



Full wwPDB EM Validation Report ⓘ

Jul 7, 2025 – 05:23 PM EDT

PDB ID : 9OFV / pdb_00009ofv
EMDB ID : EMD-70444
Title : Consensus reconstruction of the eukaryotic Ribosome-associated Quality Control complex
Authors : Li, W.; Cahoon, T.; Shen, P.S.
Deposited on : 2025-04-30
Resolution : 3.16 Å(reported)

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

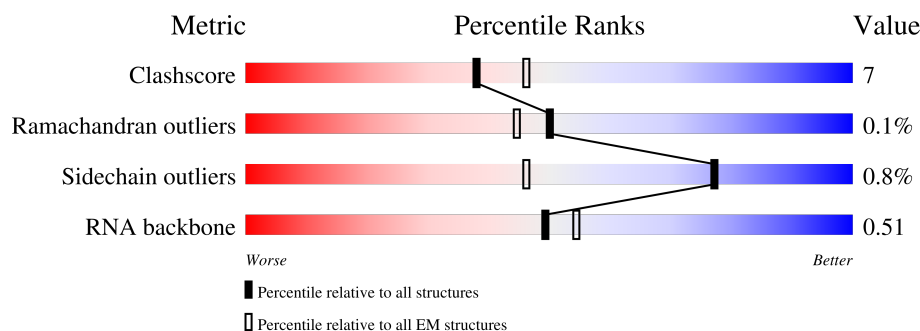
EMDB validation analysis : 0.0.1.dev118
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0rc1
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal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

1 Overall quality at a glance

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

The reported resolution of this entry is 3.16 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	A	835	65% 57% 9% 34%
1	B	835	78% 67% 11% 22%
1	C	835	59% 48% 11% 41%
1	D	835	59% 50% 8% 41%
1	E	835	59% 49% 9% 41%
1	F	835	64% 53% 10% 36%
2	H	76	100% 83% 17%

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Mol	Chain	Length	Quality of chain
2	J	76	
2	K	76	
3	G	580	
4	3	184	
5	4	186	
6	5	189	
7	6	172	
8	7	160	
9	8	121	
10	I	137	
11	9	155	
12	L	127	
13	M	136	
14	N	149	
15	O	59	
16	P	105	
17	Q	113	
18	R	130	
19	S	107	
20	T	121	
21	U	120	
22	V	100	
23	W	88	
24	Y	51	
25	Z	128	

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Mol	Chain	Length	Quality of chain
26	b	106	
27	c	92	
28	d	25	
29	f	3395	
30	h	121	
31	i	158	
32	j	254	
33	k	387	
34	l	362	
35	m	297	
36	n	176	
37	o	244	
38	p	256	
39	q	191	
40	r	221	
41	s	174	
42	t	199	
43	u	138	
44	a	1038	
45	e	1562	
46	g	245	
47	x	76	
47	y	76	
48	z	165	
49	0	312	

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Mol	Chain	Length	Quality of chain
50	1	17	
51	w	217	
52	X	78	
53	v	753	
54	2	76	
55	a0	199	
56	b0	142	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
57	ATP	A	901	-	-	X	-
57	ATP	C	1001	-	-	X	-
57	ATP	C	1003	-	-	X	-
57	ATP	D	901	-	-	X	-
57	ATP	D	902	-	-	X	-
57	ATP	E	902	-	-	X	-
57	ATP	F	901	-	-	X	-
58	ADP	E	901	-	-	X	-

2 Entry composition

There are 61 unique types of molecules in this entry. The entry contains 183852 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Cell division control protein 48.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	547	Total	C	N	O	S	0	0
			4206	2641	732	814	19		
1	B	654	Total	C	N	O	S	0	0
			5049	3184	880	964	21		
1	C	492	Total	C	N	O	S	0	0
			3759	2363	656	723	17		
1	D	489	Total	C	N	O	S	0	0
			3747	2354	659	717	17		
1	E	496	Total	C	N	O	S	0	0
			3786	2380	660	729	17		
1	F	533	Total	C	N	O	S	0	0
			4093	2567	720	787	19		

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	588	GLN	GLU	conflict	UNP P25694
B	588	GLN	GLU	conflict	UNP P25694
C	588	GLN	GLU	conflict	UNP P25694
D	588	GLN	GLU	conflict	UNP P25694
E	588	GLN	GLU	conflict	UNP P25694
F	588	GLN	GLU	conflict	UNP P25694

- Molecule 2 is a protein called Ubiquitin.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	K	48	Total	C	N	O		0	0
			376	237	63	76			
2	H	76	Total	C	N	O	S	0	0
			601	375	105	120	1		
2	J	76	Total	C	N	O	S	0	0
			601	375	105	120	1		

- Molecule 3 is a protein called Nuclear protein localization protein 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	G	468	Total	C	N	O	S	0	0
			3762	2381	628	732	21		

- Molecule 4 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	3	183	Total	C	N	O		0	0
			1416	879	284	253			

- Molecule 5 is a protein called 60S ribosomal protein L18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	4	185	Total	C	N	O	S	0	0
			1441	908	290	241	2		

- Molecule 6 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	5	156	Total	C	N	O		0	0
			1258	781	265	212			

- Molecule 7 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	6	171	Total	C	N	O	S	0	0
			1437	925	266	243	3		

- Molecule 8 is a protein called 60S ribosomal protein L21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	7	159	Total	C	N	O	S	0	0
			1272	802	245	221	4		

- Molecule 9 is a protein called 60S ribosomal protein L22-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	8	100	Total	C	N	O		0	0
			796	516	131	149			

- Molecule 10 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	I	136	Total	C	N	O	S	0	0
			1003	628	189	179	7		

- Molecule 11 is a protein called Large ribosomal subunit protein eL24A.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	9	63	Total	C	N	O	S	0	0
			518	333	102	82	1		

- Molecule 12 is a protein called 60S ribosomal protein L26-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	L	125	Total	C	N	O		0	0
			984	620	191	173			

- Molecule 13 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	M	135	Total	C	N	O		0	0
			1080	701	199	180			

- Molecule 14 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	N	148	Total	C	N	O	S	0	0
			1169	747	231	188	3		

- Molecule 15 is a protein called Large ribosomal subunit protein eL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	O	58	Total	C	N	O		0	0
			462	289	100	73			

- Molecule 16 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	P	96	Total	C	N	O	S	0	0
			737	476	123	137	1		

- Molecule 17 is a protein called 60S ribosomal protein L31-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	Q	109	Total	C	N	O	S	0	0
			876	556	167	152	1		

- Molecule 18 is a protein called Large ribosomal subunit protein eL32.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	R	127	Total	C	N	O	S	0	0
			1013	642	205	165	1		

- Molecule 19 is a protein called 60S ribosomal protein L33-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	S	106	Total	C	N	O	S	0	0
			850	540	165	144	1		

- Molecule 20 is a protein called 60S ribosomal protein L34-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	T	112	Total	C	N	O	S	0	0
			880	545	179	152	4		

- Molecule 21 is a protein called 60S ribosomal protein L35-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	U	119	Total	C	N	O	S	0	0
			969	615	186	167	1		

- Molecule 22 is a protein called 60S ribosomal protein L36-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	V	99	Total	C	N	O	S	0	0
			766	478	154	132	2		

- Molecule 23 is a protein called 60S ribosomal protein L37-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	W	81	Total	C	N	O	S	0	0
			645	393	141	106	5		

- Molecule 24 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Y	50	Total	C	N	O	S	0	0
			436	272	97	65	2		

- Molecule 25 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Z	52	Total	C	N	O	S	0	0
			410	254	86	65	5		

- Molecule 26 is a protein called 60S ribosomal protein L42-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	b	103	Total	C	N	O	S	0	0
			824	517	167	135	5		

- Molecule 27 is a protein called 60S ribosomal protein L43-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	c	91	Total	C	N	O	S	0	0
			694	429	138	121	6		

- Molecule 28 is a protein called 60S ribosomal protein L41-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	d	22	Total	C	N	O	S	0	0
			207	127	56	23	1		

- Molecule 29 is a RNA chain called 25S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	f	3216	Total	C	N	O	P	1	0
			68802	30732	12391	22462	3217		

There are 5 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
f	?	-	G	deletion	GB 1262303
f	1956	U	-	insertion	GB 1262303
f	?	-	A	deletion	GB 1262303
f	2255	U	-	insertion	GB 1262303
f	?	-	G	deletion	GB 1262303

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

Mol	Chain	Residues	Atoms					AltConf	Trace
30	h	121	Total	C	N	O	P	0	0
			2579	1152	461	845	121		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
31	i	158	Total	C	N	O	P	0	0
			3353	1500	586	1109	158		

- Molecule 32 is a protein called 60S ribosomal protein L2-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	j	246	Total	C	N	O	S	0	0
			1874	1168	380	325	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
33	k	386	Total	C	N	O	S	0	0
			3075	1950	584	533	8		

- Molecule 34 is a protein called Large ribosomal subunit protein uL4A.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	l	361	Total	C	N	O	S	0	0
			2748	1729	522	494	3		

- Molecule 35 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	m	294	Total	C	N	O	S	0	0
			2351	1484	410	455	2		

- Molecule 36 is a protein called Large ribosomal subunit protein eL6B.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	n	167	Total	C	N	O		0	0
			1307	843	234	230			

- Molecule 37 is a protein called 60S ribosomal protein L7-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	o	222	Total	C	N	O	S	0	0
			1784	1151	324	308	1		

- Molecule 38 is a protein called 60S ribosomal protein L8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	p	233	Total	C	N	O	S	0	0
			1804	1151	323	327	3		

- Molecule 39 is a protein called 60S ribosomal protein L9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	q	191	Total	C	N	O	S	0	0
			1508	957	274	273	4		

- Molecule 40 is a protein called Large ribosomal subunit protein uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	r	218	Total	C	N	O	S	0	0
			1764	1117	334	306	7		

- Molecule 41 is a protein called Large ribosomal subunit protein uL5A.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	s	169	Total	C	N	O	S	0	0
			1346	843	252	247	4		

- Molecule 42 is a protein called 60S ribosomal protein L13-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	t	193	Total	C	N	O	S	0	0
			1543	962	315	266			

- Molecule 43 is a protein called 60S ribosomal protein L14-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	u	136	Total	C	N	O	S	0	0
			1053	675	199	177	2		

- Molecule 44 is a protein called Ribosome quality control complex subunit 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	a	848	Total	C	N	O	S	0	0
			6573	4191	1139	1226	17		

- Molecule 45 is a protein called E3 ubiquitin-protein ligase listerin.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	e	1530	Total	C	N	O	S	0	0
			11556	7383	1946	2189	38		

- Molecule 46 is a protein called Eukaryotic translation initiation factor 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	g	225	Total	C	N	O	S	0	0
			1651	1030	282	332	7		

- Molecule 47 is a RNA chain called Ala tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	x	74	Total	C	N	O	P	0	0
			1579	702	278	525	74		
47	y	73	Total	C	N	O	P	0	0
			1556	692	273	518	73		

- Molecule 48 is a protein called Large ribosomal subunit protein uL11A.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	z	148	Total	C	N	O		0	0
			728	432	148	148			

- Molecule 49 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	0	121	Total	C	N	O	S	0	0
			961	618	167	173	3		

- Molecule 50 is a protein called CAT-tailed nascent peptide.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	1	17	Total	C	N	O		0	0
			85	51	17	17			

- Molecule 51 is a protein called Large ribosomal subunit protein uL1A.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	w	216	Total	C	N	O	S	0	0
			1709	1092	298	310	9		

- Molecule 52 is a protein called Large ribosomal subunit protein eL38.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	X	76	Total	C	N	O		0	0
			608	388	114	106			

- Molecule 53 is a protein called Ribosome quality control complex subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	v	531	Total	C	N	O	S	0	0
			4376	2824	729	807	16		

There are 30 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
v	724	THR	-	expression tag	UNP Q05468
v	725	SER	-	expression tag	UNP Q05468
v	726	GLY	-	expression tag	UNP Q05468
v	727	SER	-	expression tag	UNP Q05468
v	728	PRO	-	expression tag	UNP Q05468
v	729	GLY	-	expression tag	UNP Q05468
v	730	ASP	-	expression tag	UNP Q05468
v	731	TYR	-	expression tag	UNP Q05468
v	732	LYS	-	expression tag	UNP Q05468
v	733	ASP	-	expression tag	UNP Q05468
v	734	ASP	-	expression tag	UNP Q05468
v	735	ASP	-	expression tag	UNP Q05468
v	736	ASP	-	expression tag	UNP Q05468
v	737	LYS	-	expression tag	UNP Q05468
v	738	ASP	-	expression tag	UNP Q05468
v	739	TYR	-	expression tag	UNP Q05468
v	740	LYS	-	expression tag	UNP Q05468
v	741	ASP	-	expression tag	UNP Q05468
v	742	ASP	-	expression tag	UNP Q05468
v	743	ASP	-	expression tag	UNP Q05468
v	744	ASP	-	expression tag	UNP Q05468
v	745	LYS	-	expression tag	UNP Q05468
v	746	ASP	-	expression tag	UNP Q05468
v	747	TYR	-	expression tag	UNP Q05468
v	748	LYS	-	expression tag	UNP Q05468

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Chain	Residue	Modelled	Actual	Comment	Reference
v	749	ASP	-	expression tag	UNP Q05468
v	750	ASP	-	expression tag	UNP Q05468
v	751	ASP	-	expression tag	UNP Q05468
v	752	ASP	-	expression tag	UNP Q05468
v	753	LYS	-	expression tag	UNP Q05468

- Molecule 54 is a protein called Polyubiquitin-C.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	2	76	Total	C	N	O	S	0	0
			602	378	105	118	1		

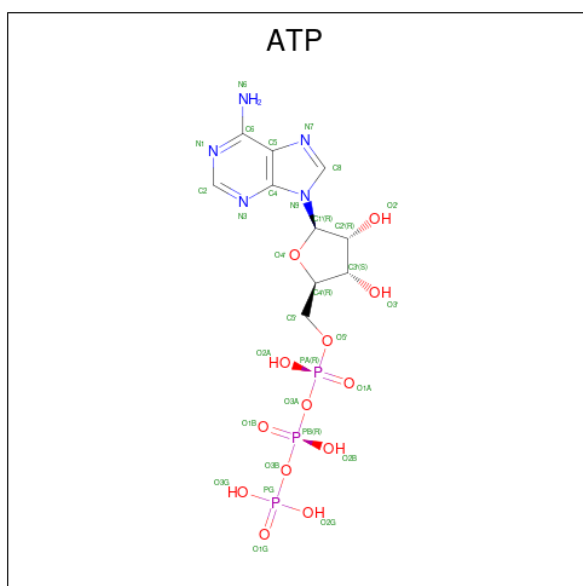
- Molecule 55 is a protein called 60S ribosomal protein L16-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	a0	197	Total	C	N	O	S	0	0
			1555	1003	289	262	1		

- Molecule 56 is a protein called 60S ribosomal protein L25.

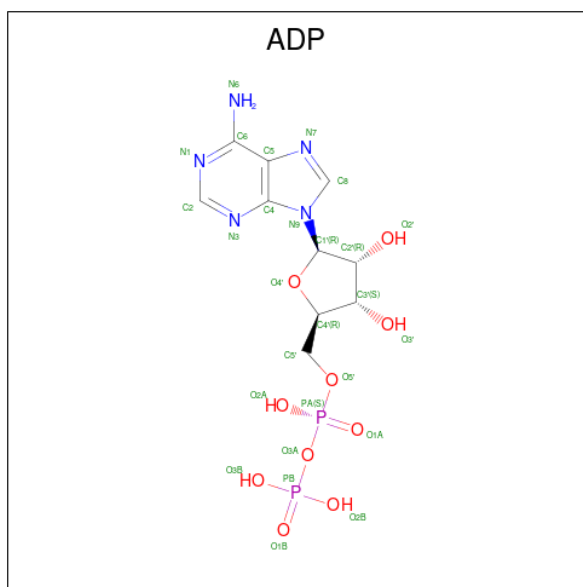
Mol	Chain	Residues	Atoms					AltConf	Trace
56	b0	121	Total	C	N	O	S	0	0
			964	620	169	173	2		

- Molecule 57 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$).



Mol	Chain	Residues	Atoms					AltConf
57	A	1	Total	C	N	O	P	0
			31	10	5	13	3	
57	B	1	Total	C	N	O	P	0
			31	10	5	13	3	
57	C	1	Total	C	N	O	P	0
			31	10	5	13	3	
57	C	1	Total	C	N	O	P	0
			31	10	5	13	3	
57	C	1	Total	C	N	O	P	0
			31	10	5	13	3	
57	D	1	Total	C	N	O	P	0
			31	10	5	13	3	
57	D	1	Total	C	N	O	P	0
			31	10	5	13	3	
57	E	1	Total	C	N	O	P	0
			31	10	5	13	3	
57	F	1	Total	C	N	O	P	0
			31	10	5	13	3	

- Molecule 58 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$).



Mol	Chain	Residues	Atoms					AltConf
58	E	1	Total	C	N	O	P	0
			27	10	5	10	2	

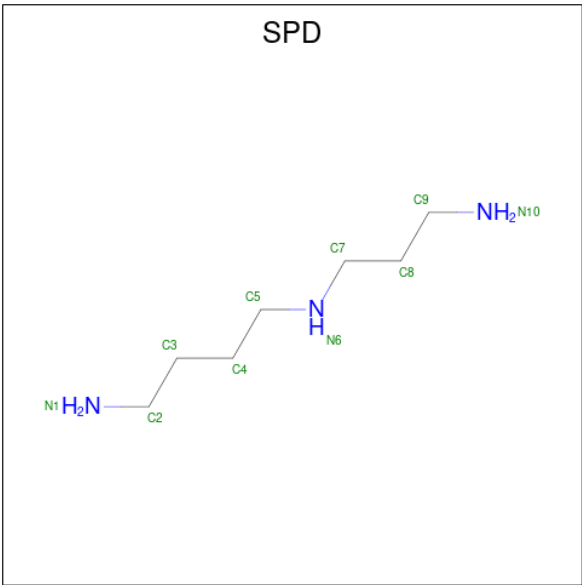
- Molecule 59 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
59	G	2	Total 2	Zn 2	0
59	T	1	Total 1	Zn 1	0
59	W	1	Total 1	Zn 1	0
59	Z	1	Total 1	Zn 1	0
59	b	1	Total 1	Zn 1	0
59	c	1	Total 1	Zn 1	0

- Molecule 60 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
60	3	1	Total 1	Mg 1	0
60	5	1	Total 1	Mg 1	0
60	I	1	Total 1	Mg 1	0
60	R	1	Total 1	Mg 1	0
60	T	1	Total 1	Mg 1	0
60	f	3	Total 3	Mg 3	0
60	h	1	Total 1	Mg 1	0
60	j	2	Total 2	Mg 2	0
60	k	1	Total 1	Mg 1	0

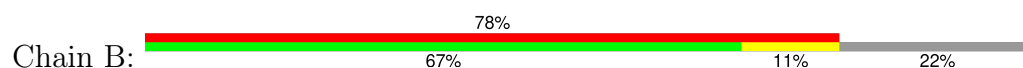
- Molecule 61 is SPERMIDINE (CCD ID: SPD) (formula: C₇H₁₉N₃).



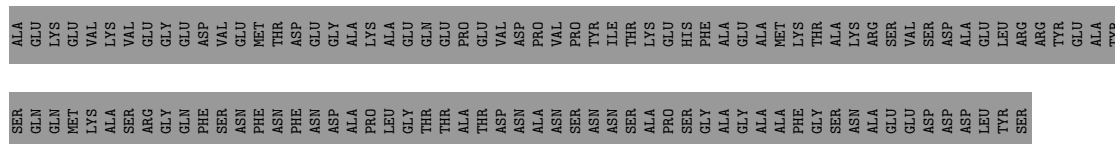
Mol	Chain	Residues	Atoms			AltConf
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			10	7	3	

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N661	A662	R663	L664	S665	I666	L667	N668	A669	Q670	L671	R672	K673	G674	P675	L676	E677	P678	G679	L680	E681	L682	T683	A684	I685	A686	K687	A688	T689	Q690	G691	F692	S693	G694	A695	D696	L697	L698	Y699	I700	V701	Q702	R703	L704	A705	K706	Y707	A708	I709	K710	D711	S712	I713	GLU	ALA	HIS	ARG	GLN	HIS	GLU	
ALA	GLU	LYS	VAL	LYS	VAL	GLU	GLU	ASP	VAL	GLU	MET	THR	ASN	PHE	GLY	ALA	LYS	ALA	ASP	PRO	THR	ASP	PRO	V750	P751	Y752	I753	T754	K755	E756	H757	F758	A759	E760	A761	M762	K763	T764	A765	K766	R767	S768	V769	S770	D771	A772	E773	L774	R775	R776	Y777	E778	A779	Y780						
S781	Q782	Q783	M784	K785	A786	S787	R788	Q789	F791	SER	ASN	PHE	ASN	PHE	ALA	ASP	ALA	PRO	LEU	GLY	THR	THR	ALA	ALA	THR	ASP	ASN	ASN	ALA	ASN	SER	ASN	PRO	ALA	GLY	GLY	ALA	ALA	PHE	GLY	SER	ASN	ALA	GLU	GLU	ASP	ASP	ASP	LEU	TYR	SER									

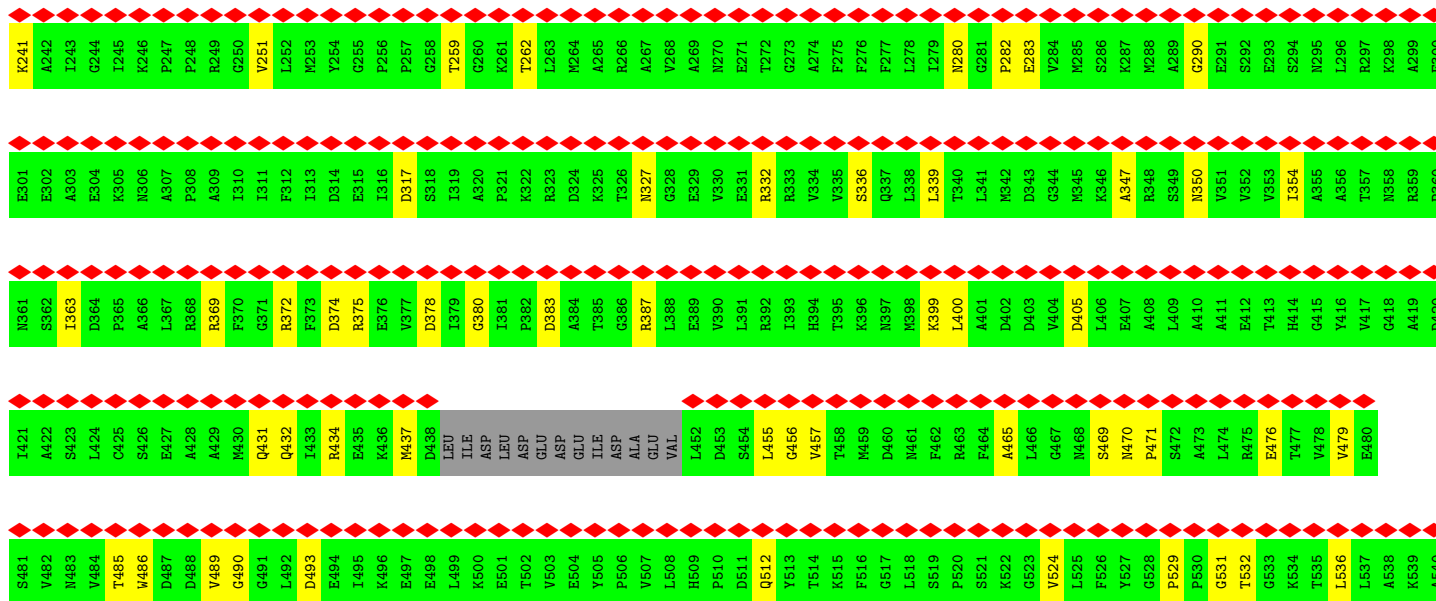
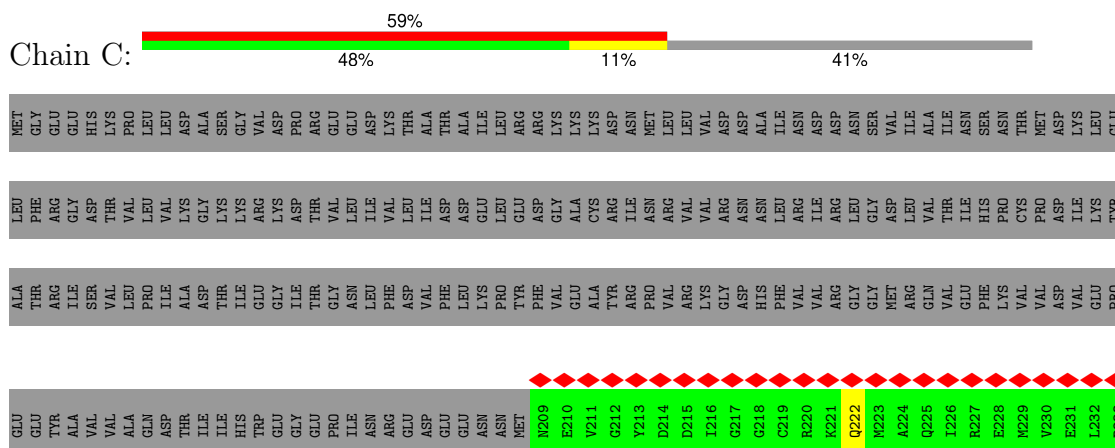
• Molecule 1: Cell division control protein 48



MET	GLY	GLU	GLU	HIS	LYS	PRO	LEU	LEU	ASP	ALA	SER	GLY	VAL	ASP	PRO	ARG	GLU	ASP	LYS	THR	ALA	ALA	ILE	LEU	ARG	ARG	LYS	LYS	ASP	ASN	ASN	MET	L1	L2	V3	D4	D5	A6	I7	N8	D9	D10	D10	S12	V13	V13	I14	A15	I16	I16	N17	S18	N19	T20	T20	D22	K23	L24	E25
L26	F27	R28	G29	D30	T31	V32	L33	V34	K35	G36	K37	K38	R39	K40	D41	T42	V43	L44	I45	V46	L47	I48	D49	D50	E51	L52	E53	D54	G55	A56	C57	R58	I59	N60	R61	V62	V63	R64	N65	N66	L67	R68	I69	R70	L71	G72	D73	L74	V75	T76	I77	H78	P79	C80	P81	D82	I83	K84	Y85
A86	T87	R88	I89	S90	V91	L92	P93	I94	A95	D96	T97	I98	E99	G100	I101	T102	G103	N104	L105	F106	D107	V108	F109	L110	K111	P112	Y113	F114	V115	E116	A117	Y118	R119	P120	V121	R122	K123	G124	D125	H126	F127	V128	V129	R130	G131	G132	H133	R134	Q135	V136	E137	F138	K139	P140	V141	D142	V143	E144	P145
E146	E147	Y148	A149	V150	V151	A152	Q153	D154	T155	I156	H158	M159	E160	G161	GLU	PRO	ILE	ASN	ARG	GLU	ASP	GLU	GLU	ASN	ASN	MET	N209	E210	V211	G212	Y213	E271	T272	G273	A274	G217	G218	C219	R220	K221	Q222	M223	A224	Q225	I226	R227	E228	M229	V230	E231	L232	P233	L234	R235	H236	P237	Q238	L239	F240
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E301	E302	A303	E304	K305	N306	A307	P308	A309	I310	I311	F312	I313	D314	E315	I316	D317	S318	I319	A320	P321	K322	R323	D324	K325	T326	M327	G328	E329	V330	E331	R332	R333	V334	V335	S336	Q337	L338	L339	T340	L341	M342	D343	G344	M345	K346	A347	R348	S349	N350	V351	V352	V353	I354	A355	A356	T357	N358	R359	P360
N361	S362	I363	D364	P365	A366	L367	R368	R369	F370	G371	R372	F373	D374	R375	E376	V377	D378	I379	G380	I381	P382	D383	A384	T385	G386	R387	L388	E389	V390	L391	R392	I393	H394	T395	K396	N397	M398	K399	L400	A401	D402	D403	V404	D405	L406	E407	A408	L409	S410	A411	E412	T413	H414	G415	Y416	V417	G418	A419	D420
I421	A422	S423	L424	C425	S426	E427	A428	A429	M430	Q431	Q432	I433	R434	E435	K436	M437	D438	L439	ILE	LEU	ASP	ASP	GLU	GLU	ILE	ASP	ALA	GLU	VAL	L452	D453	S454	L455	G456	V457	T458	M459	D460	N461	F462	R463	F464	A465	L466	G467	N468	S469	N470	P471	S472	A473	L474	R475	E476	T477	V478	V479	E480	
S481	V482	M483	V484	T485	V486	D487	V488	G489	G490	G491	L492	D493	E494	I495	K496	E497	E498	L499	K500	E501	T502	V503	E504	Y505	P506	V507	L508	H509	P510	D511	Q512	Y513	T514	K515	F516	G517	L518	S519	P520	S521	K522	G523	V524	L525	F526	Y527	G528	P529	P530	G531	T532	G533	K534	T535	L536	L537	A538	K539	A540



- Molecule 1: Cell division control protein 48

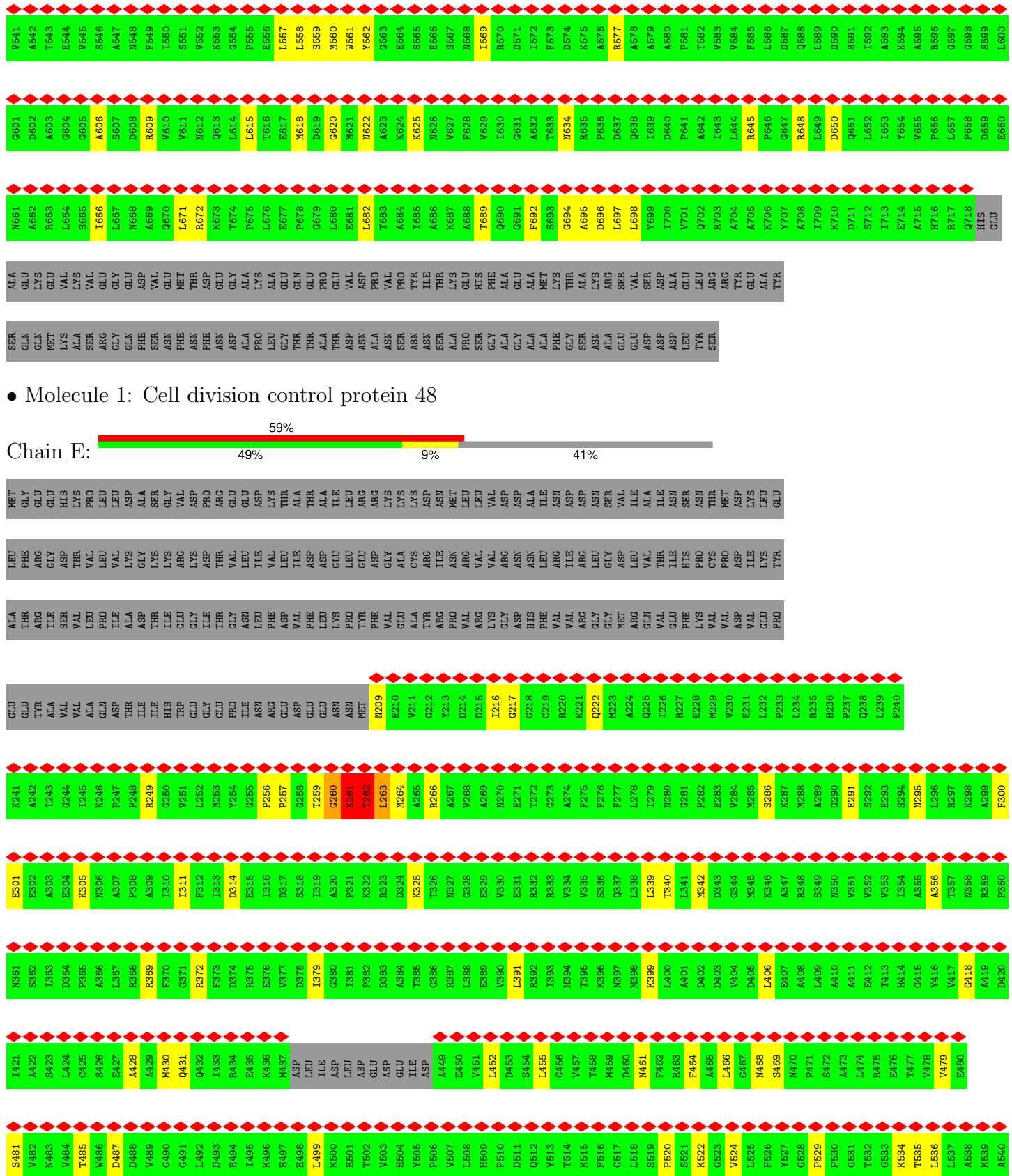


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N548	D608	N668	GLU
F549	R609	A669	ASP
I550	V610	Q670	VAL
S551	V611	L671	GLY
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P555	L615	P675	ALA
E556	T616	L676	LYS
L557	E617	E677	LEU
L558	M618	P678	GLY
S559	D619	G679	THR
M560	G620	L680	ALA
Y561	M621	E681	PRO
Y562	N622	L682	ASP
G563	A623	T683	VAL
E564	K624	A684	ASN
S565	K625	I685	THR
E566	N626	A686	ASN
S567	V627	K687	THR
N568	F628	A688	LYS
I569	V629	T689	PRO
R570	I630	Q690	GLY
D571	G631	G691	ALA
I572	A632	F692	ALA
F573	T633	S693	ALA
D574	N634	G694	PHE
K575	R635	A695	GLY
A576	P636	D696	THR
R577	D637	L697	ASN
A578	L638	L698	LYS
A579	I639	Y699	GLU
A580	D640	I700	VAL
P581	P641	V701	ASP
T582	A642	Q702	ALA
V583	I643	R703	LEU
V584	L644	A704	THR
F585	R645	A705	ARG
L586	P646	K706	LYS
D587	G647	Y707	GLU
Q588	R648	A708	ALA
L589	L649	I709	GLY
D590	D650	K710	THR
S591	Q651	D711	VAL
I592	L652	S712	ILE
A593	I653	I713	ASP
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A595	V655	ALA	THR
R596	P656	GLY	THR
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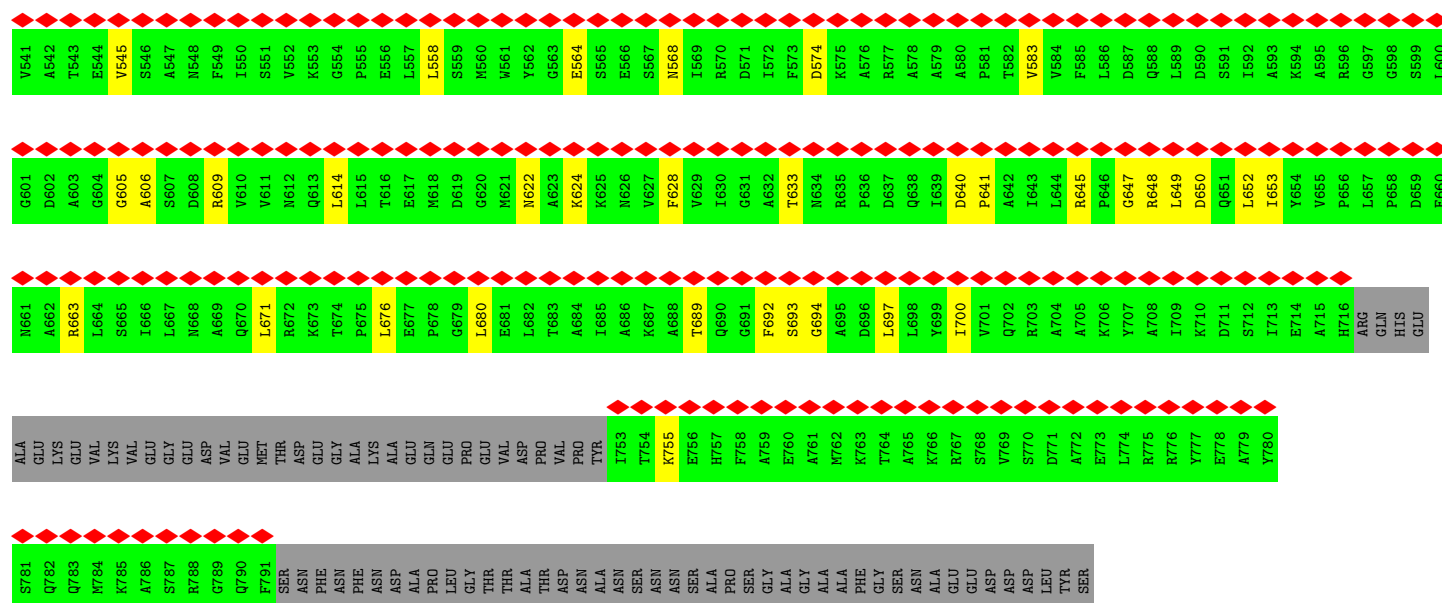
• Molecule 1: Cell division control protein 48



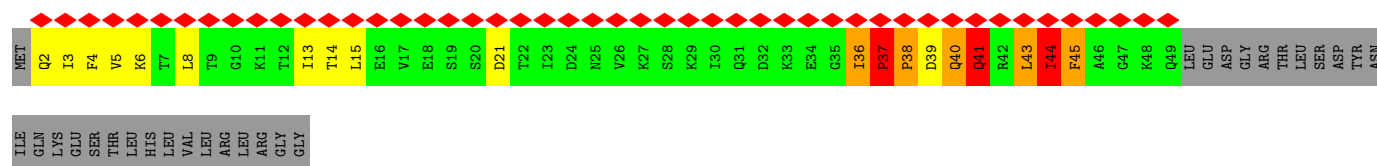
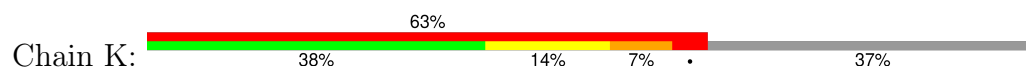
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GLU	ARG	ILE	TYR	I243	A303	I363	S423	I483
HIS	ASP	SER	VAL	G244	E304	D364	L424	V484
LYS	THR	VAL	VAL	I245	K305	P365	C425	T485
PRO	LEU	PRO	ALA	K246	N306	A366	S426	V486
LEU	VAL	LEU	GLN	P247	A307	L367	E427	D487
LEU	VAL	ASP	THR	P248	P308	R368	A428	D488
ALA	GLY	ALA	ILE	R249	A309	R369	A429	V489
SER	LYS	LYS	ILE	G250	I310	F370	G490	G490
GLY	ARG	GLY	TRP	V251	I311	G371	Q431	G491
VAL	ASP	THR	GLY	M252	F312	R372	Q432	L492
PRO	ARG	THR	GLY	Y254	I313	F373	I433	D493
GLU	VAL	GLY	PRO	G255	D314	D374	R434	E494
GLU	LEU	ASN	ILE	P256	E315	R375	E435	I495
ASP	THR	PHE	ASN	P257	I316	E376	K436	K496
THR	VAL	VAL	ARG	P258	D317	V377	M437	E497
THR	ILE	VAL	GLU	G259	S318	D378	ASP	A498
ALA	ASP	PHE	GLU	K260	I319	I379	ILE	L499
ILE	ALA	LEU	ASN	T262	A320	G380	ASP	K500
LEU	LEU	PRO	GLU	G261	P321	I381	LEU	E501
LEU	LEU	TYR	MET	L263	K322	P382	ASP	T502
ARG	ARG	PHE	THR	M264	R323	D383	ASP	V503
LYS	LYS	GLU	GLU	A265	D324	A384	GLU	E504
LYS	LYS	ALA	ALA	R266	K325	T385	ILE	Y505
ASP	ARG	TYR	TYR	A267	T326	G386	ASP	P506
THR	ILE	ARG	ARG	D212	N327	R387	GLU	V507
ALA	ASN	PRO	VAL	D214	G328	L388	VAL	L508
PRO	GLU	VAL	ARG	D215	E329	E389	LEU	H509
GLY	LEU	LYS	GLY	I216	V330	V390	ASP	P510
ASP	VAL	GLY	ASP	G217	E331	L391	SER	D511
ASP	ARG	ARG	ARG	D218	R332	R392	GLY	Q512
ALA	ASN	ASN	ASN	G219	R333	I393	VAL	Y513
ALA	ILE	PHE	PHE	R220	V334	H394	THR	T514
ASN	ASN	VAL	VAL	K221	V335	T395	M459	K515
THR	THR	THR	THR	G222	S336	K396	D460	D460
GLY	ASP	GLY	GLY	M223	Q337	N397	M461	M461
ILE	VAL	MET	MET	A224	L338	R398	F462	F462
ILE	ILE	ILE	GLN	Q225	L339	K399	R463	R463
ASP	ASP	ASP	VAL	I226	T340	L400	A465	S519
ASP	ASP	ASP	VAL	G281	A401	A401	A466	P520
ASP	ASP	ASP	VAL	E282	M342	D402	L467	S521
ASP	ASP	ASP	VAL	E283	D343	D403	G467	K522
ASP	ASP	ASP	VAL	V284	G344	V404	M468	G523
ASP	ASP	ASP	VAL	M285	M345	D405	S469	V524
ASP	ASP	ASP	VAL	S286	K346	L406	M470	L525
ASP	ASP	ASP	VAL	K287	A347	E407	P471	F526
ASP	ASP	ASP	VAL	M288	R348	A408	S472	Y527
ASP	ASP	ASP	VAL	A289	S349	A409	A473	G528
ASP	ASP	ASP	VAL	G290	N350	L410	L474	P529
ASP	ASP	ASP	VAL	E291	V351	A411	R475	P530
ASP	ASP	ASP	VAL	S292	V352	E412	E476	G531
ASP	ASP	ASP	VAL	E293	V353	T413	T477	T532
ASP	ASP	ASP	VAL	S294	I354	H414	V478	G533
ASP	ASP	ASP	VAL	N295	A355	G415	V479	K534
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ASP	ASP	ASP	VAL	R297	T357	V417	L536	L536
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ASP	ASP	ASP	VAL	A299	R359	A419	A538	A538
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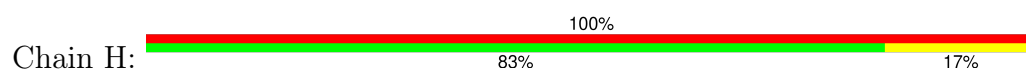




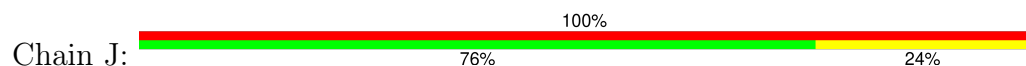
• Molecule 2: Ubiquitin



• Molecule 2: Ubiquitin

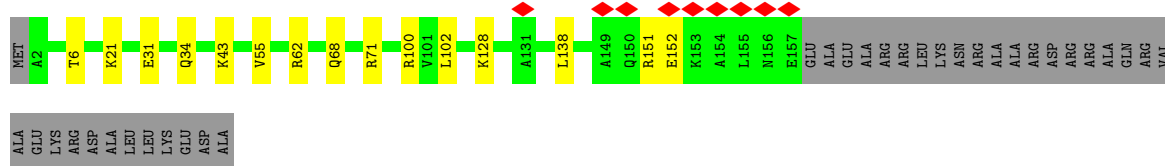
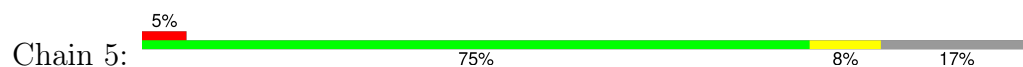


• Molecule 2: Ubiquitin

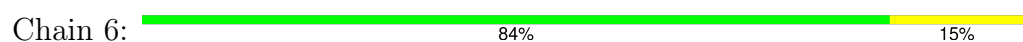




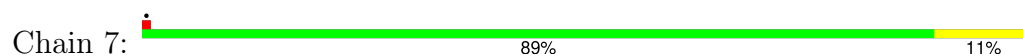
- Molecule 6: 60S ribosomal protein L19-A



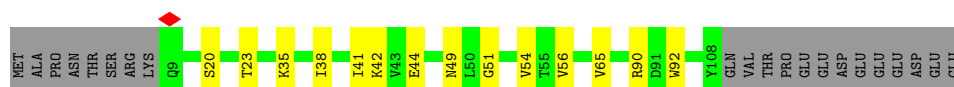
- Molecule 7: 60S ribosomal protein L20-A



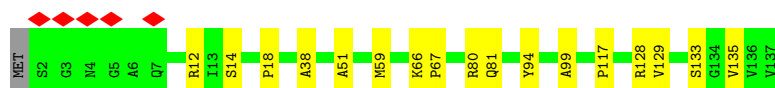
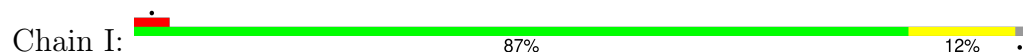
- Molecule 8: 60S ribosomal protein L21-A



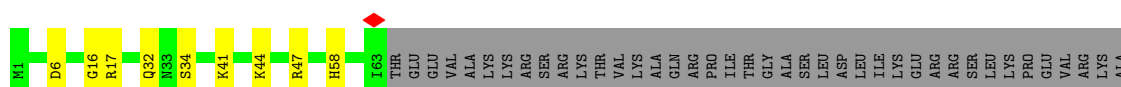
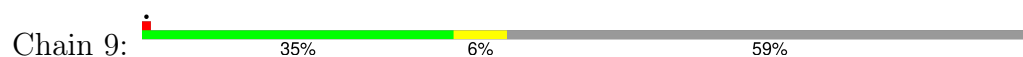
- Molecule 9: 60S ribosomal protein L22-A



- Molecule 10: 60S ribosomal protein L23-A

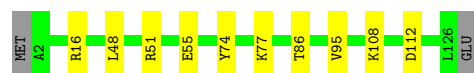


- Molecule 11: Large ribosomal subunit protein eL24A

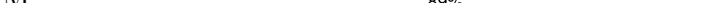


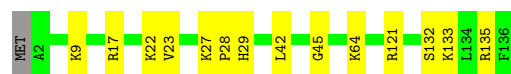
- Molecule 12: 60S ribosomal protein L26-A

Chain L: 91% 8%



- Molecule 13: 60S ribosomal protein L27-A

Chain M:  89% 10%



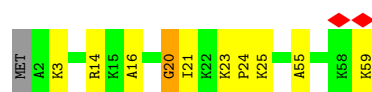
- Molecule 14: 60S ribosomal protein L28

Chain N: 85% 14%



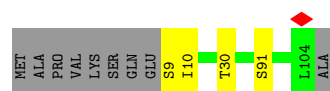
- Molecule 15: Large ribosomal subunit protein eL29

Chain 0:  81% 15% ..



- Molecule 16: 60S ribosomal protein L30

Chain P: 88% 9%

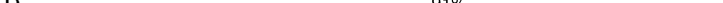


- Molecule 17: 60S ribosomal protein L31-A

Chain Q:  6% 80% 17% .



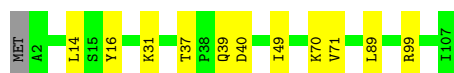
- Molecule 18: Large ribosomal subunit protein eL32

Chain R:  91% 7% .



