



Full wwPDB EM Validation Report ⓘ

Mar 9, 2026 – 06:14 AM UTC

PDB ID : 8AGT / pdb_00008agt
EMDB ID : EMD-15423
Title : Yeast RQC complex in state F
Authors : Tesina, P.; Buschauer, R.; Beckmann, R.
Deposited on : 2022-07-20
Resolution : 2.60 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

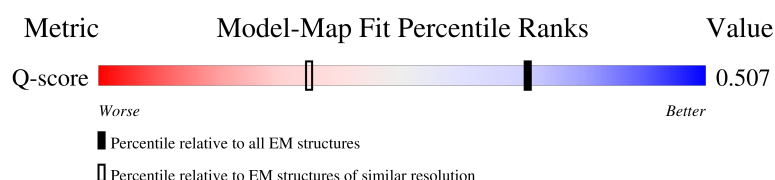
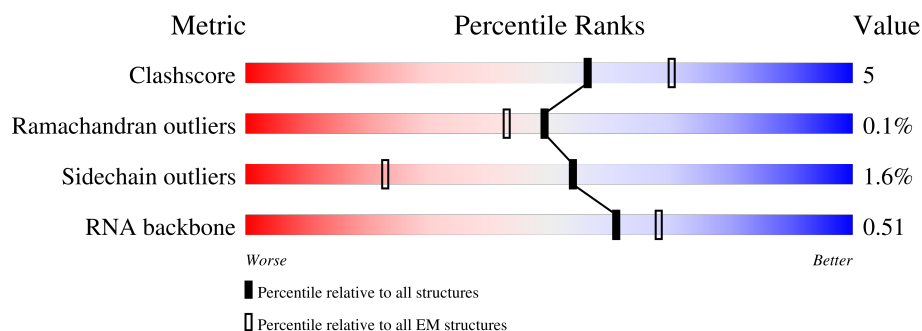
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance

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

The reported resolution of this entry is 2.60 Å.

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



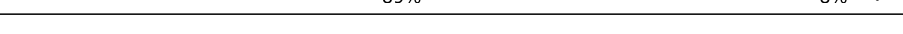
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	8728 (2.10 - 3.10)

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

Mol	Chain	Length	Quality of chain
1	A	204	
2	B	199	
3	C	184	

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Mol	Chain	Length	Quality of chain
4	D	186	
5	E	189	
6	F	172	
7	G	160	
8	H	121	
9	I	137	
10	J	155	
11	K	142	
12	L	127	
13	M	136	
14	N	149	
15	O	59	
16	P	105	
17	Q	113	
18	R	130	
19	S	107	
20	T	121	
21	U	120	
22	V	100	
23	W	88	
24	X	78	
25	Y	51	
26	Z	128	
27	b	106	
28	c	92	

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Mol	Chain	Length	Quality of chain
29	d	25	
30	f	3395	
31	h	121	
32	i	158	
33	j	254	
34	k	387	
35	l	362	
36	m	297	
37	n	176	
38	o	244	
39	p	256	
40	q	191	
41	r	221	
42	s	174	
43	t	199	
44	u	138	
45	a	1038	
46	e	1562	
47	g	245	
48	w	217	
49	x	77	
50	y	76	
51	z	165	
52	0	312	
53	1	18	

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Mol	Chain	Length	Quality of chain
54	v	157	8% 75% 15% 10%

2 Entry composition

There are 56 unique types of molecules in this entry. The entry contains 151341 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 60S ribosomal protein L15-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	203	Total	C	N	O	S	0	0
			1720	1077	361	281	1		

- Molecule 2 is a protein called 60S ribosomal protein L16-A.

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

- Molecule 3 is a protein called 60S ribosomal protein L17-A.

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

- Molecule 4 is a protein called 60S ribosomal protein L18-A.

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

- Molecule 5 is a protein called 60S ribosomal protein L19-A.

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

- Molecule 6 is a protein called 60S ribosomal protein L20-A.

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

- Molecule 7 is a protein called 60S ribosomal protein L21-A.

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

- Molecule 8 is a protein called 60S ribosomal protein L22-A.

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

- Molecule 9 is a protein called 60S ribosomal protein L23-A.

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

- Molecule 10 is a protein called 60S ribosomal protein L24-A.

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

- Molecule 11 is a protein called 60S ribosomal protein L25.

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

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

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

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

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

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

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

- Molecule 15 is a protein called 60S ribosomal protein L29.

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

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

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

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

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

- Molecule 18 is a protein called 60S ribosomal protein L32.

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

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

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

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

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

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

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

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

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

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

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

- Molecule 24 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	X	77	Total	C	N	O		0	0
			612	391	115	106			

- Molecule 25 is a protein called 60S ribosomal protein L39.

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

- Molecule 26 is a protein called Ubiquitin-60S ribosomal protein L40.

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

- Molecule 27 is a protein called 60S ribosomal protein L42-A.

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

- Molecule 28 is a protein called 60S ribosomal protein L43-A.

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

- Molecule 29 is a protein called 60S ribosomal protein L41-A.

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

- Molecule 30 is a RNA chain called 25S rRNA.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
f	?	-	G	deletion	GB 2211412835

- Molecule 31 is a RNA chain called 5S rRNA.

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

- Molecule 32 is a RNA chain called 5.8S rRNA.

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

- Molecule 33 is a protein called 60S ribosomal protein L2-A.

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

- Molecule 34 is a protein called 60S ribosomal protein L3.

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

- Molecule 35 is a protein called 60S ribosomal protein L4-A.

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

- Molecule 36 is a protein called 60S ribosomal protein L5.

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

- Molecule 37 is a protein called 60S ribosomal protein L6-B.

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

- Molecule 38 is a protein called 60S ribosomal protein L7-A.

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

- Molecule 39 is a protein called 60S ribosomal protein L8-A.

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

- Molecule 40 is a protein called 60S ribosomal protein L9-A.

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

- Molecule 41 is a protein called 60S ribosomal protein L10.

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

- Molecule 42 is a protein called 60S ribosomal protein L11-A.

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

- Molecule 43 is a protein called 60S ribosomal protein L13-A.

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

- Molecule 44 is a protein called 60S ribosomal protein L14-A.

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

- Molecule 45 is a protein called Ribosome quality control complex subunit 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	a	848	Total	C	N	O	S	0	0
			6569	4188	1138	1226	17		

- Molecule 46 is a protein called E3 ubiquitin-protein ligase listerin.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	e	1527	Total	C	N	O	S	0	0
			11508	7354	1936	2180	38		

- Molecule 47 is a protein called Eukaryotic translation initiation factor 6.

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

- Molecule 48 is a protein called 60S ribosomal protein L1-A.

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

- Molecule 49 is a RNA chain called A-site Ala aminoacyl-tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	x	75	Total	C	N	O	P	0	0
			1584	705	279	526	74		

- Molecule 50 is a RNA chain called P-site petidyl-tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	y	73	Total	C	N	O	P	0	0
			1556	692	273	518	73		

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
y	72	C	-	insertion	GB 1554469083
y	73	G	-	insertion	GB 1554469083
y	75	C	A	conflict	GB 1554469083

- Molecule 51 is a protein called 60S ribosomal protein L12-A.

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

- Molecule 52 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	0	121	Total	C	N	O	S	0	0
			961	618	167	173	3		

- Molecule 53 is a protein called CAT tailed nascent peptide.

Mol	Chain	Residues	Atoms				AltConf	Trace
53	1	17	Total	C	N	O	0	0
			85	51	17	17		

- Molecule 54 is a protein called Eukaryotic translation initiation factor 5A-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	v	142	Total	C	N	O	S	0	0
			1085	676	183	217	9		

- Molecule 55 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
55	A	1	Total	Mg	0
			1	1	
55	C	1	Total	Mg	0
			1	1	
55	E	1	Total	Mg	0
			1	1	
55	I	1	Total	Mg	0
			1	1	
55	R	1	Total	Mg	0
			1	1	
55	T	1	Total	Mg	0
			1	1	
55	f	3	Total	Mg	0
			3	3	
55	h	1	Total	Mg	0
			1	1	
55	j	2	Total	Mg	0
			2	2	
55	k	1	Total	Mg	0
			1	1	

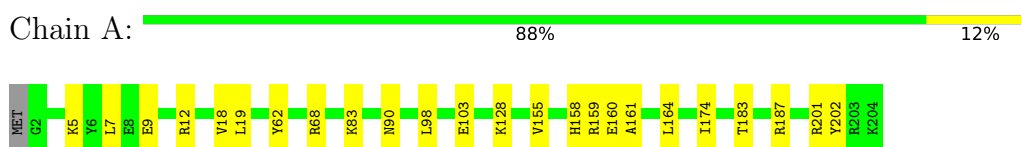
- Molecule 56 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
56	T	1	Total	Zn	0
			1	1	
56	W	1	Total	Zn	0
			1	1	
56	Z	1	Total	Zn	0
			1	1	
56	b	1	Total	Zn	0
			1	1	
56	c	1	Total	Zn	0
			1	1	
56	e	2	Total	Zn	0
			2	2	

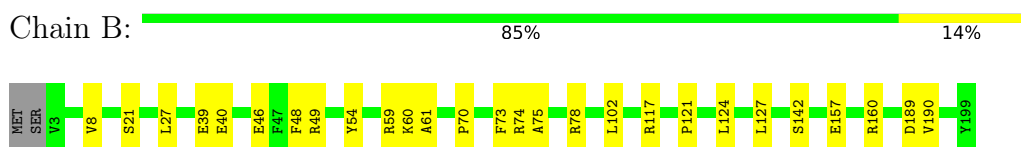
3 Residue-property plots [i](#)

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

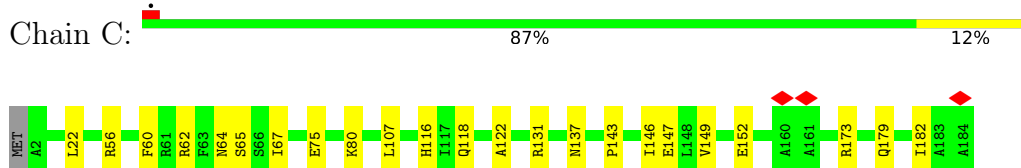
- Molecule 1: 60S ribosomal protein L15-A



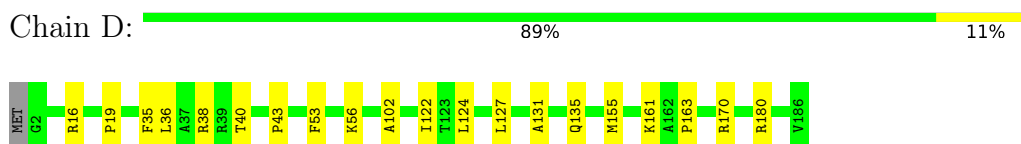
- Molecule 2: 60S ribosomal protein L16-A



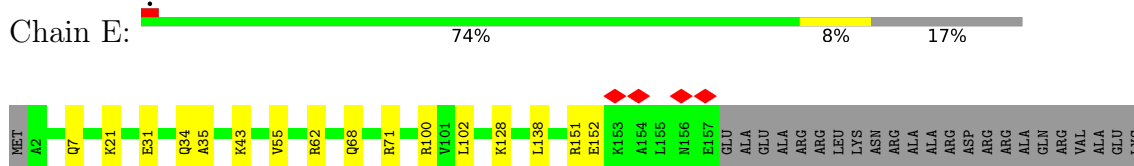
- Molecule 3: 60S ribosomal protein L17-A



- Molecule 4: 60S ribosomal protein L18-A



- Molecule 5: 60S ribosomal protein L19-A

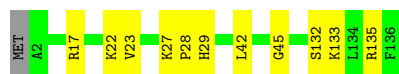


Chain L:  91% 8% .



- Molecule 13: 60S ribosomal protein L27-A

Chain M:  91% 8% .



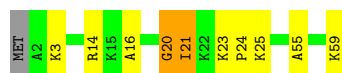
- Molecule 14: 60S ribosomal protein L28

Chain N:  87% 13% .



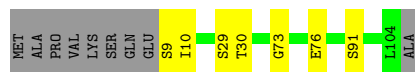
- Molecule 15: 60S ribosomal protein L29

Chain O:  81% 14% . .



- Molecule 16: 60S ribosomal protein L30

Chain P:  85% 7% 9%



- Molecule 17: 60S ribosomal protein L31-A

Chain Q:  80% 17% .



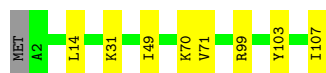
- Molecule 18: 60S ribosomal protein L32

Chain R:  89% 8% .



- Molecule 19: 60S ribosomal protein L33-A

Chain S:  92% 7%

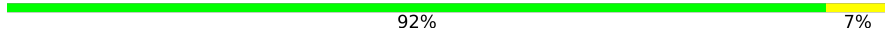


- Molecule 20: 60S ribosomal protein L34-A

Chain T:  85% 7% 7%



- Molecule 21: 60S ribosomal protein L35-A

Chain U:  92% 7%



- Molecule 22: 60S ribosomal protein L36-A

Chain V:  90% 9%



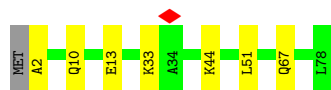
- Molecule 23: 60S ribosomal protein L37-A

Chain W:  75% 16% 8%

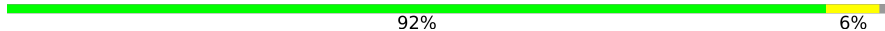


- Molecule 24: 60S ribosomal protein L38

Chain X:  90% 9%

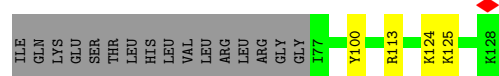


- Molecule 25: 60S ribosomal protein L39

Chain Y:  92% 6%



- Molecule 26: Ubiquitin-60S ribosomal protein L40



- | MET |
|------|
| V2 |
| T7 |
| T10 |
| H20 |
| T21 |
| Q22 |
| Y28 |
| K29 |
| A30 |
| R41 |
| R45 |
| K61 |
| A62 |
| K63 |
| V69 |
| L72 |
| V75 |
| K76 |
| H90 |
| K100 |
| L104 |
| GLN |
| PHE |

-

- Chain d:  20% 72% 12% 12%

Diagram illustrating the 20 amino acids in the genetic code, organized into four groups based on their position in the codon table:

- Group 1 (Orange):** M4
- Group 2 (Yellow):** R20
- Group 3 (Green):** K22
- Group 4 (Blue):** V23
- Group 5 (Grey):** ARG, SER, LYS

- | | | | | | |
|---|---|---|----|------|------|
| G | U | U | A6 | A13 | U14 | U19 | A20 | G21 | A26 | C36 | A40 | A43 | A49 | G58 | G59 | A60 | A63 | G64 | A65 | A66 | A67 | G68 | G76 | U77 | U78 | G86 | G92 | G93 | G94 | A95 | G98 | A99 | A109 | G110 | C111 | A116 | G120 | A121 | A122 | A123 | A124 | A125 | A126 | A127 | A128 | A129 | A130 | A131 | A132 | A133 | A134 | A135 | A136 | A137 | A138 | A139 | A140 | A141 | A142 | A143 | A144 | A145 | A146 | A147 | A148 | A149 | A150 | A151 | A152 | A153 | A154 | A155 | A156 | A157 | A158 | A159 | A160 | A161 | A162 | A163 | A164 | A165 | A166 | A167 | A168 | A169 | A170 | A171 | A172 | A173 | A174 | A175 | A176 | A177 | A178 | A179 | A180 | A181 | A182 | A183 | A184 | A185 | A186 | A187 | A188 | A189 | A190 | A191 | A192 | A193 | A194 | A195 | A196 | A197 | A198 | A199 | A200 | A201 | A202 | A203 | A204 | A205 | A206 | A207 | A208 | A209 | A210 | A211 | A212 | A213 | A214 | A215 | A216 | A217 | A218 | A219 | A220 | A221 | A222 | A223 | A224 | A225 | A226 | A227 | A228 | A229 | A230 | A231 | A232 | A233 | A234 | A235 | A236 | A237 | A238 | A239 | A240 | A241 | A242 | A243 | A244 | A245 | A246 | A247 | A248 | A249 | A250 | A251 | A252 | A253 | A254 | A255 | A256 | A257 | A258 | A259 | A260 | A261 | A262 | A263 | A264 | A265 | A266 | A267 | A268 | A269 | A270 | A271 | A272 | A273 | A274 | A275 | A276 | A277 | A278 | A279 | A280 | A281 | A282 | A283 | A284 | A285 | A286 | A287 | A288 | A289 | A290 | A291 | A292 | A293 | A294 | A295 | A296 | A297 | A298 | A299 | A300 | A301 | A302 | A303 | A304 | A305 | A306 | A307 | A308 | A309 | A310 | A311 | A312 | A313 | A314 | A315 | A316 | A317 | A318 | A319 | A320 | A321 | A322 | A323 | A324 | A325 | A326 | A327 | A328 | A329 | A330 | A331 | A332 | A333 | A334 | A335 | A336 | A337 | A338 | A339 | A340 | A341 | A342 | A343 | A344 | A345 | A346 | A347 | A348 | A349 | A350 | A351 | A352 | A353 | A354 | A355 | A356 | A357 | A358 | A359 | A360 | A361 | A362 | A363 | A364 | A365 | A366 | A367 | A368 | A369 | A370 | A371 | A372 | A373 | A374 | A375 | A376 | A377 | A378 | A379 | A380 | A381 | A382 | A383 | A384 | A385 | A386 | A387 | A388 | A389 | A390 | A391 | A392 | A393 | A394 | A395 | A396 | A397 | A398 | A399 | A400 | A401 | A402 | A403 | A404 | A405 | A406 | A407 | A408 | A409 | A410 | A411 | A412 | A413 | A414 | A415 | A416 | A417 | A418 | A419 | A420 | A421 | A422 | A423 | A424 | A425 | A426 | A427 | A428 | A429 | A430 | A431 | A432 | A433 | A434 | A435 | A436 | A437 | A438 | A439 | A440 | A441 | A442 | A443 | A444 | A445 | A446 | A447 | A448 | A449 | A450 | A451 | A452 | A453 | A454 | A455 | A456 | A457 | A458 | A459 | A460 | A461 | A462 | A463 | A464 | A465 | A466 | A467 | A468 | A469 | A470 | A471 | A472 | A473 | A474 | A475 | A476 | A477 | A478 | A479 | A480 | A481 | A482 | A483 | A484 | A485 | A486 | A487 | A488 | A489 | A490 | A491 | A492 | A493 | A494 | A495 | A496 | A497 | A498 | A499 | A500 | A501 | A502 | A503 | A504 | A505 | A506 | A507 | A508 | A509 | A510 | A511 | A512 | A513 | A514 | A515 | A516 | A517 | A518 | A519 | A520 | A521 | A522 | A523 | A524 | A525 | A526 | A527 | A528 | A529 | A530 | A531 | A532 | A533 | A534 | A535 | A536 | A537 | A538 | A539 | A540 | A541 | A542 | A543 | A544 | A545 | A546 | A547 | A548 | A549 | A550 | A551 | A552 | A553 | A554 | A555 | A556 | A557 | A558 | A559 | A560 | A561 | A562 | A563 | A564 | A565 | A566 | A567 | A568 | A569 | A570 | A571 | A572 | A573 | A574 | A575 | A576 | A577 | A578 | A579 | A580 | A581 | A582 | A583 | A584 | A585 | A586 | A587 | A588 | A589 | A590 | A591 | A592 | A593 | A594 | A595 | A596 | A597 |
|---|---|---|----|------|------|

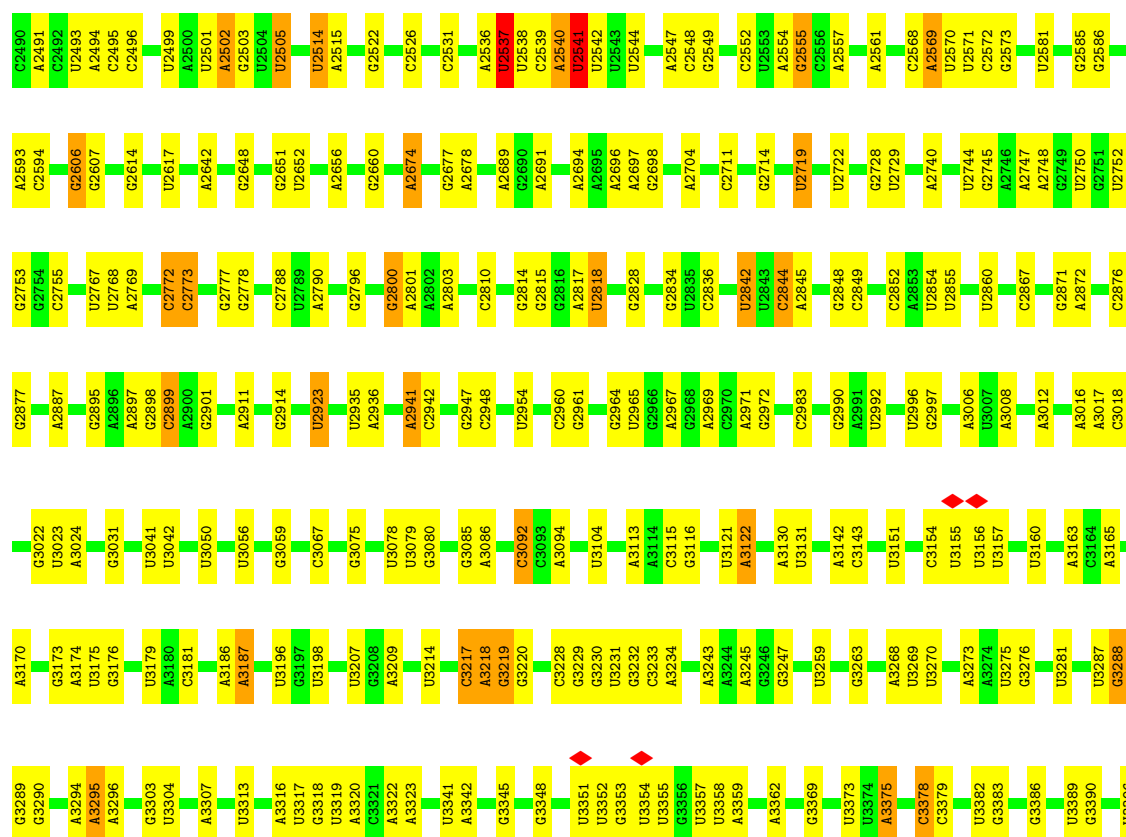
A130	U133	U134	C135	G136	G139	G156	A157	G158	A159	A165	C166	G172	G173	U182	G183	A187	U190	U191	C200	G206	U210	A211	G212	A213	G216	U217	G218	A219	G234	U240	G241	C242	G243	G244	U245	U249	U252	G269	G282	G283
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A285	A295	A296	G297	U298	G299	G300	G301	U305	A306	A307	A308	A323	U329	C339	A348	A349	C350	A351	A352	G358	A361	A365	A374	A375	G376	G394	A397	A398	A399	G400	U401	A402	C403	U411	G412	A417	A418	G421	A422	C439	A440			
U286	A297	A298	A299	A300	A301	A302	A303	A304	A305	A306	A307	A308	A309	A310	A311	A312	A313	A314	A315	A316	A317	A318	A319	A320	A321	A322	A323	A324	A325	A326	A327	A328	A329	A330	A331	A332	A333	A334	A335	A336	A337	A338	A339	A340

G442
G443
U444
G445
U446
U447
U448
U449
G450
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A486
U487
U488
U489
C490
G494
G495
G505
G518
A519
U520
A521
A522

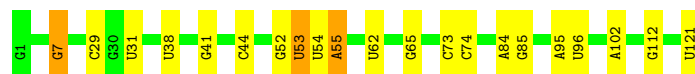
U528	G530	G531	A532	G535	U536	G542	G543	C544	U545	G547	G548	U549	A550	G552	U555	A556	A557	U558	A559	U571	A572	A578	G579	A585	A589	G590	G591	G595	C596	G597	G604	A608	G609	G610	A611	G617	G618	A619	U620	A621	A622	U627
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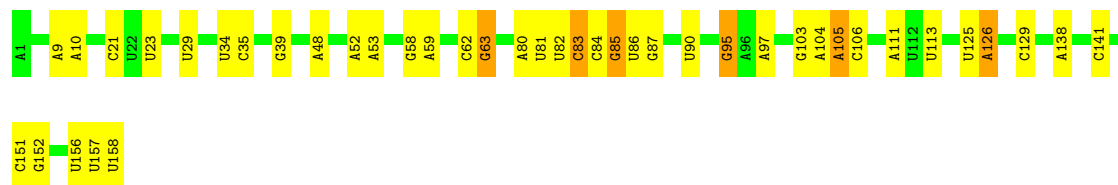
• Molecule 31: 5S rRNA

Chain h: 83% 15% .



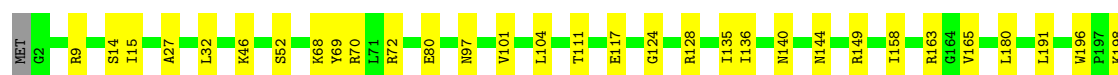
• Molecule 32: 5.8S rRNA

Chain i: 73% 23% .



• Molecule 33: 60S ribosomal protein L2-A

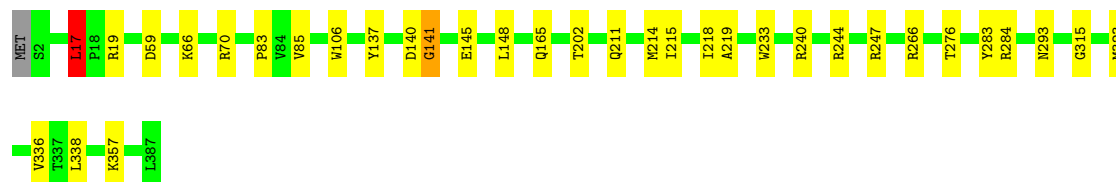
Chain j: 83% 14% .





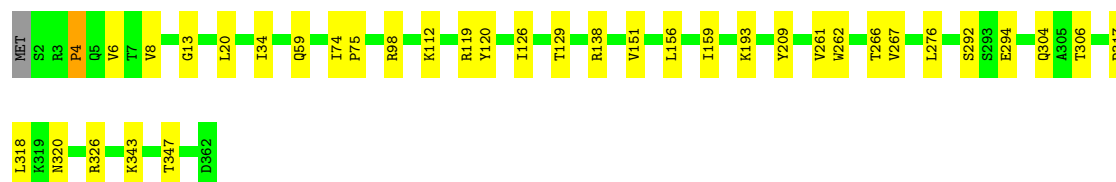
- Molecule 34: 60S ribosomal protein L3

Chain k: 91% 8%



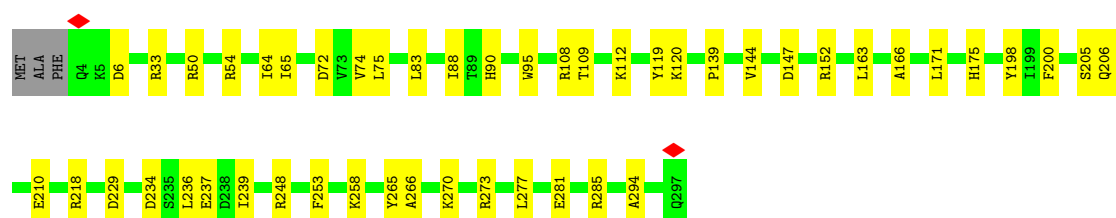
- Molecule 35: 60S ribosomal protein L4-A

Chain l: 90% 10%



- Molecule 36: 60S ribosomal protein L5

Chain m: 82% 16%



- Molecule 37: 60S ribosomal protein L6-B

Chain n: 89% 6% 5%



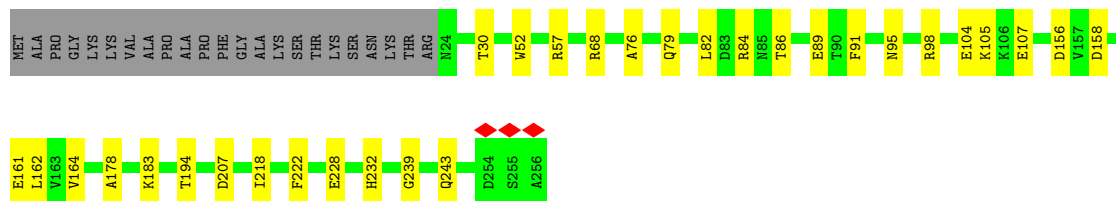
- Molecule 38: 60S ribosomal protein L7-A

Chain o: 85% 6% 9%



- Molecule 39: 60S ribosomal protein L8-A

Chain p:  79% 12% 9%



- Molecule 40: 60S ribosomal protein L9-A

Chain q:  87% 12% .



- Molecule 41: 60S ribosomal protein L10

Chain r:  87% 12% .



- Molecule 42: 60S ribosomal protein L11-A

Chain s:  86% 10% ..



- Molecule 43: 60S ribosomal protein L13-A

Chain t:  88% 9% .



