



Full wwPDB EM Validation Report ⓘ

May 17, 2025 – 11:49 PM EDT

PDB ID : 8EV3 / pdb_00008ev3
EMDB ID : EMD-24421
Title : Ytm1 associated 60S nascent ribosome (-Fkbp39) State 1B
Authors : Zhou, X.; Bilokapic, S.; Deshmukh, A.A.; Halic, M.
Deposited on : 2022-10-19
Resolution : 3.00 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev118
MolProbity : 4-5-2 with Phenix2.0rc1
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.43.1

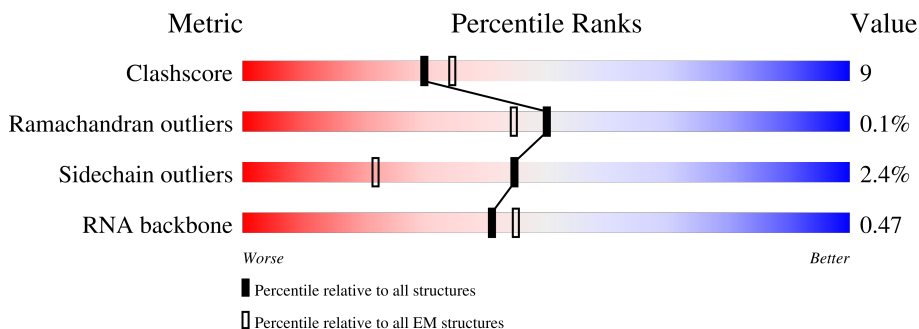
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.00 Å.

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



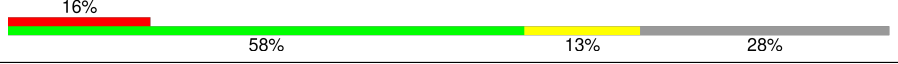
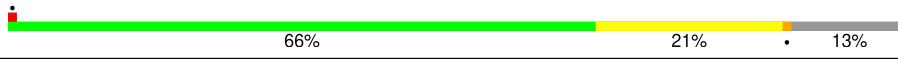
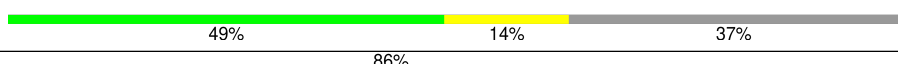
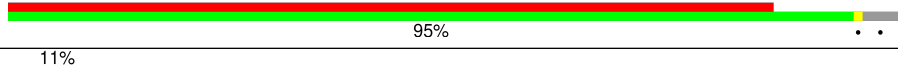
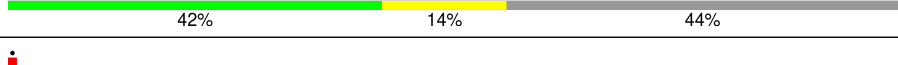
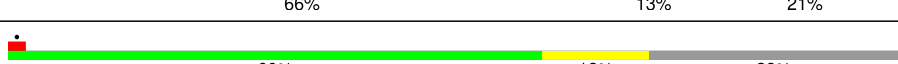
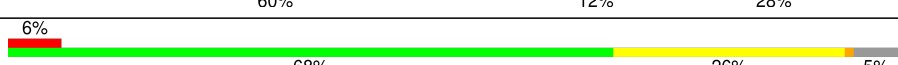
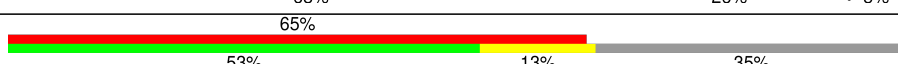
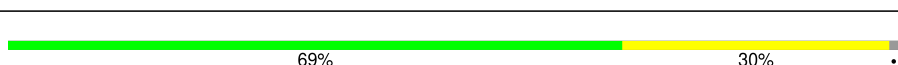
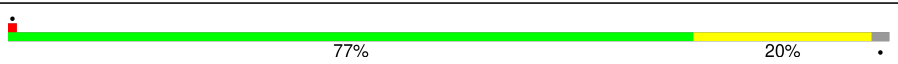
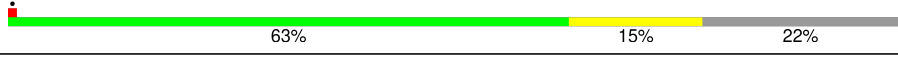
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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

Mol	Chain	Length	Quality of chain
1	1	3497	
2	2	165	
3	3	302	
4	4	217	
5	5	387	
6	6	300	
7	A	295	

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Mol	Chain	Length	Quality of chain
8	B	388	
9	C	363	
10	D	578	
11	E	195	
12	F	250	
13	G	259	
14	H	190	
15	J	333	
16	K	373	
17	L	208	
18	M	134	
19	N	201	
20	O	197	
21	P	187	
22	Q	187	
23	S	176	
24	V	139	
25	Y	126	
26	b	642	
27	e	127	
28	f	108	
29	h	122	
30	i	99	
31	j	91	
32	m	740	

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Mol	Chain	Length	Quality of chain
33	n	607	41%58%40%
34	o	276	13%37%13%50%
35	r	260	22%22%78%
36	t	249	13%70%27%
37	u	192	29%39%60%
38	v	209	63%13%23%
39	x	306	77%22%
40	y	244	77%64%13%23%
41	T	19	53%68%32%

2 Entry composition

There are 42 unique types of molecules in this entry. The entry contains 84746 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called RNA (1452-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1	1452	Total	C	N	O	P	0	0
			31076	13882	5623	10119	1452		

- Molecule 2 is a RNA chain called RNA (150-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
2	2	150	Total	C	N	O	P	0	0
			3189	1427	564	1048	150		

- Molecule 3 is a protein called Protein mak16.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	3	192	Total	C	N	O	S	0	0
			1596	1010	304	276	6		

- Molecule 4 is a protein called Ribosomal RNA-processing protein 1 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	4	211	Total	C	N	O	S	0	0
			1776	1156	303	309	8		

- Molecule 5 is a protein called Ribosome biogenesis protein nsal.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	5	340	Total	C	N	O	S	0	0
			2686	1716	468	491	11		

- Molecule 6 is a RNA chain called RNA (75-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
6	6	75	Total	C	N	O	P	0	0
			1587	712	270	530	75		

- Molecule 7 is a protein called Ribosome biogenesis protein brx1.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	A	247	Total	C	N	O	S	0	0
			1999	1267	363	361	8		

- Molecule 8 is a protein called 60S ribosomal protein L3-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	B	332	Total	C	N	O	S	0	0
			2641	1676	488	468	9		

- Molecule 9 is a protein called 60S ribosomal protein L4-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	C	362	Total	C	N	O	S	0	0
			2810	1774	539	494	3		

- Molecule 10 is a protein called RNA helicase.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	D	416	Total	C	N	O	S	0	0
			3186	2057	544	574	11		

- Molecule 11 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	E	170	Total	C	N	O	S	0	0
			1328	854	243	228	3		

- Molecule 12 is a protein called 60S ribosomal protein L7-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	F	240	Total	C	N	O	S	0	0
			1944	1250	356	335	3		

- Molecule 13 is a protein called 60S ribosomal protein L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	G	164	Total	C	N	O	S	1	0
			1273	816	223	232	2		

- Molecule 14 is a protein called 60S ribosomal protein L9-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	H	183	Total	C	N	O	0	0
			902	536	183	183		

- Molecule 15 is a protein called Probable rRNA-processing protein ebp2.

Mol	Chain	Residues	Atoms				AltConf	Trace
15	J	92	Total	C	N	O	0	0
			459	275	92	92		

- Molecule 16 is a protein called Putative ribosome biogenesis protein C8F11.04.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	K	249	Total	C	N	O	S	0	0
			1914	1224	328	356	6		

- Molecule 17 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	L	116	Total	C	N	O	S	0	0
			942	592	198	151	1		

- Molecule 18 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	M	125	Total	C	N	O	S	0	0
			1007	644	191	168	4		

- Molecule 19 is a protein called 60S ribosomal protein L15-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	N	166	Total	C	N	O	S	0	0
			1406	883	291	229	3		

- Molecule 20 is a protein called 60S ribosomal protein L16-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	O	186	Total	C	N	O	S	0	0
			1478	952	279	244	3		

- Molecule 21 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	P	148	Total	C	N	O	S	0	0
			1164	743	210	208	3		

- Molecule 22 is a protein called 60S ribosomal protein L18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	Q	135	Total	C	N	O	S	0	0
			1047	658	202	186	1		

- Molecule 23 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	S	168	Total	C	N	O	S	0	0
			1408	909	263	231	5		

- Molecule 24 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
24	V	91	Total	C	N	O	0	0
			446	263	91	92		

- Molecule 25 is a protein called Ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Y	125	Total	C	N	O	S	0	0
			998	622	201	173	2		

- Molecule 26 is a protein called Probable nucleolar GTP-binding protein 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
26	b	64	Total	C	N	O	0	0
			317	189	64	64		

- Molecule 27 is a protein called 60S ribosomal protein L32-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	e	124	Total	C	N	O	S	0	0
			995	621	202	167	5		

- Molecule 28 is a protein called 60S ribosomal protein L33-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	f	106	Total	C	N	O	S	0	0
			839	534	162	140	3		

- Molecule 29 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	h	121	Total	C	N	O		0	0
			999	629	194	176			

- Molecule 30 is a protein called 60S ribosomal protein L36-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	i	98	Total	C	N	O	S	0	0
			783	487	164	131	1		

- Molecule 31 is a protein called 60S ribosomal protein L37-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	j	71	Total	C	N	O	S	0	0
			563	346	121	90	6		

- Molecule 32 is a protein called Ribosome biogenesis protein erb1.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	m	75	Total	C	N	O		0	0
			615	379	112	124			

- Molecule 33 is a protein called Pescadillo homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	n	362	Total	C	N	O		0	0
			1791	1067	362	362			

- Molecule 34 is a protein called Uncharacterized RNA-binding protein C1827.05c.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	o	137	Total	C	N	O	S	0	0
			1026	655	189	176	6		

- Molecule 35 is a protein called Ribosome biogenesis protein nsa2.

Mol	Chain	Residues	Atoms				AltConf	Trace
35	r	57	Total	C	N	O	0	0
			283	169	57	57		

- Molecule 36 is a protein called 60S ribosomal protein L7-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
36	t	183	Total	C	N	O	0	0
			1008	602	209	197		

- Molecule 37 is a protein called Ribosome biogenesis protein rlp24.

Mol	Chain	Residues	Atoms				AltConf	Trace
37	u	76	Total	C	N	O	0	0
			377	225	76	76		

- Molecule 38 is a protein called Nucleolar protein 16.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	v	161	Total	C	N	O	S	0	0
			1299	818	243	235	3		

- Molecule 39 is a protein called Brix domain-containing protein C4F8.04.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	x	305	Total	C	N	O	S	0	0
			2516	1578	463	467	8		

- Molecule 40 is a protein called Eukaryotic translation initiation factor 6.

Mol	Chain	Residues	Atoms				AltConf	Trace
40	y	188	Total	C	N	O	0	0
			925	549	188	188		

- Molecule 41 is a protein called RPL21.

Mol	Chain	Residues	Atoms				AltConf	Trace
41	T	19	Total	C	N	O	0	0
			147	93	26	28		

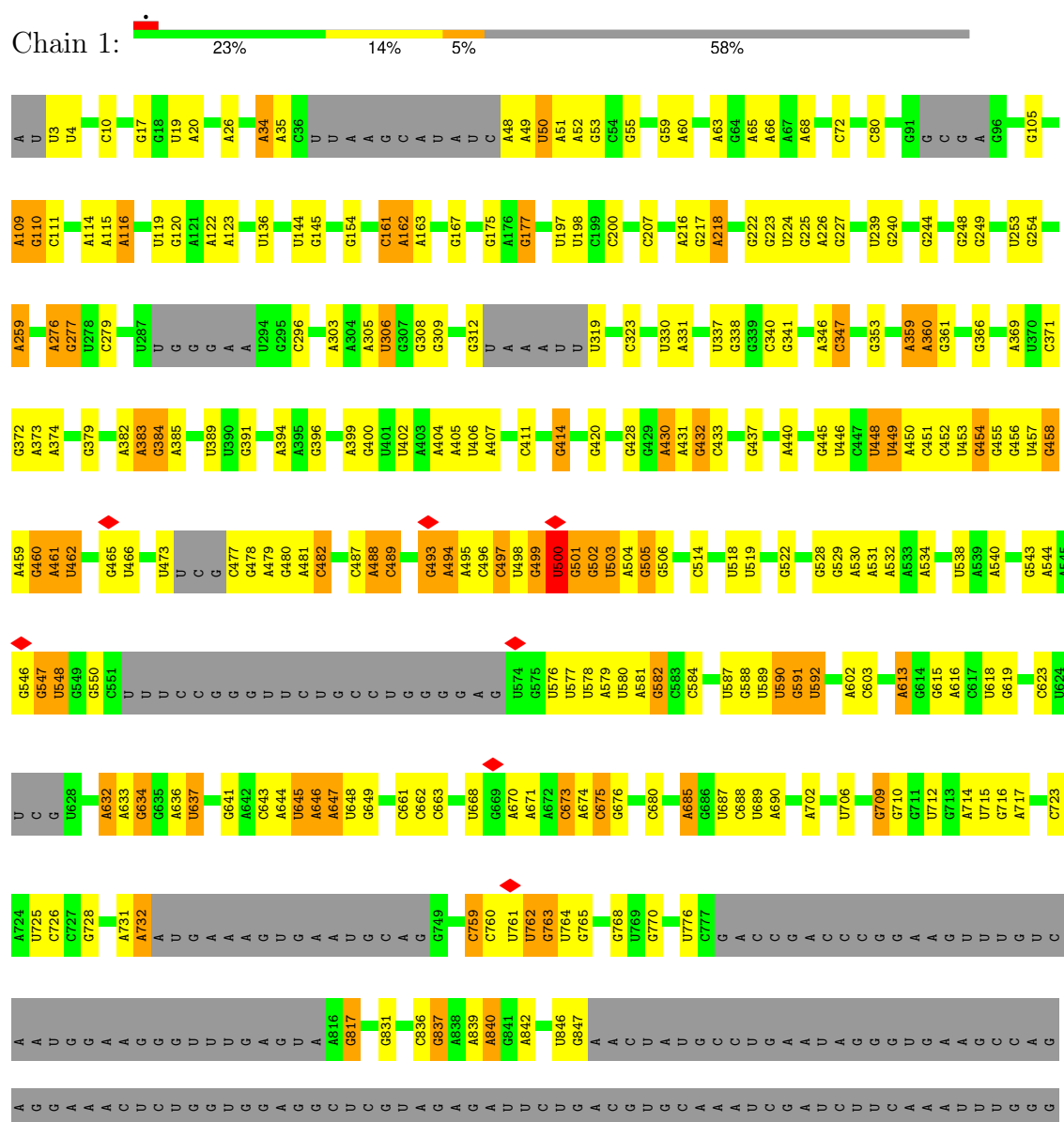
- Molecule 42 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
42	j	1	Total	Zn	0
			1	1	

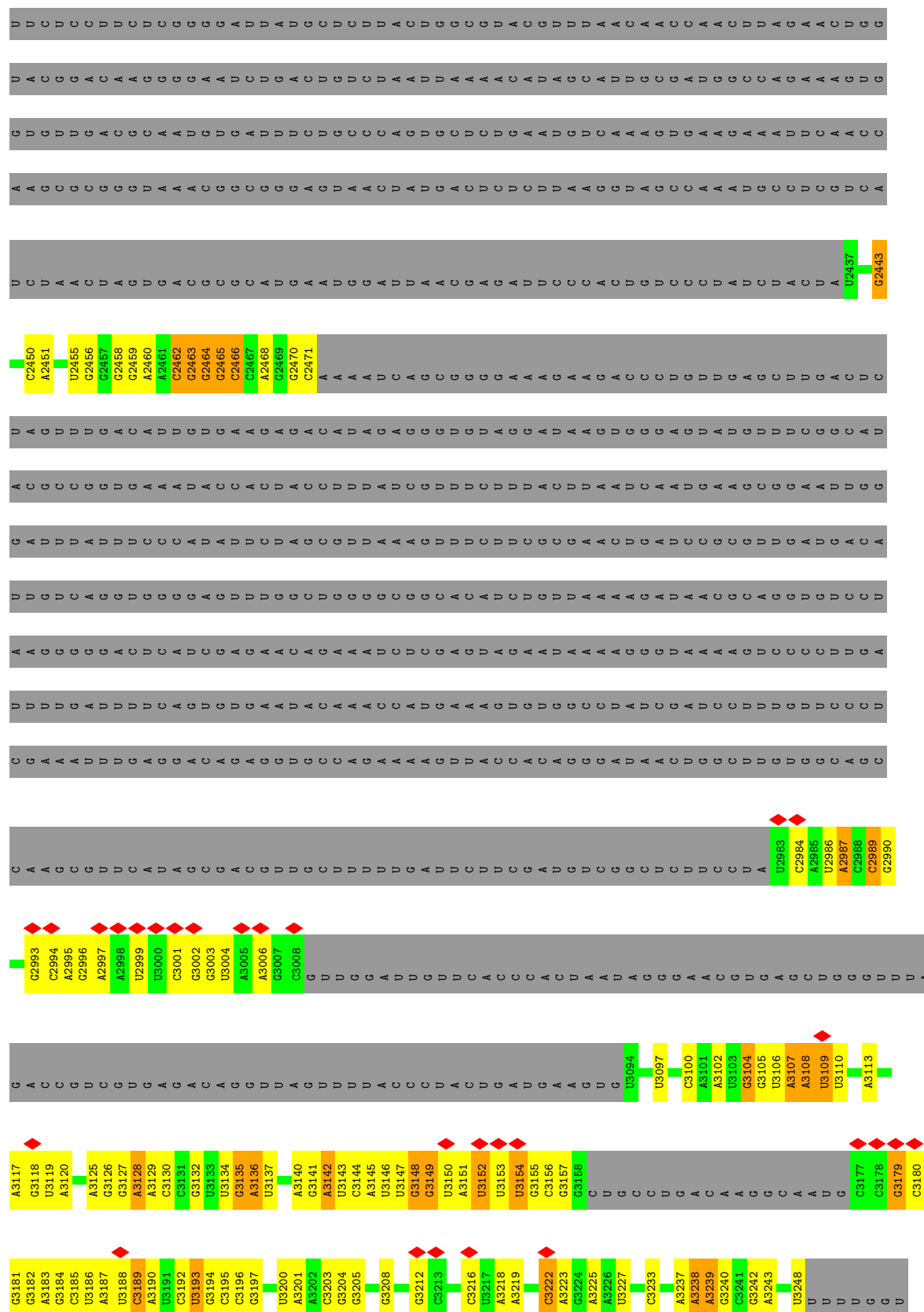
3 Residue-property plots [i](#)

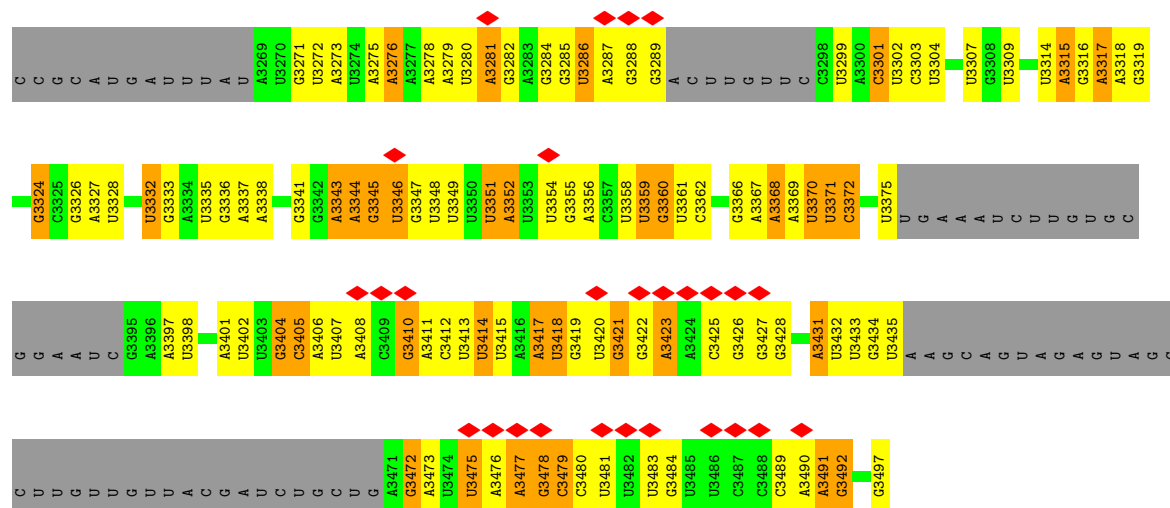
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: RNA (1452-MER)

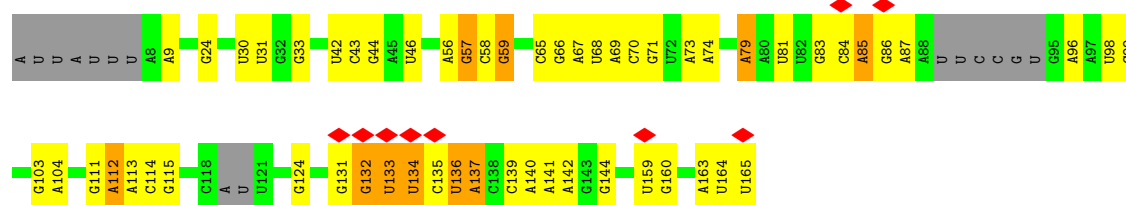




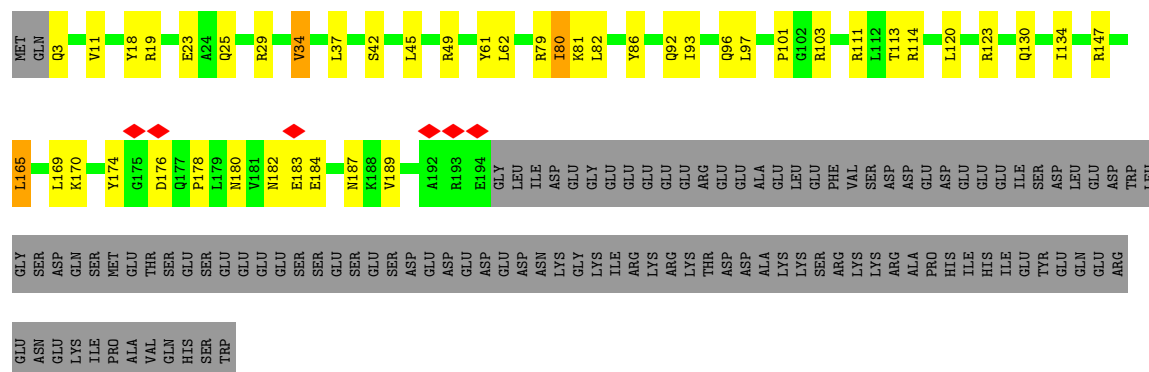




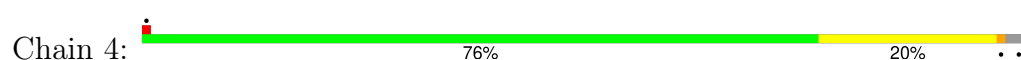
• Molecule 2: RNA (150-MER)



