.93	0.51
5:E:157:THR:OG1	29:5:4949:A:OP1	2.20	0.51
9:I:177:ASN:HB2	9:I:180:GLU:HG2	1.93	0.51
26:AA:16:LEU:HD21	68:RR:116:ASN:HD21	1.76	0.51
29:5:677:C:H2'	29:5:678:G:C8	2.45	0.51
29:5:1426:A:N7	32:a:116:LYS:NZ	2.45	0.51
29:5:1651:C:H2'	29:5:1652:A:H8	1.75	0.51
29:5:2663:G:OP2	34:c:36:LYS:NZ	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:4239:A:H4'	46:o:98:LYS:HE3	1.93	0.51
29:5:4292:C:H2'	29:5:4293:G:C8	2.46	0.51
29:5:4533:G:N2	29:5:4533:G:OP2	2.43	0.51
44:m:73:CYS:HB3	44:m:89:CYS:HB3	1.93	0.51
46:o:4:VAL:HG23	46:o:93:LEU:HD23	1.93	0.51
49:s:31:GLY:HA2	49:s:86:VAL:HA	1.91	0.51
53:9:64:A:H2	53:9:83:A:H62	1.58	0.51
53:9:391:C:H2'	53:9:392:A:H8	1.75	0.51
53:9:457:C:H2'	53:9:458:A:H8	1.74	0.51
53:9:532:C:O2'	53:9:533:A:OP1	2.27	0.51
55:EE:57:THR:OG1	55:EE:60:GLU:OE1	2.26	0.51
57:GG:98:ARG:NH1	57:GG:99:GLY:O	2.44	0.51
67:QQ:17:LYS:O	67:QQ:126:ARG:NH1	2.44	0.51
3:C:170:LEU:HD23	3:C:221:PHE:HZ	1.76	0.51
5:E:189:LEU:HD21	5:E:256:VAL:HG11	1.92	0.51
24:Y:55:VAL:HG12	24:Y:106:ILE:HA	1.93	0.51
29:5:4625:U:H2'	29:5:4626:OMU:H6	1.93	0.51
33:b:101:HIS:HD2	33:b:104:LEU:H	1.58	0.51
51:v:192:TYR:HE1	51:v:780:PRO:HD2	1.76	0.51
51:v:416:VAL:HB	51:v:466:CYS:HA	1.92	0.51
53:9:72:C:OP2	57:GG:168:LYS:NZ	2.44	0.51
53:9:436:G:OP1	53:9:471:G:O2'	2.28	0.51
53:9:788:G:H2'	53:9:789:G:H8	1.76	0.51
53:9:912:C:O2'	53:9:914:U:O2'	2.23	0.51
53:9:951:C:H1'	65:OO:50:LYS:HE2	1.93	0.51
53:9:1277:C:H2'	53:9:1278:A:H8	1.76	0.51
69:SS:82:TRP:O	69:SS:87:GLN:NE2	2.44	0.51
75:YY:27:VAL:HG11	75:YY:35:VAL:HG11	1.92	0.51
11:L:46:ILE:HB	11:L:49:ARG:HB2	1.92	0.51
11:L:178:ALA:N	32:a:134:GLU:OE2	2.35	0.51
15:P:61:THR:HG23	15:P:120:LEU:HD21	1.92	0.51
18:S:164:LYS:HB3	18:S:165:PRO:HD3	1.92	0.51
21:V:104:VAL:HG21	21:V:132:ILE:HD11	1.92	0.51
25:Z:70:SER:OG	25:Z:111:ARG:O	2.28	0.51
29:5:1830:G:H2'	29:5:1831:A:H8	1.74	0.51
29:5:1866:B8H:C5	29:5:1866:B8H:C2	2.86	0.51
29:5:2418:A:H2'	29:5:2419:U:H6	1.76	0.51
29:5:4697:A:H2'	29:5:4698:A:O4'	2.10	0.51
53:9:414:A:OP1	53:9:814:U:O2'	2.29	0.51
53:9:1239:U:H2'	53:9:1241:A:OP2	2.11	0.51
53:9:1454:A:O5'	68:RR:3:ARG:NH2	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:EE:54:TYR:OH	55:EE:97:GLU:OE1	2.29	0.51
57:GG:7:PHE:CE2	57:GG:9:ALA:HB3	2.46	0.51
70:TT:124:THR:HG23	70:TT:126:GLN:H	1.76	0.51
74:XX:46:HIS:HB3	74:XX:101:LEU:HD11	1.91	0.51
7:G:134:ASN:O	7:G:137:THR:OG1	2.26	0.50
8:H:23:ARG:HH11	8:H:39:ASN:HA	1.77	0.50
14:O:117:ARG:NH2	29:5:4766:G:OP1	2.45	0.50
29:5:906:C:H2'	29:5:907:C:H6	1.76	0.50
49:s:118:PRO:HD2	49:s:183:PHE:CE1	2.46	0.50
51:v:461:ILE:HD11	51:v:464:VAL:HB	1.92	0.50
53:9:85:A:H5''	75:YY:118:ARG:HE	1.76	0.50
53:9:106:C:H2'	53:9:107:A:C8	2.45	0.50
53:9:607:U:OP1	81:ee:132:SER:OG	2.28	0.50
53:9:1131:G:H2'	53:9:1132:C:C6	2.45	0.50
60:JJ:162:ARG:HE	75:YY:31:GLY:HA2	1.76	0.50
77:aa:46:GLU:OE1	77:aa:46:GLU:N	2.34	0.50
6:F:121:PHE:O	6:F:204:ASN:ND2	2.36	0.50
8:H:34:LEU:HD23	8:H:80:MET:HG3	1.93	0.50
10:J:95:ARG:NH2	10:J:177:GLY:O	2.44	0.50
14:O:202:LEU:HA	29:5:4878:2MG:HM21	1.91	0.50
19:T:74:ILE:HD13	19:T:96:ILE:HD11	1.93	0.50
29:5:957:G:H2'	29:5:958:C:H6	1.76	0.50
29:5:2341:C:H2'	29:5:2342:G:H8	1.75	0.50
29:5:4454:G:H5''	29:5:4455:A:H5''	1.93	0.50
32:a:19:HIS:HB3	32:a:25:HIS:HB2	1.94	0.50
32:a:36:GLY:HA3	32:a:40:HIS:NE2	2.27	0.50
50:t:41:LYS:NZ	50:t:68:GLN:OE1	2.43	0.50
51:v:10:ARG:NH1	51:v:13:MET:SD	2.84	0.50
53:9:525:A:OP2	81:ee:99:LYS:NZ	2.44	0.50
53:9:681:U:O2'	53:9:1160:U:OP1	2.30	0.50
53:9:1656:G:O6	53:9:1668:U:O4	2.29	0.50
62:LL:89:ARG:NH1	62:LL:91:ASP:OD1	2.44	0.50
82:ff:118:ARG:NH2	82:ff:134:SER:OG	2.44	0.50
29:5:1764:G:H2'	29:5:1765:G:C8	2.45	0.50
29:5:1836:G:H2'	29:5:1837:G:C8	2.45	0.50
29:5:2644:G:H22	29:5:2703:A:H61	1.59	0.50
29:5:4516:A:N1	29:5:4598:C:H4'	2.27	0.50
29:5:4607:U:H2'	29:5:4608:A:H8	1.75	0.50
41:j:18:LEU:HA	41:j:25:LYS:HA	1.93	0.50
49:s:13:TYR:HA	49:s:16:LYS:HG2	1.93	0.50
53:9:1025:U:O2'	53:9:1160:U:O2'	2.22	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:1402:A:N6	53:9:1441:U:O2'	2.45	0.50
53:9:1588:A:H2'	53:9:1589:A:C8	2.45	0.50
53:9:1601:A:H61	53:9:1636:G:H5'	1.76	0.50
53:9:1736:G:H2'	53:9:1737:G:H8	1.77	0.50
70:TT:114:GLU:N	70:TT:122:LYS:O	2.39	0.50
75:YY:35:VAL:HG13	75:YY:40:ILE:HD11	1.93	0.50
11:L:66:TYR:OH	29:5:1388:G:OP1	2.25	0.50
14:O:170:LYS:O	14:O:173:GLN:HG3	2.12	0.50
17:R:12:SER:OG	17:R:17:CYS:O	2.22	0.50
26:AA:88:LEU:HD13	26:AA:100:ALA:HB2	1.92	0.50
29:5:909:C:H2'	29:5:910:G:H8	1.77	0.50
29:5:1874:A:O2'	29:5:4408:C:O2	2.24	0.50
29:5:1978:G:O5'	49:s:38:LYS:NZ	2.34	0.50
29:5:2680:A:N6	47:p:41:PHE:O	2.39	0.50
29:5:4169:U:H5'	29:5:4170:C:H5''	1.93	0.50
51:v:401:MET:HE1	51:v:481:LYS:HA	1.92	0.50
53:9:557:U:H2'	53:9:558:G:C8	2.46	0.50
53:9:1258:A:N1	53:9:1663:A:O2'	2.43	0.50
53:9:1375:G:OP2	68:RR:67:ARG:NH2	2.44	0.50
53:9:1688:C:H2'	53:9:1689:C:H6	1.76	0.50
68:RR:28:PHE:HA	68:RR:55:THR:HG21	1.94	0.50
68:RR:31:ASN:HA	68:RR:34:VAL:HB	1.94	0.50
1:A:54:ARG:HG2	1:A:56:ALA:H	1.76	0.50
2:B:36:ASP:OD1	2:B:36:ASP:N	2.44	0.50
15:P:59:ARG:NH2	29:5:424:U:OP1	2.37	0.50
15:P:123:MET:HG2	15:P:177:MET:HE2	1.93	0.50
27:BB:28:LYS:HB3	27:BB:48:LEU:HD22	1.93	0.50
29:5:2000:C:H2'	29:5:2001:G:H8	1.76	0.50
29:5:4954:C:H2'	29:5:4955:G:H21	1.75	0.50
51:v:145:GLN:OE1	51:v:500:SER:OG	2.23	0.50
53:9:432:G:H2'	53:9:433:A:C8	2.46	0.50
53:9:952:G:H2'	53:9:953:C:C6	2.47	0.50
54:DD:172:VAL:HG22	54:DD:185:LYS:HG2	1.93	0.50
70:TT:126:GLN:HG2	70:TT:129:ARG:HH21	1.75	0.50
13:N:15:GLN:NE2	29:5:305:A:OP2	2.44	0.50
26:AA:127:PRO:HB3	26:AA:134:LEU:HD11	1.92	0.50
26:AA:132:GLN:NE2	26:AA:136:GLU:OE1	2.44	0.50
27:BB:121:ILE:HG12	27:BB:161:VAL:HG13	1.94	0.50
29:5:364:G:O6	41:j:52:LYS:NZ	2.42	0.50
29:5:511:U:H5''	32:a:86:THR:HG22	1.94	0.50
29:5:1856:A:N3	29:5:2289:G:O2'	2.41	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:2323:C:H2'	29:5:2324:G:C8	2.46	0.50
29:5:2497:C:H2'	29:5:2498:C:C6	2.45	0.50
29:5:2613:C:H2'	29:5:2614:G:H8	1.76	0.50
53:9:26:U:H2'	53:9:27:A:C8	2.46	0.50
53:9:495:U:O2'	55:EE:27:PHE:O	2.28	0.50
53:9:799:U:H2'	53:9:800:U:C6	2.46	0.50
53:9:959:G:OP2	65:OO:38:ASN:ND2	2.40	0.50
53:9:1521:C:OP2	69:SS:136:THR:OG1	2.27	0.50
53:9:1668:U:OP2	67:QQ:141:TYR:OH	2.28	0.50
56:FF:135:ARG:O	56:FF:136:ARG:NE	2.44	0.50
65:OO:95:ILE:HB	65:OO:129:ILE:HD13	1.93	0.50
65:OO:98:ARG:HB2	65:OO:132:VAL:HG23	1.93	0.50
80:dd:21:CYS:HB3	80:dd:26:ASN:H	1.76	0.50
83:gg:147:HIS:HA	83:gg:175:LYS:HZ3	1.77	0.50
3:C:284:MET:HE3	16:Q:124:ASP:HB3	1.93	0.50
13:N:123:GLU:HA	13:N:128:LYS:HA	1.94	0.50
17:R:141:HIS:HA	17:R:144:LYS:HE3	1.93	0.50
19:T:20:ARG:HH12	30:7:67:C:H4'	1.76	0.50
29:5:2498:C:H2'	29:5:2499:G:H8	1.77	0.50
29:5:2758:G:C6	29:5:2759:G:C6	3.00	0.50
29:5:2880:U:O4	29:5:3829:G:O2'	2.28	0.50
29:5:3877:A:H2'	29:5:3878:A:C8	2.46	0.50
29:5:4398:G:N3	29:5:4453:5MC:HM52	2.27	0.50
29:5:4940:A:H2'	29:5:4941:C:H6	1.76	0.50
30:7:4:U:H2'	30:7:5:A:H8	1.77	0.50
34:c:31:TYR:OH	34:c:59:GLU:OE2	2.23	0.50
50:t:116:MET:O	50:t:119:ARG:NH1	2.45	0.50
54:DD:67:ARG:O	54:DD:70:THR:OG1	2.21	0.50
57:GG:74:ARG:HG2	57:GG:96:SER:HB3	1.93	0.50
60:JJ:65:GLU:OE1	60:JJ:66:LYS:N	2.38	0.50
73:WW:24:GLN:NE2	73:WW:64:ASN:OD1	2.45	0.50
13:N:54:LYS:H	13:N:59:TYR:HD2	1.59	0.50
16:Q:133:GLY:O	16:Q:136:THR:OG1	2.27	0.50
29:5:1982:G:H1'	50:t:138:SER:HB3	1.94	0.50
29:5:2309:C:H5''	36:e:104:SER:HB2	1.94	0.50
29:5:3768:B8H:C5	29:5:3768:B8H:C2	2.85	0.50
53:9:152:U:H2'	53:9:153:G:H8	1.76	0.50
53:9:602:G:OP2	53:9:603:C:O2'	2.20	0.50
53:9:1095:U:O2'	73:WW:20:ARG:NH1	2.44	0.50
53:9:1748:G:H1	53:9:1786:U:H3	1.60	0.50
55:EE:92:ILE:HD13	75:YY:17:LEU:HD21	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:671:G:H2'	29:5:672:G:H8	1.77	0.50
29:5:2367:G:O2'	29:5:3865:G:O6	2.22	0.50
51:v:667:LYS:HE3	51:v:668:GLY:H	1.76	0.50
53:9:49:C:H2'	53:9:472:C:H41	1.77	0.50
53:9:688:U:H2'	58:HH:103:LYS:HD2	1.94	0.50
53:9:953:C:O2	65:OO:55:ARG:NH1	2.38	0.50
53:9:1016:U:OP1	78:bb:30:SER:OG	2.27	0.50
58:HH:58:LYS:HB2	58:HH:90:LYS:HG3	1.93	0.50
15:P:98:ARG:HD2	29:5:4987:G:H1'	1.94	0.49
29:5:715:G:H2'	29:5:716:G:H8	1.76	0.49
29:5:718:U:H3	29:5:956:G:H1	1.58	0.49
29:5:906:C:H2'	29:5:907:C:C6	2.47	0.49
29:5:2741:G:H2'	29:5:2742:G:H8	1.77	0.49
49:s:192:VAL:HB	49:s:199:TYR:HB3	1.93	0.49
51:v:401:MET:HE3	51:v:529:LYS:HE2	1.94	0.49
53:9:164:A:H2'	53:9:165:G:C4	2.47	0.49
53:9:220:U:H2'	53:9:221:A:H8	1.75	0.49
53:9:942:G:H2'	53:9:943:U:C6	2.47	0.49
57:GG:159:ARG:HD3	57:GG:171:THR:HB	1.94	0.49
2:B:24:ARG:H	2:B:24:ARG:HD2	1.77	0.49
2:B:252:ALA:HB1	29:5:4530:G:C2	2.47	0.49
19:T:142:ARG:NH1	19:T:144:ASN:OD1	2.44	0.49
23:X:145:ASP:OD1	23:X:145:ASP:N	2.41	0.49
29:5:132:G:H2'	29:5:133:C:O4'	2.11	0.49
29:5:1520:U:H2'	29:5:1521:A:C8	2.47	0.49
29:5:1599:A:H5''	29:5:2845:U:H5''	1.94	0.49
29:5:2584:G:H2'	29:5:2585:G:C8	2.47	0.49
29:5:2613:C:H2'	29:5:2614:G:C8	2.47	0.49
29:5:3729:A2M:H2'	29:5:3730:A:H8	1.77	0.49
53:9:466:G:O2'	57:GG:72:ARG:NH1	2.41	0.49
53:9:934:G:H22	53:9:1008:A:H2	1.60	0.49
53:9:1396:A:O2'	53:9:1398:G:N7	2.38	0.49
53:9:1856:C:H2'	53:9:1857:G:H8	1.77	0.49
58:HH:145:ARG:NE	73:WW:51:GLU:OE2	2.44	0.49
62:LL:59:LYS:HD3	62:LL:134:LEU:HD13	1.94	0.49
75:YY:29:HIS:ND1	75:YY:29:HIS:O	2.46	0.49
83:gg:88:ARG:HH21	83:gg:100:ARG:HG3	1.76	0.49
4:D:65:ALA:HB2	4:D:74:ILE:HD13	1.93	0.49
10:J:113:ILE:HA	10:J:117:ILE:HG22	1.94	0.49
13:N:14:LYS:HE2	29:5:280:G:H5''	1.94	0.49
27:BB:138:PHE:HD2	27:BB:214:LYS:HB3	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:CC:196:ILE:HB	28:CC:223:TYR:HB2	1.93	0.49
29:5:308:G:C8	29:5:310:G:H1'	2.47	0.49
29:5:1515:C:H2'	29:5:1516:G:H8	1.77	0.49
29:5:2728:G:H2'	29:5:2729:U:C6	2.47	0.49
29:5:2746:U:O2'	29:5:2748:G:N2	2.46	0.49
51:v:432:PRO:HG3	51:v:482:THR:HG23	1.93	0.49
53:9:610:G:N1	53:9:634:A:C2	2.79	0.49
53:9:1542:C:H5''	70:TT:62:ARG:NH1	2.28	0.49
61:KK:37:ASP:N	61:KK:37:ASP:OD1	2.43	0.49
63:MM:83:LYS:HA	63:MM:105:GLY:HA2	1.93	0.49
2:B:393:LYS:NZ	29:5:5049:A:OP1	2.41	0.49
6:F:95:ARG:HD3	6:F:138:TYR:CD1	2.47	0.49
6:F:222:LYS:HE3	29:5:1913:A:H4'	1.94	0.49
7:G:126:ARG:NE	29:5:4082:G:OP1	2.45	0.49
9:I:5:PRO:HB2	9:I:7:ARG:HG2	1.95	0.49
11:L:103:ARG:NH2	29:5:325:U:O3'	2.44	0.49
16:Q:16:LYS:O	16:Q:33:ARG:NH2	2.45	0.49
18:S:127:MET:HA	19:T:153:PRO:HD2	1.94	0.49
25:Z:11:VAL:HG11	25:Z:80:LEU:HB3	1.92	0.49
29:5:407:A:O2'	29:5:410:A:OP1	2.29	0.49
29:5:2664:G:O2'	29:5:2681:G:N2	2.45	0.49
29:5:4179:G:H2'	29:5:4180:U:C6	2.47	0.49
29:5:4940:A:H2'	29:5:4941:C:C6	2.47	0.49
29:5:5011:G:N2	29:5:5047:G:O2'	2.45	0.49
30:7:110:G:H2'	30:7:111:C:C6	2.48	0.49
51:v:616:ASP:HB3	51:v:619:LYS:HZ2	1.77	0.49
51:v:664:ASP:N	51:v:664:ASP:OD1	2.46	0.49
53:9:215:G:H2'	53:9:216:C:C6	2.48	0.49
53:9:1533:A:N6	53:9:1602:U:H3	2.10	0.49
59:II:139:LYS:O	59:II:140:LYS:HG2	2.13	0.49
83:gg:123:GLY:HA2	83:gg:129:ILE:HG22	1.93	0.49
83:gg:124:SER:OG	83:gg:126:ASP:OD1	2.21	0.49
1:A:21:LYS:HE3	29:5:2749:A:H1'	1.94	0.49
1:A:101:VAL:HB	1:A:165:VAL:HG22	1.93	0.49
17:R:38:ARG:HG3	29:5:2532:C:H5''	1.94	0.49
17:R:74:ARG:NE	29:5:2897:U:OP2	2.35	0.49
29:5:1731:U:H2'	29:5:1732:U:H6	1.78	0.49
29:5:2293:G:O6	32:a:10:LYS:NZ	2.35	0.49
29:5:2899:U:H2'	29:5:2900:A:H8	1.78	0.49
31:8:90:C:H2'	31:8:91:A:C8	2.47	0.49
53:9:1309:C:O2'	82:ff:143:LYS:NZ	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:1628:C:H2'	53:9:1629:C:C6	2.47	0.49
69:SS:24:ARG:HH21	69:SS:28:PHE:HB3	1.77	0.49
5:E:164:ARG:NH2	5:E:276:SER:OG	2.46	0.49
15:P:89:PHE:O	15:P:107:TRP:NE1	2.45	0.49
24:Y:54:GLU:HB3	24:Y:67:ILE:HD11	1.93	0.49
25:Z:41:ALA:HB2	25:Z:77:TYR:HE1	1.76	0.49
29:5:161:G:H2'	29:5:162:A:C8	2.48	0.49
29:5:1892:G:O2'	29:5:1915:P7G:O2'	2.30	0.49
29:5:1948:A:H2'	29:5:1949:A:C8	2.48	0.49
29:5:2380:A:H2'	29:5:2381:A:H8	1.77	0.49
29:5:2508:A:O2'	29:5:2509:G:O5'	2.21	0.49
29:5:2678:C:OP1	47:p:44:LYS:NZ	2.46	0.49
29:5:3923:A:H2'	29:5:3924:G:C8	2.47	0.49
29:5:4244:G:H2'	29:5:4245:A:C8	2.46	0.49
29:5:4420:A:H2'	29:5:4428:A:N1	2.27	0.49
29:5:4538:U:OP2	29:5:4560:G:N1	2.43	0.49
29:5:4973:A:H2'	29:5:4974:A:H8	1.76	0.49
51:v:534:VAL:HG23	51:v:553:HIS:CE1	2.47	0.49
53:9:388:U:H2'	53:9:389:A:H8	1.76	0.49
53:9:1446:A:H5''	71:UU:58:THR:HG23	1.93	0.49
69:SS:80:PRO:HB2	69:SS:82:TRP:HD1	1.76	0.49
83:gg:119:GLN:HB3	83:gg:131:LEU:HD21	1.94	0.49
3:C:287:THR:HG21	48:r:5:LEU:HB2	1.93	0.49
4:D:111:ASN:ND2	4:D:116:ASP:OD2	2.46	0.49
22:W:80:ARG:O	57:GG:131:ARG:NH2	2.45	0.49
29:5:283:G:H2'	29:5:284:G:H8	1.78	0.49
29:5:1478:C:H2'	29:5:1479:U:C6	2.48	0.49
29:5:1496:G:H2'	29:5:1497:A:H8	1.78	0.49
29:5:2001:G:H2'	29:5:2002:C:C6	2.48	0.49
29:5:2508:A:H4'	29:5:2509:G:OP1	2.13	0.49
29:5:4099:G:H2'	29:5:4100:G:H8	1.76	0.49
29:5:4238:U:O4	46:o:8:ARG:NH2	2.44	0.49
29:5:4318:U:H2'	29:5:4319:A:C8	2.46	0.49
48:r:98:ARG:HH21	48:r:107:ARG:HH12	1.59	0.49
53:9:154:U:O2'	57:GG:15:LEU:HB2	2.13	0.49
53:9:558:G:H2'	53:9:559:G:C8	2.46	0.49
53:9:1377:U:O2'	53:9:1379:A:OP1	2.27	0.49
53:9:1453:C:OP2	68:RR:45:LYS:NZ	2.42	0.49
53:9:1473:G:N2	53:9:1476:A:OP2	2.38	0.49
53:9:1566:G:N1	53:9:1570:G:O6	2.46	0.49
53:9:1584:G:OP1	70:TT:77:LYS:NZ	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:DD:131:ALA:HA	54:DD:191:PRO:HD3	1.95	0.49
61:KK:51:SER:O	61:KK:55:ARG:HG2	2.12	0.49
72:VV:21:ASN:HD22	73:WW:67:GLY:H	1.60	0.49
9:I:3:ARG:NH2	29:5:4437:U:OP2	2.33	0.49
10:J:22:LEU:HD22	10:J:130:PHE:CD1	2.47	0.49
29:5:176:G:H2'	29:5:177:G:H8	1.78	0.49
29:5:2087:C:H2'	29:5:2088:G:H8	1.78	0.49
39:h:22:ASP:OD1	39:h:23:ASP:N	2.45	0.49
47:p:85:ARG:NH2	53:9:939:U:O3'	2.45	0.49
53:9:65:C:OP1	57:GG:136:LYS:NZ	2.46	0.49
53:9:521:A:O2'	60:JJ:144:ILE:HG12	2.13	0.49
53:9:1853:C:H2'	53:9:1854:U:C6	2.47	0.49
55:EE:159:THR:HG22	55:EE:173:ILE:HB	1.94	0.49
29:5:2272:C:H4'	29:5:2273:U:O5'	2.13	0.49
29:5:4266:U:H2'	29:5:4267:C:C6	2.48	0.49
51:v:7:ASP:OD1	51:v:7:ASP:N	2.44	0.49
51:v:550:GLY:H	51:v:553:HIS:HB3	1.78	0.49
51:v:650:TRP:CE2	51:v:675:ILE:HD13	2.47	0.49
53:9:12:U:H2'	53:9:13:C:C6	2.46	0.49
53:9:1244:U:H2'	53:9:1245:G:H8	1.78	0.49
53:9:1394:G:O2'	53:9:1395:C:OP1	2.27	0.49
53:9:1808:U:H2'	53:9:1809:A:C8	2.47	0.49
56:FF:76:MET:O	56:FF:159:ARG:NH2	2.36	0.49
2:B:92:TYR:HB2	2:B:159:VAL:HG23	1.95	0.49
4:D:53:VAL:HB	4:D:159:VAL:HG13	1.94	0.49
8:H:100:PRO:HB2	51:v:168:GLN:HE21	1.78	0.49
9:I:59:GLN:HB3	9:I:126:VAL:HG11	1.94	0.49
11:L:46:ILE:O	11:L:149:GLN:NE2	2.45	0.49
13:N:75:VAL:O	29:5:3676:C:H5'	2.13	0.49
16:Q:178:ARG:N	32:a:51:GLY:HA2	2.28	0.49
27:BB:198:GLU:O	27:BB:202:GLN:HG2	2.13	0.49
29:5:163:A:H2'	29:5:164:G:H8	1.76	0.49
29:5:700:C:H2'	29:5:701:G:C8	2.47	0.49
29:5:1409:G:H2'	29:5:1410:G:C8	2.47	0.49
29:5:1890:C:H2'	29:5:1891:G:H8	1.78	0.49
29:5:2382:A:H2'	29:5:2383:C:C6	2.48	0.49
29:5:3884:C:N4	29:5:4524:A:O4'	2.46	0.49
29:5:4668:C:O2'	29:5:5010:C:OP1	2.28	0.49
31:8:102:G:H5''	41:j:39:TYR:HE1	1.78	0.49
51:v:395:MET:HE3	51:v:494:MET:HE1	1.94	0.49
53:9:14:C:H2'	53:9:15:U:C6	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:1508:A:C4	53:9:1510:G:N7	2.81	0.49
56:FF:100:ILE:HG23	56:FF:174:ALA:HB1	1.95	0.49
58:HH:157:HIS:HB3	58:HH:190:PRO:HG3	1.95	0.49
73:WW:103:VAL:HA	73:WW:112:ASP:HA	1.95	0.49
2:B:163:LEU:HB3	2:B:180:LEU:HD11	1.95	0.48
11:L:36:ARG:NH2	29:5:1370:U:OP2	2.46	0.48
19:T:43:LYS:HD2	29:5:1738:C:H5'	1.95	0.48
29:5:7:C:H2'	29:5:8:U:C6	2.48	0.48
29:5:962:G:OP1	36:e:65:LYS:NZ	2.33	0.48
29:5:1344:G:H4'	29:5:1345:U:C6	2.48	0.48
29:5:1623:G:H1'	29:5:2519:A:N6	2.28	0.48
29:5:1976:A:H5''	49:s:37:SER:HB3	1.93	0.48
29:5:2058:G:O2'	29:5:2063:A:N1	2.42	0.48
51:v:650:TRP:CZ2	51:v:664:ASP:HB3	2.48	0.48
53:9:1565:C:N4	53:9:1571:G:O6	2.46	0.48
65:OO:148:GLY:HA2	77:aa:27:ALA:HB3	1.94	0.48
73:WW:115:GLU:HA	73:WW:118:ARG:HG2	1.96	0.48
1:A:179:ILE:HG23	1:A:184:ARG:HB2	1.96	0.48
13:N:51:LEU:HD13	13:N:117:ASN:HB3	1.94	0.48
26:AA:184:ARG:HD3	26:AA:191:ARG:HG2	1.95	0.48
29:5:125:C:H2'	29:5:126:C:C6	2.48	0.48
29:5:270:U:H2'	29:5:271:C:C6	2.48	0.48
29:5:680:C:H2'	29:5:681:G:C8	2.48	0.48
29:5:2331:C:O2'	36:e:124:ASN:OD1	2.31	0.48
29:5:2699:G:OP1	42:k:35:LYS:HE3	2.13	0.48
29:5:3917:C:H2'	29:5:3918:U:C6	2.48	0.48
29:5:4180:U:H2'	29:5:4181:G:C8	2.46	0.48
29:5:4324:C:H4'	46:o:17:LYS:HA	1.94	0.48
31:8:37:A:OP2	39:h:89:ARG:NH1	2.39	0.48
36:e:70:LEU:HD21	36:e:76:LYS:HG3	1.94	0.48
51:v:451:ILE:HA	51:v:460:PRO:HA	1.95	0.48
53:9:642:U:P	60:JJ:39:ASN:HB2	2.53	0.48
53:9:812:A:O2'	55:EE:12:VAL:O	2.25	0.48
53:9:904:A:H5'	62:LL:48:LYS:HE3	1.95	0.48
53:9:1643:U:H2'	53:9:1644:C:C6	2.48	0.48
53:9:1810:U:H2'	53:9:1811:C:C6	2.48	0.48
83:gg:26:GLN:NE2	83:gg:73:SER:O	2.45	0.48
3:C:79:VAL:HG21	3:C:86:ARG:HG2	1.94	0.48
3:C:321:ASN:ND2	29:5:1287:G:OP1	2.44	0.48
26:AA:118:GLU:HG3	28:CC:65:LYS:HE3	1.95	0.48
29:5:125:C:H2'	29:5:126:C:H6	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:712:A:H2'	29:5:713:C:C6	2.48	0.48
29:5:969:A:H2'	29:5:970:G:C8	2.48	0.48
29:5:1726:C:H5''	29:5:1841:G:H21	1.78	0.48
29:5:1975:G:H2'	29:5:1976:A:H5'	1.94	0.48
29:5:2593:A:H5'	29:5:2776:C:H5'	1.94	0.48
29:5:3710:U:C2	29:5:3711:G:C8	3.01	0.48
29:5:3899:C:H2'	29:5:3900:A:C8	2.48	0.48
29:5:4942:G:O2'	29:5:4943:C:OP1	2.32	0.48
51:v:27:HIS:HB3	51:v:30:HIS:CE1	2.49	0.48
53:9:26:U:O4	53:9:27:A:N6	2.46	0.48
53:9:57:U:O3'	53:9:499:G:N2	2.35	0.48
53:9:655:A:H4'	53:9:656:G:H3'	1.94	0.48
53:9:1092:G:OP1	64:NN:2:GLY:N	2.46	0.48
64:NN:54:LEU:HB3	64:NN:60:VAL:HG13	1.94	0.48
75:YY:17:LEU:H	75:YY:17:LEU:HD12	1.78	0.48
77:aa:88:SER:O	77:aa:92:ARG:HG3	2.14	0.48
4:D:217:ASP:OD1	4:D:217:ASP:N	2.43	0.48
27:BB:113:MET:HB3	27:BB:142:PHE:HE2	1.78	0.48
29:5:87:A:H4'	32:a:63:LEU:HD13	1.95	0.48
29:5:496:C:H2'	29:5:497:G:H8	1.78	0.48
29:5:1324:C:H42	29:5:1328:1MA:H8	1.61	0.48
29:5:2289:G:H2'	29:5:2290:G:H8	1.79	0.48
29:5:2653:A:H62	29:5:2692:G:H8	1.60	0.48
29:5:5058:C:N4	29:5:5059:U:O4	2.46	0.48
39:h:53:SER:HA	39:h:56:ARG:HE	1.77	0.48
51:v:616:ASP:OD2	51:v:639:TYR:OH	2.32	0.48
53:9:85:A:H2'	53:9:86:C:H6	1.78	0.48
53:9:637:U:O2	81:ee:129:ASN:ND2	2.46	0.48
53:9:1101:U:H2'	53:9:1102:G:C8	2.46	0.48
53:9:1541:G:H2'	53:9:1542:C:C6	2.48	0.48
53:9:1616:U:H2'	53:9:1617:G:C8	2.49	0.48
67:QQ:41:MET:N	67:QQ:41:MET:SD	2.86	0.48
77:aa:22:ARG:NH2	77:aa:27:ALA:O	2.39	0.48
9:I:31:ILE:HG22	9:I:62:SER:HB2	1.95	0.48
22:W:13:ILE:HD11	22:W:32:LEU:HB2	1.96	0.48
26:AA:37:TYR:HE1	26:AA:57:LYS:HE3	1.78	0.48
29:5:2777:G:H2'	29:5:2778:C:O4'	2.13	0.48
29:5:3616:A:O2'	59:II:92:ARG:NH2	2.46	0.48
29:5:4192:A:H2'	29:5:4193:G:C8	2.49	0.48
34:c:10:SER:HB3	34:c:13:SER:HB3	1.95	0.48
53:9:453:C:O2'	57:GG:92:ARG:O	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:1518:C:OP1	53:9:1519:U:H2'	2.12	0.48
53:9:1804:U:H2'	53:9:1805:G:H8	1.79	0.48
60:JJ:63:LEU:O	60:JJ:70:ARG:NH1	2.47	0.48
67:QQ:96:TYR:HA	67:QQ:100:VAL:HG22	1.94	0.48
8:H:65:LYS:NZ	29:5:4706:A:O2'	2.47	0.48
12:M:125:ASN:HA	12:M:128:LYS:HG2	1.96	0.48
29:5:281:U:H2'	29:5:282:C:H6	1.78	0.48
29:5:2044:U:H2'	29:5:2045:G:O4'	2.14	0.48
29:5:2329:C:H2'	29:5:2330:C:H6	1.77	0.48
29:5:3922:G:H2'	29:5:3923:A:H8	1.77	0.48
41:j:70:VAL:HG23	41:j:73:ARG:HH21	1.79	0.48
49:s:133:GLU:HG2	49:s:134:LYS:HG3	1.96	0.48
53:9:124:U:O5'	55:EE:148:ARG:NH2	2.46	0.48
53:9:1005:G:H2'	53:9:1006:C:H6	1.78	0.48
53:9:1127:C:H5''	78:bb:17:ARG:HH21	1.79	0.48
53:9:1413:G:H2'	53:9:1414:A:C8	2.48	0.48
59:II:67:TRP:NE1	59:II:69:SER:OG	2.46	0.48
63:MM:80:ASP:OD1	63:MM:80:ASP:N	2.34	0.48
29:5:1939:G:O5'	29:5:1939:G:H8	1.97	0.48
29:5:1974:G:H2'	29:5:1975:G:O4'	2.14	0.48
29:5:2087:C:H2'	29:5:2088:G:C8	2.49	0.48
29:5:3926:U:H2'	29:5:3927:U:C6	2.49	0.48
29:5:4973:A:H2'	29:5:4974:A:C8	2.49	0.48
29:5:5002:C:H2'	29:5:5003:G:C8	2.48	0.48
31:8:119:C:H2'	31:8:120:G:H8	1.79	0.48
32:a:76:ASP:OD1	32:a:77:LYS:N	2.46	0.48
53:9:434:G:H2'	53:9:435:A:C8	2.48	0.48
53:9:666:U:H2'	53:9:667:U:C6	2.48	0.48
53:9:1152:U:O2'	73:WW:16:ASN:OD1	2.25	0.48
53:9:1232:U:H2'	53:9:1233:G:H8	1.77	0.48
55:EE:20:LEU:HD11	55:EE:46:ILE:HD12	1.96	0.48
61:KK:64:TRP:CG	80:dd:23:VAL:HG13	2.48	0.48
64:NN:46:THR:HG23	64:NN:48:SER:H	1.79	0.48
2:B:13:SER:HB2	29:5:4628:A:H4'	1.94	0.48
12:M:24:LEU:HD11	12:M:86:TRP:CD2	2.48	0.48
20:U:66:SER:N	20:U:69:LYS:O	2.45	0.48
26:AA:90:PHE:HD1	26:AA:179:ALA:HB2	1.77	0.48
29:5:1179:G:H2'	29:5:1180:G:C8	2.49	0.48
29:5:1297:G:O2'	29:5:1298:C:OP1	2.32	0.48
29:5:1800:A:H5''	29:5:4220:A:H61	1.78	0.48
29:5:3877:A:H2'	29:5:3878:A:H8	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:4077:U:H2'	29:5:4078:C:C6	2.49	0.48
29:5:4954:C:H2'	29:5:4955:G:N2	2.29	0.48
41:j:22:CYS:SG	41:j:24:SER:OG	2.67	0.48
51:v:13:MET:HE1	51:v:464:VAL:HA	1.96	0.48
53:9:940:U:H2'	53:9:941:C:C6	2.49	0.48
53:9:1098:C:H2'	53:9:1099:G:C8	2.49	0.48
55:EE:36:HIS:CG	55:EE:85:GLY:HA3	2.48	0.48
62:LL:7:GLU:HB2	62:LL:11:GLN:HE21	1.79	0.48
65:OO:30:VAL:HG21	65:OO:96:LYS:HE2	1.95	0.48
73:WW:50:PHE:HB3	73:WW:63:VAL:HG13	1.96	0.48
73:WW:112:ASP:OD1	73:WW:112:ASP:N	2.47	0.48
75:YY:76:TYR:OH	75:YY:86:GLU:OE1	2.21	0.48
2:B:248:LEU:HD23	2:B:248:LEU:H	1.79	0.48
12:M:101:LYS:NZ	29:5:4883:G:OP1	2.37	0.48
26:AA:33:GLN:HB3	26:AA:154:LEU:HD12	1.95	0.48
29:5:428:G:H2'	29:5:429:A:C8	2.49	0.48
29:5:968:G:O2'	29:5:969:A:O5'	2.31	0.48
29:5:1315:C:O2	37:f:21:GLN:NE2	2.47	0.48
29:5:1420:C:N4	29:5:1421:G:O6	2.47	0.48
29:5:1668:C:H2'	29:5:1669:C:H6	1.79	0.48
29:5:2644:G:H22	29:5:2703:A:N6	2.11	0.48
29:5:4099:G:H22	29:5:4121:G:H21	1.62	0.48
51:v:43:ALA:HB3	51:v:77:LEU:HD12	1.95	0.48
51:v:81:LEU:HD12	51:v:85:ASP:HB2	1.95	0.48
51:v:243:GLN:OE1	51:v:243:GLN:N	2.47	0.48
53:9:1298:G:N3	53:9:1298:G:H2'	2.29	0.48
53:9:1497:G:H4'	53:9:1498:A:H5'	1.95	0.48
53:9:1503:C:H2'	53:9:1504:U:C6	2.49	0.48
53:9:1692:U:H2'	53:9:1693:G:C8	2.49	0.48
56:FF:34:SER:OG	79:cc:55:VAL:O	2.32	0.48
59:II:105:ASP:OD1	59:II:105:ASP:N	2.47	0.48
70:TT:51:ASN:OD1	70:TT:51:ASN:N	2.36	0.48
73:WW:26:LEU:HD11	73:WW:60:LYS:HB3	1.96	0.48
79:cc:10:LYS:HD3	79:cc:11:LEU:N	2.27	0.48
6:F:102:PRO:HA	6:F:105:ARG:HG2	1.96	0.48
11:L:135:LYS:N	11:L:138:ASP:OD2	2.35	0.48
11:L:163:LYS:NZ	29:5:512:C:OP2	2.42	0.48
16:Q:88:ASP:HB2	16:Q:109:ALA:HB2	1.96	0.48
19:T:78:LYS:NZ	29:5:4307:U:OP1	2.40	0.48
24:Y:31:SER:HA	24:Y:48:PRO:HA	1.96	0.48
29:5:152:U:H2'	29:5:153:G:H8	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:299:C:H2'	29:5:300:A:C8	2.48	0.48
29:5:961:A:N6	29:5:1289:G:H1'	2.29	0.48
29:5:4430:A:H5'	44:m:96:ARG:NH1	2.29	0.48
51:v:680:VAL:HA	51:v:683:PHE:HB3	1.95	0.48
53:9:527:C:H2'	53:9:528:A:H8	1.79	0.48
53:9:962:A:N1	53:9:1055:A:O2'	2.42	0.48
53:9:1337:4AC:H2'	53:9:1338:G:H8	1.79	0.48
57:GG:29:GLU:N	57:GG:102:VAL:O	2.47	0.48
69:SS:5:ILE:HB	76:ZZ:49:LEU:HB2	1.96	0.48
80:dd:36:LEU:HB3	80:dd:38:MET:HG2	1.96	0.48
2:B:254:ILE:HD13	2:B:268:ARG:HH12	1.79	0.47
4:D:289:ARG:NH1	29:5:1186:C:N3	2.62	0.47
13:N:99:GLN:NE2	13:N:118:SER:O	2.46	0.47
25:Z:89:ILE:HD11	25:Z:117:LYS:HB3	1.95	0.47
29:5:162:A:H2'	29:5:163:A:H8	1.79	0.47
29:5:323:C:H2'	29:5:324:A:H8	1.79	0.47
29:5:428:G:H2'	29:5:429:A:H8	1.78	0.47
29:5:3654:A:H1'	29:5:3791:A2M:N6	2.29	0.47
50:t:90:ARG:HD3	50:t:95:GLN:H	1.78	0.47
53:9:12:U:H2'	53:9:13:C:H6	1.79	0.47
53:9:311:C:H5''	53:9:312:G:H5''	1.96	0.47
53:9:525:A:HO2'	81:ee:104:ARG:NH2	2.11	0.47
53:9:869:A:H5'	53:9:874:G:H4'	1.95	0.47
53:9:1479:G:H2'	53:9:1480:A:C8	2.49	0.47
53:9:1669:G:OP1	71:UU:79:ARG:NH2	2.46	0.47
1:A:207:VAL:HG21	29:5:1639:G:C6	2.49	0.47
8:H:59:LYS:HE2	8:H:66:GLU:HB2	1.96	0.47
12:M:125:ASN:HA	12:M:128:LYS:HE2	1.95	0.47
25:Z:102:ARG:H	25:Z:102:ARG:HD2	1.79	0.47
29:5:119:G:H3'	29:5:120:A:H5''	1.96	0.47
29:5:1215:U:O2'	29:5:1217:G:O4'	2.32	0.47
29:5:1250:G:H2'	29:5:1251:C:C6	2.49	0.47
29:5:1563:C:H2'	29:5:1564:A:H8	1.79	0.47
29:5:1623:G:O3'	41:j:12:ARG:NH2	2.46	0.47
29:5:1890:C:H2'	29:5:1891:G:C8	2.49	0.47
29:5:2790:C:H2'	29:5:2791:C:H6	1.79	0.47
29:5:3664:C:H2'	29:5:3665:G:C8	2.48	0.47
29:5:3703:U:H4'	29:5:3704:G:H5'	1.97	0.47
29:5:4684:G:N2	29:5:4719:G:H1'	2.28	0.47
41:j:19:CYS:HB3	41:j:22:CYS:SG	2.53	0.47
44:m:72:MLZ:C	44:m:74:TYR:H	2.26	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:v:103:ILE:HD11	51:v:122:THR:HB	1.95	0.47
51:v:265:TYR:HB3	51:v:285:LEU:HD13	1.96	0.47
53:9:126:G:H5''	57:GG:195:LYS:HB3	1.96	0.47
58:HH:29:GLU:O	58:HH:32:MET:HG3	2.14	0.47
60:JJ:93:LYS:HB3	60:JJ:96:TYR:HD2	1.79	0.47
69:SS:135:HIS:O	69:SS:139:THR:OG1	2.32	0.47
83:gg:17:TRP:HA	83:gg:305:ASN:HA	1.97	0.47
2:B:229:LYS:HA	29:5:2842:A:H4'	1.95	0.47
12:M:28:VAL:HG13	12:M:64:PHE:HE2	1.79	0.47
12:M:117:LYS:HD3	29:5:4887:U:OP2	2.14	0.47
13:N:124:ASP:N	13:N:127:TYR:O	2.44	0.47
26:AA:156:TYR:O	72:VV:60:ARG:NH2	2.37	0.47
29:5:469:C:OP2	29:5:685:G:N1	2.34	0.47
29:5:3694:U:H2'	29:5:3695:G:C8	2.49	0.47
29:5:4924:C:H2'	29:5:4925:G:H8	1.79	0.47
51:v:617:ILE:H	51:v:617:ILE:HG13	1.49	0.47
53:9:107:A:H2'	53:9:108:G:H8	1.80	0.47
53:9:571:U:O2'	75:YY:60:PHE:O	2.31	0.47
53:9:929:G:H2'	53:9:930:C:O4'	2.14	0.47
53:9:1212:G:H2'	53:9:1213:C:C6	2.48	0.47
53:9:1657:G:H2'	53:9:1658:G:H8	1.79	0.47
63:MM:64:LEU:HD21	82:ff:106:TYR:HB2	1.96	0.47
74:XX:60:LYS:HE3	74:XX:116:PRO:HB3	1.95	0.47
2:B:165:HIS:ND1	2:B:166:THR:O	2.47	0.47
3:C:222:ARG:HD2	24:Y:3:PHE:HZ	1.79	0.47
13:N:51:LEU:O	13:N:117:ASN:ND2	2.41	0.47
13:N:185:GLY:HA2	29:5:78:U:H5''	1.97	0.47
25:Z:135:ARG:NH1	29:5:2759:G:H5'	2.29	0.47
29:5:423:G:H2'	29:5:424:U:C6	2.49	0.47
29:5:706:G:H2'	29:5:707:C:C6	2.49	0.47
29:5:726:G:H2'	29:5:727:G:H8	1.79	0.47
29:5:976:U:O2	29:5:977:G:N2	2.47	0.47
29:5:1515:C:H2'	29:5:1516:G:C8	2.49	0.47
29:5:1675:A:H4'	29:5:1691:G:H21	1.78	0.47
29:5:1682:C:H41	29:5:4384:A:H5''	1.79	0.47
29:5:2085:G:H2'	29:5:2086:U:C6	2.50	0.47
29:5:2509:G:N2	29:5:4090:G:O4'	2.48	0.47
29:5:4141:G:H2'	29:5:4142:G:H8	1.79	0.47
29:5:4499:U:H2'	29:5:4500:OMG:H8	1.78	0.47
31:8:92:U:H2'	31:8:93:C:O4'	2.14	0.47
53:9:28:U:H2'	53:9:29:G:H8	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:GG:50:VAL:HG21	57:GG:111:LEU:HB3	1.97	0.47
1:A:10:LYS:HA	1:A:16:PHE:CD2	2.49	0.47
2:B:29:VAL:HG12	2:B:348:ARG:HD3	1.97	0.47
2:B:131:THR:O	2:B:135:LYS:NZ	2.44	0.47
17:R:83:GLY:N	29:5:2818:A:OP1	2.46	0.47
29:5:923:C:H2'	29:5:924:G:C8	2.50	0.47
29:5:2755:C:H2'	29:5:2756:G:C8	2.50	0.47
29:5:5010:C:H2'	29:5:5011:G:O4'	2.13	0.47
31:8:66:A:H2'	31:8:67:U:C6	2.49	0.47
42:k:37:ARG:HH21	42:k:42:LEU:HB2	1.78	0.47
48:r:7:TRP:HB2	48:r:44:ILE:HD12	1.97	0.47
51:v:579:TYR:CZ	51:v:742:GLU:HG2	2.50	0.47
52:w:283:LEU:HB2	61:KK:16:PHE:HD2	1.80	0.47
53:9:183:G:O2'	53:9:184:G:O4'	2.29	0.47
53:9:359:U:OP1	74:XX:22:TRP:NE1	2.46	0.47
53:9:600:G:H2'	53:9:601:G:H8	1.79	0.47
53:9:805:U:H2'	53:9:806:U:H6	1.80	0.47
56:FF:72:LEU:HB2	56:FF:151:ILE:HD11	1.95	0.47
73:WW:6:VAL:HG12	73:WW:34:ILE:HD11	1.97	0.47
3:C:195:LYS:HB3	3:C:200:ARG:HE	1.79	0.47
8:H:92:MET:HB3	8:H:181:VAL:HA	1.97	0.47
15:P:4:TYR:OH	29:5:400:A:OP1	2.32	0.47
16:Q:158:THR:O	16:Q:161:SER:OG	2.26	0.47
16:Q:181:ARG:NH2	29:5:1397:A:OP1	2.48	0.47
17:R:71:ARG:NH1	29:5:3610:A:H5''	2.30	0.47
29:5:52:G:OP1	41:j:48:ASN:N	2.42	0.47
29:5:1360:A:N1	29:5:1391:G:O2'	2.45	0.47
29:5:1878:G:O2'	29:5:4225:A:N3	2.44	0.47
29:5:2658:G:H22	47:p:59:SER:HA	1.79	0.47
31:8:69:U:H2'	31:8:70:G:O4'	2.14	0.47
40:i:59:GLU:O	40:i:63:VAL:HG23	2.15	0.47
51:v:844:LEU:HD23	51:v:844:LEU:H	1.80	0.47
53:9:156:G:H2'	53:9:157:U:C6	2.49	0.47
53:9:398:A:H5''	53:9:400:C:H5'	1.97	0.47
53:9:654:A:OP2	53:9:655:A:O2'	2.28	0.47
53:9:1172:U:H2'	53:9:1173:A:H8	1.79	0.47
53:9:1217:A:H2'	53:9:1218:C:C6	2.47	0.47
53:9:1533:A:N3	53:9:1533:A:H2'	2.30	0.47
57:GG:65:GLN:OE1	57:GG:66:GLY:N	2.48	0.47
57:GG:162:LEU:HB2	57:GG:170:ARG:HB2	1.97	0.47
58:HH:77:VAL:HG12	58:HH:81:ARG:HH12	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:112:LEU:HD23	5:E:112:LEU:H	1.79	0.47
7:G:136:PHE:HA	7:G:236:ILE:HD13	1.96	0.47
10:J:28:GLU:OE2	10:J:32:ARG:NH1	2.47	0.47
12:M:11:ARG:O	12:M:27:ILE:HG22	2.14	0.47
13:N:94:PHE:CE2	13:N:96:ARG:HB2	2.50	0.47
13:N:125:SER:OG	29:5:4180:U:O2	2.33	0.47
15:P:96:VAL:HG13	15:P:109:GLN:NE2	2.30	0.47
22:W:21:TYR:HB3	22:W:31:PHE:HE2	1.80	0.47
27:BB:28:LYS:NZ	65:OO:51:GLU:OE2	2.40	0.47
29:5:162:A:H2'	29:5:163:A:C8	2.50	0.47
29:5:280:G:N2	29:5:306:A:OP2	2.44	0.47
29:5:318:A:H2'	29:5:319:A:H8	1.80	0.47
29:5:422:C:H2'	29:5:423:G:H8	1.79	0.47
29:5:505:G:H2'	29:5:506:G:H8	1.78	0.47
29:5:653:G:H2'	29:5:654:C:H6	1.78	0.47
29:5:1183:U:H2'	29:5:1184:G:C8	2.50	0.47
29:5:1496:G:H2'	29:5:1497:A:C8	2.49	0.47
29:5:1889:OMG:OP1	36:e:47:ARG:NH2	2.40	0.47
29:5:1901:G:H2'	29:5:1902:A:O4'	2.15	0.47
29:5:3723:A:H2'	29:5:3724:A2M:C8	2.44	0.47
29:5:3942:A:N6	29:5:4181:G:O6	2.48	0.47
51:v:110:ASP:OD2	51:v:553:HIS:N	2.46	0.47
53:9:863:U:O2	73:WW:124:LYS:NZ	2.37	0.47
53:9:1032:C:H2'	53:9:1033:G:O4'	2.15	0.47
53:9:1093:A:H2'	53:9:1094:C:H6	1.79	0.47
53:9:1627:C:H2'	53:9:1628:C:H6	1.79	0.47
53:9:1631:U:O3'	69:SS:34:LYS:NZ	2.48	0.47
53:9:1772:C:H2'	53:9:1773:C:C6	2.50	0.47
56:FF:99:ILE:HD11	76:ZZ:108:ILE:HG12	1.96	0.47
57:GG:152:ASP:O	57:GG:155:GLN:NE2	2.36	0.47
75:YY:62:THR:HA	75:YY:69:THR:HG22	1.96	0.47
83:gg:254:PRO:HA	83:gg:285:GLN:HA	1.96	0.47
2:B:126:LYS:HZ2	29:5:4972:A:P	2.38	0.47
4:D:275:GLN:HE21	29:5:1193:G:H1'	1.79	0.47
7:G:97:ASP:OD1	7:G:98:ILE:N	2.48	0.47
7:G:276:ARG:HG3	7:G:280:ASN:HB2	1.97	0.47
13:N:187:SER:H	13:N:190:ALA:HB3	1.79	0.47
18:S:163:HIS:ND1	18:S:166:ARG:HD2	2.30	0.47
27:BB:189:ILE:HB	27:BB:190:PRO:HD3	1.96	0.47
29:5:158:A:N1	29:5:276:C:O2'	2.33	0.47
29:5:179:G:H1	29:5:257:C:H42	1.63	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:267:G:H2'	29:5:268:G:H8	1.79	0.47
29:5:671:G:H2'	29:5:672:G:C8	2.50	0.47
29:5:4114:G:H2'	29:5:4115:G:H8	1.79	0.47
51:v:773:GLU:HG2	51:v:784:VAL:HG13	1.96	0.47
53:9:67:C:C6	57:GG:162:LEU:HD23	2.49	0.47
53:9:470:G:H2'	53:9:471:G:C8	2.50	0.47
53:9:1259:A:H62	53:9:1518:C:H3'	1.80	0.47
62:LL:10:TYR:HE2	62:LL:18:GLN:HE22	1.63	0.47
74:XX:59:ALA:HB3	74:XX:64:SER:HA	1.96	0.47
26:AA:140:VAL:O	26:AA:142:LEU:HD23	2.15	0.47
26:AA:185:MET:O	72:VV:46:PHE:N	2.48	0.47
29:5:18:C:H2'	29:5:19:G:H8	1.79	0.47
29:5:212:A:H2'	29:5:213:G:H8	1.80	0.47
29:5:262:G:N3	29:5:263:G:C8	2.83	0.47
29:5:424:U:H2'	29:5:425:U:C6	2.49	0.47
29:5:2095:G:H4'	29:5:2096:U:O5'	2.15	0.47
29:5:3774:U:H2'	29:5:3775:C:H6	1.79	0.47
31:8:64:U:C2	31:8:65:A:C8	3.02	0.47
41:j:37:CYS:HA	41:j:45:ARG:HB3	1.96	0.47
53:9:1382:A:H2'	53:9:1383:A:H8	1.80	0.47
53:9:1505:U:H5''	53:9:1506:A:H5'	1.96	0.47
59:II:48:VAL:HG21	59:II:54:LYS:HG3	1.97	0.47
64:NN:45:LEU:HG	64:NN:49:GLN:HG3	1.95	0.47
83:gg:86:THR:HG22	83:gg:102:VAL:HG23	1.97	0.47
1:A:24:LYS:HG3	1:A:49:ILE:HG21	1.97	0.47
16:Q:173:LYS:NZ	29:5:87:A:OP2	2.48	0.47
24:Y:50:ARG:HG2	24:Y:51:LYS:H	1.79	0.47
27:BB:147:ASN:OD1	27:BB:148:ASN:N	2.48	0.47
29:5:1209:G:H2'	29:5:1210:C:H6	1.80	0.47
29:5:1304:C:H2'	29:5:1305:G:C8	2.50	0.47
29:5:3690:G:H2'	29:5:3691:C:C6	2.50	0.47
29:5:4544:G:H2'	29:5:4545:U:C6	2.50	0.47
29:5:4663:U:O2'	29:5:4665:G:OP2	2.33	0.47
36:e:43:ASN:OD1	36:e:46:ARG:N	2.42	0.47
53:9:96:C:H2'	53:9:97:U:C6	2.50	0.47
53:9:409:C:H2'	53:9:410:G:C8	2.50	0.47
53:9:433:A:H2'	53:9:434:G:C8	2.49	0.47
53:9:1222:G:H2'	53:9:1223:A:C8	2.49	0.47
53:9:1844:U:N3	53:9:1845:A:N7	2.63	0.47
61:KK:76:ILE:HG22	61:KK:80:ARG:HH12	1.80	0.47
81:ee:85:VAL:HA	81:ee:88:GLN:HG2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:254:ILE:HB	29:5:3904:G:H5'	1.97	0.46
18:S:115:ALA:O	18:S:118:ARG:NH1	2.48	0.46
26:AA:188:THR:HG22	26:AA:189:ILE:HG13	1.96	0.46
27:BB:29:ASP:N	27:BB:49:VAL:O	2.47	0.46
27:BB:57:ILE:HG23	27:BB:60:ASP:HB2	1.98	0.46
29:5:247:G:H2'	29:5:248:C:H6	1.79	0.46
29:5:760:G:H2'	29:5:761:G:O4'	2.16	0.46
29:5:2314:A:H61	29:5:2336:G:H1'	1.80	0.46
29:5:2553:G:N2	29:5:2779:OMG:H1'	2.30	0.46
29:5:2749:A:H2'	29:5:2750:A:C8	2.50	0.46
29:5:3889:U:H2'	29:5:3890:U:C6	2.49	0.46
29:5:4238:U:C2	46:o:5:PRO:HD3	2.50	0.46
29:5:4369:A:H5''	46:o:36:GLN:HB2	1.96	0.46
31:8:106:G:H4'	31:8:137:A:H5'	1.97	0.46
38:g:60:ARG:HB2	38:g:63:VAL:HG23	1.97	0.46
53:9:928:G:H2'	53:9:929:G:H8	1.80	0.46
53:9:1688:C:H2'	53:9:1689:C:C6	2.49	0.46
53:9:1712:A:H2'	53:9:1713:C:C6	2.50	0.46
55:EE:212:ASP:OD1	55:EE:216:ASN:N	2.48	0.46
55:EE:222:LEU:HA	55:EE:225:ILE:HD12	1.96	0.46
60:JJ:93:LYS:HB3	60:JJ:96:TYR:CD2	2.49	0.46
69:SS:60:THR:OG1	69:SS:62:ASP:OD1	2.28	0.46
12:M:72:TYR:CZ	29:5:920:G:H5'	2.50	0.46
24:Y:117:LYS:HZ3	24:Y:121:ARG:HH22	1.64	0.46
25:Z:76:ASN:OD1	25:Z:77:TYR:N	2.48	0.46
25:Z:111:ARG:NH1	29:5:2583:C:OP1	2.48	0.46
29:5:1669:C:H2'	29:5:1670:U:H6	1.80	0.46
29:5:1882:U:H2'	29:5:1883:G:C8	2.50	0.46
29:5:2749:A:H2'	29:5:2750:A:H8	1.79	0.46
29:5:3605:A:H2'	29:5:3606:G:H8	1.79	0.46
29:5:4279:A:H2'	29:5:4280:A:C8	2.50	0.46
50:t:134:GLY:HA2	50:t:137:GLN:NE2	2.30	0.46
51:v:144:ARG:HG2	51:v:192:TYR:CD2	2.50	0.46
51:v:834:VAL:O	51:v:837:GLU:HG2	2.15	0.46
53:9:189:U:OP1	59:II:152:ARG:NH2	2.32	0.46
53:9:381:C:H41	59:II:27:TYR:HB2	1.80	0.46
53:9:1088:U:H4'	53:9:1089:G:OP2	2.14	0.46
54:DD:162:ASP:OD1	54:DD:162:ASP:N	2.43	0.46
56:FF:103:LEU:HD11	76:ZZ:67:LEU:HD13	1.97	0.46
82:ff:133:ALA:O	82:ff:139:HIS:ND1	2.33	0.46
83:gg:11:LEU:HB2	83:gg:307:VAL:HB	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:gg:302:TYR:HE2	83:gg:308:ARG:HE	1.63	0.46
6:F:89:ALA:HB2	6:F:124:LEU:HD21	1.96	0.46
13:N:15:GLN:O	13:N:20:ARG:NH1	2.48	0.46
25:Z:89:ILE:HG12	25:Z:91:LEU:HG	1.97	0.46
29:5:86:U:H2'	29:5:87:A:C8	2.49	0.46
29:5:136:C:H41	39:h:79:LYS:HE3	1.80	0.46
29:5:460:C:H2'	29:5:461:G:H8	1.81	0.46
29:5:505:G:H2'	29:5:506:G:C8	2.51	0.46
29:5:911:G:H2'	29:5:912:G:H8	1.80	0.46
29:5:1693:U:H2'	29:5:1694:G:C8	2.50	0.46
29:5:1733:U:H2'	29:5:1734:U:C6	2.50	0.46
29:5:1948:A:H4'	30:7:88:A:C6	2.51	0.46
29:5:2740:U:H2'	29:5:2741:G:H8	1.79	0.46
29:5:4728:G:OP2	29:5:4728:G:N2	2.36	0.46
31:8:66:A:H2'	31:8:67:U:H6	1.81	0.46
43:l:33:ASN:HD22	43:l:34:LYS:N	2.14	0.46
50:t:32:ILE:HB	50:t:39:PRO:HB3	1.97	0.46
53:9:146:G:O2'	53:9:147:A:O5'	2.29	0.46
53:9:1386:A:OP1	53:9:1483:A:O2'	2.28	0.46
53:9:1617:G:N1	53:9:1620:A:OP2	2.46	0.46
53:9:1711:U:H2'	53:9:1712:A:H8	1.80	0.46
55:EE:124:CYS:HA	55:EE:142:HIS:HE1	1.80	0.46
56:FF:40:ALA:HB1	56:FF:45:TYR:CG	2.50	0.46
57:GG:137:ARG:HD3	57:GG:178:ARG:HH21	1.81	0.46
1:A:158:ILE:HG23	1:A:162:ASN:HD21	1.80	0.46
12:M:112:VAL:HG11	14:O:201:LEU:HD12	1.98	0.46
14:O:60:LYS:HD3	29:5:2052:G:C2	2.50	0.46
16:Q:144:LYS:HG2	29:5:1466:C:H5''	1.97	0.46
29:5:2640:C:C2	29:5:2641:U:C5	3.03	0.46
29:5:2657:C:O2'	29:5:2659:C:OP1	2.34	0.46
50:t:53:TRP:H	50:t:53:TRP:CD1	2.32	0.46
51:v:21:ASN:OD1	51:v:21:ASN:N	2.46	0.46
51:v:853:ASN:OD1	51:v:854:PHE:N	2.48	0.46
53:9:1703:C:H2'	53:9:1704:C:O4'	2.15	0.46
62:LL:57:ASP:HB3	62:LL:60:CYS:HB2	1.97	0.46
66:PP:34:MET:HE2	66:PP:45:LEU:HB3	1.97	0.46
83:gg:85:GLY:HA2	83:gg:108:VAL:HG23	1.96	0.46
1:A:3:ARG:H	1:A:207:VAL:HG12	1.80	0.46
2:B:82:PRO:HB3	2:B:328:ASN:ND2	2.30	0.46
11:L:207:VAL:HA	11:L:210:LYS:HE3	1.97	0.46
17:R:15:LEU:HD23	17:R:52:ARG:HB3	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:W:80:ARG:NH1	53:9:167:G:O2'	2.48	0.46
29:5:89:C:OP1	32:a:59:ARG:NH1	2.49	0.46
29:5:423:G:H2'	29:5:424:U:H6	1.81	0.46
29:5:491:C:H2'	29:5:492:G:C8	2.50	0.46
29:5:1547:C:H1'	29:5:2454:G:H21	1.79	0.46
29:5:1996:A:H3'	29:5:1997:A:H5''	1.97	0.46
29:5:4141:G:H2'	29:5:4142:G:C8	2.50	0.46
29:5:4184:A:H2'	29:5:4185:G:H8	1.80	0.46
29:5:4249:C:OP2	29:5:4270:G:N1	2.45	0.46
51:v:119:LEU:HA	51:v:122:THR:HG22	1.98	0.46
51:v:814:PHE:HZ	51:v:817:TRP:CE2	2.34	0.46
53:9:346:C:O2'	55:EE:30:ARG:NH2	2.49	0.46
53:9:438:G:H8	53:9:1800:A:H4'	1.81	0.46
53:9:528:A:H2'	53:9:529:A:H8	1.79	0.46
53:9:535:G:C2	53:9:536:A:C8	3.03	0.46
53:9:969:U:O2	53:9:971:G:N1	2.49	0.46
53:9:1240:A:N7	66:PP:100:LYS:HB2	2.31	0.46
53:9:1252:C:N4	67:QQ:144:SER:OG	2.48	0.46
53:9:1405:A:H2'	53:9:1406:G:O4'	2.14	0.46
53:9:1806:A:H2'	53:9:1807:C:C6	2.50	0.46
54:DD:142:LEU:HD23	54:DD:142:LEU:H	1.81	0.46
55:EE:138:HIS:CD2	55:EE:148:ARG:HB3	2.51	0.46
56:FF:128:ILE:HG22	79:cc:66:ARG:HH21	1.78	0.46
74:XX:90:CYS:HA	74:XX:93:PHE:HD2	1.81	0.46
76:ZZ:73:VAL:HG13	76:ZZ:77:LEU:HD12	1.98	0.46
7:G:199:LEU:HD13	7:G:205:ALA:HB2	1.96	0.46
8:H:75:SER:HA	8:H:78:GLN:HG2	1.97	0.46
26:AA:70:ASN:HD21	26:AA:72:ALA:HB3	1.80	0.46
29:5:275:C:H4'	29:5:276:C:OP1	2.16	0.46
29:5:679:C:H2'	29:5:680:C:H6	1.81	0.46
29:5:912:G:H2'	29:5:913:U:H6	1.80	0.46
29:5:989:U:H2'	29:5:990:C:C6	2.50	0.46
29:5:1540:A2M:HM'1	41:j:11:ARG:CZ	2.45	0.46
29:5:1738:C:H2'	29:5:1739:G:C8	2.49	0.46
29:5:1792:A:H2'	29:5:1795:C:C5	2.50	0.46
29:5:2480:G:H22	29:5:2508:A:H2'	1.81	0.46
29:5:2527:G:H4'	38:g:26:PRO:HD2	1.96	0.46
29:5:2645:U:H2'	29:5:2700:G:N1	2.30	0.46
29:5:3740:U:H2'	29:5:3741:G:O4'	2.16	0.46
36:e:7:LEU:HB2	36:e:93:LYS:HB3	1.95	0.46
48:r:96:MET:O	48:r:100:ASN:ND2	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:v:200:MET:HE3	51:v:203:ILE:HG21	1.96	0.46
53:9:1566:G:O6	70:TT:101:ARG:NH1	2.37	0.46
53:9:1757:G:O6	53:9:1775:U:O2	2.33	0.46
62:LL:111:VAL:HG11	62:LL:128:VAL:HG11	1.97	0.46
77:aa:25:ASN:OD1	77:aa:26:CYS:N	2.48	0.46
83:gg:150:TRP:HB2	83:gg:170:TRP:CD1	2.50	0.46
4:D:15:ARG:HH11	29:5:1749:A:H1'	1.80	0.46
12:M:39:ASP:HB2	12:M:47:ARG:HD3	1.98	0.46
13:N:47:LYS:HE3	29:5:280:G:OP1	2.16	0.46
14:O:37:ARG:NH1	14:O:108:ILE:HD11	2.30	0.46
26:AA:42:LYS:HE3	26:AA:48:ILE:HG12	1.97	0.46
27:BB:144:LYS:HD3	27:BB:208:HIS:HB3	1.98	0.46
29:5:297:U:C2	29:5:298:G:C8	3.03	0.46
29:5:1344:G:OP2	29:5:1344:G:N2	2.34	0.46
29:5:1447:C:H2'	29:5:1448:C:C6	2.51	0.46
29:5:2545:C:H2'	29:5:2546:C:C6	2.50	0.46
29:5:3854:U:H2'	29:5:3855:A:H8	1.80	0.46
29:5:3867:A:H2'	29:5:3868:A:C8	2.49	0.46
29:5:4460:G:O2'	29:5:4506:PSU:O2'	2.30	0.46
31:8:120:G:C2	31:8:121:G:C8	3.03	0.46
34:c:53:PRO:HD2	34:c:56:ARG:HD2	1.97	0.46
49:s:77:LYS:HZ1	49:s:196:GLY:HA2	1.81	0.46
53:9:122:G:OP1	55:EE:75:LYS:NZ	2.39	0.46
53:9:605:A:H4'	81:ee:128:PRO:HD2	1.98	0.46
53:9:1036:A:H4'	53:9:1855:G:H21	1.81	0.46
58:HH:53:VAL:HG22	58:HH:54:GLY:H	1.79	0.46
59:II:174:CYS:HB2	59:II:190:LEU:HD21	1.98	0.46
64:NN:31:ASP:OD1	64:NN:31:ASP:N	2.49	0.46
68:RR:33:ARG:HG3	83:gg:125:ARG:NH1	2.31	0.46
75:YY:104:ARG:HA	75:YY:107:ARG:HE	1.80	0.46
3:C:140:LYS:NZ	29:5:2303:E7G:O3'	2.49	0.46
3:C:330:PRO:HB3	6:F:46:ARG:HH21	1.81	0.46
4:D:15:ARG:NH1	29:5:1749:A:H1'	2.31	0.46
13:N:5:LYS:HD3	13:N:8:GLN:HE21	1.81	0.46
13:N:85:VAL:HG23	29:5:43:U:OP1	2.15	0.46
21:V:89:ARG:HB2	21:V:95:PHE:CE2	2.50	0.46
24:Y:103:LYS:HE2	29:5:231:U:H2'	1.98	0.46
26:AA:149:ASN:OD1	26:AA:150:THR:N	2.37	0.46
29:5:656:C:H2'	29:5:657:C:H6	1.80	0.46
29:5:1322:OMG:HM23	29:5:1322:OMG:H1'	1.65	0.46
29:5:1478:C:H2'	29:5:1479:U:H6	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:1745:G:H1'	29:5:1748:A:H62	1.81	0.46
29:5:2086:U:H2'	29:5:2087:C:C6	2.51	0.46