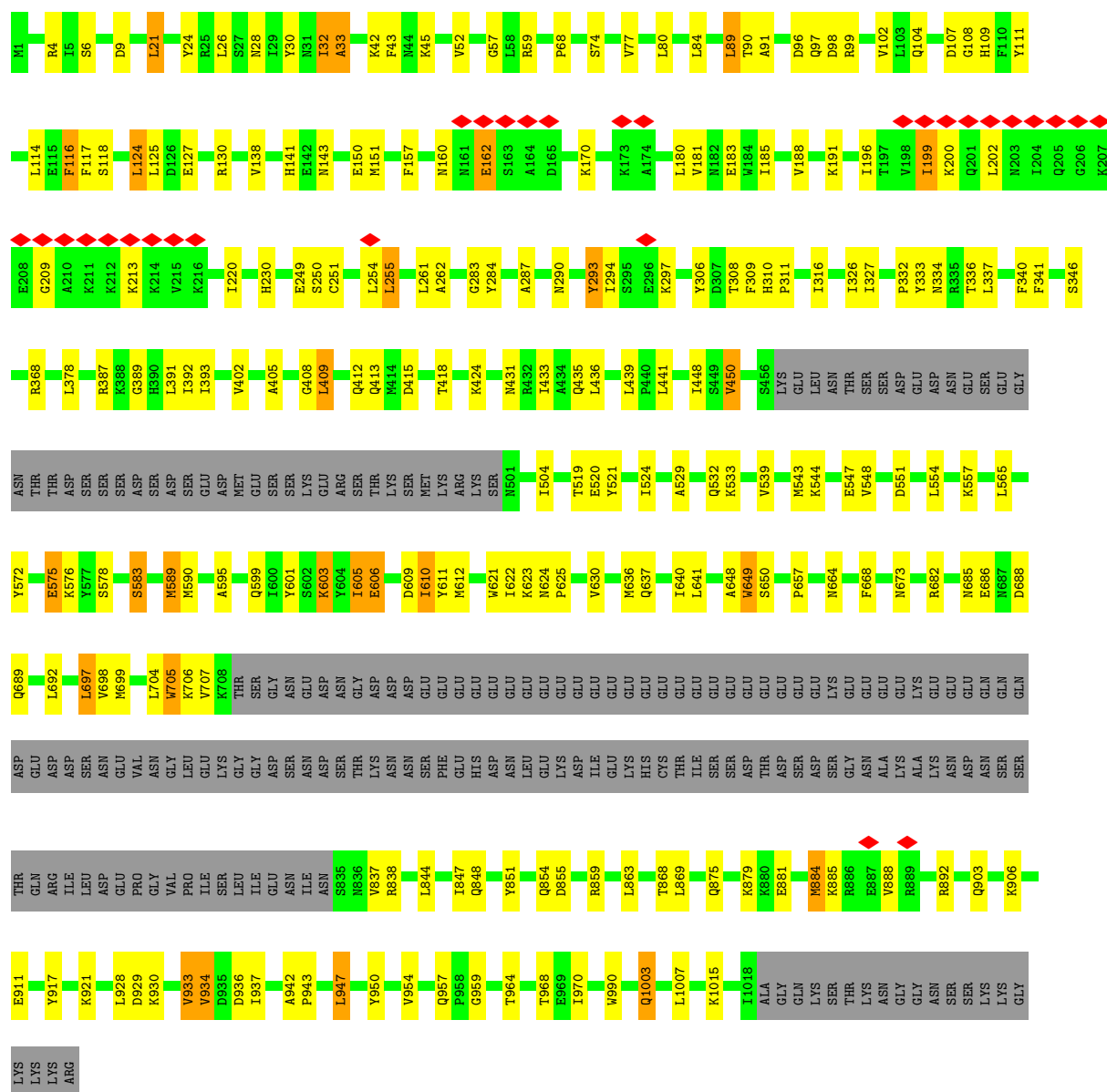
- Molecule 44: 60S ribosomal protein L14-A

Chain u:  88% 11% .

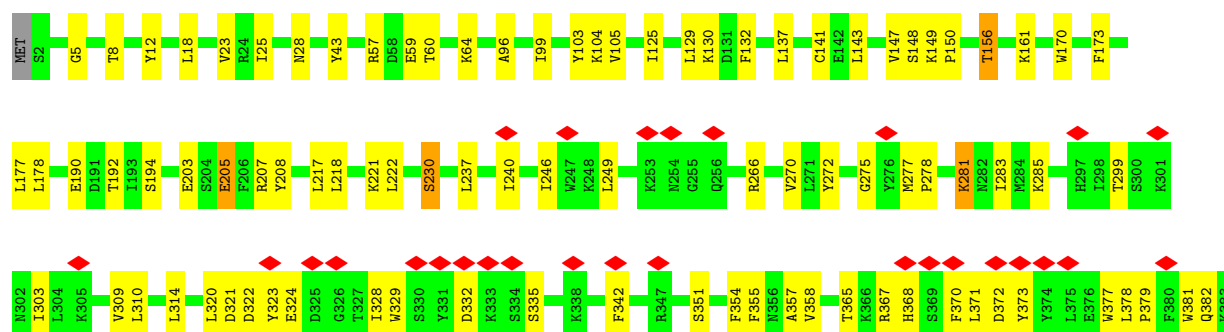
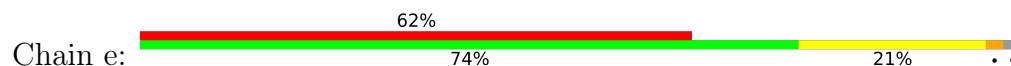


- Molecule 45: Ribosome quality control complex subunit 2

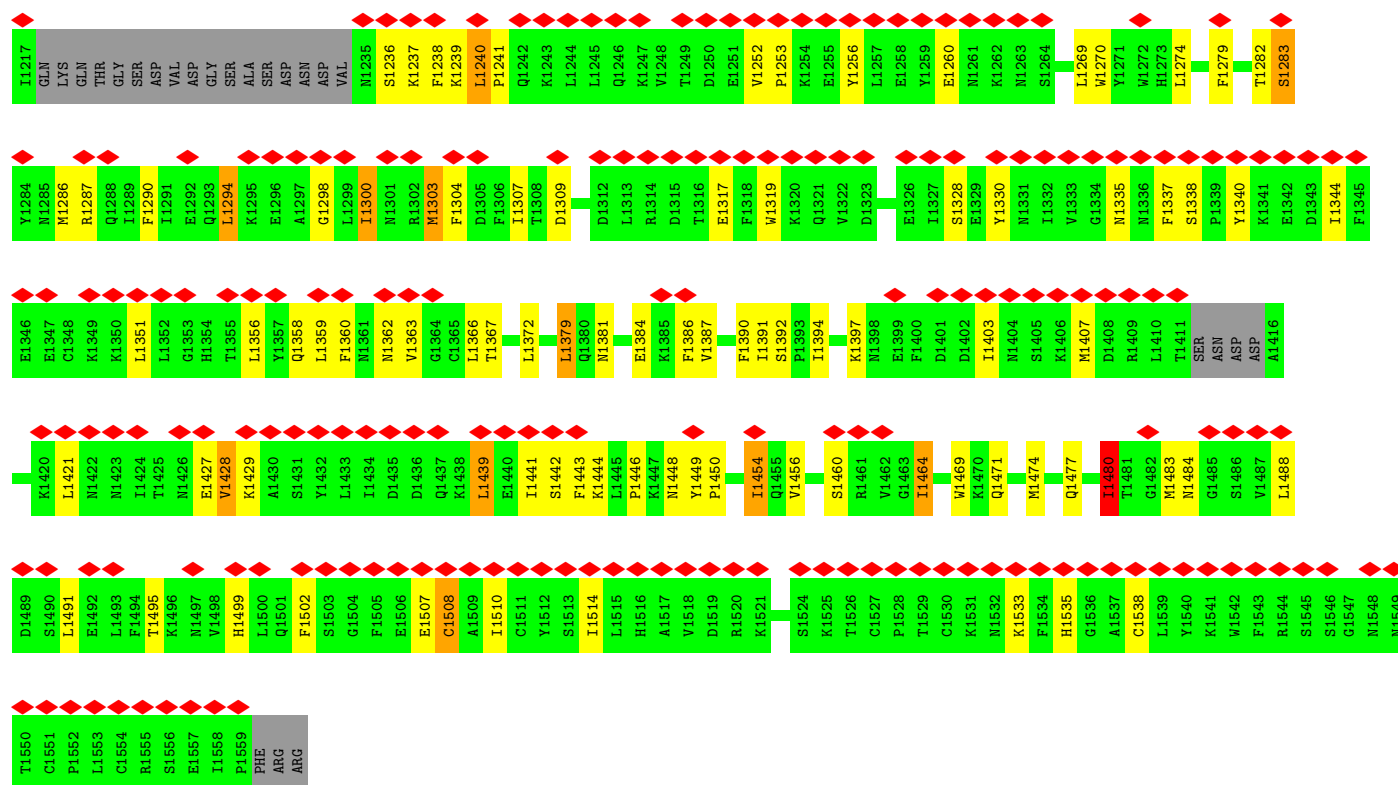
Chain a:  60% 19% 18%



• Molecule 46: E3 ubiquitin-protein ligase listerin







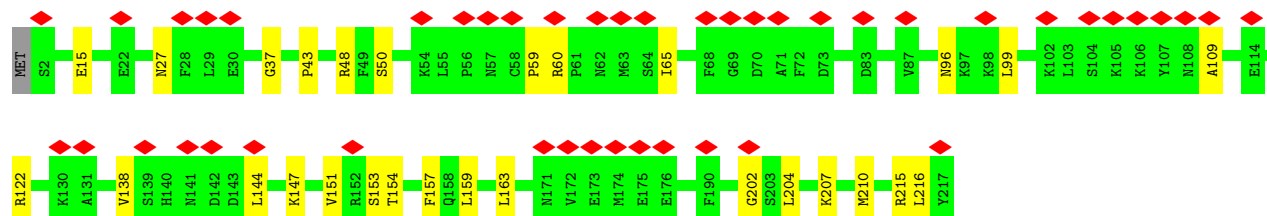
- Molecule 47: Eukaryotic translation initiation factor 6

Chain g: 77% 15% 8%



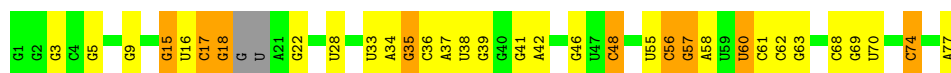
- Molecule 48: 60S ribosomal protein L1-A

Chain w: 21% 87% 13%



- Molecule 49: A-site Ala aminoacyl-tRNA

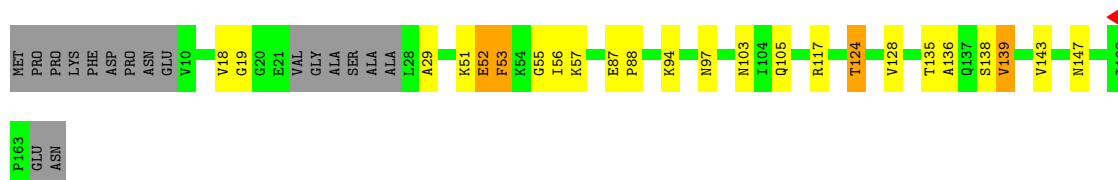
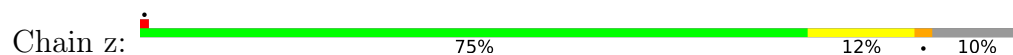
Chain x: 55% 31% 12%



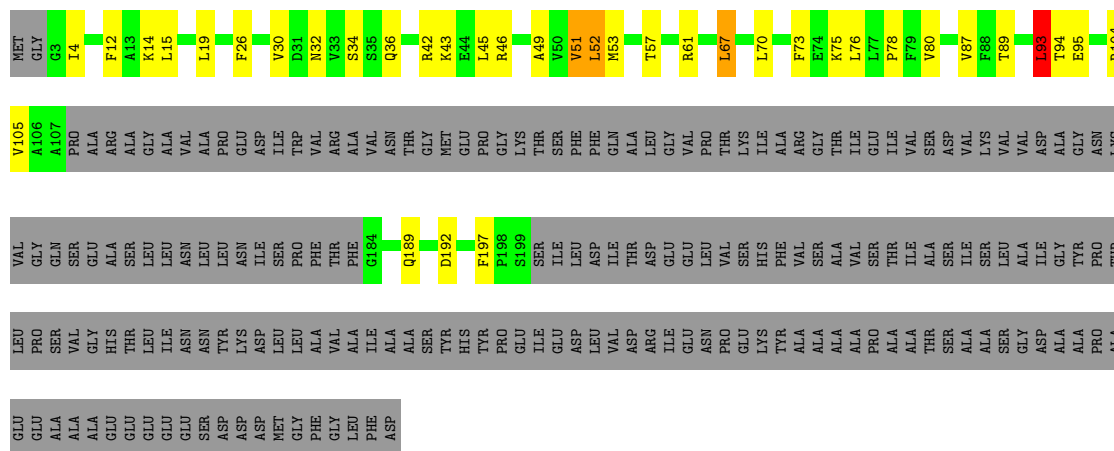
- Molecule 50: P-site petidyl-tRNA



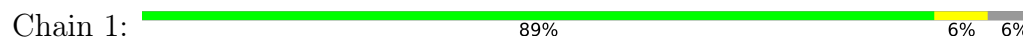
- Molecule 51: 60S ribosomal protein L12-A



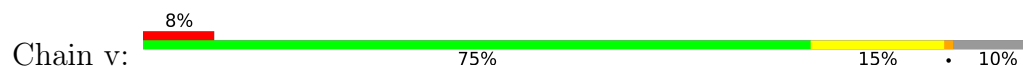
- Molecule 52: 60S acidic ribosomal protein P0

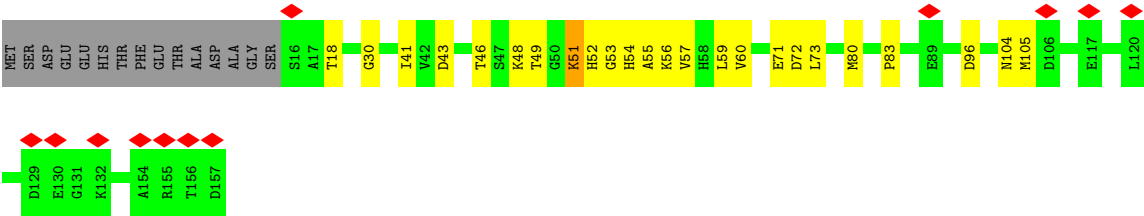


- Molecule 53: CAT tailed nascent peptide



- Molecule 54: Eukaryotic translation initiation factor 5A-1





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	74128	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	46	Depositor
Minimum defocus (nm)	400	Depositor
Maximum defocus (nm)	4000	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	3.681	Depositor
Minimum map value	-0.788	Depositor
Average map value	0.020	Depositor
Map value standard deviation	0.128	Depositor
Recommended contour level	0.35	Depositor
Map size (Å)	476.55002, 476.55002, 476.55002	wwPDB
Map dimensions	450, 450, 450	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.059, 1.059, 1.059	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, MG, 5CT

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	0.31	0/1757	0.54	0/2354
2	B	0.31	0/1585	0.54	0/2128
3	C	0.34	0/1439	0.62	0/1938
4	D	0.28	0/1465	0.57	0/1965
5	E	0.29	0/1275	0.56	0/1702
6	F	0.31	0/1473	0.56	0/1980
7	G	0.27	0/1296	0.56	0/1739
8	H	0.29	0/812	0.75	2/1099 (0.2%)
9	I	0.27	0/1018	0.50	0/1369
10	J	0.27	0/530	0.52	0/703
11	K	0.31	0/979	0.57	0/1321
12	L	0.27	0/995	0.53	0/1329
13	M	0.27	0/1106	0.56	0/1485
14	N	0.32	0/1200	0.56	1/1607 (0.1%)
15	O	0.25	0/473	0.62	0/629
16	P	0.26	0/745	0.60	0/1001
17	Q	0.31	0/890	0.68	2/1196 (0.2%)
18	R	0.25	0/1034	0.47	0/1385
19	S	0.54	0/868	0.54	1/1168 (0.1%)
20	T	0.29	0/890	0.58	2/1189 (0.2%)
21	U	0.27	0/978	0.53	0/1301
22	V	0.28	0/772	0.57	0/1026
23	W	0.37	0/660	0.59	0/875
24	X	0.29	0/618	0.65	1/826 (0.1%)
25	Y	0.29	0/443	0.46	0/588
26	Z	0.28	0/416	0.60	0/553
27	b	0.28	0/836	0.52	0/1104
28	c	0.27	0/701	0.56	0/934
29	d	0.22	0/208	0.81	2/267 (0.7%)
30	f	0.30	0/77011	0.39	7/120065 (0.0%)
31	h	0.26	0/2883	0.32	0/4491
32	i	0.30	0/3746	0.36	0/5832

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	j	0.35	0/1908	0.55	0/2564
34	k	0.30	0/3146	0.54	0/4228
35	l	0.29	0/2800	0.57	4/3790 (0.1%)
36	m	0.27	0/2400	0.56	0/3239
37	n	0.28	0/1329	0.60	0/1794
38	o	0.31	0/1821	0.58	0/2451
39	p	0.27	0/1836	0.58	1/2481 (0.0%)
40	q	0.30	0/1529	0.63	2/2060 (0.1%)
41	r	0.25	0/1801	0.49	0/2416
42	s	0.26	0/1367	0.69	4/1834 (0.2%)
43	t	0.29	0/1568	0.62	1/2106 (0.0%)
44	u	0.30	0/1068	0.53	0/1438
45	a	0.44	0/6679	0.85	24/9012 (0.3%)
46	e	0.42	0/11707	0.81	26/15897 (0.2%)
47	g	0.24	0/1672	0.59	1/2281 (0.0%)
48	w	0.27	0/1736	0.61	1/2332 (0.0%)
49	x	0.18	0/1765	0.35	0/2746
50	y	0.36	0/1735	0.63	0/2701
51	z	0.67	0/726	1.24	13/1006 (1.3%)
52	0	0.49	0/976	0.94	3/1313 (0.2%)
54	v	0.31	0/1084	0.63	1/1456 (0.1%)
All	All	0.32	0/161755	0.52	99/236294 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
15	O	0	1
21	U	0	1
23	W	0	1
34	k	0	2
35	l	0	2
39	p	0	3
40	q	0	1
44	u	0	1
46	e	0	2
47	g	0	1
All	All	0	15

There are no bond length outliers.

All (99) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
45	a	116	PHE	N-CA-C	-9.60	100.88	112.59
46	e	793	ASN	N-CA-C	-9.27	101.73	113.23
8	H	51	GLY	CA-C-N	7.86	136.55	121.54
8	H	51	GLY	C-N-CA	7.86	136.55	121.54
54	v	53	GLY	N-CA-C	7.66	124.23	112.51
46	e	637	ASP	N-CA-C	-7.61	102.99	111.28
45	a	21	LEU	N-CA-C	7.58	119.54	111.28
51	z	87	GLU	CA-C-N	-7.39	112.77	120.38
51	z	87	GLU	C-N-CA	-7.39	112.77	120.38
51	z	138	SER	N-CA-C	-7.27	103.29	111.14
46	e	666	GLY	N-CA-C	-7.24	105.07	115.64
46	e	1069	GLY	N-CA-C	7.06	121.43	110.91
46	e	1298	GLY	N-CA-C	-6.95	105.64	115.30
46	e	452	VAL	N-CA-C	-6.86	106.55	113.47
51	z	94	LYS	N-CA-C	-6.75	104.01	111.36
45	a	334	ASN	N-CA-C	-6.74	104.02	111.36
35	l	4	PRO	CA-C-N	6.72	134.38	121.54
35	l	4	PRO	C-N-CA	6.72	134.38	121.54
46	e	132	PHE	N-CA-C	6.66	118.62	111.36
46	e	148	SER	N-CA-C	6.62	118.50	111.28
45	a	130	ARG	N-CA-C	-6.45	100.73	110.28
14	N	66	ALA	N-CA-C	-6.41	106.42	114.56
45	a	603	LYS	N-CA-C	6.40	118.33	111.36
46	e	1317	GLU	N-CA-C	6.35	118.20	111.28
46	e	553	GLN	N-CA-C	-6.29	99.78	109.52
46	e	57	ARG	N-CA-C	6.28	118.12	111.28
40	q	138	THR	CA-C-N	6.26	133.50	121.54
40	q	138	THR	C-N-CA	6.26	133.50	121.54
29	d	4	MET	CA-C-N	6.22	133.41	121.54
29	d	4	MET	C-N-CA	6.22	133.41	121.54
45	a	32	ILE	N-CA-C	6.11	116.67	108.11
45	a	648	ALA	N-CA-C	-6.11	104.62	111.28
45	a	45	LYS	N-CA-C	-6.05	98.57	109.09
46	e	1283	SER	N-CA-C	-5.91	100.55	109.95
46	e	1502	PHE	N-CA-C	5.89	120.17	112.92
45	a	575	GLU	N-CA-C	5.87	117.68	111.28
51	z	124	THR	N-CA-C	5.87	117.68	111.28
45	a	45	LYS	CA-C-N	-5.87	113.49	119.83
45	a	45	LYS	C-N-CA	-5.87	113.49	119.83
45	a	539	VAL	N-CA-C	5.73	115.92	110.42
30	f	2541	U	P-O3'-C3'	5.70	128.75	120.20
47	g	171	GLU	N-CA-CB	5.63	119.01	110.28

Continued on next page...

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
42	s	114	ILE	CA-C-N	5.63	132.29	121.54
42	s	114	ILE	C-N-CA	5.63	132.29	121.54
45	a	96	ASP	CB-CA-C	-5.63	110.07	116.54
46	e	1480	ILE	N-CA-C	5.63	116.40	110.72
46	e	1252	VAL	CA-C-N	-5.60	113.50	120.79
46	e	1252	VAL	C-N-CA	-5.60	113.50	120.79
45	a	59	ARG	N-CA-C	5.57	117.74	108.99
46	e	736	VAL	N-CA-C	5.56	116.33	110.72
42	s	7	ASN	N-CA-C	5.54	117.55	109.30
45	a	84	LEU	N-CA-C	5.54	119.73	112.92
46	e	868	LYS	N-CA-C	5.50	117.27	111.28
46	e	43	TYR	N-CA-C	5.48	117.25	111.28
43	t	136	GLU	CA-CB-CG	5.47	125.05	114.10
20	T	94	LEU	CA-C-N	-5.44	112.75	121.35
20	T	94	LEU	C-N-CA	-5.44	112.75	121.35
46	e	994	ASP	N-CA-C	5.44	117.02	111.14
42	s	108	GLU	CA-CB-CG	5.41	124.92	114.10
30	f	2502	A	P-O3'-C3'	5.39	128.28	120.20
51	z	19	GLY	N-CA-C	5.38	119.43	112.54
45	a	91	ALA	N-CA-C	5.34	116.97	108.79
46	e	548	ILE	CB-CA-C	-5.34	108.69	114.35
30	f	282	G	C2'-C3'-O3'	5.33	121.70	113.70
45	a	583	SER	N-CA-C	-5.33	105.47	111.28
30	f	1815	U	P-O3'-C3'	5.33	128.19	120.20
45	a	209	GLY	N-CA-C	-5.32	107.91	115.30
52	0	94	THR	N-CA-C	5.31	117.07	111.28
17	Q	83	GLU	CA-C-N	5.31	131.68	121.54
17	Q	83	GLU	C-N-CA	5.31	131.68	121.54
46	e	1182	LYS	N-CA-C	5.30	117.06	111.28
51	z	29	ALA	N-CA-C	-5.30	105.63	113.16
30	f	1307	G	P-O3'-C3'	5.29	128.13	120.20
45	a	162	GLU	N-CA-C	-5.24	105.57	111.28
51	z	117	ARG	N-CA-C	-5.24	105.57	111.28
19	S	103	TYR	N-CA-C	-5.22	103.61	110.39
30	f	2941	A	C4'-C3'-O3'	-5.20	101.60	109.40
39	p	79	GLN	CA-CB-CG	5.20	124.51	114.10
46	e	1483	MET	N-CA-C	-5.18	101.49	109.52
35	l	317	PRO	CA-C-N	5.17	131.41	121.54
35	l	317	PRO	C-N-CA	5.17	131.41	121.54
46	e	737	TYR	N-CA-C	5.17	120.22	112.94
51	z	18	VAL	N-CA-C	-5.17	102.92	109.58
52	0	89	THR	N-CA-C	5.15	117.81	109.06

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	e	281	LYS	N-CA-C	5.13	116.88	111.28
45	a	96	ASP	N-CA-C	5.12	116.09	108.31
51	z	103	ASN	N-CA-C	5.12	116.97	109.24
51	z	147	ASN	CA-C-N	-5.12	114.31	119.83
51	z	147	ASN	C-N-CA	-5.12	114.31	119.83
46	e	275	GLY	N-CA-C	-5.11	108.22	115.43
45	a	957	GLN	CA-C-N	-5.10	114.32	119.83
45	a	957	GLN	C-N-CA	-5.10	114.32	119.83
52	0	104	ARG	N-CA-C	5.07	118.43	111.54
24	X	67	GLN	N-CA-CB	5.06	118.65	110.40
45	a	33	ALA	CB-CA-C	-5.06	110.76	116.63
51	z	139	VAL	N-CA-C	5.04	115.27	110.53
45	a	610	ILE	N-CA-C	5.03	115.56	108.36
48	w	15	GLU	N-CA-CB	5.01	118.05	110.28
30	f	2537	U	P-O3'-C3'	5.00	127.70	120.20

There are no chirality outliers.

All (15) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
15	O	20	GLY	Peptide
21	U	83	LYS	Peptide
23	W	39	TYR	Peptide
46	e	392	GLY	Peptide
46	e	396	ARG	Peptide
47	g	8	GLU	Peptide
34	k	141	GLY	Peptide
34	k	17	LEU	Peptide
35	l	13	GLY	Peptide
35	l	318	LEU	Peptide
39	p	158	ASP	Peptide
39	p	30	THR	Peptide
39	p	76	ALA	Peptide
40	q	21	LYS	Peptide
44	u	12	TRP	Peptide

5.2 Too-close contacts

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

the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1720	0	1779	18	0
2	B	1555	0	1659	17	0
3	C	1416	0	1433	14	0
4	D	1441	0	1543	16	0
5	E	1258	0	1342	11	0
6	F	1437	0	1475	20	0
7	G	1272	0	1312	13	0
8	H	796	0	812	9	0
9	I	1003	0	1048	10	0
10	J	518	0	542	6	0
11	K	964	0	1025	1	0
12	L	984	0	1075	7	0
13	M	1080	0	1122	7	0
14	N	1169	0	1211	14	0
15	O	462	0	491	9	0
16	P	737	0	792	4	0
17	Q	876	0	912	10	0
18	R	1013	0	1077	8	0
19	S	850	0	880	4	0
20	T	880	0	942	8	0
21	U	969	0	1078	5	0
22	V	766	0	844	7	0
23	W	645	0	645	14	0
24	X	612	0	682	6	0
25	Y	436	0	475	2	0
26	Z	410	0	442	5	0
27	b	824	0	888	11	0
28	c	694	0	734	8	0
29	d	207	0	250	3	0
30	f	68802	0	34573	338	0
31	h	2579	0	1304	9	0
32	i	3353	0	1695	14	0
33	j	1874	0	1943	27	0
34	k	3075	0	3142	20	0
35	l	2748	0	2859	23	0
36	m	2351	0	2294	31	0
37	n	1307	0	1377	8	0
38	o	1784	0	1862	10	0
39	p	1804	0	1877	17	0
40	q	1508	0	1572	16	0
41	r	1764	0	1804	20	0
42	s	1346	0	1370	13	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
43	t	1543	0	1608	14	0
44	u	1053	0	1149	11	0
45	a	6569	0	6460	224	0
46	e	11508	0	10762	325	0
47	g	1651	0	1613	21	0
48	w	1709	0	1799	17	0
49	x	1584	0	803	26	0
50	y	1556	0	788	19	0
51	z	728	0	337	16	0
52	0	961	0	979	46	0
53	1	85	0	20	1	0
54	v	1085	0	1087	12	0
55	A	1	0	0	0	0
55	C	1	0	0	0	0
55	E	1	0	0	0	0
55	I	1	0	0	0	0
55	R	1	0	0	0	0
55	T	1	0	0	0	0
55	f	3	0	0	0	0
55	h	1	0	0	0	0
55	j	2	0	0	0	0
55	k	1	0	0	0	0
56	T	1	0	0	0	0
56	W	1	0	0	0	0
56	Z	1	0	0	0	0
56	b	1	0	0	0	0
56	c	1	0	0	0	0
56	e	2	0	0	0	0
All	All	151341	0	113587	1289	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 5.

