



## Full wwPDB EM Validation Report ⓘ

Aug 5, 2024 – 08:49 AM EDT

PDB ID : 8UA8  
EMDB ID : EMD-42054  
Title : Structure of Semliki Forest virus VLP in complex with VLDLR LA2  
Authors : Abraham, J.; Yang, P.; Li, W.; Fan, X.; Pan, J.  
Deposited on : 2023-09-20  
Resolution : 3.70 Å (reported)

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We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev92  
Mogul : 1.8.5 (274361), 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

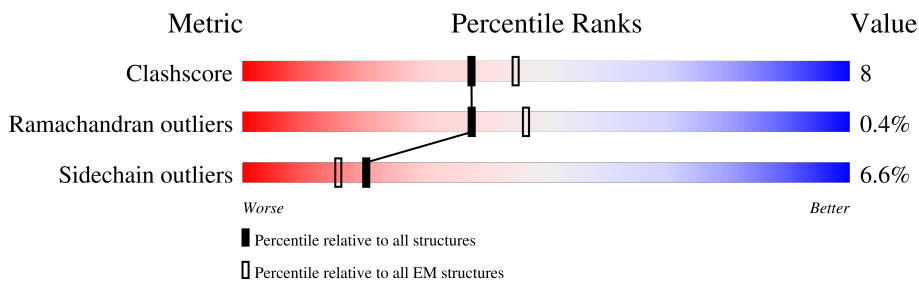
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.70 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
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  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion  $< 40\%$ ). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	438	84% 15%
1	E	438	80% 18%
1	I	438	79% 18%
1	M	438	79% 20%
2	B	417	74% 24%
2	F	417	75% 22%
2	J	417	74% 24%
2	N	417	76% 21%

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Mol	Chain	Length	Quality of chain
3	C	54	 17% 70% 20% 6%
3	G	54	 11% 74% 20% 6%
3	K	54	 9% 65% 20% 7% 6%
3	O	54	 17% 78% 20% 6%
4	D	153	 80% 18% 6%
4	H	153	 65% 33% 6% 6%
4	L	153	 73% 25% 6% 6%
4	P	153	 72% 26% 6% 6%
5	R	37	 81% 100%
6	Q	2	 50% 50%
6	U	2	 50% 50%
6	V	2	 50% 50%
6	W	2	 50% 50%
6	X	2	 50% 50%
6	a	2	 50% 50%
7	S	3	 33% 100%
7	T	3	 33% 67% 67%
7	Y	3	 33% 67% 67%
7	Z	3	 67% 33%
7	b	3	 33% 67% 67%
7	c	3	 33% 67% 67%

## 2 Entry composition [i](#)

There are 9 unique types of molecules in this entry. The entry contains 33212 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 Glycoprotein E1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	438	3329	2109	559	636	25	0	0
1	E	438	3329	2109	559	636	25	0	0
1	I	437	3318	2103	555	635	25	0	0
1	M	437	3318	2103	555	635	25	0	0

- Molecule 2 is a protein called Glycoprotein E2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	417	3249	2052	576	596	25	0	0
2	F	415	3234	2043	572	594	25	0	0
2	J	417	3249	2052	576	596	25	0	0
2	N	413	3218	2034	567	592	25	0	0

- Molecule 3 is a protein called Assembly protein E3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	51	392	246	63	75	8	0	0
3	G	52	404	252	67	77	8	0	0
3	K	51	392	246	63	75	8	0	0
3	O	53	404	253	65	78	8	0	0

- Molecule 4 is a protein called Capsid protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	D	152	Total	C	N	O	S	0	0
			1163	728	208	221	6		
4	H	153	Total	C	N	O	S	0	0
			1171	734	209	222	6		
4	L	153	Total	C	N	O	S	0	0
			1165	731	206	222	6		
4	P	153	Total	C	N	O	S	0	0
			1171	734	209	222	6		

- Molecule 5 is a protein called Very low-density lipoprotein receptor.

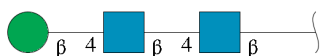
Mol	Chain	Residues	Atoms					AltConf	Trace
5	R	37	Total	C	N	O	S	0	0
			275	158	46	65	6		

- Molecule 6 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



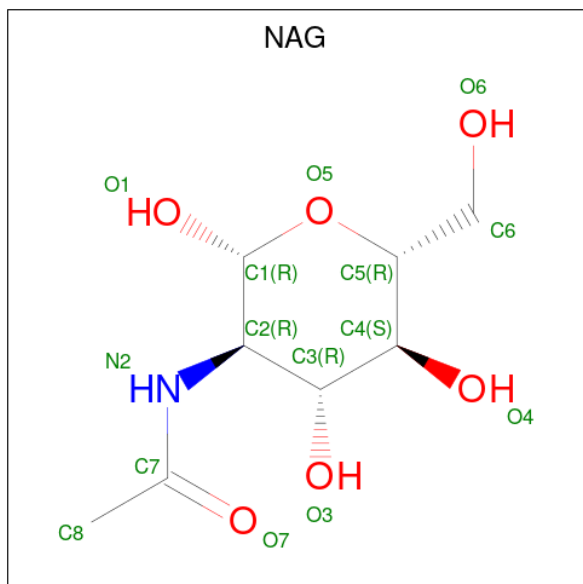
Mol	Chain	Residues	Atoms				AltConf	Trace
6	Q	2	Total	C	N	O	0	0
			28	16	2	10		
6	U	2	Total	C	N	O	0	0
			28	16	2	10		
6	V	2	Total	C	N	O	0	0
			28	16	2	10		
6	W	2	Total	C	N	O	0	0
			28	16	2	10		
6	X	2	Total	C	N	O	0	0
			28	16	2	10		
6	a	2	Total	C	N	O	0	0
			28	16	2	10		

- Molecule 7 is an oligosaccharide called beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



Mol	Chain	Residues	Atoms				AltConf	Trace
7	S	3	Total	C	N	O	0	0
			39	22	2	15		
7	T	3	Total	C	N	O	0	0
			39	22	2	15		
7	Y	3	Total	C	N	O	0	0
			39	22	2	15		
7	Z	3	Total	C	N	O	0	0
			39	22	2	15		
7	b	3	Total	C	N	O	0	0
			39	22	2	15		
7	c	3	Total	C	N	O	0	0
			39	22	2	15		

- Molecule 8 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula:  $C_8H_{15}NO_6$ ) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
8	G	1	Total	C	N	O	0
			14	8	1	5	
8	K	1	Total	C	N	O	0
			14	8	1	5	

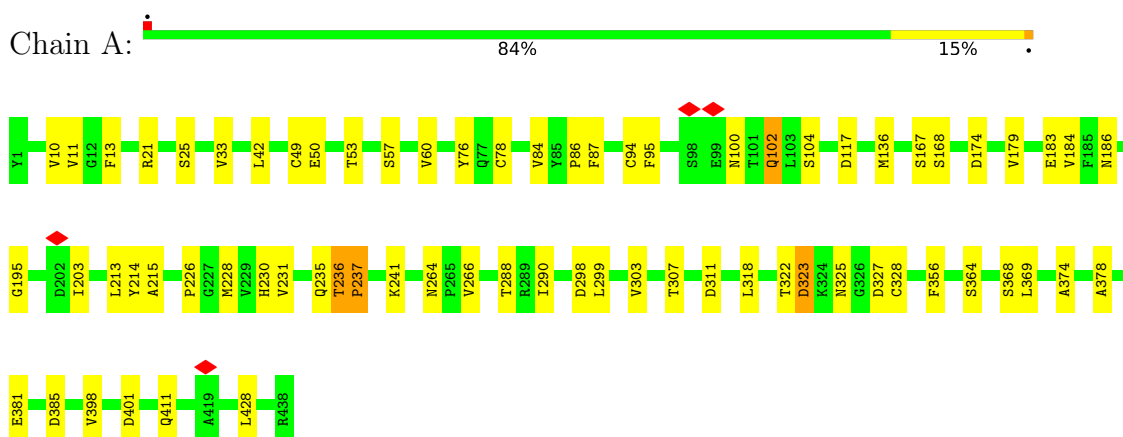
- Molecule 9 is CALCIUM ION (three-letter code: CA) (formula: Ca) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
9	R	1	Total	Ca	0
			1	1	

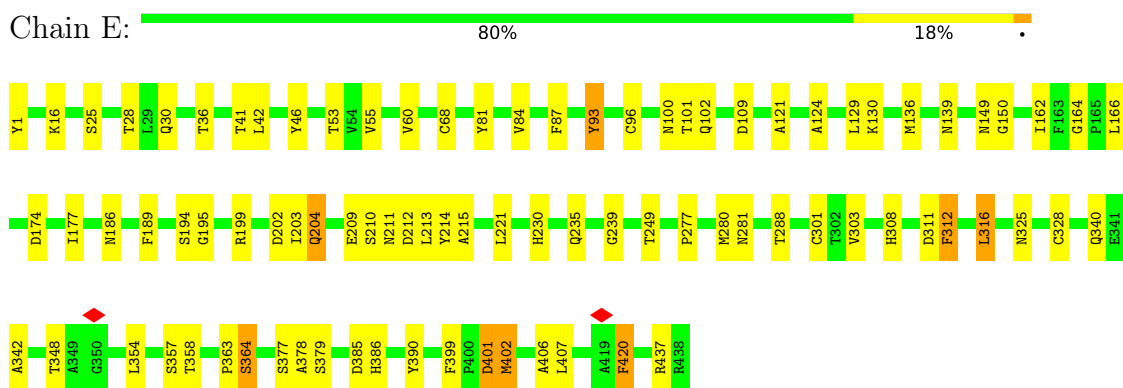
### 3 Residue-property plots [i](#)

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.

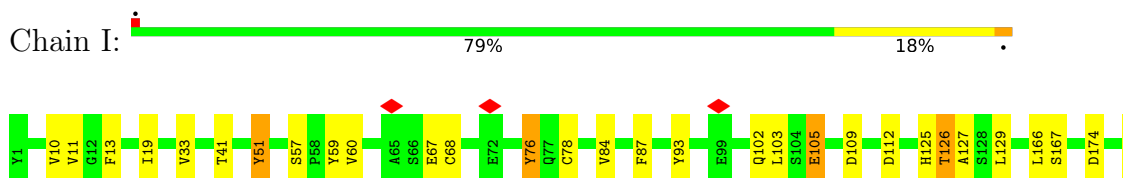
- Molecule 1: Glycoprotein E1

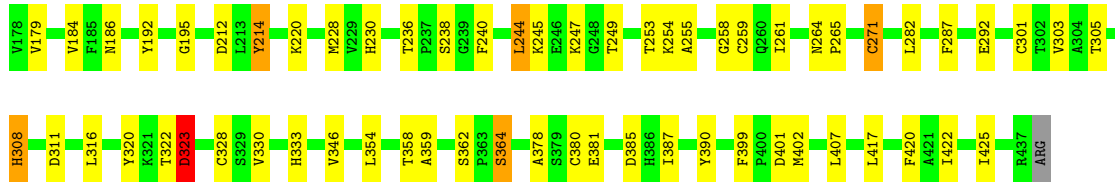


- Molecule 1: Glycoprotein E1

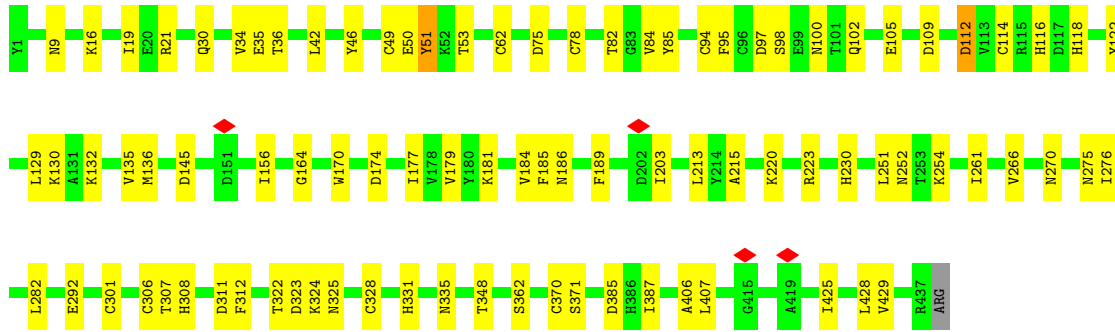
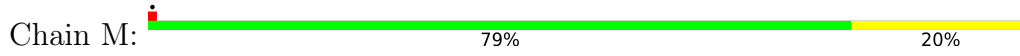


- Molecule 1: Glycoprotein E1

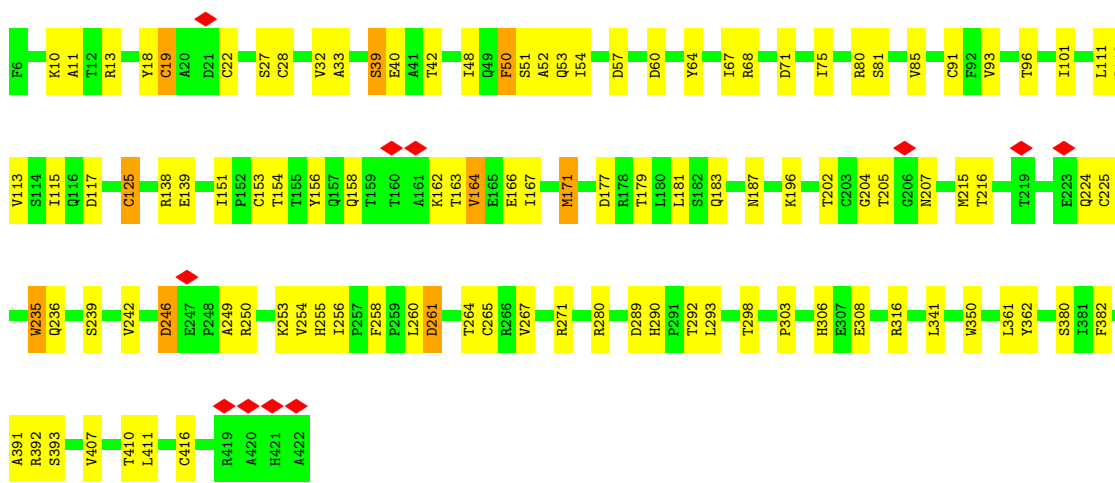
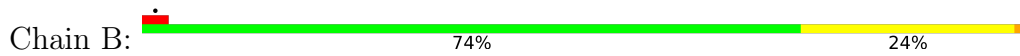




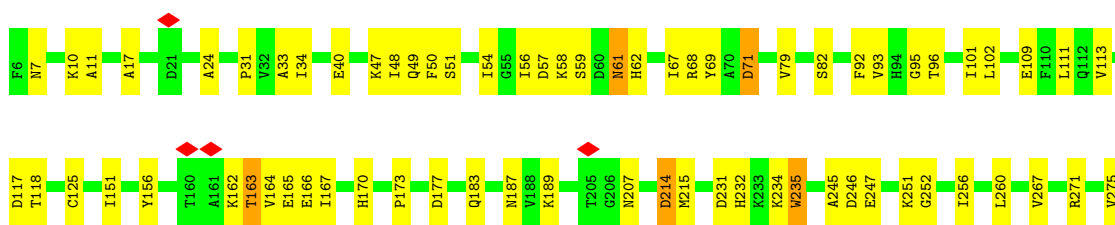
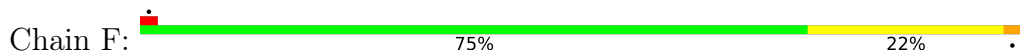
• Molecule 1: Glycoprotein E1



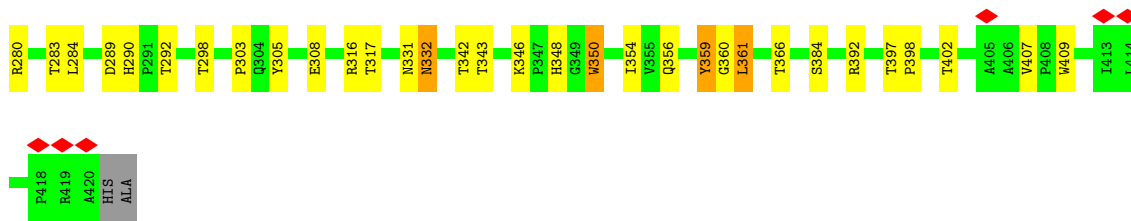
• Molecule 2: Glycoprotein E2



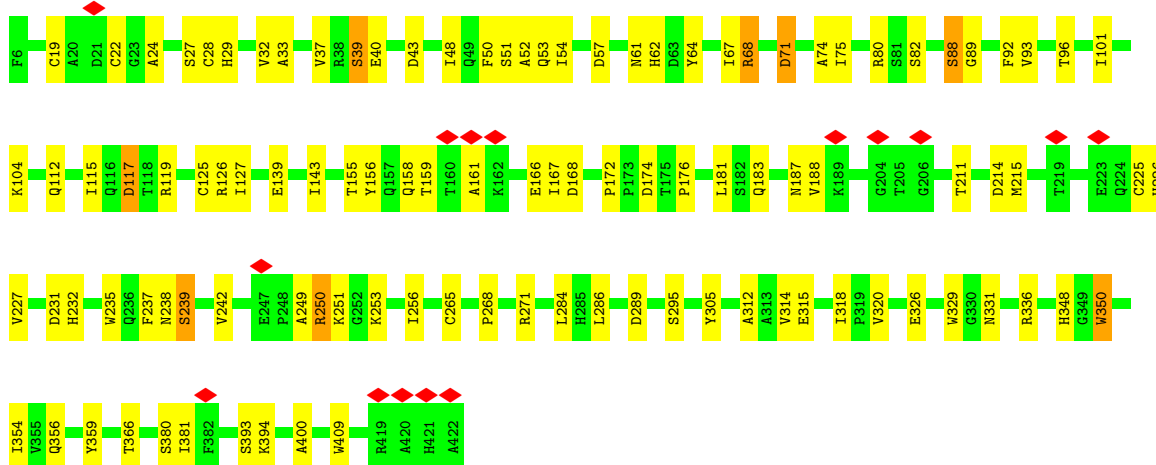
• Molecule 2: Glycoprotein E2



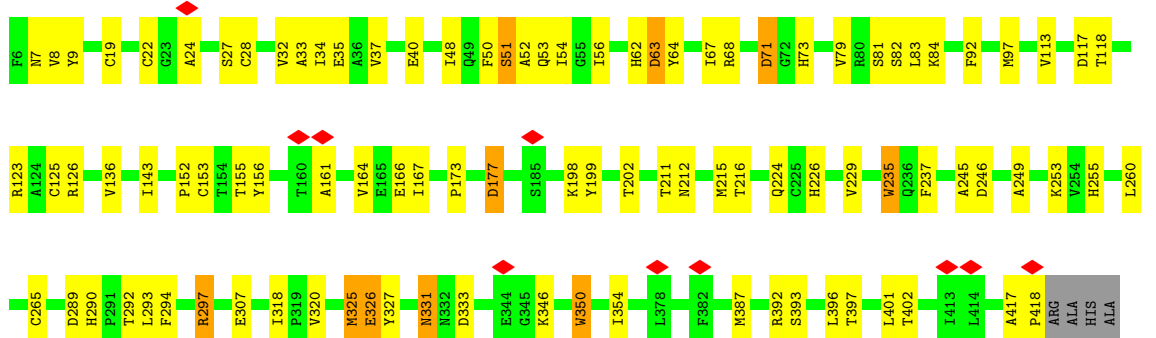
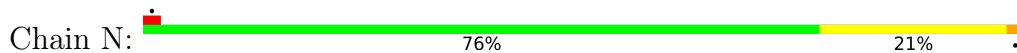




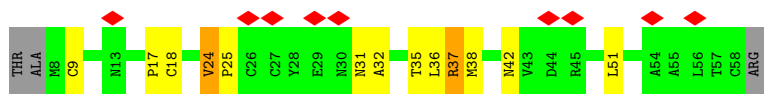
• Molecule 2: Glycoprotein E2



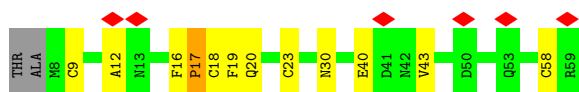
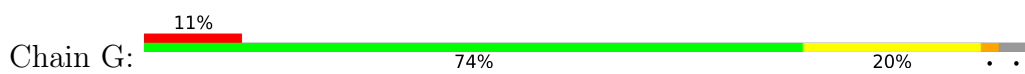
• Molecule 2: Glycoprotein E2



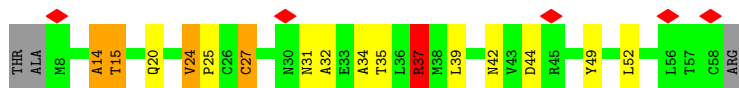
• Molecule 3: Assembly protein E3



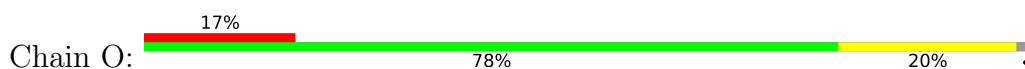
• Molecule 3: Assembly protein E3



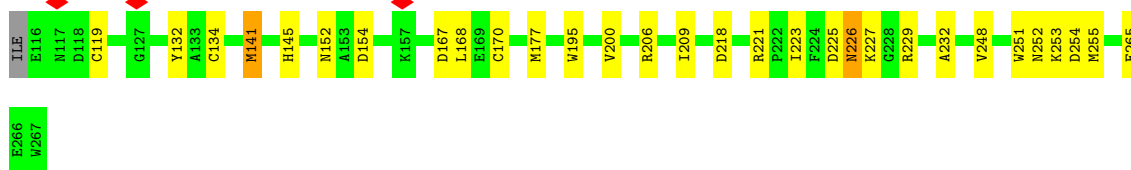
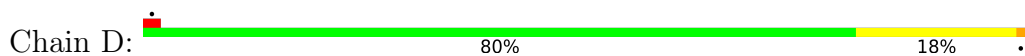
• Molecule 3: Assembly protein E3



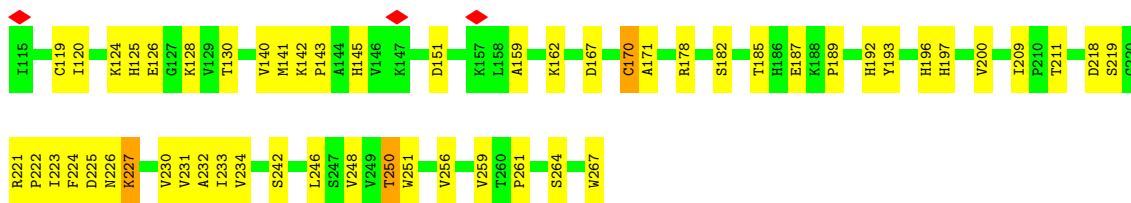
• Molecule 3: Assembly protein E3



• Molecule 4: Capsid protein



• Molecule 4: Capsid protein

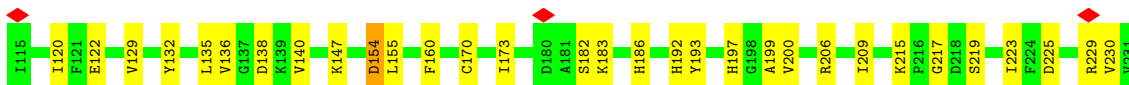


• Molecule 4: Capsid protein

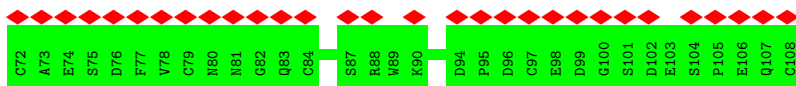
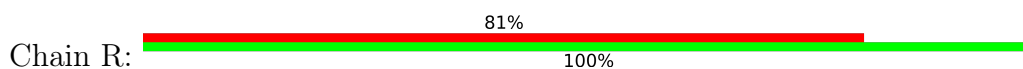