29:5:3703:U:H4'	29:5:3704:G:OP2	2.15	0.46
29:5:3873:A2M:H2'	29:5:3874:G:C8	2.51	0.46
29:5:3939:G:H2'	29:5:3940:G:H8	1.81	0.46
29:5:4310:A:C2	32:a:43:ILE:HG23	2.51	0.46
29:5:4606:G:O2'	29:5:4615:G:O6	2.30	0.46
48:r:91:SER:O	48:r:95:HIS:ND1	2.46	0.46
51:v:159:LYS:HD3	86:v:902:GDP:C6	2.51	0.46
51:v:538:ILE:HD11	51:v:542:GLY:HA2	1.97	0.46
53:9:1589:A:H4'	70:TT:82:ARG:HG3	1.98	0.46
53:9:1706:G:O2'	53:9:1850:A:O3'	2.33	0.46
69:SS:22:GLY:HA2	69:SS:56:ALA:HB3	1.97	0.46
70:TT:22:LEU:HB3	70:TT:28:LEU:HD11	1.98	0.46
14:O:54:TYR:CD1	14:O:145:VAL:HG21	2.51	0.46
16:Q:81:VAL:HG22	16:Q:101:CYS:HB3	1.98	0.46
17:R:82:LYS:O	29:5:2869:G:O2'	2.27	0.46
18:S:83:ARG:HB2	18:S:127:MET:HE3	1.98	0.46
27:BB:32:ASP:OD1	27:BB:46:LYS:NZ	2.48	0.46
27:BB:49:VAL:HG21	27:BB:62:LEU:HD22	1.96	0.46
29:5:297:U:H2'	29:5:298:G:H8	1.81	0.46
29:5:1456:C:O2'	29:5:2110:A:H1'	2.15	0.46
29:5:1511:C:H2'	29:5:1512:G:H8	1.80	0.46
29:5:1867:U:O4	29:5:1880:A:N6	2.48	0.46
29:5:3909:A:H2'	29:5:3910:G:H8	1.78	0.46
29:5:4946:C:H5'	29:5:4947:G:H5''	1.97	0.46
43:l:25:GLN:O	43:l:28:TRP:NE1	2.49	0.46
50:t:32:ILE:HA	50:t:35:LEU:HD21	1.98	0.46
53:9:874:G:N3	58:HH:114:GLN:NE2	2.51	0.46
53:9:1292:C:H42	82:ff:138:ARG:HH22	1.62	0.46
53:9:1478:U:H2'	53:9:1479:G:C8	2.50	0.46
64:NN:46:THR:HG22	64:NN:49:GLN:HG2	1.98	0.46
69:SS:39:ARG:HG3	69:SS:83:PHE:CZ	2.51	0.46
74:XX:105:PHE:HB3	74:XX:112:VAL:HG21	1.98	0.46
3:C:150:LEU:O	3:C:152:LEU:N	2.49	0.46
3:C:278:ASN:OD1	3:C:279:LEU:N	2.49	0.46
6:F:56:TYR:HD2	6:F:187:GLU:HG3	1.80	0.46
13:N:64:ILE:HD11	13:N:66:VAL:HG23	1.98	0.46
19:T:100:LYS:HB2	29:5:1736:U:H4'	1.98	0.46
21:V:87:SER:HA	21:V:97:TYR:HB3	1.98	0.46
29:5:269:G:H2'	29:5:270:U:H6	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:1176:G:H2'	29:5:1177:G:H8	1.81	0.46
29:5:1461:G:O2'	29:5:1462:JMH:OP1	2.27	0.46
29:5:1607:A:OP1	41:j:5:THR:OG1	2.24	0.46
29:5:1984:C:C2	29:5:1985:A:H1'	2.51	0.46
29:5:3631:G:O2'	29:5:3632:G:OP1	2.33	0.46
29:5:3670:G:H2'	29:5:3671:G:C8	2.50	0.46
29:5:4290:C:H2'	29:5:4291:U:C6	2.51	0.46
29:5:4530:G:H2'	29:5:4531:C:C6	2.51	0.46
29:5:4902:G:N2	29:5:4933:G:O6	2.47	0.46
31:8:109:C:O2'	41:j:20:ARG:NH2	2.46	0.46
50:t:19:GLY:HA2	50:t:58:ILE:HD13	1.98	0.46
53:9:1367:U:O2'	53:9:1466:G:O2'	2.29	0.46
1:A:103:PRO:HA	1:A:163:ARG:HA	1.98	0.45
8:H:26:ILE:HG22	8:H:35:ARG:HB3	1.98	0.45
9:I:207:ASP:HA	9:I:210:ARG:HG2	1.97	0.45
20:U:105:ASN:OD1	20:U:109:SER:OG	2.19	0.45
29:5:255:C:C2	29:5:256:G:N7	2.84	0.45
29:5:496:C:H2'	29:5:497:G:C8	2.50	0.45
29:5:1078:C:C2	29:5:1079:G:C8	3.04	0.45
29:5:1456:C:H2'	29:5:1457:G:C8	2.51	0.45
29:5:2817:G:N1	29:5:2820:C:OP2	2.31	0.45
29:5:4766:G:H2'	29:5:4767:G:O4'	2.16	0.45
29:5:4992:G:H2'	29:5:4993:C:C6	2.52	0.45
42:k:2:PRO:O	42:k:3:ARG:NH1	2.43	0.45
51:v:174:LEU:HD23	51:v:294:LEU:HD13	1.98	0.45
53:9:15:U:H2'	53:9:16:G:O4'	2.15	0.45
53:9:1450:G:H2'	53:9:1451:G:O4'	2.16	0.45
53:9:1512:C:H2'	53:9:1513:C:H6	1.81	0.45
53:9:1862:G:O2'	77:aa:5:ARG:NH2	2.49	0.45
64:NN:29:THR:HG23	64:NN:32:ASP:HB2	1.98	0.45
66:PP:18:ARG:HE	69:SS:88:LYS:HG2	1.81	0.45
68:RR:15:VAL:HA	68:RR:18:GLU:HG2	1.98	0.45
82:ff:83:LYS:NZ	82:ff:84:SER:OG	2.45	0.45
4:D:157:ASN:HB3	4:D:160:PHE:HD2	1.81	0.45
5:E:75:TYR:OH	29:5:989:U:OP1	2.27	0.45
13:N:192:TRP:CH2	29:5:49:U:H5'	2.51	0.45
18:S:11:LYS:HD3	18:S:63:TYR:HE2	1.80	0.45
27:BB:129:THR:OG1	27:BB:131:ASP:OD1	2.23	0.45
29:5:131:C:N4	29:5:132:G:O6	2.50	0.45
29:5:381:U:H2'	29:5:382:G:O4'	2.16	0.45
29:5:1310:C:H2'	29:5:1311:C:C6	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:1926:C:H3'	29:5:1927:C:H5''	1.96	0.45
29:5:2593:A:O2'	29:5:2594:C:O4'	2.34	0.45
29:5:3708:A:C6	29:5:3780:A:N1	2.84	0.45
29:5:4544:G:H2'	29:5:4545:U:H6	1.81	0.45
29:5:4557:U:H2'	29:5:4558:U:C6	2.51	0.45
29:5:4641:A:H8	29:5:5054:A:H61	1.65	0.45
47:p:37:TYR:HD2	47:p:71:TYR:HB2	1.80	0.45
53:9:1092:G:C2	53:9:1093:A:N7	2.85	0.45
53:9:1291:A:OP1	80:dd:2:GLY:N	2.49	0.45
53:9:1310:U:H4'	82:ff:143:LYS:HD3	1.98	0.45
69:SS:121:ARG:O	69:SS:125:HIS:ND1	2.31	0.45
1:A:140:ASN:ND2	1:A:142:GLU:O	2.49	0.45
3:C:85:HIS:O	3:C:89:GLN:NE2	2.50	0.45
6:F:211:LYS:HB3	29:5:2079:C:H5''	1.98	0.45
22:W:16:GLY:O	29:5:4634:PSU:O2'	2.34	0.45
23:X:139:ARG:NH1	29:5:2539:C:OP1	2.48	0.45
29:5:113:A:C5	29:5:114:G:C8	3.04	0.45
29:5:4530:G:H2'	29:5:4531:C:H6	1.81	0.45
34:c:53:PRO:HB2	34:c:56:ARG:HG2	1.97	0.45
50:t:90:ARG:HH22	50:t:98:ILE:HD13	1.81	0.45
53:9:696:G:H2'	53:9:697:G:C8	2.51	0.45
53:9:807:G:H2'	53:9:808:A:H8	1.81	0.45
53:9:1672:U:OP1	67:QQ:18:THR:OG1	2.30	0.45
53:9:1716:C:H2'	53:9:1717:C:H6	1.81	0.45
54:DD:96:LEU:HD23	54:DD:190:LEU:HD12	1.98	0.45
69:SS:15:VAL:O	69:SS:18:THR:OG1	2.29	0.45
70:TT:6:VAL:HG22	70:TT:11:GLN:HE22	1.81	0.45
83:gg:217:MET:HG2	83:gg:229:THR:HG22	1.98	0.45
4:D:56:THR:OG1	4:D:59:ASP:O	2.35	0.45
4:D:211:LEU:HB3	4:D:219:TYR:HB2	1.97	0.45
15:P:7:ASP:OD1	15:P:7:ASP:N	2.50	0.45
21:V:34:ALA:HB2	21:V:72:LEU:HD23	1.99	0.45
29:5:247:G:H2'	29:5:248:C:C6	2.51	0.45
29:5:347:A:H2'	29:5:348:G:C8	2.52	0.45
29:5:429:A:H2'	29:5:430:G:C8	2.51	0.45
29:5:1834:C:H2'	29:5:1835:G:H8	1.81	0.45
29:5:4753:C:N4	29:5:4960:G:O6	2.50	0.45
51:v:176:GLN:O	51:v:180:ARG:HG2	2.15	0.45
53:9:118:C:H1'	53:9:445:A:C5	2.51	0.45
53:9:118:C:H2'	53:9:119:U:O4'	2.16	0.45
53:9:349:A:H2'	53:9:350:C:C6	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:388:U:H2'	53:9:389:A:C8	2.51	0.45
53:9:1652:G:N2	53:9:1672:U:O2	2.40	0.45
53:9:1678:A2M:H2'	53:9:1679:A:C2	2.51	0.45
53:9:1809:A:H2'	53:9:1810:U:H6	1.80	0.45
59:II:103:LEU:HD13	59:II:170:LYS:HD2	1.98	0.45
64:NN:86:GLU:CD	64:NN:86:GLU:H	2.24	0.45
69:SS:26:ILE:HG21	69:SS:59:LEU:HD21	1.98	0.45
76:ZZ:54:THR:HA	76:ZZ:57:LYS:HG2	1.99	0.45
79:cc:44:ARG:NH2	79:cc:63:ARG:O	2.49	0.45
2:B:88:GLY:O	2:B:163:LEU:N	2.40	0.45
4:D:178:LYS:HE2	4:D:179:ARG:HH12	1.81	0.45
4:D:279:ARG:NH1	30:7:61:G:O2'	2.40	0.45
5:E:287:HIS:CD2	5:E:288:LYS:HG2	2.51	0.45
6:F:102:PRO:HD3	29:5:1882:U:O3'	2.16	0.45
13:N:83:LYS:NZ	29:5:45:U:O4	2.39	0.45
13:N:204:ARG:NH1	29:5:1347:U:O3'	2.49	0.45
17:R:42:ARG:HA	17:R:45:ILE:HD12	1.98	0.45
23:X:86:ALA:O	23:X:90:ILE:HG23	2.16	0.45
24:Y:80:ILE:HD11	24:Y:104:VAL:HG21	1.99	0.45
29:5:732:G:C6	29:5:936:A:C4	3.04	0.45
29:5:909:C:H2'	29:5:910:G:C8	2.50	0.45
29:5:2270:C:H2'	29:5:2271:G:O4'	2.16	0.45
29:5:2351:G:OP2	32:a:12:ARG:NH1	2.49	0.45
31:8:109:C:H2'	41:j:20:ARG:HH12	1.82	0.45
52:w:196:HIS:NE2	53:9:1701:C:O3'	2.37	0.45
53:9:11:A:N1	53:9:1200:A:H2	2.14	0.45
53:9:434:G:H5''	59:II:23:LYS:HE2	1.98	0.45
53:9:644:G:H2'	53:9:645:C:C6	2.51	0.45
53:9:1285:G:H4'	63:MM:35:ILE:HD11	1.97	0.45
53:9:1617:G:O6	66:PP:43:ARG:NH1	2.49	0.45
71:UU:21:ARG:HE	71:UU:88:LEU:HD13	1.81	0.45
71:UU:26:SER:HB2	71:UU:110:VAL:HG22	1.97	0.45
10:J:20:LEU:HD22	10:J:83:LEU:HB2	1.97	0.45
14:O:8:VAL:HG12	14:O:117:ARG:HG3	1.98	0.45
17:R:136:ARG:HA	17:R:139:MET:HG2	1.99	0.45
18:S:82:LEU:HD11	18:S:109:CYS:SG	2.57	0.45
19:T:116:LYS:O	19:T:120:LYS:HB2	2.17	0.45
20:U:100:LEU:HD22	20:U:112:LEU:HB3	1.99	0.45
24:Y:100:HIS:CD2	29:5:231:U:H4'	2.52	0.45
29:5:1252:G:O6	33:b:111:ARG:NH2	2.43	0.45
29:5:2084:C:H2'	29:5:2085:G:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:2370:OMG:HM23	29:5:2370:OMG:H1'	1.76	0.45
29:5:3895:G:N7	29:5:4726:C:H2'	2.32	0.45
36:e:100:ALA:HB3	36:e:103:VAL:HG23	1.97	0.45
51:v:42:LYS:HD3	51:v:43:ALA:HB2	1.99	0.45
51:v:180:ARG:HD3	51:v:180:ARG:HA	1.82	0.45
53:9:502:C:H4'	55:EE:62:LYS:HD3	1.98	0.45
53:9:1130:G:O2'	53:9:1131:G:H8	1.99	0.45
53:9:1137:U:O2'	53:9:1139:C:OP2	2.34	0.45
53:9:1515:G:H2'	53:9:1516:G:C8	2.51	0.45
53:9:1794:C:C2	53:9:1795:G:C8	3.05	0.45
53:9:1845:A:H2'	53:9:1846:G:C8	2.52	0.45
63:MM:79:VAL:HG11	63:MM:85:LEU:HD12	1.99	0.45
69:SS:14:ARG:HE	69:SS:17:ASN:HA	1.81	0.45
1:A:187:HIS:HB3	29:5:2746:U:O4'	2.16	0.45
8:H:90:TYR:HE2	8:H:155:SER:HB3	1.82	0.45
9:I:63:GLU:CD	9:I:63:GLU:H	2.23	0.45
11:L:74:ARG:N	29:5:75:G:OP1	2.50	0.45
14:O:168:TYR:CE2	14:O:172:LYS:HD2	2.51	0.45
14:O:180:GLN:OE1	14:O:183:LYS:NZ	2.50	0.45
27:BB:76:ASN:OD1	27:BB:77:ASP:N	2.49	0.45
29:5:153:G:H2'	29:5:154:G:H8	1.80	0.45
29:5:268:G:H2'	29:5:269:G:H8	1.81	0.45
29:5:759:G:O2'	29:5:760:G:H5'	2.16	0.45
29:5:2336:G:H2'	29:5:2337:G:C4	2.52	0.45
29:5:2380:A:H2'	29:5:2381:A:C8	2.51	0.45
29:5:3723:A:OP2	29:5:3741:G:N2	2.32	0.45
29:5:3874:G:H22	29:5:3906:G:H1'	1.81	0.45
31:8:60:G:O6	39:h:62:ASN:ND2	2.34	0.45
39:h:8:ASP:OD1	39:h:8:ASP:N	2.29	0.45
51:v:140:GLU:O	51:v:144:ARG:HG3	2.17	0.45
51:v:504:VAL:HG21	51:v:810:PRO:HG2	1.98	0.45
51:v:706:ASP:N	51:v:706:ASP:OD1	2.49	0.45
53:9:70:G:OP2	57:GG:167:LYS:HD3	2.17	0.45
53:9:164:A:H2'	53:9:165:G:N3	2.32	0.45
53:9:582:U:OP1	60:JJ:162:ARG:NH1	2.50	0.45
53:9:1660:C:OP1	80:dd:16:GLN:NE2	2.49	0.45
53:9:1788:A:H2'	53:9:1789:G:O4'	2.16	0.45
53:9:1839:U:H2'	53:9:1840:U:C6	2.52	0.45
58:HH:172:THR:O	58:HH:176:VAL:HG12	2.17	0.45
64:NN:130:LYS:NZ	64:NN:139:TRP:O	2.35	0.45
78:bb:67:THR:OG1	78:bb:70:LYS:O	2.35	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:gg:11:LEU:HB3	83:gg:43:TRP:CH2	2.51	0.45
1:A:245:ARG:NH1	29:5:3663:U:OP1	2.50	0.45
2:B:177:LYS:N	29:5:4992:G:OP1	2.50	0.45
2:B:245:HIS:H	29:5:4531:C:H4'	1.80	0.45
16:Q:178:ARG:H	32:a:51:GLY:HA2	1.80	0.45
29:5:163:A:H2'	29:5:164:G:C8	2.51	0.45
29:5:956:G:H2'	29:5:957:G:C8	2.49	0.45
29:5:1332:A2M:HM'3	29:5:1332:A2M:H1'	1.74	0.45
29:5:1885:C:O2'	29:5:1897:A:N3	2.47	0.45
29:5:1985:A:H5'	29:5:1986:U:OP2	2.17	0.45
29:5:2903:G:H2'	29:5:2904:G:C8	2.51	0.45
29:5:3631:G:HO2'	29:5:3632:G:P	2.40	0.45
30:7:23:A:H2'	30:7:24:C:C6	2.52	0.45
31:8:32:C:H2'	31:8:33:G:O4'	2.17	0.45
36:e:79:VAL:N	36:e:98:GLU:O	2.45	0.45
53:9:126:G:H2'	57:GG:199:THR:HG21	1.97	0.45
53:9:951:C:O2'	65:OO:50:LYS:NZ	2.33	0.45
53:9:1103:C:H2'	53:9:1104:G:H8	1.76	0.45
53:9:1261:C:HO2'	80:dd:10:HIS:CE1	2.32	0.45
53:9:1380:C:H2'	53:9:1381:G:C8	2.52	0.45
56:FF:69:VAL:O	56:FF:73:THR:OG1	2.33	0.45
70:TT:116:ASP:HB3	70:TT:122:LYS:HE2	1.99	0.45
2:B:10:ARG:NE	2:B:11:HIS:O	2.45	0.45
2:B:351:LEU:HD12	2:B:351:LEU:H	1.82	0.45
4:D:230:ASN:O	4:D:230:ASN:ND2	2.50	0.45
9:I:38:ARG:HD3	9:I:41:ALA:HB2	1.99	0.45
10:J:43:LEU:HD11	10:J:115:LEU:HD12	1.97	0.45
29:5:251:C:H2'	29:5:252:C:C6	2.52	0.45
29:5:318:A:H2'	29:5:319:A:C8	2.52	0.45
29:5:424:U:H2'	29:5:425:U:H6	1.80	0.45
29:5:983:G:H2'	29:5:984:C:O4'	2.17	0.45
29:5:1100:G:H2'	29:5:1101:A:H8	1.82	0.45
29:5:1183:U:H2'	29:5:1184:G:H8	1.82	0.45
29:5:1210:C:H2'	29:5:1211:G:H8	1.82	0.45
29:5:1668:C:H2'	29:5:1669:C:C6	2.52	0.45
29:5:1745:G:H2'	29:5:1746:C:C6	2.51	0.45
29:5:2638:U:H2'	29:5:2639:U:C6	2.52	0.45
29:5:4543:C:N4	29:5:4544:G:O6	2.50	0.45
29:5:4767:G:H2'	29:5:4768:A:C8	2.50	0.45
31:8:96:C:H2'	31:8:97:A:C8	2.51	0.45
42:k:33:LYS:HG2	42:k:46:VAL:HG22	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:375:U:H2'	53:9:376:A:C8	2.52	0.45
53:9:1265:A:O2'	53:9:1327:G:OP2	2.22	0.45
53:9:1447:G:OP1	71:UU:85:HIS:ND1	2.50	0.45
55:EE:185:GLY:N	55:EE:189:LEU:HD13	2.31	0.45
2:B:224:LYS:NZ	29:5:4632:A:OP2	2.44	0.45
8:H:150:ASP:OD1	8:H:150:ASP:N	2.47	0.45
11:L:72:ALA:HA	11:L:157:ILE:HD12	1.98	0.45
12:M:24:LEU:HD11	12:M:86:TRP:CG	2.52	0.45
14:O:168:TYR:OH	29:5:4774:G:OP1	2.29	0.45
15:P:8:PRO:HD3	15:P:178:ILE:HD13	1.99	0.45
15:P:149:ASN:HB3	31:8:13:G:H1'	1.98	0.45
29:5:175:C:H3'	29:5:176:G:C8	2.52	0.45
29:5:429:A:H2'	29:5:430:G:H8	1.82	0.45
29:5:1500:U:H2'	29:5:1501:G:C8	2.52	0.45
29:5:1831:A:H2'	29:5:1832:G:H8	1.82	0.45
29:5:1935:A:H2'	29:5:1935:A:N3	2.32	0.45
29:5:2268:G:OP2	48:r:107:ARG:NH1	2.50	0.45
29:5:2899:U:H2'	29:5:2900:A:C8	2.51	0.45
29:5:4076:U:H2'	29:5:4077:U:C6	2.51	0.45
29:5:4272:G:H2'	29:5:4272:G:N3	2.32	0.45
29:5:4644:U:H2'	29:5:4645:G:N3	2.32	0.45
29:5:5016:U:H2'	29:5:5017:A:H8	1.82	0.45
36:e:90:MET:HG2	48:r:33:LYS:HG2	1.98	0.45
51:v:232:TYR:CE2	51:v:292:LEU:HB3	2.52	0.45
51:v:792:GLU:HG2	51:v:830:ARG:HH22	1.81	0.45
53:9:38:A:H5''	60:JJ:5:ARG:HD3	1.98	0.45
53:9:354:U:OP2	62:LL:107:LYS:NZ	2.49	0.45
53:9:979:C:H2'	53:9:980:A:C8	2.52	0.45
53:9:1254:C:O2'	71:UU:71:GLY:O	2.29	0.45
53:9:1277:C:H2'	53:9:1278:A:C8	2.51	0.45
59:II:132:GLU:HB2	59:II:135:GLU:HB3	1.99	0.45
66:PP:98:ASN:ND2	66:PP:121:ILE:O	2.35	0.45
67:QQ:16:LYS:HA	67:QQ:16:LYS:HD2	1.75	0.45
75:YY:74:MET:N	75:YY:74:MET:SD	2.90	0.45
75:YY:100:LYS:HD2	75:YY:100:LYS:H	1.81	0.45
6:F:170:ASP:OD1	6:F:171:ASN:N	2.50	0.44
24:Y:114:ASP:O	24:Y:117:LYS:HG2	2.16	0.44
26:AA:108:PHE:HD2	26:AA:136:GLU:HB3	1.82	0.44
29:5:38:A:H5''	32:a:35:ALA:HB2	1.99	0.44
29:5:653:G:H2'	29:5:654:C:C6	2.52	0.44
29:5:1498:G:O2'	33:b:41:ARG:NH1	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:1731:U:H2'	29:5:1732:U:C6	2.53	0.44
29:5:2486:G:H2'	29:5:2487:G:H8	1.82	0.44
29:5:3729:A2M:HM'3	29:5:3729:A2M:H1'	1.68	0.44
29:5:3881:G:H2'	29:5:3882:A:H3'	1.98	0.44
29:5:4198:A:H2'	29:5:4199:C:H6	1.82	0.44
29:5:4542:OMC:HM22	29:5:4543:C:O4'	2.17	0.44
29:5:4694:C:H2'	29:5:4695:U:C6	2.51	0.44
49:s:27:CYS:SG	49:s:28:PHE:N	2.90	0.44
51:v:258:LYS:O	51:v:264:ARG:NH1	2.48	0.44
51:v:287:ARG:O	51:v:289:PHE:N	2.50	0.44
53:9:531:A:H3'	53:9:532:C:H5''	1.99	0.44
53:9:643:A:H4'	53:9:644:G:H5'	1.99	0.44
53:9:1093:A:H2'	53:9:1094:C:C6	2.52	0.44
53:9:1615:U:H2'	53:9:1616:U:H6	1.82	0.44
53:9:1702:G:O6	53:9:1836:G:N2	2.50	0.44
83:gg:154:VAL:O	83:gg:155:ARG:NH1	2.46	0.44
3:C:350:ARG:HG2	3:C:353:ARG:HH21	1.82	0.44
6:F:214:SER:OG	29:5:1911:U:O2	2.33	0.44
29:5:470:A:C4	29:5:471:A:C8	3.05	0.44
29:5:478:G:H2'	29:5:479:G:C8	2.52	0.44
29:5:521:U:H2'	29:5:522:C:H6	1.82	0.44
29:5:1882:U:H2'	29:5:1883:G:H8	1.82	0.44
29:5:2279:G:H2'	29:5:2280:C:H6	1.81	0.44
31:8:8:U:H2'	31:8:9:A:H8	1.81	0.44
51:v:602:LEU:HG	51:v:707:VAL:HG12	1.99	0.44
53:9:114:G:N1	53:9:350:C:O2	2.49	0.44
53:9:216:C:C4	53:9:217:A:N7	2.85	0.44
53:9:556:U:H2'	53:9:557:U:C6	2.52	0.44
53:9:730:C:H2'	53:9:731:G:H8	1.81	0.44
53:9:917:U:H2'	53:9:918:U:C6	2.51	0.44
53:9:1520:G:O2'	53:9:1521:C:OP1	2.28	0.44
53:9:1588:A:C2	53:9:1654:G:H1'	2.52	0.44
53:9:1678:A2M:HM'2	53:9:1678:A2M:H1'	1.76	0.44
56:FF:59:LYS:NZ	56:FF:62:ARG:HH21	2.15	0.44
58:HH:62:ILE:HD12	58:HH:94:PHE:HE1	1.82	0.44
63:MM:52:LEU:HD13	63:MM:65:VAL:HG11	1.98	0.44
66:PP:53:GLN:HB3	66:PP:83:MET:HE1	1.99	0.44
73:WW:40:VAL:HG21	73:WW:110:ILE:HG22	2.00	0.44
75:YY:91:LEU:HD22	75:YY:96:LEU:HD11	1.98	0.44
83:gg:120:ILE:HD11	83:gg:132:TRP:HB2	1.98	0.44
1:A:10:LYS:HA	1:A:16:PHE:HD2	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:193:ARG:NH1	29:5:3691:C:OP1	2.46	0.44
2:B:132:LYS:HB2	29:5:4733:A:OP1	2.18	0.44
3:C:103:ALA:HA	29:5:1523:2MG:HN2	1.82	0.44
8:H:120:GLU:HB3	29:5:4617:A:H2	1.82	0.44
12:M:29:ASP:OD1	12:M:30:VAL:N	2.49	0.44
16:Q:49:LYS:O	16:Q:53:MET:HG3	2.18	0.44
20:U:106:THR:OG1	20:U:107:LYS:N	2.51	0.44
25:Z:135:ARG:HH12	29:5:2759:G:H5'	1.81	0.44
29:5:283:G:H1'	40:i:82:ARG:HH12	1.82	0.44
29:5:1861:G:OP1	33:b:4:SER:HB2	2.18	0.44
29:5:2608:G:H2'	29:5:2609:C:C6	2.52	0.44
29:5:3698:A:H62	29:5:3829:G:H21	1.65	0.44
29:5:4458:U:OP2	29:5:4528:G:N1	2.43	0.44
30:7:4:U:H2'	30:7:5:A:C8	2.52	0.44
33:b:109:ARG:HA	33:b:112:ILE:HG22	1.99	0.44
44:m:67:LYS:HB2	44:m:98:LYS:HD2	2.00	0.44
49:s:42:GLN:NE2	49:s:43:ILE:HG13	2.33	0.44
49:s:109:ALA:N	49:s:183:PHE:O	2.50	0.44
53:9:493:A:H1'	53:9:574:A:H5'	2.00	0.44
53:9:841:G:H2'	53:9:842:C:H6	1.82	0.44
53:9:1555:U:H5'	53:9:1556:A:C8	2.52	0.44
62:LL:55:TYR:CE2	62:LL:115:PRO:HG2	2.53	0.44
63:MM:16:THR:O	63:MM:19:GLN:HG3	2.17	0.44
64:NN:4:MET:HG2	64:NN:5:HIS:CD2	2.53	0.44
67:QQ:55:VAL:HA	67:QQ:63:PHE:CE1	2.52	0.44
70:TT:76:THR:HB	70:TT:94:ARG:HB3	1.98	0.44
72:VV:15:ARG:NH1	72:VV:33:GLN:HB2	2.32	0.44
3:C:306:ARG:HD2	29:5:2106:G:H21	1.81	0.44
10:J:13:ARG:O	10:J:136:ARG:NH1	2.50	0.44
11:L:27:ASN:HB3	31:8:29:G:H5''	1.99	0.44
14:O:176:ARG:HD3	29:5:4775:G:H5'	1.99	0.44
20:U:43:LEU:O	20:U:47:ILE:HD13	2.17	0.44
28:CC:207:ALA:HB2	53:9:4:C:H4'	1.98	0.44
29:5:175:C:H3'	29:5:176:G:H8	1.82	0.44
29:5:1313:A:H2'	29:5:1314:C:C6	2.52	0.44
29:5:1991:G:N1	29:5:2009:G:C2	2.86	0.44
29:5:4184:A:H2'	29:5:4185:G:C8	2.53	0.44
29:5:4519:A:H2'	29:5:4520:G:C8	2.53	0.44
29:5:4912:C:H2'	29:5:4913:G:C8	2.52	0.44
30:7:92:C:H2'	30:7:93:G:C8	2.50	0.44
34:c:11:LEU:HD23	34:c:11:LEU:H	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:v:771:PHE:CZ	51:v:785:LYS:HB3	2.52	0.44
53:9:107:A:H2'	53:9:108:G:C8	2.52	0.44
53:9:532:C:HO2'	53:9:533:A:P	2.40	0.44
53:9:1510:G:H2'	53:9:1511:U:H6	1.81	0.44
53:9:1560:U:H2'	53:9:1561:A:H8	1.82	0.44
53:9:1653:U:H2'	53:9:1654:G:C8	2.52	0.44
58:HH:60:ILE:HG13	58:HH:92:VAL:HA	2.00	0.44
64:NN:118:ILE:HG12	64:NN:121:ARG:HH21	1.82	0.44
69:SS:20:ILE:HD11	69:SS:33:ILE:HG13	1.99	0.44
74:XX:91:LEU:HD21	81:ee:79:LEU:HD23	1.99	0.44
76:ZZ:73:VAL:HG12	76:ZZ:79:ILE:HD11	1.99	0.44
81:ee:85:VAL:O	81:ee:89:THR:HG23	2.17	0.44
4:D:259:ARG:HG3	30:7:120:U:H2'	2.00	0.44
6:F:216:ARG:O	6:F:245:ARG:HD2	2.18	0.44
12:M:20:HIS:HB3	12:M:23:LYS:HE2	1.99	0.44
19:T:109:VAL:HA	19:T:112:ASN:ND2	2.32	0.44
29:5:308:G:H8	29:5:310:G:H1'	1.81	0.44
29:5:405:U:N3	29:5:408:A:OP2	2.31	0.44
29:5:521:U:H2'	29:5:522:C:C6	2.53	0.44
29:5:1304:C:H2'	29:5:1305:G:H8	1.82	0.44
29:5:1367:G:H2'	29:5:1368:G:H8	1.82	0.44
29:5:1485:G:H2'	29:5:1486:C:C6	2.53	0.44
29:5:2007:G:C6	29:5:2009:G:N2	2.86	0.44
29:5:2027:G:H4'	49:s:84:GLY:C	2.43	0.44
29:5:2321:G:H2'	29:5:2322:G:O4'	2.17	0.44
29:5:2545:C:H2'	29:5:2546:C:H6	1.83	0.44
29:5:3783:G:H22	29:5:3822:A:P	2.41	0.44
30:7:111:C:H2'	30:7:112:U:O4'	2.17	0.44
31:8:102:G:OP2	31:8:104:A:O2'	2.23	0.44
51:v:815:ASP:OD1	51:v:815:ASP:N	2.50	0.44
53:9:26:U:H2'	53:9:27:A:H8	1.81	0.44
53:9:525:A:O2'	81:ee:104:ARG:NH2	2.40	0.44
53:9:674:C:H2'	53:9:675:U:C6	2.53	0.44
58:HH:143:ARG:HD2	73:WW:53:ILE:HG12	1.99	0.44
60:JJ:162:ARG:NE	75:YY:31:GLY:HA2	2.33	0.44
70:TT:60:THR:HG23	70:TT:75:MET:HE2	1.98	0.44
4:D:43:LYS:HE2	29:5:1823:U:H4'	2.00	0.44
5:E:68:LYS:HE2	29:5:986:C:OP2	2.18	0.44
8:H:79:ASN:HB3	8:H:151:ILE:CD1	2.47	0.44
11:L:61:CYS:SG	29:5:102:G:H5''	2.58	0.44
13:N:96:ARG:NH2	29:5:2466:A:O2'	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:R:93:VAL:HG21	29:5:2731:A:H1'	2.00	0.44
24:Y:55:VAL:HB	24:Y:104:VAL:HG13	2.00	0.44
29:5:261:G:C6	29:5:262:G:C6	3.06	0.44
29:5:695:C:O2'	29:5:696:G:H5'	2.18	0.44
29:5:706:G:H2'	29:5:707:C:H6	1.83	0.44
29:5:1194:C:H2'	29:5:1195:G:C8	2.52	0.44
29:5:1332:A2M:H2'	29:5:1333:C:C6	2.53	0.44
29:5:1956:U:H2'	29:5:1957:G:C8	2.49	0.44
29:5:2269:A:H5''	48:r:108:MET:HE2	1.99	0.44
29:5:2428:OMC:HM23	29:5:2428:OMC:H1'	1.66	0.44
29:5:2554:C:H2'	29:5:2555:G:H8	1.82	0.44
29:5:4931:U:H4'	29:5:4932:C:O5'	2.18	0.44
51:v:13:MET:HB2	51:v:468:ASN:ND2	2.33	0.44
51:v:463:ASP:OD1	51:v:463:ASP:N	2.41	0.44
51:v:698:ARG:HD3	51:v:741:MET:SD	2.58	0.44
53:9:115:U:H2'	53:9:116:U:C6	2.53	0.44
53:9:633:C:H4'	74:XX:134:TYR:HE2	1.82	0.44
53:9:1679:A:H2'	56:FF:60:ARG:HD2	2.00	0.44
53:9:1692:U:H2'	53:9:1693:G:H8	1.83	0.44
53:9:1711:U:H2'	53:9:1712:A:C8	2.53	0.44
57:GG:74:ARG:HA	57:GG:96:SER:HA	2.00	0.44
57:GG:116:LYS:HE2	57:GG:125:THR:HG21	1.98	0.44
3:C:317:ASN:HD22	3:C:320:LYS:HG2	1.83	0.44
11:L:49:ARG:NH2	39:h:117:ARG:O	2.39	0.44
19:T:64:VAL:HG22	19:T:74:ILE:HG22	1.99	0.44
21:V:82:ILE:HG22	21:V:83:ARG:HG3	1.99	0.44
25:Z:92:ASP:N	25:Z:92:ASP:OD1	2.50	0.44
26:AA:50:ASN:CG	26:AA:53:ARG:HE	2.26	0.44
27:BB:136:ARG:NH1	53:9:941:C:H5''	2.33	0.44
28:CC:66:LEU:HD21	28:CC:81:ILE:HD13	2.00	0.44
29:5:115:C:H2'	29:5:116:G:O4'	2.17	0.44
29:5:490:C:H2'	29:5:491:C:C6	2.52	0.44
29:5:657:C:H2'	29:5:658:C:H6	1.83	0.44
29:5:732:G:H2'	29:5:733:A:C8	2.52	0.44
29:5:1675:A:C2	29:5:1858:U:H4'	2.53	0.44
29:5:2525:U:O2'	29:5:2536:U:O2	2.24	0.44
29:5:3776:U:H2'	29:5:3777:C:C6	2.53	0.44
29:5:4125:C:O2'	29:5:4126:U:OP1	2.32	0.44
29:5:4577:A2M:H2'	29:5:4578:U:H6	1.82	0.44
31:8:5:U:H2'	31:8:6:C:C6	2.53	0.44
42:k:7:GLU:OE1	42:k:8:ILE:N	2.41	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:v:330:LYS:HD3	51:v:334:PRO:HB2	1.99	0.44
53:9:65:C:C6	57:GG:174:PRO:HB3	2.52	0.44
53:9:120:U:H1'	55:EE:33:THR:O	2.18	0.44
53:9:421:G:OP1	62:LL:97:ARG:HD2	2.18	0.44
53:9:1101:U:O2	53:9:1131:G:N2	2.38	0.44
53:9:1160:U:H2'	53:9:1161:U:C6	2.53	0.44
53:9:1337:4AC:H2'	53:9:1338:G:C8	2.53	0.44
53:9:1673:U:H2'	53:9:1674:G:O4'	2.18	0.44
53:9:1693:G:H21	53:9:1834:A:H8	1.65	0.44
53:9:1737:G:H1	53:9:1797:U:H3	1.66	0.44
54:DD:197:LYS:HD3	54:DD:197:LYS:H	1.82	0.44
56:FF:109:LEU:HD23	56:FF:109:LEU:H	1.83	0.44
57:GG:122:PRO:HA	57:GG:126:ASP:HB3	2.00	0.44
59:II:37:LYS:HB2	59:II:59:ARG:HG3	2.00	0.44
73:WW:28:ARG:HB2	73:WW:29:PRO:HD3	2.00	0.44
2:B:222:VAL:HG23	2:B:343:ARG:NH1	2.32	0.44
4:D:62:CYS:HB3	4:D:105:LEU:HD22	1.98	0.44
7:G:119:GLN:HG3	13:N:28:TRP:HH2	1.83	0.44
15:P:152:PRO:HG3	31:8:14:OMU:H5''	2.00	0.44
16:Q:35:LEU:O	16:Q:39:THR:OG1	2.27	0.44
16:Q:54:SER:O	16:Q:58:ARG:HG2	2.18	0.44
24:Y:117:LYS:NZ	24:Y:121:ARG:HH22	2.15	0.44
29:5:102:G:O2'	29:5:1387:U:O2'	2.10	0.44
29:5:173:C:O2'	39:h:112:ARG:HG2	2.18	0.44
29:5:641:C:H2'	29:5:642:G:C8	2.53	0.44
29:5:1213:C:H2'	29:5:1214:G:C8	2.52	0.44
29:5:1339:A:H2'	29:5:1340:A:C8	2.53	0.44
29:5:1630:G:C5	29:5:1649:A:C8	3.05	0.44
29:5:2526:C:H5'	38:g:8:ARG:HH22	1.83	0.44
29:5:2755:C:H2'	29:5:2756:G:H8	1.81	0.44
29:5:2765:G:H2'	29:5:2766:G:C8	2.52	0.44
29:5:3888:C:C2	29:5:3889:U:C5	3.05	0.44
29:5:4250:A:O2'	29:5:4274:A:OP1	2.29	0.44
29:5:4510:C:H2'	29:5:4511:C:C6	2.53	0.44
29:5:4611:A:H2	51:v:109:VAL:HG11	1.82	0.44
29:5:4887:U:H4'	29:5:4888:U:H5'	2.00	0.44
29:5:4938:U:H2'	29:5:4939:C:C6	2.52	0.44
32:a:110:LYS:HG3	32:a:128:PHE:HB2	1.99	0.44
35:d:68:LEU:HA	35:d:108:TYR:HB2	2.00	0.44
46:o:104:ILE:H	46:o:104:ILE:HG13	1.65	0.44
51:v:190:SER:OG	51:v:204:MET:SD	2.76	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:85:A:H2'	53:9:86:C:C6	2.53	0.44
53:9:556:U:H2'	53:9:557:U:H6	1.82	0.44
53:9:581:U:H4'	75:YY:66:GLY:HA3	2.00	0.44
53:9:959:G:OP1	65:OO:104:ARG:NH1	2.51	0.44
53:9:1047:C:H2'	53:9:1048:G:O4'	2.18	0.44
53:9:1205:C:O2'	53:9:1834:A:N6	2.47	0.44
53:9:1266:C:C4	53:9:1517:G:N2	2.86	0.44
53:9:1617:G:N2	53:9:1619:A:H3'	2.32	0.44
53:9:1733:U:H2'	53:9:1734:G:O4'	2.18	0.44
53:9:1780:G:H2'	53:9:1781:A:C8	2.53	0.44
58:HH:62:ILE:HD12	58:HH:94:PHE:CE1	2.53	0.44
60:JJ:64:ASP:OD1	60:JJ:65:GLU:N	2.51	0.44
83:gg:43:TRP:CZ3	83:gg:55:PRO:HD3	2.53	0.44
1:A:139:HIS:ND1	1:A:146:THR:OG1	2.46	0.44
2:B:57:VAL:HG22	2:B:73:VAL:HG12	1.99	0.44
7:G:119:GLN:HG3	13:N:28:TRP:CH2	2.52	0.44
14:O:14:HIS:HD2	14:O:19:LEU:HD13	1.83	0.44
19:T:20:ARG:NH2	30:7:68:C:OP1	2.51	0.44
28:CC:196:ILE:HG21	53:9:2:A:C6	2.53	0.44
29:5:53:C:C2	29:5:54:G:C8	3.06	0.44
29:5:288:G:H2'	29:5:289:C:C6	2.53	0.44
29:5:711:G:H2'	29:5:712:A:C8	2.50	0.44
29:5:719:C:H2'	29:5:720:C:O4'	2.17	0.44
29:5:1335:G:O2'	29:5:1336:A:OP1	2.26	0.44
29:5:1487:C:O2'	29:5:1488:G:O5'	2.34	0.44
29:5:2695:C:C2	29:5:2696:C:C5	3.06	0.44
29:5:3704:G:OP2	29:5:3704:G:C8	2.71	0.44
29:5:4472:C:H2'	29:5:4473:A:H8	1.82	0.44
29:5:4932:C:N4	29:5:4933:G:N7	2.66	0.44
29:5:5016:U:H2'	29:5:5017:A:C8	2.52	0.44
32:a:94:LYS:H	32:a:94:LYS:HD3	1.82	0.44
35:d:56:GLU:OE2	35:d:88:LEU:HD23	2.18	0.44
46:o:43:ARG:O	46:o:46:SER:OG	2.33	0.44
50:t:15:LEU:HD11	50:t:31:LYS:HG2	1.99	0.44
51:v:132:VAL:HG11	51:v:162:ARG:HD3	1.98	0.44
53:9:27:A:H2'	53:9:28:U:C6	2.52	0.44
53:9:901:G:H2'	53:9:902:G:C8	2.53	0.44
53:9:1511:U:H2'	53:9:1512:C:C6	2.53	0.44
53:9:1668:U:OP1	67:QQ:133:GLY:N	2.48	0.44
62:LL:59:LYS:HD3	62:LL:134:LEU:HB3	1.99	0.44
65:OO:45:THR:HG22	65:OO:52:THR:HA	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:151:GLU:HB3	6:F:247:ASN:ND2	2.33	0.43
10:J:21:CYS:SG	10:J:131:TYR:HB3	2.58	0.43
12:M:10:GLY:HA2	12:M:64:PHE:CE1	2.53	0.43
26:AA:69:GLU:OE1	26:AA:120:ARG:NH1	2.49	0.43
28:CC:253:PRO:HA	28:CC:256:TRP:NE1	2.33	0.43
29:5:22:G:H2'	29:5:23:C:C6	2.52	0.43
29:5:273:U:H2'	29:5:274:C:H6	1.83	0.43
29:5:281:U:H2'	29:5:282:C:C6	2.53	0.43
29:5:491:C:H2'	29:5:492:G:H8	1.83	0.43
29:5:1597:U:N3	29:5:4561:U:OP1	2.36	0.43
29:5:1995:G:H2'	29:5:1996:A:H8	1.83	0.43
29:5:2680:A:N6	47:p:42:CYS:HA	2.32	0.43
29:5:2882:G:C8	47:p:16:THR:HG22	2.54	0.43
29:5:3730:A:H2'	29:5:3731:G:C8	2.53	0.43
51:v:110:ASP:HB2	51:v:553:HIS:HB2	1.98	0.43
53:9:730:C:H2'	53:9:731:G:C8	2.53	0.43
53:9:1397:U:H4'	53:9:1398:G:H5''	2.00	0.43
53:9:1495:G:H2'	53:9:1496:U:C6	2.53	0.43
53:9:1570:G:H2'	53:9:1571:G:H8	1.83	0.43
53:9:1590:C:H2'	53:9:1591:C:O4'	2.17	0.43
53:9:1773:C:H2'	53:9:1774:C:C6	2.53	0.43
54:DD:55:THR:HA	54:DD:58:VAL:HG12	1.99	0.43
59:II:31:ARG:HD2	59:II:56:ARG:HH21	1.83	0.43
3:C:45:ARG:NH2	29:5:349:A:N1	2.66	0.43
29:5:714:C:H2'	29:5:715:G:C8	2.52	0.43
29:5:913:U:H2'	29:5:914:G:O4'	2.17	0.43
29:5:958:C:OP1	37:f:73:LYS:NZ	2.44	0.43
29:5:1730:G:N2	29:5:1882:U:OP1	2.45	0.43
29:5:2289:G:H2'	29:5:2290:G:C8	2.53	0.43
29:5:2669:G:H2'	29:5:2670:G:H8	1.83	0.43
29:5:2696:C:H2'	29:5:2697:U:C6	2.52	0.43
29:5:2905:C:H2'	29:5:2906:U:C6	2.53	0.43
29:5:3926:U:H2'	29:5:3927:U:H6	1.81	0.43
29:5:3931:U:H2'	29:5:3932:C:O4'	2.19	0.43
29:5:4349:U:O2'	46:o:31:ASP:OD1	2.35	0.43
49:s:91:THR:HG21	49:s:98:ILE:HG21	2.00	0.43
49:s:108:PRO:HA	49:s:184:SER:HA	2.00	0.43
52:w:286:TRP:HB2	61:KK:89:ILE:HG21	2.01	0.43
53:9:945:U:H2'	53:9:946:U:C6	2.53	0.43
53:9:1094:C:H2'	53:9:1095:U:C6	2.53	0.43
53:9:1677:U:H2'	53:9:1678:A2M:H8	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:GG:192:ILE:HD12	57:GG:195:LYS:HD2	2.00	0.43
58:HH:30:LEU:HD13	58:HH:30:LEU:HA	1.84	0.43
59:II:13:LYS:NZ	62:LL:108:ASN:O	2.43	0.43
59:II:150:ASP:HA	59:II:153:LYS:HG2	1.99	0.43
66:PP:13:ARG:NE	66:PP:13:ARG:HA	2.33	0.43
4:D:108:ARG:CZ	4:D:253:TYR:HB2	2.48	0.43
7:G:113:TYR:CZ	7:G:114:ILE:HG13	2.54	0.43
9:I:40:LYS:HG2	29:5:1756:G:H5'	2.01	0.43
13:N:178:HIS:HA	13:N:181:HIS:NE2	2.34	0.43
15:P:112:TRP:O	29:5:3862:A:H5''	2.18	0.43
22:W:52:THR:HG23	22:W:55:TYR:H	1.83	0.43
29:5:1347:U:H2'	29:5:1348:A:C8	2.53	0.43
29:5:3702:C:O2'	29:5:3703:U:H5'	2.18	0.43
29:5:3768:B8H:O2'	51:v:845:LYS:NZ	2.33	0.43
29:5:4362:G:H2'	29:5:4363:G:H8	1.81	0.43
30:7:63:C:H5'	30:7:64:G:H5''	2.00	0.43
31:8:121:G:C5	31:8:122:G:N7	2.87	0.43
36:e:23:HIS:CE1	36:e:24:GLN:HG3	2.54	0.43
48:r:108:MET:O	48:r:112:ARG:HG2	2.17	0.43
53:9:126:G:C4	53:9:181:A:H1'	2.53	0.43
53:9:223:C:H2'	53:9:224:A:H8	1.82	0.43
53:9:901:G:H2'	53:9:902:G:H8	1.83	0.43
53:9:1810:U:H2'	53:9:1811:C:H6	1.82	0.43
54:DD:29:LEU:HB2	54:DD:34:TYR:HB2	1.99	0.43
57:GG:32:MET:HE2	57:GG:63:MET:HE2	2.00	0.43
62:LL:111:VAL:HG12	62:LL:140:PHE:HB2	1.99	0.43
64:NN:4:MET:HE3	64:NN:121:ARG:HG2	2.00	0.43
70:TT:65:TYR:HD1	70:TT:123:LEU:HD22	1.82	0.43
72:VV:3:ASN:HD21	72:VV:7:GLU:HB2	1.81	0.43
74:XX:51:VAL:HG22	74:XX:70:VAL:HG11	2.00	0.43
83:gg:35:SER:OG	83:gg:36:ARG:N	2.51	0.43
2:B:43:LEU:HB2	2:B:210:VAL:HG22	2.00	0.43
3:C:39:PHE:O	3:C:43:ASN:ND2	2.40	0.43
6:F:94:ILE:HD11	6:F:232:ALA:HB2	1.99	0.43
27:BB:146:ARG:H	27:BB:149:GLN:HE21	1.66	0.43
27:BB:155:TYR:OH	53:9:989:C:OP2	2.25	0.43
29:5:443:G:H5''	37:f:54:LYS:HD3	2.00	0.43
29:5:1208:C:C2	29:5:1209:G:C8	3.06	0.43
29:5:1350:C:H2'	29:5:1351:A:C8	2.54	0.43
29:5:1351:A:H2'	29:5:1352:C:C6	2.53	0.43
29:5:1383:G:H21	29:5:1386:G:H5''	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:1801:A:H2'	29:5:1802:U:O4'	2.19	0.43
29:5:1837:G:H2'	29:5:1838:C:C6	2.54	0.43
29:5:2428:OMC:H2'	29:5:2429:A:C8	2.53	0.43
29:5:2836:G:O6	29:5:3862:A:N6	2.51	0.43
29:5:3724:A2M:HM'3	29:5:3724:A2M:H1'	1.84	0.43
29:5:4152:G:H2'	29:5:4153:G:H8	1.82	0.43
29:5:4888:U:O2'	29:5:4889:C:H4'	2.18	0.43
32:a:36:GLY:HA3	32:a:40:HIS:CD2	2.53	0.43
37:f:36:ARG:HG3	37:f:80:ASN:HA	2.00	0.43
51:v:815:ASP:OD2	51:v:816:HIS:ND1	2.46	0.43
53:9:152:U:C2	53:9:153:G:C8	3.06	0.43
53:9:870:A:H4'	53:9:871:U:O5'	2.19	0.43
53:9:1401:A:H4'	71:UU:52:GLY:HA3	2.00	0.43
57:GG:194:LEU:HA	57:GG:197:GLN:HG2	2.00	0.43
59:II:37:LYS:N	59:II:58:LEU:O	2.47	0.43
60:JJ:33:GLY:HA3	81:ee:111:TYR:CG	2.53	0.43
61:KK:91:PRO:HD2	61:KK:94:LEU:HD13	1.99	0.43
69:SS:132:ARG:HB2	69:SS:134:GLN:NE2	2.34	0.43
3:C:158:VAL:HG12	3:C:217:ILE:HD13	2.00	0.43
3:C:292:ILE:HG23	16:Q:128:LEU:HD21	2.00	0.43
4:D:146:LEU:HD12	29:5:4329:A:C2	2.53	0.43
6:F:24:PHE:HA	6:F:27:LEU:HD23	2.01	0.43
6:F:113:LEU:HD21	6:F:120:THR:HG22	2.01	0.43
14:O:71:TYR:OH	29:5:3894:G:OP1	2.27	0.43
29:5:1831:A:H2'	29:5:1832:G:C8	2.53	0.43
29:5:1963:U:O2'	29:5:1964:A:H8	2.02	0.43
29:5:2314:A:N6	29:5:2336:G:H1'	2.33	0.43
29:5:2471:C:H1'	29:5:3678:G:H1	1.82	0.43
29:5:2816:U:H2'	29:5:2817:G:O4'	2.19	0.43
29:5:4777:C:O2	29:5:4778:C:N4	2.52	0.43
29:5:5036:U:H2'	29:5:5037:G:H8	1.83	0.43
31:8:52:A:H62	43:l:27:ILE:HD13	1.83	0.43
37:f:17:GLY:N	37:f:20:ASN:O	2.50	0.43
44:m:68:MET:HG2	44:m:79:PRO:HA	2.00	0.43
53:9:96:C:H2'	53:9:97:U:H6	1.84	0.43
53:9:979:C:H2'	53:9:980:A:H8	1.83	0.43
53:9:984:C:O2'	65:OO:138:ASP:OD2	2.36	0.43
53:9:1367:U:H2'	53:9:1368:U:C6	2.53	0.43
53:9:1633:A:H2'	53:9:1634:A:C8	2.54	0.43
53:9:1689:C:H2'	53:9:1690:U:H6	1.83	0.43
57:GG:54:GLY:O	57:GG:110:ASN:ND2	2.50	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:133:TYR:HB3	1:A:168:VAL:HG12	2.01	0.43
9:I:48:LEU:HB2	9:I:142:LEU:HA	2.00	0.43
11:L:161:PHE:CG	32:a:105:ARG:HD2	2.54	0.43
13:N:44:ARG:HH12	29:5:280:G:P	2.40	0.43
13:N:184:ILE:HG13	13:N:194:ARG:HH22	1.83	0.43
15:P:113:PRO:HB2	15:P:116:SER:HB3	2.01	0.43
17:R:101:ILE:HD13	29:5:2903:G:H4'	2.01	0.43
17:R:163:ARG:HH22	62:LL:153:LYS:NZ	2.16	0.43
23:X:122:ALA:HB3	23:X:139:ARG:HG3	2.01	0.43
26:AA:78:SER:HB3	26:AA:87:VAL:HG11	2.01	0.43
29:5:727:G:H2'	29:5:728:C:C6	2.53	0.43
29:5:2471:C:H2'	29:5:2472:G:O4'	2.19	0.43
29:5:3706:C:O2'	29:5:3780:A:H1'	2.18	0.43
29:5:3876:C:H2'	29:5:3877:A:C8	2.53	0.43
29:5:4466:U:H2'	29:5:4467:C:H6	1.84	0.43
29:5:4508:C:C4	29:5:4509:A:C8	3.07	0.43
29:5:4705:U:H4'	29:5:4706:A:OP1	2.17	0.43
34:c:52:CYS:SG	34:c:57:LYS:HB2	2.59	0.43
44:m:70:CYS:SG	44:m:84:CYS:HB2	2.58	0.43
44:m:71:ARG:HE	44:m:96:ARG:HB3	1.83	0.43
48:r:63:VAL:HG22	48:r:79:ARG:HG2	1.99	0.43
51:v:195:GLY:O	51:v:196:GLU:HG2	2.18	0.43
51:v:458:VAL:HG23	51:v:459:GLU:H	1.84	0.43
53:9:211:G:H2'	53:9:212:C:C6	2.54	0.43
53:9:1240:A:N6	66:PP:100:LYS:HB2	2.33	0.43
53:9:1736:G:H2'	53:9:1737:G:C8	2.54	0.43
71:UU:23:THR:HB	71:UU:113:GLU:HB3	2.01	0.43
1:A:117:GLU:HG3	1:A:124:GLY:N	2.32	0.43
2:B:74:GLU:OE1	2:B:285:TYR:OH	2.31	0.43
2:B:245:HIS:ND1	2:B:246:ARG:HG3	2.34	0.43
6:F:45:ARG:NH2	29:5:2109:A:OP2	2.47	0.43
7:G:141:ASP:OD2	7:G:143:GLN:NE2	2.52	0.43
7:G:212:HIS:CD2	7:G:238:LYS:HG2	2.54	0.43
10:J:109:ILE:HD11	10:J:128:LEU:HD13	2.00	0.43
11:L:5:ARG:NH2	29:5:1856:A:OP2	2.51	0.43
17:R:172:ARG:HA	17:R:175:GLU:HG2	2.01	0.43
19:T:64:VAL:HA	19:T:74:ILE:HG22	2.01	0.43
29:5:69:A:N1	29:5:324:A:O2'	2.50	0.43
29:5:671:G:C2	29:5:672:G:C5	3.06	0.43
29:5:1455:C:H2'	29:5:1456:C:C6	2.54	0.43
29:5:2116:G:C2	29:5:2117:U:C5	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:2328:G:H2'	29:5:2329:C:H6	1.84	0.43
29:5:2863:A:H2'	29:5:2864:A:O4'	2.19	0.43
29:5:3706:C:H2'	29:5:3752:A:N6	2.34	0.43
29:5:4616:A:C4	29:5:4617:A:C8	3.07	0.43
29:5:4762:C:H5'	29:5:4763:C:OP1	2.18	0.43
49:s:134:LYS:HE3	49:s:177:MET:HE3	2.01	0.43
51:v:184:ASN:O	51:v:188:ILE:HG22	2.19	0.43
53:9:674:C:H2'	53:9:675:U:H6	1.84	0.43
53:9:799:U:H2'	53:9:800:U:H6	1.83	0.43
53:9:1084:A:OP1	53:9:1858:G:O2'	2.33	0.43
53:9:1588:A:H2'	53:9:1589:A:H8	1.83	0.43
53:9:1629:C:H2'	53:9:1630:A:O4'	2.19	0.43
2:B:66:LYS:NZ	21:V:12:ALA:O	2.47	0.43
2:B:87:VAL:O	2:B:107:ALA:N	2.51	0.43
2:B:229:LYS:HG3	2:B:272:LYS:HB3	2.01	0.43
3:C:48:ASN:HB2	29:5:1376:G:OP2	2.19	0.43
8:H:108:ASN:O	8:H:108:ASN:ND2	2.52	0.43
12:M:86:TRP:O	12:M:89:THR:HG22	2.19	0.43
19:T:120:LYS:HE2	19:T:120:LYS:HB3	1.89	0.43
28:CC:104:ASP:OD1	28:CC:105:GLU:N	2.52	0.43
29:5:1356:C:H2'	29:5:1357:G:C8	2.54	0.43
29:5:1600:C:H2'	29:5:1601:G:O4'	2.19	0.43
29:5:4318:U:C2	29:5:4319:A:C8	3.07	0.43
29:5:5000:G:H2'	29:5:5001:U:H6	1.83	0.43
31:8:108:A:H2'	31:8:109:C:O4'	2.19	0.43
32:a:12:ARG:HA	32:a:12:ARG:HD3	1.89	0.43
50:t:61:LYS:HD2	50:t:74:VAL:HG22	2.00	0.43
53:9:457:C:H2'	53:9:458:A:C8	2.51	0.43
53:9:527:C:H2'	53:9:528:A:C8	2.53	0.43
53:9:1134:G:H2'	53:9:1135:C:C6	2.54	0.43
53:9:1199:A:H2'	53:9:1200:A:H8	1.83	0.43
53:9:1273:C:O3'	53:9:1274:G:H3'	2.19	0.43
53:9:1447:G:H2'	53:9:1448:A:C8	2.53	0.43
53:9:1847:G:H2'	53:9:1848:U:C6	2.54	0.43
54:DD:164:VAL:HA	54:DD:168:VAL:HG22	2.00	0.43
68:RR:102:THR:O	68:RR:105:MET:HG3	2.18	0.43
83:gg:65:PHE:C	83:gg:82:SER:HG	2.23	0.43
2:B:86:VAL:HG12	2:B:201:LEU:HD12	2.00	0.43
2:B:340:THR:OG1	2:B:341:LYS:N	2.52	0.43
3:C:161:TYR:HE2	3:C:170:LEU:HD22	1.83	0.43
13:N:38:ARG:NH2	31:8:142:U:OP1	2.45	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:Q:65:ARG:HG3	29:5:1508:G:OP2	2.18	0.43
18:S:23:ARG:HH12	29:5:1206:G:P	2.41	0.43
21:V:129:TRP:O	21:V:132:ILE:HG22	2.18	0.43
22:W:80:ARG:NH2	57:GG:129:VAL:O	2.34	0.43
27:BB:86:LEU:HB3	27:BB:98:THR:HB	1.99	0.43
27:BB:118:GLN:O	53:9:988:C:O2'	2.37	0.43
27:BB:150:ILE:HG22	68:RR:131:PRO:HA	2.01	0.43
28:CC:169:TYR:OH	28:CC:175:GLY:O	2.33	0.43
28:CC:187:ARG:NH1	53:9:1142:G:OP2	2.52	0.43
29:5:644:C:H2'	29:5:645:G:C8	2.54	0.43
29:5:1885:C:H2'	29:5:1886:G:O4'	2.19	0.43
29:5:3729:A2M:H2'	29:5:3730:A:C8	2.53	0.43
29:5:3731:G:N7	40:i:67:LYS:NZ	2.41	0.43
29:5:3940:G:H2'	29:5:3941:C:C6	2.54	0.43
29:5:5000:G:H2'	29:5:5001:U:C6	2.53	0.43
31:8:33:G:H4'	31:8:34:U:H5	1.84	0.43
34:c:49:ALA:HB2	34:c:81:LEU:HD12	2.01	0.43
51:v:489:GLU:CD	51:v:490:HIS:HD1	2.27	0.43
53:9:211:G:H2'	53:9:212:C:H6	1.83	0.43
53:9:217:A:C2	53:9:218:U:C6	3.07	0.43
53:9:351:G:C2	53:9:352:U:C5	3.06	0.43
53:9:440:G:OP1	53:9:1798:C:O2'	2.37	0.43
53:9:479:C:C2	53:9:480:G:C8	3.06	0.43
53:9:1146:C:O2'	53:9:1150:A:N1	2.48	0.43
56:FF:144:LEU:HG	56:FF:148:ASN:HD21	1.83	0.43
69:SS:40:TYR:HA	69:SS:83:PHE:CE2	2.54	0.43
73:WW:57:ARG:HH12	78:bb:26:GLN:CD	2.26	0.43
75:YY:89:HIS:CE1	75:YY:90:ARG:HG3	2.54	0.43
83:gg:17:TRP:NE1	83:gg:36:ARG:HE	2.17	0.43
3:C:195:LYS:HB3	3:C:200:ARG:NE	2.33	0.43
4:D:53:VAL:HG11	4:D:159:VAL:HA	2.01	0.43
5:E:124:VAL:HG21	29:5:703:U:H5'	2.01	0.43
6:F:221:LYS:HB3	6:F:230:GLY:HA2	2.01	0.43
8:H:50:LYS:O	8:H:51:LYS:HG2	2.19	0.43
10:J:153:ALA:HA	10:J:156:ARG:NH1	2.34	0.43
15:P:123:MET:HE1	15:P:175:ILE:HB	2.01	0.43
21:V:39:ILE:HD13	21:V:61:VAL:HG21	2.00	0.43
24:Y:82:ILE:HG22	24:Y:83:GLU:H	1.83	0.43
29:5:1175:G:H2'	29:5:1176:G:C8	2.52	0.43
29:5:1334:G:H2'	29:5:1335:G:C8	2.54	0.43
29:5:1492:C:H2'	29:5:1493:G:H8	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:1938:A:H2'	29:5:1939:G:C8	2.54	0.43
29:5:1948:A:N3	29:5:4438:C:O2'	2.41	0.43
31:8:33:G:H4'	31:8:34:U:C5	2.54	0.43
32:a:82:VAL:HG12	32:a:86:THR:HG21	2.01	0.43
34:c:22:MET:HE1	34:c:85:CYS:HB3	2.00	0.43
34:c:101:ASP:N	34:c:101:ASP:OD1	2.51	0.43
35:d:36:VAL:HG11	35:d:44:ARG:HD2	2.00	0.43
39:h:25:LYS:HD3	39:h:54:ILE:HD13	2.00	0.43
48:r:18:ILE:HD11	48:r:20:ARG:NH1	2.34	0.43
51:v:619:LYS:HE2	51:v:621:GLU:HG3	2.01	0.43
53:9:632:C:H2'	53:9:633:C:C5	2.54	0.43
53:9:648:A:H2'	53:9:649:U:C6	2.54	0.43
53:9:1201:U:H2'	53:9:1202:U:C6	2.54	0.43
53:9:1204:A:H2'	53:9:1205:C:C6	2.54	0.43
53:9:1615:U:H2'	53:9:1616:U:C6	2.54	0.43
54:DD:107:TYR:HA	54:DD:110:LEU:HG	2.01	0.43
55:EE:148:ARG:HD3	55:EE:149:TYR:CD2	2.53	0.43
58:HH:51:ILE:HG21	58:HH:179:LYS:HG2	2.01	0.43
59:II:98:LYS:HB2	59:II:178:ARG:HG2	2.01	0.43
83:gg:220:ASP:HB2	83:gg:227:LEU:HD21	2.01	0.43
3:C:336:ARG:HA	3:C:339:THR:HG22	2.01	0.42
12:M:96:GLU:OE2	12:M:100:ARG:NE	2.52	0.42
16:Q:179:GLY:H	32:a:51:GLY:N	2.15	0.42
23:X:95:THR:OG1	23:X:96:LEU:N	2.52	0.42
27:BB:159:GLN:HG3	53:9:931:C:OP2	2.17	0.42
29:5:490:C:H2'	29:5:491:C:H6	1.84	0.42
29:5:1583:G:H3'	29:5:1583:G:N3	2.34	0.42
29:5:1669:C:H2'	29:5:1670:U:C6	2.54	0.42
29:5:2780:C:H2'	29:5:2781:C:H6	1.84	0.42
29:5:2822:G:H2'	29:5:2823:C:H6	1.84	0.42
29:5:3694:U:H2'	29:5:3695:G:H8	1.84	0.42
29:5:4075:U:H2'	29:5:4076:U:C6	2.54	0.42
29:5:4162:G:OP2	29:5:4163:A:O2'	2.32	0.42
29:5:4195:U:H2'	29:5:4196:U:C6	2.54	0.42
29:5:4226:6MZ:H8	29:5:4226:6MZ:O5'	2.18	0.42
29:5:4531:C:H2'	29:5:4532:U:C6	2.54	0.42
29:5:4711:A:H2'	29:5:4712:G:O4'	2.19	0.42
35:d:94:GLU:CD	35:d:94:GLU:H	2.27	0.42
48:r:119:ARG:O	48:r:122:LYS:HG2	2.19	0.42
49:s:53:VAL:HA	49:s:89:VAL:HA	2.01	0.42
51:v:10:ARG:HH12	51:v:14:ASP:HA	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:v:32:LYS:N	86:v:902:GDP:O1B	2.46	0.42
53:9:373:G:N2	62:LL:83:GLN:OE1	2.32	0.42
53:9:1226:G:N1	53:9:1639:G:OP2	2.43	0.42
53:9:1522:A:H5''	66:PP:128:HIS:NE2	2.33	0.42
53:9:1776:G:H2'	53:9:1777:G:H8	1.84	0.42
53:9:1805:G:H2'	53:9:1806:A:H8	1.84	0.42
58:HH:33:ASN:OD1	58:HH:34:SER:N	2.52	0.42
69:SS:39:ARG:HG3	69:SS:83:PHE:HZ	1.84	0.42
72:VV:24:ILE:HD13	72:VV:31:SER:HB3	2.01	0.42
1:A:196:TRP:O	1:A:198:ARG:N	2.53	0.42
3:C:110:ARG:NH1	29:5:1514:A:OP1	2.42	0.42
5:E:162:GLY:O	5:E:278:PHE:N	2.38	0.42
7:G:250:LYS:HB3	29:5:6:C:H5''	2.01	0.42
16:Q:59:PRO:HG3	16:Q:143:ARG:HA	2.01	0.42
20:U:25:CYS:HB2	20:U:28:PRO:HG2	2.01	0.42
20:U:76:VAL:HG22	20:U:77:PRO:HD2	2.01	0.42
21:V:13:LYS:HD2	21:V:128:LEU:HD11	1.99	0.42
28:CC:80:GLU:OE1	28:CC:80:GLU:N	2.51	0.42
29:5:469:C:H2'	29:5:470:A:H8	1.84	0.42
29:5:1538:G:N2	29:5:1643:A:OP2	2.37	0.42
29:5:1559:A:O2'	47:p:9:GLY:O	2.33	0.42
29:5:1583:G:C2	29:5:3643:U:H1'	2.55	0.42
29:5:1975:G:C2'	29:5:1976:A:H5'	2.50	0.42
29:5:4133:A:O2'	29:5:4134:A:H8	2.01	0.42
29:5:4439:G:H2'	29:5:4440:C:C6	2.54	0.42
29:5:4900:A:H3'	29:5:4901:C:C6	2.54	0.42
35:d:29:ILE:HD11	35:d:84:ILE:HG12	2.01	0.42
49:s:121:VAL:HG21	49:s:183:PHE:CE1	2.54	0.42
50:t:39:PRO:HG2	50:t:40:LYS:HD2	1.99	0.42
51:v:743:PRO:HG2	51:v:790:VAL:HG11	2.01	0.42
53:9:103:A:H5'	59:II:12:ARG:HH12	1.84	0.42
53:9:446:G:H5''	59:II:49:ARG:HE	1.84	0.42
53:9:544:G:H2'	53:9:545:A:H8	1.83	0.42
53:9:1018:U:H2'	53:9:1019:C:C6	2.54	0.42
53:9:1060:A:H1'	53:9:1062:A:N7	2.34	0.42
53:9:1275:G:N2	53:9:1506:A:OP2	2.39	0.42
61:KK:59:LYS:O	61:KK:69:TRP:HA	2.19	0.42
62:LL:74:SER:O	62:LL:90:ARG:NH1	2.51	0.42
63:MM:55:ASN:ND2	63:MM:55:ASN:O	2.51	0.42
70:TT:57:ALA:HB1	70:TT:107:LEU:HD11	2.00	0.42
1:A:193:ARG:NH2	29:5:3684:G:OP2	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:193:ARG:HH21	29:5:3684:G:P	2.42	0.42
2:B:228:TYR:HB2	29:5:4985:A:OP1	2.19	0.42
3:C:33:ARG:HH22	29:5:1356:C:H5'	1.85	0.42
11:L:39:ARG:NH2	29:5:1368:G:OP1	2.50	0.42
12:M:20:HIS:CD2	12:M:45:VAL:HG22	2.54	0.42
12:M:124:LYS:HE3	12:M:124:LYS:HB2	1.88	0.42
14:O:169:ARG:NH1	29:5:4866:G:H5'	2.31	0.42
26:AA:118:GLU:OE2	28:CC:65:LYS:N	2.43	0.42
29:5:174:C:H2'	29:5:175:C:C6	2.54	0.42
29:5:1239:G:O2'	29:5:1240:G:H8	2.02	0.42
29:5:1539:A:N1	29:5:1642:U:H1'	2.35	0.42
29:5:2014:U:H1'	29:5:2017:C:H5	1.83	0.42
29:5:2298:C:H2'	29:5:2299:U:C6	2.54	0.42
29:5:2405:G:H2'	29:5:2406:G:H8	1.83	0.42
