Full wwPDB EM Validation Report ⓘ

Nov 7, 2026 – 10:06 am GMT

PDB ID	:	9TCQ / pdb_00009tcq
EMDB ID	:	EMD-55796
Title	:	Structural characterization of hibernating ribosomes in the Gram-negative pathogen Klebsiella quasipneumoniae with bS21 and E-site tRNA
Authors	:	Vasanthakrishnan, R.K.B.S.; Olivier, D.; Sophie, C.; Yann, L.C.; Sylvie, G.D.; Sassi, M.; Emmanuel, G.; Reynald, G.
Deposited on	:	2025-11-21
Resolution	:	2.90 Å(reported)
Based on initial model	:	8B0X

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

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

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

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

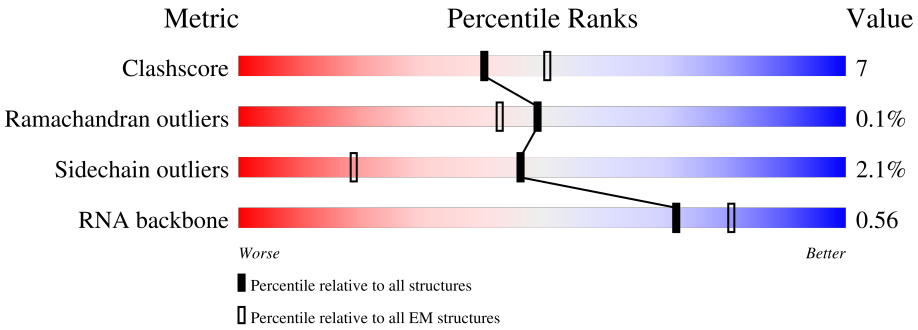
EMDB validation analysis	:	0.0.1.dev133
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.2
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.51

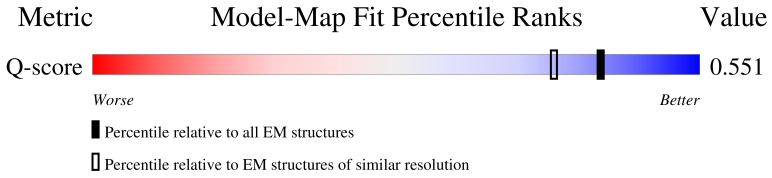
1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.90 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.





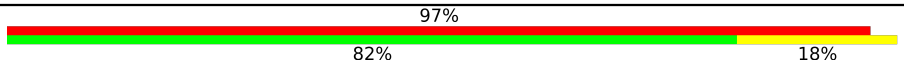
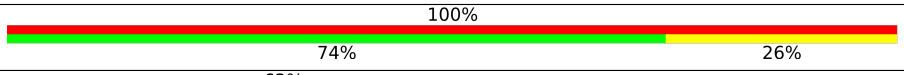
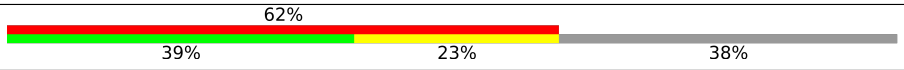
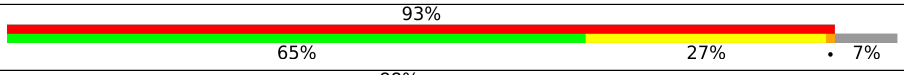
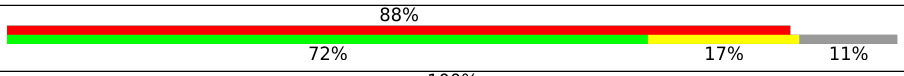
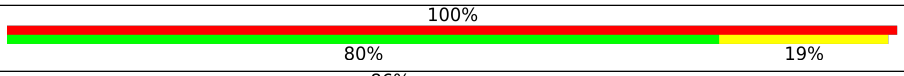
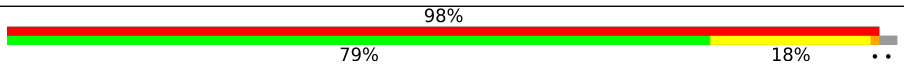
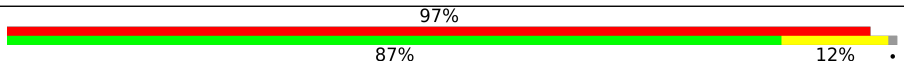
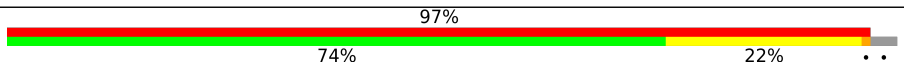
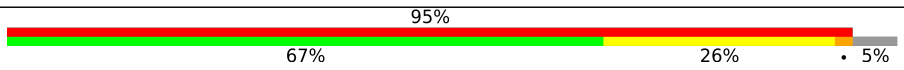
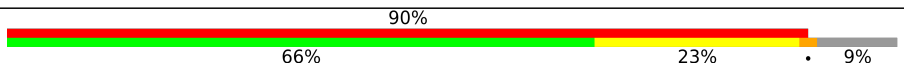
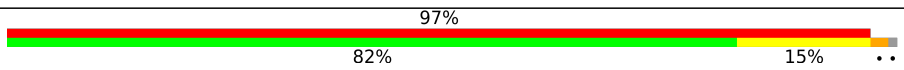
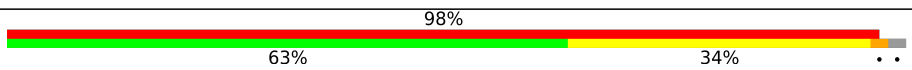
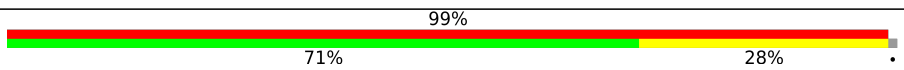
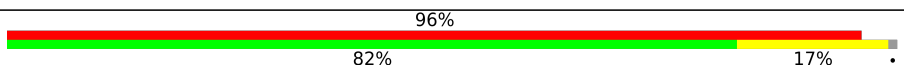
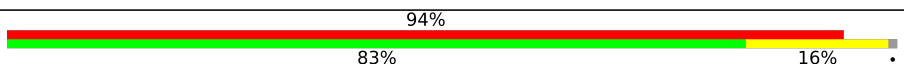
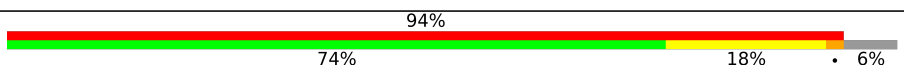
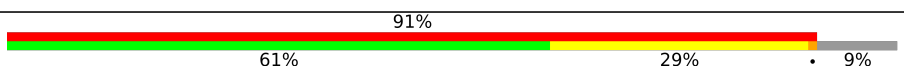
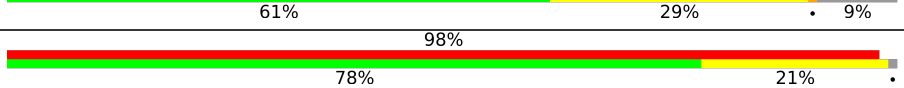
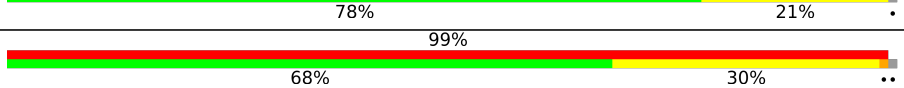
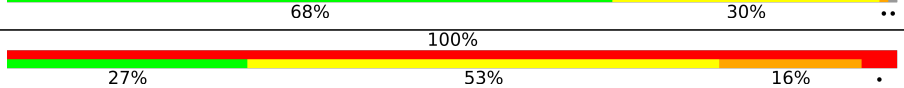
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	13054 (2.40 - 3.40)

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	0	55	87% 75% 18% 7%
2	1	46	54% 96% .
3	2	65	75% 75% 23% .

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Mol	Chain	Length	Quality of chain
4	3	38	
5	4	70	
6	5	234	
7	A	1550	
8	B	241	
9	C	232	
10	D	206	
11	E	167	
12	F	131	
13	G	156	
14	H	130	
15	I	130	
16	J	103	
17	K	129	
18	L	124	
19	M	118	
20	N	101	
21	O	89	
22	P	82	
23	Q	84	
24	R	75	
25	S	92	
26	T	87	
27	U	71	
28	V	77	

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Mol	Chain	Length	Quality of chain
29	X	111	88% 73% 14% 12%
30	a	2923	51% 62% 33%
31	b	116	91% 72% 28%
32	c	273	73% 90% 9%
33	d	209	74% 84% 16%
34	e	201	88% 86% 14%
35	f	179	99% 73% 25%
36	g	177	99% 78% 21%
37	h	149	99% 70% 28%
38	i	142	87% 78% 22%
39	j	123	87% 80% 20%
40	k	144	84% 85% 15%
41	l	136	91% 81% 18%
42	m	128	77% 83% 10% 7%
43	n	117	99% 80% 18%
44	o	115	89% 78% 21%
45	p	118	66% 86% 14%
46	q	103	91% 83% 16%
47	r	110	87% 83% 17%
48	s	100	84% 81% 12% 7%
49	t	104	98% 88% 11%
50	u	94	99% 79% 20%
51	v	85	78% 80% 12% 8%
52	w	78	85% 92% 6%
53	x	63	97% 78% 19%

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Mol	Chain	Length	Quality of chain
54	y	59	85% 80% 19%
55	z	57	74% 82% 16%

2 Entry composition

There are 58 unique types of molecules in this entry. The entry contains 146256 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Large ribosomal subunit protein bL33.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	0	51	418	268	76	73	1	0	0

- Molecule 2 is a protein called Large ribosomal subunit protein bL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	1	46	377	228	90	57	2	0	0

- Molecule 3 is a protein called Large ribosomal subunit protein bL35.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	2	64	504	323	105	74	2	0	0

- Molecule 4 is a protein called Large ribosomal subunit protein bL36.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	3	38	302	185	65	48	4	0	0

- Molecule 5 is a protein called Large ribosomal subunit protein bL31.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	4	70	540	333	103	98	6	0	0

- Molecule 6 is a protein called Large ribosomal subunit protein uL1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	5	146	1105	688	204	211	2	0	0

- Molecule 7 is a RNA chain called 16S rRNA (1530-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
7	A	1530	Total	C	N	O	P	0	0
			32847	14657	6028	10632	1530		

- Molecule 8 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	B	224	Total	C	N	O	S	0	0
			1749	1106	315	320	8		

- Molecule 9 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	C	206	Total	C	N	O	S	0	0
			1623	1028	305	287	3		

- Molecule 10 is a protein called Small ribosomal subunit protein uS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	D	205	Total	C	N	O	S	0	0
			1644	1025	316	298	5		

- Molecule 11 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	E	156	Total	C	N	O	S	0	0
			1155	719	219	211	6		

- Molecule 12 is a protein called Small ribosomal subunit protein bS6.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	F	103	Total	C	N	O	S	0	0
			832	524	151	150	7		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
F	62	MET	LEU	variant	UNP A0A2N4W582

- Molecule 13 is a protein called Small ribosomal subunit protein uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	G	153	Total	C	N	O	S	0	0
			1204	751	231	218	4		

- Molecule 14 is a protein called Small ribosomal subunit protein uS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	H	129	Total	C	N	O	S	0	0
			977	616	171	184	6		

- Molecule 15 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	I	126	Total	C	N	O	S	0	0
			1010	628	202	177	3		

- Molecule 16 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	J	98	Total	C	N	O	S	0	0
			788	493	151	143	1		

- Molecule 17 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	K	117	Total	C	N	O	S	0	0
			878	541	173	161	3		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
K	119	IAS	ASN	modified residue	UNP A0A1C1EGM1

- Molecule 18 is a protein called Small ribosomal subunit protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	L	123	Total	C	N	O	S	0	0
			958	592	196	165	5		

- Molecule 19 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	M	116	Total	C	N	O	S	0	0
			907	564	181	158	4		

- Molecule 20 is a protein called Small ribosomal subunit protein uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	N	100	Total	C	N	O	S	0	0
			805	500	164	138	3		

- Molecule 21 is a protein called Small ribosomal subunit protein uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	O	88	Total	C	N	O	S	0	0
			710	438	144	127	1		

- Molecule 22 is a protein called Small ribosomal subunit protein bS16.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	P	81	Total	C	N	O	S	0	0
			636	397	127	111	1		

- Molecule 23 is a protein called Small ribosomal subunit protein uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	Q	79	Total	C	N	O	S	0	0
			639	402	121	112	4		

- Molecule 24 is a protein called Small ribosomal subunit protein bS18.

Mol	Chain	Residues	Atoms				AltConf	Trace
24	R	62	Total	C	N	O	0	0
			507	321	94	92		

- Molecule 25 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	S	84	Total	C	N	O	S	0	0
			667	426	127	112	2		

- Molecule 26 is a protein called Small ribosomal subunit protein bS20.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	T	86	Total	C	N	O	S	0	0
			669	413	138	115	3		

- Molecule 27 is a protein called Small ribosomal subunit protein bS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	U	70	Total	C	N	O	S	0	0
			589	366	125	97	1		

- Molecule 28 is a RNA chain called E-site RNA (77-MER).

Mol	Chain	Residues	Atoms						AltConf	Trace
28	V	77	Total	C	N	O	P	S	0	0
			1644	734	297	535	77	1		

- Molecule 29 is a protein called Ribosomal subunit interface protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	X	98	Total	C	N	O	S	0	0
			778	484	149	142	3		

- Molecule 30 is a RNA chain called RNA (2901-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
30	a	2901	Total	C	N	O	P	0	0
			62284	27795	11452	20136	2901		

- Molecule 31 is a RNA chain called 5S rRNA (119-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
31	b	116	Total	C	N	O	P	0	0
			2483	1106	453	808	116		

- Molecule 32 is a protein called Large ribosomal subunit protein uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	c	271	Total	C	N	O	S	0	0
			2080	1286	423	364	7		

- Molecule 33 is a protein called Large ribosomal subunit protein uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	d	209	Total	C	N	O	S	0	0
			1567	981	289	294	3		

- Molecule 34 is a protein called Large ribosomal subunit protein uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	e	201	Total	C	N	O	S	0	0
			1554	975	284	290	5		

- Molecule 35 is a protein called Large ribosomal subunit protein uL5.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	f	177	Total	C	N	O	S	0	0
			1410	899	249	256	6		

- Molecule 36 is a protein called Large ribosomal subunit protein uL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	g	176	Total	C	N	O	S	0	0
			1319	830	243	244	2		

- Molecule 37 is a protein called Large ribosomal subunit protein bL9.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	h	148	Total	C	N	O	S	0	0
			1099	693	197	208	1		

- Molecule 38 is a protein called Large ribosomal subunit protein uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	i	142	Total	C	N	O	S	0	0
			1134	716	211	202	5		

- Molecule 39 is a protein called Large ribosomal subunit protein uL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	j	123	Total	C	N	O	S	0	0
			947	594	181	166	6		

- Molecule 40 is a protein called Large ribosomal subunit protein uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	k	144	Total	C	N	O	S	0	0
			1063	658	211	191	3		

- Molecule 41 is a protein called Large ribosomal subunit protein uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	l	136	Total	C	N	O	S	0	0
			1074	685	204	179	6		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
l	82	MS6	MET	modified residue	UNP A0A1C1EGZ5

- Molecule 42 is a protein called Large ribosomal subunit protein bL17.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	m	119	Total	C	N	O	S	0	0
			950	588	195	162	5		

- Molecule 43 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms				AltConf	Trace
43	n	116	Total	C	N	O	0	0
			892	552	178	162		

- Molecule 44 is a protein called Large ribosomal subunit protein bL19.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	o	114	Total	C	N	O	S	0	0
			917	574	179	163	1		

- Molecule 45 is a protein called Large ribosomal subunit protein bL20.

Mol	Chain	Residues	Atoms				AltConf	Trace
45	p	117	Total	C	N	O	0	0
			947	604	192	151		

- Molecule 46 is a protein called Large ribosomal subunit protein bL21.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	q	103	Total	C	N	O	S	0	0
			816	517	153	144	2		

- Molecule 47 is a protein called Large ribosomal subunit protein uL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	r	110	Total	C	N	O	S	0	0
			855	530	166	156	3		

- Molecule 48 is a protein called Large ribosomal subunit protein uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	s	93	Total	C	N	O	S	0	0
			739	467	139	131	2		

- Molecule 49 is a protein called Large ribosomal subunit protein uL24.

Mol	Chain	Residues	Atoms				AltConf	Trace
49	t	102	Total	C	N	O	0	0
			779	492	146	141		

- Molecule 50 is a protein called Large ribosomal subunit protein bL25.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	u	94	Total	C	N	O	S	0	0
			749	477	136	134	2		

- Molecule 51 is a protein called Large ribosomal subunit protein bL27.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	v	78	Total	C	N	O	S	0	0
			592	367	118	106	1		

- Molecule 52 is a protein called Large ribosomal subunit protein bL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	w	77	Total	C	N	O	S	0	0
			625	388	129	106	2		

- Molecule 53 is a protein called Large ribosomal subunit protein uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	x	62	Total 499	C 308	N 98	O 92	S 1	0	0

- Molecule 54 is a protein called Large ribosomal subunit protein uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	y	58	Total 447	C 279	N 87	O 79	S 2	0	0

- Molecule 55 is a protein called Large ribosomal subunit protein bL32.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	z	56	Total 443	C 269	N 94	O 79	S 1	0	0

- Molecule 56 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
56	3	1	Total 1	Zn 1	0
56	4	1	Total 1	Zn 1	0

- Molecule 57 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
57	A	95	Total 95	Mg 95	0
57	K	1	Total 1	Mg 1	0
57	a	252	Total 252	Mg 252	0
57	b	5	Total 5	Mg 5	0
57	c	2	Total 2	Mg 2	0
57	d	1	Total 1	Mg 1	0
57	m	1	Total 1	Mg 1	0
57	p	1	Total 1	Mg 1	0

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Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
57	z	1	Total Mg 1 1	0

- Molecule 58 is POTASSIUM ION (CCD ID: K) (formula: K).

Mol	Chain	Residues	Atoms	AltConf
58	A	47	Total K 47 47	0
58	a	116	Total K 116 116	0
58	b	1	Total K 1 1	0
58	c	3	Total K 3 3	0
58	e	1	Total K 1 1	0
58	f	1	Total K 1 1	0

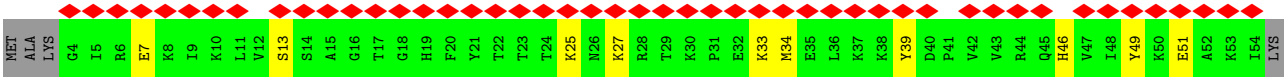
3 Residue-property plots (i)

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

• Molecule 1: Large ribosomal subunit protein bL33

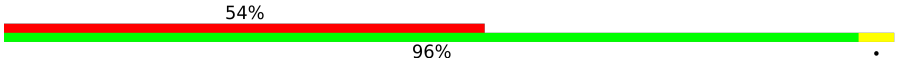
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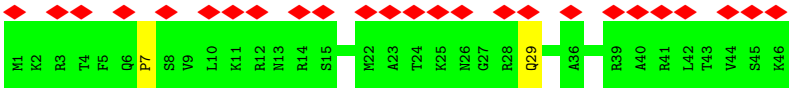




• Molecule 2: Large ribosomal subunit protein bL34

Chain 1:

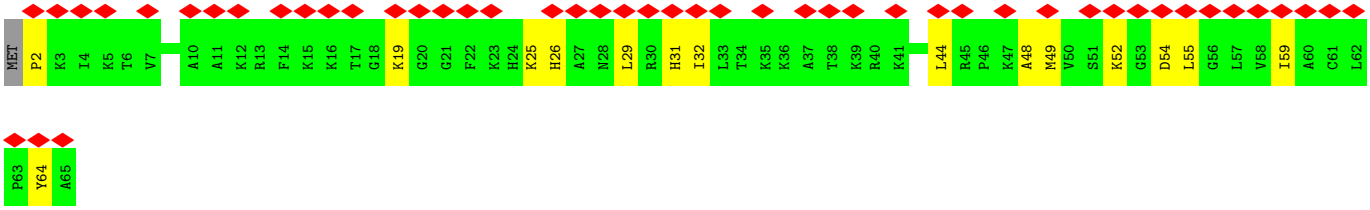




• Molecule 3: Large ribosomal subunit protein bL35

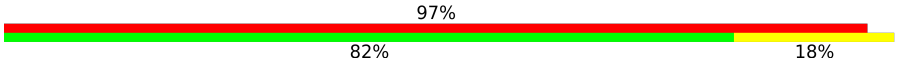
Chain 2:

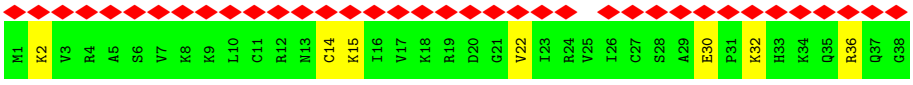




• Molecule 4: Large ribosomal subunit protein bL36

Chain 3:

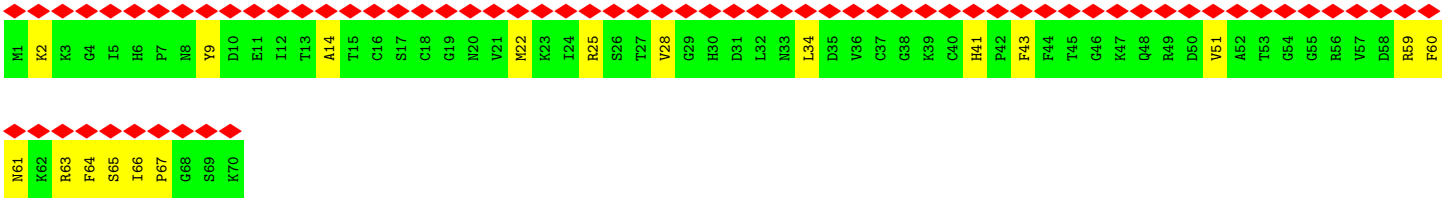




• Molecule 5: Large ribosomal subunit protein bL31

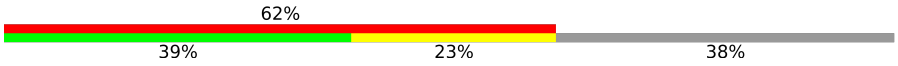
Chain 4:

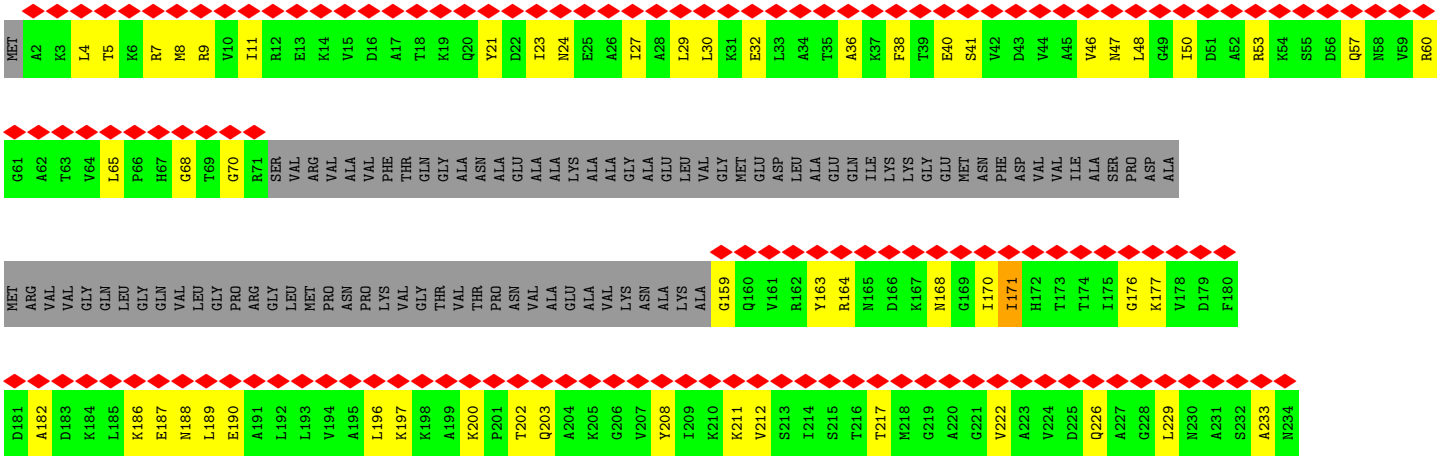




• Molecule 6: Large ribosomal subunit protein uL1

Chain 5:

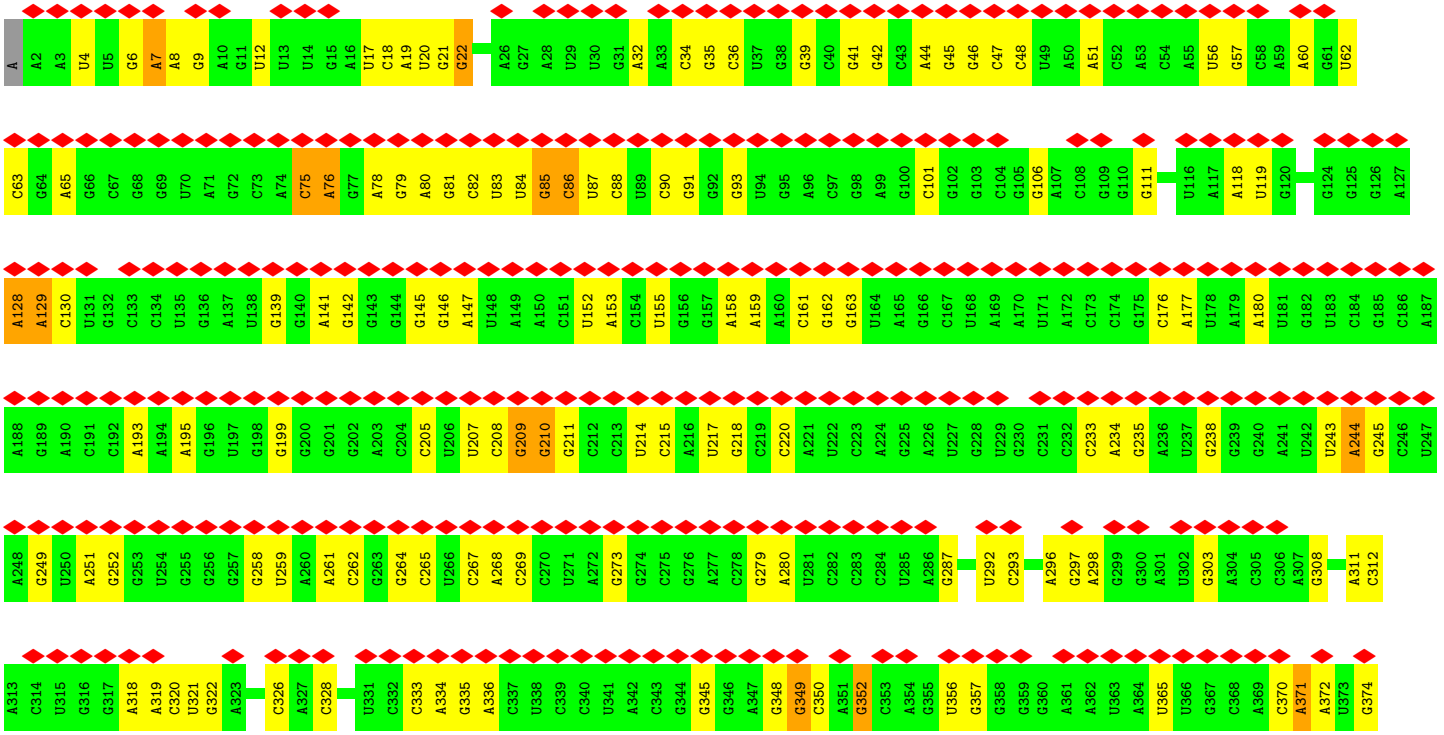


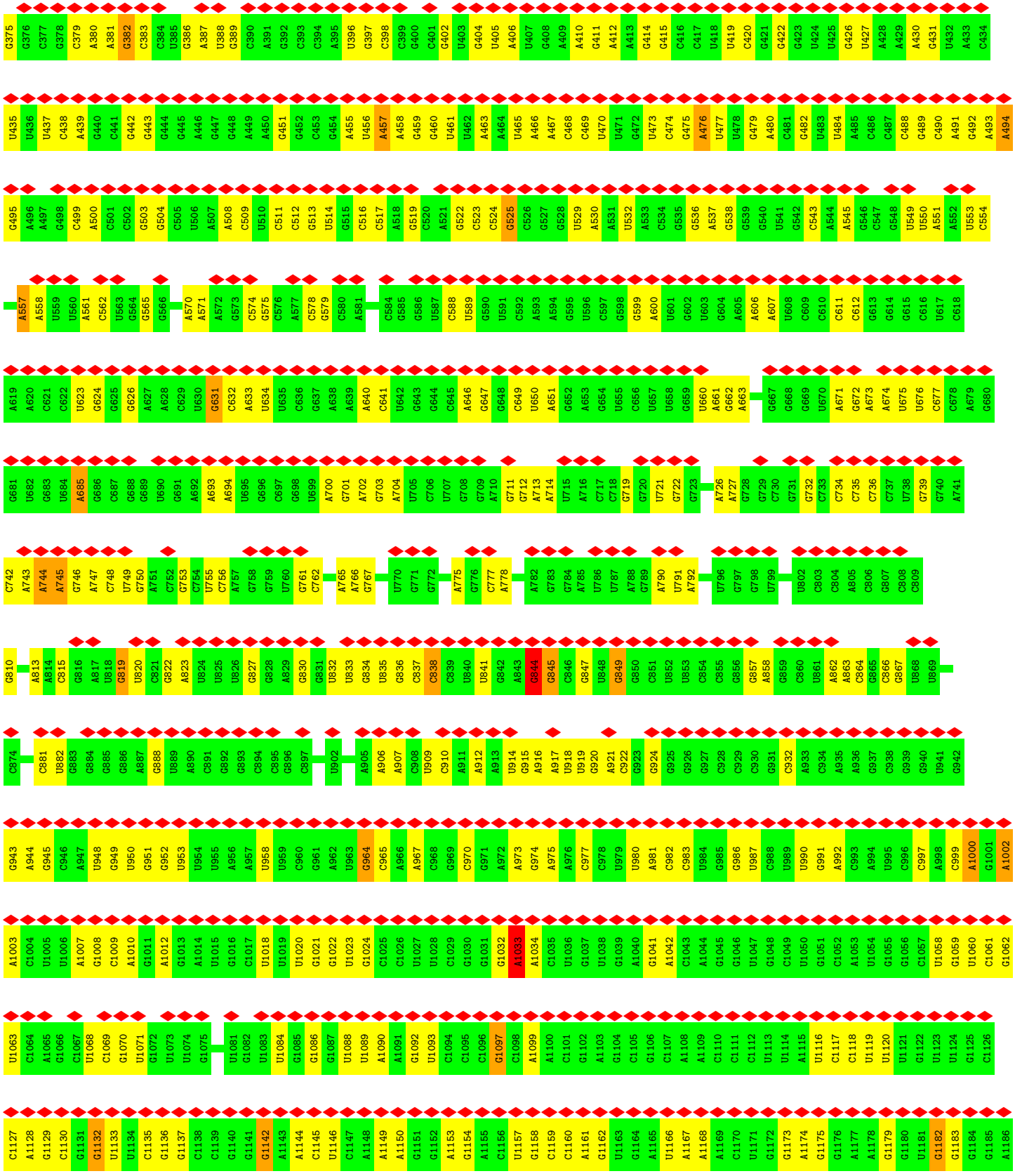


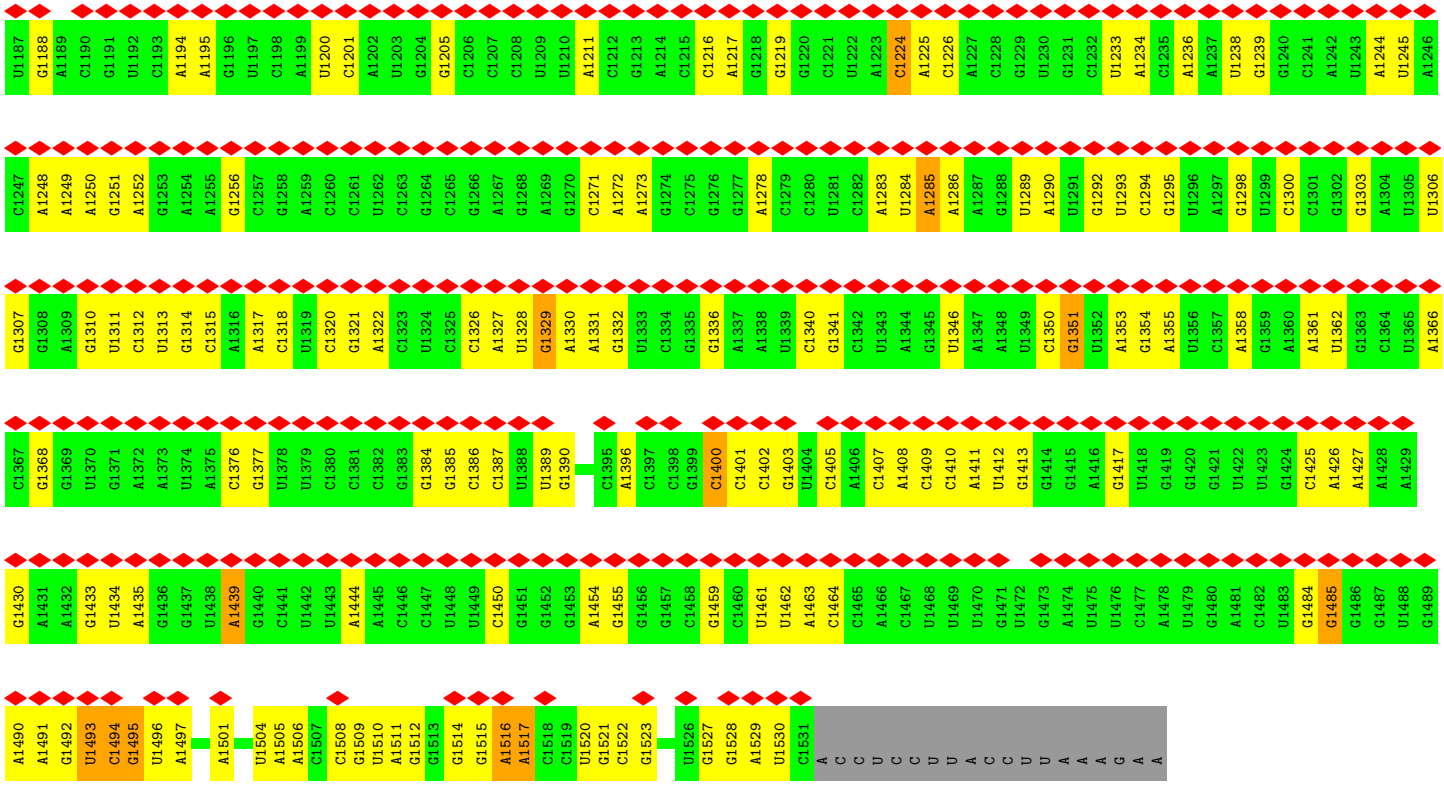
• Molecule 7: 16S rRNA (1530-MER)

Chain A:



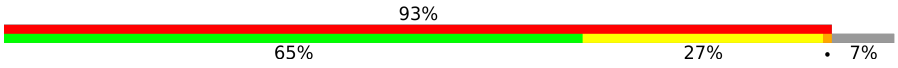


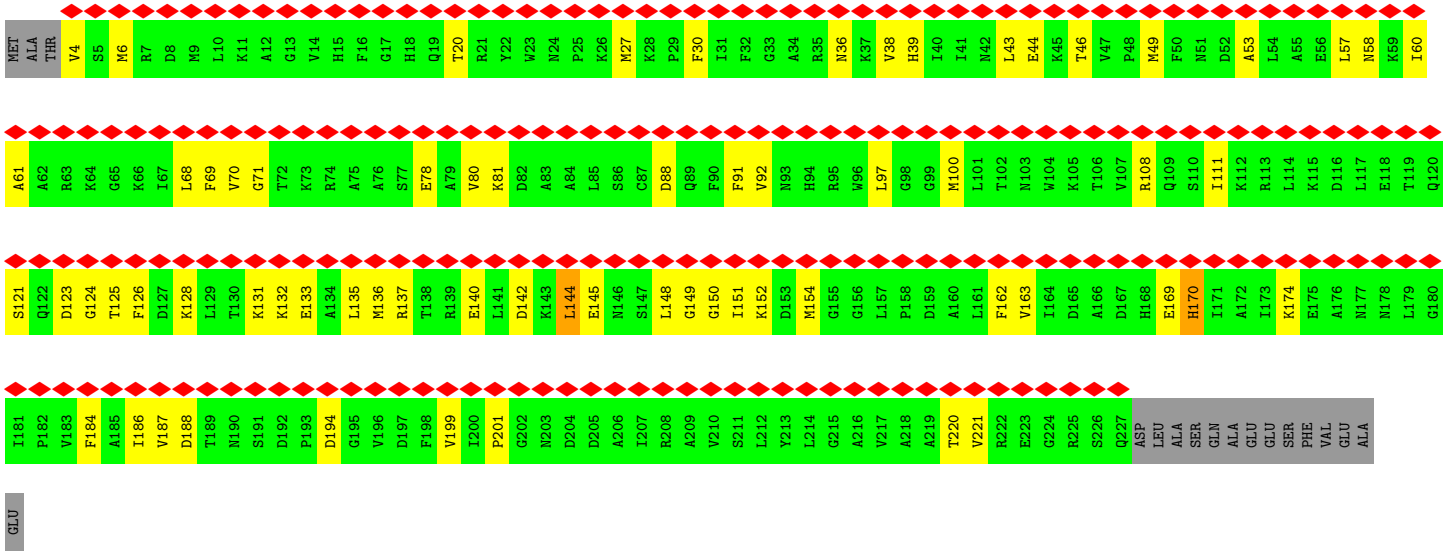

G375 G376 C377 G378 C379 A380 A381 G382 C383 C384 U385 G386 A387 U388 G389 C390 A391 G392 C393 C394 A395 U396 G397 C398 C399 G400 C401 G402 U403 G404 U405 A406 U407 G408 A409 A410 G411 A412 A413 G414 G415 C416 C417 U418 U419 C420 G421 G422 G423 U424 U425 G426 U427 A428 A429 A430 G431 U432 A433 C434
U435 U436 U437 C438 A439 G440 C441 G442 G443 G444 G445 A446 G447 G448 A449 A450 G451 C452 C453 G454 A455 U456 A457 A458 G459 G460 U461 U462 A463 A464 U465 A466 A467 C468 C469 U470 U471 G472 U473 C474 G475 A476 U477 U478 G479 A480 C481 G482 U483 U484 A485 C486 C487 C488 G489 C490 A491 G492 A493 A494
G495 A496 A497 G498 C499 A500 C501 C502 G503 G504 C505 U506 A507 A508 C509 U510 C511 C512 G513 U514 G515 C516 C517 A518 G519 C520 A521 G522 C523 C524 G525 C526 G527 G528 U529 A530 A531 U532 A533 C534 G535 G536 A537 G538 G539 G540 U541 G542 C543 A544 A545 G546 C547 G548 U549 U550 A551 A552 U553 C554
A557 A558 U559 U560 A561 C562 U563 G564 G565 G566 A570 A571 A572 G573 C574 G575 C576 A577 C578 G579 C580 A581 C584 G585 G586 U587 C588 U589 G590 U591 C592 A593 A594 G595 U596 C597 G598 G599 A600 U601 G602 U603 G604 A605 A606 A607 U608 C609 C610 C611 C612 G613 G614 G615 C616 U617 C618
A619 A620 C621 C622 U623 G624 G625 G626 A627 A628 C629 U630 G631 C632 A633 U634 U635 C636 G637 A638 A639 A640 C641 U642 G643 G644 C645 A646 G647 G648 C649 U650 A651 G652 A653 G654 U655 C656 U657 U658 G659 U660 A661 G662 A663 G667 G668 G669 U670 A671 G672 A673 A674 U675 U676 C677 C678 A679 G680
G681 U682 G683 U684 A685 G686 C687 G688 G689 U690 G691 A692 A693 A694 U695 G696 C697 G698 U699 A700 G701 A702 G703 A704 U705 C706 U707 G708 G709 A710 G711 G712 A713 A714 U715 A716 C717 C718 G719 G720 U721 G722 G723 A726 A727 G728 G729 C730 G731 G732 C733 C734 C735 C736 C737 U738 G739 G740 A741
C742 A743 A744 A745 G746 A747 C748 U749 G750 A751 C752 G753 C754 U755 C756 A757 G758 G759 U760 G761 C762 A765 A766 G767 U770 G771 G772 A775 G776 C777 A778 A782 G783 G784 A785 U786 U787 A788 G789 A790 U791 A792 U796 G797 G798 U799 U802 C803 C804 A805 C806 G807 C808 C809
G810 A813 A814 C815 G816 A817 U818 G819 U820 C821 G822 A823 U824 U825 U826 G827 G828 A829 G830 G831 U832 U833 G834 U835 G836 C837 C838 C839 U840 U841 G842 A843 G844 G845 C846 G847 U848 G849 G850 C851 U852 U853 C854 C855 G856 G857 A858 G859 C860 U861 A862 A863 C864 G865 C866 G867 U868 U869
C874 C881 U882 G883 G884 G885 G886 A887 G888 U889 A890 C891 G892 G893 C894 C895 G896 C897 U902 A905 A906 A907 C908 U909 C910 A911 A912 A913 U914 G915 A916 A917 U918 U919 G920 A921 C922 G923 G924 G925 G926 G927 C928 C929 C930 G931 C932 A933 C934 A935 A936 G937 C938 G939 G940 U941 G942
G943 A944 G945 C946 A947 U948 G949 U950 G951 G952 U953 U954 U955 A956 A957 U958 U959 C960 G961 A962 U963 G964 C965 A966 A967 C968 G969 C970 G971 A972 A973 G974 A975 A976 C977 C978 U979 U980 A981 C982 C983 U984 G985 G986 U987 C988 U989 U990 G991 A992 C993 A994 U995 C996 C997 A998 C999 A1000 G1001 A1002
A1003 C1004 U1005 U1006 A1007 G1008 C1009 A1010 G1011 A1012 G1013 A1014 U1015 G1016 C1017 U1018 U1019 U1020 G1021 G1022 U1023 G1024 C1025 C1026 U1027 U1028 C1029 G1030 G1031 G1032 A1033 A1034 C1035 U1036 G1037 U1038 G1039 A1040 G1041 A1042 C1043 A1044 G1045 G1046 U1047 G1048 C1049 U1050 G1051 C1052 A1053 U1054 G1055 G1056 C1057 U1058 G1059 U1060 C1061 G1062
U1063 C1064 A1065 G1066 C1067 U1068 C1069 G1070 U1071 G1072 U1073 U1074 G1075 U1081 G1082 U1083 U1084 G1085 G1086 G1087 U1088 U1089 A1090 A1091 G1092 U1093 C1094 C1095 C1096 G1097 C1098 A1099 A1100 C1101 G1102 A1103 G1104 C1105 G1106 C1107 A1108 A1109 C1110 C1111 C1112 U1113 U1114 A1115 U1116 C1117 C1118 U1119 U1120 U1121 G1122 U1123 U1124 G1125 C1126
C1127 A1128 G1129 C1130 G1131 G1132 U1133 U1134 C1135 G1136 G1137 C1138 C1139 G1140 G1141 G1142 A1143 A1144 C1145 U1146 C1147 A1148 A1149 A1150 G1151 G1152 A1153 G1154 A1155 C1156 U1157 G1158 C1159 C1160 A1161 G1162 U1163 G1164 A1165 U1166 A1167 A1168 A1169 C1170 U1171 G1172 G1173 A1174 G1175 G1176 A1177 A1178 G1179 G1180 U1181 G1182 G1183 G1184 G1185 A1186



• Molecule 8: Small ribosomal subunit protein uS2

Chain B:

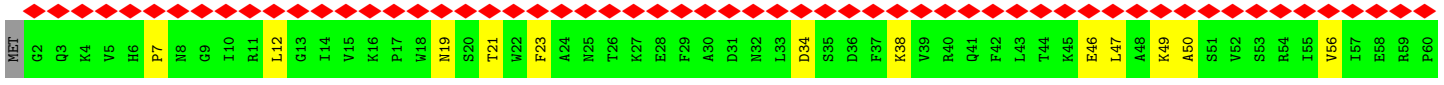


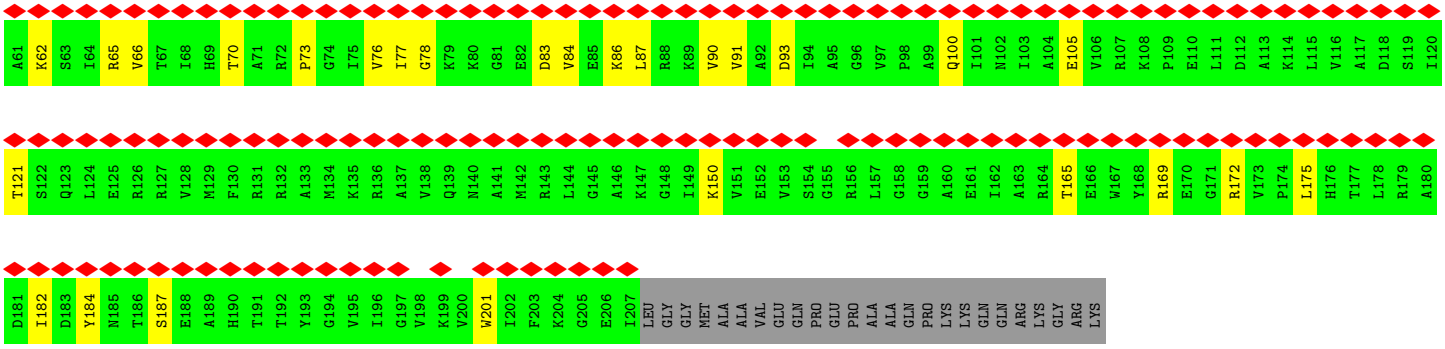


• Molecule 9: Small ribosomal subunit protein uS3

Chain C:







• Molecule 10: Small ribosomal subunit protein uS4

Chain D:

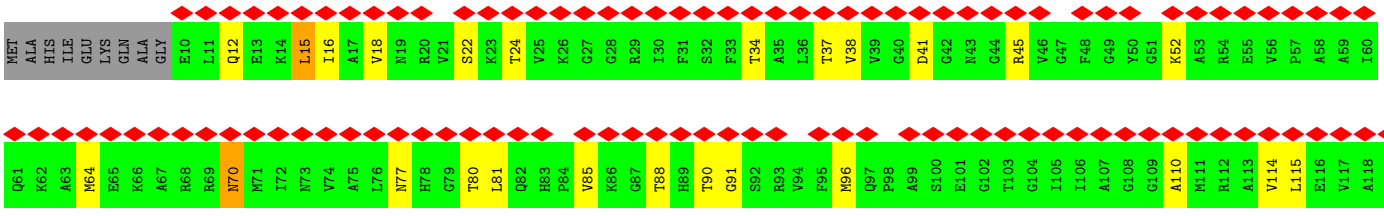




• Molecule 11: Small ribosomal subunit protein uS5

Chain E:

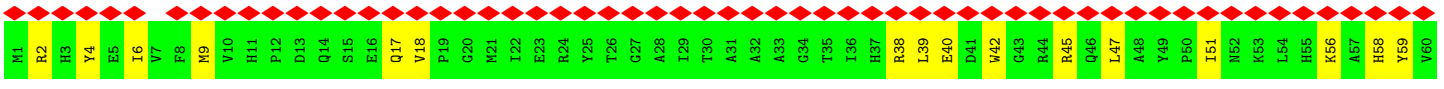


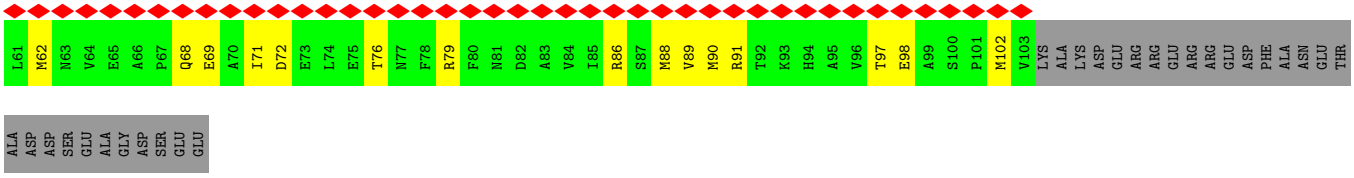


• Molecule 12: Small ribosomal subunit protein bS6

Chain F:

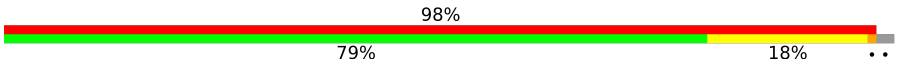


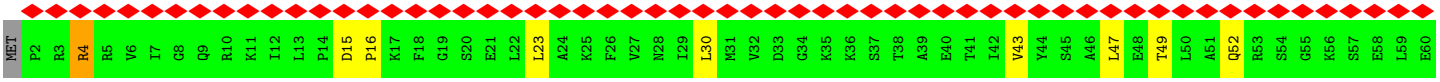


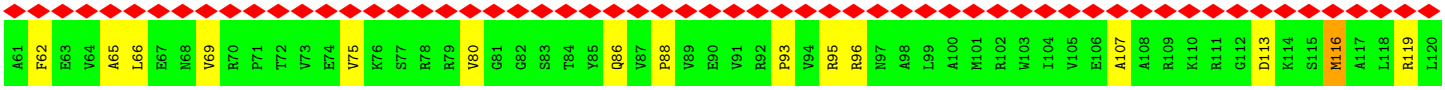


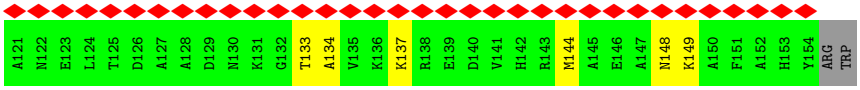
• Molecule 13: Small ribosomal subunit protein uS7

Chain G:



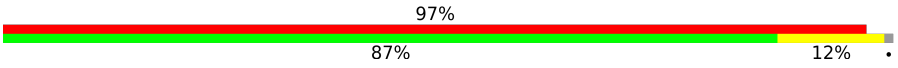


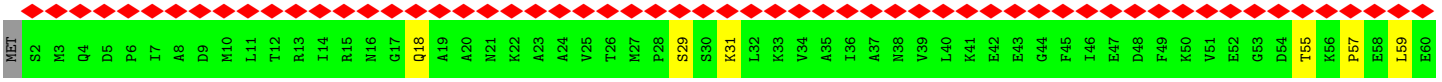


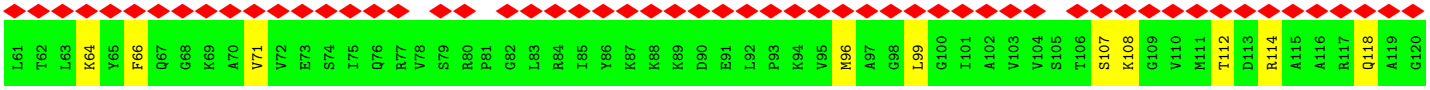


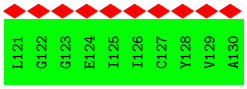
• Molecule 14: Small ribosomal subunit protein uS8

Chain H:



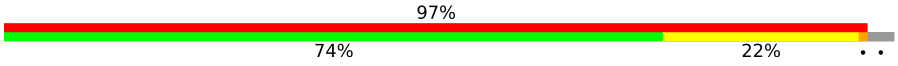




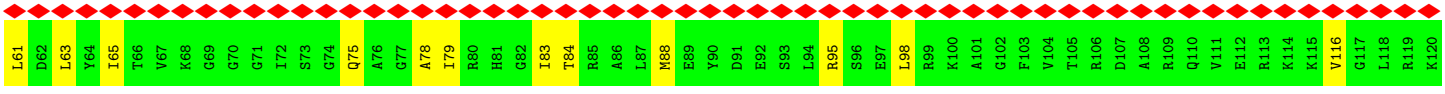


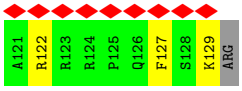
• Molecule 15: Small ribosomal subunit protein uS9

Chain I:



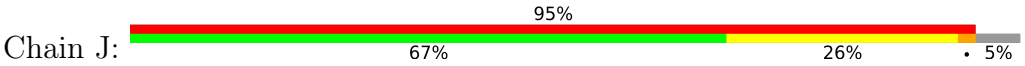


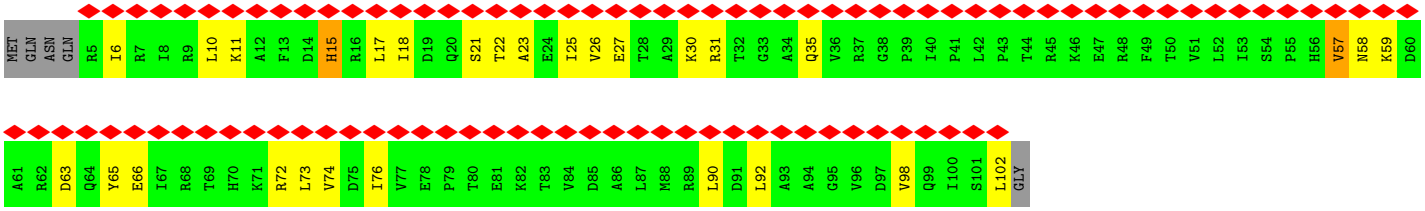




• Molecule 16: Small ribosomal subunit protein uS10

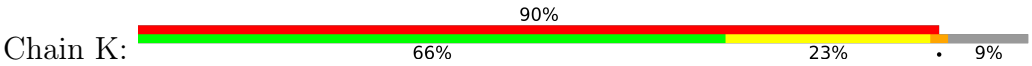
Chain J:





• Molecule 17: Small ribosomal subunit protein uS11

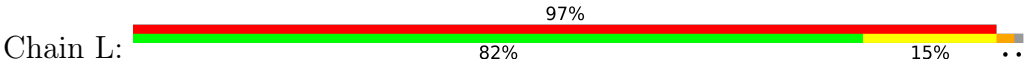
Chain K:

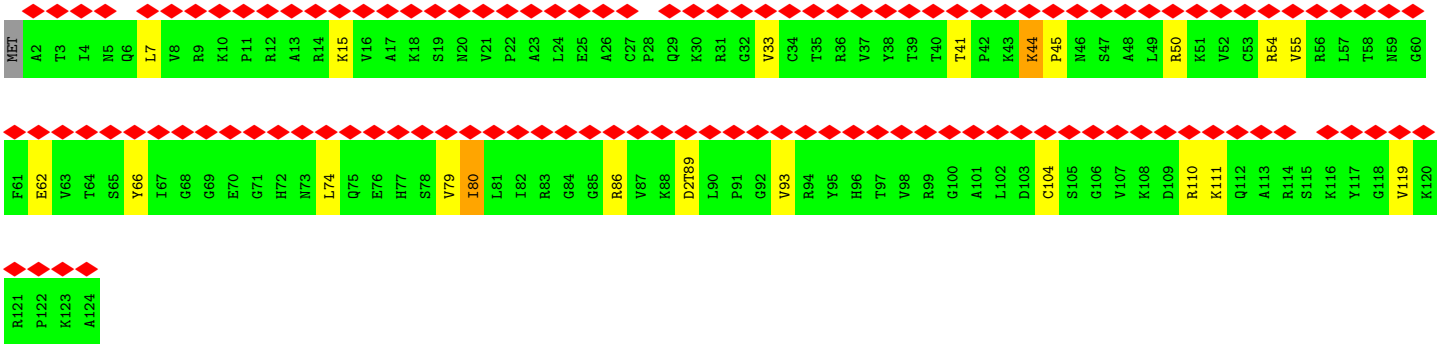




• Molecule 18: Small ribosomal subunit protein uS12

Chain L:

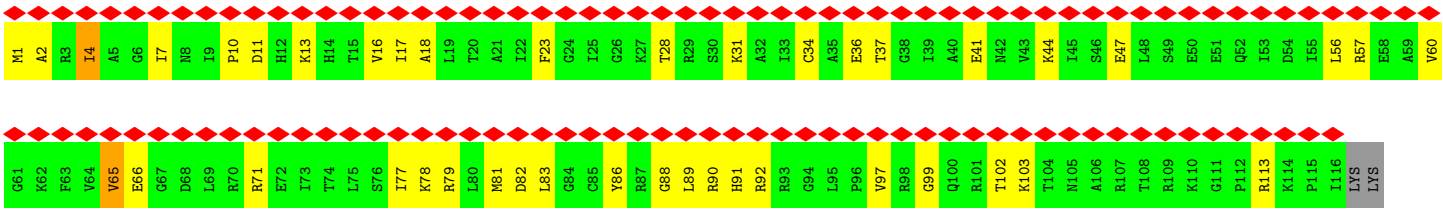




• Molecule 19: Small ribosomal subunit protein uS13

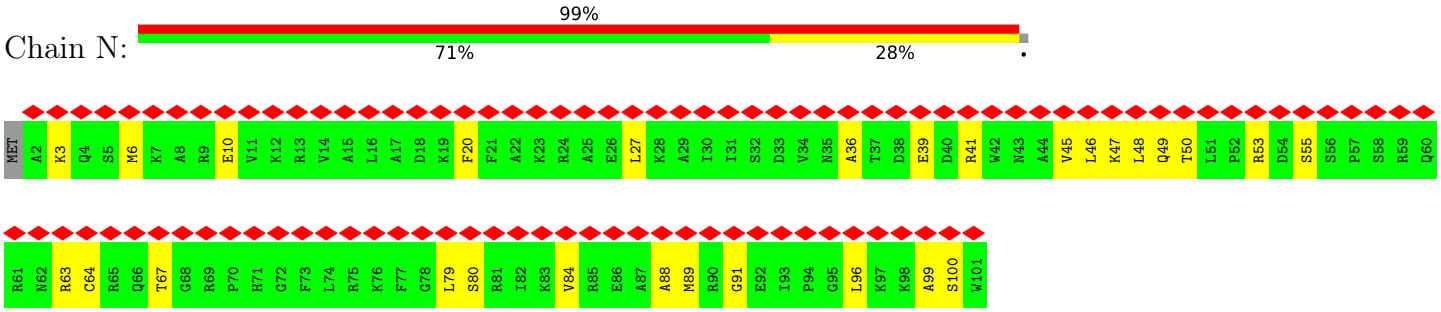
Chain M:





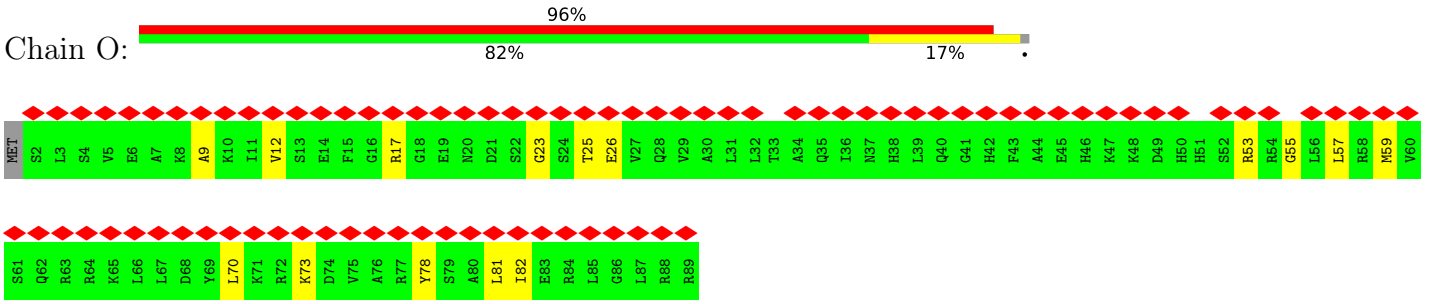
• Molecule 20: Small ribosomal subunit protein uS14

Chain N:



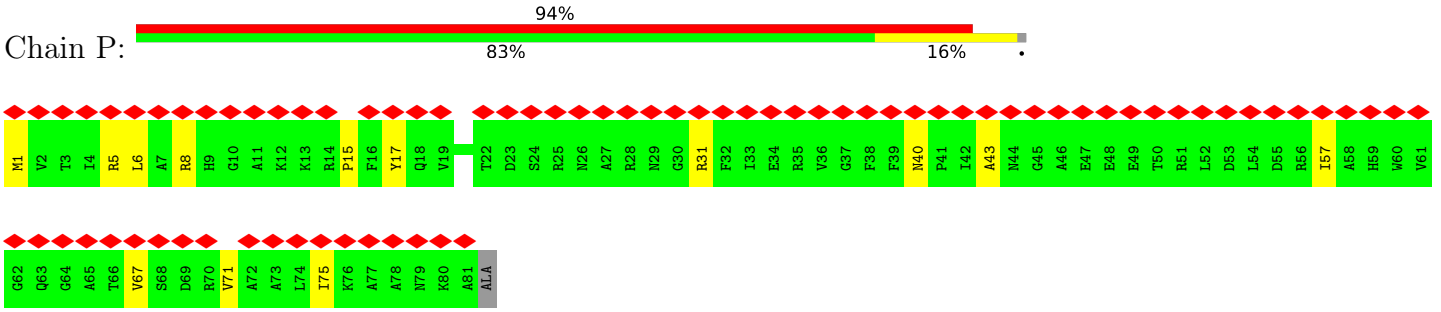
• Molecule 21: Small ribosomal subunit protein uS15

Chain O:



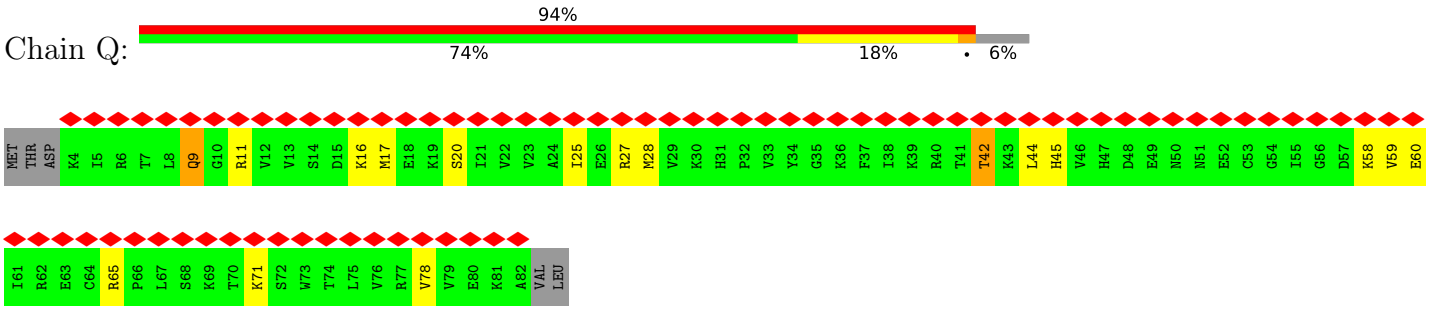
• Molecule 22: Small ribosomal subunit protein bS16

Chain P:



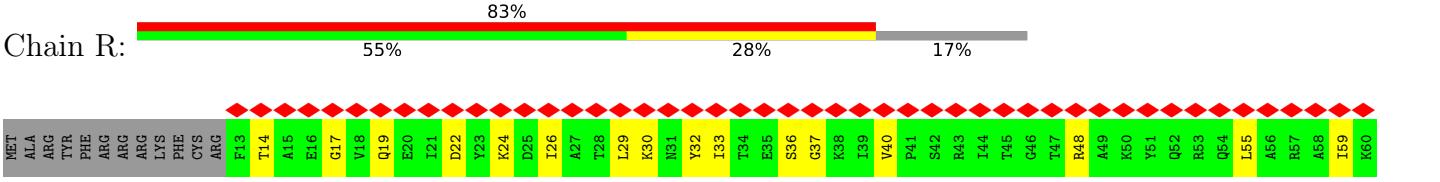
• Molecule 23: Small ribosomal subunit protein uS17

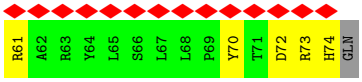
Chain Q:



• Molecule 24: Small ribosomal subunit protein bS18

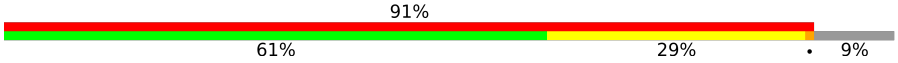
Chain R:

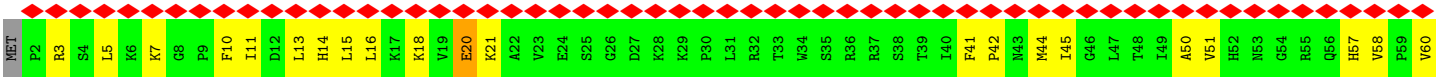


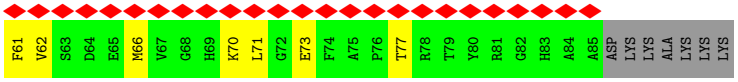


• Molecule 25: Small ribosomal subunit protein uS19

Chain S:

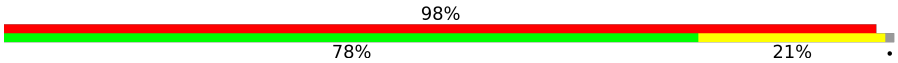


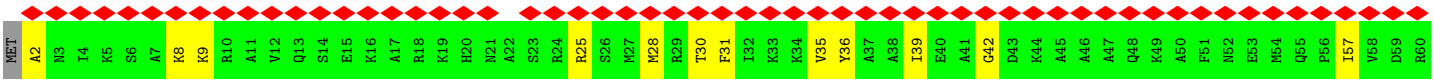


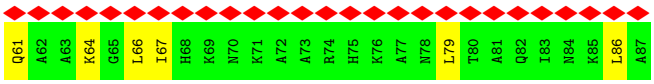


• Molecule 26: Small ribosomal subunit protein bS20

Chain T:

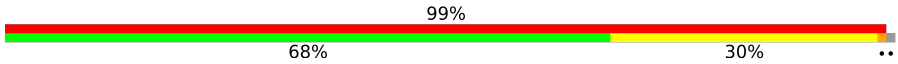






• Molecule 27: Small ribosomal subunit protein bS21

Chain U:

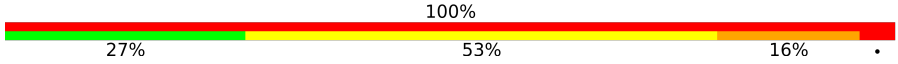


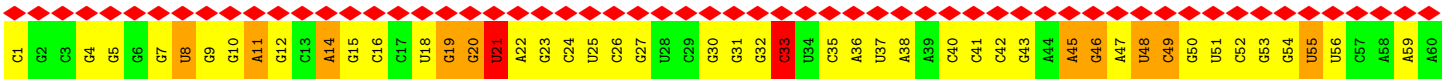


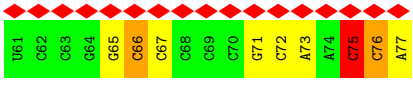


• Molecule 28: E-site RNA (77-MER)

Chain V:



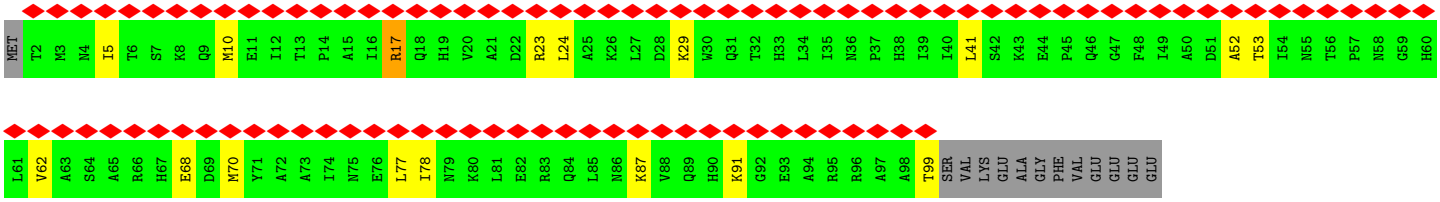




• Molecule 29: Ribosomal subunit interface protein

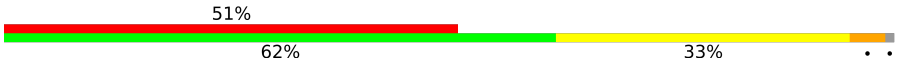
Chain X:

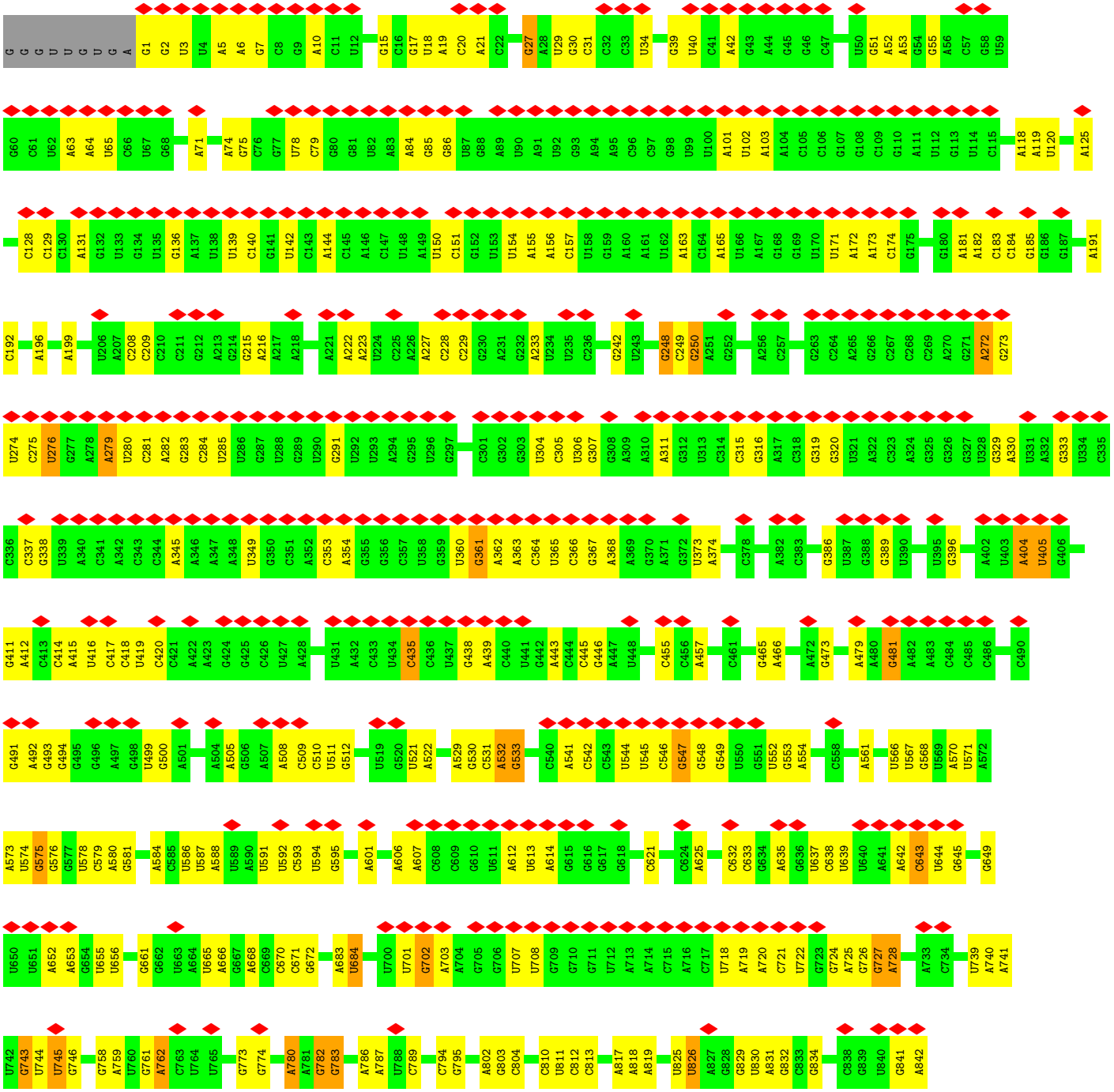


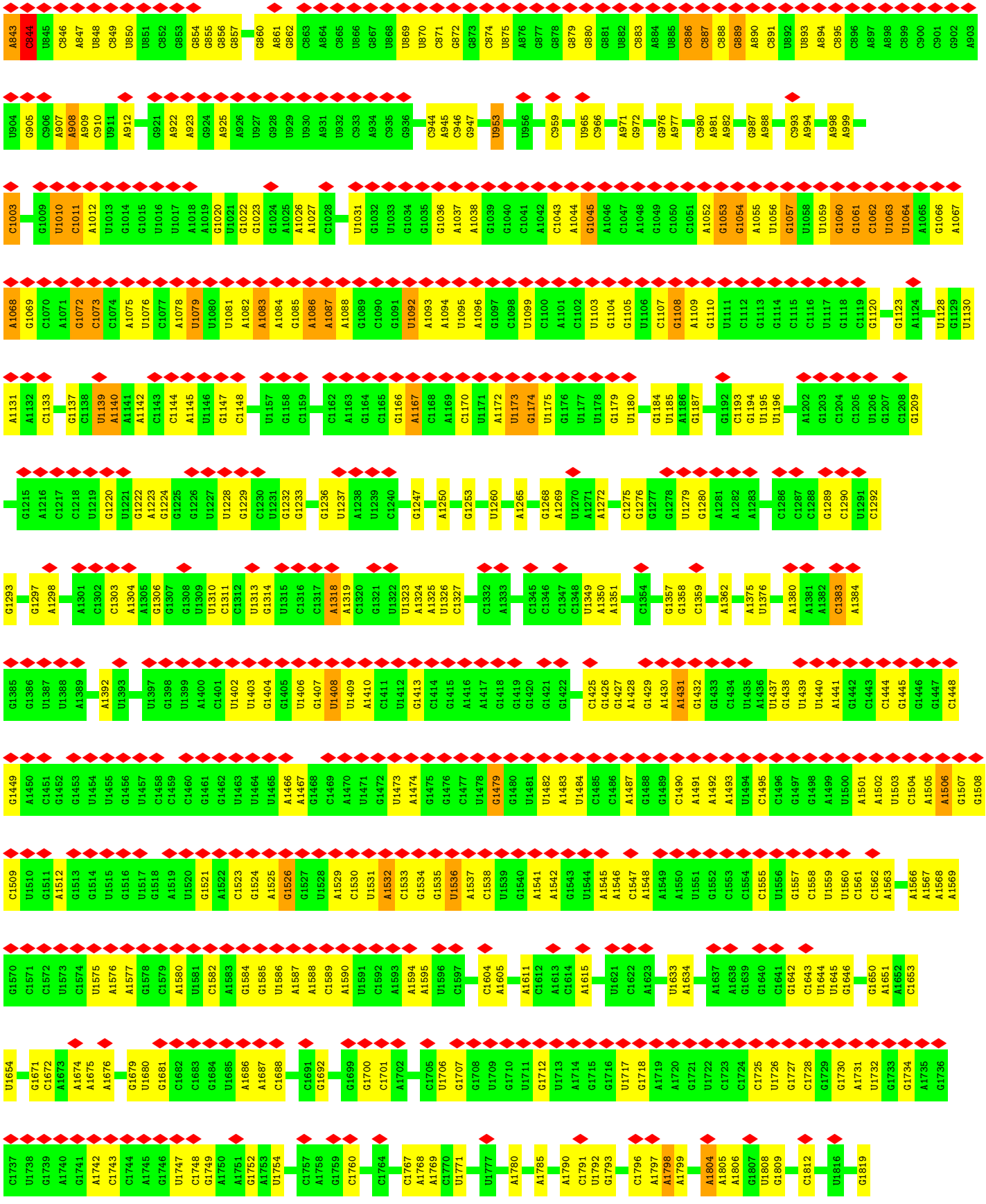


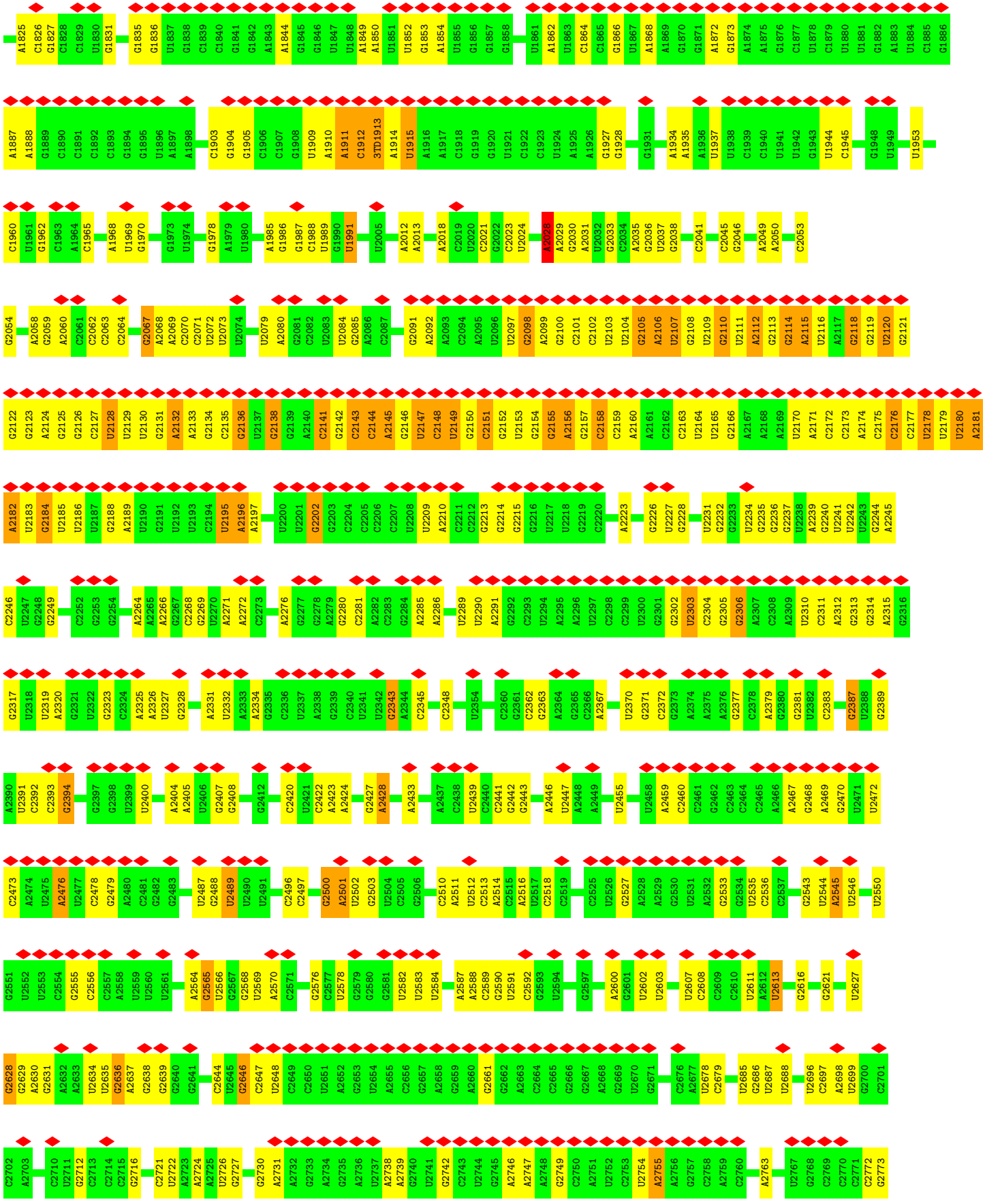
• Molecule 30: RNA (2901-MER)

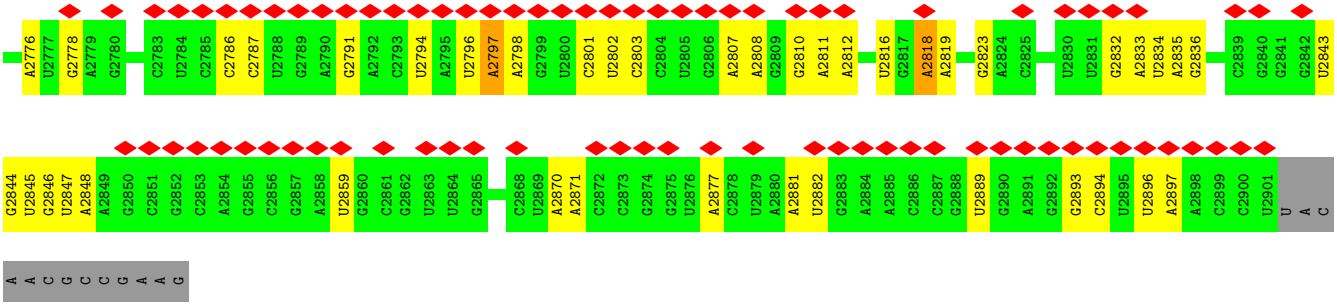
Chain a:





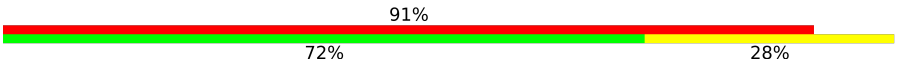


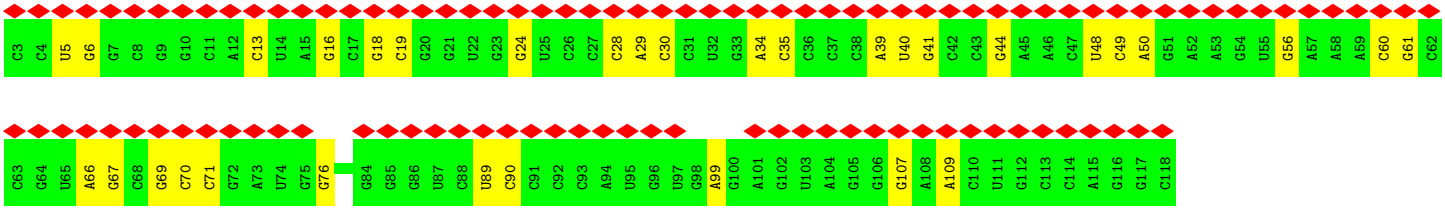

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G1931
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• Molecule 31: 5S rRNA (119-MER)

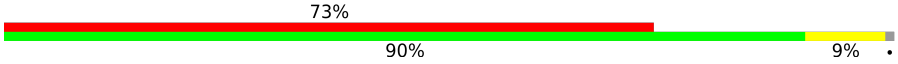
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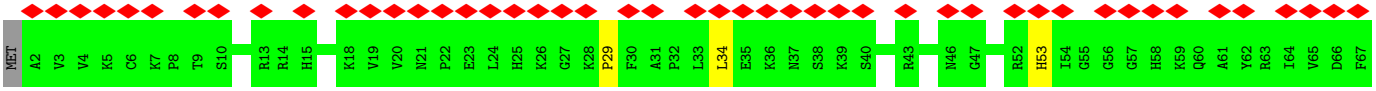


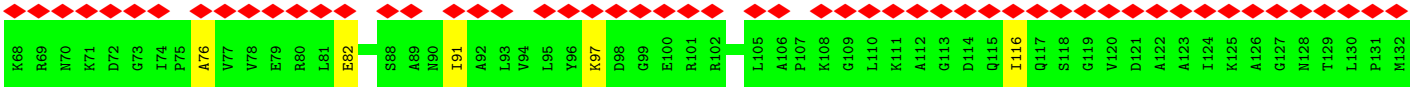


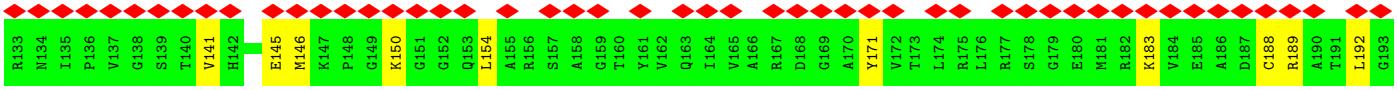
• Molecule 32: Large ribosomal subunit protein uL2

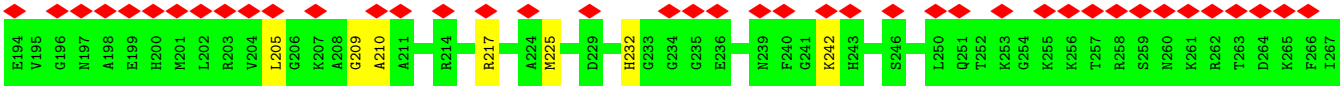
Chain c:

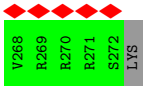








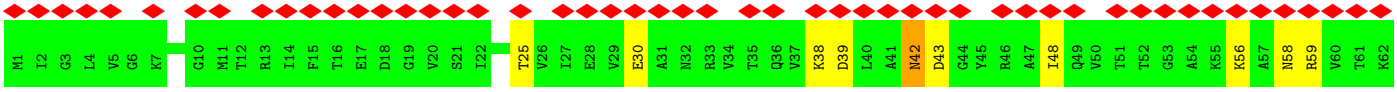


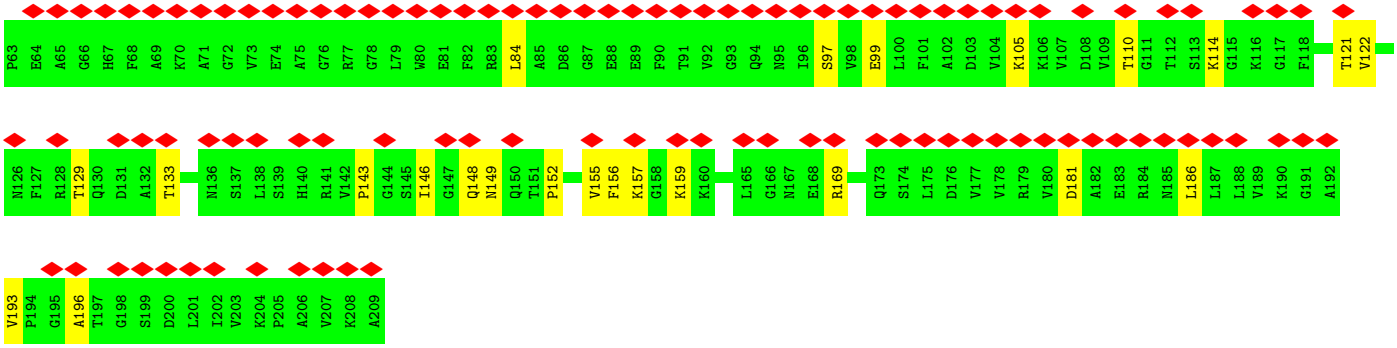


• Molecule 33: Large ribosomal subunit protein uL3

Chain d:



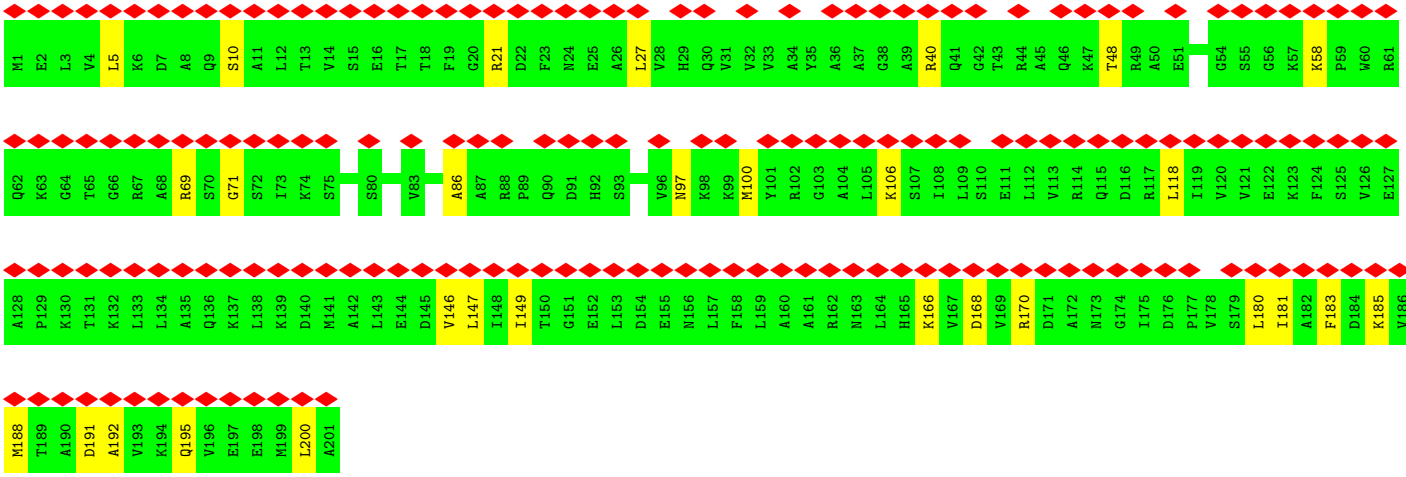




• Molecule 34: Large ribosomal subunit protein uL4

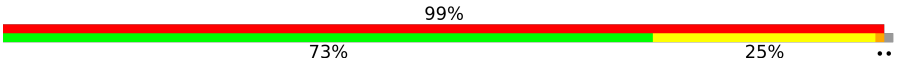
Chain e:

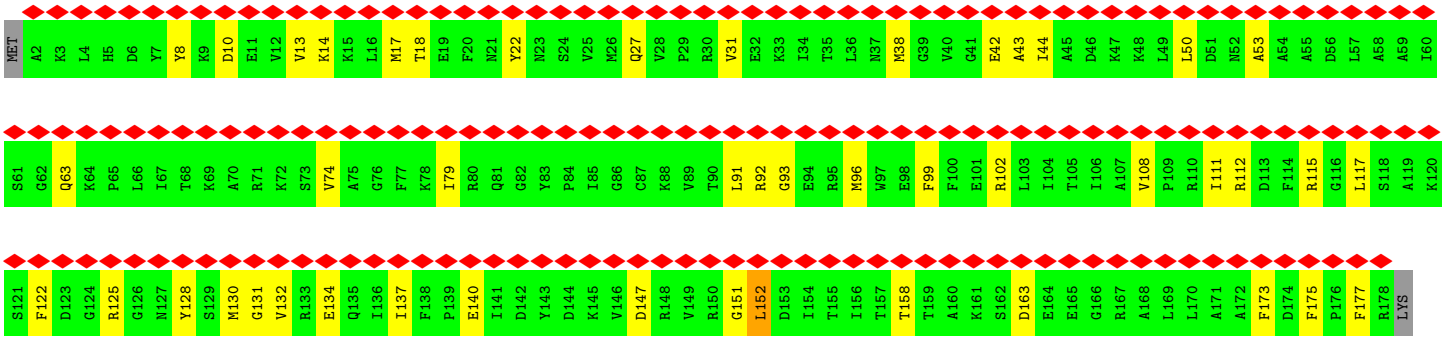




• Molecule 35: Large ribosomal subunit protein uL5

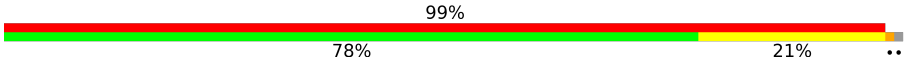
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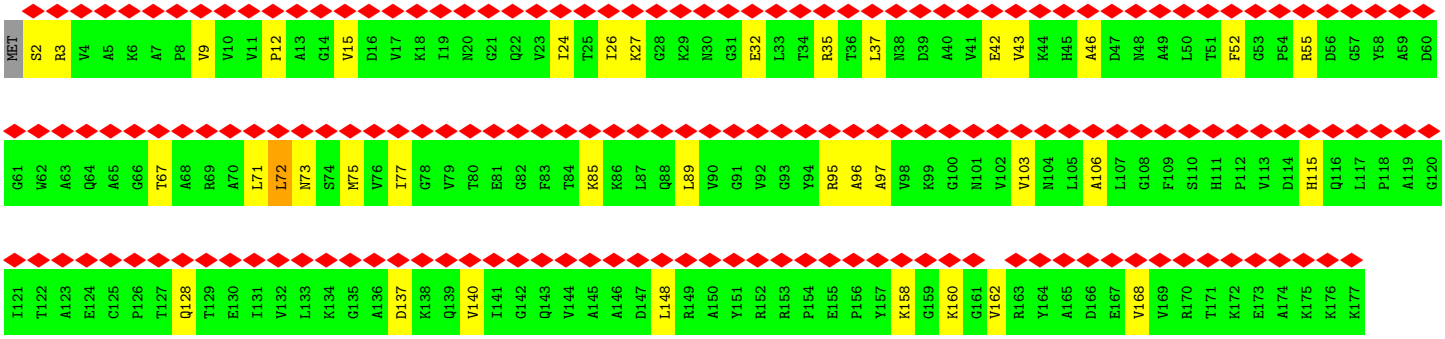




