Full wwPDB EM Validation Report (i)

Dec 10, 2025 – 07:21 pm GMT

PDB ID	:	7OBR / pdb_00007obr
EMDB ID	:	EMD-12801
Title	:	RNC-SRP early complex
Authors	:	Jomaa, A.; Ban, N.
Deposited on	:	2021-04-23
Resolution	:	2.80 Å(reported)
Based on initial model	:	6FRK

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 (i) 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 (i)) were used in the production of this report:

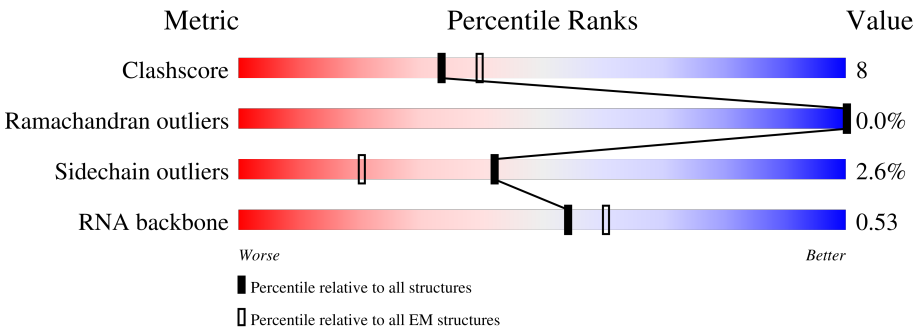
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.47

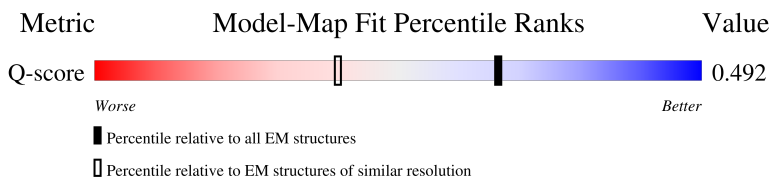
1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 2.80 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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	11806 (2.30 - 3.30)

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

Mol	Chain	Length	Quality of chain
1	1	249	98%; 45%, 49%, 6%
2	5	3493	14%; 52%, 38%, 9%
3	7	120	•; 72%, 24%, •

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Mol	Chain	Length	Quality of chain
4	8	156	10% 56% 37% 7%
5	A	245	78% 21%
6	B	402	79% 18%
7	C	413	70% 17% 12%
8	D	297	14% 78% 19%
9	E	248	22% 70% 24% 5%
10	F	225	80% 20%
11	G	319	14% 59% 16% 24%
12	H	192	7% 78% 20%
13	I	214	84% 12% 5%
14	J	178	29% 83% 12% 5%
15	L	210	12% 85% 14%
16	M	218	48% 15% 37%
17	N	204	77% 22%
18	O	199	80% 20%
19	P	153	90% 10%
20	Q	187	76% 24%
21	R	180	15% 74% 26%
22	S	175	81% 18%
23	T	160	9% 85% 14%
24	U	99	27% 79% 19%
25	V	140	77% 16% 6%
26	W	63	87% 13%
27	X	156	65% 12% 24%
28	Y	145	77% 16% 8%

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Mol	Chain	Length	Quality of chain
29	Z	136	9% 69% 29%
30	a	147	5% 80% 20%
31	b	223	10% 30% 66%
32	c	94	6% 81% 19%
33	d	125	10% 74% 11% 14%
34	e	157	61% 20% 18%
35	f	110	73% 25%
36	g	129	8% 78% 10% 12%
37	h	123	7% 76% 21%
38	i	102	12% 90% 10%
39	j	97	78% 10% 11%
40	k	69	30% 80% 19%
41	l	51	78% 20%
42	m	52	6% 81% 19%
43	n	25	92% 8%
44	o	105	12% 87% 12%
45	p	92	5% 84% 14%
46	q	144	73% 58% 15% 27%
47	r	137	72% 20% 9%
48	s	67	70% 60% 31% 9%
49	t	110	69% 58% 11% 31%
50	u	622	31% 26% 5% 69%
51	w	86	86% 66% 20% 14%
52	x	504	77% 63% 29% 5%
53	z	671	6% 5% 94%

2 Entry composition (i)

There are 56 unique types of molecules in this entry. The entry contains 146701 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called SRP RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	1	249	5341	2377	977	1738	249	0	0

- Molecule 2 is a RNA chain called 28S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	5	3493	74854	33335	13681	24346	3492	0	0

- Molecule 3 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	7	120	2558	1141	456	842	119	0	0

- Molecule 4 is a RNA chain called 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	8	156	3314	1480	585	1094	155	0	0

- Molecule 5 is a protein called 60S ribosomal protein L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	A	244	1868	1171	382	309	6	0	0

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	46	LYS	-	insertion	UNP A0A5F9D5B2
A	47	ASP	-	insertion	UNP A0A5F9D5B2
A	48	ILE	-	insertion	UNP A0A5F9D5B2

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Chain	Residue	Modelled	Actual	Comment	Reference
A	49	ILE	-	insertion	UNP A0A5F9D5B2
A	50	HIS	-	insertion	UNP A0A5F9D5B2
A	51	ASP	-	insertion	UNP A0A5F9D5B2
A	52	PRO	-	insertion	UNP A0A5F9D5B2
A	53	GLY	-	insertion	UNP A0A5F9D5B2
A	54	ARG	-	insertion	UNP A0A5F9D5B2
A	55	GLY	-	insertion	UNP A0A5F9D5B2
A	56	ALA	-	insertion	UNP A0A5F9D5B2
A	57	PRO	-	insertion	UNP A0A5F9D5B2
A	58	LEU	-	insertion	UNP A0A5F9D5B2
A	59	ALA	-	insertion	UNP A0A5F9D5B2
A	60	LYS	-	insertion	UNP A0A5F9D5B2
A	61	VAL	-	insertion	UNP A0A5F9D5B2
A	62	VAL	-	insertion	UNP A0A5F9D5B2
A	63	PHE	-	insertion	UNP A0A5F9D5B2
A	64	ARG	-	insertion	UNP A0A5F9D5B2
A	65	ASP	-	insertion	UNP A0A5F9D5B2
A	66	PRO	-	insertion	UNP A0A5F9D5B2
A	67	TYR	-	insertion	UNP A0A5F9D5B2
A	68	ARG	-	insertion	UNP A0A5F9D5B2
A	69	PHE	-	insertion	UNP A0A5F9D5B2

- Molecule 6 is a protein called uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	B	394	3148	2007	591	537	13	0	0

- Molecule 7 is a protein called 60S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	C	362	2883	1812	577	480	14	0	0

- Molecule 8 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	D	292	2386	1509	437	426	14	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	1	MET	-	initiating methionine	UNP G1SYJ6

- Molecule 9 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	E	236	1898	1215	362	318	3	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	126	ARG	LYS	conflict	UNP G1SKF7
E	217	GLN	LYS	conflict	UNP G1SKF7

- Molecule 10 is a protein called uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	F	225	1870	1202	358	301	9	0	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
F	175	ALA	THR	conflict	UNP G1SV32
F	185	GLY	ASN	conflict	UNP G1SV32
F	202	ARG	HIS	conflict	UNP G1SV32
F	233	GLU	GLY	conflict	UNP G1SV32

- Molecule 11 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	G	241	1934	1233	371	326	4	0	0

- Molecule 12 is a protein called 60S ribosomal protein L9.

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

- Molecule 13 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	I	204	1655	1051	319	272	13	0	0

- Molecule 14 is a protein called Ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	J	169	1353	855	252	240	6	0	0

- Molecule 15 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	L	210	1703	1065	354	280	4	0	0

There are 9 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
L	47	ALA	-	insertion	UNP G1TPV0
L	48	PRO	-	insertion	UNP G1TPV0
L	49	ARG	-	insertion	UNP G1TPV0
L	50	PRO	-	insertion	UNP G1TPV0
L	51	ALA	-	insertion	UNP G1TPV0
L	52	SER	-	insertion	UNP G1TPV0
L	53	GLY	-	insertion	UNP G1TPV0
L	54	PRO	-	insertion	UNP G1TPV0
L	55	LEU	-	insertion	UNP G1TPV0

- Molecule 16 is a protein called 60S ribosomal protein L14.

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

- Molecule 17 is a protein called Ribosomal protein L15.

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

- Molecule 18 is a protein called 60S ribosomal protein L13a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	O	199	1638	1056	321	256	5	0	0

- Molecule 19 is a protein called uL22.

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

- Molecule 20 is a protein called eL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	Q	187	1506	941	311	249	5	0	0

There are 18 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Q	6	ARG	LEU	conflict	UNP G1TX70
Q	14	ARG	TRP	conflict	UNP G1TX70
Q	23	ILE	MET	conflict	UNP G1TX70
Q	24	TYR	CYS	conflict	UNP G1TX70
Q	38	ARG	HIS	conflict	UNP G1TX70
Q	57	ASN	LYS	conflict	UNP G1TX70
Q	66	MET	VAL	conflict	UNP G1TX70
Q	74	GLY	ASP	conflict	UNP G1TX70
Q	75	ARG	PRO	conflict	UNP G1TX70
Q	77	GLY	ASN	conflict	UNP G1TX70
Q	106	SER	THR	conflict	UNP G1TX70
Q	110	ARG	HIS	conflict	UNP G1TX70
Q	117	GLY	GLU	conflict	UNP G1TX70
Q	124	ASP	HIS	conflict	UNP G1TX70
Q	134	CYS	ARG	conflict	UNP G1TX70
Q	150	ARG	GLN	conflict	UNP G1TX70
Q	172	ARG	GLY	conflict	UNP G1TX70
Q	184	ARG	TRP	conflict	UNP G1TX70

- Molecule 21 is a protein called 60S RIBOSOMAL PROTEIN EL19.

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

- Molecule 22 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	S	175	1454	925	284	235	10	0	0

There are 22 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
S	18	PRO	-	insertion	UNP G1TTY7
S	19	THR	-	insertion	UNP G1TTY7
S	20	PRO	SER	conflict	UNP G1TTY7
S	22	CYS	SER	conflict	UNP G1TTY7
S	23	ARG	PRO	conflict	UNP G1TTY7
S	24	THR	ALA	conflict	UNP G1TTY7
S	49	SER	LEU	conflict	UNP G1TTY7
S	50	GLN	GLU	conflict	UNP G1TTY7
S	95	ARG	HIS	conflict	UNP G1TTY7
S	101	THR	ILE	conflict	UNP G1TTY7
S	102	THR	MET	conflict	UNP G1TTY7
S	104	GLY	SER	conflict	UNP G1TTY7
S	126	ILE	VAL	conflict	UNP G1TTY7
S	132	ILE	MET	conflict	UNP G1TTY7
S	135	SER	ALA	conflict	UNP G1TTY7
S	136	LYS	ARG	conflict	UNP G1TTY7
S	138	ARG	PRO	conflict	UNP G1TTY7
S	149	LYS	ARG	conflict	UNP G1TTY7
S	151	LYS	ARG	conflict	UNP G1TTY7
S	168	THR	TYR	conflict	UNP G1TTY7
S	169	THR	ALA	conflict	UNP G1TTY7
S	176	PHE	-	insertion	UNP G1TTY7

- Molecule 23 is a protein called eL21.

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

- Molecule 24 is a protein called Ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	U	99	808	518	141	147	2	0	0

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
U	32	GLY	ARG	variant	UNP G1TSG1
U	36	ALA	GLU	variant	UNP G1TSG1
U	39	PHE	SER	variant	UNP G1TSG1
U	54	GLY	ARG	variant	UNP G1TSG1
U	60	VAL	ALA	variant	UNP G1TSG1
U	97	ARG	HIS	variant	UNP G1TSG1

- Molecule 25 is a protein called Ribosomal protein L23.

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

- Molecule 26 is a protein called Ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	W	63	528	337	103	85	3	0	0

- Molecule 27 is a protein called uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	X	119	976	624	183	168	1	0	0

- Molecule 28 is a protein called Ribosomal protein L26.

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

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

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

- Molecule 30 is a protein called uL15.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
31	b	75	609	378	130	98	3	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
32	c	94	732	465	130	131	6	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
c	34	THR	SER	conflict	UNP G1TDL2
c	95	ALA	SER	conflict	UNP G1TDL2

- Molecule 33 is a protein called eL31.

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

- Molecule 34 is a protein called eL32.

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

- Molecule 35 is a protein called eL33.

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

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

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

- Molecule 37 is a protein called uL29.

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

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

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

- Molecule 39 is a protein called Ribosomal protein L37.

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

- Molecule 40 is a protein called eL38.

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

- Molecule 41 is a protein called eL39.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	l	50	444	281	98	64	1	0	0

- Molecule 42 is a protein called 60S RIBOSOMAL PROTEIN EL40.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	m	52	429	266	90	67	6	0	0

- Molecule 43 is a protein called 60s ribosomal protein l41.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	n	23	222	134	61	25	2	0	0

- Molecule 44 is a protein called eL42.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	o	104	851	533	174	138	6	0	0

- Molecule 45 is a protein called eL43.

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

- Molecule 46 is a protein called Signal recognition particle 19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
46	q	105	844	534	152	152	6	0	0

- Molecule 47 is a protein called eL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
47	r	125	1001	621	206	168	6	0	0

- Molecule 48 is a protein called Dipeptidyl aminopeptidase B.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
48	s	67	502	329	91	82	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
s	83	HIS	GLN	conflict	UNP P18962
s	90	HIS	GLN	conflict	UNP P18962

- Molecule 49 is a protein called Signal recognition particle 14 kDa protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
49	t	76	604	384	105	111	4	0	0

- Molecule 50 is a protein called Signal recognition particle subunit SRP68.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
50	u	194	1626	1022	305	291	8	0	0

- Molecule 51 is a protein called Signal recognition particle 9 kDa protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
51	w	74	607	386	106	110	5	0	0

- Molecule 52 is a protein called Signal recognition particle 54 kDa protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
52	x	488	3773	2377	650	713	33	0	0

- Molecule 53 is a protein called Signal recognition particle subunit SRP72.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
53	z	40	339	215	66	57	1	0	0

- Molecule 54 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
54	5	97	97	97	0

- Molecule 55 is ZINC ION (CCD ID: ZN) (formula: Zn).

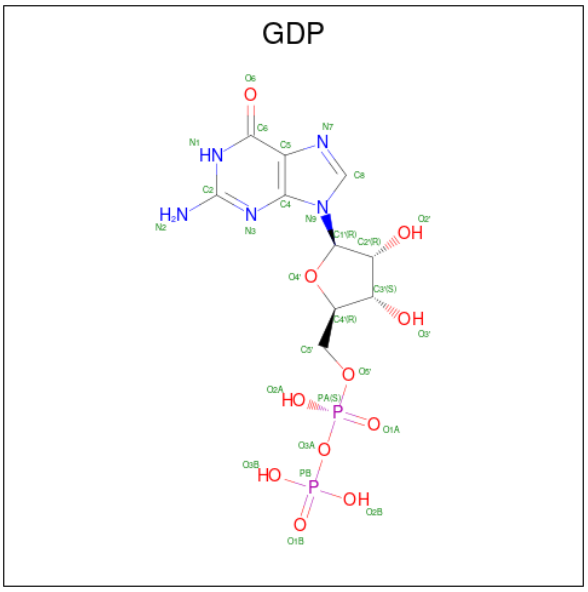
Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
55	g	1	1	1	0
55	j	1	1	1	0
55	m	1	1	1	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
55	o	1	1	1	0
			Total	Zn	
55	p	1	1	1	0

- Molecule 56 is GUANOSINE-5'-DIPHOSPHATE (CCD ID: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$) (labeled as "Ligand of Interest" by depositor).



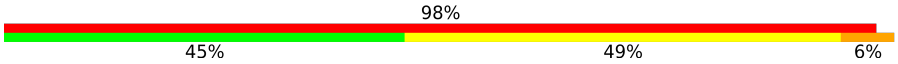
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
56	x	1	28	10	5	11	2	0

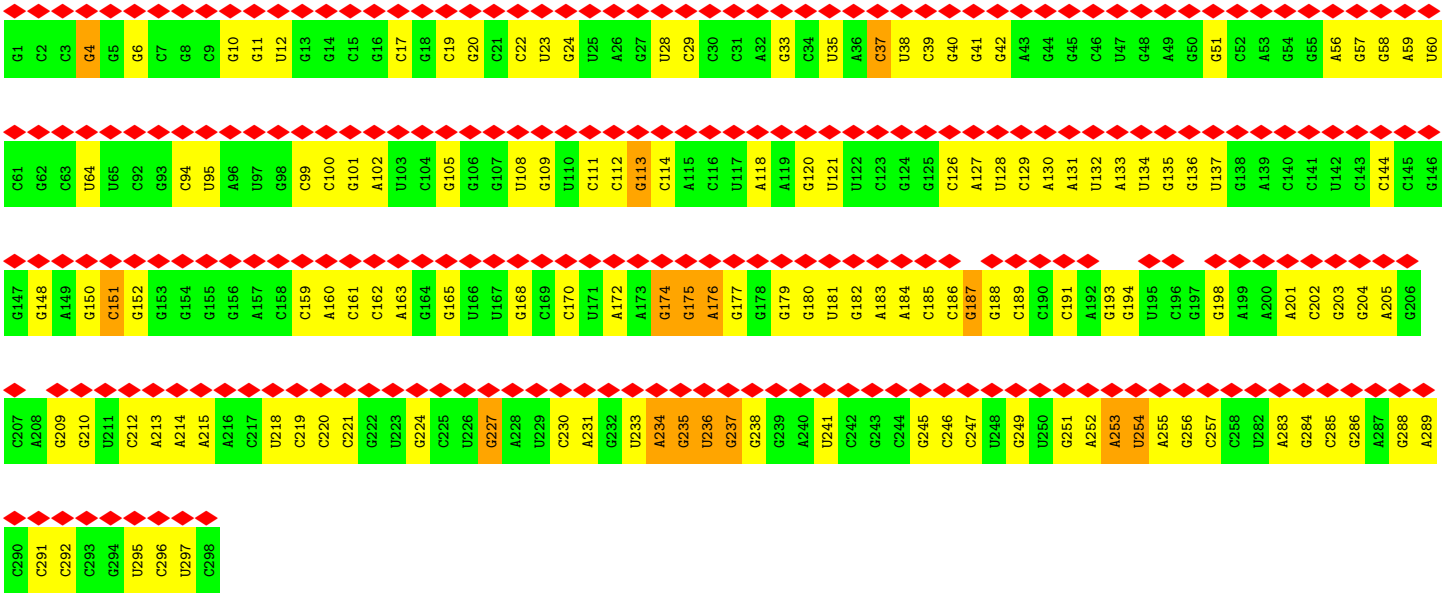
3 Residue-property plots (i)

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

- Molecule 1: SRP RNA

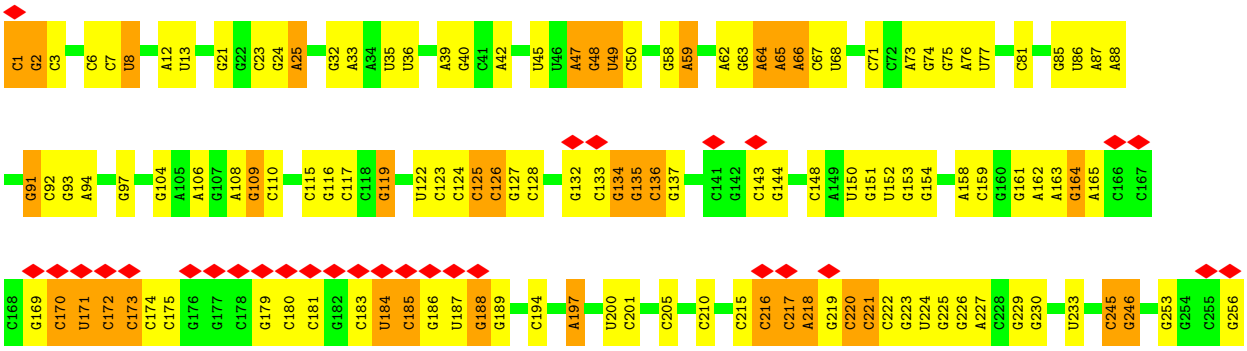
Chain 1:

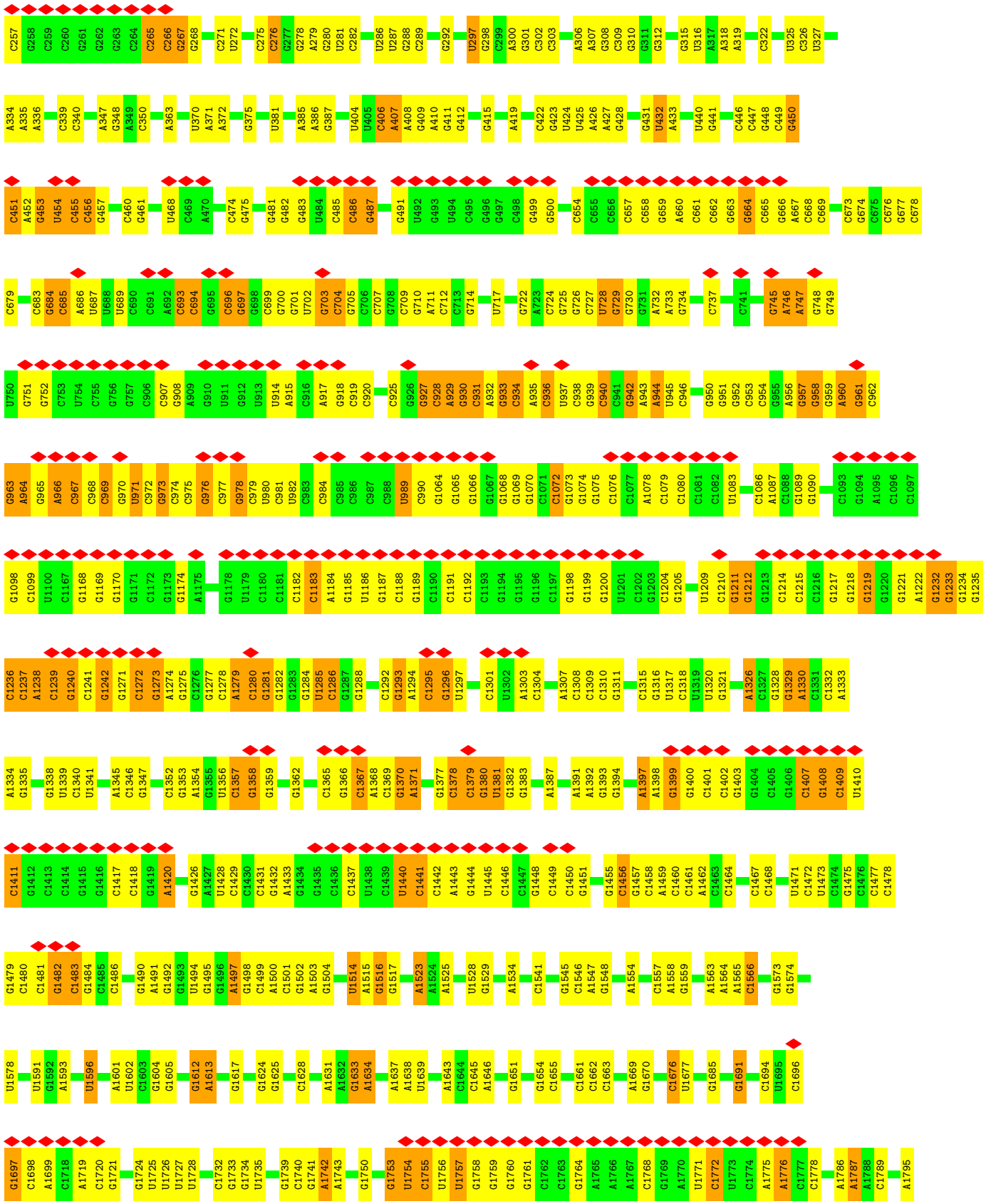




- Molecule 2: 28S rRNA

Chain 5:

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C1411 G1412 C1413 C1414 G1415 G1416 C1417 C1418 G1419 A1420 G1426 A1427 U1428 C1429 C1430 C1431 G1432 A1433 G1434 G1435 C1436 C1437 U1438 C1439 U1440 C1441 C1442 A1443 G1444 U1445 C1446 C1447 G1448 C1449 C1450 G1451 G1455 C1456 G1457 C1458 A1459 C1460 C1461 A1462 C1463 C1464 C1467 C1468 U1471 C1472 U1473 C1474 G1475 C1476 C1477 C1478
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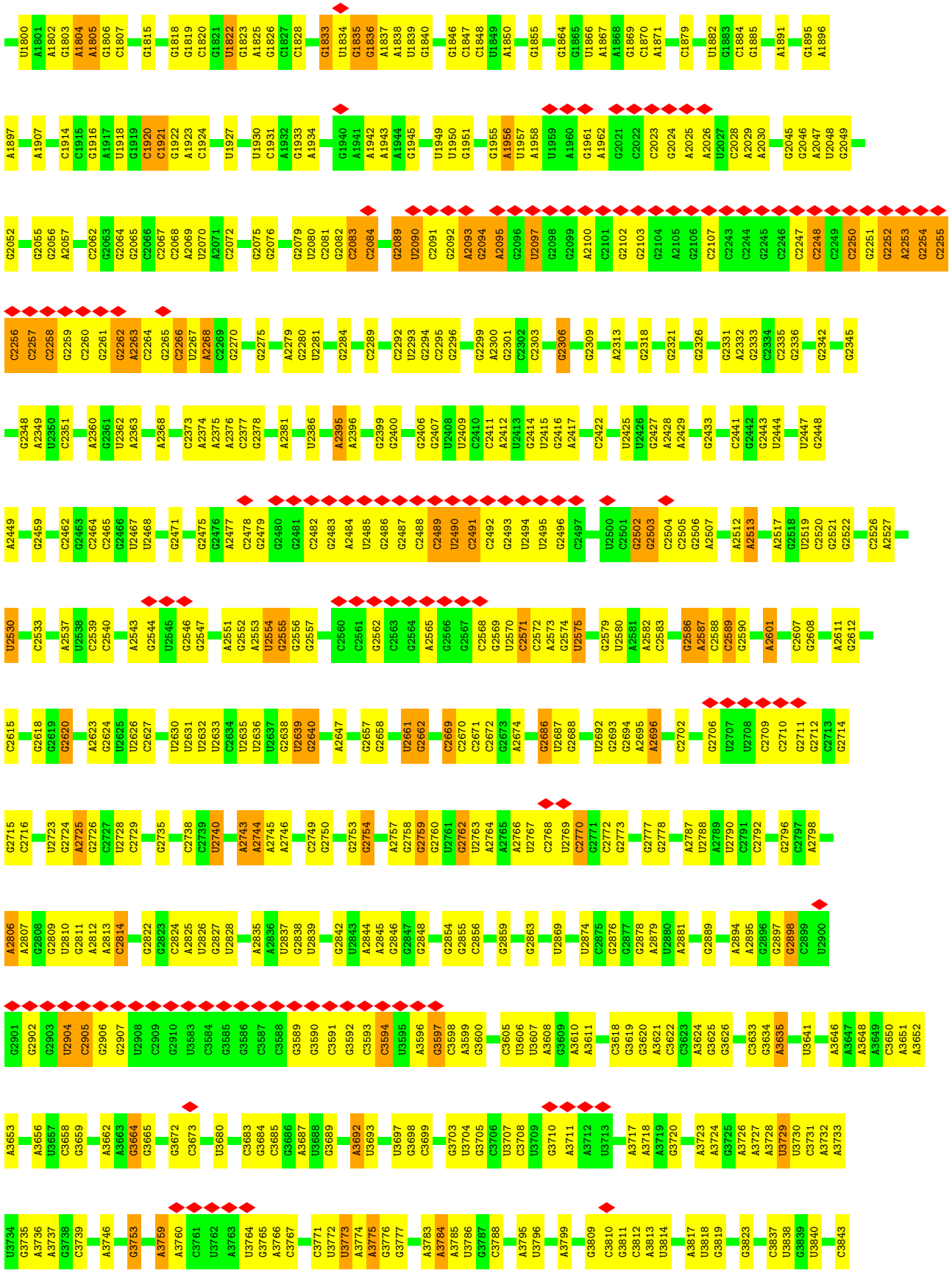
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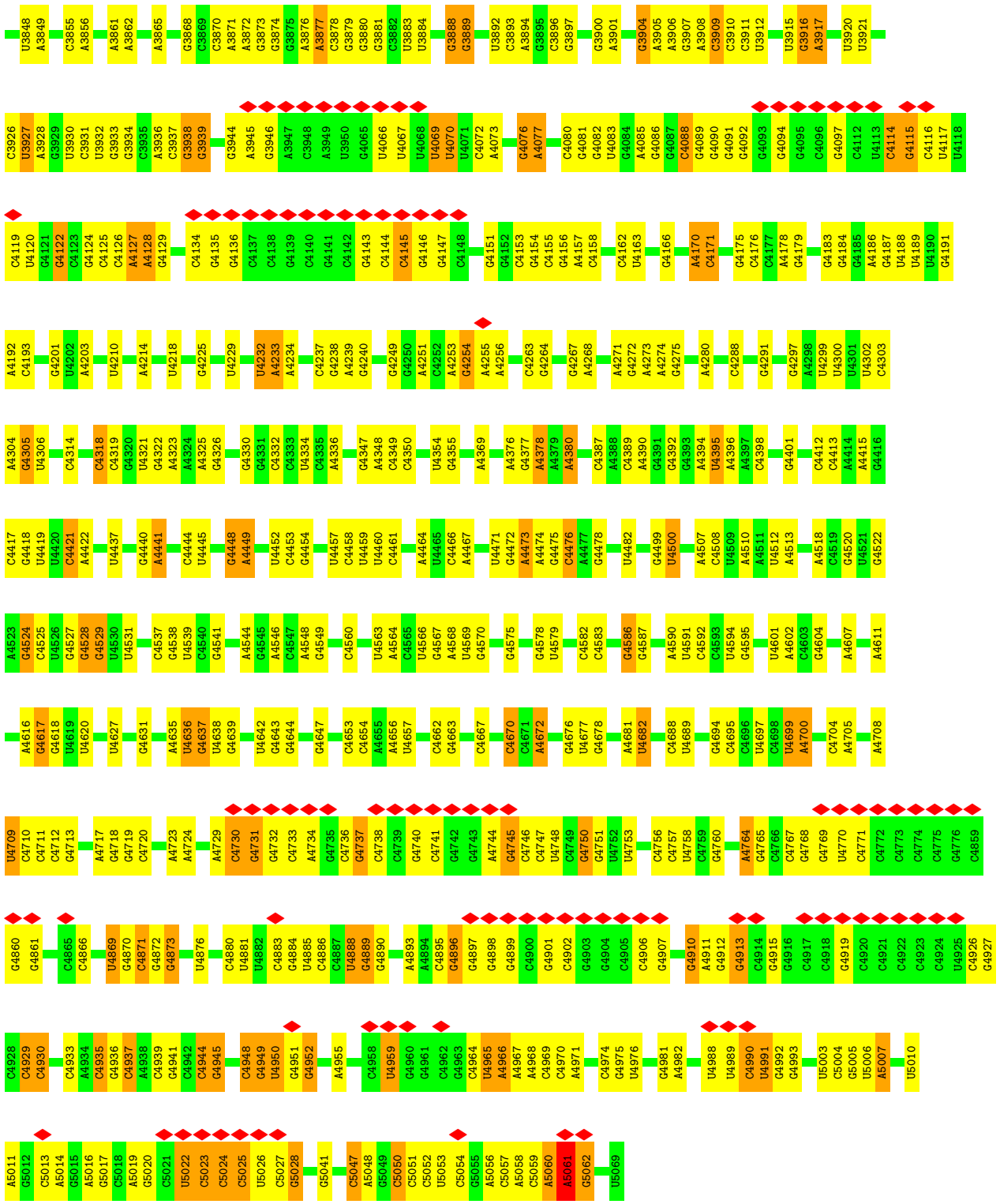
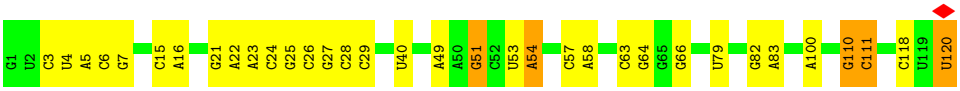


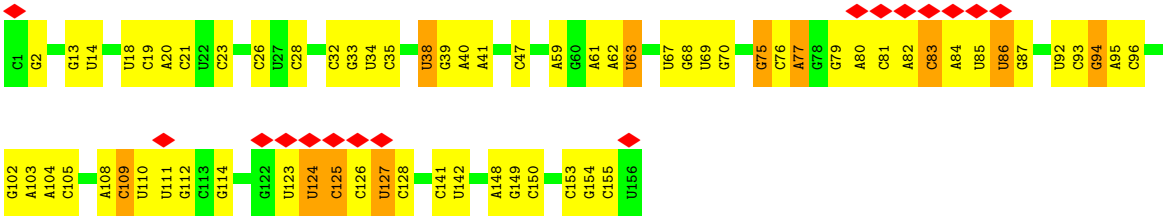
- Molecule 3: 5S ribosomal RNA

Chain 7:



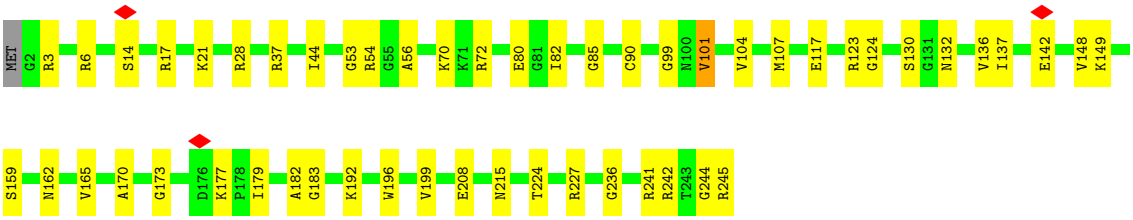
• Molecule 4: 5.8S ribosomal RNA

Chain 8:



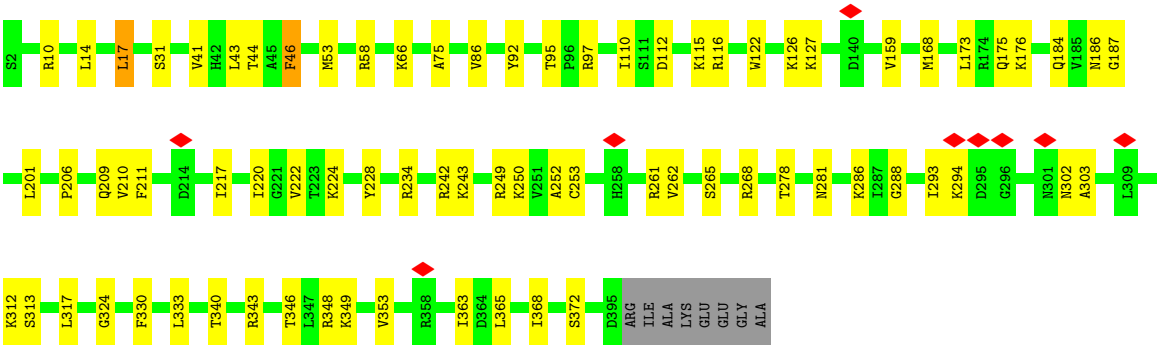
• Molecule 5: 60S ribosomal protein L8

Chain A:



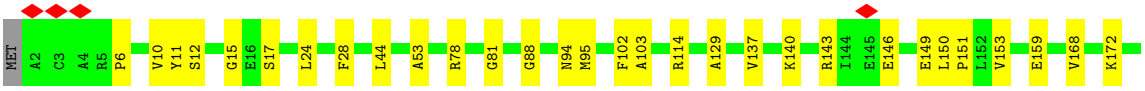
• Molecule 6: uL3

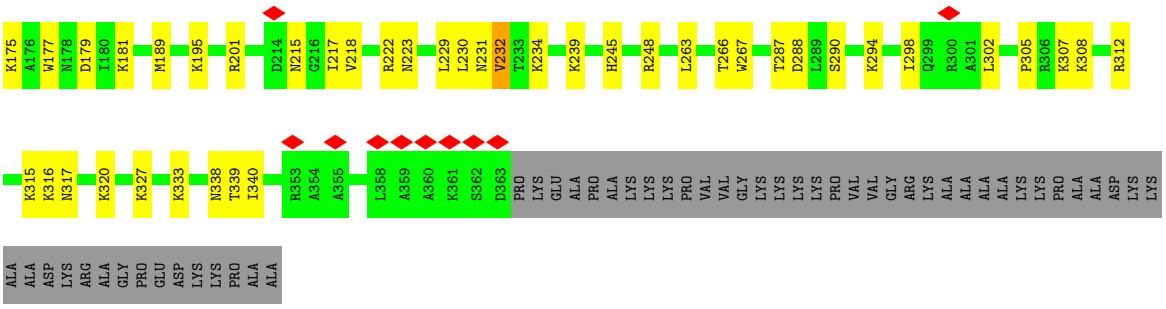
Chain B:



• Molecule 7: 60S ribosomal protein L4

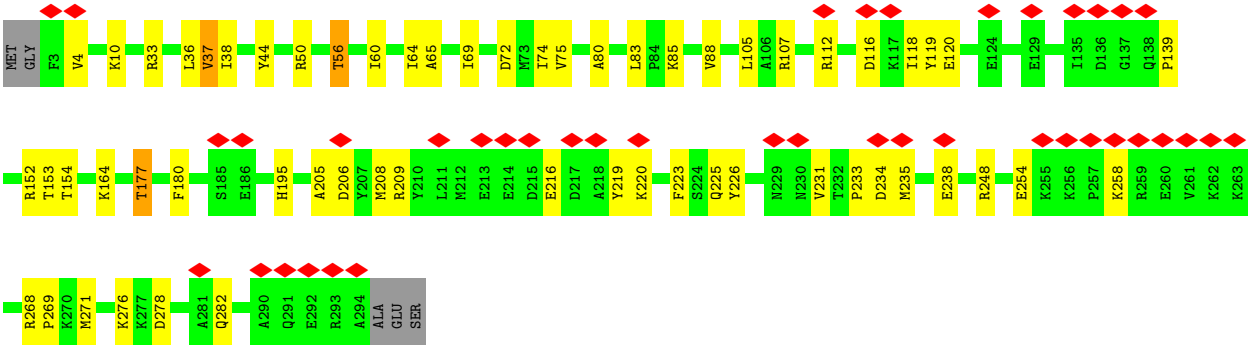
Chain C:





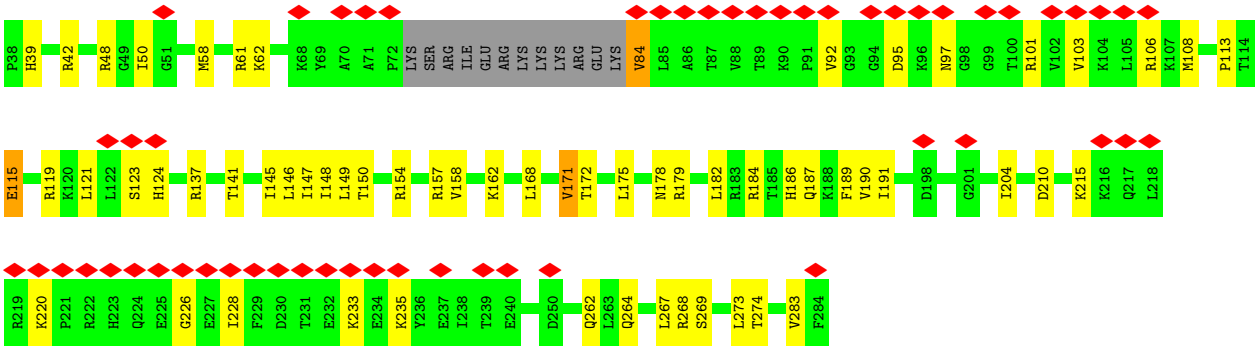
- Molecule 8: 60S ribosomal protein L5

Chain D:



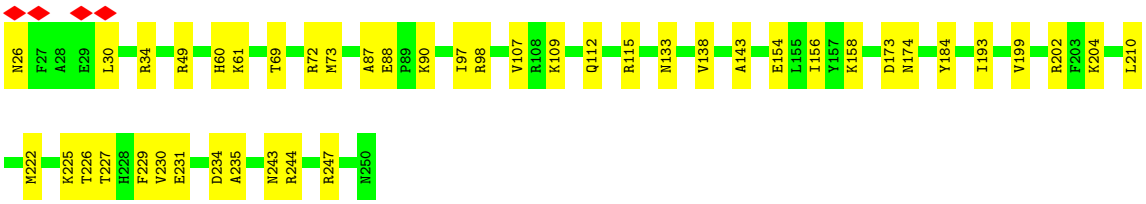
- Molecule 9: 60S ribosomal protein L6

Chain E:



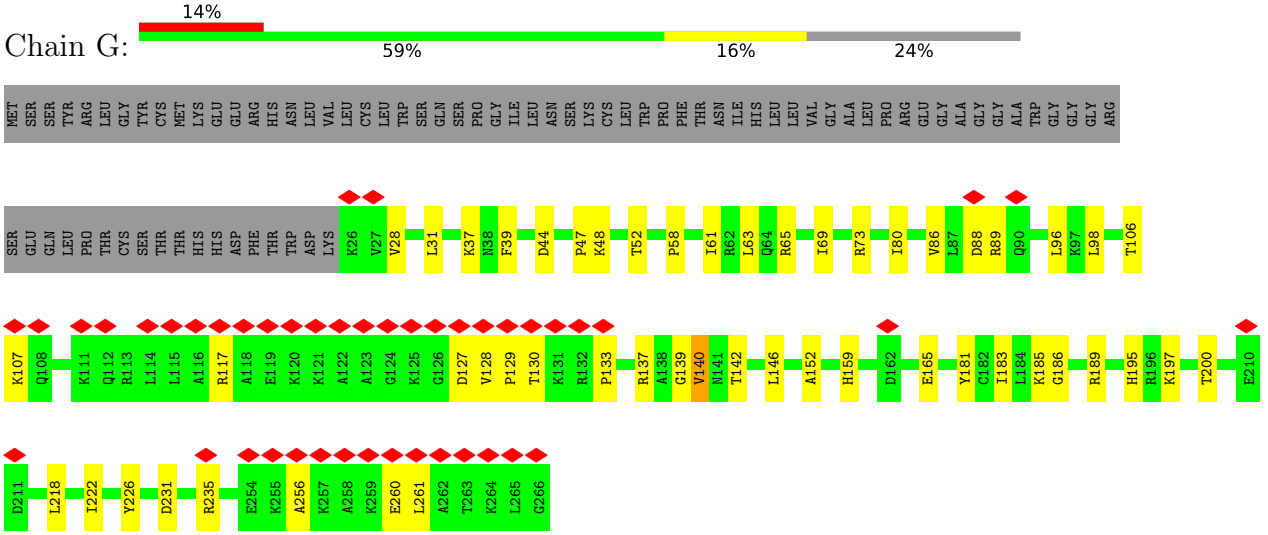
- Molecule 10: uL30

Chain F:



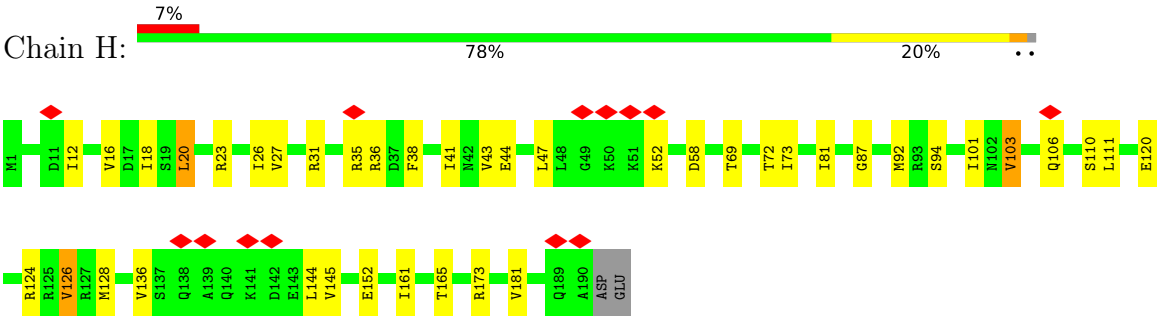
• Molecule 11: 60S ribosomal protein L7a

Chain G:



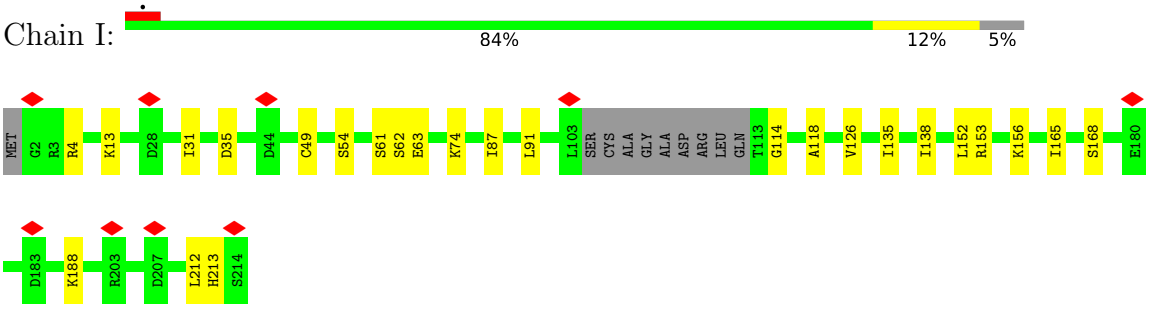
• Molecule 12: 60S ribosomal protein L9

Chain H:



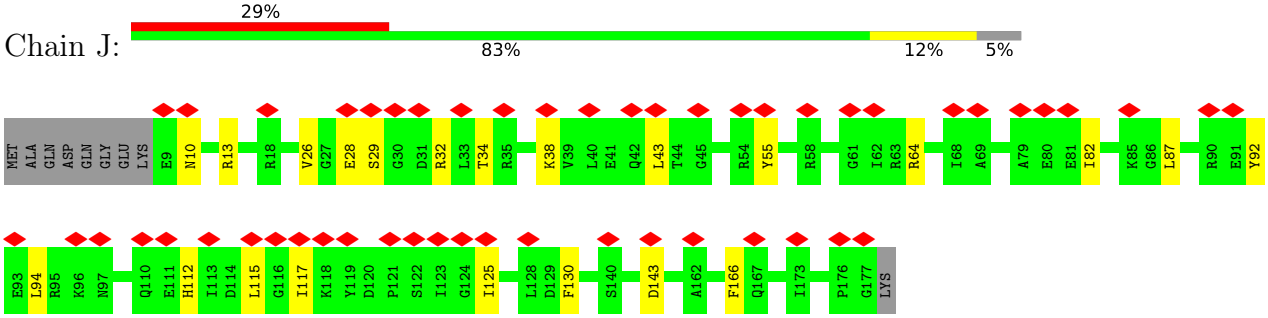
• Molecule 13: 60S ribosomal protein L10

Chain I:



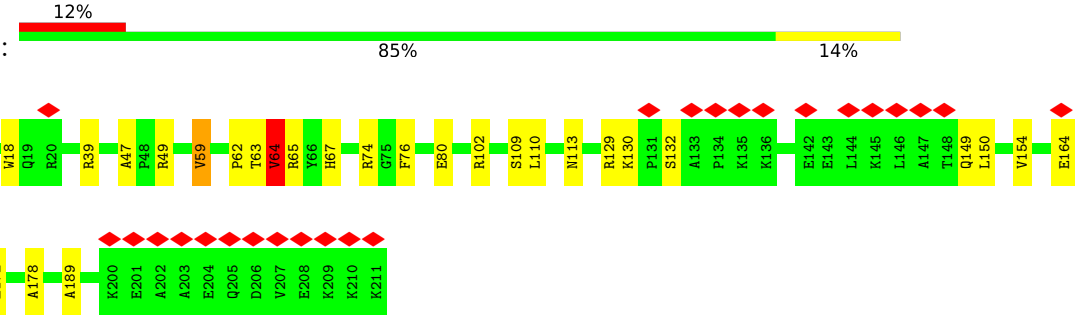
• Molecule 14: Ribosomal protein L11

Chain J:



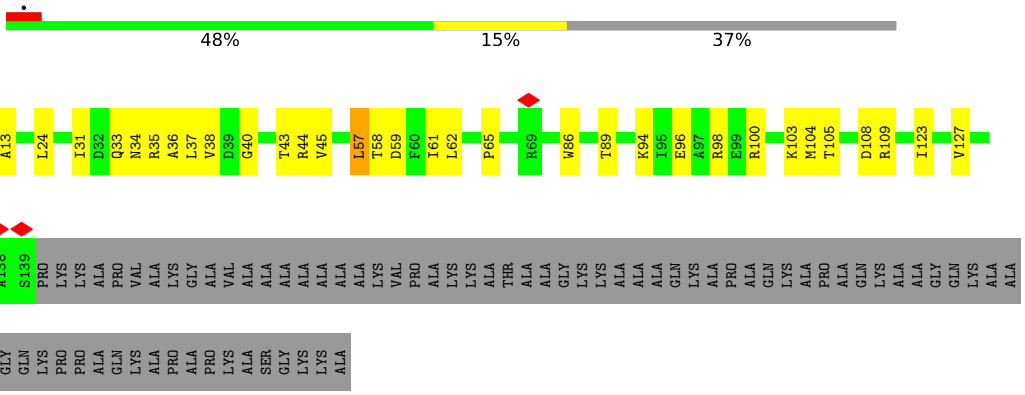
• Molecule 15: 60S ribosomal protein L13

Chain L:



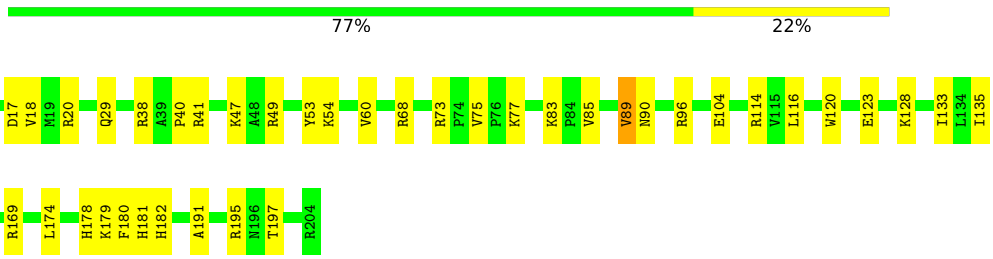
• Molecule 16: 60S ribosomal protein L14

Chain M:



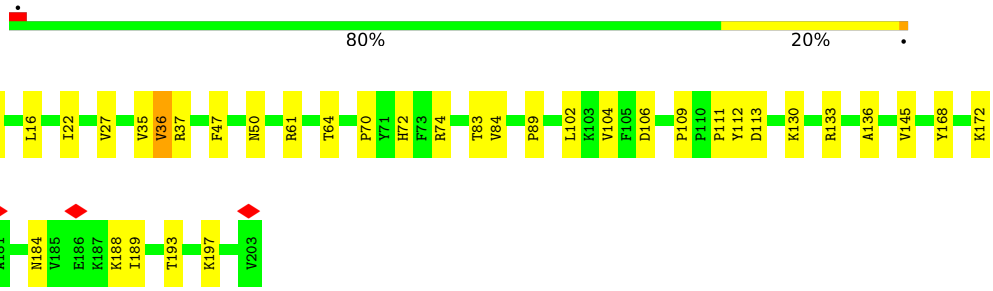
• Molecule 17: Ribosomal protein L15

Chain N:



• Molecule 18: 60S ribosomal protein L13a

Chain O:

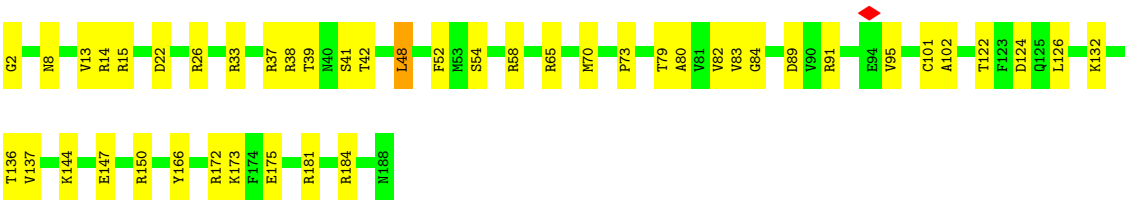


• Molecule 19: uL22

Chain P:

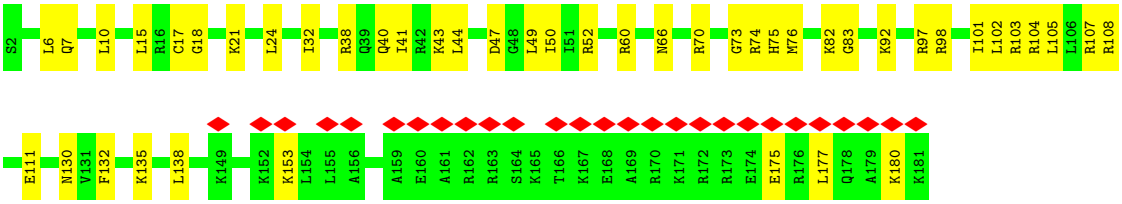
• Molecule 20: eL18

Chain Q:



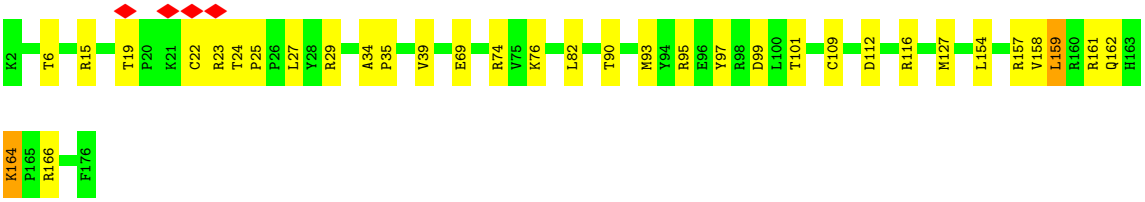
• Molecule 21: 60S RIBOSOMAL PROTEIN EL19

Chain R:



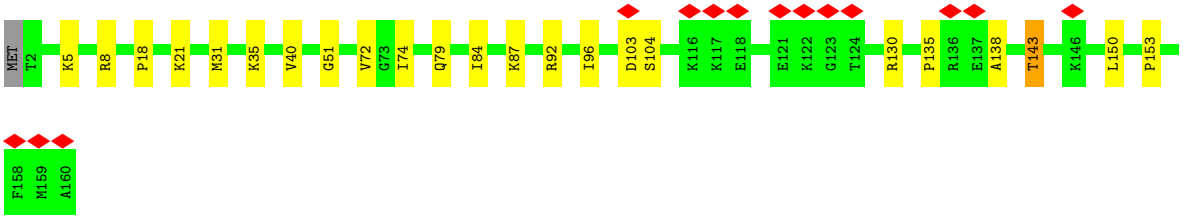
• Molecule 22: 60S ribosomal protein L18a

Chain S:



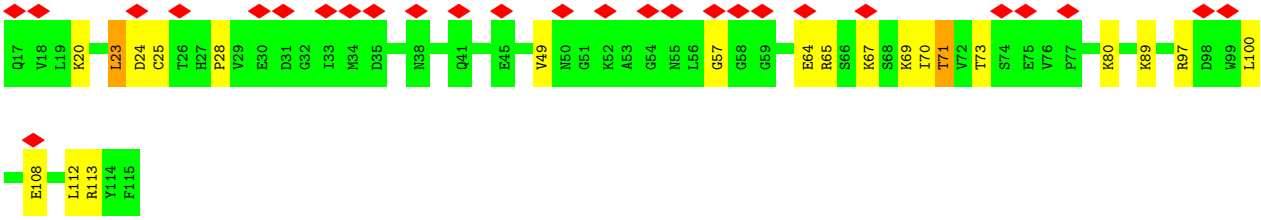
• Molecule 23: eL21

Chain T:



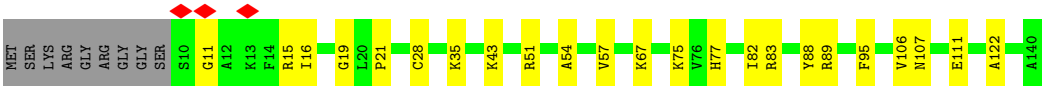
• Molecule 24: Ribosomal protein L22

Chain U:



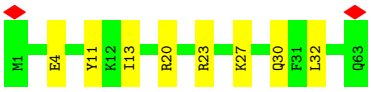
- Molecule 25: Ribosomal protein L23

Chain V:



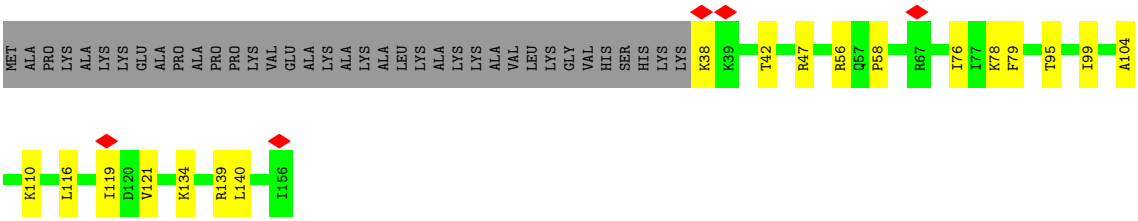
- Molecule 26: Ribosomal protein L24

Chain W:



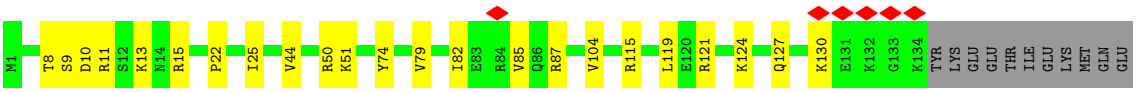
- Molecule 27: uL23

Chain X:



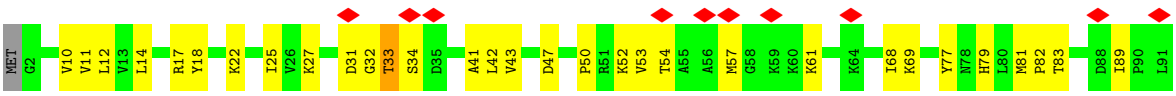
- Molecule 28: Ribosomal protein L26

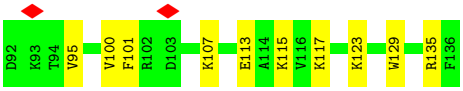
Chain Y:



- Molecule 29: 60S ribosomal protein L27

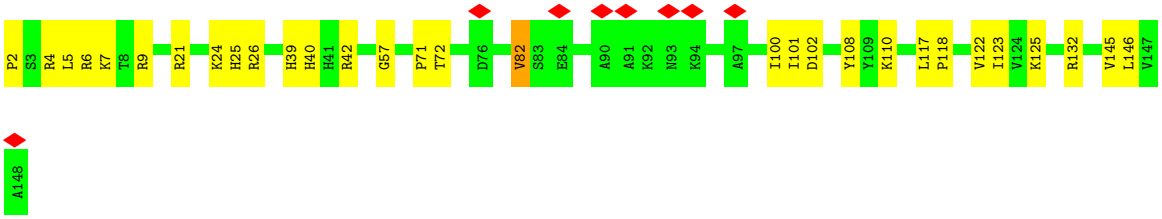
Chain Z:





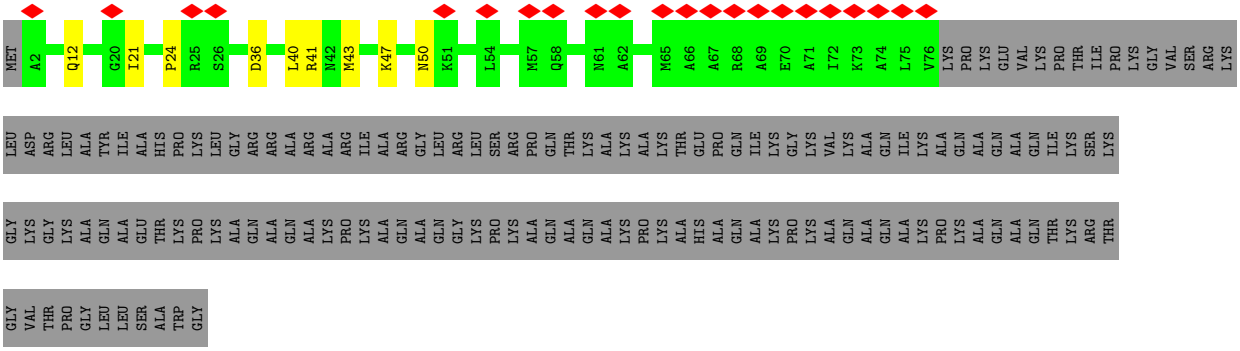
• Molecule 30: uL15

Chain a:



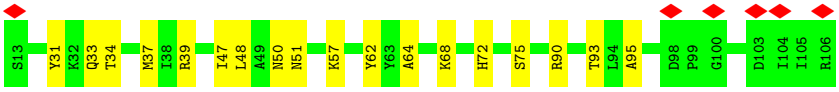
• Molecule 31: 60S ribosomal protein L29

Chain b:



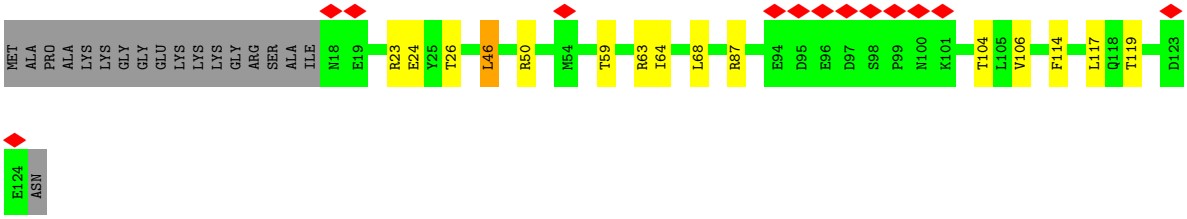
• Molecule 32: 60S ribosomal protein L30

Chain c:



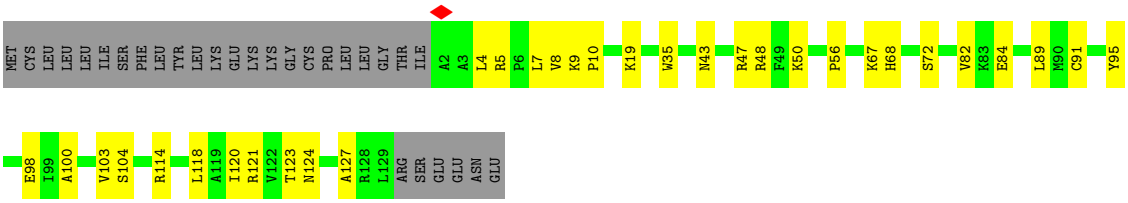
• Molecule 33: eL31

Chain d:



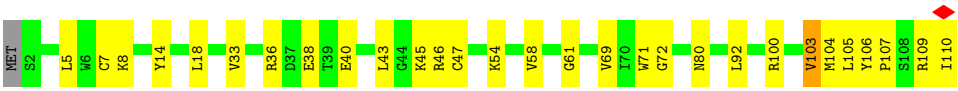
• Molecule 34: eL32

Chain e:



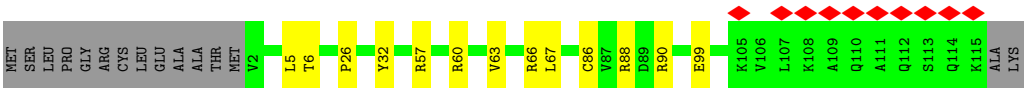
- Molecule 35: eL33

Chain f:



- Molecule 36: 60S ribosomal protein L34

Chain g:

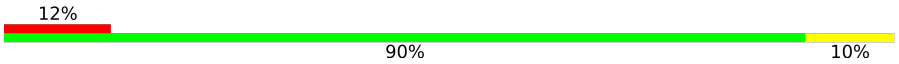


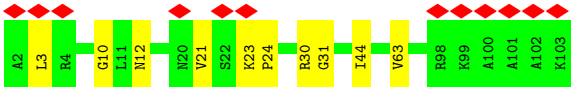
- Molecule 37: uL29

Chain h:

- Molecule 38: 60S ribosomal protein L36

Chain i:



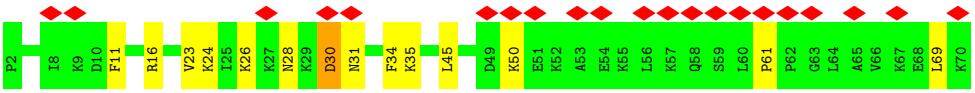


- Molecule 39: Ribosomal protein L37

Chain j:

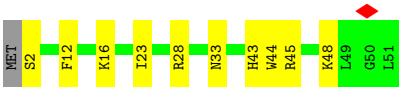
- Molecule 40: eL38

Chain k:



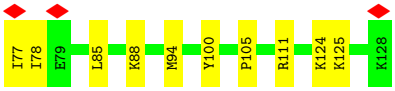
- Molecule 41: eL39

Chain l:



- Molecule 42: 60S RIBOSOMAL PROTEIN EL40

Chain m:



- Molecule 43: 60s ribosomal protein l41

Chain n:

- Molecule 44: eL42

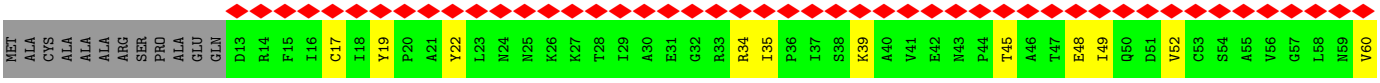
Chain o:

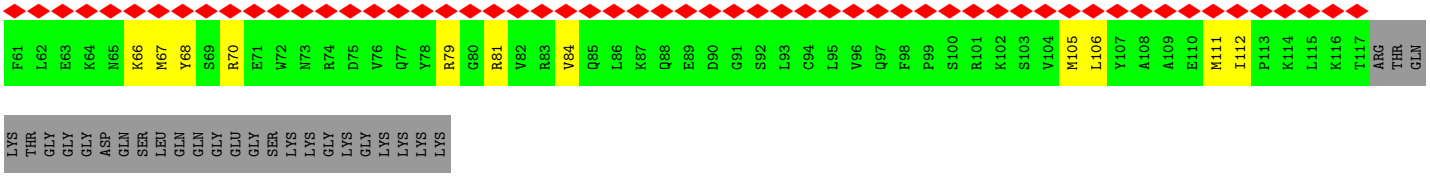
- Molecule 45: eL43

Chain p:

- Molecule 46: Signal recognition particle 19

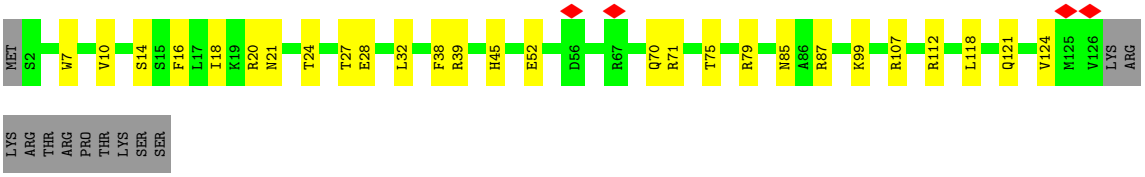
Chain q:





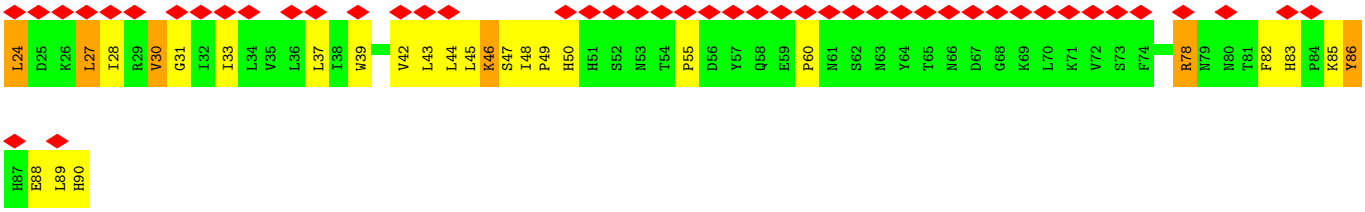
- Molecule 47: eL28

Chain r:



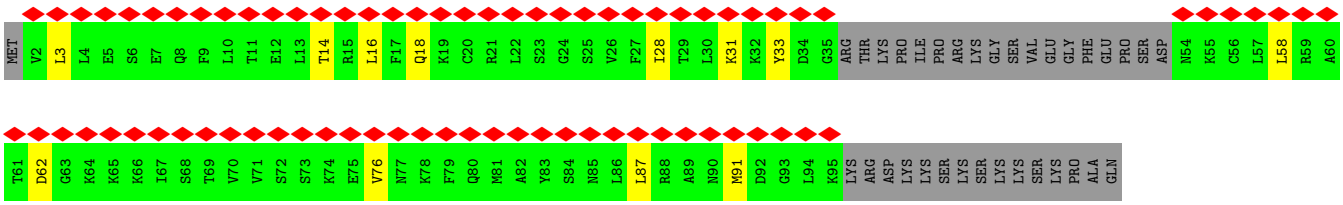
- Molecule 48: Dipeptidyl aminopeptidase B

Chain s:



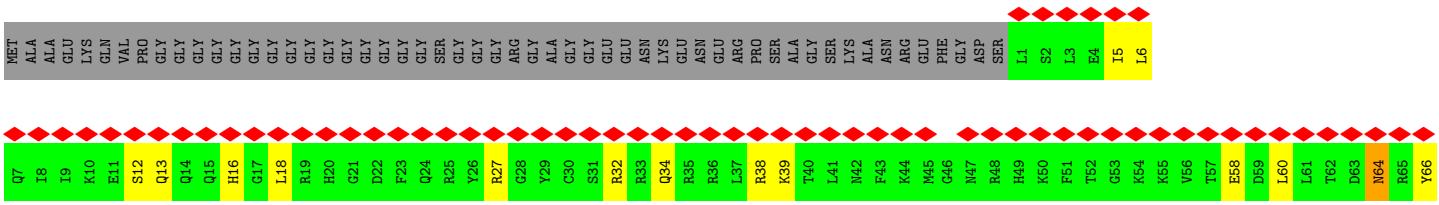
- Molecule 49: Signal recognition particle 14 kDa protein

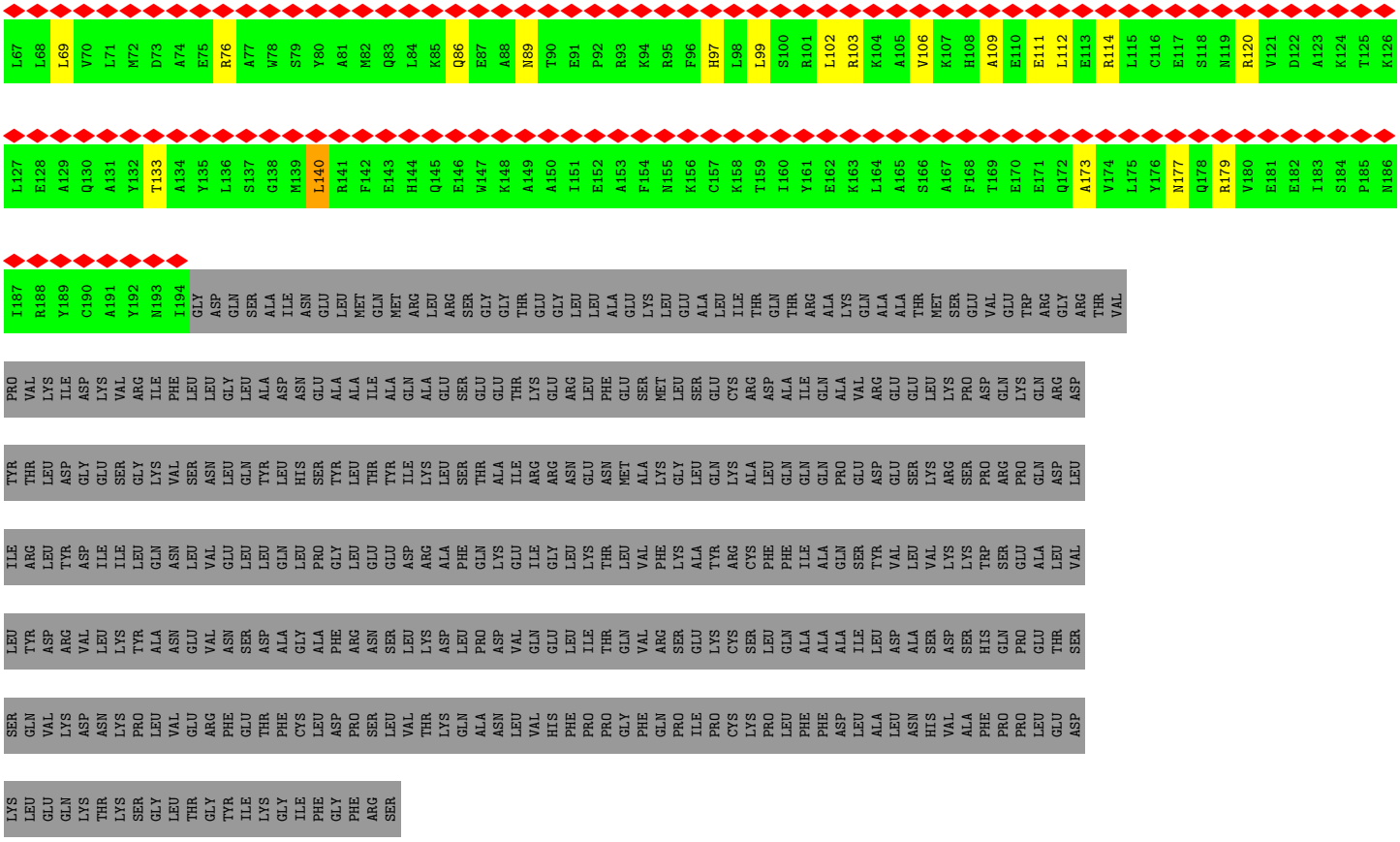
Chain t:



- Molecule 50: Signal recognition particle subunit SRP68

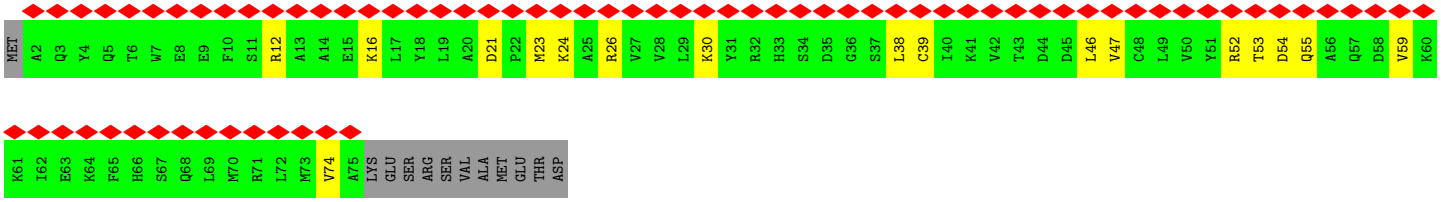
Chain u:





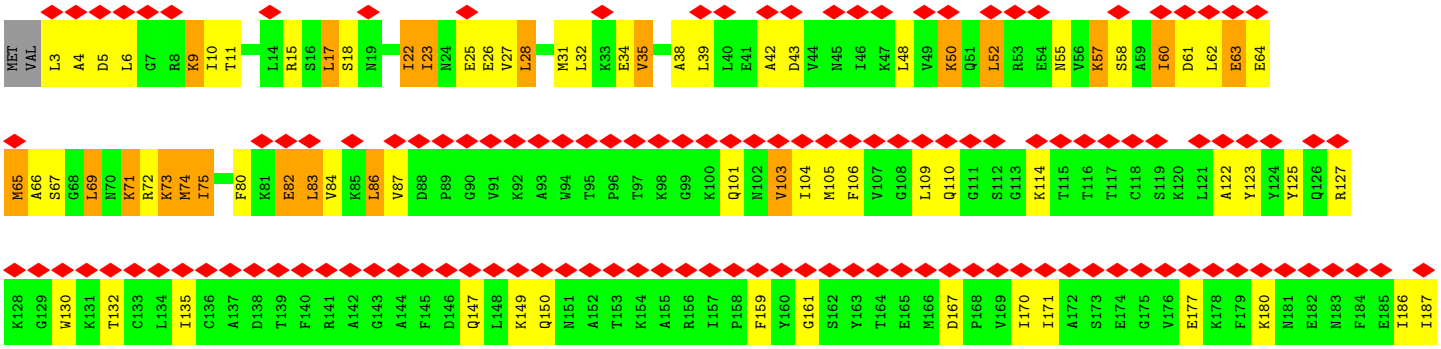
- Molecule 51: Signal recognition particle 9 kDa protein

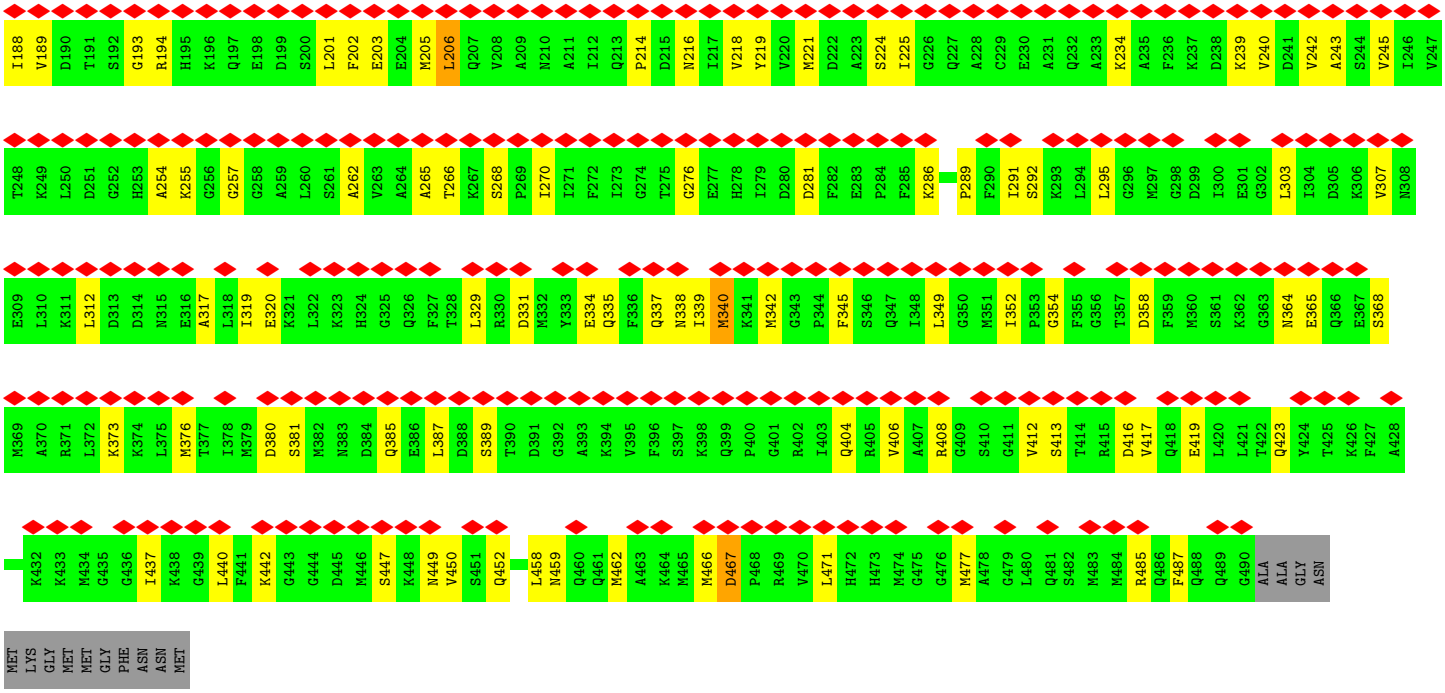
Chain w:



- Molecule 52: Signal recognition particle 54 kDa protein

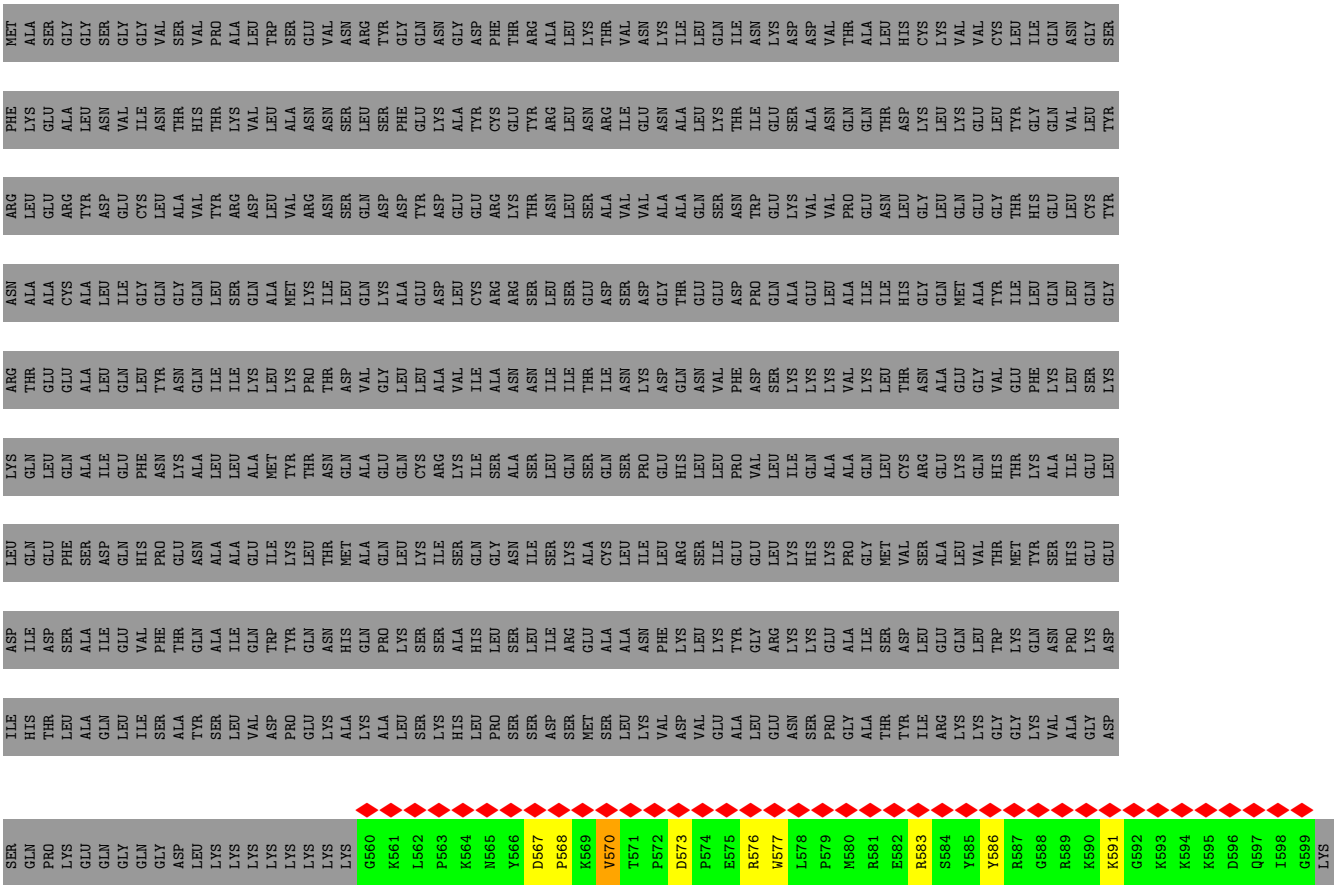
Chain x:





- Molecule 53: Signal recognition particle subunit SRP72

Chain z: 6% 5% 94%



GLY THR GLN GLY ALA THR ALA GLY ALA SER SER GLU LEU ASP ALA SER LYS THR VAL SER SER PRO PRO THR SER PRO ARG PRO GLY SER ALA ALA THR ALA SER ALA SER THR SER ASN ILE ILE PRO PRO ARG HIS GLN LYS PRO ALA GLY ALA PRO ALA THR LYS LYS LYS GLN GLN

GLN LYS LYS LYS LYS GLY GLY LYS GLY GLY TRP

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	43135	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.184	Depositor
Minimum map value	-0.080	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.0195	Depositor
Map size (Å)	479.36002, 479.36002, 479.36002	wwPDB
Map dimensions	448, 448, 448	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.07, 1.07, 1.07	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, MG, GDP

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\|>5$	RMSZ	$\#\|Z\|>5$
1	1	0.08	0/5971	0.23	0/9308
2	5	0.10	0/83726	0.25	1/130593 (0.0%)
3	7	0.08	0/2858	0.19	0/4455
4	8	0.09	0/3701	0.22	0/5766
5	A	0.10	0/1906	0.33	0/2556
6	B	0.09	0/3216	0.29	0/4311
7	C	0.10	0/2937	0.31	0/3946
8	D	0.10	0/2432	0.30	0/3257
9	E	0.13	0/1936	0.41	0/2600
10	F	0.11	0/1905	0.31	0/2539
11	G	0.12	0/1967	0.33	0/2647
12	H	0.09	0/1535	0.30	0/2063
13	I	0.10	0/1693	0.28	0/2260
14	J	0.10	0/1376	0.32	0/1841
15	L	0.11	0/1734	0.36	0/2317
16	M	0.11	0/1158	0.30	0/1547
17	N	0.11	0/1746	0.34	0/2338
18	O	0.11	0/1671	0.30	0/2234
19	P	0.10	0/1268	0.30	0/1700
20	Q	0.12	0/1530	0.33	0/2041
21	R	0.12	0/1524	0.35	0/2013
22	S	0.10	0/1493	0.31	0/2002
23	T	0.09	0/1326	0.29	0/1770
24	U	0.10	0/822	0.31	0/1103
25	V	0.09	0/993	0.29	0/1332
26	W	0.09	0/541	0.28	0/720
27	X	0.09	0/993	0.27	0/1334
28	Y	0.10	0/1132	0.28	0/1504
29	Z	0.11	0/1130	0.36	0/1507
30	a	0.10	0/1191	0.31	0/1590
31	b	0.10	0/619	0.28	0/818
32	c	0.09	0/742	0.24	0/996

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	d	0.11	0/903	0.31	0/1216
34	e	0.09	0/1071	0.28	0/1429
35	f	0.10	0/895	0.36	0/1198
36	g	0.10	0/916	0.32	0/1220
37	h	0.11	0/1021	0.31	0/1348
38	i	0.12	0/841	0.36	0/1112
39	j	0.11	0/720	0.35	0/952
40	k	0.11	0/575	0.31	0/761
41	l	0.13	0/454	0.33	0/599
42	m	0.11	0/435	0.35	0/575
43	n	0.14	0/223	0.37	0/284
44	o	0.10	0/864	0.34	0/1140
45	p	0.10	0/718	0.32	0/953
46	q	0.10	0/858	0.30	0/1156
47	r	0.13	0/1017	0.38	0/1364
48	s	0.29	0/514	0.72	2/702 (0.3%)
49	t	0.08	0/608	0.24	0/808
50	u	0.11	0/1654	0.29	0/2215
51	w	0.11	0/617	0.30	0/829
52	x	0.14	0/3825	0.36	0/5124
53	z	0.12	0/348	0.34	0/463
All	All	0.10	0/157849	0.28	3/232456 (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
6	B	0	1
22	S	0	1
35	f	0	1
All	All	0	3

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
48	s	60	PRO	N-CA-CB	7.13	110.36	103.51
2	5	5061	A	P-O3'-C3'	5.32	128.18	120.20
48	s	30	VAL	CB-CA-C	-5.13	105.22	112.14

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
6	B	17	LEU	Peptide
22	S	164	LYS	Peptide
35	f	106	TYR	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	1	5341	0	2701	86	0
2	5	74854	0	37828	1067	0
3	7	2558	0	1296	22	0
4	8	3314	0	1683	43	0
5	A	1868	0	1959	37	0
6	B	3148	0	3267	51	0
7	C	2883	0	3053	59	0
8	D	2386	0	2419	36	0
9	E	1898	0	2035	49	0
10	F	1870	0	1994	29	0
11	G	1934	0	2085	38	0
12	H	1516	0	1597	22	0
13	I	1655	0	1704	18	0
14	J	1353	0	1386	14	0
15	L	1703	0	1820	23	0
16	M	1137	0	1211	22	0
17	N	1701	0	1749	38	0
18	O	1638	0	1777	27	0
19	P	1242	0	1274	11	0
20	Q	1506	0	1623	35	0
21	R	1508	0	1664	37	0
22	S	1454	0	1496	26	0
23	T	1298	0	1366	20	0
24	U	808	0	831	12	0
25	V	979	0	1039	15	0
26	W	528	0	541	5	0
27	X	976	0	1053	11	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
28	Y	1115	0	1205	15	0
29	Z	1107	0	1182	25	0
30	a	1162	0	1209	22	0
31	b	609	0	650	7	0
32	c	732	0	769	11	0
33	d	888	0	930	8	0
34	e	1053	0	1147	21	0
35	f	876	0	912	19	0
36	g	906	0	998	10	0
37	h	1013	0	1147	23	0
38	i	830	0	916	8	0
39	j	705	0	737	11	0
40	k	569	0	637	8	0
41	l	444	0	483	8	0
42	m	429	0	465	8	0
43	n	222	0	264	0	0
44	o	851	0	920	9	0
45	p	708	0	756	9	0
46	q	844	0	861	16	0
47	r	1001	0	1060	16	0
48	s	502	0	492	65	0
49	t	604	0	642	8	0
50	u	1626	0	1645	21	0
51	w	607	0	617	13	0
52	x	3773	0	3855	189	0
53	z	339	0	353	8	0
54	5	97	0	0	0	0
55	g	1	0	0	0	0
55	j	1	0	0	0	0
55	m	1	0	0	0	0
55	o	1	0	0	0	0
55	p	1	0	0	0	0
56	x	28	0	12	1	0
All	All	146701	0	107315	2003	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 8.

