



## Full wwPDB EM Validation Report ⓘ

Oct 27, 2024 – 01:29 PM JST

PDB ID : 6AHD  
EMDB ID : EMD-9624  
Title : The Cryo-EM Structure of Human Pre-catalytic Spliceosome (B complex) at 3.8 angstrom resolution  
Authors : Zhan, X.; Yan, C.; Zhang, X.; Shi, Y.  
Deposited on : 2018-08-17  
Resolution : 3.80 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](mailto: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>.

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

EMDB validation analysis : 0.0.1.dev113  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
MolProbity : 4.02b-467  
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) : 2.39

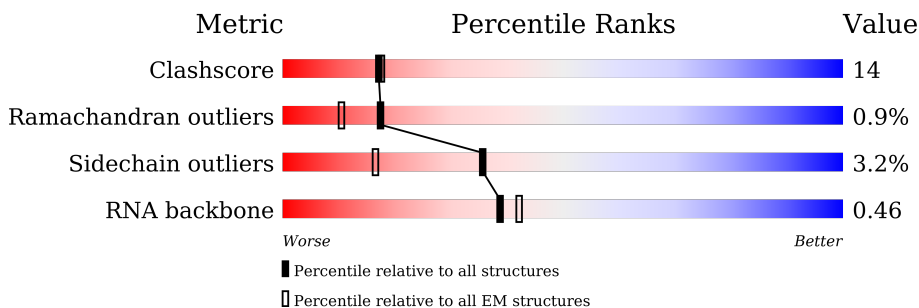
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.80 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
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  $\geq 3$ , 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	2335	
2	I	144	
3	B	117	
4	F	107	
5	G	274	
6	O	142	
7	C	972	

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Mol	Chain	Length	Quality of chain
8	N	941	16% 71% 10% 17%
9	M	128	84% 12%
10	L	499	63% 12% 25%
11	9	800	11% 6% 79%
12	J	683	29% 5% 67%
13	U	231	26% 26% 72%
13	a	231	32% 37% 63%
13	i	231	37% 37% 63%
14	V	119	66% 68% 31%
14	b	119	58% 69% 31%
14	j	119	69% 69% 31%
15	P	118	62% 60% 37%
15	c	118	81% 81% 18%
15	k	118	72% 71% 28%
16	Q	86	81% 79% 17%
16	d	86	86% 86% 14%
16	l	86	86% 86% 14%
17	R	92	83% 84% 15%
17	e	92	83% 86% 14%
17	m	92	86% 86% 14%
18	S	76	92% 91% 5%
18	f	76	95% 97%
18	n	76	89% 89% 11%
19	T	126	52% 56% 44%
19	g	126	52% 64% 36%

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Mol	Chain	Length	Quality of chain
19	h	126	63% 63% 37%
20	E	357	80% 81% 16%
21	X	376	11% 19% 80%
22	W	177	19% 90% 6% 5%
23	A0	73	5% 71% 21% 8%
24	0	439	6% 9% 90%
25	Z	312	15% 54% 44%
26	8	199	8% 26% 72%
27	Y	513	88% 83% 5% 12%
28	H	188	58% 19% 20% 16% 42%
29	o	255	64% 63% 36%
30	p	225	42% 42% 58%
31	u	793	16% 15% 84%
32	v	464	20% 18% 80%
33	w	501	84% 83% 16%
34	q	95	95% 91% 5%
35	r	102	73% 70% 27%
36	s	139	53% 53% 47%
37	t	91	79% 78% 21%
38	x	80	88% 85% 12%
39	y	103	63% 63% 37%
40	z	96	64% 63% 36%
41	K	522	71% 7% 21%
42	1	1304	79% 57% 22% 20%
43	3	1217	96% 86% 10%

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Mol	Chain	Length	Quality of chain
44	5	125	<p>86% 75% 11% 14%</p>
45	6	110	<p>78% 72% 9% 19%</p>
46	7	86	<p>74% 58% 19% 23%</p>
47	2	895	<p>20% 18% 80%</p>
48	4	424	<p>18% 17% 82%</p>
49	D	2136	<p>52% 76% 20%</p>

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
50	IHP	A	3000	-	-	X	-

## 2 Entry composition [i](#)

There are 52 unique types of molecules in this entry. The entry contains 85302 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 Pre-mRNA-processing-splicing factor 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	2209	17290	10998	3094	3128	70	0	0

- Molecule 2 is a RNA chain called U4snRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	I	136	2881	1288	498	959	136	0	0

- Molecule 3 is a RNA chain called U5snRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	B	115	2420	1084	403	818	115	0	0

- Molecule 4 is a RNA chain called U6snRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	F	94	1995	891	362	648	94	0	0

- Molecule 5 is a RNA chain called pre-mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	G	77	1612	722	261	552	77	0	0

- Molecule 6 is a protein called Thioredoxin-like protein 4A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	O	141	1152	739	194	209	10	0	0

- Molecule 7 is a protein called 116 kDa U5 small nuclear ribonucleoprotein component.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	C	818	Total	C	N	O	S	0	0
			6440	4117	1086	1205	32		

- Molecule 8 is a protein called Pre-mRNA-processing factor 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	N	781	Total	C	N	O	S	0	0
			4518	2759	876	878	5		

- Molecule 9 is a protein called NHP2-like protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	M	124	Total	C	N	O	S	0	0
			962	608	171	178	5		

- Molecule 10 is a protein called U4/U6 small nuclear ribonucleoprotein Prp31.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	L	376	Total	C	N	O	S	0	0
			2874	1788	524	550	12		

- Molecule 11 is a protein called U4/U6.U5 tri-snRNP-associated protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	9	165	Total	C	N	O	S	0	0
			1087	669	205	212	1		

- Molecule 12 is a protein called U4/U6 small nuclear ribonucleoprotein Prp3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	J	227	Total	C	N	O	S	0	0
			1273	724	283	263	3		

- Molecule 13 is a protein called SmB.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
13	a	86	Total	C	N	O	0	0
			344	172	86	86		
13	i	86	Total	C	N	O	0	0
			344	172	86	86		

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Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
13	U	64	256	128	64	64	0	0

- Molecule 14 is a protein called Small nuclear ribonucleoprotein Sm D1.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
14	b	82	328	164	82	82	0	0
14	j	82	328	164	82	82	0	0
14	V	82	334	170	82	82	0	0

- Molecule 15 is a protein called Small nuclear ribonucleoprotein Sm D2.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
15	c	97	388	194	97	97	0	0
15	k	85	340	170	85	85	0	0
15	P	74	300	152	74	74	0	0

- Molecule 16 is a protein called SmE.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
16	d	74	296	148	74	74	0	0
16	l	74	296	148	74	74	0	0
16	Q	71	292	150	71	71	0	0

- Molecule 17 is a protein called SmF.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
17	e	79	316	158	79	79	0	0
17	m	79	316	158	79	79	0	0
17	R	78	314	158	78	78	0	0



- Molecule 18 is a protein called Small nuclear ribonucleoprotein G.

Mol	Chain	Residues	Atoms				AltConf	Trace
18	f	74	Total	C	N	O	0	0
			296	148	74	74		
18	n	68	Total	C	N	O	0	0
			272	136	68	68		
18	S	73	Total	C	N	O	0	0
			298	152	73	73		

- Molecule 19 is a protein called Small nuclear ribonucleoprotein Sm D3.

Mol	Chain	Residues	Atoms				AltConf	Trace
19	g	81	Total	C	N	O	0	0
			324	162	81	81		
19	h	80	Total	C	N	O	0	0
			320	160	80	80		
19	T	71	Total	C	N	O	0	0
			288	146	71	71		

- Molecule 20 is a protein called U5 small nuclear ribonucleoprotein 40 kDa protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
20	E	299	Total	C	N	O	0	0
			1196	598	299	299		

- Molecule 21 is a protein called WW domain-binding protein 4.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	X	75	Total	C	N	O	0	0
			378	228	75	75		

- Molecule 22 is a protein called Peptidyl-prolyl cis-trans isomerase H.

Mol	Chain	Residues	Atoms				AltConf	Trace
22	W	169	Total	C	N	O	0	0
			844	506	169	169		

- Molecule 23 is a protein called Ubiquitin-like protein 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	A0	73	Total	C	N	O	S	0	0
			581	375	93	109	4		

- Molecule 24 is a protein called Microfibrillar-associated protein 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
24	0	45	225	135	45	45	0	0

- Molecule 25 is a protein called Pre-mRNA-splicing factor 38A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
25	Z	176	883	531	176	176	0	0

- Molecule 26 is a protein called Zinc finger matrin-type protein 2.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
26	8	56	277	165	56	56	0	0

- Molecule 27 is a protein called WD40 repeat-containing protein SMU1.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
27	Y	453	2258	1352	453	453	0	0

- Molecule 28 is a RNA chain called U2snRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
28	H	109	2311	1032	396	774	109	0	0

- Molecule 29 is a protein called U2 small nuclear ribonucleoprotein A'.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
29	o	162	648	324	162	162	0	0

- Molecule 30 is a protein called U2 small nuclear ribonucleoprotein B'.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
30	p	94	376	188	94	94	0	0

- Molecule 31 is a protein called Splicing factor 3A subunit 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
31	u	124	Total	C	N	O	0	0
			496	248	124	124		

- Molecule 32 is a protein called Splicing factor 3A subunit 2.

Mol	Chain	Residues	Atoms				AltConf	Trace
32	v	94	Total	C	N	O	0	0
			376	188	94	94		

- Molecule 33 is a protein called Splicing factor 3A subunit 3.

Mol	Chain	Residues	Atoms				AltConf	Trace
33	w	423	Total	C	N	O	0	0
			1693	847	423	423		

- Molecule 34 is a protein called U6 snRNA-associated Sm-like protein LSm2.

Mol	Chain	Residues	Atoms				AltConf	Trace
34	q	90	Total	C	N	O	0	0
			360	180	90	90		

- Molecule 35 is a protein called U6 snRNA-associated Sm-like protein LSm3.

Mol	Chain	Residues	Atoms				AltConf	Trace
35	r	74	Total	C	N	O	0	0
			296	148	74	74		

- Molecule 36 is a protein called U6 snRNA-associated Sm-like protein LSm4.

Mol	Chain	Residues	Atoms				AltConf	Trace
36	s	74	Total	C	N	O	0	0
			296	148	74	74		

- Molecule 37 is a protein called U6 snRNA-associated Sm-like protein LSm5.

Mol	Chain	Residues	Atoms				AltConf	Trace
37	t	72	Total	C	N	O	0	0
			288	144	72	72		

- Molecule 38 is a protein called U6 snRNA-associated Sm-like protein LSm6.

Mol	Chain	Residues	Atoms				AltConf	Trace
38	x	70	Total	C	N	O	0	0
			280	140	70	70		

- Molecule 39 is a protein called U6 snRNA-associated Sm-like protein LSm7.

Mol	Chain	Residues	Atoms				AltConf	Trace
39	y	65	Total	C	N	O	0	0
			260	130	65	65		

- Molecule 40 is a protein called U6 snRNA-associated Sm-like protein LSm8.

Mol	Chain	Residues	Atoms				AltConf	Trace
40	z	61	Total	C	N	O	0	0
			244	122	61	61		

- Molecule 41 is a protein called U4/U6 small nuclear ribonucleoprotein Prp4.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	K	414	Total	C	N	O	S	0	0
			1821	969	423	428	1		

- Molecule 42 is a protein called Splicing factor 3B subunit 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
42	1	1048	Total	C	N	O	0	0
			4192	2096	1048	1048		

- Molecule 43 is a protein called Splicing factor 3B subunit 3.

Mol	Chain	Residues	Atoms				AltConf	Trace
43	3	1168	Total	C	N	O	0	0
			4672	2336	1168	1168		

- Molecule 44 is a protein called SF3b14a, Splicing factor 3B subunit 6.

Mol	Chain	Residues	Atoms				AltConf	Trace
44	5	108	Total	C	N	O	0	0
			432	216	108	108		

- Molecule 45 is a protein called PHD finger-like domain-containing protein 5A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
45	6	89	356	178	89	89	0	0

- Molecule 46 is a protein called SF3b5, Splicing factor 3B subunit 5.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
46	7	66	264	132	66	66	0	0

- Molecule 47 is a protein called SF3b145, Splicing factor 3B subunit 2.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
47	2	182	728	364	182	182	0	0

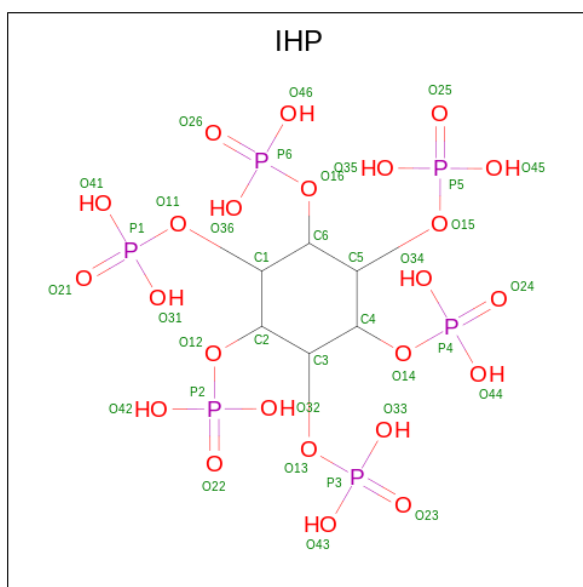
- Molecule 48 is a protein called SF3b49, Splicing factor 3B subunit 4.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
48	4	78	312	156	78	78	0	0

- Molecule 49 is a protein called Brr2, U5 small nuclear ribonucleoprotein 200 kDa helicase.

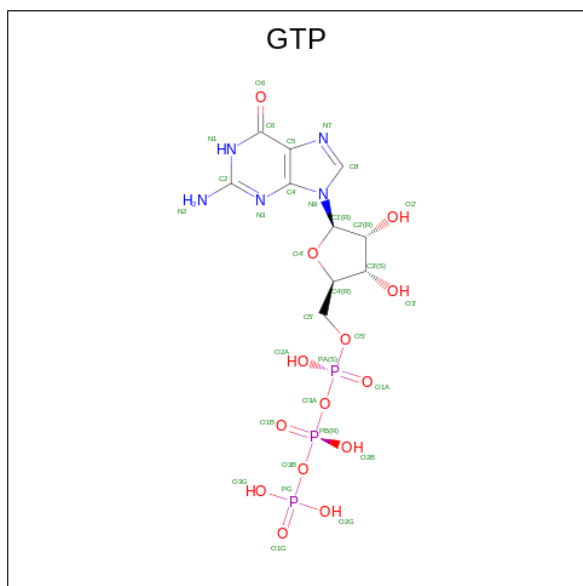
Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
49	D	1699	6796	3398	1699	1699	0	0

- Molecule 50 is INOSITOL HEXAKISPHOSPHATE (three-letter code: IHP) (formula: C<sub>6</sub>H<sub>18</sub>O<sub>24</sub>P<sub>6</sub>).



Mol	Chain	Residues	Atoms				AltConf
50	A	1	Total	C	O	P	0
			36	6	24	6	

- Molecule 51 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula:  $C_{10}H_{16}N_5O_{14}P_3$ ).



Mol	Chain	Residues	Atoms				AltConf	
51	C	1	Total	C	N	O	P	0
			32	10	5	14	3	

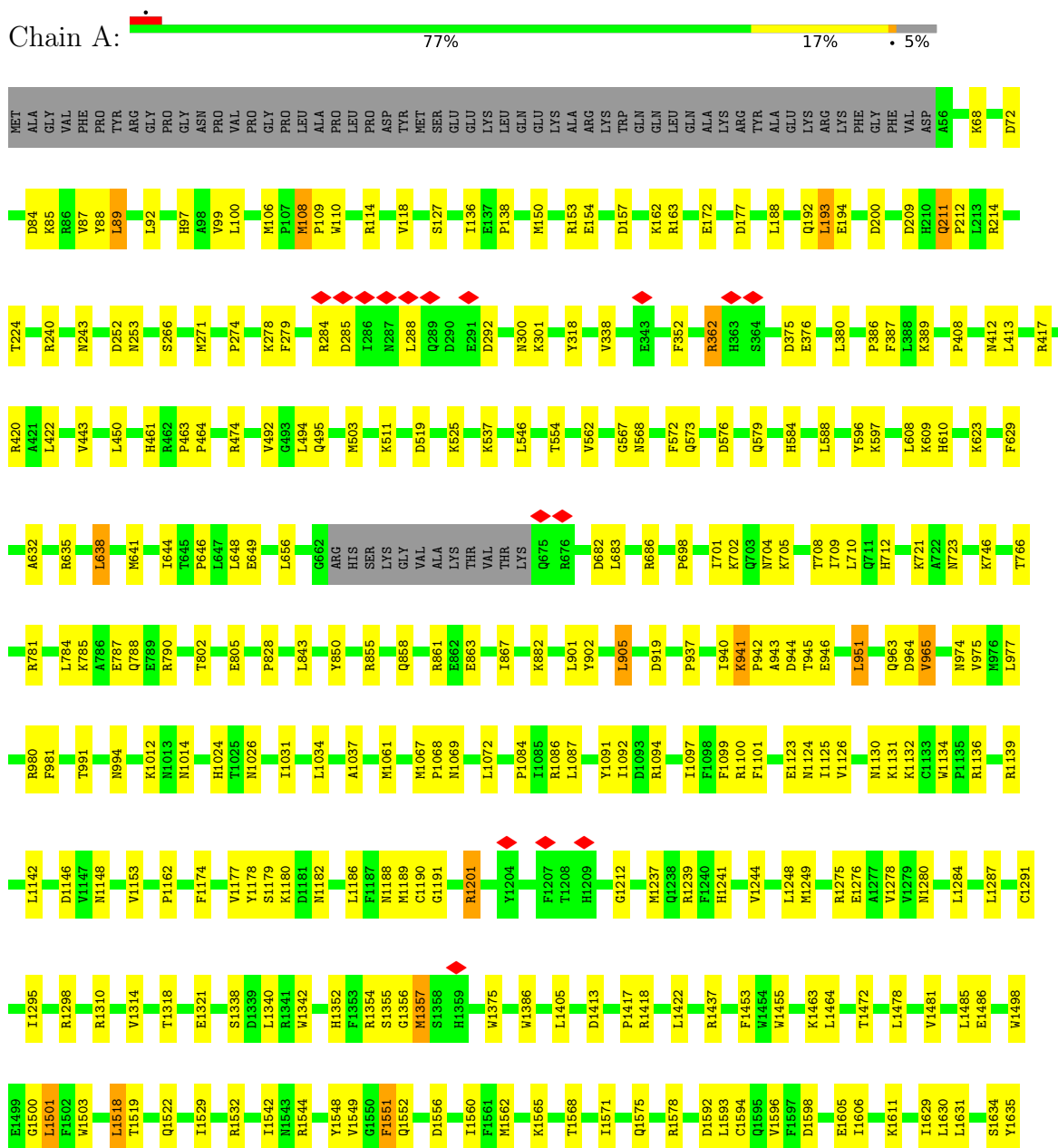
- Molecule 52 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

<b>Mol</b>	<b>Chain</b>	<b>Residues</b>	<b>Atoms</b>		<b>AltConf</b>
52	C	1	Total	Mg	0
			1	1	

### 3 Residue-property plots

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

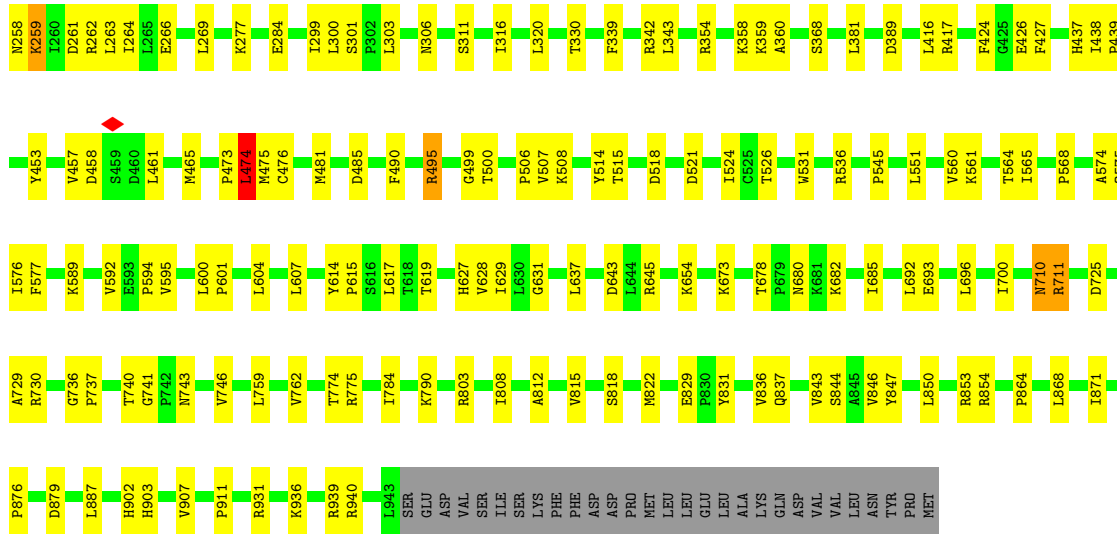
- Molecule 1: Pre-mRNA-processing-splicing factor 8



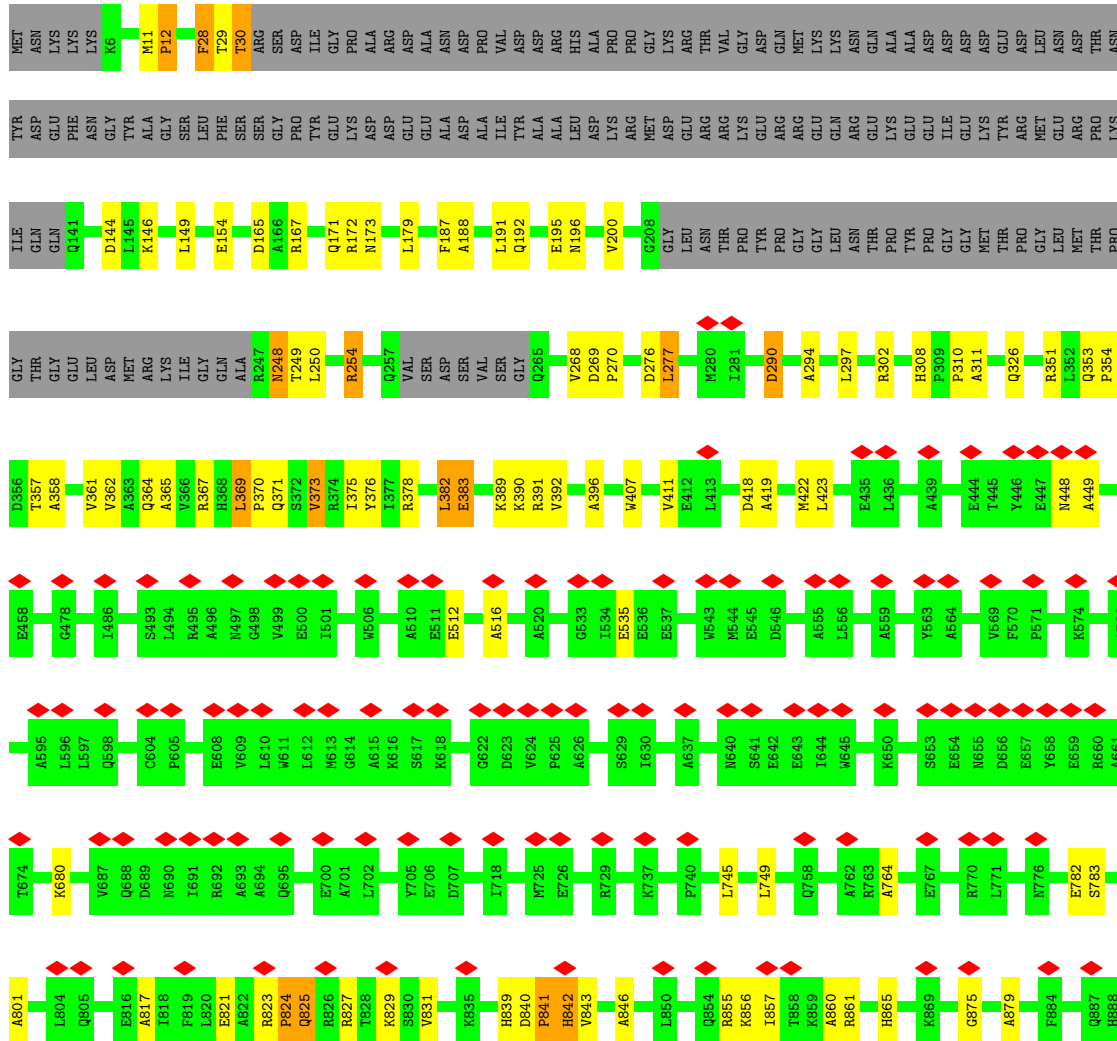






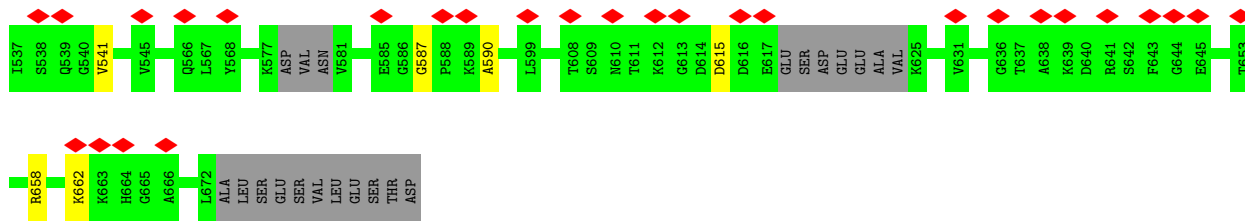


• Molecule 8: Pre-mRNA-processing factor 6

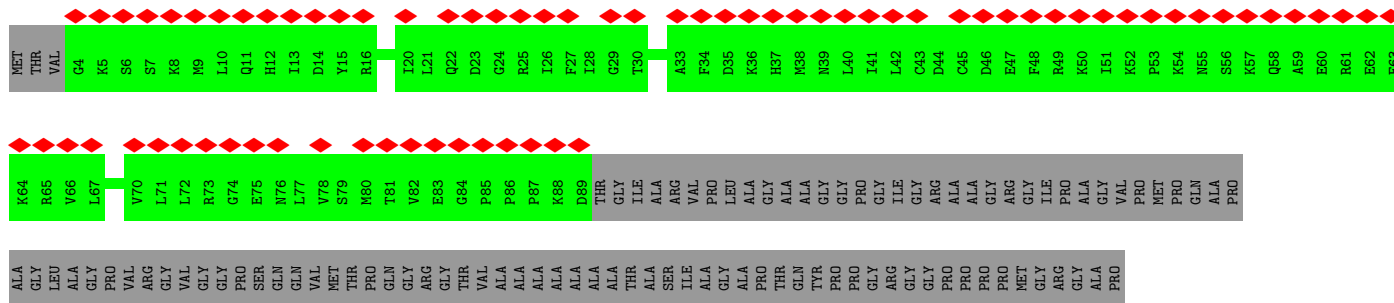




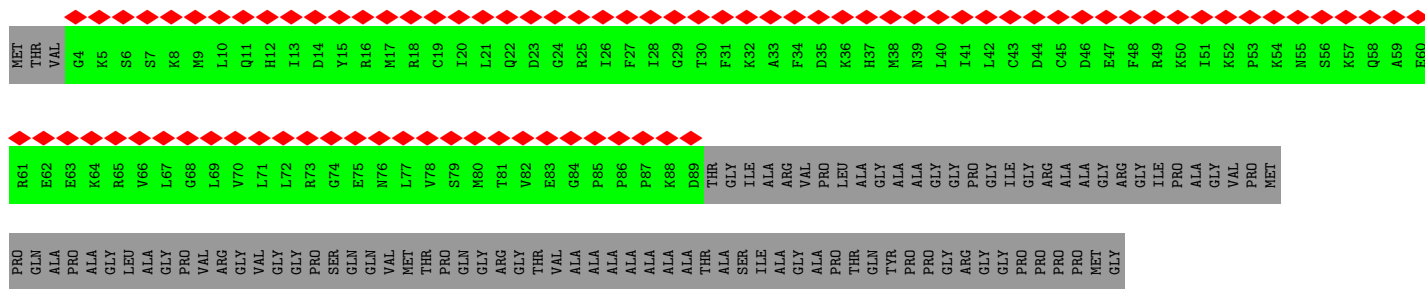




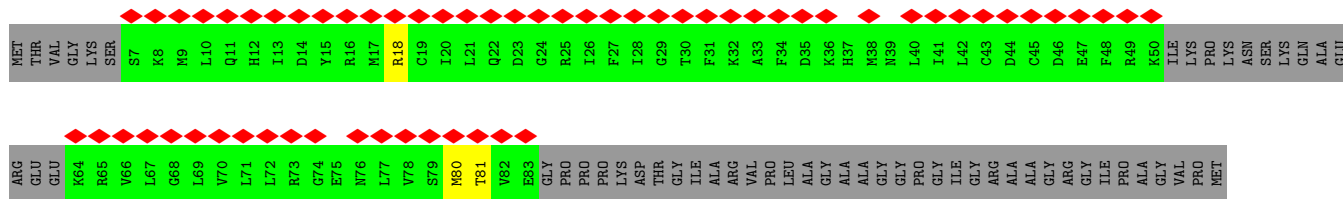
• Molecule 13: SmB



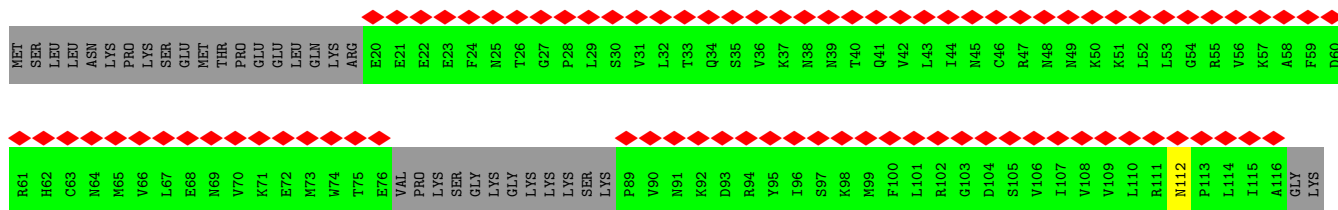
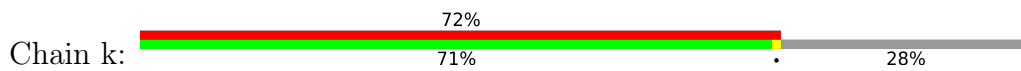
• Molecule 13: SmB



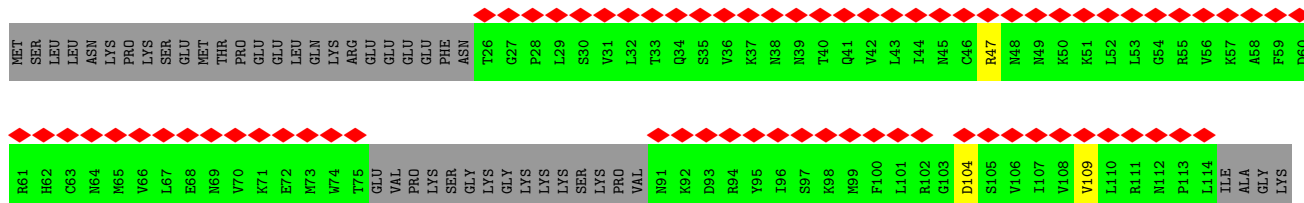
• Molecule 13: SmB



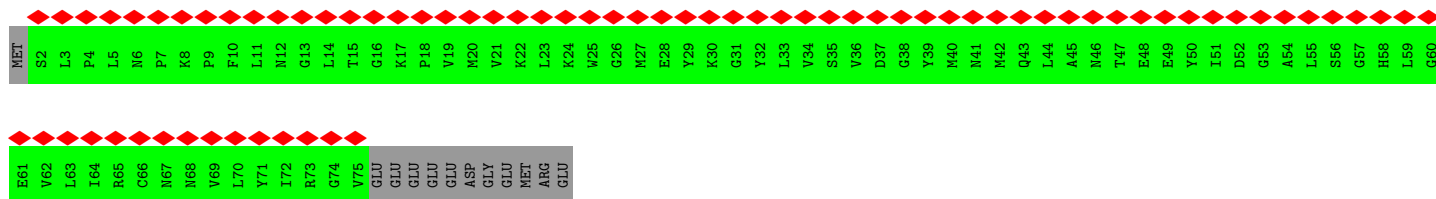
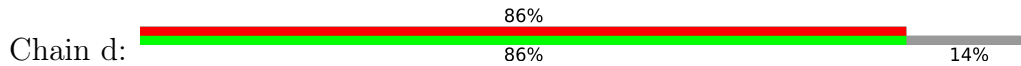




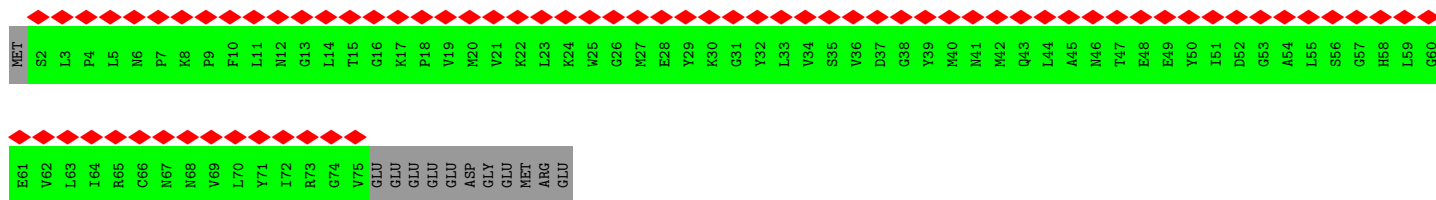
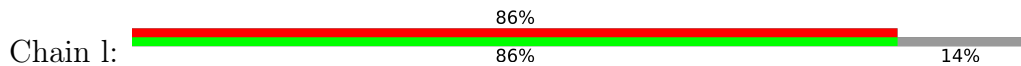
• Molecule 15: Small nuclear ribonucleoprotein Sm D2



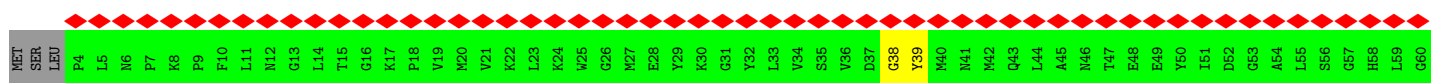
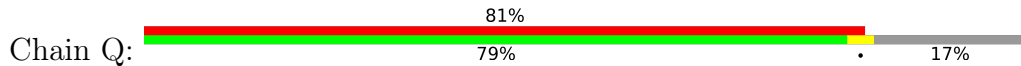
• Molecule 16: SmE



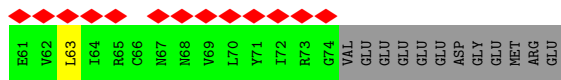
• Molecule 16: SmE



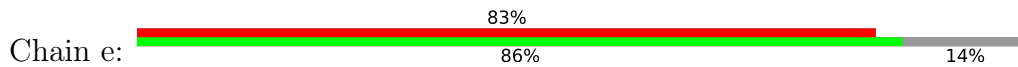
• Molecule 16: SmE



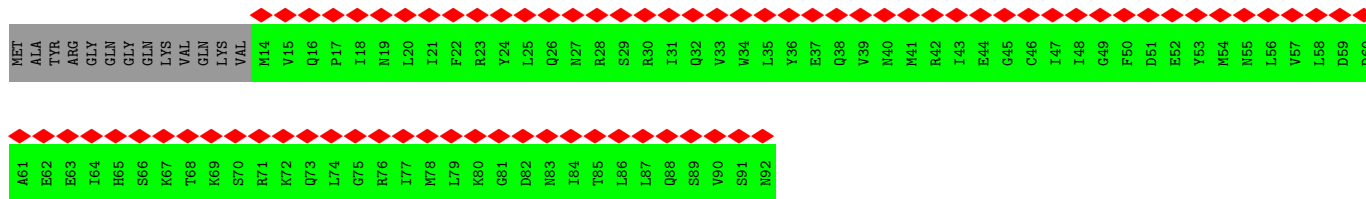
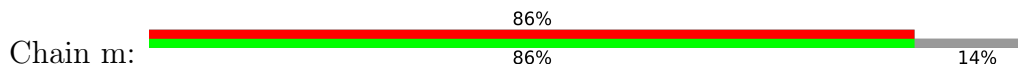




