



Full wwPDB EM Validation Report ⓘ

Aug 12, 2024 – 05:24 pm BST

PDB ID : 8Q54
EMDB ID : EMD-18162
Title : N5-methyl-H4MPT:CoM methyltransferase -coenzyme M complex + CoM
Authors : Aziz, I.; Vonck, J.; Ermler, U.
Deposited on : 2023-08-08
Resolution : 2.39 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:

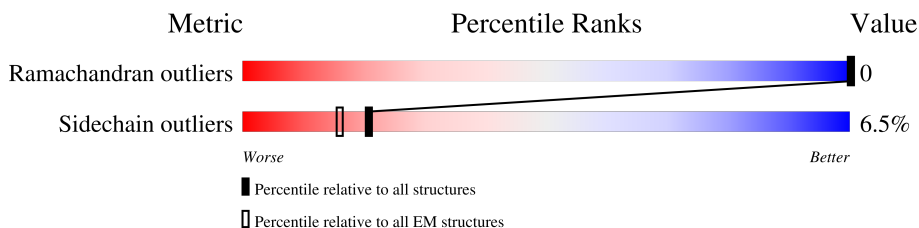
EMDB validation analysis : 0.0.1.dev92
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.37.1

1 Overall quality at a glance

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

The reported resolution of this entry is 2.39 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.



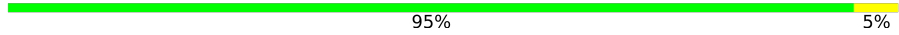
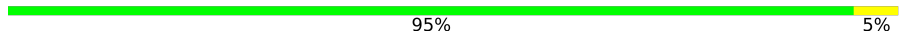
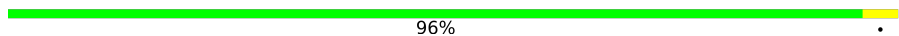
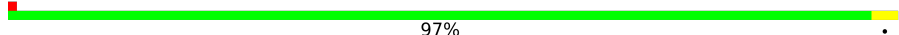
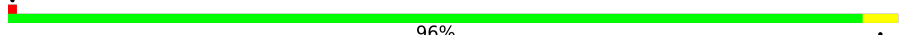
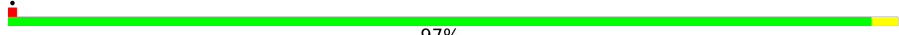






Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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	238	24% 74%
1	Q	238	24% 74%
1	a	238	24% 74%
2	B	100	64% 6% 30%
2	R	100	62% 8% 30%
2	b	100	66% 30%
3	C	267	90% 5% 5%
3	S	267	91% 5%
3	c	267	90% 5% 5%

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Mol	Chain	Length	Quality of chain
4	D	233	 95% 5%
4	T	233	 95% 5%
4	d	233	 96% .
5	E	295	 97% .
5	U	295	 96% .
5	e	295	 97% .
6	F	68	 90% 9% .
6	V	68	 87% 12% .
6	f	68	 85% 12% ..
7	G	86	 6% 79% 6% 15%
7	W	86	 5% 81% . 15%
7	g	86	 5% 81% . 15%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
11	COM	E	303[A]	-	X	-	-
11	COM	E	303[B]	-	X	-	-
11	COM	U	303[A]	-	X	-	-
11	COM	U	303[C]	-	X	-	-
11	COM	e	303[A]	-	X	-	-
11	COM	e	303[B]	-	X	-	-
9	JCV	E	304	X	-	-	-
9	JCV	E	306	X	-	-	-
9	JCV	S	301	X	-	-	-
9	JCV	U	305	X	-	-	-
9	JCV	W	101	X	-	-	-
9	JCV	c	301	X	-	-	-

2 Entry composition [i](#)

There are 12 unique types of molecules in this entry. The entry contains 48734 atoms, of which 24135 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 Tetrahydromethanopterin S-methyltransferase subunit A 1.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
1	A	61	Total 962	C 297	H 499	N 78	O 83	S 5	0	0
1	a	61	Total 962	C 297	H 499	N 78	O 83	S 5	0	0
1	Q	61	Total 962	C 297	H 499	N 78	O 83	S 5	0	0

- Molecule 2 is a protein called Tetrahydromethanopterin S-methyltransferase subunit B.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
2	B	70	Total 1076	C 346	H 545	N 78	O 106	S 1	0	0
2	b	70	Total 1076	C 346	H 545	N 78	O 106	S 1	0	0
2	R	70	Total 1076	C 346	H 545	N 78	O 106	S 1	0	0

- Molecule 3 is a protein called Tetrahydromethanopterin S-methyltransferase subunit C.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
3	C	254	Total 3786	C 1207	H 1955	N 296	O 317	S 11	2	0
3	c	254	Total 3806	C 1213	H 1964	N 300	O 318	S 11	4	0
3	S	254	Total 3786	C 1207	H 1955	N 296	O 317	S 11	2	0

- Molecule 4 is a protein called Tetrahydromethanopterin S-methyltransferase subunit D.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
4	D	233	Total 3264	C 1038	H 1668	N 257	O 288	S 13	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace	
4	d	233	Total	C	H	N	O	S	0	0
			3264	1038	1668	257	288	13		
4	T	233	Total	C	H	N	O	S	0	0
			3264	1038	1668	257	288	13		

- Molecule 5 is a protein called Tetrahydromethanopterin S-methyltransferase subunit E.

Mol	Chain	Residues	Atoms					AltConf	Trace	
5	E	294	Total	C	H	N	O	S	0	0
			4390	1420	2203	363	388	16		
5	e	294	Total	C	H	N	O	S	0	0
			4390	1420	2203	363	388	16		
5	U	294	Total	C	H	N	O	S	0	0
			4390	1420	2203	363	388	16		

- Molecule 6 is a protein called Tetrahydromethanopterin S-methyltransferase subunit F.

Mol	Chain	Residues	Atoms					AltConf	Trace	
6	F	67	Total	C	H	N	O	S	0	0
			1069	329	564	90	84	2		
6	f	67	Total	C	H	N	O	S	0	0
			1069	329	564	90	84	2		
6	V	67	Total	C	H	N	O	S	0	0
			1069	329	564	90	84	2		

- Molecule 7 is a protein called Tetrahydromethanopterin S-methyltransferase subunit G.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	73	Total	C	H	N	O	0	0
			1164	368	598	92	106		
7	g	73	Total	C	H	N	O	0	0
			1164	368	598	92	106		
7	W	73	Total	C	H	N	O	0	0
			1164	368	598	92	106		

- Molecule 8 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

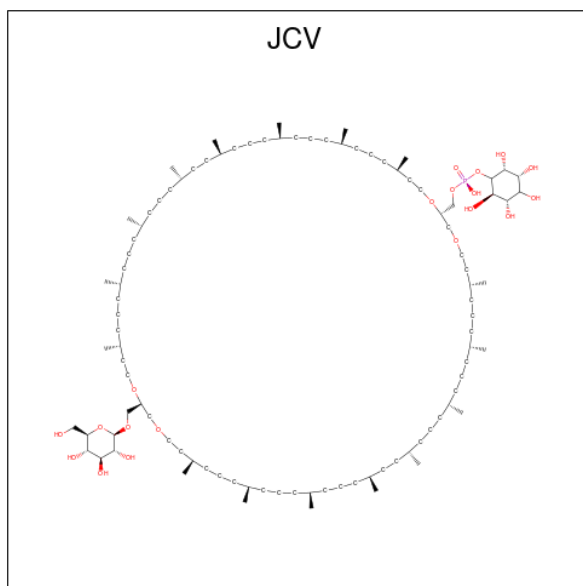
Mol	Chain	Residues	Atoms		AltConf
8	B	1	Total	Mg	0
			1	1	
8	b	1	Total	Mg	0
			1	1	

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Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
8	R	1	1	1	0

- Molecule 9 is [(2 {S},7 {R},11 {R},15 {S},19 {S},22 {S},26 {S},30 {R},34 {R},39 {S},43 {R},47 {R},51 {S},55 {S},58 {S},62 {S},66 {R},70 {R})-39-[(2 {R},3 {R},4 {S},5 {S},6 {R})-6-(hydroxymethyl)-3,4,5-tris(oxidanyl)oxan-2-yl]oxymethyl]-7,11,15,19,22,26,30,34,43,47,51,55,58,62,66,70-hexadecamethyl-1,4,37,40-tetraoxacycloheptacont-2-yl]methyl [(2 {R},3 {S},5 {R},6 {R})-2,3,4,5,6-pentakis(oxidanyl)cyclohexyl] hydrogen phosphate (three-letter code: JCV) (formula: C₉₈H₁₉₃O₁₉P).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	P	
9	C	1	118	98	19	1	0
9	E	1	118	98	19	1	0
9	E	1	118	98	19	1	0
9	E	1	118	98	19	1	0
9	c	1	118	98	19	1	0
9	e	1	118	98	19	1	0
9	e	1	118	98	19	1	0
9	g	1	118	98	19	1	0

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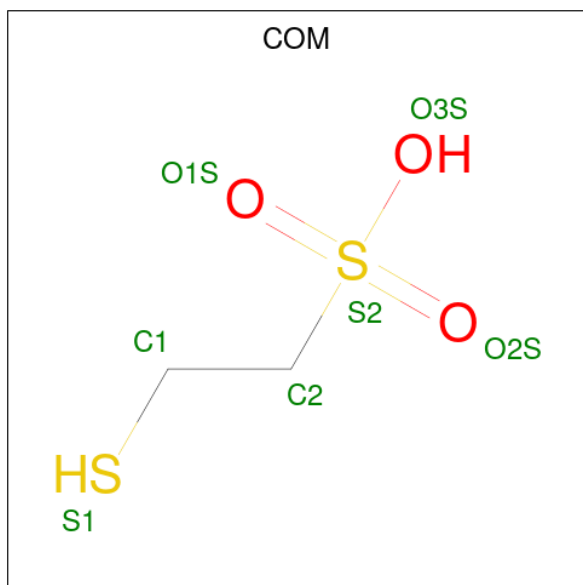
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Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	P	
9	S	1	Total 118	C 98	O 19	P 1	0
9	U	1	Total 114	C 94	O 19	P 1	0
9	U	1	Total 118	C 98	O 19	P 1	0
9	W	1	Total 118	C 98	O 19	P 1	0

- Molecule 10 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms		AltConf
			Total	Na	
10	E	2	Total 2	Na 2	0
10	e	2	Total 2	Na 2	0
10	U	2	Total 2	Na 2	0

- Molecule 11 is 1-THIOETHANESULFONIC ACID (three-letter code: COM) (formula: C₂H₆O₃S₂).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	H	O	S	
11	E	1	Total 24	C 4	H 10	O 6	S 4	1
11	e	1	Total 24	C 4	H 10	O 6	S 4	1

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	H	O	S	
11	U	1	24	4	10	6	4	1

- Molecule 12 is water.

Mol	Chain	Residues	Atoms		AltConf
12	A	2	Total 2	O 2	0
12	B	2	Total 2	O 2	0
12	C	2	Total 2	O 2	0
12	D	2	Total 2	O 2	0
12	E	18	Total 18	O 18	0
12	F	3	Total 3	O 3	0
12	a	1	Total 1	O 1	0
12	b	2	Total 2	O 2	0
12	c	1	Total 1	O 1	0
12	d	4	Total 4	O 4	0
12	e	20	Total 20	O 20	0
12	f	1	Total 1	O 1	0
12	Q	1	Total 1	O 1	0
12	R	2	Total 2	O 2	0
12	S	1	Total 1	O 1	0
12	T	3	Total 3	O 3	0
12	U	21	Total 21	O 21	0
12	V	2	Total 2	O 2	0

MET	ILE	ALA	ASN	LEU	ARG	PHE	LEU	ILE	LEU	CYS	GLY	SER	GLU	VAL	GLN	GLY	THR	ILE	THR	GLN	LYS	SER	GLU	ILE	ALA	LEU	HIS	GLN	ASN	PRO	ASP	VAL	GLY	VAL	ASP	PRO	LYS	ASP	ARG	ASN	ILE	GLY	THR	GLY	ALA	LEU	TYR	PRO	GLU	ASN	ILE	PRO	ASP
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GLU	GLY	ILE	LEU	ARG	PHE	GLN	LYS	GLN	LEU	LEU	ILE	VAL	ASN	LEU	ILE	ASP	VAL	ASP	GLU	ASP	ALA	ASP	ALA	ILE	LYS	ALA	VAL	LYS	GLU	CYS	ILE	GLU	LEU	VAL	GLY	GLY	GLU	LEU	VAL	GLY	GLY	GLY	GLU	GLY	ILE	ILE	LYS	VAL	GLY	GLY	GLY	GLY	GLU	GLY	GLY	GLY	ASP	E178	E179	V180
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S216	V238
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- Molecule 2: Tetrahydromethanopterin S-methyltransferase subunit B

Chain B:  64% 6% 30%

MET	GLU	MET	LEU	PRO	LEU	VAL	LYS	ILE	ALA	PRO	GLU	TYR	ASN	LEU	THR	LEU	ASP	PRO	SER	THR	GLY	MET	ILE	GLY	ALA	LEU	LEU	ARG	E31	V32	I33	I34	S36	I40	Q43	D59	E65	L100
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- Molecule 2: Tetrahydromethanopterin S-methyltransferase subunit B

Chain b:  66% 30%

MET	GLU	MET	LEU	PRO	LEU	VAL	LYS	ILE	ALA	PRO	GLU	TYR	ASN	LEU	THR	LEU	ASP	PRO	SER	THR	GLY	MET	ILE	GLY	ALA	LEU	LEU	ARG	E31	V32	I33	I34	Q43	I55	L100
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- Molecule 2: Tetrahydromethanopterin S-methyltransferase subunit B

Chain R:  62% 8% 30%


MET	GLU	MET	LEU	PRO	LEU	VAL	LYS	ILE	ALA	PRO	GLU	TYR	ASN	LEU	THR	LEU	ASP	PRO	SER	THR	GLY	MET	ILE	GLY	ALA	LEU	LEU	ARG	E31	V32	I33	I34	B42	E48	E65	G66	S67	F96	L100
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- Molecule 3: Tetrahydromethanopterin S-methyltransferase subunit C

Chain C:  90% 5% 5%


MET	SER	VAL	ALA	ALA	GLY	GLY	PRO	ALA	ALA	G11	S33	I39	I59	S64	V86	K121	K125	I128	M162	Q184	L218	R242	E250	V255	E264	GLU	GLU	HIS
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- Molecule 3: Tetrahydromethanopterin S-methyltransferase subunit C

Chain c:  90% 5% 5%

MET	SER	VAL	ALA	ALA	GLY	GLY	PRO	ALA	ALA	A11	L21	K121	K122	K125	I128	K133	T158	M162	Q184	Q197	E250	V255	S258	E264	GLU	GLU	HIS
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- Molecule 3: Tetrahydromethanopterin S-methyltransferase subunit C

Chain S:  91% 5% 5%



- Molecule 4: Tetrahydromethanopterin S-methyltransferase subunit D

Chain D: 95% 5%



- Molecule 4: Tetrahydromethanopterin S-methyltransferase subunit D

Chain d: 96% .



- Molecule 4: Tetrahydromethanopterin S-methyltransferase subunit D

Chain T: 95% 5%



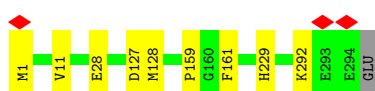
- Molecule 5: Tetrahydromethanopterin S-methyltransferase subunit E

Chain E: 97% .



- Molecule 5: Tetrahydromethanopterin S-methyltransferase subunit E

Chain e: 97% .




- Molecule 5: Tetrahydromethanopterin S-methyltransferase subunit E

Chain U: 96% .




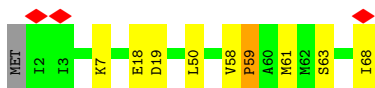
- Molecule 6: Tetrahydromethanopterin S-methyltransferase subunit F

Chain F:  90% 9%




- Molecule 6: Tetrahydromethanopterin S-methyltransferase subunit F

Chain f:  85% 12%




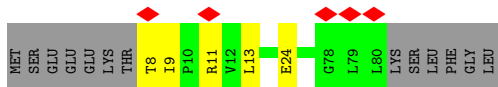
- Molecule 6: Tetrahydromethanopterin S-methyltransferase subunit F

Chain V:  87% 12%




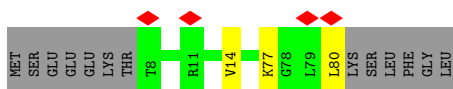
- Molecule 7: Tetrahydromethanopterin S-methyltransferase subunit G

Chain G:  79% 6% 15%




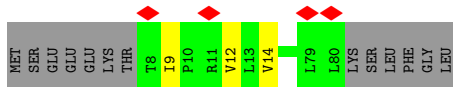
- Molecule 7: Tetrahydromethanopterin S-methyltransferase subunit G

Chain g:  81% 5% 15%



- Molecule 7: Tetrahydromethanopterin S-methyltransferase subunit G

Chain W:  81% 5% 15%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	87173	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 ($e^-/\text{\AA}^2$)	73.9	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2100	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.061	Depositor
Minimum map value	-0.017	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.01	Depositor
Map size (Å)	267.84, 267.84, 267.84	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.837, 0.837, 0.837	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: COM, MG, NA, JCV

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	0.72	1/467 (0.2%)	0.65	0/626
1	Q	0.64	0/467	0.67	0/626
1	a	0.70	1/467 (0.2%)	0.68	0/626
2	B	0.69	0/538	0.73	0/733
2	R	0.66	0/538	0.72	0/733
2	b	0.74	0/538	0.79	0/733
3	C	0.65	0/1878	0.78	0/2566
3	S	0.57	0/1878	0.70	0/2566
3	c	0.55	0/1894	0.65	0/2587
4	D	0.66	0/1624	0.75	0/2207
4	T	0.51	0/1624	0.60	0/2207
4	d	0.50	0/1624	0.57	0/2207
5	E	0.53	0/2242	0.64	1/3055 (0.0%)
5	U	0.60	2/2242 (0.1%)	0.66	1/3055 (0.0%)
5	e	0.60	1/2242 (0.0%)	0.69	1/3055 (0.0%)
6	F	0.77	0/509	0.80	0/684
6	V	0.94	2/509 (0.4%)	0.87	1/684 (0.1%)
6	f	0.99	2/509 (0.4%)	0.89	2/684 (0.3%)
7	G	0.45	0/571	0.63	0/770
7	W	0.47	0/571	0.56	0/770
7	g	0.58	0/571	0.70	0/770
All	All	0.61	9/23503 (0.0%)	0.69	6/31944 (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
5	e	0	1

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	V	59	PRO	N-CA	13.31	1.69	1.47
6	f	59	PRO	N-CA	13.07	1.69	1.47
1	A	181	LYS	C-N	10.87	1.54	1.34
1	a	181	LYS	C-N	10.49	1.54	1.34
5	U	61	GLU	C-N	9.77	1.52	1.34
6	V	58	VAL	C-N	5.37	1.44	1.34
6	f	58	VAL	C-N	5.33	1.44	1.34
5	U	61	GLU	CD-OE2	-5.23	1.19	1.25
5	e	28	GLU	CD-OE2	-5.06	1.20	1.25

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	f	59	PRO	CA-N-CD	-7.96	100.36	111.50
6	V	59	PRO	CA-N-CD	-6.63	102.22	111.50
5	e	161	PHE	CB-CA-C	6.01	122.43	110.40
5	U	161	PHE	CB-CA-C	5.98	122.35	110.40
5	E	161	PHE	CB-CA-C	5.32	121.04	110.40
6	f	58	VAL	CA-C-N	5.14	131.49	117.10