All (2003) 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)
48:s:43:LEU:CD2	52:x:312:LEU:HD23	1.28	1.57
48:s:44:LEU:HD11	52:x:319:ILE:CG1	1.40	1.49
52:x:9:LYS:NZ	52:x:38:ALA:CB	1.83	1.39
52:x:9:LYS:HZ1	52:x:38:ALA:CA	1.37	1.37
52:x:9:LYS:HZ3	52:x:38:ALA:CB	1.34	1.34
52:x:9:LYS:NZ	52:x:38:ALA:CA	1.93	1.29
48:s:43:LEU:HD21	52:x:312:LEU:CD2	1.64	1.25
52:x:32:LEU:CD1	52:x:57:LYS:HE3	1.67	1.25
48:s:44:LEU:CD1	52:x:319:ILE:HD11	1.68	1.25
48:s:44:LEU:HD11	52:x:319:ILE:CD1	1.69	1.23
52:x:9:LYS:NZ	52:x:38:ALA:HA	1.50	1.21
48:s:43:LEU:CD2	52:x:312:LEU:CD2	2.18	1.18
48:s:44:LEU:HD12	52:x:319:ILE:HD11	1.29	1.14
2:5:1444:G:N2	2:5:2100:A:H62	1.48	1.11
52:x:66:ALA:O	52:x:69:LEU:HD12	1.50	1.11
52:x:66:ALA:HB3	52:x:69:LEU:HD11	1.26	1.10
52:x:60:ILE:HD11	52:x:74:MET:O	1.52	1.09
2:5:1444:G:H21	2:5:2100:A:N6	1.53	1.07
48:s:44:LEU:HD11	52:x:319:ILE:HG12	1.25	1.05
52:x:23:ILE:CG2	52:x:72:ARG:HH12	1.68	1.05
48:s:44:LEU:CD1	52:x:319:ILE:CG1	2.34	1.05
52:x:23:ILE:HG21	52:x:72:ARG:HH12	1.22	1.05
52:x:9:LYS:NZ	52:x:38:ALA:HB1	1.56	1.03
48:s:44:LEU:CD1	52:x:319:ILE:CD1	2.33	1.03
52:x:9:LYS:HZ1	52:x:38:ALA:HA	0.86	1.01
2:5:184:U:H3	2:5:253:G:H1	1.08	1.01
52:x:32:LEU:HD11	52:x:57:LYS:HE3	1.43	1.00
2:5:2845:A:H61	2:5:3843:C:H42	1.09	1.00
52:x:32:LEU:HD12	52:x:57:LYS:CE	1.94	0.98
52:x:32:LEU:HD12	52:x:57:LYS:HE3	1.44	0.95
52:x:9:LYS:HZ3	52:x:38:ALA:HB1	0.76	0.93
48:s:44:LEU:HD11	52:x:319:ILE:HG13	1.51	0.93
48:s:37:LEU:HD22	52:x:462:MET:HE2	1.53	0.91
2:5:3904:G:N2	48:s:85:LYS:HG3	1.86	0.90
1:1:59:A:H62	1:1:288:G:H21	1.21	0.89
52:x:66:ALA:O	52:x:69:LEU:CD1	2.19	0.89
52:x:23:ILE:HG21	52:x:72:ARG:NH1	1.87	0.87
52:x:50:LYS:HA	52:x:50:LYS:HE2	1.57	0.87
2:5:1639:U:H3	2:5:1643:A:HO2'	1.20	0.87
48:s:83:HIS:HB3	48:s:85:LYS:HZ2	1.41	0.86
52:x:60:ILE:CD1	52:x:74:MET:HG3	2.06	0.85
48:s:44:LEU:O	52:x:442:LYS:HG3	1.76	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:x:17:LEU:O	52:x:17:LEU:HD22	1.77	0.84
2:5:2845:A:H61	2:5:3843:C:N4	1.78	0.82
52:x:66:ALA:CB	52:x:69:LEU:HD11	2.09	0.81
48:s:43:LEU:HD22	52:x:312:LEU:HD23	1.60	0.80
45:p:42:CYS:HB3	45:p:60:CYS:SG	2.22	0.80
2:5:3723:A:H2'	2:5:3724:A:C8	2.17	0.79
52:x:32:LEU:CD1	52:x:57:LYS:CE	2.49	0.79
48:s:24:LEU:HD12	52:x:364:ASN:HB2	1.63	0.79
48:s:27:LEU:HD22	48:s:27:LEU:H	1.46	0.79
2:5:1726:U:H3	2:5:1836:G:H1	1.32	0.77
52:x:6:LEU:HA	52:x:9:LYS:HD3	1.66	0.77
2:5:2845:A:N6	2:5:3843:C:H42	1.82	0.77
2:5:301:G:N2	2:5:4176:C:O2'	2.17	0.76
26:W:11:TYR:HB2	26:W:32:LEU:HD11	1.66	0.76
52:x:17:LEU:HB2	52:x:31:MET:HG3	1.67	0.76
2:5:1444:G:H21	2:5:2100:A:H62	0.79	0.76
2:5:969:C:O2'	2:5:970:G:N3	2.18	0.76
48:s:83:HIS:HB3	48:s:85:LYS:NZ	2.01	0.76
52:x:48:LEU:HD21	52:x:86:LEU:CD1	2.15	0.76
3:7:28:C:H1'	3:7:54:A:H61	1.51	0.75
2:5:4945:G:H21	35:f:71:TRP:HE1	1.32	0.75
48:s:24:LEU:CD1	52:x:364:ASN:HB2	2.17	0.75
2:5:81:C:H1'	2:5:1359:G:H21	1.50	0.75
2:5:658:C:H2'	2:5:659:G:H8	1.51	0.75
1:1:4:G:H1	1:1:23:U:H3	1.34	0.74
27:X:116:LEU:O	52:x:67:SER:O	2.06	0.74
52:x:72:ARG:HG2	52:x:72:ARG:HH11	1.51	0.74
2:5:2615:C:H5"	21:R:60:ARG:HH12	1.52	0.74
2:5:2416:G:N2	2:5:2427:G:O6	2.19	0.73
52:x:60:ILE:HD11	52:x:74:MET:HG3	1.70	0.73
51:w:38:LEU:H	51:w:54:ASP:HB3	1.52	0.73
52:x:206:LEU:HB3	52:x:239:LYS:HE3	1.71	0.73
2:5:1185:G:N2	8:D:278:ASP:OD2	2.22	0.73
2:5:1371:A:N6	4:8:28:C:O2'	2.22	0.73
2:5:1174:G:H22	2:5:1187:G:H21	1.37	0.73
10:F:90:LYS:HG2	23:T:135:PRO:HG2	1.71	0.72
11:G:86:VAL:HG13	11:G:183:ILE:HG22	1.72	0.72
9:E:158:VAL:HG11	9:E:171:VAL:HG13	1.71	0.72
2:5:64:A:H1'	2:5:76:A:H1'	1.72	0.72
12:H:44:GLU:HB3	12:H:58:ASP:HB2	1.70	0.72
48:s:24:LEU:HD23	48:s:24:LEU:C	2.14	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:s:27:LEU:HD22	48:s:27:LEU:N	2.05	0.71
2:5:959:G:O2'	9:E:119:ARG:O	2.07	0.71
22:S:34:ALA:HB1	22:S:39:VAL:HG23	1.72	0.71
52:x:9:LYS:NZ	52:x:38:ALA:HB2	2.01	0.71
2:5:979:C:H5"	9:E:39:HIS:HB3	1.72	0.71
4:8:96:C:H5"	37:h:66:LYS:HD2	1.72	0.71
2:5:2489:C:O2'	2:5:2491:C:N4	2.23	0.71
2:5:2589:C:O2'	2:5:2766:A:O2'	2.08	0.71
2:5:4765:G:H22	2:5:4869:U:H3	1.39	0.71
4:8:75:G:OP2	28:Y:74:TYR:OH	2.08	0.71
22:S:19:THR:HG23	22:S:22:CYS:H	1.54	0.71
2:5:3641:U:OP2	2:5:3646:A:N6	2.23	0.71
2:5:3945:A:H2'	2:5:3946:G:H8	1.54	0.71
48:s:46:LYS:HE3	52:x:450:VAL:HG22	1.72	0.71
6:B:43:LEU:HB2	6:B:210:VAL:HG11	1.73	0.70
48:s:47:SER:OG	52:x:449:ASN:HA	1.90	0.70
2:5:308:G:OP2	2:5:308:G:N2	2.20	0.70
50:u:102:LEU:HD13	50:u:140:LEU:HG	1.74	0.70
52:x:66:ALA:HB3	52:x:69:LEU:CD1	2.14	0.70
48:s:43:LEU:HD21	52:x:312:LEU:HD23	0.71	0.70
40:k:24:LYS:HD2	40:k:69:LEU:HD21	1.73	0.70
2:5:933:G:H2'	2:5:940:C:H41	1.57	0.70
2:5:67:C:OP2	2:5:312:G:N2	2.25	0.69
2:5:2905:C:H2'	2:5:2906:G:H8	1.58	0.69
2:5:1740:C:O2	2:5:1786:A:N6	2.25	0.69
2:5:2520:C:O2	2:5:2640:G:N2	2.25	0.69
2:5:3809:G:N2	2:5:3809:G:OP2	2.23	0.69
5:A:90:CYS:HB3	5:A:101:VAL:HG13	1.74	0.69
2:5:1850:A:OP2	15:L:5:ARG:NH2	2.25	0.69
2:5:4767:C:OP1	18:O:168:TYR:OH	2.10	0.69
6:B:14:LEU:HD23	6:B:17:LEU:HD21	1.74	0.69
8:D:223:PHE:HB3	8:D:226:TYR:HB2	1.75	0.69
40:k:30:ASP:H	40:k:50:LYS:HZ1	1.41	0.69
52:x:5:ASP:O	52:x:9:LYS:HG3	1.93	0.69
1:1:151:C:H2'	1:1:152:G:H8	1.58	0.68
2:5:1332:C:H2'	2:5:1333:A:H8	1.57	0.68
2:5:1753:G:H2'	2:5:1755:C:H5"	1.75	0.68
2:5:4541:G:N2	2:5:4544:A:OP2	2.24	0.68
2:5:959:G:H21	9:E:121:LEU:H	1.39	0.68
2:5:2624:G:O6	2:5:2632:U:O2	2.12	0.68
48:s:24:LEU:HA	48:s:27:LEU:HD23	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:4620:U:OP2	2:5:4670:C:N4	2.25	0.68
2:5:1204:C:H2'	2:5:1205:G:H8	1.59	0.68
32:c:34:THR:HG23	32:c:95:ALA:HB2	1.76	0.68
6:B:317:LEU:HB2	6:B:372:SER:HB3	1.74	0.68
2:5:4967:A:H2'	2:5:4968:A:H8	1.59	0.68
2:5:245:C:O2'	2:5:246:G:OP2	2.11	0.68
6:B:95:THR:HG22	6:B:97:ARG:H	1.59	0.67
52:x:17:LEU:HD21	52:x:23:ILE:HD12	1.75	0.67
2:5:2255:C:O2	2:5:2258:C:N4	2.26	0.67
48:s:83:HIS:CB	48:s:85:LYS:NZ	2.56	0.67
2:5:2400:G:H21	36:g:6:THR:HG22	1.60	0.67
9:E:115:GLU:HG3	34:e:7:LEU:HD22	1.76	0.67
2:5:2611:A:H5'	2:5:2688:G:H4'	1.77	0.67
2:5:3653:A:C2	2:5:3692:A:H4'	2.29	0.67
8:D:83:LEU:HB3	8:D:88:VAL:HB	1.77	0.67
16:M:13:ALA:HA	16:M:57:LEU:HA	1.76	0.67
2:5:704:C:H2'	2:5:705:G:H8	1.58	0.67
2:5:751:G:N2	2:5:752:G:O6	2.27	0.67
2:5:4699:U:OP2	42:m:111:ARG:NH2	2.28	0.67
2:5:5047:C:O2'	2:5:5050:C:OP2	2.13	0.67
52:x:4:ALA:HB1	52:x:358:ASP:HB3	1.77	0.66
52:x:9:LYS:HZ1	52:x:38:ALA:CB	1.70	0.66
1:1:24:G:OP1	51:w:26:ARG:NH1	2.29	0.66
2:5:1326:A:OP2	2:5:4445:U:O2'	2.14	0.66
2:5:1426:G:H22	2:5:1458:C:H5"	1.61	0.66
18:O:130:LYS:HB2	18:O:133:ARG:HG2	1.78	0.66
37:h:23:ASP:HB3	52:x:22:ILE:HD11	1.78	0.66
46:q:66:LYS:HZ3	46:q:81:ARG:HE	1.42	0.66
2:5:2089:G:N3	7:C:307:LYS:NZ	2.42	0.66
2:5:4520:G:N2	6:B:253:CYS:SG	2.68	0.66
8:D:65:ALA:HB2	8:D:74:ILE:HD13	1.78	0.66
2:5:1468:C:OP1	30:a:132:ARG:NH2	2.29	0.66
2:5:1823:G:H5"	23:T:35:LYS:HE2	1.77	0.66
8:D:120:GLU:O	8:D:248:ARG:NH2	2.28	0.66
2:5:961:G:H1	2:5:969:C:H5'	1.61	0.66
5:A:117:GLU:HB2	5:A:162:ASN:HB2	1.76	0.66
7:C:230:LEU:HD21	7:C:239:LYS:HD2	1.77	0.66
1:1:59:A:H62	1:1:288:G:N2	1.92	0.66
2:5:2905:C:H2'	2:5:2906:G:C8	2.30	0.66
2:5:4546:A:N7	5:A:215:ASN:ND2	2.44	0.66
16:M:40:GLY:HA3	16:M:45:VAL:HB	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:x:219:TYR:HB3	52:x:245:VAL:HG12	1.78	0.66
2:5:4594:U:H2'	2:5:4595:G:H8	1.61	0.65
23:T:79:GLN:HG2	23:T:84:ILE:HG12	1.77	0.65
2:5:2579:G:N2	2:5:2582:A:OP2	2.25	0.65
2:5:4272:G:OP2	2:5:4272:G:N2	2.20	0.65
48:s:27:LEU:H	48:s:27:LEU:CD2	2.09	0.65
2:5:1358:G:N2	2:5:1359:G:O6	2.29	0.65
2:5:2093:A:O5'	2:5:2095:A:N6	2.29	0.65
2:5:2889:G:OP1	21:R:75:HIS:ND1	2.29	0.65
2:5:3729:U:H2'	2:5:3730:U:C6	2.32	0.65
4:8:38:U:H5'	37:h:81:LEU:HD13	1.78	0.65
8:D:75:VAL:O	8:D:112:ARG:NH1	2.30	0.65
2:5:4944:C:O2	2:5:4945:G:N2	2.30	0.65
2:5:963:G:H22	2:5:967:C:H41	1.41	0.65
2:5:3868:G:H22	2:5:3900:G:H1'	1.60	0.65
35:f:36:ARG:HB2	35:f:80:ASN:HA	1.78	0.65
2:5:734:G:N2	2:5:930:G:O2'	2.30	0.64
2:5:4872:G:OP2	16:M:98:ARG:NH1	2.30	0.64
2:5:286:U:H2'	2:5:287:U:C6	2.32	0.64
1:1:121:U:OP2	50:u:32:ARG:NH1	2.26	0.64
2:5:696:C:H5"	2:5:697:G:H5'	1.77	0.64
4:8:76:C:H2'	4:8:77:A:C8	2.32	0.64
2:5:3659:G:H4'	5:A:227:ARG:HH22	1.63	0.64
29:Z:12:LEU:HB2	29:Z:81:MET:HB3	1.79	0.64
2:5:1233:G:H2'	2:5:1234:G:C8	2.32	0.64
2:5:1241:C:H3'	2:5:1242:G:H5"	1.79	0.64
10:F:184:TYR:HB3	10:F:202:ARG:HG2	1.80	0.64
30:a:39:HIS:O	30:a:40:HIS:ND1	2.30	0.64
48:s:43:LEU:HD22	52:x:312:LEU:CD2	2.20	0.64
1:1:10:G:H2'	1:1:11:G:H8	1.63	0.64
1:1:183:A:N6	1:1:186:C:O2'	2.31	0.64
2:5:152:U:H5"	17:N:54:LYS:HG3	1.80	0.64
2:5:3717:A:OP2	2:5:3735:G:N2	2.30	0.64
2:5:91:G:H5'	2:5:92:C:H5"	1.78	0.64
4:8:47:C:H1'	4:8:61:A:H2'	1.79	0.64
9:E:97:ASN:O	9:E:101:ARG:NH2	2.30	0.64
2:5:4966:A:H2'	2:5:4967:A:C8	2.33	0.63
11:G:96:LEU:HD11	11:G:189:ARG:HD3	1.80	0.63
4:8:155:C:OP1	11:G:89:ARG:NE	2.29	0.63
2:5:701:G:O2'	34:e:7:LEU:O	2.17	0.63
2:5:2589:C:HO2'	2:5:2766:A:HO2'	1.36	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:H:106:GLN:HB3	12:H:111:LEU:HB3	1.80	0.63
1:1:187:G:H2'	1:1:188:G:C8	2.32	0.63
2:5:4369:A:H5"	44:o:65:LYS:HD2	1.79	0.63
52:x:60:ILE:CD1	52:x:74:MET:O	2.37	0.63
13:I:87:ILE:HG12	13:I:138:ILE:HG12	1.80	0.63
2:5:1699:A:N6	2:5:2094:G:N3	2.42	0.63
2:5:4944:C:OP1	9:E:150:THR:OG1	2.17	0.63
11:G:58:PRO:HD2	11:G:61:ILE:HD12	1.81	0.63
11:G:127:ASP:HB3	11:G:129:PRO:HD3	1.81	0.63
34:e:9:LYS:NZ	34:e:72:SER:O	2.32	0.63
2:5:63:G:OP1	17:N:169:ARG:NH1	2.32	0.62
2:5:703:G:N2	2:5:705:G:OP2	2.32	0.62
2:5:976:G:OP2	2:5:1237:C:N4	2.32	0.62
13:I:49:CYS:SG	13:I:168:SER:OG	2.50	0.62
18:O:180:GLN:NE2	18:O:184:ASN:OD1	2.32	0.62
20:Q:70:MET:HE1	20:Q:137:VAL:HB	1.80	0.62
1:1:198:G:N2	1:1:201:A:OP2	2.32	0.62
15:L:49:ARG:O	15:L:149:GLN:NE2	2.32	0.62
2:5:1240:G:OP2	2:5:1271:G:O2'	2.17	0.62
2:5:1573:G:OP1	21:R:92:LYS:NZ	2.32	0.62
49:t:76:VAL:HG21	51:w:74:VAL:HG11	1.81	0.62
48:s:44:LEU:CD1	52:x:319:ILE:HG12	2.15	0.62
2:5:1460:C:H5"	20:Q:144:LYS:HG2	1.82	0.62
2:5:4670:C:O2'	2:5:4672:A:OP2	2.17	0.62
17:N:77:LYS:HD3	17:N:77:LYS:H	1.65	0.62
30:a:24:LYS:HD2	30:a:26:ARG:HH21	1.64	0.62
2:5:2492:C:H2'	2:5:2493:G:H8	1.64	0.62
29:Z:22:LYS:NZ	29:Z:129:TRP:O	2.33	0.62
2:5:1359:G:H5'	7:C:114:ARG:HH12	1.63	0.62
2:5:2759:G:O2'	2:5:2762:G:N2	2.31	0.62
4:8:83:C:O2	28:Y:50:ARG:NH2	2.32	0.62
2:5:2:G:OP2	27:X:38:LYS:N	2.32	0.62
2:5:486:C:N4	2:5:487:G:O6	2.33	0.62
2:5:964:A:N6	2:5:966:A:N7	2.48	0.62
2:5:2083:C:H5"	2:5:2084:C:H5"	1.82	0.62
17:N:114:ARG:NH1	17:N:151:ILE:O	2.33	0.62
27:X:110:LYS:NZ	27:X:121:VAL:O	2.32	0.62
37:h:23:ASP:CB	52:x:22:ILE:HD11	2.29	0.62
2:5:2647:A:H62	2:5:2686:G:H8	1.48	0.61
2:5:3680:U:OP1	5:A:54:ARG:NH2	2.32	0.61
10:F:88:GLU:HB2	23:T:135:PRO:HB3	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:H:26:ILE:HG22	12:H:35:ARG:HG3	1.80	0.61
2:5:2631:U:H5"	2:5:2632:U:H5'	1.83	0.61
2:5:4769:G:N2	2:5:4866:C:N3	2.47	0.61
20:Q:172:ARG:HD2	30:a:57:GLY:HA3	1.81	0.61
52:x:334:GLU:O	52:x:338:ASN:ND2	2.33	0.61
2:5:1238:A:H4'	2:5:1239:C:OP1	1.99	0.61
2:5:4635:A:H2	2:5:4663:G:H21	1.47	0.61
50:u:12:SER:O	50:u:16:HIS:ND1	2.32	0.61
52:x:419:GLU:OE2	52:x:423:GLN:NE2	2.34	0.61
2:5:404:U:O3'	28:Y:87:ARG:NH1	2.33	0.61
2:5:1916:G:N3	2:5:2067:C:O2'	2.33	0.61
2:5:2256:C:H4'	2:5:2257:C:O5'	1.99	0.61
2:5:2568:C:H2'	2:5:2569:G:H8	1.65	0.61
2:5:4473:A:H2'	2:5:4474:A:C8	2.35	0.61
48:s:33:ILE:HD13	52:x:466:MET:HA	1.83	0.61
48:s:39:TRP:HE1	52:x:342:MET:CE	2.14	0.61
2:5:1068:G:H2'	2:5:1069:G:H8	1.65	0.61
6:B:224:LYS:HG2	6:B:340:THR:HB	1.83	0.61
2:5:4256:A:HO2'	14:J:55:TYR:HH	1.47	0.61
19:P:36:ILE:HD11	19:P:44:ALA:HB1	1.83	0.61
52:x:234:LYS:HD3	52:x:265:ALA:HB1	1.83	0.61
2:5:2459:G:N2	2:5:2462:C:OP2	2.33	0.61
52:x:80:PHE:HD2	52:x:295:LEU:HD22	1.65	0.61
2:5:1295:C:O2	2:5:1296:G:N2	2.34	0.60
2:5:2835:A:O2'	6:B:228:TYR:O	2.18	0.60
2:5:3659:G:OP1	5:A:241:ARG:NH1	2.33	0.60
7:C:149:GLU:HG2	7:C:151:PRO:HD2	1.83	0.60
2:5:4910:G:N2	18:O:106:ASP:O	2.34	0.60
50:u:86:GLN:O	50:u:89:ASN:ND2	2.34	0.60
2:5:2318:G:N2	2:5:2321:G:OP2	2.22	0.60
2:5:2575:U:O2	2:5:2758:G:N2	2.35	0.60
2:5:3909:C:O2	2:5:4396:A:N1	2.35	0.60
2:5:4991:U:H2'	2:5:4992:G:H8	1.66	0.60
2:5:710:G:H2'	2:5:711:A:C8	2.36	0.60
2:5:1484:G:O2'	2:5:1486:C:OP2	2.20	0.60
2:5:4126:C:OP1	11:G:37:LYS:NZ	2.34	0.60
2:5:4527:G:OP2	2:5:4527:G:N2	2.26	0.60
52:x:60:ILE:HG22	52:x:60:ILE:O	2.00	0.60
2:5:33:A:H3'	2:5:47:A:H61	1.65	0.60
2:5:712:C:H42	2:5:956:A:H61	1.50	0.60
2:5:1613:A:H5"	5:A:183:GLY:HA2	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:4474:A:H5'	42:m:125:LYS:HB2	1.84	0.60
16:M:35:ARG:NH2	22:S:99:ASP:OD1	2.35	0.60
2:5:2706:G:H22	21:R:43:LYS:HE3	1.67	0.60
7:C:305:PRO:HB3	20:Q:38:ARG:HH22	1.66	0.60
32:c:48:LEU:HD13	32:c:57:LYS:HG3	1.84	0.60
2:5:930:G:H4'	2:5:931:C:O5'	2.02	0.60
25:V:16:ILE:HB	25:V:88:TYR:HB2	1.84	0.60
2:5:1516:G:O2'	15:L:18:TRP:NE1	2.32	0.60
2:5:2411:C:O2'	2:5:2526:C:O2	2.18	0.60
2:5:5058:A:H5'	33:d:23:ARG:HH12	1.66	0.60
9:E:137:ARG:NH2	35:f:110:ILE:OXT	2.29	0.60
35:f:40:GLU:O	35:f:109:ARG:NH2	2.34	0.60
2:5:115:C:O2'	2:5:276:C:OP1	2.18	0.60
2:5:704:C:H2'	2:5:705:G:C8	2.37	0.60
52:x:72:ARG:HH11	52:x:72:ARG:CG	2.14	0.60
2:5:1380:G:O2'	2:5:1381:U:O5'	2.20	0.59
16:M:123:ILE:HD11	18:O:189:ILE:HD13	1.84	0.59
34:e:8:VAL:HG12	34:e:10:PRO:HD3	1.84	0.59
2:5:2519:U:O2'	2:5:2530:U:O2	2.21	0.59
5:A:82:ILE:HD11	5:A:99:GLY:HA3	1.84	0.59
49:t:14:THR:O	49:t:18:GLN:NE2	2.35	0.59
52:x:177:GLU:HA	52:x:180:LYS:HE3	1.83	0.59
1:1:130:A:H2'	1:1:131:A:H8	1.66	0.59
2:5:1408:G:O2'	2:5:1411:C:N4	2.35	0.59
2:5:1655:C:OP2	30:a:26:ARG:NH1	2.36	0.59
2:5:4730:C:O2	2:5:4731:G:N2	2.36	0.59
8:D:177:THR:HA	8:D:180:PHE:HD2	1.67	0.59
50:u:13:GLN:HB2	50:u:18:LEU:HD23	1.84	0.59
52:x:50:LYS:HE2	52:x:50:LYS:CA	2.21	0.59
2:5:215:C:H2'	2:5:220:C:H5'	1.84	0.59
2:5:1517:G:H22	7:C:103:ALA:HA	1.67	0.59
9:E:137:ARG:NH1	9:E:187:GLN:O	2.35	0.59
2:5:4376:A:O2'	30:a:42:ARG:NH1	2.35	0.59
6:B:10:ARG:HH22	6:B:265:SER:HB2	1.67	0.59
34:e:98:GLU:OE1	34:e:123:THR:OG1	2.16	0.59
2:5:702:U:H2'	2:5:703:G:H4'	1.85	0.59
2:5:1914:C:H4'	18:O:89:PRO:HD3	1.83	0.59
4:8:102:G:OP2	4:8:104:A:O2'	2.21	0.59
8:D:85:LYS:NZ	8:D:254:GLU:OE2	2.35	0.59
2:5:963:G:OP2	47:r:107:ARG:NH2	2.35	0.59
2:5:327:U:O2'	38:i:30:ARG:NH1	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:2467:U:H4'	2:5:2468:U:H5'	1.84	0.59
48:s:31:GLY:HA3	52:x:345:PHE:HZ	1.67	0.59
2:5:1802:A:H5"	2:5:1803:G:H5'	1.83	0.59
9:E:178:ASN:ND2	9:E:267:LEU:O	2.32	0.59
48:s:39:TRP:HE1	52:x:342:MET:HE2	1.67	0.59
52:x:329:LEU:HB2	52:x:387:LEU:HA	1.84	0.59
48:s:39:TRP:CH2	52:x:339:ILE:HG12	2.38	0.59
52:x:9:LYS:HZ2	52:x:38:ALA:HA	1.59	0.59
2:5:2284:G:OP1	30:a:7:LYS:NZ	2.31	0.58
2:5:2573:A:O3'	29:Z:115:LYS:NZ	2.30	0.58
2:5:4129:G:O6	2:5:4156:G:N2	2.36	0.58
3:7:66:G:OP1	8:D:10:LYS:NZ	2.36	0.58
52:x:60:ILE:HG21	52:x:75:ILE:HG12	1.83	0.58
2:5:2745:A:H2'	2:5:2746:A:H8	1.68	0.58
8:D:107:ARG:NH2	8:D:116:ASP:OD1	2.37	0.58
2:5:229:G:H5"	28:Y:11:ARG:HD2	1.85	0.58
2:5:4256:A:O2'	14:J:55:TYR:OH	2.19	0.58
52:x:52:LEU:HD23	52:x:52:LEU:C	2.28	0.58
2:5:1332:C:H2'	2:5:1333:A:C8	2.37	0.58
2:5:2520:C:H2'	2:5:2521:G:H8	1.68	0.58
2:5:3683:C:OP1	5:A:132:ASN:ND2	2.35	0.58
2:5:3928:A:OP1	17:N:90:ASN:ND2	2.36	0.58
2:5:5057:C:H2'	2:5:5058:A:C8	2.38	0.58
9:E:42:ARG:HD3	9:E:61:ARG:HG2	1.85	0.58
2:5:4441:A:H5'	13:I:114:GLY:HA2	1.84	0.58
6:B:206:PRO:HG2	6:B:209:GLN:HG3	1.84	0.58
20:Q:82:VAL:HG12	20:Q:84:GLY:H	1.68	0.58
2:5:230:G:OP1	28:Y:15:ARG:NH1	2.36	0.58
2:5:1433:A:N6	2:5:1451:G:O2'	2.37	0.58
2:5:2777:G:H5"	2:5:2778:G:H5'	1.85	0.58
11:G:185:LYS:HB2	11:G:189:ARG:HH11	1.69	0.58
2:5:676:C:H5'	47:r:99:LYS:HD2	1.86	0.58
2:5:1281:G:N2	7:C:320:LYS:O	2.37	0.58
2:5:3873:G:H2'	2:5:3874:G:C8	2.38	0.58
2:5:4764:A:OP1	12:H:23:ARG:NH2	2.34	0.58
6:B:110:ILE:O	6:B:115:LYS:NZ	2.37	0.58
18:O:61:ARG:HA	18:O:70:PRO:HD2	1.84	0.58
2:5:2557:G:H1	2:5:2570:U:H3	1.52	0.58
2:5:2874:U:O4	2:5:3823:G:O2'	2.17	0.58
2:5:1284:G:N1	2:5:2076:G:OP1	2.36	0.58
29:Z:101:PHE:HD1	29:Z:107:LYS:HE2	1.69	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:8:U:H5"	17:N:40:PRO:HG3	1.85	0.58
2:5:907:C:H2'	2:5:908:G:H8	1.69	0.58
9:E:108:MET:O	47:r:87:ARG:NH1	2.37	0.58
9:E:113:PRO:O	47:r:112:ARG:NH2	2.37	0.58
2:5:1523:A:N3	2:5:4389:C:O2'	2.32	0.57
14:J:87:LEU:HD21	14:J:166:PHE:HE1	1.68	0.57
23:T:40:VAL:HG11	23:T:96:ILE:HG23	1.86	0.57
42:m:94:MET:HG2	42:m:105:PRO:HA	1.86	0.57
2:5:1315:C:N4	2:5:1316:G:O6	2.37	0.57
14:J:55:TYR:HA	14:J:64:ARG:HG2	1.85	0.57
2:5:93:G:H2'	2:5:94:A:C8	2.40	0.57
2:5:1398:A:H1'	2:5:1399:G:O4'	2.05	0.57
2:5:1950:U:O2'	22:S:116:ARG:NH1	2.38	0.57
2:5:5061:A:O2'	2:5:5062:G:OP2	2.20	0.57
7:C:94:ASN:HD22	7:C:102:PHE:HB2	1.70	0.57
2:5:709:C:H2'	2:5:710:G:H8	1.69	0.57
2:5:1933:G:H2'	2:5:1934:A:C8	2.39	0.57
2:5:3589:G:H2'	2:5:3590:G:C8	2.40	0.57
23:T:84:ILE:HB	31:b:24:PRO:HD3	1.85	0.57
2:5:62:A:N3	2:5:77:U:O2'	2.35	0.57
2:5:4302:U:H4'	23:T:5:LYS:HD2	1.84	0.57
2:5:969:C:H6	9:E:119:ARG:HH22	1.50	0.57
2:5:3653:A:OP1	5:A:196:TRP:NE1	2.32	0.57
2:5:5019:A:H2'	2:5:5020:G:H8	1.69	0.57
35:f:33:VAL:HG13	35:f:38:GLU:HB2	1.87	0.57
49:t:31:LYS:HZ2	49:t:33:TYR:HB2	1.67	0.57
52:x:80:PHE:CE2	52:x:291:ILE:HG22	2.40	0.57
2:5:223:G:O2'	7:C:223:ASN:ND2	2.37	0.57
2:5:4124:G:H5'	29:Z:135:ARG:HH21	1.69	0.57
53:z:576:ARG:O	53:z:583:ARG:NH2	2.37	0.57
2:5:4566:U:O2'	6:B:234:ARG:NH1	2.35	0.57
2:5:4238:G:H2'	2:5:4239:A:H8	1.69	0.57
7:C:218:VAL:O	7:C:222:ARG:HB2	2.04	0.57
9:E:175:LEU:HD12	9:E:179:ARG:HA	1.87	0.57
10:F:107:VAL:HG13	10:F:138:VAL:HG12	1.85	0.57
11:G:98:LEU:HD12	11:G:218:LEU:HD12	1.87	0.57
2:5:4088:C:H2'	2:5:4089:G:H8	1.69	0.57
2:5:88:A:N7	20:Q:173:LYS:NZ	2.50	0.56
2:5:1333:A:H2'	2:5:1334:A:H8	1.70	0.56
2:5:1380:G:H21	2:5:1381:U:H3	1.52	0.56
22:S:15:ARG:HB3	22:S:27:LEU:HD23	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:19:C:H2'	1:1:20:G:H8	1.70	0.56
2:5:717:U:H3	2:5:951:G:H1	1.53	0.56
2:5:3699:C:HO2'	2:5:3775:A:HO2'	1.51	0.56
2:5:4274:A:H2'	2:5:4275:G:H8	1.70	0.56
30:a:72:THR:HG22	30:a:110:LYS:HB3	1.87	0.56
34:e:5:ARG:HH21	34:e:9:LYS:HE3	1.70	0.56
37:h:104:THR:HG23	37:h:107:GLN:H	1.69	0.56
50:u:173:ALA:O	50:u:177:ASN:ND2	2.33	0.56
52:x:337:GLN:HA	52:x:340:MET:HE2	1.86	0.56
2:5:32:G:H21	2:5:50:C:H5	1.53	0.56
2:5:1502:G:OP1	20:Q:65:ARG:NH2	2.38	0.56
2:5:2822:G:OP2	21:R:21:LYS:NZ	2.37	0.56
2:5:4421:C:H42	2:5:4475:G:N2	2.04	0.56
7:C:10:VAL:HA	7:C:153:VAL:HG13	1.87	0.56
18:O:109:PRO:HB2	18:O:111:PRO:HD2	1.87	0.56
46:q:17:CYS:HB3	46:q:81:ARG:HD2	1.87	0.56
4:8:150:C:N4	11:G:52:THR:O	2.38	0.56
11:G:137:ARG:HG3	11:G:146:LEU:HD21	1.86	0.56
53:z:573:ASP:HB2	53:z:576:ARG:HG2	1.87	0.56
1:1:204:G:H2'	1:1:205:A:C8	2.41	0.56
2:5:2268:A:H2	20:Q:37:ARG:HH22	1.51	0.56
2:5:4232:U:H4'	2:5:4233:A:O5'	2.05	0.56
2:5:4930:C:OP1	9:E:262:GLN:N	2.39	0.56
10:F:115:ARG:NH2	10:F:210:LEU:O	2.37	0.56
18:O:12:ARG:HB2	18:O:37:ARG:HD2	1.88	0.56
44:o:34:TYR:O	44:o:39:ARG:NH1	2.38	0.56
2:5:728:U:H4'	2:5:729:G:OP2	2.06	0.56
2:5:1086:C:H2'	2:5:1087:A:H8	1.71	0.56
2:5:3904:G:H21	48:s:85:LYS:HG3	1.71	0.56
26:W:23:ARG:HH21	26:W:27:LYS:HD3	1.69	0.56
52:x:352:ILE:HG13	52:x:354:GLY:H	1.70	0.56
2:5:185:C:O2'	2:5:188:G:OP2	2.23	0.56
2:5:4730:C:O5'	2:5:4731:G:N2	2.39	0.56
38:i:23:LYS:HD2	38:i:24:PRO:HD2	1.87	0.56
2:5:2533:C:OP1	27:X:139:ARG:NH2	2.39	0.56
2:5:4467:A:O2'	2:5:4510:A:N3	2.31	0.56
46:q:52:VAL:HG11	46:q:112:ILE:HA	1.88	0.56
1:1:162:C:H2'	1:1:163:A:C8	2.40	0.56
2:5:2738:C:O2'	2:5:2740:U:O2	2.24	0.56
2:5:3945:A:H2'	2:5:3946:G:C8	2.39	0.56
3:7:26:C:H5"	8:D:56:THR:HG21	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:V:107:ASN:HD21	25:V:111:GLU:HB2	1.70	0.56
52:x:9:LYS:HZ2	52:x:38:ALA:CA	2.06	0.56
2:5:662:C:H2'	2:5:663:G:H8	1.71	0.56
2:5:1646:A:O2'	39:j:49:TRP:O	2.21	0.56
14:J:87:LEU:HG	14:J:92:TYR:HD1	1.70	0.56
52:x:43:ASP:HB2	52:x:257:GLY:HA3	1.88	0.56
8:D:164:LYS:HB2	8:D:180:PHE:HE1	1.70	0.55
2:5:48:G:H4'	2:5:49:U:O5'	2.05	0.55
4:8:67:U:H2'	4:8:68:G:H8	1.71	0.55
17:N:53:TYR:HB2	17:N:133:ILE:HD13	1.88	0.55
44:o:33:LEU:HD12	44:o:38:LYS:HE3	1.88	0.55
35:f:43:LEU:O	35:f:109:ARG:NH1	2.39	0.55
51:w:53:THR:HG22	51:w:55:GLN:HG2	1.88	0.55
2:5:2502:G:O2'	2:5:2503:G:O5'	2.16	0.55
2:5:3909:C:H2'	2:5:3910:C:H6	1.72	0.55
2:5:4522:G:O2'	2:5:4525:C:OP2	2.23	0.55
2:5:4967:A:H2'	2:5:4968:A:C8	2.40	0.55
2:5:4274:A:H2'	2:5:4275:G:C8	2.42	0.55
2:5:4966:A:OP1	6:B:126:LYS:NZ	2.36	0.55
2:5:5006:U:H4'	2:5:5007:A:H5'	1.89	0.55
9:E:147:ILE:HB	9:E:191:ILE:HB	1.87	0.55
28:Y:8:THR:HG22	28:Y:10:ASP:H	1.72	0.55
46:q:60:VAL:HG12	46:q:84:VAL:HG12	1.87	0.55
52:x:42:ALA:HA	52:x:255:LYS:HD2	1.87	0.55
52:x:303:LEU:HD23	52:x:487:PHE:HE1	1.71	0.55
2:5:318:A:H2'	2:5:319:A:H8	1.72	0.55
2:5:4239:A:H2'	2:5:4240:G:H8	1.72	0.55
2:5:5022:U:O2'	2:5:5024:C:OP2	2.24	0.55
2:5:300:A:H2'	2:5:301:G:C8	2.42	0.55
2:5:1358:G:H5'	7:C:114:ARG:HD3	1.88	0.55
2:5:1554:A:OP1	45:p:5:THR:OG1	2.23	0.55
2:5:2484:A:H2'	2:5:2485:U:C6	2.42	0.55
13:I:153:ARG:HA	13:I:156:LYS:HE2	1.88	0.55
2:5:158:A:N1	2:5:276:C:O2'	2.36	0.55
2:5:3611:A:H2	2:5:5016:A:H8	1.55	0.55
2:5:5051:C:H4'	6:B:324:GLY:HA2	1.89	0.55
8:D:271:MET:O	8:D:276:LYS:NZ	2.39	0.55
15:L:189:ALA:HB2	38:i:10:GLY:HA2	1.89	0.55
20:Q:33:ARG:HA	20:Q:48:LEU:HD11	1.89	0.55
20:Q:122:THR:OG1	20:Q:124:ASP:OD1	2.20	0.55
1:1:212:C:O2'	1:1:214:A:OP1	2.25	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:371:A:H2'	2:5:372:A:C8	2.41	0.55
2:5:2626:U:O4	24:U:97:ARG:NH1	2.40	0.55
2:5:4076:G:OP1	11:G:73:ARG:NE	2.33	0.55
7:C:159:GLU:HA	7:C:217:ILE:HB	1.88	0.55
47:r:38:PHE:O	47:r:45:HIS:NE2	2.28	0.55
2:5:3888:G:O2'	2:5:3889:G:OP1	2.23	0.55
13:I:152:LEU:HB3	13:I:165:ILE:HD12	1.89	0.55
35:f:45:LYS:HA	35:f:107:PRO:HG2	1.88	0.55
2:5:85:G:O2'	2:5:97:G:O6	2.25	0.54
2:5:1727:U:OP1	10:F:133:ASN:ND2	2.39	0.54
2:5:1732:C:H2'	2:5:1733:G:C8	2.42	0.54
2:5:2478:C:N4	2:5:2479:G:O6	2.39	0.54
2:5:4586:G:OP1	18:O:72:HIS:N	2.31	0.54
5:A:117:GLU:HG2	5:A:124:GLY:H	1.71	0.54
48:s:50:HIS:HB3	52:x:485:ARG:HD3	1.88	0.54
52:x:104:ILE:HB	52:x:188:ILE:HG22	1.89	0.54
2:5:3648:A:H1'	2:5:3785:A:H61	1.72	0.54
15:L:172:GLU:HB3	38:i:3:LEU:HD21	1.88	0.54
21:R:73:GLY:O	21:R:74:ARG:NH2	2.31	0.54
52:x:245:VAL:HG23	52:x:270:ILE:HG13	1.89	0.54
2:5:4392:G:N2	2:5:4395:U:O2	2.40	0.54
3:7:110:G:H2'	3:7:111:C:C6	2.42	0.54
17:N:116:LEU:HD22	17:N:135:ILE:HD11	1.88	0.54
22:S:27:LEU:HD12	23:T:143:THR:HB	1.89	0.54
30:a:125:LYS:HG2	30:a:145:VAL:HB	1.89	0.54
49:t:16:LEU:HD11	49:t:62:ASP:HB3	1.89	0.54
2:5:419:A:N3	2:5:1332:C:O2'	2.38	0.54
2:5:657:C:H2'	2:5:658:C:C6	2.42	0.54
3:7:7:G:OP1	8:D:33:ARG:NH2	2.40	0.54
6:B:184:GLN:HE21	6:B:186:ASN:HD21	1.53	0.54
50:u:58:GLU:OE1	50:u:120:ARG:NH1	2.41	0.54
52:x:17:LEU:HD22	52:x:17:LEU:C	2.31	0.54
2:5:161:G:H2'	2:5:162:A:H8	1.73	0.54
2:5:3732:A:H2'	2:5:3733:A:C8	2.43	0.54
2:5:4990:C:H41	6:B:176:LYS:HB3	1.73	0.54
6:B:31:SER:O	6:B:348:ARG:NH1	2.41	0.54
2:5:1802:A:N3	23:T:130:ARG:NH1	2.55	0.54
2:5:4537:C:H2'	2:5:4538:G:H8	1.72	0.54
48:s:44:LEU:CD1	52:x:319:ILE:HG13	2.22	0.54
2:5:2492:C:H2'	2:5:2493:G:C8	2.41	0.54
2:5:2493:G:O2'	4:8:127:U:OP1	2.25	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:3944:G:H2'	2:5:3945:A:H8	1.73	0.54
2:5:4699:U:H1'	2:5:4700:A:H5"	1.89	0.54
5:A:137:ILE:HD11	5:A:149:LYS:HB2	1.89	0.54
7:C:333:LYS:HE3	9:E:50:ILE:HA	1.89	0.54
10:F:230:VAL:HA	22:S:39:VAL:HG12	1.89	0.54
48:s:43:LEU:HD23	52:x:312:LEU:HD23	1.65	0.54
52:x:80:PHE:CD1	52:x:80:PHE:C	2.86	0.54
52:x:105:MET:HE2	52:x:214:PRO:HG3	1.89	0.54
6:B:220:ILE:HG12	6:B:278:THR:HG23	1.89	0.54
17:N:96:ARG:NH1	17:N:104:GLU:OE1	2.37	0.54
2:5:1775:A:H3'	2:5:1776:A:H8	1.73	0.54
2:5:3896:C:H1'	6:B:268:ARG:HH11	1.73	0.54
24:U:49:VAL:HB	24:U:57:GLY:HA3	1.90	0.54
2:5:370:U:HO2'	39:j:16:HIS:HD1	1.47	0.54
2:5:1691:G:H5'	20:Q:15:ARG:HG3	1.89	0.54
2:5:2049:G:O2'	2:5:3884:U:O2'	2.24	0.54
2:5:2856:C:O2	6:B:242:ARG:NH2	2.34	0.54
2:5:4239:A:H2'	2:5:4240:G:C8	2.43	0.54
2:5:4870:G:OP2	2:5:4870:G:N2	2.34	0.54
24:U:65:ARG:HE	24:U:67:LYS:HA	1.73	0.54
52:x:17:LEU:HD23	52:x:27:VAL:HG12	1.90	0.54
2:5:7:C:OP1	17:N:41:ARG:NH2	2.41	0.53
2:5:218:A:O2'	7:C:177:TRP:NE1	2.41	0.53
2:5:725:G:H2'	2:5:726:G:C8	2.43	0.53
2:5:1864:G:O2'	13:I:118:ALA:O	2.25	0.53
2:5:2796:G:H5'	41:l:45:ARG:HH21	1.73	0.53
2:5:4587:G:O2'	6:B:14:LEU:O	2.25	0.53
2:5:5022:U:H3	2:5:5025:C:N4	2.07	0.53
18:O:74:ARG:NH1	18:O:145:VAL:O	2.40	0.53
21:R:105:LEU:HD22	21:R:135:LYS:HG3	1.89	0.53
40:k:34:PHE:HB2	40:k:45:LEU:HB3	1.89	0.53
52:x:3:LEU:HD22	52:x:255:LYS:HB2	1.90	0.53
52:x:23:ILE:HG22	52:x:72:ARG:HH12	1.66	0.53
1:1:241:U:H4'	53:z:577:TRP:HH2	1.72	0.53
2:5:407:A:O2'	2:5:410:A:OP1	2.24	0.53
2:5:1758:G:H2'	2:5:1759:G:H8	1.73	0.53
6:B:302:ASN:HB2	6:B:313:SER:HA	1.89	0.53
48:s:46:LYS:NZ	52:x:447:SER:HB3	2.24	0.53
2:5:973:G:N2	2:5:1282:G:O2'	2.42	0.53
2:5:3746:A:H5"	5:A:244:GLY:HA3	1.90	0.53
13:I:31:ILE:HG22	13:I:62:SER:HB2	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:P:95:LEU:HD23	19:P:148:MET:HE1	1.91	0.53
29:Z:95:VAL:HG21	29:Z:113:GLU:HG2	1.90	0.53
51:w:46:LEU:HD23	51:w:47:VAL:HG13	1.89	0.53
2:5:109:G:OP2	15:L:74:ARG:NH2	2.41	0.53
2:5:1440:U:H2'	2:5:1441:C:C6	2.43	0.53
2:5:2570:U:H2'	2:5:2571:C:C6	2.44	0.53
2:5:4454:G:HO2'	2:5:4500:U:HO2'	1.56	0.53
12:H:20:LEU:HD21	12:H:47:LEU:HB2	1.90	0.53
22:S:15:ARG:HD2	22:S:25:PRO:HG2	1.89	0.53
2:5:676:C:H2'	2:5:677:G:H8	1.73	0.53
2:5:4635:A:OP1	2:5:4636:U:O2'	2.27	0.53
16:M:31:ILE:HD11	16:M:37:LEU:HB2	1.91	0.53
20:Q:39:THR:HG21	20:Q:132:LYS:HG2	1.91	0.53
48:s:83:HIS:HB2	48:s:85:LYS:HZ1	1.73	0.53
49:t:3:LEU:H	49:t:3:LEU:HD23	1.73	0.53
52:x:101:GLN:HE21	52:x:187:ILE:HD12	1.74	0.53
2:5:658:C:H2'	2:5:659:G:C8	2.40	0.53
2:5:676:C:H2'	2:5:677:G:C8	2.43	0.53
2:5:714:G:H5"	7:C:316:LYS:HG2	1.91	0.53
2:5:979:C:OP1	9:E:42:ARG:NH1	2.42	0.53
2:5:1757:U:N3	2:5:1758:G:N7	2.56	0.53
2:5:2295:C:H2'	2:5:2296:G:H8	1.74	0.53
2:5:2412:A:H5"	21:R:6:LEU:HD11	1.89	0.53
2:5:2757:A:H2'	2:5:2758:G:C8	2.44	0.53
2:5:3893:C:H2'	2:5:3894:A:H8	1.73	0.53
2:5:3944:G:H2'	2:5:3945:A:C8	2.43	0.53
7:C:28:PHE:HA	7:C:129:ALA:HA	1.91	0.53
16:M:5:ARG:HB3	16:M:57:LEU:HD11	1.89	0.53
51:w:23:MET:HG2	51:w:24:LYS:HG3	1.89	0.53
1:1:148:G:HO2'	46:q:17:CYS:HG	1.54	0.53
2:5:150:U:OP2	11:G:200:THR:OG1	2.22	0.53
2:5:1333:A:H2'	2:5:1334:A:C8	2.43	0.53
2:5:1481:C:O2'	2:5:1482:G:O5'	2.25	0.53
7:C:12:SER:OG	7:C:15:GLY:O	2.26	0.53
52:x:87:VAL:HG11	52:x:291:ILE:HD11	1.90	0.53
2:5:959:G:H1'	9:E:121:LEU:HD13	1.91	0.53
2:5:1866:U:O4'	13:I:4:ARG:NH2	2.41	0.53
2:5:4146:G:H2'	2:5:4147:G:H8	1.74	0.53
2:5:4992:G:H2'	2:5:4993:G:C8	2.43	0.53
5:A:28:ARG:HH21	5:A:123:ARG:HD3	1.74	0.53
1:1:10:G:H2'	1:1:11:G:C8	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:1870:C:H2'	2:5:1871:A:H8	1.73	0.53
2:5:2411:C:H2'	2:5:2412:A:H8	1.74	0.53
2:5:2837:U:H5'	6:B:249:ARG:HB2	1.90	0.53
29:Z:50:PRO:HD3	29:Z:68:ILE:HG22	1.91	0.53
49:t:91:MET:HE3	51:w:59:VAL:HG23	1.90	0.53
1:1:204:G:H2'	1:1:205:A:H8	1.74	0.53
2:5:957:G:H4'	2:5:958:G:O5'	2.08	0.53
2:5:2280:G:N2	2:5:2281:U:O4	2.42	0.53
5:A:80:GLU:HG2	5:A:170:ALA:HA	1.89	0.53
21:R:104:ARG:O	21:R:108:ARG:HG2	2.09	0.53
2:5:1378:C:H5'	2:5:1379:C:H5'	1.91	0.52
2:5:1492:G:O2'	31:b:41:ARG:NH1	2.43	0.52
2:5:2368:A:N6	2:5:2827:G:O2'	2.42	0.52
4:8:13:G:O2'	19:P:121:LYS:O	2.27	0.52
9:E:146:LEU:HD13	9:E:190:VAL:HG11	1.91	0.52
30:a:117:LEU:HD12	30:a:118:PRO:HD2	1.91	0.52
2:5:3861:A:H2'	2:5:3862:A:H8	1.73	0.52
52:x:373:LYS:HG3	52:x:376:MET:HE1	1.91	0.52
2:5:3855:C:H2'	2:5:3856:A:H8	1.75	0.52
2:5:4170:A:H4'	2:5:4171:C:O5'	2.09	0.52
22:S:127:MET:HG2	23:T:153:PRO:HB2	1.91	0.52
32:c:50:ASN:ND2	32:c:75:SER:O	2.42	0.52
46:q:35:ILE:HD11	46:q:105:MET:HB3	1.91	0.52
2:5:2822:G:H5"	21:R:18:GLY:HA3	1.91	0.52
2:5:4128:A:H5'	29:Z:54:THR:HB	1.90	0.52
29:Z:11:VAL:HG12	29:Z:82:PRO:HA	1.91	0.52
52:x:6:LEU:HA	52:x:9:LYS:CD	2.38	0.52
1:1:218:U:H2'	1:1:219:C:H6	1.74	0.52
2:5:134:G:H4'	2:5:135:G:O5'	2.09	0.52
2:5:4299:U:H2'	2:5:4300:U:H6	1.74	0.52
12:H:16:VAL:HG21	12:H:81:ILE:HG23	1.92	0.52
17:N:180:PHE:O	17:N:182:HIS:ND1	2.41	0.52
37:h:96:ASN:O	37:h:96:ASN:ND2	2.42	0.52
37:h:99:GLU:OE1	37:h:99:GLU:N	2.42	0.52
47:r:7:TRP:HA	47:r:10:VAL:HG12	1.92	0.52
2:5:3653:A:N1	2:5:3692:A:H4'	2.25	0.52
2:5:4991:U:H2'	2:5:4992:G:C8	2.45	0.52
6:B:312:LYS:NZ	6:B:368:ILE:O	2.38	0.52
9:E:149:LEU:HD11	9:E:191:ILE:HG12	1.91	0.52
9:E:186:HIS:HB3	9:E:189:PHE:HD2	1.75	0.52
52:x:5:ASP:O	52:x:9:LYS:CG	2.58	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:220:C:H2'	1:1:221:C:C6	2.45	0.52
2:5:2262:G:O2'	2:5:2263:A:OP1	2.22	0.52
2:5:2395:A:O2'	2:5:2806:A:H1'	2.10	0.52
2:5:2568:C:H2'	2:5:2569:G:C8	2.45	0.52
1:1:161:C:O2	1:1:214:A:O2'	2.25	0.52
2:5:170:C:H4'	2:5:171:U:OP1	2.09	0.52
2:5:1464:C:O3'	31:b:47:LYS:NZ	2.43	0.52
2:5:1839:U:H5"	10:F:115:ARG:HD2	1.92	0.52
2:5:3896:C:O2'	6:B:268:ARG:NH1	2.42	0.52
2:5:4066:U:H2'	2:5:4067:U:C6	2.44	0.52
5:A:6:ARG:HH12	5:A:199:VAL:H	1.56	0.52
2:5:4906:C:H2'	2:5:4907:G:C8	2.45	0.52
1:1:237:G:H2'	1:1:238:G:H8	1.75	0.52
2:5:6:C:H5"	11:G:197:LYS:HB3	1.91	0.52
2:5:973:G:H21	7:C:327:LYS:HD2	1.74	0.52
2:5:1204:C:H2'	2:5:1205:G:C8	2.42	0.52
2:5:1346:C:H2'	2:5:1347:G:H8	1.74	0.52
2:5:1382:G:H2'	2:5:1383:G:H8	1.75	0.52
2:5:2411:C:H2'	2:5:2412:A:C8	2.45	0.52
2:5:3591:C:N4	2:5:3592:G:O6	2.43	0.52
2:5:3880:G:H2'	2:5:3881:G:C8	2.45	0.52
15:L:63:THR:O	15:L:65:ARG:N	2.43	0.52
17:N:180:PHE:C	17:N:182:HIS:H	2.18	0.52
23:T:103:ASP:OD1	23:T:104:SER:N	2.42	0.52
2:5:307:A:N3	2:5:310:G:O2'	2.39	0.51
2:5:2848:G:O2'	2:5:3838:U:O4	2.20	0.51
2:5:4072:C:H2'	2:5:4073:A:H8	1.75	0.51
2:5:4736:C:H2'	2:5:4737:G:H8	1.75	0.51
52:x:60:ILE:HD13	52:x:74:MET:HG3	1.92	0.51
1:1:188:G:H2'	1:1:189:C:H6	1.75	0.51
2:5:2075:G:OP1	7:C:312:ARG:NH2	2.40	0.51
2:5:2266:C:O2'	47:r:39:ARG:NH1	2.43	0.51
21:R:17:CYS:HB3	21:R:52:ARG:HH12	1.76	0.51
48:s:28:ILE:HG21	52:x:368:SER:OG	2.09	0.51
48:s:83:HIS:CB	48:s:85:LYS:HZ1	2.22	0.51
2:5:1450:C:H2'	2:5:1451:G:O4'	2.10	0.51
2:5:4601:U:H2'	2:5:4602:A:H8	1.76	0.51
36:g:57:ARG:HD3	36:g:67:LEU:HD21	1.92	0.51
2:5:173:C:H5'	15:L:129:ARG:HH21	1.75	0.51
2:5:406:C:O2'	2:5:407:A:OP1	2.27	0.51
2:5:2407:G:OP2	2:5:2407:G:N2	2.39	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:2539:C:H2'	2:5:2540:C:C6	2.45	0.51
2:5:3692:A:H62	2:5:3823:G:H21	1.58	0.51
2:5:3766:A:OP2	2:5:3767:C:N4	2.42	0.51
4:8:67:U:OP2	4:8:86:U:N3	2.28	0.51
5:A:56:ALA:HB2	5:A:130:SER:HA	1.91	0.51
1:1:59:A:N6	1:1:288:G:H21	2.01	0.51
2:5:4712:C:H2'	2:5:4713:G:H8	1.76	0.51
2:5:4723:A:H2'	2:5:4724:A:C8	2.46	0.51
6:B:261:ARG:HB2	18:O:64:THR:HG21	1.93	0.51
12:H:126:VAL:HG11	12:H:161:ILE:HG22	1.93	0.51
18:O:168:TYR:CE2	18:O:172:LYS:HD2	2.46	0.51
2:5:673:C:H2'	2:5:674:G:C8	2.46	0.51
2:5:1185:G:H21	8:D:278:ASP:CG	2.15	0.51
12:H:124:ARG:HH21	12:H:165:THR:HG22	1.75	0.51
15:L:47:ALA:O	15:L:149:GLN:NE2	2.43	0.51
2:5:2079:G:H2'	2:5:2080:U:C6	2.46	0.51
2:5:2409:U:H4'	2:5:2428:A:H4'	1.92	0.51
2:5:4459:U:H2'	2:5:4460:U:C6	2.46	0.51
2:5:4941:G:OP1	9:E:215:LYS:NZ	2.44	0.51
8:D:164:LYS:HG2	8:D:195:HIS:HE2	1.76	0.51
11:G:31:LEU:HD21	29:Z:123:LYS:HA	1.93	0.51
22:S:95:ARG:NH2	22:S:112:ASP:OD2	2.44	0.51
52:x:31:MET:C	52:x:31:MET:SD	2.94	0.51
1:1:168:G:O2'	1:1:170:C:OP2	2.23	0.51
2:5:287:U:H2'	2:5:288:G:C8	2.45	0.51
2:5:1617:G:H1'	2:5:2513:A:N6	2.26	0.51
2:5:2745:A:H2'	2:5:2746:A:C8	2.45	0.51
2:5:3610:A:H2'	2:5:3611:A:H8	1.76	0.51
2:5:3664:G:H2'	2:5:3665:G:H8	1.76	0.51
9:E:168:LEU:HD23	9:E:184:ARG:HB3	1.92	0.51
52:x:80:PHE:HE2	52:x:292:SER:HA	1.76	0.51
52:x:109:LEU:O	52:x:114:LYS:NZ	2.43	0.51
2:5:450:G:N2	2:5:1294:A:O2'	2.44	0.51
2:5:491:G:H21	2:5:663:G:H1	1.59	0.51
2:5:968:C:OP1	9:E:106:ARG:NH1	2.44	0.51
2:5:1456:C:O2'	20:Q:73:PRO:O	2.25	0.51
2:5:1676:C:H41	2:5:4378:A:H5"	1.75	0.51
2:5:2809:G:O2'	2:5:4644:G:OP1	2.29	0.51
11:G:165:GLU:CD	17:N:11:TRP:HE1	2.19	0.51
12:H:18:ILE:HG22	12:H:27:VAL:HG22	1.92	0.51
12:H:69:THR:HA	12:H:72:THR:HG22	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:S:154:LEU:HG	22:S:157:ARG:HH11	1.76	0.51
1:1:129:C:C6	1:1:174:G:H2'	2.46	0.51
1:1:148:G:O2'	46:q:17:CYS:SG	2.63	0.51
1:1:175:G:H5'	50:u:97:HIS:NE2	2.27	0.51
2:5:194:C:O2	28:Y:121:ARG:NH2	2.44	0.51
2:5:287:U:H2'	2:5:288:G:H8	1.76	0.51
2:5:1198:G:H2'	2:5:1199:G:C8	2.46	0.51
2:5:4458:C:H2'	2:5:4459:U:C6	2.46	0.51
52:x:161:GLY:HA2	52:x:171:ILE:HD11	1.92	0.51
2:5:1362:G:OP1	15:L:39:ARG:NH2	2.44	0.50
2:5:1795:A:N3	3:7:79:U:O2'	2.44	0.50
2:5:4745:G:N2	2:5:4955:A:H61	2.09	0.50
21:R:102:LEU:HD22	21:R:138:LEU:HD13	1.93	0.50
2:5:1743:A:N1	2:5:1789:C:O2'	2.44	0.50
2:5:3848:U:H2'	2:5:3849:A:H8	1.77	0.50
2:5:4088:C:H2'	2:5:4089:G:C8	2.47	0.50
4:8:63:U:OP1	37:h:48:ARG:NH2	2.37	0.50
4:8:124:U:H4'	4:8:125:C:O5'	2.10	0.50
37:h:95:LEU:HD23	37:h:100:GLU:HG2	1.91	0.50
52:x:110:GLN:N	52:x:110:GLN:OE1	2.43	0.50
52:x:203:GLU:HA	52:x:206:LEU:HD23	1.94	0.50
2:5:460:C:H2'	2:5:461:G:H8	1.77	0.50
2:5:660:A:H2'	2:5:661:C:C6	2.45	0.50
2:5:929:A:H3'	2:5:930:G:H5"	1.93	0.50
2:5:1199:G:H4'	22:S:23:ARG:HG2	1.93	0.50
2:5:3653:A:H4'	5:A:179:ILE:HB	1.94	0.50
48:s:42:VAL:HG12	48:s:43:LEU:HD12	1.93	0.50
2:5:106:A:H1'	2:5:336:A:H8	1.75	0.50
2:5:148:C:OP2	11:G:197:LYS:NZ	2.33	0.50
2:5:1804:A:O2'	2:5:1833:G:N1	2.43	0.50
2:5:2520:C:H2'	2:5:2521:G:C8	2.47	0.50
2:5:4069:U:O2'	2:5:4070:U:OP1	2.25	0.50
18:O:10:ASP:HA	18:O:36:VAL:HG12	1.94	0.50
27:X:79:PHE:CD1	37:h:36:VAL:HG11	2.47	0.50
29:Z:27:LYS:HB2	29:Z:42:LEU:HB3	1.92	0.50
35:f:14:TYR:OH	35:f:92:LEU:O	2.27	0.50
2:5:1541:C:H5"	5:A:21:LYS:HG2	1.94	0.50
2:5:1942:A:H2'	2:5:1943:A:C8	2.46	0.50
2:5:2335:C:H2'	2:5:2336:G:H8	1.77	0.50
2:5:2760:G:O2'	2:5:2762:G:N1	2.45	0.50
2:5:2869:U:O2'	2:5:2881:A:N7	2.40	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:4188:U:H2'	2:5:4189:U:C6	2.46	0.50
2:5:4935:C:C5	9:E:179:ARG:HD3	2.47	0.50
6:B:46:PHE:HB2	6:B:211:PHE:HE2	1.76	0.50
17:N:68:ARG:HD3	17:N:128:LYS:HG3	1.92	0.50
21:R:177:LEU:HA	21:R:180:LYS:HE3	1.93	0.50
1:1:179:G:H2'	1:1:180:G:H8	1.77	0.50
2:5:153:G:H2'	2:5:154:G:H8	1.75	0.50
2:5:216:C:O2'	2:5:217:C:OP1	2.29	0.50
2:5:722:G:OP1	2:5:935:A:N6	2.43	0.50
2:5:1282:G:OP1	7:C:316:LYS:NZ	2.30	0.50
2:5:1503:A:H4'	2:5:1504:G:H5'	1.92	0.50
2:5:1804:A:H4'	2:5:1805:A:O5'	2.10	0.50
2:5:2562:G:N2	2:5:2565:A:OP2	2.24	0.50
2:5:4076:G:H5'	11:G:73:ARG:HG3	1.94	0.50
2:5:4421:C:H42	2:5:4475:G:H22	1.58	0.50
37:h:6:ALA:O	37:h:10:ARG:HG2	2.12	0.50
48:s:45:LEU:HG	52:x:440:LEU:O	2.12	0.50
1:1:151:C:H41	46:q:34:ARG:HH22	1.60	0.50
2:5:36:U:OP1	2:5:1651:G:N2	2.38	0.50
2:5:66:A:O2'	2:5:326:C:O2	2.25	0.50
2:5:2386:U:H5"	21:R:24:LEU:HD12	1.92	0.50
2:5:2587:A:O2'	2:5:2588:C:O4'	2.27	0.50
7:C:315:LYS:NZ	10:F:158:LYS:O	2.42	0.50
50:u:27:ARG:HD3	50:u:76:ARG:HH21	1.77	0.50
2:5:1293:G:OP2	35:f:61:GLY:N	2.31	0.50
2:5:1339:U:H2'	2:5:1340:C:C6	2.46	0.50
2:5:2303:C:H5"	34:e:104:SER:HB3	1.94	0.50
2:5:3656:A:O3'	5:A:245:ARG:NH1	2.43	0.50
2:5:3727:A:H2'	2:5:3728:A:C8	2.47	0.50
2:5:4318:C:O2'	44:o:18:HIS:ND1	2.31	0.50
3:7:6:C:O2'	8:D:50:ARG:NH1	2.45	0.50
33:d:24:GLU:HG2	33:d:87:ARG:HG2	1.93	0.50
52:x:286:LYS:HD2	52:x:289:PRO:HG2	1.94	0.50
2:5:1074:G:H2'	2:5:1075:G:C8	2.47	0.50
2:5:2623:A:H2	2:5:2633:U:H3	1.60	0.50
5:A:101:VAL:HB	5:A:165:VAL:HG22	1.92	0.50
19:P:128:ARG:HH21	19:P:136:ILE:HD13	1.76	0.50
20:Q:70:MET:HE3	20:Q:80:ALA:HB2	1.94	0.50
29:Z:89:ILE:HD11	29:Z:117:LYS:HB3	1.93	0.50
47:r:10:VAL:HG22	47:r:14:SER:HB2	1.94	0.50
52:x:365:GLU:HA	52:x:368:SER:HB3	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:1321:G:O4'	2:5:1891:A:N6	2.45	0.49
2:5:1920:C:H3'	2:5:1921:C:H5"	1.93	0.49
2:5:1924:C:OP1	16:M:34:ASN:ND2	2.45	0.49
2:5:2607:C:H2'	2:5:2608:G:H8	1.77	0.49
2:5:2878:G:OP2	2:5:2879:A:O2'	2.25	0.49
2:5:3720:G:H22	2:5:3733:A:H2	1.60	0.49
2:5:4537:C:H2'	2:5:4538:G:C8	2.46	0.49
8:D:37:VAL:HG12	8:D:38:ILE:HD13	1.94	0.49
12:H:36:ARG:HH22	12:H:152:GLU:HG3	1.77	0.49
2:5:1604:G:H2'	2:5:1605:G:C8	2.47	0.49
2:5:2495:U:H2'	2:5:2496:G:H8	1.77	0.49
2:5:2580:U:O2'	29:Z:79:HIS:ND1	2.46	0.49
2:5:3598:C:H2'	2:5:3599:A:H8	1.78	0.49
2:5:3689:G:O2'	2:5:3818:U:OP2	2.27	0.49
2:5:4088:C:OP1	5:A:37:ARG:NH2	2.45	0.49
2:5:4156:G:OP2	2:5:4157:A:O2'	2.28	0.49
2:5:4531:U:C5	48:s:90:HIS:HB2	2.47	0.49
2:5:4729:A:H5"	2:5:4965:U:H1'	1.93	0.49
2:5:4870:G:H4'	2:5:4872:G:H4'	1.93	0.49
6:B:58:ARG:HD3	6:B:363:ILE:HG23	1.95	0.49
9:E:157:ARG:NH2	9:E:269:SER:OG	2.45	0.49
12:H:92:MET:HB3	12:H:181:VAL:HA	1.94	0.49
15:L:150:LEU:HD23	15:L:154:VAL:HG22	1.93	0.49
18:O:35:VAL:HB	18:O:104:VAL:HG12	1.94	0.49
29:Z:12:LEU:HD23	29:Z:22:LYS:HG2	1.94	0.49
1:1:202:C:H2'	1:1:203:G:H8	1.77	0.49
2:5:2554:U:O4	2:5:2762:G:O2'	2.28	0.49
2:5:2759:G:O2'	2:5:2763:U:O2	2.28	0.49
2:5:2812:A:OP1	21:R:83:GLY:N	2.43	0.49
2:5:2824:C:H2'	2:5:2825:A:C8	2.48	0.49
9:E:273:LEU:HD11	35:f:105:LEU:HD11	1.93	0.49
18:O:16:LEU:HD21	18:O:83:THR:HG21	1.94	0.49
45:p:51:ALA:HB3	45:p:54:ILE:HD12	1.94	0.49
2:5:951:G:H2'	2:5:952:G:H8	1.76	0.49
2:5:967:C:H42	2:5:2255:C:H41	1.61	0.49
2:5:1098:G:H2'	2:5:1099:C:C6	2.47	0.49
2:5:1345:A:H2'	2:5:1346:C:C6	2.48	0.49
2:5:2630:U:O4	24:U:89:LYS:NZ	2.42	0.49
2:5:2639:U:O2	36:g:26:PRO:HB3	2.11	0.49
2:5:4948:C:H2'	2:5:4949:G:N3	2.28	0.49
6:B:92:TYR:HB2	6:B:159:VAL:HB	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:M:105:THR:OG1	16:M:108:ASP:OD1	2.30	0.49
2:5:152:U:P	17:N:49:ARG:HH12	2.36	0.49
2:5:266:C:O2	37:h:112:ARG:NE	2.45	0.49
2:5:1637:A:N3	39:j:11:ARG:NH1	2.60	0.49
2:5:1826:G:H21	31:b:50:ASN:HD21	1.60	0.49
2:5:2897:G:H4'	21:R:101:ILE:HD13	1.94	0.49
2:5:3717:A:H2'	2:5:3718:A:H8	1.77	0.49
2:5:4507:A:H2'	2:5:4508:C:C6	2.47	0.49
25:V:35:LYS:HB2	25:V:67:LYS:HG3	1.94	0.49
40:k:26:LYS:HB2	40:k:69:LEU:HD12	1.93	0.49
2:5:1734:G:N2	2:5:1735:U:O4	2.39	0.49
2:5:2702:C:O3'	24:U:113:ARG:NH2	2.46	0.49
2:5:4499:G:N2	2:5:4529:G:H1'	2.28	0.49
2:5:4731:G:O2'	2:5:4733:C:OP2	2.29	0.49
4:8:108:A:H2'	4:8:109:C:O4'	2.13	0.49
7:C:168:VAL:HG22	7:C:172:LYS:HE2	1.93	0.49
11:G:142:THR:O	11:G:146:LEU:HG	2.12	0.49
15:L:76:PHE:HA	15:L:102:ARG:HH11	1.77	0.49
29:Z:47:ASP:HB3	29:Z:69:LYS:HB3	1.94	0.49
50:u:60:LEU:HB3	50:u:66:TYR:HE2	1.77	0.49
50:u:99:LEU:HA	50:u:102:LEU:HG	1.93	0.49
52:x:381:SER:HB2	52:x:406:VAL:HG13	1.95	0.49
2:5:454:U:H5'	9:E:220:LYS:HE3	1.95	0.49
2:5:2601:A:N6	2:5:2744:A:OP2	2.45	0.49
2:5:2635:U:H2'	2:5:2636:U:C6	2.48	0.49
9:E:154:ARG:HG2	35:f:5:LEU:HD12	1.93	0.49
10:F:243:ASN:O	10:F:247:ARG:HG2	2.12	0.49
11:G:63:LEU:HD21	17:N:29:GLN:HG3	1.94	0.49
48:s:43:LEU:HD12	48:s:43:LEU:N	2.27	0.49
49:t:87:LEU:HG	49:t:91:MET:HE2	1.94	0.49
52:x:276:GLY:N	52:x:281:ASP:OD2	2.46	0.49
52:x:385:GLN:O	52:x:389:SER:OG	2.26	0.49
2:5:1733:G:N3	2:5:4214:A:H2'	2.27	0.49
2:5:2490:U:H3'	2:5:2491:C:C6	2.48	0.49
2:5:4114:C:H5'	2:5:4115:G:OP2	2.13	0.49
13:I:188:LYS:HD3	13:I:213:HIS:CD2	2.47	0.49
48:s:39:TRP:CZ3	52:x:339:ILE:HG12	2.48	0.49
52:x:104:ILE:HD12	52:x:216:ASN:HB3	1.94	0.49
52:x:437:ILE:HG21	52:x:440:LEU:HB2	1.95	0.49
2:5:318:A:H2'	2:5:319:A:C8	2.48	0.49
2:5:953:C:H2'	2:5:954:C:C6	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:1186:U:H2'	2:5:1187:G:O4'	2.13	0.49
2:5:1293:G:H2'	2:5:1294:A:C4	2.48	0.49
2:5:1818:G:OP2	2:5:1818:G:N2	2.40	0.49
2:5:2089:G:O2'	2:5:2090:U:OP2	2.27	0.49
2:5:3599:A:H2'	2:5:3600:G:C8	2.47	0.49
2:5:3633:C:H2'	2:5:3634:G:C8	2.47	0.49
2:5:4238:G:H2'	2:5:4239:A:C8	2.46	0.49
4:8:153:C:H2'	4:8:154:G:H8	1.78	0.49
34:e:4:LEU:HB2	34:e:121:ARG:HG3	1.95	0.49
53:z:586:TYR:HB3	53:z:591:LYS:HG3	1.95	0.49
2:5:218:A:H2'	7:C:181:LYS:HG2	1.94	0.49
2:5:4347:G:H2'	2:5:4348:A:C8	2.48	0.49
3:7:27:G:H2'	3:7:28:C:H6	1.77	0.49
19:P:8:PRO:HD3	19:P:149:ILE:HD13	1.95	0.49
21:R:43:LYS:NZ	21:R:47:ASP:OD2	2.41	0.49
52:x:72:ARG:NH1	52:x:72:ARG:CG	2.73	0.49
1:1:209:G:H2'	1:1:210:G:C8	2.48	0.48
2:5:279:A:OP1	17:N:47:LYS:NZ	2.44	0.48
2:5:292:G:O6	17:N:181:HIS:ND1	2.44	0.48
2:5:1281:G:OP1	9:E:48:ARG:NH1	2.46	0.48
2:5:1490:G:H2'	2:5:1491:A:H8	1.77	0.48
2:5:2448:G:H2'	2:5:2449:A:C8	2.48	0.48
2:5:2615:C:OP1	21:R:60:ARG:NH1	2.47	0.48
2:5:3871:A:H2'	2:5:3872:A:C8	2.48	0.48
29:Z:57:MET:HB3	29:Z:61:LYS:HB3	1.94	0.48
2:5:45:U:O4	17:N:83:LYS:NZ	2.41	0.48
2:5:265:C:H4'	2:5:266:C:OP2	2.13	0.48
2:5:687:U:H4'	9:E:103:VAL:HG12	1.93	0.48
2:5:1397:A:O2'	2:5:1467:C:O2'	2.22	0.48
2:5:1696:C:O2'	2:5:1697:G:O5'	2.30	0.48
2:5:4906:C:H2'	2:5:4907:G:H8	1.76	0.48
35:f:7:CYS:HB2	35:f:103:VAL:HG13	1.94	0.48
48:s:42:VAL:HG11	52:x:307:VAL:HG11	1.95	0.48
48:s:46:LYS:HZ2	52:x:447:SER:CB	2.26	0.48
2:5:662:C:H2'	2:5:663:G:C8	2.48	0.48
2:5:1214:C:O4'	10:F:61:LYS:NZ	2.47	0.48
2:5:2072:C:OP1	20:Q:2:GLY:N	2.46	0.48
2:5:2362:U:H2'	2:5:2363:A:H8	1.79	0.48
2:5:2485:U:H2'	2:5:2486:G:C8	2.48	0.48
2:5:2863:G:O2'	21:R:82:LYS:O	2.31	0.48
2:5:4135:G:H2'	2:5:4136:G:H8	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:4569:U:OP1	2:5:4982:A:O2'	2.24	0.48
2:5:4708:A:C2	2:5:4709:U:H5'	2.48	0.48
2:5:5023:C:N4	2:5:5028:G:H21	2.11	0.48
32:c:62:TYR:HE2	36:g:99:GLU:HG2	1.77	0.48
45:p:39:CYS:HB2	45:p:47:MET:HG2	1.95	0.48
48:s:43:LEU:CD2	52:x:312:LEU:CG	2.89	0.48
52:x:83:LEU:N	52:x:83:LEU:HD23	2.26	0.48
2:5:86:U:H2'	2:5:87:A:C8	2.49	0.48
2:5:1358:G:O3'	7:C:114:ARG:NH1	2.46	0.48
2:5:2252:G:H3'	9:E:84:VAL:HG23	1.95	0.48
2:5:2399:G:O2'	2:5:2822:G:O2'	2.28	0.48
2:5:3707:U:H2'	2:5:3708:C:C6	2.48	0.48
2:5:4970:C:O2'	19:P:72:GLN:OE1	2.31	0.48
3:7:57:C:H2'	3:7:58:A:H8	1.78	0.48
8:D:64:ILE:HG13	8:D:105:LEU:HD21	1.94	0.48
52:x:224:SER:HA	52:x:254:ALA:HB3	1.95	0.48
2:5:2844:A:O2'	2:5:4631:G:H4'	2.13	0.48
2:5:4155:C:H2'	2:5:4156:G:O4'	2.14	0.48
11:G:106:THR:HB	11:G:195:HIS:CE1	2.48	0.48
21:R:38:ARG:C	21:R:40:GLN:H	2.20	0.48
2:5:134:G:C4	39:j:81:GLY:HA3	2.49	0.48
2:5:961:G:H5"	9:E:119:ARG:HD3	1.96	0.48
2:5:974:C:H2'	2:5:975:C:C6	2.48	0.48
2:5:1669:A:H4'	2:5:1685:G:N2	2.28	0.48
2:5:1927:U:OP1	2:5:1949:U:O2'	2.19	0.48
2:5:3610:A:H2'	2:5:3611:A:C8	2.48	0.48
2:5:3783:A:H4'	2:5:3784:A:H5"	1.94	0.48
2:5:3893:C:H2'	2:5:3894:A:C8	2.48	0.48
2:5:3911:C:H2'	2:5:3912:U:H6	1.77	0.48
2:5:4322:G:N2	2:5:4325:A:OP2	2.41	0.48
2:5:4616:A:H2'	2:5:4617:G:O4'	2.12	0.48
2:5:4898:G:H2'	2:5:4899:G:C8	2.47	0.48
23:T:72:VAL:HG23	23:T:74:ILE:HD11	1.96	0.48
1:1:179:G:H2'	1:1:180:G:C8	2.48	0.48
2:5:161:G:H2'	2:5:162:A:C8	2.49	0.48
2:5:1755:C:C5	2:5:1778:C:H1'	2.48	0.48
2:5:2477:A:H2'	2:5:2478:C:C6	2.49	0.48
2:5:2485:U:H2'	2:5:2486:G:H8	1.78	0.48
2:5:3916:G:H2'	2:5:3917:A:C8	2.49	0.48
2:5:4323:A:C6	8:D:153:THR:HG21	2.48	0.48
12:H:173:ARG:HD3	42:m:124:LYS:HE2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:1211:G:O2'	2:5:1212:G:OP1	2.26	0.48
2:5:2555:G:H2'	2:5:2556:G:H8	1.79	0.48
2:5:4620:U:OP1	25:V:51:ARG:NH2	2.47	0.48
11:G:159:HIS:CE1	11:G:186:GLY:H	2.32	0.48
18:O:168:TYR:CZ	18:O:172:LYS:HD2	2.48	0.48
34:e:91:CYS:HB3	34:e:95:TYR:HD2	1.77	0.48
48:s:39:TRP:HH2	52:x:339:ILE:HA	1.79	0.48
52:x:123:TYR:OH	52:x:127:ARG:NH2	2.46	0.48
2:5:1367:C:O2	2:5:1370:G:O2'	2.32	0.48
2:5:2378:G:N2	2:5:2381:A:OP2	2.41	0.48
2:5:4730:C:O2	2:5:4734:A:N6	2.47	0.48
4:8:21:C:OP1	7:C:195:LYS:NZ	2.41	0.48
4:8:67:U:H2'	4:8:68:G:C8	2.48	0.48
20:Q:39:THR:HG22	20:Q:41:SER:H	1.78	0.48
40:k:28:ASN:HB3	40:k:31:ASN:HB3	1.95	0.48
51:w:52:ARG:HG2	51:w:53:THR:H	1.78	0.48
2:5:288:G:H2'	2:5:289:C:C6	2.49	0.48
2:5:710:G:H2'	2:5:711:A:H8	1.78	0.48
2:5:1806:G:H2'	2:5:1807:C:H6	1.79	0.48
2:5:1879:C:O2'	2:5:1891:A:N3	2.43	0.48
2:5:2657:G:H2'	2:5:2658:G:C8	2.49	0.48
6:B:222:VAL:HG23	6:B:343:ARG:NH1	2.29	0.48
18:O:193:THR:HG22	18:O:197:LYS:HE3	1.95	0.48
24:U:64:GLU:HB3	24:U:71:THR:HG23	1.96	0.48
1:1:241:U:H4'	53:z:577:TRP:CH2	2.49	0.47
2:5:2081:C:H2'	2:5:2082:G:H8	1.79	0.47
2:5:2811:G:N1	2:5:2814:C:OP2	2.31	0.47
2:5:3598:C:H2'	2:5:3599:A:C8	2.48	0.47
3:7:4:U:H2'	3:7:5:A:H8	1.79	0.47
3:7:82:G:H2'	3:7:83:A:C8	2.49	0.47
6:B:222:VAL:HG23	6:B:343:ARG:HH11	1.79	0.47
10:F:229:PHE:N	10:F:235:ALA:O	2.44	0.47
19:P:18:ARG:HA	19:P:94:MET:HE1	1.96	0.47
2:5:725:G:H2'	2:5:726:G:H8	1.78	0.47
2:5:942:G:OP2	10:F:244:ARG:NE	2.44	0.47
2:5:2029:A:H2'	2:5:2030:A:C8	2.49	0.47
2:5:3870:C:H2'	2:5:3871:A:H8	1.80	0.47
2:5:4594:U:H2'	2:5:4595:G:C8	2.44	0.47
2:5:4860:G:H2'	2:5:4861:G:H8	1.79	0.47
2:5:745:G:H2'	2:5:746:A:H5'	1.95	0.47
