Full wwPDB EM Validation Report

Feb 25, 2026 – 02:30 PM JST

PDB ID	:	7WYY / pdb_00007wyy
EMDB ID	:	EMD-32898
Title	:	Cryo-EM structure of Na+,K+-ATPase in the E2P state formed by inorganic phosphate with istaroxime
Authors	:	Kanai, R.; Cornelius, F.; Vilsen, B.; Toyoshima, C.
Deposited on	:	2022-02-16
Resolution	:	3.90 Å(reported)
Based on initial model	:	7D91

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 (i) 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 (1)) were used in the production of this report:

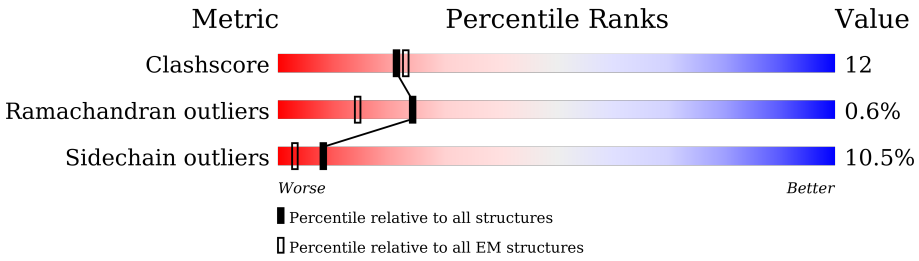
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.48.1

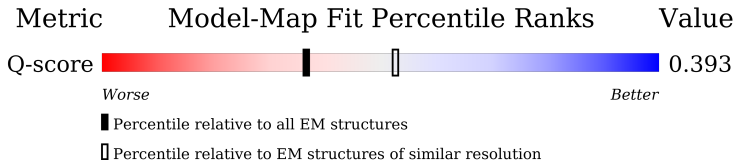
1 Overall quality at a glance

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

The reported resolution of this entry is 3.90 Å.

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





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	8855 (3.40 - 4.40)

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

Mol	Chain	Length	Quality of chain
1	A	1028	14% 71% 22%
1	C	1028	14% 71% 22%
2	B	305	57% 32% 6%
2	D	305	57% 32% 7%
3	E	94	7% 28% 15% 57%

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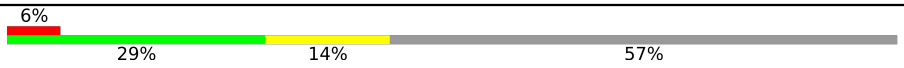
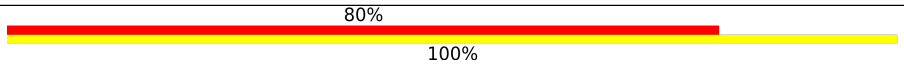
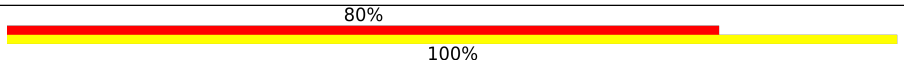
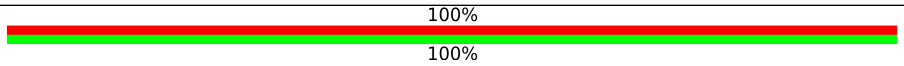
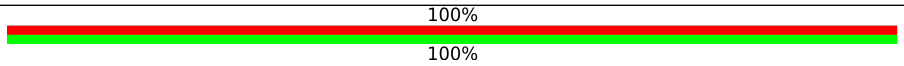
Mol	Chain	Length	Quality of chain
3	G	94	
4	F	6	
4	K	6	
5	H	6	
5	L	6	
6	I	5	
6	M	5	
7	J	2	
7	N	2	

2 Entry composition

There are 12 unique types of molecules in this entry. The entry contains 22656 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 Sodium/potassium-transporting ATPase subunit alpha.

Mol	Chain	Residues	Atoms						AltConf	Trace
1	A	993	Total	C	N	O	P	S	0	0
			7687	4890	1291	1459	1	46		
1	C	993	Total	C	N	O	P	S	0	0
			7687	4890	1291	1459	1	46		

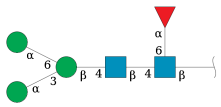
- Molecule 2 is a protein called Na+,K+-ATPase beta subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	294	Total	C	N	O	S	0	0
			2399	1551	394	443	11		
2	D	294	Total	C	N	O	S	0	0
			2399	1551	394	443	11		

- Molecule 3 is a protein called FXYD domain-containing ion transport regulator.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	G	40	Total	C	N	O	S	0	0
			311	203	51	55	2		
3	E	40	Total	C	N	O	S	0	0
			311	203	51	55	2		

- Molecule 4 is an oligosaccharide called alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose.



Mol	Chain	Residues	Atoms				AltConf	Trace
4	F	6	Total	C	N	O	0	0
			71	40	2	29		

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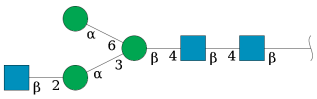
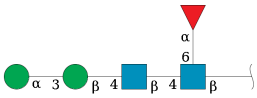
Mol	Chain	Residues	Atoms				AltConf	Trace
4	K	6	Total	C	N	O	0	0
			71	40	2	29		

- Molecule 5 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]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
5	H	6	Total	C	N	O	0	0
			75	42	3	30		
5	L	6	Total	C	N	O	0	0
			75	42	3	30		

- Molecule 6 is an oligosaccharide called alpha-D-mannopyranose-(1-3)-beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose.



Mol	Chain	Residues	Atoms				AltConf	Trace
6	I	5	Total	C	N	O	0	0
			60	34	2	24		
6	M	5	Total	C	N	O	0	0
			60	34	2	24		

- Molecule 7 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
7	J	2	Total	C	N	O	0	0
			28	16	2	10		

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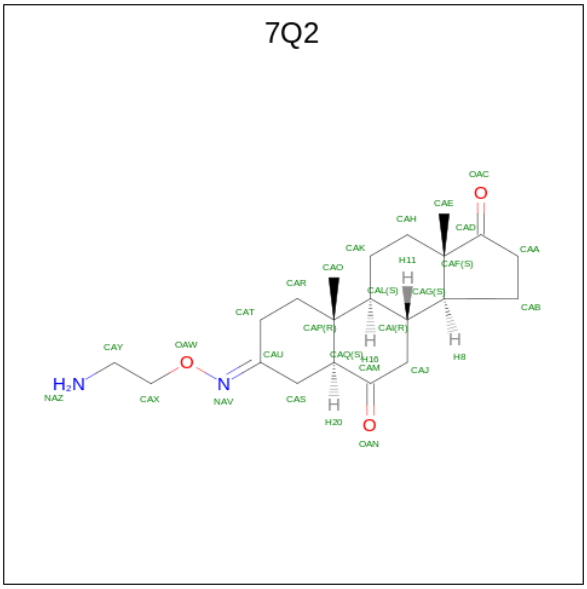
Mol	Chain	Residues	Atoms				AltConf	Trace
7	N	2	Total	C	N	O	0	0
			28	16	2	10		

- Molecule 8 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

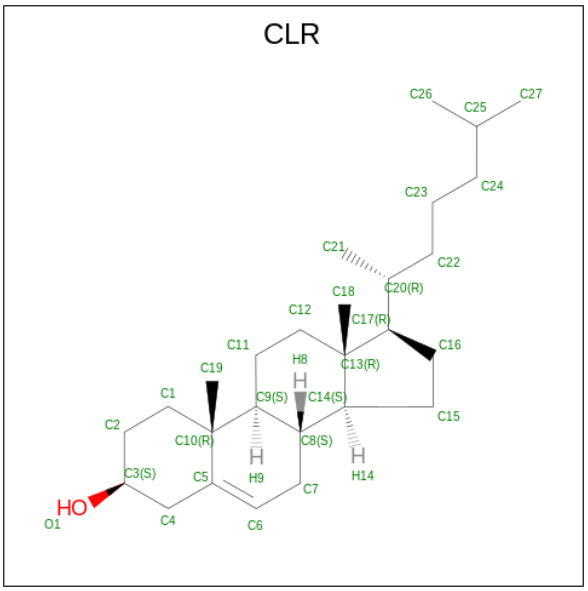
Mol	Chain	Residues	Atoms		AltConf
8	A	3	Total	Mg	0
			3	3	
8	C	3	Total	Mg	0
			3	3	

- Molecule 9 is (3E,5S,8R,9S,10R,13S,14S)-3-(2-azanylethoxyimino)-10,13-dimethyl-1,2,4,5,7,8,9,11,12,14,15,16-dodecahydrocyclopenta[a]phenanthrene-6,17-dione (CCD ID: 7Q2) (formula: $C_{21}H_{32}N_2O_3$) (labeled as "Ligand of Interest" by depositor).



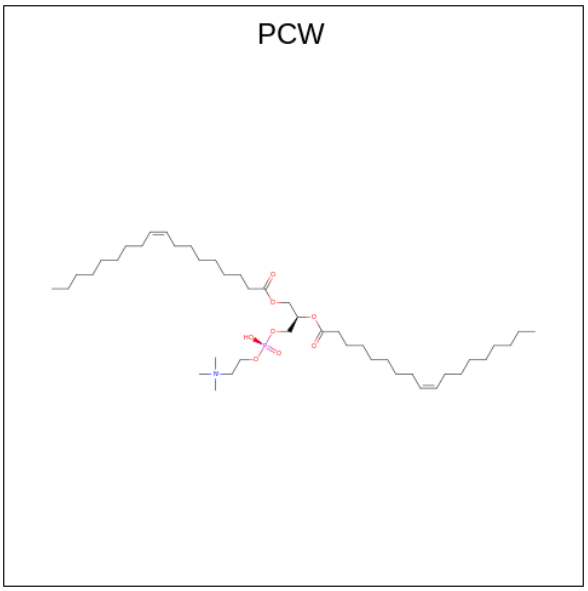
Mol	Chain	Residues	Atoms				AltConf
9	A	1	Total	C	N	O	0
			26	21	2	3	
9	C	1	Total	C	N	O	0
			26	21	2	3	

- Molecule 10 is CHOLESTEROL (CCD ID: CLR) (formula: $C_{27}H_{46}O$).



Mol	Chain	Residues	Atoms	AltConf
10	A	1	Total C O 28 27 1	0
10	B	1	Total C O 28 27 1	0
10	B	1	Total C O 28 27 1	0
10	G	1	Total C O 28 27 1	0
10	C	1	Total C O 28 27 1	0
10	D	1	Total C O 28 27 1	0
10	D	1	Total C O 28 27 1	0
10	E	1	Total C O 28 27 1	0

- Molecule 11 is 1,2-DIOLEOYL-SN-GLYCERO-3-PHOSPHOCHOLINE (CCD ID: PCW) (formula: $C_{44}H_{85}NO_8P$).



Mol	Chain	Residues	Atoms					AltConf
11	A	1	Total	C	N	O	P	0
			22	12	1	8	1	
11	A	1	Total	C	N	O	P	0
			22	12	1	8	1	
11	A	1	Total	C	N	O	P	0
			54	44	1	8	1	
11	A	1	Total	C	N	O	P	0
			54	44	1	8	1	
11	A	1	Total	C	N	O	P	0
			54	44	1	8	1	
11	A	1	Total	C	N	O	P	0
			54	44	1	8	1	
11	A	1	Total	C	N	O	P	0
			54	44	1	8	1	
11	A	1	Total	C	N	O	P	0
			22	12	1	8	1	
11	A	1	Total	C	N	O	P	0
			54	44	1	8	1	
11	G	1	Total	C	N	O	P	0
			54	44	1	8	1	
11	G	1	Total	C	N	O	P	0
			54	44	1	8	1	
11	G	1	Total	C	N	O	P	0
			54	44	1	8	1	
11	C	1	Total	C	N	O	P	0
			22	12	1	8	1	
11	C	1	Total	C	N	O	P	0
			22	12	1	8	1	

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Mol	Chain	Residues	Atoms					AltConf
11	C	1	Total	C	N	O	P	0
			54	44	1	8	1	
11	C	1	Total	C	N	O	P	0
			54	44	1	8	1	
11	C	1	Total	C	N	O	P	0
			54	44	1	8	1	
11	C	1	Total	C	N	O	P	0
			54	44	1	8	1	
11	C	1	Total	C	N	O	P	0
			54	44	1	8	1	
11	C	1	Total	C	N	O	P	0
			22	12	1	8	1	
11	C	1	Total	C	N	O	P	0
			54	44	1	8	1	
11	E	1	Total	C	N	O	P	0
			54	44	1	8	1	
11	E	1	Total	C	N	O	P	0
			54	44	1	8	1	
11	E	1	Total	C	N	O	P	0
			54	44	1	8	1	

- Molecule 12 is water.

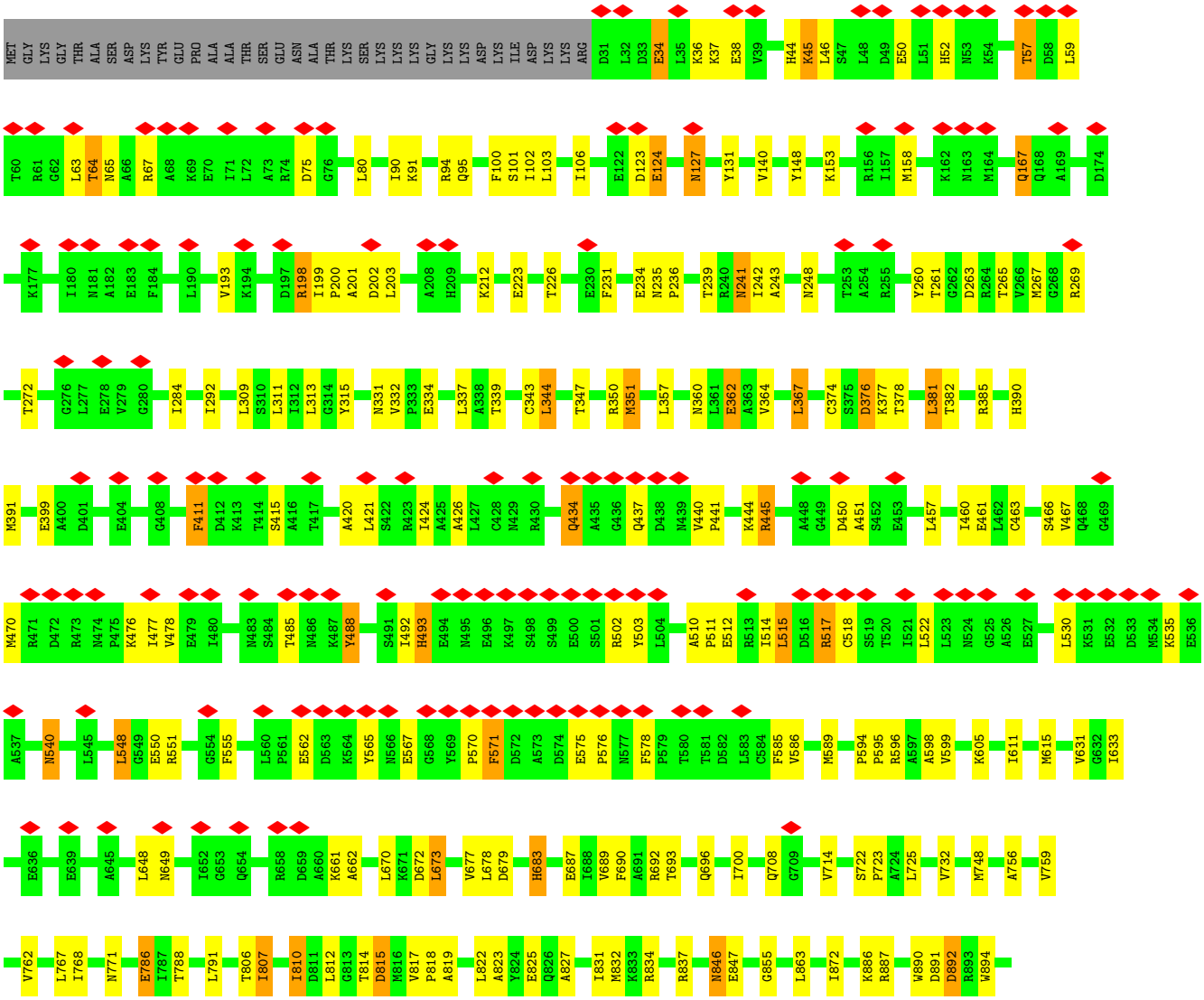
Mol	Chain	Residues	Atoms		AltConf
12	A	4	Total	O	0
			4	4	
12	C	4	Total	O	0
			4	4	

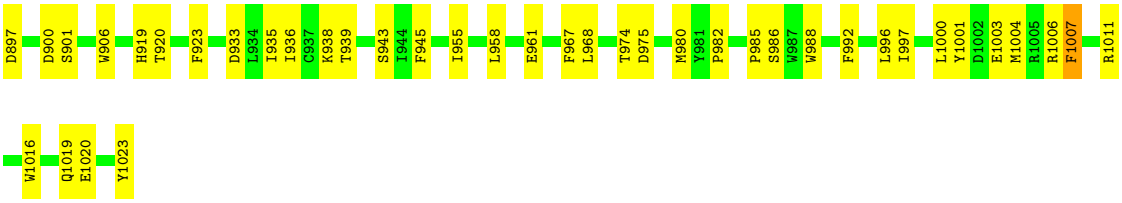
3 Residue-property plots (i)

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.

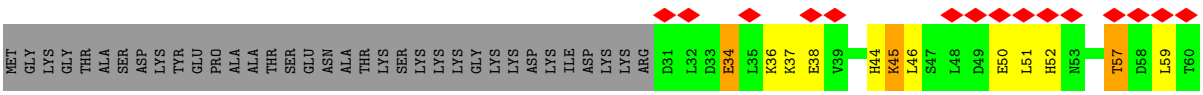
• Molecule 1: Sodium/potassium-transporting ATPase subunit alpha

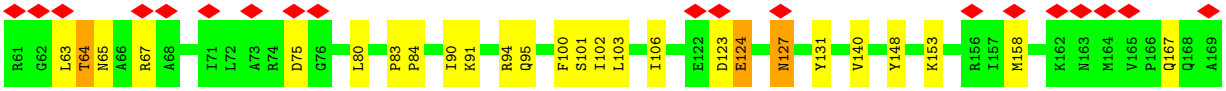
Chain A:

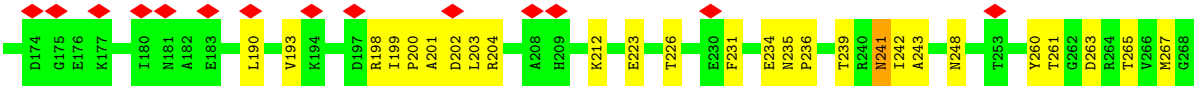


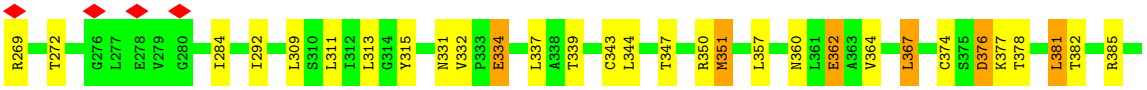


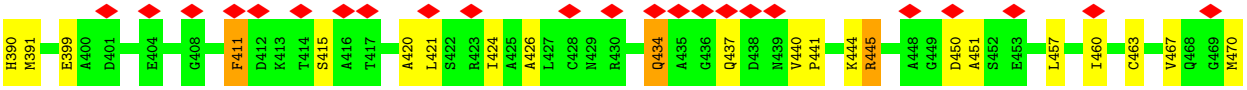
• Molecule 1: Sodium/potassium-transporting ATPase subunit alpha

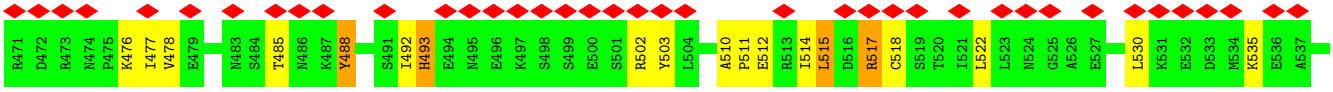


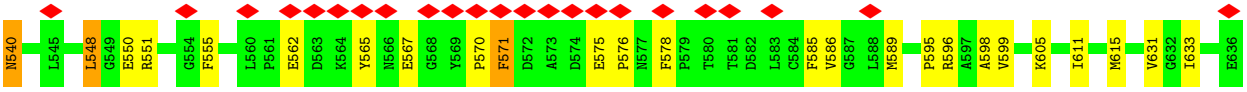


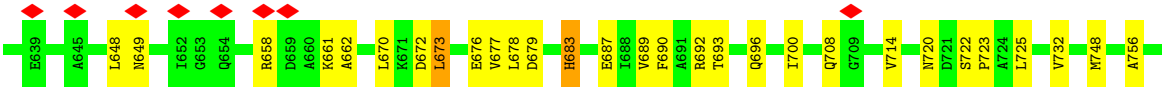


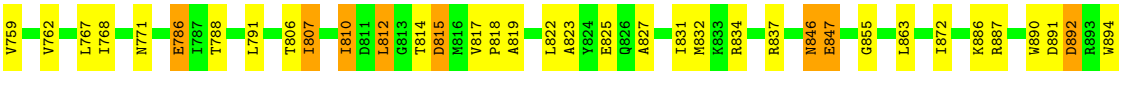


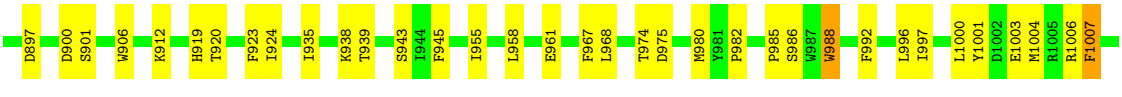






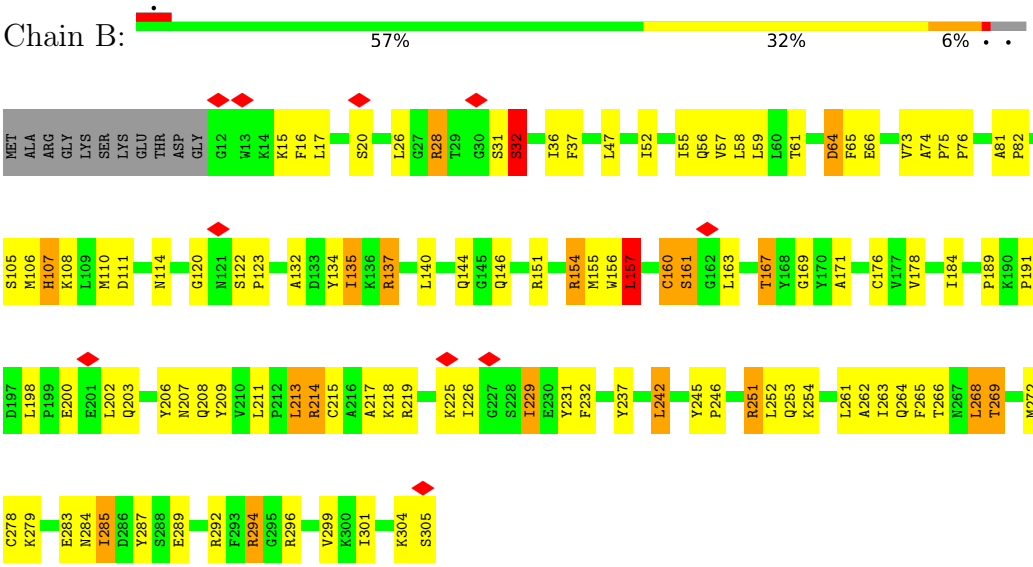






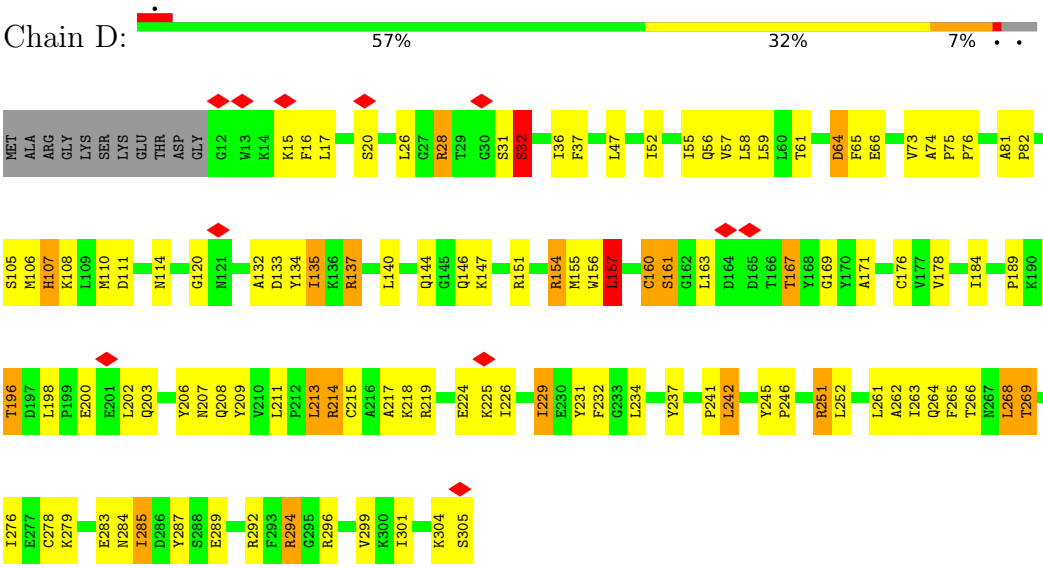
• Molecule 2: Na+,K+-ATPase beta subunit

Chain B:



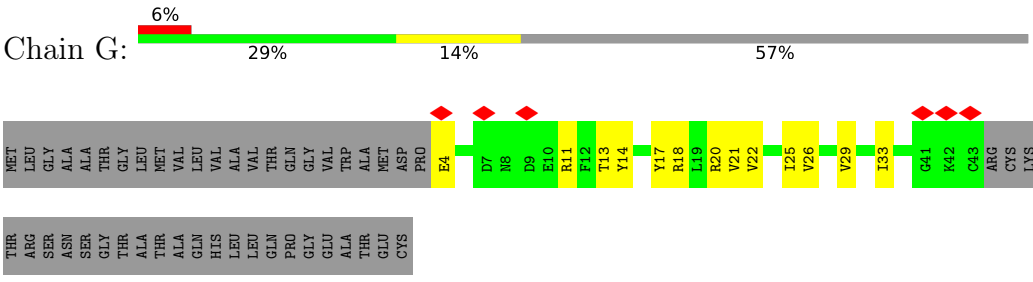
• Molecule 2: Na+,K+-ATPase beta subunit

Chain D:



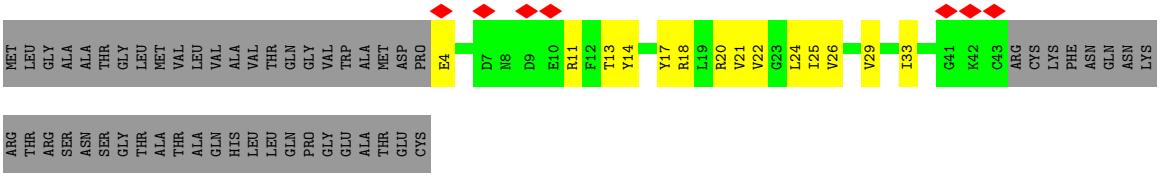
• Molecule 3: FXYD domain-containing ion transport regulator

Chain G:



• Molecule 3: FXYD domain-containing ion transport regulator

Chain E:



• Molecule 4: alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose

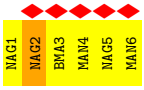
Chain F:

• Molecule 4: alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose

Chain K:

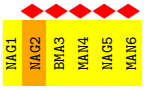
• Molecule 5: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain H:



• Molecule 5: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain L:

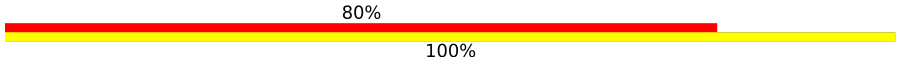


• Molecule 6: alpha-D-mannopyranose-(1-3)-beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose

Chain I:

• Molecule 6: alpha-D-mannopyranose-(1-3)-beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose

Chain M:



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

Chain J:

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

Chain N:

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C2	Depositor
Number of particles used	97101	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 ($e^-/Å^2$)	60	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	0.102	Depositor
Minimum map value	-0.055	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.004	Depositor
Recommended contour level	0.019	Depositor
Map size (Å)	258.24, 258.24, 258.24	wwPDB
Map dimensions	240, 240, 240	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.076, 1.076, 1.076	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: FUC, PHD, 7Q2, PCW, CLR, NAG, BMA, MG, MAN

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	0.23	0/7824	0.72	3/10613 (0.0%)
1	C	0.23	0/7824	0.72	3/10613 (0.0%)
2	B	0.26	0/2462	0.88	4/3317 (0.1%)
2	D	0.26	0/2462	0.88	4/3317 (0.1%)
3	E	0.19	0/315	0.57	0/427
3	G	0.18	0/315	0.57	0/427
All	All	0.24	0/21202	0.76	14/28714 (0.0%)

There are no bond length outliers.

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	157	LEU	N-CA-C	-6.60	98.44	108.67
2	B	157	LEU	N-CA-C	-6.59	98.45	108.67
2	D	32	SER	N-CA-C	5.42	116.99	111.14
1	C	57	THR	N-CA-C	5.42	116.64	108.46
2	B	32	SER	N-CA-C	5.41	116.99	111.14
1	A	57	THR	N-CA-C	5.36	116.55	108.46
2	B	202	LEU	N-CA-C	5.24	118.77	112.38
2	D	202	LEU	N-CA-C	5.21	118.74	112.38
2	D	31	SER	N-CA-C	5.19	117.84	111.82
2	B	31	SER	N-CA-C	5.16	117.81	111.82
1	C	807	ILE	N-CA-C	-5.13	105.39	110.62
1	A	807	ILE	N-CA-C	-5.08	105.44	110.62
1	A	855	GLY	N-CA-C	5.07	125.19	113.18
1	C	855	GLY	N-CA-C	5.07	125.19	113.18

There are no chirality outliers.

There are no planarity outliers.

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	7687	0	7703	159	0
1	C	7687	0	7703	166	0
2	B	2399	0	2354	77	0
2	D	2399	0	2354	72	0
3	E	311	0	323	9	0
3	G	311	0	323	8	0
4	F	71	0	61	1	0
4	K	71	0	61	1	0
5	H	75	0	64	1	0
5	L	75	0	64	1	0
6	I	60	0	52	0	0
6	M	60	0	52	0	0
7	J	28	0	25	0	0
7	N	28	0	25	0	0
8	A	3	0	0	0	0
8	C	3	0	0	0	0
9	A	26	0	0	0	0
9	C	26	0	0	0	0
10	A	28	0	46	1	0
10	B	56	0	92	4	0
10	C	28	0	46	2	0
10	D	56	0	92	3	0
10	E	28	0	46	6	0
10	G	28	0	46	6	0
11	A	390	0	558	35	0
11	C	390	0	558	34	0
11	E	162	0	252	22	0
11	G	162	0	252	22	0
12	A	4	0	0	0	0
12	C	4	0	0	0	0
All	All	22656	0	23152	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 12.

