Full wwPDB EM Validation Report

Nov 17, 2025 – 02:31 PM EST

PDB ID	:	9YX5 / pdb_00009yx5
EMDB ID	:	EMD-73596
Title	:	Structure of the long chain acyl-CoA carboxylase complex from Mycobacterium smegmatis with MSMEG_0435-MSMEG_0436 bound
Authors	:	Liang, Y.; Rubinstein, J.L.
Deposited on	:	2025-10-26
Resolution	:	2.90 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:

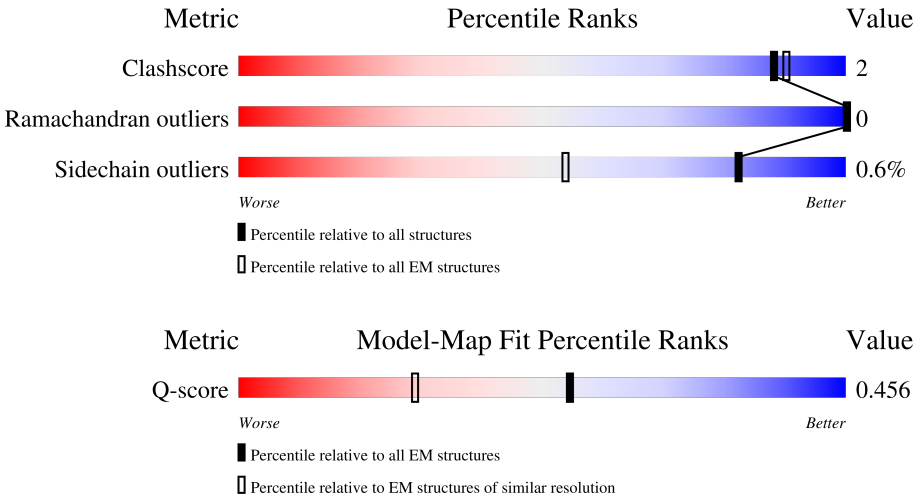
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive 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)	:	2.46

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.90 Å.

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



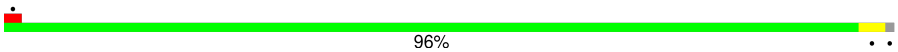
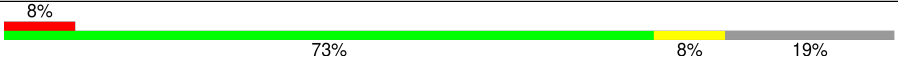
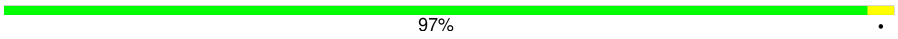
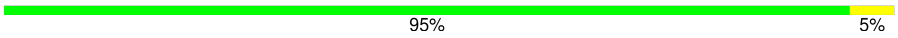
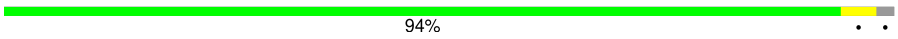
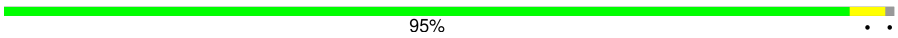
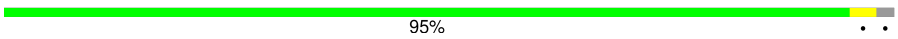
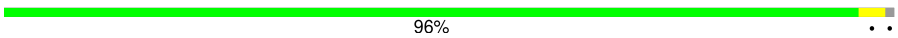
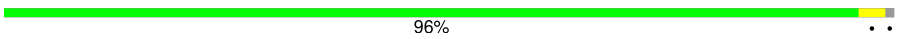
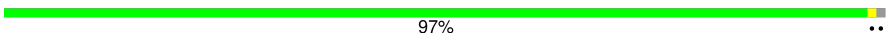
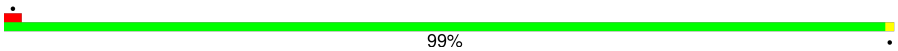
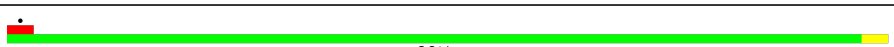
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	13054 (2.40 - 3.40)

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

Mol	Chain	Length	Quality of chain
1	A	598	21% 99%
1	B	598	41% 79% 19%
1	C	598	75% 77% 19%
1	D	598	69% 78% 20%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	I	598	
1	J	598	
1	K	598	
1	L	598	
1	Q	598	
1	R	598	
1	S	598	
1	T	598	
1	U	598	
1	X	598	
2	E	94	
2	P	94	
3	F	517	
3	O	517	
4	G	542	
4	H	542	
4	M	542	
4	N	542	
5	V	294	
5	Y	294	
6	W	210	
6	Z	210	

2 Entry composition (i)

There are 12 unique types of molecules in this entry. The entry contains 56321 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 Biotin-dependent acyl-coenzyme A carboxylase alpha3 subunit.

Mol	Chain	Residues	Atoms	AltConf	Trace
1	A	592	Total C N O 2894 1710 592 592	0	0
1	I	68	Total C N O S 409 253 73 80 3	0	0
1	J	69	Total C N O S 370 227 72 70 1	0	0
1	K	69	Total C N O S 423 263 76 81 3	0	0
1	L	69	Total C N O S 394 247 74 72 1	0	0
1	Q	592	Total C N O S 3932 2476 730 719 7	0	0
1	X	64	Total C N O S 370 228 67 72 3	0	0
1	U	64	Total C N O S 370 228 67 72 3	0	0
1	B	482	Total C N O 2364 1400 482 482	0	0
1	C	482	Total C N O 2364 1400 482 482	0	0
1	D	481	Total C N O 2359 1397 481 481	0	0
1	R	482	Total C N O S 3656 2303 649 698 6	0	0
1	S	482	Total C N O 2364 1400 482 482	0	0
1	T	481	Total C N O 2359 1397 481 481	0	0

- Molecule 2 is a protein called Acetyl-/propionyl-coenzyme A carboxylase AccE5.

Mol	Chain	Residues	Atoms	AltConf	Trace
2	E	69	Total C N O S 473 294 97 80 2	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf	Trace
2	P	70	Total	C	N	O	S	0	0
			510	319	103	85	3		

- Molecule 3 is a protein called Propionyl-CoA carboxylase beta chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	F	516	Total	C	N	O	S	0	0
			3775	2413	674	674	14		
3	O	516	Total	C	N	O	S	0	0
			3797	2424	676	682	15		

- Molecule 4 is a protein called Propionyl-CoA carboxylase beta chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	G	530	Total	C	N	O	S	0	0
			3877	2469	680	713	15		
4	H	538	Total	C	N	O	S	0	0
			3963	2517	694	738	14		
4	M	531	Total	C	N	O	S	0	0
			3887	2477	681	714	15		
4	N	539	Total	C	N	O	S	0	0
			3994	2532	696	752	14		

- Molecule 5 is a protein called Allophanate hydrolase subunit 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	V	290	Total	C	N	O	S	0	0
			2109	1329	392	384	4		
5	Y	290	Total	C	N	O	S	0	0
			2114	1331	392	387	4		

- Molecule 6 is a protein called Allophanate hydrolase subunit 1.

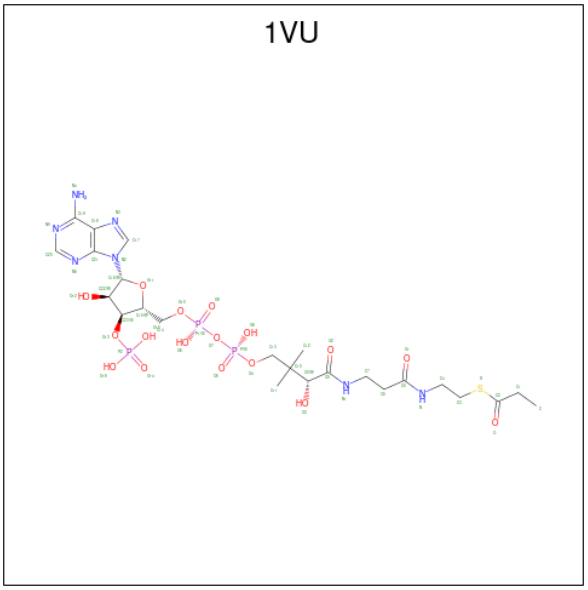
Mol	Chain	Residues	Atoms					AltConf	Trace
6	W	210	Total	C	N	O	S	0	0
			1330	862	235	231	2		
6	Z	210	Total	C	N	O	S	0	0
			1371	875	251	243	2		

- Molecule 7 is S-{(3S,5S,9R)-1-[(2R,3S,4R,5R)-5-(6-amino-9H-purin-9-yl)-4-hydroxy-3-(phosphonooxy)oxolan-2-yl]-3,5,9-trihydroxy-8,8-dimethyl-3,5,10,14-tetraoxo-2,4,6-trioxa-11,15-diaza-3lambda 5 ,5lambda 5 -diphosphaheptadecan-17-yl} (11E,14E,16E)-icosa-11,14,16-trie

nethioate (non-preferred name) (CCD ID: A1CZD) (formula: $C_{41}H_{68}N_7O_{17}P_3S$) (labeled as "Ligand of Interest" by depositor).

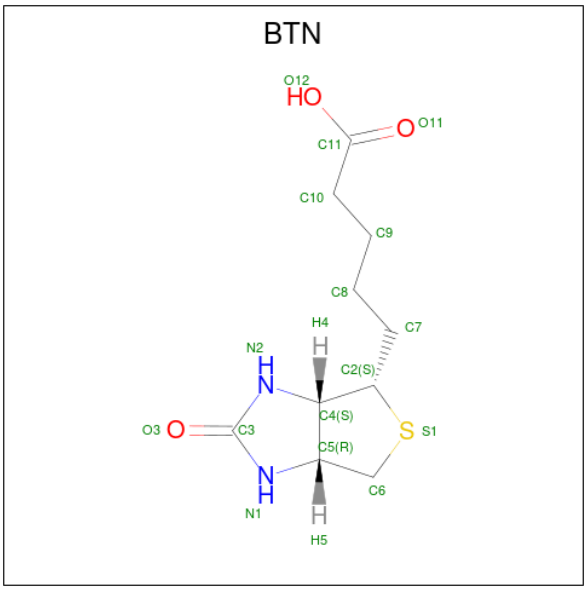
Mol	Chain	Residues	Atoms						AltConf
7	F	1	Total	C	N	O	P	S	0
			69	41	7	17	3	1	
7	O	1	Total	C	N	O	P	S	0
			69	41	7	17	3	1	

- Molecule 8 is propionyl Coenzyme A (CCD ID: 1VU) (formula: $C_{24}H_{40}N_7O_{17}P_3S$) (labeled as "Ligand of Interest" by depositor).



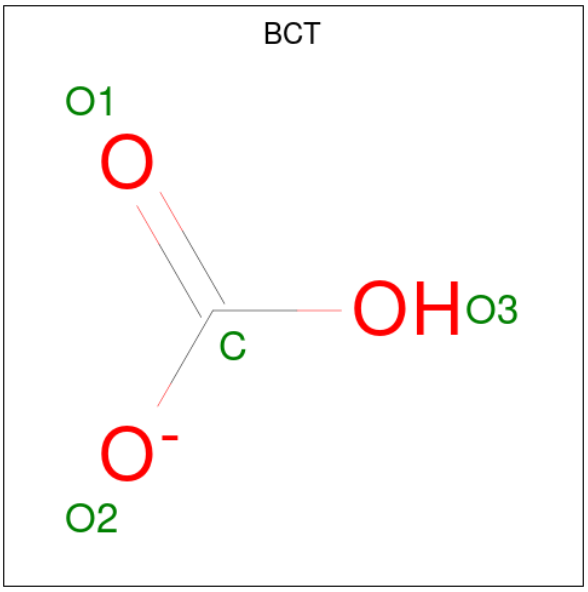
Mol	Chain	Residues	Atoms						AltConf
8	G	1	Total	C	N	O	P	S	0
			52	24	7	17	3	1	
8	H	1	Total	C	N	O	P	S	0
			52	24	7	17	3	1	
8	M	1	Total	C	N	O	P	S	0
			52	24	7	17	3	1	
8	N	1	Total	C	N	O	P	S	0
			52	24	7	17	3	1	

- Molecule 9 is BIOTIN (CCD ID: BTN) (formula: $C_{10}H_{16}N_2O_3S$) (labeled as "Ligand of Interest" by depositor).



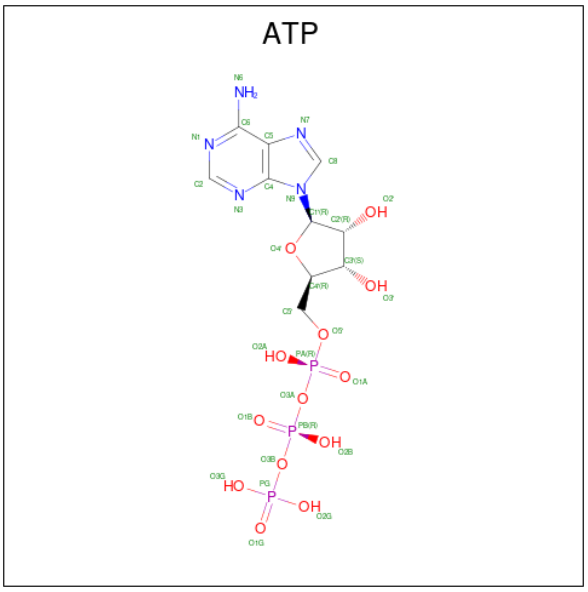
Mol	Chain	Residues	Atoms					AltConf
9	I	1	Total	C	N	O	S	0
			15	10	2	2	1	
9	K	1	Total	C	N	O	S	0
			15	10	2	2	1	
9	Q	1	Total	C	N	O	S	0
			15	10	2	2	1	
9	X	1	Total	C	N	O	S	0
			15	10	2	2	1	
9	U	1	Total	C	N	O	S	0
			15	10	2	2	1	

- Molecule 10 is BICARBONATE ION (CCD ID: BCT) (formula: CHO_3) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
10	Q	1	Total	C	O	0
			4	1	3	
10	R	1	Total	C	O	0
			4	1	3	

- Molecule 11 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
11	Q	1	Total	C	N	O	P	0
			31	10	5	13	3	

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
11	R	1	Total	C	N	O	P	0
			31	10	5	13	3	

- Molecule 12 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

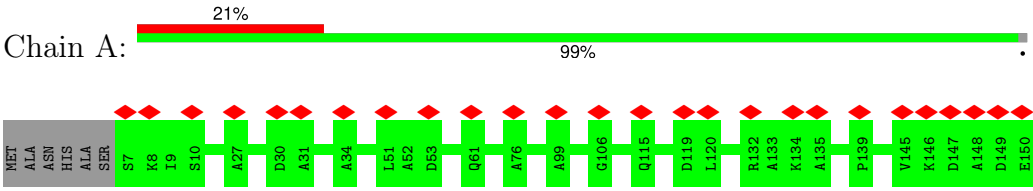
Mol	Chain	Residues	Atoms		AltConf
12	Q	1	Total	Mg	0
			1	1	
12	R	1	Total	Mg	0
			1	1	

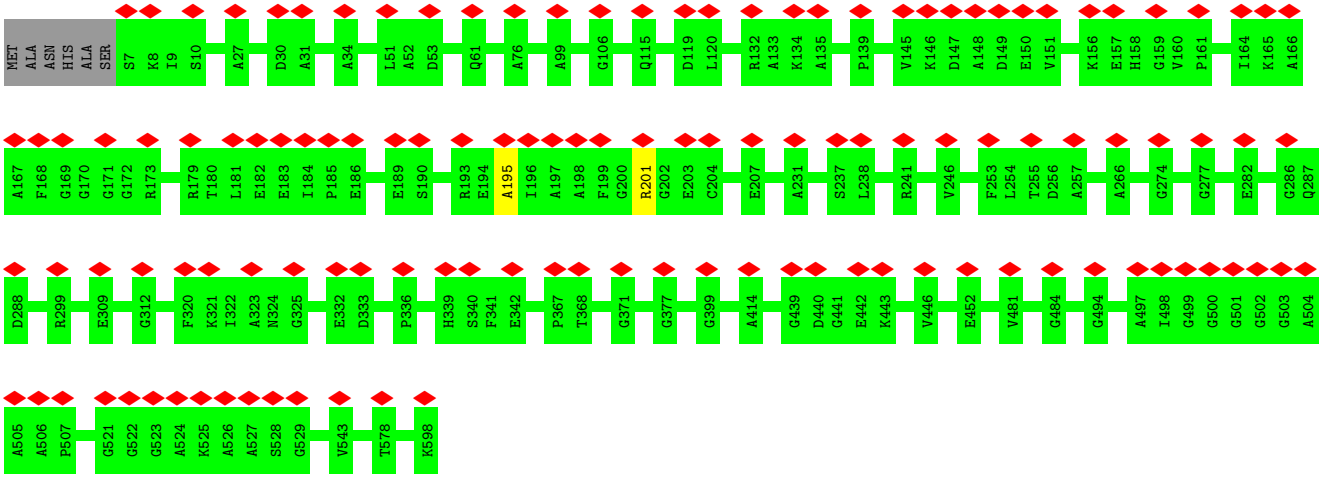
3 Residue-property plots (i)

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

• Molecule 1: Biotin-dependent acyl-coenzyme A carboxylase alpha3 subunit

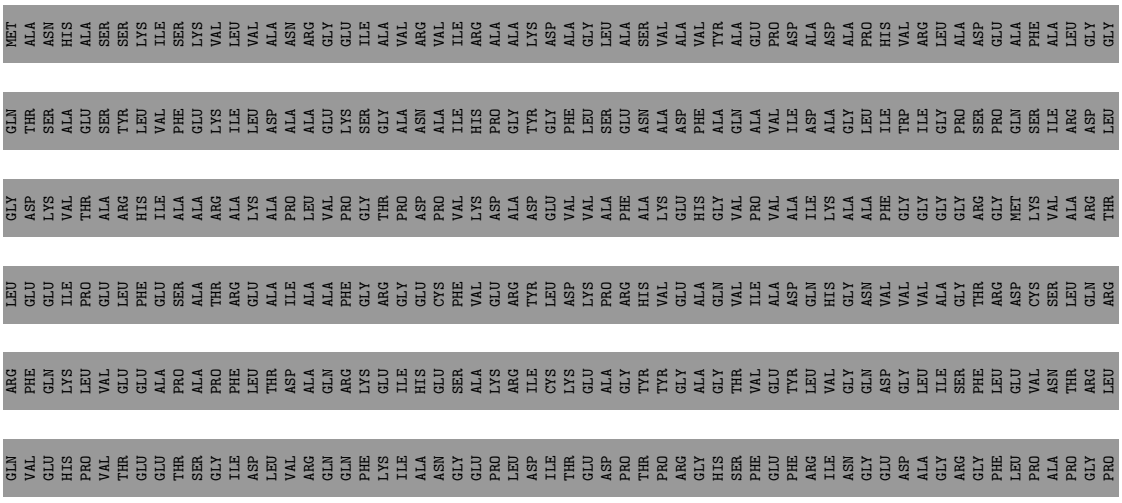
Chain A:

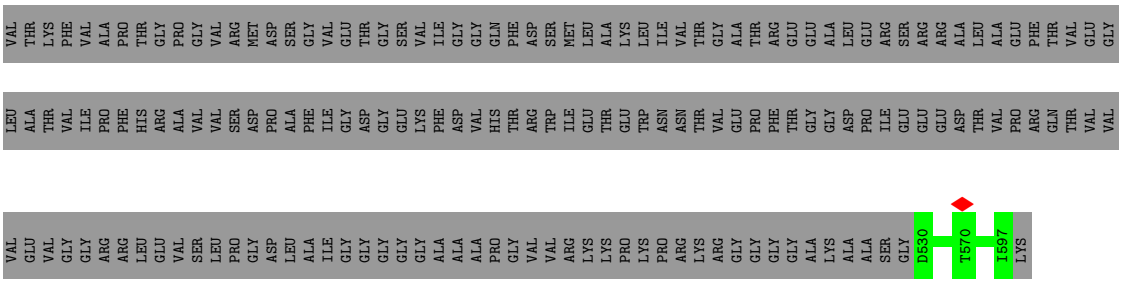




• Molecule 1: Biotin-dependent acyl-coenzyme A carboxylase alpha3 subunit

Chain I:



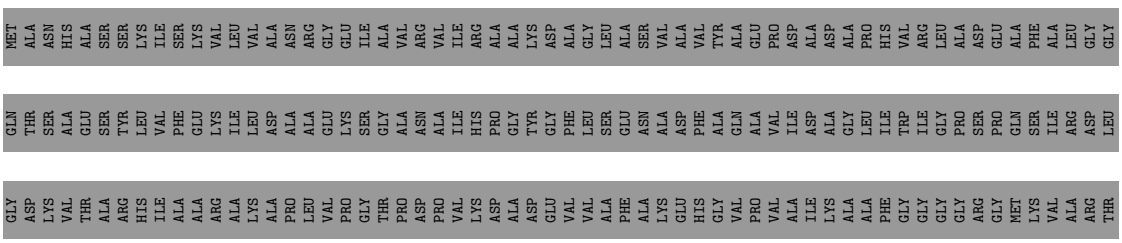


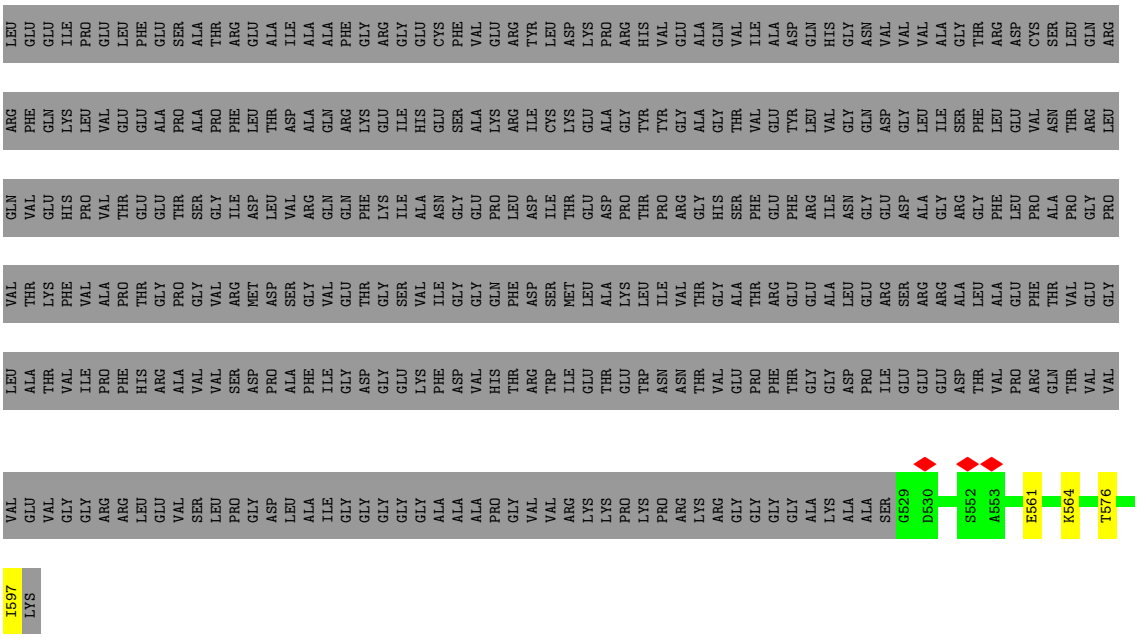
• Molecule 1: Biotin-dependent acyl-coenzyme A carboxylase alpha3 subunit

Chain J:

• Molecule 1: Biotin-dependent acyl-coenzyme A carboxylase alpha3 subunit

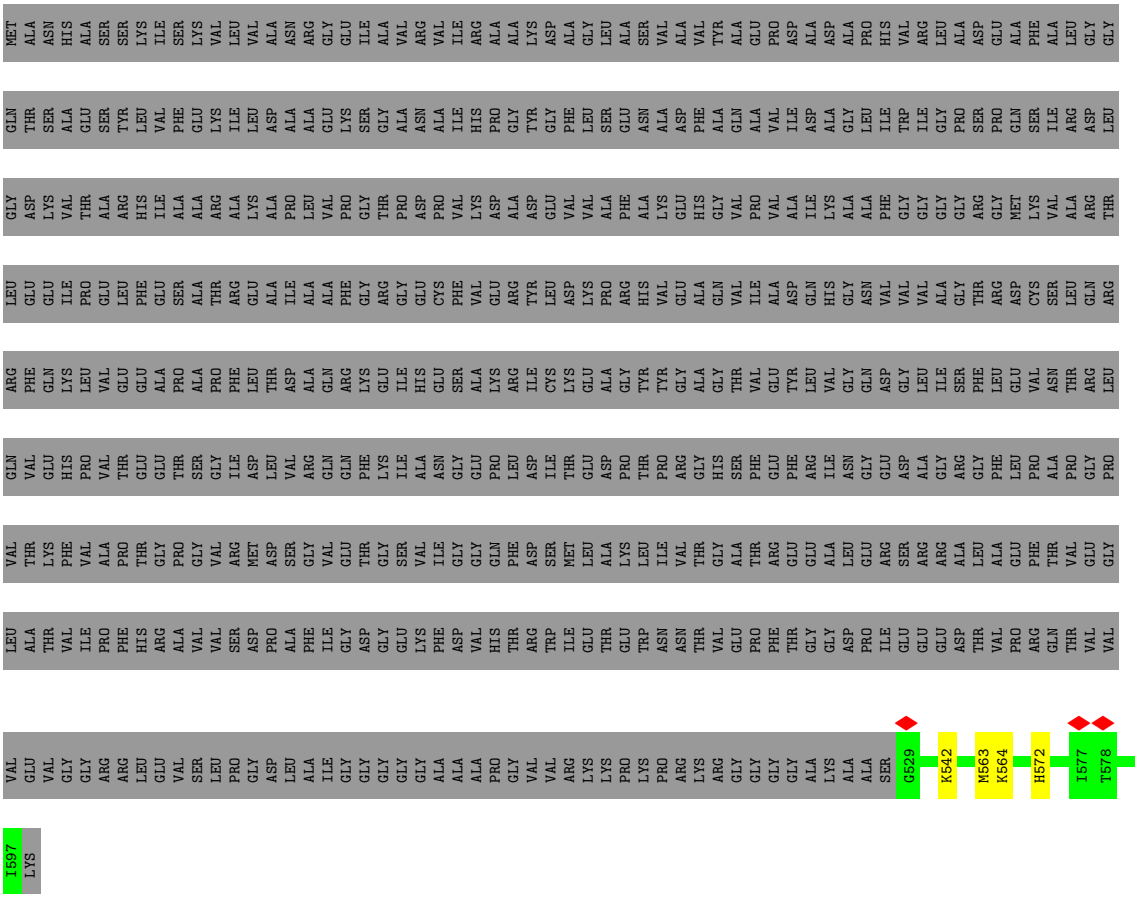
Chain K:





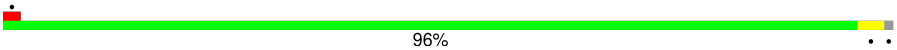
• Molecule 1: Biotin-dependent acyl-coenzyme A carboxylase alpha3 subunit

Chain L:



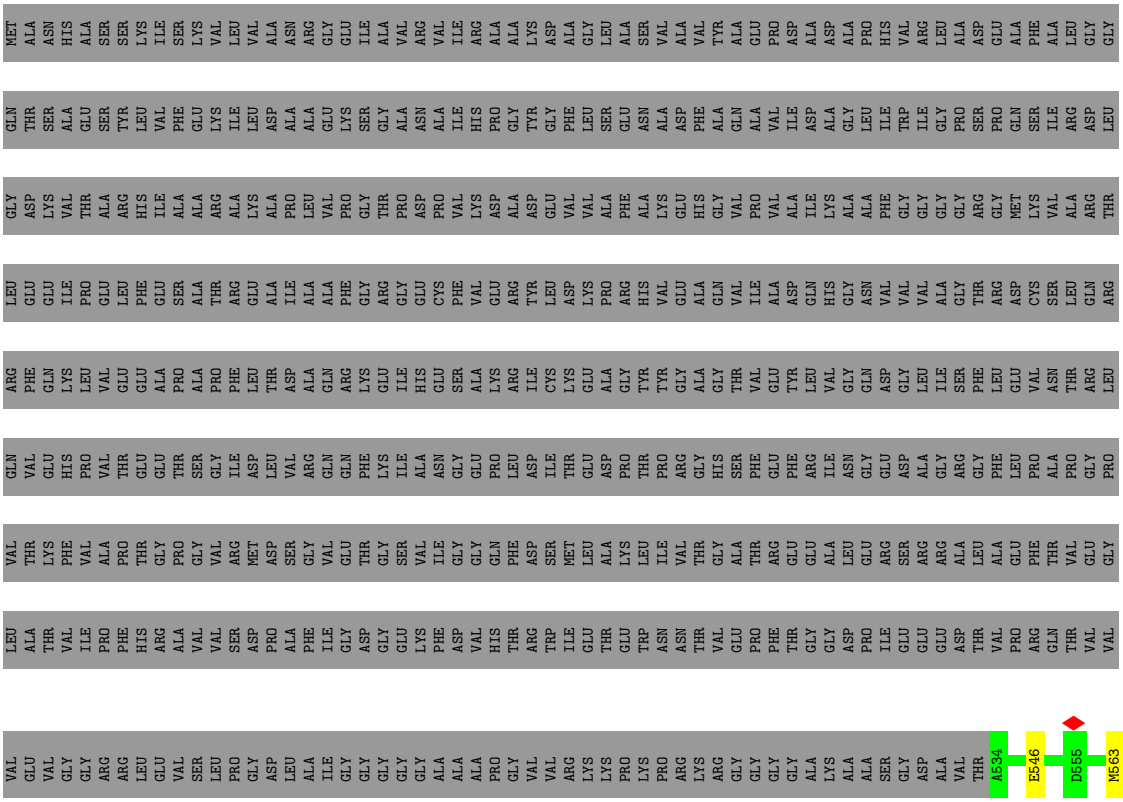
• Molecule 1: Biotin-dependent acyl-coenzyme A carboxylase alpha3 subunit

Chain Q:



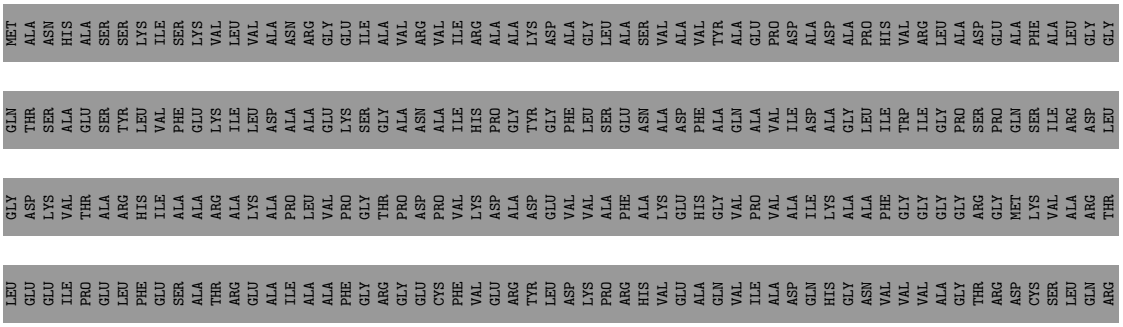
• Molecule 1: Biotin-dependent acyl-coenzyme A carboxylase alpha3 subunit

Chain X:



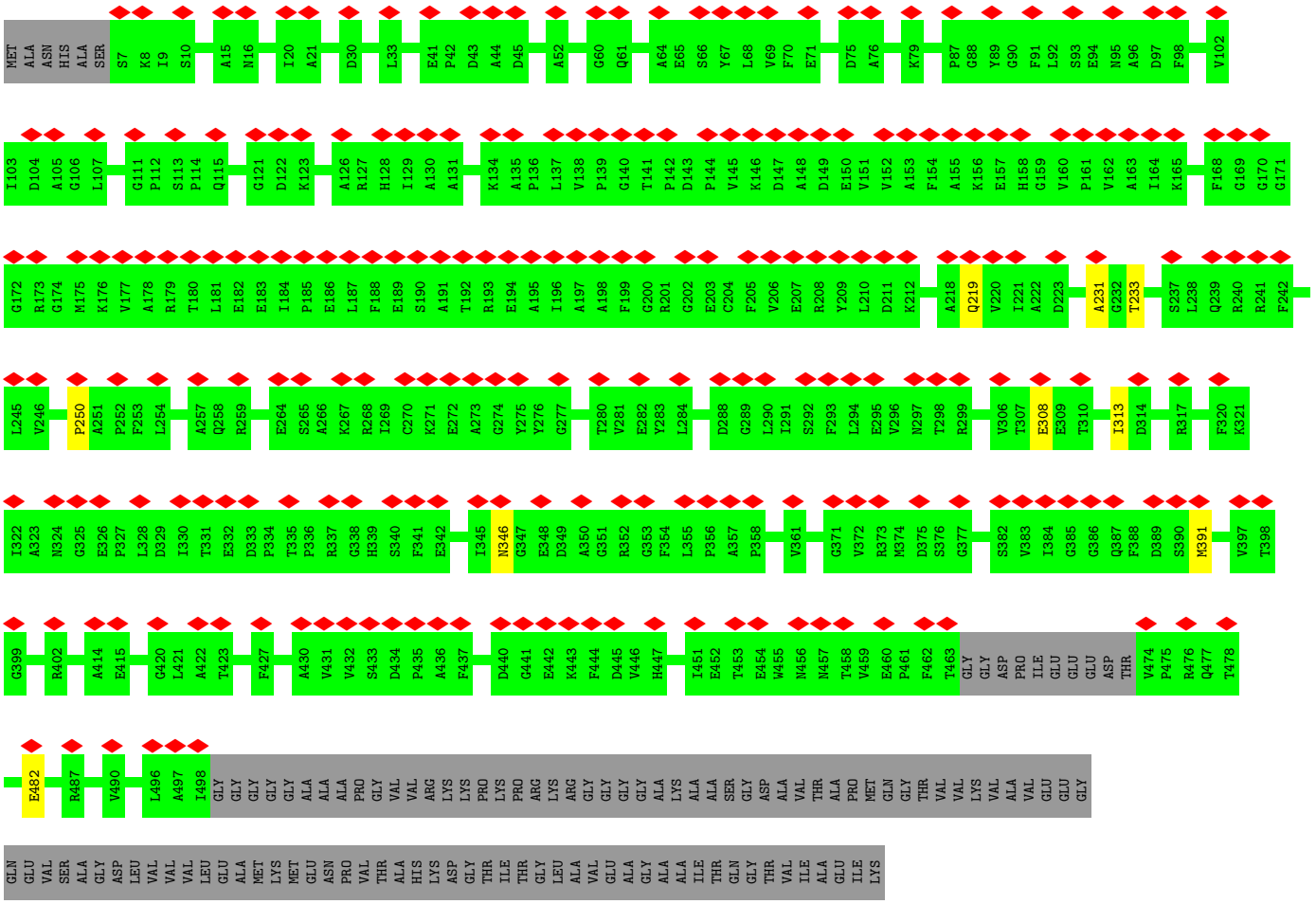
• Molecule 1: Biotin-dependent acyl-coenzyme A carboxylase alpha3 subunit

Chain U:



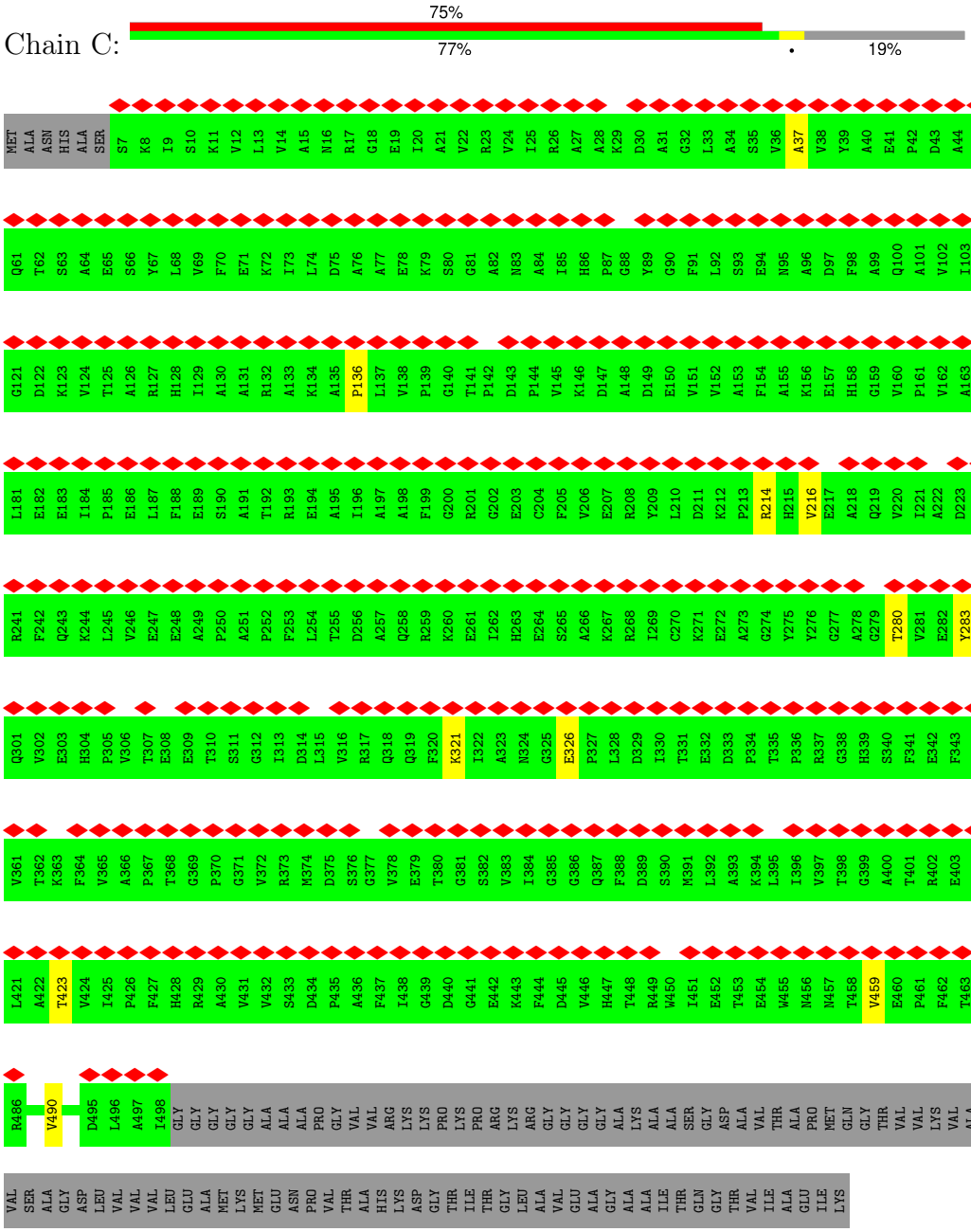
• Molecule 1: Biotin-dependent acyl-coenzyme A carboxylase alpha3 subunit

Chain B:



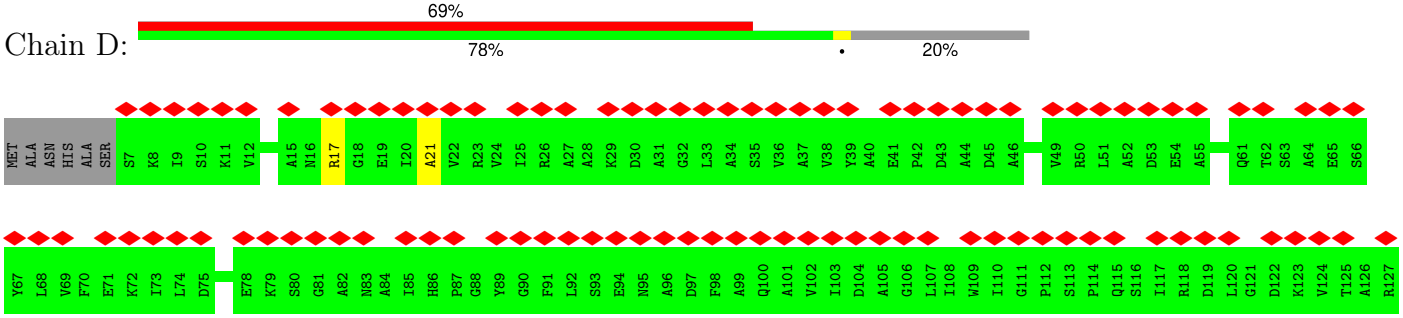
• Molecule 1: Biotin-dependent acyl-coenzyme A carboxylase alpha3 subunit

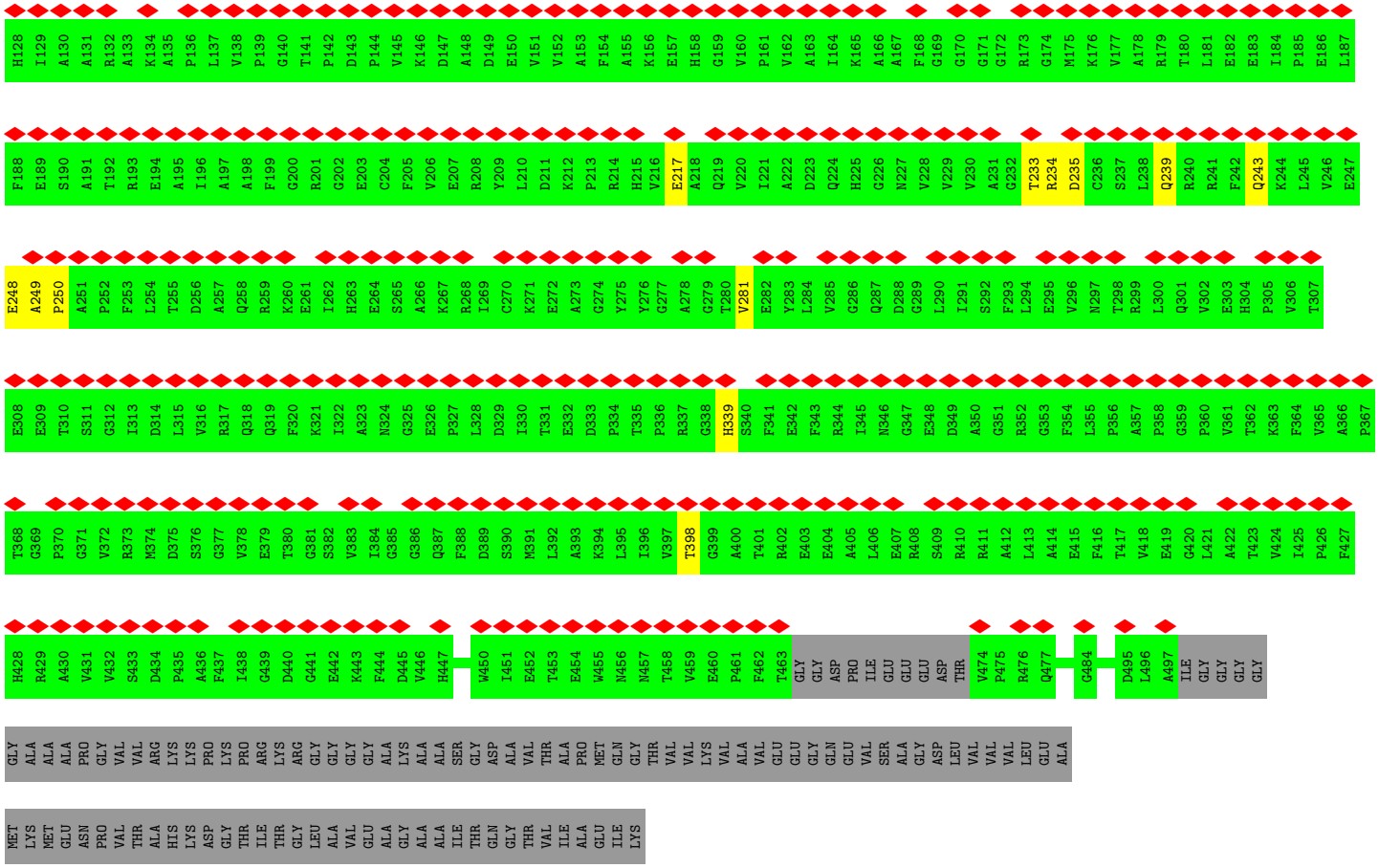
Chain C:



• Molecule 1: Biotin-dependent acyl-coenzyme A carboxylase alpha3 subunit

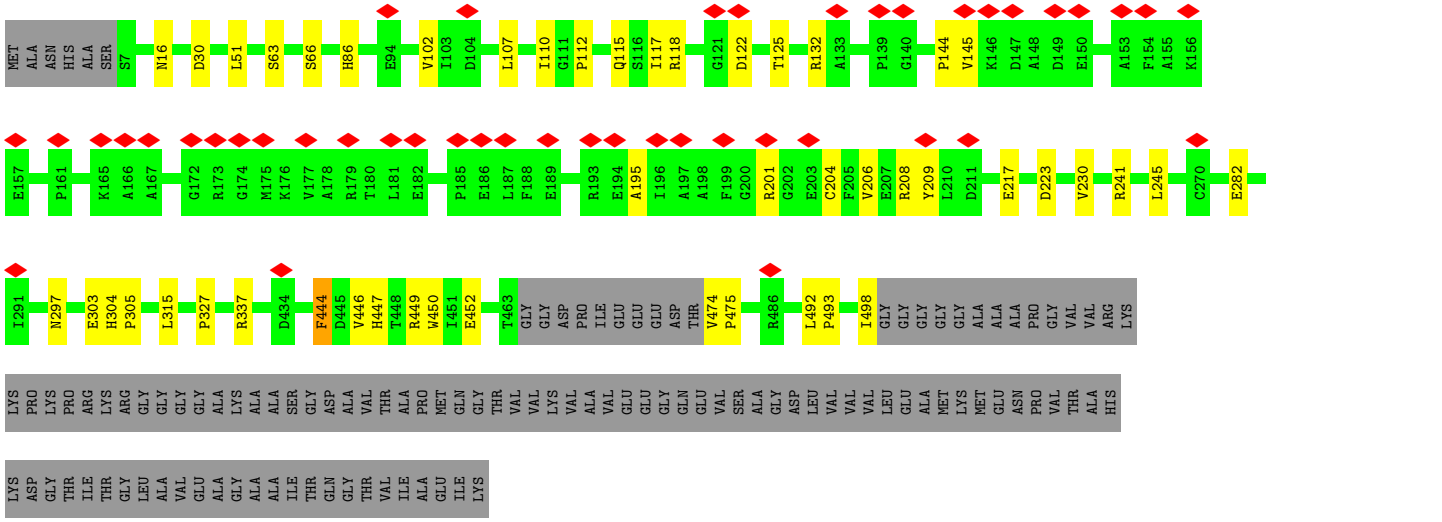
Chain D:





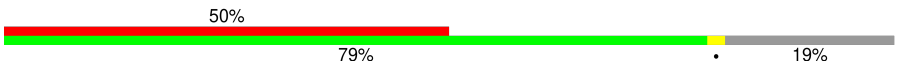
• Molecule 1: Biotin-dependent acyl-coenzyme A carboxylase alpha3 subunit