2:5:1317:U:H2'	2:5:1318:C:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:1458:C:H3'	2:5:1459:A:H8	1.79	0.47
2:5:2517:A:N3	2:5:2539:C:O2'	2.46	0.47
2:5:3910:C:H2'	2:5:3911:C:C6	2.49	0.47
18:O:50:ASN:HD22	18:O:136:ALA:HB3	1.79	0.47
24:U:23:LEU:N	24:U:70:ILE:O	2.43	0.47
2:5:1494:U:H2'	2:5:1495:G:H8	1.79	0.47
2:5:2551:A:H61	2:5:2766:A:H62	1.61	0.47
2:5:2837:U:H4'	6:B:250:LYS:HE3	1.97	0.47
2:5:2906:G:H2'	2:5:2907:G:C8	2.50	0.47
2:5:4186:A:H2'	2:5:4187:G:C8	2.49	0.47
2:5:4473:A:H5"	42:m:100:TYR:HB3	1.97	0.47
2:5:4694:G:N2	2:5:4694:G:OP1	2.48	0.47
2:5:4873:G:C2	16:M:94:LYS:HD2	2.49	0.47
32:c:50:ASN:OD1	32:c:51:ASN:N	2.47	0.47
48:s:83:HIS:HB2	48:s:85:LYS:NZ	2.27	0.47
2:5:980:U:H2'	2:5:981:C:C6	2.50	0.47
2:5:1402:C:H2'	2:5:1403:G:C8	2.50	0.47
2:5:1500:A:H5"	2:5:1501:C:H5'	1.97	0.47
2:5:2846:G:O2'	25:V:19:GLY:O	2.29	0.47
2:5:4253:A:H5'	2:5:4254:G:C8	2.49	0.47
2:5:4992:G:H2'	2:5:4993:G:H8	1.80	0.47
5:A:177:LYS:HB2	45:p:29:ILE:HG21	1.96	0.47
7:C:305:PRO:HB3	20:Q:38:ARG:NH2	2.29	0.47
15:L:62:PRO:O	15:L:63:THR:OG1	2.32	0.47
22:S:69:GLU:HG2	22:S:101:THR:HG22	1.96	0.47
2:5:1402:C:H2'	2:5:1403:G:H8	1.79	0.47
2:5:2429:A:OP1	41:l:43:HIS:NE2	2.45	0.47
2:5:2555:G:H2'	2:5:2556:G:C8	2.50	0.47
2:5:3652:A:O2'	5:A:182:ALA:HB2	2.15	0.47
2:5:4122:G:H4'	36:g:90:ARG:HD2	1.94	0.47
2:5:4472:G:O2'	42:m:100:TYR:O	2.27	0.47
12:H:110:SER:HA	12:H:128:MET:HE2	1.97	0.47
46:q:39:LYS:HG2	46:q:106:LEU:HD22	1.97	0.47
1:1:172:A:N3	1:1:224:G:O2'	2.47	0.47
1:1:254:U:H2'	1:1:255:A:C8	2.49	0.47
2:5:288:G:H2'	2:5:289:C:H6	1.80	0.47
2:5:1613:A:H5"	5:A:183:GLY:CA	2.45	0.47
2:5:1916:G:O6	35:f:18:LEU:HB2	2.15	0.47
2:5:2045:G:O6	2:5:3870:C:O2'	2.33	0.47
2:5:2052:G:O2'	2:5:2057:A:N1	2.43	0.47
2:5:2083:C:H4'	2:5:2084:C:OP2	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:2102:G:H2'	2:5:2103:G:H8	1.80	0.47
2:5:2373:C:H5"	33:d:50:ARG:HH21	1.79	0.47
2:5:2521:G:H2'	2:5:2522:G:H8	1.80	0.47
2:5:3590:G:H2'	2:5:3591:C:O4'	2.15	0.47
2:5:3928:A:H5'	17:N:89:VAL:HG21	1.97	0.47
2:5:4499:G:C2	2:5:4529:G:H1'	2.49	0.47
2:5:4740:G:H2'	2:5:4741:C:C6	2.49	0.47
2:5:4974:C:H2'	2:5:4975:G:C8	2.48	0.47
2:5:5010:U:H2'	2:5:5011:A:H8	1.80	0.47
7:C:146:GLU:HB3	7:C:175:LYS:HD3	1.97	0.47
8:D:69:ILE:HA	23:T:31:MET:HE3	1.96	0.47
11:G:80:ILE:HD11	17:N:18:VAL:HG13	1.97	0.47
20:Q:79:THR:HB	20:Q:136:THR:HG22	1.97	0.47
37:h:121:VAL:HG12	37:h:122:LYS:H	1.80	0.47
50:u:64:ASN:O	50:u:64:ASN:ND2	2.42	0.47
51:w:30:LYS:HG3	51:w:39:CYS:HB3	1.96	0.47
52:x:413:SER:HA	52:x:416:ASP:HB2	1.95	0.47
2:5:35:U:O2'	2:5:1525:A:N1	2.46	0.47
2:5:169:G:N1	2:5:267:G:C2	2.83	0.47
2:5:335:A:H2'	2:5:336:A:C4	2.50	0.47
2:5:370:U:O2'	39:j:16:HIS:ND1	2.35	0.47
2:5:1307:A:H2'	2:5:1308:C:C6	2.50	0.47
2:5:2081:C:H2'	2:5:2082:G:C8	2.50	0.47
2:5:3916:G:H2'	2:5:3917:A:H8	1.79	0.47
2:5:4929:C:H5'	9:E:262:GLN:HE21	1.80	0.47
4:8:153:C:OP1	11:G:185:LYS:NZ	2.40	0.47
11:G:39:PHE:CD1	11:G:47:PRO:HD3	2.50	0.47
15:L:8:MET:HG2	20:Q:166:TYR:HB3	1.96	0.47
1:1:237:G:H2'	1:1:238:G:C8	2.50	0.47
2:5:1279:A:H2'	2:5:1280:C:C2	2.50	0.47
2:5:1461:C:H2'	2:5:1462:A:H8	1.80	0.47
2:5:3732:A:H2'	2:5:3733:A:H8	1.80	0.47
2:5:5022:U:H4'	2:5:5023:C:OP1	2.15	0.47
17:N:9:GLU:HB2	38:i:44:ILE:HG13	1.97	0.47
21:R:24:LEU:HA	21:R:50:ILE:HG22	1.97	0.47
31:b:43:MET:HG2	31:b:47:LYS:HE2	1.96	0.47
1:1:56:A:H2'	1:1:57:G:C8	2.50	0.47
1:1:134:U:H2'	1:1:135:G:C8	2.50	0.47
2:5:65:A:N6	2:5:75:G:H1'	2.30	0.47
2:5:2623:A:H2'	2:5:2624:G:C8	2.50	0.47
2:5:3730:U:H2'	2:5:3731:C:C6	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:4126:C:H5"	2:5:4127:A:H5"	1.96	0.47
11:G:48:LYS:HB3	27:X:42:THR:HG23	1.97	0.47
15:L:130:LYS:HE2	15:L:132:SER:HB3	1.96	0.47
52:x:110:GLN:HG3	52:x:193:GLY:HA3	1.97	0.47
2:5:151:G:O6	11:G:139:GLY:HA3	2.16	0.46
2:5:700:G:H2'	2:5:701:G:C8	2.51	0.46
2:5:976:G:H2'	2:5:977:C:C6	2.50	0.46
2:5:1670:G:OP1	31:b:12:GLN:NE2	2.35	0.46
2:5:2028:C:H2'	2:5:2029:A:H8	1.80	0.46
2:5:2102:G:H2'	2:5:2103:G:C8	2.49	0.46
2:5:2706:G:N2	2:5:2709:C:OP2	2.48	0.46
10:F:156:ILE:HD12	10:F:193:ILE:HG12	1.97	0.46
30:a:4:ARG:HG2	30:a:5:LEU:HD12	1.96	0.46
51:w:21:ASP:N	51:w:21:ASP:OD1	2.46	0.46
2:5:406:C:HO2'	2:5:407:A:P	2.38	0.46
2:5:1188:C:H2'	2:5:1189:G:C8	2.49	0.46
2:5:2374:A:H5"	33:d:63:ARG:HG3	1.96	0.46
2:5:2876:G:N7	45:p:16:THR:HG23	2.30	0.46
2:5:3707:U:H2'	2:5:3708:C:H6	1.79	0.46
2:5:4473:A:H2'	2:5:4474:A:H8	1.79	0.46
7:C:177:TRP:O	7:C:181:LYS:HG3	2.15	0.46
13:I:54:SER:HB3	13:I:135:ILE:HD11	1.97	0.46
23:T:51:GLY:HA3	23:T:92:ARG:HB2	1.98	0.46
29:Z:25:ILE:HA	29:Z:43:VAL:HG12	1.97	0.46
46:q:68:TYR:CE2	46:q:70:ARG:HB3	2.51	0.46
48:s:24:LEU:HD23	48:s:24:LEU:O	2.15	0.46
52:x:55:ASN:OD1	52:x:82:GLU:OE1	2.33	0.46
2:5:181:C:N3	2:5:256:G:N2	2.64	0.46
2:5:727:C:H3'	2:5:728:U:H3'	1.97	0.46
2:5:1209:U:O2	10:F:72:ARG:NH2	2.44	0.46
2:5:1449:C:H2'	2:5:1450:C:C6	2.50	0.46
2:5:2521:G:H2'	2:5:2522:G:C8	2.50	0.46
2:5:2811:G:H22	2:5:2813:A:H3'	1.79	0.46
2:5:3861:A:H2'	2:5:3862:A:C8	2.50	0.46
2:5:4288:C:O2'	2:5:4321:U:OP1	2.32	0.46
7:C:288:ASP:OD1	7:C:288:ASP:N	2.44	0.46
46:q:49:ILE:HA	46:q:52:VAL:HG22	1.98	0.46
52:x:35:VAL:O	52:x:39:LEU:HD23	2.16	0.46
52:x:65:MET:HE3	52:x:65:MET:HB2	1.85	0.46
2:5:180:C:H2'	2:5:181:C:C6	2.50	0.46
2:5:684:G:OP1	9:E:97:ASN:ND2	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:976:G:H2'	2:5:977:C:H6	1.80	0.46
2:5:1358:G:O2'	2:5:1359:G:H8	1.98	0.46
2:5:1557:C:H2'	2:5:1558:A:H8	1.80	0.46
2:5:4305:G:H1	23:T:87:LYS:HZ2	1.64	0.46
4:8:32:C:H2'	4:8:33:G:O4'	2.16	0.46
21:R:10:LEU:HB3	21:R:41:ILE:HD12	1.97	0.46
1:1:133:A:N6	1:1:165:G:O6	2.49	0.46
1:1:283:A:H2'	1:1:284:G:H8	1.80	0.46
2:5:453:G:H2'	2:5:453:G:N3	2.31	0.46
2:5:963:G:N2	2:5:967:C:H41	2.12	0.46
2:5:1218:G:H3'	2:5:1219:G:H5"	1.98	0.46
2:5:1318:C:OP1	30:a:21:ARG:HB2	2.15	0.46
2:5:1490:G:H2'	2:5:1491:A:C8	2.51	0.46
2:5:1593:A:H5"	2:5:2839:U:H5"	1.97	0.46
2:5:1775:A:H3'	2:5:1776:A:C8	2.49	0.46
2:5:2661:U:O3'	2:5:2662:G:H4'	2.16	0.46
2:5:2906:G:H2'	2:5:2907:G:H8	1.80	0.46
2:5:4077:A:N1	2:5:4171:C:N4	2.60	0.46
2:5:4186:A:H2'	2:5:4187:G:H8	1.80	0.46
5:A:104:VAL:HA	5:A:107:MET:HE3	1.98	0.46
6:B:217:ILE:HD11	6:B:333:LEU:HD11	1.98	0.46
7:C:78:ARG:HB3	7:C:88:GLY:HA2	1.98	0.46
8:D:72:ASP:N	8:D:72:ASP:OD1	2.48	0.46
10:F:109:LYS:HD2	10:F:112:GLN:HE21	1.81	0.46
22:S:127:MET:HA	23:T:153:PRO:HD2	1.97	0.46
2:5:1548:G:O2'	2:5:2812:A:N3	2.39	0.46
2:5:3910:C:H2'	2:5:3911:C:H6	1.80	0.46
2:5:4412:C:H2'	2:5:4413:C:O2	2.15	0.46
4:8:141:C:H2'	4:8:142:U:C6	2.50	0.46
10:F:173:ASP:OD1	10:F:174:ASN:N	2.49	0.46
14:J:143:ASP:OD1	14:J:143:ASP:N	2.48	0.46
20:Q:8:ASN:HD22	20:Q:8:ASN:H	1.64	0.46
33:d:59:THR:OG1	33:d:104:THR:OG1	2.27	0.46
1:1:112:C:H3'	1:1:113:G:H5"	1.98	0.46
1:1:202:C:H2'	1:1:203:G:C8	2.51	0.46
1:1:209:G:H2'	1:1:210:G:H8	1.81	0.46
2:5:454:U:O2'	2:5:455:C:O5'	2.30	0.46
2:5:974:C:O3'	10:F:49:ARG:NH2	2.49	0.46
2:5:2326:G:H5"	34:e:127:ALA:HB1	1.98	0.46
2:5:3620:G:OP1	2:5:3622:C:N4	2.49	0.46
2:5:3635:A:N7	2:5:3692:A:H1'	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:4415:A:H4'	13:I:74:LYS:HD2	1.97	0.46
2:5:4637:G:H2'	2:5:4638:U:C6	2.50	0.46
2:5:5019:A:H2'	2:5:5020:G:C8	2.49	0.46
5:A:14:SER:H	5:A:17:ARG:HG3	1.79	0.46
10:F:97:ILE:HD13	10:F:143:ALA:HB2	1.98	0.46
20:Q:181:ARG:HB2	20:Q:184:ARG:HB2	1.96	0.46
35:f:46:ARG:O	35:f:104:MET:N	2.40	0.46
52:x:23:ILE:O	52:x:23:ILE:HG12	2.15	0.46
53:z:576:ARG:O	53:z:576:ARG:NH1	2.49	0.46
2:5:1278:C:C4	2:5:1279:A:H1'	2.50	0.46
2:5:1662:C:H2'	2:5:1663:C:C6	2.50	0.46
2:5:2373:C:H5'	33:d:46:LEU:HD22	1.96	0.46
2:5:3621:A:C8	2:5:4642:U:H1'	2.51	0.46
2:5:4134:C:H2'	2:5:4135:G:H8	1.81	0.46
2:5:4730:C:H2'	2:5:4965:U:C4	2.51	0.46
4:8:148:A:H2'	4:8:149:G:C8	2.51	0.46
6:B:220:ILE:HB	6:B:346:THR:HB	1.98	0.46
8:D:119:TYR:OH	8:D:139:PRO:O	2.24	0.46
9:E:162:LYS:HE2	9:E:204:ILE:HG21	1.97	0.46
16:M:58:THR:OG1	16:M:59:ASP:N	2.48	0.46
17:N:120:TRP:HZ2	17:N:123:GLU:HG2	1.80	0.46
22:S:161:ARG:HB3	22:S:164:LYS:HB2	1.97	0.46
40:k:16:ARG:HD3	40:k:61:PRO:HG2	1.97	0.46
45:p:38:THR:HA	45:p:45:THR:HA	1.98	0.46
52:x:240:VAL:HG23	52:x:242:VAL:HG23	1.98	0.46
1:1:159:C:H2'	1:1:160:A:C8	2.51	0.46
1:1:227:G:OP2	50:u:39:LYS:NZ	2.49	0.46
2:5:1338:G:H22	30:a:25:HIS:CD2	2.34	0.46
2:5:1346:C:H2'	2:5:1347:G:C8	2.50	0.46
2:5:1431:C:H2'	2:5:1432:G:O4'	2.16	0.46
2:5:1461:C:H2'	2:5:1462:A:C8	2.51	0.46
2:5:2414:G:H2'	2:5:2415:U:C6	2.51	0.46
2:5:2444:U:O2'	4:8:112:G:O2'	2.33	0.46
2:5:2517:A:O2'	36:g:66:ARG:NH1	2.48	0.46
2:5:3877:A:N3	2:5:4401:G:O2'	2.31	0.46
3:7:23:A:H2	3:7:118:C:H1'	1.81	0.46
8:D:268:ARG:HD2	8:D:269:PRO:HD2	1.97	0.46
11:G:117:ARG:HD3	11:G:128:VAL:HG13	1.98	0.46
52:x:132:THR:HG23	52:x:186:ILE:HB	1.98	0.46
52:x:149:LYS:HG3	52:x:159:PHE:CZ	2.51	0.46
2:5:2415:U:H2'	2:5:2416:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:7:27:G:H2'	3:7:28:C:C6	2.51	0.46
46:q:19:TYR:CZ	46:q:81:ARG:HD3	2.50	0.46
1:1:59:A:OP1	51:w:52:ARG:NH2	2.49	0.45
2:5:2749:C:H2'	2:5:2750:G:C8	2.51	0.45
2:5:2854:G:O6	6:B:243:LYS:NZ	2.35	0.45
2:5:4747:C:H5"	35:f:54:LYS:HE2	1.97	0.45
26:W:13:ILE:HG12	26:W:32:LEU:HD23	1.97	0.45
41:l:28:ARG:HA	41:l:33:ASN:ND2	2.31	0.45
44:o:9:ARG:HA	44:o:20:PRO:HA	1.97	0.45
48:s:33:ILE:CD1	52:x:466:MET:HA	2.45	0.45
48:s:43:LEU:HD11	52:x:307:VAL:CG1	2.45	0.45
49:t:28:ILE:HG23	49:t:58:LEU:HD21	1.98	0.45
2:5:86:U:H2'	2:5:87:A:H8	1.80	0.45
2:5:693:C:O2'	2:5:694:C:OP1	2.31	0.45
2:5:1340:C:H2'	2:5:1341:U:C6	2.52	0.45
2:5:1501:C:H4'	2:5:1502:G:H5'	1.98	0.45
2:5:1787:A:N3	2:5:4210:U:O2'	2.47	0.45
2:5:2551:A:H61	2:5:2766:A:N6	2.14	0.45
2:5:2586:G:H8	2:5:2770:C:H1'	1.82	0.45
2:5:3705:G:H21	5:A:224:THR:HG21	1.81	0.45
2:5:4896:G:N2	2:5:4926:C:N3	2.64	0.45
4:8:69:U:H2'	4:8:70:G:O4'	2.16	0.45
7:C:232:VAL:HB	7:C:263:LEU:HD11	1.97	0.45
27:X:104:ALA:O	27:X:134:LYS:NZ	2.46	0.45
35:f:8:LYS:HB3	35:f:100:ARG:NH1	2.30	0.45
52:x:340:MET:HE2	52:x:340:MET:HB2	1.85	0.45
2:5:1311:G:H4'	34:e:50:LYS:HE2	1.98	0.45
2:5:1545:G:H2'	2:5:1546:C:C6	2.52	0.45
2:5:3717:A:H2'	2:5:3718:A:C8	2.52	0.45
12:H:31:ARG:NH1	12:H:87:GLY:HA3	2.31	0.45
20:Q:89:ASP:OD1	20:Q:91:ARG:HG2	2.15	0.45
52:x:349:LEU:HD12	52:x:352:ILE:HD13	1.97	0.45
1:1:134:U:H2'	1:1:135:G:H8	1.80	0.45
2:5:65:A:H61	2:5:75:G:H1'	1.81	0.45
2:5:1494:U:H2'	2:5:1495:G:C8	2.52	0.45
2:5:2743:A:H2'	2:5:2744:A:C8	2.52	0.45
2:5:3619:G:H22	2:5:3624:A:H1'	1.81	0.45
2:5:4232:U:C2	44:o:5:PRO:HD3	2.51	0.45
2:5:5010:U:H2'	2:5:5011:A:C8	2.51	0.45
6:B:86:VAL:HG12	6:B:201:LEU:HD12	1.99	0.45
6:B:294:LYS:HB2	53:z:570:VAL:HG11	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:C:6:PRO:HD2	7:C:24:LEU:HD12	1.97	0.45
21:R:105:LEU:HD23	21:R:138:LEU:HD22	1.98	0.45
22:S:74:ARG:O	22:S:76:LYS:NZ	2.49	0.45
28:Y:44:VAL:HG21	28:Y:119:LEU:HD23	1.98	0.45
32:c:47:ILE:HD13	32:c:72:HIS:HB3	1.97	0.45
2:5:271:C:H2'	2:5:272:U:C6	2.52	0.45
2:5:1380:G:H4'	2:5:1381:U:OP1	2.16	0.45
2:5:4325:A:H1'	8:D:36:LEU:HD23	1.99	0.45
2:5:4528:G:HO2'	2:5:4529:G:P	2.39	0.45
8:D:208:MET:HG2	8:D:219:TYR:HE1	1.82	0.45
16:M:24:LEU:HD11	16:M:86:TRP:CG	2.51	0.45
37:h:106:LYS:HG3	37:h:110:LYS:HE2	1.99	0.45
50:u:38:ARG:HE	50:u:69:LEU:HD12	1.82	0.45
2:5:699:C:H2'	2:5:700:G:C8	2.51	0.45
2:5:709:C:H2'	2:5:710:G:C8	2.51	0.45
2:5:989:U:O2	2:5:1064:G:O6	2.35	0.45
2:5:1771:U:H2'	2:5:1772:C:C6	2.51	0.45
2:5:1846:G:H2'	2:5:1847:C:C6	2.52	0.45
2:5:2543:A:H2	2:5:2773:G:H1	1.64	0.45
2:5:4768:G:H5'	18:O:176:ARG:HD3	1.98	0.45
2:5:4912:G:N7	2:5:4913:G:N2	2.64	0.45
3:7:49:A:OP1	8:D:225:GLN:HB2	2.16	0.45
18:O:47:PHE:HA	18:O:136:ALA:HB2	1.98	0.45
22:S:82:LEU:HB2	22:S:93:MET:HB2	1.99	0.45
1:1:136:G:H2'	1:1:137:U:C6	2.52	0.45
2:5:450:G:H5'	2:5:451:C:OP2	2.16	0.45
2:5:1235:G:H2'	2:5:1236:C:H5'	1.99	0.45
2:5:1727:U:H2'	2:5:1728:U:C6	2.51	0.45
2:5:2447:U:H2'	2:5:2448:G:H8	1.80	0.45
52:x:122:ALA:HB2	52:x:188:ILE:HD11	1.99	0.45
1:1:285:C:H2'	1:1:286:G:C8	2.52	0.45
2:5:425:U:H2'	2:5:426:A:H8	1.81	0.45
2:5:1565:A:C5	2:5:1566:C:H1'	2.52	0.45
2:5:1846:G:H2'	2:5:1847:C:H6	1.82	0.45
2:5:2345:G:N7	30:a:9:ARG:NH1	2.64	0.45
12:H:106:GLN:HG2	12:H:111:LEU:HD23	1.99	0.45
27:X:95:THR:HG22	27:X:139:ARG:HA	1.99	0.45
52:x:60:ILE:HG21	52:x:75:ILE:CG1	2.47	0.45
1:1:129:C:H2'	1:1:130:A:H8	1.82	0.45
1:1:181:U:H2'	1:1:182:G:O4'	2.17	0.45
2:5:220:C:H2'	2:5:221:C:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:979:C:H2'	2:5:980:U:C6	2.52	0.45
2:5:1448:G:C2	2:5:2097:U:C4	3.05	0.45
2:5:1601:A:OP1	39:j:5:THR:OG1	2.29	0.45
2:5:1839:U:OP2	10:F:204:LYS:NZ	2.38	0.45
2:5:2539:C:H2'	2:5:2540:C:H6	1.82	0.45
2:5:2859:G:N2	2:5:3837:C:O2	2.50	0.45
13:I:63:GLU:OE2	13:I:63:GLU:N	2.48	0.45
17:N:17:ASP:HA	17:N:20:ARG:HG2	1.98	0.45
21:R:7:GLN:HG2	21:R:32:ILE:HG22	1.99	0.45
21:R:15:LEU:HD13	21:R:52:ARG:HB3	1.97	0.45
26:W:4:GLU:O	26:W:13:ILE:N	2.45	0.45
48:s:39:TRP:HH2	52:x:339:ILE:HG12	1.81	0.45
52:x:317:ALA:O	52:x:320:GLU:HG3	2.17	0.45
1:1:188:G:H2'	1:1:189:C:C6	2.52	0.45
1:1:296:C:H2'	1:1:297:U:C6	2.52	0.45
2:5:132:G:N2	2:5:137:G:C6	2.85	0.45
2:5:1199:G:H2'	2:5:1200:G:H8	1.82	0.45
2:5:1285:U:O2'	2:5:1286:C:H5"	2.16	0.45
2:5:4740:G:N2	2:5:4959:U:H3	2.14	0.45
24:U:100:LEU:HD23	24:U:112:LEU:HD23	1.99	0.45
25:V:82:ILE:HG22	25:V:83:ARG:HG3	1.99	0.45
34:e:100:ALA:HB3	34:e:103:VAL:HG23	1.99	0.45
52:x:80:PHE:CD1	52:x:80:PHE:O	2.70	0.45
52:x:413:SER:HB3	52:x:417:VAL:HG23	1.98	0.45
2:5:971:U:O4	9:E:124:HIS:ND1	2.50	0.44
2:5:1338:G:H4'	2:5:1339:U:H6	1.81	0.44
2:5:1639:U:N3	2:5:1643:A:O2'	2.27	0.44
2:5:2248:C:OP2	10:F:26:ASN:N	2.50	0.44
2:5:2552:G:OP2	2:5:2553:A:H5"	2.17	0.44
2:5:2894:A:H2'	2:5:2895:A:C8	2.52	0.44
2:5:4591:U:H2'	2:5:4592:C:C6	2.52	0.44
2:5:5060:A:O2'	2:5:5061:A:OP1	2.29	0.44
4:8:14:U:H5"	19:P:123:PRO:HG3	1.98	0.44
6:B:41:VAL:HA	6:B:187:GLY:HA3	1.99	0.44
7:C:302:LEU:HB3	20:Q:38:ARG:HD3	1.98	0.44
9:E:233:LYS:O	9:E:235:LYS:N	2.50	0.44
14:J:112:HIS:HA	14:J:115:LEU:HD23	1.99	0.44
25:V:75:LYS:HE3	25:V:77:HIS:NE2	2.32	0.44
26:W:20:ARG:HD3	26:W:30:GLN:HG3	2.00	0.44
52:x:9:LYS:HB3	52:x:9:LYS:HE2	1.80	0.44
1:1:11:G:H2'	1:1:12:U:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:1823:G:H4'	8:D:44:TYR:HD2	1.81	0.44
2:5:2065:G:O2'	35:f:80:ASN:ND2	2.45	0.44
2:5:3653:A:H2	2:5:3692:A:H4'	1.76	0.44
2:5:4618:G:H5'	25:V:15:ARG:HB3	1.98	0.44
2:5:4860:G:H2'	2:5:4861:G:C8	2.52	0.44
2:5:4873:G:H22	16:M:98:ARG:NH1	2.16	0.44
2:5:4898:G:H2'	2:5:4899:G:H8	1.82	0.44
3:7:29:C:H1'	3:7:51:G:H1	1.81	0.44
5:A:136:VAL:HG12	5:A:148:VAL:HG12	1.98	0.44
11:G:165:GLU:OE1	17:N:11:TRP:NE1	2.41	0.44
12:H:41:ILE:HG23	12:H:43:VAL:HG13	1.99	0.44
16:M:100:ARG:HA	16:M:103:LYS:HG2	1.99	0.44
28:Y:22:PRO:HD2	28:Y:25:ILE:HD12	2.00	0.44
34:e:89:LEU:HD13	34:e:118:LEU:HD22	1.99	0.44
2:5:267:G:H2'	2:5:268:G:H8	1.81	0.44
2:5:733:A:H2'	2:5:734:G:H8	1.81	0.44
2:5:1481:C:O2'	2:5:1482:G:O4'	2.36	0.44
2:5:1837:A:H2'	2:5:1838:A:C8	2.52	0.44
2:5:1942:A:H2'	2:5:1943:A:H8	1.81	0.44
2:5:2080:U:H2'	2:5:2081:C:C6	2.52	0.44
2:5:2253:A:H2'	2:5:2254:G:H4'	1.98	0.44
2:5:2490:U:H3'	2:5:2491:C:C5	2.52	0.44
2:5:2607:C:H2'	2:5:2608:G:C8	2.53	0.44
2:5:3648:A:H1'	2:5:3785:A:N6	2.31	0.44
2:5:4642:U:H2'	2:5:4643:G:H8	1.82	0.44
5:A:159:SER:O	5:A:162:ASN:ND2	2.50	0.44
24:U:24:ASP:HA	24:U:69:LYS:HA	1.98	0.44
30:a:82:VAL:HG21	30:a:101:ILE:HG12	2.00	0.44
52:x:84:VAL:HG23	52:x:291:ILE:HG21	1.99	0.44
2:5:960:A:C8	7:C:308:LYS:HE3	2.53	0.44
2:5:1329:G:O2'	2:5:1330:A:OP1	2.25	0.44
2:5:1499:C:OP1	20:Q:150:ARG:NH2	2.51	0.44
2:5:1596:U:H5'	48:s:82:PHE:HZ	1.82	0.44
2:5:2079:G:H2'	2:5:2080:U:H6	1.82	0.44
2:5:4303:C:H2'	2:5:4305:G:H8	1.83	0.44
2:5:4538:G:H2'	2:5:4539:U:C6	2.52	0.44
13:I:91:LEU:HD12	13:I:135:ILE:HG23	1.98	0.44
14:J:34:THR:O	14:J:38:LYS:HG2	2.18	0.44
22:S:154:LEU:HB3	22:S:157:ARG:HD3	2.00	0.44
29:Z:41:ALA:HB2	29:Z:77:TYR:HE1	1.82	0.44
52:x:459:ASN:ND2	52:x:477:MET:SD	2.84	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:22:C:H4'	1:1:59:A:H1'	2.00	0.44
1:1:51:G:H1	1:1:295:U:H3	1.65	0.44
2:5:23:C:H2'	2:5:24:G:O4'	2.17	0.44
2:5:123:C:H2'	2:5:124:C:H6	1.82	0.44
2:5:1497:A:H61	20:Q:175:GLU:HB2	1.82	0.44
2:5:1655:C:O2	2:5:4390:A:O2'	2.34	0.44
2:5:3764:U:H2'	2:5:3765:G:O4'	2.18	0.44
2:5:3911:C:H2'	2:5:3912:U:C6	2.51	0.44
2:5:4080:C:H2'	2:5:4081:G:H8	1.82	0.44
2:5:4710:C:H2'	2:5:4711:C:C6	2.53	0.44
7:C:338:ASN:C	7:C:340:ILE:H	2.26	0.44
12:H:47:LEU:HG	12:H:52:LYS:HD2	1.99	0.44
29:Z:52:LYS:HE2	29:Z:54:THR:HG22	1.98	0.44
41:l:45:ARG:HD2	41:l:45:ARG:HA	1.71	0.44
50:u:109:ALA:HB1	50:u:133:THR:HG22	2.00	0.44
2:5:1068:G:H2'	2:5:1069:G:C8	2.51	0.44
2:5:1234:G:C4	2:5:1235:G:C8	3.05	0.44
2:5:1340:C:OP2	30:a:6:ARG:NH1	2.50	0.44
2:5:1884:C:H4'	2:5:2070:U:C4	2.53	0.44
2:5:2527:A:OP1	21:R:38:ARG:NH1	2.51	0.44
2:5:3633:C:H2'	2:5:3634:G:H8	1.83	0.44
3:7:15:C:H2'	3:7:16:A:H8	1.83	0.44
4:8:40:A:H2'	4:8:41:A:C8	2.53	0.44
17:N:191:ALA:O	17:N:195:ARG:HD3	2.17	0.44
48:s:55:PRO:HD3	52:x:452:GLN:HG3	1.99	0.44
52:x:147:GLN:O	52:x:150:GLN:HG3	2.18	0.44
2:5:223:G:H4'	2:5:225:G:C8	2.53	0.44
2:5:319:A:H1'	2:5:3726:A:N3	2.32	0.44
2:5:474:C:H2'	2:5:475:G:H8	1.83	0.44
2:5:1628:C:H42	5:A:3:ARG:HD2	1.81	0.44
2:5:1835:G:H4'	2:5:1836:G:O5'	2.17	0.44
2:5:1921:C:O4'	22:S:161:ARG:HG2	2.18	0.44
2:5:4740:G:H22	2:5:4959:U:H3	1.64	0.44
2:5:4745:G:H22	2:5:4955:A:H61	1.64	0.44
3:7:24:C:H2'	3:7:25:G:O4'	2.17	0.44
9:E:264:GLN:O	9:E:268:ARG:HG3	2.18	0.44
29:Z:77:TYR:HB3	32:c:39:ARG:NE	2.32	0.44
50:u:111:GLU:HA	50:u:114:ARG:HG2	2.00	0.44
52:x:103:VAL:HG13	52:x:214:PRO:HA	2.00	0.44
52:x:262:ALA:O	52:x:266:THR:HG22	2.18	0.44
1:1:126:C:H2'	1:1:127:A:C8	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:693:C:H2'	2:5:694:C:C6	2.52	0.44
2:5:1168:G:H2'	2:5:1169:G:H8	1.82	0.44
2:5:1392:A:H2'	2:5:1393:G:C8	2.52	0.44
2:5:1407:C:O2'	2:5:1409:C:OP1	2.34	0.44
2:5:1472:C:H2'	2:5:1473:U:C6	2.52	0.44
2:5:4421:C:N4	2:5:4475:G:H22	2.15	0.44
11:G:65:ARG:O	11:G:69:ILE:HG12	2.18	0.44
11:G:256:ALA:O	11:G:260:GLU:HG2	2.17	0.44
33:d:114:PHE:HA	33:d:117:LEU:HD12	2.00	0.44
2:5:297:U:O2'	17:N:179:LYS:O	2.25	0.44
2:5:1217:G:N2	2:5:1218:G:O6	2.50	0.44
2:5:1320:U:O2'	2:5:1891:A:N1	2.40	0.44
2:5:3932:U:H2'	2:5:3933:G:H8	1.82	0.44
6:B:66:LYS:HE3	25:V:11:GLY:HA3	2.00	0.44
11:G:181:TYR:CZ	11:G:226:TYR:HB3	2.53	0.44
22:S:161:ARG:HB3	22:S:164:LYS:HG3	2.00	0.44
42:m:85:LEU:O	42:m:88:LYS:HG2	2.18	0.44
1:1:150:G:OP1	46:q:22:TYR:OH	2.23	0.43
2:5:724:C:H2'	2:5:725:G:H8	1.83	0.43
2:5:1669:A:H4'	2:5:1685:G:H21	1.81	0.43
2:5:2250:C:H2'	2:5:2252:G:H1'	1.98	0.43
2:5:2792:C:O2	39:j:9:GLY:HA2	2.18	0.43
2:5:3759:A:H62	2:5:3764:U:H3	1.66	0.43
11:G:88:ASP:N	11:G:88:ASP:OD1	2.51	0.43
17:N:73:ARG:HB3	17:N:89:VAL:HG12	2.00	0.43
29:Z:14:LEU:HB3	36:g:88:ARG:HG3	2.00	0.43
30:a:100:ILE:HA	30:a:123:ILE:HB	1.99	0.43
52:x:26:GLU:C	52:x:26:GLU:CD	2.86	0.43
52:x:28:LEU:HD13	52:x:57:LYS:HE2	1.99	0.43
1:1:19:C:H2'	1:1:20:G:C8	2.50	0.43
1:1:218:U:H2'	1:1:219:C:C6	2.51	0.43
2:5:951:G:H2'	2:5:952:G:C8	2.53	0.43
2:5:1236:C:H4'	2:5:1237:C:O5'	2.18	0.43
2:5:2279:A:O2'	34:e:48:ARG:NH2	2.51	0.43
2:5:2502:G:HO2'	2:5:2503:G:P	2.38	0.43
2:5:4528:G:O2'	2:5:4529:G:OP1	2.28	0.43
2:5:4937:C:O2	9:E:179:ARG:NH2	2.51	0.43
4:8:19:C:H2'	4:8:20:A:C8	2.53	0.43
11:G:140:VAL:HG13	11:G:200:THR:OG1	2.18	0.43
21:R:66:ASN:O	21:R:70:ARG:HD3	2.18	0.43
48:s:24:LEU:CA	48:s:27:LEU:HD23	2.44	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:s:27:LEU:N	48:s:27:LEU:CD2	2.73	0.43
52:x:221:MET:HG3	52:x:225:ILE:HD11	1.99	0.43
1:1:130:A:H2'	1:1:131:A:C8	2.51	0.43
2:5:375:G:OP2	39:j:52:LYS:NZ	2.49	0.43
2:5:1170:G:O6	2:5:1192:C:N4	2.51	0.43
2:5:1272:C:O2'	2:5:1273:G:O4'	2.31	0.43
2:5:1428:U:H5'	20:Q:42:THR:OG1	2.18	0.43
2:5:2601:A:N6	2:5:2743:A:H3'	2.33	0.43
2:5:3658:C:H5"	5:A:242:ARG:O	2.18	0.43
2:5:3933:G:H2'	2:5:3934:G:H8	1.83	0.43
2:5:4448:G:H5"	2:5:4449:A:H5'	1.99	0.43
3:7:3:C:H2'	3:7:4:U:C6	2.52	0.43
11:G:44:ASP:OD1	11:G:44:ASP:N	2.51	0.43
28:Y:50:ARG:HD2	28:Y:115:ARG:HH11	1.83	0.43
36:g:60:ARG:HB2	36:g:63:VAL:HG23	2.00	0.43
52:x:194:ARG:NE	52:x:201:LEU:O	2.48	0.43
1:1:159:C:H2'	1:1:160:A:H8	1.83	0.43
2:5:408:A:O2'	2:5:411:G:OP2	2.27	0.43
2:5:732:A:H61	2:5:934:C:H42	1.66	0.43
2:5:977:C:C2'	2:5:978:G:H5'	2.48	0.43
2:5:1098:G:H2'	2:5:1099:C:H6	1.83	0.43
2:5:1191:C:H2'	2:5:1192:C:H6	1.83	0.43
2:5:1480:C:N4	2:5:1483:C:O2	2.52	0.43
2:5:1557:C:H2'	2:5:1558:A:C8	2.53	0.43
2:5:3938:G:H4'	2:5:3939:G:O5'	2.18	0.43
2:5:4145:C:H2'	2:5:4146:G:C8	2.53	0.43
2:5:4460:U:H2'	2:5:4461:C:C6	2.53	0.43
4:8:26:C:O2'	7:C:53:ALA:O	2.32	0.43
7:C:143:ARG:N	7:C:179:ASP:OD1	2.49	0.43
7:C:307:LYS:HB3	7:C:307:LYS:HE2	1.77	0.43
16:M:96:GLU:OE2	16:M:100:ARG:NH2	2.49	0.43
21:R:70:ARG:HE	21:R:75:HIS:HB2	1.83	0.43
44:o:65:LYS:HE3	44:o:65:LYS:HB2	1.87	0.43
46:q:67:MET:HB2	46:q:79:ARG:HH11	1.83	0.43
1:1:94:C:H2'	1:1:95:U:O4'	2.19	0.43
2:5:1739:G:N3	2:5:1742:A:N6	2.66	0.43
2:5:1895:G:H2'	2:5:1896:A:O4'	2.18	0.43
2:5:2292:C:H2'	2:5:2293:U:C6	2.53	0.43
2:5:2526:C:OP2	21:R:38:ARG:HG2	2.18	0.43
2:5:2553:A:OP2	2:5:2574:G:O2'	2.27	0.43
2:5:2894:A:H2'	2:5:2895:A:H8	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:4091:G:H2'	2:5:4092:G:C8	2.54	0.43
2:5:4460:U:H2'	2:5:4461:C:H6	1.83	0.43
2:5:4681:A:H2'	2:5:4682:U:O4'	2.19	0.43
3:7:4:U:H2'	3:7:5:A:C8	2.53	0.43
4:8:102:G:H5"	39:j:39:TYR:HE1	1.83	0.43
10:F:222:MET:HB3	10:F:234:ASP:OD2	2.19	0.43
14:J:82:ILE:HG22	14:J:130:PHE:HE2	1.83	0.43
21:R:103:ARG:O	21:R:107:ARG:HG2	2.18	0.43
25:V:107:ASN:OD1	25:V:111:GLU:N	2.51	0.43
44:o:26:TYR:HB3	44:o:67:VAL:HB	2.00	0.43
47:r:16:PHE:HD1	47:r:27:THR:HG23	1.83	0.43
50:u:6:LEU:HD11	50:u:179:ARG:HG3	2.00	0.43
52:x:466:MET:HG3	52:x:467:ASP:H	1.83	0.43
1:1:170:C:H41	50:u:103:ARG:NH2	2.17	0.43
2:5:1065:G:H2'	2:5:1066:G:C8	2.54	0.43
2:5:1080:C:N4	2:5:1221:G:O6	2.52	0.43
2:5:4524:G:N3	6:B:252:ALA:HB1	2.33	0.43
7:C:231:ASN:HB3	7:C:234:LYS:HG2	2.01	0.43
16:M:104:MET:HE3	16:M:109:ARG:HG2	2.00	0.43
34:e:84:GLU:OE1	47:r:20:ARG:NH2	2.52	0.43
34:e:124:ASN:OD1	34:e:124:ASN:N	2.52	0.43
37:h:74:LYS:HE3	37:h:74:LYS:HB3	1.85	0.43
50:u:34:GLN:O	50:u:38:ARG:HG2	2.18	0.43
52:x:50:LYS:O	52:x:50:LYS:HG3	2.19	0.43
2:5:1211:G:H2'	2:5:1212:G:C8	2.54	0.43
2:5:1329:G:H2'	2:5:3865:A:H5'	2.01	0.43
2:5:1442:C:H2'	2:5:1443:A:C8	2.53	0.43
2:5:2706:G:H1	21:R:43:LYS:HE2	1.84	0.43
2:5:4334:U:O4'	23:T:8:ARG:HD3	2.18	0.43
7:C:298:ILE:O	7:C:302:LEU:HG	2.19	0.43
14:J:26:VAL:HG11	14:J:32:ARG:HB3	2.01	0.43
16:M:86:TRP:O	16:M:89:THR:OG1	2.37	0.43
21:R:44:LEU:HD22	21:R:49:LEU:HD22	2.01	0.43
29:Z:17:ARG:NH2	29:Z:18:TYR:OH	2.52	0.43
42:m:77:ILE:HG23	42:m:78:ILE:HG22	2.00	0.43
48:s:50:HIS:CD2	48:s:50:HIS:H	2.36	0.43
50:u:103:ARG:O	50:u:106:VAL:HG12	2.18	0.43
1:1:6:G:H4'	1:1:289:A:H5'	2.01	0.43
1:1:41:G:H2'	1:1:42:G:C8	2.54	0.43
1:1:94:C:N3	1:1:257:C:N4	2.53	0.43
1:1:175:G:H3'	1:1:176:A:H4'	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:7:C:H2'	2:5:8:U:C6	2.54	0.43
2:5:1442:C:H2'	2:5:1443:A:H8	1.83	0.43
2:5:1753:G:H5'	2:5:1754:U:OP2	2.19	0.43
2:5:1806:G:H2'	2:5:1807:C:C6	2.53	0.43
2:5:2293:U:H2'	2:5:2294:G:C8	2.54	0.43
2:5:2639:U:H2'	2:5:2694:G:H1	1.84	0.43
2:5:2692:U:H2'	2:5:2693:G:O4'	2.18	0.43
2:5:3635:A:C8	2:5:3692:A:H1'	2.53	0.43
2:5:5004:C:H2'	2:5:5005:G:O4'	2.19	0.43
4:8:95:A:OP1	39:j:81:GLY:N	2.45	0.43
6:B:112:ASP:O	6:B:116:ARG:HG2	2.19	0.43
7:C:140:LYS:HE3	7:C:245:HIS:HB2	2.01	0.43
7:C:266:THR:OG1	7:C:267:TRP:N	2.52	0.43
10:F:69:THR:O	10:F:73:MET:HG2	2.18	0.43
16:M:24:LEU:HB2	16:M:43:THR:HG21	2.00	0.43
52:x:57:LYS:HA	52:x:57:LYS:HD3	1.44	0.43
1:1:161:C:H2'	1:1:162:C:C6	2.53	0.43
2:5:132:G:H2'	2:5:133:C:O4'	2.19	0.43
2:5:1242:G:H4'	2:5:1242:G:OP1	2.18	0.43
2:5:1417:C:H2'	2:5:1418:C:H6	1.84	0.43
2:5:2089:G:N3	2:5:2089:G:H2'	2.34	0.43
2:5:2478:C:H2'	2:5:2479:G:C8	2.54	0.43
2:5:3848:U:H2'	2:5:3849:A:C8	2.53	0.43
2:5:4178:A:H2'	2:5:4179:G:C8	2.53	0.43
2:5:4578:G:H2'	2:5:4579:U:C6	2.54	0.43
2:5:4642:U:H2'	2:5:4643:G:C8	2.54	0.43
3:7:23:A:H2'	3:7:24:C:C6	2.54	0.43
15:L:109:SER:O	15:L:113:ASN:ND2	2.44	0.43
52:x:177:GLU:O	52:x:180:LYS:HG2	2.19	0.43
1:1:235:G:H4'	1:1:236:U:OP1	2.18	0.43
2:5:173:C:H2'	2:5:174:C:C6	2.54	0.43
2:5:218:A:H8	7:C:181:LYS:HE3	1.84	0.43
2:5:950:G:H2'	2:5:951:G:H8	1.82	0.43
2:5:1292:C:H3'	2:5:1293:G:H5"	2.01	0.43
2:5:2590:G:N2	2:5:2754:G:N3	2.66	0.43
2:5:4237:C:O3'	2:5:4326:G:N2	2.52	0.43
2:5:5003:U:H2'	2:5:5004:C:C6	2.54	0.43
5:A:53:GLY:O	5:A:192:LYS:NZ	2.50	0.43
8:D:205:ALA:HB1	8:D:233:PRO:HB3	1.99	0.43
9:E:58:MET:HB3	9:E:62:LYS:HE3	2.00	0.43
2:5:67:C:N4	2:5:325:U:O2'	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:163:A:H2'	2:5:164:G:C8	2.54	0.42
2:5:499:G:H2'	2:5:499:G:N3	2.34	0.42
2:5:1528:U:H2'	2:5:1529:G:C8	2.54	0.42
2:5:1870:C:H2'	2:5:1871:A:C8	2.54	0.42
2:5:2484:A:H2'	2:5:2485:U:H6	1.83	0.42
2:5:2810:U:H2'	2:5:2811:G:O4'	2.19	0.42
2:5:3651:A:C4	2:5:3652:A:C8	3.06	0.42
2:5:3699:C:O2'	2:5:3775:A:O2'	2.27	0.42
2:5:3753:G:H22	2:5:3771:C:H5	1.67	0.42
2:5:3812:C:OP1	2:5:3813:A:O2'	2.29	0.42
2:5:4604:G:N2	2:5:4607:A:OP2	2.50	0.42
2:5:4676:G:OP1	6:B:281:ASN:ND2	2.51	0.42
3:7:3:C:H2'	3:7:4:U:H6	1.84	0.42
4:8:141:C:OP1	17:N:38:ARG:NH1	2.46	0.42
6:B:122:TRP:CE2	6:B:127:LYS:HE3	2.54	0.42
9:E:172:THR:OG1	9:E:182:LEU:HD23	2.19	0.42
10:F:30:LEU:O	10:F:34:ARG:HG2	2.19	0.42
12:H:38:PHE:CE1	12:H:73:ILE:HG13	2.54	0.42
13:I:188:LYS:HE3	13:I:212:LEU:HD13	2.01	0.42
27:X:56:ARG:HG2	27:X:58:PRO:HD3	2.00	0.42
30:a:71:PRO:HG2	30:a:108:TYR:HA	2.00	0.42
52:x:135:ILE:HB	52:x:189:VAL:HA	1.99	0.42
52:x:349:LEU:O	52:x:352:ILE:HG12	2.19	0.42
2:5:310:G:C4	38:i:31:GLY:HA3	2.54	0.42
2:5:432:U:H4'	2:5:433:A:H5"	2.00	0.42
2:5:1089:G:H2'	2:5:1090:G:H8	1.84	0.42
2:5:2309:G:O2'	4:8:18:U:O2	2.37	0.42
2:5:2494:U:H2'	2:5:2495:U:C6	2.53	0.42
2:5:3788:C:N4	2:5:3812:C:O4'	2.52	0.42
2:5:4457:U:O2	6:B:252:ALA:HB3	2.19	0.42
11:G:146:LEU:HD13	11:G:152:ALA:HB2	2.00	0.42
20:Q:54:SER:O	20:Q:58:ARG:HG2	2.19	0.42
28:Y:8:THR:HG23	28:Y:13:LYS:HD2	2.01	0.42
52:x:404:GLN:O	52:x:408:ARG:HG2	2.19	0.42
2:5:2306:G:H1'	2:5:2332:A:N6	2.34	0.42
2:5:2374:A:H2'	2:5:2375:A:H8	1.83	0.42
2:5:4688:C:H2'	2:5:4689:U:C6	2.53	0.42
6:B:53:MET:HE2	6:B:75:ALA:HB1	2.01	0.42
8:D:209:ARG:NH2	8:D:234:ASP:OD1	2.35	0.42
11:G:106:THR:OG1	11:G:107:LYS:N	2.53	0.42
25:V:57:VAL:HG21	25:V:122:ALA:HB3	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:Y:50:ARG:HG2	28:Y:51:LYS:H	1.84	0.42
29:Z:33:THR:O	29:Z:34:SER:OG	2.35	0.42
52:x:17:LEU:HD23	52:x:27:VAL:CG1	2.49	0.42
52:x:303:LEU:HD23	52:x:487:PHE:CE1	2.53	0.42
53:z:567:ASP:HB2	53:z:568:PRO:HD3	2.00	0.42
2:5:74:G:H5"	15:L:59:VAL:HG22	2.02	0.42
2:5:956:A:H3'	2:5:957:G:C8	2.54	0.42
2:5:1184:A:H2'	2:5:1185:G:H8	1.84	0.42
2:5:1400:G:H2'	2:5:1401:C:H6	1.85	0.42
2:5:2376:A:H2'	2:5:2377:C:C6	2.55	0.42
2:5:2400:G:N2	36:g:6:THR:HG22	2.31	0.42
2:5:3594:C:O2	2:5:3594:C:H2'	2.19	0.42
2:5:3599:A:H2'	2:5:3600:G:H8	1.82	0.42
2:5:4897:G:H2'	2:5:4898:G:C8	2.54	0.42
2:5:4969:C:H2'	2:5:4970:C:H6	1.85	0.42
4:8:92:U:H2'	4:8:93:C:O4'	2.19	0.42
4:8:94:G:OP2	39:j:72:ARG:NH1	2.52	0.42
6:B:168:MET:HE2	6:B:175:GLN:HG3	2.01	0.42
8:D:60:ILE:HB	8:D:80:ALA:HB2	2.01	0.42
9:E:95:ASP:OD2	9:E:101:ARG:NH2	2.52	0.42
13:I:61:SER:HA	13:I:126:VAL:HG23	1.99	0.42
37:h:9:LEU:HD21	37:h:57:VAL:HG22	2.02	0.42
52:x:73:LYS:HB3	52:x:73:LYS:HE3	1.36	0.42
2:5:197:A:N3	2:5:222:C:O2'	2.48	0.42
2:5:223:G:H4'	2:5:225:G:N7	2.35	0.42
2:5:281:U:H2'	2:5:282:C:H6	1.84	0.42
2:5:451:C:O2'	9:E:226:GLY:O	2.23	0.42
2:5:1321:G:H2'	2:5:3876:A:N7	2.34	0.42
2:5:1440:U:H2'	2:5:1441:C:C5	2.54	0.42
2:5:2090:U:C2	2:5:2091:C:H5	2.37	0.42
2:5:2502:G:H4'	2:5:2503:G:OP1	2.19	0.42
2:5:2573:A:H2'	2:5:2574:G:O4'	2.20	0.42
2:5:2723:U:H2'	2:5:2724:G:C8	2.54	0.42
2:5:2728:U:H2'	2:5:2729:C:C6	2.54	0.42
2:5:4611:A:H2	12:H:120:GLU:HG2	1.84	0.42
7:C:137:VAL:HG21	7:C:150:LEU:HD11	2.01	0.42
28:Y:82:ILE:HD12	28:Y:85:VAL:HG21	2.00	0.42
32:c:90:ARG:HH21	45:p:44:LYS:HE3	1.84	0.42
52:x:6:LEU:HD12	52:x:9:LYS:HD3	2.02	0.42
52:x:125:TYR:HB3	52:x:130:TRP:HB2	2.01	0.42
52:x:202:PHE:CZ	52:x:239:LYS:HD2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:2:G:H2'	2:5:3:C:C6	2.54	0.42
2:5:25:A:N3	2:5:339:C:O2'	2.46	0.42
2:5:747:A:H62	2:5:915:A:H2	1.65	0.42
2:5:1222:A:H1'	2:5:1232:G:C4	2.55	0.42
2:5:1645:C:H2'	2:5:1646:A:C8	2.55	0.42
2:5:1727:U:H2'	2:5:1728:U:H6	1.84	0.42
2:5:3650:C:C2	2:5:3651:A:C8	3.07	0.42
2:5:4871:C:H4'	2:5:4872:G:H5'	2.01	0.42
2:5:4880:C:N4	2:5:4881:U:O4	2.52	0.42
2:5:4893:A:H5"	18:O:188:LYS:HE3	2.00	0.42
5:A:44:ILE:HD11	5:A:85:GLY:HA2	2.01	0.42
7:C:81:GLY:HA2	48:s:78:ARG:HH12	1.85	0.42
7:C:150:LEU:HB3	7:C:151:PRO:HD3	2.02	0.42
7:C:189:MET:HE1	7:C:201:ARG:HE	1.85	0.42
14:J:94:LEU:HD23	14:J:166:PHE:CZ	2.54	0.42
34:e:82:VAL:HG23	34:e:114:ARG:HG2	2.02	0.42
36:g:86:CYS:O	36:g:90:ARG:HG2	2.20	0.42
37:h:27:GLU:OE1	52:x:72:ARG:NH2	2.53	0.42
1:1:129:C:H2'	1:1:130:A:C8	2.55	0.42
2:5:71:C:O3'	15:L:67:HIS:NE2	2.51	0.42
2:5:440:U:H2'	2:5:441:G:H8	1.84	0.42
2:5:684:G:HO2'	2:5:685:C:P	2.42	0.42
2:5:2023:C:H2'	2:5:2024:G:O4'	2.19	0.42
2:5:3920:U:H2'	2:5:3921:U:C6	2.55	0.42
6:B:303:ALA:HA	6:B:368:ILE:HD12	2.02	0.42
7:C:159:GLU:HB3	7:C:215:ASN:HB2	2.01	0.42
51:w:38:LEU:N	51:w:54:ASP:HB3	2.26	0.42
2:5:58:G:H4'	2:5:59:A:H4'	2.01	0.42
2:5:448:G:H2'	2:5:449:C:O4'	2.19	0.42
2:5:969:C:O2'	2:5:970:G:O4'	2.36	0.42
2:5:3736:A:H2'	2:5:3737:A:C8	2.54	0.42
2:5:4082:G:H2'	2:5:4083:U:C6	2.55	0.42
2:5:4192:A:H2'	2:5:4193:C:H6	1.85	0.42
2:5:4263:C:H2'	2:5:4264:G:O4'	2.20	0.42
2:5:4538:G:H2'	2:5:4539:U:H6	1.84	0.42
2:5:4945:G:H1'	35:f:69:VAL:HG11	2.01	0.42
7:C:305:PRO:HD3	20:Q:38:ARG:HH12	1.85	0.42
14:J:28:GLU:O	14:J:29:SER:OG	2.32	0.42
17:N:104:GLU:HA	17:N:160:GLU:HG3	2.01	0.42
1:1:136:G:H2'	1:1:137:U:H6	1.83	0.42
2:5:68:U:OP1	17:N:178:HIS:ND1	2.32	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:978:G:H2'	2:5:979:C:H6	1.85	0.42
2:5:1072:C:H1'	2:5:1073:G:C8	2.55	0.42
2:5:1089:G:H2'	2:5:1090:G:C8	2.54	0.42
2:5:1370:G:H4'	2:5:1371:A:H5'	2.02	0.42
2:5:4417:C:H2'	2:5:4418:G:O4'	2.20	0.42
4:8:40:A:H2'	4:8:41:A:H8	1.85	0.42
20:Q:15:ARG:NE	20:Q:52:PHE:O	2.53	0.42
22:S:97:TYR:CZ	22:S:109:CYS:HA	2.55	0.42
29:Z:31:ASP:OD1	29:Z:32:GLY:N	2.53	0.42
52:x:23:ILE:HD11	52:x:75:ILE:HD12	2.02	0.42
52:x:254:ALA:O	52:x:255:LYS:HG2	2.20	0.42
1:1:118:A:N1	1:1:234:A:N6	2.68	0.42
1:1:133:A:C6	1:1:165:G:C6	3.08	0.42
2:5:972:C:H2'	2:5:973:G:C8	2.55	0.42
2:5:1356:U:H2'	2:5:1357:C:C6	2.55	0.42
2:5:1471:U:H2'	2:5:1472:C:H6	1.85	0.42
2:5:2342:G:OP2	30:a:2:PRO:HA	2.20	0.42
2:5:3607:U:H2'	2:5:3608:A:C8	2.55	0.42
2:5:4653:C:H2'	2:5:4654:C:C6	2.54	0.42
6:B:44:THR:HG22	6:B:349:LYS:HD2	2.01	0.42
7:C:317:ASN:HD22	7:C:320:LYS:HG3	1.85	0.42
13:I:35:ASP:N	13:I:35:ASP:OD1	2.53	0.42
15:L:64:VAL:O	15:L:67:HIS:HB2	2.20	0.42
15:L:80:GLU:HG2	15:L:110:LEU:HD12	2.01	0.42
1:1:285:C:H2'	1:1:286:G:H8	1.84	0.41
2:5:40:G:N2	2:5:4380:A:H62	2.18	0.41
2:5:298:G:H5'	17:N:179:LYS:O	2.19	0.41
2:5:663:G:H3'	2:5:664:G:H5"	2.02	0.41
2:5:936:C:H4'	16:M:44:ARG:HH11	1.84	0.41
2:5:1078:A:H2'	2:5:1079:C:H5	1.85	0.41
2:5:1907:A:H4'	10:F:225:LYS:HE3	2.02	0.41
2:5:2028:C:H2'	2:5:2029:A:C8	2.54	0.41
2:5:2482:C:H2'	2:5:2483:G:C8	2.54	0.41
2:5:3927:U:H2'	2:5:3928:A:C8	2.55	0.41
2:5:3933:G:H2'	2:5:3934:G:C8	2.55	0.41
2:5:4474:A:H2'	2:5:4476:C:H5"	2.02	0.41
2:5:4568:A:O2'	2:5:4981:G:N7	2.52	0.41
4:8:75:G:H2'	4:8:76:C:C6	2.54	0.41
10:F:227:THR:OG1	10:F:231:GLU:OE2	2.37	0.41
11:G:231:ASP:HB3	11:G:235:ARG:HH12	1.85	0.41
15:L:164:GLU:HB3	30:a:100:ILE:HD12	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:P:7:ASP:OD1	19:P:7:ASP:N	2.53	0.41
19:P:94:MET:HE2	19:P:146:ILE:HG12	2.02	0.41
52:x:48:LEU:HD21	52:x:86:LEU:HD11	1.99	0.41
1:1:35:U:H4'	1:1:37:C:H5	1.84	0.41
2:5:125:C:H2'	2:5:126:C:H6	1.83	0.41
2:5:678:C:H2'	2:5:679:C:C6	2.55	0.41
2:5:927:G:O2'	2:5:928:C:O5'	2.37	0.41
2:5:944:A:N7	10:F:60:HIS:HA	2.35	0.41
2:5:1352:C:H2'	2:5:1353:G:O4'	2.21	0.41
2:5:1401:C:H2'	2:5:1402:C:H6	1.85	0.41
2:5:1479:G:H2'	2:5:1480:C:C6	2.55	0.41
2:5:4949:G:N2	2:5:4950:U:O2'	2.53	0.41
5:A:70:LYS:HD2	5:A:72:ARG:NH1	2.35	0.41
7:C:11:TYR:HA	7:C:17:SER:HA	2.02	0.41
8:D:152:ARG:HG3	8:D:154:THR:HG23	2.01	0.41
17:N:169:ARG:HE	17:N:174:LEU:HD11	1.85	0.41
37:h:30:GLN:NE2	52:x:71:LYS:NZ	2.68	0.41
2:5:381:U:H4'	2:5:415:G:H5'	2.02	0.41
2:5:1633:G:H5'	2:5:1634:A:OP1	2.19	0.41
2:5:1755:C:N4	2:5:1778:C:O2'	2.42	0.41
2:5:2669:C:H2'	2:5:2670:C:O4'	2.20	0.41
2:5:2696:A:H62	40:k:35:LYS:NZ	2.18	0.41
2:5:3684:G:H2'	2:5:3685:C:C6	2.55	0.41
2:5:4699:U:H4'	2:5:4700:A:OP1	2.20	0.41
2:5:4750:G:H5'	2:5:4751:G:H21	1.85	0.41
2:5:4757:C:H6	2:5:4757:C:H2'	1.71	0.41
22:S:161:ARG:HD2	22:S:164:LYS:HG3	2.01	0.41
28:Y:127:GLN:HA	28:Y:130:LYS:HE2	2.01	0.41
32:c:33:GLN:O	32:c:37:MET:HG2	2.21	0.41
38:i:10:GLY:C	38:i:12:ASN:H	2.28	0.41
47:r:18:ILE:O	47:r:24:THR:HA	2.20	0.41
1:1:256:G:H2'	1:1:257:C:C6	2.55	0.41
2:5:267:G:H2'	2:5:268:G:C8	2.56	0.41
2:5:424:U:H2'	2:5:425:U:C6	2.53	0.41
2:5:474:C:H2'	2:5:475:G:C8	2.55	0.41
2:5:977:C:H2'	2:5:978:G:H8	1.86	0.41
2:5:1420:A:O2'	2:5:1500:A:O3'	2.38	0.41
2:5:1449:C:H2'	2:5:1450:C:H6	1.86	0.41
2:5:2374:A:H2'	2:5:2375:A:C8	2.55	0.41
2:5:2671:C:H2'	2:5:2672:C:C6	2.55	0.41
16:M:31:ILE:H	16:M:36:ALA:HA	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:N:114:ARG:HG3	17:N:137:PRO:HG3	2.02	0.41
18:O:12:ARG:HD3	18:O:37:ARG:HH11	1.86	0.41
21:R:98:ARG:NH2	21:R:132:PHE:O	2.50	0.41
22:S:35:PRO:HD2	22:S:39:VAL:HG21	2.01	0.41
30:a:100:ILE:HG12	30:a:123:ILE:HD12	2.03	0.41
34:e:19:LYS:HE3	34:e:19:LYS:HB3	1.93	0.41
34:e:43:ASN:O	34:e:47:ARG:HG2	2.20	0.41
51:w:12:ARG:HG3	51:w:16:LYS:NZ	2.36	0.41
52:x:202:PHE:CE2	52:x:239:LYS:HD2	2.55	0.41
52:x:471:LEU:HD21	52:x:477:MET:HE1	2.02	0.41
2:5:1:C:H4'	2:5:2:G:OP1	2.20	0.41
2:5:1286:C:OP1	9:E:123:SER:HB3	2.21	0.41
2:5:1612:G:H2'	2:5:1612:G:N3	2.35	0.41
2:5:2904:U:H5"	2:5:2905:C:C5	2.55	0.41
2:5:4717:A:H2'	2:5:4718:G:O4'	2.20	0.41
3:7:120:U:O2'	8:D:258:LYS:NZ	2.42	0.41
8:D:164:LYS:HB2	8:D:180:PHE:CE1	2.54	0.41
9:E:145:ILE:HD12	9:E:267:LEU:HD21	2.02	0.41
12:H:103:VAL:HG21	12:H:144:LEU:HD11	2.01	0.41
18:O:109:PRO:HG2	18:O:112:TYR:HD2	1.85	0.41
52:x:194:ARG:CZ	52:x:205:MET:HB2	2.50	0.41
52:x:440:LEU:HG	52:x:458:LEU:HD13	2.02	0.41
2:5:456:C:H2'	2:5:457:G:H8	1.86	0.41
2:5:1504:G:OP1	20:Q:147:GLU:HG2	2.20	0.41
2:5:1558:A:H2'	2:5:1559:G:H8	1.85	0.41
2:5:2374:A:H5'	33:d:64:ILE:O	2.20	0.41
2:5:2611:A:H2'	2:5:2612:G:H8	1.85	0.41
2:5:2620:G:P	24:U:80:LYS:H	2.44	0.41
2:5:2725:A:H5"	21:R:97:ARG:HH21	1.86	0.41
2:5:2792:C:OP1	41:l:48:LYS:HG2	2.21	0.41
2:5:4458:C:H2'	2:5:4459:U:H6	1.86	0.41
2:5:4970:C:C2	2:5:4971:A:C8	3.09	0.41
18:O:22:ILE:HD13	22:S:166:ARG:HD3	2.03	0.41
24:U:20:LYS:HG3	24:U:73:THR:HG22	2.03	0.41
25:V:21:PRO:HA	25:V:54:ALA:HA	2.03	0.41
2:5:119:G:H1	11:G:133:PRO:HD2	1.86	0.41
2:5:184:U:O2	2:5:253:G:N2	2.35	0.41
2:5:1398:A:C8	2:5:1399:G:C8	3.09	0.41
2:5:1407:C:O2'	2:5:1408:G:OP1	2.32	0.41
2:5:1514:U:H2'	2:5:1515:A:C8	2.56	0.41
2:5:2759:G:N2	2:5:2764:A:N1	2.69	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:3930:U:H2'	2:5:3931:C:C6	2.56	0.41
2:5:4476:C:O2'	2:5:4478:G:OP2	2.33	0.41
2:5:4704:C:H2'	2:5:4705:A:H8	1.86	0.41
2:5:4748:U:H3	2:5:4952:G:H1	1.68	0.41
4:8:68:G:H2'	4:8:69:U:C6	2.56	0.41
5:A:173:GLY:O	45:p:69:TRP:NE1	2.52	0.41
25:V:43:LYS:HE3	25:V:43:LYS:HB2	1.92	0.41
29:Z:10:VAL:O	29:Z:83:THR:OG1	2.33	0.41
52:x:114:LYS:NZ	56:x:601:GDP:O2B	2.54	0.41
1:1:236:U:C2	1:1:237:G:C8	3.09	0.41
2:5:1309:C:H2'	2:5:1310:C:C6	2.56	0.41
2:5:1755:C:H5	2:5:1778:C:H1'	1.86	0.41
2:5:2495:U:H2'	2:5:2496:G:C8	2.56	0.41
2:5:3773:U:H2'	2:5:3775:A:H2	1.85	0.41
2:5:3795:A:H2'	2:5:3796:U:C6	2.56	0.41
2:5:4586:G:O6	2:5:4717:A:N6	2.53	0.41
2:5:4662:C:O2'	2:5:5004:C:OP1	2.34	0.41
4:8:86:U:H6	37:h:7:ARG:HE	1.68	0.41
6:B:168:MET:HE1	6:B:173:LEU:HD12	2.03	0.41
8:D:216:GLU:O	8:D:220:LYS:HG2	2.21	0.41
8:D:235:MET:HA	8:D:238:GLU:CD	2.46	0.41
12:H:94:SER:HB2	12:H:101:ILE:HD12	2.01	0.41
15:L:169:ILE:H	15:L:169:ILE:HG13	1.61	0.41
27:X:47:ARG:HB3	27:X:47:ARG:HH11	1.86	0.41
31:b:36:ASP:OD1	31:b:36:ASP:N	2.54	0.41
46:q:45:THR:N	46:q:48:GLU:OE2	2.52	0.41
47:r:52:GLU:OE2	47:r:79:ARG:NH2	2.38	0.41
52:x:167:ASP:HB3	52:x:170:ILE:HG12	2.02	0.41
1:1:128:U:O2'	1:1:174:G:O2'	2.37	0.41
1:1:132:U:H2'	1:1:133:A:H8	1.85	0.41
1:1:193:G:H2'	1:1:194:G:O4'	2.20	0.41
2:5:286:U:O2	2:5:301:G:O6	2.38	0.41
2:5:347:A:H2'	2:5:348:G:C8	2.55	0.41
2:5:422:C:H2'	2:5:423:G:C8	2.56	0.41
2:5:427:A:H2'	2:5:428:G:C8	2.56	0.41
2:5:919:C:O2'	16:M:65:PRO:HD3	2.20	0.41
2:5:1065:G:H2'	2:5:1066:G:H8	1.86	0.41
2:5:1340:C:H2'	2:5:1341:U:H6	1.86	0.41
2:5:1440:U:O2'	2:5:1441:C:OP1	2.35	0.41
2:5:1786:A:H2'	2:5:1789:C:C5	2.56	0.41
2:5:1823:G:H2'	2:5:1825:A:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:2362:U:H2'	2:5:2363:A:C8	2.56	0.41
2:5:3692:A:C5	2:5:3693:U:C5	3.09	0.41
2:5:4145:C:H2'	2:5:4146:G:H8	1.86	0.41
2:5:4192:A:H2'	2:5:4193:C:C6	2.55	0.41
2:5:4321:U:H2'	2:5:4322:G:C8	2.55	0.41
2:5:4582:C:H2'	2:5:4583:C:O4'	2.21	0.41
2:5:4888:U:O2'	2:5:4889:G:H2'	2.21	0.41
4:8:141:C:H5"	17:N:60:VAL:HG21	2.03	0.41
7:C:6:PRO:HB2	47:r:71:ARG:HH12	1.86	0.41
7:C:239:LYS:O	7:C:248:ARG:NH1	2.53	0.41
9:E:210:ASP:OD1	9:E:210:ASP:N	2.54	0.41
16:M:127:VAL:HG21	18:O:178:ARG:HE	1.85	0.41
17:N:10:LEU:HG	38:i:44:ILE:HD12	2.03	0.41
18:O:84:VAL:HG11	18:O:102:LEU:HD13	2.02	0.41
21:R:153:LYS:HE3	21:R:153:LYS:HB3	1.88	0.41
24:U:25:CYS:HB2	24:U:28:PRO:HG3	2.03	0.41
25:V:89:ARG:HB2	25:V:95:PHE:CE2	2.56	0.41
32:c:64:ALA:O	32:c:68:LYS:N	2.54	0.41
34:e:35:TRP:CZ2	34:e:56:PRO:HD2	2.56	0.41
35:f:47:CYS:O	35:f:72:GLY:N	2.54	0.41
44:o:12:CYS:HB3	44:o:15:CYS:HB2	2.02	0.41
50:u:109:ALA:O	50:u:112:LEU:HG	2.20	0.41
52:x:31:MET:SD	52:x:31:MET:O	2.79	0.41
52:x:437:ILE:HD12	52:x:437:ILE:HA	1.90	0.41
1:1:41:G:H2'	1:1:42:G:H8	1.86	0.41
1:1:253:A:H2'	1:1:254:U:C6	2.56	0.41
2:5:174:C:H2'	2:5:175:C:H6	1.86	0.41
2:5:689:U:H4'	47:r:85:ASN:CG	2.46	0.41
2:5:1328:G:O2'	2:5:2349:A:OP1	2.38	0.41
2:5:1391:A:OP2	20:Q:181:ARG:NH1	2.43	0.41
2:5:1401:C:H2'	2:5:1402:C:C6	2.56	0.41
2:5:1460:C:H2'	2:5:1461:C:C6	2.56	0.41
2:5:2083:C:P	20:Q:14:ARG:HH22	2.43	0.41
2:5:2464:C:H2'	2:5:2465:C:H6	1.85	0.41
2:5:3687:A:O2'	5:A:236:GLY:N	2.52	0.41
6:B:286:LYS:HD2	6:B:365:LEU:HD22	2.03	0.41
7:C:11:TYR:CE2	7:C:17:SER:HB3	2.56	0.41
10:F:87:ALA:CA	23:T:138:ALA:HB2	2.51	0.41
13:I:74:LYS:HE3	13:I:74:LYS:HB2	1.87	0.41
15:L:178:ALA:HB1	30:a:146:LEU:HD21	2.03	0.41
22:S:29:ARG:HE	23:T:150:LEU:HG	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:V:75:LYS:HE3	25:V:77:HIS:CE1	2.56	0.41
52:x:243:ALA:O	52:x:268:SER:OG	2.30	0.41
1:1:291:C:H2'	1:1:292:C:C6	2.56	0.40
2:5:482:G:H2'	2:5:483:G:C8	2.56	0.40
2:5:1182:C:OP2	2:5:1183:C:N4	2.53	0.40
2:5:1233:G:H2'	2:5:1234:G:H8	1.81	0.40
2:5:1308:C:H2'	2:5:1309:C:C6	2.56	0.40
2:5:1662:C:H2'	2:5:1663:C:H6	1.85	0.40
2:5:1884:C:H2'	2:5:1885:G:H8	1.85	0.40
2:5:2897:G:H2'	2:5:2898:G:H8	1.86	0.40
2:5:2902:G:N2	2:5:3597:G:H22	2.19	0.40
2:5:3888:G:HO2'	2:5:3889:G:P	2.44	0.40
2:5:4635:A:H8	2:5:5048:A:H61	1.68	0.40
2:5:4897:G:H2'	2:5:4898:G:H8	1.85	0.40
4:8:68:G:H2'	4:8:69:U:H6	1.86	0.40
7:C:218:VAL:HG12	7:C:229:LEU:HD13	2.02	0.40
21:R:74:ARG:O	21:R:76:MET:HG2	2.21	0.40
37:h:12:LYS:NZ	37:h:20:GLN:OE1	2.50	0.40
37:h:95:LEU:HD12	37:h:95:LEU:HA	1.92	0.40
40:k:11:PHE:CZ	40:k:34:PHE:HB3	2.55	0.40
2:5:267:G:C2	2:5:268:G:C5	3.10	0.40
2:5:481:G:H2'	2:5:482:G:C8	2.57	0.40
2:5:2487:G:H4'	4:8:125:C:OP1	2.21	0.40
2:5:2811:G:N2	2:5:2813:A:H3'	2.36	0.40
2:5:3937:C:H2'	2:5:3938:G:C2	2.56	0.40
2:5:4127:A:O2'	2:5:4128:A:H8	2.04	0.40
17:N:73:ARG:HG2	17:N:75:VAL:HG13	2.03	0.40
20:Q:101:CYS:SG	20:Q:126:LEU:HD12	2.61	0.40
41:l:12:PHE:O	41:l:16:LYS:HG2	2.22	0.40
41:l:44:TRP:CZ3	41:l:45:ARG:HD3	2.57	0.40
48:s:30:VAL:HG22	52:x:467:ASP:HB2	2.04	0.40
52:x:106:PHE:CD1	52:x:218:VAL:HB	2.56	0.40
2:5:127:G:H2'	2:5:128:C:C6	2.56	0.40
2:5:172:C:O2	37:h:112:ARG:NH2	2.54	0.40
2:5:302:C:H2'	2:5:303:C:H6	1.86	0.40
2:5:1822:U:H3'	2:5:1823:G:H8	1.87	0.40
2:5:2406:G:O6	41:l:2:SER:N	2.54	0.40
2:5:2611:A:H2'	2:5:2612:G:C8	2.56	0.40
2:5:2674:A:OP2	32:c:31:TYR:N	2.54	0.40
2:5:3936:A:N6	2:5:4175:G:O6	2.54	0.40
2:5:4563:U:H2'	2:5:4564:A:H8	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:4992:G:H4'	6:B:176:LYS:NZ	2.37	0.40
2:5:5061:A:C4'	2:5:5062:G:H5"	2.52	0.40
7:C:290:SER:O	7:C:294:LYS:HG2	2.22	0.40
14:J:10:ASN:HB3	14:J:13:ARG:HB2	2.03	0.40
23:T:18:PRO:HG2	23:T:21:LYS:HB2	2.03	0.40
48:s:48:ILE:HA	48:s:49:PRO:HD3	1.94	0.40
52:x:331:ASP:O	52:x:335:GLN:HG2	2.22	0.40
2:5:136:C:H5'	37:h:96:ASN:OD1	2.22	0.40
2:5:447:C:N4	2:5:448:G:O6	2.54	0.40
2:5:1472:C:H2'	2:5:1473:U:H6	1.87	0.40
2:5:1867:A:OP1	13:I:13:LYS:NZ	2.40	0.40
2:5:3703:G:H2'	2:5:3704:U:H6	1.87	0.40
2:5:3883:U:H2'	2:5:3884:U:C6	2.57	0.40
2:5:4635:A:H3'	2:5:4636:U:H4'	2.02	0.40
6:B:288:GLY:HA3	6:B:330:PHE:CZ	2.56	0.40
10:F:98:ARG:HH22	10:F:226:THR:HA	1.86	0.40
14:J:43:LEU:HD13	14:J:117:ILE:HD11	2.03	0.40
17:N:136:ASP:HA	17:N:137:PRO:HD3	1.94	0.40
19:P:94:MET:HE3	19:P:94:MET:HB3	1.98	0.40
20:Q:82:VAL:O	20:Q:102:ALA:HA	2.22	0.40
21:R:130:ASN:O	21:R:130:ASN:ND2	2.54	0.40
27:X:78:LYS:HD2	27:X:99:ILE:HG22	2.03	0.40
34:e:67:LYS:HG2	34:e:68:HIS:CD2	2.56	0.40
46:q:52:VAL:HB	46:q:111:MET:HG3	2.04	0.40
2:5:1335:G:N2	7:C:95:MET:HB2	2.37	0.40
2:5:1955:G:H2'	2:5:1956:A:C8	2.56	0.40
2:5:3597:G:H2'	2:5:3598:C:C6	2.57	0.40
2:5:4153:C:H2'	2:5:4154:G:C8	2.56	0.40
7:C:149:GLU:HG3	47:r:71:ARG:HG3	2.03	0.40
20:Q:22:ASP:O	20:Q:26:ARG:HG2	2.22	0.40
22:S:159:LEU:O	22:S:162:GLN:NE2	2.55	0.40
28:Y:124:LYS:HD3	28:Y:124:LYS:HA	1.91	0.40
47:r:118:LEU:HD23	47:r:121:GLN:HE21	1.86	0.40
52:x:63:GLU:H	52:x:63:GLU:HG3	1.49	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	A	242/245 (99%)	227 (94%)	15 (6%)	0	100	100
6	B	392/402 (98%)	384 (98%)	8 (2%)	0	100	100
7	C	360/413 (87%)	348 (97%)	12 (3%)	0	100	100
8	D	290/297 (98%)	275 (95%)	15 (5%)	0	100	100
9	E	232/248 (94%)	199 (86%)	33 (14%)	0	100	100
10	F	223/225 (99%)	216 (97%)	7 (3%)	0	100	100
11	G	239/319 (75%)	223 (93%)	16 (7%)	0	100	100
12	H	188/192 (98%)	181 (96%)	7 (4%)	0	100	100
13	I	200/214 (94%)	195 (98%)	5 (2%)	0	100	100
14	J	167/178 (94%)	154 (92%)	13 (8%)	0	100	100
15	L	208/210 (99%)	191 (92%)	16 (8%)	1 (0%)	25	56
16	M	136/218 (62%)	133 (98%)	3 (2%)	0	100	100
17	N	201/204 (98%)	192 (96%)	9 (4%)	0	100	100
18	O	197/199 (99%)	195 (99%)	2 (1%)	0	100	100
19	P	151/153 (99%)	149 (99%)	2 (1%)	0	100	100
20	Q	185/187 (99%)	180 (97%)	5 (3%)	0	100	100
21	R	178/180 (99%)	173 (97%)	5 (3%)	0	100	100
22	S	173/175 (99%)	166 (96%)	7 (4%)	0	100	100
23	T	157/160 (98%)	148 (94%)	9 (6%)	0	100	100
24	U	97/99 (98%)	92 (95%)	5 (5%)	0	100	100
25	V	129/140 (92%)	126 (98%)	3 (2%)	0	100	100
26	W	61/63 (97%)	61 (100%)	0	0	100	100
27	X	117/156 (75%)	112 (96%)	5 (4%)	0	100	100
28	Y	132/145 (91%)	130 (98%)	2 (2%)	0	100	100
29	Z	133/136 (98%)	123 (92%)	10 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
30	a	145/147 (99%)	135 (93%)	10 (7%)	0	100	100
31	b	73/223 (33%)	70 (96%)	3 (4%)	0	100	100
32	c	92/94 (98%)	91 (99%)	1 (1%)	0	100	100
33	d	105/125 (84%)	104 (99%)	1 (1%)	0	100	100
34	e	126/157 (80%)	121 (96%)	5 (4%)	0	100	100
35	f	107/110 (97%)	101 (94%)	6 (6%)	0	100	100
36	g	112/129 (87%)	112 (100%)	0	0	100	100
37	h	120/123 (98%)	118 (98%)	2 (2%)	0	100	100
38	i	100/102 (98%)	95 (95%)	5 (5%)	0	100	100
39	j	84/97 (87%)	82 (98%)	2 (2%)	0	100	100
40	k	67/69 (97%)	60 (90%)	7 (10%)	0	100	100
41	l	48/51 (94%)	41 (85%)	7 (15%)	0	100	100
42	m	50/52 (96%)	48 (96%)	2 (4%)	0	100	100
43	n	21/25 (84%)	21 (100%)	0	0	100	100
44	o	102/105 (97%)	94 (92%)	8 (8%)	0	100	100
45	p	89/92 (97%)	83 (93%)	6 (7%)	0	100	100
46	q	103/144 (72%)	100 (97%)	3 (3%)	0	100	100
47	r	123/137 (90%)	111 (90%)	11 (9%)	1 (1%)	16	44
48	s	65/67 (97%)	53 (82%)	11 (17%)	1 (2%)	8	29
49	t	72/110 (66%)	72 (100%)	0	0	100	100
50	u	192/622 (31%)	189 (98%)	3 (2%)	0	100	100
51	w	72/86 (84%)	65 (90%)	7 (10%)	0	100	100
52	x	486/504 (96%)	463 (95%)	23 (5%)	0	100	100
53	z	38/671 (6%)	32 (84%)	6 (16%)	0	100	100
All	All	7380/9200 (80%)	7034 (95%)	343 (5%)	3 (0%)	100	100