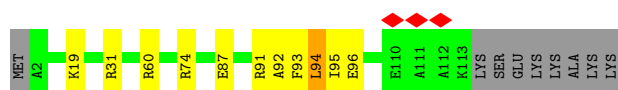
- Molecule 19: 60S ribosomal protein L33-A

Chain S: 89% 10%



- Molecule 20: 60S ribosomal protein L34-A

Chain T: 83% 8% 7%



- Molecule 21: 60S ribosomal protein L35-A

Chain U: 93% 6%



- Molecule 22: 60S ribosomal protein L36-A

Chain V: 91% 8%



- Molecule 23: 60S ribosomal protein L37-A

Chain W: 77% 15% 8%

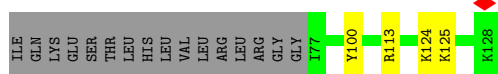
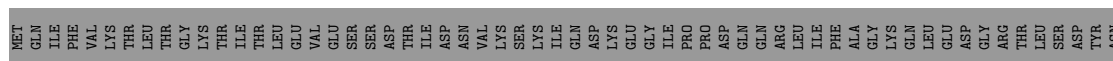


- Molecule 24: 60S ribosomal protein L39

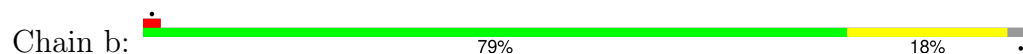
Chain Y: 88% 10%



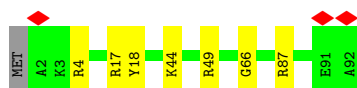
- Molecule 25: Ubiquitin-60S ribosomal protein L40



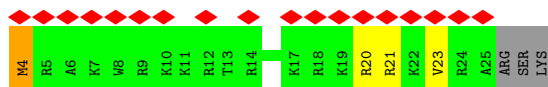
- Molecule 26: 60S ribosomal protein L42-A



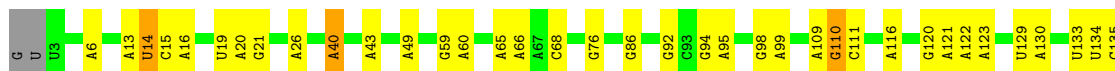
- Molecule 27: 60S ribosomal protein L43-A

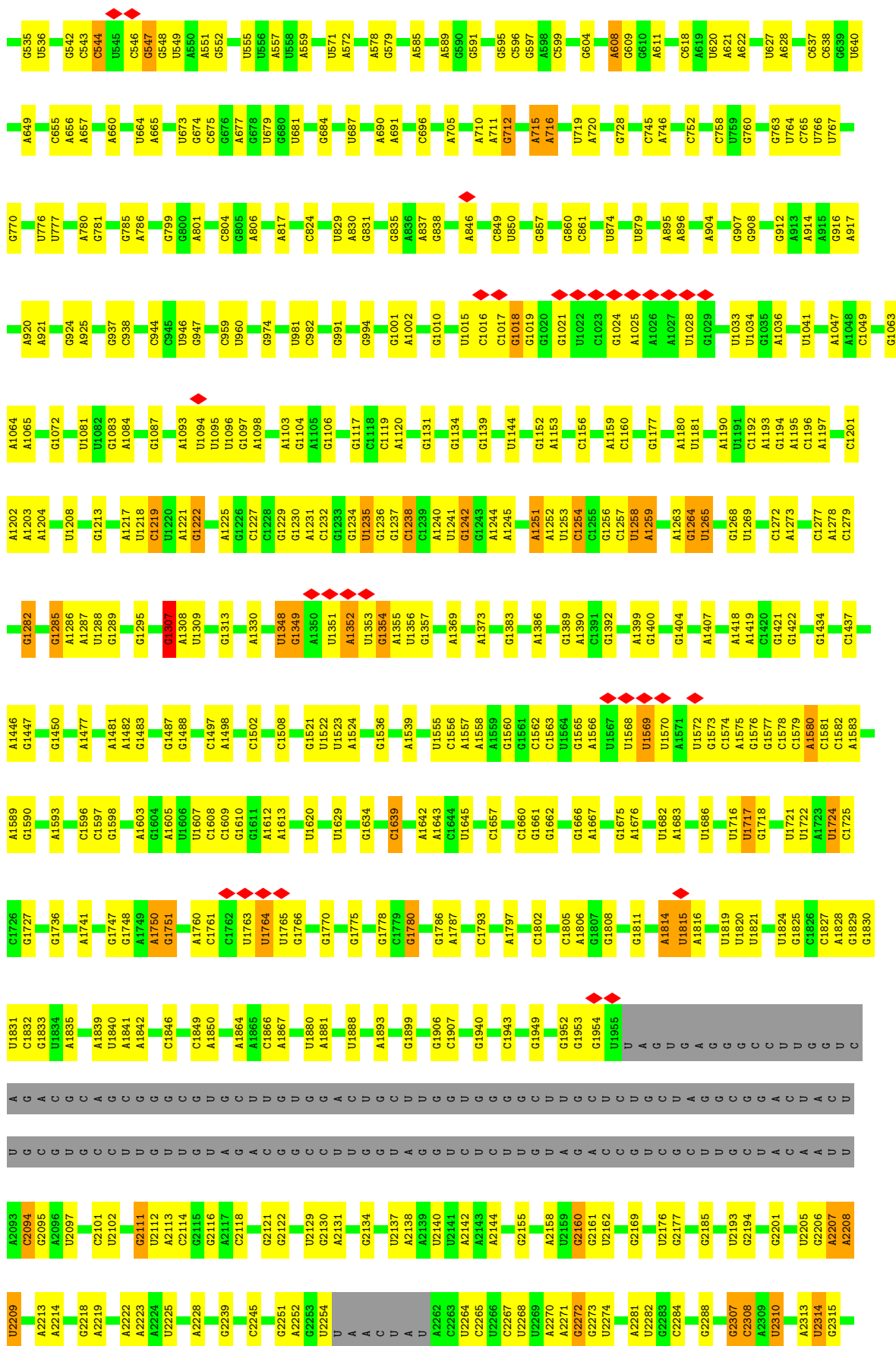


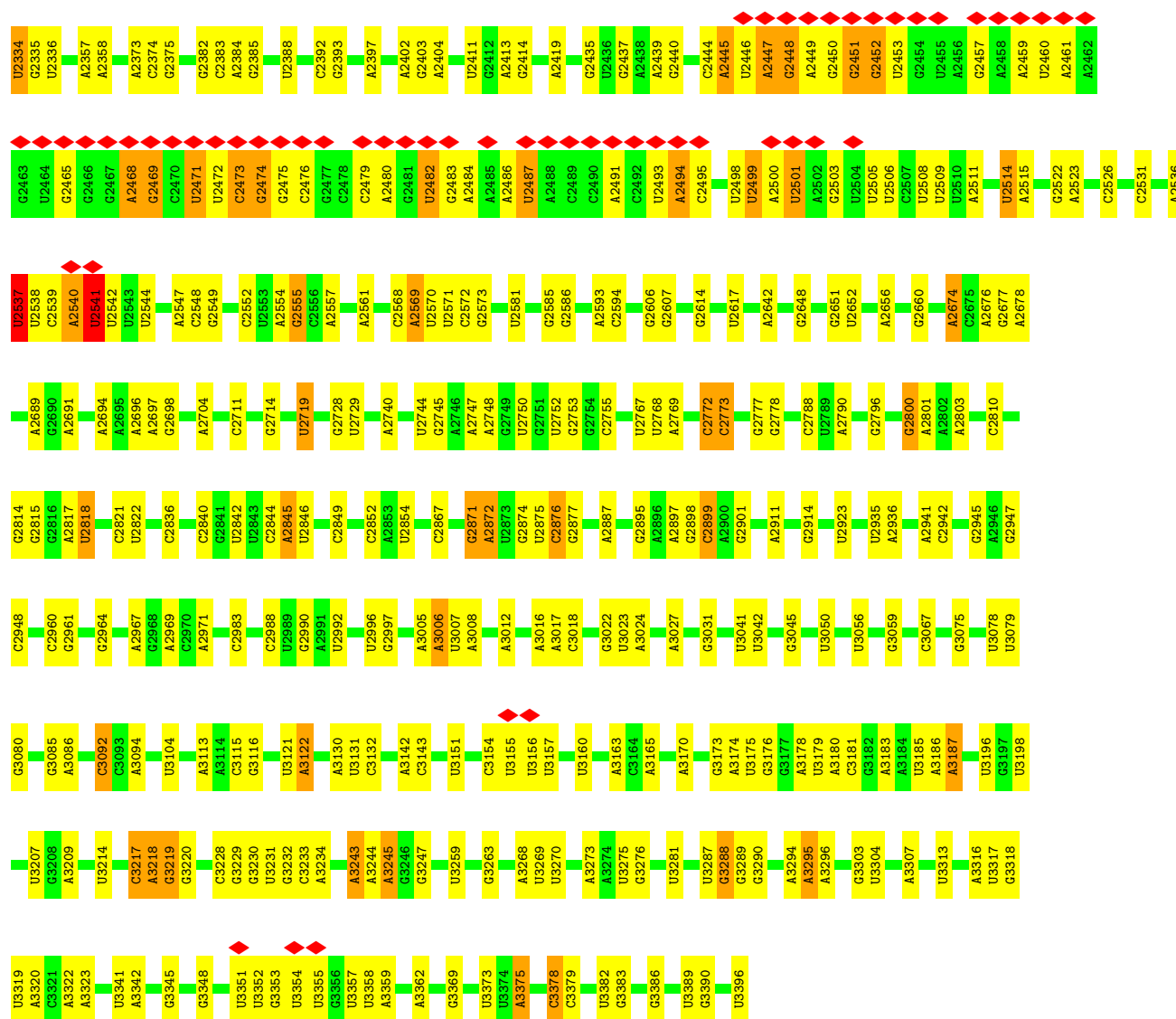
- Molecule 28: 60S ribosomal protein L41-A



- Molecule 29: 25S rRNA

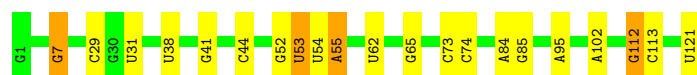






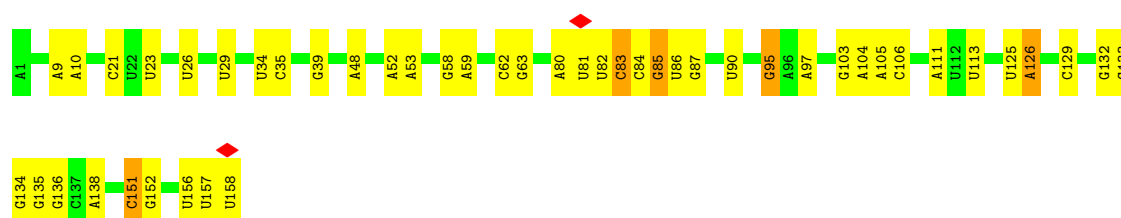
- Molecule 30: 5S rRNA

Chain h: 83% 14%



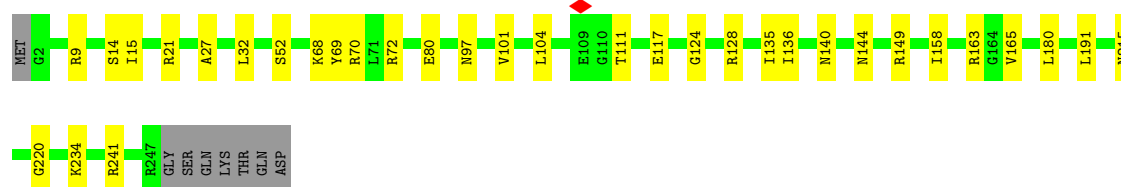
- Molecule 31: 5.8S rRNA

Chain i: 70% 27%



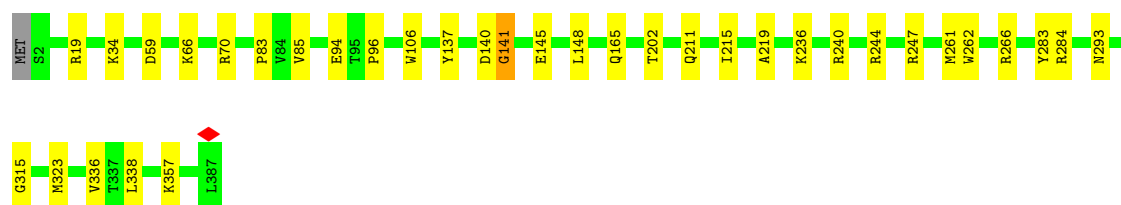
- Molecule 32: 60S ribosomal protein L2-A

Chain j:  84% 13%



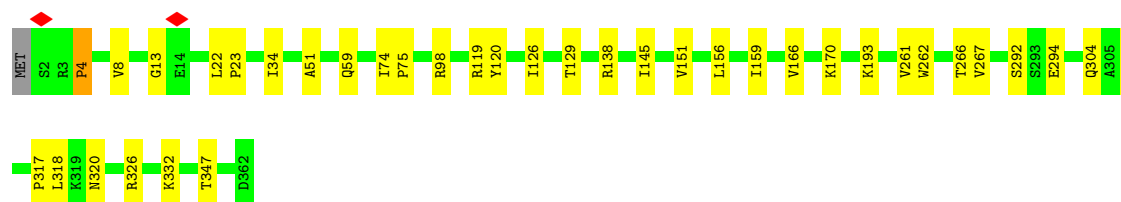
- Molecule 33: Large ribosomal subunit protein uL3

Chain k:  91% 9%



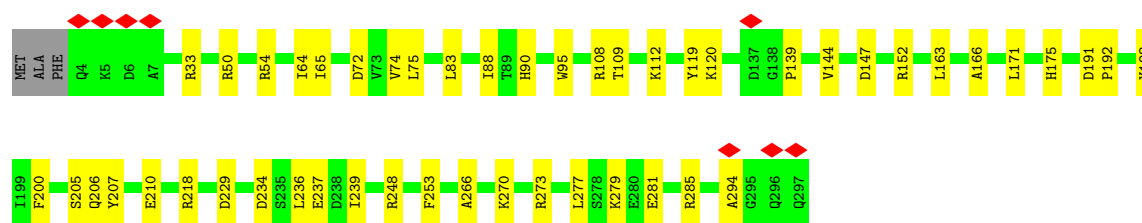
- Molecule 34: Large ribosomal subunit protein uL4A

Chain l:  90% 10%



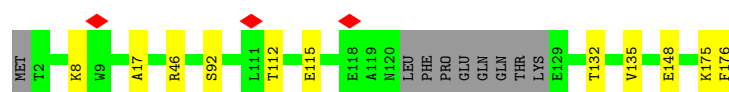
- Molecule 35: Large ribosomal subunit protein uL18

Chain m:  82% 16%

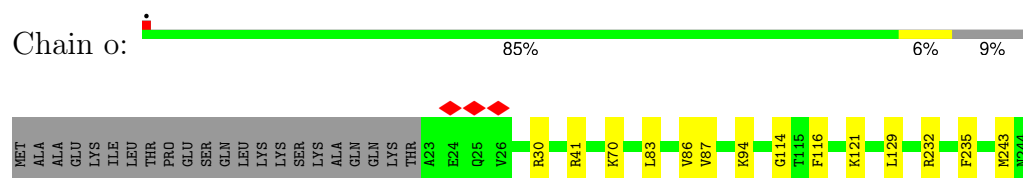


- Molecule 36: Large ribosomal subunit protein eL6B

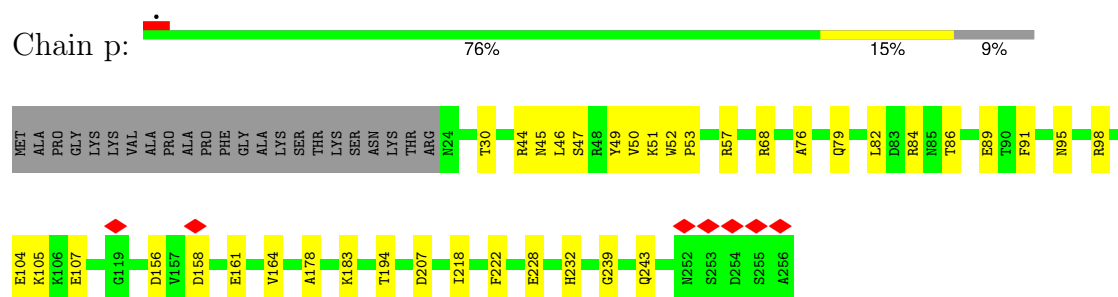
Chain n:  89% 6% 5%



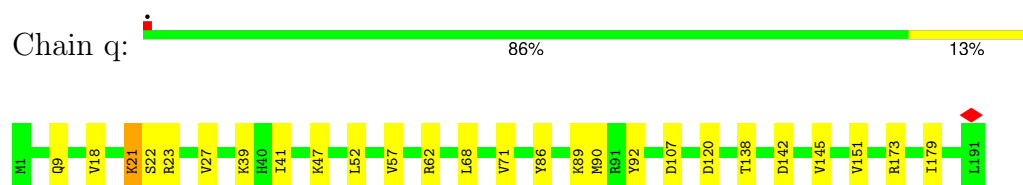
- Molecule 37: 60S ribosomal protein L7-A



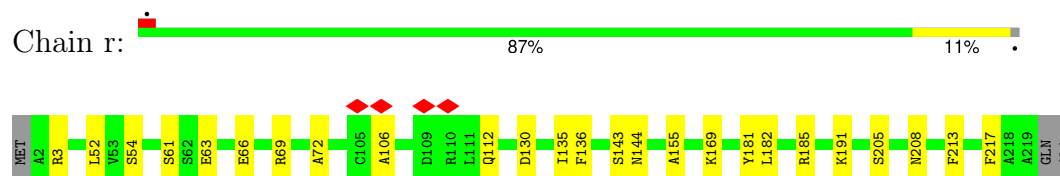
- Molecule 38: 60S ribosomal protein L8-A



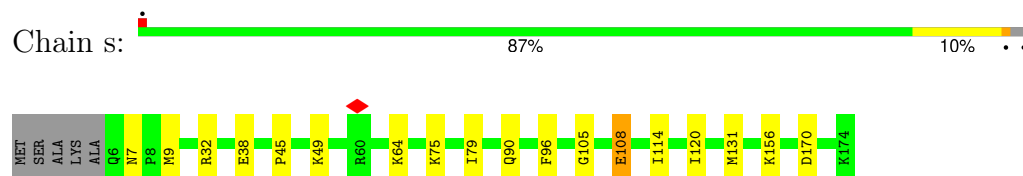
- Molecule 39: 60S ribosomal protein L9-A



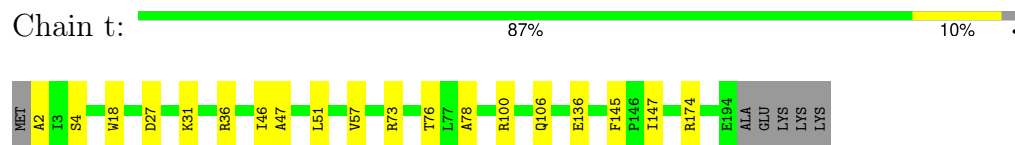
- Molecule 40: Large ribosomal subunit protein uL16



- Molecule 41: Large ribosomal subunit protein uL5A



- Molecule 42: 60S ribosomal protein L13-A

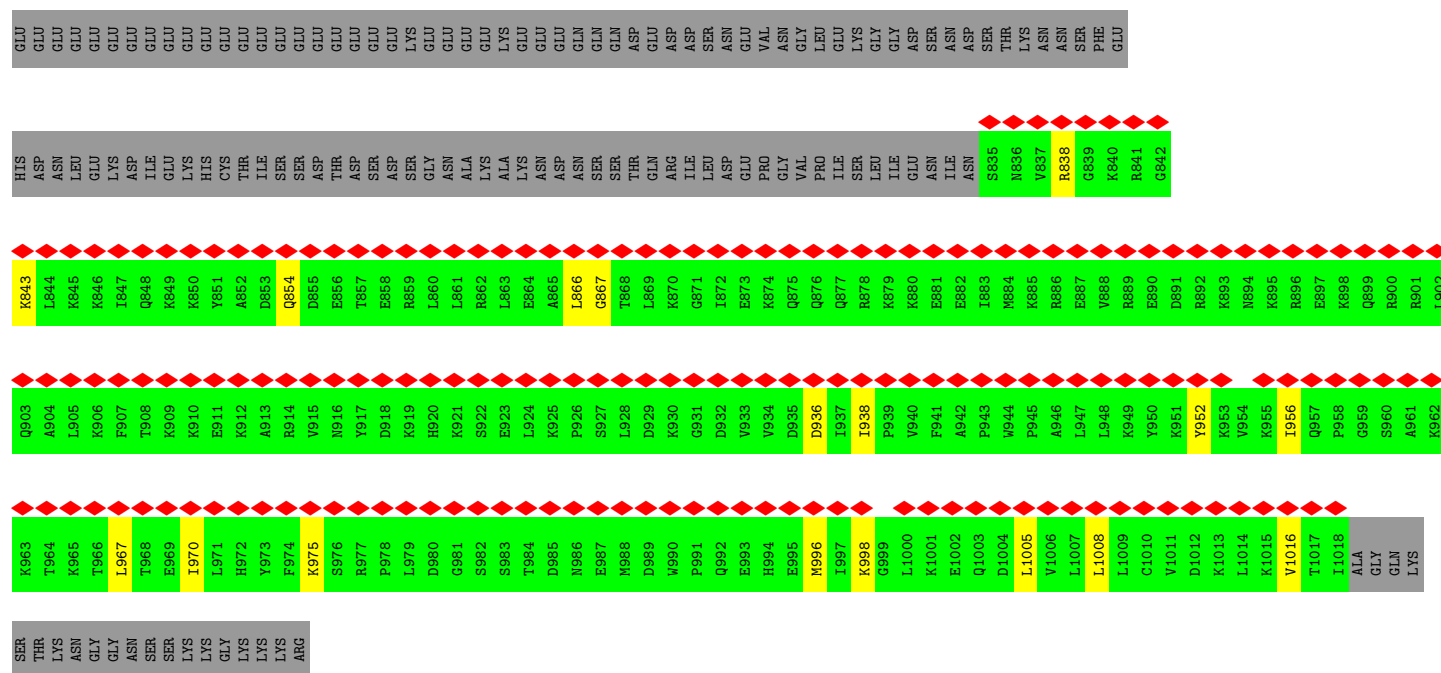


- Molecule 43: 60S ribosomal protein L14-A

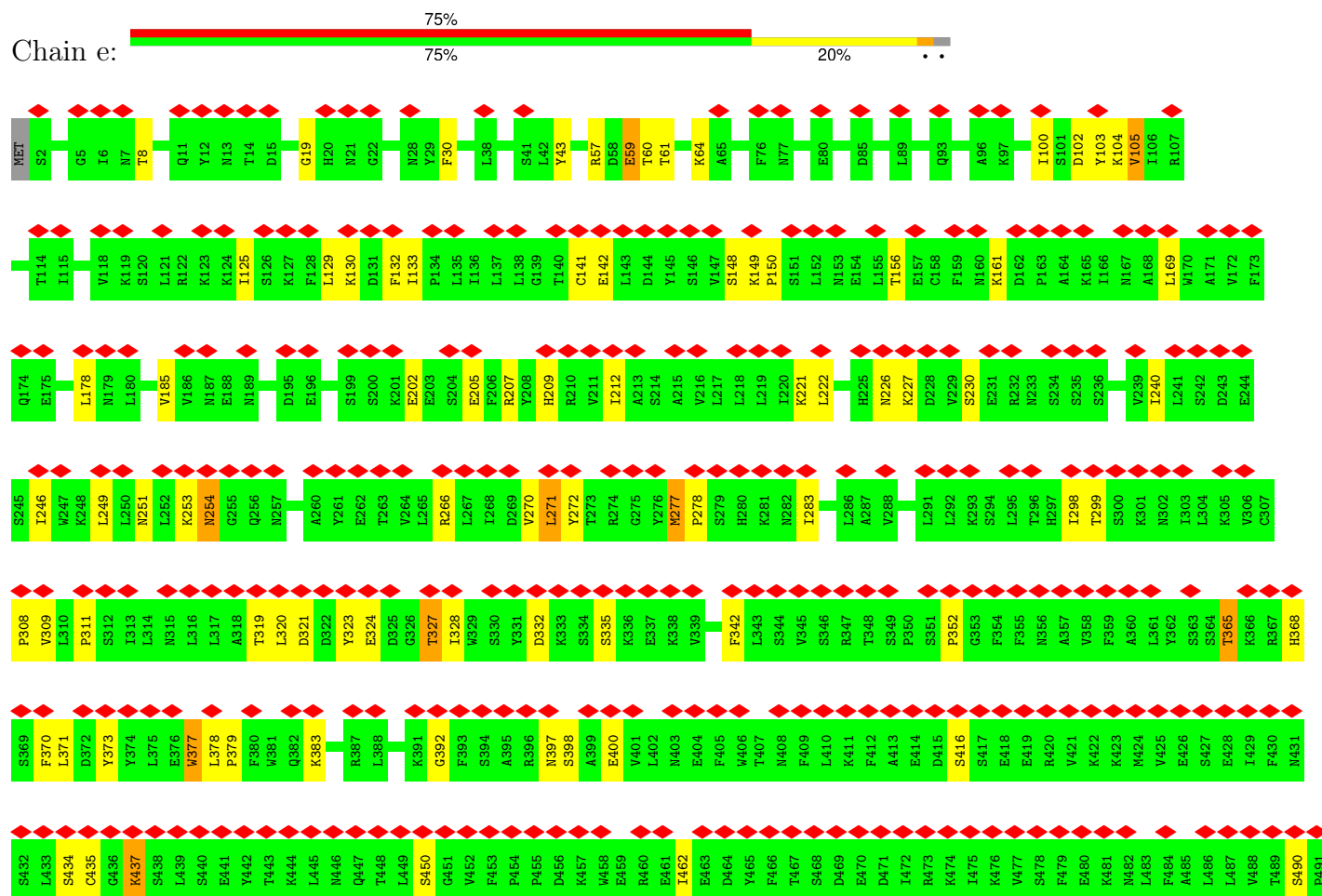


Chain a:



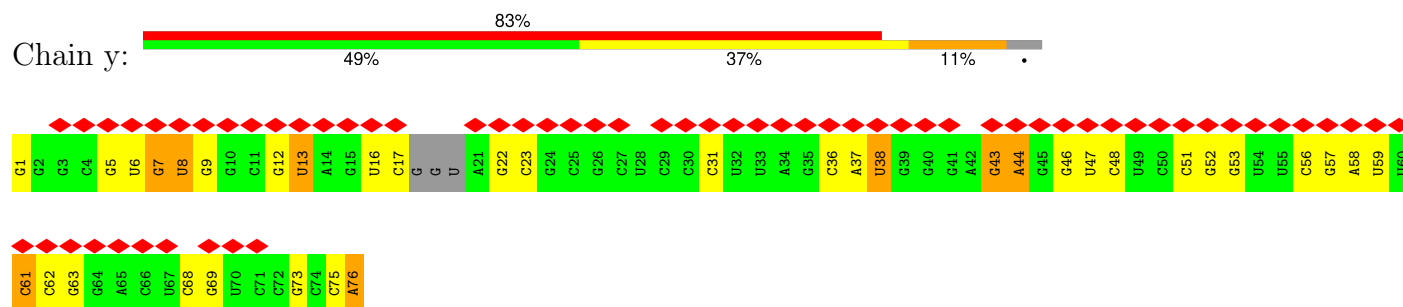


• Molecule 45: E3 ubiquitin-protein ligase listerin

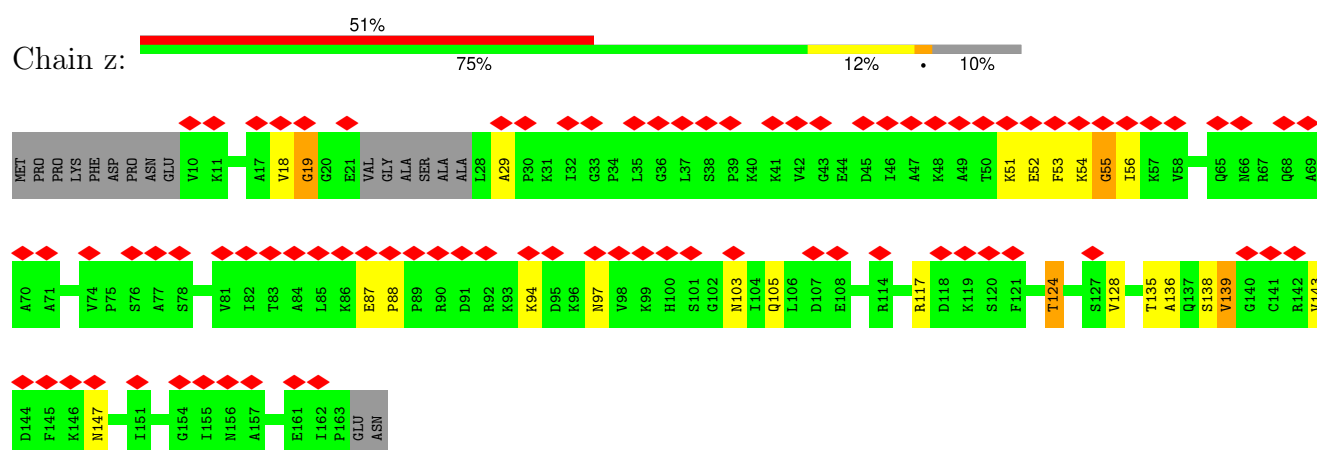


N492	N493	N494	N495	N496	N497	N498	N499	L500	F501	D502	F503	F504	V505	Q506	L507	L508	E509	T510	D511	P512	S513	N514	V515	F516	N517	K518	Y519	D520	G521	Y522	Y523	D524	A525	L526	N527	Y528	F529	L530	D531	S532	D533	M534	I535	F536	L537	N538	G539	K540	I541	G542	K543	F544	I545	N546	I548	P549	T550	L551	
V552	Q553	E554	S555	T556	Y557	Q558	N559	F560	A561	G562	I563	M564	A565	Q566	Y567	L568	N569	S570	K571	F572	F573	K574	M575	N576	T577	D578	A579	I580	T581	S582	L583	E584	D585	F586	F587	I588	V589	L590	D591	S592	F593	M594	I595	F596	K597	T598	I599	K600	L601	A602	T603	M604	N605	E606	L607	D608	N609	D610	I611
Y612	Q613	Q614	L615	K616	K617	S618	D619	S620	L621	E622	L623	E624	L625	Y626	I627	E628	N629	F630	M631	K632	N633	Y634	K635	F636	D637	D638	S639	G640	E641	I642	F643	K644	G645	N646	N647	K648	F649	L650	N651	Q652	R653	T654	I655	T656	L657	L658	Y659	R660	S661	A662	V663	A664	N665	G666	Q667	V668	E669	Q670	F671
C672	A673	V674	L675	S676	K677	L678	D679	E680	T681	F682	F683	S684	T685	L686	I687	L688	N689	T690	D691	F692	L693	S694	C695	A696	L697	Y698	V700	T701	E702	D703	T704	N705	E706	K707	L708	F709	K710	S712	L713	Q714	L715	A716	K717	G718	N719	S720	E721	I722	A723	N724	K725	L726	A727	Q728	V729	I730	L731		
Q732	H733	A734	Q735	V736	Y737	F738	S739	P740	G741	A742	K743	E744	K745	Y746	T747	T748	H749	A750	V751	E752	L753	I754	N755	Q756	C757	N758	D759	T760	S761	Q762	I763	F764	F765	F766	A767	N768	A769	I770	E771	V772	F773	A774	R775	Y776	M777	P778	I779	I780	D781	Y782	R783	S784	S785	L786	T787	S788	S789	L790	S791
T792	N793	T794	H795	L796	L797	L798	T799	D800	D801	K802	P803	T804	N805	L806	K807	N808	M809	Q810	K811	L812	I813	R814	Y815	A816	L817	F818	L819	D820	A821	L822	L823	D824	A825	L826	P827	E828	R829	V830	N831	N832	H833	I834	V835	A836	F837	I838	T839	V840	V841	S842	E843	S844	V845	T846	D847	Y848	N849	C850	L851
S852	E853	E854	P855	N856	D857	L858	Y859	Y860	D861	F862	G863	H864	T865	F866	F867	K868	H869	G870	K871	V872	N873	L874	N875	F876	S877	D878	I879	V880	G881	N882	V883	I884	Q885	P886	A887	N888	G889	G890	D891	A892	M893	L894	T895	P896	D897	I898	A899	E900	S901	N902	S903	Y904	Y905	F906	F907	Y908	Y909	S910	R911
Y912	L913	Y914	K915	Y916	L917	L918	N919	S920	I921	D922	T923	Y924	S925	S926	T927	T928	L929	N930	G931	L932	L933	A934	S935	V936	E937	S938	F939	Y940	T941	K942	T943	Y944	R945	D946	Q947	K948	S949	T950	D951	K952	D953	Y954	L955	L956	C957	A958	P959	L960	L961	N962	L963	F964	N965	R966	S967	N968	S969	K970	D971
E972	I973	T974	K975	R976	R977	T978	L979	L980	A981	S982	Q983	L984	I985	G986	I987	R988	E989	V990	E991	L992	V993	D994	Q995	E996	F997	K998	S999	L1000	A1001	L1002	L1003	M1004	L1005	L1006	D1007	D1008	I1009	P1010	Q1011	A1012	D1013	K1014	Q1015	F1016	V1017	P1018	I1019	A1020	P1021	Q1022	R1023	L1024	N1025	M1026	I1027	F1028	R1029	S1030	I1031
L1032	K1033	M1034	L1035	D1036	S1037	D1038	L1039	A1040	Y1041	E1042	P1043	S1044	F1045	S1046	T1047	R1048	R1049	L1050	L1051	L1052	L1053	D1054	F1055	F1056	T1057	K1058	L1059	M1060	R1061	F1062	L1063	G1064	V1065	R1066	D1067	M1068	G1069	L1070	T1071	A1072	F1073	E1074	L1075	S1076	E1077	R1078	L1079	L1080	A1081	D1082	S1083	L1084	S1085	M1086	C1087	Q1088	I1089	D1090	D1091
T1092	L1093	Y1094	L1095	L1096	L1097	L1098	R1099	S1100	S1101	C1102	L1103	N1104	L1105	Y1106	E1107	T1108	L1109	S1110	Q1111	GLY	VAL	SER	LYS	ASN	GLY	GLU	ILE	SER	E1122	Y1123	G1124	D1125	E1126	I1127	Q1128	E1129	L1130	L1131	I1132	E1133	L1134	M1135	F1136	L1137	M1138	F1139	N1140	Q1141	E1142	R1143	N1144	N1145	Q1146	V1147	T1148	S1149	I1150	F1151	
Y1152	Q1153	K1154	L1155	Y1156	K1157	V1158	I1159	S1160	S1161	M1162	E1163	L1164	K1165	K1166	L1167	E1168	S1169	Q1170	Y1171	K1172	R1173	L1174	F1175	L1176	L1177	N1178	H1180	D1181	K1182	D1183	I1184	K1185	S1186	M1187	I1188	M1189	R1192	L1193	L1194	T1195	L1196	L1197	L1198	G1199	S1200	L1201	V1202	V1203	K1204	T1205	Q1206	Q1207	D1208	I1209	I1210	I1211	L1212	Y1213	
L1214	L1215	R1216	L1217	GLN	LYS	GLN	THR	GLY	SER	GLY	ASP	VAL	ASP	GLY	SER	ALA	SER	ASP	ASN	ASP	VAL	N1235	S1236	K1237	F1238	K1239	L1240	P1241	Q1242	K1243	L1244	Q1245	K1246	K1247	D1250	E1251	V1252	F1253	K1254	L1257	E1258	Y1259	E1260	K1261	K1262	N1263	S1264	F1265	Y1268	L1269	V1270	H1273	L1274	I1275	L1276	M1277			

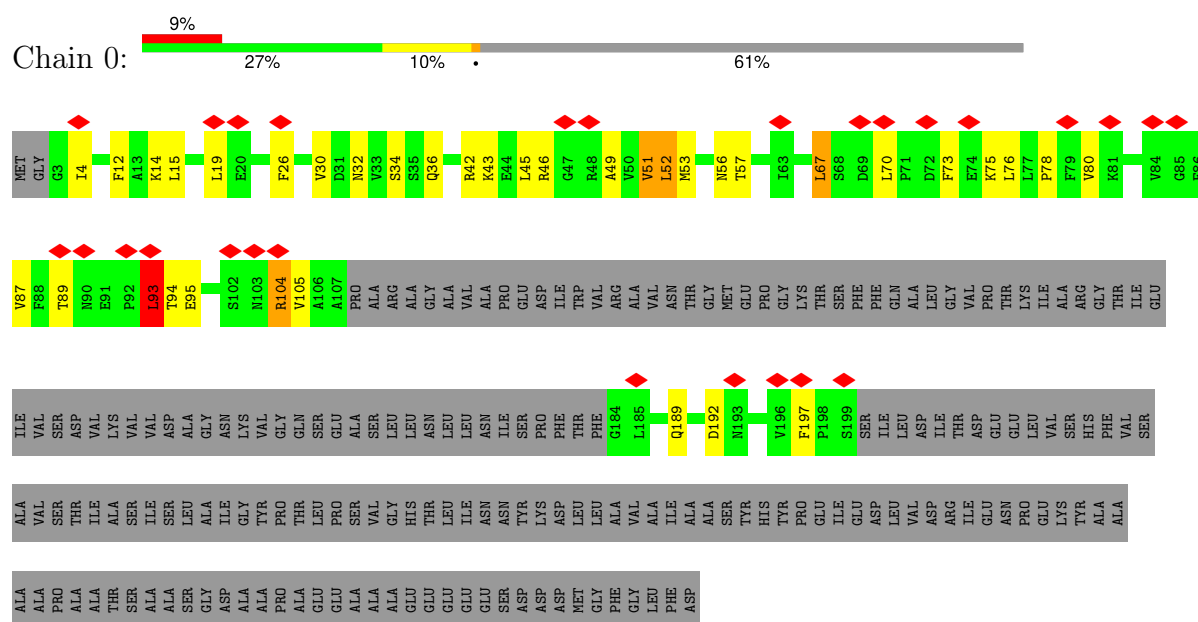
- Molecule 47: Ala tRNA



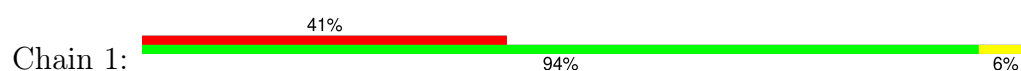
- Molecule 48: Large ribosomal subunit protein uL11A

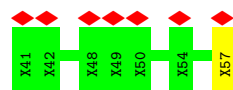


- Molecule 49: 60S acidic ribosomal protein P0



- Molecule 50: CAT-tailed nascent peptide

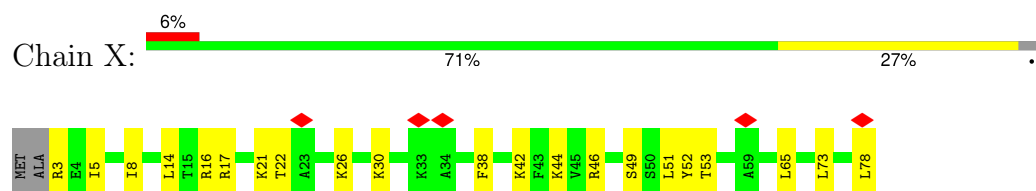




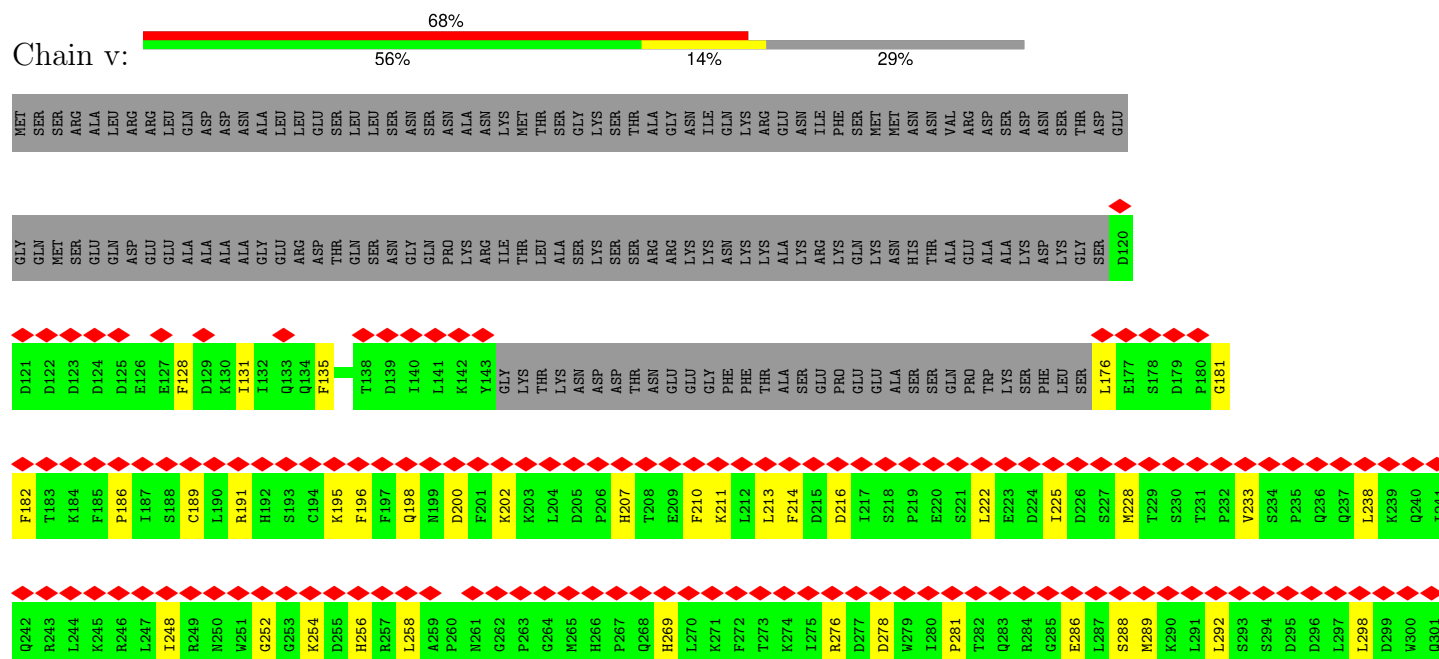
- Molecule 51: Large ribosomal subunit protein uL1A

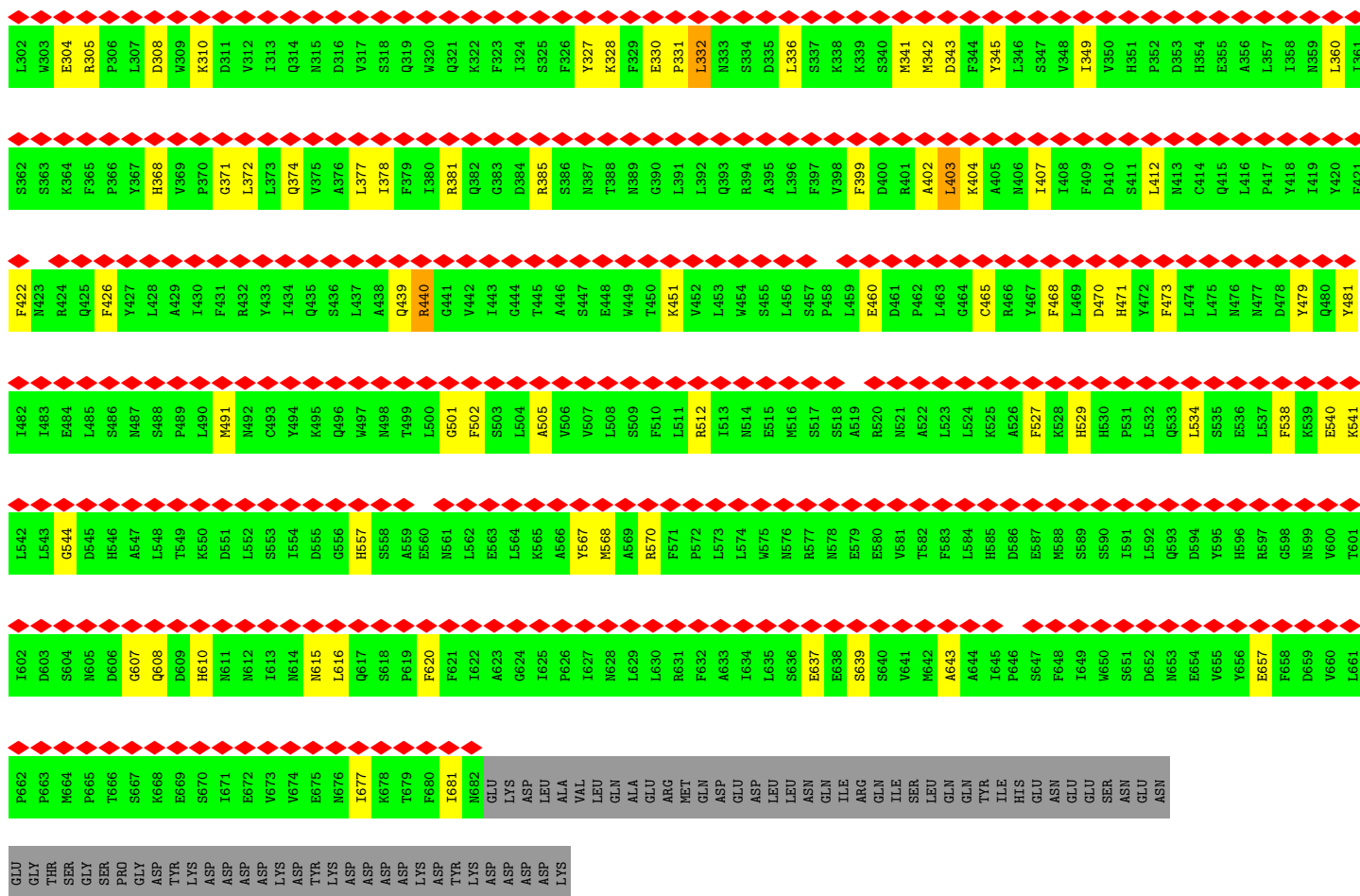


- Molecule 52: Large ribosomal subunit protein eL38

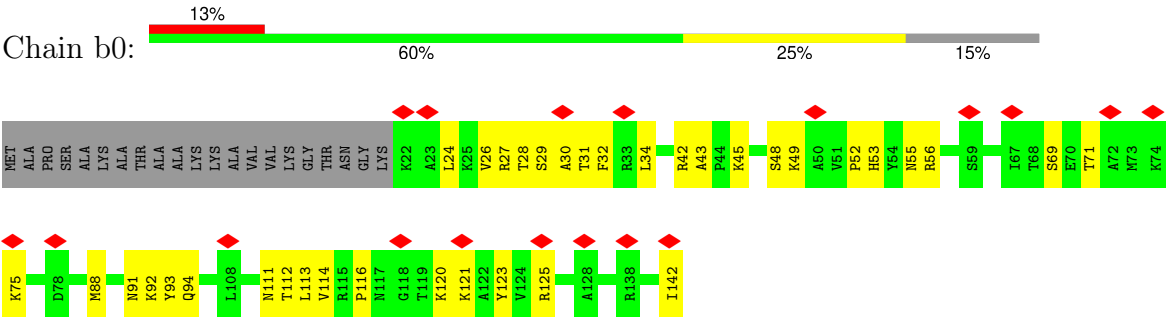


- Molecule 53: Ribosome quality control complex subunit 1





• Molecule 56: 60S ribosomal protein L25



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	28262	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 ($e^-/\text{\AA}^2$)	36	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.553	Depositor
Minimum map value	-0.788	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.051	Depositor
Recommended contour level	0.187	Depositor
Map size (Å)	677.12, 677.12, 677.12	wwPDB
Map dimensions	640, 640, 640	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.058, 1.058, 1.058	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.15	0/4273	0.42	0/5775
1	B	0.37	0/5129	0.63	0/6942
1	C	0.18	0/3819	0.46	0/5165
1	D	0.18	0/3808	0.46	0/5148
1	E	0.21	1/3846 (0.0%)	0.45	4/5202 (0.1%)
1	F	0.15	0/4158	0.41	0/5614
2	H	0.17	0/606	0.43	0/812
2	J	0.14	0/606	0.38	0/812
2	K	0.65	0/379	1.15	5/509 (1.0%)
3	G	0.20	0/3851	0.53	2/5201 (0.0%)
4	3	0.30	0/1439	0.61	0/1938
5	4	0.28	0/1465	0.58	0/1965
6	5	0.30	0/1275	0.56	0/1702
7	6	0.31	0/1473	0.56	0/1980
8	7	0.27	0/1296	0.56	0/1739
9	8	0.29	0/812	0.75	2/1099 (0.2%)
10	I	0.27	0/1018	0.50	0/1369
11	9	0.27	0/530	0.52	0/703
12	L	0.27	0/995	0.53	0/1329
13	M	0.27	0/1106	0.56	0/1485
14	N	0.32	0/1200	0.56	1/1607 (0.1%)
15	O	0.26	0/473	0.62	0/629
16	P	0.26	0/745	0.60	0/1001
17	Q	0.31	0/890	0.68	2/1196 (0.2%)
18	R	0.26	0/1034	0.47	0/1385
19	S	0.30	0/868	0.47	0/1168
20	T	0.29	0/890	0.58	2/1189 (0.2%)
21	U	0.27	0/978	0.53	0/1301
22	V	0.28	0/772	0.57	0/1026
23	W	0.32	0/660	0.60	0/875
24	Y	0.29	0/443	0.46	0/588
25	Z	0.28	0/416	0.60	0/553

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
26	b	0.28	0/836	0.53	0/1104
27	c	0.27	0/701	0.56	0/934
28	d	0.22	0/208	0.81	2/267 (0.7%)
29	f	0.31	0/77011	0.40	5/120065 (0.0%)
30	h	0.26	0/2883	0.32	0/4491
31	i	0.30	0/3746	0.36	0/5832
32	j	0.31	0/1908	0.54	0/2564
33	k	0.29	0/3146	0.53	0/4228
34	l	0.29	0/2800	0.57	4/3790 (0.1%)
35	m	0.27	0/2400	0.56	0/3239
36	n	0.28	0/1329	0.60	0/1794
37	o	0.31	0/1821	0.58	0/2451
38	p	0.27	0/1836	0.58	1/2481 (0.0%)
39	q	0.30	0/1529	0.64	2/2060 (0.1%)
40	r	0.25	0/1801	0.49	0/2416
41	s	0.27	0/1367	0.69	4/1834 (0.2%)
42	t	0.29	0/1568	0.62	1/2106 (0.0%)
43	u	0.30	0/1068	0.53	0/1438
44	a	0.26	0/6683	0.55	2/9016 (0.0%)
45	e	0.66	0/11755	0.97	58/15956 (0.4%)
46	g	0.24	0/1672	0.59	1/2281 (0.0%)
47	x	0.35	0/1761	0.61	0/2742
47	y	0.37	0/1735	0.64	0/2701
48	z	0.67	0/726	1.24	13/1006 (1.3%)
49	0	0.49	0/976	0.95	3/1313 (0.2%)
51	w	0.27	0/1736	0.61	0/2332
52	X	0.45	0/614	0.50	0/819
53	v	0.84	3/4492 (0.1%)	1.12	7/6087 (0.1%)
54	2	0.72	0/608	1.02	0/816
55	a0	0.32	0/1585	0.54	0/2128
56	b0	0.31	0/979	0.57	0/1321
All	All	0.35	4/194533 (0.0%)	0.55	121/280619 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
3	G	0	1
15	O	0	1
21	U	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
33	k	0	1
34	l	0	2
38	p	0	3
39	q	0	1
43	u	0	1
45	e	0	1
46	g	0	1
All	All	0	13

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
53	v	439	GLN	C-N	21.17	1.61	1.33
53	v	372	LEU	C-N	18.31	1.58	1.33
53	v	286	GLU	C-N	8.53	1.45	1.33
1	E	261	LYS	N-CA	-6.29	1.38	1.46

All (121) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	K	36	ILE	C-N-CD	-13.24	70.72	125.00
45	e	1364	GLY	N-CA-C	12.27	127.34	112.49
53	v	440	ARG	O-C-N	11.96	136.70	122.34
45	e	1514	ILE	CA-C-N	-10.41	106.69	122.09
45	e	1514	ILE	C-N-CA	-10.41	106.69	122.09
45	e	1460	SER	N-CA-C	10.06	122.33	111.36
53	v	372	LEU	O-C-N	8.84	131.49	122.12
45	e	1181	ASP	N-CA-C	8.82	120.89	111.28
45	e	1141	GLN	N-CA-C	8.72	120.79	111.28
2	K	43	LEU	N-CA-C	8.70	129.32	110.80
45	e	793	ASN	N-CA-C	-8.70	102.67	113.28
2	K	37	PRO	C-N-CD	-8.67	89.44	125.00
9	8	51	GLY	CA-C-N	7.90	136.62	121.54
9	8	51	GLY	C-N-CA	7.90	136.62	121.54
44	a	116	PHE	N-CA-C	-7.79	103.84	112.72
45	e	437	LYS	N-CA-C	-7.78	94.24	110.80
45	e	901	SER	N-CA-C	7.62	119.59	111.28
45	e	870	GLY	N-CA-C	-7.58	105.36	115.21
45	e	666	GLY	N-CA-C	-7.46	104.91	115.43
53	v	402	ALA	CA-C-N	7.41	131.23	120.71
53	v	402	ALA	C-N-CA	7.41	131.23	120.71
48	z	87	GLU	CA-C-N	-7.36	112.80	120.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
48	z	87	GLU	C-N-CA	-7.36	112.80	120.38
45	e	1447	LYS	N-CA-C	-7.31	100.88	110.53
48	z	138	SER	N-CA-C	-7.27	103.28	111.14
45	e	435	CYS	N-CA-C	-7.24	103.32	111.14
45	e	1298	GLY	N-CA-C	-7.22	105.24	115.43
45	e	1449	TYR	CA-C-N	-7.04	111.23	119.05
45	e	1449	TYR	C-N-CA	-7.04	111.23	119.05
44	a	117	PHE	N-CA-CB	-7.02	100.32	110.36
1	E	261	LYS	N-CA-C	-6.98	101.99	112.04
45	e	434	SER	N-CA-C	6.96	118.65	111.14
45	e	43	TYR	N-CA-C	6.83	118.72	111.28
48	z	94	LYS	N-CA-C	-6.77	103.98	111.36
34	l	4	PRO	CA-C-N	6.76	134.45	121.54
34	l	4	PRO	C-N-CA	6.76	134.45	121.54
45	e	57	ARG	N-CA-C	6.68	118.57	111.28
45	e	1182	LYS	N-CA-C	6.53	118.06	111.07
53	v	402	ALA	O-C-N	-6.47	113.22	122.41
14	N	66	ALA	N-CA-C	-6.42	106.41	114.56
45	e	667	GLN	N-CA-C	-6.35	105.48	112.72
45	e	148	SER	N-CA-C	6.32	117.97	111.14
45	e	132	PHE	N-CA-C	6.29	118.22	111.36
39	q	138	THR	CA-C-N	6.27	133.52	121.54
39	q	138	THR	C-N-CA	6.27	133.52	121.54
45	e	1283	SER	N-CA-C	-6.27	99.95	109.85
45	e	1445	LEU	N-CA-C	-6.21	100.61	109.24
28	d	4	MET	CA-C-N	6.17	133.33	121.54
28	d	4	MET	C-N-CA	6.17	133.33	121.54
45	e	736	VAL	N-CA-C	6.17	116.95	110.72
53	v	440	ARG	CA-C-N	-6.13	109.64	121.78
53	v	440	ARG	C-N-CA	-6.13	109.64	121.78
2	K	41	GLN	O-C-N	5.95	130.51	122.59
45	e	365	THR	N-CA-C	5.95	118.72	111.82
45	e	185	VAL	N-CA-C	5.89	116.07	110.53
45	e	383	LYS	N-CA-C	-5.87	104.88	111.28
48	z	124	THR	N-CA-C	5.87	117.68	111.28
45	e	202	GLU	N-CA-C	-5.84	102.99	110.53
45	e	1317	GLU	N-CA-C	5.80	117.27	111.07
45	e	787	VAL	N-CA-C	5.71	116.49	110.72
1	E	545	VAL	N-CA-C	-5.68	105.86	111.77
29	f	2541	U	P-O3'-C3'	5.67	128.71	120.20
2	K	36	ILE	N-CA-C	5.66	121.10	108.88
46	g	171	GLU	N-CA-CB	5.63	119.01	110.28

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
45	e	462	ILE	N-CA-C	-5.60	104.91	110.62
41	s	114	ILE	CA-C-N	5.59	132.22	121.54
41	s	114	ILE	C-N-CA	5.59	132.22	121.54
45	e	490	SER	N-CA-C	5.53	116.66	109.64
41	s	7	ASN	N-CA-C	5.52	117.53	109.30
45	e	1505	PHE	CA-CB-CG	5.51	119.31	113.80
42	t	136	GLU	CA-CB-CG	5.48	125.07	114.10
45	e	517	ASN	N-CA-C	5.48	117.06	111.14
20	T	94	LEU	CA-C-N	-5.45	112.73	121.35
20	T	94	LEU	C-N-CA	-5.45	112.73	121.35
41	s	108	GLU	CA-CB-CG	5.43	124.95	114.10
45	e	788	SER	N-CA-C	5.43	117.08	110.41
45	e	691	ASP	N-CA-C	-5.39	106.47	113.16
45	e	19	GLY	N-CA-C	5.39	118.86	111.54
48	z	19	GLY	N-CA-C	5.39	119.43	112.54
45	e	896	PHE	N-CA-C	5.38	117.22	111.36
49	0	94	THR	N-CA-C	5.35	117.11	111.28
48	z	29	ALA	N-CA-C	-5.34	105.57	113.16
45	e	1500	LEU	N-CA-C	-5.34	102.55	111.37
17	Q	83	GLU	CA-C-N	5.33	131.72	121.54
17	Q	83	GLU	C-N-CA	5.33	131.72	121.54
29	f	1307	G	P-O3'-C3'	5.32	128.19	120.20
45	e	133	ILE	CA-C-N	-5.32	113.14	119.05
45	e	133	ILE	C-N-CA	-5.32	113.14	119.05
45	e	1480	ILE	N-CA-C	5.32	116.09	110.72
29	f	282	G	C2'-C3'-O3'	5.32	121.68	113.70
29	f	1815	U	P-O3'-C3'	5.32	128.17	120.20
45	e	1314	ARG	N-CA-C	5.29	117.79	111.71
45	e	30	PHE	N-CA-C	5.25	117.01	111.28
45	e	548	ILE	CB-CA-C	-5.24	108.80	114.35
45	e	142	GLU	N-CA-C	-5.22	101.37	109.72
48	z	18	VAL	N-CA-C	-5.21	102.86	109.58
45	e	1459	VAL	CB-CA-C	-5.21	107.28	111.71
48	z	117	ARG	N-CA-C	-5.21	105.60	111.28
38	p	79	GLN	CA-CB-CG	5.20	124.50	114.10
45	e	59	GLU	N-CA-C	5.18	117.01	111.36
49	0	89	THR	N-CA-C	5.17	117.85	109.06
34	l	317	PRO	CA-C-N	5.17	131.42	121.54
34	l	317	PRO	C-N-CA	5.17	131.42	121.54
48	z	139	VAL	N-CA-C	5.16	115.38	110.53
45	e	450	SER	N-CA-C	5.15	116.58	111.07
45	e	1252	VAL	CA-C-N	-5.14	114.10	120.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
45	e	1252	VAL	C-N-CA	-5.14	114.10	120.79
45	e	570	SER	N-CA-C	5.13	117.30	110.53
48	z	103	ASN	N-CA-C	5.12	116.98	109.24
45	e	1453	ASN	N-CA-C	5.12	117.72	110.50
3	G	449	VAL	CA-C-N	5.11	129.53	121.56
3	G	449	VAL	C-N-CA	5.11	129.53	121.56
49	0	104	ARG	N-CA-C	5.10	118.48	111.54
48	z	147	ASN	CA-C-N	-5.09	114.33	119.83
48	z	147	ASN	C-N-CA	-5.09	114.33	119.83
1	E	260	GLY	CA-C-N	-5.07	110.85	121.80
1	E	260	GLY	C-N-CA	-5.07	110.85	121.80
45	e	796	LEU	N-CA-C	-5.06	105.77	111.28
45	e	1459	VAL	N-CA-C	5.05	116.23	111.48
45	e	377	TRP	N-CA-C	5.01	116.82	111.36
29	f	2537	U	P-O3'-C3'	5.00	127.70	120.20

There are no chirality outliers.