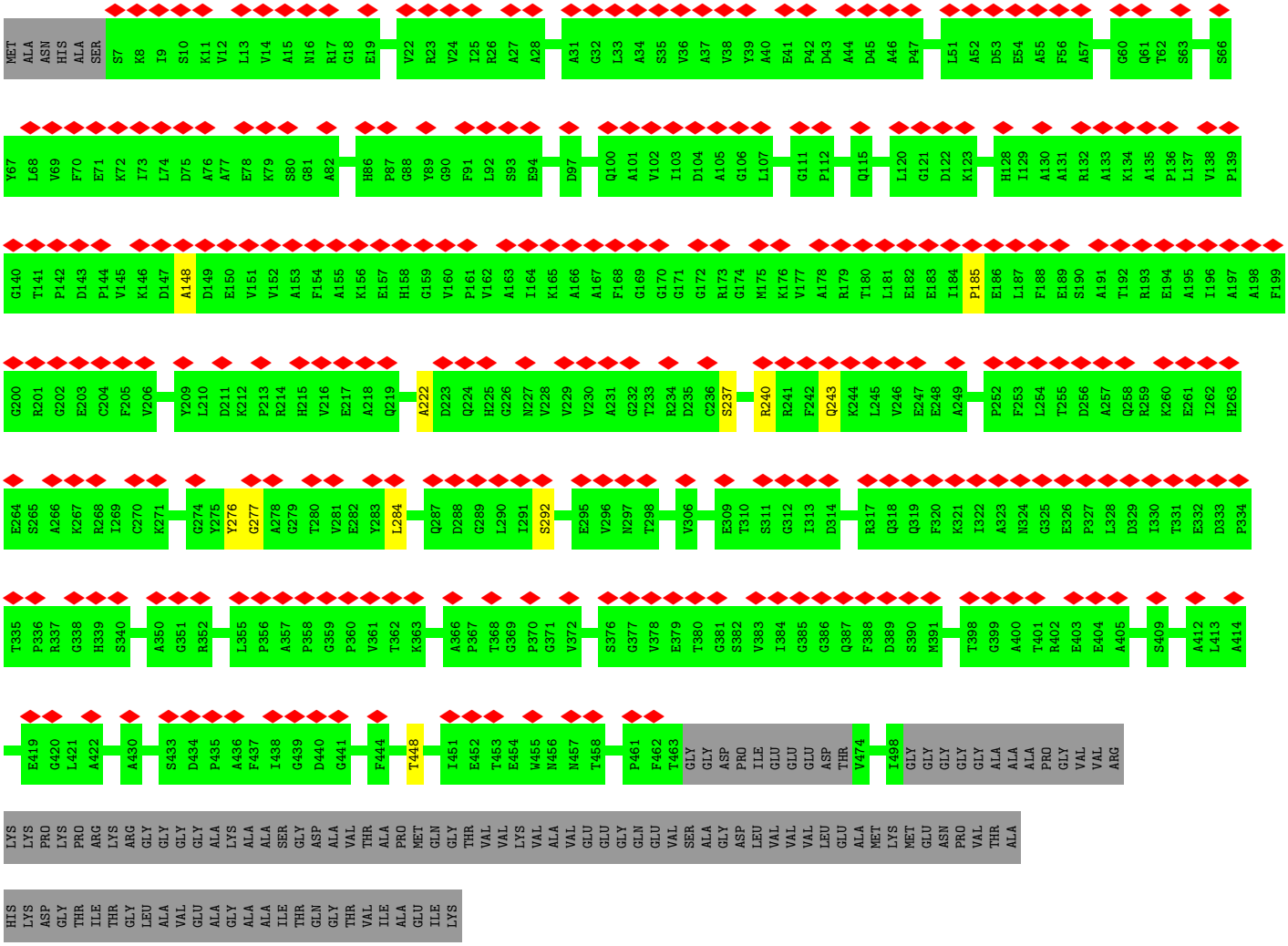
Chain R:



• Molecule 1: Biotin-dependent acyl-coenzyme A carboxylase alpha3 subunit

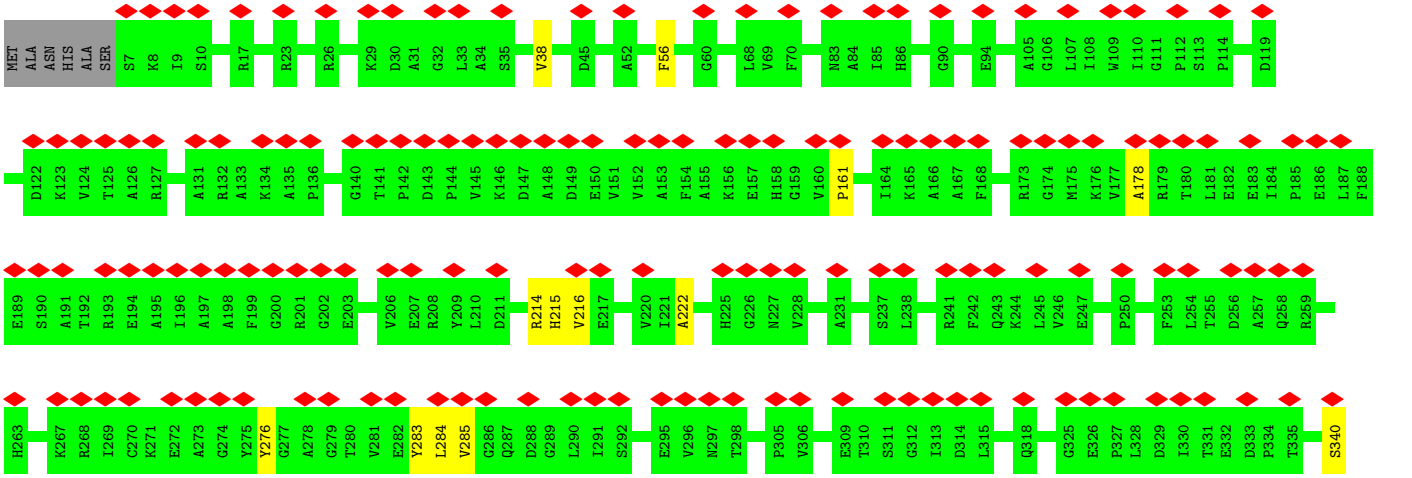
Chain S:

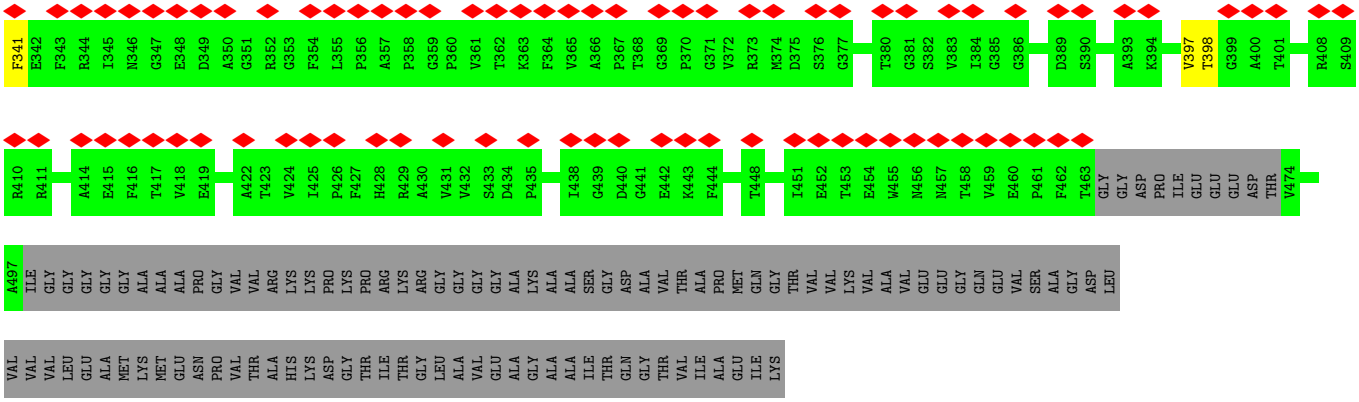




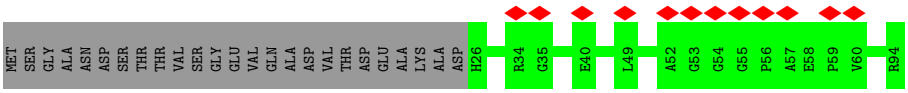
• Molecule 1: Biotin-dependent acyl-coenzyme A carboxylase alpha3 subunit

Chain T:

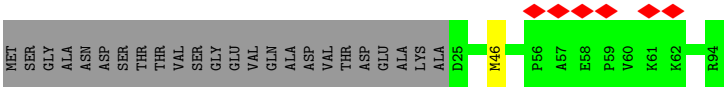




• Molecule 2: Acetyl-/propionyl-coenzyme A carboxylase AccE5



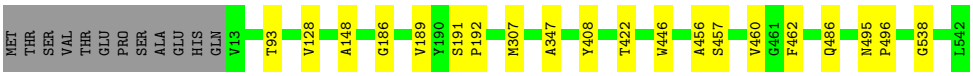
• Molecule 2: Acetyl-/propionyl-coenzyme A carboxylase AccE5



• Molecule 3: Propionyl-CoA carboxylase beta chain

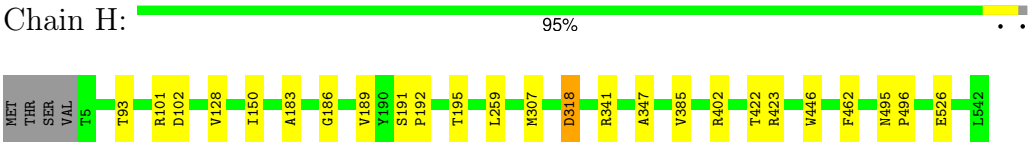
• Molecule 3: Propionyl-CoA carboxylase beta chain

• Molecule 4: Propionyl-CoA carboxylase beta chain



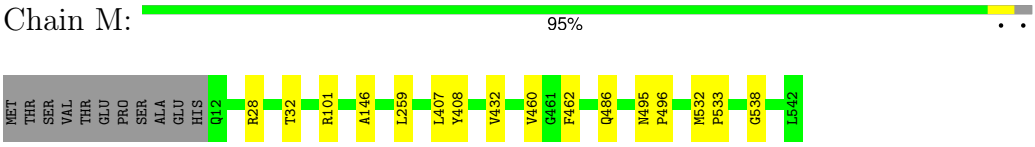
• Molecule 4: Propionyl-CoA carboxylase beta chain

Chain H:



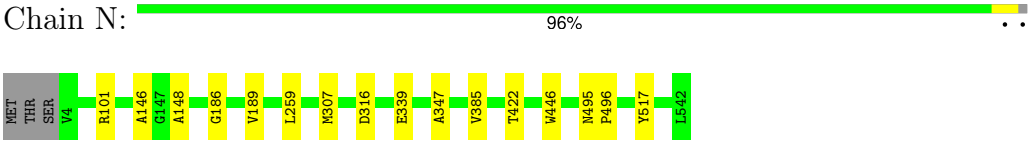
• Molecule 4: Propionyl-CoA carboxylase beta chain

Chain M:



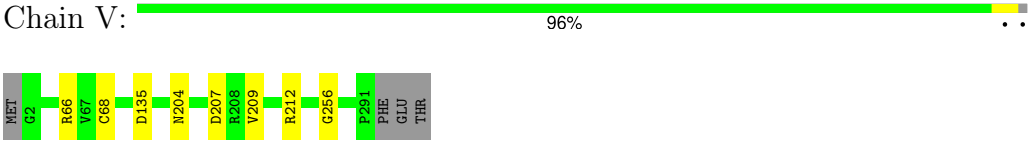
• Molecule 4: Propionyl-CoA carboxylase beta chain

Chain N:



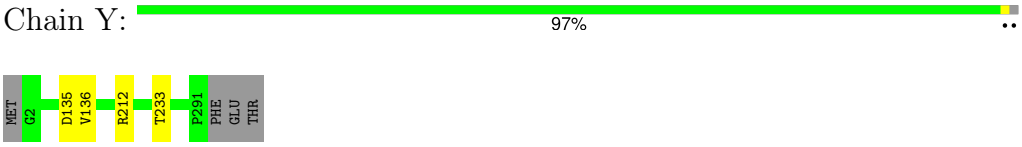
• Molecule 5: Allophanate hydrolase subunit 2

Chain V:



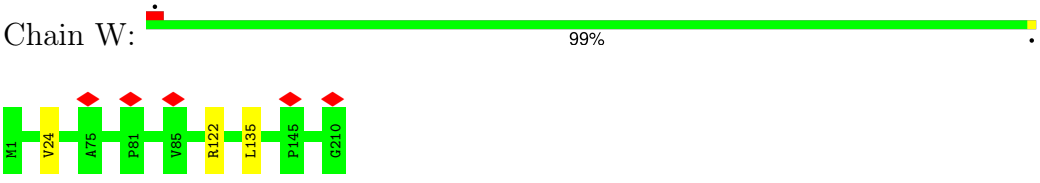
• Molecule 5: Allophanate hydrolase subunit 2

Chain Y:



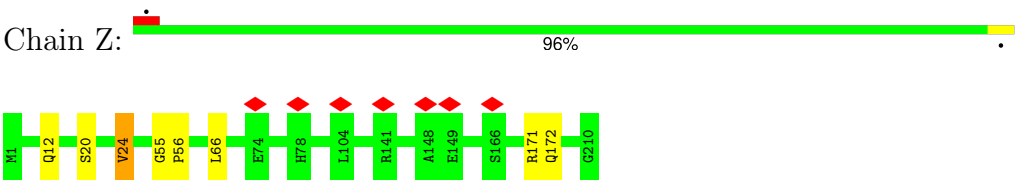
• Molecule 6: Allophanate hydrolase subunit 1

Chain W:



• Molecule 6: Allophanate hydrolase subunit 1

Chain Z:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	10016	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1100	Depositor
Maximum defocus (nm)	20000	Depositor
Magnification	130000	Depositor
Image detector	TFS FALCON 4i (4k x 4k)	Depositor
Maximum map value	0.983	Depositor
Minimum map value	-0.558	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.037	Depositor
Recommended contour level	0.12	Depositor
Map size (Å)	446.4, 446.4, 446.4	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.93, 0.93, 0.93	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: MG, BTN, 1VU, ATP, BCT, A1CZD

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	0.18	0/2893	0.53	0/4009
1	B	0.24	0/2362	0.63	0/3276
1	C	0.32	0/2362	0.76	0/3276
1	D	0.30	0/2357	0.71	0/3269
1	I	0.14	0/411	0.40	0/564
1	J	0.19	0/371	0.46	0/511
1	K	0.14	0/425	0.37	0/582
1	L	0.21	0/396	0.49	0/546
1	Q	0.21	0/4003	0.49	0/5487
1	R	0.19	0/3729	0.51	0/5060
1	S	0.28	0/2362	0.70	0/3276
1	T	0.25	0/2357	0.68	0/3269
1	U	0.24	0/371	0.54	0/509
1	X	0.23	0/371	0.54	0/509
2	E	0.24	0/482	0.54	0/655
2	P	0.21	0/521	0.49	0/706
3	F	0.23	0/3856	0.48	0/5248
3	O	0.22	0/3878	0.47	0/5279
4	G	0.22	0/3953	0.47	0/5390
4	H	0.22	0/4041	0.46	0/5507
4	M	0.21	0/3963	0.45	0/5403
4	N	0.21	0/4072	0.46	0/5548
5	V	0.18	0/2162	0.42	0/2969
5	Y	0.18	0/2167	0.43	0/2975
6	W	0.20	0/1365	0.49	0/1897
6	Z	0.19	0/1403	0.48	0/1937
All	All	0.22	0/56633	0.53	0/77657

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
4	H	0	1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
4	H	402	ARG	Sidechain

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2894	0	1446	2	0
1	B	2364	0	1160	5	0
1	C	2364	0	1160	11	0
1	D	2359	0	1158	8	0
1	I	409	0	346	0	0
1	J	370	0	272	1	0
1	K	423	0	383	2	0
1	L	394	0	335	1	0
1	Q	3932	0	3592	15	0
1	R	3656	0	3622	31	0
1	S	2364	0	1160	8	0
1	T	2359	0	1158	11	0
1	U	370	0	309	5	0
1	X	370	0	309	1	0
2	E	473	0	401	0	0
2	P	510	0	465	1	0
3	F	3775	0	3698	8	0
3	O	3797	0	3731	14	0
4	G	3877	0	3817	11	0
4	H	3963	0	3898	14	0
4	M	3887	0	3832	10	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	N	3994	0	3935	10	0
5	V	2109	0	2072	9	0
5	Y	2114	0	2079	2	0
6	W	1330	0	1127	1	0
6	Z	1371	0	1183	4	0
7	F	69	0	0	2	0
7	O	69	0	0	1	0
8	G	52	0	38	2	0
8	H	52	0	38	5	0
8	M	52	0	38	5	0
8	N	52	0	38	5	0
9	I	15	0	15	0	0
9	K	15	0	15	0	0
9	Q	15	0	15	0	0
9	U	15	0	15	2	0
9	X	15	0	15	1	0
10	Q	4	0	1	0	0
10	R	4	0	1	0	0
11	Q	31	0	12	0	0
11	R	31	0	12	1	0
12	Q	1	0	0	0	0
12	R	1	0	0	0	0
All	All	56321	0	46901	181	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 2.

All (181) 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)
5:V:207:ASP:OD2	1:U:564:LYS:HD3	1.25	1.23
5:V:207:ASP:OD2	1:U:564:LYS:CD	1.88	1.21
5:V:204:ASN:OD1	1:U:537:GLN:NE2	1.91	1.02
6:Z:12:GLN:HE21	6:Z:55:GLY:HA2	1.24	1.02
5:V:212:ARG:NH1	9:U:601:BTN:O11	2.01	0.92
1:C:214:ARG:N	1:C:285:VAL:O	2.15	0.78
8:H:601:1VU:H27	4:M:462:PHE:HE2	1.48	0.77
4:N:148:ALA:H	8:N:601:1VU:H37	1.51	0.75
1:C:136:PRO:O	1:C:293:PHE:N	2.18	0.74
5:V:207:ASP:OD2	1:U:564:LYS:HD2	1.83	0.74
1:S:240:ARG:N	1:S:243:GLN:O	2.24	0.69