• Molecule 36: Large ribosomal subunit protein uL6

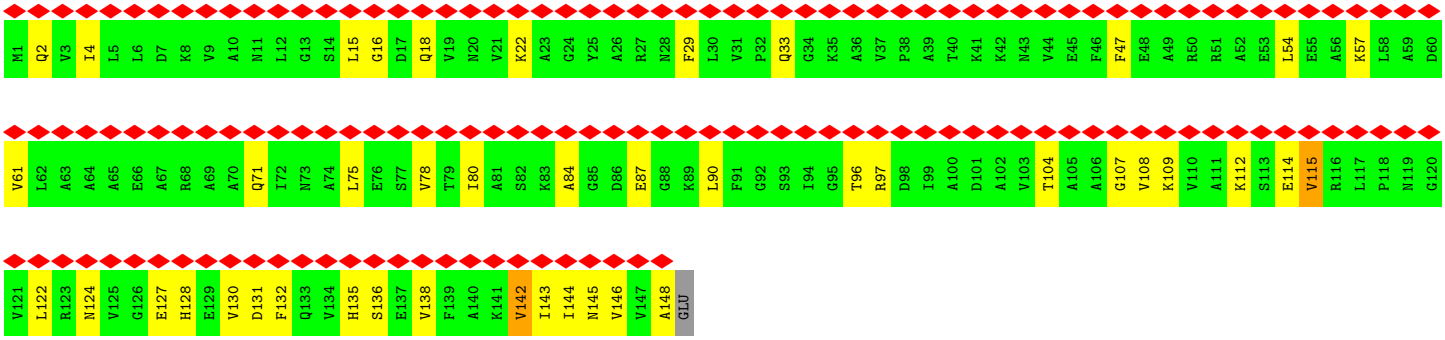
Chain g:



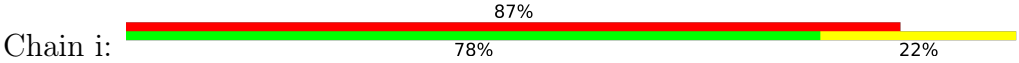


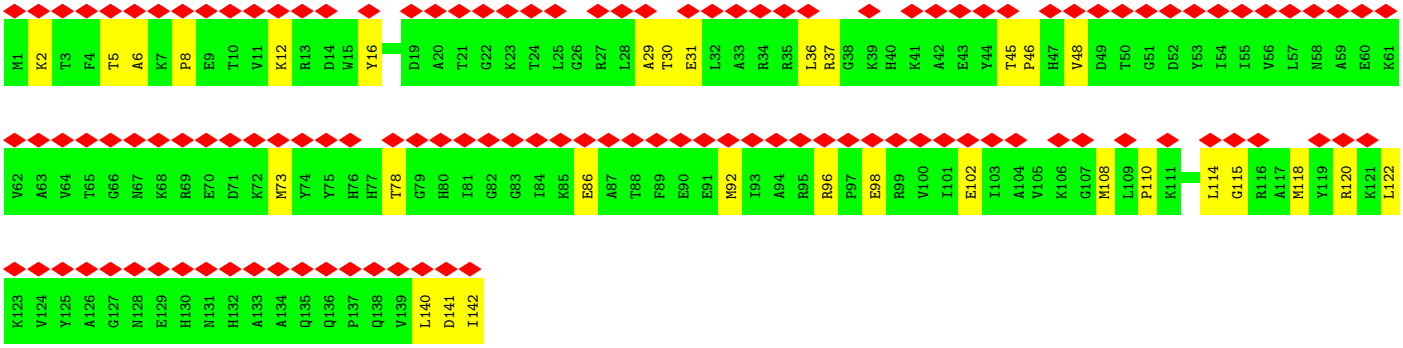
• Molecule 37: Large ribosomal subunit protein bL9



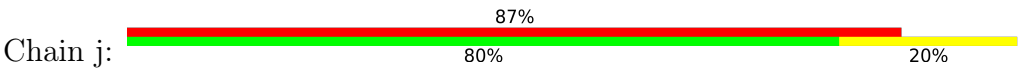


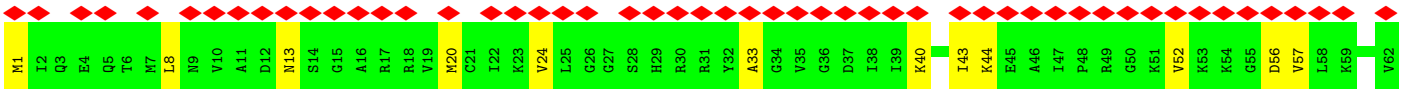
• Molecule 38: Large ribosomal subunit protein uL13

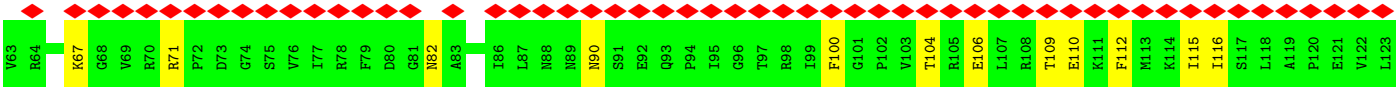




• Molecule 39: Large ribosomal subunit protein uL14



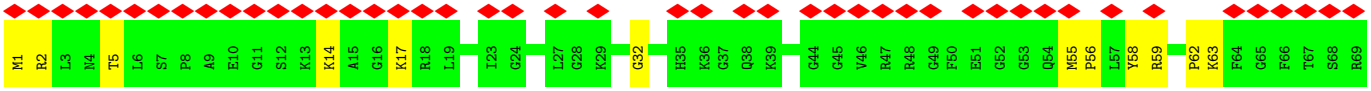


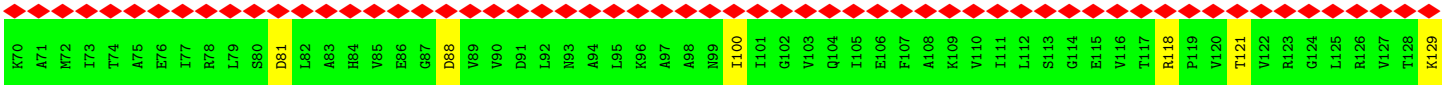


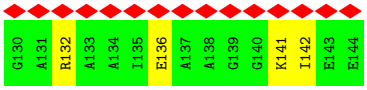
• Molecule 40: Large ribosomal subunit protein uL15

Chain k:





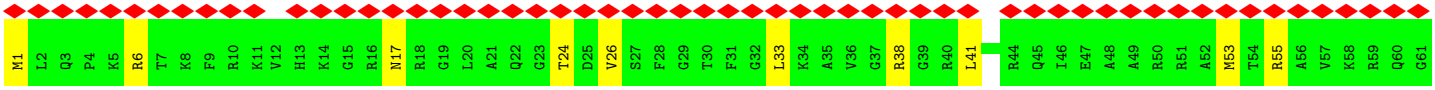


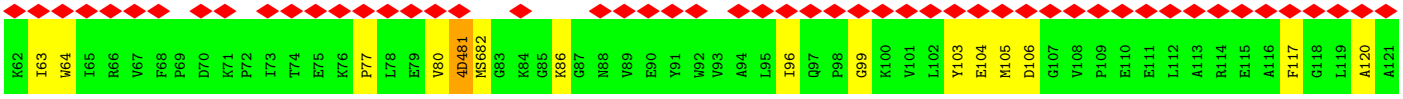


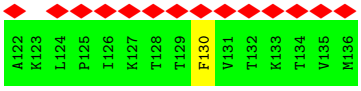
• Molecule 41: Large ribosomal subunit protein uL16

Chain l:





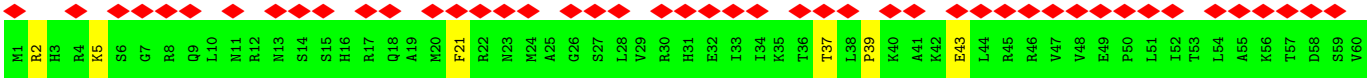


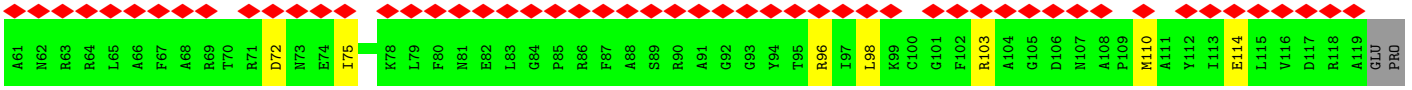


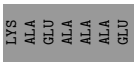
• Molecule 42: Large ribosomal subunit protein bL17

Chain m:



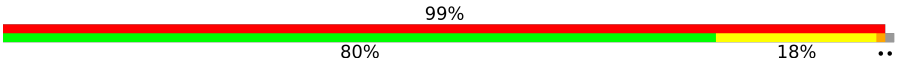






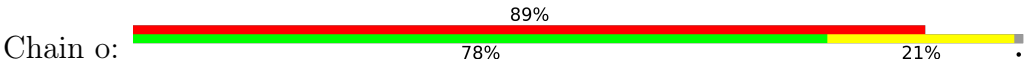
• Molecule 43: Large ribosomal subunit protein uL18

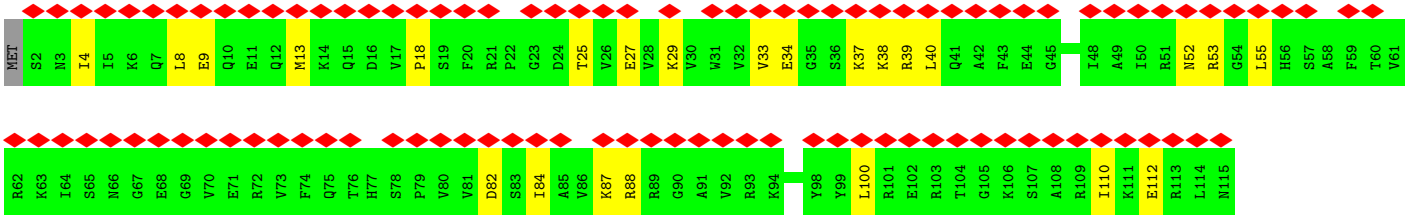
Chain n:



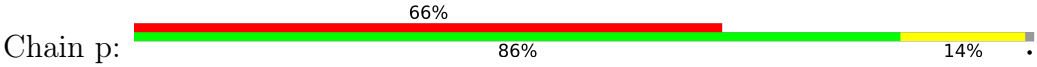


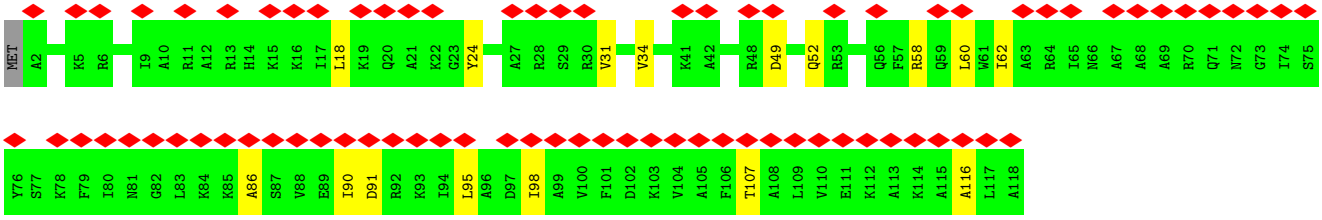
• Molecule 44: Large ribosomal subunit protein bL19



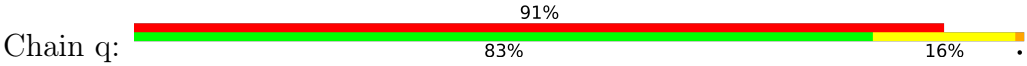


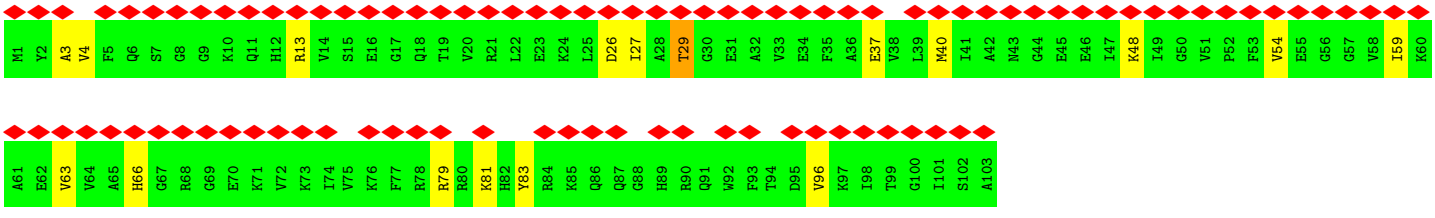
• Molecule 45: Large ribosomal subunit protein bL20



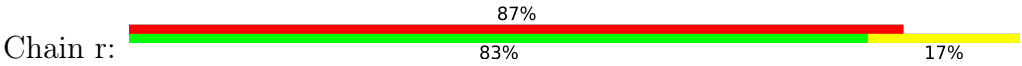


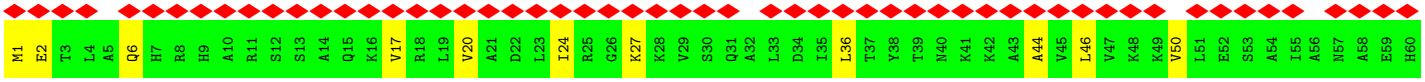
• Molecule 46: Large ribosomal subunit protein bL21

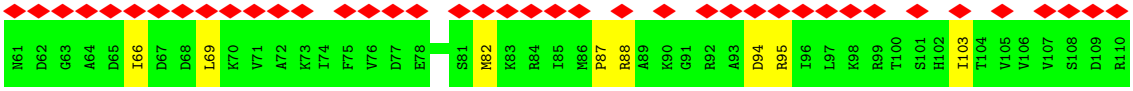




• Molecule 47: Large ribosomal subunit protein uL22



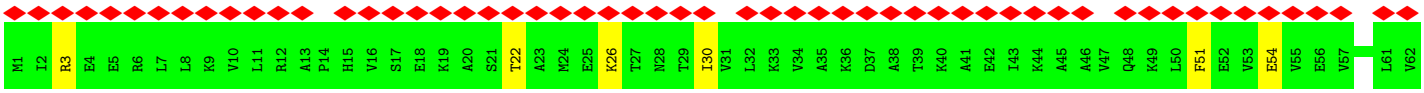


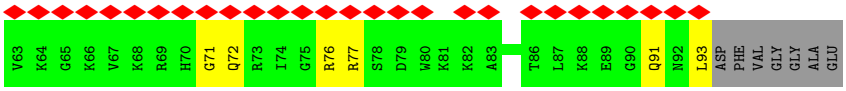


• Molecule 48: Large ribosomal subunit protein uL23

Chain s:

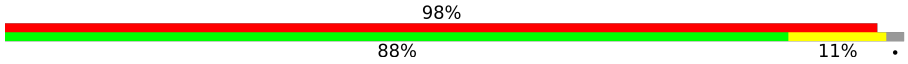


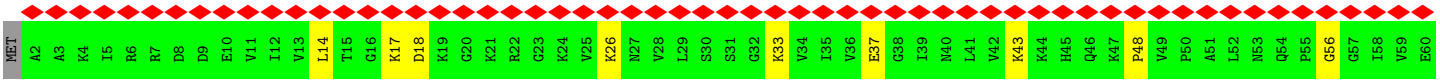


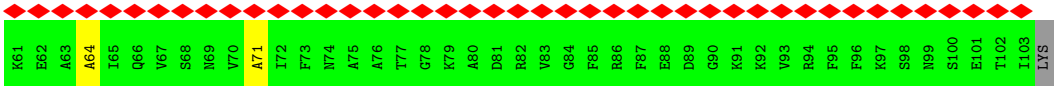


• Molecule 49: Large ribosomal subunit protein uL24

Chain t:

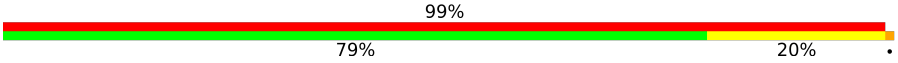


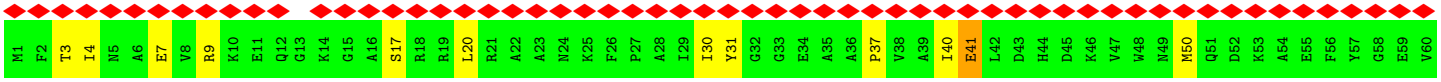


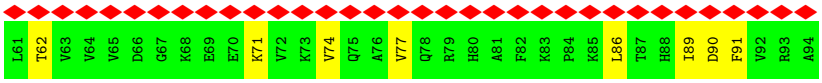


• Molecule 50: Large ribosomal subunit protein bL25

Chain u:



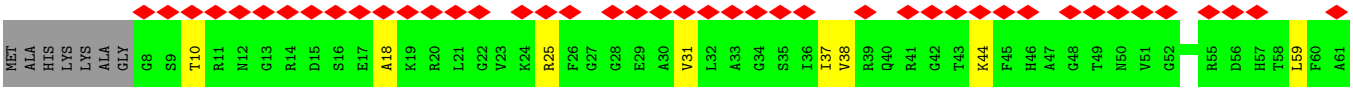


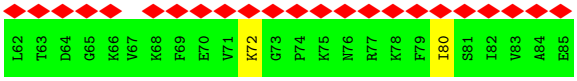


• Molecule 51: Large ribosomal subunit protein bL27

Chain v:

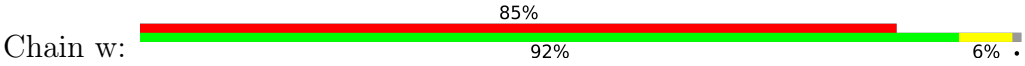


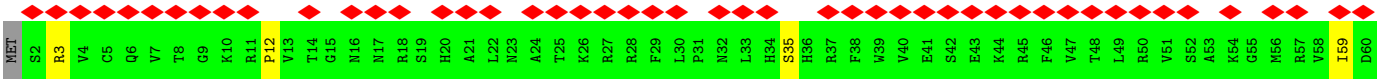


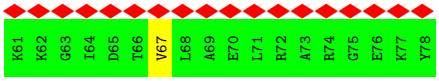


• Molecule 52: Large ribosomal subunit protein bL28

Chain w:

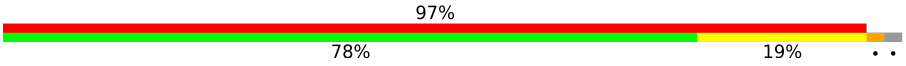


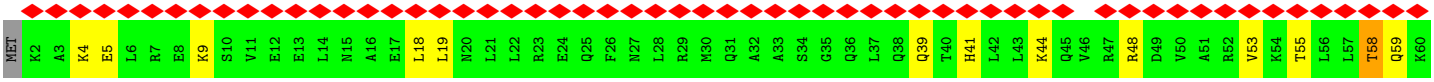




• Molecule 53: Large ribosomal subunit protein uL29

Chain x:



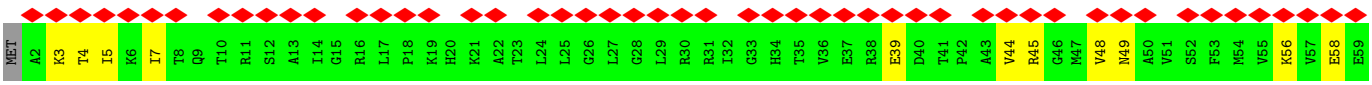




• Molecule 54: Large ribosomal subunit protein uL30

Chain y:

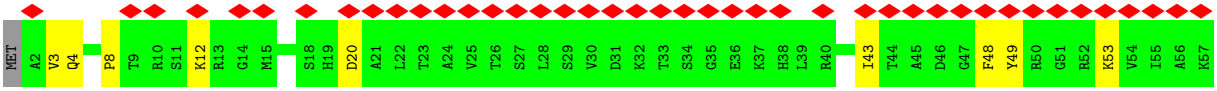




• Molecule 55: Large ribosomal subunit protein bL32

Chain z:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	17191	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 ($e^-/Å^2$)	35	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.397	Depositor
Minimum map value	-0.605	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.054	Depositor
Recommended contour level	0.55	Depositor
Map size (Å)	542.72, 542.72, 542.72	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.06, 1.06, 1.06	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: 5MU, OMC, 2MG, ZN, 6MZ, 1MG, MEQ, 4SU, 4OC, 2MA, IAS, MA6, K, MG, MS6, 3TD, OMG, G7M, D2T, 5MC, H2U, OMU, 4D4, UR3, PSU

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	0	0.17	0/425	0.32	0/566
2	1	0.18	0/380	0.27	0/498
3	2	0.19	0/513	0.27	0/676
4	3	0.21	0/303	0.39	0/397
5	4	0.18	0/550	0.45	0/734
6	5	0.16	0/1112	0.38	0/1492
7	A	0.38	1/36501 (0.0%)	0.72	4/56938 (0.0%)
8	B	0.18	0/1780	0.46	0/2398
9	C	0.16	0/1650	0.34	0/2223
10	D	0.15	0/1665	0.30	0/2225
11	E	0.19	0/1168	0.37	0/1570
12	F	0.18	0/851	0.37	0/1152
13	G	0.15	0/1220	0.35	0/1638
14	H	0.18	0/987	0.33	0/1323
15	I	0.17	0/1022	0.39	0/1361
16	J	0.19	0/798	0.46	0/1078
17	K	0.17	0/885	0.34	0/1192
18	L	0.15	0/961	0.28	0/1287
19	M	0.17	0/916	0.42	0/1225
20	N	0.16	0/817	0.26	0/1088
21	O	0.17	0/718	0.31	0/955
22	P	0.18	0/646	0.34	0/870
23	Q	0.17	0/647	0.36	0/865
24	R	0.17	0/515	0.32	0/693
25	S	0.14	0/684	0.33	0/920
26	T	0.20	0/675	0.34	0/894
27	U	0.15	0/597	0.39	0/792
28	V	0.28	0/1724	0.80	1/2687 (0.0%)
29	X	0.16	0/791	0.36	0/1069
30	a	0.43	0/69183	0.73	11/107924 (0.0%)
31	b	0.38	0/2776	0.71	0/4328

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
32	c	0.18	0/2118	0.29	0/2846
33	d	0.19	0/1577	0.30	0/2122
34	e	0.18	0/1573	0.28	0/2115
35	f	0.17	0/1434	0.40	0/1926
36	g	0.15	0/1339	0.36	1/1811 (0.1%)
37	h	0.13	0/1110	0.36	0/1500
38	i	0.19	0/1157	0.35	0/1556
39	j	0.19	0/956	0.31	0/1281
40	k	0.17	0/1073	0.30	0/1427
41	l	0.20	0/1072	0.32	0/1434
42	m	0.19	0/963	0.35	0/1288
43	n	0.18	0/902	0.45	0/1209
44	o	0.18	0/929	0.31	0/1242
45	p	0.20	0/960	0.29	0/1278
46	q	0.19	0/829	0.40	0/1106
47	r	0.19	0/862	0.34	0/1154
48	s	0.18	0/745	0.35	0/996
49	t	0.15	0/787	0.28	0/1051
50	u	0.17	0/763	0.35	0/1024
51	v	0.19	0/599	0.31	0/795
52	w	0.19	0/635	0.31	0/848
53	x	0.15	0/500	0.31	0/665
54	y	0.19	0/451	0.31	0/603
55	z	0.18	0/449	0.29	0/597
All	All	0.36	1/157243 (0.0%)	0.65	17/234932 (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
41	l	0	1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	A	525	G7M	O3'-P	5.00	1.61	1.56

All (17) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
30	a	2098	G	OP1-P-O3'	-10.94	75.19	108.00
30	a	2098	G	OP2-P-O3'	-9.41	79.77	108.00
30	a	1310	U	C2-N1-C1'	7.02	126.12	117.70
30	a	1311	C	C2-N1-C1'	5.80	125.18	118.80
7	A	1033	A	O4'-C1'-N9	5.71	112.77	108.20
36	g	46	ALA	CB-CA-C	-5.63	110.07	116.54
30	a	1310	U	N1-C2-O2	5.51	126.66	122.80
28	V	75	C	C2-N1-C1'	5.41	124.75	118.80
7	A	328	C	N1-C2-O2	5.39	122.13	118.90
30	a	844	C	N1-C2-O2	5.30	122.08	118.90
30	a	1310	U	N3-C2-O2	-5.26	118.52	122.20
30	a	2319	U	C2-N1-C1'	5.24	123.98	117.70
7	A	838	C	N1-C2-O2	5.22	122.03	118.90
7	A	844	G	N1-C2-N2	-5.16	111.55	116.20
30	a	2195	U	P-O3'-C3'	5.15	125.88	119.70
30	a	404	A	P-O3'-C3'	5.09	125.81	119.70
30	a	844	C	C2-N1-C1'	5.00	124.30	118.80

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
41	l	81	4D4	Mainchain

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	418	0	449	5	0
2	1	377	0	418	1	0
3	2	504	0	572	10	0
4	3	302	0	340	4	0
5	4	540	0	537	12	0
6	5	1105	0	1165	34	0
7	A	32847	0	16541	375	0
8	B	1749	0	1774	39	0
9	C	1623	0	1696	22	0
10	D	1644	0	1706	27	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
11	E	1155	0	1206	21	0
12	F	832	0	821	22	0
13	G	1204	0	1254	20	0
14	H	977	0	1031	11	0
15	I	1010	0	1057	23	0
16	J	788	0	830	20	0
17	K	878	0	884	20	0
18	L	958	0	1019	12	0
19	M	907	0	977	34	0
20	N	805	0	846	24	0
21	O	710	0	735	8	0
22	P	636	0	649	8	0
23	Q	639	0	684	11	0
24	R	507	0	525	16	0
25	S	667	0	691	19	0
26	T	669	0	717	12	0
27	U	589	0	629	19	0
28	V	1644	0	840	38	0
29	X	778	0	793	16	0
30	a	62284	0	31326	611	0
31	b	2483	0	1258	18	0
32	c	2080	0	2152	15	0
33	d	1567	0	1619	22	0
34	e	1554	0	1620	18	0
35	f	1410	0	1444	33	0
36	g	1319	0	1367	25	0
37	h	1099	0	1139	26	0
38	i	1134	0	1161	23	0
39	j	947	0	1025	14	0
40	k	1063	0	1130	15	0
41	l	1074	0	1138	15	0
42	m	950	0	994	7	0
43	n	892	0	923	12	0
44	o	917	0	962	17	0
45	p	947	0	1019	9	0
46	q	816	0	841	11	0
47	r	855	0	915	11	0
48	s	739	0	809	9	0
49	t	779	0	830	6	0
50	u	749	0	763	12	0
51	v	592	0	612	6	0
52	w	625	0	652	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
53	x	499	0	534	8	0
54	y	447	0	484	7	0
55	z	443	0	458	6	0
56	3	1	0	0	0	0
56	4	1	0	0	0	0
57	A	95	0	0	0	0
57	K	1	0	0	0	0
57	a	252	0	0	0	0
57	b	5	0	0	0	0
57	c	2	0	0	0	0
57	d	1	0	0	0	0
57	m	1	0	0	0	0
57	p	1	0	0	0	0
57	z	1	0	0	0	0
58	A	47	0	0	0	0
58	a	116	0	0	0	0
58	b	1	0	0	0	0
58	c	3	0	0	0	0
58	e	1	0	0	0	0
58	f	1	0	0	0	0
All	All	146256	0	98561	1714	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 7.