All (13) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
3	G	510	ASN	Peptide
15	O	20	GLY	Peptide
21	U	83	LYS	Peptide
45	e	392	GLY	Peptide
46	g	8	GLU	Peptide
33	k	141	GLY	Peptide
34	l	13	GLY	Peptide
34	l	318	LEU	Peptide
38	p	158	ASP	Peptide
38	p	30	THR	Peptide
38	p	76	ALA	Peptide
39	q	21	LYS	Peptide
43	u	12	TRP	Peptide

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	A	4206	0	4232	63	0
1	B	5049	0	5118	110	0
1	C	3759	0	3798	86	0
1	D	3747	0	3784	127	0
1	E	3786	0	3827	126	0
1	F	4093	0	4121	70	0
2	H	601	0	622	8	0
2	J	601	0	622	10	0
2	K	376	0	392	64	0
3	G	3762	0	3638	45	0
4	3	1416	0	1433	12	0
5	4	1441	0	1543	14	0
6	5	1258	0	1342	18	0
7	6	1437	0	1475	21	0
8	7	1272	0	1312	12	0
9	8	796	0	812	8	0
10	I	1003	0	1048	11	0
11	9	518	0	542	7	0
12	L	984	0	1075	7	0
13	M	1080	0	1122	10	0
14	N	1169	0	1211	16	0
15	O	462	0	491	8	0
16	P	737	0	792	2	0
17	Q	876	0	912	10	0
18	R	1013	0	1077	6	0
19	S	850	0	880	7	0
20	T	880	0	942	9	0
21	U	969	0	1078	4	0
22	V	766	0	842	6	0
23	W	645	0	645	11	0
24	Y	436	0	475	6	0
25	Z	410	0	442	4	0
26	b	824	0	888	12	0
27	c	694	0	734	8	0
28	d	207	0	250	3	0
29	f	68802	0	34573	604	0
30	h	2579	0	1304	9	0
31	i	3353	0	1695	41	0
32	j	1874	0	1943	24	0
33	k	3075	0	3142	26	0
34	l	2748	0	2859	23	0
35	m	2351	0	2294	31	0
36	n	1307	0	1377	8	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
37	o	1784	0	1862	10	0
38	p	1804	0	1877	55	0
39	q	1508	0	1572	17	0
40	r	1764	0	1804	16	0
41	s	1346	0	1370	9	0
42	t	1543	0	1608	15	0
43	u	1053	0	1149	51	0
44	a	6573	0	6471	60	0
45	e	11556	0	10822	475	0
46	g	1651	0	1613	22	0
47	x	1579	0	800	24	0
47	y	1556	0	788	16	0
48	z	728	0	337	20	0
49	0	961	0	979	48	0
50	1	85	0	21	1	0
51	w	1709	0	1797	15	0
52	X	608	0	677	66	0
53	v	4376	0	4289	116	0
54	2	602	0	629	26	0
55	a0	1555	0	1659	133	0
56	b0	964	0	1025	187	0
57	A	31	0	12	23	0
57	B	31	0	12	2	0
57	C	93	0	32	64	0
57	D	62	0	22	49	0
57	E	31	0	10	14	0
57	F	31	0	12	18	0
58	E	27	0	11	23	0
59	G	2	0	0	0	0
59	T	1	0	0	0	0
59	W	1	0	0	0	0
59	Z	1	0	0	0	0
59	b	1	0	0	0	0
59	c	1	0	0	0	0
60	3	1	0	0	0	0
60	5	1	0	0	0	0
60	I	1	0	0	0	0
60	R	1	0	0	0	0
60	T	1	0	0	0	0
60	f	3	0	0	0	0
60	h	1	0	0	0	0
60	j	2	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
60	k	1	0	0	0	0
61	f	10	0	19	1	0
All	All	183852	0	145983	2352	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 7.

All (2352) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:e:917:LEU:HD13	45:e:963:MET:SD	1.21	1.74
45:e:272:TYR:HA	45:e:277:MET:SD	1.28	1.66
45:e:277:MET:SD	45:e:278:PRO:HD3	1.34	1.65
1:E:536:LEU:HD22	58:E:901:ADP:C5'	1.23	1.60
1:E:536:LEU:CD2	58:E:901:ADP:H3'	1.14	1.60
45:e:751:VAL:HA	45:e:754:ILE:CD1	1.30	1.58
45:e:272:TYR:HD1	45:e:277:MET:CE	1.13	1.56
1:D:559:SER:CB	1:E:562:TYR:HE1	1.18	1.56
45:e:371:LEU:HD12	45:e:377:TRP:CZ2	1.39	1.55
1:E:536:LEU:CD2	58:E:901:ADP:C3'	1.85	1.55
45:e:272:TYR:CD1	45:e:277:MET:HE1	1.39	1.54
45:e:906:PHE:CE2	45:e:955:LEU:HD23	1.04	1.51
45:e:1053:LEU:CD1	45:e:1105:LEU:HD22	1.38	1.51
1:D:216:ILE:HG22	57:D:902:ATP:N6	1.19	1.50
45:e:906:PHE:CE2	45:e:955:LEU:CD2	1.98	1.46
45:e:371:LEU:HB2	45:e:377:TRP:NE1	1.19	1.46
45:e:918:LEU:CD1	45:e:966:ARG:HH11	1.24	1.45
45:e:1544:ARG:NH2	53:v:276:ARG:HH12	1.00	1.45
1:E:536:LEU:CD2	58:E:901:ADP:H5'2	1.45	1.44
29:f:1259:A:C8	49:0:53:MET:HB2	1.51	1.44
47:y:76:A:O3'	50:1:57:UNK:C	1.64	1.43
29:f:1258:U:H4'	49:0:42:ARG:NH1	1.26	1.43
45:e:277:MET:SD	45:e:278:PRO:CD	2.07	1.42
45:e:917:LEU:CD1	45:e:963:MET:SD	2.08	1.41
45:e:1032:LEU:CD2	45:e:1075:LEU:HD21	1.51	1.40
6:5:34:GLN:CD	53:v:254:LYS:HE2	1.11	1.40
45:e:1501:GLN:O	45:e:1522:LEU:CD1	1.68	1.39
1:D:559:SER:CB	1:E:562:TYR:CE1	2.03	1.38
45:e:918:LEU:HD11	45:e:966:ARG:NH1	1.33	1.38
45:e:1053:LEU:CD1	45:e:1105:LEU:CD2	1.99	1.38
45:e:883:VAL:CB	45:e:956:LEU:HD11	1.52	1.38

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:f:1258:U:C4'	49:0:42:ARG:HH12	1.36	1.38
45:e:751:VAL:CA	45:e:754:ILE:HD11	1.53	1.37
29:f:1748:G:OP1	52:X:44:LYS:CE	1.72	1.37
45:e:1303:MET:HA	45:e:1303:MET:CE	1.48	1.37
45:e:1456:VAL:CG2	45:e:1480:ILE:HD11	1.51	1.37
45:e:323:TYR:CE1	45:e:324:GLU:CG	2.07	1.36
45:e:883:VAL:O	45:e:956:LEU:HD21	1.21	1.36
45:e:918:LEU:CD1	45:e:966:ARG:NH1	1.80	1.35
1:B:489:VAL:HG13	57:C:1001:ATP:N6	1.39	1.35
1:D:562:TYR:CE1	1:D:609:ARG:NH2	1.92	1.35
45:e:323:TYR:CE1	45:e:324:GLU:HG3	1.61	1.34
29:f:1523:U:O4'	56:b0:113:LEU:HD23	1.23	1.33
1:D:561:TRP:CD1	2:K:4:PHE:HB2	1.65	1.31
45:e:272:TYR:CA	45:e:277:MET:SD	2.18	1.31
45:e:751:VAL:O	45:e:754:ILE:HG13	1.29	1.31
57:C:1003:ATP:O1B	1:D:645:ARG:NH1	1.61	1.30
1:D:216:ILE:CG2	57:D:902:ATP:HN61	1.43	1.30
1:E:418:GLY:O	57:E:902:ATP:N3	1.62	1.30
45:e:809:MET:CE	45:e:844:LEU:HD21	1.59	1.30
57:C:1003:ATP:O1B	1:D:645:ARG:CZ	1.78	1.30
45:e:1463:GLY:HA3	45:e:1515:LEU:CD1	1.59	1.29
45:e:1070:ILE:HG22	45:e:1072:ALA:N	1.47	1.29
45:e:1544:ARG:NH2	53:v:276:ARG:NH1	1.81	1.29
38:p:45:ASN:CG	56:b0:26:VAL:HG23	1.58	1.27
1:D:216:ILE:CG2	57:D:902:ATP:N6	1.97	1.26
45:e:906:PHE:CD2	45:e:955:LEU:HD23	1.69	1.26
1:D:559:SER:OG	1:E:562:TYR:CE1	1.86	1.25
2:H:124:ASP:OD1	2:H:152:ASP:HB2	1.27	1.25
47:x:56:C:O2'	47:x:57:G:H5''	1.30	1.25
29:f:1751:G:N1	52:X:78:LEU:CD1	2.00	1.25
29:f:3244:A:N6	55:a0:105:PHE:HD1	1.35	1.25
38:p:46:LEU:N	56:b0:27:ARG:O	1.67	1.25
45:e:371:LEU:HD12	45:e:377:TRP:CE2	1.70	1.25
1:E:536:LEU:CD2	58:E:901:ADP:C5'	1.98	1.24
43:u:120:VAL:CG1	55:a0:197:LEU:HB3	1.68	1.24
45:e:272:TYR:CD1	45:e:277:MET:CE	2.05	1.24
1:D:531:GLY:HA2	57:D:901:ATP:O1B	1.11	1.24
45:e:883:VAL:CG1	45:e:956:LEU:CG	2.14	1.23
29:f:1523:U:C2	56:b0:123:TYR:CE2	2.25	1.23
45:e:371:LEU:CB	45:e:377:TRP:NE1	2.01	1.23
1:C:558:LEU:HD11	1:D:562:TYR:CZ	1.74	1.22

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:559:SER:HB2	1:E:562:TYR:CE1	1.64	1.22
45:e:750:ALA:O	45:e:754:ILE:HG12	1.37	1.21
45:e:1053:LEU:HD12	45:e:1105:LEU:CD2	1.64	1.21
1:E:536:LEU:HD22	58:E:901:ADP:C4'	1.69	1.21
2:K:36:ILE:CG2	2:K:40:GLN:HB3	1.71	1.21
1:D:216:ILE:HG22	57:D:902:ATP:C6	1.74	1.21
29:f:3178:A:O4'	55:a0:4:GLU:OE1	1.59	1.20
29:f:3244:A:C6	55:a0:105:PHE:CE1	2.29	1.20
45:e:1303:MET:HE2	45:e:1303:MET:CA	1.63	1.20
45:e:1463:GLY:CA	45:e:1515:LEU:HD13	1.69	1.20
45:e:906:PHE:CD2	45:e:955:LEU:CD2	2.21	1.20
29:f:1751:G:C2	52:X:78:LEU:HD13	1.74	1.20
1:C:536:LEU:HD11	57:C:1003:ATP:C8	1.78	1.19
45:e:1060:MET:HE1	45:e:1072:ALA:CB	1.72	1.19
29:f:1523:U:C2	56:b0:123:TYR:CD2	2.29	1.19
29:f:3244:A:N1	55:a0:105:PHE:HE1	1.40	1.19
57:D:902:ATP:O1B	1:E:369:ARG:NH1	1.76	1.19
1:B:531:GLY:O	57:C:1001:ATP:O5'	1.58	1.19
29:f:3244:A:N6	55:a0:105:PHE:CD1	2.10	1.18
29:f:1257:C:H5'	48:z:124:THR:CB	1.74	1.18
43:u:120:VAL:HG12	55:a0:197:LEU:CB	1.72	1.18
45:e:932:LEU:C	45:e:933:LEU:N	2.01	1.18
6:5:34:GLN:CD	53:v:254:LYS:CE	2.02	1.17
29:f:1751:G:C6	52:X:78:LEU:CD1	2.27	1.17
45:e:883:VAL:HG12	45:e:956:LEU:CG	1.74	1.17
45:e:1028:PHE:HE2	45:e:1070:ILE:HD13	1.06	1.17
47:x:56:C:O2'	47:x:57:G:C5'	1.93	1.16
1:D:634:ASN:ND2	57:D:901:ATP:O3G	1.78	1.16
45:e:1060:MET:CE	45:e:1072:ALA:HB1	1.75	1.15
1:B:489:VAL:CG1	57:C:1001:ATP:N6	2.09	1.15
1:F:263:LEU:HD22	57:F:901:ATP:C2'	1.77	1.15
43:u:131:VAL:HG11	55:a0:182:ASN:OD1	1.46	1.15
45:e:1070:ILE:O	45:e:1072:ALA:N	1.78	1.15
29:f:1830:G:H5''	56:b0:92:LYS:HB2	1.22	1.14
45:e:917:LEU:HD22	45:e:963:MET:HE1	1.19	1.14
2:K:37:PRO:CB	2:K:38:PRO:HD2	1.76	1.14
29:f:1751:G:N1	52:X:78:LEU:HD11	1.62	1.14
53:v:381:ARG:NH2	53:v:657:GLU:OE1	1.80	1.14
31:i:151:C:C5	56:b0:24:LEU:HD11	1.82	1.14
29:f:1751:G:H5'	52:X:26:LYS:NZ	1.60	1.13
31:i:135:G:H5''	56:b0:49:LYS:HD2	1.26	1.13

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:p:45:ASN:CB	56:b0:26:VAL:HG23	1.78	1.13
29:f:1259:A:C8	49:0:53:MET:CB	2.32	1.13
29:f:1523:U:N1	56:b0:123:TYR:CE2	2.14	1.13
45:e:323:TYR:CE1	45:e:324:GLU:HG2	1.77	1.13
45:e:917:LEU:HD22	45:e:963:MET:CE	1.78	1.13
45:e:1501:GLN:O	45:e:1522:LEU:HD11	0.97	1.13
1:B:532:THR:CG2	57:C:1001:ATP:N3	2.12	1.12
1:C:558:LEU:HD11	1:D:562:TYR:OH	1.48	1.12
45:e:1053:LEU:HD11	45:e:1105:LEU:CD2	1.73	1.12
1:E:536:LEU:HD22	58:E:901:ADP:H5'1	1.29	1.12
45:e:809:MET:HE3	45:e:844:LEU:HD21	1.19	1.12
45:e:1456:VAL:HG23	45:e:1480:ILE:CD1	1.79	1.12
45:e:751:VAL:HA	45:e:754:ILE:CG1	1.80	1.12
29:f:1748:G:OP1	52:X:44:LYS:HE2	0.95	1.11
29:f:1608:C:OP1	56:b0:111:ASN:ND2	1.82	1.11
1:F:263:LEU:HD22	57:F:901:ATP:H2'	1.24	1.11
45:e:1050:LEU:HD11	45:e:1098:LEU:HD23	1.31	1.11
29:f:1824:U:OP1	52:X:3:ARG:NH2	1.83	1.11
1:A:216:ILE:HA	57:A:901:ATP:HN61	1.01	1.10
1:D:531:GLY:CA	57:D:901:ATP:O1B	1.98	1.10
29:f:1221:A:C2	49:0:12:PHE:HE2	1.69	1.10
1:C:262:THR:CG2	57:C:1002:ATP:O3G	2.00	1.10
2:K:36:ILE:HG21	2:K:40:GLN:HB3	1.15	1.10
38:p:50:VAL:HG21	56:b0:27:ARG:HD3	1.34	1.10
1:B:532:THR:CG2	57:C:1001:ATP:C2	2.35	1.09
2:K:39:ASP:HB2	3:G:472:ASN:HB2	1.19	1.09
31:i:151:C:C4	56:b0:24:LEU:HD11	1.86	1.09
45:e:921:ILE:HD11	45:e:967:SER:HB3	1.22	1.09
45:e:918:LEU:HD13	45:e:966:ARG:NH1	1.64	1.09
45:e:1477:GLN:NE2	45:e:1481:THR:CG2	2.15	1.09
45:e:882:ASN:O	45:e:885:GLN:O	1.69	1.09
45:e:1477:GLN:NE2	45:e:1481:THR:OG1	1.84	1.09
1:D:562:TYR:CD1	1:D:609:ARG:NH2	2.15	1.08
1:E:536:LEU:CD2	58:E:901:ADP:C4'	2.28	1.08
1:C:262:THR:HG23	57:C:1002:ATP:O3G	1.51	1.08
45:e:371:LEU:CD1	45:e:377:TRP:CZ2	2.34	1.08
45:e:809:MET:CE	45:e:844:LEU:CD2	2.32	1.08
45:e:1032:LEU:HD21	45:e:1075:LEU:HD21	1.30	1.08
45:e:1032:LEU:HD23	45:e:1075:LEU:HD21	1.25	1.08
45:e:1477:GLN:HE22	45:e:1481:THR:CB	1.65	1.08
1:A:216:ILE:CA	57:A:901:ATP:HN61	1.65	1.07

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:532:THR:HG21	57:C:1001:ATP:C2	1.89	1.07
29:f:1523:U:O2	56:b0:123:TYR:CD2	2.06	1.07
29:f:3243:A:O2'	55:a0:110:PRO:HD2	1.53	1.07
29:f:3244:A:O2'	55:a0:111:PRO:HD3	1.55	1.07
1:E:536:LEU:HD21	58:E:901:ADP:C3'	1.66	1.07
6:5:34:GLN:OE1	53:v:254:LYS:HE2	1.52	1.07
45:e:1463:GLY:HA3	45:e:1515:LEU:HD13	1.27	1.07
1:A:217:GLY:H	57:A:901:ATP:N6	1.52	1.06
45:e:1070:ILE:CG2	45:e:1072:ALA:N	2.18	1.06
45:e:1544:ARG:HH21	53:v:276:ARG:NH1	1.41	1.06
6:5:34:GLN:OE1	53:v:254:LYS:CE	1.99	1.06
45:e:1028:PHE:CE2	45:e:1070:ILE:HD13	1.90	1.06
1:D:606:ALA:HB1	1:E:562:TYR:OH	1.56	1.05
53:v:381:ARG:NH2	54:2:6:LYS:HD3	1.69	1.05
43:u:123:LEU:HD12	55:a0:197:LEU:HD12	1.06	1.05
53:v:374:GLN:HE22	54:2:10:GLY:HA3	1.21	1.05
1:E:536:LEU:CB	58:E:901:ADP:H5'2	1.86	1.05
29:f:1751:G:N1	52:X:78:LEU:HD13	1.68	1.05
45:e:713:LEU:O	45:e:717:LYS:HG3	1.55	1.05
1:D:562:TYR:HE1	1:D:609:ARG:CZ	1.70	1.04
1:E:536:LEU:HB2	58:E:901:ADP:H5'2	1.37	1.04
45:e:906:PHE:HE2	45:e:955:LEU:CD2	1.52	1.04
43:u:124:ARG:HA	55:a0:194:LEU:HD11	1.40	1.04
2:K:39:ASP:CB	3:G:472:ASN:HB2	1.87	1.04
29:f:3244:A:C6	55:a0:105:PHE:HE1	1.72	1.04
53:v:374:GLN:NE2	54:2:9:THR:O	1.89	1.03
29:f:1522:U:C4	56:b0:116:PRO:HG3	1.93	1.03
29:f:1825:G:H5'	52:X:17:ARG:NH2	1.71	1.03
1:C:558:LEU:CD1	1:D:562:TYR:OH	2.06	1.03
1:D:561:TRP:HD1	2:K:4:PHE:CB	1.70	1.03
1:E:560:MET:HE3	1:E:561:TRP:HE1	1.22	1.02
7:6:168:PRO:HG3	55:a0:127:LEU:HD11	1.38	1.02
45:e:883:VAL:O	45:e:956:LEU:CD2	2.06	1.02
45:e:1050:LEU:CD1	45:e:1098:LEU:HD23	1.89	1.02
45:e:1456:VAL:CG2	45:e:1480:ILE:CD1	2.34	1.02
45:e:731:LEU:HD12	45:e:732:GLN:N	1.73	1.02
29:f:1523:U:C4'	56:b0:113:LEU:HD23	1.88	1.01
45:e:323:TYR:CZ	45:e:324:GLU:CG	2.44	1.01
45:e:1060:MET:HE1	45:e:1072:ALA:HB1	1.02	1.01
1:C:694:GLY:HA3	57:C:1003:ATP:H2	1.23	1.00
45:e:1071:THR:O	45:e:1074:GLU:CD	2.04	1.00