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:T:214:ARG:O	1:T:285:VAL:N	2.24	0.64
1:Q:337:ARG:HD3	1:R:337:ARG:CB	2.26	0.64
1:T:214:ARG:N	1:T:285:VAL:O	2.32	0.63
8:M:601:1VU:H28	8:M:601:1VU:N3	2.12	0.62
6:Z:12:GLN:NE2	6:Z:56:PRO:HD3	2.15	0.62
8:H:601:1VU:H27	4:M:462:PHE:CE2	2.34	0.60
8:M:601:1VU:O2	8:M:601:1VU:H16	2.00	0.60
1:R:297:ASN:ND2	11:R:601:ATP:O1B	2.35	0.59
1:B:219:GLN:O	1:B:231:ALA:N	2.35	0.58
4:M:146:ALA:HB2	8:M:601:1VU:H18	1.84	0.58
5:V:256:GLY:HA2	9:U:601:BTN:O3	2.04	0.58
8:N:601:1VU:H26	8:N:601:1VU:H21	1.69	0.57
3:O:127:ASP:OD1	3:O:128:SER:N	2.38	0.57
1:D:235:ASP:N	1:D:248:GLU:O	2.27	0.56
8:H:601:1VU:H29	8:H:601:1VU:O3	2.04	0.56
1:Q:387:GLN:NE2	1:Q:539:THR:OG1	2.38	0.55
1:B:346:ASN:HA	1:B:391:MET:HA	1.89	0.55
1:R:223:ASP:OD2	1:R:327:PRO:HA	2.06	0.55
1:T:340:SER:HA	1:T:398:THR:HA	1.89	0.55
1:T:214:ARG:O	1:T:284:LEU:HA	2.07	0.54
1:A:195:ALA:HB1	1:A:201:ARG:O	2.07	0.54
1:C:37:ALA:O	1:C:55:ALA:HA	2.08	0.54
1:T:216:VAL:O	1:T:283:TYR:N	2.26	0.54
1:S:284:LEU:N	1:S:292:SER:O	2.41	0.53
1:Q:62:THR:HG22	1:Q:387:GLN:NE2	2.24	0.53
4:G:148:ALA:H	8:G:601:1VU:H37	1.72	0.53
8:G:601:1VU:H30	8:G:601:1VU:H18	1.89	0.53
1:Q:337:ARG:HG2	1:Q:337:ARG:O	2.08	0.52
1:R:447:HIS:H	1:R:450:TRP:HB2	1.75	0.52
4:H:422:THR:HG22	4:H:446:TRP:CD2	2.45	0.52
6:W:122:ARG:O	6:W:135:LEU:HA	2.10	0.52
4:G:495:ASN:HB2	4:G:496:PRO:HD2	1.92	0.51
1:Q:337:ARG:HD3	1:R:337:ARG:HB2	1.93	0.51
1:D:235:ASP:O	1:D:248:GLU:N	2.37	0.50
4:H:150:ILE:HD11	8:H:601:1VU:H32	1.93	0.50
3:O:151:GLU:HA	7:O:601:A1CZD:C05	2.42	0.50
1:C:351:GLY:HA3	1:C:459:VAL:O	2.11	0.50
1:S:237:SER:O	1:S:448:THR:HA	2.11	0.49
1:T:341:PHE:O	1:T:397:VAL:N	2.36	0.49
3:F:360:VAL:HG22	3:F:410:MET:HB3	1.94	0.49
4:G:460:VAL:HG21	4:G:486:GLN:HA	1.94	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:413:LYS:HE3	3:F:480:ASP:OD1	2.12	0.49
1:Q:240:ARG:NH1	1:Q:243:GLN:HB2	2.28	0.49
1:R:115:GLN:OE1	1:R:118:ARG:NH1	2.43	0.48
4:G:462:PHE:HZ	8:N:601:1VU:C21	2.26	0.48
4:N:146:ALA:HB2	8:N:601:1VU:H20	1.95	0.48
4:H:495:ASN:HB2	4:H:496:PRO:HD2	1.94	0.48
1:Q:337:ARG:HD3	1:R:337:ARG:HG3	1.96	0.48
4:M:460:VAL:HG21	4:M:486:GLN:HA	1.95	0.48
1:B:308:GLU:HA	1:B:313:ILE:O	2.14	0.48
1:T:341:PHE:N	1:T:397:VAL:O	2.40	0.48
7:F:601:A1CZD:N60	7:F:601:A1CZD:C49	2.77	0.48
4:H:307:MET:HG2	4:H:347:ALA:HB1	1.96	0.47
1:B:233:THR:O	1:B:250:PRO:HA	2.15	0.47
4:H:462:PHE:CE2	8:M:601:1VU:H29	2.49	0.47
3:O:358:PHE:CZ	3:O:387:ILE:HD13	2.50	0.47
4:G:186:GLY:O	4:G:189:VAL:HG22	2.15	0.47
4:N:495:ASN:HB2	4:N:496:PRO:HD2	1.97	0.47
3:O:403:TYR:HA	3:O:429:ALA:O	2.14	0.47
1:R:304:HIS:CG	1:R:305:PRO:HD3	2.49	0.47
3:F:168:ALA:HA	3:F:191:PHE:O	2.16	0.46
4:G:422:THR:HG22	4:G:446:TRP:CD2	2.50	0.46
1:S:222:ALA:O	1:S:277:GLY:N	2.37	0.46
4:N:307:MET:HG2	4:N:347:ALA:HB1	1.97	0.46
4:M:28:ARG:O	4:M:32:THR:HG23	2.16	0.46
4:N:186:GLY:O	4:N:189:VAL:HG22	2.15	0.46
1:T:222:ALA:HB3	1:T:276:TYR:HA	1.97	0.46
1:Q:128:HIS:O	1:Q:132:ARG:HG3	2.15	0.46
9:X:601:BTN:O11	5:Y:212:ARG:NH1	2.37	0.46
1:R:230:VAL:HG13	1:R:230:VAL:O	2.15	0.46
2:P:46:MET:HE2	2:P:46:MET:HA	1.97	0.46
1:K:576:THR:O	1:K:597:ILE:HA	2.16	0.46
3:F:31:LYS:O	3:F:34:LYS:N	2.49	0.46
4:M:407:LEU:HG	4:M:432:VAL:HG22	1.97	0.46
1:R:144:PRO:HA	1:R:204:CYS:O	2.16	0.46
1:Q:411:ARG:HE	1:R:30:ASP:CG	2.23	0.46
1:C:216:VAL:O	1:C:283:TYR:N	2.44	0.46
1:B:482:GLU:O	1:C:490:VAL:HA	2.16	0.45
1:A:195:ALA:O	1:A:201:ARG:N	2.46	0.45
1:S:240:ARG:O	1:S:243:GLN:N	2.40	0.45
3:F:430:VAL:HG22	3:O:140:LEU:HB2	1.97	0.45
4:N:422:THR:HG22	4:N:446:TRP:CD2	2.52	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Q:304:HIS:CG	1:Q:305:PRO:HD3	2.51	0.45
1:R:444:PHE:CE2	1:R:446:VAL:HG22	2.51	0.45
1:S:222:ALA:HB3	1:S:276:TYR:HA	1.98	0.45
3:F:154:ARG:NH2	3:F:179:ASP:OD1	2.42	0.45
1:Q:216:VAL:O	1:Q:283:TYR:N	2.44	0.45
1:R:474:VAL:N	1:R:475:PRO:CD	2.80	0.45
6:Z:20:SER:O	6:Z:24:VAL:HG13	2.18	0.44
1:D:17:ARG:C	1:D:21:ALA:HB2	2.42	0.44
1:T:215:HIS:HA	1:T:283:TYR:O	2.17	0.44
1:C:321:LYS:O	1:C:326:GLU:N	2.46	0.44
1:R:86:HIS:CD2	1:R:110:ILE:HG21	2.53	0.44
1:R:217:GLU:HG2	1:R:282:GLU:HA	1.98	0.44
3:O:100:VAL:HG21	3:O:143:TYR:CE1	2.52	0.44
1:T:161:PRO:HA	1:T:178:ALA:O	2.17	0.44
4:H:183:ALA:HB3	8:H:601:1VU:H19	2.00	0.44
1:S:148:ALA:CB	1:S:185:PRO:HA	2.48	0.44
3:O:168:ALA:HA	3:O:191:PHE:O	2.18	0.44
4:M:495:ASN:HB2	4:M:496:PRO:HD2	1.99	0.43
8:M:601:1VU:H27	8:M:601:1VU:H24	1.49	0.43
1:D:239:GLN:HA	1:D:243:GLN:O	2.19	0.43
1:T:38:VAL:HA	1:T:56:PHE:O	2.18	0.43
1:R:208:ARG:NH1	1:R:209:TYR:O	2.43	0.43
4:H:101:ARG:NH2	4:H:259:LEU:O	2.49	0.43
3:O:293:ASP:OD2	3:O:316:ASP:N	2.51	0.43
1:Q:128:HIS:HB3	1:Q:132:ARG:HH21	1.83	0.43
1:C:360:PRO:O	1:C:420:GLY:C	2.62	0.43
4:M:101:ARG:NH2	4:M:259:LEU:O	2.51	0.43
3:O:360:VAL:HG22	3:O:410:MET:HB3	2.01	0.43
4:N:385:VAL:HG13	4:N:385:VAL:O	2.19	0.43
1:Q:240:ARG:NH2	1:Q:243:GLN:OE1	2.52	0.43
1:C:346:ASN:O	1:C:423:THR:HA	2.19	0.43
1:D:339:HIS:O	1:D:398:THR:HA	2.19	0.43
4:H:186:GLY:O	4:H:189:VAL:HG22	2.18	0.43
4:H:385:VAL:O	4:H:385:VAL:HG13	2.19	0.43
1:X:563:MET:HB3	1:X:563:MET:HE2	1.76	0.43
4:H:318:ASP:OD1	4:H:318:ASP:N	2.50	0.42
1:R:112:PRO:HG2	1:R:117:ILE:CG1	2.49	0.42
4:H:191:SER:HB3	4:H:192:PRO:HD3	2.01	0.42
5:V:66:ARG:HG2	5:V:68:CYS:SG	2.59	0.42
4:H:191:SER:O	4:H:195:THR:HG23	2.19	0.42
5:Y:135:ASP:OD1	5:Y:135:ASP:C	2.62	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S:148:ALA:HB1	1:S:185:PRO:HA	2.02	0.42
5:V:207:ASP:OD1	5:V:209:VAL:N	2.48	0.42
1:R:102:VAL:HG13	1:R:107:LEU:HB2	2.02	0.42
3:F:19:LEU:C	3:F:19:LEU:HD23	2.44	0.42
1:K:561:GLU:OE2	1:K:564:LYS:HA	2.19	0.42
4:N:146:ALA:HB2	8:N:601:1VU:C11	2.49	0.42
5:V:135:ASP:OD1	5:V:135:ASP:C	2.60	0.42
1:D:217:GLU:HA	1:D:281:VAL:O	2.19	0.42
1:R:145:VAL:N	1:R:204:CYS:O	2.43	0.42
1:L:563:MET:O	1:L:564:LYS:HB2	2.19	0.42
7:F:601:A1CZD:C02	3:O:507:LYS:HD2	2.50	0.42
4:M:408:TYR:OH	4:M:538:GLY:HA3	2.20	0.42
1:Q:337:ARG:HD3	1:R:337:ARG:CG	2.50	0.42
1:R:447:HIS:CE1	1:R:449:ARG:HB2	2.55	0.42
1:D:234:ARG:CB	1:D:249:ALA:HB2	2.50	0.41
4:G:191:SER:HB3	4:G:192:PRO:HD3	2.03	0.41
4:G:408:TYR:OH	4:G:538:GLY:HA3	2.20	0.41
4:H:341:ARG:NH2	4:H:526:GLU:OE1	2.53	0.41
3:O:154:ARG:HH22	3:O:179:ASP:CG	2.28	0.41
1:Q:19:GLU:O	1:Q:22:VAL:HG22	2.20	0.41
6:Z:171:ARG:O	6:Z:172:GLN:C	2.61	0.41
1:R:303:GLU:C	1:R:305:PRO:HD2	2.46	0.41
1:R:304:HIS:HB2	1:R:315:LEU:HD12	2.02	0.41
4:N:101:ARG:NH2	4:N:259:LEU:O	2.52	0.41
1:C:280:THR:N	1:C:297:ASN:O	2.52	0.41
4:G:456:ALA:O	4:G:457:SER:C	2.63	0.41
4:H:93:THR:HB	4:H:128:VAL:HG11	2.03	0.41
3:O:274:VAL:HG13	3:O:400:ARG:HD2	2.02	0.41
3:F:358:PHE:CZ	3:F:387:ILE:HD13	2.56	0.41
4:G:307:MET:HG2	4:G:347:ALA:HB1	2.02	0.41
1:C:285:VAL:HA	1:C:290:LEU:O	2.21	0.41
1:R:492:LEU:HB3	1:R:493:PRO:HD2	2.02	0.41
3:O:104:PHE:CD1	3:O:104:PHE:C	2.99	0.41
1:D:233:THR:O	1:D:250:PRO:HA	2.20	0.41
1:R:145:VAL:HG11	1:R:206:VAL:CG2	2.51	0.41
1:J:573:LYS:HE2	1:J:573:LYS:HB2	1.92	0.41
4:N:316:ASP:OD2	4:N:339:GLU:N	2.54	0.41
1:R:63:SER:HA	1:R:66:SER:OG	2.21	0.41
1:R:195:ALA:HB1	1:R:201:ARG:O	2.20	0.41
1:U:563:MET:HE2	1:U:563:MET:HB3	1.76	0.40
1:R:498:ILE:O	1:R:498:ILE:HG23	2.21	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:R:241:ARG:N	1:R:452:GLU:OE2	2.47	0.40
4:G:93:THR:HB	4:G:128:VAL:HG11	2.03	0.40
3:O:390:ALA:O	3:O:394:LYS:NZ	2.49	0.40
1:R:122:ASP:HB3	1:R:125:THR:OG1	2.22	0.40
4:M:532:MET:HG3	4:M:533:PRO:HD2	2.04	0.40
1:R:122:ASP:OD1	1:R:122:ASP:C	2.64	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	590/598 (99%)	570 (97%)	20 (3%)	0	100	100
1	B	478/598 (80%)	445 (93%)	33 (7%)	0	100	100
1	C	478/598 (80%)	450 (94%)	28 (6%)	0	100	100
1	D	477/598 (80%)	459 (96%)	18 (4%)	0	100	100
1	I	66/598 (11%)	64 (97%)	2 (3%)	0	100	100
1	J	67/598 (11%)	66 (98%)	1 (2%)	0	100	100
1	K	67/598 (11%)	66 (98%)	1 (2%)	0	100	100
1	L	67/598 (11%)	66 (98%)	1 (2%)	0	100	100
1	Q	590/598 (99%)	559 (95%)	31 (5%)	0	100	100
1	R	478/598 (80%)	455 (95%)	23 (5%)	0	100	100
1	S	478/598 (80%)	458 (96%)	20 (4%)	0	100	100
1	T	477/598 (80%)	450 (94%)	27 (6%)	0	100	100
1	U	62/598 (10%)	59 (95%)	3 (5%)	0	100	100
1	X	62/598 (10%)	59 (95%)	3 (5%)	0	100	100
2	E	67/94 (71%)	62 (92%)	5 (8%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	P	68/94 (72%)	61 (90%)	7 (10%)	0	100	100
3	F	514/517 (99%)	500 (97%)	14 (3%)	0	100	100
3	O	514/517 (99%)	498 (97%)	16 (3%)	0	100	100
4	G	528/542 (97%)	511 (97%)	17 (3%)	0	100	100
4	H	536/542 (99%)	520 (97%)	16 (3%)	0	100	100
4	M	529/542 (98%)	513 (97%)	16 (3%)	0	100	100
4	N	537/542 (99%)	520 (97%)	17 (3%)	0	100	100
5	V	288/294 (98%)	281 (98%)	7 (2%)	0	100	100
5	Y	288/294 (98%)	278 (96%)	10 (4%)	0	100	100
6	W	208/210 (99%)	200 (96%)	8 (4%)	0	100	100
6	Z	208/210 (99%)	201 (97%)	7 (3%)	0	100	100
All	All	8722/12770 (68%)	8371 (96%)	351 (4%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	I	27/453 (6%)	27 (100%)	0	100	100
1	J	13/453 (3%)	12 (92%)	1 (8%)	10	31
1	K	31/453 (7%)	31 (100%)	0	100	100
1	L	22/453 (5%)	20 (91%)	2 (9%)	7	25
1	Q	315/453 (70%)	313 (99%)	2 (1%)	84	95
1	R	376/453 (83%)	371 (99%)	5 (1%)	65	88
1	U	22/453 (5%)	21 (96%)	1 (4%)	23	56
1	X	22/453 (5%)	21 (96%)	1 (4%)	23	56
2	E	33/76 (43%)	33 (100%)	0	100	100
2	P	42/76 (55%)	42 (100%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
3	F	361/412 (88%)	360 (100%)	1 (0%)	91 97
3	O	369/412 (90%)	367 (100%)	2 (0%)	86 96
4	G	384/436 (88%)	384 (100%)	0	100 100
4	H	397/436 (91%)	394 (99%)	3 (1%)	79 93
4	M	385/436 (88%)	385 (100%)	0	100 100
4	N	406/436 (93%)	405 (100%)	1 (0%)	92 98
5	V	217/237 (92%)	217 (100%)	0	100 100
5	Y	219/237 (92%)	217 (99%)	2 (1%)	75 92
6	W	89/164 (54%)	88 (99%)	1 (1%)	70 90
6	Z	99/164 (60%)	97 (98%)	2 (2%)	50 79
All	All	3829/7146 (54%)	3805 (99%)	24 (1%)	82 95

All (24) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	F	31	LYS
4	H	102	ASP
4	H	318	ASP
4	H	423	ARG
1	J	573	LYS
1	L	542	LYS
1	L	572	HIS
4	N	517	TYR
3	O	161	SER
3	O	441	VAL
1	Q	177	VAL
1	Q	378	VAL
6	W	24	VAL
1	X	546	GLU
5	Y	136	VAL
5	Y	233	THR
6	Z	24	VAL
6	Z	66	LEU
1	U	546	GLU
1	R	16	ASN
1	R	51	LEU
1	R	132	ARG
1	R	245	LEU
1	R	444	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (23) such sidechains are listed below:

Mol	Chain	Res	Type
4	G	16	HIS
4	G	167	ASN
4	G	450	GLN
4	H	11	HIS
4	H	376	ASN
4	H	394	GLN
4	H	487	GLN
4	H	531	GLN
1	K	567	ASN
4	M	165	HIS
4	M	167	ASN
4	M	394	GLN
4	N	167	ASN
4	N	394	GLN
3	O	150	HIS
1	Q	387	GLN
5	V	93	ASN
5	V	97	HIS
6	W	59	GLN
5	Y	93	ASN
5	Y	97	HIS
5	Y	179	GLN
6	Z	12	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 17 ligands modelled in this entry, 2 are monoatomic - leaving 15 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
8	1VU	M	601	-	48,54,54	0.65	0	60,80,80	0.99	2 (3%)
8	1VU	G	601	-	48,54,54	0.62	0	60,80,80	0.96	2 (3%)
8	1VU	N	601	-	48,54,54	0.63	0	60,80,80	0.98	2 (3%)
7	A1CZD	F	601	-	65,71,71	2.85	20 (30%)	77,97,97	1.85	17 (22%)
9	BTN	K	601	1	15,16,17	6.50	11 (73%)	20,21,23	2.71	7 (35%)
11	ATP	Q	603	12	28,33,33	0.70	0	34,52,52	0.95	2 (5%)
11	ATP	R	601	12	28,33,33	0.62	0	34,52,52	0.94	2 (5%)
9	BTN	U	601	1	15,16,17	6.51	11 (73%)	20,21,23	2.73	9 (45%)
9	BTN	Q	601	1	15,16,17	6.49	11 (73%)	20,21,23	2.76	9 (45%)
8	1VU	H	601	-	48,54,54	0.62	0	60,80,80	1.03	3 (5%)
9	BTN	I	601	1	15,16,17	6.49	11 (73%)	20,21,23	2.78	6 (30%)
10	BCT	R	603	-	3,3,3	1.05	0	2,3,3	3.99	2 (100%)
10	BCT	Q	602	-	3,3,3	1.05	0	2,3,3	4.04	1 (50%)
7	A1CZD	O	601	-	65,71,71	2.93	19 (29%)	77,97,97	1.76	16 (20%)
9	BTN	X	601	1	15,16,17	6.53	11 (73%)	20,21,23	2.73	9 (45%)

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
8	1VU	M	601	-	-	10/49/69/69	0/3/3/3
8	1VU	G	601	-	-	16/49/69/69	0/3/3/3
8	1VU	N	601	-	-	22/49/69/69	0/3/3/3
7	A1CZD	F	601	-	-	33/66/86/86	0/3/3/3
9	BTN	K	601	1	-	1/6/27/28	0/2/2/2

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
11	ATP	Q	603	12	-	2/18/38/38	0/3/3/3
11	ATP	R	601	12	-	6/18/38/38	0/3/3/3
9	BTN	U	601	1	-	1/6/27/28	0/2/2/2
9	BTN	Q	601	1	-	3/6/27/28	0/2/2/2
8	1VU	H	601	-	-	10/49/69/69	0/3/3/3
9	BTN	I	601	1	-	1/6/27/28	0/2/2/2
7	A1CZD	O	601	-	-	27/66/86/86	0/3/3/3
9	BTN	X	601	1	-	1/6/27/28	0/2/2/2

All (94) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	F	601	A1CZD	P65-O64	14.15	1.84	1.59
7	O	601	A1CZD	P65-O64	14.06	1.84	1.59
9	K	601	BTN	C6-S1	-13.33	1.44	1.81
9	I	601	BTN	C6-S1	-13.28	1.44	1.81
9	U	601	BTN	C6-S1	-13.24	1.44	1.81
9	X	601	BTN	C6-S1	-13.24	1.44	1.81
9	Q	601	BTN	C6-S1	-13.20	1.44	1.81
9	K	601	BTN	C3-N1	12.75	1.58	1.35
9	I	601	BTN	C3-N1	12.67	1.58	1.35
9	X	601	BTN	C3-N1	12.66	1.58	1.35
9	U	601	BTN	C3-N1	12.63	1.58	1.35
9	Q	601	BTN	C3-N1	12.58	1.58	1.35
9	K	601	BTN	C3-N2	8.86	1.51	1.35
9	I	601	BTN	C3-N2	8.80	1.51	1.35
9	X	601	BTN	C3-N2	8.76	1.51	1.35
9	U	601	BTN	C3-N2	8.75	1.51	1.35
9	Q	601	BTN	C3-N2	8.73	1.51	1.35
9	X	601	BTN	C5-N1	-8.70	1.33	1.46
9	U	601	BTN	C5-N1	-8.66	1.33	1.46
9	Q	601	BTN	C5-N1	-8.62	1.33	1.46
9	K	601	BTN	C5-N1	-8.39	1.33	1.46
9	I	601	BTN	C5-N1	-8.32	1.33	1.46
9	I	601	BTN	C2-S1	-7.30	1.71	1.82
9	X	601	BTN	C2-S1	-7.29	1.71	1.82
9	U	601	BTN	C2-S1	-7.27	1.71	1.82
9	Q	601	BTN	C2-S1	-7.25	1.71	1.82
9	K	601	BTN	C2-S1	-7.14	1.71	1.82
7	F	601	A1CZD	C05-C04	6.45	1.55	1.33
7	O	601	A1CZD	C05-C04	6.33	1.54	1.33

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	O	601	A1CZD	P39-O38	6.17	1.83	1.59
7	O	601	A1CZD	C06-C07	6.14	1.54	1.33
7	F	601	A1CZD	C06-C07	6.11	1.54	1.33
7	F	601	A1CZD	P39-O38	6.01	1.82	1.59
7	O	601	A1CZD	P43-O42	5.79	1.65	1.59
9	Q	601	BTN	C6-C5	5.62	1.65	1.53
9	X	601	BTN	C6-C5	5.56	1.64	1.53
9	U	601	BTN	C6-C5	5.54	1.64	1.53
9	I	601	BTN	C6-C5	5.45	1.64	1.53
9	K	601	BTN	C6-C5	5.45	1.64	1.53
7	O	601	A1CZD	C31-N30	5.03	1.45	1.33
7	F	601	A1CZD	C31-N30	4.95	1.45	1.33
7	O	601	A1CZD	C37-C34	4.64	1.60	1.52
7	O	601	A1CZD	C26-N25	4.57	1.44	1.33
9	Q	601	BTN	C7-C2	4.52	1.64	1.52
9	X	601	BTN	C7-C2	4.43	1.64	1.52
9	U	601	BTN	C7-C2	4.42	1.64	1.52
7	F	601	A1CZD	C26-N25	4.38	1.43	1.33
9	I	601	BTN	C7-C2	4.36	1.64	1.52
9	K	601	BTN	C7-C2	4.34	1.64	1.52
7	F	601	A1CZD	C37-C34	4.22	1.59	1.52
7	F	601	A1CZD	P43-O42	4.14	1.64	1.59
7	O	601	A1CZD	C09-C10	3.98	1.54	1.31
7	O	601	A1CZD	C20-S22	3.91	1.85	1.76
9	I	601	BTN	C2-C4	-3.86	1.43	1.53
9	X	601	BTN	C2-C4	-3.84	1.43	1.53
9	U	601	BTN	C2-C4	-3.82	1.43	1.53
9	K	601	BTN	C2-C4	-3.76	1.43	1.53
9	I	601	BTN	C4-N2	-3.73	1.38	1.45
9	X	601	BTN	C4-N2	-3.72	1.38	1.45
9	K	601	BTN	C4-N2	-3.72	1.38	1.45
9	U	601	BTN	C4-N2	-3.72	1.38	1.45
9	Q	601	BTN	C2-C4	-3.70	1.43	1.53
7	F	601	A1CZD	C09-C10	3.67	1.52	1.31
9	X	601	BTN	C5-C4	3.64	1.66	1.55
9	U	601	BTN	C5-C4	3.64	1.66	1.55
7	O	601	A1CZD	P43-O46	3.62	1.73	1.59
9	Q	601	BTN	C4-N2	-3.60	1.39	1.45
9	K	601	BTN	C5-C4	3.59	1.66	1.55
9	I	601	BTN	C5-C4	3.55	1.65	1.55
9	Q	601	BTN	C5-C4	3.52	1.65	1.55
7	F	601	A1CZD	C20-S22	3.52	1.84	1.76

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	F	601	A1CZD	P43-O46	3.43	1.72	1.59
7	F	601	A1CZD	C06-C05	3.29	1.54	1.44
7	O	601	A1CZD	C06-C05	3.02	1.53	1.44
7	O	601	A1CZD	C50-C49	2.96	1.59	1.53
7	F	601	A1CZD	C51-N53	2.94	1.57	1.49
7	O	601	A1CZD	O64-C49	-2.82	1.34	1.44
7	F	601	A1CZD	O64-C49	-2.80	1.34	1.44
7	O	601	A1CZD	P39-O42	2.58	1.62	1.59
7	F	601	A1CZD	C61-N60	2.56	1.39	1.35
7	O	601	A1CZD	C59-N58	2.50	1.38	1.33
7	F	601	A1CZD	O52-C51	-2.40	1.37	1.40
7	F	601	A1CZD	C59-N58	2.40	1.38	1.33
7	O	601	A1CZD	O38-C37	-2.34	1.36	1.43
7	F	601	A1CZD	O38-C37	-2.31	1.36	1.43
7	F	601	A1CZD	C29-C28	2.29	1.59	1.51
9	I	601	BTN	O3-C3	-2.27	1.18	1.23
7	O	601	A1CZD	C51-N53	2.22	1.55	1.49
9	K	601	BTN	O3-C3	-2.20	1.18	1.23
9	X	601	BTN	O3-C3	-2.18	1.18	1.23
9	U	601	BTN	O3-C3	-2.17	1.18	1.23
9	Q	601	BTN	O3-C3	-2.16	1.18	1.23
7	O	601	A1CZD	O52-C51	-2.06	1.38	1.40
7	F	601	A1CZD	O63-C50	-2.05	1.37	1.43

All (89) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	F	601	A1CZD	C19-C20-S22	7.82	122.72	113.40
9	I	601	BTN	C6-S1-C2	7.72	106.03	89.98
9	K	601	BTN	C6-S1-C2	7.26	105.08	89.98
7	O	601	A1CZD	C19-C20-S22	7.01	121.75	113.40
9	Q	601	BTN	C6-S1-C2	6.58	103.66	89.98
9	U	601	BTN	C6-S1-C2	6.40	103.30	89.98
9	X	601	BTN	C6-S1-C2	6.40	103.29	89.98
9	X	601	BTN	C4-C5-N1	5.74	108.80	102.43
9	Q	601	BTN	C4-C5-N1	5.70	108.76	102.43
9	U	601	BTN	C4-C5-N1	5.67	108.73	102.43
8	H	601	1VU	P2-O13-C23	-5.65	108.33	123.43
9	I	601	BTN	C4-C5-N1	5.50	108.54	102.43
9	K	601	BTN	C4-C5-N1	5.50	108.54	102.43
10	Q	602	BCT	O2-C-O1	5.37	133.40	119.68
8	M	601	1VU	P2-O13-C23	-5.26	109.39	123.43

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	G	601	1VU	P2-O13-C23	-5.26	109.39	123.43
10	R	603	BCT	O2-C-O1	5.25	133.10	119.68
8	N	601	1VU	P2-O13-C23	-5.23	109.46	123.43
9	K	601	BTN	C5-C4-N2	4.47	107.73	102.68
9	I	601	BTN	C5-C4-N2	4.41	107.65	102.68
7	F	601	A1CZD	O21-C20-C19	-4.32	119.00	123.98
7	O	601	A1CZD	O21-C20-C19	-4.17	119.17	123.98
9	U	601	BTN	C5-C4-N2	4.14	107.35	102.68
9	X	601	BTN	C5-C4-N2	4.11	107.31	102.68
9	Q	601	BTN	C5-C4-N2	3.98	107.17	102.68
7	F	601	A1CZD	O32-C31-N30	-3.91	114.70	122.98
7	O	601	A1CZD	C23-S22-C20	3.77	112.97	101.84
9	K	601	BTN	C4-N2-C3	-3.68	107.98	112.56
7	O	601	A1CZD	O32-C31-N30	-3.68	115.19	122.98
9	Q	601	BTN	C6-C5-N1	-3.63	108.51	113.18
7	F	601	A1CZD	C23-S22-C20	3.62	112.53	101.84
9	I	601	BTN	C4-N2-C3	-3.61	108.08	112.56
9	U	601	BTN	C4-N2-C3	-3.53	108.18	112.56
9	X	601	BTN	C4-N2-C3	-3.52	108.19	112.56
7	F	601	A1CZD	O21-C20-S22	-3.46	118.29	122.68
7	O	601	A1CZD	C28-C26-N25	3.45	122.64	116.34
7	F	601	A1CZD	C28-C26-N25	3.41	122.56	116.34
9	Q	601	BTN	C4-N2-C3	-3.32	108.44	112.56
9	X	601	BTN	C6-C5-N1	-3.24	109.01	113.18
9	U	601	BTN	C6-C5-N1	-3.23	109.02	113.18
9	X	601	BTN	C5-N1-C3	-3.15	107.75	112.38
9	I	601	BTN	C5-N1-C3	-3.13	107.79	112.38
9	K	601	BTN	C5-N1-C3	-3.12	107.80	112.38
9	U	601	BTN	C5-N1-C3	-3.11	107.80	112.38
7	O	601	A1CZD	O64-P65-O67	-3.06	98.44	109.33
7	F	601	A1CZD	C33-C31-N30	3.02	122.20	116.48
9	Q	601	BTN	C5-N1-C3	-2.99	107.99	112.38
7	F	601	A1CZD	O64-P65-O67	-2.96	98.78	109.33
7	F	601	A1CZD	O27-C26-N25	-2.90	117.34	123.03
9	X	601	BTN	C2-C4-C5	-2.87	105.38	108.89
9	Q	601	BTN	C2-C4-C5	-2.85	105.41	108.89
9	U	601	BTN	C2-C4-C5	-2.85	105.41	108.89
7	O	601	A1CZD	O21-C20-S22	-2.83	119.08	122.68
7	F	601	A1CZD	C28-C29-N30	2.77	117.89	112.00
7	F	601	A1CZD	O38-P39-O41	-2.76	98.01	108.94
7	O	601	A1CZD	O38-P39-O41	-2.70	98.25	108.94
9	U	601	BTN	C6-C5-C4	-2.64	104.88	109.06

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
9	X	601	BTN	C6-C5-C4	-2.63	104.89	109.06
7	O	601	A1CZD	O27-C26-N25	-2.59	117.95	123.03
7	O	601	A1CZD	C56-C57-N62	2.54	124.17	120.31
9	Q	601	BTN	C8-C7-C2	-2.49	108.31	114.04
9	Q	601	BTN	C6-C5-C4	-2.47	105.15	109.06
7	F	601	A1CZD	C51-N53-C61	2.47	130.97	126.64
11	Q	603	ATP	C5-C6-N6	2.45	124.05	120.31
7	O	601	A1CZD	C49-C50-C51	2.44	105.25	99.89
11	R	601	ATP	C5-C6-N6	2.38	123.94	120.31
7	O	601	A1CZD	C33-C31-N30	2.29	120.83	116.48
7	F	601	A1CZD	O40-P39-O41	2.26	122.95	112.44
8	G	601	1VU	C18-C19-N4	2.25	123.75	120.31
8	M	601	1VU	C18-C19-N4	2.25	123.75	120.31
11	R	601	ATP	O3'-C3'-C4'	-2.25	104.61	111.08
9	K	601	BTN	C6-C5-C4	-2.25	105.50	109.06
7	F	601	A1CZD	O63-C50-C49	-2.23	104.95	111.19
7	O	601	A1CZD	O40-P39-O41	2.18	122.57	112.44
9	K	601	BTN	C2-C4-C5	-2.16	106.25	108.89
8	N	601	1VU	C18-C19-N4	2.16	123.59	120.31
7	O	601	A1CZD	C28-C29-N30	2.14	116.56	112.00
7	F	601	A1CZD	C56-C57-N62	2.09	123.50	120.31
8	H	601	1VU	C18-C19-N4	2.09	123.50	120.31
9	X	601	BTN	C5-C6-S1	-2.08	103.20	106.06
7	F	601	A1CZD	C50-C49-C48	-2.07	99.61	103.24
9	U	601	BTN	C5-C6-S1	-2.06	103.22	106.06
10	R	603	BCT	O3-C-O1	-2.06	114.41	119.68
7	O	601	A1CZD	C03-C04-C05	-2.06	115.56	125.66
11	Q	603	ATP	O4'-C4'-C3'	-2.03	101.12	105.15
7	O	601	A1CZD	C51-N53-C61	2.03	130.20	126.64
9	I	601	BTN	C6-C5-C4	-2.02	105.86	109.06
8	H	601	1VU	O3-C9-C10	-2.02	105.51	110.18
7	F	601	A1CZD	C29-C28-C26	2.00	115.73	112.39

There are no chirality outliers.