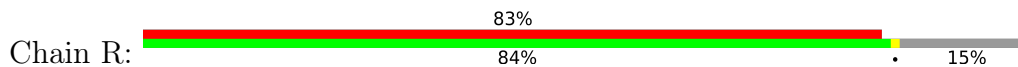
• Molecule 17: SmF



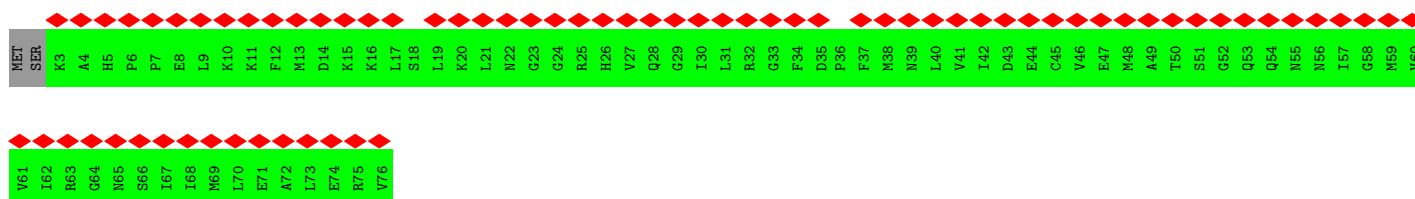
• Molecule 17: SmF



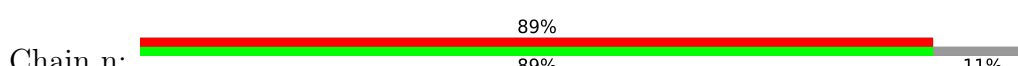
• Molecule 17: SmF

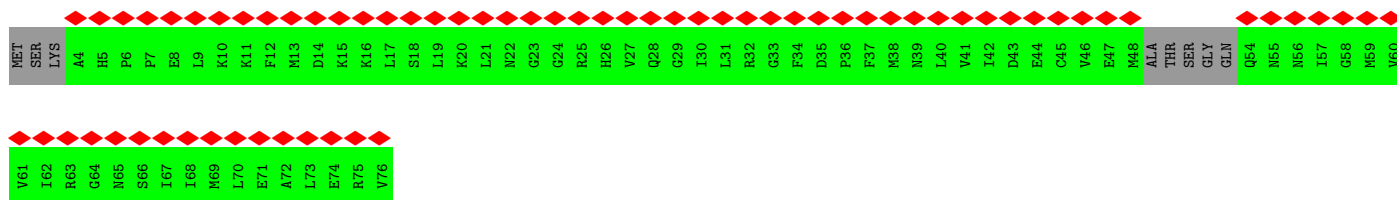


• Molecule 18: Small nuclear ribonucleoprotein G

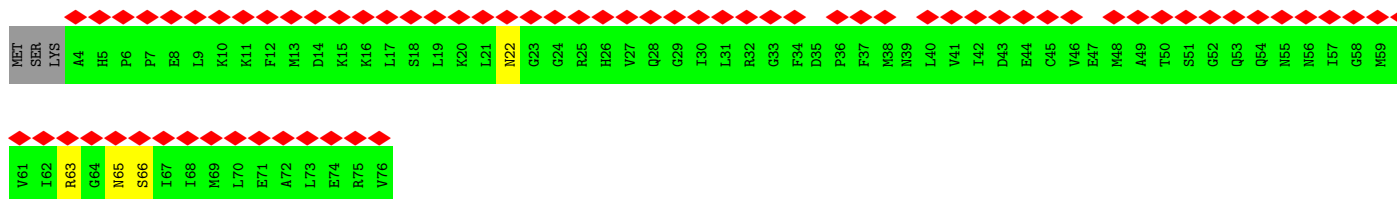
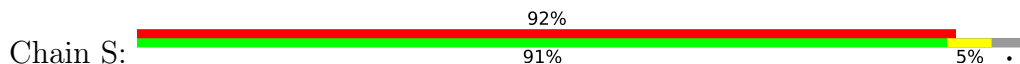


• Molecule 18: Small nuclear ribonucleoprotein G

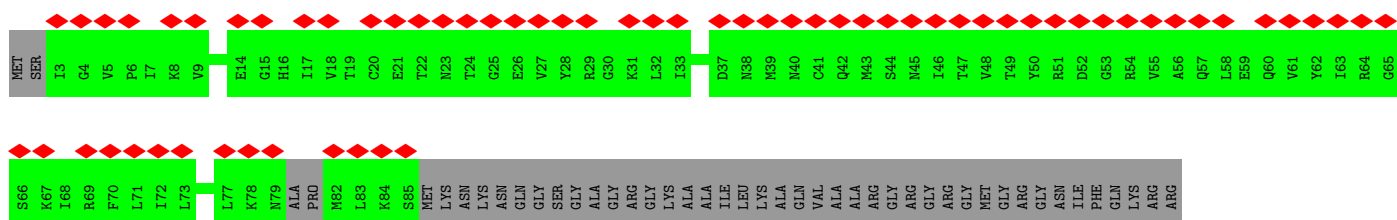




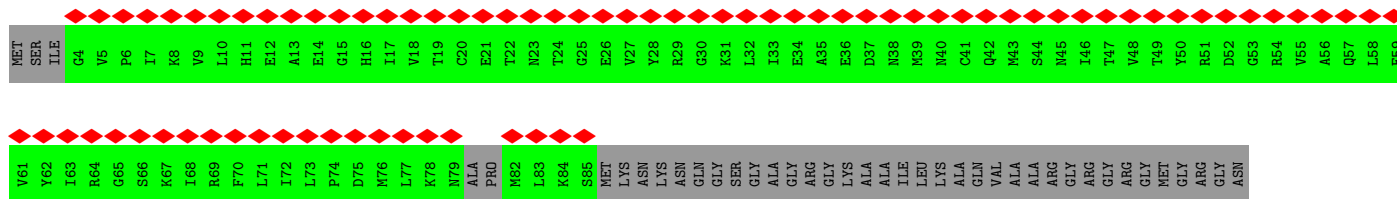
• Molecule 18: Small nuclear ribonucleoprotein G



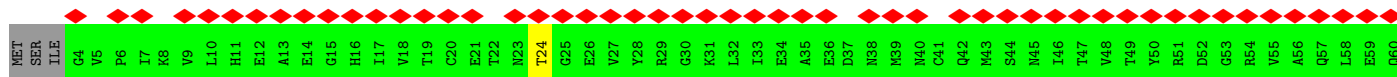
• Molecule 19: Small nuclear ribonucleoprotein Sm D3



• Molecule 19: Small nuclear ribonucleoprotein Sm D3

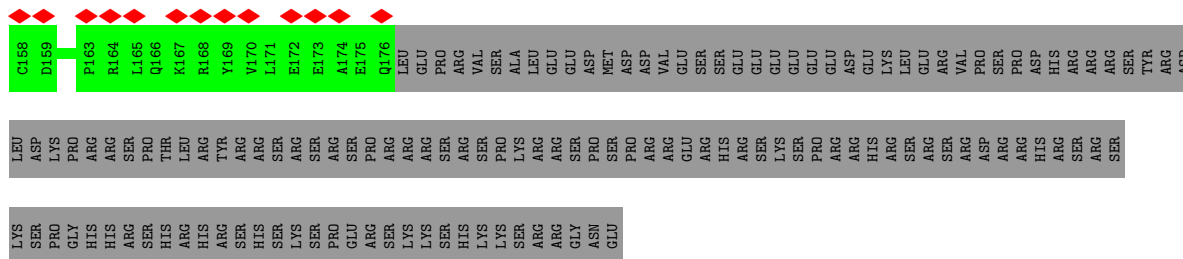


• Molecule 19: Small nuclear ribonucleoprotein Sm D3

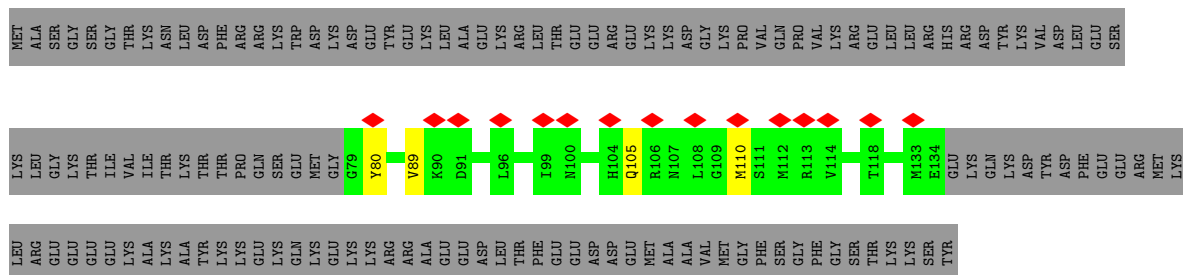




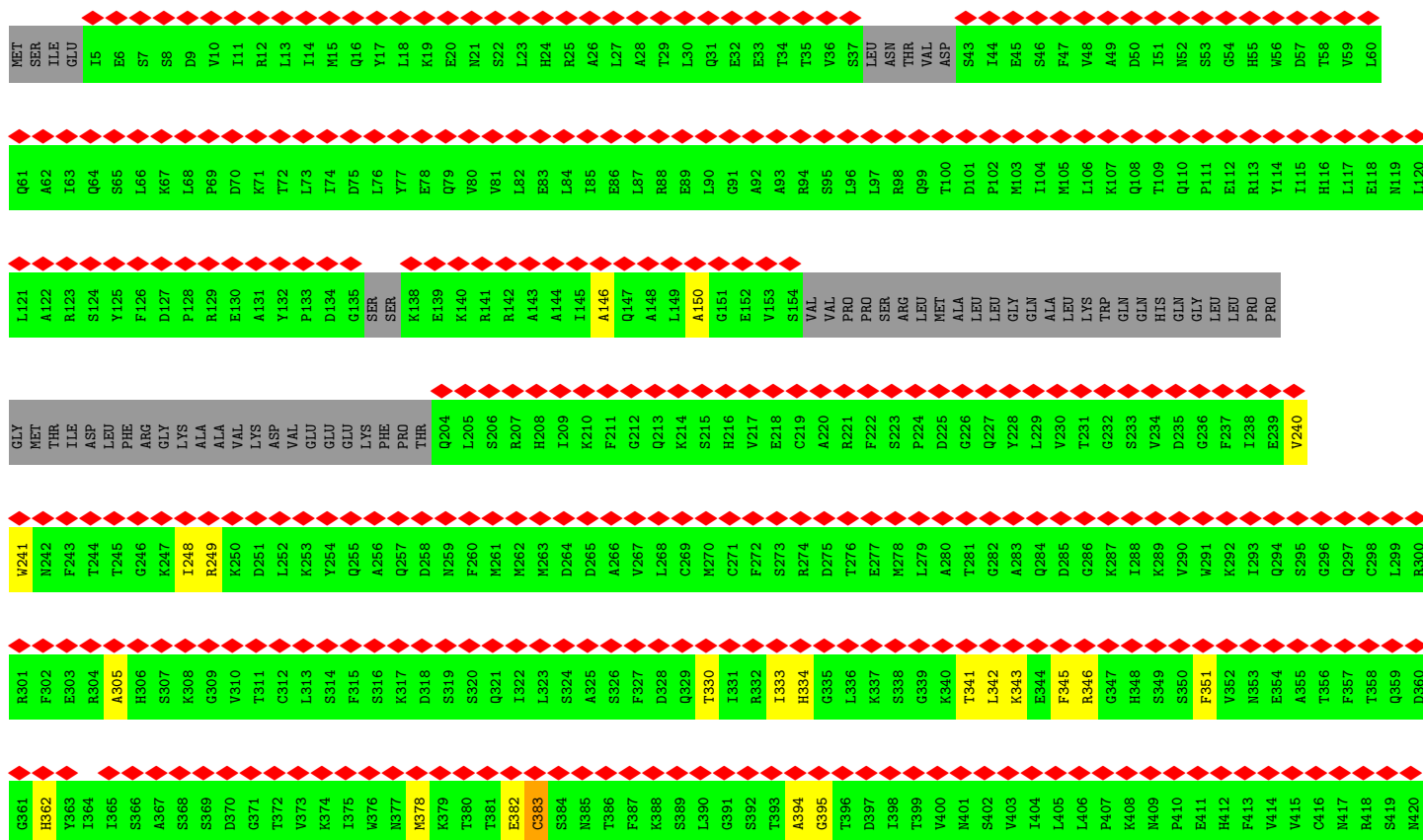
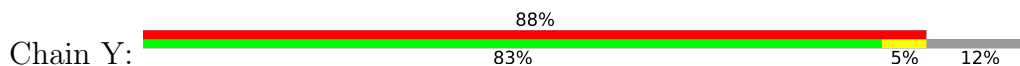


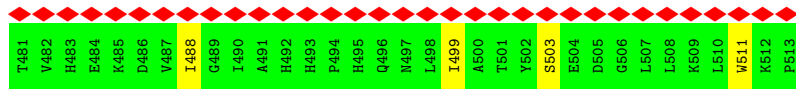
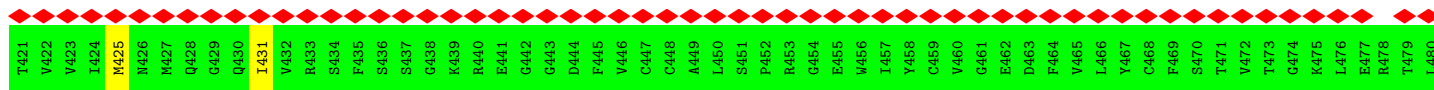


• Molecule 26: Zinc finger matrin-type protein 2

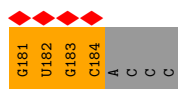
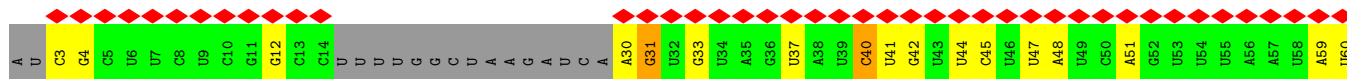
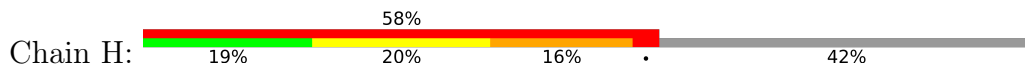


• Molecule 27: WD40 repeat-containing protein SMU1

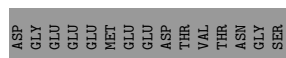
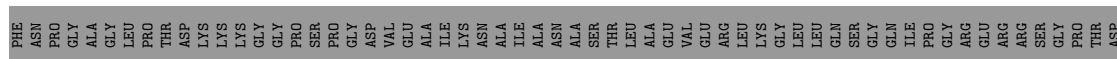
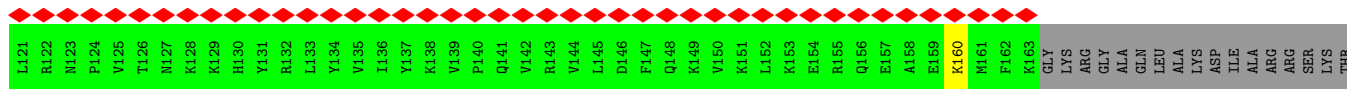
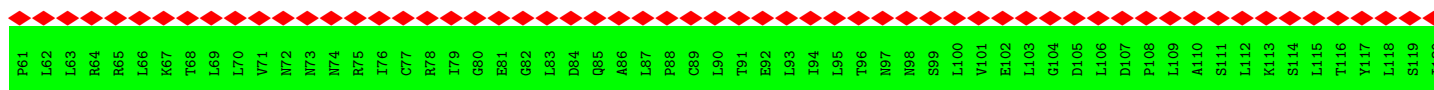
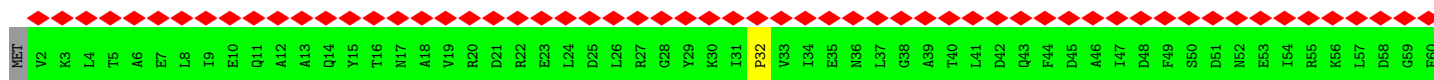




• Molecule 28: U2snRNA



• Molecule 29: U2 small nuclear ribonucleoprotein A'



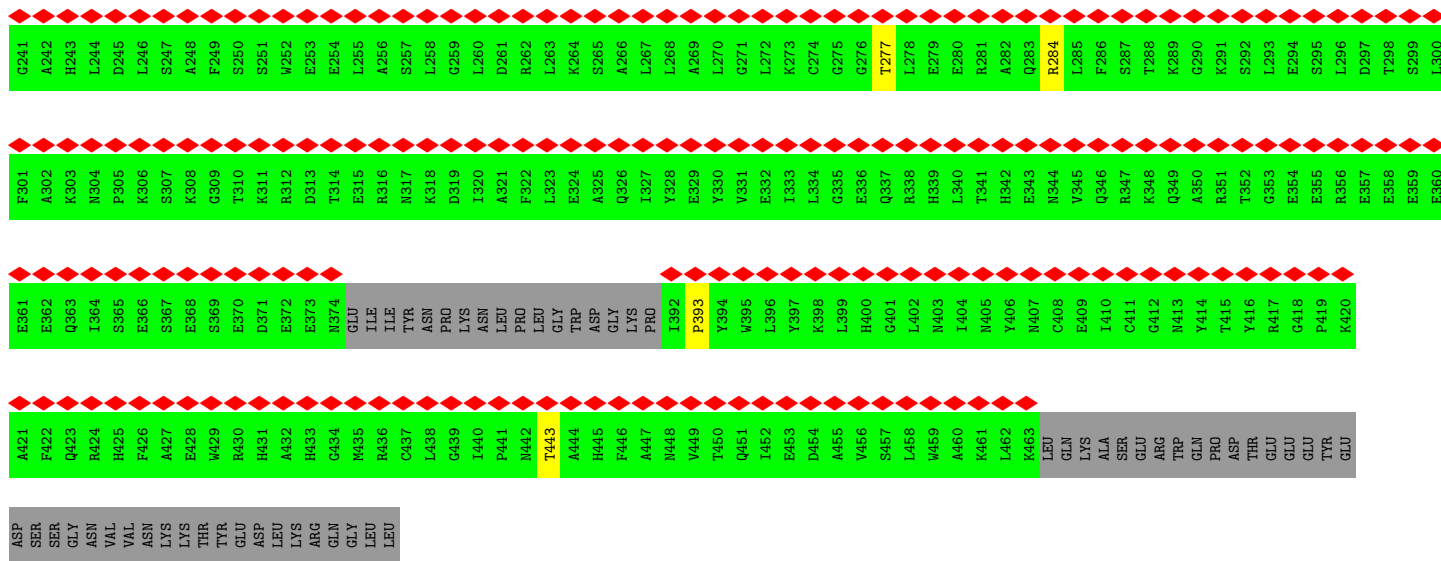
• Molecule 30: U2 small nuclear ribonucleoprotein B''



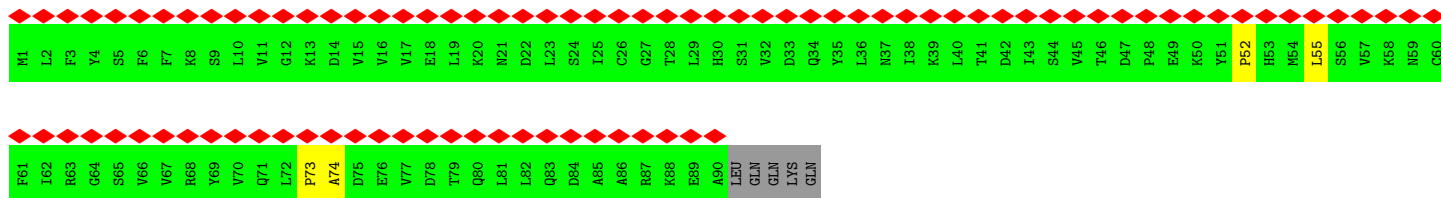
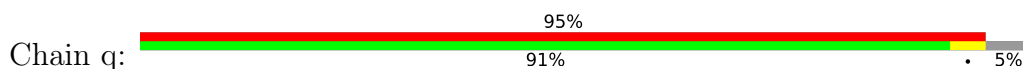








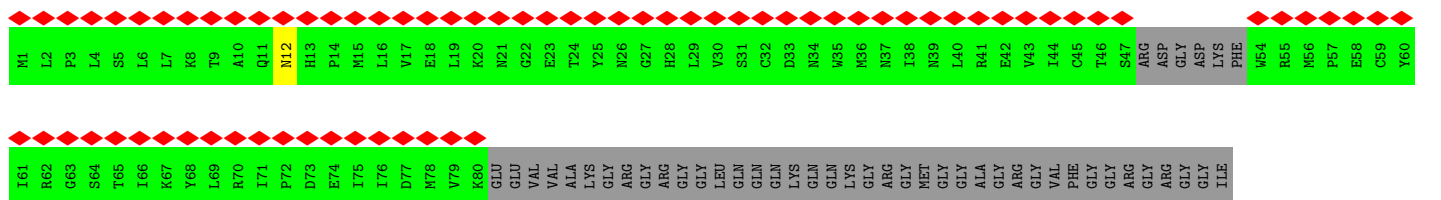
• Molecule 34: U6 snRNA-associated Sm-like protein LSm2



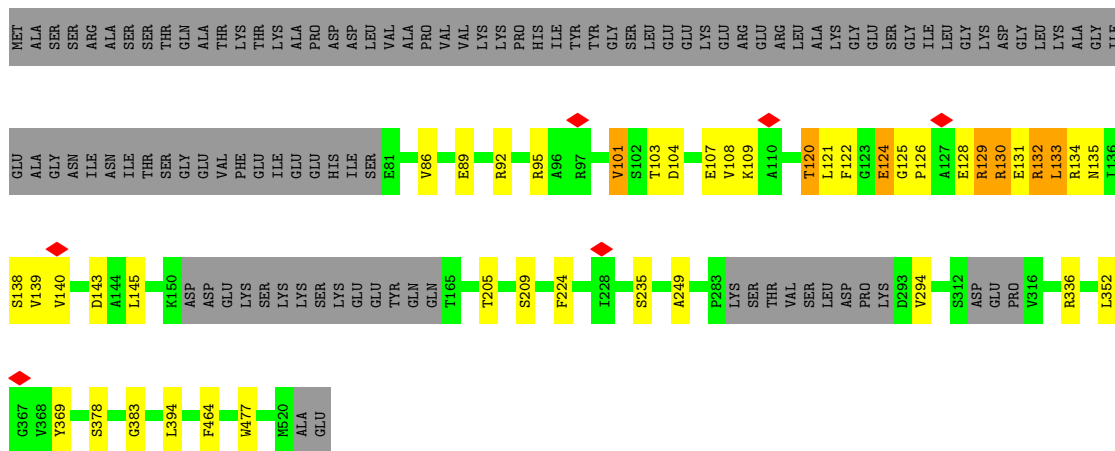
• Molecule 35: U6 snRNA-associated Sm-like protein LSm3



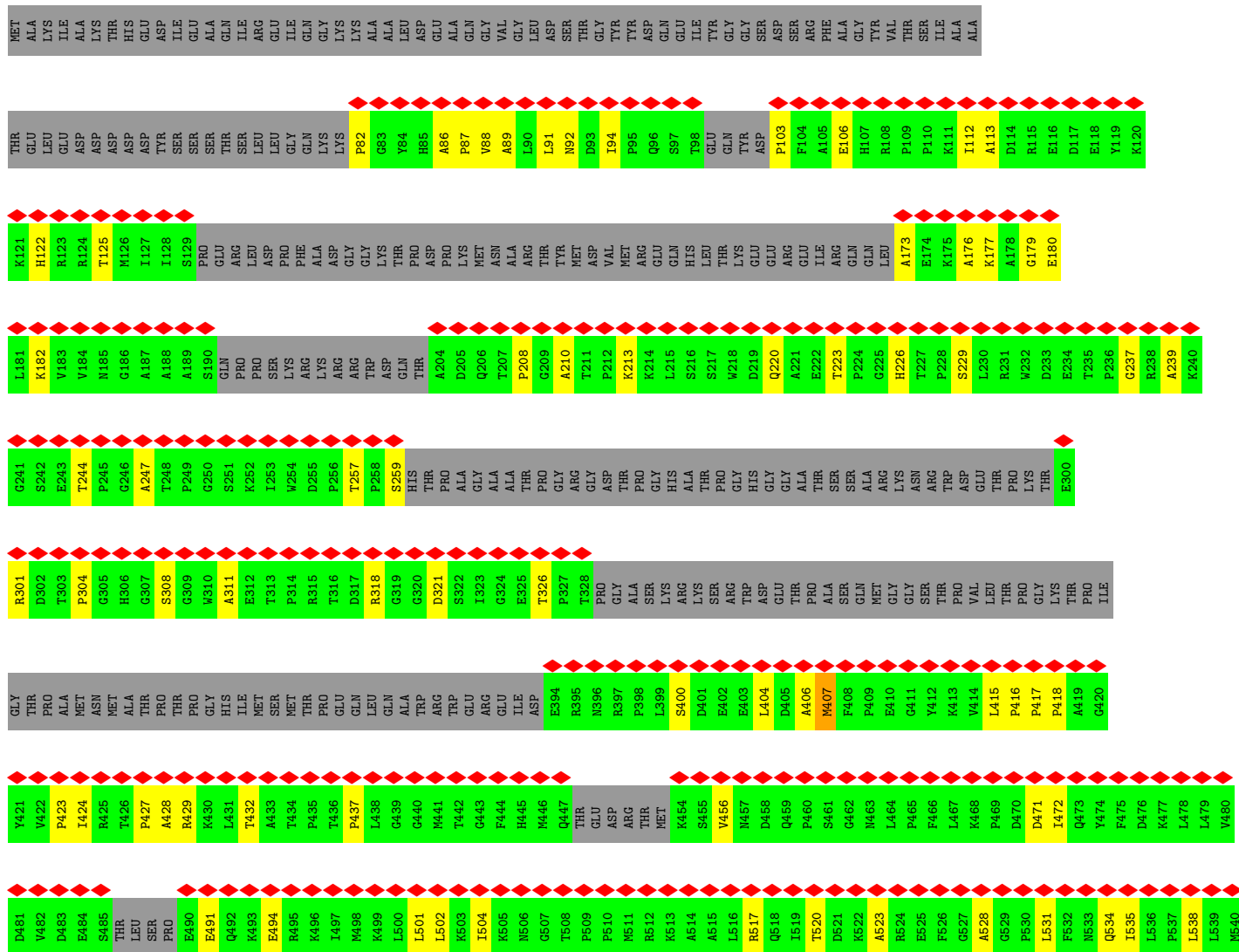
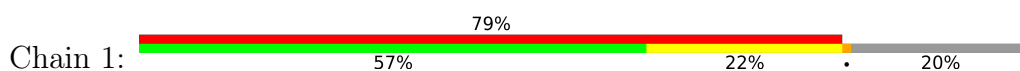
• Molecule 36: U6 snRNA-associated Sm-like protein LSm4







• Molecule 42: Splicing factor 3B subunit 1



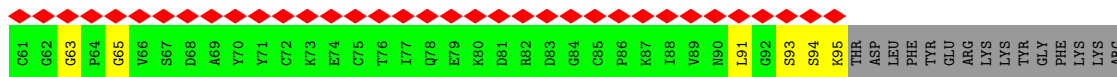
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A601	A603	A604	G605	L606	A607	T608	M609	I610	S611	T612	M613	R614	P615	D616	I617	D618	N619	M620	D621	H682	Y623	D624	S625	L666	V667	T627	T628	A629	R630	A631	F632	A633	L634	I635	V636	S637	I578	E579	P580	L581	L582	D583	D584	L645	L646	D586	Y587	Y588	A589	R590	V591	E592	K593	R594	E595	I596	I597	S598	N599	L600																					
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- Molecule 43: Splicing factor 3B subunit 3

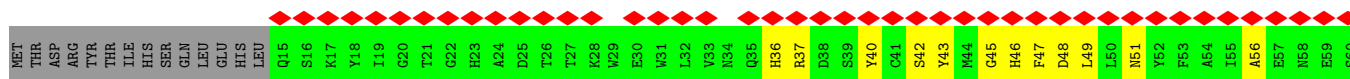
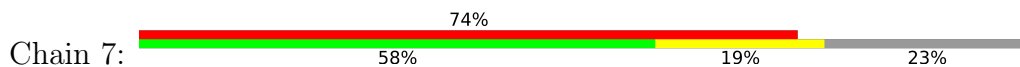


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V61	I62	R63	S64	L65	M66	A67	F68	R69	L70	T71	G72	T73	G74	K75	D76	Y77	I78	V79	V80	G81	S82	D83	S84	G85	K86	R87	I87	V88	I89	L90	E91	Y92	Q93	S94	P94	S95	K96	N97	L98	F99	L100	K101	I102	H103	Q104	E105	N106	F107	G108	K109	S110	G111	C112	R113	L114	T115	V116	F117	G118	Q119	F120	
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M181	F182	A183	C184	L185	E186	M187	D188	Y189	E190	E191	A192	D193	M194	D195	P196	T197	G198	E199	A200	A201	A202	M203	T204	Q205	Q206	T207	L208	I209	F210	Y211	E212	L213	D214	L215	G216	L217	N218	H219	V220	V221	R222	K223	Y224	S225	E226	P227	L228	E229	E230	H231	G232	M233	V234	L235	T236	T237	V238	P239	G240			
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P421	Q422	L423	Y424	V425	A426	C427	G428	R429	G430	P431	R432	S433	A434	L435	R436	V437	L438	R439	HIS	G441	L442	E443	V444	S445	E446	M447	A448	V449	S450	L451	D452	P453	G454	M455	P456	V398	M457	A458	V459	W460	T461	V462	R463	R464	H465	L466	E467	D468	E469	F470	D471	A472	Y473	L474	I475	V476	S477	F478	V479	M480		
A481	T482	L483	V484	L485	S486	T487	G488	E489	T490	V491	E492	E493	V494	T495	D496	S497	G498	F499	L500	G501	T502	T503	P504	T505	F506	S507	C508	S509	L510	L511	G512	D513	D514	A515	L516	V517	Q518	V519	Y520	P521	D522	G523	I524	R525	H526	L527	F528	R529	A529	D530	K531	R532	L533	A534	Y535	N534	E535	V536	K537	T538	P539	G540
K541	K542	T543	I544	V545	K546	C547	A548	V549	N550	Q551	R552	Q553	V554	V555	I556	A557	L558	T559	G560	G561	E562	L563	V564	F565	F566	P567	M568	D569	M630	Q631	G632	G633	L634	P634	A635	E576	Q636	P637	E638	S639	L640	C641	C642	I642	V643	E644	M645	GLY	GLY	THR	GLU	LYS	M590	ASP	LEU	GLY	GLU	ARG	GLY	SER	ILE	
F662	L663	Y664	L665	M666	I667	G668	L669	Q670	M671	G672	M673	L674	L675	R676	T677	V678	L679	D680	P681	V682	T683	G684	D685	L686	S687	D688	T689	R690	T691	ARG	TYR	LEU	G695	S696	R697	P698	V699	K700	L701	F702	R703	V704	R705	M706	Q707	G708	Q709	E710	A711	V712	L713	A714	M715	S716	S717	R718	S719	W720				
L721	S722	Y723	S724	Y725	Q726	S727	R728	F729	H730	L731	T732	F733	L734	S735	Y736	E737	T738	L739	E740	F741	A742	S743	G744	F745	A746	S747	E748	Q749	C750	F751	E752	G753	I754	V755	A756	I757	S758	T759	M760	T761	L762	R763	I764	L765	A766	L767	E768	K769	L770	A771	G771	ALA	V773	F774	M775	Q776	V777	A778	F779	P780		

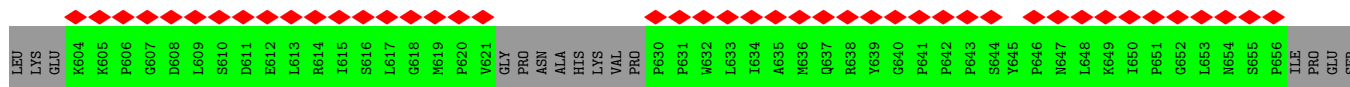
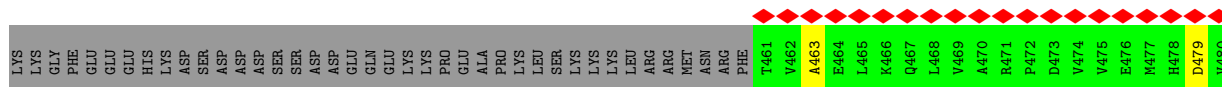
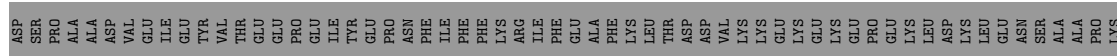
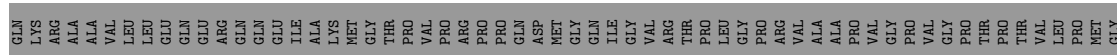
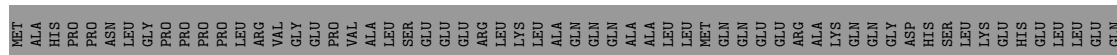
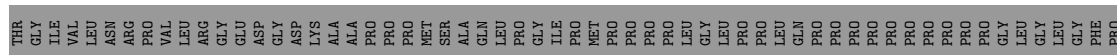
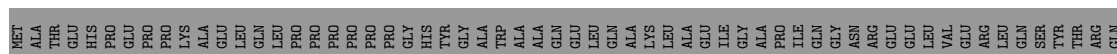




• Molecule 46: SF3b5, Splicing factor 3B subunit 5

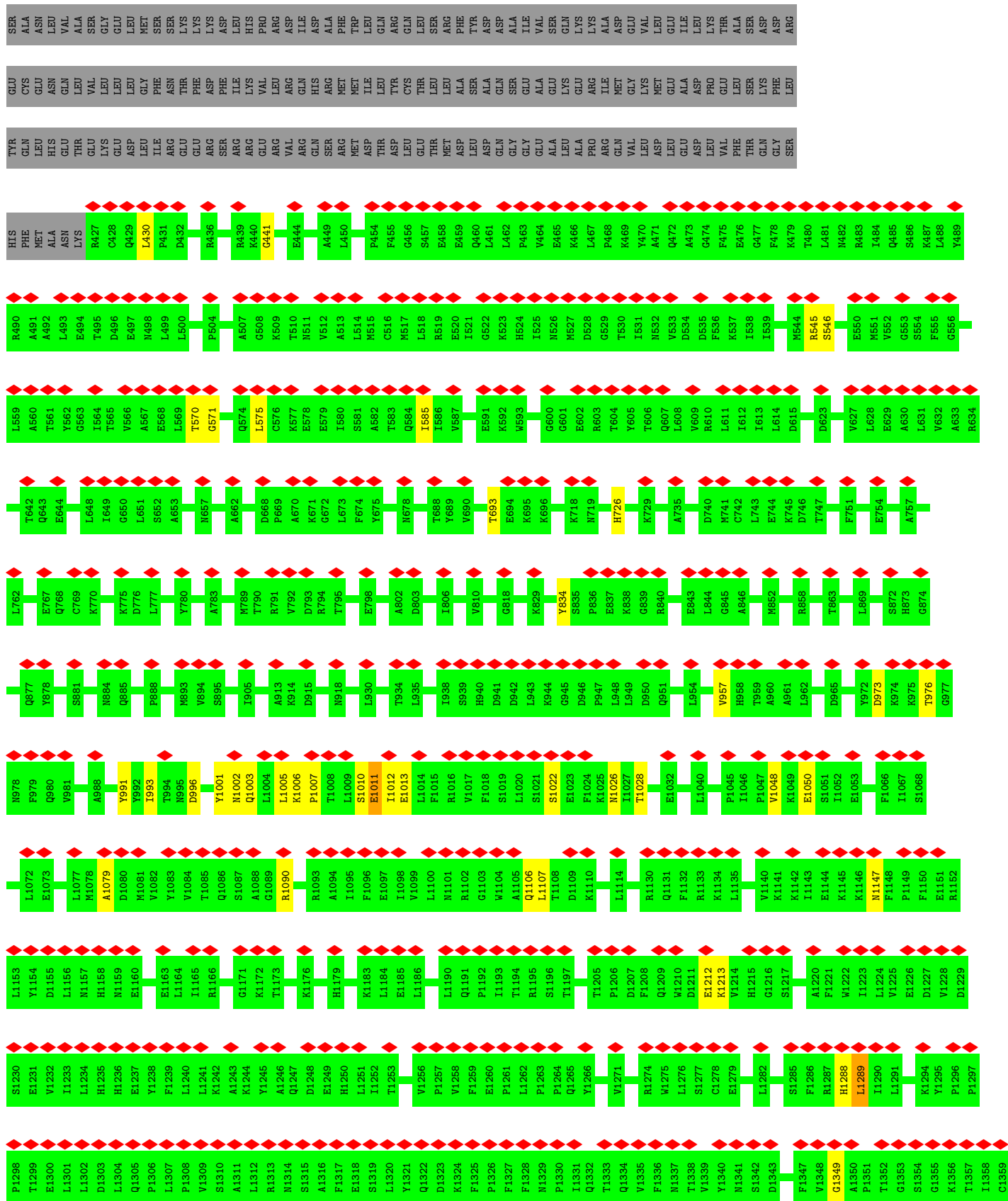


• Molecule 47: SF3b145, Splicing factor 3B subunit 2











## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	137853	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	45	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.251	Depositor
Minimum map value	-0.129	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.007	Depositor
Recommended contour level	0.03	Depositor
Map size ( $\text{\AA}$ )	535.2, 535.2, 535.2	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	1.338, 1.338, 1.338	Depositor