All (1289) 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)
46:e:371:LEU:CB	46:e:377:TRP:HE1	1.08	1.60
45:a:185:ILE:CG2	45:a:255:LEU:HA	1.32	1.57
45:a:185:ILE:HG21	45:a:255:LEU:CA	1.41	1.49
46:e:371:LEU:CB	46:e:377:TRP:NE1	1.74	1.46
30:f:1259:A:C8	52:0:53:MET:HB2	1.51	1.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:f:1258:U:H4'	52:0:42:ARG:NH1	1.26	1.40
30:f:1258:U:C4'	52:0:42:ARG:HH12	1.36	1.35
46:e:141:CYS:SG	46:e:221:LYS:HE3	1.65	1.33
46:e:750:ALA:O	46:e:754:ILE:HG23	1.16	1.31
46:e:277:MET:HG3	46:e:278:PRO:CD	1.61	1.29
45:a:185:ILE:HD13	45:a:254:LEU:O	1.26	1.27
45:a:185:ILE:CG2	45:a:255:LEU:CA	1.99	1.26
45:a:1003:GLN:H	45:a:1003:GLN:NE2	1.31	1.26
46:e:1290:PHE:O	46:e:1294:LEU:HD13	1.33	1.25
46:e:371:LEU:HB2	46:e:377:TRP:NE1	1.32	1.25
46:e:1508:CYS:HA	46:e:1533:LYS:O	1.34	1.25
46:e:141:CYS:SG	46:e:221:LYS:CD	2.26	1.23
45:a:884:MET:HE1	45:a:885:LYS:CG	1.68	1.22
46:e:141:CYS:SG	46:e:221:LYS:CE	2.28	1.21
46:e:1303:MET:HA	46:e:1303:MET:CE	1.69	1.20
46:e:684:SER:CB	46:e:715:LEU:HD13	1.71	1.19
46:e:277:MET:CG	46:e:278:PRO:HD3	1.71	1.19
46:e:882:ASN:O	46:e:885:GLN:O	1.59	1.18
30:f:1257:C:H5'	51:z:124:THR:CB	1.74	1.18
46:e:1283:SER:OG	46:e:1286:MET:HG2	1.40	1.18
45:a:309:PHE:CD1	45:a:309:PHE:O	1.97	1.17
46:e:804:ILE:HD12	46:e:809:MET:SD	1.86	1.14
46:e:750:ALA:O	46:e:754:ILE:CG2	1.96	1.12
30:f:1259:A:C8	52:0:53:MET:CB	2.32	1.12
45:a:884:MET:CE	45:a:885:LYS:HG3	1.77	1.12
46:e:371:LEU:HB3	46:e:377:TRP:NE1	1.49	1.10
45:a:881:GLU:O	45:a:884:MET:HE3	1.51	1.10
30:f:1221:A:C2	52:0:12:PHE:HE2	1.69	1.09
46:e:1303:MET:HE2	46:e:1303:MET:CA	1.79	1.08
46:e:1087:CYS:SG	46:e:1099:ARG:HA	1.95	1.07
46:e:1178:VAL:HA	46:e:1184:ILE:HD12	1.36	1.07
42:s:55:ARG:HG3	50:y:16:U:N3	1.68	1.06
46:e:1319:TRP:CD1	46:e:1386:PHE:HE1	1.72	1.06
46:e:314:LEU:CB	46:e:357:ALA:HB1	1.86	1.05
46:e:377:TRP:O	46:e:381:TRP:HD1	1.39	1.03
45:a:649:TRP:HD1	45:a:650:SER:N	1.58	1.02
45:a:884:MET:HE1	45:a:885:LYS:HG3	1.05	1.02
45:a:151:MET:HE3	49:x:36:C:H42	1.20	1.02
46:e:1340:TYR:O	46:e:1344:ILE:HG12	1.59	1.01
45:a:884:MET:SD	45:a:884:MET:C	2.43	1.01
46:e:731:LEU:HD12	46:e:732:GLN:N	1.77	1.00