- Molecule 4: Capsid protein



- Molecule 5: Very low-density lipoprotein receptor



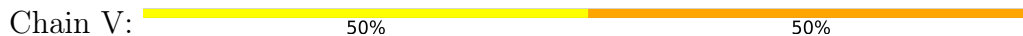
- Molecule 6: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



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- Molecule 6: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 7: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 7: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 7: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 7: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose





- Molecule 7: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 7: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	439486	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	54.9	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.794	Depositor
Minimum map value	-0.002	Depositor
Average map value	0.013	Depositor
Map value standard deviation	0.080	Depositor
Recommended contour level	0.1	Depositor
Map size ( $\text{\AA}$ )	354.75, 354.75, 354.75	wwPDB
Map dimensions	430, 430, 430	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	0.825, 0.825, 0.825	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: NAG, BMA, CA

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	0.90	5/3415 (0.1%)	0.86	9/4660 (0.2%)
1	E	0.68	3/3415 (0.1%)	0.75	3/4660 (0.1%)
1	I	0.70	1/3404 (0.0%)	0.75	4/4646 (0.1%)
1	M	0.67	1/3404 (0.0%)	0.76	3/4646 (0.1%)
2	B	0.64	3/3342 (0.1%)	0.76	4/4559 (0.1%)
2	F	0.62	0/3326	0.80	5/4537 (0.1%)
2	J	0.63	2/3342 (0.1%)	0.76	1/4559 (0.0%)
2	N	0.57	0/3310	0.81	4/4516 (0.1%)
3	C	0.47	0/401	0.84	1/549 (0.2%)
3	G	0.52	0/413	0.81	1/563 (0.2%)
3	K	0.54	0/401	0.98	1/549 (0.2%)
3	O	0.44	0/413	0.75	0/566
4	D	0.58	0/1191	0.83	2/1609 (0.1%)
4	H	0.52	0/1199	0.85	1/1620 (0.1%)
4	L	0.55	0/1193	0.78	1/1613 (0.1%)
4	P	0.49	0/1199	0.79	0/1620
5	R	0.27	0/280	0.51	0/379
All	All	0.65	15/33648 (0.0%)	0.79	40/45851 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
2	B	0	1
2	F	0	1
2	J	0	1
2	N	0	1
3	C	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
3	K	0	3
All	All	0	9

All (15) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	237	PRO	CB-CG	24.57	2.72	1.50
1	A	237	PRO	CG-CD	-17.42	0.93	1.50
1	A	237	PRO	N-CD	7.76	1.58	1.47
1	A	328	CYS	CB-SG	-6.93	1.70	1.82
1	E	68	CYS	CB-SG	-6.85	1.70	1.82
2	J	19	CYS	CB-SG	-6.78	1.70	1.82
2	J	29	HIS	C-N	-5.92	1.20	1.34
1	E	328	CYS	CB-SG	-5.88	1.72	1.81
1	I	292	GLU	CB-CG	5.72	1.63	1.52
2	B	265	CYS	CB-SG	-5.68	1.72	1.81
1	E	195	GLY	C-N	-5.60	1.21	1.34
1	M	328	CYS	CB-SG	-5.46	1.73	1.81
1	A	76	TYR	CD2-CE2	-5.42	1.31	1.39
2	B	125	CYS	CB-SG	-5.42	1.73	1.81
2	B	19	CYS	CB-SG	-5.05	1.73	1.81

All (40) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	237	PRO	CB-CG-CD	-23.81	13.64	106.50
1	A	237	PRO	CA-CB-CG	-9.75	85.47	104.00
4	H	143	PRO	CA-N-CD	-8.65	99.39	111.50
1	I	323	ASP	CB-CG-OD1	8.45	125.90	118.30
1	A	237	PRO	N-CD-CG	-8.43	90.56	103.20
2	N	71	ASP	CB-CG-OD1	8.25	125.72	118.30
1	A	237	PRO	N-CA-CB	-8.16	93.51	103.30
2	N	63	ASP	CB-CG-OD1	7.97	125.47	118.30
1	A	78	CYS	CA-CB-SG	7.77	127.99	114.00
1	A	236	THR	C-N-CD	7.75	144.67	128.40
4	L	218	ASP	CB-CG-OD2	7.74	125.27	118.30
2	F	71	ASP	CB-CG-OD1	7.51	125.06	118.30
1	M	97	ASP	CB-CG-OD1	7.40	124.96	118.30
3	G	17	PRO	CA-N-CD	-7.05	101.62	111.50
3	C	17	PRO	CA-N-CD	-6.99	101.71	111.50
1	A	237	PRO	CA-N-CD	-6.95	101.78	111.50
2	B	261	ASP	CB-CG-OD1	6.90	124.51	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	I	212	ASP	CB-CG-OD1	6.88	124.50	118.30
1	I	271	CYS	CA-CB-SG	6.80	126.24	114.00
2	F	246	ASP	CB-CG-OD1	6.75	124.38	118.30
2	N	177	ASP	CB-CG-OD1	6.67	124.31	118.30
2	F	361	LEU	CA-CB-CG	6.55	130.36	115.30
2	J	71	ASP	CB-CG-OD1	6.40	124.06	118.30
2	F	214	ASP	CB-CG-OD1	6.31	123.98	118.30
2	B	246	ASP	CB-CG-OD2	6.25	123.92	118.30
4	D	218	ASP	CB-CG-OD2	6.21	123.89	118.30
1	E	68	CYS	CA-CB-SG	6.20	125.16	114.00
2	F	177	ASP	CB-CG-OD1	6.16	123.84	118.30
1	A	117	ASP	CB-CG-OD1	6.14	123.82	118.30
2	B	265	CYS	CA-CB-SG	6.13	125.04	114.00
1	E	166	LEU	CB-CG-CD2	5.94	121.09	111.00
2	N	265	CYS	CA-CB-SG	5.78	124.40	114.00
1	M	189	PHE	CB-CG-CD1	5.72	124.81	120.80
3	K	37	ARG	NE-CZ-NH2	-5.37	117.62	120.30
1	I	292	GLU	CA-CB-CG	5.35	125.17	113.40
2	B	71	ASP	CB-CG-OD1	5.32	123.08	118.30
1	A	226	PRO	CA-N-CD	-5.22	104.19	111.50
4	D	132	TYR	CA-CB-CG	5.15	123.18	113.40
1	E	402	MET	CA-CB-CG	5.14	122.05	113.30
1	M	370	CYS	CA-CB-SG	5.04	123.07	114.00

There are no chirality outliers.

All (9) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	369	LEU	Peptide
2	B	264	THR	Peptide
3	C	24	VAL	Peptide
2	F	247	GLU	Peptide
2	J	249	ALA	Peptide
3	K	15	THR	Peptide
3	K	24	VAL	Peptide
3	K	37	ARG	Sidechain
2	N	161	ALA	Peptide

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

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3329	0	3247	46	0
1	E	3329	0	3245	49	0
1	I	3318	0	3232	55	0
1	M	3318	0	3236	50	0
2	B	3249	0	3161	59	0
2	F	3234	0	3149	56	0
2	J	3249	0	3160	68	0
2	N	3218	0	3131	59	0
3	C	392	0	364	7	0
3	G	404	0	376	6	0
3	K	392	0	363	12	0
3	O	404	0	376	6	0
4	D	1163	0	1126	13	0
4	H	1171	0	1137	34	0
4	L	1165	0	1126	26	0
4	P	1171	0	1137	26	0
5	R	275	0	217	0	0
6	Q	28	0	25	1	0
6	U	28	0	25	1	0
6	V	28	0	25	1	0
6	W	28	0	25	1	0
6	X	28	0	25	0	0
6	a	28	0	25	0	0
7	S	39	0	34	0	0
7	T	39	0	34	2	0
7	Y	39	0	34	1	0
7	Z	39	0	34	1	0
7	b	39	0	34	0	0
7	c	39	0	34	0	0
8	G	14	0	13	0	0
8	K	14	0	13	0	0
9	R	1	0	0	0	0
All	All	33212	0	32163	529	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 8.

All (529) close contacts within the same asymmetric unit are listed below, sorted by their clash

magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:237:PRO:CG	1:A:237:PRO:N	1.84	1.39
1:A:237:PRO:CD	1:A:237:PRO:HG3	1.69	1.13
1:A:237:PRO:CG	1:A:237:PRO:HD3	1.60	1.10
1:A:237:PRO:CG	1:A:237:PRO:HD2	1.60	1.10
1:A:237:PRO:CD	1:A:237:PRO:HG2	1.69	1.09
1:A:237:PRO:CG	1:A:237:PRO:CD	0.93	0.93
1:I:387:ILE:HD11	2:J:320:VAL:HG21	1.55	0.89
1:M:94:CYS:SG	1:M:100:ASN:ND2	2.45	0.89
4:D:232:ALA:HB1	4:D:248:VAL:HG21	1.57	0.85
2:N:54:ILE:HD13	2:N:67:ILE:HD13	1.59	0.83
1:A:57:SER:OG	2:B:242:VAL:O	1.97	0.82
1:A:25:SER:OG	1:A:288:THR:OG1	1.98	0.82
1:A:290:ILE:HD11	1:I:305:THR:HG21	1.62	0.81
2:B:96:THR:HG22	2:B:101:ILE:HD13	1.61	0.81
2:F:59:SER:OG	2:F:61:ASN:OD1	1.98	0.80
2:B:40:GLU:OE1	2:B:156:TYR:OH	2.00	0.80
4:P:225:ASP:OD1	4:P:229:ARG:N	2.17	0.78
2:N:297:ARG:NH1	2:N:326:GLU:OE2	2.17	0.77
1:A:236:THR:HA	1:A:237:PRO:HG2	1.66	0.76
2:F:47:LYS:NZ	2:F:165:GLU:OE2	2.18	0.76
1:I:57:SER:OG	2:J:242:VAL:O	2.04	0.76
2:F:40:GLU:OE1	2:F:156:TYR:OH	2.04	0.76
1:A:174:ASP:OD1	1:A:186:ASN:ND2	2.18	0.75
1:E:174:ASP:OD2	1:E:186:ASN:ND2	2.20	0.75
2:N:79:VAL:O	2:N:82:SER:OG	2.03	0.75
2:N:117:ASP:OD1	2:N:118:THR:N	2.18	0.74
2:F:69:TYR:OH	2:F:117:ASP:OD1	2.05	0.74
4:D:252:ASN:OD1	4:D:253:LYS:N	2.19	0.74
2:B:166:GLU:OE1	2:B:166:GLU:N	2.20	0.74
2:F:298:THR:OG1	2:F:303:PRO:O	2.06	0.74
4:H:189:PRO:O	4:H:193:TYR:OH	2.06	0.73
1:E:1:TYR:O	1:E:281:ASN:ND2	2.22	0.73
1:A:228:MET:SD	1:A:230:HIS:ND1	2.61	0.72
4:H:125:HIS:ND1	4:H:126:GLU:OE1	2.22	0.72
4:H:219:SER:OG	4:H:267:TRP:OXT	2.07	0.72
4:L:225:ASP:OD1	4:L:229:ARG:N	2.22	0.72
2:B:225:CYS:SG	2:B:226:HIS:N	2.61	0.71
1:I:41:THR:OG1	1:I:125:HIS:O	2.09	0.71
1:M:174:ASP:OD2	1:M:186:ASN:ND2	2.23	0.71
2:F:397:THR:HG23	2:F:398:PRO:HD3	1.73	0.71
2:J:166:GLU:N	2:J:166:GLU:OE1	2.24	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:158:GLN:N	2:J:158:GLN:OE1	2.24	0.70
2:J:139:GLU:OE2	2:J:331:ASN:ND2	2.24	0.70
2:J:183:GLN:NE2	2:J:187:ASN:O	2.24	0.70
2:B:183:GLN:NE2	2:B:187:ASN:O	2.25	0.70
4:P:250:THR:OG1	4:P:251:TRP:N	2.21	0.70
2:F:31:PRO:O	2:F:51:SER:OG	2.09	0.70
4:D:200:VAL:HG12	4:D:209:ILE:CG2	2.22	0.69
2:J:167:ILE:HG23	2:J:256:ILE:HG21	1.74	0.69
1:A:21:ARG:NH2	1:I:385:ASP:OD2	2.26	0.68
1:I:228:MET:SD	1:I:230:HIS:ND1	2.66	0.68
1:A:381:GLU:N	1:A:381:GLU:OE1	2.28	0.67
2:J:24:ALA:HB2	2:N:92:PHE:HE1	1.57	0.67
4:H:197:HIS:NE2	4:H:218:ASP:OD2	2.27	0.67
3:K:39:LEU:HD21	3:K:52:LEU:CD1	2.26	0.66
2:F:163:THR:OG1	2:F:164:VAL:N	2.28	0.66
4:H:261:PRO:O	4:H:264:SER:OG	2.12	0.66
2:B:271:ARG:NH1	2:B:289:ASP:OD1	2.28	0.66
1:E:30:GLN:NE2	1:E:136:MET:SD	2.68	0.66
3:C:32:ALA:O	3:C:35:THR:OG1	2.12	0.66
2:F:151:ILE:HD12	2:F:267:VAL:HG11	1.78	0.66
1:M:387:ILE:HD12	2:N:320:VAL:HG11	1.77	0.66
2:B:32:VAL:HG23	2:B:50:PHE:CE1	2.31	0.65
4:D:206:ARG:NH1	4:L:138:ASP:OD1	2.29	0.65
2:J:271:ARG:NH1	2:J:289:ASP:OD1	2.30	0.65
1:M:16:LYS:NZ	1:M:30:GLN:OE1	2.30	0.65
2:J:24:ALA:HB2	2:N:92:PHE:CE1	2.32	0.64
2:B:54:ILE:HG21	2:B:96:THR:HB	1.77	0.64
4:H:232:ALA:O	4:H:233:ILE:HD13	1.98	0.64
4:H:200:VAL:HG12	4:H:209:ILE:HD13	1.80	0.64
1:I:322:THR:OG1	1:I:323:ASP:N	2.31	0.64
4:D:223:ILE:HB	4:D:232:ALA:HB3	1.80	0.63
2:F:166:GLU:N	2:F:166:GLU:OE1	2.31	0.63
1:I:249:THR:HG23	1:I:254:LYS:NZ	2.13	0.63
1:A:322:THR:OG1	1:A:323:ASP:N	2.31	0.63
4:H:145:HIS:N	4:H:167:ASP:OD1	2.31	0.63
2:F:271:ARG:NH1	2:F:289:ASP:OD1	2.31	0.63
2:J:231:ASP:O	2:J:232:HIS:ND1	2.32	0.63
1:M:311:ASP:OD1	1:M:312:PHE:N	2.32	0.63
2:J:271:ARG:NH2	2:J:289:ASP:OD2	2.31	0.63
1:E:121:ALA:HB1	1:E:189:PHE:CE2	2.35	0.62
1:M:53:THR:O	1:M:53:THR:OG1	2.17	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:84:VAL:HG11	1:M:102:GLN:CB	2.30	0.62
2:B:33:ALA:N	2:B:51:SER:OG	2.33	0.62
2:F:189:LYS:NZ	2:F:214:ASP:OD2	2.32	0.62
1:M:50:GLU:OE2	1:M:51:TYR:N	2.32	0.62
2:N:33:ALA:N	2:N:51:SER:OG	2.31	0.62
2:F:48:ILE:HB	2:F:101:ILE:HG23	1.82	0.62
4:P:136:VAL:HG13	4:P:230:VAL:HG11	1.81	0.62
4:L:152:ASN:OD1	4:L:154:ASP:N	2.33	0.62
3:K:32:ALA:O	3:K:35:THR:OG1	2.13	0.61
4:D:225:ASP:OD1	4:D:229:ARG:N	2.33	0.61
1:E:203:ILE:HD11	1:E:213:LEU:HD21	1.81	0.61
1:E:210:SER:OG	1:E:212:ASP:OD1	2.16	0.61
1:E:407:LEU:HD12	1:E:407:LEU:O	2.01	0.61
2:F:151:ILE:CD1	2:F:267:VAL:HG11	2.30	0.61
1:M:406:ALA:HA	2:N:354:ILE:HD13	1.82	0.61
4:L:221:ARG:O	4:L:234:VAL:HG22	2.00	0.61
2:F:402:THR:HG22	4:H:256:VAL:HG13	1.83	0.61
2:B:171:MET:SD	3:C:37:ARG:NH2	2.74	0.60
2:B:341:LEU:HB3	2:B:361:LEU:HD21	1.82	0.60
2:B:13:ARG:NH1	2:B:236:GLN:OE1	2.33	0.60
2:J:166:GLU:HG3	2:J:253:LYS:HZ3	1.67	0.60
2:N:166:GLU:OE1	2:N:166:GLU:N	2.34	0.60
2:B:204:GLY:O	2:B:207:ASN:ND2	2.35	0.60
2:B:158:GLN:OE1	2:B:158:GLN:N	2.34	0.60
2:J:159:THR:HG22	2:J:161:ALA:H	1.65	0.60
1:I:381:GLU:N	1:I:381:GLU:OE1	2.34	0.60
1:I:401:ASP:OD1	1:I:402:MET:N	2.35	0.60
1:A:237:PRO:N	1:A:237:PRO:HG2	1.98	0.59
2:F:17:ALA:HB3	2:F:33:ALA:HB3	1.82	0.59
2:B:167:ILE:HG23	2:B:256:ILE:HG21	1.84	0.59
2:F:11:ALA:O	2:F:235:TRP:N	2.36	0.59
1:I:174:ASP:OD1	1:I:186:ASN:ND2	2.35	0.59
2:J:33:ALA:N	2:J:51:SER:OG	2.36	0.59
4:L:232:ALA:HB1	4:L:248:VAL:CG2	2.32	0.59
2:J:54:ILE:HD13	2:J:96:THR:HB	1.84	0.59
2:J:326:GLU:OE2	2:J:336:ARG:NH1	2.36	0.59
4:P:136:VAL:HG13	4:P:230:VAL:CG1	2.33	0.59
2:J:155:THR:OG1	2:J:156:TYR:N	2.36	0.58
2:N:56:ILE:O	2:N:68:ARG:NE	2.36	0.58
2:N:331:ASN:OD1	2:N:331:ASN:N	2.36	0.58
4:D:141:MET:HB3	4:D:168:LEU:HD11	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:181:LEU:HD13	2:B:227:VAL:HG11	1.85	0.58
1:I:51:TYR:OH	1:I:236:THR:O	2.22	0.58
1:I:84:VAL:HG21	1:I:102:GLN:HB2	1.85	0.58
1:M:84:VAL:HG11	1:M:102:GLN:HB2	1.86	0.58
1:I:417:LEU:HD11	2:J:381:ILE:HG12	1.86	0.58
3:K:27:CYS:SG	3:K:35:THR:HG22	2.44	0.58
2:J:225:CYS:SG	2:J:226:HIS:N	2.75	0.58
2:J:400:ALA:HB3	4:L:161:LYS:NZ	2.19	0.58
4:L:189:PRO:O	4:L:193:TYR:OH	2.15	0.58
1:A:53:THR:HG21	1:A:235:GLN:OE1	2.04	0.58
1:I:57:SER:N	2:J:238:ASN:OD1	2.37	0.58
4:H:200:VAL:HG12	4:H:209:ILE:CD1	2.33	0.57
1:I:249:THR:HG21	2:J:305:TYR:CE2	2.39	0.57
2:B:138:ARG:CZ	2:B:293:LEU:HD23	2.34	0.57
2:J:211:THR:HG21	2:J:215:MET:SD	2.44	0.57
2:J:231:ASP:OD1	2:J:232:HIS:N	2.37	0.57
1:E:199:ARG:NH2	2:J:315:GLU:OE1	2.37	0.57
2:N:253:LYS:O	3:O:48:TYR:OH	2.19	0.57
2:J:67:ILE:HG12	2:J:115:ILE:HD12	1.87	0.57
1:E:303:VAL:HG11	1:E:378:ALA:HB2	1.85	0.57
2:F:34:ILE:HD11	2:F:113:VAL:HG12	1.86	0.57
1:M:322:THR:OG1	1:M:323:ASP:N	2.37	0.57
1:E:149:ASN:OD1	1:E:149:ASN:N	2.38	0.56
1:E:204:GLN:HE21	1:E:204:GLN:HA	1.69	0.56
4:H:125:HIS:HB2	4:H:130:THR:HG21	1.85	0.56
1:I:422:ILE:HA	1:I:425:ILE:HD12	1.87	0.56
1:A:236:THR:CA	1:A:237:PRO:HG2	2.35	0.56
2:F:275:VAL:HG12	2:F:284:LEU:CD2	2.36	0.56
1:E:53:THR:HG21	1:E:235:GLN:OE1	2.05	0.56
2:B:48:ILE:HB	2:B:101:ILE:HG23	1.88	0.56
2:F:173:PRO:HA	2:F:245:ALA:HB2	1.87	0.56
1:I:244:LEU:HD23	1:I:247:LYS:HE3	1.88	0.56
4:L:182:SER:OG	4:L:230:VAL:HG13	2.05	0.56
2:N:52:ALA:HB1	2:N:68:ARG:O	2.06	0.56
2:B:202:THR:O	2:B:224:GLN:NE2	2.39	0.56
2:N:202:THR:HG23	2:N:224:GLN:HE22	1.71	0.56
1:I:387:ILE:HD11	2:J:320:VAL:CG2	2.34	0.55
4:P:232:ALA:C	4:P:233:ILE:HD13	2.27	0.55
4:L:182:SER:OG	4:L:183:LYS:N	2.40	0.55
1:I:253:THR:HG21	2:J:295:SER:HB2	1.87	0.55
3:C:9:CYS:N	3:C:18:CYS:SG	2.78	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:251:LYS:O	3:G:43:VAL:HG21	2.07	0.55
3:K:31:ASN:OD1	3:K:34:ALA:HB3	2.07	0.55
1:M:252:ASN:HA	1:M:261:ILE:HD13	1.88	0.55
1:A:11:VAL:HA	1:A:33:VAL:HG23	1.89	0.55
1:E:96:CYS:O	1:E:100:ASN:ND2	2.40	0.55
4:L:232:ALA:HB1	4:L:248:VAL:HG21	1.89	0.55
2:B:11:ALA:O	2:B:235:TRP:N	2.39	0.54
2:B:52:ALA:HB1	2:B:68:ARG:O	2.06	0.54
1:E:53:THR:HG21	1:E:235:GLN:HE22	1.71	0.54
3:G:40:GLU:O	3:G:43:VAL:HG23	2.07	0.54
4:P:252:ASN:OD1	4:P:253:LYS:N	2.40	0.54
2:F:343:THR:OG1	2:F:361:LEU:HD12	2.07	0.54
2:B:290:HIS:O	2:B:292:THR:HG23	2.08	0.54
1:E:194:SER:O	1:E:194:SER:OG	2.22	0.54
1:E:203:ILE:CD1	1:E:213:LEU:HD21	2.36	0.54
2:J:54:ILE:HG12	2:J:67:ILE:HD13	1.88	0.54
2:N:167:ILE:HD13	2:N:237:PHE:CD1	2.43	0.54
1:A:428:LEU:HD13	2:B:391:ALA:HB2	1.90	0.54
2:N:392:ARG:HD2	2:N:396:LEU:HD12	1.90	0.54
4:P:193:TYR:O	4:P:199:ALA:HB1	2.08	0.54
2:B:177:ASP:OD1	2:B:179:THR:HG23	2.08	0.54
1:E:325:ASN:OD1	1:E:348:THR:HG23	2.08	0.54
1:M:362:SER:OG	1:M:362:SER:O	2.21	0.54
4:D:195:TRP:CZ3	4:D:209:ILE:HG21	2.43	0.53
2:F:283:THR:HG22	2:F:317:THR:HG22	1.90	0.53
2:N:53:GLN:OE1	2:N:53:GLN:N	2.38	0.53
1:A:94:CYS:SG	1:A:100:ASN:ND2	2.81	0.53
1:A:290:ILE:HD11	1:I:305:THR:CG2	2.37	0.53
4:H:225:ASP:HB3	4:H:231:VAL:HG21	1.90	0.53
2:J:127:ILE:C	2:N:143:ILE:HD11	2.29	0.53
1:M:179:VAL:HG22	1:M:184:VAL:HG23	1.89	0.53
1:A:398:VAL:HG21	2:B:362:TYR:OH	2.09	0.53
3:O:11:LEU:HB3	3:O:14:ALA:HB3	1.88	0.53
1:A:183:GLU:OE1	1:A:183:GLU:N	2.40	0.53
2:B:151:ILE:HD12	2:B:267:VAL:HG11	1.89	0.53
2:B:177:ASP:OD2	2:B:179:THR:OG1	2.24	0.53
4:H:125:HIS:CB	4:H:130:THR:HG21	2.39	0.53
1:I:308:HIS:O	1:I:308:HIS:ND1	2.41	0.53
4:H:232:ALA:C	4:H:233:ILE:HD13	2.29	0.53
2:J:167:ILE:HD13	2:J:237:PHE:HD1	1.74	0.53
1:M:118:HIS:ND1	1:M:118:HIS:O	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:323:ASP:OD1	1:M:324:LYS:N	2.42	0.53
2:N:83:LEU:HD12	2:N:84:LYS:N	2.24	0.53
2:B:166:GLU:HG3	2:B:253:LYS:HZ3	1.74	0.53
4:H:185:THR:HG21	4:H:231:VAL:HG22	1.91	0.53
1:M:9:ASN:HD22	1:M:276:ILE:HD11	1.74	0.53
2:N:318:ILE:HD13	2:N:325:MET:HG3	1.91	0.52
2:J:117:ASP:OD1	2:J:117:ASP:N	2.42	0.52
1:E:406:ALA:HB2	2:F:354:ILE:HD12	1.90	0.52
1:M:129:LEU:HD23	1:M:130:LYS:N	2.24	0.52
6:W:1:NAG:H83	6:W:1:NAG:H3	1.92	0.52
7:Z:1:NAG:H83	7:Z:1:NAG:H3	1.90	0.52
4:D:232:ALA:HB1	4:D:248:VAL:CG2	2.34	0.52
4:P:200:VAL:HG12	4:P:209:ILE:HG22	1.90	0.52
1:A:42:LEU:HD11	1:A:266:VAL:CG1	2.39	0.52
1:E:129:LEU:HD12	1:E:130:LYS:N	2.24	0.52
2:J:39:SER:O	2:J:39:SER:OG	2.20	0.52
2:N:235:TRP:CE3	3:O:36:LEU:HD11	2.44	0.52
1:E:358:THR:HG21	1:E:363:PRO:HG3	1.90	0.52
1:M:42:LEU:HD22	1:M:122:TYR:CD2	2.44	0.52
4:L:196:HIS:ND1	4:L:196:HIS:O	2.43	0.52
4:H:182:SER:OG	4:H:230:VAL:HG13	2.10	0.52
1:I:19:ILE:HD12	1:I:282:LEU:HD11	1.90	0.52
1:E:420:PHE:HE2	2:F:384:SER:HG	1.58	0.52
2:F:93:VAL:HB	2:F:101:ILE:HD11	1.91	0.52
2:J:312:ALA:O	2:J:314:VAL:HG13	2.08	0.52
2:B:57:ASP:O	2:B:68:ARG:NH2	2.43	0.51
2:F:7:ASN:OD1	2:F:10:LYS:N	2.42	0.51
4:L:115:ILE:HG23	4:L:116:GLU:H	1.76	0.51
4:D:152:ASN:OD1	4:D:154:ASP:N	2.43	0.51
1:A:179:VAL:HG22	1:A:184:VAL:HG23	1.92	0.51
2:B:239:SER:OG	2:B:242:VAL:HG22	2.11	0.51
2:F:10:LYS:O	2:F:234:LYS:NZ	2.36	0.51
1:I:303:VAL:HG21	1:I:378:ALA:HA	1.92	0.51
3:C:51:LEU:HD12	3:C:51:LEU:O	2.11	0.51
4:H:221:ARG:HE	4:H:234:VAL:HG11	1.75	0.51
2:J:400:ALA:HB3	4:L:161:LYS:HZ1	1.76	0.51
4:H:259:VAL:HG12	4:H:261:PRO:HD3	1.92	0.51
2:J:286:LEU:HD13	2:J:329:TRP:CZ3	2.46	0.51
3:K:14:ALA:O	3:K:15:THR:OG1	2.27	0.51
2:B:54:ILE:HG23	2:B:67:ILE:CD1	2.40	0.51
1:E:203:ILE:HD12	1:E:215:ALA:HB2	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:43:ASP:OD2	2:J:104:LYS:NZ	2.44	0.51
4:P:232:ALA:O	4:P:233:ILE:HD13	2.10	0.51
4:H:250:THR:OG1	4:H:251:TRP:N	2.44	0.51
1:I:179:VAL:HG22	1:I:184:VAL:HG23	1.92	0.51
2:F:95:GLY:HA3	2:F:102:LEU:HD12	1.92	0.50
4:H:185:THR:CG2	4:H:231:VAL:HG22	2.42	0.50
4:D:200:VAL:HG12	4:D:209:ILE:HG22	1.92	0.50
2:J:93:VAL:HB	2:J:101:ILE:HD11	1.92	0.50
1:M:308:HIS:O	1:M:308:HIS:ND1	2.43	0.50
4:P:223:ILE:HD11	4:P:234:VAL:CG1	2.42	0.50
1:I:358:THR:OG1	1:I:359:ALA:N	2.45	0.50
3:K:20:GLN:OE1	3:K:20:GLN:N	2.45	0.50
2:B:42:THR:HG23	2:B:153:CYS:HB3	1.94	0.50
4:H:234:VAL:HA	4:H:248:VAL:HG22	1.92	0.50
2:F:231:ASP:O	2:F:232:HIS:ND1	2.45	0.50
4:L:200:VAL:HG12	4:L:209:ILE:HD11	1.93	0.50
2:F:275:VAL:HG12	2:F:284:LEU:HD23	1.94	0.49
1:M:84:VAL:HG11	1:M:102:GLN:HB3	1.93	0.49
2:N:40:GLU:OE1	2:N:156:TYR:OH	2.27	0.49
2:B:54:ILE:HA	2:B:67:ILE:HD12	1.94	0.49
2:J:235:TRP:CH2	3:K:39:LEU:HD23	2.48	0.49
1:M:203:ILE:HD12	1:M:215:ALA:HB2	1.93	0.49
2:N:167:ILE:HD12	2:N:167:ILE:O	2.13	0.49
1:M:251:LEU:HD12	1:M:254:LYS:HB3	1.94	0.49
2:N:199:TYR:HE2	2:N:211:THR:HG22	1.78	0.49
4:P:183:LYS:O	4:P:230:VAL:N	2.43	0.49
2:F:57:ASP:OD1	2:F:58:LYS:N	2.42	0.49
2:N:32:VAL:HG12	2:N:113:VAL:HG23	1.94	0.49
3:K:24:VAL:HG12	3:K:25:PRO:HD3	1.94	0.49
2:N:417:ALA:HB1	2:N:418:PRO:HD2	1.94	0.49
3:O:51:LEU:HD12	3:O:51:LEU:O	2.13	0.49
4:P:254:ASP:OD1	4:P:254:ASP:N	2.45	0.49
1:I:303:VAL:HG11	1:I:378:ALA:HB2	1.94	0.49
2:J:253:LYS:NZ	3:K:49:TYR:OH	2.31	0.49
1:A:303:VAL:HG21	1:A:378:ALA:HA	1.94	0.49
1:E:136:MET:HE1	6:U:1:NAG:H82	1.95	0.49
1:M:179:VAL:CG2	1:M:184:VAL:HG23	2.41	0.49
4:P:223:ILE:HD11	4:P:234:VAL:HG12	1.93	0.49
1:I:174:ASP:O	1:I:177:ILE:HD11	2.13	0.49
2:J:52:ALA:HB1	2:J:68:ARG:O	2.13	0.49
4:L:145:HIS:NE2	4:L:267:TRP:O	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:N:53:GLN:O	2:N:67:ILE:HD12	2.13	0.49
2:N:73:HIS:NE2	2:N:177:ASP:OD2	2.46	0.49
2:N:401:LEU:HD23	4:P:170:CYS:SG	2.51	0.49
2:B:308:GLU:OE2	2:B:316:ARG:NH2	2.42	0.48
2:J:40:GLU:OE1	2:J:156:TYR:OH	2.31	0.48
3:O:39:LEU:HD13	3:O:52:LEU:HD13	1.94	0.48
1:E:121:ALA:HB1	1:E:189:PHE:CZ	2.48	0.48
1:M:30:GLN:NE2	1:M:136:MET:SD	2.86	0.48
2:F:92:PHE:CE2	2:N:24:ALA:HB2	2.48	0.48
1:E:129:LEU:HD12	1:E:130:LYS:H	1.77	0.48
4:P:154:ASP:OD1	4:P:155:LEU:N	2.42	0.48
1:A:307:THR:O	1:A:307:THR:OG1	2.31	0.48
2:F:24:ALA:HB2	2:J:92:PHE:CE1	2.48	0.48
1:A:203:ILE:HD12	1:A:215:ALA:HB2	1.95	0.48
4:H:187:GLU:N	4:H:187:GLU:OE1	2.47	0.48
1:M:270:ASN:N	1:M:270:ASN:OD1	2.45	0.48
2:N:155:THR:OG1	2:N:156:TYR:N	2.47	0.48
4:D:145:HIS:N	4:D:167:ASP:OD1	2.47	0.48
4:H:234:VAL:HG21	4:H:246:LEU:HD22	1.94	0.48
1:A:195:GLY:N	1:A:214:TYR:OH	2.46	0.48
1:I:259:CYS:HB3	1:I:271:CYS:HA	1.96	0.48
2:J:350:TRP:O	2:J:354:ILE:HD12	2.13	0.48
1:M:371:SER:O	1:M:371:SER:OG	2.32	0.48
2:B:111:LEU:HD12	2:B:112:GLN:N	2.29	0.48
2:F:48:ILE:CD1	2:F:111:LEU:HD21	2.44	0.48
4:H:170:CYS:SG	4:H:171:ALA:N	2.87	0.48
1:A:236:THR:C	1:A:237:PRO:CG	2.77	0.48
1:E:36:THR:HB	1:E:129:LEU:HD11	1.96	0.48
4:L:234:VAL:HG12	4:L:246:LEU:HD13	1.95	0.48
2:B:163:THR:O	2:B:164:VAL:HG22	2.14	0.47
2:F:167:ILE:HG23	2:F:256:ILE:HG21	1.96	0.47
2:F:397:THR:HG23	2:F:398:PRO:CD	2.43	0.47
4:P:219:SER:O	4:P:234:VAL:HG23	2.14	0.47
1:A:364:SER:OG	1:A:364:SER:O	2.31	0.47
2:B:215:MET:SD	2:B:216:THR:N	2.87	0.47
2:B:235:TRP:CD1	3:C:36:LEU:HD13	2.50	0.47
2:F:56:ILE:O	2:F:68:ARG:NE	2.47	0.47
2:N:167:ILE:HD13	2:N:237:PHE:HD1	1.79	0.47
2:N:50:PHE:CD2	2:N:52:ALA:HB3	2.49	0.47
2:B:39:SER:O	2:B:39:SER:OG	2.20	0.47
2:B:42:THR:HG22	2:B:154:THR:H	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:343:THR:HG23	2:F:360:GLY:HA3	1.95	0.47
1:I:10:VAL:HG23	1:I:13:PHE:HB2	1.95	0.47
1:A:303:VAL:HG21	1:A:378:ALA:CB	2.45	0.47
2:B:392:ARG:NH2	2:B:416:CYS:O	2.47	0.47
1:I:126:THR:HG22	1:I:127:ALA:H	1.79	0.47
4:L:219:SER:O	4:L:234:VAL:HG23	2.15	0.47
1:M:132:LYS:NZ	1:M:145:ASP:OD2	2.44	0.47
2:N:54:ILE:O	2:N:56:ILE:HD12	2.15	0.47
2:N:402:THR:OG1	4:P:256:VAL:HG23	2.14	0.47
1:E:81:TYR:O	1:E:101:THR:OG1	2.24	0.47
1:E:164:GLY:N	1:E:277:PRO:O	2.40	0.47
7:Y:1:NAG:O6	7:Y:2:NAG:N2	2.45	0.47
4:H:223:ILE:HB	4:H:232:ALA:HB3	1.97	0.47
1:M:19:ILE:HD13	1:M:282:LEU:HD11	1.96	0.47
1:A:364:SER:OG	1:A:401:ASP:OD2	2.27	0.46
1:E:53:THR:HG21	1:E:235:GLN:NE2	2.29	0.46
1:I:282:LEU:HD12	1:I:287:PHE:CE2	2.50	0.46
4:P:138:ASP:O	4:P:173:ILE:HG12	2.15	0.46
1:M:203:ILE:HD11	1:M:213:LEU:HD21	1.96	0.46
7:T:1:NAG:H3	7:T:1:NAG:H83	1.97	0.46
2:B:246:ASP:OD2	2:B:249:ALA:N	2.43	0.46
2:B:246:ASP:OD1	2:B:250:ARG:N	2.48	0.46
1:I:68:CYS:HB3	1:I:103:LEU:HD21	1.97	0.46
2:J:61:ASN:OD1	2:J:62:HIS:N	2.48	0.46
2:J:250:ARG:CZ	3:K:37:ARG:HH22	2.29	0.46
2:N:211:THR:OG1	2:N:212:ASN:N	2.49	0.46
1:M:95:PHE:HD1	2:N:226:HIS:HB2	1.80	0.46
1:A:10:VAL:HG23	1:A:13:PHE:HB2	1.97	0.46
2:B:298:THR:OG1	2:B:303:PRO:O	2.17	0.46
4:H:120:ILE:HD12	4:H:222:PRO:HD2	1.98	0.46
1:I:76:TYR:OH	1:I:105:GLU:OE2	2.34	0.46
1:I:330:VAL:HG21	1:I:354:LEU:CD1	2.46	0.46
2:B:54:ILE:HG12	2:B:67:ILE:HD11	1.98	0.45
1:E:41:THR:C	1:E:42:LEU:HD22	2.35	0.45
1:E:84:VAL:HG11	1:E:102:GLN:HB3	1.97	0.45
4:L:247:SER:O	4:L:247:SER:OG	2.34	0.45
4:L:123:VAL:HG21	4:L:142:LYS:NZ	2.32	0.45
2:B:138:ARG:NH1	2:B:293:LEU:HD23	2.31	0.45
2:J:167:ILE:HD13	2:J:237:PHE:CD1	2.50	0.45
1:M:35:GLU:OE1	1:M:35:GLU:N	2.50	0.45
1:M:425:ILE:O	1:M:429:VAL:HG23	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:N:290:HIS:O	2:N:292:THR:HG23	2.16	0.45
4:P:233:ILE:O	4:P:249:VAL:HG12	2.16	0.45
1:A:50:GLU:OE1	1:A:241:LYS:NZ	2.41	0.45
2:F:48:ILE:HD11	2:F:111:LEU:HD21	1.97	0.45
1:I:109:ASP:OD1	1:I:109:ASP:N	2.49	0.45
2:F:407:VAL:HG12	2:F:407:VAL:O	2.17	0.45
2:F:165:GLU:OE2	2:F:256:ILE:HD11	2.16	0.45
2:J:57:ASP:OD1	2:J:61:ASN:N	2.50	0.45
1:I:255:ALA:HB2	1:I:261:ILE:HD11	1.99	0.45
1:A:60:VAL:HG11	1:A:86:PRO:HG3	1.98	0.45
2:B:85:VAL:HG23	2:B:91:CYS:HB2	1.99	0.45
4:L:155:LEU:HD13	4:L:177:MET:SD	2.57	0.45
4:L:264:SER:OG	4:L:265:GLU:N	2.50	0.45
2:N:37:VAL:HG13	2:N:48:ILE:HD12	1.97	0.45
4:P:120:ILE:HG22	4:P:132:TYR:HB3	1.98	0.45
4:P:265:GLU:OE1	4:P:265:GLU:N	2.48	0.45
2:F:359:TYR:HA	2:F:366:THR:HG21	1.97	0.45
1:I:362:SER:O	1:I:362:SER:OG	2.30	0.45
2:N:33:ALA:N	2:N:51:SER:HG	2.13	0.45
2:N:73:HIS:CD2	2:N:229:VAL:HG11	2.52	0.45
6:V:2:NAG:O7	6:V:2:NAG:O3	2.24	0.45
1:A:203:ILE:CD1	1:A:213:LEU:HD11	2.46	0.45
2:J:88:SER:OG	2:J:89:GLY:N	2.50	0.45
1:I:264:ASN:HB3	1:I:265:PRO:HD3	1.98	0.44
1:M:164:GLY:N	1:M:277:PRO:O	2.43	0.44
1:M:428:LEU:O	1:M:428:LEU:HD12	2.17	0.44
2:N:293:LEU:HD11	2:N:307:GLU:HG3	1.98	0.44
1:I:195:GLY:N	1:I:214:TYR:OH	2.44	0.44
1:E:124:ALA:HB2	1:E:177:ILE:HD13	1.99	0.44
1:E:402:MET:HE3	1:E:407:LEU:HG	1.99	0.44
1:A:84:VAL:HG21	1:A:102:GLN:CB	2.47	0.44
2:F:308:GLU:OE2	2:F:316:ARG:NH2	2.47	0.44
2:F:332:ASN:OD1	2:F:332:ASN:N	2.50	0.44
4:L:232:ALA:HB1	4:L:248:VAL:HG22	2.00	0.44
1:A:136:MET:SD	6:Q:1:NAG:H82	2.57	0.44
2:J:168:ASP:OD2	2:J:251:LYS:NZ	2.49	0.44
1:M:42:LEU:HD11	1:M:266:VAL:HG12	2.00	0.44
1:A:327:ASP:OD1	1:A:327:ASP:N	2.51	0.44
2:B:32:VAL:HG23	2:B:50:PHE:CZ	2.53	0.44
1:I:129:LEU:HD13	1:I:166:LEU:HD13	1.99	0.44
1:M:135:VAL:HG21	1:M:156:ILE:HD13	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:N:215:MET:SD	2:N:216:THR:N	2.91	0.44
2:N:289:ASP:OD1	2:N:289:ASP:N	2.47	0.44
1:A:299:LEU:HD11	1:A:318:LEU:HD22	2.00	0.43
4:P:217:GLY:N	4:P:267:TRP:O	2.45	0.43
2:B:410:THR:OG1	2:B:411:LEU:N	2.50	0.43
1:E:16:LYS:NZ	1:E:340:GLN:O	2.45	0.43
1:I:320:TYR:CE2	1:I:346:VAL:HG13	2.53	0.43
4:P:135:LEU:CD1	4:P:173:ILE:HG21	2.49	0.43
1:M:42:LEU:HD11	1:M:266:VAL:CG1	2.49	0.43
1:M:116:HIS:ND1	2:N:260:LEU:HD21	2.33	0.43
3:O:10:VAL:O	3:O:42:ASN:ND2	2.43	0.43
4:D:226:ASN:OD1	4:D:226:ASN:N	2.52	0.43
1:M:34:VAL:HG13	1:M:35:GLU:OE1	2.18	0.43
1:M:174:ASP:O	1:M:177:ILE:HD11	2.18	0.43
1:I:402:MET:CE	1:I:407:LEU:HD13	2.48	0.43
2:N:392:ARG:CD	2:N:396:LEU:HD12	2.47	0.43
2:F:79:VAL:HG13	2:F:82:SER:HB3	2.00	0.43
4:H:140:VAL:HG22	4:H:171:ALA:HB3	2.00	0.43
2:F:117:ASP:OD1	2:F:118:THR:N	2.47	0.43
4:P:140:VAL:HG13	4:P:140:VAL:O	2.19	0.43
4:L:140:VAL:HG11	4:L:155:LEU:HD11	2.01	0.43
4:L:182:SER:HG	4:L:230:VAL:HG13	1.84	0.43
1:M:82:THR:O	1:M:223:ARG:NH2	2.52	0.43
1:M:184:VAL:HG22	1:M:185:PHE:H	1.84	0.43
2:N:37:VAL:HG13	2:N:48:ILE:CD1	2.49	0.43
1:E:249:THR:HG21	2:F:305:TYR:HE2	1.84	0.43
1:E:364:SER:OG	1:E:401:ASP:OD2	2.31	0.43
2:N:32:VAL:HG12	2:N:32:VAL:O	2.19	0.43
1:I:258:GLY:O	2:J:336:ARG:NH2	2.50	0.42
1:M:428:LEU:HD23	2:N:387:MET:SD	2.59	0.42
2:N:173:PRO:HA	2:N:245:ALA:HB2	2.01	0.42
1:E:60:VAL:HG13	1:E:60:VAL:O	2.19	0.42
1:E:202:ASP:OD2	1:E:239:GLY:N	2.51	0.42
2:F:271:ARG:NH2	2:F:289:ASP:OD2	2.53	0.42
4:H:223:ILE:HD11	4:H:234:VAL:HB	2.00	0.42
2:J:250:ARG:NE	3:K:37:ARG:HH22	2.18	0.42
2:J:359:TYR:HA	2:J:366:THR:HG21	2.01	0.42
2:B:407:VAL:HG12	2:B:407:VAL:O	2.19	0.42
1:E:28:THR:HG21	1:E:342:ALA:HB1	2.01	0.42
2:F:252:GLY:N	3:G:40:GLU:OE2	2.53	0.42
1:A:299:LEU:HG	1:A:374:ALA:HB2	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:25:SER:HG	1:E:288:THR:HG1	1.62	0.42
3:G:9:CYS:N	3:G:18:CYS:SG	2.93	0.42
4:L:163:SER:O	4:L:167:ASP:N	2.49	0.42
1:M:261:ILE:HD12	1:M:261:ILE:H	1.84	0.42
2:B:254:VAL:HG22	2:B:255:HIS:H	1.85	0.42
1:I:60:VAL:HG23	1:I:93:TYR:CE2	2.54	0.42
2:N:50:PHE:CE2	2:N:52:ALA:HB3	2.55	0.42
4:P:122:GLU:OE2	4:P:129:VAL:HA	2.18	0.42
1:E:60:VAL:HG13	1:E:93:TYR:CE2	2.55	0.42
4:H:128:LYS:O	4:H:130:THR:HG23	2.20	0.42
2:J:143:ILE:HD12	2:J:143:ILE:O	2.19	0.42
3:K:39:LEU:HD21	3:K:52:LEU:HD13	2.01	0.42
2:B:139:GLU:HB3	2:B:292:THR:HG22	2.02	0.42
1:I:19:ILE:CD1	1:I:282:LEU:HD11	2.50	0.42
2:J:37:VAL:HG13	2:J:48:ILE:CD1	2.49	0.42
1:E:150:GLY:O	1:E:162:ILE:HD11	2.19	0.42
4:H:124:LYS:N	4:H:151:ASP:OD2	2.53	0.42
1:I:301:CYS:SG	1:I:316:LEU:HD12	2.60	0.42
2:N:136:VAL:HG11	2:N:153:CYS:SG	2.60	0.42
1:A:303:VAL:HG11	1:A:378:ALA:HB2	2.01	0.42
2:F:183:GLN:NE2	2:F:187:ASN:O	2.50	0.42
2:N:8:VAL:HG22	2:N:9:TYR:H	1.85	0.42
4:H:192:HIS:O	4:H:226:ASN:ND2	2.51	0.41
1:I:380:CYS:O	2:J:348:HIS:NE2	2.51	0.41
2:J:226:HIS:O	2:J:227:VAL:HG13	2.20	0.41
2:N:393:SER:O	2:N:397:THR:HG23	2.19	0.41
2:F:54:ILE:HG21	2:F:96:THR:HB	2.03	0.41
1:M:307:THR:O	1:M:307:THR:OG1	2.36	0.41
1:M:325:ASN:OD1	1:M:348:THR:HG23	2.19	0.41
2:B:96:THR:CG2	2:B:101:ILE:HD13	2.42	0.41
1:E:46:TYR:CD1	1:E:204:GLN:NE2	2.79	0.41
2:F:290:HIS:O	2:F:292:THR:HG23	2.20	0.41
4:H:159:ALA:O	4:H:171:ALA:HB2	2.21	0.41
4:H:227:LYS:HA	4:H:227:LYS:HE2	2.03	0.41
2:J:32:VAL:HG21	2:J:115:ILE:CG2	2.50	0.41
3:G:30:ASN:OD1	3:G:30:ASN:N	2.54	0.41
1:I:259:CYS:HB3	1:I:271:CYS:CA	2.51	0.41
2:N:125:CYS:SG	2:N:126:ARG:N	2.94	0.41
1:E:311:ASP:OD1	1:E:312:PHE:N	2.48	0.41
1:E:316:LEU:HD21	1:E:354:LEU:HB2	2.02	0.41
2:F:231:ASP:OD1	2:F:232:HIS:N	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:H:211:THR:HG23	4:H:242:SER:O	2.21	0.41
2:J:74:ALA:C	2:J:75:ILE:HD13	2.41	0.41
2:J:112:GLN:OE1	2:J:126:ARG:NH1	2.54	0.41
2:J:393:SER:OG	2:J:394:LYS:N	2.54	0.41
4:L:122:GLU:HB2	4:L:129:VAL:HG23	2.03	0.41
1:A:95:PHE:CZ	2:B:226:HIS:HB2	2.55	0.41
1:E:213:LEU:HD23	1:E:214:TYR:N	2.36	0.41
1:E:379:SER:HG	2:F:348:HIS:CE1	2.37	0.41
1:I:11:VAL:HA	1:I:33:VAL:HG23	2.03	0.41
2:J:181:LEU:HD22	2:J:188:VAL:CG1	2.51	0.41
2:B:75:ILE:HD12	2:B:75:ILE:N	2.35	0.41
3:C:9:CYS:SG	3:C:51:LEU:HD22	2.61	0.41
1:E:55:VAL:O	1:E:55:VAL:HG13	2.21	0.41
1:I:282:LEU:HD12	1:I:287:PHE:CZ	2.56	0.41
1:I:417:LEU:HD11	2:J:381:ILE:CG1	2.51	0.41
2:J:284:LEU:CD1	2:J:318:ILE:HD11	2.50	0.41
7:T:2:NAG:HO3	7:T:3:BMA:C1	2.34	0.41
2:B:93:VAL:HB	2:B:101:ILE:HD11	2.03	0.41
1:I:364:SER:O	1:I:364:SER:OG	2.39	0.41
2:J:268:PRO:O	2:J:331:ASN:ND2	2.45	0.41
2:N:117:ASP:OD2	2:N:123:ARG:NH1	2.55	0.41
2:B:67:ILE:CG2	2:B:115:ILE:HD11	2.51	0.40
3:C:24:VAL:HG12	3:C:25:PRO:N	2.35	0.40
2:N:34:ILE:HD11	2:N:113:VAL:HG22	2.02	0.40
1:A:231:VAL:HG23	1:A:231:VAL:O	2.21	0.40
1:I:112:ASP:N	1:I:112:ASP:OD1	2.54	0.40
1:M:36:THR:OG1	1:M:129:LEU:HD21	2.21	0.40
1:M:98:SER:O	1:M:98:SER:OG	2.36	0.40
1:M:112:ASP:OD1	1:M:112:ASP:N	2.54	0.40
1:E:386:HIS:ND1	2:F:342:THR:HG21	2.37	0.40
1:I:402:MET:N	1:I:402:MET:SD	2.95	0.40
2:J:168:ASP:N	2:J:168:ASP:OD1	2.55	0.40
2:J:239:SER:HB3	2:J:242:VAL:HG22	2.04	0.40
2:B:32:VAL:HG22	2:B:113:VAL:HG23	2.03	0.40
3:G:17:PRO:HD2	3:G:17:PRO:O	2.22	0.40
2:N:293:LEU:HD12	2:N:294:PHE:N	2.36	0.40
4:P:233:ILE:HD11	4:P:251:TRP:HH2	1.86	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	436/438 (100%)	436 (100%)	0	0	100	100
1	E	436/438 (100%)	436 (100%)	0	0	100	100
1	I	435/438 (99%)	434 (100%)	0	1 (0%)	47	78
1	M	435/438 (99%)	434 (100%)	1 (0%)	0	100	100
2	B	415/417 (100%)	409 (99%)	3 (1%)	3 (1%)	22	59
2	F	413/417 (99%)	405 (98%)	4 (1%)	4 (1%)	15	51
2	J	415/417 (100%)	413 (100%)	0	2 (0%)	29	66
2	N	411/417 (99%)	407 (99%)	1 (0%)	3 (1%)	22	59
3	C	49/54 (91%)	46 (94%)	3 (6%)	0	100	100
3	G	50/54 (93%)	49 (98%)	0	1 (2%)	7	39
3	K	49/54 (91%)	44 (90%)	3 (6%)	2 (4%)	3	26
3	O	51/54 (94%)	51 (100%)	0	0	100	100
4	D	150/153 (98%)	150 (100%)	0	0	100	100
4	H	151/153 (99%)	151 (100%)	0	0	100	100
4	L	151/153 (99%)	151 (100%)	0	0	100	100
4	P	151/153 (99%)	150 (99%)	0	1 (1%)	22	59
5	R	35/37 (95%)	35 (100%)	0	0	100	100
All	All	4233/4285 (99%)	4201 (99%)	15 (0%)	17 (0%)	38	69