29:5:2410:A:H1'	41:j:12:ARG:HH11	1.84	0.42
29:5:2786:C:H2'	29:5:2787:G:H8	1.83	0.42
29:5:3767:C:H2'	29:5:3768:B8H:C6	2.48	0.42
29:5:4278:G:H3'	29:5:4279:A:H5'	2.00	0.42
29:5:4360:U:H3	32:a:60:HIS:CE1	2.36	0.42
29:5:4717:C:H2'	29:5:4718:C:C6	2.54	0.42
31:8:27:U:H2'	31:8:28:C:C6	2.54	0.42
31:8:94:G:H1'	41:j:82:THR:O	2.20	0.42
32:a:75:LEU:HB3	32:a:117:LEU:HD13	2.02	0.42
42:k:26:LYS:HB2	42:k:69:LEU:HD22	2.00	0.42
49:s:13:TYR:OH	49:s:61:MET:SD	2.76	0.42
51:v:429:ILE:HG12	51:v:443:TYR:HB2	2.01	0.42
51:v:590:LEU:HD21	51:v:603:TYR:HB3	2.01	0.42
53:9:465:A:H4'	53:9:466:G:O5'	2.18	0.42
53:9:909:G:C2	53:9:910:G:C5	3.08	0.42
53:9:1192:U:H2'	53:9:1193:U:C6	2.53	0.42
53:9:1263:U:O2'	80:dd:28:HIS:NE2	2.40	0.42
53:9:1284:A:H4'	53:9:1285:G:H5'	2.01	0.42
53:9:1683:C:C4	79:cc:24:GLN:HG3	2.54	0.42
55:EE:69:PHE:CE1	55:EE:94:LYS:HD2	2.55	0.42
60:JJ:53:ILE:HG23	60:JJ:77:LEU:HD11	2.02	0.42
64:NN:29:THR:OG1	64:NN:30:SER:N	2.52	0.42
67:QQ:70:VAL:HG11	67:QQ:88:ILE:HD11	1.99	0.42
78:bb:14:GLU:O	78:bb:18:LYS:HG3	2.20	0.42
79:cc:13:ARG:N	79:cc:33:GLU:O	2.40	0.42
82:ff:126:CYS:HB2	82:ff:130:VAL:HB	2.02	0.42
2:B:89:ILE:HD11	2:B:150:PHE:HE1	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:53:ALA:O	31:8:26:C:O2'	2.31	0.42
5:E:49:ASN:HB2	5:E:64:MET:HE3	2.00	0.42
5:E:133:LYS:HD2	29:5:1290:G:N3	2.34	0.42
7:G:307:GLU:HA	7:G:310:LYS:HG2	2.00	0.42
24:Y:66:GLN:CD	24:Y:66:GLN:H	2.27	0.42
29:5:327:U:HO2'	40:i:30:ARG:HH11	1.63	0.42
29:5:674:C:H2'	29:5:675:G:C8	2.49	0.42
29:5:1350:C:H2'	29:5:1351:A:H8	1.84	0.42
29:5:1508:G:H22	32:a:77:LYS:HE2	1.85	0.42
29:5:2035:A:H2'	29:5:2036:A:C8	2.54	0.42
29:5:2085:G:H2'	29:5:2086:U:H6	1.83	0.42
29:5:2871:U:H2'	29:5:2872:C:C6	2.55	0.42
29:5:3713:U:H2'	29:5:3714:C:C6	2.55	0.42
29:5:4720:C:C2	29:5:4721:C:C6	3.07	0.42
34:c:26:LYS:HG3	34:c:97:ILE:HB	2.02	0.42
47:p:37:TYR:CD2	47:p:71:TYR:HB2	2.54	0.42
50:t:129:ILE:HA	50:t:132:ILE:HG22	2.02	0.42
51:v:244:LEU:C	51:v:246:PRO:HD2	2.44	0.42
51:v:723:PRO:O	51:v:727:ARG:NE	2.53	0.42
53:9:821:G:C6	60:JJ:150:ARG:HG3	2.55	0.42
53:9:824:C:C2	53:9:825:A:C8	3.07	0.42
53:9:846:G:P	55:EE:108:ARG:HH22	2.42	0.42
53:9:902:G:C2	53:9:903:A:C8	3.07	0.42
53:9:1512:C:O2'	80:dd:7:TYR:O	2.29	0.42
56:FF:193:LYS:HB3	56:FF:193:LYS:HE2	1.83	0.42
57:GG:135:PRO:HG2	57:GG:144:LEU:HD22	2.00	0.42
67:QQ:105:LYS:HE2	67:QQ:105:LYS:HB3	1.74	0.42
71:UU:26:SER:HB3	71:UU:32:LEU:HB2	2.02	0.42
72:VV:21:ASN:HD22	73:WW:66:THR:HB	1.84	0.42
82:ff:125:GLU:H	82:ff:125:GLU:CD	2.27	0.42
6:F:175:ALA:HB1	29:5:2108:G:C8	2.54	0.42
9:I:115:MET:HE3	29:5:1874:A:H61	1.85	0.42
14:O:109:PRO:HG2	14:O:112:TYR:HD2	1.85	0.42
14:O:175:MET:HG2	29:5:4879:G:N3	2.34	0.42
15:P:119:PHE:HD1	15:P:119:PHE:HA	1.68	0.42
19:T:2:THR:N	29:5:4226:6MZ:O2P	2.52	0.42
27:BB:126:ASP:OD2	27:BB:136:ARG:NH1	2.52	0.42
29:5:65:A:H61	29:5:75:G:H1'	1.85	0.42
29:5:1560:A:H61	29:5:1579:G:H1'	1.84	0.42
29:5:1586:C:H2'	29:5:1587:G:O4'	2.20	0.42
29:5:2323:C:H2'	29:5:2324:G:H8	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:2390:U:H2'	29:5:2391:U:C6	2.55	0.42
29:5:2662:U:C4	29:5:2663:G:C6	3.07	0.42
29:5:5008:U:H2'	29:5:5009:U:C6	2.55	0.42
31:8:112:G:C6	31:8:113:C:C4	3.08	0.42
41:j:72:ARG:HA	41:j:75:ARG:HE	1.85	0.42
51:v:155:LEU:HD23	51:v:155:LEU:H	1.84	0.42
51:v:602:LEU:HD23	51:v:603:TYR:N	2.35	0.42
53:9:516:A:N1	53:9:643:A:O2'	2.42	0.42
53:9:941:C:H2'	53:9:942:G:H8	1.85	0.42
53:9:1232:U:H2'	53:9:1233:G:C8	2.55	0.42
53:9:1247:C:H1'	53:9:1251:A:C2	2.54	0.42
53:9:1513:C:C2	53:9:1514:G:N7	2.87	0.42
57:GG:192:ILE:HD12	57:GG:192:ILE:HA	1.95	0.42
61:KK:79:LEU:HD12	61:KK:79:LEU:HA	1.89	0.42
63:MM:54:SER:OG	63:MM:55:ASN:N	2.53	0.42
68:RR:29:HIS:HA	68:RR:32:LYS:HE2	2.02	0.42
13:N:120:TRP:HZ2	13:N:123:GLU:HG2	1.85	0.42
18:S:115:ALA:HB2	29:5:2066:G:N2	2.35	0.42
23:X:65:ALA:HB2	39:h:69:LEU:HD11	2.01	0.42
29:5:337:U:H2'	29:5:338:A:H8	1.84	0.42
29:5:2021:U:H2'	29:5:2022:C:H6	1.83	0.42
29:5:2268:G:N7	48:r:98:ARG:NH2	2.56	0.42
29:5:2589:C:H5''	38:g:74:VAL:HG21	2.01	0.42
29:5:2781:C:H2'	29:5:2782:G:H8	1.85	0.42
29:5:4981:G:O2'	29:5:4983:A:N6	2.53	0.42
30:7:112:U:H2'	30:7:113:G:H8	1.84	0.42
31:8:15:G:H2'	31:8:16:G:C8	2.55	0.42
31:8:108:A:N1	31:8:112:G:C6	2.87	0.42
42:k:6:GLU:CD	42:k:6:GLU:H	2.28	0.42
51:v:411:TYR:HE1	51:v:473:VAL:HB	1.84	0.42
53:9:186:C:H2'	53:9:187:G:C8	2.54	0.42
53:9:688:U:H5	58:HH:103:LYS:H	1.67	0.42
53:9:788:G:H2'	53:9:789:G:C8	2.54	0.42
53:9:1113:A:O2'	53:9:1114:U:H5'	2.20	0.42
53:9:1276:A:N6	53:9:1322:G:H1'	2.34	0.42
53:9:1285:G:H1'	82:ff:100:LEU:HD21	2.00	0.42
53:9:1512:C:C2	53:9:1513:C:C5	3.08	0.42
53:9:1667:U:H2'	53:9:1668:U:C6	2.55	0.42
60:JJ:138:ARG:HH22	60:JJ:153:SER:HA	1.85	0.42
83:gg:108:VAL:HA	83:gg:124:SER:HA	2.01	0.42
5:E:160:HIS:HB3	5:E:163:LYS:HE3	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:149:LEU:HD11	7:G:242:ARG:NE	2.34	0.42
7:G:163:LYS:HG3	7:G:166:ARG:HH12	1.85	0.42
18:S:154:LEU:HD13	18:S:157:ARG:NH1	2.35	0.42
27:BB:138:PHE:CD2	27:BB:214:LYS:HB3	2.54	0.42
27:BB:162:ARG:HA	27:BB:165:ARG:HG2	2.01	0.42
29:5:149:A:H5'	29:5:151:G:O4'	2.20	0.42
29:5:274:C:H2'	29:5:275:C:C6	2.55	0.42
29:5:930:G:H2'	29:5:931:G:C8	2.55	0.42
29:5:1450:G:H2'	29:5:1451:U:C6	2.55	0.42
29:5:2332:G:H2'	29:5:2333:G:H8	1.84	0.42
29:5:2697:U:C2	29:5:2698:U:C5	3.08	0.42
29:5:3894:G:O2'	29:5:3895:G:OP1	2.34	0.42
29:5:4464:C:H2'	29:5:4465:U:H6	1.83	0.42
29:5:4924:C:H2'	29:5:4925:G:C8	2.54	0.42
47:p:50:ARG:HH21	47:p:56:HIS:CG	2.37	0.42
47:p:72:ASN:OD1	47:p:72:ASN:N	2.53	0.42
48:r:65:LYS:O	48:r:102:TYR:OH	2.25	0.42
49:s:81:HIS:HD2	49:s:191:GLN:HG3	1.83	0.42
51:v:26:ALA:HB2	51:v:128:VAL:HB	2.02	0.42
53:9:122:G:P	55:EE:77:ARG:HH22	2.43	0.42
53:9:414:A:H2'	53:9:415:A:C8	2.55	0.42
53:9:752:G:O2'	53:9:754:G:O5'	2.30	0.42
55:EE:147:ILE:H	55:EE:147:ILE:HG13	1.66	0.42
55:EE:253:ASP:OD1	55:EE:254:LYS:N	2.53	0.42
57:GG:189:ARG:O	57:GG:192:ILE:HG22	2.19	0.42
63:MM:19:GLN:HB3	63:MM:88:TRP:CZ3	2.54	0.42
64:NN:90:HIS:HA	64:NN:93:LYS:HG2	2.00	0.42
67:QQ:26:LYS:NZ	67:QQ:27:ARG:O	2.52	0.42
67:QQ:123:ASP:OD2	67:QQ:125:ARG:NE	2.49	0.42
6:F:58:LYS:HG3	6:F:61:ARG:NH2	2.35	0.42
12:M:81:ASP:OD2	12:M:84:THR:OG1	2.25	0.42
15:P:151:ALA:HB3	15:P:172:PRO:HG2	2.01	0.42
19:T:83:LYS:HE2	19:T:85:LEU:HD21	2.01	0.42
25:Z:121:ARG:O	25:Z:124:THR:HG22	2.20	0.42
28:CC:183:LYS:HG3	73:WW:95:PRO:O	2.20	0.42
29:5:262:G:C2	29:5:263:G:C8	3.07	0.42
29:5:398:A2M:HM'3	29:5:398:A2M:H1'	1.78	0.42
29:5:1403:A:OP1	32:a:130:SER:OG	2.32	0.42
29:5:1451:U:O2'	29:5:1452:C:OP1	2.34	0.42
29:5:1739:G:N3	29:5:4220:A:H2'	2.35	0.42
29:5:3801:A:H2'	29:5:3802:U:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:4351:C:H2'	29:5:4352:U:H6	1.83	0.42
29:5:4984:G:H2'	29:5:4985:A:H5''	2.01	0.42
51:v:511:ALA:HB3	51:v:517:LEU:HD23	2.02	0.42
51:v:749:ILE:HG13	51:v:784:VAL:HB	2.02	0.42
51:v:790:VAL:O	51:v:793:SER:OG	2.37	0.42
53:9:176:U:H2'	53:9:177:G:O4'	2.20	0.42
53:9:429:C:H2'	53:9:430:C:H6	1.85	0.42
53:9:616:A:H4'	81:ee:81:ARG:O	2.20	0.42
53:9:796:G:H2'	53:9:797:C:C6	2.55	0.42
53:9:1115:U:H1'	53:9:1116:C:H2'	2.01	0.42
53:9:1251:A:H2'	53:9:1252:C:O4'	2.20	0.42
53:9:1285:G:OP1	63:MM:107:SER:N	2.46	0.42
53:9:1317:C:N4	53:9:1318:G:O6	2.53	0.42
53:9:1512:C:H5''	80:dd:8:TRP:HZ3	1.84	0.42
53:9:1560:U:O2'	53:9:1583:C:O2'	2.25	0.42
57:GG:75:LEU:HD13	57:GG:97:VAL:HG22	2.02	0.42
63:MM:42:LEU:HD21	63:MM:74:ILE:HD13	2.01	0.42
73:WW:106:THR:OG1	73:WW:111:MET:HE2	2.20	0.42
77:aa:50:VAL:HG23	77:aa:64:LEU:HD11	2.02	0.42
77:aa:52:ASP:OD1	77:aa:52:ASP:N	2.32	0.42
83:gg:173:LEU:HG	83:gg:189:ILE:HG12	2.01	0.42
3:C:76:ILE:HD11	3:C:95:MET:HE3	2.01	0.42
4:D:50:ARG:O	4:D:64:ILE:HA	2.20	0.42
10:J:90:ARG:O	10:J:93:GLU:HG2	2.20	0.42
14:O:24:ALA:HB1	14:O:88:LEU:HD21	2.01	0.42
18:S:35:PRO:HD2	18:S:39:VAL:HG11	2.00	0.42
22:W:101:ARG:HA	22:W:104:GLN:HE21	1.85	0.42
23:X:110:LYS:HG3	23:X:121:VAL:HB	2.01	0.42
28:CC:256:TRP:CD2	73:WW:68:ARG:HD3	2.55	0.42
29:5:271:C:H2'	29:5:272:U:H6	1.85	0.42
29:5:272:U:H2'	29:5:273:U:C6	2.55	0.42
29:5:985:G:H2'	29:5:986:C:H6	1.84	0.42
29:5:2572:G:H2'	29:5:2573:G:C8	2.53	0.42
29:5:3936:U:H3	29:5:4186:G:H1	1.68	0.42
29:5:4572:U:H2'	29:5:4573:G:O4'	2.19	0.42
29:5:4705:U:OP2	44:m:85:ARG:NE	2.42	0.42
29:5:4954:C:H3'	29:5:4955:G:C5'	2.50	0.42
37:f:23:GLU:OE1	37:f:23:GLU:N	2.52	0.42
53:9:884:C:H2'	53:9:885:U:O4'	2.20	0.42
53:9:1005:G:H2'	53:9:1006:C:C6	2.54	0.42
53:9:1620:A:H2'	66:PP:40:ARG:NH2	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:1627:C:C2	53:9:1628:C:C5	3.08	0.42
53:9:1644:C:H2'	53:9:1645:C:C6	2.55	0.42
56:FF:19:LEU:HD12	56:FF:19:LEU:HA	1.81	0.42
57:GG:168:LYS:HE3	57:GG:168:LYS:HB2	1.88	0.42
67:QQ:10:VAL:HG21	67:QQ:95:TYR:HA	2.02	0.42
73:WW:3:ARG:NH2	73:WW:28:ARG:HH12	2.17	0.42
76:ZZ:78:LYS:HD3	76:ZZ:78:LYS:HA	1.83	0.42
82:ff:137:ASP:OD1	82:ff:137:ASP:N	2.52	0.42
3:C:227:ILE:HD13	3:C:227:ILE:HA	1.94	0.42
15:P:44:CYS:SG	15:P:179:LEU:HB2	2.59	0.42
29:5:497:G:H2'	29:5:498:G:H5'	2.02	0.42
29:5:678:G:H2'	29:5:679:C:C6	2.54	0.42
29:5:741:G:C5	29:5:930:G:C6	3.08	0.42
29:5:1239:G:C2	29:5:1240:G:C5	3.07	0.42
29:5:1321:C:N4	29:5:1322:OMG:O6	2.53	0.42
29:5:1517:U:H2'	29:5:1518:G:C8	2.54	0.42
29:5:1910:G:OP1	37:f:76:ARG:NH1	2.53	0.42
29:5:4513:A:H2'	29:5:4514:C:H6	1.83	0.42
42:k:26:LYS:NZ	42:k:28:ASN:HB3	2.34	0.42
48:r:98:ARG:HH21	48:r:107:ARG:NH1	2.17	0.42
50:t:17:CYS:SG	50:t:18:THR:N	2.92	0.42
51:v:613:LEU:HD23	51:v:613:LEU:H	1.84	0.42
51:v:788:LEU:HD12	51:v:789:PRO:HD2	2.01	0.42
53:9:430:C:H2'	53:9:431:G:H8	1.83	0.42
53:9:1320:G:H2'	53:9:1321:G:O4'	2.19	0.42
53:9:1397:U:C2	53:9:1442:U:H4'	2.54	0.42
53:9:1654:G:H2'	53:9:1655:C:C6	2.55	0.42
53:9:1657:G:H2'	53:9:1658:G:C8	2.55	0.42
53:9:1672:U:H2'	53:9:1673:U:C6	2.55	0.42
56:FF:175:ASP:OD1	56:FF:176:GLU:N	2.53	0.42
60:JJ:45:ARG:HG3	60:JJ:46:VAL:N	2.35	0.42
72:VV:16:LYS:HD3	72:VV:21:ASN:OD1	2.19	0.42
74:XX:81:ILE:HD13	74:XX:81:ILE:HA	1.84	0.42
3:C:32:ILE:HD12	3:C:130:ALA:HB2	2.01	0.41
16:Q:78:LYS:HG3	16:Q:79:THR:H	1.85	0.41
18:S:76:LYS:HE2	18:S:78:PHE:HZ	1.84	0.41
21:V:59:ASP:N	21:V:59:ASP:OD1	2.52	0.41
29:5:18:C:H2'	29:5:19:G:C8	2.54	0.41
29:5:67:C:H41	29:5:325:U:HO2'	1.61	0.41
29:5:654:C:H2'	29:5:655:C:H6	1.85	0.41
29:5:1404:A:H2'	29:5:1405:G:O4'	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:1560:A:OP2	47:p:4:ARG:NE	2.32	0.41
29:5:2525:U:H1'	29:5:2526:C:C6	2.55	0.41
29:5:2611:G:H2'	29:5:2612:G:C8	2.55	0.41
29:5:2667:U:O2'	29:5:2668:G:O5'	2.33	0.41
29:5:2689:C:H2'	29:5:2690:C:C6	2.55	0.41
29:5:2797:C:OP1	43:l:48:LYS:NZ	2.49	0.41
29:5:2836:G:H2'	29:5:2837:G:H8	1.85	0.41
29:5:2875:U:O2'	29:5:2887:A:N7	2.46	0.41
29:5:3691:C:H2'	29:5:3692:G:C8	2.55	0.41
29:5:4425:U:O4'	51:v:765:ARG:NH1	2.53	0.41
30:7:64:G:H2'	30:7:65:G:C8	2.55	0.41
31:8:119:C:H2'	31:8:120:G:C8	2.55	0.41
32:a:74:ASN:HA	32:a:112:LEU:O	2.20	0.41
53:9:399:C:N3	62:LL:89:ARG:NH2	2.68	0.41
53:9:478:G:H2'	53:9:479:C:H6	1.84	0.41
53:9:482:G:N1	53:9:485:A:OP2	2.50	0.41
53:9:676:C:H2'	53:9:677:G:O4'	2.20	0.41
53:9:1130:G:OP2	53:9:1130:G:N2	2.53	0.41
53:9:1281:G:C6	53:9:1282:A:C6	3.08	0.41
53:9:1438:A:H2'	53:9:1439:A:H8	1.84	0.41
53:9:1593:C:H2'	53:9:1594:A:H8	1.84	0.41
53:9:1672:U:H2'	53:9:1673:U:H6	1.85	0.41
69:SS:120:HIS:O	69:SS:124:ARG:HG2	2.19	0.41
72:VV:40:ASP:HB3	72:VV:43:THR:HB	2.00	0.41
73:WW:85:ASP:OD1	73:WW:85:ASP:N	2.40	0.41
74:XX:54:LYS:HB3	74:XX:91:LEU:HD11	2.01	0.41
83:gg:292:SER:HB2	83:gg:299:PHE:CE1	2.54	0.41
2:B:26:ARG:HH22	29:5:4587:G:P	2.43	0.41
2:B:44:THR:HG21	2:B:186:ASN:ND2	2.35	0.41
2:B:60:VAL:HG12	2:B:62:ARG:HG2	2.02	0.41
2:B:85:VAL:HG22	2:B:204:GLN:HG2	2.02	0.41
5:E:285:TYR:HB3	5:E:287:HIS:CE1	2.54	0.41
6:F:90:PHE:HB2	6:F:144:PRO:HG3	2.02	0.41
10:J:98:ASN:ND2	29:5:4256:G:OP1	2.52	0.41
13:N:140:LYS:HD2	29:5:125:C:OP1	2.19	0.41
18:S:71:SER:O	18:S:76:LYS:NZ	2.50	0.41
26:AA:89:LYS:HZ2	26:AA:201:LEU:HD11	1.85	0.41
29:5:676:C:H2'	29:5:677:C:H6	1.85	0.41
29:5:715:G:H2'	29:5:716:G:C8	2.54	0.41
29:5:1570:A:H2'	29:5:1571:A:C8	2.55	0.41
29:5:1880:A:H4'	29:5:4223:G:H22	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:2810:OMC:HM23	29:5:2810:OMC:H1'	1.89	0.41
29:5:3727:U:H2'	29:5:3728:G:C8	2.54	0.41
29:5:4529:A2M:H1'	29:5:4564:U:C4	2.55	0.41
29:5:4583:U:H2'	29:5:4584:G:C8	2.55	0.41
29:5:4602:C:H2'	29:5:4603:UR3:H6	2.02	0.41
31:8:27:U:H2'	31:8:28:C:H6	1.84	0.41
31:8:31:G:H2'	31:8:32:C:O4'	2.20	0.41
42:k:12:LEU:HD13	42:k:12:LEU:HA	1.94	0.41
51:v:265:TYR:CZ	51:v:277:ALA:HA	2.55	0.41
51:v:737:GLN:O	51:v:739:ARG:NH1	2.53	0.41
53:9:35:C:H5''	53:9:579:C:H5''	2.02	0.41
53:9:167:G:H5'	53:9:168:C:OP2	2.20	0.41
53:9:658:U:H1'	74:XX:17:ARG:NH1	2.35	0.41
53:9:1712:A:H2'	53:9:1713:C:H6	1.84	0.41
72:VV:11:LEU:H	72:VV:11:LEU:HD23	1.86	0.41
79:cc:23:SER:OG	79:cc:24:GLN:OE1	2.29	0.41
82:ff:114:ILE:HD13	82:ff:114:ILE:HA	1.89	0.41
1:A:223:SER:OG	29:5:3754:A:O2'	2.27	0.41
3:C:323:ARG:NH1	29:5:1285:A:O2'	2.52	0.41
7:G:253:THR:OG1	29:5:150:U:OP2	2.26	0.41
8:H:41:ILE:HD13	8:H:73:ILE:HD11	2.02	0.41
16:Q:167:VAL:HG12	16:Q:169:SER:H	1.86	0.41
27:BB:126:ASP:N	27:BB:126:ASP:OD1	2.53	0.41
29:5:233:U:O2'	29:5:234:G:H5''	2.19	0.41
29:5:286:U:H2'	29:5:287:U:C6	2.55	0.41
29:5:657:C:C2	29:5:658:C:C5	3.09	0.41
29:5:1100:G:H2'	29:5:1101:A:C8	2.55	0.41
29:5:1450:G:H8	29:5:1450:G:O5'	2.03	0.41
29:5:1627:A:H2'	29:5:1628:U:C6	2.55	0.41
29:5:1782:A:N3	29:5:1782:A:H2'	2.35	0.41
29:5:3695:G:H2'	29:5:3696:U:C6	2.55	0.41
29:5:3838:U:H2'	29:5:3839:C:C6	2.53	0.41
29:5:4074:U:H2'	29:5:4075:U:H6	1.85	0.41
29:5:4318:U:C2	29:5:4319:A:N7	2.89	0.41
29:5:4555:G:C4	29:5:4556:7MG:H82	2.55	0.41
29:5:4626:OMU:H2'	29:5:4627:C:O4'	2.19	0.41
29:5:4722:C:H2'	29:5:4723:A:H8	1.84	0.41
31:8:154:G:H2'	31:8:155:C:C6	2.55	0.41
49:s:81:HIS:CD2	49:s:191:GLN:HG3	2.55	0.41
50:t:106:PHE:HA	50:t:109:ILE:HD12	2.02	0.41
51:v:659:PRO:HG2	51:v:698:ARG:HA	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:319:C:OP1	53:9:319:C:H4'	2.21	0.41
53:9:554:A:H5'	53:9:555:A:OP1	2.20	0.41
53:9:812:A:H3'	53:9:813:A:H8	1.85	0.41
53:9:1423:C:C2	53:9:1424:G:C8	3.09	0.41
53:9:1468:C:H2'	53:9:1469:A:C8	2.55	0.41
53:9:1541:G:C2	53:9:1593:C:C2	3.08	0.41
53:9:1793:A:H2'	53:9:1794:C:H6	1.85	0.41
55:EE:177:THR:HG22	55:EE:195:ILE:HG22	2.01	0.41
57:GG:119:LYS:HE3	57:GG:119:LYS:HB3	1.96	0.41
1:A:112:ILE:H	47:p:83:ILE:HD11	1.85	0.41
6:F:93:ARG:HB2	6:F:113:LEU:HB3	2.01	0.41
7:G:213:ASP:N	7:G:213:ASP:OD1	2.52	0.41
11:L:116:ARG:HH12	11:L:157:ILE:HD11	1.85	0.41
26:AA:33:GLN:NE2	72:VV:64:GLU:OE2	2.44	0.41
29:5:307:A:H2'	29:5:308:G:C4	2.55	0.41
29:5:1296:G:H2'	29:5:1297:G:C8	2.54	0.41
29:5:1872:UR3:OP1	29:5:1872:UR3:H6	2.21	0.41
29:5:2344:C:C4	29:5:2345:G:N7	2.88	0.41
29:5:2376:A:N7	35:d:39:LYS:NZ	2.50	0.41
29:5:2493:G:O6	29:5:2495:C:O2'	2.38	0.41
29:5:2641:U:H2'	29:5:2642:U:C6	2.55	0.41
29:5:3676:C:H2'	29:5:3677:G:C8	2.55	0.41
29:5:3808:U:O4	29:5:4508:C:N4	2.44	0.41
29:5:4716:C:H2'	29:5:4717:C:C6	2.56	0.41
29:5:5003:G:C2	29:5:5004:G:C8	3.09	0.41
29:5:5052:U:H2'	29:5:5056:C:H41	1.84	0.41
31:8:141:C:H2'	31:8:142:U:C6	2.56	0.41
34:c:26:LYS:HG2	34:c:98:ASP:OD1	2.19	0.41
41:j:54:LYS:O	41:j:58:THR:HG23	2.20	0.41
53:9:109:U:H2'	53:9:110:U:C6	2.55	0.41
53:9:449:A:O2'	53:9:450:C:H4'	2.20	0.41
53:9:1083:A:H5''	53:9:1085:C:N4	2.35	0.41
53:9:1387:G:C2	53:9:1388:A:H1'	2.55	0.41
53:9:1470:C:H2'	53:9:1471:C:C6	2.55	0.41
53:9:1804:U:H2'	53:9:1805:G:C8	2.55	0.41
66:PP:20:VAL:HG21	66:PP:28:MET:HE1	2.02	0.41
75:YY:80:ASP:OD1	75:YY:81:TYR:N	2.53	0.41
83:gg:172:LYS:HG2	83:gg:193:GLY:O	2.21	0.41
6:F:181:TYR:CZ	6:F:202:GLU:HG2	2.56	0.41
8:H:65:LYS:HB3	8:H:65:LYS:HZ2	1.85	0.41
12:M:20:HIS:HD2	12:M:45:VAL:HG22	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Y:45:ARG:NH2	29:5:238:C:OP2	2.53	0.41
26:AA:66:VAL:HG21	26:AA:185:MET:HB2	2.03	0.41
28:CC:60:TRP:CG	28:CC:92:GLU:HG2	2.56	0.41
29:5:152:U:C2	29:5:153:G:C8	3.08	0.41
29:5:460:C:H2'	29:5:461:G:C8	2.55	0.41
29:5:1347:U:H2'	29:5:1348:A:H8	1.85	0.41
29:5:2283:C:H2'	29:5:2284:G:C8	2.56	0.41
29:5:2454:G:H2'	29:5:2455:A:C8	2.55	0.41
29:5:2526:C:H1'	29:5:2646:G:H21	1.85	0.41
29:5:3936:U:H2'	29:5:3937:C:C6	2.55	0.41
29:5:4215:G:O6	29:5:4230:A:N6	2.54	0.41
29:5:4577:A2M:HM'3	29:5:4577:A2M:H1'	1.88	0.41
30:7:3:C:H2'	30:7:4:U:C6	2.55	0.41
30:7:57:C:H2'	30:7:58:A:H8	1.85	0.41
42:k:5:ILE:HG21	42:k:11:PHE:HB2	2.02	0.41
49:s:130:LEU:HD13	49:s:177:MET:HE2	2.02	0.41
53:9:1296:U:H2'	53:9:1297:U:C6	2.56	0.41
53:9:1627:C:H5''	70:TT:41:LYS:HE3	2.03	0.41
53:9:1805:G:H2'	53:9:1806:A:C8	2.55	0.41
58:HH:9:VAL:HB	58:HH:44:ASN:HD21	1.85	0.41
60:JJ:111:GLN:HB2	60:JJ:145:PRO:HB2	2.02	0.41
67:QQ:132:PHE:HB2	71:UU:77:TRP:CD1	2.55	0.41
69:SS:124:ARG:HH21	69:SS:129:LEU:HB3	1.85	0.41
73:WW:23:ARG:HG3	78:bb:4:ALA:HB2	2.02	0.41
78:bb:50:ALA:O	78:bb:51:GLN:HG2	2.20	0.41
79:cc:26:GLN:H	79:cc:26:GLN:CD	2.27	0.41
80:dd:30:LEU:HA	80:dd:39:CYS:HA	2.01	0.41
2:B:120:LYS:N	29:5:4974:A:OP1	2.47	0.41
3:C:77:PRO:O	3:C:90:GLY:HA2	2.20	0.41
3:C:152:LEU:HD23	3:C:251:ILE:HG12	2.03	0.41
3:C:343:GLN:HG2	29:5:725:C:H1'	2.01	0.41
5:E:61:ARG:HB2	29:5:1243:C:H5''	2.01	0.41
8:H:24:THR:OG1	8:H:36:ARG:O	2.23	0.41
10:J:86:GLY:O	10:J:89:VAL:HG12	2.21	0.41
14:O:201:LEU:HD23	14:O:201:LEU:HA	1.90	0.41
16:Q:43:PHE:CD2	16:Q:133:GLY:HA3	2.55	0.41
17:R:104:ARG:HA	17:R:107:ARG:HG2	2.03	0.41
26:AA:176:TRP:CE3	26:AA:199:PRO:HB3	2.55	0.41
29:5:271:C:H2'	29:5:272:U:C6	2.56	0.41
29:5:325:U:H2'	29:5:326:C:C6	2.55	0.41
29:5:1449:A:H2'	29:5:1450:G:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:1575:U:H2'	29:5:1576:G:H8	1.85	0.41
29:5:2268:G:O6	48:r:98:ARG:NH1	2.53	0.41
29:5:2568:G:N2	29:5:2570:G:H3'	2.35	0.41
29:5:2660:C:H2'	29:5:2661:C:C6	2.55	0.41
29:5:2763:A:H2'	29:5:2764:G:C8	2.56	0.41
29:5:2842:A:C2	29:5:3901:G:H4'	2.56	0.41
29:5:4938:U:H2'	29:5:4939:C:H6	1.84	0.41
46:o:24:THR:HG23	46:o:69:ARG:HB3	2.02	0.41
51:v:592:LEU:HD13	51:v:603:TYR:CE2	2.55	0.41
53:9:71:G:H21	53:9:73:C:N4	2.17	0.41
53:9:422:U:H2'	53:9:423:U:C6	2.55	0.41
53:9:628:A:O4'	54:DD:178:ARG:NH2	2.53	0.41
53:9:849:A:H2'	53:9:850:C:C6	2.55	0.41
53:9:944:A:H5''	65:OO:134:PRO:HB2	2.01	0.41
53:9:1423:C:H2'	53:9:1424:G:O4'	2.20	0.41
54:DD:24:PHE:HD2	54:DD:25:LEU:HD12	1.86	0.41
55:EE:160:ILE:HD12	55:EE:169:ILE:HG22	2.03	0.41
55:EE:222:LEU:HD23	55:EE:225:ILE:HD12	2.02	0.41
60:JJ:54:ARG:O	60:JJ:58:ARG:HG3	2.20	0.41
64:NN:46:THR:HG22	64:NN:49:GLN:H	1.85	0.41
73:WW:104:LEU:HB3	73:WW:125:ILE:HA	2.02	0.41
74:XX:46:HIS:CD2	74:XX:103:ALA:HB2	2.56	0.41
83:gg:125:ARG:HG2	83:gg:150:TRP:CD2	2.56	0.41
2:B:194:LEU:HD23	2:B:194:LEU:HA	1.84	0.41
4:D:51:MET:HG2	4:D:64:ILE:HG22	2.03	0.41
6:F:43:LYS:HE3	6:F:43:LYS:HB2	1.96	0.41
7:G:141:ASP:OD1	7:G:141:ASP:N	2.46	0.41
8:H:117:PHE:O	8:H:120:GLU:HG2	2.20	0.41
25:Z:59:LYS:O	25:Z:62:ILE:HG13	2.21	0.41
29:5:158:A:H5''	29:5:159:C:H2'	2.02	0.41
29:5:1201:G:H2'	29:5:1202:G:H8	1.86	0.41
29:5:1466:C:H2'	29:5:1467:C:H6	1.86	0.41
29:5:1467:C:H2'	29:5:1468:A:H8	1.84	0.41
29:5:1477:U:H2'	29:5:1478:C:H6	1.85	0.41
29:5:3610:A:H2'	29:5:3611:C:C6	2.56	0.41
31:8:130:C:H2'	31:8:131:G:H8	1.86	0.41
37:f:106:TYR:CG	37:f:107:PRO:HD3	2.56	0.41
46:o:44:LYS:HE3	46:o:52:THR:HB	2.03	0.41
53:9:112:U:H2'	53:9:115:U:H5	1.86	0.41
53:9:1067:C:H2'	53:9:1068:G:O4'	2.21	0.41
53:9:1305:C:H2'	53:9:1306:U:H6	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:1599:U:C2	56:FF:166:ILE:HG13	2.55	0.41
53:9:1828:C:H2'	53:9:1829:G:C8	2.55	0.41
54:DD:163:PRO:O	54:DD:167:TYR:HB2	2.20	0.41
55:EE:100:ARG:HB2	55:EE:114:ILE:HD13	2.03	0.41
55:EE:130:PHE:O	55:EE:138:HIS:N	2.51	0.41
60:JJ:35:TYR:OH	60:JJ:103:GLU:HB2	2.21	0.41
60:JJ:84:ILE:HG13	60:JJ:86:VAL:HG13	2.01	0.41
67:QQ:132:PHE:HB2	71:UU:77:TRP:HD1	1.86	0.41
70:TT:124:THR:HG23	70:TT:126:GLN:N	2.36	0.41
1:A:224:THR:HG23	29:5:3754:A:H1'	2.03	0.41
2:B:385:LYS:NZ	29:5:5008:U:OP2	2.53	0.41
5:E:120:PRO:O	48:r:112:ARG:HD2	2.20	0.41
7:G:128:LYS:HE2	7:G:293:ASN:HD22	1.85	0.41
7:G:164:LYS:HE3	7:G:164:LYS:HB3	1.78	0.41
11:L:31:ARG:HD2	29:5:337:U:OP1	2.21	0.41
11:L:71:ARG:NH2	29:5:74:G:O3'	2.52	0.41
17:R:78:ILE:HG22	17:R:81:ARG:NH2	2.35	0.41
17:R:96:MET:HE2	17:R:100:ARG:HH12	1.86	0.41
22:W:101:ARG:HB3	22:W:105:ARG:HH21	1.86	0.41
25:Z:96:VAL:HG22	25:Z:110:ALA:HB1	2.01	0.41
26:AA:111:GLN:HA	26:AA:116:PHE:CD1	2.55	0.41
28:CC:94:ILE:HG21	28:CC:162:ILE:HD12	2.02	0.41
28:CC:133:TYR:CD1	28:CC:216:MET:HA	2.56	0.41
29:5:223:G:H4'	29:5:225:G:C8	2.56	0.41
29:5:324:A:C6	29:5:325:U:C4	3.08	0.41
29:5:1398:A:H2'	29:5:1399:G:C8	2.56	0.41
29:5:1461:G:H2'	29:5:1462:JMH:C6	2.51	0.41
29:5:1565:G:H2'	29:5:1566:A:H8	1.85	0.41
29:5:1948:A:H2'	29:5:1949:A:H8	1.86	0.41
29:5:3733:A:H2'	29:5:3734:A:C8	2.56	0.41
29:5:3774:U:H2'	29:5:3775:C:C6	2.55	0.41
29:5:4635:U:H2'	29:5:4636:G:C8	2.53	0.41
29:5:4765:C:H2'	29:5:4766:G:C8	2.55	0.41
29:5:4994:U:H2'	29:5:5067:A:N6	2.36	0.41
37:f:43:LEU:HD22	37:f:76:ARG:HA	2.02	0.41
50:t:147:HIS:HA	50:t:150:ASP:HB2	2.03	0.41
51:v:539:GLU:HG2	51:v:540:GLU:H	1.85	0.41
53:9:202:G:C4	53:9:203:G:C8	3.09	0.41
53:9:429:C:H2'	53:9:430:C:C6	2.55	0.41
53:9:807:G:H2'	53:9:808:A:C8	2.56	0.41
53:9:1017:U:H2'	53:9:1018:U:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:9:1335:G:H4'	54:DD:172:VAL:HG11	2.02	0.41
56:FF:151:ILE:HA	56:FF:154:LEU:HD22	2.02	0.41
59:II:38:ILE:HD11	59:II:81:VAL:HG23	2.03	0.41
69:SS:7:GLU:CD	69:SS:7:GLU:H	2.28	0.41
73:WW:77:PRO:HD3	74:XX:5:ARG:O	2.20	0.41
82:ff:140:TYR:HD1	82:ff:147:THR:HG22	1.85	0.41
83:gg:194:TYR:CE1	83:gg:212:LYS:HD2	2.55	0.41
83:gg:275:ILE:H	83:gg:275:ILE:HG13	1.66	0.41
4:D:156:GLY:HA2	4:D:181:PRO:HD3	2.02	0.41
4:D:234:ASP:OD1	4:D:235:MET:N	2.54	0.41
4:D:239:MET:HE3	4:D:239:MET:HB3	1.94	0.41
7:G:195:THR:O	7:G:199:LEU:HG	2.21	0.41
9:I:52:MET:HE1	9:I:155:ALA:HB3	2.02	0.41
12:M:43:THR:HG23	12:M:45:VAL:HG23	2.03	0.41
13:N:4:TYR:HD1	13:N:46:ASP:HB3	1.85	0.41
15:P:63:GLN:HE22	29:5:424:U:H5''	1.84	0.41
18:S:37:HIS:HA	18:S:40:ALA:HB3	2.03	0.41
18:S:86:SER:OG	18:S:89:GLY:O	2.34	0.41
21:V:42:VAL:HA	21:V:61:VAL:HG23	2.02	0.41
29:5:22:G:H2'	29:5:23:C:H6	1.86	0.41
29:5:25:A:C8	29:5:341:G:C8	3.09	0.41
29:5:58:G:H4'	29:5:59:A:H4'	2.02	0.41
29:5:98:A:C4	29:5:99:A:C8	3.09	0.41
29:5:269:G:H2'	29:5:270:U:C6	2.56	0.41
29:5:374:G:OP2	41:j:56:ARG:NH1	2.54	0.41
29:5:644:C:H2'	29:5:645:G:H8	1.84	0.41
29:5:1487:C:N4	40:i:4:ARG:HE	2.19	0.41
29:5:1541:C:H2'	29:5:1542:U:O4'	2.21	0.41
29:5:2013:G:H21	29:5:2018:A:H62	0.65	0.41
29:5:2368:U:H2'	29:5:2369:A2M:C8	2.49	0.41
29:5:2395:A:H2'	29:5:2396:G:C8	2.56	0.41
29:5:2410:A:O2'	41:j:12:ARG:O	2.33	0.41
29:5:2603:G:H2'	29:5:2604:A:C8	2.56	0.41
29:5:2712:G:HO2'	29:5:2715:C:H41	1.58	0.41
29:5:2757:G:C2	29:5:2758:G:N7	2.89	0.41
29:5:2780:C:H2'	29:5:2781:C:C6	2.56	0.41
29:5:3700:U:C2	29:5:3701:U:C5	3.08	0.41
29:5:3839:C:H2'	29:5:3840:C:H6	1.85	0.41
29:5:3873:A2M:HM'3	29:5:3873:A2M:H1'	1.76	0.41
29:5:3929:A:H2'	29:5:3930:C:C6	2.55	0.41
29:5:5044:A:H2'	29:5:5045:U:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:8:6:C:H2'	31:8:7:U:C6	2.55	0.41
31:8:75:G:H2'	31:8:76:C:C6	2.55	0.41
31:8:120:G:C6	31:8:131:G:C6	3.08	0.41
32:a:100:ILE:HG12	32:a:123:ILE:HB	2.03	0.41
34:c:22:MET:HE3	34:c:27:TYR:CE2	2.56	0.41
47:p:30:GLU:HA	47:p:33:GLN:HG2	2.02	0.41
49:s:125:ALA:HA	49:s:154:ILE:HB	2.02	0.41
51:v:25:ILE:HD11	51:v:142:VAL:HG13	2.02	0.41
51:v:481:LYS:HG2	51:v:529:LYS:HA	2.03	0.41
51:v:560:ASP:OD1	51:v:560:ASP:N	2.50	0.41
51:v:605:LYS:HG3	51:v:705:HIS:NE2	2.36	0.41
51:v:791:ASN:C	51:v:792:GLU:HG3	2.46	0.41
53:9:28:U:H2'	53:9:29:G:C8	2.55	0.41
53:9:191:A:H62	53:9:208:G:H21	1.68	0.41
53:9:337:C:H2'	53:9:338:G:H8	1.86	0.41
53:9:350:C:C4	53:9:351:G:C8	3.08	0.41
53:9:552:G:H4'	81:ee:112:ASN:HB3	2.02	0.41
53:9:611:G:H3'	53:9:612:U:C6	2.56	0.41
53:9:846:G:H3'	55:EE:19:MET:HE2	2.03	0.41
53:9:1007:C:H2'	53:9:1008:A:H8	1.84	0.41
53:9:1676:U:H2'	53:9:1677:U:O4'	2.21	0.41
53:9:1685:U:H2'	53:9:1686:G:O4'	2.20	0.41
53:9:1806:A:H2'	53:9:1807:C:H6	1.86	0.41
54:DD:46:THR:HB	54:DD:84:VAL:HG12	2.02	0.41
55:EE:70:ILE:HG22	55:EE:90:ILE:HD11	2.02	0.41
56:FF:101:HIS:HB2	56:FF:108:PRO:HG3	2.03	0.41
59:II:21:TYR:CZ	59:II:22:HIS:HD2	2.38	0.41
63:MM:93:LYS:HE3	63:MM:96:ARG:HG2	2.02	0.41
66:PP:40:ARG:HA	66:PP:40:ARG:HD2	1.81	0.41
67:QQ:16:LYS:HG3	67:QQ:17:LYS:H	1.85	0.41
71:UU:64:THR:HG22	71:UU:77:TRP:CE3	2.56	0.41
78:bb:56:CYS:SG	78:bb:57:VAL:N	2.94	0.41
1:A:70:LYS:HD2	1:A:72:ARG:NH1	2.36	0.41
2:B:113:GLU:OE1	2:B:168:MET:N	2.54	0.41
3:C:245:HIS:CE1	48:r:13:CYS:HG	2.39	0.41
4:D:146:LEU:HD12	29:5:4329:A:H2	1.86	0.41
8:H:176:LEU:HD23	44:m:60:ALA:HB3	2.03	0.41
10:J:19:LYS:HD3	10:J:75:ARG:NH2	2.37	0.41
10:J:85:LYS:O	10:J:88:LYS:HG2	2.21	0.41
12:M:108:ASP:HB2	14:O:199:HIS:NE2	2.36	0.41
14:O:74:ARG:HG3	14:O:145:VAL:HG13	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:P:156:ARG:NH2	29:5:2428:OMC:OP1	2.54	0.41
17:R:64:ARG:O	17:R:68:LEU:HG	2.21	0.41
20:U:28:PRO:HB3	20:U:100:LEU:HD21	2.02	0.41
23:X:56:ARG:NE	29:5:13:U:O3'	2.40	0.41
24:Y:37:GLU:O	24:Y:40:GLN:HG3	2.21	0.41
29:5:444:G:H2'	29:5:445:U:C6	2.55	0.41
29:5:463:A:N1	29:5:693:A:N1	2.69	0.41
29:5:1210:C:H2'	29:5:1211:G:C8	2.56	0.41
29:5:1451:U:H2'	29:5:1452:C:C6	2.57	0.41
29:5:1621:C:H2'	29:5:1622:U:C6	2.56	0.41
29:5:1649:A:H2'	29:5:1650:C:H6	1.85	0.41
29:5:2002:C:H42	29:5:2006:G:H22	1.69	0.41
29:5:2380:A:H5'	35:d:64:ILE:O	2.20	0.41
29:5:2740:U:H2'	29:5:2741:G:C8	2.55	0.41
29:5:3822:A:O2'	29:5:3825:G:N3	2.40	0.41
29:5:4267:C:H2'	29:5:4268:C:H6	1.86	0.41
29:5:4466:U:H2'	29:5:4467:C:C6	2.56	0.41
29:5:5006:G:C2	29:5:5057:C:C2	3.09	0.41
31:8:45:C:P	43:l:15:LYS:HD3	2.61	0.41
31:8:142:U:H2'	31:8:143:G:C8	2.56	0.41
50:t:64:ILE:HD13	50:t:69:ALA:HB2	2.02	0.41
51:v:396:MET:HG3	51:v:485:ILE:HG23	2.03	0.41
53:9:128:U:H3'	53:9:129:C:H6	1.86	0.41
53:9:532:C:H2'	53:9:533:A:H8	1.84	0.41
53:9:651:U:H2'	53:9:652:U:C6	2.56	0.41
53:9:974:C:H2'	53:9:975:G:H8	1.86	0.41
53:9:1244:U:H3	53:9:1255:G:H1	1.68	0.41
53:9:1716:C:H2'	53:9:1717:C:C6	2.56	0.41
53:9:1856:C:H2'	53:9:1857:G:C8	2.55	0.41
53:9:1860:A:H3'	77:aa:8:ASN:HB3	2.02	0.41
55:EE:11:ARG:NH1	55:EE:24:THR:OG1	2.54	0.41
60:JJ:46:VAL:HG11	60:JJ:106:LEU:HD12	2.03	0.41
63:MM:43:ASP:HB3	82:ff:128:ALA:O	2.20	0.41
67:QQ:16:LYS:HE3	67:QQ:82:TYR:HD2	1.86	0.41
82:ff:135:HIS:HB2	82:ff:138:ARG:O	2.21	0.41
83:gg:171:ASP:OD1	83:gg:171:ASP:N	2.54	0.41
2:B:135:LYS:HA	2:B:138:GLN:NE2	2.36	0.40
3:C:207:PRO:HB3	3:C:249:PHE:CD2	2.55	0.40
4:D:33:ARG:HH21	30:7:7:G:H4'	1.86	0.40
5:E:286:PRO:HA	5:E:289:LEU:HG	2.02	0.40
9:I:171:TRP:O	9:I:174:THR:OG1	2.27	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:S:55:LYS:NZ	30:7:99:G:N7	2.52	0.40
19:T:28:ALA:O	19:T:32:ARG:HG3	2.20	0.40
19:T:108:ARG:NH2	29:5:1843:A:OP1	2.54	0.40
26:AA:5:LEU:O	26:AA:9:GLN:HG2	2.21	0.40
29:5:25:A:N9	29:5:341:G:C8	2.89	0.40
29:5:1733:U:H2'	29:5:1734:U:H6	1.86	0.40
29:5:2080:C:H2'	29:5:2081:G:H8	1.85	0.40
29:5:2630:G:H2'	29:5:2631:U:C6	2.57	0.40
29:5:2759:G:OP2	29:5:2759:G:H8	2.04	0.40
29:5:3805:A:N3	29:5:4512:C:O2'	2.45	0.40
29:5:3811:U:H2'	29:5:3812:G:H8	1.86	0.40
29:5:4312:OMU:H1'	29:5:4312:OMU:HM23	1.78	0.40
29:5:4626:OMU:HM23	29:5:4626:OMU:H1'	1.58	0.40
29:5:4657:A:H2'	29:5:4658:G:O4'	2.21	0.40
39:h:5:LYS:HE2	39:h:5:LYS:HB3	1.85	0.40
42:k:54:GLU:HA	42:k:57:LYS:HG2	2.03	0.40
48:r:56:ASP:OD1	48:r:57:GLY:N	2.49	0.40
51:v:561:LEU:HD13	51:v:561:LEU:HA	1.86	0.40
51:v:766:LYS:HE2	51:v:796:PHE:HA	2.02	0.40
53:9:841:G:H2'	53:9:842:C:C6	2.56	0.40
55:EE:31:PRO:HD2	55:EE:38:LEU:HD11	2.04	0.40
57:GG:115:LYS:HE3	57:GG:115:LYS:HB2	1.91	0.40
62:LL:86:ILE:HG12	62:LL:113:LEU:HB2	2.03	0.40
63:MM:99:LYS:HE3	63:MM:99:LYS:HB3	1.88	0.40
72:VV:21:ASN:ND2	73:WW:67:GLY:H	2.19	0.40
79:cc:16:LYS:HB3	79:cc:31:ARG:HB3	2.02	0.40
83:gg:270:LEU:HD13	83:gg:310:TRP:CE3	2.56	0.40
83:gg:277:THR:HG23	83:gg:281:ALA:HB3	2.03	0.40
1:A:124:GLY:O	1:A:125:LYS:HD2	2.22	0.40
2:B:358:ARG:NH2	29:5:4681:U:OP1	2.54	0.40
3:C:116:ASN:HB2	3:C:119:GLN:HG2	2.02	0.40
7:G:247:VAL:HB	7:G:249:ARG:HE	1.86	0.40
8:H:117:PHE:HE1	8:H:178:GLY:HA2	1.87	0.40
9:I:116:ARG:HA	29:5:4201:G:N2	2.36	0.40
14:O:36:VAL:HG22	14:O:108:ILE:HA	2.03	0.40
24:Y:51:LYS:HB2	31:8:72:A:P	2.61	0.40
29:5:65:A:N6	29:5:75:G:H1'	2.37	0.40
29:5:211:G:C2	29:5:212:A:C8	3.08	0.40
29:5:985:G:H2'	29:5:986:C:C6	2.56	0.40
29:5:1571:A:C5	29:5:1572:C:H1'	2.56	0.40
29:5:1960:U:H2'	29:5:1961:G:H8	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:2002:C:H42	29:5:2006:G:N2	2.19	0.40
29:5:2104:G:H2'	29:5:2105:C:C6	2.56	0.40
29:5:2667:U:O2'	29:5:2668:G:H4'	2.20	0.40
29:5:3690:G:H2'	29:5:3691:C:H6	1.86	0.40
29:5:5007:U:H2'	29:5:5008:U:O4'	2.22	0.40
35:d:88:LEU:HD13	35:d:106:VAL:HG13	2.03	0.40
44:m:96:ARG:HA	44:m:97:PRO:HD3	1.91	0.40
50:t:123:ARG:HD2	50:t:123:ARG:HA	1.81	0.40
51:v:27:HIS:CE1	51:v:28:VAL:HG22	2.56	0.40
51:v:288:THR:HA	51:v:291:GLN:HB3	2.03	0.40
51:v:309:LYS:HA	51:v:312:THR:HG22	2.04	0.40
51:v:602:LEU:HD22	51:v:728:CYS:SG	2.61	0.40
53:9:89:C:H2'	53:9:90:G:C8	2.57	0.40
53:9:160:U:O2'	53:9:161:U:H3'	2.21	0.40
53:9:162:C:H5''	57:GG:87:ARG:NH2	2.35	0.40
53:9:204:G:C2	53:9:205:G:C8	3.10	0.40
53:9:583:A:OP1	60:JJ:162:ARG:NH2	2.54	0.40
53:9:1207:G:O2'	53:9:1837:G:N2	2.51	0.40
53:9:1236:G:H2'	53:9:1237:C:H6	1.86	0.40
53:9:1279:C:H2'	53:9:1280:G:C8	2.56	0.40
53:9:1336:C:H2'	53:9:1337:4AC:O4'	2.21	0.40
53:9:1399:C:O3'	83:gg:100:ARG:NH2	2.54	0.40
53:9:1687:C:H2'	53:9:1688:C:C6	2.57	0.40
57:GG:163:ASN:OD1	57:GG:163:ASN:N	2.54	0.40
59:II:62:VAL:HA	59:II:77:ARG:HA	2.03	0.40
60:JJ:88:ASP:OD1	60:JJ:88:ASP:N	2.45	0.40
60:JJ:131:ARG:NH1	60:JJ:143:ASN:O	2.54	0.40
61:KK:14:LEU:HA	61:KK:17:LYS:HG2	2.03	0.40
83:gg:108:VAL:HG22	83:gg:124:SER:HB3	2.03	0.40
2:B:252:ALA:HB1	29:5:4530:G:N3	2.36	0.40
3:C:67:TRP:CE3	3:C:73:VAL:HG11	2.57	0.40
4:D:208:MET:HE3	4:D:208:MET:HB2	1.95	0.40
9:I:190:LEU:HD23	9:I:197:VAL:HG11	2.04	0.40
12:M:121:ARG:O	12:M:125:ASN:ND2	2.54	0.40
14:O:14:HIS:CE1	14:O:119:VAL:HG23	2.56	0.40
15:P:124:LEU:HA	15:P:177:MET:HE1	2.03	0.40
16:Q:85:THR:HG23	16:Q:104:ARG:HG3	2.03	0.40
19:T:92:ARG:NH2	29:5:4319:A:OP1	2.29	0.40
26:AA:177:MET:HE3	26:AA:177:MET:HB2	1.94	0.40
29:5:275:C:H2'	29:5:276:C:C6	2.56	0.40
29:5:385:A:H4'	29:5:386:A:OP1	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:1314:C:H2'	29:5:1315:C:C6	2.55	0.40
29:5:1490:G:H2'	29:5:1490:G:N3	2.35	0.40
29:5:1809:G:N2	29:5:1812:G:H21	2.19	0.40
29:5:1880:A:O4'	29:5:4219:A:N6	2.55	0.40
29:5:2301:C:H2'	29:5:2302:G:C8	2.53	0.40
29:5:2409:A:OP1	38:g:10:ARG:NH1	2.41	0.40
29:5:2558:G:H1'	29:5:2772:A:N6	2.36	0.40
29:5:2639:U:C2	29:5:2640:C:C5	3.10	0.40
29:5:4729:A:H2'	29:5:4730:A:H8	1.86	0.40
29:5:4754:U:H2'	29:5:4755:C:C6	2.57	0.40
29:5:4931:U:H4'	29:5:4932:C:C5'	2.51	0.40
31:8:15:G:O2'	31:8:16:G:O4'	2.26	0.40
39:h:35:LYS:HG3	39:h:44:LEU:HD22	2.03	0.40
41:j:13:ASN:OD1	41:j:13:ASN:N	2.54	0.40
48:r:98:ARG:HE	48:r:107:ARG:HH12	1.68	0.40
49:s:118:PRO:O	49:s:163:THR:HG23	2.22	0.40
53:9:521:A:H2'	53:9:522:A:O4'	2.21	0.40
53:9:610:G:C6	53:9:634:A:N1	2.89	0.40
53:9:913:A:O2'	58:HH:120:ARG:NH2	2.54	0.40
53:9:1272:C:H2'	53:9:1273:C:C6	2.57	0.40
53:9:1375:G:H2'	53:9:1376:A:C8	2.56	0.40
53:9:1568:C:OP1	70:TT:96:SER:OG	2.28	0.40
55:EE:124:CYS:HA	55:EE:142:HIS:CE1	2.56	0.40
63:MM:89:VAL:HG13	63:MM:91:LEU:HG	2.02	0.40
67:QQ:53:GLU:N	67:QQ:54:PRO:HD2	2.37	0.40
3:C:179:ASP:OD1	3:C:179:ASP:N	2.54	0.40
6:F:26:GLU:HA	6:F:29:ILE:HG22	2.04	0.40
8:H:20:LEU:HD22	8:H:25:VAL:HG12	2.03	0.40
14:O:51:LYS:NZ	14:O:144:GLU:OE2	2.47	0.40
28:CC:262:THR:OG1	28:CC:263:LYS:N	2.54	0.40
29:5:262:G:C2	29:5:263:G:N7	2.89	0.40
29:5:393:U:H2'	29:5:394:G:C8	2.56	0.40
29:5:680:C:C2	29:5:681:G:C8	3.08	0.40
29:5:912:G:H2'	29:5:913:U:C6	2.56	0.40
29:5:1317:G:H2'	29:5:1318:A:O4'	2.22	0.40
29:5:1464:C:C2	29:5:1465:A:C8	3.09	0.40
29:5:1562:C:O2'	29:5:2675:C:OP1	2.27	0.40
29:5:1798:U:H3'	29:5:1799:A:H8	1.86	0.40
29:5:2051:G:O6	29:5:3876:C:O2'	2.38	0.40
29:5:2371:OMC:HM23	29:5:2371:OMC:H1'	1.94	0.40
29:5:2470:C:H2'	29:5:2471:C:C6	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:5:3889:U:H2'	29:5:3890:U:H6	1.87	0.40
29:5:4384:A:O2'	29:5:4385:A:H2'	2.22	0.40
32:a:121:PRO:HA	32:a:141:GLY:O	2.21	0.40
37:f:16:ARG:HA	37:f:21:GLN:HA	2.03	0.40
45:n:20:MET:HA	45:n:23:ARG:HG2	2.03	0.40
48:r:28:GLU:H	48:r:28:GLU:HG2	1.69	0.40
51:v:25:ILE:O	51:v:127:VAL:HA	2.21	0.40
51:v:152:LYS:HD3	51:v:359:PRO:HD3	2.02	0.40
51:v:715:DDE:HAB2	51:v:715:DDE:HAU3	1.75	0.40
51:v:747:VAL:HG23	51:v:786:ALA:HB3	2.04	0.40
51:v:751:CYS:SG	51:v:755:VAL:HG23	2.61	0.40
53:9:531:A:H2'	53:9:532:C:O4'	2.22	0.40
53:9:1705:C:H2'	53:9:1706:G:C8	2.56	0.40
53:9:1819:A:H2'	53:9:1820:G:C8	2.56	0.40
56:FF:61:PHE:CZ	79:cc:51:ARG:HG3	2.56	0.40
69:SS:7:GLU:C	69:SS:8:LYS:HG3	2.46	0.40
76:ZZ:88:LEU:HB3	76:ZZ:109:TYR:CE2	2.56	0.40
83:gg:91:ASP:O	83:gg:95:GLY:N	2.47	0.40
83:gg:234:ASP:OD1	83:gg:252:THR:HG22	2.21	0.40
1:A:112:ILE:HG13	47:p:79:VAL:HG22	2.04	0.40
2:B:66:LYS:HB2	21:V:11:GLY:HA3	2.03	0.40
2:B:193:LYS:HE3	2:B:193:LYS:HB2	1.84	0.40
2:B:315:ASN:HD22	2:B:320:PHE:HE2	1.68	0.40
18:S:170:LYS:HE3	29:5:4877:C:C5	2.57	0.40
19:T:75:VAL:HG22	19:T:88:ARG:HB3	2.02	0.40
29:5:1219:G:H5''	29:5:1220:C:H5''	2.03	0.40
29:5:1297:G:H2'	29:5:1298:C:C6	2.57	0.40
29:5:1467:C:H2'	29:5:1468:A:C8	2.56	0.40
29:5:1510:G:H2'	29:5:1511:C:C6	2.57	0.40
29:5:1517:U:H2'	29:5:1518:G:H8	1.85	0.40
29:5:1995:G:H2'	29:5:1996:A:C8	2.56	0.40
29:5:2017:C:H2'	29:5:2018:A:O4'	2.22	0.40
29:5:2027:G:H5''	49:s:58:ASN:ND2	2.36	0.40
29:5:2410:A:H1'	41:j:12:ARG:NH1	2.37	0.40
29:5:2529:G:H2'	29:5:2530:U:C6	2.57	0.40
29:5:4950:C:N4	37:f:59:THR:HA	2.36	0.40
29:5:5001:U:H2'	29:5:5002:C:C6	2.57	0.40
30:7:24:C:H2'	30:7:25:G:O4'	2.22	0.40
31:8:130:C:H2'	31:8:131:G:C8	2.57	0.40
44:m:59:LEU:O	44:m:62:LYS:HG2	2.21	0.40
44:m:72:MLZ:O	44:m:74:TYR:N	2.53	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:o:66:ILE:HB	46:o:85:ILE:HB	2.02	0.40
50:t:90:ARG:NH2	50:t:98:ILE:HD13	2.35	0.40
50:t:108:GLU:HA	50:t:111:ASN:ND2	2.37	0.40
51:v:218:LEU:HB2	86:v:902:GDP:C5	2.57	0.40
53:9:27:A:H2'	53:9:28:U:H6	1.87	0.40
53:9:37:C:H2'	53:9:38:A:O4'	2.20	0.40
53:9:553:U:O2'	53:9:554:A:P	2.79	0.40
53:9:948:C:H2'	53:9:949:G:C8	2.55	0.40
53:9:1300:U:O2'	66:PP:51:ARG:NH1	2.55	0.40
53:9:1417:C:H42	53:9:1423:C:H41	1.69	0.40
53:9:1438:A:H2'	53:9:1439:A:C8	2.55	0.40
53:9:1700:C:C2	53:9:1834:A:N6	2.89	0.40
54:DD:24:PHE:CD2	54:DD:25:LEU:HD12	2.57	0.40
60:JJ:76:ALA:O	60:JJ:79:ARG:HG3	2.21	0.40
66:PP:111:MET:HE3	66:PP:119:PHE:CE2	2.57	0.40
77:aa:11:ALA:H	77:aa:33:ASP:HB2	1.87	0.40
83:gg:201:SER:OG	83:gg:203:ASP:OD1	2.29	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 PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	246/257 (96%)	233 (95%)	13 (5%)	0	100	100
2	B	392/403 (97%)	378 (96%)	14 (4%)	0	100	100
3	C	359/413 (87%)	349 (97%)	10 (3%)	0	100	100
4	D	291/297 (98%)	286 (98%)	5 (2%)	0	100	100
5	E	208/291 (72%)	202 (97%)	6 (3%)	0	100	100
6	F	223/249 (90%)	216 (97%)	7 (3%)	0	100	100
7	G	229/319 (72%)	225 (98%)	4 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
8	H	188/192 (98%)	180 (96%)	8 (4%)	0	100	100
9	I	201/214 (94%)	199 (99%)	2 (1%)	0	100	100
10	J	168/178 (94%)	165 (98%)	3 (2%)	0	100	100
11	L	208/211 (99%)	200 (96%)	8 (4%)	0	100	100
12	M	136/218 (62%)	127 (93%)	9 (7%)	0	100	100
13	N	201/204 (98%)	192 (96%)	9 (4%)	0	100	100
14	O	197/203 (97%)	194 (98%)	3 (2%)	0	100	100
15	P	151/213 (71%)	147 (97%)	4 (3%)	0	100	100
16	Q	185/188 (98%)	177 (96%)	8 (4%)	0	100	100
17	R	178/212 (84%)	173 (97%)	5 (3%)	0	100	100
18	S	174/224 (78%)	167 (96%)	7 (4%)	0	100	100
19	T	157/160 (98%)	152 (97%)	5 (3%)	0	100	100
20	U	97/128 (76%)	91 (94%)	6 (6%)	0	100	100
21	V	129/140 (92%)	126 (98%)	3 (2%)	0	100	100
22	W	102/157 (65%)	100 (98%)	2 (2%)	0	100	100
23	X	116/156 (74%)	115 (99%)	1 (1%)	0	100	100
24	Y	132/145 (91%)	132 (100%)	0	0	100	100
25	Z	133/136 (98%)	129 (97%)	4 (3%)	0	100	100
26	AA	215/295 (73%)	210 (98%)	5 (2%)	0	100	100
27	BB	211/264 (80%)	206 (98%)	5 (2%)	0	100	100
28	CC	219/293 (75%)	215 (98%)	4 (2%)	0	100	100
32	a	145/147 (99%)	138 (95%)	7 (5%)	0	100	100
33	b	100/245 (41%)	99 (99%)	1 (1%)	0	100	100
34	c	96/98 (98%)	94 (98%)	2 (2%)	0	100	100
35	d	105/107 (98%)	98 (93%)	7 (7%)	0	100	100
36	e	126/128 (98%)	122 (97%)	4 (3%)	0	100	100
37	f	107/109 (98%)	105 (98%)	2 (2%)	0	100	100
38	g	112/114 (98%)	112 (100%)	0	0	100	100
39	h	120/122 (98%)	120 (100%)	0	0	100	100
40	i	100/102 (98%)	98 (98%)	2 (2%)	0	100	100
41	j	84/86 (98%)	82 (98%)	2 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
42	k	67/69 (97%)	67 (100%)	0	0	100	100
43	l	48/50 (96%)	46 (96%)	2 (4%)	0	100	100
44	m	49/52 (94%)	42 (86%)	6 (12%)	1 (2%)	6	26
45	n	23/25 (92%)	23 (100%)	0	0	100	100
46	o	101/103 (98%)	99 (98%)	2 (2%)	0	100	100
47	p	89/91 (98%)	88 (99%)	1 (1%)	0	100	100
48	r	122/124 (98%)	118 (97%)	4 (3%)	0	100	100
49	s	194/196 (99%)	182 (94%)	12 (6%)	0	100	100
50	t	151/153 (99%)	134 (89%)	17 (11%)	0	100	100
51	v	834/839 (99%)	779 (93%)	54 (6%)	1 (0%)	48	79
52	w	22/26 (85%)	22 (100%)	0	0	100	100
54	DD	226/228 (99%)	218 (96%)	8 (4%)	0	100	100
55	EE	260/262 (99%)	253 (97%)	7 (3%)	0	100	100
56	FF	181/204 (89%)	170 (94%)	11 (6%)	0	100	100
57	GG	235/237 (99%)	231 (98%)	4 (2%)	0	100	100
58	HH	181/194 (93%)	176 (97%)	5 (3%)	0	100	100
59	II	204/206 (99%)	195 (96%)	9 (4%)	0	100	100
60	JJ	183/185 (99%)	179 (98%)	4 (2%)	0	100	100
61	KK	94/96 (98%)	87 (93%)	7 (7%)	0	100	100
62	LL	139/158 (88%)	133 (96%)	6 (4%)	0	100	100
63	MM	115/117 (98%)	110 (96%)	5 (4%)	0	100	100
64	NN	147/149 (99%)	143 (97%)	4 (3%)	0	100	100
65	OO	134/136 (98%)	127 (95%)	7 (5%)	0	100	100
66	PP	118/120 (98%)	111 (94%)	7 (6%)	0	100	100
67	QQ	140/142 (99%)	135 (96%)	5 (4%)	0	100	100
68	RR	130/132 (98%)	125 (96%)	5 (4%)	0	100	100
69	SS	142/144 (99%)	134 (94%)	8 (6%)	0	100	100
70	TT	139/141 (99%)	134 (96%)	5 (4%)	0	100	100
71	UU	98/100 (98%)	96 (98%)	2 (2%)	0	100	100
72	VV	81/83 (98%)	81 (100%)	0	0	100	100
73	WW	127/129 (98%)	122 (96%)	5 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
74	XX	139/141 (99%)	133 (96%)	5 (4%)	1 (1%)	19	51
75	YY	122/124 (98%)	119 (98%)	3 (2%)	0	100	100
76	ZZ	73/75 (97%)	72 (99%)	1 (1%)	0	100	100
77	aa	99/101 (98%)	95 (96%)	4 (4%)	0	100	100
78	bb	81/83 (98%)	78 (96%)	3 (4%)	0	100	100
79	cc	60/62 (97%)	59 (98%)	1 (2%)	0	100	100
80	dd	53/55 (96%)	53 (100%)	0	0	100	100
81	ee	53/55 (96%)	52 (98%)	1 (2%)	0	100	100
82	ff	66/68 (97%)	64 (97%)	2 (3%)	0	100	100
83	gg	311/313 (99%)	294 (94%)	17 (6%)	0	100	100
All	All	12372/13586 (91%)	11933 (96%)	436 (4%)	3 (0%)	100	100