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)
11:A:1109:PCW:H442	10:G:1301:CLR:H273	1.58	0.86
11:C:1109:PCW:H442	10:E:1301:CLR:H273	1.58	0.86
3:G:29:VAL:HG11	11:G:1303:PCW:H261	1.58	0.85
3:E:29:VAL:HG11	11:E:1303:PCW:H261	1.58	0.85
1:C:421:LEU:HG	1:C:589:MET:HE2	1.60	0.84
1:C:411:PHE:HZ	1:C:463:CYS:HG	1.26	0.83
1:A:421:LEU:HG	1:A:589:MET:HE2	1.60	0.82
11:G:1304:PCW:H482	11:E:1304:PCW:H382	1.61	0.80
1:C:52:HIS:HE1	1:C:59:LEU:HD12	1.49	0.77
1:A:814:THR:HB	1:A:961:GLU:HG3	1.66	0.77
1:C:814:THR:HB	1:C:961:GLU:HG3	1.66	0.77
1:A:52:HIS:HE1	1:A:59:LEU:HD12	1.49	0.76
2:B:176:CYS:SG	2:B:264:GLN:HG3	2.26	0.76
2:D:161:SER:HB3	2:D:163:LEU:HD12	1.69	0.75
1:A:202:ASP:HB2	1:A:260:TYR:HB2	1.69	0.75
2:D:176:CYS:SG	2:D:264:GLN:HG3	2.26	0.75
11:G:1304:PCW:H461	11:E:1304:PCW:H412	1.69	0.74
11:G:1304:PCW:H382	11:E:1304:PCW:H482	1.68	0.74
2:B:161:SER:HB3	2:B:163:LEU:HD12	1.69	0.73
1:C:202:ASP:HB2	1:C:260:TYR:HB2	1.69	0.73
2:D:28:ARG:HD3	2:D:32:SER:HB3	1.69	0.73
1:C:241:ASN:H	1:C:241:ASN:HD22	1.37	0.72
1:A:426:ALA:HB2	1:A:460:ILE:HG21	1.71	0.72
2:B:74:ALA:HB3	2:B:75:PRO:HD3	1.72	0.72
2:B:28:ARG:HD3	2:B:32:SER:HB3	1.69	0.71
1:A:241:ASN:HD22	1:A:241:ASN:H	1.37	0.71
1:A:967:PHE:HZ	11:A:1112:PCW:H172	1.56	0.71
1:C:426:ALA:HB2	1:C:460:ILE:HG21	1.71	0.71
10:E:1301:CLR:H272	11:E:1304:PCW:H272	1.73	0.70
2:D:74:ALA:HB3	2:D:75:PRO:HD3	1.72	0.70
1:C:967:PHE:HZ	11:C:1112:PCW:H172	1.56	0.70
1:C:575:GLU:HB3	1:C:576:PRO:HD2	1.74	0.69
1:A:441:PRO:O	1:A:445:ARG:HG2	1.94	0.68
1:A:503:TYR:HE2	1:A:567:GLU:HA	1.59	0.68
11:G:1304:PCW:H412	11:E:1304:PCW:H461	1.76	0.68
11:G:1304:PCW:H261	11:E:1304:PCW:H451	1.76	0.68
1:C:441:PRO:O	1:C:445:ARG:HG2	1.94	0.68
10:G:1301:CLR:H272	11:G:1304:PCW:H272	1.73	0.68
1:C:503:TYR:HE2	1:C:567:GLU:HA	1.59	0.67
1:A:411:PHE:HZ	1:A:463:CYS:HG	1.41	0.67
11:G:1304:PCW:H432	11:E:1304:PCW:H432	1.76	0.67
1:A:575:GLU:HB3	1:A:576:PRO:HD2	1.74	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:982:PRO:HD3	3:E:20:ARG:HH21	1.60	0.67
2:D:76:PRO:HG3	2:D:184:ILE:HD12	1.77	0.67
11:E:1303:PCW:H262	11:E:1304:PCW:H20	1.77	0.66
1:A:503:TYR:CE2	1:A:567:GLU:HA	2.31	0.66
2:B:76:PRO:HG3	2:B:184:ILE:HD12	1.77	0.66
1:C:503:TYR:CE2	1:C:567:GLU:HA	2.31	0.66
2:B:231:TYR:HD1	2:B:263:ILE:HG12	1.61	0.66
11:G:1303:PCW:H262	11:G:1304:PCW:H20	1.77	0.66
2:D:231:TYR:HD1	2:D:263:ILE:HG12	1.61	0.65
2:D:206:TYR:O	2:D:206:TYR:CD1	2.49	0.65
1:A:982:PRO:HD3	3:G:20:ARG:HH21	1.60	0.65
1:C:127:ASN:OD1	1:C:127:ASN:N	2.30	0.65
2:B:206:TYR:O	2:B:206:TYR:CD1	2.49	0.65
3:G:26:VAL:HG11	10:G:1301:CLR:H71	1.79	0.65
2:D:209:TYR:HA	2:D:242:LEU:HD22	1.79	0.65
3:E:26:VAL:HG11	10:E:1301:CLR:H71	1.79	0.65
1:C:1001:TYR:HD1	11:C:1108:PCW:H40	1.62	0.64
2:B:57:VAL:HG22	1:C:1004:MET:HE3	1.80	0.64
1:A:127:ASN:OD1	1:A:127:ASN:N	2.29	0.64
2:D:65:PHE:HE1	2:D:251:ARG:HH11	1.46	0.63
1:C:992:PHE:CD2	11:C:1109:PCW:H271	2.34	0.63
2:B:209:TYR:HA	2:B:242:LEU:HD22	1.79	0.63
1:A:1001:TYR:HD1	11:A:1108:PCW:H40	1.62	0.63
3:G:18:ARG:O	3:G:22:VAL:HG23	1.99	0.63
1:A:530:LEU:HD22	1:A:535:LYS:HE3	1.80	0.62
1:A:992:PHE:HD2	11:A:1109:PCW:H271	1.64	0.62
1:A:992:PHE:CD2	11:A:1109:PCW:H271	2.34	0.62
11:G:1304:PCW:H462	10:E:1301:CLR:H241	1.81	0.62
1:A:771:ASN:ND2	1:A:823:ALA:O	2.33	0.62
1:C:530:LEU:HD22	1:C:535:LYS:HE3	1.80	0.62
2:B:65:PHE:HE1	2:B:251:ARG:HH11	1.46	0.61
1:C:992:PHE:HD2	11:C:1109:PCW:H271	1.64	0.61
3:E:18:ARG:O	3:E:22:VAL:HG23	1.99	0.61
1:C:771:ASN:ND2	1:C:823:ALA:O	2.33	0.61
11:C:1114:PCW:H19	10:D:501:CLR:H151	1.81	0.61
11:A:1114:PCW:H19	10:B:501:CLR:H151	1.81	0.61
2:B:213:LEU:HD23	2:B:261:LEU:HD13	1.82	0.61
2:D:213:LEU:HD23	2:D:261:LEU:HD13	1.82	0.60
10:B:502:CLR:H272	10:D:502:CLR:H272	1.84	0.60
3:G:21:VAL:O	3:G:25:ILE:HG12	2.01	0.60
11:G:1304:PCW:H441	10:E:1301:CLR:H263	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:21:VAL:O	3:E:25:ILE:HG12	2.01	0.60
2:D:217:ALA:HB2	2:D:226:ILE:HD12	1.83	0.60
1:C:80:LEU:HD11	1:C:267:MET:SD	2.42	0.59
1:C:722:SER:HB2	1:C:723:PRO:HD3	1.84	0.59
2:B:217:ALA:HB2	2:B:226:ILE:HD12	1.83	0.59
1:A:722:SER:HB2	1:A:723:PRO:HD3	1.84	0.59
1:A:80:LEU:HD11	1:A:267:MET:SD	2.42	0.59
1:A:90:ILE:O	1:A:94:ARG:HG2	2.03	0.59
1:A:241:ASN:HD22	1:A:241:ASN:N	1.98	0.59
1:C:90:ILE:O	1:C:94:ARG:HG2	2.03	0.58
1:A:265:THR:O	1:A:269:ARG:HG3	2.03	0.58
2:B:75:PRO:HB2	2:B:294:ARG:HD3	1.85	0.58
11:A:1110:PCW:H283	1:C:996:LEU:HD23	1.86	0.58
1:A:377:LYS:HA	1:A:381:LEU:HB2	1.85	0.58
1:A:46:LEU:HD22	1:A:50:GLU:HG2	1.86	0.58
2:B:64:ASP:N	2:B:64:ASP:OD1	2.36	0.58
1:C:377:LYS:HA	1:C:381:LEU:HB2	1.85	0.58
1:C:239:THR:OG1	1:C:241:ASN:ND2	2.37	0.58
1:C:265:THR:O	1:C:269:ARG:HG3	2.03	0.58
1:A:239:THR:OG1	1:A:241:ASN:ND2	2.37	0.57
1:A:441:PRO:HG2	1:A:444:LYS:HE3	1.86	0.57
2:B:92:SER:HA	2:B:304:LYS:O	2.04	0.57
1:C:690:PHE:HB3	1:C:693:THR:HG21	1.86	0.57
2:D:64:ASP:N	2:D:64:ASP:OD1	2.36	0.57
1:A:1004:MET:HE3	2:D:57:VAL:HG22	1.86	0.57
1:C:100:PHE:HB3	1:C:337:LEU:HD13	1.87	0.57
1:C:241:ASN:HD22	1:C:241:ASN:N	1.98	0.57
2:D:92:SER:HA	2:D:304:LYS:O	2.04	0.57
2:D:75:PRO:HB2	2:D:294:ARG:HD3	1.85	0.57
1:A:100:PHE:HB3	1:A:337:LEU:HD13	1.86	0.57
1:C:1000:LEU:HD11	11:C:1110:PCW:H39	1.87	0.57
10:G:1301:CLR:H241	11:E:1304:PCW:H462	1.87	0.57
1:C:46:LEU:HD22	1:C:50:GLU:HG2	1.86	0.57
11:C:1111:PCW:H241	11:C:1112:PCW:H441	1.87	0.57
1:A:690:PHE:HB3	1:A:693:THR:HG21	1.86	0.56
11:A:1111:PCW:H241	11:A:1112:PCW:H441	1.87	0.56
1:C:424:ILE:HG21	1:C:555:PHE:HB3	1.88	0.56
1:A:44:HIS:HB3	1:A:242:ILE:HD11	1.88	0.56
1:C:441:PRO:HG2	1:C:444:LYS:HE3	1.86	0.56
1:A:127:ASN:ND2	1:A:131:TYR:OH	2.39	0.56
1:C:44:HIS:HB3	1:C:242:ILE:HD11	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:127:ASN:ND2	1:C:131:TYR:OH	2.39	0.56
1:A:477:ILE:HG22	1:A:478:VAL:HG23	1.87	0.56
1:A:791:LEU:HB3	11:A:1114:PCW:H282	1.88	0.56
1:A:123:ASP:O	1:A:124:GLU:HG2	2.06	0.56
1:A:1000:LEU:HD11	11:A:1110:PCW:H39	1.87	0.56
1:C:791:LEU:HB3	11:C:1114:PCW:H282	1.88	0.56
1:A:424:ILE:HG21	1:A:555:PHE:HB3	1.88	0.55
1:C:477:ILE:HG22	1:C:478:VAL:HG23	1.87	0.55
1:A:996:LEU:HD23	11:C:1110:PCW:H283	1.89	0.54
1:C:223:GLU:OE1	1:C:551:ARG:NH1	2.40	0.54
1:C:193:VAL:HG11	1:C:199:ILE:HD13	1.88	0.54
1:C:123:ASP:O	1:C:124:GLU:HG2	2.06	0.54
3:G:17:TYR:O	3:G:21:VAL:HG23	2.07	0.54
11:G:1304:PCW:H451	11:E:1304:PCW:H261	1.89	0.54
1:C:212:LYS:HG2	1:C:226:THR:HG22	1.90	0.54
3:E:17:TYR:O	3:E:21:VAL:HG23	2.07	0.54
1:C:241:ASN:H	1:C:241:ASN:ND2	2.05	0.54
2:B:265:PHE:HB3	2:B:268:LEU:CD1	2.38	0.54
1:A:223:GLU:CD	1:A:551:ARG:HH12	2.16	0.53
2:D:265:PHE:HB3	2:D:268:LEU:CD1	2.38	0.53
1:A:193:VAL:HG11	1:A:199:ILE:HD13	1.88	0.53
1:A:492:ILE:HD12	1:A:578:PHE:CE1	2.43	0.53
1:C:1004:MET:SD	11:C:1108:PCW:H422	2.48	0.53
2:B:191:PRO:HG3	2:B:208:GLN:O	2.09	0.53
11:G:1304:PCW:H461	11:E:1304:PCW:C41	2.37	0.53
2:D:191:PRO:HG3	2:D:208:GLN:O	2.09	0.53
1:A:52:HIS:CE1	1:A:59:LEU:HD12	2.39	0.53
1:C:492:ILE:HD12	1:C:578:PHE:CE1	2.43	0.53
1:A:223:GLU:OE1	1:A:551:ARG:NH1	2.40	0.53
1:A:212:LYS:HG2	1:A:226:THR:HG22	1.90	0.53
1:C:863:LEU:HD12	2:D:47:LEU:HD22	1.91	0.53
1:A:810:ILE:O	1:A:815:ASP:HB2	2.09	0.53
1:C:810:ILE:O	1:C:815:ASP:HB2	2.08	0.53
1:A:45:LYS:NZ	1:A:234:GLU:OE1	2.38	0.53
2:B:65:PHE:HE1	2:B:251:ARG:NH1	2.07	0.53
1:C:153:LYS:NZ	11:C:1113:PCW:O2P	2.42	0.53
1:A:1004:MET:SD	11:A:1108:PCW:H422	2.48	0.53
1:A:153:LYS:NZ	11:A:1113:PCW:O2P	2.42	0.52
1:C:223:GLU:CD	1:C:551:ARG:HH12	2.17	0.52
1:C:450:ASP:OD1	1:C:451:ALA:N	2.43	0.52
1:A:391:MET:HE1	1:A:411:PHE:CD2	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:968:LEU:O	1:A:974:THR:HG21	2.10	0.52
1:C:153:LYS:HZ1	11:C:1113:PCW:P	2.32	0.52
2:D:163:LEU:HD23	4:K:6:FUC:H61	1.91	0.52
1:A:411:PHE:HZ	1:A:463:CYS:SG	2.32	0.52
11:G:1304:PCW:H483	10:E:1301:CLR:H221	1.92	0.52
1:C:477:ILE:CD1	1:C:503:TYR:HE1	2.23	0.52
1:C:810:ILE:HG12	1:C:923:PHE:HD2	1.75	0.52
1:A:450:ASP:OD1	1:A:451:ALA:N	2.43	0.52
1:A:863:LEU:HD12	2:B:47:LEU:HD22	1.91	0.52
1:C:825:GLU:OE2	1:C:938:LYS:NZ	2.42	0.52
1:A:477:ILE:CD1	1:A:503:TYR:HE1	2.23	0.51
1:A:810:ILE:HG12	1:A:923:PHE:HD2	1.74	0.51
10:A:1105:CLR:H263	11:C:1108:PCW:H462	1.92	0.51
2:B:163:LEU:HD23	4:F:6:FUC:H61	1.91	0.51
1:C:477:ILE:HD11	1:C:503:TYR:HE1	1.76	0.51
1:C:517:ARG:HG2	1:C:517:ARG:HH11	1.76	0.51
1:A:825:GLU:OE2	1:A:938:LYS:NZ	2.42	0.51
1:C:391:MET:HE1	1:C:411:PHE:CD2	2.45	0.51
1:A:517:ARG:HG2	1:A:517:ARG:HH11	1.76	0.51
1:C:714:VAL:HG12	1:C:725:LEU:HD23	1.93	0.51
2:D:65:PHE:HE1	2:D:251:ARG:NH1	2.07	0.51
11:G:1304:PCW:H241	11:E:1304:PCW:H471	1.92	0.51
1:C:52:HIS:CE1	1:C:59:LEU:HB2	2.45	0.51
11:C:1108:PCW:H271	2:D:47:LEU:CD2	2.41	0.51
1:A:477:ILE:HD11	1:A:503:TYR:HE1	1.76	0.51
1:C:52:HIS:CE1	1:C:59:LEU:HD12	2.39	0.51
1:A:153:LYS:HZ1	11:A:1113:PCW:P	2.34	0.51
1:A:411:PHE:N	1:A:411:PHE:CD1	2.78	0.51
1:C:515:LEU:HD11	1:C:535:LYS:HE2	1.93	0.51
1:A:52:HIS:CE1	1:A:59:LEU:HB2	2.45	0.51
1:A:241:ASN:H	1:A:241:ASN:ND2	2.05	0.51
11:A:1108:PCW:H271	2:B:47:LEU:CD2	2.41	0.51
1:C:45:LYS:NZ	1:C:234:GLU:OE1	2.38	0.51
1:C:411:PHE:CD1	1:C:411:PHE:N	2.78	0.50
1:C:565:TYR:HB3	1:C:571:PHE:HE2	1.77	0.50
11:C:1114:PCW:C19	10:D:501:CLR:H151	2.41	0.50
1:A:827:ALA:HB2	1:A:831:ILE:HD11	1.94	0.50
1:C:827:ALA:HB2	1:C:831:ILE:HD11	1.94	0.50
1:A:565:TYR:HB3	1:A:571:PHE:HE2	1.77	0.50
1:A:846:ASN:OD1	1:A:846:ASN:N	2.42	0.50
1:C:762:VAL:HG13	1:C:832:MET:HE1	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:968:LEU:O	1:C:974:THR:HG21	2.10	0.50
1:C:1000:LEU:CD1	11:C:1110:PCW:H39	2.42	0.50
1:A:714:VAL:HG12	1:A:725:LEU:HD23	1.93	0.50
1:A:920:THR:HG23	1:A:980:MET:HE2	1.93	0.50
1:C:351:MET:HE2	1:C:364:VAL:HG13	1.93	0.50
2:B:110:MET:HE1	2:B:157:LEU:HD13	1.93	0.50
1:C:615:MET:HB3	1:C:689:VAL:HG22	1.94	0.50
1:C:920:THR:HG23	1:C:980:MET:HE2	1.93	0.50
2:D:81:ALA:HB3	2:D:82:PRO:HD3	1.93	0.50
1:A:762:VAL:HG13	1:A:832:MET:HE1	1.93	0.49
1:A:1000:LEU:CD1	11:A:1110:PCW:H39	2.42	0.49
1:A:351:MET:HE2	1:A:364:VAL:HG13	1.93	0.49
11:A:1114:PCW:C19	10:B:501:CLR:H151	2.41	0.49
2:B:81:ALA:HB3	2:B:82:PRO:HD3	1.93	0.49
1:A:996:LEU:CD2	11:C:1110:PCW:H283	2.43	0.49
1:A:515:LEU:HD11	1:A:535:LYS:HE2	1.93	0.49
2:B:15:LYS:C	2:B:17:LEU:H	2.20	0.49
1:A:997:ILE:HG21	11:A:1108:PCW:H272	1.94	0.49
2:D:110:MET:HE1	2:D:157:LEU:HD13	1.94	0.49
2:B:206:TYR:O	2:B:206:TYR:HD1	1.96	0.49
2:D:215:CYS:SG	2:D:263:ILE:HD13	2.53	0.49
1:A:672:ASP:O	1:A:673:LEU:HD23	2.13	0.48
11:A:1110:PCW:H282	11:C:1110:PCW:H282	1.94	0.48
1:C:102:ILE:O	1:C:106:ILE:HG23	2.13	0.48
1:C:502:ARG:HG2	1:C:562:GLU:HB3	1.95	0.48
1:A:502:ARG:HG2	1:A:562:GLU:HB3	1.95	0.48
2:B:279:LYS:HG3	2:B:296:ARG:HB3	1.95	0.48
1:A:517:ARG:HH11	1:A:517:ARG:CG	2.26	0.48
1:C:517:ARG:HH11	1:C:517:ARG:CG	2.26	0.48
1:C:897:ASP:OD1	1:C:897:ASP:N	2.46	0.48
1:C:997:ILE:HG21	11:C:1108:PCW:H272	1.94	0.48
2:D:15:LYS:C	2:D:17:LEU:H	2.20	0.48
1:A:897:ASP:OD1	1:A:897:ASP:N	2.46	0.48
1:C:382:THR:HA	1:C:595:PRO:HA	1.95	0.48
1:C:540:ASN:N	1:C:540:ASN:HD22	2.12	0.48
2:D:58:LEU:O	2:D:61:THR:OG1	2.31	0.48
1:A:615:MET:HB3	1:A:689:VAL:HG22	1.94	0.48
1:A:102:ILE:O	1:A:106:ILE:HG23	2.13	0.48
1:A:900:ASP:OD2	1:A:906:TRP:NE1	2.47	0.48
2:B:215:CYS:SG	2:B:263:ILE:HD13	2.53	0.48
1:A:36:LYS:HZ1	1:A:272:THR:HB	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:846:ASN:OD1	1:C:846:ASN:N	2.42	0.48
1:A:95:GLN:HG3	1:A:148:TYR:HB2	1.96	0.48
11:A:1112:PCW:H19	11:G:1302:PCW:H40	1.96	0.48
1:A:488:TYR:C	1:A:488:TYR:HD1	2.22	0.48
1:A:945:PHE:HD1	11:A:1109:PCW:H121	1.79	0.48
2:B:58:LEU:O	2:B:61:THR:OG1	2.31	0.48
2:B:122:SER:HA	2:B:123:PRO:HA	1.55	0.48
1:C:672:ASP:O	1:C:673:LEU:HD23	2.13	0.48
11:E:1303:PCW:H262	11:E:1304:PCW:C20	2.44	0.48
1:A:488:TYR:C	1:A:488:TYR:CD1	2.92	0.48
2:D:206:TYR:O	2:D:206:TYR:HD1	1.96	0.48
1:C:488:TYR:CD1	1:C:488:TYR:C	2.92	0.47
11:E:1303:PCW:H283	11:E:1304:PCW:H222	1.96	0.47
1:A:390:HIS:CD2	1:A:399:GLU:HG2	2.50	0.47
1:C:235:ASN:OD1	1:C:236:PRO:HD2	2.14	0.47
1:C:488:TYR:C	1:C:488:TYR:HD1	2.22	0.47
11:C:1112:PCW:H19	11:E:1302:PCW:H40	1.96	0.47
1:A:382:THR:HA	1:A:595:PRO:HA	1.95	0.47
1:A:997:ILE:HG21	11:A:1108:PCW:H261	1.96	0.47
1:A:1007:PHE:HZ	2:D:61:THR:HA	1.79	0.47
1:C:390:HIS:CD2	1:C:399:GLU:HG2	2.50	0.47
1:C:648:LEU:O	1:C:649:ASN:HB2	2.15	0.47
1:A:103:LEU:HD22	1:A:292:ILE:HG23	1.96	0.47
1:A:235:ASN:OD1	1:A:236:PRO:HD2	2.15	0.47
2:B:229:ILE:H	2:B:229:ILE:HG13	1.53	0.47
1:C:103:LEU:HD22	1:C:292:ILE:HG23	1.96	0.47
1:A:679:ASP:O	1:A:683:HIS:HB2	2.15	0.47
1:C:900:ASP:OD2	1:C:906:TRP:NE1	2.47	0.47
2:D:265:PHE:HB3	2:D:268:LEU:HD12	1.97	0.47
1:A:540:ASN:N	1:A:540:ASN:HD22	2.12	0.47
2:B:225:LYS:O	2:B:269:THR:OG1	2.33	0.47
2:D:279:LYS:HG3	2:D:296:ARG:HB3	1.95	0.47
1:A:52:HIS:CD2	1:A:57:THR:HG23	2.50	0.47
11:G:1303:PCW:H262	11:G:1304:PCW:C20	2.44	0.47
11:G:1304:PCW:C41	11:E:1304:PCW:H461	2.44	0.47
1:C:847:GLU:H	1:C:847:GLU:HG3	1.51	0.47
2:D:134:TYR:HE1	2:D:242:LEU:HG	1.80	0.47
2:B:107:HIS:O	2:B:111:ASP:HB2	2.15	0.47
1:A:662:ALA:HB2	1:A:687:GLU:HB2	1.97	0.47
1:C:420:ALA:O	1:C:424:ILE:HG13	2.15	0.47
1:C:945:PHE:HD1	11:C:1109:PCW:H121	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:14:TYR:CZ	11:G:1304:PCW:H82	2.50	0.46
1:C:424:ILE:HG22	1:C:555:PHE:HD2	1.79	0.46
1:C:679:ASP:O	1:C:683:HIS:HB2	2.15	0.46
11:G:1304:PCW:C26	11:E:1304:PCW:H451	2.44	0.46
1:A:421:LEU:HD13	1:A:586:VAL:HG12	1.97	0.46
11:G:1303:PCW:H283	11:G:1304:PCW:H222	1.96	0.46
2:D:229:ILE:HD12	2:D:229:ILE:O	2.14	0.46
1:A:615:MET:HB2	1:A:633:ILE:HD13	1.98	0.46
1:A:648:LEU:O	1:A:649:ASN:HB2	2.15	0.46
2:B:229:ILE:HD12	2:B:229:ILE:O	2.14	0.46
11:C:1108:PCW:C40	11:C:1108:PCW:H20	2.46	0.46
11:A:1108:PCW:C40	11:A:1108:PCW:H20	2.46	0.46
11:A:1108:PCW:H72	11:A:1108:PCW:H41	1.69	0.46
2:B:265:PHE:HB3	2:B:268:LEU:HD12	1.97	0.46
1:C:95:GLN:HG3	1:C:148:TYR:HB2	1.96	0.46
1:C:548:LEU:HB3	1:C:550:GLU:HG3	1.98	0.46
2:B:134:TYR:HE1	2:B:242:LEU:HG	1.80	0.46
1:C:615:MET:HB2	1:C:633:ILE:HD13	1.98	0.46
1:C:997:ILE:HG21	11:C:1108:PCW:H261	1.97	0.46
2:D:74:ALA:CB	2:D:75:PRO:HD3	2.44	0.46
2:D:107:HIS:O	2:D:111:ASP:HB2	2.15	0.46
2:D:140:LEU:HD23	2:D:252:LEU:HD12	1.98	0.46
1:A:997:ILE:HG21	11:A:1108:PCW:C26	2.46	0.46
2:D:114:ASN:OD1	2:D:154:ARG:NH1	2.49	0.46
2:B:114:ASN:OD1	2:B:154:ARG:NH1	2.49	0.46
1:C:596:ARG:HB2	1:C:599:VAL:HG23	1.98	0.46
1:C:732:VAL:HG13	1:C:748:MET:HE3	1.96	0.46
1:A:420:ALA:O	1:A:424:ILE:HG13	2.15	0.45
1:A:424:ILE:HG22	1:A:555:PHE:HD2	1.79	0.45
2:B:74:ALA:CB	2:B:75:PRO:HD3	2.45	0.45
1:C:673:LEU:HD13	1:C:677:VAL:CG1	2.46	0.45
1:C:52:HIS:CD2	1:C:57:THR:HG23	2.50	0.45
1:A:732:VAL:HG13	1:A:748:MET:HE3	1.96	0.45
1:C:421:LEU:HD13	1:C:586:VAL:HG12	1.97	0.45
1:C:997:ILE:HD13	11:C:1108:PCW:H261	1.97	0.45
1:A:548:LEU:HB3	1:A:550:GLU:HG3	1.98	0.45
1:C:101:SER:HB3	1:C:140:VAL:HG13	1.98	0.45
1:C:997:ILE:HG21	11:C:1108:PCW:C26	2.46	0.45
2:D:132:ALA:O	2:D:209:TYR:HB3	2.17	0.45
1:A:696:GLN:O	1:A:700:ILE:HG12	2.17	0.45
2:B:66:GLU:OE2	3:G:11:ARG:NH2	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:132:ALA:O	2:B:209:TYR:HB3	2.17	0.45
1:A:510:ALA:O	1:A:514:ILE:HG12	2.17	0.45
1:A:997:ILE:HD13	11:A:1108:PCW:H261	1.97	0.45
2:B:140:LEU:HD23	2:B:252:LEU:HD12	1.98	0.45
2:D:105:SER:O	2:D:106:MET:C	2.60	0.45
2:D:225:LYS:O	2:D:269:THR:OG1	2.33	0.45
3:E:14:TYR:CZ	11:E:1304:PCW:H82	2.50	0.45
1:A:673:LEU:HD13	1:A:677:VAL:CG1	2.46	0.45
1:C:696:GLN:O	1:C:700:ILE:HG12	2.17	0.45
1:A:891:ASP:O	1:A:892:ASP:C	2.60	0.45
2:B:81:ALA:HB2	2:B:178:VAL:HB	1.98	0.45
1:C:411:PHE:HZ	1:C:463:CYS:SG	2.32	0.45
2:D:66:GLU:OE2	3:E:11:ARG:NH2	2.50	0.45
1:C:510:ALA:O	1:C:514:ILE:HG12	2.17	0.45
1:C:662:ALA:HB2	1:C:687:GLU:HB2	1.97	0.45
1:C:997:ILE:HG12	11:C:1108:PCW:H472	1.99	0.45
2:D:93:ILE:HB	2:D:305:SER:OG	2.17	0.45
1:A:611:ILE:HD11	1:A:762:VAL:HG21	1.98	0.45
2:B:105:SER:O	2:B:106:MET:C	2.60	0.45
2:D:167:THR:HG21	2:D:171:ALA:HB2	1.99	0.45
1:A:997:ILE:HG12	11:A:1108:PCW:H472	1.99	0.44
2:B:93:ILE:HB	2:B:305:SER:OG	2.17	0.44
1:C:891:ASP:O	1:C:892:ASP:C	2.59	0.44
2:B:167:THR:HG21	2:B:171:ALA:HB2	1.99	0.44
2:B:245:TYR:HB3	2:B:246:PRO:HA	1.99	0.44
1:A:596:ARG:HB2	1:A:599:VAL:HG23	1.98	0.44
1:C:476:LYS:HE2	1:C:493:HIS:CE1	2.53	0.44
1:A:101:SER:HB3	1:A:140:VAL:HG13	1.98	0.44
11:A:1110:PCW:C27	10:C:1105:CLR:H273	2.48	0.44
11:E:1302:PCW:H382	11:E:1302:PCW:H411	1.85	0.44
1:A:34:GLU:O	1:A:38:GLU:HG3	2.18	0.44
1:A:284:ILE:HG21	1:A:362:GLU:HB3	2.00	0.44
1:C:611:ILE:HD11	1:C:762:VAL:HG21	1.98	0.44
1:A:575:GLU:HB3	1:A:576:PRO:CD	2.45	0.44
1:A:967:PHE:HZ	11:A:1112:PCW:C17	2.29	0.44
2:B:193:LYS:O	2:B:198:LEU:HD13	2.18	0.44
2:D:81:ALA:HB2	2:D:178:VAL:HB	1.98	0.44
2:D:105:SER:O	2:D:108:LYS:N	2.51	0.44
1:C:284:ILE:HG21	1:C:362:GLU:HB3	2.00	0.43
1:C:806:THR:HG21	1:C:919:HIS:HB3	1.99	0.43
2:B:61:THR:HG22	1:C:1007:PHE:HZ	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:215:CYS:HA	2:B:278:CYS:HA	1.99	0.43
2:B:299:VAL:HG12	2:B:301:ILE:HG13	1.99	0.43
10:G:1301:CLR:H263	11:E:1304:PCW:H441	1.99	0.43
2:D:207:ASN:ND2	2:D:237:TYR:CZ	2.86	0.43
2:D:224:GLU:H	2:D:224:GLU:HG3	1.46	0.43
1:A:806:THR:HG21	1:A:919:HIS:HB3	1.99	0.43
1:C:598:ALA:HB1	1:C:756:ALA:HB2	2.01	0.43
2:D:135:ILE:HD11	2:D:137:ARG:HD3	2.01	0.43
2:D:215:CYS:HA	2:D:278:CYS:HA	2.00	0.43
2:D:265:PHE:CZ	2:D:276:ILE:HD12	2.53	0.43
1:A:476:LYS:HE2	1:A:493:HIS:CE1	2.53	0.43
1:A:759:VAL:O	1:A:762:VAL:HG12	2.19	0.43
1:A:997:ILE:HG21	11:A:1108:PCW:C27	2.48	0.43
11:A:1110:PCW:H283	1:C:996:LEU:CD2	2.48	0.43
1:C:309:LEU:C	1:C:309:LEU:HD23	2.44	0.43
1:C:374:CYS:HB2	1:C:714:VAL:HG22	2.00	0.43
1:A:376:PHD:OD2	1:A:378:THR:O	2.36	0.43
2:D:52:ILE:O	2:D:55:ILE:HG22	2.19	0.43
2:D:193:LYS:O	2:D:198:LEU:HD13	2.18	0.43
2:D:56:GLN:HE22	2:D:59:LEU:HD12	1.84	0.43
2:D:189:PRO:HG2	2:D:245:TYR:CD2	2.54	0.43
2:B:189:PRO:HG2	2:B:245:TYR:CD2	2.54	0.43
1:C:376:PHD:OD2	1:C:378:THR:O	2.36	0.43
1:A:201:ALA:HB1	1:A:260:TYR:O	2.19	0.43
1:A:309:LEU:C	1:A:309:LEU:HD23	2.44	0.43
2:B:135:ILE:HD11	2:B:137:ARG:HD3	2.01	0.43
2:B:207:ASN:ND2	2:B:237:TYR:CZ	2.86	0.43
1:A:203:LEU:HB2	1:A:243:ALA:HB3	2.00	0.43
1:A:594:PRO:HA	1:A:595:PRO:HD3	1.84	0.43
1:A:605:LYS:HB2	1:A:759:VAL:HG21	2.01	0.43
1:C:203:LEU:HB2	1:C:243:ALA:HB3	2.00	0.43
1:C:676:GLU:OE1	1:C:676:GLU:N	2.45	0.43
1:A:374:CYS:HB2	1:A:714:VAL:HG22	2.00	0.43
1:A:434:GLN:O	1:A:437:GLN:HG2	2.19	0.43
1:A:598:ALA:HB1	1:A:756:ALA:HB2	2.01	0.43
2:B:105:SER:O	2:B:108:LYS:N	2.51	0.43
11:A:1108:PCW:H462	10:C:1105:CLR:H263	2.00	0.42
2:B:154:ARG:HB3	2:B:163:LEU:HD11	2.01	0.42
2:B:265:PHE:CZ	2:B:276:ILE:HD12	2.53	0.42
1:A:153:LYS:NZ	11:A:1113:PCW:P	2.92	0.42
11:A:1108:PCW:H271	2:B:47:LEU:HD21	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:52:ILE:O	2:B:55:ILE:HG22	2.19	0.42
2:B:61:THR:HG22	1:C:1007:PHE:CZ	2.54	0.42
1:C:91:LYS:O	1:C:95:GLN:HG2	2.20	0.42
1:C:759:VAL:O	1:C:762:VAL:HG12	2.19	0.42
1:C:1003:GLU:HG2	11:C:1110:PCW:H352	2.01	0.42
2:D:160:CYS:SG	2:D:262:ALA:HB1	2.60	0.42
1:A:631:VAL:HG23	1:A:633:ILE:HG13	2.01	0.42
1:C:34:GLU:O	1:C:38:GLU:HG3	2.18	0.42
11:C:1108:PCW:H271	2:D:47:LEU:HD21	2.01	0.42
2:D:299:VAL:HG12	2:D:301:ILE:HG13	1.99	0.42
1:C:997:ILE:HG21	11:C:1108:PCW:C27	2.48	0.42
2:D:15:LYS:C	2:D:17:LEU:N	2.78	0.42
1:C:511:PRO:O	1:C:515:LEU:HB2	2.20	0.42
1:C:518:CYS:SG	1:C:585:PHE:HB2	2.59	0.42
1:A:477:ILE:CD1	1:A:503:TYR:CE1	3.02	0.42
2:B:28:ARG:HH12	2:B:36:ILE:HB	1.85	0.42
1:C:434:GLN:O	1:C:437:GLN:HG2	2.19	0.42
1:C:515:LEU:CD1	1:C:535:LYS:HE2	2.50	0.42
1:C:658:ARG:HA	1:C:658:ARG:HD3	1.89	0.42
2:D:245:TYR:HB3	2:D:246:PRO:HA	1.99	0.42
1:C:153:LYS:NZ	11:C:1113:PCW:P	2.93	0.42
1:A:518:CYS:SG	1:A:585:PHE:HB2	2.59	0.42
2:B:61:THR:HA	1:C:1007:PHE:HZ	1.85	0.42
10:G:1301:CLR:H221	11:E:1304:PCW:H483	2.02	0.42
1:C:575:GLU:HB3	1:C:576:PRO:CD	2.45	0.42
1:C:955:ILE:HA	1:C:958:LEU:HD12	2.02	0.42
2:D:120:GLY:O	2:D:151:ARG:NH2	2.52	0.42
2:D:268:LEU:HD21	2:D:274:LEU:HD12	2.02	0.42
1:A:457:LEU:HD12	1:A:467:VAL:HG21	2.01	0.42
1:A:1003:GLU:HG2	11:A:1110:PCW:H352	2.01	0.42
1:C:241:ASN:ND2	1:C:241:ASN:N	2.67	0.42
1:A:91:LYS:O	1:A:95:GLN:HG2	2.20	0.42
1:A:817:VAL:HB	1:A:818:PRO:HD3	2.02	0.42
1:A:955:ILE:HA	1:A:958:LEU:HD12	2.02	0.42
11:A:1111:PCW:H221	11:A:1111:PCW:H471	2.02	0.42
2:B:15:LYS:C	2:B:17:LEU:N	2.78	0.42
2:B:56:GLN:HE22	2:B:59:LEU:HD12	1.84	0.42
2:B:120:GLY:O	2:B:151:ARG:NH2	2.52	0.42
2:B:160:CYS:SG	2:B:262:ALA:HB1	2.59	0.42
1:C:201:ALA:HB1	1:C:260:TYR:O	2.19	0.42
1:A:347:THR:OG1	1:A:768:ILE:HD13	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:786:GLU:HG2	1:A:807:ILE:HG23	2.01	0.41
1:C:720:ASN:OD1	1:C:720:ASN:N	2.53	0.41
2:D:28:ARG:HH12	2:D:36:ILE:HB	1.85	0.41
2:D:283:GLU:C	2:D:285:ILE:H	2.29	0.41
1:A:64:THR:HG23	1:A:67:ARG:HB3	2.02	0.41
2:B:283:GLU:C	2:B:285:ILE:H	2.28	0.41
1:C:457:LEU:HD12	1:C:467:VAL:HG21	2.01	0.41
2:D:232:PHE:HB2	2:D:262:ALA:HB3	2.03	0.41
1:A:36:LYS:NZ	1:A:272:THR:HB	2.35	0.41
1:C:605:LYS:HB2	1:C:759:VAL:HG21	2.01	0.41
1:C:939:THR:OG1	1:C:1006:ARG:NH1	2.53	0.41
2:D:154:ARG:HB3	2:D:163:LEU:HD11	2.01	0.41
1:A:548:LEU:HD12	1:A:548:LEU:HA	1.90	0.41
1:A:939:THR:OG1	1:A:1006:ARG:NH1	2.53	0.41
1:C:36:LYS:NZ	1:C:272:THR:HB	2.35	0.41
1:C:817:VAL:HB	1:C:818:PRO:HD3	2.02	0.41
11:C:1111:PCW:H221	11:C:1111:PCW:H471	2.02	0.41
2:B:195:THR:HG22	2:B:196:THR:N	2.36	0.41
1:C:631:VAL:HG23	1:C:633:ILE:HG13	2.01	0.41
2:D:213:LEU:HD12	2:D:214:ARG:N	2.35	0.41
1:A:515:LEU:CD1	1:A:535:LYS:HE2	2.50	0.41
2:B:213:LEU:HD12	2:B:214:ARG:N	2.35	0.41
10:B:502:CLR:H161	10:B:502:CLR:H222	1.98	0.41
2:D:195:THR:HG22	2:D:196:THR:N	2.36	0.41
2:B:276:ILE:HG13	2:B:276:ILE:O	2.21	0.41
11:G:1302:PCW:H382	11:G:1302:PCW:H411	1.85	0.41
1:C:477:ILE:CD1	1:C:503:TYR:CE1	3.02	0.41
3:E:24:LEU:HD23	3:E:24:LEU:HA	1.93	0.41
2:B:232:PHE:HB2	2:B:262:ALA:HB3	2.03	0.41
1:A:339:THR:HG21	1:A:819:ALA:HB1	2.03	0.41
1:A:367:LEU:CD2	1:A:748:MET:HE1	2.50	0.41
1:A:510:ALA:HB1	1:A:512:GLU:OE2	2.21	0.41
2:B:15:LYS:O	2:B:17:LEU:N	2.54	0.41
2:B:61:THR:HA	1:C:1007:PHE:CZ	2.56	0.41
2:B:226:ILE:HD13	2:B:276:ILE:HG22	2.03	0.41
1:C:64:THR:HG23	1:C:67:ARG:HB3	2.02	0.41
1:C:347:THR:OG1	1:C:768:ILE:HD13	2.20	0.41
1:C:493:HIS:CD2	1:C:493:HIS:N	2.88	0.41
1:C:846:ASN:ND2	1:C:1023:TYR:O	2.54	0.41
1:C:967:PHE:HZ	11:C:1112:PCW:C17	2.29	0.41
1:C:996:LEU:HD12	1:C:996:LEU:HA	1.92	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:133:ASP:CG	2:D:134:TYR:H	2.28	0.41
1:A:493:HIS:CD2	1:A:493:HIS:N	2.88	0.41
1:A:540:ASN:HD22	1:A:540:ASN:H	1.69	0.41
2:B:167:THR:HG22	2:B:169:GLY:H	1.86	0.41
1:C:339:THR:HG21	1:C:819:ALA:HB1	2.03	0.41
1:C:367:LEU:CD2	1:C:748:MET:HE1	2.50	0.41
1:C:912:LYS:HD3	1:C:912:LYS:HA	1.89	0.41
5:H:2:NAG:O7	5:H:2:NAG:C3	2.68	0.41
5:L:2:NAG:O7	5:L:2:NAG:C3	2.68	0.41
1:A:846:ASN:ND2	1:A:1023:TYR:O	2.54	0.40
1:A:886:LYS:HG2	1:A:890:TRP:HB2	2.02	0.40
1:C:786:GLU:HG2	1:C:807:ILE:HG23	2.01	0.40
1:C:810:ILE:HD13	1:C:810:ILE:HA	1.92	0.40
2:D:213:LEU:HD23	2:D:261:LEU:HD22	2.03	0.40
2:D:234:LEU:HG	2:D:241:PRO:HG3	2.03	0.40
1:A:344:LEU:HD12	1:A:344:LEU:HA	1.89	0.40
1:A:933:ASP:HA	1:A:936:ILE:HG12	2.03	0.40
2:B:253:GLN:O	2:B:254:LYS:C	2.64	0.40
1:C:51:LEU:HD22	1:C:204:ARG:HD2	2.03	0.40
1:C:83:PRO:HA	1:C:84:PRO:HD3	1.91	0.40
2:D:167:THR:HG22	2:D:169:GLY:H	1.86	0.40
1:A:461:GLU:OE1	1:A:466:SER:HA	2.21	0.40
1:A:1016:TRP:CE2	1:A:1020:GLU:HG3	2.57	0.40
2:D:225:LYS:HD2	2:D:272:MET:SD	2.61	0.40
1:A:167:GLN:OE1	1:A:198:ARG:NH1	2.55	0.40
1:A:511:PRO:O	1:A:515:LEU:HB2	2.20	0.40
2:B:135:ILE:HG12	2:B:137:ARG:CZ	2.52	0.40
2:B:192:LEU:O	2:B:206:TYR:HE2	2.04	0.40
1:C:334:GLU:HG3	1:C:812:LEU:HD12	2.04	0.40
1:C:510:ALA:HB1	1:C:512:GLU:OE2	2.21	0.40
1:C:886:LYS:HG2	1:C:890:TRP:HB2	2.02	0.40
1:C:924:ILE:HD13	1:C:988:TRP:CZ2	2.57	0.40
11:C:1108:PCW:H72	11:C:1108:PCW:H41	1.69	0.40
2:B:268:LEU:HD21	2:B:274:LEU:HD12	2.02	0.40
1:C:190:LEU:HD12	1:C:190:LEU:HA	1.90	0.40
2:D:147:LYS:H	2:D:147:LYS:HG2	1.72	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	990/1028 (96%)	909 (92%)	75 (8%)	6 (1%)	22	57
1	C	990/1028 (96%)	909 (92%)	75 (8%)	6 (1%)	22	57
2	B	292/305 (96%)	254 (87%)	36 (12%)	2 (1%)	19	54
2	D	292/305 (96%)	255 (87%)	35 (12%)	2 (1%)	19	54
3	E	38/94 (40%)	33 (87%)	5 (13%)	0	100	100
3	G	38/94 (40%)	33 (87%)	5 (13%)	0	100	100
All	All	2640/2854 (92%)	2393 (91%)	231 (9%)	16 (1%)	24	57