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:K:37:PRO:CB	2:K:38:PRO:CD	2.40	1.00
45:e:371:LEU:CB	45:e:377:TRP:HE1	1.64	0.99
1:E:536:LEU:HB2	58:E:901:ADP:C5'	1.91	0.99
29:f:1522:U:OP2	56:b0:121:LYS:NZ	1.94	0.99
29:f:1523:U:H4'	56:b0:113:LEU:HB3	1.42	0.99
45:e:1053:LEU:HD11	45:e:1105:LEU:HD23	1.44	0.99
45:e:809:MET:HE2	45:e:844:LEU:HD21	1.42	0.99
29:f:1259:A:N7	49:0:53:MET:CB	2.25	0.99
45:e:1050:LEU:CD2	45:e:1098:LEU:HA	1.93	0.98
1:D:562:TYR:HE1	1:D:609:ARG:NH2	1.41	0.98
1:E:536:LEU:HD23	58:E:901:ADP:C3'	1.89	0.98
45:e:1050:LEU:HD21	45:e:1098:LEU:HA	1.45	0.98
1:E:560:MET:HE3	1:E:561:TRP:NE1	1.78	0.98
31:i:133:G:H4'	56:b0:55:ASN:CG	1.89	0.98
2:K:36:ILE:CG2	2:K:40:GLN:CB	2.41	0.98
31:i:133:G:H5''	56:b0:55:ASN:OD1	1.63	0.98
1:D:262:THR:CG2	57:D:902:ATP:O3G	2.11	0.98
45:e:1053:LEU:CD1	45:e:1105:LEU:HD23	1.91	0.98
45:e:323:TYR:CD1	45:e:324:GLU:HG2	1.98	0.98
29:f:3244:A:N1	55:a0:105:PHE:CE1	2.31	0.97
29:f:3244:A:O2'	55:a0:111:PRO:CD	2.12	0.97
29:f:2473:C:C2	29:f:2475:G:H1'	1.98	0.97
45:e:371:LEU:CD1	45:e:377:TRP:CE2	2.46	0.97
53:v:374:GLN:HE21	54:2:9:THR:C	1.72	0.97
29:f:1523:U:H5'	56:b0:113:LEU:HB3	1.47	0.96
29:f:1751:G:C6	52:X:78:LEU:HD13	1.97	0.96
1:B:532:THR:HG23	57:C:1001:ATP:N3	1.79	0.96
1:D:606:ALA:HB3	1:E:562:TYR:CZ	2.00	0.96
1:A:217:GLY:H	57:A:901:ATP:HN62	1.09	0.96
53:v:639:SER:HB3	54:2:64:GLU:O	1.63	0.96
1:D:606:ALA:CB	1:E:562:TYR:CZ	2.48	0.96
29:f:1830:G:O3'	56:b0:91:ASN:HB2	1.65	0.96
29:f:3178:A:C4'	55:a0:4:GLU:OE1	2.14	0.95
2:K:37:PRO:HB3	2:K:38:PRO:HD2	1.48	0.95
1:E:261:LYS:O	1:E:263:LEU:N	1.99	0.95
29:f:1751:G:C2	52:X:78:LEU:CD1	2.42	0.95
1:E:536:LEU:CG	58:E:901:ADP:H5'2	1.96	0.95
43:u:123:LEU:HD12	55:a0:197:LEU:CD1	1.94	0.95
45:e:731:LEU:HD12	45:e:731:LEU:C	1.90	0.95
29:f:1259:A:H8	49:0:53:MET:HB2	1.29	0.95
45:e:929:LEU:HD23	45:e:967:SER:O	1.64	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:e:1463:GLY:HA3	45:e:1515:LEU:HD11	1.47	0.94
53:v:374:GLN:NE2	54:2:9:THR:C	2.25	0.94
45:e:1456:VAL:HG23	45:e:1480:ILE:HD11	0.96	0.94
45:e:751:VAL:C	45:e:754:ILE:HG13	1.93	0.94
29:f:3180:A:H4'	55:a0:116:LYS:HD3	1.49	0.94
29:f:1609:C:OP1	56:b0:125:ARG:HD2	1.68	0.94
45:e:323:TYR:CZ	45:e:324:GLU:HG2	2.02	0.94
45:e:1544:ARG:HH22	53:v:276:ARG:HH12	1.00	0.94
45:e:883:VAL:CG1	45:e:956:LEU:HD12	1.45	0.94
45:e:1050:LEU:CG	45:e:1098:LEU:HD23	1.97	0.94
43:u:124:ARG:HG3	55:a0:194:LEU:HD22	1.50	0.94
29:f:3244:A:C6	55:a0:105:PHE:CD1	2.54	0.94
1:D:559:SER:HB2	1:E:562:TYR:HE1	0.77	0.93
31:i:133:G:H4'	56:b0:55:ASN:ND2	1.82	0.93
45:e:1463:GLY:H	45:e:1520:ARG:NH1	1.66	0.93
1:D:606:ALA:CB	1:E:562:TYR:OH	2.16	0.93
45:e:1032:LEU:CD2	45:e:1075:LEU:CD2	2.45	0.93
45:e:751:VAL:CA	45:e:754:ILE:CG1	2.46	0.93
29:f:1751:G:H5'	52:X:26:LYS:HZ2	1.30	0.93
45:e:1463:GLY:H	45:e:1520:ARG:HH11	0.96	0.93
45:e:1463:GLY:HA2	45:e:1515:LEU:HD13	1.47	0.93
45:e:1477:GLN:NE2	45:e:1481:THR:HG21	1.80	0.92
29:f:1258:U:P	49:0:46:ARG:HH22	1.89	0.92
29:f:3243:A:N1	55:a0:108:ILE:N	2.17	0.92
29:f:1257:C:O3'	49:0:46:ARG:NH2	2.02	0.92
43:u:123:LEU:HD13	55:a0:193:GLN:HB3	1.48	0.92
15:O:16:ALA:O	15:O:20:GLY:HA3	1.69	0.92
2:K:44:ILE:HD13	3:G:393:GLU:OE1	1.70	0.92
31:i:134:G:H4'	56:b0:53:HIS:O	1.70	0.92
1:C:694:GLY:HA3	57:C:1003:ATP:C2	2.05	0.91
45:e:883:VAL:CG1	45:e:956:LEU:CD1	0.92	0.91
1:E:261:LYS:H	1:E:261:LYS:HD3	1.34	0.91
1:B:489:VAL:HA	57:C:1001:ATP:HN61	1.33	0.91
45:e:917:LEU:CG	45:e:963:MET:SD	2.58	0.91
45:e:1477:GLN:HE22	45:e:1481:THR:CG2	1.77	0.91
38:p:45:ASN:HB2	56:b0:26:VAL:HG23	1.50	0.91
45:e:1463:GLY:CA	45:e:1515:LEU:CD1	2.35	0.91
1:D:262:THR:HG22	57:D:902:ATP:O3G	1.70	0.91
29:f:1523:U:C4'	56:b0:113:LEU:HB3	2.00	0.91
29:f:1523:U:C5'	56:b0:113:LEU:HB3	1.99	0.91
29:f:1523:U:C5'	56:b0:113:LEU:CD2	2.49	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:K:39:ASP:HB3	3:G:472:ASN:CG	1.96	0.90
1:A:216:ILE:HA	57:A:901:ATP:N6	1.86	0.90
1:D:666:ILE:HD13	57:D:901:ATP:C6	2.05	0.90
1:B:532:THR:HG23	57:C:1001:ATP:C2	2.05	0.90
45:e:918:LEU:HD11	45:e:966:ARG:HH11	0.75	0.90
29:f:3007:U:OP1	55:a0:74:ARG:N	2.04	0.90
43:u:123:LEU:CD1	55:a0:197:LEU:HD12	2.00	0.90
1:A:216:ILE:CA	57:A:901:ATP:N6	2.35	0.89
47:y:8:U:O2	47:y:8:U:H2'	1.71	0.89
1:D:562:TYR:HE1	1:D:609:ARG:NH1	1.69	0.89
1:D:262:THR:HG23	57:D:902:ATP:O3B	1.72	0.89
1:E:562:TYR:CZ	1:E:609:ARG:NH1	2.40	0.89
29:f:1258:U:O5'	49:0:42:ARG:NH1	2.04	0.89
1:A:260:GLY:CA	57:A:901:ATP:H5'2	2.01	0.89
1:D:561:TRP:HD1	2:K:4:PHE:HB2	0.78	0.89
29:f:3243:A:O2'	55:a0:110:PRO:CD	2.21	0.89
1:E:262:THR:HG22	57:E:902:ATP:O2A	1.73	0.88
45:e:277:MET:SD	45:e:278:PRO:HD2	2.12	0.88
29:f:1258:U:C5'	49:0:42:ARG:HH12	1.86	0.88
1:A:217:GLY:N	57:A:901:ATP:N6	2.21	0.88
1:B:532:THR:O	57:C:1001:ATP:O2B	1.91	0.88
29:f:1523:U:H5'	56:b0:113:LEU:CB	2.01	0.88
45:e:883:VAL:C	45:e:956:LEU:HD21	1.99	0.88
57:D:902:ATP:PB	1:E:369:ARG:HH12	1.97	0.88
45:e:1032:LEU:HD21	45:e:1075:LEU:CD2	2.03	0.88
53:v:381:ARG:HH21	54:2:6:LYS:HD3	1.32	0.88
29:f:1522:U:C5	56:b0:116:PRO:HG3	2.09	0.88
29:f:2383:C:N4	55:a0:91:LYS:HG2	1.89	0.87
45:e:929:LEU:HD11	45:e:967:SER:OG	1.71	0.87
43:u:135:LEU:HD22	55:a0:181:ALA:CB	2.04	0.87
45:e:1066:ARG:NH1	45:e:1111:GLN:HE22	1.72	0.87
2:K:37:PRO:HB2	2:K:38:PRO:HD2	1.55	0.87
29:f:1222:G:OP2	49:0:57:THR:OG1	1.90	0.87
45:e:883:VAL:HG13	45:e:956:LEU:CG	1.94	0.87
29:f:2382:G:N7	55:a0:91:LYS:NZ	2.23	0.87
1:A:260:GLY:HA2	57:A:901:ATP:H5'2	1.55	0.87
2:K:39:ASP:OD2	3:G:472:ASN:ND2	2.07	0.87
38:p:45:ASN:OD1	56:b0:27:ARG:N	2.06	0.87
43:u:124:ARG:HG3	55:a0:194:LEU:CD2	2.04	0.87
43:u:120:VAL:HG12	55:a0:197:LEU:HB3	0.90	0.86
29:f:1221:A:C2	49:0:12:PHE:CE2	2.62	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:e:932:LEU:HB3	45:e:964:PHE:HZ	1.38	0.86
29:f:1751:G:H5'	52:X:26:LYS:HZ1	1.35	0.86
29:f:1751:G:C4	52:X:78:LEU:HD13	2.09	0.86
1:C:536:LEU:CD1	57:C:1003:ATP:C8	2.57	0.86
45:e:751:VAL:O	45:e:754:ILE:CG1	2.19	0.86
1:C:698:LEU:HD13	57:C:1003:ATP:O2'	1.75	0.86
2:K:44:ILE:O	2:K:45:PHE:HB2	1.75	0.86
29:f:1824:U:O2'	52:X:17:ARG:NH2	2.08	0.86
1:E:536:LEU:HD23	58:E:901:ADP:H5'2	1.52	0.85
45:e:277:MET:CE	45:e:278:PRO:HD3	2.06	0.85
1:D:216:ILE:HG22	57:D:902:ATP:C5	2.09	0.85
29:f:1521:G:OP1	56:b0:69:SER:OG	1.95	0.85
45:e:324:GLU:O	45:e:327:THR:OG1	1.93	0.85
29:f:1831:U:OP1	56:b0:91:ASN:HA	1.75	0.85
45:e:809:MET:HE3	45:e:844:LEU:CD2	1.99	0.85
45:e:883:VAL:HG11	45:e:956:LEU:HD12	0.95	0.85
29:f:1258:U:C4'	49:0:42:ARG:NH1	2.13	0.85
29:f:1523:U:C5'	56:b0:113:LEU:HD22	2.07	0.85
29:f:1831:U:H5'	56:b0:91:ASN:HB3	1.57	0.85
1:E:562:TYR:OH	1:E:609:ARG:NH2	2.10	0.84
1:D:216:ILE:CB	57:D:902:ATP:HN61	1.90	0.84
45:e:323:TYR:CD1	45:e:324:GLU:CG	2.59	0.84
1:B:532:THR:HA	57:C:1001:ATP:H5'2	1.57	0.84
1:D:561:TRP:HE1	2:K:5:VAL:H	1.24	0.84
29:f:1259:A:N7	49:0:53:MET:HG3	1.92	0.84
45:e:883:VAL:HG13	45:e:956:LEU:CD1	0.68	0.84
45:e:1502:PHE:HD1	45:e:1522:LEU:HD21	1.42	0.84
45:e:1505:PHE:HB2	45:e:1514:ILE:HG12	1.60	0.84
1:B:532:THR:CG2	57:C:1001:ATP:C4	2.60	0.84
1:E:261:LYS:O	1:E:262:THR:C	2.20	0.84
29:f:1824:U:OP1	52:X:3:ARG:NH1	2.11	0.84
29:f:3007:U:H5'	55:a0:73:PHE:CD2	2.12	0.83
38:p:45:ASN:CG	56:b0:26:VAL:CG2	2.49	0.83
45:e:1053:LEU:HD21	45:e:1102:CYS:HA	1.60	0.83
45:e:809:MET:HE2	45:e:844:LEU:CD2	2.00	0.83
53:v:643:ALA:CB	54:2:64:GLU:HG2	2.08	0.83
45:e:931:GLY:O	45:e:933:LEU:N	2.11	0.83
45:e:1049:ARG:HD2	45:e:1086:MET:HE1	1.61	0.83
29:f:1751:G:C5	52:X:78:LEU:HD13	2.13	0.83
29:f:3243:A:HO2'	55:a0:110:PRO:HD2	1.40	0.83
1:B:489:VAL:CG1	57:C:1001:ATP:HN62	1.90	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:f:1825:G:H5'	52:X:17:ARG:HH21	1.40	0.83
45:e:371:LEU:HB2	45:e:377:TRP:CD1	2.12	0.82
45:e:804:ILE:HD12	45:e:809:MET:SD	2.17	0.82
45:e:906:PHE:CD2	45:e:955:LEU:HD22	2.13	0.82
1:A:216:ILE:HB	57:A:901:ATP:N6	1.94	0.82
29:f:1229:G:H4'	49:0:32:ASN:OD1	1.79	0.82
29:f:1824:U:OP1	52:X:3:ARG:CZ	2.27	0.82
1:B:418:GLY:HA3	57:B:901:ATP:C2	2.15	0.82
2:K:37:PRO:HG2	2:K:40:GLN:OE1	1.79	0.82
45:e:1463:GLY:HA2	45:e:1520:ARG:HD3	1.59	0.82
1:D:418:GLY:HA3	57:D:902:ATP:C2	2.14	0.82
45:e:1028:PHE:HE2	45:e:1070:ILE:CD1	1.89	0.82
45:e:914:TYR:HE1	45:e:962:LEU:HD13	1.44	0.82
1:E:263:LEU:O	1:E:266:ARG:N	2.12	0.81
29:f:1830:G:H5''	56:b0:92:LYS:CB	2.08	0.81
45:e:917:LEU:HB3	45:e:963:MET:SD	2.19	0.81
1:D:561:TRP:NE1	2:K:5:VAL:H	1.79	0.81
29:f:1222:G:N7	49:0:57:THR:HB	1.96	0.81
43:u:131:VAL:CG1	55:a0:182:ASN:OD1	2.27	0.81
1:B:558:LEU:CD1	1:C:562:TYR:OH	2.27	0.81
2:K:39:ASP:CB	3:G:472:ASN:CB	2.59	0.81
45:e:931:GLY:C	45:e:933:LEU:N	2.38	0.81
45:e:1499:HIS:O	45:e:1503:SER:N	2.13	0.81
1:A:262:THR:CG2	57:A:901:ATP:O3G	2.29	0.81
45:e:1050:LEU:HD21	45:e:1098:LEU:HD23	1.61	0.81
1:E:536:LEU:HD22	58:E:901:ADP:C3'	1.79	0.81
45:e:751:VAL:C	45:e:754:ILE:CG1	2.53	0.81
45:e:1049:ARG:NH1	45:e:1086:MET:SD	2.52	0.81
45:e:1070:ILE:C	45:e:1072:ALA:N	2.38	0.81
29:f:1523:U:C1'	56:b0:123:TYR:CE2	2.63	0.81
45:e:222:LEU:HD12	45:e:226:ASN:ND2	1.94	0.81
45:e:272:TYR:CD1	45:e:277:MET:HE3	2.16	0.81
45:e:1444:LYS:HD2	45:e:1455:GLN:HE21	1.45	0.81
53:v:328:LYS:HE2	53:v:330:GLU:HG2	1.62	0.81
29:f:1258:U:H4'	49:0:42:ARG:HH12	0.66	0.80
45:e:910:SER:HB2	45:e:955:LEU:HD21	1.63	0.80
1:E:260:GLY:HA2	57:E:902:ATP:O2A	1.81	0.80
29:f:1750:A:OP2	52:X:42:LYS:NZ	2.11	0.80
29:f:2383:C:C2	55:a0:91:LYS:HE2	2.15	0.80
45:e:371:LEU:CB	45:e:377:TRP:CD1	2.65	0.80
45:e:921:ILE:HD11	45:e:967:SER:CB	2.09	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:e:1050:LEU:HD21	45:e:1098:LEU:CD2	2.11	0.80
53:v:381:ARG:NH1	54:2:7:THR:O	2.14	0.80
1:D:606:ALA:HB3	1:E:562:TYR:CE2	2.16	0.80
1:A:260:GLY:HA2	57:A:901:ATP:C5'	2.12	0.80
1:D:216:ILE:CB	57:D:902:ATP:N6	2.45	0.80
1:D:559:SER:OG	1:E:562:TYR:CD1	2.32	0.80
29:f:1558:A:N3	56:b0:34:LEU:HD12	1.97	0.80
47:x:58:A:H8	47:x:58:A:OP2	1.63	0.80
2:K:36:ILE:HG22	2:K:40:GLN:CB	2.11	0.79
29:f:1523:U:H5'	56:b0:113:LEU:CD2	2.12	0.79
1:B:489:VAL:HG13	57:C:1001:ATP:C6	2.16	0.79
45:e:1057:THR:OG1	45:e:1105:LEU:HD13	1.82	0.79
45:e:932:LEU:CB	45:e:964:PHE:HZ	1.95	0.79
45:e:1032:LEU:HD23	45:e:1075:LEU:CD2	2.11	0.79
1:B:558:LEU:HD22	1:C:562:TYR:CZ	2.17	0.79
2:K:40:GLN:HA	3:G:470:PHE:O	1.83	0.79
45:e:751:VAL:CA	45:e:754:ILE:CD1	2.27	0.79
45:e:914:TYR:CE1	45:e:962:LEU:HD13	2.17	0.79
45:e:1050:LEU:CD2	45:e:1098:LEU:HD23	2.11	0.79
31:i:134:G:OP1	56:b0:56:ARG:HD3	1.83	0.79
1:D:666:ILE:CD1	57:D:901:ATP:C6	2.66	0.79
38:p:53:PRO:HD3	56:b0:32:PHE:CD2	2.17	0.79
45:e:918:LEU:CD1	45:e:966:ARG:HH12	1.93	0.79
45:e:1502:PHE:CD1	45:e:1522:LEU:HD21	2.18	0.79
29:f:1523:U:O4'	56:b0:113:LEU:CD2	2.19	0.78
45:e:917:LEU:HD22	45:e:963:MET:SD	2.23	0.78
29:f:1523:U:H5'	56:b0:113:LEU:HD22	1.65	0.78
29:f:2523:A:OP1	56:b0:31:THR:HG22	1.83	0.78
38:p:45:ASN:HB2	56:b0:26:VAL:CG2	2.13	0.78
1:F:263:LEU:CD2	57:F:901:ATP:O2'	2.32	0.78
1:D:560:MET:HG3	1:D:561:TRP:CE3	2.19	0.78
29:f:1259:A:N7	49:0:53:MET:CG	2.47	0.78
29:f:1825:G:OP2	52:X:49:SER:OG	2.01	0.78
45:e:222:LEU:CD1	45:e:226:ASN:ND2	2.47	0.78
1:F:263:LEU:CD2	57:F:901:ATP:C2'	2.60	0.77
29:f:1833:G:OP2	56:b0:114:VAL:CG2	2.31	0.77
2:J:224:ASP:OD1	2:J:252:ASP:O	2.02	0.77
38:p:45:ASN:CB	56:b0:26:VAL:CG2	2.62	0.77
43:u:124:ARG:N	55:a0:194:LEU:HD21	1.99	0.77
1:D:606:ALA:HB1	1:E:562:TYR:HH	1.50	0.77
29:f:2988:C:OP1	55:a0:68:ARG:NH1	2.17	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:i:133:G:C5'	56:b0:55:ASN:OD1	2.33	0.77
45:e:141:CYS:SG	45:e:221:LYS:HD2	2.24	0.77
29:f:3007:U:OP1	55:a0:73:PHE:HA	1.85	0.77
45:e:1050:LEU:HD11	45:e:1098:LEU:CD2	2.13	0.77
45:e:1050:LEU:HD21	45:e:1098:LEU:CA	2.14	0.77
29:f:1523:U:O2	56:b0:123:TYR:CG	2.37	0.77
31:i:134:G:H5''	56:b0:53:HIS:O	1.83	0.77
45:e:1057:THR:HG23	45:e:1108:THR:OG1	1.83	0.77
47:x:26:G:O6	47:x:43:G:O6	2.01	0.77
2:K:36:ILE:HG22	2:K:40:GLN:HB2	1.67	0.76
45:e:883:VAL:HG12	45:e:956:LEU:HD11	0.82	0.76
45:e:1463:GLY:N	45:e:1520:ARG:HH11	1.78	0.76
45:e:1477:GLN:CD	45:e:1481:THR:OG1	2.28	0.76
29:f:2383:C:C4	55:a0:91:LYS:HG2	2.20	0.76
29:f:1523:U:C6	56:b0:123:TYR:CE2	2.74	0.76
29:f:3006:A:HO2'	55:a0:73:PHE:HE2	1.33	0.76
33:k:262:TRP:N	55:a0:64:PHE:O	2.18	0.76
29:f:1612:A:P	52:X:46:ARG:NH1	2.59	0.76
29:f:3006:A:O2'	55:a0:73:PHE:HE2	1.67	0.76
45:e:1070:ILE:CB	45:e:1072:ALA:N	2.49	0.76
45:e:906:PHE:HD2	45:e:955:LEU:CD2	1.96	0.76
29:f:2444:C:H2'	29:f:2445:A:H8	1.51	0.75
45:e:883:VAL:HG11	45:e:956:LEU:CD1	1.24	0.75
45:e:1456:VAL:HG21	45:e:1480:ILE:HD11	1.64	0.75
29:f:1830:G:O2'	56:b0:91:ASN:CB	2.35	0.75
1:D:216:ILE:CG2	57:D:902:ATP:C6	2.58	0.75
2:K:36:ILE:CG2	2:K:37:PRO:HD2	2.16	0.75
29:f:1258:U:C5'	49:0:42:ARG:NH1	2.46	0.75
1:C:536:LEU:CD1	57:C:1003:ATP:N7	2.50	0.75
29:f:1524:A:OP1	56:b0:112:THR:N	2.20	0.75
43:u:127:LYS:CD	55:a0:194:LEU:HD12	2.17	0.75
1:D:216:ILE:HG22	57:D:902:ATP:HN61	0.76	0.74
31:i:134:G:C5'	56:b0:53:HIS:O	2.35	0.74
45:e:272:TYR:CB	45:e:277:MET:SD	2.76	0.74
1:F:258:GLY:O	57:F:901:ATP:H2	1.70	0.74
31:i:135:G:OP1	56:b0:49:LYS:NZ	2.14	0.74
53:v:288:SER:HB3	53:v:332:LEU:HD12	1.70	0.74
45:e:1547:GLY:O	53:v:440:ARG:HG2	1.88	0.74
1:B:128:VAL:HG11	1:B:135:GLN:NE2	2.03	0.74
38:p:46:LEU:HD12	56:b0:28:THR:O	1.88	0.74
45:e:1501:GLN:O	45:e:1522:LEU:HD13	1.84	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:634:ASN:HD21	57:D:901:ATP:PG	2.10	0.74
2:K:40:GLN:O	2:K:41:GLN:O	2.05	0.74
43:u:135:LEU:HD22	55:a0:181:ALA:HB1	1.67	0.74
45:e:323:TYR:HE1	45:e:324:GLU:HG3	1.44	0.74
45:e:1435:ASP:CG	45:e:1514:ILE:H	1.95	0.74
1:F:258:GLY:N	57:F:901:ATP:O1B	2.20	0.74
29:f:3180:A:H4'	55:a0:116:LYS:CD	2.18	0.73
45:e:272:TYR:HD1	45:e:277:MET:HE1	0.57	0.73
47:x:56:C:HO2'	47:x:57:G:C5'	1.92	0.73
43:u:123:LEU:CD1	55:a0:193:GLN:HB3	2.17	0.73
1:C:561:TRP:CD2	2:K:8:LEU:HD11	2.24	0.73
29:f:1523:U:C2	56:b0:123:TYR:CZ	2.76	0.73
43:u:135:LEU:CD2	55:a0:181:ALA:HB3	2.17	0.73
45:e:266:ARG:O	45:e:270:VAL:HG23	1.88	0.73
43:u:135:LEU:HD21	55:a0:181:ALA:HB3	1.71	0.73
31:i:134:G:C4'	56:b0:53:HIS:O	2.37	0.73
43:u:135:LEU:CD2	55:a0:181:ALA:CB	2.66	0.73
1:A:216:ILE:CB	57:A:901:ATP:N6	2.51	0.73
1:B:558:LEU:HD13	1:C:562:TYR:OH	1.89	0.73
45:e:149:LYS:HB3	45:e:150:PRO:HD3	1.69	0.73
29:f:1610:G:P	56:b0:125:ARG:NH2	2.62	0.73
45:e:1499:HIS:HA	45:e:1503:SER:H	1.53	0.73
53:v:211:LYS:HE2	53:v:222:LEU:HD11	1.71	0.73
29:f:1610:G:OP2	56:b0:125:ARG:NH1	2.22	0.72
29:f:1751:G:C5'	52:X:26:LYS:NZ	2.47	0.72
45:e:731:LEU:C	45:e:731:LEU:CD1	2.62	0.72
1:D:262:THR:CG2	57:D:902:ATP:PG	2.77	0.72
45:e:691:ASP:O	45:e:695:CYS:N	2.21	0.72
1:D:562:TYR:HE1	1:D:609:ARG:HH12	1.36	0.72
29:f:1612:A:H5''	52:X:51:LEU:HD22	1.70	0.72
45:e:272:TYR:CE1	45:e:277:MET:HE1	2.18	0.72
15:O:16:ALA:O	15:O:20:GLY:CA	2.36	0.72
31:i:133:G:O3'	56:b0:55:ASN:HA	1.89	0.72
31:i:134:G:O2'	56:b0:52:PRO:HB3	1.90	0.72
45:e:906:PHE:HD2	45:e:955:LEU:HD22	1.52	0.72
45:e:932:LEU:HB3	45:e:964:PHE:CZ	2.23	0.72
48:z:105:GLN:HA	48:z:143:VAL:HA	1.71	0.72
53:v:374:GLN:HE22	54:2:10:GLY:CA	2.02	0.72
1:B:489:VAL:CA	57:C:1001:ATP:HN61	2.03	0.72
29:f:1751:G:N3	52:X:78:LEU:HD13	2.04	0.72
45:e:883:VAL:HG12	45:e:956:LEU:CD1	1.34	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:e:917:LEU:CB	45:e:963:MET:SD	2.77	0.72
43:u:124:ARG:HD2	55:a0:199:TYR:CG	2.24	0.72
6:5:34:GLN:OE1	53:v:254:LYS:NZ	2.22	0.72
45:e:1145:ASN:HB2	45:e:1147:VAL:HG22	1.72	0.72
47:x:58:A:OP2	47:x:58:A:C8	2.43	0.72
1:D:561:TRP:CD1	2:K:4:PHE:CB	2.55	0.71
45:e:1477:GLN:HE21	45:e:1481:THR:HG21	1.53	0.71
45:e:323:TYR:CZ	45:e:324:GLU:HG3	2.16	0.71
1:C:698:LEU:HD22	57:C:1003:ATP:O2'	1.89	0.71
1:B:532:THR:HG22	57:C:1001:ATP:C4	2.26	0.71
45:e:105:VAL:HG22	46:g:1:MET:HE1	1.72	0.71
45:e:932:LEU:C	45:e:964:PHE:CZ	2.69	0.71
47:x:56:C:O2'	47:x:57:G:O5'	2.05	0.71
48:z:19:GLY:HA3	48:z:55:GLY:HA2	1.72	0.71
38:p:44:ARG:O	56:b0:28:THR:HA	1.91	0.71
45:e:917:LEU:CD2	45:e:963:MET:SD	2.79	0.71
1:E:262:THR:CG2	57:E:902:ATP:O2A	2.39	0.71
2:K:39:ASP:CB	3:G:472:ASN:CG	2.63	0.71
29:f:1524:A:OP2	56:b0:112:THR:O	2.09	0.71
45:e:1514:ILE:HG23	45:e:1522:LEU:HD23	1.73	0.71
45:e:1540:TYR:CE1	53:v:210:PHE:CD2	2.78	0.71
52:X:8:ILE:HD11	52:X:65:LEU:HD13	1.72	0.71
45:e:978:THR:HG23	45:e:1023:ARG:NH1	2.06	0.71
49:0:26:PHE:HB2	49:0:87:VAL:HB	1.74	0.70
29:f:2473:C:N3	29:f:2475:G:H1'	2.04	0.70
29:f:1018:G:H1	29:f:1034:U:H3	1.38	0.70
29:f:1763:U:H3	53:v:202:LYS:HZ3	1.39	0.70
45:e:365:THR:HB	45:e:370:PHE:HB3	1.72	0.70
45:e:921:ILE:CD1	45:e:967:SER:HB3	2.12	0.70
29:f:2473:C:N4	29:f:2475:G:N3	2.40	0.70
45:e:918:LEU:CD2	45:e:966:ARG:HH12	2.04	0.70
45:e:929:LEU:CD2	45:e:967:SER:O	2.37	0.70
29:f:1523:U:H1'	56:b0:123:TYR:CD2	2.26	0.70
1:B:531:GLY:O	57:C:1001:ATP:PA	2.49	0.70
45:e:1049:ARG:HD2	45:e:1086:MET:CE	2.21	0.70
1:E:561:TRP:CD1	1:E:561:TRP:H	2.08	0.70
29:f:1259:A:N7	49:0:53:MET:HB2	1.92	0.70
29:f:1523:U:C4'	56:b0:113:LEU:CD2	2.65	0.70
45:e:930:ASN:O	45:e:933:LEU:CB	2.40	0.70
1:A:217:GLY:N	57:A:901:ATP:HN62	1.82	0.69
29:f:2254:U:H5''	44:a:75:GLY:HA3	1.73	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:6:168:PRO:CG	55:a0:127:LEU:HD11	2.18	0.69
29:f:1219:C:OP1	49:0:4:ILE:HG21	1.92	0.69
29:f:1522:U:O4	56:b0:116:PRO:HG3	1.92	0.69
52:X:8:ILE:HD12	53:v:128:PHE:HE1	1.57	0.69
1:D:262:THR:CG2	57:D:902:ATP:O3B	2.39	0.69
38:p:46:LEU:CA	56:b0:27:ARG:O	2.40	0.69
45:e:1053:LEU:HD12	45:e:1105:LEU:HD22	0.73	0.69
1:D:606:ALA:CB	1:E:562:TYR:HH	2.00	0.69
1:E:262:THR:CG2	57:E:902:ATP:PA	2.80	0.69
23:W:21:ARG:HE	23:W:39:TYR:HB2	1.57	0.69
29:f:3183:A:OP1	55:a0:12:LYS:HE3	1.92	0.69
38:p:49:TYR:O	56:b0:30:ALA:HB1	1.93	0.69
1:B:532:THR:HA	57:C:1001:ATP:C5'	2.23	0.69
38:p:52:TRP:HH2	56:b0:27:ARG:CZ	2.05	0.69
45:e:272:TYR:HA	45:e:277:MET:CG	2.23	0.69
1:D:216:ILE:CG2	57:D:902:ATP:C5	2.75	0.69
1:E:536:LEU:HD23	58:E:901:ADP:C2'	2.22	0.69
29:f:1833:G:P	56:b0:114:VAL:HB	2.33	0.69
29:f:3244:A:C8	55:a0:109:PRO:HB3	2.27	0.69
29:f:3244:A:HO2'	55:a0:111:PRO:HD3	1.55	0.69
45:e:104:LYS:H	46:g:1:MET:HE3	1.58	0.69
45:e:1050:LEU:HD22	45:e:1098:LEU:HA	1.74	0.69
47:x:1:G:H2'	47:x:2:G:C8	2.27	0.69
1:E:536:LEU:HD21	58:E:901:ADP:H3'	0.69	0.69
31:i:135:G:OP1	56:b0:53:HIS:HB2	1.93	0.69
45:e:932:LEU:CB	45:e:964:PHE:CZ	2.76	0.69
45:e:1066:ARG:NH1	45:e:1111:GLN:NE2	2.41	0.69
1:D:694:GLY:HA3	57:D:901:ATP:C2	2.28	0.68
53:v:211:LYS:HE2	53:v:222:LEU:CD1	2.22	0.68
29:f:1833:G:OP1	56:b0:114:VAL:HG11	1.92	0.68
45:e:222:LEU:HD12	45:e:226:ASN:HD21	1.57	0.68
29:f:3178:A:C6	55:a0:6:VAL:HB	2.29	0.68
45:e:1545:SER:HB3	53:v:228:MET:HE1	1.75	0.68
1:B:536:LEU:CD1	57:C:1001:ATP:C8	2.77	0.68
29:f:1523:U:C5'	56:b0:113:LEU:HD23	2.20	0.68
38:p:45:ASN:OD1	56:b0:26:VAL:HG23	1.93	0.68
45:e:272:TYR:CD1	45:e:277:MET:SD	2.86	0.68
45:e:1499:HIS:O	45:e:1502:PHE:N	2.26	0.68
51:w:138:VAL:HG23	51:w:147:LYS:HD2	1.75	0.68
29:f:14:U:O2'	56:b0:42:ARG:HG3	1.94	0.68
29:f:1830:G:O2'	56:b0:91:ASN:HB2	1.94	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:634:ASN:ND2	57:D:901:ATP:PG	2.67	0.68
29:f:1524:A:P	56:b0:112:THR:O	2.52	0.68
44:a:90:THR:HG21	44:a:107:ASP:OD1	1.94	0.68
39:q:92:TYR:HB2	39:q:142:ASP:HB3	1.73	0.67
45:e:751:VAL:HA	45:e:754:ILE:HD11	0.68	0.67
1:B:558:LEU:CD2	1:C:562:TYR:OH	2.42	0.67
29:f:1523:U:O4	56:b0:75:LYS:HE3	1.94	0.67
1:E:261:LYS:HD3	1:E:261:LYS:N	2.08	0.67
29:f:2969:A:N7	32:j:215:ASN:ND2	2.42	0.67
43:u:127:LYS:CB	55:a0:194:LEU:HD12	2.24	0.67
1:B:30:ASP:OD1	45:e:1023:ARG:NH2	2.27	0.67
2:K:37:PRO:HB2	2:K:38:PRO:CD	2.19	0.67
29:f:2193:U:H5'	29:f:2194:G:H5'	1.75	0.67
45:e:222:LEU:CD1	45:e:226:ASN:HD21	2.08	0.67
45:e:371:LEU:HD12	45:e:377:TRP:HZ2	1.49	0.67
29:f:1610:G:OP1	56:b0:125:ARG:NH2	2.28	0.67
29:f:3005:A:H5''	55:a0:149:TYR:OH	1.95	0.67
29:f:1751:G:N2	52:X:78:LEU:HD22	2.09	0.67
1:B:92:LEU:HD21	1:B:160:GLU:HB2	1.76	0.67
29:f:3180:A:C4'	55:a0:116:LYS:HD3	2.23	0.66
1:E:536:LEU:CD2	58:E:901:ADP:C2'	2.72	0.66
29:f:1222:G:C8	49:0:57:THR:HB	2.29	0.66
29:f:1254:C:O2	48:z:135:THR:CB	2.43	0.66
29:f:2473:C:N4	29:f:2475:G:C2	2.62	0.66
45:e:1021:PRO:HB3	45:e:1068:MET:HE3	1.77	0.66
29:f:1222:G:C8	49:0:57:THR:CB	2.79	0.66
57:D:902:ATP:O1B	1:E:369:ARG:CZ	2.44	0.66
29:f:2472:U:H2'	29:f:2474:G:H22	1.59	0.66
53:v:471:HIS:HB2	53:v:570:ARG:HH11	1.61	0.66
1:D:561:TRP:NE1	2:K:5:VAL:O	2.29	0.66
45:e:883:VAL:CB	45:e:956:LEU:CD1	2.37	0.66
45:e:929:LEU:CD1	45:e:967:SER:OG	2.22	0.66
45:e:1540:TYR:CD2	53:v:225:ILE:HD13	2.31	0.66
53:v:643:ALA:HB2	54:2:64:GLU:HG2	1.78	0.66
29:f:1940:G:H21	29:f:3362:A:H8	1.44	0.66
53:v:374:GLN:NE2	54:2:10:GLY:HA3	2.04	0.66
53:v:381:ARG:NH2	53:v:657:GLU:CD	2.51	0.66
1:B:489:VAL:HG12	57:C:1001:ATP:HN62	1.60	0.66
1:D:666:ILE:HD11	57:D:901:ATP:N6	2.11	0.66
29:f:2988:C:P	55:a0:68:ARG:NH1	2.68	0.66
31:i:134:G:OP1	56:b0:56:ARG:N	2.27	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:f:2473:C:C5	29:f:2474:G:N2	2.63	0.66
45:e:253:LYS:C	45:e:254:ASN:OD1	2.39	0.66
29:f:1751:G:H1	52:X:78:LEU:HD11	1.56	0.65
45:e:320:LEU:HB3	45:e:328:ILE:HG21	1.79	0.65
29:f:1222:G:C8	49:0:57:THR:HG21	2.31	0.65
44:a:403:LYS:NZ	44:a:512:LEU:O	2.28	0.65
1:D:418:GLY:HA3	57:D:902:ATP:H2	1.59	0.65
29:f:1240:A:OP1	48:z:97:ASN:O	2.14	0.65
1:F:394:HIS:HE1	57:F:901:ATP:H1'	1.60	0.65
45:e:936:VAL:HG21	45:e:964:PHE:CE1	2.31	0.65
1:D:535:THR:OG1	57:D:901:ATP:O2A	2.07	0.65
1:D:562:TYR:CE1	1:D:609:ARG:NH1	2.56	0.65
57:F:901:ATP:O2A	57:F:901:ATP:H3'	1.97	0.65
8:7:84:TYR:HB2	15:O:24:PRO:HD3	1.78	0.65
7:6:164:SER:HB2	55:a0:121:PRO:HG3	1.78	0.65
29:f:3244:A:H61	55:a0:105:PHE:HD1	1.37	0.65
53:v:343:ASP:HB3	53:v:360:LEU:HD12	1.78	0.65
23:W:2:GLY:N	29:f:2138:A:HO2'	1.95	0.65
29:f:1238:C:H4'	48:z:139:VAL:CB	2.27	0.65
45:e:985:ILE:HD11	45:e:1023:ARG:HG3	1.78	0.65
53:v:381:ARG:CZ	54:2:6:LYS:HD3	2.26	0.65
29:f:3018:C:OP1	46:g:9:ASN:ND2	2.29	0.65
2:K:39:ASP:HB3	3:G:472:ASN:CB	2.26	0.65
29:f:687:U:OP2	42:t:36:ARG:NH2	2.30	0.65
29:f:1523:U:C2	56:b0:123:TYR:CG	2.84	0.65
29:f:2836:C:H5	29:f:2852:C:H42	1.44	0.65
29:f:3180:A:C5'	55:a0:116:LYS:HD3	2.27	0.65
53:v:233:VAL:HG21	53:v:278:ASP:HB2	1.78	0.65
45:e:883:VAL:HG12	45:e:956:LEU:CD2	2.26	0.64
45:e:1477:GLN:NE2	45:e:1481:THR:HG23	2.12	0.64
29:f:1221:A:N3	49:0:12:PHE:HE2	1.93	0.64
38:p:45:ASN:OD1	56:b0:26:VAL:HA	1.97	0.64
53:v:328:LYS:HE2	53:v:330:GLU:CG	2.26	0.64
57:C:1003:ATP:O1B	1:D:645:ARG:NH2	2.28	0.64
29:f:2474:G:H1'	29:f:2475:G:C8	2.32	0.64
1:D:562:TYR:HD1	1:D:609:ARG:NH2	1.87	0.64
29:f:1825:G:H5'	52:X:17:ARG:HH22	1.58	0.64
29:f:1610:G:P	56:b0:125:ARG:HH22	2.21	0.64
45:e:1086:MET:HB2	45:e:1092:THR:HG21	1.80	0.64
45:e:1475:SER:OG	45:e:1493:LEU:HD21	1.96	0.64
45:e:1540:TYR:HE1	53:v:210:PHE:CD2	2.14	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:K:43:LEU:H	2:K:43:LEU:HD22	1.62	0.64
43:u:127:LYS:HD2	55:a0:194:LEU:HD12	1.80	0.64
29:f:1523:U:C1'	56:b0:123:TYR:CD2	2.81	0.64
29:f:1523:U:O5'	56:b0:113:LEU:HD22	1.98	0.64
29:f:3243:A:C6	55:a0:108:ILE:O	2.51	0.64
45:e:1050:LEU:HD21	45:e:1098:LEU:CB	2.28	0.64
1:D:560:MET:HG3	1:D:561:TRP:CZ3	2.33	0.63
29:f:1232:C:O2'	49:0:36:GLN:NE2	2.31	0.63
1:E:314:ASP:OD2	57:E:902:ATP:O3G	2.17	0.63
10:I:12:ARG:NH1	29:f:3041:U:OP1	2.32	0.63
45:e:883:VAL:CG1	45:e:956:LEU:HD11	0.20	0.63
45:e:60:THR:O	45:e:64:LYS:HG3	1.98	0.63
45:e:371:LEU:HB3	45:e:377:TRP:CD1	2.32	0.63
45:e:1236:SER:HA	45:e:1239:LYS:HE3	1.80	0.63
47:y:62:C:H2'	47:y:63:G:C8	2.34	0.63
38:p:52:TRP:HH2	56:b0:27:ARG:NH1	1.96	0.63
45:e:1192:ARG:HG2	45:e:1270:TRP:CH2	2.34	0.63
45:e:1506:GLU:HB2	45:e:1533:LYS:HD2	1.79	0.63
48:z:54:LYS:C	48:z:56:ILE:H	2.07	0.63
1:C:262:THR:HG21	57:C:1002:ATP:O3G	1.95	0.63
29:f:2523:A:H3'	56:b0:30:ALA:CB	2.29	0.63
53:v:305:ARG:HD2	53:v:308:ASP:OD2	1.99	0.63
1:E:418:GLY:O	57:E:902:ATP:C2	2.47	0.63
2:K:44:ILE:O	2:K:45:PHE:CB	2.45	0.63
2:J:218:GLU:HB2	2:J:221:ASP:HB2	1.81	0.63
29:f:1610:G:OP2	56:b0:125:ARG:NH2	2.31	0.63
29:f:1751:G:C6	52:X:78:LEU:HD12	2.33	0.63
29:f:3185:U:C5	55:a0:126:VAL:HG11	2.33	0.63
38:p:52:TRP:CH2	56:b0:27:ARG:CZ	2.82	0.63
45:e:59:GLU:HG2	45:e:103:TYR:CD1	2.33	0.63
45:e:807:LYS:CE	45:e:808:ASN:OD1	2.47	0.63
45:e:932:LEU:C	45:e:933:LEU:CA	2.71	0.63
28:d:4:MET:N	29:f:1802:C:OP1	2.32	0.62
1:B:116:GLU:HG2	1:B:153:GLN:HE21	1.63	0.62
29:f:1825:G:P	52:X:49:SER:OG	2.57	0.62
43:u:124:ARG:HA	55:a0:194:LEU:CD1	2.23	0.62
45:e:102:ASP:OD1	45:e:207:ARG:HD2	1.99	0.62
45:e:930:ASN:O	45:e:933:LEU:HB2	1.98	0.62
45:e:1050:LEU:CG	45:e:1098:LEU:CD2	2.74	0.62
45:e:1477:GLN:OE1	45:e:1481:THR:OG1	2.18	0.62
1:F:394:HIS:CE1	57:F:901:ATP:H1'	2.34	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:f:2472:U:H2'	29:f:2474:G:N2	2.13	0.62
1:B:532:THR:HG21	57:C:1001:ATP:N1	2.15	0.62
1:C:531:GLY:N	57:C:1003:ATP:O2B	2.32	0.62
13:M:27:LYS:HB3	13:M:42:LEU:HB2	1.81	0.62
29:f:1523:U:C4	56:b0:123:TYR:CZ	2.88	0.62
45:e:1024:LEU:HD11	45:e:1059:LEU:HD21	1.82	0.62
52:X:8:ILE:CD1	53:v:128:PHE:CE1	2.83	0.62
1:B:489:VAL:HG13	57:C:1001:ATP:HN61	1.56	0.62
24:Y:10:LYS:NZ	56:b0:114:VAL:O	2.31	0.62
29:f:1235:U:O4	48:z:136:ALA:HA	2.00	0.62
45:e:1319:TRP:CD1	45:e:1386:PHE:HE1	2.17	0.62
1:C:698:LEU:CD1	57:C:1003:ATP:O2'	2.47	0.62
27:c:87:ARG:NH1	32:j:97:ASN:OD1	2.32	0.62
31:i:133:G:C4'	56:b0:55:ASN:ND2	2.62	0.62
31:i:151:C:C4	56:b0:24:LEU:CD1	2.75	0.62
29:f:1221:A:N3	49:0:12:PHE:CE2	2.67	0.61
29:f:1751:G:N2	52:X:78:LEU:CD2	2.62	0.61
46:g:111:ASN:ND2	46:g:114:VAL:O	2.32	0.61
48:z:51:LYS:O	48:z:52:GLU:C	2.43	0.61
1:B:52:LEU:HD21	1:B:58:ARG:HG3	1.81	0.61
1:B:536:LEU:HD11	57:C:1001:ATP:N7	2.15	0.61
1:E:216:ILE:HG13	57:E:902:ATP:N7	2.14	0.61
10:I:14:SER:O	10:I:81:GLN:NE2	2.33	0.61
29:f:1610:G:OP2	56:b0:125:ARG:CZ	2.48	0.61
29:f:3348:G:H1	29:f:3357:U:H3	1.47	0.61
1:B:122:ARG:NH1	1:B:147:GLU:HB3	2.15	0.61
1:F:583:VAL:HG23	1:F:628:PHE:HB3	1.83	0.61
29:f:2383:C:N4	55:a0:91:LYS:CG	2.61	0.61
43:u:123:LEU:HD13	55:a0:193:GLN:CB	2.27	0.61
1:B:28:ARG:NE	1:B:48:ILE:HD12	2.15	0.61
29:f:1258:U:P	49:0:46:ARG:NH2	2.64	0.61
29:f:1523:U:O4	56:b0:75:LYS:CE	2.49	0.61
29:f:1750:A:H4'	52:X:26:LYS:NZ	2.15	0.61
1:D:618:MET:HB3	1:D:648:ARG:HH21	1.66	0.61
23:W:21:ARG:HG2	31:i:103:G:H4'	1.82	0.61
29:f:1348:U:O2	29:f:1349:G:N2	2.34	0.61
29:f:1751:G:C5	52:X:78:LEU:CD1	2.79	0.61
45:e:1032:LEU:HG	45:e:1075:LEU:HD11	1.83	0.61
31:i:132:G:H5''	56:b0:94:GLN:CG	2.30	0.61
45:e:883:VAL:CG1	45:e:956:LEU:CD2	2.78	0.61
45:e:1057:THR:OG1	45:e:1105:LEU:CD1	2.47	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:e:1439:LEU:HA	45:e:1460:SER:HB2	1.83	0.61
47:y:1:G:C6	47:y:73:G:C2	2.88	0.61
29:f:1612:A:O5'	52:X:46:ARG:NH1	2.34	0.61
42:t:27:ASP:O	42:t:31:LYS:HB2	2.01	0.61
45:e:1060:MET:HE1	45:e:1072:ALA:HB3	1.79	0.61
52:X:8:ILE:HD12	53:v:128:PHE:CE1	2.36	0.61
53:v:527:PHE:HA	53:v:534:LEU:HD12	1.83	0.61
1:C:524:VAL:HG23	1:C:651:GLN:HB2	1.83	0.60
29:f:2254:U:C5'	44:a:75:GLY:HA3	2.31	0.60
45:e:807:LYS:NZ	45:e:808:ASN:OD1	2.35	0.60
45:e:917:LEU:CD2	45:e:963:MET:CE	2.68	0.60
45:e:1340:TYR:O	45:e:1344:ILE:HG12	2.01	0.60
2:K:36:ILE:HG22	2:K:36:ILE:O	2.01	0.60
23:W:55:ARG:NH2	34:l:59:GLN:OE1	2.34	0.60
29:f:1751:G:C6	52:X:78:LEU:HD11	2.16	0.60
29:f:1751:G:OP1	52:X:26:LYS:NZ	2.31	0.60
6:5:43:LYS:NZ	29:f:1764:U:OP1	2.31	0.60
7:6:80:ARG:HH21	7:6:87:THR:HG21	1.66	0.60
29:f:15:C:H5''	56:b0:42:ARG:CG	2.31	0.60
29:f:1253:U:H5''	29:f:1254:C:H5'	1.83	0.60
35:m:277:LEU:HG	35:m:281:GLU:HG3	1.82	0.60
44:a:4:ARG:NH1	44:a:57:GLY:O	2.35	0.60
45:e:917:LEU:CD2	45:e:963:MET:HE1	2.13	0.60
1:D:561:TRP:HE1	2:K:5:VAL:N	1.96	0.60
5:4:38:ARG:NH2	29:f:1348:U:OP2	2.34	0.60
29:f:439:C:O2'	29:f:494:G:N2	2.34	0.60
29:f:1523:U:N3	56:b0:123:TYR:CZ	2.70	0.60
1:B:536:LEU:HD11	57:C:1001:ATP:C8	2.35	0.60
22:V:66:GLU:OE2	51:w:199:GLN:NE2	2.35	0.60
31:i:151:C:C5	56:b0:24:LEU:CD1	2.74	0.60
29:f:1833:G:OP1	56:b0:114:VAL:CG1	2.49	0.60
45:e:751:VAL:CB	45:e:754:ILE:HD11	2.29	0.60
45:e:883:VAL:HG12	45:e:956:LEU:HG	1.79	0.60
29:f:1603:A:N6	56:b0:71:THR:OG1	2.34	0.60
35:m:50:ARG:NH1	35:m:147:ASP:OD2	2.34	0.60
37:o:87:VAL:HG11	37:o:243:MET:HE1	1.83	0.60
1:C:694:GLY:CA	57:C:1003:ATP:C2	2.83	0.60
29:f:804:C:OP1	34:l:98:ARG:NH2	2.35	0.60
38:p:47:SER:HA	56:b0:27:ARG:HB2	1.84	0.60
1:C:222:GLN:HE22	1:C:380:GLY:H	1.50	0.59
29:f:2383:C:H42	55:a0:91:LYS:HG2	1.67	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:e:149:LYS:HB3	45:e:150:PRO:CD	2.31	0.59
45:e:883:VAL:HG13	45:e:956:LEU:HD13	0.60	0.59
45:e:1477:GLN:CD	45:e:1481:THR:HG1	2.09	0.59
51:w:65:ILE:HG12	51:w:109:ALA:HB3	1.84	0.59
29:f:14:U:O3'	56:b0:42:ARG:NE	2.34	0.59
29:f:3243:A:HO2'	55:a0:110:PRO:CD	2.10	0.59
45:e:1525:LYS:HE3	53:v:214:PHE:HA	1.84	0.59
45:e:1303:MET:HA	45:e:1303:MET:HE2	0.69	0.59
1:B:536:LEU:CD1	57:C:1001:ATP:N7	2.65	0.59
43:u:127:LYS:HB2	55:a0:194:LEU:HD12	1.84	0.59
45:e:712:SER:O	45:e:716:ALA:N	2.27	0.59
45:e:1040:ALA:O	45:e:1049:ARG:NH2	2.34	0.59
2:K:43:LEU:HD22	2:K:43:LEU:N	2.18	0.59
6:5:34:GLN:OE1	53:v:254:LYS:CD	2.50	0.59
6:5:128:LYS:NZ	29:f:1724:U:OP2	2.31	0.59
29:f:1763:U:H3	53:v:202:LYS:NZ	1.99	0.59
29:f:1829:G:H5'	56:b0:93:TYR:CE1	2.38	0.59
35:m:294:ALA:HB1	40:r:217:PHE:HB3	1.83	0.59
1:D:666:ILE:CD1	57:D:901:ATP:N6	2.66	0.59
4:3:173:ARG:NH2	29:f:618:C:OP1	2.35	0.59
20:T:74:ARG:NH2	29:f:1639:C:OP2	2.31	0.59
44:a:619:HIS:NE2	44:a:679:GLY:O	2.36	0.59
29:f:1522:U:H3'	56:b0:113:LEU:HD22	1.85	0.59
25:Z:125:LYS:O	39:q:173:ARG:NH1	2.35	0.59
29:f:1268:G:O2'	29:f:1273:A:N6	2.36	0.59
29:f:1830:G:C5'	56:b0:92:LYS:HB2	2.14	0.59
29:f:3245:A:O2'	55:a0:110:PRO:HB3	2.03	0.59
44:a:359:GLN:HA	44:a:362:LYS:HD2	1.85	0.59
53:v:403:LEU:HD23	53:v:407:ILE:HB	1.85	0.59
1:E:553:LYS:HB3	1:E:556:GLU:HB2	1.84	0.58
7:6:8:GLN:HB3	7:6:64:ILE:HD11	1.85	0.58
43:u:131:VAL:HG22	55:a0:185:ALA:HB3	1.85	0.58
45:e:731:LEU:HD12	45:e:732:GLN:CA	2.32	0.58
49:0:192:ASP:HB2	49:0:197:PHE:HE2	1.67	0.58
29:f:3243:A:N1	55:a0:107:GLY:HA3	2.18	0.58
45:e:1071:THR:O	45:e:1074:GLU:CG	2.51	0.58
29:f:2254:U:H5''	44:a:75:GLY:CA	2.32	0.58
29:f:3244:A:C2	55:a0:105:PHE:HE1	2.17	0.58
14:N:42:ARG:NH2	29:f:2800:G:O6	2.37	0.58
29:f:3008:A:OP1	55:a0:72:HIS:N	2.23	0.58
38:p:45:ASN:OD1	56:b0:26:VAL:CG2	2.51	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:e:917:LEU:HB3	45:e:963:MET:CE	2.33	0.58
14:N:21:ARG:NH2	29:f:640:U:OP1	2.32	0.58
21:U:5:LYS:HB2	21:U:8:GLU:HG2	1.84	0.58
29:f:3007:U:H5'	55:a0:73:PHE:CE2	2.37	0.58
30:h:31:U:O2'	35:m:218:ARG:NH1	2.35	0.58
31:i:21:C:OP1	34:l:193:LYS:NZ	2.36	0.58
54:2:42:ARG:HE	54:2:49:GLN:CD	2.10	0.58
29:f:2384:A:N1	55:a0:96:LYS:CE	2.66	0.58
45:e:1499:HIS:O	45:e:1502:PHE:C	2.46	0.58
6:5:100:ARG:NH1	29:f:1722:U:OP1	2.36	0.58
39:q:89:LYS:HG2	39:q:145:VAL:HG22	1.84	0.58
45:e:1303:MET:CE	45:e:1303:MET:CA	2.30	0.58
32:j:27:ALA:O	32:j:128:ARG:NH2	2.36	0.58
53:v:471:HIS:HB2	53:v:570:ARG:NH1	2.18	0.58
14:N:21:ARG:NH1	29:f:1369:A:OP1	2.36	0.58
27:c:17:ARG:NH1	29:f:860:G:OP1	2.36	0.58
29:f:1354:G:N3	36:n:8:LYS:NZ	2.51	0.58
35:m:166:ALA:HB1	35:m:171:LEU:HD12	1.85	0.58
44:a:975:LYS:HE2	44:a:998:LYS:HA	1.84	0.58
45:e:776:TYR:HB2	45:e:812:LEU:HG	1.85	0.58
45:e:1068:MET:HE2	45:e:1070:ILE:HD11	1.85	0.58
7:6:77:VAL:HG22	7:6:126:VAL:HG23	1.85	0.58
29:f:2471:U:O2	29:f:2474:G:C2	2.56	0.58
45:e:1276:LEU:HD13	45:e:1358:GLN:HG2	1.86	0.57
45:e:1435:ASP:OD2	45:e:1514:ILE:N	2.36	0.57
17:Q:55:LEU:HB2	17:Q:95:PRO:HD3	1.86	0.57
29:f:1257:C:C5'	48:z:124:THR:CB	2.68	0.57
29:f:3187:A:OP1	39:q:23:ARG:NH1	2.37	0.57
31:i:135:G:P	56:b0:53:HIS:H	2.27	0.57
45:e:277:MET:CG	45:e:278:PRO:HD3	2.31	0.57
45:e:1053:LEU:HD11	45:e:1105:LEU:CB	2.35	0.57
29:f:1833:G:OP2	56:b0:114:VAL:HG23	2.03	0.57
40:r:205:SER:OG	40:r:208:ASN:OD1	2.21	0.57
29:f:1231:A:H5''	29:f:1232:C:H5'	1.86	0.57
29:f:1522:U:C4	56:b0:116:PRO:CG	2.80	0.57
45:e:100:ILE:HG22	45:e:207:ARG:HH21	1.69	0.57
47:y:8:U:O2	47:y:8:U:C2'	2.46	0.57
1:C:347:ALA:HB1	1:C:350:ASN:HD22	1.69	0.57
24:Y:5:LYS:HE2	24:Y:13:MET:HE1	1.87	0.57
27:c:49:ARG:NH2	29:f:1793:C:OP2	2.38	0.57
1:A:663:ARG:HG3	1:A:666:ILE:HD12	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:c:4:ARG:NH1	29:f:837:A:OP2	2.37	0.57
1:C:557:LEU:O	1:C:568:ASN:ND2	2.38	0.57
1:C:561:TRP:CZ3	2:K:8:LEU:HD12	2.40	0.57
31:i:134:G:OP1	56:b0:56:ARG:CD	2.52	0.57
45:e:793:ASN:ND2	45:e:1005:ASN:HD21	2.02	0.57
29:f:15:C:H5''	56:b0:42:ARG:HG2	1.86	0.57
45:e:156:THR:HG22	45:e:161:LYS:HA	1.86	0.57
45:e:1057:THR:HG22	45:e:1108:THR:HG21	1.87	0.57
45:e:1544:ARG:NH1	53:v:207:HIS:CE1	2.73	0.57
47:y:62:C:H2'	47:y:63:G:H8	1.68	0.57
53:v:211:LYS:CE	53:v:222:LEU:CD1	2.82	0.57
17:Q:4:LEU:O	17:Q:79:ARG:NH2	2.38	0.57
22:V:68:ARG:NH2	29:f:2219:A:OP2	2.38	0.57
29:f:1830:G:O3'	56:b0:91:ASN:CB	2.47	0.57
1:E:561:TRP:CD1	1:E:561:TRP:N	2.72	0.57
45:e:906:PHE:HE2	45:e:955:LEU:CG	2.15	0.56
46:g:118:HIS:HD1	46:g:120:ASP:H	1.52	0.56
1:B:534:LYS:HG2	1:B:535:THR:HG23	1.87	0.56
29:f:1830:G:O2'	56:b0:91:ASN:ND2	2.37	0.56
29:f:2523:A:H3'	56:b0:30:ALA:HB3	1.87	0.56
30:h:52:G:H21	41:s:9:MET:HE1	1.68	0.56
33:k:140:ASP:OD1	33:k:141:GLY:N	2.36	0.56
43:u:124:ARG:HG3	55:a0:194:LEU:HD21	1.86	0.56
45:e:795:HIS:CD2	45:e:1047:THR:HG23	2.39	0.56
1:B:28:ARG:HE	1:B:48:ILE:HD12	1.70	0.56
1:B:532:THR:C	57:C:1001:ATP:O2A	2.48	0.56
1:D:216:ILE:CG2	57:D:902:ATP:N7	2.68	0.56
5:4:43:PRO:HB2	29:f:728:G:H5''	1.86	0.56
27:c:4:ARG:NH2	29:f:838:G:O6	2.38	0.56
29:f:3180:A:N6	55:a0:167:TYR:CE1	2.73	0.56
36:n:132:THR:HA	36:n:135:VAL:HG12	1.87	0.56
45:e:1152:TYR:HD1	45:e:1193:LEU:HD12	1.68	0.56
53:v:378:ILE:HG12	54:2:8:LEU:O	2.05	0.56
1:A:315:GLU:OE2	57:A:901:ATP:PG	2.64	0.56
31:i:133:G:C4'	56:b0:55:ASN:CG	2.71	0.56
1:F:419:ALA:HB2	57:F:901:ATP:H5'2	1.88	0.56
1:F:285:MET:HE1	1:F:334:VAL:HG21	1.87	0.56
29:f:1390:A:N6	29:f:1418:A:O2'	2.38	0.56
44:a:90:THR:HG21	44:a:107:ASP:H	1.70	0.56
44:a:936:ASP:HA	44:a:996:MET:HE1	1.86	0.56
29:f:2162:U:OP1	32:j:234:LYS:NZ	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:0:43:LYS:HA	49:0:46:ARG:HG2	1.86	0.56
53:v:378:ILE:CG1	54:2:8:LEU:O	2.54	0.56
1:E:562:TYR:OH	1:E:609:ARG:CZ	2.53	0.56
17:Q:9:THR:HG23	17:Q:109:VAL:HG23	1.88	0.56
29:f:2472:U:C2'	29:f:2474:G:N2	2.68	0.56
33:k:59:ASP:HB2	33:k:357:LYS:HE3	1.87	0.56
38:p:49:TYR:O	56:b0:30:ALA:CB	2.53	0.56
1:E:261:LYS:O	1:E:264:MET:N	2.38	0.56
9:8:56:VAL:HG12	9:8:65:VAL:HG22	1.88	0.56
39:q:23:ARG:HE	39:q:39:LYS:HA	1.71	0.56
39:q:57:VAL:HG12	39:q:68:LEU:HD22	1.88	0.56
1:B:532:THR:HG21	57:C:1001:ATP:C4	2.40	0.56
1:B:589:LEU:HB3	1:B:639:ILE:HD13	1.88	0.56
1:C:558:LEU:HD11	1:D:562:TYR:CE1	2.38	0.56
13:M:17:ARG:NH1	29:f:1634:G:N7	2.53	0.56
47:x:55:U:H2'	47:x:56:C:H2'	1.88	0.56
1:D:280:ASN:HB3	1:D:283:GLU:HB2	1.88	0.55
45:e:323:TYR:CG	45:e:324:GLU:HG2	2.40	0.55
45:e:1070:ILE:HB	45:e:1072:ALA:CB	2.35	0.55
45:e:1477:GLN:NE2	45:e:1481:THR:CB	2.43	0.55
52:X:16:ARG:HD2	53:v:135:PHE:CE1	2.41	0.55
2:K:43:LEU:N	2:K:43:LEU:CD2	2.69	0.55
29:f:2447:A:H2'	29:f:2448:G:O4'	2.06	0.55
35:m:64:ILE:HG13	35:m:109:THR:HG21	1.87	0.55
38:p:47:SER:CA	56:b0:27:ARG:HB2	2.37	0.55
40:r:143:SER:C	40:r:144:ASN:HD22	2.14	0.55
1:B:558:LEU:HD11	1:C:562:TYR:OH	2.05	0.55
1:E:431:GLN:HB3	1:E:461:ASN:HD21	1.70	0.55
29:f:1612:A:P	52:X:46:ARG:HH11	2.29	0.55
29:f:2674:A:H5''	41:s:105:GLY:HA3	1.89	0.55
45:e:932:LEU:C	45:e:964:PHE:HZ	2.12	0.55
20:T:87:GLU:OE1	20:T:91:ARG:NH1	2.39	0.55
29:f:2473:C:H5	29:f:2474:G:N2	2.05	0.55
1:E:428:ALA:O	1:E:461:ASN:ND2	2.39	0.55
1:F:337:GLN:HE21	1:F:341:LEU:HD23	1.71	0.55
25:Z:100:TYR:O	29:f:2895:G:O2'	2.24	0.55
29:f:1523:U:N1	56:b0:123:TYR:HE2	1.93	0.55
32:j:111:THR:HB	32:j:136:ILE:HD13	1.87	0.55
45:e:750:ALA:C	45:e:754:ILE:HG12	2.24	0.55
49:0:42:ARG:HG2	49:0:51:VAL:HG11	1.88	0.55
29:f:2482:U:H2'	29:f:2483:G:C8	2.41	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:a:604:TYR:O	44:a:623:LYS:NZ	2.39	0.55
45:e:365:THR:HB	45:e:370:PHE:CB	2.37	0.55
1:B:262:THR:OG1	57:B:901:ATP:O1A	2.25	0.55
32:j:70:ARG:HD2	32:j:72:ARG:HE	1.72	0.55
33:k:66:LYS:O	33:k:70:ARG:NH2	2.39	0.55
45:e:1505:PHE:HB2	45:e:1514:ILE:CG1	2.35	0.55
1:E:562:TYR:CD1	1:E:562:TYR:C	2.85	0.55
10:I:94:TYR:OH	11:9:41:LYS:NZ	2.39	0.55
29:f:1352:A:H4'	29:f:1353:U:H5'	1.88	0.55
29:f:2491:A:H1'	51:w:207:LYS:HE2	1.88	0.55
29:f:3008:A:OP1	55:a0:72:HIS:ND1	2.40	0.55
29:f:3045:G:OP1	33:k:19:ARG:NH2	2.39	0.55
1:A:697:LEU:HD23	1:A:700:ILE:HD13	1.88	0.55
29:f:542:G:H1	29:f:549:U:H3	1.52	0.55
29:f:1259:A:N7	49:0:53:MET:HB3	2.15	0.55
29:f:2473:C:H2'	29:f:2474:G:H4'	1.89	0.55
29:f:2557:A:OP1	32:j:69:TYR:OH	2.24	0.55
45:e:1307:ILE:O	45:e:1311:ILE:HG12	2.06	0.55
7:6:96:ASP:OD1	7:6:97:VAL:N	2.38	0.55
9:8:90:ARG:NH1	29:f:1682:U:O4	2.40	0.55
14:N:44:ASN:ND2	42:t:4:SER:O	2.40	0.55
29:f:1832:C:OP1	56:b0:120:LYS:CE	2.55	0.55
29:f:3180:A:C5	55:a0:167:TYR:CZ	2.95	0.55
45:e:906:PHE:HE2	45:e:955:LEU:HD23	0.74	0.55
45:e:1156:TYR:HB2	45:e:1193:LEU:HD21	1.89	0.55
47:x:1:G:H2'	47:x:2:G:H8	1.72	0.55
1:D:484:VAL:HG13	1:D:488:ASP:HB2	1.88	0.54
29:f:1833:G:OP1	56:b0:114:VAL:HB	2.07	0.54
29:f:2383:C:N3	55:a0:91:LYS:HE2	2.22	0.54
43:u:124:ARG:HD2	55:a0:199:TYR:CD2	2.41	0.54
2:K:40:GLN:C	2:K:41:GLN:O	2.49	0.54
29:f:1221:A:C4	49:0:12:PHE:CZ	2.95	0.54
40:r:61:SER:OG	40:r:63:GLU:OE1	2.25	0.54
45:e:1435:ASP:CG	45:e:1514:ILE:N	2.63	0.54
2:K:40:GLN:O	2:K:41:GLN:C	2.51	0.54
29:f:1256:G:O2'	48:z:124:THR:CB	2.55	0.54
29:f:1522:U:P	56:b0:121:LYS:NZ	2.81	0.54
29:f:1558:A:O2'	56:b0:34:LEU:HD13	2.07	0.54
45:e:917:LEU:HB3	45:e:963:MET:HE3	1.89	0.54
45:e:1070:ILE:HB	45:e:1072:ALA:N	2.22	0.54
1:B:400:LEU:HD12	1:B:404:VAL:HG21	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:490:GLY:H	57:C:1001:ATP:N6	2.06	0.54
1:B:535:THR:HB	1:B:539:LYS:HE2	1.90	0.54
1:E:430:MET:HE1	1:F:248:PRO:HG3	1.89	0.54
38:p:45:ASN:OD1	56:b0:26:VAL:CA	2.56	0.54
45:e:272:TYR:CA	45:e:277:MET:CG	2.85	0.54
53:v:195:LYS:HE3	53:v:196:PHE:CZ	2.43	0.54
1:E:562:TYR:CE2	1:E:609:ARG:NH1	2.75	0.54
14:N:95:SER:OG	14:N:98:THR:OG1	2.25	0.54
29:f:3115:C:OP1	39:q:62:ARG:NH2	2.41	0.54
29:f:3214:U:OP2	43:u:128:ARG:NH1	2.34	0.54
45:e:104:LYS:N	46:g:1:MET:HE3	2.22	0.54
1:D:561:TRP:CD1	2:K:5:VAL:H	2.26	0.54
2:K:39:ASP:HB2	3:G:472:ASN:CB	2.10	0.54
29:f:1242:G:H1	44:a:519:THR:HG22	1.73	0.54
29:f:1524:A:C5'	56:b0:111:ASN:CG	2.81	0.54
29:f:2383:C:C4	55:a0:91:LYS:CG	2.90	0.54
53:v:176:LEU:HD11	53:v:182:PHE:CE1	2.43	0.54
18:R:19:ARG:HD3	18:R:33:ARG:HB2	1.89	0.54
29:f:394:G:N1	29:f:397:A:OP2	2.39	0.54
29:f:1222:G:C8	49:0:57:THR:CG2	2.90	0.54
29:f:3178:A:C8	55:a0:5:PRO:HD2	2.42	0.54
45:e:1499:HIS:O	45:e:1500:LEU:C	2.50	0.54
1:C:639:ILE:HD12	1:C:644:LEU:HD21	1.89	0.54
1:D:561:TRP:CG	2:K:6:LYS:HD3	2.43	0.54
1:E:262:THR:HG22	57:E:902:ATP:PA	2.48	0.54
1:F:245:ILE:O	1:F:348:ARG:NH2	2.41	0.54
29:f:1751:G:P	52:X:26:LYS:HZ1	2.30	0.54
29:f:2384:A:N1	55:a0:96:LYS:HE3	2.23	0.54
35:m:236:LEU:HA	35:m:239:ILE:HG12	1.90	0.54
1:A:513:TYR:HE2	1:A:520:PRO:HA	1.73	0.54
1:C:262:THR:HG23	57:C:1002:ATP:PG	2.48	0.54
1:E:536:LEU:HD23	58:E:901:ADP:C4'	2.21	0.54
2:J:204:PHE:HB2	2:J:266:THR:HA	1.90	0.54
8:7:17:ARG:HG2	8:7:22:HIS:HA	1.90	0.54
29:f:1221:A:C4	49:0:12:PHE:CE2	2.96	0.54
29:f:1523:U:C1'	56:b0:123:TYR:HE2	2.14	0.54
29:f:1524:A:H5'	56:b0:111:ASN:CG	2.33	0.54
29:f:3231:U:H2'	29:f:3232:G:H8	1.73	0.54
44:a:607:ASP:HB3	44:a:663:LYS:HB3	1.90	0.54
1:E:340:THR:HG23	3:G:138:LYS:HB3	1.90	0.53
3:G:226:LEU:HD12	3:G:439:TYR:HB3	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:9:6:ASP:OD1	11:9:32:GLN:N	2.40	0.53
51:w:48:ARG:HG2	51:w:159:LEU:HD23	1.89	0.53
1:A:281:GLY:HA3	1:A:315:GLU:HB2	1.90	0.53
1:F:525:LEU:HD11	1:F:649:LEU:HD23	1.91	0.53
29:f:3042:U:OP2	29:f:3092:C:N4	2.38	0.53
44:a:1005:LEU:HA	44:a:1008:LEU:HD12	1.89	0.53
45:e:332:ASP:HB3	45:e:335:SER:HB3	1.89	0.53
45:e:809:MET:CE	45:e:844:LEU:HD23	2.30	0.53
1:E:286:SER:HB2	1:F:333:ARG:HD2	1.90	0.53
29:f:1751:G:C2	52:X:78:LEU:HD22	2.43	0.53
45:e:1132:ILE:HG21	45:e:1170:GLN:HG3	1.89	0.53
53:v:381:ARG:CZ	54:2:6:LYS:HB3	2.37	0.53
29:f:68:C:OP2	29:f:301:G:N2	2.40	0.53
35:m:120:LYS:O	35:m:248:ARG:NH2	2.42	0.53
45:e:1028:PHE:CD2	45:e:1070:ILE:HG21	2.43	0.53
52:X:21:LYS:HG3	52:X:22:THR:HG23	1.89	0.53
1:B:283:GLU:O	1:B:287:LYS:NZ	2.41	0.53
29:f:1833:G:OP1	56:b0:114:VAL:CB	2.56	0.53
35:m:75:LEU:O	35:m:112:LYS:NZ	2.40	0.53
53:v:198:GLN:HE22	53:v:200:ASP:C	2.16	0.53
1:D:531:GLY:H	57:D:901:ATP:PB	2.31	0.53
1:E:479:VAL:HB	1:E:548:ASN:HD21	1.73	0.53
9:8:44:GLU:OE2	9:8:49:ASN:ND2	2.41	0.53
11:9:44:LYS:HD2	29:f:2111:G:H1'	1.90	0.53
29:f:1256:G:H4'	48:z:128:VAL:CB	2.39	0.53
29:f:2245:C:O2'	32:j:220:GLY:O	2.26	0.53
29:f:2473:C:H5	29:f:2474:G:C2	2.27	0.53
45:e:1560:PHE:CZ	53:v:210:PHE:HE1	2.27	0.53
1:B:536:LEU:HD11	57:C:1001:ATP:C5	2.44	0.53
57:D:902:ATP:PB	1:E:369:ARG:NH1	2.70	0.53
20:T:31:ARG:NH2	29:f:1598:G:OP2	2.42	0.53
29:f:1833:G:OP2	56:b0:114:VAL:HB	2.09	0.53
29:f:3007:U:OP1	55:a0:73:PHE:CA	2.54	0.53
29:f:110:G:OP2	42:t:73:ARG:NH2	2.42	0.53
29:f:1613:A:OP1	52:X:51:LEU:HB3	2.08	0.53
29:f:1747:G:O3'	52:X:53:THR:HG21	2.09	0.53
33:k:284:ARG:NH1	33:k:293:ASN:O	2.42	0.53
35:m:270:LYS:HG2	35:m:273:ARG:HE	1.73	0.53
38:p:51:LYS:N	56:b0:30:ALA:O	2.35	0.53
38:p:51:LYS:O	56:b0:32:PHE:HB3	2.09	0.53
45:e:209:HIS:HA	45:e:212:ILE:HG22	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:e:1540:TYR:CE1	53:v:210:PHE:CG	2.96	0.53
53:v:289:MET:O	53:v:404:LYS:HE3	2.09	0.53
1:E:464:PHE:O	1:E:468:ASN:ND2	2.42	0.53
29:f:1558:A:O3'	56:b0:34:LEU:HB2	2.09	0.53
31:i:133:G:C5'	56:b0:55:ASN:CG	2.82	0.53
44:a:111:TYR:HB2	44:a:125:LEU:HB2	1.91	0.53
45:e:323:TYR:CE2	45:e:324:GLU:HG2	2.42	0.53
8:7:158:THR:OG1	40:r:169:LYS:NZ	2.42	0.53
17:Q:102:LYS:NZ	29:f:3373:U:OP2	2.38	0.53
29:f:1156:C:OP2	37:o:94:LYS:NZ	2.40	0.53
1:B:128:VAL:HG11	1:B:135:GLN:HE21	1.73	0.52
1:D:262:THR:HG23	57:D:902:ATP:PG	2.46	0.52
4:3:118:GLN:NE2	4:3:147:GLU:OE2	2.39	0.52
26:b:2:VAL:N	26:b:90:HIS:O	2.42	0.52
35:m:54:ARG:NH1	35:m:147:ASP:O	2.42	0.52
43:u:120:VAL:HG12	55:a0:197:LEU:CG	2.39	0.52
45:e:1070:ILE:HB	45:e:1072:ALA:HB2	1.91	0.52
47:x:7:G:C6	47:x:49:U:C4	2.97	0.52
1:E:291:GLU:O	1:E:295:ASN:ND2	2.43	0.52
5:4:180:ARG:NH2	29:f:2790:A:OP1	2.42	0.52
11:9:47:ARG:HH21	11:9:58:HIS:HB2	1.73	0.52
45:e:918:LEU:HD21	45:e:966:ARG:HH12	1.75	0.52
45:e:1422:ASN:HB2	45:e:1425:THR:HG22	1.90	0.52
53:v:378:ILE:HG23	54:2:8:LEU:HD22	1.91	0.52
6:5:128:LYS:NZ	29:f:1721:U:O4	2.39	0.52
7:6:80:ARG:HB2	7:6:122:HIS:HB2	1.91	0.52
29:f:3268:A:OP1	36:n:46:ARG:NH2	2.35	0.52
1:C:698:LEU:CD2	57:C:1003:ATP:O2'	2.57	0.52
1:E:663:ARG:NH2	1:E:693:SER:O	2.41	0.52
11:9:16:GLY:O	29:f:3050:U:O2'	2.28	0.52
29:f:1899:G:O2'	29:f:2334:U:O4	2.25	0.52
29:f:3180:A:H5''	55:a0:116:LYS:HD3	1.91	0.52
44:a:612:MET:HE1	44:a:642:CYS:HB2	1.92	0.52
45:e:932:LEU:O	45:e:936:VAL:HG23	2.09	0.52
1:B:600:LEU:HD12	1:C:602:ASP:HB2	1.91	0.52
1:E:479:VAL:O	1:E:548:ASN:ND2	2.43	0.52
4:3:107:LEU:HD12	4:3:152:GLU:HG3	1.92	0.52
8:7:136:ARG:HD2	8:7:139:ARG:HH12	1.74	0.52
29:f:1830:G:O2'	56:b0:91:ASN:CG	2.52	0.52
34:l:266:THR:HG23	34:l:267:VAL:HG13	1.92	0.52
41:s:32:ARG:HD2	41:s:120:ILE:HA	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:u:127:LYS:CB	55:a0:194:LEU:CD1	2.88	0.52
47:y:6:U:H2'	47:y:7:G:C8	2.44	0.52
1:D:577:ARG:HD2	1:D:625:LYS:HD3	1.90	0.52
1:E:261:LYS:H	1:E:261:LYS:CD	2.13	0.52
7:6:77:VAL:HG11	7:6:106:LEU:HD22	1.92	0.52
29:f:1523:U:H1'	56:b0:123:TYR:HD2	1.71	0.52
29:f:2473:C:C5	29:f:2474:G:N3	2.78	0.52
45:e:271:LEU:C	45:e:277:MET:HG3	2.34	0.52
53:v:607:GLY:O	53:v:610:HIS:CD2	2.63	0.52
3:G:145:CYS:SG	3:G:146:GLU:N	2.79	0.52
19:S:70:LYS:HD2	29:f:585:A:H5''	1.92	0.52
41:s:49:LYS:HG3	41:s:64:LYS:HD3	1.92	0.52
45:e:1515:LEU:HD22	45:e:1520:ARG:O	2.10	0.52
1:A:439:LEU:HD23	1:A:440:ILE:HG12	1.92	0.52
1:B:43:VAL:HG23	1:B:120:PRO:HB2	1.92	0.52
1:D:341:LEU:HD23	3:G:183:LYS:HG2	1.91	0.52
29:f:831:G:O2'	29:f:1864:A:N3	2.39	0.52
29:f:3008:A:OP2	55:a0:74:ARG:NH1	2.43	0.52
32:j:241:ARG:HD3	44:a:866:LEU:HD21	1.92	0.52
45:e:981:ALA:HB1	45:e:1027:ILE:HD11	1.91	0.52
53:v:181:GLY:HA3	53:v:305:ARG:HD3	1.91	0.52
1:C:703:ARG:HD2	1:C:706:LYS:HE2	1.92	0.52
1:E:399:LYS:HE2	1:E:452:LEU:HD13	1.92	0.52
2:J:201:MET:N	2:J:217:VAL:O	2.42	0.52
29:f:3243:A:N6	55:a0:157:GLU:OE2	2.38	0.52
35:m:50:ARG:NH2	35:m:72:ASP:OD2	2.43	0.52
44:a:704:LEU:HB3	44:a:938:ILE:HG13	1.91	0.52
45:e:222:LEU:HD11	45:e:226:ASN:ND2	2.22	0.52
45:e:1050:LEU:CD2	45:e:1098:LEU:CD2	2.78	0.52
45:e:1066:ARG:CZ	45:e:1111:GLN:HE22	2.21	0.52
45:e:1495:THR:O	45:e:1499:HIS:CD2	2.63	0.52
53:v:341:MET:HE3	53:v:677:ILE:HG13	1.92	0.52
1:A:216:ILE:C	57:A:901:ATP:N6	2.68	0.51
1:C:605:GLY:HA2	1:C:609:ARG:HH22	1.74	0.51
29:f:2177:G:OP2	32:j:128:ARG:NH1	2.43	0.51
29:f:3230:G:H4'	43:u:132:LYS:HD3	1.92	0.51
45:e:1477:GLN:NE2	45:e:1481:THR:HG1	2.00	0.51
1:A:525:LEU:HD21	1:A:652:LEU:HD13	1.91	0.51
14:N:100:PRO:HG2	14:N:123:VAL:HG23	1.92	0.51
26:b:75:VAL:HG23	26:b:76:LYS:HD2	1.93	0.51
29:f:2307:G:O2'	29:f:2310:U:OP2	2.28	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:f:2493:U:H2'	29:f:2494:A:C8	2.44	0.51
53:v:465:CYS:HA	53:v:468:PHE:CE2	2.45	0.51
1:B:261:LYS:NZ	1:B:358:ASN:OD1	2.44	0.51
1:E:562:TYR:HB3	2:K:2:GLN:HA	1.92	0.51
3:G:412:ASP:OD1	3:G:412:ASP:N	2.43	0.51
45:e:272:TYR:HB2	45:e:277:MET:HE3	1.92	0.51
1:B:493:ASP:N	1:B:493:ASP:OD1	2.41	0.51
1:C:557:LEU:HD21	1:C:569:ILE:HG12	1.92	0.51
2:J:236:ILE:O	2:J:241:GLN:NE2	2.42	0.51
29:f:1256:G:O3'	48:z:124:THR:CB	2.59	0.51
29:f:1751:G:C5'	52:X:26:LYS:HZ1	2.13	0.51
38:p:46:LEU:CD1	56:b0:28:THR:O	2.57	0.51
43:u:127:LYS:HB3	55:a0:194:LEU:CD1	2.40	0.51
45:e:277:MET:SD	45:e:278:PRO:CG	2.94	0.51
53:v:298:LEU:HD21	53:v:310:LYS:HE3	1.92	0.51
1:C:665:SER:HA	1:C:668:ASN:HB2	1.91	0.51
1:E:216:ILE:C	57:E:902:ATP:N6	2.62	0.51
1:E:261:LYS:N	1:E:261:LYS:CD	2.70	0.51
1:F:301:GLU:O	1:F:305:LYS:NZ	2.43	0.51
1:F:558:LEU:HG	1:F:606:ALA:HB1	1.91	0.51
3:G:357:MET:O	3:G:361:HIS:ND1	2.44	0.51
21:U:67:ARG:NH2	31:i:97:A:OP1	2.44	0.51
29:f:2540:A:N3	29:f:2541:U:N3	2.59	0.51
38:p:52:TRP:O	38:p:57:ARG:NH1	2.44	0.51
45:e:1499:HIS:C	45:e:1502:PHE:H	2.17	0.51
51:w:50:SER:HA	51:w:157:PHE:O	2.11	0.51
1:B:31:THR:HG21	1:B:83:ILE:HD13	1.93	0.51
1:B:558:LEU:CD2	1:C:562:TYR:CZ	2.92	0.51
38:p:207:ASP:OD1	38:p:207:ASP:N	2.44	0.51
53:v:248:ILE:HD12	53:v:281:PRO:HB2	1.92	0.51
1:A:260:GLY:HA2	57:A:901:ATP:O2A	2.11	0.51
1:B:591:SER:HB2	1:C:609:ARG:HG3	1.91	0.51
1:C:405:ASP:N	1:C:405:ASP:OD1	2.44	0.51
1:C:561:TRP:CE3	2:K:8:LEU:HD12	2.45	0.51
28:d:20:ARG:HA	28:d:23:VAL:HG12	1.92	0.51
29:f:16:A:H5''	56:b0:43:ALA:O	2.11	0.51
29:f:1234:G:N2	48:z:135:THR:CB	2.73	0.51
29:f:1778:G:O2'	29:f:1780:G:OP2	2.28	0.51
29:f:2568:C:O2'	29:f:2569:A:O4'	2.27	0.51
31:i:29:U:H5''	42:t:27:ASP:HB3	1.92	0.51
38:p:50:VAL:HA	56:b0:30:ALA:O	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:e:751:VAL:CA	45:e:754:ILE:HG12	2.38	0.51
45:e:804:ILE:CD1	45:e:809:MET:SD	2.96	0.51
45:e:910:SER:CB	45:e:955:LEU:HD21	2.38	0.51
46:g:68:ARG:NH2	46:g:112:ASP:O	2.44	0.51
2:K:39:ASP:CG	3:G:472:ASN:ND2	2.67	0.51
20:T:96:GLU:OE2	29:f:2555:G:N1	2.42	0.51
21:U:118:ILE:HD11	42:t:145:PHE:HE2	1.76	0.51
29:f:655:C:H2'	29:f:656:A:H8	1.76	0.51
29:f:1288:U:H2'	29:f:1289:G:H8	1.74	0.51
29:f:1833:G:P	56:b0:114:VAL:HG21	2.51	0.51
29:f:2901:G:O2'	29:f:3024:A:N1	2.44	0.51
35:m:206:GLN:NE2	35:m:210:GLU:OE2	2.44	0.51
45:e:1444:LYS:HD2	45:e:1455:GLN:NE2	2.22	0.51
1:A:464:PHE:O	1:A:468:ASN:ND2	2.44	0.51
1:B:42:THR:HG22	1:B:67:LEU:HD21	1.93	0.51
1:B:534:LYS:HB2	57:C:1001:ATP:O3B	2.11	0.51
1:C:251:VAL:HB	1:C:354:ILE:HG22	1.92	0.51
29:f:76:G:O2'	42:t:100:ARG:NH1	2.37	0.51
29:f:544:C:H2'	29:f:547:G:H1	1.76	0.51
29:f:1661:G:H2'	29:f:1662:G:C8	2.46	0.51
29:f:1833:G:P	56:b0:114:VAL:CB	2.99	0.51
44:a:192:TYR:HE1	44:a:218:PRO:HD2	1.76	0.51
45:e:751:VAL:CA	45:e:754:ILE:HG13	2.31	0.51
45:e:1057:THR:OG1	45:e:1105:LEU:HA	2.11	0.51
29:f:1830:G:C3'	56:b0:91:ASN:HB2	2.39	0.51
29:f:2471:U:H2'	29:f:2474:G:N2	2.26	0.51
34:l:156:LEU:HD12	34:l:159:ILE:HD12	1.93	0.51
45:e:1505:PHE:CD2	45:e:1514:ILE:HG12	2.46	0.51
1:B:489:VAL:CA	57:C:1001:ATP:N6	2.74	0.50
1:F:663:ARG:NH2	1:F:689:THR:OG1	2.44	0.50
29:f:1751:G:C2	52:X:78:LEU:CD2	2.94	0.50
29:f:3198:U:O2	39:q:21:LYS:N	2.44	0.50
45:e:711:LEU:O	45:e:715:LEU:HG	2.10	0.50
45:e:1548:ASN:OD1	53:v:385:ARG:HD2	2.10	0.50
1:A:485:THR:HA	1:A:543:THR:HG21	1.93	0.50
1:B:92:LEU:HD12	1:B:141:VAL:HG21	1.91	0.50
1:B:558:LEU:HD22	1:C:562:TYR:OH	2.05	0.50
1:E:261:LYS:C	1:E:263:LEU:N	2.65	0.50
45:e:1287:ARG:HA	45:e:1290:PHE:HD2	1.76	0.50
1:C:374:ASP:OD1	1:C:374:ASP:N	2.44	0.50
1:C:432:GLN:HG3	1:C:455:LEU:HD12	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:f:3160:U:H3	29:f:3290:G:H1	1.58	0.50
39:q:18:VAL:HG12	39:q:27:VAL:HG22	1.94	0.50
1:B:3:VAL:HG21	1:B:69:ILE:HD12	1.94	0.50
27:c:18:TYR:HB3	32:j:180:LEU:HD22	1.93	0.50
29:f:2137:U:OP2	29:f:2142:A:N6	2.40	0.50
29:f:3132:C:O2'	55:a0:55:HIS:CE1	2.65	0.50
30:h:44:C:H4'	35:m:152:ARG:HG3	1.93	0.50
33:k:261:MET:HA	55:a0:64:PHE:HB2	1.93	0.50
39:q:22:SER:OG	39:q:39:LYS:NZ	2.44	0.50
1:B:317:ASP:OD1	1:B:317:ASP:N	2.45	0.50
1:C:470:ASN:ND2	1:C:471:PRO:O	2.44	0.50
1:D:558:LEU:HD12	1:D:560:MET:H	1.77	0.50
1:E:561:TRP:H	1:E:561:TRP:HD1	1.58	0.50
1:F:258:GLY:O	57:F:901:ATP:C2	2.61	0.50
29:f:1019:G:H1	29:f:1033:U:H3	1.59	0.50
31:i:132:G:H5''	56:b0:94:GLN:HG3	1.93	0.50
45:e:1499:HIS:HB3	45:e:1503:SER:OG	2.12	0.50
1:B:698:LEU:HD12	57:C:1001:ATP:O2'	2.12	0.50
1:D:502:THR:HG23	1:D:503:VAL:HG13	1.93	0.50
4:3:60:PHE:HB3	4:3:64:ASN:HB3	1.93	0.50
4:3:62:ARG:NH1	29:f:412:G:OP1	2.45	0.50
45:e:1159:ILE:HG21	45:e:1197:LEU:HD11	1.93	0.50
51:w:138:VAL:HG21	51:w:144:LEU:HD23	1.94	0.50
1:C:561:TRP:CE3	2:K:8:LEU:CD1	2.95	0.50
1:E:669:ALA:O	1:E:672:ARG:NH1	2.45	0.50
15:O:23:LYS:HG3	15:O:24:PRO:HD2	1.93	0.50
34:l:126:ILE:O	34:l:129:THR:OG1	2.30	0.50
1:C:431:GLN:OE1	1:C:434:ARG:NH2	2.44	0.50
1:E:536:LEU:HD23	58:E:901:ADP:H8	1.77	0.50
14:N:26:ARG:NH1	29:f:938:C:OP2	2.44	0.50
29:f:3027:A:O2'	44:a:415:ASP:OD1	2.29	0.50
1:E:696:ASP:OD1	1:F:645:ARG:NH1	2.45	0.50
1:F:263:LEU:HD22	57:F:901:ATP:O2'	1.97	0.50
7:6:22:PRO:O	8:7:146:ASN:ND2	2.38	0.50
17:Q:77:ARG:HD2	17:Q:89:LEU:HD13	1.94	0.50
18:R:104:ASN:ND2	29:f:1389:G:OP1	2.42	0.50
29:f:505:G:OP1	34:l:320:ASN:ND2	2.43	0.50
29:f:3243:A:C2	55:a0:107:GLY:HA3	2.47	0.50