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
15	L	64	VAL
48	s	86	TYR
47	r	21	ASN

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	A	187/188 (100%)	184 (98%)	3 (2%)	58	85
6	B	336/347 (97%)	332 (99%)	4 (1%)	67	89
7	C	302/337 (90%)	298 (99%)	4 (1%)	65	88
8	D	247/250 (99%)	239 (97%)	8 (3%)	34	68
9	E	208/221 (94%)	199 (96%)	9 (4%)	25	57
10	F	194/195 (100%)	192 (99%)	2 (1%)	73	91
11	G	206/273 (76%)	201 (98%)	5 (2%)	44	77
12	H	169/171 (99%)	163 (96%)	6 (4%)	30	64
13	I	174/181 (96%)	174 (100%)	0	100	100
14	J	142/149 (95%)	141 (99%)	1 (1%)	81	94
15	L	176/176 (100%)	173 (98%)	3 (2%)	56	84
16	M	117/160 (73%)	111 (95%)	6 (5%)	20	51
17	N	171/172 (99%)	168 (98%)	3 (2%)	54	83
18	O	171/171 (100%)	167 (98%)	4 (2%)	45	78
19	P	134/134 (100%)	134 (100%)	0	100	100
20	Q	163/163 (100%)	159 (98%)	4 (2%)	42	75
21	R	159/159 (100%)	157 (99%)	2 (1%)	65	88
22	S	156/156 (100%)	151 (97%)	5 (3%)	34	68
23	T	139/140 (99%)	138 (99%)	1 (1%)	81	94
24	U	89/89 (100%)	86 (97%)	3 (3%)	32	66
25	V	101/107 (94%)	99 (98%)	2 (2%)	50	81
26	W	55/55 (100%)	55 (100%)	0	100	100
27	X	107/134 (80%)	104 (97%)	3 (3%)	38	72
28	Y	124/135 (92%)	121 (98%)	3 (2%)	44	77
29	Z	117/118 (99%)	114 (97%)	3 (3%)	41	75
30	a	119/119 (100%)	116 (98%)	3 (2%)	42	75