All (133) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
7	F	601	A1CZD	C17-C18-C19-C20
7	F	601	A1CZD	C33-C31-N30-C29
7	F	601	A1CZD	C31-C33-C34-C35
7	F	601	A1CZD	C31-C33-C34-C36
7	F	601	A1CZD	C31-C33-C34-C37

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
7	F	601	A1CZD	O69-C33-C34-C35
7	F	601	A1CZD	O69-C33-C34-C36
7	F	601	A1CZD	O69-C33-C34-C37
7	F	601	A1CZD	C33-C34-C37-O38
7	F	601	A1CZD	C35-C34-C37-O38
7	F	601	A1CZD	C36-C34-C37-O38
7	F	601	A1CZD	C34-C37-O38-P39
7	F	601	A1CZD	C37-O38-P39-O40
7	F	601	A1CZD	C37-O38-P39-O42
7	F	601	A1CZD	C47-O46-P43-O42
7	F	601	A1CZD	C47-O46-P43-O45
7	O	601	A1CZD	C19-C20-S22-C23
7	O	601	A1CZD	O21-C20-S22-C23
7	O	601	A1CZD	C24-C23-S22-C20
7	O	601	A1CZD	C03-C04-C05-C06
7	O	601	A1CZD	N30-C31-C33-C34
7	O	601	A1CZD	N30-C31-C33-O69
7	O	601	A1CZD	O32-C31-C33-C34
7	O	601	A1CZD	O32-C31-C33-O69
7	O	601	A1CZD	C33-C34-C37-O38
7	O	601	A1CZD	C35-C34-C37-O38
7	O	601	A1CZD	C36-C34-C37-O38
7	O	601	A1CZD	C48-C47-O46-P43
7	O	601	A1CZD	C47-O46-P43-O44
8	G	601	1VU	C13-O4-P-O7
8	G	601	1VU	C13-O4-P-O6
8	G	601	1VU	C13-C10-C9-C8
8	G	601	1VU	C12-C10-C9-C8
8	G	601	1VU	N1-C8-C9-O3
8	G	601	1VU	C9-C8-N1-C7
8	G	601	1VU	C6-C5-N-C4
8	G	601	1VU	O1-C5-N-C4
8	H	601	1VU	C11-C10-C13-O4
8	H	601	1VU	C12-C10-C13-O4
8	H	601	1VU	C9-C10-C13-O4
8	H	601	1VU	C9-C8-N1-C7
8	H	601	1VU	O2-C8-N1-C7
8	M	601	1VU	N1-C8-C9-O3
8	M	601	1VU	C9-C8-N1-C7
8	M	601	1VU	C5-C6-C7-N1
8	M	601	1VU	C-C1-C2-O
8	N	601	1VU	C11-C10-C13-O4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
8	N	601	1VU	C12-C10-C13-O4
8	N	601	1VU	C9-C10-C13-O4
8	N	601	1VU	C13-C10-C9-O3
8	N	601	1VU	C11-C10-C9-O3
8	N	601	1VU	O2-C8-C9-C10
8	N	601	1VU	N1-C8-C9-C10
8	N	601	1VU	N1-C8-C9-O3
8	N	601	1VU	C9-C8-N1-C7
8	N	601	1VU	C6-C5-N-C4
8	N	601	1VU	O1-C5-N-C4
8	N	601	1VU	C4-C3-S-C2
8	N	601	1VU	C1-C2-S-C3
9	Q	601	BTN	C9-C10-C11-O11
9	X	601	BTN	C9-C10-C11-O11
9	U	601	BTN	C9-C10-C11-O11
11	R	601	ATP	C5'-O5'-PA-O1A
11	R	601	ATP	C5'-O5'-PA-O2A
11	R	601	ATP	C5'-O5'-PA-O3A
8	N	601	1VU	C6-C7-N1-C8
8	G	601	1VU	O2-C8-N1-C7
7	F	601	A1CZD	O32-C31-N30-C29
8	M	601	1VU	O2-C8-N1-C7
8	N	601	1VU	O2-C8-N1-C7
11	R	601	ATP	O4'-C4'-C5'-O5'
7	O	601	A1CZD	C04-C05-C06-C07
7	O	601	A1CZD	C48-C49-O64-P65
11	R	601	ATP	C3'-C4'-C5'-O5'
8	H	601	1VU	C6-C7-N1-C8
7	F	601	A1CZD	C05-C06-C07-C08
7	O	601	A1CZD	C05-C06-C07-C08
9	Q	601	BTN	C7-C8-C9-C10
7	F	601	A1CZD	C16-C17-C18-C19
7	O	601	A1CZD	C50-C49-O64-P65
7	O	601	A1CZD	C14-C15-C16-C17
7	F	601	A1CZD	C08-C09-C10-C11
7	F	601	A1CZD	C26-C28-C29-N30
7	F	601	A1CZD	C48-C47-O46-P43
7	O	601	A1CZD	C15-C16-C17-C18
8	G	601	1VU	O2-C8-C9-O3
8	M	601	1VU	O2-C8-C9-O3
7	F	601	A1CZD	C10-C11-C12-C13
8	G	601	1VU	C12-C10-C9-O3

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
8	N	601	1VU	C12-C10-C9-O3
7	F	601	A1CZD	O32-C31-C33-C34
8	G	601	1VU	O2-C8-C9-C10
11	R	601	ATP	C4'-C5'-O5'-PA
7	F	601	A1CZD	N30-C31-C33-O69
7	O	601	A1CZD	C13-C14-C15-C16
8	H	601	1VU	O-C2-S-C3
8	N	601	1VU	O-C2-S-C3
7	F	601	A1CZD	C07-C08-C09-C10
7	O	601	A1CZD	C07-C08-C09-C10
7	F	601	A1CZD	C13-C14-C15-C16
8	H	601	1VU	C1-C2-S-C3
8	N	601	1VU	O1-C5-C6-C7
8	N	601	1VU	N-C5-C6-C7
8	N	601	1VU	C11-C10-C9-C8
7	F	601	A1CZD	C11-C12-C13-C14
7	F	601	A1CZD	P39-O42-P43-O44
7	O	601	A1CZD	P39-O42-P43-O44
9	Q	601	BTN	C11-C10-C9-C8
8	M	601	1VU	C11-C10-C13-O4
8	N	601	1VU	C13-C10-C9-C8
7	O	601	A1CZD	C49-O64-P65-O67
8	M	601	1VU	C4-C3-S-C2
8	H	601	1VU	C3-C4-N-C5
8	G	601	1VU	C13-C10-C9-O3
11	Q	603	ATP	C5'-O5'-PA-O1A
8	G	601	1VU	C11-C10-C9-O3
7	O	601	A1CZD	C16-C17-C18-C19
7	F	601	A1CZD	N30-C31-C33-C34
8	G	601	1VU	N1-C8-C9-C10
8	M	601	1VU	C3-C4-N-C5
9	I	601	BTN	C7-C8-C9-C10
8	H	601	1VU	P1-O7-P-O6
8	M	601	1VU	P1-O7-P-O6
11	Q	603	ATP	PB-O3A-PA-O5'
9	K	601	BTN	C7-C8-C9-C10
7	F	601	A1CZD	C02-C03-C04-C05
7	O	601	A1CZD	C09-C10-C11-C12
7	F	601	A1CZD	C12-C13-C14-C15
8	G	601	1VU	C11-C10-C9-C8
8	N	601	1VU	C12-C10-C9-C8
7	F	601	A1CZD	P39-O42-P43-O45

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
7	O	601	A1CZD	P39-O42-P43-O45
7	O	601	A1CZD	C01-C02-C03-C04

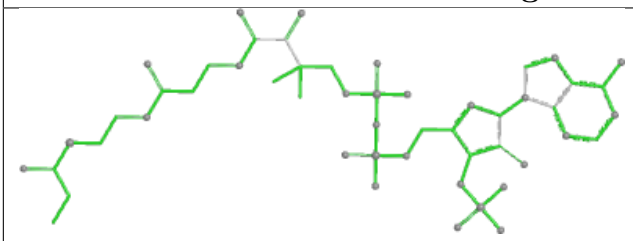
There are no ring outliers.

9 monomers are involved in 24 short contacts:

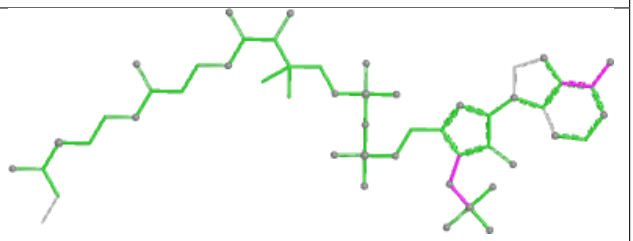
Mol	Chain	Res	Type	Clashes	Symm-Clashes
8	M	601	1VU	5	0
8	G	601	1VU	2	0
8	N	601	1VU	5	0
7	F	601	A1CZD	2	0
11	R	601	ATP	1	0
9	U	601	BTN	2	0
8	H	601	1VU	5	0
7	O	601	A1CZD	1	0
9	X	601	BTN	1	0