35:m:90:HIS:NE2	35:m:229:ASP:OD2	2.41	0.50
41:s:90:GLN:NE2	41:s:170:ASP:OD1	2.45	0.50
51:w:59:PRO:HD2	51:w:153:SER:HA	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:616:THR:OG1	1:F:475:ARG:NH2	2.44	0.49
6:5:68:GLN:OE1	6:5:71:ARG:NH2	2.43	0.49
13:M:23:VAL:HG12	13:M:45:GLY:HA3	1.94	0.49
36:n:92:SER:OG	36:n:148:GLU:OE1	2.30	0.49
38:p:161:GLU:HA	38:p:164:VAL:HG22	1.93	0.49
45:e:1071:THR:O	45:e:1074:GLU:OE1	2.29	0.49
45:e:1443:PHE:HB3	45:e:1454:ILE:HD11	1.94	0.49
45:e:1514:ILE:HG23	45:e:1522:LEU:CD2	2.40	0.49
53:v:460:GLU:HG3	53:v:620:PHE:CE1	2.47	0.49
1:D:281:GLY:HA2	1:D:319:ILE:HD11	1.93	0.49
1:D:671:LEU:HD21	1:D:682:LEU:HD11	1.93	0.49
1:F:336:SER:HA	1:F:339:LEU:HD12	1.95	0.49
1:F:522:LYS:HD2	1:F:648:ARG:HG3	1.93	0.49
3:G:167:ILE:O	3:G:171:SER:OG	2.30	0.49
17:Q:80:ASN:OD1	17:Q:81:GLU:N	2.45	0.49
29:f:664:U:H2'	29:f:665:A:C8	2.47	0.49
29:f:1613:A:OP1	52:X:51:LEU:CB	2.60	0.49
44:a:579:TRP:HA	44:a:588:VAL:O	2.11	0.49
1:E:249:ARG:HB2	1:E:342:MET:HE1	1.94	0.49
1:E:663:ARG:HD3	1:E:686:ALA:HB1	1.94	0.49
1:F:393:ILE:HA	1:F:396:LYS:HE3	1.94	0.49
3:G:521:HIS:HD2	3:G:560:LEU:HD13	1.77	0.49
26:b:45:ARG:NH1	29:f:283:G:OP1	2.46	0.49
29:f:1832:C:OP1	56:b0:120:LYS:NZ	2.45	0.49
29:f:2897:A:H2'	29:f:2899:C:H5''	1.93	0.49
38:p:91:PHE:O	38:p:95:ASN:ND2	2.46	0.49
45:e:1539:LEU:HD23	53:v:214:PHE:HE1	1.77	0.49
1:B:664:LEU:O	1:B:668:ASN:ND2	2.45	0.49
1:F:525:LEU:HB2	1:F:652:LEU:HA	1.94	0.49
29:f:3178:A:N1	55:a0:6:VAL:HB	2.28	0.49
44:a:29:ILE:HD12	44:a:80:LEU:HB3	1.94	0.49
45:e:352:PRO:HG3	45:e:397:ASN:ND2	2.26	0.49
1:A:549:PHE:HE1	1:A:585:PHE:HB3	1.77	0.49
1:F:493:ASP:HA	1:F:496:LYS:HE2	1.94	0.49
3:G:259:ARG:NH2	3:G:286:GLU:OE1	2.46	0.49
5:4:56:LYS:NZ	29:f:674:G:O6	2.46	0.49
29:f:3180:A:C5	55:a0:167:TYR:CE2	3.00	0.49
44:a:970:ILE:HD11	44:a:1016:VAL:HG11	1.94	0.49
45:e:753:LEU:HG	45:e:760:THR:HG21	1.94	0.49
48:z:54:LYS:C	48:z:56:ILE:N	2.71	0.49
54:2:13:ILE:HD13	54:2:34:GLU:HG3	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:6:155:ARG:HB2	7:6:172:TYR:HD1	1.77	0.49
15:O:25:LYS:NZ	29:f:1106:G:O3'	2.44	0.49
29:f:1824:U:O2'	52:X:17:ARG:CZ	2.61	0.49
33:k:85:VAL:HG22	33:k:202:THR:HG22	1.95	0.49
45:e:751:VAL:CG2	45:e:754:ILE:HD11	2.42	0.49
45:e:1179:LEU:HD22	45:e:1247:LYS:HZ3	1.77	0.49
1:D:216:ILE:CA	57:D:902:ATP:HN61	2.25	0.49
8:7:108:ARG:O	8:7:112:ASN:HB2	2.12	0.49
45:e:1049:ARG:HD2	45:e:1086:MET:SD	2.52	0.49
45:e:1549:ASN:HB3	53:v:440:ARG:O	2.13	0.49
47:x:62:C:H2'	47:x:63:G:C8	2.48	0.49
1:B:532:THR:CA	57:C:1001:ATP:H5'2	2.37	0.49
1:D:254:TYR:HE2	1:D:376:GLU:HB2	1.78	0.49
1:D:562:TYR:CE1	1:D:609:ARG:CZ	2.59	0.49
7:6:93:GLU:HG3	7:6:140:VAL:HG11	1.95	0.49
45:e:272:TYR:CG	45:e:277:MET:CE	2.86	0.49
45:e:1240:LEU:HG	45:e:1290:PHE:HD1	1.78	0.49
1:A:216:ILE:HB	57:A:901:ATP:HN62	1.74	0.49
1:B:658:PRO:O	1:B:663:ARG:NH1	2.46	0.49
1:D:216:ILE:HB	57:D:902:ATP:N6	2.25	0.49
2:K:13:ILE:HG22	2:K:14:THR:HG22	1.93	0.49
29:f:348:A:N3	29:f:352:A:O2'	2.46	0.49
29:f:2815:G:N2	29:f:2818:U:O2	2.45	0.49
29:f:2948:C:OP1	33:k:244:ARG:NH2	2.36	0.49
31:i:156:U:OP2	38:p:84:ARG:NH2	2.45	0.49
44:a:402:VAL:HG22	44:a:433:ILE:HG23	1.95	0.49
1:E:300:PHE:HE1	1:E:311:ILE:HG21	1.77	0.49
2:K:40:GLN:CA	3:G:470:PHE:O	2.57	0.49
29:f:2155:G:OP1	32:j:241:ARG:NH1	2.46	0.49
45:e:793:ASN:CG	45:e:1005:ASN:HD21	2.20	0.49
45:e:1498:VAL:O	45:e:1501:GLN:HB3	2.13	0.49
1:F:234:LEU:HD22	1:F:308:PRO:HB3	1.95	0.48
1:F:693:SER:OG	1:F:694:GLY:N	2.45	0.48
2:J:244:ILE:HD13	3:G:574:MET:HG3	1.94	0.48
5:4:16:ARG:HB2	29:f:974:G:H5'	1.95	0.48
6:5:151:ARG:NH2	6:5:152:GLU:OE2	2.44	0.48
29:f:123:A:OP1	38:p:105:LYS:NZ	2.37	0.48
29:f:1264:G:N2	29:f:1265:U:O4	2.40	0.48
45:e:941:THR:HA	45:e:979:LEU:HD21	1.94	0.48
1:A:500:LYS:HD2	1:A:504:GLU:HG2	1.95	0.48
1:B:534:LYS:HB2	57:C:1001:ATP:O3G	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:586:LEU:HD13	1:C:589:LEU:HD13	1.94	0.48
1:D:280:ASN:ND2	1:D:283:GLU:OE1	2.45	0.48
1:E:536:LEU:HD23	58:E:901:ADP:C8	2.48	0.48
1:F:564:GLU:OE1	1:F:568:ASN:ND2	2.42	0.48
29:f:1569:U:H5'	29:f:1570:U:H5''	1.94	0.48
29:f:2854:U:OP2	40:r:3:ARG:NH2	2.47	0.48
29:f:2964:G:N2	29:f:2967:A:OP2	2.41	0.48
4:3:65:SER:OG	29:f:1447:G:OP1	2.28	0.48
12:L:16:ARG:NH1	29:f:216:G:OP1	2.45	0.48
16:P:30:THR:HG23	16:P:91:SER:HB2	1.95	0.48
33:k:211:GLN:NE2	33:k:283:TYR:O	2.45	0.48
38:p:46:LEU:HD12	56:b0:29:SER:HA	1.95	0.48
39:q:120:ASP:OD1	39:q:120:ASP:N	2.44	0.48
45:e:1504:GLY:O	45:e:1506:GLU:N	2.40	0.48
1:B:382:PRO:O	1:B:387:ARG:NH1	2.45	0.48
1:B:532:THR:C	57:C:1001:ATP:O2B	2.56	0.48
3:G:168:SER:OG	3:G:171:SER:OG	2.30	0.48
6:5:62:ARG:HH22	29:f:3067:C:H3'	1.77	0.48
29:f:1523:U:C5	56:b0:123:TYR:CZ	3.02	0.48
29:f:3178:A:C5'	55:a0:4:GLU:OE1	2.61	0.48
45:e:882:ASN:C	45:e:885:GLN:O	2.53	0.48
45:e:1050:LEU:HG	45:e:1098:LEU:CD2	2.42	0.48
48:z:52:GLU:O	48:z:53:PHE:C	2.55	0.48
1:A:392:ARG:O	1:A:396:LYS:NZ	2.47	0.48
1:D:531:GLY:HA2	57:D:901:ATP:PB	2.40	0.48
5:4:131:ALA:HB1	5:4:135:GLN:H	1.78	0.48
29:f:591:G:O2'	36:n:17:ALA:O	2.28	0.48
29:f:655:C:H2'	29:f:656:A:C8	2.49	0.48
33:k:145:GLU:HA	33:k:148:LEU:HB2	1.95	0.48
45:e:1477:GLN:HE21	45:e:1481:THR:CG2	2.12	0.48
46:g:146:ILE:HG13	46:g:147:LEU:HD12	1.96	0.48
23:W:52:LYS:NZ	34:l:59:GLN:O	2.39	0.48
29:f:2209:U:C4	44:a:838:ARG:HD2	2.49	0.48
39:q:47:LYS:H	43:u:7:VAL:HG21	1.78	0.48
45:e:212:ILE:HG23	45:e:249:LEU:HD21	1.95	0.48
45:e:807:LYS:HE3	45:e:808:ASN:OD1	2.13	0.48
45:e:930:ASN:O	45:e:933:LEU:N	2.46	0.48
46:g:116:LEU:HG	46:g:177:LEU:HD21	1.94	0.48
53:v:557:HIS:CE1	53:v:608:GLN:HE21	2.31	0.48
3:G:383:THR:OG1	3:G:399:TYR:O	2.32	0.48
5:4:19:PRO:HB3	5:4:53:PHE:HA	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Y:10:LYS:NZ	56:b0:114:VAL:HG12	2.28	0.48
29:f:712:G:OP1	42:t:174:ARG:NH1	2.47	0.48
29:f:1524:A:OP1	56:b0:111:ASN:HA	2.13	0.48
29:f:3180:A:N6	55:a0:167:TYR:CD1	2.82	0.48
34:l:292:SER:OG	34:l:294:GLU:OE1	2.31	0.48
45:e:757:CYS:HB2	45:e:760:THR:HG23	1.95	0.48
45:e:1477:GLN:OE1	45:e:1477:GLN:C	2.56	0.48
46:g:197:MET:HE3	46:g:218:ILE:HD12	1.96	0.48
52:X:5:ILE:HD11	52:X:52:TYR:HB3	1.94	0.48
1:B:560:MET:HB3	1:B:564:GLU:HB2	1.95	0.48
1:D:287:LYS:HD3	1:D:291:GLU:HB2	1.96	0.48
2:H:158:ASP:N	2:H:158:ASP:OD1	2.46	0.48
29:f:3243:A:H2	55:a0:106:GLU:O	1.97	0.48
41:s:38:GLU:HB2	41:s:45:PRO:HD3	1.95	0.48
45:e:793:ASN:HD21	45:e:1005:ASN:ND2	2.11	0.48
45:e:1373:ASN:O	45:e:1374:ILE:C	2.55	0.48
46:g:88:LEU:HD12	46:g:92:VAL:HG21	1.96	0.48
53:v:377:LEU:HD22	53:v:657:GLU:HB3	1.96	0.48
1:D:531:GLY:CA	57:D:901:ATP:PB	3.02	0.48
2:H:117:VAL:HG11	2:H:126:VAL:HG22	1.96	0.48
29:f:1230:G:H4'	49:0:34:SER:HA	1.96	0.48
29:f:1383:G:O3'	34:l:138:ARG:NH2	2.47	0.48
29:f:1833:G:OP2	56:b0:114:VAL:CB	2.62	0.48
45:e:864:HIS:HA	45:e:869:HIS:HB3	1.96	0.48
45:e:1206:GLN:O	45:e:1210:ILE:HG13	2.13	0.48
1:B:671:LEU:HD23	1:B:676:LEU:HD22	1.96	0.48
1:C:238:GLN:HA	1:C:241:LYS:HE2	1.95	0.48
1:E:222:GLN:HE21	1:E:379:ILE:HG22	1.78	0.48
5:4:102:ALA:HA	5:4:122:ILE:O	2.14	0.48
29:f:1523:U:C6	56:b0:123:TYR:CZ	3.01	0.48
31:i:9:A:H2'	31:i:10:A:C8	2.49	0.48
32:j:117:GLU:HG2	32:j:124:GLY:H	1.79	0.48
38:p:44:ARG:O	56:b0:28:THR:CA	2.62	0.48
43:u:127:LYS:HD3	55:a0:194:LEU:CD1	2.43	0.48
45:e:1463:GLY:CA	45:e:1520:ARG:HD3	2.37	0.48
45:e:1504:GLY:C	45:e:1506:GLU:H	2.20	0.48
53:v:377:LEU:CD2	53:v:657:GLU:CB	2.92	0.48
1:D:262:THR:HG21	57:D:902:ATP:PG	2.54	0.47
1:E:339:LEU:HD22	1:E:372:ARG:HD3	1.96	0.47
14:N:94:ALA:HA	14:N:121:VAL:HG23	1.95	0.47
45:e:1174:ILE:HG22	45:e:1198:LEU:HD13	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:e:1499:HIS:C	45:e:1501:GLN:N	2.68	0.47
1:E:369:ARG:HB2	1:E:372:ARG:HD2	1.96	0.47
15:O:3:LYS:HD3	29:f:2617:U:H3'	1.95	0.47
44:a:572:TYR:HB2	44:a:575:GLU:HG3	1.96	0.47
45:e:1083:SER:HA	45:e:1086:MET:HE2	1.96	0.47
45:e:1508:CYS:HA	45:e:1533:LYS:O	2.14	0.47
47:y:8:U:O2	47:y:13:U:O4	2.31	0.47
1:C:493:ASP:OD1	1:C:493:ASP:N	2.47	0.47
1:D:241:LYS:HG3	1:D:348:ARG:HH12	1.79	0.47
1:D:314:ASP:OD1	1:D:314:ASP:N	2.47	0.47
1:E:263:LEU:HD12	1:E:266:ARG:HB3	1.95	0.47
29:f:520:U:OP2	37:o:70:LYS:NZ	2.45	0.47
29:f:1814:A:H4'	29:f:1815:U:H5'	1.95	0.47
1:F:263:LEU:HD13	57:F:901:ATP:O2A	2.13	0.47
3:G:126:ASP:OD1	3:G:126:ASP:N	2.46	0.47
29:f:411:U:H2'	29:f:412:G:H8	1.79	0.47
29:f:1523:U:O5'	56:b0:113:LEU:CD2	2.61	0.47
32:j:32:LEU:HD13	32:j:163:ARG:HD3	1.96	0.47
34:l:304:GLN:NE2	34:l:306:THR:O	2.42	0.47
38:p:156:ASP:N	38:p:156:ASP:OD1	2.47	0.47
45:e:1525:LYS:CE	53:v:214:PHE:HA	2.44	0.47
45:e:1560:PHE:CD1	53:v:213:LEU:HD13	2.49	0.47
53:v:176:LEU:HD11	53:v:182:PHE:CD1	2.49	0.47
1:B:249:ARG:NH1	1:B:342:MET:O	2.48	0.47
1:D:403:ASP:OD2	1:D:459:MET:N	2.47	0.47
1:D:560:MET:CG	1:D:561:TRP:CZ3	2.97	0.47
3:G:336:ASP:OD1	3:G:336:ASP:N	2.45	0.47
29:f:2185:G:O2'	29:f:2314:U:OP2	2.28	0.47
29:f:3006:A:O2'	55:a0:73:PHE:CE2	2.48	0.47
31:i:126:A:O2'	31:i:129:C:N4	2.48	0.47
45:e:882:ASN:O	45:e:885:GLN:C	2.50	0.47
1:E:261:LYS:NZ	57:E:902:ATP:O1G	2.48	0.47
1:F:614:LEU:O	1:F:648:ARG:NH2	2.47	0.47
5:4:170:ARG:HD2	14:N:57:GLY:HA3	1.97	0.47
13:M:133:LYS:HE3	13:M:135:ARG:HD3	1.96	0.47
29:f:2473:C:C5	29:f:2474:G:C2	3.03	0.47
35:m:119:TYR:OH	35:m:139:PRO:O	2.33	0.47
45:e:1435:ASP:OD2	45:e:1514:ILE:HB	2.15	0.47
1:A:246:LYS:HD3	1:A:247:PRO:HD2	1.97	0.47
1:C:603:ALA:HB2	2:K:3:ILE:HB	1.96	0.47
1:D:216:ILE:HA	57:D:902:ATP:HN61	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:259:THR:HG23	1:E:261:LYS:HD2	1.97	0.47
1:E:574:ASP:OD1	1:E:574:ASP:N	2.47	0.47
14:N:115:LYS:HA	29:f:715:A:H5''	1.97	0.47
19:S:99:ARG:NH1	29:f:3275:U:O2'	2.48	0.47
29:f:912:G:OP2	32:j:9:ARG:NH2	2.45	0.47
29:f:1523:U:O4'	56:b0:123:TYR:HE2	1.96	0.47
29:f:1805:C:H2'	29:f:1806:A:H8	1.79	0.47
29:f:1833:G:P	56:b0:114:VAL:CG2	3.02	0.47
29:f:1907:C:O2	33:k:240:ARG:NH2	2.45	0.47
35:m:207:TYR:HA	35:m:210:GLU:HG2	1.97	0.47
43:u:38:ILE:HA	43:u:44:VAL:HG12	1.96	0.47
43:u:127:LYS:CD	55:a0:194:LEU:CD1	2.92	0.47
45:e:371:LEU:HB2	45:e:377:TRP:HE1	0.67	0.47
45:e:932:LEU:C	45:e:964:PHE:CE2	2.93	0.47
1:A:260:GLY:HA3	57:A:901:ATP:H5'2	1.94	0.47
1:D:694:GLY:HA3	57:D:901:ATP:N3	2.30	0.47
3:G:236:HIS:ND1	3:G:467:THR:O	2.47	0.47
7:6:167:ARG:NE	55:a0:119:VAL:HG11	2.30	0.47
29:f:627:U:H2'	29:f:628:A:C8	2.50	0.47
29:f:1477:A:OP1	29:f:3075:G:O2'	2.31	0.47
29:f:2239:G:O2'	44:a:867:GLY:O	2.30	0.47
33:k:219:ALA:HB2	33:k:336:VAL:HG23	1.96	0.47
40:r:66:GLU:OE1	40:r:69:ARG:NH2	2.47	0.47
42:t:76:THR:HG22	42:t:78:ALA:H	1.80	0.47
53:v:292:LEU:HD21	53:v:328:LYS:HB2	1.97	0.47
1:A:687:LYS:O	1:A:690:GLN:NE2	2.48	0.47
1:B:709:ILE:HG23	1:C:512:GLN:HE21	1.80	0.47
1:E:481:SER:HB2	1:E:543:THR:HG22	1.97	0.47
1:E:650:ASP:OD1	1:E:650:ASP:N	2.47	0.47
6:5:21:LYS:HE3	6:5:55:VAL:HA	1.97	0.47
20:T:95:ILE:HD11	29:f:2555:G:N7	2.30	0.47
24:Y:7:PHE:CZ	56:b0:88:MET:HE2	2.50	0.47
35:m:163:LEU:HD11	35:m:175:HIS:HB3	1.97	0.47
43:u:124:ARG:CA	55:a0:194:LEU:HD21	2.45	0.47
44:a:660:CYS:SG	44:a:661:PHE:N	2.88	0.47
51:w:122:ARG:HA	51:w:122:ARG:HD2	1.64	0.47
53:v:342:MET:HG2	53:v:681:ILE:HG23	1.96	0.47
2:J:207:THR:HA	2:J:269:LEU:HB3	1.97	0.47
13:M:22:LYS:NZ	13:M:132:SER:O	2.47	0.47
18:R:60:ASN:HB3	18:R:63:THR:HB	1.97	0.47
26:b:41:ARG:NH1	29:f:284:A:OP2	2.40	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:f:2499:U:H2'	29:f:2500:A:C8	2.50	0.47
29:f:2874:G:O6	29:f:2945:G:H2'	2.15	0.47
45:e:1023:ARG:HA	45:e:1026:MET:HE3	1.97	0.47
46:g:219:GLU:HA	46:g:224:LEU:HD12	1.96	0.47
53:v:557:HIS:HE1	53:v:608:GLN:HE21	1.61	0.47
1:D:615:LEU:O	1:D:648:ARG:NH1	2.48	0.46
1:D:695:ALA:HA	1:D:698:LEU:HD12	1.96	0.46
1:E:452:LEU:HA	1:E:455:LEU:HD23	1.98	0.46
3:G:198:PHE:H	3:G:408:LEU:HD22	1.80	0.46
32:j:68:LYS:HE2	32:j:70:ARG:HH21	1.80	0.46
45:e:1505:PHE:CB	45:e:1514:ILE:HG12	2.40	0.46
53:v:374:GLN:NE2	54:2:10:GLY:CA	2.72	0.46
1:A:262:THR:HG23	57:A:901:ATP:O3B	2.15	0.46
57:D:901:ATP:O1B	1:E:645:ARG:NH2	2.48	0.46
1:E:430:MET:SD	1:F:375:ARG:NH2	2.87	0.46
29:f:1524:A:H5''	56:b0:111:ASN:CG	2.40	0.46
29:f:2444:C:H2'	29:f:2445:A:C8	2.41	0.46
33:k:96:PRO:HG3	55:a0:153:VAL:HG22	1.97	0.46
40:r:54:SER:OG	40:r:130:ASP:O	2.33	0.46
40:r:54:SER:HB3	40:r:135:ILE:HD11	1.97	0.46
45:e:876:PHE:HZ	45:e:963:MET:HB3	1.80	0.46
46:g:14:GLY:HA2	46:g:198:VAL:HG13	1.96	0.46
1:B:437:MET:HE2	1:B:437:MET:HB2	1.73	0.46
1:B:534:LYS:HB2	57:C:1001:ATP:PG	2.56	0.46
1:F:317:ASP:N	1:F:317:ASP:OD1	2.48	0.46
1:F:640:ASP:OD1	1:F:640:ASP:N	2.47	0.46
18:R:9:ILE:HG12	18:R:63:THR:HG23	1.97	0.46
29:f:2384:A:H61	55:a0:96:LYS:HE3	1.78	0.46
29:f:2875[B]:U:O2'	47:x:76:A:H4'	2.15	0.46
29:f:3375:A:O2'	29:f:3378:C:OP2	2.26	0.46
45:e:844:LEU:HD23	45:e:844:LEU:O	2.16	0.46
45:e:992:LEU:HD22	45:e:1034:TRP:CE3	2.50	0.46
45:e:1498:VAL:O	45:e:1502:PHE:N	2.47	0.46
49:0:26:PHE:HZ	49:0:93:LEU:HA	1.80	0.46
52:X:5:ILE:CD1	52:X:14:LEU:HD12	2.45	0.46
1:A:529:PRO:HA	1:A:530:PRO:HD3	1.85	0.46
1:B:532:THR:HG21	57:C:1001:ATP:C6	2.51	0.46
13:M:28:PRO:O	13:M:29:HIS:ND1	2.48	0.46
29:f:40:A:OP1	61:f:3401:SPD:N10	2.48	0.46
29:f:1523:U:H4'	56:b0:113:LEU:CB	2.30	0.46
29:f:1717:U:H2'	29:f:1718:G:C8	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:l:326:ARG:O	37:o:41:ARG:NH2	2.48	0.46
45:e:1181:ASP:O	45:e:1185:GLY:N	2.45	0.46
1:A:343:ASP:OD2	1:A:372:ARG:NH2	2.47	0.46
2:H:123:ILE:HB	2:H:152:ASP:HA	1.97	0.46
29:f:1612:A:OP2	52:X:46:ARG:NH1	2.48	0.46
32:j:104:LEU:HD12	32:j:158:ILE:HD11	1.98	0.46
8:7:116:ARG:NH2	29:f:1096:U:OP2	2.48	0.46
17:Q:75:ILE:HG12	17:Q:93:VAL:HG22	1.96	0.46
29:f:1949:G:H1	29:f:2097:U:H3	1.63	0.46
29:f:2094:C:H2'	29:f:2095:G:H8	1.81	0.46
29:f:2473:C:C4	29:f:2475:G:N3	2.83	0.46
29:f:3243:A:N1	55:a0:107:GLY:C	2.74	0.46
44:a:576:LYS:HB2	47:y:31:C:H5'	1.98	0.46
45:e:883:VAL:HG12	45:e:956:LEU:HD21	1.98	0.46
47:y:43:G:H3'	47:y:44:A:H8	1.80	0.46
1:B:430:MET:HG2	1:C:375:ARG:HH12	1.81	0.46
1:F:260:GLY:HA2	57:F:901:ATP:O2A	2.16	0.46
1:F:495:ILE:HD11	1:F:653:ILE:HD12	1.97	0.46
12:L:55:GLU:HB2	12:L:108:LYS:HB3	1.98	0.46
44:a:346:SER:HB2	44:a:564:VAL:HG13	1.98	0.46
4:3:67:ILE:HD11	4:3:80:LYS:HB3	1.97	0.46
29:f:571:U:H2'	29:f:572:A:H8	1.81	0.46
29:f:2451:G:H2'	29:f:2452:G:C8	2.50	0.46
29:f:3244:A:N7	55:a0:109:PRO:HB3	2.29	0.46
43:u:126:GLN:HB3	55:a0:190:VAL:HG11	1.96	0.46
53:v:233:VAL:HG21	53:v:278:ASP:CB	2.44	0.46
53:v:377:LEU:HD11	53:v:637:GLU:OE1	2.16	0.46
1:A:432:GLN:OE1	1:A:461:ASN:ND2	2.49	0.46
1:B:44:LEU:HD11	1:B:63:VAL:HG11	1.97	0.46
1:C:369:ARG:HH21	1:C:372:ARG:HH22	1.63	0.46
12:L:86:THR:OG1	12:L:95:VAL:O	2.34	0.46
19:S:14:LEU:HD11	19:S:31:LYS:HB2	1.98	0.46
19:S:49:ILE:HD11	19:S:71:VAL:HG22	1.96	0.46
29:f:2392:C:O2'	33:k:266:ARG:NH2	2.48	0.46
29:f:2498:U:H2'	29:f:2499:U:C6	2.51	0.46
44:a:618:SER:OG	44:a:646:SER:OG	2.26	0.46
45:e:1446:PRO:HD3	45:e:1454:ILE:HA	1.98	0.46
45:e:1477:GLN:CD	45:e:1477:GLN:O	2.59	0.46
54:2:42:ARG:HE	54:2:49:GLN:NE2	2.14	0.46
1:C:280:ASN:HB3	1:C:283:GLU:HB2	1.97	0.46
1:D:694:GLY:HA2	1:D:697:LEU:HD12	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:263:LEU:O	1:E:264:MET:C	2.59	0.46
1:F:647:GLY:H	1:F:650:ASP:HB3	1.81	0.46
26:b:30:ALA:O	29:f:2767:U:O2'	2.29	0.46
29:f:2218:G:H2'	29:f:2219:A:H8	1.80	0.46
37:o:86:VAL:O	37:o:114:GLY:HA2	2.16	0.46
45:e:930:ASN:O	45:e:933:LEU:HB3	2.15	0.46
1:B:286:SER:OG	1:C:290:GLY:O	2.33	0.45
1:C:536:LEU:HD12	57:C:1003:ATP:N7	2.29	0.45
1:E:562:TYR:CZ	1:E:609:ARG:CZ	2.99	0.45
2:H:115:LEU:HD11	2:H:129:LYS:HB3	1.98	0.45
4:3:22:LEU:HD12	4:3:146:ILE:HD12	1.97	0.45
29:f:2473:C:C6	29:f:2474:G:N3	2.84	0.45
35:m:83:LEU:HB3	35:m:88:ILE:HB	1.98	0.45
44:a:4:ARG:HD2	47:x:33:U:H4'	1.97	0.45
45:e:1017:VAL:HG12	45:e:1019:ILE:O	2.16	0.45
49:0:104:ARG:HA	49:0:104:ARG:HD2	1.85	0.45
53:v:341:MET:SD	53:v:368:HIS:HE1	2.38	0.45
1:C:383:ASP:O	1:C:387:ARG:NH2	2.49	0.45
1:E:499:LEU:HD11	1:E:524:VAL:HG11	1.97	0.45
10:I:18:PRO:HA	10:I:51:ALA:HA	1.97	0.45
29:f:1119:C:H2'	29:f:1120:A:H8	1.81	0.45
29:f:2676:A:OP1	44:a:652:LYS:NZ	2.46	0.45
29:f:3116:G:OP1	29:f:3116:G:N2	2.43	0.45
29:f:3379:C:H4'	33:k:315:GLY:HA2	1.98	0.45
34:l:8:VAL:HG23	34:l:151:VAL:HG12	1.98	0.45
43:u:123:LEU:HD21	55:a0:193:GLN:NE2	2.32	0.45
45:e:272:TYR:N	45:e:277:MET:CG	2.79	0.45
45:e:793:ASN:HD21	45:e:1005:ASN:HD21	1.63	0.45
45:e:1502:PHE:HE1	45:e:1515:LEU:HD21	1.80	0.45
46:g:11:ASN:ND2	46:g:209:ASP:OD2	2.49	0.45
1:B:117:ALA:HA	45:e:1029:ARG:NH2	2.30	0.45
1:D:531:GLY:N	57:D:901:ATP:O1B	2.46	0.45
5:4:35:PHE:HE1	29:f:1348:U:H5'	1.80	0.45
29:f:835:G:O2'	29:f:857:G:N2	2.37	0.45
29:f:2876:C:H2'	29:f:2877:G:O4'	2.16	0.45
29:f:3022:G:O2'	29:f:3031:G:O6	2.32	0.45
30:h:7:G:OP1	35:m:33:ARG:NH1	2.48	0.45
45:e:298:ILE:HD13	45:e:342:PHE:CE1	2.51	0.45
45:e:1269:LEU:HD23	45:e:1351:LEU:HB3	1.98	0.45
53:v:538:PHE:CE2	53:v:544:GLY:HA3	2.52	0.45
29:f:829:U:H3	29:f:895:A:H62	1.63	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:q:41:ILE:HD13	39:q:71:VAL:HB	1.99	0.45
43:u:127:LYS:HD3	55:a0:194:LEU:HD12	1.98	0.45
44:a:101:LEU:HB2	44:a:116:PHE:HE2	1.81	0.45
45:e:368:HIS:CE1	45:e:370:PHE:HB2	2.50	0.45
45:e:770:ILE:HD12	45:e:901:SER:HB2	1.98	0.45
47:x:6:U:H2'	47:x:7:G:C8	2.51	0.45
1:C:594:LYS:HE3	1:C:607:SER:HB3	1.99	0.45
1:F:343:ASP:OD1	1:F:343:ASP:N	2.45	0.45
2:K:44:ILE:HG22	2:K:45:PHE:N	2.32	0.45
17:Q:44:MET:O	17:Q:77:ARG:NH1	2.49	0.45
23:W:81:GLY:O	31:i:95:G:O2'	2.32	0.45
29:f:15:C:H5''	56:b0:42:ARG:HG3	1.95	0.45
29:f:2205:U:O4	44:a:854:GLN:NE2	2.42	0.45
29:f:2284:C:N4	29:f:2308:C:OP2	2.50	0.45
29:f:3092:C:O2'	29:f:3094:A:OP2	2.28	0.45
32:j:14:SER:OG	32:j:15:ILE:N	2.50	0.45
53:v:252:GLY:O	53:v:256:HIS:HA	2.16	0.45
1:A:262:THR:HG21	57:A:901:ATP:O3G	2.16	0.45
1:A:316:ILE:HD13	1:A:355:ALA:HB1	1.99	0.45
1:C:400:LEU:HA	1:C:457:VAL:HG22	1.99	0.45
1:C:561:TRP:CD2	2:K:8:LEU:CD1	2.98	0.45
1:F:527:TYR:HB3	1:F:633:THR:HG23	1.98	0.45
6:5:34:GLN:HG2	53:v:254:LYS:HE3	1.28	0.45
17:Q:46:THR:HG22	17:Q:48:ASP:H	1.82	0.45
29:f:528:U:H2'	29:f:529:A:C8	2.51	0.45
29:f:1134:G:O2'	29:f:2642:A:N3	2.44	0.45
29:f:1497:C:H2'	29:f:1498:A:H8	1.81	0.45
29:f:3023:U:OP1	45:e:61:THR:HG21	2.16	0.45
44:a:4:ARG:NH1	44:a:118:SER:HA	2.30	0.45
45:e:272:TYR:HE1	45:e:323:TYR:HB2	1.81	0.45
45:e:917:LEU:HD12	45:e:959:ILE:CG2	2.47	0.45
1:F:263:LEU:HD22	57:F:901:ATP:C3'	2.43	0.45
29:f:19:U:H2'	29:f:20:A:C8	2.52	0.45
33:k:34:LYS:HE2	33:k:34:LYS:HB2	1.85	0.45
37:o:232:ARG:O	37:o:235:PHE:N	2.48	0.45
45:e:1079:LEU:HD23	45:e:1079:LEU:HA	1.61	0.45
46:g:106:ASN:OD1	46:g:150:SER:OG	2.34	0.45
47:x:29:C:H2'	47:x:30:C:C6	2.52	0.45
53:v:377:LEU:HD22	53:v:657:GLU:CB	2.47	0.45
1:B:59:ILE:HD11	1:B:69:ILE:HD11	1.98	0.45
1:C:591:SER:O	1:C:594:LYS:NZ	2.45	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:562:TYR:CD1	1:D:562:TYR:O	2.69	0.45
1:D:577:ARG:NH2	1:D:620:GLY:O	2.45	0.45
1:F:387:ARG:HA	1:F:390:VAL:HG22	1.98	0.45
10:I:129:VAL:O	10:I:133:SER:HB3	2.17	0.45
14:N:7:LYS:NZ	29:f:1373:A:OP2	2.40	0.45
26:b:7:THR:OG1	26:b:22:GLN:NE2	2.37	0.45
29:f:1750:A:OP2	52:X:42:LYS:HD2	2.15	0.45
43:u:55:ARG:NH2	43:u:76:ALA:O	2.48	0.45
45:e:1544:ARG:HD3	53:v:225:ILE:CG2	2.47	0.45
49:0:45:LEU:HB3	49:0:49:ALA:HB3	1.99	0.45
1:B:291:GLU:OE1	3:G:222:SER:OG	2.35	0.45
1:D:511:ASP:N	1:D:511:ASP:OD1	2.46	0.45
29:f:297:G:OP2	29:f:297:G:N2	2.41	0.45
29:f:307:A:H2'	29:f:308:A:C8	2.52	0.45
29:f:675:C:O2'	29:f:679:U:OP1	2.35	0.45
29:f:799:G:O2'	42:t:18:TRP:NE1	2.47	0.45
45:e:397:ASN:O	45:e:398:SER:C	2.60	0.45
45:e:1294:LEU:HB3	45:e:1300:ILE:HG12	1.99	0.45
1:B:52:LEU:HD11	1:B:58:ARG:HG3	1.99	0.45
1:B:677:GLU:HG3	1:B:679:GLY:H	1.82	0.45
1:C:437:MET:SD	1:C:437:MET:N	2.88	0.45
3:G:526:ASN:HB3	3:G:529:LEU:HB3	1.97	0.45
6:5:6:THR:OG1	29:f:1498:A:OP1	2.28	0.45
12:L:74:TYR:HB3	12:L:77:LYS:HB2	1.98	0.45
15:O:55:ALA:O	15:O:59:LYS:HB3	2.16	0.45
22:V:53:TYR:HA	22:V:56:ARG:HG2	1.99	0.45
29:f:358:G:N2	29:f:361:A:OP2	2.42	0.45
29:f:599:C:OP1	34:l:332:LYS:NZ	2.45	0.45
29:f:1307:G:H5'	55:a0:60:LYS:HE3	1.98	0.45
29:f:1523:U:C4	56:b0:75:LYS:HE3	2.51	0.45
29:f:2473:C:H2'	29:f:2474:G:C4'	2.47	0.45
38:p:52:TRP:CZ3	56:b0:32:PHE:CE1	3.05	0.45
43:u:48:GLY:HA3	43:u:53:VAL:HB	1.98	0.45
45:e:910:SER:OG	45:e:955:LEU:HD11	2.17	0.45
45:e:1196:THR:CG2	45:e:1197:LEU:N	2.80	0.45
45:e:1400:PHE:HE1	45:e:1428:VAL:HG22	1.81	0.45
46:g:2:ALA:HA	46:g:204:ALA:O	2.16	0.45
47:x:62:C:H2'	47:x:63:G:H8	1.82	0.45
1:C:282:PRO:HB3	1:D:332:ARG:HG2	1.98	0.44
1:D:557:LEU:HD21	1:D:569:ILE:HD12	1.99	0.44
1:E:325:LYS:HD3	1:E:325:LYS:HA	1.84	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:390:VAL:HA	1:F:393:ILE:HD12	1.99	0.44
1:F:436:LYS:HD3	1:F:436:LYS:HA	1.79	0.44
3:G:255:THR:HG23	3:G:257:MET:H	1.82	0.44
29:f:86:G:O2'	29:f:98:G:O6	2.32	0.44
29:f:1523:U:N3	56:b0:123:TYR:CE1	2.84	0.44
31:i:134:G:O3'	56:b0:53:HIS:N	2.51	0.44
45:e:141:CYS:SG	45:e:221:LYS:CD	3.03	0.44
45:e:321:ASP:HA	45:e:328:ILE:HG12	1.99	0.44
1:B:536:LEU:HD13	57:C:1001:ATP:C8	2.50	0.44
1:C:587:ASP:N	1:C:587:ASP:OD1	2.51	0.44
1:E:262:THR:CG2	57:E:902:ATP:O1A	2.66	0.44
5:4:180:ARG:HH22	29:f:2719:U:H5''	1.82	0.44
29:f:2660:G:OP1	29:f:2750:U:O2'	2.35	0.44
35:m:65:ILE:HG12	35:m:74:VAL:HG22	1.99	0.44
38:p:53:PRO:CD	56:b0:32:PHE:CD2	2.95	0.44
45:e:1052:LEU:HB2	45:e:1079:LEU:HD11	1.99	0.44
45:e:1502:PHE:CE1	45:e:1515:LEU:HD21	2.52	0.44
53:v:345:TYR:CD2	53:v:349:ILE:HD12	2.53	0.44
1:B:328:GLY:HA3	2:K:15:LEU:HD23	2.00	0.44
4:3:179:GLN:HA	4:3:182:ILE:HG22	2.00	0.44
23:W:30:GLN:NE2	29:f:904:A:OP2	2.50	0.44
29:f:494:G:H2'	29:f:495:G:H8	1.82	0.44
44:a:199:ILE:HG12	44:a:212:LYS:HE3	1.99	0.44
45:e:378:LEU:O	45:e:379:PRO:C	2.60	0.44
45:e:1435:ASP:OD1	45:e:1514:ILE:HB	2.17	0.44
47:x:67:U:H2'	47:x:68:C:C6	2.52	0.44
1:E:301:GLU:O	1:E:305:LYS:NZ	2.49	0.44
1:F:605:GLY:HA2	1:F:609:ARG:HB2	1.99	0.44
15:O:14:ARG:NH2	29:f:1139:G:OP2	2.51	0.44
30:h:62:U:O2'	35:m:285:ARG:NH2	2.50	0.44
32:j:140:ASN:O	32:j:144:ASN:HA	2.16	0.44
35:m:205:SER:HB3	35:m:236:LEU:HD21	2.00	0.44
45:e:1059:LEU:HG	45:e:1065:VAL:HG11	2.00	0.44
1:A:262:THR:HG23	57:A:901:ATP:O3G	2.16	0.44
57:D:902:ATP:O1B	1:E:369:ARG:NH2	2.50	0.44
1:F:222:GLN:HE21	1:F:379:ILE:HD13	1.82	0.44
1:F:383:ASP:OD1	1:F:383:ASP:N	2.45	0.44
10:I:117:PRO:HA	10:I:135:VAL:HG13	2.00	0.44
13:M:133:LYS:NZ	29:f:1808:G:OP2	2.44	0.44
22:V:9:ILE:HD12	42:t:174:ARG:HB2	1.99	0.44
29:f:1786:G:H2'	29:f:1787:A:C8	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:f:2116:G:OP1	29:f:2118:C:N4	2.50	0.44
29:f:2357:A:H2'	29:f:2358:A:C8	2.53	0.44
29:f:2514:U:H5'	38:p:68:ARG:HG3	2.00	0.44
32:j:135:ILE:HD12	32:j:149:ARG:HE	1.82	0.44
33:k:83:PRO:O	33:k:165:GLN:NE2	2.48	0.44
36:n:175:LYS:O	43:u:117:ARG:NH2	2.50	0.44
45:e:1540:TYR:HE1	53:v:210:PHE:CE2	2.36	0.44
52:X:21:LYS:C	52:X:73:LEU:HD12	2.43	0.44
1:C:336:SER:HA	1:C:339:LEU:HG	1.99	0.44
1:C:561:TRP:CE2	2:K:8:LEU:HD11	2.52	0.44
1:C:702:GLN:NE2	1:D:521:SER:OG	2.50	0.44
1:D:561:TRP:CD1	2:K:5:VAL:N	2.85	0.44
1:D:622:ASN:HB3	1:D:625:LYS:HD2	1.99	0.44
1:E:217:GLY:N	57:E:902:ATP:N6	2.66	0.44
2:H:155:THR:OG1	2:H:156:LEU:N	2.50	0.44
25:Z:124:LYS:NZ	29:f:2897:A:OP2	2.47	0.44
33:k:215:ILE:HD12	33:k:338:LEU:HD12	1.98	0.44
34:l:74:ILE:HD12	34:l:75:PRO:HD2	2.00	0.44
45:e:130:LYS:HE3	45:e:130:LYS:HB2	1.79	0.44
45:e:240:ILE:HG22	45:e:246:ILE:HD11	2.00	0.44
47:x:41:G:H2'	47:x:42:A:C8	2.53	0.44
53:v:479:TYR:OH	53:v:512:ARG:HD3	2.17	0.44
1:D:485:THR:OG1	1:D:486:TRP:N	2.51	0.44
1:D:559:SER:CB	1:E:562:TYR:CZ	2.88	0.44
1:F:680:LEU:HG	1:F:755:LYS:HG3	1.98	0.44
10:I:128:ARG:NE	46:g:12:GLU:OE2	2.50	0.44
29:f:1282:G:OP1	49:0:56:ASN:N	2.40	0.44
29:f:1888:U:H5''	33:k:247:ARG:HB2	2.00	0.44
29:f:2697:A:H2'	29:f:2698:G:C8	2.52	0.44
33:k:106:TRP:O	33:k:137:TYR:OH	2.24	0.44
37:o:83:LEU:HD11	37:o:116:PHE:HB3	1.99	0.44
38:p:50:VAL:HG22	56:b0:29:SER:O	2.17	0.44
47:x:26:G:C6	47:x:43:G:O6	2.69	0.44
53:v:211:LYS:CE	53:v:222:LEU:HD11	2.41	0.44
1:B:92:LEU:CD2	1:B:160:GLU:HB2	2.46	0.44
1:C:706:LYS:HB2	1:D:501:GLU:HG2	2.00	0.44
1:E:562:TYR:CD1	1:E:562:TYR:O	2.70	0.44
1:E:562:TYR:CB	2:K:2:GLN:HA	2.48	0.44
1:F:321:PRO:HD2	1:F:323:ARG:HH12	1.82	0.44
38:p:95:ASN:OD1	38:p:98:ARG:NH2	2.51	0.44
53:v:643:ALA:HB1	54:2:64:GLU:HG2	1.93	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:327:ASN:OD1	1:C:332:ARG:NH1	2.51	0.44
1:C:663:ARG:HG2	1:C:666:ILE:HD12	2.00	0.44
1:F:622:ASN:O	1:F:624:LYS:NZ	2.42	0.44
1:F:671:LEU:HD13	1:F:676:LEU:HD22	1.99	0.44
3:G:495:MET:N	3:G:495:MET:SD	2.91	0.44
3:G:563:LEU:O	3:G:566:SER:OG	2.36	0.44
21:U:78:LYS:HA	21:U:81:ARG:HG2	2.00	0.44
29:f:2768:U:H2'	29:f:2769:A:H8	1.83	0.44
29:f:3178:A:N6	55:a0:6:VAL:CG2	2.81	0.44
48:z:51:LYS:O	48:z:55:GLY:N	2.51	0.44
53:v:491:MET:HE2	53:v:502:PHE:CG	2.52	0.44
1:C:485:THR:OG1	1:C:486:TRP:N	2.48	0.43
1:E:571:ASP:O	1:E:575:LYS:NZ	2.47	0.43
2:H:172:ARG:O	2:H:174:ARG:NH2	2.51	0.43
3:G:413:MET:HG3	3:G:434:VAL:HG11	2.00	0.43
7:6:70:THR:OG1	43:u:55:ARG:NH1	2.51	0.43
18:R:3:SER:OG	18:R:4:LEU:N	2.51	0.43
29:f:1666:G:H2'	29:f:1667:A:H8	1.83	0.43
29:f:3007:U:H5''	55:a0:73:PHE:HA	1.99	0.43
29:f:3016:A:H2'	29:f:3017:A:H8	1.83	0.43
45:e:1508:CYS:O	45:e:1512:TYR:N	2.47	0.43
49:0:14:LYS:HE3	49:0:52:LEU:HD11	2.00	0.43
1:B:644:LEU:HA	1:B:649:LEU:HD12	2.00	0.43
1:F:259:THR:C	57:F:901:ATP:N1	2.76	0.43
3:G:325:ILE:HG22	3:G:384:CYS:HB3	2.00	0.43
7:6:164:SER:CB	55:a0:121:PRO:HG3	2.48	0.43
10:I:38:ALA:HB3	10:I:59:MET:HB2	1.99	0.43
12:L:112:ASP:OD2	31:i:85:G:N1	2.49	0.43
16:P:9:SER:OG	16:P:10:ILE:N	2.39	0.43
26:b:100:LYS:HE3	26:b:100:LYS:HB3	1.90	0.43
29:f:1524:A:H5''	56:b0:111:ASN:OD1	2.17	0.43
29:f:1675:G:H2'	29:f:1676:A:H8	1.83	0.43
29:f:2960:C:H2'	29:f:2961:G:C8	2.53	0.43
32:j:101:VAL:HG22	32:j:165:VAL:HG22	2.00	0.43
38:p:46:LEU:HD12	56:b0:28:THR:C	2.42	0.43
38:p:46:LEU:C	56:b0:27:ARG:O	2.61	0.43
45:e:773:PHE:HA	45:e:812:LEU:HD11	1.99	0.43
45:e:1240:LEU:HG	45:e:1290:PHE:CD1	2.54	0.43
45:e:1283:SER:OG	45:e:1286:MET:HG2	2.17	0.43
51:w:96:ASN:HD21	51:w:99:LEU:HD12	1.84	0.43
1:A:219:CYS:HB2	1:A:222:GLN:HB2	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:624:LYS:HE3	1:F:464:PHE:HA	2.00	0.43
1:C:317:ASP:HA	1:C:363:ILE:HD13	2.00	0.43
1:D:561:TRP:HE1	2:K:5:VAL:C	2.26	0.43
1:F:504:GLU:HB3	1:F:545:VAL:HG12	2.00	0.43
23:W:63:ARG:NH1	31:i:58:G:O6	2.50	0.43
29:f:3295:A:H2'	29:f:3296:A:C8	2.53	0.43
45:e:932:LEU:C	45:e:933:LEU:HA	2.42	0.43
45:e:1075:LEU:HD23	45:e:1075:LEU:HA	1.80	0.43
49:0:15:LEU:O	49:0:19:LEU:HG	2.18	0.43
1:D:561:TRP:CD1	2:K:6:LYS:HD3	2.54	0.43
1:E:262:THR:HG21	57:E:902:ATP:O1A	2.18	0.43
1:E:535:THR:OG1	58:E:901:ADP:O3A	2.35	0.43
29:f:696:C:OP2	34:l:119:ARG:NH2	2.49	0.43
29:f:1222:G:N2	29:f:1285:G:O2'	2.51	0.43
29:f:1748:G:OP1	52:X:44:LYS:HE3	1.97	0.43
29:f:1748:G:OP1	52:X:44:LYS:NZ	2.41	0.43
31:i:134:G:H5''	56:b0:53:HIS:C	2.44	0.43
44:a:704:LEU:HD23	44:a:938:ILE:HD11	2.00	0.43
45:e:1498:VAL:HG13	45:e:1502:PHE:CD2	2.53	0.43
47:x:56:C:O2'	47:x:57:G:P	2.76	0.43
1:A:590:ASP:OD1	1:A:590:ASP:N	2.48	0.43
1:E:529:PRO:O	1:E:534:LYS:NZ	2.51	0.43
2:K:36:ILE:HG23	2:K:37:PRO:HD2	1.98	0.43
7:6:32:SER:HB2	7:6:36:ILE:HD12	2.01	0.43
13:M:64:LYS:NZ	29:f:1811:G:N7	2.64	0.43
29:f:710:A:H2'	29:f:711:A:C8	2.54	0.43
29:f:1524:A:OP1	56:b0:111:ASN:CA	2.67	0.43
29:f:1750:A:H4'	52:X:26:LYS:HZ3	1.84	0.43
29:f:2160:G:H2'	29:f:2161:G:H8	1.84	0.43
29:f:2840:C:N4	29:f:2845:A:O2'	2.50	0.43
45:e:1303:MET:CA	45:e:1303:MET:HE3	2.40	0.43
45:e:1435:ASP:OD2	45:e:1514:ILE:CB	2.67	0.43
46:g:38:PHE:O	46:g:42:LEU:HB2	2.19	0.43
47:y:61:C:H2'	47:y:62:C:C6	2.54	0.43
53:v:501:GLY:HA2	53:v:567:TYR:CE1	2.53	0.43
57:C:1003:ATP:PB	1:D:645:ARG:CZ	3.00	0.43
1:D:689:THR:HB	1:D:692:PHE:HB2	2.00	0.43
1:D:696:ASP:HA	1:E:646:PRO:HG2	2.00	0.43
2:H:139:ASP:O	2:H:174:ARG:NH1	2.52	0.43
7:6:80:ARG:HG3	7:6:124:LEU:HD21	1.99	0.43
8:7:133:ALA:HB3	37:o:121:LYS:HB2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:8:20:SER:HA	9:8:23:THR:HG22	2.00	0.43
23:W:58:THR:OG1	23:W:59:THR:N	2.51	0.43
24:Y:37:TYR:O	29:f:351:A:N6	2.48	0.43
26:b:28:TYR:HB3	26:b:69:VAL:HB	2.01	0.43
29:f:2459:A:H61	29:f:2487:U:H3	1.67	0.43
38:p:44:ARG:O	56:b0:28:THR:CB	2.66	0.43
38:p:82:LEU:HD13	38:p:222:PHE:HE2	1.84	0.43
45:e:1407:MET:HB2	45:e:1407:MET:HE2	1.68	0.43
45:e:1477:GLN:OE1	45:e:1477:GLN:O	2.36	0.43
46:g:119:PRO:O	46:g:139:ARG:NH1	2.50	0.43
51:w:43:PRO:HD3	51:w:163:LEU:HD21	2.01	0.43
1:E:520:PRO:O	1:E:522:LYS:NZ	2.45	0.43
2:J:255:THR:OG1	2:J:256:LEU:N	2.52	0.43
8:7:102:ARG:HA	8:7:102:ARG:HD2	1.77	0.43
29:f:595:G:OP2	37:o:30:ARG:NH1	2.51	0.43
29:f:1831:U:P	56:b0:92:LYS:HG3	2.58	0.43
29:f:2270:A:H2'	29:f:2271:A:C8	2.53	0.43
29:f:2468:A:H4'	29:f:2469:G:H4'	2.00	0.43
29:f:3358:U:H2'	29:f:3359:A:H8	1.84	0.43
40:r:106:ALA:CB	47:x:74:C:H5''	2.49	0.43
45:e:272:TYR:CB	45:e:277:MET:CE	2.97	0.43
45:e:272:TYR:CG	45:e:277:MET:SD	3.12	0.43
52:X:30:LYS:HB2	52:X:38:PHE:CZ	2.53	0.43
1:A:530:PRO:HB3	1:A:634:ASN:HB3	2.00	0.43
1:B:1:LEU:HD12	1:B:77:ILE:CD1	2.49	0.43
57:F:901:ATP:H5'1	57:F:901:ATP:N3	2.32	0.43
3:G:327:THR:HG22	3:G:386:ILE:HD12	2.00	0.43
7:6:80:ARG:HD2	8:7:155:PRO:HA	2.00	0.43
10:I:80:ARG:HB2	10:I:99:ALA:HB3	2.00	0.43
14:N:36:GLY:HA3	14:N:40:HIS:CE1	2.53	0.43
27:c:44:LYS:NZ	29:f:1727:G:OP1	2.51	0.43
29:f:1523:U:C5	56:b0:123:TYR:OH	2.65	0.43
29:f:1666:G:H2'	29:f:1667:A:C8	2.54	0.43
29:f:1825:G:P	52:X:49:SER:HG	2.32	0.43
29:f:2745:G:N2	29:f:2748:A:OP2	2.47	0.43
29:f:3244:A:O2'	55:a0:111:PRO:CG	2.63	0.43
29:f:3245:A:O2'	55:a0:110:PRO:CB	2.67	0.43
38:p:104:GLU:HA	38:p:107:GLU:HG3	2.00	0.43
39:q:9:GLN:HB3	39:q:52:LEU:HD11	2.01	0.43
53:v:381:ARG:NH2	54:2:6:LYS:CD	2.60	0.43
1:B:52:LEU:HD21	1:B:58:ARG:CG	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:488:ASP:OD1	1:D:672:ARG:NH1	2.52	0.43
3:G:241:LYS:HG3	3:G:243:GLU:H	1.83	0.43
9:8:42:LYS:NZ	29:f:1686:U:OP1	2.44	0.43
23:W:45:ARG:NH2	29:f:361:A:O3'	2.52	0.43
26:b:10:THR:HG21	26:b:72:LEU:HD13	2.01	0.43
29:f:1558:A:H1'	56:b0:34:LEU:CD1	2.48	0.43
29:f:2213:A:H2'	29:f:2214:A:C8	2.54	0.43
29:f:2383:C:N3	55:a0:91:LYS:HG2	2.32	0.43
35:m:95:TRP:CE3	35:m:198:TYR:HB3	2.54	0.43
38:p:86:THR:HA	38:p:89:GLU:HG2	2.00	0.43
38:p:239:GLY:O	38:p:243:GLN:HB2	2.19	0.43
45:e:1164:LEU:HG	45:e:1165:LYS:HD3	2.00	0.43
49:0:75:LYS:O	49:0:78:PRO:HD2	2.19	0.43
1:B:531:GLY:HA2	1:B:695:ALA:HB2	2.00	0.43
1:B:587:ASP:OD1	1:B:587:ASP:N	2.52	0.43
2:J:243:LEU:HD11	2:J:267:LEU:HB3	1.99	0.43
27:c:66:GLY:HA2	32:j:80:GLU:HG3	2.00	0.43
29:f:520:U:O4	34:l:347:THR:OG1	2.34	0.43
29:f:2129:U:H2'	29:f:2130:G:C8	2.54	0.43
34:l:22:LEU:HA	34:l:23:PRO:HD3	1.85	0.43
45:e:1193:LEU:HD23	45:e:1193:LEU:HA	1.63	0.43
47:y:37:A:H3'	47:y:38:U:H4'	2.01	0.43
53:v:289:MET:HE2	53:v:327:TYR:CG	2.54	0.43
53:v:541:LYS:HE2	53:v:568:MET:HE3	2.00	0.43
1:A:387:ARG:NH1	1:A:413:THR:O	2.52	0.42
1:A:399:LYS:NZ	1:B:242:ALA:O	2.46	0.42
22:V:18:THR:HG23	42:t:106:GLN:HB3	2.01	0.42
29:f:417:A:H2'	29:f:418:A:C8	2.54	0.42
29:f:1522:U:C5	56:b0:116:PRO:CG	2.94	0.42
29:f:2268:U:H3	29:f:2272:G:H22	1.65	0.42
33:k:94:GLU:HG3	55:a0:152:VAL:CG2	2.49	0.42
38:p:183:LYS:HB2	38:p:194:THR:HG23	2.01	0.42
44:a:117:PHE:CD1	44:a:118:SER:N	2.86	0.42
45:e:1083:SER:O	45:e:1087:CYS:SG	2.70	0.42
45:e:1189:ASN:ND2	45:e:1337:PHE:HB3	2.34	0.42
45:e:1446:PRO:HD2	45:e:1449:TYR:HD1	1.84	0.42
1:A:279:ILE:HB	1:A:313:ILE:HG22	2.01	0.42
1:A:490:GLY:H	1:A:666:ILE:HG12	1.83	0.42
1:E:259:THR:CG2	1:E:261:LYS:HD2	2.49	0.42
1:E:391:LEU:HD13	1:E:406:LEU:HB3	2.01	0.42
1:F:258:GLY:CA	57:F:901:ATP:O1B	2.66	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:417:VAL:HG13	1:F:419:ALA:H	1.85	0.42
29:f:2711:C:O2'	29:f:2744:U:OP1	2.38	0.42
29:f:3178:A:N6	55:a0:6:VAL:HG21	2.34	0.42
29:f:3322:A:H2'	29:f:3323:A:C8	2.53	0.42
33:k:284:ARG:HB3	33:k:323:MET:HB3	2.02	0.42
38:p:51:LYS:O	56:b0:32:PHE:CB	2.68	0.42
44:a:45:LYS:HG2	44:a:46:PRO:HD2	2.00	0.42
48:z:54:LYS:O	48:z:56:ILE:N	2.52	0.42
1:A:663:ARG:HD2	1:A:686:ALA:HB1	2.00	0.42
1:D:436:LYS:HA	1:D:436:LYS:HD3	1.94	0.42
2:K:37:PRO:HB3	2:K:38:PRO:CD	2.25	0.42
7:6:95:ARG:HB2	7:6:140:VAL:HG23	2.00	0.42
29:f:2218:G:H2'	29:f:2219:A:C8	2.54	0.42
31:i:136:G:P	56:b0:48:SER:HG	2.42	0.42
35:m:234:ASP:OD1	35:m:234:ASP:N	2.47	0.42
43:u:113:THR:OG1	43:u:114:ASP:N	2.52	0.42
45:e:254:ASN:OD1	45:e:254:ASN:N	2.49	0.42
45:e:1099:ARG:HE	45:e:1099:ARG:HB3	1.48	0.42
1:B:1:LEU:N	1:B:75:VAL:O	2.48	0.42
8:7:68:THR:OG1	8:7:69:LYS:N	2.51	0.42
14:N:27:LYS:NZ	29:f:801:A:OP1	2.37	0.42
23:W:27:PHE:HA	23:W:34:CYS:HA	2.01	0.42
29:f:531:G:H2'	29:f:532:A:C8	2.55	0.42
29:f:3243:A:N1	55:a0:107:GLY:CA	2.82	0.42
38:p:178:ALA:HB2	38:p:218:ILE:HG23	2.02	0.42
41:s:96:PHE:HB2	41:s:156:LYS:HE3	2.01	0.42
45:e:227:LYS:HA	45:e:227:LYS:HD3	1.85	0.42
45:e:1057:THR:CG2	45:e:1108:THR:HG21	2.49	0.42
1:A:239:LEU:HD13	1:F:433:ILE:HD13	2.01	0.42
1:C:489:VAL:CG2	57:C:1003:ATP:N6	2.83	0.42
1:D:359:ARG:HD2	1:D:360:PRO:HD2	2.01	0.42
3:G:129:ILE:HB	3:G:151:LEU:HB3	2.02	0.42
26:b:34:SER:OG	26:b:35:LEU:O	2.32	0.42
29:f:1221:A:C4	49:0:12:PHE:HZ	2.38	0.42
29:f:3218:A:H5''	29:f:3219:G:C5	2.55	0.42
33:k:262:TRP:HD1	55:a0:64:PHE:C	2.27	0.42
34:l:261:VAL:HG23	34:l:262:TRP:CD1	2.55	0.42
35:m:144:VAL:HG11	35:m:171:LEU:HD13	2.02	0.42
37:o:129:LEU:HD23	37:o:129:LEU:HA	1.89	0.42
44:a:113:VAL:HB	44:a:123:ILE:HB	2.01	0.42
45:e:704:THR:O	45:e:707:LYS:HG3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:e:1068:MET:CE	45:e:1070:ILE:HD11	2.49	0.42
53:v:451:LYS:HE3	53:v:473:PHE:CE1	2.54	0.42
1:A:391:LEU:HD13	1:A:409:LEU:HD13	2.01	0.42
2:K:39:ASP:O	3:G:472:ASN:N	2.53	0.42
5:4:124:LEU:HD13	5:4:127:LEU:HD23	2.01	0.42
6:5:102:LEU:HD22	6:5:138:LEU:HD22	2.01	0.42
11:9:34:SER:OG	29:f:3085:G:OP1	2.32	0.42
29:f:219:A:HO2'	29:f:220:G:H21	1.66	0.42
29:f:1203:A:H2'	29:f:1204:A:C8	2.55	0.42
29:f:1825:G:OP2	52:X:49:SER:CB	2.68	0.42
29:f:2772:C:H4'	29:f:2773:C:H5'	2.02	0.42
29:f:3016:A:H2'	29:f:3017:A:C8	2.55	0.42
44:a:54:VAL:HG22	44:a:60:ILE:HG13	2.00	0.42
45:e:1083:SER:HA	45:e:1086:MET:HG2	2.00	0.42
47:y:68:C:H2'	47:y:69:G:C8	2.54	0.42
52:X:5:ILE:HD11	52:X:14:LEU:HD12	2.00	0.42
53:v:374:GLN:NE2	54:2:10:GLY:N	2.66	0.42
53:v:399:PHE:CE1	53:v:426:PHE:HB2	2.54	0.42
1:F:511:ASP:OD1	1:F:511:ASP:N	2.51	0.42
29:f:1831:U:OP2	56:b0:92:LYS:HG3	2.20	0.42
29:f:2876:C:H5'	47:x:76:A:H4'	2.01	0.42
1:F:322:LYS:HA	1:F:322:LYS:HD3	1.91	0.42
29:f:158:G:H2'	29:f:159:A:H8	1.85	0.42
29:f:760:G:O2'	29:f:770:G:N2	2.43	0.42
29:f:1660:C:H2'	29:f:1661:G:H8	1.85	0.42
31:i:26:U:O2'	34:l:51:ALA:O	2.37	0.42
38:p:46:LEU:H	56:b0:28:THR:HA	1.85	0.42
38:p:228:GLU:O	38:p:232:HIS:ND1	2.43	0.42
56:b0:142:ILE:HD12	56:b0:142:ILE:HA	1.83	0.42
1:D:249:ARG:NH1	1:D:349:SER:O	2.49	0.42
26:b:10:THR:HA	26:b:20:HIS:HD2	1.84	0.42
29:f:16:A:O3'	56:b0:45:LYS:HG2	2.19	0.42
29:f:1194:G:H2'	29:f:1195:A:C8	2.55	0.42
29:f:3023:U:H2'	29:f:3024:A:H8	1.84	0.42
29:f:3183:A:P	55:a0:12:LYS:HE3	2.60	0.42
44:a:601:TYR:HA	44:a:605:ILE:HB	2.02	0.42
45:e:1429:LYS:HE2	45:e:1429:LYS:HB3	1.85	0.42
46:g:199:VAL:HG23	46:g:204:ALA:HB2	2.02	0.42
51:w:37:GLY:O	51:w:202:GLY:N	2.52	0.42
53:v:345:TYR:CE2	53:v:349:ILE:HD12	2.54	0.42
1:C:529:PRO:HG2	1:C:532:THR:HG21	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:560:MET:O	2:K:6:LYS:NZ	2.50	0.42
1:F:413:THR:HB	1:F:416:TYR:HB2	2.02	0.42
29:f:240:U:H4'	29:f:241:G:H5'	2.02	0.42
29:f:716:A:OP1	29:f:752:C:O2'	2.37	0.42
29:f:1237:G:H22	29:f:1251:A:H2	1.66	0.42
29:f:1751:G:H5''	52:X:26:LYS:HE3	2.01	0.42
29:f:3180:A:C6	55:a0:167:TYR:CZ	3.08	0.42
39:q:90:MET:HE3	39:q:179:ILE:HG22	2.01	0.42
44:a:967:LEU:HD13	44:a:1005:LEU:HB2	2.01	0.42
45:e:1172:LYS:HB3	45:e:1173:ARG:NH2	2.35	0.42
47:y:12:G:H2'	47:y:13:U:O4'	2.20	0.42
51:w:25:LYS:HD2	51:w:25:LYS:HA	1.88	0.42
53:v:186:PRO:HG2	53:v:189:CYS:SG	2.60	0.42
54:2:45:PHE:HB3	54:2:50:LEU:HD21	2.02	0.42
1:B:532:THR:HG22	57:C:1001:ATP:H5'2	2.02	0.41
1:C:222:GLN:NE2	1:C:378:ASP:O	2.53	0.41
1:D:666:ILE:CD1	57:D:901:ATP:N1	2.82	0.41
2:J:222:THR:HA	2:J:255:THR:HA	2.02	0.41
4:3:116:HIS:HB3	4:3:149:VAL:HB	2.02	0.41
18:R:4:LEU:HD12	18:R:5:PRO:HD2	2.01	0.41
29:f:129:U:H2'	29:f:130:A:C8	2.54	0.41
29:f:2268:U:H3	29:f:2272:G:H1	1.68	0.41
29:f:2514:U:OP2	29:f:2586:G:N2	2.49	0.41
35:m:200:PHE:HB3	35:m:237:GLU:HG2	2.02	0.41
36:n:112:THR:HG23	36:n:115:GLU:H	1.85	0.41
44:a:246:ASP:HB2	44:a:249:GLU:HB2	2.02	0.41
45:e:735:GLN:HG2	45:e:815:TYR:HB2	2.01	0.41
45:e:1193:LEU:O	45:e:1196:THR:HG22	2.20	0.41
45:e:1521:LYS:NZ	53:v:216:ASP:O	2.53	0.41
1:A:677:GLU:HG2	1:A:679:GLY:H	1.84	0.41
1:C:490:GLY:HA3	1:C:666:ILE:HG12	2.02	0.41
13:M:121:ARG:HA	13:M:121:ARG:HD2	1.93	0.41
29:f:443:G:O6	29:f:490:C:N4	2.53	0.41
29:f:2500:A:H4'	29:f:2501:U:OP1	2.20	0.41
29:f:3163:A:N6	29:f:3288:G:O6	2.53	0.41
33:k:236:LYS:HE2	33:k:236:LYS:HB2	1.90	0.41
40:r:72:ALA:HB2	40:r:155:ALA:HB2	2.01	0.41
40:r:144:ASN:HD22	40:r:144:ASN:N	2.18	0.41
41:s:131:MET:HE3	41:s:131:MET:HB3	1.81	0.41
45:e:1544:ARG:HH22	53:v:276:ARG:NH1	1.76	0.41
1:A:777:TYR:HA	1:A:780:TYR:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:432:GLN:NE2	1:B:456:GLY:O	2.54	0.41
1:D:493:ASP:N	1:D:493:ASP:OD1	2.48	0.41
1:E:209:ASN:OD1	1:E:209:ASN:N	2.53	0.41
1:E:466:LEU:HA	1:E:469:SER:HB3	2.02	0.41
1:E:561:TRP:CD1	1:E:564:GLU:HG3	2.54	0.41
11:9:17:ARG:HD3	11:9:17:ARG:HA	1.91	0.41
20:T:60:ARG:NH1	29:f:1593:A:OP1	2.53	0.41
29:f:1579:C:H2'	29:f:1580:A:C8	2.55	0.41
29:f:3007:U:O2'	55:a0:71:PHE:CD1	2.73	0.41
30:h:38:U:N3	30:h:41:G:OP2	2.41	0.41
39:q:86:TYR:CE2	39:q:151:VAL:HB	2.56	0.41
45:e:178:LEU:HA	45:e:178:LEU:HD12	1.66	0.41
45:e:1477:GLN:CD	45:e:1477:GLN:C	2.88	0.41
1:A:317:ASP:OD1	1:A:317:ASP:N	2.46	0.41
1:A:470:ASN:OD1	1:A:470:ASN:N	2.53	0.41
1:B:111:LYS:HB3	1:B:112:PRO:HD3	2.02	0.41
1:B:492:LEU:HD23	1:B:495:ILE:HD12	2.02	0.41
1:B:608:ASP:OD1	1:B:608:ASP:N	2.54	0.41
13:M:9:LYS:HB3	13:M:9:LYS:HE3	1.91	0.41
29:f:2471:U:O3'	29:f:2472:U:H6	2.03	0.41
29:f:2871:G:H5''	29:f:2872:A:H5'	2.02	0.41
29:f:3233:C:H2'	29:f:3234:A:C8	2.55	0.41
34:l:34:ILE:HG21	34:l:120:TYR:HD2	1.85	0.41
43:u:47:ASP:HB2	43:u:55:ARG:HG3	2.02	0.41
44:a:956:ILE:HG12	44:a:1016:VAL:HG12	2.03	0.41
45:e:858:LEU:HD12	45:e:858:LEU:HA	1.92	0.41
48:z:51:LYS:O	48:z:54:LYS:N	2.54	0.41
1:A:214:ASP:OD1	1:A:214:ASP:N	2.52	0.41
1:A:311:ILE:HB	1:A:353:VAL:HG12	2.02	0.41
1:B:275:PHE:HE2	1:B:277:PHE:HD2	1.67	0.41
1:C:476:GLU:HG3	1:C:479:VAL:HB	2.02	0.41
1:E:256:PRO:HA	1:E:257:PRO:HD3	1.96	0.41
3:G:168:SER:O	3:G:171:SER:OG	2.39	0.41
3:G:284:ILE:HG21	3:G:325:ILE:HD11	2.02	0.41
4:3:122:ALA:HB3	4:3:143:PRO:HB2	2.01	0.41
10:I:135:VAL:HG23	46:g:102:SER:HB3	2.03	0.41
19:S:16:TYR:OH	19:S:89:LEU:O	2.31	0.41
26:b:61:LYS:NZ	26:b:63:LYS:O	2.53	0.41
29:f:1404:G:N2	29:f:1407:A:OP2	2.43	0.41
29:f:1831:U:C5'	56:b0:91:ASN:HB3	2.40	0.41
29:f:2523:A:H3'	56:b0:30:ALA:HB1	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:f:3198:U:H1'	39:q:21:LYS:HB2	2.01	0.41
40:r:52:LEU:HB3	40:r:136:PHE:HB2	2.02	0.41
45:e:1165:LYS:HB2	45:e:1165:LYS:HE2	1.81	0.41
1:A:314:ASP:OD2	57:A:901:ATP:O3G	2.38	0.41
1:B:387:ARG:NE	1:B:413:THR:O	2.54	0.41
1:D:650:ASP:OD1	1:D:650:ASP:N	2.46	0.41
1:F:697:LEU:HD22	1:F:700:ILE:HD11	2.02	0.41
3:G:169:PHE:HA	3:G:172:TYR:HB3	2.01	0.41
29:f:3121:U:H1'	29:f:3122:A:H5''	2.01	0.41
35:m:266:ALA:O	35:m:270:LYS:HB2	2.20	0.41
44:a:98:ASP:HA	47:x:34:A:H61	1.84	0.41
45:e:759:ASP:O	45:e:762:GLN:HG3	2.20	0.41
45:e:964:PHE:CD2	45:e:968:ASN:ND2	2.89	0.41
45:e:1273:HIS:HA	45:e:1276:LEU:HG	2.02	0.41
45:e:1496:LYS:O	45:e:1500:LEU:HG	2.21	0.41
45:e:1514:ILE:O	45:e:1535:HIS:NE2	2.29	0.41
49:0:67:LEU:HD22	49:0:67:LEU:HA	1.85	0.41
1:A:246:LYS:HB2	1:A:246:LYS:HE2	1.88	0.41
1:B:666:ILE:HD13	57:C:1001:ATP:C2	2.55	0.41
1:E:485:THR:OG1	1:E:487:ASP:OD1	2.34	0.41
1:E:619:ASP:OD1	1:E:619:ASP:N	2.44	0.41
1:F:276:PHE:HE2	1:F:278:LEU:HD12	1.85	0.41
1:F:648:ARG:HG2	1:F:649:LEU:HD12	2.01	0.41
29:f:673:U:H2'	29:f:674:G:C8	2.55	0.41
29:f:1083:G:H2'	29:f:1084:A:C8	2.56	0.41
29:f:2747:A:H2'	29:f:2748:A:C8	2.54	0.41
38:p:46:LEU:H	56:b0:27:ARG:C	2.09	0.41
53:v:191:ARG:HA	53:v:412:LEU:HD11	2.03	0.41
1:A:364:ASP:HA	1:A:365:PRO:HD3	1.94	0.41
1:C:583:VAL:HG13	1:C:628:PHE:HZ	1.84	0.41
1:D:216:ILE:HG22	57:D:902:ATP:N7	2.32	0.41
1:D:531:GLY:N	57:D:901:ATP:PB	2.94	0.41
1:F:574:ASP:OD1	1:F:574:ASP:N	2.52	0.41
6:5:31:GLU:HA	6:5:34:GLN:HB2	2.03	0.41
29:f:182:U:H2'	29:f:183:G:H8	1.85	0.41
29:f:745:C:H2'	29:f:746:A:H8	1.85	0.41
29:f:1288:U:H2'	29:f:1289:G:C8	2.54	0.41
29:f:1497:C:H2'	29:f:1498:A:C8	2.56	0.41
29:f:2357:A:H2'	29:f:2358:A:H8	1.85	0.41
29:f:2536:A:H2'	29:f:2537:U:C4	2.56	0.41
29:f:3008:A:P	55:a0:72:HIS:H	2.37	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:h:84:A:H2'	30:h:85:G:C8	2.56	0.41
32:j:52:SER:HB3	32:j:191:LEU:HD23	2.02	0.41
35:m:279:LYS:HE2	35:m:279:LYS:HB3	1.89	0.41
36:n:176:PHE:O	43:u:113:THR:OG1	2.33	0.41
44:a:117:PHE:HD1	44:a:118:SER:O	2.02	0.41
45:e:875:ASN:O	45:e:879:ILE:HG13	2.21	0.41
45:e:1435:ASP:CG	45:e:1514:ILE:HB	2.45	0.41
53:v:304:GLU:HG3	53:v:620:PHE:CZ	2.56	0.41
53:v:540:GLU:OE2	53:v:568:MET:HE1	2.20	0.41
1:B:531:GLY:O	57:C:1001:ATP:C5'	2.63	0.41
1:C:465:ALA:O	1:C:469:SER:OG	2.32	0.41
1:D:499:LEU:HD21	1:D:526:PHE:HZ	1.86	0.41
9:8:92:TRP:CZ2	45:e:1474:MET:HB2	2.55	0.41
10:I:66:LYS:HA	10:I:67:PRO:HD3	1.94	0.41
17:Q:20:LEU:HD11	17:Q:32:ALA:HB2	2.03	0.41
20:T:19:LYS:HA	20:T:19:LYS:HD3	1.93	0.41
20:T:92:ALA:O	20:T:96:GLU:HG2	2.21	0.41
20:T:93:PHE:HD2	20:T:94:LEU:HD22	1.86	0.41
22:V:5:THR:HG23	22:V:12:ASN:HB2	2.03	0.41
29:f:20:A:H2'	29:f:21:G:C8	2.56	0.41
29:f:352:A:H61	29:f:365:A:H5''	1.86	0.41
29:f:1833:G:OP2	56:b0:114:VAL:HG21	2.14	0.41
29:f:2208:A:H62	44:a:843:LYS:NZ	2.18	0.41
29:f:2413:A:H2'	29:f:2414:G:H8	1.85	0.41
29:f:2457:G:H2'	29:f:2459:A:C2	2.55	0.41
29:f:2473:C:C2'	29:f:2474:G:H4'	2.50	0.41
29:f:3217:C:C5	29:f:3220:G:H1'	2.56	0.41
29:f:3243:A:C2'	55:a0:110:PRO:CD	2.98	0.41
30:h:53:U:O2'	30:h:55:A:N7	2.53	0.41
35:m:191:ASP:HA	35:m:192:PRO:HD3	1.94	0.41
41:s:75:LYS:O	41:s:79:ILE:HG13	2.20	0.41
43:u:93:LYS:HB2	43:u:93:LYS:HE3	1.87	0.41
43:u:124:ARG:CG	55:a0:194:LEU:HD22	2.35	0.41
44:a:90:THR:CG2	44:a:107:ASP:OD1	2.66	0.41
44:a:574:PHE:HB2	44:a:589:MET:HE1	2.03	0.41
44:a:632:PRO:HA	44:a:635:LEU:HD12	2.02	0.41
45:e:251:ASN:HD21	45:e:253:LYS:HB2	1.85	0.41
45:e:308:PRO:O	45:e:311:PRO:HD2	2.20	0.41
45:e:854:GLU:HA	45:e:855:PRO:HD3	1.91	0.41
45:e:1057:THR:HG23	45:e:1105:LEU:HA	2.03	0.41
45:e:1237:LYS:HB2	45:e:1237:LYS:HE3	1.76	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:e:1400:PHE:CE1	45:e:1428:VAL:HG22	2.55	0.41
45:e:1447:LYS:HB2	45:e:1447:LYS:HE2	1.89	0.41
45:e:1511:CYS:SG	45:e:1535:HIS:CE1	3.14	0.41
49:0:70:LEU:HB3	49:0:73:PHE:CD1	2.55	0.41
51:w:9:VAL:HG12	51:w:180:VAL:HG22	2.03	0.41
51:w:204:LEU:HB2	51:w:216:LEU:O	2.21	0.41
1:B:111:LYS:HG3	1:B:115:VAL:HG21	2.01	0.41
1:B:533:GLY:N	57:C:1001:ATP:O2A	2.54	0.41
1:C:608:ASP:OD1	1:C:608:ASP:N	2.54	0.41
1:D:666:ILE:HD11	57:D:901:ATP:C6	2.48	0.41
7:6:14:LEU:HA	7:6:15:PRO:HD3	1.96	0.41
12:L:48:LEU:HD23	12:L:48:LEU:HA	1.92	0.41
19:S:37:THR:OG1	19:S:39:GLN:OE1	2.39	0.41
29:f:596:C:N3	29:f:608:A:O2'	2.54	0.41
29:f:824:C:H5''	32:j:21:ARG:HG3	2.03	0.41
29:f:1421:G:H2'	29:f:1422:G:H8	1.86	0.41
29:f:1596:C:H2'	29:f:1597:C:C6	2.56	0.41
29:f:2508:U:H2'	29:f:2509:U:C6	2.56	0.41
42:t:57:VAL:HG23	42:t:147:ILE:HD12	2.03	0.41
44:a:597:THR:HG23	44:a:621:TRP:HE1	1.86	0.41
46:g:49:VAL:HG21	46:g:88:LEU:HD22	2.03	0.41
52:X:8:ILE:HG23	53:v:131:ILE:HG21	2.03	0.41
54:2:36:ILE:HG21	54:2:71:LEU:HD22	2.03	0.41
1:A:431:GLN:HA	1:A:434:ARG:HG2	2.02	0.40
1:A:706:LYS:HD2	1:A:706:LYS:HA	1.94	0.40
1:B:703:ARG:HA	1:B:703:ARG:HD2	1.89	0.40
1:F:640:ASP:HA	1:F:641:PRO:HD3	1.90	0.40
1:F:689:THR:HA	1:F:692:PHE:HD2	1.86	0.40
2:K:21:ASP:OD2	3:G:227:GLN:NE2	2.43	0.40
8:7:73:GLY:HA2	8:7:89:LEU:O	2.21	0.40
25:Z:113:ARG:NH2	29:f:1190:A:H4'	2.36	0.40
28:d:21:ARG:HD2	28:d:21:ARG:HA	1.80	0.40
45:e:1094:TYR:O	45:e:1098:LEU:HG	2.21	0.40
45:e:1410:LEU:HG	45:e:1417:LEU:HD11	2.03	0.40
53:v:196:PHE:HA	53:v:481:TYR:HE2	1.86	0.40
53:v:331:PRO:HG3	53:v:422:PHE:CE2	2.56	0.40
53:v:368:HIS:CD2	53:v:371:GLY:H	2.39	0.40
1:C:685:ILE:HD11	1:C:700:ILE:HD13	2.04	0.40
1:F:529:PRO:HA	1:F:530:PRO:HD3	1.85	0.40
5:4:161:LYS:HA	5:4:161:LYS:HD3	1.82	0.40
7:6:137:ARG:HH21	29:f:1213:G:H5'	1.84	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Y:10:LYS:HZ1	56:b0:114:VAL:C	2.27	0.40
29:f:1152:G:OP2	29:f:1152:G:N2	2.44	0.40
40:r:181:TYR:CE2	40:r:185:ARG:HD2	2.56	0.40
44:a:26:LEU:HD21	44:a:29:ILE:HD11	2.04	0.40
45:e:59:GLU:HG2	45:e:103:TYR:CG	2.57	0.40
45:e:129:LEU:HD23	45:e:129:LEU:HA	1.77	0.40
47:y:1:G:C5	47:y:73:G:N2	2.90	0.40
1:E:314:ASP:HA	1:E:356:ALA:HB3	2.04	0.40
5:4:126:GLN:HA	5:4:129:VAL:HG22	2.04	0.40
9:8:41:ILE:HG21	9:8:54:VAL:HG21	2.02	0.40
14:N:96:LYS:HE2	14:N:96:LYS:HB2	1.70	0.40
29:f:656:A:H2'	29:f:657:A:C8	2.57	0.40
29:f:1565:G:H1	29:f:1574:C:H42	1.69	0.40
29:f:2207:A:H1'	29:f:2208:A:H5'	2.04	0.40
29:f:2264:U:H2'	29:f:2265:C:C6	2.56	0.40
33:k:323:MET:HE3	33:k:323:MET:HB2	1.90	0.40
34:l:166:VAL:O	34:l:170:LYS:HG2	2.22	0.40
45:e:819:LEU:O	45:e:823:LEU:HG	2.21	0.40
45:e:1204:LYS:HA	45:e:1204:LYS:HD3	1.95	0.40
53:v:470:ASP:HB2	53:v:505:ALA:HB2	2.04	0.40
1:B:430:MET:HE1	1:C:240:PHE:HE1	1.87	0.40
1:C:694:GLY:C	57:C:1003:ATP:N3	2.79	0.40
1:E:551:SER:HA	1:E:585:PHE:HB3	2.02	0.40
1:F:527:TYR:HE2	1:F:652:LEU:HB2	1.87	0.40
1:F:663:ARG:HD2	1:F:697:LEU:HD12	2.04	0.40
3:G:263:MET:HG2	3:G:284:ILE:HG12	2.02	0.40
4:3:182:ILE:HD12	4:3:182:ILE:HA	1.85	0.40
12:L:51:ARG:NH2	31:i:83:C:O2	2.54	0.40
14:N:41:HIS:CE1	42:t:2:ALA:HB3	2.56	0.40
14:N:114:GLY:O	14:N:137:LYS:NZ	2.54	0.40
29:f:129:U:H3	29:f:139:G:H1	1.69	0.40
29:f:1238:C:C4'	48:z:139:VAL:CB	2.98	0.40
29:f:2836:C:H5	29:f:2852:C:N4	2.16	0.40
35:m:108:ARG:CZ	35:m:253:PHE:HB2	2.51	0.40
40:r:191:LYS:HB3	40:r:213:PHE:HE1	1.87	0.40
44:a:90:THR:CG2	44:a:107:ASP:H	2.35	0.40
44:a:185:ILE:HD12	44:a:258:THR:HG23	2.04	0.40
44:a:601:TYR:HA	44:a:605:ILE:HD12	2.03	0.40
45:e:371:LEU:HB3	45:e:377:TRP:NE1	2.16	0.40
45:e:1544:ARG:NH1	53:v:207:HIS:HE1	2.17	0.40
53:v:211:LYS:CE	53:v:222:LEU:HD13	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:415:GLY:HA3	1:A:474:LEU:HD11	2.02	0.40
1:B:402:ASP:OD1	1:B:402:ASP:N	2.54	0.40
1:C:399:LYS:HG3	1:C:456:GLY:HA2	2.04	0.40
1:D:561:TRP:NE1	2:K:5:VAL:N	2.56	0.40
1:E:570:ARG:HA	1:E:573:PHE:HD2	1.87	0.40
3:G:291:ASP:OD1	3:G:291:ASP:N	2.48	0.40
9:8:35:LYS:HA	9:8:38:ILE:HG12	2.04	0.40
19:S:37:THR:HG23	19:S:40:ASP:H	1.86	0.40
29:f:94:G:H2'	29:f:95:A:C8	2.57	0.40
29:f:448:U:O2	29:f:488:U:O2'	2.33	0.40
29:f:946:U:H2'	29:f:947:G:H8	1.86	0.40
29:f:1577:G:H2'	29:f:1578:C:H6	1.86	0.40
29:f:1827:C:H2'	29:f:1828:A:C8	2.57	0.40
29:f:3178:A:C6	55:a0:6:VAL:CG2	3.05	0.40
29:f:3178:A:H5'	55:a0:4:GLU:OE1	2.22	0.40
30:h:112:G:H2'	30:h:113:C:C6	2.57	0.40
34:l:145:ILE:HD13	34:l:145:ILE:HA	1.97	0.40
40:r:182:LEU:HD23	40:r:182:LEU:HA	1.98	0.40
42:t:46:ILE:HD11	42:t:51:LEU:HA	2.04	0.40
44:a:576:LYS:HD3	47:y:31:C:H5''	2.03	0.40
44:a:702:GLY:HA2	44:a:952:TYR:O	2.21	0.40
45:e:373:TYR:OH	45:e:416:SER:HB3	2.22	0.40
45:e:911:ARG:O	45:e:915:LYS:HG2	2.20	0.40
45:e:1196:THR:HG23	45:e:1197:LEU:N	2.35	0.40
45:e:1464:ILE:HG22	45:e:1468:LYS:HB3	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
1	A	543/835 (65%)	522 (96%)	21 (4%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	648/835 (78%)	612 (94%)	36 (6%)	0	100	100
1	C	488/835 (58%)	448 (92%)	40 (8%)	0	100	100
1	D	485/835 (58%)	449 (93%)	36 (7%)	0	100	100
1	E	492/835 (59%)	463 (94%)	27 (6%)	2 (0%)	30	61
1	F	527/835 (63%)	501 (95%)	26 (5%)	0	100	100
2	H	74/76 (97%)	73 (99%)	1 (1%)	0	100	100
2	J	74/76 (97%)	74 (100%)	0	0	100	100
2	K	46/76 (60%)	31 (67%)	10 (22%)	5 (11%)	0	1
3	G	466/580 (80%)	421 (90%)	44 (9%)	1 (0%)	44	72
4	3	181/184 (98%)	172 (95%)	9 (5%)	0	100	100
5	4	183/186 (98%)	176 (96%)	7 (4%)	0	100	100
6	5	154/189 (82%)	151 (98%)	3 (2%)	0	100	100
7	6	169/172 (98%)	163 (96%)	6 (4%)	0	100	100
8	7	157/160 (98%)	149 (95%)	8 (5%)	0	100	100
9	8	98/121 (81%)	93 (95%)	5 (5%)	0	100	100
10	I	134/137 (98%)	132 (98%)	2 (2%)	0	100	100
11	9	61/155 (39%)	61 (100%)	0	0	100	100
12	L	123/127 (97%)	119 (97%)	4 (3%)	0	100	100
13	M	133/136 (98%)	126 (95%)	7 (5%)	0	100	100
14	N	146/149 (98%)	136 (93%)	10 (7%)	0	100	100
15	O	56/59 (95%)	52 (93%)	3 (5%)	1 (2%)	7	31
16	P	94/105 (90%)	93 (99%)	1 (1%)	0	100	100
17	Q	107/113 (95%)	98 (92%)	9 (8%)	0	100	100
18	R	125/130 (96%)	123 (98%)	2 (2%)	0	100	100
19	S	104/107 (97%)	101 (97%)	3 (3%)	0	100	100
20	T	110/121 (91%)	108 (98%)	2 (2%)	0	100	100
21	U	117/120 (98%)	112 (96%)	5 (4%)	0	100	100
22	V	97/100 (97%)	93 (96%)	4 (4%)	0	100	100
23	W	79/88 (90%)	75 (95%)	4 (5%)	0	100	100
24	Y	48/51 (94%)	46 (96%)	2 (4%)	0	100	100
25	Z	50/128 (39%)	48 (96%)	2 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
26	b	101/106 (95%)	95 (94%)	6 (6%)	0	100	100
27	c	89/92 (97%)	85 (96%)	4 (4%)	0	100	100
28	d	20/25 (80%)	19 (95%)	1 (5%)	0	100	100
32	j	244/254 (96%)	226 (93%)	18 (7%)	0	100	100
33	k	384/387 (99%)	363 (94%)	21 (6%)	0	100	100
34	l	359/362 (99%)	329 (92%)	29 (8%)	1 (0%)	37	66
35	m	292/297 (98%)	277 (95%)	15 (5%)	0	100	100
36	n	163/176 (93%)	154 (94%)	9 (6%)	0	100	100
37	o	220/244 (90%)	207 (94%)	13 (6%)	0	100	100
38	p	231/256 (90%)	220 (95%)	11 (5%)	0	100	100
39	q	189/191 (99%)	174 (92%)	14 (7%)	1 (0%)	25	57
40	r	216/221 (98%)	206 (95%)	10 (5%)	0	100	100
41	s	167/174 (96%)	161 (96%)	5 (3%)	1 (1%)	22	54
42	t	191/199 (96%)	174 (91%)	16 (8%)	1 (0%)	25	57
43	u	134/138 (97%)	125 (93%)	9 (7%)	0	100	100
44	a	842/1038 (81%)	827 (98%)	15 (2%)	0	100	100
45	e	1518/1562 (97%)	1486 (98%)	30 (2%)	2 (0%)	48	77
46	g	223/245 (91%)	215 (96%)	8 (4%)	0	100	100
48	z	144/165 (87%)	135 (94%)	7 (5%)	2 (1%)	9	36
49	0	117/312 (38%)	116 (99%)	0	1 (1%)	14	45
51	w	214/217 (99%)	211 (99%)	3 (1%)	0	100	100
52	X	74/78 (95%)	74 (100%)	0	0	100	100
53	v	527/753 (70%)	510 (97%)	16 (3%)	1 (0%)	44	72
54	2	74/76 (97%)	73 (99%)	1 (1%)	0	100	100
55	a0	195/199 (98%)	192 (98%)	3 (2%)	0	100	100
56	b0	119/142 (84%)	118 (99%)	1 (1%)	0	100	100
All	All	13416/16565 (81%)	12793 (95%)	604 (4%)	19 (0%)	50	77