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:e:1319:TRP:CD1	46:e:1386:PHE:CE1	2.49	1.00
45:a:405:ALA:O	45:a:409:LEU:HD23	1.62	1.00
46:e:314:LEU:HB2	46:e:357:ALA:HB1	1.42	0.99
30:f:1259:A:N7	52:0:53:MET:CB	2.25	0.99
45:a:309:PHE:O	45:a:309:PHE:HD1	1.38	0.99
45:a:151:MET:HE3	49:x:36:C:N4	1.77	0.98
46:e:1192:ARG:HG2	46:e:1270:TRP:CH2	1.98	0.97
45:a:185:ILE:HG22	45:a:255:LEU:HB2	1.46	0.97
46:e:804:ILE:HD11	46:e:851:LEU:HD12	1.44	0.97
30:f:1259:A:H8	52:0:53:MET:HB2	1.29	0.97
45:a:220:ILE:CB	45:a:249:GLU:HB3	1.95	0.97
45:a:1003:GLN:NE2	45:a:1003:GLN:N	2.13	0.96
46:e:937:GLU:HG2	46:e:976:LEU:HG	1.42	0.96
30:f:1258:U:P	52:0:46:ARG:HH22	1.89	0.95
45:a:160:ASN:HB2	45:a:162:GLU:OE2	1.65	0.94
46:e:1191:SER:HG	46:e:1270:TRP:HZ3	0.96	0.94
49:x:3:G:H1	49:x:70:U:H3	1.16	0.93
30:f:1257:C:O3'	52:0:46:ARG:NH2	2.02	0.93
45:a:185:ILE:CD1	45:a:254:LEU:O	2.15	0.93
46:e:989:GLU:OE1	46:e:1039:LEU:HB2	1.68	0.93
45:a:185:ILE:HG22	45:a:255:LEU:HA	1.47	0.92
45:a:640:ILE:HG22	45:a:699:MET:HE2	1.51	0.92
42:s:55:ARG:HG3	50:y:16:U:H3	1.34	0.92
45:a:649:TRP:CD1	45:a:649:TRP:C	2.49	0.91
46:e:1104:ASN:O	46:e:1108:THR:HG23	1.70	0.91
15:O:16:ALA:O	15:O:20:GLY:HA3	1.68	0.90
45:a:1003:GLN:H	45:a:1003:GLN:HE21	0.92	0.90
46:e:141:CYS:SG	46:e:221:LYS:HD2	2.12	0.90
46:e:735:GLN:HG2	46:e:815:TYR:HB2	1.52	0.90
46:e:1287:ARG:HA	46:e:1290:PHE:HD2	1.34	0.90
45:a:185:ILE:HG22	45:a:255:LEU:CA	2.01	0.89
46:e:384:SER:O	46:e:388:LEU:HG	1.72	0.89
30:f:1222:G:OP2	52:0:57:THR:OG1	1.90	0.89
30:f:1258:U:O5'	52:0:42:ARG:NH1	2.04	0.89
45:a:1003:GLN:N	45:a:1003:GLN:HE21	1.68	0.88
46:e:141:CYS:SG	46:e:221:LYS:HD3	2.13	0.88
46:e:1087:CYS:SG	46:e:1099:ARG:CA	2.60	0.88
46:e:731:LEU:HD12	46:e:731:LEU:C	1.99	0.88
49:x:77:ALA:N	53:1:57:UNK:H	1.72	0.88
45:a:185:ILE:HD13	45:a:254:LEU:C	1.97	0.87
45:a:185:ILE:HG22	45:a:255:LEU:CB	2.05	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:f:1258:U:C5'	52:0:42:ARG:HH12	1.86	0.87
45:a:185:ILE:CG2	45:a:255:LEU:N	2.37	0.87
46:e:382:GLN:O	46:e:385:VAL:HG12	1.74	0.87
45:a:185:ILE:HG21	45:a:255:LEU:N	1.89	0.86
46:e:365:THR:HA	46:e:368:HIS:CE1	2.10	0.86
46:e:981:ALA:HB3	46:e:1023:ARG:HD3	1.57	0.86
45:a:929:ASP:CA	45:a:990:TRP:HH2	1.89	0.86
45:a:649:TRP:CD1	45:a:650:SER:N	2.42	0.86
45:a:641:LEU:HA	45:a:699:MET:HE1	1.57	0.86
46:e:992:LEU:HD12	46:e:996:GLU:HB2	1.57	0.85
46:e:981:ALA:CB	46:e:1023:ARG:HD3	2.07	0.85
45:a:151:MET:CE	49:x:36:C:H42	1.90	0.85
46:e:371:LEU:HB2	46:e:377:TRP:HE1	0.68	0.85
30:f:1221:A:C2	52:0:12:PHE:CE2	2.62	0.84
45:a:640:ILE:HG21	45:a:698:VAL:O	1.78	0.84
46:e:804:ILE:CD1	46:e:809:MET:SD	2.65	0.83
45:a:412:GLN:O	45:a:413:GLN:HB2	1.76	0.83
46:e:266:ARG:O	46:e:270:VAL:HG23	1.79	0.83
30:f:1259:A:N7	52:0:53:MET:HG3	1.92	0.83
30:f:1258:U:H4'	52:0:42:ARG:HH12	0.66	0.83
45:a:405:ALA:O	45:a:409:LEU:CD2	2.27	0.83
46:e:754:ILE:HD11	46:e:826:LEU:HD12	1.59	0.83
45:a:160:ASN:HB2	45:a:162:GLU:CD	2.03	0.82
46:e:314:LEU:HB3	46:e:357:ALA:HB1	1.61	0.82
45:a:544:LYS:O	45:a:548:VAL:HG23	1.80	0.82
46:e:951:ASP:OD1	46:e:998:LYS:HE2	1.79	0.82
46:e:1335:ASN:OD1	46:e:1338:SER:HB2	1.78	0.82
46:e:1303:MET:HA	46:e:1303:MET:HE2	0.86	0.81
45:a:641:LEU:HA	45:a:699:MET:CE	2.10	0.81
46:e:371:LEU:CB	46:e:377:TRP:CE2	2.53	0.81
30:f:1229:G:H4'	52:0:32:ASN:OD1	1.80	0.81
42:s:55:ARG:HG3	50:y:16:U:C2	2.15	0.81
30:f:1222:G:N7	52:0:57:THR:HB	1.96	0.80
45:a:884:MET:SD	45:a:885:LYS:N	2.53	0.80
46:e:377:TRP:O	46:e:381:TRP:CD1	2.31	0.80
46:e:1307:ILE:HB	46:e:1356:LEU:HD13	1.64	0.80
45:a:640:ILE:CG2	45:a:698:VAL:O	2.30	0.79
45:a:160:ASN:CB	45:a:162:GLU:OE2	2.30	0.79
46:e:1279:PHE:HZ	46:e:1294:LEU:HD21	1.47	0.79
45:a:97:GLN:C	49:x:34:A:N6	2.40	0.79
45:a:625:PRO:HB3	45:a:917:TYR:CD2	2.17	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:a:138:VAL:O	45:a:141:HIS:O	2.02	0.78
46:e:1307:ILE:CB	46:e:1356:LEU:HD13	2.12	0.78
45:a:595:ALA:O	45:a:599:GLN:HG3	1.84	0.78
46:e:750:ALA:C	46:e:754:ILE:HG23	2.06	0.77
30:f:1258:U:C5'	52:0:42:ARG:NH1	2.46	0.77
45:a:583:SER:HB2	45:a:637:GLN:HE22	1.48	0.77
45:a:554:LEU:O	45:a:554:LEU:HD23	1.85	0.77
46:e:1508:CYS:CA	46:e:1533:LYS:O	2.26	0.76
46:e:1192:ARG:CG	46:e:1270:TRP:CH2	2.67	0.76
46:e:1290:PHE:O	46:e:1294:LEU:CD1	2.26	0.76
30:f:1259:A:N7	52:0:53:MET:CG	2.47	0.76
45:a:884:MET:HE1	45:a:885:LYS:HG2	1.68	0.76
46:e:1279:PHE:CZ	46:e:1294:LEU:HD21	2.21	0.76
45:a:637:GLN:O	45:a:943:PRO:HG3	1.87	0.75
45:a:554:LEU:HA	45:a:557:LYS:HD2	1.67	0.75
46:e:989:GLU:O	46:e:1039:LEU:HD21	1.65	0.75
45:a:185:ILE:CG2	45:a:255:LEU:CB	2.61	0.74
46:e:365:THR:HB	46:e:370:PHE:HB3	1.69	0.74
45:a:409:LEU:HD22	45:a:409:LEU:N	2.02	0.74
46:e:1178:VAL:HA	46:e:1184:ILE:CD1	2.17	0.74
46:e:1427:GLU:OE2	46:e:1444:LYS:HE2	1.88	0.74
30:f:1258:U:C4'	52:0:42:ARG:NH1	2.13	0.74
46:e:371:LEU:HB2	46:e:377:TRP:CE2	2.04	0.74
46:e:937:GLU:HA	46:e:976:LEU:HD11	1.69	0.74
45:a:929:ASP:HA	45:a:990:TRP:HH2	1.53	0.74
46:e:1192:ARG:HG2	46:e:1270:TRP:CZ2	2.23	0.74
15:O:16:ALA:O	15:O:20:GLY:CA	2.36	0.73
46:e:1178:VAL:CA	46:e:1184:ILE:HD12	2.15	0.73
23:W:2:GLY:N	30:f:2138:A:HO2'	1.85	0.73
46:e:314:LEU:HB2	46:e:357:ALA:CB	2.19	0.73
51:z:105:GLN:HA	51:z:143:VAL:HA	1.71	0.72
46:e:378:LEU:HB3	46:e:379:PRO:HD3	1.72	0.72
46:e:937:GLU:HG2	46:e:976:LEU:CG	2.20	0.72
45:a:57:GLY:HA2	45:a:117:PHE:O	1.89	0.72
45:a:97:GLN:C	49:x:34:A:H61	1.99	0.71
45:a:929:ASP:HA	45:a:990:TRP:CH2	2.25	0.71
40:q:92:TYR:HB2	40:q:142:ASP:HB3	1.73	0.71
46:e:141:CYS:CB	46:e:221:LYS:HE3	2.21	0.70
46:e:1287:ARG:HA	46:e:1290:PHE:CD2	2.23	0.70
45:a:664:ASN:ND2	45:a:688:ASP:HB2	2.06	0.70
45:a:959:GLY:HA3	45:a:1015:LYS:HB2	1.73	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:f:1018:G:H1	30:f:1034:U:H3	1.38	0.70
45:a:664:ASN:HD22	45:a:688:ASP:HB2	1.56	0.69
46:e:365:THR:CG2	46:e:370:PHE:HD2	2.04	0.69
46:e:684:SER:CB	46:e:715:LEU:CD1	2.61	0.69
30:f:1219:C:OP1	52:0:4:ILE:HG21	1.92	0.69
45:a:589:MET:CE	45:a:589:MET:HA	2.22	0.69
45:a:309:PHE:CD1	45:a:309:PHE:C	2.70	0.69
45:a:685:ASN:HB2	45:a:688:ASP:OD2	1.91	0.69
46:e:819:LEU:O	46:e:823:LEU:HG	1.92	0.69
45:a:185:ILE:HG21	45:a:255:LEU:HA	0.70	0.69
45:a:249:GLU:OE2	45:a:254:LEU:HD23	1.92	0.69
30:f:2193:U:H5'	30:f:2194:G:H5'	1.75	0.69
45:a:415:ASP:O	45:a:418:THR:OG1	2.11	0.69
46:e:371:LEU:HB3	46:e:377:TRP:CD1	2.28	0.69
46:e:1340:TYR:O	46:e:1344:ILE:CG1	2.41	0.69
52:0:26:PHE:HB2	52:0:87:VAL:HB	1.73	0.68
2:B:46[A]:GLU:HB3	2:B:49[A]:ARG:HG3	1.75	0.68
41:r:25:ALA:HB2	50:y:64:G:C5'	2.24	0.68
45:a:603:LYS:O	45:a:911:GLU:O	2.11	0.68
45:a:249:GLU:CD	45:a:254:LEU:HD23	2.19	0.68
46:e:1168:GLU:O	46:e:1171:TYR:HB3	1.94	0.68
46:e:1178:VAL:HG22	46:e:1184:ILE:CD1	2.24	0.68
30:f:1222:G:C8	52:0:57:THR:HB	2.29	0.67
51:z:51:LYS:O	51:z:52:GLU:C	2.37	0.67
46:e:1335:ASN:OD1	46:e:1335:ASN:O	2.12	0.67
48:w:138:VAL:HG23	48:w:147:LYS:HD2	1.75	0.67
46:e:1209:ILE:HG23	46:e:1238:PHE:HD1	1.60	0.67
30:f:1222:G:C8	52:0:57:THR:CB	2.79	0.66
45:a:97:GLN:CB	45:a:230:HIS:CB	2.72	0.66
30:f:1240:A:OP1	51:z:97:ASN:O	2.14	0.66
30:f:1254:C:O2	51:z:135:THR:CB	2.43	0.66
30:f:1242:G:H22	45:a:519:THR:HG22	1.60	0.66
30:f:1222:G:C8	52:0:57:THR:HG21	2.31	0.66
45:a:884:MET:CE	45:a:885:LYS:N	2.57	0.66
46:e:105:VAL:HG22	47:g:1:MET:HE1	1.76	0.66
46:e:804:ILE:HD11	46:e:851:LEU:CD1	2.24	0.66
45:a:903:GLN:HA	45:a:906:LYS:HE2	1.78	0.66
46:e:396:ARG:HA	46:e:398:SER:N	2.10	0.66
30:f:1258:U:P	52:0:46:ARG:NH2	2.64	0.66
30:f:1940:G:H21	30:f:3362:A:H8	1.44	0.66
45:a:863:LEU:HB3	45:a:869:LEU:HG	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:e:936:VAL:O	46:e:940:VAL:HG23	1.96	0.66
46:e:1303:MET:CE	46:e:1303:MET:CA	2.47	0.66
46:e:1319:TRP:CE2	46:e:1386:PHE:HZ	2.13	0.66
46:e:396:ARG:HA	46:e:398:SER:H	1.60	0.66
30:f:1221:A:N3	52:0:12:PHE:HE2	1.93	0.65
46:e:156:THR:HG22	46:e:161:LYS:HA	1.77	0.65
30:f:2969:A:N7	33:j:215:ASN:ND2	2.42	0.65
30:f:1238:C:H4'	51:z:139:VAL:CB	2.27	0.65
46:e:1209:ILE:HG22	46:e:1286:MET:HE1	1.77	0.65
30:f:3018:C:OP1	47:g:9:ASN:ND2	2.29	0.65
30:f:687:U:OP2	43:t:36:ARG:NH2	2.30	0.65
46:e:1178:VAL:HG22	46:e:1184:ILE:HD11	1.78	0.65
46:e:321:ASP:CG	46:e:329:TRP:HE1	2.05	0.65
46:e:170:TRP:CH2	46:e:221:LYS:CB	2.80	0.65
7:G:84:TYR:HB2	15:O:24:PRO:HD3	1.78	0.64
46:e:1087:CYS:SG	46:e:1099:ARG:HB2	2.36	0.64
46:e:1087:CYS:SG	46:e:1099:ARG:CB	2.86	0.64
46:e:277:MET:HG3	46:e:278:PRO:HD3	0.74	0.64
46:e:332:ASP:HB3	46:e:335:SER:HB3	1.79	0.64
45:a:188:VAL:O	45:a:191:LYS:HG2	1.97	0.64
46:e:1192:ARG:CG	46:e:1270:TRP:HH2	2.10	0.64
46:e:1307:ILE:CG2	46:e:1356:LEU:HD13	2.27	0.64
45:a:97:GLN:CB	49:x:34:A:N6	2.61	0.64
46:e:731:LEU:C	46:e:731:LEU:CD1	2.69	0.64
46:e:1210:ILE:HG23	46:e:1283:SER:HB3	1.78	0.64
23:W:21:ARG:HE	23:W:39:TYR:HB2	1.62	0.63
46:e:1307:ILE:HD12	46:e:1356:LEU:CD1	2.29	0.63
46:e:1236:SER:HA	46:e:1239:LYS:HE3	1.79	0.63
45:a:431:ASN:O	45:a:435:GLN:HG3	1.99	0.63
46:e:365:THR:HG22	46:e:370:PHE:HD2	1.62	0.63
46:e:1319:TRP:NE1	46:e:1386:PHE:CE1	2.65	0.63
2:B:27[A]:LEU:HD21	2:B:102[A]:LEU:HB2	1.80	0.63
9:I:12:ARG:NH1	30:f:3041:U:OP1	2.32	0.63
45:a:409:LEU:CD2	45:a:409:LEU:H	2.12	0.63
45:a:888:VAL:HG12	45:a:892:ARG:NH2	2.14	0.63
47:g:111:ASN:ND2	47:g:114:VAL:O	2.32	0.63
46:e:351:SER:OG	46:e:354:PHE:HB2	1.98	0.63
29:d:4:MET:N	30:f:1802:C:OP1	2.32	0.62
28:c:87:ARG:NH1	33:j:97:ASN:OD1	2.33	0.62
30:f:2442:G:H1	30:f:2505:U:H3	1.46	0.62
45:a:368:ARG:HD2	45:a:543:MET:HE2	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:27:LYS:HB3	13:M:42:LEU:HB2	1.81	0.62
46:e:1009:ILE:HB	46:e:1012:ALA:HB2	1.82	0.62
45:a:641:LEU:CA	45:a:699:MET:HE1	2.27	0.62
30:f:1232:C:O2'	52:0:36:GLN:NE2	2.31	0.62
5:E:43:LYS:NZ	30:f:1764:U:OP1	2.31	0.62
9:I:14:SER:O	9:I:81:GLN:NE2	2.33	0.62
45:a:185:ILE:HG23	45:a:255:LEU:N	2.15	0.61
46:e:989:GLU:OE1	46:e:1039:LEU:CB	2.47	0.61
23:W:21:ARG:HG2	32:i:103:G:H4'	1.82	0.61
30:f:1221:A:N3	52:0:12:PHE:CE2	2.67	0.61
30:f:3348:G:H1	30:f:3357:U:H3	1.48	0.61
41:r:25:ALA:HB2	50:y:64:G:H5'	1.83	0.61
45:a:408:GLY:O	45:a:412:GLN:HG3	2.00	0.61
46:e:149:LYS:HB3	46:e:150:PRO:HD3	1.81	0.61
30:f:1348:U:O2	30:f:1349:G:N2	2.34	0.61
30:f:1235:U:O4	51:z:136:ALA:HA	2.00	0.61
36:m:50:ARG:NH1	36:m:147:ASP:OD2	2.34	0.61
38:o:87:VAL:HG11	38:o:243:MET:HE1	1.83	0.61
46:e:371:LEU:CA	46:e:377:TRP:HE1	2.05	0.60
46:e:1191:SER:OG	46:e:1270:TRP:HZ3	1.74	0.60
46:e:1307:ILE:CD1	46:e:1356:LEU:HD13	2.31	0.60
5:E:128:LYS:NZ	30:f:1724:U:OP2	2.31	0.60
20:T:74:ARG:NH2	30:f:1639:C:OP2	2.30	0.60
36:m:294:ALA:HB1	41:r:217:PHE:HB3	1.83	0.60
45:a:409:LEU:CD2	45:a:409:LEU:N	2.64	0.60
46:e:1307:ILE:HG21	46:e:1356:LEU:HD13	1.83	0.60
46:e:365:THR:HG22	46:e:370:PHE:CD2	2.37	0.60
3:C:173:ARG:NH2	30:f:618:C:OP1	2.35	0.60
30:f:1253:U:H5''	30:f:1254:C:H5'	1.83	0.60
4:D:38:ARG:NH2	30:f:1348:U:OP2	2.34	0.60
14:N:21:ARG:NH2	30:f:640:U:OP1	2.32	0.60
40:q:89:LYS:HG2	40:q:145:VAL:HG22	1.84	0.60
6:F:80:ARG:HH21	6:F:87:THR:HG21	1.66	0.60
1:A:201:ARG:NH2	30:f:692:A:OP1	2.35	0.60
43:t:27:ASP:O	43:t:31:LYS:HB2	2.01	0.60
46:e:839:THR:HA	46:e:865:THR:HG23	1.84	0.60
23:W:55:ARG:NH2	35:l:59:GLN:OE1	2.34	0.59
46:e:303:ILE:HD11	46:e:310:LEU:HD11	1.84	0.59
54:v:43:ASP:HB3	54:v:60:VAL:HB	1.83	0.59
31:h:31:U:O2'	36:m:218:ARG:NH1	2.35	0.59
36:m:277:LEU:HG	36:m:281:GLU:HG3	1.82	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:a:389:GLY:O	45:a:393:ILE:HG13	2.01	0.59
46:e:170:TRP:CH2	46:e:221:LYS:HB2	2.38	0.59
46:e:230:SER:HA	46:e:237:LEU:CD1	2.32	0.59
46:e:1319:TRP:HB2	46:e:1390:PHE:CZ	2.37	0.59
52:0:192:ASP:HB2	52:0:197:PHE:HE2	1.67	0.59
6:F:8:GLN:HB3	6:F:64:ILE:HD11	1.85	0.59
45:a:589:MET:HA	45:a:589:MET:HE3	1.85	0.59
45:a:346:SER:HB3	45:a:565:LEU:HB2	1.85	0.59
46:e:1307:ILE:HD12	46:e:1356:LEU:HD13	1.85	0.59
1:A:183:THR:HG22	1:A:187:ARG:HB2	1.85	0.59
45:a:929:ASP:O	45:a:930:LYS:HG2	2.03	0.59
46:e:314:LEU:HD12	46:e:357:ALA:HB3	1.85	0.59
30:f:804:C:OP1	35:l:98:ARG:NH2	2.35	0.59
31:h:52:G:H21	42:s:9:MET:HE1	1.68	0.59
30:f:1268:G:O2'	30:f:1273:A:N6	2.36	0.58
33:j:27:ALA:O	33:j:128:ARG:NH2	2.36	0.58
45:a:409:LEU:HD22	45:a:409:LEU:H	1.67	0.58
46:e:230:SER:HA	46:e:237:LEU:HD11	1.85	0.58
30:f:439:C:O2'	30:f:494:G:N2	2.34	0.58
48:w:65:ILE:HG12	48:w:109:ALA:HB3	1.84	0.58
5:E:100:ARG:NH1	30:f:1722:U:OP1	2.36	0.58
14:N:21:ARG:NH1	30:f:1369:A:OP1	2.36	0.58
21:U:5:LYS:HB2	21:U:8:GLU:HG2	1.84	0.58
30:f:1354:G:N3	37:n:8:LYS:NZ	2.51	0.58
45:a:90:THR:OG1	45:a:104:GLN:CB	2.51	0.58
46:e:203:GLU:O	46:e:207:ARG:HG3	2.02	0.58
6:F:77:VAL:HG22	6:F:126:VAL:HG23	1.85	0.58
28:c:4:ARG:NH1	30:f:837:A:OP2	2.37	0.58
30:f:2854:U:OP2	41:r:3:ARG:NH2	2.37	0.58
45:a:884:MET:SD	45:a:885:LYS:HA	2.43	0.58
46:e:770:ILE:HD11	46:e:902:ASN:HB2	1.86	0.58
30:f:1259:A:N7	52:0:53:MET:HB3	2.15	0.58
28:c:17:ARG:NH1	30:f:860:G:OP1	2.36	0.58
46:e:365:THR:CB	46:e:370:PHE:HB3	2.33	0.58
14:N:42:ARG:NH2	30:f:2800:G:O6	2.37	0.58
46:e:365:THR:HA	46:e:368:HIS:HE1	1.66	0.58
45:a:888:VAL:HG12	45:a:892:ARG:CZ	2.34	0.58
32:i:21:C:OP1	35:l:193:LYS:NZ	2.36	0.58
41:r:205:SER:OG	41:r:208:ASN:OD1	2.21	0.58
45:a:185:ILE:HG21	45:a:254:LEU:C	2.29	0.58
45:a:884:MET:HE3	45:a:885:LYS:N	2.19	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:e:1083:SER:HA	46:e:1086:MET:HE2	1.85	0.58
46:e:1319:TRP:CD1	46:e:1386:PHE:CZ	2.92	0.58
30:f:3187:A:OP1	40:q:23:ARG:NH1	2.37	0.57
46:e:1443:PHE:HB3	46:e:1454:ILE:HD11	1.85	0.57
26:Z:125:LYS:O	40:q:173:ARG:NH1	2.35	0.57
36:m:166:ALA:HB1	36:m:171:LEU:HD12	1.85	0.57
46:e:170:TRP:CH2	46:e:221:LYS:HB3	2.39	0.57
46:e:1358:GLN:O	46:e:1362:ASN:OD1	2.22	0.57
52:O:43:LYS:HA	52:O:46:ARG:HG2	1.87	0.57
11:K:50:ALA:HB1	21:U:66:VAL:HG11	1.86	0.57
50:y:9:G:O4'	50:y:46:G:O4'	2.22	0.57
36:m:64:ILE:HG13	36:m:109:THR:HG21	1.87	0.57
45:a:138:VAL:HG11	49:x:36:C:H1'	1.87	0.57
46:e:1191:SER:O	46:e:1195:THR:OG1	2.21	0.57
2:B:60[A]:LYS:HE3	30:f:1307:G:H5'	1.86	0.57
46:e:177:LEU:HD12	46:e:222:LEU:HD13	1.85	0.57
28:c:4:ARG:NH2	30:f:838:G:O6	2.38	0.57
46:e:1507:GLU:HG2	46:e:1514:ILE:HG12	1.86	0.57
46:e:1319:TRP:CE2	46:e:1386:PHE:CZ	2.93	0.57
30:f:2842:U:OP1	30:f:2844:C:N4	2.37	0.57
45:a:188:VAL:CG1	45:a:251:CYS:SG	2.93	0.57
45:a:888:VAL:HG12	45:a:892:ARG:NE	2.19	0.57
46:e:981:ALA:HB1	46:e:1023:ARG:HD3	1.84	0.57
46:e:968:ASN:HD22	46:e:1009:ILE:HG12	1.70	0.57
46:e:1294:LEU:CD1	46:e:1294:LEU:N	2.67	0.56
4:D:43:PRO:HB2	30:f:728:G:H5''	1.86	0.56
30:f:1390:A:N6	30:f:1418:A:O2'	2.38	0.56
34:k:59:ASP:HB2	34:k:357:LYS:HE3	1.87	0.56
47:g:118:HIS:HE2	47:g:146:ILE:HD12	1.70	0.56
17:Q:4:LEU:O	17:Q:79:ARG:NH2	2.38	0.56
22:V:68:ARG:NH2	30:f:2219:A:OP2	2.38	0.56
37:n:132:THR:HA	37:n:135:VAL:HG12	1.87	0.56
45:a:664:ASN:ND2	45:a:688:ASP:CB	2.67	0.56
46:e:277:MET:CG	46:e:278:PRO:CD	2.52	0.56
54:v:49:THR:HG22	54:v:56:LYS:HE3	1.87	0.56
13:M:17:ARG:NH1	30:f:1634:G:N7	2.53	0.56
30:f:1231:A:H5''	30:f:1232:C:H5'	1.86	0.56
26:Z:100:TYR:O	30:f:2895:G:O2'	2.24	0.56
28:c:49:ARG:NH2	30:f:1793:C:OP2	2.38	0.56
30:f:542:G:H1	30:f:549:U:H3	1.52	0.56
46:e:992:LEU:HA	46:e:996:GLU:HB2	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:e:1086:MET:HE3	46:e:1098:LEU:HD22	1.88	0.56
46:e:1335:ASN:OD1	46:e:1338:SER:CB	2.51	0.56
17:Q:55:LEU:HB2	17:Q:95:PRO:HD3	1.86	0.56
25:Y:5:LYS:HE2	25:Y:13:MET:HE1	1.87	0.56
45:a:881:GLU:O	45:a:884:MET:CE	2.39	0.56
46:e:882:ASN:O	46:e:885:GLN:C	2.43	0.56
46:e:1294:LEU:N	46:e:1294:LEU:HD12	2.21	0.56
34:k:66:LYS:O	34:k:70:ARG:NH2	2.39	0.56
46:e:1439:LEU:HA	46:e:1460:SER:HB2	1.87	0.56
51:z:55:GLY:C	51:z:57:LYS:H	2.14	0.56
20:T:87:GLU:OE1	20:T:91:ARG:NH1	2.39	0.55
36:m:75:LEU:O	36:m:112:LYS:NZ	2.40	0.55
46:e:740:PRO:HG2	46:e:858:LEU:HG	1.87	0.55
46:e:971:ASP:O	46:e:975:LYS:HG3	2.05	0.55
46:e:1066:ARG:NH1	46:e:1111:GLN:NE2	2.54	0.55
41:r:25:ALA:HB2	50:y:64:G:H5'	1.87	0.55
41:r:143:SER:C	41:r:144:ASN:HD22	2.14	0.55
45:a:686:GLU:O	45:a:689:GLN:HG2	2.06	0.55
18:R:19:ARG:HD3	18:R:33:ARG:HB2	1.89	0.55
30:f:2493:U:OP1	48:w:215:ARG:NH2	2.39	0.55
46:e:355:PHE:HE2	46:e:401:VAL:HG13	1.72	0.55
46:e:1319:TRP:NE1	46:e:1386:PHE:CZ	2.74	0.55
52:O:42:ARG:HG2	52:O:51:VAL:HG11	1.88	0.55
30:f:394:G:N1	30:f:397:A:OP2	2.39	0.55
33:j:111:THR:HB	33:j:136:ILE:HD13	1.87	0.55
14:N:44:ASN:ND2	43:t:4:SER:O	2.40	0.55
45:a:108:GLY:HA2	45:a:111:TYR:CE1	2.42	0.55
46:e:1132:ILE:HG21	46:e:1170:GLN:HG3	1.87	0.55
46:e:1286:MET:O	46:e:1290:PHE:CD2	2.60	0.55
33:j:70:ARG:HD2	33:j:72:ARG:HE	1.72	0.55
45:a:26:LEU:HD12	45:a:42:LYS:O	2.07	0.55
45:a:929:ASP:CA	45:a:990:TRP:CH2	2.79	0.55
46:e:190:GLU:HG2	46:e:205:GLU:HA	1.89	0.55
30:f:3042:U:OP2	30:f:3092:C:N4	2.38	0.55
34:k:106:TRP:O	34:k:137:TYR:OH	2.24	0.55
46:e:1128:GLN:HB3	46:e:1162:MET:HE3	1.88	0.55
48:w:48:ARG:HG2	48:w:159:LEU:HD23	1.89	0.55
2:B:157[A]:GLU:OE1	2:B:160[A]:ARG:NH2	2.40	0.54
46:e:643:PHE:HA	46:e:647:ASN:HA	1.87	0.54
46:e:773:PHE:HB2	46:e:837:PHE:HE1	1.72	0.54
30:f:3231:U:H2'	30:f:3232:G:H8	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:a:554:LEU:HD23	45:a:554:LEU:C	2.32	0.54
45:a:572:TYR:HB2	45:a:575:GLU:HG3	1.88	0.54
45:a:649:TRP:HD1	45:a:650:SER:CA	2.21	0.54
46:e:815:TYR:O	46:e:819:LEU:HG	2.08	0.54
30:f:1222:G:C8	52:0:57:THR:CG2	2.91	0.54
30:f:1352:A:H4'	30:f:1353:U:H5'	1.88	0.54
40:q:57:VAL:HG12	40:q:68:LEU:HD22	1.88	0.54
41:r:61:SER:OG	41:r:63:GLU:OE1	2.25	0.54
30:f:2268:U:H3	30:f:2272:G:H22	1.55	0.54
46:e:992:LEU:HD12	46:e:996:GLU:CB	2.35	0.54
8:H:90:ARG:NH1	30:f:1682:U:O4	2.40	0.54
17:Q:9:THR:HG23	17:Q:109:VAL:HG23	1.88	0.54
30:f:1256:G:O2'	51:z:124:THR:CB	2.55	0.54
40:q:23:ARG:HE	40:q:39:LYS:HA	1.71	0.54
30:f:2162:U:OP1	33:j:234:LYS:NZ	2.39	0.54
30:f:2674:A:H5''	42:s:105:GLY:HA3	1.89	0.54
45:a:160:ASN:HB2	45:a:162:GLU:OE1	2.07	0.54
45:a:884:MET:SD	45:a:885:LYS:CA	2.95	0.54
5:E:128:LYS:NZ	30:f:1721:U:O4	2.38	0.54
30:f:68:C:OP2	30:f:301:G:N2	2.40	0.54
30:f:76:G:O2'	43:t:100:ARG:NH1	2.37	0.54
30:f:3268:A:OP1	37:n:46:ARG:NH2	2.35	0.54
36:m:236:LEU:HA	36:m:239:ILE:HG12	1.90	0.54
46:e:731:LEU:HD12	46:e:732:GLN:CA	2.37	0.54
14:N:95:SER:OG	14:N:98:THR:OG1	2.25	0.54
45:a:309:PHE:HD1	45:a:309:PHE:C	2.12	0.54
46:e:1184:ILE:HG12	46:e:1191:SER:HA	1.89	0.54
30:f:1221:A:C4	52:0:12:PHE:CE2	2.96	0.53
30:f:1221:A:C4	52:0:12:PHE:CZ	2.95	0.53
30:f:3115:C:OP1	40:q:62:ARG:NH2	2.41	0.53
36:m:270:LYS:HG2	36:m:273:ARG:HE	1.73	0.53
45:a:964:THR:O	45:a:968:THR:HG23	2.08	0.53
8:H:56:VAL:HG12	8:H:65:VAL:HG22	1.88	0.53
34:k:140:ASP:OD1	34:k:141:GLY:N	2.36	0.53
46:e:847:ASP:CG	46:e:911:ARG:HH12	2.15	0.53
7:G:17:ARG:HG2	7:G:22:HIS:HA	1.90	0.53
30:f:1256:G:H4'	51:z:128:VAL:CB	2.39	0.53
45:a:625:PRO:HG2	45:a:921:LYS:NZ	2.22	0.53
45:a:640:ILE:HD13	45:a:698:VAL:HG23	1.91	0.53
30:f:2148:U:H5''	33:j:196:TRP:HE1	1.73	0.53
46:e:60:THR:O	46:e:64:LYS:HG3	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:44:LYS:HD2	30:f:2111:G:H1'	1.90	0.53
30:f:1156:C:OP2	38:o:94:LYS:NZ	2.40	0.53
30:f:3375:A:O2'	30:f:3378:C:OP2	2.26	0.53
45:a:929:ASP:C	45:a:990:TRP:HH2	2.17	0.53
54:v:59:LEU:HB2	54:v:72:ASP:OD1	2.08	0.53
2:B:75[A]:ALA:HB3	2:B:78[A]:ARG:HG2	1.90	0.53
34:k:284:ARG:NH1	34:k:293:ASN:O	2.42	0.53
42:s:32:ARG:HD2	42:s:120:ILE:HA	1.91	0.53
45:a:24:TYR:HB3	45:a:43:PHE:HB3	1.90	0.53
45:a:89:LEU:C	45:a:89:LEU:HD12	2.32	0.53
46:e:769:ALA:HB1	46:e:837:PHE:HB2	1.90	0.53
54:v:46:THR:HG22	54:v:57:VAL:HG22	1.90	0.53
10:J:6:ASP:OD1	10:J:32:GLN:N	2.40	0.53
36:m:120:LYS:O	36:m:248:ARG:NH2	2.42	0.53
46:e:797:LEU:HD13	46:e:907:PHE:HB2	1.90	0.53
46:e:1080:LEU:HD21	46:e:1106:TYR:HB2	1.91	0.53
2:B:21[A]:SER:OG	30:f:1181:U:O4	2.27	0.53
23:W:52:LYS:NZ	35:l:59:GLN:O	2.39	0.53
46:e:1152:TYR:HD1	46:e:1193:LEU:HD12	1.73	0.53
49:x:55:U:H2'	49:x:56:C:H2'	1.91	0.53
8:H:44:GLU:OE2	8:H:49:ASN:ND2	2.41	0.52
10:J:47:ARG:HH21	10:J:58:HIS:HB2	1.73	0.52
20:T:31:ARG:NH2	30:f:1598:G:OP2	2.42	0.52
30:f:1257:C:C5'	51:z:124:THR:CB	2.68	0.52
30:f:2245:C:O2'	33:j:220:GLY:O	2.26	0.52
45:a:141:HIS:CE1	45:a:150:GLU:HB2	2.44	0.52
46:e:382:GLN:O	46:e:385:VAL:CG1	2.53	0.52
30:f:3230:G:H4'	44:u:132:LYS:HD3	1.92	0.52
45:a:283:GLY:HA2	45:a:311:PRO:HA	1.90	0.52
46:e:961:LEU:HD22	46:e:1006:LEU:HD21	1.90	0.52
2:B:61[A]:ALA:HA	2:B:70[A]:PRO:HD2	1.90	0.52
6:F:96:ASP:OD1	6:F:97:VAL:N	2.38	0.52
45:a:188:VAL:HG12	45:a:251:CYS:HB3	1.90	0.52
46:e:933:LEU:HD11	46:e:973:ILE:HG12	1.90	0.52
46:e:519:TYR:CB	46:e:522:VAL:CB	2.87	0.52
46:e:1279:PHE:HZ	46:e:1294:LEU:CD2	2.20	0.52
46:e:1429:LYS:HE3	46:e:1442:SER:HB3	1.91	0.52
30:f:2419:A:H2'	30:f:2420:C:C6	2.45	0.52
46:e:846:THR:HA	46:e:860:TYR:HE1	1.75	0.52
46:e:1189:ASN:ND2	46:e:1337:PHE:HB3	2.25	0.52
3:C:118:GLN:NE2	3:C:147:GLU:OE2	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:77:VAL:HG11	6:F:106:LEU:HD22	1.92	0.52
7:G:158:THR:OG1	41:r:169:LYS:NZ	2.42	0.52
46:e:989:GLU:CD	46:e:1039:LEU:HB2	2.34	0.52
30:f:1288:U:H2'	30:f:1289:G:H8	1.74	0.52
2:B:74[A]:ARG:O	2:B:142[A]:SER:OG	2.23	0.52
27:b:2:VAL:N	27:b:90:HIS:O	2.42	0.52
30:f:2177:G:OP2	33:j:128:ARG:NH1	2.43	0.52
45:a:309:PHE:HD2	45:a:340:PHE:CD2	2.28	0.52
45:a:928:LEU:C	45:a:990:TRP:CH2	2.87	0.52
7:G:136:ARG:HD2	7:G:139:ARG:HH12	1.74	0.52
17:Q:102:LYS:NZ	30:f:3373:U:OP2	2.38	0.52
24:X:44:LYS:NZ	30:f:1750:A:OP1	2.38	0.52
46:e:794:THR:HA	46:e:797:LEU:HD12	1.92	0.52
46:e:1060:MET:HE1	46:e:1072:ALA:HB1	1.92	0.52
6:F:80:ARG:HB2	6:F:122:HIS:HB2	1.91	0.52
10:J:16:GLY:O	30:f:3050:U:O2'	2.27	0.52
45:a:547:GLU:O	45:a:551:ASP:CG	2.53	0.52
45:a:589:MET:HA	45:a:589:MET:HE2	1.91	0.52
46:e:989:GLU:OE1	46:e:1039:LEU:HD13	2.10	0.52
46:e:1031:ILE:HA	46:e:1034:TRP:CE3	2.45	0.52
9:I:94:TYR:OH	10:J:41:LYS:NZ	2.39	0.51
45:a:90:THR:HG21	45:a:107:ASP:H	1.74	0.51
8:H:92:TRP:CH2	46:e:1471:GLN:HA	2.45	0.51
14:N:100:PRO:HG2	14:N:123:VAL:HG23	1.93	0.51
30:f:3160:U:H3	30:f:3290:G:H1	1.59	0.51
42:s:49:LYS:HG3	42:s:64:LYS:HD3	1.92	0.51
45:a:387:ARG:HH21	45:a:504:ILE:HD12	1.76	0.51
46:e:1307:ILE:HG22	46:e:1356:LEU:HD22	1.92	0.51
51:z:51:LYS:O	51:z:53:PHE:N	2.44	0.51
27:b:41:ARG:NH1	30:f:284:A:OP2	2.40	0.51
30:f:2557:A:OP1	33:j:69:TYR:OH	2.24	0.51
35:l:266:THR:HG23	35:l:267:VAL:HG13	1.92	0.51
45:a:196:ILE:HG22	45:a:200:LYS:HE3	1.91	0.51
30:f:1234:G:N2	51:z:135:THR:CB	2.73	0.51
45:a:97:GLN:CB	49:x:34:A:H61	2.23	0.51
27:b:75:VAL:HG23	27:b:76:LYS:HD2	1.92	0.51
29:d:20:ARG:HA	29:d:23:VAL:HG12	1.92	0.51
30:f:1778:G:O2'	30:f:1780:G:OP2	2.28	0.51
36:m:50:ARG:NH2	36:m:72:ASP:OD2	2.43	0.51
36:m:54:ARG:NH1	36:m:147:ASP:O	2.42	0.51
30:f:123:A:OP1	39:p:105:LYS:NZ	2.37	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:U:67:ARG:NH2	32:i:97:A:OP1	2.44	0.51
30:f:2540:A:N3	30:f:2541:U:N3	2.59	0.51
40:q:22:SER:OG	40:q:39:LYS:NZ	2.44	0.51
45:a:884:MET:SD	45:a:884:MET:O	2.69	0.51
47:g:68:ARG:NH2	47:g:112:ASP:O	2.44	0.51
30:f:1256:G:O3'	51:z:124:THR:CB	2.59	0.51
35:l:156:LEU:HD12	35:l:159:ILE:HD12	1.93	0.51
39:p:207:ASP:OD1	39:p:207:ASP:N	2.44	0.51
45:a:108:GLY:CA	45:a:111:TYR:CE1	2.94	0.51
19:S:70:LYS:HD2	30:f:585:A:H5''	1.92	0.51
20:T:96:GLU:OE2	30:f:2555:G:N1	2.42	0.51
30:f:544:C:H2'	30:f:547:G:H1	1.76	0.51
30:f:1661:G:H2'	30:f:1662:G:C8	2.46	0.51
30:f:591:G:O2'	37:n:17:ALA:O	2.28	0.51
30:f:2489:C:O2'	48:w:210:MET:SD	2.69	0.51
46:e:1464:ILE:HG13	46:e:1469:TRP:CE3	2.46	0.51
1:A:103:GLU:HG3	1:A:160:GLU:HB2	1.93	0.50
32:i:29:U:H5''	43:t:27:ASP:HB3	1.92	0.50
36:m:206:GLN:NE2	36:m:210:GLU:OE2	2.44	0.50
46:e:1360:PHE:HB3	46:e:1450:PRO:HB3	1.94	0.50
15:O:23:LYS:HG3	15:O:24:PRO:HD2	1.93	0.50
45:a:685:ASN:CB	45:a:688:ASP:OD2	2.60	0.50
46:e:754:ILE:CG1	46:e:755:ASN:N	2.74	0.50
46:e:989:GLU:OE1	46:e:1039:LEU:HD22	1.96	0.50
3:C:107:LEU:HD12	3:C:152:GLU:HG3	1.92	0.50
30:f:2307:G:O2'	30:f:2310:U:OP2	2.28	0.50
30:f:2828:G:OP2	41:r:7:ARG:NH2	2.44	0.50
35:l:126:ILE:O	35:l:129:THR:OG1	2.30	0.50
39:p:52:TRP:O	39:p:57:ARG:NH1	2.44	0.50
39:p:161:GLU:HA	39:p:164:VAL:HG22	1.93	0.50
45:a:57:GLY:CA	45:a:117:PHE:O	2.57	0.50
54:v:18:THR:HG22	54:v:83:PRO:HA	1.93	0.50
14:N:26:ARG:NH1	30:f:938:C:OP2	2.44	0.50
21:U:118:ILE:HD11	43:t:145:PHE:HE2	1.76	0.50
30:f:110:G:OP2	43:t:73:ARG:NH2	2.42	0.50
30:f:655:C:H2'	30:f:656:A:H8	1.76	0.50
46:e:272:TYR:HE1	46:e:323:TYR:HB2	1.76	0.50
3:C:65:SER:OG	30:f:1447:G:OP1	2.28	0.50
5:E:62:ARG:HH22	30:f:3067:C:H3'	1.77	0.50
30:f:2948:C:OP1	34:k:244:ARG:NH2	2.36	0.50
45:a:928:LEU:O	45:a:990:TRP:CH2	2.64	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:w:50:SER:HA	48:w:157:PHE:O	2.11	0.50
30:f:664:U:H2'	30:f:665:A:C8	2.47	0.50
30:f:3214:U:OP2	44:u:128:ARG:NH1	2.34	0.50
45:a:685:ASN:CA	45:a:688:ASP:OD2	2.59	0.50
23:W:21:ARG:HH21	23:W:39:TYR:N	2.10	0.50
30:f:2137:U:OP2	30:f:2142:A:N6	2.40	0.50
30:f:2897:A:H2'	30:f:2899:C:H5''	1.93	0.50
28:c:18:TYR:HB3	33:j:180:LEU:HD22	1.93	0.50
31:h:44:C:H4'	36:m:152:ARG:HG3	1.93	0.50
45:a:884:MET:CE	45:a:885:LYS:CG	2.56	0.50
46:e:1307:ILE:HB	46:e:1356:LEU:CD1	2.37	0.50
48:w:59:PRO:HD2	48:w:153:SER:HA	1.93	0.50
45:a:284:TYR:O	45:a:310:HIS:O	2.29	0.50
45:a:641:LEU:HA	45:a:699:MET:HE3	1.91	0.50
30:f:2965:U:O2'	33:j:221:LYS:HD3	2.12	0.49
45:a:436:LEU:HB3	45:a:450:VAL:HG23	1.94	0.49
46:e:1495:THR:O	46:e:1499:HIS:CD2	2.65	0.49
3:C:60:PHE:HB3	3:C:64:ASN:HB3	1.93	0.49
17:Q:77:ARG:HD2	17:Q:89:LEU:HD13	1.94	0.49
24:X:2:ALA:N	30:f:1613:A:OP1	2.46	0.49
32:i:156:U:OP2	39:p:84:ARG:NH2	2.45	0.49
46:e:281:LYS:HB3	46:e:285:LYS:HE3	1.95	0.49
46:e:884:ILE:HD13	46:e:935:SER:HB3	1.94	0.49
47:g:116:LEU:HG	47:g:177:LEU:HD21	1.94	0.49
50:y:43:G:H3'	50:y:44:A:H8	1.77	0.49
3:C:62:ARG:NH1	30:f:412:G:OP1	2.45	0.49
30:f:1569:U:H5'	30:f:1570:U:H5''	1.94	0.49
45:a:138:VAL:HB	45:a:143:ASN:ND2	2.27	0.49
45:a:649:TRP:HA	45:a:697:LEU:HD13	1.93	0.49
1:A:83:LYS:NZ	30:f:36:C:OP2	2.42	0.49
2:B:46[A]:GLU:HG3	2:B:48[A]:PHE:H	1.77	0.49
16:P:9:SER:OG	16:P:10:ILE:N	2.39	0.49
30:f:348:A:N3	30:f:352:A:O2'	2.46	0.49
30:f:2185:G:O2'	30:f:2314:U:OP2	2.28	0.49
45:a:249:GLU:CD	45:a:254:LEU:CD2	2.84	0.49
46:e:1510:ILE:HD12	46:e:1538:CYS:HB3	1.94	0.49
35:l:292:SER:OG	35:l:294:GLU:OE1	2.31	0.49
36:m:90:HIS:NE2	36:m:229:ASP:OD2	2.41	0.49
7:G:99:SER:HG	7:G:101:CYS:HG	1.60	0.49
16:P:30:THR:HG23	16:P:91:SER:HB2	1.95	0.49
30:f:505:G:OP1	35:l:320:ASN:ND2	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:f:1019:G:H1	30:f:1033:U:H3	1.59	0.49
42:s:90:GLN:NE2	42:s:170:ASP:OD1	2.45	0.49
46:e:170:TRP:CZ3	46:e:221:LYS:HB2	2.48	0.49
48:w:138:VAL:HG21	48:w:144:LEU:HD23	1.94	0.49
6:F:155:ARG:HB2	6:F:172:TYR:HD1	1.77	0.49
7:G:108:ARG:O	7:G:112:ASN:HB2	2.12	0.49
30:f:1264:G:N2	30:f:1265:U:O4	2.40	0.49
42:s:55:ARG:CG	50:y:16:U:C2	2.93	0.49
45:a:141:HIS:HE1	45:a:150:GLU:HB2	1.78	0.49
46:e:104:LYS:H	47:g:1:MET:HE3	1.76	0.49
46:e:1403:ILE:HA	46:e:1488:LEU:HD11	1.94	0.49
4:D:56:LYS:NZ	30:f:674:G:O6	2.46	0.49
18:R:104:ASN:ND2	30:f:1389:G:OP1	2.42	0.49
27:b:7:THR:OG1	27:b:22:GLN:NE2	2.36	0.49
45:a:80:LEU:HD23	45:a:124:LEU:HD12	1.94	0.49
46:e:937:GLU:CG	46:e:976:LEU:HG	2.29	0.49
46:e:177:LEU:CD1	46:e:222:LEU:HD13	2.43	0.48
46:e:726:LEU:HG	46:e:753:LEU:HD22	1.95	0.48
46:e:805:ASN:O	46:e:809:MET:HG3	2.13	0.48
14:N:94:ALA:HA	14:N:121:VAL:HG23	1.95	0.48
27:b:30:ALA:O	30:f:2767:U:O2'	2.29	0.48
30:f:2901:G:O2'	30:f:3024:A:N1	2.44	0.48
45:a:332:PRO:O	45:a:333:TYR:HB3	2.13	0.48
47:g:197:MET:HE3	47:g:218:ILE:HD12	1.96	0.48
17:Q:80:ASN:OD1	17:Q:81:GLU:N	2.45	0.48
19:S:49:ILE:HD11	19:S:71:VAL:HG22	1.96	0.48
37:n:92:SER:OG	37:n:148:GLU:OE1	2.30	0.48
39:p:91:PHE:O	39:p:95:ASN:ND2	2.46	0.48
45:a:685:ASN:N	45:a:688:ASP:OD2	2.47	0.48
45:a:706:LYS:O	45:a:934:VAL:HA	2.12	0.48
4:D:131:ALA:HB1	4:D:135:GLN:H	1.79	0.48
34:k:145:GLU:HA	34:k:148:LEU:HB2	1.95	0.48
15:O:3:LYS:HD3	30:f:2617:U:H3'	1.95	0.48
30:f:520:U:OP2	38:o:70:LYS:NZ	2.45	0.48
4:D:102:ALA:HA	4:D:122:ILE:O	2.14	0.48
13:M:133:LYS:HE3	13:M:135:ARG:HD3	1.95	0.48
30:f:1814:A:H4'	30:f:1815:U:H5'	1.95	0.48
30:f:2568:C:O2'	30:f:2569:A:O4'	2.27	0.48
35:l:304:GLN:NE2	35:l:306:THR:O	2.42	0.48
30:f:1477:A:OP1	30:f:3075:G:O2'	2.31	0.48
32:i:9:A:H2'	32:i:10:A:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:s:38:GLU:HB2	42:s:45:PRO:HD3	1.95	0.48
46:e:1050:LEU:HG	46:e:1098:LEU:HD23	1.95	0.48
46:e:1456:VAL:HG22	46:e:1480:ILE:HD11	1.95	0.48
30:f:3198:U:O2	40:q:21:LYS:N	2.44	0.48
45:a:309:PHE:HE2	45:a:341:PHE:CZ	2.32	0.48
45:a:884:MET:HE3	45:a:885:LYS:HG3	1.86	0.48
4:D:16:ARG:HB2	30:f:974:G:H5'	1.95	0.48
6:F:93:GLU:HG3	6:F:140:VAL:HG11	1.95	0.48
27:b:45:ARG:NH1	30:f:283:G:OP1	2.46	0.48
30:f:1383:G:O3'	35:l:138:ARG:NH2	2.47	0.48
40:q:18:VAL:HG12	40:q:27:VAL:HG22	1.94	0.48
13:M:23:VAL:HG12	13:M:45:GLY:HA3	1.94	0.48
30:f:1230:G:H4'	52:0:34:SER:HA	1.96	0.48
30:f:2155:G:OP1	33:j:241:ARG:NH1	2.46	0.48
34:k:85:VAL:HG22	34:k:202:THR:HG22	1.95	0.48
40:q:47:LYS:H	44:u:7:VAL:HG21	1.78	0.48
45:a:392:ILE:HD11	45:a:521:TYR:CE2	2.48	0.48
46:e:1456:VAL:HG23	46:e:1477:GLN:CG	2.44	0.48
47:g:146:ILE:HG13	47:g:147:LEU:HD12	1.96	0.48
30:f:1805:C:H2'	30:f:1806:A:H8	1.79	0.47
43:t:76:THR:HG22	43:t:78:ALA:H	1.79	0.47
45:a:89:LEU:CD1	45:a:104:GLN:O	2.62	0.47
51:z:55:GLY:O	51:z:57:LYS:N	2.38	0.47
3:C:22:LEU:HD12	3:C:146:ILE:HD12	1.97	0.47
17:Q:75:ILE:HG12	17:Q:93:VAL:HG22	1.96	0.47
30:f:411:U:H2'	30:f:412:G:H8	1.79	0.47
30:f:655:C:H2'	30:f:656:A:C8	2.49	0.47
33:j:117:GLU:HG2	33:j:124:GLY:H	1.79	0.47
45:a:99:ARG:HB3	45:a:116:PHE:HB2	1.96	0.47
45:a:554:LEU:C	45:a:554:LEU:CD2	2.87	0.47