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

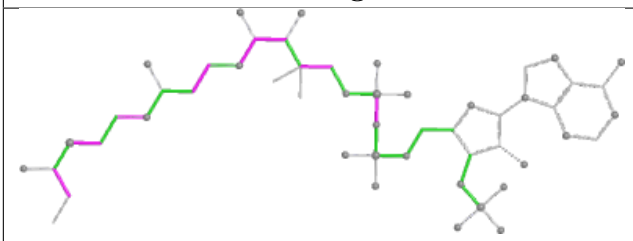
Ligand 1VU M 601



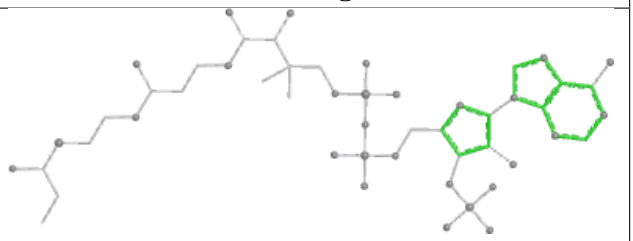
Bond lengths



Bond angles

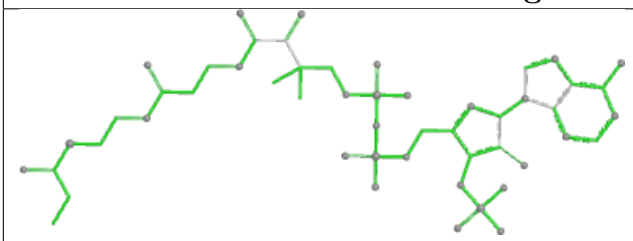


Torsions

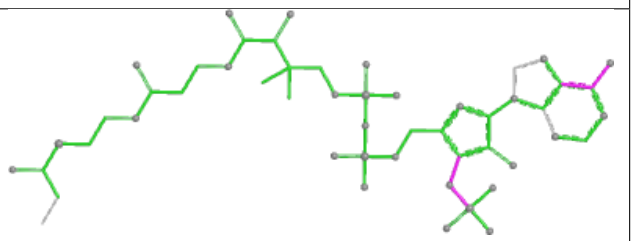


Rings

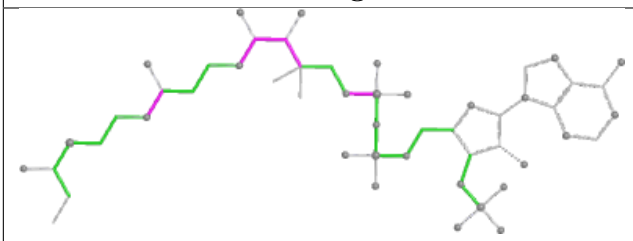
Ligand 1VU G 601



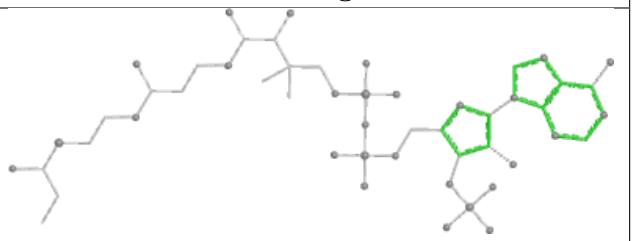
Bond lengths



Bond angles

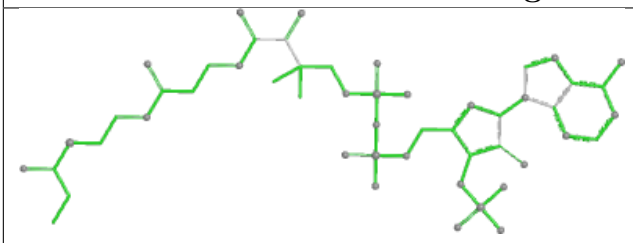


Torsions

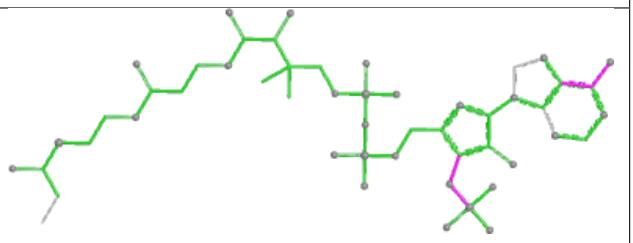


Rings

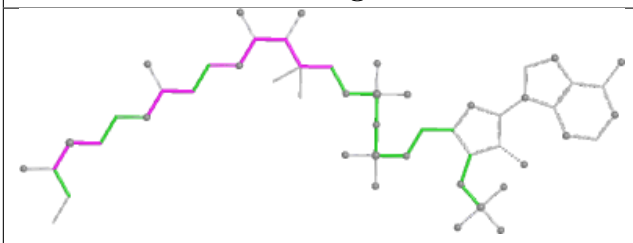
Ligand 1VU N 601



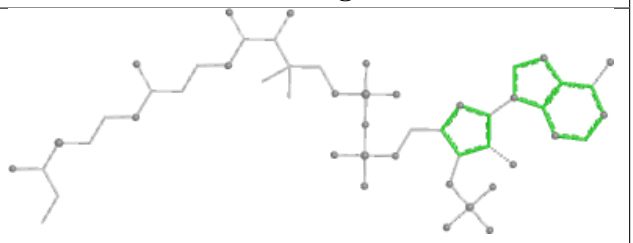
Bond lengths



Bond angles

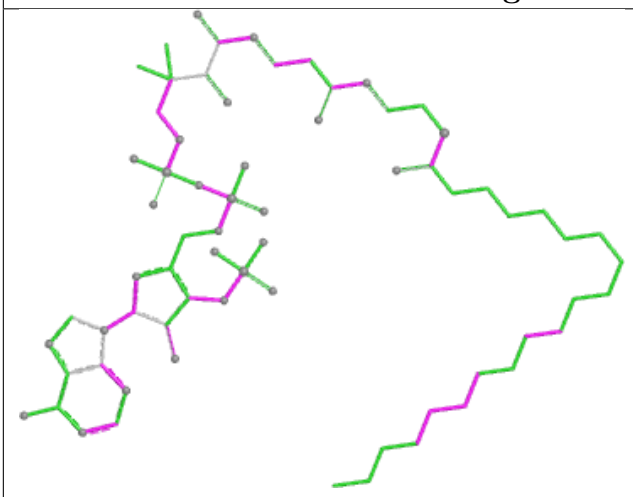


Torsions

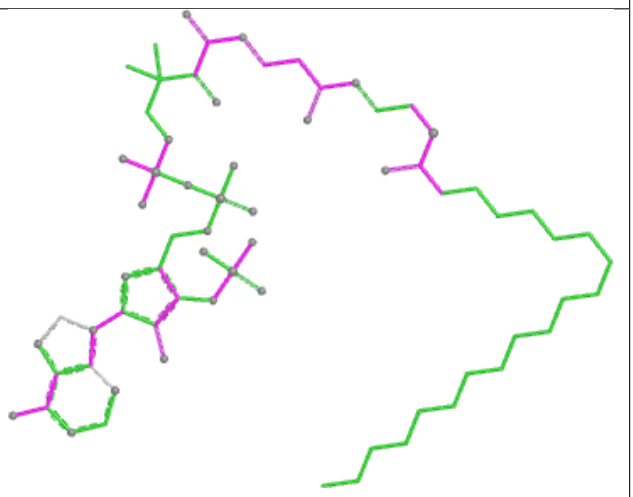


Rings

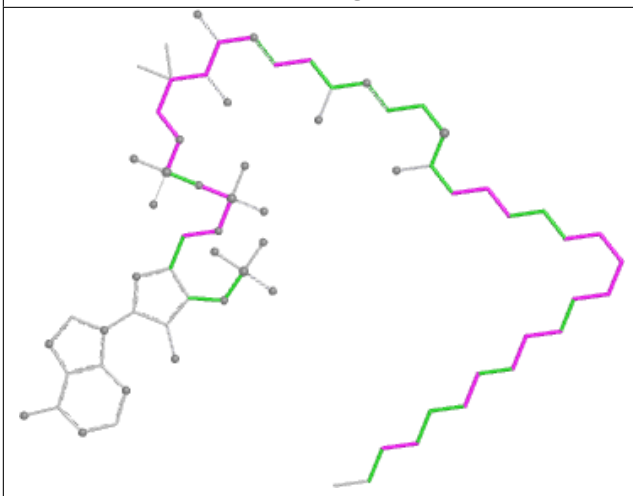
Ligand A1CZD F 601



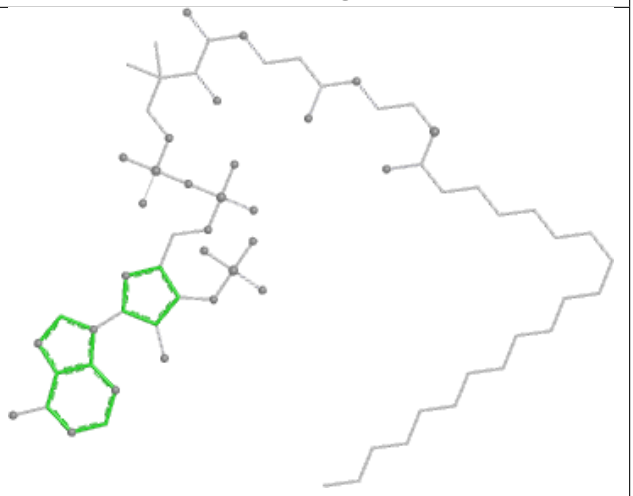
Bond lengths



Bond angles

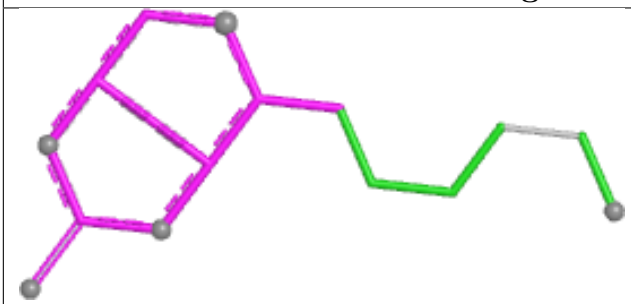


Torsions

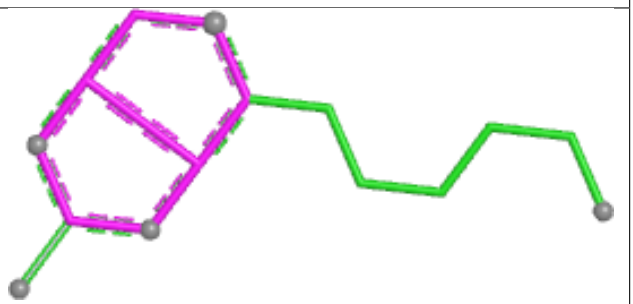


Rings

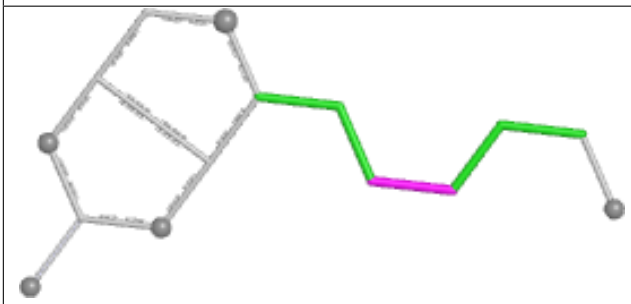
Ligand BTN K 601



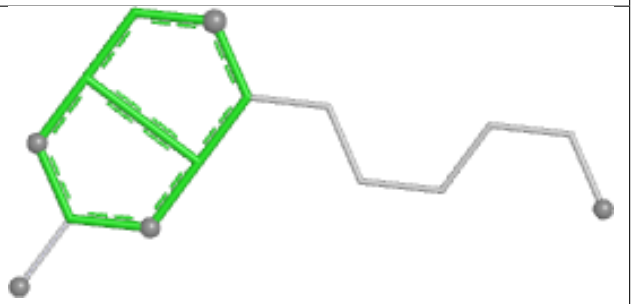
Bond lengths



Bond angles

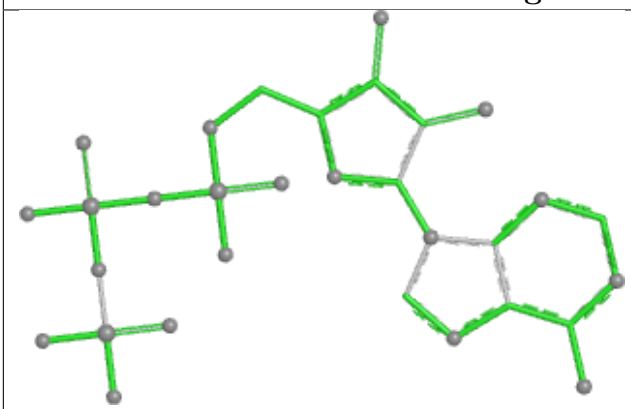


Torsions

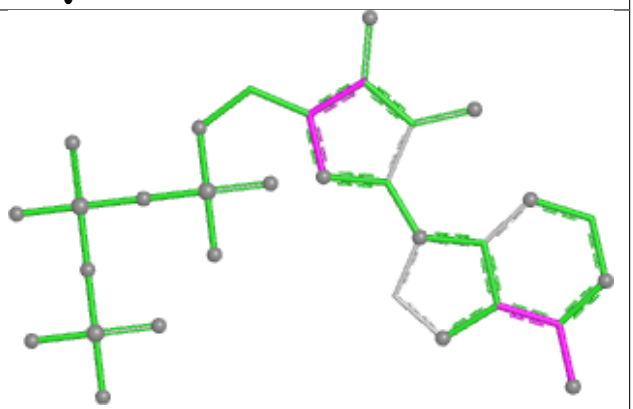


Rings

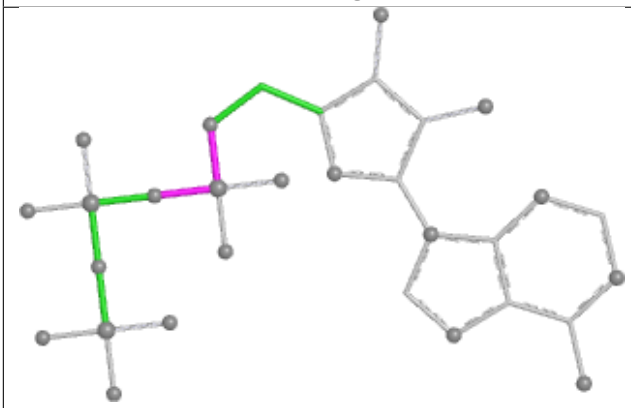
Ligand ATP Q 603



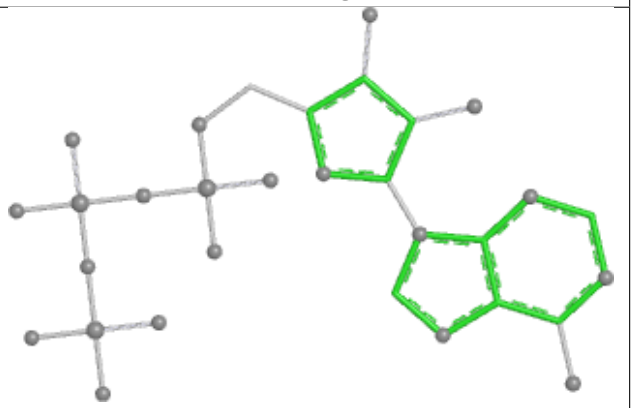
Bond lengths



Bond angles

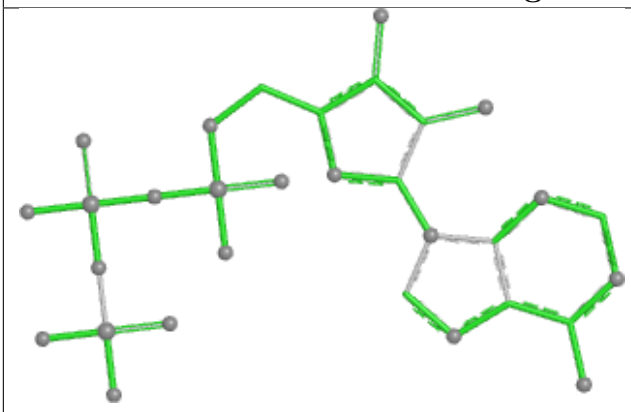


Torsions

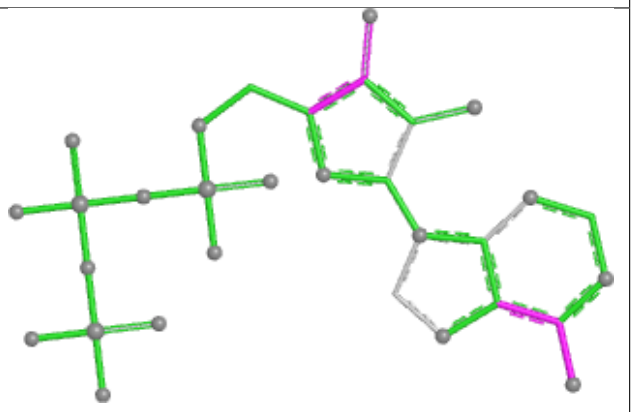


Rings

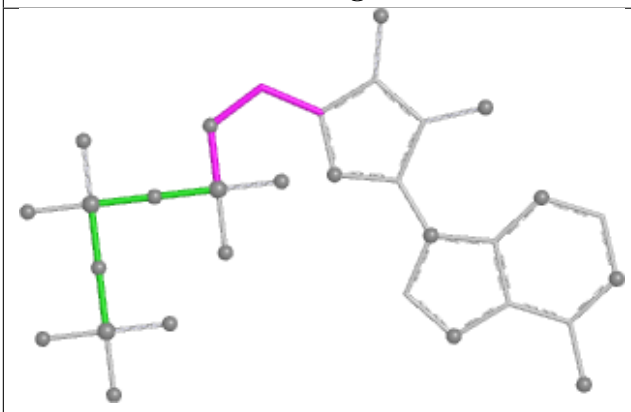
Ligand ATP R 601



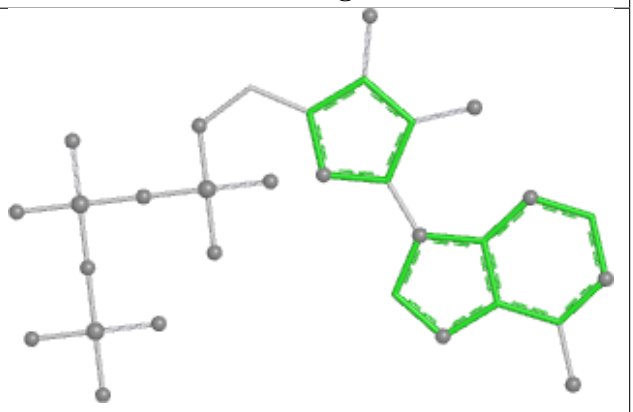
Bond lengths



Bond angles

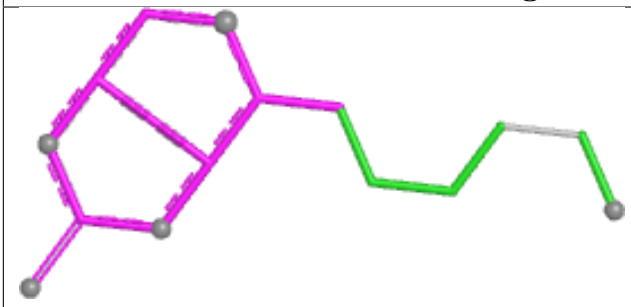


Torsions

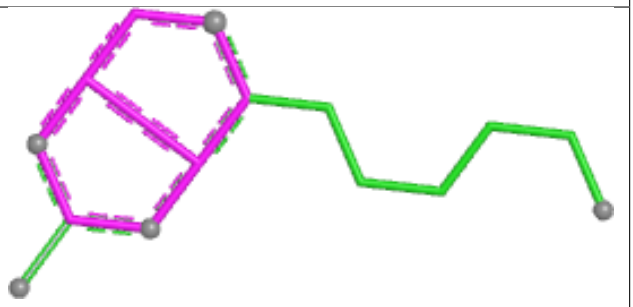


Rings

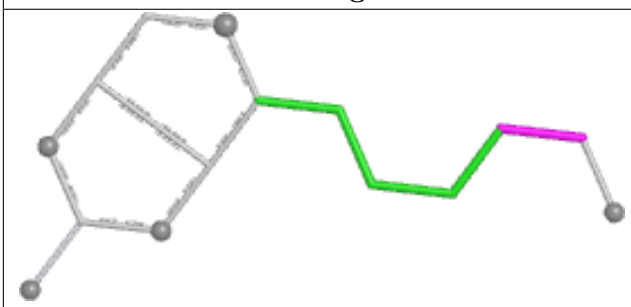
Ligand BTN U 601



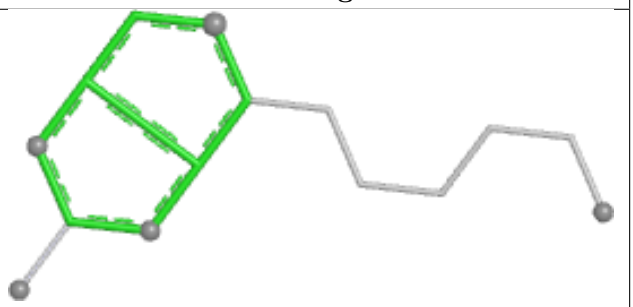
Bond lengths



Bond angles

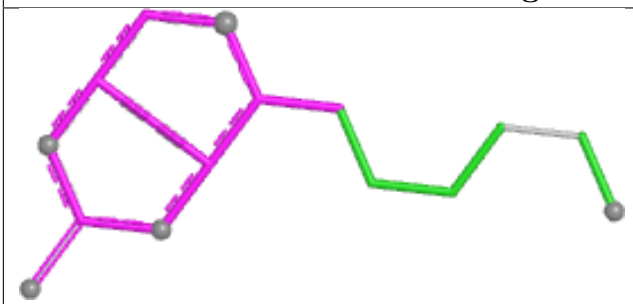


Torsions



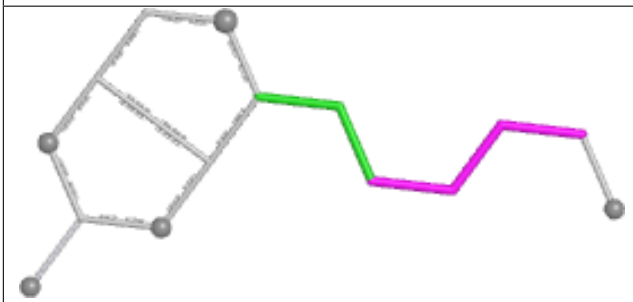
Rings

Ligand BTN Q 601

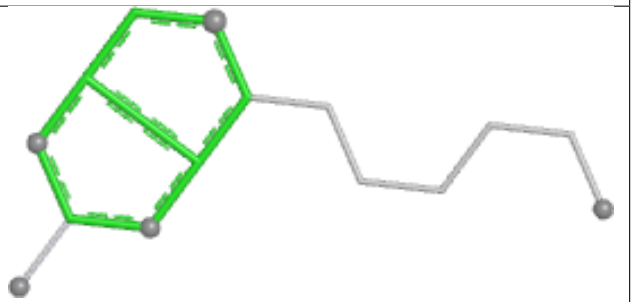


Bond lengths

Bond angles

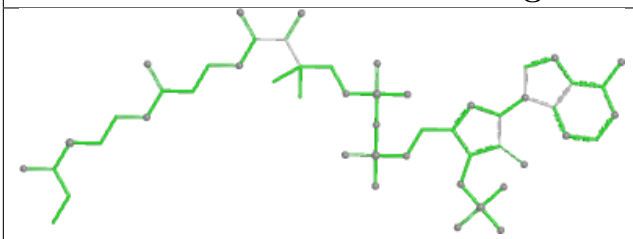


Torsions

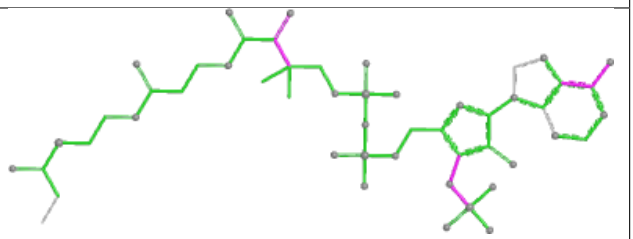


Rings

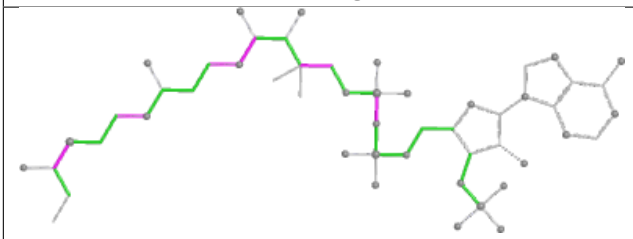
Ligand 1VU H 601



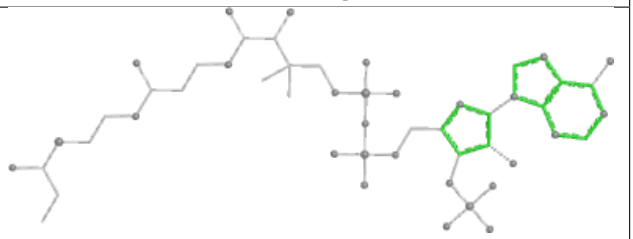
Bond lengths



Bond angles

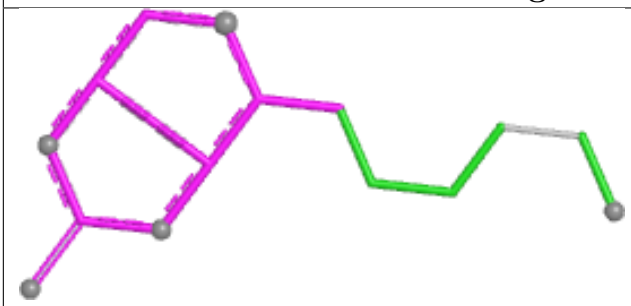


Torsions

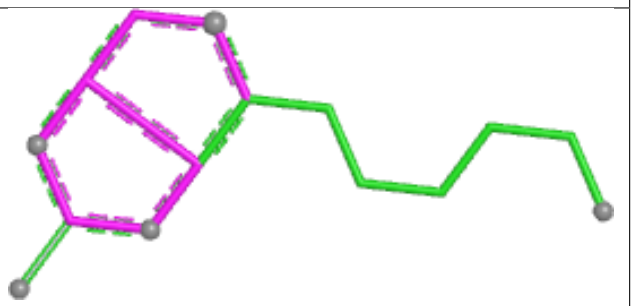


Rings

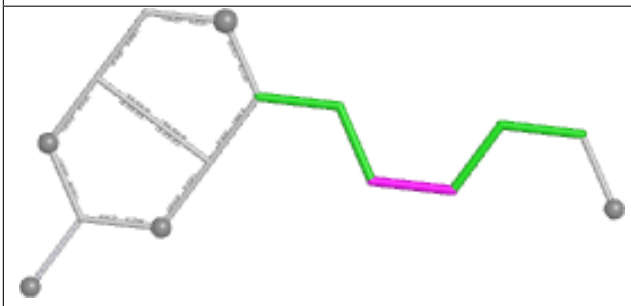
Ligand BTN I 601



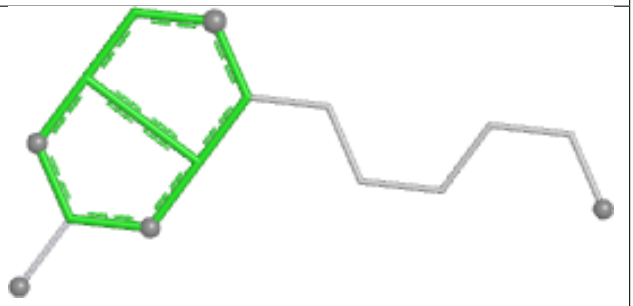
Bond lengths



Bond angles

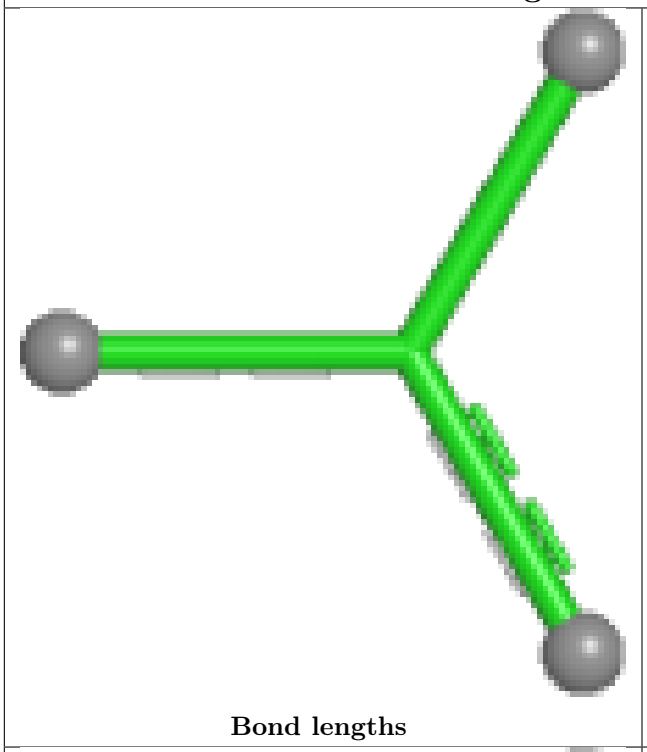


Torsions

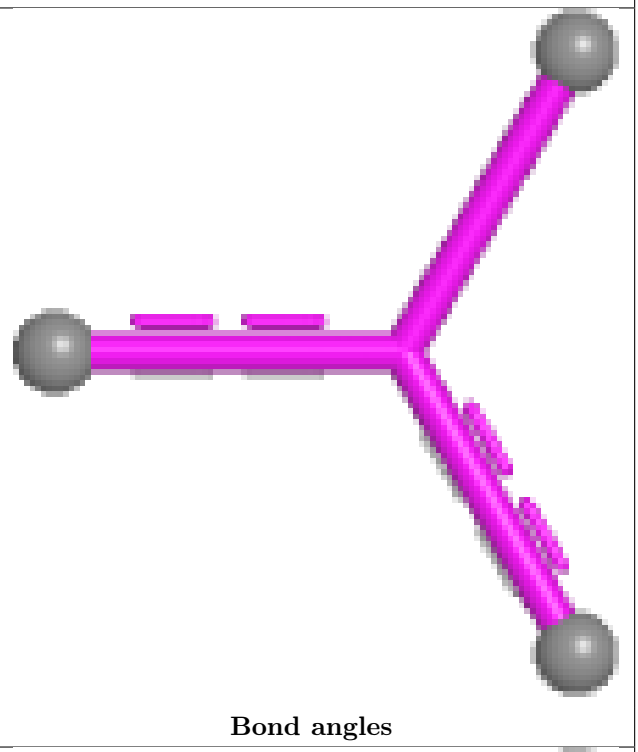


Rings

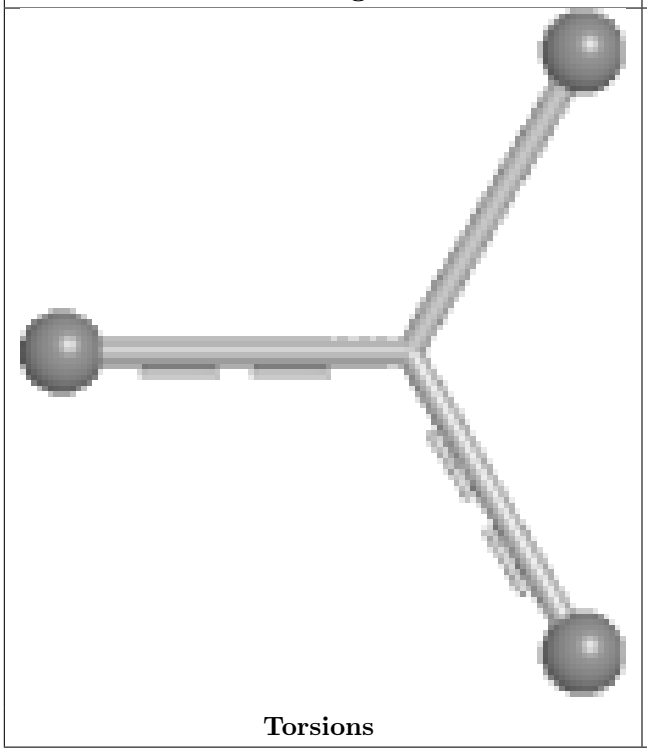