All (19) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	E	561	TRP
2	K	37	PRO

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Mol	Chain	Res	Type
2	K	38	PRO
2	K	41	GLN
48	z	88	PRO
53	v	615	ASN
1	E	262	THR
45	e	437	LYS
2	K	45	PHE
3	G	169	PHE
45	e	855	PRO
34	l	4	PRO
39	q	107	ASP
41	s	108	GLU
49	0	93	LEU
15	O	21	ILE
2	K	44	ILE
42	t	47	ALA
48	z	55	GLY

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	448/695 (64%)	447 (100%)	1 (0%)	92	96
1	B	545/695 (78%)	543 (100%)	2 (0%)	89	94
1	C	401/695 (58%)	399 (100%)	2 (0%)	86	92
1	D	398/695 (57%)	397 (100%)	1 (0%)	91	95
1	E	403/695 (58%)	399 (99%)	4 (1%)	73	85
1	F	434/695 (62%)	433 (100%)	1 (0%)	92	96
2	H	69/69 (100%)	69 (100%)	0	100	100
2	J	69/69 (100%)	69 (100%)	0	100	100
2	K	44/69 (64%)	42 (96%)	2 (4%)	23	52
3	G	420/516 (81%)	419 (100%)	1 (0%)	92	96
4	3	138/146 (94%)	138 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	4	150/151 (99%)	150 (100%)	0	100	100
6	5	129/154 (84%)	129 (100%)	0	100	100
7	6	155/156 (99%)	155 (100%)	0	100	100
8	7	135/137 (98%)	135 (100%)	0	100	100
9	8	87/107 (81%)	87 (100%)	0	100	100
10	I	104/105 (99%)	104 (100%)	0	100	100
11	9	54/129 (42%)	54 (100%)	0	100	100
12	L	108/110 (98%)	108 (100%)	0	100	100
13	M	112/116 (97%)	112 (100%)	0	100	100
14	N	117/119 (98%)	117 (100%)	0	100	100
15	O	46/47 (98%)	46 (100%)	0	100	100
16	P	81/88 (92%)	81 (100%)	0	100	100
17	Q	92/97 (95%)	92 (100%)	0	100	100
18	R	107/111 (96%)	107 (100%)	0	100	100
19	S	90/91 (99%)	90 (100%)	0	100	100
20	T	95/103 (92%)	95 (100%)	0	100	100
21	U	104/105 (99%)	104 (100%)	0	100	100
22	V	80/82 (98%)	80 (100%)	0	100	100
23	W	67/71 (94%)	67 (100%)	0	100	100
24	Y	45/46 (98%)	45 (100%)	0	100	100
25	Z	45/116 (39%)	45 (100%)	0	100	100
26	b	87/91 (96%)	87 (100%)	0	100	100
27	c	71/72 (99%)	71 (100%)	0	100	100
28	d	20/23 (87%)	20 (100%)	0	100	100
32	j	189/196 (96%)	189 (100%)	0	100	100
33	k	320/323 (99%)	320 (100%)	0	100	100
34	l	288/289 (100%)	288 (100%)	0	100	100
35	m	241/245 (98%)	241 (100%)	0	100	100
36	n	139/155 (90%)	139 (100%)	0	100	100
37	o	186/205 (91%)	186 (100%)	0	100	100
38	p	187/208 (90%)	187 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
39	q	168/171 (98%)	168 (100%)	0	100	100
40	r	185/187 (99%)	184 (100%)	1 (0%)	86	92
41	s	145/150 (97%)	145 (100%)	0	100	100
42	t	154/159 (97%)	154 (100%)	0	100	100
43	u	107/109 (98%)	107 (100%)	0	100	100
44	a	677/949 (71%)	676 (100%)	1 (0%)	92	97
45	e	1157/1451 (80%)	1102 (95%)	55 (5%)	21	50
46	g	180/211 (85%)	180 (100%)	0	100	100
49	o	104/254 (41%)	94 (90%)	10 (10%)	7	25
51	w	197/198 (100%)	197 (100%)	0	100	100
52	X	68/69 (99%)	68 (100%)	0	100	100
53	v	492/686 (72%)	484 (98%)	8 (2%)	58	77
54	2	68/68 (100%)	68 (100%)	0	100	100
55	a0	160/162 (99%)	160 (100%)	0	100	100
56	b0	104/118 (88%)	104 (100%)	0	100	100
All	All	11066/14029 (79%)	10977 (99%)	89 (1%)	77	89

All (89) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	484	VAL
1	B	436	LYS
1	B	437	MET
1	C	259	THR
1	C	562	TYR
1	D	330	VAL
1	E	261	LYS
1	E	262	THR
1	E	263	LEU
1	E	562	TYR
1	F	479	VAL
2	K	40	GLN
2	K	44	ILE
3	G	477	THR
40	r	112	GLN
44	a	98	ASP
45	e	8	THR

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Mol	Chain	Res	Type
45	e	105	VAL
45	e	125	ILE
45	e	169	LEU
45	e	205	GLU
45	e	230	SER
45	e	254	ASN
45	e	271	LEU
45	e	277	MET
45	e	283	ILE
45	e	299	THR
45	e	309	VAL
45	e	319	THR
45	e	327	THR
45	e	400	GLU
45	e	731	LEU
45	e	733	HIS
45	e	754	ILE
45	e	763	ILE
45	e	770	ILE
45	e	780	ILE
45	e	797	LEU
45	e	799	THR
45	e	806	LEU
45	e	826	LEU
45	e	853	GLU
45	e	867	PHE
45	e	904	VAL
45	e	910	SER
45	e	924	VAL
45	e	1102	CYS
45	e	1142	GLU
45	e	1149	THR
45	e	1164	LEU
45	e	1179	LEU
45	e	1184	ILE
45	e	1269	LEU
45	e	1294	LEU
45	e	1300	ILE
45	e	1303	MET
45	e	1363	VAL
45	e	1367	THR
45	e	1372	LEU

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Mol	Chain	Res	Type
45	e	1379	LEU
45	e	1384	GLU
45	e	1400	PHE
45	e	1407	MET
45	e	1421	LEU
45	e	1428	VAL
45	e	1441	ILE
45	e	1454	ILE
45	e	1464	ILE
45	e	1480	ILE
45	e	1508	CYS
45	e	1514	ILE
49	0	30	VAL
49	0	51	VAL
49	0	52	LEU
49	0	67	LEU
49	0	76	LEU
49	0	80	VAL
49	0	93	LEU
49	0	95	GLU
49	0	105	VAL
49	0	189	GLN
53	v	238	LEU
53	v	258	LEU
53	v	269	HIS
53	v	332	LEU
53	v	336	LEU
53	v	403	LEU
53	v	529	HIS
53	v	616	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (156) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	468	ASN
1	A	509	HIS
1	A	588	GLN
1	A	651	GLN
1	A	757	HIS
1	B	78	HIS
1	B	135	GLN
1	B	153	GLN

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Mol	Chain	Res	Type
1	B	327	ASN
1	B	394	HIS
1	B	432	GLN
1	B	509	HIS
1	B	626	ASN
1	B	690	GLN
1	C	222	GLN
1	C	236	HIS
1	C	280	ASN
1	C	306	ASN
1	C	337	GLN
1	C	350	ASN
1	C	394	HIS
1	C	461	ASN
1	C	483	ASN
1	C	512	GLN
1	C	612	ASN
1	C	702	GLN
1	D	295	ASN
1	D	306	ASN
1	D	337	GLN
1	D	431	GLN
1	D	588	GLN
1	D	670	GLN
1	D	702	GLN
1	E	209	ASN
1	E	222	GLN
1	E	350	ASN
1	E	461	ASN
1	E	512	GLN
1	E	548	ASN
1	E	568	ASN
1	E	588	GLN
1	E	626	ASN
1	E	651	GLN
1	F	295	ASN
1	F	306	ASN
1	F	337	GLN
1	F	394	HIS
1	F	468	ASN
1	F	651	GLN
2	K	25	ASN