46:e:759:ASP:O	46:e:762:GLN:HG3	2.13	0.47
46:e:989:GLU:HB3	46:e:1034:TRP:CD1	2.48	0.47
49:x:18:G:O4'	49:x:57:G:N2	2.47	0.47
54:v:48:LYS:HA	54:v:55:ALA:HA	1.96	0.47
4:D:19:PRO:HB3	4:D:53:PHE:HA	1.96	0.47
19:S:99:ARG:NH1	30:f:3275:U:O2'	2.48	0.47
26:Z:124:LYS:NZ	30:f:2897:A:OP2	2.47	0.47
30:f:831:G:O2'	30:f:1864:A:N3	2.39	0.47
34:k:219:ALA:HB2	34:k:336:VAL:HG23	1.96	0.47
45:a:625:PRO:HG2	45:a:921:LYS:HZ1	1.79	0.47
45:a:220:ILE:CB	45:a:249:GLU:CB	2.82	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:a:884:MET:HE3	45:a:885:LYS:H	1.79	0.47
46:e:320:LEU:HB3	46:e:328:ILE:HG21	1.97	0.47
46:e:787:VAL:HG11	46:e:847:ASP:HA	1.97	0.47
46:e:1030:SER:O	46:e:1033:LYS:HG2	2.15	0.47
47:g:14:GLY:HA2	47:g:198:VAL:HG13	1.96	0.47
23:W:81:GLY:O	32:i:95:G:O2'	2.32	0.47
30:f:829:U:H3	30:f:895:A:H62	1.63	0.47
46:e:933:LEU:HD13	46:e:972:GLU:HB2	1.95	0.47
47:g:88:LEU:HD12	47:g:92:VAL:HG21	1.96	0.47
52:0:26:PHE:HZ	52:0:93:LEU:HA	1.80	0.47
7:G:116:ARG:NH2	30:f:1096:U:OP2	2.48	0.47
9:I:18:PRO:HA	9:I:51:ALA:HA	1.97	0.47
30:f:358:G:N2	30:f:361:A:OP2	2.42	0.47
32:i:103:G:OP2	32:i:105:A:O2'	2.33	0.47
45:a:97:GLN:O	49:x:34:A:N6	2.46	0.47
46:e:684:SER:CA	46:e:715:LEU:HD13	2.41	0.47
5:E:21:LYS:HE3	5:E:55:VAL:HA	1.97	0.47
5:E:151:ARG:NH2	5:E:152:GLU:OE2	2.45	0.47
30:f:712:G:OP1	43:t:174:ARG:NH1	2.47	0.47
32:i:126:A:O2'	32:i:129:C:N4	2.48	0.47
33:j:32:LEU:HD13	33:j:163:ARG:HD3	1.96	0.47
34:k:211:GLN:NE2	34:k:283:TYR:O	2.44	0.47
36:m:163:LEU:HD11	36:m:175:HIS:HB3	1.97	0.47
39:p:228:GLU:O	39:p:232:HIS:ND1	2.43	0.47
41:r:54:SER:HB3	41:r:135:ILE:HD11	1.97	0.47
41:r:66:GLU:OE1	41:r:69:ARG:NH2	2.48	0.47
45:a:181:VAL:HG21	45:a:262:ALA:HA	1.96	0.47
45:a:609:ASP:HB2	45:a:622:ILE:O	2.14	0.47
45:a:929:ASP:N	45:a:990:TRP:HH2	2.12	0.47
46:e:272:TYR:CE1	46:e:323:TYR:HB2	2.49	0.47
46:e:365:THR:HG21	46:e:370:PHE:HD2	1.77	0.47
46:e:1294:LEU:CD1	46:e:1294:LEU:H	2.28	0.47
46:e:1307:ILE:HD12	46:e:1356:LEU:HD12	1.96	0.47
49:x:62:C:H2'	49:x:63:G:C8	2.50	0.47
1:A:5:LYS:HE2	22:V:40:VAL:HG21	1.97	0.47
30:f:1907:C:O2	34:k:240:ARG:NH2	2.45	0.47
4:D:170:ARG:HD2	14:N:57:GLY:HA3	1.97	0.47
14:N:115:LYS:HA	30:f:715:A:H5''	1.97	0.47
30:f:627:U:H2'	30:f:628:A:C8	2.50	0.47
44:u:38:ILE:HA	44:u:44:VAL:HG12	1.96	0.47
44:u:55:ARG:NH2	44:u:76:ALA:O	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:a:875:GLN:O	45:a:879:LYS:HG3	2.15	0.47
30:f:912:G:OP2	33:j:9:ARG:NH2	2.45	0.47
45:a:290:ASN:HB3	45:a:293:TYR:HB3	1.97	0.47
46:e:314:LEU:CD1	46:e:357:ALA:HB3	2.45	0.47
30:f:2491:A:H1'	48:w:207:LYS:HE2	1.97	0.46
45:a:601:TYR:O	45:a:605:ILE:HB	2.15	0.46
45:a:640:ILE:HB	45:a:943:PRO:HB3	1.97	0.46
46:e:733:HIS:HB3	46:e:746:TYR:HE1	1.80	0.46
46:e:809:MET:HE3	46:e:844:LEU:CD1	2.44	0.46
46:e:1387:VAL:HG13	46:e:1391:ILE:HB	1.97	0.46
4:D:180:ARG:NH2	30:f:2790:A:OP1	2.42	0.46
5:E:68:GLN:OE1	5:E:71:ARG:NH2	2.43	0.46
15:O:55:ALA:O	15:O:59:LYS:HB3	2.16	0.46
30:f:835:G:O2'	30:f:857:G:N2	2.38	0.46
36:m:234:ASP:OD1	36:m:234:ASP:N	2.47	0.46
47:g:219:GLU:HA	47:g:224:LEU:HD12	1.96	0.46
23:W:43:LYS:HB2	23:W:43:LYS:HE3	1.66	0.46
30:f:2466:G:H5''	48:w:60:ARG:HH12	1.80	0.46
46:e:856:ASN:HB3	46:e:859:TYR:CD2	2.49	0.46
3:C:67:ILE:HD11	3:C:80:LYS:HB3	1.98	0.46
30:f:2815:G:N2	30:f:2818:U:O2	2.45	0.46
30:f:2876:C:H2'	30:f:2877:G:O4'	2.15	0.46
35:l:326:ARG:O	38:o:41:ARG:NH2	2.48	0.46
46:e:872:VAL:HG11	46:e:893:MET:HG2	1.97	0.46
46:e:1307:ILE:HG21	46:e:1356:LEU:HB2	1.96	0.46
2:B:59[A]:ARG:NH1	30:f:1307:G:OP1	2.48	0.46
13:M:28:PRO:O	13:M:29:HIS:ND1	2.48	0.46
30:f:86:G:O2'	30:f:98:G:O6	2.32	0.46
41:r:54:SER:OG	41:r:130:ASP:O	2.33	0.46
46:e:1328:SER:OG	46:e:1394:ILE:HG21	2.14	0.46
49:x:33:U:O2'	49:x:35:G:OP1	2.34	0.46
49:x:62:C:H2'	49:x:63:G:H8	1.80	0.46
12:L:55:GLU:HB2	12:L:108:LYS:HB3	1.98	0.46
18:R:9:ILE:HG12	18:R:63:THR:HG23	1.97	0.46
30:f:297:G:OP2	30:f:297:G:N2	2.41	0.46
30:f:617:G:OP1	37:n:108:LYS:NZ	2.41	0.46
44:u:48:GLY:HA3	44:u:53:VAL:HB	1.98	0.46
45:a:888:VAL:HG12	45:a:892:ARG:HH21	1.78	0.46
45:a:928:LEU:HG	45:a:990:TRP:HZ3	1.80	0.46
2:B:39[A]:GLU:HG2	2:B:40[A]:GLU:HG2	1.97	0.46
12:L:74:TYR:HB3	12:L:77:LYS:HB2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:95:ILE:HD11	30:f:2555:G:N7	2.30	0.46
30:f:1152:G:OP2	30:f:1152:G:N2	2.44	0.46
36:m:119:TYR:OH	36:m:139:PRO:O	2.33	0.46
49:x:17:C:H42	49:x:55:U:H1'	1.81	0.46
45:a:4:ARG:HG3	49:x:33:U:H5''	1.98	0.46
45:a:431:ASN:HD21	46:e:12:TYR:HB2	1.81	0.46
46:e:372:ASP:OD1	46:e:372:ASP:C	2.57	0.46
46:e:807:LYS:HD2	46:e:808:ASN:OD1	2.15	0.46
46:e:1403:ILE:HG21	46:e:1428:VAL:HG11	1.98	0.46
4:D:35:PHE:HE1	30:f:1348:U:H5'	1.81	0.46
15:O:25:LYS:NZ	30:f:1106:G:O3'	2.44	0.46
30:f:696:C:OP2	35:l:119:ARG:NH2	2.49	0.46
30:f:1717:U:H2'	30:f:1718:G:C8	2.50	0.46
30:f:1949:G:H1	30:f:2097:U:H3	1.63	0.46
36:m:207:TYR:HA	36:m:210:GLU:HG2	1.97	0.46
45:a:6:SER:HB3	45:a:9:ASP:CG	2.41	0.46
47:g:11:ASN:ND2	47:g:209:ASP:OD2	2.49	0.46
54:v:104:ASN:OD1	54:v:105:MET:N	2.49	0.46
13:M:133:LYS:NZ	30:f:1808:G:OP2	2.44	0.46
18:R:60:ASN:HB3	18:R:63:THR:HB	1.97	0.46
30:f:2392:C:O2'	34:k:266:ARG:NH2	2.48	0.46
38:o:86:VAL:O	38:o:114:GLY:HA2	2.16	0.46
39:p:156:ASP:OD1	39:p:156:ASP:N	2.47	0.46
42:s:131:MET:HE3	42:s:131:MET:HB3	1.82	0.46
46:e:1042:GLU:HB2	46:e:1045:PHE:HB2	1.97	0.46
46:e:1189:ASN:HD21	46:e:1337:PHE:HB3	1.80	0.46
14:N:96:LYS:HB2	14:N:96:LYS:HE2	1.70	0.45
19:S:14:LEU:HD11	19:S:31:LYS:HB2	1.98	0.45
46:e:884:ILE:HG23	46:e:939:PHE:HB2	1.97	0.45
1:A:159:ARG:HB3	1:A:164:LEU:HB2	1.98	0.45
1:A:202:TYR:HB3	35:l:112:LYS:HG3	1.97	0.45
13:M:22:LYS:NZ	13:M:132:SER:O	2.47	0.45
36:m:65:ILE:HG12	36:m:74:VAL:HG22	1.99	0.45
46:e:1033:LYS:HG3	46:e:1034:TRP:N	2.31	0.45
46:e:1192:ARG:HG3	46:e:1270:TRP:HH2	1.81	0.45
46:e:1253:PRO:HB3	46:e:1260:GLU:HG2	1.97	0.45
1:A:62:TYR:OH	32:i:141:C:O3'	2.34	0.45
12:L:16:ARG:NH1	30:f:216:G:OP1	2.45	0.45
17:Q:44:MET:O	17:Q:77:ARG:NH1	2.49	0.45
30:f:494:G:H2'	30:f:495:G:H8	1.82	0.45
30:f:3116:G:OP1	30:f:3116:G:N2	2.43	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:j:68:LYS:HE2	33:j:70:ARG:HH21	1.80	0.45
30:f:1119:C:H2'	30:f:1120:A:H8	1.81	0.45
30:f:2218:G:H2'	30:f:2219:A:H8	1.80	0.45
31:h:7:G:OP1	36:m:33:ARG:NH1	2.48	0.45
45:a:686:GLU:O	45:a:689:GLN:CG	2.64	0.45
46:e:1049:ARG:HD2	46:e:1086:MET:HE1	1.98	0.45
46:e:1307:ILE:CG2	46:e:1356:LEU:HD22	2.47	0.45
46:e:1456:VAL:HG21	46:e:1477:GLN:HA	1.98	0.45
6:F:22:PRO:O	7:G:146:ASN:ND2	2.38	0.45
30:f:307:A:H2'	30:f:308:A:C8	2.51	0.45
30:f:1497:C:H2'	30:f:1498:A:H8	1.81	0.45
30:f:2697:A:H2'	30:f:2698:G:C8	2.52	0.45
30:f:3022:G:O2'	30:f:3031:G:O6	2.32	0.45
36:m:83:LEU:HB3	36:m:88:ILE:HB	1.98	0.45
37:n:175:LYS:O	44:u:117:ARG:NH2	2.50	0.45
46:e:1446:PRO:HD2	46:e:1449:TYR:HD1	1.81	0.45
4:D:180:ARG:HH22	30:f:2719:U:H5''	1.82	0.45
8:H:92:TRP:CZ2	46:e:1471:GLN:HA	2.52	0.45
30:f:1134:G:O2'	30:f:2642:A:N3	2.44	0.45
31:h:62:U:O2'	36:m:285:ARG:NH2	2.50	0.45
45:a:287:ALA:HA	45:a:306:TYR:HA	1.98	0.45
45:a:847:ILE:HA	45:a:851:TYR:HD2	1.82	0.45
46:e:310:LEU:HD22	46:e:342:PHE:HE1	1.82	0.45
46:e:826:LEU:HD13	46:e:829:ARG:HD2	1.98	0.45
23:W:30:GLN:NE2	30:f:904:A:OP2	2.50	0.45
30:f:1693:C:HO2'	30:f:1772:U:HO2'	1.64	0.45
45:a:936:ASP:OD1	45:a:937:ILE:N	2.49	0.45
30:f:448:U:O2	30:f:488:U:O2'	2.33	0.45
30:f:571:U:H2'	30:f:572:A:H8	1.81	0.45
33:j:14:SER:OG	33:j:15:ILE:N	2.50	0.45
33:j:104:LEU:HD12	33:j:158:ILE:HD11	1.98	0.45
33:j:140:ASN:O	33:j:144:ASN:HA	2.16	0.45
38:o:83:LEU:HD11	38:o:116:PHE:HB3	1.99	0.45
45:a:520:GLU:O	45:a:524:ILE:HG13	2.16	0.45
45:a:576:LYS:HE2	50:y:31:C:H5''	1.99	0.45
46:e:96:ALA:O	46:e:99:ILE:HG12	2.16	0.45
46:e:899:ALA:HB1	46:e:906:PHE:HA	1.99	0.45
46:e:1256:TYR:HE1	46:e:1309:ASP:O	1.99	0.45
50:y:46:G:H3'	50:y:46:G:H8	1.80	0.45
30:f:2212:C:H42	45:a:838:ARG:HH22	1.64	0.45
35:l:8:VAL:HG23	35:l:151:VAL:HG12	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:o:232:ARG:O	38:o:235:PHE:N	2.48	0.45
46:e:882:ASN:C	46:e:885:GLN:O	2.51	0.45
49:x:15:G:H22	49:x:48:C:H42	1.64	0.45
22:V:53:TYR:HA	22:V:56:ARG:HG2	1.99	0.45
45:a:391:LEU:HD23	45:a:391:LEU:HA	1.79	0.45
47:g:106:ASN:OD1	47:g:150:SER:OG	2.34	0.45
1:A:7:LEU:HD11	39:p:162:LEU:HA	1.99	0.44
29:d:21:ARG:HA	29:d:21:ARG:HD2	1.80	0.44
30:f:528:U:H2'	30:f:529:A:C8	2.51	0.44
30:f:2094:C:H2'	30:f:2095:G:H8	1.81	0.44
40:q:41:ILE:HD13	40:q:71:VAL:HB	1.99	0.44
34:k:215:ILE:HD12	34:k:338:LEU:HD12	1.98	0.44
46:e:1237:LYS:HE3	46:e:1237:LYS:HB2	1.79	0.44
8:H:42:LYS:NZ	30:f:1686:U:OP1	2.44	0.44
25:Y:37:TYR:O	30:f:351:A:N6	2.48	0.44
30:f:2660:G:OP1	30:f:2750:U:O2'	2.35	0.44
33:j:135:ILE:HD12	33:j:149:ARG:HE	1.82	0.44
39:p:95:ASN:OD1	39:p:98:ARG:NH2	2.51	0.44
45:a:109:HIS:O	45:a:127:GLU:N	2.50	0.44
45:a:954:VAL:HG21	45:a:970:ILE:HG23	2.00	0.44
46:e:190:GLU:HG3	46:e:208:TYR:CB	2.47	0.44
46:e:841:VAL:O	46:e:844:LEU:HB3	2.18	0.44
30:f:19:U:H2'	30:f:20:A:C8	2.52	0.44
45:a:612:MET:HE3	45:a:612:MET:HB3	1.64	0.44
50:y:67:U:H2'	50:y:68:C:C6	2.52	0.44
9:I:38:ALA:HB3	9:I:59:MET:HB2	1.99	0.44
9:I:128:ARG:NE	47:g:12:GLU:OE2	2.50	0.44
30:f:2606:G:N3	30:f:2606:G:H2'	2.33	0.44
40:q:120:ASP:OD1	40:q:120:ASP:N	2.44	0.44
45:a:610:ILE:HG12	45:a:624:ASN:HD21	1.83	0.44
45:a:685:ASN:HB2	45:a:688:ASP:CG	2.43	0.44
46:e:831:ASN:HB2	46:e:834:ILE:HG13	2.00	0.44
46:e:1363:VAL:HG11	46:e:1366:LEU:HB2	1.99	0.44
46:e:1363:VAL:HG13	46:e:1484:ASN:HD21	1.82	0.44
49:x:60:U:H5''	49:x:61:C:H5	1.83	0.44
54:v:80:MET:HE3	54:v:80:MET:HB3	1.75	0.44
2:B:74[A]:ARG:NH1	30:f:3008:A:OP2	2.51	0.44
24:X:10:GLN:HA	24:X:13:GLU:HG2	1.99	0.44
30:f:520:U:O4	35:l:347:THR:OG1	2.34	0.44
30:f:1786:G:H2'	30:f:1787:A:C8	2.52	0.44
33:j:101:VAL:HG22	33:j:165:VAL:HG22	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:a:415:ASP:HB3	45:a:418:THR:OG1	2.18	0.44
45:a:888:VAL:HG12	45:a:892:ARG:HE	1.82	0.44
46:e:177:LEU:HD22	46:e:218:LEU:HD21	2.00	0.44
46:e:797:LEU:HD11	46:e:955:LEU:HD22	1.98	0.44
46:e:1456:VAL:HG21	46:e:1477:GLN:CA	2.47	0.44
47:g:2:ALA:HA	47:g:204:ALA:O	2.16	0.44
50:y:46:G:C8	50:y:46:G:C3'	3.00	0.44
2:B:127[A]:LEU:HD22	6:F:156:VAL:HG13	2.00	0.44
15:O:21:ILE:HD12	15:O:21:ILE:HG23	1.83	0.44
30:f:799:G:O2'	43:t:18:TRP:NE1	2.47	0.44
30:f:1888:U:H5''	34:k:247:ARG:HB2	2.00	0.44
30:f:1899:G:O2'	30:f:2334:U:O4	2.25	0.44
30:f:2960:C:H2'	30:f:2961:G:C8	2.53	0.44
30:f:2964:G:N2	30:f:2967:A:OP2	2.41	0.44
31:h:38:U:N3	31:h:41:G:OP2	2.41	0.44
45:a:707:VAL:HG13	45:a:933:VAL:O	2.17	0.44
46:e:59:GLU:HG2	46:e:103:TYR:CD1	2.53	0.44
46:e:141:CYS:CB	46:e:221:LYS:CE	2.89	0.44
46:e:726:LEU:HD23	46:e:753:LEU:HD13	2.00	0.44
50:y:23:C:H2'	50:y:24:G:C8	2.52	0.44
6:F:80:ARG:HG3	6:F:124:LEU:HD21	1.99	0.44
9:I:129:VAL:O	9:I:133:SER:HB3	2.17	0.44
30:f:1203:A:N3	30:f:2855:U:O2'	2.46	0.44
30:f:1270:A:H4'	45:a:519:THR:HG21	2.00	0.44
30:f:2284:C:N4	30:f:2308:C:OP2	2.50	0.44
30:f:2419:A:H2'	30:f:2420:C:H6	1.82	0.44
45:a:89:LEU:HD12	45:a:104:GLN:O	2.18	0.44
45:a:111:TYR:HB2	45:a:125:LEU:HB2	1.99	0.44
46:e:354:PHE:CE1	46:e:358:VAL:CG2	3.00	0.44
46:e:1177:VAL:O	46:e:1180:ASN:O	2.36	0.44
46:e:1358:GLN:O	46:e:1362:ASN:CG	2.60	0.44
54:v:30:GLY:H	54:v:41:ILE:HG22	1.82	0.44
12:L:112:ASP:OD2	32:i:85:G:N1	2.49	0.44
14:N:36:GLY:HA3	14:N:40:HIS:CE1	2.53	0.44
17:Q:46:THR:HG22	17:Q:48:ASP:H	1.82	0.44
45:a:402:VAL:HG22	45:a:433:ILE:HG23	2.00	0.44
46:e:240:ILE:HG22	46:e:246:ILE:HD11	2.00	0.44
46:e:987:ILE:HD13	46:e:996:GLU:HG3	2.00	0.44
46:e:1035:LEU:HA	46:e:1040:ALA:HB2	2.00	0.44
6:F:80:ARG:HD2	7:G:155:PRO:HA	2.00	0.43
15:O:14:ARG:NH2	30:f:1139:G:OP2	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:V:9:ILE:HD12	43:t:174:ARG:HB2	1.99	0.43
30:f:710:A:H2'	30:f:711:A:C8	2.53	0.43
30:f:911:C:OP1	33:j:14:SER:OG	2.32	0.43
30:f:1259:A:N3	30:f:1280:C:O2'	2.50	0.43
30:f:2116:G:OP1	30:f:2118:C:N4	2.51	0.43
30:f:2357:A:H2'	30:f:2358:A:C8	2.53	0.43
30:f:3322:A:H2'	30:f:3323:A:C8	2.53	0.43
35:l:74:ILE:HD12	35:l:75:PRO:HD2	2.00	0.43
36:m:205:SER:HB3	36:m:236:LEU:HD21	2.00	0.43
39:p:104:GLU:HA	39:p:107:GLU:HG3	2.00	0.43
41:r:184:LYS:HE2	41:r:184:LYS:HB2	1.86	0.43
45:a:942:ALA:HB3	45:a:947:LEU:HD23	1.99	0.43
46:e:894:LEU:HD23	46:e:894:LEU:HA	1.81	0.43
46:e:1240:LEU:HD23	46:e:1241:PRO:HD2	2.00	0.43
46:e:1282:THR:HG21	46:e:1287:ARG:HD3	2.00	0.43
4:D:161:LYS:HD3	4:D:161:LYS:HA	1.82	0.43
8:H:20:SER:HA	8:H:23:THR:HG22	2.00	0.43
30:f:595:G:OP2	38:o:30:ARG:NH1	2.51	0.43
30:f:3379:C:H4'	34:k:315:GLY:HA2	1.99	0.43
46:e:957:CYS:O	46:e:961:LEU:HG	2.17	0.43
48:w:37:GLY:O	48:w:202:GLY:N	2.52	0.43
48:w:96:ASN:HD21	48:w:99:LEU:HD12	1.83	0.43
52:0:45:LEU:HB3	52:0:49:ALA:HB3	1.99	0.43
7:G:133:ALA:HB3	38:o:121:LYS:HB2	2.00	0.43
20:T:95:ILE:HG21	20:T:95:ILE:HD13	1.81	0.43
23:W:63:ARG:NH1	32:i:58:G:O6	2.50	0.43
30:f:1222:G:N2	30:f:1285:G:O2'	2.51	0.43
30:f:1237:G:H22	30:f:1251:A:H2	1.66	0.43
30:f:1657:C:O2'	30:f:1797:A:OP2	2.30	0.43
30:f:1813:A:O2'	30:f:1816:A:N3	2.46	0.43
30:f:2768:U:H2'	30:f:2769:A:H8	1.83	0.43
36:m:258:LYS:O	36:m:265:TYR:OH	2.31	0.43
39:p:82:LEU:HD13	39:p:222:PHE:HE2	1.84	0.43
45:a:284:TYR:HD2	45:a:326:ILE:HD12	1.83	0.43
45:a:529:ALA:O	45:a:533:LYS:HG2	2.18	0.43
45:a:664:ASN:HD22	45:a:688:ASP:CB	2.25	0.43
45:a:705:TRP:HB2	45:a:928:LEU:HD13	2.00	0.43
50:y:46:G:H3'	50:y:46:G:C8	2.54	0.43
8:H:92:TRP:CZ2	46:e:1474:MET:HB2	2.53	0.43
9:I:117:PRO:HA	9:I:135:VAL:HG13	2.00	0.43
30:f:3016:A:H2'	30:f:3017:A:H8	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:f:3295:A:H2'	30:f:3296:A:C8	2.53	0.43
39:p:239:GLY:O	39:p:243:GLN:HB2	2.19	0.43
46:e:989:GLU:OE1	46:e:1039:LEU:CG	2.67	0.43
47:g:119:PRO:O	47:g:139:ARG:NH1	2.50	0.43
50:y:32:U:H2'	50:y:33:U:C6	2.53	0.43
52:0:15:LEU:O	52:0:19:LEU:HG	2.18	0.43
10:J:34:SER:OG	30:f:3085:G:OP1	2.32	0.43
30:f:1666:G:H2'	30:f:1667:A:H8	1.83	0.43
39:p:86:THR:HA	39:p:89:GLU:HG2	2.00	0.43
45:a:294:ILE:HB	45:a:297:LYS:HG2	2.00	0.43
49:x:41:G:H2'	49:x:42:A:C8	2.53	0.43
1:A:12:ARG:NH1	30:f:297:G:O6	2.46	0.43
1:A:158:HIS:HB3	1:A:161:ALA:HB3	2.00	0.43
23:W:27:PHE:HA	23:W:34:CYS:HA	2.01	0.43
23:W:58:THR:OG1	23:W:59:THR:N	2.51	0.43
30:f:2514:U:H5'	39:p:68:ARG:HG3	2.00	0.43
45:a:98:ASP:N	49:x:34:A:H61	2.16	0.43
46:e:129:LEU:HD23	46:e:129:LEU:HA	1.78	0.43
46:e:1054:ASP:O	46:e:1058:LYS:HD2	2.19	0.43
47:g:38:PHE:O	47:g:42:LEU:HB2	2.19	0.43
46:e:137:LEU:HD23	46:e:137:LEU:HA	1.91	0.43
46:e:314:LEU:CB	46:e:357:ALA:CB	2.76	0.43
52:0:75:LYS:O	52:0:78:PRO:HD2	2.19	0.43
1:A:68:ARG:HA	1:A:98:LEU:HD21	2.01	0.43
3:C:56:ARG:NH2	3:C:75:GLU:OE2	2.51	0.43
6:F:70:THR:OG1	44:u:55:ARG:NH1	2.51	0.43
24:X:2:ALA:N	24:X:51:LEU:O	2.52	0.43
28:c:66:GLY:HA2	33:j:80:GLU:HG3	2.01	0.43
30:f:716:A:OP1	30:f:752:C:O2'	2.37	0.43
30:f:1288:U:H2'	30:f:1289:G:C8	2.54	0.43
30:f:2218:G:H2'	30:f:2219:A:C8	2.54	0.43
30:f:2836:C:H5	30:f:2852:C:H42	1.67	0.43
30:f:2876:C:H6	30:f:2876:C:O5'	2.02	0.43
30:f:3358:U:H2'	30:f:3359:A:H8	1.84	0.43
45:a:141:HIS:HB2	49:x:36:C:O2	2.17	0.43
46:e:1135:MET:HE3	46:e:1135:MET:HB2	1.82	0.43
4:D:124:LEU:HD13	4:D:127:LEU:HD23	2.01	0.43
5:E:102:LEU:HD22	5:E:138:LEU:HD22	2.01	0.43
30:f:1675:G:H2'	30:f:1676:A:H8	1.83	0.43
30:f:2129:U:H2'	30:f:2130:G:C8	2.54	0.43
30:f:2514:U:OP2	30:f:2586:G:N2	2.50	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:f:2745:G:N2	30:f:2748:A:OP2	2.47	0.43
46:e:1491:LEU:O	46:e:1495:THR:HG23	2.19	0.43
18:R:3:SER:OG	18:R:4:LEU:N	2.51	0.43
30:f:3121:U:H1'	30:f:3122:A:H5''	2.01	0.43
45:a:441:LEU:HD22	45:a:448:ILE:HG22	2.00	0.43
45:a:611:TYR:HB2	45:a:621:TRP:CZ3	2.54	0.43
46:e:322:ASP:HA	46:e:367:ARG:HH22	1.84	0.43
48:w:43:PRO:HD3	48:w:163:LEU:HD21	2.01	0.43
2:B:54[A]:TYR:OH	2:B:73[A]:PHE:O	2.37	0.42
12:L:86:THR:OG1	12:L:94:SER:OG	2.36	0.42
23:W:45:ARG:NH2	30:f:361:A:O3'	2.52	0.42
30:f:2747:A:H2'	30:f:2748:A:C8	2.54	0.42
34:k:17:LEU:HD11	34:k:233:TRP:HH2	1.84	0.42
44:u:93:LYS:HE3	44:u:93:LYS:HB2	1.87	0.42
46:e:397:ASN:O	46:e:398:SER:C	2.61	0.42
3:C:179:GLN:HA	3:C:182:ILE:HG22	2.00	0.42
30:f:2213:A:H2'	30:f:2214:A:C8	2.54	0.42
30:f:3233:C:H2'	30:f:3234:A:C8	2.55	0.42
41:r:72:ALA:HB2	41:r:155:ALA:HB2	2.01	0.42
45:a:844:LEU:O	45:a:848:GLN:HG3	2.19	0.42
46:e:788:SER:HB2	46:e:911:ARG:HD3	2.01	0.42
46:e:1304:PHE:HE1	46:e:1359:LEU:HB3	1.83	0.42
6:F:95:ARG:HB2	6:F:140:VAL:HG23	2.00	0.42
9:I:80:ARG:HB2	9:I:99:ALA:HB3	2.00	0.42
18:R:45:ARG:O	30:f:1145:G:O2'	2.36	0.42
24:X:33:LYS:HA	24:X:33:LYS:HD3	1.84	0.42
30:f:2442:G:H2'	30:f:2443:A:H8	1.83	0.42
45:a:185:ILE:CG2	45:a:254:LEU:C	2.91	0.42
46:e:1456:VAL:HG23	46:e:1477:GLN:HG2	2.01	0.42
52:0:70:LEU:HB3	52:0:73:PHE:CD1	2.55	0.42
27:b:28:TYR:HB3	27:b:69:VAL:HB	2.01	0.42
30:f:63:A:N3	30:f:78:U:O2'	2.43	0.42
30:f:417:A:H2'	30:f:418:A:C8	2.54	0.42
30:f:2160:G:H2'	30:f:2161:G:H8	1.84	0.42
36:m:200:PHE:HB3	36:m:237:GLU:HG2	2.01	0.42
44:u:47:ASP:HB2	44:u:55:ARG:HG3	2.02	0.42
45:a:412:GLN:HG2	46:e:5:GLY:HA3	2.02	0.42
46:e:737:TYR:HB2	46:e:746:TYR:OH	2.19	0.42
49:x:68:C:H2'	49:x:69:G:C8	2.54	0.42
52:0:67:LEU:HD22	52:0:67:LEU:HA	1.85	0.42
6:F:32:SER:HB2	6:F:36:ILE:HD12	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:U:78:LYS:HA	21:U:81:ARG:HG2	2.00	0.42
30:f:1666:G:H2'	30:f:1667:A:C8	2.54	0.42
45:a:704:LEU:HD13	45:a:950:TYR:CE2	2.55	0.42
46:e:1206:GLN:O	46:e:1210:ILE:HG13	2.19	0.42
46:e:1508:CYS:HB3	46:e:1535:HIS:CE1	2.55	0.42
50:y:62:C:H2'	50:y:63:G:C8	2.55	0.42
52:0:61:ARG:HA	52:0:61:ARG:HD2	1.92	0.42
8:H:41:ILE:HG21	8:H:54:VAL:HG21	2.02	0.42
22:V:18:THR:HG23	43:t:106:GLN:HB3	2.01	0.42
28:c:44:LYS:NZ	30:f:1727:G:OP1	2.51	0.42
30:f:158:G:H2'	30:f:159:A:H8	1.84	0.42
30:f:673:U:H2'	30:f:674:G:C8	2.55	0.42
30:f:1203:A:H2'	30:f:1204:A:C8	2.55	0.42
36:m:6:ASP:OD1	36:m:6:ASP:N	2.48	0.42
46:e:754:ILE:HG12	46:e:755:ASN:N	2.35	0.42
46:e:1024:LEU:HD23	46:e:1068:MET:HE1	2.02	0.42
46:e:1079:LEU:HD23	46:e:1079:LEU:HA	1.60	0.42
46:e:1196:THR:CG2	46:e:1197:LEU:N	2.83	0.42
46:e:1300:ILE:H	46:e:1300:ILE:HG12	1.58	0.42
52:0:14:LYS:HE3	52:0:52:LEU:HD11	2.00	0.42
6:F:137:ARG:HH21	30:f:1213:G:H5'	1.85	0.42
27:b:10:THR:HG21	27:b:72:LEU:HD13	2.01	0.42
30:f:1579:C:H2'	30:f:1580:A:C8	2.55	0.42
30:f:3016:A:H2'	30:f:3017:A:C8	2.55	0.42
35:l:261:VAL:HG23	35:l:262:TRP:CD1	2.55	0.42
42:s:96:PHE:HB2	42:s:156:LYS:HE3	2.01	0.42
45:a:283:GLY:HA3	45:a:336:THR:HG21	2.01	0.42
46:e:780:ILE:H	46:e:780:ILE:HG12	1.49	0.42
46:e:1392:SER:HB2	46:e:1448:ASN:HA	2.01	0.42
30:f:760:G:O2'	30:f:770:G:N2	2.43	0.42
30:f:1660:C:H2'	30:f:1661:G:H8	1.85	0.42
30:f:3023:U:H2'	30:f:3024:A:H8	1.84	0.42
34:k:83:PRO:O	34:k:165:GLN:NE2	2.47	0.42
35:l:276:LEU:HD23	35:l:276:LEU:HA	1.91	0.42
36:m:95:TRP:CE3	36:m:198:TYR:HB3	2.54	0.42
39:p:183:LYS:HB2	39:p:194:THR:HG23	2.01	0.42
46:e:149:LYS:HB3	46:e:150:PRO:CD	2.50	0.42
46:e:1330:TYR:CZ	46:e:1351:LEU:HD22	2.55	0.42
47:g:199:VAL:HG23	47:g:204:ALA:HB2	2.02	0.42
16:P:73:GLY:N	16:P:76:GLU:OE2	2.42	0.42
30:f:2772:C:H4'	30:f:2773:C:H5'	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:f:2852:C:N3	41:r:158:LYS:NZ	2.68	0.42
30:f:2923:U:O4	49:x:74:C:N3	2.52	0.42
33:j:46:LYS:HD2	33:j:46:LYS:HA	1.81	0.42
45:a:378:LEU:HD13	45:a:532:GLN:HA	2.02	0.42
46:e:217:LEU:HG	46:e:221:LYS:HE2	2.01	0.42
54:v:51:5CT:H5	54:v:52:HIS:CE1	2.55	0.42
1:A:90:ASN:ND2	30:f:2424:A:OP1	2.50	0.42
3:C:182:ILE:HD12	3:C:182:ILE:HA	1.85	0.42
27:b:10:THR:HA	27:b:20:HIS:HD2	1.84	0.42
30:f:129:U:H2'	30:f:130:A:C8	2.54	0.42
30:f:296:A:N3	30:f:299:G:O2'	2.53	0.42
30:f:531:G:H2'	30:f:532:A:C8	2.55	0.42
30:f:2413:A:H2'	30:f:2414:G:H8	1.85	0.42
30:f:2711:C:O2'	30:f:2744:U:OP1	2.38	0.42
35:l:6:VAL:N	35:l:20:LEU:O	2.48	0.42
36:m:144:VAL:HG11	36:m:171:LEU:HD13	2.01	0.42
36:m:266:ALA:O	36:m:270:LYS:HB2	2.20	0.42
37:n:112:THR:HG23	37:n:115:GLU:H	1.85	0.42
45:a:33:ALA:HB2	45:a:68:PRO:HG2	2.01	0.42
46:e:1474:MET:HE2	46:e:1474:MET:HB3	1.87	0.42
27:b:61:LYS:NZ	27:b:63:LYS:O	2.53	0.41
30:f:1194:G:H2'	30:f:1195:A:C8	2.55	0.41
30:f:3163:A:N6	30:f:3288:G:O6	2.53	0.41
34:k:214:MET:HE3	34:k:214:MET:HB3	1.94	0.41
45:a:578:SER:HB3	45:a:590:MET:HB3	2.00	0.41
3:C:116:HIS:HB3	3:C:149:VAL:HB	2.02	0.41
6:F:110:MET:HE3	6:F:110:MET:HB3	1.95	0.41
7:G:88:ARG:O	30:f:2722:U:O2'	2.35	0.41
16:P:29:SER:OG	30:f:1730:G:O6	2.37	0.41
30:f:443:G:O6	30:f:490:C:N4	2.53	0.41
30:f:675:C:O2'	30:f:679:U:OP1	2.34	0.41
30:f:2205:U:C5	45:a:859:ARG:HG3	2.55	0.41
30:f:3218:A:H5''	30:f:3219:G:C5	2.55	0.41
45:a:930:LYS:O	45:a:930:LYS:HG3	2.20	0.41
46:e:130:LYS:HA	46:e:173:PHE:HE2	1.86	0.41
46:e:372:ASP:OD1	46:e:373:TYR:N	2.53	0.41
46:e:864:HIS:HA	46:e:869:HIS:HB3	2.02	0.41
46:e:1192:ARG:HG3	46:e:1270:TRP:CH2	2.52	0.41
30:f:2451:G:H2'	30:f:2452:G:C8	2.55	0.41
45:a:706:LYS:O	45:a:934:VAL:HG23	2.21	0.41
46:e:28:ASN:HB3	46:e:192:THR:HB	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:98:LEU:HD22	1:A:128:LYS:HD2	2.02	0.41
4:D:36:LEU:O	4:D:40:THR:OG1	2.27	0.41
20:T:60:ARG:NH1	30:f:1593:A:OP1	2.53	0.41
30:f:1577:G:H2'	30:f:1578:C:H6	1.85	0.41
31:h:53:U:O2'	31:h:55:A:N7	2.52	0.41
45:a:117:PHE:HD1	45:a:118:SER:O	2.02	0.41
45:a:170:LYS:HE3	45:a:170:LYS:HB3	1.73	0.41
45:a:213:LYS:HE3	45:a:213:LYS:HB2	1.90	0.41
45:a:424:LYS:HG2	45:a:439:LEU:HD22	2.02	0.41
45:a:657:PRO:HG2	45:a:692:LEU:HB2	2.02	0.41
46:e:899:ALA:HA	46:e:905:TYR:HD1	1.85	0.41
46:e:1191:SER:OG	46:e:1270:TRP:CZ3	2.59	0.41
48:w:122:ARG:HA	48:w:122:ARG:HD2	1.65	0.41
7:G:102:ARG:HD2	7:G:102:ARG:HA	1.77	0.41
30:f:20:A:H2'	30:f:21:G:C8	2.56	0.41
30:f:689:U:O4	35:l:209:TYR:OH	2.35	0.41
30:f:745:C:H2'	30:f:746:A:H8	1.85	0.41
30:f:3198:U:H1'	40:q:21:LYS:HB2	2.01	0.41
45:a:668:PHE:HB3	45:a:673:ASN:HA	2.02	0.41
46:e:59:GLU:HG2	46:e:103:TYR:CG	2.55	0.41
46:e:1330:TYR:CD2	46:e:1351:LEU:HD13	2.55	0.41
12:L:63:LYS:HA	12:L:63:LYS:HD3	1.92	0.41
26:Z:100:TYR:OH	30:f:2848:G:OP1	2.29	0.41
27:b:100:LYS:HE3	27:b:100:LYS:HB3	1.90	0.41
30:f:1221:A:C4	52:0:12:PHE:HZ	2.38	0.41
30:f:1421:G:H2'	30:f:1422:G:H8	1.85	0.41
30:f:1497:C:H2'	30:f:1498:A:C8	2.56	0.41
34:k:284:ARG:HB3	34:k:323:MET:HB3	2.02	0.41
41:r:52:LEU:HB3	41:r:136:PHE:HB2	2.02	0.41
9:I:135:VAL:HG23	47:g:102:SER:HB3	2.03	0.41
22:V:5:THR:HG23	22:V:12:ASN:HB2	2.03	0.41
30:f:1764:U:H3'	30:f:1765:U:H4'	2.03	0.41
46:e:18:LEU:HB2	46:e:25:ILE:HB	2.03	0.41
46:e:303:ILE:HD12	46:e:303:ILE:HA	1.93	0.41
46:e:1303:MET:HG2	46:e:1359:LEU:HD21	2.02	0.41
50:y:66:C:H2'	50:y:67:U:C6	2.56	0.41
2:B:8[A]:VAL:HG12	2:B:117[A]:ARG:HG3	2.03	0.41
3:C:122:ALA:HB3	3:C:143:PRO:HB2	2.02	0.41
14:N:75:LEU:HD23	14:N:75:LEU:HA	1.92	0.41
18:R:99:ASN:O	30:f:1388:U:O2'	2.36	0.41
23:W:31:LYS:NZ	30:f:815:G:OP2	2.52	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:f:352:A:H61	30:f:365:A:H5''	1.86	0.41
40:q:9:GLN:HB3	40:q:52:LEU:HD11	2.01	0.41
44:u:113:THR:OG1	44:u:114:ASP:N	2.52	0.41
45:a:199:ILE:HD12	45:a:202:LEU:HD12	2.02	0.41
46:e:864:HIS:HA	46:e:869:HIS:CB	2.50	0.41
48:w:151:VAL:O	48:w:154:THR:OG1	2.33	0.41
1:A:9:GLU:HG3	22:V:44:VAL:HG21	2.03	0.41
1:A:155:VAL:HG12	30:f:58:G:H4'	2.03	0.41
2:B:121[A]:PRO:HA	2:B:124[A]:LEU:HD12	2.03	0.41
3:C:131:ARG:HG3	3:C:137:ASN:ND2	2.36	0.41
5:E:7:GLN:NE2	5:E:35:ALA:O	2.53	0.41
6:F:90:MET:HE3	30:f:1213:G:H4'	2.03	0.41
30:f:946:U:H2'	30:f:947:G:H8	1.86	0.41
30:f:1083:G:H2'	30:f:1084:A:C8	2.56	0.41
30:f:1660:C:H2'	30:f:1661:G:C8	2.56	0.41
30:f:2416:U:H2'	30:f:2417:U:C6	2.56	0.41
30:f:2470:C:OP1	48:w:27:ASN:N	2.47	0.41
30:f:3217:C:C5	30:f:3220:G:H1'	2.56	0.41
35:l:34:ILE:HG21	35:l:120:TYR:HD2	1.85	0.41
35:l:343:LYS:HE2	35:l:343:LYS:HB2	1.92	0.41
41:r:44:ASP:OD1	41:r:44:ASP:N	2.48	0.41
42:s:75:LYS:O	42:s:79:ILE:HG13	2.21	0.41
43:t:57:VAL:HG23	43:t:147:ILE:HD12	2.03	0.41
45:a:28:ASN:HB3	45:a:30:TYR:CE2	2.56	0.41
45:a:77:VAL:HA	45:a:80:LEU:HD12	2.02	0.41
45:a:185:ILE:CG2	45:a:255:LEU:HB2	2.26	0.41
45:a:589:MET:HE2	45:a:589:MET:CA	2.51	0.41
46:e:104:LYS:HE2	46:e:104:LYS:HB3	1.92	0.41
46:e:813:ILE:HG12	46:e:845:VAL:HG22	2.02	0.41
46:e:968:ASN:HA	46:e:973:ILE:HG21	2.02	0.41
46:e:1397:LYS:HD2	46:e:1397:LYS:HA	1.91	0.41
48:w:204:LEU:HB2	48:w:216:LEU:O	2.21	0.41
49:x:68:C:H2'	49:x:69:G:H8	1.86	0.41
54:v:96:ASP:OD1	54:v:96:ASP:N	2.54	0.41
2:B:189[A]:ASP:OD1	2:B:190[A]:VAL:N	2.53	0.41
14:N:114:GLY:O	14:N:137:LYS:NZ	2.54	0.41
30:f:3092:C:O2'	30:f:3094:A:OP2	2.28	0.41
45:a:250:SER:O	45:a:254:LEU:HG	2.20	0.41
46:e:951:ASP:OD1	46:e:998:LYS:CE	2.61	0.41
46:e:989:GLU:H	46:e:989:GLU:HG3	1.50	0.41
54:v:48:LYS:HD2	54:v:55:ALA:HB2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:174:ILE:HG21	30:f:63:A:H5''	2.04	0.40
17:Q:20:LEU:HD11	17:Q:32:ALA:HB2	2.03	0.40
18:R:4:LEU:HD12	18:R:5:PRO:HD2	2.01	0.40
30:f:1249:G:H2'	30:f:1250:G:H8	1.86	0.40
30:f:2148:U:H5''	33:j:196:TRP:NE1	2.35	0.40
30:f:2357:A:H2'	30:f:2358:A:H8	1.85	0.40
31:h:84:A:H2'	31:h:85:G:C8	2.56	0.40
34:k:218:ILE:HG12	34:k:276:THR:HG23	2.03	0.40
40:q:90:MET:HE3	40:q:179:ILE:HG22	2.01	0.40
41:r:144:ASN:HD22	41:r:144:ASN:N	2.18	0.40
41:r:181:TYR:CE2	41:r:185:ARG:HD2	2.56	0.40
43:t:189:GLU:HA	43:t:192:GLU:HG3	2.03	0.40
46:e:371:LEU:HB3	46:e:377:TRP:CE2	2.37	0.40
46:e:1024:LEU:HD12	46:e:1024:LEU:HA	1.90	0.40
1:A:18:VAL:HG13	1:A:19:LEU:HD12	2.01	0.40
6:F:43:TYR:OH	31:h:96:U:OP1	2.35	0.40
12:L:51:ARG:NH2	32:i:83:C:O2	2.54	0.40
20:T:93:PHE:HD2	20:T:94:LEU:HD22	1.86	0.40
30:f:129:U:H3	30:f:139:G:H1	1.69	0.40
30:f:1108:U:H2'	30:f:1109:U:C6	2.56	0.40
45:a:929:ASP:C	45:a:990:TRP:CH2	2.99	0.40
46:e:368:HIS:ND1	46:e:370:PHE:HB2	2.37	0.40
46:e:1165:LYS:HB2	46:e:1165:LYS:HE2	1.85	0.40
46:e:1363:VAL:HG11	46:e:1366:LEU:HD12	2.03	0.40
4:D:155:MET:HE2	4:D:163:PRO:HB3	2.03	0.40
5:E:31:GLU:HA	5:E:34:GLN:HB2	2.03	0.40
6:F:40:ARG:HA	6:F:40:ARG:HD2	1.84	0.40
24:X:2:ALA:HB1	30:f:1747:G:H21	1.87	0.40
26:Z:113:ARG:NH2	30:f:1190:A:H4'	2.36	0.40
30:f:1238:C:C4'	51:z:139:VAL:CB	2.98	0.40
36:m:108:ARG:CZ	36:m:253:PHE:HB2	2.51	0.40
45:a:636:MET:HE2	45:a:636:MET:HB2	1.90	0.40
46:e:1381:ASN:O	46:e:1384:GLU:HG3	2.20	0.40
50:y:46:G:C8	50:y:46:G:H5'	2.57	0.40
4:D:180:ARG:HE	4:D:180:ARG:HB2	1.62	0.40
30:f:94:G:H2'	30:f:95:A:C8	2.57	0.40
30:f:182:U:H2'	30:f:183:G:H8	1.85	0.40
30:f:1596:C:H2'	30:f:1597:C:C6	2.56	0.40
30:f:1799:A:H2'	30:f:1800:A:C8	2.56	0.40
30:f:2536:A:H2'	30:f:2537:U:C4	2.56	0.40
33:j:52:SER:HB3	33:j:191:LEU:HD23	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:p:178:ALA:HB2	39:p:218:ILE:HG23	2.02	0.40
45:a:254:LEU:HD22	45:a:261:LEU:HD12	2.03	0.40
45:a:606:GLU:HG2	45:a:623:LYS:HE3	2.03	0.40
46:e:1070:ILE:HG13	46:e:1074:GLU:HG3	2.02	0.40
46:e:1319:TRP:CD2	46:e:1386:PHE:HZ	2.38	0.40
47:g:4:ARG:HD2	47:g:208:LEU:HA	2.04	0.40
7:G:73:GLY:HA2	7:G:89:LEU:O	2.21	0.40
30:f:1553:U:H4'	30:f:1554:U:H5'	2.04	0.40
30:f:1827:C:H2'	30:f:1828:A:C8	2.57	0.40
32:i:63:G:H22	32:i:97:A:H2	1.69	0.40
38:o:129:LEU:HD23	38:o:129:LEU:HA	1.89	0.40
46:e:328:ILE:HG13	46:e:329:TRP:N	2.36	0.40
46:e:1379:LEU:HD22	46:e:1379:LEU:HA	1.91	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	201/204 (98%)	190 (94%)	11 (6%)	0	100	100
2	B	195/199 (98%)	192 (98%)	3 (2%)	0	100	100
3	C	181/184 (98%)	172 (95%)	9 (5%)	0	100	100
4	D	183/186 (98%)	176 (96%)	7 (4%)	0	100	100
5	E	154/189 (82%)	151 (98%)	3 (2%)	0	100	100
6	F	169/172 (98%)	163 (96%)	6 (4%)	0	100	100
7	G	157/160 (98%)	149 (95%)	8 (5%)	0	100	100
8	H	98/121 (81%)	93 (95%)	5 (5%)	0	100	100
9	I	134/137 (98%)	132 (98%)	2 (2%)	0	100	100
10	J	61/155 (39%)	61 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
11	K	119/142 (84%)	118 (99%)	1 (1%)	0	100	100
12	L	123/127 (97%)	119 (97%)	4 (3%)	0	100	100
13	M	133/136 (98%)	126 (95%)	7 (5%)	0	100	100
14	N	146/149 (98%)	136 (93%)	10 (7%)	0	100	100
15	O	56/59 (95%)	52 (93%)	3 (5%)	1 (2%)	6	14
16	P	94/105 (90%)	93 (99%)	1 (1%)	0	100	100
17	Q	107/113 (95%)	98 (92%)	9 (8%)	0	100	100
18	R	125/130 (96%)	123 (98%)	2 (2%)	0	100	100
19	S	104/107 (97%)	100 (96%)	4 (4%)	0	100	100
20	T	110/121 (91%)	108 (98%)	2 (2%)	0	100	100
21	U	117/120 (98%)	112 (96%)	5 (4%)	0	100	100
22	V	97/100 (97%)	93 (96%)	4 (4%)	0	100	100
23	W	79/88 (90%)	74 (94%)	5 (6%)	0	100	100
24	X	75/78 (96%)	74 (99%)	1 (1%)	0	100	100
25	Y	48/51 (94%)	46 (96%)	2 (4%)	0	100	100
26	Z	50/128 (39%)	47 (94%)	3 (6%)	0	100	100
27	b	101/106 (95%)	95 (94%)	6 (6%)	0	100	100
28	c	89/92 (97%)	85 (96%)	4 (4%)	0	100	100
29	d	20/25 (80%)	19 (95%)	1 (5%)	0	100	100
33	j	244/254 (96%)	226 (93%)	18 (7%)	0	100	100
34	k	384/387 (99%)	364 (95%)	20 (5%)	0	100	100
35	l	359/362 (99%)	329 (92%)	29 (8%)	1 (0%)	36	58
36	m	292/297 (98%)	278 (95%)	14 (5%)	0	100	100
37	n	163/176 (93%)	153 (94%)	10 (6%)	0	100	100
38	o	220/244 (90%)	207 (94%)	13 (6%)	0	100	100
39	p	231/256 (90%)	220 (95%)	11 (5%)	0	100	100
40	q	189/191 (99%)	174 (92%)	14 (7%)	1 (0%)	24	46
41	r	216/221 (98%)	206 (95%)	10 (5%)	0	100	100
42	s	167/174 (96%)	161 (96%)	5 (3%)	1 (1%)	21	42
43	t	191/199 (96%)	174 (91%)	16 (8%)	1 (0%)	24	46
44	u	134/138 (97%)	125 (93%)	9 (7%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
45	a	842/1038 (81%)	832 (99%)	10 (1%)	0	100	100
46	e	1519/1562 (97%)	1503 (99%)	14 (1%)	2 (0%)	48	70
47	g	223/245 (91%)	215 (96%)	8 (4%)	0	100	100
48	w	214/217 (99%)	211 (99%)	3 (1%)	0	100	100
51	z	144/165 (87%)	135 (94%)	5 (4%)	4 (3%)	4	6
52	0	117/312 (38%)	116 (99%)	0	1 (1%)	14	30
54	v	139/157 (88%)	139 (100%)	0	0	100	100
All	All	9314/10279 (91%)	8965 (96%)	337 (4%)	12 (0%)	49	70