All (17) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	164	VAL
2	B	205	THR
2	F	162	LYS
2	F	163	THR
2	J	250	ARG

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Mol	Chain	Res	Type
3	K	14	ALA
2	N	164	VAL
4	P	154	ASP
1	I	126	THR
3	K	44	ASP
2	N	249	ALA
2	J	350	TRP
2	F	207	ASN
3	G	12	ALA
2	N	350	TRP
2	F	350	TRP
2	B	350	TRP

### 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	372/372 (100%)	357 (96%)	15 (4%)	31	60
1	E	372/372 (100%)	349 (94%)	23 (6%)	18	49
1	I	371/372 (100%)	347 (94%)	24 (6%)	17	48
1	M	371/372 (100%)	347 (94%)	24 (6%)	17	48
2	B	355/355 (100%)	328 (92%)	27 (8%)	13	43
2	F	354/355 (100%)	333 (94%)	21 (6%)	19	51
2	J	355/355 (100%)	331 (93%)	24 (7%)	16	47
2	N	353/355 (99%)	327 (93%)	26 (7%)	13	44
3	C	44/46 (96%)	40 (91%)	4 (9%)	9	36
3	G	45/46 (98%)	40 (89%)	5 (11%)	6	28
3	K	44/46 (96%)	42 (96%)	2 (4%)	27	57
3	O	45/46 (98%)	43 (96%)	2 (4%)	28	58
4	D	122/124 (98%)	110 (90%)	12 (10%)	8	33
4	H	123/124 (99%)	113 (92%)	10 (8%)	11	41

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	L	122/124 (98%)	113 (93%)	9 (7%)	13	44
4	P	123/124 (99%)	113 (92%)	10 (8%)	11	41
5	R	33/33 (100%)	33 (100%)	0	100	100
All	All	3604/3621 (100%)	3366 (93%)	238 (7%)	20	48

All (238) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	49	CYS
1	A	87	PHE
1	A	102	GLN
1	A	104	SER
1	A	167	SER
1	A	168	SER
1	A	264	ASN
1	A	298	ASP
1	A	311	ASP
1	A	323	ASP
1	A	325	ASN
1	A	356	PHE
1	A	368	SER
1	A	385	ASP
1	A	411	GLN
2	B	10	LYS
2	B	18	TYR
2	B	19	CYS
2	B	22	CYS
2	B	27	SER
2	B	28	CYS
2	B	39	SER
2	B	50	PHE
2	B	53	GLN
2	B	60	ASP
2	B	64	TYR
2	B	80	ARG
2	B	81	SER
2	B	117	ASP
2	B	125	CYS
2	B	162	LYS
2	B	171	MET
2	B	196	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	B	235	TRP
2	B	258	PHE
2	B	260	LEU
2	B	261	ASP
2	B	280	ARG
2	B	306	HIS
2	B	380	SER
2	B	382	PHE
2	B	393	SER
3	C	31	ASN
3	C	37	ARG
3	C	38	MET
3	C	42	ASN
4	D	119	CYS
4	D	134	CYS
4	D	141	MET
4	D	170	CYS
4	D	177	MET
4	D	221	ARG
4	D	226	ASN
4	D	227	LYS
4	D	251	TRP
4	D	254	ASP
4	D	255	MET
4	D	265	GLU
1	E	87	PHE
1	E	93	TYR
1	E	109	ASP
1	E	139	ASN
1	E	204	GLN
1	E	209	GLU
1	E	211	ASN
1	E	221	LEU
1	E	230	HIS
1	E	280	MET
1	E	301	CYS
1	E	308	HIS
1	E	312	PHE
1	E	316	LEU
1	E	357	SER
1	E	364	SER
1	E	377	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	E	385	ASP
1	E	390	TYR
1	E	399	PHE
1	E	401	ASP
1	E	420	PHE
1	E	437	ARG
2	F	49	GLN
2	F	50	PHE
2	F	61	ASN
2	F	62	HIS
2	F	67	ILE
2	F	71	ASP
2	F	109	GLU
2	F	125	CYS
2	F	170	HIS
2	F	215	MET
2	F	235	TRP
2	F	260	LEU
2	F	280	ARG
2	F	331	ASN
2	F	332	ASN
2	F	346	LYS
2	F	350	TRP
2	F	356	GLN
2	F	359	TYR
2	F	392	ARG
2	F	409	TRP
3	G	16	PHE
3	G	19	PHE
3	G	20	GLN
3	G	23	CYS
3	G	58	CYS
4	H	119	CYS
4	H	141	MET
4	H	142	LYS
4	H	162	LYS
4	H	170	CYS
4	H	178	ARG
4	H	196	HIS
4	H	224	PHE
4	H	227	LYS
4	H	250	THR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	I	51	TYR
1	I	59	TYR
1	I	67	GLU
1	I	76	TYR
1	I	78	CYS
1	I	87	PHE
1	I	105	GLU
1	I	167	SER
1	I	192	TYR
1	I	214	TYR
1	I	220	LYS
1	I	238	SER
1	I	240	PHE
1	I	244	LEU
1	I	245	LYS
1	I	308	HIS
1	I	311	ASP
1	I	323	ASP
1	I	328	CYS
1	I	333	HIS
1	I	364	SER
1	I	390	TYR
1	I	399	PHE
1	I	420	PHE
2	J	22	CYS
2	J	27	SER
2	J	28	CYS
2	J	39	SER
2	J	50	PHE
2	J	53	GLN
2	J	64	TYR
2	J	68	ARG
2	J	71	ASP
2	J	80	ARG
2	J	82	SER
2	J	88	SER
2	J	117	ASP
2	J	119	ARG
2	J	125	CYS
2	J	172	PRO
2	J	174	ASP
2	J	176	PRO

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	J	214	ASP
2	J	239	SER
2	J	265	CYS
2	J	356	GLN
2	J	380	SER
2	J	409	TRP
3	K	27	CYS
3	K	42	ASN
4	L	142	LYS
4	L	170	CYS
4	L	176	HIS
4	L	192	HIS
4	L	197	HIS
4	L	218	ASP
4	L	221	ARG
4	L	227	LYS
4	L	247	SER
1	M	21	ARG
1	M	46	TYR
1	M	49	CYS
1	M	51	TYR
1	M	62	CYS
1	M	75	ASP
1	M	78	CYS
1	M	85	TYR
1	M	105	GLU
1	M	109	ASP
1	M	112	ASP
1	M	114	CYS
1	M	170	TRP
1	M	181	LYS
1	M	220	LYS
1	M	230	HIS
1	M	275	ASN
1	M	292	GLU
1	M	301	CYS
1	M	306	CYS
1	M	331	HIS
1	M	335	ASN
1	M	385	ASP
1	M	407	LEU
2	N	7	ASN

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Mol	Chain	Res	Type
2	N	19	CYS
2	N	22	CYS
2	N	27	SER
2	N	28	CYS
2	N	35	GLU
2	N	51	SER
2	N	62	HIS
2	N	63	ASP
2	N	64	TYR
2	N	71	ASP
2	N	81	SER
2	N	97	MET
2	N	152	PRO
2	N	198	LYS
2	N	235	TRP
2	N	246	ASP
2	N	255	HIS
2	N	297	ARG
2	N	325	MET
2	N	326	GLU
2	N	327	TYR
2	N	331	ASN
2	N	333	ASP
2	N	346	LYS
2	N	350	TRP
3	O	31	ASN
3	O	49	TYR
4	P	147	LYS
4	P	160	PHE
4	P	182	SER
4	P	186	HIS
4	P	192	HIS
4	P	197	HIS
4	P	206	ARG
4	P	215	LYS
4	P	250	THR
4	P	251	TRP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (3) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	100	ASN

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Mol	Chain	Res	Type
2	B	224	GLN
2	F	73	HIS

### 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](#)

30 monosaccharides are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
6	NAG	Q	1	6,1	14,14,15	0.38	0	17,19,21	1.15	2 (11%)
6	NAG	Q	2	6	14,14,15	0.24	0	17,19,21	0.48	0
7	NAG	S	1	2,7	14,14,15	0.78	1 (7%)	17,19,21	0.67	0
7	NAG	S	2	7	14,14,15	0.91	1 (7%)	17,19,21	0.53	0
7	BMA	S	3	7	11,11,12	0.57	0	15,15,17	0.98	1 (6%)
7	NAG	T	1	2,7	14,14,15	0.54	0	17,19,21	1.38	2 (11%)
7	NAG	T	2	7	14,14,15	0.60	1 (7%)	17,19,21	0.41	0
7	BMA	T	3	7	11,11,12	0.61	0	15,15,17	0.72	0
6	NAG	U	1	6,1	14,14,15	0.32	0	17,19,21	1.13	1 (5%)
6	NAG	U	2	6	14,14,15	0.21	0	17,19,21	0.40	0
6	NAG	V	1	2,6	14,14,15	1.33	1 (7%)	17,19,21	0.71	1 (5%)
6	NAG	V	2	6	14,14,15	0.61	1 (7%)	17,19,21	0.46	0
6	NAG	W	1	2,6	14,14,15	0.33	0	17,19,21	1.61	2 (11%)
6	NAG	W	2	6	14,14,15	0.40	0	17,19,21	0.43	0



Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
6	NAG	X	1	6,1	14,14,15	0.70	1 (7%)	17,19,21	0.75	0
6	NAG	X	2	6	14,14,15	0.54	0	17,19,21	0.36	0
7	NAG	Y	1	2,7	14,14,15	0.59	1 (7%)	17,19,21	0.43	0
7	NAG	Y	2	7	14,14,15	0.75	1 (7%)	17,19,21	0.51	0
7	BMA	Y	3	7	11,11,12	0.57	0	15,15,17	0.92	0
7	NAG	Z	1	2,7	14,14,15	0.46	0	17,19,21	1.37	2 (11%)
7	NAG	Z	2	7	14,14,15	0.43	0	17,19,21	0.48	0
7	BMA	Z	3	7	11,11,12	0.66	0	15,15,17	0.71	0
6	NAG	a	1	6,1	14,14,15	0.84	1 (7%)	17,19,21	1.16	1 (5%)
6	NAG	a	2	6	14,14,15	0.51	0	17,19,21	0.35	0
7	NAG	b	1	2,7	14,14,15	0.91	1 (7%)	17,19,21	0.58	0
7	NAG	b	2	7	14,14,15	1.10	1 (7%)	17,19,21	0.55	0
7	BMA	b	3	7	11,11,12	0.59	0	15,15,17	0.92	0
7	NAG	c	1	2,7	14,14,15	0.47	0	17,19,21	1.38	3 (17%)
7	NAG	c	2	7	14,14,15	0.51	0	17,19,21	0.41	0
7	BMA	c	3	7	11,11,12	0.81	1 (9%)	15,15,17	0.80	1 (6%)

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
6	NAG	Q	1	6,1	-	1/6/23/26	0/1/1/1
6	NAG	Q	2	6	-	2/6/23/26	0/1/1/1
7	NAG	S	1	2,7	-	1/6/23/26	0/1/1/1
7	NAG	S	2	7	-	2/6/23/26	0/1/1/1
7	BMA	S	3	7	-	0/2/19/22	0/1/1/1
7	NAG	T	1	2,7	-	6/6/23/26	0/1/1/1
7	NAG	T	2	7	-	2/6/23/26	0/1/1/1
7	BMA	T	3	7	-	0/2/19/22	0/1/1/1
6	NAG	U	1	6,1	-	2/6/23/26	0/1/1/1
6	NAG	U	2	6	-	1/6/23/26	0/1/1/1
6	NAG	V	1	2,6	-	4/6/23/26	0/1/1/1
6	NAG	V	2	6	-	3/6/23/26	0/1/1/1
6	NAG	W	1	2,6	-	5/6/23/26	0/1/1/1
6	NAG	W	2	6	-	2/6/23/26	0/1/1/1
6	NAG	X	1	6,1	-	2/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	NAG	X	2	6	-	2/6/23/26	0/1/1/1
7	NAG	Y	1	2,7	-	2/6/23/26	0/1/1/1
7	NAG	Y	2	7	-	1/6/23/26	0/1/1/1
7	BMA	Y	3	7	-	0/2/19/22	0/1/1/1
7	NAG	Z	1	2,7	-	4/6/23/26	0/1/1/1
7	NAG	Z	2	7	-	1/6/23/26	0/1/1/1
7	BMA	Z	3	7	-	0/2/19/22	0/1/1/1
6	NAG	a	1	6,1	-	2/6/23/26	0/1/1/1
6	NAG	a	2	6	-	3/6/23/26	0/1/1/1
7	NAG	b	1	2,7	-	2/6/23/26	0/1/1/1
7	NAG	b	2	7	-	2/6/23/26	0/1/1/1
7	BMA	b	3	7	-	0/2/19/22	0/1/1/1
7	NAG	c	1	2,7	-	5/6/23/26	0/1/1/1
7	NAG	c	2	7	-	2/6/23/26	0/1/1/1
7	BMA	c	3	7	-	0/2/19/22	0/1/1/1

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	V	1	NAG	O5-C1	-4.75	1.36	1.43
7	b	2	NAG	O5-C1	-4.06	1.37	1.43
7	S	2	NAG	O5-C1	-3.26	1.38	1.43
7	b	1	NAG	O5-C1	-3.21	1.38	1.43
7	Y	2	NAG	O5-C1	-2.66	1.39	1.43
7	S	1	NAG	O5-C1	-2.61	1.39	1.43
6	a	1	NAG	O5-C1	-2.28	1.40	1.43
6	V	2	NAG	O5-C1	-2.20	1.40	1.43
7	T	2	NAG	O5-C1	-2.14	1.40	1.43
7	c	3	BMA	O5-C1	-2.13	1.40	1.43
7	Y	1	NAG	O5-C1	-2.07	1.40	1.43
6	X	1	NAG	O5-C1	-2.05	1.40	1.43

All (16) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	T	1	NAG	C2-N2-C7	4.42	129.19	122.90
6	W	1	NAG	C2-N2-C7	4.36	129.11	122.90
7	Z	1	NAG	C2-N2-C7	4.36	129.11	122.90
7	c	1	NAG	C2-N2-C7	4.22	128.91	122.90
6	U	1	NAG	C1-O5-C5	3.33	116.71	112.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	Q	1	NAG	C1-O5-C5	3.27	116.62	112.19
6	W	1	NAG	C1-O5-C5	2.78	115.96	112.19
6	a	1	NAG	C1-O5-C5	2.78	115.96	112.19
6	V	1	NAG	O4-C4-C3	-2.23	105.18	110.35
7	c	1	NAG	C1-C2-N2	2.23	114.30	110.49
7	c	3	BMA	O2-C2-C3	-2.17	105.78	110.14
7	Z	1	NAG	C1-C2-N2	2.12	114.11	110.49
7	S	3	BMA	C1-O5-C5	2.12	115.06	112.19
7	c	1	NAG	C1-O5-C5	2.08	115.00	112.19
7	T	1	NAG	C1-C2-N2	2.06	114.02	110.49
6	Q	1	NAG	O4-C4-C3	2.01	114.99	110.35

There are no chirality outliers.