All (1714) 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)
7:A:76:A:N6	7:A:91:G:H1	1.43	1.15
28:V:27:G:H1	28:V:45:A:N6	1.64	0.94
15:I:21:ILE:HD11	15:I:61:LEU:HG	1.49	0.94
28:V:27:G:N1	28:V:45:A:N6	2.21	0.87
38:i:31:GLU:HG2	38:i:142:ILE:HD12	1.55	0.87
11:E:70:ASN:O	11:E:70:ASN:ND2	2.08	0.86
34:e:97:ASN:HB2	34:e:100:MET:HG3	1.60	0.84
7:A:76:A:N1	7:A:91:G:N2	2.26	0.83
38:i:73:MET:HE1	38:i:86:GLU:HG3	1.60	0.83
8:B:133:GLU:O	8:B:137:ARG:HB2	1.79	0.82
7:A:662:G:H22	7:A:739:G:H1	1.25	0.81
7:A:671:A:H2'	7:A:672:G:C8	2.16	0.81
29:X:24:LEU:HD22	29:X:78:ILE:HD11	1.63	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1024:G:H1	7:A:1033:A:N6	1.80	0.80
30:a:1103:U:H2'	30:a:1104:G:H8	1.47	0.79
42:m:103:ARG:HD3	42:m:110:MET:HE3	1.65	0.78
25:S:41:PHE:H	25:S:44:MET:HE3	1.47	0.77
41:l:41:LEU:HD13	41:l:96:ILE:HG13	1.64	0.77
7:A:76:A:H61	7:A:91:G:H1	0.77	0.77
16:J:6:ILE:HG22	16:J:102:LEU:HA	1.68	0.76
19:M:7:ILE:HD12	35:f:112:ARG:HH12	1.51	0.76
8:B:125:THR:HA	8:B:128:LYS:HE3	1.67	0.76
14:H:29:SER:HB3	14:H:59:LEU:HB2	1.68	0.75
30:a:2105:G:H1	30:a:2180:U:H3	1.34	0.75
7:A:79:G:H22	7:A:88:C:H42	1.34	0.75
23:Q:25:ILE:HB	23:Q:42:THR:HG23	1.69	0.75
16:J:57:VAL:HG22	16:J:58:ASN:H	1.52	0.74
6:5:5:THR:HB	6:5:8:MET:HG2	1.70	0.74
8:B:131:LYS:O	8:B:135:LEU:HD12	1.88	0.73
7:A:1024:G:H1	7:A:1033:A:H61	1.36	0.73
37:h:96:THR:HG23	37:h:115:VAL:HB	1.70	0.73
29:X:5:ILE:HD12	29:X:17:ARG:HG3	1.69	0.73
5:4:61:ASN:HA	5:4:65:SER:HB3	1.70	0.73
7:A:844:G:H2'	7:A:845:G:H8	1.54	0.72
15:I:21:ILE:HD13	15:I:63:LEU:HD12	1.70	0.72
26:T:35:VAL:O	26:T:39:ILE:HD12	1.90	0.72
43:n:39:VAL:HB	43:n:49:VAL:HG22	1.72	0.72
30:a:2113:G:H2'	30:a:2115:A:H62	1.55	0.72
30:a:2303:U:H5"	35:f:131:GLY:HA3	1.72	0.72
44:o:29:LYS:HB3	44:o:40:LEU:HD22	1.71	0.71
6:5:189:LEU:HD23	6:5:229:LEU:HD21	1.71	0.71
7:A:711:G:H2'	7:A:712:G:C8	2.26	0.71
26:T:39:ILE:HG23	26:T:86:LEU:HD22	1.73	0.71
8:B:111:ILE:HD11	8:B:152:LYS:HA	1.73	0.71
11:E:34:THR:HG22	11:E:52:LYS:HG2	1.72	0.71
25:S:3:ARG:HH11	25:S:10:PHE:HB2	1.55	0.71
51:v:25:ARG:HD3	51:v:31:VAL:HG12	1.73	0.70
16:J:10:LEU:HD13	16:J:22:THR:HG22	1.73	0.70
24:R:33:ILE:HD12	24:R:37:GLY:HA2	1.73	0.70
30:a:172:A:H2'	30:a:173:A:H8	1.57	0.70
27:U:40:LYS:HD3	27:U:42:THR:HB	1.74	0.70
10:D:64:MET:HE1	10:D:195:ILE:HD11	1.73	0.70
30:a:1060:G:H3'	30:a:1061:G:H21	1.55	0.70
30:a:2639:G:H5"	38:i:78:THR:HB	1.72	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:544:U:O2	30:a:547:G:O6	2.11	0.69
44:o:4:ILE:H	44:o:4:ILE:HD12	1.56	0.69
36:g:42:GLU:HG2	36:g:55:ARG:HE	1.57	0.69
30:a:727:G:H5"	30:a:728:A:H5"	1.73	0.69
32:c:29:PRO:HG2	32:c:34:LEU:HD11	1.74	0.69
28:V:51:U:H3	28:V:65:G:H1	0.81	0.68
30:a:566:U:H1'	30:a:2028:6MZ:H9C1	1.74	0.68
8:B:108:ARG:HA	8:B:111:ILE:HG22	1.76	0.68
7:A:1520:U:H2'	7:A:1521:G:H8	1.59	0.68
7:A:1326:C:H5"	19:M:28:THR:HG21	1.74	0.68
7:A:632:C:H2'	7:A:633:A:H8	1.60	0.67
30:a:846:C:H2'	30:a:847:A:H8	1.59	0.67
15:I:55:VAL:HG23	15:I:57:MET:HB3	1.77	0.67
41:l:26:VAL:HG13	41:l:104:GLU:HG2	1.75	0.67
8:B:126:PHE:CZ	8:B:137:ARG:HB3	2.29	0.67
30:a:1440:U:H2'	30:a:1441:A:H8	1.60	0.67
17:K:56:ARG:HH12	28:V:40:C:H4'	1.59	0.66
13:G:93:PRO:HA	13:G:96:ARG:HG3	1.76	0.66
50:u:4:ILE:HG12	50:u:50:MET:HE1	1.76	0.66
27:U:12:PHE:CE1	27:U:16:LEU:HD11	2.30	0.66
30:a:1429:G:H2'	30:a:1430:A:C8	2.31	0.66
42:m:2:ARG:HA	42:m:5:LYS:HD2	1.77	0.66
7:A:233:C:H2'	7:A:234:A:H8	1.60	0.66
7:A:490:C:H2'	7:A:491:A:C8	2.30	0.66
45:p:49:ASP:HA	45:p:52:GLN:HB2	1.77	0.66
10:D:27:ALA:HB3	10:D:30:THR:HG23	1.77	0.66
30:a:1072:G:H2'	30:a:1073:C:C6	2.31	0.66
39:j:1:MET:HE3	39:j:67:LYS:HG2	1.77	0.66
7:A:267:C:H2'	7:A:268:A:H8	1.61	0.66
16:J:15:HIS:HA	16:J:18:ILE:HG22	1.77	0.66
55:z:43:ILE:HG22	55:z:49:TYR:HB2	1.77	0.66
20:N:46:LEU:HD22	25:S:13:LEU:HD23	1.78	0.66
13:G:80:VAL:HG13	29:X:99:THR:HG22	1.78	0.65
7:A:1216:C:H2'	7:A:1217:A:C8	2.30	0.65
30:a:2133:A:H4'	30:a:2158:C:H4'	1.78	0.65
7:A:744:A:H2'	7:A:745:A:C8	2.32	0.65
7:A:944:A:H2'	7:A:945:G:C8	2.30	0.65
7:A:233:C:H2'	7:A:234:A:C8	2.32	0.65
7:A:712:G:H2'	7:A:713:A:C8	2.32	0.65
7:A:944:A:H2'	7:A:945:G:H8	1.62	0.65
12:F:88:MET:HE1	24:R:61:ARG:HG2	1.78	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:H:96:MET:HG2	14:H:99:LEU:HB2	1.79	0.64
28:V:48:U:H4'	28:V:49:C:H5'	1.78	0.64
7:A:743:A:H2'	7:A:744:A:C8	2.32	0.64
30:a:2084:U:H2'	30:a:2085:G:C8	2.32	0.64
30:a:2173:C:H2'	30:a:2174:A:C8	2.33	0.64
54:y:4:THR:HG22	54:y:39:GLU:HA	1.78	0.64
7:A:1002:A:N6	7:A:1024:G:H1'	2.12	0.64
30:a:172:A:H2'	30:a:173:A:C8	2.33	0.64
30:a:1479:G:H1'	30:a:1506:A:H61	1.62	0.64
6:5:46:VAL:HG22	6:5:212:VAL:HG22	1.78	0.64
7:A:145:G:H2'	7:A:146:G:C8	2.33	0.64
7:A:742:C:H2'	7:A:743:A:H8	1.63	0.64
7:A:1069:C:H2'	7:A:1070:G:H8	1.62	0.64
9:C:73:PRO:HG3	9:C:105:GLU:HG3	1.78	0.64
30:a:1426:G:H2'	30:a:1427:G:H8	1.63	0.64
30:a:2244:G:H2'	30:a:2245:A:H8	1.63	0.64
32:c:82:GLU:HB2	32:c:91:ILE:HG13	1.79	0.64
7:A:1149:A:HO2'	7:A:1150:A:H8	1.43	0.63
22:P:6:LEU:HB3	22:P:17:TYR:HB3	1.80	0.63
6:5:65:LEU:HB3	6:5:188:ASN:ND2	2.14	0.63
30:a:1383:C:H2'	30:a:1384:A:H8	1.62	0.63
7:A:129:A:H2'	7:A:130:C:C6	2.34	0.63
41:l:53:MET:HG3	41:l:120:ALA:HB2	1.79	0.63
8:B:132:LYS:HE2	8:B:132:LYS:HA	1.80	0.63
7:A:844:G:H2'	7:A:845:G:C8	2.34	0.63
7:A:660:U:H2'	7:A:661:A:C8	2.34	0.63
9:C:46:GLU:HB3	9:C:47:LEU:HD12	1.81	0.63
9:C:47:LEU:HD11	9:C:87:LEU:HD11	1.80	0.63
30:a:511:U:H4'	30:a:1232:G:H4'	1.80	0.63
30:a:1026:A:H2'	30:a:1027:A:C8	2.34	0.62
30:a:2141:C:H3'	30:a:2142:G:H8	1.64	0.62
7:A:672:G:H2'	7:A:673:A:H8	1.63	0.62
20:N:3:LYS:HB2	20:N:6:MET:HG2	1.81	0.62
30:a:886:C:H2'	30:a:887:C:O4'	1.99	0.62
30:a:2616:G:H21	33:d:155:VAL:HG21	1.65	0.62
40:k:81:ASP:HB3	40:k:100:ILE:HD13	1.80	0.62
30:a:291:G:O6	30:a:349:U:O2	2.16	0.62
7:A:671:A:H2'	7:A:672:G:H8	1.63	0.62
7:A:335:G:H2'	7:A:336:A:C8	2.35	0.62
30:a:1383:C:H2'	30:a:1384:A:C8	2.35	0.62
30:a:2244:G:H2'	30:a:2245:A:C8	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:2302:G:H22	30:a:2310:U:H3	1.48	0.61
38:i:45:THR:HB	38:i:48:VAL:HG12	1.81	0.61
40:k:2:ARG:HB2	40:k:5:THR:HG23	1.82	0.61
30:a:2132:A:H8	30:a:2155:G:H21	1.46	0.61
35:f:14:LYS:O	35:f:18:THR:HG23	1.99	0.61
7:A:1354:G:H2'	7:A:1355:A:C8	2.35	0.61
30:a:2145:A:H2'	30:a:2146:G:O4'	2.00	0.61
51:v:38:VAL:HG12	51:v:59:LEU:HB2	1.82	0.61
9:C:65:ARG:HG3	9:C:100:GLN:HG2	1.83	0.61
19:M:56:LEU:O	19:M:60:VAL:HG23	2.01	0.61
26:T:64:LYS:HE2	26:T:64:LYS:HA	1.83	0.61
19:M:10:PRO:HG2	19:M:13:LYS:HD2	1.80	0.61
30:a:1567:A:H2'	30:a:1568:A:C8	2.35	0.61
7:A:1495:G:H1'	7:A:1516:MA6:H2	1.82	0.61
17:K:107:ILE:HD12	17:K:110:ILE:HD11	1.83	0.61
40:k:121:THR:HG23	40:k:141:LYS:HB2	1.83	0.61
7:A:335:G:H2'	7:A:336:A:H8	1.66	0.61
19:M:36:GLU:HG3	19:M:37:THR:H	1.65	0.61
35:f:13:VAL:O	35:f:17:MET:HG2	2.01	0.61
9:C:87:LEU:O	9:C:91:VAL:HG12	2.01	0.61
24:R:36:SER:HA	24:R:72:ASP:HB2	1.83	0.61
30:a:1798:A:H2'	30:a:1799:A:C8	2.36	0.61
35:f:134:GLU:O	35:f:137:ILE:HG23	2.01	0.61
7:A:461:U:H3	7:A:467:A:H61	1.49	0.60
18:L:110:ARG:HB3	18:L:119:VAL:HG21	1.82	0.60
30:a:2146:G:H2'	30:a:2147:U:C6	2.35	0.60
31:b:66:A:H61	31:b:107:G:H2'	1.66	0.60
36:g:35:ARG:HH11	36:g:71:LEU:HD13	1.66	0.60
44:o:33:VAL:HG22	44:o:38:LYS:HG2	1.82	0.60
11:E:90:THR:HG22	11:E:91:GLY:N	2.16	0.60
28:V:30:G:H2'	28:V:31:G:H8	1.66	0.60
30:a:869:U:H2'	30:a:870:U:C6	2.35	0.60
30:a:282:A:H2'	30:a:283:G:C8	2.37	0.60
30:a:2327:U:H2'	30:a:2328:G:C8	2.36	0.60
7:A:388:U:H2'	7:A:389:G:C8	2.36	0.60
19:M:4:ILE:HG23	19:M:57:ARG:HG2	1.84	0.60
35:f:74:VAL:HG22	35:f:79:ILE:HD11	1.84	0.60
38:i:92:MET:HE3	38:i:96:ARG:HD2	1.84	0.60
7:A:1310:G:H5'	25:S:5:LEU:HD11	1.84	0.60
28:V:51:U:O4	28:V:65:G:O6	2.19	0.60
30:a:1594:A:H5"	30:a:1595:A:H5'	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:P:40:ASN:HB3	22:P:43:ALA:HB2	1.84	0.60
7:A:457:A:H2'	7:A:458:A:H8	1.66	0.60
30:a:580:A:H2'	30:a:581:G:H8	1.66	0.60
7:A:388:U:H2'	7:A:389:G:H8	1.65	0.60
30:a:2037:U:H2'	30:a:2038:G:C8	2.37	0.60
7:A:79:G:H22	7:A:88:C:N4	2.00	0.59
7:A:1321:G:H2'	7:A:1322:A:C8	2.37	0.59
25:S:11:ILE:HD13	25:S:16:LEU:HD13	1.84	0.59
25:S:51:VAL:HG21	25:S:71:LEU:HB3	1.84	0.59
30:a:1431:A:H2'	30:a:1432:G:C8	2.36	0.59
30:a:2326:A:H2'	30:a:2327:U:C6	2.37	0.59
34:e:5:LEU:HD12	34:e:10:SER:HB2	1.84	0.59
7:A:435:U:H5"	10:D:152:GLN:HE22	1.66	0.59
17:K:89:PRO:HG3	27:U:32:VAL:HG11	1.84	0.59
30:a:282:A:H2'	30:a:283:G:H8	1.67	0.59
30:a:1792:U:H2'	30:a:1793:G:H8	1.67	0.59
35:f:92:ARG:HA	35:f:96:MET:HE2	1.84	0.59
15:I:84:THR:HG23	15:I:98:LEU:HD22	1.82	0.59
30:a:2786:C:H2'	30:a:2787:C:C6	2.37	0.59
7:A:914:U:H2'	7:A:915:G:H8	1.66	0.59
30:a:1323:U:H2'	30:a:1324:A:H8	1.67	0.59
30:a:1431:A:H2'	30:a:1432:G:H8	1.67	0.59
6:5:190:GLU:HG3	6:5:229:LEU:HD23	1.84	0.59
30:a:1466:A:H2'	30:a:1467:A:C8	2.37	0.59
25:S:3:ARG:HH21	25:S:7:LYS:HB3	1.67	0.59
30:a:2202:G:H4'	32:c:150:LYS:HG3	1.84	0.59
36:g:73:ASN:O	36:g:77:ILE:HG22	2.02	0.59
7:A:767:G:H4'	7:A:1511:A:H4'	1.85	0.59
15:I:52:LEU:HB3	15:I:58:VAL:HG22	1.85	0.59
30:a:579:C:H2'	30:a:580:A:H8	1.65	0.59
30:a:1060:G:C8	30:a:1086:A:H2'	2.38	0.59
44:o:100:LEU:HD11	44:o:110:ILE:HD11	1.85	0.59
7:A:499:C:H2'	7:A:500:A:H8	1.68	0.59
7:A:1009:C:H2'	7:A:1010:A:C8	2.38	0.59
7:A:1248:A:H2'	7:A:1249:A:C8	2.38	0.59
19:M:81:MET:SD	19:M:91:HIS:HB3	2.42	0.59
30:a:1444:C:H2'	30:a:1445:G:H8	1.67	0.59
30:a:2896:U:H2'	30:a:2897:A:H8	1.67	0.59
30:a:1228:U:H2'	30:a:1229:G:H8	1.68	0.58
30:a:2097:U:H2'	30:a:2098:G:H8	1.67	0.58
46:q:29:THR:HG23	46:q:66:HIS:HD2	1.67	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:2151:C:H2'	30:a:2152:G:H8	1.67	0.58
7:A:21:G:H2'	7:A:22:G:C8	2.38	0.58
7:A:267:C:H2'	7:A:268:A:C8	2.38	0.58
28:V:51:U:H2'	28:V:52:C:C6	2.38	0.58
29:X:53:THR:HG23	29:X:62:VAL:HG22	1.85	0.58
32:c:171:TYR:HB3	32:c:183:LYS:HG2	1.84	0.58
30:a:1402:U:H2'	30:a:1403:U:C6	2.38	0.58
30:a:2163:C:H2'	30:a:2164:U:C6	2.39	0.58
36:g:95:ARG:HG2	36:g:106:ALA:HB3	1.85	0.58
41:l:53:MET:HE1	41:l:103:TYR:HB3	1.85	0.58
16:J:90:LEU:HD13	16:J:92:LEU:HD21	1.85	0.58
30:a:1912:C:H2'	30:a:1913:3TD:H6	1.86	0.58
7:A:742:C:H2'	7:A:743:A:C8	2.38	0.58
30:a:552:U:H2'	30:a:553:G:O4'	2.04	0.58
3:2:55:LEU:O	3:2:59:ILE:HG12	2.04	0.58
7:A:1494:C:H2'	7:A:1495:G:O4'	2.02	0.58
30:a:1350:A:H2'	30:a:1351:A:C8	2.39	0.58
41:l:33:LEU:HD13	41:l:117:PHE:HB3	1.84	0.58
7:A:56:U:H2'	7:A:57:G:H8	1.68	0.58
7:A:675:U:H3	7:A:711:G:H22	1.50	0.58
30:a:499:U:H5"	49:t:43:LYS:HD2	1.84	0.58
30:a:1409:U:H2'	30:a:1410:A:C8	2.39	0.58
35:f:31:VAL:HA	35:f:158:THR:HG22	1.86	0.58
31:b:60:C:H2'	31:b:61:G:H8	1.69	0.58
35:f:8:TYR:HB2	35:f:173:PHE:HZ	1.68	0.58
7:A:1511:A:H2'	7:A:1512:G:C8	2.39	0.58
20:N:10:GLU:HG2	20:N:63:ARG:HD2	1.86	0.58
30:a:1440:U:H2'	30:a:1441:A:C8	2.39	0.58
37:h:16:GLY:HA2	37:h:47:PHE:HE2	1.69	0.58
49:t:14:LEU:HD11	49:t:71:ALA:HB2	1.85	0.58
19:M:13:LYS:HG3	19:M:18:ALA:HB2	1.86	0.57
26:T:28:MET:HE1	26:T:67:ILE:HG21	1.86	0.57
30:a:1742:A:H2'	30:a:1743:C:C6	2.39	0.57
30:a:2111:U:H3'	30:a:2112:A:C8	2.39	0.57
31:b:5:U:H2'	31:b:6:G:H8	1.68	0.57
7:A:56:U:H2'	7:A:57:G:C8	2.39	0.57
20:N:79:LEU:HB2	20:N:84:VAL:HG23	1.86	0.57
10:D:107:PHE:HD1	10:D:159:LEU:HD21	1.69	0.57
27:U:29:LEU:O	27:U:33:ARG:HG2	2.05	0.57
28:V:75:C:H2'	28:V:76:C:O4'	2.05	0.57
30:a:2289:U:H2'	30:a:2290:U:C6	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:2696:U:H2'	30:a:2697:C:C6	2.40	0.57
24:R:55:LEU:O	24:R:59:ILE:HG12	2.05	0.57
30:a:1011:C:H2'	30:a:1012:A:H8	1.70	0.57
30:a:1055:A:H5"	30:a:1087:A:H61	1.68	0.57
23:Q:45:HIS:HB3	23:Q:71:LYS:HG2	1.86	0.57
19:M:88:GLY:O	19:M:92:ARG:HG3	2.04	0.57
38:i:114:LEU:O	38:i:118:MET:HG3	2.03	0.57
29:X:23:ARG:HG3	29:X:78:ILE:HG13	1.86	0.57
30:a:1067:A:H4'	30:a:1068:A:H8	1.68	0.57
13:G:88:PRO:HG2	13:G:149:LYS:HA	1.86	0.57
30:a:2589:C:H2'	30:a:2590:G:H8	1.68	0.57
7:A:1249:A:H2'	7:A:1250:A:C8	2.39	0.56
18:L:33:VAL:HG22	18:L:79:VAL:HG22	1.87	0.56
36:g:89:LEU:HD22	36:g:162:VAL:HG22	1.86	0.56
6:5:27:ILE:HG21	6:5:182:ALA:HB2	1.86	0.56
12:F:2:ARG:HE	12:F:91:ARG:HE	1.51	0.56
4:3:22:VAL:HG21	4:3:36:ARG:HH21	1.70	0.56
7:A:1142:G:N2	7:A:1144:A:H62	2.03	0.56
7:A:1346:U:H4'	15:I:122:ARG:HG3	1.87	0.56
7:A:1493:U:H5'	30:a:1910:A:H4'	1.88	0.56
10:D:3:ARG:HE	10:D:115:ARG:HD3	1.70	0.56
16:J:23:ALA:HA	16:J:26:VAL:HG22	1.86	0.56
30:a:2125:G:N2	30:a:2160:A:H1'	2.20	0.56
7:A:499:C:H2'	7:A:500:A:C8	2.41	0.56
7:A:1116:U:H2'	7:A:1117:C:C6	2.40	0.56
30:a:5:A:H2'	30:a:6:A:C8	2.40	0.56
30:a:1275:C:H2'	30:a:1276:G:H8	1.70	0.56
30:a:2045:C:H2'	30:a:2046:G:H8	1.70	0.56
36:g:95:ARG:HG3	36:g:95:ARG:HH11	1.69	0.56
38:i:36:LEU:HD11	38:i:122:LEU:HB2	1.86	0.56
11:E:115:LEU:HD13	11:E:123:VAL:HG11	1.87	0.56
30:a:2512:U:H2'	30:a:2513:C:C6	2.41	0.56
7:A:1002:A:H2'	7:A:1003:A:O4'	2.05	0.56
8:B:199:VAL:HG12	8:B:201:PRO:HD3	1.87	0.56
7:A:17:U:H2'	7:A:18:C:C6	2.41	0.56
8:B:91:PHE:CE1	8:B:150:GLY:HA3	2.41	0.56
19:M:81:MET:HE3	19:M:92:ARG:HG2	1.88	0.56
30:a:740:A:H2'	30:a:741:A:C8	2.41	0.56
30:a:1466:A:H2'	30:a:1467:A:H8	1.71	0.56
30:a:2183:U:H2'	30:a:2184:G:C8	2.41	0.56
50:u:20:LEU:HD21	50:u:41:GLU:HB3	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:64:A:H2'	30:a:65:U:C6	2.41	0.56
30:a:2589:C:H2'	30:a:2590:G:C8	2.41	0.56
7:A:1116:U:H2'	7:A:1117:C:H6	1.70	0.56
7:A:1522:C:H2'	7:A:1523:G:C8	2.40	0.56
13:G:86:GLN:HB2	13:G:148:ASN:HD22	1.71	0.56
13:G:113:ASP:HB2	13:G:119:ARG:HG3	1.87	0.56
30:a:579:C:H2'	30:a:580:A:C8	2.41	0.56
30:a:2810:G:H2'	30:a:2811:A:C8	2.41	0.56
6:5:53:ARG:N	6:5:53:ARG:HD2	2.21	0.55
7:A:857:G:H2'	7:A:858:A:C8	2.40	0.55
30:a:1:G:H2'	30:a:2:G:H8	1.71	0.55
30:a:998:A:H2'	30:a:999:A:C8	2.41	0.55
30:a:2796:U:H4'	30:a:2797:A:H5'	1.87	0.55
37:h:80:ILE:HG13	37:h:146:VAL:HG23	1.87	0.55
8:B:57:LEU:HA	8:B:60:ILE:HD12	1.88	0.55
30:a:578:U:H2'	30:a:579:C:C6	2.41	0.55
7:A:1021:G:H2'	7:A:1022:G:H8	1.71	0.55
9:C:23:PHE:CZ	16:J:11:LYS:HD3	2.41	0.55
16:J:25:ILE:HG21	16:J:74:VAL:HG11	1.89	0.55
30:a:191:A:H2'	30:a:192:C:H6	1.71	0.55
33:d:181:ASP:HB2	33:d:186:LEU:HB2	1.87	0.55
34:e:21:ARG:HD3	34:e:106:LYS:HB3	1.87	0.55
6:5:40:GLU:HG3	6:5:217:THR:HG22	1.89	0.55
7:A:632:C:H2'	7:A:633:A:C8	2.42	0.55
29:X:41:LEU:HD23	29:X:70:MET:SD	2.47	0.55
30:a:580:A:H2'	30:a:581:G:C8	2.41	0.55
30:a:2104:U:H2'	30:a:2105:G:C8	2.42	0.55
7:A:90:C:H2'	7:A:91:G:C8	2.41	0.55
7:A:457:A:H2'	7:A:458:A:C8	2.42	0.55
7:A:914:U:H2'	7:A:915:G:C8	2.41	0.55
7:A:1505:A:H2'	7:A:1506:A:C8	2.42	0.55
29:X:10:MET:HE1	29:X:70:MET:HE3	1.89	0.55
51:v:37:ILE:HG21	51:v:80:ILE:HG21	1.88	0.55
30:a:2467:A:H4'	41:l:55:ARG:HD2	1.89	0.55
30:a:2802:U:H2'	30:a:2803:C:C6	2.42	0.55
16:J:66:GLU:HG2	20:N:99:ALA:HB2	1.89	0.55
30:a:1083:A:H1'	30:a:1103:U:H1'	1.87	0.55
38:i:12:LYS:H	38:i:12:LYS:HD2	1.72	0.55
8:B:170:HIS:O	8:B:174:LYS:HG2	2.07	0.55
15:I:19:VAL:HG22	15:I:65:ILE:HG23	1.88	0.55
17:K:108:THR:O	27:U:6:VAL:HG22	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:2084:U:H2'	30:a:2085:G:H8	1.72	0.55
31:b:5:U:H2'	31:b:6:G:C8	2.42	0.55
43:n:7:ARG:HG3	43:n:10:ARG:HH21	1.71	0.55
7:A:1285:A:H2'	7:A:1286:A:C8	2.42	0.55
30:a:1680:U:H2'	30:a:1681:G:H8	1.72	0.55
30:a:2555:G:H2'	30:a:2556:C:C6	2.42	0.55
33:d:56:LYS:HG3	33:d:59:ARG:HB2	1.89	0.55
7:A:111:G:H1'	7:A:352:G:H5'	1.89	0.54
9:C:121:THR:HG21	9:C:187:SER:HB3	1.89	0.54
15:I:88:MET:HE2	15:I:88:MET:HA	1.88	0.54
47:r:20:VAL:HG11	47:r:44:ALA:HA	1.88	0.54
52:w:59:ILE:HG12	52:w:67:VAL:HG21	1.89	0.54
7:A:537:A:H2'	7:A:538:G:C8	2.43	0.54
28:V:42:C:H2'	28:V:43:G:C8	2.42	0.54
37:h:4:ILE:HG13	37:h:18:GLN:HG3	1.89	0.54
7:A:1306:U:H2'	7:A:1307:G:H8	1.72	0.54
8:B:145:GLU:OE2	8:B:149:GLY:HA2	2.07	0.54
28:V:24:C:H2'	28:V:25:U:C6	2.42	0.54
30:a:849:C:H2'	30:a:850:U:C6	2.42	0.54
30:a:1429:G:H2'	30:a:1430:A:H8	1.71	0.54
31:b:60:C:H2'	31:b:61:G:C8	2.42	0.54
35:f:128:TYR:CE2	35:f:130:MET:HB3	2.42	0.54
7:A:75:C:H2'	7:A:76:A:C8	2.42	0.54
7:A:397:G:H2'	7:A:398:C:C6	2.43	0.54
8:B:71:GLY:HA3	8:B:80:VAL:HG21	1.88	0.54
28:V:10:G:N2	28:V:27:G:H1'	2.22	0.54
28:V:27:G:C6	28:V:45:A:N6	2.76	0.54
30:a:545:U:H1'	30:a:547:G:C6	2.43	0.54
30:a:1742:A:H2'	30:a:1743:C:H6	1.72	0.54
7:A:1021:G:H2'	7:A:1022:G:C8	2.43	0.54
8:B:151:ILE:HG23	8:B:154:MET:HE3	1.89	0.54
21:O:55:GLY:O	21:O:59:MET:HG3	2.08	0.54
30:a:831:A:H2'	30:a:832:G:C8	2.43	0.54
30:a:2173:C:H2'	30:a:2174:A:H8	1.72	0.54
39:j:24:VAL:HG13	39:j:33:ALA:HB2	1.90	0.54
7:A:1306:U:H2'	7:A:1307:G:C8	2.43	0.54
10:D:50:ASP:O	10:D:54:GLN:HG3	2.08	0.54
7:A:512:C:H2'	7:A:513:G:H8	1.73	0.54
9:C:47:LEU:HB3	9:C:50:ALA:HB3	1.90	0.54
30:a:2079:U:H2'	30:a:2080:A:H8	1.73	0.54
30:a:2100:G:H2'	30:a:2101:C:C6	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:60:PHE:CD1	25:S:42:PRO:HD3	2.42	0.54
6:5:29:LEU:HA	6:5:32:GLU:HB2	1.90	0.54
7:A:537:A:H2'	7:A:538:G:H8	1.73	0.54
10:D:89:ASN:O	10:D:93:LEU:HG	2.07	0.54
19:M:36:GLU:HG3	19:M:37:THR:N	2.22	0.54
24:R:32:TYR:CG	24:R:55:LEU:HD21	2.43	0.54
25:S:50:ALA:HB1	25:S:57:HIS:HB3	1.90	0.54
29:X:52:ALA:HB2	29:X:77:LEU:HD21	1.90	0.54
30:a:574:U:H2'	30:a:575:G:C8	2.43	0.54
30:a:643:C:H2'	30:a:645:G:C8	2.43	0.54
30:a:2231:U:H2'	30:a:2232:G:C8	2.42	0.54
33:d:38:LYS:HD3	33:d:43:ASP:OD1	2.08	0.54
35:f:122:PHE:CE1	35:f:128:TYR:HD1	2.26	0.54
48:s:51:PHE:HB3	48:s:93:LEU:HD11	1.90	0.54
7:A:6:G:H4'	7:A:296:A:H4'	1.90	0.53
17:K:107:ILE:HD11	27:U:12:PHE:HD1	1.73	0.53
30:a:637:U:H2'	30:a:638:C:C6	2.43	0.53
7:A:599:G:H2'	7:A:600:A:H8	1.73	0.53
7:A:1510:U:H2'	7:A:1511:A:C8	2.44	0.53
21:O:78:TYR:O	21:O:82:ILE:HG23	2.07	0.53
30:a:718:U:H2'	30:a:719:A:H8	1.73	0.53
30:a:2023:C:H2'	30:a:2024:U:C6	2.43	0.53
30:a:2165:U:H2'	30:a:2166:G:C8	2.43	0.53
30:a:2807:A:H2'	30:a:2808:A:C8	2.43	0.53
37:h:130:VAL:HG23	37:h:142:VAL:HG13	1.89	0.53
7:A:822:G:H2'	7:A:823:A:H8	1.74	0.53
7:A:1009:C:H2'	7:A:1010:A:H8	1.73	0.53
8:B:27:MET:HE1	8:B:187:VAL:HG23	1.90	0.53
20:N:20:PHE:HB2	20:N:55:SER:HB2	1.91	0.53
30:a:2118:G:H2'	30:a:2119:G:H8	1.73	0.53
7:A:75:C:H2'	7:A:76:A:H8	1.74	0.53
30:a:1195:U:H2'	30:a:1196:U:C6	2.43	0.53
7:A:308:G:H5"	22:P:31:ARG:HB2	1.90	0.53
7:A:1511:A:H2'	7:A:1512:G:H8	1.74	0.53
30:a:2102:C:H2'	30:a:2103:U:C6	2.44	0.53
46:q:63:VAL:HA	46:q:96:VAL:HG12	1.89	0.53
9:C:175:LEU:HD23	9:C:182:ILE:HD13	1.91	0.53
24:R:29:LEU:O	24:R:33:ILE:HG23	2.07	0.53
27:U:16:LEU:O	27:U:20:LYS:HG3	2.09	0.53
30:a:2513:C:H2'	30:a:2514:A:H8	1.73	0.53
39:j:112:PHE:HB3	39:j:115:ILE:HD12	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1201:C:H5'	20:N:67:THR:HG23	1.91	0.53
18:L:80:ILE:HG22	18:L:104:CYS:HB2	1.90	0.53
7:A:916:A:H2'	7:A:917:A:C8	2.44	0.53
7:A:950:U:H2'	7:A:951:G:H8	1.74	0.53
12:F:90:MET:HE1	24:R:61:ARG:HH11	1.74	0.53
27:U:12:PHE:O	27:U:16:LEU:HD12	2.09	0.53
30:a:1289:G:H2'	30:a:1290:C:C6	2.44	0.53
18:L:54:ARG:NH1	18:L:62:GLU:HG2	2.24	0.53
30:a:2049:A:H5'	30:a:2576:G:O4'	2.09	0.53
30:a:2327:U:H2'	30:a:2328:G:H8	1.73	0.53
36:g:137:ASP:HB3	36:g:140:VAL:HB	1.90	0.53
41:l:63:ILE:HD11	41:l:105:MET:HE2	1.90	0.53
7:A:128:A:H5'	23:Q:65:ARG:HD2	1.91	0.53
7:A:674:A:H2'	7:A:675:U:H6	1.73	0.53
15:I:63:LEU:HD23	15:I:65:ILE:HD11	1.91	0.53
30:a:181:A:H1'	30:a:435:C:H5'	1.89	0.53
7:A:374:G:H5"	22:P:5:ARG:HB2	1.91	0.52
7:A:397:G:H2'	7:A:398:C:H6	1.74	0.52
7:A:857:G:H2'	7:A:858:A:H8	1.74	0.52
7:A:1060:U:H2'	7:A:1061:C:C6	2.44	0.52
43:n:30:ARG:HG3	43:n:35:ILE:HD12	1.91	0.52
7:A:744:A:H2'	7:A:745:A:H8	1.74	0.52
7:A:866:C:H2'	7:A:867:G:O4'	2.09	0.52
7:A:999:C:H2'	7:A:1000:A:C8	2.43	0.52
7:A:1289:U:H2'	7:A:1290:A:H8	1.73	0.52
30:a:181:A:H2'	30:a:182:A:C8	2.45	0.52
33:d:97:SER:HB2	33:d:99:GLU:OE2	2.10	0.52
36:g:158:LYS:HB2	36:g:160:LYS:HG3	1.90	0.52
17:K:35:THR:HG22	17:K:41:ALA:HA	1.92	0.52
30:a:830:U:H2'	30:a:831:A:H8	1.74	0.52
30:a:1184:G:H5'	46:q:83:TYR:CE1	2.45	0.52
30:a:1792:U:H2'	30:a:1793:G:C8	2.44	0.52
8:B:132:LYS:O	8:B:136:MET:HG2	2.10	0.52
30:a:1438:G:H2'	30:a:1439:U:C6	2.45	0.52
30:a:1642:G:H5"	30:a:1643:C:H5'	1.92	0.52
7:A:333:C:H2'	7:A:334:A:C8	2.44	0.52
10:D:11:LEU:HD13	10:D:63:ARG:HG2	1.91	0.52
16:J:21:SER:C	16:J:23:ALA:H	2.16	0.52
24:R:14:THR:HG21	24:R:48:ARG:HG2	1.92	0.52
30:a:879:G:H2'	30:a:880:G:H8	1.74	0.52
30:a:2393:C:H2'	30:a:2394:G:O4'	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:2428:A:H2'	30:a:2428:A:N3	2.24	0.52
38:i:6:ALA:HB3	38:i:48:VAL:HG11	1.90	0.52
3:2:25:LYS:HB3	40:k:62:PRO:HG2	1.92	0.52
16:J:63:ASP:HB3	16:J:65:TYR:CE1	2.44	0.52
30:a:1060:G:N3	30:a:1060:G:H2'	2.23	0.52
30:a:1808:U:H2'	30:a:1809:G:H8	1.75	0.52
36:g:35:ARG:NH1	36:g:71:LEU:HD13	2.24	0.52
6:5:197:LYS:HB3	6:5:233:ALA:HB2	1.91	0.52
30:a:2069:A:H2'	30:a:2070:C:C6	2.44	0.52
33:d:186:LEU:HD21	44:o:4:ILE:HG21	1.91	0.52
7:A:557:A:H4'	7:A:558:A:H3'	1.91	0.52
42:m:37:THR:HG22	42:m:39:PRO:HD2	1.91	0.52
7:A:1271:C:H2'	7:A:1272:A:O4'	2.10	0.52
8:B:27:MET:HE2	8:B:188:ASP:O	2.10	0.52
30:a:591:U:H2'	30:a:592:U:C6	2.44	0.52
30:a:1036:G:H2'	30:a:1037:A:C8	2.44	0.52
30:a:1587:A:H2'	30:a:1588:A:H8	1.75	0.52
30:a:1767:C:H2'	30:a:1768:A:C8	2.45	0.52
30:a:2811:A:H2'	30:a:2812:A:H8	1.75	0.52
7:A:475:G:H2'	7:A:476:A:C8	2.45	0.52
7:A:522:G:H2'	7:A:523:C:C6	2.44	0.52
12:F:2:ARG:HE	12:F:91:ARG:NE	2.08	0.52
29:X:68:GLU:CD	29:X:68:GLU:H	2.18	0.52
30:a:719:A:H2'	30:a:720:A:C8	2.45	0.52
30:a:849:C:H2'	30:a:850:U:H6	1.74	0.52
30:a:907:A:H2'	30:a:910:C:H5	1.75	0.52
30:a:1139:U:H4'	30:a:1140:A:O4'	2.10	0.52
30:a:1444:C:H2'	30:a:1445:G:C8	2.45	0.52
5:4:9:TYR:HE1	35:f:102:ARG:HH12	1.58	0.51
7:A:1219:G:O3'	25:S:77:THR:HG21	2.10	0.51
26:T:25:ARG:HG3	26:T:66:LEU:HD21	1.92	0.51
30:a:830:U:H2'	30:a:831:A:C8	2.45	0.51
7:A:152:U:H2'	7:A:153:A:C8	2.45	0.51
7:A:640:A:N7	14:H:107:SER:HA	2.25	0.51
7:A:964:2MG:C5	29:X:62:VAL:HG11	2.45	0.51
30:a:250:G:H4'	40:k:59:ARG:HD2	1.91	0.51
30:a:2141:C:H3'	30:a:2142:G:C8	2.45	0.51
30:a:2377:G:H4'	43:n:21:LEU:HD21	1.91	0.51
11:E:15:LEU:HD23	11:E:37:THR:HG22	1.92	0.51
30:a:642:A:H2'	30:a:643:C:O4'	2.10	0.51
30:a:846:C:H2'	30:a:847:A:C8	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:1587:A:H2'	30:a:1588:A:C8	2.46	0.51
45:p:58:ARG:O	45:p:62:ILE:HG13	2.11	0.51
7:A:862:A:H4'	11:E:90:THR:HG23	1.92	0.51
7:A:1522:C:H2'	7:A:1523:G:H8	1.75	0.51
8:B:162:PHE:CZ	8:B:186:ILE:HD11	2.45	0.51
19:M:86:TYR:O	19:M:90:ARG:HG2	2.09	0.51
30:a:1384:A:H5'	30:a:1466:A:H1'	1.91	0.51
30:a:2196:A:H8	30:a:2196:A:OP1	1.92	0.51
33:d:152:PRO:HG3	33:d:156:PHE:CZ	2.45	0.51
35:f:8:TYR:HB2	35:f:173:PHE:CZ	2.44	0.51
37:h:57:LYS:O	37:h:61:VAL:HG22	2.10	0.51
7:A:374:G:H5"	22:P:5:ARG:HD2	1.92	0.51
7:A:488:C:H2'	7:A:489:G:H8	1.75	0.51
7:A:970:C:O3'	16:J:59:LYS:HD3	2.11	0.51
7:A:1493:U:HO2'	7:A:1494:C:H6	1.58	0.51
30:a:419:U:H2'	30:a:420:C:C6	2.45	0.51
30:a:1173:U:H4'	30:a:1174:G:O5'	2.09	0.51
36:g:103:VAL:HG13	36:g:115:HIS:HB3	1.92	0.51
7:A:743:A:H2'	7:A:744:A:H8	1.76	0.51
18:L:74:LEU:HD21	18:L:80:ILE:HG21	1.93	0.51
30:a:2646:G:H2'	30:a:2647:C:C6	2.46	0.51
34:e:149:ILE:HG22	34:e:192:ALA:HB1	1.93	0.51
1:0:13:SER:HB3	1:0:49:TYR:CZ	2.46	0.51
7:A:1233:U:H2'	7:A:1234:A:O4'	2.11	0.51
13:G:86:GLN:HG3	13:G:144:MET:HE3	1.93	0.51
30:a:1790:A:H2'	30:a:1791:C:H6	1.76	0.51
30:a:1849:A:H2'	30:a:1850:A:C8	2.45	0.51
30:a:2896:U:H2'	30:a:2897:A:C8	2.45	0.51
6:5:7:ARG:O	6:5:11:ILE:HB	2.11	0.51
6:5:164:ARG:HH12	30:a:2120:U:H5"	1.75	0.51
6:5:186:LYS:HG3	6:5:187:GLU:N	2.26	0.51
7:A:158:A:H2'	7:A:159:A:O4'	2.11	0.51
7:A:1084:U:H3	7:A:1097:G:H22	1.58	0.51
30:a:191:A:H2'	30:a:192:C:C6	2.46	0.51
30:a:2613:U:C2	55:z:4:GLN:HA	2.46	0.51
5:4:64:PHE:O	5:4:67:PRO:HD3	2.11	0.51
7:A:578:C:H2'	7:A:579:G:O4'	2.10	0.51
7:A:1407:C:H2'	7:A:1408:A:H8	1.76	0.51
30:a:1680:U:H2'	30:a:1681:G:C8	2.46	0.51
30:a:2126:G:N2	30:a:2158:C:H2'	2.26	0.51
37:h:135:HIS:HB3	37:h:138:VAL:HB	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:n:17:LYS:HD2	43:n:21:LEU:HD13	1.92	0.51
7:A:210:G:H2'	7:A:211:G:H8	1.76	0.51
30:a:1473:U:H2'	30:a:1474:A:H8	1.75	0.51
30:a:2271:A:H2'	30:a:2272:A:C8	2.46	0.51
6:5:46:VAL:HB	6:5:171:ILE:HG22	1.92	0.50
7:A:550:U:C2	7:A:551:A:C8	2.99	0.50
7:A:1161:A:H2'	7:A:1162:G:H8	1.75	0.50
17:K:112:ASP:HB3	27:U:2:PRO:HD2	1.93	0.50
28:V:20:G:H4'	28:V:21:H2U:OP2	2.08	0.50
30:a:272:A:H2'	30:a:273:G:H8	1.76	0.50
30:a:818:A:H4'	30:a:834:G:H22	1.76	0.50
30:a:1767:C:H2'	30:a:1768:A:H8	1.76	0.50
7:A:511:C:H2'	7:A:512:C:C6	2.46	0.50
30:a:248:G:O5'	30:a:249:C:H5"	2.12	0.50
30:a:811:U:H2'	30:a:812:C:C6	2.46	0.50
30:a:1808:U:H2'	30:a:1809:G:C8	2.46	0.50
32:c:146:MET:HE2	32:c:154:LEU:HD21	1.93	0.50
7:A:1353:A:H2'	7:A:1354:G:H8	1.76	0.50
30:a:306:U:H2'	30:a:307:G:O4'	2.11	0.50
30:a:360:U:H3'	30:a:361:G:C8	2.46	0.50
7:A:1224:C:N4	19:M:103:LYS:HG3	2.26	0.50
26:T:57:ILE:O	26:T:61:GLN:HG2	2.12	0.50
30:a:1107:C:H3'	30:a:1108:G:C8	2.47	0.50
30:a:2133:A:H2'	30:a:2134:G:O4'	2.11	0.50
7:A:952:G:H2'	7:A:953:U:C6	2.46	0.50
7:A:1251:G:H2'	7:A:1252:A:H8	1.76	0.50
28:V:26:C:C2	28:V:27:G:C8	2.99	0.50
30:a:632:C:H2'	30:a:633:C:C6	2.47	0.50
30:a:782:G:H5'	30:a:783:G:OP1	2.12	0.50
30:a:2097:U:H2'	30:a:2098:G:C8	2.45	0.50
33:d:42:ASN:ND2	33:d:43:ASP:OD2	2.45	0.50
7:A:396:U:H2'	7:A:397:G:H8	1.76	0.50
7:A:672:G:H2'	7:A:673:A:C8	2.43	0.50
7:A:726:A:H2'	7:A:727:A:C8	2.46	0.50
19:M:92:ARG:HD2	30:a:886:C:C5	2.47	0.50
7:A:41:G:H2'	7:A:42:G:H8	1.77	0.50
7:A:380:A:H2'	7:A:381:A:C8	2.46	0.50
7:A:1128:A:H2'	7:A:1129:G:H8	1.76	0.50
30:a:279:A:H2'	30:a:280:U:O4'	2.12	0.50
30:a:922:A:H2'	30:a:923:A:H8	1.77	0.50
30:a:953:PSU:H5'	41:l:86:LYS:HD2	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:1313:U:H2'	30:a:1314:G:H8	1.75	0.50
30:a:1584:G:H2'	30:a:1585:G:H8	1.77	0.50
30:a:2036:G:H2'	30:a:2037:U:O4'	2.10	0.50
30:a:2062:C:H2'	30:a:2063:C:C6	2.46	0.50
45:p:86:ALA:HB2	45:p:116:ALA:HB2	1.93	0.50
6:5:23:ILE:HG13	6:5:24:ASN:N	2.27	0.50
7:A:35:G:H2'	7:A:36:C:C6	2.47	0.50
7:A:1200:U:O2'	20:N:67:THR:HG21	2.12	0.50
30:a:718:U:H2'	30:a:719:A:C8	2.47	0.50
30:a:1985:A:H2'	30:a:1986:G:H8	1.75	0.50
47:r:24:ILE:HD13	47:r:36:LEU:HD11	1.94	0.50
6:5:163:TYR:HB2	6:5:171:ILE:HG12	1.93	0.50
7:A:209:G:H8	7:A:209:G:O5'	1.95	0.50
7:A:438:C:C2	7:A:439:A:C8	3.00	0.50
8:B:70:VAL:HG12	8:B:169:GLU:HG3	1.94	0.50
17:K:37:ARG:HH11	17:K:37:ARG:HG3	1.76	0.50
20:N:45:VAL:HG12	20:N:49:GLN:HE21	1.77	0.50
7:A:382:G:H2'	7:A:383:C:C6	2.47	0.49
7:A:387:A:H3'	7:A:388:U:H6	1.77	0.49
7:A:1012:A:C2	7:A:1217:A:H1'	2.47	0.49
30:a:30:G:H2'	30:a:31:C:C6	2.46	0.49
30:a:740:A:H2'	30:a:741:A:H8	1.77	0.49
30:a:2143:C:H3'	30:a:2144:C:H6	1.76	0.49
5:4:60:PHE:HD1	25:S:42:PRO:HD3	1.76	0.49
7:A:921:A:H2'	7:A:922:C:C6	2.47	0.49
7:A:1330:A:H2'	7:A:1331:A:C8	2.47	0.49
18:L:55:VAL:HG21	18:L:80:ILE:HD11	1.92	0.49
24:R:70:TYR:HB2	24:R:74:HIS:NE2	2.26	0.49
30:a:739:U:H2'	30:a:740:A:C8	2.47	0.49
32:c:232:HIS:HA	32:c:242:LYS:HD2	1.93	0.49
7:A:948:U:H2'	7:A:949:G:C8	2.48	0.49
10:D:85:ASN:HB3	10:D:88:GLU:HB2	1.93	0.49
11:E:81:LEU:HD11	11:E:96:MET:HB3	1.94	0.49
30:a:2126:G:H22	30:a:2158:C:H2'	1.77	0.49
30:a:2314:G:H2'	30:a:2315:A:H8	1.76	0.49
30:a:2325:A:H2'	30:a:2326:A:C8	2.47	0.49
35:f:38:MET:HG2	35:f:152:LEU:HB3	1.94	0.49
50:u:74:VAL:HG22	50:u:91:PHE:HE1	1.78	0.49
7:A:1491:A:H5'	30:a:1911:A:H1'	1.94	0.49
30:a:889:G:H2'	30:a:890:A:C8	2.46	0.49
30:a:1426:G:H2'	30:a:1427:G:C8	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:1790:A:H2'	30:a:1791:C:C6	2.47	0.49
7:A:503:G:H2'	7:A:504:G:H8	1.77	0.49
8:B:140:GLU:O	8:B:144:LEU:HB2	2.11	0.49
21:O:53:ARG:O	21:O:57:LEU:HG	2.12	0.49
28:V:71:G:H2'	28:V:72:C:C6	2.47	0.49
31:b:49:C:H2'	31:b:50:A:C8	2.47	0.49
33:d:25:THR:HG21	33:d:193:VAL:HG22	1.93	0.49
7:A:214:U:H2'	7:A:215:C:C6	2.47	0.49
7:A:1160:C:H2'	7:A:1161:A:H8	1.78	0.49
9:C:12:LEU:HD21	20:N:91:GLY:HA2	1.94	0.49
30:a:841:G:H2'	30:a:842:A:C8	2.48	0.49
30:a:1525:A:H2'	30:a:1526:G:O4'	2.12	0.49
30:a:2239:A:H2'	30:a:2240:G:C8	2.48	0.49
30:a:2801:C:H2'	30:a:2802:U:H6	1.76	0.49
35:f:22:TYR:CD1	35:f:27:GLN:HG2	2.47	0.49
35:f:42:GLU:H	35:f:42:GLU:CD	2.21	0.49
38:i:140:LEU:HD21	38:i:142:ILE:HD11	1.93	0.49
7:A:999:C:H2'	7:A:1000:A:H8	1.77	0.49
7:A:1402:C:H2'	7:A:1403:G:C8	2.48	0.49
10:D:107:PHE:CG	10:D:145:ILE:HD11	2.48	0.49
30:a:1679:G:H2'	30:a:1680:U:C6	2.48	0.49
30:a:2063:C:H2'	30:a:2064:C:H6	1.78	0.49
3:2:26:HIS:NE2	3:2:48:ALA:HB2	2.27	0.49
7:A:19:A:H2'	7:A:20:U:C6	2.47	0.49
7:A:1167:A:H2'	7:A:1168:A:C8	2.48	0.49
30:a:1568:A:H2'	30:a:1569:A:C8	2.47	0.49
30:a:2893:G:H2'	30:a:2894:C:H6	1.78	0.49
33:d:48:ILE:HG23	33:d:84:LEU:HD11	1.95	0.49
37:h:71:GLN:HB3	37:h:108:VAL:HG11	1.95	0.49
40:k:132:ARG:HG3	40:k:142:ILE:HD13	1.93	0.49
47:r:66:ILE:HA	47:r:69:LEU:HD23	1.95	0.49
50:u:31:TYR:HE2	50:u:90:ASP:OD2	1.96	0.49
7:A:34:C:H2'	7:A:35:G:H8	1.77	0.49
7:A:268:A:H2'	7:A:269:C:C6	2.48	0.49
7:A:863:A:H2'	7:A:864:C:C6	2.48	0.49
7:A:1251:G:H2'	7:A:1252:A:C8	2.47	0.49
8:B:78:GLU:CD	8:B:78:GLU:H	2.20	0.49
10:D:9:LEU:HD13	10:D:32:CYS:HB3	1.95	0.49
11:E:16:ILE:HD13	11:E:110:ALA:HB1	1.95	0.49
22:P:67:VAL:HG13	22:P:71:VAL:HG12	1.94	0.49
30:a:856:G:N3	30:a:2266:A:H2'	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:2726:U:HO2'	30:a:2727:G:H8	1.61	0.49
31:b:28:C:H2'	31:b:29:A:C8	2.48	0.49
7:A:943:G:C2	7:A:944:A:C8	3.00	0.49
7:A:950:U:H2'	7:A:951:G:C8	2.47	0.49
7:A:1412:U:H2'	7:A:1413:G:H8	1.78	0.49
17:K:111:THR:HG23	27:U:3:VAL:HG22	1.95	0.49
28:V:35:C:H2'	28:V:36:A:C8	2.48	0.49
28:V:45:A:H3'	28:V:46:G:C8	2.48	0.49
30:a:5:A:H2'	30:a:6:A:H8	1.76	0.49
30:a:155:A:H2'	30:a:156:A:C8	2.48	0.49
30:a:181:A:H2'	30:a:182:A:H8	1.76	0.49
30:a:1872:A:H2'	30:a:1873:G:O4'	2.13	0.49
30:a:2050:A:H4'	33:d:148:GLN:O	2.13	0.49
30:a:2125:G:C2	30:a:2126:G:C8	3.01	0.49
32:c:205:LEU:HB3	32:c:210:ALA:HB3	1.95	0.49
35:f:99:PHE:HD1	35:f:102:ARG:HH21	1.60	0.49
7:A:311:A:H2'	7:A:312:C:C6	2.48	0.48
7:A:633:A:H2'	7:A:634:U:H6	1.78	0.48
9:C:78:GLY:HA3	9:C:83:ASP:OD2	2.12	0.48
17:K:30:THR:HG21	17:K:63:ALA:HA	1.95	0.48
30:a:701:U:H2'	30:a:702:G:O4'	2.13	0.48
30:a:1052:A:H2'	30:a:1053:G:O4'	2.12	0.48
41:l:64:TRP:HZ3	41:l:106:ASP:HB2	1.78	0.48
6:5:21:TYR:HD2	6:5:222:VAL:HG21	1.78	0.48
7:A:909:U:H2'	7:A:910:C:C6	2.48	0.48
7:A:1311:U:H2'	7:A:1312:C:C6	2.48	0.48
7:A:1439:A:H62	7:A:1459:G:H21	1.60	0.48
30:a:52:A:H2'	30:a:53:A:C8	2.48	0.48
7:A:244:A:C2	7:A:280:A:C5	3.02	0.48
7:A:1161:A:H2'	7:A:1162:G:C8	2.49	0.48
7:A:1321:G:H2'	7:A:1322:A:H8	1.77	0.48
15:I:30:ILE:HD11	15:I:35:LEU:HG	1.96	0.48
30:a:606:A:H2'	30:a:607:A:C8	2.48	0.48
30:a:739:U:H2'	30:a:740:A:H8	1.77	0.48
30:a:908:A:H2'	30:a:909:A:C8	2.47	0.48
30:a:1491:A:H2'	30:a:1492:A:C8	2.48	0.48
30:a:1545:A:H2'	30:a:1546:A:C8	2.49	0.48
33:d:114:LYS:HE3	33:d:196:ALA:HB2	1.94	0.48
7:A:1173:G:H2'	7:A:1174:A:H8	1.78	0.48
7:A:1389:U:H2'	7:A:1390:G:C8	2.49	0.48
12:F:18:VAL:HG11	12:F:58:HIS:CD2	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:414:C:H2’	30:a:415:A:C8	2.49	0.48
30:a:743:1MG:O2’	30:a:746:G:H1’	2.13	0.48
30:a:1026:A:N6	30:a:1123:G:H2’	2.28	0.48
30:a:1303:C:H2’	30:a:1304:A:H8	1.78	0.48
30:a:1350:A:H2’	30:a:1351:A:H8	1.78	0.48
36:g:9:VAL:HG11	36:g:73:ASN:HB2	1.95	0.48
7:A:674:A:H2’	7:A:675:U:C6	2.49	0.48
7:A:948:U:H2’	7:A:949:G:H8	1.79	0.48
23:Q:9:GLN:HG3	23:Q:60:GLU:HG3	1.96	0.48
30:a:592:U:H2’	30:a:593:C:C6	2.48	0.48
30:a:889:G:H2’	30:a:890:A:H8	1.78	0.48
1:0:7:GLU:HB2	1:0:27:LYS:HD2	1.94	0.48
7:A:86:C:H2’	7:A:87:U:C2	2.48	0.48
7:A:511:C:H2’	7:A:512:C:H6	1.78	0.48
7:A:599:G:H2’	7:A:600:A:C8	2.49	0.48
7:A:777:C:H2’	7:A:778:A:O4’	2.14	0.48
7:A:1238:U:OP1	13:G:116:MET:HB2	2.13	0.48
24:R:29:LEU:HD13	24:R:59:ILE:HD13	1.96	0.48
26:T:31:PHE:O	26:T:35:VAL:HG23	2.14	0.48
30:a:1492:A:H2’	30:a:1493:A:C8	2.49	0.48
30:a:1804:A:H3’	30:a:1805:A:C8	2.49	0.48
30:a:2545:A:H2’	30:a:2546:U:C6	2.49	0.48
32:c:141:VAL:HG12	32:c:192:LEU:HD13	1.96	0.48
35:f:132:VAL:O	35:f:151:GLY:HA3	2.12	0.48
37:h:131:ASP:C	37:h:132:PHE:HD2	2.21	0.48
7:A:321:U:H2’	7:A:322:G:O4’	2.14	0.48
7:A:1216:C:H2’	7:A:1217:A:H8	1.74	0.48
14:H:64:LYS:HG2	14:H:71:VAL:HG21	1.95	0.48
19:M:65:VAL:HG23	19:M:66:GLU:HG3	1.95	0.48
20:N:36:ALA:HB3	20:N:41:ARG:HH11	1.79	0.48
30:a:27:G:N2	30:a:512:G:H1’	2.29	0.48
30:a:1174:G:H2’	30:a:1175:U:C6	2.48	0.48
35:f:14:LYS:HE3	35:f:14:LYS:HB3	1.58	0.48
41:l:117:PHE:HD2	41:l:130:PHE:CD2	2.32	0.48
1:0:39:TYR:HB2	1:0:46:HIS:CE1	2.49	0.48
6:5:47:ASN:HB2	6:5:211:LYS:HG2	1.95	0.48
7:A:1292:G:H2’	7:A:1293:U:C6	2.49	0.48
7:A:1508:C:H2’	7:A:1509:G:C8	2.48	0.48
19:M:90:ARG:HB2	19:M:97:VAL:HG12	1.96	0.48
20:N:39:GLU:HA	20:N:39:GLU:OE2	2.13	0.48
30:a:17:G:H2’	30:a:18:U:C6	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:30:G:H2'	30:a:31:C:H6	1.79	0.48
30:a:479:A:N3	30:a:481:G:H5"	2.27	0.48
30:a:854:G:H2'	30:a:855:G:C8	2.48	0.48
30:a:1409:U:H2'	30:a:1410:A:H8	1.77	0.48
49:t:48:PRO:HB3	49:t:56:GLY:H	1.79	0.48
7:A:85:G:H3'	7:A:86:C:C6	2.48	0.48
7:A:129:A:H2'	7:A:130:C:H6	1.78	0.48
7:A:1410:C:H2'	7:A:1411:A:C8	2.49	0.48
30:a:78:U:H2'	30:a:79:C:C6	2.49	0.48
30:a:173:A:H2'	30:a:174:C:C6	2.49	0.48
34:e:58:LYS:HG3	34:e:71:GLY:HA2	1.95	0.48
38:i:12:LYS:HD2	38:i:12:LYS:N	2.29	0.48
6:5:50:ILE:CG2	6:5:57:GLN:HB3	2.44	0.47
7:A:81:G:N2	7:A:86:C:H42	2.11	0.47
7:A:492:G:H2'	7:A:494:A:H8	1.79	0.47
7:A:588:C:OP1	14:H:31:LYS:HG3	2.14	0.47
7:A:819:G:H2'	7:A:820:U:C6	2.49	0.47
14:H:18:GLN:HA	14:H:18:GLN:OE1	2.14	0.47
15:I:21:ILE:CD1	15:I:61:LEU:HG	2.32	0.47
30:a:2106:A:H3'	30:a:2107:U:H6	1.79	0.47
35:f:43:ALA:HB2	35:f:50:LEU:HB2	1.95	0.47
35:f:93:GLY:H	35:f:96:MET:HE3	1.79	0.47
7:A:1149:A:O2'	7:A:1150:A:H8	1.97	0.47
16:J:6:ILE:CD1	16:J:76:ILE:HB	2.44	0.47
30:a:150:U:H2'	30:a:151:C:C6	2.49	0.47
30:a:1493:A:H2'	30:a:1495:C:C5	2.49	0.47
30:a:2778:G:OP2	38:i:120:ARG:HD3	2.14	0.47
43:n:52:SER:OG	43:n:54:VAL:HG22	2.13	0.47
10:D:102:VAL:HG13	10:D:107:PHE:HB2	1.95	0.47
19:M:16:VAL:HG11	19:M:41:GLU:OE1	2.15	0.47
28:V:30:G:H2'	28:V:31:G:C8	2.47	0.47
30:a:274:U:H2'	30:a:275:C:C6	2.50	0.47
30:a:1289:G:H2'	30:a:1290:C:H6	1.79	0.47
30:a:1503:U:H2'	30:a:1504:C:C6	2.50	0.47
37:h:84:ALA:HB2	37:h:90:LEU:HD12	1.95	0.47
7:A:258:G:H2'	7:A:259:U:C6	2.50	0.47
31:b:49:C:H2'	31:b:50:A:H8	1.79	0.47
33:d:110:THR:HG21	33:d:169:ARG:CZ	2.45	0.47
33:d:186:LEU:HD13	44:o:8:LEU:HD11	1.96	0.47
7:A:152:U:H2'	7:A:153:A:H8	1.79	0.47
29:X:17:ARG:HE	29:X:17:ARG:HB2	1.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:594:U:H2'	30:a:595:G:H8	1.78	0.47
30:a:1104:G:C2	30:a:1105:G:C8	3.02	0.47
30:a:2072:U:H2'	30:a:2073:U:C6	2.49	0.47
30:a:2104:U:H2'	30:a:2105:G:H8	1.77	0.47
34:e:147:LEU:HD11	34:e:170:ARG:HG3	1.96	0.47
46:q:26:ASP:C	46:q:27:ILE:HD12	2.40	0.47
10:D:170:TRP:CD2	10:D:186:PRO:HB3	2.50	0.47
12:F:6:ILE:HG13	12:F:89:VAL:HG22	1.96	0.47
30:a:18:U:H2'	30:a:19:A:C8	2.49	0.47
30:a:465:G:H2'	30:a:466:A:C8	2.50	0.47
38:i:46:PRO:HD3	45:p:60:LEU:HD13	1.96	0.47
45:p:98:ILE:HD13	46:q:40:MET:HE1	1.97	0.47
48:s:22:THR:O	48:s:26:LYS:HG3	2.13	0.47
5:4:9:TYR:HD2	5:4:25:ARG:HH21	1.62	0.47
6:5:68:GLY:HA2	6:5:159:GLY:HA3	1.97	0.47
7:A:319:A:H2'	7:A:320:C:C6	2.49	0.47
7:A:650:U:H1'	7:A:651:A:H8	1.80	0.47
7:A:1491:A:H2'	7:A:1491:A:N3	2.29	0.47
8:B:88:ASP:OD1	8:B:88:ASP:O	2.33	0.47
24:R:22:ASP:OD1	24:R:24:LYS:HE2	2.13	0.47
27:U:44:GLU:O	27:U:47:ARG:HG3	2.15	0.47
30:a:227:A:C2	30:a:2405:A:H1'	2.50	0.47
30:a:812:C:H2'	30:a:813:C:H6	1.79	0.47
30:a:1576:A:H2'	30:a:1577:A:C8	2.50	0.47
30:a:2371:G:H2'	30:a:2372:C:C6	2.49	0.47
30:a:2535:U:H2'	30:a:2536:C:C6	2.50	0.47
30:a:2565:G:H2'	30:a:2566:U:C6	2.50	0.47
30:a:2647:C:H2'	30:a:2648:U:C6	2.50	0.47
30:a:2835:A:H2'	30:a:2836:G:H8	1.80	0.47
48:s:54:GLU:HB3	48:s:91:GLN:NE2	2.30	0.47
7:A:1311:U:H2'	7:A:1312:C:H6	1.80	0.47
13:G:15:ASP:OD2	13:G:23:LEU:HB3	2.14	0.47
15:I:88:MET:HE1	15:I:95:ARG:HA	1.97	0.47
18:L:50:ARG:HB3	18:L:66:TYR:HE1	1.79	0.47
19:M:77:ILE:O	19:M:81:MET:HG3	2.14	0.47
24:R:17:GLY:N	24:R:19:GLN:HE22	2.13	0.47
30:a:843:A:H5'	30:a:844:C:OP2	2.15	0.47
31:b:16:G:N2	31:b:69:G:H1'	2.30	0.47
31:b:29:A:H2'	31:b:30:C:O4'	2.15	0.47
7:A:1312:C:H2'	7:A:1313:U:C6	2.50	0.47
7:A:1400:4OC:H2'	7:A:1401:C:O4'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:S:3:ARG:NH1	25:S:10:PHE:HB2	2.28	0.47
30:a:304:U:H2'	30:a:305:C:C6	2.50	0.47
30:a:1686:A:H2'	30:a:1687:A:C8	2.50	0.47
30:a:2241:U:H2'	30:a:2242:U:C6	2.50	0.47
36:g:67:THR:O	36:g:71:LEU:HG	2.15	0.47
36:g:89:LEU:HD11	36:g:96:ALA:HB2	1.97	0.47
37:h:97:ARG:HD2	37:h:112:LYS:HD3	1.97	0.47
44:o:18:PRO:HG3	44:o:84:ILE:O	2.15	0.47
46:q:4:VAL:HG22	46:q:13:ARG:HG3	1.97	0.47
7:A:1142:G:H21	7:A:1144:A:H62	1.62	0.47
30:a:64:A:H2'	30:a:65:U:H6	1.77	0.47
30:a:499:U:H2'	30:a:500:G:O4'	2.15	0.47
30:a:568:G:H2'	30:a:2028:6MZ:N7	2.30	0.47
30:a:2154:G:H2'	30:a:2155:G:C5	2.49	0.47
6:5:36:ALA:HB1	6:5:38:PHE:CZ	2.50	0.46
8:B:68:LEU:HD21	8:B:92:VAL:HG23	1.96	0.46
12:F:90:MET:HE1	24:R:61:ARG:NH1	2.30	0.46
19:M:78:LYS:O	19:M:82:ASP:OD2	2.33	0.46
28:V:19:G:H8	28:V:19:G:OP1	1.98	0.46
30:a:1439:U:H2'	30:a:1440:U:C6	2.50	0.46
30:a:1560:U:H2'	30:a:1561:C:C6	2.49	0.46
30:a:1887:A:H2'	30:a:1888:A:C8	2.50	0.46
30:a:2314:G:H1'	35:f:125:ARG:HH21	1.80	0.46
30:a:2794:U:H3	30:a:2797:A:H61	1.63	0.46
41:l:53:MET:HE1	41:l:103:TYR:CB	2.45	0.46
53:x:55:THR:O	53:x:58:THR:HG22	2.14	0.46
7:A:1491:A:C5'	30:a:1911:A:H1'	2.45	0.46
16:J:27:GLU:HA	16:J:30:LYS:HE3	1.96	0.46
37:h:78:VAL:HB	37:h:144:ILE:HD12	1.97	0.46
47:r:1:MET:HB2	47:r:2:GLU:OE1	2.15	0.46
7:A:402:G:N7	10:D:2:ALA:HB3	2.31	0.46
12:F:4:TYR:CE2	12:F:71:ILE:HG13	2.49	0.46
15:I:79:ILE:O	15:I:83:ILE:HG13	2.16	0.46
28:V:14:A:H3'	28:V:15:G:H8	1.81	0.46
28:V:26:C:H2'	28:V:27:G:H8	1.80	0.46
28:V:33:OMC:HM23	28:V:33:OMC:H1'	1.62	0.46
30:a:1103:U:H2'	30:a:1104:G:C8	2.38	0.46
30:a:1482:U:H2'	30:a:1483:A:H8	1.80	0.46
30:a:1568:A:H2'	30:a:1569:A:H8	1.79	0.46
30:a:2646:G:H2'	30:a:2647:C:H6	1.80	0.46
30:a:2843:U:H5"	44:o:52:ASN:O	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:i:29:ALA:HB3	38:i:108:MET:HE3	1.97	0.46
49:t:17:LYS:HG3	49:t:18:ASP:OD1	2.15	0.46
6:5:176:GLY:C	6:5:177:LYS:HD2	2.40	0.46
7:A:1024:G:N1	7:A:1033:A:N6	2.49	0.46
7:A:1069:C:H2'	7:A:1070:G:C8	2.48	0.46
30:a:171:U:H2'	30:a:172:A:H8	1.80	0.46
30:a:1026:A:H2'	30:a:1027:A:H8	1.81	0.46
30:a:2512:U:H2'	30:a:2513:C:H6	1.78	0.46
40:k:56:PRO:HG2	40:k:59:ARG:HB2	1.98	0.46
7:A:101:C:OP2	26:T:9:LYS:HE2	2.16	0.46
7:A:1433:G:H2'	7:A:1434:U:C6	2.51	0.46