All (12) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
46	e	437	LYS
51	z	88	PRO
51	z	52	GLU
51	z	53	PHE
35	l	4	PRO
40	q	107	ASP
42	s	108	GLU
51	z	56	ILE
52	0	93	LEU
46	e	855	PRO
15	O	21	ILE
43	t	47	ALA

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	175/176 (99%)	175 (100%)	0	100	100
2	B	160/162 (99%)	160 (100%)	0	100	100
3	C	138/146 (94%)	138 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	D	150/151 (99%)	150 (100%)	0	100	100
5	E	129/154 (84%)	129 (100%)	0	100	100
6	F	155/156 (99%)	155 (100%)	0	100	100
7	G	135/137 (98%)	135 (100%)	0	100	100
8	H	87/107 (81%)	87 (100%)	0	100	100
9	I	104/105 (99%)	104 (100%)	0	100	100
10	J	54/129 (42%)	54 (100%)	0	100	100
11	K	104/118 (88%)	104 (100%)	0	100	100
12	L	108/110 (98%)	108 (100%)	0	100	100
13	M	112/116 (97%)	112 (100%)	0	100	100
14	N	117/119 (98%)	117 (100%)	0	100	100
15	O	46/47 (98%)	46 (100%)	0	100	100
16	P	81/88 (92%)	81 (100%)	0	100	100
17	Q	92/97 (95%)	92 (100%)	0	100	100
18	R	107/111 (96%)	107 (100%)	0	100	100
19	S	90/91 (99%)	89 (99%)	1 (1%)	65	84
20	T	95/103 (92%)	95 (100%)	0	100	100
21	U	104/105 (99%)	104 (100%)	0	100	100
22	V	80/82 (98%)	80 (100%)	0	100	100
23	W	67/71 (94%)	67 (100%)	0	100	100
24	X	68/69 (99%)	68 (100%)	0	100	100
25	Y	45/46 (98%)	45 (100%)	0	100	100
26	Z	45/116 (39%)	45 (100%)	0	100	100
27	b	87/91 (96%)	87 (100%)	0	100	100
28	c	71/72 (99%)	71 (100%)	0	100	100
29	d	20/23 (87%)	20 (100%)	0	100	100
33	j	189/196 (96%)	188 (100%)	1 (0%)	81	92
34	k	320/323 (99%)	318 (99%)	2 (1%)	78	91
35	l	288/289 (100%)	288 (100%)	0	100	100
36	m	241/245 (98%)	241 (100%)	0	100	100
37	n	139/155 (90%)	139 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
38	o	186/205 (91%)	186 (100%)	0	100	100
39	p	187/208 (90%)	187 (100%)	0	100	100
40	q	168/171 (98%)	168 (100%)	0	100	100
41	r	185/187 (99%)	184 (100%)	1 (0%)	81	92
42	s	145/150 (97%)	145 (100%)	0	100	100
43	t	154/159 (97%)	154 (100%)	0	100	100
44	u	107/109 (98%)	107 (100%)	0	100	100
45	a	676/949 (71%)	638 (94%)	38 (6%)	19	40
46	e	1150/1451 (79%)	1083 (94%)	67 (6%)	18	39
47	g	180/211 (85%)	180 (100%)	0	100	100
48	w	197/198 (100%)	197 (100%)	0	100	100
52	0	104/254 (41%)	94 (90%)	10 (10%)	8	17
54	v	119/132 (90%)	116 (98%)	3 (2%)	42	69
All	All	7561/8690 (87%)	7438 (98%)	123 (2%)	54	79

All (123) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
19	S	107	ILE
33	j	198	LYS
34	k	17	LEU
34	k	19	ARG
41	r	112	GLN
45	a	21	LEU
45	a	32	ILE
45	a	52	VAL
45	a	74	SER
45	a	89	LEU
45	a	102	VAL
45	a	114	LEU
45	a	124	LEU
45	a	157	PHE
45	a	180	LEU
45	a	183	GLU
45	a	199	ILE
45	a	255	LEU
45	a	293	TYR

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Mol	Chain	Res	Type
45	a	308	THR
45	a	316	ILE
45	a	327	ILE
45	a	337	LEU
45	a	409	LEU
45	a	450	VAL
45	a	589	MET
45	a	605	ILE
45	a	606	GLU
45	a	630	VAL
45	a	649	TRP
45	a	682	ARG
45	a	697	LEU
45	a	705	TRP
45	a	837	VAL
45	a	854	GLN
45	a	855	ASP
45	a	868	THR
45	a	884	MET
45	a	933	VAL
45	a	934	VAL
45	a	947	LEU
45	a	1003	GLN
45	a	1007	LEU
46	e	8	THR
46	e	23	VAL
46	e	125	ILE
46	e	143	LEU
46	e	147	VAL
46	e	156	THR
46	e	178	LEU
46	e	194	SER
46	e	205	GLU
46	e	230	SER
46	e	249	LEU
46	e	283	ILE
46	e	299	THR
46	e	309	VAL
46	e	324	GLU
46	e	401	VAL
46	e	731	LEU
46	e	733	HIS

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Mol	Chain	Res	Type
46	e	754	ILE
46	e	763	ILE
46	e	770	ILE
46	e	780	ILE
46	e	799	THR
46	e	806	LEU
46	e	826	LEU
46	e	844	LEU
46	e	853	GLU
46	e	858	LEU
46	e	867	PHE
46	e	904	VAL
46	e	910	SER
46	e	924	VAL
46	e	933	LEU
46	e	967	SER
46	e	979	LEU
46	e	989	GLU
46	e	1017	VAL
46	e	1046	SER
46	e	1050	LEU
46	e	1059	LEU
46	e	1079	LEU
46	e	1102	CYS
46	e	1123	TYR
46	e	1135	MET
46	e	1179	LEU
46	e	1184	ILE
46	e	1193	LEU
46	e	1195	THR
46	e	1202	VAL
46	e	1240	LEU
46	e	1269	LEU
46	e	1274	LEU
46	e	1294	LEU
46	e	1300	ILE
46	e	1303	MET
46	e	1367	THR
46	e	1372	LEU
46	e	1379	LEU
46	e	1407	MET
46	e	1421	LEU

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Mol	Chain	Res	Type
46	e	1428	VAL
46	e	1439	LEU
46	e	1441	ILE
46	e	1454	ILE
46	e	1464	ILE
46	e	1480	ILE
46	e	1508	CYS
52	0	30	VAL
52	0	51	VAL
52	0	52	LEU
52	0	67	LEU
52	0	76	LEU
52	0	80	VAL
52	0	93	LEU
52	0	95	GLU
52	0	105	VAL
52	0	189	GLN
54	v	54	HIS
54	v	71	GLU
54	v	73	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (88) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	95	GLN
2	B	193[A]	GLN
3	C	55	GLN
3	C	97	ASN
4	D	5	HIS
5	E	150	GLN
7	G	66	ASN
7	G	149	GLN
8	H	87	ASN
8	H	101	ASN
11	K	65	GLN
11	K	85	GLN
13	M	122	HIS
13	M	127	ASN
15	O	12	GLN
15	O	17	HIS
17	Q	15	ASN
17	Q	21	HIS

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Mol	Chain	Res	Type
18	R	35	GLN
18	R	49	ASN
20	T	61	GLN
21	U	16	GLN
21	U	59	ASN
21	U	99	GLN
23	W	12	HIS
23	W	13	ASN
25	Y	4	GLN
25	Y	20	ASN
27	b	3	ASN
27	b	102	GLN
34	k	139	GLN
34	k	198	HIS
34	k	224	HIS
35	l	5	GLN
35	l	196	ASN
35	l	213	ASN
35	l	316	ASN
38	o	64	GLN
38	o	225	GLN
38	o	244	ASN
39	p	77	GLN
40	q	49	ASN
40	q	169	ASN
40	q	183	HIS
41	r	208	ASN
42	s	43	GLN
42	s	62	ASN
42	s	90	GLN
44	u	62	GLN
45	a	51	ASN
45	a	141	HIS
45	a	143	ASN
45	a	147	GLN
45	a	290	ASN
45	a	395	ASN
45	a	413	GLN
45	a	417	ASN
45	a	538	ASN
45	a	562	HIS
45	a	624	ASN

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Mol	Chain	Res	Type
45	a	664	ASN
45	a	696	GLN
45	a	957	GLN
45	a	1003	GLN
46	e	10	GLN
46	e	79	ASN
46	e	160	ASN
46	e	189	ASN
46	e	403	ASN
46	e	719	ASN
46	e	768	ASN
46	e	805	ASN
46	e	888	ASN
46	e	902	ASN
46	e	968	ASN
46	e	1111	GLN
46	e	1189	ASN
46	e	1273	HIS
46	e	1288	GLN
46	e	1293	GLN
46	e	1499	HIS
47	g	9	ASN
47	g	75	GLN
47	g	225	GLN
48	w	27	ASN
52	0	36	GLN
54	v	52	HIS
54	v	78	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
30	f	3211/3395 (94%)	590 (18%)	0
31	h	120/121 (99%)	12 (10%)	0
32	i	157/158 (99%)	32 (20%)	0
49	x	72/77 (93%)	19 (26%)	0
50	y	71/76 (93%)	23 (32%)	0
All	All	3631/3827 (94%)	676 (18%)	0