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
51	v	288	THR
44	m	73	CYS
74	XX	62	PRO

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	190/199 (96%)	185 (97%)	5 (3%)	41	68
2	B	342/348 (98%)	331 (97%)	11 (3%)	34	63
3	C	301/336 (90%)	290 (96%)	11 (4%)	29	59
4	D	247/250 (99%)	240 (97%)	7 (3%)	38	66
5	E	190/251 (76%)	184 (97%)	6 (3%)	34	63
6	F	196/218 (90%)	193 (98%)	3 (2%)	60	80
7	G	200/272 (74%)	193 (96%)	7 (4%)	31	61

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
8	H	169/171 (99%)	160 (95%)	9 (5%)	19	48
9	I	175/181 (97%)	168 (96%)	7 (4%)	27	58
10	J	143/149 (96%)	140 (98%)	3 (2%)	48	72
11	L	175/176 (99%)	166 (95%)	9 (5%)	20	49
12	M	117/161 (73%)	112 (96%)	5 (4%)	25	55
13	N	171/172 (99%)	166 (97%)	5 (3%)	37	65
14	O	171/173 (99%)	166 (97%)	5 (3%)	37	65
15	P	134/190 (70%)	129 (96%)	5 (4%)	29	59
16	Q	164/165 (99%)	162 (99%)	2 (1%)	67	83
17	R	159/191 (83%)	155 (98%)	4 (2%)	42	69
18	S	157/192 (82%)	152 (97%)	5 (3%)	34	63
19	T	139/140 (99%)	136 (98%)	3 (2%)	47	71
20	U	89/114 (78%)	87 (98%)	2 (2%)	47	71
21	V	101/107 (94%)	100 (99%)	1 (1%)	73	86
22	W	86/126 (68%)	86 (100%)	0	100	100
23	X	106/134 (79%)	105 (99%)	1 (1%)	75	88
24	Y	124/135 (92%)	121 (98%)	3 (2%)	44	70
25	Z	117/118 (99%)	113 (97%)	4 (3%)	32	62
26	AA	180/245 (74%)	176 (98%)	4 (2%)	47	71
27	BB	194/231 (84%)	188 (97%)	6 (3%)	35	63
28	CC	187/225 (83%)	180 (96%)	7 (4%)	29	59
32	a	119/119 (100%)	118 (99%)	1 (1%)	79	89
33	b	84/184 (46%)	84 (100%)	0	100	100
34	c	84/84 (100%)	80 (95%)	4 (5%)	21	51
35	d	98/98 (100%)	93 (95%)	5 (5%)	20	49
36	e	114/114 (100%)	111 (97%)	3 (3%)	41	68
37	f	88/88 (100%)	85 (97%)	3 (3%)	32	62
38	g	98/98 (100%)	94 (96%)	4 (4%)	26	57
39	h	109/109 (100%)	106 (97%)	3 (3%)	38	66
40	i	86/86 (100%)	82 (95%)	4 (5%)	22	52
41	j	73/73 (100%)	71 (97%)	2 (3%)	40	67