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
5	e	128	MET	Mainchain

5.2 Too-close contacts [i](#)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

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	59/238 (25%)	55 (93%)	4 (7%)	0	100	100
1	Q	59/238 (25%)	57 (97%)	2 (3%)	0	100	100
1	a	59/238 (25%)	56 (95%)	3 (5%)	0	100	100
2	B	68/100 (68%)	67 (98%)	1 (2%)	0	100	100
2	R	68/100 (68%)	68 (100%)	0	0	100	100
2	b	68/100 (68%)	68 (100%)	0	0	100	100
3	C	254/267 (95%)	247 (97%)	7 (3%)	0	100	100
3	S	254/267 (95%)	246 (97%)	8 (3%)	0	100	100
3	c	256/267 (96%)	250 (98%)	6 (2%)	0	100	100
4	D	231/233 (99%)	226 (98%)	5 (2%)	0	100	100
4	T	231/233 (99%)	227 (98%)	4 (2%)	0	100	100
4	d	231/233 (99%)	228 (99%)	3 (1%)	0	100	100
5	E	292/295 (99%)	283 (97%)	9 (3%)	0	100	100
5	U	292/295 (99%)	286 (98%)	6 (2%)	0	100	100
5	e	292/295 (99%)	287 (98%)	5 (2%)	0	100	100
6	F	65/68 (96%)	64 (98%)	1 (2%)	0	100	100
6	V	65/68 (96%)	65 (100%)	0	0	100	100
6	f	65/68 (96%)	63 (97%)	2 (3%)	0	100	100
7	G	71/86 (83%)	71 (100%)	0	0	100	100
7	W	71/86 (83%)	71 (100%)	0	0	100	100
7	g	71/86 (83%)	69 (97%)	2 (3%)	0	100	100
All	All	3122/3861 (81%)	3054 (98%)	68 (2%)	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	A	50/193 (26%)	47 (94%)	3 (6%)	19	31
1	Q	50/193 (26%)	47 (94%)	3 (6%)	19	31
1	a	50/193 (26%)	47 (94%)	3 (6%)	19	31
2	B	58/82 (71%)	52 (90%)	6 (10%)	7	10
2	R	58/82 (71%)	50 (86%)	8 (14%)	3	4
2	b	58/82 (71%)	54 (93%)	4 (7%)	15	25
3	C	191/196 (97%)	176 (92%)	15 (8%)	12	19
3	S	191/196 (97%)	178 (93%)	13 (7%)	16	25
3	c	192/196 (98%)	178 (93%)	14 (7%)	14	22
4	D	155/155 (100%)	143 (92%)	12 (8%)	13	20
4	T	155/155 (100%)	144 (93%)	11 (7%)	14	23
4	d	155/155 (100%)	145 (94%)	10 (6%)	17	27
5	E	228/229 (100%)	220 (96%)	8 (4%)	36	55
5	U	228/229 (100%)	218 (96%)	10 (4%)	28	45
5	e	228/229 (100%)	222 (97%)	6 (3%)	46	66
6	F	54/55 (98%)	48 (89%)	6 (11%)	6	8
6	V	54/55 (98%)	48 (89%)	6 (11%)	6	8
6	f	54/55 (98%)	46 (85%)	8 (15%)	3	3
7	G	61/73 (84%)	56 (92%)	5 (8%)	11	17
7	W	61/73 (84%)	58 (95%)	3 (5%)	25	40
7	g	61/73 (84%)	58 (95%)	3 (5%)	25	40
All	All	2392/2949 (81%)	2235 (93%)	157 (7%)	21	26

All (157) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	178	GLU
1	A	179	GLU
1	A	181	LYS
2	B	33	ILE
2	B	36	SER
2	B	40	ILE
2	B	43	GLN
2	B	59	ASP
2	B	65	GLU
3	C	33	SER

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Mol	Chain	Res	Type
3	C	39	ILE
3	C	59	ILE
3	C	64	SER
3	C	86	VAL
3	C	121	LYS
3	C	125	LYS
3	C	128	ILE
3	C	162	MET
3	C	184[A]	GLN
3	C	184[B]	GLN
3	C	218	LEU
3	C	242	ARG
3	C	250	GLU
3	C	255	VAL
4	D	2	ASP
4	D	45	MET
4	D	102	SER
4	D	114	GLU
4	D	117	LYS
4	D	126	HIS
4	D	156	GLU
4	D	166	MET
4	D	175	PHE
4	D	179	ILE
4	D	194	THR
4	D	208	ARG
5	E	1	MET
5	E	11	VAL
5	E	35	SER
5	E	109	SER
5	E	184	SER
5	E	216	LYS
5	E	229	HIS
5	E	260	THR
6	F	2	ILE
6	F	7	LYS
6	F	18	GLU
6	F	21	LYS
6	F	50	LEU
6	F	54	LEU
7	G	8	THR
7	G	9	ILE

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Mol	Chain	Res	Type
7	G	11	ARG
7	G	13	LEU
7	G	24	GLU
1	a	180	VAL
1	a	220	GLN
1	a	238	VAL
2	b	33	ILE
2	b	34	ILE
2	b	43	GLN
2	b	55	ILE
3	c	21	LEU
3	c	121	LYS
3	c	122	LYS
3	c	125	LYS
3	c	128	ILE
3	c	133	LYS
3	c	158	THR
3	c	162	MET
3	c	184[A]	GLN
3	c	184[B]	GLN
3	c	197	GLN
3	c	250	GLU
3	c	255	VAL
3	c	258	SER
4	d	4	LEU
4	d	67	LEU
4	d	69	ILE
4	d	80	MET
4	d	126	HIS
4	d	156	GLU
4	d	160	THR
4	d	188	SER
4	d	204	LYS
4	d	223	LEU
5	e	1	MET
5	e	11	VAL
5	e	127	ASP
5	e	159	PRO
5	e	229	HIS
5	e	292	LYS
6	f	7	LYS
6	f	18	GLU

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Mol	Chain	Res	Type
6	f	19	ASP
6	f	50	LEU
6	f	59	PRO
6	f	61	MET
6	f	63	SER
6	f	68	ILE
7	g	14	VAL
7	g	77	LYS
7	g	80	LEU
1	Q	178	GLU
1	Q	180	VAL
1	Q	216	SER
2	R	31	GLU
2	R	33	ILE
2	R	34	ILE
2	R	42	GLU
2	R	48	GLU
2	R	65	GLU
2	R	67	SER
2	R	96	PHE
3	S	36	ASN
3	S	64	SER
3	S	65	TYR
3	S	122	LYS
3	S	127	LYS
3	S	128	ILE
3	S	133	LYS
3	S	162	MET
3	S	184[A]	GLN
3	S	184[B]	GLN
3	S	191	LEU
3	S	255	VAL
3	S	256	LYS
4	T	45	MET
4	T	64	GLN
4	T	67	LEU
4	T	98	THR
4	T	102	SER
4	T	106	SER
4	T	117	LYS
4	T	156	GLU
4	T	162	SER

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Mol	Chain	Res	Type
4	T	166	MET
4	T	223	LEU
5	U	11	VAL
5	U	35	SER
5	U	78	VAL
5	U	183	SER
5	U	216	LYS
5	U	218	GLU
5	U	260	THR
5	U	272	LEU
5	U	292	LYS
5	U	294	GLU
6	V	7	LYS
6	V	11	ARG
6	V	15	ASN
6	V	19	ASP
6	V	61	MET
6	V	62	MET
7	W	9	ILE
7	W	12	VAL
7	W	14	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	198	GLN
3	C	179	ASN
5	e	34	GLN
5	e	40	GLN
6	f	24	ASN
7	g	47	GLN
1	Q	196	ASN
4	T	64	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 27 ligands modelled in this entry, 9 are monoatomic - leaving 18 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 >
11	COM	e	303[B]	-	6,6,6	1.78	3 (50%)	7,8,8	2.80	4 (57%)
11	COM	E	303[A]	-	6,6,6	1.82	2 (33%)	7,8,8	2.78	4 (57%)
9	JCV	g	101	-	120,120,120	1.11	10 (8%)	148,154,154	0.71	0
9	JCV	e	305	-	120,120,120	1.15	11 (9%)	148,154,154	1.19	16 (10%)
9	JCV	U	304	-	116,116,120	1.10	9 (7%)	141,146,154	0.73	0
11	COM	U	303[C]	-	6,6,6	1.84	3 (50%)	7,8,8	2.80	3 (42%)
11	COM	E	303[B]	-	6,6,6	1.77	2 (33%)	7,8,8	2.79	4 (57%)
9	JCV	E	305	-	120,120,120	1.32	12 (10%)	148,154,154	1.47	24 (16%)
9	JCV	W	101	-	120,120,120	1.13	11 (9%)	148,154,154	0.87	2 (1%)
9	JCV	E	306	-	120,120,120	1.13	10 (8%)	148,154,154	0.68	0
11	COM	U	303[A]	-	6,6,6	1.78	3 (50%)	7,8,8	2.75	4 (57%)
9	JCV	C	301	-	120,120,120	1.13	12 (10%)	148,154,154	0.66	0
9	JCV	E	304	-	120,120,120	1.25	14 (11%)	148,154,154	1.62	23 (15%)
9	JCV	e	304	-	120,120,120	1.32	12 (10%)	148,154,154	1.48	26 (17%)
9	JCV	S	301	-	120,120,120	1.10	8 (6%)	148,154,154	1.29	20 (13%)
11	COM	e	303[A]	-	6,6,6	1.31	1 (16%)	7,8,8	3.78	4 (57%)
9	JCV	U	305	-	120,120,120	1.13	11 (9%)	148,154,154	0.67	0
9	JCV	c	301	-	120,120,120	1.13	10 (8%)	148,154,154	0.66	0

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
11	COM	e	303[B]	-	-	1/4/4/4	-
11	COM	E	303[A]	-	-	4/4/4/4	-
9	JCV	g	101	-	-	51/126/170/170	0/2/2/2
9	JCV	e	305	-	-	62/126/170/170	0/2/2/2
9	JCV	U	304	-	-	34/118/162/170	0/2/2/2
11	COM	U	303[C]	-	-	3/4/4/4	-
11	COM	E	303[B]	-	-	2/4/4/4	-
9	JCV	E	305	-	-	29/126/170/170	0/2/2/2
9	JCV	W	101	-	2/2/30/30	61/126/170/170	0/2/2/2
9	JCV	E	306	-	1/1/30/30	55/126/170/170	0/2/2/2
11	COM	U	303[A]	-	-	4/4/4/4	-
9	JCV	C	301	-	-	71/126/170/170	0/2/2/2
9	JCV	E	304	-	1/1/30/30	54/126/170/170	0/2/2/2
9	JCV	e	304	-	-	44/126/170/170	0/2/2/2
9	JCV	S	301	-	2/2/30/30	51/126/170/170	0/2/2/2
11	COM	e	303[A]	-	-	3/4/4/4	-
9	JCV	U	305	-	1/1/30/30	72/126/170/170	0/2/2/2
9	JCV	c	301	-	2/2/30/30	71/126/170/170	0/2/2/2

All (144) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
9	E	305	JCV	OY1-CG7	-6.30	1.32	1.43
9	e	304	JCV	OY1-CG7	-5.88	1.33	1.43
9	e	305	JCV	OY1-CG7	-5.14	1.34	1.43
9	C	301	JCV	OY1-CG7	-4.27	1.35	1.43
9	g	101	JCV	OY1-CG7	-4.24	1.36	1.43
9	W	101	JCV	OY1-CG7	-4.23	1.36	1.43
9	E	306	JCV	OY1-CG7	-4.21	1.36	1.43
9	U	305	JCV	OY1-CG7	-4.19	1.36	1.43
9	U	304	JCV	OY1-CG7	-4.17	1.36	1.43
9	c	301	JCV	OY1-CG7	-4.14	1.36	1.43
9	S	301	JCV	OY1-CG7	-4.13	1.36	1.43
9	E	304	JCV	OY1-CG7	-4.02	1.36	1.43
9	U	305	JCV	C22M-C22	3.36	1.63	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
9	C	301	JCV	C22M-C22	3.35	1.63	1.52
9	c	301	JCV	C22M-C22	3.33	1.63	1.52
9	E	304	JCV	OG3-C1	-3.32	1.27	1.42
9	g	101	JCV	C22M-C22	3.30	1.63	1.52
9	E	306	JCV	C22M-C22	3.29	1.63	1.52
9	e	305	JCV	C22M-C22	3.28	1.63	1.52
9	e	304	JCV	OG3-C1	-3.27	1.27	1.42
9	W	101	JCV	C22M-C22	3.26	1.63	1.52
9	U	304	JCV	C22M-C22	3.25	1.63	1.52
9	E	305	JCV	OG3-C1	-3.24	1.27	1.42
11	E	303[A]	COM	C2-S2	3.19	1.82	1.77
11	U	303[C]	COM	C2-S2	3.17	1.82	1.77
9	E	304	JCV	P-O2	-3.08	1.40	1.50
11	U	303[A]	COM	C2-S2	3.07	1.81	1.77
9	E	305	JCV	C3M-C3	-3.07	1.43	1.52
11	e	303[B]	COM	C2-S2	3.03	1.81	1.77
9	S	301	JCV	C31-C32	3.02	1.61	1.50
9	W	101	JCV	C31-C32	3.01	1.61	1.50
9	U	305	JCV	C31-C32	3.01	1.61	1.50
9	C	301	JCV	C31-C32	3.00	1.61	1.50
9	e	304	JCV	C3M-C3	-3.00	1.43	1.52
9	e	304	JCV	C80M-C80	-2.98	1.43	1.52
9	c	301	JCV	C31-C32	2.98	1.61	1.50
11	E	303[B]	COM	C2-S2	2.97	1.81	1.77
9	E	305	JCV	C17-C16	-2.96	1.44	1.53
9	g	101	JCV	C31-C32	2.94	1.61	1.50
9	E	304	JCV	C3M-C3	-2.93	1.43	1.52
9	E	306	JCV	C31-C32	2.93	1.60	1.50
9	E	304	JCV	C22M-C22	2.87	1.61	1.52
9	e	305	JCV	C3M-C3	-2.86	1.43	1.52
9	E	305	JCV	P-O3	-2.84	1.42	1.55
9	U	304	JCV	C31-C32	2.84	1.60	1.50
9	e	305	JCV	OG3-C1	-2.83	1.29	1.42
9	C	301	JCV	C2-C1	2.83	1.60	1.50
9	E	306	JCV	C2-C1	2.82	1.60	1.50
9	c	301	JCV	C2-C1	2.81	1.60	1.50
9	U	304	JCV	C2-C1	2.80	1.60	1.50
9	e	304	JCV	C17-C16	-2.79	1.45	1.53
9	U	305	JCV	C2-C1	2.76	1.60	1.50
9	e	304	JCV	P-O2	-2.74	1.41	1.50
9	E	305	JCV	C80M-C80	-2.73	1.44	1.52
9	e	304	JCV	C22M-C22	2.72	1.61	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
9	g	101	JCV	C2-C1	2.72	1.60	1.50
9	W	101	JCV	C2-C1	2.71	1.60	1.50
9	E	306	JCV	C55-C54	2.69	1.63	1.52
9	S	301	JCV	C22M-C22	2.69	1.61	1.52
9	U	305	JCV	C55-C54	2.65	1.63	1.52
9	W	101	JCV	C55-C54	2.65	1.63	1.52
9	C	301	JCV	C55-C54	2.64	1.63	1.52
9	E	305	JCV	C22M-C22	2.63	1.61	1.52
9	c	301	JCV	C55-C54	2.63	1.63	1.52
9	U	304	JCV	C55-C54	2.62	1.63	1.52
9	e	305	JCV	C31-C32	2.62	1.59	1.50
9	E	304	JCV	C31-C32	2.60	1.59	1.50
9	g	101	JCV	C55-C54	2.58	1.63	1.52
9	S	301	JCV	OG3-C1	-2.57	1.30	1.42
9	e	305	JCV	C2-C1	2.57	1.59	1.50
9	S	301	JCV	C3M-C3	-2.56	1.44	1.52
9	E	304	JCV	C17-C16	-2.56	1.45	1.53
9	E	306	JCV	OG3-C1	-2.55	1.31	1.42
9	W	101	JCV	OG3-C1	-2.55	1.31	1.42
9	g	101	JCV	OG3-C1	-2.53	1.31	1.42
9	U	304	JCV	OG3-C1	-2.53	1.31	1.42
9	S	301	JCV	C2-C1	2.53	1.59	1.50
9	U	305	JCV	OG3-C1	-2.52	1.31	1.42
9	e	305	JCV	C80M-C80	-2.51	1.44	1.52
9	e	304	JCV	P-O3	-2.50	1.43	1.55
9	c	301	JCV	OG3-C1	-2.49	1.31	1.42
9	C	301	JCV	OG3-C1	-2.49	1.31	1.42
9	e	305	JCV	CG8-CG6	2.46	1.58	1.50
9	E	305	JCV	P-O2	-2.43	1.42	1.50
9	E	304	JCV	P-O3	-2.42	1.43	1.55
11	e	303[A]	COM	C2-S2	2.42	1.80	1.77
9	e	304	JCV	C74-C73	-2.36	1.42	1.52
9	c	301	JCV	CG8-CG6	2.31	1.57	1.50
9	W	101	JCV	CG8-CG6	2.28	1.57	1.50
9	E	306	JCV	CG8-CG6	2.27	1.57	1.50
9	E	304	JCV	CX3-CX2	-2.27	1.46	1.52
9	U	305	JCV	CG8-CG6	2.26	1.57	1.50
9	E	304	JCV	C55-C54	2.25	1.61	1.52
9	e	304	JCV	CX3-CX2	-2.23	1.46	1.52
9	e	305	JCV	C55-C54	2.22	1.61	1.52
9	C	301	JCV	CG8-CG6	2.22	1.57	1.50
9	g	101	JCV	CG8-CG6	2.21	1.57	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
9	U	304	JCV	C17-C16	-2.21	1.46	1.53
9	E	304	JCV	CX4-CX3	-2.20	1.46	1.52
9	e	304	JCV	C2-C1	2.19	1.58	1.50
9	E	304	JCV	OX2-CX4	-2.19	1.37	1.43
9	U	304	JCV	CG8-CG6	2.16	1.57	1.50
11	U	303[C]	COM	O2S-S2	2.14	1.51	1.45
9	E	304	JCV	CG8-CG6	2.14	1.57	1.50
11	E	303[B]	COM	O2S-S2	2.13	1.51	1.45
9	E	305	JCV	C2-C1	2.13	1.58	1.50
9	E	305	JCV	CX3-CX2	-2.13	1.46	1.52
9	e	305	JCV	C17-C16	-2.11	1.46	1.53
9	g	101	JCV	C17-C16	-2.11	1.47	1.53
9	C	301	JCV	C17-C16	-2.10	1.47	1.53
9	E	304	JCV	OY1-CY1	2.10	1.43	1.40
9	c	301	JCV	C3M-C3	-2.09	1.46	1.52
11	U	303[C]	COM	O1S-S2	2.09	1.51	1.45
9	U	304	JCV	C3M-C3	-2.09	1.46	1.52
9	E	305	JCV	C74-C73	-2.09	1.43	1.52
9	U	305	JCV	C20-C19	2.09	1.61	1.52
9	U	305	JCV	C3M-C3	-2.07	1.46	1.52
9	W	101	JCV	C17-C16	-2.07	1.47	1.53
11	E	303[A]	COM	O1S-S2	2.07	1.51	1.45
9	c	301	JCV	C17-C16	-2.07	1.47	1.53
9	W	101	JCV	C3M-C3	-2.06	1.46	1.52
11	e	303[B]	COM	O2S-S2	2.06	1.51	1.45
11	e	303[B]	COM	O1S-S2	2.05	1.51	1.45
9	E	306	JCV	C17-C16	-2.05	1.47	1.53
9	U	305	JCV	C17-C16	-2.05	1.47	1.53
9	C	301	JCV	C20-C19	2.05	1.60	1.52
11	U	303[A]	COM	O2S-S2	2.05	1.51	1.45
11	U	303[A]	COM	O1S-S2	2.05	1.51	1.45
9	E	306	JCV	C59-C60	2.05	1.60	1.52
9	U	305	JCV	C59-C60	2.04	1.60	1.52
9	S	301	JCV	C17-C16	-2.04	1.47	1.53
9	g	101	JCV	C3M-C3	-2.03	1.46	1.52
9	W	101	JCV	C59-C60	2.03	1.60	1.52
9	c	301	JCV	OY1-CY1	2.03	1.43	1.40
9	W	101	JCV	C20-C19	2.03	1.60	1.52
9	g	101	JCV	C20-C19	2.03	1.60	1.52
9	C	301	JCV	C3M-C3	-2.02	1.46	1.52
9	S	301	JCV	C80M-C80	-2.02	1.46	1.52
9	e	304	JCV	C55-C54	2.01	1.60	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
9	e	305	JCV	C20-C19	2.01	1.60	1.52
9	E	306	JCV	C3M-C3	-2.00	1.46	1.52
9	C	301	JCV	C59-C60	2.00	1.60	1.52
9	C	301	JCV	P-O4	2.00	1.65	1.60
9	E	305	JCV	C55-C54	2.00	1.60	1.52