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
31	b	62/170 (36%)	60 (97%)	2 (3%)	34	68
32	c	79/79 (100%)	78 (99%)	1 (1%)	65	88
33	d	98/110 (89%)	93 (95%)	5 (5%)	20	51
34	e	114/141 (81%)	113 (99%)	1 (1%)	75	92
35	f	88/89 (99%)	86 (98%)	2 (2%)	45	78
36	g	98/109 (90%)	96 (98%)	2 (2%)	50	81
37	h	109/110 (99%)	105 (96%)	4 (4%)	29	63
38	i	86/86 (100%)	84 (98%)	2 (2%)	45	78
39	j	73/80 (91%)	72 (99%)	1 (1%)	62	87
40	k	64/64 (100%)	62 (97%)	2 (3%)	35	69
41	l	47/48 (98%)	46 (98%)	1 (2%)	48	80
42	m	48/48 (100%)	48 (100%)	0	100	100
43	n	22/24 (92%)	22 (100%)	0	100	100
44	o	92/93 (99%)	92 (100%)	0	100	100
45	p	74/75 (99%)	72 (97%)	2 (3%)	40	74
46	q	92/121 (76%)	92 (100%)	0	100	100
47	r	109/121 (90%)	104 (95%)	5 (5%)	23	55
48	s	51/64 (80%)	44 (86%)	7 (14%)	3	10
49	t	69/100 (69%)	69 (100%)	0	100	100
50	u	171/524 (33%)	168 (98%)	3 (2%)	54	83
51	w	66/77 (86%)	66 (100%)	0	100	100
52	x	409/420 (97%)	373 (91%)	36 (9%)	8	26
53	z	36/570 (6%)	35 (97%)	1 (3%)	38	72
All	All	6420/7823 (82%)	6256 (97%)	164 (3%)	42	75

All (164) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
5	A	101	VAL
5	A	142	GLU
5	A	208	GLU
6	B	46	PHE
6	B	262	VAL
6	B	293	ILE

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Mol	Chain	Res	Type
6	B	353	VAL
7	C	44	LEU
7	C	232	VAL
7	C	287	THR
7	C	339	THR
8	D	4	VAL
8	D	37	VAL
8	D	56	THR
8	D	118	ILE
8	D	177	THR
8	D	206	ASP
8	D	231	VAL
8	D	282	GLN
9	E	84	VAL
9	E	92	VAL
9	E	115	GLU
9	E	141	THR
9	E	148	ILE
9	E	171	VAL
9	E	228	ILE
9	E	274	THR
9	E	283	VAL
10	F	154	GLU
10	F	199	VAL
11	G	28	VAL
11	G	130	THR
11	G	140	VAL
11	G	222	ILE
11	G	261	LEU
12	H	12	ILE
12	H	20	LEU
12	H	103	VAL
12	H	126	VAL
12	H	136	VAL
12	H	145	VAL
14	J	125	ILE
15	L	59	VAL
15	L	64	VAL
15	L	170	THR
16	M	9	VAL
16	M	33	GLN
16	M	38	VAL

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Mol	Chain	Res	Type
16	M	57	LEU
16	M	61	ILE
16	M	62	LEU
17	N	85	VAL
17	N	89	VAL
17	N	197	THR
18	O	8	VAL
18	O	27	VAL
18	O	36	VAL
18	O	113	ASP
20	Q	13	VAL
20	Q	48	LEU
20	Q	83	VAL
20	Q	95	VAL
21	R	111	GLU
21	R	175	GLU
22	S	6	THR
22	S	24	THR
22	S	90	THR
22	S	158	VAL
22	S	159	LEU
23	T	143	THR
24	U	23	LEU
24	U	71	THR
24	U	108	GLU
25	V	28	CYS
25	V	106	VAL
27	X	76	ILE
27	X	119	ILE
27	X	140	LEU
28	Y	9	SER
28	Y	79	VAL
28	Y	104	VAL
29	Z	33	THR
29	Z	53	VAL
29	Z	100	VAL
30	a	82	VAL
30	a	102	ASP
30	a	122	VAL
31	b	21	ILE
31	b	40	LEU
32	c	93	THR

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Mol	Chain	Res	Type
33	d	26	THR
33	d	46	LEU
33	d	68	LEU
33	d	106	VAL
33	d	119	THR
34	e	120	ILE
35	f	58	VAL
35	f	103	VAL
36	g	5	LEU
36	g	32	TYR
37	h	88	THR
37	h	96	ASN
37	h	102	LEU
37	h	121	VAL
38	i	21	VAL
38	i	63	VAL
39	j	13	ASN
40	k	23	VAL
40	k	30	ASP
41	l	23	ILE
45	p	16	THR
45	p	52	VAL
47	r	28	GLU
47	r	32	LEU
47	r	70	GLN
47	r	75	THR
47	r	124	VAL
48	s	24	LEU
48	s	27	LEU
48	s	46	LYS
48	s	78	ARG
48	s	86	TYR
48	s	88	GLU
48	s	89	LEU
50	u	5	ILE
50	u	64	ASN
50	u	140	LEU
52	x	9	LYS
52	x	10	ILE
52	x	11	THR
52	x	15	ARG
52	x	17	LEU

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Mol	Chain	Res	Type
52	x	18	SER
52	x	22	ILE
52	x	23	ILE
52	x	25	GLU
52	x	28	LEU
52	x	34	GLU
52	x	35	VAL
52	x	50	LYS
52	x	52	LEU
52	x	57	LYS
52	x	58	SER
52	x	60	ILE
52	x	61	ASP
52	x	62	LEU
52	x	63	GLU
52	x	64	GLU
52	x	65	MET
52	x	69	LEU
52	x	71	LYS
52	x	73	LYS
52	x	74	MET
52	x	75	ILE
52	x	82	GLU
52	x	83	LEU
52	x	86	LEU
52	x	103	VAL
52	x	206	LEU
52	x	340	MET
52	x	380	ASP
52	x	412	VAL
52	x	467	ASP
53	z	570	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (73) such sidechains are listed below:

Mol	Chain	Res	Type
5	A	38	HIS
5	A	97	ASN
6	B	138	GLN
6	B	184	GLN
6	B	204	GLN
6	B	301	ASN

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Mol	Chain	Res	Type
7	C	94	ASN
7	C	142	HIS
7	C	329	ASN
8	D	175	HIS
8	D	282	GLN
10	F	112	GLN
10	F	208	ASN
10	F	241	GLN
10	F	250	ASN
11	G	112	GLN
12	H	79	ASN
12	H	162	GLN
13	I	73	ASN
14	J	42	GLN
14	J	46	GLN
16	M	20	HIS
16	M	120	ASN
16	M	125	ASN
18	O	63	ASN
18	O	90	HIS
18	O	180	GLN
18	O	184	ASN
19	P	25	HIS
19	P	56	GLN
20	Q	8	ASN
20	Q	44	ASN
24	U	27	HIS
24	U	50	ASN
24	U	94	ASN
24	U	105	ASN
25	V	77	HIS
26	W	59	HIS
28	Y	72	GLN
30	a	62	HIS
30	a	120	GLN
31	b	6	ASN
31	b	11	ASN
34	e	80	HIS
35	f	21	GLN
35	f	55	ASN
35	f	65	ASN
37	h	30	GLN

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Mol	Chain	Res	Type
37	h	98	HIS
41	l	19	GLN
42	m	90	ASN
46	q	88	GLN
47	r	6	GLN
47	r	23	GLN
48	s	79	ASN
48	s	90	HIS
49	t	18	GLN
49	t	77	ASN
49	t	90	ASN
50	u	13	GLN
50	u	14	GLN
51	w	55	GLN
52	x	19	ASN
52	x	76	GLN
52	x	101	GLN
52	x	102	ASN
52	x	151	ASN
52	x	181	ASN
52	x	207	GLN
52	x	423	GLN
52	x	454	GLN
52	x	488	GLN
53	z	597	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	245/249 (98%)	49 (20%)	5 (2%)
2	5	3478/3493 (99%)	706 (20%)	84 (2%)
3	7	119/120 (99%)	12 (10%)	0
4	8	155/156 (99%)	32 (20%)	1 (0%)
All	All	3997/4018 (99%)	799 (19%)	90 (2%)

All (799) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	4	G
1	1	17	C
1	1	28	U

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Mol	Chain	Res	Type
1	1	29	C
1	1	33	G
1	1	38	U
1	1	39	C
1	1	40	G
1	1	58	G
1	1	60	U
1	1	64	U
1	1	99	C
1	1	100	C
1	1	101	G
1	1	102	A
1	1	105	G
1	1	108	U
1	1	109	G
1	1	111	C
1	1	113	G
1	1	114	C
1	1	120	G
1	1	144	C
1	1	151	C
1	1	174	G
1	1	175	G
1	1	176	A
1	1	177	G
1	1	184	A
1	1	185	C
1	1	187	G
1	1	191	C
1	1	213	A
1	1	215	A
1	1	227	G
1	1	230	C
1	1	231	A
1	1	233	U
1	1	235	G
1	1	236	U
1	1	237	G
1	1	245	G
1	1	246	C
1	1	247	C
1	1	249	G

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Mol	Chain	Res	Type
1	1	251	G
1	1	252	A
1	1	253	A
1	1	254	U
2	5	2	G
2	5	8	U
2	5	12	A
2	5	13	U
2	5	21	G
2	5	25	A
2	5	39	A
2	5	42	A
2	5	48	G
2	5	49	U
2	5	59	A
2	5	64	A
2	5	65	A
2	5	66	A
2	5	73	A
2	5	91	G
2	5	104	G
2	5	108	A
2	5	109	G
2	5	110	C
2	5	116	G
2	5	117	C
2	5	119	G
2	5	122	U
2	5	126	C
2	5	134	G
2	5	135	G
2	5	136	C
2	5	143	C
2	5	144	G
2	5	159	C
2	5	164	G
2	5	165	A
2	5	171	U
2	5	172	C
2	5	173	C
2	5	179	G
2	5	183	C

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Mol	Chain	Res	Type
2	5	184	U
2	5	185	C
2	5	186	G
2	5	187	U
2	5	188	G
2	5	189	G
2	5	197	A
2	5	200	U
2	5	201	C
2	5	205	C
2	5	210	C
2	5	216	C
2	5	217	C
2	5	218	A
2	5	219	G
2	5	220	C
2	5	221	C
2	5	224	U
2	5	227	A
2	5	233	U
2	5	246	G
2	5	257	C
2	5	265	C
2	5	266	C
2	5	267	G
2	5	276	C
2	5	278	G
2	5	280	G
2	5	297	U
2	5	306	A
2	5	309	C
2	5	315	G
2	5	316	U
2	5	322	C
2	5	334	A
2	5	340	C
2	5	350	C
2	5	363	A
2	5	386	A
2	5	387	G
2	5	407	A
2	5	409	G

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Mol	Chain	Res	Type
2	5	412	G
2	5	431	G
2	5	432	U
2	5	446	C
2	5	450	G
2	5	451	C
2	5	452	A
2	5	453	G
2	5	454	U
2	5	455	C
2	5	456	C
2	5	468	U
2	5	485	C
2	5	486	C
2	5	487	G
2	5	500	G
2	5	654	C
2	5	664	G
2	5	665	C
2	5	666	G
2	5	667	A
2	5	668	C
2	5	669	C
2	5	683	C
2	5	684	G
2	5	685	C
2	5	686	A
2	5	694	C
2	5	696	C
2	5	697	G
2	5	703	G
2	5	704	C
2	5	707	C
2	5	729	G
2	5	730	G
2	5	737	C
2	5	745	G
2	5	746	A
2	5	747	A
2	5	748	G
2	5	749	G
2	5	914	U

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Mol	Chain	Res	Type
2	5	918	G
2	5	920	C
2	5	925	C
2	5	927	G
2	5	928	C
2	5	929	A
2	5	930	G
2	5	931	C
2	5	932	A
2	5	933	G
2	5	934	C
2	5	936	C
2	5	937	U
2	5	938	C
2	5	939	G
2	5	940	C
2	5	942	G
2	5	944	A
2	5	945	U
2	5	946	C
2	5	957	G
2	5	958	G
2	5	960	A
2	5	961	G
2	5	962	C
2	5	963	G
2	5	964	A
2	5	965	G
2	5	966	A
2	5	967	C
2	5	969	C
2	5	971	U
2	5	973	G
2	5	976	G
2	5	978	G
2	5	982	U
2	5	984	C
2	5	989	U
2	5	990	C
2	5	1070	G
2	5	1072	C
2	5	1076	C

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Mol	Chain	Res	Type
2	5	1083	U
2	5	1183	C
2	5	1210	C
2	5	1211	G
2	5	1212	G
2	5	1215	C
2	5	1219	G
2	5	1233	G
2	5	1236	C
2	5	1237	C
2	5	1238	A
2	5	1239	C
2	5	1240	G
2	5	1242	G
2	5	1272	C
2	5	1273	G
2	5	1274	A
2	5	1275	G
2	5	1277	G
2	5	1279	A
2	5	1280	C
2	5	1281	G
2	5	1285	U
2	5	1286	C
2	5	1288	G
2	5	1293	G
2	5	1295	C
2	5	1296	G
2	5	1297	U
2	5	1301	C
2	5	1303	A
2	5	1304	C
2	5	1326	A
2	5	1330	A
2	5	1354	A
2	5	1358	G
2	5	1366	G
2	5	1367	C
2	5	1369	C
2	5	1370	G
2	5	1371	A
2	5	1377	G

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Mol	Chain	Res	Type
2	5	1378	C
2	5	1379	C
2	5	1380	G
2	5	1381	U
2	5	1387	A
2	5	1394	G
2	5	1397	A
2	5	1399	G
2	5	1407	C
2	5	1408	G
2	5	1409	C
2	5	1410	U
2	5	1411	C
2	5	1420	A
2	5	1429	C
2	5	1437	C
2	5	1440	U
2	5	1441	C
2	5	1445	U
2	5	1446	C
2	5	1456	C
2	5	1457	G
2	5	1475	G
2	5	1478	C
2	5	1482	G
2	5	1483	C
2	5	1497	A
2	5	1498	G
2	5	1514	U
2	5	1516	G
2	5	1523	A
2	5	1534	A
2	5	1547	A
2	5	1563	A
2	5	1564	A
2	5	1566	C
2	5	1574	G
2	5	1578	U
2	5	1591	U
2	5	1596	U
2	5	1602	U
2	5	1612	G

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Mol	Chain	Res	Type
2	5	1613	A
2	5	1624	G
2	5	1625	G
2	5	1631	A
2	5	1633	G
2	5	1634	A
2	5	1638	A
2	5	1654	G
2	5	1661	C
2	5	1676	C
2	5	1677	U
2	5	1691	G
2	5	1694	C
2	5	1697	G
2	5	1698	C
2	5	1719	A
2	5	1720	C
2	5	1721	G
2	5	1724	G
2	5	1725	U
2	5	1741	G
2	5	1742	A
2	5	1750	G
2	5	1753	G
2	5	1754	U
2	5	1755	C
2	5	1756	U
2	5	1757	U
2	5	1760	G
2	5	1761	G
2	5	1764	G
2	5	1768	C
2	5	1772	C
2	5	1776	A
2	5	1787	A
2	5	1800	U
2	5	1804	A
2	5	1805	A
2	5	1815	G
2	5	1819	G
2	5	1820	C
2	5	1822	U

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Mol	Chain	Res	Type
2	5	1828	C
2	5	1833	G
2	5	1834	U
2	5	1835	G
2	5	1836	G
2	5	1840	G
2	5	1848	C
2	5	1855	G
2	5	1869	G
2	5	1882	U
2	5	1897	A
2	5	1918	U
2	5	1920	C
2	5	1921	C
2	5	1922	G
2	5	1923	A
2	5	1930	U
2	5	1931	C
2	5	1945	G
2	5	1951	G
2	5	1956	A
2	5	1957	U
2	5	1958	A
2	5	1961	G
2	5	1962	A
2	5	2025	A
2	5	2026	A
2	5	2047	A
2	5	2048	U
2	5	2055	G
2	5	2056	G
2	5	2062	C
2	5	2064	G
2	5	2069	A
2	5	2084	C
2	5	2089	G
2	5	2090	U
2	5	2092	G
2	5	2093	A
2	5	2094	G
2	5	2095	A
2	5	2097	U

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Mol	Chain	Res	Type
2	5	2107	C
2	5	2247	C
2	5	2248	C
2	5	2250	C
2	5	2251	G
2	5	2252	G
2	5	2253	A
2	5	2254	G
2	5	2255	C
2	5	2257	C
2	5	2258	C
2	5	2259	G
2	5	2260	C
2	5	2261	G
2	5	2263	A
2	5	2264	C
2	5	2265	G
2	5	2266	C
2	5	2267	U
2	5	2268	A
2	5	2270	G
2	5	2275	G
2	5	2289	C
2	5	2299	G
2	5	2300	A
2	5	2301	G
2	5	2306	G
2	5	2313	A
2	5	2331	G
2	5	2333	G
2	5	2348	G
2	5	2351	C
2	5	2360	A
2	5	2395	A
2	5	2396	A
2	5	2417	A
2	5	2422	C
2	5	2425	U
2	5	2433	G
2	5	2441	C
2	5	2443	G
2	5	2471	G

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Mol	Chain	Res	Type
2	5	2475	G
2	5	2488	C
2	5	2489	C
2	5	2490	U
2	5	2491	C
2	5	2503	G
2	5	2504	C
2	5	2505	C
2	5	2506	G
2	5	2507	A
2	5	2512	A
2	5	2513	A
2	5	2530	U
2	5	2537	A
2	5	2544	G
2	5	2546	G
2	5	2547	G
2	5	2554	U
2	5	2555	G
2	5	2571	C
2	5	2572	C
2	5	2575	U
2	5	2583	C
2	5	2586	G
2	5	2587	A
2	5	2589	C
2	5	2601	A
2	5	2618	G
2	5	2620	G
2	5	2627	C
2	5	2638	G
2	5	2640	G
2	5	2661	U
2	5	2662	G
2	5	2669	C
2	5	2686	G
2	5	2687	U
2	5	2695	A
2	5	2696	A
2	5	2710	C
2	5	2711	G
2	5	2712	G

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Mol	Chain	Res	Type
2	5	2714	G
2	5	2715	G
2	5	2716	C
2	5	2725	A
2	5	2726	G
2	5	2735	G
2	5	2740	U
2	5	2743	A
2	5	2744	A
2	5	2753	G
2	5	2754	G
2	5	2759	G
2	5	2762	G
2	5	2767	U
2	5	2768	C
2	5	2769	U
2	5	2770	C
2	5	2772	C
2	5	2787	A
2	5	2788	U
2	5	2790	U
2	5	2798	A
2	5	2806	A
2	5	2807	A
2	5	2814	C
2	5	2826	U
2	5	2828	U
2	5	2838	G
2	5	2842	G
2	5	2855	G
2	5	2898	G
2	5	2904	U
2	5	2905	C
2	5	3593	C
2	5	3594	C
2	5	3596	A
2	5	3597	G
2	5	3605	C
2	5	3606	U
2	5	3618	C
2	5	3625	G
2	5	3626	G

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Mol	Chain	Res	Type
2	5	3635	A
2	5	3662	A
2	5	3664	G
2	5	3672	G
2	5	3673	C
2	5	3692	A
2	5	3698	G
2	5	3710	G
2	5	3711	A
2	5	3729	U
2	5	3739	C
2	5	3753	G
2	5	3759	A
2	5	3760	A
2	5	3772	U
2	5	3773	U
2	5	3774	A
2	5	3775	A
2	5	3776	G
2	5	3777	G
2	5	3784	A
2	5	3786	U
2	5	3799	A
2	5	3810	C
2	5	3811	G
2	5	3814	U
2	5	3817	A
2	5	3819	G
2	5	3840	U
2	5	3877	A
2	5	3878	C
2	5	3879	G
2	5	3889	G
2	5	3892	U
2	5	3897	G
2	5	3901	A
2	5	3905	A
2	5	3906	A
2	5	3907	G
2	5	3908	A
2	5	3909	C
2	5	3915	U

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Mol	Chain	Res	Type
2	5	3916	G
2	5	3917	A
2	5	3926	C
2	5	3927	U
2	5	3938	G
2	5	3939	G
2	5	4069	U
2	5	4070	U
2	5	4076	G
2	5	4077	A
2	5	4085	A
2	5	4086	G
2	5	4088	C
2	5	4090	G
2	5	4094	G
2	5	4097	G
2	5	4114	C
2	5	4115	G
2	5	4116	C
2	5	4117	U
2	5	4119	C
2	5	4120	U
2	5	4122	G
2	5	4125	C
2	5	4127	A
2	5	4128	A
2	5	4143	G
2	5	4144	C
2	5	4145	C
2	5	4151	G
2	5	4158	C
2	5	4162	C
2	5	4163	U
2	5	4166	G
2	5	4170	A
2	5	4171	C
2	5	4183	G
2	5	4184	G
2	5	4191	G
2	5	4201	G
2	5	4203	A
2	5	4218	U

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Mol	Chain	Res	Type
2	5	4225	G
2	5	4229	U
2	5	4233	A
2	5	4234	A
2	5	4249	G
2	5	4251	A
2	5	4254	G
2	5	4255	A
2	5	4267	G
2	5	4268	A
2	5	4271	A
2	5	4273	A
2	5	4280	A
2	5	4291	G
2	5	4297	G
2	5	4304	A
2	5	4305	G
2	5	4306	U
2	5	4314	C
2	5	4318	C
2	5	4319	C
2	5	4330	G
2	5	4332	C
2	5	4336	A
2	5	4349	C
2	5	4350	C
2	5	4354	U
2	5	4355	G
2	5	4377	G
2	5	4378	A
2	5	4380	A
2	5	4387	C
2	5	4394	A
2	5	4395	U
2	5	4398	C
2	5	4419	U
2	5	4421	C
2	5	4422	A
2	5	4437	U
2	5	4440	G
2	5	4441	A
2	5	4444	C

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Mol	Chain	Res	Type
2	5	4448	G
2	5	4449	A
2	5	4452	U
2	5	4453	C
2	5	4464	A
2	5	4466	C
2	5	4471	U
2	5	4473	A
2	5	4476	C
2	5	4482	U
2	5	4500	U
2	5	4512	U
2	5	4513	A
2	5	4518	A
2	5	4524	G
2	5	4528	G
2	5	4529	G
2	5	4548	A
2	5	4549	G
2	5	4560	C
2	5	4567	G
2	5	4570	G
2	5	4575	G
2	5	4586	G
2	5	4590	A
2	5	4617	G
2	5	4627	U
2	5	4636	U
2	5	4637	G
2	5	4639	G
2	5	4647	G
2	5	4656	A
2	5	4657	U
2	5	4667	C
2	5	4670	C
2	5	4672	A
2	5	4677	U
2	5	4678	G
2	5	4682	U
2	5	4695	C
2	5	4697	U
2	5	4700	A

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Mol	Chain	Res	Type
2	5	4709	U
2	5	4719	G
2	5	4720	C
2	5	4730	C
2	5	4731	G
2	5	4732	G
2	5	4737	G
2	5	4738	C
2	5	4744	A
2	5	4745	G
2	5	4746	C
2	5	4750	G
2	5	4753	U
2	5	4756	C
2	5	4758	U
2	5	4760	G
2	5	4764	A
2	5	4770	U
2	5	4771	C
2	5	4869	U
2	5	4871	C
2	5	4873	G
2	5	4876	U
2	5	4883	C
2	5	4884	G
2	5	4886	C
2	5	4889	G
2	5	4890	G
2	5	4895	C
2	5	4896	G
2	5	4901	G
2	5	4902	C
2	5	4910	G
2	5	4911	A
2	5	4913	G
2	5	4915	G
2	5	4919	G
2	5	4927	G
2	5	4929	C
2	5	4930	C
2	5	4933	C
2	5	4936	G

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Mol	Chain	Res	Type
2	5	4937	C
2	5	4939	C
2	5	4944	C
2	5	4945	G
2	5	4948	C
2	5	4949	G
2	5	4950	U
2	5	4951	G
2	5	4952	G
2	5	4959	U
2	5	4964	C
2	5	4965	U
2	5	4966	A
2	5	4976	U
2	5	4988	U
2	5	4989	U
2	5	4990	C
2	5	4991	U
2	5	5007	A
2	5	5013	C
2	5	5014	A
2	5	5017	G
2	5	5023	C
2	5	5024	C
2	5	5025	C
2	5	5026	U
2	5	5027	C
2	5	5028	G
2	5	5041	G
2	5	5047	C
2	5	5050	C
2	5	5052	C
2	5	5053	U
2	5	5054	C
2	5	5056	A
2	5	5060	A
2	5	5061	A
2	5	5062	G
3	7	21	G
3	7	22	A
3	7	40	U
3	7	51	G

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Mol	Chain	Res	Type
3	7	53	U
3	7	54	A
3	7	63	C
3	7	64	G
3	7	100	A
3	7	110	G
3	7	111	C
3	7	120	U
4	8	2	G
4	8	23	C
4	8	34	U
4	8	35	C
4	8	38	U
4	8	39	G
4	8	59	A
4	8	62	A
4	8	63	U
4	8	75	G
4	8	77	A
4	8	79	G
4	8	80	A
4	8	81	C
4	8	82	A
4	8	83	C
4	8	84	A
4	8	85	U
4	8	86	U
4	8	87	G
4	8	94	G
4	8	103	A
4	8	105	C
4	8	109	C
4	8	110	U
4	8	111	U
4	8	114	G
4	8	123	U
4	8	125	C
4	8	126	C
4	8	127	U
4	8	128	C

All (90) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	37	C
1	1	38	U
1	1	39	C
1	1	234	A
1	1	236	U
2	5	1	C
2	5	12	A
2	5	47	A
2	5	48	G
2	5	125	C
2	5	134	G
2	5	170	C
2	5	187	U
2	5	216	C
2	5	218	A
2	5	226	G
2	5	245	C
2	5	265	C
2	5	275	C
2	5	385	A
2	5	406	C
2	5	451	C
2	5	454	U
2	5	684	G
2	5	693	C
2	5	728	U
2	5	917	A
2	5	930	G
2	5	932	A
2	5	943	A
2	5	957	G
2	5	965	G
2	5	1211	G
2	5	1232	G
2	5	1236	C
2	5	1238	A
2	5	1239	C
2	5	1296	G
2	5	1329	G
2	5	1357	C
2	5	1365	C
2	5	1368	A
2	5	1380	G

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Mol	Chain	Res	Type
2	5	1407	C
2	5	1440	U
2	5	1455	G
2	5	1477	C
2	5	1633	G
2	5	1720	C
2	5	1804	A
2	5	1835	G
2	5	2046	G
2	5	2068	C
2	5	2083	C
2	5	2089	G
2	5	2093	A
2	5	2256	C
2	5	2257	C
2	5	2260	C
2	5	2262	G
2	5	2265	G
2	5	2502	G
2	5	2506	G
2	5	2639	U
2	5	2661	U
2	5	2695	A
2	5	3625	G
2	5	3697	U
2	5	3888	G
2	5	3904	G
2	5	4069	U
2	5	4119	C
2	5	4170	A
2	5	4232	U
2	5	4448	G
2	5	4528	G
2	5	4656	A
2	5	4699	U
2	5	4719	G
2	5	4885	U
2	5	4888	U
2	5	4889	G
2	5	4935	C
2	5	4948	C
2	5	5022	U

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Mol	Chain	Res	Type
2	5	5027	C
2	5	5059	C
2	5	5060	A
2	5	5061	A
4	8	124	U

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

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 103 ligands modelled in this entry, 102 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	$\#\|Z\| > 2$
56	GDP	x	601	-	24,30,30	0.94	1 (4%)	30,47,47	1.31	4 (13%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
56	GDP	x	601	-	-	0/12/32/32	0/3/3/3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
56	x	601	GDP	C6-N1	-2.37	1.34	1.37

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
56	x	601	GDP	PA-O3A-PB	-3.71	120.09	132.83
56	x	601	GDP	C3'-C2'-C1'	3.13	105.69	100.98
56	x	601	GDP	C8-N7-C5	2.37	107.50	102.99
56	x	601	GDP	C5-C6-N1	2.30	118.01	113.95

There are no chirality outliers.