All (16) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	988	TRP
2	B	16	PHE
2	B	155	MET
1	C	988	TRP
2	D	16	PHE
2	D	155	MET
1	A	315	TYR
1	A	985	PRO
1	C	315	TYR
1	C	985	PRO
1	A	124	GLU
1	A	200	PRO
1	C	124	GLU
1	C	200	PRO
1	A	570	PRO
1	C	570	PRO

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	840/868 (97%)	764 (91%)	76 (9%)	8 28
1	C	840/868 (97%)	764 (91%)	76 (9%)	8 28
2	B	258/266 (97%)	218 (84%)	40 (16%)	2 13
2	D	258/266 (97%)	218 (84%)	40 (16%)	2 13
3	E	33/75 (44%)	30 (91%)	3 (9%)	7 28
3	G	33/75 (44%)	30 (91%)	3 (9%)	7 28
All	All	2262/2418 (94%)	2024 (90%)	238 (10%)	8 22

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

Mol	Chain	Res	Type
1	A	34	GLU
1	A	37	LYS
1	A	45	LYS
1	A	63	LEU
1	A	64	THR
1	A	65	ASN
1	A	75	ASP
1	A	127	ASN
1	A	158	MET
1	A	167	GLN
1	A	198	ARG
1	A	231	PHE
1	A	241	ASN
1	A	248	ASN
1	A	261	THR
1	A	263	ASP
1	A	311	LEU
1	A	313	LEU
1	A	331	ASN
1	A	332	VAL
1	A	334	GLU
1	A	343	CYS

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Mol	Chain	Res	Type
1	A	344	LEU
1	A	350	ARG
1	A	351	MET
1	A	357	LEU
1	A	360	ASN
1	A	362	GLU
1	A	367	LEU
1	A	381	LEU
1	A	385	ARG
1	A	411	PHE
1	A	415	SER
1	A	434	GLN
1	A	440	VAL
1	A	445	ARG
1	A	470	MET
1	A	485	THR
1	A	488	TYR
1	A	493	HIS
1	A	515	LEU
1	A	517	ARG
1	A	522	LEU
1	A	540	ASN
1	A	548	LEU
1	A	571	PHE
1	A	661	LYS
1	A	670	LEU
1	A	673	LEU
1	A	678	LEU
1	A	683	HIS
1	A	692	ARG
1	A	708	GLN
1	A	767	LEU
1	A	786	GLU
1	A	788	THR
1	A	810	ILE
1	A	812	LEU
1	A	815	ASP
1	A	822	LEU
1	A	834	ARG
1	A	837	ARG
1	A	846	ASN
1	A	847	GLU

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Mol	Chain	Res	Type
1	A	872	ILE
1	A	887	ARG
1	A	892	ASP
1	A	894	TRP
1	A	901	SER
1	A	935	ILE
1	A	943	SER
1	A	975	ASP
1	A	986	SER
1	A	1007	PHE
1	A	1011	ARG
1	A	1019	GLN
2	B	20	SER
2	B	26	LEU
2	B	28	ARG
2	B	32	SER
2	B	37	PHE
2	B	64	ASP
2	B	73	VAL
2	B	94	SER
2	B	107	HIS
2	B	135	ILE
2	B	137	ARG
2	B	144	GLN
2	B	146	GLN
2	B	154	ARG
2	B	156	TRP
2	B	157	LEU
2	B	160	CYS
2	B	161	SER
2	B	167	THR
2	B	196	THR
2	B	200	GLU
2	B	203	GLN
2	B	211	LEU
2	B	213	LEU
2	B	214	ARG
2	B	218	LYS
2	B	219	ARG
2	B	229	ILE
2	B	242	LEU
2	B	251	ARG

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Mol	Chain	Res	Type
2	B	266	THR
2	B	268	LEU
2	B	269	THR
2	B	272	MET
2	B	284	ASN
2	B	285	ILE
2	B	287	TYR
2	B	289	GLU
2	B	292	ARG
2	B	294	ARG
3	G	4	GLU
3	G	13	THR
3	G	33	ILE
1	C	34	GLU
1	C	37	LYS
1	C	45	LYS
1	C	63	LEU
1	C	64	THR
1	C	65	ASN
1	C	75	ASP
1	C	127	ASN
1	C	158	MET
1	C	167	GLN
1	C	198	ARG
1	C	231	PHE
1	C	241	ASN
1	C	248	ASN
1	C	261	THR
1	C	263	ASP
1	C	311	LEU
1	C	313	LEU
1	C	331	ASN
1	C	332	VAL
1	C	334	GLU
1	C	343	CYS
1	C	344	LEU
1	C	350	ARG
1	C	351	MET
1	C	357	LEU
1	C	360	ASN
1	C	362	GLU
1	C	367	LEU

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Mol	Chain	Res	Type
1	C	381	LEU
1	C	385	ARG
1	C	411	PHE
1	C	415	SER
1	C	434	GLN
1	C	440	VAL
1	C	445	ARG
1	C	470	MET
1	C	485	THR
1	C	488	TYR
1	C	493	HIS
1	C	515	LEU
1	C	517	ARG
1	C	522	LEU
1	C	540	ASN
1	C	548	LEU
1	C	571	PHE
1	C	661	LYS
1	C	670	LEU
1	C	673	LEU
1	C	678	LEU
1	C	683	HIS
1	C	692	ARG
1	C	708	GLN
1	C	767	LEU
1	C	786	GLU
1	C	788	THR
1	C	810	ILE
1	C	812	LEU
1	C	815	ASP
1	C	822	LEU
1	C	834	ARG
1	C	837	ARG
1	C	846	ASN
1	C	847	GLU
1	C	872	ILE
1	C	887	ARG
1	C	892	ASP
1	C	894	TRP
1	C	901	SER
1	C	935	ILE
1	C	943	SER

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Mol	Chain	Res	Type
1	C	975	ASP
1	C	986	SER
1	C	1007	PHE
1	C	1011	ARG
1	C	1019	GLN
2	D	20	SER
2	D	26	LEU
2	D	28	ARG
2	D	32	SER
2	D	37	PHE
2	D	64	ASP
2	D	73	VAL
2	D	94	SER
2	D	107	HIS
2	D	135	ILE
2	D	137	ARG
2	D	144	GLN
2	D	146	GLN
2	D	154	ARG
2	D	156	TRP
2	D	157	LEU
2	D	160	CYS
2	D	161	SER
2	D	167	THR
2	D	196	THR
2	D	200	GLU
2	D	203	GLN
2	D	211	LEU
2	D	213	LEU
2	D	214	ARG
2	D	218	LYS
2	D	219	ARG
2	D	229	ILE
2	D	242	LEU
2	D	251	ARG
2	D	266	THR
2	D	268	LEU
2	D	269	THR
2	D	272	MET
2	D	284	ASN
2	D	285	ILE
2	D	287	TYR

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Mol	Chain	Res	Type
2	D	289	GLU
2	D	292	ARG
2	D	294	ARG
3	E	4	GLU
3	E	13	THR
3	E	33	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (29) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	52	HIS
1	A	241	ASN
1	A	360	ASN
1	A	434	GLN
1	A	474	ASN
1	A	489	GLN
1	A	539	GLN
1	A	540	ASN
1	A	649	ASN
1	A	904	GLN
2	B	56	GLN
2	B	80	HIS
2	B	203	GLN
2	B	258	GLN
1	C	52	HIS
1	C	241	ASN
1	C	360	ASN
1	C	434	GLN
1	C	474	ASN
1	C	486	ASN
1	C	489	GLN
1	C	540	ASN
1	C	649	ASN
1	C	697	GLN
1	C	904	GLN
2	D	56	GLN
2	D	80	HIS
2	D	203	GLN
2	D	258	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)

2 non-standard protein/DNA/RNA residues 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	$\#\|Z\| > 2$
1	PHD	A	376	8,1	9,11,12	1.99	1 (11%)	10,15,17	1.15	2 (20%)
1	PHD	C	376	8,1	9,11,12	1.97	1 (11%)	10,15,17	1.15	2 (20%)

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
1	PHD	A	376	8,1	-	2/8/11/13	-
1	PHD	C	376	8,1	-	2/8/11/13	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	376	PHD	P-OD1	-5.25	1.51	1.59
1	C	376	PHD	P-OD1	-5.20	1.51	1.59

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	376	PHD	OD1-CG-CB	2.12	116.94	111.11
1	C	376	PHD	OD1-CG-CB	2.10	116.89	111.11
1	A	376	PHD	CA-CB-CG	2.06	117.17	112.86
1	C	376	PHD	CA-CB-CG	2.05	117.16	112.86

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	376	PHD	CA-CB-CG-OD1
1	C	376	PHD	CA-CB-CG-OD1
1	A	376	PHD	CA-CB-CG-OD2
1	C	376	PHD	CA-CB-CG-OD2

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	376	PHD	1	0
1	C	376	PHD	1	0

5.5 Carbohydrates (i)

38 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	$\#\|Z\| > 2$
4	NAG	F	1	2,4	14,14,15	1.29	2 (14%)	17,19,21	1.31	1 (5%)
4	NAG	F	2	4	14,14,15	0.25	0	17,19,21	0.61	1 (5%)
4	BMA	F	3	4	11,11,12	0.84	0	15,15,17	1.42	2 (13%)
4	MAN	F	4	4	11,11,12	0.75	0	15,15,17	0.99	2 (13%)
4	MAN	F	5	4	11,11,12	0.71	0	15,15,17	0.94	2 (13%)
4	FUC	F	6	4	10,10,11	1.09	1 (10%)	14,14,16	0.76	0
5	NAG	H	1	5,2	14,14,15	0.65	1 (7%)	17,19,21	1.20	2 (11%)
5	NAG	H	2	5	14,14,15	0.33	0	17,19,21	1.61	2 (11%)
5	BMA	H	3	5	11,11,12	1.26	1 (9%)	15,15,17	1.04	1 (6%)
5	MAN	H	4	5	11,11,12	1.48	2 (18%)	15,15,17	1.38	2 (13%)
5	NAG	H	5	5	14,14,15	0.69	0	17,19,21	0.94	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
5	MAN	H	6	5	11,11,12	0.75	0	15,15,17	0.94	2 (13%)
6	NAG	I	1	6,2	14,14,15	0.90	1 (7%)	17,19,21	1.65	1 (5%)
6	NAG	I	2	6	14,14,15	0.19	0	17,19,21	0.64	1 (5%)
6	BMA	I	3	6	11,11,12	0.60	0	15,15,17	1.37	2 (13%)
6	MAN	I	4	6	11,11,12	0.68	0	15,15,17	0.97	2 (13%)
6	FUC	I	5	6	10,10,11	1.03	1 (10%)	14,14,16	0.76	0
7	NAG	J	1	7,2	14,14,15	0.47	0	17,19,21	0.63	0
7	NAG	J	2	7	14,14,15	0.19	0	17,19,21	0.37	0
4	NAG	K	1	2,4	14,14,15	1.29	2 (14%)	17,19,21	1.31	1 (5%)
4	NAG	K	2	4	14,14,15	0.24	0	17,19,21	0.62	1 (5%)
4	BMA	K	3	4	11,11,12	0.85	0	15,15,17	1.41	2 (13%)
4	MAN	K	4	4	11,11,12	0.77	0	15,15,17	0.99	2 (13%)
4	MAN	K	5	4	11,11,12	0.71	0	15,15,17	0.94	2 (13%)
4	FUC	K	6	4	10,10,11	1.07	1 (10%)	14,14,16	0.76	0
5	NAG	L	1	5,2	14,14,15	0.65	1 (7%)	17,19,21	1.20	2 (11%)
5	NAG	L	2	5	14,14,15	0.34	0	17,19,21	1.61	2 (11%)
5	BMA	L	3	5	11,11,12	1.26	1 (9%)	15,15,17	1.04	1 (6%)
5	MAN	L	4	5	11,11,12	1.48	2 (18%)	15,15,17	1.38	2 (13%)
5	NAG	L	5	5	14,14,15	0.68	0	17,19,21	0.92	1 (5%)
5	MAN	L	6	5	11,11,12	0.75	0	15,15,17	0.94	2 (13%)
6	NAG	M	1	6,2	14,14,15	0.89	1 (7%)	17,19,21	1.64	1 (5%)
6	NAG	M	2	6	14,14,15	0.20	0	17,19,21	0.64	1 (5%)
6	BMA	M	3	6	11,11,12	0.60	0	15,15,17	1.37	2 (13%)
6	MAN	M	4	6	11,11,12	0.69	0	15,15,17	0.96	2 (13%)
6	FUC	M	5	6	10,10,11	1.03	1 (10%)	14,14,16	0.76	0
7	NAG	N	1	7,2	14,14,15	0.47	0	17,19,21	0.64	0
7	NAG	N	2	7	14,14,15	0.19	0	17,19,21	0.38	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
4	NAG	F	1	2,4	-	0/6/23/26	0/1/1/1
4	NAG	F	2	4	-	0/6/23/26	0/1/1/1
4	BMA	F	3	4	-	1/2/19/22	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	MAN	F	4	4	-	0/2/19/22	0/1/1/1
4	MAN	F	5	4	-	0/2/19/22	0/1/1/1
4	FUC	F	6	4	-	-	0/1/1/1
5	NAG	H	1	5,2	-	0/6/23/26	0/1/1/1
5	NAG	H	2	5	-	3/6/23/26	0/1/1/1
5	BMA	H	3	5	-	2/2/19/22	0/1/1/1
5	MAN	H	4	5	-	0/2/19/22	0/1/1/1
5	NAG	H	5	5	-	4/6/23/26	0/1/1/1
5	MAN	H	6	5	-	2/2/19/22	0/1/1/1
6	NAG	I	1	6,2	-	0/6/23/26	0/1/1/1
6	NAG	I	2	6	-	0/6/23/26	0/1/1/1
6	BMA	I	3	6	-	1/2/19/22	0/1/1/1
6	MAN	I	4	6	-	0/2/19/22	0/1/1/1
6	FUC	I	5	6	-	-	0/1/1/1
7	NAG	J	1	7,2	-	0/6/23/26	0/1/1/1
7	NAG	J	2	7	-	0/6/23/26	0/1/1/1
4	NAG	K	1	2,4	-	0/6/23/26	0/1/1/1
4	NAG	K	2	4	-	0/6/23/26	0/1/1/1
4	BMA	K	3	4	-	1/2/19/22	0/1/1/1
4	MAN	K	4	4	-	0/2/19/22	0/1/1/1
4	MAN	K	5	4	-	0/2/19/22	0/1/1/1
4	FUC	K	6	4	-	-	0/1/1/1
5	NAG	L	1	5,2	-	0/6/23/26	0/1/1/1
5	NAG	L	2	5	-	3/6/23/26	0/1/1/1
5	BMA	L	3	5	-	2/2/19/22	0/1/1/1
5	MAN	L	4	5	-	0/2/19/22	0/1/1/1
5	NAG	L	5	5	-	4/6/23/26	0/1/1/1
5	MAN	L	6	5	-	2/2/19/22	0/1/1/1
6	NAG	M	1	6,2	-	0/6/23/26	0/1/1/1
6	NAG	M	2	6	-	0/6/23/26	0/1/1/1
6	BMA	M	3	6	-	1/2/19/22	0/1/1/1
6	MAN	M	4	6	-	0/2/19/22	0/1/1/1
6	FUC	M	5	6	-	-	0/1/1/1
7	NAG	N	1	7,2	-	0/6/23/26	0/1/1/1
7	NAG	N	2	7	-	0/6/23/26	0/1/1/1

All (18) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	F	1	NAG	O5-C1	4.29	1.50	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	K	1	NAG	O5-C1	4.29	1.50	1.43
5	L	4	MAN	O2-C2	3.23	1.50	1.43
5	H	4	MAN	O2-C2	3.20	1.50	1.43
4	F	6	FUC	O5-C1	-2.90	1.39	1.43
4	K	6	FUC	O5-C1	-2.82	1.39	1.43
6	M	1	NAG	O5-C1	2.71	1.48	1.43
6	I	1	NAG	O5-C1	2.67	1.48	1.43
6	M	5	FUC	O5-C1	-2.41	1.39	1.43
6	I	5	FUC	O5-C1	-2.40	1.39	1.43
5	H	4	MAN	C1-C2	2.40	1.57	1.52
5	L	4	MAN	C1-C2	2.39	1.57	1.52
5	H	3	BMA	C2-C3	2.19	1.55	1.52
5	L	1	NAG	C1-C2	2.18	1.55	1.52
5	L	3	BMA	C2-C3	2.18	1.55	1.52
5	H	1	NAG	C1-C2	2.16	1.55	1.52
4	F	1	NAG	C1-C2	2.10	1.55	1.52
4	K	1	NAG	C1-C2	2.10	1.55	1.52

All (48) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	I	1	NAG	C1-O5-C5	6.27	120.68	112.19
6	M	1	NAG	C1-O5-C5	6.22	120.62	112.19
4	K	1	NAG	C1-O5-C5	4.99	118.95	112.19
4	F	1	NAG	C1-O5-C5	4.97	118.93	112.19
5	H	2	NAG	C1-O5-C5	4.52	118.31	112.19
5	L	2	NAG	C1-O5-C5	4.51	118.30	112.19
5	H	4	MAN	O2-C2-C1	4.29	117.93	109.15
5	L	4	MAN	O2-C2-C1	4.29	117.93	109.15
5	H	2	NAG	C2-N2-C7	4.25	128.95	122.90
5	L	2	NAG	C2-N2-C7	4.22	128.92	122.90
5	H	5	NAG	C1-O5-C5	3.68	117.18	112.19
5	L	5	NAG	C1-O5-C5	3.65	117.14	112.19
5	H	1	NAG	O4-C4-C5	3.16	117.14	109.30
5	L	1	NAG	O4-C4-C5	3.16	117.14	109.30
5	H	3	BMA	O3-C3-C2	3.13	115.98	109.99
5	L	3	BMA	O3-C3-C2	3.11	115.95	109.99
4	F	3	BMA	O5-C5-C6	2.97	111.86	107.20
4	K	3	BMA	O5-C5-C6	2.92	111.78	107.20
5	H	1	NAG	C1-O5-C5	2.86	116.06	112.19
5	L	1	NAG	C1-O5-C5	2.84	116.04	112.19
6	I	3	BMA	O5-C5-C6	2.73	111.48	107.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	M	3	BMA	O5-C5-C6	2.73	111.48	107.20
5	L	4	MAN	C1-O5-C5	2.60	115.71	112.19
5	H	4	MAN	C1-O5-C5	2.59	115.69	112.19
6	M	3	BMA	C3-C4-C5	-2.36	106.03	110.24
6	I	3	BMA	C3-C4-C5	-2.36	106.03	110.24
4	K	5	MAN	O2-C2-C3	-2.27	105.60	110.14
6	I	2	NAG	C1-O5-C5	2.26	115.25	112.19
4	F	5	MAN	O2-C2-C3	-2.26	105.62	110.14
4	K	3	BMA	C3-C4-C5	-2.24	106.24	110.24
6	M	2	NAG	C1-O5-C5	2.24	115.23	112.19
4	F	3	BMA	C3-C4-C5	-2.24	106.25	110.24
4	F	4	MAN	O2-C2-C3	-2.22	105.70	110.14
4	K	4	MAN	C1-O5-C5	2.20	115.18	112.19
6	I	4	MAN	C1-O5-C5	2.20	115.18	112.19
6	M	4	MAN	C1-O5-C5	2.19	115.16	112.19
4	K	2	NAG	C1-O5-C5	2.19	115.16	112.19
5	H	6	MAN	C1-O5-C5	2.19	115.16	112.19
5	L	6	MAN	C1-O5-C5	2.19	115.15	112.19
5	L	6	MAN	O2-C2-C3	-2.18	105.78	110.14
4	K	4	MAN	O2-C2-C3	-2.17	105.78	110.14
5	H	6	MAN	O2-C2-C3	-2.17	105.79	110.14
4	F	4	MAN	C1-O5-C5	2.16	115.12	112.19
4	F	2	NAG	C1-O5-C5	2.16	115.12	112.19
6	M	4	MAN	O2-C2-C3	-2.13	105.87	110.14
6	I	4	MAN	O2-C2-C3	-2.11	105.90	110.14
4	K	5	MAN	C1-O5-C5	2.06	114.99	112.19
4	F	5	MAN	C1-O5-C5	2.06	114.98	112.19

There are no chirality outliers.

All (26) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	H	2	NAG	C3-C2-N2-C7
5	L	2	NAG	C3-C2-N2-C7
5	H	2	NAG	O5-C5-C6-O6
5	H	6	MAN	O5-C5-C6-O6
5	L	2	NAG	O5-C5-C6-O6
5	L	6	MAN	O5-C5-C6-O6
5	H	5	NAG	O5-C5-C6-O6
5	L	5	NAG	O5-C5-C6-O6
5	H	5	NAG	C4-C5-C6-O6
5	L	5	NAG	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
5	H	3	BMA	O5-C5-C6-O6
5	L	3	BMA	O5-C5-C6-O6
5	H	6	MAN	C4-C5-C6-O6
5	L	6	MAN	C4-C5-C6-O6
5	H	2	NAG	C4-C5-C6-O6
5	L	2	NAG	C4-C5-C6-O6
5	H	5	NAG	C8-C7-N2-C2
5	H	5	NAG	O7-C7-N2-C2
5	L	5	NAG	C8-C7-N2-C2
5	L	5	NAG	O7-C7-N2-C2
5	H	3	BMA	C4-C5-C6-O6
5	L	3	BMA	C4-C5-C6-O6
4	F	3	BMA	O5-C5-C6-O6
6	I	3	BMA	O5-C5-C6-O6
6	M	3	BMA	O5-C5-C6-O6
4	K	3	BMA	O5-C5-C6-O6

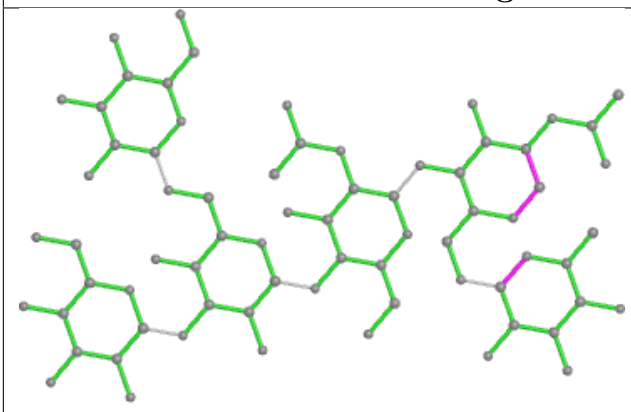
There are no ring outliers.