All (134) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	E	304	JCV	OX4-CX2-CX3	-8.22	91.35	110.35
11	e	303[A]	COM	O3S-S2-C2	6.47	116.24	105.77
9	E	304	JCV	CX6-CX1-CX2	6.09	119.63	110.85
11	e	303[A]	COM	O3S-S2-O1S	-5.50	97.83	111.27
9	e	304	JCV	CX4-CX3-CX2	-5.36	101.46	110.82
9	S	301	JCV	CX5-CX4-CX3	5.34	120.15	110.82
9	E	304	JCV	O4-CX1-CX2	5.27	120.92	108.66
9	E	305	JCV	CX4-CX3-CX2	-4.71	102.60	110.82
9	W	101	JCV	CX6-CX1-CX2	4.66	117.57	110.85
11	e	303[B]	COM	O3S-S2-O1S	-4.44	100.43	111.27
9	S	301	JCV	CX4-CX3-CX2	4.40	118.51	110.82
11	E	303[B]	COM	O3S-S2-O2S	-4.28	100.81	111.27
9	e	305	JCV	OG4-C82-C81	-4.27	99.80	108.77
11	E	303[A]	COM	O3S-S2-O2S	-4.22	100.95	111.27
11	U	303[C]	COM	O3S-S2-O1S	-4.19	101.05	111.27
11	E	303[B]	COM	O3S-S2-C2	4.13	112.44	105.77
9	E	305	JCV	CX5-CX4-CX3	-4.12	103.63	110.82
11	U	303[A]	COM	O3S-S2-O1S	-4.05	101.38	111.27
11	E	303[A]	COM	O3S-S2-C2	4.04	112.30	105.77
9	e	304	JCV	CX5-CX4-CX3	-4.01	103.83	110.82
11	e	303[A]	COM	O1S-S2-C2	3.97	111.69	106.92
11	U	303[C]	COM	O1S-S2-C2	3.94	111.66	106.92
9	E	304	JCV	OX2-CX4-CX3	-3.93	101.27	110.35
9	E	305	JCV	C20-C19-C18	-3.88	103.38	115.92
9	E	305	JCV	CY1-CY2-CY3	-3.88	101.92	110.00
9	E	304	JCV	O3-P-O2	-3.81	93.39	112.24
9	e	304	JCV	CG8-CG6-CG7	-3.79	102.82	111.79
11	U	303[C]	COM	O3S-S2-C2	3.79	111.90	105.77
11	U	303[A]	COM	O3S-S2-C2	3.70	111.75	105.77
11	e	303[B]	COM	O1S-S2-C2	3.64	111.30	106.92
11	e	303[B]	COM	O3S-S2-C2	3.60	111.60	105.77
9	E	304	JCV	P-O4-CX1	3.59	132.47	119.41
9	W	101	JCV	CX3-CX2-CX1	3.59	117.88	109.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	E	304	JCV	CX5-CX4-CX3	-3.57	104.60	110.82
11	E	303[B]	COM	O2S-S2-C2	3.42	111.03	106.92
11	U	303[A]	COM	O1S-S2-C2	3.41	111.02	106.92
9	e	305	JCV	CY1-OY5-CY5	-3.26	107.29	113.69
9	E	304	JCV	OX2-CX4-CX5	-3.22	102.91	110.35
9	e	305	JCV	OX5-CX5-CX6	-3.16	103.03	110.35
9	e	304	JCV	CX3-CX2-CX1	-3.16	102.47	109.68
9	S	301	JCV	C55-C56-C57	-3.15	105.74	115.92
9	E	304	JCV	O3-P-O4	3.14	119.18	106.78
9	e	304	JCV	OY5-CY1-CY2	-3.12	103.74	110.35
9	e	304	JCV	OY5-CY1-OY1	-3.07	102.71	109.97
9	E	305	JCV	C63-C64-C65	-3.06	106.03	115.92
11	E	303[A]	COM	O1S-S2-C2	3.00	110.53	106.92
9	S	301	JCV	CX6-CX1-CX2	2.99	115.17	110.85
11	U	303[A]	COM	O2S-S2-C2	2.95	110.47	106.92
9	e	304	JCV	C20-C19-C18	-2.95	106.39	115.92
11	E	303[A]	COM	O2S-S2-C2	2.89	110.40	106.92
9	S	301	JCV	C5-C6-C7	-2.87	106.66	115.92
9	E	305	JCV	CX3-CX2-CX1	-2.86	103.15	109.68
9	e	305	JCV	C51-OG2-CG2	-2.80	108.95	115.40
9	E	305	JCV	CX6-CX5-CX4	-2.79	105.96	110.82
9	E	305	JCV	OX5-CX5-CX4	-2.78	103.91	110.35
9	S	301	JCV	C28-C29-C30	-2.78	106.94	115.92
9	E	305	JCV	CG8-CG6-CG7	-2.76	105.27	111.79
9	E	305	JCV	CY4-CY3-CY2	-2.74	106.03	110.82
9	e	304	JCV	OX5-CX5-CX4	-2.74	104.02	110.35
9	e	304	JCV	CX6-CX5-CX4	-2.73	106.05	110.82
9	E	305	JCV	OY1-CG7-CG6	-2.66	104.48	110.90
11	e	303[B]	COM	O2S-S2-C2	2.66	110.11	106.92
9	E	304	JCV	CX3-CX2-CX1	2.64	115.71	109.68
9	e	304	JCV	C28-C29-C30	-2.59	107.54	115.92
9	e	304	JCV	C53M-C53-C54	-2.59	101.91	111.29
9	e	305	JCV	C55-C56-C57	-2.59	107.56	115.92
9	e	304	JCV	CY1-CY2-CY3	-2.57	104.64	110.00
9	e	305	JCV	CG7-OY1-CY1	-2.57	108.71	113.74
9	E	305	JCV	OY5-CY1-CY2	-2.57	104.90	110.35
9	E	305	JCV	OG6-CG8-CG6	-2.56	103.42	109.44
9	e	304	JCV	C61M-C61-C60	-2.51	102.19	111.29
9	e	305	JCV	C78-C77-C76	-2.51	107.81	115.92
9	e	305	JCV	CX5-CX6-CX1	-2.51	103.96	109.68
9	e	304	JCV	OG4-CG6-CG7	2.51	116.95	109.06
9	S	301	JCV	CG3-CG2-CG1	-2.49	105.89	111.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	E	304	JCV	OY1-CY1-CY2	2.47	112.17	108.30
9	S	301	JCV	C7M-C7-C6	-2.46	102.39	111.29
9	E	304	JCV	C9-C10-C11	-2.44	108.05	115.92
9	e	305	JCV	OY1-CG7-CG6	-2.43	105.04	110.90
9	S	301	JCV	CX6-CX5-CX4	2.41	115.04	110.82
9	e	305	JCV	CY3-CY4-CY5	2.39	114.50	110.24
9	S	301	JCV	C57M-C57-C56	-2.39	102.65	111.29
9	E	304	JCV	O4-P-O2	-2.38	100.55	109.47
9	e	304	JCV	C78-C77-C76	-2.37	108.26	115.92
9	e	304	JCV	OX2-CX4-CX5	-2.37	104.87	110.35
9	S	301	JCV	C63-C62-C61	-2.37	108.27	115.92
9	e	304	JCV	C9-C10-C11	-2.36	108.30	115.92
9	E	304	JCV	C9-C8-C7	-2.34	108.34	115.92
9	e	305	JCV	C5-C6-C7	-2.34	108.36	115.92
9	S	301	JCV	CX3-CX2-CX1	2.33	115.00	109.68
9	e	304	JCV	C72M-C72-C73	-2.33	102.86	111.29
9	E	305	JCV	OG4-C82-C81	-2.33	103.88	108.77
9	e	304	JCV	C63-C64-C65	-2.33	108.40	115.92
9	S	301	JCV	C5-C4-C3	-2.32	108.42	115.92
9	E	305	JCV	C78-C77-C76	-2.32	108.43	115.92
9	E	305	JCV	C9-C8-C7	-2.32	108.43	115.92
9	e	304	JCV	C59-C58-C57	-2.31	108.44	115.92
9	E	304	JCV	C59-C58-C57	-2.31	108.47	115.92
11	E	303[B]	COM	O1S-S2-C2	2.30	109.69	106.92
9	e	305	JCV	C55-C54-C53	-2.30	108.47	115.92
9	E	304	JCV	C28-C27-C26	-2.26	108.61	115.92
9	E	305	JCV	CY1-OY5-CY5	-2.26	109.25	113.69
9	e	304	JCV	OY2-CY2-CY1	2.25	115.51	110.05
9	E	304	JCV	O4-CX1-CX6	2.25	113.89	108.66
9	S	301	JCV	O4-CX1-CX2	-2.25	103.44	108.66
9	E	305	JCV	CX6-CX1-CX2	-2.24	107.63	110.85
11	e	303[A]	COM	O3S-S2-O2S	2.23	116.72	111.27
9	e	305	JCV	C59-C60-C61	-2.21	108.79	115.92
9	E	305	JCV	C53M-C53-C54	-2.20	103.32	111.29
9	E	304	JCV	CX5-CX6-CX1	2.20	114.71	109.68
9	S	301	JCV	C15M-C15-C14	-2.20	103.33	111.29
9	e	304	JCV	C9-C8-C7	-2.20	108.81	115.92
9	E	304	JCV	O1-P-O2	2.19	117.61	109.07
9	e	305	JCV	CX4-CX3-CX2	-2.19	107.01	110.82
9	E	304	JCV	OX4-CX2-CX1	-2.18	104.17	109.94
9	S	301	JCV	C59-C60-C61	-2.17	108.91	115.92
9	E	305	JCV	CY3-CY4-CY5	2.16	114.09	110.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	e	304	JCV	CX6-CX1-CX2	-2.14	107.77	110.85
9	S	301	JCV	C74-C75-C76	-2.14	109.01	115.92
9	E	304	JCV	C28-C29-C30	-2.13	109.03	115.92
9	e	304	JCV	CY3-CY4-CY5	2.09	113.97	110.24
9	e	305	JCV	C63-C62-C61	-2.08	109.19	115.92
9	e	304	JCV	C74-C75-C76	-2.08	109.19	115.92
9	E	304	JCV	C20-C21-C22	-2.07	109.22	115.92
9	E	305	JCV	C80M-C80-C79	-2.07	103.80	111.29
9	E	305	JCV	C20-C21-C22	-2.06	109.25	115.92
9	E	304	JCV	CG7-OY1-CY1	2.06	117.77	113.74
9	S	301	JCV	P-O4-CX1	-2.05	111.96	119.41
9	e	305	JCV	OY1-CY1-CY2	2.03	111.48	108.30
9	S	301	JCV	OX2-CX4-CX5	2.01	115.00	110.35
9	E	305	JCV	C28-C29-C30	-2.01	109.42	115.92
9	S	301	JCV	C63-C64-C65	-2.00	109.44	115.92
9	e	304	JCV	C3M-C3-C4	-2.00	104.04	111.29
9	E	305	JCV	C61M-C61-C60	-2.00	104.04	111.29

All (9) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
9	E	304	JCV	CY4
9	E	306	JCV	CG6
9	c	301	JCV	C80
9	c	301	JCV	C68
9	S	301	JCV	C61
9	S	301	JCV	CY4
9	U	305	JCV	C22
9	W	101	JCV	C26
9	W	101	JCV	CG2

All (672) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
9	C	301	JCV	C52-C51-OG2-CG2
9	C	301	JCV	C30M-C30-C31-C32
9	C	301	JCV	C55-C56-C57-C57M
9	C	301	JCV	C80M-C80-C81-C82
9	C	301	JCV	CG1-O1-P-O2
9	C	301	JCV	CG1-O1-P-O3
9	E	304	JCV	C1-C2-C3-C3M
9	E	304	JCV	C21-C22-C23-C24

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Mol	Chain	Res	Type	Atoms
9	E	304	JCV	C30M-C30-C31-C32
9	E	304	JCV	CX2-CX1-O4-P
9	E	304	JCV	CY2-CY1-OY1-CG7
9	E	304	JCV	OY5-CY1-OY1-CG7
9	E	304	JCV	CX1-O4-P-O3
9	E	305	JCV	CX1-O4-P-O3
9	E	306	JCV	C1-C2-C3-C3M
9	E	306	JCV	C51-C52-C53-C53M
9	E	306	JCV	C65-C66-C67-C68
9	c	301	JCV	CG1-CG2-OG2-C51
9	c	301	JCV	C16-C17-C18-C18M
9	c	301	JCV	C51-C52-C53-C53M
9	c	301	JCV	C80M-C80-C81-C82
9	c	301	JCV	C81-C82-OG4-CG6
9	c	301	JCV	CX6-CX1-O4-P
9	c	301	JCV	CY2-CY1-OY1-CG7
9	c	301	JCV	OY5-CY1-OY1-CG7
9	e	304	JCV	C80M-C80-C81-C82
9	e	304	JCV	CG6-CG8-OG6-C32
9	e	304	JCV	OY5-CY1-OY1-CG7
9	e	304	JCV	CX1-O4-P-O2
9	e	304	JCV	CX1-O4-P-O3
9	e	305	JCV	C30M-C30-C31-C32
9	e	305	JCV	C51-C52-C53-C53M
9	e	305	JCV	C65-C66-C67-C68
9	e	305	JCV	C74-C75-C76-C76M
9	g	101	JCV	C30M-C30-C31-C32
9	S	301	JCV	C1-C2-C3-C3M
9	S	301	JCV	C53M-C53-C54-C55
9	S	301	JCV	CG1-O1-P-O2
9	S	301	JCV	CX1-O4-P-O1
9	U	304	JCV	C30M-C30-C31-C32
9	U	304	JCV	OG4-CG6-CG8-OG6
9	U	304	JCV	OY5-CY1-OY1-CG7
9	U	304	JCV	CX1-O4-P-O2
9	U	304	JCV	CX1-O4-P-O3
9	U	305	JCV	C52-C51-OG2-CG2
9	U	305	JCV	C1-C2-C3-C3M
9	U	305	JCV	C51-C52-C53-C53M
9	U	305	JCV	C80M-C80-C81-C82
9	U	305	JCV	CY2-CY1-OY1-CG7
9	W	101	JCV	CG3-CG2-OG2-C51

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Mol	Chain	Res	Type	Atoms
9	W	101	JCV	C51-C52-C53-C53M
9	W	101	JCV	C59-C60-C61-C61M
9	W	101	JCV	CG8-CG6-OG4-C82
9	W	101	JCV	CY2-CY1-OY1-CG7
9	W	101	JCV	OY5-CY1-OY1-CG7
9	W	101	JCV	CG1-O1-P-O2
11	E	303[A]	COM	C1-C2-S2-O1S
11	E	303[A]	COM	C1-C2-S2-O2S
11	e	303[A]	COM	C1-C2-S2-O1S
11	e	303[A]	COM	C1-C2-S2-O2S
11	e	303[A]	COM	C1-C2-S2-O3S
11	U	303[A]	COM	C1-C2-S2-O2S
11	U	303[C]	COM	C1-C2-S2-O1S
11	U	303[C]	COM	C1-C2-S2-O2S
11	U	303[C]	COM	C1-C2-S2-O3S
9	W	101	JCV	CY4-CY5-CY6-OY6
9	e	305	JCV	CY4-CY5-CY6-OY6
9	E	305	JCV	CG6-CG8-OG6-C32
9	c	301	JCV	CG2-CG3-OG3-C1
9	W	101	JCV	CG6-CG8-OG6-C32
9	C	301	JCV	C31-C32-OG6-CG8
9	e	305	JCV	C31-C32-OG6-CG8
9	U	304	JCV	OY5-CY5-CY6-OY6
9	E	306	JCV	C19-C20-C21-C22
9	e	305	JCV	OY5-CY5-CY6-OY6
9	W	101	JCV	OY5-CY5-CY6-OY6
9	S	301	JCV	CY4-CY5-CY6-OY6
9	C	301	JCV	OY5-CY1-OY1-CG7
9	g	101	JCV	OY5-CY1-OY1-CG7
9	U	305	JCV	OY5-CY1-OY1-CG7
9	C	301	JCV	C2-C1-OG3-CG3
9	E	304	JCV	C31-C32-OG6-CG8
9	U	304	JCV	C66-C67-C68-C69
9	E	304	JCV	OG2-C51-C52-C53
9	S	301	JCV	OG2-C51-C52-C53
9	U	304	JCV	CY4-CY5-CY6-OY6
9	W	101	JCV	C27-C28-C29-C30
9	U	304	JCV	CY2-CY1-OY1-CG7
9	S	301	JCV	OY5-CY5-CY6-OY6
9	C	301	JCV	C13-C14-C15-C15M
9	C	301	JCV	C20-C21-C22-C22M
9	C	301	JCV	C22M-C22-C23-C24

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Mol	Chain	Res	Type	Atoms
9	C	301	JCV	C26M-C26-C27-C28
9	C	301	JCV	C28-C29-C30-C30M
9	C	301	JCV	C57M-C57-C58-C59
9	C	301	JCV	C5-C6-C7-C7M
9	C	301	JCV	C66-C67-C68-C68M
9	C	301	JCV	C76M-C76-C77-C78
9	E	304	JCV	C11M-C11-C12-C13
9	E	304	JCV	C66-C67-C68-C68M
9	E	304	JCV	C76M-C76-C77-C78
9	E	306	JCV	C15M-C15-C16-C17
9	E	306	JCV	C72M-C72-C73-C74
9	E	306	JCV	C74-C75-C76-C76M
9	c	301	JCV	C53M-C53-C54-C55
9	c	301	JCV	C55-C56-C57-C57M
9	c	301	JCV	C59-C60-C61-C61M
9	c	301	JCV	C65M-C65-C66-C67
9	e	304	JCV	C66-C67-C68-C68M
9	e	304	JCV	C78-C79-C80-C80M
9	e	305	JCV	C11M-C11-C12-C13
9	e	305	JCV	C22M-C22-C23-C24
9	e	305	JCV	C78-C79-C80-C80M
9	g	101	JCV	C15M-C15-C16-C17
9	g	101	JCV	C16-C17-C18-C18M
9	g	101	JCV	C63-C64-C65-C65M
9	g	101	JCV	C72M-C72-C73-C74
9	g	101	JCV	C76M-C76-C77-C78
9	g	101	JCV	C78-C79-C80-C80M
9	S	301	JCV	C18M-C18-C19-C20
9	S	301	JCV	C20-C21-C22-C22M
9	S	301	JCV	C65M-C65-C66-C67
9	U	304	JCV	C28-C29-C30-C30M
9	U	305	JCV	C55-C56-C57-C57M
9	U	305	JCV	C61M-C61-C62-C63
9	U	305	JCV	C63-C64-C65-C65M
9	U	305	JCV	C72M-C72-C73-C74
9	U	305	JCV	C76M-C76-C77-C78
9	W	101	JCV	C16-C17-C18-C18M
9	W	101	JCV	C22M-C22-C23-C24
9	W	101	JCV	C65M-C65-C66-C67
9	E	306	JCV	C53-C54-C55-C56
9	e	305	JCV	C26-C27-C28-C29
9	S	301	JCV	C11-C12-C13-C14