9:C:7:PRO:HD2	9:C:184:TYR:CD2	2.50	0.46
30:a:879:G:H2'	30:a:880:G:C8	2.51	0.46
30:a:1403:U:H2'	30:a:1404:G:C8	2.50	0.46
30:a:2174:A:H2'	30:a:2175:C:C6	2.49	0.46
30:a:2303:U:H2'	30:a:2304:C:C6	2.50	0.46
7:A:553:U:H2'	7:A:554:C:C6	2.50	0.46
7:A:693:A:H2'	7:A:694:A:C8	2.50	0.46
7:A:862:A:H2'	7:A:863:A:C8	2.50	0.46
8:B:97:LEU:HG	8:B:100:MET:HE1	1.97	0.46
30:a:993:C:N4	38:i:2:LYS:HG2	2.30	0.46
30:a:1055:A:C2	30:a:1056:U:H1'	2.50	0.46
30:a:1275:C:H2'	30:a:1276:G:C8	2.50	0.46
30:a:2587:A:H2'	30:a:2588:A:C8	2.51	0.46
37:h:16:GLY:HA2	37:h:47:PHE:CE2	2.49	0.46
50:u:9:ARG:HG2	50:u:41:GLU:HG2	1.97	0.46
53:x:55:THR:O	53:x:59:GLN:HG2	2.16	0.46
7:A:468:C:H2'	7:A:469:C:H6	1.81	0.46
7:A:702:A:C4	7:A:703:G:C8	3.04	0.46
7:A:1508:C:H2'	7:A:1509:G:H8	1.80	0.46
8:B:61:ALA:HB2	8:B:221:VAL:HG23	1.97	0.46
12:F:42:TRP:CE2	12:F:102:MET:HG3	2.51	0.46
15:I:75:GLN:O	15:I:79:ILE:HG13	2.16	0.46
27:U:25:LYS:HE3	27:U:25:LYS:HB3	1.71	0.46
28:V:40:C:H2'	28:V:41:C:O4'	2.16	0.46
30:a:52:A:H2'	30:a:53:A:H8	1.80	0.46
30:a:578:U:H2'	30:a:579:C:H6	1.80	0.46
30:a:721:C:H2'	30:a:722:U:O4'	2.15	0.46
30:a:1003:C:O2'	38:i:30:THR:HG21	2.16	0.46
37:h:15:LEU:HD13	37:h:16:GLY:N	2.31	0.46
3:2:31:HIS:CD2	3:2:32:ILE:HG13	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:297:G:H2'	7:A:298:A:C8	2.51	0.46
7:A:980:U:H4'	7:A:981:A:O4'	2.16	0.46
7:A:1350:C:H2'	7:A:1351:G:C8	2.51	0.46
7:A:1409:C:H2'	7:A:1410:C:C6	2.51	0.46
8:B:69:PHE:HB3	8:B:80:VAL:HG13	1.97	0.46
16:J:6:ILE:HD11	16:J:76:ILE:HB	1.96	0.46
16:J:27:GLU:O	16:J:31:ARG:HG3	2.15	0.46
21:O:17:ARG:HG2	21:O:17:ARG:HH11	1.81	0.46
30:a:871:C:H2'	30:a:872:G:H8	1.80	0.46
30:a:1674:A:H2'	30:a:1675:A:H8	1.81	0.46
30:a:2105:G:H3'	30:a:2106:A:H8	1.81	0.46
30:a:2343:G:N3	30:a:2379:A:H2'	2.30	0.46
30:a:2588:A:H2'	30:a:2589:C:H6	1.81	0.46
30:a:2811:A:H2'	30:a:2812:A:C8	2.50	0.46
30:a:2845:U:H2'	30:a:2846:G:O4'	2.15	0.46
53:x:44:LYS:O	53:x:48:ARG:HG2	2.15	0.46
6:5:4:LEU:HB2	6:5:9:ARG:NE	2.31	0.46
7:A:62:U:H2'	7:A:63:C:C6	2.51	0.46
7:A:458:A:H2'	7:A:459:G:H8	1.80	0.46
13:G:116:MET:HA	13:G:119:ARG:HE	1.81	0.46
30:a:2:G:H2'	30:a:3:U:C6	2.50	0.46
30:a:1483:A:H2'	30:a:1484:U:C6	2.51	0.46
30:a:1826:C:H2'	30:a:1827:G:H8	1.81	0.46
30:a:2214:G:H2'	30:a:2215:G:H8	1.81	0.46
30:a:2391:U:H2'	30:a:2392:C:H6	1.81	0.46
30:a:2698:A:H2'	30:a:2699:U:H6	1.80	0.46
39:j:13:ASN:HB3	39:j:100:PHE:CZ	2.51	0.46
47:r:17:VAL:HG11	47:r:103:ILE:HG12	1.97	0.46
4:3:2:LYS:HE2	4:3:32:LYS:O	2.16	0.46
7:A:176:C:C2	7:A:177:A:C8	3.05	0.46
7:A:414:G:H2'	7:A:415:G:H8	1.81	0.46
7:A:460:G:H2'	7:A:461:U:C6	2.51	0.46
7:A:503:G:H2'	7:A:504:G:C8	2.50	0.46
7:A:611:C:H2'	7:A:612:C:C6	2.51	0.46
7:A:713:A:H2'	7:A:714:A:C8	2.51	0.46
12:F:9:MET:SD	12:F:86:ARG:HB3	2.56	0.46
30:a:275:C:H2'	30:a:276:U:O4'	2.16	0.46
30:a:1011:C:H2'	30:a:1012:A:C8	2.49	0.46
30:a:1483:A:H2'	30:a:1484:U:H6	1.81	0.46
30:a:2178:U:H2'	30:a:2179:U:O4'	2.16	0.46
30:a:2392:C:H5"	40:k:63:LYS:HE2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:319:A:H2'	7:A:320:C:H6	1.81	0.45
7:A:1150:A:P	16:J:72:ARG:HH22	2.40	0.45
20:N:47:LYS:HA	20:N:50:THR:HG22	1.98	0.45
27:U:4:ILE:HG23	27:U:18:ARG:NH2	2.30	0.45
30:a:665:U:H2'	30:a:666:A:O4'	2.16	0.45
30:a:1944:U:H2'	30:a:1945:C:C6	2.51	0.45
30:a:2290:U:H2'	30:a:2291:A:C8	2.51	0.45
30:a:2407:G:H2'	30:a:2408:G:O4'	2.16	0.45
31:b:48:U:H2'	31:b:49:C:C6	2.51	0.45
7:A:356:U:H2'	7:A:357:G:H8	1.81	0.45
7:A:631:G:H2'	7:A:632:C:C6	2.52	0.45
7:A:703:G:C5	7:A:704:A:C8	3.05	0.45
7:A:761:G:H2'	7:A:762:C:C6	2.51	0.45
7:A:1090:A:H5"	13:G:4:ARG:NH1	2.30	0.45
30:a:1319:A:H5"	47:r:82:MET:HE1	1.97	0.45
30:a:1586:U:H2'	30:a:1587:A:C8	2.51	0.45
30:a:2441:C:H2'	30:a:2442:G:H8	1.81	0.45
30:a:2587:A:H2'	30:a:2588:A:H8	1.81	0.45
48:s:77:ARG:H	48:s:77:ARG:HG2	1.56	0.45
50:u:62:THR:HG22	50:u:71:LYS:HD3	1.97	0.45
7:A:543:C:H5'	10:D:69:GLU:HB2	1.98	0.45
7:A:734:C:H2'	7:A:735:C:C6	2.51	0.45
7:A:1313:U:H2'	7:A:1314:G:C8	2.51	0.45
12:F:68:GLN:H	12:F:68:GLN:CD	2.23	0.45
15:I:28:ILE:HG21	15:I:35:LEU:HB2	1.97	0.45
17:K:85:MET:HB3	17:K:113:VAL:HG21	1.98	0.45
20:N:64:CYS:HB2	20:N:80:SER:HB3	1.97	0.45
30:a:18:U:H2'	30:a:19:A:H8	1.82	0.45
30:a:826:U:H4'	30:a:829:G:N1	2.32	0.45
30:a:1043:C:H4'	30:a:1045:G:H1'	1.99	0.45
30:a:1067:A:H4'	30:a:1068:A:C8	2.50	0.45
30:a:1147:G:H2'	30:a:1148:C:C6	2.51	0.45
30:a:1547:C:H2'	30:a:1548:A:H8	1.81	0.45
30:a:2290:U:H2'	30:a:2291:A:H8	1.81	0.45
30:a:2489:U:H5'	30:a:2568:G:H5"	1.97	0.45
37:h:84:ALA:HB3	37:h:148:ALA:HB2	1.98	0.45
7:A:549:U:H2'	7:A:550:U:H6	1.81	0.45
7:A:1463:A:H2'	7:A:1464:C:C6	2.51	0.45
9:C:150:LYS:HD2	9:C:201:TRP:CZ3	2.51	0.45
12:F:56:LYS:HE2	12:F:56:LYS:HB3	1.82	0.45
13:G:86:GLN:HB2	13:G:148:ASN:ND2	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:K:45:ALA:HB3	17:K:70:CYS:HB2	1.98	0.45
30:a:2647:C:H2'	30:a:2648:U:H6	1.82	0.45
30:a:2802:U:H2'	30:a:2803:C:H6	1.80	0.45
30:a:2834:U:H2'	30:a:2835:A:C8	2.51	0.45
7:A:19:A:H2'	7:A:20:U:H6	1.81	0.45
7:A:1012:A:N3	7:A:1217:A:H1'	2.32	0.45
7:A:1174:A:H2'	7:A:1175:G:C8	2.52	0.45
30:a:1358:G:H2'	30:a:1359:C:C6	2.52	0.45
36:g:26:ILE:HD12	36:g:75:MET:HE2	1.99	0.45
17:K:63:ALA:HB1	17:K:96:THR:HG23	1.98	0.45
30:a:415:A:H2'	30:a:416:U:C6	2.52	0.45
30:a:1166:G:H2'	30:a:1167:A:H8	1.82	0.45
30:a:1944:U:H2'	30:a:1945:C:H6	1.80	0.45
30:a:2012:A:H2'	30:a:2013:A:C8	2.51	0.45
44:o:37:LYS:HE3	44:o:39:ARG:HB3	1.97	0.45
55:z:48:PHE:CE1	55:z:53:LYS:HD3	2.51	0.45
7:A:292:U:H2'	7:A:293:C:C6	2.52	0.45
10:D:11:LEU:O	10:D:15:GLU:HG2	2.16	0.45
30:a:1313:U:H2'	30:a:1314:G:C8	2.52	0.45
30:a:1730:G:H2'	30:a:1731:A:H8	1.81	0.45
30:a:2172:C:H2'	30:a:2173:C:H6	1.82	0.45
30:a:2582:U:H2'	30:a:2583:U:H2'	1.99	0.45
6:5:170:ILE:HD11	30:a:2176:C:O2'	2.17	0.45
7:A:1328:U:H4'	19:M:23:PHE:CE1	2.51	0.45
19:M:1:MET:HE3	19:M:2:ALA:N	2.32	0.45
28:V:24:C:H2'	28:V:25:U:H6	1.81	0.45
30:a:521:U:H2'	30:a:522:A:C8	2.51	0.45
33:d:105:LYS:HE3	33:d:105:LYS:HB3	1.70	0.45
35:f:122:PHE:HD2	35:f:163:ASP:HA	1.82	0.45
3:2:52:LYS:HA	3:2:52:LYS:HD3	1.70	0.45
7:A:1132:G:H2'	7:A:1133:U:O4'	2.17	0.45
30:a:154:U:H2'	30:a:155:A:C8	2.52	0.45
30:a:414:C:H2'	30:a:415:A:H8	1.81	0.45
30:a:637:U:H2'	30:a:638:C:H6	1.81	0.45
30:a:643:C:H2'	30:a:645:G:N7	2.32	0.45
30:a:2070:C:H2'	30:a:2071:C:H6	1.82	0.45
30:a:2500:G:H5"	30:a:2501:2MA:H5"	1.97	0.45
33:d:121:THR:HG21	33:d:143:PRO:HB3	1.98	0.45
55:z:12:LYS:HB3	55:z:12:LYS:HE3	1.73	0.45
5:4:2:LYS:HG3	31:b:40:U:C5	2.51	0.45
6:5:171:ILE:HD13	6:5:196:LEU:HD21	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:918:U:H2'	7:A:919:U:C6	2.52	0.45
17:K:64:GLN:HG2	17:K:99:ALA:HB2	1.99	0.45
25:S:14:HIS:O	25:S:18:LYS:HG3	2.17	0.45
30:a:1072:G:H2'	30:a:1073:C:H6	1.78	0.45
30:a:1403:U:H2'	30:a:1404:G:H8	1.82	0.45
30:a:2037:U:H2'	30:a:2038:G:H8	1.81	0.45
30:a:2213:G:H2'	30:a:2214:G:C8	2.52	0.45
7:A:7:A:H5'	7:A:296:A:O4'	2.17	0.44
7:A:251:A:H2'	7:A:252:G:C8	2.51	0.44
7:A:251:A:H2'	7:A:252:G:H8	1.82	0.44
7:A:1012:A:H4'	25:S:14:HIS:NE2	2.33	0.44
7:A:1340:C:H2'	7:A:1341:G:C8	2.52	0.44
8:B:70:VAL:HB	8:B:163:VAL:HG22	1.99	0.44
10:D:121:LYS:HG3	10:D:131:ASN:HB3	1.99	0.44
16:J:10:LEU:HD22	16:J:21:SER:HB3	1.99	0.44
18:L:86:ARG:HG3	18:L:93:VAL:O	2.17	0.44
30:a:548:G:H2'	30:a:549:G:H8	1.82	0.44
30:a:945:A:H2'	30:a:946:C:C6	2.53	0.44
30:a:1428:A:H2'	30:a:1429:G:C8	2.52	0.44
30:a:2068:A:H2'	30:a:2069:A:C8	2.52	0.44
1:0:25:LYS:HE2	1:0:51:GLU:OE2	2.18	0.44
7:A:217:U:H2'	7:A:218:G:H8	1.82	0.44
7:A:837:C:H2'	7:A:838:C:C6	2.52	0.44
7:A:906:A:H2'	7:A:907:A:H8	1.82	0.44
7:A:1407:C:H2'	7:A:1408:A:C8	2.52	0.44
7:A:1434:U:H2'	7:A:1435:A:C8	2.52	0.44
7:A:1510:U:H2'	7:A:1511:A:H8	1.81	0.44
15:I:7:TYR:HE2	15:I:18:ARG:HB3	1.82	0.44
26:T:36:TYR:CE2	26:T:79:LEU:HD21	2.52	0.44
30:a:1056:U:H3'	30:a:1057:G:C8	2.52	0.44
30:a:1589:C:H2'	30:a:1590:A:C8	2.52	0.44
30:a:2135:C:H2'	30:a:2136:G:H8	1.82	0.44
30:a:2818:A:H2'	30:a:2818:A:N3	2.32	0.44
32:c:76:ALA:HB3	32:c:116:ILE:HG13	1.98	0.44
33:d:56:LYS:HD2	33:d:59:ARG:HG3	1.99	0.44
7:A:34:C:H2'	7:A:35:G:C8	2.52	0.44
15:I:60:LYS:HE3	15:I:60:LYS:HB2	1.80	0.44
25:S:20:GLU:HG2	25:S:21:LYS:N	2.31	0.44
30:a:20:C:H2'	30:a:21:A:H8	1.80	0.44
30:a:29:U:H2'	30:a:30:G:C8	2.51	0.44
30:a:591:U:H2'	30:a:592:U:H6	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:1056:U:H3'	30:a:1057:G:H8	1.82	0.44
30:a:1406:U:H2'	30:a:1407:G:H8	1.83	0.44
30:a:1633:U:H2'	30:a:1634:A:C8	2.51	0.44
30:a:2133:A:N6	30:a:2154:G:H1'	2.33	0.44
30:a:2227:U:H2'	30:a:2228:G:H8	1.82	0.44
34:e:191:ASP:O	34:e:195:GLN:HG3	2.18	0.44
35:f:108:VAL:HA	35:f:111:ILE:HD13	2.00	0.44
37:h:29:PHE:O	37:h:33:GLN:HB2	2.17	0.44
37:h:75:LEU:HD22	37:h:107:GLY:HA3	1.99	0.44
43:n:20:GLU:HA	43:n:20:GLU:OE2	2.17	0.44
43:n:58:ILE:O	43:n:62:LEU:HD13	2.18	0.44
44:o:53:ARG:HD3	44:o:53:ARG:HA	1.74	0.44
54:y:7:ILE:HG12	54:y:48:VAL:HG11	1.98	0.44
7:A:442:G:H2'	7:A:443:G:H8	1.83	0.44
7:A:765:A:H2'	7:A:766:A:H8	1.82	0.44
7:A:964:2MG:C2	29:X:62:VAL:HG21	2.52	0.44
7:A:1400:4OC:O5'	7:A:1400:4OC:H6	2.18	0.44
9:C:86:LYS:NZ	9:C:90:VAL:HG21	2.32	0.44
15:I:10:GLY:HA3	15:I:78:ALA:O	2.17	0.44
28:V:4:G:H2'	28:V:5:G:C8	2.52	0.44
28:V:21:H2U:OP2	28:V:21:H2U:H62	2.18	0.44
30:a:1887:A:H2'	30:a:1888:A:H8	1.83	0.44
34:e:118:LEU:HD11	34:e:188:MET:SD	2.56	0.44
39:j:71:ARG:HA	39:j:71:ARG:HD3	1.84	0.44
43:n:18:LEU:HD13	43:n:25:ARG:HG3	1.99	0.44
7:A:128:A:C8	23:Q:65:ARG:HB2	2.53	0.44
7:A:379:C:H2'	7:A:380:A:O4'	2.18	0.44
7:A:881:C:O2'	7:A:882:U:H5'	2.18	0.44
7:A:1328:U:H2'	7:A:1329:G:O4'	2.18	0.44
7:A:1493:U:C2	7:A:1494:C:C5	3.05	0.44
8:B:81:LYS:HG3	8:B:91:PHE:CZ	2.52	0.44
10:D:98:LEU:HB2	10:D:135:TYR:HB3	1.99	0.44
24:R:32:TYR:O	24:R:40:VAL:HG22	2.18	0.44
30:a:672:G:O2'	34:e:69:ARG:HD2	2.17	0.44
30:a:719:A:H2'	30:a:720:A:H8	1.81	0.44
30:a:1078:A:H2'	30:a:1079:U:H6	1.83	0.44
30:a:2698:A:H2'	30:a:2699:U:C6	2.53	0.44
30:a:2772:C:H2'	30:a:2773:G:O4'	2.17	0.44
41:l:17:ASN:O	41:l:38:ARG:HD3	2.18	0.44
7:A:318:A:H2'	7:A:319:A:C8	2.52	0.44
7:A:374:G:H2'	7:A:375:G:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:964:2MG:C4	29:X:62:VAL:HG11	2.52	0.44
7:A:1353:A:H2'	7:A:1354:G:C8	2.53	0.44
8:B:58:ASN:HB2	8:B:220:THR:HG22	1.99	0.44
28:V:36:A:H2'	28:V:37:U:H6	1.82	0.44
30:a:154:U:H2'	30:a:155:A:H8	1.83	0.44
30:a:1561:C:H2'	30:a:1562:C:C6	2.52	0.44
31:b:70:C:H2'	31:b:71:C:H6	1.82	0.44
37:h:15:LEU:HD21	37:h:54:LEU:HD11	1.98	0.44
46:q:37:GLU:OE2	46:q:37:GLU:N	2.50	0.44
3:2:2:PRO:HD2	30:a:665:U:O2	2.18	0.44
7:A:468:C:H2'	7:A:469:C:C6	2.53	0.44
7:A:822:G:H2'	7:A:823:A:C8	2.51	0.44
7:A:1312:C:H2'	7:A:1313:U:H6	1.82	0.44
9:C:62:LYS:HD3	9:C:62:LYS:HA	1.73	0.44
12:F:45:ARG:HB2	12:F:59:TYR:HD2	1.82	0.44
20:N:27:LEU:HD23	20:N:27:LEU:HA	1.90	0.44
28:V:48:U:H4'	28:V:49:C:C5'	2.47	0.44
30:a:707:U:H2'	30:a:708:U:C6	2.53	0.44
30:a:2028:6MZ:C2	30:a:2497:C:H5"	2.47	0.44
30:a:2181:A:H2'	30:a:2182:A:C8	2.53	0.44
7:A:426:G:OP2	10:D:7:PRO:HG2	2.18	0.44
8:B:53:ALA:HB1	8:B:184:PHE:HD2	1.82	0.44
11:E:41:ASP:OD2	11:E:45:ARG:HB2	2.18	0.44
11:E:162:GLU:OE2	11:E:162:GLU:N	2.50	0.44
18:L:15:LYS:H	18:L:15:LYS:HG2	1.59	0.44
20:N:41:ARG:O	20:N:45:VAL:HG23	2.18	0.44
30:a:171:U:H2'	30:a:172:A:C8	2.53	0.44
30:a:661:G:H5"	40:k:17:LYS:HD2	1.98	0.44
30:a:1003:C:H1'	30:a:1010:U:N3	2.32	0.44
30:a:1633:U:H2'	30:a:1634:A:H8	1.82	0.44
50:u:71:LYS:HE3	50:u:71:LYS:HB2	1.82	0.44
7:A:755:U:H2'	7:A:756:C:O4'	2.17	0.44
11:E:15:LEU:HD11	11:E:18:VAL:HG23	2.00	0.44
20:N:47:LYS:HA	20:N:47:LYS:HD3	1.84	0.44
28:V:37:U:H2'	28:V:38:A:O4'	2.18	0.44
30:a:373:U:H2'	30:a:374:A:H8	1.82	0.44
30:a:655:U:H2'	30:a:656:U:C6	2.53	0.44
30:a:684:U:H6	30:a:786:A:N1	2.16	0.44
30:a:1060:G:N7	30:a:1086:A:H2'	2.33	0.44
30:a:2154:G:H2'	30:a:2155:G:C4	2.53	0.44
33:d:122:VAL:HG21	33:d:129:THR:HG22	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1217:A:H5”	20:N:53:ARG:NH1	2.33	0.43
10:D:87:GLY:HA3	10:D:197:GLU:HG3	2.00	0.43
28:V:4:G:H2’	28:V:5:G:H8	1.82	0.43
30:a:1541:A:H2’	30:a:1542:A:C8	2.53	0.43
30:a:1576:A:H2’	30:a:1577:A:H8	1.83	0.43
30:a:2151:C:H2’	30:a:2152:G:C8	2.50	0.43
7:A:348:G:H2’	7:A:349:G:C8	2.54	0.43
17:K:81:ASN:HB3	17:K:106:ARG:HG3	2.00	0.43
24:R:26:ILE:O	24:R:30:LYS:HG3	2.18	0.43
27:U:12:PHE:CZ	27:U:16:LEU:HD11	2.52	0.43
28:V:10:G:H2’	28:V:11:A:C8	2.53	0.43
30:a:6:A:H2’	30:a:7:G:H8	1.83	0.43
30:a:438:G:H2’	30:a:439:A:C8	2.53	0.43
30:a:2214:G:H2’	30:a:2215:G:C8	2.53	0.43
30:a:2797:A:O2’	30:a:2798:A:H5”	2.17	0.43
37:h:90:LEU:HD12	37:h:90:LEU:HA	1.81	0.43
40:k:55:MET:HE2	40:k:55:MET:HA	2.00	0.43
43:n:116:GLN:OE1	43:n:116:GLN:HA	2.17	0.43
7:A:473:U:H2’	7:A:474:C:C6	2.53	0.43
7:A:1032:G:H2’	7:A:1033:A:H8	1.84	0.43
7:A:1088:U:H2’	7:A:1089:U:C6	2.52	0.43
8:B:43:LEU:HA	8:B:46:THR:HB	2.00	0.43
15:I:88:MET:HE1	15:I:95:ARG:CA	2.48	0.43
29:X:52:ALA:HB3	29:X:77:LEU:HD11	2.00	0.43
30:a:727:G:O2’	30:a:761:G:H4’	2.18	0.43
30:a:889:G:C2	30:a:890:A:C5	3.06	0.43
30:a:965:U:H2’	30:a:966:C:C6	2.53	0.43
30:a:2114:G:H5”	30:a:2115:A:N7	2.33	0.43
30:a:2312:A:H2’	30:a:2313:G:H8	1.84	0.43
31:b:39:A:H2’	31:b:40:U:C6	2.54	0.43
34:e:146:VAL:HA	34:e:185:LYS:O	2.18	0.43
53:x:4:LYS:H	53:x:4:LYS:HG2	1.54	0.43
7:A:81:G:H2’	7:A:82:C:O4’	2.19	0.43
7:A:982:C:H2’	7:A:983:C:C6	2.53	0.43
13:G:30:LEU:HD22	13:G:43:VAL:HG23	2.00	0.43
30:a:1:G:H2’	30:a:2:G:C8	2.52	0.43
30:a:367:G:H3’	30:a:368:A:H8	1.83	0.43
30:a:1717:U:H2’	30:a:1718:G:O4’	2.18	0.43
30:a:1835:G:C2	30:a:1836:G:C8	3.06	0.43
30:a:1987:G:H2’	30:a:1988:C:O4’	2.18	0.43
30:a:2234:U:H2’	30:a:2235:G:O4’	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:2893:G:H2'	30:a:2894:C:C6	2.53	0.43
32:c:145:GLU:HG3	32:c:188:CYS:HB3	1.99	0.43
40:k:58:TYR:CE1	40:k:59:ARG:HG3	2.54	0.43
54:y:56:LYS:HD3	54:y:56:LYS:HA	1.71	0.43
6:5:8:MET:N	6:5:8:MET:SD	2.91	0.43
7:A:234:A:H2'	7:A:235:G:H8	1.83	0.43
7:A:640:A:H2'	7:A:641:C:H6	1.82	0.43
12:F:47:LEU:HD13	12:F:51:ILE:HD12	1.99	0.43
15:I:127:PHE:HZ	15:I:129:LYS:HZ2	1.66	0.43
19:M:1:MET:SD	19:M:11:ASP:HB3	2.58	0.43
30:a:2013:A:C6	55:z:3:VAL:HG23	2.54	0.43
30:a:2138:G:H1	30:a:2149:U:H3	1.66	0.43
30:a:2621:G:H4'	30:a:2823:G:H8	1.83	0.43
30:a:2726:U:O2'	30:a:2727:G:H8	2.00	0.43
34:e:48:THR:HG22	34:e:86:ALA:HB3	1.99	0.43
41:l:77:PRO:HG2	41:l:80:VAL:HG21	2.00	0.43
5:4:66:ILE:HD11	20:N:39:GLU:OE2	2.18	0.43
9:C:86:LYS:C	9:C:86:LYS:HD3	2.44	0.43
25:S:61:PHE:CD1	25:S:61:PHE:C	2.97	0.43
30:a:228:C:H4'	30:a:229:C:H5"	2.00	0.43
30:a:922:A:H2'	30:a:923:A:C8	2.53	0.43
30:a:1194:G:H2'	30:a:1195:U:H6	1.84	0.43
30:a:1501:A:H2'	30:a:1502:A:C8	2.54	0.43
30:a:1535:G:H2'	30:a:1536:U:C6	2.53	0.43
30:a:2125:G:N3	30:a:2126:G:C8	2.87	0.43
30:a:2621:G:H4'	30:a:2823:G:C8	2.54	0.43
30:a:2678:U:O2'	30:a:2679:C:H5'	2.19	0.43
30:a:2685:U:H2'	30:a:2686:G:O4'	2.19	0.43
30:a:2721:C:H2'	30:a:2722:U:O4'	2.19	0.43
37:h:104:THR:HA	37:h:109:LYS:HA	2.00	0.43
40:k:88:ASP:OD1	40:k:118:ARG:HD3	2.19	0.43
40:k:129:LYS:HB3	40:k:129:LYS:HE2	1.80	0.43
44:o:88:ARG:HH11	44:o:112:GLU:HG3	1.83	0.43
6:5:48:LEU:HB3	6:5:50:ILE:HG13	2.01	0.43
7:A:649:C:H2'	7:A:650:U:C6	2.53	0.43
30:a:703:A:C2	30:a:725:A:H1'	2.54	0.43
30:a:1611:A:C6	47:r:87:PRO:HB3	2.53	0.43
30:a:2119:G:H2'	30:a:2120:U:C6	2.54	0.43
30:a:2469:A:H2'	30:a:2470:G:O4'	2.19	0.43
30:a:2635:U:H2'	30:a:2636:G:O4'	2.19	0.43
38:i:16:TYR:CD2	38:i:140:LEU:HD13	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:r:46:LEU:O	47:r:50:VAL:HG23	2.18	0.43
7:A:268:A:H2'	7:A:269:C:H6	1.83	0.43
10:D:33:LYS:HB2	10:D:33:LYS:HE3	1.64	0.43
15:I:22:LYS:O	15:I:61:LEU:HD12	2.17	0.43
19:M:79:ARG:HH11	19:M:83:LEU:HD11	1.83	0.43
21:O:25:THR:HG21	21:O:70:LEU:HB2	2.01	0.43
23:Q:27:ARG:CZ	23:Q:27:ARG:HB2	2.49	0.43
23:Q:59:VAL:HG12	23:Q:78:VAL:HG22	2.01	0.43
26:T:2:ALA:HB3	26:T:8:LYS:HG2	2.00	0.43
30:a:1674:A:H2'	30:a:1675:A:C8	2.53	0.43
30:a:2092:A:OP1	37:h:22:LYS:HG3	2.19	0.43
33:d:157:LYS:HE2	33:d:157:LYS:HB2	1.59	0.43
36:g:24:ILE:HD11	36:g:43:VAL:HG11	2.01	0.43
54:y:44:VAL:O	54:y:48:VAL:HG22	2.18	0.43
3:2:26:HIS:HB3	3:2:44:LEU:HD22	2.00	0.43
6:5:200:LYS:HA	6:5:208:TYR:OH	2.19	0.43
12:F:17:GLN:HG2	37:h:87:GLU:OE2	2.19	0.43
13:G:16:PRO:HB3	15:I:46:MET:HB2	2.00	0.43
13:G:134:ALA:HA	13:G:137:LYS:HB3	1.99	0.43
20:N:48:LEU:HD12	20:N:48:LEU:HA	1.87	0.43
30:a:643:C:O2'	30:a:644:U:H5"	2.18	0.43
30:a:1292:C:C2	30:a:1293:G:C8	3.06	0.43
30:a:2738:A:H2'	30:a:2739:A:C8	2.53	0.43
36:g:27:LYS:HB3	36:g:27:LYS:HE3	1.54	0.43
4:3:32:LYS:HE2	30:a:2476:A:H5'	2.01	0.43
7:A:41:G:H2'	7:A:42:G:C8	2.54	0.43
7:A:405:U:H2'	7:A:406:A:H8	1.84	0.43
7:A:685:A:C2	7:A:702:A:C5	3.07	0.43
7:A:1008:G:H2'	7:A:1009:C:H6	1.84	0.43
7:A:1145:C:H2'	7:A:1146:U:H6	1.83	0.43
12:F:17:GLN:O	12:F:17:GLN:HG3	2.19	0.43
28:V:66:C:H2'	28:V:67:C:H6	1.83	0.43
30:a:128:C:H2'	30:a:129:C:C6	2.53	0.43
30:a:291:G:O6	30:a:349:U:C2	2.71	0.43
30:a:532:A:H4'	30:a:533:G:C8	2.54	0.43
30:a:2245:A:H2'	30:a:2246:C:H6	1.84	0.43
30:a:2280:G:H4'	30:a:2387:G:O2'	2.19	0.43
35:f:44:ILE:HD12	35:f:44:ILE:HA	1.86	0.43
44:o:40:LEU:HD21	44:o:82:ASP:HB2	2.00	0.43
6:5:60:ARG:HH12	6:5:164:ARG:HE	1.66	0.42
7:A:1244:A:H2'	7:A:1245:U:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:B:30:PHE:HE2	8:B:49:MET:HE1	1.84	0.42
11:E:38:VAL:HG11	11:E:114:VAL:HG22	2.01	0.42
12:F:45:ARG:NH1	12:F:102:MET:HE1	2.34	0.42
19:M:89:LEU:HD12	19:M:89:LEU:HA	1.87	0.42
24:R:17:GLY:H	24:R:19:GLN:HE22	1.66	0.42
30:a:547:G:H2'	30:a:548:G:O4'	2.19	0.42
30:a:587:U:H2'	30:a:588:A:C8	2.54	0.42
30:a:1092:U:H1'	30:a:1096:A:N6	2.34	0.42
30:a:2070:C:H2'	30:a:2071:C:C6	2.54	0.42
30:a:2213:G:H2'	30:a:2214:G:H8	1.84	0.42
36:g:12:PRO:HD2	36:g:15:VAL:HG21	2.01	0.42
38:i:8:PRO:HG3	38:i:48:VAL:HG23	2.01	0.42
42:m:21:PHE:CZ	42:m:43:GLU:HB3	2.53	0.42
7:A:371:A:C2	7:A:372:A:C8	3.07	0.42
30:a:1083:A:H4'	30:a:1103:U:H4'	2.01	0.42
30:a:1914:A:H2'	30:a:1915:PSU:O4'	2.19	0.42
30:a:2132:A:H2'	30:a:2133:A:O4'	2.19	0.42
30:a:2135:C:H2'	30:a:2136:G:C8	2.55	0.42
34:e:100:MET:HE3	34:e:100:MET:HB3	1.74	0.42
35:f:175:PHE:HB3	35:f:177:PHE:CE2	2.54	0.42
36:g:27:LYS:HD2	36:g:32:GLU:HB2	2.01	0.42
7:A:87:U:C2	7:A:88:C:H5	2.36	0.42
7:A:1320:C:H5"	19:M:99:GLY:HA3	2.02	0.42
7:A:1529:A:H2'	7:A:1530:U:C6	2.54	0.42
11:E:77:ASN:O	11:E:80:THR:HG22	2.19	0.42
12:F:45:ARG:HB2	12:F:59:TYR:CD2	2.55	0.42
14:H:114:ARG:O	14:H:118:GLN:HG2	2.19	0.42
30:a:553:G:O2'	30:a:554:A:H8	2.02	0.42
30:a:670:C:H2'	30:a:671:C:C6	2.55	0.42
30:a:1020:G:H1'	30:a:1022:G:O6	2.19	0.42
30:a:1179:G:H2'	30:a:1180:U:O4'	2.19	0.42
30:a:1487:A:N1	32:c:97:LYS:HE2	2.34	0.42
30:a:1653:C:H2'	30:a:1654:U:H6	1.83	0.42
30:a:2175:C:H2'	30:a:2176:C:O4'	2.19	0.42
30:a:2634:U:H2'	30:a:2635:U:C6	2.54	0.42
31:b:76:G:H5"	50:u:17:SER:OG	2.19	0.42
32:c:53:HIS:HA	32:c:217:ARG:HB2	2.01	0.42
35:f:74:VAL:H	35:f:79:ILE:HD12	1.82	0.42
36:g:103:VAL:HG11	36:g:148:LEU:HD21	2.00	0.42
4:3:14:CYS:C	4:3:15:LYS:HD3	2.44	0.42
5:4:41:HIS:CE1	5:4:43:PHE:H	2.37	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:8:MET:HE3	30:a:2127:C:OP1	2.19	0.42
7:A:835:U:H2'	7:A:836:G:H8	1.85	0.42
7:A:1354:G:H2'	7:A:1355:A:H8	1.81	0.42
12:F:79:ARG:HB2	12:F:79:ARG:CZ	2.50	0.42
13:G:49:THR:O	13:G:52:GLN:HG3	2.19	0.42
29:X:87:LYS:O	29:X:91:LYS:HB2	2.18	0.42
30:a:1357:G:C8	30:a:1358:G:C8	3.07	0.42
30:a:1357:G:N7	30:a:1358:G:C8	2.88	0.42
30:a:1747:U:H2'	30:a:1748:C:C6	2.54	0.42
30:a:2305:G:H4'	30:a:2306:G:O4'	2.19	0.42
30:a:2459:A:H2'	30:a:2460:C:C6	2.53	0.42
30:a:2844:G:H2'	30:a:2845:U:C6	2.54	0.42
35:f:38:MET:HE3	35:f:53:ALA:HB1	2.01	0.42
39:j:40:LYS:HE2	39:j:57:VAL:HG12	2.00	0.42
39:j:43:ILE:HD13	39:j:52:VAL:HB	2.01	0.42
44:o:9:GLU:O	44:o:13:MET:HG2	2.19	0.42
6:5:202:THR:HG23	6:5:203:GLN:HG2	2.01	0.42
7:A:292:U:H2'	7:A:293:C:H6	1.85	0.42
7:A:1068:U:H2'	7:A:1069:C:H6	1.85	0.42
7:A:1293:U:H2'	7:A:1294:C:C6	2.54	0.42
7:A:1385:G:H2'	7:A:1386:C:C6	2.55	0.42
9:C:77:ILE:HD13	9:C:84:VAL:HG21	2.00	0.42
12:F:39:LEU:HD13	12:F:62:MET:HG2	2.02	0.42
18:L:7:LEU:HD23	18:L:7:LEU:HA	1.84	0.42
30:a:319:G:H2'	30:a:320:G:O4'	2.20	0.42
30:a:492:A:H2'	30:a:493:G:O4'	2.19	0.42
30:a:780:A:C2	32:c:225:MET:HG2	2.55	0.42
30:a:802:A:H2'	30:a:804:C:C4	2.55	0.42
30:a:1222:G:H2'	30:a:1223:A:C8	2.55	0.42
30:a:2063:C:H2'	30:a:2064:C:C6	2.55	0.42
30:a:2110:G:C5	30:a:2111:U:C5	3.08	0.42
30:a:2568:G:H2'	30:a:2569:U:O4'	2.19	0.42
7:A:458:A:H2'	7:A:459:G:C8	2.54	0.42
7:A:735:C:H2'	7:A:736:C:H6	1.85	0.42
7:A:1331:A:H2'	7:A:1332:G:O4'	2.20	0.42
7:A:1461:U:H2'	7:A:1462:U:C6	2.55	0.42
8:B:123:ASP:CG	8:B:124:GLY:H	2.27	0.42
8:B:142:ASP:C	8:B:144:LEU:H	2.26	0.42
17:K:37:ARG:HG3	17:K:37:ARG:NH1	2.34	0.42
21:O:9:ALA:HA	21:O:12:VAL:HG12	2.01	0.42
23:Q:17:MET:HB2	23:Q:20:SER:OG	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:20:C:H2'	30:a:21:A:C8	2.55	0.42
30:a:337:C:H2'	30:a:338:G:O4'	2.19	0.42
30:a:443:A:N7	34:e:40:ARG:HG2	2.35	0.42
30:a:445:C:H2'	30:a:446:G:O4'	2.20	0.42
30:a:861:A:H2'	30:a:862:G:C8	2.55	0.42
30:a:1675:A:H2'	30:a:1676:A:O4'	2.20	0.42
34:e:106:LYS:HG2	34:e:200:LEU:HD13	2.02	0.42
7:A:60:A:H62	7:A:106:G:H4'	1.85	0.42
7:A:430:A:H2'	7:A:431:G:O4'	2.19	0.42
7:A:906:A:H2'	7:A:907:A:C8	2.55	0.42
10:D:177:LYS:O	10:D:179:GLU:HG3	2.20	0.42
19:M:71:ARG:NH2	35:f:115:ARG:HD3	2.35	0.42
30:a:84:A:H4'	30:a:85:G:O5'	2.18	0.42
30:a:363:A:H2'	30:a:364:C:C6	2.54	0.42
30:a:541:A:H2'	30:a:542:C:C6	2.54	0.42
30:a:638:C:H2'	30:a:639:U:C6	2.55	0.42
30:a:1523:C:H2'	30:a:1524:G:O4'	2.19	0.42
36:g:37:LEU:HD11	36:g:72:LEU:HD11	2.00	0.42
39:j:43:ILE:HD12	39:j:56:ASP:HB2	2.02	0.42
48:s:30:ILE:HD13	48:s:93:LEU:HD22	2.02	0.42
48:s:93:LEU:HD12	48:s:93:LEU:HA	1.81	0.42
5:4:14:ALA:HB3	5:4:22:MET:HG2	2.02	0.42
5:4:28:VAL:HG13	35:f:140:GLU:HA	2.01	0.42
7:A:12:U:H4'	7:A:524:C:H4'	2.02	0.42
7:A:536:G:H5"	18:L:111:LYS:HB2	2.01	0.42
7:A:734:C:H2'	7:A:735:C:H6	1.84	0.42
7:A:832:U:H2'	7:A:833:U:C6	2.53	0.42
7:A:834:G:C6	7:A:849:G:C5	3.08	0.42
8:B:20:THR:HG22	8:B:39:HIS:CE1	2.55	0.42
8:B:36:ASN:O	8:B:38:VAL:HG23	2.19	0.42
12:F:38:ARG:HD2	12:F:40:GLU:OE2	2.19	0.42
14:H:29:SER:OG	14:H:57:PRO:HB2	2.20	0.42
28:V:1:C:H42	28:V:73:A:H61	1.67	0.42
30:a:404:A:H1'	30:a:405:U:OP2	2.19	0.42
30:a:1140:A:C4	30:a:1142:A:N7	2.88	0.42
30:a:2132:A:H2'	30:a:2133:A:C8	2.54	0.42
30:a:2628:G:H2'	30:a:2629:G:H8	1.84	0.42
36:g:95:ARG:HH12	36:g:97:ALA:HB2	1.84	0.42
1:0:33:LYS:HA	1:0:51:GLU:OE2	2.20	0.42
7:A:761:G:H2'	7:A:762:C:H6	1.84	0.42
7:A:981:A:H5'	7:A:982:C:OP2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1119:U:H2'	7:A:1120:U:C6	2.55	0.42
7:A:1386:C:H2'	7:A:1387:C:C6	2.55	0.42
13:G:65:ALA:O	13:G:69:VAL:HG23	2.19	0.42
17:K:68:GLU:O	17:K:72:GLU:HG2	2.19	0.42
25:S:50:ALA:HA	25:S:58:VAL:O	2.20	0.42
27:U:67:ARG:HA	27:U:67:ARG:HD3	1.78	0.42
30:a:1236:G:H2'	30:a:1237:U:O4'	2.20	0.42
30:a:1439:U:H2'	30:a:1440:U:H6	1.85	0.42
30:a:1686:A:H2'	30:a:1687:A:H8	1.85	0.42
30:a:1852:U:H2'	30:a:1853:G:O4'	2.20	0.42
30:a:2045:C:H2'	30:a:2046:G:C8	2.51	0.42
30:a:2749:G:C4	36:g:3:ARG:HD2	2.55	0.42
43:n:12:THR:O	43:n:16:ARG:HG2	2.20	0.42
2:1:7:PRO:HB2	30:a:1306:G:H4'	2.02	0.42
7:A:261:A:H2'	7:A:262:C:C6	2.55	0.42
7:A:561:A:H2'	7:A:565:G:C8	2.54	0.42
7:A:633:A:H2'	7:A:634:U:C6	2.55	0.42
7:A:1174:A:H2'	7:A:1175:G:H8	1.85	0.42
7:A:1289:U:H2'	7:A:1290:A:C8	2.54	0.42
9:C:66:VAL:HG21	9:C:91:VAL:HG21	2.01	0.42
11:E:165:LEU:HD23	11:E:165:LEU:HA	1.88	0.42
13:G:95:ARG:HG2	13:G:95:ARG:HH11	1.85	0.42
30:a:6:A:H2'	30:a:7:G:C8	2.55	0.42
30:a:570:A:H5'	46:q:79:ARG:NH1	2.34	0.42
30:a:817:A:H5"	30:a:971:A:N1	2.35	0.42
30:a:1195:U:H2'	30:a:1196:U:H6	1.85	0.42
30:a:1531:U:O3'	30:a:1532:A:H2'	2.20	0.42
30:a:1547:C:H2'	30:a:1548:A:C8	2.55	0.42
30:a:1558:C:H2'	30:a:1559:U:C6	2.55	0.42
30:a:1706:U:H2'	30:a:1707:G:H8	1.84	0.42
30:a:2268:C:H2'	30:a:2269:G:O4'	2.20	0.42
30:a:2269:G:OP1	51:v:18:ALA:HB1	2.19	0.42
30:a:2637:A:H2'	30:a:2638:G:O4'	2.20	0.42
34:e:181:ILE:HG23	40:k:1:MET:HG2	2.02	0.42
35:f:10:ASP:OD2	35:f:10:ASP:C	2.62	0.42
39:j:20:MET:HE3	39:j:44:LYS:HE2	2.00	0.42
46:q:48:LYS:HD2	46:q:54:VAL:HG13	2.02	0.42
51:v:72:LYS:NZ	51:v:72:LYS:HB3	2.35	0.42
53:x:19:LEU:HD23	53:x:19:LEU:HA	1.88	0.42
7:A:1062:G:H1'	7:A:1188:G:H21	1.83	0.41
8:B:6:MET:HE1	8:B:44:GLU:OE1	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:L:44:LYS:HG3	18:L:45:PRO:HA	2.01	0.41
19:M:4:ILE:H	19:M:4:ILE:HG12	1.57	0.41
25:S:45:ILE:HA	25:S:62:VAL:HG12	2.02	0.41
28:V:10:G:H2'	28:V:11:A:H8	1.84	0.41
30:a:144:A:H4'	48:s:3:ARG:NH1	2.35	0.41
30:a:315:C:H2'	30:a:316:G:O4'	2.20	0.41
30:a:702:G:H1'	30:a:725:A:N6	2.35	0.41
30:a:1053:G:H3'	30:a:1054:G:H8	1.85	0.41
30:a:2035:A:H2'	30:a:2036:G:C8	2.56	0.41
30:a:2128:U:H1'	30:a:2156:A:N1	2.35	0.41
30:a:2510:C:H2'	30:a:2511:A:O4'	2.20	0.41
31:b:18:G:H2'	31:b:19:C:C6	2.55	0.41
35:f:92:ARG:HA	35:f:96:MET:CE	2.47	0.41
44:o:9:GLU:HB3	44:o:55:LEU:HB2	2.01	0.41
54:y:3:LYS:HA	54:y:3:LYS:HD2	1.72	0.41
7:A:748:C:O2	21:O:23:GLY:HA3	2.20	0.41
7:A:1058:U:H2'	7:A:1059:G:H8	1.85	0.41
11:E:150:PRO:HG3	14:H:99:LEU:HD21	2.03	0.41
26:T:42:GLY:HA2	26:T:86:LEU:HD21	2.01	0.41
30:a:150:U:H2'	30:a:151:C:H6	1.82	0.41
30:a:417:C:H2'	30:a:418:C:C6	2.56	0.41
30:a:971:A:H5"	46:q:81:LYS:HD2	2.01	0.41
30:a:1062:C:H2'	30:a:1064:U:C2	2.55	0.41
30:a:1799:A:H2	30:a:1819:G:H1'	1.85	0.41
30:a:2226:G:H2'	30:a:2227:U:H6	1.85	0.41
50:u:77:VAL:HG22	50:u:89:ILE:HG12	2.01	0.41
52:w:3:ARG:O	52:w:12:PRO:HD3	2.19	0.41
7:A:435:U:H5"	10:D:152:GLN:NE2	2.33	0.41
7:A:543:C:H5'	10:D:69:GLU:CB	2.50	0.41
7:A:676:U:H2'	7:A:677:C:H6	1.84	0.41
8:B:30:PHE:CE2	8:B:49:MET:HE1	2.55	0.41
11:E:149:SER:OG	11:E:152:MET:HG2	2.19	0.41
19:M:1:MET:HB3	19:M:2:ALA:H	1.51	0.41
20:N:45:VAL:O	20:N:49:GLN:HG3	2.20	0.41
27:U:40:LYS:HG3	27:U:43:THR:H	1.85	0.41
27:U:46:LYS:HE3	27:U:46:LYS:HB3	1.81	0.41
30:a:279:A:N1	30:a:362:A:H5'	2.34	0.41
30:a:533:G:H5'	45:p:24:TYR:CE1	2.56	0.41
30:a:762:A:H5'	32:c:209:GLY:HA2	2.01	0.41
30:a:794:C:H2'	30:a:795:G:C8	2.56	0.41
30:a:1063:U:H3'	30:a:1064:U:C5'	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:2391:U:H2'	30:a:2392:C:C6	2.55	0.41
7:A:1008:G:H2'	7:A:1009:C:C6	2.55	0.41
7:A:1182:G:C2	7:A:1183:G:C8	3.08	0.41
7:A:1384:G:H2'	7:A:1385:G:H8	1.83	0.41
9:C:70:THR:HG21	9:C:76:VAL:HG21	2.01	0.41
12:F:72:ASP:O	12:F:76:THR:HG23	2.21	0.41
16:J:17:LEU:HD23	16:J:17:LEU:HA	1.82	0.41
16:J:66:GLU:HG2	20:N:99:ALA:CB	2.49	0.41
17:K:86:VAL:HG11	17:K:93:ARG:HB3	2.01	0.41
20:N:36:ALA:HB3	20:N:41:ARG:HD3	2.02	0.41
22:P:8:ARG:CZ	22:P:15:PRO:HB3	2.50	0.41
30:a:847:A:H2'	30:a:848:U:C6	2.55	0.41
30:a:976:G:O4'	30:a:999:A:H2	2.04	0.41
30:a:1193:C:H2'	30:a:1194:G:C8	2.55	0.41
30:a:1529:A:H2'	30:a:1530:C:H6	1.85	0.41
30:a:2122:G:H3'	30:a:2123:G:H8	1.85	0.41
30:a:2132:A:H4'	30:a:2157:G:H21	1.84	0.41
30:a:2630:A:H2'	30:a:2631:G:C8	2.56	0.41
39:j:8:LEU:HD23	39:j:82:ASN:HB2	2.02	0.41
39:j:109:THR:O	39:j:110:GLU:HB3	2.20	0.41
50:u:3:THR:HG23	50:u:62:THR:OG1	2.21	0.41
51:v:44:LYS:HB2	51:v:44:LYS:HE2	1.80	0.41
7:A:333:C:H2'	7:A:334:A:H8	1.84	0.41
7:A:550:U:H2'	7:A:551:A:H8	1.85	0.41
7:A:1070:G:H2'	7:A:1071:U:C6	2.55	0.41
7:A:1118:C:H2'	7:A:1119:U:C6	2.55	0.41
7:A:1153:A:H2'	7:A:1154:G:O4'	2.21	0.41
7:A:1317:A:C8	7:A:1321:G:C6	3.08	0.41
7:A:1409:C:H2'	7:A:1410:C:H6	1.84	0.41
10:D:4:TYR:CD2	10:D:11:LEU:HD11	2.55	0.41
13:G:75:VAL:HG21	13:G:144:MET:HE2	2.02	0.41
17:K:42:LEU:HD22	17:K:77:TYR:CE1	2.55	0.41
28:V:11:A:H2'	28:V:12:G:C8	2.56	0.41
30:a:208:C:H2'	30:a:209:C:H6	1.84	0.41
30:a:360:U:C4	30:a:361:G:C6	3.09	0.41
30:a:727:G:H5"	30:a:728:A:C5'	2.49	0.41
30:a:1318:A:C4	30:a:1319:A:C8	3.08	0.41
30:a:1358:G:H2'	30:a:1359:C:H6	1.86	0.41
30:a:2441:C:H2'	30:a:2442:G:C8	2.55	0.41
31:b:28:C:H2'	31:b:29:A:H8	1.85	0.41
33:d:30:GLU:H	33:d:30:GLU:HG3	1.68	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:g:52:PHE:HE1	36:g:72:LEU:HD13	1.85	0.41
47:r:88:ARG:HG2	47:r:94:ASP:HB2	2.03	0.41
6:5:70:GLY:C	6:5:177:LYS:HD3	2.46	0.41
7:A:234:A:H2'	7:A:235:G:C8	2.56	0.41
7:A:469:C:H2'	7:A:470:U:C6	2.56	0.41
10:D:107:PHE:CD2	10:D:145:ILE:HD11	2.55	0.41
19:M:34:CYS:SG	19:M:41:GLU:HA	2.61	0.41
19:M:90:ARG:CB	19:M:97:VAL:HG12	2.51	0.41
23:Q:25:ILE:HG13	23:Q:44:LEU:HD12	2.02	0.41
30:a:283:G:H2'	30:a:284:C:C6	2.56	0.41
30:a:1473:U:H2'	30:a:1474:A:C8	2.55	0.41
30:a:2326:A:H2'	30:a:2327:U:H6	1.83	0.41
30:a:2478:C:H2'	30:a:2479:G:O4'	2.20	0.41
32:c:145:GLU:CG	32:c:189:ARG:H	2.33	0.41
38:i:110:PRO:O	38:i:115:GLY:HA3	2.21	0.41
41:l:1:MET:HB3	41:l:1:MET:HE2	1.71	0.41
7:A:1117:C:H2'	7:A:1118:C:H6	1.85	0.41
19:M:113:ARG:H	19:M:113:ARG:HG2	1.67	0.41
28:V:31:G:H2'	28:V:32:G:O4'	2.21	0.41
30:a:156:A:H2'	30:a:157:C:C6	2.56	0.41
30:a:594:U:H2'	30:a:595:G:C8	2.54	0.41
30:a:1003:C:H1'	30:a:1010:U:H3	1.86	0.41
30:a:1748:C:H2'	30:a:1749:G:C8	2.55	0.41
30:a:2487:U:H2'	30:a:2488:G:O4'	2.21	0.41
37:h:122:LEU:HD13	37:h:128:HIS:ND1	2.36	0.41
43:n:64:TYR:HB3	43:n:67:ASN:ND2	2.35	0.41
44:o:25:THR:HB	44:o:88:ARG:HB3	2.03	0.41
53:x:39:GLN:HB3	53:x:41:HIS:CE1	2.56	0.41
7:A:209:G:H2'	7:A:210:G:O4'	2.21	0.41
7:A:1023:U:O3'	7:A:1024:G:H8	2.04	0.41
7:A:1385:G:H2'	7:A:1386:C:H6	1.86	0.41
11:E:156:LYS:HA	14:H:66:PHE:CD1	2.56	0.41
14:H:108:LYS:HA	14:H:108:LYS:HD2	1.76	0.41
17:K:98:ARG:HA	27:U:12:PHE:CZ	2.56	0.41
22:P:57:ILE:HD13	22:P:75:ILE:HD11	2.01	0.41
23:Q:11:ARG:CZ	23:Q:58:LYS:HB2	2.50	0.41
30:a:184:C:H2'	30:a:185:G:H8	1.86	0.41
30:a:353:C:H2'	30:a:354:A:H8	1.85	0.41
30:a:521:U:H2'	30:a:522:A:H8	1.86	0.41
30:a:907:A:H2'	30:a:910:C:C5	2.55	0.41
30:a:1144:C:C2	30:a:1145:A:C8	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:1260:U:O2'	55:z:8:PRO:HD2	2.21	0.41
30:a:1731:A:H2'	30:a:1732:U:C6	2.54	0.41
30:a:2101:C:H2'	30:a:2102:C:H6	1.85	0.41
30:a:2226:G:H2'	30:a:2227:U:C6	2.55	0.41
34:e:168:ASP:HB2	34:e:183:PHE:CZ	2.56	0.41
44:o:27:GLU:HB3	44:o:87:LYS:HE2	2.02	0.41
53:x:18:LEU:HB2	53:x:53:VAL:HG11	2.02	0.41
7:A:45:G:H2'	7:A:46:G:C8	2.55	0.41
7:A:155:U:H1'	7:A:163:G:N2	2.36	0.41
7:A:273:G:H5'	23:Q:16:LYS:HD3	2.03	0.41
7:A:371:A:C2	7:A:480:A:C6	3.09	0.41
7:A:1149:A:O2'	7:A:1150:A:H5"	2.21	0.41
10:D:18:ASP:C	10:D:18:ASP:OD2	2.63	0.41
21:O:26:GLU:HG3	21:O:81:LEU:HD13	2.03	0.41
30:a:279:A:H61	30:a:361:G:H1'	1.86	0.41
30:a:365:U:H2'	30:a:366:C:C6	2.56	0.41
30:a:811:U:H2'	30:a:812:C:H6	1.84	0.41
30:a:860:G:H2'	30:a:861:A:O4'	2.20	0.41
30:a:1508:G:H2'	30:a:1509:C:C6	2.56	0.41
30:a:1687:A:H2'	30:a:1688:C:O4'	2.21	0.41
30:a:1700:G:H2'	30:a:1701:C:C6	2.56	0.41
36:g:85:LYS:HE3	36:g:85:LYS:HB3	1.97	0.41
37:h:114:GLU:O	37:h:115:VAL:C	2.64	0.41
38:i:92:MET:HE3	38:i:96:ARG:HH11	1.86	0.41
41:l:24:THR:HG22	41:l:99:GLY:O	2.21	0.41
42:m:72:ASP:HB3	42:m:75:ILE:HG12	2.03	0.41
45:p:91:ASP:OD2	45:p:91:ASP:C	2.64	0.41
46:q:3:ALA:HB3	46:q:59:ILE:HD11	2.02	0.41
47:r:27:LYS:HZ2	47:r:27:LYS:HG2	1.77	0.41
48:s:71:GLY:O	48:s:72:GLN:HB3	2.20	0.41
50:u:7:GLU:O	50:u:40:ILE:HA	2.21	0.41
53:x:5:GLU:O	53:x:9:LYS:HG3	2.21	0.41
7:A:79:G:N2	7:A:88:C:H42	2.10	0.41
7:A:623:U:H2'	7:A:624:G:C8	2.54	0.41
7:A:749:U:H2'	7:A:750:G:O4'	2.21	0.41
7:A:819:G:H2'	7:A:820:U:H6	1.86	0.41
7:A:977:C:H41	7:A:1358:A:H62	1.69	0.41
7:A:1062:G:H1'	7:A:1188:G:N2	2.36	0.41
9:C:19:ASN:O	9:C:56:VAL:HA	2.21	0.41
30:a:494:G:H4'	47:r:6:GLN:HB2	2.02	0.41
30:a:758:G:H2'	30:a:759:A:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:1187:G:H5”	40:k:32:GLY:HA2	2.01	0.41
30:a:2289:U:H2’	30:a:2290:U:H6	1.83	0.41
30:a:2312:A:H2’	30:a:2313:G:C8	2.56	0.41
31:b:66:A:N6	31:b:107:G:H2’	2.35	0.41
42:m:96:ARG:HD3	42:m:98:LEU:HD21	2.03	0.41
45:p:31:VAL:HG12	45:p:34:VAL:H	1.86	0.41
49:t:33:LYS:HB3	49:t:64:ALA:HB1	2.03	0.41
50:u:30:ILE:O	50:u:37:PRO:HA	2.21	0.41
5:4:59:ARG:NH1	5:4:63:ARG:HH12	2.18	0.40
7:A:503:G:H5’	7:A:532:U:H2’	2.03	0.40
7:A:606:A:H2’	7:A:607:A:O4’	2.21	0.40
7:A:1158:G:C2	7:A:1159:C:C6	3.09	0.40
7:A:1454:A:H2’	7:A:1455:G:O4’	2.21	0.40
9:C:34:ASP:OD2	9:C:38:LYS:HE2	2.22	0.40
11:E:85:VAL:HG23	11:E:96:MET:HE3	2.03	0.40
13:G:62:PHE:CZ	13:G:66:LEU:HD11	2.56	0.40
19:M:44:LYS:HB2	19:M:47:GLU:HG2	2.02	0.40
29:X:29:LYS:HB3	29:X:29:LYS:HE2	1.65	0.40
30:a:977:A:H2’	30:a:980:C:H42	1.86	0.40
30:a:1078:A:H2’	30:a:1079:U:C6	2.57	0.40
30:a:1771:U:O4	30:a:1785:A:H2	2.04	0.40
30:a:2832:G:H2’	30:a:2877:A:H61	1.86	0.40
34:e:27:LEU:HD11	34:e:100:MET:HB3	2.03	0.40
34:e:180:LEU:HD23	34:e:180:LEU:HA	1.93	0.40
39:j:116:ILE:HD13	39:j:116:ILE:HA	1.89	0.40
44:o:34:GLU:OE2	44:o:39:ARG:HD3	2.22	0.40
48:s:76:ARG:HH11	48:s:76:ARG:HB2	1.86	0.40
54:y:58:GLU:HA	54:y:58:GLU:OE2	2.22	0.40
7:A:588:C:H2’	7:A:589:U:C6	2.56	0.40
7:A:646:A:H2’	7:A:647:G:O4’	2.21	0.40
7:A:836:G:C6	7:A:847:G:C6	3.09	0.40
7:A:1425:C:H2’	7:A:1426:A:C8	2.56	0.40
8:B:121:SER:O	8:B:126:PHE:HB2	2.20	0.40
20:N:88:ALA:HB1	20:N:96:LEU:HD22	2.02	0.40
28:V:54:G:H3’	28:V:55:5MU:H73	2.03	0.40
30:a:182:A:H2’	30:a:183:C:H6	1.87	0.40
30:a:544:U:H2’	30:a:545:U:O4’	2.22	0.40
30:a:575:G:H2’	30:a:576:G:C8	2.55	0.40
30:a:670:C:H2’	30:a:671:C:H6	1.86	0.40
30:a:861:A:H2’	30:a:862:G:H8	1.86	0.40
30:a:1279:U:H2’	30:a:1280:G:O4’	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:a:1508:G:H2'	30:a:1509:C:H6	1.85	0.40
30:a:2148:C:H2'	30:a:2149:U:C6	2.56	0.40
30:a:2543:G:H2'	30:a:2544:U:O4'	2.21	0.40
3:2:19:LYS:HB2	30:a:649:G:OP1	2.22	0.40
3:2:49:MET:HE3	3:2:49:MET:HB3	1.83	0.40
7:A:199:G:H21	7:A:467:A:H1'	1.85	0.40
7:A:1327:A:P	19:M:28:THR:HG22	2.61	0.40
9:C:150:LYS:HG3	9:C:169:ARG:HB2	2.03	0.40
13:G:107:ALA:HB1	13:G:133:THR:HB	2.02	0.40
19:M:13:LYS:HD3	19:M:17:ILE:HG22	2.02	0.40
27:U:21:ARG:HA	27:U:24:GLU:OE1	2.22	0.40
30:a:567:U:H5"	30:a:819:A:N1	2.37	0.40
30:a:874:C:H2'	30:a:875:U:O4'	2.21	0.40
30:a:1220:G:C6	30:a:1224:G:C6	3.09	0.40
30:a:1407:G:H2'	30:a:1408:U:C6	2.56	0.40
30:a:1537:A:H2'	30:a:1538:C:C6	2.57	0.40
33:d:146:ILE:HG22	33:d:159:LYS:HE3	2.03	0.40
37:h:127:GLU:CD	37:h:145:ASN:HB3	2.46	0.40
38:i:98:GLU:O	38:i:102:GLU:HG3	2.21	0.40
45:p:90:ILE:HG22	45:p:95:LEU:HG	2.03	0.40
49:t:26:LYS:HD2	49:t:37:GLU:HG2	2.02	0.40
3:2:64:TYR:CE2	30:a:242:G:H5"	2.56	0.40
6:5:168:ASN:HB3	6:5:170:ILE:HD12	2.03	0.40
7:A:193:A:H1'	7:A:220:C:O2'	2.20	0.40
7:A:488:C:H2'	7:A:489:G:C8	2.56	0.40
7:A:550:U:N3	7:A:551:A:N7	2.69	0.40
7:A:1455:G:H5"	26:T:30:THR:HG21	2.03	0.40
7:A:1484:G:H2'	7:A:1485:G:O4'	2.21	0.40
30:a:39:G:H2'	30:a:40:U:C6	2.57	0.40
30:a:272:A:H2'	30:a:273:G:C8	2.55	0.40
30:a:493:G:H2'	30:a:494:G:O4'	2.22	0.40
30:a:666:A:H2'	30:a:668:A:H62	1.86	0.40
30:a:871:C:H2'	30:a:872:G:C8	2.56	0.40
30:a:946:C:H2'	30:a:947:G:H8	1.87	0.40
30:a:1325:A:H2'	30:a:1327:C:C4	2.56	0.40
30:a:1650:G:H3'	42:m:2:ARG:HG2	2.03	0.40
30:a:2591:U:H2'	30:a:2592:C:C6	2.57	0.40
35:f:63:GLN:NE2	35:f:91:LEU:HD23	2.35	0.40
37:h:135:HIS:CG	37:h:136:SER:N	2.90	0.40
54:y:5:ILE:HG21	54:y:45:ARG:HH21	1.86	0.40
6:5:41:SER:HA	6:5:177:LYS:HE3	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:920:G:H1'	11:E:24:THR:OG1	2.21	0.40
7:A:1340:C:H4'	15:I:127:PHE:O	2.21	0.40
11:E:70:ASN:ND2	11:E:70:ASN:C	2.77	0.40
11:E:147:MET:HE3	11:E:147:MET:HB3	1.88	0.40
25:S:70:LYS:HB2	25:S:73:GLU:HG3	2.03	0.40
30:a:208:C:H2'	30:a:209:C:C6	2.57	0.40
30:a:586:U:H2'	30:a:587:U:C6	2.57	0.40
30:a:642:A:C2	30:a:2367:A:H1'	2.57	0.40
30:a:1437:U:H2'	30:a:1438:G:C8	2.57	0.40
30:a:1586:U:H2'	30:a:1587:A:H8	1.85	0.40
30:a:1805:A:H2'	30:a:1806:A:C8	2.57	0.40
30:a:1991:U:H4'	33:d:133:THR:OG1	2.21	0.40
30:a:2311:C:H2'	30:a:2312:A:H8	1.87	0.40
30:a:2362:C:H2'	30:a:2363:G:O4'	2.21	0.40
30:a:2747:A:H5"	36:g:2:SER:N	2.37	0.40
30:a:2754:U:H1'	30:a:2755:A:H5"	2.02	0.40
38:i:37:ARG:HA	38:i:118:MET:SD	2.61	0.40
38:i:141:ASP:O	38:i:142:ILE:HD13	2.22	0.40
39:j:104:THR:OG1	39:j:106:GLU:HG2	2.22	0.40
39:j:110:GLU:O	39:j:110:GLU:HG2	2.22	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	
1	0	49/55 (89%)	49 (100%)	0	0	100	100
2	1	44/46 (96%)	43 (98%)	1 (2%)	0	100	100
3	2	62/65 (95%)	60 (97%)	2 (3%)	0	100	100
4	3	36/38 (95%)	33 (92%)	3 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	4	68/70 (97%)	58 (85%)	10 (15%)	0	100	100
6	5	142/234 (61%)	127 (89%)	15 (11%)	0	100	100
8	B	222/241 (92%)	205 (92%)	17 (8%)	0	100	100
9	C	204/232 (88%)	197 (97%)	7 (3%)	0	100	100
10	D	203/206 (98%)	201 (99%)	2 (1%)	0	100	100
11	E	154/167 (92%)	149 (97%)	5 (3%)	0	100	100
12	F	101/131 (77%)	100 (99%)	1 (1%)	0	100	100
13	G	151/156 (97%)	145 (96%)	6 (4%)	0	100	100
14	H	127/130 (98%)	122 (96%)	5 (4%)	0	100	100
15	I	124/130 (95%)	119 (96%)	5 (4%)	0	100	100
16	J	96/103 (93%)	88 (92%)	7 (7%)	1 (1%)	12	39
17	K	113/129 (88%)	108 (96%)	5 (4%)	0	100	100
18	L	120/124 (97%)	112 (93%)	8 (7%)	0	100	100
19	M	114/118 (97%)	109 (96%)	5 (4%)	0	100	100
20	N	98/101 (97%)	96 (98%)	2 (2%)	0	100	100
21	O	86/89 (97%)	85 (99%)	1 (1%)	0	100	100
22	P	79/82 (96%)	77 (98%)	2 (2%)	0	100	100
23	Q	77/84 (92%)	74 (96%)	3 (4%)	0	100	100
24	R	60/75 (80%)	58 (97%)	2 (3%)	0	100	100
25	S	82/92 (89%)	81 (99%)	1 (1%)	0	100	100
26	T	84/87 (97%)	83 (99%)	1 (1%)	0	100	100
27	U	68/71 (96%)	66 (97%)	1 (2%)	1 (2%)	8	28
29	X	96/111 (86%)	92 (96%)	4 (4%)	0	100	100
32	c	269/273 (98%)	263 (98%)	6 (2%)	0	100	100
33	d	206/209 (99%)	202 (98%)	3 (2%)	1 (0%)	24	54
34	e	199/201 (99%)	196 (98%)	3 (2%)	0	100	100
35	f	175/179 (98%)	164 (94%)	11 (6%)	0	100	100
36	g	174/177 (98%)	167 (96%)	7 (4%)	0	100	100
37	h	146/149 (98%)	139 (95%)	6 (4%)	1 (1%)	18	48
38	i	140/142 (99%)	140 (100%)	0	0	100	100
39	j	121/123 (98%)	119 (98%)	2 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
40	k	142/144 (99%)	139 (98%)	3 (2%)	0	100	100
41	l	132/136 (97%)	130 (98%)	2 (2%)	0	100	100
42	m	117/128 (91%)	114 (97%)	3 (3%)	0	100	100
43	n	114/117 (97%)	108 (95%)	6 (5%)	0	100	100
44	o	112/115 (97%)	110 (98%)	2 (2%)	0	100	100
45	p	115/118 (98%)	113 (98%)	2 (2%)	0	100	100
46	q	101/103 (98%)	98 (97%)	3 (3%)	0	100	100
47	r	108/110 (98%)	105 (97%)	3 (3%)	0	100	100
48	s	91/100 (91%)	89 (98%)	2 (2%)	0	100	100
49	t	100/104 (96%)	92 (92%)	8 (8%)	0	100	100
50	u	92/94 (98%)	88 (96%)	4 (4%)	0	100	100
51	v	76/85 (89%)	75 (99%)	1 (1%)	0	100	100
52	w	75/78 (96%)	75 (100%)	0	0	100	100
53	x	60/63 (95%)	60 (100%)	0	0	100	100
54	y	56/59 (95%)	55 (98%)	1 (2%)	0	100	100
55	z	54/57 (95%)	54 (100%)	0	0	100	100
All	All	5835/6231 (94%)	5632 (96%)	199 (3%)	4 (0%)	49	77