• Molecule 3: Protein mak16

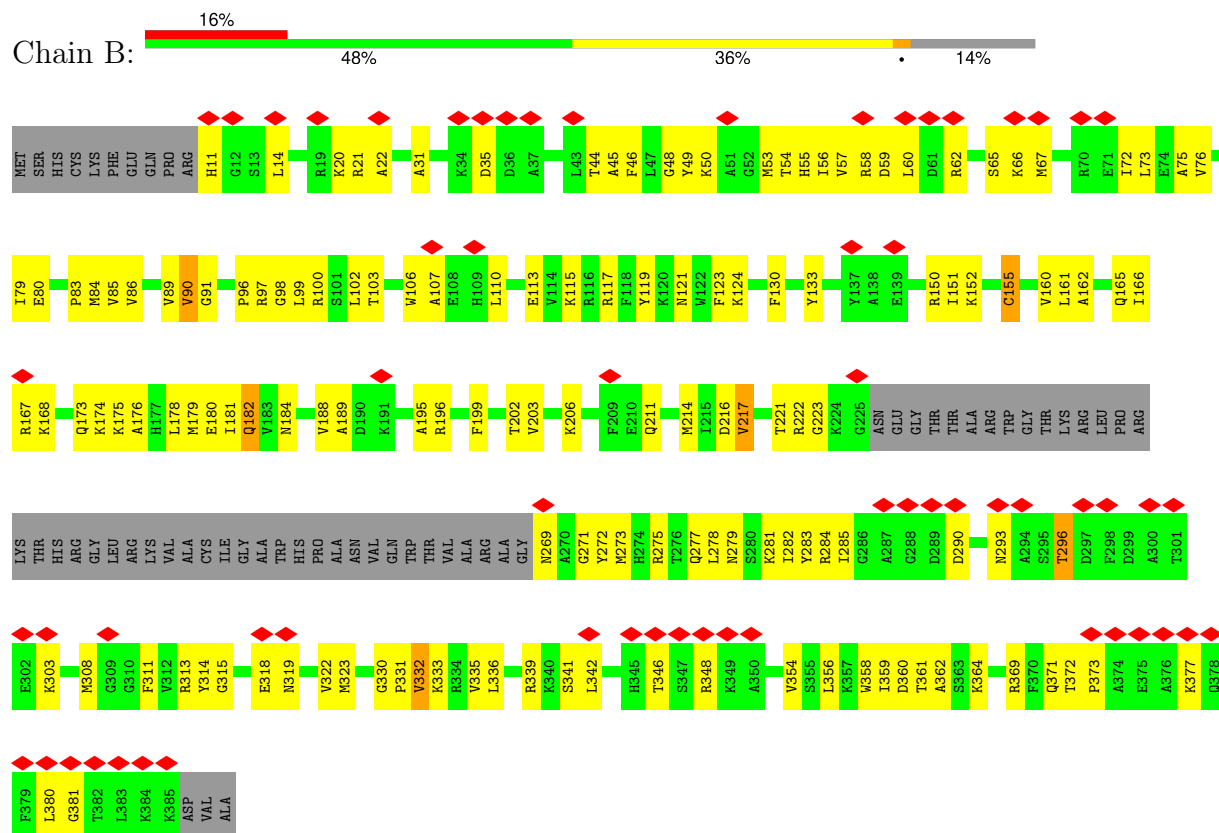


• Molecule 4: Ribosomal RNA-processing protein 1 homolog

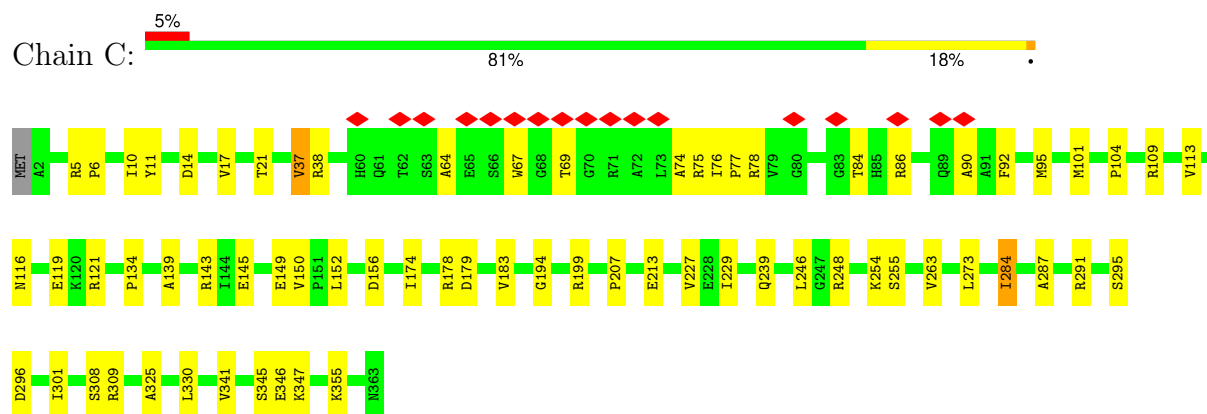




- Molecule 8: 60S ribosomal protein L3-A

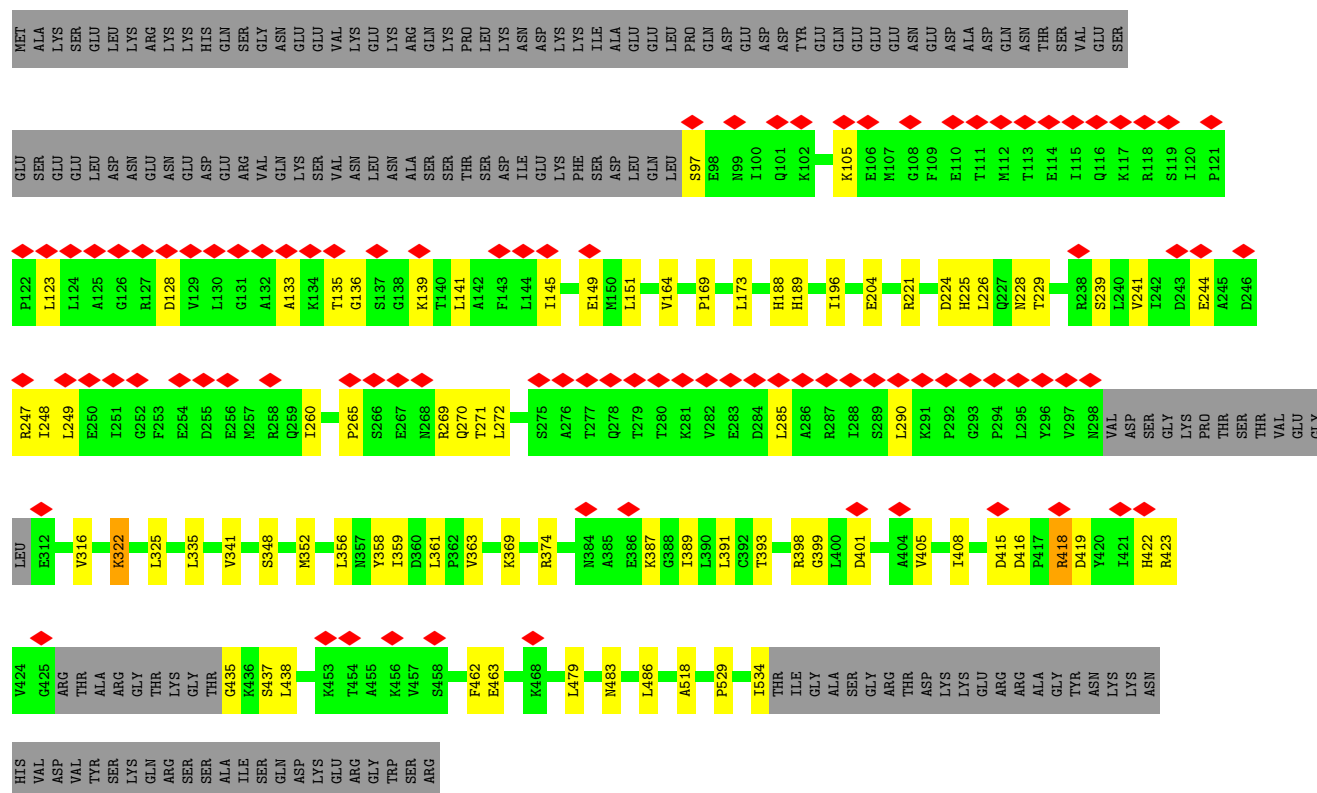


- Molecule 9: 60S ribosomal protein L4-B

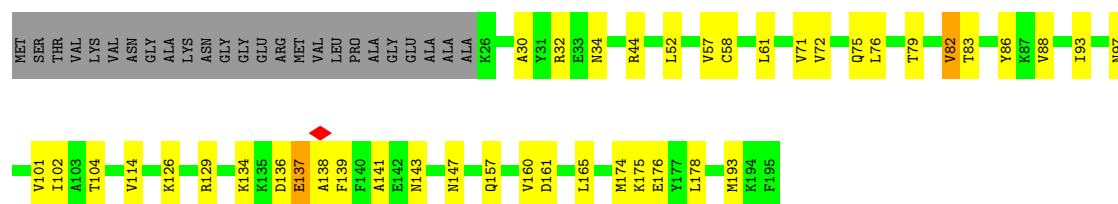


- Molecule 10: RNA helicase

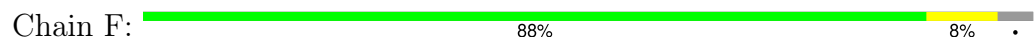




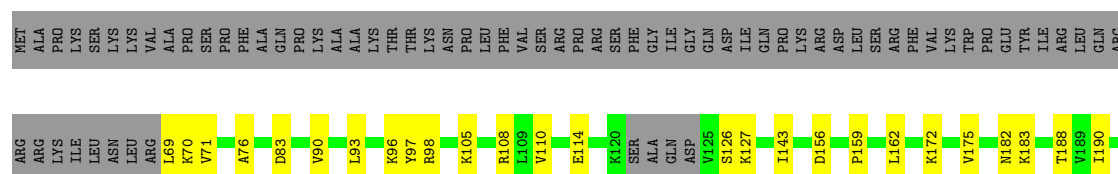
• Molecule 11: 60S ribosomal protein L6

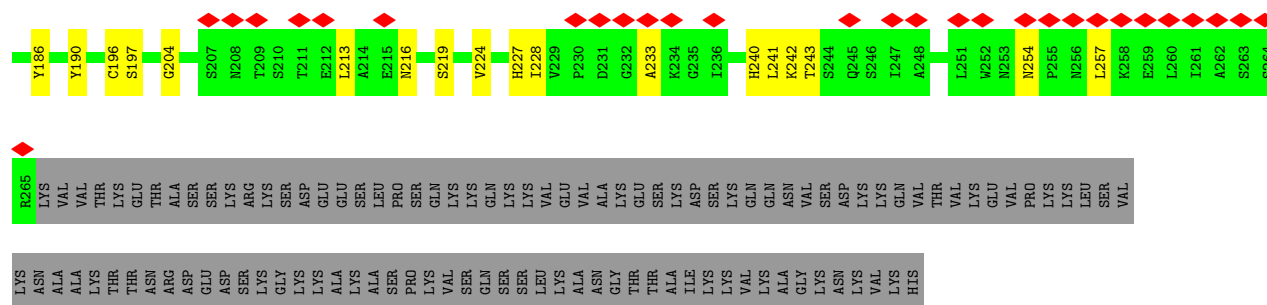


• Molecule 12: 60S ribosomal protein L7-B

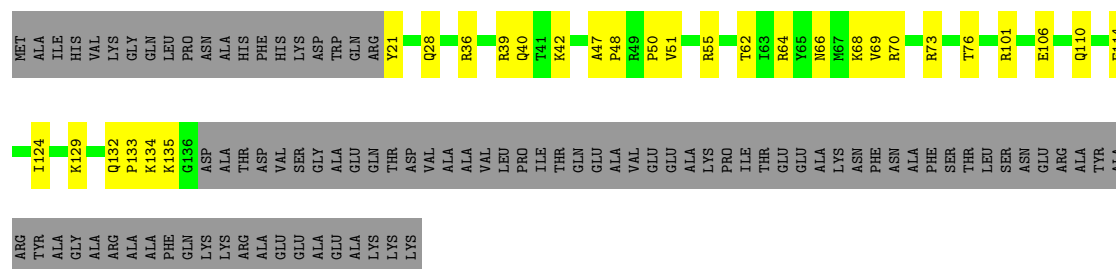


• Molecule 13: 60S ribosomal protein L8

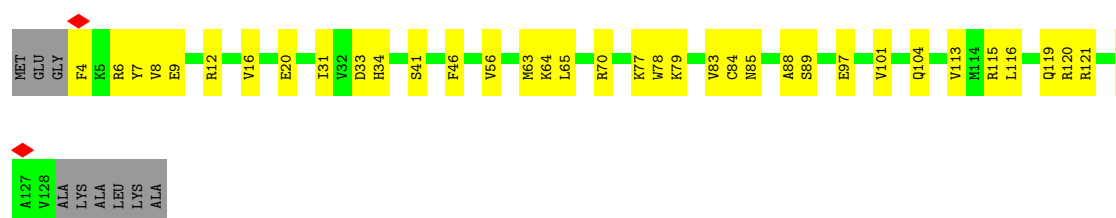




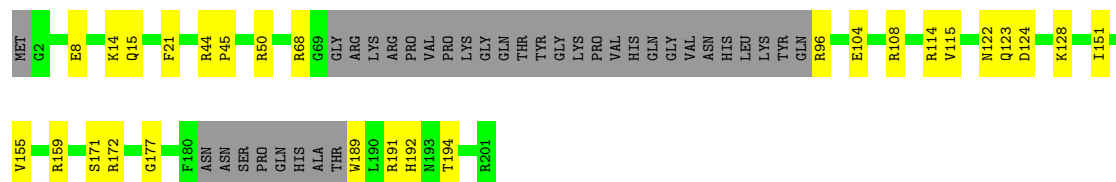
• Molecule 17: 60S ribosomal protein L13



• Molecule 18: 60S ribosomal protein L14

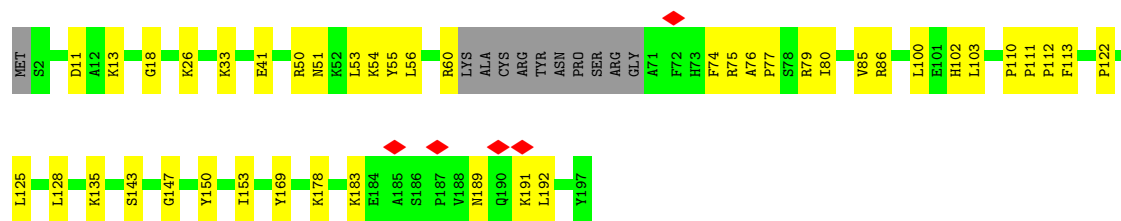


• Molecule 19: 60S ribosomal protein L15-A

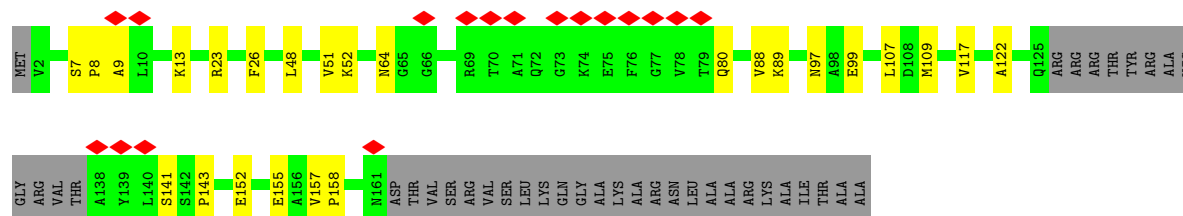


• Molecule 20: 60S ribosomal protein L16-B

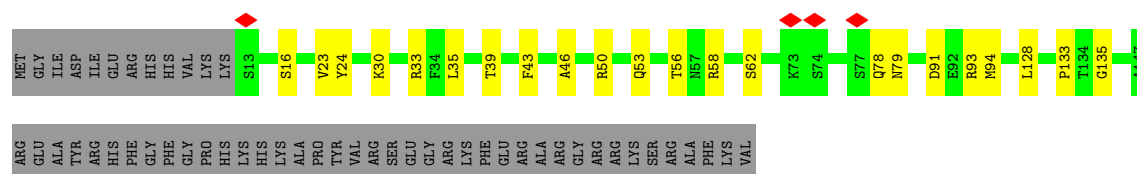




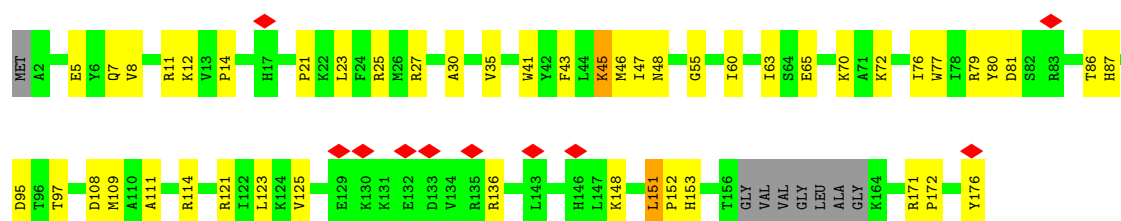
• Molecule 21: 60S ribosomal protein L17-A



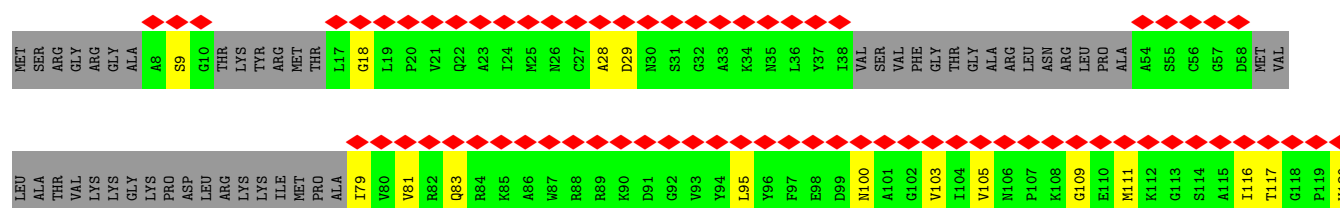
• Molecule 22: 60S ribosomal protein L18-A

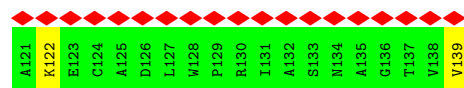


• Molecule 23: 60S ribosomal protein L20-A



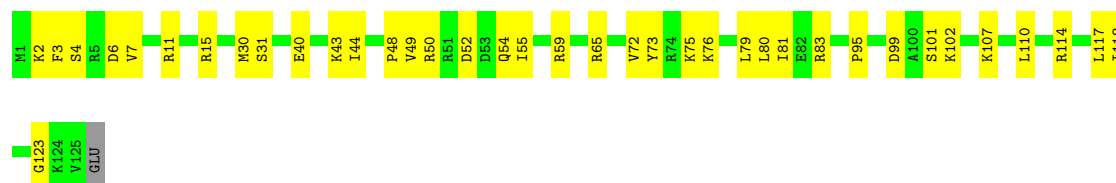
• Molecule 24: 60S ribosomal protein L23-A





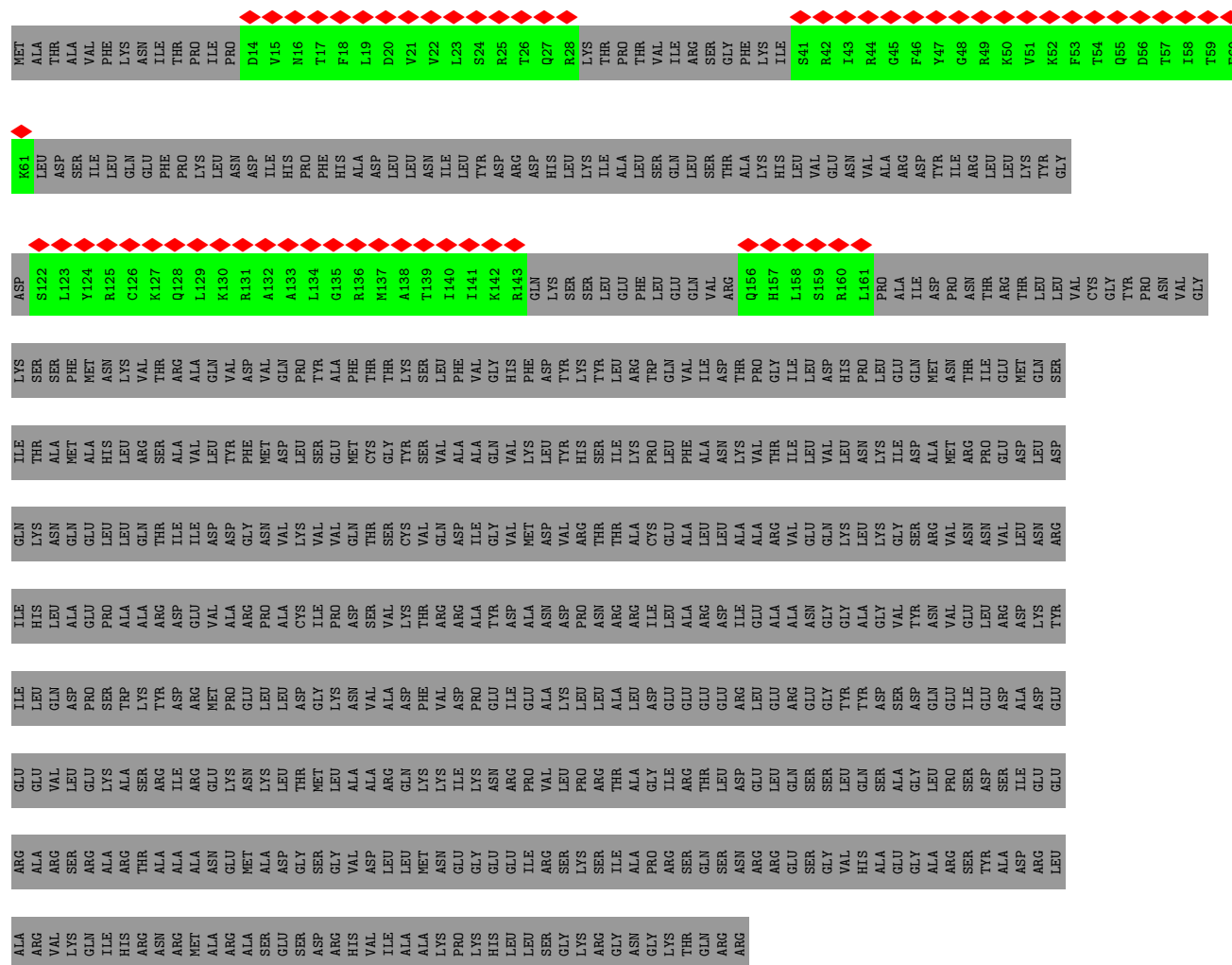
• Molecule 25: Ribosomal protein L26

Chain Y: 69% 30%



• Molecule 26: Probable nucleolar GTP-binding protein 1

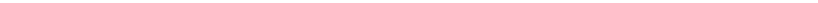
Chain b: 10% 90%

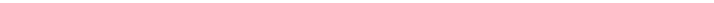


MET	ALA	ALA	V4	K9	K23	V29	R30	K31	P32	D36	P50	I52	G55	R61	V62	V76	V79	E80	I93	A94	V97	S98	K101	R102	K108	L112	V116	T117	M118	A119	S125	I126	S127
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- Chain f: 84% 13% ..

MET	PRO	A3	Q4	G5
		A12		
		L15		
		K32		
		E40		
		L46		
		V53		
		K58		
		V67		
		T71		
		P75		
		S79		
		L99		
		T108		

- Chain h: 

- Chain i: 

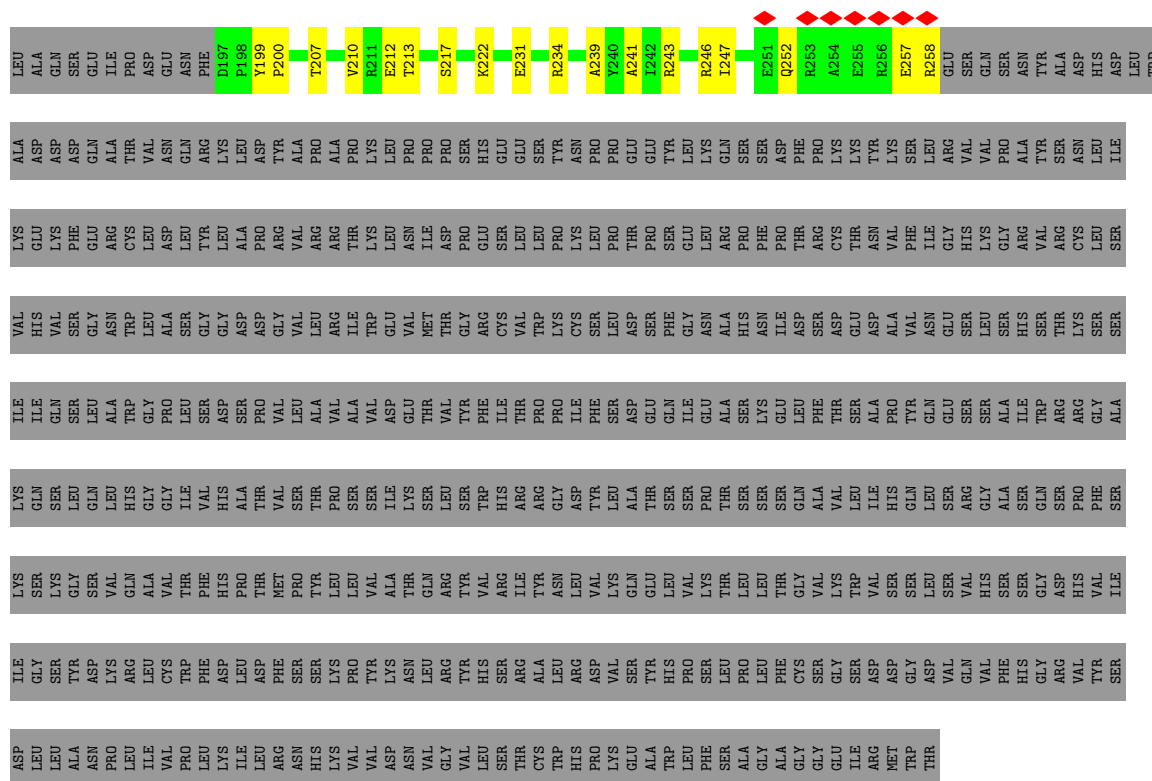
Category	Count
A2	10
V7	10
G8	10
L9	10
M10	10
K11	10
G12	10
K13	10
T14	10
L15	10
L16	10
R18	10
P24	10
S25	10
R26	10
H30	10
R34	10
R43	10
G47	10
E52	10
R53	10
R54	10
N61	10
Q63	10
Q63	10
R66	10
K72	10
L78	10
K79	10
R80	10
L88	10
T89	10
S90	10
Q93	10
R96	10
L97	10
A98	10
T99	10

- Chain j:

NET	THR	LYS	GLY	THR	GLN	SER	PHE	GLY	MET	ARG	HIS	ASN	K14	F27	C34	Y39	P40	N43	K52	R66	R57	T58	R63	Y66	K69	R72	G77	K82	P83	A84	ALA	ALA	VAL	ALA	ALA	SER	ALA
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

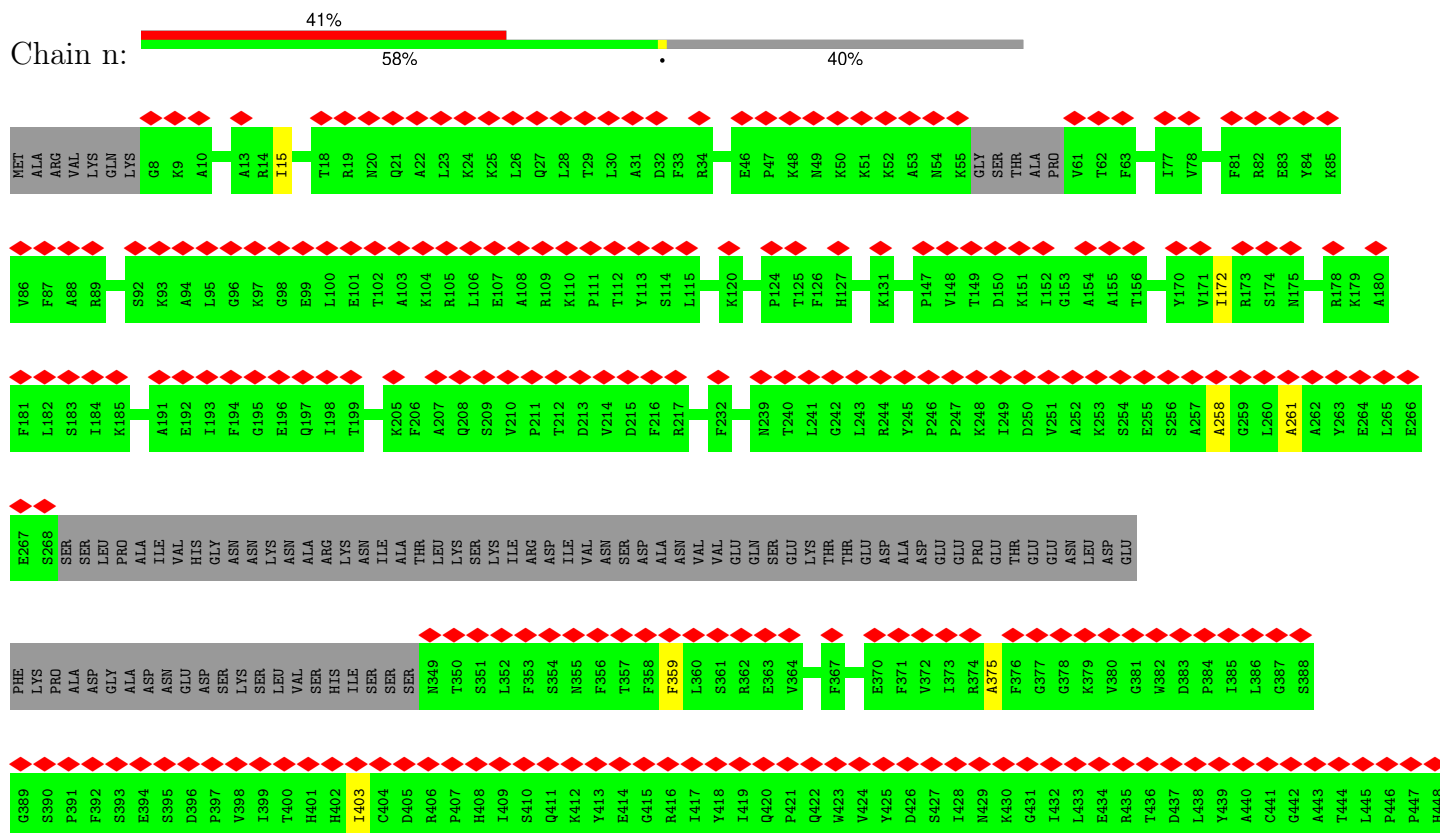
- Chain m:

[illegible]

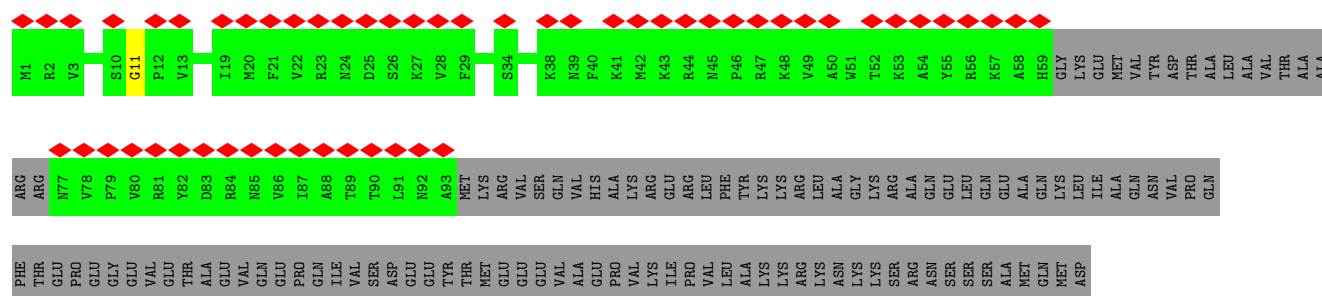


• Molecule 33: Pescadillo homolog

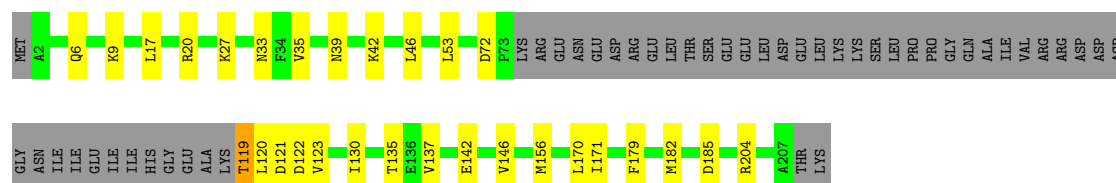
Chain n:



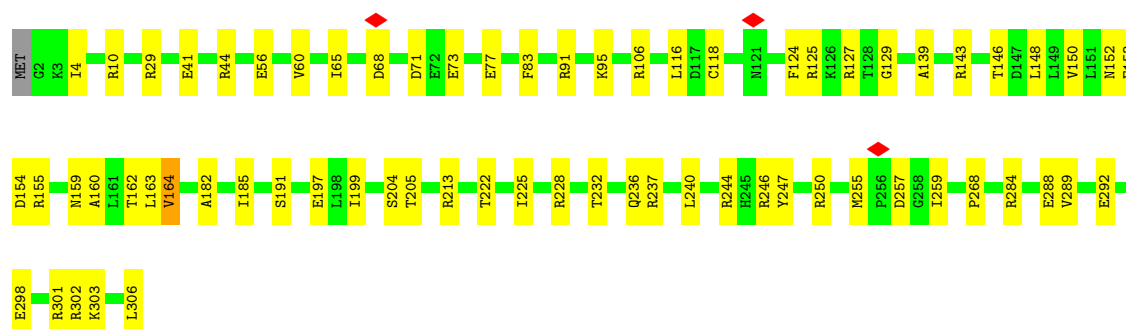
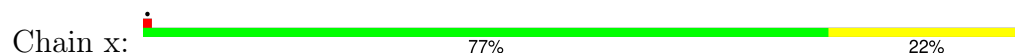
- Molecule 37: Ribosome biogenesis protein rlp24



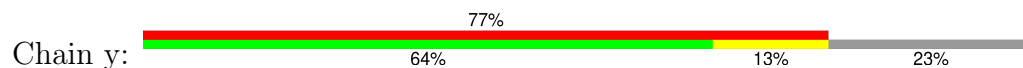
- Molecule 38: Nucleolar protein 16

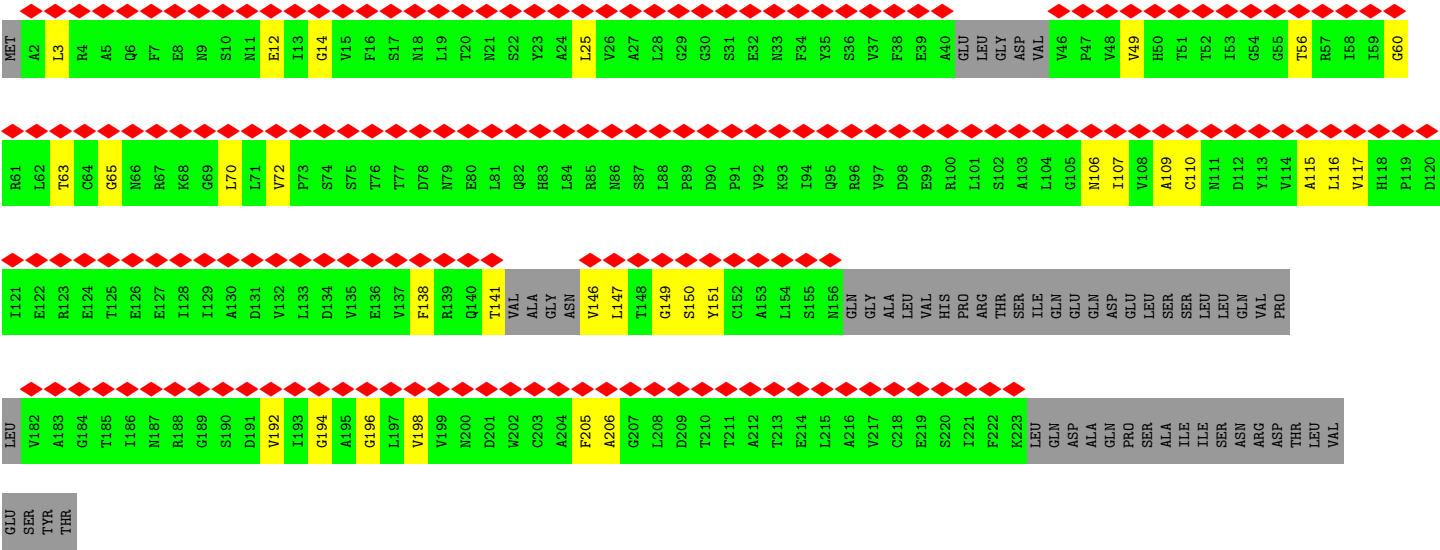


- Molecule 39: Brix domain-containing protein C4F8.04

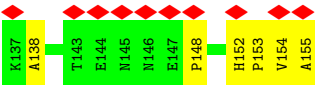


- Molecule 40: Eukaryotic translation initiation factor 6





● Molecule 41: RPL21



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	250000	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 ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.756	Depositor
Minimum map value	-0.337	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.010	Depositor
Recommended contour level	0.05	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: ZN

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	1	0.18	1/34768 (0.0%)	0.23	0/54150
2	2	0.16	0/3563	0.21	0/5543
3	3	0.23	0/1627	0.30	0/2188
4	4	0.17	0/1823	0.29	0/2462
5	5	0.15	0/2739	0.33	0/3702
6	6	0.09	0/1770	0.19	0/2745
7	A	0.13	0/2038	0.34	0/2747
8	B	0.12	0/2694	0.34	0/3619
9	C	0.21	0/2863	0.30	0/3863
10	D	0.10	0/3245	0.23	0/4396
11	E	0.15	0/1356	0.34	0/1829
12	F	0.16	0/1982	0.26	0/2658
13	G	0.18	0/1291	0.27	0/1742
14	H	0.06	0/901	0.20	0/1252
15	J	0.11	0/458	0.32	0/639
16	K	0.10	0/1948	0.26	0/2640
17	L	0.22	0/960	0.31	0/1288
18	M	0.15	0/1024	0.38	0/1375
19	N	0.20	0/1436	0.26	0/1920
20	O	0.11	0/1506	0.24	0/2017
21	P	0.13	0/1187	0.27	0/1595
22	Q	0.19	0/1058	0.30	0/1421
23	S	0.13	0/1444	0.30	0/1939
24	V	0.10	0/442	0.25	0/605
25	Y	0.18	0/1008	0.31	0/1341
26	b	0.04	0/313	0.13	0/430
27	e	0.19	0/1009	0.24	0/1345
28	f	0.17	0/859	0.27	0/1152
29	h	0.17	0/1008	0.35	0/1340
30	i	0.15	0/791	0.24	0/1050
31	j	0.12	0/575	0.27	0/761
32	m	0.16	0/627	0.39	0/844

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	n	0.05	0/1788	0.17	0/2487
34	o	0.14	0/1049	0.35	0/1419
35	r	0.05	0/282	0.15	0/392
36	t	0.08	0/1009	0.22	0/1385
37	u	0.05	0/375	0.17	0/520
38	v	0.17	0/1319	0.29	0/1769
39	x	0.15	0/2562	0.27	0/3432
40	y	0.09	0/921	0.28	0/1274
41	T	0.09	0/151	0.26	0/207
All	All	0.16	1/89769 (0.0%)	0.26	0/129483

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	500	U	Cl'-N1	5.28	1.55	1.47

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1	31076	0	15637	396	0
2	2	3189	0	1613	37	0
3	3	1596	0	1645	35	0
4	4	1776	0	1793	28	0
5	5	2686	0	2745	58	0
6	6	1587	0	800	37	0
7	A	1999	0	2025	77	0
8	B	2641	0	2727	134	0
9	C	2810	0	2933	47	0
10	D	3186	0	3200	49	0
11	E	1328	0	1408	30	0
12	F	1944	0	2035	12	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
13	G	1273	0	1348	25	0
14	H	902	0	392	1	0
15	J	459	0	208	10	0
16	K	1914	0	1950	44	0
17	L	942	0	1012	23	0
18	M	1007	0	1072	28	0
19	N	1406	0	1441	19	0
20	O	1478	0	1572	34	0
21	P	1164	0	1183	19	0
22	Q	1047	0	1142	14	0
23	S	1408	0	1462	47	0
24	V	446	0	220	12	0
25	Y	998	0	1090	27	0
26	b	317	0	136	0	0
27	e	995	0	1059	19	0
28	f	839	0	866	8	0
29	h	999	0	1092	27	0
30	i	783	0	863	20	0
31	j	563	0	578	12	0
32	m	615	0	589	19	0
33	n	1791	0	805	4	0
34	o	1026	0	940	34	0
35	r	283	0	133	0	0
36	t	1008	0	571	7	0
37	u	377	0	167	1	0
38	v	1299	0	1347	23	0
39	x	2516	0	2524	47	0
40	y	925	0	430	17	0
41	T	147	0	140	7	0
42	j	1	0	0	0	0
All	All	84746	0	64893	1234	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 9.