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Mol	Chain	Res	Type	Atoms
9	W	101	JCV	C18-C19-C20-C21
9	g	101	JCV	C61-C62-C63-C64
9	C	301	JCV	C62-C63-C64-C65
9	e	305	JCV	C18-C19-C20-C21
9	e	305	JCV	C27-C28-C29-C30
9	e	305	JCV	C58-C59-C60-C61
9	S	301	JCV	C76-C77-C78-C79
9	U	304	JCV	C19-C20-C21-C22
9	E	304	JCV	C29-C30-C31-C32
9	g	101	JCV	C29-C30-C31-C32
9	C	301	JCV	C27-C28-C29-C30
9	C	301	JCV	C57-C58-C59-C60
9	c	301	JCV	C19-C20-C21-C22
9	g	101	JCV	C57-C58-C59-C60
9	U	304	JCV	C70-C71-C72-C73
9	E	304	JCV	C58-C59-C60-C61
9	W	101	JCV	C76-C77-C78-C79
9	W	101	JCV	C7-C8-C9-C10
9	e	304	JCV	OY5-CY5-CY6-OY6
9	C	301	JCV	C69-C70-C71-C72
9	S	301	JCV	C26-C27-C28-C29
9	E	306	JCV	C54-C55-C56-C57
9	E	304	JCV	C5-C6-C7-C8
9	E	304	JCV	C60-C61-C62-C63
9	E	305	JCV	C59-C60-C61-C62
9	E	306	JCV	C21-C22-C23-C24
9	c	301	JCV	C78-C79-C80-C81
9	e	305	JCV	C2-C3-C4-C5
9	e	305	JCV	C56-C57-C58-C59
9	e	305	JCV	C67-C68-C69-C70
9	g	101	JCV	C55-C56-C57-C58
9	S	301	JCV	C71-C72-C73-C74
9	U	304	JCV	C17-C18-C19-C20
9	U	305	JCV	C10-C11-C12-C13
9	U	305	JCV	C13-C14-C15-C16
9	U	305	JCV	C20-C21-C22-C23
9	U	305	JCV	C2-C3-C4-C5
9	W	101	JCV	C9-C10-C11-C12
9	W	101	JCV	C70-C71-C72-C73
9	e	304	JCV	C76-C77-C78-C79
9	S	301	JCV	C54-C55-C56-C57
9	U	305	JCV	C62-C63-C64-C65

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Mol	Chain	Res	Type	Atoms
9	E	306	JCV	C77-C78-C79-C80
9	e	305	JCV	C73-C74-C75-C76
9	C	301	JCV	C19-C20-C21-C22
9	E	305	JCV	C73-C74-C75-C76
9	c	301	JCV	C3-C4-C5-C6
9	W	101	JCV	C23-C24-C25-C26
9	W	101	JCV	C26-C27-C28-C29
9	C	301	JCV	C54-C55-C56-C57
9	c	301	JCV	C23-C24-C25-C26
9	c	301	JCV	C62-C63-C64-C65
9	c	301	JCV	C69-C70-C71-C72
9	e	305	JCV	C69-C70-C71-C72
9	g	101	JCV	C22-C23-C24-C25
9	W	101	JCV	C62-C63-C64-C65
9	C	301	JCV	CG1-O1-P-O4
9	C	301	JCV	C68-C69-C70-C71
9	E	304	JCV	C30-C31-C32-OG6
9	E	306	JCV	C80-C81-C82-OG4
9	U	304	JCV	C30-C31-C32-OG6
9	E	306	JCV	CY2-CY1-OY1-CG7
9	e	304	JCV	CY2-CY1-OY1-CG7
9	E	304	JCV	C22-C23-C24-C25
9	C	301	JCV	C70-C71-C72-C72M
9	c	301	JCV	C15M-C15-C16-C17
9	c	301	JCV	C24-C25-C26-C26M
9	c	301	JCV	C78-C79-C80-C80M
9	e	305	JCV	C65M-C65-C66-C67
9	S	301	JCV	C72M-C72-C73-C74
9	U	304	JCV	C18M-C18-C19-C20
9	U	305	JCV	C11M-C11-C12-C13
9	W	101	JCV	C24-C25-C26-C26M
9	W	101	JCV	C78-C79-C80-C80M
9	g	101	JCV	C19-C20-C21-C22
9	U	304	JCV	C76-C77-C78-C79
9	S	301	JCV	C53-C54-C55-C56
9	U	305	JCV	CG6-CG8-OG6-C32
9	E	306	JCV	OY5-CY1-OY1-CG7
9	e	305	JCV	C62-C63-C64-C65
9	E	304	JCV	C18-C19-C20-C21
9	S	301	JCV	C57-C58-C59-C60
9	S	301	JCV	C61-C62-C63-C64
9	c	301	JCV	C29-C30-C31-C32

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Mol	Chain	Res	Type	Atoms
9	S	301	JCV	C79-C80-C81-C82
9	C	301	JCV	C26-C27-C28-C29
9	e	305	JCV	C72-C73-C74-C75
9	E	304	JCV	C26-C27-C28-C29
9	E	306	JCV	C18-C19-C20-C21
9	e	304	JCV	C19-C20-C21-C22
9	W	101	JCV	C53-C54-C55-C56
9	E	305	JCV	C30-C31-C32-OG6
9	W	101	JCV	C30-C31-C32-OG6
9	W	101	JCV	C80-C81-C82-OG4
9	E	305	JCV	C19-C20-C21-C22
9	C	301	JCV	C16-C17-C18-C19
9	C	301	JCV	C21-C22-C23-C24
9	C	301	JCV	C56-C57-C58-C59
9	C	301	JCV	C75-C76-C77-C78
9	E	304	JCV	C10-C11-C12-C13
9	c	301	JCV	C14-C15-C16-C17
9	c	301	JCV	C2-C3-C4-C5
9	e	304	JCV	C24-C25-C26-C27
9	e	304	JCV	C64-C65-C66-C67
9	e	304	JCV	C71-C72-C73-C74
9	e	305	JCV	C52-C53-C54-C55
9	e	305	JCV	C59-C60-C61-C62
9	g	101	JCV	C28-C29-C30-C31
9	g	101	JCV	C63-C64-C65-C66
9	g	101	JCV	C75-C76-C77-C78
9	S	301	JCV	C16-C17-C18-C19
9	U	305	JCV	C5-C6-C7-C8
9	W	101	JCV	C78-C79-C80-C81
9	U	304	JCV	C26-C27-C28-C29
9	U	305	JCV	C19-C20-C21-C22
9	C	301	JCV	C4-C5-C6-C7
9	U	305	JCV	C26-C27-C28-C29
9	C	301	JCV	C58-C59-C60-C61
9	E	304	JCV	C62-C63-C64-C65
9	g	101	JCV	OG2-CG2-CG3-OG3
9	E	305	JCV	OY5-CY5-CY6-OY6
9	C	301	JCV	C16-C17-C18-C18M
9	E	304	JCV	C65M-C65-C66-C67
9	E	305	JCV	C72M-C72-C73-C74
9	E	306	JCV	C66-C67-C68-C68M
9	c	301	JCV	C11M-C11-C12-C13

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Mol	Chain	Res	Type	Atoms
9	c	301	JCV	C13-C14-C15-C15M
9	c	301	JCV	C3M-C3-C4-C5
9	e	305	JCV	C68M-C68-C69-C70
9	g	101	JCV	C20-C21-C22-C22M
9	g	101	JCV	C28-C29-C30-C30M
9	U	305	JCV	C18M-C18-C19-C20
9	U	305	JCV	C24-C25-C26-C26M
9	U	305	JCV	C53M-C53-C54-C55
9	W	101	JCV	C9-C10-C11-C11M
9	W	101	JCV	C13-C14-C15-C15M
9	W	101	JCV	C70-C71-C72-C72M
9	U	305	JCV	C76-C77-C78-C79
9	E	306	JCV	OY5-CY5-CY6-OY6
9	E	304	JCV	C19-C20-C21-C22
9	E	306	JCV	C11-C12-C13-C14
9	e	305	JCV	C54-C55-C56-C57
9	U	305	JCV	C68-C69-C70-C71
9	c	301	JCV	CG1-O1-P-O4
9	g	101	JCV	C68-C69-C70-C71
11	E	303[A]	COM	S1-C1-C2-S2
9	E	306	JCV	C1-C2-C3-C4
9	E	306	JCV	C51-C52-C53-C54
9	e	304	JCV	C79-C80-C81-C82
9	U	305	JCV	C51-C52-C53-C54
9	U	305	JCV	C79-C80-C81-C82
9	E	304	JCV	CG1-CG2-CG3-OG3
9	E	306	JCV	CG8-CG6-CG7-OY1
9	c	301	JCV	CG1-CG2-CG3-OG3
9	c	301	JCV	CG8-CG6-CG7-OY1
9	e	305	JCV	CG7-CG6-CG8-OG6
9	g	101	JCV	CG7-CG6-CG8-OG6
9	S	301	JCV	CG7-CG6-CG8-OG6
9	U	304	JCV	CG8-CG6-CG7-OY1
9	U	304	JCV	CG7-CG6-CG8-OG6
9	U	305	JCV	CG8-CG6-CG7-OY1
9	e	304	JCV	C73-C74-C75-C76
9	c	301	JCV	CG6-CG7-OY1-CY1
9	E	305	JCV	C68-C69-C70-C71
9	E	305	JCV	CX1-O4-P-O1
9	e	304	JCV	CX1-O4-P-O1
9	U	304	JCV	CX1-O4-P-O1
9	C	301	JCV	OY5-CY5-CY6-OY6

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Mol	Chain	Res	Type	Atoms
9	U	305	JCV	C3-C4-C5-C6
9	E	306	JCV	C61-C62-C63-C64
9	e	304	JCV	C68-C69-C70-C71
9	c	301	JCV	C61-C62-C63-C64
9	E	306	JCV	OG4-CG6-CG8-OG6
9	e	304	JCV	OG4-CG6-CG7-OY1
9	W	101	JCV	OG4-CG6-CG7-OY1
9	U	305	JCV	C72-C73-C74-C75
9	c	301	JCV	CX2-CX1-O4-P
9	C	301	JCV	C5-C6-C7-C8
9	E	304	JCV	C28-C29-C30-C31
9	E	305	JCV	C17-C18-C19-C20
9	E	306	JCV	C52-C53-C54-C55
9	E	306	JCV	C56-C57-C58-C59
9	E	306	JCV	C66-C67-C68-C69
9	E	306	JCV	C71-C72-C73-C74
9	c	301	JCV	C13-C14-C15-C16
9	c	301	JCV	C52-C53-C54-C55
9	c	301	JCV	C56-C57-C58-C59
9	e	304	JCV	C17-C18-C19-C20
9	e	304	JCV	C63-C64-C65-C66
9	e	304	JCV	C66-C67-C68-C69
9	e	305	JCV	C9-C10-C11-C12
9	e	305	JCV	C6-C7-C8-C9
9	e	305	JCV	C74-C75-C76-C77
9	g	101	JCV	C20-C21-C22-C23
9	g	101	JCV	C78-C79-C80-C81
9	S	301	JCV	C17-C18-C19-C20
9	S	301	JCV	C64-C65-C66-C67
9	U	305	JCV	C17-C18-C19-C20
9	U	305	JCV	C52-C53-C54-C55
9	U	305	JCV	C55-C56-C57-C58
9	W	101	JCV	C20-C21-C22-C23
9	W	101	JCV	C59-C60-C61-C62
9	W	101	JCV	C66-C67-C68-C69
9	C	301	JCV	C18M-C18-C19-C20
9	C	301	JCV	C65M-C65-C66-C67
9	E	304	JCV	C26M-C26-C27-C28
9	E	304	JCV	C28-C29-C30-C30M
9	E	305	JCV	C18M-C18-C19-C20
9	E	305	JCV	C59-C60-C61-C61M
9	E	306	JCV	C16-C17-C18-C18M

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Mol	Chain	Res	Type	Atoms
9	E	306	JCV	C53M-C53-C54-C55
9	c	301	JCV	C61M-C61-C62-C63
9	e	304	JCV	C18M-C18-C19-C20
9	e	305	JCV	C9-C10-C11-C11M
9	e	305	JCV	C57M-C57-C58-C59
9	e	305	JCV	C7M-C7-C8-C9
9	g	101	JCV	C26M-C26-C27-C28
9	g	101	JCV	C59-C60-C61-C61M
9	S	301	JCV	C7M-C7-C8-C9
9	U	305	JCV	C13-C14-C15-C15M
9	U	305	JCV	C22M-C22-C23-C24
9	U	305	JCV	C28-C29-C30-C30M
9	U	305	JCV	C3M-C3-C4-C5
9	U	305	JCV	C57M-C57-C58-C59
11	E	303[B]	COM	C1-C2-S2-O2S
11	U	303[A]	COM	C1-C2-S2-O1S
9	c	301	JCV	C72-C73-C74-C75
9	U	305	JCV	C18-C19-C20-C21
9	W	101	JCV	C68-C69-C70-C71
9	U	305	JCV	O1-CG1-CG2-CG3
11	E	303[A]	COM	C1-C2-S2-O3S
11	U	303[A]	COM	C1-C2-S2-O3S
9	e	305	JCV	C4-C5-C6-C7
9	e	305	JCV	C30-C31-C32-OG6
9	c	301	JCV	C53-C54-C55-C56
9	E	304	JCV	CX1-O4-P-O1
9	C	301	JCV	C29-C30-C31-C32
9	e	305	JCV	C29-C30-C31-C32
9	e	305	JCV	C51-C52-C53-C54
9	U	304	JCV	C29-C30-C31-C32
9	E	304	JCV	C77-C78-C79-C80
9	E	306	JCV	CG7-CG6-CG8-OG6
9	g	101	JCV	CG1-CG2-CG3-OG3
9	U	304	JCV	CG7-CG6-OG4-C82
9	U	305	JCV	CG1-CG2-CG3-OG3
9	U	305	JCV	CG7-CG6-CG8-OG6
9	E	305	JCV	CX1-O4-P-O2
9	E	306	JCV	CX1-O4-P-O2
9	S	301	JCV	CX1-O4-P-O2
9	C	301	JCV	C18-C19-C20-C21
9	C	301	JCV	CG6-CG8-OG6-C32
9	W	101	JCV	CG1-O1-P-O4

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Mol	Chain	Res	Type	Atoms
9	S	301	JCV	C23-C24-C25-C26
9	E	304	JCV	OG2-CG2-CG3-OG3
9	E	304	JCV	OG4-CG6-CG8-OG6
9	E	306	JCV	OG4-CG6-CG7-OY1
9	S	301	JCV	OG4-CG6-CG8-OG6
9	E	304	JCV	C7-C8-C9-C10
9	C	301	JCV	C53M-C53-C54-C55
9	C	301	JCV	C63-C64-C65-C65M
9	E	304	JCV	C5-C6-C7-C7M
9	E	306	JCV	C5-C6-C7-C7M
9	e	304	JCV	C68M-C68-C69-C70
9	e	305	JCV	C15M-C15-C16-C17
9	e	305	JCV	C3M-C3-C4-C5
9	g	101	JCV	C55-C56-C57-C57M
9	W	101	JCV	C20-C21-C22-C22M
9	W	101	JCV	C7M-C7-C8-C9
9	W	101	JCV	C72M-C72-C73-C74
9	e	305	JCV	C19-C20-C21-C22
9	E	304	JCV	OY5-CY5-CY6-OY6
9	e	305	JCV	C3-C4-C5-C6
9	c	301	JCV	C2-C1-OG3-CG3
9	e	305	JCV	O1-CG1-CG2-CG3
9	C	301	JCV	C25-C26-C27-C28
9	C	301	JCV	C52-C53-C54-C55
9	C	301	JCV	C55-C56-C57-C58
9	C	301	JCV	C64-C65-C66-C67
9	C	301	JCV	C66-C67-C68-C69
9	E	305	JCV	C75-C76-C77-C78
9	E	306	JCV	C16-C17-C18-C19
9	c	301	JCV	C16-C17-C18-C19
9	c	301	JCV	C55-C56-C57-C58
9	c	301	JCV	C64-C65-C66-C67
9	c	301	JCV	C71-C72-C73-C74
9	e	304	JCV	C67-C68-C69-C70
9	e	305	JCV	C21-C22-C23-C24
9	e	305	JCV	C60-C61-C62-C63
9	g	101	JCV	C25-C26-C27-C28
9	g	101	JCV	C67-C68-C69-C70
9	S	301	JCV	C20-C21-C22-C23
9	S	301	JCV	C52-C53-C54-C55
9	S	301	JCV	C63-C64-C65-C66
9	S	301	JCV	C6-C7-C8-C9

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Mol	Chain	Res	Type	Atoms
9	U	304	JCV	C28-C29-C30-C31
9	U	305	JCV	C21-C22-C23-C24
9	U	305	JCV	C28-C29-C30-C31
9	U	305	JCV	C63-C64-C65-C66
9	U	305	JCV	C64-C65-C66-C67
9	U	305	JCV	C71-C72-C73-C74
9	W	101	JCV	C60-C61-C62-C63
9	W	101	JCV	C63-C64-C65-C66
9	C	301	JCV	CX1-O4-P-O1
9	c	301	JCV	CX1-O4-P-O1
9	S	301	JCV	C73-C74-C75-C76
9	S	301	JCV	C12-C13-C14-C15
9	C	301	JCV	C79-C80-C81-C82
9	E	304	JCV	C1-C2-C3-C4
9	c	301	JCV	C79-C80-C81-C82
9	U	305	JCV	C1-C2-C3-C4
9	C	301	JCV	CG8-CG6-CG7-OY1
9	E	304	JCV	CG7-CG6-CG8-OG6
9	W	101	JCV	CG8-CG6-CG7-OY1
9	C	301	JCV	O1-CG1-CG2-OG2
9	E	304	JCV	O1-CG1-CG2-OG2
9	E	306	JCV	O1-CG1-CG2-OG2
9	c	301	JCV	C26-C27-C28-C29
9	C	301	JCV	OG4-CG6-CG7-OY1
9	c	301	JCV	OG4-CG6-CG7-OY1
9	E	304	JCV	C65-C66-C67-C68
9	E	304	JCV	C63-C64-C65-C65M
9	E	305	JCV	C76M-C76-C77-C78
9	E	306	JCV	C22M-C22-C23-C24
9	e	304	JCV	C63-C64-C65-C65M
9	g	101	JCV	C68M-C68-C69-C70
9	U	305	JCV	C20-C21-C22-C22M
9	U	305	JCV	C65M-C65-C66-C67
9	W	101	JCV	C61M-C61-C62-C63
9	c	301	JCV	C31-C32-OG6-CG8
9	e	305	JCV	C2-C1-OG3-CG3
9	U	305	JCV	C30-C31-C32-OG6
9	S	301	JCV	C27-C28-C29-C30
9	S	301	JCV	CG1-O1-P-O4
9	c	301	JCV	CG2-CG1-O1-P
9	g	101	JCV	CG2-CG1-O1-P
9	c	301	JCV	CG1-O1-P-O3