All (59) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	V	2	NAG	C1-C2-N2-C7
6	U	1	NAG	C4-C5-C6-O6
6	W	1	NAG	O5-C5-C6-O6
7	T	1	NAG	O5-C5-C6-O6
7	T	2	NAG	C4-C5-C6-O6
6	U	1	NAG	O5-C5-C6-O6
7	c	2	NAG	C4-C5-C6-O6
6	X	1	NAG	C4-C5-C6-O6
6	a	1	NAG	C4-C5-C6-O6
6	W	2	NAG	O5-C5-C6-O6
6	X	2	NAG	O5-C5-C6-O6
7	S	2	NAG	O5-C5-C6-O6
7	b	2	NAG	O5-C5-C6-O6
7	T	2	NAG	O5-C5-C6-O6
7	c	2	NAG	O5-C5-C6-O6
6	W	1	NAG	C4-C5-C6-O6
6	a	1	NAG	O5-C5-C6-O6
6	X	2	NAG	C4-C5-C6-O6
7	T	1	NAG	C4-C5-C6-O6
6	X	1	NAG	O5-C5-C6-O6
6	V	1	NAG	C1-C2-N2-C7
6	W	2	NAG	C4-C5-C6-O6
6	W	1	NAG	C8-C7-N2-C2
6	W	1	NAG	O7-C7-N2-C2
7	T	1	NAG	C8-C7-N2-C2
7	T	1	NAG	O7-C7-N2-C2

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Mol	Chain	Res	Type	Atoms
7	Z	1	NAG	C8-C7-N2-C2
7	Z	1	NAG	O7-C7-N2-C2
7	c	1	NAG	C8-C7-N2-C2
7	c	1	NAG	O7-C7-N2-C2
6	Q	2	NAG	O5-C5-C6-O6
6	V	1	NAG	O5-C5-C6-O6
7	Y	2	NAG	O5-C5-C6-O6
7	b	1	NAG	O5-C5-C6-O6
7	Y	1	NAG	C4-C5-C6-O6
7	S	1	NAG	O5-C5-C6-O6
6	V	2	NAG	O5-C5-C6-O6
7	S	2	NAG	C4-C5-C6-O6
6	a	2	NAG	C1-C2-N2-C7
6	a	2	NAG	O5-C5-C6-O6
6	V	1	NAG	C4-C5-C6-O6
7	Y	1	NAG	O5-C5-C6-O6
7	c	1	NAG	C4-C5-C6-O6
6	U	2	NAG	O5-C5-C6-O6
7	Z	1	NAG	O5-C5-C6-O6
7	Z	2	NAG	O5-C5-C6-O6
7	b	2	NAG	C4-C5-C6-O6
7	c	1	NAG	O5-C5-C6-O6
6	V	2	NAG	C3-C2-N2-C7
6	a	2	NAG	C3-C2-N2-C7
7	c	1	NAG	C3-C2-N2-C7
6	Q	2	NAG	C4-C5-C6-O6
7	b	1	NAG	C4-C5-C6-O6
6	V	1	NAG	C3-C2-N2-C7
6	W	1	NAG	C3-C2-N2-C7
7	T	1	NAG	C3-C2-N2-C7
7	Z	1	NAG	C3-C2-N2-C7
6	Q	1	NAG	C4-C5-C6-O6
7	T	1	NAG	C1-C2-N2-C7

There are no ring outliers.

10 monomers are involved in 8 short contacts:

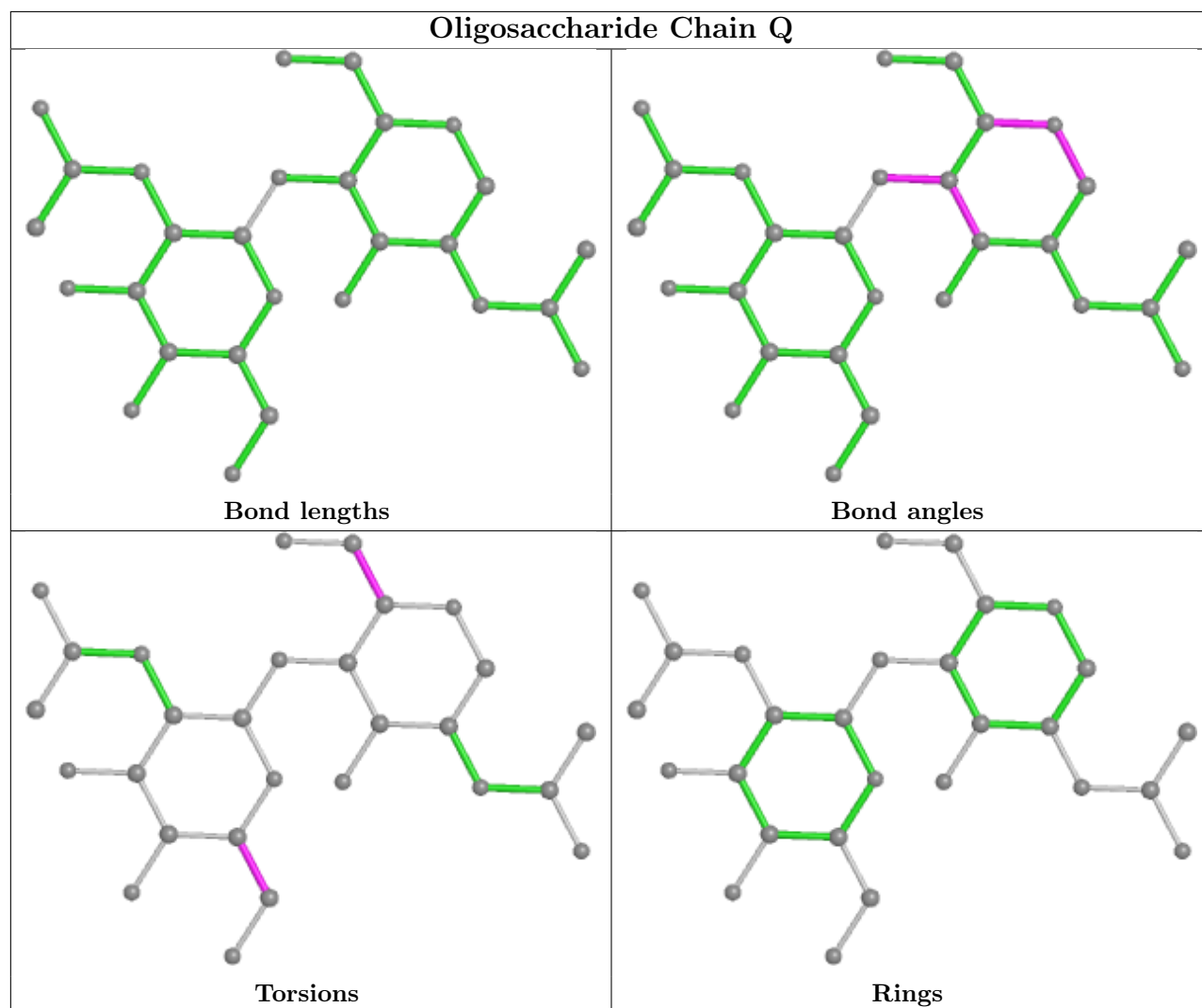
Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	T	3	BMA	1	0
7	Z	1	NAG	1	0
6	Q	1	NAG	1	0
7	Y	2	NAG	1	0

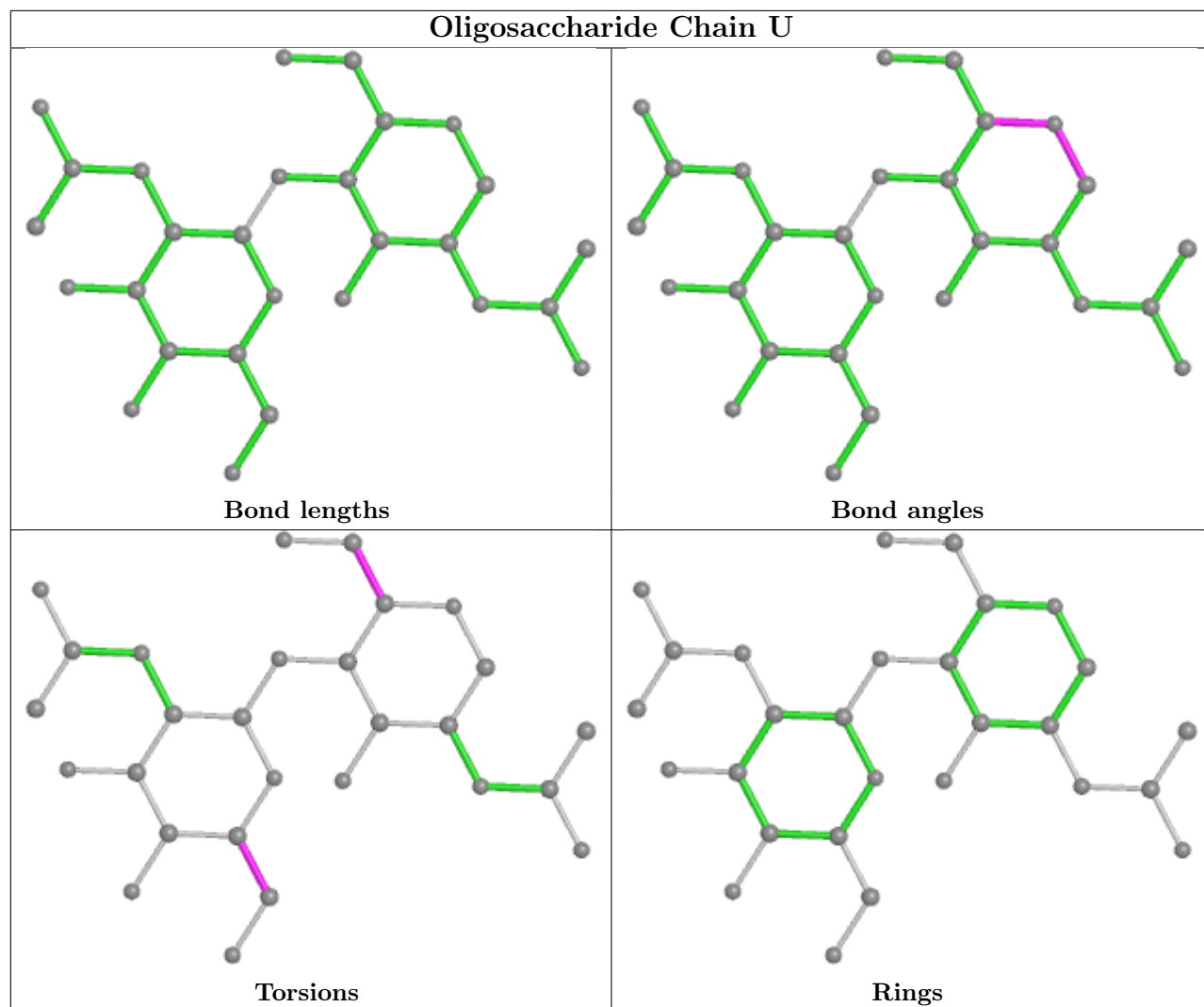
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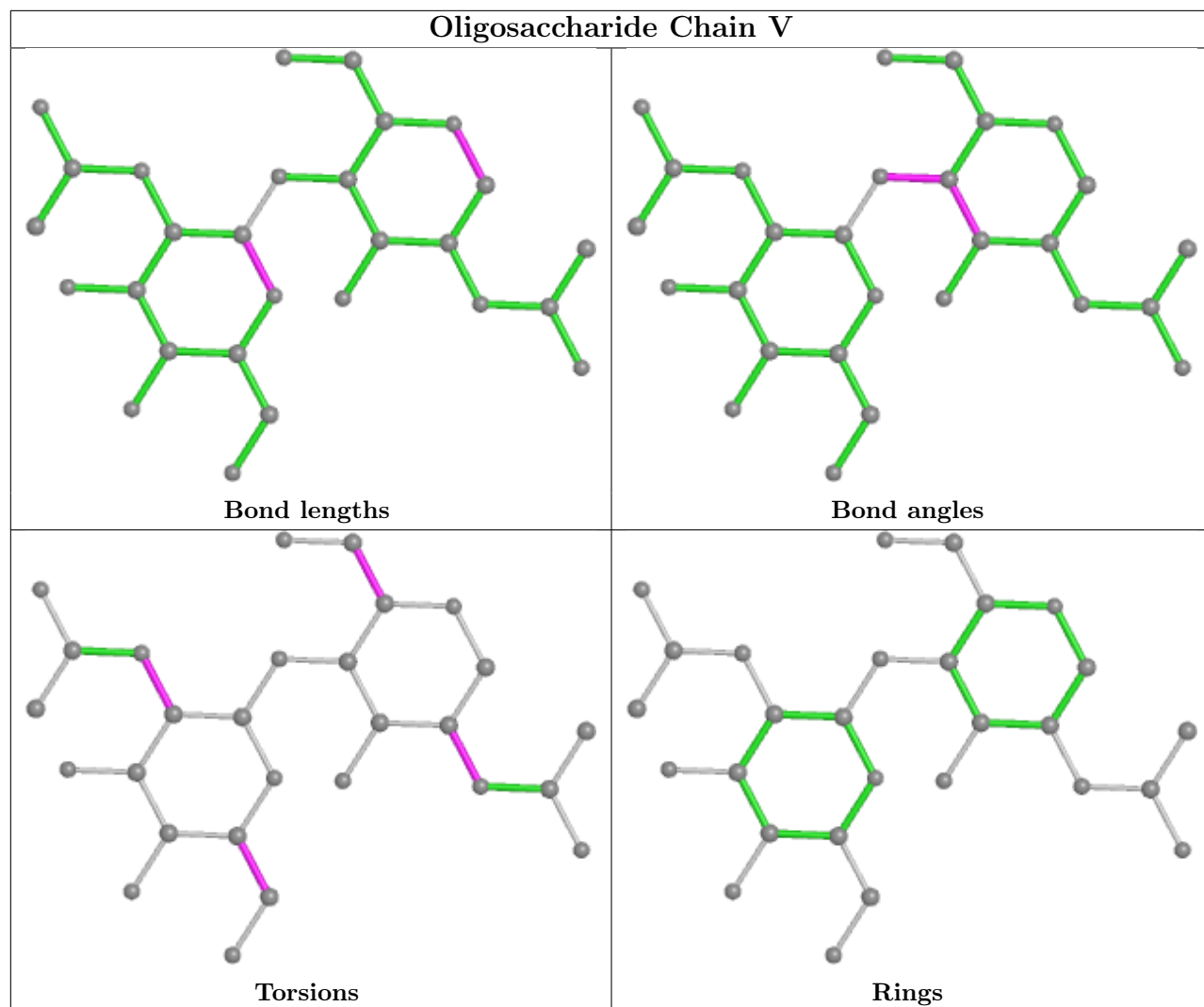
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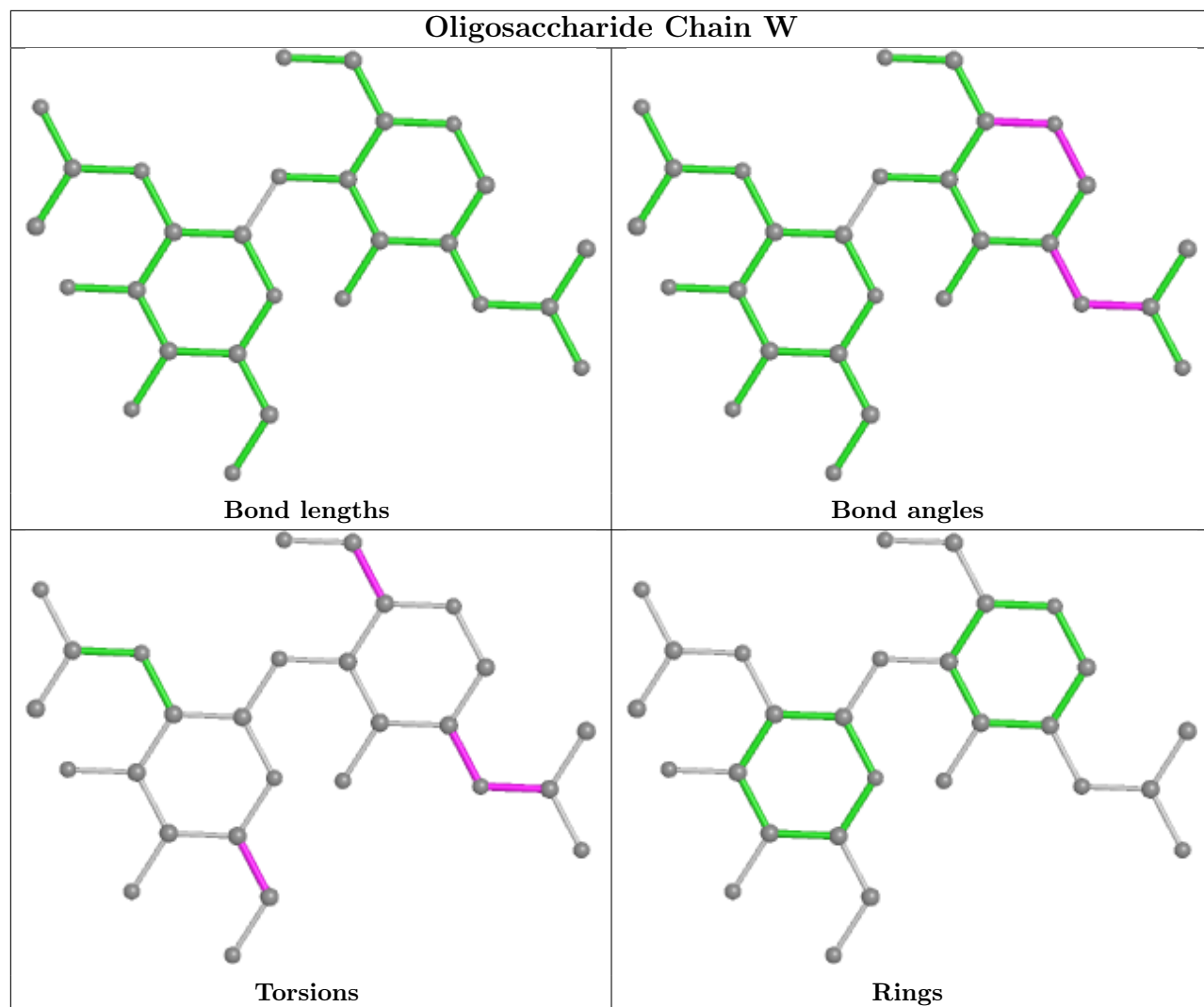
Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	Y	1	NAG	1	0
6	U	1	NAG	1	0
6	W	1	NAG	1	0
6	V	2	NAG	1	0
7	T	2	NAG	1	0
7	T	1	NAG	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