Ligand BCT R 603



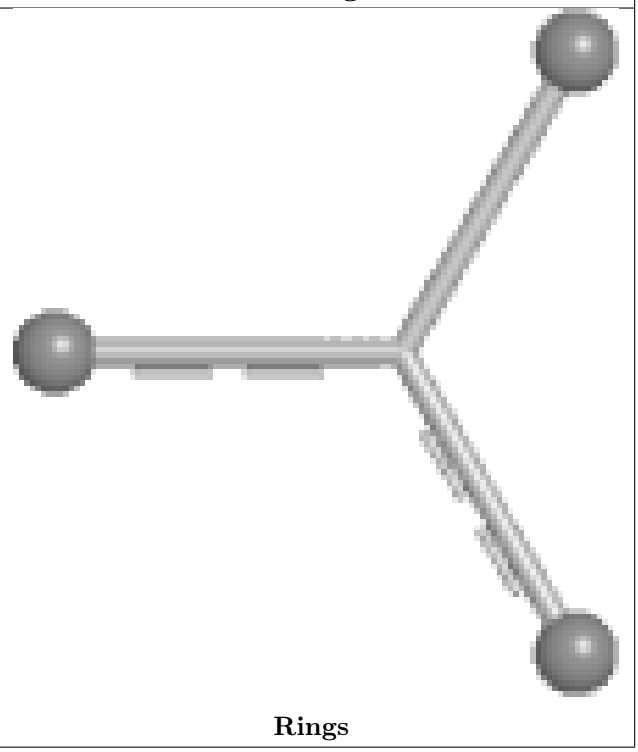
Bond lengths



Bond angles

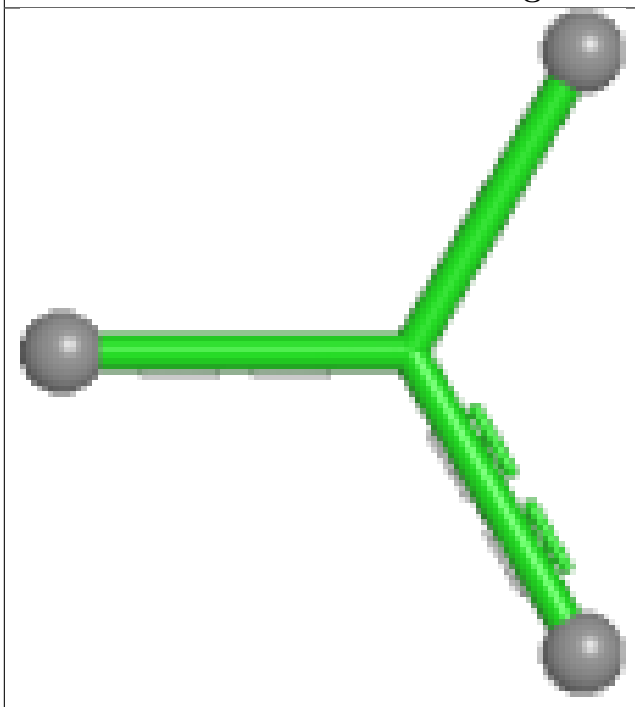


Torsions

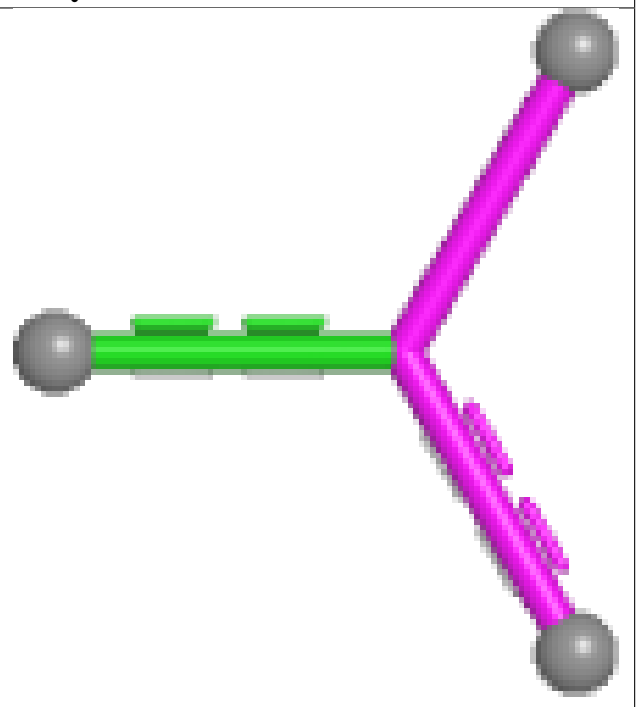


Rings

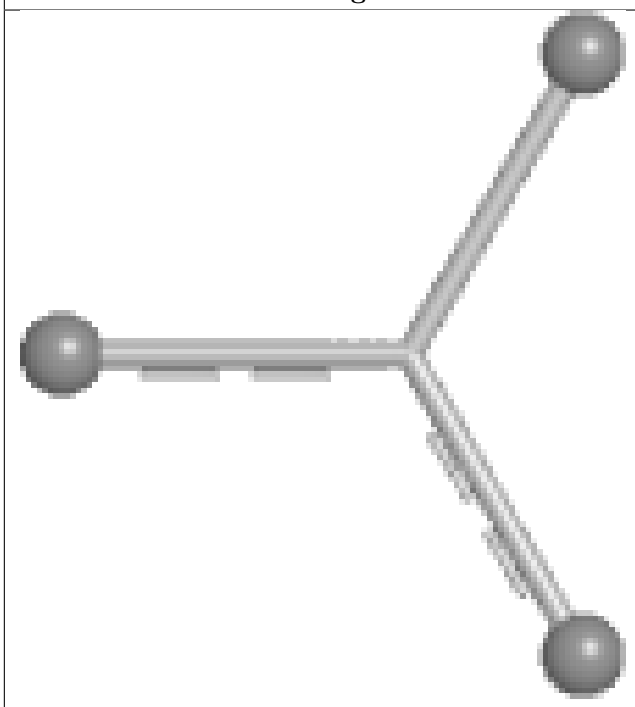
Ligand BCT Q 602



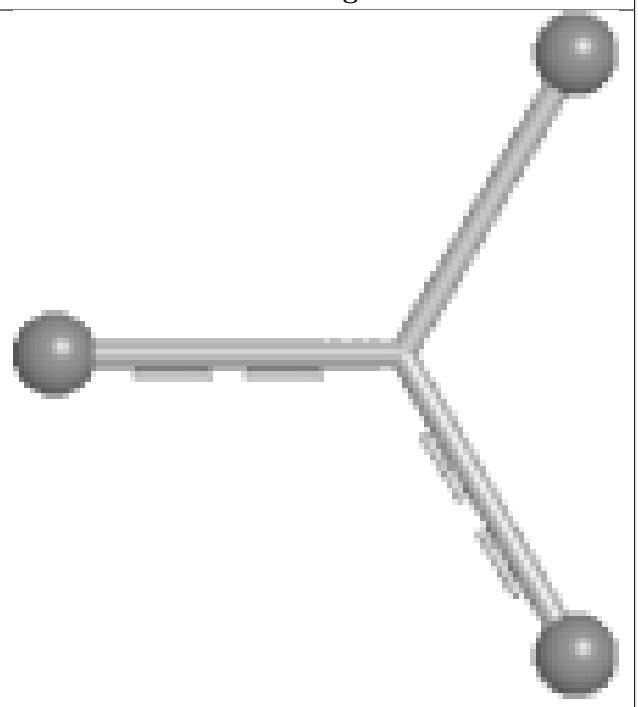
Bond lengths



Bond angles

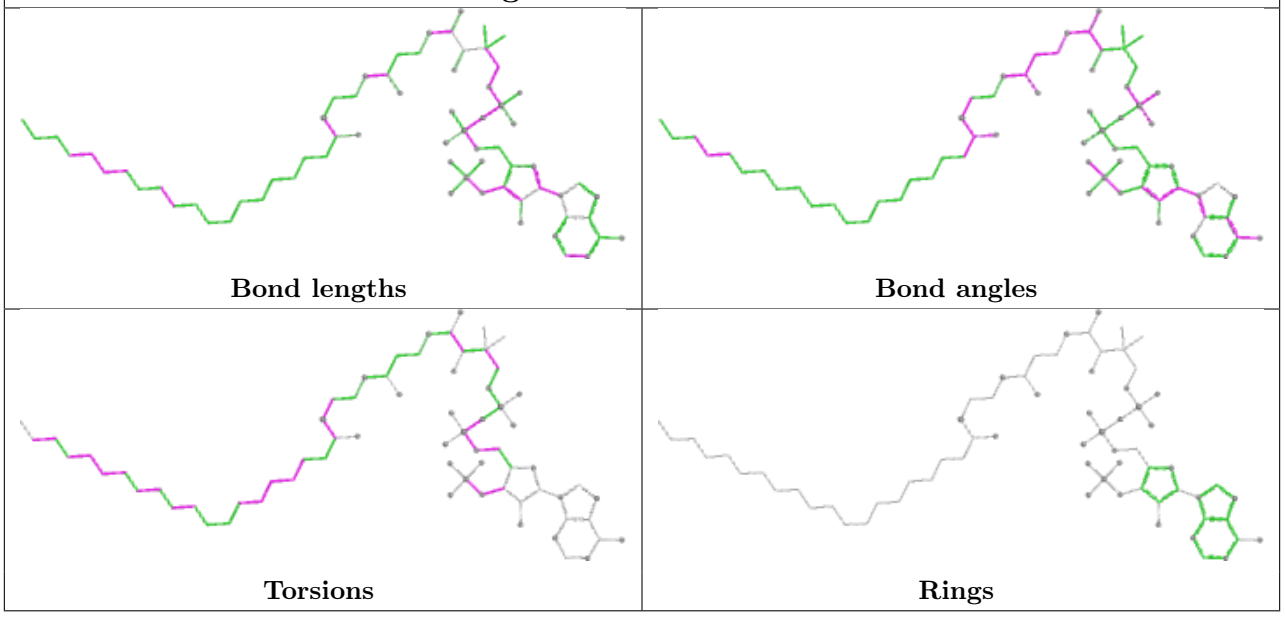


Torsions

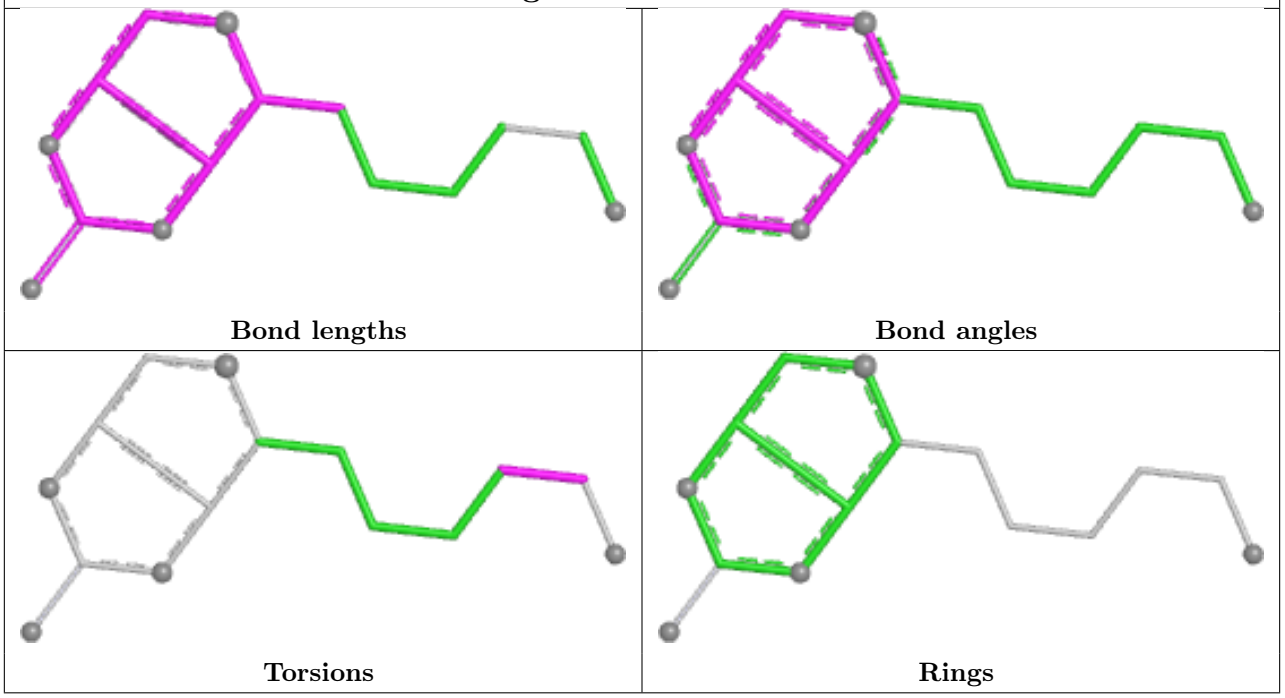


Rings

Ligand A1CZD O 601



Ligand BTN X 601



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.

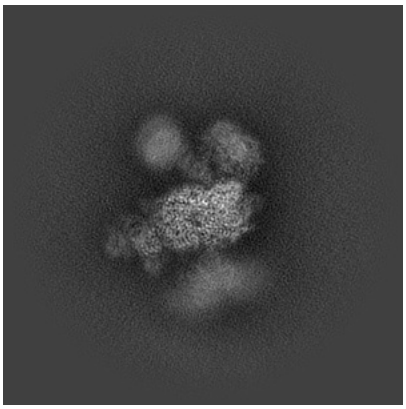
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-73596. These allow visual inspection of the internal detail of the map and identification of artifacts.

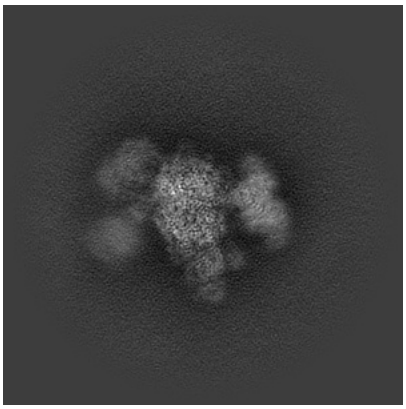
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

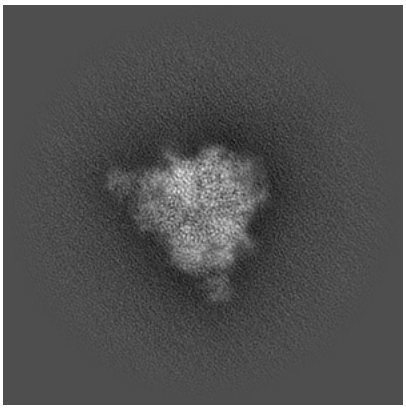
6.1.1 Primary map



X

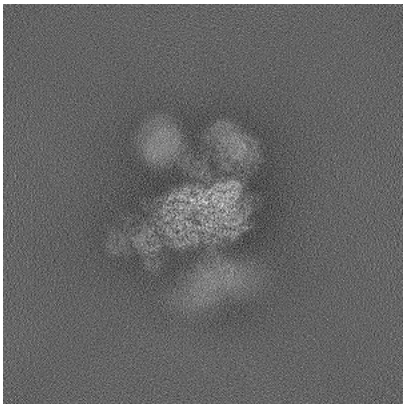


Y

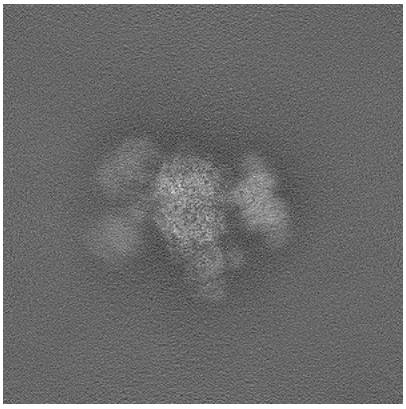


Z

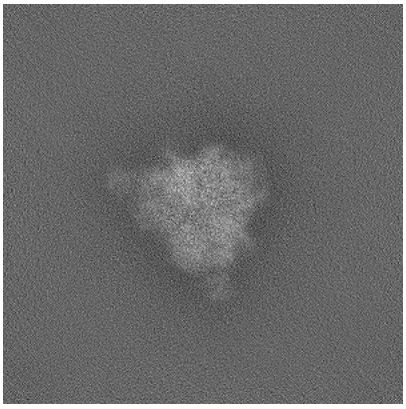
6.1.2 Raw map



X



Y

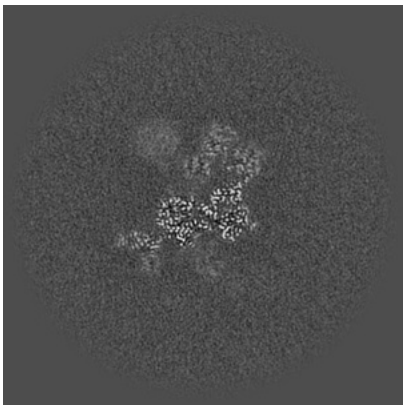


Z

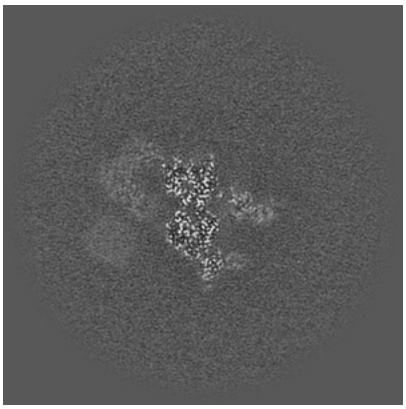
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

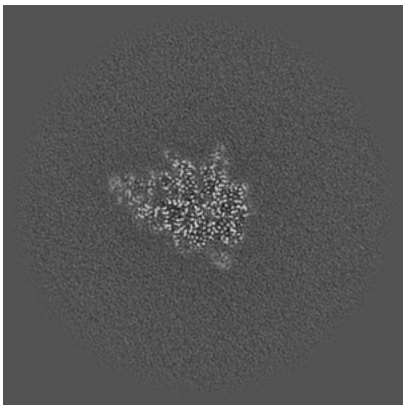
6.2.1 Primary map



X Index: 240

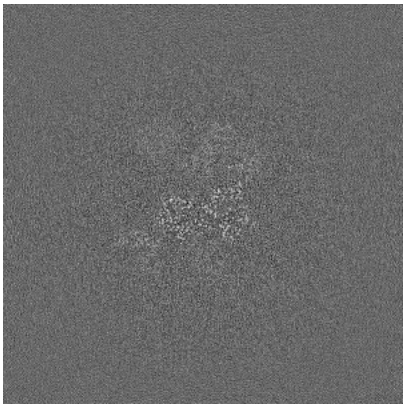


Y Index: 240

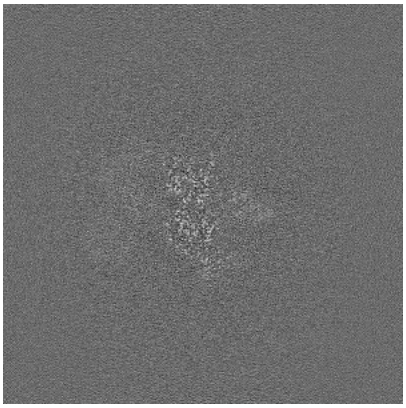


Z Index: 240

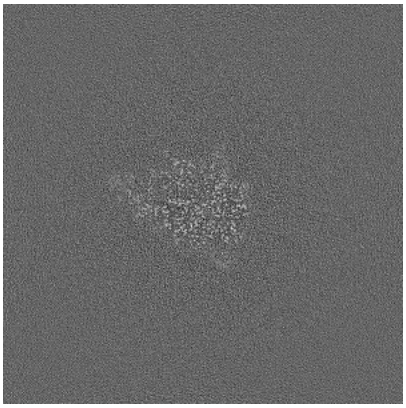
6.2.2 Raw map



X Index: 240



Y Index: 240

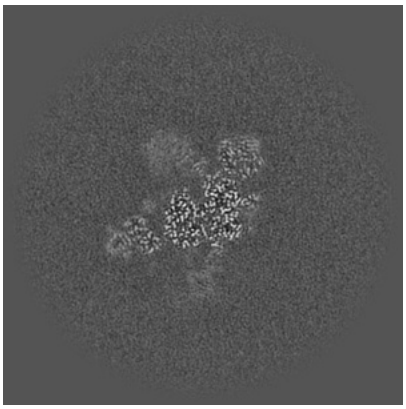


Z Index: 240

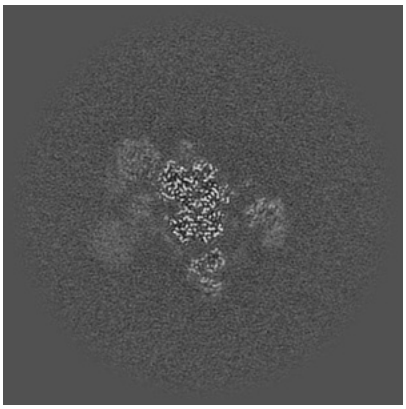
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

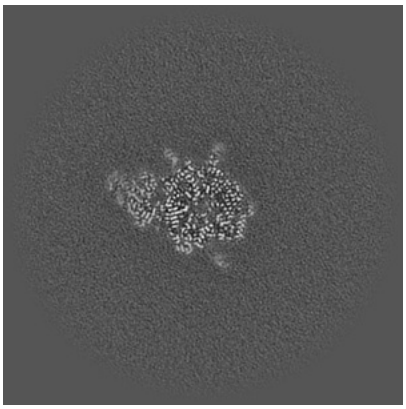
6.3.1 Primary map



X Index: 253

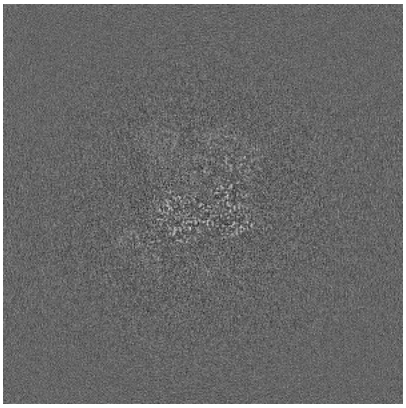


Y Index: 255

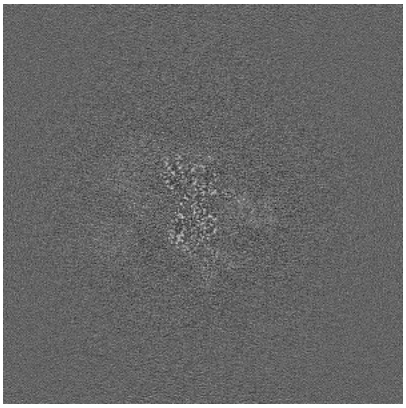


Z Index: 245

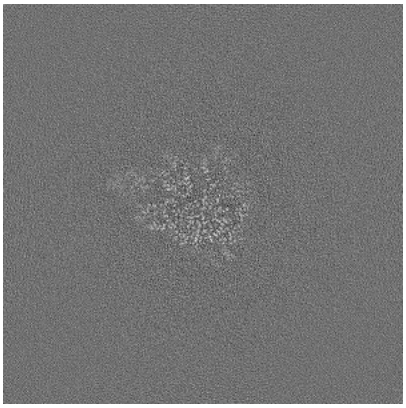
6.3.2 Raw map



X Index: 242



Y Index: 243

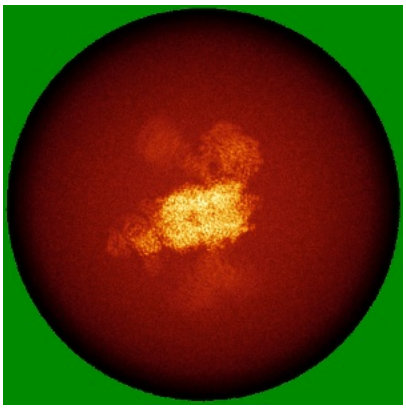


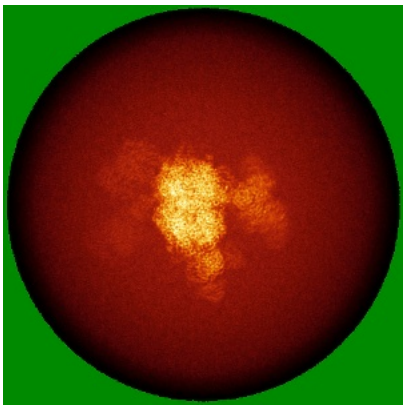
Z Index: 236

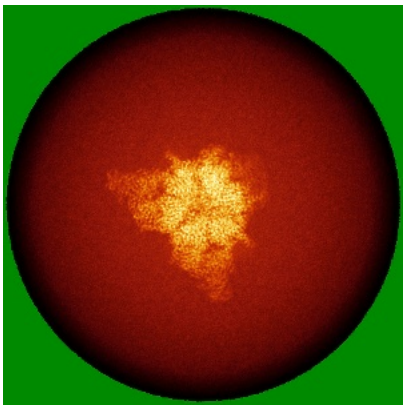
The images above show the largest variance slices of the map in three orthogonal directions.

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

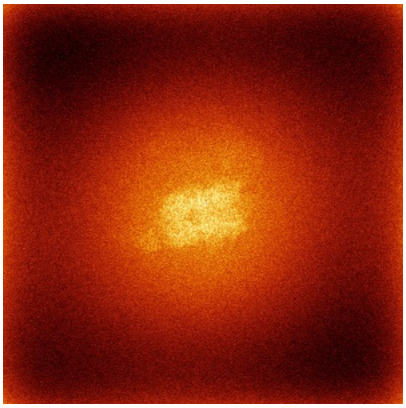
6.4.1 Primary map

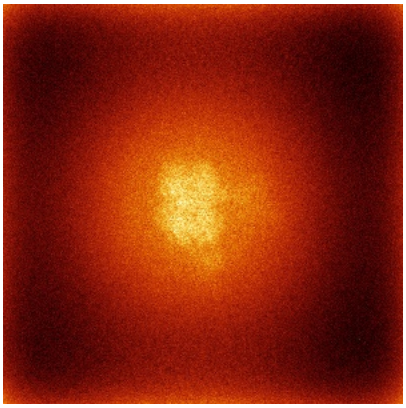

X

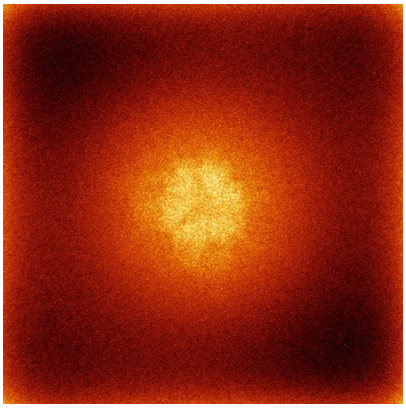

Y


Z

6.4.2 Raw map


X

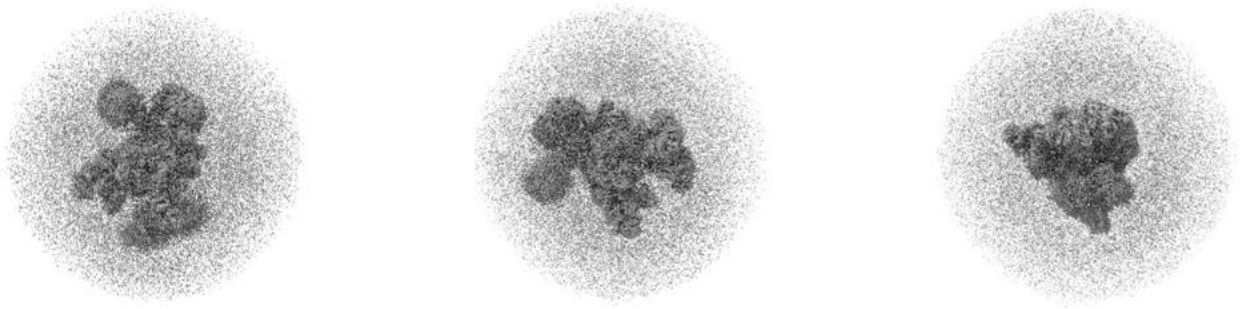

Y


Z

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

6.5 Orthogonal surface views (i)

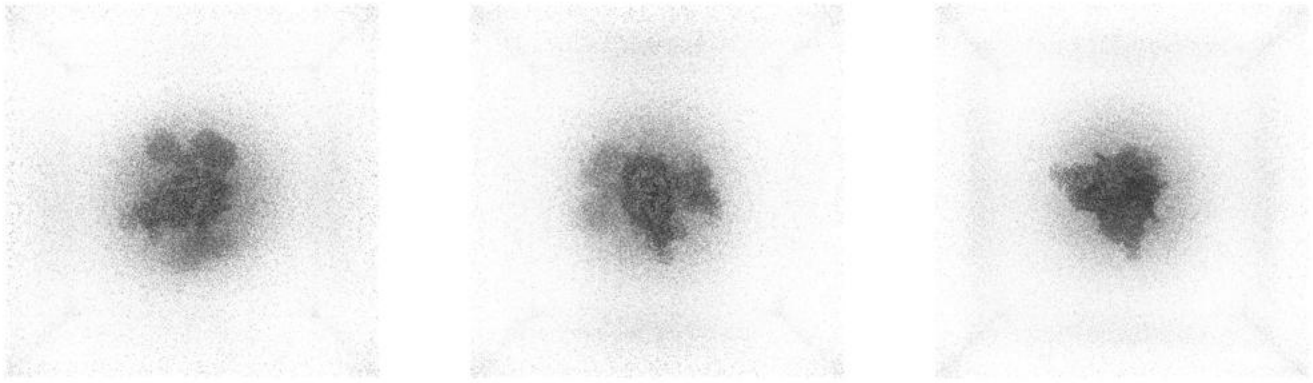
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.12. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