## 5 Model quality i

### 5.1 Standard geometry i

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

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	0.47	0/17735	0.64	10/23951 (0.0%)
2	I	0.52	0/3214	0.97	7/4998 (0.1%)
3	B	0.47	0/2698	1.05	25/4195 (0.6%)
4	F	0.50	1/2230 (0.0%)	1.02	9/3468 (0.3%)
5	G	0.65	6/1793 (0.3%)	0.93	2/2783 (0.1%)
6	O	0.50	0/1180	0.65	1/1594 (0.1%)
7	C	0.38	0/6584	0.63	1/8942 (0.0%)
8	N	0.44	0/4568	0.60	2/6320 (0.0%)
9	M	0.36	0/974	0.60	0/1316
10	L	0.36	0/2912	0.60	0/3924
11	9	0.77	0/1091	0.91	3/1478 (0.2%)
12	J	0.50	0/1278	0.61	0/1657
13	U	0.22	0/254	0.48	0/314
13	a	0.50	0/343	0.69	0/427
13	i	0.50	0/343	0.69	0/427
14	V	0.22	0/333	0.47	0/416
14	b	0.57	0/327	0.67	0/407
14	j	0.56	0/327	0.68	0/407
15	P	0.23	0/298	0.48	0/370
15	c	0.69	0/387	0.72	0/482
15	k	0.70	0/338	0.73	0/419
16	Q	0.24	0/291	0.49	0/363
16	d	0.77	0/295	0.76	0/367
16	l	0.78	0/295	0.76	0/367
17	R	0.22	0/313	0.49	0/390
17	e	0.65	0/315	0.75	0/392
17	m	0.64	0/315	0.75	0/392
18	S	0.24	0/297	0.51	0/371
18	f	0.54	0/295	0.61	0/367
18	n	0.55	0/270	0.63	0/334
19	T	0.23	0/287	0.49	0/358
19	g	0.47	0/322	0.55	0/399

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
19	h	0.47	0/318	0.56	0/394
20	E	0.67	0/1195	0.71	0/1492
21	X	0.24	0/379	0.35	0/530
22	W	0.25	0/853	0.47	0/1188
23	A0	0.38	0/591	0.84	2/799 (0.3%)
24	0	0.22	0/224	0.29	0/312
25	Z	0.23	0/888	0.40	0/1241
26	8	0.22	0/276	0.43	0/383
27	Y	0.24	0/2265	0.45	0/3156
28	H	0.85	11/2576 (0.4%)	1.43	55/4003 (1.4%)
29	o	0.63	0/647	1.42	0/807
30	p	0.61	0/375	1.20	0/467
31	u	0.22	0/493	0.42	0/611
32	v	0.21	0/373	0.58	1/461 (0.2%)
33	w	0.25	0/1688	0.47	0/2102
34	q	0.42	0/359	0.67	0/447
35	r	0.47	0/294	0.75	0/364
36	s	0.34	0/294	0.61	0/364
37	t	0.43	0/286	0.59	0/354
38	x	0.43	0/279	0.72	0/347
39	y	0.38	0/258	0.61	0/319
40	z	0.41	0/242	0.64	0/299
41	K	0.27	0/1818	0.63	0/2308
42	1	1.04	4/4184 (0.1%)	0.83	2/5216 (0.0%)
43	3	0.85	0/4664	0.76	0/5816
44	5	0.79	0/431	0.79	0/537
45	6	0.73	0/355	0.68	0/442
46	7	1.01	0/263	0.77	0/327
47	2	0.74	0/722	0.72	0/892
48	4	0.62	0/311	0.64	0/387
49	D	0.30	0/6795	0.58	0/8492
All	All	0.54	22/87198 (0.0%)	0.75	120/117252 (0.1%)

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
1	A	0	12
7	C	0	6
8	N	0	8

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Mol	Chain	#Chirality outliers	#Planarity outliers
15	c	0	1
15	k	0	1
23	A0	0	2
33	w	0	1
42	1	0	11
43	3	0	11
44	5	0	1
46	7	0	1
47	2	0	3
49	D	0	1
All	All	0	59

All (22) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
42	1	407	MET	N-CA	12.36	1.71	1.46
42	1	406	ALA	C-N	7.99	1.52	1.34
28	H	142	C	C1'-N1	7.29	1.59	1.48
42	1	1243	PRO	N-CA	-7.11	1.35	1.47
28	H	182	U	C1'-N1	6.93	1.59	1.48
28	H	150	U	C1'-N1	6.73	1.58	1.48
28	H	151	C	C1'-N1	6.53	1.58	1.48
28	H	97	G	C1'-N9	-6.39	1.37	1.46
28	H	141	C	C1'-N1	6.39	1.58	1.48
28	H	184	C	C1'-N1	6.38	1.58	1.48
28	H	148	C	C1'-N1	6.33	1.58	1.48
5	G	9	C	O3'-P	5.77	1.68	1.61
42	1	944	SER	N-CA	-5.70	1.34	1.46
28	H	65	U	C1'-N1	5.51	1.57	1.48
28	H	48	A	C1'-N9	-5.48	1.39	1.46
5	G	131	U	C1'-N1	5.45	1.56	1.48
4	F	53	A	N9-C4	-5.25	1.34	1.37
5	G	122	U	C1'-N1	5.18	1.56	1.48
5	G	124	U	C1'-N1	5.15	1.56	1.48
5	G	123	U	C1'-N1	5.13	1.56	1.48
5	G	23	U	C1'-N1	5.09	1.56	1.48
28	H	110	A	C1'-N9	-5.04	1.39	1.46

All (120) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
28	H	167	U	C5-C4-O4	11.72	132.93	125.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
23	A0	8	ASP	CB-CG-OD1	10.83	128.05	118.30
42	1	406	ALA	C-N-CA	10.26	147.36	121.70
28	H	164	C	N1-C2-O2	-10.13	112.82	118.90
8	N	277	LEU	CA-CB-CG	9.42	136.96	115.30
28	H	162	U	N3-C2-O2	-8.97	115.92	122.20
4	F	62	C	N1-C2-O2	8.91	124.24	118.90
28	H	169	C	P-O3'-C3'	8.22	129.57	119.70
28	H	164	C	C5'-C4'-O4'	-8.19	99.28	109.10
28	H	166	G	O4'-C1'-N9	8.05	114.64	108.20
8	N	250	LEU	CA-CB-CG	8.01	133.72	115.30
28	H	167	U	N3-C4-O4	-7.94	113.84	119.40
2	I	55	U	C5-C6-N1	7.90	126.65	122.70
4	F	62	C	C2-N1-C1'	7.66	127.23	118.80
28	H	164	C	P-O3'-C3'	7.50	128.70	119.70
1	A	1869	LEU	CA-CB-CG	7.47	132.47	115.30
28	H	167	U	N1-C2-O2	7.37	127.96	122.80
5	G	9	C	P-O3'-C3'	7.36	128.54	119.70
28	H	164	C	N3-C2-O2	7.36	127.06	121.90
11	9	276	LEU	CB-CG-CD1	-7.29	98.61	111.00
28	H	113	G	OP2-P-O3'	7.26	121.18	105.20
28	H	114	A	OP2-P-O3'	7.25	121.15	105.20
28	H	149	A	OP2-P-O3'	7.25	121.14	105.20
28	H	180	G	OP2-P-O3'	7.23	121.10	105.20
28	H	183	G	OP2-P-O3'	7.23	121.10	105.20
28	H	150	U	OP2-P-O3'	7.22	121.08	105.20
28	H	141	C	OP2-P-O3'	7.21	121.06	105.20
28	H	181	G	OP2-P-O3'	7.21	121.07	105.20
28	H	182	U	OP2-P-O3'	7.20	121.05	105.20
1	A	1405	LEU	CA-CB-CG	7.20	131.86	115.30
28	H	148	C	OP2-P-O3'	7.19	121.02	105.20
28	H	168	A	P-O5'-C5'	-7.14	109.47	120.90
4	F	62	C	N3-C2-O2	-7.05	116.97	121.90
28	H	167	U	N3-C2-O2	-6.92	117.35	122.20
3	B	36	C	N1-C2-O2	6.87	123.02	118.90
28	H	149	A	O3'-P-O5'	-6.83	91.03	104.00
28	H	155	C	P-O3'-C3'	6.83	127.89	119.70
28	H	180	G	O3'-P-O5'	-6.82	91.04	104.00
28	H	182	U	O3'-P-O5'	-6.82	91.04	104.00
42	1	406	ALA	CA-C-O	-6.81	105.80	120.10
28	H	183	G	O3'-P-O5'	-6.81	91.06	104.00
28	H	141	C	O3'-P-O5'	-6.77	91.14	104.00
28	H	148	C	O3'-P-O5'	-6.76	91.15	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
28	H	181	G	O3'-P-O5'	-6.75	91.18	104.00
28	H	113	G	O3'-P-O5'	-6.74	91.20	104.00
28	H	150	U	O3'-P-O5'	-6.74	91.20	104.00
28	H	114	A	O3'-P-O5'	-6.73	91.22	104.00
1	A	375	ASP	CB-CG-OD1	6.70	124.33	118.30
3	B	24	G	C4-N9-C1'	6.51	134.96	126.50
3	B	43	U	N3-C2-O2	-6.50	117.65	122.20
3	B	24	G	N3-C4-N9	6.32	129.79	126.00
2	I	3	C	N1-C2-O2	6.31	122.69	118.90
3	B	36	C	N3-C2-O2	-6.28	117.50	121.90
28	H	165	A	O4'-C1'-N9	-6.25	103.20	108.20
28	H	166	G	N9-C4-C5	6.22	107.89	105.40
3	B	43	U	N1-C2-O2	6.18	127.13	122.80
28	H	166	G	C8-N9-C4	-6.18	103.93	106.40
3	B	21	A	O5'-P-OP2	-6.13	100.19	105.70
28	H	162	U	N1-C2-O2	6.10	127.07	122.80
3	B	24	G	N3-C4-C5	-6.05	125.58	128.60
7	C	134	LEU	CA-CB-CG	6.04	129.20	115.30
3	B	53	U	C2-N1-C1'	6.03	124.93	117.70
5	G	9	C	O3'-P-O5'	6.01	115.42	104.00
28	H	166	G	N3-C4-C5	-6.00	125.60	128.60
3	B	56	C	C6-N1-C2	-5.98	117.91	120.30
28	H	168	A	C5'-C4'-C3'	-5.91	106.54	116.00
4	F	40	U	N3-C2-O2	-5.82	118.13	122.20
3	B	34	U	N3-C2-O2	-5.82	118.13	122.20
3	B	36	C	C2-N1-C1'	5.81	125.19	118.80
2	I	19	U	N1-C2-O2	5.80	126.86	122.80
28	H	172	C	P-O3'-C3'	5.79	126.65	119.70
2	I	19	U	C2-N1-C1'	5.78	124.63	117.70
28	H	156	U	P-O3'-C3'	-5.78	112.77	119.70
32	v	146	MET	C-N-CA	5.76	146.19	122.00
28	H	167	U	O3'-P-O5'	-5.75	93.07	104.00
3	B	24	G	P-O3'-C3'	5.75	126.60	119.70
28	H	164	C	C5-C4-N4	-5.71	116.21	120.20
3	B	35	U	N3-C2-O2	-5.70	118.21	122.20
3	B	58	U	N3-C2-O2	-5.70	118.21	122.20
3	B	53	U	C5-C6-N1	5.62	125.51	122.70
1	A	89	LEU	CA-CB-CG	5.61	128.20	115.30
1	A	1938	LEU	CA-CB-CG	5.58	128.12	115.30
3	B	17	U	N3-C2-O2	-5.54	118.32	122.20
28	H	166	G	C6-N1-C2	-5.50	121.80	125.10
4	F	51	U	P-O3'-C3'	5.50	126.29	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	34	U	N1-C2-O2	5.49	126.64	122.80
1	A	2068	SER	N-CA-C	5.48	125.79	111.00
28	H	157	G	O4'-C1'-N9	-5.45	103.84	108.20
23	A0	44	LEU	CA-CB-CG	5.45	127.83	115.30
3	B	24	G	C8-N9-C1'	-5.42	119.95	127.00
3	B	17	U	N1-C2-O2	5.40	126.58	122.80
2	I	34	G	N3-C4-N9	-5.39	122.76	126.00
11	9	272	MET	CG-SD-CE	5.39	108.82	100.20
28	H	106	G	O5'-P-OP1	5.38	117.15	110.70
2	I	54	A	N9-C4-C5	-5.34	103.66	105.80
11	9	118	LEU	CB-CG-CD1	5.33	120.05	111.00
28	H	156	U	OP2-P-O3'	5.30	116.86	105.20
28	H	160	A	P-O5'-C5'	-5.25	112.50	120.90
4	F	62	C	C6-N1-C1'	-5.25	114.50	120.80
4	F	62	C	C6-N1-C2	-5.25	118.20	120.30
28	H	170	C	O4'-C1'-C2'	-5.22	100.58	105.80
1	A	638	LEU	CA-CB-CG	-5.20	103.35	115.30
1	A	1916	LEU	CB-CG-CD2	-5.19	102.17	111.00
2	I	3	C	N3-C2-O2	-5.18	118.28	121.90
3	B	34	U	C2-N1-C1'	5.17	123.90	117.70
28	H	170	C	N3-C4-C5	-5.14	119.84	121.90
28	H	164	C	C6-N1-C2	5.14	122.36	120.30
3	B	14	U	N3-C2-O2	-5.13	118.61	122.20
28	H	157	G	P-O5'-C5'	-5.13	112.69	120.90
3	B	14	U	N1-C2-O2	5.13	126.39	122.80
1	A	193	LEU	CA-CB-CG	5.13	127.09	115.30
28	H	156	U	C4'-C3'-C2'	5.09	107.69	102.60
3	B	43	U	C2-N1-C1'	5.08	123.80	117.70
28	H	176	G	N9-C4-C5	5.05	107.42	105.40
1	A	951	LEU	CA-CB-CG	5.05	126.92	115.30
4	F	63	C	C6-N1-C2	-5.04	118.28	120.30
28	H	162	U	C2-N3-C4	-5.03	123.98	127.00
6	O	60	LEU	CB-CG-CD1	-5.03	102.46	111.00
4	F	72	G	N3-C4-N9	5.02	129.01	126.00
3	B	35	U	N1-C2-O2	5.01	126.31	122.80

There are no chirality outliers.

All (59) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
42	1	1025	LYS	Peptide
42	1	1122	THR	Peptide

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>Group</b>
42	1	1127	THR	Peptide
42	1	1179	ASP	Peptide
42	1	1199	VAL	Peptide
42	1	220	GLN	Peptide
42	1	415	LEU	Mainchain,Peptide
42	1	689	ILE	Peptide
42	1	941	ASN	Peptide
42	1	944	SER	Peptide
47	2	553	MET	Peptide
47	2	558	ARG	Peptide
47	2	571	LEU	Peptide
43	3	261	PHE	Peptide
43	3	366	ASP	Peptide
43	3	468	ASP	Peptide
43	3	530	ASP	Peptide
43	3	534	ASN	Peptide
43	3	552	ARG	Peptide
43	3	670	GLN	Peptide
43	3	678	VAL	Peptide
43	3	74	THR	Peptide
43	3	980	LYS	Peptide
43	3	986	ILE	Peptide
44	5	29	LYS	Peptide
46	7	74	GLN	Peptide
1	A	108	MET	Peptide
1	A	1091	TYR	Peptide
1	A	1191	GLY	Peptide
1	A	1551	PHE	Peptide
1	A	1719	PHE	Peptide
1	A	211	GLN	Peptide
1	A	408	PRO	Peptide
1	A	463	PRO	Peptide
1	A	802	THR	Peptide
1	A	941	LYS	Peptide
1	A	942	PRO	Peptide
1	A	981	PHE	Peptide
23	A0	10	LEU	Peptide
23	A0	7	ASN	Peptide
7	C	358	LYS	Peptide
7	C	360	ALA	Peptide
7	C	426	GLU	Peptide
7	C	473	PRO	Peptide

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Mol	Chain	Res	Type	Group
7	C	474	LEU	Peptide
7	C	902	HIS	Peptide
49	D	430	LEU	Peptide
8	N	195	GLU	Peptide
8	N	248	ASN	Peptide
8	N	276	ASP	Peptide
8	N	277	LEU	Peptide
8	N	290	ASP	Peptide
8	N	370	PRO	Peptide
8	N	840	ASP	Peptide
8	N	841	PRO	Peptide
15	c	112	ASN	Peptide
15	k	112	ASN	Peptide
33	w	443	THR	Peptide

## 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	17290	0	16495	383	0
2	I	2881	0	1461	123	0
3	B	2420	0	1226	94	0
4	F	1995	0	1006	61	0
5	G	1612	0	821	192	0
6	O	1152	0	1123	21	0
7	C	6440	0	6465	127	0
8	N	4518	0	3121	96	0
9	M	962	0	1012	12	0
10	L	2874	0	2856	46	0
11	9	1087	0	921	252	0
12	J	1273	0	903	32	0
13	U	256	0	70	2	0
13	a	344	0	93	0	0
13	i	344	0	93	0	0
14	V	334	0	92	1	0
14	b	328	0	89	0	0
14	j	328	0	89	0	0
15	P	300	0	80	4	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
15	c	388	0	102	0	0
15	k	340	0	87	0	0
16	Q	292	0	93	6	0
16	d	296	0	87	0	0
16	l	296	0	87	0	0
17	R	314	0	86	3	0
17	e	316	0	85	0	0
17	m	316	0	85	0	0
18	S	298	0	89	5	0
18	f	296	0	84	0	0
18	n	272	0	75	0	0
19	T	288	0	84	1	0
19	g	324	0	89	0	0
19	h	320	0	88	0	0
20	E	1196	0	337	2	0
21	X	378	0	190	1	0
22	W	844	0	426	16	0
23	A0	581	0	567	45	0
24	0	225	0	98	2	0
25	Z	883	0	414	6	0
26	8	277	0	114	2	0
27	Y	2258	0	1064	38	0
28	H	2311	0	1170	141	0
29	o	648	0	167	0	0
30	p	376	0	102	0	0
31	u	496	0	118	0	0
32	v	376	0	85	0	0
33	w	1693	0	454	0	0
34	q	360	0	95	0	0
35	r	296	0	76	0	0
36	s	296	0	77	0	0
37	t	288	0	78	0	0
38	x	280	0	81	0	0
39	y	260	0	75	0	0
40	z	244	0	71	0	0
41	K	1821	0	759	50	0
42	1	4192	0	1110	173	0
43	3	4672	0	1260	62	0
44	5	432	0	114	6	0
45	6	356	0	105	7	0
46	7	264	0	70	8	0
47	2	728	0	183	8	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
48	4	312	0	87	3	0
49	D	6796	0	1778	106	0
50	A	36	0	6	9	0
51	C	32	0	12	0	0
52	C	1	0	0	0	0
All	All	85302	0	50580	1753	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 14.

All (1753) 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)
1:A:1790:ILE:HD13	11:9:266:PHE:CE2	1.27	1.66
11:9:352:GLU:HG3	11:9:357:ALA:CB	1.28	1.59
1:A:1790:ILE:HD13	11:9:266:PHE:CD2	1.40	1.54
42:1:407:MET:N	42:1:407:MET:CA	1.71	1.52
1:A:1790:ILE:CD1	11:9:266:PHE:CE2	1.92	1.46
11:9:261:HIS:CE1	11:9:291:ASN:H	1.31	1.46
11:9:352:GLU:CG	11:9:357:ALA:CB	2.00	1.37
49:D:1671:GLY:C	49:D:1885:ASN:CA	1.92	1.36
11:9:352:GLU:CG	11:9:357:ALA:HB2	1.54	1.35
5:G:145:U:C2'	5:G:146:C:H5''	1.54	1.35
27:Y:305:ALA:HB1	49:D:1553:HIS:O	1.27	1.33
1:A:596:TYR:CD1	5:G:-5:G:C2	2.15	1.33
1:A:1791:HIS:HB3	11:9:271:THR:CG2	1.60	1.31
2:I:75:C:H1'	49:D:570:THR:O	1.27	1.29
11:9:120:ILE:CA	23:A0:17:LYS:HZ3	1.45	1.29
11:9:261:HIS:NE2	11:9:294:LEU:HB2	1.44	1.29
2:I:71:U:H4'	49:D:726:HIS:O	1.15	1.29
1:A:1798:LEU:HD13	11:9:356:THR:CG2	1.62	1.28
11:9:329:LYS:CA	11:9:333:ILE:HD12	1.62	1.28
11:9:261:HIS:HE1	11:9:291:ASN:N	1.29	1.27
41:K:131:GLU:O	41:K:135:ASN:HB2	1.23	1.26
1:A:1790:ILE:CD1	11:9:266:PHE:HE2	1.38	1.24
2:I:77:A:H5'	49:D:575:LEU:O	1.27	1.24
1:A:1792:LYS:O	11:9:268:GLU:HA	1.35	1.23
5:G:135:G:N2	28:H:42:G:C4	2.07	1.21
11:9:329:LYS:HA	11:9:333:ILE:CD1	1.72	1.18
5:G:145:U:C4	5:G:146:C:C5	2.32	1.18
5:G:153:C:H4'	5:G:154:U:OP1	1.42	1.18

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:596:TYR:CD1	5:G:-5:G:N2	2.12	1.17
11:9:120:ILE:HG23	23:A0:1:MET:CE	1.74	1.17
11:9:120:ILE:HA	23:A0:17:LYS:NZ	1.58	1.17
1:A:1894:GLN:HE22	11:9:292:VAL:HG11	1.08	1.16
2:I:71:U:C5	49:D:834:TYR:O	1.99	1.15
2:I:119:A:H5''	16:Q:39:TYR:CA	1.75	1.15
5:G:137:C:O2'	5:G:138:A:H5'	1.45	1.15
5:G:149:G:C8	5:G:150:U:C5	2.34	1.15
22:W:47:CYS:O	41:K:122:PHE:HB2	1.42	1.15
11:9:329:LYS:CG	11:9:333:ILE:CD1	2.25	1.13
2:I:71:U:C4'	49:D:726:HIS:O	1.97	1.13
2:I:25:A:H4'	2:I:26:G:C5'	1.77	1.13
5:G:145:U:H2'	5:G:146:C:C5'	1.78	1.13
11:9:120:ILE:HA	23:A0:17:LYS:HZ3	1.00	1.12
49:D:1007:PRO:CA	49:D:1106:GLN:CA	2.26	1.13
1:A:511:LYS:HE2	8:N:30:THR:HG22	1.20	1.12
1:A:1798:LEU:CD1	11:9:356:THR:HG23	1.80	1.11
22:W:47:CYS:O	41:K:122:PHE:CB	1.97	1.11
1:A:2019:PRO:HB3	11:9:306:LEU:CD1	1.79	1.10
11:9:352:GLU:HG3	11:9:357:ALA:HB3	1.29	1.09
11:9:352:GLU:CG	11:9:357:ALA:HB3	1.75	1.09
11:9:260:GLU:OE1	11:9:288:VAL:HG21	1.51	1.09
49:D:1007:PRO:N	49:D:1107:LEU:N	2.01	1.09
28:H:156:U:H6	28:H:156:U:H5''	1.10	1.08
5:G:18:A:H4'	5:G:19:G:OP2	1.38	1.08
1:A:2019:PRO:CB	11:9:306:LEU:HD13	1.84	1.07
11:9:120:ILE:HG23	23:A0:1:MET:HE2	1.35	1.07
1:A:2019:PRO:HB3	11:9:306:LEU:HD13	1.12	1.07
2:I:77:A:C5'	49:D:575:LEU:O	2.01	1.06
49:D:1672:LYS:N	49:D:1885:ASN:CA	2.18	1.06
28:H:105:G:H2'	28:H:106:G:H5''	1.37	1.06
49:D:1006:LYS:C	49:D:1107:LEU:CA	2.23	1.06
11:9:304:VAL:HG22	11:9:307:ARG:HH12	1.18	1.06
11:9:258:THR:HG22	11:9:349:PHE:O	1.54	1.05
45:6:93:SER:O	45:6:95:LYS:N	1.90	1.05
1:A:1798:LEU:HD13	11:9:356:THR:HG23	1.12	1.05
5:G:155:U:H4'	5:G:156:U:H5'	1.38	1.05
4:F:33:G:H1	5:G:14:A:N6	1.54	1.04
5:G:145:U:O4	5:G:146:C:C4	2.09	1.04
2:I:118:A:C2	2:I:119:A:N6	2.25	1.04
5:G:145:U:C3'	5:G:146:C:H5''	1.84	1.04

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1790:ILE:HD11	11:9:266:PHE:HE2	1.17	1.04
1:A:1792:LYS:HD3	1:A:1798:LEU:HG	1.34	1.04
11:9:120:ILE:CA	23:A0:17:LYS:NZ	2.16	1.04
49:D:1007:PRO:CA	49:D:1106:GLN:C	2.25	1.04
8:N:855:ARG:CB	10:L:115:ARG:HH11	1.71	1.03
11:9:120:ILE:N	23:A0:17:LYS:HZ3	1.55	1.03
2:I:126:A:C2	15:P:104:ASP:CA	2.41	1.03
11:9:261:HIS:NE2	11:9:294:LEU:CB	2.21	1.02
1:A:1790:ILE:CD1	11:9:266:PHE:CD2	2.21	1.02
5:G:145:U:H2'	5:G:146:C:H5''	1.03	1.02
5:G:149:G:C8	5:G:150:U:C4	2.47	1.02
5:G:135:G:N2	28:H:42:G:N3	2.06	1.01
49:D:1899:LEU:CA	49:D:1952:ALA:C	2.29	1.00
7:C:230:ASP:OD1	7:C:259:LYS:HG3	1.60	1.00
1:A:511:LYS:CE	8:N:30:THR:HG22	1.90	1.00
49:D:1671:GLY:CA	49:D:1885:ASN:CA	2.40	1.00
5:G:145:U:C3'	5:G:146:C:C5'	2.40	1.00
49:D:1824:ILE:O	49:D:1825:ASN:O	1.80	0.99
1:A:1732:LYS:CD	11:9:332:SER:HB2	1.93	0.99
11:9:261:HIS:CE1	11:9:290:VAL:HG13	1.98	0.99
1:A:1732:LYS:HD3	11:9:332:SER:HB2	1.42	0.98
1:A:1791:HIS:CB	11:9:271:THR:HG22	1.92	0.98
11:9:119:SER:O	23:A0:17:LYS:NZ	1.95	0.98
1:A:1791:HIS:HB3	11:9:271:THR:HG22	0.98	0.98
1:A:1675:ASP:OD2	11:9:148:GLU:CB	2.12	0.98
11:9:261:HIS:CE1	11:9:291:ASN:N	2.10	0.98
28:H:168:A:H5''	28:H:168:A:C8	1.98	0.97
5:G:146:C:C2	28:H:33:G:N1	2.32	0.97
1:A:1352:HIS:CD2	11:9:150:PRO:CG	2.48	0.97
41:K:131:GLU:O	41:K:135:ASN:CB	2.12	0.97
2:I:91:A:H2	2:I:110:G:N2	1.61	0.97
4:F:78:A:C8	4:F:78:A:H5'	2.00	0.96
5:G:145:U:C2'	5:G:146:C:C5'	2.38	0.96
11:9:293:ASN:O	11:9:297:LYS:HG3	1.65	0.96
1:A:2017:SER:CB	11:9:303:ASN:HD22	1.77	0.96
11:9:329:LYS:HG2	11:9:333:ILE:HD13	1.47	0.96
11:9:329:LYS:HG3	11:9:333:ILE:CD1	1.93	0.96
5:G:135:G:N3	28:H:42:G:C2	2.33	0.96
42:1:501:LEU:O	42:1:504:ILE:N	1.98	0.96
8:N:764:ALA:HB2	41:K:224:PHE:O	1.62	0.96
27:Y:333:ILE:O	27:Y:342:LEU:N	1.97	0.96