4 monomers are involved in 4 short contacts:

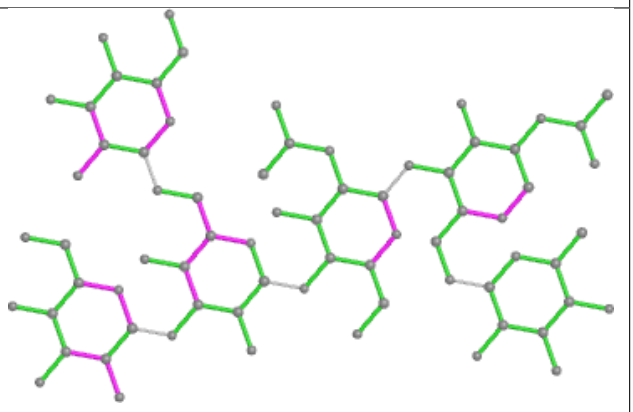
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	H	2	NAG	1	0
4	K	6	FUC	1	0
5	L	2	NAG	1	0
4	F	6	FUC	1	0

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

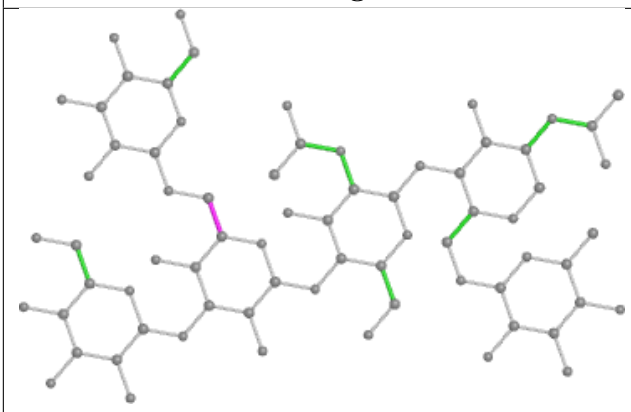
Oligosaccharide Chain F



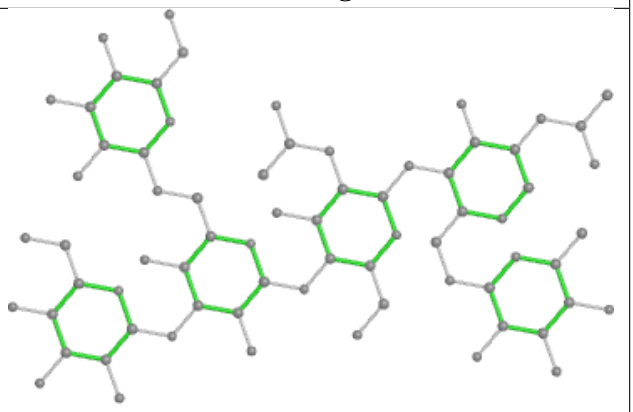
Bond lengths



Bond angles

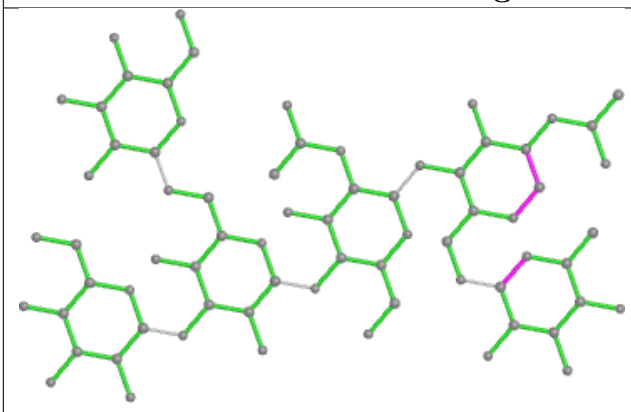


Torsions

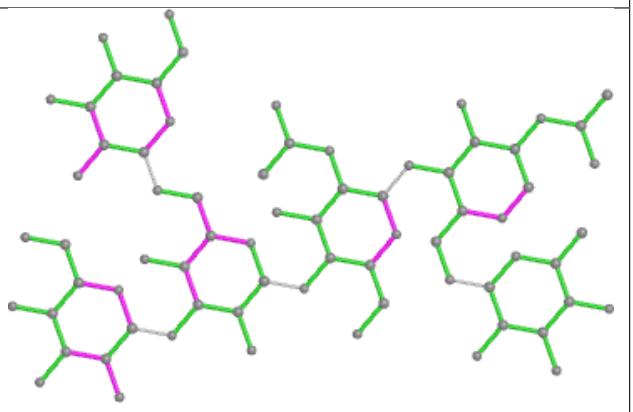


Rings

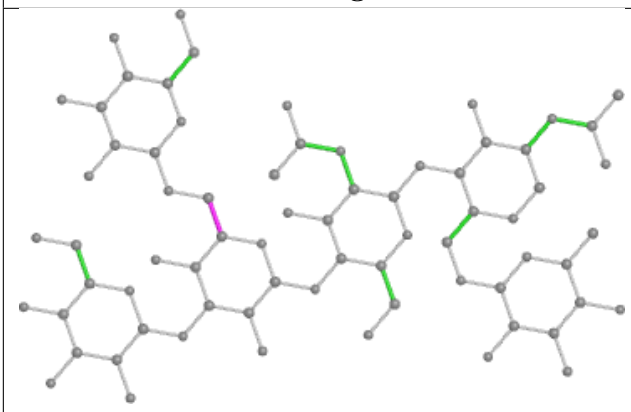
Oligosaccharide Chain K



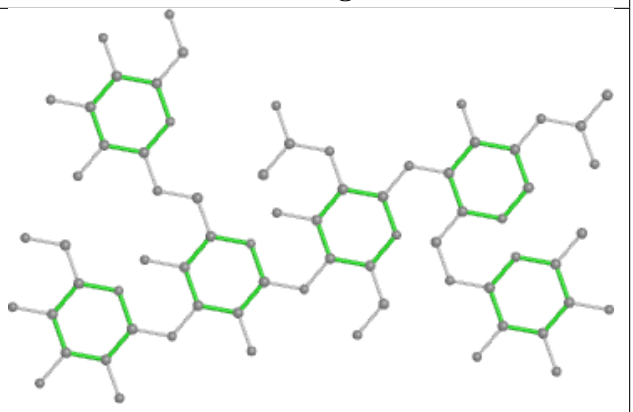
Bond lengths



Bond angles

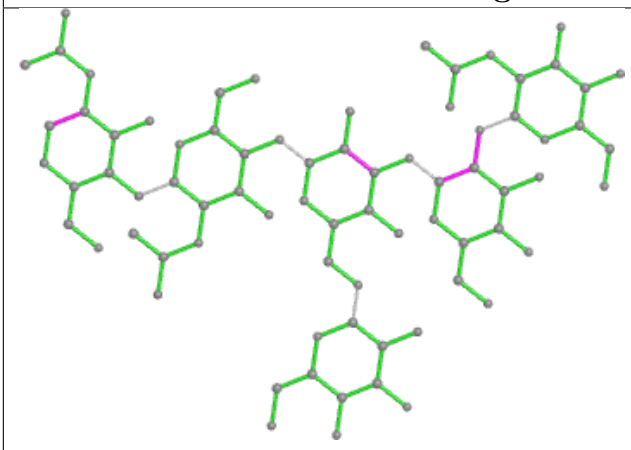


Torsions

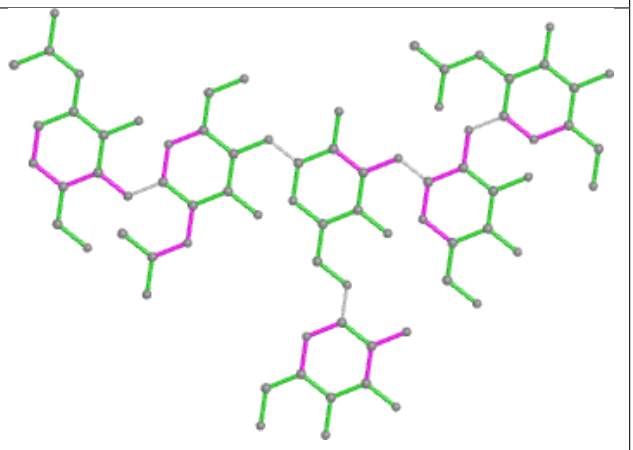


Rings

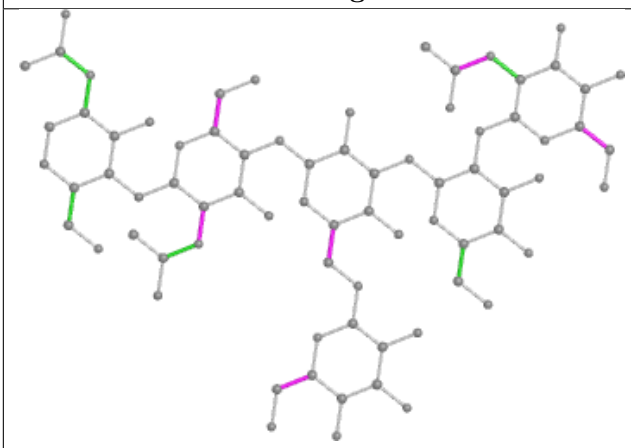
Oligosaccharide Chain H



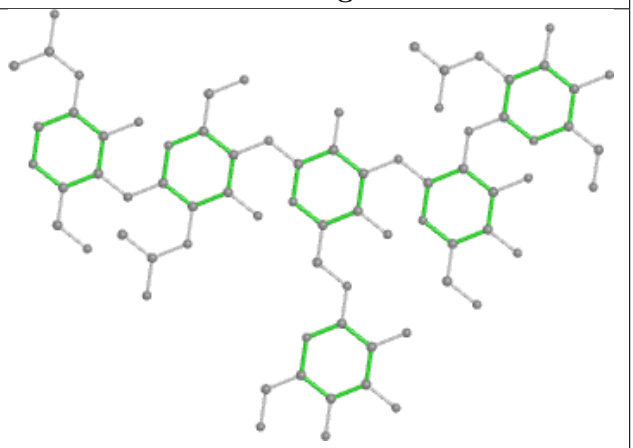
Bond lengths



Bond angles

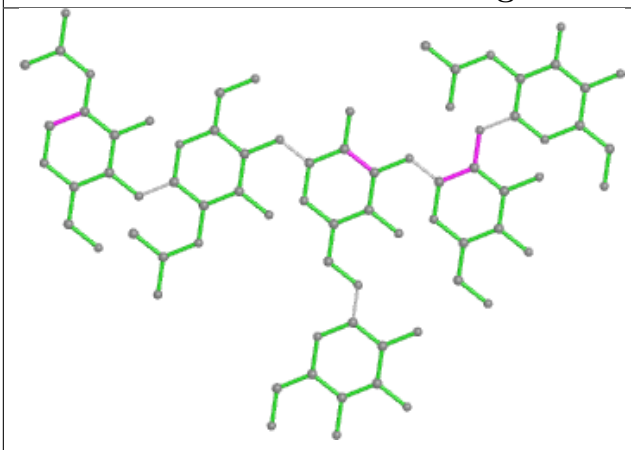


Torsions

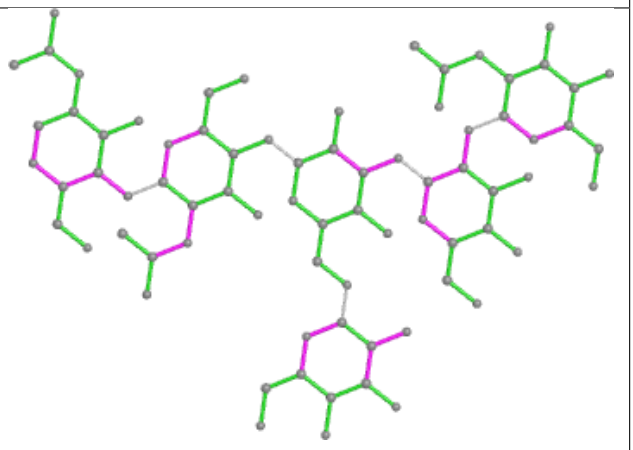


Rings

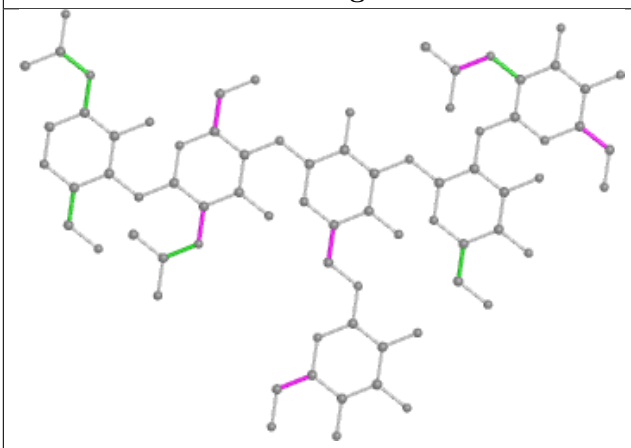
Oligosaccharide Chain L



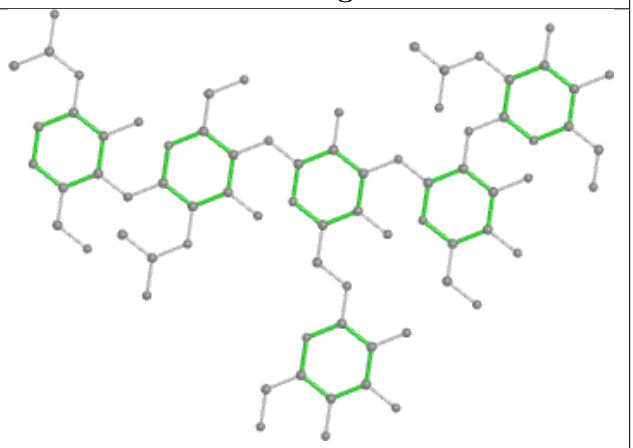
Bond lengths



Bond angles

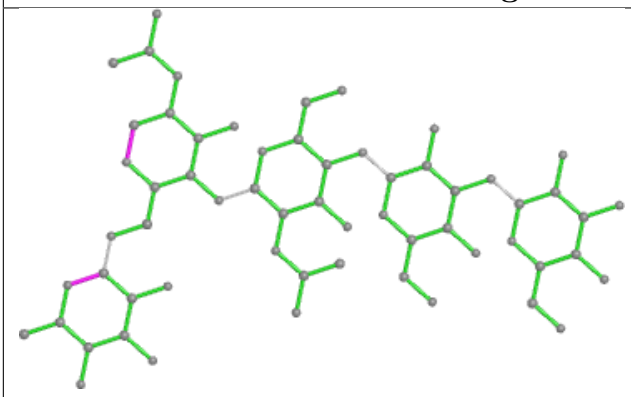


Torsions

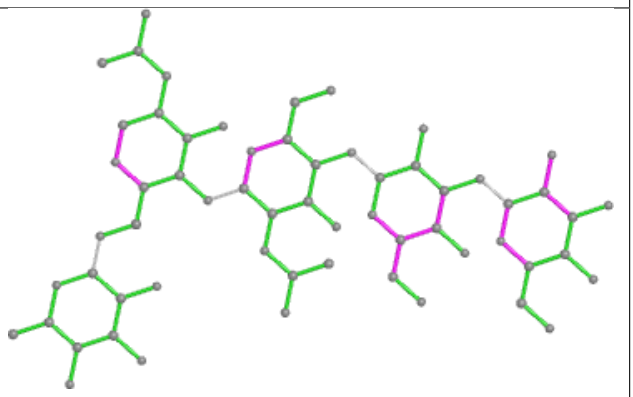


Rings

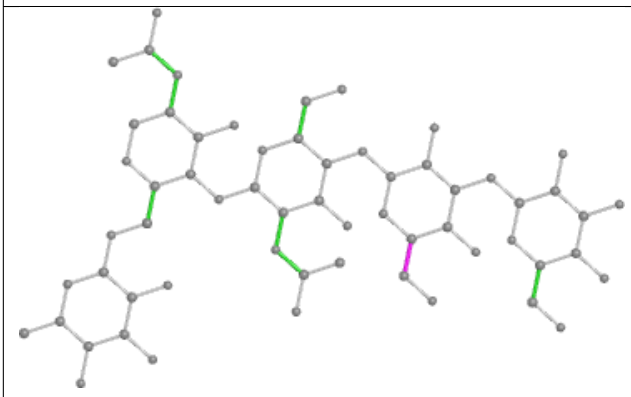
Oligosaccharide Chain I



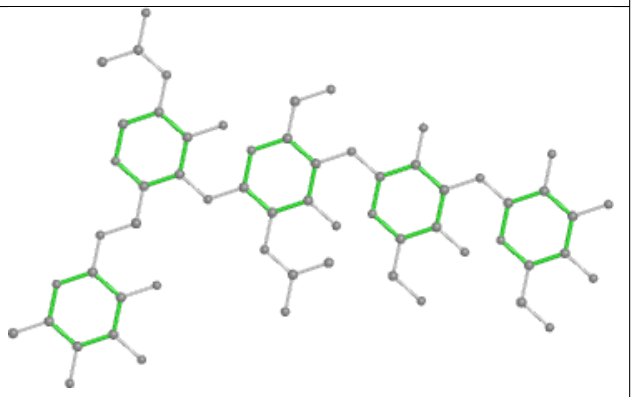
Bond lengths



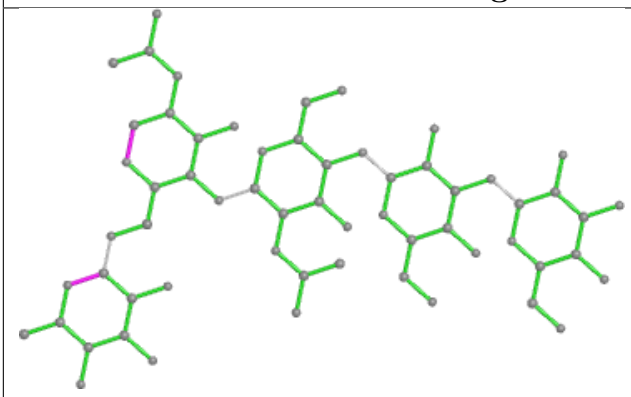
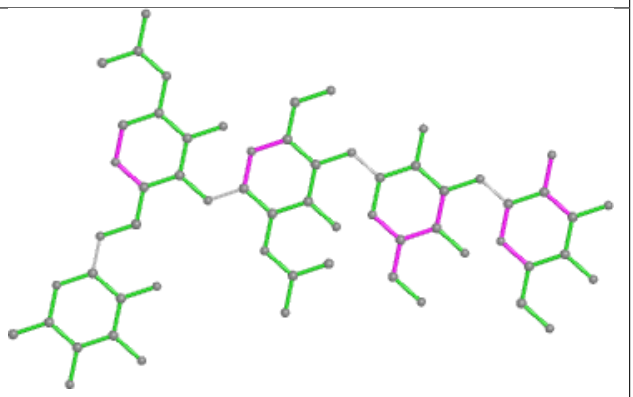
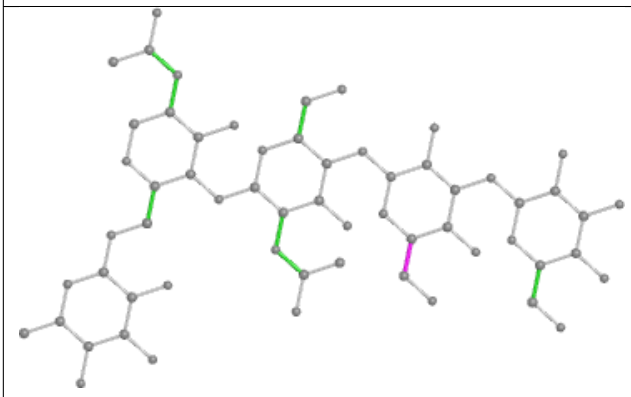
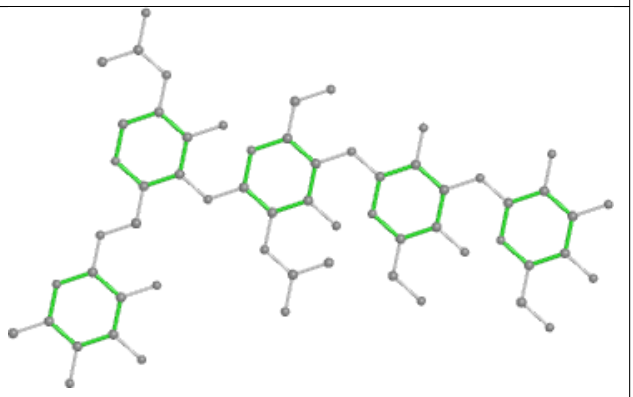
Bond angles



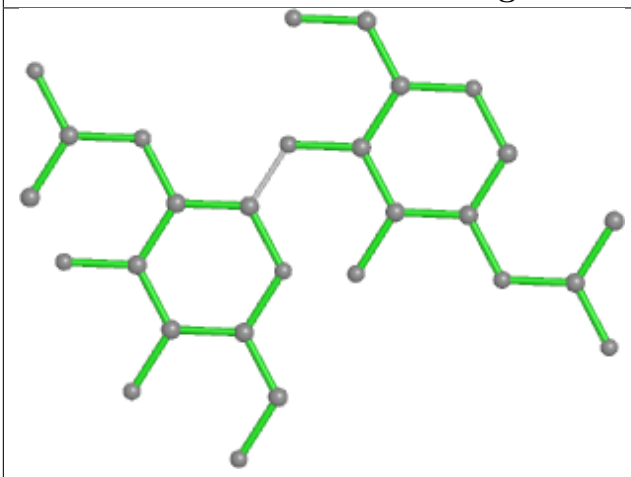
Torsions



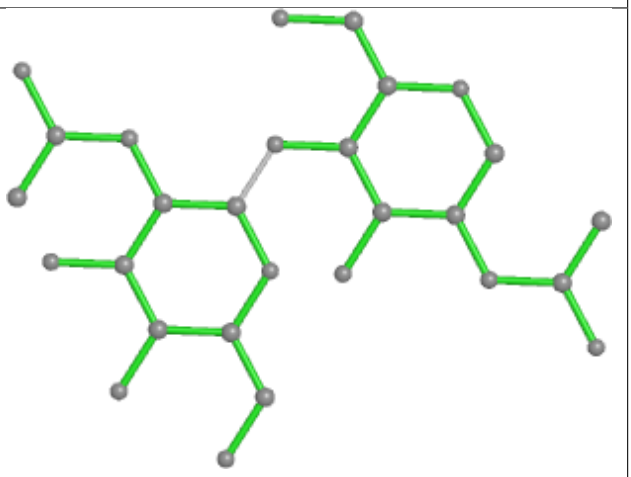
Rings

Oligosaccharide Chain M	
	
Bond lengths	**Bond angles**
	
Torsions	**Rings**

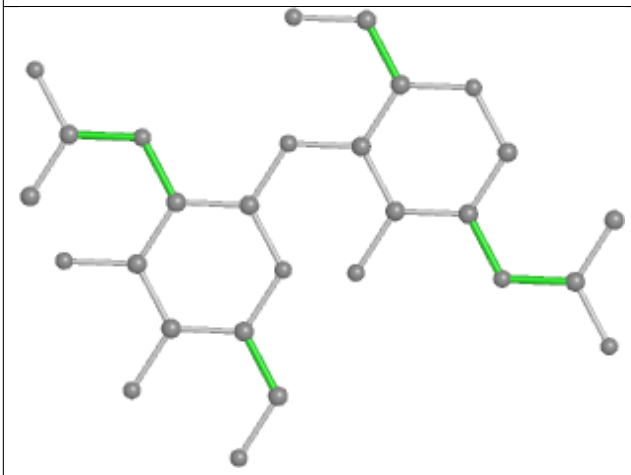
Oligosaccharide Chain J



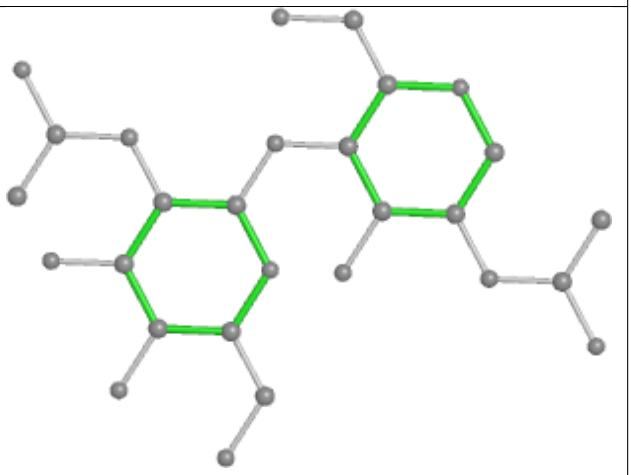
Bond lengths



Bond angles

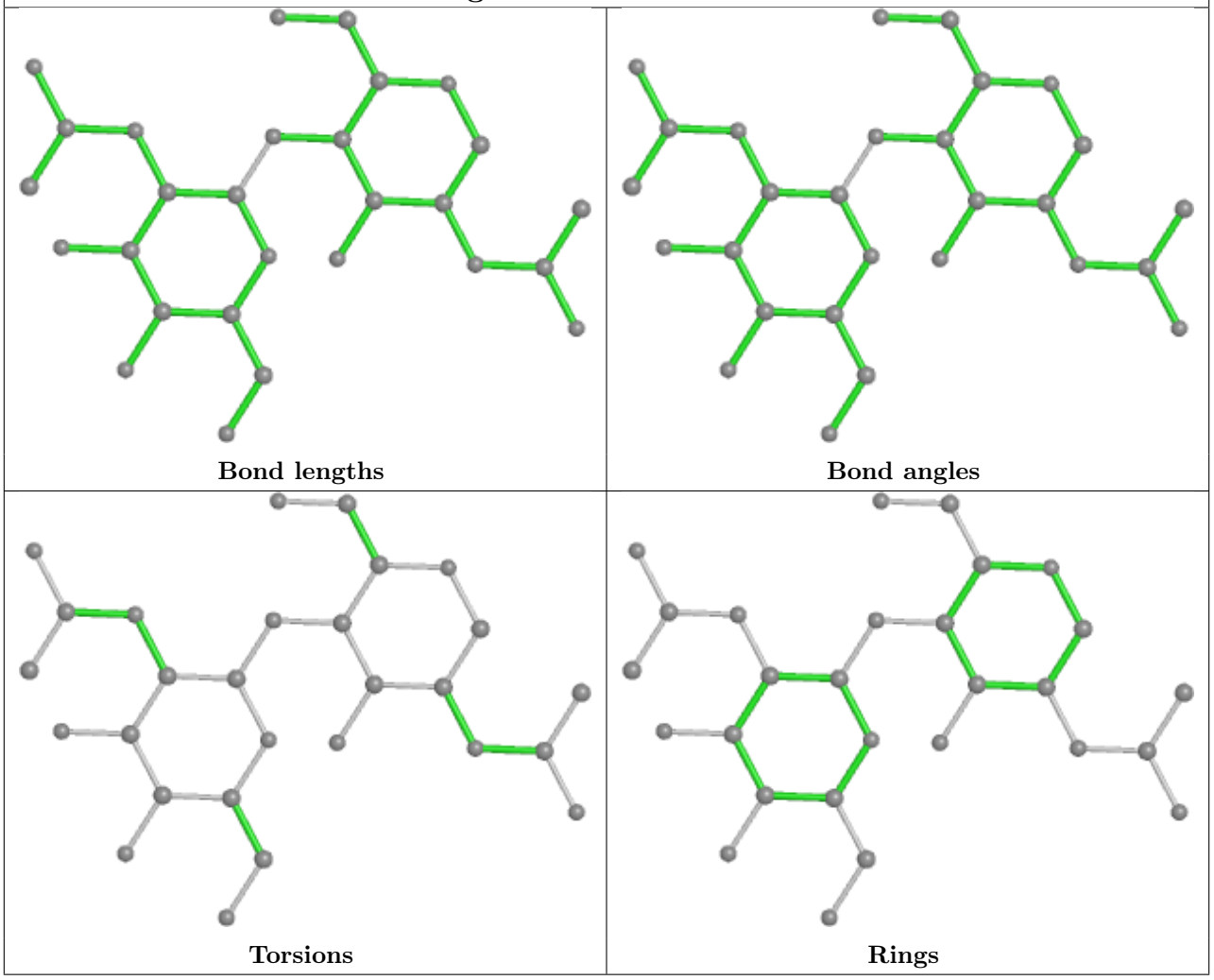


Torsions



Rings

Oligosaccharide Chain N



5.6 Ligand geometry (i)

Of 40 ligands modelled in this entry, 6 are monoatomic - leaving 34 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	$\#\|Z\| > 2$
11	PCW	A	1106	-	21,21,53	0.86	0	27,29,61	1.13	3 (11%)
11	PCW	E	1304	-	53,53,53	1.01	2 (3%)	59,61,61	0.66	0
11	PCW	C	1106	-	21,21,53	0.86	0	27,29,61	1.13	3 (11%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
11	PCW	C	1108	-	53,53,53	0.97	2 (3%)	59,61,61	0.71	0
9	7Q2	C	1104	-	29,29,29	3.91	15 (51%)	43,45,45	2.00	13 (30%)
11	PCW	C	1110	-	53,53,53	0.96	2 (3%)	59,61,61	0.78	0
10	CLR	B	501	-	31,31,31	1.11	1 (3%)	48,48,48	1.37	7 (14%)
10	CLR	C	1105	-	31,31,31	1.12	1 (3%)	48,48,48	1.37	7 (14%)
11	PCW	G	1303	-	53,53,53	0.98	2 (3%)	59,61,61	0.75	0
9	7Q2	A	1104	-	29,29,29	3.90	15 (51%)	43,45,45	2.00	13 (30%)
11	PCW	C	1107	-	21,21,53	0.87	0	27,29,61	1.13	3 (11%)
11	PCW	C	1112	-	53,53,53	0.99	2 (3%)	59,61,61	0.72	0
11	PCW	G	1302	-	53,53,53	0.99	2 (3%)	59,61,61	0.75	0
11	PCW	C	1113	-	21,21,53	0.86	0	27,29,61	1.31	3 (11%)
11	PCW	A	1112	-	53,53,53	0.99	2 (3%)	59,61,61	0.72	0
11	PCW	G	1304	-	53,53,53	1.00	2 (3%)	59,61,61	0.66	0
11	PCW	A	1108	-	53,53,53	0.97	2 (3%)	59,61,61	0.71	0
11	PCW	A	1114	-	53,53,53	1.00	2 (3%)	59,61,61	0.64	0
11	PCW	C	1111	-	53,53,53	1.00	2 (3%)	59,61,61	0.66	0
11	PCW	C	1114	-	53,53,53	1.00	2 (3%)	59,61,61	0.64	0
10	CLR	E	1301	-	31,31,31	1.12	1 (3%)	48,48,48	1.36	7 (14%)
11	PCW	A	1113	-	21,21,53	0.86	0	27,29,61	1.31	3 (11%)
10	CLR	G	1301	-	31,31,31	1.12	1 (3%)	48,48,48	1.37	7 (14%)
10	CLR	D	501	-	31,31,31	1.10	1 (3%)	48,48,48	1.36	7 (14%)
10	CLR	B	502	-	31,31,31	1.12	1 (3%)	48,48,48	1.35	6 (12%)
10	CLR	D	502	-	31,31,31	1.11	1 (3%)	48,48,48	1.36	6 (12%)
11	PCW	A	1107	-	21,21,53	0.87	0	27,29,61	1.13	3 (11%)
11	PCW	A	1110	-	53,53,53	0.96	2 (3%)	59,61,61	0.78	0
11	PCW	E	1303	-	53,53,53	0.98	2 (3%)	59,61,61	0.75	0
10	CLR	A	1105	-	31,31,31	1.12	1 (3%)	48,48,48	1.37	6 (12%)
11	PCW	E	1302	-	53,53,53	0.99	2 (3%)	59,61,61	0.75	0
11	PCW	A	1109	-	53,53,53	1.00	2 (3%)	59,61,61	0.71	0
11	PCW	A	1111	-	53,53,53	1.00	2 (3%)	59,61,61	0.66	0
11	PCW	C	1109	-	53,53,53	1.00	2 (3%)	59,61,61	0.71	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	PCW	A	1106	-	-	6/23/23/57	-
11	PCW	E	1304	-	-	18/57/57/57	-
11	PCW	C	1106	-	-	6/23/23/57	-
11	PCW	C	1108	-	-	21/57/57/57	-
9	7Q2	C	1104	-	-	2/5/66/66	0/4/4/4
11	PCW	C	1110	-	-	14/57/57/57	-
10	CLR	B	501	-	-	1/10/68/68	0/4/4/4
10	CLR	C	1105	-	-	0/10/68/68	0/4/4/4
11	PCW	G	1303	-	-	22/57/57/57	-
9	7Q2	A	1104	-	-	2/5/66/66	0/4/4/4
11	PCW	C	1107	-	-	14/23/23/57	-
11	PCW	C	1112	-	-	19/57/57/57	-
11	PCW	G	1302	-	-	18/57/57/57	-
11	PCW	C	1113	-	-	9/23/23/57	-
11	PCW	A	1112	-	-	19/57/57/57	-
11	PCW	G	1304	-	-	18/57/57/57	-
11	PCW	A	1108	-	-	21/57/57/57	-
11	PCW	A	1114	-	-	22/57/57/57	-
11	PCW	C	1111	-	-	22/57/57/57	-
11	PCW	C	1114	-	-	22/57/57/57	-
10	CLR	E	1301	-	-	0/10/68/68	0/4/4/4
11	PCW	A	1113	-	-	9/23/23/57	-
10	CLR	G	1301	-	-	0/10/68/68	0/4/4/4
10	CLR	D	501	-	-	1/10/68/68	0/4/4/4
10	CLR	B	502	-	-	0/10/68/68	0/4/4/4
10	CLR	D	502	-	-	0/10/68/68	0/4/4/4
11	PCW	A	1107	-	-	14/23/23/57	-
11	PCW	A	1110	-	-	13/57/57/57	-
11	PCW	E	1303	-	-	22/57/57/57	-
10	CLR	A	1105	-	-	0/10/68/68	0/4/4/4
11	PCW	E	1302	-	-	18/57/57/57	-
11	PCW	A	1109	-	-	18/57/57/57	-
11	PCW	A	1111	-	-	22/57/57/57	-
11	PCW	C	1109	-	-	18/57/57/57	-