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
42	k	64/64 (100%)	60 (94%)	4 (6%)	15	42
43	l	47/47 (100%)	45 (96%)	2 (4%)	25	55
44	m	47/47 (100%)	44 (94%)	3 (6%)	14	42
45	n	24/24 (100%)	23 (96%)	1 (4%)	25	56
46	o	91/91 (100%)	88 (97%)	3 (3%)	33	62
47	p	74/74 (100%)	70 (95%)	4 (5%)	18	47
48	r	108/108 (100%)	100 (93%)	8 (7%)	11	36
49	s	164/164 (100%)	151 (92%)	13 (8%)	10	34
50	t	126/126 (100%)	120 (95%)	6 (5%)	21	51
51	v	713/713 (100%)	658 (92%)	55 (8%)	10	35
52	w	23/23 (100%)	23 (100%)	0	100	100
54	DD	190/190 (100%)	182 (96%)	8 (4%)	25	56
55	EE	224/224 (100%)	212 (95%)	12 (5%)	18	47
56	FF	158/170 (93%)	152 (96%)	6 (4%)	28	59
57	GG	207/207 (100%)	202 (98%)	5 (2%)	44	70
58	HH	165/174 (95%)	155 (94%)	10 (6%)	15	43
59	II	178/178 (100%)	173 (97%)	5 (3%)	38	66
60	JJ	161/161 (100%)	160 (99%)	1 (1%)	84	91
61	KK	87/87 (100%)	84 (97%)	3 (3%)	32	62
62	LL	130/142 (92%)	126 (97%)	4 (3%)	35	63
63	MM	99/99 (100%)	94 (95%)	5 (5%)	20	49
64	NN	130/130 (100%)	127 (98%)	3 (2%)	45	70
65	OO	106/106 (100%)	104 (98%)	2 (2%)	52	75
66	PP	109/109 (100%)	106 (97%)	3 (3%)	38	66
67	QQ	117/117 (100%)	110 (94%)	7 (6%)	16	44
68	RR	119/119 (100%)	115 (97%)	4 (3%)	32	62
69	SS	125/125 (100%)	118 (94%)	7 (6%)	17	46
70	TT	111/111 (100%)	107 (96%)	4 (4%)	30	60
71	UU	92/92 (100%)	87 (95%)	5 (5%)	18	47
72	VV	67/67 (100%)	64 (96%)	3 (4%)	23	53
73	WW	112/112 (100%)	109 (97%)	3 (3%)	40	67

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
74	XX	113/113 (100%)	107 (95%)	6 (5%)	19	48
75	YY	107/107 (100%)	102 (95%)	5 (5%)	22	52
76	ZZ	66/66 (100%)	65 (98%)	1 (2%)	60	80
77	aa	88/88 (100%)	84 (96%)	4 (4%)	23	53
78	bb	75/75 (100%)	73 (97%)	2 (3%)	40	67
79	cc	55/55 (100%)	53 (96%)	2 (4%)	30	60
80	dd	48/48 (100%)	48 (100%)	0	100	100
81	ee	46/46 (100%)	44 (96%)	2 (4%)	25	55
82	ff	61/61 (100%)	59 (97%)	2 (3%)	33	62
83	gg	272/272 (100%)	257 (94%)	15 (6%)	18	47
All	All	10776/11555 (93%)	10369 (96%)	407 (4%)	30	59

All (407) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	4	VAL
1	A	101	VAL
1	A	102	LEU
1	A	146	THR
1	A	243	THR
2	B	24	ARG
2	B	29	VAL
2	B	66	LYS
2	B	101	THR
2	B	150	PHE
2	B	205	VAL
2	B	207	VAL
2	B	262	VAL
2	B	294	LYS
2	B	344	VAL
2	B	351	LEU
3	C	57	LEU
3	C	76	ILE
3	C	94	ASN
3	C	119	GLN
3	C	124	ILE
3	C	154	VAL
3	C	217	ILE

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Mol	Chain	Res	Type
3	C	232	VAL
3	C	266	THR
3	C	287	THR
3	C	313	VAL
4	D	10	LYS
4	D	36	LEU
4	D	37	VAL
4	D	55	VAL
4	D	64	ILE
4	D	146	LEU
4	D	189	GLU
5	E	51	VAL
5	E	157	THR
5	E	178	VAL
5	E	215	LEU
5	E	263	LYS
5	E	290	VAL
6	F	35	LYS
6	F	54	LYS
6	F	135	VAL
7	G	88	ARG
7	G	161	GLN
7	G	212	HIS
7	G	215	ASP
7	G	220	VAL
7	G	250	LYS
7	G	313	GLU
8	H	4	ILE
8	H	16	VAL
8	H	48	LEU
8	H	57	VAL
8	H	71	ARG
8	H	82	LYS
8	H	104	VAL
8	H	150	ASP
8	H	151	ILE
9	I	38	ARG
9	I	48	LEU
9	I	53	VAL
9	I	76	MET
9	I	96	VAL
9	I	165	ILE

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Mol	Chain	Res	Type
9	I	206	LEU
10	J	22	LEU
10	J	49	VAL
10	J	133	VAL
11	L	9	ILE
11	L	55	ILE
11	L	58	ILE
11	L	59	VAL
11	L	67	HIS
11	L	124	LEU
11	L	144	LEU
11	L	154	VAL
11	L	159	ASN
12	M	12	VAL
12	M	38	VAL
12	M	62	LEU
12	M	105	THR
12	M	118	MET
13	N	64	ILE
13	N	77	LYS
13	N	89	VAL
13	N	174	LEU
13	N	176	LYS
14	O	36	VAL
14	O	46	ASN
14	O	129	LEU
14	O	145	VAL
14	O	195	VAL
15	P	6	LEU
15	P	96	VAL
15	P	119	PHE
15	P	120	LEU
15	P	124	LEU
16	Q	13	VAL
16	Q	16	LYS
17	R	105	LEU
17	R	148	ASP
17	R	168	GLU
17	R	177	LEU
18	S	24	THR
18	S	61	ILE
18	S	75	VAL

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Mol	Chain	Res	Type
18	S	90	THR
18	S	166	ARG
19	T	21	LYS
19	T	96	ILE
19	T	143	THR
20	U	47	ILE
20	U	76	VAL
21	V	59	ASP
23	X	50	LYS
24	Y	79	VAL
24	Y	82	ILE
24	Y	111	LEU
25	Z	60	LYS
25	Z	68	ILE
25	Z	72	VAL
25	Z	124	THR
26	AA	44	ASP
26	AA	58	LEU
26	AA	60	LEU
26	AA	124	VAL
27	BB	57	ILE
27	BB	126	ASP
27	BB	134	LEU
27	BB	150	ILE
27	BB	204	ILE
27	BB	212	VAL
28	CC	79	GLU
28	CC	137	VAL
28	CC	139	LEU
28	CC	233	LEU
28	CC	251	LEU
28	CC	252	THR
28	CC	270	THR
32	a	82	VAL
34	c	65	MET
34	c	81	LEU
34	c	91	VAL
34	c	93	THR
35	d	20	VAL
35	d	26	THR
35	d	84	ILE
35	d	86	VAL

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Mol	Chain	Res	Type
35	d	106	VAL
36	e	13	VAL
36	e	22	ARG
36	e	92	ASN
37	f	33	VAL
37	f	76	ARG
37	f	84	VAL
38	g	5	LEU
38	g	33	LEU
38	g	59	VAL
38	g	105	LYS
39	h	4	ILE
39	h	8	ASP
39	h	56	ARG
40	i	17	VAL
40	i	29	ARG
40	i	42	ASP
40	i	48	CYS
41	j	18	LEU
41	j	70	VAL
42	k	7	GLU
42	k	12	LEU
42	k	36	VAL
42	k	37	ARG
43	l	29	MET
43	l	33	ASN
44	m	51	ILE
44	m	96	ARG
44	m	99	LYS
45	n	13	LEU
46	o	23	VAL
46	o	43	ARG
46	o	82	MET
47	p	45	THR
47	p	52	VAL
47	p	61	MET
47	p	72	ASN
48	r	18	ILE
48	r	24	THR
48	r	49	VAL
48	r	61	VAL
48	r	106	LEU

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Mol	Chain	Res	Type
48	r	118	LEU
48	r	119	ARG
48	r	124	VAL
49	s	30	VAL
49	s	53	VAL
49	s	54	LEU
49	s	61	MET
49	s	68	HIS
49	s	69	LEU
49	s	70	GLU
49	s	89	VAL
49	s	97	GLU
49	s	123	VAL
49	s	144	THR
49	s	147	ILE
49	s	174	LEU
50	t	35	LEU
50	t	37	LEU
50	t	59	THR
50	t	96	LYS
50	t	125	LEU
50	t	133	LEU
51	v	5	THR
51	v	6	VAL
51	v	21	ASN
51	v	25	ILE
51	v	73	THR
51	v	121	VAL
51	v	127	VAL
51	v	135	VAL
51	v	149	GLU
51	v	154	VAL
51	v	167	LEU
51	v	169	LEU
51	v	188	ILE
51	v	224	THR
51	v	225	LEU
51	v	227	GLN
51	v	248	GLU
51	v	315	LEU
51	v	344	LEU
51	v	350	LEU

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Mol	Chain	Res	Type
51	v	366	LYS
51	v	383	MET
51	v	398	ILE
51	v	402	VAL
51	v	411	TYR
51	v	420	LEU
51	v	427	VAL
51	v	438	LYS
51	v	442	LEU
51	v	458	VAL
51	v	469	ILE
51	v	476	ASP
51	v	485	ILE
51	v	517	LEU
51	v	527	LEU
51	v	534	VAL
51	v	546	ILE
51	v	556	ILE
51	v	561	LEU
51	v	572	LYS
51	v	617	ILE
51	v	629	LYS
51	v	635	LEU
51	v	667	LYS
51	v	670	GLN
51	v	708	THR
51	v	747	VAL
51	v	770	VAL
51	v	783	VAL
51	v	797	THR
51	v	804	THR
51	v	820	LEU
51	v	844	LEU
51	v	851	LEU
51	v	857	LYS
54	DD	39	VAL
54	DD	41	VAL
54	DD	44	THR
54	DD	48	ILE
54	DD	113	LEU
54	DD	123	LEU
54	DD	126	ILE

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Mol	Chain	Res	Type
54	DD	175	VAL
55	EE	21	ASP
55	EE	23	LEU
55	EE	62	LYS
55	EE	67	GLN
55	EE	70	ILE
55	EE	72	ILE
55	EE	105	THR
55	EE	108	ARG
55	EE	126	VAL
55	EE	146	THR
55	EE	147	ILE
55	EE	148	ARG
56	FF	30	ILE
56	FF	63	LYS
56	FF	73	THR
56	FF	109	LEU
56	FF	111	VAL
56	FF	154	LEU
57	GG	79	LYS
57	GG	121	ILE
57	GG	147	LEU
57	GG	153	VAL
57	GG	181	THR
58	HH	8	ILE
58	HH	30	LEU
58	HH	36	LEU
58	HH	51	ILE
58	HH	75	ILE
58	HH	79	LEU
58	HH	95	ILE
58	HH	133	LEU
58	HH	134	VAL
58	HH	176	VAL
59	II	3	ILE
59	II	18	ARG
59	II	48	VAL
59	II	79	ILE
59	II	107	THR
60	JJ	79	ARG
61	KK	6	LYS
61	KK	58	VAL

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Mol	Chain	Res	Type
61	KK	59	LYS
62	LL	4	ILE
62	LL	33	LEU
62	LL	85	THR
62	LL	125	ILE
63	MM	18	LEU
63	MM	35	ILE
63	MM	64	LEU
63	MM	74	ILE
63	MM	93	LYS
64	NN	29	THR
64	NN	46	THR
64	NN	60	VAL
65	OO	116	LEU
65	OO	119	LEU
66	PP	21	ASP
66	PP	25	LEU
66	PP	41	GLN
67	QQ	12	VAL
67	QQ	41	MET
67	QQ	53	GLU
67	QQ	70	VAL
67	QQ	72	VAL
67	QQ	73	LYS
67	QQ	102	GLU
68	RR	24	LEU
68	RR	71	ILE
68	RR	95	ILE
68	RR	123	THR
69	SS	12	ILE
69	SS	26	ILE
69	SS	36	VAL
69	SS	51	ASP
69	SS	52	LEU
69	SS	59	LEU
69	SS	98	VAL
70	TT	6	VAL
70	TT	51	ASN
70	TT	124	THR
70	TT	131	LEU
71	UU	22	ILE
71	UU	46	LYS

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Mol	Chain	Res	Type
71	UU	48	LEU
71	UU	54	VAL
71	UU	72	GLU
72	VV	9	VAL
72	VV	11	LEU
72	VV	52	THR
73	WW	7	LEU
73	WW	103	VAL
73	WW	104	LEU
74	XX	7	LEU
74	XX	81	ILE
74	XX	85	VAL
74	XX	105	PHE
74	XX	129	SER
74	XX	131	LEU
75	YY	35	VAL
75	YY	85	ASN
75	YY	96	LEU
75	YY	100	LYS
75	YY	116	LYS
76	ZZ	43	LYS
77	aa	21	ILE
77	aa	40	VAL
77	aa	50	VAL
77	aa	52	ASP
78	bb	17	ARG
78	bb	42	LYS
79	cc	10	LYS
79	cc	17	VAL
81	ee	82	VAL
81	ee	116	VAL
82	ff	108	VAL
82	ff	143	LYS
83	gg	18	VAL
83	gg	40	ILE
83	gg	42	MET
83	gg	50	THR
83	gg	66	VAL
83	gg	113	PHE
83	gg	120	ILE
83	gg	174	VAL
83	gg	183	LYS

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Mol	Chain	Res	Type
83	gg	206	LEU
83	gg	252	THR
83	gg	257	LYS
83	gg	261	LEU
83	gg	268	ASP
83	gg	287	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (80) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	162	ASN
1	A	205	ASN
2	B	236	HIS
3	C	38	ASN
3	C	89	GLN
3	C	215	ASN
3	C	329	ASN
4	D	229	ASN
4	D	282	GLN
5	E	131	HIS
5	E	259	GLN
5	E	282	ASN
6	F	55	HIS
6	F	191	HIS
7	G	91	ASN
7	G	293	ASN
8	H	149	ASN
10	J	42	GLN
11	L	104	ASN
12	M	125	ASN
13	N	8	GLN
13	N	32	GLN
13	N	86	HIS
13	N	149	GLN
14	O	14	HIS
14	O	50	ASN
15	P	93	ASN
16	Q	188	ASN
17	R	40	GLN
21	V	84	GLN
22	W	95	ASN
22	W	104	GLN

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Mol	Chain	Res	Type
24	Y	14	ASN
24	Y	18	HIS
24	Y	43	ASN
24	Y	127	GLN
28	CC	113	GLN
28	CC	267	GLN
32	a	17	HIS
32	a	67	GLN
33	b	60	ASN
34	c	51	ASN
35	d	28	ASN
35	d	34	HIS
36	e	92	ASN
39	h	98	HIS
41	j	28	HIS
43	l	33	ASN
46	o	76	ASN
49	s	41	GLN
49	s	58	ASN
50	t	65	GLN
50	t	103	ASN
50	t	149	HIS
51	v	168	GLN
51	v	202	ASN
51	v	468	ASN
51	v	803	ASN
54	DD	57	ASN
55	EE	161	GLN
55	EE	214	ASN
56	FF	36	GLN
58	HH	76	GLN
58	HH	165	ASN
58	HH	168	HIS
61	KK	61	GLN
63	MM	55	ASN
64	NN	36	GLN
68	RR	31	ASN
68	RR	83	ASN
72	VV	21	ASN
72	VV	35	ASN
72	VV	47	ASN
74	XX	16	HIS

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Mol	Chain	Res	Type
75	YY	112	ASN
77	aa	8	ASN
79	cc	29	GLN
82	ff	111	ASN
83	gg	119	GLN
83	gg	311	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
29	5	3506/3635 (96%)	703 (20%)	50 (1%)
30	7	119/120 (99%)	15 (12%)	0
31	8	149/156 (95%)	24 (16%)	1 (0%)
53	9	1685/1698 (99%)	352 (20%)	17 (1%)
All	All	5459/5609 (97%)	1094 (20%)	68 (1%)

All (1094) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
29	5	8	U
29	5	12	A
29	5	13	U
29	5	25	A
29	5	35	U
29	5	39	A
29	5	42	A
29	5	48	G
29	5	49	U
29	5	56	A
29	5	59	A
29	5	64	A
29	5	65	A
29	5	66	A
29	5	71	C
29	5	73	A
29	5	74	G
29	5	91	G
29	5	104	G
29	5	109	G
29	5	110	C
29	5	116	G

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Mol	Chain	Res	Type
29	5	118	C
29	5	119	G
29	5	120	A
29	5	122	U
29	5	126	C
29	5	134	G
29	5	135	G
29	5	136	C
29	5	157	U
29	5	159	C
29	5	170	C
29	5	171	U
29	5	172	C
29	5	173	C
29	5	175	C
29	5	181	C
29	5	182	G
29	5	190	G
29	5	191	G
29	5	193	G
29	5	197	A
29	5	200	U
29	5	201	C
29	5	205	C
29	5	207	G
29	5	209	U
29	5	216	C
29	5	218	A
29	5	220	C
29	5	224	U
29	5	233	U
29	5	234	G
29	5	237	B9B
29	5	246	G
29	5	256	G
29	5	263	G
29	5	265	C
29	5	266	C
29	5	274	C
29	5	276	C
29	5	280	G
29	5	281	U

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Mol	Chain	Res	Type
29	5	297	U
29	5	306	A
29	5	309	C
29	5	310	G
29	5	315	G
29	5	316	U
29	5	334	A
29	5	340	C
29	5	350	C
29	5	357	U
29	5	386	A
29	5	387	G
29	5	398	A2M
29	5	407	A
29	5	409	G
29	5	412	G
29	5	413	G
29	5	415	G
29	5	440	U
29	5	446	C
29	5	449	C
29	5	450	G
29	5	452	A
29	5	453	G
29	5	454	U
29	5	463	A
29	5	464	G
29	5	467	U
29	5	468	U
29	5	481	G
29	5	482	C
29	5	483	G
29	5	487	C
29	5	493	U
29	5	494	G
29	5	498	G
29	5	499	C
29	5	500	G
29	5	506	G
29	5	511	U
29	5	667	G
29	5	668	A

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Mol	Chain	Res	Type
29	5	670	C
29	5	671	G
29	5	686	C
29	5	687	A
29	5	688	U
29	5	689	U
29	5	692	C
29	5	697	C
29	5	698	G
29	5	705	C
29	5	706	G
29	5	720	C
29	5	732	G
29	5	739	C
29	5	740	C
29	5	741	G
29	5	746	G
29	5	749	A
29	5	750	G
29	5	751	G
29	5	752	U
29	5	753	G
29	5	760	G
29	5	916	U
29	5	917	A
29	5	919	A
29	5	924	G
29	5	927	C
29	5	929	C
29	5	930	G
29	5	933	A
29	5	935	C
29	5	936	A
29	5	937	G
29	5	938	C
29	5	939	A
29	5	940	A
29	5	941	C
29	5	943	C
29	5	944	G
29	5	946	C
29	5	948	A

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Mol	Chain	Res	Type
29	5	949	A
29	5	950	U
29	5	961	A
29	5	964	G
29	5	965	A
29	5	966	G
29	5	969	A
29	5	970	G
29	5	971	A
29	5	972	C
29	5	974	C
29	5	975	G
29	5	977	G
29	5	978	C
29	5	984	C
29	5	989	U
29	5	1078	C
29	5	1079	G
29	5	1085	C
29	5	1088	C
29	5	1181	A
29	5	1185	U
29	5	1186	C
29	5	1193	G
29	5	1199	C
29	5	1201	G
29	5	1216	C
29	5	1217	G
29	5	1218	G
29	5	1221	C
29	5	1240	G
29	5	1241	G
29	5	1242	C
29	5	1243	C
29	5	1244	A
29	5	1245	C
29	5	1278	C
29	5	1279	G
29	5	1281	G
29	5	1282	C
29	5	1290	G
29	5	1291	U

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Mol	Chain	Res	Type
29	5	1293	G
29	5	1297	G
29	5	1298	C
29	5	1299	G
29	5	1302	G
29	5	1307	C
29	5	1309	A
29	5	1310	C
29	5	1320	C
29	5	1332	A2M
29	5	1333	C
29	5	1336	A
29	5	1354	P4U
29	5	1360	A
29	5	1364	G
29	5	1365	G
29	5	1377	A
29	5	1378	A
29	5	1383	G
29	5	1386	G
29	5	1393	A
29	5	1400	G
29	5	1403	A
29	5	1404	A
29	5	1425	G
29	5	1427	G
29	5	1439	A
29	5	1442	C
29	5	1443	C
29	5	1444	U
29	5	1446	U
29	5	1447	C
29	5	1451	U
29	5	1452	C
29	5	1454	G
29	5	1462	JMH
29	5	1463	G
29	5	1464	C
29	5	1471	G
29	5	1481	G
29	5	1483	C
29	5	1488	G

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Mol	Chain	Res	Type
29	5	1489	C
29	5	1503	A
29	5	1504	G
29	5	1507	C
29	5	1508	G
29	5	1510	G
29	5	1524	A
29	5	1529	A
29	5	1531	A
29	5	1540	A2M
29	5	1553	A
29	5	1572	C
29	5	1580	B9B
29	5	1584	U
29	5	1588	PSU
29	5	1597	U
29	5	1602	U
29	5	1608	U
29	5	1618	G
29	5	1619	A
29	5	1630	G
29	5	1631	OMG
29	5	1632	G
29	5	1637	A
29	5	1639	G
29	5	1640	A
29	5	1644	A
29	5	1660	G
29	5	1667	C
29	5	1682	C
29	5	1683	PSU
29	5	1697	G
29	5	1747	G
29	5	1748	A
29	5	1752	A
29	5	1759	G
29	5	1761	C
29	5	1762	U
29	5	1767	G
29	5	1770	G
29	5	1774	C
29	5	1778	C

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Mol	Chain	Res	Type
29	5	1779	U
29	5	1782	A
29	5	1786	A
29	5	1787	U
29	5	1793	A
29	5	1809	G
29	5	1810	A
29	5	1811	A
29	5	1812	G
29	5	1814	C
29	5	1821	G
29	5	1825	G
29	5	1835	G
29	5	1841	G
29	5	1842	G
29	5	1843	A
29	5	1848	G
29	5	1853	C
29	5	1861	G
29	5	1875	G
29	5	1887	C
29	5	1894	A
29	5	1903	A
29	5	1924	U
29	5	1925	G
29	5	1926	C
29	5	1927	C
29	5	1928	G
29	5	1934	C
29	5	1936	U
29	5	1937	C
29	5	1944	C
29	5	1946	G
29	5	1951	G
29	5	1954	G
29	5	1963	U
29	5	1964	A
29	5	1966	A
29	5	1967	G
29	5	1970	A
29	5	1973	A
29	5	1975	G

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Mol	Chain	Res	Type
29	5	1976	A
29	5	1980	U
29	5	1981	G
29	5	1982	G
29	5	1983	C
29	5	1985	A
29	5	1986	U
29	5	1987	G
29	5	1989	A
29	5	1990	A
29	5	1991	G
29	5	1993	C
29	5	1997	A
29	5	1998	U
29	5	2000	C
29	5	2003	U
29	5	2007	G
29	5	2008	A
29	5	2009	G
29	5	2010	U
29	5	2017	C
29	5	2031	A
29	5	2032	A
29	5	2053	A
29	5	2054	U
29	5	2058	G
29	5	2061	G
29	5	2062	G
29	5	2068	C
29	5	2075	A
29	5	2090	U
29	5	2096	U
29	5	2099	G
29	5	2100	C
29	5	2101	A
29	5	2103	A
29	5	2104	G
29	5	2106	G
29	5	2107	A
29	5	2108	G
29	5	2110	A
29	5	2111	A

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Mol	Chain	Res	Type
29	5	2112	G
29	5	2114	G
29	5	2265	G
29	5	2266	C
29	5	2273	U
29	5	2274	A
29	5	2281	G
29	5	2295	C
29	5	2306	A
29	5	2307	G
29	5	2319	A
29	5	2320	G
29	5	2322	G
29	5	2337	G
29	5	2339	G
29	5	2354	G
29	5	2357	C
29	5	2366	A
29	5	2370	OMG
29	5	2386	B8W
29	5	2401	A
29	5	2402	A
29	5	2416	C
29	5	2423	A
29	5	2428	OMC
29	5	2430	OMG
29	5	2431	U
29	5	2439	G
29	5	2447	C
29	5	2459	A
29	5	2477	G
29	5	2481	G
29	5	2482	G
29	5	2494	C
29	5	2495	C
29	5	2496	U
29	5	2497	C
29	5	2501	U
29	5	2509	G
29	5	2510	C
29	5	2511	C
29	5	2512	G

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Mol	Chain	Res	Type
29	5	2519	A
29	5	2535	A
29	5	2536	U
29	5	2543	A
29	5	2550	G
29	5	2552	G
29	5	2553	G
29	5	2559	A
29	5	2566	C
29	5	2574	C
29	5	2581	U
29	5	2587	A
29	5	2589	C
29	5	2592	G
29	5	2595	C
29	5	2607	A
29	5	2624	G
29	5	2626	G
29	5	2629	A
29	5	2633	C
29	5	2644	G
29	5	2646	G
29	5	2655	G
29	5	2659	C
29	5	2667	U
29	5	2668	G
29	5	2675	C
29	5	2681	G
29	5	2687	G
29	5	2692	G
29	5	2693	U
29	5	2701	A
29	5	2702	A
29	5	2711	G
29	5	2713	U
29	5	2714	U
29	5	2715	C
29	5	2716	C
29	5	2717	G
29	5	2720	G
29	5	2721	G
29	5	2722	C

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Mol	Chain	Res	Type
29	5	2725	C
29	5	2727	G
29	5	2731	A
29	5	2732	G
29	5	2746	U
29	5	2759	G
29	5	2760	B9B
29	5	2769	U
29	5	2770	A
29	5	2775	U
29	5	2778	C
29	5	2779	OMG
29	5	2793	A
29	5	2794	U
29	5	2796	U
29	5	2804	A
29	5	2820	C
29	5	2832	U
29	5	2833	G
29	5	2835	U
29	5	2848	G
29	5	2861	G
29	5	2890	G
29	5	2904	G
29	5	3604	C
29	5	3610	A
29	5	3611	C
29	5	3621	G
29	5	3631	G
29	5	3632	G
29	5	3641	A
29	5	3668	A
29	5	3670	G
29	5	3679	C
29	5	3698	A
29	5	3704	G
29	5	3716	G
29	5	3717	A
29	5	3718	A
29	5	3719	U
29	5	3735	PSU
29	5	3759	G

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Mol	Chain	Res	Type
29	5	3765	A
29	5	3766	A
29	5	3767	C
29	5	3770	PSU
29	5	3778	U
29	5	3779	U
29	5	3780	A
29	5	3782	G
29	5	3783	G
29	5	3790	A
29	5	3792	U
29	5	3798	OMG
29	5	3816	C
29	5	3817	G
29	5	3820	U
29	5	3823	A
29	5	3825	G
29	5	3846	U
29	5	3873	A2M
29	5	3874	G
29	5	3882	A
29	5	3883	A
29	5	3884	C
29	5	3885	G
29	5	3886	P7G
29	5	3895	G
29	5	3898	U
29	5	3903	B8K
29	5	3904	G
29	5	3905	BGH
29	5	3907	A
29	5	3911	A
29	5	3912	A
29	5	3913	G
29	5	3914	A
29	5	3921	U
29	5	3923	A
29	5	3932	C
29	5	3933	U
29	5	3944	G
29	5	3945	G
29	5	4079	A

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Mol	Chain	Res	Type
29	5	4082	G
29	5	4091	A
29	5	4092	G
29	5	4106	C
29	5	4125	C
29	5	4126	U
29	5	4128	G
29	5	4131	C
29	5	4133	A
29	5	4161	C
29	5	4164	C
29	5	4168	C
29	5	4169	U
29	5	4172	G
29	5	4176	A
29	5	4189	G
29	5	4190	G
29	5	4197	G
29	5	4200	I4U
29	5	4209	A
29	5	4218	A
29	5	4235	U
29	5	4239	A
29	5	4240	A
29	5	4257	A
29	5	4259	A
29	5	4260	G
29	5	4272	G
29	5	4273	G
29	5	4274	A
29	5	4277	A
29	5	4279	A
29	5	4287	A
29	5	4290	C
29	5	4296	U
29	5	4297	G
29	5	4299	PSU
29	5	4309	C
29	5	4310	A
29	5	4311	G
29	5	4312	OMU
29	5	4320	C

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Mol	Chain	Res	Type
29	5	4324	C
29	5	4325	C
29	5	4335	G
29	5	4336	G
29	5	4338	C
29	5	4341	5MC
29	5	4345	A
29	5	4355	C
29	5	4356	C
29	5	4360	U
29	5	4379	G
29	5	4383	G
29	5	4384	A
29	5	4386	A
29	5	4393	C
29	5	4400	A
29	5	4401	U
29	5	4404	C
29	5	4411	G
29	5	4425	U
29	5	4426	U
29	5	4427	C
29	5	4428	A
29	5	4430	A
29	5	4443	U
29	5	4445	U
29	5	4454	G
29	5	4455	A
29	5	4456	PSU
29	5	4470	A
29	5	4472	C
29	5	4480	A
29	5	4481	G
29	5	4482	C
29	5	4506	PSU
29	5	4517	A
29	5	4518	U
29	5	4519	A
29	5	4524	A
29	5	4526	G
29	5	4528	G
29	5	4529	A2M

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Mol	Chain	Res	Type
29	5	4530	G
29	5	4536	UR3
29	5	4537	PSU
29	5	4554	A
29	5	4566	C
29	5	4573	G
29	5	4579	G
29	5	4580	U
29	5	4581	G
29	5	4590	A
29	5	4592	G
29	5	4595	A
29	5	4596	A
29	5	4633	U
29	5	4642	PSU
29	5	4643	OMG
29	5	4645	G
29	5	4658	G
29	5	4662	A
29	5	4673	C
29	5	4676	C
29	5	4678	A
29	5	4683	U
29	5	4699	C
29	5	4706	A
29	5	4715	U
29	5	4725	G
29	5	4726	C
29	5	4742	C
29	5	4756	G
29	5	4757	G
29	5	4758	U
29	5	4760	G
29	5	4762	C
29	5	4763	C
29	5	4765	C
29	5	4771	G
29	5	4777	C
29	5	4778	C
29	5	4874	G
29	5	4876	OMG
29	5	4878	2MG

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Mol	Chain	Res	Type
29	5	4879	G
29	5	4881	G
29	5	4883	G
29	5	4887	U
29	5	4888	U
29	5	4889	C
29	5	4891	U
29	5	4893	C
29	5	4901	C
29	5	4908	C
29	5	4912	C
29	5	4916	A
29	5	4918	G
29	5	4920	G
29	5	4921	G
29	5	4927	C
29	5	4931	U
29	5	4932	C
29	5	4933	G
29	5	4934	C
29	5	4935	C
29	5	4943	C
29	5	4946	C
29	5	4950	C
29	5	4954	C
29	5	4955	G
29	5	4956	U
29	5	4957	G
29	5	4961	A
29	5	4962	A
29	5	4963	C
29	5	4966	G
29	5	4971	U
29	5	4981	G
29	5	4982	U
29	5	4994	U
29	5	4996	C
29	5	4999	G
29	5	5012	U
29	5	5013	A
29	5	5020	A
29	5	5023	G

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Mol	Chain	Res	Type
29	5	5047	G
29	5	5053	C
29	5	5056	C
29	5	5058	C
29	5	5060	C
29	5	5061	G
29	5	5066	A
29	5	5067	A
29	5	5068	G
30	7	7	G
30	7	13	A
30	7	33	U
30	7	53	U
30	7	54	A
30	7	57	C
30	7	63	C
30	7	64	G
30	7	89	G
30	7	91	C
30	7	100	A
30	7	102	U
30	7	110	G
30	7	111	C
30	7	120	U
31	8	2	G
31	8	14	OMU
31	8	23	C
31	8	34	U
31	8	35	C
31	8	39	G
31	8	59	A
31	8	62	A
31	8	63	U
31	8	75	G
31	8	87	G
31	8	90	C
31	8	94	G
31	8	103	A
31	8	105	C
31	8	108	A
31	8	110	U
31	8	111	U

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Mol	Chain	Res	Type
31	8	114	G
31	8	125	C
31	8	126	C
31	8	127	U
31	8	147	G
31	8	150	C
53	9	2	A
53	9	3	C
53	9	25	A
53	9	26	U
53	9	33	G
53	9	41	G
53	9	42	A
53	9	44	U
53	9	46	A
53	9	56	G
53	9	59	U
53	9	67	C
53	9	68	A
53	9	71	G
53	9	74	G
53	9	77	A
53	9	79	A
53	9	99	A
53	9	103	A
53	9	111	A
53	9	113	G
53	9	115	U
53	9	124	U
53	9	126	G
53	9	127	C
53	9	141	A
53	9	143	U
53	9	147	A
53	9	155	G
53	9	158	A
53	9	161	U
53	9	162	C
53	9	163	U
53	9	168	C
53	9	180	G
53	9	183	G

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Mol	Chain	Res	Type
53	9	184	G
53	9	188	C
53	9	189	U
53	9	190	G
53	9	192	C
53	9	215	G
53	9	292	A
53	9	302	A
53	9	305	U
53	9	307	G
53	9	308	G
53	9	309	G
53	9	310	C
53	9	314	U
53	9	317	C
53	9	318	A
53	9	319	C
53	9	332	G
53	9	335	G
53	9	347	G
53	9	350	C
53	9	351	G
53	9	360	A
53	9	362	C
53	9	364	A
53	9	368	U
53	9	369	C
53	9	370	G
53	9	381	C
53	9	385	G
53	9	386	C
53	9	398	A
53	9	400	C
53	9	408	A
53	9	409	C
53	9	417	C
53	9	418	A
53	9	426	A
53	9	428	U
53	9	435	A
53	9	438	G
53	9	448	A

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Mol	Chain	Res	Type
53	9	450	C
53	9	465	A
53	9	466	G
53	9	472	C
53	9	473	A
53	9	474	G
53	9	482	G
53	9	483	C
53	9	485	A
53	9	487	U
53	9	492	C
53	9	496	C
53	9	530	U
53	9	532	C
53	9	533	A
53	9	547	G
53	9	548	C
53	9	549	C
53	9	550	C
53	9	551	U
53	9	554	A
53	9	555	A
53	9	556	U
53	9	559	G
53	9	560	A
53	9	563	G
53	9	564	A
53	9	568	C
53	9	576	A
53	9	583	A
53	9	587	A
53	9	588	G
53	9	590	A
53	9	591	U
53	9	599	A
53	9	600	G
53	9	603	C
53	9	606	G
53	9	608	C
53	9	614	C
53	9	617	G
53	9	626	G

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Mol	Chain	Res	Type
53	9	627	U
53	9	629	A
53	9	631	U
53	9	632	C
53	9	633	C
53	9	643	A
53	9	660	C
53	9	668	A
53	9	669	A
53	9	671	A
53	9	672	A
53	9	673	G
53	9	688	U
53	9	689	U
53	9	690	G
53	9	752	G
53	9	753	C
53	9	754	G
53	9	798	G
53	9	799	U
53	9	811	A
53	9	821	G
53	9	822	U
53	9	827	A
53	9	830	A
53	9	833	C
53	9	834	C
53	9	844	U
53	9	847	A
53	9	852	G
53	9	861	A
53	9	870	A
53	9	871	U
53	9	872	A
53	9	873	G
53	9	874	G
53	9	875	A
53	9	878	G
53	9	879	C
53	9	888	U
53	9	890	U
53	9	892	U

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Mol	Chain	Res	Type
53	9	893	U
53	9	902	G
53	9	903	A
53	9	909	G
53	9	913	A
53	9	914	U
53	9	920	A
53	9	933	G
53	9	938	A
53	9	971	G
53	9	990	A
53	9	992	A
53	9	999	G
53	9	1002	U
53	9	1023	A
53	9	1026	C
53	9	1042	A
53	9	1045	U
53	9	1060	A
53	9	1061	U
53	9	1062	A
53	9	1067	C
53	9	1083	A
53	9	1084	A
53	9	1085	C
53	9	1086	G
53	9	1097	G
53	9	1100	A
53	9	1109	C
53	9	1114	U
53	9	1115	U
53	9	1116	C
53	9	1117	C
53	9	1118	C
53	9	1120	U
53	9	1121	G
53	9	1123	C
53	9	1126	G
53	9	1131	G
53	9	1133	A
53	9	1138	C
53	9	1139	C

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Mol	Chain	Res	Type
53	9	1148	A
53	9	1149	A
53	9	1150	A
53	9	1153	C
53	9	1154	U
53	9	1155	U
53	9	1170	A
53	9	1171	G
53	9	1195	A
53	9	1207	G
53	9	1208	A
53	9	1215	C
53	9	1216	C
53	9	1221	G
53	9	1224	G
53	9	1241	A
53	9	1242	U
53	9	1243	PSU
53	9	1248	B8N
53	9	1251	A
53	9	1253	A
53	9	1254	C
53	9	1256	G
53	9	1257	G
53	9	1265	A
53	9	1266	C
53	9	1274	G
53	9	1275	G
53	9	1282	A
53	9	1283	C
53	9	1284	A
53	9	1285	G
53	9	1286	G
53	9	1287	A
53	9	1295	A
53	9	1298	G
53	9	1299	A
53	9	1301	A
53	9	1302	G
53	9	1303	C
53	9	1307	U
53	9	1308	U

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Mol	Chain	Res	Type
53	9	1309	C
53	9	1312	G
53	9	1313	A
53	9	1327	G
53	9	1333	U
53	9	1342	U
53	9	1363	C
53	9	1364	U
53	9	1371	U
53	9	1372	U
53	9	1376	A
53	9	1378	A
53	9	1381	G
53	9	1382	A
53	9	1395	C
53	9	1396	A
53	9	1397	U
53	9	1401	A
53	9	1402	A
53	9	1404	U
53	9	1428	G
53	9	1447	G
53	9	1454	A
53	9	1462	U
53	9	1463	U
53	9	1475	G
53	9	1476	A
53	9	1477	U
53	9	1483	A
53	9	1484	A
53	9	1485	U
53	9	1486	A
53	9	1489	A
53	9	1490	G
53	9	1495	G
53	9	1497	G
53	9	1498	A
53	9	1507	G
53	9	1510	G
53	9	1521	C
53	9	1522	A
53	9	1531	A

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Mol	Chain	Res	Type
53	9	1535	U
53	9	1536	G
53	9	1544	C
53	9	1548	G
53	9	1552	G
53	9	1553	C
53	9	1554	C
53	9	1556	A
53	9	1557	C
53	9	1573	G
53	9	1574	C
53	9	1579	A
53	9	1580	A
53	9	1585	U
53	9	1587	G
53	9	1588	A
53	9	1595	U
53	9	1598	G
53	9	1601	A
53	9	1602	U
53	9	1604	G
53	9	1606	G
53	9	1621	U
53	9	1623	A
53	9	1637	A
53	9	1638	G
53	9	1646	C
53	9	1648	G
53	9	1664	A
53	9	1665	G
53	9	1666	C
53	9	1680	G
53	9	1683	C
53	9	1686	G
53	9	1695	A
53	9	1698	C
53	9	1699	A
53	9	1715	A
53	9	1721	U
53	9	1722	G
53	9	1726	G
53	9	1744	G

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Mol	Chain	Res	Type
53	9	1748	G
53	9	1753	C
53	9	1783	C
53	9	1784	G
53	9	1785	C
53	9	1823	A
53	9	1824	A
53	9	1825	A
53	9	1831	A
53	9	1835	A
53	9	1836	G
53	9	1837	G
53	9	1838	U
53	9	1849	G
53	9	1851	A
53	9	1852	C
53	9	1861	G
53	9	1862	G
53	9	1863	A
53	9	1865	C
53	9	1866	A
53	9	1867	U

All (68) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
29	5	12	A
29	5	47	A
29	5	48	G
29	5	125	C
29	5	217	C
29	5	275	C
29	5	385	A
29	5	406	C
29	5	486	C
29	5	493	U
29	5	505	G
29	5	685	G
29	5	934	G
29	5	938	C
29	5	964	G
29	5	1078	C

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Mol	Chain	Res	Type
29	5	1180	G
29	5	1217	G
29	5	1242	C
29	5	1244	A
29	5	1297	G
29	5	1335	G
29	5	1376	G
29	5	1446	U
29	5	1451	U
29	5	1639	G
29	5	1810	A
29	5	1985	A
29	5	2052	G
29	5	2095	G
29	5	2103	A
29	5	2272	C
29	5	2508	A
29	5	2645	U
29	5	2667	U
29	5	2701	A
29	5	3631	G
29	5	3766	A
29	5	3882	A
29	5	3894	G
29	5	4125	C
29	5	4238	U
29	5	4454	G
29	5	4705	U
29	5	4725	G
29	5	4890	G
29	5	4931	U
29	5	4942	G
29	5	4953	U
29	5	5067	A
31	8	124	U
53	9	110	U
53	9	434	G
53	9	465	A
53	9	532	C
53	9	553	U
53	9	642	U
53	9	688	U

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Mol	Chain	Res	Type
53	9	752	G
53	9	870	A
53	9	1137	U
53	9	1253	A
53	9	1264	C
53	9	1394	G
53	9	1395	C
53	9	1489	A
53	9	1520	G
53	9	1637	A

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

110 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$
29	B8H	5	4302	29	19,22,23	6.87	8 (42%)	21,32,35	2.50	5 (23%)
53	A2M	9	1678	53	18,25,26	2.73	8 (44%)	20,36,39	2.03	4 (20%)
29	OMG	5	4202	29	19,26,27	2.56	7 (36%)	21,38,41	1.45	4 (19%)
29	JMH	5	1462	29	18,22,23	2.87	6 (33%)	23,32,35	1.40	3 (13%)
29	OMC	5	3875	29	19,22,23	3.04	8 (42%)	25,31,34	0.68	0
29	B8W	5	4135	29	18,26,27	1.52	2 (11%)	17,38,41	3.08	5 (29%)
53	5MC	9	1374	53	19,22,23	3.88	8 (42%)	26,32,35	1.06	2 (7%)
29	I4U	5	4200	29	20,24,25	3.51	8 (40%)	27,34,37	1.68	2 (7%)
29	E7G	5	2303	29	24,27,28	3.36	11 (45%)	28,40,43	2.40	9 (32%)
29	5MC	5	3788	29	19,22,23	3.88	8 (42%)	26,32,35	1.00	2 (7%)
29	OMG	5	2430	29	19,26,27	2.56	7 (36%)	21,38,41	1.47	4 (19%)
29	MHG	5	4377	29	29,32,33	3.60	10 (34%)	34,46,49	2.55	9 (26%)
29	OMC	5	2428	29,84	19,22,23	3.03	8 (42%)	25,31,34	0.74	0
29	A2M	5	4529	29,84	18,25,26	2.65	9 (50%)	20,36,39	2.01	3 (15%)
29	2MG	5	1523	29	18,26,27	2.19	5 (27%)	16,38,41	1.69	5 (31%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
29	OMG	5	2370	29	19,26,27	2.54	7 (36%)	21,38,41	1.47	4 (19%)
29	A2M	5	1332	29	18,25,26	2.72	9 (50%)	20,36,39	1.93	3 (15%)
29	A2M	5	2407	29,84	18,25,26	2.68	8 (44%)	20,36,39	1.92	3 (15%)
29	BGH	5	3905	29,84	25,29,30	4.54	18 (72%)	30,43,46	2.38	11 (36%)
29	PSU	5	3770	29	18,21,22	4.55	6 (33%)	21,30,33	2.94	5 (23%)
29	B8T	5	4677	29	19,22,23	3.30	8 (42%)	25,31,34	0.90	1 (4%)
29	1MA	5	1328	29,84	17,25,26	3.88	3 (17%)	17,37,40	1.75	3 (17%)
29	A2M	5	1540	29,84	18,25,26	2.71	8 (44%)	20,36,39	1.94	3 (15%)
29	UR3	5	4603	29	19,22,23	3.20	9 (47%)	26,32,35	1.56	4 (15%)
29	OMG	5	3798	29	19,26,27	2.55	7 (36%)	21,38,41	1.44	4 (19%)
29	OMU	5	4626	29	19,22,23	3.05	8 (42%)	25,31,34	1.81	5 (20%)
29	OMG	5	4643	29	19,26,27	2.55	7 (36%)	21,38,41	1.45	4 (19%)
29	OMG	5	4876	29	19,26,27	2.56	7 (36%)	21,38,41	1.48	4 (19%)
29	OMC	5	2867	29	19,22,23	3.06	8 (42%)	25,31,34	0.88	1 (4%)
29	B8W	5	4478	29	18,26,27	1.51	2 (11%)	17,38,41	3.10	6 (35%)
29	PSU	5	4409	29	18,21,22	4.55	7 (38%)	21,30,33	2.89	7 (33%)
29	A2M	5	1877	29,84	18,25,26	2.68	9 (50%)	20,36,39	1.89	3 (15%)
29	B8K	5	4696	29	24,28,29	3.33	12 (50%)	29,42,45	2.42	11 (37%)
29	7MG	5	1611	29	23,26,27	3.37	10 (43%)	27,39,42	2.21	9 (33%)
29	P7G	5	3886	29	24,28,29	3.59	10 (41%)	25,41,44	1.39	2 (8%)
29	PSU	5	4634	29	18,21,22	4.53	6 (33%)	21,30,33	3.05	5 (23%)
29	PSU	5	1683	29	18,21,22	4.57	7 (38%)	21,30,33	3.05	7 (33%)
29	OMG	5	1889	29	19,26,27	2.55	8 (42%)	21,38,41	1.49	4 (19%)
29	7MG	5	4556	29	23,26,27	3.39	10 (43%)	27,39,42	2.22	9 (33%)
29	PSU	5	2514	29	18,21,22	4.54	6 (33%)	21,30,33	2.99	5 (23%)
29	PSU	5	4299	29	18,21,22	4.53	7 (38%)	21,30,33	3.01	6 (28%)
29	UR3	5	4536	29	19,22,23	3.24	8 (42%)	26,32,35	1.60	3 (11%)
29	A2M	5	3791	29	18,25,26	2.81	9 (50%)	20,36,39	1.97	5 (25%)
29	B8W	5	4191	29	18,26,27	1.52	2 (11%)	17,38,41	3.18	6 (35%)
29	B9B	5	2760	29,84	20,28,29	1.76	2 (10%)	19,40,43	1.91	5 (26%)
29	OMG	5	373	29	19,26,27	2.54	7 (36%)	21,38,41	1.47	4 (19%)
29	A2M	5	398	29	18,25,26	2.65	8 (44%)	20,36,39	1.95	3 (15%)
3	MLZ	C	333	3	8,9,10	0.72	0	4,9,11	0.91	0
29	OMG	5	1528	29	19,26,27	2.55	7 (36%)	21,38,41	1.48	4 (19%)
29	OMC	5	3893	29	19,22,23	3.04	8 (42%)	25,31,34	0.72	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
53	PSU	9	1243	53	18,21,22	4.57	6 (33%)	21,30,33	2.87	5 (23%)
29	5MU	5	4089	29	19,22,23	8.30	7 (36%)	27,32,35	3.57	10 (37%)
29	PSU	5	3735	29	18,21,22	4.53	6 (33%)	21,30,33	2.98	5 (23%)
29	PSU	5	4537	29	18,21,22	4.52	6 (33%)	21,30,33	3.00	5 (23%)
44	MLZ	m	72	44	8,9,10	0.72	0	4,9,11	0.80	0
29	P7G	5	1915	29	24,28,29	3.59	10 (41%)	25,41,44	1.22	2 (8%)
29	B8W	5	4535	29,84	18,26,27	1.50	2 (11%)	17,38,41	3.20	6 (35%)
29	PSU	5	1689	29	18,21,22	4.52	6 (33%)	21,30,33	3.01	6 (28%)
31	OMU	8	14	31,29	19,22,23	3.11	8 (42%)	25,31,34	1.84	5 (20%)
29	OMG	5	2779	29	19,26,27	2.58	7 (36%)	21,38,41	1.48	4 (19%)
29	OMG	5	4500	29	19,26,27	2.54	7 (36%)	21,38,41	1.47	4 (19%)
29	5MC	5	4453	29	19,22,23	3.85	8 (42%)	26,32,35	1.06	1 (3%)
29	B8H	5	3768	29	19,22,23	6.87	8 (42%)	21,32,35	2.47	5 (23%)
29	A2M	5	3873	29	18,25,26	2.71	9 (50%)	20,36,39	1.88	3 (15%)
51	DDE	v	715	51	15,20,21	2.21	4 (26%)	11,28,30	0.99	1 (9%)
29	P4U	5	1354	29,84	21,24,25	3.51	8 (38%)	28,33,36	1.52	2 (7%)
29	5MC	5	4341	29	19,22,23	3.90	8 (42%)	26,32,35	1.02	2 (7%)
29	B8H	5	1866	29	19,22,23	6.83	8 (42%)	21,32,35	2.46	5 (23%)
29	2MG	5	730	29	18,26,27	2.21	5 (27%)	16,38,41	1.60	4 (25%)
29	M7A	5	4570	29	19,25,26	1.61	2 (10%)	25,37,40	4.34	7 (28%)
29	OMG	5	4629	29	19,26,27	2.55	7 (36%)	21,38,41	1.46	4 (19%)
29	UR3	5	1872	29	19,22,23	3.20	8 (42%)	26,32,35	1.62	4 (15%)
29	A2M	5	1530	29	18,25,26	2.70	9 (50%)	20,36,39	1.92	4 (20%)
29	OMC	5	2371	29	19,22,23	3.03	8 (42%)	25,31,34	0.71	0
29	OMC	5	3915	29	19,22,23	3.03	8 (42%)	25,31,34	0.76	0
29	A2M	5	3729	29	18,25,26	2.70	9 (50%)	20,36,39	1.83	3 (15%)
29	OMC	5	4542	29	19,22,23	3.05	8 (42%)	25,31,34	0.77	0
29	A2M	5	2369	29,84	18,25,26	2.67	9 (50%)	20,36,39	1.94	3 (15%)
29	A2M	5	3831	29	18,25,26	2.67	9 (50%)	20,36,39	1.96	3 (15%)
29	B9H	5	2792	29	21,25,26	2.95	4 (19%)	22,35,38	1.59	5 (22%)
29	OMC	5	3707	29,84	19,22,23	3.02	8 (42%)	25,31,34	0.70	0
29	OMG	5	1631	29,84	19,26,27	2.56	7 (36%)	21,38,41	1.49	4 (19%)
29	2MG	5	4878	29	18,26,27	2.21	5 (27%)	16,38,41	1.98	5 (31%)
29	PSU	5	4506	29	18,21,22	4.54	7 (38%)	21,30,33	2.99	6 (28%)
29	7MG	5	2528	29	23,26,27	3.38	10 (43%)	27,39,42	2.21	9 (33%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
53	JMH	9	1219	53	18,22,23	2.97	6 (33%)	23,32,35	1.99	7 (30%)
29	E7G	5	1803	29	24,27,28	3.37	11 (45%)	28,40,43	2.37	9 (32%)
29	B8W	5	2386	29	18,26,27	1.51	2 (11%)	17,38,41	3.19	6 (35%)
29	PSU	5	4456	29,84	18,21,22	4.50	6 (33%)	21,30,33	3.03	6 (28%)
29	PSU	5	1588	29	18,21,22	4.52	6 (33%)	21,30,33	2.97	5 (23%)
29	OMU	5	4312	29	19,22,23	3.06	8 (42%)	25,31,34	1.81	5 (20%)
29	1MA	5	4421	29	17,25,26	3.91	3 (17%)	17,37,40	1.68	3 (17%)
29	A2M	5	3724	29	18,25,26	2.68	8 (44%)	20,36,39	1.93	3 (15%)
53	4AC	9	1337	53	21,24,25	3.71	9 (42%)	28,34,37	1.17	4 (14%)
29	6MZ	5	4226	29	17,25,26	1.39	2 (11%)	15,36,39	2.29	4 (26%)
29	OMC	5	2810	29	19,22,23	3.05	8 (42%)	25,31,34	0.72	0
53	B8N	9	1248	53	25,29,30	2.53	7 (28%)	28,42,45	2.07	5 (17%)
29	OMG	5	2056	29	19,26,27	2.53	7 (36%)	21,38,41	1.43	4 (19%)
29	B8K	5	3903	29	24,28,29	3.24	12 (50%)	29,42,45	2.36	11 (37%)
29	PSU	5	3721	29	18,21,22	4.55	6 (33%)	21,30,33	2.95	5 (23%)
29	B9B	5	1580	29	20,28,29	1.75	2 (10%)	19,40,43	1.91	4 (21%)
29	E6G	5	4361	29	19,27,28	1.78	2 (10%)	18,39,42	2.03	4 (22%)
29	B9B	5	237	29,84	20,28,29	1.75	2 (10%)	19,40,43	1.90	4 (21%)
29	PSU	5	4448	29	18,21,22	4.53	6 (33%)	21,30,33	2.99	7 (33%)
29	PSU	5	4642	29	18,21,22	4.53	6 (33%)	21,30,33	2.99	5 (23%)
29	B8T	5	4489	29	19,22,23	3.30	8 (42%)	25,31,34	0.88	1 (4%)
29	OMG	5	4376	29	19,26,27	2.53	7 (36%)	21,38,41	1.46	4 (19%)
29	OMG	5	1322	29	19,26,27	2.54	7 (36%)	21,38,41	1.48	4 (19%)
29	I4U	5	1665	29	20,24,25	3.53	8 (40%)	27,34,37	1.74	2 (7%)
29	A2M	5	4577	29	18,25,26	2.65	8 (44%)	20,36,39	1.93	3 (15%)