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Mol	Chain	Res	Type	Atoms
9	W	101	JCV	CG1-O1-P-O3
9	C	301	JCV	O1-CG1-CG2-CG3
9	E	304	JCV	O1-CG1-CG2-CG3
9	E	306	JCV	O1-CG1-CG2-CG3
9	c	301	JCV	O1-CG1-CG2-CG3
9	U	304	JCV	C71-C72-C73-C74
9	U	304	JCV	C79-C80-C81-C82
9	E	304	JCV	C56-C57-C58-C59
9	E	304	JCV	C63-C64-C65-C66
9	E	304	JCV	C66-C67-C68-C69
9	E	304	JCV	C6-C7-C8-C9
9	E	304	JCV	C75-C76-C77-C78
9	E	305	JCV	C24-C25-C26-C27
9	c	301	JCV	O1-CG1-CG2-OG2
9	c	301	JCV	C59-C60-C61-C62
9	c	301	JCV	C60-C61-C62-C63
9	c	301	JCV	C74-C75-C76-C77
9	e	304	JCV	C74-C75-C76-C77
9	e	305	JCV	C10-C11-C12-C13
9	e	305	JCV	C14-C15-C16-C17
9	e	305	JCV	C78-C79-C80-C81
9	g	101	JCV	C14-C15-C16-C17
9	g	101	JCV	C71-C72-C73-C74
9	S	301	JCV	C66-C67-C68-C69
9	U	304	JCV	C24-C25-C26-C27
9	U	305	JCV	O1-CG1-CG2-OG2
9	U	305	JCV	C6-C7-C8-C9
9	U	305	JCV	C70-C71-C72-C73
9	W	101	JCV	C21-C22-C23-C24
9	W	101	JCV	C25-C26-C27-C28
9	W	101	JCV	C64-C65-C66-C67
9	W	101	JCV	C6-C7-C8-C9
11	e	303[B]	COM	S1-C1-C2-S2
11	U	303[A]	COM	S1-C1-C2-S2
9	C	301	JCV	C23-C24-C25-C26
9	c	301	JCV	C51-C52-C53-C54
9	W	101	JCV	C51-C52-C53-C54
9	E	305	JCV	CG8-CG6-OG4-C82
9	e	304	JCV	CG8-CG6-CG7-OY1
9	g	101	JCV	C51-C52-C53-C53M
9	S	301	JCV	C51-C52-C53-C53M
9	U	305	JCV	C30M-C30-C31-C32

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Mol	Chain	Res	Type	Atoms
9	c	301	JCV	OG2-CG2-CG3-OG3
9	e	304	JCV	OG4-CG6-CG8-OG6
9	g	101	JCV	OG4-CG6-CG8-OG6
9	U	304	JCV	OG4-CG6-CG7-OY1
9	U	305	JCV	OG2-CG2-CG3-OG3
9	U	305	JCV	OG4-CG6-CG7-OY1
9	U	305	JCV	OG4-CG6-CG8-OG6
9	e	305	JCV	CG6-CG7-OY1-CY1
9	E	305	JCV	C76-C77-C78-C79
9	C	301	JCV	C15M-C15-C16-C17
9	C	301	JCV	C61M-C61-C62-C63
9	E	304	JCV	C22M-C22-C23-C24
9	E	304	JCV	C57M-C57-C58-C59
9	E	304	JCV	C7M-C7-C8-C9
9	E	305	JCV	C26M-C26-C27-C28
9	E	306	JCV	C11M-C11-C12-C13
9	E	306	JCV	C57M-C57-C58-C59
9	c	301	JCV	C20-C21-C22-C22M
9	c	301	JCV	C57M-C57-C58-C59
9	c	301	JCV	C72M-C72-C73-C74
9	e	304	JCV	C24-C25-C26-C26M
9	e	304	JCV	C72M-C72-C73-C74
9	e	305	JCV	C26M-C26-C27-C28
9	e	305	JCV	C61M-C61-C62-C63
9	S	301	JCV	C28-C29-C30-C30M
9	S	301	JCV	C63-C64-C65-C65M
9	W	101	JCV	C63-C64-C65-C65M
9	e	304	JCV	C31-C32-OG6-CG8
9	W	101	JCV	C57-C58-C59-C60
9	C	301	JCV	CG2-CG3-OG3-C1
9	S	301	JCV	CG2-CG3-OG3-C1
9	U	305	JCV	CG2-CG3-OG3-C1
9	U	304	JCV	C78-C79-C80-C81
9	e	305	JCV	O1-CG1-CG2-OG2
9	g	101	JCV	C27-C28-C29-C30
9	S	301	JCV	C62-C63-C64-C65
9	C	301	JCV	OG4-CG6-CG8-OG6
9	e	305	JCV	OG4-CG6-CG8-OG6
9	e	305	JCV	C1-C2-C3-C4
9	C	301	JCV	CG7-CG6-CG8-OG6
9	C	301	JCV	C13-C14-C15-C16
9	C	301	JCV	C28-C29-C30-C31

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Mol	Chain	Res	Type	Atoms
9	C	301	JCV	C60-C61-C62-C63
9	E	305	JCV	C56-C57-C58-C59
9	E	306	JCV	C63-C64-C65-C66
9	c	301	JCV	C66-C67-C68-C69
9	e	304	JCV	C13-C14-C15-C16
9	e	304	JCV	C59-C60-C61-C62
9	S	301	JCV	C14-C15-C16-C17
9	U	304	JCV	C59-C60-C61-C62
9	W	101	JCV	C16-C17-C18-C19
9	E	306	JCV	CX1-O4-P-O1
9	c	301	JCV	C74-C75-C76-C76M
9	e	304	JCV	C74-C75-C76-C76M
9	S	301	JCV	C22M-C22-C23-C24
9	S	301	JCV	C66-C67-C68-C68M
9	U	305	JCV	C7M-C7-C8-C9
9	U	305	JCV	C70-C71-C72-C72M
9	W	101	JCV	C26M-C26-C27-C28
9	g	101	JCV	C31-C32-OG6-CG8
9	g	101	JCV	C81-C82-OG4-CG6
9	E	305	JCV	C26-C27-C28-C29
9	g	101	JCV	C23-C24-C25-C26
9	E	306	JCV	C31-C32-OG6-CG8
9	C	301	JCV	C11M-C11-C12-C13
9	E	304	JCV	C3M-C3-C4-C5
9	E	306	JCV	C63-C64-C65-C65M
9	c	301	JCV	C66-C67-C68-C68M
9	e	304	JCV	C26M-C26-C27-C28
9	U	305	JCV	C5-C6-C7-C7M
9	C	301	JCV	C53-C54-C55-C56
9	C	301	JCV	C73-C74-C75-C76
9	c	301	JCV	CG7-CG6-CG8-OG6
9	e	305	JCV	CG8-CG6-CG7-OY1
9	E	305	JCV	C3-C4-C5-C6
9	E	306	JCV	CX1-O4-P-O3
9	C	301	JCV	C20-C21-C22-C23
9	E	306	JCV	C74-C75-C76-C77
9	g	101	JCV	C21-C22-C23-C24
9	g	101	JCV	C6-C7-C8-C9
9	U	304	JCV	C2-C3-C4-C5
9	U	305	JCV	C75-C76-C77-C78
9	e	305	JCV	CG2-CG3-OG3-C1
9	C	301	JCV	C3-C4-C5-C6

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Mol	Chain	Res	Type	Atoms
9	c	301	JCV	C11-C12-C13-C14
9	W	101	JCV	C12-C13-C14-C15
9	W	101	JCV	C31-C32-OG6-CG8
9	c	301	JCV	C65-C66-C67-C68
11	E	303[B]	COM	S1-C1-C2-S2
9	E	305	JCV	C57M-C57-C58-C59
9	E	306	JCV	C59-C60-C61-C61M
9	S	301	JCV	C58-C59-C60-C61
9	e	304	JCV	CY4-CY5-CY6-OY6
9	U	305	JCV	C27-C28-C29-C30
9	U	305	JCV	C4-C5-C6-C7
9	E	306	JCV	C52-C51-OG2-CG2
9	S	301	JCV	C52-C51-OG2-CG2
9	U	305	JCV	CG6-CG7-OY1-CY1
9	e	305	JCV	C76-C77-C78-C79
9	U	304	JCV	C3-C4-C5-C6
9	g	101	JCV	C2-C1-OG3-CG3
9	W	101	JCV	C4-C5-C6-C7
9	E	306	JCV	C75-C76-C77-C78
9	e	304	JCV	C78-C79-C80-C81
9	e	305	JCV	C66-C67-C68-C69
9	S	301	JCV	C10-C11-C12-C13
9	U	304	JCV	C20-C21-C22-C23
9	W	101	JCV	C55-C56-C57-C58
9	E	306	JCV	C73-C74-C75-C76
9	E	304	JCV	C61M-C61-C62-C63
9	e	304	JCV	C65M-C65-C66-C67
9	g	101	JCV	C7M-C7-C8-C9
9	W	101	JCV	C28-C29-C30-C30M
9	g	101	JCV	C79-C80-C81-C82
9	E	306	JCV	CG1-CG2-CG3-OG3
9	e	304	JCV	CG7-CG6-CG8-OG6
9	C	301	JCV	C77-C78-C79-C80
9	e	304	JCV	C22-C23-C24-C25
9	E	305	JCV	OG4-CG6-CG8-OG6
9	E	306	JCV	OG2-CG2-CG3-OG3
9	e	305	JCV	OG2-CG2-CG3-OG3
9	g	101	JCV	C24-C25-C26-C27
9	U	305	JCV	C60-C61-C62-C63
9	C	301	JCV	C9-C10-C11-C11M
9	E	305	JCV	C24-C25-C26-C26M
9	c	301	JCV	C22M-C22-C23-C24

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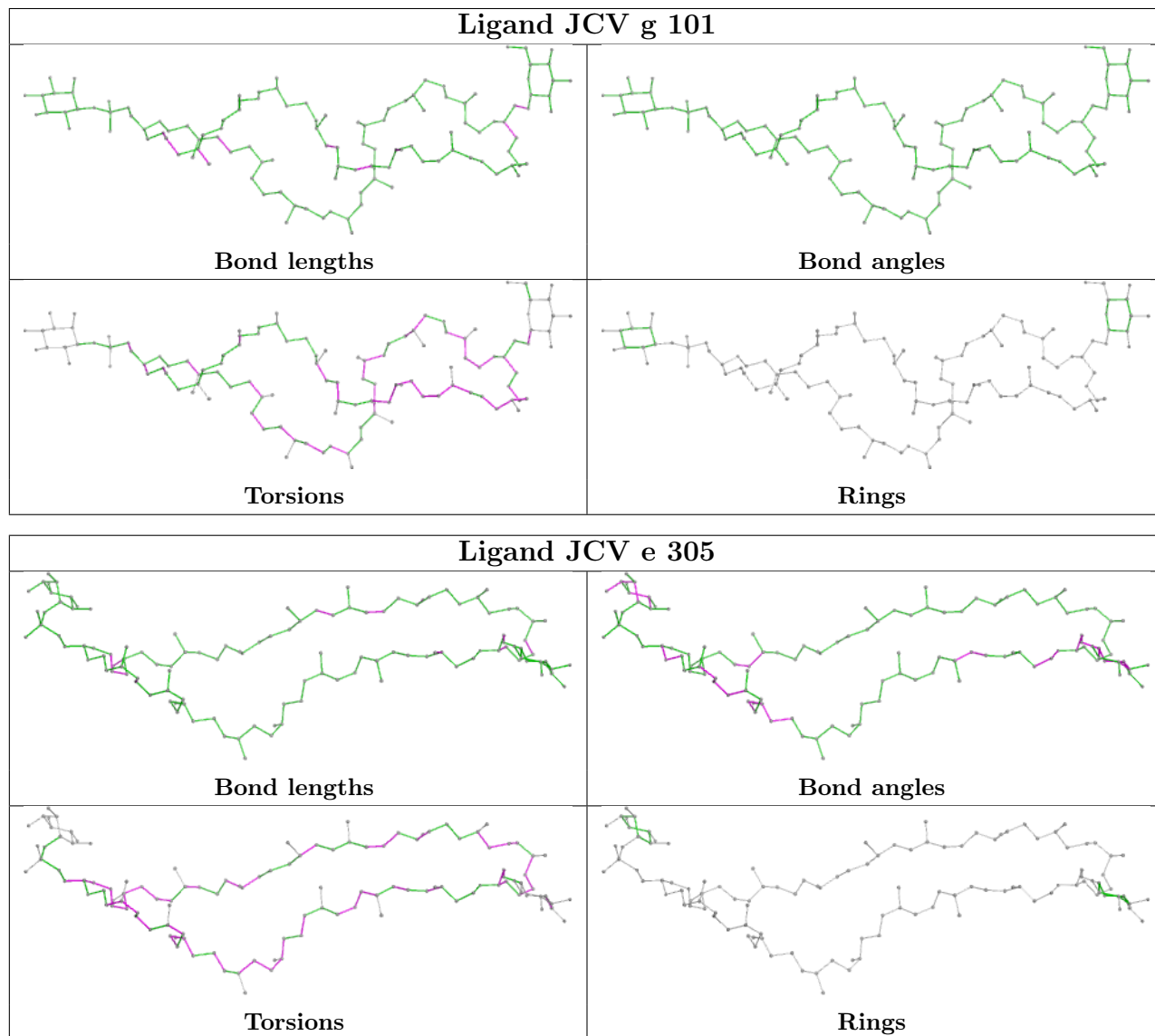
Mol	Chain	Res	Type	Atoms
9	e	304	JCV	C59-C60-C61-C61M
9	e	305	JCV	C53M-C53-C54-C55
9	e	305	JCV	C59-C60-C61-C61M
9	g	101	JCV	C24-C25-C26-C26M
9	g	101	JCV	C74-C75-C76-C76M
9	S	301	JCV	C16-C17-C18-C18M
9	U	304	JCV	C59-C60-C61-C61M
9	U	305	JCV	C74-C75-C76-C76M
9	c	301	JCV	C30-C31-C32-OG6
9	e	304	JCV	C30-C31-C32-OG6
9	e	304	JCV	C61-C62-C63-C64
9	e	305	JCV	OG3-C1-C2-C3
9	g	101	JCV	C80-C81-C82-OG4
9	E	304	JCV	C78-C79-C80-C80M
9	E	306	JCV	C7M-C7-C8-C9
9	E	306	JCV	C76M-C76-C77-C78
9	S	301	JCV	C70-C71-C72-C72M
9	U	304	JCV	C61M-C61-C62-C63
9	W	101	JCV	C18M-C18-C19-C20
9	S	301	JCV	C72-C73-C74-C75
9	E	304	JCV	C12-C13-C14-C15
9	E	304	JCV	C78-C79-C80-C81
9	E	305	JCV	C13-C14-C15-C16
9	E	305	JCV	C2-C3-C4-C5
9	E	306	JCV	C14-C15-C16-C17
9	c	301	JCV	C21-C22-C23-C24
9	g	101	JCV	C16-C17-C18-C19
9	g	101	JCV	C70-C71-C72-C73
9	U	305	JCV	C74-C75-C76-C77
9	U	305	JCV	C78-C79-C80-C81
9	W	101	JCV	C28-C29-C30-C31
9	E	305	JCV	OY5-CY1-OY1-CG7
9	U	305	JCV	C22-C23-C24-C25
9	E	306	JCV	C62-C63-C64-C65

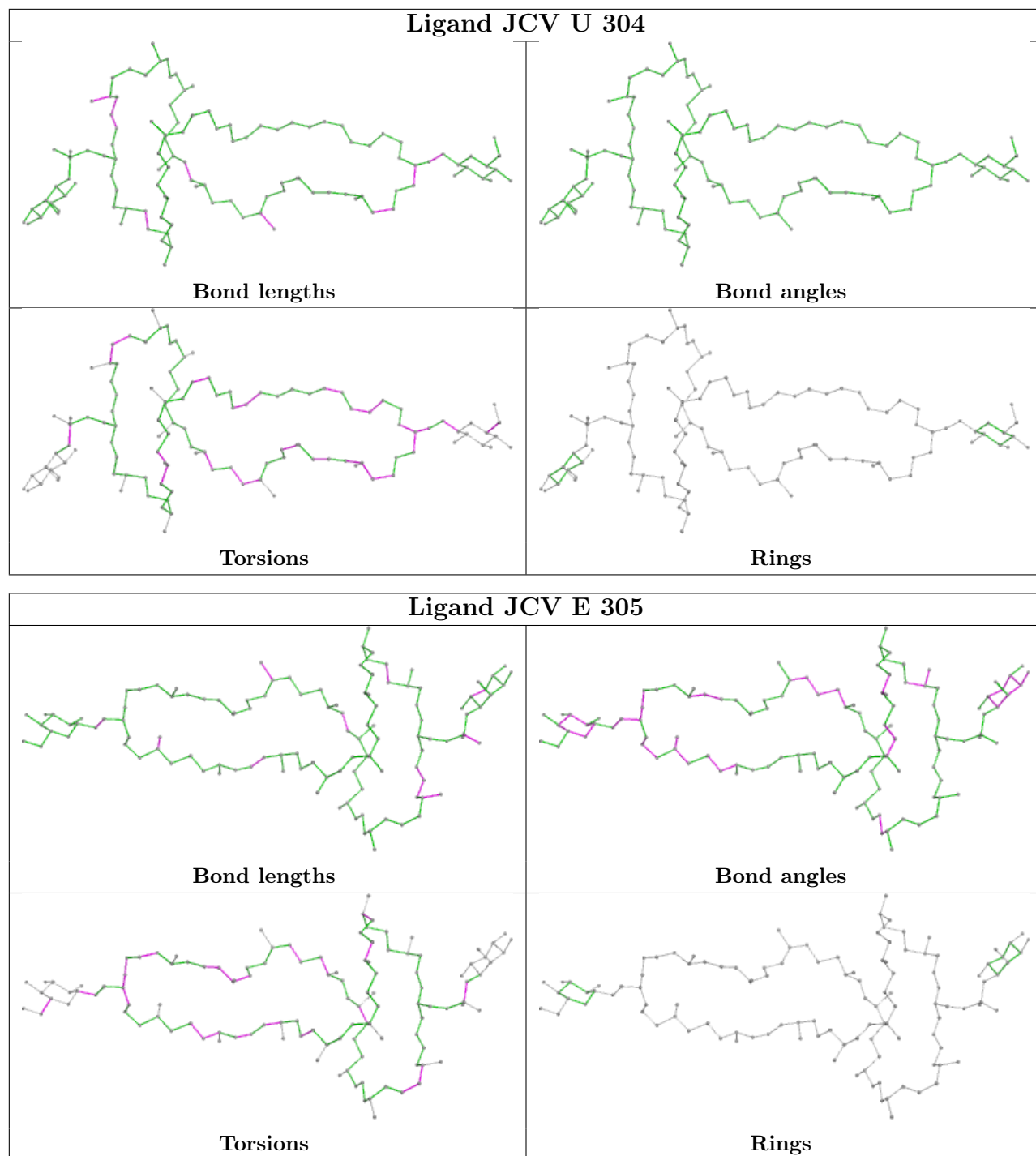
There are no ring outliers.