All (74) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
9	A	1104	7Q2	CAS-CAU	-8.98	1.40	1.50
9	C	1104	7Q2	CAS-CAU	-8.91	1.40	1.50
9	C	1104	7Q2	CAT-CAU	-8.41	1.41	1.50
9	A	1104	7Q2	CAT-CAU	-8.37	1.41	1.50
9	C	1104	7Q2	CAF-CAD	-8.03	1.41	1.52
9	A	1104	7Q2	CAF-CAD	-7.95	1.41	1.52
9	C	1104	7Q2	CAF-CAG	-6.02	1.43	1.54
9	A	1104	7Q2	CAF-CAG	-6.00	1.43	1.54
9	A	1104	7Q2	CAB-CAG	-5.69	1.42	1.54
9	C	1104	7Q2	CAB-CAG	-5.69	1.42	1.54
9	C	1104	7Q2	CAU-NAV	5.66	1.32	1.28
9	A	1104	7Q2	CAU-NAV	5.63	1.32	1.28
9	C	1104	7Q2	CAQ-CAM	-4.85	1.42	1.51
9	A	1104	7Q2	CAQ-CAM	-4.82	1.42	1.51
9	C	1104	7Q2	CAP-CAL	-4.34	1.48	1.56
9	A	1104	7Q2	CAP-CAL	-4.27	1.48	1.56
9	C	1104	7Q2	CAJ-CAM	-4.20	1.43	1.50
9	A	1104	7Q2	CAJ-CAM	-4.20	1.43	1.50
9	A	1104	7Q2	CAI-CAG	-4.08	1.45	1.53
9	C	1104	7Q2	CAI-CAG	-4.08	1.45	1.53
11	G	1304	PCW	C40-C39	4.01	1.55	1.31
11	E	1304	PCW	C40-C39	4.01	1.55	1.31
11	C	1109	PCW	C20-C19	3.92	1.54	1.31
11	A	1109	PCW	C20-C19	3.92	1.54	1.31
11	G	1302	PCW	C40-C39	3.90	1.54	1.31
11	C	1112	PCW	C40-C39	3.90	1.54	1.31
11	E	1302	PCW	C40-C39	3.90	1.54	1.31
11	A	1114	PCW	C20-C19	3.90	1.54	1.31
11	C	1112	PCW	C20-C19	3.90	1.54	1.31
11	A	1111	PCW	C20-C19	3.89	1.54	1.31
11	C	1114	PCW	C20-C19	3.89	1.54	1.31
11	C	1111	PCW	C20-C19	3.89	1.54	1.31
11	G	1303	PCW	C40-C39	3.88	1.54	1.31
11	G	1302	PCW	C20-C19	3.88	1.54	1.31
11	E	1303	PCW	C40-C39	3.88	1.54	1.31
11	E	1302	PCW	C20-C19	3.88	1.54	1.31
11	A	1112	PCW	C20-C19	3.88	1.54	1.31
11	A	1112	PCW	C40-C39	3.88	1.54	1.31
11	C	1111	PCW	C40-C39	3.87	1.54	1.31
11	A	1109	PCW	C40-C39	3.86	1.54	1.31
11	C	1109	PCW	C40-C39	3.86	1.54	1.31
11	A	1111	PCW	C40-C39	3.86	1.54	1.31
11	C	1114	PCW	C40-C39	3.84	1.54	1.31

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	C	1108	PCW	C20-C19	3.84	1.54	1.31
11	A	1108	PCW	C20-C19	3.84	1.54	1.31
11	E	1304	PCW	C20-C19	3.83	1.54	1.31
11	A	1114	PCW	C40-C39	3.83	1.53	1.31
11	A	1110	PCW	C40-C39	3.82	1.53	1.31
11	C	1110	PCW	C40-C39	3.81	1.53	1.31
11	G	1304	PCW	C20-C19	3.81	1.53	1.31
11	C	1110	PCW	C20-C19	3.80	1.53	1.31
11	A	1110	PCW	C20-C19	3.79	1.53	1.31
11	C	1108	PCW	C40-C39	3.77	1.53	1.31
11	A	1108	PCW	C40-C39	3.76	1.53	1.31
11	G	1303	PCW	C20-C19	3.74	1.53	1.31
11	E	1303	PCW	C20-C19	3.72	1.53	1.31
9	A	1104	7Q2	CAH-CAF	-3.39	1.47	1.54
9	C	1104	7Q2	CAH-CAF	-3.34	1.47	1.54
10	E	1301	CLR	C16-C17	3.26	1.61	1.54
10	B	502	CLR	C16-C17	3.24	1.61	1.54
10	G	1301	CLR	C16-C17	3.23	1.61	1.54
10	D	501	CLR	C16-C17	3.23	1.61	1.54
10	A	1105	CLR	C16-C17	3.23	1.61	1.54
10	B	501	CLR	C16-C17	3.23	1.61	1.54
10	C	1105	CLR	C16-C17	3.22	1.61	1.54
10	D	502	CLR	C16-C17	3.22	1.61	1.54
9	C	1104	7Q2	CAP-CAQ	-2.92	1.51	1.56
9	A	1104	7Q2	CAP-CAQ	-2.91	1.51	1.56
9	C	1104	7Q2	CAK-CAL	2.65	1.58	1.53
9	A	1104	7Q2	CAK-CAL	2.65	1.58	1.53
9	A	1104	7Q2	OAW-NAV	2.33	1.46	1.42
9	C	1104	7Q2	OAW-NAV	2.32	1.46	1.42
9	C	1104	7Q2	CAH-CAK	2.11	1.57	1.53
9	A	1104	7Q2	CAH-CAK	2.07	1.57	1.53

All (97) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
9	A	1104	7Q2	OAW-NAV-CAU	5.47	116.87	110.81
9	C	1104	7Q2	OAW-NAV-CAU	5.45	116.84	110.81
11	A	1113	PCW	C2-O2-C31	-4.51	109.50	117.90
11	C	1113	PCW	C2-O2-C31	-4.50	109.51	117.90
11	A	1107	PCW	C2-O2-C31	-4.06	110.33	117.90
11	C	1107	PCW	C2-O2-C31	-4.05	110.34	117.90
9	C	1104	7Q2	CAB-CAG-CAI	-4.01	112.48	119.08

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
9	A	1104	7Q2	CAB-CAG-CAI	-3.99	112.52	119.08
9	A	1104	7Q2	CAT-CAR-CAP	-3.48	109.01	113.47
9	C	1104	7Q2	CAT-CAR-CAP	-3.48	109.01	113.47
9	C	1104	7Q2	CAB-CAA-CAD	-3.46	102.22	105.70
9	A	1104	7Q2	CAB-CAA-CAD	-3.44	102.24	105.70
11	C	1106	PCW	C2-O2-C31	-3.37	111.62	117.90
11	A	1106	PCW	C2-O2-C31	-3.35	111.66	117.90
9	A	1104	7Q2	CAF-CAG-CAI	-3.34	109.55	113.12
9	C	1104	7Q2	CAF-CAG-CAI	-3.33	109.56	113.12
11	C	1113	PCW	C3-O3-C11	-3.21	109.03	117.10
11	A	1113	PCW	C3-O3-C11	-3.20	109.07	117.10
9	A	1104	7Q2	CAP-CAL-CAI	-3.13	109.13	112.42
9	C	1104	7Q2	CAP-CAL-CAI	-3.12	109.15	112.42
9	A	1104	7Q2	CAK-CAL-CAP	-2.91	110.56	113.91
9	C	1104	7Q2	CAK-CAL-CAP	-2.90	110.57	113.91
10	D	502	CLR	C22-C20-C17	-2.83	104.43	110.28
10	B	502	CLR	C22-C20-C17	-2.83	104.44	110.28
11	C	1106	PCW	C3-O3-C11	-2.82	110.02	117.10
11	A	1106	PCW	C3-O3-C11	-2.82	110.03	117.10
10	C	1105	CLR	C22-C20-C17	-2.77	104.57	110.28
10	A	1105	CLR	C22-C20-C17	-2.75	104.61	110.28
10	D	501	CLR	C13-C17-C20	-2.73	115.21	119.49
10	B	501	CLR	C13-C17-C20	-2.72	115.22	119.49
10	G	1301	CLR	C7-C8-C14	-2.69	107.01	110.91
10	B	502	CLR	C7-C8-C14	-2.68	107.03	110.91
10	E	1301	CLR	C7-C8-C14	-2.67	107.04	110.91
10	D	502	CLR	C7-C8-C14	-2.66	107.04	110.91
10	G	1301	CLR	C22-C20-C17	-2.66	104.79	110.28
9	C	1104	7Q2	CAE-CAF-CAD	2.66	110.07	105.18
9	A	1104	7Q2	CAE-CAF-CAD	2.65	110.05	105.18
10	E	1301	CLR	C22-C20-C17	-2.65	104.81	110.28
10	C	1105	CLR	C7-C8-C14	-2.64	107.08	110.91
10	A	1105	CLR	C7-C8-C14	-2.63	107.09	110.91
10	B	501	CLR	C22-C20-C17	-2.61	104.89	110.28
10	D	501	CLR	C22-C20-C17	-2.60	104.92	110.28
10	G	1301	CLR	C13-C17-C20	-2.52	115.53	119.49
10	C	1105	CLR	C13-C17-C20	-2.51	115.56	119.49
10	A	1105	CLR	C13-C17-C20	-2.49	115.58	119.49
9	A	1104	7Q2	CAH-CAF-CAD	-2.49	112.94	116.67
9	A	1104	7Q2	CAG-CAF-CAD	2.49	103.44	100.59
10	E	1301	CLR	C13-C17-C20	-2.48	115.59	119.49
9	C	1104	7Q2	CAH-CAF-CAD	-2.48	112.94	116.67

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
9	C	1104	7Q2	CAG-CAF-CAD	2.48	103.43	100.59
10	A	1105	CLR	C15-C14-C13	2.46	106.80	103.84
10	D	501	CLR	C7-C8-C14	-2.45	107.35	110.91
10	B	501	CLR	C7-C8-C14	-2.44	107.36	110.91
10	C	1105	CLR	C15-C14-C13	2.44	106.79	103.84
9	A	1104	7Q2	CAJ-CAM-CAQ	2.40	118.97	115.35
9	C	1104	7Q2	CAJ-CAM-CAQ	2.39	118.97	115.35
10	G	1301	CLR	C15-C14-C13	2.39	106.72	103.84
10	E	1301	CLR	C15-C14-C13	2.36	106.69	103.84
10	D	502	CLR	C13-C17-C20	-2.36	115.79	119.49
11	A	1107	PCW	C3-O3-C11	-2.35	111.19	117.10
10	B	502	CLR	C13-C17-C20	-2.34	115.83	119.49
11	C	1107	PCW	C3-O3-C11	-2.33	111.24	117.10
10	B	502	CLR	C15-C14-C13	2.32	106.64	103.84
10	D	502	CLR	C15-C14-C13	2.30	106.61	103.84
10	B	501	CLR	C15-C14-C13	2.27	106.58	103.84
10	A	1105	CLR	C10-C5-C6	2.24	126.33	122.90
11	A	1107	PCW	O2-C31-C32	2.22	115.18	111.09
9	A	1104	7Q2	CAH-CAK-CAL	-2.22	109.27	113.11
11	C	1107	PCW	O2-C31-C32	2.22	115.17	111.09
10	D	501	CLR	C15-C14-C13	2.21	106.51	103.84
10	C	1105	CLR	C10-C5-C6	2.21	126.29	122.90
9	C	1104	7Q2	CAH-CAK-CAL	-2.21	109.28	113.11
9	C	1104	7Q2	CAK-CAH-CAF	-2.20	107.98	112.74
9	A	1104	7Q2	CAK-CAH-CAF	-2.19	107.99	112.74
10	G	1301	CLR	C10-C5-C6	2.19	126.25	122.90
10	D	502	CLR	C10-C5-C6	2.18	126.24	122.90
10	B	502	CLR	C10-C5-C6	2.17	126.23	122.90
10	E	1301	CLR	C10-C5-C6	2.17	126.23	122.90
10	B	502	CLR	C24-C23-C22	-2.11	103.56	113.24
10	D	502	CLR	C24-C23-C22	-2.10	103.59	113.24
11	C	1113	PCW	O2-C31-C32	2.10	114.95	111.09
10	B	501	CLR	C10-C5-C6	2.10	126.11	122.90
11	A	1113	PCW	O2-C31-C32	2.09	114.94	111.09
10	D	501	CLR	C10-C5-C6	2.08	126.09	122.90
10	D	501	CLR	C3-C4-C5	2.08	115.55	112.03
10	G	1301	CLR	C3-C4-C5	2.07	115.54	112.03
10	B	501	CLR	C3-C4-C5	2.07	115.54	112.03
10	B	501	CLR	C24-C23-C22	-2.07	103.74	113.24
10	D	501	CLR	C24-C23-C22	-2.07	103.74	113.24
10	G	1301	CLR	C24-C23-C22	-2.06	103.75	113.24
10	E	1301	CLR	C3-C4-C5	2.06	115.53	112.03

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
10	C	1105	CLR	C24-C23-C22	-2.06	103.77	113.24
10	A	1105	CLR	C24-C23-C22	-2.06	103.78	113.24
10	E	1301	CLR	C24-C23-C22	-2.06	103.78	113.24
11	C	1106	PCW	O2-C31-C32	2.02	114.81	111.09
11	A	1106	PCW	O2-C31-C32	2.02	114.81	111.09
10	C	1105	CLR	C3-C4-C5	2.01	115.43	112.03

There are no chirality outliers.

All (411) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
9	A	1104	7Q2	OAW-CAX-CAY-NAZ
9	C	1104	7Q2	OAW-CAX-CAY-NAZ
11	A	1107	PCW	C4-O4P-P-O2P
11	A	1108	PCW	O4P-C4-C5-N
11	A	1108	PCW	C4-O4P-P-O1P
11	A	1109	PCW	O3P-C1-C2-O2
11	A	1109	PCW	C1-O3P-P-O2P
11	A	1112	PCW	O2-C2-C3-O3
11	A	1113	PCW	C1-O3P-P-O2P
11	G	1302	PCW	O2-C2-C3-O3
11	G	1302	PCW	C1-O3P-P-O1P
11	G	1302	PCW	C1-O3P-P-O2P
11	G	1302	PCW	C4-O4P-P-O2P
11	G	1302	PCW	C4-O4P-P-O3P
11	G	1303	PCW	C4-O4P-P-O3P
11	C	1107	PCW	C4-O4P-P-O2P
11	C	1108	PCW	O4P-C4-C5-N
11	C	1108	PCW	C4-O4P-P-O1P
11	C	1109	PCW	O3P-C1-C2-O2
11	C	1109	PCW	C1-O3P-P-O2P
11	C	1112	PCW	O2-C2-C3-O3
11	C	1113	PCW	C1-O3P-P-O2P
11	E	1302	PCW	O2-C2-C3-O3
11	E	1302	PCW	C1-O3P-P-O1P
11	E	1302	PCW	C1-O3P-P-O2P
11	E	1302	PCW	C4-O4P-P-O2P
11	E	1302	PCW	C4-O4P-P-O3P
11	E	1303	PCW	C4-O4P-P-O3P
11	A	1107	PCW	C32-C31-O2-C2
11	C	1107	PCW	C32-C31-O2-C2
11	A	1107	PCW	C12-C11-O3-C3

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Mol	Chain	Res	Type	Atoms
11	C	1107	PCW	C12-C11-O3-C3
11	A	1111	PCW	C4-C5-N-C8
11	A	1112	PCW	C4-C5-N-C8
11	A	1114	PCW	C4-C5-N-C8
11	G	1302	PCW	C4-C5-N-C8
11	G	1303	PCW	C4-C5-N-C8
11	C	1111	PCW	C4-C5-N-C8
11	C	1112	PCW	C4-C5-N-C8
11	C	1114	PCW	C4-C5-N-C8
11	E	1302	PCW	C4-C5-N-C8
11	E	1303	PCW	C4-C5-N-C8
11	A	1107	PCW	O31-C31-O2-C2
11	C	1107	PCW	O31-C31-O2-C2
11	A	1107	PCW	O11-C11-O3-C3
11	C	1107	PCW	O11-C11-O3-C3
11	A	1108	PCW	C11-C12-C13-C14
11	A	1108	PCW	C31-C32-C33-C34
11	A	1110	PCW	C31-C32-C33-C34
11	A	1112	PCW	C31-C32-C33-C34
11	A	1114	PCW	C11-C12-C13-C14
11	G	1303	PCW	C11-C12-C13-C14
11	C	1108	PCW	C11-C12-C13-C14
11	C	1108	PCW	C31-C32-C33-C34
11	C	1110	PCW	C31-C32-C33-C34
11	C	1112	PCW	C31-C32-C33-C34
11	C	1114	PCW	C11-C12-C13-C14
11	E	1303	PCW	C11-C12-C13-C14
11	A	1111	PCW	C16-C17-C18-C19
11	C	1111	PCW	C16-C17-C18-C19
11	A	1107	PCW	C1-O3P-P-O4P
11	A	1107	PCW	C4-O4P-P-O3P
11	A	1108	PCW	C4-O4P-P-O3P
11	G	1302	PCW	C1-O3P-P-O4P
11	C	1107	PCW	C1-O3P-P-O4P
11	C	1107	PCW	C4-O4P-P-O3P
11	C	1108	PCW	C4-O4P-P-O3P
11	E	1302	PCW	C1-O3P-P-O4P
11	A	1111	PCW	C4-C5-N-C6
11	A	1111	PCW	C4-C5-N-C7
11	A	1112	PCW	C4-C5-N-C6
11	A	1112	PCW	C4-C5-N-C7
11	A	1114	PCW	C4-C5-N-C6

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Mol	Chain	Res	Type	Atoms
11	A	1114	PCW	C4-C5-N-C7
11	G	1302	PCW	C4-C5-N-C6
11	G	1302	PCW	C4-C5-N-C7
11	G	1303	PCW	C4-C5-N-C6
11	G	1303	PCW	C4-C5-N-C7
11	G	1304	PCW	C4-C5-N-C6
11	G	1304	PCW	C4-C5-N-C8
11	C	1111	PCW	C4-C5-N-C6
11	C	1111	PCW	C4-C5-N-C7
11	C	1112	PCW	C4-C5-N-C6
11	C	1112	PCW	C4-C5-N-C7
11	C	1114	PCW	C4-C5-N-C6
11	C	1114	PCW	C4-C5-N-C7
11	E	1302	PCW	C4-C5-N-C6
11	E	1302	PCW	C4-C5-N-C7
11	E	1303	PCW	C4-C5-N-C6
11	E	1303	PCW	C4-C5-N-C7
11	E	1304	PCW	C4-C5-N-C6
11	E	1304	PCW	C4-C5-N-C8
11	G	1304	PCW	C43-C44-C45-C46
11	E	1304	PCW	C43-C44-C45-C46
11	A	1110	PCW	C34-C35-C36-C37
11	G	1303	PCW	C13-C14-C15-C16
11	G	1304	PCW	C21-C22-C23-C24
11	C	1110	PCW	C34-C35-C36-C37
11	E	1303	PCW	C13-C14-C15-C16
11	E	1304	PCW	C21-C22-C23-C24
11	A	1111	PCW	C22-C23-C24-C25
11	A	1111	PCW	C43-C44-C45-C46
11	C	1111	PCW	C22-C23-C24-C25
11	C	1111	PCW	C43-C44-C45-C46
11	G	1304	PCW	C34-C35-C36-C37
11	E	1304	PCW	C34-C35-C36-C37
11	A	1112	PCW	C42-C43-C44-C45
11	A	1109	PCW	C44-C45-C46-C47
11	C	1109	PCW	C44-C45-C46-C47
11	C	1112	PCW	C42-C43-C44-C45
11	A	1111	PCW	C21-C22-C23-C24
11	A	1109	PCW	C20-C21-C22-C23
11	A	1112	PCW	C40-C41-C42-C43
11	C	1112	PCW	C40-C41-C42-C43
11	A	1111	PCW	C23-C24-C25-C26

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Mol	Chain	Res	Type	Atoms
11	A	1112	PCW	C35-C36-C37-C38
11	C	1111	PCW	C21-C22-C23-C24
11	C	1111	PCW	C23-C24-C25-C26
11	G	1304	PCW	C4-C5-N-C7
11	E	1304	PCW	C4-C5-N-C7
11	C	1112	PCW	C35-C36-C37-C38
11	A	1108	PCW	C33-C34-C35-C36
11	C	1108	PCW	C33-C34-C35-C36
11	A	1110	PCW	C15-C16-C17-C18
11	C	1110	PCW	C15-C16-C17-C18
11	G	1304	PCW	C33-C34-C35-C36
11	E	1304	PCW	C33-C34-C35-C36
11	A	1112	PCW	C33-C34-C35-C36
11	C	1112	PCW	C33-C34-C35-C36
11	A	1114	PCW	C20-C21-C22-C23
11	C	1109	PCW	C20-C21-C22-C23
11	C	1114	PCW	C20-C21-C22-C23
11	G	1303	PCW	C34-C35-C36-C37
11	E	1303	PCW	C34-C35-C36-C37
11	A	1110	PCW	C41-C42-C43-C44
11	C	1110	PCW	C41-C42-C43-C44
11	A	1108	PCW	C16-C17-C18-C19
11	A	1108	PCW	C40-C41-C42-C43
11	G	1302	PCW	C40-C41-C42-C43
11	C	1108	PCW	C16-C17-C18-C19
11	C	1108	PCW	C40-C41-C42-C43
11	E	1302	PCW	C40-C41-C42-C43
11	A	1113	PCW	O3P-C1-C2-O2
11	C	1113	PCW	O3P-C1-C2-O2
11	A	1108	PCW	C20-C21-C22-C23
11	A	1109	PCW	C40-C41-C42-C43
11	A	1112	PCW	C36-C37-C38-C39
11	C	1108	PCW	C20-C21-C22-C23
11	C	1109	PCW	C40-C41-C42-C43
11	C	1112	PCW	C36-C37-C38-C39
11	A	1109	PCW	O3P-C1-C2-C3
11	A	1111	PCW	O3P-C1-C2-C3
11	A	1112	PCW	O3P-C1-C2-C3
11	A	1114	PCW	O3P-C1-C2-C3
11	G	1304	PCW	O3P-C1-C2-C3
11	C	1109	PCW	O3P-C1-C2-C3
11	C	1111	PCW	O3P-C1-C2-C3

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Mol	Chain	Res	Type	Atoms
11	C	1112	PCW	O3P-C1-C2-C3
11	C	1114	PCW	O3P-C1-C2-C3
11	E	1304	PCW	O3P-C1-C2-C3
11	A	1114	PCW	C31-C32-C33-C34
11	C	1114	PCW	C31-C32-C33-C34
11	A	1110	PCW	C40-C41-C42-C43
11	C	1110	PCW	C40-C41-C42-C43
11	G	1304	PCW	C11-C12-C13-C14
11	E	1304	PCW	C11-C12-C13-C14
11	A	1111	PCW	C32-C33-C34-C35
11	C	1111	PCW	C32-C33-C34-C35
11	E	1302	PCW	C35-C36-C37-C38
11	G	1302	PCW	C35-C36-C37-C38
11	A	1112	PCW	C14-C15-C16-C17
11	C	1112	PCW	C14-C15-C16-C17
11	A	1109	PCW	C1-C2-C3-O3
11	A	1112	PCW	C1-C2-C3-O3
11	C	1109	PCW	C1-C2-C3-O3
11	C	1112	PCW	C1-C2-C3-O3
11	G	1302	PCW	C43-C44-C45-C46
11	E	1302	PCW	C43-C44-C45-C46
11	G	1303	PCW	C31-C32-C33-C34
11	E	1303	PCW	C31-C32-C33-C34
11	C	1111	PCW	C14-C15-C16-C17
11	G	1304	PCW	C16-C17-C18-C19
11	E	1304	PCW	C16-C17-C18-C19
11	A	1111	PCW	C14-C15-C16-C17
11	C	1109	PCW	C14-C15-C16-C17
11	A	1109	PCW	C14-C15-C16-C17
11	G	1304	PCW	C31-C32-C33-C34
11	E	1304	PCW	C31-C32-C33-C34
11	A	1111	PCW	O2-C2-C3-O3
11	G	1303	PCW	O2-C2-C3-O3
11	C	1111	PCW	O2-C2-C3-O3
11	E	1303	PCW	O2-C2-C3-O3
11	G	1303	PCW	C23-C24-C25-C26
11	E	1303	PCW	C23-C24-C25-C26
11	A	1113	PCW	O3P-C1-C2-C3
11	C	1113	PCW	O3P-C1-C2-C3
11	A	1114	PCW	C25-C26-C27-C28
11	C	1114	PCW	C25-C26-C27-C28
11	A	1107	PCW	C1-C2-C3-O3

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Mol	Chain	Res	Type	Atoms
11	A	1111	PCW	C1-C2-C3-O3
11	A	1113	PCW	C1-C2-C3-O3
11	A	1114	PCW	C1-C2-C3-O3
11	C	1107	PCW	C1-C2-C3-O3
11	C	1111	PCW	C1-C2-C3-O3
11	C	1113	PCW	C1-C2-C3-O3
11	C	1114	PCW	C1-C2-C3-O3
11	A	1113	PCW	C1-O3P-P-O4P
11	C	1113	PCW	C1-O3P-P-O4P
11	A	1106	PCW	O3P-C1-C2-O2
11	A	1111	PCW	O3P-C1-C2-O2
11	A	1114	PCW	O3P-C1-C2-O2
11	C	1106	PCW	O3P-C1-C2-O2
11	C	1111	PCW	O3P-C1-C2-O2
11	C	1114	PCW	O3P-C1-C2-O2
11	A	1107	PCW	O2-C2-C3-O3
11	A	1108	PCW	O2-C2-C3-O3
11	A	1109	PCW	O2-C2-C3-O3
11	A	1113	PCW	O2-C2-C3-O3
11	C	1107	PCW	O2-C2-C3-O3
11	C	1109	PCW	O2-C2-C3-O3
11	C	1113	PCW	O2-C2-C3-O3
11	G	1303	PCW	C35-C36-C37-C38
11	C	1110	PCW	C43-C44-C45-C46
11	E	1303	PCW	C35-C36-C37-C38
11	A	1110	PCW	C43-C44-C45-C46
11	A	1114	PCW	C45-C46-C47-C48
11	C	1114	PCW	C45-C46-C47-C48
11	A	1106	PCW	O3P-C1-C2-C3
11	C	1106	PCW	O3P-C1-C2-C3
9	A	1104	7Q2	CAY-CAX-OAW-NAV
9	C	1104	7Q2	CAY-CAX-OAW-NAV
11	A	1108	PCW	C1-C2-C3-O3
11	G	1302	PCW	C1-C2-C3-O3
11	C	1108	PCW	C1-C2-C3-O3
11	E	1302	PCW	C1-C2-C3-O3
11	G	1303	PCW	O3P-C1-C2-O2
11	E	1303	PCW	O3P-C1-C2-O2
11	A	1111	PCW	C15-C16-C17-C18
11	C	1111	PCW	C15-C16-C17-C18
11	A	1114	PCW	C15-C16-C17-C18
11	C	1114	PCW	C15-C16-C17-C18

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Mol	Chain	Res	Type	Atoms
11	C	1108	PCW	O2-C2-C3-O3
11	A	1109	PCW	C1-O3P-P-O4P
11	C	1109	PCW	C1-O3P-P-O4P
11	A	1107	PCW	C1-O3P-P-O2P
11	A	1107	PCW	C4-O4P-P-O1P
11	G	1303	PCW	C4-O4P-P-O1P
11	C	1107	PCW	C1-O3P-P-O2P
11	C	1107	PCW	C4-O4P-P-O1P
11	E	1303	PCW	C4-O4P-P-O1P
11	G	1303	PCW	O3P-C1-C2-C3
11	E	1303	PCW	O3P-C1-C2-C3
11	A	1110	PCW	C32-C33-C34-C35
11	C	1110	PCW	C32-C33-C34-C35
11	G	1303	PCW	O2-C31-C32-C33
11	A	1106	PCW	O4P-C4-C5-N
11	A	1107	PCW	O4P-C4-C5-N
11	A	1109	PCW	O4P-C4-C5-N
11	A	1110	PCW	O4P-C4-C5-N
11	A	1111	PCW	O4P-C4-C5-N
11	A	1112	PCW	O4P-C4-C5-N
11	A	1113	PCW	O4P-C4-C5-N
11	A	1114	PCW	O4P-C4-C5-N
11	G	1302	PCW	O4P-C4-C5-N
11	G	1303	PCW	O4P-C4-C5-N
11	G	1304	PCW	O4P-C4-C5-N
11	C	1106	PCW	O4P-C4-C5-N
11	C	1107	PCW	O4P-C4-C5-N
11	C	1109	PCW	O4P-C4-C5-N
11	C	1110	PCW	O4P-C4-C5-N
11	C	1111	PCW	O4P-C4-C5-N
11	C	1112	PCW	O4P-C4-C5-N
11	C	1113	PCW	O4P-C4-C5-N
11	C	1114	PCW	O4P-C4-C5-N
11	E	1302	PCW	O4P-C4-C5-N
11	E	1303	PCW	O4P-C4-C5-N
11	E	1304	PCW	O4P-C4-C5-N
11	A	1114	PCW	O2-C2-C3-O3
11	C	1114	PCW	O2-C2-C3-O3
11	A	1110	PCW	C14-C15-C16-C17
11	C	1110	PCW	C14-C15-C16-C17
11	E	1303	PCW	O2-C31-C32-C33
11	A	1108	PCW	C35-C36-C37-C38

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Mol	Chain	Res	Type	Atoms
11	C	1108	PCW	C35-C36-C37-C38
11	A	1114	PCW	C39-C40-C41-C42
11	C	1114	PCW	C39-C40-C41-C42
11	A	1107	PCW	O3P-C1-C2-C3
11	C	1107	PCW	O3P-C1-C2-C3
11	A	1107	PCW	O3P-C1-C2-O2
11	A	1112	PCW	O3P-C1-C2-O2
11	G	1304	PCW	O3P-C1-C2-O2
11	C	1107	PCW	O3P-C1-C2-O2
11	C	1112	PCW	O3P-C1-C2-O2
11	E	1304	PCW	O3P-C1-C2-O2
11	A	1106	PCW	C1-O3P-P-O4P
11	A	1106	PCW	C4-O4P-P-O3P
11	A	1108	PCW	C1-O3P-P-O4P
11	A	1109	PCW	C4-O4P-P-O3P
11	A	1110	PCW	C4-O4P-P-O3P
11	A	1111	PCW	C4-O4P-P-O3P
11	A	1112	PCW	C4-O4P-P-O3P
11	A	1113	PCW	C4-O4P-P-O3P
11	A	1114	PCW	C4-O4P-P-O3P
11	C	1106	PCW	C1-O3P-P-O4P
11	C	1106	PCW	C4-O4P-P-O3P
11	C	1108	PCW	C1-O3P-P-O4P
11	C	1109	PCW	C4-O4P-P-O3P
11	C	1110	PCW	C4-O4P-P-O3P
11	C	1111	PCW	C4-O4P-P-O3P
11	C	1112	PCW	C4-O4P-P-O3P
11	C	1113	PCW	C4-O4P-P-O3P
11	C	1114	PCW	C4-O4P-P-O3P
11	A	1111	PCW	C41-C42-C43-C44
11	C	1111	PCW	C41-C42-C43-C44
11	G	1303	PCW	C1-C2-C3-O3
11	E	1303	PCW	C1-C2-C3-O3
11	A	1111	PCW	C42-C43-C44-C45
11	C	1111	PCW	C42-C43-C44-C45
11	A	1109	PCW	C17-C18-C19-C20
11	A	1114	PCW	C19-C20-C21-C22
11	C	1109	PCW	C17-C18-C19-C20
11	C	1114	PCW	C19-C20-C21-C22
11	G	1304	PCW	C20-C21-C22-C23
11	E	1304	PCW	C20-C21-C22-C23
11	C	1114	PCW	C41-C42-C43-C44