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
29	B8H	5	4302	29	-	0/7/25/26	0/2/2/2
53	A2M	9	1678	53	-	1/5/27/28	0/3/3/3
29	OMG	5	4202	29	-	0/5/27/28	0/3/3/3
29	JMH	5	1462	29	-	2/7/25/26	0/2/2/2
29	OMC	5	3875	29	-	0/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
29	B8W	5	4135	29	-	2/5/27/28	0/3/3/3
53	5MC	9	1374	53	-	0/7/25/26	0/2/2/2
29	I4U	5	4200	29	-	3/9/29/30	0/2/2/2
29	E7G	5	2303	29	-	3/9/39/40	0/3/3/3
29	5MC	5	3788	29	-	1/7/25/26	0/2/2/2
29	OMG	5	2430	29	-	2/5/27/28	0/3/3/3
29	MHG	5	4377	29	-	3/16/46/47	0/3/3/3
29	OMC	5	2428	29,84	-	2/9/27/28	0/2/2/2
29	A2M	5	4529	29,84	-	3/5/27/28	0/3/3/3
29	2MG	5	1523	29	-	0/5/27/28	0/3/3/3
29	OMG	5	2370	29	-	3/5/27/28	0/3/3/3
29	A2M	5	1332	29	-	1/5/27/28	0/3/3/3
29	A2M	5	2407	29,84	-	0/5/27/28	0/3/3/3
29	BGH	5	3905	29,84	-	3/13/43/44	0/3/3/3
29	PSU	5	3770	29	-	1/7/25/26	0/2/2/2
29	B8T	5	4677	29	-	2/7/27/28	0/2/2/2
29	1MA	5	1328	29,84	-	0/3/25/26	0/3/3/3
29	A2M	5	1540	29,84	-	1/5/27/28	0/3/3/3
29	UR3	5	4603	29	-	0/7/25/26	0/2/2/2
29	OMG	5	3798	29	-	2/5/27/28	0/3/3/3
29	OMU	5	4626	29	-	1/9/27/28	0/2/2/2
29	OMG	5	4643	29	-	3/5/27/28	0/3/3/3
29	OMG	5	4876	29	-	3/5/27/28	0/3/3/3
29	OMC	5	2867	29	-	0/9/27/28	0/2/2/2
29	B8W	5	4478	29	-	2/5/27/28	0/3/3/3
29	PSU	5	4409	29	-	2/7/25/26	0/2/2/2
29	A2M	5	1877	29,84	-	0/5/27/28	0/3/3/3
29	B8K	5	4696	29	-	0/11/41/42	0/3/3/3
29	7MG	5	1611	29	-	0/7/37/38	0/3/3/3
29	P7G	5	3886	29	-	2/10/40/41	0/3/3/3
29	PSU	5	4634	29	-	0/7/25/26	0/2/2/2
29	PSU	5	1683	29	-	1/7/25/26	0/2/2/2
29	OMG	5	1889	29	-	0/5/27/28	0/3/3/3
29	7MG	5	4556	29	-	0/7/37/38	0/3/3/3
29	PSU	5	2514	29	-	0/7/25/26	0/2/2/2
29	PSU	5	4299	29	-	2/7/25/26	0/2/2/2
29	UR3	5	4536	29	-	2/7/25/26	0/2/2/2
29	A2M	5	3791	29	-	2/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
29	B8W	5	4191	29	-	2/5/27/28	0/3/3/3
29	B9B	5	2760	29,84	-	3/7/29/30	0/3/3/3
29	OMG	5	373	29	-	1/5/27/28	0/3/3/3
29	A2M	5	398	29	-	3/5/27/28	0/3/3/3
3	MLZ	C	333	3	-	2/7/8/10	-
29	OMG	5	1528	29	-	0/5/27/28	0/3/3/3
29	OMC	5	3893	29	-	2/9/27/28	0/2/2/2
53	PSU	9	1243	53	-	2/7/25/26	0/2/2/2
29	5MU	5	4089	29	-	0/7/25/26	0/2/2/2
29	PSU	5	3735	29	-	2/7/25/26	0/2/2/2
29	PSU	5	4537	29	-	2/7/25/26	0/2/2/2
44	MLZ	m	72	44	-	2/7/8/10	-
29	P7G	5	1915	29	-	3/10/40/41	0/3/3/3
29	B8W	5	4535	29,84	-	4/5/27/28	0/3/3/3
29	PSU	5	1689	29	-	0/7/25/26	0/2/2/2
31	OMU	8	14	31,29	-	5/9/27/28	0/2/2/2
29	OMG	5	2779	29	-	2/5/27/28	0/3/3/3
29	OMG	5	4500	29	-	0/5/27/28	0/3/3/3
29	5MC	5	4453	29	-	4/7/25/26	0/2/2/2
29	B8H	5	3768	29	-	0/7/25/26	0/2/2/2
29	A2M	5	3873	29	-	4/5/27/28	0/3/3/3
51	DDE	v	715	51	-	7/20/21/23	0/1/1/1
29	P4U	5	1354	29,84	-	4/10/29/30	0/2/2/2
29	5MC	5	4341	29	-	3/7/25/26	0/2/2/2
29	B8H	5	1866	29	-	0/7/25/26	0/2/2/2
29	2MG	5	730	29	-	0/5/27/28	0/3/3/3
29	M7A	5	4570	29	-	0/7/37/38	0/3/3/3
29	OMG	5	4629	29	-	0/5/27/28	0/3/3/3
29	UR3	5	1872	29	-	0/7/25/26	0/2/2/2
29	A2M	5	1530	29	-	0/5/27/28	0/3/3/3
29	OMC	5	2371	29	-	0/9/27/28	0/2/2/2
29	OMC	5	3915	29	-	0/9/27/28	0/2/2/2
29	A2M	5	3729	29	-	1/5/27/28	0/3/3/3
29	OMC	5	4542	29	-	0/9/27/28	0/2/2/2
29	A2M	5	2369	29,84	-	0/5/27/28	0/3/3/3
29	A2M	5	3831	29	-	1/5/27/28	0/3/3/3
29	B9H	5	2792	29	-	0/12/47/48	0/2/2/2
29	OMC	5	3707	29,84	-	4/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
29	OMG	5	1631	29,84	-	2/5/27/28	0/3/3/3
29	2MG	5	4878	29	-	2/5/27/28	0/3/3/3
29	PSU	5	4506	29	-	3/7/25/26	0/2/2/2
29	7MG	5	2528	29	-	0/7/37/38	0/3/3/3
53	JMH	9	1219	53	-	1/7/25/26	0/2/2/2
29	E7G	5	1803	29	-	2/9/39/40	0/3/3/3
29	B8W	5	2386	29	-	4/5/27/28	0/3/3/3
29	PSU	5	4456	29,84	-	4/7/25/26	0/2/2/2
29	PSU	5	1588	29	-	2/7/25/26	0/2/2/2
29	OMU	5	4312	29	-	3/9/27/28	0/2/2/2
29	1MA	5	4421	29	-	1/3/25/26	0/3/3/3
29	A2M	5	3724	29	-	1/5/27/28	0/3/3/3
53	4AC	9	1337	53	-	0/11/29/30	0/2/2/2
29	6MZ	5	4226	29	-	0/5/27/28	0/3/3/3
29	OMC	5	2810	29	-	0/9/27/28	0/2/2/2
53	B8N	9	1248	53	-	2/16/34/35	0/2/2/2
29	OMG	5	2056	29	-	0/5/27/28	0/3/3/3
29	B8K	5	3903	29	-	3/11/41/42	0/3/3/3
29	PSU	5	3721	29	-	0/7/25/26	0/2/2/2
29	B9B	5	1580	29	-	3/7/29/30	0/3/3/3
29	E6G	5	4361	29	-	4/6/28/29	0/3/3/3
29	B9B	5	237	29,84	-	4/7/29/30	0/3/3/3
29	PSU	5	4448	29	-	2/7/25/26	0/2/2/2
29	PSU	5	4642	29	-	2/7/25/26	0/2/2/2
29	B8T	5	4489	29	-	0/7/27/28	0/2/2/2
29	OMG	5	4376	29	-	0/5/27/28	0/3/3/3
29	OMG	5	1322	29	-	1/5/27/28	0/3/3/3
29	I4U	5	1665	29	-	0/9/29/30	0/2/2/2
29	A2M	5	4577	29	-	1/5/27/28	0/3/3/3

All (769) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	4089	5MU	C4-C5	23.55	1.83	1.44
29	5	4089	5MU	C6-N1	17.77	1.68	1.38
29	5	3768	B8H	C6-C5	-15.88	1.12	1.35
29	5	4302	B8H	C6-C5	-15.81	1.12	1.35
29	5	1866	B8H	C6-C5	-15.64	1.12	1.35
29	5	4421	1MA	C2-N3	15.18	1.47	1.28

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	1328	1MA	C2-N3	15.05	1.47	1.28
29	5	4089	5MU	C4-N3	-14.67	1.11	1.38
29	5	4302	B8H	C4-N3	-14.66	1.11	1.38
29	5	1866	B8H	C4-N3	-14.59	1.11	1.38
29	5	3768	B8H	C4-N3	-14.59	1.11	1.38
29	5	1866	B8H	C4-C5	14.05	1.83	1.44
29	5	3768	B8H	C4-C5	14.05	1.83	1.44
29	5	4302	B8H	C4-C5	14.01	1.83	1.44
29	5	4089	5MU	C6-C5	-13.60	1.12	1.34
29	5	4302	B8H	C6-N1	13.10	1.68	1.36
29	5	3768	B8H	C6-N1	13.08	1.68	1.36
29	5	1866	B8H	C6-N1	13.05	1.68	1.36
53	9	1243	PSU	C6-C5	12.72	1.49	1.35
29	5	4409	PSU	C6-C5	12.60	1.49	1.35
29	5	3770	PSU	C6-C5	12.57	1.49	1.35
29	5	1588	PSU	C6-C5	12.56	1.49	1.35
29	5	3721	PSU	C6-C5	12.55	1.49	1.35
29	5	4506	PSU	C6-C5	12.54	1.49	1.35
29	5	1683	PSU	C6-C5	12.53	1.49	1.35
29	5	4448	PSU	C6-C5	12.53	1.49	1.35
29	5	4642	PSU	C6-C5	12.52	1.49	1.35
29	5	4537	PSU	C6-C5	12.51	1.49	1.35
29	5	2514	PSU	C6-C5	12.49	1.49	1.35
29	5	4634	PSU	C6-C5	12.49	1.49	1.35
29	5	3735	PSU	C6-C5	12.48	1.49	1.35
29	5	1689	PSU	C6-C5	12.46	1.49	1.35
29	5	4299	PSU	C6-C5	12.42	1.49	1.35
29	5	4456	PSU	C6-C5	12.40	1.49	1.35
29	5	1665	I4U	C4-N3	10.85	1.45	1.31
29	5	1354	P4U	C4-N3	10.76	1.45	1.31
29	5	4200	I4U	C4-N3	10.73	1.45	1.31
29	5	4377	MHG	C8-N9	10.22	1.52	1.45
29	5	1683	PSU	C2-N1	10.06	1.49	1.36
29	5	4409	PSU	C2-N1	10.02	1.49	1.36
29	5	4299	PSU	C2-N1	10.00	1.49	1.36
29	5	2514	PSU	C2-N1	9.99	1.49	1.36
29	5	4642	PSU	C2-N1	9.96	1.49	1.36
29	5	3735	PSU	C2-N1	9.96	1.49	1.36
29	5	1689	PSU	C2-N1	9.96	1.49	1.36
29	5	4634	PSU	C2-N1	9.95	1.49	1.36
29	5	3905	BGH	C3'-C4'	-9.95	1.27	1.53
29	5	4448	PSU	C2-N1	9.95	1.49	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	3721	PSU	C2-N1	9.94	1.49	1.36
29	5	4456	PSU	C2-N1	9.93	1.49	1.36
29	5	4537	PSU	C2-N1	9.90	1.49	1.36
29	5	3770	PSU	C2-N1	9.89	1.49	1.36
29	5	4506	PSU	C2-N1	9.85	1.49	1.36
53	9	1243	PSU	C2-N1	9.81	1.49	1.36
29	5	1588	PSU	C2-N1	9.79	1.49	1.36
29	5	3905	BGH	O4'-C4'	9.61	1.66	1.45
29	5	4536	UR3	C2-N1	9.38	1.51	1.38
29	5	3886	P7G	C8-N9	9.31	1.51	1.45
29	5	4453	5MC	C6-C5	9.29	1.49	1.34
29	5	4341	5MC	C6-C5	9.29	1.49	1.34
53	9	1374	5MC	C6-C5	9.23	1.49	1.34
29	5	1872	UR3	C2-N1	9.21	1.51	1.38
29	5	3788	5MC	C6-C5	9.21	1.49	1.34
29	5	4603	UR3	C2-N1	9.14	1.51	1.38
29	5	1915	P7G	C8-N9	9.13	1.51	1.45
29	5	4377	MHG	C2-N3	8.70	1.48	1.32
29	5	4556	7MG	C8-N9	8.68	1.51	1.45
29	5	2528	7MG	C8-N9	8.68	1.51	1.45
29	5	1611	7MG	C8-N9	8.62	1.51	1.45
29	5	2303	E7G	C8-N9	8.60	1.51	1.45
29	5	1803	E7G	C8-N9	8.51	1.51	1.45
29	5	2792	B9H	C2-N3	8.40	1.48	1.37
53	9	1337	4AC	C4-N3	8.37	1.46	1.32
29	5	3905	BGH	C8-N9	7.96	1.51	1.45
29	5	1915	P7G	C5-N7	7.93	1.45	1.35
29	5	4377	MHG	C5-N7	7.82	1.45	1.35
53	9	1243	PSU	C2-N3	7.73	1.50	1.37
29	5	3770	PSU	C2-N3	7.58	1.50	1.37
29	5	4537	PSU	C2-N3	7.57	1.49	1.37
29	5	1683	PSU	C2-N3	7.57	1.49	1.37
29	5	2514	PSU	C2-N3	7.52	1.49	1.37
29	5	3721	PSU	C2-N3	7.51	1.49	1.37
53	9	1248	B8N	C4-N3	-7.50	1.27	1.40
29	5	3735	PSU	C2-N3	7.50	1.49	1.37
29	5	4506	PSU	C2-N3	7.49	1.49	1.37
29	5	4299	PSU	C2-N3	7.49	1.49	1.37
29	5	3886	P7G	C5-N7	7.48	1.45	1.35
29	5	4642	PSU	C2-N3	7.48	1.49	1.37
29	5	4634	PSU	C2-N3	7.48	1.49	1.37
29	5	4456	PSU	C2-N3	7.46	1.49	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	1689	PSU	C2-N3	7.45	1.49	1.37
29	5	4448	PSU	C2-N3	7.44	1.49	1.37
29	5	2792	B9H	C6-C5	7.42	1.48	1.33
31	8	14	OMU	C2-N1	7.42	1.50	1.38
29	5	4489	B8T	C4-N3	7.40	1.45	1.32
29	5	1588	PSU	C2-N3	7.39	1.49	1.37
29	5	4677	B8T	C4-N3	7.38	1.45	1.32
53	9	1337	4AC	C2-N3	7.37	1.51	1.36
29	5	3791	A2M	O4'-C1'	-7.29	1.31	1.40
29	5	1803	E7G	C5-N7	7.23	1.44	1.35
29	5	4409	PSU	C2-N3	7.15	1.49	1.37
29	5	4696	B8K	C8-N9	7.15	1.50	1.45
29	5	4556	7MG	C5-N7	7.11	1.44	1.35
29	5	2303	E7G	C5-N7	7.11	1.44	1.35
31	8	14	OMU	C2-N3	7.06	1.50	1.38
29	5	4626	OMU	C2-N1	7.06	1.49	1.38
29	5	4312	OMU	C2-N1	7.03	1.49	1.38
29	5	2528	7MG	C5-N7	7.02	1.44	1.35
29	5	4312	OMU	C2-N3	7.00	1.50	1.38
29	5	4626	OMU	C2-N3	6.96	1.50	1.38
53	9	1678	A2M	O4'-C1'	-6.96	1.31	1.40
29	5	1611	7MG	C5-N7	6.95	1.44	1.35
29	5	4341	5MC	C5-C4	6.93	1.49	1.44
53	9	1337	4AC	C6-C5	6.92	1.51	1.35
29	5	1540	A2M	O4'-C1'	-6.92	1.31	1.40
29	5	1530	A2M	O4'-C1'	-6.91	1.31	1.40
29	5	3873	A2M	O4'-C1'	-6.91	1.31	1.40
29	5	4341	5MC	C4-N3	6.90	1.45	1.34
29	5	3788	5MC	C4-N3	6.89	1.45	1.34
29	5	3788	5MC	C5-C4	6.88	1.49	1.44
53	9	1374	5MC	C4-N3	6.82	1.45	1.34
29	5	1332	A2M	O4'-C1'	-6.82	1.31	1.40
29	5	3729	A2M	O4'-C1'	-6.81	1.32	1.40
29	5	4453	5MC	C4-N3	6.78	1.45	1.34
53	9	1374	5MC	C5-C4	6.75	1.49	1.44
29	5	4377	MHG	C4-N9	6.67	1.46	1.37
29	5	1877	A2M	O4'-C1'	-6.67	1.32	1.40
29	5	3831	A2M	O4'-C1'	-6.67	1.32	1.40
53	9	1219	JMH	C2-N1	6.66	1.47	1.38
29	5	2407	A2M	O4'-C1'	-6.65	1.32	1.40
29	5	2369	A2M	O4'-C1'	-6.62	1.32	1.40
29	5	3724	A2M	O4'-C1'	-6.60	1.32	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	2810	OMC	C2-N3	6.57	1.49	1.36
29	5	2867	OMC	C2-N3	6.55	1.49	1.36
29	5	4577	A2M	O4'-C1'	-6.55	1.32	1.40
29	5	398	A2M	O4'-C1'	-6.54	1.32	1.40
29	5	4529	A2M	O4'-C1'	-6.53	1.32	1.40
29	5	3893	OMC	C2-N3	6.52	1.49	1.36
29	5	3875	OMC	C2-N3	6.50	1.49	1.36
29	5	3707	OMC	C2-N3	6.50	1.49	1.36
29	5	2428	OMC	C2-N3	6.48	1.49	1.36
29	5	4489	B8T	C2-N3	6.48	1.49	1.36
29	5	4542	OMC	C2-N3	6.47	1.49	1.36
29	5	2371	OMC	C2-N3	6.47	1.49	1.36
29	5	3915	OMC	C2-N3	6.47	1.49	1.36
29	5	4677	B8T	C2-N3	6.45	1.49	1.36
29	5	4453	5MC	C5-C4	6.45	1.49	1.44
29	5	4377	MHG	C2-N1	6.43	1.46	1.36
29	5	2792	B9H	C2-N1	6.42	1.47	1.38
29	5	1665	I4U	C2-N3	6.38	1.49	1.36
53	9	1374	5MC	C2-N3	6.33	1.48	1.36
29	5	4200	I4U	C6-C5	6.32	1.49	1.35
29	5	1354	P4U	C2-N3	6.32	1.48	1.36
29	5	4341	5MC	C2-N3	6.30	1.48	1.36
29	5	1665	I4U	C6-C5	6.27	1.49	1.35
29	5	3788	5MC	C2-N3	6.26	1.48	1.36
29	5	4200	I4U	C2-N3	6.25	1.48	1.36
29	5	4453	5MC	C2-N3	6.24	1.48	1.36
29	5	1354	P4U	C6-C5	6.24	1.49	1.35
29	5	3886	P7G	C4-N9	6.22	1.45	1.35
29	5	3903	B8K	C8-N9	6.18	1.49	1.45
29	5	4677	B8T	C6-C5	6.17	1.49	1.35
29	5	4489	B8T	C6-C5	6.16	1.49	1.35
53	9	1337	4AC	C4-N4	6.12	1.49	1.39
29	5	4696	B8K	C4-N3	6.09	1.48	1.34
29	5	3903	B8K	C4-N3	6.06	1.48	1.34
29	5	4536	UR3	C6-C5	6.04	1.49	1.35
29	5	3875	OMC	C6-C5	6.03	1.49	1.35
29	5	3905	BGH	C2-N3	6.02	1.47	1.33
29	5	4542	OMC	C6-C5	6.01	1.49	1.35
29	5	2371	OMC	C6-C5	6.00	1.49	1.35
29	5	1915	P7G	C4-N9	6.00	1.45	1.35
29	5	2428	OMC	C6-C5	5.99	1.49	1.35
29	5	2810	OMC	C6-C5	5.99	1.49	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	2867	OMC	C6-C5	5.99	1.49	1.35
29	5	1462	JMH	C2-N1	5.99	1.46	1.38
29	5	3893	OMC	C6-C5	5.98	1.48	1.35
29	5	1462	JMH	C6-C5	5.97	1.48	1.35
29	5	2303	E7G	C2-N3	5.95	1.47	1.33
29	5	3915	OMC	C6-C5	5.95	1.48	1.35
29	5	1803	E7G	C2-N3	5.95	1.47	1.33
29	5	1872	UR3	C6-C5	5.95	1.48	1.35
29	5	4603	UR3	C6-C5	5.95	1.48	1.35
29	5	3905	BGH	C4-N3	5.95	1.47	1.34
29	5	3707	OMC	C6-C5	5.94	1.48	1.35
53	9	1248	B8N	C2-N1	5.88	1.56	1.39
29	5	3903	B8K	C2-N3	5.88	1.47	1.33
29	5	1611	7MG	C2-N3	5.88	1.47	1.33
29	5	4556	7MG	C2-N3	5.88	1.47	1.33
29	5	1580	B9B	C2-N2	5.87	1.45	1.33
29	5	2528	7MG	C2-N3	5.87	1.47	1.33
53	9	1219	JMH	C6-C5	5.87	1.48	1.35
29	5	4696	B8K	C2-N3	5.87	1.47	1.33
29	5	2760	B9B	C2-N2	5.86	1.45	1.33
29	5	237	B9B	C2-N2	5.85	1.45	1.33
29	5	4361	E6G	C2-N2	5.80	1.45	1.33
53	9	1248	B8N	C6-C5	5.77	1.43	1.35
29	5	3903	B8K	C4-N9	5.75	1.44	1.37
29	5	4312	OMU	C6-C5	5.67	1.48	1.35
29	5	4626	OMU	C6-C5	5.66	1.48	1.35
53	9	1219	JMH	C2-N3	5.61	1.50	1.39
29	5	4696	B8K	C4-N9	5.57	1.44	1.37
31	8	14	OMU	C6-C5	5.56	1.48	1.35
29	5	3886	P7G	C2-N1	5.55	1.46	1.33
29	5	1915	P7G	C2-N1	5.55	1.46	1.33
29	5	4696	B8K	C2-N2	5.55	1.47	1.34
29	5	2779	OMG	C2-N3	5.54	1.46	1.33
29	5	3903	B8K	C2-N2	5.53	1.47	1.34
29	5	2430	OMG	C2-N3	5.51	1.46	1.33
29	5	3798	OMG	C2-N3	5.51	1.46	1.33
29	5	2056	OMG	C2-N3	5.48	1.46	1.33
29	5	4643	OMG	C2-N3	5.47	1.46	1.33
29	5	4500	OMG	C2-N3	5.45	1.46	1.33
29	5	4629	OMG	C2-N3	5.45	1.46	1.33
29	5	4202	OMG	C2-N3	5.45	1.46	1.33
29	5	1889	OMG	C2-N3	5.45	1.46	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	2370	OMG	C2-N3	5.45	1.46	1.33
29	5	1528	OMG	C2-N3	5.44	1.46	1.33
29	5	3905	BGH	C4-N9	5.43	1.44	1.37
53	9	1219	JMH	C4-N4	5.42	1.50	1.27
29	5	1322	OMG	C2-N3	5.42	1.46	1.33
29	5	4876	OMG	C2-N3	5.42	1.46	1.33
29	5	1631	OMG	C2-N3	5.41	1.46	1.33
51	v	715	DDE	CBI-NAD	5.38	1.45	1.32
29	5	4376	OMG	C2-N3	5.37	1.46	1.33
29	5	3707	OMC	C4-N3	5.37	1.45	1.34
29	5	3905	BGH	O4'-C1'	-5.37	1.29	1.42
29	5	2810	OMC	C4-N3	5.37	1.45	1.34
29	5	373	OMG	C2-N3	5.36	1.46	1.33
29	5	3893	OMC	C4-N3	5.36	1.45	1.34
29	5	1611	7MG	C4-N9	5.34	1.44	1.37
29	5	1462	JMH	C4-N4	5.34	1.49	1.27
29	5	4542	OMC	C4-N3	5.33	1.45	1.34
29	5	1803	E7G	C4-N9	5.33	1.44	1.37
29	5	2428	OMC	C4-N3	5.32	1.45	1.34
29	5	3875	OMC	C4-N3	5.32	1.45	1.34
29	5	2528	7MG	C4-N9	5.31	1.44	1.37
29	5	2867	OMC	C4-N3	5.31	1.45	1.34
29	5	2303	E7G	C4-N9	5.29	1.44	1.37
29	5	3915	OMC	C4-N3	5.27	1.45	1.34
29	5	2371	OMC	C4-N3	5.27	1.44	1.34
29	5	4409	PSU	C6-N1	5.24	1.44	1.36
29	5	1462	JMH	C2-N3	5.24	1.49	1.39
29	5	4556	7MG	C4-N9	5.23	1.44	1.37
29	5	1915	P7G	C2-N2	5.21	1.46	1.34
29	5	4299	PSU	C6-N1	5.19	1.44	1.36
29	5	1683	PSU	C6-N1	5.18	1.44	1.36
29	5	3886	P7G	C2-N2	5.18	1.46	1.34
29	5	1689	PSU	C6-N1	5.17	1.44	1.36
29	5	2514	PSU	C6-N1	5.16	1.44	1.36
29	5	2779	OMG	C4-N3	5.16	1.49	1.37
29	5	4448	PSU	C6-N1	5.15	1.44	1.36
29	5	3721	PSU	C6-N1	5.14	1.44	1.36
29	5	4634	PSU	C6-N1	5.14	1.44	1.36
29	5	4642	PSU	C6-N1	5.14	1.44	1.36
29	5	3770	PSU	C6-N1	5.14	1.44	1.36
29	5	3735	PSU	C6-N1	5.13	1.44	1.36
29	5	2430	OMG	C4-N3	5.13	1.49	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	730	2MG	C4-N3	5.13	1.49	1.37
53	9	1243	PSU	C6-N1	5.12	1.44	1.36
29	5	4603	UR3	C2-N3	5.12	1.49	1.39
29	5	4506	PSU	C6-N1	5.12	1.44	1.36
29	5	4456	PSU	C6-N1	5.12	1.44	1.36
29	5	4536	UR3	C2-N3	5.10	1.49	1.39
29	5	4537	PSU	C6-N1	5.09	1.44	1.36
29	5	3798	OMG	C4-N3	5.09	1.49	1.37
29	5	4643	OMG	C4-N3	5.09	1.49	1.37
29	5	4500	OMG	C4-N3	5.08	1.49	1.37
29	5	4876	OMG	C4-N3	5.08	1.49	1.37
29	5	1889	OMG	C4-N3	5.07	1.49	1.37
29	5	1872	UR3	C2-N3	5.07	1.49	1.39
29	5	4202	OMG	C4-N3	5.07	1.49	1.37
29	5	2370	OMG	C4-N3	5.06	1.49	1.37
29	5	4629	OMG	C4-N3	5.06	1.49	1.37
53	9	1337	4AC	C2-N1	5.06	1.50	1.40
29	5	1588	PSU	C6-N1	5.06	1.44	1.36
29	5	1528	OMG	C4-N3	5.05	1.49	1.37
29	5	2056	OMG	C4-N3	5.03	1.49	1.37
29	5	4376	OMG	C4-N3	5.03	1.49	1.37
29	5	1322	OMG	C4-N3	5.03	1.49	1.37
29	5	1631	OMG	C4-N3	5.02	1.49	1.37
29	5	373	OMG	C4-N3	5.02	1.49	1.37
29	5	4878	2MG	C2-N1	4.99	1.44	1.36
29	5	1523	2MG	C4-N3	4.97	1.49	1.37
29	5	3768	B8H	C2-N3	4.96	1.46	1.38
29	5	1523	2MG	C2-N1	4.94	1.44	1.36
29	5	2779	OMG	C2-N2	4.93	1.45	1.34
29	5	4302	B8H	C1'-C5	-4.92	1.39	1.50
29	5	2430	OMG	C2-N2	4.92	1.45	1.34
29	5	1889	OMG	C2-N2	4.92	1.45	1.34
29	5	3798	OMG	C2-N2	4.92	1.45	1.34
29	5	4643	OMG	C2-N2	4.91	1.45	1.34
29	5	4629	OMG	C2-N2	4.91	1.45	1.34
29	5	2056	OMG	C2-N2	4.91	1.45	1.34
29	5	2370	OMG	C2-N2	4.90	1.45	1.34
29	5	1631	OMG	C2-N2	4.90	1.45	1.34
29	5	3768	B8H	C1'-C5	-4.90	1.39	1.50
29	5	2867	OMC	C2-N1	4.89	1.50	1.40
29	5	1866	B8H	C2-N3	4.89	1.46	1.38
29	5	4876	OMG	C2-N2	4.89	1.45	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	730	2MG	C2-N1	4.89	1.44	1.36
29	5	1322	OMG	C2-N2	4.88	1.45	1.34
29	5	4500	OMG	C2-N2	4.88	1.45	1.34
29	5	4202	OMG	C2-N2	4.88	1.45	1.34
29	5	4878	2MG	C4-N3	4.87	1.49	1.37
29	5	3905	BGH	C2-N2	4.87	1.45	1.34
29	5	1528	OMG	C2-N2	4.87	1.45	1.34
29	5	373	OMG	C2-N2	4.87	1.45	1.34
29	5	4089	5MU	C2-N3	4.86	1.46	1.38
29	5	1803	E7G	C2-N2	4.86	1.45	1.34
29	5	2303	E7G	C2-N2	4.85	1.45	1.34
29	5	4376	OMG	C2-N2	4.85	1.45	1.34
29	5	4302	B8H	C2-N3	4.85	1.46	1.38
29	5	1611	7MG	C2-N2	4.77	1.45	1.34
29	5	4556	7MG	C2-N2	4.77	1.45	1.34
29	5	2528	7MG	C2-N2	4.77	1.45	1.34
29	5	2810	OMC	C4-N4	4.74	1.45	1.33
29	5	3893	OMC	C4-N4	4.74	1.45	1.33
29	5	4542	OMC	C4-N4	4.74	1.45	1.33
29	5	2867	OMC	C4-N4	4.74	1.45	1.33
29	5	3707	OMC	C4-N4	4.74	1.45	1.33
29	5	3875	OMC	C4-N4	4.73	1.45	1.33
29	5	2371	OMC	C4-N4	4.73	1.45	1.33
29	5	2428	OMC	C4-N4	4.72	1.45	1.33
29	5	3915	OMC	C4-N4	4.72	1.45	1.33
29	5	3886	P7G	C2-N3	4.67	1.49	1.37
29	5	4489	B8T	C4-N4	4.67	1.45	1.36
29	5	3915	OMC	C2-N1	4.65	1.49	1.40
29	5	4542	OMC	C2-N1	4.65	1.49	1.40
29	5	4677	B8T	C4-N4	4.65	1.45	1.36
29	5	1866	B8H	C1'-C5	-4.64	1.39	1.50
29	5	2810	OMC	C2-N1	4.64	1.49	1.40
29	5	2371	OMC	C2-N1	4.58	1.49	1.40
29	5	3893	OMC	C2-N1	4.58	1.49	1.40
29	5	2428	OMC	C2-N1	4.57	1.49	1.40
29	5	4226	6MZ	C6-C5	-4.56	1.37	1.44
29	5	2760	B9B	O6-C6	4.54	1.40	1.34
29	5	3875	OMC	C2-N1	4.54	1.49	1.40
29	5	4453	5MC	C6-N1	4.54	1.45	1.38
29	5	237	B9B	O6-C6	4.53	1.40	1.34
29	5	4341	5MC	C6-N1	4.51	1.45	1.38
29	5	1915	P7G	C2-N3	4.51	1.48	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	4135	B8W	C2-N2	4.50	1.42	1.33
29	5	4191	B8W	C2-N2	4.49	1.42	1.33
53	9	1374	5MC	C6-N1	4.49	1.45	1.38
29	5	3788	5MC	C6-N1	4.49	1.45	1.38
53	9	1374	5MC	C2-N1	4.49	1.49	1.40
29	5	2386	B8W	C2-N2	4.48	1.42	1.33
29	5	4535	B8W	C2-N2	4.48	1.42	1.33
29	5	4478	B8W	C2-N2	4.47	1.42	1.33
29	5	3707	OMC	C2-N1	4.47	1.49	1.40
29	5	1580	B9B	O6-C6	4.46	1.40	1.34
53	9	1374	5MC	C4-N4	4.44	1.45	1.34
29	5	3788	5MC	C4-N4	4.44	1.45	1.34
29	5	4341	5MC	C4-N4	4.44	1.45	1.34
29	5	4453	5MC	C4-N4	4.42	1.45	1.34
29	5	4361	E6G	O6-C6	4.40	1.40	1.34
29	5	4489	B8T	C2-N1	4.40	1.49	1.40
29	5	4677	B8T	C2-N1	4.39	1.49	1.40
29	5	3788	5MC	C2-N1	4.38	1.49	1.40
53	9	1337	4AC	C5-C4	4.38	1.50	1.41
29	5	4570	M7A	C6-N6	4.37	1.45	1.34
29	5	1354	P4U	C2-N1	4.34	1.49	1.40
29	5	4341	5MC	C2-N1	4.33	1.49	1.40
29	5	4453	5MC	C2-N1	4.27	1.49	1.40
29	5	4570	M7A	C5-N7	4.25	1.49	1.39
29	5	4626	OMU	C4-N3	4.25	1.45	1.38
29	5	4696	B8K	C5-C6	4.23	1.54	1.43
29	5	1665	I4U	C2-N1	4.22	1.48	1.40
29	5	4312	OMU	C4-N3	4.21	1.45	1.38
29	5	3903	B8K	C5-C6	4.21	1.54	1.43
29	5	1354	P4U	O4-C4	4.20	1.40	1.35
31	8	14	OMU	C4-N3	4.20	1.45	1.38
29	5	4200	I4U	C2-N1	4.15	1.48	1.40
29	5	3770	PSU	C4-N3	4.14	1.46	1.38
29	5	3903	B8K	C2-N1	4.13	1.47	1.37
29	5	4696	B8K	C2-N1	4.11	1.47	1.37
29	5	4536	UR3	O4-C4	-4.08	1.14	1.23
29	5	1872	UR3	O4-C4	-4.08	1.14	1.23
29	5	4603	UR3	O4-C4	-4.07	1.14	1.23
29	5	4537	PSU	C4-N3	4.06	1.46	1.38
29	5	3721	PSU	C4-N3	4.05	1.46	1.38
29	5	3735	PSU	C4-N3	4.05	1.46	1.38
29	5	1588	PSU	C4-N3	4.04	1.46	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	4506	PSU	C4-N3	4.04	1.46	1.38
29	5	2514	PSU	C4-N3	4.03	1.46	1.38
29	5	4448	PSU	C4-N3	4.02	1.46	1.38
29	5	4299	PSU	C4-N3	4.02	1.46	1.38
29	5	1683	PSU	C4-N3	4.01	1.46	1.38
29	5	4642	PSU	C4-N3	4.01	1.46	1.38
29	5	1689	PSU	C4-N3	4.00	1.46	1.38
29	5	4634	PSU	C4-N3	4.00	1.46	1.38
29	5	4456	PSU	C4-N3	3.98	1.46	1.38
29	5	3905	BGH	C5-C6	3.95	1.53	1.43
53	9	1243	PSU	C4-N3	3.91	1.46	1.38
29	5	3729	A2M	C6-N6	3.91	1.48	1.34
53	9	1678	A2M	C6-N6	3.90	1.48	1.34
29	5	2407	A2M	C6-N6	3.89	1.48	1.34
29	5	4421	1MA	C2-N1	3.89	1.43	1.35
29	5	1530	A2M	C6-N6	3.88	1.48	1.34
29	5	398	A2M	C6-N6	3.87	1.48	1.34
29	5	4577	A2M	C6-N6	3.87	1.47	1.34
29	5	3724	A2M	C6-N6	3.87	1.47	1.34
29	5	2369	A2M	C6-N6	3.86	1.47	1.34
29	5	3873	A2M	C6-N6	3.86	1.47	1.34
29	5	4529	A2M	C6-N6	3.86	1.47	1.34
29	5	3831	A2M	C6-N6	3.86	1.47	1.34
53	9	1337	4AC	C7-N4	3.86	1.45	1.37
29	5	4409	PSU	C4-N3	3.86	1.46	1.38
29	5	1540	A2M	C6-N6	3.86	1.47	1.34
29	5	1877	A2M	C6-N6	3.86	1.47	1.34
29	5	1332	A2M	C6-N6	3.84	1.47	1.34
29	5	2528	7MG	C2-N1	3.83	1.46	1.37
29	5	1611	7MG	C2-N1	3.83	1.46	1.37
29	5	4556	7MG	C2-N1	3.82	1.46	1.37
51	v	715	DDE	CBW-NCB	-3.81	1.46	1.54
29	5	1915	P7G	C6-N1	3.80	1.44	1.38
29	5	1803	E7G	C2-N1	3.78	1.46	1.37
29	5	3791	A2M	C6-N6	3.77	1.47	1.34
29	5	4878	2MG	C6-N1	3.76	1.43	1.37
29	5	1328	1MA	C2-N1	3.75	1.43	1.35
29	5	2303	E7G	C2-N1	3.75	1.46	1.37
29	5	373	OMG	C6-N1	3.74	1.43	1.37
29	5	4202	OMG	C6-N1	3.74	1.43	1.37
29	5	4876	OMG	C6-N1	3.72	1.43	1.37
29	5	1631	OMG	C6-N1	3.71	1.43	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	4677	B8T	C5-C4	3.71	1.49	1.41
29	5	4489	B8T	C5-C4	3.69	1.49	1.41
29	5	3886	P7G	C6-N1	3.68	1.44	1.38
29	5	1889	OMG	C6-N1	3.68	1.43	1.37
29	5	2779	OMG	C6-N1	3.67	1.43	1.37
29	5	2430	OMG	C6-N1	3.67	1.43	1.37
29	5	1322	OMG	C6-N1	3.67	1.43	1.37
29	5	4478	B8W	O6-C6	3.66	1.45	1.35
29	5	4500	OMG	C6-N1	3.66	1.43	1.37
29	5	3905	BGH	C6-N1	3.66	1.45	1.38
29	5	4629	OMG	C6-N1	3.66	1.43	1.37
29	5	1528	OMG	C6-N1	3.65	1.43	1.37
29	5	1523	2MG	C6-N1	3.65	1.43	1.37
29	5	2370	OMG	C6-N1	3.64	1.43	1.37
29	5	4643	OMG	C6-N1	3.64	1.43	1.37
29	5	4135	B8W	O6-C6	3.64	1.45	1.35
29	5	4376	OMG	C6-N1	3.63	1.43	1.37
29	5	1530	A2M	C5'-C4'	-3.62	1.40	1.51
29	5	1803	E7G	C5-C6	3.62	1.52	1.43
29	5	4696	B8K	C5-N7	3.62	1.46	1.39
29	5	3798	OMG	C6-N1	3.60	1.43	1.37
29	5	730	2MG	C6-N1	3.59	1.43	1.37
29	5	4377	MHG	C5-C6	3.58	1.52	1.43
29	5	2056	OMG	C6-N1	3.58	1.43	1.37
29	5	2303	E7G	C5-C6	3.58	1.52	1.43
29	5	4191	B8W	O6-C6	3.58	1.45	1.35
29	5	3905	BGH	C5-N7	3.57	1.46	1.39
29	5	3905	BGH	C2-N1	3.56	1.46	1.37
29	5	4535	B8W	O6-C6	3.56	1.45	1.35
29	5	2386	B8W	O6-C6	3.55	1.45	1.35
29	5	4577	A2M	C5'-C4'	-3.54	1.40	1.51
53	9	1678	A2M	C5'-C4'	-3.52	1.41	1.51
29	5	3903	B8K	C5-N7	3.52	1.46	1.39
29	5	4556	7MG	C5-C6	3.51	1.52	1.43
29	5	3729	A2M	C5'-C4'	-3.50	1.41	1.51
29	5	398	A2M	C5'-C4'	-3.49	1.41	1.51
29	5	2407	A2M	C5'-C4'	-3.49	1.41	1.51
29	5	3724	A2M	C5'-C4'	-3.47	1.41	1.51
29	5	4529	A2M	C5'-C4'	-3.47	1.41	1.51
29	5	1611	7MG	C5-C6	3.47	1.52	1.43
29	5	4696	B8K	C6-N1	3.47	1.45	1.38
29	5	3831	A2M	C5'-C4'	-3.47	1.41	1.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	2528	7MG	C5-C6	3.47	1.52	1.43
29	5	3873	A2M	C5'-C4'	-3.46	1.41	1.51
29	5	4377	MHG	C8-N7	3.44	1.52	1.45
29	5	1915	P7G	C8-N7	3.44	1.52	1.45
29	5	1877	A2M	C5'-C4'	-3.43	1.41	1.51
29	5	3903	B8K	C6-N1	3.42	1.45	1.38
29	5	3791	A2M	C5'-C4'	-3.42	1.41	1.51
29	5	2369	A2M	C5'-C4'	-3.41	1.41	1.51
29	5	1332	A2M	C5'-C4'	-3.38	1.41	1.51
29	5	1540	A2M	C5'-C4'	-3.35	1.41	1.51
29	5	3886	P7G	C8-N7	3.34	1.51	1.45
29	5	3905	BGH	O2'-C2'	-3.33	1.34	1.42
29	5	2867	OMC	C6-N1	3.33	1.46	1.38
29	5	3905	BGH	C71-N7	3.33	1.47	1.39
29	5	3893	OMC	C6-N1	3.32	1.46	1.38
29	5	3791	A2M	C3'-C4'	3.32	1.61	1.53
29	5	2810	OMC	C6-N1	3.31	1.46	1.38
29	5	2371	OMC	C6-N1	3.30	1.46	1.38
29	5	3875	OMC	C6-N1	3.30	1.46	1.38
29	5	4542	OMC	C6-N1	3.30	1.46	1.38
29	5	4878	2MG	C5-C6	3.30	1.53	1.47
29	5	2428	OMC	C6-N1	3.29	1.45	1.38
29	5	4200	I4U	O4-C41	-3.26	1.39	1.47
29	5	3915	OMC	C6-N1	3.25	1.45	1.38
29	5	2303	E7G	C8-N7	3.24	1.51	1.45
29	5	3707	OMC	C6-N1	3.23	1.45	1.38
29	5	1803	E7G	C8-N7	3.19	1.51	1.45
29	5	4200	I4U	C6-N1	3.19	1.45	1.38
29	5	4536	UR3	C5-C4	3.19	1.51	1.43
29	5	1332	A2M	C3'-C4'	3.18	1.61	1.53
29	5	2779	OMG	C5-C6	3.18	1.53	1.47
29	5	4202	OMG	C5-C6	3.18	1.53	1.47
29	5	1611	7MG	C6-N1	3.18	1.44	1.38
29	5	4629	OMG	C5-C6	3.18	1.53	1.47
29	5	2528	7MG	C6-N1	3.18	1.44	1.38
29	5	4556	7MG	C6-N1	3.18	1.44	1.38
29	5	1528	OMG	C5-C6	3.17	1.53	1.47
53	9	1678	A2M	O2'-C2'	3.17	1.50	1.42
29	5	1665	I4U	C6-N1	3.17	1.45	1.38
29	5	730	2MG	C5-C6	3.17	1.53	1.47
29	5	4489	B8T	C6-N1	3.16	1.45	1.38
29	5	3886	P7G	C5-C4	3.15	1.44	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	1872	UR3	C5-C4	3.15	1.51	1.43
29	5	1915	P7G	C5-C4	3.15	1.44	1.36
53	9	1337	4AC	C6-N1	3.15	1.45	1.38
29	5	4376	OMG	C5-C6	3.14	1.53	1.47
29	5	4876	OMG	C5-C6	3.14	1.53	1.47
29	5	1803	E7G	C6-N1	3.14	1.44	1.38
29	5	2370	OMG	C5-C6	3.14	1.53	1.47
29	5	1354	P4U	C6-N1	3.13	1.45	1.38
29	5	4603	UR3	C5-C4	3.12	1.51	1.43
29	5	1631	OMG	C5-C6	3.11	1.53	1.47
29	5	2303	E7G	C6-N1	3.11	1.44	1.38
29	5	4643	OMG	C5-C6	3.11	1.53	1.47
29	5	1665	I4U	O4-C41	-3.11	1.40	1.47
29	5	2430	OMG	C5-C6	3.11	1.53	1.47
29	5	1322	OMG	C5-C6	3.10	1.53	1.47
29	5	1540	A2M	C3'-C4'	3.09	1.60	1.53
29	5	3729	A2M	O2'-C2'	3.09	1.50	1.42
29	5	1523	2MG	C5-C6	3.08	1.53	1.47
29	5	3873	A2M	C3'-C4'	3.08	1.60	1.53
29	5	373	OMG	C5-C6	3.08	1.53	1.47
29	5	3798	OMG	C5-C6	3.08	1.53	1.47
29	5	2056	OMG	C5-C6	3.07	1.53	1.47
29	5	4677	B8T	C6-N1	3.07	1.45	1.38
53	9	1678	A2M	C3'-C4'	3.07	1.60	1.53
29	5	1332	A2M	O2'-C2'	3.05	1.50	1.42
51	v	715	DDE	CD2-NE2	-3.05	1.31	1.36
29	5	4500	OMG	C5-C6	3.04	1.53	1.47
29	5	398	A2M	O2'-C2'	3.04	1.50	1.42
29	5	2369	A2M	C3'-C4'	3.01	1.60	1.53
29	5	1462	JMH	C5-C4	3.01	1.49	1.42
29	5	1889	OMG	C5-C6	3.01	1.53	1.47
29	5	1328	1MA	C5-C4	-3.00	1.35	1.43
29	5	3831	A2M	O2'-C2'	3.00	1.50	1.42
29	5	2369	A2M	O2'-C2'	2.99	1.50	1.42
29	5	2407	A2M	O2'-C2'	2.98	1.50	1.42
29	5	1530	A2M	O2'-C2'	2.98	1.50	1.42
29	5	3724	A2M	C3'-C4'	2.97	1.60	1.53
29	5	3873	A2M	O2'-C2'	2.97	1.49	1.42
29	5	3724	A2M	O2'-C2'	2.96	1.49	1.42
53	9	1219	JMH	C5-C4	2.96	1.49	1.42
29	5	1530	A2M	C3'-C4'	2.96	1.60	1.53
29	5	1877	A2M	C3'-C4'	2.96	1.60	1.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	4312	OMU	O4-C4	-2.95	1.18	1.24
29	5	4577	A2M	O2'-C2'	2.95	1.49	1.42
29	5	1877	A2M	O2'-C2'	2.94	1.49	1.42
29	5	3831	A2M	C3'-C4'	2.94	1.60	1.53
31	8	14	OMU	O4-C4	-2.94	1.18	1.24
29	5	4529	A2M	O2'-C2'	2.93	1.49	1.42
29	5	4626	OMU	O4-C4	-2.93	1.18	1.24
29	5	4529	A2M	C3'-C4'	2.92	1.60	1.53
29	5	3791	A2M	O3'-C3'	2.92	1.50	1.43
29	5	2407	A2M	C3'-C4'	2.91	1.60	1.53
29	5	3729	A2M	C3'-C4'	2.91	1.60	1.53
29	5	3791	A2M	O2'-C2'	2.89	1.49	1.42
29	5	4421	1MA	C5-C4	-2.89	1.35	1.43
29	5	398	A2M	C3'-C4'	2.87	1.60	1.53
29	5	4876	OMG	C2-N1	2.87	1.44	1.37
29	5	4312	OMU	C6-N1	2.86	1.44	1.38
29	5	2779	OMG	C2-N1	2.86	1.44	1.37
29	5	4377	MHG	C6-N1	2.86	1.44	1.38
29	5	1631	OMG	C2-N1	2.85	1.44	1.37
29	5	1540	A2M	O4'-C4'	2.85	1.51	1.45
29	5	1540	A2M	O2'-C2'	2.84	1.49	1.42
29	5	4202	OMG	C2-N1	2.84	1.44	1.37
29	5	3798	OMG	C2-N1	2.84	1.44	1.37
29	5	373	OMG	C2-N1	2.83	1.44	1.37
29	5	1889	OMG	C2-N1	2.83	1.44	1.37
29	5	4643	OMG	C2-N1	2.83	1.44	1.37
29	5	2430	OMG	C2-N1	2.83	1.44	1.37
29	5	1322	OMG	C2-N1	2.83	1.44	1.37
29	5	1915	P7G	O6-C6	-2.83	1.18	1.23
29	5	3886	P7G	O6-C6	-2.83	1.18	1.23
29	5	2370	OMG	C2-N1	2.82	1.44	1.37
29	5	4629	OMG	C2-N1	2.82	1.44	1.37
29	5	4500	OMG	C2-N1	2.82	1.44	1.37
29	5	2056	OMG	C2-N1	2.81	1.44	1.37
29	5	4577	A2M	C3'-C4'	2.81	1.60	1.53
29	5	1332	A2M	O3'-C3'	2.81	1.49	1.43
29	5	4626	OMU	C6-N1	2.81	1.44	1.38
29	5	4376	OMG	C2-N1	2.80	1.44	1.37
29	5	4696	B8K	O6-C6	-2.80	1.18	1.23
29	5	1528	OMG	C2-N1	2.80	1.44	1.37
29	5	3791	A2M	O4'-C4'	2.79	1.51	1.45
53	9	1337	4AC	O7-C7	-2.79	1.17	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	1332	A2M	O4'-C4'	2.78	1.51	1.45
53	9	1678	A2M	O3'-C3'	2.77	1.49	1.43
29	5	3724	A2M	O4'-C4'	2.77	1.51	1.45
29	5	1530	A2M	O3'-C3'	2.77	1.49	1.43
31	8	14	OMU	C6-N1	2.77	1.44	1.38
29	5	3724	A2M	O3'-C3'	2.76	1.49	1.43
53	9	1248	B8N	O4'-C1'	-2.76	1.40	1.43
29	5	1540	A2M	O3'-C3'	2.76	1.49	1.43
29	5	4536	UR3	C6-N1	2.76	1.44	1.38
29	5	2407	A2M	O3'-C3'	2.76	1.49	1.43
29	5	2428	OMC	O2-C2	-2.75	1.18	1.23
29	5	2407	A2M	O4'-C4'	2.74	1.51	1.45
29	5	3873	A2M	O3'-C3'	2.74	1.49	1.43
29	5	398	A2M	O3'-C3'	2.73	1.49	1.43
29	5	1872	UR3	C6-N1	2.73	1.44	1.38
29	5	4603	UR3	C6-N1	2.73	1.44	1.38
29	5	3915	OMC	O2-C2	-2.73	1.18	1.23
29	5	3873	A2M	O4'-C4'	2.73	1.51	1.45
29	5	4878	2MG	C5-C4	-2.72	1.36	1.43
29	5	1889	OMG	C5-C4	-2.72	1.36	1.43
29	5	1322	OMG	C5-C4	-2.71	1.36	1.43
29	5	4577	A2M	O3'-C3'	2.70	1.49	1.43
29	5	4577	A2M	O4'-C4'	2.70	1.51	1.45
29	5	3903	B8K	O6-C6	-2.70	1.18	1.23
29	5	2369	A2M	O4'-C4'	2.70	1.51	1.45
29	5	373	OMG	C5-C4	-2.70	1.36	1.43
29	5	398	A2M	O4'-C4'	2.70	1.51	1.45
29	5	3875	OMC	O2-C2	-2.70	1.18	1.23
29	5	4542	OMC	O2-C2	-2.70	1.18	1.23
29	5	4529	A2M	O3'-C3'	2.69	1.49	1.43
29	5	3831	A2M	O4'-C4'	2.69	1.51	1.45
29	5	1354	P4U	O2-C2	-2.69	1.18	1.23
29	5	4376	OMG	C5-C4	-2.69	1.36	1.43
29	5	1523	2MG	C5-C4	-2.69	1.36	1.43
29	5	2371	OMC	O2-C2	-2.69	1.18	1.23
29	5	2369	A2M	O3'-C3'	2.68	1.49	1.43
29	5	3893	OMC	O2-C2	-2.68	1.18	1.23
29	5	1528	OMG	C5-C4	-2.68	1.36	1.43
29	5	1631	OMG	C5-C4	-2.68	1.36	1.43
29	5	4677	B8T	O2-C2	-2.67	1.18	1.23
29	5	4696	B8K	C71-N7	2.67	1.45	1.39
29	5	2867	OMC	O2-C2	-2.67	1.18	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	3729	A2M	O3'-C3'	2.67	1.49	1.43
29	5	4489	B8T	O2-C2	-2.67	1.18	1.23
29	5	3831	A2M	O3'-C3'	2.66	1.49	1.43
29	5	1877	A2M	O3'-C3'	2.66	1.49	1.43
29	5	4556	7MG	O6-C6	-2.66	1.18	1.23
29	5	4643	OMG	C5-C4	-2.66	1.36	1.43
29	5	3707	OMC	O2-C2	-2.66	1.18	1.23
29	5	1877	A2M	O4'-C4'	2.66	1.50	1.45
29	5	1665	I4U	O2-C2	-2.66	1.18	1.23
29	5	4500	OMG	C5-C4	-2.65	1.36	1.43
29	5	2810	OMC	O2-C2	-2.65	1.18	1.23
29	5	4529	A2M	O4'-C4'	2.65	1.50	1.45
51	v	715	DDE	OAG-CBI	-2.65	1.19	1.23
29	5	4200	I4U	O2-C2	-2.65	1.18	1.23
29	5	4409	PSU	C1'-C5	2.65	1.56	1.50
29	5	4202	OMG	C5-C4	-2.64	1.36	1.43
29	5	730	2MG	C5-C4	-2.64	1.36	1.43
29	5	4453	5MC	O2-C2	-2.64	1.18	1.23
29	5	2528	7MG	O6-C6	-2.64	1.18	1.23
29	5	2370	OMG	C5-C4	-2.64	1.36	1.43
29	5	3905	BGH	O6-C6	-2.64	1.18	1.23
29	5	1611	7MG	O6-C6	-2.63	1.18	1.23
29	5	4876	OMG	C5-C4	-2.63	1.36	1.43
29	5	3798	OMG	C5-C4	-2.62	1.36	1.43
29	5	4629	OMG	C5-C4	-2.62	1.36	1.43
29	5	2430	OMG	C5-C4	-2.61	1.36	1.43
29	5	2779	OMG	C5-C4	-2.61	1.36	1.43
29	5	2056	OMG	C5-C4	-2.60	1.36	1.43
29	5	1462	JMH	C6-N1	2.60	1.44	1.38
29	5	4341	5MC	O2-C2	-2.60	1.18	1.23
29	5	4089	5MU	O4-C4	-2.58	1.18	1.23
29	5	1540	A2M	C2-N3	2.57	1.36	1.32
29	5	3788	5MC	O2-C2	-2.56	1.18	1.23
53	9	1374	5MC	O2-C2	-2.56	1.18	1.23
29	5	4302	B8H	O4-C4	-2.55	1.18	1.23
29	5	4089	5MU	O2-C2	-2.55	1.18	1.23
29	5	1866	B8H	O4-C4	-2.55	1.18	1.23
29	5	398	A2M	C2-N3	2.53	1.36	1.32
29	5	3905	BGH	O3'-C3'	2.53	1.49	1.43
29	5	1803	E7G	O6-C6	-2.52	1.18	1.23
29	5	4577	A2M	C2-N3	2.52	1.36	1.32
53	9	1678	A2M	C2-N3	2.51	1.36	1.32