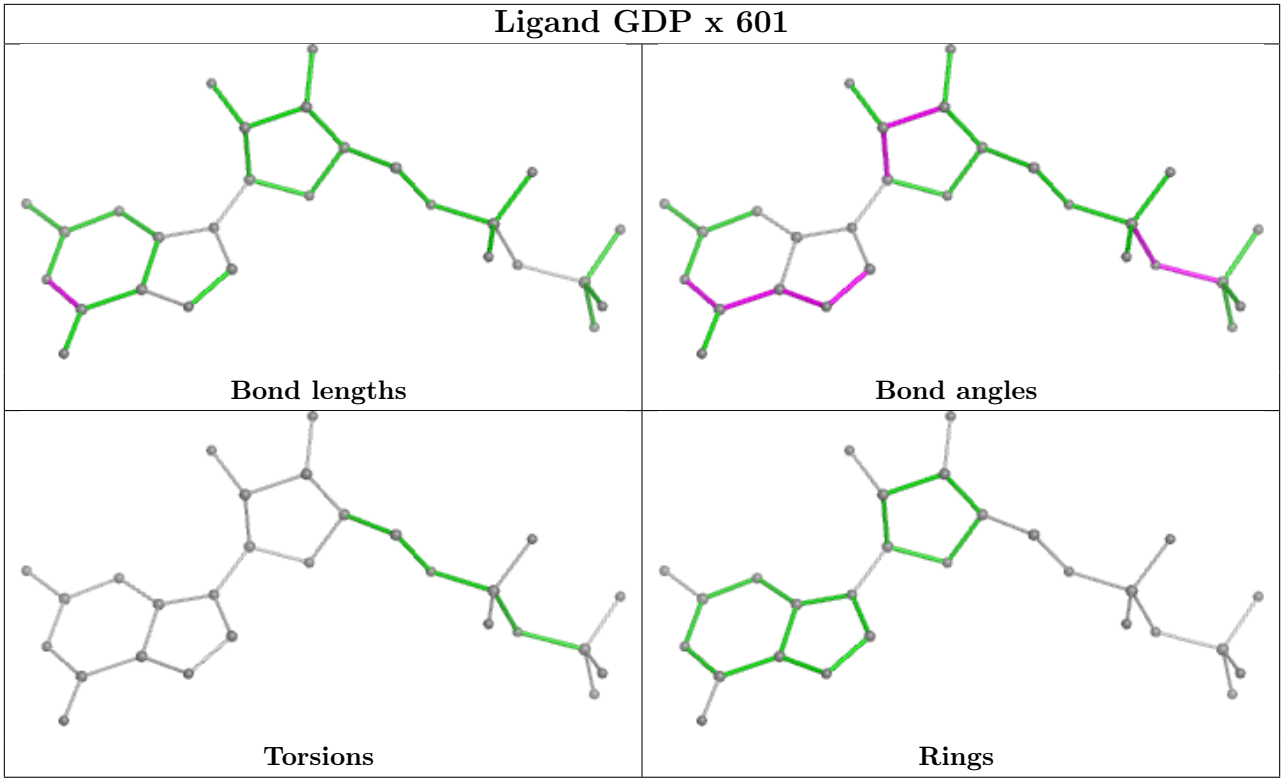
There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
56	x	601	GDP	1	0

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



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
2	5	15
1	1	3

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	1	65:U	O3'	92:C	P	57.10
1	1	258:C	O3'	282:U	P	50.27
1	5	462:G	O3'	467:U	P	20.95
1	5	4776:G	O3'	4859:C	P	17.67
1	5	4097:G	O3'	4112:C	P	17.47
1	5	757:G	O3'	906:C	P	17.40
1	5	2910:G	O3'	3583:U	P	16.72
1	5	990:C	O3'	1064:G	P	16.04

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	5	500:G	O3'	652:G	P	15.94
1	5	3950:U	O3'	4065:G	P	14.72
1	5	2107:C	O3'	2243:C	P	13.48
1	5	1962:A	O3'	2021:G	P	13.43
1	5	1242:G	O3'	1271:G	P	12.04
1	5	1699:A	O3'	1718:C	P	5.02
1	5	1840:G	O3'	1842:G	P	4.62
1	1	105:G	O3'	106:G	P	4.57
1	5	1222:A	O3'	1232:G	P	4.31
1	5	1100:U	O3'	1167:C	P	3.76

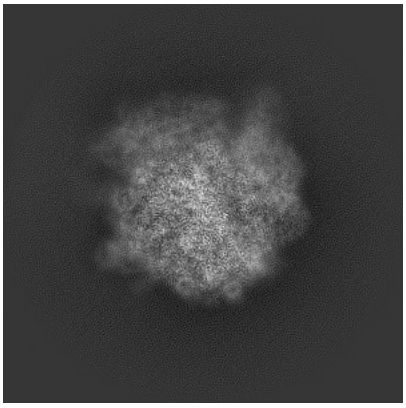
6 Map visualisation (i)

This section contains visualisations of the EMDB entry EMD-12801. These allow visual inspection of the internal detail of the map and identification of artifacts.

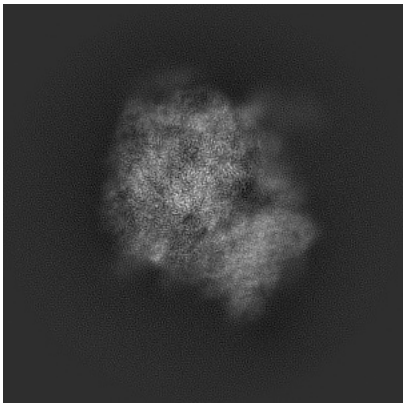
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections (i)

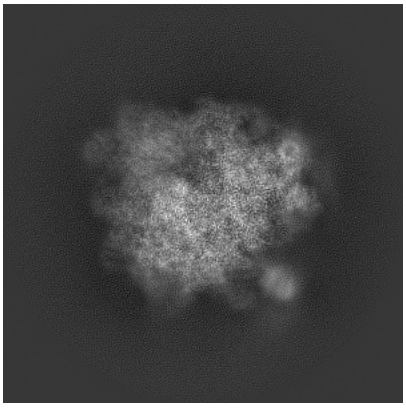
6.1.1 Primary map



X



Y

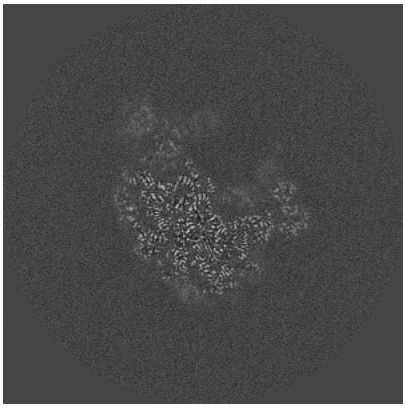


Z

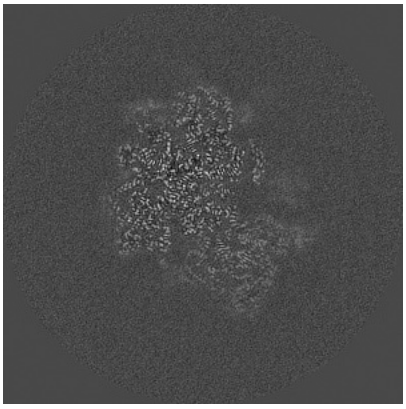
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

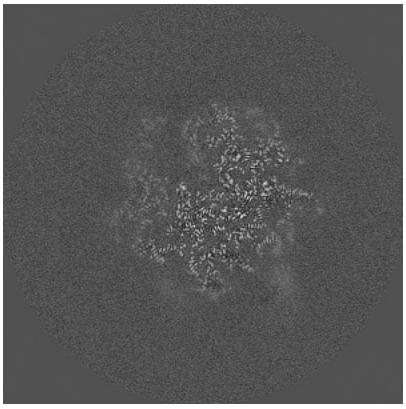
6.2.1 Primary map



X Index: 224



Y Index: 224

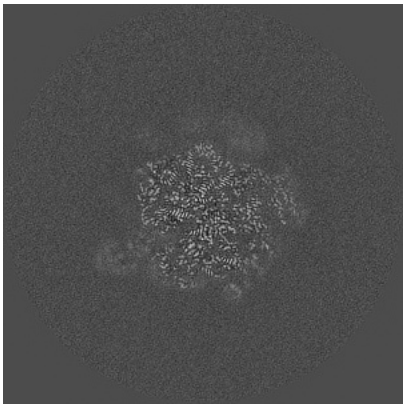


Z Index: 224

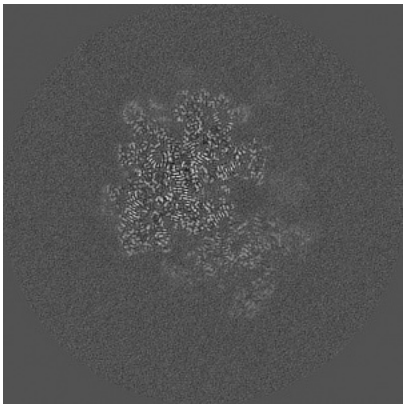
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

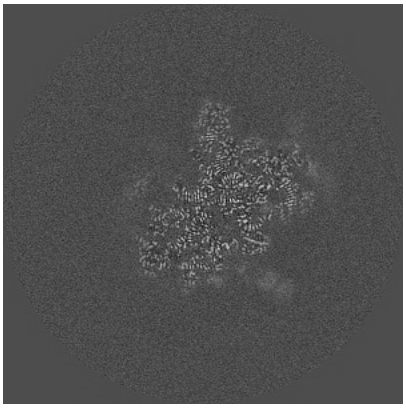
6.3.1 Primary map



X Index: 259



Y Index: 228

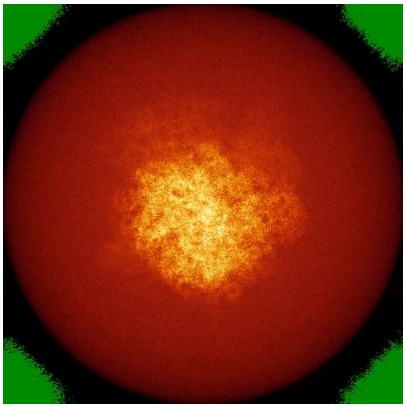


Z Index: 195

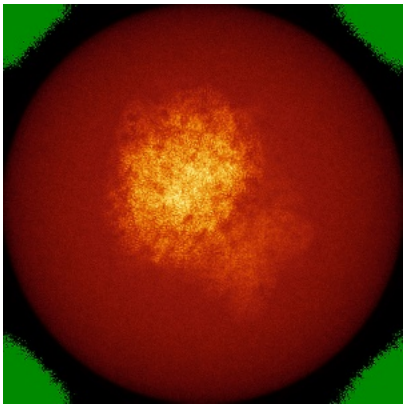
The images above show the largest variance slices of the map in three orthogonal directions.

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

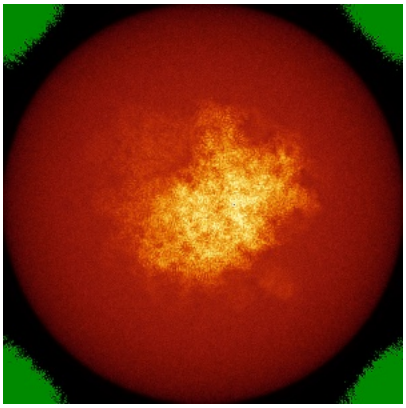
6.4.1 Primary map



X



Y

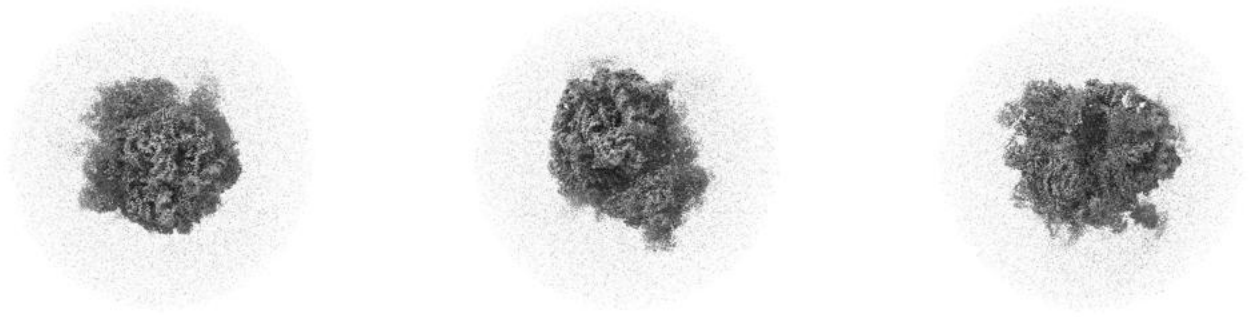


Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.0195. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

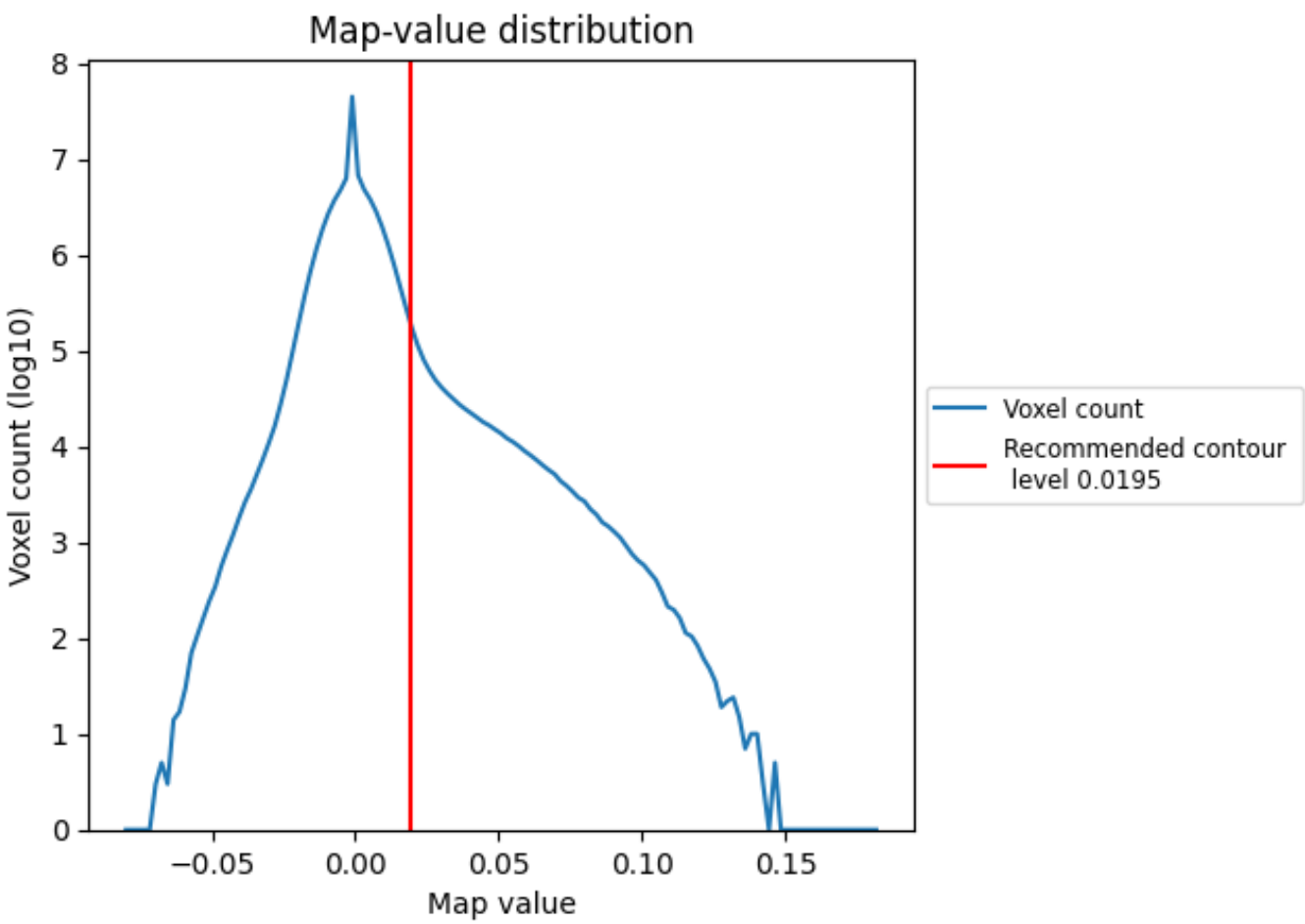
6.6 Mask visualisation (i)

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

7 Map analysis (i)

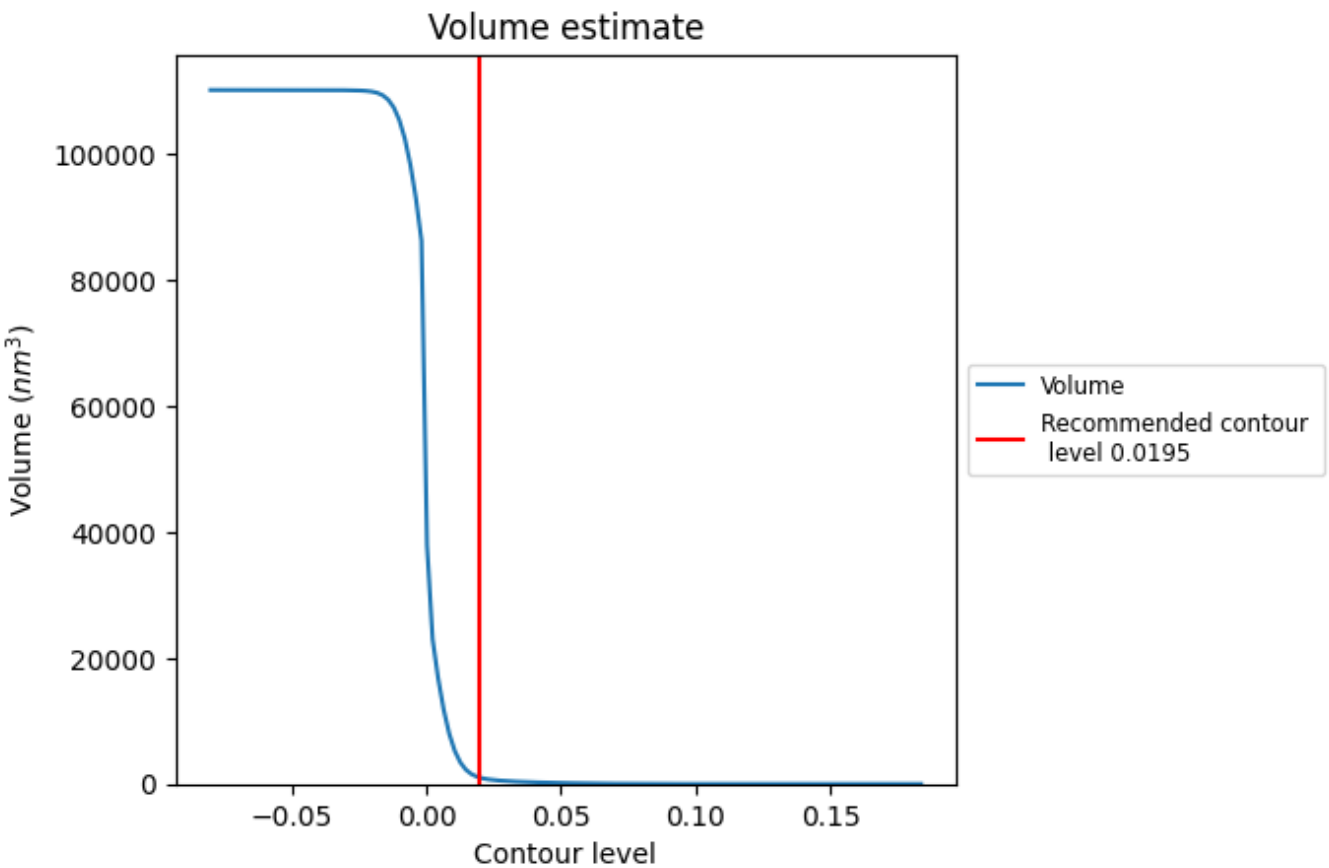
This section contains the results of statistical analysis of the map.

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.

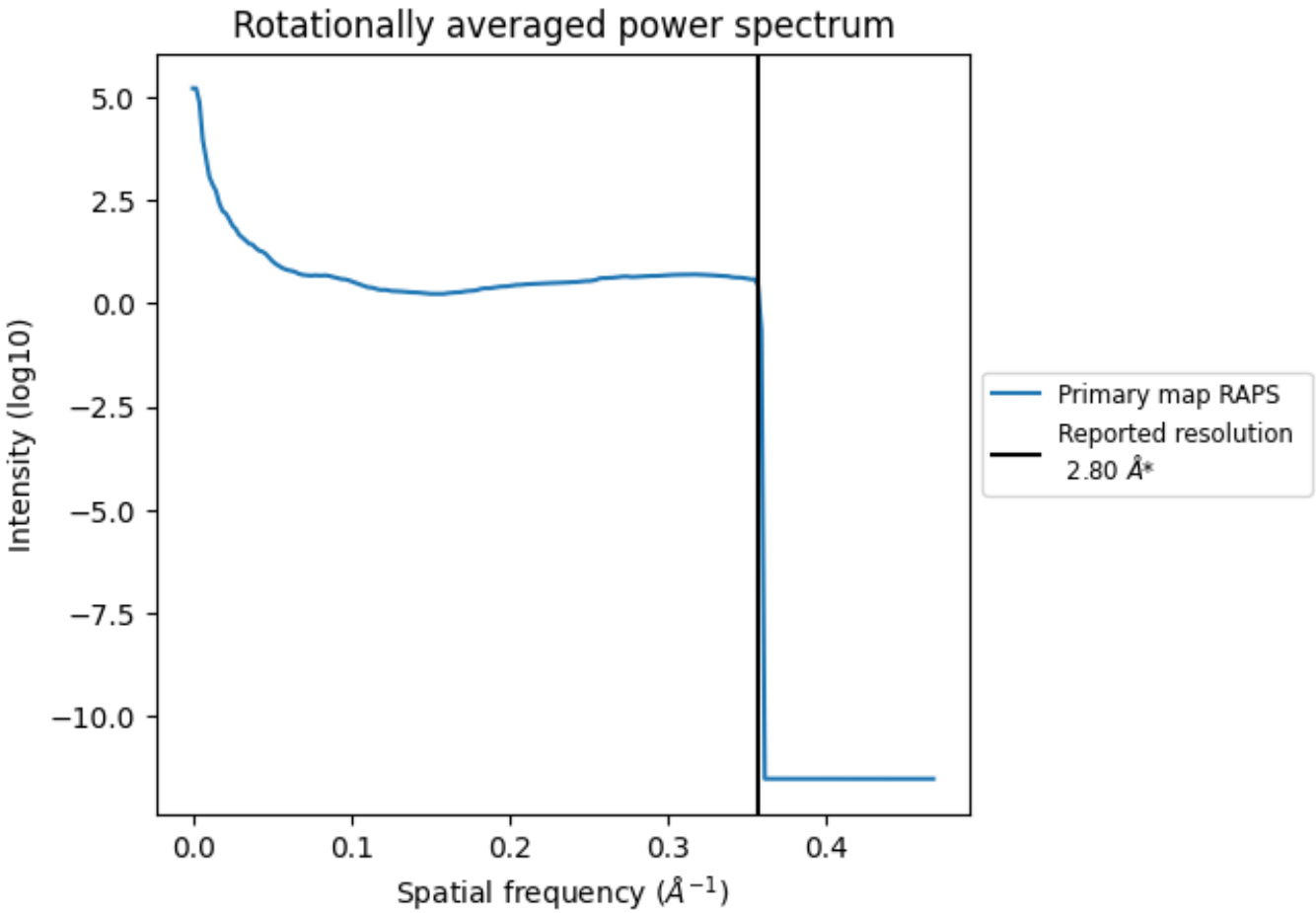
7.2 Volume estimate (i)



The volume at the recommended contour level is 1075 nm^3; this corresponds to an approximate mass of 971 kDa.

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

7.3 Rotationally averaged power spectrum (i)



*Reported resolution corresponds to spatial frequency of 0.357 Å^{-1}

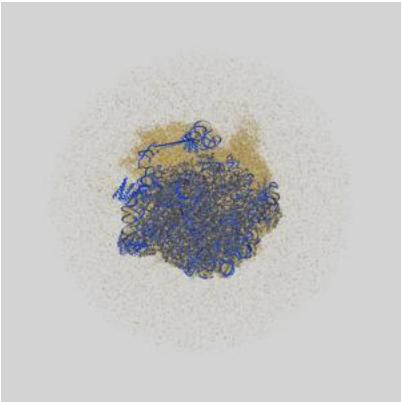
8 Fourier-Shell correlation (i)

This section was not generated. No FSC curve or half-maps provided.

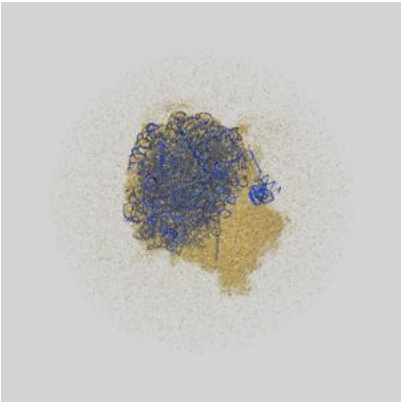
9 Map-model fit (i)

This section contains information regarding the fit between EMDB map EMD-12801 and PDB model 7OBR. Per-residue inclusion information can be found in section 3 on page 17.

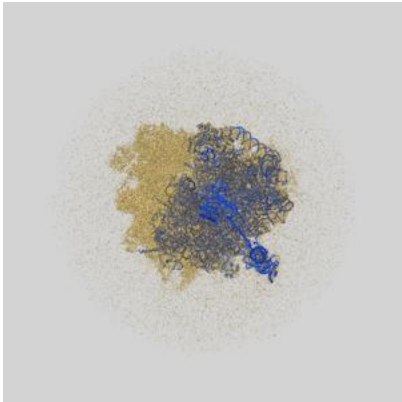
9.1 Map-model overlay (i)



X



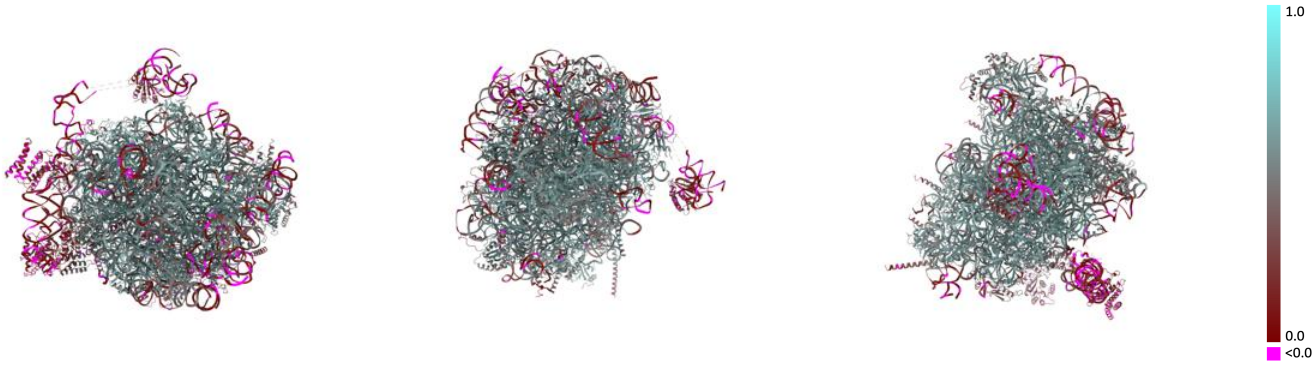
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0195 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

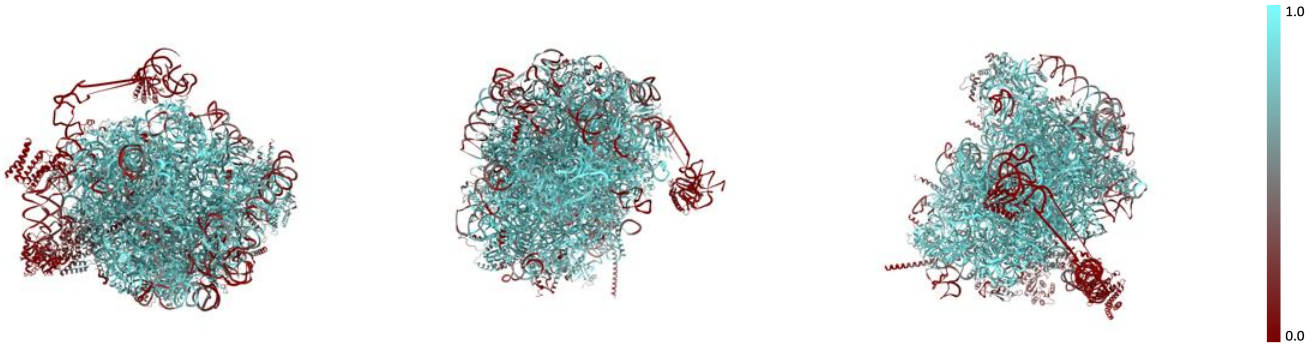
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

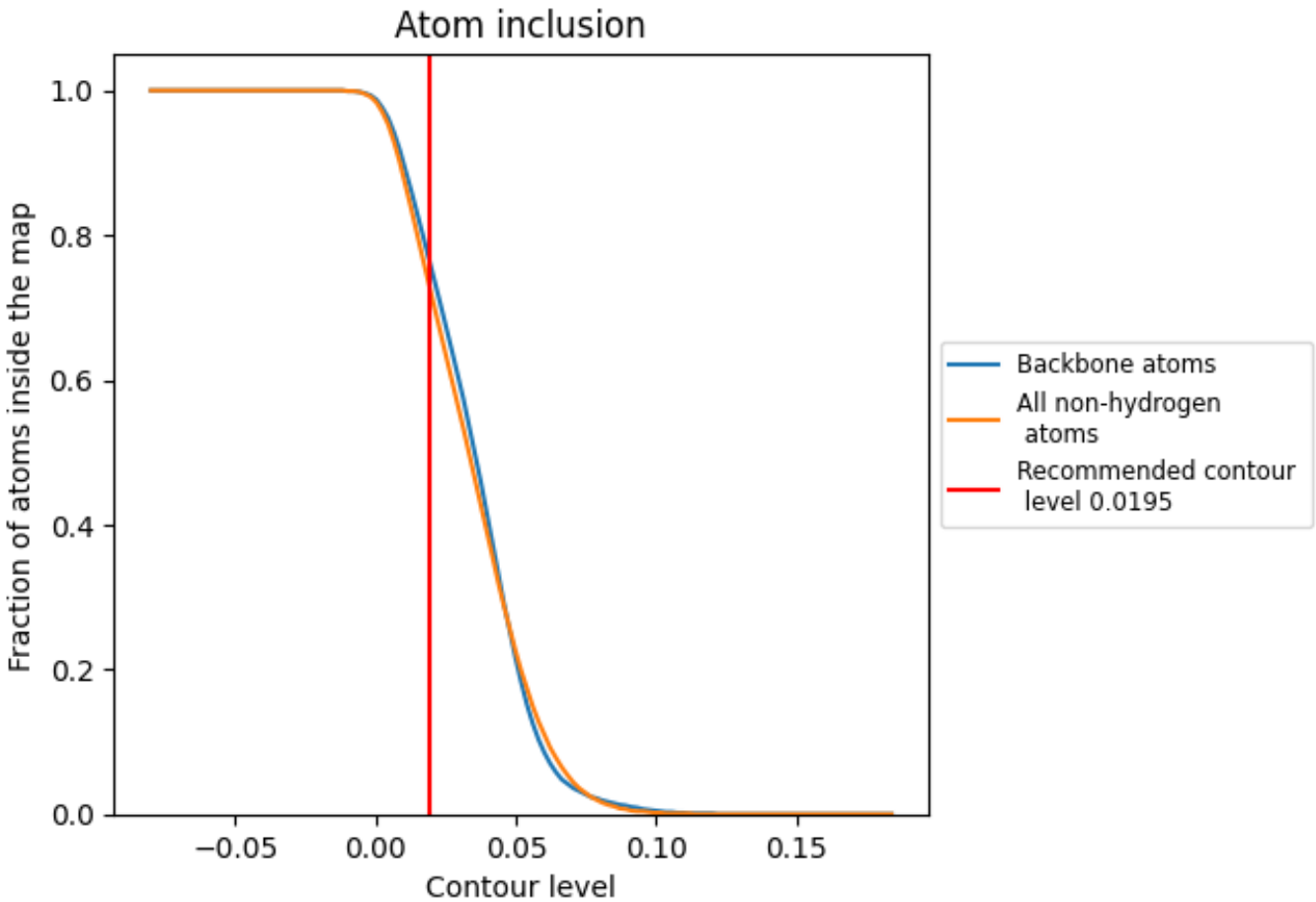
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0195).

9.4 Atom inclusion (i)



At the recommended contour level, 76% of all backbone atoms, 72% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.0195) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7240	0.4920
1	0.0770	0.0730
5	0.7880	0.5050
7	0.8960	0.5740
8	0.8380	0.5380
A	0.8680	0.6060
B	0.8390	0.5920
C	0.8260	0.5720
D	0.6920	0.5080
E	0.6190	0.4500
F	0.8350	0.5890
G	0.6570	0.4850
H	0.7400	0.5440
I	0.7950	0.5740
J	0.5490	0.4640
L	0.7300	0.5310
M	0.7780	0.5450
N	0.8880	0.6030
O	0.8570	0.5930
P	0.8470	0.5990
Q	0.8460	0.5890
R	0.7220	0.5320
S	0.8400	0.5810
T	0.7570	0.5470
U	0.5620	0.4520
V	0.8330	0.5880
W	0.8430	0.5870
X	0.7680	0.5490
Y	0.7880	0.5690
Z	0.7370	0.5280
a	0.8470	0.5830
b	0.6390	0.4930
c	0.7830	0.5550
d	0.7530	0.5440
e	0.8560	0.6060

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Chain	Atom inclusion	Q-score
f	0.8760	0.6040
g	0.7920	0.5680
h	0.7450	0.5520
i	0.7290	0.5280
j	0.8680	0.5930
k	0.5690	0.4440
l	0.8110	0.5650
m	0.7880	0.5520
n	0.6770	0.5350
o	0.7450	0.5580
p	0.8130	0.5910
q	0.0590	0.1270
r	0.8130	0.5590
s	0.3020	0.3100
t	0.0440	0.2170
u	0.0200	0.1110
w	0.0220	0.1990
x	0.2340	0.2740
z	0.0120	0.0950