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1791:HIS:CB	11:9:271:THR:CG2	2.44	0.96
11:9:329:LYS:HG2	11:9:333:ILE:CD1	1.94	0.96
12:J:535:GLU:CG	12:J:587:GLY:CA	2.44	0.96
11:9:119:SER:C	23:A0:17:LYS:NZ	2.19	0.95
7:C:230:ASP:CG	7:C:259:LYS:HE2	1.86	0.95
1:A:1635:TYR:OH	1:A:2244:LYS:N	1.99	0.95
5:G:146:C:C2	28:H:33:G:C6	2.53	0.95
1:A:1732:LYS:NZ	11:9:328:GLN:CB	2.30	0.95
5:G:143:U:H5'	5:G:143:U:H6	1.30	0.94
22:W:174:CYS:O	41:K:122:PHE:HB3	1.68	0.94
5:G:146:C:O2	28:H:33:G:C6	2.20	0.94
3:B:68:C:H2'	3:B:69:A:O4'	1.66	0.94
6:O:73:TYR:HH	8:N:29:THR:HG1	1.12	0.94
49:D:1672:LYS:N	49:D:1885:ASN:C	2.21	0.94
7:C:230:ASP:OD2	7:C:259:LYS:HE2	1.67	0.94
1:A:1732:LYS:NZ	11:9:328:GLN:HB3	1.84	0.93
49:D:1523:LEU:CA	49:D:1700:GLY:O	2.16	0.93
8:N:855:ARG:CB	10:L:115:ARG:NH1	2.30	0.93
49:D:1734:ASP:CA	49:D:1826:TYR:CA	2.46	0.93
2:I:25:A:H4'	2:I:26:G:O5'	1.56	0.93
28:H:156:U:H5''	28:H:156:U:C6	2.02	0.93
1:A:596:TYR:HB2	5:G:-5:G:H22	1.33	0.93
5:G:-11:G:H4'	5:G:-10:C:OP2	1.69	0.92
49:D:1006:LYS:C	49:D:1107:LEU:N	2.22	0.92
11:9:329:LYS:HA	11:9:333:ILE:HD12	0.93	0.92
11:9:352:GLU:HG3	11:9:357:ALA:HB2	0.93	0.92
12:J:535:GLU:CG	12:J:587:GLY:C	2.37	0.92
1:A:596:TYR:HD1	5:G:-5:G:N2	1.63	0.92
11:9:352:GLU:HG2	11:9:357:ALA:CB	1.99	0.92
11:9:329:LYS:CG	11:9:333:ILE:HD13	1.98	0.91
42:1:86:ALA:O	42:1:89:ALA:N	2.02	0.91
5:G:135:G:C2	28:H:42:G:C2	2.57	0.91
11:9:261:HIS:HE1	11:9:291:ASN:CA	1.81	0.91
11:9:331:ARG:O	11:9:334:LEU:N	2.01	0.91
1:A:1790:ILE:HD11	11:9:266:PHE:CE2	1.94	0.91
7:C:230:ASP:OD2	7:C:259:LYS:CE	2.18	0.91
5:G:143:U:H5'	5:G:143:U:C6	2.06	0.91
27:Y:305:ALA:CB	49:D:1553:HIS:O	2.17	0.91
1:A:1732:LYS:CD	11:9:328:GLN:HB3	2.00	0.90
2:I:75:C:C1'	49:D:570:THR:O	2.18	0.90
1:A:72:ASP:CG	4:F:28:A:H5''	1.91	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:75:C:O2'	49:D:571:GLY:HA2	1.71	0.90
12:J:535:GLU:CG	12:J:587:GLY:HA3	2.02	0.90
1:A:1352:HIS:HD2	11:9:150:PRO:CG	1.84	0.90
3:B:95:G:H21	3:B:96:A:H5''	1.36	0.90
1:A:1732:LYS:HG3	11:9:332:SER:OG	1.70	0.89
11:9:120:ILE:N	23:A0:17:LYS:NZ	2.20	0.89
7:C:230:ASP:OD2	7:C:259:LYS:NZ	2.05	0.89
5:G:149:G:N7	5:G:150:U:C4	2.40	0.89
8:N:827:ARG:O	8:N:831:VAL:N	2.04	0.89
49:D:1010:SER:O	49:D:1012:ILE:N	2.05	0.89
49:D:1672:LYS:CA	49:D:1885:ASN:C	2.40	0.89
1:A:511:LYS:HE2	8:N:30:THR:CG2	2.03	0.89
1:A:1798:LEU:HD13	11:9:356:THR:HG21	1.52	0.89
6:O:73:TYR:OH	8:N:29:THR:OG1	1.90	0.89
42:1:793:LYS:O	42:1:797:GLY:HA3	1.72	0.88
5:G:155:U:O2'	5:G:156:U:OP2	1.89	0.88
11:9:120:ILE:CG2	23:A0:1:MET:CE	2.51	0.88
11:9:304:VAL:HG22	11:9:307:ARG:NH1	1.89	0.88
41:K:121:LEU:HB2	41:K:132:ARG:HH11	1.38	0.88
49:D:1007:PRO:N	49:D:1106:GLN:C	2.27	0.88
49:D:1006:LYS:CA	49:D:1107:LEU:CA	2.52	0.88
11:9:329:LYS:CB	11:9:333:ILE:HD12	2.03	0.87
11:9:329:LYS:CG	11:9:333:ILE:HD12	1.94	0.87
1:A:1824:THR:O	11:9:252:ARG:NH2	2.07	0.87
5:G:127:U:H2'	5:G:127:U:OP2	1.74	0.87
11:9:119:SER:C	23:A0:17:LYS:HZ1	1.78	0.87
28:H:154:C:O2	28:H:176:G:N2	2.07	0.87
1:A:1792:LYS:O	11:9:268:GLU:CA	2.22	0.87
2:I:120:U:H2'	17:R:82:ASP:CA	2.04	0.86
12:J:535:GLU:HB3	12:J:587:GLY:H	1.39	0.86
2:I:118:A:H2	2:I:119:A:H62	1.22	0.86
28:H:40:C:H6	28:H:40:C:H5''	1.39	0.86
28:H:168:A:H5''	28:H:168:A:H8	1.36	0.86
28:H:156:U:H6	28:H:156:U:C5'	1.89	0.86
1:A:596:TYR:CE1	5:G:-5:G:C2	2.64	0.86
5:G:145:U:C4	5:G:146:C:C4	2.63	0.86
1:A:1732:LYS:HZ2	11:9:328:GLN:HB3	1.36	0.86
2:I:118:A:N3	2:I:119:A:N6	2.23	0.86
1:A:2020:SER:HB3	11:9:310:LYS:CG	2.06	0.85
5:G:153:C:OP1	5:G:154:U:P	2.34	0.85
1:A:1732:LYS:HD2	11:9:328:GLN:HB3	1.56	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:9:261:HIS:CD2	11:9:294:LEU:HB3	2.11	0.85
11:9:260:GLU:OE1	11:9:288:VAL:CG2	2.24	0.85
1:A:1894:GLN:NE2	11:9:292:VAL:HG11	1.91	0.85
49:D:1671:GLY:HA3	49:D:1885:ASN:CA	2.06	0.85
1:A:610:HIS:NE2	50:A:3000:IHP:O22	2.08	0.85
1:A:1352:HIS:CD2	11:9:150:PRO:HG2	2.10	0.85
2:I:77:A:C6	49:D:1213:LYS:O	2.30	0.85
2:I:121:U:H3	18:S:63:ARG:CA	1.88	0.85
42:1:728:LEU:O	42:1:731:LEU:N	2.10	0.85
5:G:126:C:O2	5:G:126:C:H2'	1.75	0.85
22:W:47:CYS:O	41:K:122:PHE:CG	2.30	0.85
5:G:145:U:H3'	5:G:146:C:C5'	2.04	0.84
11:9:259:VAL:HG22	11:9:289:LEU:O	1.78	0.84
7:C:258:ASN:C	7:C:259:LYS:HG2	1.98	0.84
11:9:293:ASN:HB3	11:9:297:LYS:HE3	1.58	0.84
45:6:93:SER:C	45:6:95:LYS:H	1.81	0.84
2:I:119:A:C5'	16:Q:39:TYR:CA	2.56	0.83
11:9:254:LEU:H	11:9:254:LEU:HD12	1.43	0.83
4:F:31:U:H3	5:G:16:G:H1	0.86	0.83
5:G:145:U:C5	5:G:146:C:C5	2.67	0.83
28:H:152:G:N2	28:H:153:A:N7	2.27	0.83
5:G:151:C:H1'	5:G:152:C:OP1	1.78	0.83
7:C:230:ASP:OD1	7:C:259:LYS:HE2	1.76	0.83
11:9:261:HIS:CD2	11:9:294:LEU:CB	2.61	0.83
3:B:68:C:C4	3:B:69:A:C6	2.67	0.83
49:D:1899:LEU:CA	49:D:1952:ALA:O	2.26	0.83
1:A:1352:HIS:HD2	11:9:150:PRO:HG2	1.40	0.83
3:B:10:U:H3	3:B:67:A:H2	1.23	0.82
11:9:120:ILE:HG23	23:A0:1:MET:SD	2.18	0.82
1:A:1732:LYS:HZ1	11:9:328:GLN:HB2	1.43	0.82
11:9:130:LEU:HD13	23:A0:29:LYS:HD3	1.59	0.82
11:9:261:HIS:CE1	11:9:290:VAL:CG1	2.62	0.82
41:K:137:LEU:HD12	41:K:145:LEU:CD2	2.10	0.82
3:B:68:C:C5	3:B:69:A:C2	2.68	0.81
5:G:135:G:C2	28:H:42:G:C4	2.68	0.81
28:H:105:G:C2'	28:H:106:G:H5''	2.10	0.81
43:3:839:ALA:O	43:3:843:LEU:N	2.13	0.81
2:I:78:A:C6	49:D:1212:GLU:CA	2.63	0.81
12:J:535:GLU:CG	12:J:587:GLY:O	2.29	0.81
27:Y:334:HIS:HA	27:Y:341:THR:HA	1.62	0.81
27:Y:395:GLY:N	49:D:1003:GLN:CA	2.43	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:K:137:LEU:HD12	41:K:145:LEU:HD21	1.62	0.81
42:1:648:LEU:O	42:1:651:VAL:N	2.13	0.81
5:G:146:C:O2	28:H:33:G:N1	2.13	0.81
28:H:152:G:H5''	28:H:153:A:OP2	1.80	0.81
5:G:149:G:C2	5:G:150:U:H2'	2.16	0.81
5:G:-6:C:H5''	5:G:-6:C:O2	1.81	0.81
5:G:151:C:H4'	5:G:152:C:H5	1.44	0.81
5:G:142:U:OP2	42:1:1106:ARG:CA	2.30	0.80
8:N:297:LEU:HD23	11:9:282:LEU:CD2	2.11	0.80
4:F:36:A:H1'	4:F:37:C:H5	1.44	0.80
1:A:1352:HIS:CD2	11:9:150:PRO:HG3	2.16	0.80
3:B:68:C:N4	3:B:69:A:N6	2.30	0.80
2:I:108:C:O2'	2:I:109:G:H5'	1.81	0.80
3:B:77:G:O2'	3:B:78:U:P	2.40	0.80
5:G:147:C:O2	28:H:31:G:N1	2.11	0.80
5:G:149:G:N9	5:G:150:U:C5	2.49	0.80
11:9:261:HIS:CE1	11:9:294:LEU:HB2	2.16	0.80
8:N:297:LEU:CD2	11:9:282:LEU:HD23	2.11	0.80
1:A:1790:ILE:HD13	11:9:266:PHE:HD2	1.45	0.79
5:G:19:G:O2'	5:G:20:A:OP1	2.00	0.79
28:H:101:U:H5''	28:H:102:U:H5'	1.65	0.79
1:A:609:LYS:NZ	50:A:3000:IHP:O24	2.15	0.79
45:6:56:GLY:O	45:6:65:GLY:N	2.12	0.79
27:Y:342:LEU:O	49:D:1698:ASP:O	1.99	0.79
1:A:596:TYR:CE1	5:G:-5:G:N3	2.50	0.79
2:I:71:U:C5	2:I:72:U:C4	2.70	0.79
11:9:252:ARG:HD2	11:9:254:LEU:HD11	1.64	0.79
1:A:705:LYS:O	1:A:708:THR:HB	1.81	0.79
3:B:94:U:H1'	3:B:95:G:OP1	1.82	0.79
42:1:669:GLN:O	42:1:672:ALA:N	2.16	0.79
2:I:2:G:H1	4:F:73:A:H61	1.29	0.79
1:A:1592:ASP:OD2	11:9:331:ARG:NH2	2.16	0.79
5:G:18:A:C4'	5:G:19:G:OP2	2.28	0.78
5:G:149:G:H2'	5:G:150:U:C6	2.19	0.78
41:K:137:LEU:HD21	41:K:143:ASP:O	1.82	0.78
5:G:146:C:H1'	28:H:33:G:N2	1.99	0.78
5:G:151:C:H4'	5:G:152:C:C5	2.18	0.78
8:N:165:ASP:HB2	8:N:172:ARG:HH21	1.49	0.78
43:3:523:GLY:HA3	43:3:536:TRP:O	1.83	0.78
1:A:1791:HIS:HB3	11:9:271:THR:HG23	1.66	0.78
5:G:146:C:O2	28:H:33:G:C2	2.37	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:D:1672:LYS:N	49:D:1885:ASN:O	2.17	0.77
43:3:914:ILE:O	43:3:918:ARG:CA	2.32	0.77
3:B:10:U:N3	3:B:67:A:C2	2.49	0.77
42:1:428:ALA:O	42:1:432:THR:N	2.17	0.77
1:A:278:LYS:NZ	5:G:-9:C:OP1	2.16	0.77
28:H:177:A:H5''	28:H:178:A:OP1	1.84	0.77
8:N:801:ALA:HB1	9:M:76:LYS:HA	1.67	0.77
11:9:263:ILE:O	11:9:263:ILE:HD13	1.84	0.77
2:I:121:U:N3	18:S:63:ARG:CA	2.48	0.77
5:G:123:U:O2	5:G:123:U:H2'	1.84	0.77
1:A:609:LYS:HD2	50:A:3000:IHP:O24	1.84	0.77
3:B:10:U:C2	3:B:69:A:N6	2.53	0.77
5:G:135:G:C2	28:H:42:G:N3	2.53	0.76
1:A:511:LYS:CE	8:N:30:THR:CG2	2.63	0.76
41:K:130:ARG:O	41:K:134:ARG:CB	2.33	0.76
1:A:1786:TYR:HB3	11:9:276:LEU:HD11	1.66	0.76
28:H:153:A:H2'	28:H:154:C:H5'	1.65	0.76
1:A:72:ASP:OD2	4:F:28:A:OP2	2.03	0.76
27:Y:394:ALA:C	49:D:1002:ASN:O	2.24	0.76
27:Y:395:GLY:HA2	49:D:1002:ASN:C	2.06	0.76
42:1:1246:MET:O	42:1:1249:TYR:N	2.18	0.76
5:G:149:G:H3'	5:G:150:U:H5''	1.67	0.76
2:I:25:A:H4'	2:I:26:G:H5'	1.68	0.76
1:A:1551:PHE:HB2	23:A0:47:TRP:HE1	1.50	0.76
8:N:172:ARG:HH22	10:L:338:LYS:HB2	1.49	0.76
5:G:155:U:H4'	5:G:156:U:C5'	2.13	0.76
8:N:297:LEU:HD23	11:9:282:LEU:HD21	1.68	0.76
8:N:764:ALA:CB	41:K:224:PHE:O	2.34	0.76
42:1:531:LEU:O	42:1:534:GLN:N	2.18	0.76
5:G:146:C:H1'	28:H:33:G:C2	2.20	0.75
11:9:261:HIS:CE1	11:9:291:ASN:CB	2.69	0.75
2:I:91:A:H2	2:I:110:G:H22	0.83	0.75
5:G:145:U:H3	28:H:33:G:H1	1.33	0.75
1:A:1732:LYS:CG	11:9:332:SER:HB2	2.17	0.75
1:A:2017:SER:CB	11:9:303:ASN:ND2	2.49	0.75
42:1:1016:LEU:O	42:1:1019:ARG:N	2.19	0.75
1:A:1798:LEU:HD12	1:A:1798:LEU:H	1.52	0.75
3:B:67:A:N1	3:B:69:A:N7	2.35	0.75
10:L:115:ARG:NH2	10:L:126:GLU:OE1	2.20	0.75
28:H:153:A:C2'	28:H:154:C:H5'	2.17	0.75
11:9:290:VAL:HG11	11:9:295:VAL:CG2	2.17	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:H:143:A:H3'	28:H:143:A:N3	2.01	0.74
5:G:132:G:H1	28:H:44:U:H3	1.33	0.74
11:9:252:ARG:HB3	11:9:254:LEU:HD11	1.69	0.74
49:D:1006:LYS:N	49:D:1107:LEU:CA	2.50	0.74
8:N:842:HIS:O	8:N:846:ALA:HB2	1.88	0.74
1:A:596:TYR:HB2	5:G:-5:G:N2	2.02	0.74
1:A:2017:SER:OG	11:9:303:ASN:HB3	1.88	0.74
10:L:115:ARG:HH21	10:L:126:GLU:CD	1.90	0.74
1:A:1732:LYS:HG3	11:9:332:SER:CB	2.17	0.74
3:B:77:G:O2'	3:B:78:U:OP1	2.04	0.74
4:F:33:G:H1	5:G:14:A:H61	0.79	0.74
27:Y:345:PHE:CB	49:D:1524:GLU:CA	2.66	0.74
43:3:304:GLN:CA	43:3:309:ASP:O	2.36	0.74
42:1:1270:ASN:O	42:1:1273:TYR:N	2.21	0.74
8:N:297:LEU:CD2	11:9:282:LEU:CD2	2.66	0.74
22:W:176:GLU:CB	41:K:120:THR:CB	2.65	0.74
5:G:146:C:O2	28:H:33:G:C5	2.41	0.73
11:9:257:LEU:H	11:9:257:LEU:HD22	1.50	0.73
42:1:874:LYS:O	42:1:877:GLY:N	2.20	0.73
41:K:137:LEU:CD2	41:K:143:ASP:O	2.36	0.73
43:3:442:LEU:O	43:3:735:SER:N	2.19	0.73
5:G:149:G:H2'	5:G:150:U:H6	1.52	0.73
5:G:153:C:OP1	5:G:154:U:OP1	2.06	0.73
1:A:1732:LYS:HZ2	11:9:328:GLN:CB	1.96	0.73
1:A:1791:HIS:CB	11:9:271:THR:HG23	2.16	0.73
11:9:352:GLU:CB	11:9:357:ALA:HB2	2.16	0.73
42:1:660:ALA:O	42:1:663:THR:N	2.22	0.73
11:9:261:HIS:CE1	11:9:291:ASN:HB3	2.24	0.73
41:K:137:LEU:CD1	41:K:145:LEU:CD2	2.66	0.73
28:H:179:C:H2'	28:H:180:G:H8	1.54	0.73
12:J:535:GLU:HB3	12:J:587:GLY:N	2.04	0.72
49:D:1528:GLN:O	49:D:1706:CYS:O	2.06	0.72
28:H:106:G:H21	28:H:107:A:N6	1.87	0.72
1:A:1790:ILE:CD1	11:9:266:PHE:HD2	1.97	0.72
2:I:71:U:H4'	49:D:726:HIS:C	2.08	0.72
5:G:145:U:C4	5:G:146:C:C6	2.77	0.72
3:B:68:C:N4	3:B:69:A:C6	2.57	0.72
7:C:230:ASP:CG	7:C:259:LYS:CE	2.55	0.72
43:3:753:GLY:HA3	43:3:765:LEU:O	1.88	0.72
11:9:254:LEU:HD12	11:9:254:LEU:N	2.03	0.72
1:A:72:ASP:CG	4:F:28:A:C5'	2.58	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:1:1055:TRP:O	42:1:1058:ILE:N	2.22	0.72
5:G:134:U:H3	28:H:42:G:H1	1.37	0.72
1:A:2017:SER:HB2	11:9:303:ASN:ND2	2.05	0.72
3:B:10:U:N3	3:B:67:A:H2	1.86	0.72
5:G:136:U:H1'	5:G:137:C:OP1	1.90	0.72
42:1:87:PRO:O	42:1:91:LEU:N	2.21	0.72
2:I:77:A:C4'	49:D:575:LEU:O	2.37	0.72
49:D:1010:SER:O	49:D:1013:GLU:N	2.22	0.72
5:G:20:A:H2'	5:G:20:A:N3	2.04	0.72
5:G:130:A:H2'	5:G:131:U:O4'	1.89	0.72
42:1:535:ILE:O	42:1:538:LEU:N	2.23	0.72
42:1:122:HIS:O	42:1:125:THR:N	2.22	0.71
2:I:71:U:H3'	2:I:72:U:C6	2.23	0.71
42:1:994:LEU:O	42:1:997:LEU:N	2.22	0.71
28:H:106:G:H4'	28:H:107:A:O4'	1.89	0.71
28:H:153:A:H2'	28:H:154:C:C5'	2.19	0.71
42:1:791:VAL:O	42:1:794:GLN:N	2.23	0.71
5:G:153:C:OP1	5:G:154:U:OP2	2.09	0.71
3:B:67:A:C8	3:B:69:A:OP2	2.43	0.71
3:B:96:A:H4'	3:B:97:G:H5''	1.72	0.71
4:F:86:U:H3	28:H:12:G:H1	1.39	0.71
2:I:74:C:OP1	49:D:546:SER:N	2.24	0.70
23:A0:44:LEU:HA	23:A0:69:GLU:O	1.92	0.70
1:A:1732:LYS:HD2	11:9:328:GLN:CB	2.21	0.70
3:B:68:C:C5	3:B:69:A:N1	2.60	0.70
3:B:87:A:N6	3:B:92:U:P	2.64	0.70
47:2:479:ASP:O	47:2:482:ALA:N	2.25	0.70
2:I:2:G:H1	4:F:73:A:N6	1.89	0.70
42:1:700:LYS:O	42:1:703:THR:N	2.24	0.70
3:B:94:U:C1'	3:B:95:G:OP1	2.39	0.70
1:A:596:TYR:CD1	5:G:-5:G:N3	2.59	0.70
1:A:646:PRO:O	1:A:649:GLU:HB3	1.91	0.70
11:9:127:ARG:HH22	23:A0:19:ASN:HB2	1.56	0.70
49:D:1899:LEU:O	49:D:1952:ALA:O	2.09	0.70
1:A:1732:LYS:HZ1	11:9:328:GLN:CB	2.02	0.69
1:A:2276:GLN:O	49:D:1147:ASN:O	2.10	0.69
28:H:40:C:H6	28:H:40:C:C5'	2.05	0.69
43:3:545:VAL:N	43:3:557:ALA:O	2.25	0.69
28:H:154:C:H2'	28:H:155:C:C6	2.26	0.69
1:A:623:LYS:NZ	50:A:3000:IHP:O36	2.24	0.69
1:A:1916:LEU:HB2	8:N:269:ASP:HB2	1.73	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:F:35:A:P	4:F:35:A:H8	2.15	0.69
2:I:120:U:C2'	17:R:82:ASP:CA	2.70	0.69
7:C:818:SER:O	7:C:822:MET:HB2	1.92	0.69
1:A:1790:ILE:HG13	11:9:272:MET:O	1.91	0.69
28:H:153:A:N6	28:H:177:A:C2	2.60	0.69
45:6:7:ASP:O	45:6:91:LEU:N	2.25	0.69
49:D:991:TYR:CA	49:D:1090:ARG:CA	2.71	0.69
1:A:596:TYR:CG	5:G:-5:G:N2	2.60	0.69
7:C:133:THR:O	7:C:225:VAL:HA	1.93	0.69
41:K:137:LEU:CD1	41:K:145:LEU:HD23	2.23	0.69
49:D:1010:SER:O	49:D:1011:GLU:C	2.30	0.69
43:3:558:LEU:O	43:3:561:GLY:N	2.24	0.68
12:J:536:ASP:H	12:J:587:GLY:HA3	1.59	0.68
4:F:36:A:H1'	4:F:37:C:C5	2.28	0.68
11:9:352:GLU:HG2	11:9:357:ALA:HB3	1.66	0.68
28:H:30:A:H2'	28:H:30:A:N3	2.06	0.68
3:B:87:A:N6	3:B:92:U:OP2	2.26	0.68
7:C:746:VAL:O	7:C:790:LYS:HA	1.94	0.68
1:A:172:GLU:OE2	25:Z:22:GLU:CB	2.42	0.68
4:F:103:U:H3'	4:F:104:U:H5''	1.75	0.68
3:B:68:C:C2'	3:B:69:A:O4'	2.40	0.68
22:W:111:SER:HA	22:W:140:VAL:HA	1.76	0.68
11:9:257:LEU:HD22	11:9:257:LEU:N	2.09	0.67
28:H:143:A:H2'	28:H:144:C:H6	1.59	0.67
11:9:261:HIS:NE2	11:9:290:VAL:HG13	2.08	0.67
5:G:21:A:H2	5:G:22:C:H5	1.43	0.67
7:C:258:ASN:O	7:C:259:LYS:CG	2.42	0.67
7:C:595:VAL:HG22	7:C:654:LYS:HG3	1.76	0.67
24:0:299:LYS:O	24:0:303:GLU:CB	2.43	0.67
1:A:1732:LYS:NZ	11:9:328:GLN:HB2	2.04	0.67
3:B:17:U:H3	3:B:60:G:H1	1.42	0.67
28:H:152:G:O3'	28:H:153:A:O4'	2.11	0.67
5:G:151:C:C4'	5:G:152:C:H5	2.07	0.67
27:Y:362:HIS:O	27:Y:378:MET:N	2.26	0.67
3:B:97:G:H1	3:B:116:U:H3	1.41	0.67
11:9:118:LEU:O	23:A0:17:LYS:HE2	1.95	0.67
41:K:109:LYS:CG	41:K:129:ARG:NH1	2.58	0.67
3:B:95:G:H21	3:B:96:A:C5'	2.06	0.67
5:G:137:C:H6	5:G:137:C:O5'	1.78	0.67
2:I:71:U:H3'	2:I:72:U:H6	1.60	0.67
5:G:-11:G:H5'	5:G:-10:C:H5	1.58	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:3:1148:LEU:O	43:3:1152:HIS:N	2.27	0.67
1:A:609:LYS:NZ	50:A:3000:IHP:H3	2.09	0.67
2:I:111:C:H6	2:I:111:C:O5'	1.78	0.67
8:N:841:PRO:O	8:N:843:VAL:N	2.28	0.67
1:A:285:ASP:HB3	1:A:288:LEU:HB2	1.77	0.67
5:G:-10:C:O5'	5:G:-10:C:H6	1.78	0.67
28:H:151:C:C2	28:H:152:G:C8	2.83	0.67
1:A:1635:TYR:OH	1:A:2244:LYS:CA	2.42	0.66
2:I:78:A:N1	49:D:1212:GLU:CA	2.58	0.66
5:G:146:C:H5'	5:G:146:C:H6	1.58	0.66
11:9:120:ILE:CG2	23:A0:1:MET:HE2	2.16	0.66
28:H:150:U:H3	28:H:181:G:H1	1.41	0.66
1:A:1914:MET:SD	8:N:254:ARG:NH1	2.68	0.66
27:Y:395:GLY:HA2	49:D:1002:ASN:CA	2.25	0.66
28:H:151:C:H2'	28:H:152:G:H8	1.60	0.66
42:1:1280:LEU:O	42:1:1283:HIS:N	2.22	0.66
28:H:168:A:C8	28:H:168:A:C5'	2.75	0.66
42:1:758:ASP:O	42:1:762:ALA:N	2.28	0.66
43:3:753:GLY:CA	43:3:765:LEU:O	2.44	0.66
2:I:71:U:H5	49:D:834:TYR:O	1.75	0.66
10:L:115:ARG:HG3	10:L:116:ASP:N	2.10	0.66
47:2:487:LEU:O	47:2:490:HIS:N	2.28	0.66
49:D:1288:HIS:O	49:D:1289:LEU:O	2.14	0.66
1:A:2017:SER:HB2	11:9:303:ASN:HD22	1.54	0.66
4:F:103:U:H4'	4:F:104:U:OP2	1.95	0.66
42:1:400:SER:O	42:1:404:LEU:N	2.28	0.66
27:Y:394:ALA:O	49:D:1002:ASN:O	2.13	0.66
28:H:151:C:O2	28:H:152:G:C8	2.48	0.66
3:B:10:U:O2	3:B:68:C:N4	2.18	0.66
42:1:1243:PRO:O	42:1:1246:MET:N	2.29	0.66
5:G:151:C:H1'	5:G:152:C:P	2.36	0.66
6:O:29:ARG:NH1	6:O:79:CYS:SG	2.69	0.66
1:A:596:TYR:CG	5:G:-5:G:C2	2.82	0.65
11:9:290:VAL:CG1	11:9:295:VAL:HG23	2.26	0.65
12:J:536:ASP:H	12:J:587:GLY:CA	2.09	0.65
3:B:3:A:N1	3:B:79:C:H1'	2.11	0.65
5:G:123:U:O2	5:G:123:U:C2'	2.44	0.65
28:H:153:A:C3'	28:H:154:C:H5'	2.25	0.65
5:G:20:A:H2	5:G:21:A:C8	2.14	0.65
6:O:45:LEU:O	6:O:49:ALA:HB2	1.96	0.65
8:N:842:HIS:O	8:N:846:ALA:CB	2.44	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:72:ASP:OD1	4:F:28:A:H5'	1.96	0.65
2:I:117:C:O5'	2:I:117:C:H6	1.80	0.65
11:9:260:GLU:OE1	11:9:288:VAL:CB	2.44	0.65
11:9:260:GLU:HA	11:9:348:SER:HB3	1.77	0.65
42:1:658:TRP:O	42:1:661:ARG:N	2.30	0.65
41:K:137:LEU:HG	41:K:145:LEU:HD23	1.78	0.65
1:A:2017:SER:OG	11:9:303:ASN:ND2	2.30	0.65
7:C:230:ASP:OD1	7:C:259:LYS:CG	2.41	0.65
47:2:596:GLU:C	47:2:598:GLU:H	2.00	0.65
3:B:89:U:H2'	3:B:90:U:H5''	1.79	0.64
5:G:126:C:O2	5:G:126:C:C2'	2.45	0.64
5:G:147:C:H3'	5:G:147:C:OP2	1.96	0.64
25:Z:35:TRP:O	25:Z:39:CYS:CB	2.46	0.64
42:1:886:HIS:O	42:1:889:GLU:N	2.30	0.64
43:3:325:ILE:O	43:3:375:SER:N	2.30	0.64
49:D:1824:ILE:O	49:D:1825:ASN:C	2.34	0.64
1:A:1472:THR:HG23	11:9:162:ARG:CB	2.27	0.64
8:N:857:ILE:O	8:N:861:ARG:CB	2.45	0.64
11:9:300:ALA:O	11:9:303:ASN:OD1	2.14	0.64
41:K:109:LYS:CG	41:K:129:ARG:HH11	2.09	0.64
27:Y:334:HIS:CA	27:Y:341:THR:HA	2.27	0.64
28:H:114:A:H61	28:H:142:C:H42	1.44	0.64
46:7:40:TYR:O	46:7:43:TYR:N	2.31	0.64
4:F:40:U:H3	5:G:7:G:H22	1.46	0.64
5:G:137:C:O2'	5:G:138:A:C5'	2.37	0.64
5:G:151:C:C4'	5:G:152:C:C5	2.79	0.64
49:D:1530:PHE:H	49:D:1708:GLY:N	1.96	0.64
3:B:67:A:C6	3:B:69:A:C8	2.84	0.64
1:A:68:LYS:O	1:A:72:ASP:OD2	2.15	0.64
5:G:137:C:C2'	5:G:138:A:H5'	2.28	0.64
11:9:331:ARG:O	11:9:333:ILE:N	2.31	0.64
1:A:1732:LYS:CG	11:9:332:SER:CB	2.74	0.64
2:I:120:U:OP2	16:Q:39:TYR:O	2.16	0.64
4:F:66:C:O2	12:J:518:ARG:NH2	2.30	0.64
1:A:1732:LYS:CE	11:9:328:GLN:HB3	2.27	0.64
47:2:491:LEU:O	47:2:494:THR:N	2.30	0.64
28:H:147:G:H2'	28:H:148:C:H6	1.63	0.64
28:H:154:C:H2'	28:H:155:C:H6	1.63	0.64
43:3:868:VAL:O	43:3:877:LEU:N	2.30	0.64
5:G:150:U:OP1	45:6:63:GLY:HA3	1.98	0.63
28:H:152:G:C2	28:H:153:A:C5	2.87	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:1:1018:PRO:O	42:1:1021:THR:N	2.30	0.63
49:D:1671:GLY:O	49:D:1885:ASN:CA	2.46	0.63
10:L:219:LEU:HD11	10:L:231:ILE:HD11	1.79	0.63
11:9:118:LEU:O	23:A0:17:LYS:CE	2.45	0.63
11:9:260:GLU:OE1	11:9:288:VAL:HG11	1.99	0.63
11:9:328:GLN:NE2	11:9:328:GLN:HA	2.14	0.63
42:1:749:ALA:O	42:1:752:TYR:N	2.31	0.63
2:I:127:C:O2	15:P:47:ARG:O	2.17	0.63
5:G:135:G:H5'	5:G:136:U:OP2	1.99	0.63
22:W:48:THR:HA	41:K:122:PHE:O	1.98	0.63
28:H:164:C:H6	28:H:164:C:H5'	1.63	0.63
41:K:235:SER:N	41:K:249:ALA:O	2.32	0.63
43:3:563:LEU:N	43:3:581:LYS:O	2.27	0.63
3:B:88:A:H2'	3:B:88:A:N3	2.14	0.63
5:G:146:C:N3	28:H:33:G:C6	2.66	0.63
28:H:156:U:C6	28:H:156:U:C5'	2.72	0.63
43:3:645:MET:N	43:3:662:PHE:O	2.28	0.63
1:A:1352:HIS:HD2	11:9:150:PRO:HG3	1.59	0.63
2:I:89:U:C2'	2:I:90:G:H5'	2.29	0.63
5:G:19:G:H1'	5:G:20:A:P	2.39	0.63
8:N:378:ARG:O	8:N:382:LEU:HD22	1.97	0.63
11:9:253:ASP:HB2	11:9:354:GLY:HA2	1.81	0.63
28:H:153:A:H3'	28:H:154:C:H5'	1.79	0.63
2:I:91:A:H8	2:I:91:A:O5'	1.82	0.63
7:C:258:ASN:C	7:C:259:LYS:CG	2.67	0.63
1:A:1835:GLN:NE2	1:A:1835:GLN:H	1.97	0.63
7:C:148:CYS:SG	7:C:417:ARG:NH2	2.72	0.62
43:3:1191:LYS:O	43:3:1194:SER:N	2.32	0.62
2:I:89:U:O2'	2:I:90:G:H5'	1.99	0.62
42:1:1264:VAL:O	42:1:1267:LYS:N	2.32	0.62
2:I:108:C:H2'	2:I:109:G:H8	1.63	0.62
8:N:376:TYR:CD2	8:N:396:ALA:HA	2.34	0.62
5:G:145:U:O4	5:G:146:C:N4	2.31	0.62
7:C:205:THR:HB	7:C:215:VAL:HG22	1.81	0.62
7:C:226:VAL:HA	7:C:254:THR:O	1.99	0.62
11:9:260:GLU:HB2	11:9:290:VAL:CG2	2.28	0.62
1:A:1835:GLN:H	1:A:1835:GLN:HE21	1.47	0.62
5:G:146:C:C2	5:G:147:C:C5	2.87	0.62
7:C:531:TRP:HB2	7:C:551:LEU:HB2	1.81	0.62
1:A:1787:ARG:CG	11:9:273:ILE:HG23	2.30	0.62
5:G:146:C:H2'	5:G:147:C:H6	1.65	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:1:179:GLY:O	42:1:182:LYS:N	2.33	0.62
1:A:1635:TYR:CZ	1:A:2244:LYS:C	2.73	0.62
22:W:107:PRO:HG3	22:W:129:SER:HA	1.81	0.62
12:J:530:ILE:O	12:J:533:LEU:CG	2.48	0.62
12:J:658:ARG:O	12:J:662:LYS:N	2.31	0.62
1:A:919:ASP:OD2	1:A:1012:LYS:NZ	2.33	0.62
1:A:1026:ASN:HD22	1:A:1031:ILE:HG13	1.62	0.62
1:A:1787:ARG:HG3	11:9:273:ILE:HG23	1.81	0.62
1:A:2067:PHE:O	1:A:2071:THR:CA	2.48	0.62
28:H:143:A:H2'	28:H:144:C:C6	2.35	0.62
48:4:77:ILE:O	48:4:84:ILE:N	2.32	0.62
1:A:1418:ARG:HE	1:A:1464:LEU:HA	1.64	0.62
2:I:10:C:OP2	12:J:449:ARG:NH1	2.33	0.62
7:C:476:CYS:HB3	7:C:565:ILE:HB	1.81	0.62
1:A:1798:LEU:HD12	1:A:1798:LEU:N	2.15	0.61
3:B:95:G:H2'	3:B:95:G:N3	2.15	0.61
5:G:146:C:C2'	5:G:147:C:H5'	2.30	0.61
7:C:277:LYS:NZ	7:C:864:PRO:O	2.31	0.61
43:3:586:ASP:O	43:3:610:VAL:N	2.32	0.61
1:A:1732:LYS:HD2	11:9:328:GLN:HG3	1.82	0.61
11:9:120:ILE:HA	23:A0:17:LYS:HZ2	1.62	0.61
42:1:784:MET:O	42:1:787:ILE:N	2.34	0.61
42:1:914:PHE:O	42:1:917:VAL:N	2.32	0.61
49:D:1899:LEU:C	49:D:1952:ALA:O	2.37	0.61
28:H:112:G:H2'	28:H:113:G:H8	1.65	0.61
28:H:142:C:C2'	28:H:143:A:H5'	2.30	0.61
42:1:88:VAL:CA	42:1:92:ASN:H	2.13	0.61
42:1:897:LEU:O	42:1:900:PHE:N	2.34	0.61
42:1:981:TYR:O	42:1:984:GLU:N	2.20	0.61
43:3:973:GLY:HA3	43:3:976:LYS:O	2.00	0.61
1:A:200:ASP:OD1	1:A:240:ARG:NH2	2.34	0.61
1:A:474:ARG:NH2	3:B:14:U:OP2	2.33	0.61
5:G:146:C:O2'	5:G:147:C:H5'	2.00	0.61
8:N:297:LEU:HD21	11:9:282:LEU:HD23	1.82	0.61
10:L:115:ARG:NH2	10:L:126:GLU:CD	2.53	0.61
5:G:155:U:H5''	5:G:156:U:H5''	1.83	0.61
28:H:157:G:H5''	28:H:157:G:H8	1.65	0.61
4:F:36:A:C1'	4:F:37:C:H5	2.11	0.61
5:G:146:C:H2'	5:G:147:C:C6	2.35	0.61
4:F:35:A:P	4:F:35:A:C8	2.94	0.61
42:1:895:GLY:O	42:1:898:TYR:N	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:106:MET:O	1:A:114:ARG:NH1	2.34	0.61
3:B:77:G:O2'	3:B:78:U:O5'	2.19	0.61
4:F:78:A:H5'	4:F:78:A:H8	1.63	0.61
5:G:150:U:H4'	5:G:151:C:OP2	1.98	0.61
7:C:711:ARG:HH12	7:C:730:ARG:HG2	1.65	0.61
8:N:856:LYS:O	8:N:860:ALA:CB	2.49	0.61
1:A:68:LYS:O	1:A:72:ASP:CG	2.39	0.61
23:A0:73:GLN:C	25:Z:24:ILE:CB	2.69	0.61
42:1:862:GLU:O	42:1:865:ARG:N	2.33	0.60
1:A:301:LYS:NZ	7:C:939:ARG:O	2.34	0.60
2:I:25:A:C4'	2:I:26:G:O5'	2.42	0.60
5:G:128:U:H2'	5:G:129:G:H8	1.66	0.60
27:Y:395:GLY:H	49:D:1003:GLN:CA	2.12	0.60
42:1:551:LEU:O	42:1:554:LYS:N	2.34	0.60
1:A:702:LYS:HE2	1:A:704:ASN:HB3	1.84	0.60
1:A:1413:ASP:O	1:A:1418:ARG:NH1	2.35	0.60
1:A:1635:TYR:CZ	1:A:2245:GLY:N	2.69	0.60
8:N:856:LYS:O	8:N:860:ALA:HB3	2.02	0.60
43:3:550:ASN:N	43:3:553:GLN:O	2.27	0.60
5:G:136:U:H1'	5:G:137:C:P	2.41	0.60
11:9:127:ARG:HH22	23:A0:19:ASN:CB	2.14	0.60
42:1:953:ASP:O	42:1:956:SER:N	2.34	0.60
1:A:901:LEU:HD13	1:A:1239:ARG:HE	1.66	0.60
5:G:125:C:O2'	5:G:126:C:OP2	2.16	0.60
42:1:1125:PRO:O	42:1:1128:VAL:N	2.35	0.60
28:H:153:A:N6	28:H:177:A:H2	1.98	0.60
42:1:610:ILE:O	42:1:613:MET:N	2.34	0.60
5:G:128:U:O5'	5:G:128:U:H6	1.84	0.60
7:C:508:LYS:HE3	7:C:568:PRO:HA	1.84	0.60
1:A:537:LYS:HD2	8:N:30:THR:HG23	1.82	0.60
1:A:721:LYS:O	1:A:781:ARG:NH1	2.33	0.60
6:O:30:PHE:O	6:O:79:CYS:HA	1.99	0.60
7:C:339:PHE:O	7:C:343:LEU:HB2	2.02	0.60
7:C:685:ILE:HB	7:C:815:VAL:HG21	1.84	0.60
28:H:106:G:N2	28:H:107:A:C6	2.67	0.59
43:3:664:TYR:CA	43:3:677:THR:O	2.50	0.59
49:D:996:ASP:C	49:D:1022:SER:H	2.05	0.59
1:A:609:LYS:CD	50:A:3000:IHP:O24	2.50	0.59
5:G:146:C:O2	28:H:33:G:C4	2.55	0.59
11:9:261:HIS:CE1	11:9:291:ASN:CA	2.72	0.59
11:9:290:VAL:HG11	11:9:295:VAL:HG23	1.82	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:3:15:SER:N	43:3:33:SER:O	2.35	0.59
2:I:42:C:OP1	9:M:48:ARG:NH2	2.32	0.59
2:I:75:C:H1'	49:D:570:THR:C	2.14	0.59
7:C:174:GLU:OE2	7:C:536:ARG:NH2	2.34	0.59
22:W:29:ILE:HA	22:W:144:ILE:HA	1.83	0.59
42:1:929:LEU:O	42:1:932:ILE:N	2.34	0.59
42:1:1109:ARG:O	42:1:1110:VAL:C	2.41	0.59
49:D:1006:LYS:O	49:D:1107:LEU:CA	2.49	0.59
11:9:261:HIS:HE1	11:9:291:ASN:CB	2.12	0.59
27:Y:334:HIS:HA	27:Y:342:LEU:H	1.67	0.59
1:A:211:GLN:OE1	1:A:214:ARG:NH1	2.35	0.59
1:A:1575:GLN:NE2	4:F:47:A:OP1	2.35	0.59
3:B:95:G:N2	3:B:96:A:H5''	2.12	0.59
1:A:1061:MET:O	1:A:1069:ASN:ND2	2.35	0.59
42:1:1109:ARG:O	42:1:1112:THR:N	2.36	0.59
42:1:1149:LYS:O	42:1:1152:SER:N	2.36	0.59
1:A:1790:ILE:CG1	11:9:266:PHE:CE2	2.83	0.59
3:B:10:U:C2	3:B:67:A:H2	2.21	0.59
3:B:77:G:HO2'	3:B:78:U:P	2.21	0.59
7:C:300:LEU:HD13	7:C:306:ASN:HB3	1.85	0.59
42:1:1182:LEU:O	42:1:1185:ARG:N	2.35	0.59
4:F:55:C:OP1	12:J:483:ARG:NH1	2.34	0.59
8:N:407:TRP:O	8:N:411:VAL:CB	2.51	0.59
1:A:72:ASP:OD1	4:F:28:A:C5'	2.50	0.59
1:A:1792:LYS:HB2	1:A:1798:LEU:HB3	1.83	0.59
2:I:71:U:C6	49:D:834:TYR:O	2.53	0.59
3:B:87:A:N6	3:B:91:U:O3'	2.35	0.59
4:F:103:U:C3'	4:F:104:U:H5''	2.31	0.59
5:G:135:G:N3	28:H:42:G:N2	2.50	0.59
23:A0:46:LYS:NZ	23:A0:67:ASN:O	2.36	0.59
1:A:609:LYS:CE	50:A:3000:IHP:O24	2.51	0.59
7:C:829:GLU:HB2	7:C:907:VAL:HG22	1.84	0.59
8:N:745:LEU:O	8:N:749:LEU:CB	2.50	0.59
44:5:67:ILE:O	44:5:70:ALA:N	2.36	0.59
1:A:1578:ARG:HB2	4:F:45:A:H5''	1.85	0.58
42:1:745:ALA:O	42:1:748:LYS:N	2.36	0.58
2:I:71:U:C6	2:I:72:U:C5	2.91	0.58
2:I:74:C:OP1	49:D:545:ARG:C	2.40	0.58
2:I:110:G:H8	2:I:110:G:O5'	1.86	0.58
2:I:118:A:H2	2:I:119:A:N6	1.84	0.58
9:M:25:LEU:HD22	9:M:119:ILE:HG13	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:1:424:ILE:O	42:1:428:ALA:N	2.36	0.58
42:1:811:LEU:O	42:1:814:PHE:N	2.36	0.58
5:G:145:U:N3	5:G:146:C:C6	2.71	0.58
27:Y:334:HIS:CB	27:Y:341:THR:HA	2.33	0.58
5:G:145:U:H3'	5:G:146:C:H5'	1.83	0.58
7:C:843:VAL:HG13	7:C:871:ILE:HD11	1.85	0.58
1:A:284:ARG:NH2	3:B:36:C:O2'	2.37	0.58
4:F:31:U:O4	5:G:16:G:O6	2.22	0.58
8:N:297:LEU:HD23	11:9:282:LEU:HD23	1.81	0.58
41:K:104:ASP:HB2	41:K:107:GLU:HB2	1.86	0.58
42:1:308:SER:O	42:1:311:ALA:N	2.35	0.58
43:3:931:VAL:O	43:3:936:LYS:N	2.31	0.58
1:A:2020:SER:CB	11:9:310:LYS:CG	2.81	0.58
8:N:875:GLY:O	8:N:879:ALA:HB2	2.03	0.58
11:9:290:VAL:HG11	11:9:295:VAL:HG22	1.84	0.58
1:A:1732:LYS:NZ	11:9:327:GLN:O	2.37	0.58
2:I:16:C:OP2	10:L:357:ARG:NH2	2.36	0.58
2:I:111:C:H2'	2:I:112:A:H8	1.69	0.58
6:O:92:ILE:O	6:O:99:ASN:ND2	2.34	0.58
47:2:596:GLU:O	47:2:598:GLU:N	2.37	0.58
11:9:257:LEU:HD23	11:9:257:LEU:O	2.04	0.58
1:A:596:TYR:CE1	5:G:-5:G:C4	2.91	0.58
1:A:1241:HIS:HB2	1:A:1287:LEU:HD21	1.85	0.58
46:7:48:ASP:O	46:7:51:ASN:N	2.37	0.58
1:A:975:VAL:HB	1:A:1177:VAL:HG12	1.84	0.57
2:I:126:A:N1	15:P:104:ASP:CA	2.67	0.57
42:1:892:LEU:O	42:1:895:GLY:N	2.37	0.57
43:3:523:GLY:CA	43:3:536:TRP:O	2.51	0.57
3:B:77:G:C2'	3:B:78:U:O5'	2.52	0.57
5:G:151:C:C5'	5:G:152:C:H5	2.17	0.57
11:9:254:LEU:H	11:9:254:LEU:CD1	2.07	0.57
11:9:259:VAL:O	11:9:259:VAL:HG12	2.02	0.57
43:3:638:GLU:N	43:3:668:GLY:O	2.32	0.57
43:3:1160:HIS:O	43:3:1163:PHE:N	2.37	0.57
1:A:118:VAL:HG21	1:A:492:VAL:HG21	1.84	0.57
1:A:698:PRO:HB2	1:A:701:ILE:HG12	1.86	0.57
2:I:10:C:OP1	12:J:453:ARG:NH1	2.37	0.57
2:I:108:C:C2'	2:I:109:G:H5'	2.34	0.57
23:A0:7:ASN:ND2	23:A0:67:ASN:OD1	2.38	0.57
27:Y:395:GLY:CA	49:D:1002:ASN:C	2.72	0.57
1:A:1732:LYS:HD2	11:9:328:GLN:CG	2.35	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:G:137:C:HO2'	5:G:138:A:H5'	1.67	0.57
7:C:301:SER:H	7:C:306:ASN:HD22	1.52	0.57
8:N:861:ARG:O	8:N:865:HIS:CB	2.52	0.57
10:L:115:ARG:HH21	10:L:126:GLU:CG	2.16	0.57
10:L:298:LYS:HD2	10:L:320:LEU:HD22	1.85	0.57
11:9:291:ASN:HD22	11:9:294:LEU:HG	1.68	0.57
5:G:149:G:C4	5:G:150:U:C6	2.93	0.57
28:H:152:G:N2	28:H:153:A:C5	2.73	0.57
42:1:491:GLU:O	42:1:494:GLU:N	2.32	0.57
1:A:97:HIS:O	1:A:100:LEU:HB3	2.05	0.57
1:A:461:HIS:HD2	3:B:27:U:H3	1.53	0.57
1:A:1995:ASN:OD1	11:9:300:ALA:HB1	2.05	0.57
22:W:47:CYS:O	41:K:122:PHE:CA	2.53	0.57
27:Y:382:GLU:O	27:Y:383:CYS:CB	2.52	0.57
1:A:980:ARG:HG2	1:A:1094:ARG:HG3	1.86	0.57
5:G:149:G:N9	5:G:150:U:C6	2.72	0.57
8:N:290:ASP:HA	10:L:402:SER:HA	1.87	0.57
1:A:1797:ASN:N	1:A:1797:ASN:OD1	2.37	0.57
2:I:121:U:C2	18:S:63:ARG:CA	2.88	0.57
10:L:427:THR:O	10:L:431:GLN:HB2	2.04	0.57
25:Z:116:CYS:O	25:Z:120:LEU:CB	2.53	0.57
41:K:205:THR:O	41:K:209:SER:N	2.36	0.57
1:A:596:TYR:CB	5:G:-5:G:N2	2.67	0.57
1:A:1342:TRP:HB2	1:A:1486:GLU:HG3	1.85	0.57
5:G:146:C:C1'	28:H:33:G:N2	2.68	0.57
10:L:409:GLN:NE2	10:L:411:GLN:OE1	2.37	0.57
11:9:329:LYS:HG3	11:9:333:ILE:HD11	1.83	0.57
28:H:152:G:N2	28:H:153:A:C8	2.73	0.57
43:3:1204:VAL:O	43:3:1207:LYS:N	2.37	0.57
8:N:362:VAL:O	8:N:365:ALA:HB3	2.04	0.56
28:H:141:C:C2	28:H:142:C:C5	2.93	0.56
1:A:1638:ASN:HB3	1:A:1652:MET:HB3	1.86	0.56
1:A:1794:PHE:HD1	11:9:268:GLU:HB2	1.69	0.56
3:B:81:U:H2'	3:B:81:U:O2	2.05	0.56
5:G:146:C:N4	5:G:147:C:H41	2.03	0.56
1:A:682:ASP:OD1	1:A:746:LYS:NZ	2.37	0.56
1:A:965:VAL:HA	1:A:1100:ARG:HE	1.69	0.56
1:A:1357:MET:HG3	11:9:155:VAL:CB	2.35	0.56
2:I:10:C:O2	12:J:518:ARG:NH1	2.36	0.56
2:I:71:U:O3'	49:D:726:HIS:O	2.24	0.56
5:G:127:U:H2'	5:G:127:U:P	2.45	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:0:300:GLU:O	24:0:304:ILE:CB	2.53	0.56
42:1:937:LEU:O	42:1:940:LEU:N	2.38	0.56
2:I:69:C:O5'	2:I:69:C:H6	1.89	0.56
3:B:87:A:C6	3:B:92:U:OP2	2.59	0.56
11:9:198:ASP:HA	11:9:202:ALA:HB3	1.87	0.56
28:H:154:C:O2'	28:H:155:C:H5'	2.04	0.56
42:1:173:ALA:C	42:1:176:ALA:H	2.09	0.56
1:A:1132:LYS:HA	1:A:1139:ARG:HH12	1.70	0.56
5:G:125:C:O2'	5:G:126:C:P	2.64	0.56
8:N:28:PHE:N	8:N:28:PHE:CD1	2.73	0.56
8:N:389:LYS:O	8:N:392:VAL:N	2.38	0.56
28:H:181:G:H2'	28:H:182:U:H6	1.71	0.56
41:K:140:VAL:O	41:K:140:VAL:HG12	2.05	0.56
43:3:42:ARG:N	43:3:51:HIS:O	2.32	0.56
43:3:931:VAL:O	43:3:935:GLU:N	2.39	0.56
1:A:110:TRP:O	1:A:192:GLN:NE2	2.39	0.56
1:A:975:VAL:HG11	1:A:1153:VAL:HG21	1.88	0.56
3:B:110:C:H2'	3:B:111:A:H8	1.70	0.56
41:K:89:GLU:HA	41:K:92:ARG:HB3	1.88	0.56
43:3:287:PHE:CA	43:3:304:GLN:O	2.53	0.56
6:O:8:LEU:HD22	6:O:13:GLN:HB3	1.87	0.56
10:L:183:GLU:OE1	10:L:186:ARG:NH1	2.38	0.56
42:1:968:GLU:O	42:1:971:MET:N	2.39	0.56
49:D:1672:LYS:CA	49:D:1885:ASN:O	2.53	0.56
1:A:1178:TYR:HA	1:A:1182:ASN:HB2	1.86	0.56
9:M:95:VAL:HG12	9:M:97:ARG:H	1.70	0.56
44:5:98:PHE:O	44:5:100:LYS:N	2.39	0.56
5:G:136:U:C1'	5:G:137:C:P	2.94	0.56
11:9:120:ILE:CG2	23:A0:1:MET:SD	2.93	0.56
41:K:137:LEU:CG	41:K:145:LEU:HD23	2.36	0.56
1:A:461:HIS:NE2	3:B:24:G:OP1	2.38	0.55
1:A:1565:LYS:HE3	5:G:1:G:H4'	1.87	0.55
1:A:1787:ARG:HG3	11:9:273:ILE:CG2	2.36	0.55
5:G:151:C:O2'	5:G:152:C:OP1	2.24	0.55
42:1:1124:SER:O	42:1:1127:THR:N	2.34	0.55
11:9:123:THR:OG1	23:A0:17:LYS:HE3	2.05	0.55
28:H:149:A:H2'	28:H:150:U:H6	1.70	0.55
1:A:635:ARG:NH2	3:B:26:A:O2'	2.38	0.55
1:A:1340:LEU:HD12	1:A:1355:SER:HB3	1.88	0.55
5:G:19:G:C1'	5:G:20:A:P	2.94	0.55
27:Y:395:GLY:N	49:D:1003:GLN:N	2.54	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:H:183:G:C4	28:H:184:C:C5	2.94	0.55
1:A:609:LYS:HZ1	50:A:3000:IHP:H3	1.71	0.55
1:A:1298:ARG:NH1	6:O:142:TYR:OH	2.39	0.55
2:I:113:C:H6	2:I:113:C:O5'	1.88	0.55
3:B:110:C:H2'	3:B:111:A:C8	2.42	0.55
44:5:109:GLN:O	44:5:112:LEU:N	2.39	0.55
2:I:108:C:H2'	2:I:109:G:C8	2.41	0.55
5:G:146:C:N3	28:H:33:G:O6	2.40	0.55
5:G:149:G:C2'	5:G:150:U:C6	2.88	0.55
5:G:151:C:O2'	5:G:151:C:O2	2.24	0.55
5:G:151:C:C1'	5:G:152:C:P	2.94	0.55
28:H:150:U:C2	28:H:151:C:C5	2.94	0.55
42:1:874:LYS:O	42:1:877:GLY:CA	2.54	0.55
1:A:1532:ARG:HH21	1:A:1571:ILE:HG22	1.72	0.55
1:A:1719:PHE:HB2	1:A:1722:SER:HB3	1.89	0.55
28:H:141:C:H2'	28:H:142:C:H6	1.71	0.55
28:H:150:U:H2'	28:H:151:C:H6	1.71	0.55
43:3:303:ALA:O	43:3:310:ILE:CA	2.55	0.55
7:C:692:LEU:HB3	7:C:696:LEU:HD12	1.88	0.55
1:A:977:LEU:HD23	1:A:1097:ILE:HD12	1.88	0.55
2:I:77:A:C5	49:D:1213:LYS:O	2.59	0.55
3:B:80:U:O2	3:B:80:U:H5''	2.07	0.55
8:N:783:SER:O	8:N:787:GLU:CB	2.54	0.55
27:Y:330:THR:HA	27:Y:346:ARG:HA	1.88	0.55
42:1:578:ILE:O	42:1:581:LEU:N	2.39	0.55
1:A:92:LEU:HD22	1:A:503:MET:HG3	1.89	0.55
1:A:240:ARG:O	1:A:243:ASN:ND2	2.40	0.55
4:F:35:A:C8	4:F:35:A:H5''	2.42	0.55
7:C:458:ASP:OD1	7:C:458:ASP:N	2.38	0.55
11:9:117:SER:HB3	23:A0:15:ARG:HE	1.71	0.55
11:9:290:VAL:HG12	11:9:291:ASN:N	2.22	0.55
28:H:149:A:C4	28:H:150:U:C5	2.95	0.55
28:H:183:G:H2'	28:H:184:C:H6	1.71	0.55
1:A:1635:TYR:CE1	1:A:2244:LYS:C	2.80	0.55
4:F:35:A:H8	4:F:35:A:H5''	1.71	0.55
8:N:353:GLN:HG3	8:N:361:VAL:HG21	1.88	0.55
42:1:557:ASP:O	42:1:560:LEU:N	2.40	0.55
3:B:67:A:N6	3:B:69:A:C8	2.75	0.54
28:H:147:G:C4	28:H:148:C:C5	2.94	0.54
41:K:131:GLU:O	41:K:135:ASN:N	2.36	0.54
42:1:849:ILE:O	42:1:852:ARG:N	2.38	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1594:CYS:O	1:A:1598:ASP:HB2	2.06	0.54
7:C:227:LEU:HB3	7:C:255:VAL:HG23	1.89	0.54
42:1:517:ARG:O	42:1:520:THR:N	2.41	0.54
49:D:1288:HIS:O	49:D:1289:LEU:C	2.46	0.54
5:G:135:G:N2	28:H:42:G:N9	2.53	0.54
5:G:149:G:C3'	5:G:150:U:H5''	2.35	0.54
42:1:641:ILE:O	42:1:644:LEU:N	2.40	0.54
11:9:120:ILE:CG2	23:A0:1:MET:HE1	2.38	0.54
28:H:181:G:C4	28:H:182:U:C5	2.95	0.54
43:3:785:PRO:CA	43:3:800:ILE:O	2.56	0.54
1:A:1125:ILE:HG23	1:A:1142:LEU:HD13	1.89	0.54
3:B:67:A:N6	3:B:69:A:H8	2.05	0.54
5:G:146:C:C2	28:H:33:G:C2	2.95	0.54
1:A:1472:THR:CG2	11:9:162:ARG:CB	2.84	0.54
11:9:119:SER:C	23:A0:17:LYS:CE	2.76	0.54
11:9:329:LYS:HA	11:9:333:ILE:CG1	2.37	0.54
27:Y:305:ALA:O	49:D:1552:LYS:O	2.25	0.54
42:1:1205:GLU:O	42:1:1208:LEU:N	2.41	0.54
28:H:179:C:H2'	28:H:180:G:C8	2.39	0.54
1:A:127:SER:OG	1:A:495:GLN:NE2	2.38	0.54
41:K:121:LEU:CB	41:K:132:ARG:HH11	2.17	0.54
43:3:589:CYS:O	43:3:608:GLY:N	2.30	0.54
49:D:1048:VAL:O	49:D:1050:GLU:N	2.40	0.54
8:N:376:TYR:HB3	8:N:396:ALA:CB	2.38	0.54
27:Y:351:PHE:H	49:D:973:ASP:CA	2.19	0.54
1:A:209:ASP:HB3	1:A:212:PRO:HA	1.90	0.54
3:B:68:C:C5	3:B:69:A:C6	2.95	0.54
28:H:147:G:H2'	28:H:148:C:C6	2.43	0.54
1:A:596:TYR:CB	5:G:-5:G:H22	2.15	0.53
1:A:1529:ILE:HD12	1:A:1532:ARG:HD3	1.90	0.53
5:G:12:G:N3	5:G:12:G:H5''	2.24	0.53
11:9:299:ARG:O	11:9:303:ASN:OD1	2.27	0.53
1:A:1034:LEU:HB2	1:A:1037:ALA:HB2	1.89	0.53
2:I:25:A:N3	2:I:25:A:H5'	2.23	0.53
11:9:261:HIS:CE1	11:9:294:LEU:HD12	2.43	0.53
2:I:119:A:H5''	16:Q:39:TYR:N	2.23	0.53
3:B:77:G:H2'	3:B:78:U:H4'	1.91	0.53
6:O:37:THR:HG21	6:O:78:PRO:HB3	1.91	0.53
28:H:153:A:C3'	28:H:154:C:C5'	2.86	0.53
42:1:1026:ASN:O	42:1:1028:HIS:N	2.41	0.53
42:1:1132:LEU:O	42:1:1135:GLU:N	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1788:VAL:HG21	11:9:289:LEU:HD13	1.89	0.53
4:F:66:C:H2'	4:F:67:G:H8	1.73	0.53
42:1:663:THR:O	42:1:666:LYS:N	2.42	0.53
42:1:929:LEU:O	42:1:930:PRO:C	2.46	0.53
3:B:99:C:H2'	3:B:100:C:C6	2.43	0.53
5:G:125:C:HO2'	5:G:126:C:P	2.32	0.53
8:N:419:ALA:O	8:N:423:LEU:CB	2.56	0.53
28:H:153:A:H3'	28:H:154:C:C5'	2.38	0.53
49:D:1007:PRO:N	49:D:1106:GLN:CA	2.67	0.53
2:I:77:A:H8	2:I:77:A:H3'	1.72	0.53
3:B:108:G:H3'	3:B:109:G:H8	1.73	0.53
5:G:130:A:O2'	5:G:131:U:H5'	2.09	0.53
42:1:1280:LEU:O	42:1:1282:ALA:N	2.42	0.53
1:A:1237:MET:HG3	1:A:1284:LEU:HD23	1.91	0.53
1:A:1900:GLU:OE1	1:A:1951:LYS:NZ	2.35	0.53
3:B:11:U:H2'	3:B:12:U:C6	2.44	0.53
7:C:258:ASN:O	7:C:259:LYS:HG2	2.05	0.53
8:N:173:ASN:OD1	8:N:173:ASN:N	2.41	0.53
1:A:579:GLN:HG3	1:A:629:PHE:H	1.73	0.53
1:A:1134:TRP:O	1:A:1139:ARG:NH2	2.42	0.53
5:G:137:C:C2'	5:G:138:A:C5'	2.87	0.53
11:9:331:ARG:O	11:9:332:SER:C	2.45	0.53
23:A0:44:LEU:HD13	23:A0:68:LEU:HD13	1.90	0.53
1:A:163:ARG:NE	1:A:576:ASP:OD2	2.39	0.53
1:A:709:ILE:O	1:A:712:HIS:HB2	2.09	0.52
2:I:71:U:C3'	49:D:726:HIS:O	2.56	0.52
7:C:589:LYS:HG3	7:C:628:VAL:HG13	1.91	0.52
42:1:244:THR:O	42:1:247:ALA:N	2.43	0.52
42:1:407:MET:CA	42:1:407:MET:H	2.06	0.52
43:3:1195:GLU:O	43:3:1198:ASP:N	2.41	0.52
1:A:902:TYR:OH	1:A:1249:MET:SD	2.68	0.52
5:G:21:A:H2'	5:G:21:A:N3	2.25	0.52
8:N:823:ARG:N	8:N:824:PRO:HD3	2.23	0.52
11:9:353:GLN:HA	11:9:353:GLN:NE2	2.23	0.52
27:Y:341:THR:O	49:D:1698:ASP:CA	2.58	0.52
43:3:914:ILE:O	43:3:918:ARG:C	2.47	0.52
1:A:376:GLU:OE2	7:C:342:ARG:NH2	2.42	0.52
1:A:474:ARG:HH21	3:B:14:U:H5''	1.75	0.52
1:A:766:THR:HG22	6:O:141:ARG:HB3	1.90	0.52
5:G:156:U:O2	5:G:156:U:H2'	2.09	0.52
27:Y:425:MET:HA	27:Y:431:ILE:HA	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:1:841:ALA:O	42:1:843:LYS:N	2.41	0.52
42:1:1025:LYS:O	42:1:1027:ARG:N	2.42	0.52
1:A:153:ARG:O	1:A:157:ASP:HB2	2.09	0.52
1:A:546:LEU:HD22	1:A:648:LEU:HD21	1.91	0.52
5:G:151:C:C5'	5:G:152:C:C5	2.91	0.52
1:A:1794:PHE:HB3	11:9:268:GLU:HG2	1.91	0.52
3:B:95:G:N3	3:B:95:G:C2'	2.73	0.52
5:G:153:C:O2	5:G:153:C:H2'	2.08	0.52
12:J:522:ALA:O	12:J:526:LYS:HB3	2.10	0.52
3:B:87:A:H61	3:B:92:U:P	2.32	0.52
10:L:163:THR:HA	10:L:166:VAL:HG12	1.92	0.52
11:9:257:LEU:N	11:9:257:LEU:CD2	2.73	0.52
1:A:1084:PRO:HB3	1:A:1101:PHE:HE1	1.75	0.52
2:I:118:A:H8	2:I:118:A:OP2	1.92	0.52
7:C:506:PRO:HA	7:C:526:THR:HA	1.91	0.52
7:C:844:SER:O	7:C:847:TYR:HB2	2.10	0.52
28:H:30:A:N3	28:H:30:A:C2'	2.73	0.52
42:1:423:PRO:O	42:1:427:PRO:N	2.43	0.52
1:A:596:TYR:HD1	5:G:-5:G:H21	1.54	0.52
1:A:1212:GLY:HA3	1:A:1280:ASN:HD21	1.74	0.52
6:O:117:GLU:HG3	10:L:346:PRO:HB3	1.92	0.52
43:3:973:GLY:HA3	43:3:976:LYS:C	2.31	0.52
1:A:828:PRO:HB2	1:A:882:LYS:HE2	1.92	0.52
1:A:1732:LYS:HZ2	11:9:328:GLN:C	2.12	0.52
1:A:1823:HIS:HD2	1:A:1910:THR:HA	1.75	0.52
2:I:78:A:H61	49:D:1212:GLU:H	1.56	0.52
4:F:36:A:O2'	4:F:37:C:H6	1.93	0.52
5:G:17:U:H2'	5:G:18:A:C8	2.44	0.52
42:1:1207:SER:O	42:1:1210:HIS:N	2.43	0.52
1:A:1806:ALA:HB1	1:A:1819:LEU:HD11	1.91	0.52
9:M:35:LEU:HD21	9:M:102:CYS:HB2	1.92	0.52
28:H:107:A:C6	28:H:108:G:C5	2.99	0.52
41:K:336:ARG:O	41:K:352:LEU:N	2.43	0.52
1:A:1086:ARG:HD2	1:A:1100:ARG:HB3	1.90	0.51
2:I:25:A:N3	2:I:25:A:C5'	2.73	0.51
3:B:78:U:O2'	3:B:79:C:O5'	2.15	0.51
5:G:150:U:O2	5:G:150:U:O2'	2.22	0.51
12:J:535:GLU:CB	12:J:587:GLY:HA3	2.39	0.51
1:A:1248:LEU:HD21	1:A:1295:ILE:HG22	1.91	0.51
1:A:1682:ALA:HB2	23:A0:59:ASP:HB3	1.93	0.51