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	3768	B8H	O4-C4	-2.51	1.18	1.23
29	5	3791	A2M	C2-N3	2.51	1.36	1.32
29	5	3724	A2M	C2-N3	2.50	1.36	1.32
29	5	4542	OMC	C5-C4	2.50	1.48	1.42
29	5	2303	E7G	O6-C6	-2.50	1.18	1.23
29	5	2371	OMC	C5-C4	2.50	1.48	1.42
29	5	2407	A2M	C2-N3	2.49	1.36	1.32
53	9	1678	A2M	O4'-C4'	2.49	1.50	1.45
29	5	1877	A2M	C2-N3	2.49	1.35	1.32
29	5	1588	PSU	C1'-C5	2.49	1.55	1.50
29	5	2369	A2M	C2-N3	2.49	1.35	1.32
29	5	3729	A2M	O4'-C4'	2.49	1.50	1.45
29	5	3729	A2M	C2-N3	2.49	1.35	1.32
29	5	1332	A2M	C2-N3	2.48	1.35	1.32
29	5	3915	OMC	C5-C4	2.47	1.48	1.42
29	5	3903	B8K	C71-N7	2.47	1.45	1.39
29	5	4529	A2M	C2-N3	2.47	1.35	1.32
29	5	2792	B9H	C6-N1	2.47	1.44	1.38
29	5	1530	A2M	O4'-C4'	2.47	1.50	1.45
53	9	1248	B8N	C4-C5	-2.47	1.41	1.47
29	5	3875	OMC	C5-C4	2.46	1.48	1.42
29	5	3707	OMC	C5-C4	2.46	1.48	1.42
29	5	3893	OMC	C5-C4	2.45	1.48	1.42
29	5	4377	MHG	C5-C4	2.45	1.45	1.37
29	5	3873	A2M	C2-N3	2.44	1.35	1.32
29	5	4626	OMU	O2-C2	-2.42	1.18	1.23
29	5	3831	A2M	C2-N3	2.42	1.35	1.32
29	5	2810	OMC	C5-C4	2.42	1.48	1.42
29	5	4506	PSU	C1'-C5	2.41	1.55	1.50
29	5	4312	OMU	O2-C2	-2.41	1.18	1.23
53	9	1219	JMH	C6-N1	2.41	1.43	1.38
29	5	1530	A2M	C2-N3	2.41	1.35	1.32
29	5	1866	B8H	O2-C2	-2.40	1.18	1.23
31	8	14	OMU	O2-C2	-2.40	1.18	1.23
29	5	2867	OMC	C5-C4	2.40	1.48	1.42
29	5	2428	OMC	C5-C4	2.39	1.48	1.42
29	5	3721	PSU	C1'-C5	2.38	1.55	1.50
29	5	1665	I4U	C5-C4	2.38	1.49	1.43
29	5	4200	I4U	C5-C4	2.37	1.49	1.43
29	5	3770	PSU	C1'-C5	2.37	1.55	1.50
29	5	4626	OMU	C5-C4	2.37	1.48	1.43
29	5	4302	B8H	O2-C2	-2.36	1.18	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	4536	UR3	O2-C2	-2.35	1.18	1.22
29	5	1872	UR3	O2-C2	-2.35	1.18	1.22
29	5	3768	B8H	O2-C2	-2.35	1.18	1.23
29	5	4603	UR3	O2-C2	-2.34	1.18	1.22
29	5	4312	OMU	C5-C4	2.34	1.48	1.43
29	5	4377	MHG	O6-C6	-2.31	1.19	1.23
29	5	4226	6MZ	C2-N3	2.29	1.35	1.32
29	5	3905	BGH	C5-C4	2.29	1.44	1.37
29	5	1354	P4U	C5-C4	2.28	1.49	1.43
53	9	1243	PSU	C1'-C5	2.28	1.55	1.50
29	5	4642	PSU	C1'-C5	2.27	1.55	1.50
29	5	4448	PSU	C1'-C5	2.27	1.55	1.50
31	8	14	OMU	C5-C4	2.25	1.48	1.43
29	5	3735	PSU	C1'-C5	2.25	1.55	1.50
29	5	1872	UR3	C4-N3	2.24	1.45	1.40
29	5	1683	PSU	C1'-C5	2.24	1.55	1.50
29	5	2514	PSU	C1'-C5	2.23	1.55	1.50
29	5	4299	PSU	C1'-C5	2.22	1.55	1.50
29	5	4409	PSU	O4-C4	-2.18	1.19	1.23
29	5	4634	PSU	C1'-C5	2.17	1.55	1.50
29	5	3903	B8K	C5-C4	2.16	1.44	1.37
29	5	1683	PSU	O4'-C1'	-2.16	1.40	1.43
29	5	1689	PSU	C1'-C5	2.16	1.55	1.50
29	5	4536	UR3	C4-N3	2.15	1.44	1.40
29	5	4603	UR3	C4-N3	2.14	1.44	1.40
29	5	1611	7MG	C5-C4	2.13	1.44	1.37
29	5	4603	UR3	C3U-N3	-2.10	1.43	1.47
29	5	1530	A2M	C4-N3	-2.10	1.32	1.35
29	5	2528	7MG	C5-C4	2.10	1.44	1.37
29	5	4537	PSU	C1'-C5	2.09	1.55	1.50
29	5	1803	E7G	C5-C4	2.08	1.44	1.37
29	5	3729	A2M	C4-N3	-2.08	1.32	1.35
29	5	3791	A2M	C4-N3	-2.08	1.32	1.35
29	5	4696	B8K	C5-C4	2.07	1.44	1.37
29	5	2369	A2M	C4-N3	-2.07	1.32	1.35
29	5	4556	7MG	C5-C4	2.06	1.44	1.37
29	5	2303	E7G	C5-C4	2.06	1.44	1.37
29	5	3873	A2M	C4-N3	-2.06	1.32	1.35
29	5	4456	PSU	C1'-C5	2.04	1.54	1.50
53	9	1248	B8N	C1'-C5	2.04	1.54	1.50
29	5	1332	A2M	C4-N3	-2.03	1.32	1.35
29	5	3831	A2M	C4-N3	-2.03	1.32	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	5	4299	PSU	O4-C4	-2.02	1.19	1.23
29	5	1877	A2M	C4-N3	-2.02	1.32	1.35
29	5	4529	A2M	C4-N3	-2.01	1.32	1.35
29	5	3905	BGH	C1'-N9	2.01	1.50	1.46
53	9	1248	B8N	O4-C4	-2.01	1.19	1.23
29	5	1889	OMG	O6-C6	-2.00	1.18	1.23
29	5	4506	PSU	O4-C4	-2.00	1.19	1.23

All (463) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	5	4570	M7A	C5-C6-N6	14.78	148.85	123.75
29	5	4570	M7A	N6-C6-N1	-12.17	91.26	118.38
29	5	4089	5MU	C5-C4-N3	10.31	124.28	115.32
29	5	4089	5MU	C5-C6-N1	-9.16	113.36	123.31
29	5	4191	B8W	N2-C2-N3	7.94	130.19	117.79
29	5	4535	B8W	N2-C2-N3	7.94	130.18	117.79
29	5	1588	PSU	N1-C2-N3	7.93	123.54	115.17
29	5	4456	PSU	N1-C2-N3	7.91	123.52	115.17
29	5	4634	PSU	N1-C2-N3	7.89	123.50	115.17
29	5	2386	B8W	N2-C2-N3	7.88	130.10	117.79
29	5	4537	PSU	N1-C2-N3	7.85	123.45	115.17
29	5	1683	PSU	N1-C2-N3	7.85	123.45	115.17
29	5	4135	B8W	N2-C2-N3	7.85	130.04	117.79
29	5	4506	PSU	N1-C2-N3	7.82	123.42	115.17
29	5	1689	PSU	N1-C2-N3	7.81	123.41	115.17
29	5	4299	PSU	N1-C2-N3	7.79	123.39	115.17
29	5	3735	PSU	N1-C2-N3	7.77	123.37	115.17
29	5	2514	PSU	N1-C2-N3	7.77	123.36	115.17
29	5	4448	PSU	N1-C2-N3	7.77	123.36	115.17
29	5	4478	B8W	N2-C2-N3	7.77	129.91	117.79
29	5	4409	PSU	N1-C2-N3	7.76	123.36	115.17
29	5	4642	PSU	N1-C2-N3	7.75	123.35	115.17
29	5	3721	PSU	N1-C2-N3	7.74	123.34	115.17
29	5	3770	PSU	N1-C2-N3	7.70	123.29	115.17
29	5	4377	MHG	C2-N3-C4	7.61	121.53	112.00
29	5	1665	I4U	O4-C4-C5	7.51	120.78	115.45
53	9	1243	PSU	N1-C2-N3	7.48	123.06	115.17
29	5	4377	MHG	C4-C5-N7	7.23	110.80	104.94
29	5	4200	I4U	O4-C4-C5	7.22	120.57	115.45
29	5	4089	5MU	C4-N3-C2	-6.81	118.41	127.34
29	5	4302	B8H	C4-N3-C2	-6.74	118.50	127.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	5	3768	B8H	C4-N3-C2	-6.56	118.74	127.34
29	5	1689	PSU	C4-N3-C2	-6.55	117.35	126.37
29	5	1866	B8H	C4-N3-C2	-6.54	118.77	127.34
29	5	4299	PSU	C4-N3-C2	-6.54	117.37	126.37
29	5	4456	PSU	C4-N3-C2	-6.53	117.37	126.37
29	5	2303	E7G	C4-C5-N7	6.53	110.23	104.94
29	5	1683	PSU	C4-N3-C2	-6.52	117.39	126.37
29	5	4634	PSU	C4-N3-C2	-6.51	117.41	126.37
29	5	4448	PSU	C4-N3-C2	-6.50	117.42	126.37
29	5	2514	PSU	C4-N3-C2	-6.46	117.47	126.37
29	5	4642	PSU	C4-N3-C2	-6.45	117.49	126.37
29	5	3735	PSU	C4-N3-C2	-6.43	117.52	126.37
29	5	4409	PSU	C4-N3-C2	-6.42	117.53	126.37
29	5	3831	A2M	N3-C2-N1	-6.39	120.00	128.67
29	5	1588	PSU	C4-N3-C2	-6.37	117.60	126.37
29	5	4529	A2M	N3-C2-N1	-6.35	120.05	128.67
29	5	4226	6MZ	N3-C2-N1	-6.35	120.06	128.67
29	5	4506	PSU	C4-N3-C2	-6.34	117.63	126.37
53	9	1678	A2M	N3-C2-N1	-6.34	120.07	128.67
29	5	398	A2M	N3-C2-N1	-6.33	120.08	128.67
29	5	3768	B8H	N3-C2-N1	6.33	121.34	115.22
29	5	1803	E7G	C4-C5-N7	6.31	110.06	104.94
29	5	2407	A2M	N3-C2-N1	-6.31	120.11	128.67
29	5	4537	PSU	C4-N3-C2	-6.31	117.68	126.37
29	5	4577	A2M	N3-C2-N1	-6.31	120.11	128.67
29	5	3721	PSU	C4-N3-C2	-6.30	117.69	126.37
29	5	1877	A2M	N3-C2-N1	-6.28	120.14	128.67
29	5	1332	A2M	N3-C2-N1	-6.28	120.14	128.67
29	5	4302	B8H	N3-C2-N1	6.27	121.29	115.22
29	5	3724	A2M	N3-C2-N1	-6.27	120.17	128.67
29	5	1866	B8H	N3-C2-N1	6.24	121.25	115.22
29	5	1540	A2M	N3-C2-N1	-6.23	120.21	128.67
29	5	4570	M7A	N3-C4-N9	6.23	134.68	126.88
29	5	2369	A2M	N3-C2-N1	-6.23	120.21	128.67
29	5	3770	PSU	C4-N3-C2	-6.22	117.81	126.37
29	5	1354	P4U	O4-C4-C5	6.17	119.83	115.45
29	5	3791	A2M	N3-C2-N1	-6.17	120.30	128.67
29	5	3729	A2M	N3-C2-N1	-6.12	120.36	128.67
29	5	1530	A2M	N3-C2-N1	-6.08	120.42	128.67
29	5	3873	A2M	N3-C2-N1	-6.01	120.51	128.67
53	9	1243	PSU	C6-N1-C2	-5.89	117.23	122.69
53	9	1248	B8N	C4-N3-C2	-5.86	118.41	125.62

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
53	9	1243	PSU	C4-N3-C2	-5.85	118.31	126.37
29	5	1588	PSU	C6-N1-C2	-5.81	117.30	122.69
29	5	4537	PSU	C6-N1-C2	-5.81	117.30	122.69
29	5	4506	PSU	C6-N1-C2	-5.78	117.33	122.69
29	5	3770	PSU	C6-N1-C2	-5.76	117.35	122.69
29	5	3721	PSU	C6-N1-C2	-5.67	117.43	122.69
29	5	2303	E7G	C2-N3-C4	5.66	122.06	112.30
29	5	4556	7MG	C2-N3-C4	5.66	122.05	112.30
29	5	1803	E7G	C2-N3-C4	5.66	122.05	112.30
29	5	4626	OMU	C4-N3-C2	-5.64	119.62	126.61
29	5	4312	OMU	C4-N3-C2	-5.60	119.66	126.61
29	5	2528	7MG	C2-N3-C4	5.60	121.95	112.30
29	5	1611	7MG	C2-N3-C4	5.59	121.92	112.30
29	5	1872	UR3	C4-N3-C2	-5.58	120.09	124.58
29	5	4361	E6G	N3-C2-N1	-5.58	120.11	127.21
29	5	4299	PSU	C6-N1-C2	-5.58	117.51	122.69
29	5	4696	B8K	C5-C6-N1	5.58	120.76	110.94
29	5	4642	PSU	C6-N1-C2	-5.58	117.51	122.69
29	5	4634	PSU	C6-N1-C2	-5.57	117.52	122.69
29	5	4409	PSU	C6-N1-C2	-5.57	117.52	122.69
29	5	4456	PSU	C6-N1-C2	-5.56	117.53	122.69
29	5	4536	UR3	C4-N3-C2	-5.54	120.12	124.58
29	5	3735	PSU	C6-N1-C2	-5.54	117.55	122.69
29	5	1683	PSU	C6-N1-C2	-5.50	117.58	122.69
29	5	237	B9B	N3-C2-N1	-5.49	120.22	127.21
29	5	4448	PSU	C6-N1-C2	-5.48	117.60	122.69
29	5	2514	PSU	C6-N1-C2	-5.47	117.61	122.69
29	5	1580	B9B	N3-C2-N1	-5.42	120.32	127.21
29	5	4191	B8W	N3-C2-N1	-5.42	120.32	127.21
29	5	4570	M7A	N3-C2-N1	-5.41	120.39	128.58
29	5	1689	PSU	C6-N1-C2	-5.40	117.68	122.69
29	5	3905	BGH	C5-C6-N1	5.40	120.45	110.94
29	5	3903	B8K	C5-C6-N1	5.39	120.42	110.94
29	5	2760	B9B	N3-C2-N1	-5.36	120.39	127.21
29	5	4478	B8W	N3-C2-N1	-5.35	120.40	127.21
29	5	2386	B8W	N3-C2-N1	-5.34	120.42	127.21
29	5	3886	P7G	C4-C5-N7	5.33	110.30	106.71
31	8	14	OMU	C4-N3-C2	-5.32	120.01	126.61
29	5	4135	B8W	N3-C2-N1	-5.31	120.46	127.21
29	5	4089	5MU	N3-C2-N1	5.30	121.79	114.89
29	5	4535	B8W	N2-C2-N1	-5.29	109.29	117.22
29	5	4535	B8W	N3-C2-N1	-5.25	120.53	127.21

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	5	4603	UR3	C4-N3-C2	-5.19	120.40	124.58
53	9	1219	JMH	C1'-N1-C2	5.18	125.52	117.04
29	5	2386	B8W	N2-C2-N1	-5.16	109.48	117.22
29	5	4191	B8W	N2-C2-N1	-5.15	109.50	117.22
29	5	3905	BGH	C4-C5-N7	5.15	109.10	104.93
29	5	4135	B8W	N2-C2-N1	-5.15	109.50	117.22
29	5	4535	B8W	O6-C6-C5	-5.14	109.70	116.72
29	5	4377	MHG	C2-N1-C6	-5.13	118.35	124.55
53	9	1248	B8N	C5-C4-N3	5.10	125.41	116.15
29	5	4696	B8K	C4-C5-N7	5.09	109.04	104.93
29	5	1328	1MA	N1-C2-N3	-5.06	119.58	125.90
29	5	3903	B8K	C4-C5-N7	5.04	109.00	104.93
29	5	4478	B8W	N2-C2-N1	-5.03	109.69	117.22
29	5	2386	B8W	O6-C6-C5	-4.92	110.00	116.72
29	5	4878	2MG	N1-C2-N2	4.88	121.54	116.56
29	5	4421	1MA	N1-C2-N3	-4.87	119.81	125.90
29	5	4456	PSU	C6-C5-C4	4.86	121.45	118.17
29	5	4191	B8W	O6-C6-C5	-4.82	110.14	116.72
29	5	1683	PSU	C6-C5-C4	4.76	121.39	118.17
29	5	4537	PSU	C6-C5-C4	4.71	121.36	118.17
29	5	4634	PSU	C6-C5-C4	4.69	121.34	118.17
29	5	4696	B8K	C2-N3-C4	4.69	120.37	112.30
53	9	1243	PSU	O2-C2-N1	-4.63	118.01	122.79
29	5	3903	B8K	C2-N3-C4	4.61	120.24	112.30
29	5	4478	B8W	O6-C6-C5	-4.60	110.43	116.72
29	5	4089	5MU	C5M-C5-C6	-4.59	116.64	122.85
29	5	4506	PSU	O2-C2-N1	-4.59	118.06	122.79
29	5	3905	BGH	C2-N3-C4	4.58	120.19	112.30
29	5	1588	PSU	O2-C2-N1	-4.55	118.10	122.79
29	5	1689	PSU	C6-C5-C4	4.55	121.24	118.17
29	5	3770	PSU	O2-C2-N1	-4.52	118.13	122.79
29	5	4537	PSU	O2-C2-N1	-4.52	118.13	122.79
29	5	4634	PSU	O2-C2-N1	-4.49	118.16	122.79
29	5	2760	B9B	C2-N3-C4	4.48	120.31	115.48
29	5	4135	B8W	O6-C6-C5	-4.48	110.60	116.72
29	5	1915	P7G	C4-C5-N7	4.48	109.72	106.71
29	5	1803	E7G	C5-C6-N1	4.46	118.79	110.94
29	5	3735	PSU	O2-C2-N1	-4.46	118.19	122.79
29	5	2514	PSU	C6-C5-C4	4.44	121.17	118.17
29	5	4556	7MG	C5-C6-N1	4.43	118.74	110.94
29	5	2303	E7G	C5-C6-N1	4.42	118.71	110.94
29	5	4456	PSU	O2-C2-N1	-4.42	118.24	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	5	2514	PSU	O2-C2-N1	-4.37	118.28	122.79
29	5	3721	PSU	O2-C2-N1	-4.37	118.28	122.79
29	5	1683	PSU	O2-C2-N1	-4.36	118.29	122.79
29	5	2528	7MG	C5-C6-N1	4.36	118.61	110.94
29	5	4377	MHG	C5-C6-N1	4.36	118.61	110.94
29	5	1689	PSU	O2-C2-N1	-4.35	118.30	122.79
29	5	4448	PSU	C6-C5-C4	4.34	121.11	118.17
29	5	4642	PSU	O2-C2-N1	-4.34	118.31	122.79
29	5	1580	B9B	C2-N3-C4	4.32	120.14	115.48
29	5	4299	PSU	O2-C2-N1	-4.32	118.33	122.79
29	5	4299	PSU	C6-C5-C4	4.32	121.09	118.17
29	5	4696	B8K	C72-C71-N7	4.32	125.17	118.80
29	5	1611	7MG	C5-C6-N1	4.32	118.54	110.94
29	5	3735	PSU	C6-C5-C4	4.30	121.08	118.17
29	5	4642	PSU	C6-C5-C4	4.29	121.07	118.17
29	5	4191	B8W	C2-N3-C4	4.29	120.11	115.48
29	5	2386	B8W	C2-N3-C4	4.27	120.09	115.48
29	5	4478	B8W	C2-N3-C4	4.26	120.08	115.48
29	5	4448	PSU	O2-C2-N1	-4.26	118.40	122.79
29	5	4535	B8W	C2-N3-C4	4.23	120.05	115.48
29	5	4135	B8W	C2-N3-C4	4.20	120.01	115.48
29	5	237	B9B	C2-N3-C4	4.18	120.00	115.48
29	5	3905	BGH	C72-C71-N7	4.15	124.92	118.80
53	9	1219	JMH	C6-C5-C4	-4.15	114.15	118.79
29	5	4361	E6G	C2-N3-C4	4.13	119.94	115.48
29	5	3721	PSU	C6-C5-C4	4.12	120.96	118.17
29	5	2792	B9H	C31-N3-C2	4.12	122.35	117.29
29	5	2528	7MG	C4-C5-N7	4.11	110.23	105.38
29	5	1611	7MG	C4-C5-N7	4.09	110.21	105.38
29	5	4556	7MG	C4-C5-N7	4.08	110.20	105.38
53	9	1219	JMH	C6-N1-C2	-4.03	118.50	121.80
29	5	3770	PSU	C6-C5-C4	4.00	120.87	118.17
53	9	1248	B8N	C1'-C5-C4	4.00	123.68	117.61
29	5	4226	6MZ	C2-N1-C6	3.97	119.68	116.60
29	5	4506	PSU	C6-C5-C4	3.95	120.84	118.17
53	9	1243	PSU	C6-C5-C4	3.91	120.81	118.17
29	5	4377	MHG	C5-C4-N3	-3.91	120.79	128.13
29	5	4226	6MZ	C9-N6-C6	-3.90	119.24	122.85
29	5	4312	OMU	N3-C2-N1	3.87	119.93	114.89
29	5	4626	OMU	N3-C2-N1	3.85	119.90	114.89
29	5	4089	5MU	C5M-C5-C4	3.84	122.89	118.78
29	5	4089	5MU	O4-C4-C5	-3.84	120.53	124.92

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	5	3903	B8K	C72-C71-N7	3.83	124.44	118.80
29	5	4556	7MG	C2-N1-C6	-3.80	118.22	125.11
29	5	2303	E7G	C2-N1-C6	-3.79	118.24	125.11
29	5	1611	7MG	C2-N1-C6	-3.78	118.25	125.11
29	5	2528	7MG	C2-N1-C6	-3.77	118.27	125.11
29	5	1803	E7G	C2-N1-C6	-3.76	118.29	125.11
29	5	2303	E7G	C5-C4-N3	-3.76	121.08	128.13
29	5	1523	2MG	N1-C2-N2	3.76	120.40	116.56
29	5	4696	B8K	C5-C4-N9	3.73	111.12	106.33
29	5	1611	7MG	C5-C4-N3	-3.71	121.17	128.13
29	5	1872	UR3	C5-C4-N3	3.70	119.92	115.04
31	8	14	OMU	N3-C2-N1	3.70	119.71	114.89
29	5	1803	E7G	C5-C4-N3	-3.69	121.21	128.13
29	5	2528	7MG	C5-C4-N3	-3.67	121.24	128.13
29	5	4556	7MG	C5-C4-N3	-3.66	121.26	128.13
29	5	1530	A2M	C5-C6-N6	3.66	125.88	120.31
29	5	398	A2M	C5-C6-N6	3.65	125.87	120.31
29	5	1462	JMH	C5-C6-N1	-3.64	115.92	121.84
29	5	4302	B8H	C5-C4-N3	3.64	124.56	116.55
29	5	1866	B8H	C5-C4-N3	3.63	124.53	116.55
29	5	2369	A2M	C5-C6-N6	3.62	125.83	120.31
29	5	3873	A2M	C5-C6-N6	3.62	125.83	120.31
29	5	4626	OMU	C5-C4-N3	3.62	119.87	114.80
29	5	1332	A2M	C5-C6-N6	3.61	125.81	120.31
29	5	2407	A2M	C5-C6-N6	3.61	125.81	120.31
29	5	1665	I4U	C5-C4-N3	-3.61	119.57	124.86
29	5	4603	UR3	C5-C4-N3	3.61	119.79	115.04
29	5	3905	BGH	C5-C4-N9	3.60	110.95	106.33
29	5	1540	A2M	C5-C6-N6	3.59	125.78	120.31
29	5	4577	A2M	C5-C6-N6	3.59	125.77	120.31
29	5	3831	A2M	C5-C6-N6	3.58	125.77	120.31
29	5	2779	OMG	C8-N7-C5	3.57	108.63	102.55
29	5	4312	OMU	C5-C4-N3	3.57	119.80	114.80
29	5	4529	A2M	C5-C6-N6	3.56	125.74	120.31
53	9	1678	A2M	C5-C6-N6	3.56	125.73	120.31
29	5	1322	OMG	C8-N7-C5	3.55	108.60	102.55
29	5	1528	OMG	C8-N7-C5	3.55	108.59	102.55
29	5	4376	OMG	C8-N7-C5	3.54	108.58	102.55
29	5	3724	A2M	C5-C6-N6	3.54	125.71	120.31
29	5	4536	UR3	C5-C4-N3	3.54	119.71	115.04
29	5	4643	OMG	C8-N7-C5	3.54	108.58	102.55
29	5	4409	PSU	O2-C2-N1	-3.53	119.15	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	5	4453	5MC	C5-C6-N1	-3.53	119.48	123.31
29	5	3729	A2M	C5-C6-N6	3.52	125.68	120.31
29	5	4876	OMG	C8-N7-C5	3.52	108.53	102.55
29	5	3798	OMG	C8-N7-C5	3.51	108.53	102.55
29	5	3768	B8H	C5-C4-N3	3.51	124.28	116.55
29	5	3903	B8K	N9-C8-N7	3.51	107.94	103.31
29	5	1588	PSU	C6-C5-C4	3.50	120.54	118.17
29	5	3903	B8K	C5-C4-N3	-3.50	121.56	128.13
29	5	1877	A2M	C5-C6-N6	3.50	125.64	120.31
29	5	1631	OMG	C8-N7-C5	3.50	108.50	102.55
29	5	1866	B8H	O2-C2-N1	-3.49	119.25	122.78
29	5	3903	B8K	C5-C4-N9	3.49	110.80	106.33
29	5	4202	OMG	C8-N7-C5	3.48	108.47	102.55
29	5	2370	OMG	C8-N7-C5	3.48	108.47	102.55
29	5	373	OMG	C8-N7-C5	3.47	108.45	102.55
29	5	4629	OMG	C8-N7-C5	3.47	108.45	102.55
29	5	1889	OMG	C8-N7-C5	3.44	108.41	102.55
29	5	3905	BGH	C5-C4-N3	-3.44	121.67	128.13
29	5	3768	B8H	O2-C2-N1	-3.44	119.30	122.78
29	5	4500	OMG	C8-N7-C5	3.44	108.40	102.55
29	5	2430	OMG	C8-N7-C5	3.42	108.38	102.55
31	8	14	OMU	C5-C4-N3	3.39	119.55	114.80
29	5	1328	1MA	C5-C6-N1	3.39	118.82	113.95
29	5	4200	I4U	C5-C4-N3	-3.39	119.89	124.86
29	5	2792	B9H	C4-N3-C2	-3.38	115.91	122.00
29	5	2056	OMG	C8-N7-C5	3.38	108.30	102.55
29	5	4696	B8K	C5-C4-N3	-3.37	121.81	128.13
29	5	4302	B8H	O2-C2-N1	-3.36	119.38	122.78
29	5	1354	P4U	C5-C4-N3	-3.35	119.94	124.86
29	5	4878	2MG	C8-N7-C5	3.32	108.20	102.55
29	5	1328	1MA	C8-N7-C5	3.32	108.19	102.55
53	9	1248	B8N	O4-C4-N3	-3.31	114.62	119.99
29	5	4421	1MA	C5-C6-N1	3.30	118.70	113.95
29	5	4361	E6G	N2-C2-N3	3.25	122.86	117.79
29	5	4409	PSU	C6-C5-C4	3.23	120.35	118.17
29	5	4421	1MA	C8-N7-C5	3.22	108.02	102.55
29	5	730	2MG	C8-N7-C5	3.20	108.00	102.55
29	5	1889	OMG	C5-C6-N1	3.20	120.18	114.07
29	5	4341	5MC	C5-C6-N1	-3.19	119.84	123.31
29	5	4500	OMG	C5-C6-N1	3.19	120.16	114.07
29	5	4570	M7A	C71-N7-C5	-3.18	110.16	123.44
29	5	1528	OMG	C5-C6-N1	3.18	120.14	114.07

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	5	730	2MG	N1-C2-N2	3.18	119.81	116.56
29	5	4570	M7A	C2-N3-C4	3.17	119.58	111.83
29	5	1322	OMG	C5-C6-N1	3.16	120.10	114.07
29	5	4696	B8K	N9-C8-N7	3.14	107.45	103.31
29	5	730	2MG	C5-C6-N1	3.14	120.06	114.07
29	5	2430	OMG	C5-C6-N1	3.14	120.06	114.07
29	5	4377	MHG	N9-C4-N3	3.13	130.05	125.46
29	5	4529	A2M	C1'-N9-C4	-3.13	121.14	126.64
29	5	1523	2MG	C8-N7-C5	3.13	107.88	102.55
29	5	2370	OMG	C5-C6-N1	3.13	120.04	114.07
29	5	3905	BGH	N9-C8-N7	3.12	107.43	103.31
29	5	4629	OMG	C5-C6-N1	3.12	120.03	114.07
29	5	4376	OMG	C5-C6-N1	3.12	120.02	114.07
31	8	14	OMU	C1'-N1-C2	3.11	123.19	117.59
29	5	4643	OMG	C5-C6-N1	3.11	120.00	114.07
29	5	2779	OMG	C5-C6-N1	3.10	119.99	114.07
29	5	4202	OMG	C5-C6-N1	3.10	119.99	114.07
29	5	2056	OMG	C5-C6-N1	3.10	119.99	114.07
29	5	1631	OMG	C5-C6-N1	3.10	119.98	114.07
29	5	4878	2MG	C5-C6-N1	3.10	119.98	114.07
53	9	1678	A2M	C4'-O4'-C1'	-3.09	107.09	109.92
29	5	1523	2MG	C5-C6-N1	3.09	119.97	114.07
29	5	1332	A2M	C1'-N9-C4	-3.08	121.23	126.64
29	5	3798	OMG	C5-C6-N1	3.08	119.95	114.07
29	5	4876	OMG	C5-C6-N1	3.08	119.94	114.07
29	5	3873	A2M	C1'-N9-C4	-3.07	121.25	126.64
29	5	373	OMG	C5-C6-N1	3.06	119.91	114.07
29	5	3791	A2M	C5-C6-N6	3.06	124.97	120.31
29	5	3788	5MC	C5-C6-N1	-3.05	120.00	123.31
53	9	1219	JMH	C31-N3-C2	3.05	122.65	117.33
29	5	1528	OMG	C2-N1-C6	-3.03	119.56	125.11
29	5	2056	OMG	C2-N1-C6	-3.03	119.56	125.11
29	5	3831	A2M	C1'-N9-C4	-3.03	121.33	126.64
29	5	4500	OMG	C2-N1-C6	-3.02	119.59	125.11
29	5	3798	OMG	C2-N1-C6	-3.00	119.61	125.11
29	5	1462	JMH	C6-N1-C2	-3.00	119.35	121.80
29	5	1322	OMG	C2-N1-C6	-2.99	119.63	125.11
29	5	1889	OMG	C2-N1-C6	-2.99	119.63	125.11
29	5	4089	5MU	C6-C5-C4	2.98	120.48	118.02
29	5	2430	OMG	C2-N1-C6	-2.98	119.66	125.11
29	5	2370	OMG	C2-N1-C6	-2.97	119.68	125.11
53	9	1337	4AC	C6-C5-C4	2.97	120.57	117.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	5	4202	OMG	C2-N1-C6	-2.96	119.70	125.11
29	5	4629	OMG	C2-N1-C6	-2.95	119.71	125.11
29	5	4376	OMG	C2-N1-C6	-2.95	119.71	125.11
29	5	4643	OMG	C2-N1-C6	-2.94	119.72	125.11
29	5	4626	OMU	O4-C4-C5	-2.94	120.09	125.16
29	5	1631	OMG	C2-N1-C6	-2.94	119.73	125.11
53	9	1374	5MC	C5-C6-N1	-2.93	120.13	123.31
29	5	2369	A2M	C1'-N9-C4	-2.93	121.49	126.64
31	8	14	OMU	O4-C4-C5	-2.93	120.12	125.16
29	5	2779	OMG	C2-N1-C6	-2.92	119.77	125.11
29	5	4876	OMG	C2-N1-C6	-2.88	119.83	125.11
29	5	2528	7MG	C5-C4-N9	2.88	110.03	106.33
29	5	2303	E7G	C5-C4-N9	2.88	110.02	106.33
29	5	1611	7MG	C5-C4-N9	2.88	110.02	106.33
29	5	4089	5MU	O2-C2-N1	-2.87	119.06	122.80
29	5	373	OMG	C2-N1-C6	-2.87	119.86	125.11
29	5	4312	OMU	O4-C4-C5	-2.86	120.23	125.16
29	5	4556	7MG	C5-C4-N9	2.86	109.99	106.33
29	5	4696	B8K	C6-C5-C4	-2.85	117.39	122.40
29	5	1803	E7G	C5-C4-N9	2.83	109.96	106.33
29	5	237	B9B	N2-C2-N3	2.83	122.21	117.79
29	5	398	A2M	C1'-N9-C4	-2.81	121.70	126.64
29	5	4577	A2M	C1'-N9-C4	-2.80	121.73	126.64
29	5	4878	2MG	CM2-N2-C2	-2.79	117.64	123.65
53	9	1678	A2M	C1'-N9-C4	-2.79	121.74	126.64
29	5	3724	A2M	C1'-N9-C4	-2.79	121.74	126.64
29	5	4361	E6G	C61-O6-C6	-2.78	113.74	117.32
29	5	3905	BGH	C6-C5-C4	-2.78	117.50	122.40
29	5	4570	M7A	C5-C4-N3	-2.77	120.16	126.56
29	5	1580	B9B	N2-C2-N3	2.76	122.09	117.79
29	5	1877	A2M	C1'-N9-C4	-2.75	121.81	126.64
53	9	1219	JMH	C5-C6-N1	-2.74	117.39	121.84
53	9	1248	B8N	C31-N3-C4	2.73	121.05	117.18
29	5	2760	B9B	N2-C2-N3	2.71	122.02	117.79
29	5	1866	B8H	O4-C4-N3	-2.69	115.05	120.11
29	5	2407	A2M	C1'-N9-C4	-2.69	121.91	126.64
29	5	1540	A2M	C1'-N9-C4	-2.69	121.91	126.64
29	5	3791	A2M	C1'-N9-C4	-2.69	121.92	126.64
29	5	1803	E7G	O6-C6-C5	-2.69	121.03	127.62
53	9	1337	4AC	N4-C4-N3	2.68	118.22	113.87
29	5	2303	E7G	O6-C6-C5	-2.67	121.06	127.62
29	5	4302	B8H	O4-C4-N3	-2.67	115.10	120.11

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	5	4696	B8K	C2-N1-C6	-2.66	120.29	125.11
29	5	2792	B9H	C6-N1-C2	-2.66	119.63	121.80
29	5	3768	B8H	O4-C4-N3	-2.65	115.14	120.11
29	5	3903	B8K	C2-N1-C6	-2.62	120.36	125.11
29	5	4089	5MU	O4-C4-N3	-2.62	115.19	120.11
29	5	1611	7MG	O6-C6-C5	-2.61	121.21	127.62
29	5	3903	B8K	C6-C5-C4	-2.61	117.81	122.40
29	5	4556	7MG	O6-C6-C5	-2.61	121.22	127.62
29	5	4677	B8T	C6-C5-C4	2.60	120.13	117.00
29	5	2528	7MG	O6-C6-C5	-2.59	121.26	127.62
29	5	1530	A2M	C1'-N9-C4	-2.59	122.09	126.64
29	5	4377	MHG	O6-C6-C5	-2.59	121.27	127.62
29	5	4489	B8T	C6-C5-C4	2.57	120.10	117.00
29	5	1611	7MG	N9-C8-N7	2.57	107.01	103.37
29	5	2792	B9H	O2-C2-N3	-2.53	118.86	122.10
29	5	4377	MHG	N9-C8-N7	2.52	106.94	103.37
29	5	4536	UR3	C6-N1-C2	-2.49	119.77	121.80
29	5	2528	7MG	N9-C8-N7	2.48	106.88	103.37
29	5	1462	JMH	C31-N3-C2	2.47	121.64	117.33
29	5	4409	PSU	O2-C2-N3	-2.46	117.50	121.86
29	5	2303	E7G	N9-C8-N7	2.45	106.84	103.37
29	5	2386	B8W	C1'-N9-C4	-2.44	122.36	126.64
29	5	1915	P7G	N9-C8-N7	2.43	106.82	103.37
29	5	3886	P7G	N9-C8-N7	2.43	106.82	103.37
29	5	3905	BGH	C2-N1-C6	-2.43	120.70	125.11
29	5	1580	B9B	C61-O6-C6	-2.40	113.58	117.65
29	5	3729	A2M	C1'-N9-C4	-2.39	122.44	126.64
29	5	1889	OMG	O6-C6-C5	-2.39	119.59	124.32
29	5	3791	A2M	C2'-C1'-N9	-2.38	107.26	112.56
29	5	4191	B8W	C1'-N9-C4	-2.38	122.47	126.64
29	5	237	B9B	O6-C6-N1	-2.35	118.22	120.23
29	5	4603	UR3	C6-N1-C2	-2.35	119.88	121.80
29	5	2303	E7G	N9-C4-N3	2.35	128.90	125.46
53	9	1337	4AC	C5-C4-N3	-2.35	118.93	122.60
29	5	4556	7MG	N9-C8-N7	2.33	106.67	103.37
29	5	4500	OMG	O6-C6-C5	-2.32	119.71	124.32
29	5	1803	E7G	N9-C8-N7	2.31	106.64	103.37
53	9	1219	JMH	O2-C2-N3	-2.31	118.14	121.33
29	5	1803	E7G	N9-C4-N3	2.30	128.82	125.46
29	5	3791	A2M	O4'-C1'-N9	2.30	111.79	108.75
29	5	1611	7MG	N9-C4-N3	2.29	128.81	125.46
29	5	2792	B9H	C1'-N1-C2	2.27	120.76	117.04

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	5	1523	2MG	O6-C6-C5	-2.27	119.82	124.32
29	5	2430	OMG	O6-C6-C5	-2.27	119.82	124.32
53	9	1337	4AC	CM7-C7-N4	2.26	118.92	115.27
29	5	4603	UR3	C1'-N1-C2	2.26	120.73	117.04
29	5	1322	OMG	O6-C6-C5	-2.25	119.86	124.32
29	5	4696	B8K	O6-C6-C5	-2.25	122.09	127.62
53	9	1219	JMH	C1'-N1-C6	-2.25	115.98	120.78
29	5	4535	B8W	C1'-N9-C4	-2.25	122.69	126.64
29	5	4556	7MG	N9-C4-N3	2.24	128.75	125.46
29	5	2056	OMG	O6-C6-C5	-2.24	119.88	124.32
29	5	4409	PSU	O4'-C1'-C2'	2.24	108.25	105.15
29	5	373	OMG	O6-C6-C5	-2.23	119.89	124.32
29	5	3798	OMG	O6-C6-C5	-2.23	119.89	124.32
29	5	2528	7MG	N9-C4-N3	2.23	128.73	125.46
29	5	1631	OMG	O6-C6-C5	-2.22	119.92	124.32
29	5	730	2MG	O6-C6-C5	-2.22	119.93	124.32
29	5	4312	OMU	O2-C2-N1	-2.21	119.92	122.80
29	5	4876	OMG	O6-C6-C5	-2.21	119.94	124.32
29	5	4202	OMG	O6-C6-C5	-2.20	119.95	124.32
29	5	4377	MHG	C5-C4-N9	2.20	109.16	106.33
29	5	4643	OMG	O6-C6-C5	-2.20	119.96	124.32
29	5	2779	OMG	O6-C6-C5	-2.20	119.96	124.32
29	5	1872	UR3	C1'-N1-C2	2.19	120.62	117.04
29	5	1528	OMG	O6-C6-C5	-2.18	119.99	124.32
29	5	2370	OMG	O6-C6-C5	-2.18	119.99	124.32
29	5	4629	OMG	O6-C6-C5	-2.18	120.00	124.32
29	5	4478	B8W	C1'-N9-C4	-2.18	122.81	126.64
29	5	3903	B8K	O6-C6-C5	-2.17	122.29	127.62
29	5	2867	OMC	O2-C2-N3	-2.16	118.92	122.33
29	5	4506	PSU	O4'-C1'-C2'	2.16	108.14	105.15
29	5	2760	B9B	O6-C6-N1	-2.16	118.38	120.23
29	5	4696	B8K	N1-C2-N3	-2.15	119.39	123.32
29	5	4878	2MG	O6-C6-C5	-2.14	120.07	124.32
29	5	3905	BGH	O6-C6-C5	-2.13	122.39	127.62
29	5	1872	UR3	C6-N1-C2	-2.12	120.06	121.80
51	v	715	DDE	OAG-CBI-NAD	-2.11	119.31	123.04
29	5	4626	OMU	O2-C2-N1	-2.11	120.05	122.80
29	5	3905	BGH	N1-C2-N3	-2.10	119.48	123.32
53	9	1374	5MC	CM5-C5-C6	-2.08	120.03	122.85
29	5	4376	OMG	O6-C6-C5	-2.08	120.20	124.32
29	5	4226	6MZ	C6-C5-C4	2.07	119.87	117.68
29	5	3788	5MC	CM5-C5-C6	-2.07	120.05	122.85

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	5	2760	B9B	C61-O6-C6	-2.07	114.14	117.65
29	5	4341	5MC	CM5-C5-C6	-2.05	120.07	122.85
29	5	4448	PSU	O2-C2-N3	-2.04	118.24	121.86
29	5	4456	PSU	O2-C2-N3	-2.03	118.25	121.86
29	5	1523	2MG	CM2-N2-C2	-2.03	119.28	123.65
29	5	3903	B8K	N1-C2-N3	-2.03	119.61	123.32
29	5	1683	PSU	O2-C2-N3	-2.03	118.26	121.86
29	5	4299	PSU	O2-C2-N3	-2.02	118.28	121.86
29	5	4448	PSU	O4'-C1'-C2'	2.01	107.94	105.15
29	5	1683	PSU	O4'-C1'-C2'	2.01	107.93	105.15
29	5	1689	PSU	O2-C2-N3	-2.01	118.29	121.86
29	5	1530	A2M	C5'-C4'-C3'	-2.00	108.00	115.21

There are no chirality outliers.

All (165) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
29	5	237	B9B	C5-C6-O6-C61
29	5	237	B9B	N1-C6-O6-C61
29	5	237	B9B	C3'-C4'-C5'-O5'
29	5	237	B9B	O4'-C4'-C5'-O5'
29	5	398	A2M	O4'-C4'-C5'-O5'
29	5	398	A2M	C1'-C2'-O2'-CM'
29	5	1322	OMG	C1'-C2'-O2'-CM2
29	5	1332	A2M	C1'-C2'-O2'-CM'
29	5	1354	P4U	N3-C4-O4-C41
29	5	1354	P4U	C3'-C4'-C5'-O5'
29	5	1354	P4U	O4'-C4'-C5'-O5'
29	5	1580	B9B	C5-C6-O6-C61
29	5	1580	B9B	N1-C6-O6-C61
29	5	1588	PSU	C3'-C4'-C5'-O5'
29	5	1588	PSU	O4'-C4'-C5'-O5'
29	5	1915	P7G	C72-C71-N7-C5
29	5	2370	OMG	C1'-C2'-O2'-CM2
29	5	2386	B8W	C5-C6-O6-C61
29	5	2386	B8W	N1-C6-O6-C61
29	5	2386	B8W	O4'-C4'-C5'-O5'
29	5	2428	OMC	C1'-C2'-O2'-CM2
29	5	2430	OMG	O4'-C4'-C5'-O5'
29	5	2760	B9B	C5-C6-O6-C61
29	5	2760	B9B	N1-C6-O6-C61
29	5	2779	OMG	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
29	5	3724	A2M	C1'-C2'-O2'-CM'
29	5	3729	A2M	C1'-C2'-O2'-CM'
29	5	3798	OMG	O4'-C4'-C5'-O5'
29	5	3831	A2M	C1'-C2'-O2'-CM'
29	5	3873	A2M	C1'-C2'-O2'-CM'
29	5	3886	P7G	O4'-C4'-C5'-O5'
29	5	3903	B8K	O4'-C4'-C5'-O5'
29	5	3905	BGH	C1'-C2'-O2'-C6'
29	5	3905	BGH	O4'-C4'-C5'-O5'
29	5	4135	B8W	C5-C6-O6-C61
29	5	4135	B8W	N1-C6-O6-C61
29	5	4191	B8W	C5-C6-O6-C61
29	5	4191	B8W	N1-C6-O6-C61
29	5	4361	E6G	C5-C6-O6-C61
29	5	4361	E6G	N1-C6-O6-C61
29	5	4377	MHG	C71-C72-C73-C75
29	5	4409	PSU	O4'-C1'-C5-C4
29	5	4409	PSU	O4'-C1'-C5-C6
29	5	4453	5MC	C2'-C1'-N1-C6
29	5	4456	PSU	C2'-C1'-C5-C4
29	5	4478	B8W	C5-C6-O6-C61
29	5	4478	B8W	N1-C6-O6-C61
29	5	4506	PSU	O4'-C4'-C5'-O5'
29	5	4529	A2M	O4'-C4'-C5'-O5'
29	5	4529	A2M	C1'-C2'-O2'-CM'
29	5	4535	B8W	C5-C6-O6-C61
29	5	4536	UR3	O4'-C4'-C5'-O5'
29	5	4577	A2M	C1'-C2'-O2'-CM'
29	5	4626	OMU	C1'-C2'-O2'-CM2
29	5	4643	OMG	C1'-C2'-O2'-CM2
29	5	4876	OMG	O4'-C4'-C5'-O5'
29	5	4878	2MG	O4'-C4'-C5'-O5'
31	8	14	OMU	C1'-C2'-O2'-CM2
31	8	14	OMU	O4'-C4'-C5'-O5'
44	m	72	MLZ	N-CA-CB-CG
44	m	72	MLZ	C-CA-CB-CG
51	v	715	DDE	CA-CB-CG-ND1
51	v	715	DDE	CA-CB-CG-CD2
53	9	1248	B8N	O4'-C4'-C5'-O5'
53	9	1678	A2M	C1'-C2'-O2'-CM'
29	5	2370	OMG	O4'-C4'-C5'-O5'
29	5	2386	B8W	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
29	5	2430	OMG	C3'-C4'-C5'-O5'
29	5	3735	PSU	O4'-C4'-C5'-O5'
29	5	3798	OMG	C3'-C4'-C5'-O5'
29	5	3886	P7G	C3'-C4'-C5'-O5'
29	5	3905	BGH	C3'-C4'-C5'-O5'
29	5	4200	I4U	O4'-C4'-C5'-O5'
29	5	4312	OMU	C3'-C4'-C5'-O5'
29	5	4506	PSU	C3'-C4'-C5'-O5'
29	5	4529	A2M	C3'-C4'-C5'-O5'
29	5	4536	UR3	C3'-C4'-C5'-O5'
29	5	4642	PSU	C3'-C4'-C5'-O5'
29	5	4643	OMG	O4'-C4'-C5'-O5'
29	5	4876	OMG	C3'-C4'-C5'-O5'
53	9	1248	B8N	C3'-C4'-C5'-O5'
51	v	715	DDE	CAT-CAU-CBW-CBI
29	5	4535	B8W	N1-C6-O6-C61
29	5	4453	5MC	C2'-C1'-N1-C2
29	5	1803	E7G	O4'-C4'-C5'-O5'
29	5	4456	PSU	C3'-C4'-C5'-O5'
29	5	4456	PSU	O4'-C4'-C5'-O5'
29	5	4642	PSU	O4'-C4'-C5'-O5'
31	8	14	OMU	C3'-C4'-C5'-O5'
29	5	2779	OMG	C3'-C4'-C5'-O5'
29	5	4878	2MG	C3'-C4'-C5'-O5'
29	5	3707	OMC	C2'-C1'-N1-C6
29	5	2303	E7G	C3'-C4'-C5'-O5'
29	5	2370	OMG	C3'-C4'-C5'-O5'
29	5	3791	A2M	O4'-C4'-C5'-O5'
29	5	3791	A2M	C3'-C4'-C5'-O5'
29	5	3903	B8K	C3'-C4'-C5'-O5'
29	5	398	A2M	C3'-C4'-C5'-O5'
29	5	1462	JMH	O4'-C4'-C5'-O5'
29	5	3735	PSU	C3'-C4'-C5'-O5'
29	5	4200	I4U	C3'-C4'-C5'-O5'
29	5	4299	PSU	O4'-C4'-C5'-O5'
29	5	4643	OMG	C3'-C4'-C5'-O5'
53	9	1243	PSU	C3'-C4'-C5'-O5'
29	5	1462	JMH	C3'-C4'-C5'-O5'
29	5	4299	PSU	C3'-C4'-C5'-O5'
29	5	4312	OMU	O4'-C4'-C5'-O5'
3	C	333	MLZ	CA-CB-CG-CD
51	v	715	DDE	CE1-CAT-CAU-CBW

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Mol	Chain	Res	Type	Atoms
29	5	1915	P7G	C72-C71-N7-C8
29	5	1354	P4U	O4-C41-C42-C43
29	5	1803	E7G	C3'-C4'-C5'-O5'
29	5	2303	E7G	O4'-C4'-C5'-O5'
29	5	4361	E6G	O4'-C4'-C5'-O5'
29	5	4535	B8W	O4'-C4'-C5'-O5'
53	9	1243	PSU	O4'-C4'-C5'-O5'
29	5	1631	OMG	C4'-C5'-O5'-P
29	5	3873	A2M	C4'-C5'-O5'-P
29	5	3873	A2M	C3'-C4'-C5'-O5'
29	5	4341	5MC	C3'-C4'-C5'-O5'
29	5	4535	B8W	C3'-C4'-C5'-O5'
29	5	4537	PSU	O4'-C4'-C5'-O5'
51	v	715	DDE	CAT-CAU-CBW-NCB
29	5	3707	OMC	O4'-C1'-N1-C6
29	5	2428	OMC	O4'-C4'-C5'-O5'
3	C	333	MLZ	N-CA-CB-CG
29	5	4421	1MA	C3'-C4'-C5'-O5'
51	v	715	DDE	CAU-CAT-CE1-ND1
29	5	3707	OMC	C2'-C1'-N1-C2
29	5	3893	OMC	C3'-C4'-C5'-O5'
29	5	4453	5MC	O4'-C1'-N1-C2
29	5	3770	PSU	C4'-C5'-O5'-P
29	5	3903	B8K	C4'-C5'-O5'-P
29	5	4506	PSU	C4'-C5'-O5'-P
29	5	4876	OMG	C4'-C5'-O5'-P
29	5	1683	PSU	O4'-C1'-C5-C4
29	5	4448	PSU	O4'-C1'-C5-C4
29	5	4456	PSU	O4'-C1'-C5-C4
29	5	1631	OMG	C3'-C4'-C5'-O5'
29	5	4377	MHG	O4'-C4'-C5'-O5'
29	5	4453	5MC	O4'-C1'-N1-C6
29	5	2760	B9B	C4'-C5'-O5'-P
29	5	3893	OMC	C4'-C5'-O5'-P
29	5	3707	OMC	O4'-C1'-N1-C2
31	8	14	OMU	C2'-C1'-N1-C6
29	5	4341	5MC	C4'-C5'-O5'-P
29	5	3873	A2M	O4'-C4'-C5'-O5'
29	5	4377	MHG	C3'-C4'-C5'-O5'
31	8	14	OMU	C2'-C1'-N1-C2
29	5	1915	P7G	N7-C71-C72-C73
29	5	373	OMG	C4'-C5'-O5'-P

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Mol	Chain	Res	Type	Atoms
29	5	4312	OMU	C1'-C2'-O2'-CM2
29	5	1580	B9B	C4'-C5'-O5'-P
29	5	4448	PSU	O4'-C1'-C5-C6
29	5	2303	E7G	C72-C71-N7-C8
29	5	4200	I4U	C42-C41-O4-C4
29	5	4341	5MC	O4'-C4'-C5'-O5'
51	v	715	DDE	NAD-CBI-CBW-NCB
29	5	4677	B8T	C2'-C1'-N1-C6
29	5	4537	PSU	C3'-C4'-C5'-O5'
53	9	1219	JMH	C2'-C1'-N1-C2
29	5	4677	B8T	O4'-C1'-N1-C6
29	5	1540	A2M	O4'-C4'-C5'-O5'
29	5	3788	5MC	O4'-C4'-C5'-O5'
29	5	4361	E6G	C3'-C4'-C5'-O5'

There are no ring outliers.