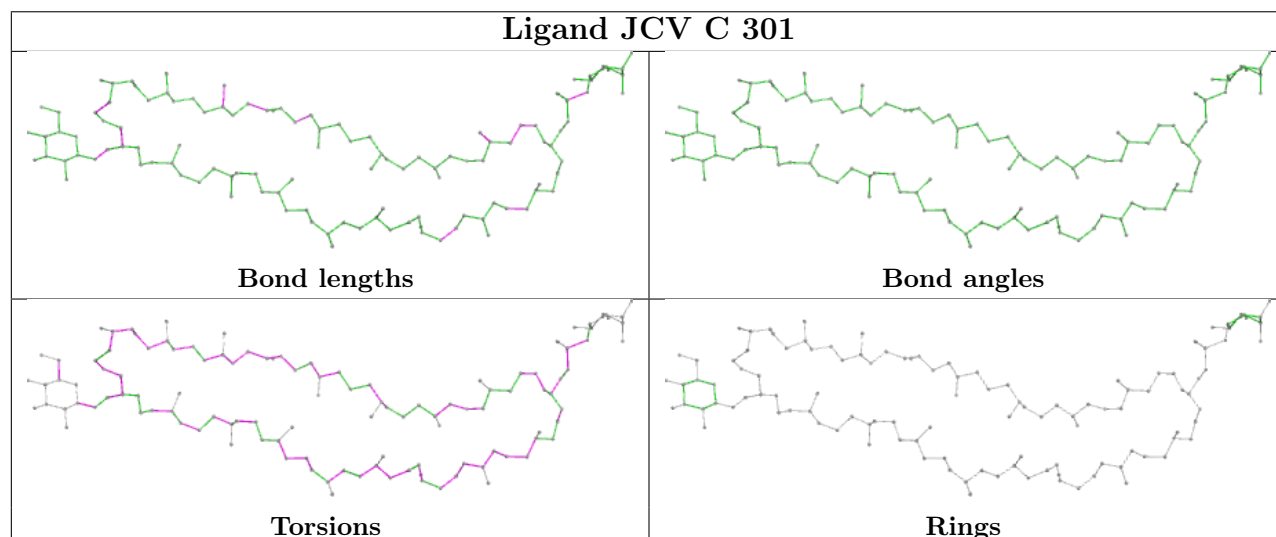
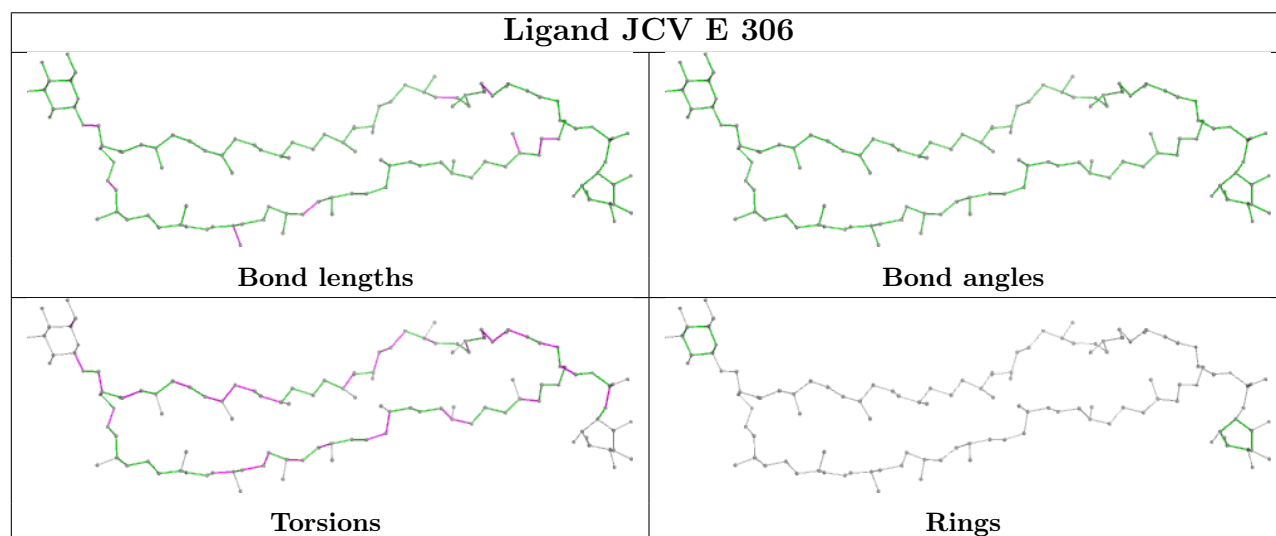
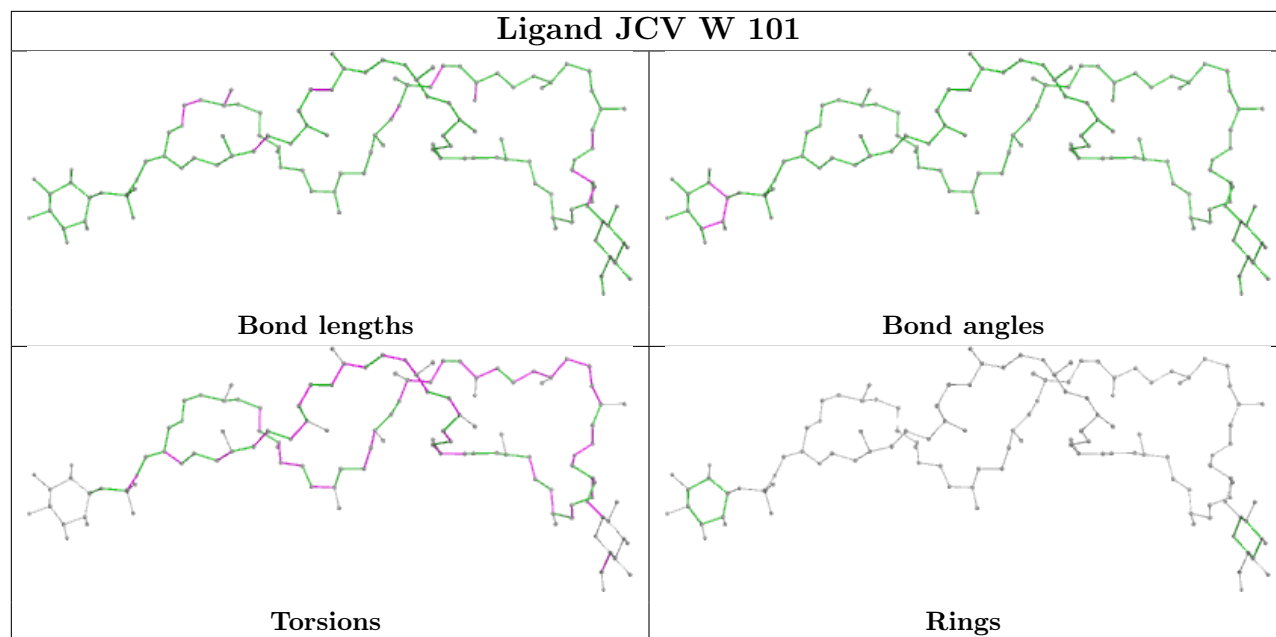
No monomer is involved in short contacts.

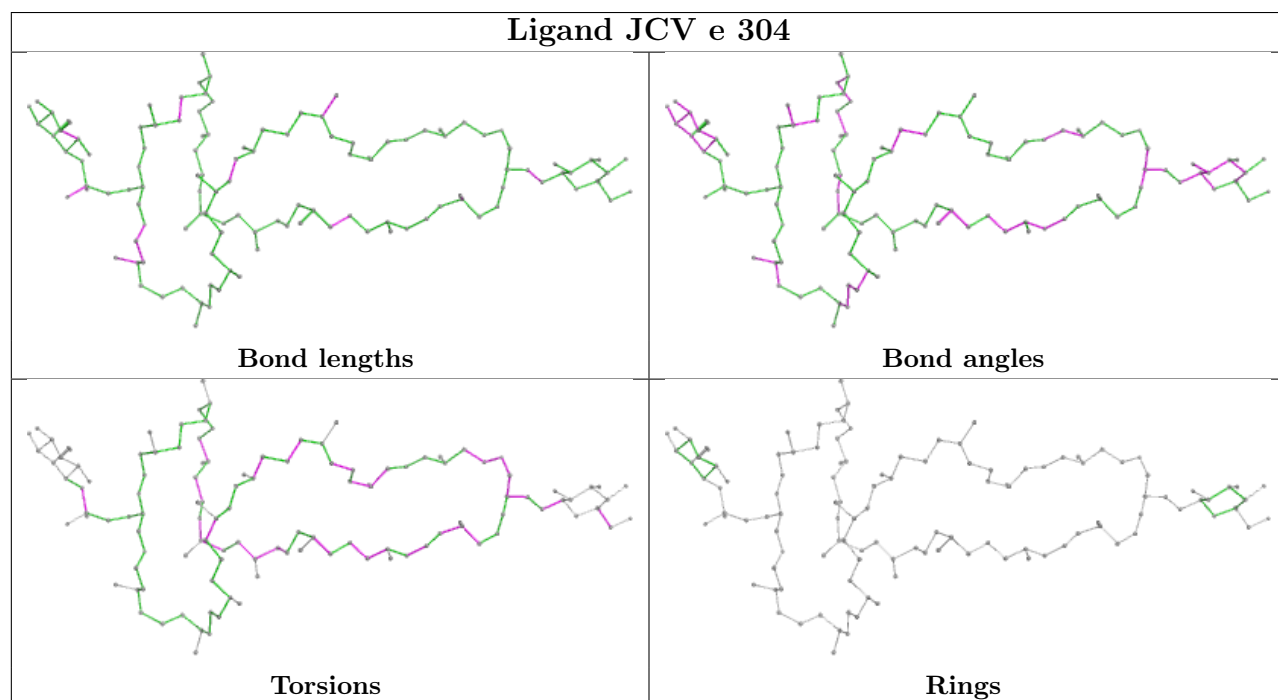
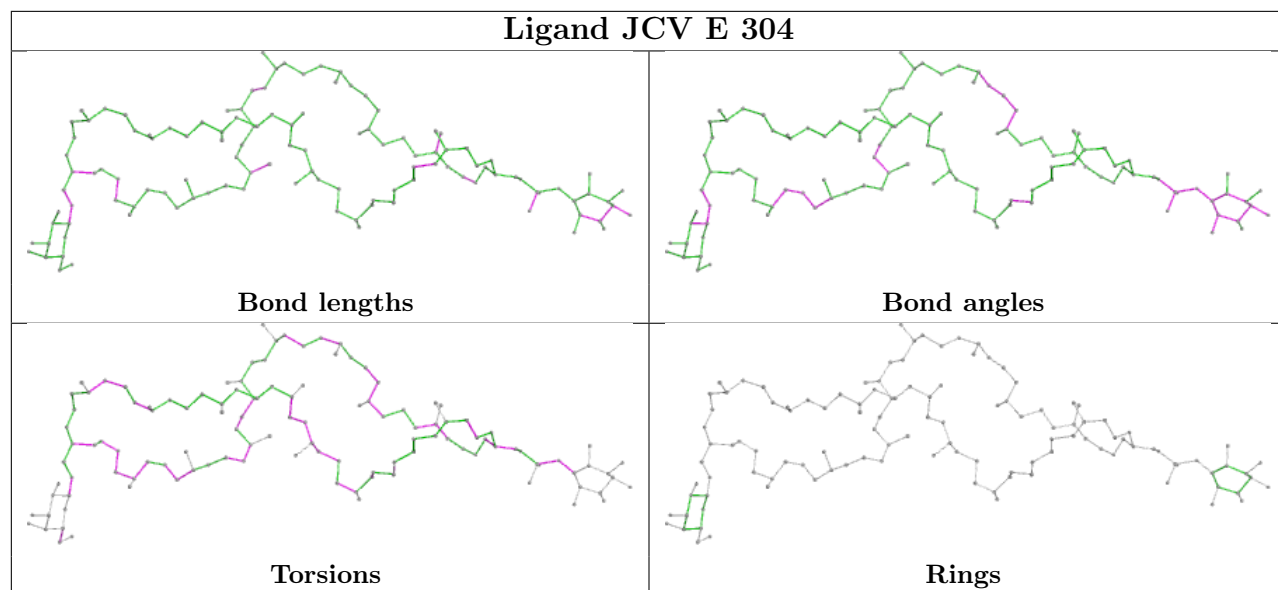
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier.

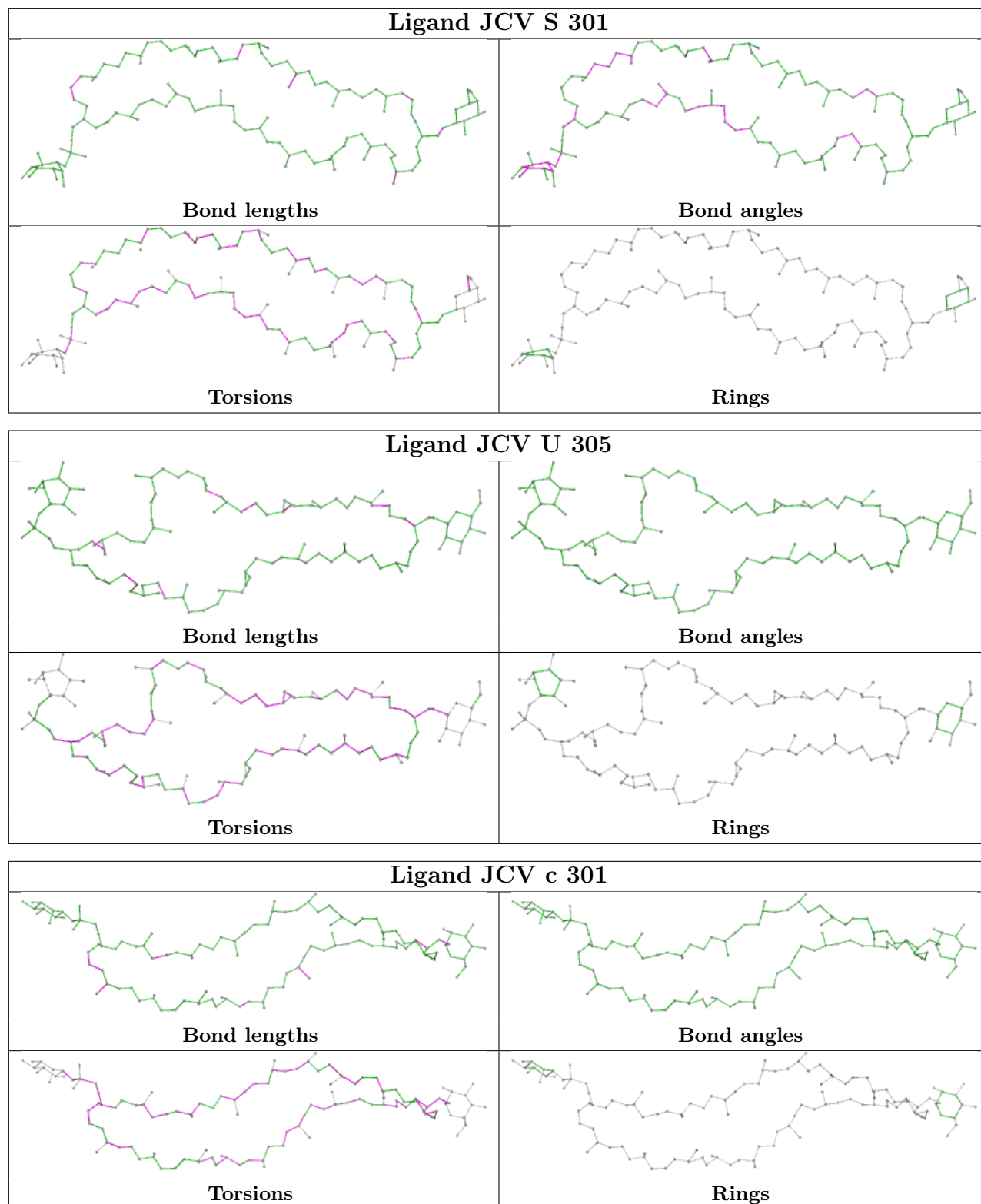
Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.











5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

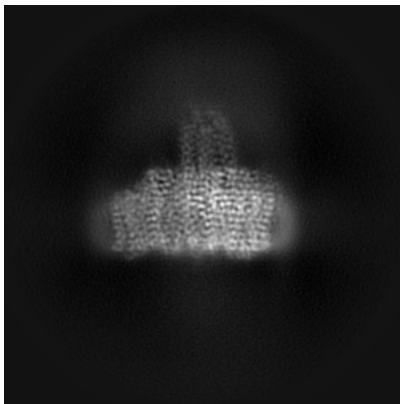
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-18162. These allow visual inspection of the internal detail of the map and identification of artifacts.

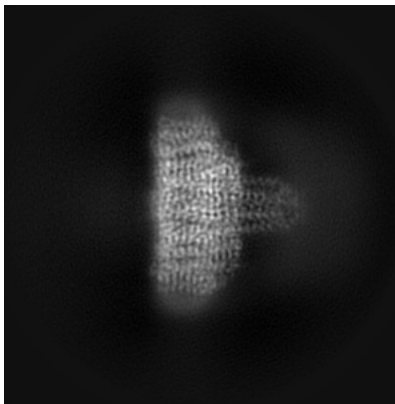
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

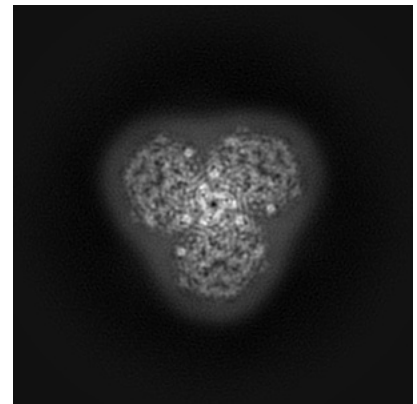
6.1.1 Primary map



X

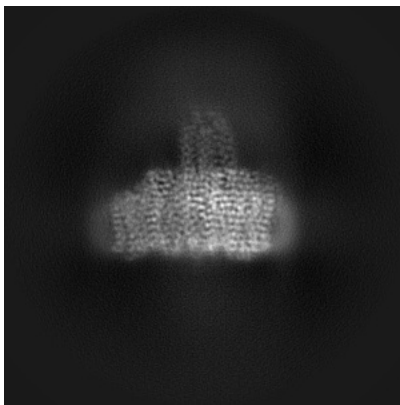


Y

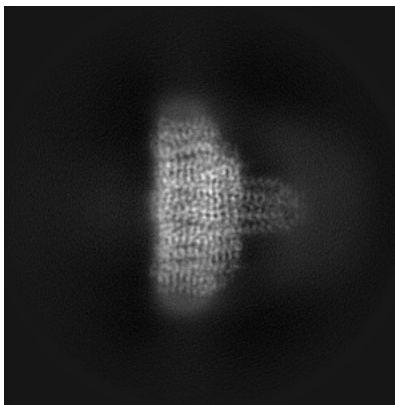


Z

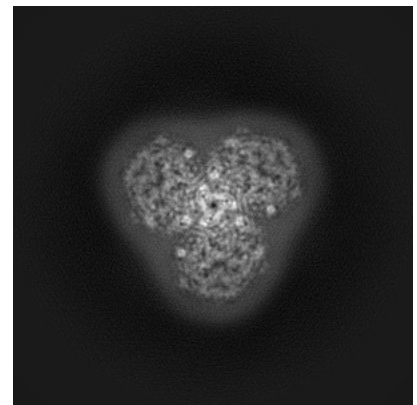
6.1.2 Raw map



X



Y

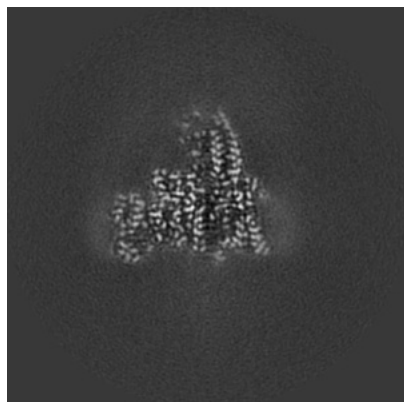


Z

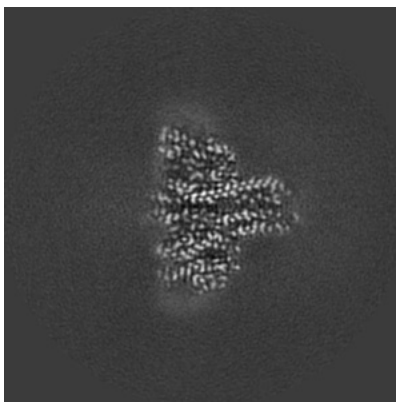
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