1:A:1809:ILE:HB	1:A:1818:PHE:HB2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1850:ARG:NH2	1:A:1878:ASP:OD2	2.43	0.51
10:L:254:ALA:HA	10:L:271:THR:HB	1.92	0.51
11:9:293:ASN:O	11:9:297:LYS:CG	2.50	0.51
12:J:497:GLU:OE2	12:J:501:ARG:NH2	2.41	0.51
41:K:121:LEU:HB2	41:K:132:ARG:NH1	2.17	0.51
42:1:1129:LEU:O	42:1:1132:LEU:N	2.44	0.51
1:A:380:LEU:N	7:C:354:ARG:O	2.43	0.51
1:A:1704:ALA:O	1:A:1712:HIS:HA	2.10	0.51
2:I:120:U:O2'	17:R:82:ASP:CA	2.58	0.51
43:3:673:VAL:CA	43:3:691:THR:H	2.24	0.51
2:I:2:G:N2	4:F:73:A:N1	2.56	0.51
5:G:-11:G:H5'	5:G:-10:C:C5	2.44	0.51
8:N:326:GLN:NE2	11:9:179:LEU:CB	2.73	0.51
42:1:1109:ARG:O	42:1:1111:CYS:N	2.44	0.51
42:1:1110:VAL:O	42:1:1113:THR:N	2.43	0.51
49:D:1010:SER:C	49:D:1012:ILE:N	2.63	0.51
1:A:991:THR:HG22	10:L:261:GLY:HA3	1.92	0.51
5:G:12:G:N3	5:G:12:G:C5'	2.73	0.51
5:G:151:C:C1'	5:G:152:C:OP1	2.55	0.51
7:C:258:ASN:O	7:C:259:LYS:HG3	2.09	0.51
10:L:328:PHE:O	10:L:332:GLN:NE2	2.43	0.51
10:L:373:LYS:HD3	10:L:377:ARG:HH22	1.75	0.51
11:9:352:GLU:HG2	11:9:357:ALA:H	1.76	0.51
28:H:111:G:O3'	28:H:112:G:O4'	2.29	0.51
42:1:1094:LEU:O	42:1:1098:LEU:N	2.41	0.51
49:D:1001:TYR:O	49:D:1005:LEU:N	2.44	0.51
1:A:1244:VAL:HG11	1:A:1291:CYS:HB3	1.91	0.51
1:A:1790:ILE:CG1	11:9:272:MET:O	2.59	0.51
7:C:263:LEU:HG	7:C:269:LEU:HD12	1.92	0.51
10:L:179:LEU:HD22	10:L:183:GLU:HG2	1.93	0.51
13:U:18:ARG:N	13:U:81:THR:O	2.40	0.51
1:A:1418:ARG:NH2	1:A:1464:LEU:O	2.44	0.51
7:C:682:LYS:HE3	7:C:803:ARG:HD3	1.92	0.51
43:3:546:LYS:O	43:3:556:ILE:CA	2.58	0.51
43:3:699:VAL:CA	43:3:715:MET:O	2.59	0.51
11:9:328:GLN:HE22	11:9:330:PRO:HG2	1.76	0.51
1:A:1852:LEU:HD23	1:A:1856:GLU:HB3	1.92	0.51
1:A:1860:GLN:HE21	1:A:1885:LYS:HE2	1.76	0.51
7:C:135:CYS:SG	7:C:136:GLY:N	2.84	0.51
10:L:255:GLN:HB2	10:L:271:THR:HG22	1.93	0.51
11:9:117:SER:HB3	23:A0:15:ARG:NE	2.25	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:9:261:HIS:NE2	11:9:290:VAL:CG1	2.72	0.51
44:5:46:ARG:N	44:5:63:VAL:O	2.44	0.51
46:7:37:ARG:O	46:7:40:TYR:N	2.44	0.51
3:B:68:C:H3'	3:B:68:C:O2	2.11	0.51
8:N:418:ASP:O	8:N:422:MET:CB	2.58	0.51
11:9:329:LYS:HG3	11:9:333:ILE:HD13	1.75	0.51
41:K:137:LEU:HD22	41:K:143:ASP:O	2.11	0.51
42:1:528:ALA:O	42:1:531:LEU:N	2.44	0.51
1:A:1594:CYS:HB2	1:A:1611:LYS:HD2	1.92	0.50
3:B:98:G:H2'	3:B:99:C:C6	2.47	0.50
7:C:224:GLY:HA3	7:C:438:ILE:HD12	1.92	0.50
11:9:252:ARG:HD2	11:9:254:LEU:HD21	1.93	0.50
26:8:105:GLN:O	26:8:110:MET:N	2.34	0.50
28:H:164:C:H5'	28:H:164:C:C6	2.44	0.50
42:1:629:ALA:O	42:1:632:PHE:N	2.45	0.50
42:1:747:LEU:O	42:1:748:LYS:C	2.48	0.50
1:A:461:HIS:CD2	3:B:27:U:H3	2.28	0.50
2:I:77:A:H3'	2:I:77:A:C8	2.46	0.50
2:I:143:U:H2'	2:I:144:G:H5''	1.92	0.50
8:N:354:PRO:O	8:N:357:THR:OG1	2.29	0.50
8:N:817:ALA:O	8:N:821:GLU:CB	2.60	0.50
11:9:118:LEU:O	23:A0:17:LYS:HE3	2.11	0.50
42:1:804:ASN:O	42:1:807:LYS:N	2.44	0.50
1:A:1275:ARG:HD2	1:A:1375:TRP:CE2	2.46	0.50
2:I:111:C:H2'	2:I:112:A:C8	2.46	0.50
3:B:100:C:H2'	3:B:101:U:C6	2.46	0.50
5:G:146:C:H2'	5:G:147:C:H5'	1.91	0.50
7:C:137:HIS:HA	7:C:238:ASN:HB3	1.94	0.50
11:9:260:GLU:CB	11:9:290:VAL:CG2	2.90	0.50
42:1:771:LEU:O	42:1:774:ILE:N	2.43	0.50
42:1:963:LYS:O	42:1:966:GLN:N	2.30	0.50
43:3:1195:GLU:C	43:3:1198:ASP:H	2.14	0.50
1:A:1314:VAL:HG23	1:A:1478:LEU:HD22	1.94	0.50
1:A:1732:LYS:CG	11:9:332:SER:OG	2.54	0.50
3:B:9:G:H2'	3:B:10:U:C6	2.46	0.50
7:C:700:ILE:O	7:C:740:THR:OG1	2.27	0.50
27:Y:343:LYS:HA	49:D:1699:GLU:CA	2.41	0.50
42:1:86:ALA:C	42:1:89:ALA:H	2.11	0.50
43:3:488:GLY:C	43:3:490:THR:H	2.14	0.50
1:A:1123:GLU:O	1:A:1126:VAL:HB	2.12	0.50
4:F:36:A:O2'	4:F:37:C:C6	2.65	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:G:152:C:H6	5:G:152:C:H3'	1.76	0.50
7:C:137:HIS:HB3	7:C:140:HIS:CE1	2.46	0.50
7:C:474:LEU:HG	7:C:499:GLY:HA3	1.93	0.50
42:1:1035:CYS:O	42:1:1038:LEU:N	2.44	0.50
42:1:1188:ALA:O	42:1:1191:VAL:N	2.45	0.50
1:A:1180:LYS:O	1:A:1201:ARG:NH2	2.44	0.50
1:A:1596:VAL:CG2	11:9:328:GLN:OE1	2.60	0.50
2:I:120:U:H3'	2:I:120:U:H6	1.77	0.50
5:G:149:G:H21	5:G:150:U:H5'	1.77	0.50
8:N:875:GLY:O	8:N:879:ALA:CB	2.60	0.50
41:K:369:TYR:N	41:K:383:GLY:O	2.45	0.50
42:1:1268:ILE:O	42:1:1271:SER:N	2.44	0.50
1:A:1386:TRP:HE1	1:A:1417:PRO:HD2	1.77	0.50
1:A:1544:ARG:HD2	1:A:1671:TYR:HB3	1.94	0.50
1:A:1835:GLN:NE2	1:A:1835:GLN:N	2.60	0.50
3:B:67:A:H2'	3:B:68:C:H5'	1.92	0.50
5:G:149:G:C2'	5:G:150:U:H6	2.23	0.50
5:G:155:U:HO2'	5:G:156:U:P	2.24	0.50
7:C:137:HIS:HB2	7:C:239:THR:HG23	1.93	0.50
8:N:782:GLU:O	8:N:786:LEU:CB	2.60	0.50
42:1:699:GLN:O	42:1:700:LYS:C	2.48	0.50
49:D:1006:LYS:CA	49:D:1107:LEU:N	2.74	0.50
1:A:266:SER:OG	1:A:271:MET:O	2.29	0.50
1:A:300:ASN:HB3	7:C:939:ARG:HH12	1.77	0.50
1:A:1920:TYR:HB3	1:A:1924:LEU:HD23	1.94	0.50
2:I:77:A:H4'	49:D:575:LEU:O	2.12	0.50
3:B:78:U:O2	3:B:78:U:H2'	2.11	0.50
4:F:35:A:H8	4:F:35:A:C5'	2.25	0.50
7:C:215:VAL:HG11	7:C:242:LEU:HD21	1.93	0.50
8:N:355:GLY:O	8:N:358:ALA:HB3	2.12	0.50
42:1:1080:THR:O	42:1:1083:TYR:N	2.44	0.50
1:A:850:TYR:OH	1:A:863:GLU:OE1	2.30	0.49
8:N:297:LEU:HD21	11:9:282:LEU:CD2	2.39	0.49
23:A0:14:VAL:HG13	23:A0:34:GLN:HG2	1.92	0.49
1:A:1310:ARG:NH2	1:A:1338:SER:OG	2.44	0.49
1:A:1773:SER:OG	1:A:1774:ASN:N	2.45	0.49
1:A:1786:TYR:HB3	11:9:276:LEU:CD1	2.38	0.49
4:F:74:U:H2'	4:F:75:G:H8	1.77	0.49
5:G:21:A:H2	5:G:22:C:C5	2.26	0.49
7:C:693:GLU:H	7:C:696:LEU:HD12	1.76	0.49
11:9:290:VAL:CG1	11:9:291:ASN:N	2.74	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:Y:394:ALA:HA	49:D:1003:GLN:CA	2.42	0.49
1:A:609:LYS:HZ2	50:A:3000:IHP:H3	1.77	0.49
5:G:152:C:O2'	5:G:153:C:O5'	2.30	0.49
7:C:343:LEU:O	7:C:368:SER:OG	2.22	0.49
11:9:260:GLU:OE1	11:9:288:VAL:CG1	2.59	0.49
43:3:1194:SER:O	43:3:1199:ARG:N	2.35	0.49
1:A:292:ASP:OD1	1:A:292:ASP:N	2.44	0.49
1:A:858:GLN:OE1	1:A:861:ARG:NH1	2.44	0.49
4:F:24:A:H4'	4:F:26:U:H1'	1.94	0.49
7:C:262:ARG:NE	7:C:266:GLU:OE1	2.45	0.49
43:3:596:PRO:O	43:3:598:GLY:N	2.46	0.49
49:D:1530:PHE:H	49:D:1707:GLN:C	2.16	0.49
1:A:1821:ILE:HD13	1:A:1906:ILE:HG12	1.95	0.49
7:C:233:GLU:OE1	7:C:837:GLN:NE2	2.45	0.49
23:A0:5:VAL:O	23:A0:67:ASN:ND2	2.46	0.49
1:A:788:GLN:HG2	1:A:1024:HIS:HB3	1.94	0.49
3:B:98:G:H2'	3:B:99:C:H6	1.77	0.49
4:F:36:A:C2'	4:F:37:C:O5'	2.60	0.49
5:G:6:A:H2'	5:G:7:G:H8	1.78	0.49
28:H:107:A:C2	28:H:108:G:C4	3.01	0.49
1:A:511:LYS:NZ	8:N:30:THR:HG21	2.27	0.49
1:A:1014:ASN:HD22	10:L:262:PHE:HB2	1.77	0.49
1:A:1732:LYS:CD	11:9:332:SER:CB	2.81	0.49
5:G:19:G:H1'	5:G:20:A:OP2	2.12	0.49
4:F:51:U:O2'	4:F:53:A:OP2	2.30	0.49
27:Y:395:GLY:N	49:D:1002:ASN:C	2.66	0.49
41:K:125:GLY:H	41:K:128:GLU:HB3	1.78	0.49
42:1:553:VAL:O	42:1:556:ILE:N	2.46	0.49
42:1:793:LYS:O	42:1:797:GLY:CA	2.54	0.49
1:A:641:MET:HA	1:A:644:ILE:HG22	1.95	0.49
1:A:1661:TRP:CE2	1:A:1700:GLY:HA3	2.48	0.49
2:I:138:G:OP2	19:T:24:THR:O	2.31	0.49
1:A:420:ARG:HH21	1:A:422:LEU:HD12	1.77	0.49
1:A:608:LEU:HD13	1:A:632:ALA:HB1	1.94	0.49
2:I:57:G:O2'	12:J:461:GLN:NE2	2.46	0.49
2:I:77:A:C8	2:I:77:A:C3'	2.96	0.49
5:G:146:C:C2	5:G:147:C:H5	2.30	0.49
1:A:1146:ASP:HB2	1:A:1177:VAL:HG21	1.95	0.48
3:B:92:U:H3'	3:B:92:U:H6	1.77	0.48
7:C:261:ASP:HA	7:C:264:ILE:HG12	1.95	0.48
11:9:329:LYS:HG2	11:9:333:ILE:HD12	1.72	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:1:177:LYS:O	42:1:180:GLU:N	2.46	0.48
42:1:1227:ILE:O	42:1:1230:VAL:N	2.46	0.48
43:3:430:GLY:O	43:3:433:SER:N	2.31	0.48
49:D:1007:PRO:N	49:D:1107:LEU:H	2.07	0.48
5:G:-12:G:H8	5:G:-12:G:OP1	1.96	0.48
8:N:841:PRO:C	8:N:843:VAL:H	2.16	0.48
11:9:290:VAL:HG12	11:9:295:VAL:HG23	1.93	0.48
28:H:143:A:N3	28:H:143:A:C3'	2.73	0.48
1:A:1498:TRP:HB2	10:L:380:PHE:HE2	1.78	0.48
2:I:71:U:H5	2:I:72:U:C4	2.31	0.48
3:B:11:U:O5'	3:B:11:U:H6	1.95	0.48
12:J:536:ASP:H	12:J:587:GLY:N	2.11	0.48
12:J:536:ASP:N	12:J:587:GLY:HA3	2.26	0.48
42:1:237:GLY:O	42:1:239:ALA:N	2.45	0.48
43:3:672:GLY:O	43:3:695:GLY:N	2.46	0.48
47:2:491:LEU:O	47:2:493:ALA:N	2.46	0.48
1:A:1807:ILE:HB	1:A:1820:LYS:HB3	1.96	0.48
2:I:76:C:H1'	49:D:575:LEU:CA	2.43	0.48
3:B:46:U:O4	3:B:47:A:N6	2.47	0.48
5:G:149:G:H3'	5:G:149:G:N3	2.28	0.48
1:A:1321:GLU:HG3	10:L:383:ILE:HG13	1.95	0.48
3:B:9:G:O5'	3:B:9:G:N3	2.46	0.48
28:H:153:A:C2'	28:H:154:C:C5'	2.86	0.48
42:1:625:ARG:O	42:1:628:THR:N	2.46	0.48
42:1:631:ALA:O	42:1:634:VAL:N	2.46	0.48
42:1:944:SER:O	42:1:946:LYS:N	2.38	0.48
42:1:226:HIS:O	42:1:229:SER:N	2.46	0.48
1:A:1437:ARG:NH1	1:A:1455:TRP:O	2.45	0.48
1:A:2004:GLN:OE1	12:J:491:GLN:NE2	2.46	0.48
8:N:146:LYS:HA	8:N:149:LEU:HD12	1.96	0.48
10:L:97:ASN:HD21	10:L:232:MET:HG2	1.79	0.48
1:A:1788:VAL:CG2	11:9:289:LEU:HD13	2.44	0.48
5:G:20:A:N3	5:G:20:A:C2'	2.75	0.48
6:O:85:PHE:O	6:O:88:LYS:HB3	2.14	0.48
11:9:261:HIS:CE1	11:9:290:VAL:HG12	2.46	0.48
1:A:1819:LEU:HD21	1:A:1906:ILE:HD11	1.96	0.48
1:A:2017:SER:OG	11:9:303:ASN:CB	2.59	0.48
5:G:135:G:C2	28:H:42:G:C5	3.02	0.48
41:K:137:LEU:HD11	41:K:145:LEU:HG	1.95	0.48
1:A:843:LEU:HD22	1:A:867:ILE:HG23	1.95	0.48
5:G:143:U:C6	5:G:143:U:C5'	2.89	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:C:774:THR:HA	7:C:784:ILE:HD12	1.94	0.48
2:I:110:G:H2'	2:I:111:C:C6	2.49	0.47
5:G:153:C:H4'	5:G:153:C:OP1	2.14	0.47
7:C:221:ILE:O	7:C:495:ARG:NH1	2.47	0.47
7:C:236:MET:O	7:C:239:THR:OG1	2.28	0.47
8:N:449:ALA:O	8:N:453:LEU:CB	2.62	0.47
9:M:52:GLU:N	9:M:104:VAL:O	2.45	0.47
1:A:1278:VAL:HG13	1:A:1284:LEU:HD12	1.96	0.47
3:B:111:A:H2'	3:B:112:A:C8	2.49	0.47
7:C:594:PRO:HG3	7:C:600:LEU:HA	1.95	0.47
8:N:172:ARG:NH2	10:L:338:LYS:HE2	2.30	0.47
10:L:245:PRO:HG2	10:L:248:ASN:HD22	1.79	0.47
28:H:151:C:C2	28:H:152:G:N7	2.82	0.47
46:7:36:HIS:O	46:7:37:ARG:C	2.53	0.47
1:A:92:LEU:HB2	1:A:656:LEU:HD11	1.96	0.47
1:A:1422:LEU:HB3	8:N:200:VAL:HG21	1.96	0.47
1:A:1549:VAL:HG23	23:A0:67:ASN:HB2	1.96	0.47
2:I:73:U:O4	49:D:1079:ALA:C	2.52	0.47
4:F:45:A:N7	4:F:47:A:N6	2.61	0.47
4:F:78:A:C8	4:F:78:A:C5'	2.87	0.47
49:D:1824:ILE:C	49:D:1825:ASN:O	2.52	0.47
1:A:1666:LEU:HD23	1:A:1705:ILE:HB	1.95	0.47
8:N:376:TYR:HB3	8:N:396:ALA:HB1	1.96	0.47
22:W:176:GLU:O	41:K:120:THR:CA	2.63	0.47
28:H:150:U:H2'	28:H:151:C:C6	2.50	0.47
42:1:978:LEU:O	42:1:979:TYR:C	2.51	0.47
43:3:558:LEU:O	43:3:561:GLY:CA	2.63	0.47
1:A:338:VAL:N	7:C:266:GLU:OE2	2.43	0.47
1:A:686:ARG:HH21	1:A:710:LEU:HD11	1.79	0.47
2:I:71:U:C5'	49:D:726:HIS:O	2.58	0.47
4:F:36:A:C2'	4:F:37:C:H6	2.27	0.47
5:G:135:G:O6	28:H:41:U:O4	2.32	0.47
22:W:48:THR:HA	41:K:122:PHE:HA	1.97	0.47
41:K:121:LEU:HB3	41:K:124:GLU:HB3	1.96	0.47
43:3:923:GLY:HA3	43:3:947:GLU:O	2.14	0.47
1:A:905:LEU:H	1:A:905:LEU:HG	1.57	0.47
1:A:1606:ILE:HD13	1:A:1631:LEU:HD12	1.96	0.47
8:N:373:VAL:HG11	8:N:375:ILE:HD12	1.95	0.47
11:9:266:PHE:N	11:9:266:PHE:CD1	2.82	0.47
42:1:1280:LEU:O	42:1:1281:ILE:C	2.51	0.47
46:7:42:SER:O	46:7:45:GLY:N	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:188:LEU:HD22	1:A:567:GLY:HA2	1.96	0.47
1:A:519:ASP:HB3	1:A:525:LYS:HE2	1.95	0.47
1:A:1500:GLY:O	1:A:1756:SER:OG	2.31	0.47
2:I:80:A:H2'	2:I:80:A:N3	2.28	0.47
4:F:36:A:C2'	4:F:37:C:C6	2.98	0.47
5:G:135:G:H1	28:H:41:U:H3	1.60	0.47
6:O:72:MET:CG	8:N:28:PHE:CE1	2.97	0.47
7:C:183:SER:HB3	7:C:214:GLU:HB3	1.97	0.47
7:C:264:ILE:HG21	7:C:381:LEU:HD12	1.97	0.47
7:C:389:ASP:OD1	7:C:389:ASP:N	2.46	0.47
7:C:737:PRO:HD2	7:C:741:GLY:HA3	1.95	0.47
27:Y:499:ILE:N	27:Y:511:TRP:O	2.43	0.47
28:H:153:A:C8	28:H:154:C:H5'	2.50	0.47
28:H:183:G:H2'	28:H:184:C:C6	2.50	0.47
47:2:573:ASP:O	47:2:577:LYS:N	2.44	0.47
47:2:596:GLU:C	47:2:598:GLU:N	2.67	0.47
1:A:1124:ASN:ND2	1:A:1148:ASN:OD1	2.48	0.47
1:A:1596:VAL:HG11	1:A:1729:ALA:HB2	1.97	0.47
4:F:71:G:H2'	4:F:72:G:C8	2.50	0.47
7:C:514:TYR:HB3	7:C:576:ILE:HD11	1.97	0.47
48:4:70:ALA:O	48:4:74:MET:N	2.40	0.47
2:I:29:A:N7	9:M:97:ARG:NH1	2.63	0.47
7:C:836:VAL:HB	7:C:871:ILE:HB	1.96	0.47
12:J:535:GLU:CB	12:J:587:GLY:CA	2.92	0.47
43:3:44:ASP:O	43:3:48:GLY:HA2	2.15	0.47
1:A:99:VAL:HG13	1:A:554:THR:HG21	1.97	0.47
1:A:1189:MET:HG3	1:A:1190:CYS:H	1.80	0.47
1:A:1792:LYS:O	11:9:268:GLU:CB	2.63	0.47
2:I:76:C:O2	49:D:575:LEU:CA	2.62	0.47
7:C:592:VAL:HG21	7:C:629:ILE:HD12	1.97	0.47
27:Y:395:GLY:CA	49:D:1003:GLN:N	2.78	0.47
1:A:72:ASP:CB	4:F:28:A:H5''	2.45	0.46
1:A:224:THR:HG23	3:B:12:U:H5''	1.96	0.46
4:F:36:A:H2'	4:F:37:C:O5'	2.14	0.46
7:C:461:LEU:HD13	7:C:574:ALA:HA	1.97	0.46
7:C:614:TYR:OH	7:C:643:ASP:OD2	2.31	0.46
11:9:290:VAL:CG1	11:9:295:VAL:CG2	2.87	0.46
1:A:974:ASN:OD1	1:A:974:ASN:N	2.44	0.46
11:9:290:VAL:HG12	11:9:291:ASN:O	2.15	0.46
28:H:141:C:H2'	28:H:142:C:C6	2.50	0.46
42:1:720:GLY:O	42:1:721:ILE:C	2.54	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:108:MET:O	1:A:110:TRP:N	2.49	0.46
3:B:29:A:H2'	3:B:30:A:H8	1.81	0.46
11:9:130:LEU:HD13	23:A0:29:LYS:CD	2.38	0.46
11:9:294:LEU:HD23	11:9:297:LYS:HD2	1.96	0.46
28:H:107:A:C6	28:H:108:G:C6	3.04	0.46
42:1:103:PRO:C	42:1:106:GLU:H	2.18	0.46
1:A:443:VAL:HG12	1:A:610:HIS:HB3	1.96	0.46
1:A:1179:SER:OG	1:A:1180:LYS:N	2.48	0.46
2:I:109:G:H2'	2:I:110:G:C8	2.50	0.46
10:L:115:ARG:HE	10:L:115:ARG:HB2	1.53	0.46
42:1:693:GLY:O	42:1:695:VAL:N	2.48	0.46
45:6:93:SER:C	45:6:95:LYS:N	2.50	0.46
49:D:1672:LYS:CA	49:D:1885:ASN:CA	2.88	0.46
1:A:274:PRO:HB2	5:G:-11:G:C2'	2.45	0.46
1:A:683:LEU:HD23	6:O:39:MET:HB3	1.96	0.46
5:G:122:U:H4'	5:G:123:U:OP1	2.15	0.46
7:C:135:CYS:O	7:C:227:LEU:HA	2.15	0.46
7:C:853:ARG:NH1	7:C:879:ASP:O	2.44	0.46
10:L:269:PRO:HG2	10:L:275:TYR:CG	2.51	0.46
3:B:99:C:H2'	3:B:100:C:H6	1.79	0.46
42:1:1119:VAL:O	42:1:1122:THR:N	2.49	0.46
49:D:996:ASP:CA	49:D:1022:SER:H	2.28	0.46
1:A:494:LEU:HD21	1:A:562:VAL:HG21	1.98	0.46
7:C:619:THR:HA	7:C:628:VAL:O	2.16	0.46
8:N:188:ALA:O	8:N:192:GLN:HB2	2.16	0.46
22:W:176:GLU:O	41:K:120:THR:CB	2.64	0.46
2:I:78:A:N6	49:D:1212:GLU:H	2.12	0.46
5:G:22:C:O2	5:G:22:C:H2'	2.15	0.46
5:G:153:C:C4'	5:G:154:U:OP1	2.34	0.46
7:C:213:ASP:HB3	7:C:615:PRO:HB2	1.98	0.46
11:9:267:ARG:HB3	11:9:270:GLU:HG3	1.97	0.46
28:H:3:C:H2'	28:H:4:G:C8	2.51	0.46
42:1:210:ALA:O	42:1:213:LYS:N	2.48	0.46
42:1:257:THR:O	42:1:259:SER:N	2.49	0.46
6:O:72:MET:CG	8:N:28:PHE:HE1	2.29	0.46
28:H:142:C:H2'	28:H:143:A:H5'	1.98	0.46
28:H:149:A:H2'	28:H:150:U:C6	2.50	0.46
42:1:429:ARG:O	42:1:432:THR:N	2.46	0.46
1:A:702:LYS:HB3	1:A:705:LYS:HZ3	1.81	0.46
4:F:36:A:C1'	4:F:37:C:C5	2.94	0.46
7:C:710:ASN:HD22	7:C:711:ARG:H	1.64	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:1:1243:PRO:O	42:1:1244:CYS:C	2.55	0.46
1:A:300:ASN:HB3	7:C:939:ARG:NH1	2.31	0.45
6:O:73:TYR:HD2	8:N:28:PHE:CE2	2.34	0.45
7:C:255:VAL:HG12	7:C:300:LEU:HD12	1.98	0.45
7:C:617:LEU:HD11	7:C:629:ILE:HG23	1.99	0.45
7:C:846:VAL:HG22	7:C:887:LEU:HD11	1.98	0.45
8:N:369:LEU:O	8:N:371:GLN:N	2.46	0.45
10:L:121:ARG:NH2	10:L:144:ASN:O	2.39	0.45
11:9:263:ILE:CG2	11:9:264:ASP:N	2.78	0.45
11:9:328:GLN:NE2	11:9:330:PRO:HG2	2.31	0.45
22:W:174:CYS:O	41:K:122:PHE:CB	2.53	0.45
42:1:803:ALA:O	42:1:804:ASN:C	2.54	0.45
42:1:939:ARG:O	42:1:940:LEU:C	2.51	0.45
46:7:62:ALA:O	46:7:65:ARG:N	2.50	0.45
1:A:638:LEU:HD23	1:A:638:LEU:HA	1.73	0.45
1:A:1995:ASN:O	11:9:307:ARG:NH1	2.49	0.45
8:N:167:ARG:HB2	8:N:171:GLN:HG3	1.98	0.45
8:N:376:TYR:CE2	8:N:396:ALA:HA	2.52	0.45
28:H:152:G:O2'	28:H:153:A:H1'	2.16	0.45
41:K:121:LEU:O	41:K:124:GLU:CD	2.53	0.45
42:1:862:GLU:O	42:1:863:GLN:C	2.55	0.45
1:A:1130:ASN:HA	1:A:1174:PHE:HE1	1.80	0.45
42:1:892:LEU:O	42:1:893:ILE:C	2.54	0.45
1:A:975:VAL:HG13	1:A:1099:PHE:HB2	1.98	0.45
2:I:79:U:H5''	2:I:79:U:O2	2.16	0.45
5:G:149:G:N3	5:G:150:U:H5''	2.31	0.45
7:C:514:TYR:N	7:C:521:ASP:OD2	2.49	0.45
7:C:604:LEU:HD21	7:C:627:HIS:CE1	2.51	0.45
7:C:854:ARG:HE	7:C:876:PRO:HG2	1.80	0.45
8:N:294:ALA:HB2	10:L:407:VAL:HG13	1.98	0.45
8:N:512:GLU:O	8:N:516:ALA:HB3	2.16	0.45
11:9:123:THR:HB	23:A0:17:LYS:HZ2	1.81	0.45
42:1:708:ALA:O	42:1:709:ILE:C	2.54	0.45
45:6:46:CYS:O	45:6:50:ASN:N	2.43	0.45
1:A:84:ASP:O	1:A:87:VAL:HB	2.17	0.45
1:A:1963:GLU:HG3	1:A:1965:HIS:H	1.81	0.45
2:I:25:A:C4'	2:I:26:G:H5'	2.42	0.45
11:9:255:GLN:HB2	11:9:257:LEU:CD2	2.47	0.45
23:A0:73:GLN:HA	25:Z:24:ILE:CB	2.46	0.45
28:H:180:G:H2'	28:H:181:G:H8	1.81	0.45
18:S:22:ASN:N	18:S:66:SER:O	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:1:687:VAL:O	42:1:690:ILE:N	2.50	0.45
1:A:1072:LEU:HD22	1:A:1087:LEU:HD22	1.99	0.45
1:A:1732:LYS:CE	11:9:328:GLN:CB	2.93	0.45
1:A:1776:ILE:HB	1:A:1858:PRO:HA	1.99	0.45
2:I:40:U:O2'	8:N:825:GLN:CB	2.64	0.45
7:C:743:ASN:ND2	7:C:784:ILE:O	2.49	0.45
11:9:255:GLN:O	11:9:351:LEU:HD12	2.17	0.45
43:3:672:GLY:O	43:3:691:THR:N	2.49	0.45
43:3:1141:PHE:O	43:3:1144:VAL:N	2.49	0.45
49:D:1349:GLY:HA2	49:D:1491:SER:O	2.16	0.45
1:A:136:ILE:HG22	1:A:138:PRO:HD2	1.99	0.45
1:A:1794:PHE:CD1	1:A:1794:PHE:N	2.72	0.45
2:I:115:G:H2'	2:I:116:G:C8	2.52	0.45
5:G:147:C:N3	28:H:31:G:O6	2.50	0.45
7:C:604:LEU:HD23	7:C:607:LEU:HD12	1.99	0.45
7:C:631:GLY:HA3	7:C:637:LEU:HD21	1.99	0.45
10:L:180:SER:H	10:L:183:GLU:HB3	1.80	0.45
11:9:351:LEU:N	11:9:351:LEU:HD23	2.30	0.45
1:A:318:TYR:HD1	7:C:645:ARG:HH11	1.64	0.45
4:F:36:A:OP2	5:G:11:A:N7	2.50	0.45
4:F:44:G:N3	5:G:3:A:N6	2.65	0.45
42:1:708:ALA:O	42:1:711:ALA:N	2.49	0.45
3:B:9:G:O2'	3:B:10:U:O4'	2.35	0.45
4:F:35:A:C8	4:F:35:A:OP2	2.70	0.45
7:C:500:THR:HG22	7:C:545:PRO:HA	1.99	0.45
7:C:831:TYR:HB2	7:C:903:HIS:O	2.17	0.45
23:A0:3:GLU:O	23:A0:65:GLY:N	2.45	0.45
41:K:101:VAL:HG11	41:K:145:LEU:HD22	1.99	0.45
42:1:501:LEU:O	42:1:502:LEU:C	2.55	0.45
42:1:1078:VAL:O	42:1:1081:PHE:N	2.50	0.45
43:3:215:LEU:O	43:3:218:ASN:N	2.50	0.45
43:3:663:LEU:O	43:3:678:VAL:CA	2.65	0.45
1:A:1763:LEU:HD21	1:A:1771:LEU:HD12	1.98	0.45
1:A:1931:THR:HG21	12:J:497:GLU:HB2	1.98	0.45
27:Y:341:THR:O	49:D:1698:ASP:C	2.55	0.45
28:H:59:A:H2'	28:H:60:U:O4'	2.17	0.45
42:1:974:LEU:O	42:1:975:GLY:C	2.54	0.45
1:A:1136:ARG:HA	1:A:1139:ARG:HE	1.82	0.44
1:A:1655:THR:OG1	1:A:1656:THR:N	2.50	0.44
4:F:33:G:N2	5:G:14:A:N1	2.50	0.44
5:G:146:C:C4	5:G:147:C:N4	2.73	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:C:560:VAL:HG12	7:C:561:LYS:H	1.82	0.44
11:9:328:GLN:CA	11:9:328:GLN:HE21	2.31	0.44
28:H:114:A:H2'	28:H:115:G:H8	1.81	0.44
41:K:108:VAL:HG13	41:K:133:LEU:HD12	1.99	0.44
42:1:693:GLY:O	42:1:694:LEU:C	2.55	0.44
1:A:162:LYS:NZ	1:A:573:GLN:OE1	2.50	0.44
1:A:1248:LEU:HD23	1:A:1248:LEU:HA	1.84	0.44
1:A:1794:PHE:HD1	11:9:268:GLU:CB	2.30	0.44
1:A:1823:HIS:H	1:A:1912:PRO:HG3	1.81	0.44
2:I:118:A:OP2	2:I:118:A:C8	2.71	0.44
4:F:67:G:H5'	12:J:519:LYS:HB2	1.98	0.44
5:G:-12:G:OP1	5:G:-12:G:C8	2.71	0.44
5:G:13:C:H2'	5:G:14:A:H8	1.82	0.44
5:G:148:U:O3'	5:G:149:G:O4'	2.35	0.44
7:C:299:ILE:O	7:C:306:ASN:ND2	2.50	0.44
8:N:382:LEU:H	8:N:382:LEU:CD2	2.30	0.44
28:H:143:A:OP2	28:H:143:A:C2	2.71	0.44
42:1:833:LEU:O	42:1:834:VAL:C	2.56	0.44
1:A:387:PHE:HE1	7:C:330:THR:HG21	1.83	0.44
2:I:91:A:H2'	2:I:92:C:C6	2.53	0.44
2:I:127:C:O5'	2:I:127:C:C6	2.70	0.44
3:B:81:U:C6	3:B:81:U:O5'	2.70	0.44
4:F:91:A:H2'	4:F:92:A:H8	1.82	0.44
7:C:736:GLY:HA3	7:C:737:PRO:HD3	1.83	0.44
9:M:13:LEU:HD11	9:M:84:ARG:HG2	2.00	0.44
12:J:532:LYS:O	12:J:533:LEU:C	2.56	0.44
28:H:40:C:C5'	28:H:40:C:C6	2.92	0.44
15:P:109:VAL:N	16:Q:63:LEU:O	2.42	0.44
42:1:629:ALA:O	42:1:630:ARG:C	2.56	0.44
42:1:660:ALA:O	42:1:661:ARG:C	2.53	0.44
1:A:787:GLU:OE2	1:A:790:ARG:NH2	2.44	0.44
1:A:1798:LEU:CD1	11:9:356:THR:CG2	2.53	0.44
1:A:1849:ILE:O	1:A:1857:GLN:NE2	2.51	0.44
4:F:90:G:H2'	4:F:91:A:H8	1.82	0.44
4:F:91:A:H2'	4:F:92:A:C8	2.53	0.44
11:9:263:ILE:HD13	11:9:263:ILE:C	2.36	0.44
46:7:48:ASP:O	46:7:49:LEU:C	2.54	0.44
1:A:1014:ASN:ND2	10:L:265:THR:OG1	2.50	0.44
8:N:268:VAL:HG12	8:N:270:PRO:HD3	2.00	0.44
11:9:329:LYS:N	11:9:330:PRO:HD2	2.33	0.44
28:H:112:G:H2'	28:H:113:G:C8	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:1:849:ILE:O	42:1:850:ILE:C	2.54	0.44
3:B:67:A:C6	3:B:69:A:H8	2.35	0.44
4:F:55:C:OP1	12:J:480:ASN:ND2	2.45	0.44
8:N:680:LYS:HA	8:N:934:ALA:HB1	1.99	0.44
49:D:441:GLY:O	49:D:693:THR:N	2.36	0.44
1:A:278:LYS:NZ	5:G:-9:C:P	2.90	0.44
1:A:1552:GLN:HB2	23:A0:47:TRP:HD1	1.82	0.44
8:N:187:PHE:HE2	10:L:372:ARG:HG3	1.83	0.44
8:N:912:TRP:O	8:N:916:SER:CB	2.66	0.44
20:E:255:MET:C	20:E:257:ASN:H	2.21	0.44
42:1:606:LEU:O	42:1:609:MET:N	2.51	0.44
42:1:663:THR:O	42:1:664:GLY:C	2.56	0.44
1:A:965:VAL:HA	1:A:1100:ARG:HH21	1.83	0.44
3:B:68:C:C4	3:B:69:A:C5	3.05	0.44
6:O:103:ASN:N	6:O:103:ASN:OD1	2.50	0.44
7:C:678:THR:OG1	7:C:680:ASN:O	2.27	0.44
8:N:512:GLU:O	8:N:516:ALA:CB	2.66	0.44
28:H:113:G:H2'	28:H:114:A:H8	1.82	0.44
28:H:182:U:H2'	28:H:183:G:H8	1.81	0.44
43:3:406:PRO:CA	43:3:1122:LEU:O	2.65	0.44
1:A:1453:PHE:CD2	10:L:389:GLN:HB3	2.53	0.44
2:I:16:C:H2'	2:I:17:A:C8	2.53	0.44
5:G:150:U:O2'	5:G:151:C:C5	2.71	0.44
7:C:230:ASP:OD1	7:C:259:LYS:CE	2.58	0.44
7:C:320:LEU:HD12	7:C:343:LEU:HB3	2.00	0.44
7:C:725:ASP:O	7:C:729:ALA:N	2.50	0.44
12:J:522:ALA:O	12:J:526:LYS:CB	2.66	0.44
21:X:9:PRO:HB2	21:X:22:ASP:HA	1.99	0.44
28:H:153:A:H2'	28:H:154:C:H5''	1.99	0.44
41:K:133:LEU:C	41:K:133:LEU:CD2	2.85	0.44
42:1:1029:GLU:O	42:1:1032:GLN:N	2.51	0.44
1:A:1629:ILE:HB	1:A:1662:ILE:HB	1.99	0.43
1:A:1775:GLN:HB2	1:A:1859:LYS:HB3	1.99	0.43
1:A:2017:SER:CA	11:9:303:ASN:HD22	2.29	0.43
2:I:59:U:H2'	2:I:60:A:H8	1.83	0.43
3:B:67:A:C6	3:B:69:A:N7	2.85	0.43
42:1:578:ILE:O	42:1:579:GLU:C	2.57	0.43
42:1:953:ASP:O	42:1:954:LEU:C	2.56	0.43
42:1:994:LEU:O	42:1:995:GLY:C	2.56	0.43
42:1:1230:VAL:O	42:1:1233:ALA:N	2.51	0.43
43:3:676:ARG:O	43:3:686:LEU:CA	2.65	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:3:930:LEU:C	43:3:934:GLY:HA2	2.38	0.43
1:A:644:ILE:HG13	1:A:648:LEU:HD23	2.00	0.43
1:A:1817:LEU:HD23	1:A:1917:PHE:HB2	1.99	0.43
1:A:1952:VAL:HA	1:A:1955:LYS:HG2	2.00	0.43
3:B:24:G:N1	3:B:58:U:O2	2.51	0.43
5:G:149:G:C5	5:G:150:U:C4	3.05	0.43
7:C:381:LEU:HD22	7:C:416:LEU:HD11	2.00	0.43
7:C:515:THR:HG22	7:C:518:ASP:HB2	2.00	0.43
7:C:696:LEU:HD23	7:C:696:LEU:HA	1.82	0.43
28:H:154:C:O2'	28:H:155:C:C5'	2.66	0.43
28:H:181:G:H2'	28:H:182:U:C6	2.50	0.43
41:K:378:SER:O	41:K:394:LEU:N	2.37	0.43
43:3:1148:LEU:O	43:3:1151:GLU:N	2.51	0.43
1:A:362:ARG:NH1	7:C:284:GLU:OE2	2.50	0.43
1:A:855:ARG:HB3	8:N:179:LEU:HD12	2.00	0.43
1:A:1706:ASP:O	1:A:1710:ASN:N	2.51	0.43
1:A:1786:TYR:CB	11:9:276:LEU:HD11	2.43	0.43
2:I:122:U:H1'	18:S:65:ASN:CA	2.47	0.43
6:O:29:ARG:CZ	6:O:60:LEU:HD11	2.48	0.43
11:9:300:ALA:C	11:9:303:ASN:OD1	2.57	0.43
12:J:535:GLU:CG	12:J:590:ALA:H	2.30	0.43
28:H:98:G:H5'	28:H:104:U:OP2	2.19	0.43
28:H:148:C:H2'	28:H:149:A:H8	1.82	0.43
1:A:1501:LEU:H	1:A:1501:LEU:HD23	1.82	0.43
2:I:71:U:C5	2:I:72:U:C5	3.06	0.43
2:I:76:C:O2'	2:I:77:A:OP2	2.21	0.43
3:B:9:G:H2'	3:B:10:U:C5	2.54	0.43
4:F:92:A:H2'	4:F:93:G:H8	1.83	0.43
7:C:507:VAL:HA	7:C:568:PRO:HD3	1.99	0.43
7:C:507:VAL:O	7:C:524:ILE:HA	2.19	0.43
7:C:818:SER:O	7:C:822:MET:CB	2.65	0.43
11:9:328:GLN:NE2	11:9:328:GLN:CA	2.75	0.43
22:W:176:GLU:O	41:K:120:THR:N	2.52	0.43
27:Y:488:ILE:H	27:Y:503:SER:HA	1.84	0.43
42:1:955:ILE:O	42:1:956:SER:C	2.57	0.43
49:D:1530:PHE:N	49:D:1708:GLY:N	2.63	0.43
1:A:1418:ARG:HE	1:A:1464:LEU:HD23	1.83	0.43
1:A:1790:ILE:O	11:9:271:THR:HA	2.18	0.43
2:I:79:U:O2	2:I:79:U:H3'	2.19	0.43
7:C:216:THR:HG22	7:C:245:HIS:HE1	1.83	0.43
8:N:373:VAL:HB	8:N:375:ILE:H	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:N:389:LYS:C	8:N:391:ARG:N	2.72	0.43
11:9:261:HIS:CG	11:9:294:LEU:HD13	2.54	0.43
22:W:176:GLU:O	41:K:120:THR:O	2.37	0.43
43:3:318:ASP:N	43:3:321:MET:O	2.27	0.43
1:A:785:LYS:HE2	1:A:785:LYS:HB3	1.77	0.43
2:I:108:C:HO2'	2:I:109:G:H5'	1.82	0.43
3:B:89:U:C2'	3:B:90:U:H5''	2.47	0.43
42:1:665:ILE:O	42:1:668:VAL:N	2.52	0.43
42:1:667:ILE:O	42:1:668:VAL:C	2.53	0.43
42:1:705:SER:O	42:1:706:ALA:C	2.54	0.43
1:A:412:ASN:OD1	1:A:413:LEU:N	2.51	0.43
1:A:597:LYS:N	3:B:45:C:OP1	2.48	0.43
1:A:1763:LEU:HG	1:A:1862:ILE:HD13	2.01	0.43
2:I:70:U:H3'	2:I:70:U:O2	2.19	0.43
7:C:316:ILE:HA	7:C:424:PHE:HD2	1.84	0.43
11:9:332:SER:O	11:9:335:SER:OG	2.20	0.43
44:5:98:PHE:C	44:5:100:LYS:N	2.72	0.43
1:A:1354:ARG:NH1	1:A:1356:GLY:O	2.52	0.43
3:B:72:U:H2'	3:B:73:C:O4'	2.19	0.43
4:F:89:U:H2'	4:F:90:G:C8	2.53	0.43
43:3:5:ASN:O	43:3:1176:GLY:HA3	2.19	0.43
43:3:147:ASP:N	43:3:151:ARG:O	2.42	0.43
43:3:886:GLU:CA	43:3:910:ALA:O	2.67	0.43
1:A:252:ASP:N	1:A:252:ASP:OD1	2.47	0.43
1:A:1481:VAL:O	1:A:1485:LEU:HB2	2.18	0.43
3:B:68:C:C6	3:B:69:A:C2	3.07	0.43
4:F:89:U:H2'	4:F:90:G:H8	1.84	0.43
7:C:129:ILE:HG22	7:C:199:LEU:HB3	2.01	0.43
7:C:306:ASN:OD1	7:C:437:HIS:ND1	2.52	0.43
11:9:252:ARG:HB3	11:9:254:LEU:CD1	2.46	0.43
13:U:80:MET:O	14:V:59:SER:N	2.44	0.43
42:1:82:PRO:O	42:1:86:ALA:N	2.42	0.43
42:1:993:ILE:O	42:1:994:LEU:C	2.56	0.43
1:A:937:PRO:HD2	1:A:940:ILE:HD12	2.01	0.43
1:A:1593:LEU:HD23	1:A:1593:LEU:HA	1.91	0.43
2:I:75:C:O2'	49:D:571:GLY:CA	2.54	0.43
7:C:936:LYS:O	7:C:940:ARG:N	2.51	0.43
28:H:178:A:N3	28:H:178:A:H2'	2.34	0.43
42:1:627:THR:O	42:1:630:ARG:N	2.52	0.43
42:1:889:GLU:O	42:1:892:LEU:N	2.51	0.43
42:1:1110:VAL:O	42:1:1111:CYS:C	2.57	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:1:1264:VAL:O	42:1:1265:TYR:C	2.56	0.43
1:A:150:MET:SD	1:A:153:ARG:NH2	2.92	0.42
1:A:154:GLU:HG2	1:A:572:PHE:CG	2.54	0.42
1:A:511:LYS:NZ	8:N:30:THR:CG2	2.82	0.42
1:A:1666:LEU:HD22	1:A:1707:LEU:HD11	2.01	0.42
2:I:120:U:C3'	2:I:120:U:C6	3.01	0.42
3:B:49:A:H2'	3:B:50:G:H8	1.83	0.42
5:G:152:C:C2'	5:G:153:C:O5'	2.67	0.42
7:C:911:PRO:O	7:C:931:ARG:NH1	2.45	0.42
11:9:303:ASN:OD1	11:9:303:ASN:N	2.51	0.42
42:1:854:VAL:O	42:1:856:ASP:N	2.52	0.42
1:A:1542:ILE:HG23	1:A:1548:TYR:HE2	1.83	0.42
1:A:1605:GLU:HB3	1:A:1634:SER:HB3	2.02	0.42
1:A:1788:VAL:CG2	11:9:274:LEU:HB2	2.49	0.42
4:F:92:A:H2'	4:F:93:G:C8	2.54	0.42
7:C:564:THR:HG21	7:C:577:PHE:H	1.84	0.42
8:N:11:MET:HA	8:N:12:PRO:HD3	1.74	0.42
11:9:282:LEU:HD22	11:9:282:LEU:HA	1.79	0.42
28:H:64:A:H2'	28:H:65:U:C6	2.54	0.42
28:H:142:C:O2'	28:H:143:A:H5'	2.18	0.42
1:A:1798:LEU:CD1	1:A:1798:LEU:H	2.14	0.42
3:B:63:A:H2'	3:B:64:G:C8	2.54	0.42
11:9:261:HIS:ND1	11:9:294:LEU:HD12	2.34	0.42
42:1:981:TYR:O	42:1:983:GLY:N	2.53	0.42
1:A:858:GLN:NE2	10:L:421:SER:OG	2.49	0.42
1:A:1630:LEU:HD11	1:A:1659:LYS:HG3	2.01	0.42
1:A:1737:ASN:HB3	1:A:1740:LEU:HB2	2.02	0.42
1:A:1788:VAL:HG23	11:9:274:LEU:HB2	2.01	0.42
1:A:1798:LEU:HD12	11:9:356:THR:HG23	1.85	0.42
2:I:90:G:H2'	2:I:91:A:C8	2.55	0.42
2:I:119:A:H5''	16:Q:38:GLY:O	2.20	0.42
8:N:382:LEU:HD23	8:N:383:GLU:N	2.35	0.42
9:M:12:PRO:HG3	9:M:80:TYR:CE2	2.55	0.42
11:9:258:THR:CG2	11:9:349:PHE:O	2.44	0.42
27:Y:334:HIS:HA	27:Y:342:LEU:N	2.34	0.42
28:H:107:A:N1	28:H:108:G:C5	2.88	0.42
44:5:51:GLY:HA3	44:5:56:THR:O	2.19	0.42
1:A:85:LYS:O	1:A:88:TYR:HB2	2.18	0.42
1:A:177:ASP:OD1	1:A:177:ASP:N	2.46	0.42
1:A:1678:ARG:HD2	1:A:1681:ARG:HH12	1.85	0.42
2:I:110:G:O5'	2:I:110:G:C8	2.70	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:G:152:C:O2'	5:G:153:C:O4'	2.38	0.42
5:G:135:G:C2	28:H:42:G:N1	2.87	0.42
5:G:145:U:C5	5:G:146:C:H5	2.32	0.42
7:C:261:ASP:N	7:C:261:ASP:OD1	2.52	0.42
28:H:40:C:H5''	28:H:40:C:C6	2.32	0.42
42:1:665:ILE:O	42:1:666:LYS:C	2.56	0.42
42:1:841:ALA:C	42:1:843:LYS:N	2.73	0.42
42:1:865:ARG:O	42:1:866:LYS:C	2.56	0.42
49:D:1899:LEU:CA	49:D:1952:ALA:CA	2.97	0.42
1:A:1501:LEU:HD13	1:A:1753:LEU:HD13	2.00	0.42
2:I:71:U:O5'	49:D:726:HIS:O	2.38	0.42
3:B:29:A:H2'	3:B:30:A:C8	2.55	0.42
8:N:308:HIS:HD2	8:N:311:ALA:HB2	1.84	0.42
11:9:123:THR:HB	23:A0:17:LYS:NZ	2.35	0.42
28:H:155:C:H2'	28:H:156:U:H5''	2.02	0.42
28:H:157:G:H2'	28:H:158:G:O4'	2.19	0.42
42:1:567:VAL:O	42:1:568:ARG:C	2.58	0.42
42:1:645:LEU:O	42:1:646:PRO:C	2.56	0.42
1:A:941:LYS:HG3	1:A:951:LEU:HD22	2.00	0.42
7:C:254:THR:HA	7:C:300:LEU:HD11	2.02	0.42
8:N:376:TYR:HB3	8:N:396:ALA:HB2	2.02	0.42
10:L:351:ARG:HD2	10:L:353:LYS:HD3	2.01	0.42
5:G:125:C:OP2	5:G:125:C:C2	2.73	0.42
5:G:137:C:H2'	5:G:138:A:C5'	2.49	0.42
7:C:311:SER:HB3	7:C:316:ILE:HD13	2.02	0.42
12:J:462:GLU:O	12:J:466:LEU:N	2.44	0.42
42:1:471:ASP:O	42:1:472:ILE:C	2.57	0.42
42:1:631:ALA:O	42:1:632:PHE:C	2.58	0.42
42:1:952:ALA:O	42:1:953:ASP:C	2.57	0.42
43:3:1148:LEU:O	43:3:1149:ARG:C	2.57	0.42
8:N:801:ALA:CB	9:M:76:LYS:HD3	2.49	0.42
42:1:872:ILE:O	42:1:873:GLU:C	2.57	0.42
48:4:77:ILE:O	48:4:84:ILE:CA	2.68	0.42
1:A:701:ILE:HD13	8:N:154:GLU:HG2	2.01	0.41
1:A:1139:ARG:HA	1:A:1186:LEU:HD11	2.01	0.41
2:I:41:C:OP2	8:N:829:LYS:CB	2.68	0.41
3:B:68:C:H2'	3:B:69:A:C1'	2.48	0.41
3:B:78:U:C1'	3:B:79:C:P	3.08	0.41
6:O:83:PHE:CD2	6:O:119:VAL:HG21	2.55	0.41
11:9:266:PHE:H	11:9:266:PHE:HD1	1.68	0.41
27:Y:146:ALA:O	27:Y:150:ALA:CB	2.68	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:H:103:U:C3'	28:H:104:U:H5'	2.50	0.41
42:1:91:LEU:O	42:1:94:ILE:N	2.53	0.41
42:1:810:ILE:O	42:1:811:LEU:C	2.58	0.41
42:1:1169:VAL:O	42:1:1172:LEU:N	2.54	0.41
1:A:1790:ILE:CD1	11:9:272:MET:O	2.68	0.41
1:A:1790:ILE:CG1	11:9:266:PHE:HE2	2.20	0.41
1:A:1930:TYR:OH	12:J:478:ILE:O	2.22	0.41
4:F:36:A:OP1	5:G:10:U:O4	2.38	0.41
7:C:759:LEU:HA	7:C:762:VAL:HG22	2.02	0.41
28:H:153:A:H62	28:H:177:A:H2	1.67	0.41
42:1:318:ARG:O	42:1:321:ASP:N	2.52	0.41
42:1:862:GLU:O	42:1:864:TYR:N	2.53	0.41
1:A:1503:TRP:HD1	10:L:380:PHE:HB2	1.85	0.41
1:A:1957:ASP:HB3	1:A:1960:THR:HG23	2.02	0.41
2:I:73:U:O4	49:D:1079:ALA:O	2.38	0.41
3:B:78:U:O2	3:B:78:U:H5''	2.20	0.41
41:K:464:PHE:CA	41:K:477:TRP:O	2.68	0.41
42:1:745:ALA:O	42:1:746:PHE:C	2.59	0.41
42:1:867:MET:O	42:1:868:VAL:C	2.57	0.41
42:1:998:LYS:O	42:1:1001:VAL:N	2.51	0.41
1:A:784:LEU:HD23	1:A:784:LEU:HA	1.89	0.41
1:A:805:GLU:HG2	1:A:1162:PRO:HB3	2.02	0.41
1:A:1519:THR:H	1:A:1522:GLN:NE2	2.18	0.41
2:I:21:U:H2'	2:I:22:C:C6	2.56	0.41
7:C:485:ASP:N	7:C:485:ASP:OD1	2.53	0.41
9:M:79:PRO:HB3	9:M:123:ILE:HG21	2.03	0.41
27:Y:241:TRP:HA	27:Y:248:ILE:HA	2.01	0.41
28:H:63:G:H2'	28:H:64:A:C8	2.56	0.41
42:1:86:ALA:O	42:1:89:ALA:CA	2.67	0.41
42:1:1165:TYR:O	42:1:1166:ILE:C	2.59	0.41
1:A:1556:ASP:OD1	1:A:1556:ASP:N	2.53	0.41
1:A:1788:VAL:HA	1:A:1802:PRO:HA	2.01	0.41
7:C:481:MET:HB3	7:C:490:PHE:HE2	1.84	0.41
8:N:801:ALA:CB	9:M:76:LYS:HA	2.44	0.41
26:8:80:TYR:O	26:8:89:VAL:N	2.47	0.41
27:Y:342:LEU:O	49:D:1699:GLU:CA	2.69	0.41
28:H:152:G:H2'	28:H:153:A:C1'	2.51	0.41
42:1:600:LEU:O	42:1:604:ALA:N	2.35	0.41
42:1:1129:LEU:O	42:1:1130:PRO:C	2.59	0.41
42:1:1256:HIS:O	42:1:1257:PRO:C	2.58	0.41
1:A:941:LYS:HD3	1:A:943:ALA:H	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1532:ARG:HG2	1:A:1568:THR:HG23	2.02	0.41
1:A:1592:ASP:OD2	11:9:331:ARG:CZ	2.68	0.41
1:A:1792:LYS:HB2	1:A:1798:LEU:CB	2.49	0.41
5:G:155:U:O4'	5:G:156:U:C5	2.73	0.41
8:N:144:ASP:OD1	8:N:144:ASP:N	2.52	0.41
12:J:535:GLU:HB3	12:J:587:GLY:CA	2.49	0.41
41:K:92:ARG:HA	41:K:95:ARG:HB3	2.01	0.41
1:A:1146:ASP:OD1	1:A:1146:ASP:N	2.53	0.41
1:A:1635:TYR:CZ	1:A:2244:LYS:CA	3.03	0.41
2:I:70:U:O2	2:I:70:U:H5''	2.19	0.41
2:I:107:U:H2'	2:I:108:C:H6	1.85	0.41
7:C:453:TYR:OH	7:C:575:GLN:NE2	2.54	0.41
28:H:112:G:O5'	28:H:112:G:H8	2.04	0.41
1:A:386:PRO:HD2	1:A:389:LYS:HE3	2.02	0.41
2:I:78:A:N6	49:D:1212:GLU:N	2.69	0.41
3:B:74:U:H2'	3:B:75:G:C8	2.55	0.41
7:C:808:ILE:O	7:C:812:ALA:N	2.47	0.41
10:L:125:LEU:HD11	10:L:138:THR:HG21	2.01	0.41
11:9:293:ASN:O	11:9:297:LYS:N	2.47	0.41
28:H:171:U:H2'	28:H:172:C:O4'	2.21	0.41
1:A:352:PHE:HE1	7:C:269:LEU:HD22	1.84	0.41
3:B:10:U:O2	3:B:67:A:H2	2.03	0.41
6:O:25:VAL:HG13	6:O:120:TYR:HD1	1.84	0.41
6:O:92:ILE:HG21	6:O:115:ILE:HD11	2.02	0.41
7:C:241:ARG:HG2	7:C:244:LYS:HE2	2.02	0.41
7:C:601:PRO:O	7:C:604:LEU:HB2	2.20	0.41
7:C:850:LEU:HD23	7:C:850:LEU:HA	1.93	0.41
8:N:364:GLN:O	8:N:367:ARG:HB3	2.21	0.41
11:9:119:SER:O	23:A0:17:LYS:CE	2.65	0.41
20:E:255:MET:O	20:E:257:ASN:N	2.54	0.41
27:Y:394:ALA:C	49:D:1002:ASN:C	2.79	0.41
28:H:152:G:H2'	28:H:152:G:N3	2.36	0.41
1:A:702:LYS:HG2	1:A:704:ASN:H	1.86	0.41
1:A:945:THR:OG1	1:A:946:GLU:OE1	2.34	0.41
2:I:6:U:H2'	2:I:7:G:C8	2.56	0.41
7:C:216:THR:HG22	7:C:245:HIS:CE1	2.56	0.41
10:L:97:ASN:O	10:L:100:THR:OG1	2.30	0.41
11:9:263:ILE:HG23	11:9:264:ASP:N	2.36	0.41
23:A0:73:GLN:CA	25:Z:24:ILE:CB	2.99	0.41
27:Y:240:VAL:O	27:Y:249:ARG:N	2.52	0.41
28:H:149:A:C6	28:H:150:U:C4	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:1:301:ARG:O	42:1:304:PRO:N	2.54	0.41
42:1:914:PHE:O	42:1:915:GLY:C	2.58	0.41
1:A:1131:LYS:NZ	1:A:1188:ASN:HB2	2.36	0.40
1:A:1212:GLY:HA2	1:A:1276:GLU:HG2	2.03	0.40
1:A:1639:VAL:O	1:A:1654:SER:OG	2.26	0.40
3:B:49:A:H2'	3:B:50:G:C8	2.56	0.40
7:C:228:PHE:HD1	7:C:258:ASN:HB2	1.85	0.40
7:C:837:GLN:HE21	7:C:868:LEU:HD13	1.86	0.40
42:1:758:ASP:O	42:1:761:TYR:N	2.54	0.40
42:1:1031:VAL:O	42:1:1032:GLN:C	2.60	0.40
43:3:437:VAL:O	43:3:776:GLN:CA	2.69	0.40
46:7:46:HIS:O	46:7:47:PHE:C	2.59	0.40
1:A:193:LEU:HD22	1:A:194:GLU:H	1.85	0.40
1:A:944:ASP:OD1	1:A:944:ASP:N	2.53	0.40
1:A:1518:LEU:H	1:A:1518:LEU:HG	1.71	0.40
2:I:78:A:N6	49:D:1212:GLU:CA	2.84	0.40
10:L:365:ARG:NH1	10:L:419:ARG:HE	2.19	0.40
43:3:672:GLY:N	43:3:697:ARG:O	2.54	0.40
1:A:584:HIS:O	1:A:588:LEU:HB2	2.21	0.40
2:I:59:U:H2'	2:I:60:A:C8	2.57	0.40
8:N:841:PRO:C	8:N:843:VAL:N	2.73	0.40
10:L:137:ARG:HH21	10:L:198:ASN:HD21	1.68	0.40
10:L:388:TYR:CE2	10:L:390:GLU:HB2	2.57	0.40
1:A:1314:VAL:O	1:A:1318:THR:OG1	2.31	0.40
1:A:1791:HIS:HB2	11:9:271:THR:HG23	2.02	0.40
1:A:1871:PRO:HG3	11:9:281:VAL:HG21	2.04	0.40
2:I:40:U:C2	8:N:825:GLN:CB	3.05	0.40
4:F:64:U:H2'	4:F:65:G:H8	1.87	0.40
7:C:303:LEU:HD23	7:C:303:LEU:HA	1.91	0.40
8:N:249:THR:HG22	8:N:310:PRO:HG2	2.03	0.40
8:N:389:LYS:O	8:N:391:ARG:N	2.55	0.40
27:Y:394:ALA:C	49:D:1003:GLN:CA	2.89	0.40
28:H:183:G:C6	28:H:184:C:N4	2.89	0.40
42:1:750:ILE:O	42:1:753:LEU:N	2.54	0.40
43:3:1191:LYS:O	43:3:1192:ASN:C	2.59	0.40
1:A:1067:MET:HA	1:A:1068:PRO:HD3	1.91	0.40
1:A:1463:LYS:NZ	10:L:386:ASP:O	2.38	0.40
1:A:1611:LYS:HE2	1:A:1611:LYS:HB2	1.90	0.40
1:A:1943:LEU:HD23	1:A:1943:LEU:HA	1.88	0.40
3:B:107:U:H2'	3:B:108:G:O4'	2.22	0.40
5:G:128:U:O5'	5:G:128:U:C6	2.70	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:N:448:ASN:O	8:N:452:VAL:CB	2.69	0.40
28:H:160:A:H2'	28:H:161:U:O4'	2.22	0.40
42:1:1062:LEU:O	42:1:1064:GLU:N	2.55	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	2203/2335 (94%)	2043 (93%)	150 (7%)	10 (0%)	25	58
6	O	139/142 (98%)	125 (90%)	13 (9%)	1 (1%)	19	52
7	C	814/972 (84%)	756 (93%)	54 (7%)	4 (0%)	25	58
8	N	773/941 (82%)	685 (89%)	78 (10%)	10 (1%)	10	39
9	M	122/128 (95%)	118 (97%)	4 (3%)	0	100	100
10	L	372/499 (74%)	351 (94%)	21 (6%)	0	100	100
11	9	155/800 (19%)	141 (91%)	13 (8%)	1 (1%)	22	55
12	J	221/683 (32%)	207 (94%)	12 (5%)	2 (1%)	14	45
13	U	60/231 (26%)	57 (95%)	3 (5%)	0	100	100
13	a	84/231 (36%)	82 (98%)	2 (2%)	0	100	100
13	i	84/231 (36%)	82 (98%)	2 (2%)	0	100	100
14	V	80/119 (67%)	76 (95%)	4 (5%)	0	100	100
14	b	80/119 (67%)	77 (96%)	3 (4%)	0	100	100
14	j	80/119 (67%)	77 (96%)	3 (4%)	0	100	100
15	P	70/118 (59%)	68 (97%)	2 (3%)	0	100	100
15	c	95/118 (80%)	91 (96%)	4 (4%)	0	100	100
15	k	81/118 (69%)	78 (96%)	3 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
16	Q	69/86 (80%)	67 (97%)	2 (3%)	0	100	100
16	d	72/86 (84%)	69 (96%)	3 (4%)	0	100	100
16	l	72/86 (84%)	68 (94%)	4 (6%)	0	100	100
17	R	76/92 (83%)	70 (92%)	6 (8%)	0	100	100
17	e	77/92 (84%)	76 (99%)	1 (1%)	0	100	100
17	m	77/92 (84%)	76 (99%)	1 (1%)	0	100	100
18	S	71/76 (93%)	67 (94%)	4 (6%)	0	100	100
18	f	72/76 (95%)	70 (97%)	2 (3%)	0	100	100
18	n	64/76 (84%)	62 (97%)	2 (3%)	0	100	100
19	T	69/126 (55%)	69 (100%)	0	0	100	100
19	g	77/126 (61%)	75 (97%)	2 (3%)	0	100	100
19	h	76/126 (60%)	75 (99%)	1 (1%)	0	100	100
20	E	297/357 (83%)	272 (92%)	16 (5%)	9 (3%)	3	26
21	X	73/376 (19%)	70 (96%)	3 (4%)	0	100	100
22	W	167/177 (94%)	158 (95%)	9 (5%)	0	100	100
23	A0	71/73 (97%)	68 (96%)	3 (4%)	0	100	100
24	0	43/439 (10%)	42 (98%)	1 (2%)	0	100	100
25	Z	174/312 (56%)	158 (91%)	15 (9%)	1 (1%)	22	55
26	8	54/199 (27%)	47 (87%)	7 (13%)	0	100	100
27	Y	445/513 (87%)	432 (97%)	12 (3%)	1 (0%)	44	74
29	o	160/255 (63%)	146 (91%)	12 (8%)	2 (1%)	10	39
30	p	92/225 (41%)	90 (98%)	2 (2%)	0	100	100
31	u	118/793 (15%)	106 (90%)	6 (5%)	6 (5%)	1	17
32	v	88/464 (19%)	63 (72%)	16 (18%)	9 (10%)	0	7
33	w	413/501 (82%)	367 (89%)	41 (10%)	5 (1%)	11	40
34	q	88/95 (93%)	77 (88%)	7 (8%)	4 (4%)	2	19
35	r	70/102 (69%)	64 (91%)	3 (4%)	3 (4%)	2	20
36	s	70/139 (50%)	63 (90%)	6 (9%)	1 (1%)	9	37
37	t	68/91 (75%)	63 (93%)	4 (6%)	1 (2%)	8	37
38	x	68/80 (85%)	64 (94%)	2 (3%)	2 (3%)	3	26
39	y	61/103 (59%)	56 (92%)	5 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
40	z	57/96 (59%)	52 (91%)	4 (7%)	1 (2%)	7	34
41	K	406/522 (78%)	343 (84%)	62 (15%)	1 (0%)	44	74
42	1	1032/1304 (79%)	844 (82%)	166 (16%)	22 (2%)	5	32
43	3	1152/1217 (95%)	1053 (91%)	89 (8%)	10 (1%)	14	45
44	5	106/125 (85%)	84 (79%)	19 (18%)	3 (3%)	4	27
45	6	87/110 (79%)	76 (87%)	10 (12%)	1 (1%)	12	42
46	7	64/86 (74%)	55 (86%)	7 (11%)	2 (3%)	3	25
47	2	170/895 (19%)	151 (89%)	15 (9%)	4 (2%)	5	29
48	4	76/424 (18%)	75 (99%)	1 (1%)	0	100	100
49	D	1697/2136 (79%)	1604 (94%)	82 (5%)	11 (1%)	22	55
All	All	13852/21253 (65%)	12701 (92%)	1024 (7%)	127 (1%)	17	45