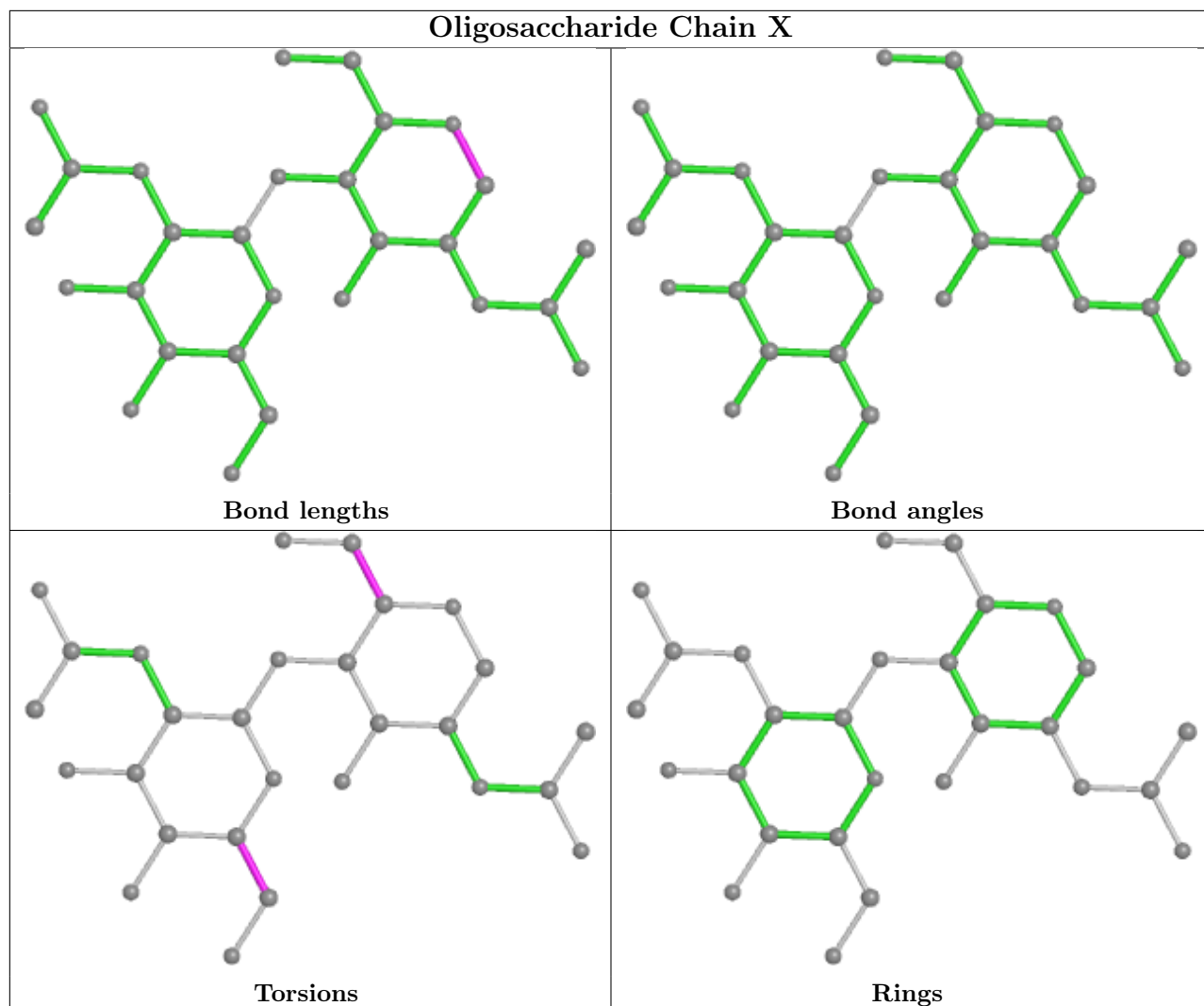


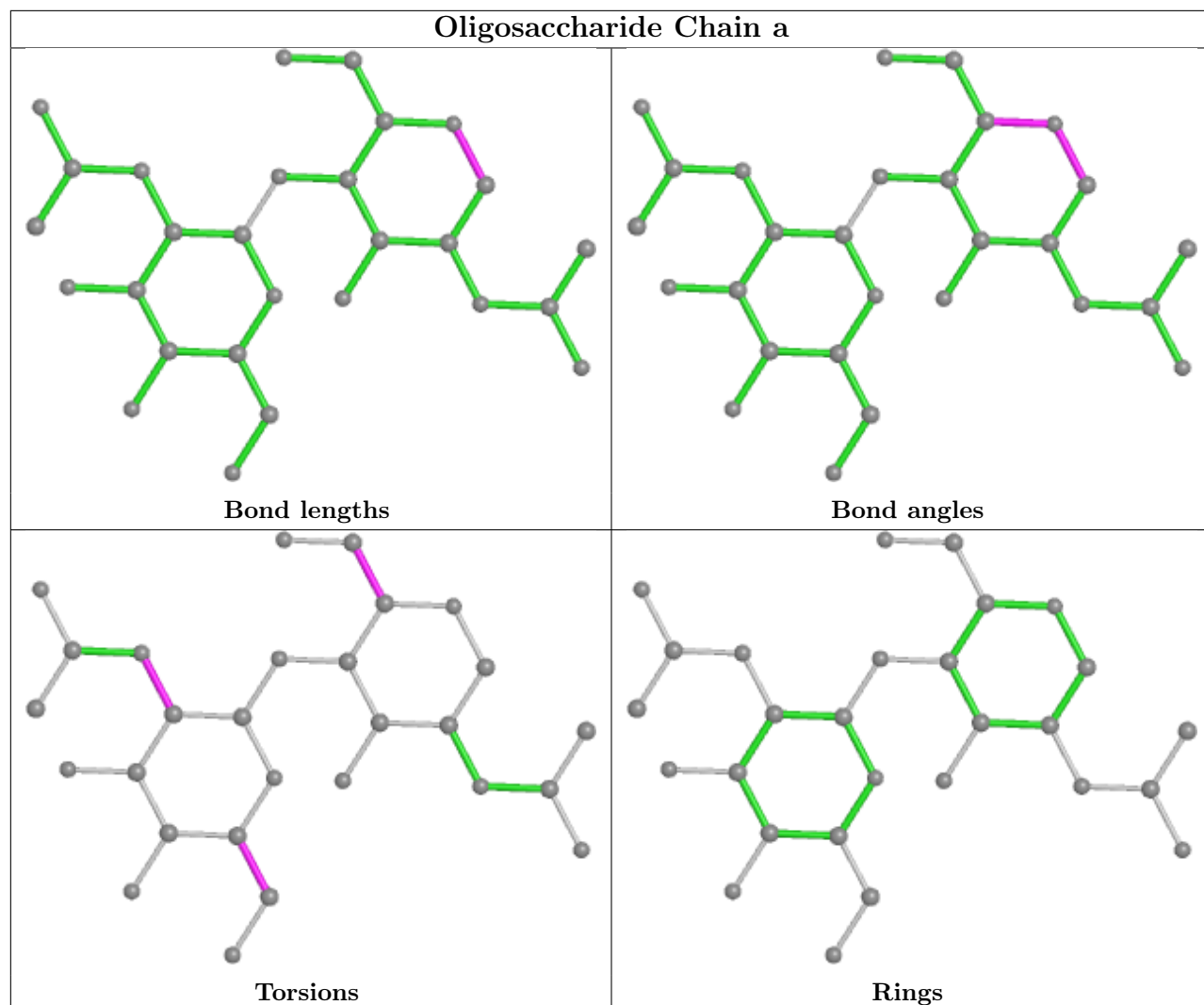


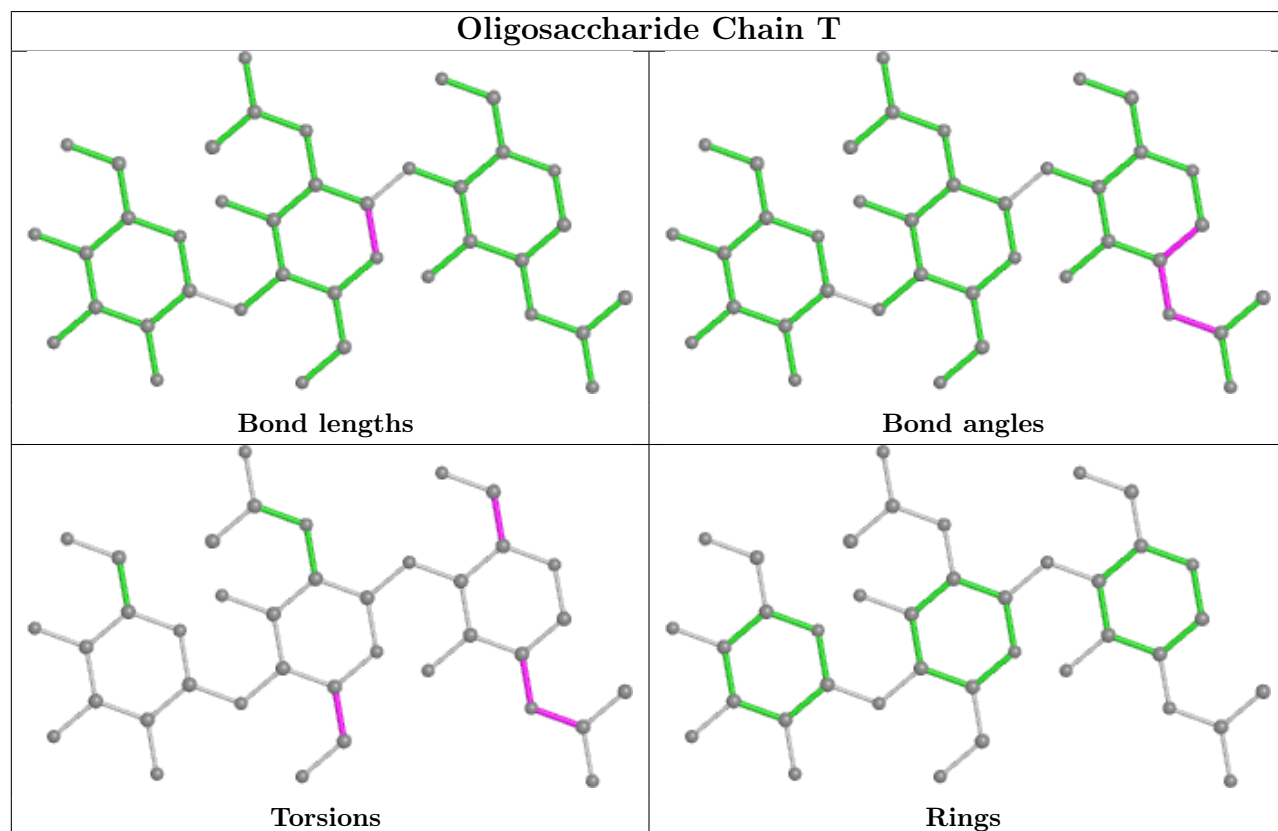
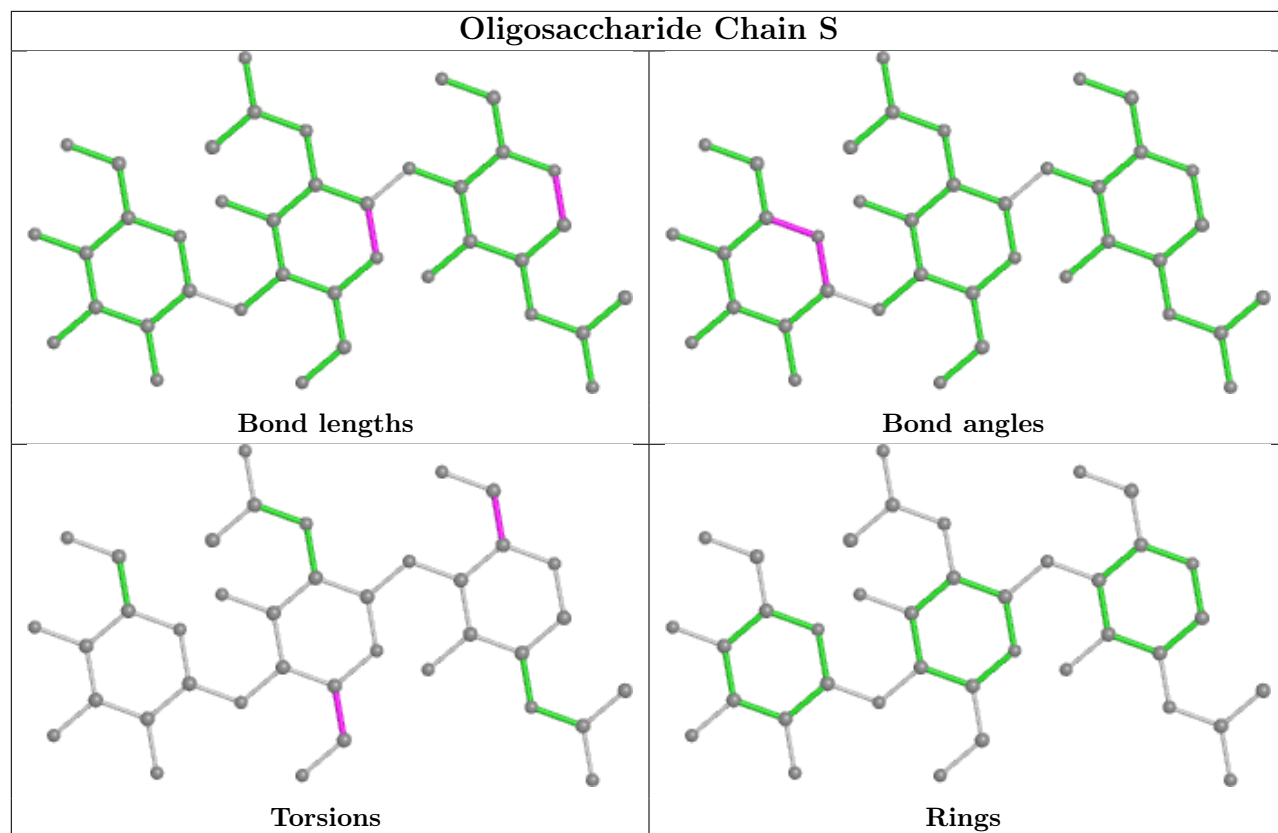


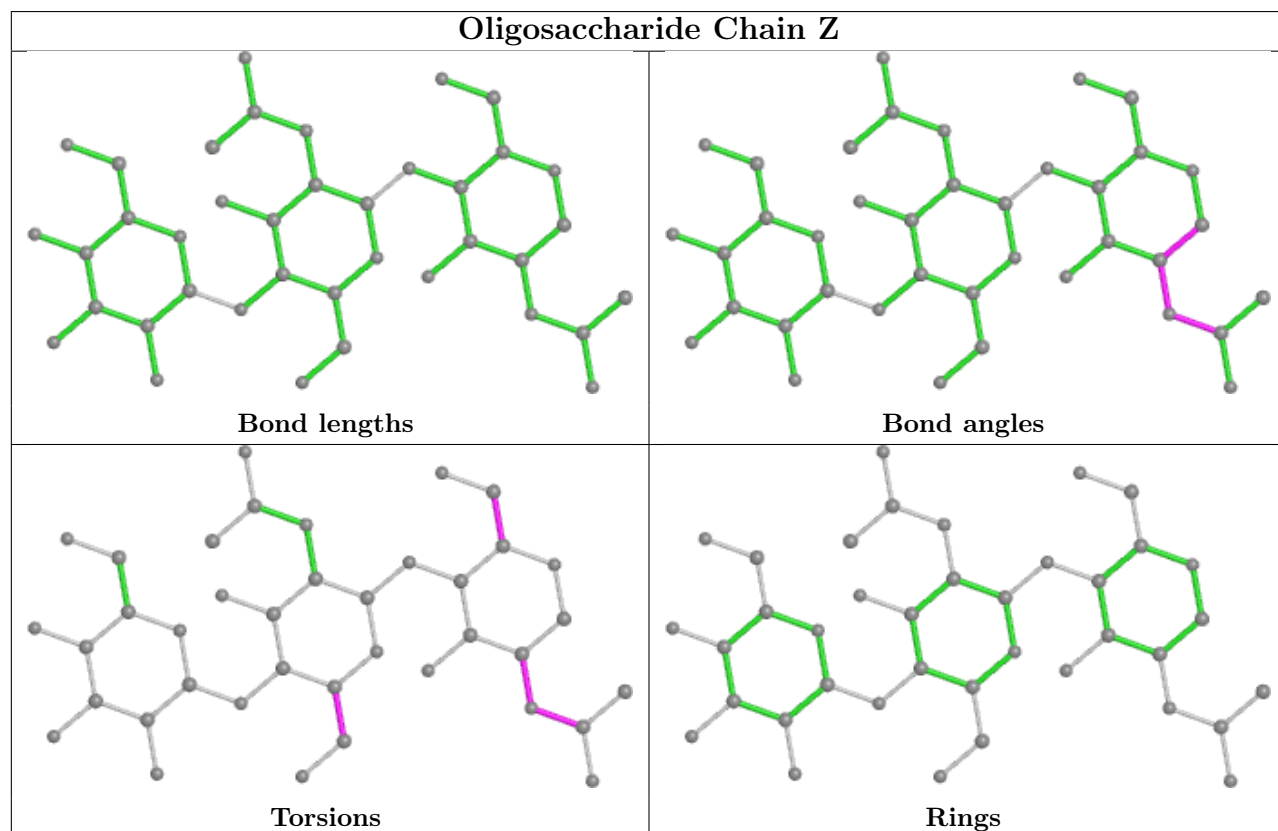
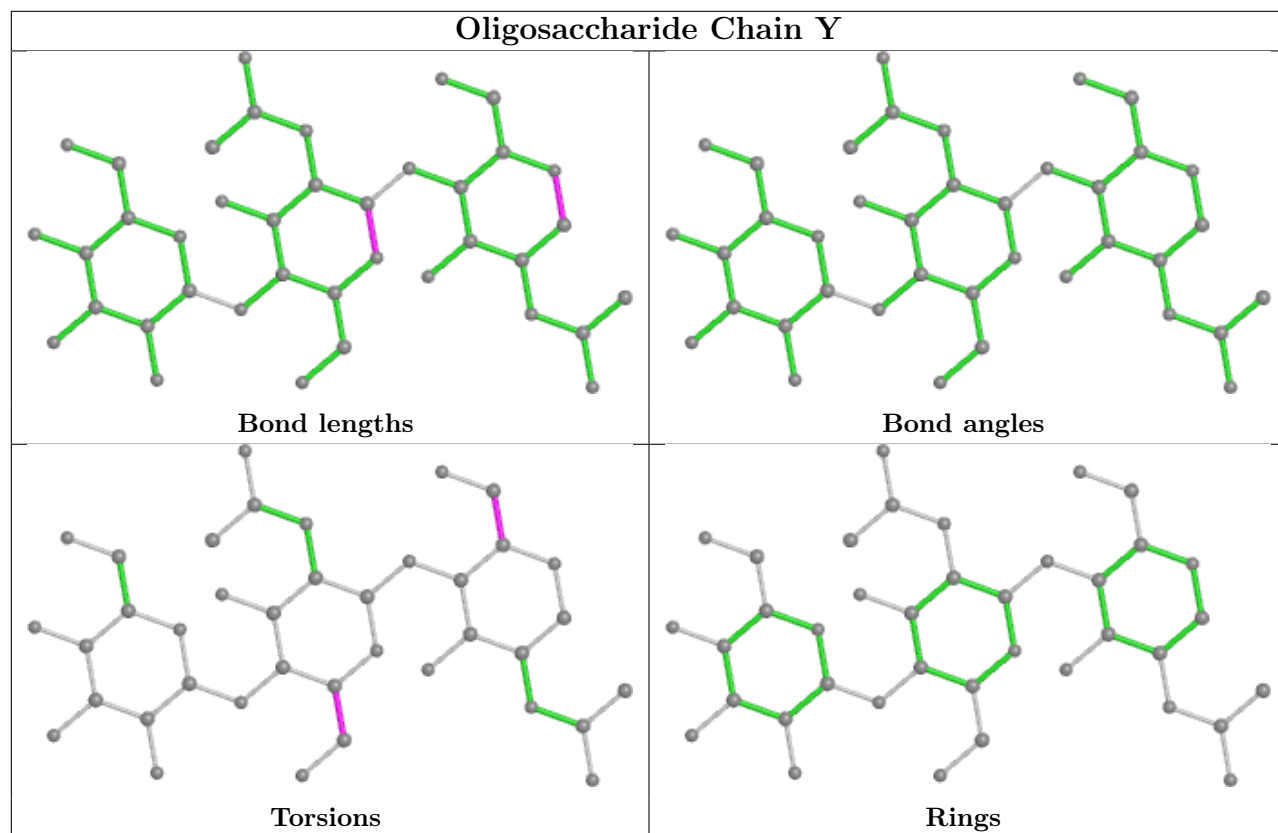


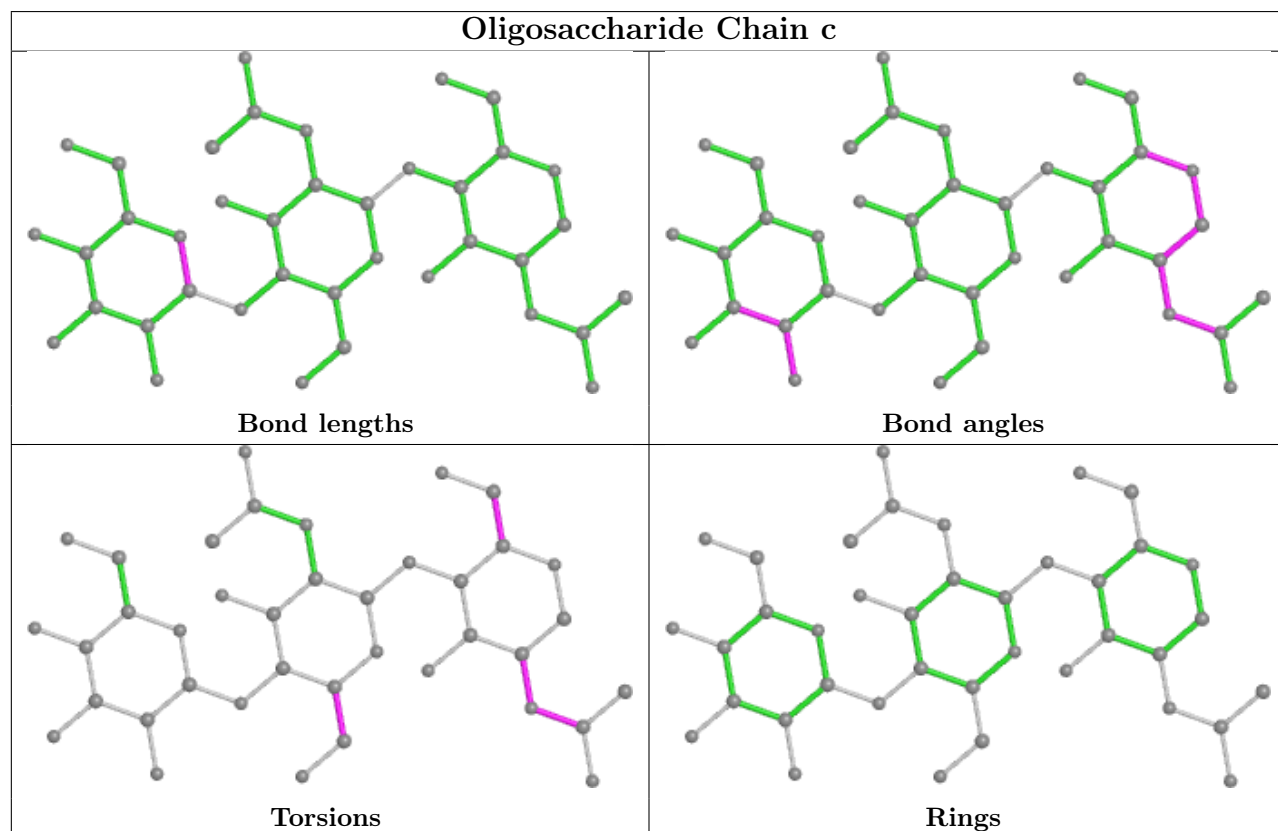
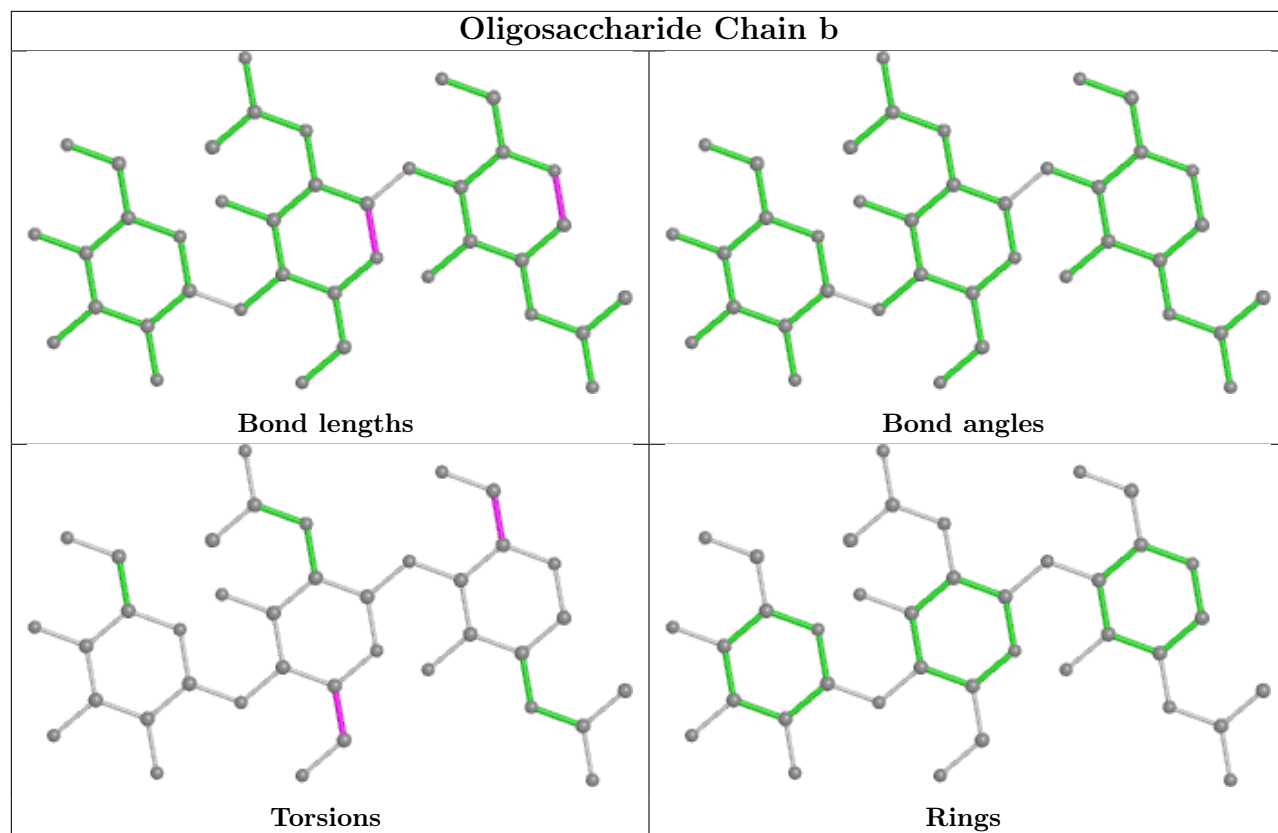












## 5.6 Ligand geometry

Of 3 ligands modelled in this entry, 1 is monoatomic - leaving 2 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
8	NAG	G	101	3	14,14,15	0.24	0	17,19,21	0.58	1 (5%)
8	NAG	K	101	3	14,14,15	0.25	0	17,19,21	0.32	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
8	NAG	G	101	3	-	2/6/23/26	0/1/1/1
8	NAG	K	101	3	-	1/6/23/26	0/1/1/1

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	G	101	NAG	C1-O5-C5	2.00	114.91	112.19

There are no chirality outliers.