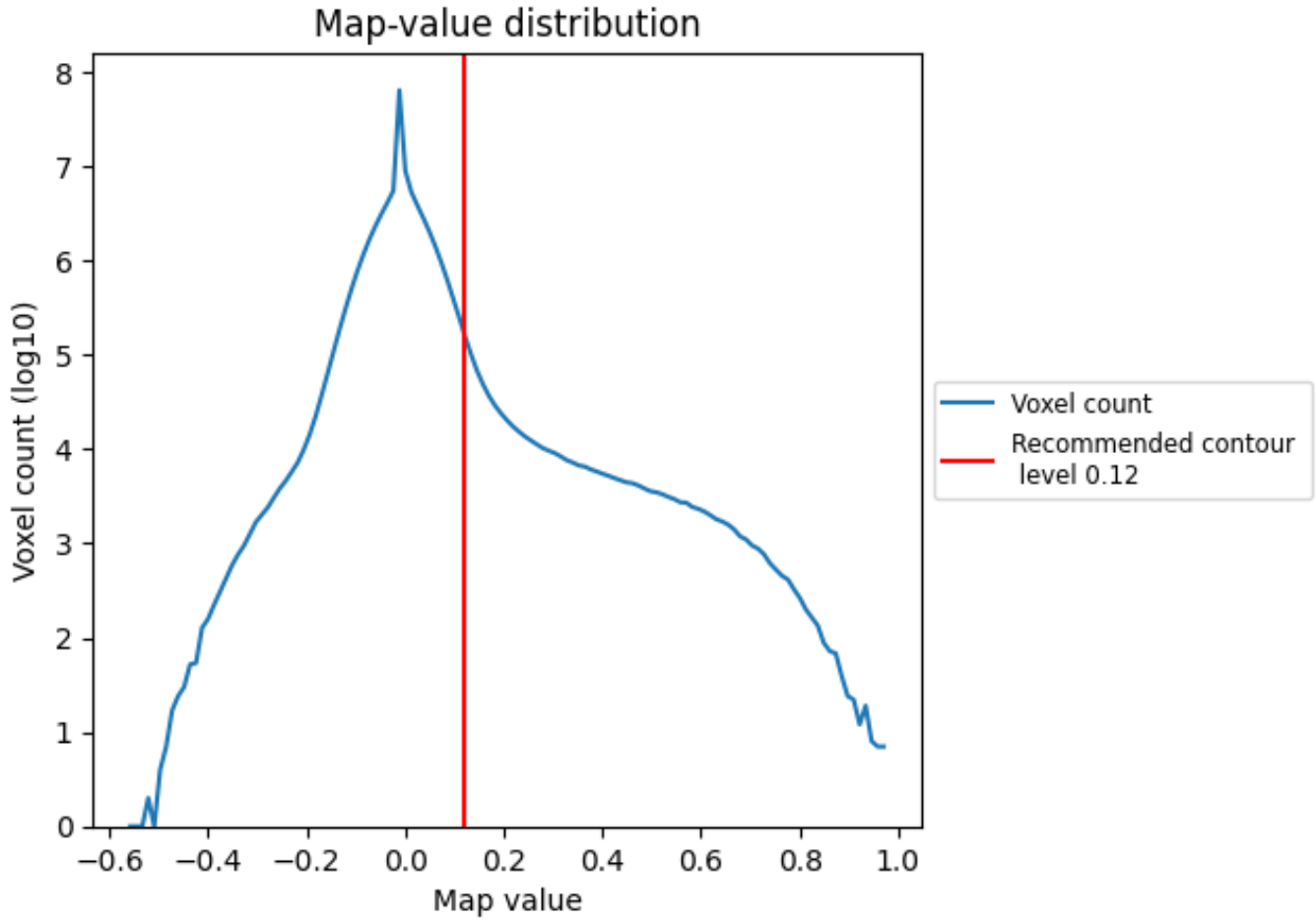
6.6 Mask visualisation (i)

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

7 Map analysis

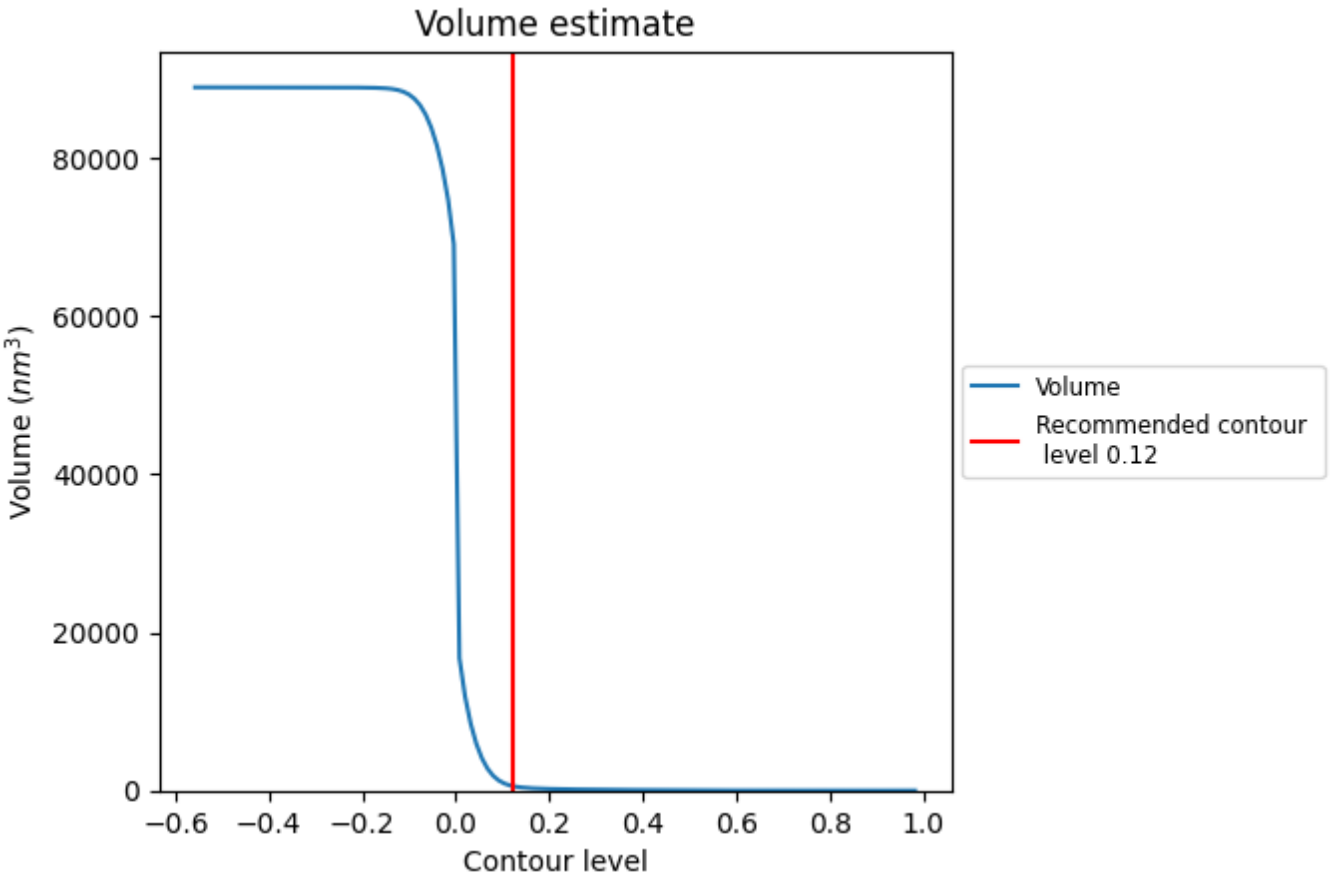
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

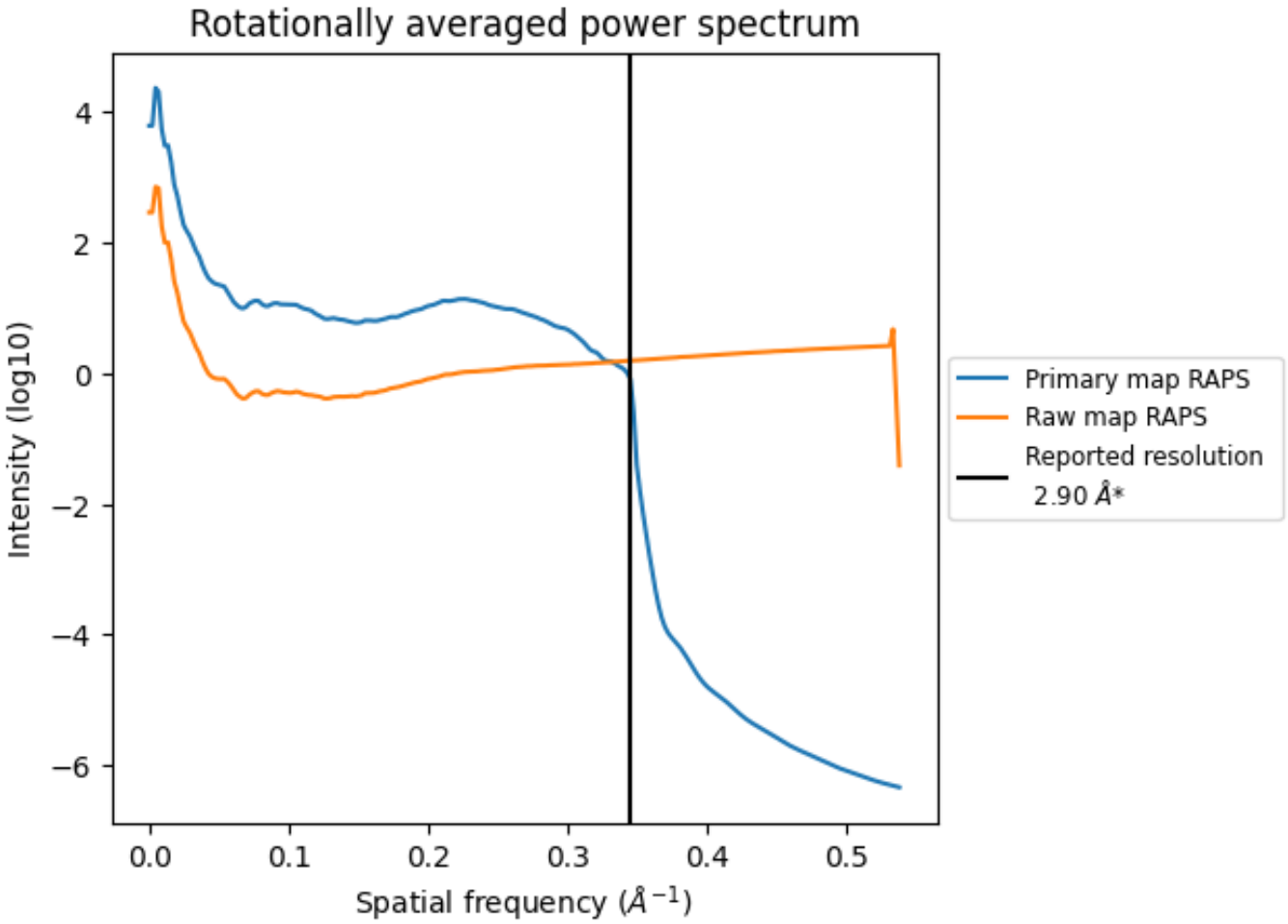
7.2 Volume estimate



The volume at the recommended contour level is 597 nm^3; this corresponds to an approximate mass of 540 kDa.

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

7.3 Rotationally averaged power spectrum (i)

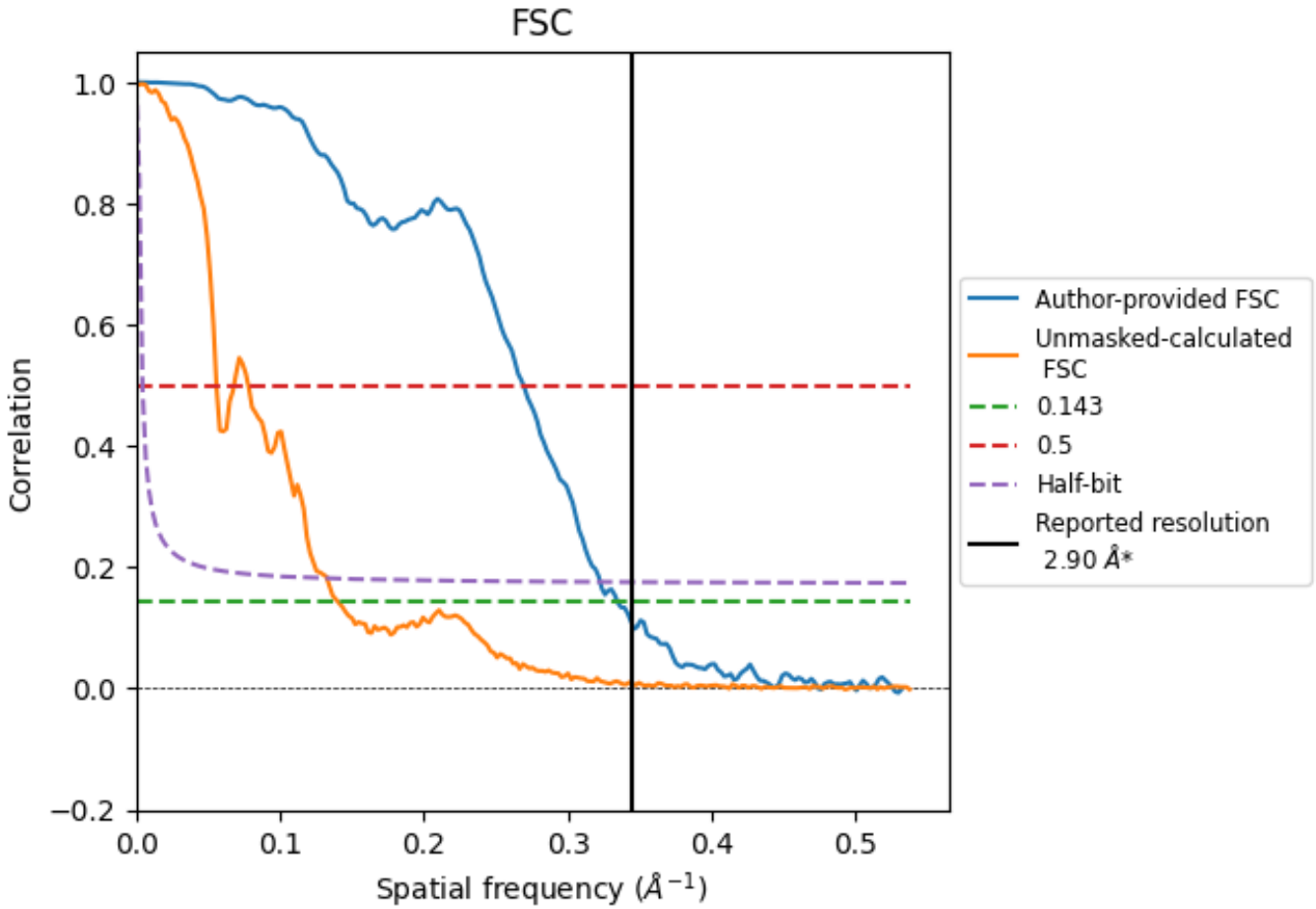


*Reported resolution corresponds to spatial frequency of 0.345 Å^{-1}

8 Fourier-Shell correlation

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

8.1 FSC



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

8.2 Resolution estimates (i)

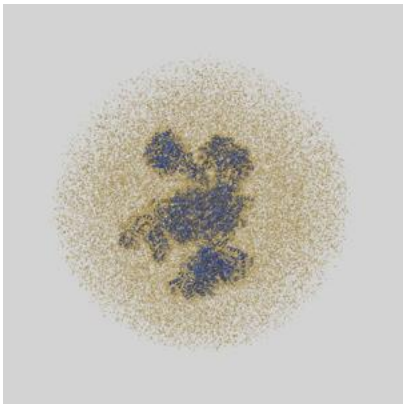
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.90	-	-
Author-provided FSC curve	2.99	3.71	3.10
Unmasked-calculated*	7.13	17.92	7.54

*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 7.13 differs from the reported value 2.9 by more than 10 %

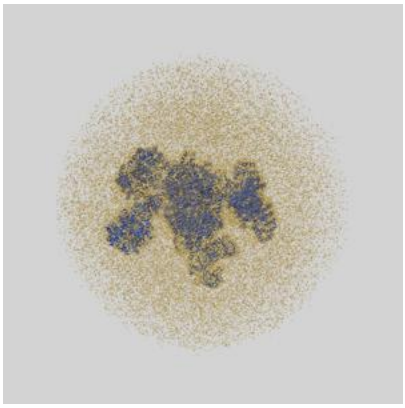
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-73596 and PDB model 9YX5. Per-residue inclusion information can be found in section 3 on page 10.

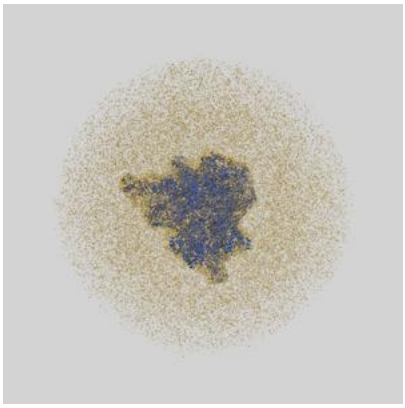
9.1 Map-model overlay



X



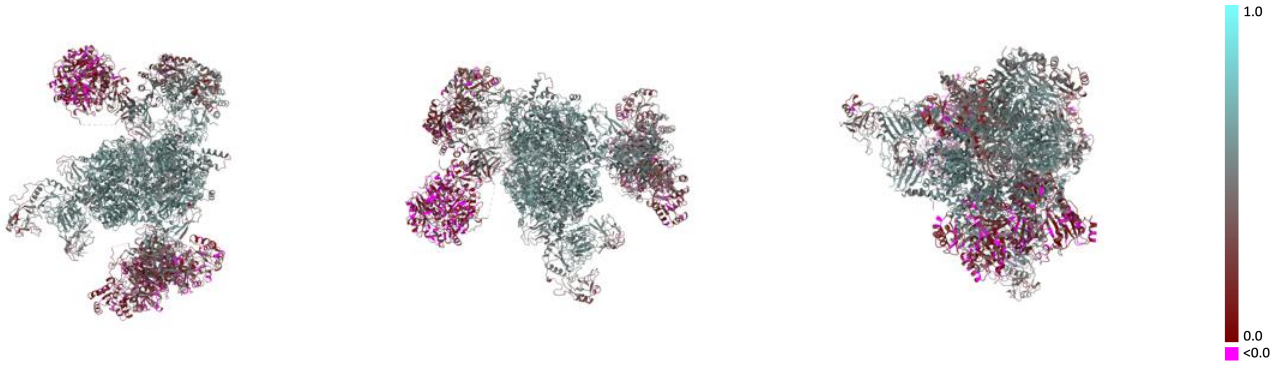
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.12 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

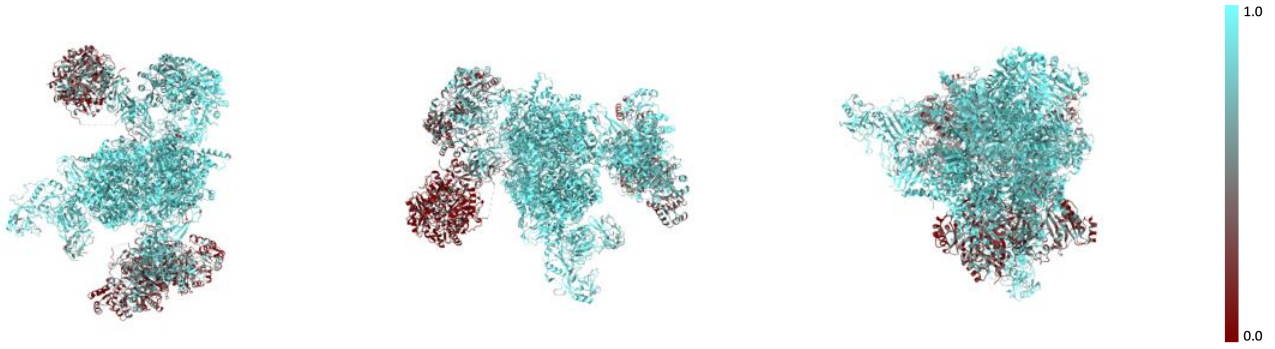
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

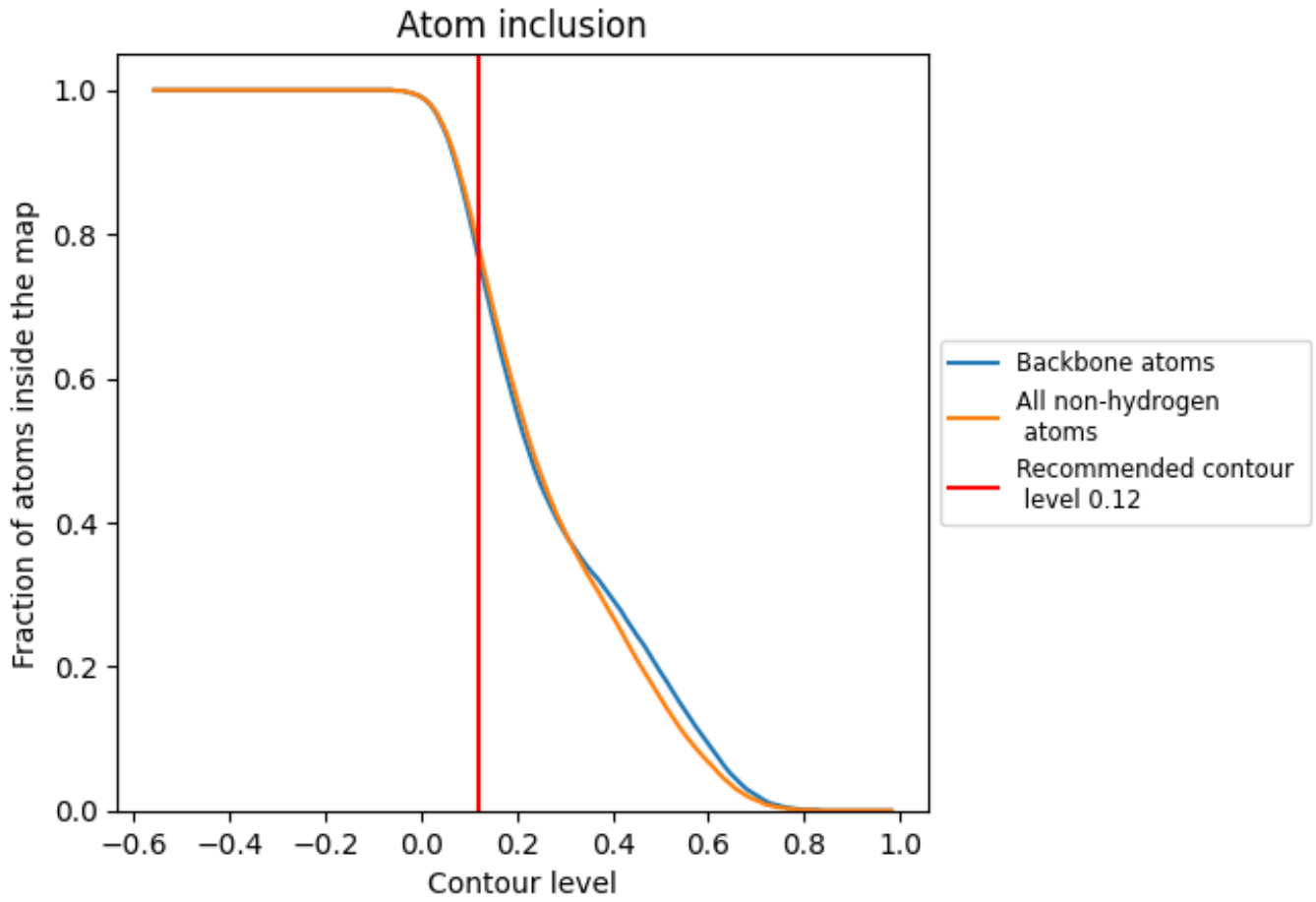
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.12).

9.4 Atom inclusion (i)



At the recommended contour level, 76% of all backbone atoms, 78% 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 (0.12) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7820	0.4560
A	0.6720	0.3750
B	0.4670	0.2550
C	0.1400	0.1360
D	0.2170	0.1470
E	0.8210	0.4990
F	0.9610	0.5900
G	0.9720	0.5940
H	0.9590	0.5910
I	0.8820	0.5050
J	0.7190	0.4640
K	0.8330	0.4670
L	0.8050	0.4890
M	0.9720	0.5930
N	0.9620	0.5920
O	0.9620	0.5880
P	0.9010	0.5430
Q	0.9070	0.5060
R	0.7360	0.3590
S	0.3960	0.1660
T	0.4950	0.1920
U	0.6730	0.3350
V	0.9460	0.5670
W	0.8570	0.4420
X	0.7460	0.4020
Y	0.9380	0.5630
Z	0.8570	0.4450