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
33	d	149	ASN
37	h	115	VAL
16	J	57	VAL
27	U	28	VAL

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	46/49 (94%)	45 (98%)	1 (2%)	45	77
2	1	38/38 (100%)	37 (97%)	1 (3%)	40	73
3	2	51/52 (98%)	49 (96%)	2 (4%)	28	63
4	3	34/34 (100%)	33 (97%)	1 (3%)	37	71
5	4	60/60 (100%)	58 (97%)	2 (3%)	33	67
6	5	116/180 (64%)	113 (97%)	3 (3%)	40	73
8	B	185/198 (93%)	180 (97%)	5 (3%)	39	73
9	C	170/189 (90%)	165 (97%)	5 (3%)	37	71
10	D	171/172 (99%)	169 (99%)	2 (1%)	63	86
11	E	119/126 (94%)	113 (95%)	6 (5%)	22	53
12	F	88/111 (79%)	85 (97%)	3 (3%)	32	66
13	G	126/129 (98%)	123 (98%)	3 (2%)	43	75
14	H	104/105 (99%)	102 (98%)	2 (2%)	50	79
15	I	104/107 (97%)	102 (98%)	2 (2%)	50	79
16	J	87/91 (96%)	83 (95%)	4 (5%)	24	57
17	K	89/98 (91%)	84 (94%)	5 (6%)	19	50
18	L	102/103 (99%)	99 (97%)	3 (3%)	37	71
19	M	96/98 (98%)	92 (96%)	4 (4%)	26	60
20	N	83/84 (99%)	81 (98%)	2 (2%)	43	75
21	O	75/76 (99%)	74 (99%)	1 (1%)	61	86
22	P	63/63 (100%)	62 (98%)	1 (2%)	55	83
23	Q	73/78 (94%)	70 (96%)	3 (4%)	27	61
24	R	53/65 (82%)	52 (98%)	1 (2%)	50	79
25	S	72/79 (91%)	68 (94%)	4 (6%)	19	50
26	T	65/66 (98%)	65 (100%)	0	100	100
27	U	60/61 (98%)	59 (98%)	1 (2%)	53	82
29	X	83/94 (88%)	82 (99%)	1 (1%)	63	86
32	c	215/217 (99%)	215 (100%)	0	100	100
33	d	163/163 (100%)	160 (98%)	3 (2%)	51	80
34	e	165/165 (100%)	164 (99%)	1 (1%)	78	93
35	f	148/150 (99%)	145 (98%)	3 (2%)	48	78
36	g	135/136 (99%)	132 (98%)	3 (2%)	45	77

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
37	h	112/113 (99%)	108 (96%)	4 (4%)	31	65
38	i	116/116 (100%)	115 (99%)	1 (1%)	70	90
39	j	104/104 (100%)	103 (99%)	1 (1%)	68	89
40	k	105/105 (100%)	103 (98%)	2 (2%)	50	79
41	l	107/107 (100%)	106 (99%)	1 (1%)	70	90
42	m	98/103 (95%)	97 (99%)	1 (1%)	68	89
43	n	86/87 (99%)	83 (96%)	3 (4%)	32	66
44	o	99/100 (99%)	99 (100%)	0	100	100
45	p	89/90 (99%)	87 (98%)	2 (2%)	45	77
46	q	83/83 (100%)	82 (99%)	1 (1%)	63	86
47	r	92/92 (100%)	91 (99%)	1 (1%)	65	88
48	s	80/84 (95%)	80 (100%)	0	100	100
49	t	83/85 (98%)	83 (100%)	0	100	100
50	u	76/76 (100%)	74 (97%)	2 (3%)	40	73
51	v	60/64 (94%)	59 (98%)	1 (2%)	53	82
52	w	67/68 (98%)	66 (98%)	1 (2%)	57	84
53	x	53/54 (98%)	52 (98%)	1 (2%)	50	79
54	y	48/49 (98%)	47 (98%)	1 (2%)	47	77
55	z	47/48 (98%)	46 (98%)	1 (2%)	47	77
All	All	4844/5065 (96%)	4742 (98%)	102 (2%)	46	77

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

Mol	Chain	Res	Type
1	0	34	MET
2	1	29	GLN
3	2	29	LEU
3	2	54	ASP
4	3	30	GLU
5	4	34	LEU
5	4	51	VAL
6	5	30	LEU
6	5	171	ILE
6	5	226	GLN
8	B	4	VAL

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Mol	Chain	Res	Type
8	B	144	LEU
8	B	148	LEU
8	B	170	HIS
8	B	194	ASP
9	C	21	THR
9	C	49	LYS
9	C	93	ASP
9	C	165	THR
9	C	172	ARG
10	D	169	THR
10	D	173	VAL
11	E	12	GLN
11	E	15	LEU
11	E	22	SER
11	E	64	MET
11	E	70	ASN
11	E	88	THR
12	F	69	GLU
12	F	97	THR
12	F	98	GLU
13	G	4	ARG
13	G	47	LEU
13	G	116	MET
14	H	55	THR
14	H	112	THR
15	I	35	LEU
15	I	116	VAL
16	J	15	HIS
16	J	35	GLN
16	J	73	LEU
16	J	98	VAL
17	K	55	SER
17	K	56	ARG
17	K	64	GLN
17	K	97	ILE
17	K	101	ASN
18	L	41	THR
18	L	44	LYS
18	L	80	ILE
19	M	4	ILE
19	M	31	LYS
19	M	65	VAL

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Mol	Chain	Res	Type
19	M	102	THR
20	N	89	MET
20	N	100	SER
21	O	73	LYS
22	P	1	MET
23	Q	9	GLN
23	Q	28	MET
23	Q	42	THR
24	R	73	ARG
25	S	15	LEU
25	S	20	GLU
25	S	60	VAL
25	S	66	MET
27	U	12	PHE
29	X	17	ARG
33	d	39	ASP
33	d	42	ASN
33	d	58	ASN
34	e	166	LYS
35	f	117	LEU
35	f	147	ASP
35	f	152	LEU
36	g	72	LEU
36	g	128	GLN
36	g	168	VAL
37	h	2	GLN
37	h	124	ASN
37	h	142	VAL
37	h	143	ILE
38	i	5	THR
39	j	90	ASN
40	k	14	LYS
40	k	136	GLU
41	l	6	ARG
42	m	114	GLU
43	n	21	LEU
43	n	24	THR
43	n	40	ILE
45	p	18	LEU
45	p	107	THR
46	q	29	THR
47	r	95	ARG

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Mol	Chain	Res	Type
50	u	41	GLU
50	u	86	LEU
51	v	10	THR
52	w	35	SER
53	x	58	THR
54	y	49	ASN
55	z	20	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (39) such sidechains are listed below:

Mol	Chain	Res	Type
1	0	45	GLN
5	4	33	ASN
6	5	47	ASN
6	5	188	ASN
8	B	39	HIS
8	B	94	HIS
9	C	8	ASN
11	E	89	HIS
12	F	17	GLN
12	F	68	GLN
13	G	148	ASN
14	H	4	GLN
15	I	110	GLN
19	M	52	GLN
20	N	43	ASN
20	N	60	GLN
29	X	19	HIS
32	c	53	HIS
32	c	134	ASN
32	c	243	HIS
33	d	94	GLN
34	e	9	GLN
36	g	128	GLN
36	g	139	GLN
37	h	2	GLN
37	h	18	GLN
37	h	124	ASN
39	j	9	ASN
39	j	88	ASN
41	l	13	HIS
42	m	73	ASN

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Mol	Chain	Res	Type
45	p	44	GLN
45	p	52	GLN
46	q	18	GLN
47	r	9	HIS
48	s	48	GLN
51	v	12	ASN
52	w	34	HIS
53	x	15	ASN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
28	V	76/77 (98%)	24 (31%)	2 (2%)
30	a	2899/2923 (99%)	437 (15%)	0
31	b	115/116 (99%)	12 (10%)	0
7	A	1529/1550 (98%)	216 (14%)	2 (0%)
All	All	4619/4666 (98%)	689 (14%)	4 (0%)

All (689) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
7	A	4	U
7	A	7	A
7	A	8	A
7	A	9	G
7	A	22	G
7	A	32	A
7	A	39	G
7	A	44	A
7	A	47	C
7	A	48	C
7	A	51	A
7	A	65	A
7	A	75	C
7	A	76	A
7	A	78	A
7	A	80	A
7	A	83	U
7	A	84	U
7	A	85	G
7	A	86	C

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Mol	Chain	Res	Type
7	A	93	G
7	A	118	A
7	A	119	U
7	A	128	A
7	A	129	A
7	A	139	G
7	A	141	A
7	A	142	G
7	A	147	A
7	A	161	C
7	A	162	G
7	A	180	A
7	A	195	A
7	A	205	C
7	A	207	U
7	A	208	C
7	A	209	G
7	A	210	G
7	A	238	G
7	A	243	U
7	A	244	A
7	A	245	G
7	A	249	G
7	A	264	G
7	A	265	C
7	A	279	G
7	A	287	G
7	A	303	G
7	A	326	C
7	A	345	G
7	A	349	G
7	A	350	C
7	A	352	G
7	A	365	U
7	A	370	C
7	A	371	A
7	A	382	G
7	A	386	G
7	A	404	G
7	A	410	A
7	A	411	G
7	A	412	A

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Mol	Chain	Res	Type
7	A	419	U
7	A	420	C
7	A	422	G
7	A	427	U
7	A	437	U
7	A	451	G
7	A	455	A
7	A	456	U
7	A	457	A
7	A	463	A
7	A	465	U
7	A	466	A
7	A	476	A
7	A	477	U
7	A	479	G
7	A	482	G
7	A	484	U
7	A	493	A
7	A	494	A
7	A	495	G
7	A	508	A
7	A	509	C
7	A	516	C
7	A	517	C
7	A	519	G
7	A	525	G7M
7	A	529	U
7	A	530	A
7	A	545	A
7	A	557	A
7	A	562	C
7	A	570	A
7	A	571	A
7	A	574	C
7	A	575	G
7	A	626	G
7	A	631	G
7	A	663	A
7	A	685	A
7	A	700	A
7	A	701	G
7	A	719	G

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Mol	Chain	Res	Type
7	A	721	U
7	A	722	G
7	A	732	G
7	A	744	A
7	A	745	A
7	A	746	G
7	A	747	A
7	A	753	G
7	A	775	A
7	A	790	A
7	A	791	U
7	A	792	A
7	A	810	G
7	A	813	A
7	A	815	C
7	A	819	G
7	A	827	G
7	A	830	G
7	A	841	U
7	A	844	G
7	A	845	G
7	A	849	G
7	A	888	G
7	A	912	A
7	A	924	G
7	A	932	C
7	A	958	U
7	A	967	A
7	A	973	A
7	A	974	G
7	A	975	A
7	A	986	G
7	A	987	U
7	A	990	U
7	A	991	G
7	A	992	A
7	A	997	C
7	A	1000	A
7	A	1002	A
7	A	1007	A
7	A	1018	U
7	A	1020	U

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Mol	Chain	Res	Type
7	A	1033	A
7	A	1034	A
7	A	1041	G
7	A	1042	A
7	A	1063	U
7	A	1086	G
7	A	1092	G
7	A	1093	U
7	A	1097	G
7	A	1099	A
7	A	1127	C
7	A	1130	C
7	A	1132	G
7	A	1135	C
7	A	1136	G
7	A	1137	G
7	A	1142	G
7	A	1157	U
7	A	1166	U
7	A	1179	G
7	A	1182	G
7	A	1194	A
7	A	1195	A
7	A	1211	A
7	A	1224	C
7	A	1225	A
7	A	1226	C
7	A	1236	A
7	A	1239	G
7	A	1256	G
7	A	1273	A
7	A	1278	A
7	A	1283	A
7	A	1284	U
7	A	1285	A
7	A	1295	G
7	A	1298	G
7	A	1300	C
7	A	1303	G
7	A	1315	C
7	A	1318	C
7	A	1329	G

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Mol	Chain	Res	Type
7	A	1336	G
7	A	1351	G
7	A	1361	A
7	A	1362	U
7	A	1366	A
7	A	1368	G
7	A	1376	C
7	A	1377	G
7	A	1396	A
7	A	1417	G
7	A	1427	A
7	A	1430	G
7	A	1439	A
7	A	1444	A
7	A	1450	C
7	A	1485	G
7	A	1490	A
7	A	1492	G
7	A	1493	U
7	A	1494	C
7	A	1495	G
7	A	1497	A
7	A	1501	A
7	A	1504	U
7	A	1515	G
7	A	1517	MA6
7	A	1527	G
7	A	1528	G
28	V	7	G
28	V	8	4SU
28	V	9	G
28	V	11	A
28	V	14	A
28	V	16	C
28	V	18	U
28	V	19	G
28	V	20	G
28	V	21	H2U
28	V	22	A
28	V	23	G
28	V	33	OMC
28	V	45	A

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Mol	Chain	Res	Type
28	V	46	G
28	V	47	A
28	V	48	U
28	V	49	C
28	V	50	G
28	V	53	G
28	V	59	A
28	V	66	C
28	V	76	C
28	V	77	A
30	a	10	A
30	a	15	G
30	a	27	G
30	a	34	U
30	a	42	A
30	a	51	G
30	a	55	G
30	a	63	A
30	a	71	A
30	a	74	A
30	a	75	G
30	a	86	G
30	a	101	A
30	a	102	U
30	a	103	A
30	a	118	A
30	a	119	A
30	a	120	U
30	a	125	A
30	a	131	A
30	a	136	G
30	a	139	U
30	a	140	C
30	a	142	U
30	a	163	A
30	a	165	A
30	a	196	A
30	a	199	A
30	a	215	G
30	a	216	A
30	a	222	A
30	a	223	A

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Mol	Chain	Res	Type
30	a	233	A
30	a	248	G
30	a	250	G
30	a	272	A
30	a	276	U
30	a	279	A
30	a	281	C
30	a	285	U
30	a	311	A
30	a	329	G
30	a	330	A
30	a	333	G
30	a	345	A
30	a	361	G
30	a	386	G
30	a	389	G
30	a	396	G
30	a	405	U
30	a	411	G
30	a	412	A
30	a	435	C
30	a	455	C
30	a	457	A
30	a	473	G
30	a	481	G
30	a	491	G
30	a	505	A
30	a	508	A
30	a	509	C
30	a	510	C
30	a	529	A
30	a	530	G
30	a	531	C
30	a	532	A
30	a	533	G
30	a	546	C
30	a	547	G
30	a	561	A
30	a	571	U
30	a	573	A
30	a	575	G
30	a	584	A

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Mol	Chain	Res	Type
30	a	601	A
30	a	612	A
30	a	613	U
30	a	614	A
30	a	621	C
30	a	625	A
30	a	635	A
30	a	643	C
30	a	652	A
30	a	653	A
30	a	683	A
30	a	684	U
30	a	702	G
30	a	724	G
30	a	726	G
30	a	727	G
30	a	728	A
30	a	745	5MU
30	a	762	A
30	a	773	G
30	a	774	G
30	a	780	A
30	a	782	G
30	a	783	G
30	a	787	A
30	a	789	C
30	a	803	G
30	a	810	C
30	a	825	U
30	a	826	U
30	a	843	A
30	a	844	C
30	a	857	G
30	a	883	C
30	a	886	C
30	a	887	C
30	a	888	C
30	a	889	G
30	a	891	C
30	a	893	U
30	a	894	A
30	a	895	C

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Mol	Chain	Res	Type
30	a	905	G
30	a	908	A
30	a	912	A
30	a	925	A
30	a	944	C
30	a	959	C
30	a	972	G
30	a	981	A
30	a	982	A
30	a	987	G
30	a	988	A
30	a	994	A
30	a	1003	C
30	a	1010	U
30	a	1011	C
30	a	1023	G
30	a	1031	U
30	a	1038	A
30	a	1044	A
30	a	1045	G
30	a	1053	G
30	a	1054	G
30	a	1057	G
30	a	1059	U
30	a	1060	G
30	a	1061	G
30	a	1062	C
30	a	1063	U
30	a	1064	U
30	a	1066	G
30	a	1068	A
30	a	1069	G
30	a	1072	G
30	a	1073	C
30	a	1075	A
30	a	1076	U
30	a	1079	U
30	a	1081	U
30	a	1082	A
30	a	1083	A
30	a	1084	A
30	a	1085	G

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Mol	Chain	Res	Type
30	a	1086	A
30	a	1087	A
30	a	1088	A
30	a	1092	U
30	a	1093	A
30	a	1094	A
30	a	1095	U
30	a	1099	U
30	a	1108	G
30	a	1109	A
30	a	1110	G
30	a	1120	G
30	a	1128	U
30	a	1130	U
30	a	1131	A
30	a	1133	C
30	a	1137	G
30	a	1139	U
30	a	1140	A
30	a	1167	A
30	a	1170	C
30	a	1172	A
30	a	1173	U
30	a	1174	G
30	a	1185	U
30	a	1209	G
30	a	1233	G
30	a	1247	G
30	a	1250	A
30	a	1253	G
30	a	1265	A
30	a	1268	G
30	a	1269	A
30	a	1272	A
30	a	1297	G
30	a	1298	A
30	a	1318	A
30	a	1326	U
30	a	1349	U
30	a	1362	A
30	a	1375	A
30	a	1376	U