All (127) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
7	C	474	LEU
8	N	842	HIS
12	J	541	VAL
20	E	193	THR
27	Y	383	CYS
31	u	301	PRO
32	v	139	PRO
32	v	141	ILE
32	v	146	MET
32	v	162	PRO
32	v	165	ARG
32	v	218	PRO
33	w	284	ARG
34	q	55	LEU
35	r	84	MET
37	t	70	ASP
38	x	52	VAL
38	x	55	GLN
41	K	294	VAL
42	1	208	PRO
42	1	416	PRO
42	1	418	PRO
42	1	456	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
42	1	717	THR
42	1	941	ASN
42	1	1107	GLN
43	3	405	SER
43	3	919	SER
44	5	99	GLN
44	5	105	LYS
45	6	94	SER
49	D	957	VAL
49	D	1011	GLU
49	D	1026	ASN
49	D	1028	THR
49	D	1289	LEU
49	D	1584	ILE
49	D	1825	ASN
1	A	964	ASP
1	A	2068	SER
1	A	2081	ALA
1	A	2082	ASN
7	C	439	PRO
7	C	475	MET
8	N	390	LYS
29	o	160	LYS
31	u	223	LYS
31	u	280	VAL
33	w	277	THR
34	q	74	ALA
35	r	97	PRO
36	s	12	ASN
42	1	113	ALA
42	1	1110	VAL
43	3	917	PRO
47	2	597	PHE
49	D	976	THR
1	A	464	PRO
7	C	427	PHE
8	N	12	PRO
8	N	196	ASN
8	N	535	GLU
8	N	824	PRO
20	E	60	MET
20	E	88	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
20	E	256	ASP
25	Z	157	VAL
33	w	177	ARG
33	w	393	PRO
47	2	510	TYR
1	A	1092	ILE
6	O	103	ASN
12	J	615	ASP
20	E	162	ARG
29	o	32	PRO
31	u	300	THR
35	r	96	ALA
42	1	112	ILE
42	1	437	PRO
42	1	523	ALA
42	1	909	VAL
42	1	1006	MET
43	3	529	ALA
43	3	578	THR
44	5	75	ASP
47	2	463	ALA
47	2	574	ALA
1	A	109	PRO
1	A	963	GLN
8	N	825	GLN
8	N	839	HIS
11	9	353	GLN
20	E	159	PRO
32	v	147	PRO
32	v	217	PRO
34	q	73	PRO
42	1	1047	ALA
42	1	1075	ARG
42	1	1186	GLN
43	3	95	SER
43	3	229	GLU
49	D	1522	PRO
1	A	2015	GLU
20	E	270	LYS
32	v	220	PRO
40	z	34	ILE
42	1	326	THR