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Mol	Chain	Res	Type
2	K	31	GLN
3	G	162	ASN
3	G	179	ASN
3	G	181	ASN
3	G	250	GLN
3	G	491	ASN
3	G	521	HIS
4	3	55	GLN
4	3	97	ASN
5	4	158	HIS
6	5	150	GLN
8	7	66	ASN
8	7	149	GLN
9	8	87	ASN
9	8	101	ASN
13	M	103	GLN
13	M	122	HIS
13	M	127	ASN
14	N	38	GLN
15	O	12	GLN
15	O	17	HIS
17	Q	15	ASN
17	Q	21	HIS
18	R	35	GLN
18	R	49	ASN
21	U	16	GLN
21	U	59	ASN
21	U	99	GLN
23	W	12	HIS
23	W	13	ASN
24	Y	4	GLN
24	Y	20	ASN
26	b	3	ASN
26	b	102	GLN
33	k	139	GLN
33	k	198	HIS
33	k	224	HIS
34	l	5	GLN
34	l	196	ASN
34	l	316	ASN
36	n	61	ASN
37	o	64	GLN

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Mol	Chain	Res	Type
37	o	244	ASN
39	q	49	ASN
39	q	169	ASN
39	q	183	HIS
40	r	51	HIS
40	r	208	ASN
41	s	43	GLN
41	s	62	ASN
41	s	90	GLN
41	s	109	HIS
43	u	62	GLN
44	a	51	ASN
44	a	121	ASN
44	a	382	GLN
44	a	395	ASN
44	a	417	ASN
44	a	438	ASN
44	a	562	HIS
44	a	624	ASN
44	a	689	GLN
45	e	79	ASN
45	e	160	ASN
45	e	174	GLN
45	e	189	ASN
45	e	226	ASN
45	e	233	ASN
45	e	251	ASN
45	e	397	ASN
45	e	403	ASN
45	e	408	ASN
45	e	795	HIS
45	e	805	ASN
45	e	869	HIS
45	e	888	ASN
45	e	902	ASN
45	e	968	ASN
45	e	1005	ASN
45	e	1111	GLN
45	e	1141	GLN
45	e	1189	ASN
45	e	1288	GLN
45	e	1455	GLN

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Mol	Chain	Res	Type
45	e	1457	ASN
45	e	1477	GLN
45	e	1478	HIS
45	e	1499	HIS
45	e	1516	HIS
45	e	1532	ASN
46	g	9	ASN
46	g	75	GLN
49	0	36	GLN
53	v	198	GLN
53	v	359	ASN
53	v	368	HIS
53	v	374	GLN
53	v	389	ASN
53	v	476	ASN
53	v	608	GLN
53	v	610	HIS
54	2	40	GLN
55	a0	55	HIS
55	a0	193	GLN
56	b0	65	GLN
56	b0	85	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
29	f	3211/3395 (94%)	601 (18%)	0
30	h	120/121 (99%)	12 (10%)	0
31	i	157/158 (99%)	32 (20%)	0
47	x	72/76 (94%)	26 (36%)	0
47	y	71/76 (93%)	26 (36%)	0
All	All	3631/3826 (94%)	697 (19%)	0

All (697) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
29	f	6	A
29	f	13	A
29	f	14	U
29	f	26	A
29	f	40	A

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Mol	Chain	Res	Type
29	f	43	A
29	f	49	A
29	f	59	G
29	f	60	A
29	f	65	A
29	f	66	A
29	f	92	G
29	f	99	A
29	f	109	A
29	f	110	G
29	f	111	C
29	f	116	A
29	f	120	G
29	f	121	A
29	f	122	A
29	f	133	U
29	f	134	U
29	f	135	C
29	f	136	G
29	f	156	G
29	f	157	A
29	f	165	A
29	f	166	C
29	f	172	G
29	f	173	G
29	f	187	A
29	f	190	U
29	f	191	U
29	f	200	C
29	f	206	G
29	f	210	U
29	f	211	A
29	f	213	A
29	f	218	G
29	f	219	A
29	f	234	G
29	f	240	U
29	f	241	G
29	f	242	C
29	f	243	G
29	f	245	U
29	f	249	U

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Mol	Chain	Res	Type
29	f	252	U
29	f	269	G
29	f	283	G
29	f	286	U
29	f	295	A
29	f	305	U
29	f	323	A
29	f	329	U
29	f	339	C
29	f	350	C
29	f	374	A
29	f	376	G
29	f	398	A
29	f	399	A
29	f	401	U
29	f	402	A
29	f	403	C
29	f	421	G
29	f	422	A
29	f	439	C
29	f	440	A
29	f	441	U
29	f	442	G
29	f	443	G
29	f	445	G
29	f	446	U
29	f	447	U
29	f	448	U
29	f	450	G
29	f	487	U
29	f	488	U
29	f	489	U
29	f	490	C
29	f	494	G
29	f	518	G
29	f	520	U
29	f	521	A
29	f	523	A
29	f	535	G
29	f	536	U
29	f	543	C
29	f	544	C

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Mol	Chain	Res	Type
29	f	546	C
29	f	547	G
29	f	548	G
29	f	551	A
29	f	552	G
29	f	555	U
29	f	557	A
29	f	559	A
29	f	578	A
29	f	579	G
29	f	589	A
29	f	597	G
29	f	604	G
29	f	608	A
29	f	609	G
29	f	611	A
29	f	620	U
29	f	621	A
29	f	622	A
29	f	637	C
29	f	638	C
29	f	649	A
29	f	660	A
29	f	677	A
29	f	681	U
29	f	684	G
29	f	690	A
29	f	691	A
29	f	705	A
29	f	712	G
29	f	715	A
29	f	716	A
29	f	719	U
29	f	720	A
29	f	758	C
29	f	763	G
29	f	764	U
29	f	765	C
29	f	766	U
29	f	767	U
29	f	776	U
29	f	777	U

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Mol	Chain	Res	Type
29	f	780	A
29	f	781	G
29	f	785	G
29	f	786	A
29	f	806	A
29	f	817	A
29	f	830	A
29	f	846	A
29	f	849	C
29	f	850	U
29	f	861	C
29	f	874	U
29	f	879	U
29	f	896	A
29	f	907	G
29	f	908	G
29	f	914	A
29	f	916	G
29	f	917	A
29	f	920	A
29	f	921	A
29	f	924	G
29	f	925	A
29	f	937	G
29	f	944	C
29	f	959	C
29	f	960	U
29	f	981	U
29	f	982	C
29	f	991	G
29	f	994	G
29	f	1001	G
29	f	1002	A
29	f	1010	G
29	f	1015	U
29	f	1016	C
29	f	1017	C
29	f	1018	G
29	f	1021	G
29	f	1024	G
29	f	1025	A
29	f	1028	U

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Mol	Chain	Res	Type
29	f	1036	A
29	f	1041	U
29	f	1047	A
29	f	1049	C
29	f	1063	G
29	f	1064	A
29	f	1065	A
29	f	1072	G
29	f	1081	U
29	f	1087	G
29	f	1093	A
29	f	1094	U
29	f	1095	U
29	f	1097	G
29	f	1098	A
29	f	1103	A
29	f	1104	G
29	f	1117	G
29	f	1131	G
29	f	1144	U
29	f	1153	A
29	f	1159	A
29	f	1160	C
29	f	1177	G
29	f	1180	A
29	f	1181	U
29	f	1192	C
29	f	1193	A
29	f	1196	C
29	f	1197	A
29	f	1201	C
29	f	1202	A
29	f	1208	U
29	f	1217	A
29	f	1218	U
29	f	1219	C
29	f	1222	G
29	f	1225	A
29	f	1227	C
29	f	1235	U
29	f	1236	G
29	f	1238	C

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Mol	Chain	Res	Type
29	f	1241	U
29	f	1242	G
29	f	1244	A
29	f	1245	A
29	f	1251	A
29	f	1252	A
29	f	1254	C
29	f	1258	U
29	f	1259	A
29	f	1263	A
29	f	1264	G
29	f	1265	U
29	f	1269	U
29	f	1272	C
29	f	1277	C
29	f	1278	A
29	f	1279	C
29	f	1282	G
29	f	1285	G
29	f	1286	A
29	f	1287	A
29	f	1295	G
29	f	1307	G
29	f	1308	A
29	f	1309	U
29	f	1313	G
29	f	1330	A
29	f	1348	U
29	f	1349	G
29	f	1351	U
29	f	1352	A
29	f	1354	G
29	f	1355	A
29	f	1356	U
29	f	1357	G
29	f	1386	A
29	f	1392	G
29	f	1399	A
29	f	1400	G
29	f	1419	A
29	f	1434	G
29	f	1437	C

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Mol	Chain	Res	Type
29	f	1446	A
29	f	1450	G
29	f	1481	A
29	f	1482	A
29	f	1483	G
29	f	1487	G
29	f	1488	G
29	f	1502	C
29	f	1508	C
29	f	1536	G
29	f	1539	A
29	f	1555	U
29	f	1556	C
29	f	1557	A
29	f	1560	G
29	f	1562	C
29	f	1563	C
29	f	1566	A
29	f	1568	U
29	f	1569	U
29	f	1572	U
29	f	1573	G
29	f	1575	A
29	f	1576	G
29	f	1580	A
29	f	1581	C
29	f	1582	C
29	f	1583	A
29	f	1589	A
29	f	1590	G
29	f	1605	A
29	f	1607	U
29	f	1620	U
29	f	1629	U
29	f	1639	C
29	f	1642	A
29	f	1643	A
29	f	1645	U
29	f	1657	C
29	f	1683	A
29	f	1716	U
29	f	1717	U

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Mol	Chain	Res	Type
29	f	1724	U
29	f	1725	C
29	f	1736	G
29	f	1741	A
29	f	1750	A
29	f	1751	G
29	f	1760	A
29	f	1761	C
29	f	1764	U
29	f	1765	U
29	f	1766	G
29	f	1770	G
29	f	1775	G
29	f	1780	G
29	f	1797	A
29	f	1814	A
29	f	1816	A
29	f	1819	U
29	f	1820	U
29	f	1821	U
29	f	1835	A
29	f	1839	A
29	f	1840	U
29	f	1841	A
29	f	1842	A
29	f	1846	C
29	f	1849	C
29	f	1850	A
29	f	1866	C
29	f	1867	A
29	f	1880	U
29	f	1881	A
29	f	1893	A
29	f	1906	G
29	f	1943	C
29	f	1952	G
29	f	1953	G
29	f	1954	G
29	f	2094	C
29	f	2101	C
29	f	2102	U
29	f	2111	G

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Mol	Chain	Res	Type
29	f	2112	U
29	f	2113	A
29	f	2114	C
29	f	2121	G
29	f	2122	G
29	f	2131	A
29	f	2134	G
29	f	2140	U
29	f	2144	A
29	f	2158	A
29	f	2160	G
29	f	2169	G
29	f	2176	U
29	f	2201	G
29	f	2206	G
29	f	2207	A
29	f	2208	A
29	f	2209	U
29	f	2222	A
29	f	2223	A
29	f	2225	U
29	f	2228	A
29	f	2251	G
29	f	2252	A
29	f	2267	C
29	f	2272	G
29	f	2273	G
29	f	2274	U
29	f	2281	A
29	f	2282	U
29	f	2288	G
29	f	2307	G
29	f	2308	C
29	f	2310	U
29	f	2313	A
29	f	2314	U
29	f	2315	G
29	f	2334	U
29	f	2335	G
29	f	2336	U
29	f	2373	A
29	f	2374	C

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Mol	Chain	Res	Type
29	f	2375	G
29	f	2385	G
29	f	2388	U
29	f	2393	G
29	f	2397	A
29	f	2402	A
29	f	2403	G
29	f	2404	A
29	f	2411	U
29	f	2419	A
29	f	2435	G
29	f	2437	G
29	f	2439	A
29	f	2440	G
29	f	2445	A
29	f	2446	U
29	f	2447	A
29	f	2448	G
29	f	2449	A
29	f	2450	G
29	f	2451	G
29	f	2452	G
29	f	2453	U
29	f	2460	U
29	f	2461	A
29	f	2465	G
29	f	2468	A
29	f	2469	G
29	f	2471	U
29	f	2473	C
29	f	2474	G
29	f	2476	C
29	f	2479	C
29	f	2480	A
29	f	2482	U
29	f	2484	A
29	f	2486	A
29	f	2487	U
29	f	2494	A
29	f	2495	C
29	f	2499	U
29	f	2501	U

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Mol	Chain	Res	Type
29	f	2503	G
29	f	2505	U
29	f	2506	U
29	f	2511	A
29	f	2514	U
29	f	2515	A
29	f	2522	G
29	f	2526	C
29	f	2531	C
29	f	2537	U
29	f	2538	U
29	f	2539	C
29	f	2540	A
29	f	2541	U
29	f	2542	U
29	f	2544	U
29	f	2547	A
29	f	2548	C
29	f	2549	G
29	f	2552	C
29	f	2554	A
29	f	2555	G
29	f	2561	A
29	f	2569	A
29	f	2570	U
29	f	2571	U
29	f	2572	C
29	f	2573	G
29	f	2581	U
29	f	2585	G
29	f	2593	A
29	f	2594	C
29	f	2606	G
29	f	2607	G
29	f	2614	G
29	f	2648	G
29	f	2651	G
29	f	2652	U
29	f	2656	A
29	f	2674	A
29	f	2677	G
29	f	2678	A

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Mol	Chain	Res	Type
29	f	2689	A
29	f	2691	A
29	f	2694	A
29	f	2696	A
29	f	2704	A
29	f	2714	G
29	f	2719	U
29	f	2728	G
29	f	2729	U
29	f	2740	A
29	f	2752	U
29	f	2753	G
29	f	2755	C
29	f	2772	C
29	f	2773	C
29	f	2777	G
29	f	2778	G
29	f	2788	C
29	f	2796	G
29	f	2800	G
29	f	2801	A
29	f	2803	A
29	f	2810	C
29	f	2814	G
29	f	2817	A
29	f	2818	U
29	f	2821	C
29	f	2822	U
29	f	2842	U
29	f	2844	C
29	f	2845	A
29	f	2846	U
29	f	2849	C
29	f	2867	C
29	f	2871	G
29	f	2872	A
29	f	2876	C
29	f	2887	A
29	f	2898	G
29	f	2899	C
29	f	2911	A
29	f	2914	G

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Mol	Chain	Res	Type
29	f	2923	U
29	f	2935	U
29	f	2936	A
29	f	2941	A
29	f	2942	C
29	f	2947	G
29	f	2971	A
29	f	2983	C
29	f	2990	G
29	f	2992	U
29	f	2996	U
29	f	2997	G
29	f	3006	A
29	f	3012	A
29	f	3056	U
29	f	3059	G
29	f	3078	U
29	f	3079	U
29	f	3080	G
29	f	3086	A
29	f	3092	C
29	f	3104	U
29	f	3113	A
29	f	3122	A
29	f	3130	A
29	f	3131	U
29	f	3142	A
29	f	3143	C
29	f	3151	U
29	f	3154	C
29	f	3155	U
29	f	3156	U
29	f	3157	U
29	f	3165	A
29	f	3170	A
29	f	3173	G
29	f	3174	A
29	f	3175	U
29	f	3176	G
29	f	3179	U
29	f	3181	C
29	f	3186	A

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Mol	Chain	Res	Type
29	f	3187	A
29	f	3196	U
29	f	3207	U
29	f	3209	A
29	f	3217	C
29	f	3218	A
29	f	3219	G
29	f	3228	C
29	f	3229	G
29	f	3243	A
29	f	3245	A
29	f	3247	G
29	f	3259	U
29	f	3263	G
29	f	3269	U
29	f	3270	U
29	f	3273	A
29	f	3276	G
29	f	3281	U
29	f	3287	U
29	f	3288	G
29	f	3289	G
29	f	3294	A
29	f	3295	A
29	f	3303	G
29	f	3304	U
29	f	3307	A
29	f	3313	U
29	f	3316	A
29	f	3317	U
29	f	3318	G
29	f	3319	U
29	f	3320	A
29	f	3341	U
29	f	3342	A
29	f	3345	G
29	f	3351	U
29	f	3352	U
29	f	3353	G
29	f	3354	U
29	f	3355	U
29	f	3369	G

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Mol	Chain	Res	Type
29	f	3375	A
29	f	3378	C
29	f	3382	U
29	f	3383	G
29	f	3386	G
29	f	3389	U
29	f	3390	G
29	f	3396	U
30	h	7	G
30	h	29	C
30	h	53	U
30	h	54	U
30	h	55	A
30	h	65	G
30	h	73	C
30	h	74	C
30	h	95	A
30	h	102	A
30	h	112	G
30	h	121	U
31	i	23	U
31	i	34	U
31	i	35	C
31	i	39	G
31	i	48	A
31	i	52	A
31	i	53	A
31	i	59	A
31	i	62	C
31	i	63	G
31	i	80	A
31	i	81	U
31	i	82	U
31	i	83	C
31	i	84	C
31	i	85	G
31	i	86	U
31	i	87	G
31	i	90	U
31	i	95	G
31	i	104	A
31	i	105	A

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Mol	Chain	Res	Type
31	i	106	C
31	i	111	A
31	i	113	U
31	i	125	U
31	i	126	A
31	i	138	A
31	i	151	C
31	i	152	G
31	i	157	U
31	i	158	U
47	x	5	G
47	x	7	G
47	x	10	G
47	x	13	U
47	x	16	U
47	x	17	C
47	x	18	G
47	x	22	G
47	x	28	U
47	x	33	U
47	x	34	A
47	x	35	G
47	x	36	C
47	x	37	A
47	x	38	U
47	x	42	A
47	x	43	G
47	x	46	G
47	x	48	C
47	x	49	U
47	x	56	C
47	x	57	G
47	x	58	A
47	x	60	U
47	x	61	C
47	x	74	C
47	y	5	G
47	y	7	G
47	y	8	U
47	y	9	G
47	y	13	U
47	y	16	U

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Mol	Chain	Res	Type
47	y	17	C
47	y	22	G
47	y	23	C
47	y	36	C
47	y	38	U
47	y	43	G
47	y	44	A
47	y	46	G
47	y	47	U
47	y	48	C
47	y	51	C
47	y	52	G
47	y	53	G
47	y	56	C
47	y	57	G
47	y	58	A
47	y	59	U
47	y	61	C
47	y	75	C
47	y	76	A

There are no RNA pucker outliers to report.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 30 ligands modelled in this entry, 19 are monoatomic - leaving 11 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the

expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
57	ATP	C	1002	-	28,33,33	0.99	0	34,52,52	1.22	3 (8%)
57	ATP	F	901	-	28,33,33	0.99	1 (3%)	34,52,52	1.21	3 (8%)
57	ATP	C	1001	-	28,33,33	0.99	0	34,52,52	1.21	3 (8%)
57	ATP	D	901	-	28,33,33	0.99	0	34,52,52	1.23	3 (8%)
61	SPD	f	3401	-	9,9,9	0.31	0	8,8,8	0.85	0
57	ATP	A	901	-	28,33,33	0.98	0	34,52,52	1.22	3 (8%)
57	ATP	D	902	-	28,33,33	0.98	0	34,52,52	1.22	3 (8%)
57	ATP	C	1003	-	28,33,33	0.99	0	34,52,52	1.22	3 (8%)
58	ADP	E	901	-	24,29,29	0.92	0	29,45,45	1.26	3 (10%)
57	ATP	E	902	-	28,33,33	0.99	1 (3%)	34,52,52	1.23	3 (8%)
57	ATP	B	901	-	28,33,33	0.99	0	34,52,52	1.23	3 (8%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
57	ATP	C	1002	-	-	5/18/38/38	0/3/3/3
57	ATP	F	901	-	-	1/18/38/38	0/3/3/3
57	ATP	C	1001	-	-	5/18/38/38	0/3/3/3
57	ATP	D	901	-	-	4/18/38/38	0/3/3/3
61	SPD	f	3401	-	-	5/7/7/7	-
57	ATP	A	901	-	-	5/18/38/38	0/3/3/3
57	ATP	D	902	-	-	5/18/38/38	0/3/3/3
57	ATP	C	1003	-	-	5/18/38/38	0/3/3/3
58	ADP	E	901	-	-	3/12/32/32	0/3/3/3
57	ATP	E	902	-	-	5/18/38/38	0/3/3/3
57	ATP	B	901	-	-	3/18/38/38	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
57	F	901	ATP	O4'-C1'	2.06	1.43	1.40
57	E	902	ATP	O4'-C1'	2.02	1.43	1.40

All (30) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
57	D	901	ATP	N3-C2-N1	-3.70	123.65	128.67
57	E	902	ATP	N3-C2-N1	-3.70	123.65	128.67
57	B	901	ATP	N3-C2-N1	-3.69	123.66	128.67
57	C	1002	ATP	N3-C2-N1	-3.68	123.68	128.67
57	C	1003	ATP	N3-C2-N1	-3.67	123.70	128.67
57	A	901	ATP	N3-C2-N1	-3.64	123.74	128.67
57	F	901	ATP	N3-C2-N1	-3.62	123.76	128.67
58	E	901	ADP	N3-C2-N1	-3.61	123.77	128.67
57	D	902	ATP	N3-C2-N1	-3.59	123.80	128.67
57	C	1001	ATP	N3-C2-N1	-3.58	123.81	128.67
57	C	1001	ATP	C4-C5-N7	-2.65	106.54	109.34
57	D	902	ATP	C4-C5-N7	-2.65	106.54	109.34
57	A	901	ATP	C4-C5-N7	-2.63	106.56	109.34
57	B	901	ATP	C4-C5-N7	-2.62	106.57	109.34
57	E	902	ATP	C4-C5-N7	-2.61	106.58	109.34
57	D	901	ATP	C4-C5-N7	-2.61	106.58	109.34
57	C	1002	ATP	C4-C5-N7	-2.60	106.59	109.34
57	C	1003	ATP	C4-C5-N7	-2.60	106.59	109.34
58	E	901	ADP	C4-C5-N7	-2.58	106.62	109.34
57	F	901	ATP	C4-C5-N7	-2.57	106.62	109.34
57	E	902	ATP	C4'-O4'-C1'	2.17	111.91	109.92
57	B	901	ATP	C4'-O4'-C1'	2.17	111.91	109.92
57	D	902	ATP	C4'-O4'-C1'	2.16	111.90	109.92
57	D	901	ATP	C4'-O4'-C1'	2.15	111.89	109.92
58	E	901	ADP	C4'-O4'-C1'	2.14	111.88	109.92
57	C	1001	ATP	C4'-O4'-C1'	2.13	111.88	109.92
57	A	901	ATP	C4'-O4'-C1'	2.10	111.85	109.92
57	C	1003	ATP	C4'-O4'-C1'	2.09	111.84	109.92
57	C	1002	ATP	C4'-O4'-C1'	2.08	111.83	109.92
57	F	901	ATP	C4'-O4'-C1'	2.04	111.80	109.92

There are no chirality outliers.

All (46) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
57	A	901	ATP	O4'-C4'-C5'-O5'
57	A	901	ATP	C3'-C4'-C5'-O5'
57	C	1001	ATP	O4'-C4'-C5'-O5'
57	C	1001	ATP	C3'-C4'-C5'-O5'
57	C	1002	ATP	O4'-C4'-C5'-O5'
57	C	1002	ATP	C3'-C4'-C5'-O5'

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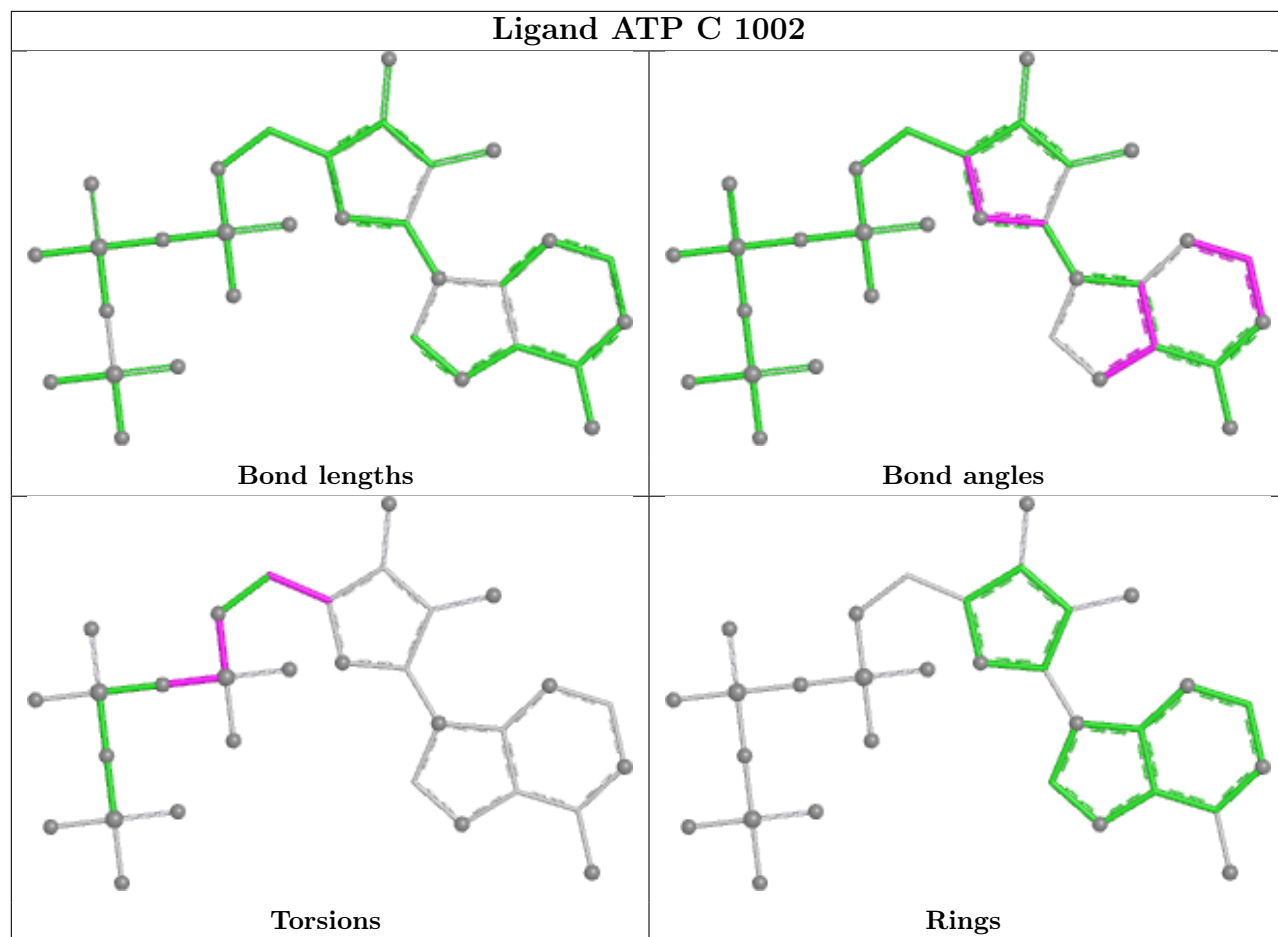
Mol	Chain	Res	Type	Atoms
57	C	1003	ATP	O4'-C4'-C5'-O5'
57	C	1003	ATP	C3'-C4'-C5'-O5'
57	D	901	ATP	O4'-C4'-C5'-O5'
57	D	902	ATP	O4'-C4'-C5'-O5'
57	D	902	ATP	C3'-C4'-C5'-O5'
57	E	902	ATP	O4'-C4'-C5'-O5'
57	E	902	ATP	C3'-C4'-C5'-O5'
58	E	901	ADP	C5'-O5'-PA-O3A
58	E	901	ADP	C4'-C5'-O5'-PA
57	D	901	ATP	C3'-C4'-C5'-O5'
61	f	3401	SPD	C3-C4-C5-N6
61	f	3401	SPD	N6-C7-C8-C9
57	A	901	ATP	PB-O3A-PA-O2A
57	B	901	ATP	PB-O3A-PA-O2A
57	C	1002	ATP	PB-O3A-PA-O2A
57	D	901	ATP	PG-O3B-PB-O2B
57	D	902	ATP	PB-O3A-PA-O2A
57	E	902	ATP	PB-O3A-PA-O2A
61	f	3401	SPD	C2-C3-C4-C5
57	A	901	ATP	C5'-O5'-PA-O1A
57	B	901	ATP	C5'-O5'-PA-O2A
57	C	1001	ATP	C5'-O5'-PA-O1A
57	C	1002	ATP	C5'-O5'-PA-O1A
57	C	1003	ATP	C5'-O5'-PA-O1A
57	D	902	ATP	C5'-O5'-PA-O1A
57	E	902	ATP	C5'-O5'-PA-O1A
58	E	901	ADP	C5'-O5'-PA-O1A
57	C	1001	ATP	PB-O3A-PA-O2A
57	C	1003	ATP	PB-O3A-PA-O2A
57	F	901	ATP	C4'-C5'-O5'-PA
57	D	901	ATP	PG-O3B-PB-O1B
61	f	3401	SPD	C4-C5-N6-C7
61	f	3401	SPD	C8-C7-N6-C5
57	A	901	ATP	PB-O3A-PA-O1A
57	B	901	ATP	PB-O3A-PA-O1A
57	C	1001	ATP	PB-O3A-PA-O1A
57	C	1002	ATP	PB-O3A-PA-O1A
57	C	1003	ATP	PB-O3A-PA-O1A
57	D	902	ATP	PB-O3A-PA-O1A
57	E	902	ATP	PB-O3A-PA-O1A

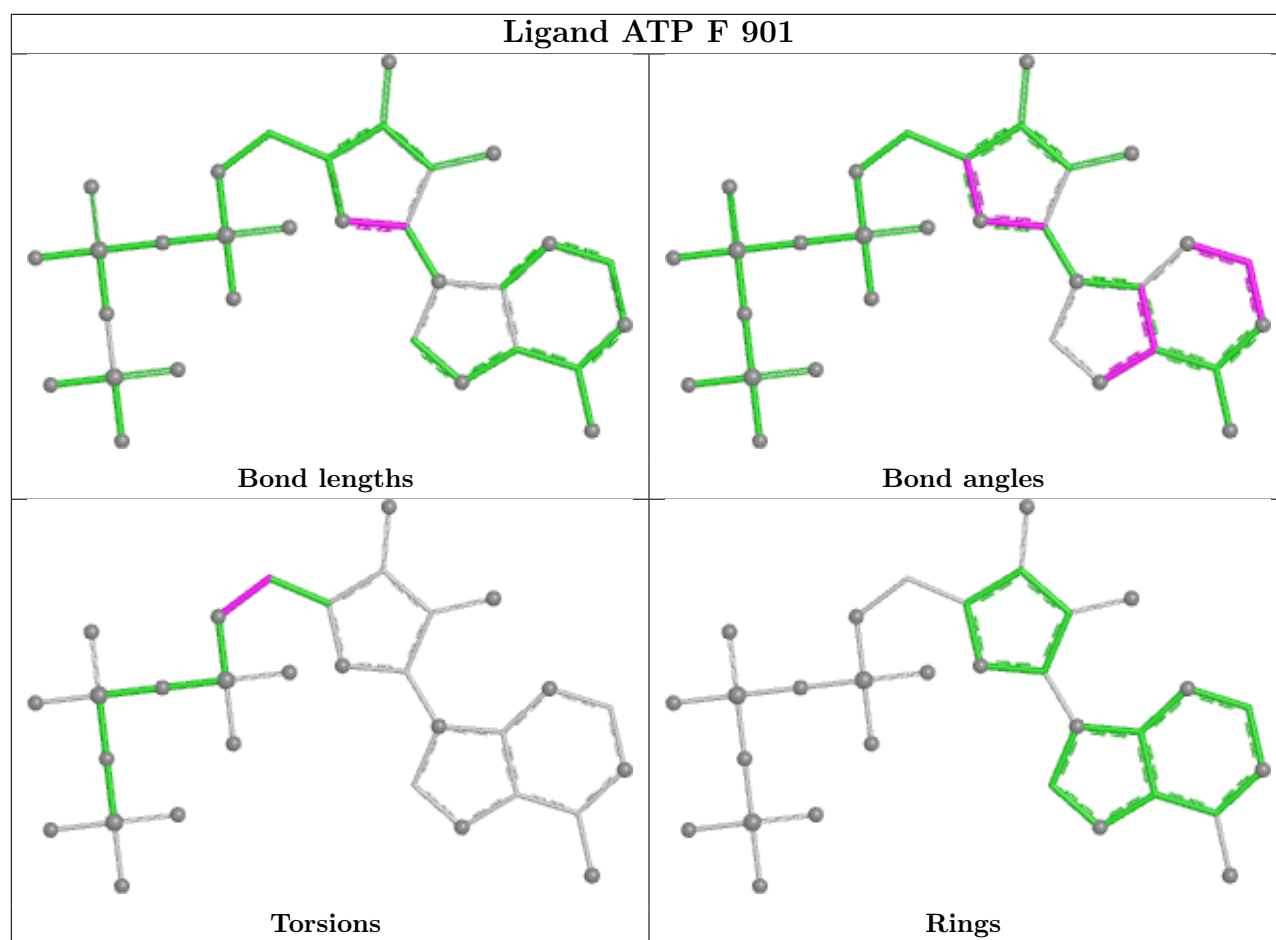
There are no ring outliers.

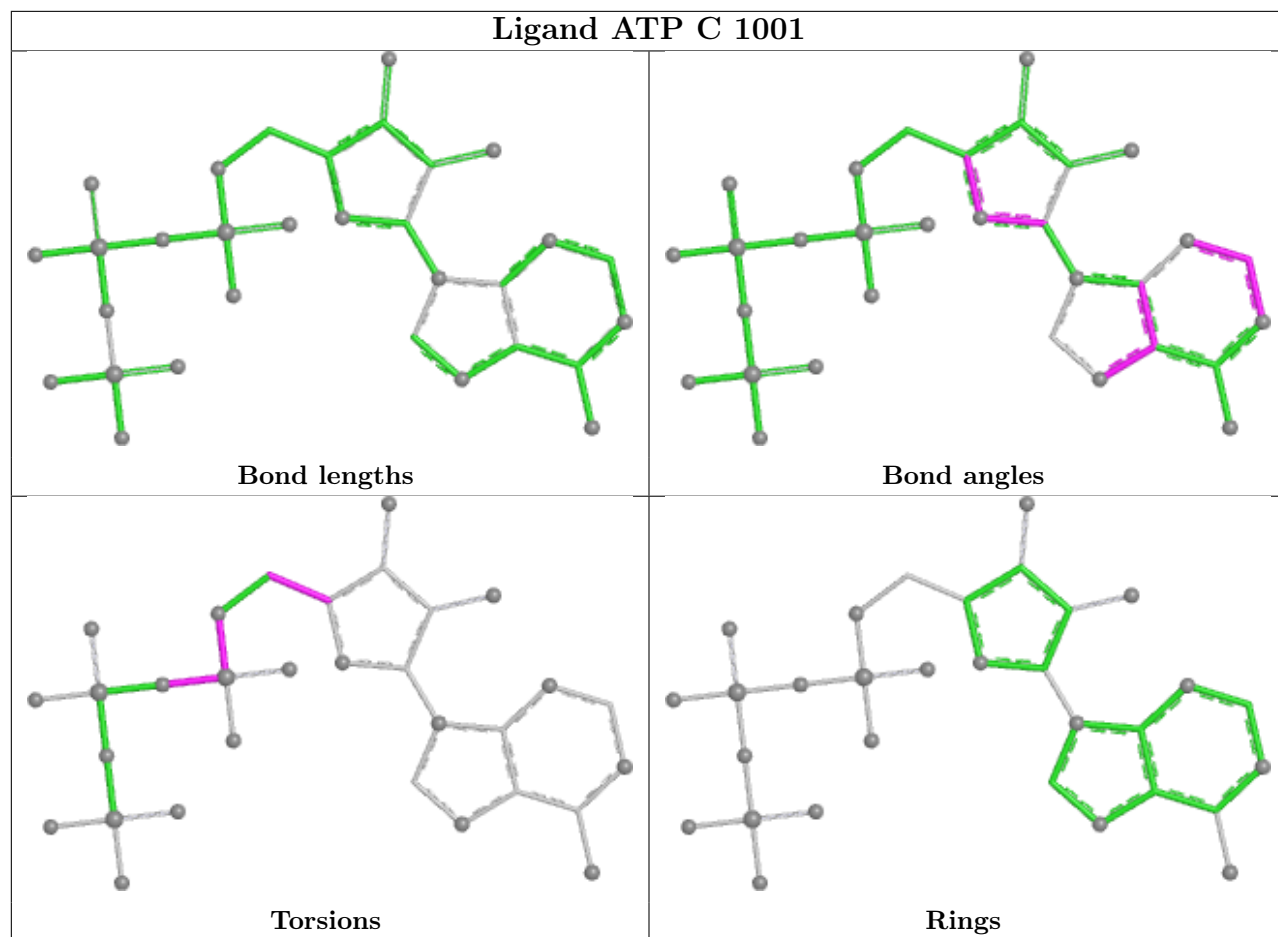
11 monomers are involved in 194 short contacts:

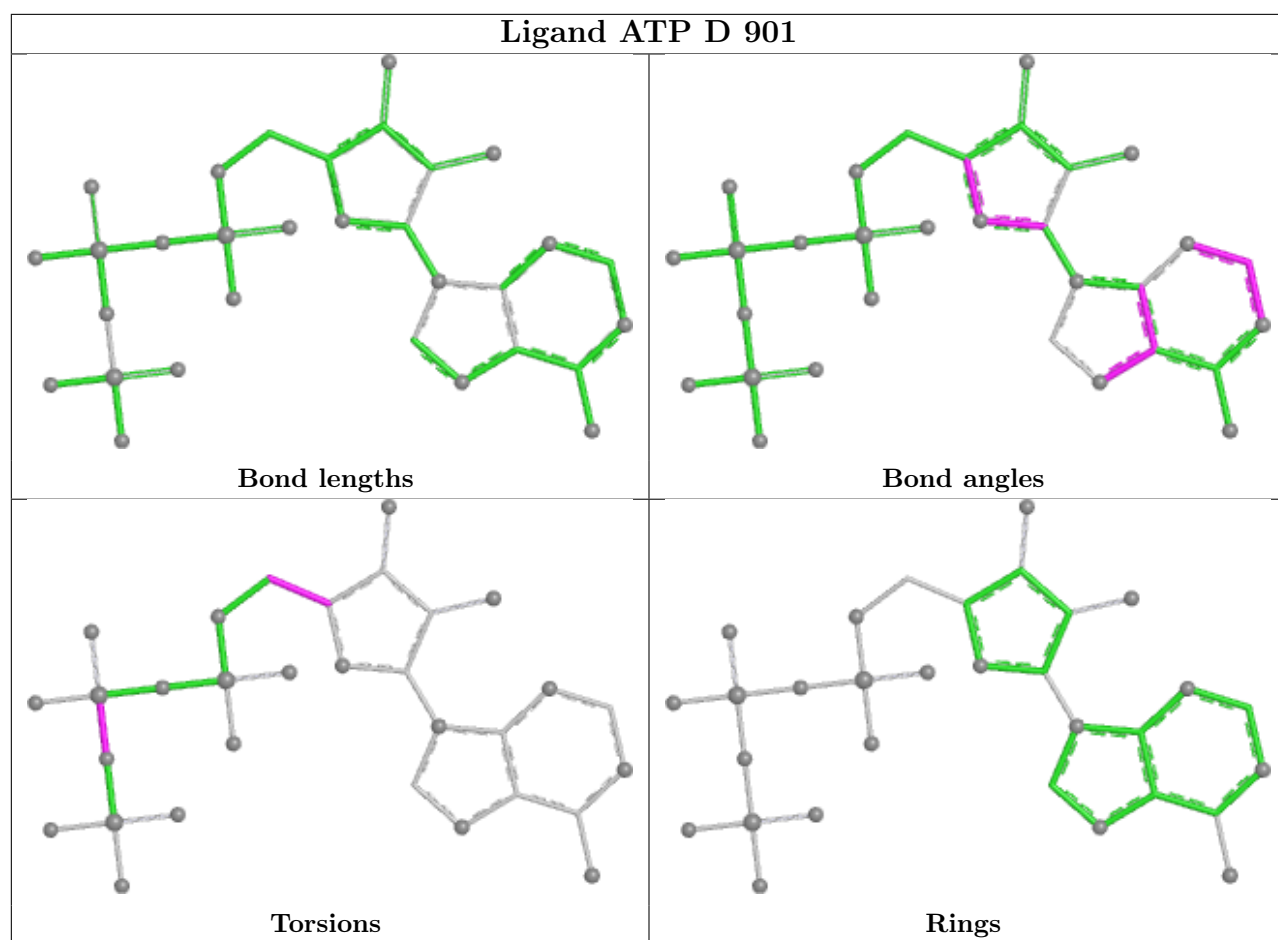
Mol	Chain	Res	Type	Clashes	Symm-Clashes
57	C	1002	ATP	4	0
57	F	901	ATP	18	0
57	C	1001	ATP	42	0
57	D	901	ATP	20	0
61	f	3401	SPD	1	0
57	A	901	ATP	23	0
57	D	902	ATP	29	0
57	C	1003	ATP	18	0
58	E	901	ADP	23	0
57	E	902	ATP	14	0
57	B	901	ATP	2	0

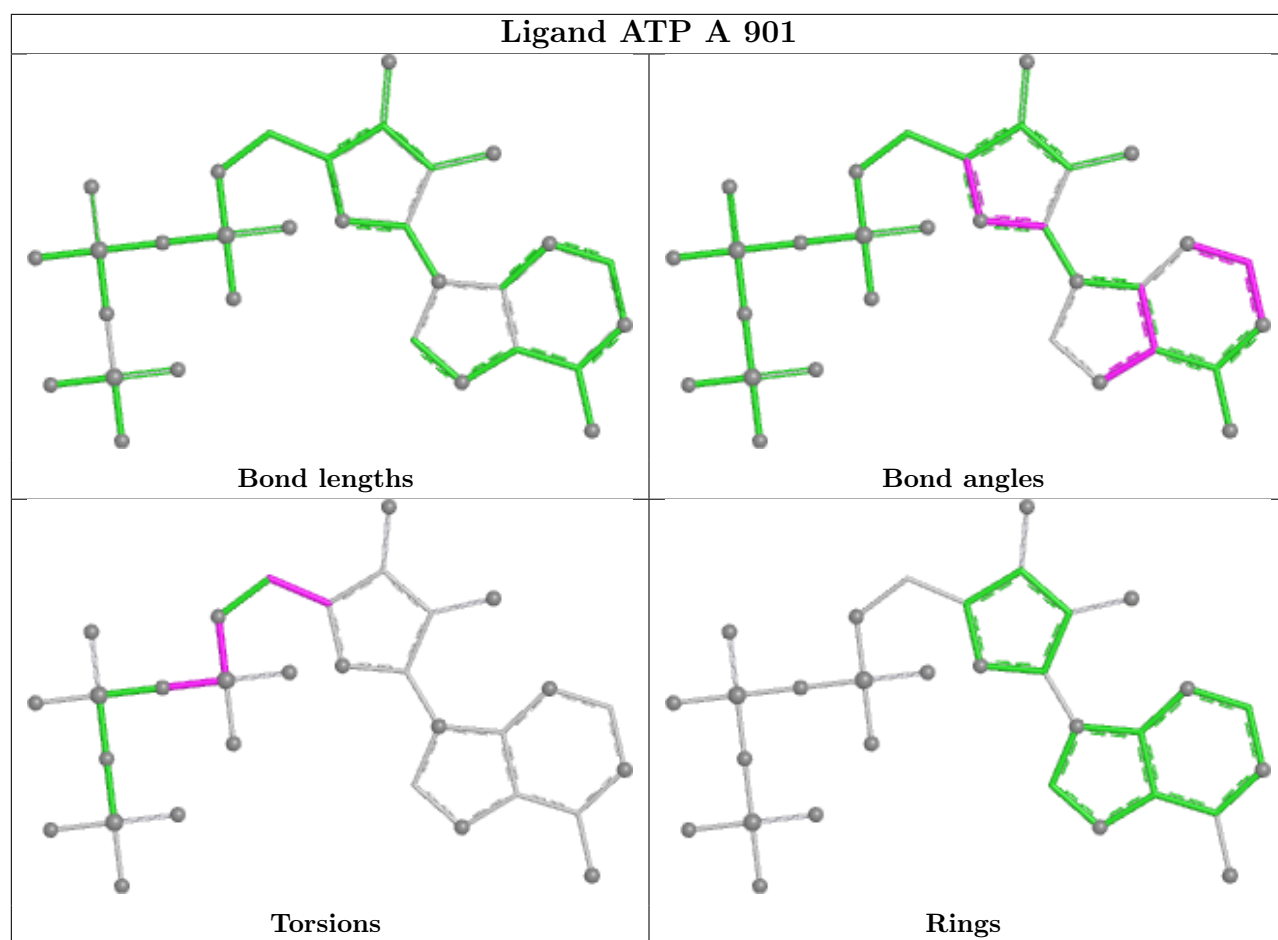
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