All (1234) 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)
2:2:132:G:H1	2:2:137:A:H61	1.11	0.94
9:C:101:MET:HE2	9:C:104:PRO:HA	1.54	0.88
1:1:3148:G:H1	1:1:3186:U:H3	1.20	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:C:84:THR:HG22	9:C:86:ARG:H	1.44	0.82
16:K:65:ASN:HA	34:o:208:ARG:HH12	1.45	0.82
1:1:3285:G:H1	1:1:3302:U:H3	1.27	0.81
8:B:222:ARG:HB2	8:B:331:PRO:HD3	1.63	0.80
8:B:168:LYS:HB3	8:B:319:ASN:HD21	1.47	0.80
8:B:84:MET:HE2	8:B:84:MET:HA	1.66	0.78
8:B:106:TRP:HB2	8:B:133:TYR:HE2	1.48	0.78
6:6:3:A:N7	36:t:59:ASN:ND2	2.31	0.77
4:4:179:LYS:HZ3	4:4:214:LYS:H	1.30	0.77
8:B:214:MET:HE1	8:B:279:ASN:HA	1.65	0.77
40:y:65:GLY:HA3	40:y:70:LEU:HA	1.66	0.76
1:1:396:G:H1'	21:P:97:ASN:HD21	1.50	0.76
1:1:712:U:OP2	17:L:36:ARG:NH2	2.20	0.75
7:A:154:THR:HB	7:A:193:ILE:HG22	1.68	0.75
1:1:440:A:H5''	28:f:58:LYS:HE3	1.69	0.75
1:1:817:G:OP1	22:Q:93:ARG:NH2	2.20	0.75
4:4:37:GLU:OE2	4:4:37:GLU:N	2.20	0.75
6:6:62:U:O2	6:6:81:A:N6	2.20	0.75
24:V:83:GLN:HA	24:V:100:ASN:HA	1.68	0.75
1:1:3367:A:OP2	1:1:3368:A:N6	2.20	0.74
5:5:169:GLU:HB2	5:5:172:ARG:HH12	1.53	0.73
1:1:3151:A:H1'	1:1:3183:A:H61	1.54	0.73
1:1:382:A:H4'	1:1:383:A:H5'	1.69	0.72
4:4:52:MET:HE1	4:4:61:GLN:HB2	1.71	0.72
8:B:223:GLY:HA2	8:B:271:GLY:HA3	1.70	0.72
10:D:164:VAL:HG22	10:D:239:SER:HB3	1.71	0.72
7:A:147:PRO:HB3	7:A:187:ARG:HG3	1.72	0.72
2:2:56:A:H62	2:2:59:G:H5''	1.55	0.72
19:N:68:ARG:NH1	19:N:124:ASP:O	2.23	0.72
1:1:3150:U:H3	1:1:3184:G:H1	1.38	0.71
1:1:3288:G:H22	1:1:3299:U:H3	1.39	0.71
7:A:182:LYS:HE3	15:J:173:GLU:H	1.54	0.71
1:1:3179:G:H21	1:1:3434:G:H5'	1.55	0.71
7:A:203:TYR:HE2	15:J:143:TYR:HA	1.56	0.71
39:x:154:ASP:OD1	39:x:159:ASN:ND2	2.23	0.71
34:o:190:MET:HE3	34:o:191:PHE:HB2	1.70	0.70
16:K:196:CYS:SG	16:K:197:SER:N	2.64	0.70
1:1:1422:U:OP1	27:e:101:LYS:NZ	2.25	0.70
8:B:90:VAL:HG13	8:B:161:LEU:HD21	1.74	0.70
8:B:283:TYR:HB3	8:B:354:VAL:HG11	1.73	0.70
1:1:3143:U:O2	1:1:3145:A:N6	2.24	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:86:G:H4'	29:h:44:SER:HB2	1.74	0.70
2:2:81:U:O2	2:2:85:A:N6	2.24	0.70
1:1:3317:A:H1'	1:1:3367:A:H1'	1.74	0.70
1:1:3418:U:O2	1:1:3419:G:N1	2.24	0.70
25:Y:2:LYS:HD3	25:Y:7:VAL:HG23	1.74	0.70
1:1:277:G:H5''	19:N:14:LYS:HE3	1.73	0.69
1:1:531:A:OP2	12:F:77:ARG:NH1	2.24	0.69
8:B:83:PRO:HB2	8:B:165:GLN:HE22	1.58	0.69
1:1:34:A:N3	1:1:842:A:O2'	2.26	0.69
1:1:371:C:OP2	31:j:56:ARG:NH2	2.26	0.69
1:1:3414:U:H4'	8:B:173:GLN:HE22	1.57	0.69
1:1:3477:A:H3'	1:1:3478:G:H3'	1.74	0.69
18:M:6:ARG:HG3	23:S:176:TYR:HB3	1.75	0.69
8:B:168:LYS:HB3	8:B:319:ASN:ND2	2.07	0.69
1:1:1156:U:H2'	1:1:1157:G:C8	2.28	0.69
2:2:81:U:H2'	2:2:85:A:H61	1.58	0.68
5:5:69:VAL:HG21	5:5:342:ILE:HD12	1.75	0.68
16:K:254:ASN:HB3	16:K:257:LEU:HB3	1.76	0.68
23:S:11:ARG:HH12	23:S:14:PRO:HD3	1.58	0.68
32:m:113:GLU:N	32:m:113:GLU:OE1	2.25	0.68
2:2:73:A:H5''	29:h:5:THR:HG21	1.74	0.68
1:1:1424:A:N6	1:1:1452:A:O2'	2.26	0.68
1:1:590:U:O2'	1:1:591:G:N3	2.27	0.68
1:1:505:G:H1	1:1:644:A:H2	1.43	0.67
9:C:5:ARG:NH1	9:C:149:GLU:OE2	2.27	0.67
7:A:292:ASN:O	7:A:292:ASN:ND2	2.26	0.67
1:1:1245:U:OP1	23:S:136:ARG:NH1	2.28	0.67
39:x:116:LEU:HD11	39:x:124:PHE:HB2	1.77	0.67
34:o:117:TYR:HA	34:o:136:MET:HE1	1.76	0.67
10:D:241:VAL:HG22	10:D:272:LEU:HD12	1.77	0.67
29:h:21:GLN:OE1	29:h:21:GLN:N	2.19	0.67
7:A:69:PRO:O	7:A:180:ARG:NH2	2.28	0.67
16:K:242:LYS:NZ	16:K:243:THR:O	2.27	0.67
9:C:74:ALA:O	9:C:78:ARG:NH2	2.28	0.66
29:h:18:GLU:HA	29:h:21:GLN:HE22	1.60	0.66
1:1:1158:G:N2	1:1:1162:G:N7	2.36	0.66
5:5:22:ASP:OD1	5:5:329:ASN:ND2	2.28	0.66
16:K:151:PRO:HA	16:K:159:TYR:HE2	1.60	0.66
1:1:731:A:H3'	1:1:732:A:H5''	1.77	0.66
25:Y:65:ARG:NH2	25:Y:83:ARG:O	2.29	0.66
8:B:86:VAL:HA	8:B:162:ALA:HA	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:y:107:ILE:HA	40:y:147:LEU:HA	1.76	0.66
1:1:63:A:OP1	19:N:172:ARG:NH2	2.28	0.66
1:1:3404:G:H22	1:1:3412:C:H2'	1.61	0.66
8:B:314:TYR:HB2	8:B:332:VAL:HB	1.77	0.66
11:E:137:GLU:HG2	11:E:138:ALA:H	1.61	0.66
8:B:221:THR:HG22	8:B:273:MET:H	1.61	0.65
1:1:3153:U:H3	1:1:3181:G:H21	1.44	0.65
5:5:174:GLU:OE1	5:5:174:GLU:N	2.23	0.65
6:6:6:C:N3	6:6:48:G:O2'	2.28	0.65
10:D:335:LEU:O	10:D:387:LYS:NZ	2.29	0.65
3:3:25:GLN:HG2	3:3:37:LEU:HD22	1.79	0.65
34:o:138:ARG:HH21	34:o:200:ARG:HH22	1.44	0.65
1:1:499:G:H2'	1:1:501:G:N7	2.11	0.65
3:3:11:VAL:O	3:3:19:ARG:NH2	2.29	0.65
4:4:52:MET:HG2	4:4:109:LEU:HD22	1.79	0.65
23:S:12:LYS:HA	23:S:55:GLY:HA2	1.79	0.65
27:e:102:ARG:NH2	27:e:118:ASN:O	2.29	0.65
1:1:3343:A:C8	20:O:111:PRO:HG3	2.32	0.64
5:5:255:PRO:HG2	5:5:273:LYS:HE2	1.79	0.64
16:K:152:ARG:O	16:K:154:LEU:N	2.29	0.64
1:1:615:G:N2	1:1:637:U:OP1	2.26	0.64
1:1:968:A:O2'	1:1:970:C:N4	2.31	0.64
29:h:46:ILE:O	29:h:50:ARG:HG3	1.98	0.64
17:L:48:PRO:HG3	38:v:33:ASN:HD22	1.60	0.64
1:1:3279:A:OP2	20:O:13:LYS:NZ	2.31	0.64
25:Y:55:ILE:HD11	25:Y:81:ILE:HG12	1.79	0.64
1:1:1463:G:OP2	9:C:109:ARG:NH2	2.30	0.64
1:1:3117:A:N6	1:1:3129:A:OP2	2.28	0.64
32:m:241:ALA:HB1	32:m:246:ARG:HB2	1.79	0.64
1:1:340:C:OP1	38:v:9:LYS:NZ	2.31	0.64
8:B:339:ARG:HH22	8:B:342:LEU:HG	1.61	0.64
3:3:120:LEU:HD12	3:3:123:ARG:HH12	1.62	0.64
8:B:91:GLY:HA3	8:B:151:ILE:HD12	1.78	0.64
23:S:23:LEU:HD23	41:T:148:PRO:HG3	1.80	0.64
4:4:38:ARG:NH2	4:4:85:SER:OG	2.31	0.63
13:G:162:LEU:HD11	19:N:45:PRO:HG3	1.80	0.63
4:4:38:ARG:NH1	4:4:89:GLU:OE1	2.31	0.63
5:5:319:ILE:HG22	5:5:327:LEU:HB2	1.79	0.63
6:6:44:A:OP1	16:K:227:HIS:ND1	2.31	0.63
34:o:203:HIS:HA	34:o:206:ILE:HG12	1.81	0.63
7:A:66:SER:OG	7:A:67:MET:SD	2.56	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1183:G:OP2	1:1:1183:G:N2	2.28	0.63
1:1:1324:U:O2'	23:S:87:HIS:NE2	2.30	0.63
23:S:43:PHE:HA	23:S:46:MET:HE2	1.80	0.63
5:5:50:LYS:NZ	5:5:52:GLU:O	2.31	0.63
10:D:136:GLY:HA3	10:D:399:GLY:HA3	1.81	0.63
11:E:174:MET:HE2	11:E:174:MET:HA	1.81	0.63
10:D:483:ASN:HB3	10:D:486:LEU:HB2	1.81	0.63
13:G:93:LEU:HD13	13:G:210:GLU:HG2	1.81	0.63
39:x:4:ILE:O	39:x:10:ARG:NH1	2.31	0.63
1:1:644:A:H5'	1:1:645:U:H3'	1.80	0.62
6:6:100:U:OP1	34:o:140:ARG:NH1	2.31	0.62
7:A:89:LEU:HG	30:i:78:LEU:HD22	1.80	0.62
2:2:137:A:H5'	33:n:15:ILE:HA	1.81	0.62
7:A:153:LYS:NZ	15:J:123:THR:O	2.30	0.62
21:P:157:VAL:HG23	39:x:246:ARG:HE	1.62	0.62
1:1:762:U:H3'	1:1:763:G:H8	1.64	0.62
1:1:985:G:H1	1:1:1173:G:H2'	1.64	0.62
9:C:37:VAL:HG21	9:C:246:LEU:HD21	1.81	0.62
11:E:139:PHE:HZ	39:x:129:GLY:HA3	1.64	0.62
21:P:158:PRO:O	39:x:228:ARG:NH2	2.31	0.62
29:h:14:GLU:CD	29:h:14:GLU:H	2.08	0.62
6:6:180:A:C2	34:o:197:PRO:HA	2.35	0.62
21:P:23:ARG:NH1	21:P:141:SER:OG	2.31	0.62
1:1:632:A:OP1	11:E:44:ARG:NH2	2.32	0.62
7:A:97:ASN:ND2	7:A:171:THR:OG1	2.33	0.62
8:B:66:LYS:NZ	24:V:18:GLY:O	2.32	0.62
1:1:3104:G:OP2	20:O:75:ARG:NH1	2.32	0.62
5:5:53:MET:HE3	5:5:53:MET:HA	1.81	0.62
5:5:71:GLN:HE22	5:5:75:ILE:HG22	1.65	0.62
11:E:52:LEU:O	11:E:75:GLN:NE2	2.29	0.61
8:B:85:VAL:HG23	8:B:165:GLN:HE21	1.64	0.61
17:L:42:LYS:NZ	17:L:51:VAL:O	2.30	0.61
17:L:55:ARG:NH1	17:L:73:ARG:O	2.32	0.61
1:1:1226:A:H1'	1:1:1350:G:H4'	1.80	0.61
7:A:142:LEU:HA	15:J:174:MET:HA	1.82	0.61
1:1:340:C:OP2	38:v:6:GLN:NE2	2.26	0.61
1:1:3149:G:H1'	1:1:3189:C:H42	1.65	0.61
1:1:3287:A:H2'	1:1:3288:G:H8	1.64	0.61
23:S:65:GLU:OE2	23:S:72:LYS:NZ	2.33	0.61
29:h:98:GLU:HA	29:h:101:ARG:HG2	1.82	0.61
5:5:166:ASP:OD1	5:5:167:GLU:N	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3004:U:O2'	1:1:3201:A:N3	2.31	0.61
4:4:111:ARG:NH1	4:4:168:GLU:OE2	2.33	0.61
17:L:110:GLN:HB2	38:v:123:VAL:HG11	1.81	0.61
1:1:503:U:H2'	1:1:504:A:C8	2.36	0.61
1:1:1022:U:H3	1:1:1091:G:H22	1.47	0.60
8:B:303:LYS:NZ	8:B:359:ILE:O	2.25	0.60
10:D:128:ASP:HA	10:D:270:GLN:HE21	1.63	0.60
1:1:404:A:OP2	39:x:301:ARG:NH2	2.34	0.60
1:1:3324:G:H1	1:1:3361:U:H3	1.48	0.60
1:1:3417:A:C5	8:B:124:LYS:HB2	2.36	0.60
8:B:49:TYR:O	8:B:80:GLU:N	2.35	0.60
5:5:59:ARG:NH2	5:5:65:GLU:OE2	2.34	0.60
10:D:226:LEU:HD12	10:D:260:ILE:HD12	1.83	0.60
23:S:11:ARG:HD2	23:S:21:PRO:HG2	1.82	0.60
1:1:1241:U:H3	1:1:1326:G:H1	1.48	0.60
5:5:76:LEU:HD21	5:5:79:LEU:HB2	1.82	0.60
7:A:125:HIS:ND1	7:A:127:GLU:OE2	2.34	0.60
1:1:592:U:N3	9:C:346:GLU:OE1	2.26	0.60
4:4:170:ARG:HH22	4:4:212:TYR:HE2	1.49	0.60
7:A:125:HIS:HB2	7:A:230:ILE:HD11	1.83	0.60
39:x:240:LEU:HD21	39:x:306:LEU:HD13	1.84	0.60
8:B:323:MET:HE2	8:B:323:MET:HA	1.83	0.60
38:v:156:MET:HE1	38:v:204:ARG:HA	1.84	0.60
38:v:35:VAL:O	38:v:39:ASN:ND2	2.32	0.59
1:1:488:A:O2'	1:1:489:C:OP1	2.21	0.59
11:E:176:GLU:OE1	18:M:115:ARG:NH1	2.36	0.59
3:3:80:ILE:HD13	3:3:96:GLN:HG3	1.85	0.59
5:5:274:ARG:NH2	39:x:284:ARG:O	2.35	0.59
5:5:299:SER:H	5:5:312:GLY:HA2	1.68	0.59
39:x:152:ASN:HB3	39:x:160:ALA:HB3	1.85	0.59
13:G:105:LYS:HE2	32:m:234:ARG:HH21	1.67	0.59
23:S:76:ILE:HG12	23:S:125:VAL:HG22	1.84	0.59
40:y:12:GLU:HA	40:y:196:GLY:HA2	1.84	0.59
1:1:312:G:H1	1:1:319:U:H3	1.50	0.59
1:1:402:U:OP2	39:x:302:ARG:NH1	2.34	0.59
25:Y:44:ILE:HD11	25:Y:118:ILE:HA	1.84	0.59
21:P:122:ALA:HB3	21:P:143:PRO:HB2	1.84	0.59
1:1:379:G:N1	1:1:382:A:OP2	2.36	0.59
18:M:116:LEU:HD11	20:O:192:LEU:HD23	1.85	0.59
1:1:1146:G:N2	1:1:1146:G:OP2	2.36	0.59
1:1:3140:A:OP1	8:B:11:HIS:N	2.35	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:129:LEU:HD21	7:A:131:THR:HG23	1.85	0.58
7:A:198:ILE:HB	7:A:227:MET:HB2	1.85	0.58
34:o:134:LEU:HG	34:o:151:ILE:HG12	1.85	0.58
8:B:308:MET:SD	8:B:373:PRO:HG3	2.44	0.58
40:y:110:CYS:HA	40:y:115:ALA:HA	1.85	0.58
13:G:156:ASP:N	13:G:156:ASP:OD1	2.35	0.58
1:1:646:A:OP1	39:x:106:ARG:NH1	2.30	0.58
1:1:840:A:N6	1:1:964:U:H3	2.01	0.58
23:S:123:LEU:O	41:T:152:HIS:ND1	2.32	0.58
1:1:35:A:N6	1:1:48:A:OP2	2.35	0.58
1:1:1012:A:O2'	1:1:1013:U:O5'	2.21	0.58
8:B:89:VAL:HG12	8:B:160:VAL:HG12	1.85	0.58
8:B:283:TYR:HB2	8:B:323:MET:HG3	1.85	0.58
1:1:145:G:H5''	32:m:247:ILE:HG13	1.86	0.58
1:1:3314:U:OP2	18:M:121:ARG:NH2	2.37	0.58
5:5:3:LEU:HD13	5:5:339:ILE:HD11	1.86	0.57
28:f:32:LYS:NZ	28:f:79:SER:O	2.36	0.57
31:j:72:ARG:HG2	38:v:17:LEU:HD21	1.86	0.57
20:O:11:ASP:OD2	23:S:171:ARG:NH2	2.36	0.57
1:1:544:A:H61	1:1:582:G:H1	1.52	0.57
4:4:129:LEU:HD23	4:4:129:LEU:H	1.70	0.57
5:5:49:LEU:HD13	5:5:96:LYS:HA	1.84	0.57
7:A:149:LEU:HA	7:A:189:CYS:HB2	1.87	0.57
8:B:161:LEU:HD12	8:B:178:LEU:HD21	1.86	0.57
1:1:3415:U:H5''	8:B:174:LYS:HE2	1.86	0.57
1:1:448:U:H4'	1:1:449:U:O5'	2.04	0.57
1:1:529:G:OP2	1:1:529:G:N2	2.31	0.57
10:D:408:ILE:HG13	10:D:437:SER:HA	1.87	0.57
10:D:518:ALA:HA	10:D:529:PRO:HG3	1.87	0.57
1:1:144:U:H4'	32:m:246:ARG:HH11	1.70	0.57
7:A:149:LEU:HG	7:A:189:CYS:HB2	1.86	0.57
25:Y:49:VAL:HG21	25:Y:79:LEU:HD21	1.85	0.57
40:y:106:ASN:O	40:y:150:SER:N	2.36	0.57
1:1:3181:G:H4'	1:1:3433:U:H5'	1.87	0.57
5:5:11:GLN:NE2	39:x:73:GLU:OE2	2.37	0.57
11:E:72:VAL:HA	11:E:82:VAL:HG23	1.86	0.57
28:f:15:LEU:HD11	28:f:32:LYS:HB2	1.85	0.57
23:S:7:GLN:HB2	23:S:63:ILE:HD11	1.87	0.56
25:Y:54:GLN:HB3	25:Y:107:LYS:HB3	1.86	0.56
30:i:63:GLN:OE1	30:i:66:ARG:NE	2.37	0.56
40:y:25:LEU:HA	40:y:49:VAL:H	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:431:A:H3'	1:1:432:G:H8	1.70	0.56
1:1:3157:G:H1'	1:1:3434:G:H4'	1.86	0.56
7:A:46:LEU:HG	7:A:48:LEU:HD11	1.87	0.56
12:F:128:LYS:NZ	12:F:132:GLU:OE1	2.37	0.56
2:2:58:C:OP2	2:2:59:G:N2	2.38	0.56
8:B:346:THR:O	8:B:348:ARG:NH1	2.39	0.56
39:x:255:MET:SD	39:x:255:MET:N	2.74	0.56
1:1:3152:U:H1'	1:1:3154:U:H5''	1.87	0.56
6:6:181:C:O2'	6:6:183:A:OP2	2.20	0.56
10:D:224:ASP:OD1	10:D:228:ASN:ND2	2.38	0.56
20:O:122:PRO:HA	20:O:125:LEU:HD12	1.87	0.56
39:x:71:ASP:OD1	39:x:71:ASP:N	2.38	0.56
1:1:323:C:OP2	30:i:26:ARG:NH2	2.33	0.56
2:2:56:A:N6	2:2:59:G:H5''	2.19	0.56
6:6:93:A:H2	16:K:126:SER:HA	1.70	0.56
11:E:138:ALA:HA	11:E:143:ASN:H	1.70	0.56
16:K:77:LYS:NZ	16:K:219:SER:OG	2.38	0.56
23:S:111:ALA:O	23:S:114:ARG:NH1	2.39	0.56
1:1:1008:U:O2'	1:1:1009:C:O5'	2.23	0.56
2:2:68:U:O4	29:h:61:ASN:ND2	2.35	0.56
9:C:76:ILE:HG12	9:C:90:ALA:HB1	1.88	0.56
23:S:25:ARG:HH22	23:S:27:ARG:HD2	1.70	0.56
39:x:60:VAL:HG21	39:x:303:LYS:HE2	1.88	0.56
6:6:82:A:HO2'	6:6:83:A:H8	1.53	0.56
7:A:89:LEU:HD21	30:i:72:LYS:HE3	1.86	0.56
21:P:155:GLU:HG3	39:x:250:ARG:HH12	1.71	0.56
29:h:7:GLU:OE2	29:h:7:GLU:N	2.30	0.56
1:1:1224:A:H3'	1:1:1225:G:C8	2.40	0.55
1:1:276:A:OP1	19:N:50:ARG:NH1	2.40	0.55
1:1:372:G:O6	31:j:56:ARG:HD3	2.06	0.55
3:3:182:ASN:OD1	3:3:184:GLU:N	2.38	0.55
5:5:162:LYS:HE2	5:5:219:GLU:HB2	1.87	0.55
10:D:133:ALA:HB3	10:D:139:LYS:HD3	1.88	0.55
17:L:132:GLN:NE2	17:L:133:PRO:O	2.35	0.55
7:A:193:ILE:HG13	7:A:198:ILE:HG12	1.87	0.55
1:1:3372:C:O2	11:E:97:ASN:ND2	2.33	0.55
3:3:180:ASN:ND2	39:x:225:ILE:HG23	2.21	0.55
10:D:169:PRO:HD2	10:D:173:LEU:HD23	1.87	0.55
12:F:83:PHE:HE1	41:T:138:ALA:HB1	1.72	0.55
13:G:143:ILE:HG23	13:G:175:VAL:HG21	1.89	0.55
40:y:3:LEU:O	40:y:206:ALA:N	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:x:56:GLU:OE2	39:x:236:GLN:NE2	2.39	0.55
1:1:3410:G:H3'	1:1:3411:A:H8	1.71	0.55
1:1:3475:U:H4'	1:1:3477:A:H61	1.72	0.55
8:B:67:MET:N	8:B:67:MET:HE2	2.21	0.55
8:B:284:ARG:NH1	8:B:293:ASN:O	2.34	0.55
1:1:223:G:OP1	25:Y:15:ARG:NH1	2.38	0.55
1:1:3315:A:N6	1:1:3361:U:OP2	2.39	0.55
8:B:206:LYS:NZ	8:B:285:ILE:O	2.40	0.55
9:C:355:LYS:HD2	12:F:80:GLY:HA3	1.89	0.55
23:S:79:ARG:HB2	23:S:121:ARG:HG3	1.87	0.55
1:1:1008:U:O2'	1:1:1009:C:O4'	2.25	0.55
1:1:3278:A:H2'	1:1:3279:A:C8	2.42	0.55
7:A:99:PHE:CE1	7:A:171:THR:HG21	2.42	0.55
30:i:43:ARG:NH2	30:i:47:GLY:O	2.40	0.55
3:3:176:ASP:OD1	3:3:176:ASP:N	2.39	0.54
6:6:181:C:OP1	36:t:61:TYR:OH	2.21	0.54
7:A:68:MET:HB2	7:A:70:HIS:CE1	2.42	0.54
8:B:182:GLN:HB3	8:B:184:ASN:ND2	2.22	0.54
12:F:88:PRO:HG2	12:F:145:ILE:HG12	1.89	0.54
39:x:197:GLU:OE2	39:x:247:TYR:OH	2.24	0.54
1:1:3276:A:H61	1:1:3284:G:H4'	1.71	0.54
24:V:105:VAL:HA	24:V:111:MET:HA	1.90	0.54
1:1:175:G:O2'	1:1:177:G:OP2	2.26	0.54
1:1:3100:C:O2'	8:B:99:LEU:O	2.25	0.54
8:B:44:THR:HG23	8:B:184:ASN:OD1	2.07	0.54
16:K:85:SER:O	16:K:186:TYR:OH	2.23	0.54
1:1:116:A:OP1	30:i:34:ARG:NH2	2.34	0.54
8:B:107:ALA:HA	8:B:199:PHE:CE2	2.43	0.54
40:y:141:THR:HA	40:y:146:VAL:HA	1.89	0.54
8:B:119:TYR:O	8:B:175:LYS:NZ	2.41	0.54
10:D:270:GLN:NE2	10:D:271:THR:O	2.40	0.54
13:G:172:LYS:HB2	32:m:207:THR:HG22	1.89	0.54
40:y:63:THR:HA	40:y:72:VAL:HA	1.89	0.54
7:A:146:ARG:NH2	15:J:117:GLU:O	2.41	0.54
9:C:11:TYR:CE2	9:C:17:VAL:HG22	2.42	0.54
23:S:8:VAL:HG22	23:S:60:ILE:HD12	1.89	0.54
5:5:315:ARG:NH1	39:x:77:GLU:OE2	2.37	0.54
13:G:226:TYR:O	13:G:228:GLU:N	2.40	0.54
16:K:224:VAL:HA	16:K:228:ILE:HD13	1.88	0.54
18:M:78:TRP:NE1	18:M:84:CYS:SG	2.77	0.54
27:e:116:VAL:HB	27:e:119:ALA:HB2	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:148:ILE:HB	7:A:188:VAL:HG22	1.89	0.54
10:D:419:ASP:OD1	10:D:423:ARG:NH2	2.37	0.54
19:N:123:GLN:OE1	19:N:128:LYS:NZ	2.39	0.54
1:1:391:G:N2	1:1:394:A:OP2	2.33	0.54
1:1:458:G:H1	1:1:494:A:H2	1.56	0.54
3:3:114:ARG:HG2	11:E:30:ALA:HB1	1.90	0.53
11:E:57:VAL:O	11:E:104:THR:OG1	2.22	0.53
23:S:108:ASP:OD1	23:S:109:MET:N	2.41	0.53
34:o:132:LEU:HD23	34:o:132:LEU:H	1.73	0.53
5:5:218:ASP:HB3	5:5:221:LEU:HG	1.89	0.53
8:B:106:TRP:HB2	8:B:133:TYR:CE2	2.38	0.53
18:M:6:ARG:NH1	23:S:176:TYR:OXT	2.41	0.53
4:4:197:VAL:O	4:4:201:THR:OG1	2.20	0.53
10:D:105:LYS:N	10:D:105:LYS:HD3	2.23	0.53
20:O:75:ARG:O	20:O:143:SER:OG	2.24	0.53
1:1:3280:U:H5''	1:1:3281:A:H2'	1.91	0.53
2:2:131:G:O6	2:2:137:A:N6	2.41	0.53
4:4:46:LYS:HG2	7:A:293:VAL:HG11	1.91	0.53
10:D:529:PRO:HB2	32:m:213:THR:HG22	1.90	0.53
2:2:136:U:H3'	2:2:137:A:C8	2.44	0.53
8:B:62:ARG:HD2	8:B:65:SER:HB2	1.91	0.53
1:1:473:U:O2'	1:1:477:C:N4	2.39	0.53
1:1:2465:G:H5'	1:1:2466:C:H5	1.74	0.53
1:1:3102:A:O2'	20:O:79:ARG:NH1	2.41	0.53
6:6:83:A:H2'	6:6:84:U:C6	2.44	0.53
8:B:107:ALA:HB3	8:B:110:LEU:HD23	1.90	0.53
8:B:151:ILE:O	8:B:155:CYS:HB2	2.08	0.53
22:Q:16:SER:O	22:Q:33:ARG:NH2	2.36	0.53
1:1:1012:A:O2'	1:1:1013:U:O4'	2.26	0.53
1:1:1386:G:OP1	11:E:32:ARG:NH1	2.40	0.53
1:1:3491:A:O2'	1:1:3492:G:H8	1.92	0.53
5:5:344:GLU:OE1	5:5:345:ARG:NH1	2.41	0.53
23:S:95:ASP:OD1	23:S:97:THR:N	2.41	0.53
1:1:3106:U:H5'	8:B:14:LEU:HB2	1.89	0.52
8:B:273:MET:HE3	8:B:275:ARG:HH22	1.74	0.52
25:Y:6:ASP:OD2	38:v:20:ARG:HB3	2.09	0.52
1:1:366:G:N2	1:1:369:A:OP2	2.31	0.52
5:5:160:THR:C	5:5:162:LYS:H	2.17	0.52
6:6:106:A:H2'	6:6:107:A:H8	1.73	0.52
7:A:243:TYR:HD1	7:A:244:LYS:N	2.07	0.52
9:C:284:ILE:HD11	22:Q:24:TYR:HD1	1.73	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:40:GLU:O	25:Y:43:LYS:NZ	2.41	0.52
38:v:53:LEU:HD22	38:v:137:VAL:HG21	1.91	0.52
7:A:74:ASP:OD1	7:A:75:SER:N	2.37	0.52
1:1:1157:G:C4	1:1:1158:G:H1'	2.44	0.52
1:1:3286:U:H3	1:1:3301:C:H42	1.55	0.52
3:3:114:ARG:NH2	27:e:112:LEU:O	2.40	0.52
5:5:332:ILE:O	5:5:334:ALA:N	2.40	0.52
20:O:13:LYS:O	23:S:171:ARG:NH2	2.36	0.52
1:1:110:G:OP2	17:L:73:ARG:NH2	2.42	0.52
1:1:1157:G:N3	1:1:1158:G:H1'	2.24	0.52
1:1:3344:A:O5'	8:B:97:ARG:NH2	2.42	0.52
18:M:64:LYS:O	18:M:65:LEU:HD23	2.08	0.52
39:x:65:ILE:HG13	39:x:204:SER:HB2	1.91	0.52
40:y:198:VAL:N	40:y:205:PHE:O	2.42	0.52
1:1:253:U:H2'	1:1:254:G:H8	1.75	0.52
1:1:3361:U:OP1	18:M:119:GLN:NE2	2.37	0.52
1:1:728:G:O6	7:A:269:ARG:NH2	2.37	0.52
18:M:63:MET:SD	18:M:83:VAL:HG21	2.50	0.52
6:6:97:C:H42	34:o:189:ASN:HD21	1.58	0.52
7:A:40:PRO:HA	32:m:105:GLY:HA2	1.92	0.52
20:O:33:LYS:HG3	20:O:102:HIS:HD2	1.75	0.52
22:Q:78:GLN:HG2	22:Q:79:ASN:N	2.23	0.52
1:1:136:U:N3	31:j:77:GLY:O	2.37	0.52
1:1:837:G:OP1	9:C:76:ILE:HA	2.10	0.52
1:1:1382:C:OP1	3:3:103:ARG:NH1	2.34	0.52
4:4:95:TRP:O	9:C:291:ARG:NH2	2.43	0.52
7:A:38:PHE:N	32:m:106:TYR:O	2.30	0.52
7:A:203:TYR:CE2	15:J:143:TYR:HA	2.43	0.52
25:Y:99:ASP:OD2	25:Y:101:SER:OG	2.28	0.52
36:t:160:GLY:HA2	36:t:208:LEU:HA	1.91	0.52
1:1:319:U:H5''	7:A:82:ARG:HH22	1.74	0.52
1:1:1158:G:H2'	1:1:1158:G:N3	2.24	0.52
7:A:44:LYS:HB3	7:A:95:CYS:HA	1.90	0.52
7:A:253:MET:C	7:A:253:MET:HE2	2.35	0.52
1:1:3242:G:H4'	8:B:100:ARG:HD2	1.91	0.51
3:3:170:LYS:NZ	39:x:257:ASP:OD2	2.42	0.51
7:A:127:GLU:HB2	7:A:226:VAL:HB	1.92	0.51
9:C:152:LEU:HD21	9:C:174:ILE:HD12	1.91	0.51
11:E:137:GLU:O	11:E:141:ALA:N	2.42	0.51
34:o:106:VAL:HA	34:o:152:GLU:HA	1.92	0.51
1:1:646:A:O2'	1:1:647:A:H8	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1016:G:N1	1:1:1170:G:OP1	2.37	0.51
1:1:3193:U:O2'	8:B:278:LEU:O	2.28	0.51
3:3:170:LYS:HE3	39:x:259:ILE:HD11	1.92	0.51
18:M:126:VAL:HG11	20:O:178:LYS:HB3	1.93	0.51
32:m:257:GLU:OE1	32:m:258:ARG:NH1	2.43	0.51
7:A:63:ASP:O	7:A:66:SER:OG	2.27	0.51
8:B:217:VAL:HG13	8:B:277:GLN:HB2	1.91	0.51
9:C:284:ILE:HD12	9:C:287:ALA:HA	1.91	0.51
18:M:20:GLU:OE2	18:M:20:GLU:N	2.29	0.51
20:O:56:LEU:HB3	20:O:60:ARG:HH21	1.75	0.51
20:O:86:ARG:HG2	20:O:100:LEU:HD11	1.92	0.51
38:v:142:GLU:O	38:v:146:VAL:HG23	2.10	0.51
1:1:550:G:H22	1:1:576:U:H1'	1.74	0.51
7:A:67:MET:SD	7:A:67:MET:N	2.84	0.51
33:n:258:ALA:HB1	33:n:261:ALA:HB3	1.92	0.51
1:1:430:A:C4	1:1:2451:A:H4'	2.46	0.51
1:1:1182:U:H3'	1:1:1183:G:N2	2.26	0.51
1:1:3144:C:OP2	8:B:222:ARG:NH2	2.44	0.51
7:A:120:PRO:HG2	7:A:167:LEU:HD11	1.93	0.51
10:D:416:ASP:N	10:D:416:ASP:OD1	2.43	0.51
29:h:56:ILE:O	29:h:60:ILE:HD13	2.11	0.51
1:1:259:A:O2'	17:L:135:LYS:O	2.28	0.51
1:1:709:G:OP2	17:L:28:GLN:NE2	2.38	0.51
1:1:985:G:N1	1:1:1173:G:H2'	2.26	0.51
4:4:93:ARG:HG3	4:4:94:GLU:HG2	1.91	0.51
7:A:101:PHE:HB3	7:A:109:LEU:HD11	1.93	0.51
10:D:123:LEU:HD21	10:D:272:LEU:HD11	1.92	0.51
16:K:56:GLN:NE2	16:K:240:HIS:ND1	2.59	0.51
20:O:55:TYR:OH	20:O:74:PHE:O	2.26	0.51
1:1:528:G:OP1	12:F:74:ARG:NH2	2.43	0.51
1:1:837:G:OP1	9:C:77:PRO:HD3	2.11	0.51
5:5:95:MET:HG3	5:5:104:LEU:HD22	1.92	0.51
6:6:181:C:H2'	36:t:68:ARG:HH22	1.75	0.51
6:6:182:C:O2	6:6:186:U:O2'	2.28	0.51
13:G:69:LEU:O	13:G:236:GLY:N	2.44	0.51
1:1:80:C:H5''	19:N:191:ARG:HH21	1.75	0.51
1:1:501:G:H2'	1:1:502:G:C8	2.45	0.51
1:1:689:U:H2'	1:1:690:A:C8	2.46	0.51
10:D:341:VAL:HB	10:D:391:LEU:HD23	1.93	0.51
5:5:273:LYS:HE3	39:x:288:GLU:HG2	1.93	0.51
8:B:117:ARG:NH2	8:B:175:LYS:O	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:P:52:LYS:HZ2	21:P:89:LYS:HE2	1.75	0.51
23:S:81:ASP:OD1	23:S:121:ARG:NH2	2.44	0.51
39:x:236:GLN:HG3	39:x:237:ARG:HD2	1.92	0.51
1:1:1224:A:H3'	1:1:1225:G:H8	1.75	0.50
2:2:81:U:H1'	2:2:86:G:H22	1.76	0.50
13:G:190:ILE:HD11	13:G:195:ALA:HB2	1.93	0.50
1:1:477:C:H5''	1:1:478:G:C8	2.46	0.50
1:1:710:G:OP1	17:L:39:ARG:NH2	2.40	0.50
22:Q:53:GLN:O	22:Q:58:ARG:NH1	2.44	0.50
1:1:379:G:H4'	1:1:404:A:N1	2.26	0.50
1:1:3203:C:H2'	1:1:3204:G:C8	2.46	0.50
1:1:3431:A:H2'	1:1:3432:U:C6	2.47	0.50
3:3:86:TYR:OH	3:3:113:THR:OG1	2.22	0.50
9:C:69:THR:HG23	9:C:75:ARG:HE	1.77	0.50
8:B:369:ARG:HH21	37:u:11:GLY:HA3	1.76	0.50
1:1:760:C:C2	1:1:762:U:H4'	2.47	0.50
1:1:1378:U:H2'	1:1:1389:A:H61	1.76	0.50
3:3:183:GLU:OE1	3:3:187:ASN:ND2	2.42	0.50
6:6:181:C:C2	34:o:200:ARG:HD2	2.46	0.50
16:K:65:ASN:HA	34:o:208:ARG:NH1	2.23	0.50
6:6:180:A:N7	34:o:119:LYS:NZ	2.55	0.50
27:e:127:GLU:OE2	39:x:127:ARG:NH1	2.44	0.50
1:1:984:A:N3	1:1:1145:U:O2'	2.39	0.50
1:1:1182:U:H3'	1:1:1183:G:H21	1.77	0.50
9:C:263:VAL:HG22	9:C:273:LEU:HD12	1.92	0.50
38:v:119:THR:O	38:v:119:THR:OG1	2.27	0.50
1:1:1438:G:N2	1:1:1441:A:OP2	2.37	0.50
1:1:3332:U:H2'	1:1:3333:G:H8	1.77	0.50
6:6:102:G:H21	6:6:184:C:N4	2.10	0.50
10:D:265:PRO:O	10:D:269:ARG:NH1	2.44	0.50
11:E:71:VAL:HG23	11:E:178:LEU:HD21	1.93	0.50
5:5:270:PHE:HE1	5:5:280:PHE:HB2	1.77	0.50
7:A:179:ARG:C	7:A:180:ARG:HE	2.20	0.50
8:B:166:ILE:HD13	8:B:174:LYS:HA	1.93	0.50
27:e:9:LYS:NZ	27:e:55:GLY:O	2.37	0.50
1:1:840:A:H61	1:1:964:U:H3	1.60	0.49
1:1:3135:G:H2'	1:1:3136:A:C8	2.47	0.49
2:2:81:U:H1'	2:2:86:G:N2	2.26	0.49
5:5:8:GLU:HG2	5:5:337:THR:HG23	1.92	0.49
19:N:122:ASN:OD1	19:N:123:GLN:N	2.45	0.49
20:O:13:LYS:HG2	20:O:41:GLU:HG2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:V:81:VAL:H	24:V:103:VAL:H	1.60	0.49
2:2:83:G:OP2	25:Y:73:TYR:OH	2.28	0.49
1:1:982:G:N1	1:1:1402:U:OP2	2.32	0.49
6:6:85:U:H5'	16:K:67:ARG:NH2	2.26	0.49
8:B:214:MET:HG3	8:B:341:SER:HB3	1.95	0.49
11:E:141:ALA:HB2	39:x:143:ARG:CZ	2.43	0.49
13:G:126:SER:OG	13:G:127:LYS:N	2.45	0.49
1:1:481:A:H2'	1:1:482:C:O4'	2.12	0.49
1:1:1347:U:H3	23:S:153:HIS:HB3	1.76	0.49
10:D:405:VAL:O	10:D:435:GLY:N	2.45	0.49
30:i:93:GLN:OE1	30:i:93:GLN:HA	2.12	0.49
2:2:65:C:O2	2:2:69:A:O2'	2.28	0.49
16:K:25:SER:O	16:K:28:LYS:NZ	2.36	0.49
18:M:9:GLU:OE2	18:M:12:ARG:NH2	2.45	0.49
27:e:80:GLU:HG2	27:e:108:LYS:HE2	1.93	0.49
1:1:17:G:H4'	29:h:77:TYR:CZ	2.48	0.49
1:1:582:G:OP1	18:M:77:LYS:NZ	2.46	0.49
1:1:1385:U:H5'	1:1:1386:G:H2'	1.94	0.49
6:6:61:U:H4'	34:o:211:HIS:CE1	2.47	0.49
13:G:98:ARG:NH2	13:G:188:THR:O	2.45	0.49
16:K:151:PRO:HA	16:K:159:TYR:CE2	2.45	0.49
1:1:589:U:H2'	1:1:590:U:C5	2.48	0.49
1:1:3316:G:H1	1:1:3358:U:H5''	1.77	0.49
3:3:147:ARG:NH1	39:x:298:GLU:O	2.44	0.49
4:4:110:MET:HE2	4:4:160:HIS:HD2	1.76	0.49
7:A:154:THR:O	7:A:157:THR:OG1	2.25	0.49
28:f:3:ALA:O	28:f:4:GLN:NE2	2.43	0.49
1:1:613:A:H1'	1:1:1368:A:H5''	1.95	0.49
4:4:100:ILE:HD13	9:C:291:ARG:HA	1.95	0.49
6:6:8:U:O4	16:K:118:SER:OG	2.31	0.49
8:B:110:LEU:HB2	8:B:115:LYS:HE3	1.94	0.49
1:1:404:A:O2'	1:1:407:A:OP1	2.28	0.49
1:1:3181:G:O2'	1:1:3432:U:O2'	2.30	0.49
7:A:243:TYR:CE1	7:A:245:ASN:HA	2.48	0.49
31:j:39:TYR:CG	31:j:40:PRO:HA	2.47	0.49
1:1:518:U:H2'	1:1:519:U:C6	2.47	0.49
1:1:3346:U:H4'	1:1:3347:G:O4'	2.13	0.49
2:2:66:G:N7	31:j:63:ARG:NH1	2.60	0.49
6:6:188:G:H21	36:t:107:LYS:HA	1.77	0.49
17:L:47:ALA:HB3	17:L:48:PRO:HD3	1.95	0.49
1:1:502:G:H2'	1:1:503:U:C6	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:839:A:H2'	1:1:840:A:H4'	1.95	0.48
1:1:3107:A:N6	1:1:3233:C:O2'	2.45	0.48
4:4:166:THR:OG1	4:4:183:TYR:OH	2.24	0.48
11:E:88:VAL:HG22	11:E:175:LYS:HE2	1.95	0.48
23:S:79:ARG:HH22	23:S:86:THR:HG23	1.76	0.48
34:o:119:LYS:O	34:o:123:MET:HG3	2.13	0.48
38:v:170:LEU:HB3	38:v:182:MET:HE3	1.95	0.48
40:y:117:VAL:N	40:y:138:PHE:O	2.46	0.48
1:1:494:A:H5''	3:3:123:ARG:CZ	2.43	0.48
1:1:689:U:H2'	1:1:690:A:H8	1.78	0.48
1:1:3417:A:H2'	8:B:124:LYS:HA	1.95	0.48
2:2:111:G:OP2	2:2:113:A:O2'	2.28	0.48
17:L:76:THR:HG22	17:L:101:ARG:HB3	1.95	0.48
20:O:75:ARG:HG2	20:O:147:GLY:HA3	1.96	0.48
1:1:644:A:H3'	1:1:645:U:C6	2.48	0.48
8:B:56:ILE:HG21	8:B:359:ILE:HD13	1.95	0.48
10:D:271:THR:HB	10:D:290:LEU:HD12	1.95	0.48
11:E:141:ALA:O	39:x:125:ARG:NH1	2.45	0.48
16:K:98:TYR:OH	16:K:145:ARG:NH2	2.46	0.48
19:N:114:ARG:NH1	19:N:151:ILE:O	2.46	0.48
1:1:1455:A:H2'	1:1:1456:G:C8	2.47	0.48
1:1:2462:C:H2'	1:1:2463:G:C5	2.49	0.48
1:1:2986:U:H2'	1:1:2987:A:H8	1.78	0.48
8:B:180:GLU:OE1	8:B:180:GLU:N	2.46	0.48
1:1:3128:A:H2'	1:1:3129:A:H8	1.76	0.48
2:2:57:G:H1'	29:h:43:LEU:HD13	1.95	0.48
8:B:89:VAL:HG11	8:B:195:ALA:HB1	1.95	0.48
1:1:1219:U:OP1	1:1:1326:G:N2	2.46	0.48
8:B:31:ALA:O	8:B:339:ARG:NH2	2.47	0.48
10:D:225:HIS:ND1	10:D:229:THR:OG1	2.38	0.48
10:D:316:VAL:HG22	10:D:462:PHE:HB2	1.95	0.48
23:S:5:GLU:OE2	23:S:27:ARG:NH2	2.47	0.48
1:1:588:G:H2'	1:1:589:U:O4'	2.14	0.48
1:1:1007:C:N4	1:1:1008:U:O4	2.46	0.48
1:1:3135:G:H2'	1:1:3136:A:H8	1.79	0.48
10:D:418:ARG:O	10:D:422:HIS:ND1	2.45	0.48
11:E:61:LEU:HD11	11:E:102:ILE:HG13	1.96	0.48
16:K:68:LYS:HG2	16:K:70:ILE:HG12	1.94	0.48
1:1:647:A:H2'	1:1:648:U:O4'	2.13	0.48
1:1:1389:A:H4'	1:1:1390:A:O5'	2.14	0.48
1:1:3371:U:OP2	11:E:126:LYS:NZ	2.26	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3414:U:H4'	8:B:173:GLN:NE2	2.27	0.48
2:2:132:G:N2	2:2:137:A:N1	2.54	0.48
10:D:401:ASP:OD1	10:D:401:ASP:N	2.39	0.48
1:1:1176:G:N1	1:1:1190:A:O2'	2.47	0.48
2:2:132:G:H4'	2:2:133:U:C5	2.49	0.48
5:5:51:HIS:C	5:5:51:HIS:CD2	2.91	0.48
7:A:96:ASN:HA	32:m:102:ILE:HD11	1.94	0.48
8:B:84:MET:HB3	8:B:203:VAL:HB	1.95	0.48
11:E:83:THR:HB	11:E:93:ILE:HA	1.95	0.48
1:1:3143:U:H2'	1:1:3144:C:C6	2.49	0.48
1:1:3354:U:H2'	1:1:3355:G:H8	1.77	0.48
31:j:66:TYR:HA	31:j:69:LYS:HE3	1.96	0.48
1:1:3421:G:N2	1:1:3489:C:O2	2.47	0.47
5:5:48:MET:HE3	5:5:338:SER:HB3	1.96	0.47
5:5:50:LYS:HB2	5:5:340:ILE:HD12	1.95	0.47
7:A:40:PRO:C	7:A:41:ILE:HD13	2.39	0.47
7:A:149:LEU:HD22	7:A:169:GLN:HA	1.96	0.47
8:B:60:LEU:HD23	8:B:72:ILE:HB	1.94	0.47
9:C:156:ASP:OD2	9:C:255:SER:OG	2.29	0.47
13:G:110:VAL:O	13:G:114:GLU:HG3	2.13	0.47
17:L:106:GLU:HG2	30:i:18:ARG:HG3	1.96	0.47
18:M:8:VAL:O	23:S:148:LYS:HA	2.14	0.47
1:1:591:G:H1'	1:1:592:U:H3'	1.95	0.47
1:1:1242:U:O4	1:1:1243:A:N6	2.47	0.47
1:1:3179:G:N2	1:1:3433:U:O2'	2.47	0.47
1:1:3366:G:H2'	1:1:3367:A:C8	2.49	0.47
16:K:76:ILE:HD11	16:K:216:ASN:HA	1.95	0.47
21:P:99:GLU:HG2	21:P:109:MET:HE1	1.96	0.47
39:x:83:PHE:HB2	39:x:213:ARG:HH21	1.79	0.47
1:1:1154:U:H2'	1:1:1155:U:O4'	2.13	0.47
1:1:1420:U:O4'	9:C:143:ARG:NH2	2.47	0.47
1:1:3145:A:C2	8:B:75:ALA:HB1	2.50	0.47
1:1:3475:U:H4'	1:1:3477:A:N6	2.29	0.47
7:A:104:ARG:HG3	7:A:105:ARG:HG3	1.96	0.47
7:A:142:LEU:H	7:A:186:ASP:HB3	1.78	0.47
8:B:221:THR:HA	8:B:330:GLY:N	2.29	0.47
10:D:204:GLU:OE1	10:D:221:ARG:NH1	2.47	0.47
11:E:136:ASP:OD1	11:E:137:GLU:N	2.47	0.47
16:K:86:GLU:OE1	16:K:112:THR:OG1	2.32	0.47
20:O:77:PRO:HA	20:O:80:ILE:HD12	1.95	0.47
40:y:109:ALA:N	40:y:116:LEU:O	2.43	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:499:G:O3'	1:1:500:U:H2'	2.14	0.47
2:2:74:A:OP1	29:h:5:THR:OG1	2.31	0.47
5:5:1:MET:HE2	5:5:1:MET:HB2	1.81	0.47
18:M:7:TYR:O	18:M:12:ARG:NE	2.47	0.47
25:Y:73:TYR:CE2	25:Y:76:LYS:HG3	2.49	0.47
39:x:41:GLU:HA	39:x:44:ARG:HE	1.79	0.47
1:1:431:A:H2'	1:1:432:G:H5'	1.97	0.47
1:1:1455:A:H2'	1:1:1456:G:H8	1.80	0.47
5:5:88:GLU:OE2	5:5:88:GLU:N	2.35	0.47
7:A:64:LEU:O	7:A:68:MET:HE3	2.15	0.47
7:A:199:TRP:CD1	7:A:201:ARG:HH21	2.32	0.47
8:B:35:ASP:HB3	8:B:184:ASN:HB3	1.95	0.47
10:D:141:LEU:HD12	10:D:145:ILE:HD11	1.96	0.47
34:o:184:ASP:N	34:o:184:ASP:OD1	2.46	0.47
1:1:52:A:H5''	31:j:48:ASN:HB2	1.96	0.47
1:1:119:U:H4'	1:1:120:G:H3'	1.97	0.47
8:B:58:ARG:HH21	8:B:354:VAL:HA	1.79	0.47
9:C:194:GLY:O	9:C:199:ARG:HB2	2.13	0.47
10:D:463:GLU:O	16:K:44:GLU:N	2.48	0.47
13:G:96:LYS:NZ	13:G:210:GLU:OE1	2.39	0.47