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Mol	Chain	Res	Type
42	1	932	ILE
43	3	918	ARG
43	3	1138	HIS
46	7	56	ALA
8	N	929	ILE
20	E	149	GLY
42	1	417	PRO
1	A	965	VAL
31	u	221	PRO
42	1	223	THR
49	D	993	ILE
33	w	229	TRP
43	3	1204	VAL
8	N	905	GLU
20	E	324	PRO
31	u	298	PRO
42	1	1031	VAL
46	7	64	VAL
49	D	585	ILE
34	q	52	PRO

### 5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	1775/2108 (84%)	1742 (98%)	33 (2%)	52 69
6	O	126/130 (97%)	123 (98%)	3 (2%)	44 62
7	C	719/866 (83%)	710 (99%)	9 (1%)	65 76
8	N	196/792 (25%)	185 (94%)	11 (6%)	17 43
9	M	108/111 (97%)	108 (100%)	0	100 100
10	L	299/424 (70%)	292 (98%)	7 (2%)	45 63
11	9	81/681 (12%)	54 (67%)	27 (33%)	0 1
12	J	72/599 (12%)	67 (93%)	5 (7%)	13 37

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
21	X	2/333 (1%)	2 (100%)	0	100	100
22	W	10/148 (7%)	10 (100%)	0	100	100
23	A0	60/66 (91%)	56 (93%)	4 (7%)	13	38
25	Z	6/293 (2%)	6 (100%)	0	100	100
27	Y	11/450 (2%)	11 (100%)	0	100	100
41	K	29/442 (7%)	17 (59%)	12 (41%)	0	0
All	All	3494/7443 (47%)	3383 (97%)	111 (3%)	36	56

All (111) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	89	LEU
1	A	253	ASN
1	A	279	PHE
1	A	362	ARG
1	A	417	ARG
1	A	450	LEU
1	A	568	ASN
1	A	723	ASN
1	A	905	LEU
1	A	994	ASN
1	A	1201	ARG
1	A	1357	MET
1	A	1501	LEU
1	A	1518	LEU
1	A	1560	ILE
1	A	1562	MET
1	A	1641	ARG
1	A	1652	MET
1	A	1667	ARG
1	A	1691	ASN
1	A	1744	ARG
1	A	1763	LEU
1	A	1774	ASN
1	A	1793	THR
1	A	1794	PHE
1	A	1795	GLU
1	A	1797	ASN
1	A	1798	LEU
1	A	1835	GLN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	1889	LEU
1	A	1898	LYS
1	A	2014	MET
1	A	2023	ARG
6	O	70	ASN
6	O	73	TYR
6	O	100	ASN
7	C	259	LYS
7	C	359	LYS
7	C	457	VAL
7	C	465	MET
7	C	495	ARG
7	C	673	LYS
7	C	710	ASN
7	C	711	ARG
7	C	775	ARG
8	N	28	PHE
8	N	30	THR
8	N	191	LEU
8	N	248	ASN
8	N	254	ARG
8	N	302	ARG
8	N	351	ARG
8	N	369	LEU
8	N	373	VAL
8	N	382	LEU
8	N	383	GLU
10	L	115	ARG
10	L	161	ASN
10	L	174	THR
10	L	354	ARG
10	L	369	THR
10	L	392	LEU
10	L	406	ARG
11	9	118	LEU
11	9	126	LEU
11	9	253	ASP
11	9	254	LEU
11	9	255	GLN
11	9	257	LEU
11	9	258	THR
11	9	259	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
11	9	260	GLU
11	9	263	ILE
11	9	265	SER
11	9	267	ARG
11	9	268	GLU
11	9	270	GLU
11	9	271	THR
11	9	272	MET
11	9	276	LEU
11	9	282	LEU
11	9	287	ASP
11	9	303	ASN
11	9	328	GLN
11	9	329	LYS
11	9	332	SER
11	9	346	PRO
11	9	350	ARG
11	9	353	GLN
11	9	356	THR
12	J	452	THR
12	J	465	ARG
12	J	487	THR
12	J	507	ARG
12	J	527	VAL
23	A0	15	ARG
23	A0	17	LYS
23	A0	19	ASN
23	A0	67	ASN
41	K	86	VAL
41	K	101	VAL
41	K	103	THR
41	K	120	THR
41	K	124	GLU
41	K	126	PRO
41	K	129	ARG
41	K	130	ARG
41	K	132	ARG
41	K	133	LEU
41	K	138	SER
41	K	139	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (55) such sidechains are listed below:



Mol	Chain	Res	Type
1	A	97	HIS
1	A	243	ASN
1	A	253	ASN
1	A	363	HIS
1	A	448	GLN
1	A	495	GLN
1	A	509	HIS
1	A	568	ASN
1	A	723	ASN
1	A	775	ASN
1	A	1014	ASN
1	A	1024	HIS
1	A	1026	ASN
1	A	1124	ASN
1	A	1148	ASN
1	A	1184	ASN
1	A	1246	GLN
1	A	1280	ASN
1	A	1296	GLN
1	A	1345	GLN
1	A	1352	HIS
1	A	1460	HIS
1	A	1522	GLN
1	A	1623	ASN
1	A	1691	ASN
1	A	1774	ASN
1	A	1811	ASN
1	A	1835	GLN
1	A	1894	GLN
6	O	70	ASN
7	C	140	HIS
7	C	245	HIS
7	C	313	GLN
7	C	575	GLN
7	C	710	ASN
7	C	837	GLN
8	N	197	HIS
8	N	248	ASN
8	N	326	GLN
9	M	34	GLN
10	L	97	ASN
10	L	161	ASN
10	L	198	ASN

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Mol	Chain	Res	Type
10	L	202	HIS
10	L	218	ASN
10	L	270	HIS
10	L	332	GLN
10	L	389	GLN
11	9	261	HIS
11	9	291	ASN
11	9	353	GLN
12	J	461	GLN
23	A0	7	ASN
23	A0	19	ASN
23	A0	67	ASN

### 5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	I	133/144 (92%)	54 (40%)	5 (3%)
28	H	105/188 (55%)	22 (20%)	3 (2%)
3	B	114/117 (97%)	43 (37%)	6 (5%)
4	F	90/107 (84%)	32 (35%)	5 (5%)
5	G	76/274 (27%)	44 (57%)	15 (19%)
All	All	518/830 (62%)	195 (37%)	34 (6%)

All (195) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	I	2	G
2	I	9	G
2	I	11	A
2	I	12	G
2	I	18	G
2	I	20	A
2	I	25	A
2	I	26	G
2	I	30	A
2	I	36	U
2	I	37	C
2	I	39	A
2	I	41	C
2	I	43	G
2	I	44	A

*Continued on next page...*

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	I	45	G
2	I	50	G
2	I	53	U
2	I	54	A
2	I	55	U
2	I	56	U
2	I	58	C
2	I	61	A
2	I	69	C
2	I	70	U
2	I	71	U
2	I	72	U
2	I	73	U
2	I	74	C
2	I	75	C
2	I	76	C
2	I	77	A
2	I	78	A
2	I	79	U
2	I	80	A
2	I	81	C
2	I	82	C
2	I	84	C
2	I	85	G
2	I	90	G
2	I	100	A
2	I	103	A
2	I	109	G
2	I	114	U
2	I	115	G
2	I	118	A
2	I	119	A
2	I	120	U
2	I	121	U
2	I	124	U
2	I	125	G
2	I	126	A
2	I	127	C
2	I	144	G
3	B	8	G
3	B	9	G
3	B	10	U

*Continued on next page...*

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	B	20	G
3	B	21	A
3	B	22	U
3	B	23	C
3	B	24	G
3	B	25	C
3	B	26	A
3	B	28	A
3	B	34	U
3	B	35	U
3	B	36	C
3	B	37	G
3	B	38	C
3	B	39	C
3	B	41	U
3	B	42	U
3	B	44	A
3	B	45	C
3	B	46	U
3	B	47	A
3	B	49	A
3	B	52	U
3	B	57	G
3	B	68	C
3	B	69	A
3	B	71	C
3	B	78	U
3	B	79	C
3	B	80	U
3	B	83	A
3	B	88	A
3	B	89	U
3	B	90	U
3	B	92	U
3	B	93	U
3	B	94	U
3	B	95	G
3	B	96	A
3	B	97	G
3	B	109	G
4	F	6	C
4	F	7	G

*Continued on next page...*

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
4	F	9	U
4	F	21	U
4	F	22	A
4	F	26	U
4	F	28	A
4	F	29	A
4	F	33	G
4	F	35	A
4	F	36	A
4	F	37	C
4	F	38	G
4	F	44	G
4	F	45	A
4	F	46	G
4	F	47	A
4	F	48	A
4	F	49	G
4	F	50	A
4	F	51	U
4	F	52	U
4	F	53	A
4	F	55	C
4	F	58	G
4	F	67	G
4	F	69	A
4	F	70	A
4	F	77	C
4	F	78	A
4	F	103	U
4	F	104	U
5	G	-11	G
5	G	-10	C
5	G	-6	C
5	G	-5	G
5	G	-4	A
5	G	1	G
5	G	2	U
5	G	3	A
5	G	4	A
5	G	10	U
5	G	12	G
5	G	13	C

*Continued on next page...*

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	G	14	A
5	G	17	U
5	G	19	G
5	G	20	A
5	G	23	U
5	G	123	U
5	G	124	U
5	G	125	C
5	G	126	C
5	G	127	U
5	G	128	U
5	G	130	A
5	G	135	G
5	G	136	U
5	G	137	C
5	G	140	A
5	G	144	A
5	G	145	U
5	G	146	C
5	G	147	C
5	G	148	U
5	G	149	G
5	G	150	U
5	G	151	C
5	G	152	C
5	G	154	U
5	G	156	U
5	G	157	U
5	G	159	U
5	G	161	U
5	G	162	C
5	G	163	C
28	H	31	G
28	H	37	U
28	H	40	C
28	H	45	C
28	H	47	U
28	H	51	A
28	H	65	U
28	H	112	G
28	H	143	A
28	H	147	G

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Mol	Chain	Res	Type
28	H	152	G
28	H	153	A
28	H	154	C
28	H	156	U
28	H	157	G
28	H	164	C
28	H	165	A
28	H	168	A
28	H	169	C
28	H	177	A
28	H	178	A
28	H	179	C

All (34) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	I	25	A
2	I	40	U
2	I	43	G
2	I	99	C
2	I	114	U
3	B	20	G
3	B	24	G
3	B	77	G
3	B	78	U
3	B	94	U
3	B	96	A
4	F	28	A
4	F	35	A
4	F	51	U
4	F	52	U
4	F	77	C
5	G	-12	G
5	G	-11	G
5	G	-10	C
5	G	3	A
5	G	18	A
5	G	19	G
5	G	124	U
5	G	136	U
5	G	143	U
5	G	148	U

*Continued on next page...*

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Mol	Chain	Res	Type
5	G	150	U
5	G	151	C
5	G	153	C
5	G	155	U
5	G	156	U
28	H	156	U
28	H	164	C
28	H	168	A

## 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 3 ligands modelled in this entry, 1 is monoatomic - leaving 2 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
51	GTP	C	1500	52	26,34,34	1.40	3 (11%)	32,54,54	1.79	8 (25%)
50	IHP	A	3000	-	36,36,36	0.82	0	54,60,60	1.20	2 (3%)

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
51	GTP	C	1500	52	-	6/18/38/38	0/3/3/3
50	IHP	A	3000	-	-	6/30/54/54	0/1/1/1

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
51	C	1500	GTP	C5-C6	-5.03	1.37	1.47
51	C	1500	GTP	C2-N3	2.38	1.38	1.33
51	C	1500	GTP	O4'-C4'	-2.00	1.40	1.45

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
51	C	1500	GTP	PB-O3B-PG	-5.03	115.58	132.83
51	C	1500	GTP	PA-O3A-PB	-4.55	117.22	132.83
50	A	3000	IHP	C6-C5-C4	3.80	118.73	110.41
51	C	1500	GTP	C3'-C2'-C1'	3.17	105.76	100.98
51	C	1500	GTP	C5-C6-N1	2.94	119.14	113.95
51	C	1500	GTP	C8-N7-C5	2.80	108.31	102.99
51	C	1500	GTP	O6-C6-C5	-2.53	119.43	124.37
51	C	1500	GTP	C2-N1-C6	-2.50	120.50	125.10
50	A	3000	IHP	C5-C4-C3	2.47	115.83	110.41
51	C	1500	GTP	O3G-PG-O3B	2.02	111.40	104.64

There are no chirality outliers.