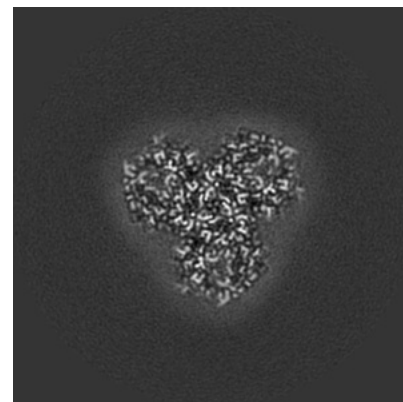
6.2.1 Primary map



X Index: 160

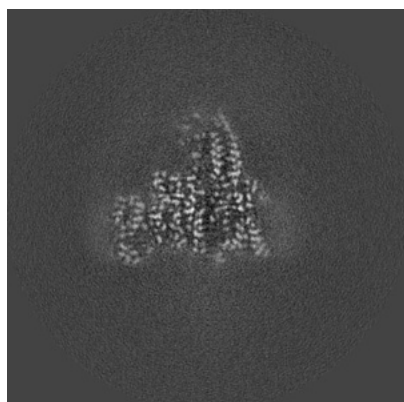


Y Index: 160

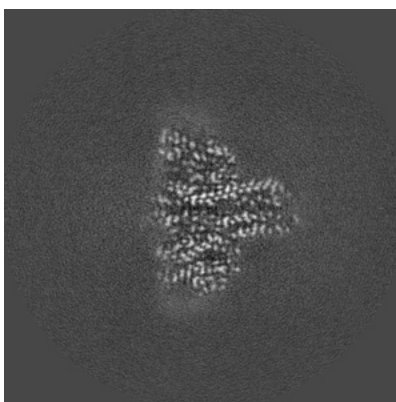


Z Index: 160

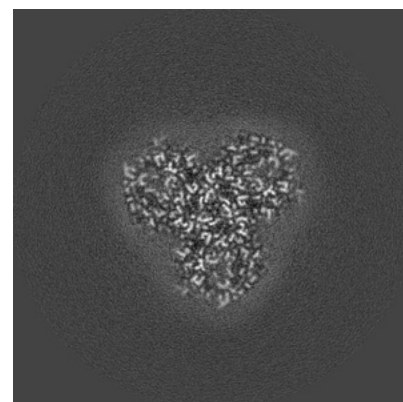
6.2.2 Raw map



X Index: 160



Y Index: 160

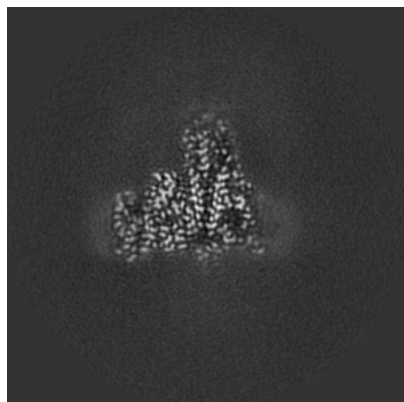


Z Index: 160

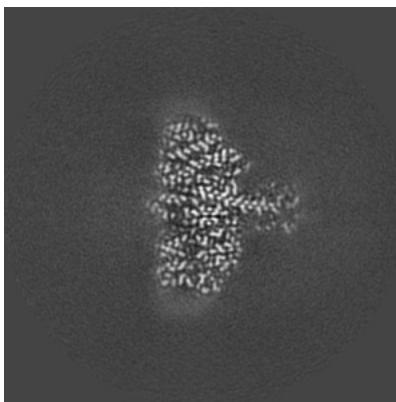
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

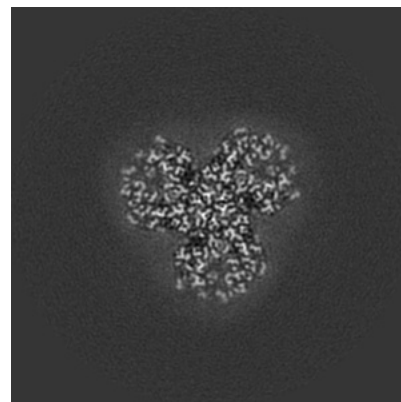
6.3.1 Primary map



X Index: 155

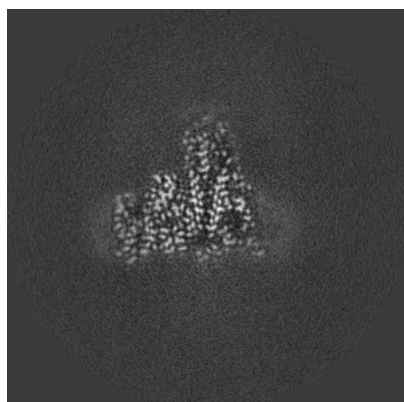


Y Index: 167

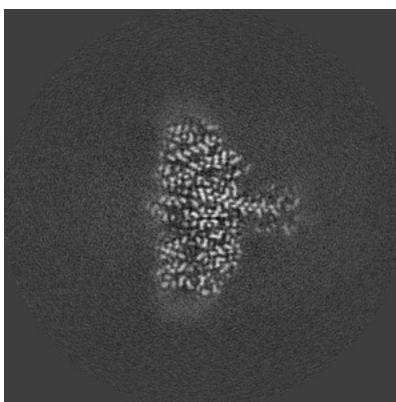


Z Index: 165

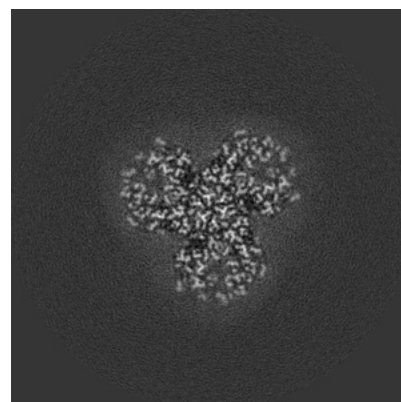
6.3.2 Raw map



X Index: 155



Y Index: 167

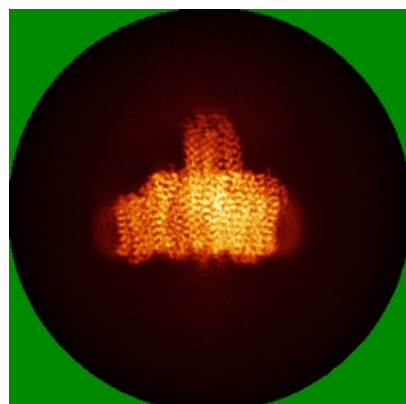


Z Index: 165

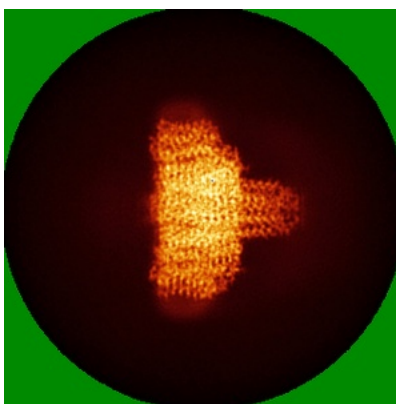
The images above show the largest variance slices of the map in three orthogonal directions.

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

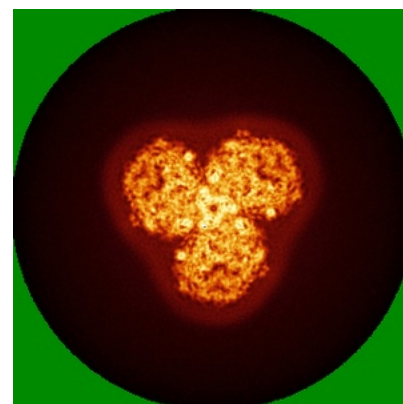
6.4.1 Primary map



X

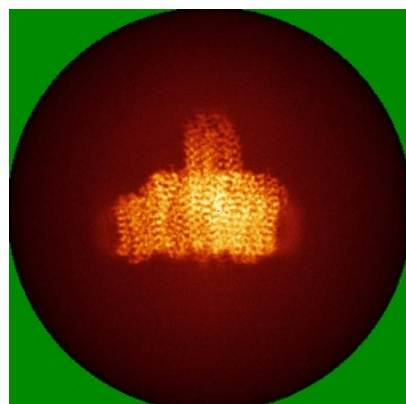


Y

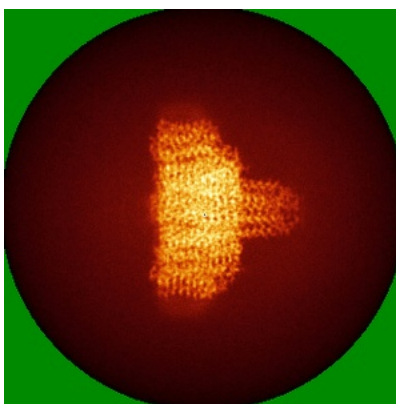


Z

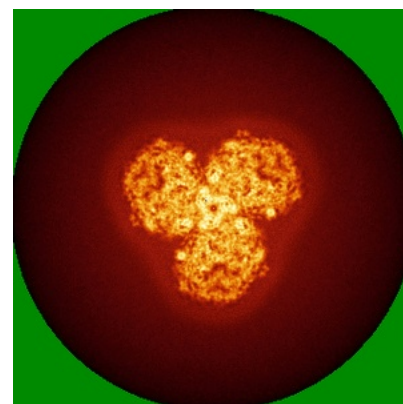
6.4.2 Raw map



X



Y

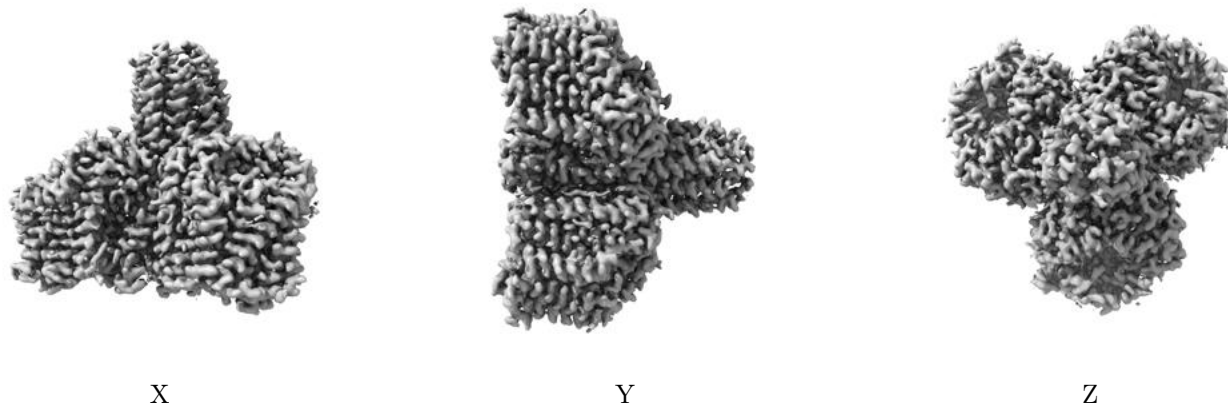


Z

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.

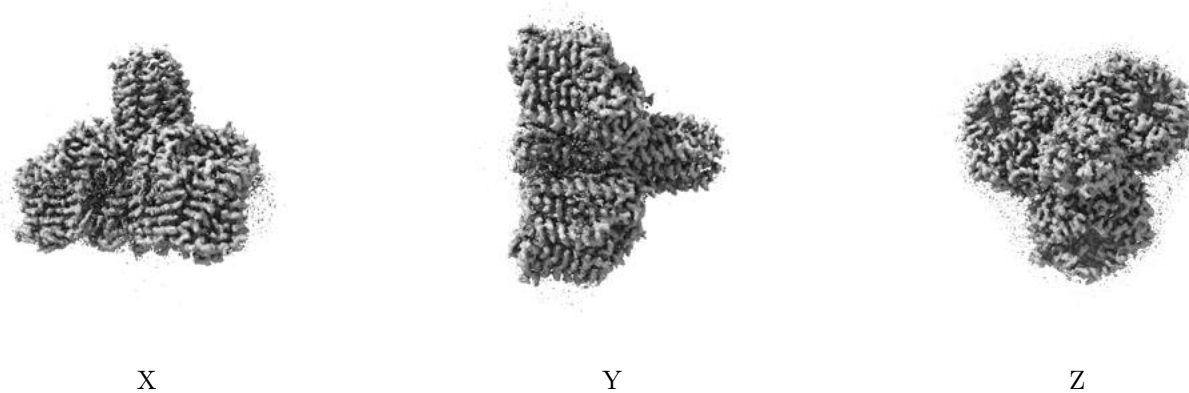
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.01. 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.

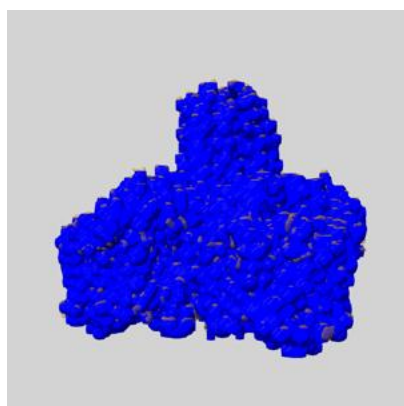
6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

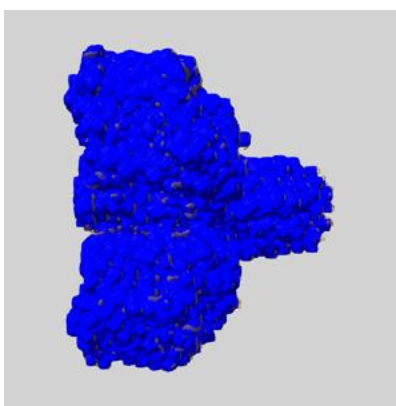
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

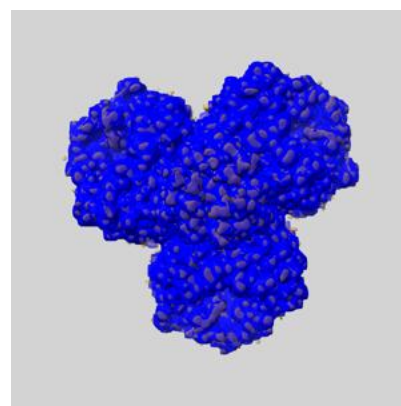
6.6.1 emd_18162_msk_1.map [i](#)



X



Y

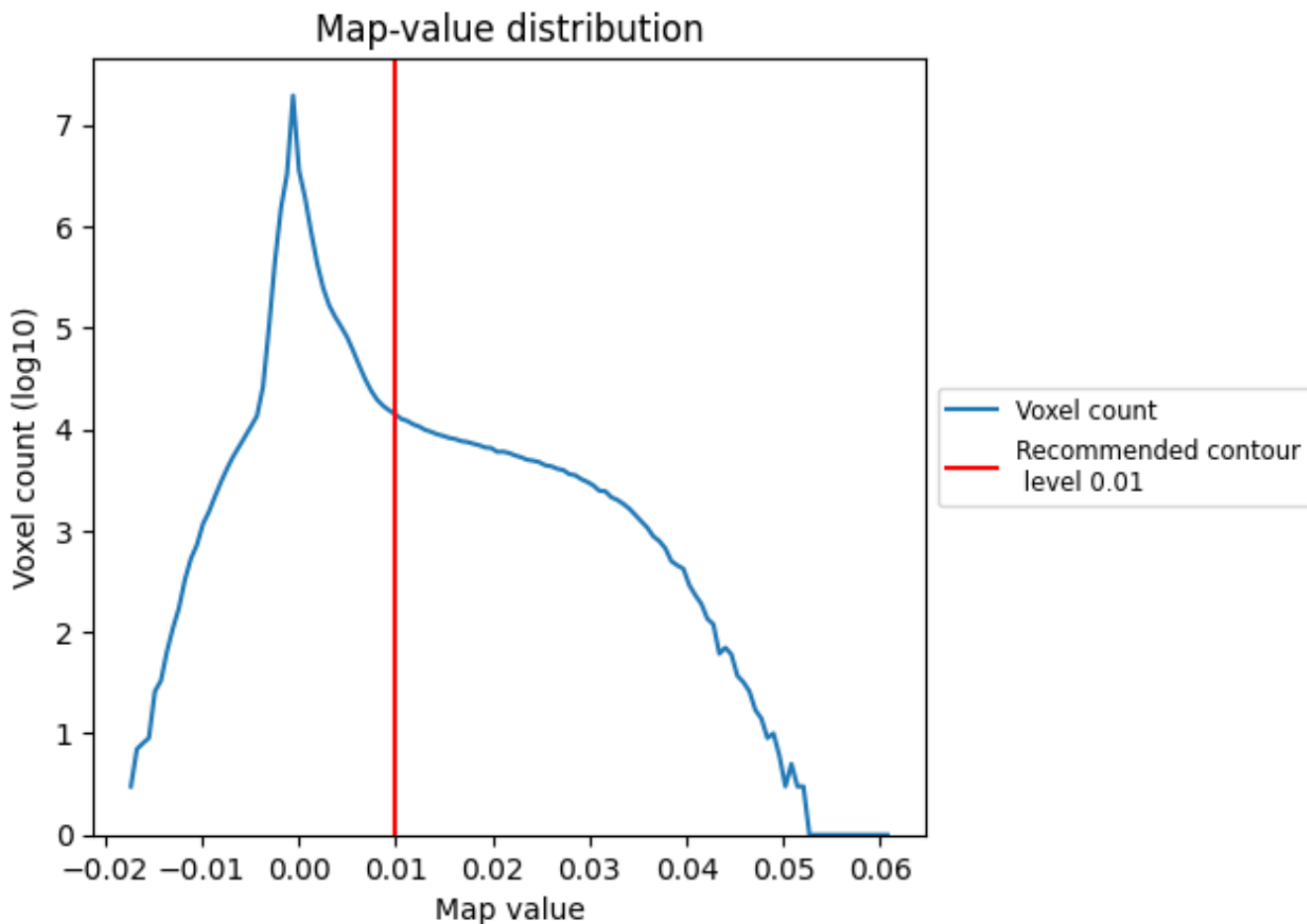


Z

7 Map analysis [i](#)

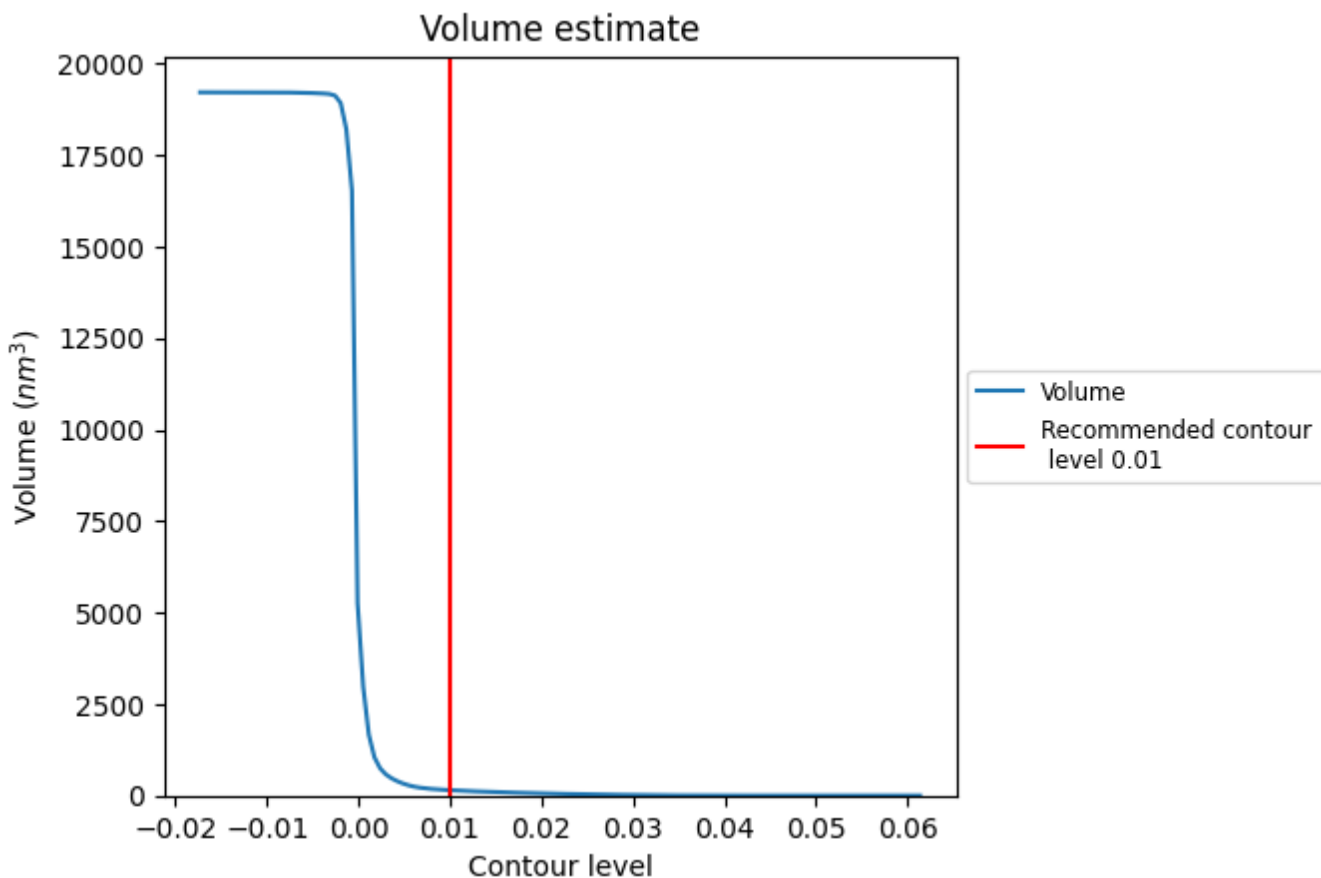
This section contains the results of statistical analysis of the map.