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Mol	Chain	Res	Type	Atoms
11	A	1114	PCW	C41-C42-C43-C44
11	A	1110	PCW	O2-C2-C3-O3
11	C	1110	PCW	O2-C2-C3-O3
11	A	1108	PCW	C2-C1-O3P-P
11	C	1108	PCW	C2-C1-O3P-P
11	G	1302	PCW	C17-C18-C19-C20
11	E	1302	PCW	C17-C18-C19-C20
11	A	1114	PCW	C43-C44-C45-C46
11	C	1114	PCW	C43-C44-C45-C46
11	A	1111	PCW	C19-C20-C21-C22
11	C	1111	PCW	C19-C20-C21-C22
11	G	1302	PCW	C36-C37-C38-C39
11	G	1303	PCW	C36-C37-C38-C39
11	E	1302	PCW	C36-C37-C38-C39
11	E	1303	PCW	C36-C37-C38-C39
11	A	1110	PCW	C1-C2-C3-O3
11	C	1110	PCW	C1-C2-C3-O3
11	E	1302	PCW	C41-C42-C43-C44
11	G	1302	PCW	C41-C42-C43-C44
11	G	1303	PCW	C19-C20-C21-C22
11	E	1303	PCW	C19-C20-C21-C22
11	A	1108	PCW	O3P-C1-C2-O2
11	C	1108	PCW	O3P-C1-C2-O2
11	A	1109	PCW	C22-C23-C24-C25
11	C	1109	PCW	C22-C23-C24-C25
11	A	1108	PCW	O3P-C1-C2-C3
11	C	1108	PCW	O3P-C1-C2-C3
11	A	1110	PCW	C39-C40-C41-C42
11	C	1110	PCW	C39-C40-C41-C42
10	B	501	CLR	C23-C24-C25-C27
10	D	501	CLR	C23-C24-C25-C27
11	A	1109	PCW	C36-C37-C38-C39
11	C	1109	PCW	C36-C37-C38-C39
11	A	1114	PCW	O2-C31-C32-C33
11	C	1114	PCW	O2-C31-C32-C33
11	A	1109	PCW	O2-C31-C32-C33
11	C	1109	PCW	O2-C31-C32-C33
11	A	1108	PCW	C19-C20-C21-C22
11	G	1303	PCW	C17-C18-C19-C20
11	G	1304	PCW	C19-C20-C21-C22
11	G	1304	PCW	C37-C38-C39-C40
11	C	1108	PCW	C19-C20-C21-C22

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Mol	Chain	Res	Type	Atoms
11	E	1303	PCW	C17-C18-C19-C20
11	E	1304	PCW	C19-C20-C21-C22
11	E	1304	PCW	C37-C38-C39-C40
11	A	1108	PCW	O2-C31-C32-C33
11	C	1108	PCW	O2-C31-C32-C33
11	G	1303	PCW	C20-C21-C22-C23
11	E	1303	PCW	C20-C21-C22-C23
11	G	1303	PCW	C32-C33-C34-C35
11	E	1303	PCW	C32-C33-C34-C35
11	C	1112	PCW	O2-C31-C32-C33
11	A	1108	PCW	C37-C38-C39-C40
11	A	1112	PCW	C19-C20-C21-C22
11	C	1108	PCW	C37-C38-C39-C40
11	C	1111	PCW	C37-C38-C39-C40
11	C	1112	PCW	C19-C20-C21-C22
11	A	1112	PCW	O2-C31-C32-C33
11	A	1109	PCW	C37-C38-C39-C40
11	A	1111	PCW	C37-C38-C39-C40
11	C	1109	PCW	C37-C38-C39-C40
11	A	1114	PCW	O31-C31-C32-C33
11	C	1109	PCW	O31-C31-C32-C33
11	C	1114	PCW	O31-C31-C32-C33
11	A	1109	PCW	O31-C31-C32-C33
11	A	1108	PCW	O31-C31-C32-C33
11	C	1108	PCW	O31-C31-C32-C33
11	A	1106	PCW	C4-O4P-P-O2P
11	A	1108	PCW	C1-O3P-P-O2P
11	A	1111	PCW	C4-O4P-P-O2P
11	A	1112	PCW	C4-O4P-P-O2P
11	A	1113	PCW	C4-O4P-P-O2P
11	A	1114	PCW	C4-O4P-P-O2P
11	G	1304	PCW	C1-O3P-P-O2P
11	C	1106	PCW	C4-O4P-P-O2P
11	C	1108	PCW	C1-O3P-P-O2P
11	C	1111	PCW	C4-O4P-P-O2P
11	C	1112	PCW	C4-O4P-P-O2P
11	C	1113	PCW	C4-O4P-P-O2P
11	C	1114	PCW	C4-O4P-P-O2P
11	E	1304	PCW	C1-O3P-P-O2P
11	G	1302	PCW	C5-C4-O4P-P
11	E	1302	PCW	C5-C4-O4P-P
11	E	1304	PCW	C32-C33-C34-C35

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Mol	Chain	Res	Type	Atoms
11	G	1304	PCW	C32-C33-C34-C35
11	C	1110	PCW	O3-C11-C12-C13

There are no ring outliers.

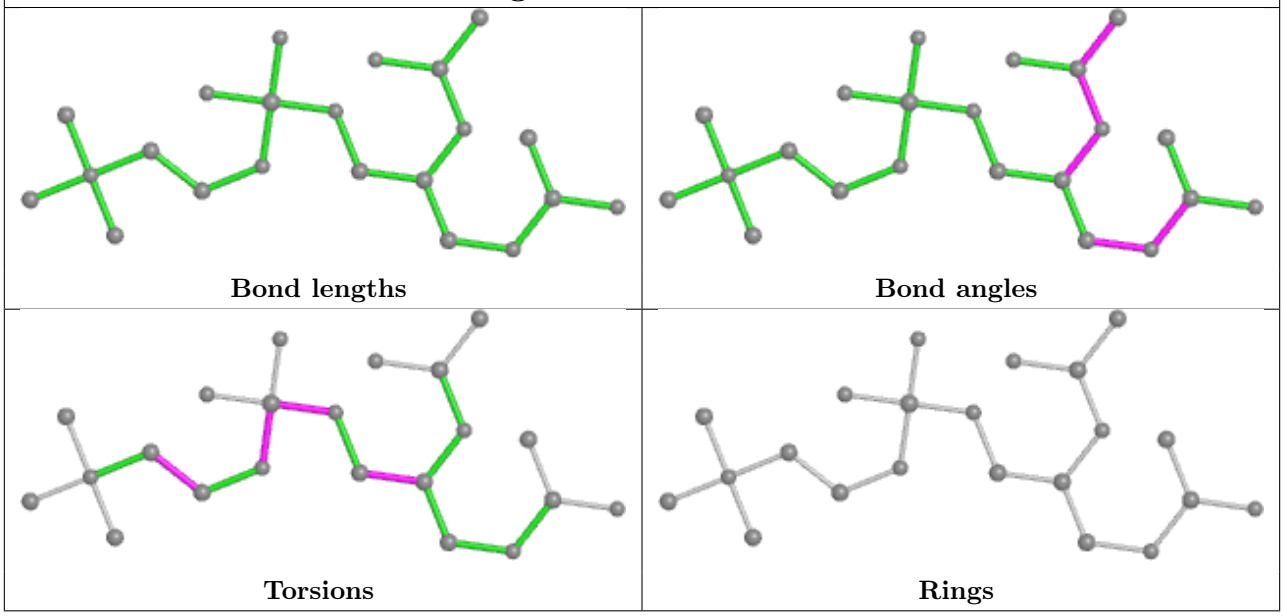
28 monomers are involved in 103 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	E	1304	PCW	19	0
11	C	1108	PCW	13	0
11	C	1110	PCW	6	0
10	B	501	CLR	2	0
10	C	1105	CLR	2	0
11	G	1303	PCW	4	0
11	C	1112	PCW	4	0
11	G	1302	PCW	2	0
11	C	1113	PCW	3	0
11	A	1112	PCW	4	0
11	G	1304	PCW	19	0
11	A	1108	PCW	13	0
11	A	1114	PCW	3	0
11	C	1111	PCW	2	0
11	C	1114	PCW	3	0
10	E	1301	CLR	6	0
11	A	1113	PCW	3	0
10	G	1301	CLR	6	0
10	D	501	CLR	2	0
10	B	502	CLR	2	0
10	D	502	CLR	1	0
11	A	1110	PCW	7	0
11	E	1303	PCW	4	0
10	A	1105	CLR	1	0
11	E	1302	PCW	2	0
11	A	1109	PCW	4	0
11	A	1111	PCW	2	0
11	C	1109	PCW	4	0

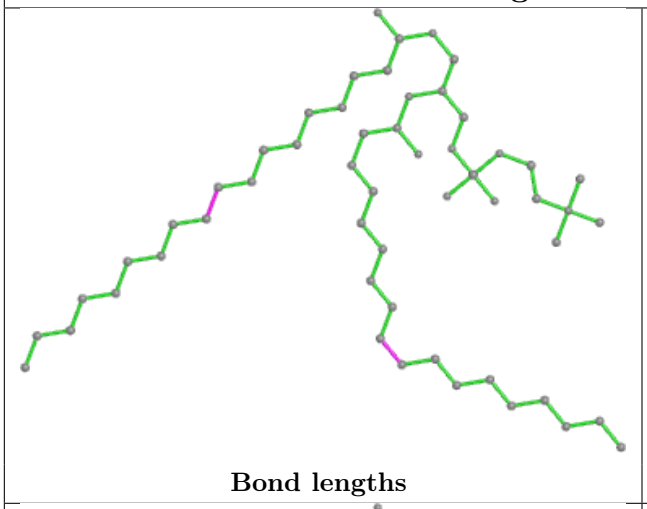
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

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

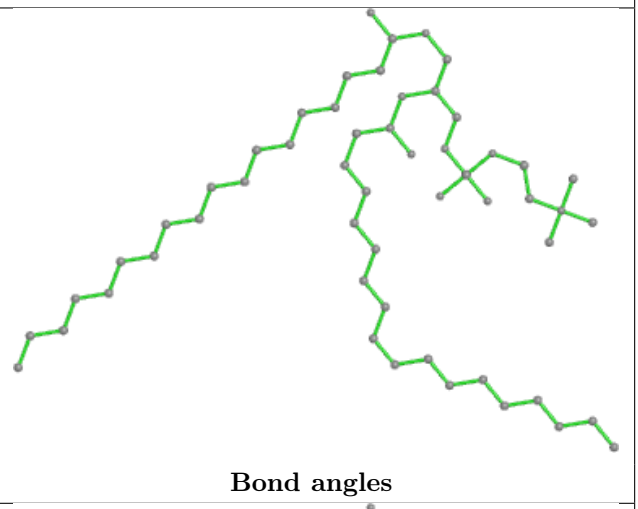
Ligand PCW A 1106



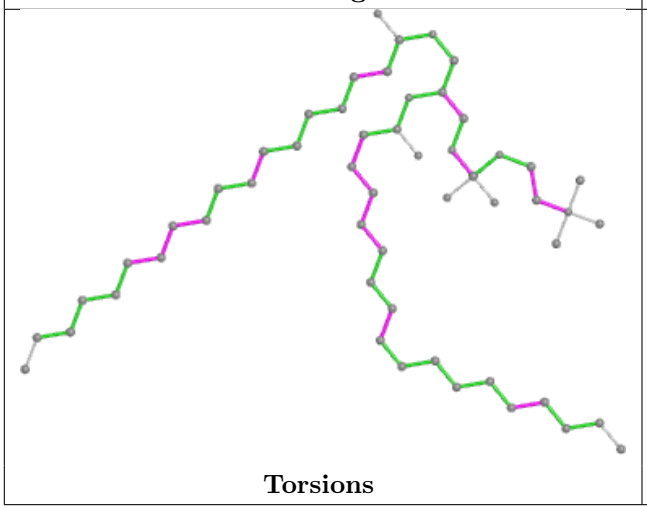
Ligand PCW E 1304



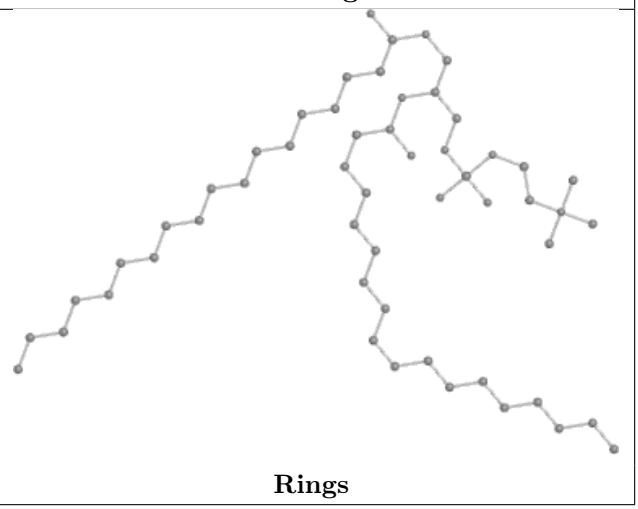
Bond lengths



Bond angles

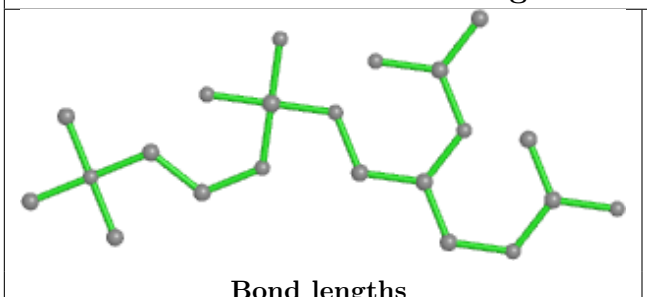


Torsions

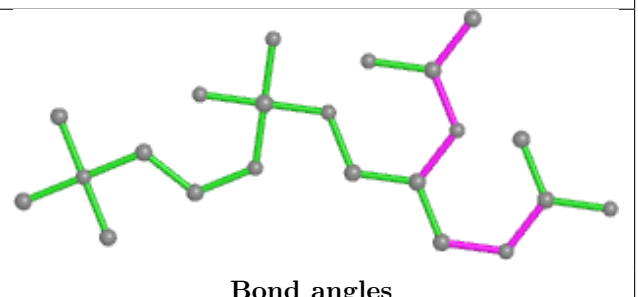


Rings

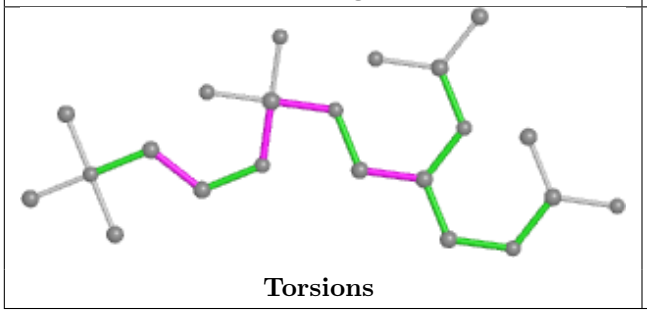
Ligand PCW C 1106



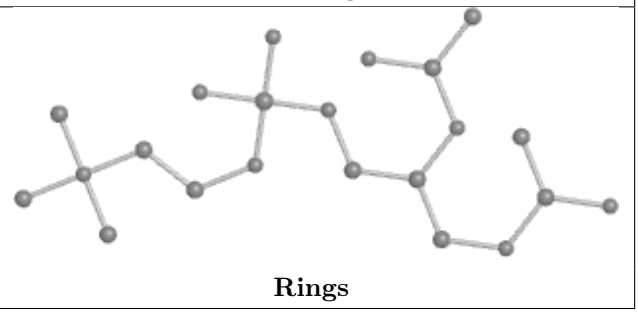
Bond lengths



Bond angles

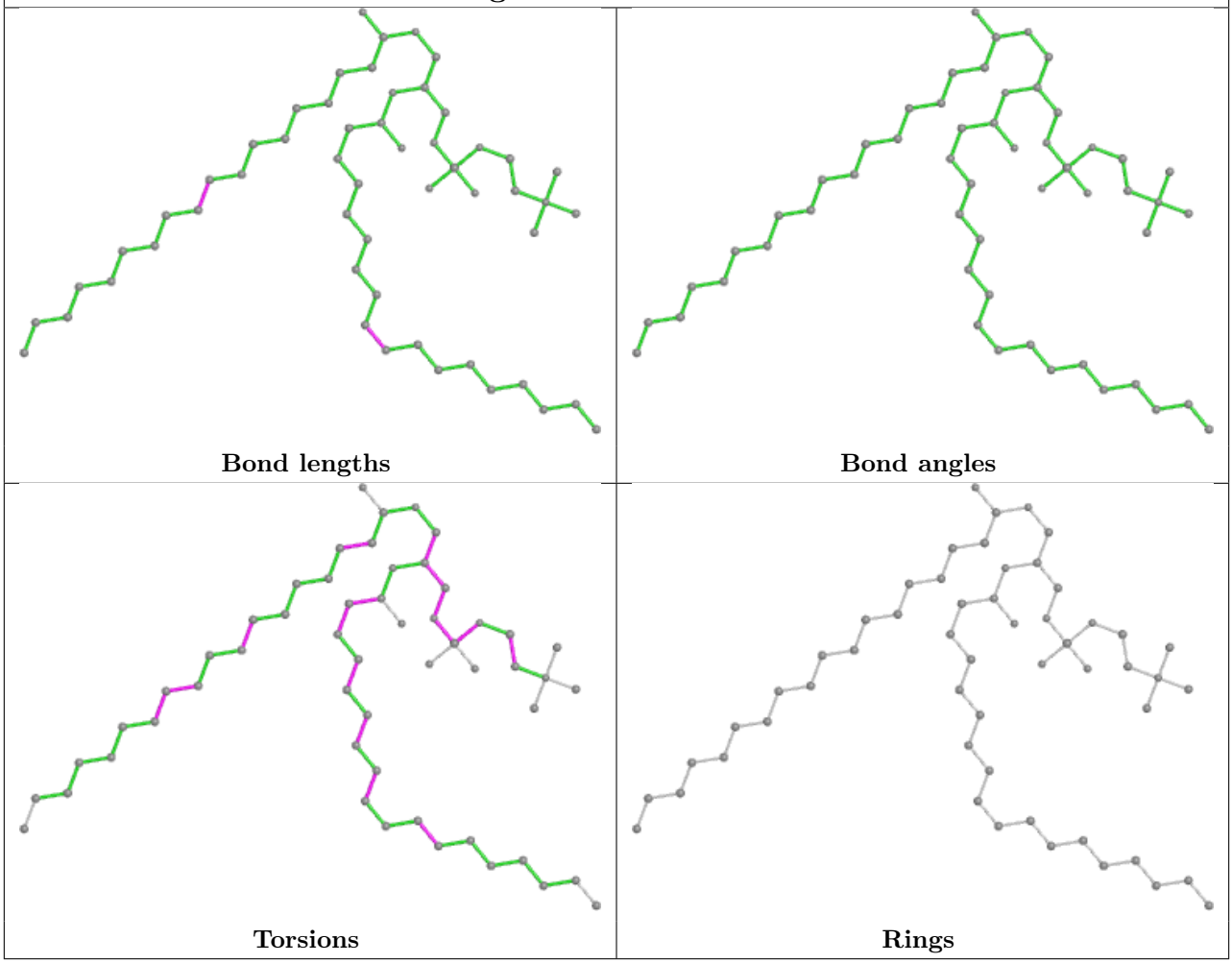


Torsions

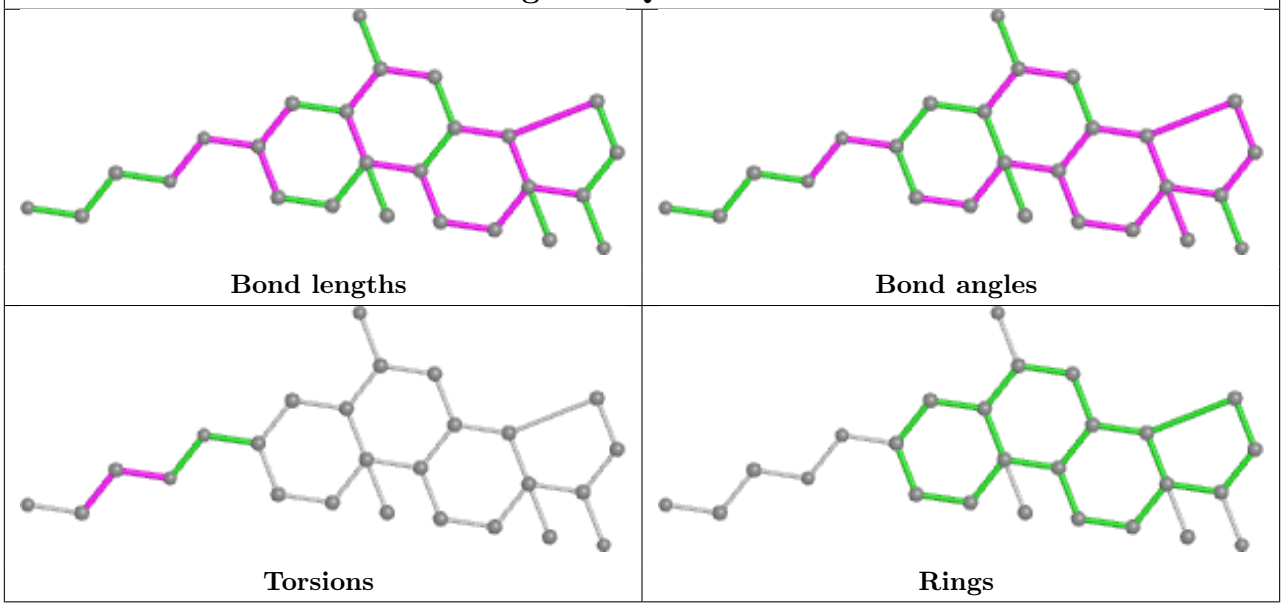


Rings

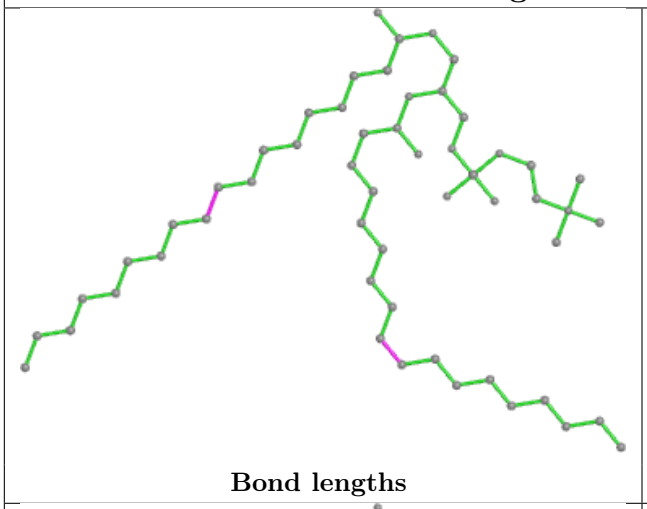
Ligand PCW C 1108



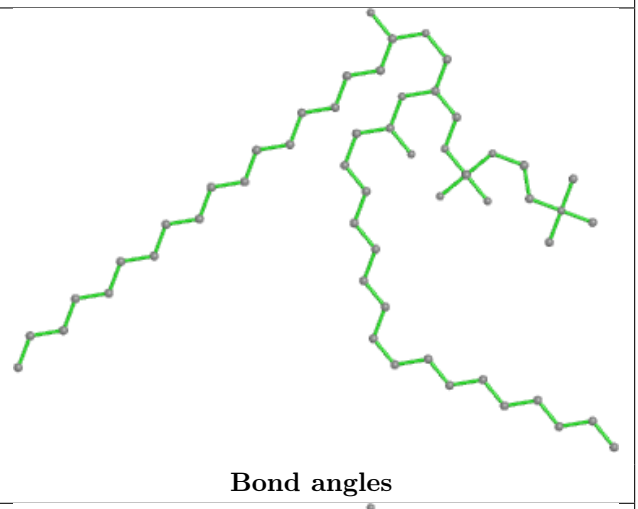
Ligand 7Q2 C 1104



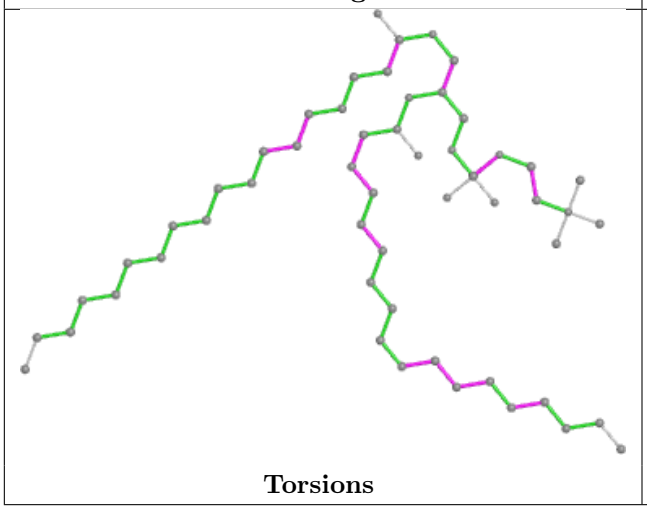
Ligand PCW C 1110



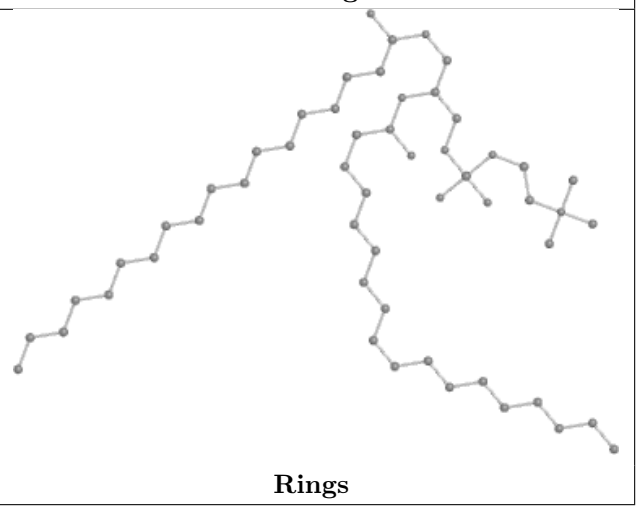
Bond lengths



Bond angles

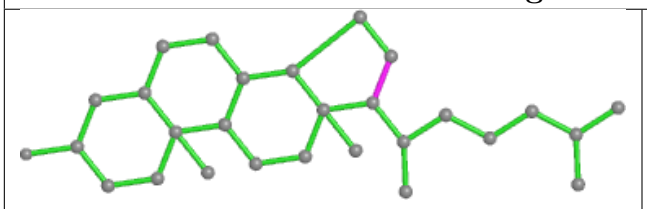


Torsions

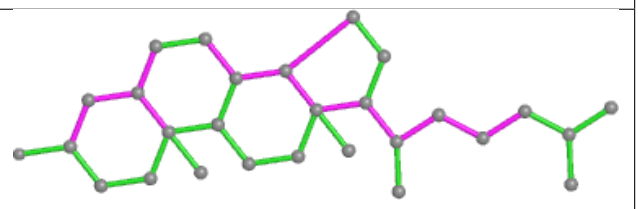


Rings

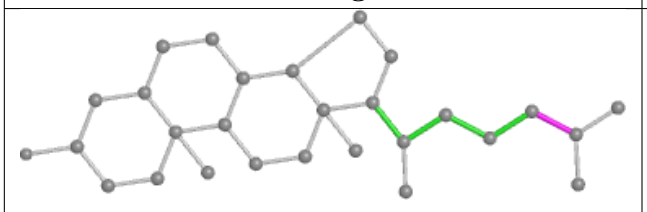
Ligand CLR B 501



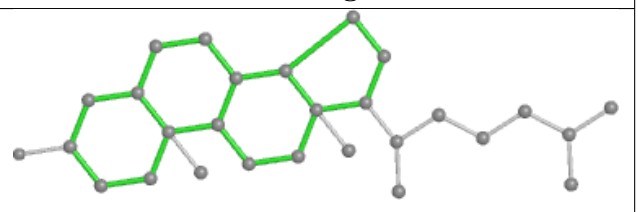
Bond lengths



Bond angles

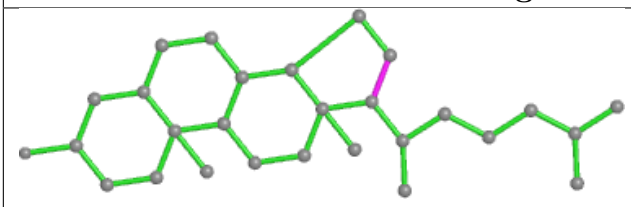


Torsions

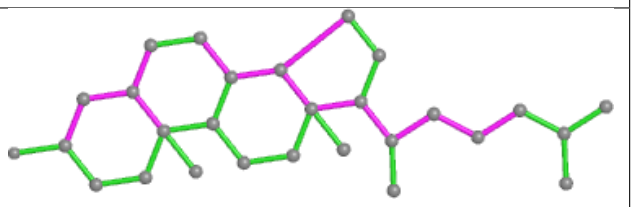


Rings

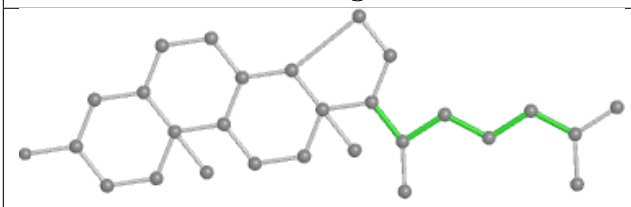
Ligand CLR C 1105



Bond lengths



Bond angles



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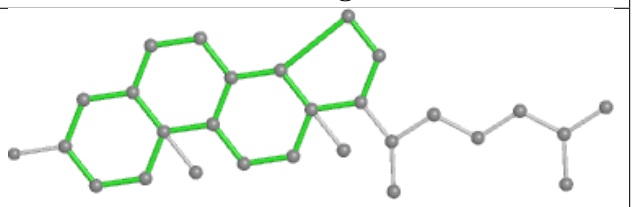
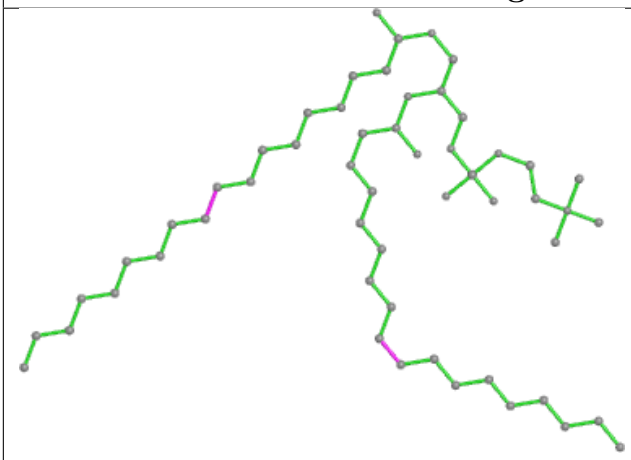