All (12) torsion outliers are listed below:

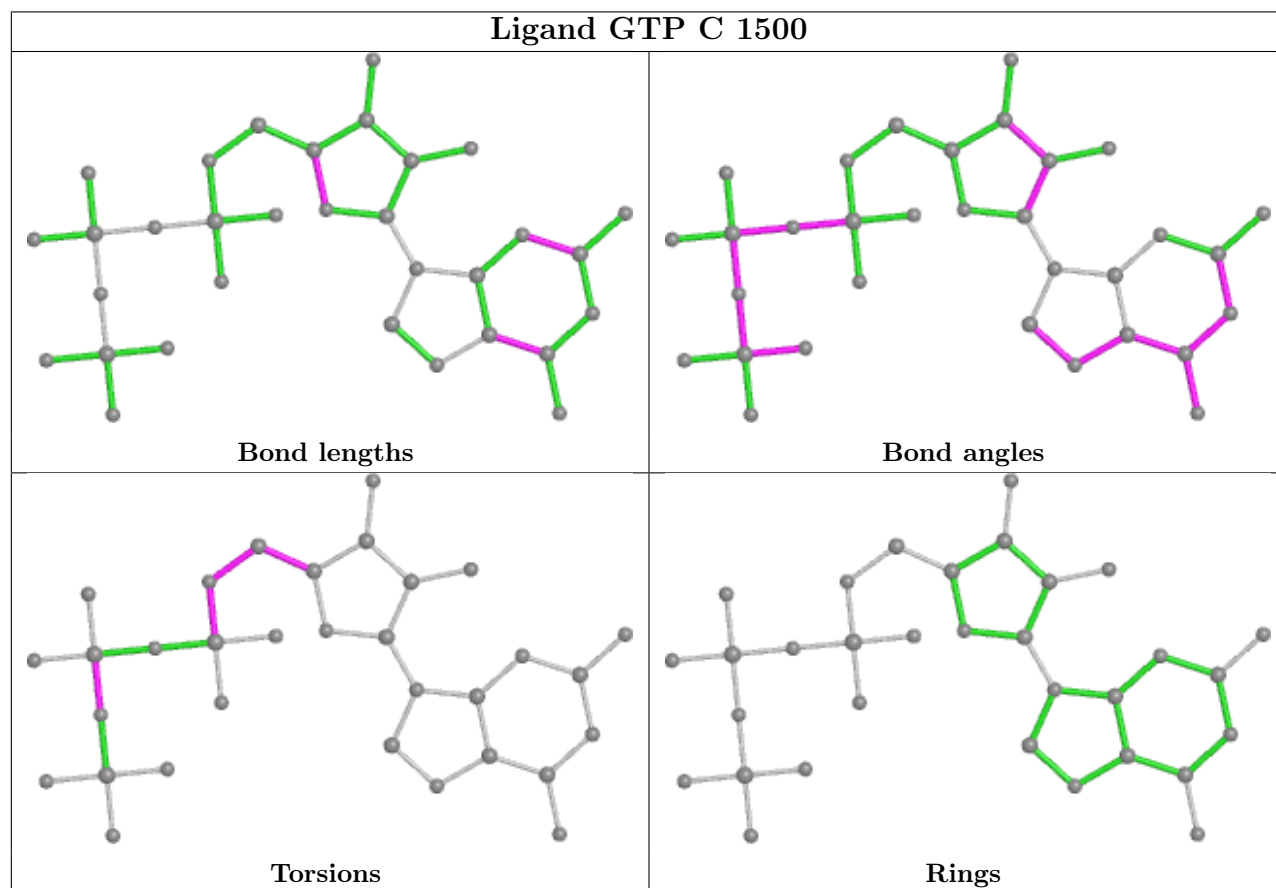
Mol	Chain	Res	Type	Atoms
50	A	3000	IHP	C2-O12-P2-O42
50	A	3000	IHP	C3-O13-P3-O23
51	C	1500	GTP	C3'-C4'-C5'-O5'
51	C	1500	GTP	C4'-C5'-O5'-PA
51	C	1500	GTP	O4'-C4'-C5'-O5'
50	A	3000	IHP	C6-O16-P6-O46
51	C	1500	GTP	PG-O3B-PB-O2B
50	A	3000	IHP	C5-O15-P5-O25
50	A	3000	IHP	C1-O11-P1-O31
50	A	3000	IHP	C4-O14-P4-O34
51	C	1500	GTP	C5'-O5'-PA-O3A
51	C	1500	GTP	C5'-O5'-PA-O2A

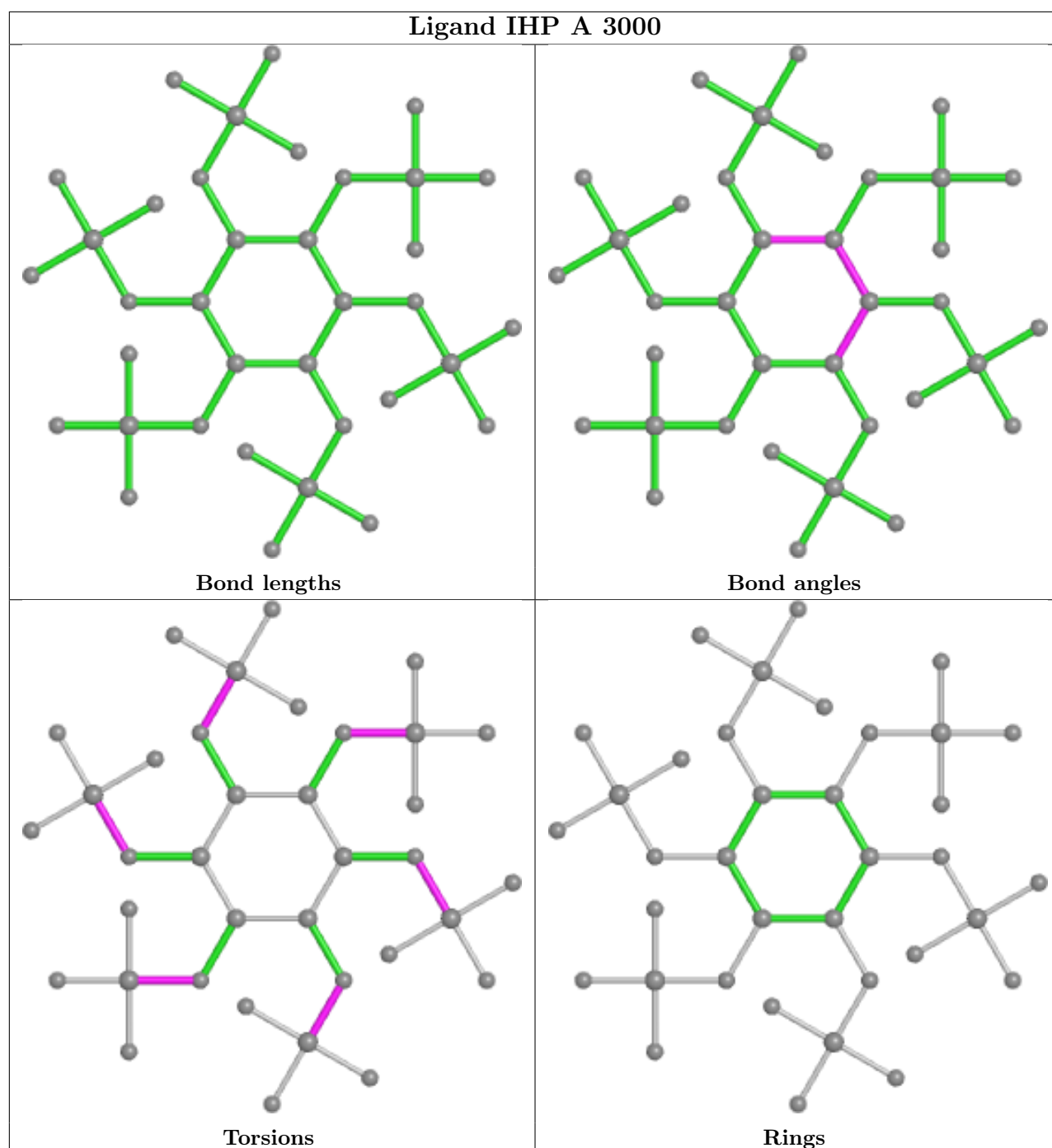
There are no ring outliers.

1 monomer is involved in 9 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
50	A	3000	IHP	9	0

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





## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

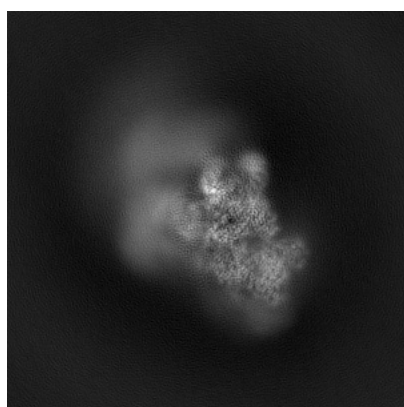
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-9624. These allow visual inspection of the internal detail of the map and identification of artifacts.

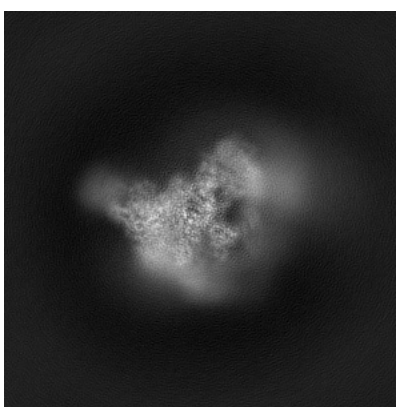
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

### 6.1 Orthogonal projections [i](#)

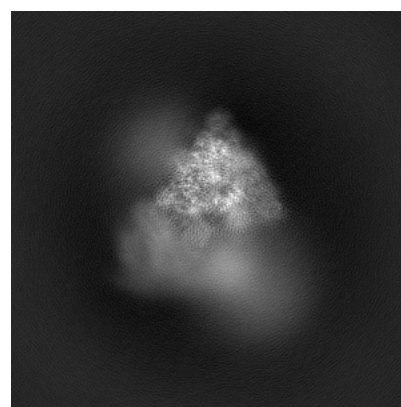
#### 6.1.1 Primary map



X



Y

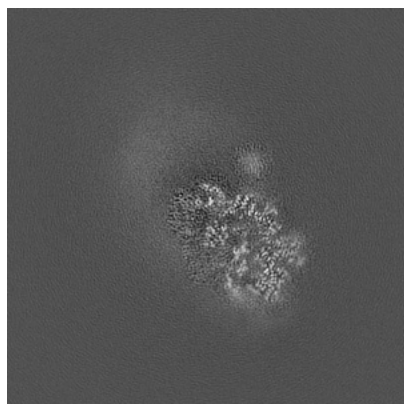


Z

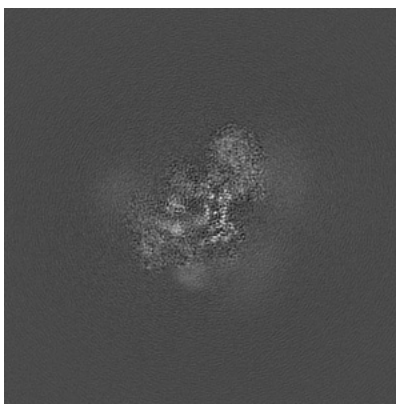
The images above show the map projected in three orthogonal directions.

### 6.2 Central slices [i](#)

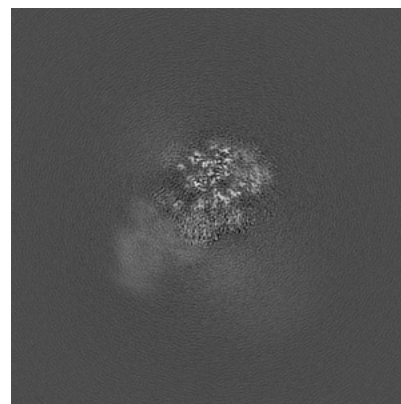
#### 6.2.1 Primary map



X Index: 200



Y Index: 200

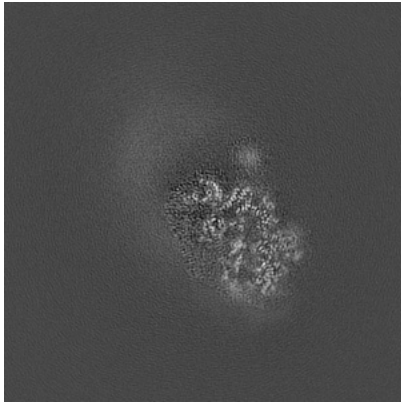


Z Index: 200

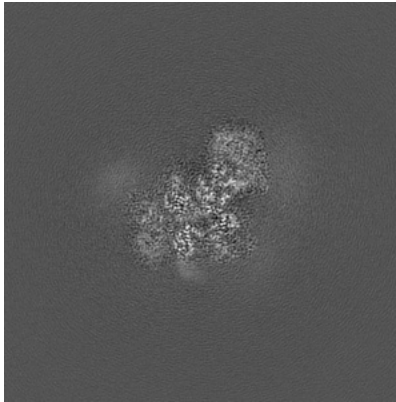
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

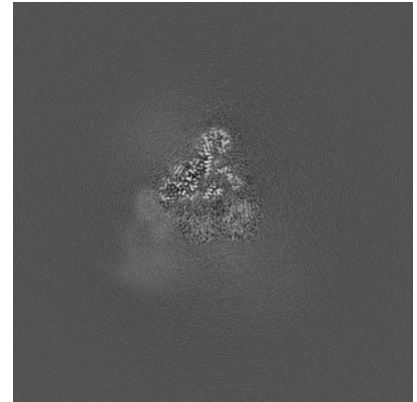
### 6.3.1 Primary map



X Index: 201



Y Index: 207

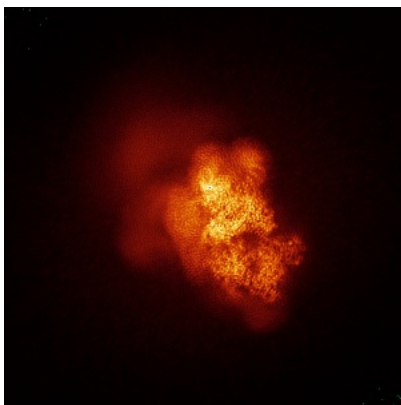


Z Index: 181

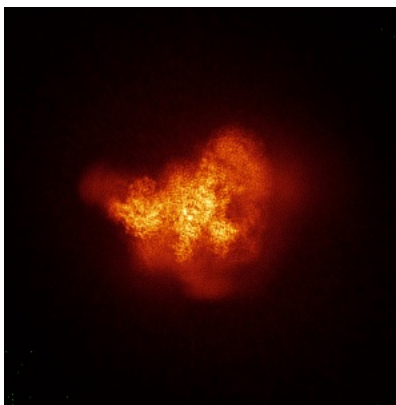
The images above show the largest variance slices of the map in three orthogonal directions.

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

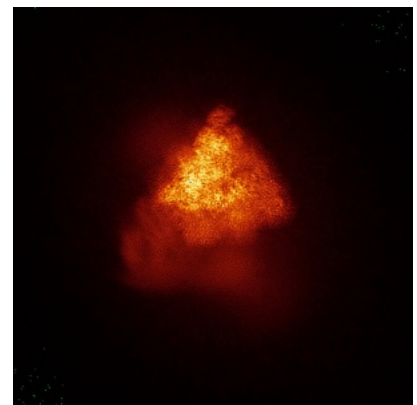
### 6.4.1 Primary map



X



Y

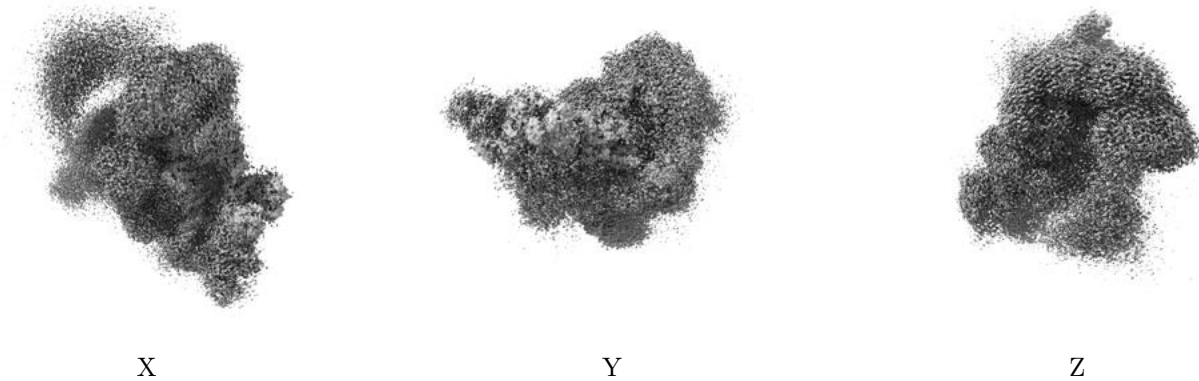


Z

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

## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.03. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

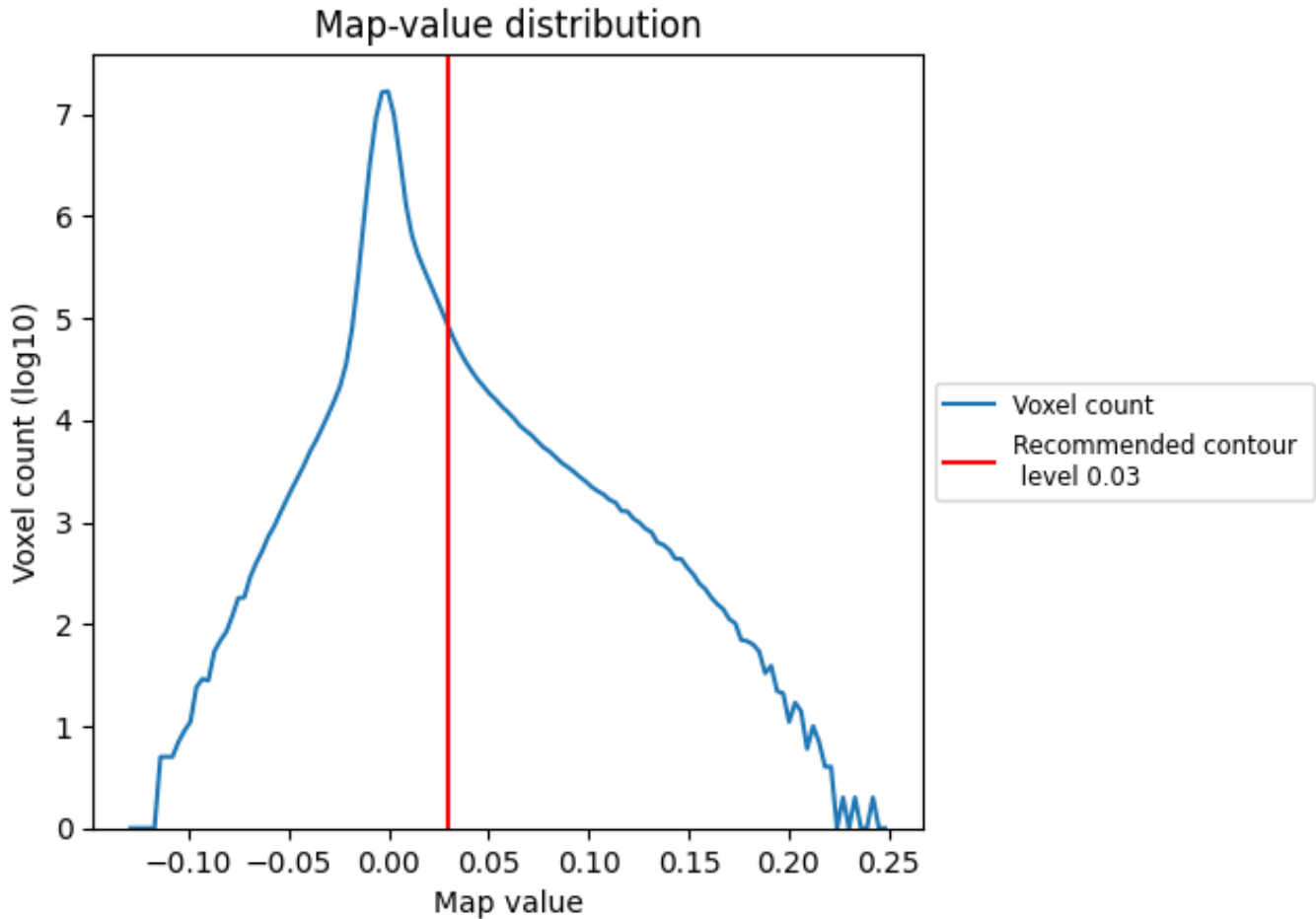
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

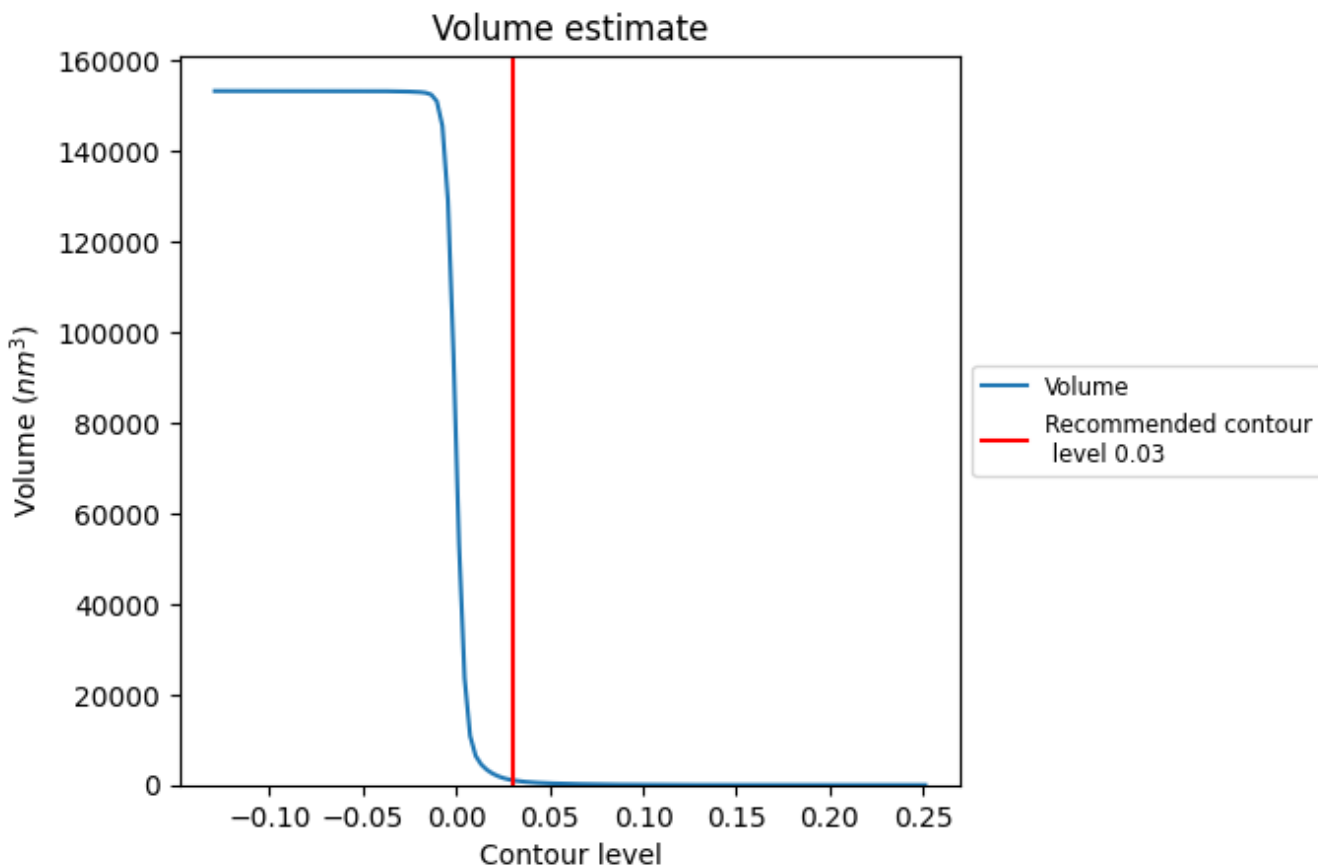
This section contains the results of statistical analysis of the map.

### 7.1 Map-value distribution [i](#)



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

## 7.2 Volume estimate [i](#)

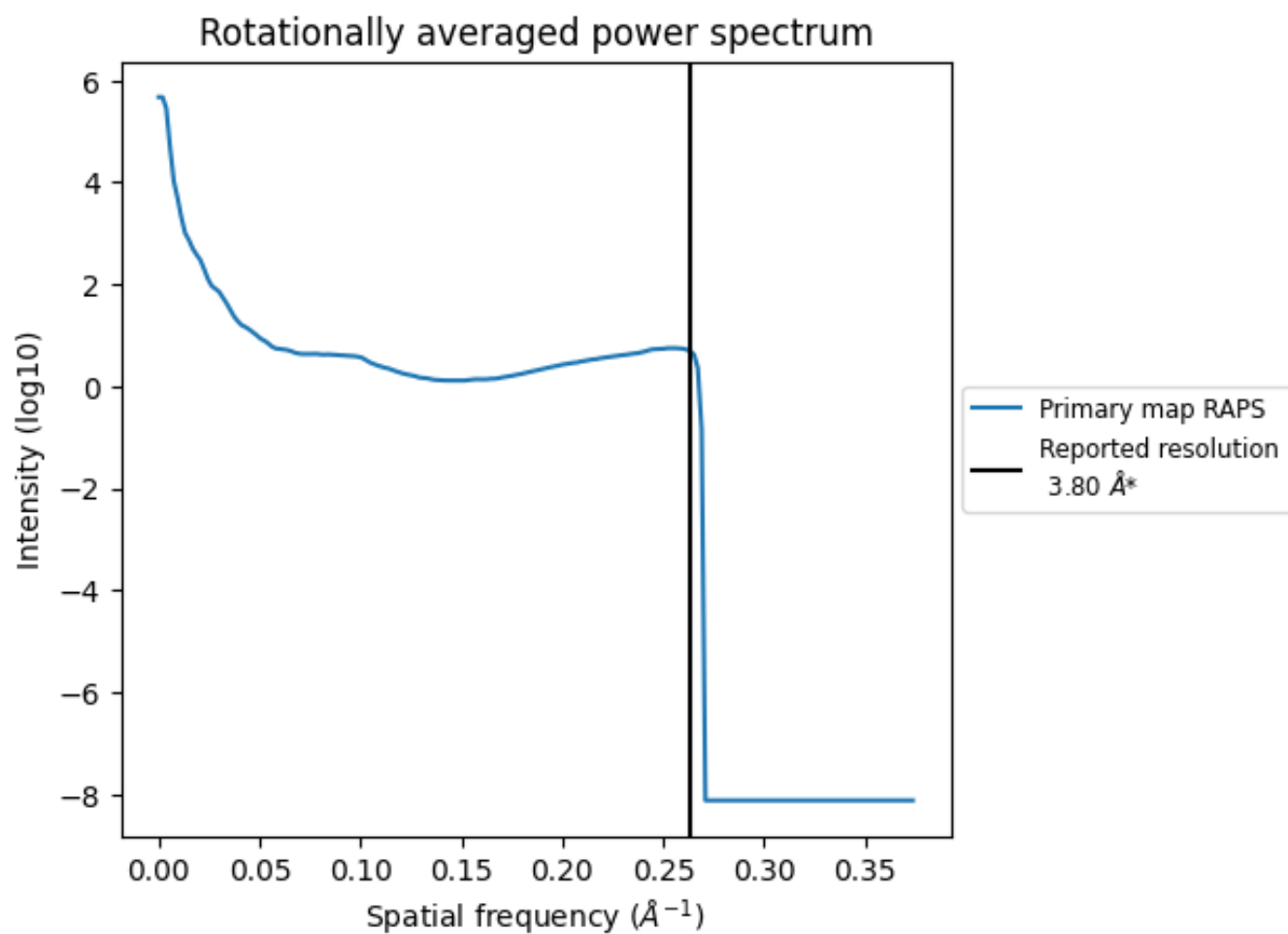


The volume at the recommended contour level is 1073 nm<sup>3</sup>; this corresponds to an approximate mass of 969 kDa.

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



### 7.3 Rotationally averaged power spectrum [i](#)



\*Reported resolution corresponds to spatial frequency of 0.263 Å<sup>-1</sup>

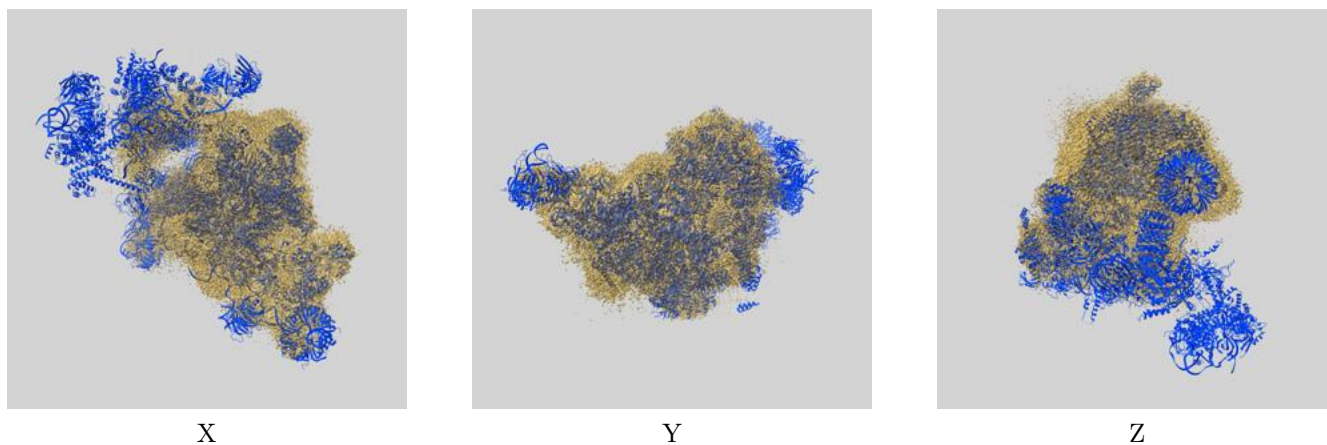
## 8 Fourier-Shell correlation

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

## 9 Map-model fit [i](#)

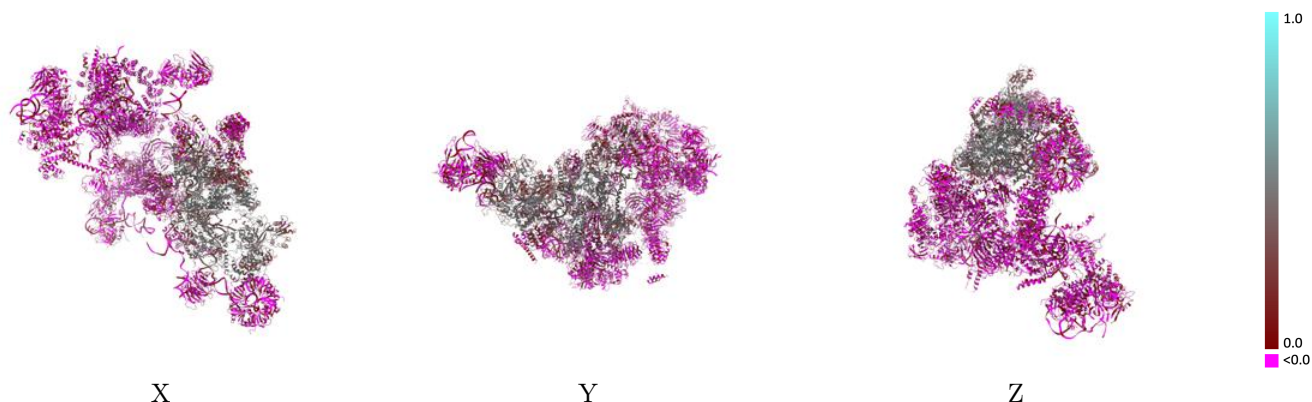
This section contains information regarding the fit between EMDB map EMD-9624 and PDB model 6AHD. Per-residue inclusion information can be found in section [3](#) on page [16](#).

### 9.1 Map-model overlay [i](#)



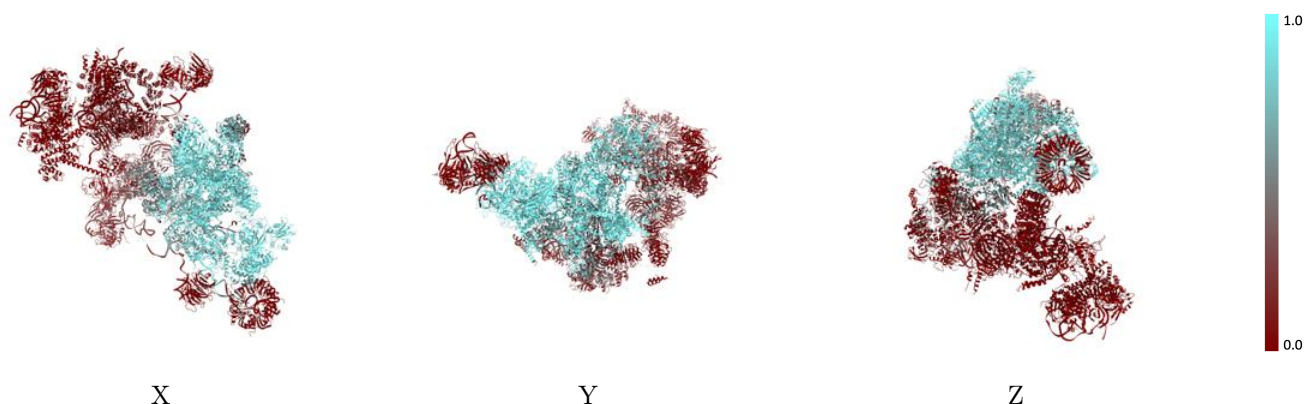
The images above show the 3D surface view of the map at the recommended contour level 0.03 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



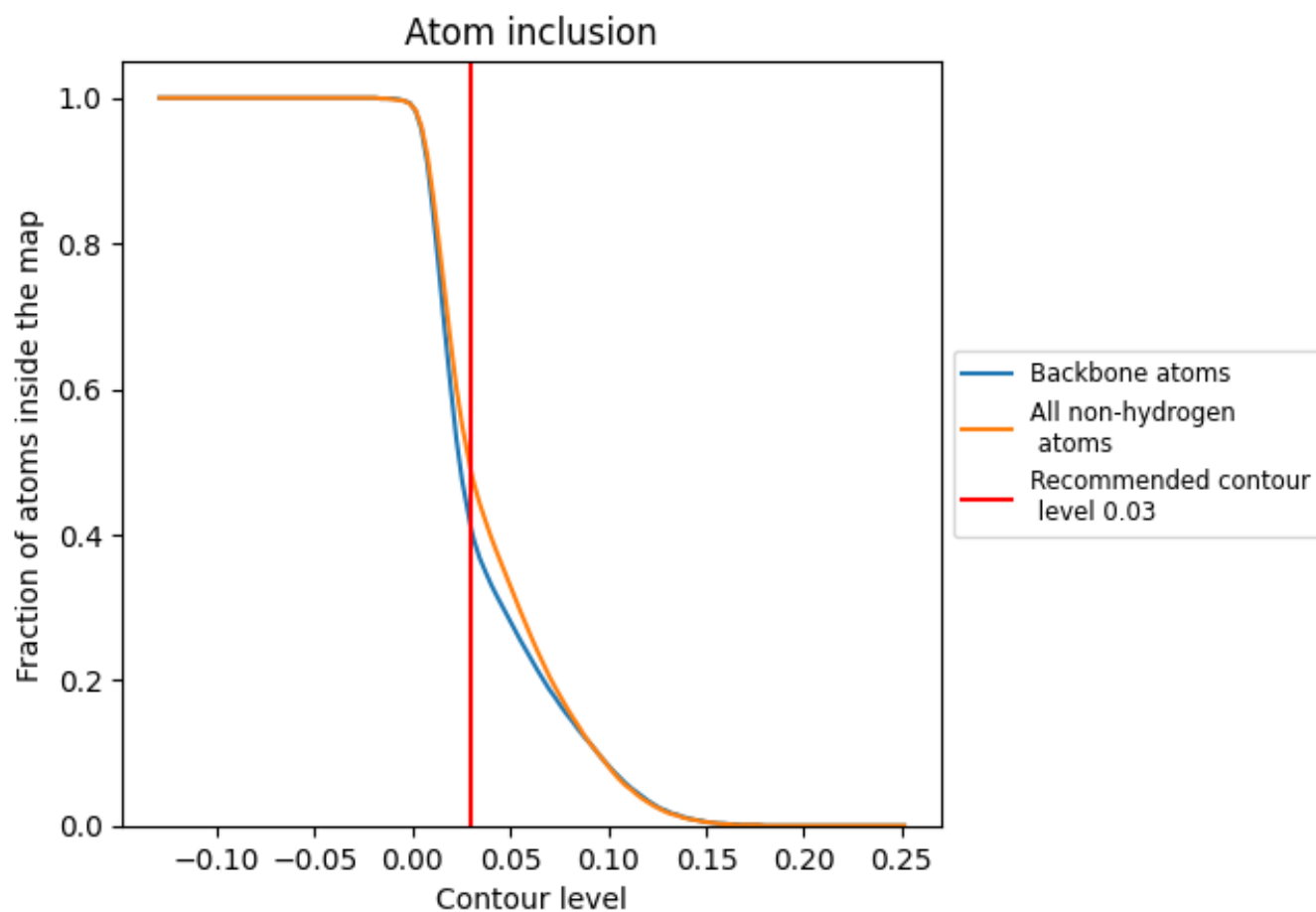
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.03).







































































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 41% of all backbone atoms, 48% 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 (0.03) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.4850	 0.1890
0	 0.4620	 0.0350
1	 0.0200	 -0.0020
2	 0.0510	 0.0150
3	 0.0100	 -0.0120
4	 0.0450	 0.0080
5	 0.0000	 -0.0120
6	 0.0450	 0.0060
7	 0.0490	 -0.0460
8	 0.6250	 0.1170
9	 0.8110	 0.3010
A	 0.8920	 0.4270
A0	 0.7330	 0.3980
B	 0.6270	 0.2100
C	 0.9040	 0.3920
D	 0.2710	 0.0170
E	 0.0430	 0.0270
F	 0.4840	 0.1360
G	 0.3250	 0.0910
H	 0.0290	 0.0170
I	 0.5260	 0.1780
J	 0.7910	 0.2650
K	 0.8960	 0.2760
L	 0.8380	 0.3490
M	 0.8950	 0.4130
N	 0.7580	 0.2080
O	 0.9210	 0.4500
P	 0.0270	 -0.0080
Q	 0.0170	 -0.0430
R	 0.0380	 0.0530
S	 0.0570	 0.0580
T	 0.0520	 0.0070
U	 0.0510	 0.0040
V	 0.0360	 0.0450
W	 0.6680	 0.0810



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Chain	Atom inclusion	Q-score
X	 0.4710	 0.0330
Y	 0.0260	 0.0100
Z	 0.6690	 0.1560
a	 0.1280	 -0.0110
b	 0.1250	 0.0190
c	 0.0410	 0.0080
d	 0.0100	 -0.0090
e	 0.0220	 0.0010
f	 0.0340	 -0.0570
g	 0.1850	 0.0140
h	 0.0000	 -0.0180
i	 0.0000	 0.0150
j	 0.0000	 -0.0030
k	 0.0000	 -0.0090
l	 0.0000	 -0.0360
m	 0.0000	 0.0330
n	 0.0000	 -0.0400
o	 0.0000	 0.0220
p	 0.0000	 -0.0370
q	 0.0000	 0.0190
r	 0.0000	 0.0090
s	 0.0000	 -0.0050
t	 0.0000	 0.0350
u	 0.0000	 0.0260
v	 0.0000	 0.0080
w	 0.0010	 0.0110
x	 0.0070	 0.0140
y	 0.0000	 -0.0360
z	 0.0000	 -0.0230