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Mol	Chain	Res	Type
30	a	1380	A
30	a	1383	C
30	a	1392	A
30	a	1408	U
30	a	1413	G
30	a	1425	C
30	a	1431	A
30	a	1448	C
30	a	1449	G
30	a	1479	G
30	a	1490	C
30	a	1505	A
30	a	1506	A
30	a	1507	G
30	a	1512	A
30	a	1521	G
30	a	1526	G
30	a	1532	A
30	a	1533	C
30	a	1534	G
30	a	1536	U
30	a	1555	C
30	a	1557	G
30	a	1563	A
30	a	1566	A
30	a	1575	U
30	a	1580	A
30	a	1582	C
30	a	1604	C
30	a	1605	A
30	a	1644	U
30	a	1645	U
30	a	1646	G
30	a	1651	A
30	a	1671	G
30	a	1672	C
30	a	1692	G
30	a	1712	G
30	a	1725	C
30	a	1726	U
30	a	1727	G
30	a	1728	C

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Mol	Chain	Res	Type
30	a	1734	G
30	a	1752	G
30	a	1754	U
30	a	1760	C
30	a	1769	A
30	a	1780	A
30	a	1796	C
30	a	1797	A
30	a	1798	A
30	a	1804	A
30	a	1812	C
30	a	1825	A
30	a	1844	A
30	a	1854	A
30	a	1862	A
30	a	1864	C
30	a	1866	G
30	a	1868	A
30	a	1903	C
30	a	1904	G
30	a	1905	G
30	a	1911	A
30	a	1912	C
30	a	1927	G
30	a	1928	G
30	a	1934	A
30	a	1935	A
30	a	1953	U
30	a	1962	G
30	a	1965	C
30	a	1968	A
30	a	1969	U
30	a	1970	G
30	a	1978	G
30	a	1989	U
30	a	1991	U
30	a	2018	A
30	a	2021	C
30	a	2028	6MZ
30	a	2029	A
30	a	2030	G
30	a	2031	A

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Mol	Chain	Res	Type
30	a	2033	G
30	a	2041	C
30	a	2053	C
30	a	2054	G
30	a	2058	A
30	a	2059	G
30	a	2060	A
30	a	2067	G7M
30	a	2091	G
30	a	2099	A
30	a	2105	G
30	a	2106	A
30	a	2107	U
30	a	2108	G
30	a	2109	U
30	a	2110	G
30	a	2112	A
30	a	2114	G
30	a	2115	A
30	a	2116	U
30	a	2118	G
30	a	2120	U
30	a	2121	G
30	a	2124	A
30	a	2128	U
30	a	2129	U
30	a	2130	U
30	a	2131	G
30	a	2132	A
30	a	2136	G
30	a	2138	G
30	a	2141	C
30	a	2143	C
30	a	2144	C
30	a	2145	A
30	a	2147	U
30	a	2148	C
30	a	2149	U
30	a	2150	G
30	a	2151	C
30	a	2153	U
30	a	2155	G

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Mol	Chain	Res	Type
30	a	2156	A
30	a	2158	C
30	a	2159	C
30	a	2170	U
30	a	2171	A
30	a	2176	C
30	a	2177	C
30	a	2178	U
30	a	2180	U
30	a	2181	A
30	a	2182	A
30	a	2184	G
30	a	2185	U
30	a	2186	U
30	a	2188	G
30	a	2189	A
30	a	2195	U
30	a	2196	A
30	a	2197	A
30	a	2202	G
30	a	2209	U
30	a	2210	A
30	a	2223	A
30	a	2236	G
30	a	2237	G
30	a	2264	A
30	a	2276	A
30	a	2281	C
30	a	2285	A
30	a	2286	A
30	a	2303	U
30	a	2306	G
30	a	2317	G
30	a	2320	A
30	a	2323	G
30	a	2331	A
30	a	2332	U
30	a	2334	A
30	a	2343	G
30	a	2345	C
30	a	2348	C
30	a	2370	U

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Mol	Chain	Res	Type
30	a	2381	G
30	a	2383	C
30	a	2387	G
30	a	2389	G
30	a	2394	G
30	a	2400	U
30	a	2404	A
30	a	2420	C
30	a	2422	C
30	a	2423	A
30	a	2424	A
30	a	2427	G
30	a	2428	A
30	a	2433	A
30	a	2439	U
30	a	2446	A
30	a	2468	G
30	a	2472	U
30	a	2473	C
30	a	2476	A
30	a	2489	U
30	a	2500	G
30	a	2503	G
30	a	2516	A
30	a	2518	C
30	a	2527	G
30	a	2533	G
30	a	2545	A
30	a	2564	A
30	a	2565	G
30	a	2570	A
30	a	2584	U
30	a	2600	A
30	a	2607	U
30	a	2608	C
30	a	2611	U
30	a	2613	U
30	a	2627	U
30	a	2628	G
30	a	2636	G
30	a	2644	C
30	a	2646	G

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Mol	Chain	Res	Type
30	a	2661	G
30	a	2687	U
30	a	2688	U
30	a	2712	G
30	a	2716	G
30	a	2724	A
30	a	2730	G
30	a	2731	A
30	a	2742	G
30	a	2746	A
30	a	2755	A
30	a	2763	A
30	a	2776	A
30	a	2791	G
30	a	2797	A
30	a	2816	U
30	a	2818	A
30	a	2819	A
30	a	2833	A
30	a	2847	U
30	a	2848	A
30	a	2859	U
30	a	2870	A
30	a	2871	A
30	a	2881	A
30	a	2882	U
30	a	2889	U
31	b	13	C
31	b	24	G
31	b	34	A
31	b	35	C
31	b	41	G
31	b	44	G
31	b	56	G
31	b	67	G
31	b	89	U
31	b	90	C
31	b	99	A
31	b	109	A

All (4) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
7	A	1033	A
7	A	1492	G
28	V	20	G
28	V	75	C

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
7	4OC	A	1400	7	20,23,24	2.24	3 (15%)	26,32,35	0.99	2 (7%)
7	2MG	A	964	7	23,26,27	2.57	4 (17%)	32,38,41	2.07	10 (31%)
18	D2T	L	89	18	7,9,10	1.22	1 (14%)	6,11,13	1.56	1 (16%)
30	OMU	a	2550	58,30,57	19,22,23	2.59	7 (36%)	26,31,34	1.73	5 (19%)
7	2MG	A	1205	58,7	23,26,27	2.57	4 (17%)	32,38,41	2.07	9 (28%)
30	6MZ	a	2028	30	22,25,26	2.39	3 (13%)	30,36,39	2.36	10 (33%)
30	PSU	a	2578	30	18,21,22	2.06	8 (44%)	22,30,33	1.87	5 (22%)
28	OMC	V	33	28	19,22,23	1.78	3 (15%)	26,31,34	0.91	2 (7%)
30	PSU	a	2455	30	18,21,22	2.00	7 (38%)	22,30,33	1.89	4 (18%)
28	4SU	V	8	28	18,21,22	3.75	8 (44%)	26,30,33	2.22	4 (15%)
30	PSU	a	953	30	18,21,22	2.04	7 (38%)	22,30,33	1.83	3 (13%)
7	5MC	A	965	7	18,22,23	1.91	5 (27%)	26,32,35	1.30	2 (7%)
30	PSU	a	744	30,57	18,21,22	1.99	7 (38%)	22,30,33	1.79	3 (13%)
30	PSU	a	1909	30	18,21,22	1.90	7 (38%)	22,30,33	1.76	3 (13%)
7	G7M	A	525	58,7	23,26,27	2.18	5 (21%)	35,39,42	1.86	7 (20%)
30	2MA	a	2501	58,30,57	22,25,26	1.32	1 (4%)	33,37,40	2.00	7 (21%)
30	2MG	a	2443	30	23,26,27	2.58	7 (30%)	32,38,41	2.03	10 (31%)
28	H2U	V	21	28	18,21,22	4.32	5 (27%)	21,30,33	4.78	6 (28%)
7	MA6	A	1517	7	23,26,27	1.19	3 (13%)	34,38,41	2.27	10 (29%)
30	5MU	a	1937	58,30	19,22,23	2.50	7 (36%)	28,32,35	3.84	10 (35%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
28	5MU	V	55	28	19,22,23	2.36	7 (36%)	28,32,35	3.69	10 (35%)
28	PSU	V	56	28	18,21,22	1.93	7 (38%)	22,30,33	1.82	3 (13%)
30	PSU	a	2502	58,30	18,21,22	2.05	7 (38%)	22,30,33	1.88	4 (18%)
30	5MC	a	1960	58,30	18,22,23	1.89	6 (33%)	26,32,35	1.31	2 (7%)
30	PSU	a	2603	30	18,21,22	2.01	7 (38%)	22,30,33	1.80	3 (13%)
30	OMG	a	2249	58,30	23,26,27	2.33	6 (26%)	33,38,41	1.84	10 (30%)
7	UR3	A	1496	7	19,22,23	2.56	6 (31%)	26,32,35	1.30	2 (7%)
7	MA6	A	1516	7	23,26,27	1.18	3 (13%)	34,38,41	2.21	9 (26%)
30	5MU	a	745	30	19,22,23	2.48	7 (36%)	28,32,35	3.85	11 (39%)
30	G7M	a	2067	58,30	23,26,27	2.18	5 (21%)	35,39,42	1.87	7 (20%)
30	6MZ	a	1615	30	22,25,26	2.40	3 (13%)	30,36,39	2.27	10 (33%)
30	2MG	a	1831	30	23,26,27	2.57	4 (17%)	32,38,41	2.06	10 (31%)
30	PSU	a	1915	30	18,21,22	1.90	7 (38%)	22,30,33	1.79	3 (13%)
30	3TD	a	1913	-	18,22,23	2.91	7 (38%)	22,32,35	1.74	3 (13%)
30	H2U	a	2447	30	18,21,22	4.16	5 (27%)	21,30,33	5.22	6 (28%)
30	OMC	a	2496	30,57	19,22,23	1.79	4 (21%)	26,31,34	0.99	2 (7%)
17	IAS	K	119	17	6,7,8	1.77	1 (16%)	6,8,10	2.70	2 (33%)
41	MS6	l	82	41	5,7,8	0.53	0	2,7,9	1.79	1 (50%)
7	PSU	A	514	57,7	18,21,22	1.97	7 (38%)	22,30,33	1.78	4 (18%)
30	PSU	a	2602	30	18,21,22	2.01	7 (38%)	22,30,33	1.83	3 (13%)
7	2MG	A	1514	7	23,26,27	2.57	5 (21%)	32,38,41	2.07	11 (34%)
7	5MC	A	1405	7	18,22,23	1.90	5 (27%)	26,32,35	1.29	2 (7%)
30	1MG	a	743	30	22,26,27	2.51	5 (22%)	33,39,42	2.04	7 (21%)
33	MEQ	d	150	33	8,9,10	0.87	0	5,10,12	0.55	0
41	4D4	l	81	41	9,11,12	0.82	0	8,13,15	1.57	2 (25%)

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
7	4OC	A	1400	7	-	0/9/29/30	0/2/2/2
7	2MG	A	964	7	-	0/9/27/28	0/3/3/3
18	D2T	L	89	18	-	4/7/12/14	-
30	OMU	a	2550	58,30,57	-	0/9/27/28	0/2/2/2
7	2MG	A	1205	58,7	-	1/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
30	6MZ	a	2028	30	-	2/9/27/28	0/3/3/3
30	PSU	a	2578	30	-	0/7/25/26	0/2/2/2
28	OMC	V	33	28	-	2/9/27/28	0/2/2/2
30	PSU	a	2455	30	-	0/7/25/26	0/2/2/2
28	4SU	V	8	28	-	0/7/25/26	0/2/2/2
30	PSU	a	953	30	-	0/7/25/26	0/2/2/2
7	5MC	A	965	7	-	0/7/25/26	0/2/2/2
30	PSU	a	744	30,57	-	1/7/25/26	0/2/2/2
30	PSU	a	1909	30	-	0/7/25/26	0/2/2/2
7	G7M	A	525	58,7	-	3/7/25/26	0/3/3/3
30	2MA	a	2501	58,30,57	-	2/7/25/26	0/3/3/3
30	2MG	a	2443	30	-	0/9/27/28	0/3/3/3
28	H2U	V	21	28	-	7/7/38/39	0/2/2/2
7	MA6	A	1517	7	-	5/11/29/30	0/3/3/3
30	5MU	a	1937	58,30	-	0/7/25/26	0/2/2/2
28	5MU	V	55	28	-	0/7/25/26	0/2/2/2
28	PSU	V	56	28	-	0/7/25/26	0/2/2/2
30	PSU	a	2502	58,30	-	0/7/25/26	0/2/2/2
30	5MC	a	1960	58,30	-	0/7/25/26	0/2/2/2
30	PSU	a	2603	30	-	0/7/25/26	0/2/2/2
30	OMG	a	2249	58,30	-	1/9/27/28	0/3/3/3
7	UR3	A	1496	7	-	0/7/25/26	0/2/2/2
7	MA6	A	1516	7	-	2/11/29/30	0/3/3/3
30	5MU	a	745	30	-	0/7/25/26	0/2/2/2
30	G7M	a	2067	58,30	-	1/7/25/26	0/3/3/3
30	6MZ	a	1615	30	-	0/9/27/28	0/3/3/3
30	2MG	a	1831	30	-	4/9/27/28	0/3/3/3
30	PSU	a	1915	30	-	0/7/25/26	0/2/2/2
30	3TD	a	1913	-	-	2/7/25/26	0/2/2/2
30	H2U	a	2447	30	-	2/7/38/39	0/2/2/2
30	OMC	a	2496	30,57	-	0/9/27/28	0/2/2/2
17	IAS	K	119	17	-	2/7/7/8	-
41	MS6	l	82	41	-	1/4/6/8	-
7	PSU	A	514	57,7	-	0/7/25/26	0/2/2/2
30	PSU	a	2602	30	-	0/7/25/26	0/2/2/2
7	2MG	A	1514	7	-	0/9/27/28	0/3/3/3
7	5MC	A	1405	7	-	0/7/25/26	0/2/2/2
30	1MG	a	743	30	-	0/7/25/26	0/3/3/3
33	MEQ	d	150	33	-	3/8/9/11	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
41	4D4	l	81	41	-	2/11/12/14	-

All (223) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	V	21	H2U	O4-C4	10.25	1.44	1.23
30	a	1615	6MZ	C6-N6	10.14	1.45	1.34
30	a	2028	6MZ	C6-N6	10.03	1.45	1.34
30	a	2447	H2U	O4-C4	10.03	1.43	1.23
7	A	964	2MG	O6-C6	9.16	1.41	1.23
7	A	1205	2MG	O6-C6	9.14	1.41	1.23
7	A	1514	2MG	O6-C6	9.12	1.40	1.23
30	a	2443	2MG	O6-C6	9.05	1.40	1.23
30	a	1831	2MG	O6-C6	9.04	1.40	1.23
7	A	1496	UR3	O4-C4	8.82	1.42	1.23
28	V	21	H2U	C2-N1	8.81	1.48	1.35
30	a	1913	3TD	O4-C4	8.58	1.41	1.23
28	V	21	H2U	O2-C2	8.54	1.38	1.23
30	a	2249	OMG	O6-C6	8.47	1.39	1.23
30	a	2447	H2U	O2-C2	8.32	1.38	1.23
30	a	2447	H2U	C2-N1	8.25	1.47	1.35
30	a	2550	OMU	O4-C4	8.12	1.40	1.24
30	a	743	1MG	O6-C6	8.11	1.40	1.23
30	a	2067	G7M	O6-C6	8.02	1.38	1.23
7	A	525	G7M	O6-C6	7.97	1.38	1.23
28	V	8	4SU	C4-N3	7.86	1.46	1.37
28	V	8	4SU	C2-N3	7.25	1.50	1.38
28	V	21	H2U	C2-N3	7.04	1.50	1.38
28	V	8	4SU	C4-S4	-6.81	1.55	1.68
30	a	2447	H2U	C2-N3	6.80	1.50	1.38
7	A	1400	4OC	O2-C2	6.50	1.35	1.23
30	a	1937	5MU	C2-N1	-6.10	1.28	1.38
30	a	743	1MG	C2-N2	6.06	1.45	1.34
30	a	745	5MU	C2-N1	-6.01	1.28	1.38
7	A	964	2MG	C2-N2	5.95	1.46	1.33
7	A	1205	2MG	C2-N2	5.94	1.46	1.33
30	a	1831	2MG	C2-N2	5.93	1.46	1.33
7	A	1514	2MG	C2-N2	5.91	1.46	1.33
30	a	2443	2MG	C2-N2	5.77	1.46	1.33
28	V	55	5MU	C2-N1	-5.69	1.29	1.38
7	A	1400	4OC	C4-N4	5.61	1.47	1.35
28	V	21	H2U	C4-N3	5.36	1.46	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	V	33	OMC	C4-N4	5.03	1.45	1.33
28	V	8	4SU	C6-C5	5.03	1.46	1.35
30	a	2447	H2U	C4-N3	4.98	1.46	1.37
30	a	2496	OMC	C4-N4	4.83	1.45	1.33
28	V	8	4SU	C2-N1	4.75	1.46	1.38
30	a	1937	5MU	C2-N3	-4.74	1.29	1.38
30	a	745	5MU	C2-N3	-4.68	1.29	1.38
30	a	745	5MU	C6-N1	-4.49	1.30	1.38
30	a	2501	2MA	C6-N6	4.47	1.45	1.34
30	a	1937	5MU	C6-N1	-4.44	1.30	1.38
28	V	55	5MU	C2-N3	-4.43	1.30	1.38
30	a	1913	3TD	C4-N3	-4.35	1.31	1.40
30	a	1913	3TD	C2-N1	-4.31	1.31	1.37
28	V	55	5MU	C6-N1	-4.24	1.30	1.38
7	A	965	5MC	C4-N4	4.21	1.45	1.34
30	a	2249	OMG	C2-N2	4.17	1.44	1.34
7	A	1405	5MC	C4-N4	4.14	1.44	1.34
30	a	2496	OMC	C2-N1	-4.13	1.31	1.40
30	a	1960	5MC	C4-N4	4.10	1.44	1.34
28	V	8	4SU	C5-C4	4.06	1.47	1.42
28	V	33	OMC	C2-N1	-4.05	1.31	1.40
30	a	2550	OMU	C2-N1	-4.01	1.32	1.38
28	V	8	4SU	C6-N1	3.93	1.47	1.38
30	a	743	1MG	C6-N1	-3.91	1.32	1.40
30	a	1913	3TD	C6-C5	3.91	1.39	1.35
30	a	2578	PSU	C2-N1	-3.80	1.31	1.36
30	a	2502	PSU	C4-N3	-3.77	1.31	1.38
30	a	953	PSU	C2-N1	-3.77	1.31	1.36
30	a	2249	OMG	C6-N1	-3.75	1.31	1.38
30	a	1960	5MC	C2-N1	-3.74	1.31	1.40
30	a	953	PSU	C4-N3	-3.72	1.31	1.38
7	A	1405	5MC	C2-N1	-3.71	1.31	1.40
7	A	965	5MC	C2-N1	-3.70	1.32	1.40
7	A	1400	4OC	C2-N1	-3.69	1.32	1.40
7	A	525	G7M	C5-N7	-3.68	1.34	1.39
30	a	2602	PSU	C4-N3	-3.68	1.32	1.38
30	a	2578	PSU	C4-N3	-3.66	1.32	1.38
30	a	2603	PSU	C4-N3	-3.66	1.32	1.38
30	a	2455	PSU	C4-N3	-3.65	1.32	1.38
30	a	744	PSU	C4-N3	-3.62	1.32	1.38
17	K	119	IAS	OD1-CG	3.61	1.40	1.19
30	a	2502	PSU	C2-N1	-3.60	1.31	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	A	1496	UR3	C4-N3	-3.59	1.32	1.40
30	a	2602	PSU	C2-N1	-3.57	1.31	1.36
7	A	514	PSU	C2-N1	-3.55	1.31	1.36
30	a	2603	PSU	C2-N1	-3.55	1.31	1.36
30	a	2550	OMU	C4-N3	-3.54	1.32	1.38
30	a	1937	5MU	C6-C5	3.51	1.40	1.34
28	V	56	PSU	C4-N3	-3.50	1.32	1.38
30	a	2455	PSU	C2-N1	-3.49	1.32	1.36
30	a	2602	PSU	C2-N3	-3.48	1.31	1.37
7	A	514	PSU	C4-N3	-3.47	1.32	1.38
28	V	55	5MU	C6-C5	3.47	1.40	1.34
30	a	2067	G7M	C5-N7	-3.46	1.35	1.39
7	A	1516	MA6	C6-N6	3.45	1.47	1.36
30	a	953	PSU	C2-N3	-3.45	1.31	1.37
28	V	8	4SU	O2-C2	-3.45	1.16	1.23
30	a	2502	PSU	C2-N3	-3.45	1.31	1.37
30	a	1909	PSU	C4-N3	-3.44	1.32	1.38
30	a	2550	OMU	C2-N3	-3.39	1.31	1.38
30	a	1915	PSU	C4-N3	-3.38	1.32	1.38
30	a	2455	PSU	C2-N3	-3.35	1.31	1.37
30	a	2603	PSU	C2-N3	-3.35	1.31	1.37
7	A	1517	MA6	C6-N6	3.34	1.46	1.36
30	a	2578	PSU	C2-N3	-3.34	1.31	1.37
30	a	744	PSU	C2-N1	-3.31	1.32	1.36
30	a	745	5MU	C6-C5	3.31	1.40	1.34
30	a	745	5MU	C4-N3	-3.31	1.32	1.38
30	a	744	PSU	C2-N3	-3.31	1.31	1.37
28	V	56	PSU	C6-C5	3.29	1.39	1.35
30	a	1937	5MU	C4-N3	-3.25	1.32	1.38
30	a	2067	G7M	C6-N1	-3.25	1.32	1.38
7	A	525	G7M	C6-N1	-3.23	1.32	1.38
28	V	56	PSU	C2-N1	-3.23	1.32	1.36
7	A	514	PSU	C2-N3	-3.22	1.32	1.37
30	a	1960	5MC	C6-N1	-3.22	1.32	1.38
7	A	525	G7M	C2-N2	3.20	1.41	1.34
7	A	1496	UR3	C2-N3	-3.19	1.32	1.39
28	V	56	PSU	C2-N3	-3.17	1.32	1.37
30	a	1909	PSU	C2-N1	-3.17	1.32	1.36
7	A	1517	MA6	C8-N9	-3.17	1.31	1.37
30	a	1915	PSU	C2-N1	-3.16	1.32	1.36
30	a	1915	PSU	C6-C5	3.16	1.39	1.35
7	A	1405	5MC	C6-N1	-3.15	1.32	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
30	a	1909	PSU	C2-N3	-3.14	1.32	1.37
28	V	55	5MU	C4-N3	-3.13	1.33	1.38
7	A	965	5MC	C6-N1	-3.13	1.32	1.38
30	a	1909	PSU	C6-C5	3.12	1.39	1.35
30	a	1915	PSU	C2-N3	-3.12	1.32	1.37
30	a	2067	G7M	C2-N2	3.09	1.41	1.34
7	A	1516	MA6	C8-N9	-3.09	1.32	1.37
30	a	2502	PSU	C6-C5	3.07	1.38	1.35
30	a	1831	2MG	C6-N1	-3.06	1.33	1.38
30	a	2443	2MG	C6-N1	-3.02	1.33	1.38
30	a	2028	6MZ	C8-N9	-3.02	1.32	1.37
30	a	744	PSU	C6-C5	3.00	1.38	1.35
30	a	2603	PSU	C6-C5	2.96	1.38	1.35
30	a	2602	PSU	C6-C5	2.94	1.38	1.35
30	a	1615	6MZ	C8-N9	-2.94	1.32	1.37
7	A	514	PSU	C6-C5	2.93	1.38	1.35
30	a	1960	5MC	O2-C2	-2.91	1.18	1.23
30	a	1913	3TD	C2-N3	-2.90	1.32	1.38
7	A	1514	2MG	C6-N1	-2.87	1.33	1.38
7	A	1205	2MG	C6-N1	-2.87	1.33	1.38
30	a	2455	PSU	C6-C5	2.85	1.38	1.35
30	a	953	PSU	C6-C5	2.85	1.38	1.35
7	A	964	2MG	C6-N1	-2.85	1.33	1.38
30	a	2443	2MG	C5-N7	-2.84	1.33	1.39
7	A	965	5MC	C6-C5	2.78	1.39	1.34
7	A	1405	5MC	O2-C2	-2.78	1.18	1.23
30	a	1831	2MG	C5-N7	-2.78	1.33	1.39
7	A	1514	2MG	C5-N7	-2.78	1.33	1.39
7	A	1205	2MG	C5-N7	-2.76	1.33	1.39
7	A	1405	5MC	C6-C5	2.74	1.39	1.34
7	A	965	5MC	O2-C2	-2.73	1.18	1.23
7	A	964	2MG	C5-N7	-2.72	1.33	1.39
30	a	2578	PSU	C6-C5	2.70	1.38	1.35
7	A	1496	UR3	C2-N1	-2.69	1.34	1.38
30	a	745	5MU	O4-C4	-2.67	1.18	1.23
30	a	1937	5MU	O4-C4	-2.65	1.18	1.23
30	a	2603	PSU	O4-C4	-2.65	1.18	1.23
30	a	953	PSU	O4-C4	-2.63	1.18	1.23
30	a	2578	PSU	O4-C4	-2.61	1.18	1.23
30	a	2502	PSU	O4-C4	-2.60	1.18	1.23
30	a	2249	OMG	C8-N9	-2.60	1.31	1.37
30	a	2578	PSU	C6-N1	-2.59	1.31	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	A	514	PSU	O4-C4	-2.58	1.18	1.23
30	a	744	PSU	O4-C4	-2.58	1.18	1.23
30	a	2455	PSU	O4-C4	-2.57	1.18	1.23
28	V	56	PSU	O4-C4	-2.55	1.18	1.23
30	a	1937	5MU	O2-C2	-2.53	1.18	1.23
30	a	2602	PSU	O4-C4	-2.53	1.18	1.23
28	V	55	5MU	O4-C4	-2.52	1.18	1.23
30	a	2455	PSU	C6-N1	-2.50	1.32	1.36
30	a	1615	6MZ	C5-N7	-2.48	1.34	1.39
30	a	953	PSU	C6-N1	-2.47	1.32	1.36
30	a	743	1MG	C5-N7	-2.46	1.34	1.39
30	a	1960	5MC	C6-C5	2.45	1.38	1.34
30	a	745	5MU	O2-C2	-2.45	1.18	1.23
30	a	743	1MG	C8-N9	-2.43	1.32	1.37
30	a	2249	OMG	C5-N7	-2.43	1.34	1.39
30	a	1913	3TD	O2-C2	-2.43	1.18	1.23
30	a	2550	OMU	O2-C2	-2.43	1.18	1.23
30	a	2602	PSU	C6-N1	-2.42	1.32	1.36
30	a	2502	PSU	C6-N1	-2.42	1.32	1.36
30	a	2502	PSU	O2-C2	-2.41	1.18	1.23
30	a	2603	PSU	C6-N1	-2.41	1.32	1.36
30	a	2028	6MZ	C5-N7	-2.41	1.34	1.39
7	A	525	G7M	C2-N1	-2.40	1.31	1.37
30	a	2550	OMU	C6-N1	-2.40	1.32	1.38
30	a	2067	G7M	C2-N1	-2.38	1.31	1.37
7	A	1496	UR3	O2-C2	2.37	1.27	1.22
30	a	2578	PSU	O4'-C1'	-2.34	1.40	1.43
30	a	744	PSU	C6-N1	-2.34	1.32	1.36
7	A	514	PSU	C6-N1	-2.34	1.32	1.36
30	a	2455	PSU	O2-C2	-2.32	1.18	1.23
30	a	2602	PSU	O2-C2	-2.29	1.18	1.23
30	a	953	PSU	O2-C2	-2.28	1.18	1.23
30	a	1913	3TD	C6-N1	-2.27	1.32	1.36
30	a	2578	PSU	O2-C2	-2.26	1.18	1.23
28	V	55	5MU	O2-C2	-2.24	1.18	1.23
30	a	1915	PSU	O2-C2	-2.22	1.18	1.23
7	A	1496	UR3	C6-N1	-2.22	1.32	1.38
7	A	1517	MA6	C5-N7	-2.22	1.34	1.39
30	a	1915	PSU	C6-N1	-2.22	1.32	1.36
30	a	2603	PSU	O2-C2	-2.22	1.18	1.23
30	a	1909	PSU	O2-C2	-2.20	1.18	1.23
28	V	56	PSU	C6-N1	-2.20	1.32	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
30	a	2550	OMU	C5-C4	-2.20	1.38	1.43
30	a	1909	PSU	C6-N1	-2.19	1.32	1.36
30	a	2443	2MG	C4-N9	-2.18	1.32	1.38
30	a	2249	OMG	C2-N1	-2.16	1.32	1.37
30	a	1909	PSU	O4-C4	-2.16	1.19	1.23
28	V	56	PSU	O2-C2	-2.15	1.18	1.23
7	A	514	PSU	O2-C2	-2.15	1.18	1.23
28	V	33	OMC	C6-C5	2.15	1.40	1.35
30	a	744	PSU	O2-C2	-2.15	1.18	1.23
30	a	2443	2MG	CM2-N2	-2.13	1.41	1.45
7	A	1514	2MG	C4-N9	-2.12	1.32	1.38
30	a	2496	OMC	C6-C5	2.08	1.39	1.35
7	A	1516	MA6	C5-N7	-2.08	1.35	1.39
30	a	1915	PSU	O4-C4	-2.08	1.19	1.23
30	a	2496	OMC	C5-C4	-2.06	1.38	1.42
30	a	1960	5MC	C2-N3	-2.05	1.32	1.36
30	a	2443	2MG	C8-N9	-2.01	1.33	1.37
18	L	89	D2T	CB-CG	2.00	1.55	1.52

All (240) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
30	a	2447	H2U	C4-N3-C2	-16.69	111.95	125.79
28	V	21	H2U	C4-N3-C2	-13.26	114.79	125.79
28	V	21	H2U	O2-C2-N1	-11.05	109.24	123.11
30	a	2447	H2U	O2-C2-N1	-10.87	109.46	123.11
30	a	745	5MU	C5M-C5-C4	9.01	128.69	118.77
30	a	1937	5MU	C4-N3-C2	-8.79	115.97	127.35
28	V	55	5MU	C5M-C5-C4	8.68	128.32	118.77
30	a	745	5MU	C4-N3-C2	-8.38	116.50	127.35
30	a	1937	5MU	N3-C2-N1	8.36	126.00	114.89
30	a	1937	5MU	C5M-C5-C4	8.30	127.90	118.77
30	a	745	5MU	N3-C2-N1	8.08	125.61	114.89
28	V	55	5MU	C4-N3-C2	-8.06	116.91	127.35
28	V	55	5MU	N3-C2-N1	7.99	125.50	114.89
28	V	8	4SU	C4-N3-C2	-7.87	119.70	127.34
30	a	1937	5MU	C5-C6-N1	-7.70	115.42	123.34
30	a	2447	H2U	O4-C4-N3	-7.52	108.36	120.28
28	V	21	H2U	O4-C4-N3	-7.46	108.45	120.28
30	a	745	5MU	C5-C6-N1	-7.31	115.81	123.34
28	V	21	H2U	O2-C2-N3	-7.27	107.95	121.50
30	a	2501	2MA	C5-C4-N3	-7.15	119.15	127.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
30	a	745	5MU	C5M-C5-C6	-7.14	113.32	122.85
30	a	743	1MG	C5-C4-N3	-7.13	116.89	128.46
7	A	1205	2MG	C2-N3-C4	7.11	120.86	112.04
7	A	1514	2MG	C2-N3-C4	7.10	120.84	112.04
30	a	1831	2MG	C2-N3-C4	7.04	120.77	112.04
7	A	964	2MG	C2-N3-C4	7.00	120.72	112.04
28	V	55	5MU	C5-C6-N1	-6.93	116.21	123.34
28	V	55	5MU	C5M-C5-C6	-6.93	113.60	122.85
30	a	2443	2MG	C2-N3-C4	6.74	120.40	112.04
30	a	1913	3TD	N1-C2-N3	6.63	121.37	116.14
30	a	1937	5MU	C5M-C5-C6	-6.54	114.11	122.85
28	V	21	H2U	O4-C4-C5	-6.53	108.22	122.17
30	a	1937	5MU	C5-C4-N3	6.48	120.84	115.31
30	a	2447	H2U	O4-C4-C5	-6.33	108.65	122.17
7	A	1517	MA6	C5-C4-N3	-6.25	118.59	126.75
30	a	2447	H2U	O2-C2-N3	-6.17	110.00	121.50
30	a	745	5MU	C5-C4-N3	6.07	120.50	115.31
17	K	119	IAS	OD1-CG-CB	-5.97	108.03	125.43
30	a	2447	H2U	N3-C2-N1	-5.96	110.36	116.65
30	a	2502	PSU	N1-C2-N3	5.82	121.72	115.13
30	a	2455	PSU	N1-C2-N3	5.71	121.59	115.13
28	V	55	5MU	C5-C4-N3	5.70	120.18	115.31
7	A	1516	MA6	C5-C4-N3	-5.69	119.33	126.75
30	a	2602	PSU	N1-C2-N3	5.53	121.40	115.13
28	V	8	4SU	C5-C4-N3	5.50	119.79	114.69
30	a	953	PSU	N1-C2-N3	5.50	121.36	115.13
30	a	744	PSU	N1-C2-N3	5.47	121.33	115.13
28	V	56	PSU	N1-C2-N3	5.46	121.32	115.13
30	a	2578	PSU	N1-C2-N3	5.46	121.31	115.13
30	a	1915	PSU	N1-C2-N3	5.40	121.25	115.13
30	a	2603	PSU	N1-C2-N3	5.35	121.19	115.13
30	a	2249	OMG	C5-C4-N3	-5.34	119.80	128.46
30	a	2550	OMU	N3-C2-N1	5.33	121.97	114.89
30	a	1909	PSU	N1-C2-N3	5.30	121.14	115.13
7	A	525	G7M	C2-N3-C4	5.24	121.63	112.30
30	a	2028	6MZ	C9-N6-C6	-5.24	118.36	122.87
30	a	1615	6MZ	C5-C4-N3	-5.22	119.94	126.75
7	A	1205	2MG	C5-C4-N3	-5.18	120.05	128.46
30	a	2501	2MA	N3-C4-N9	5.18	134.18	126.99
7	A	514	PSU	N1-C2-N3	5.18	121.00	115.13
30	a	2067	G7M	C2-N3-C4	5.17	121.51	112.30
30	a	1831	2MG	C5-C4-N3	-5.15	120.10	128.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	A	964	2MG	C5-C4-N3	-5.11	120.16	128.46
30	a	2028	6MZ	C5-C4-N3	-5.10	120.10	126.75
30	a	743	1MG	C2-N3-C4	5.08	123.41	111.98
30	a	743	1MG	N9-C4-N3	5.03	136.04	125.94
28	V	21	H2U	N3-C2-N1	-5.03	111.34	116.65
7	A	965	5MC	C5-C6-N1	-4.99	118.21	123.34
7	A	1514	2MG	C5-C4-N3	-4.94	120.45	128.46
30	a	1615	6MZ	N1-C2-N3	-4.89	120.95	128.60
30	a	2443	2MG	C5-C4-N3	-4.88	120.55	128.46
7	A	1405	5MC	C5-C6-N1	-4.86	118.33	123.34
30	a	2028	6MZ	N1-C2-N3	-4.83	121.04	128.60
7	A	1517	MA6	N3-C4-N9	4.77	134.95	127.08
7	A	1516	MA6	N1-C2-N3	-4.74	121.19	128.60
7	A	525	G7M	C5-C4-N3	-4.70	119.13	128.15
7	A	1517	MA6	N1-C2-N3	-4.69	121.27	128.60
30	a	1960	5MC	C5-C6-N1	-4.69	118.52	123.34
30	a	1615	6MZ	C9-N6-C6	-4.59	118.92	122.87
7	A	1496	UR3	C4-N3-C2	-4.58	120.25	124.56
30	a	2249	OMG	C2-N3-C4	4.55	120.40	112.30
7	A	1516	MA6	N3-C4-N9	4.45	134.41	127.08
30	a	2067	G7M	C5-C4-N3	-4.45	119.62	128.15
30	a	2067	G7M	C5-C6-N1	4.32	120.81	111.79
7	A	525	G7M	C5-C6-N1	4.32	120.81	111.79
7	A	1517	MA6	C2-N3-C4	4.23	121.74	111.75
30	a	1937	5MU	O2-C2-N1	-4.22	117.18	122.79
30	a	2550	OMU	C4-N3-C2	-4.20	121.04	126.58
7	A	1516	MA6	C2-N1-C6	4.10	121.44	111.75
7	A	1516	MA6	C2-N3-C4	4.02	121.25	111.75
30	a	745	5MU	O4-C4-N3	-4.00	112.45	120.12
7	A	1517	MA6	C2-N1-C6	3.90	120.95	111.75
30	a	744	PSU	C4-N3-C2	-3.87	120.76	126.34
30	a	1615	6MZ	C2-N3-C4	3.86	120.87	111.75
30	a	1937	5MU	O4-C4-N3	-3.85	112.74	120.12
30	a	2455	PSU	C4-N3-C2	-3.83	120.81	126.34
30	a	2249	OMG	N9-C4-N3	3.83	133.62	125.94
30	a	2028	6MZ	C2-N3-C4	3.82	120.77	111.75
7	A	525	G7M	N9-C4-N3	3.75	133.47	125.94
28	V	55	5MU	O4-C4-N3	-3.73	112.97	120.12
28	V	56	PSU	C4-N3-C2	-3.72	120.97	126.34
28	V	8	4SU	N3-C2-N1	3.72	119.83	114.89
7	A	1516	MA6	N9-C8-N7	-3.69	108.87	113.91
30	a	2502	PSU	C4-N3-C2	-3.68	121.04	126.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
30	a	2603	PSU	C4-N3-C2	-3.68	121.04	126.34
30	a	2067	G7M	C6-C5-N7	3.66	136.67	132.25
30	a	953	PSU	C4-N3-C2	-3.65	121.08	126.34
30	a	2602	PSU	C4-N3-C2	-3.64	121.09	126.34
30	a	1915	PSU	C4-N3-C2	-3.60	121.15	126.34
30	a	2028	6MZ	C6-C5-N7	3.56	136.24	132.39
30	a	1909	PSU	C4-N3-C2	-3.55	121.23	126.34
7	A	1516	MA6	C5-N7-C8	3.52	108.51	103.51
30	a	1831	2MG	N9-C4-N3	3.52	133.01	125.94
28	V	55	5MU	O2-C2-N1	-3.51	118.11	122.79
30	a	2578	PSU	C4-N3-C2	-3.51	121.28	126.34
7	A	514	PSU	C4-N3-C2	-3.49	121.31	126.34
30	a	2028	6MZ	C5-N7-C8	3.46	108.43	103.51
28	V	8	4SU	C5-C4-S4	-3.44	120.03	124.47
7	A	525	G7M	O6-C6-C5	-3.44	120.30	128.06
30	a	2067	G7M	O6-C6-C5	-3.43	120.32	128.06
30	a	1615	6MZ	N3-C4-N9	3.43	132.74	127.08
30	a	745	5MU	O2-C2-N1	-3.43	118.23	122.79
7	A	1516	MA6	C4-N9-C8	3.41	109.42	105.73
7	A	1517	MA6	C5-N7-C8	3.41	108.35	103.51
7	A	964	2MG	N9-C4-N3	3.40	132.76	125.94
30	a	2067	G7M	N9-C4-N3	3.39	132.74	125.94
7	A	1517	MA6	N9-C8-N7	-3.36	109.32	113.91
7	A	1205	2MG	N9-C4-N3	3.36	132.68	125.94
30	a	2028	6MZ	N9-C8-N7	-3.33	109.36	113.91
30	a	2028	6MZ	N3-C4-N9	3.32	132.54	127.08
30	a	2028	6MZ	C4-C5-N7	-3.31	106.59	110.62
30	a	2578	PSU	O2-C2-N1	-3.28	119.17	122.79
30	a	1615	6MZ	C5-N7-C8	3.28	108.16	103.51
30	a	2455	PSU	O2-C2-N1	-3.25	119.22	122.79
30	a	1615	6MZ	C6-C5-N7	3.21	135.86	132.39
30	a	2443	2MG	N9-C4-N3	3.17	132.31	125.94
7	A	525	G7M	C6-C5-N7	3.17	136.08	132.25
30	a	953	PSU	O2-C2-N1	-3.17	119.30	122.79
41	l	81	4D4	NE-CZ-NH2	3.17	126.26	120.70
30	a	1615	6MZ	C4-C5-N7	-3.15	106.78	110.62
7	A	1514	2MG	N9-C4-N3	3.12	132.20	125.94
30	a	2602	PSU	O2-C2-N1	-3.11	119.36	122.79
30	a	744	PSU	O2-C2-N1	-3.08	119.40	122.79
7	A	514	PSU	O2-C2-N1	-3.07	119.41	122.79
7	A	1514	2MG	C6-C5-N7	3.05	135.92	130.25
30	a	1615	6MZ	N9-C8-N7	-3.03	109.77	113.91

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	A	1516	MA6	C4-C5-N7	-3.02	106.94	110.62
7	A	1517	MA6	C4-C5-N7	-3.00	106.97	110.62
30	a	2502	PSU	O2-C2-N1	-2.98	119.51	122.79
30	a	2443	2MG	C6-C5-N7	2.95	135.74	130.25
30	a	2603	PSU	O2-C2-N1	-2.93	119.56	122.79
7	A	1517	MA6	C4-N9-C8	2.92	108.89	105.73
28	V	56	PSU	O2-C2-N1	-2.89	119.61	122.79
30	a	2501	2MA	N9-C8-N7	-2.89	109.97	113.91
30	a	1915	PSU	O2-C2-N1	-2.87	119.63	122.79
30	a	745	5MU	O2-C2-N3	-2.87	116.16	121.50
30	a	1913	3TD	C4-N3-C2	-2.85	121.52	124.61
7	A	1205	2MG	C6-C5-N7	2.84	135.53	130.25
7	A	964	2MG	C6-C5-N7	2.83	135.52	130.25
30	a	2067	G7M	C2-N1-C6	-2.81	119.98	125.10
30	a	2501	2MA	C5-N7-C8	2.78	107.45	103.51
30	a	1831	2MG	C6-C5-N7	2.76	135.38	130.25
30	a	745	5MU	C1'-N1-C6	-2.76	116.53	121.12
30	a	2249	OMG	C6-C5-N7	2.75	135.36	130.25
7	A	525	G7M	C2-N1-C6	-2.75	120.09	125.10
28	V	55	5MU	O2-C2-N3	-2.74	116.39	121.50
30	a	1909	PSU	O2-C2-N1	-2.74	119.77	122.79
18	L	89	D2T	OD1-CG-CB	-2.73	116.72	122.44
30	a	2496	OMC	O2-C2-N3	-2.67	117.98	122.33
30	a	2550	OMU	O2-C2-N1	-2.65	119.27	122.79
30	a	2550	OMU	O4-C4-C5	-2.56	120.65	125.16
30	a	1937	5MU	O2-C2-N3	-2.51	116.82	121.50
7	A	1514	2MG	C4-C5-N7	-2.51	106.75	110.72
30	a	2443	2MG	C4-C5-N7	-2.49	106.78	110.72
30	a	2501	2MA	C4-C5-N7	-2.47	107.61	110.62
30	a	2249	OMG	C5-C6-N1	2.47	119.47	113.19
30	a	2550	OMU	C5-C4-N3	2.47	118.53	114.84
30	a	1937	5MU	C6-N1-C2	2.46	123.79	121.30
30	a	2578	PSU	O4'-C1'-C2'	2.46	108.61	105.14
7	A	964	2MG	C4-C5-N7	-2.46	106.83	110.72
30	a	743	1MG	C5-C6-N1	2.46	119.66	114.91
7	A	1205	2MG	C4-C5-N7	-2.45	106.84	110.72
30	a	1913	3TD	C5-C6-N1	-2.45	118.43	122.11
7	A	965	5MC	C5-C4-N3	-2.43	119.05	121.67
30	a	2443	2MG	CM2-N2-C2	-2.43	118.49	123.86
41	l	82	MS6	CE-SD-CG	2.43	108.73	100.40
30	a	2249	OMG	C8-N7-C5	2.40	108.58	104.24
30	a	2501	2MA	C4-N9-C8	2.37	108.30	105.73

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
30	a	743	1MG	C4-C5-N7	-2.36	106.99	110.72
30	a	2249	OMG	C4-C5-N7	-2.34	107.02	110.72
30	a	2028	6MZ	C4-N9-C8	2.33	108.25	105.73
30	a	1831	2MG	C4-C5-N7	-2.31	107.07	110.72
30	a	2249	OMG	O6-C6-C5	-2.30	120.50	126.60
7	A	1405	5MC	C5-C4-N3	-2.28	119.21	121.67
7	A	1205	2MG	C2-N1-C6	-2.28	121.86	124.48
7	A	1496	UR3	C5-C6-N1	-2.28	117.99	121.81
30	a	2443	2MG	C2-N1-C6	-2.27	121.86	124.48
7	A	1514	2MG	O6-C6-C5	-2.27	120.57	126.60
28	V	55	5MU	C1'-N1-C6	-2.26	117.36	121.12
30	a	745	5MU	C6-N1-C2	2.26	123.58	121.30
30	a	1960	5MC	C5-C4-N3	-2.26	119.24	121.67
7	A	964	2MG	C2-N1-C6	-2.25	121.89	124.48
7	A	1400	4OC	C5-C4-N3	-2.25	118.98	122.59
30	a	2496	OMC	N1-C2-N3	2.24	122.89	118.81
30	a	2501	2MA	N3-C2-N1	-2.24	121.60	125.72
30	a	1831	2MG	O6-C6-C5	-2.24	120.67	126.60
7	A	1205	2MG	O6-C6-C5	-2.23	120.68	126.60
7	A	1514	2MG	C2-N1-C6	-2.23	121.91	124.48
30	a	2249	OMG	N9-C8-N7	-2.22	109.20	113.39
30	a	2443	2MG	O6-C6-C5	-2.22	120.71	126.60
7	A	514	PSU	O4'-C1'-C2'	2.22	108.27	105.14
28	V	33	OMC	N1-C2-N3	2.22	122.84	118.81
7	A	964	2MG	O6-C6-C5	-2.20	120.77	126.60
30	a	1831	2MG	C5-C6-N1	2.20	118.77	113.19
30	a	2249	OMG	C2-N1-C6	-2.19	121.10	125.10
30	a	2502	PSU	C6-N1-C2	-2.19	120.44	122.68
7	A	1514	2MG	C5-C6-N1	2.19	118.75	113.19
7	A	964	2MG	CM2-N2-C2	-2.19	119.03	123.86
30	a	1831	2MG	C2-N1-C6	-2.17	121.98	124.48
7	A	1205	2MG	C5-C6-N1	2.17	118.71	113.19
7	A	1400	4OC	O2-C2-N3	-2.14	118.86	122.33
7	A	964	2MG	C8-N7-C5	2.13	108.10	104.24
30	a	743	1MG	C6-C5-N7	2.13	134.17	129.35
30	a	2443	2MG	C5-C6-N1	2.13	118.60	113.19
30	a	2443	2MG	C8-N7-C5	2.13	108.09	104.24
7	A	964	2MG	C5-C6-N1	2.13	118.60	113.19
30	a	2455	PSU	O4'-C1'-C2'	2.12	108.13	105.14
7	A	1517	MA6	C4-C5-C6	2.12	118.25	115.88
30	a	2578	PSU	C6-N1-C2	-2.10	120.53	122.68
7	A	1514	2MG	C8-N7-C5	2.10	108.05	104.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	A	1514	2MG	N1-C2-N3	-2.09	120.71	123.95
41	l	81	4D4	NH1-CZ-NE	-2.09	114.37	119.19
28	V	33	OMC	O2-C2-N3	-2.09	118.94	122.33
30	a	743	1MG	C8-N7-C5	2.08	108.01	104.24
30	a	1615	6MZ	C4-N9-C8	2.06	107.96	105.73
7	A	1205	2MG	C8-N7-C5	2.06	107.97	104.24
7	A	1514	2MG	CM2-N2-C2	-2.02	119.40	123.86
17	K	119	IAS	OXT-C-CA	2.02	120.25	113.38
30	a	1831	2MG	C8-N7-C5	2.02	107.89	104.24
30	a	1831	2MG	N1-C2-N3	-2.01	120.84	123.95

There are no chirality outliers.