63 monomers are involved in 121 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
29	5	4302	B8H	6	0
53	9	1678	A2M	3	0
29	5	1462	JMH	2	0
53	9	1374	5MC	1	0
29	5	4200	I4U	1	0
29	5	2303	E7G	1	0
29	5	2428	OMC	3	0
29	5	4529	A2M	1	0
29	5	1523	2MG	1	0
29	5	2370	OMG	1	0
29	5	1332	A2M	4	0
29	5	3905	BGH	1	0
29	5	4677	B8T	1	0
29	5	1328	1MA	1	0
29	5	1540	A2M	1	0
29	5	4603	UR3	1	0
29	5	4626	OMU	4	0
29	5	4478	B8W	1	0
29	5	1877	A2M	1	0
29	5	1611	7MG	2	0
29	5	4634	PSU	1	0
29	5	1889	OMG	1	0
29	5	4556	7MG	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
29	5	4299	PSU	1	0
29	5	3791	A2M	1	0
29	5	2760	B9B	1	0
29	5	373	OMG	1	0
29	5	398	A2M	1	0
3	C	333	MLZ	1	0
29	5	1528	OMG	1	0
29	5	4089	5MU	5	0
29	5	3735	PSU	1	0
29	5	4537	PSU	1	0
44	m	72	MLZ	2	0
29	5	1915	P7G	1	0
29	5	1689	PSU	1	0
31	8	14	OMU	2	0
29	5	2779	OMG	2	0
29	5	4500	OMG	2	0
29	5	4453	5MC	1	0
29	5	3768	B8H	8	0
29	5	3873	A2M	2	0
51	v	715	DDE	4	0
29	5	1866	B8H	6	0
29	5	1872	UR3	2	0
29	5	2371	OMC	1	0
29	5	3729	A2M	5	0
29	5	4542	OMC	1	0
29	5	2369	A2M	2	0
29	5	1631	OMG	1	0
29	5	4878	2MG	2	0
29	5	4506	PSU	1	0
29	5	2528	7MG	2	0
53	9	1219	JMH	1	0
29	5	4312	OMU	1	0
29	5	3724	A2M	3	0
53	9	1337	4AC	5	0
29	5	4226	6MZ	2	0
29	5	2810	OMC	1	0
29	5	2056	OMG	1	0
29	5	4448	PSU	1	0
29	5	1322	OMG	2	0
29	5	4577	A2M	2	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 303 ligands modelled in this entry, 302 are monoatomic - leaving 1 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
86	GDP	v	902	-	25,30,30	3.75	15 (60%)	30,47,47	1.55	5 (16%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
86	GDP	v	902	-	-	7/12/32/32	0/3/3/3

All (15) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
86	v	902	GDP	O4'-C1'	8.07	1.51	1.40
86	v	902	GDP	C1'-N9	-6.57	1.32	1.50
86	v	902	GDP	O4'-C4'	-6.25	1.31	1.45
86	v	902	GDP	C2-N3	5.60	1.46	1.33
86	v	902	GDP	C3'-C4'	5.47	1.66	1.53
86	v	902	GDP	PA-O3A	5.44	1.65	1.59
86	v	902	GDP	C4-N3	5.06	1.49	1.37
86	v	902	GDP	C2-N2	4.74	1.45	1.34
86	v	902	GDP	C6-N1	3.71	1.43	1.37
86	v	902	GDP	C5-C6	3.27	1.53	1.47
86	v	902	GDP	O2'-C2'	3.13	1.50	1.43
86	v	902	GDP	C2-N1	2.87	1.44	1.37
86	v	902	GDP	C5-C4	-2.63	1.36	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
86	v	902	GDP	O3'-C3'	2.10	1.48	1.43
86	v	902	GDP	O6-C6	-2.03	1.18	1.23

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
86	v	902	GDP	C8-N7-C5	3.97	109.31	102.55
86	v	902	GDP	C4'-O4'-C1'	-3.89	106.36	109.92
86	v	902	GDP	C5-C6-N1	3.16	120.10	114.07
86	v	902	GDP	C2-N1-C6	-2.85	119.89	125.11
86	v	902	GDP	O6-C6-C5	-2.16	120.04	124.32

There are no chirality outliers.

All (7) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
86	v	902	GDP	PA-O3A-PB-O2B
86	v	902	GDP	PA-O3A-PB-O3B
86	v	902	GDP	C5'-O5'-PA-O2A
86	v	902	GDP	C3'-C4'-C5'-O5'
86	v	902	GDP	C5'-O5'-PA-O3A
86	v	902	GDP	C5'-O5'-PA-O1A
86	v	902	GDP	O4'-C4'-C5'-O5'

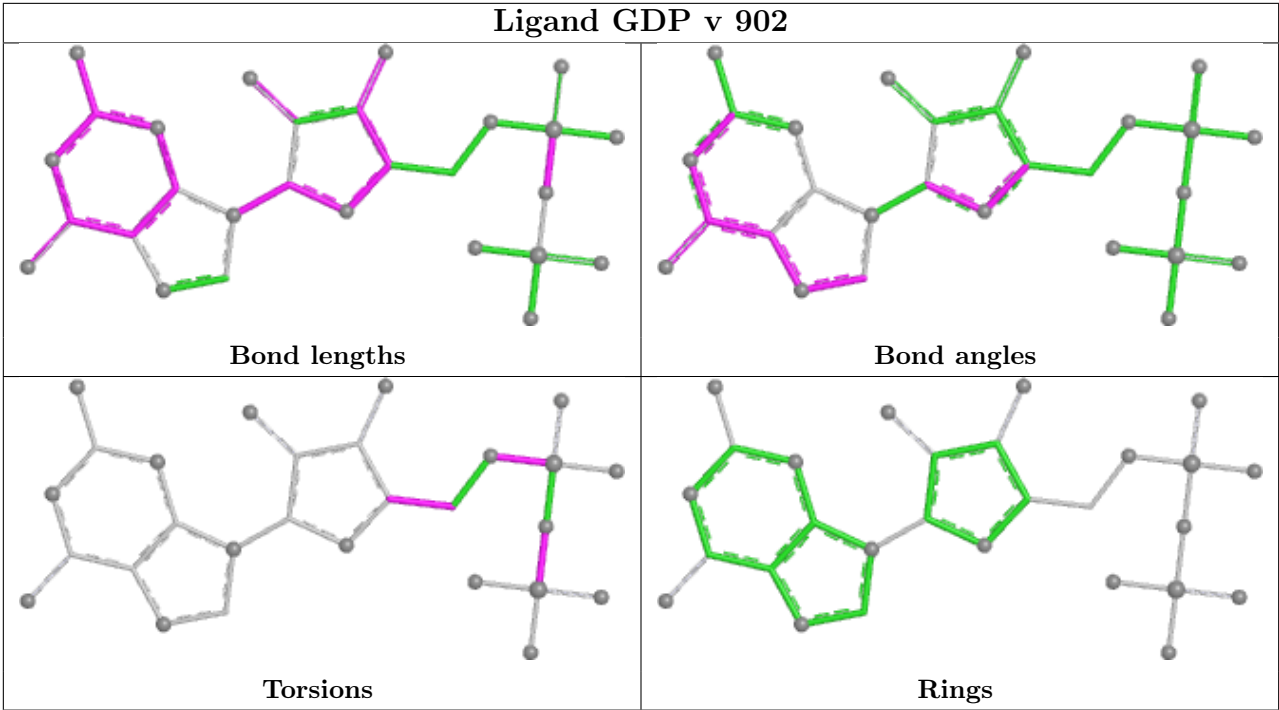
There are no ring outliers.

1 monomer is involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
86	v	902	GDP	3	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 ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

The following chains have linkage breaks:

Mol	Chain	Number of breaks
29	5	19
53	9	10
52	w	1
51	v	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	w	202:SER	C	282:THR	N	64.88
1	5	2119:G	O3'	2264:C	P	40.57
1	5	1258:C	O3'	1277:G	P	35.57
1	9	697:G	O3'	729:C	P	18.44
1	5	4144:C	O3'	4152:G	P	17.51
1	9	756:C	O3'	788:G	P	17.51

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	9	834:C	O3'	841:G	P	17.22
1	9	130:G	O3'	140:U	P	17.15
1	5	4107:C	O3'	4113:G	P	17.13
1	9	1761:U	O3'	1771:G	P	16.88
1	5	524:C	O3'	639:G	P	16.60
1	5	996:U	O3'	1070:G	P	16.25
1	9	1417:C	O3'	1423:C	P	16.22
1	5	182:G	O3'	189:G	P	14.83
1	5	1702:C	O3'	1726:C	P	14.77
1	5	762:G	O3'	906:C	P	14.64
1	5	5028:U	O3'	5034:G	P	14.03
1	5	2907:G	O3'	3603:G	P	13.87
1	5	1370:U	O3'	1374:A	P	12.80
1	v	47:ALA	C	66:ARG	N	11.48
1	9	225:G	O3'	287:U	P	8.86
1	5	4735:A	O3'	4741:G	P	8.77
1	9	745:C	O3'	749:U	P	7.55
1	5	513:U	O3'	516:C	P	6.75
1	5	501:G	O3'	505:G	P	5.71
1	9	736:C	O3'	743:U	P	5.59
1	5	1245:C	O3'	1250:G	P	5.06
1	5	4746:G	O3'	4749:G	P	4.92
1	9	1432:U	O3'	1438:A	P	4.77
1	5	1444:U	O3'	1446:U	P	3.18
1	5	4905:G	O3'	4908:C	P	3.12

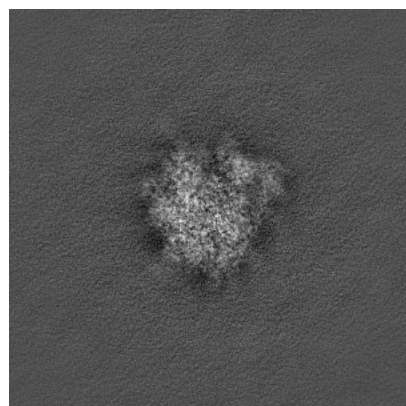
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-43570. These allow visual inspection of the internal detail of the map and identification of artifacts.

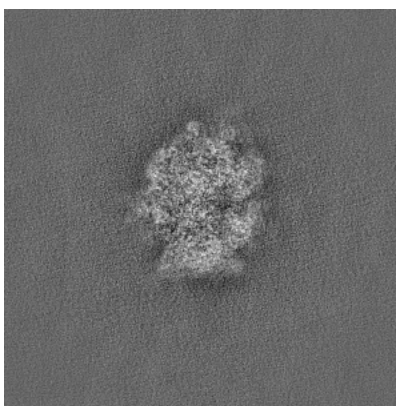
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

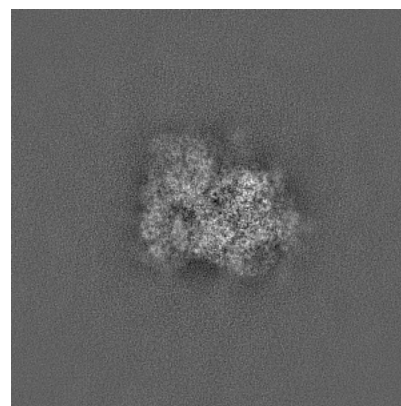
6.1.1 Primary map



X

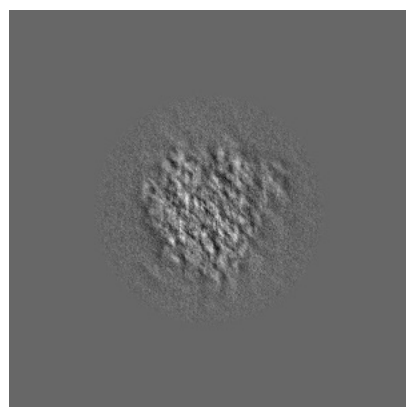


Y

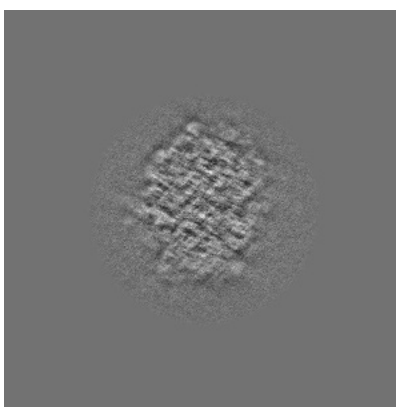


Z

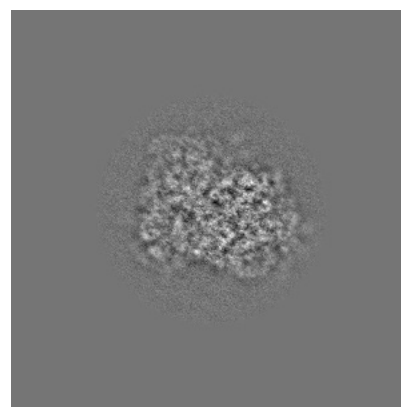
6.1.2 Raw map



X



Y

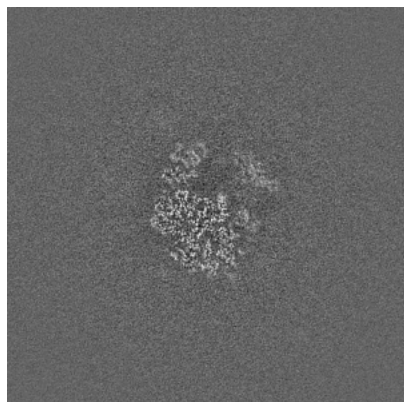


Z

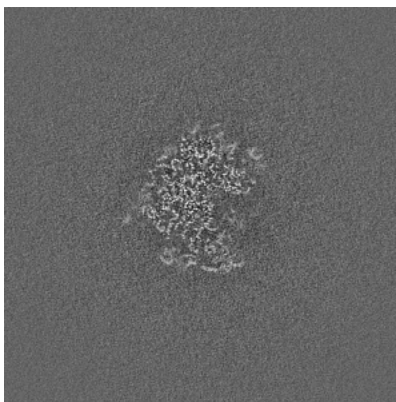
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

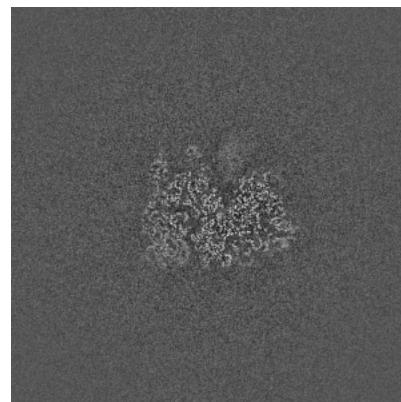
6.2.1 Primary map



X Index: 324

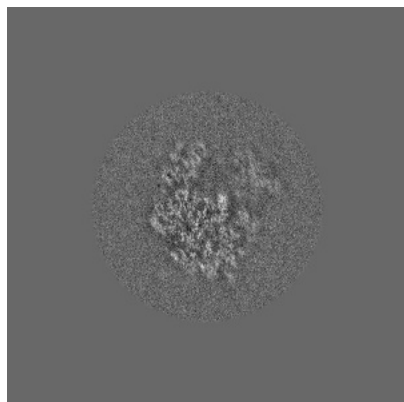


Y Index: 324

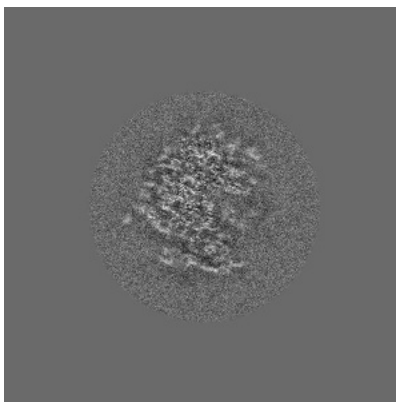


Z Index: 324

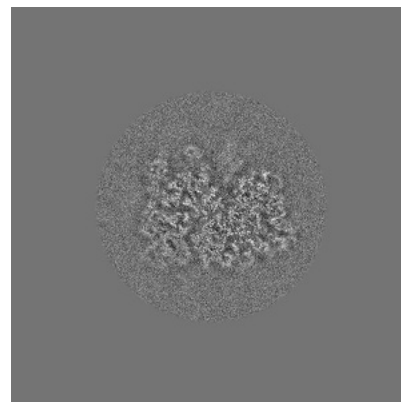
6.2.2 Raw map



X Index: 324



Y Index: 324

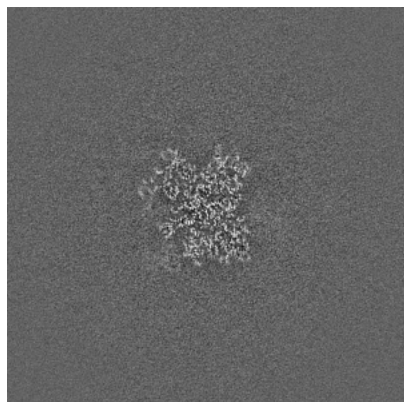


Z Index: 324

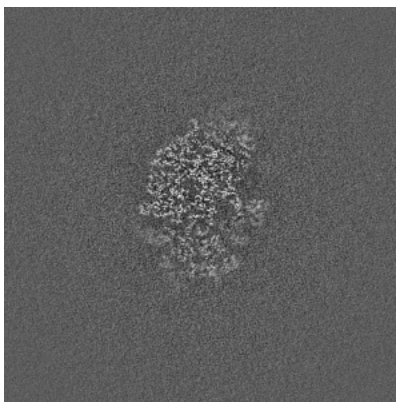
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

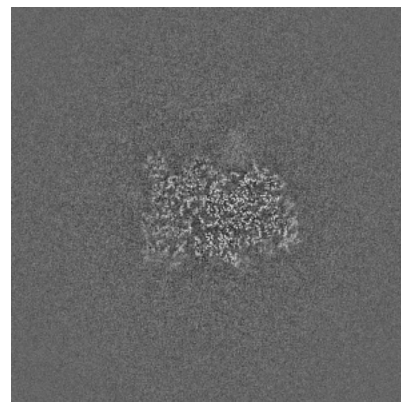
6.3.1 Primary map



X Index: 375

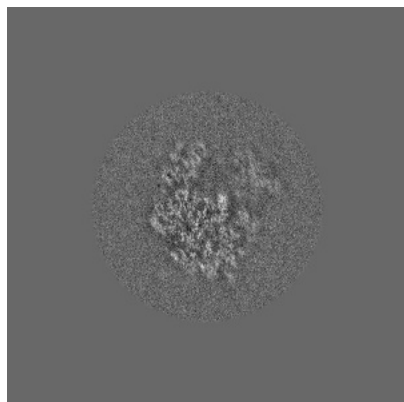


Y Index: 301

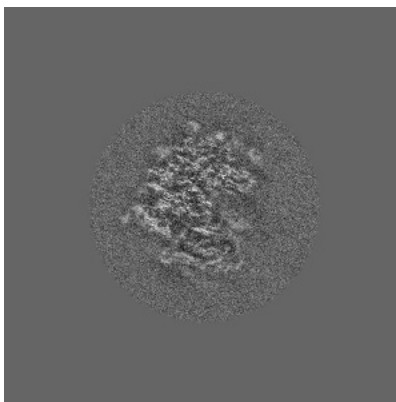


Z Index: 312

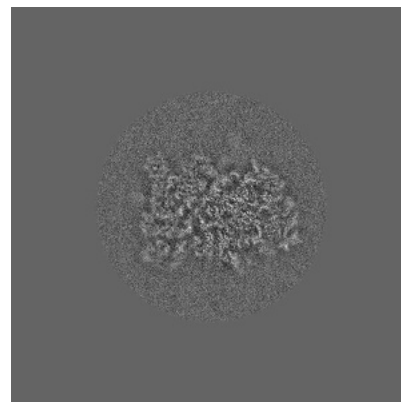
6.3.2 Raw map



X Index: 324



Y Index: 328

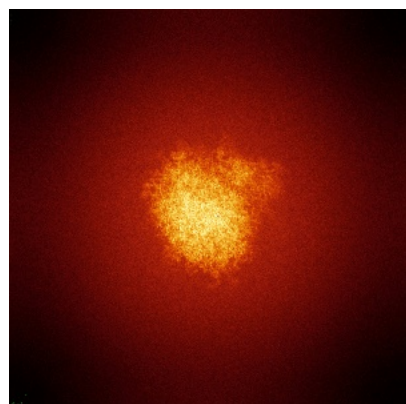


Z Index: 312

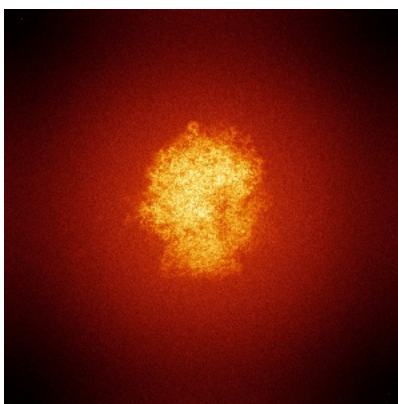
The images above show the largest variance slices of the map in three orthogonal directions.

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

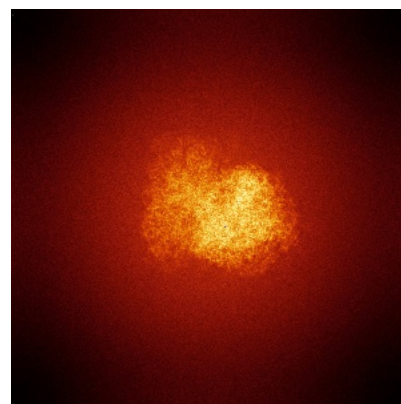
6.4.1 Primary map



X

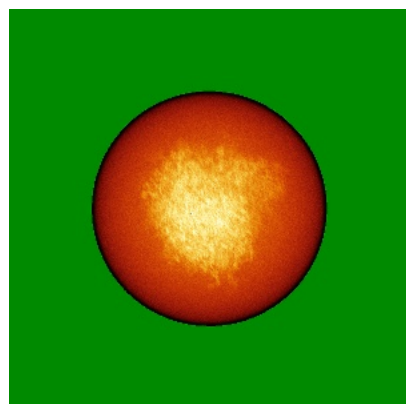


Y

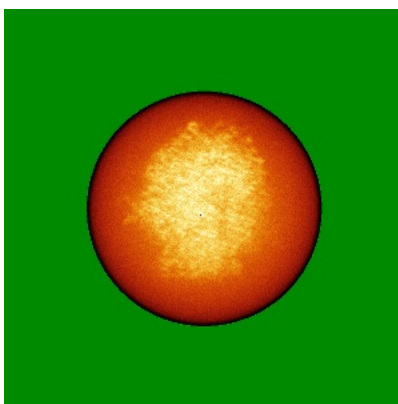


Z

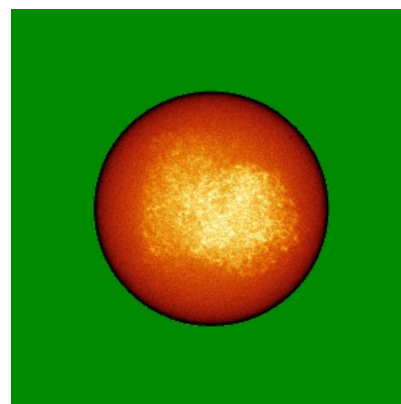
6.4.2 Raw map



X



Y

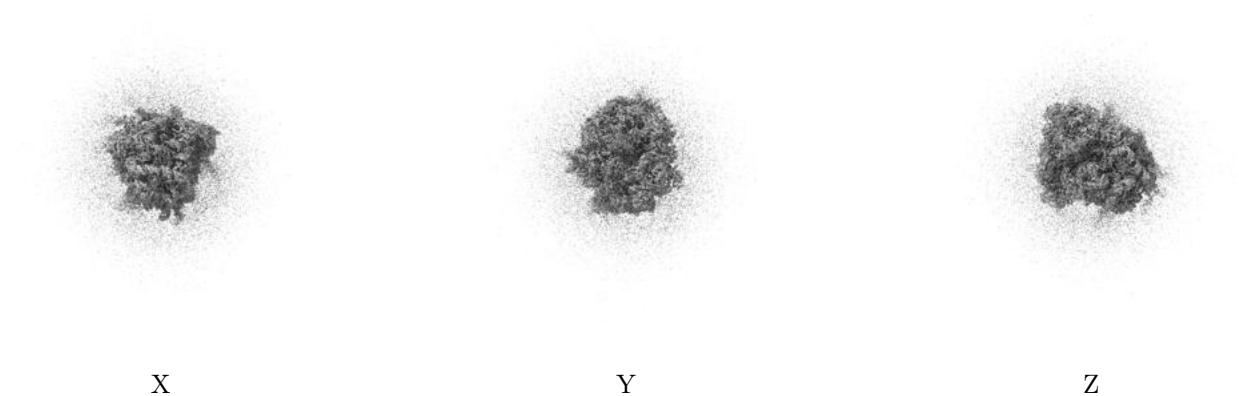


Z

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

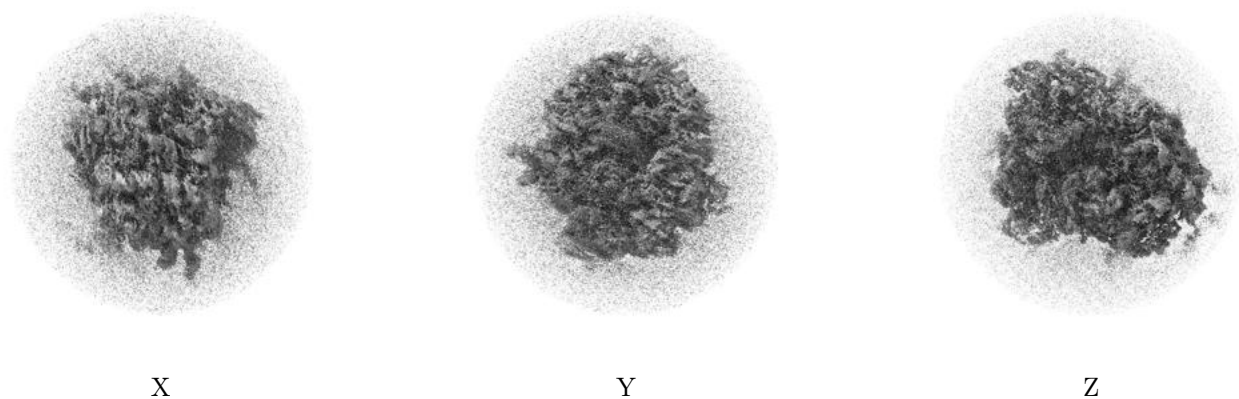
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 6.2. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

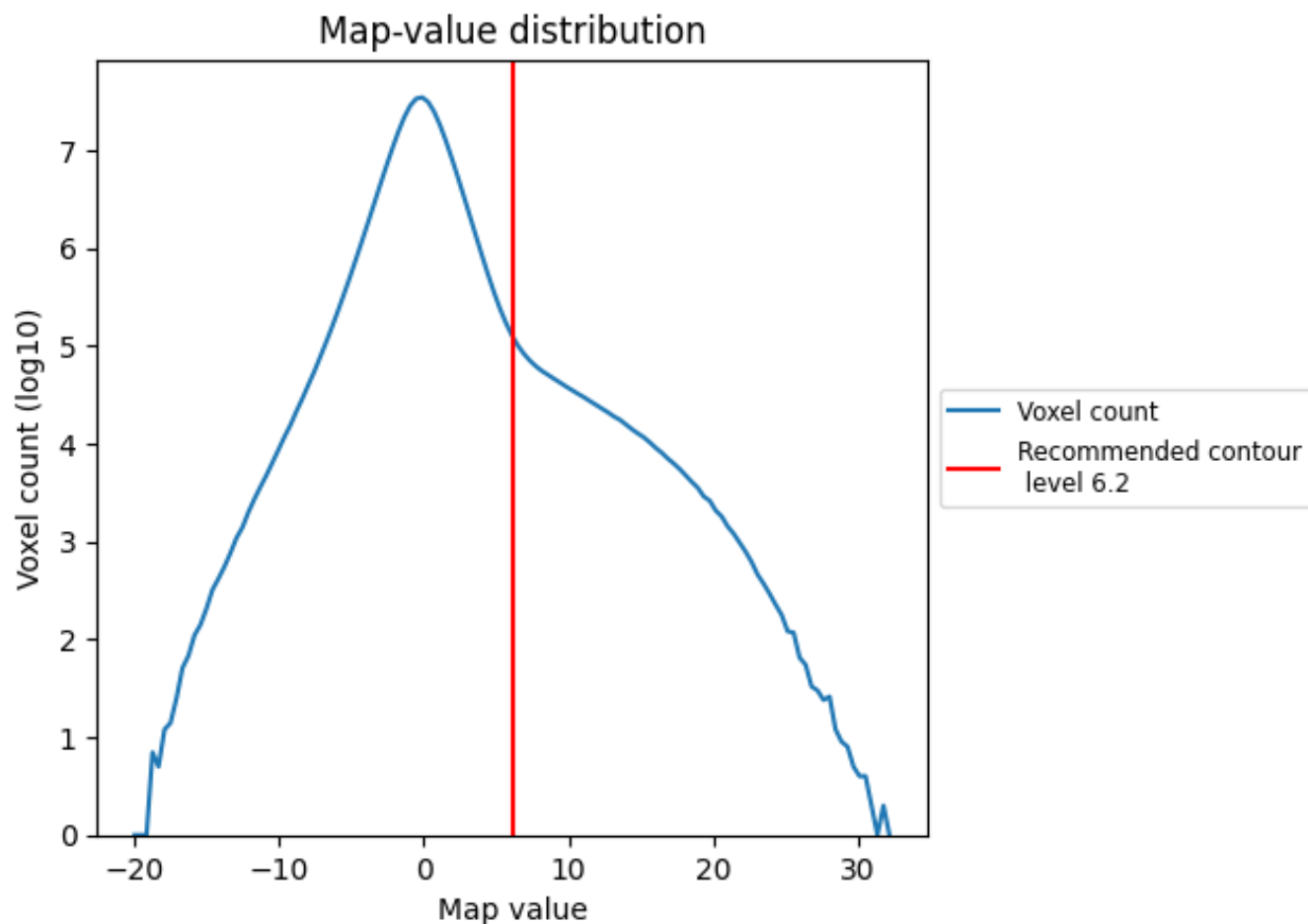
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

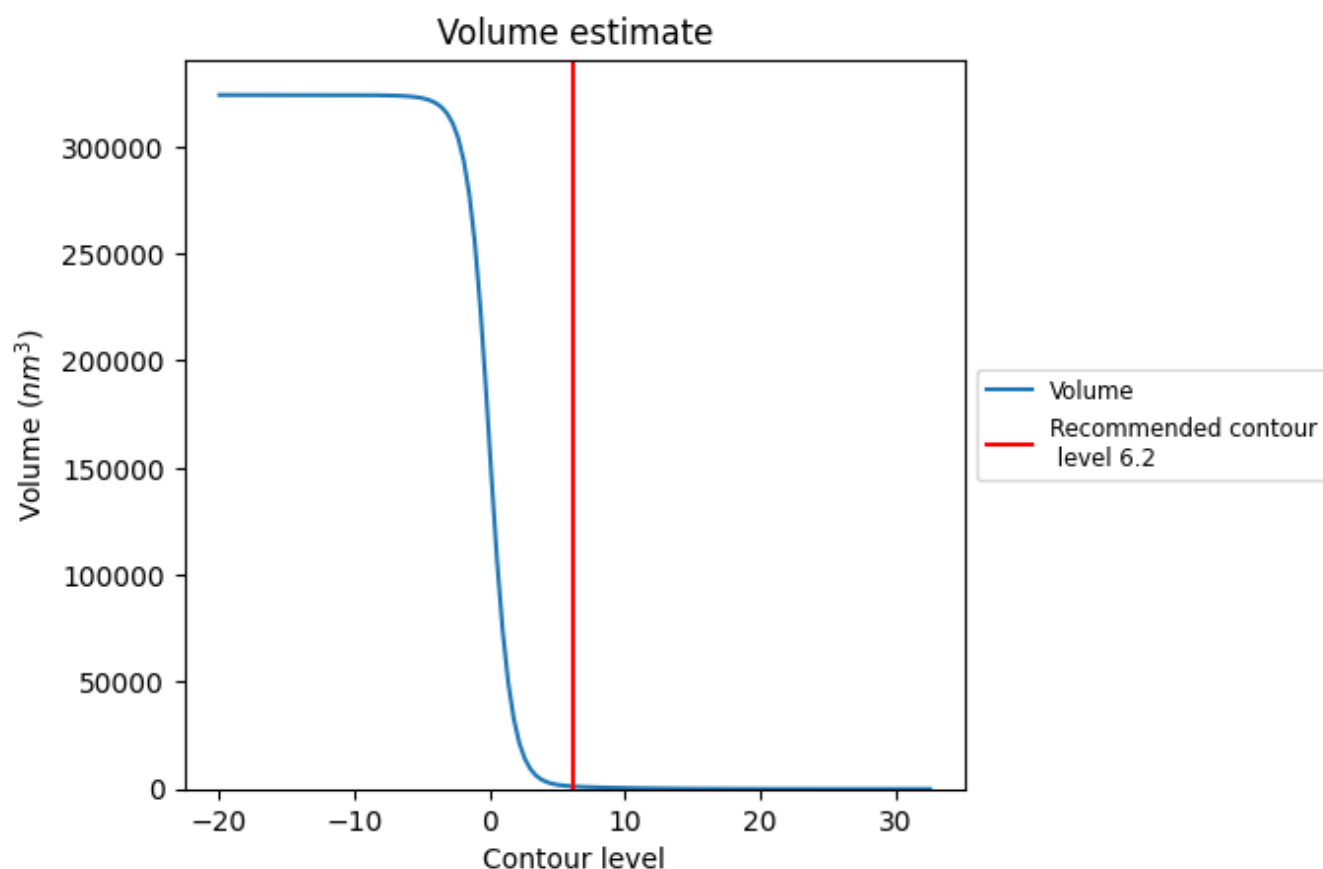
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

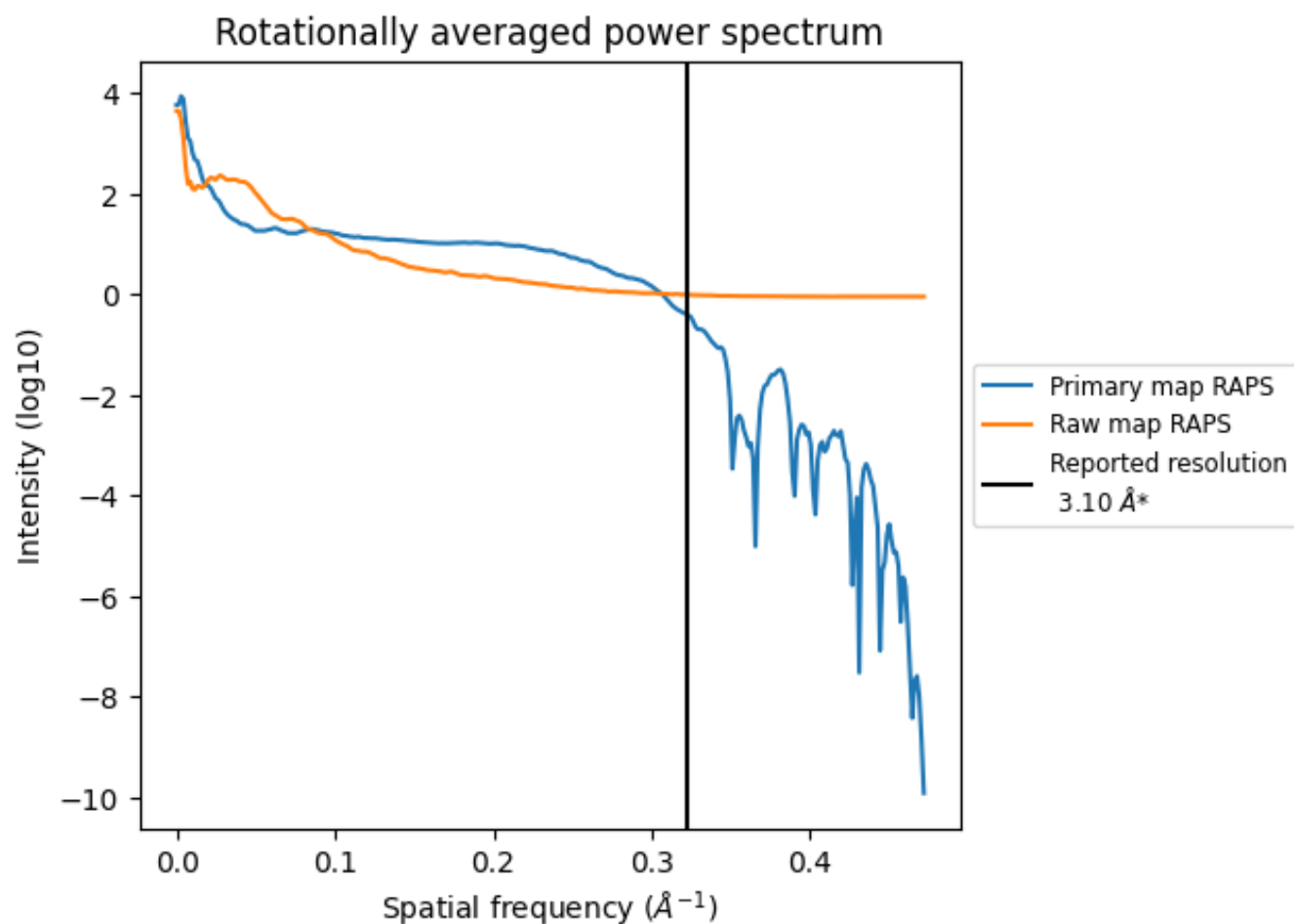
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1197 nm³; this corresponds to an approximate mass of 1081 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

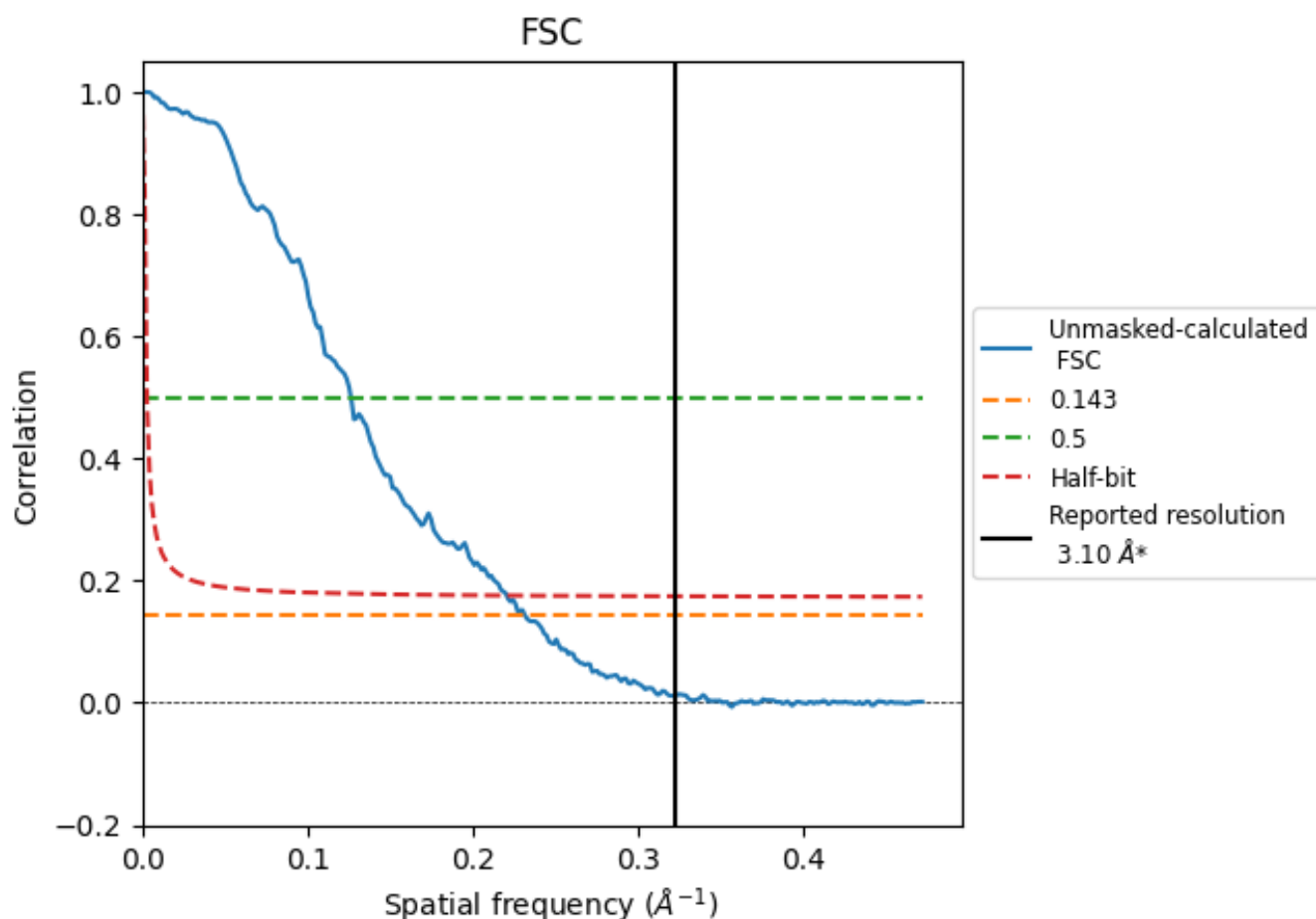


*Reported resolution corresponds to spatial frequency of 0.323 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.323 \AA^{-1}

8.2 Resolution estimates [i](#)

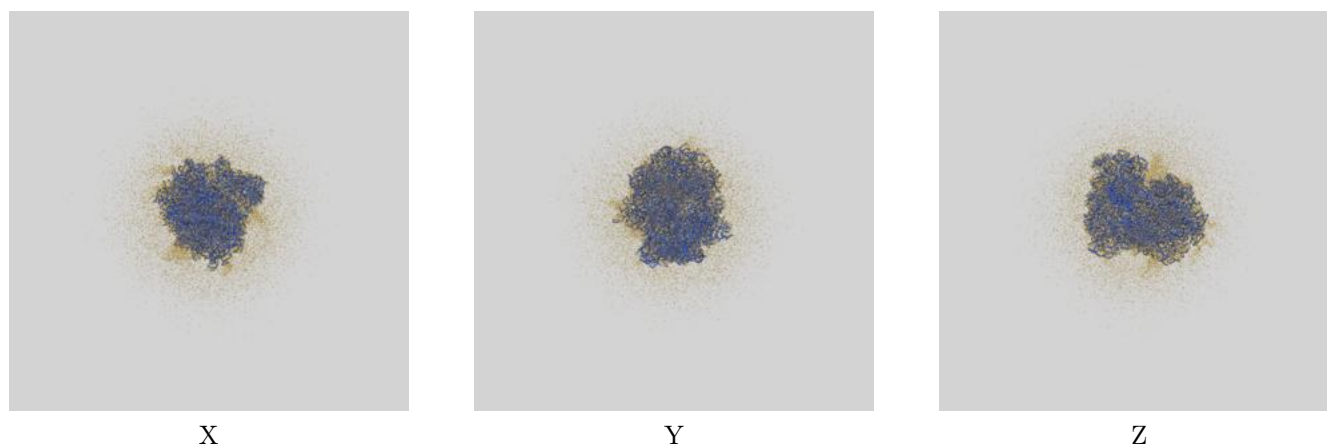
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.10	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.32	7.92	4.54

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.32 differs from the reported value 3.1 by more than 10 %

9 Map-model fit [i](#)

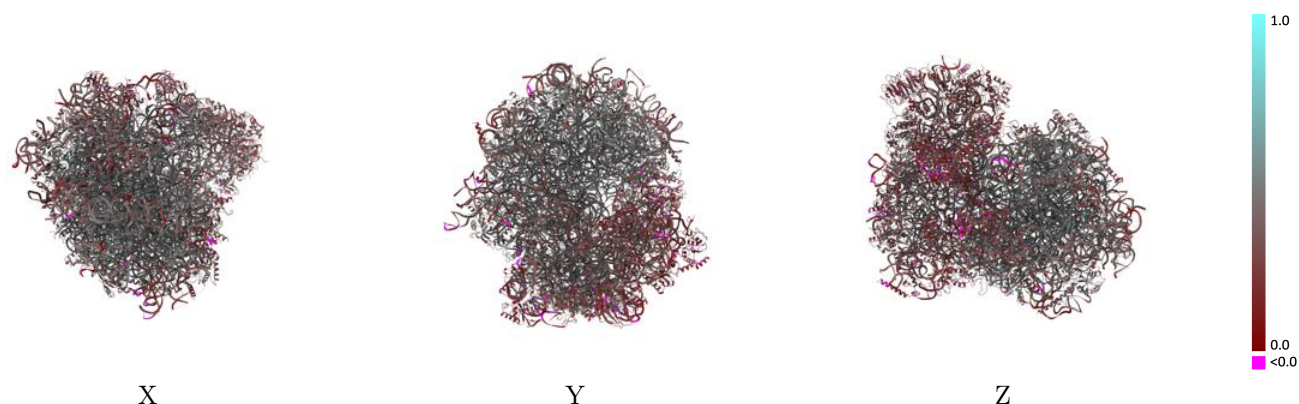
This section contains information regarding the fit between EMDB map EMD-43570 and PDB model 8VVV. Per-residue inclusion information can be found in [section 3](#) on [page 24](#).

9.1 Map-model overlay [i](#)



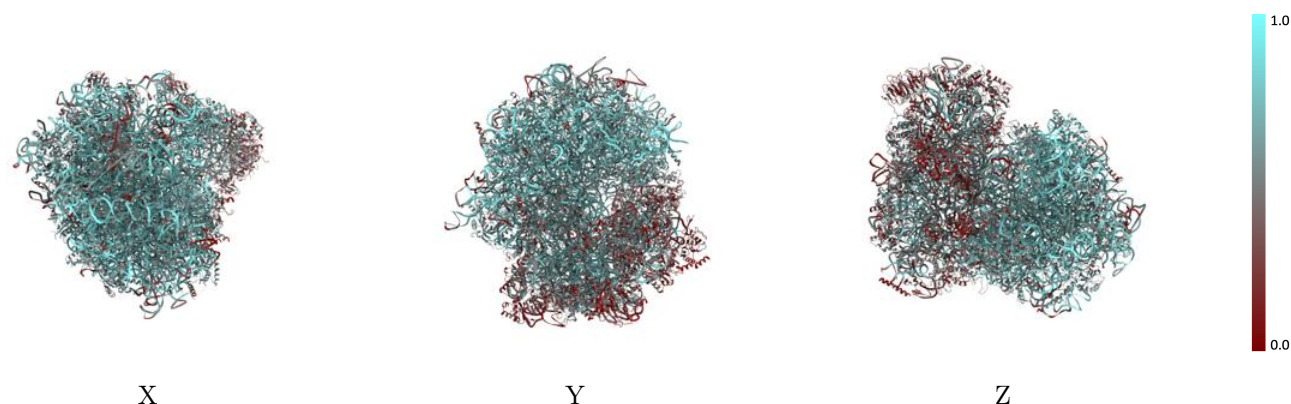
The images above show the 3D surface view of the map at the recommended contour level 6.2 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



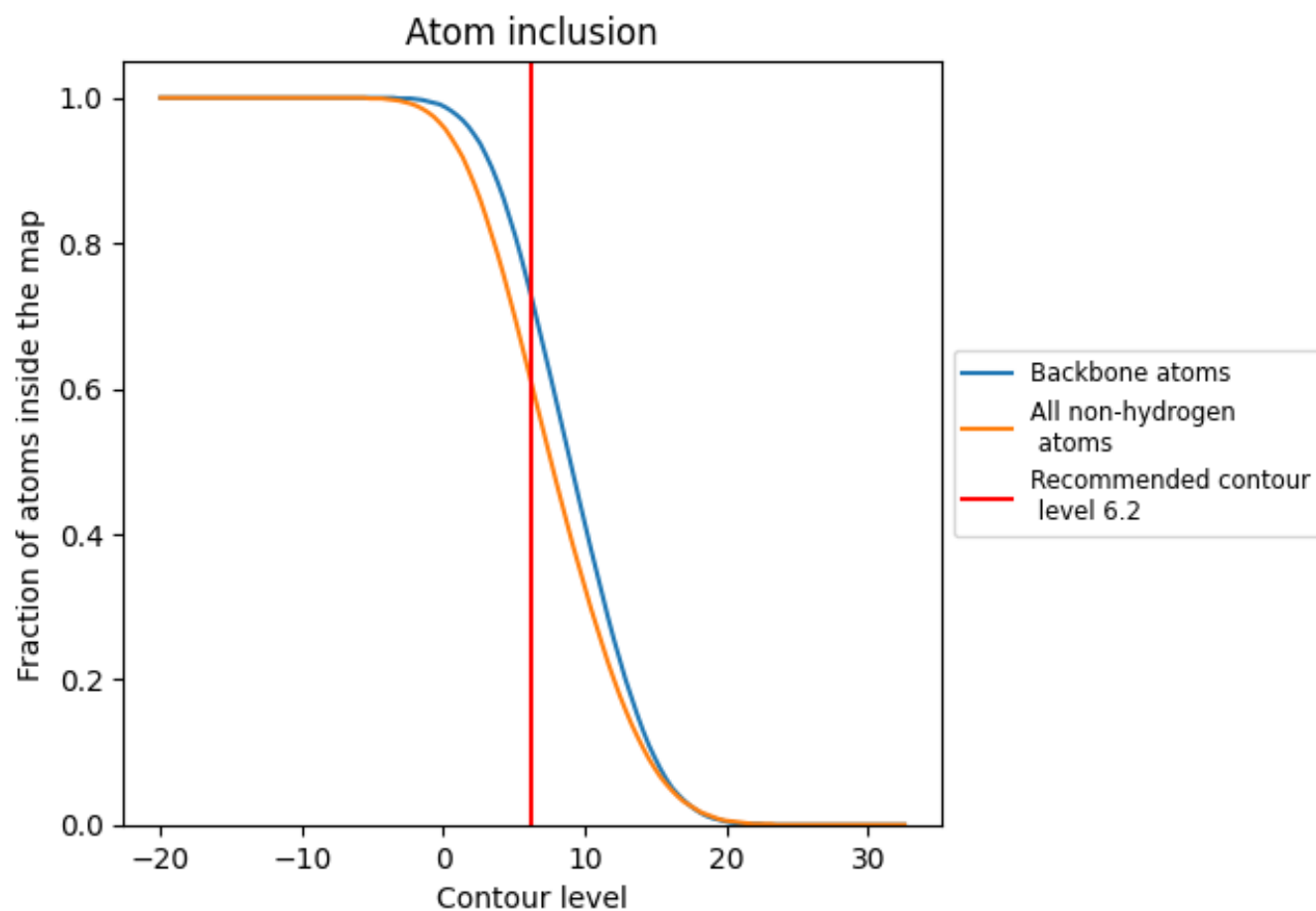
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (6.2).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 73% of all backbone atoms, 61% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ





















































































The table lists the average atom inclusion at the recommended contour level (6.2) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6090	 0.3940
5	 0.7490	 0.4260
7	 0.8260	 0.4590
8	 0.7640	 0.4240
9	 0.6070	 0.3590
A	 0.6270	 0.4830
AA	 0.4450	 0.3520
B	 0.6210	 0.4620
BB	 0.4280	 0.3620
C	 0.6260	 0.4600
CC	 0.4980	 0.3890
D	 0.6420	 0.4240
DD	 0.3480	 0.3260
E	 0.5830	 0.4270
EE	 0.4190	 0.3600
F	 0.6150	 0.4480
FF	 0.3510	 0.3090
G	 0.5870	 0.4000
GG	 0.3730	 0.3030
H	 0.5830	 0.4260
HH	 0.2830	 0.2920
I	 0.6080	 0.4490
II	 0.4470	 0.3660
J	 0.5760	 0.3910
JJ	 0.4800	 0.3510
KK	 0.2850	 0.2540
L	 0.6100	 0.4350
LL	 0.4830	 0.4190
M	 0.5990	 0.4180
MM	 0.1280	 0.1530
N	 0.6490	 0.4760
NN	 0.4910	 0.3850
O	 0.6330	 0.4520
OO	 0.4550	 0.3750
P	 0.6330	 0.4710

















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Chain	Atom inclusion	Q-score
PP	 0.3380	 0.2600
Q	 0.6190	 0.4700
QQ	 0.3320	 0.3060
R	 0.5790	 0.4060
RR	 0.2980	 0.3040
S	 0.6220	 0.4560
SS	 0.3320	 0.2910
T	 0.6140	 0.4580
TT	 0.3210	 0.2950
U	 0.5570	 0.3710
UU	 0.3000	 0.2960
V	 0.6080	 0.4660
VV	 0.4900	 0.3720
W	 0.4630	 0.3560
WW	 0.5000	 0.4100
X	 0.5940	 0.4430
XX	 0.4460	 0.3960
Y	 0.6180	 0.4360
YY	 0.3710	 0.3150
Z	 0.5960	 0.4240
ZZ	 0.2800	 0.2770
a	 0.6420	 0.4740
aa	 0.4780	 0.3880
b	 0.5150	 0.3950
bb	 0.3940	 0.3460
c	 0.5950	 0.4100
cc	 0.2940	 0.2930
d	 0.6070	 0.4350
dd	 0.4200	 0.3460
e	 0.6080	 0.4750
ee	 0.3710	 0.3090
f	 0.6370	 0.4800
ff	 0.1480	 0.2060
g	 0.6290	 0.4590
gg	 0.2470	 0.2550
h	 0.6080	 0.4210
i	 0.6010	 0.4160
j	 0.6420	 0.4710
k	 0.5420	 0.3880
l	 0.5970	 0.4710
m	 0.6020	 0.4250
n	 0.4910	 0.4160

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Chain	Atom inclusion	Q-score
o	 0.6170	 0.4550
p	 0.6040	 0.4570
r	 0.6350	 0.4590
s	 0.3870	 0.2910
t	 0.2270	 0.1810
v	 0.3090	 0.2610
w	 0.1150	 0.2330