All (3) torsion outliers are listed below:

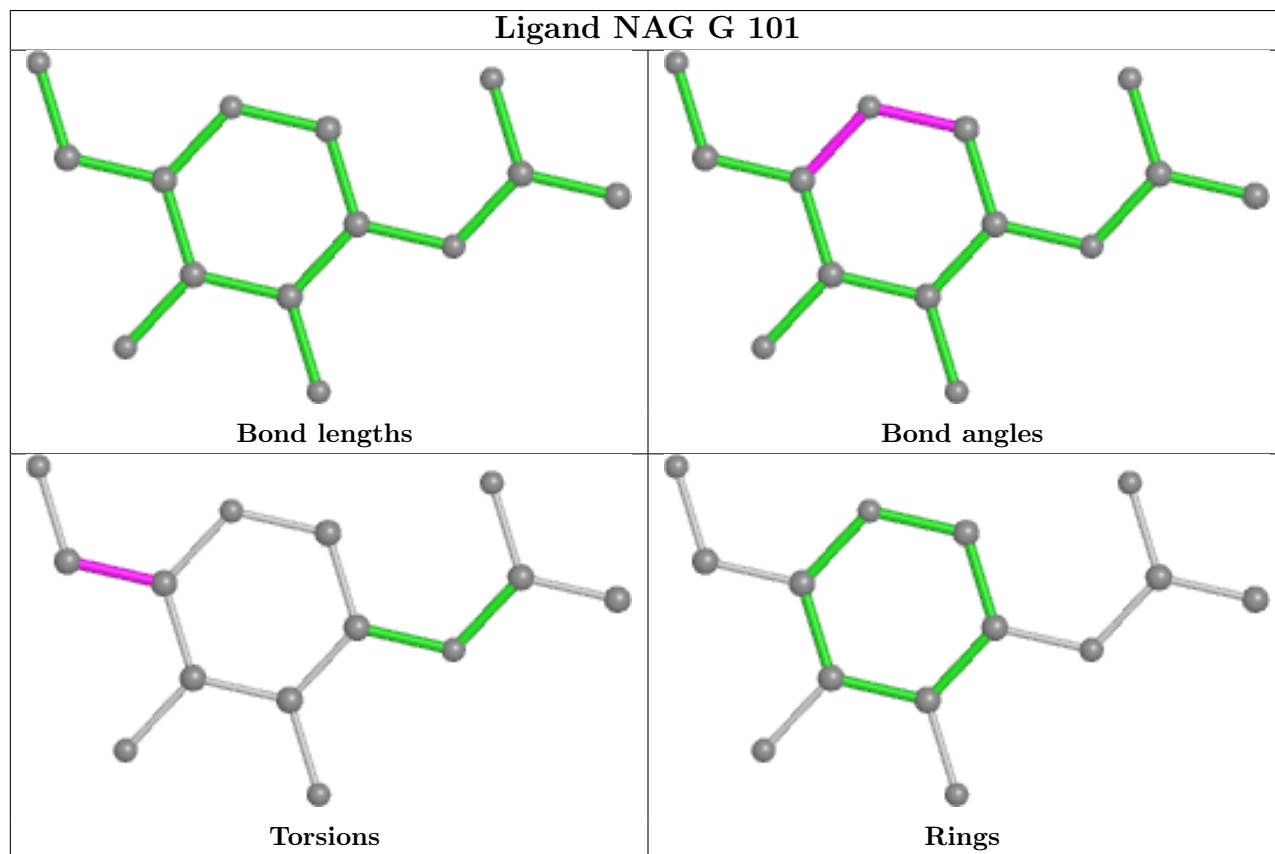
Mol	Chain	Res	Type	Atoms
8	G	101	NAG	C4-C5-C6-O6
8	G	101	NAG	O5-C5-C6-O6
8	K	101	NAG	O5-C5-C6-O6

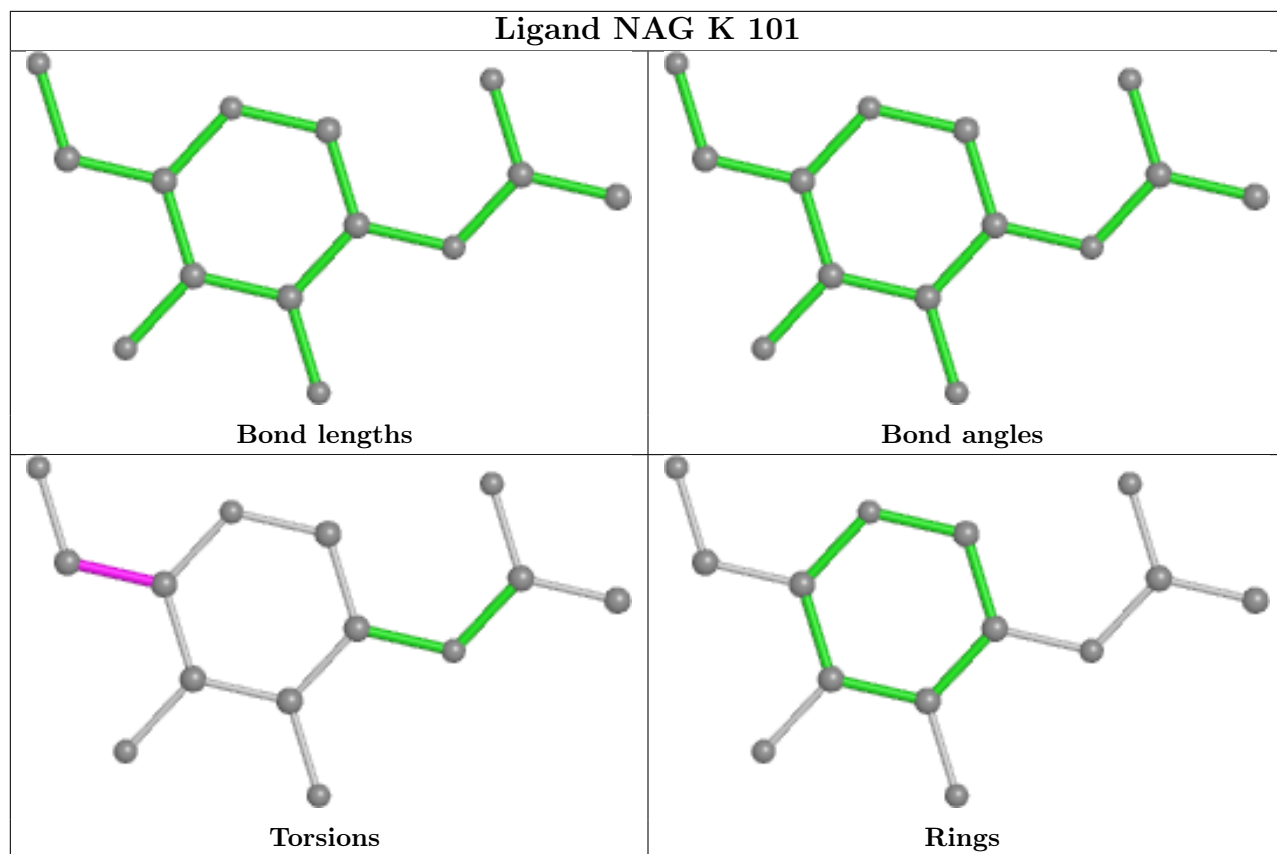
There are no ring outliers.

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 [\(i\)](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
2	J	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	J	29:HIS	C	30:SER	N	1.20



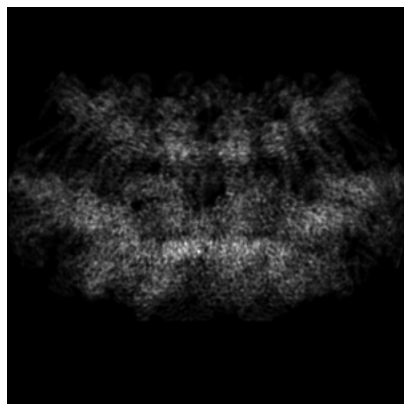
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-42054. These allow visual inspection of the internal detail of the map and identification of artifacts.

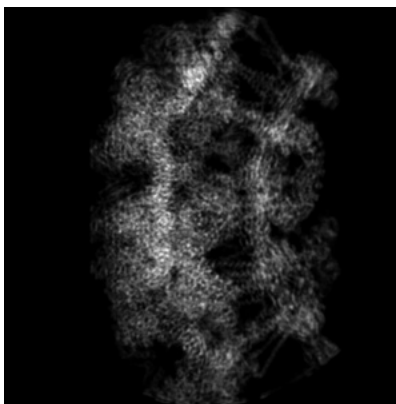
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

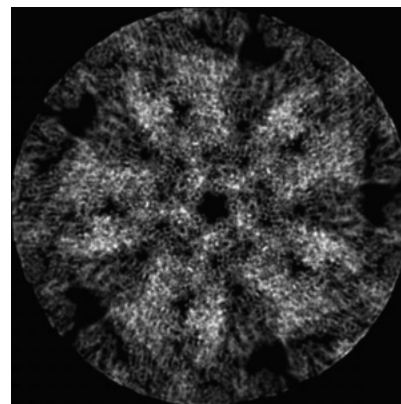
#### 6.1.1 Primary map



X

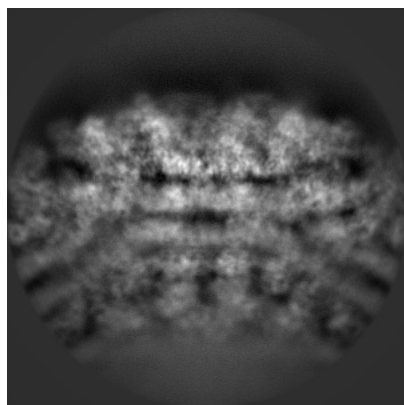


Y

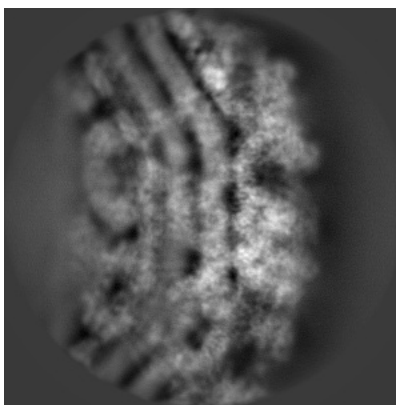


Z

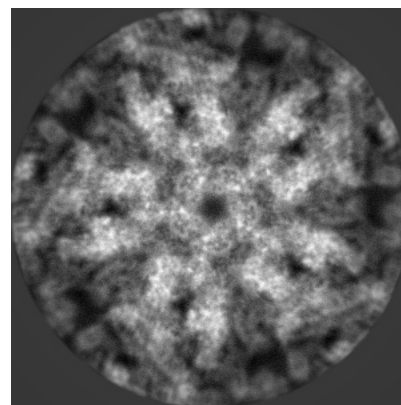
#### 6.1.2 Raw map



X



Y

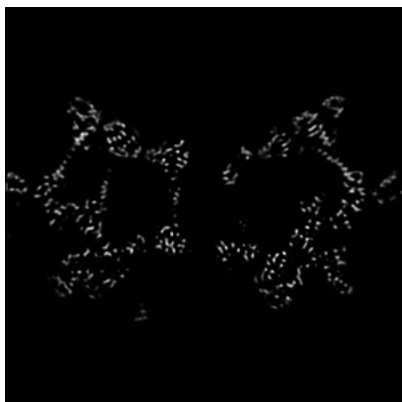


Z

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

## 6.2 Central slices [i](#)

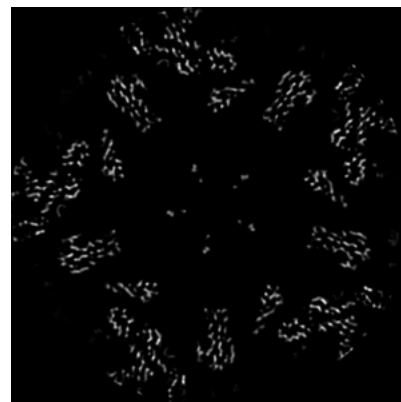
### 6.2.1 Primary map



X Index: 215

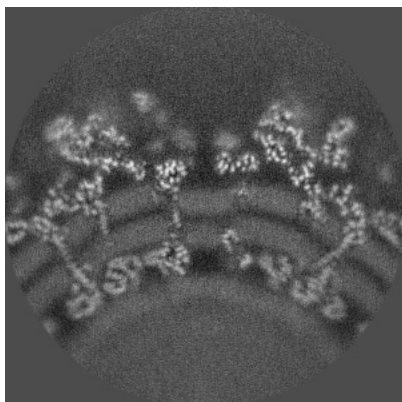


Y Index: 215

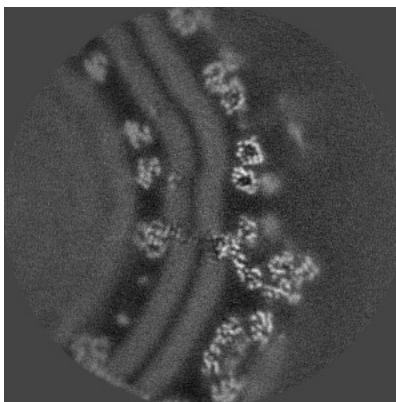


Z Index: 215

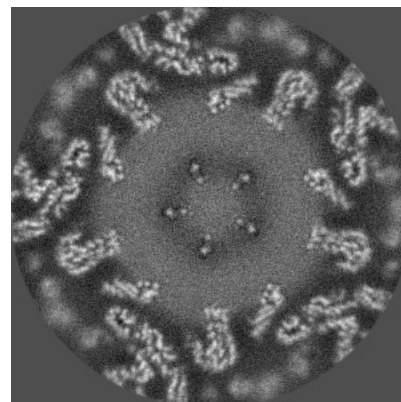
### 6.2.2 Raw map



X Index: 215



Y Index: 215

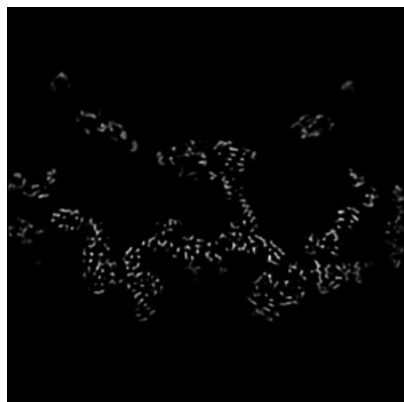


Z Index: 215

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

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

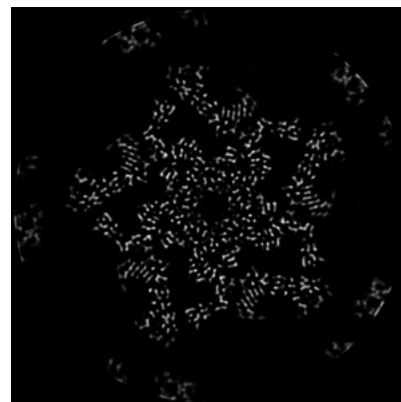
### 6.3.1 Primary map



X Index: 197

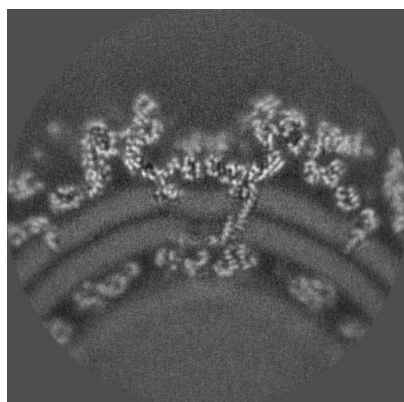


Y Index: 243

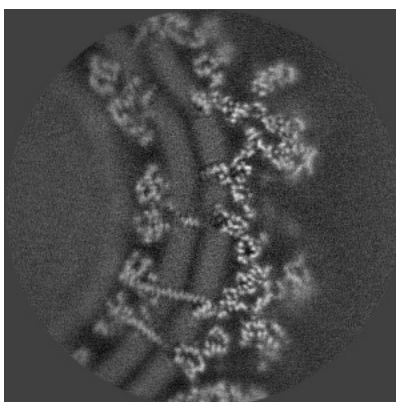


Z Index: 175

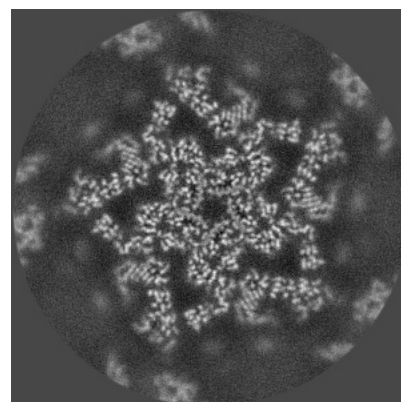
### 6.3.2 Raw map



X Index: 198



Y Index: 250

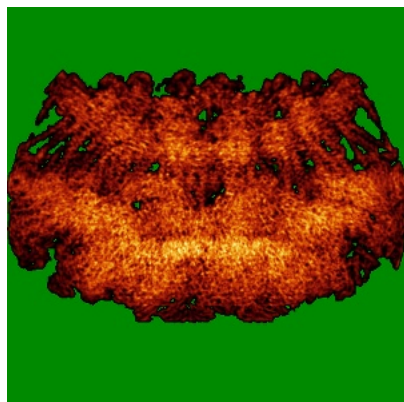


Z Index: 254

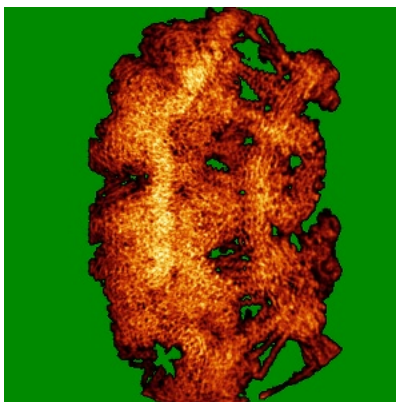
The images above show the largest variance slices of the map in three orthogonal directions.

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

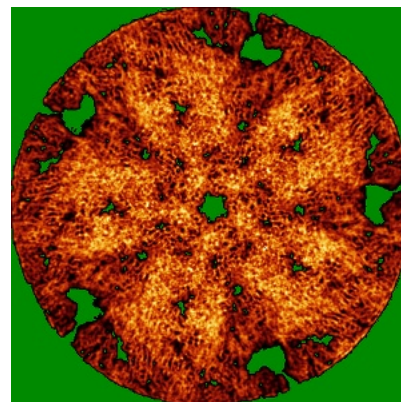
### 6.4.1 Primary map



X

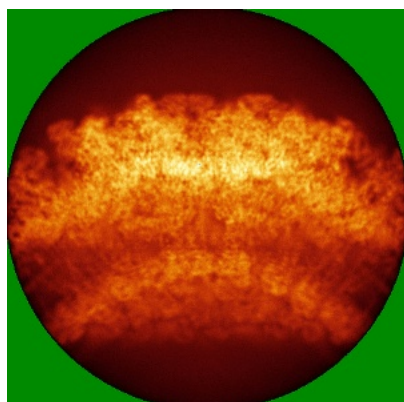


Y

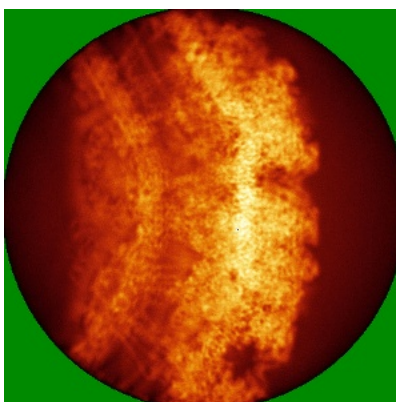


Z

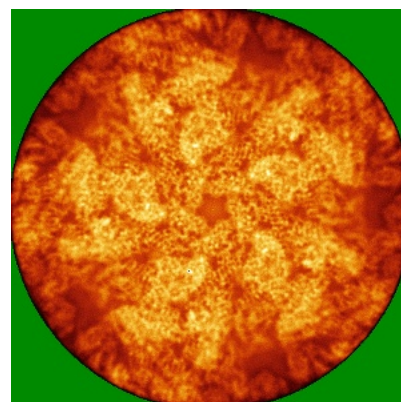
### 6.4.2 Raw map



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.

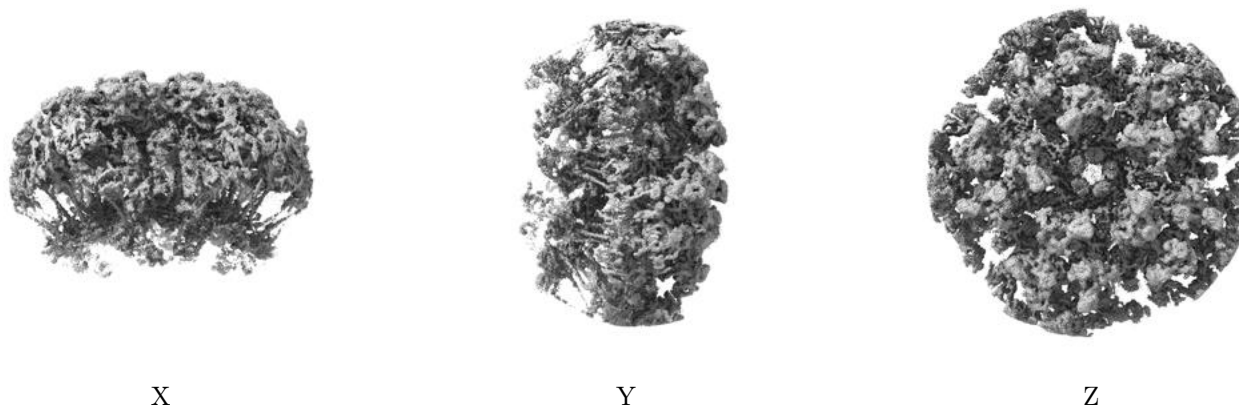
## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.1. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.5.2 Raw map



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

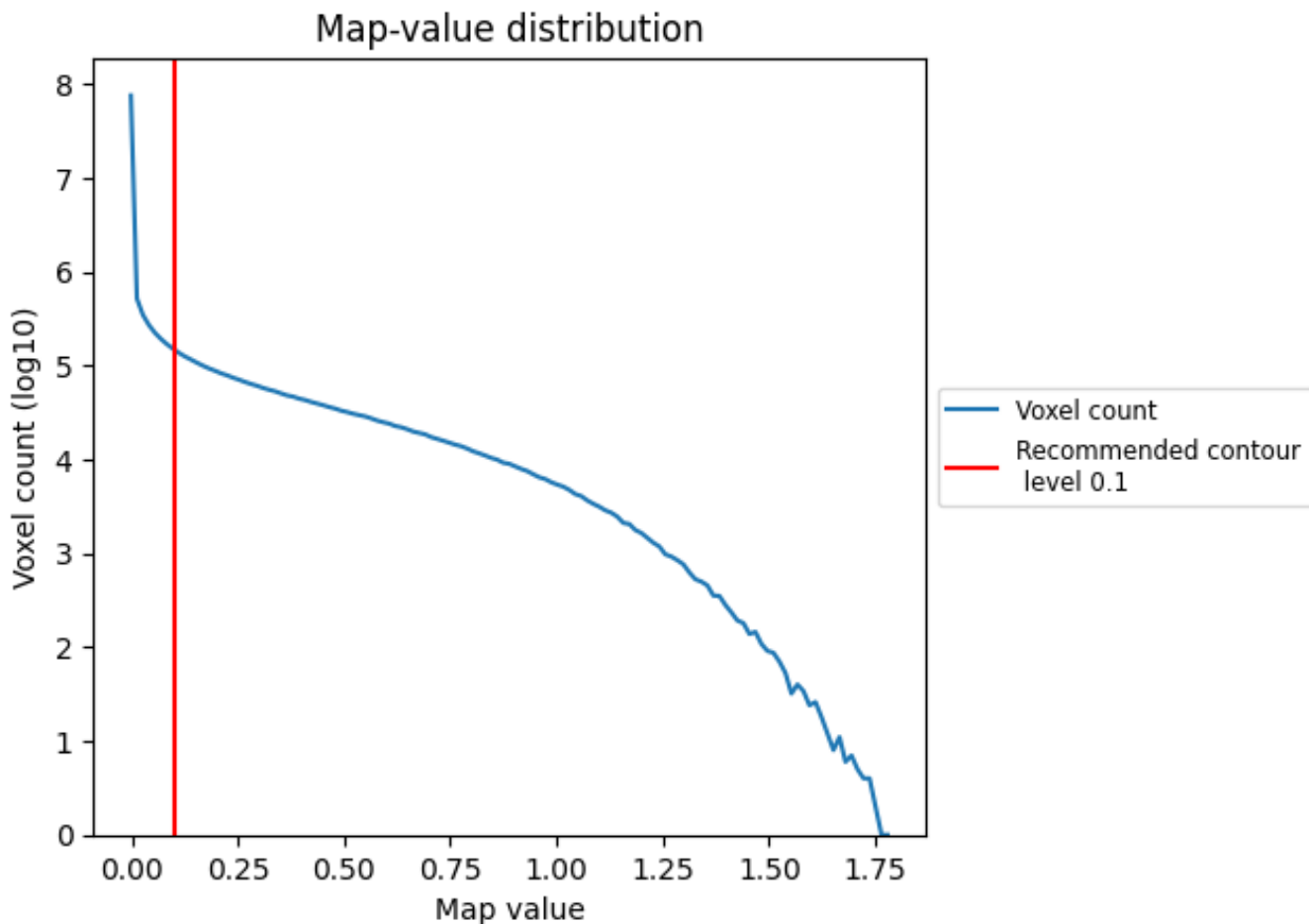
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