24:V:120:VAL:O	24:V:139:VAL:N	2.33	0.47
1:1:35:A:OP2	1:1:48:A:N6	2.44	0.47
1:1:279:C:O2	30:i:80:ARG:NH2	2.37	0.47
1:1:457:U:H3	1:1:495:A:H61	1.61	0.47
1:1:547:G:N2	1:1:548:U:O4	2.34	0.47
9:C:14:ASP:OD1	9:C:14:ASP:N	2.37	0.47
19:N:115:VAL:O	19:N:159:ARG:NH1	2.47	0.47
23:S:47:ILE:HD12	41:T:154:VAL:HG23	1.97	0.47
34:o:133:ARG:HB2	34:o:191:PHE:CZ	2.49	0.47
23:S:123:LEU:HA	41:T:153:PRO:HD2	1.96	0.47
29:h:21:GLN:O	29:h:25:GLN:NE2	2.47	0.47
38:v:121:ASP:OD1	38:v:121:ASP:N	2.48	0.47
1:1:3222:C:H2'	1:1:3223:A:C8	2.50	0.47
1:1:3417:A:C2	8:B:123:PHE:HB2	2.50	0.47
8:B:311:PHE:HB2	8:B:314:TYR:HD2	1.79	0.47
13:G:233:TRP:NE1	32:m:200:PRO:O	2.46	0.47
17:L:68:LYS:HG3	30:i:8:GLY:HA2	1.96	0.47
20:O:191:LYS:HB3	20:O:192:LEU:HD22	1.96	0.47
24:V:29:ASP:HA	24:V:116:ILE:HA	1.96	0.47
40:y:150:SER:O	40:y:194:GLY:N	2.48	0.47
1:1:19:U:H2'	1:1:20:A:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:162:A:H5''	30:i:24:PRO:HD2	1.97	0.47
1:1:762:U:H5'	1:1:764:U:C4	2.50	0.47
6:6:180:A:H61	34:o:195:ASP:C	2.23	0.47
8:B:96:PRO:HA	20:O:153:ILE:HD11	1.97	0.47
9:C:134:PRO:HG3	9:C:150:VAL:HB	1.97	0.47
16:K:128:GLU:HG3	16:K:131:ARG:HH21	1.80	0.47
23:S:48:ASN:HD22	23:S:48:ASN:N	2.13	0.47
28:f:53:VAL:HG22	28:f:67:VAL:HG22	1.96	0.47
29:h:104:LEU:HG	29:h:108:LYS:HE3	1.97	0.47
1:1:3:U:H5	2:2:164:U:H1'	1.79	0.46
1:1:248:G:H2'	1:1:249:G:C8	2.50	0.46
1:1:430:A:N1	1:1:2450:C:O2'	2.44	0.46
1:1:1141:C:O2'	1:1:1142:U:H5'	2.15	0.46
1:1:3222:C:H2'	1:1:3223:A:H8	1.79	0.46
1:1:3242:G:H2'	1:1:3243:A:C8	2.50	0.46
8:B:48:GLY:N	8:B:336:LEU:O	2.38	0.46
8:B:113:GLU:OE1	8:B:166:ILE:HG13	2.14	0.46
8:B:152:LYS:HG2	8:B:189:ALA:HA	1.97	0.46
23:S:79:ARG:HD3	41:T:155:ALA:HA	1.97	0.46
25:Y:110:LEU:HD23	25:Y:110:LEU:HA	1.81	0.46
1:1:1481:G:H22	1:1:2443:G:H3'	1.81	0.46
1:1:3109:U:H2'	1:1:3110:U:C6	2.50	0.46
4:4:8:ILE:HG23	4:4:47:GLY:HA3	1.97	0.46
8:B:20:LYS:N	8:B:273:MET:HE1	2.30	0.46
13:G:159:PRO:HG2	13:G:162:LEU:HD13	1.97	0.46
18:M:16:VAL:HA	18:M:56:VAL:HG12	1.97	0.46
21:P:107:LEU:HB3	21:P:152:GLU:OE2	2.15	0.46
21:P:155:GLU:OE2	21:P:155:GLU:N	2.48	0.46
1:1:461:A:OP1	5:5:186:LYS:HB3	2.14	0.46
1:1:3359:U:H5''	1:1:3361:U:H5	1.79	0.46
11:E:157:GLN:O	11:E:160:VAL:HG22	2.15	0.46
18:M:85:ASN:HA	18:M:88:ALA:HB3	1.97	0.46
39:x:199:ILE:HG13	39:x:232:THR:HG23	1.96	0.46
1:1:723:C:OP2	9:C:121:ARG:NH2	2.47	0.46
1:1:1236:A:H2'	1:1:1237:G:C8	2.50	0.46
1:1:3105:G:O2'	8:B:14:LEU:O	2.30	0.46
1:1:3107:A:H4'	1:1:3108:A:H4'	1.98	0.46
7:A:54:THR:OG1	7:A:57:GLN:HG3	2.16	0.46
7:A:60:LEU:HD12	7:A:129:LEU:HD12	1.97	0.46
8:B:59:ASP:OD1	8:B:59:ASP:N	2.48	0.46
16:K:168:VAL:HG12	16:K:170:ILE:HG23	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:S:151:LEU:HD13	23:S:152:PRO:HD2	1.97	0.46
25:Y:43:LYS:HB2	25:Y:123:GLY:HA2	1.97	0.46
29:h:72:TYR:HB3	29:h:78:ILE:HG22	1.97	0.46
1:1:161:C:H1'	30:i:24:PRO:HB2	1.97	0.46
1:1:676:G:O2'	1:1:1469:A:OP1	2.32	0.46
1:1:3194:G:H5''	8:B:279:ASN:OD1	2.16	0.46
7:A:56:ARG:HB3	7:A:129:LEU:HD13	1.97	0.46
7:A:243:TYR:HE1	7:A:245:ASN:HA	1.80	0.46
13:G:90:VAL:HA	13:G:214:ILE:HD13	1.97	0.46
14:H:29:THR:HA	14:H:34:THR:HA	1.96	0.46
16:K:99:LYS:HG2	16:K:114:VAL:HB	1.98	0.46
1:1:4:U:C5	2:2:163:A:H2	2.34	0.46
1:1:3140:A:H2'	1:1:3141:G:H8	1.79	0.46
27:e:31:LYS:HD2	27:e:32:PRO:HD2	1.96	0.46
34:o:201:ILE:HB	34:o:203:HIS:CE1	2.51	0.46
1:1:668:U:O2'	1:1:670:A:N7	2.47	0.46
1:1:673:C:H3'	1:1:674:A:C8	2.51	0.46
1:1:2463:G:O2'	1:1:2464:G:H3'	2.15	0.46
1:1:3287:A:H2'	1:1:3288:G:C8	2.48	0.46
3:3:23:GLU:HG2	27:e:62:TYR:CE1	2.51	0.46
7:A:108:ASP:OD2	7:A:251:SER:OG	2.27	0.46
23:S:41:TRP:HA	23:S:41:TRP:CE3	2.51	0.46
1:1:200:C:OP1	5:5:292:GLN:NE2	2.48	0.46
1:1:715:U:H4'	25:Y:3:PHE:CE1	2.51	0.46
1:1:3415:U:O2'	1:1:3422:G:H4'	2.16	0.46
20:O:85:VAL:HG11	20:O:103:LEU:HD22	1.97	0.46
25:Y:102:LYS:HA	25:Y:102:LYS:HD3	1.83	0.46
27:e:29:TRP:CZ2	27:e:50:PRO:HD2	2.51	0.46
30:i:13:LYS:HA	30:i:13:LYS:HD2	1.85	0.46
34:o:161:VAL:O	34:o:165:THR:HG22	2.16	0.46
34:o:187:HIS:N	34:o:187:HIS:CD2	2.84	0.46
1:1:494:A:H5''	3:3:123:ARG:NH1	2.31	0.46
2:2:56:A:H3'	2:2:58:C:OP2	2.15	0.46
2:2:79:A:C2	2:2:96:A:H1'	2.51	0.46
3:3:169:LEU:HA	3:3:174:TYR:HE2	1.80	0.46
7:A:143:LYS:H	15:J:174:MET:HA	1.81	0.46
8:B:54:THR:HG21	8:B:360:ASP:O	2.16	0.46
9:C:10:ILE:HD13	9:C:254:LYS:HG3	1.98	0.46
8:B:371:GLN:H	8:B:371:GLN:CD	2.25	0.46
10:D:356:LEU:HD22	10:D:361:LEU:HD23	1.97	0.46
10:D:398:ARG:NH1	10:D:416:ASP:OD2	2.39	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:j:27:PHE:HA	31:j:34:CYS:HA	1.98	0.46
33:n:172:ILE:HA	33:n:375:ALA:HA	1.97	0.46
39:x:148:LEU:HB3	39:x:164:VAL:HG22	1.97	0.46
5:5:15:ILE:HG22	5:5:17:ILE:H	1.80	0.45
10:D:358:TYR:HD2	10:D:479:LEU:HD21	1.81	0.45
13:G:71:VAL:HG23	13:G:76:ALA:HB2	1.97	0.45
16:K:7:LEU:HA	16:K:233:ALA:HB1	1.98	0.45
1:1:1382:C:O2'	1:1:1384:U:OP1	2.34	0.45
5:5:256:LEU:HD23	5:5:272:ASP:HB3	1.98	0.45
8:B:361:THR:H	8:B:371:GLN:HB2	1.81	0.45
18:M:120:ARG:HD3	20:O:183:LYS:HD3	1.97	0.45
24:V:9:SER:H	24:V:109:GLY:HA3	1.81	0.45
1:1:3143:U:OP1	8:B:221:THR:OG1	2.28	0.45
5:5:199:THR:HG21	5:5:256:LEU:O	2.15	0.45
7:A:148:ILE:O	7:A:189:CYS:N	2.49	0.45
8:B:284:ARG:H	8:B:323:MET:HB3	1.82	0.45
13:G:97:TYR:OH	13:G:207:ASP:OD2	2.29	0.45
16:K:53:VAL:HG21	16:K:213:LEU:HD11	1.99	0.45
22:Q:43:PHE:CD2	22:Q:135:GLY:HA3	2.52	0.45
1:1:455:G:H2'	1:1:456:G:C8	2.51	0.45
1:1:459:A:N6	1:1:460:G:O6	2.50	0.45
1:1:2989:C:H2'	1:1:2990:G:C8	2.51	0.45
1:1:3276:A:H1'	20:O:169:TYR:HB2	1.96	0.45
21:P:152:GLU:OE1	21:P:152:GLU:N	2.47	0.45
24:V:28:ALA:O	24:V:117:THR:N	2.43	0.45
38:v:122:ASP:OD1	38:v:122:ASP:N	2.35	0.45
1:1:3:U:C5	2:2:164:U:H1'	2.51	0.45
1:1:493:G:H4'	1:1:494:A:OP2	2.16	0.45
1:1:643:C:O2'	1:1:646:A:N3	2.43	0.45
1:1:3480:C:H2'	1:1:3481:U:O4'	2.15	0.45
8:B:84:MET:N	8:B:203:VAL:O	2.48	0.45
8:B:98:GLY:HA2	20:O:150:TYR:HE2	1.80	0.45
13:G:71:VAL:HG12	19:N:21:PHE:CZ	2.52	0.45
17:L:50:PRO:HG3	29:h:120:LEU:HD12	1.98	0.45
18:M:97:GLU:OE2	18:M:97:GLU:HA	2.16	0.45
20:O:50:ARG:HG2	20:O:54:LYS:HZ2	1.79	0.45
20:O:110:PRO:HG2	20:O:113:PHE:HD2	1.80	0.45
21:P:64:ASN:O	21:P:80:GLN:NE2	2.49	0.45
1:1:997:A:H3'	1:1:998:U:H5''	1.97	0.45
1:1:1387:A:OP2	1:1:1391:G:N2	2.49	0.45
1:1:3271:G:H5'	28:f:5:GLY:H	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:D:322:LYS:HE3	10:D:322:LYS:HB2	1.77	0.45
23:S:109:MET:HE3	23:S:109:MET:HB3	1.84	0.45
23:S:136:ARG:HA	23:S:136:ARG:HD3	1.80	0.45
27:e:76:VAL:O	27:e:80:GLU:HG3	2.15	0.45
5:5:65:GLU:HG3	5:5:67:TRP:HE1	1.81	0.45
8:B:121:ASN:OD1	8:B:124:LYS:N	2.49	0.45
10:D:97:SER:N	10:D:149:GLU:OE1	2.49	0.45
16:K:134:ARG:HG3	16:K:163:LYS:HG3	1.99	0.45
1:1:167:G:H5'	32:m:222:LYS:HD2	1.99	0.45
1:1:1207:C:H2'	1:1:1208:G:N2	2.32	0.45
1:1:1345:C:H5'	20:O:18:GLY:HA3	1.98	0.45
3:3:169:LEU:HD12	3:3:174:TYR:CE2	2.52	0.45
5:5:80:TRP:HE1	5:5:82:LEU:HD23	1.82	0.45
8:B:46:PHE:CZ	8:B:84:MET:HB2	2.52	0.45
11:E:76:LEU:HD12	11:E:76:LEU:HA	1.74	0.45
16:K:142:ALA:HB3	16:K:147:ILE:HD13	1.98	0.45
17:L:69:VAL:HG21	30:i:11:LYS:HB2	1.98	0.45
23:S:80:TYR:HB3	23:S:87:HIS:HB3	1.99	0.45
27:e:61:ARG:NH1	27:e:62:TYR:OH	2.50	0.45
1:1:414:G:H1'	2:2:24:G:N2	2.32	0.45
1:1:687:U:H2'	1:1:688:C:C6	2.52	0.45
1:1:1347:U:O4	23:S:153:HIS:ND1	2.50	0.45
2:2:46:U:O2'	29:h:85:LYS:NZ	2.49	0.45
3:3:34:VAL:O	3:3:111:ARG:NH1	2.50	0.45
8:B:107:ALA:HA	8:B:199:PHE:HE2	1.80	0.45
9:C:308:SER:O	9:C:309:ARG:C	2.60	0.45
10:D:356:LEU:HD23	10:D:359:ILE:HD11	1.98	0.45
34:o:201:ILE:HD12	34:o:201:ILE:H	1.81	0.45
1:1:453:U:H3	1:1:499:G:H1	1.64	0.45
6:6:81:A:H3'	6:6:82:A:H8	1.82	0.45
19:N:189:TRP:O	19:N:192:HIS:ND1	2.49	0.45
38:v:20:ARG:HA	38:v:20:ARG:HD3	1.75	0.45
1:1:55:G:O3'	19:N:108:ARG:NH2	2.50	0.44
1:1:431:A:H3'	1:1:432:G:C8	2.52	0.44
1:1:3142:A:OP1	8:B:273:MET:HB2	2.18	0.44
1:1:3351:U:H2'	1:1:3352:A:C8	2.53	0.44
7:A:201:ARG:NE	7:A:224:ARG:HH12	2.14	0.44
7:A:244:LYS:NZ	7:A:246:ASP:H	2.15	0.44
7:A:265:ARG:HD2	17:L:64:ARG:NH2	2.32	0.44
39:x:182:ALA:HA	39:x:185:ILE:HD12	1.98	0.44
1:1:587:U:H2'	1:1:588:G:O4'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:726:C:H5'	7:A:266:TYR:HE1	1.82	0.44
1:1:1472:U:H4'	9:C:90:ALA:HB3	1.99	0.44
1:1:3140:A:H2'	1:1:3141:G:C8	2.51	0.44
1:1:3284:G:H2'	1:1:3285:G:C8	2.53	0.44
7:A:56:ARG:HD2	7:A:129:LEU:HD22	1.98	0.44
8:B:53:MET:HB2	8:B:76:VAL:O	2.18	0.44
9:C:239:GLN:O	9:C:248:ARG:HD3	2.17	0.44
10:D:348:SER:O	10:D:352:MET:HG2	2.17	0.44
11:E:129:ARG:HD3	11:E:129:ARG:H	1.81	0.44
11:E:134:LYS:HG3	11:E:137:GLU:OE1	2.16	0.44
23:S:80:TYR:HD1	23:S:81:ASP:N	2.15	0.44
25:Y:30:MET:HE1	25:Y:72:VAL:HB	1.98	0.44
39:x:65:ILE:HA	39:x:205:THR:HA	2.00	0.44
1:1:1236:A:H2'	1:1:1237:G:H8	1.83	0.44
1:1:1382:C:OP1	3:3:103:ARG:HD2	2.17	0.44
1:1:1395:A:H2'	1:1:1396:G:C8	2.52	0.44
2:2:139:C:H2'	2:2:140:A:C8	2.53	0.44
6:6:48:G:O6	16:K:69:LEU:N	2.31	0.44
8:B:21:ARG:HD2	8:B:269:ASN:HD21	1.82	0.44
9:C:345:SER:HB2	9:C:347:LYS:HZ1	1.82	0.44
22:Q:30:LYS:HE2	22:Q:30:LYS:HB2	1.80	0.44
25:Y:75:LYS:HB2	25:Y:75:LYS:HE2	1.73	0.44
1:1:109:A:N1	1:1:330:U:O2'	2.48	0.44
1:1:646:A:O2'	1:1:647:A:OP2	2.31	0.44
1:1:2989:C:H2'	1:1:2990:G:H8	1.82	0.44
1:1:3326:G:H1'	1:1:3360:G:N2	2.33	0.44
2:2:141:A:H2'	2:2:142:A:C8	2.53	0.44
8:B:50:LYS:HG2	8:B:332:VAL:HA	2.00	0.44
8:B:273:MET:HE3	8:B:275:ARG:NH2	2.31	0.44
12:F:27:LYS:HE3	12:F:27:LYS:HB3	1.84	0.44
1:1:1446:G:H4'	39:x:155:ARG:HH22	1.82	0.44
1:1:3128:A:H2'	1:1:3129:A:C8	2.52	0.44
5:5:49:LEU:HB3	5:5:95:MET:CE	2.48	0.44
11:E:161:ASP:HB3	11:E:165:LEU:HD23	2.00	0.44
13:G:70:LYS:HG2	32:m:199:TYR:CE2	2.53	0.44
17:L:21:TYR:HB3	19:N:194:THR:HG22	2.00	0.44
23:S:123:LEU:HD12	23:S:123:LEU:H	1.82	0.44
25:Y:31:SER:HA	25:Y:48:PRO:HA	1.98	0.44
29:h:26:GLU:O	29:h:30:LEU:HG	2.17	0.44
1:1:361:G:O2'	1:1:372:G:O6	2.28	0.44
1:1:1423:G:H5''	27:e:98:SER:HB3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3286:U:H2'	1:1:3287:A:C8	2.53	0.44
2:2:79:A:H3'	25:Y:50:ARG:HG2	2.00	0.44
3:3:81:LYS:O	3:3:92:GLN:NE2	2.51	0.44
4:4:181:ASP:OD1	4:4:181:ASP:N	2.50	0.44
7:A:143:LYS:N	15:J:173:GLU:O	2.50	0.44
1:1:175:G:H5''	29:h:111:ARG:HD3	2.00	0.44
1:1:685:A:N1	1:1:973:G:O2'	2.47	0.44
1:1:308:G:OP1	30:i:79:LYS:NZ	2.41	0.44
1:1:497:C:H2'	1:1:498:U:O4'	2.18	0.44
1:1:3185:C:H2'	1:1:3186:U:C6	2.52	0.44
1:1:3479:C:H5''	8:B:313:ARG:HG2	1.99	0.44
4:4:175:GLU:H	4:4:175:GLU:CD	2.24	0.44
8:B:362:ALA:HA	8:B:371:GLN:HA	2.00	0.44
17:L:66:ASN:OD1	17:L:66:ASN:N	2.51	0.44
23:S:151:LEU:HB2	23:S:176:TYR:HE1	1.82	0.44
1:1:481:A:OP1	3:3:61:TYR:OH	2.27	0.44
1:1:1469:A:N1	9:C:95:MET:HE3	2.32	0.44
1:1:3208:G:H21	1:1:3218:A:H62	1.66	0.44
1:1:3371:U:C4	11:E:126:LYS:HA	2.53	0.44
4:4:12:ALA:HB1	9:C:6:PRO:HG2	2.00	0.44
5:5:1:MET:HE2	5:5:17:ILE:HG23	2.00	0.44
6:6:107:A:N6	6:6:176:U:O4	2.51	0.44
6:6:180:A:H4'	6:6:181:C:H4'	2.00	0.44
7:A:179:ARG:HB3	7:A:180:ARG:HE	1.81	0.44
7:A:253:MET:HE2	7:A:253:MET:O	2.17	0.44
8:B:22:ALA:N	8:B:272:TYR:O	2.42	0.44
9:C:116:ASN:HB2	9:C:119:GLU:HG3	1.98	0.44
10:D:135:THR:HB	10:D:398:ARG:HG2	2.00	0.44
18:M:63:MET:HE2	18:M:65:LEU:HD21	1.99	0.44
22:Q:46:ALA:O	22:Q:50:ARG:HG3	2.18	0.44
1:1:359:A:H2	1:1:374:A:H61	1.64	0.43
1:1:836:C:H4'	9:C:95:MET:HE1	2.00	0.43
1:1:3351:U:H2'	1:1:3352:A:H8	1.82	0.43
1:1:3397:A:H2'	1:1:3398:U:C6	2.53	0.43
5:5:49:LEU:HB3	5:5:95:MET:HE2	2.00	0.43
7:A:249:VAL:HB	7:A:253:MET:SD	2.58	0.43
12:F:81:ASN:OD1	12:F:81:ASN:N	2.50	0.43
16:K:49:ASP:OD1	16:K:49:ASP:N	2.50	0.43
1:1:680:C:H5''	27:e:23:LYS:HB3	1.99	0.43
1:1:1420:U:H5'	9:C:143:ARG:HH22	1.83	0.43
1:1:3359:U:H5''	1:1:3361:U:C5	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3428:G:N2	1:1:3481:U:H1'	2.33	0.43
4:4:86:THR:O	4:4:90:THR:HG23	2.18	0.43
5:5:111:LEU:HB3	5:5:113:PHE:HE1	1.82	0.43
7:A:49:SER:HB3	7:A:61:LEU:HD13	1.99	0.43
8:B:55:HIS:HB2	8:B:73:LEU:HD11	1.98	0.43
19:N:96:ARG:NH2	19:N:104:GLU:OE2	2.47	0.43
20:O:76:ALA:HB3	20:O:79:ARG:HE	1.83	0.43
28:f:46:LEU:HD11	28:f:75:PRO:HD3	2.01	0.43
1:1:455:G:H2'	1:1:456:G:H8	1.81	0.43
1:1:643:C:H2'	1:1:644:A:O4'	2.18	0.43
3:3:62:LEU:HD21	3:3:97:LEU:HD13	1.99	0.43
5:5:154:LEU:HB2	5:5:180:PHE:HB3	1.99	0.43
5:5:278:SER:HB3	5:5:290:ARG:HG3	2.00	0.43
8:B:211:GLN:HE22	8:B:354:VAL:HB	1.83	0.43
18:M:41:SER:HB3	18:M:46:PHE:HB3	2.00	0.43
33:n:359:PHE:O	33:n:403:ILE:N	2.42	0.43
1:1:382:A:N3	1:1:384:G:H5''	2.33	0.43
1:1:986:U:H1'	1:1:987:U:H5''	2.00	0.43
1:1:1016:G:H1	1:1:1170:G:P	2.40	0.43
1:1:3134:U:H4'	8:B:66:LYS:HE3	2.00	0.43
1:1:3422:G:H2'	1:1:3423:A:C8	2.53	0.43
1:1:3433:U:H3	1:1:3472:G:H1	1.66	0.43
6:6:6:C:H4'	6:6:7:U:H5''	1.99	0.43
10:D:363:VAL:HA	10:D:389:ILE:HG23	2.00	0.43
13:G:183:LYS:HG3	13:G:194:THR:HG23	2.00	0.43
16:K:13:LEU:O	16:K:15:LYS:N	2.50	0.43
27:e:94:ALA:HB3	27:e:97:VAL:HG23	1.99	0.43
28:f:12:ALA:O	28:f:99:LEU:N	2.49	0.43
29:h:21:GLN:HB2	29:h:25:GLN:NE2	2.33	0.43
34:o:122:ARG:NH1	34:o:131:VAL:O	2.52	0.43
39:x:150:VAL:HB	39:x:162:THR:HG23	2.01	0.43
1:1:389:U:O4	39:x:29:ARG:NH1	2.49	0.43
1:1:2458:G:N1	1:1:2462:C:H3'	2.33	0.43
4:4:202:LEU:HD12	4:4:202:LEU:HA	1.88	0.43
5:5:180:PHE:HE1	5:5:243:ARG:HA	1.83	0.43
6:6:12:A:H2'	6:6:42:U:H3	1.84	0.43
8:B:278:LEU:HD12	8:B:279:ASN:H	1.83	0.43
22:Q:94:MET:HE3	22:Q:94:MET:HB2	1.86	0.43
23:S:65:GLU:HB2	23:S:97:THR:HG23	1.99	0.43
29:h:6:PHE:CD1	29:h:6:PHE:N	2.86	0.43
1:1:68:A:OP2	1:1:309:G:N2	2.39	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3242:G:H2'	1:1:3243:A:H8	1.83	0.43
2:2:84:C:H3'	2:2:85:A:H8	1.83	0.43
3:3:165:LEU:HD12	3:3:165:LEU:HA	1.79	0.43
1:1:49:A:O2'	1:1:50:U:OP1	2.32	0.43
7:A:200:PHE:CD2	7:A:223:PRO:HB2	2.53	0.43
8:B:314:TYR:HD1	8:B:333:LYS:HB3	1.83	0.43
16:K:77:LYS:H	16:K:77:LYS:HD2	1.82	0.43
1:1:453:U:H2'	1:1:454:G:O4'	2.19	0.43
1:1:3480:C:O3'	8:B:315:GLY:HA2	2.18	0.43
3:3:93:ILE:O	3:3:97:LEU:HB2	2.19	0.43
5:5:285:LYS:HE2	5:5:285:LYS:HB2	1.72	0.43
8:B:45:ALA:HB3	8:B:181:ILE:HG23	2.01	0.43
8:B:290:ASP:O	8:B:293:ASN:ND2	2.51	0.43
29:h:16:LEU:HD13	29:h:60:ILE:HD12	1.99	0.43
39:x:56:GLU:OE2	39:x:237:ARG:NE	2.51	0.43
1:1:306:U:C5	30:i:30:HIS:HB2	2.54	0.43
1:1:633:A:H5'	9:C:325:ALA:HB3	2.00	0.43
1:1:3107:A:C4'	1:1:3108:A:H4'	2.49	0.43
8:B:66:LYS:HE3	8:B:66:LYS:HB3	1.69	0.43
8:B:79:ILE:HB	8:B:322:VAL:HG22	2.00	0.43
8:B:102:LEU:HD21	8:B:150:ARG:HG2	2.00	0.43
8:B:221:THR:CG2	8:B:273:MET:H	2.30	0.43
16:K:71:PRO:HB2	16:K:190:TYR:HD2	1.83	0.43
18:M:4:PHE:HB2	18:M:7:TYR:CZ	2.54	0.43
29:h:29:SER:O	29:h:33:GLN:HG2	2.18	0.43
1:1:372:G:OP2	31:j:52:LYS:NZ	2.28	0.43
1:1:979:G:H5''	27:e:52:ILE:HB	2.01	0.43
8:B:130:PHE:HD2	8:B:133:TYR:HD2	1.65	0.43
8:B:166:ILE:HD12	8:B:167:ARG:N	2.34	0.43
8:B:211:GLN:NE2	8:B:283:TYR:O	2.51	0.43
10:D:249:LEU:HD21	10:D:285:LEU:HD13	2.01	0.43
16:K:134:ARG:NH1	16:K:161:LYS:HG3	2.34	0.43
20:O:135:LYS:HD3	20:O:135:LYS:HA	1.81	0.43
21:P:51:VAL:HG11	21:P:88:VAL:HG21	2.01	0.43
25:Y:59:ARG:HB2	25:Y:102:LYS:HD2	2.01	0.43
25:Y:114:ARG:O	25:Y:118:ILE:HG13	2.19	0.43
30:i:61:ASN:HB2	30:i:63:GLN:HE21	1.83	0.43
38:v:179:PHE:HA	38:v:182:MET:HB2	1.99	0.43
1:1:4:U:H5	2:2:163:A:H2	1.66	0.42
1:1:353:G:O2'	2:2:33:G:N3	2.52	0.42
1:1:1153:U:H2'	1:1:1154:U:H6	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3156:C:H4'	1:1:3473:A:N3	2.33	0.42
1:1:3354:U:H2'	1:1:3355:G:C8	2.54	0.42
2:2:132:G:H1'	2:2:134:U:H5	1.83	0.42
6:6:82:A:O2'	6:6:83:A:H8	2.02	0.42
9:C:145:GLU:OE1	9:C:178:ARG:NH1	2.40	0.42
9:C:179:ASP:O	9:C:183:VAL:HG23	2.19	0.42
12:F:224:ARG:HA	12:F:224:ARG:HD3	1.62	0.42
20:O:26:LYS:HA	20:O:26:LYS:HD2	1.78	0.42
34:o:189:ASN:O	34:o:192:LYS:NZ	2.52	0.42
1:1:452:C:H2'	1:1:453:U:C6	2.54	0.42
1:1:1327:C:H2'	1:1:1328:C:C6	2.54	0.42
5:5:8:GLU:HG3	5:5:335:LEU:HB3	2.01	0.42
6:6:47:U:O2	16:K:66:ASN:ND2	2.52	0.42
7:A:179:ARG:HD2	32:m:112:THR:HA	2.01	0.42
8:B:66:LYS:HZ3	24:V:18:GLY:C	2.24	0.42
8:B:91:GLY:O	8:B:102:LEU:N	2.48	0.42
8:B:380:LEU:HD13	8:B:381:GLY:N	2.35	0.42
16:K:61:LYS:HA	34:o:211:HIS:NE2	2.34	0.42
16:K:174:THR:HG22	16:K:177:GLN:HB3	2.02	0.42
20:O:128:LEU:HD11	23:S:172:PRO:HG3	2.02	0.42
22:Q:35:LEU:O	22:Q:39:THR:OG1	2.26	0.42
23:S:47:ILE:HG22	23:S:48:ASN:HD22	1.83	0.42
25:Y:4:SER:HB3	25:Y:7:VAL:HG22	2.01	0.42
1:1:80:C:H5''	19:N:191:ARG:NH2	2.34	0.42
1:1:347:C:OP1	1:1:1414:G:O2'	2.32	0.42
1:1:1209:G:N3	1:1:1359:C:O2'	2.51	0.42
1:1:3147:U:H2'	1:1:3148:G:C8	2.55	0.42
1:1:3186:U:H2'	1:1:3187:A:C8	2.55	0.42
1:1:3369:A:H4'	1:1:3370:U:O5'	2.19	0.42
1:1:3404:G:H4'	1:1:3405:C:H5'	2.02	0.42
1:1:3410:G:OP2	1:1:3410:G:N2	2.46	0.42
7:A:150:SER:HA	15:J:122:THR:HA	2.01	0.42
7:A:202:ASN:CG	7:A:221:ILE:HG13	2.44	0.42
8:B:86:VAL:HG21	8:B:160:VAL:HB	2.01	0.42
17:L:70:ARG:HA	30:i:7:VAL:HG12	2.01	0.42
20:O:50:ARG:O	20:O:53:LEU:HG	2.20	0.42
34:o:138:ARG:HH21	34:o:200:ARG:NH2	2.15	0.42
38:v:120:LEU:HA	38:v:123:VAL:HG12	2.01	0.42
1:1:3155:G:C2	1:1:3156:C:C2	3.08	0.42
4:4:194:HIS:CB	22:Q:79:ASN:HD21	2.32	0.42
5:5:148:LYS:HE3	5:5:197:TRP:CZ3	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:194:ALA:O	7:A:197:LYS:HG3	2.20	0.42
8:B:113:GLU:OE1	8:B:165:GLN:HA	2.19	0.42
20:O:189:ASN:C	20:O:189:ASN:OD1	2.62	0.42
24:V:122:LYS:H	24:V:139:VAL:C	2.27	0.42
25:Y:52:ASP:OD1	25:Y:52:ASP:O	2.37	0.42
39:x:68:ASP:N	39:x:68:ASP:OD1	2.52	0.42
23:S:45:LYS:HD3	23:S:45:LYS:HA	1.60	0.42
34:o:120:GLN:HG3	36:t:57:PHE:HB3	2.01	0.42
38:v:185:ASP:OD1	38:v:185:ASP:C	2.63	0.42
1:1:360:A:N1	1:1:373:A:H5'	2.34	0.42
4:4:108:LEU:HD12	4:4:111:ARG:HD2	2.01	0.42
5:5:281:ASP:HB2	5:5:288:ILE:HG12	2.02	0.42
8:B:84:MET:O	8:B:203:VAL:N	2.51	0.42
8:B:152:LYS:HA	8:B:188:VAL:HG12	2.01	0.42
8:B:221:THR:OG1	8:B:222:ARG:N	2.51	0.42
11:E:34:ASN:OD1	11:E:34:ASN:N	2.52	0.42
11:E:58:CYS:HB2	11:E:101:VAL:HG13	2.01	0.42
16:K:156:LYS:HB2	16:K:160:GLN:OE1	2.19	0.42
38:v:42:LYS:HD2	38:v:42:LYS:HA	1.81	0.42
38:v:72:ASP:OD1	38:v:72:ASP:N	2.51	0.42
1:1:431:A:C2'	1:1:432:G:H5'	2.49	0.42
5:5:274:ARG:HD3	39:x:289:VAL:HG21	2.01	0.42
10:D:244:GLU:HB3	10:D:247:ARG:HG3	2.02	0.42
12:F:132:GLU:HA	12:F:135:GLN:HG2	2.02	0.42
29:h:105:LYS:O	29:h:109:LYS:HD3	2.19	0.42
1:1:277:G:OP2	19:N:44:ARG:NH1	2.44	0.42
5:5:52:GLU:HB3	5:5:53:MET:H	1.64	0.42
7:A:266:TYR:O	7:A:270:GLN:HG2	2.20	0.42
8:B:57:VAL:HG22	8:B:358:TRP:HE3	1.84	0.42
16:K:145:ARG:H	16:K:145:ARG:HG2	1.53	0.42
20:O:111:PRO:N	20:O:112:PRO:HD2	2.34	0.42
22:Q:78:GLN:HG2	22:Q:79:ASN:H	1.85	0.42
31:j:82:LYS:HE2	31:j:82:LYS:HB2	1.88	0.42
39:x:191:SER:OG	39:x:244:ARG:NH1	2.53	0.42
1:1:216:A:H4'	1:1:218:A:N7	2.35	0.42
1:1:619:G:N1	1:1:634:G:OP1	2.44	0.42
1:1:3151:A:H1'	1:1:3183:A:N6	2.29	0.42
1:1:3332:U:H2'	1:1:3333:G:C8	2.54	0.42
6:6:61:U:O2'	34:o:211:HIS:ND1	2.32	0.42
39:x:139:ALA:O	39:x:143:ARG:HG3	2.20	0.42
1:1:123:A:OP1	13:G:105:LYS:NZ	2.33	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:161:C:H5''	1:1:162:A:H2'	2.01	0.42
1:1:1325:A:H2'	1:1:1326:G:C8	2.55	0.42
8:B:216:ASP:OD1	8:B:216:ASP:N	2.47	0.42
9:C:291:ARG:O	9:C:295:SER:HB3	2.20	0.42
9:C:301:ILE:HD11	22:Q:133:PRO:HB2	2.02	0.42
30:i:52:GLU:HG2	30:i:88:LEU:HD11	2.01	0.42
32:m:241:ALA:HB3	32:m:247:ILE:HD12	2.02	0.42
1:1:222:G:H5''	25:Y:11:ARG:HG3	2.02	0.41
1:1:420:G:H5'	21:P:26:PHE:HZ	1.86	0.41
1:1:584:C:P	18:M:70:ARG:HE	2.43	0.41
1:1:675:C:N4	1:1:676:G:O6	2.53	0.41
1:1:1232:G:O2'	1:1:1233:A:H5'	2.20	0.41
1:1:2458:G:H2'	1:1:2462:C:H41	1.84	0.41
5:5:166:ASP:OD1	5:5:166:ASP:C	2.63	0.41
8:B:166:ILE:CD1	8:B:174:LYS:HA	2.49	0.41
10:D:169:PRO:HG3	10:D:248:ILE:HG13	2.01	0.41
27:e:80:GLU:HA	27:e:112:LEU:HD11	2.01	0.41
1:1:405:A:H5'	1:1:407:A:OP1	2.21	0.41
1:1:725:U:H2'	1:1:726:C:O4'	2.20	0.41
1:1:759:C:H2'	1:1:760:C:C6	2.55	0.41
1:1:1449:U:H2'	1:1:1450:C:O4'	2.20	0.41
1:1:3413:U:H2'	1:1:3414:U:C6	2.55	0.41
3:3:45:LEU:HD13	9:C:139:ALA:HB2	2.02	0.41
3:3:174:TYR:CD2	3:3:178:PRO:HB3	2.55	0.41
4:4:195:ASN:HB3	4:4:198:LEU:HB3	2.01	0.41
5:5:48:MET:O	5:5:340:ILE:HG13	2.20	0.41
6:6:84:U:OP1	34:o:141:LYS:HE3	2.21	0.41
10:D:335:LEU:HD21	10:D:361:LEU:HD11	2.01	0.41
10:D:369:LYS:NZ	10:D:374:ARG:HG3	2.35	0.41
20:O:74:PHE:CD2	20:O:79:ARG:HD2	2.56	0.41
25:Y:80:LEU:HD22	25:Y:95:PRO:HB2	2.00	0.41
1:1:846:U:H2'	1:1:847:G:C8	2.55	0.41
1:1:3303:C:H2'	1:1:3304:U:C6	2.55	0.41
1:1:3491:A:HO2'	1:1:3492:G:C5'	2.33	0.41
4:4:52:MET:HE3	4:4:105:LYS:HD3	2.01	0.41
8:B:318:GLU:HG2	8:B:319:ASN:OD1	2.20	0.41
17:L:40:GLN:HG2	38:v:27:LYS:HB3	2.02	0.41
18:M:85:ASN:O	18:M:89:SER:OG	2.36	0.41
23:S:70:LYS:HE2	23:S:70:LYS:HB3	1.83	0.41
24:V:95:LEU:HA	40:y:56:THR:HA	2.03	0.41
1:1:68:A:O3'	19:N:177:GLY:HA2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:488:A:HO2'	1:1:489:C:P	2.42	0.41
1:1:2997:A:H4'	1:1:3127:G:H4'	2.03	0.41
1:1:3184:G:H4'	1:1:3478:G:N9	2.36	0.41
1:1:3414:U:H2'	1:1:3415:U:O4'	2.20	0.41
8:B:58:ARG:HB2	8:B:356:LEU:HD22	2.03	0.41
18:M:33:ASP:CG	18:M:34:HIS:N	2.78	0.41
23:S:77:TRP:HB3	23:S:123:LEU:HD13	2.02	0.41
29:h:11:GLN:HG3	29:h:16:LEU:HG	2.00	0.41
34:o:189:ASN:HB2	34:o:192:LYS:HZ3	1.85	0.41
1:1:543:G:H2'	1:1:544:A:C8	2.55	0.41
1:1:1328:C:H2'	1:1:1329:C:C6	2.55	0.41
1:1:1330:U:H2'	1:1:1331:G:O4'	2.20	0.41
1:1:2465:G:H3'	1:1:2466:C:H6	1.86	0.41
6:6:48:G:N7	16:K:69:LEU:HD23	2.34	0.41
8:B:166:ILE:HD11	8:B:167:ARG:HH21	1.86	0.41
27:e:93:ILE:HG21	27:e:102:ARG:HG2	2.02	0.41
5:5:141:GLY:HA2	5:5:171:TRP:CH2	2.56	0.41
8:B:113:GLU:HB3	8:B:176:ALA:HB2	2.03	0.41
9:C:347:LYS:HE2	9:C:347:LYS:HB2	1.85	0.41
12:F:24:LYS:O	12:F:28:GLN:HG2	2.20	0.41
13:G:172:LYS:HD3	32:m:207:THR:HA	2.02	0.41
31:j:63:ARG:HE	31:j:63:ARG:HB3	1.70	0.41
1:1:836:C:H2'	1:1:837:G:O4'	2.20	0.41
6:6:44:A:H2'	6:6:45:G:O4'	2.21	0.41
9:C:67:TRP:CZ3	9:C:78:ARG:HD2	2.55	0.41
16:K:80:VAL:HG12	16:K:204:GLY:HA2	2.03	0.41
18:M:79:LYS:HD3	18:M:79:LYS:HA	1.92	0.41
40:y:109:ALA:HB2	40:y:149:GLY:HA2	2.01	0.41
1:1:161:C:H4'	1:1:162:A:H2'	2.02	0.41
1:1:984:A:H2'	1:1:985:G:O4'	2.20	0.41
1:1:1341:G:H2'	1:1:1342:G:H8	1.85	0.41
1:1:1388:G:O2'	1:1:1390:A:O2'	2.35	0.41
3:3:18:TYR:O	3:3:29:ARG:N	2.42	0.41
3:3:114:ARG:HA	3:3:114:ARG:HD2	1.78	0.41
8:B:284:ARG:NH1	8:B:296:THR:HG22	2.36	0.41
10:D:415:ASP:OD1	10:D:415:ASP:N	2.54	0.41
10:D:418:ARG:H	10:D:418:ARG:HD3	1.84	0.41
11:E:79:THR:HG22	11:E:97:ASN:HA	2.02	0.41
21:P:13:LYS:HB3	21:P:152:GLU:OE1	2.21	0.41
34:o:134:LEU:HD23	34:o:135:ARG:N	2.36	0.41
39:x:95:LYS:N	39:x:146:THR:OG1	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:396:G:H1'	21:P:97:ASN:ND2	2.27	0.41
1:1:500:U:H4'	1:1:501:G:OP1	2.19	0.41
1:1:1224:A:H61	1:1:1348:A:H62	1.68	0.41
6:6:100:U:O4	34:o:198:PHE:HA	2.21	0.41
6:6:181:C:H2'	36:t:68:ARG:NH2	2.36	0.41
7:A:190:THR:OG1	7:A:201:ARG:O	2.33	0.41
8:B:102:LEU:HD23	8:B:151:ILE:HD13	2.03	0.41
8:B:179:MET:SD	8:B:181:ILE:HG12	2.61	0.41
8:B:373:PRO:O	8:B:377:LYS:HG2	2.21	0.41
10:D:438:LEU:HD12	10:D:438:LEU:HA	1.86	0.41
10:D:462:PHE:HA	16:K:42:LEU:HD11	2.03	0.41
10:D:534:ILE:HD13	10:D:534:ILE:HA	1.94	0.41
12:F:130:ILE:HD13	12:F:133:MET:HE3	2.03	0.41
15:J:153:ALA:O	15:J:157:LEU:N	2.43	0.41
16:K:93:ASP:OD2	16:K:118:SER:OG	2.37	0.41
18:M:8:VAL:HG12	18:M:31:ILE:HD12	2.03	0.41
21:P:8:PRO:O	21:P:9:ALA:HB3	2.21	0.41
21:P:48:LEU:HD22	21:P:88:VAL:HG13	2.03	0.41
23:S:30:ALA:HB1	23:S:35:VAL:HB	2.01	0.41
29:h:94:LEU:HD22	29:h:98:GLU:HG3	2.02	0.41
30:i:54:ARG:HA	30:i:54:ARG:HD2	1.92	0.41
34:o:187:HIS:O	34:o:190:MET:HG3	2.20	0.41
1:1:114:A:H2'	1:1:115:A:O4'	2.21	0.41
1:1:385:A:H1'	1:1:400:G:N2	2.36	0.41
1:1:547:G:H1'	1:1:548:U:H5	1.86	0.41
1:1:689:U:H5'	9:C:109:ARG:HA	2.02	0.41
1:1:1224:A:N6	1:1:1346:U:O2	2.53	0.41
1:1:2458:G:H1	1:1:2462:C:H3'	1.86	0.41
3:3:61:TYR:HB3	3:3:79:ARG:HG3	2.03	0.41
4:4:59:LEU:HD23	4:4:59:LEU:HA	1.94	0.41
7:A:200:PHE:HB2	7:A:227:MET:HE1	2.03	0.41
8:B:196:ARG:O	8:B:199:PHE:HB2	2.20	0.41
22:Q:62:SER:OG	22:Q:91:ASP:HB2	2.21	0.41
39:x:118:CYS:SG	39:x:268:PRO:HD2	2.61	0.41
1:1:538:U:O2	1:1:588:G:N2	2.42	0.40
1:1:646:A:O2'	1:1:647:A:C8	2.74	0.40
1:1:1092:U:H2'	1:1:1093:A:C8	2.56	0.40
1:1:1159:U:H2'	1:1:1159:U:OP2	2.21	0.40
1:1:1380:A:C2	9:C:296:ASP:HA	2.56	0.40
1:1:3238:A:H3'	1:1:3239:A:H5'	2.03	0.40
1:1:3417:A:C4	8:B:124:LYS:HB2	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:4:79:ASN:OD1	4:4:79:ASN:N	2.50	0.40
5:5:134:GLU:HG3	5:5:135:LEU:N	2.35	0.40
8:B:214:MET:CE	8:B:279:ASN:HD22	2.34	0.40
9:C:64:ALA:HB3	9:C:92:PHE:CE2	2.56	0.40
13:G:108:ARG:HH22	32:m:231:GLU:CD	2.29	0.40
32:m:239:ALA:O	32:m:243:ARG:HG3	2.22	0.40
1:1:462:U:H5	3:3:82:LEU:O	2.03	0.40
1:1:645:U:H5''	1:1:646:A:OP2	2.22	0.40
1:1:3145:A:H5'	8:B:364:LYS:HB3	2.04	0.40
3:3:49:ARG:NH2	3:3:101:PRO:HD3	2.37	0.40
5:5:95:MET:HA	5:5:103:MET:HE2	2.03	0.40
7:A:179:ARG:HB3	7:A:180:ARG:NE	2.37	0.40
7:A:200:PHE:CE2	7:A:223:PRO:HB2	2.57	0.40
13:G:83:ASP:OD1	13:G:83:ASP:N	2.47	0.40
23:S:123:LEU:HD23	41:T:153:PRO:O	2.20	0.40
38:v:170:LEU:HD12	38:v:182:MET:HG2	2.04	0.40
1:1:51:A:H2'	1:1:52:A:O4'	2.21	0.40
1:1:224:U:O2'	25:Y:102:LYS:HE2	2.21	0.40
1:1:590:U:O2'	1:1:591:G:O5'	2.39	0.40
1:1:1161:A:C2	1:1:1162:G:H1'	2.57	0.40
1:1:3001:C:H2'	1:1:3002:G:H8	1.85	0.40
1:1:3401:A:H2'	1:1:3402:U:O4'	2.21	0.40
2:2:44:G:O2'	2:2:112:A:N1	2.45	0.40
3:3:169:LEU:HD21	3:3:189:VAL:HG21	2.03	0.40
8:B:121:ASN:ND2	8:B:124:LYS:HB3	2.36	0.40
8:B:281:LYS:HG2	8:B:282:ILE:N	2.36	0.40
18:M:101:VAL:O	18:M:104:GLN:HG3	2.22	0.40
1:1:3132:G:O3'	8:B:348:ARG:HD3	2.22	0.40
7:A:220:GLU:HG3	7:A:222:GLY:H	1.86	0.40
17:L:129:LYS:HE2	17:L:129:LYS:HB2	1.93	0.40
27:e:29:TRP:CE2	27:e:50:PRO:HD2	2.56	0.40
1:1:296:C:H4'	19:N:171:SER:O	2.20	0.40
1:1:3341:G:H2'	1:1:3345:G:C8	2.56	0.40
5:5:103:MET:HE3	5:5:105:ALA:H	1.86	0.40
9:C:207:PRO:HG2	9:C:227:VAL:HG22	2.02	0.40
10:D:188:HIS:O	10:D:189:HIS:ND1	2.55	0.40
17:L:114:GLU:HB2	38:v:123:VAL:CG2	2.52	0.40
21:P:7:SER:N	21:P:8:PRO:HD2	2.36	0.40
24:V:79:ILE:N	24:V:105:VAL:O	2.55	0.40
39:x:222:THR:O	39:x:222:THR:HG23	2.22	0.40
40:y:14:GLY:O	40:y:60:GLY:HA3	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:y:151:TYR:HA	40:y:192:VAL:HA	2.03	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	
3	3	190/302 (63%)	184 (97%)	6 (3%)	0	100	100
4	4	209/217 (96%)	205 (98%)	4 (2%)	0	100	100
5	5	336/387 (87%)	311 (93%)	25 (7%)	0	100	100
7	A	243/295 (82%)	231 (95%)	12 (5%)	0	100	100
8	B	328/388 (84%)	318 (97%)	10 (3%)	0	100	100
9	C	360/363 (99%)	342 (95%)	18 (5%)	0	100	100
10	D	410/578 (71%)	400 (98%)	10 (2%)	0	100	100
11	E	168/195 (86%)	154 (92%)	13 (8%)	1 (1%)	22	57
12	F	238/250 (95%)	229 (96%)	9 (4%)	0	100	100
13	G	161/259 (62%)	152 (94%)	7 (4%)	2 (1%)	11	41
14	H	181/190 (95%)	180 (99%)	1 (1%)	0	100	100
15	J	90/333 (27%)	86 (96%)	3 (3%)	1 (1%)	12	44
16	K	245/373 (66%)	231 (94%)	14 (6%)	0	100	100
17	L	114/208 (55%)	110 (96%)	4 (4%)	0	100	100
18	M	123/134 (92%)	118 (96%)	5 (4%)	0	100	100
19	N	160/201 (80%)	158 (99%)	2 (1%)	0	100	100
20	O	182/197 (92%)	180 (99%)	2 (1%)	0	100	100
21	P	144/187 (77%)	136 (94%)	8 (6%)	0	100	100
22	Q	133/187 (71%)	123 (92%)	10 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
23	S	164/176 (93%)	156 (95%)	8 (5%)	0	100	100
24	V	83/139 (60%)	78 (94%)	5 (6%)	0	100	100
25	Y	123/126 (98%)	118 (96%)	5 (4%)	0	100	100
26	b	56/642 (9%)	56 (100%)	0	0	100	100
27	e	122/127 (96%)	120 (98%)	2 (2%)	0	100	100
28	f	104/108 (96%)	100 (96%)	4 (4%)	0	100	100
29	h	119/122 (98%)	117 (98%)	2 (2%)	0	100	100
30	i	96/99 (97%)	93 (97%)	3 (3%)	0	100	100
31	j	69/91 (76%)	66 (96%)	3 (4%)	0	100	100
32	m	71/740 (10%)	69 (97%)	2 (3%)	0	100	100
33	n	356/607 (59%)	352 (99%)	4 (1%)	0	100	100
34	o	135/276 (49%)	129 (96%)	6 (4%)	0	100	100
35	r	55/260 (21%)	54 (98%)	1 (2%)	0	100	100
36	t	179/249 (72%)	172 (96%)	7 (4%)	0	100	100
37	u	72/192 (38%)	72 (100%)	0	0	100	100
38	v	157/209 (75%)	153 (98%)	3 (2%)	1 (1%)	22	57
39	x	303/306 (99%)	297 (98%)	6 (2%)	0	100	100
40	y	180/244 (74%)	173 (96%)	7 (4%)	0	100	100
41	T	17/19 (90%)	16 (94%)	1 (6%)	0	100	100
All	All	6476/9976 (65%)	6239 (96%)	232 (4%)	5 (0%)	50	81