Rings

Ligand PCW G 1303



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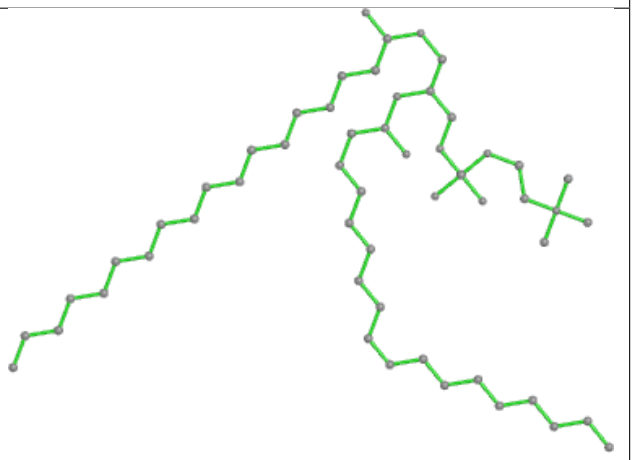
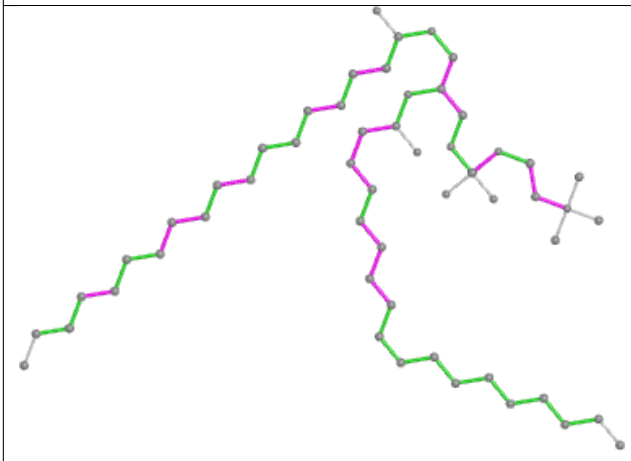
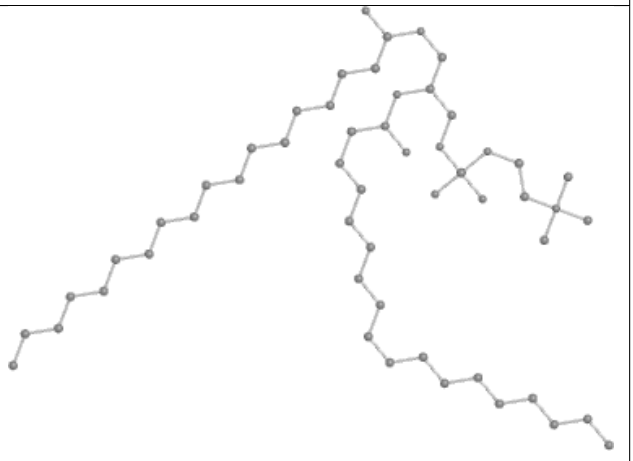


Bond angles

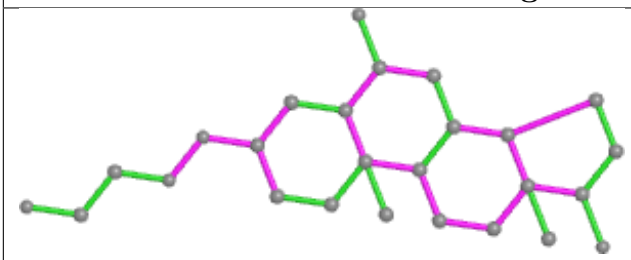


Torsions



Rings

Ligand 7Q2 A 1104



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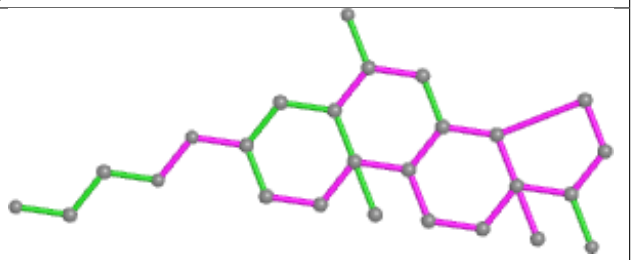
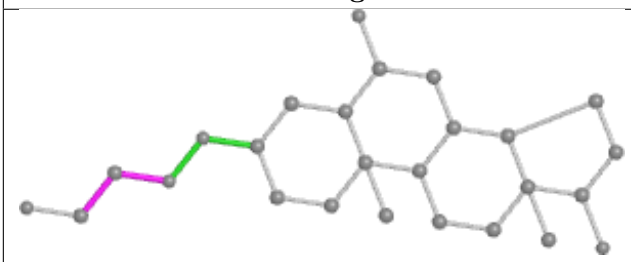


Bond angles



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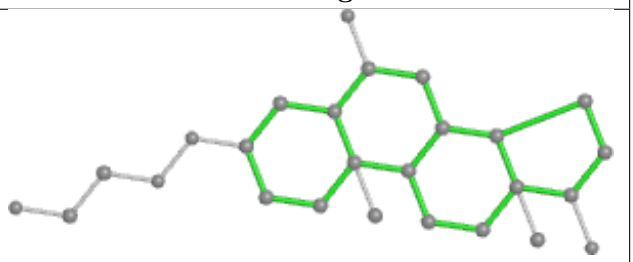
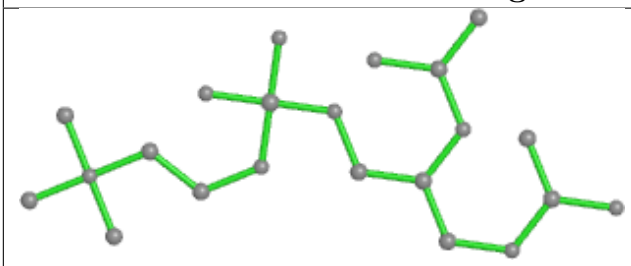


Rings

Ligand PCW C 1107



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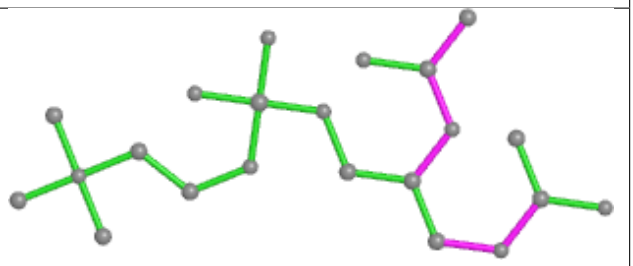
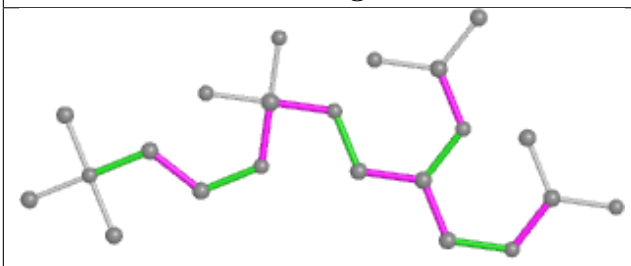


Bond angles



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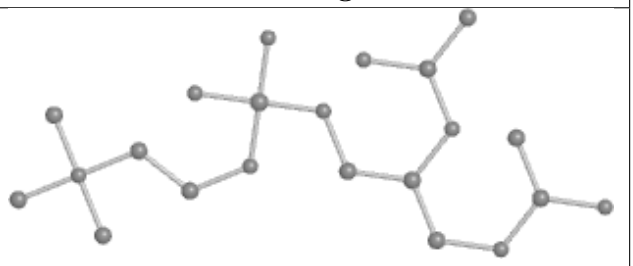
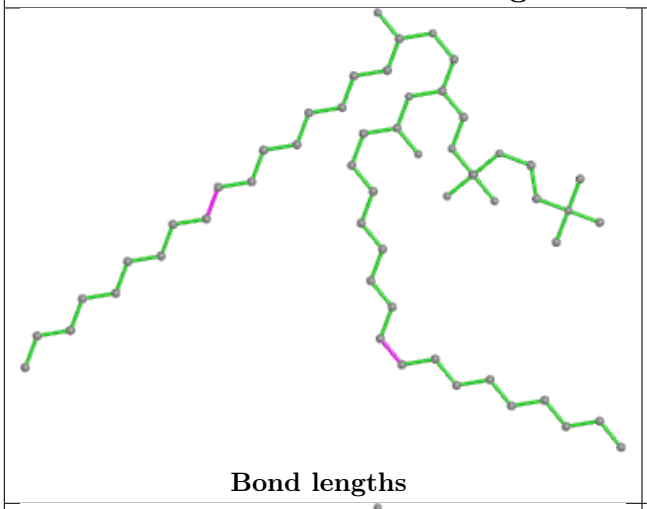


Rings

Ligand PCW C 1112



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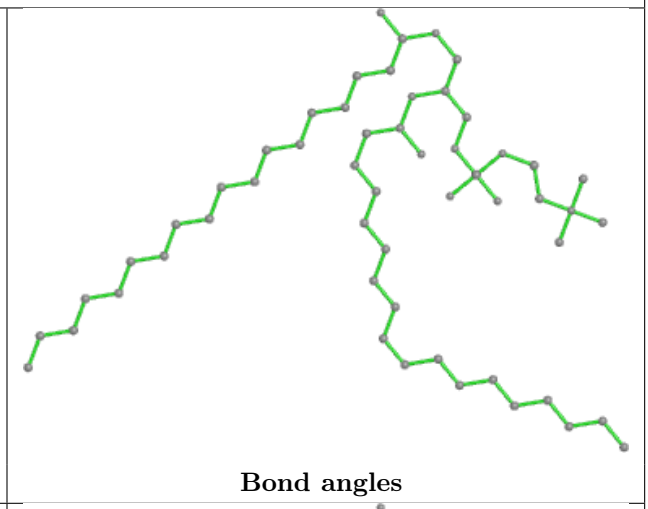
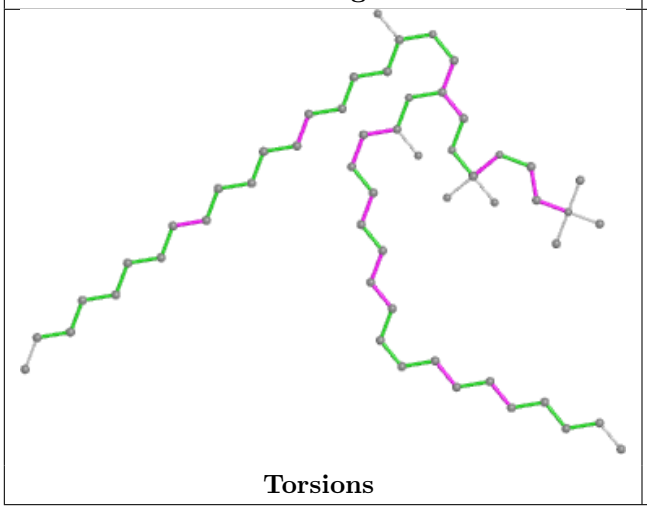


Bond angles



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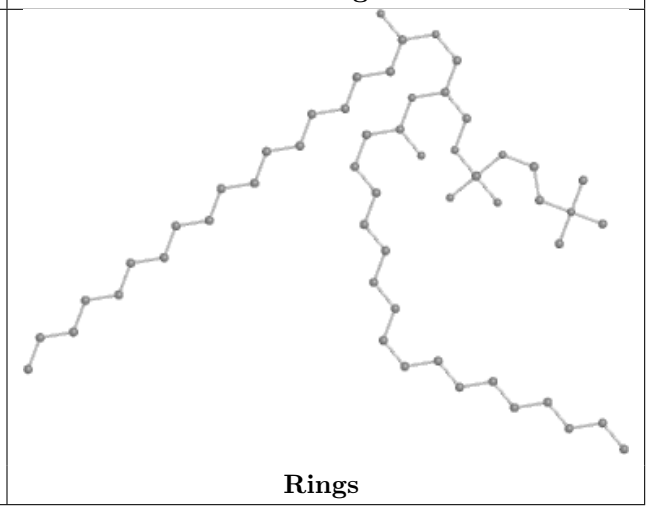
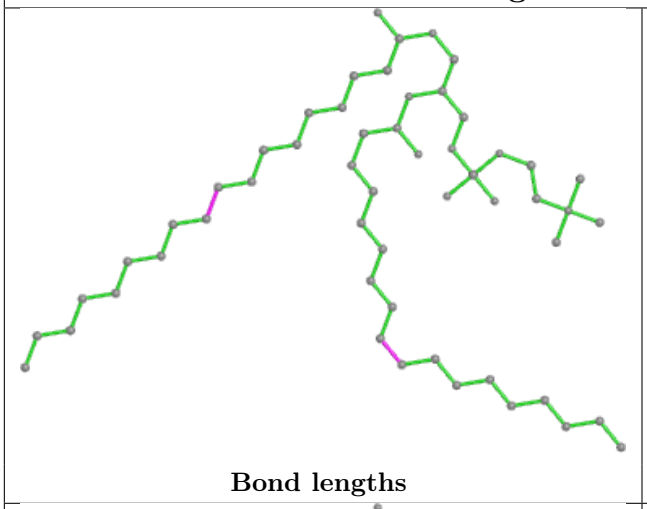


Rings

Ligand PCW G 1302



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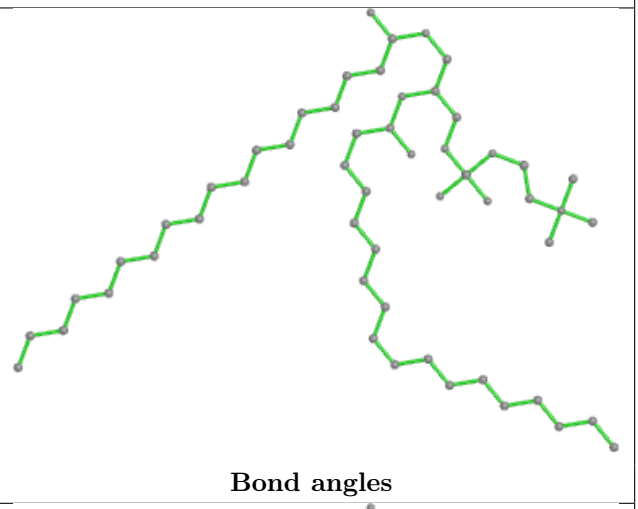
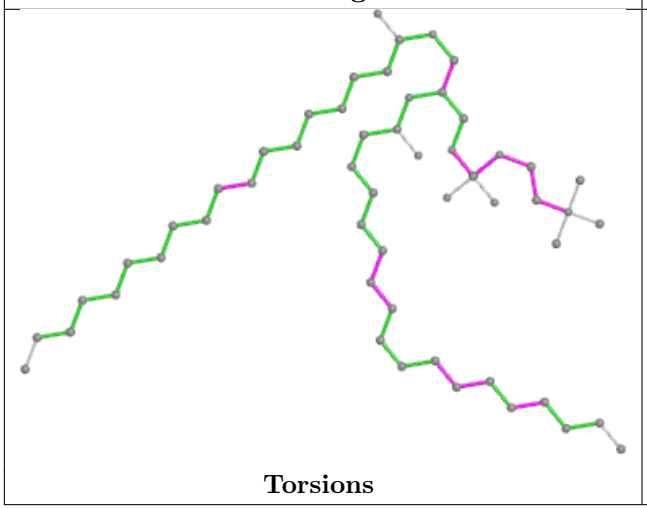


Bond angles



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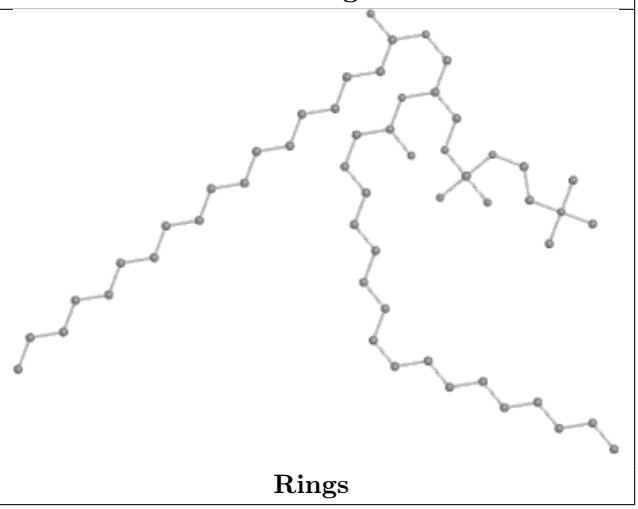
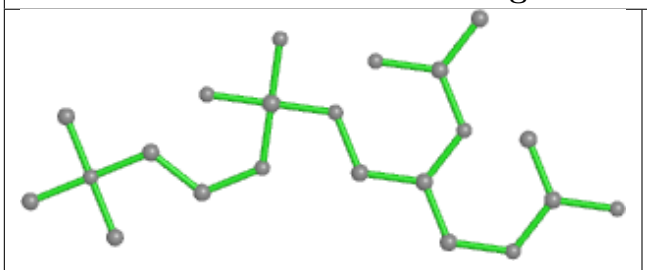


Rings

Ligand PCW C 1113



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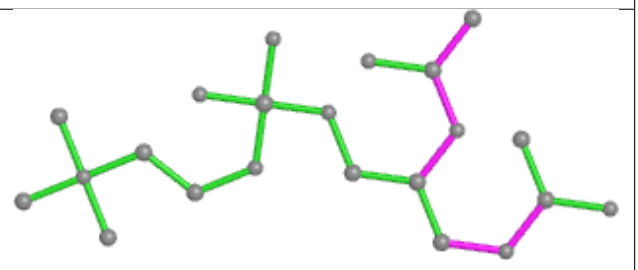
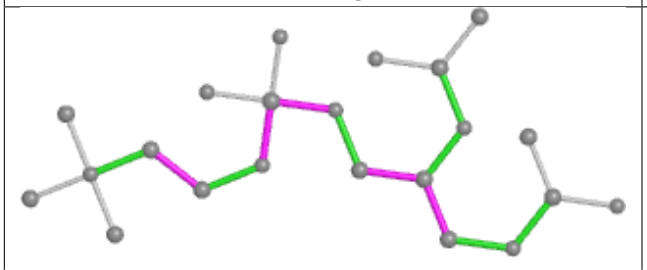


Bond angles



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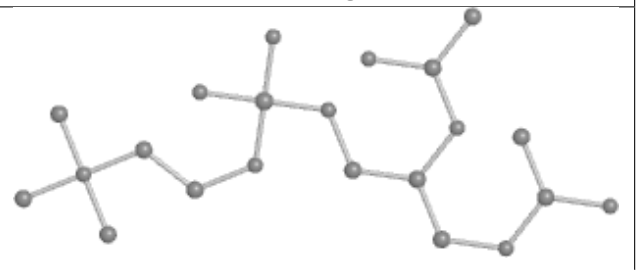
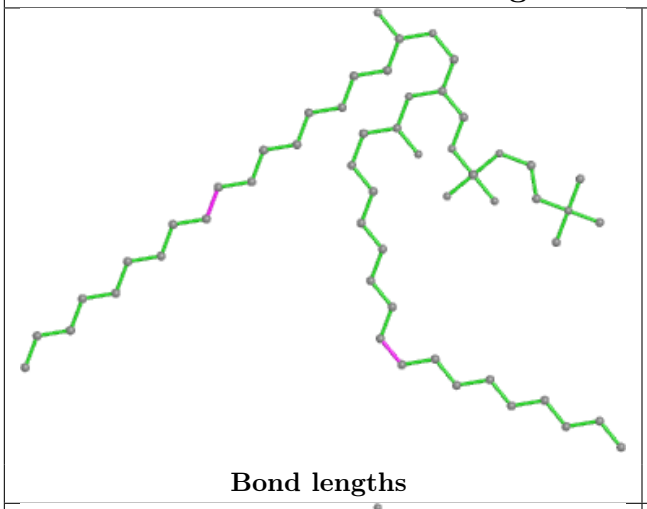


Rings

Ligand PCW A 1112



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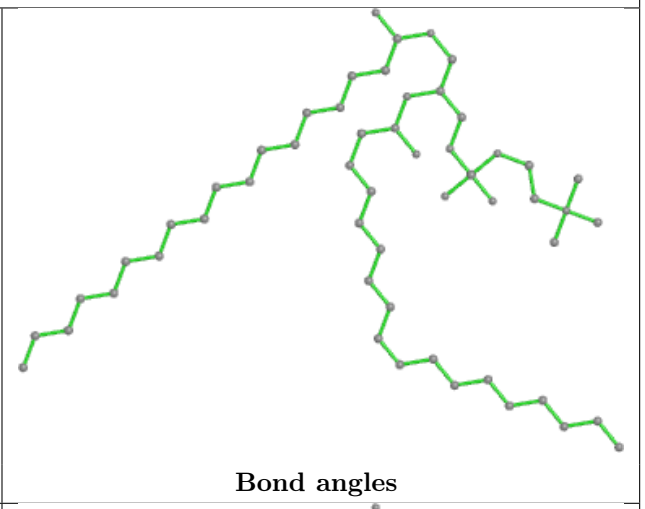
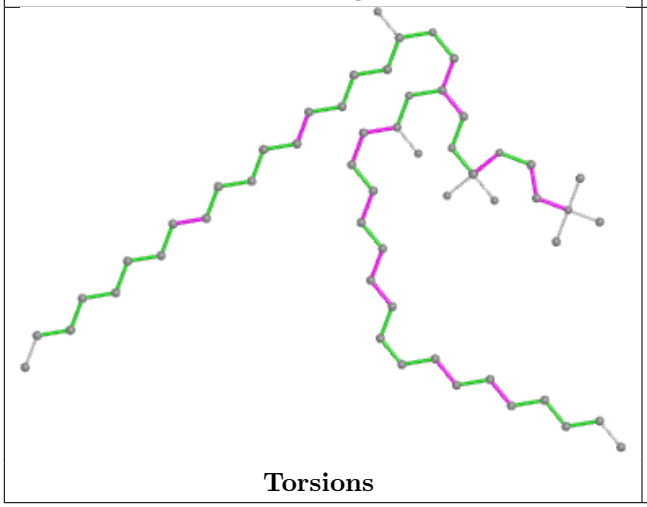
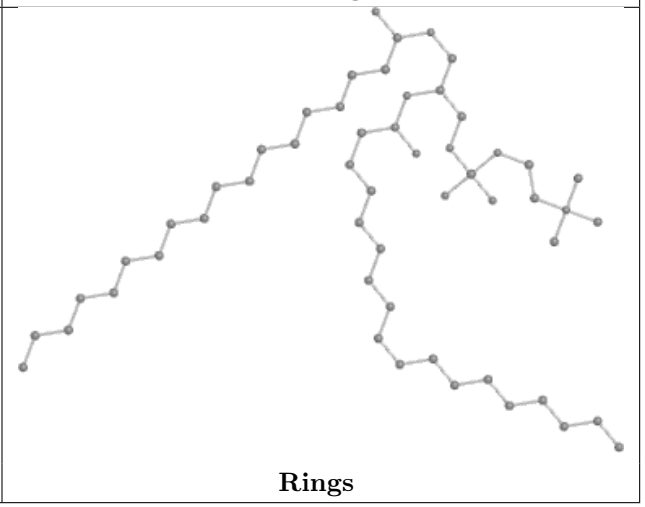


Bond angles

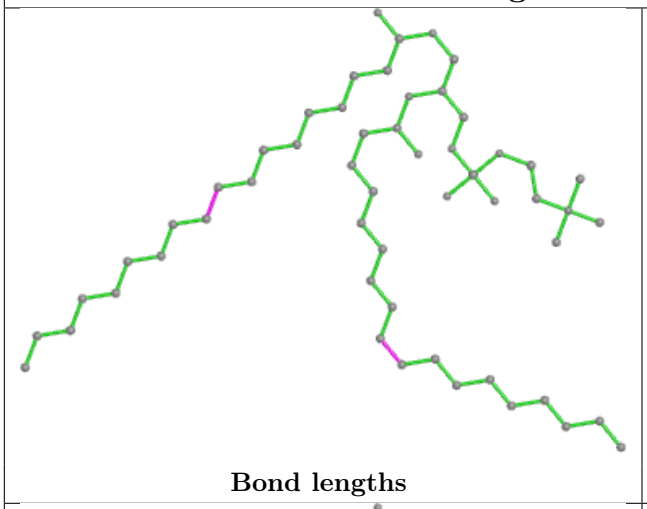


Torsions



Rings

Ligand PCW G 1304



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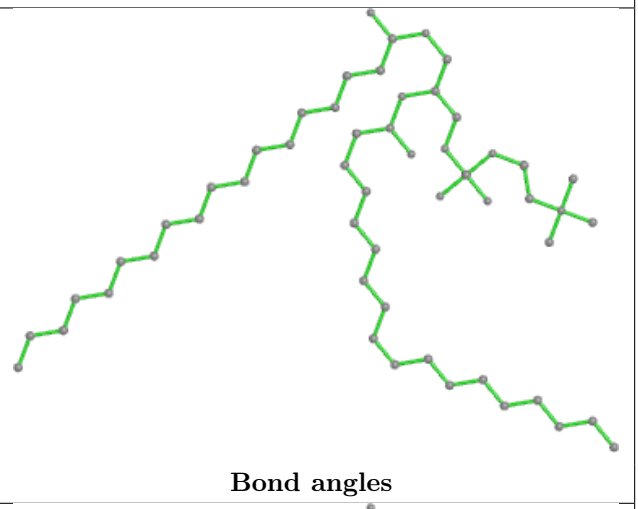
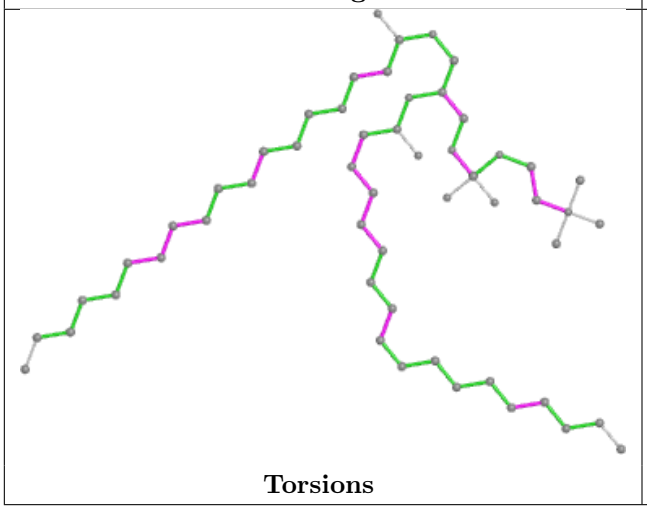


Bond angles



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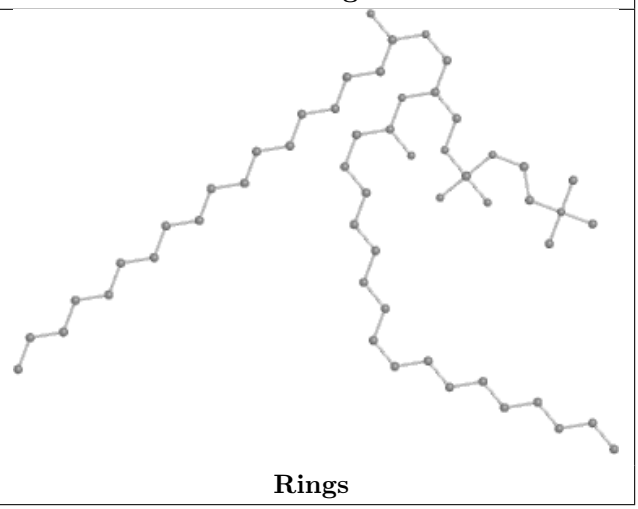
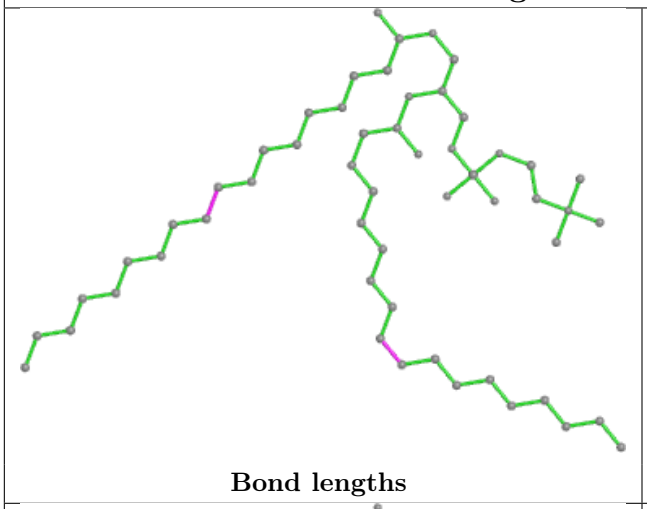


Rings

Ligand PCW A 1108



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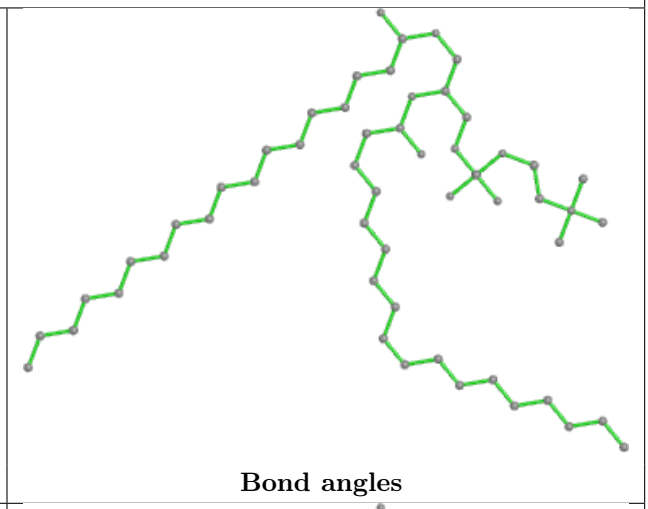
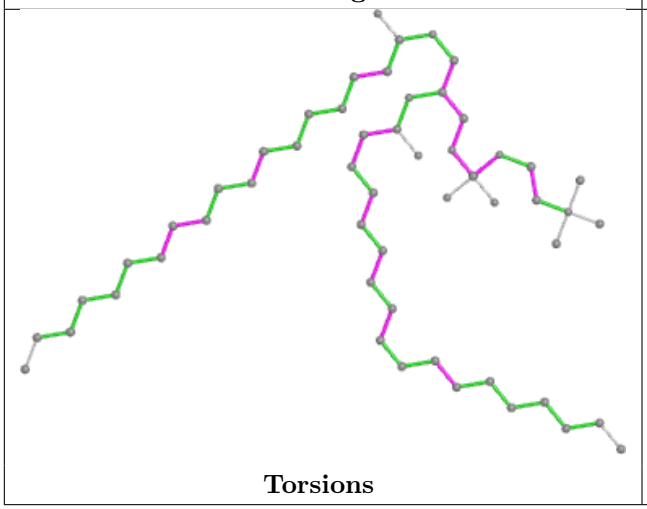


Bond angles



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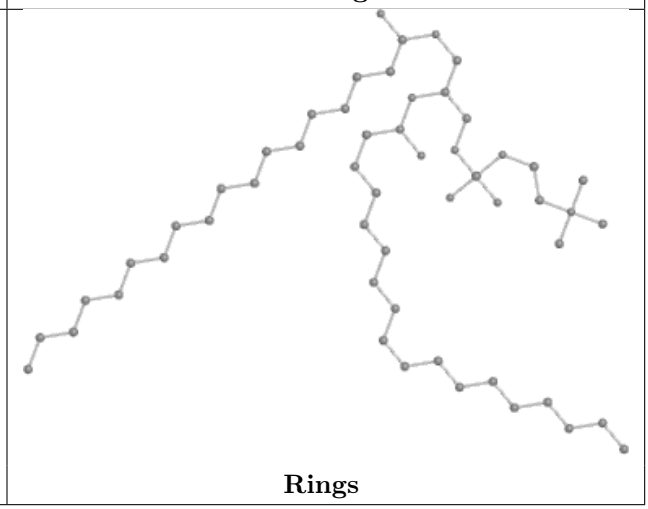
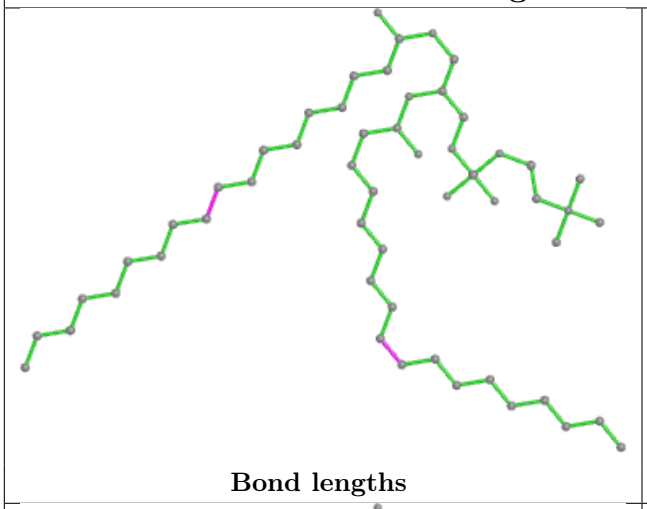