All (676) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
30	f	6	A
30	f	13	A
30	f	14	U
30	f	26	A
30	f	40	A
30	f	43	A
30	f	49	A
30	f	59	G
30	f	60	A
30	f	65	A
30	f	66	A
30	f	92	G
30	f	99	A
30	f	109	A
30	f	110	G
30	f	111	C
30	f	116	A
30	f	120	G
30	f	121	A
30	f	122	A
30	f	133	U
30	f	134	U
30	f	135	C
30	f	136	G
30	f	156	G
30	f	157	A
30	f	165	A
30	f	166	C
30	f	172	G
30	f	173	G
30	f	187	A
30	f	190	U
30	f	191	U
30	f	200	C
30	f	206	G
30	f	210	U
30	f	211	A
30	f	213	A
30	f	218	G
30	f	219	A
30	f	234	G
30	f	240	U
30	f	241	G

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Mol	Chain	Res	Type
30	f	242	C
30	f	243	G
30	f	245	U
30	f	249	U
30	f	252	U
30	f	269	G
30	f	283	G
30	f	286	U
30	f	295	A
30	f	305	U
30	f	323	A
30	f	329	U
30	f	339	C
30	f	350	C
30	f	374	A
30	f	376	G
30	f	398	A
30	f	399	A
30	f	401	U
30	f	402	A
30	f	403	C
30	f	421	G
30	f	422	A
30	f	439	C
30	f	440	A
30	f	441	U
30	f	442	G
30	f	443	G
30	f	445	G
30	f	446	U
30	f	447	U
30	f	448	U
30	f	450	G
30	f	487	U
30	f	488	U
30	f	489	U
30	f	490	C
30	f	494	G
30	f	518	G
30	f	520	U
30	f	521	A
30	f	523	A

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Mol	Chain	Res	Type
30	f	535	G
30	f	536	U
30	f	543	C
30	f	544	C
30	f	546	C
30	f	547	G
30	f	548	G
30	f	551	A
30	f	552	G
30	f	555	U
30	f	557	A
30	f	559	A
30	f	578	A
30	f	579	G
30	f	589	A
30	f	597	G
30	f	604	G
30	f	608	A
30	f	609	G
30	f	611	A
30	f	620	U
30	f	621	A
30	f	622	A
30	f	637	C
30	f	638	C
30	f	649	A
30	f	660	A
30	f	677	A
30	f	681	U
30	f	684	G
30	f	690	A
30	f	691	A
30	f	705	A
30	f	712	G
30	f	715	A
30	f	716	A
30	f	719	U
30	f	720	A
30	f	758	C
30	f	763	G
30	f	764	U
30	f	765	C

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Mol	Chain	Res	Type
30	f	766	U
30	f	767	U
30	f	776	U
30	f	777	U
30	f	780	A
30	f	781	G
30	f	785	G
30	f	786	A
30	f	806	A
30	f	817	A
30	f	830	A
30	f	846	A
30	f	849	C
30	f	850	U
30	f	861	C
30	f	874	U
30	f	879	U
30	f	896	A
30	f	907	G
30	f	908	G
30	f	914	A
30	f	916	G
30	f	917	A
30	f	920	A
30	f	921	A
30	f	924	G
30	f	925	A
30	f	937	G
30	f	944	C
30	f	959	C
30	f	960	U
30	f	981	U
30	f	982	C
30	f	991	G
30	f	994	G
30	f	1001	G
30	f	1002	A
30	f	1010	G
30	f	1015	U
30	f	1016	C
30	f	1017	C
30	f	1018	G

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Mol	Chain	Res	Type
30	f	1021	G
30	f	1024	G
30	f	1025	A
30	f	1028	U
30	f	1036	A
30	f	1041	U
30	f	1047	A
30	f	1049	C
30	f	1063	G
30	f	1064	A
30	f	1065	A
30	f	1072	G
30	f	1081	U
30	f	1087	G
30	f	1093	A
30	f	1094	U
30	f	1095	U
30	f	1097	G
30	f	1098	A
30	f	1103	A
30	f	1104	G
30	f	1117	G
30	f	1131	G
30	f	1144	U
30	f	1153	A
30	f	1159	A
30	f	1160	C
30	f	1177	G
30	f	1180	A
30	f	1181	U
30	f	1192	C
30	f	1193	A
30	f	1196	C
30	f	1197	A
30	f	1201	C
30	f	1202	A
30	f	1208	U
30	f	1217	A
30	f	1218	U
30	f	1219	C
30	f	1222	G
30	f	1225	A

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Mol	Chain	Res	Type
30	f	1227	C
30	f	1235	U
30	f	1236	G
30	f	1238	C
30	f	1241	U
30	f	1242	G
30	f	1244	A
30	f	1245	A
30	f	1251	A
30	f	1252	A
30	f	1254	C
30	f	1258	U
30	f	1259	A
30	f	1263	A
30	f	1264	G
30	f	1265	U
30	f	1269	U
30	f	1272	C
30	f	1277	C
30	f	1278	A
30	f	1279	C
30	f	1282	G
30	f	1285	G
30	f	1286	A
30	f	1287	A
30	f	1295	G
30	f	1307	G
30	f	1308	A
30	f	1309	U
30	f	1313	G
30	f	1330	A
30	f	1348	U
30	f	1349	G
30	f	1351	U
30	f	1352	A
30	f	1354	G
30	f	1355	A
30	f	1356	U
30	f	1357	G
30	f	1386	A
30	f	1392	G
30	f	1399	A

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Mol	Chain	Res	Type
30	f	1400	G
30	f	1419	A
30	f	1434	G
30	f	1437	C
30	f	1446	A
30	f	1450	G
30	f	1481	A
30	f	1482	A
30	f	1483	G
30	f	1487	G
30	f	1488	G
30	f	1502	C
30	f	1508	C
30	f	1536	G
30	f	1539	A
30	f	1555	U
30	f	1556	C
30	f	1557	A
30	f	1560	G
30	f	1562	C
30	f	1563	C
30	f	1566	A
30	f	1568	U
30	f	1569	U
30	f	1572	U
30	f	1573	G
30	f	1575	A
30	f	1576	G
30	f	1580	A
30	f	1581	C
30	f	1582	C
30	f	1583	A
30	f	1589	A
30	f	1590	G
30	f	1605	A
30	f	1607	U
30	f	1620	U
30	f	1629	U
30	f	1639	C
30	f	1642	A
30	f	1643	A
30	f	1645	U

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Mol	Chain	Res	Type
30	f	1657	C
30	f	1683	A
30	f	1716	U
30	f	1717	U
30	f	1724	U
30	f	1725	C
30	f	1736	G
30	f	1741	A
30	f	1750	A
30	f	1751	G
30	f	1760	A
30	f	1761	C
30	f	1764	U
30	f	1765	U
30	f	1766	G
30	f	1770	G
30	f	1775	G
30	f	1780	G
30	f	1797	A
30	f	1814	A
30	f	1816	A
30	f	1819	U
30	f	1820	U
30	f	1821	U
30	f	1835	A
30	f	1839	A
30	f	1840	U
30	f	1841	A
30	f	1842	A
30	f	1846	C
30	f	1849	C
30	f	1850	A
30	f	1866	C
30	f	1867	A
30	f	1880	U
30	f	1881	A
30	f	1893	A
30	f	1906	G
30	f	1943	C
30	f	1952	G
30	f	1953	G
30	f	1954	G

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Mol	Chain	Res	Type
30	f	2094	C
30	f	2101	C
30	f	2102	U
30	f	2111	G
30	f	2112	U
30	f	2113	A
30	f	2114	C
30	f	2121	G
30	f	2122	G
30	f	2131	A
30	f	2134	G
30	f	2140	U
30	f	2144	A
30	f	2158	A
30	f	2160	G
30	f	2169	G
30	f	2176	U
30	f	2201	G
30	f	2206	G
30	f	2207	A
30	f	2208	A
30	f	2209	U
30	f	2222	A
30	f	2223	A
30	f	2225	U
30	f	2228	A
30	f	2249	G
30	f	2272	G
30	f	2273	G
30	f	2274	U
30	f	2281	A
30	f	2282	U
30	f	2288	G
30	f	2307	G
30	f	2308	C
30	f	2310	U
30	f	2313	A
30	f	2314	U
30	f	2315	G
30	f	2334	U
30	f	2335	G
30	f	2336	U

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Mol	Chain	Res	Type
30	f	2373	A
30	f	2374	C
30	f	2375	G
30	f	2385	G
30	f	2388	U
30	f	2393	G
30	f	2397	A
30	f	2402	A
30	f	2403	G
30	f	2404	A
30	f	2411	U
30	f	2419	A
30	f	2437	G
30	f	2446	U
30	f	2447	A
30	f	2450	G
30	f	2461	A
30	f	2463	G
30	f	2464	U
30	f	2468	A
30	f	2469	G
30	f	2470	C
30	f	2471	U
30	f	2472	U
30	f	2474	G
30	f	2479	C
30	f	2480	A
30	f	2484	A
30	f	2486	A
30	f	2487	U
30	f	2488	A
30	f	2494	A
30	f	2495	C
30	f	2496	C
30	f	2499	U
30	f	2501	U
30	f	2502	A
30	f	2503	G
30	f	2505	U
30	f	2514	U
30	f	2515	A
30	f	2522	G

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Mol	Chain	Res	Type
30	f	2526	C
30	f	2531	C
30	f	2537	U
30	f	2538	U
30	f	2539	C
30	f	2540	A
30	f	2541	U
30	f	2542	U
30	f	2544	U
30	f	2547	A
30	f	2548	C
30	f	2549	G
30	f	2552	C
30	f	2554	A
30	f	2555	G
30	f	2561	A
30	f	2569	A
30	f	2570	U
30	f	2571	U
30	f	2572	C
30	f	2573	G
30	f	2581	U
30	f	2585	G
30	f	2593	A
30	f	2594	C
30	f	2606	G
30	f	2607	G
30	f	2614	G
30	f	2648	G
30	f	2651	G
30	f	2652	U
30	f	2656	A
30	f	2674	A
30	f	2677	G
30	f	2678	A
30	f	2689	A
30	f	2691	A
30	f	2694	A
30	f	2696	A
30	f	2704	A
30	f	2714	G
30	f	2719	U

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Mol	Chain	Res	Type
30	f	2728	G
30	f	2729	U
30	f	2740	A
30	f	2752	U
30	f	2753	G
30	f	2755	C
30	f	2772	C
30	f	2773	C
30	f	2777	G
30	f	2778	G
30	f	2788	C
30	f	2796	G
30	f	2800	G
30	f	2801	A
30	f	2803	A
30	f	2810	C
30	f	2814	G
30	f	2817	A
30	f	2818	U
30	f	2834	G
30	f	2842	U
30	f	2844	C
30	f	2845	A
30	f	2849	C
30	f	2860	U
30	f	2867	C
30	f	2871	G
30	f	2872	A
30	f	2887	A
30	f	2898	G
30	f	2899	C
30	f	2911	A
30	f	2914	G
30	f	2923	U
30	f	2935	U
30	f	2936	A
30	f	2941	A
30	f	2942	C
30	f	2947	G
30	f	2954	U
30	f	2971	A
30	f	2972	G

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Mol	Chain	Res	Type
30	f	2983	C
30	f	2990	G
30	f	2992	U
30	f	2996	U
30	f	2997	G
30	f	3006	A
30	f	3012	A
30	f	3056	U
30	f	3059	G
30	f	3078	U
30	f	3079	U
30	f	3080	G
30	f	3086	A
30	f	3092	C
30	f	3104	U
30	f	3113	A
30	f	3122	A
30	f	3130	A
30	f	3131	U
30	f	3142	A
30	f	3143	C
30	f	3151	U
30	f	3154	C
30	f	3155	U
30	f	3156	U
30	f	3157	U
30	f	3165	A
30	f	3170	A
30	f	3173	G
30	f	3174	A
30	f	3175	U
30	f	3176	G
30	f	3179	U
30	f	3181	C
30	f	3186	A
30	f	3187	A
30	f	3196	U
30	f	3207	U
30	f	3209	A
30	f	3217	C
30	f	3218	A
30	f	3219	G

Continued on next page...

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Mol	Chain	Res	Type
30	f	3228	C
30	f	3229	G
30	f	3243	A
30	f	3245	A
30	f	3247	G
30	f	3259	U
30	f	3263	G
30	f	3269	U
30	f	3270	U
30	f	3273	A
30	f	3276	G
30	f	3281	U
30	f	3287	U
30	f	3288	G
30	f	3289	G
30	f	3294	A
30	f	3295	A
30	f	3303	G
30	f	3304	U
30	f	3307	A
30	f	3313	U
30	f	3316	A
30	f	3317	U
30	f	3318	G
30	f	3319	U
30	f	3320	A
30	f	3341	U
30	f	3342	A
30	f	3345	G
30	f	3351	U
30	f	3352	U
30	f	3353	G
30	f	3354	U
30	f	3355	U
30	f	3369	G
30	f	3375	A
30	f	3378	C
30	f	3382	U
30	f	3383	G
30	f	3386	G
30	f	3389	U
30	f	3390	G

Continued on next page...

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Mol	Chain	Res	Type
30	f	3396	U
31	h	7	G
31	h	29	C
31	h	53	U
31	h	54	U
31	h	55	A
31	h	65	G
31	h	73	C
31	h	74	C
31	h	95	A
31	h	102	A
31	h	112	G
31	h	121	U
32	i	23	U
32	i	34	U
32	i	35	C
32	i	39	G
32	i	48	A
32	i	52	A
32	i	53	A
32	i	59	A
32	i	62	C
32	i	63	G
32	i	80	A
32	i	81	U
32	i	82	U
32	i	83	C
32	i	84	C
32	i	85	G
32	i	86	U
32	i	87	G
32	i	90	U
32	i	95	G
32	i	104	A
32	i	105	A
32	i	106	C
32	i	111	A
32	i	113	U
32	i	125	U
32	i	126	A
32	i	138	A
32	i	151	C

Continued on next page...

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Mol	Chain	Res	Type
32	i	152	G
32	i	157	U
32	i	158	U
49	x	5	G
49	x	9	G
49	x	15	G
49	x	16	U
49	x	17	C
49	x	18	G
49	x	22	G
49	x	28	U
49	x	35	G
49	x	37	A
49	x	38	U
49	x	39	G
49	x	46	G
49	x	48	C
49	x	56	C
49	x	57	G
49	x	58	A
49	x	60	U
49	x	74	C
50	y	5	G
50	y	7	G
50	y	9	G
50	y	13	U
50	y	16	U
50	y	17	C
50	y	22	G
50	y	34	A
50	y	35	G
50	y	36	C
50	y	38	U
50	y	42	A
50	y	43	G
50	y	44	A
50	y	46	G
50	y	47	U
50	y	48	C
50	y	54	U
50	y	56	C
50	y	58	A

Continued on next page...

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Mol	Chain	Res	Type
50	y	61	C
50	y	65	A
50	y	76	A

There are no RNA pucker outliers to report.

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
54	5CT	v	51	54	13,14,15	0.79	0	8,15,17	1.29	1 (12%)

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
54	5CT	v	51	54	-	9/13/14/16	-

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
54	v	51	5CT	C4-C3-C2	-2.19	108.86	113.47

There are no chirality outliers.

All (9) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
54	v	51	5CT	NZ-C1-C2-C3
54	v	51	5CT	O1-C2-C3-C4
54	v	51	5CT	C2-C3-C4-N1
54	v	51	5CT	C-CA-CB-CG
54	v	51	5CT	N-CA-CB-CG
54	v	51	5CT	NZ-C1-C2-O1
54	v	51	5CT	C1-C2-C3-C4
54	v	51	5CT	C2-C1-NZ-CE
54	v	51	5CT	CE-CD-CG-CB

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
54	v	51	5CT	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 20 ligands modelled in this entry, 20 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

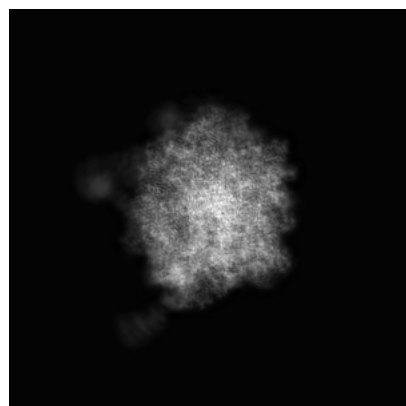
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-15423. These allow visual inspection of the internal detail of the map and identification of artifacts.

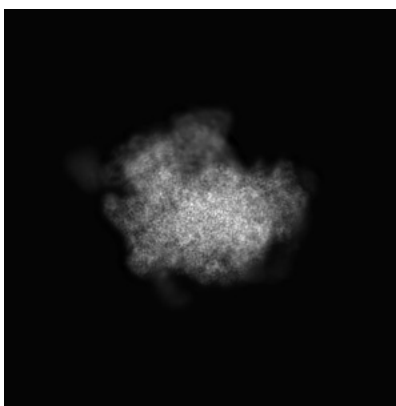
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

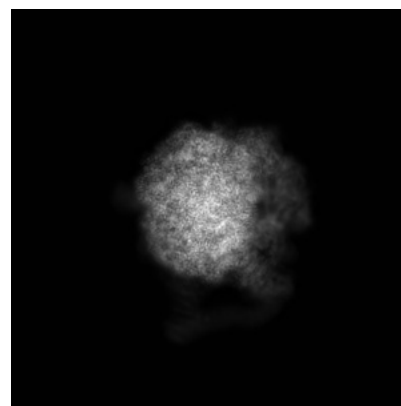
6.1.1 Primary map



X

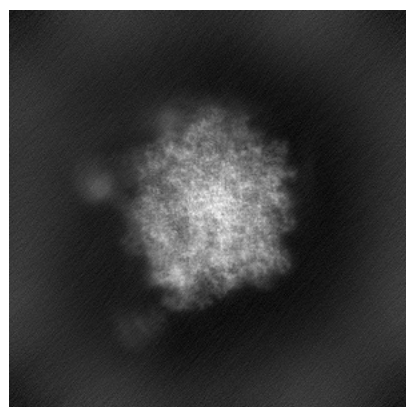


Y

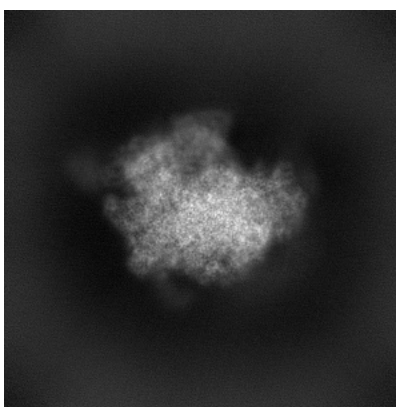


Z

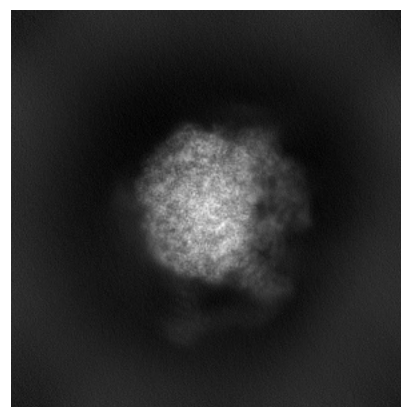
6.1.2 Raw map



X



Y

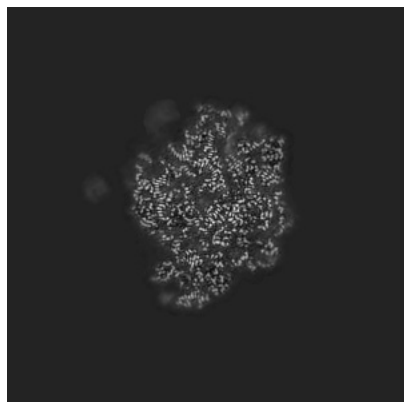


Z

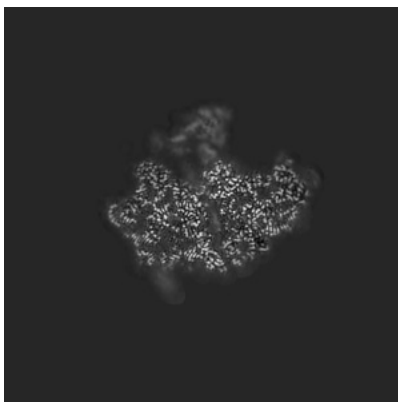
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

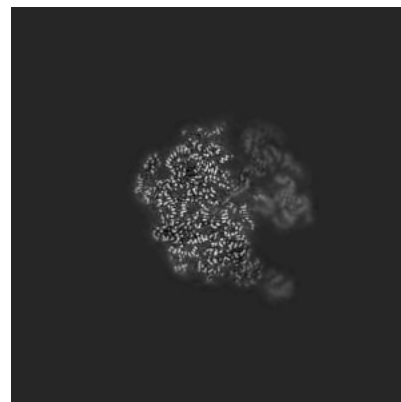
6.2.1 Primary map



X Index: 225

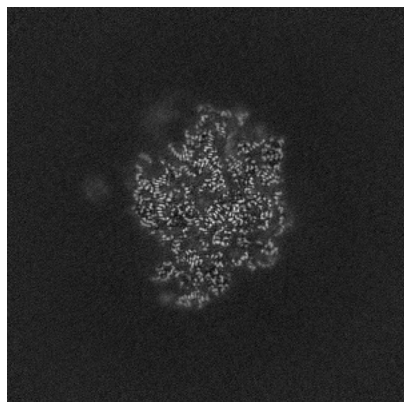


Y Index: 225

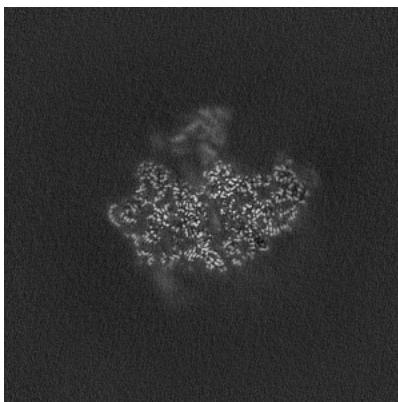


Z Index: 225

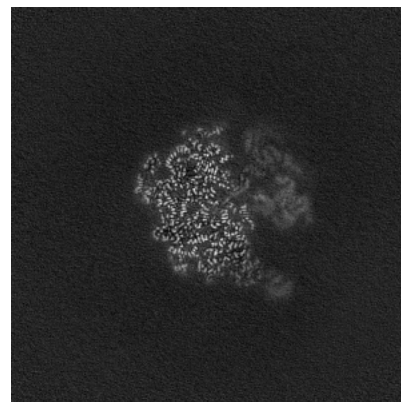
6.2.2 Raw map



X Index: 225



Y Index: 225

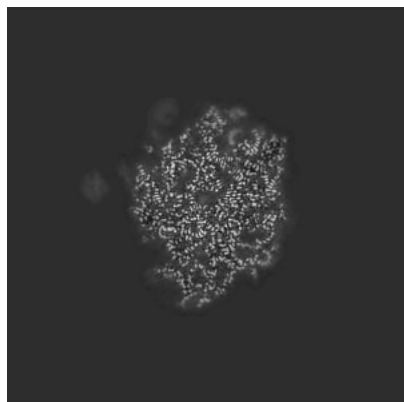


Z Index: 225

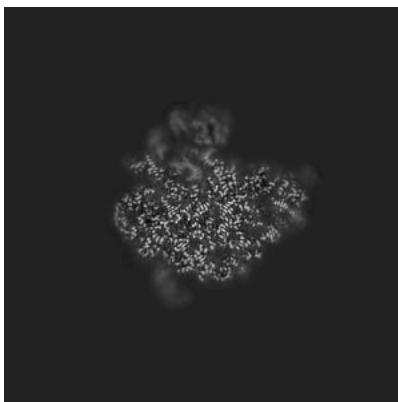
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

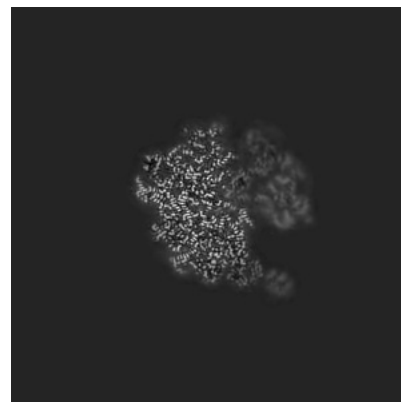
6.3.1 Primary map



X Index: 219

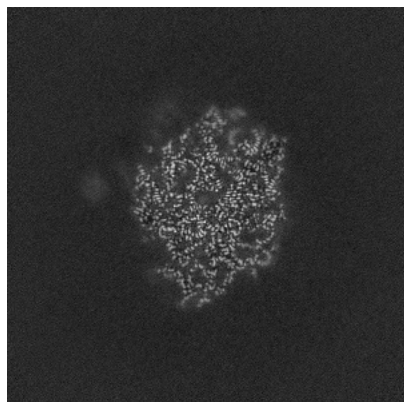


Y Index: 237

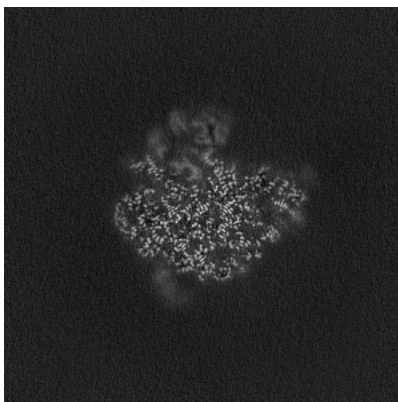


Z Index: 222

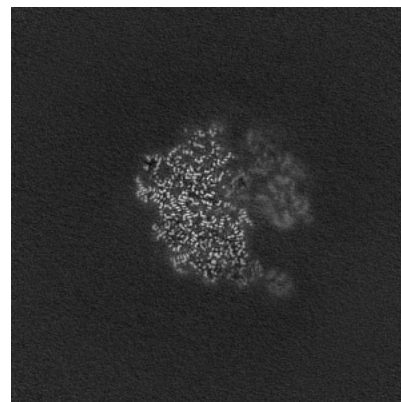
6.3.2 Raw map



X Index: 219



Y Index: 237

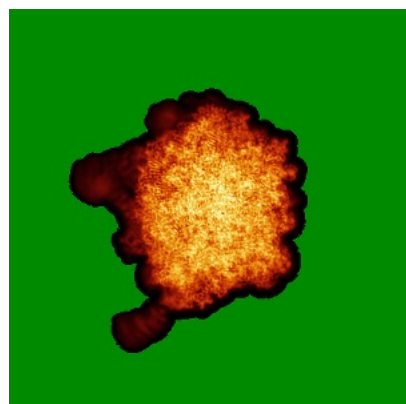


Z Index: 222

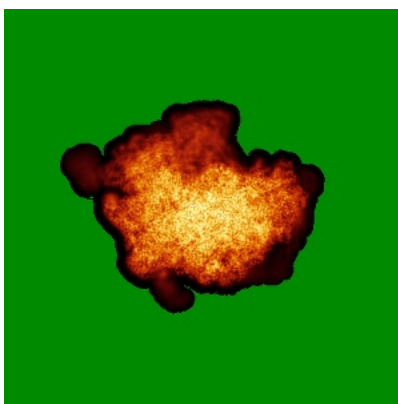
The images above show the largest variance slices of the map in three orthogonal directions.