All (47) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
18	L	89	D2T	CA-CB-CG-OD1
18	L	89	D2T	CA-CB-CG-OD2
18	L	89	D2T	SB-CB-CG-OD2
28	V	21	H2U	O4'-C4'-C5'-O5'
28	V	21	H2U	C3'-C4'-C5'-O5'
28	V	21	H2U	O4'-C1'-N1-C2
28	V	21	H2U	O4'-C1'-N1-C6
28	V	21	H2U	C2'-C1'-N1-C6
28	V	33	OMC	C1'-C2'-O2'-CM2
33	d	150	MEQ	O-C-CA-CB
7	A	1205	2MG	N3-C2-N2-CM2
7	A	1517	MA6	C5-C6-N6-C9
7	A	1517	MA6	C5-C6-N6-C10
17	K	119	IAS	N-CA-CB-CG
30	a	1831	2MG	N1-C2-N2-CM2
30	a	1831	2MG	N3-C2-N2-CM2
7	A	525	G7M	C3'-C4'-C5'-O5'
7	A	1517	MA6	O4'-C4'-C5'-O5'
30	a	2028	6MZ	O4'-C4'-C5'-O5'
30	a	2028	6MZ	C3'-C4'-C5'-O5'
7	A	1517	MA6	C3'-C4'-C5'-O5'
30	a	1913	3TD	C3'-C4'-C5'-O5'
30	a	1913	3TD	O4'-C4'-C5'-O5'
7	A	1517	MA6	N1-C6-N6-C10
33	d	150	MEQ	OE1-CD-CG-CB
33	d	150	MEQ	NE2-CD-CG-CB
41	l	82	MS6	CB-CG-SD-CE

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
7	A	525	G7M	O4'-C4'-C5'-O5'
7	A	1516	MA6	C5-C6-N6-C10
30	a	2249	OMG	C1'-C2'-O2'-CM2
18	L	89	D2T	CG-CB-SB-CB1
28	V	33	OMC	C4'-C5'-O5'-P
7	A	525	G7M	C4'-C5'-O5'-P
30	a	1831	2MG	O4'-C4'-C5'-O5'
30	a	1831	2MG	C3'-C4'-C5'-O5'
7	A	1516	MA6	C5-C6-N6-C9
41	l	81	4D4	CG-CD-NE-CZ
30	a	2501	2MA	C4'-C5'-O5'-P
28	V	21	H2U	C4'-C5'-O5'-P
17	K	119	IAS	CA-CB-CG-OD1
28	V	21	H2U	C2'-C1'-N1-C2
30	a	744	PSU	O4'-C1'-C5-C6
30	a	2447	H2U	C2'-C1'-N1-C2
30	a	2447	H2U	O4'-C1'-N1-C2
30	a	2067	G7M	O4'-C4'-C5'-O5'
30	a	2501	2MA	O4'-C4'-C5'-O5'
41	l	81	4D4	O-C-CA-CB

There are no ring outliers.

12 monomers are involved in 18 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	A	1400	4OC	2	0
7	A	964	2MG	3	0
30	a	2028	6MZ	3	0
28	V	33	OMC	1	0
30	a	953	PSU	1	0
30	a	2501	2MA	1	0
28	V	21	H2U	2	0
28	V	55	5MU	1	0
7	A	1516	MA6	1	0
30	a	1915	PSU	1	0
30	a	1913	3TD	1	0
30	a	743	1MG	1	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 530 ligands modelled in this entry, 530 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

The following chains have linkage breaks:

Mol	Chain	Number of breaks
30	a	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	a	1913:3TD	O3'	1914:A	P	5.28
1	a	1912:C	O3'	1913:3TD	P	3.05

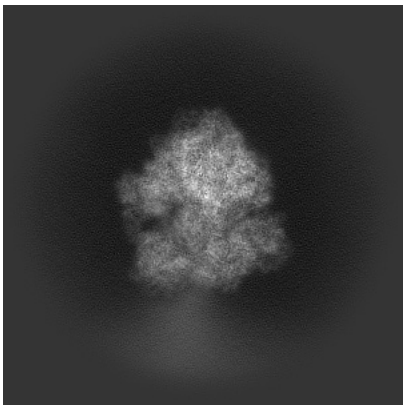
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-55796. These allow visual inspection of the internal detail of the map and identification of artifacts.

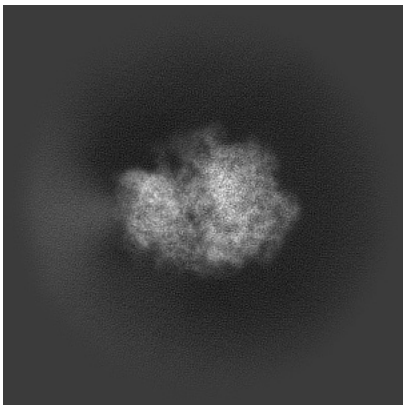
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

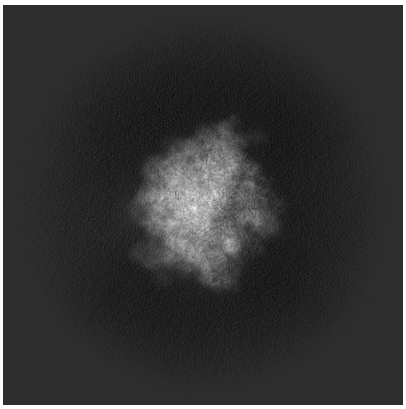
6.1.1 Primary map



X

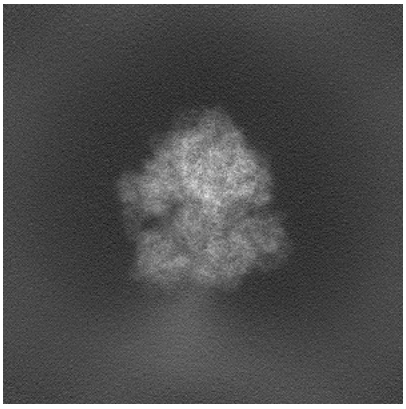


Y

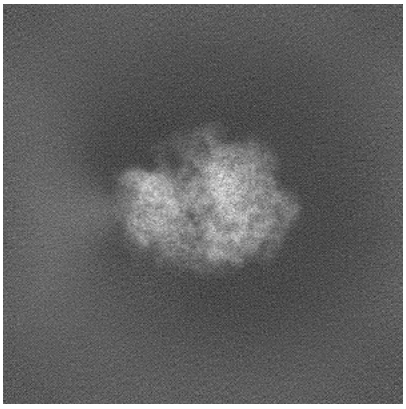


Z

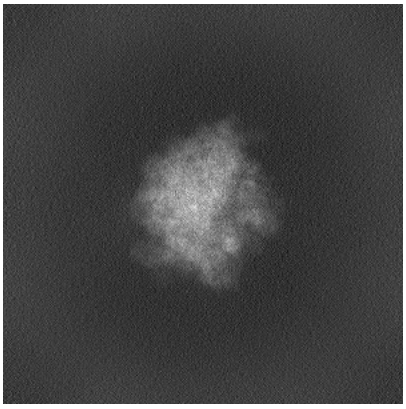
6.1.2 Raw map



X



Y

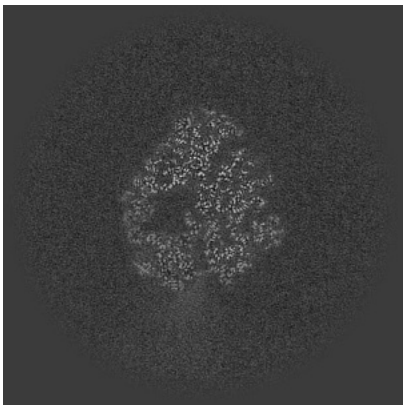


Z

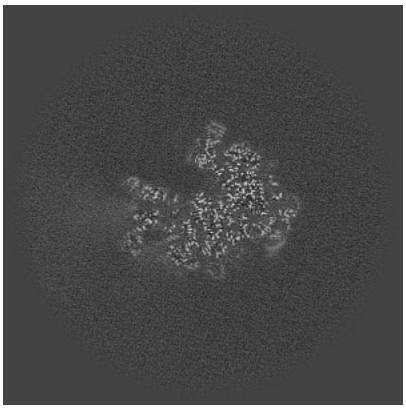
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

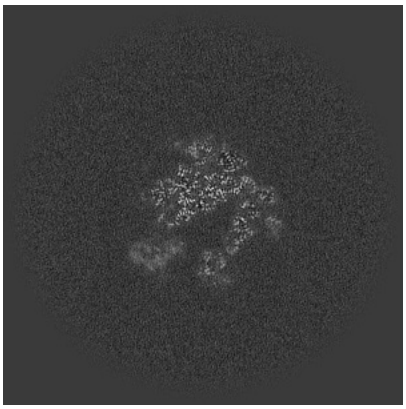
6.2.1 Primary map



X Index: 256

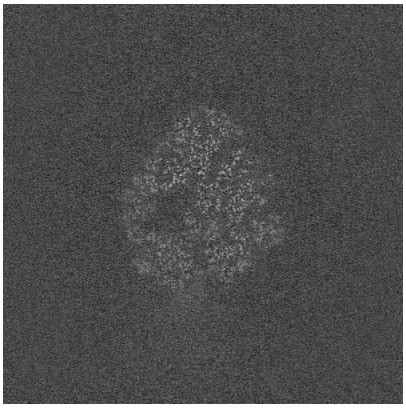


Y Index: 256

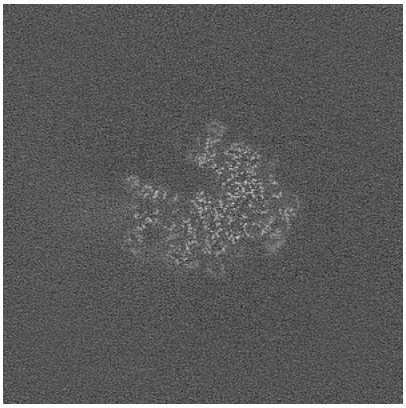


Z Index: 256

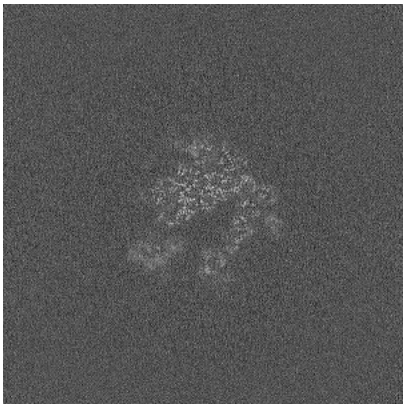
6.2.2 Raw map



X Index: 256



Y Index: 256

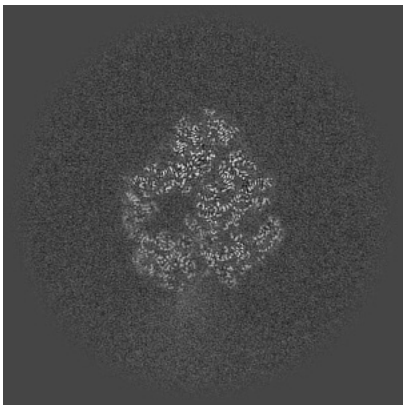


Z Index: 256

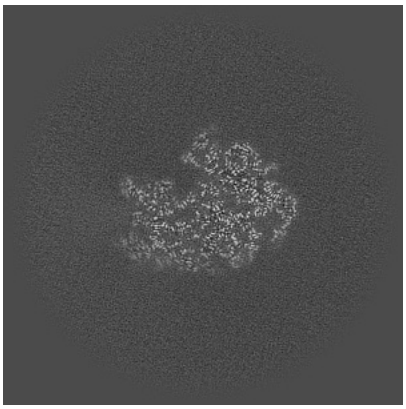
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

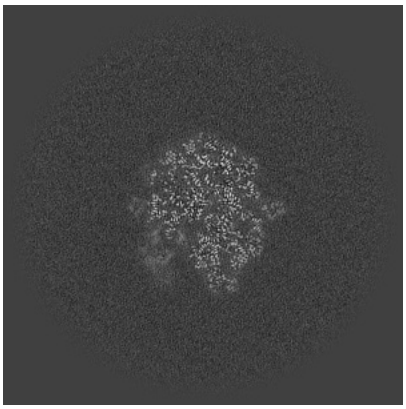
6.3.1 Primary map



X Index: 260

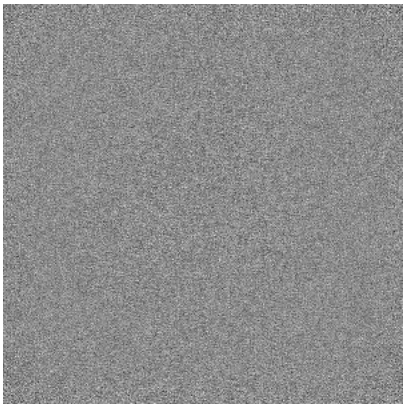


Y Index: 265

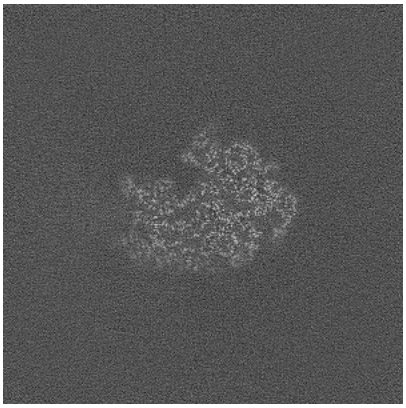


Z Index: 278

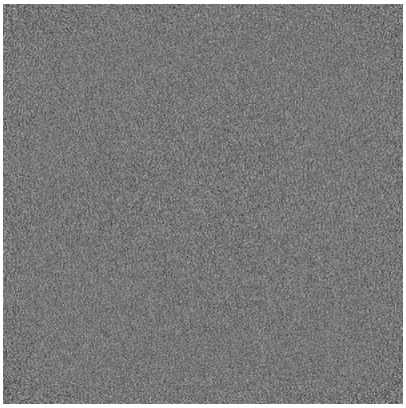
6.3.2 Raw map



X Index: 0



Y Index: 265

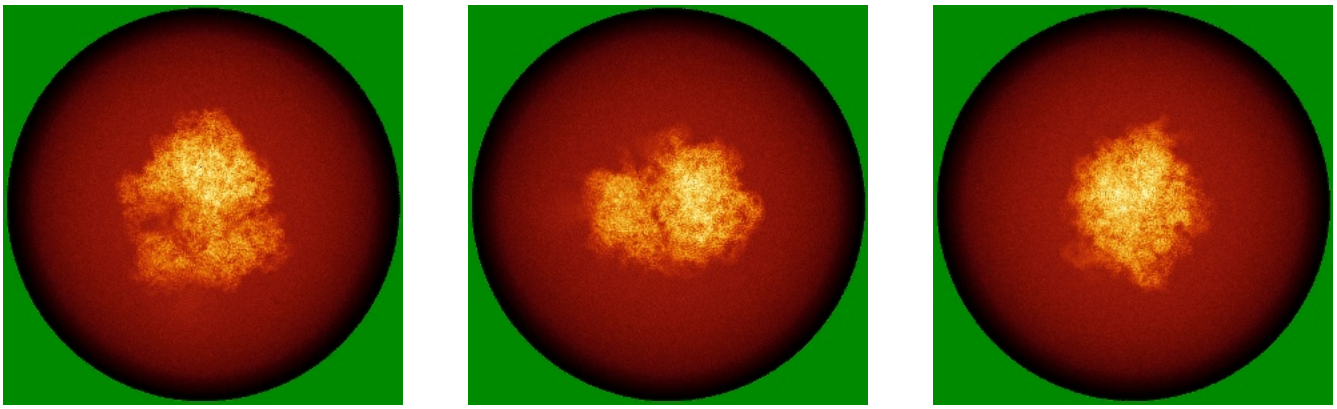


Z Index: 0

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

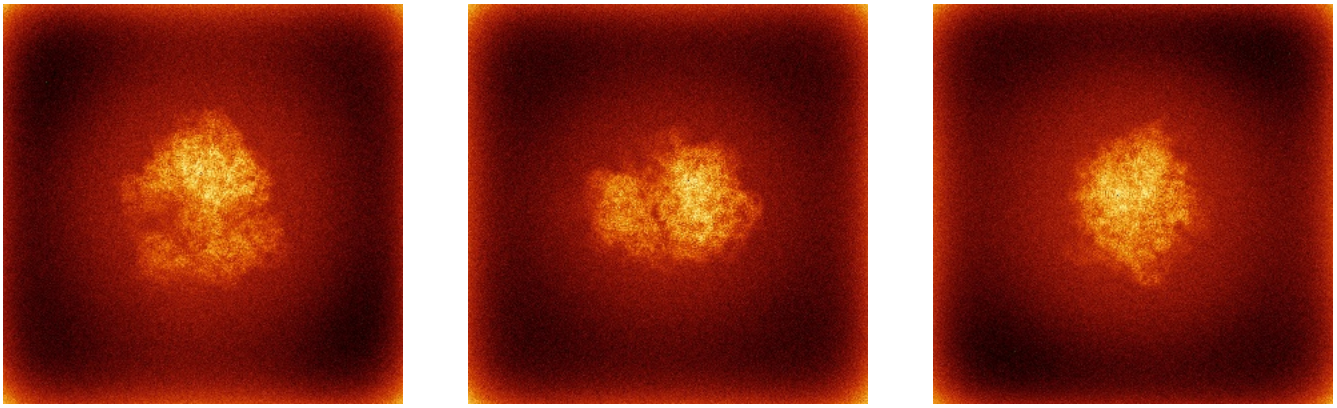
6.4 Orthogonal standard-deviation projections (False-color) (i)

6.4.1 Primary map



X Y Z

6.4.2 Raw map

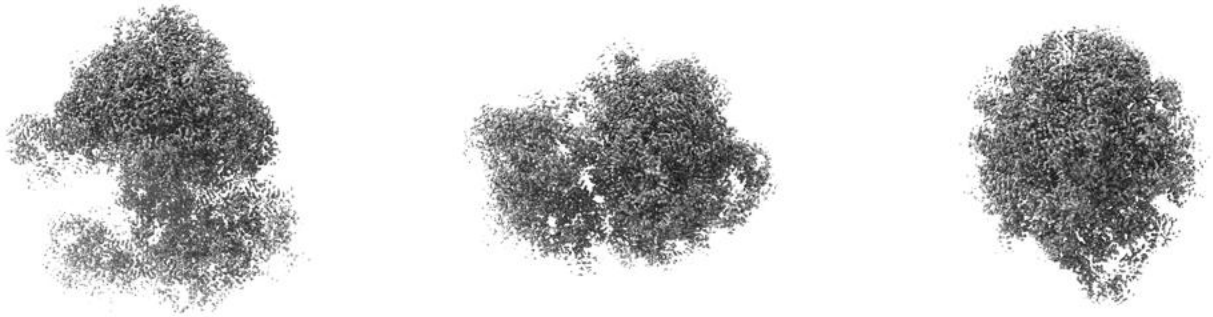


X Y Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.55. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

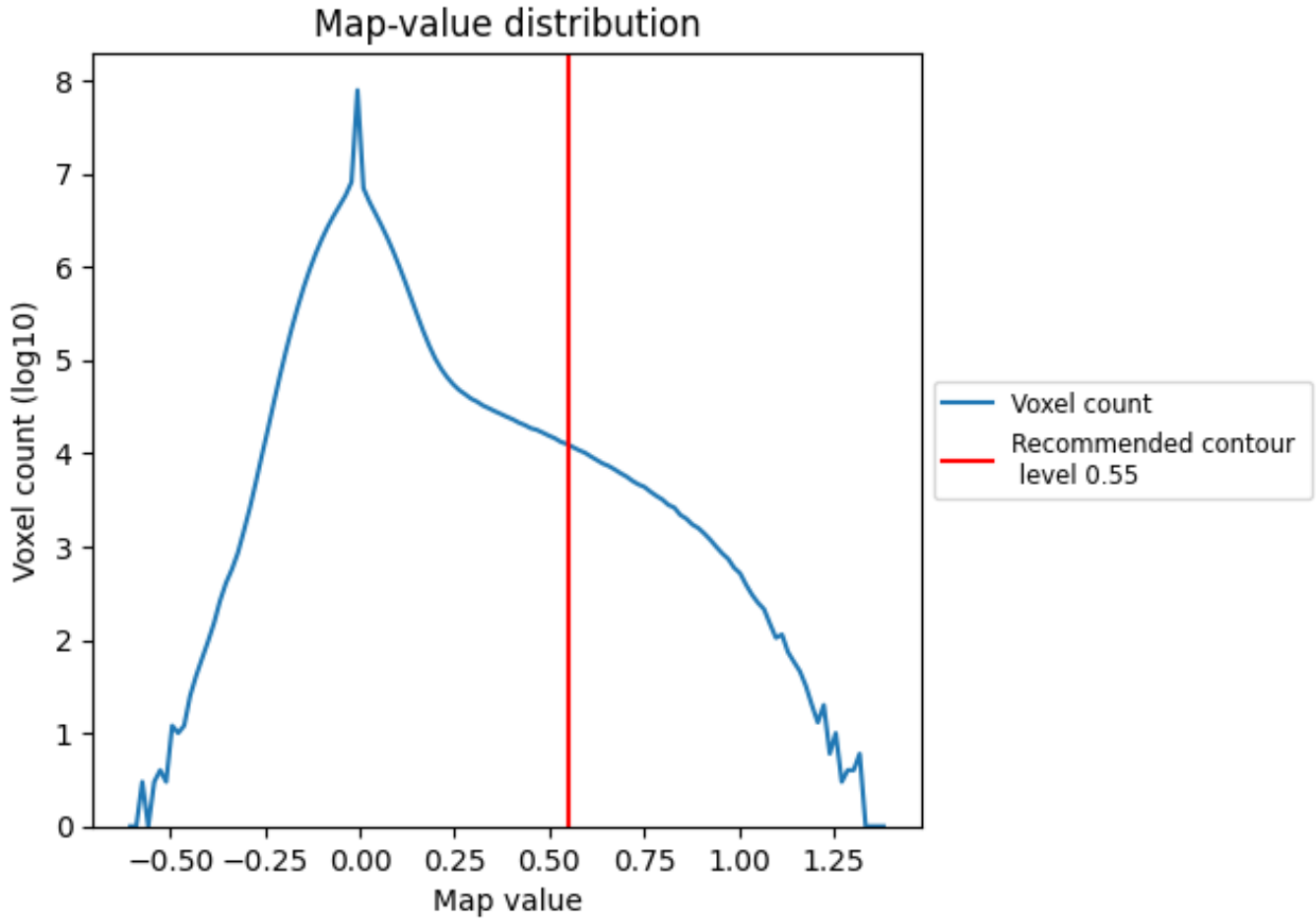
6.6 Mask visualisation (i)

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

7 Map analysis

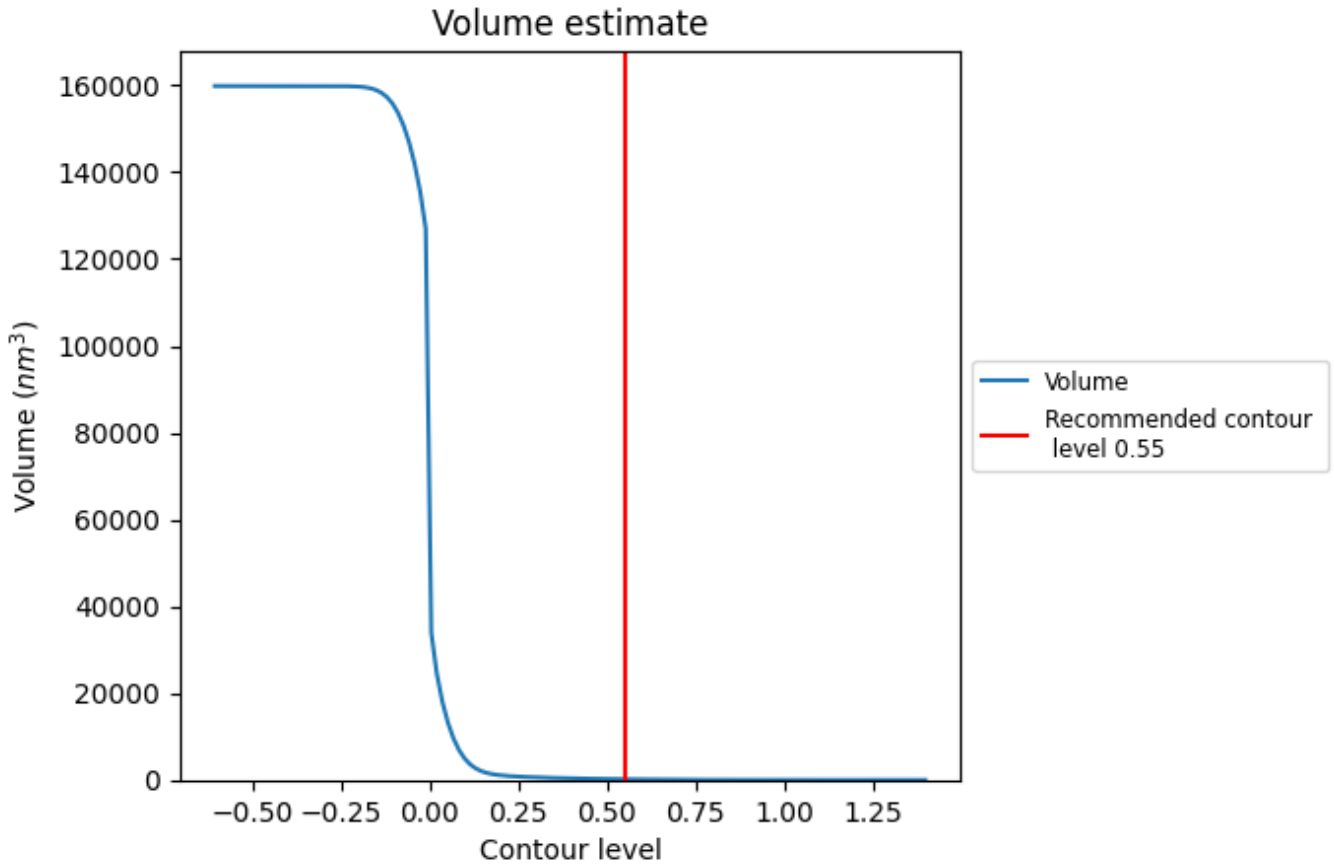
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

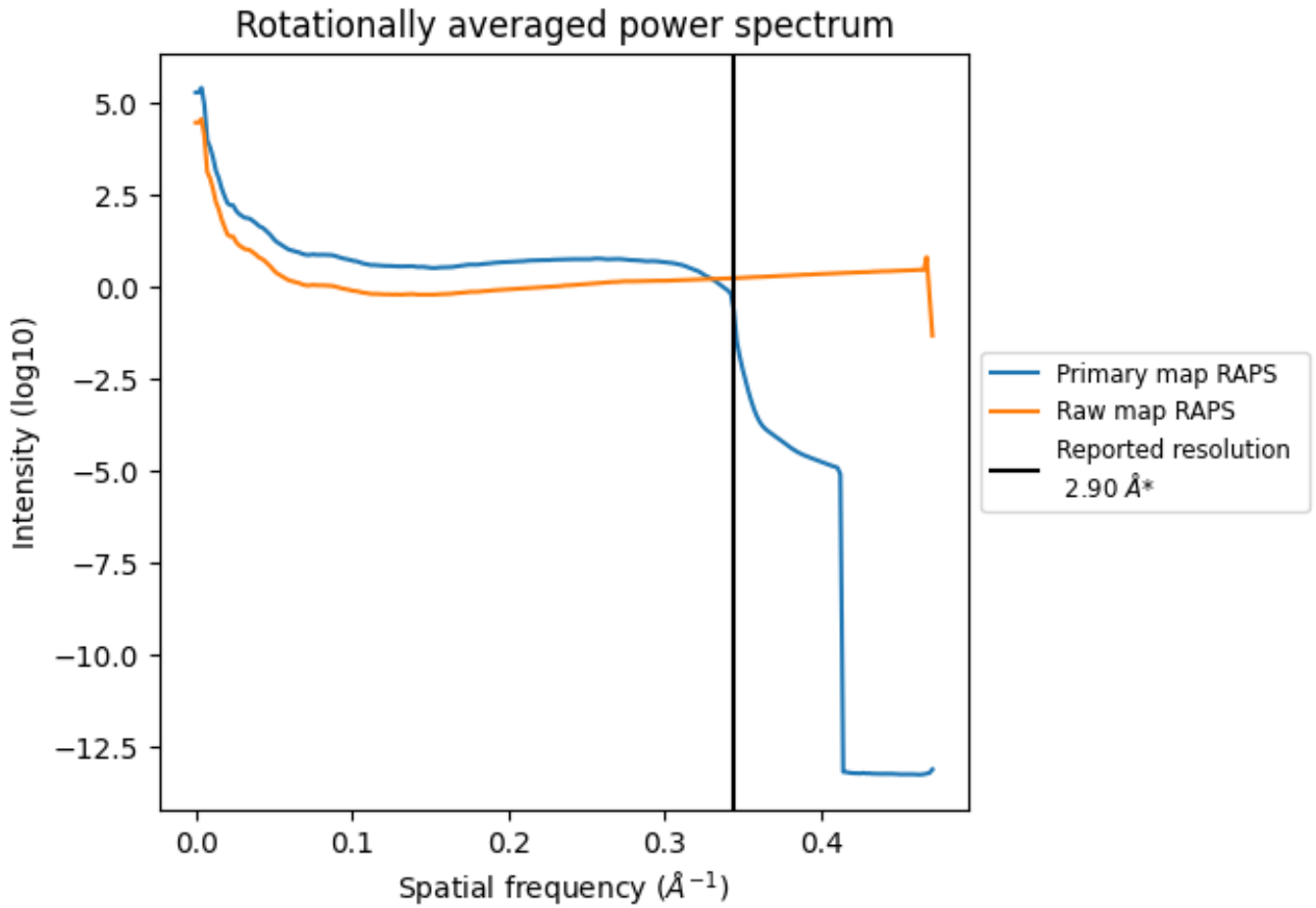
7.2 Volume estimate



The volume at the recommended contour level is 165 nm^3; this corresponds to an approximate mass of 149 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)

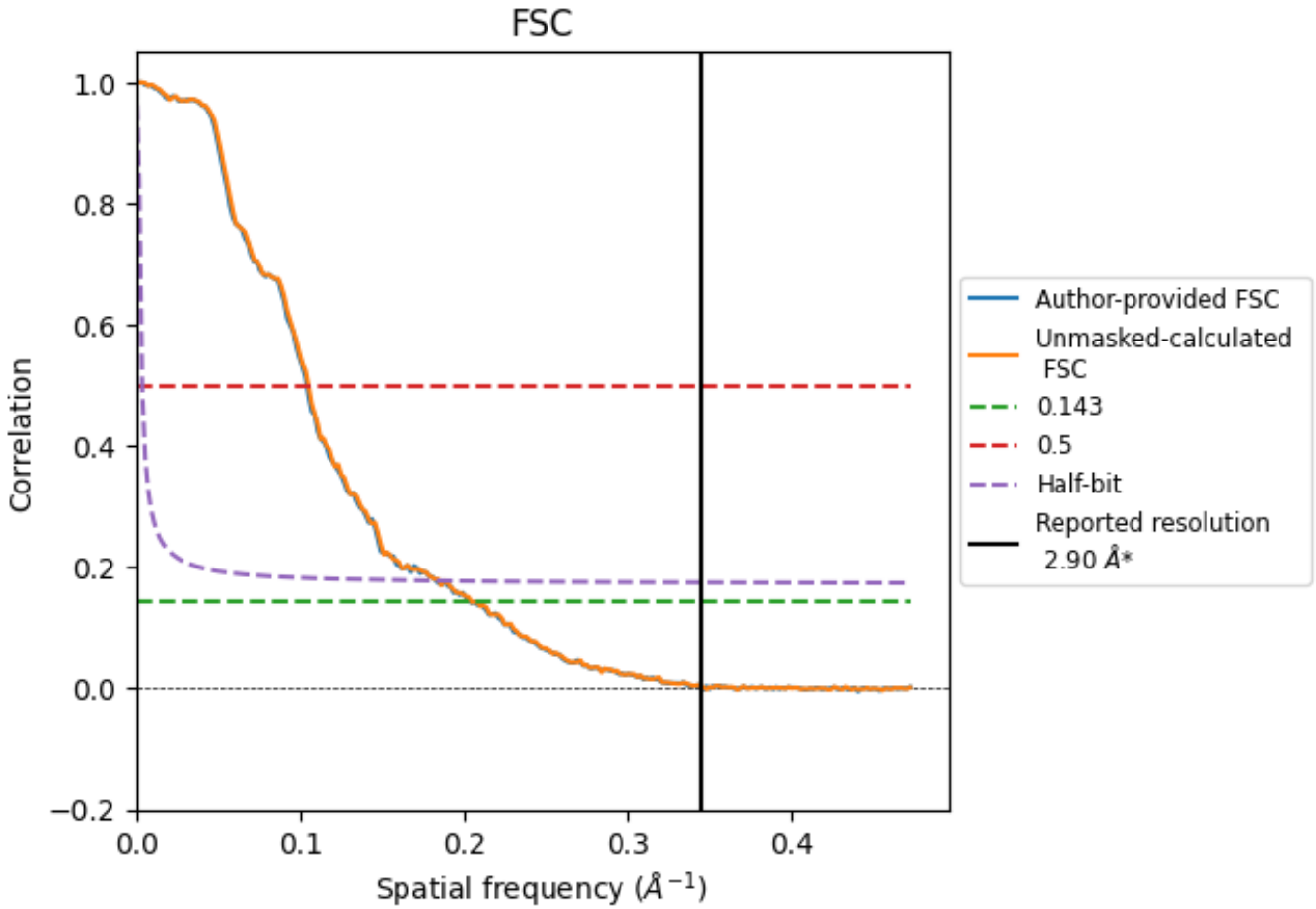


*Reported resolution corresponds to spatial frequency of 0.345 $Å^{-1}$

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.345 $Å^{-1}$

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.90	-	-
Author-provided FSC curve	4.91	9.62	5.46
Unmasked-calculated*	4.89	9.52	5.41

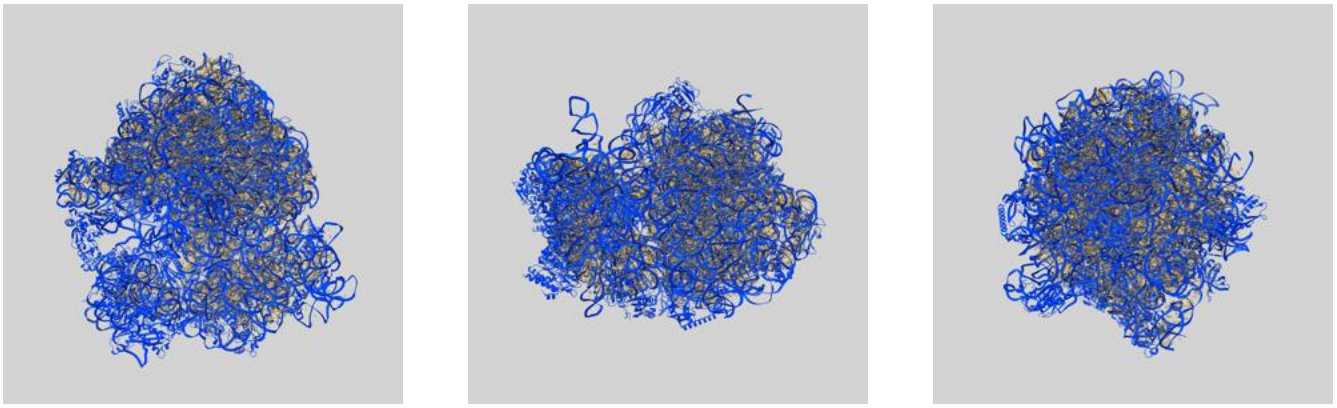
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from author-provided FSC intersecting FSC 0.143 CUT-OFF 4.91 differs from the reported value 2.9 by more than 10 %

The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.89 differs from the reported value 2.9 by more than 10 %

9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-55796 and PDB model 9TCQ. Per-residue inclusion information can be found in section 3 on page 16.

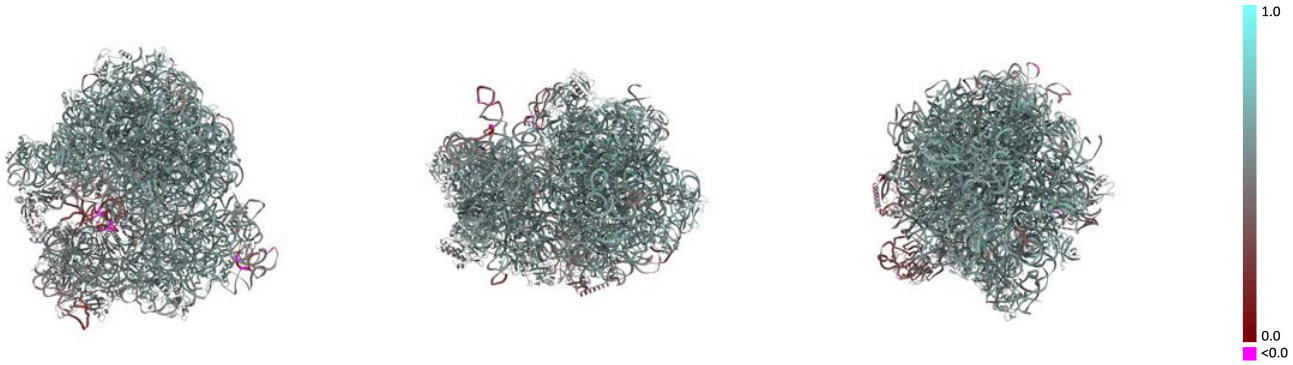
9.1 Map-model overlay



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.55 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.

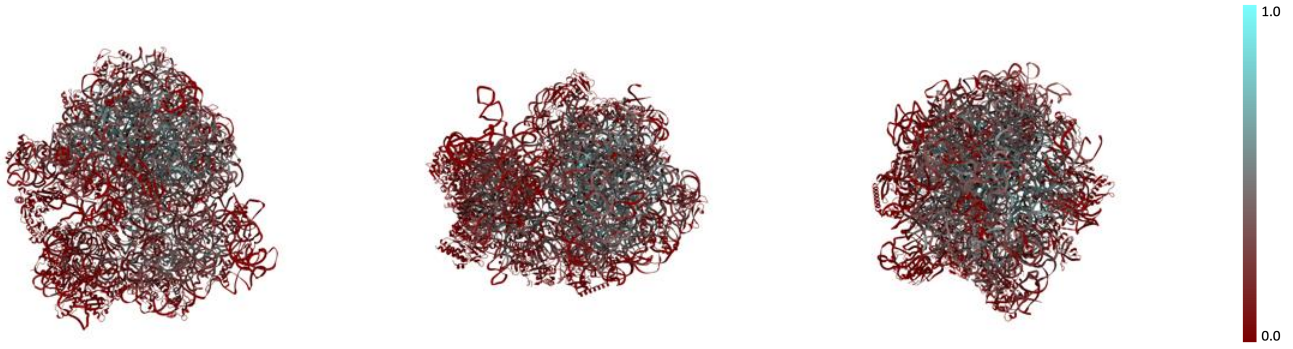
9.2 Q-score mapped to coordinate model (i)



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.

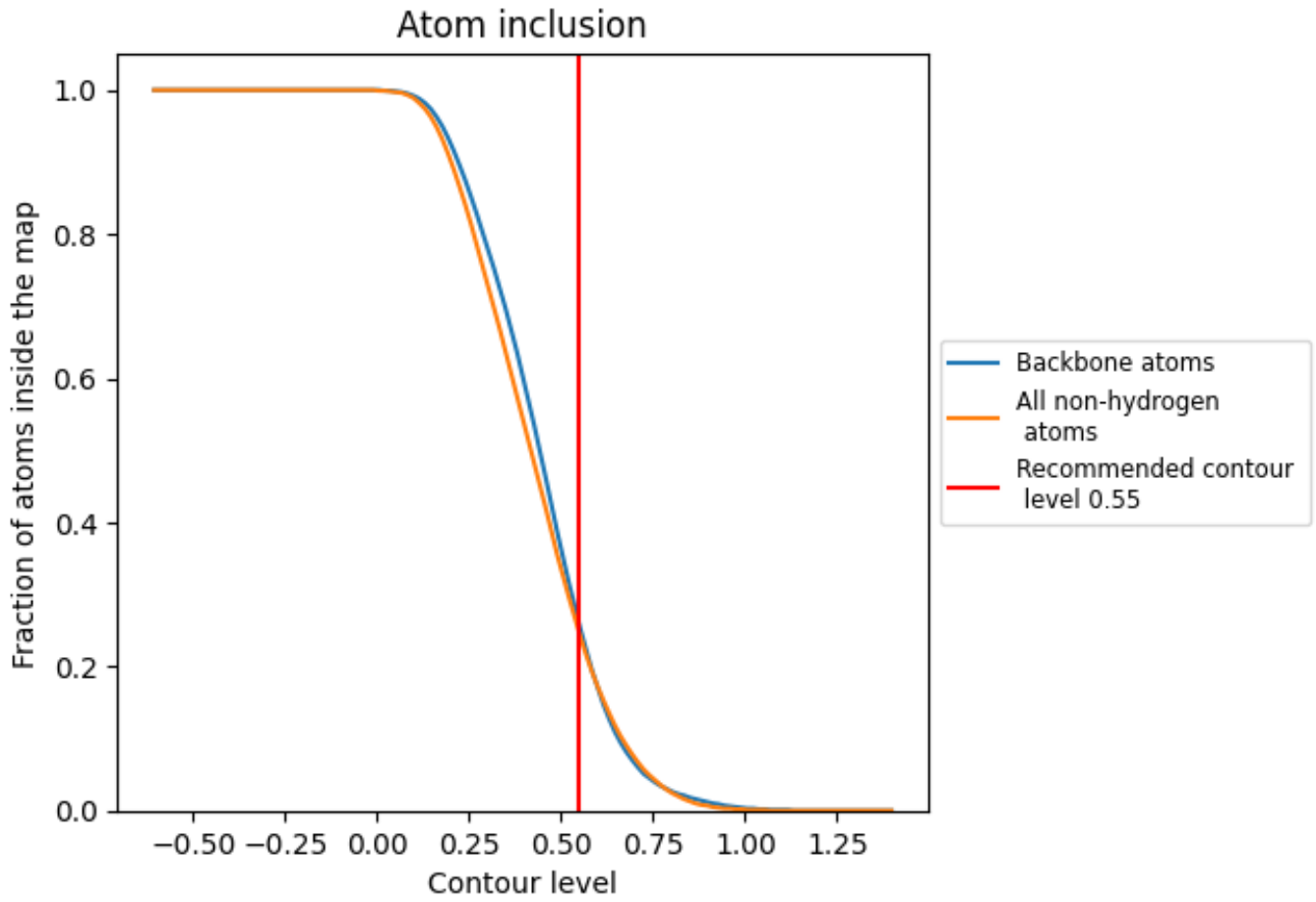
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.55).

9.4 Atom inclusion (i)



At the recommended contour level, 26% of all backbone atoms, 24% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.55) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.2450	0.5510
0	0.1470	0.5890
1	0.3890	0.6160
2	0.3340	0.6080
3	0.1770	0.5860
4	0.0000	0.4150
5	0.0000	0.3660
A	0.2100	0.5400
B	0.0120	0.5060
C	0.0350	0.5390
D	0.0430	0.5430
E	0.1340	0.5760
F	0.0420	0.5470
G	0.0100	0.5030
H	0.1060	0.5700
I	0.0150	0.5060
J	0.0130	0.4850
K	0.0510	0.5500
L	0.0970	0.5780
M	0.0030	0.4950
N	0.0150	0.5320
O	0.1050	0.5550
P	0.1320	0.5690
Q	0.0560	0.5590
R	0.1000	0.5300
S	0.0050	0.5140
T	0.0870	0.5440
U	0.0000	0.4410
V	0.0030	0.3380
X	0.0120	0.5200
a	0.3640	0.5640
b	0.1970	0.5520
c	0.2790	0.6070
d	0.2540	0.5970
e	0.1800	0.5760



Continued on next page...

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Chain	Atom inclusion	Q-score
f	0.0100	0.5090
g	0.0220	0.5190
h	0.0030	0.4200
i	0.2390	0.5930
j	0.1940	0.5990
k	0.2070	0.5920
l	0.1480	0.5920
m	0.3030	0.6030
n	0.0670	0.5620
o	0.2030	0.5850
p	0.3380	0.5980
q	0.1660	0.5950
r	0.2410	0.5910
s	0.1730	0.5730
t	0.0890	0.5630
u	0.0850	0.5730
v	0.2500	0.6080
w	0.2080	0.5840
x	0.1030	0.5580
y	0.2000	0.5860
z	0.2560	0.6010