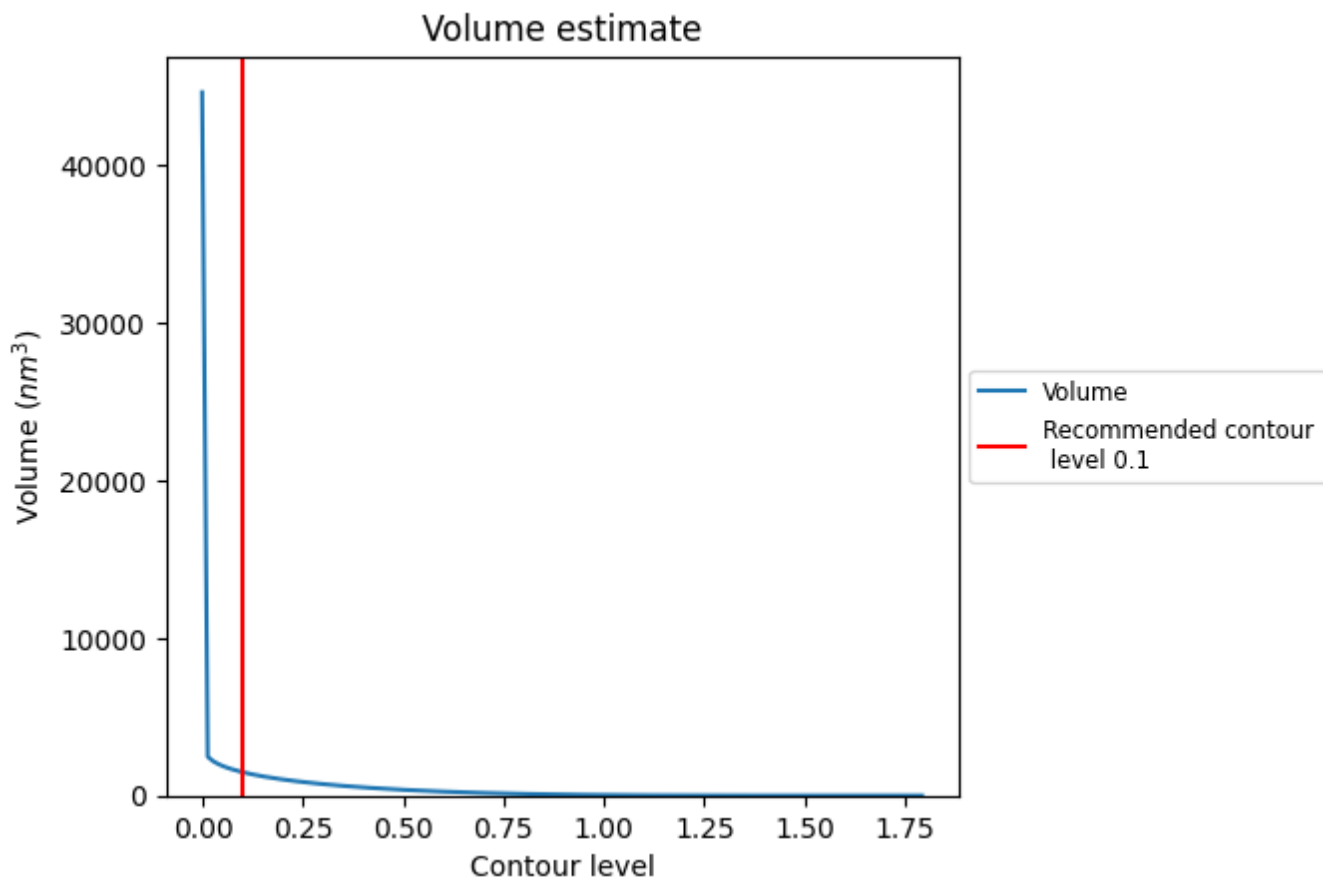
This section contains the results of statistical analysis of the map.

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



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

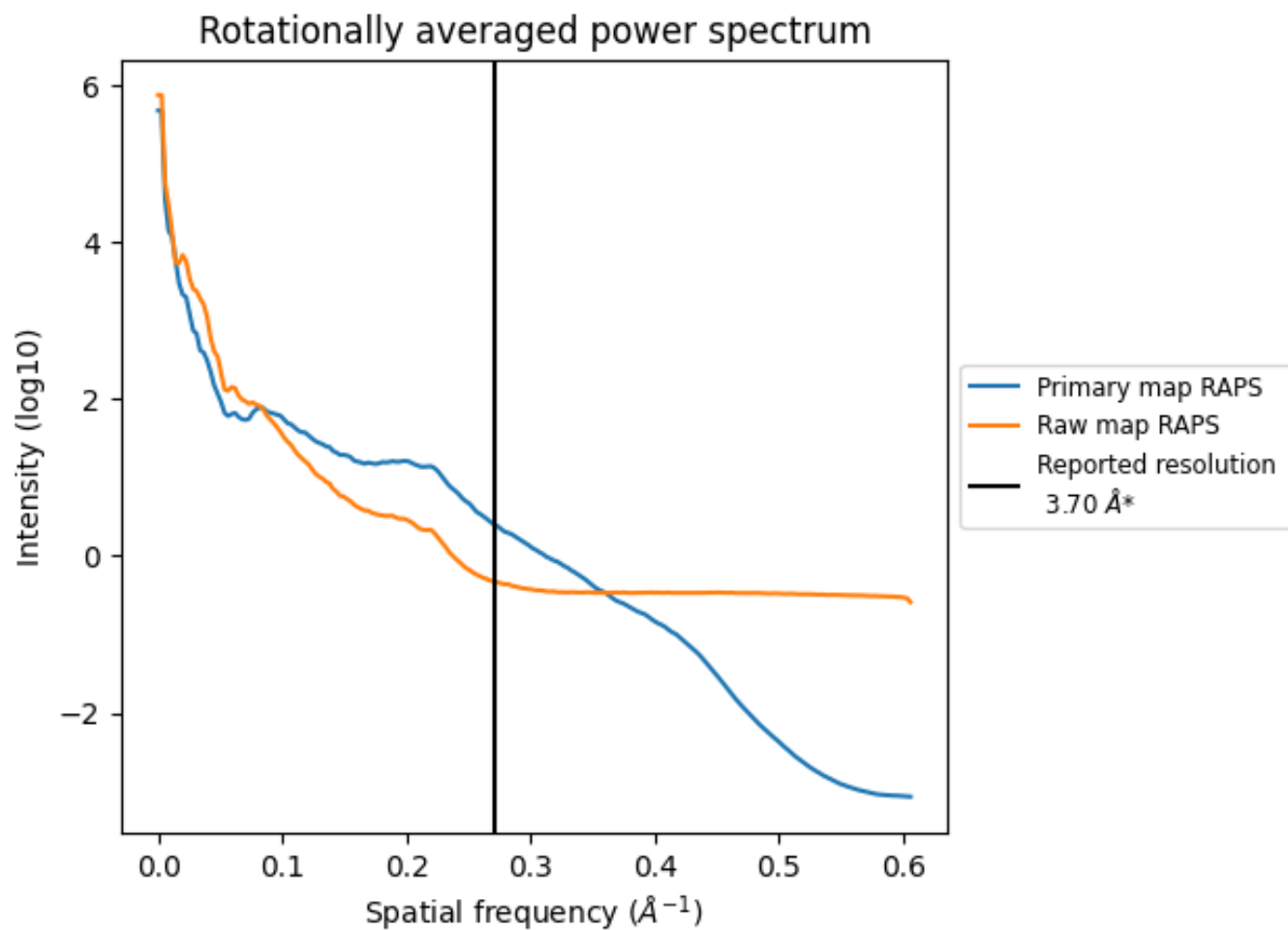
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is  $1480 \text{ nm}^3$ ; this corresponds to an approximate mass of 1337 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](#)



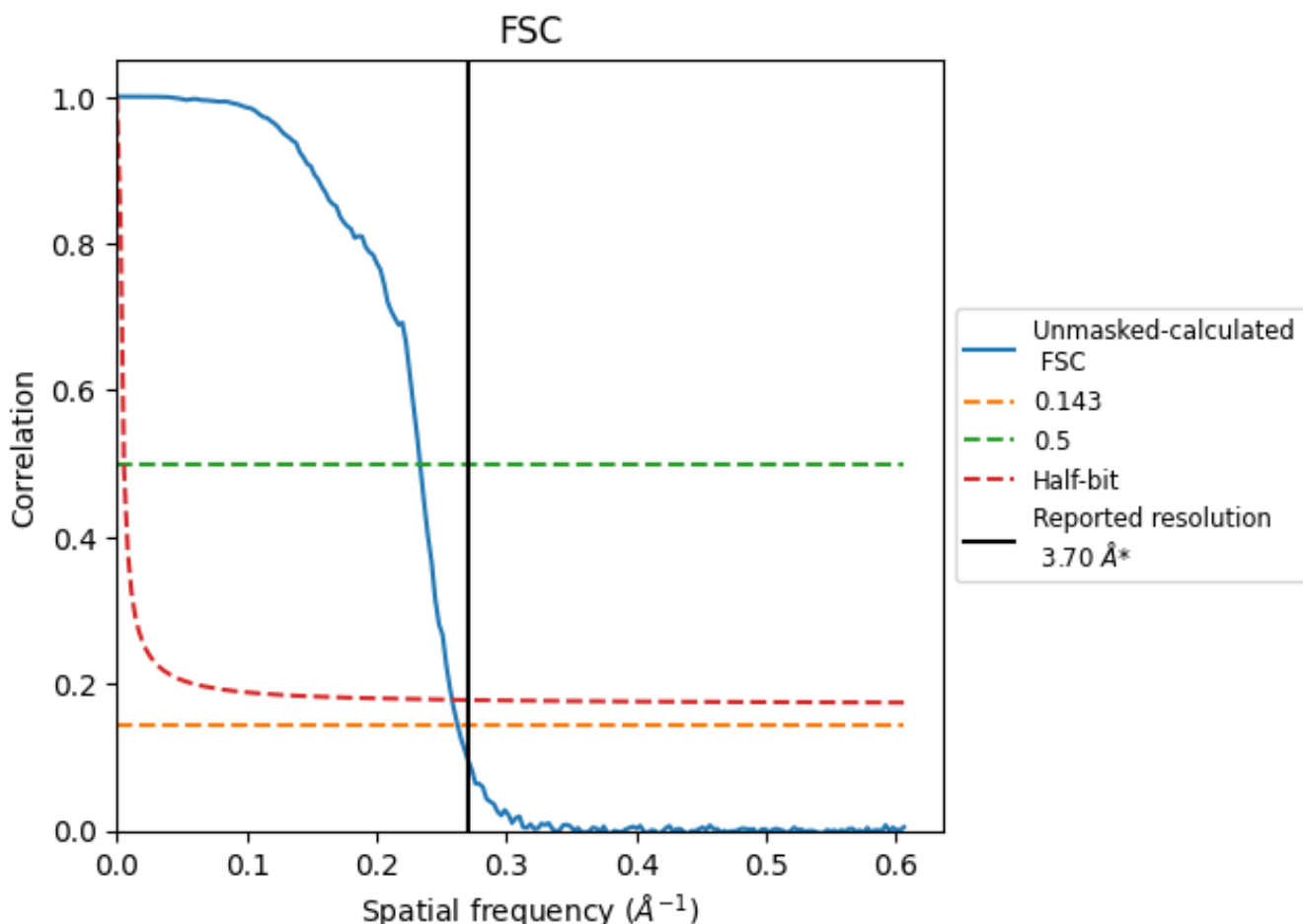
\*Reported resolution corresponds to spatial frequency of 0.270 Å<sup>-1</sup>



## 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 0.270 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

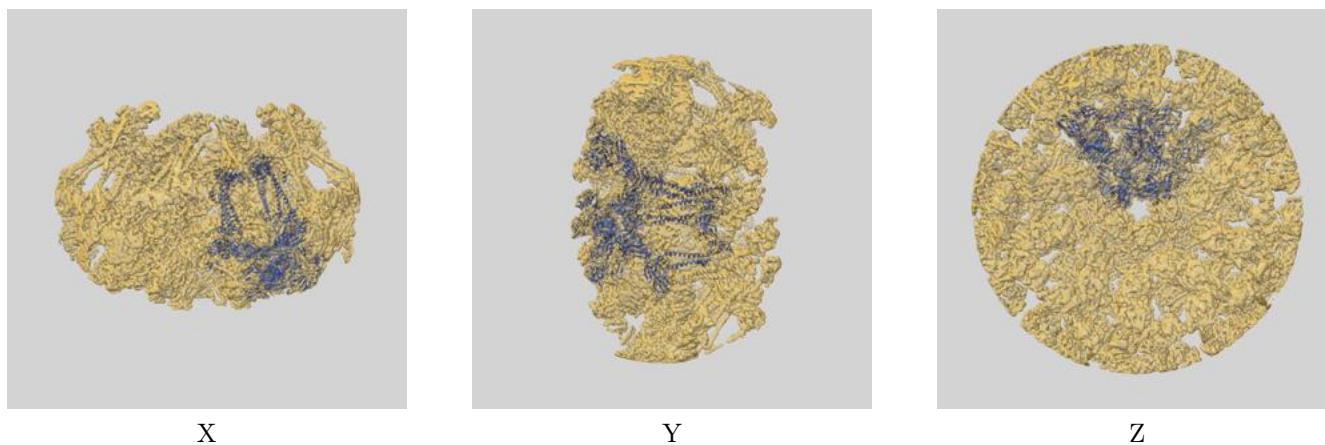
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.70	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.81	4.28	3.87

\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

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

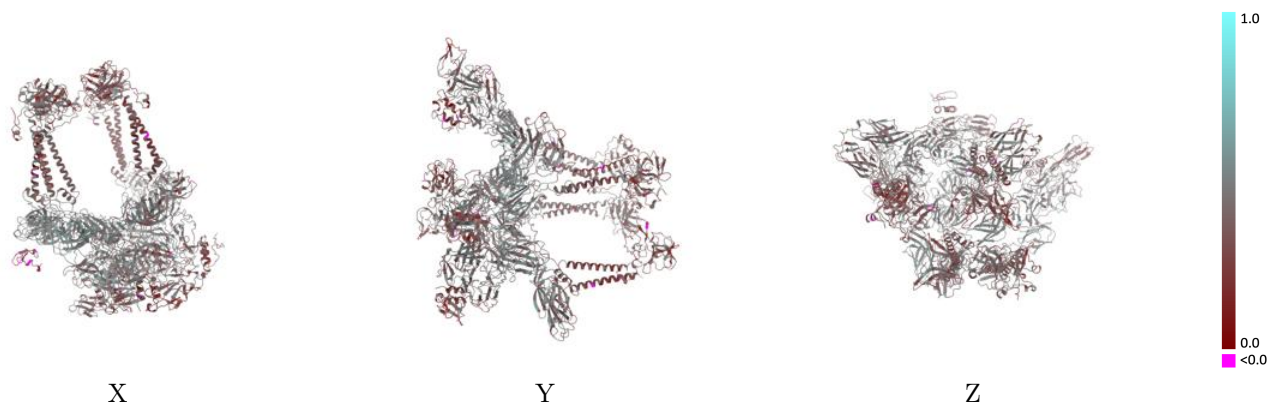
This section contains information regarding the fit between EMDB map EMD-42054 and PDB model 8UA8. Per-residue inclusion information can be found in section 3 on page 7.

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



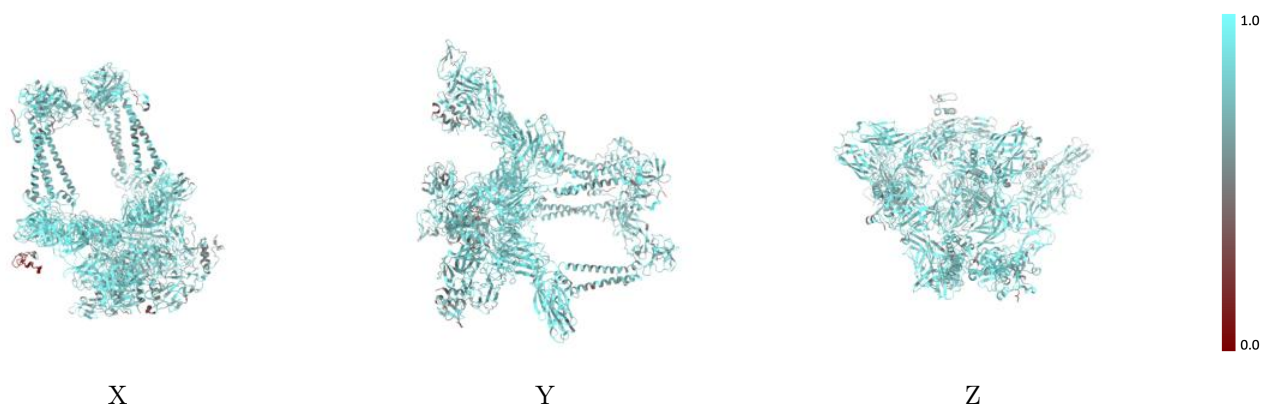
The images above show the 3D surface view of the map at the recommended contour level 0.1 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



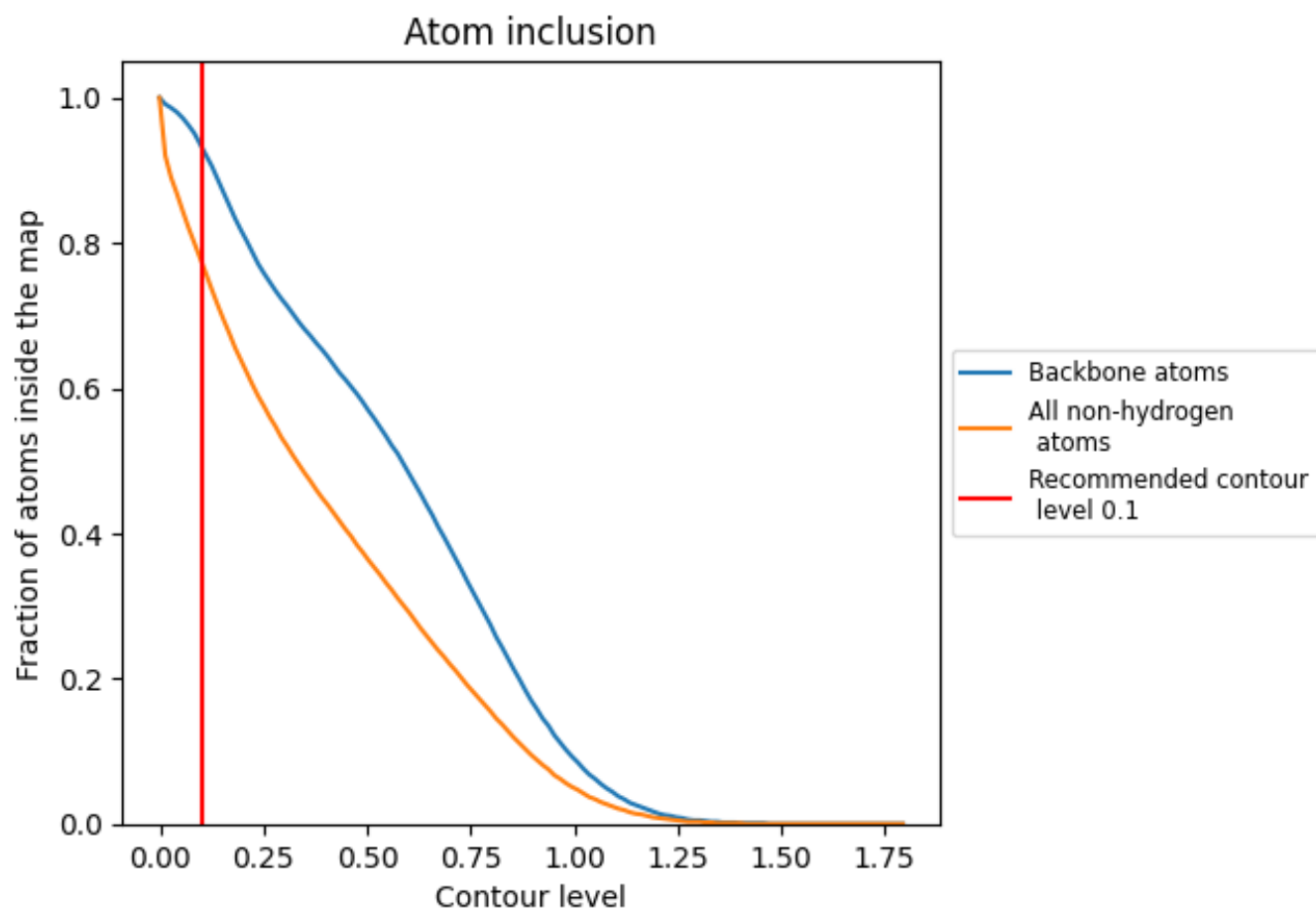
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.1).





























































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 93% of all backbone atoms, 77% 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 (0.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7730	 0.4040
A	 0.8220	 0.4460
B	 0.7770	 0.4220
C	 0.5970	 0.2930
D	 0.7690	 0.3730
E	 0.8120	 0.4280
F	 0.7910	 0.4210
G	 0.6140	 0.3060
H	 0.7290	 0.3140
I	 0.8350	 0.4550
J	 0.7710	 0.4170
K	 0.6140	 0.2680
L	 0.7580	 0.3740
M	 0.8140	 0.4220
N	 0.7650	 0.3990
O	 0.5690	 0.2820
P	 0.7270	 0.3160
Q	 0.7140	 0.3960
R	 0.1540	 0.0710
S	 0.4870	 0.2610
T	 0.4870	 0.3570
U	 0.4640	 0.2790
V	 0.7860	 0.5090
W	 0.4640	 0.2410
X	 0.7140	 0.3900
Y	 0.4870	 0.2920
Z	 0.6410	 0.3700
a	 0.6070	 0.2580
b	 0.4620	 0.3720
c	 0.6670	 0.3760