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
13	G	227[A]	ASP
13	G	227[B]	ASP
38	v	130	ILE
11	E	137	GLU
15	J	162	VAL

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	3	169/271 (62%)	162 (96%)	7 (4%)	26	60
4	4	192/197 (98%)	185 (96%)	7 (4%)	30	64
5	5	301/345 (87%)	292 (97%)	9 (3%)	36	69
7	A	221/266 (83%)	214 (97%)	7 (3%)	34	67
8	B	282/326 (86%)	272 (96%)	10 (4%)	31	65
9	C	296/297 (100%)	287 (97%)	9 (3%)	36	69
10	D	332/505 (66%)	326 (98%)	6 (2%)	54	80
11	E	139/155 (90%)	134 (96%)	5 (4%)	30	64
12	F	201/210 (96%)	198 (98%)	3 (2%)	60	83
13	G	135/212 (64%)	133 (98%)	2 (2%)	60	83
16	K	210/333 (63%)	207 (99%)	3 (1%)	62	83
17	L	97/167 (58%)	94 (97%)	3 (3%)	35	68
18	M	108/113 (96%)	107 (99%)	1 (1%)	75	89
19	N	146/176 (83%)	143 (98%)	3 (2%)	48	77
20	O	153/162 (94%)	152 (99%)	1 (1%)	81	91
21	P	120/149 (80%)	119 (99%)	1 (1%)	79	90
22	Q	116/159 (73%)	113 (97%)	3 (3%)	41	72
23	S	150/154 (97%)	148 (99%)	2 (1%)	65	85
25	Y	110/111 (99%)	109 (99%)	1 (1%)	75	89
27	e	106/107 (99%)	104 (98%)	2 (2%)	52	79
28	f	89/91 (98%)	86 (97%)	3 (3%)	32	66
29	h	106/107 (99%)	104 (98%)	2 (2%)	52	79
30	i	83/84 (99%)	80 (96%)	3 (4%)	30	64
31	j	58/71 (82%)	57 (98%)	1 (2%)	56	81
32	m	67/659 (10%)	63 (94%)	4 (6%)	16	47
34	o	93/246 (38%)	91 (98%)	2 (2%)	47	76
36	t	23/223 (10%)	22 (96%)	1 (4%)	25	58
38	v	138/181 (76%)	134 (97%)	4 (3%)	37	70
39	x	272/273 (100%)	267 (98%)	5 (2%)	54	80
41	T	17/17 (100%)	17 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	4530/6367 (71%)	4420 (98%)	110 (2%)	45 74