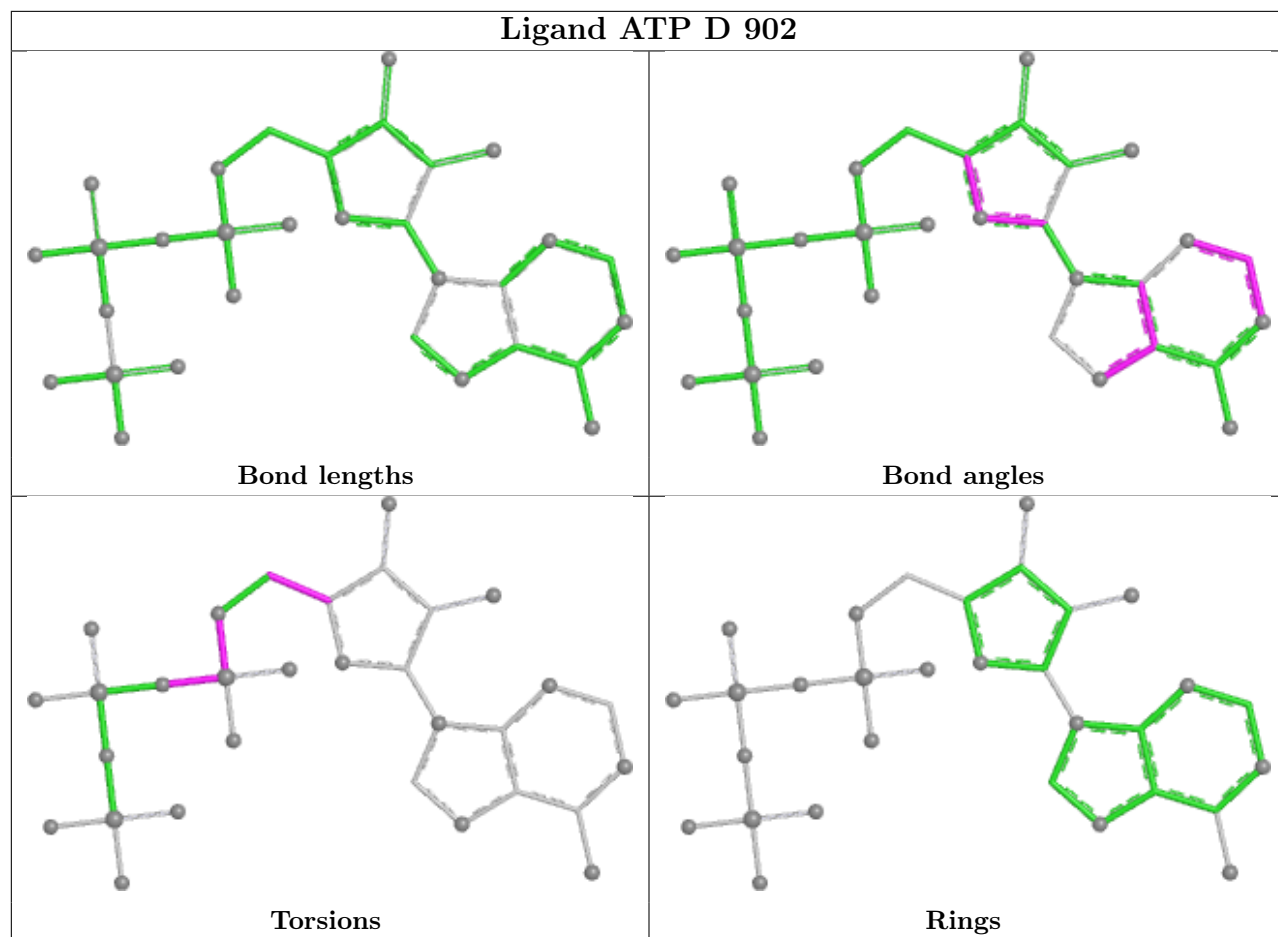




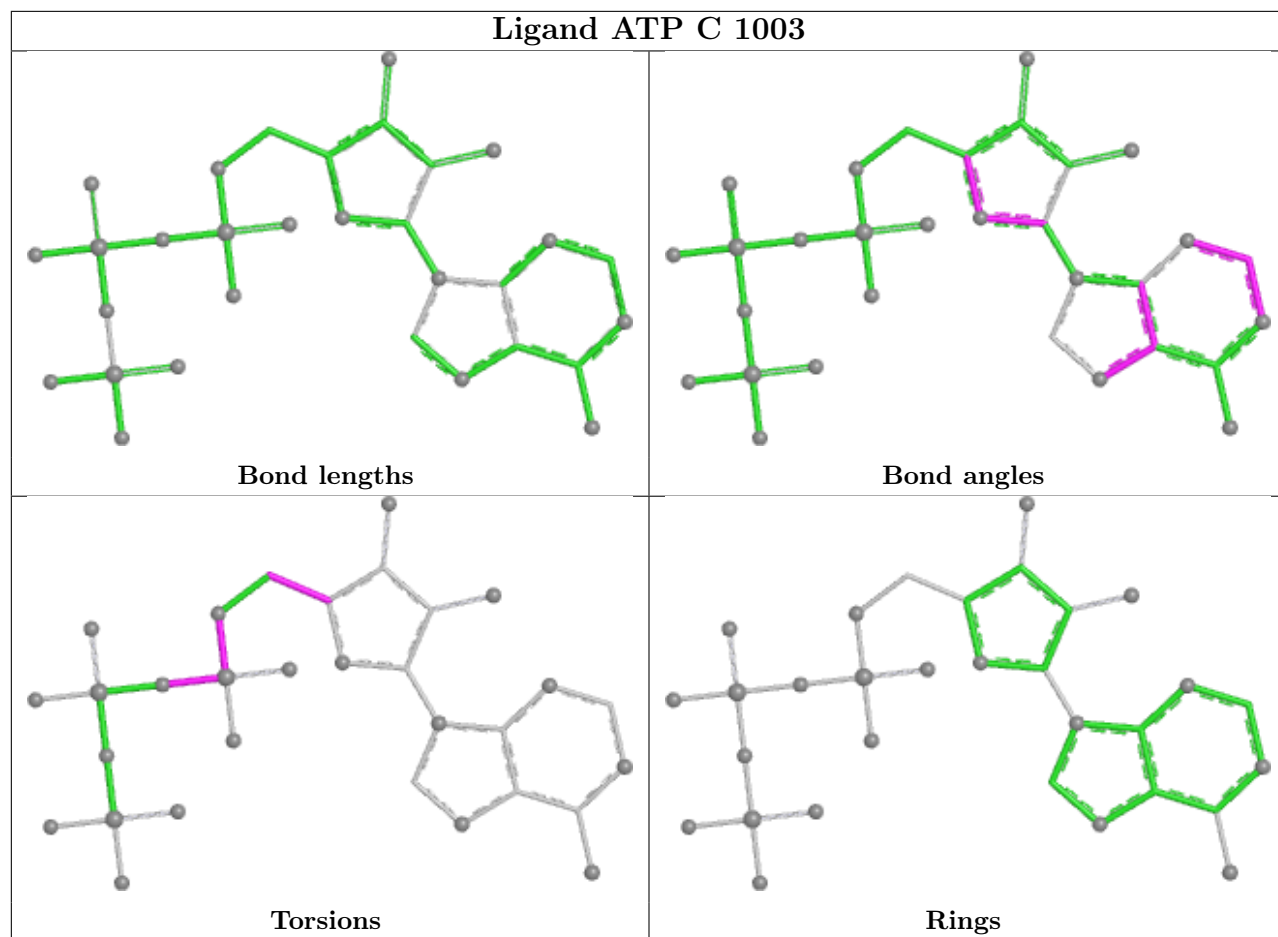




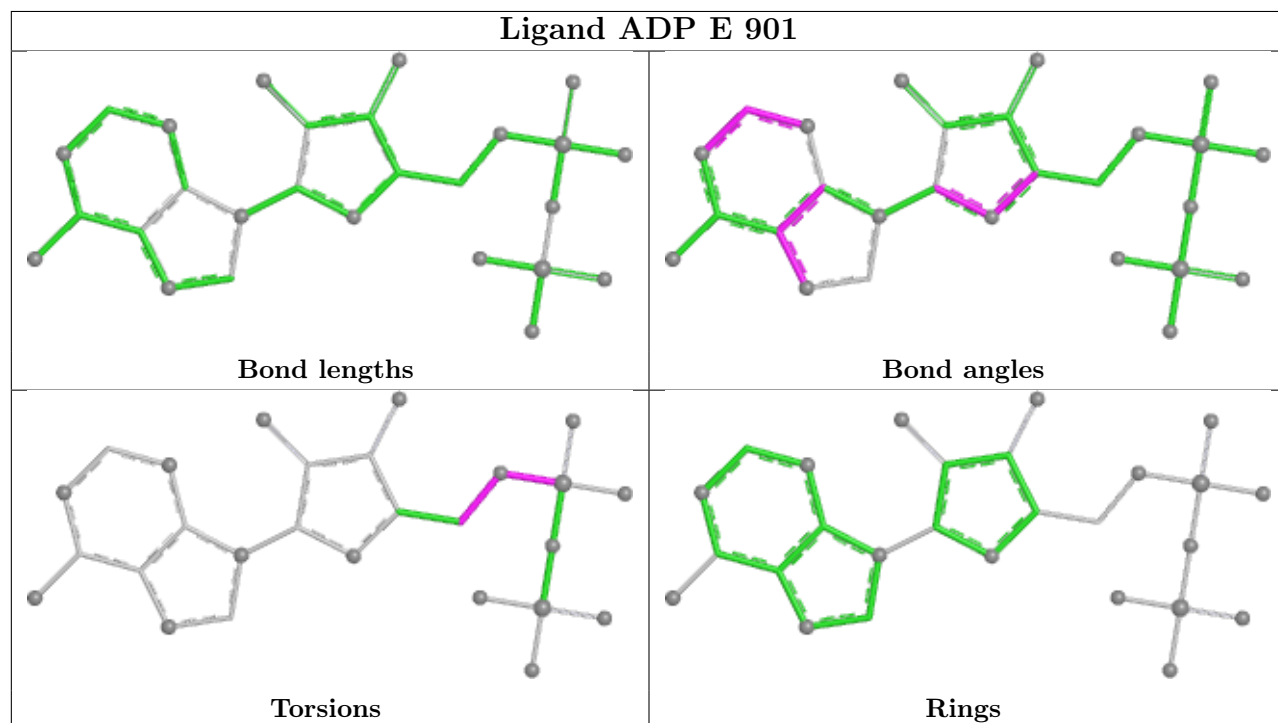


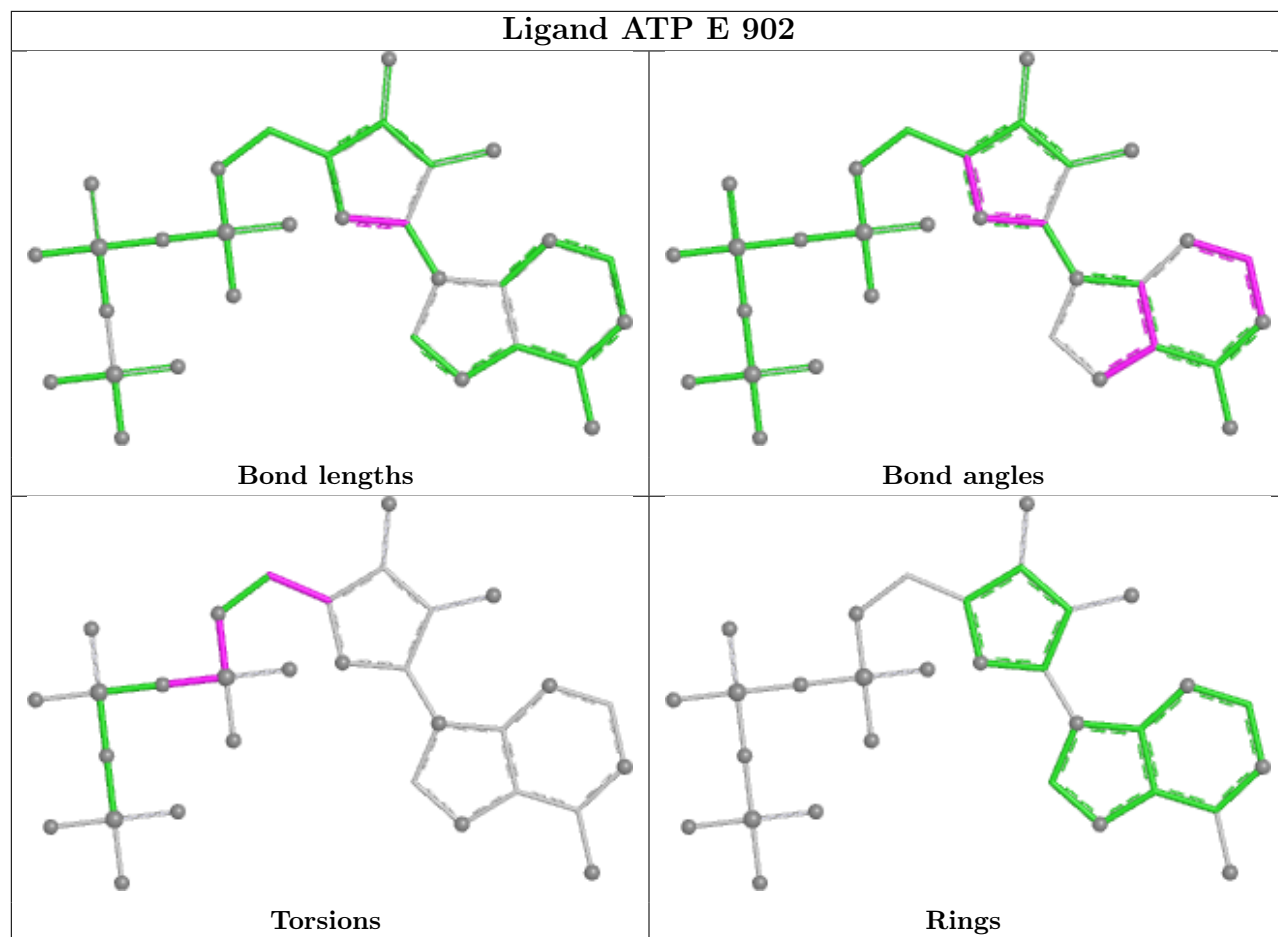


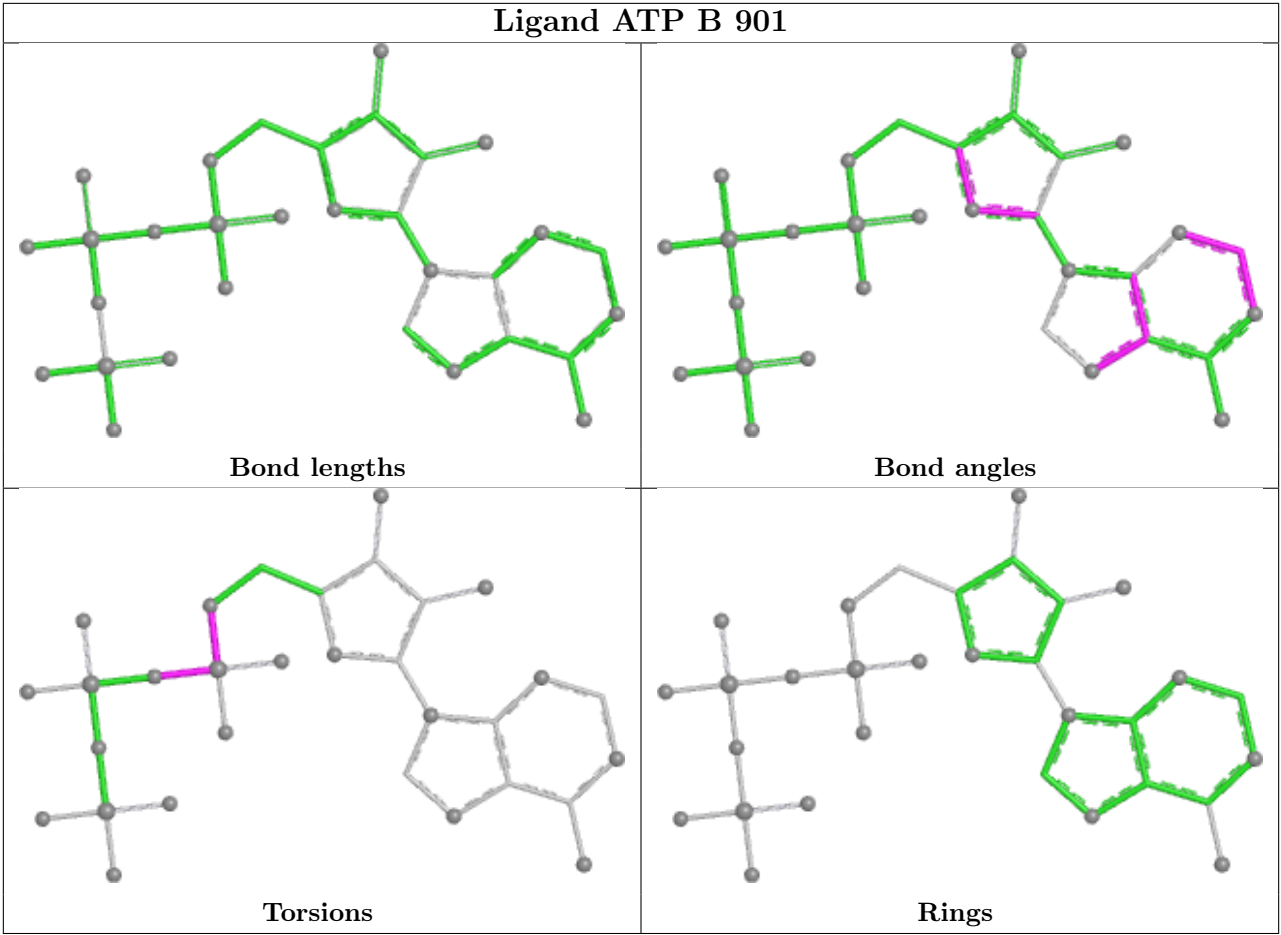
Ligand ATP C 1003



Ligand ADP E 901







5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

The following chains have linkage breaks:

Mol	Chain	Number of breaks
45	e	2
53	v	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	e	1071:THR	C	1072:ALA	N	3.98
1	e	932:LEU	C	933:LEU	N	2.01
1	v	439:GLN	C	440:ARG	N	1.62

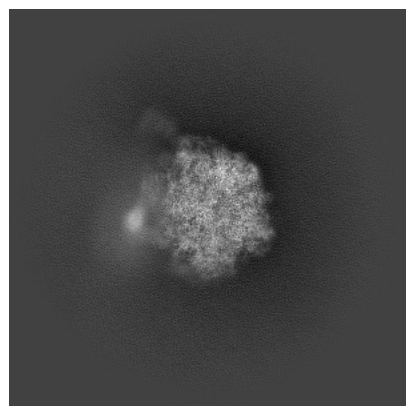
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-70444. These allow visual inspection of the internal detail of the map and identification of artifacts.

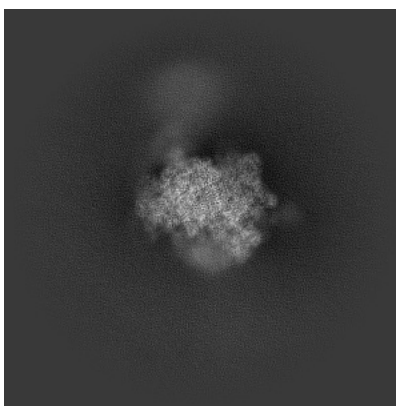
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

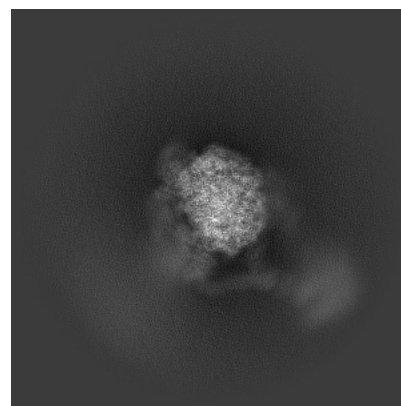
6.1.1 Primary map



X

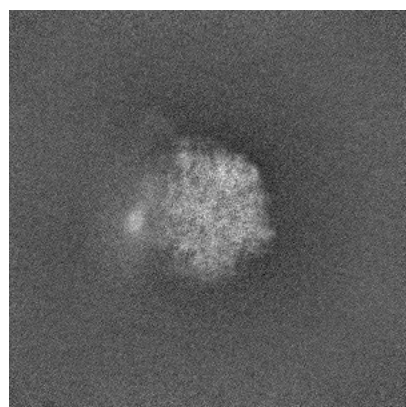


Y

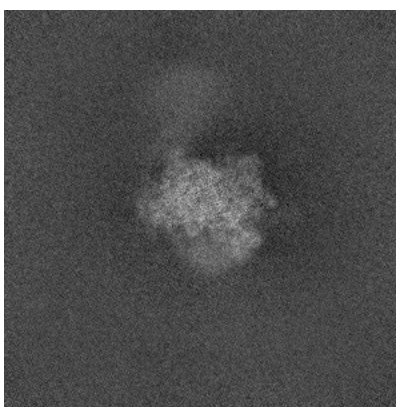


Z

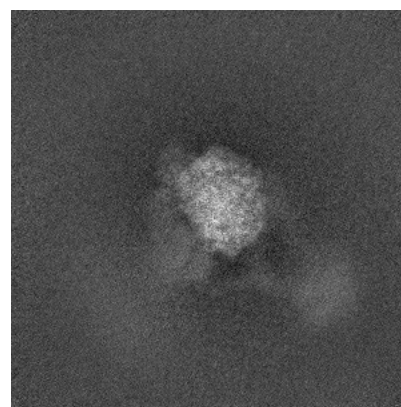
6.1.2 Raw map



X



Y

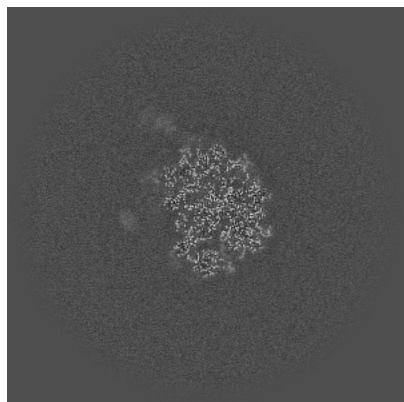


Z

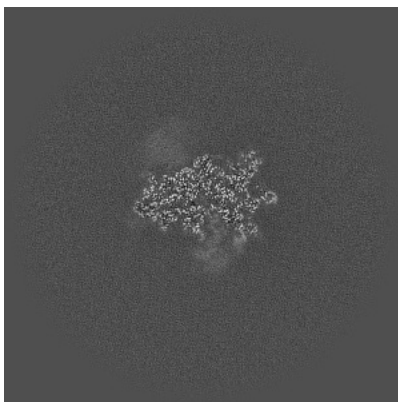
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

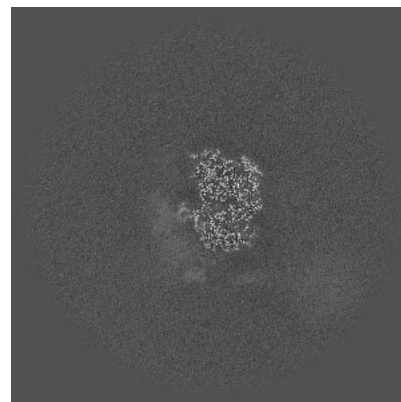
6.2.1 Primary map



X Index: 320

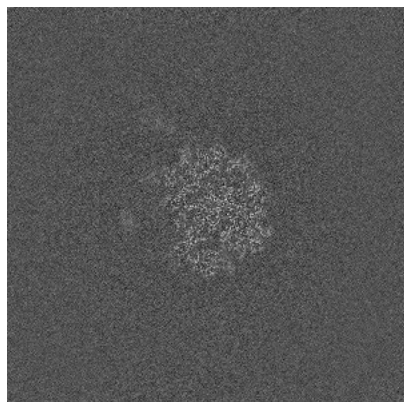


Y Index: 320

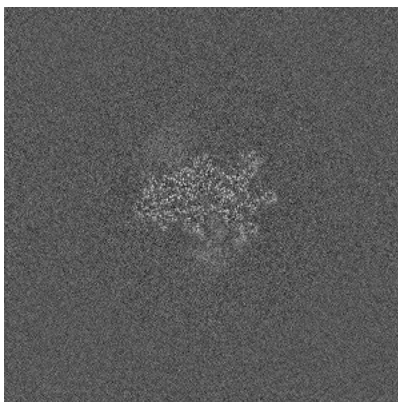


Z Index: 320

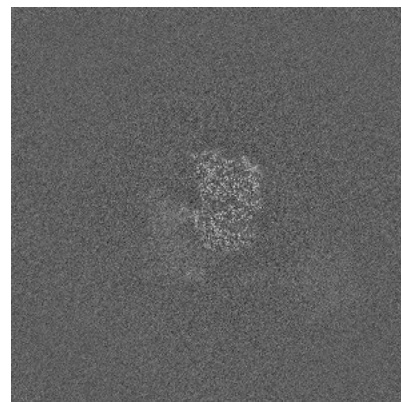
6.2.2 Raw map



X Index: 320



Y Index: 320

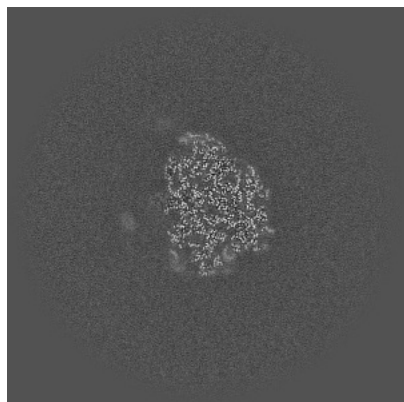


Z Index: 320

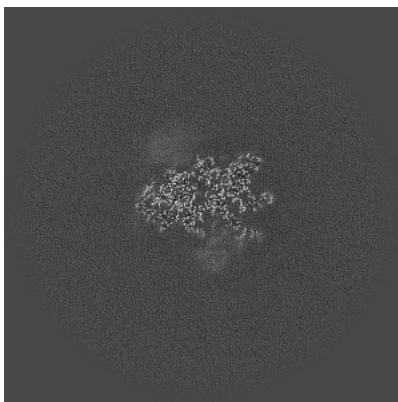
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

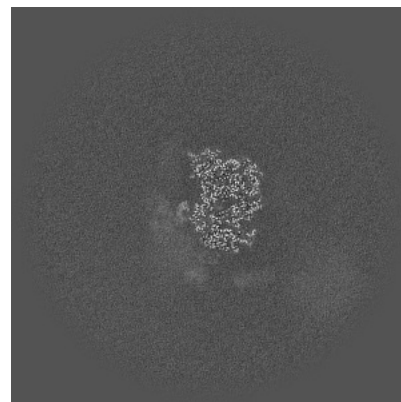
6.3.1 Primary map



X Index: 331

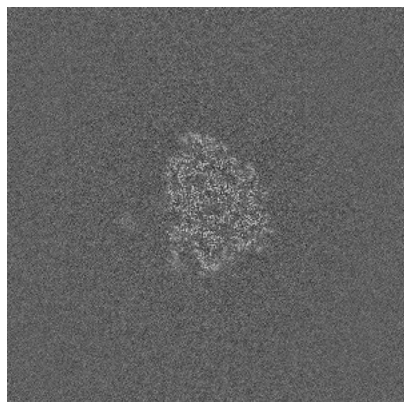


Y Index: 325

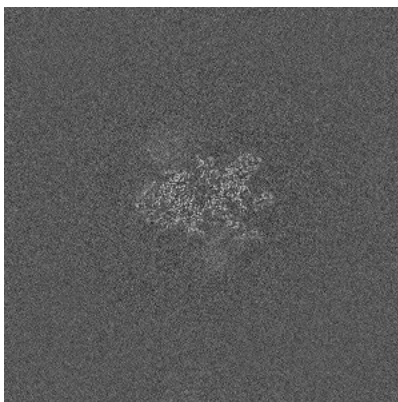


Z Index: 318

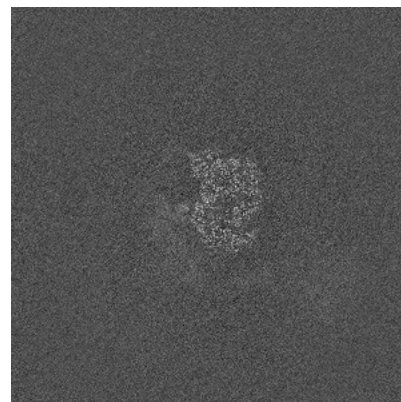
6.3.2 Raw map



X Index: 333



Y Index: 326

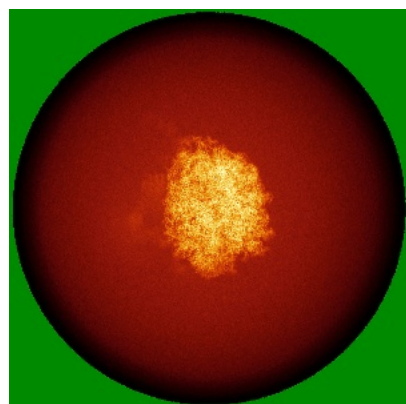


Z Index: 317

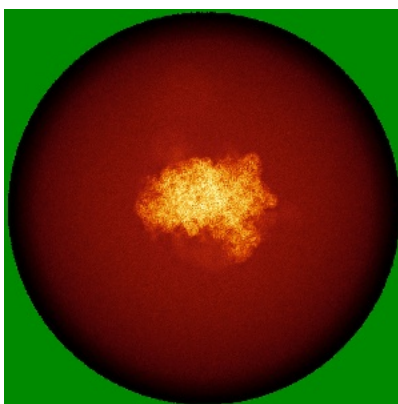
The images above show the largest variance slices of the map in three orthogonal directions.

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

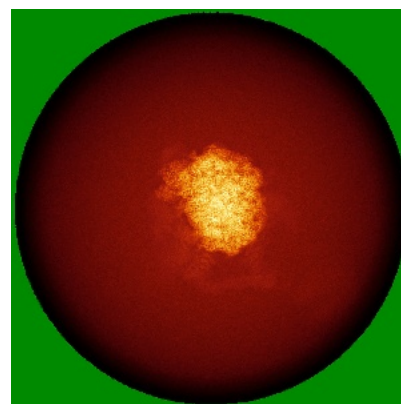
6.4.1 Primary map



X

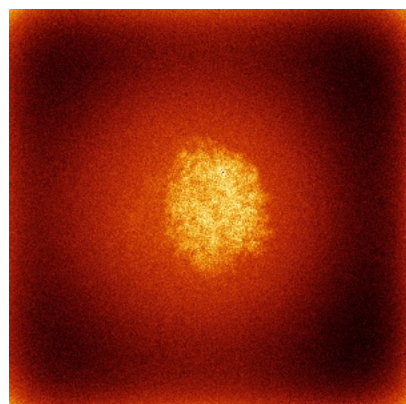


Y

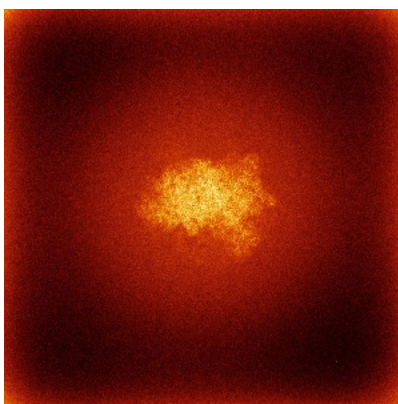


Z

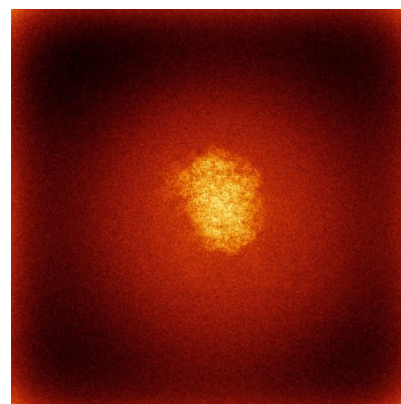
6.4.2 Raw map



X



Y

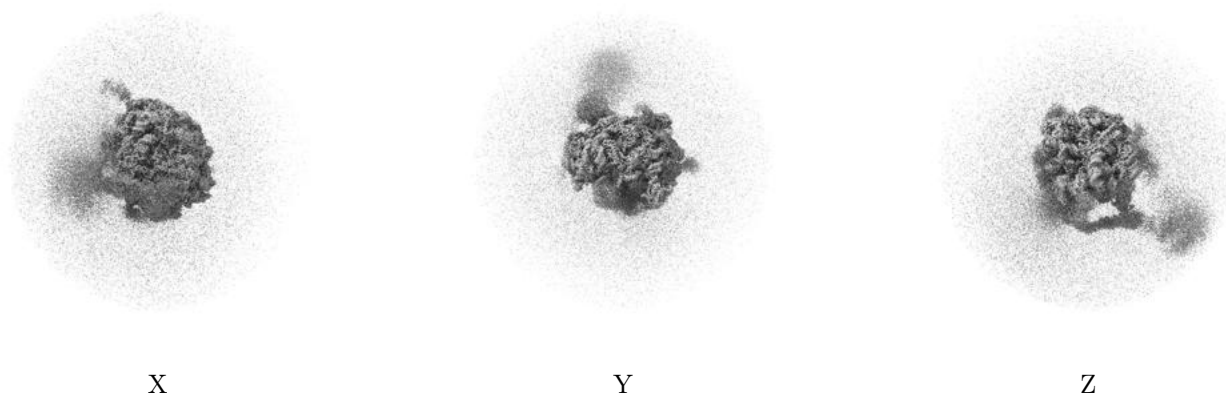


Z

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

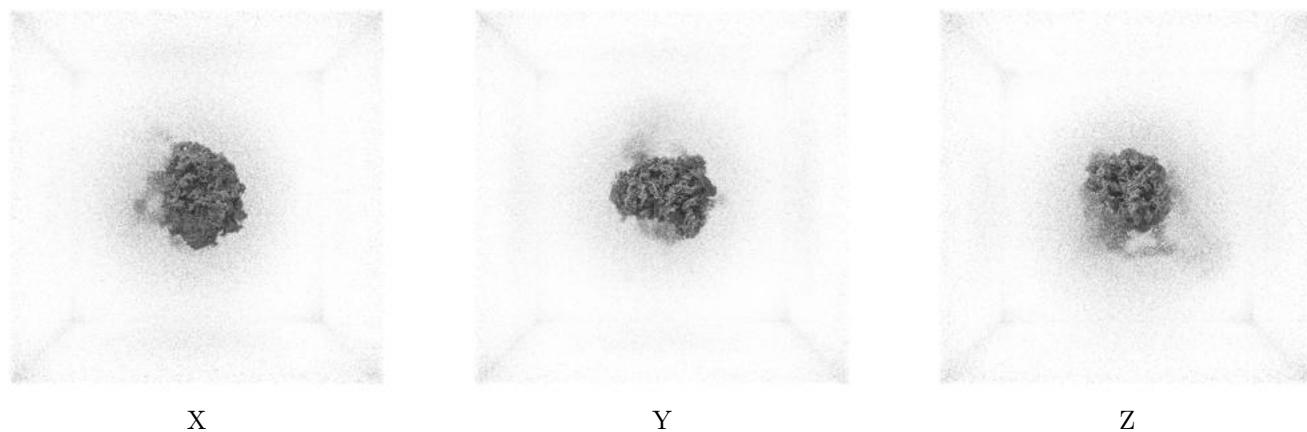
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.187. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

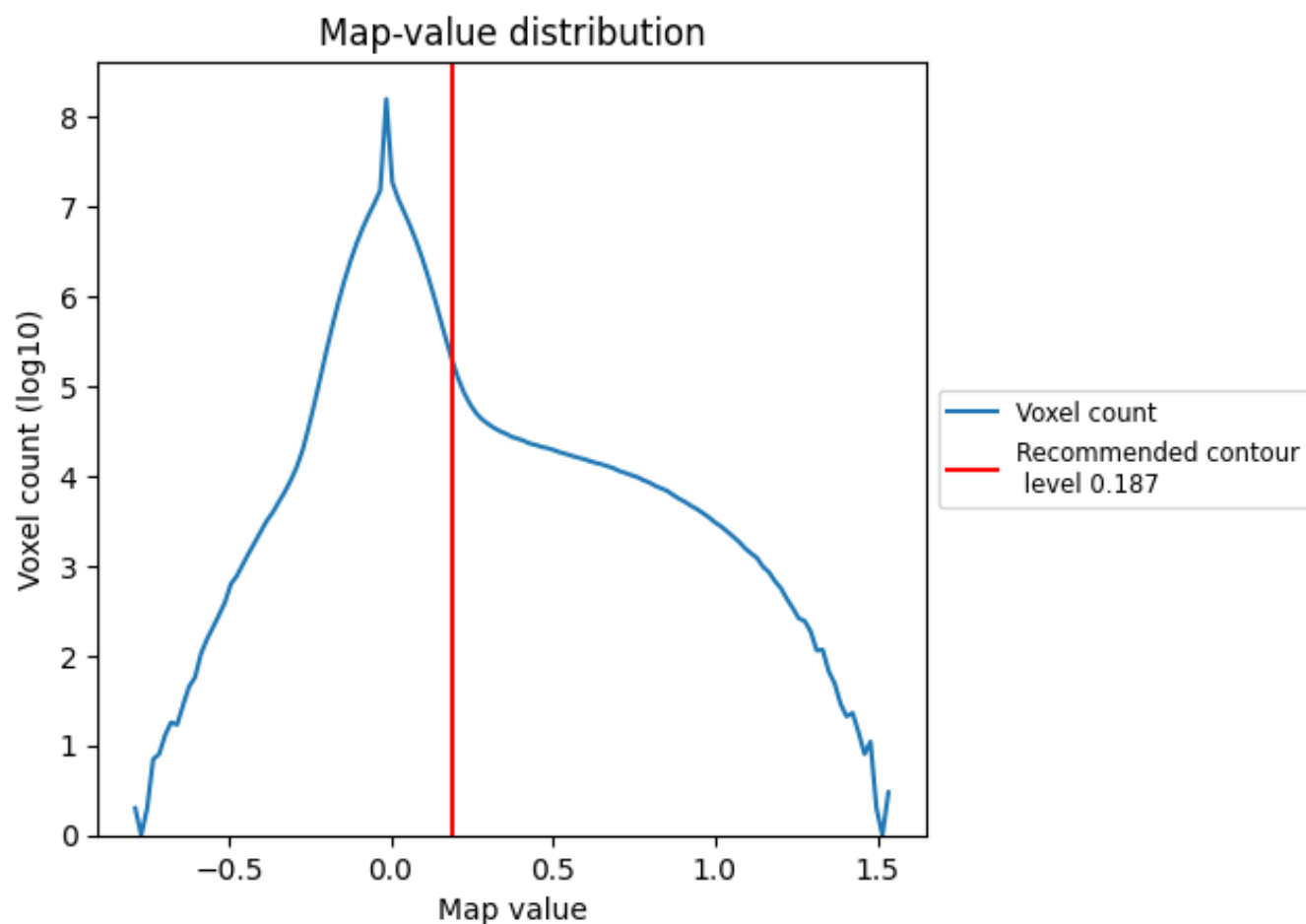
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

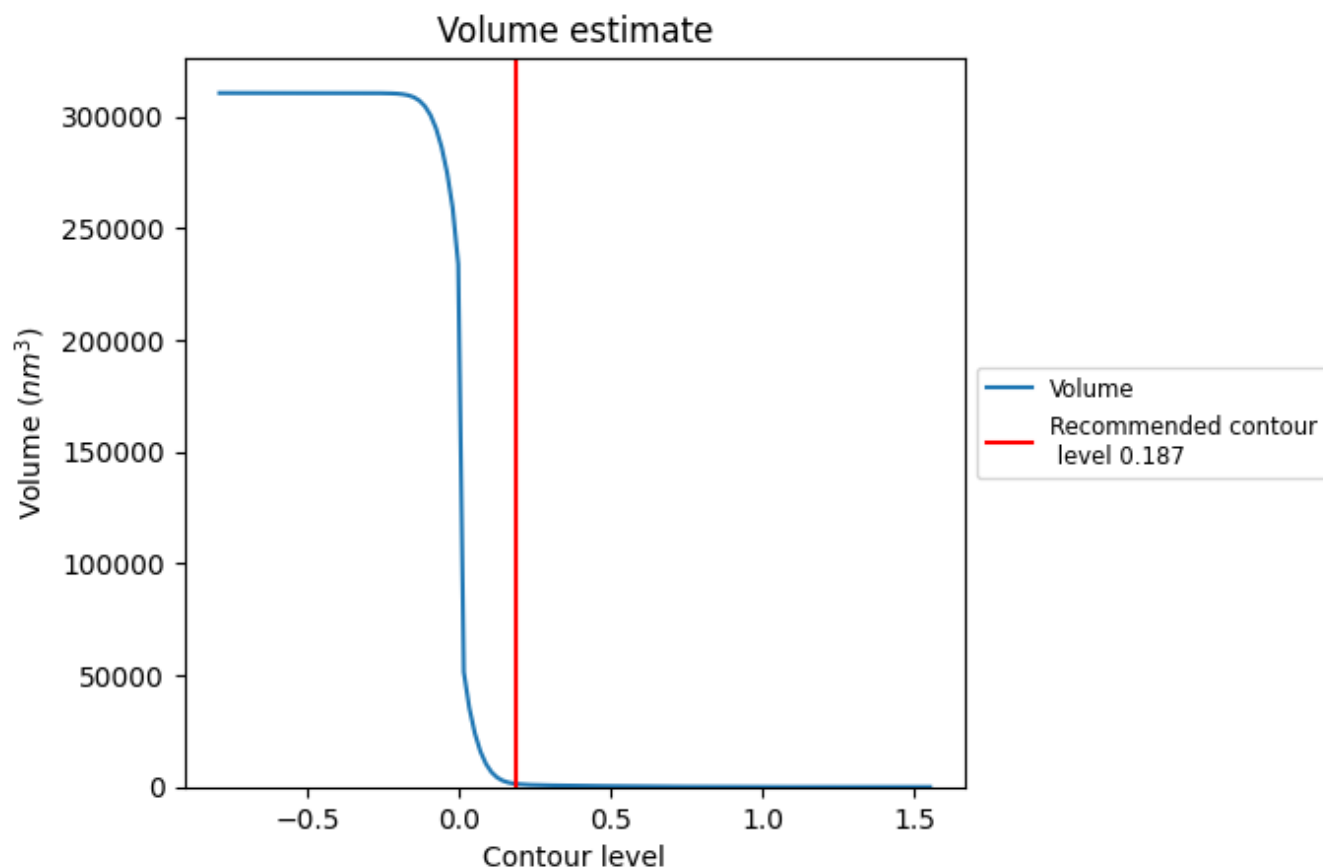
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

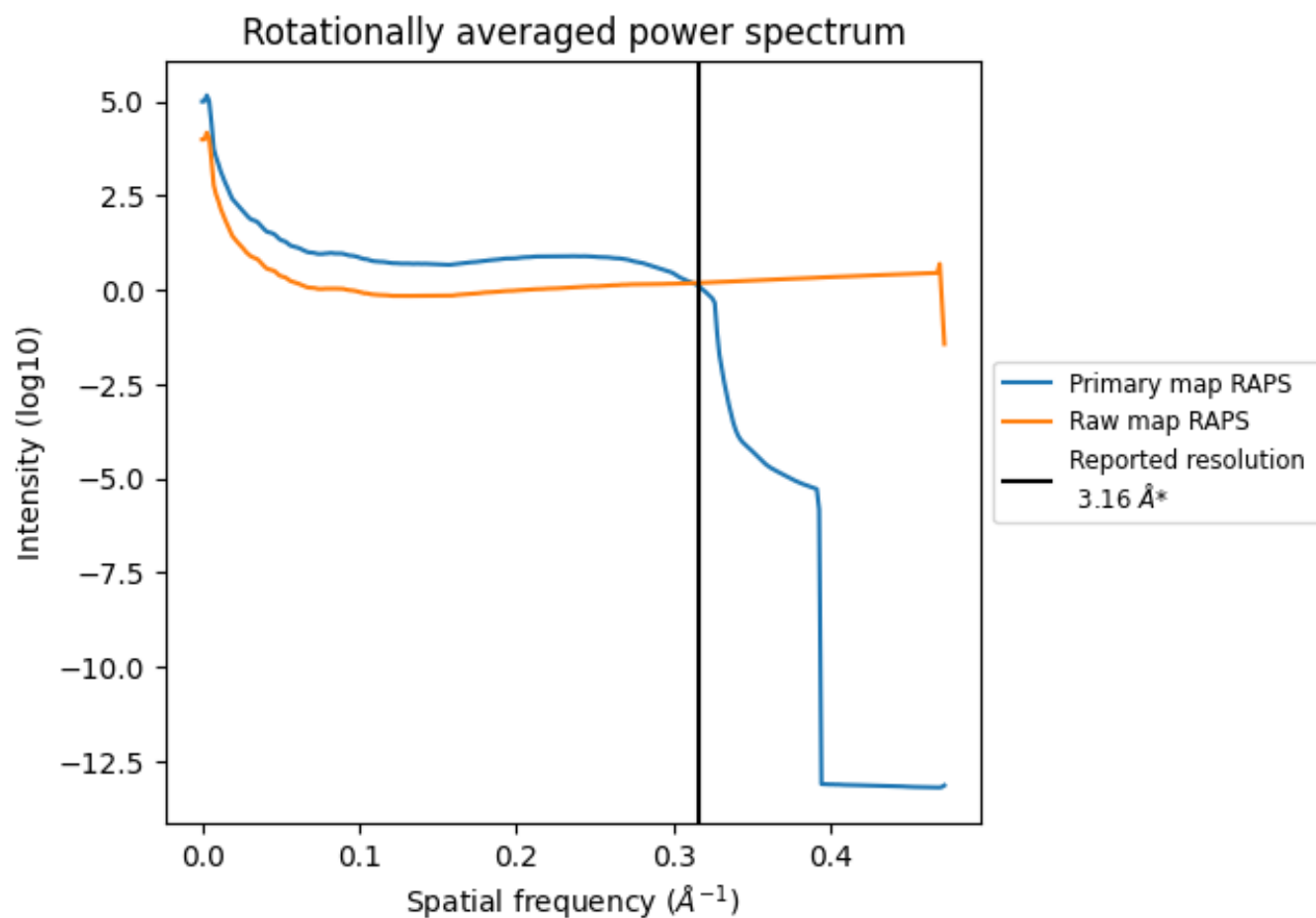
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1424 nm³; this corresponds to an approximate mass of 1287 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 ⓘ

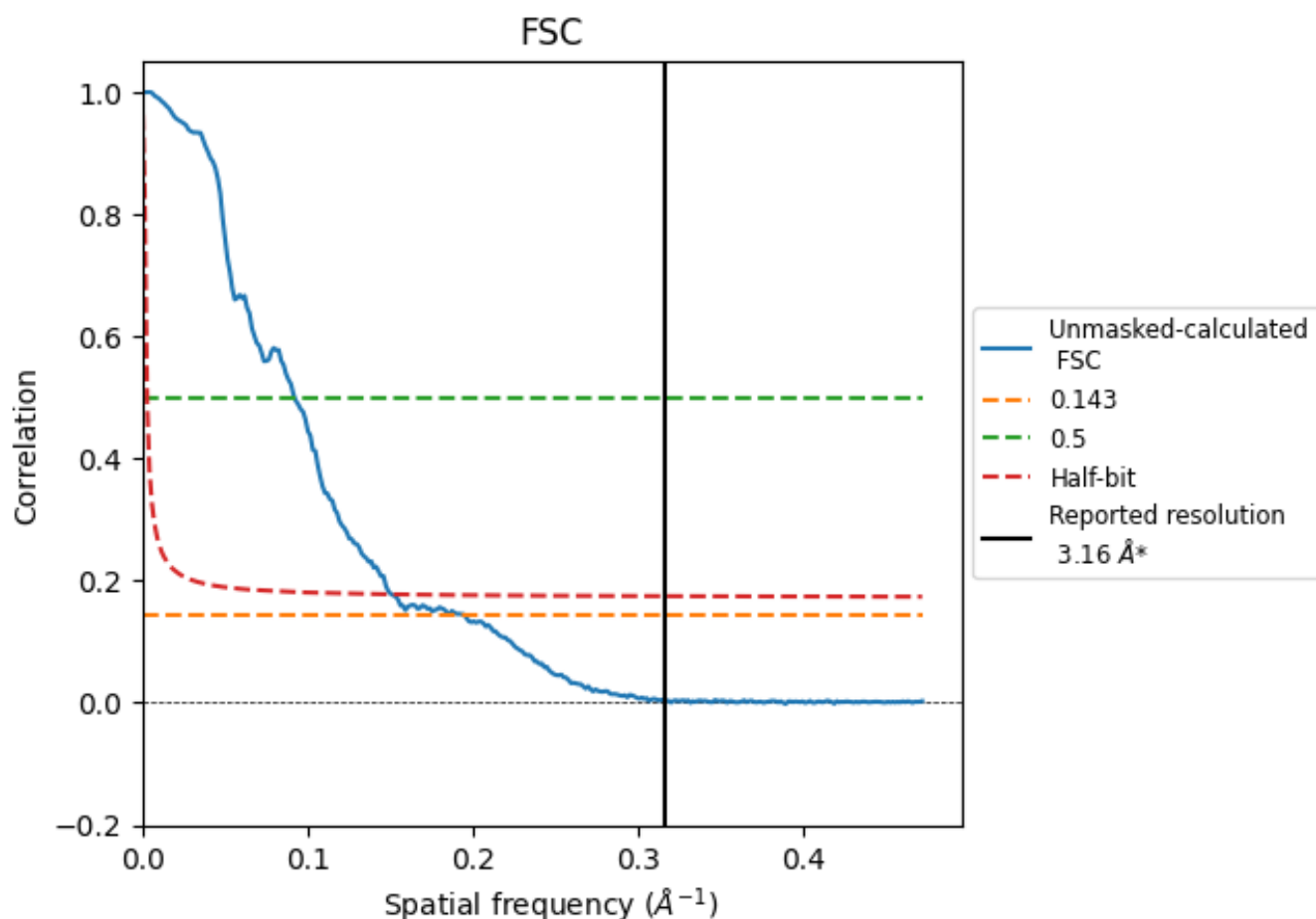


*Reported resolution corresponds to spatial frequency of 0.316 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.316 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

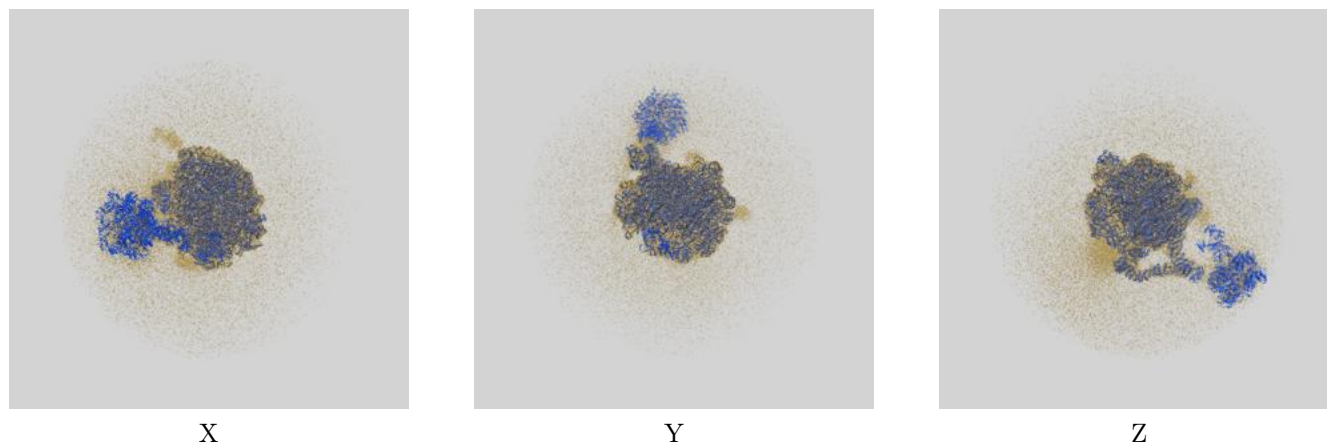
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.16	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	5.12	10.83	6.62

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 5.12 differs from the reported value 3.16 by more than 10 %

9 Map-model fit [i](#)

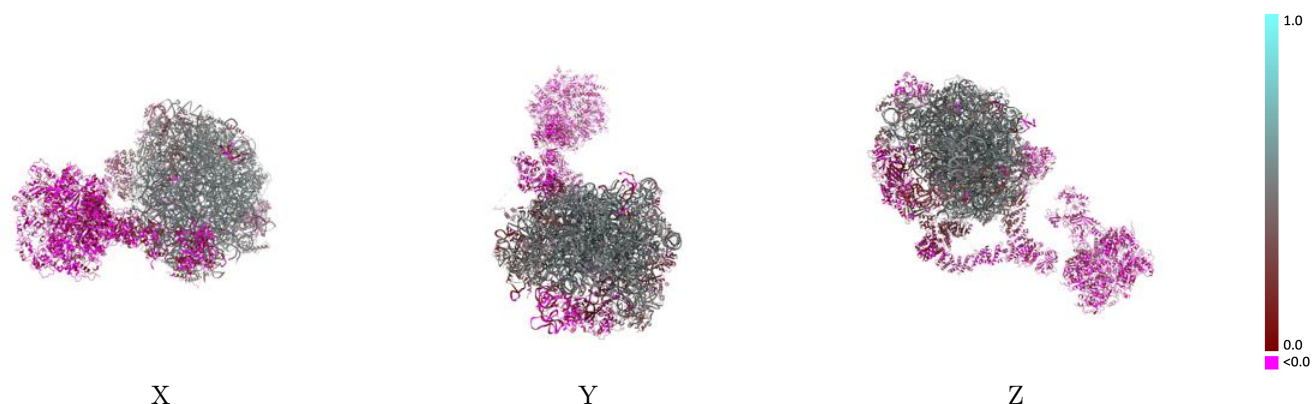
This section contains information regarding the fit between EMDB map EMD-70444 and PDB model 9OFV. Per-residue inclusion information can be found in section 3 on page 19.

9.1 Map-model overlay [i](#)



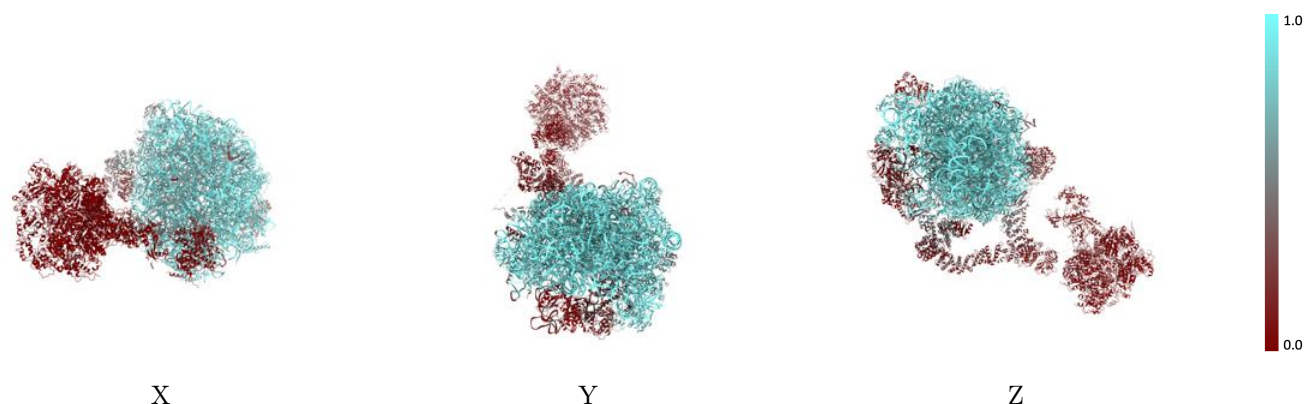
The images above show the 3D surface view of the map at the recommended contour level 0.187 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



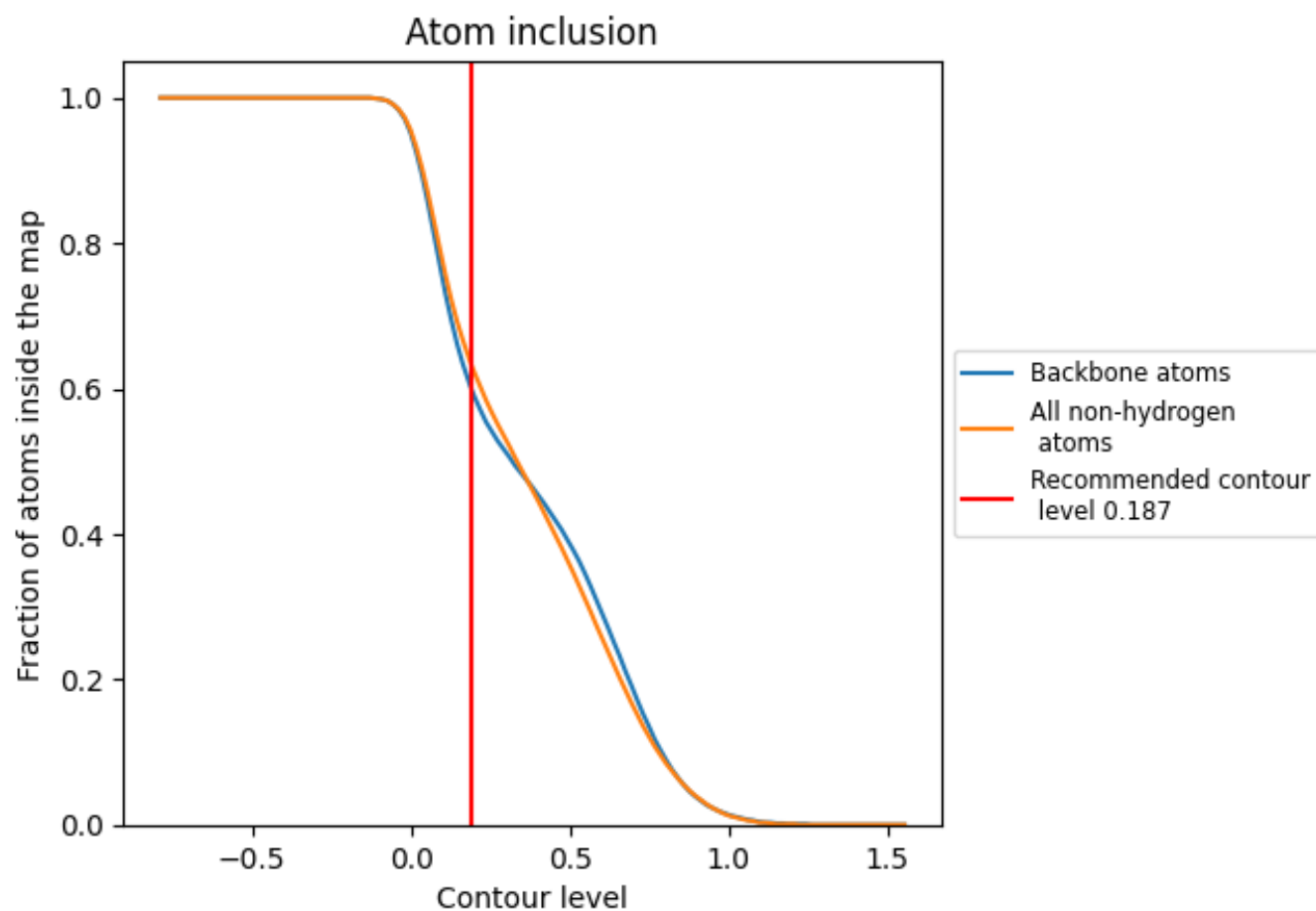
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.187).

9.4 Atom inclusion [i](#)



At the recommended contour level, 60% of all backbone atoms, 64% 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 (0.187) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6360	 0.3290
0	 0.5700	 0.2150
1	 0.5770	 0.3690
2	 0.0370	 -0.0080
3	 0.8750	 0.5180
4	 0.9070	 0.5240
5	 0.8230	 0.4600
6	 0.8890	 0.5070
7	 0.8730	 0.5020
8	 0.7950	 0.4250
9	 0.8670	 0.4790
A	 0.0140	 0.0070
B	 0.0140	 0.0020
C	 0.0070	 -0.0160
D	 0.0080	 -0.0000
E	 0.0070	 0.0060
F	 0.0070	 0.0010
G	 0.0030	 0.0110
H	 0.0000	 0.0090
I	 0.8320	 0.4920
J	 0.0020	 0.0010
K	 0.0000	 0.0050
L	 0.8780	 0.4980
M	 0.8280	 0.4230
N	 0.9090	 0.5300
O	 0.8500	 0.4870
P	 0.8180	 0.4310
Q	 0.8330	 0.4800
R	 0.8980	 0.5310
S	 0.9000	 0.5270
T	 0.8420	 0.4740
U	 0.8560	 0.4850
V	 0.8450	 0.4450
W	 0.9210	 0.5440
X	 0.7280	 0.3320



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Chain	Atom inclusion	Q-score
Y	 0.9060	 0.5280
Z	 0.8720	 0.4990
a	 0.1590	 0.0670
a0	 0.7390	 0.3180
b	 0.8670	 0.5000
b0	 0.6670	 0.2380
c	 0.8510	 0.4680
d	 0.2180	 0.2700
e	 0.2610	 0.0850
f	 0.9320	 0.4770
g	 0.0740	 0.2270
h	 0.9720	 0.4930
i	 0.9530	 0.4990
j	 0.8840	 0.5060
k	 0.8870	 0.5090
l	 0.8930	 0.5050
m	 0.8370	 0.4270
n	 0.8270	 0.4420
o	 0.8820	 0.4900
p	 0.8250	 0.4280
q	 0.8530	 0.4740
r	 0.8410	 0.4820
s	 0.8110	 0.3930
t	 0.8930	 0.4940
u	 0.8530	 0.4610
v	 0.0890	 0.0090
w	 0.0490	 0.0010
x	 0.1830	 0.0950
y	 0.2690	 0.0980
z	 0.4600	 0.1380