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

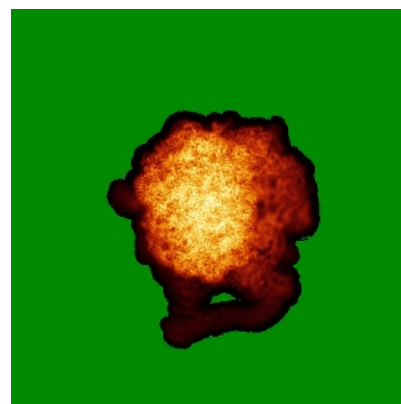
6.4.1 Primary map



X

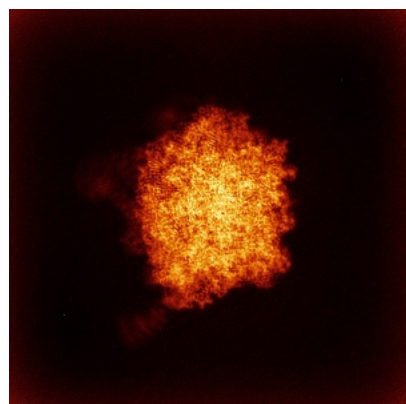


Y

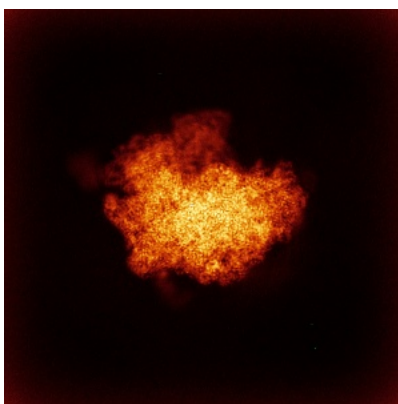


Z

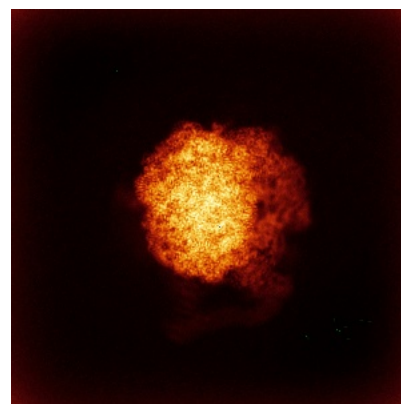
6.4.2 Raw map



X



Y

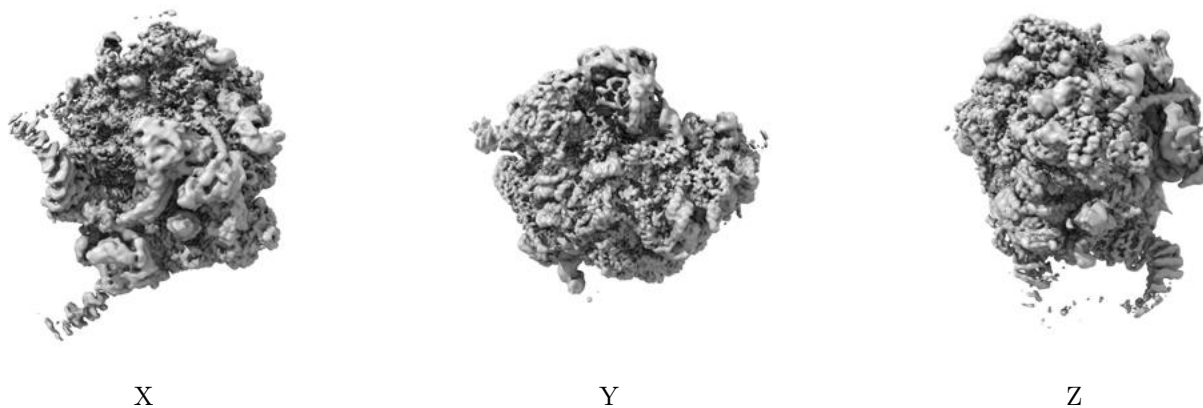


Z

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

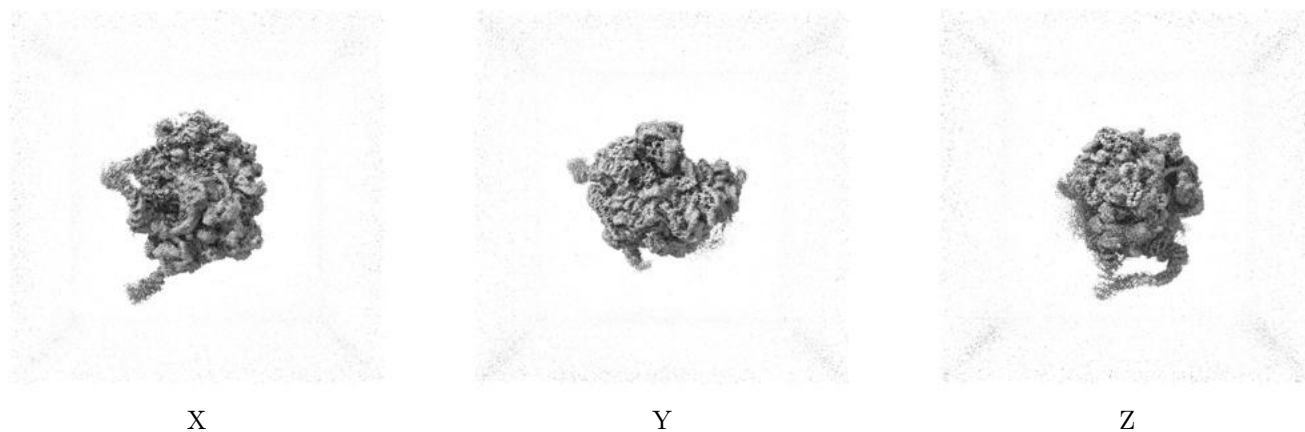
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.35. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

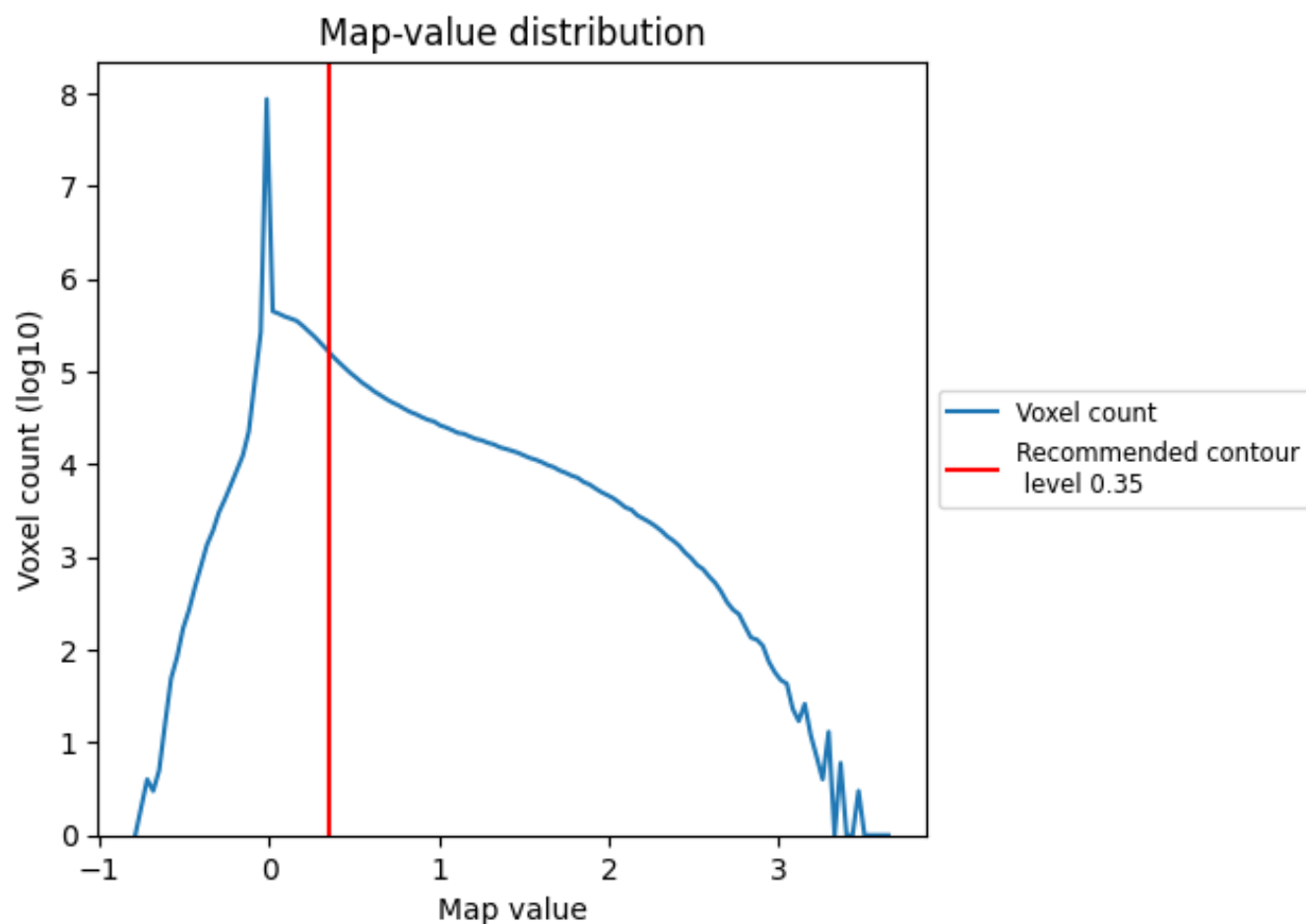
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

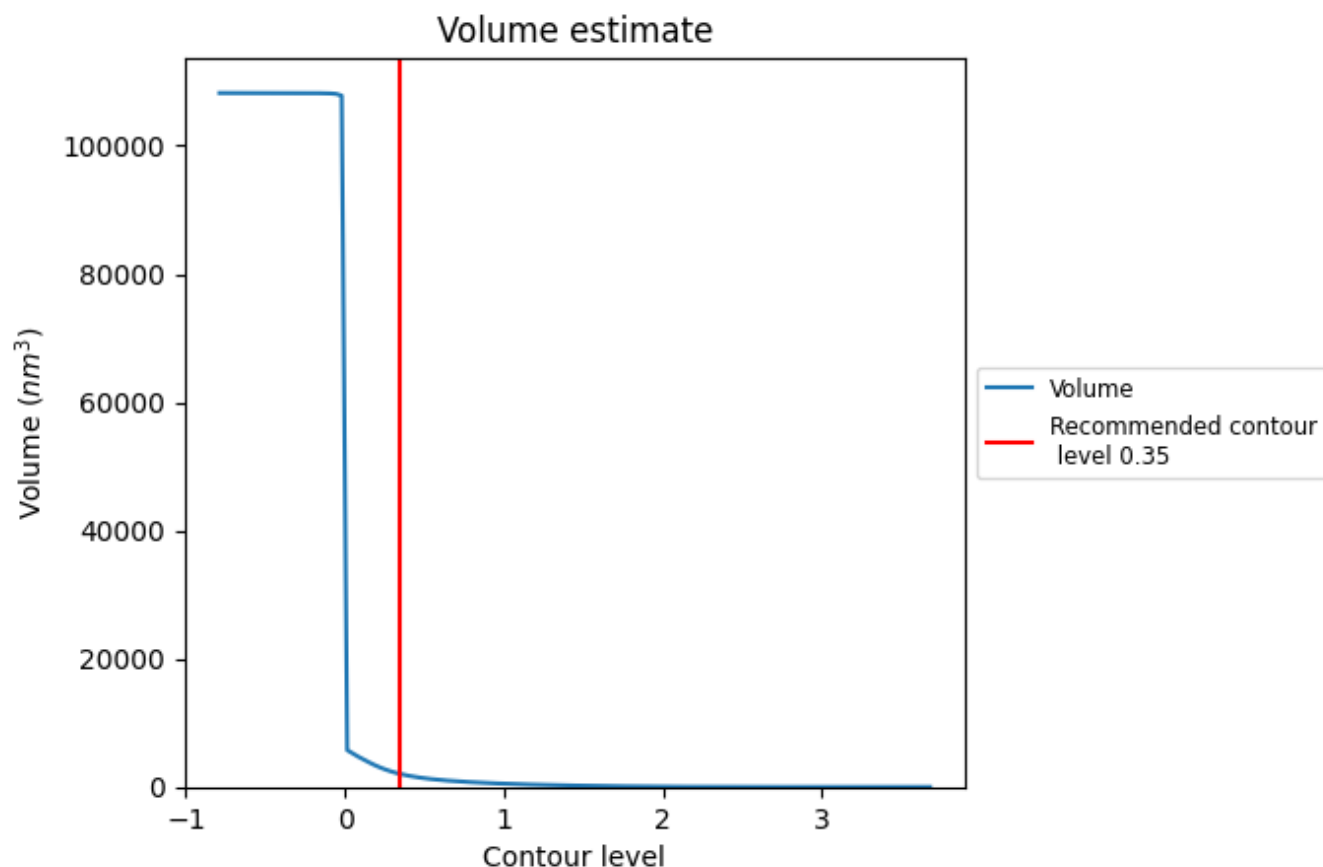
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

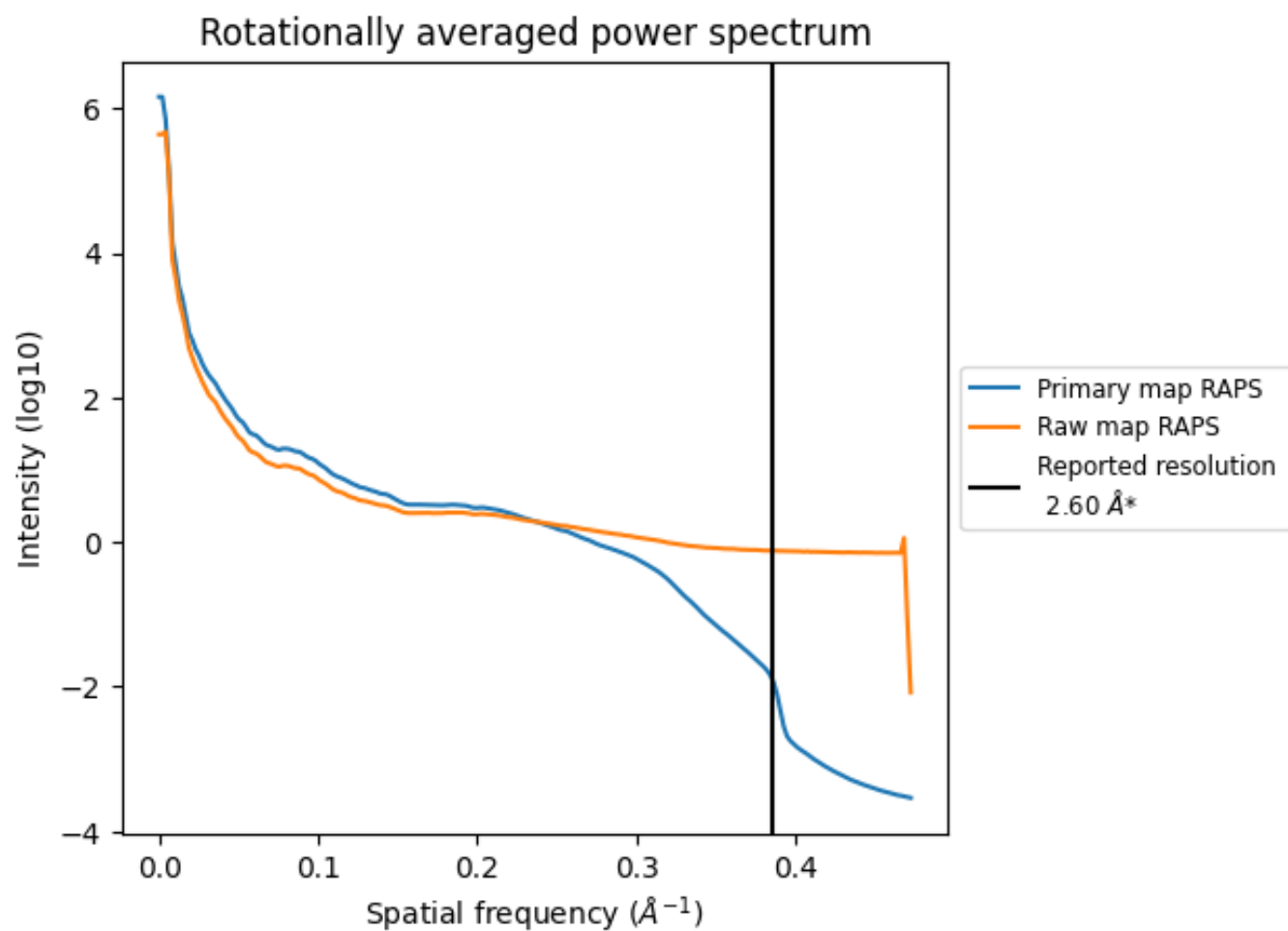
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2020 nm^3 ; this corresponds to an approximate mass of 1824 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

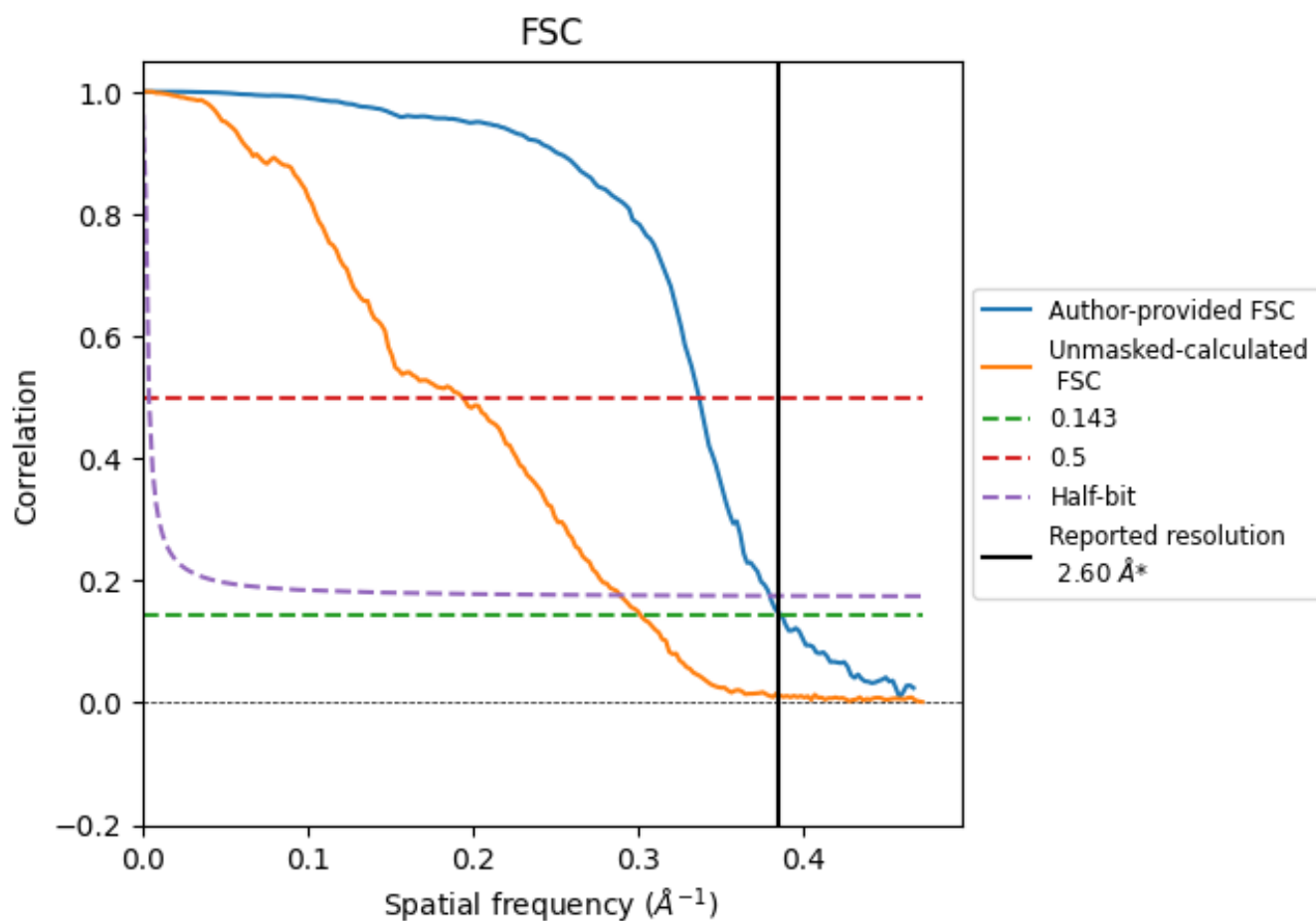


*Reported resolution corresponds to spatial frequency of 0.385 $\text{\AA}^{-1}$

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.385 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

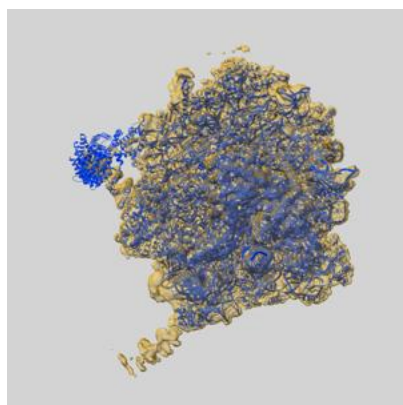
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.60	-	-
Author-provided FSC curve	2.58	2.97	2.63
Unmasked-calculated*	3.32	5.16	3.46

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.32 differs from the reported value 2.6 by more than 10 %

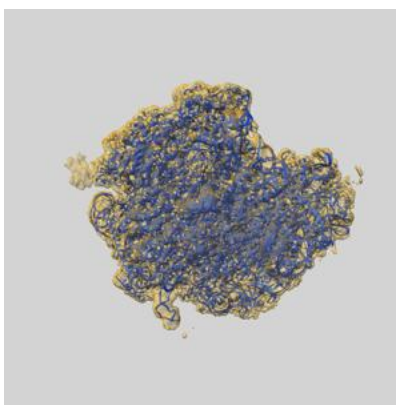
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-15423 and PDB model 8AGT. Per-residue inclusion information can be found in section [3](#) on page [15](#).

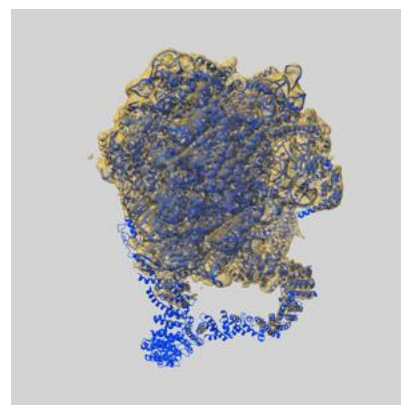
9.1 Map-model overlay [i](#)



X



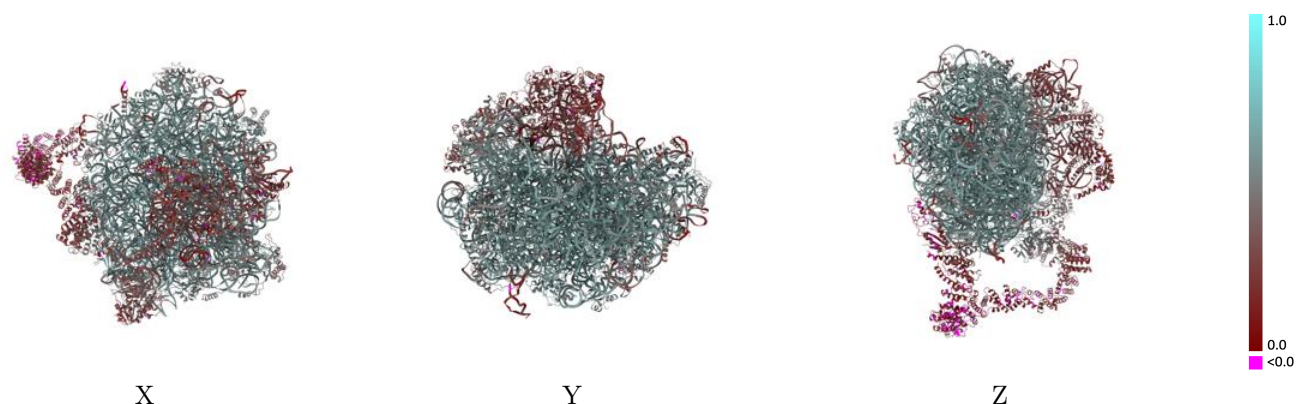
Y



Z

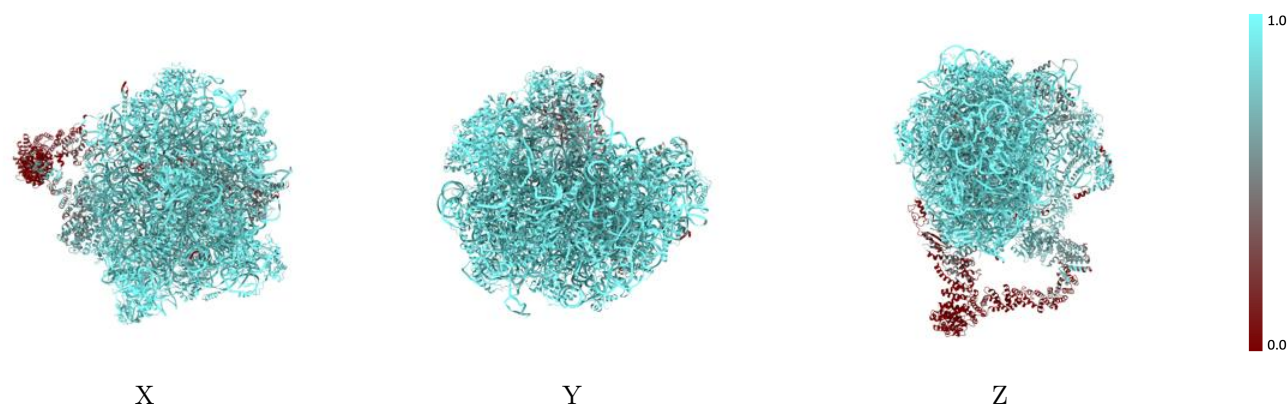
The images above show the 3D surface view of the map at the recommended contour level 0.35 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



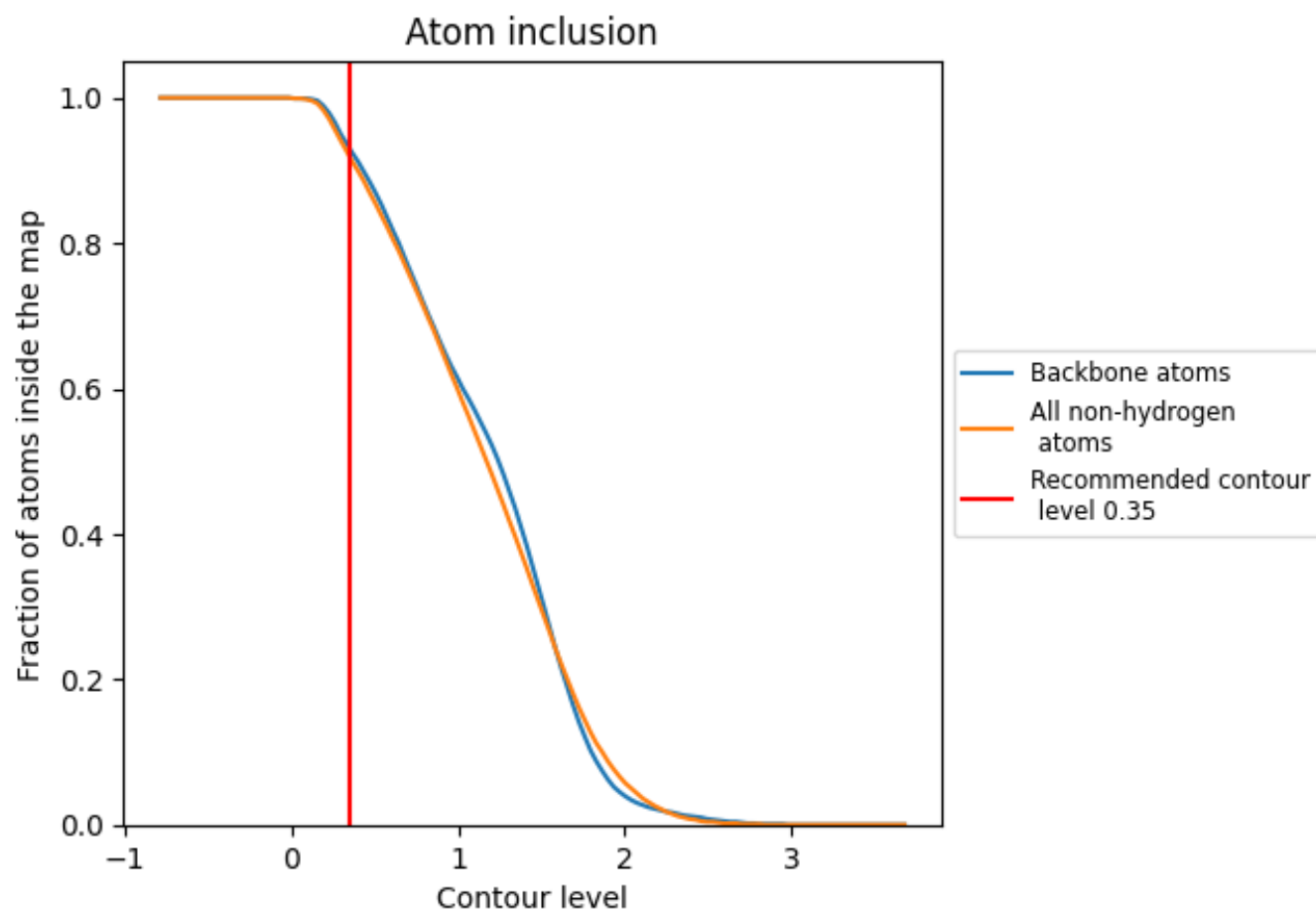
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.35).

9.4 Atom inclusion [i](#)



At the recommended contour level, 93% of all backbone atoms, 92% 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 (0.35) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9180	 0.5070
0	 0.8760	 0.3000
1	 0.9880	 0.4320
A	 0.9950	 0.6100
B	 0.9810	 0.5840
C	 0.9790	 0.5850
D	 0.9850	 0.5840
E	 0.9460	 0.5440
F	 0.9840	 0.5760
G	 0.9730	 0.5550
H	 0.9410	 0.4710
I	 0.9750	 0.5750
J	 0.9760	 0.5720
K	 0.9760	 0.5630
L	 0.9850	 0.5620
M	 0.9620	 0.5170
N	 0.9820	 0.5900
O	 0.9740	 0.5390
P	 0.9420	 0.5160
Q	 0.9440	 0.5440
R	 0.9900	 0.6000
S	 0.9940	 0.6160
T	 0.9800	 0.5730
U	 0.9720	 0.5520
V	 0.9690	 0.5230
W	 1.0000	 0.6240
X	 0.9420	 0.4940
Y	 1.0000	 0.5980
Z	 0.9650	 0.5730
a	 0.8550	 0.2670
b	 0.9630	 0.5730
c	 0.9780	 0.5680
d	 0.7870	 0.4160
e	 0.2940	 0.1860
f	 0.9920	 0.5680



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Chain	Atom inclusion	Q-score
g	 0.8200	 0.4650
h	 0.9990	 0.5650
i	 0.9970	 0.5950
j	 0.9910	 0.6000
k	 0.9850	 0.5850
l	 0.9820	 0.5720
m	 0.9520	 0.4800
n	 0.9600	 0.5210
o	 0.9760	 0.5650
p	 0.9590	 0.5220
q	 0.9660	 0.5450
r	 0.9730	 0.5430
s	 0.9460	 0.4360
t	 0.9790	 0.5600
u	 0.9790	 0.5430
v	 0.7620	 0.3880
w	 0.5790	 0.2430
x	 0.9850	 0.2700
y	 0.9920	 0.2810
z	 0.9790	 0.3160