All (110) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	3	3	GLN
3	3	34	VAL
3	3	42	SER
3	3	80	ILE
3	3	130	GLN
3	3	134	ILE
3	3	165	LEU
4	4	26	LEU
4	4	75	VAL
4	4	85	SER
4	4	167	GLU
4	4	181	ASP
4	4	189	THR
4	4	196	VAL
5	5	3	LEU
5	5	49	LEU
5	5	104	LEU
5	5	181	GLN
5	5	196	VAL
5	5	206	ASP
5	5	288	ILE
5	5	308	VAL
5	5	340	ILE
7	A	45	VAL
7	A	55	TYR
7	A	195	ASP
7	A	247	THR
7	A	267	VAL
7	A	271	GLU
7	A	292	ASN
8	B	90	VAL
8	B	103	THR
8	B	155	CYS
8	B	182	GLN
8	B	202	THR
8	B	217	VAL
8	B	296	THR

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Mol	Chain	Res	Type
8	B	332	VAL
8	B	335	VAL
8	B	372	THR
9	C	21	THR
9	C	37	VAL
9	C	38	ARG
9	C	113	VAL
9	C	213	GLU
9	C	229	ILE
9	C	284	ILE
9	C	330	LEU
9	C	341	VAL
10	D	151	LEU
10	D	196	ILE
10	D	322	LYS
10	D	325	LEU
10	D	393	THR
10	D	418	ARG
11	E	82	VAL
11	E	86	TYR
11	E	114	VAL
11	E	147	ASN
11	E	193	MET
12	F	84	VAL
12	F	116	LEU
12	F	124	VAL
13	G	182	ASN
13	G	229	SER
16	K	67	ARG
16	K	91	VAL
16	K	241	LEU
17	L	62	THR
17	L	124	ILE
17	L	134	LYS
18	M	113	VAL
19	N	8	GLU
19	N	15	GLN
19	N	155	VAL
20	O	51	ASN
21	P	117	VAL
22	Q	23	VAL
22	Q	56	THR

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Mol	Chain	Res	Type
22	Q	128	LEU
23	S	45	LYS
23	S	151	LEU
25	Y	117	LEU
27	e	79	VAL
27	e	125	SER
28	f	40	GLU
28	f	46	LEU
28	f	71	THR
29	h	15	ASN
29	h	52	ASP
30	i	9	LEU
30	i	15	LEU
30	i	90	SER
31	j	58	THR
32	m	210	VAL
32	m	212	GLU
32	m	217	SER
32	m	252	GLN
34	o	176	LEU
34	o	199	LYS
36	t	60	ASN
38	v	46	LEU
38	v	119	THR
38	v	135	THR
38	v	171	ILE
39	x	91	ARG
39	x	153	GLU
39	x	163	LEU
39	x	164	VAL
39	x	292	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (48) such sidechains are listed below:

Mol	Chain	Res	Type
4	4	122	GLN
5	5	125	GLN
5	5	282	HIS
7	A	97	ASN
8	B	165	GLN
8	B	198	HIS
8	B	211	GLN

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Mol	Chain	Res	Type
8	B	269	ASN
8	B	279	ASN
8	B	319	ASN
9	C	118	ASN
9	C	316	GLN
9	C	323	ASN
9	C	361	HIS
10	D	213	ASN
10	D	270	GLN
10	D	372	GLN
11	E	157	GLN
12	F	120	ASN
12	F	243	ASN
16	K	78	ASN
16	K	95	GLN
16	K	177	GLN
16	K	192	ASN
18	M	49	GLN
19	N	19	ASN
20	O	91	HIS
20	O	102	HIS
20	O	176	GLN
20	O	190	GLN
21	P	97	ASN
22	Q	79	ASN
23	S	48	ASN
23	S	141	GLN
25	Y	18	HIS
27	e	5	ASN
28	f	22	HIS
31	j	48	ASN
32	m	232	GLN
34	o	168	ASN
38	v	43	HIS
38	v	200	ASN
39	x	11	GLN
39	x	12	GLN
39	x	20	GLN
39	x	187	ASN
39	x	294	ASN
41	T	145	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	1427/3497 (40%)	357 (25%)	16 (1%)
2	2	147/165 (89%)	31 (21%)	0
6	6	72/300 (24%)	40 (55%)	1 (1%)
All	All	1646/3962 (41%)	428 (26%)	17 (1%)

All (428) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	10	C
1	1	26	A
1	1	34	A
1	1	50	U
1	1	53	G
1	1	59	G
1	1	60	A
1	1	65	A
1	1	66	A
1	1	72	C
1	1	105	G
1	1	109	A
1	1	110	G
1	1	111	C
1	1	116	A
1	1	122	A
1	1	154	G
1	1	161	C
1	1	162	A
1	1	163	A
1	1	177	G
1	1	197	U
1	1	198	U
1	1	207	C
1	1	217	G
1	1	218	A
1	1	225	G
1	1	226	A
1	1	227	G
1	1	239	U
1	1	240	G
1	1	244	G
1	1	259	A

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Mol	Chain	Res	Type
1	1	276	A
1	1	277	G
1	1	303	A
1	1	305	A
1	1	306	U
1	1	331	A
1	1	337	U
1	1	338	G
1	1	341	G
1	1	346	A
1	1	347	C
1	1	359	A
1	1	360	A
1	1	383	A
1	1	384	G
1	1	399	A
1	1	406	U
1	1	411	C
1	1	428	G
1	1	430	A
1	1	432	G
1	1	433	C
1	1	437	G
1	1	445	G
1	1	446	U
1	1	448	U
1	1	449	U
1	1	450	A
1	1	451	C
1	1	454	G
1	1	458	G
1	1	460	G
1	1	461	A
1	1	462	U
1	1	465	G
1	1	466	U
1	1	479	A
1	1	480	G
1	1	482	C
1	1	488	A
1	1	489	C
1	1	493	G

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Mol	Chain	Res	Type
1	1	494	A
1	1	497	C
1	1	499	G
1	1	500	U
1	1	501	G
1	1	502	G
1	1	503	U
1	1	505	G
1	1	506	G
1	1	514	C
1	1	522	G
1	1	530	A
1	1	532	A
1	1	534	A
1	1	540	A
1	1	546	G
1	1	547	G
1	1	548	U
1	1	577	U
1	1	578	U
1	1	579	A
1	1	580	U
1	1	581	A
1	1	582	G
1	1	590	U
1	1	591	G
1	1	592	U
1	1	602	A
1	1	603	C
1	1	613	A
1	1	616	A
1	1	618	U
1	1	623	C
1	1	632	A
1	1	634	G
1	1	636	A
1	1	637	U
1	1	641	G
1	1	645	U
1	1	646	A
1	1	647	A
1	1	649	G

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Mol	Chain	Res	Type
1	1	661	C
1	1	662	C
1	1	663	C
1	1	671	A
1	1	673	C
1	1	675	C
1	1	685	A
1	1	702	A
1	1	706	U
1	1	709	G
1	1	714	A
1	1	716	G
1	1	717	A
1	1	732	A
1	1	759	C
1	1	761	U
1	1	762	U
1	1	763	G
1	1	765	G
1	1	768	G
1	1	770	G
1	1	776	U
1	1	817	G
1	1	831	G
1	1	837	G
1	1	840	A
1	1	964	U
1	1	968	A
1	1	969	G
1	1	976	C
1	1	986	U
1	1	987	U
1	1	989	C
1	1	990	C
1	1	996	G
1	1	997	A
1	1	998	U
1	1	1009	C
1	1	1010	A
1	1	1011	G
1	1	1012	A
1	1	1013	U

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Mol	Chain	Res	Type
1	1	1017	U
1	1	1023	G
1	1	1135	G
1	1	1138	U
1	1	1142	U
1	1	1143	A
1	1	1155	U
1	1	1156	U
1	1	1158	G
1	1	1159	U
1	1	1160	A
1	1	1161	A
1	1	1163	C
1	1	1166	A
1	1	1168	C
1	1	1170	G
1	1	1173	G
1	1	1176	G
1	1	1184	A
1	1	1191	C
1	1	1205	G
1	1	1211	A
1	1	1212	U
1	1	1217	G
1	1	1221	A
1	1	1222	U
1	1	1223	C
1	1	1224	A
1	1	1227	C
1	1	1233	A
1	1	1234	A
1	1	1235	A
1	1	1239	U
1	1	1243	A
1	1	1244	G
1	1	1249	U
1	1	1324	U
1	1	1325	A
1	1	1347	U
1	1	1348	A
1	1	1361	A
1	1	1363	A

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Mol	Chain	Res	Type
1	1	1380	A
1	1	1381	G
1	1	1382	C
1	1	1386	G
1	1	1387	A
1	1	1388	G
1	1	1389	A
1	1	1390	A
1	1	1420	U
1	1	1433	U
1	1	1452	A
1	1	1453	A
1	1	1465	G
1	1	1468	G
1	1	1470	U
1	1	1471	C
1	1	1484	G
1	1	1935	U
1	1	1936	A
1	1	2443	G
1	1	2455	U
1	1	2456	G
1	1	2459	G
1	1	2460	A
1	1	2462	C
1	1	2463	G
1	1	2464	G
1	1	2465	G
1	1	2466	C
1	1	2468	A
1	1	2470	G
1	1	2471	C
1	1	2984	C
1	1	2987	A
1	1	2989	C
1	1	2993	G
1	1	2994	C
1	1	2995	A
1	1	2996	G
1	1	2999	U
1	1	3003	G
1	1	3006	A

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Mol	Chain	Res	Type
1	1	3097	U
1	1	3104	G
1	1	3107	A
1	1	3108	A
1	1	3109	U
1	1	3113	A
1	1	3118	G
1	1	3119	U
1	1	3120	A
1	1	3125	A
1	1	3126	G
1	1	3128	A
1	1	3130	C
1	1	3135	G
1	1	3136	A
1	1	3137	U
1	1	3142	A
1	1	3146	U
1	1	3148	G
1	1	3149	G
1	1	3152	U
1	1	3154	U
1	1	3179	G
1	1	3180	C
1	1	3182	G
1	1	3188	U
1	1	3189	C
1	1	3190	A
1	1	3192	C
1	1	3193	U
1	1	3195	C
1	1	3196	C
1	1	3197	G
1	1	3200	U
1	1	3205	G
1	1	3212	G
1	1	3216	C
1	1	3219	A
1	1	3222	C
1	1	3225	A
1	1	3227	U
1	1	3237	A

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Mol	Chain	Res	Type
1	1	3238	A
1	1	3239	A
1	1	3240	G
1	1	3248	U
1	1	3272	U
1	1	3273	A
1	1	3275	A
1	1	3276	A
1	1	3281	A
1	1	3282	G
1	1	3286	U
1	1	3289	G
1	1	3301	C
1	1	3307	U
1	1	3309	U
1	1	3315	A
1	1	3317	A
1	1	3318	A
1	1	3319	G
1	1	3324	G
1	1	3327	A
1	1	3328	U
1	1	3332	U
1	1	3335	U
1	1	3336	G
1	1	3338	A
1	1	3343	A
1	1	3344	A
1	1	3345	G
1	1	3346	U
1	1	3348	U
1	1	3349	U
1	1	3351	U
1	1	3352	A
1	1	3356	A
1	1	3359	U
1	1	3360	G
1	1	3362	C
1	1	3368	A
1	1	3370	U
1	1	3371	U
1	1	3372	C

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Mol	Chain	Res	Type
1	1	3375	U
1	1	3404	G
1	1	3405	C
1	1	3406	A
1	1	3407	U
1	1	3408	A
1	1	3410	G
1	1	3414	U
1	1	3417	A
1	1	3418	U
1	1	3420	U
1	1	3421	G
1	1	3423	A
1	1	3425	C
1	1	3426	G
1	1	3427	G
1	1	3431	A
1	1	3435	U
1	1	3472	G
1	1	3475	U
1	1	3476	A
1	1	3477	A
1	1	3478	G
1	1	3479	C
1	1	3483	U
1	1	3484	G
1	1	3490	A
1	1	3491	A
1	1	3492	G
1	1	3497	G
2	2	9	A
2	2	30	U
2	2	31	U
2	2	42	U
2	2	43	C
2	2	57	G
2	2	59	G
2	2	67	A
2	2	70	C
2	2	71	G
2	2	79	A
2	2	85	A

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Mol	Chain	Res	Type
2	2	87	A
2	2	98	U
2	2	99	C
2	2	103	G
2	2	104	A
2	2	112	A
2	2	114	C
2	2	115	G
2	2	124	G
2	2	132	G
2	2	133	U
2	2	134	U
2	2	135	C
2	2	136	U
2	2	137	A
2	2	144	G
2	2	159	U
2	2	160	G
2	2	165	U
6	6	2	C
6	6	4	A
6	6	5	U
6	6	6	C
6	6	7	U
6	6	8	U
6	6	9	C
6	6	47	U
6	6	49	U
6	6	50	U
6	6	57	A
6	6	60	U
6	6	61	U
6	6	62	U
6	6	82	A
6	6	83	A
6	6	87	A
6	6	88	G
6	6	89	U
6	6	94	A
6	6	95	A
6	6	97	C
6	6	98	G

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Mol	Chain	Res	Type
6	6	99	A
6	6	101	U
6	6	102	G
6	6	105	G
6	6	106	A
6	6	108	A
6	6	177	U
6	6	178	U
6	6	179	U
6	6	180	A
6	6	182	C
6	6	183	A
6	6	184	C
6	6	185	U
6	6	187	U
6	6	188	G
6	6	189	U

All (17) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	414	G
1	1	445	G
1	1	449	U
1	1	461	A
1	1	487	C
1	1	488	A
1	1	493	G
1	1	496	C
1	1	500	U
1	1	761	U
1	1	996	G
1	1	1155	U
1	1	1159	U
1	1	1380	A
1	1	1389	A
1	1	3337	A
6	6	1	A

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 1 ligands modelled in this entry, 1 is 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 [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

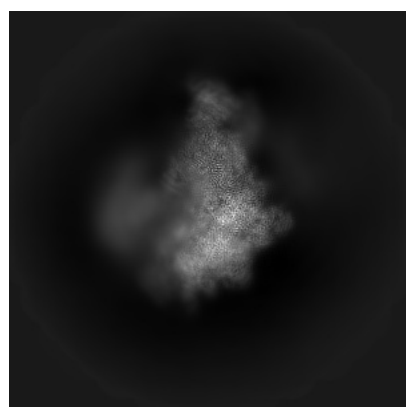
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-24421. These allow visual inspection of the internal detail of the map and identification of artifacts.

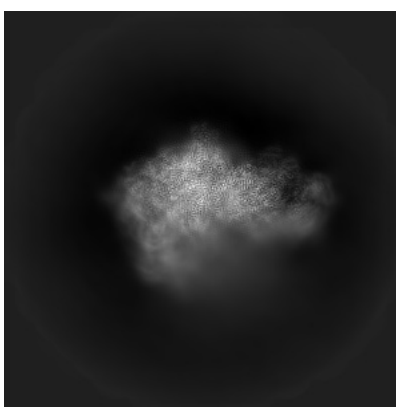
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

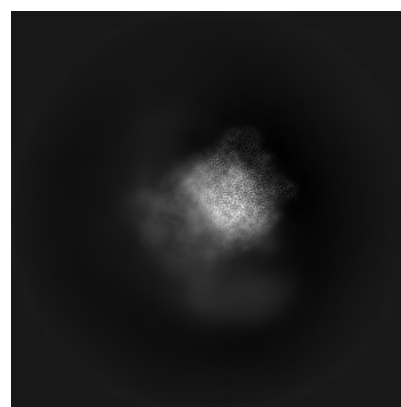
6.1.1 Primary map



X



Y

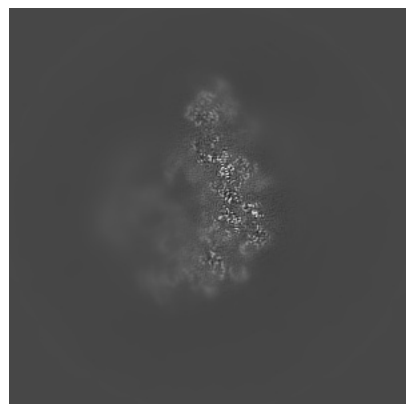


Z

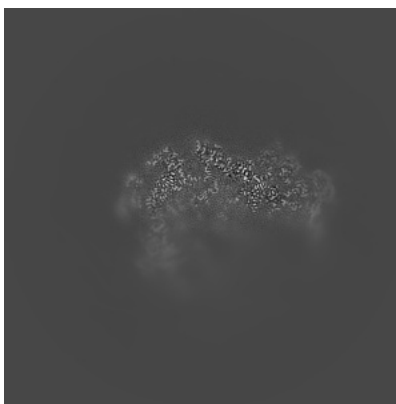
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

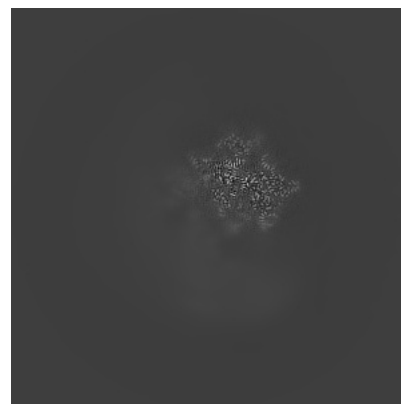
6.2.1 Primary map



X Index: 256



Y Index: 256

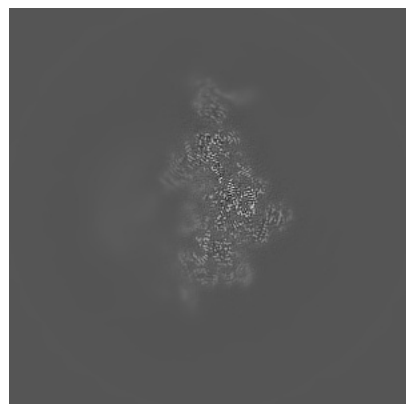


Z Index: 256

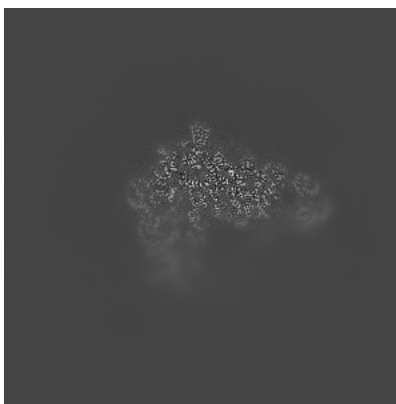
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

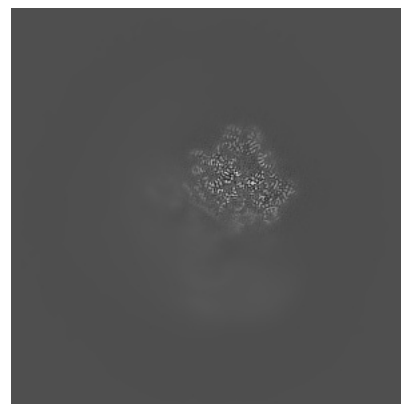
6.3.1 Primary map



X Index: 282



Y Index: 274

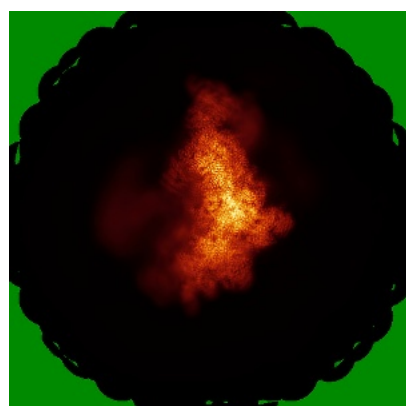


Z Index: 249

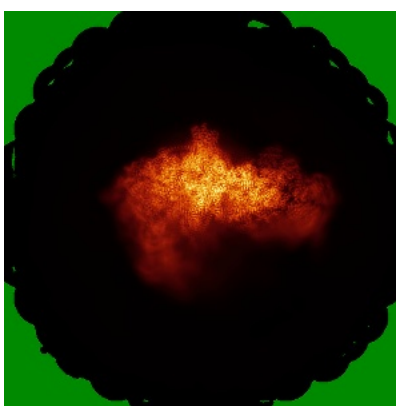
The images above show the largest variance slices of the map in three orthogonal directions.