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.

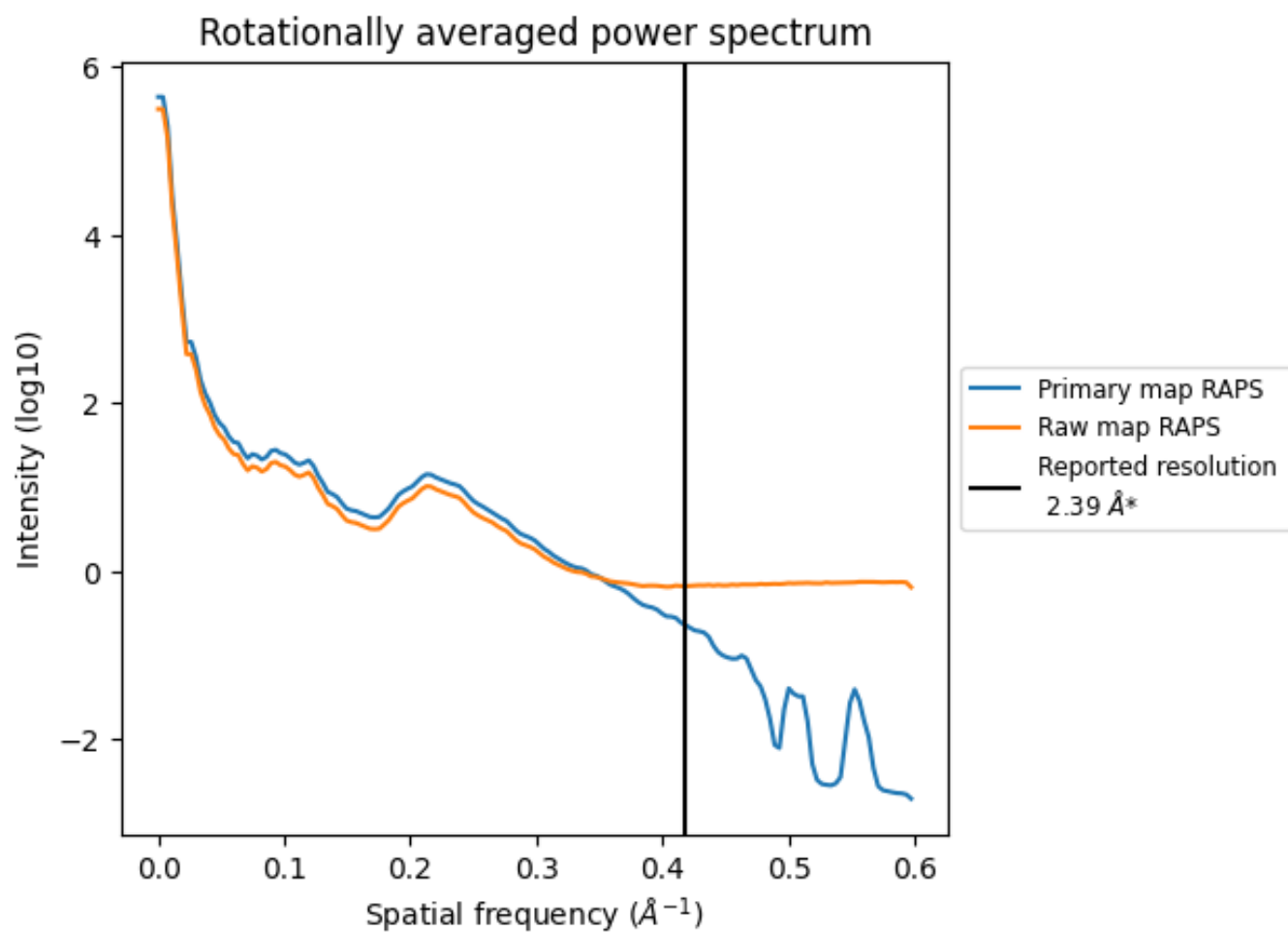
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 148 nm³; this corresponds to an approximate mass of 133 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](#)

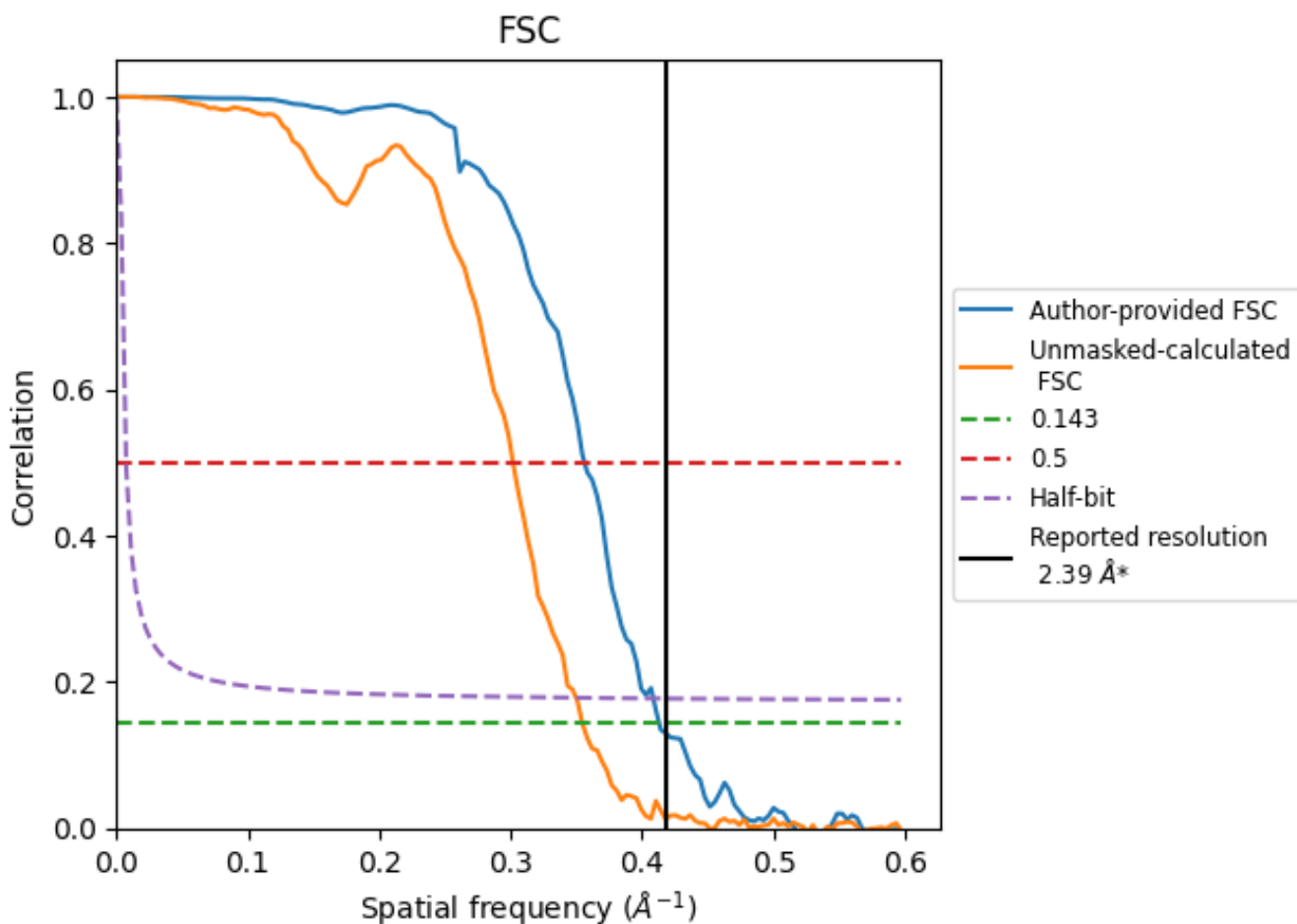


*Reported resolution corresponds to spatial frequency of 0.418 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.418 \AA^{-1}

8.2 Resolution estimates [i](#)

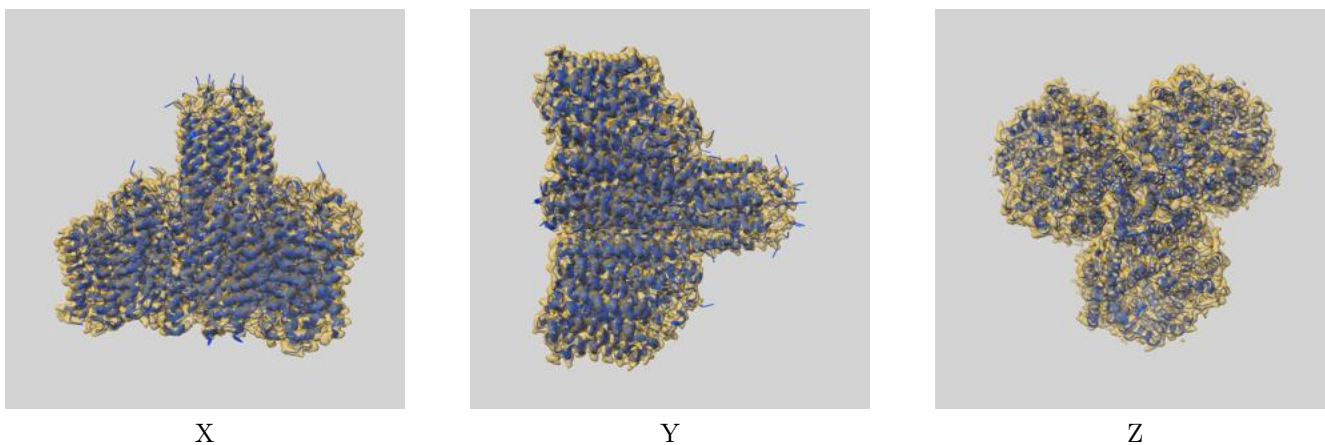
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.39	-	-
Author-provided FSC curve	2.42	2.81	2.45
Unmasked-calculated*	2.82	3.31	2.86

*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 2.82 differs from the reported value 2.39 by more than 10 %

9 Map-model fit [i](#)

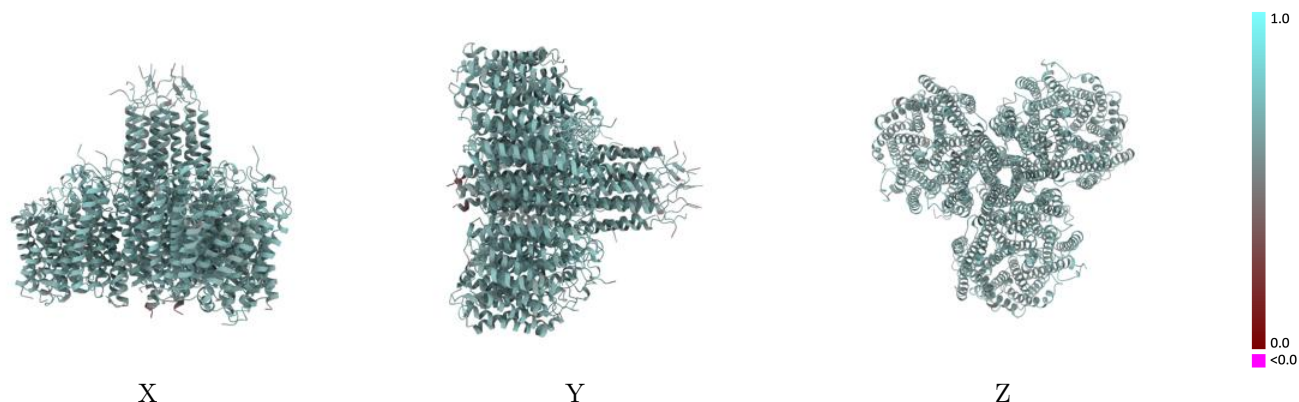
This section contains information regarding the fit between EMDB map EMD-18162 and PDB model 8Q54. Per-residue inclusion information can be found in section 3 on page 9.

9.1 Map-model overlay [i](#)



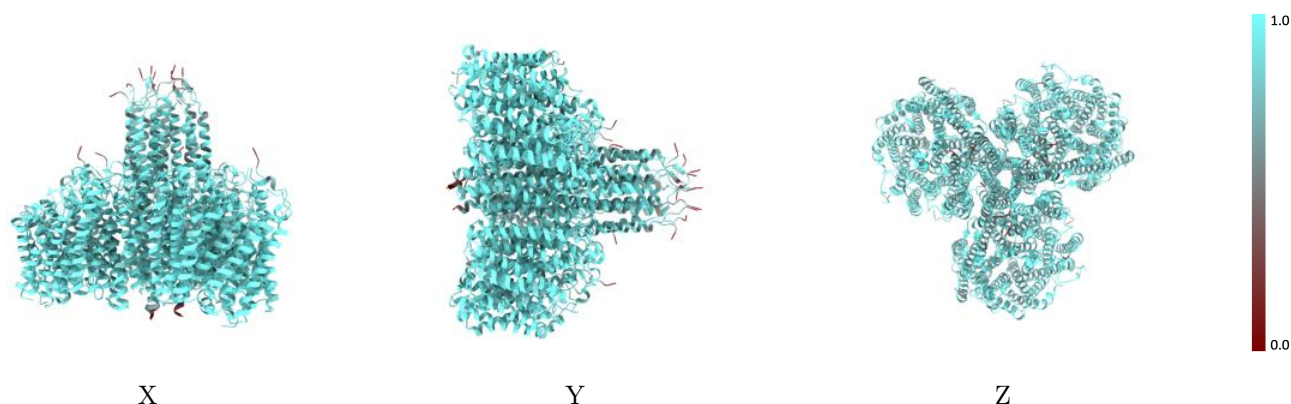
The images above show the 3D surface view of the map at the recommended contour level 0.01 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



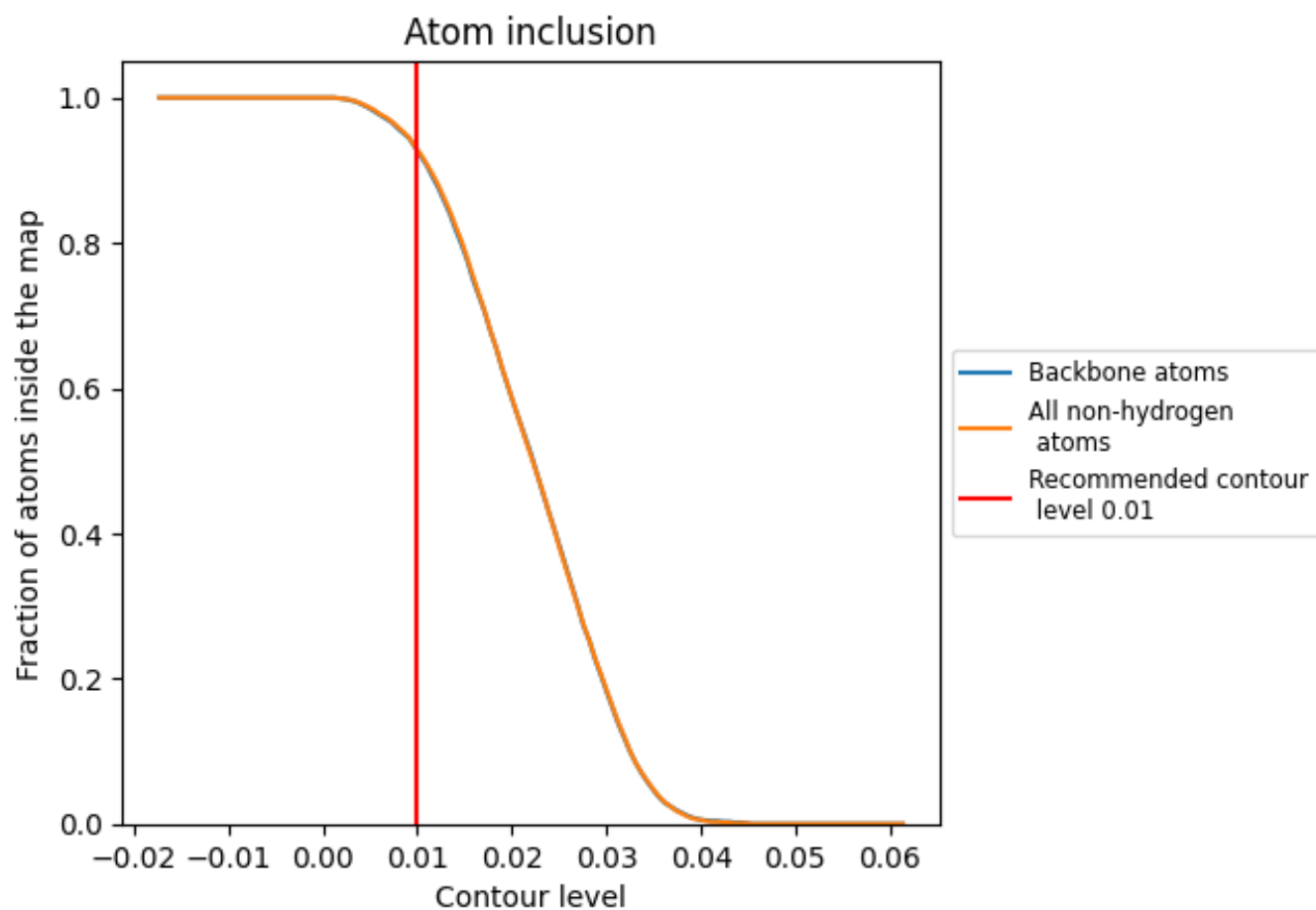
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.01).













































9.4 Atom inclusion [i](#)



At the recommended contour level, 93% of all backbone atoms, 93% 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 (0.01) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9280	 0.6320
A	 0.9250	 0.6360
B	 0.9090	 0.6340
C	 0.9110	 0.6160
D	 0.9600	 0.6290
E	 0.9270	 0.6430
F	 0.8970	 0.6350
G	 0.8500	 0.6140
Q	 0.9190	 0.6440
R	 0.9130	 0.6370
S	 0.9210	 0.6130
T	 0.9630	 0.6370
U	 0.9380	 0.6490
V	 0.8990	 0.6270
W	 0.8170	 0.6080
a	 0.9230	 0.6420
b	 0.9180	 0.6350
c	 0.9130	 0.6180
d	 0.9670	 0.6370
e	 0.9410	 0.6490
f	 0.8950	 0.6300
g	 0.8140	 0.6100