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

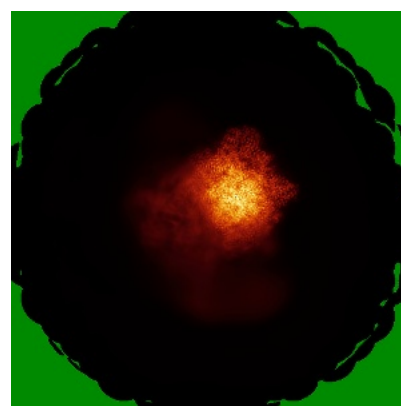
6.4.1 Primary map



X



Y

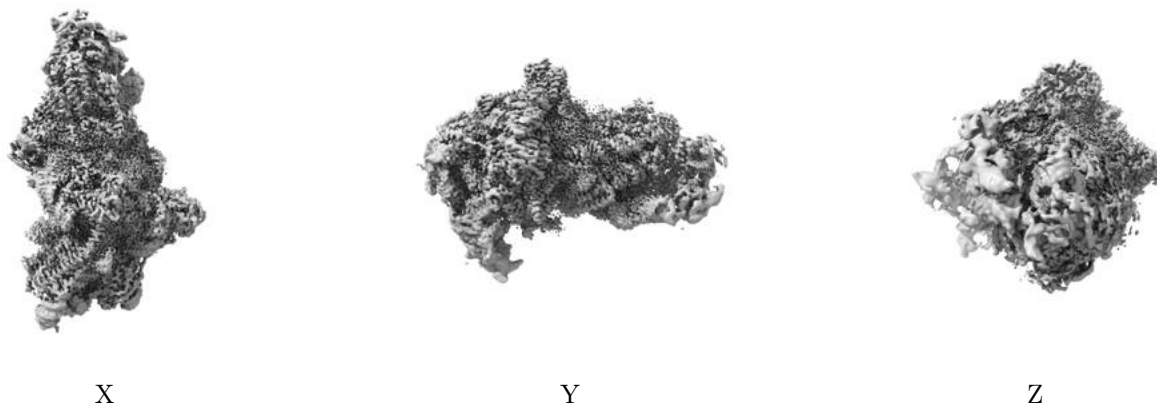


Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.05. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

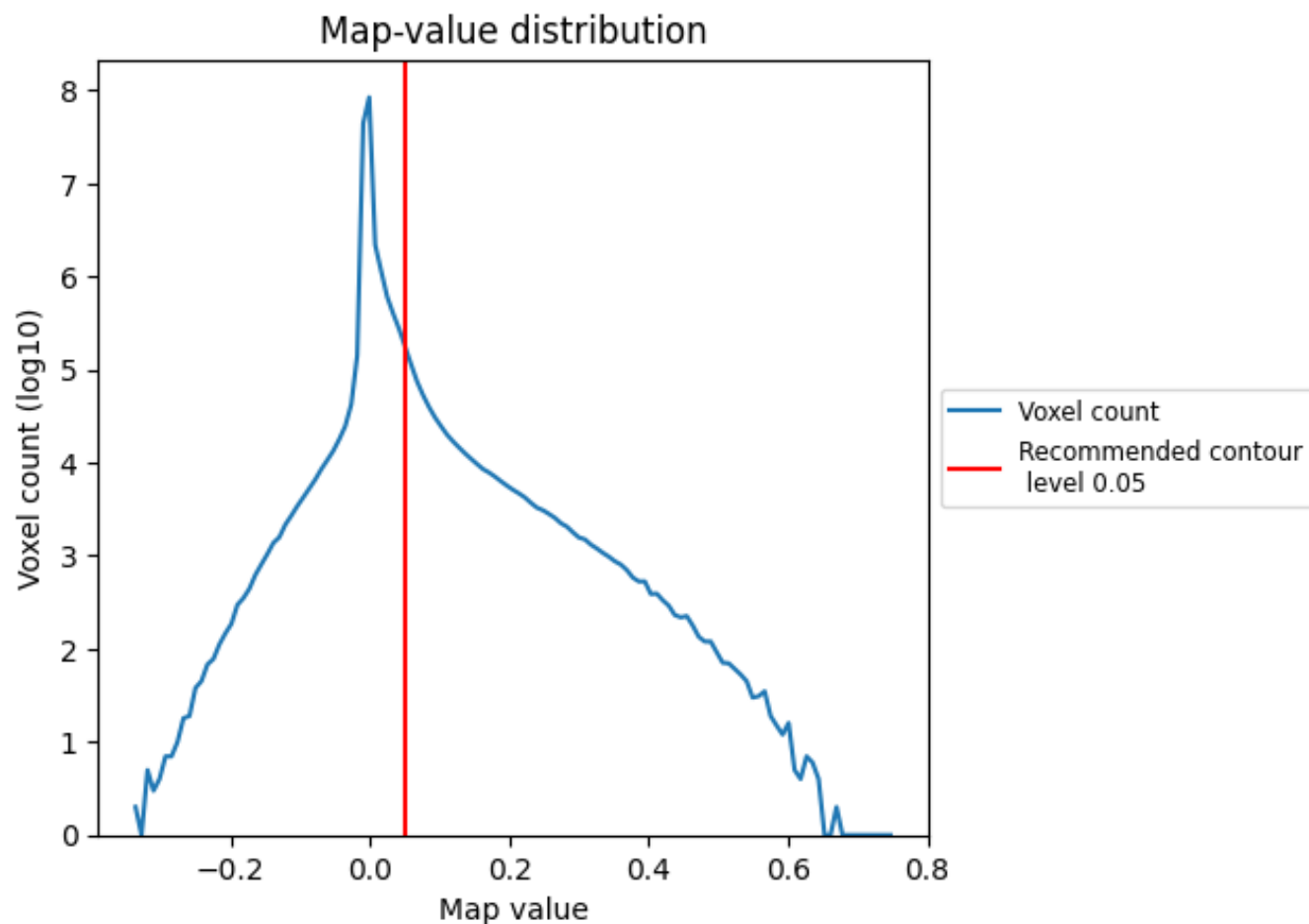
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

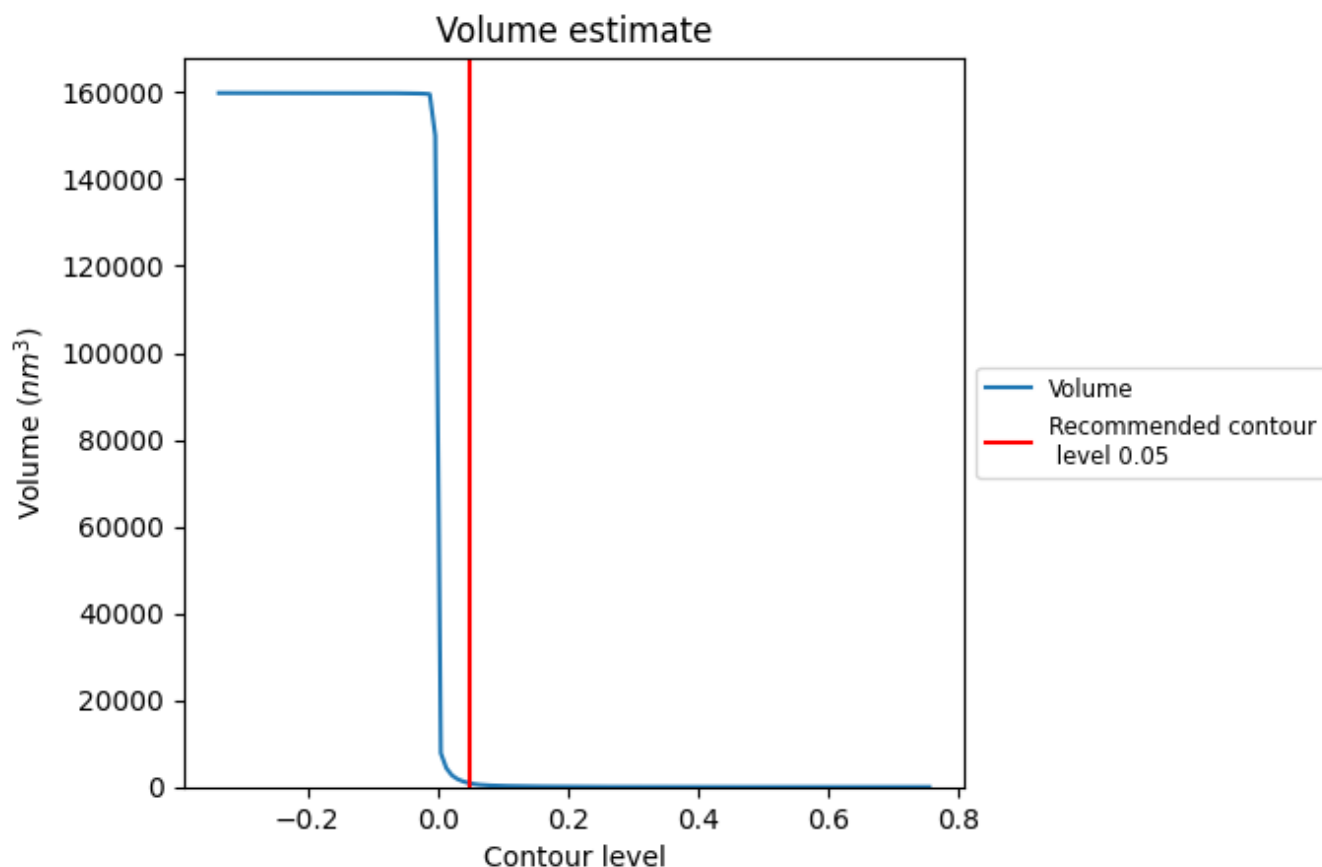
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

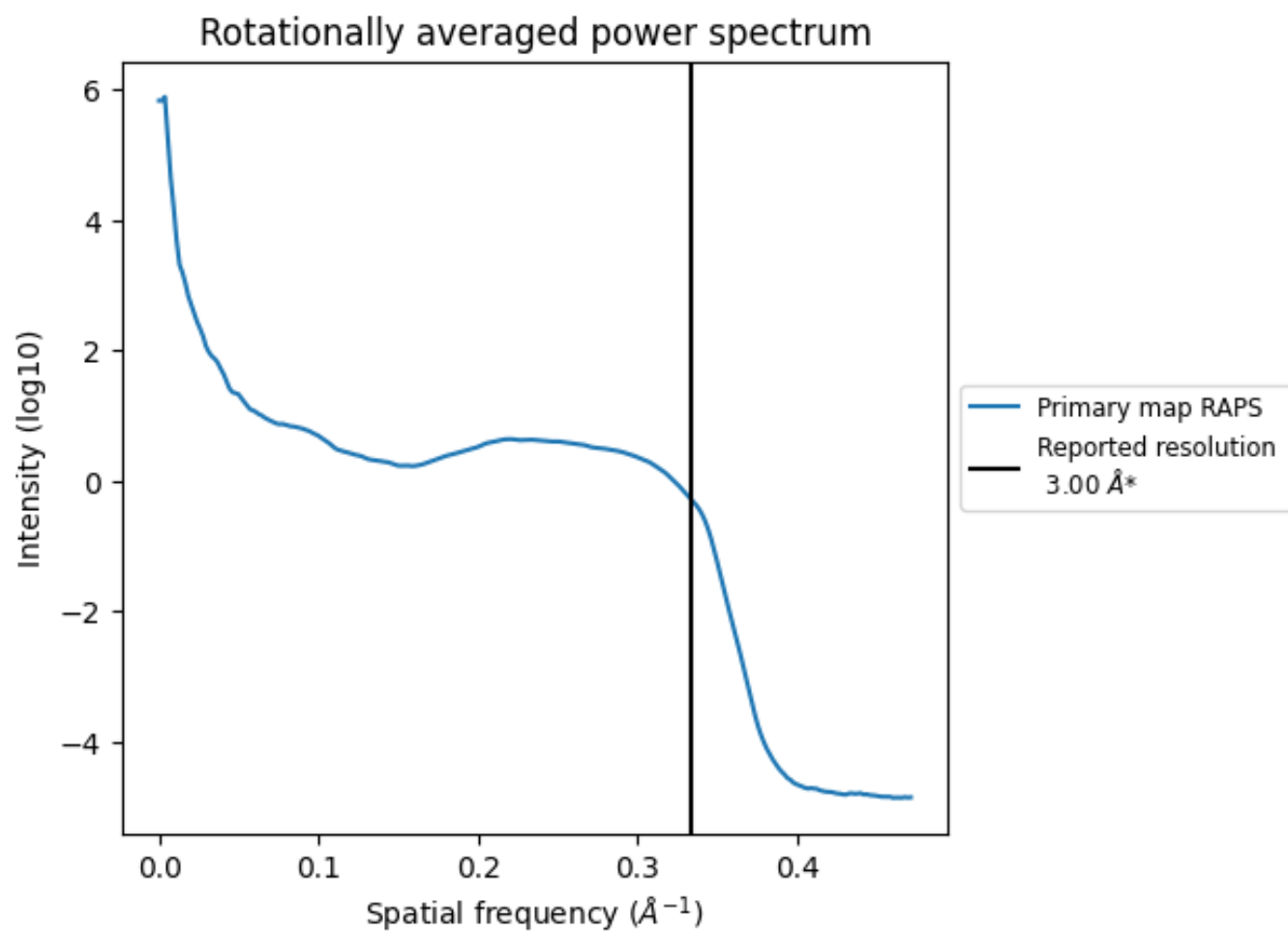
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 836 nm³; this corresponds to an approximate mass of 756 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ



*Reported resolution corresponds to spatial frequency of 0.333 Å⁻¹

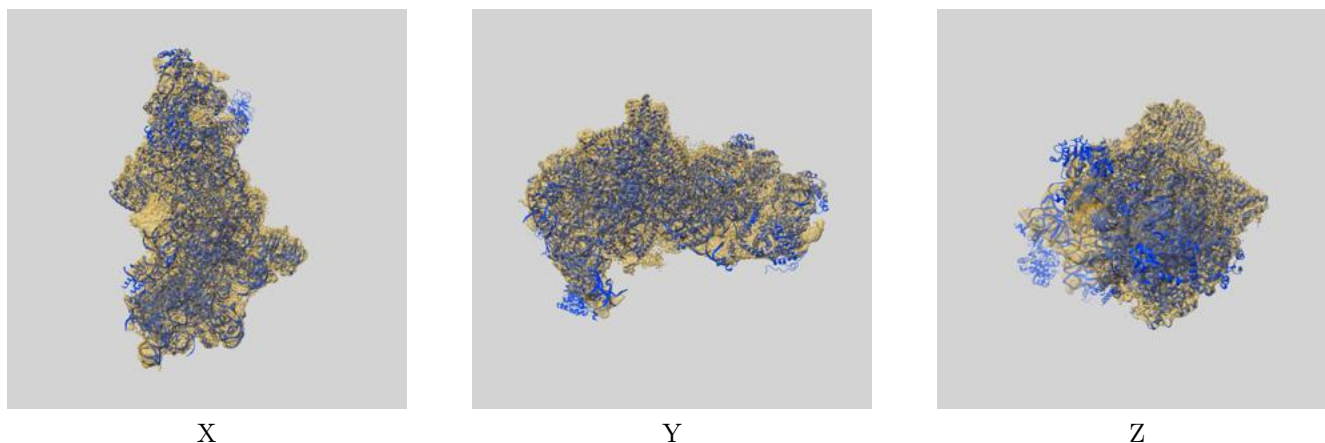
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

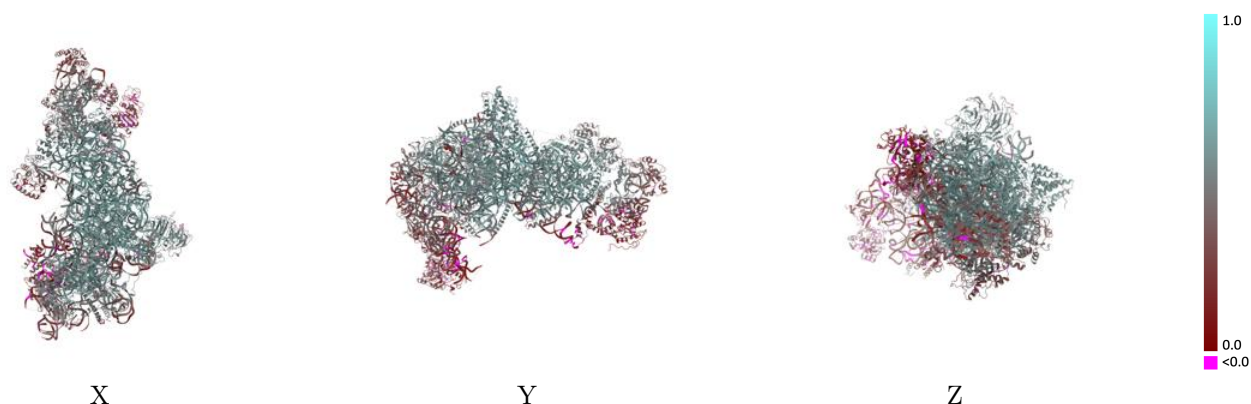
This section contains information regarding the fit between EMDB map EMD-24421 and PDB model 8EV3. Per-residue inclusion information can be found in [section 3](#) on [page 12](#).

9.1 Map-model overlay [i](#)



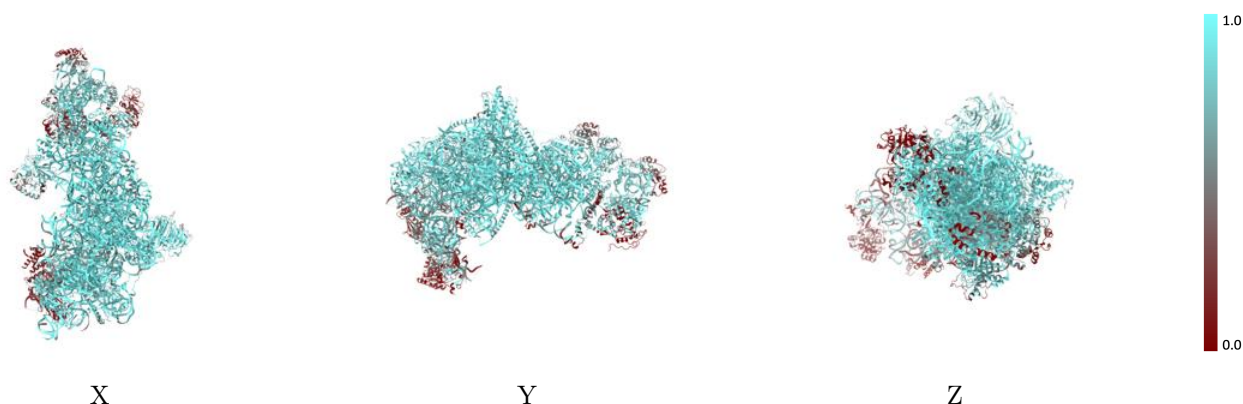
The images above show the 3D surface view of the map at the recommended contour level 0.05 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



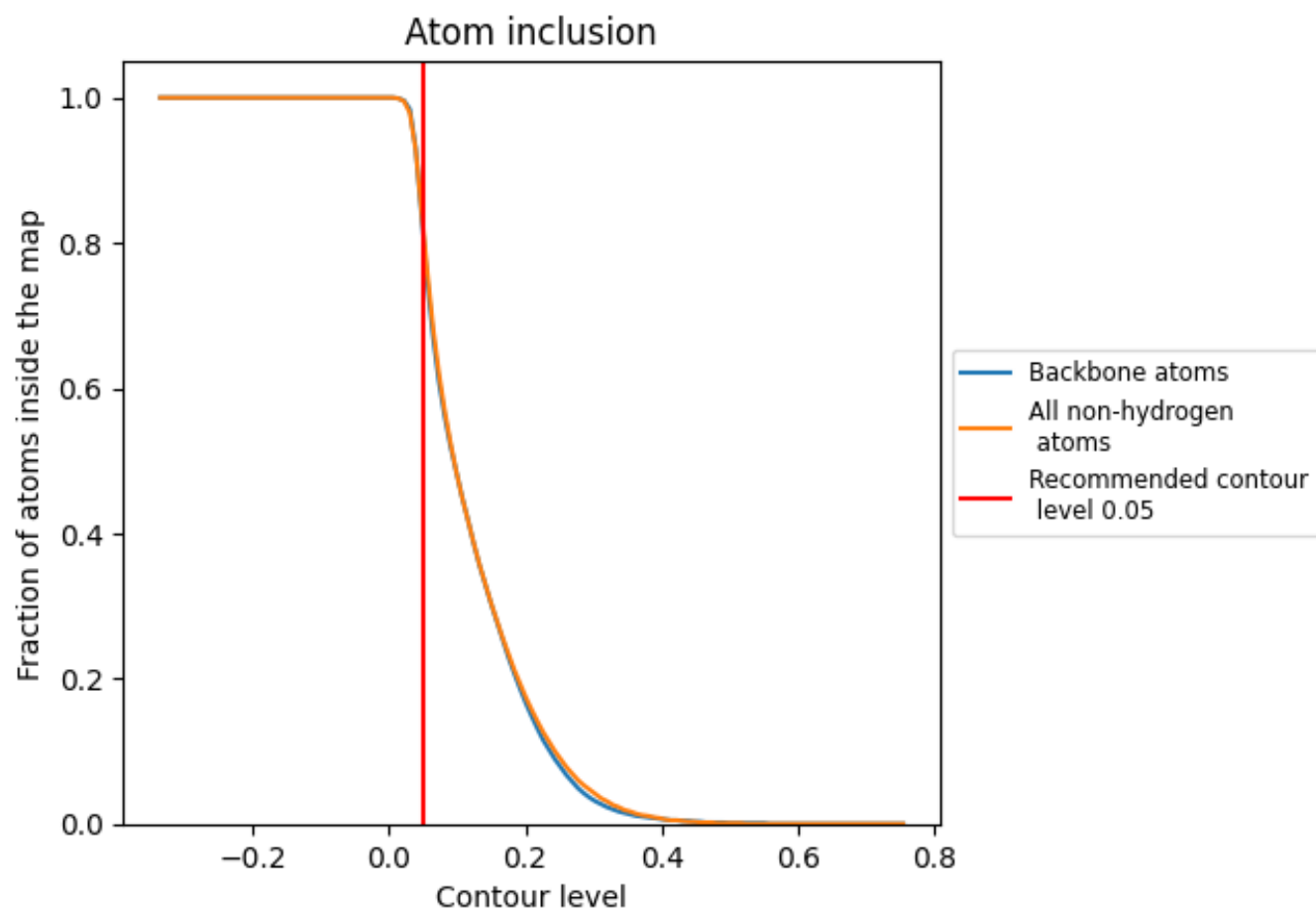
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.05).

9.4 Atom inclusion [i](#)



At the recommended contour level, 81% of all backbone atoms, 82% 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 (0.05) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8200	 0.4620
1	 0.8780	 0.4450
2	 0.8890	 0.4570
3	 0.9400	 0.5940
4	 0.9170	 0.5770
5	 0.8800	 0.5330
6	 0.8400	 0.3210
A	 0.7850	 0.3930
B	 0.6340	 0.2630
C	 0.9280	 0.5840
D	 0.6540	 0.4890
E	 0.9130	 0.5290
F	 0.9420	 0.5710
G	 0.9460	 0.5840
H	 0.1330	 0.2830
J	 0.5420	 0.3010
K	 0.6150	 0.3940
L	 0.9800	 0.6290
M	 0.9310	 0.4890
N	 0.9890	 0.6200
O	 0.8990	 0.4840
P	 0.8330	 0.5180
Q	 0.9560	 0.5890
S	 0.8440	 0.4560
T	 0.3670	 0.3620
V	 0.0000	 0.1100
Y	 0.9750	 0.5990
b	 0.0000	 0.2500
e	 0.9830	 0.6170
f	 0.9940	 0.6020
h	 0.8260	 0.5190
i	 0.9240	 0.5510
j	 0.9430	 0.5830
m	 0.8600	 0.5230
n	 0.3200	 0.1710



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Chain	Atom inclusion	Q-score
o	 0.7270	 0.4300
r	 0.0140	 0.1790
t	 0.7810	 0.3250
u	 0.2440	 0.1920
v	 0.9310	 0.5680
x	 0.9110	 0.5640
y	 0.0010	 0.1830