Rings

Ligand PCW A 1114



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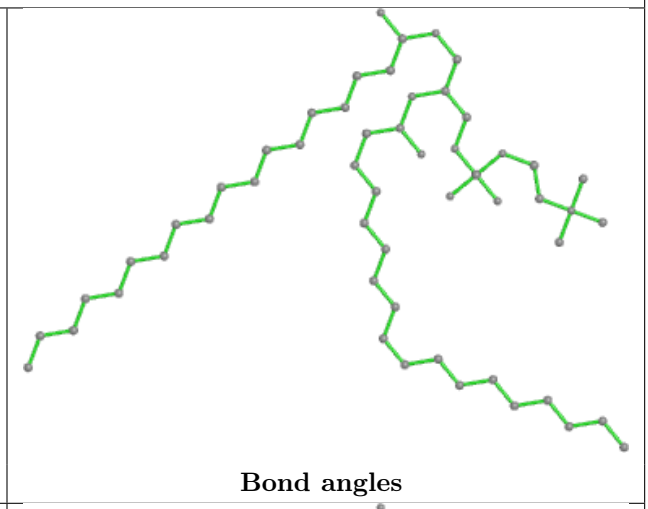
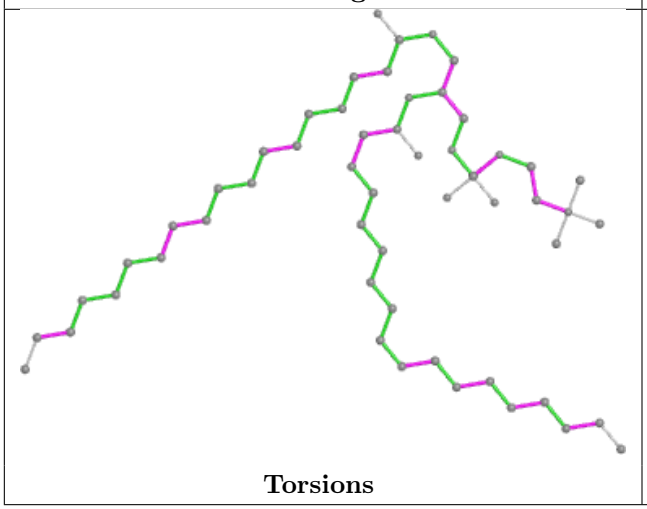


Bond angles



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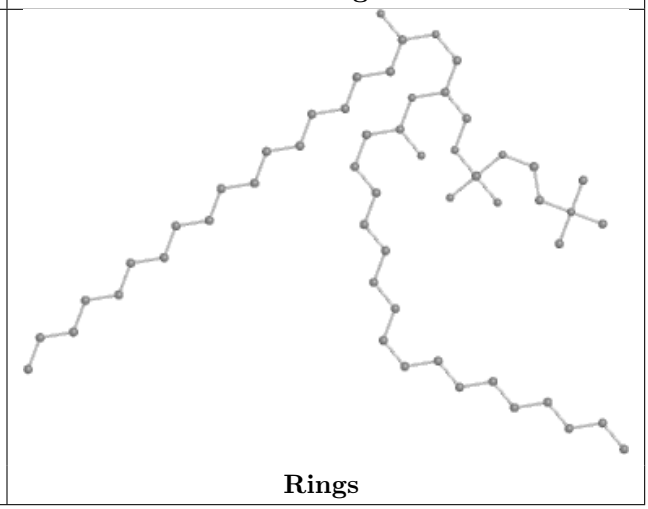
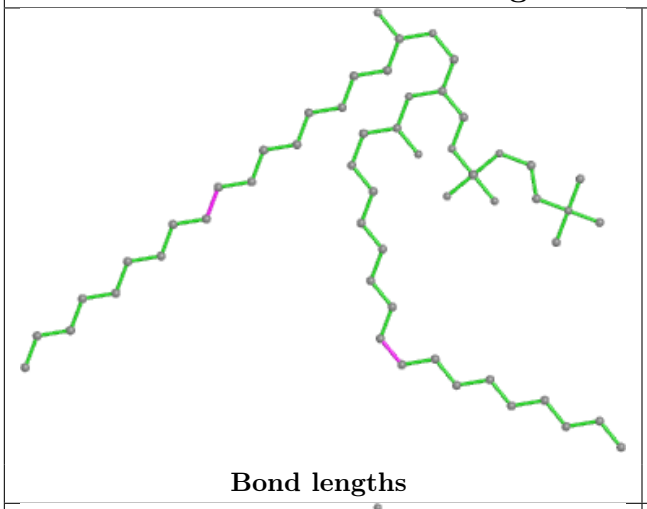
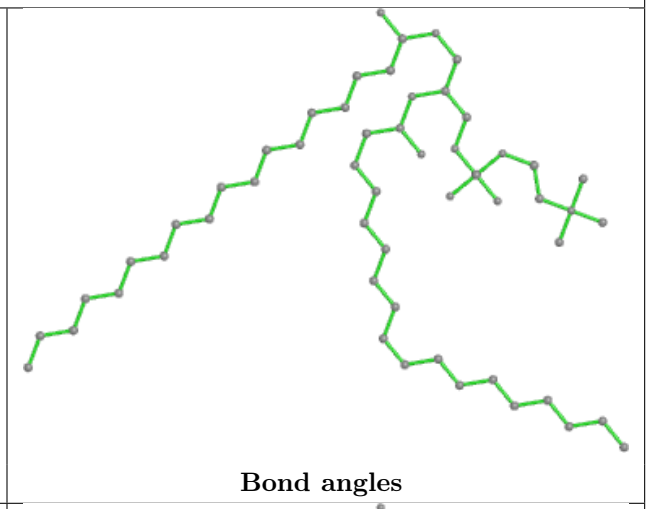


Rings

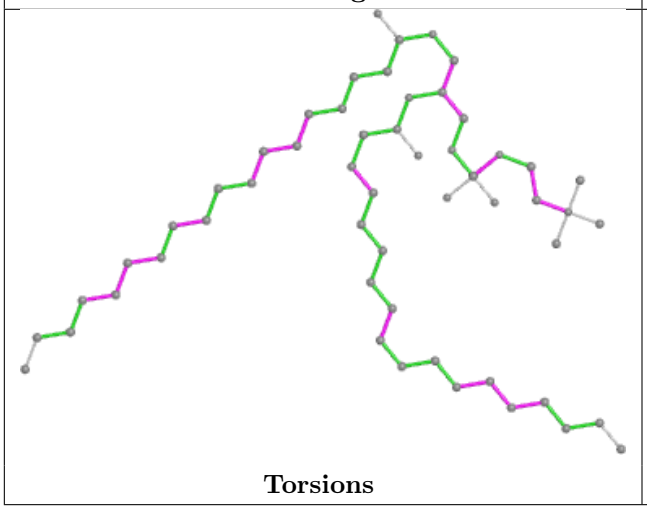
Ligand PCW C 1111



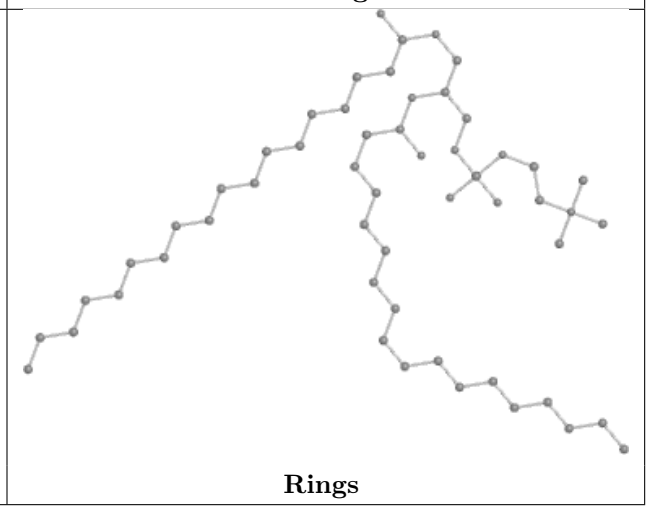
Bond lengths



Bond angles

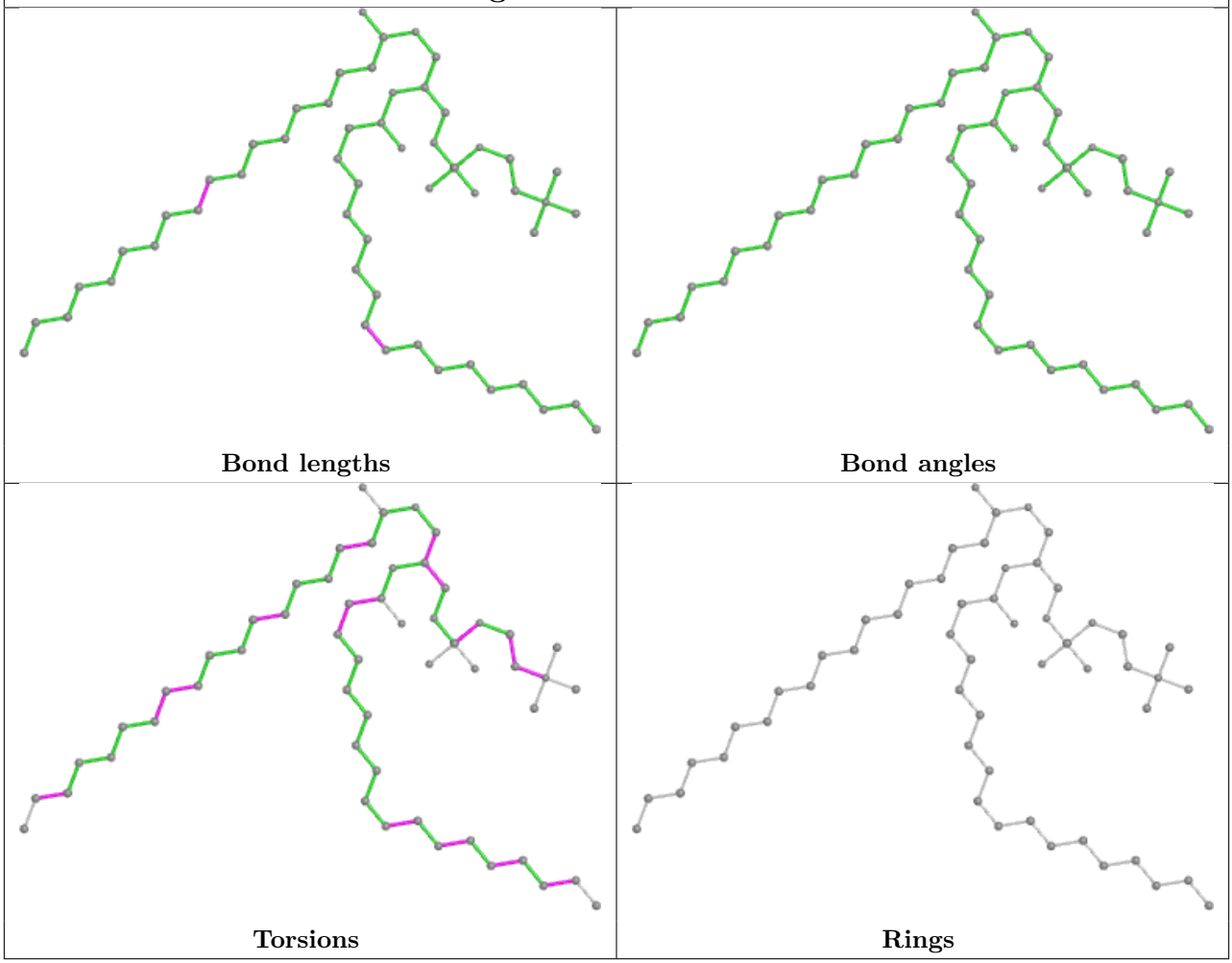


Torsions

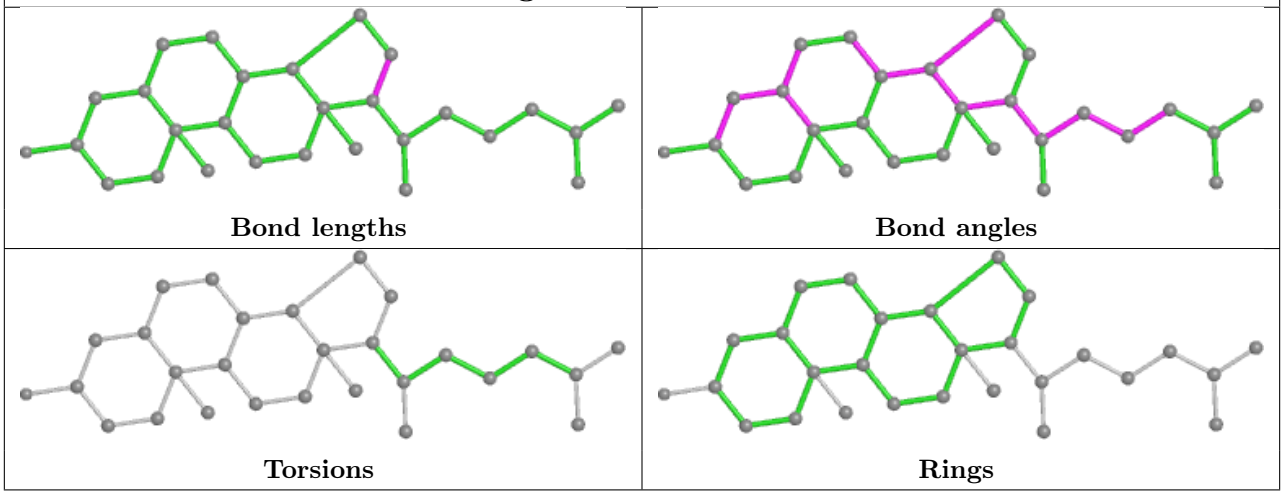


Rings

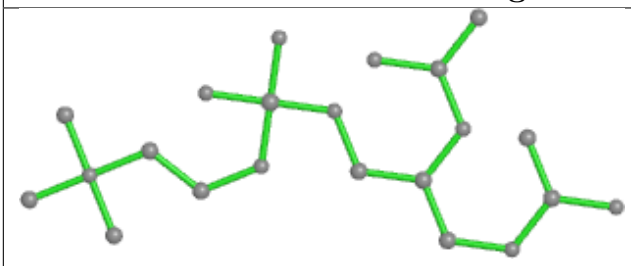
Ligand PCW C 1114

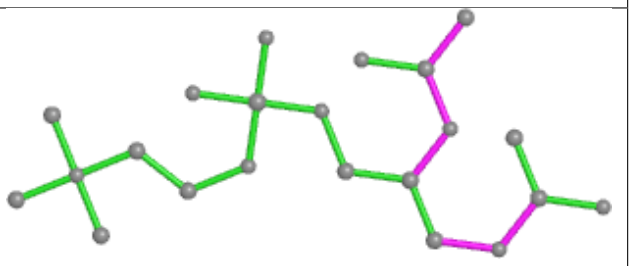


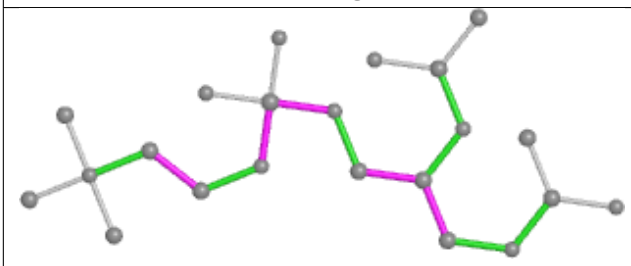
Ligand CLR E 1301

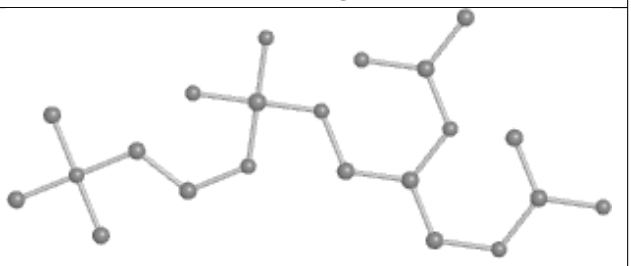


Ligand PCW A 1113

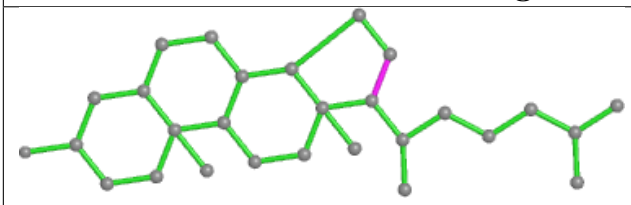

Bond lengths


Bond angles


Torsions


Rings

Ligand CLR G 1301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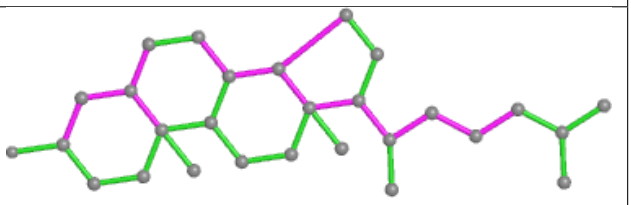
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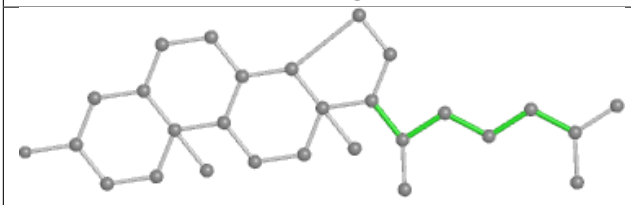
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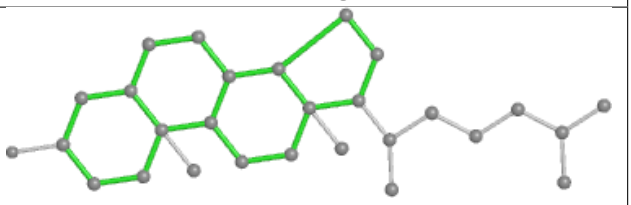
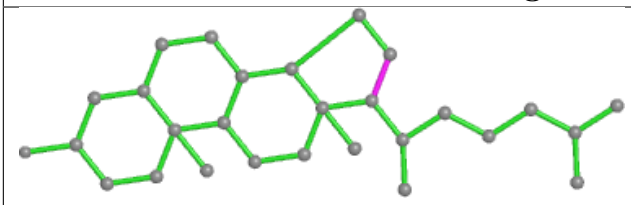

Rings

Ligand CLR D 501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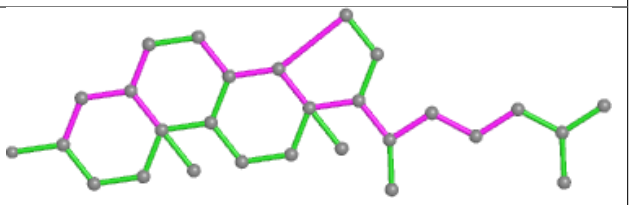
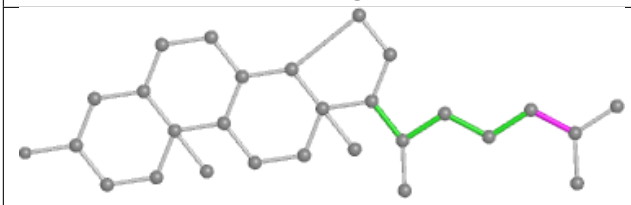

Bond angles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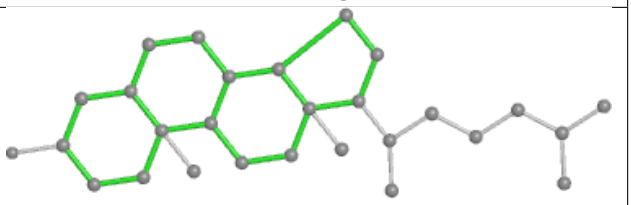
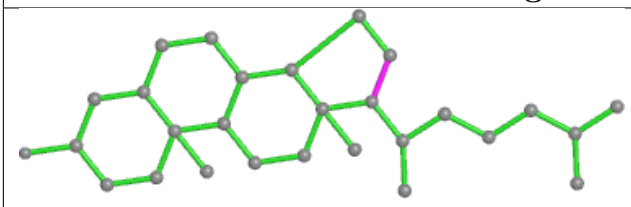

Rings

Ligand CLR B 502



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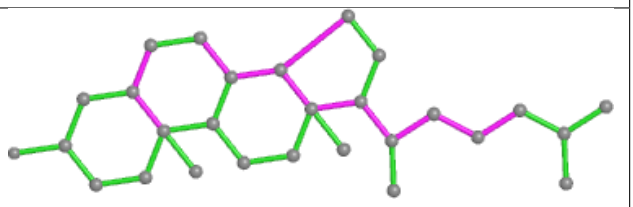

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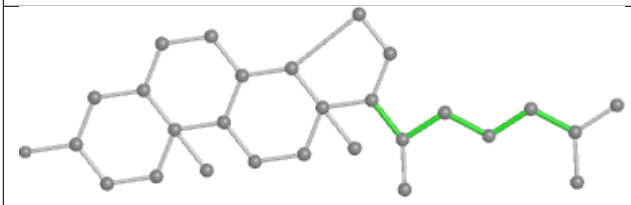

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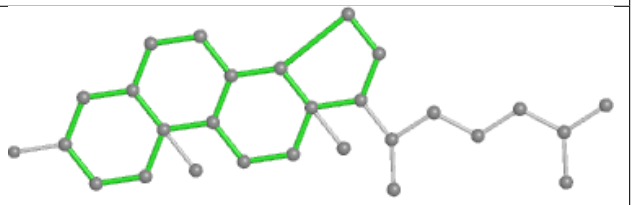
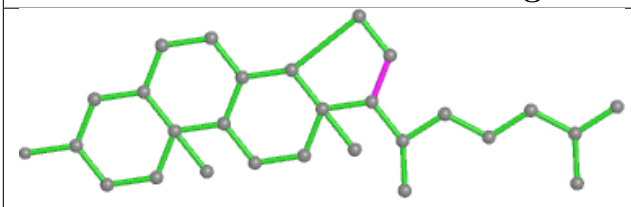


Rings

Ligand CLR D 502



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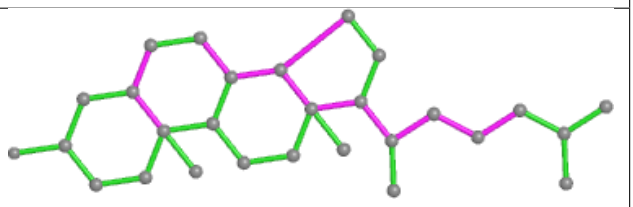
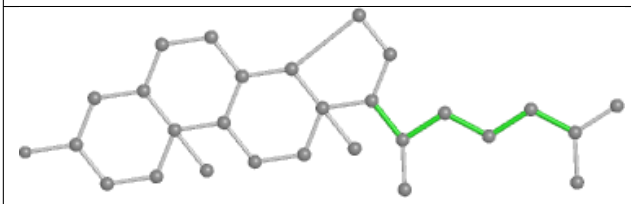
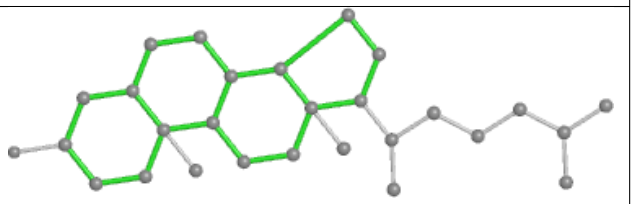


Bond angles

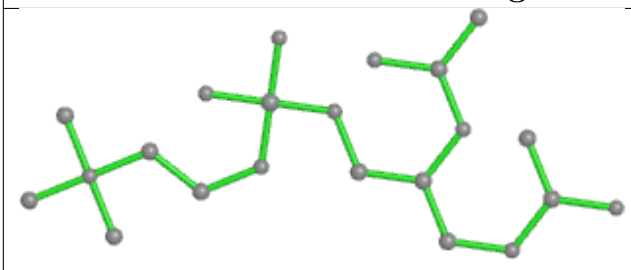


Torsions

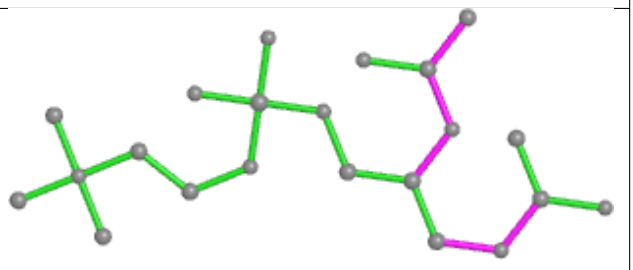


Rings

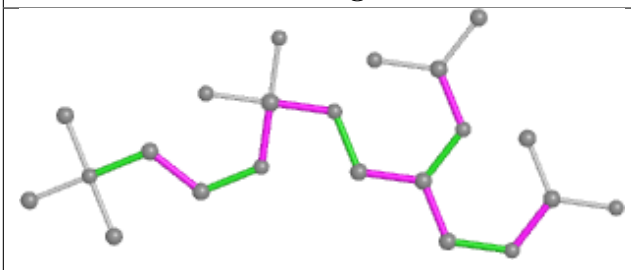
Ligand PCW A 1107



Bond lengths



Bond angles



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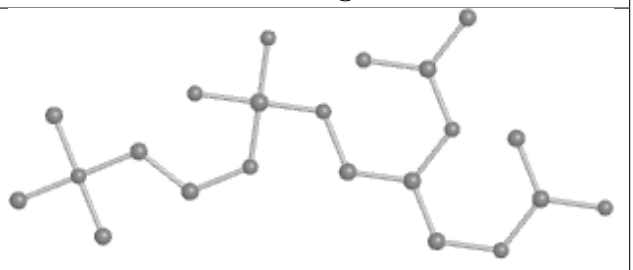
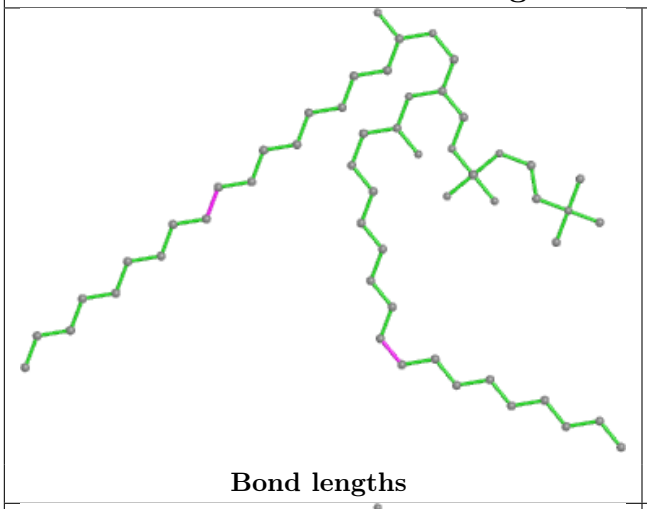


Rings

Ligand PCW A 1110



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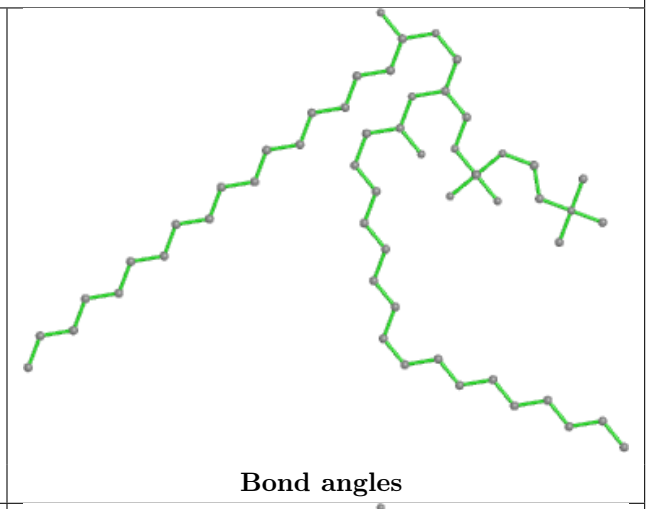
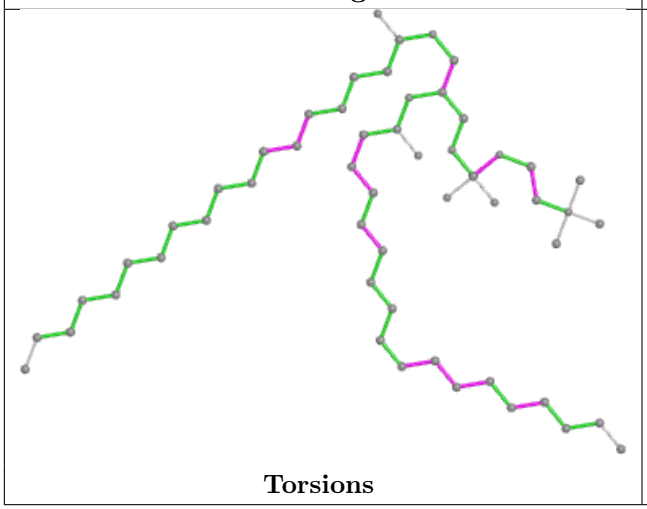


Bond angles



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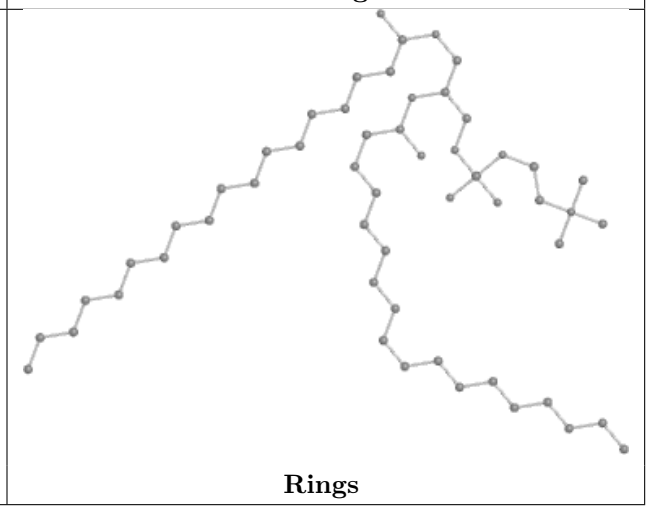
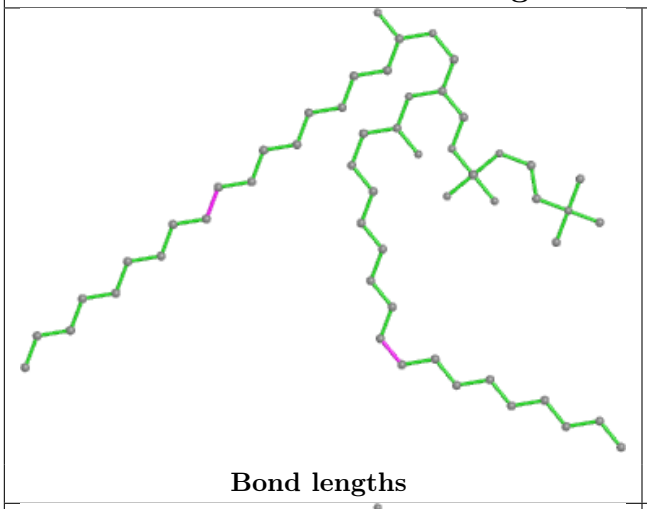
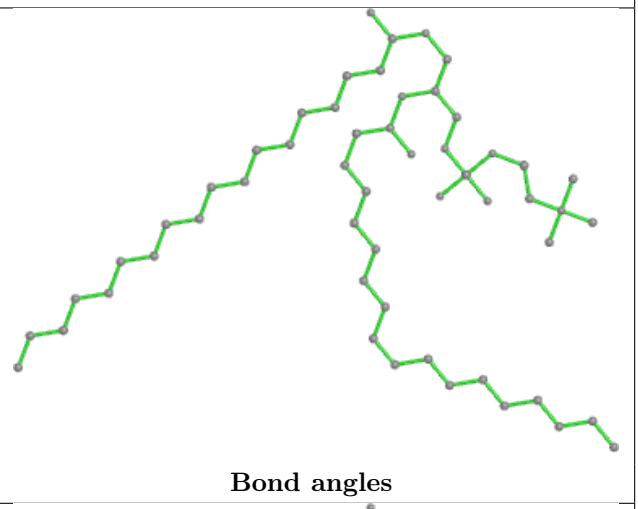


Rings

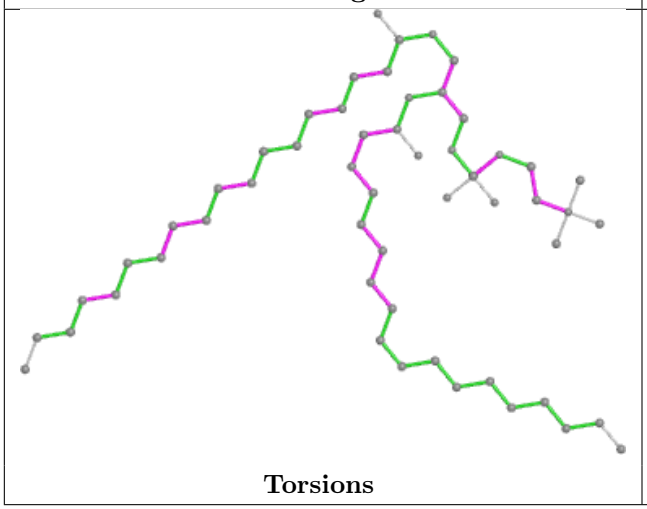
Ligand PCW E 1303



Bond lengths



Bond angles



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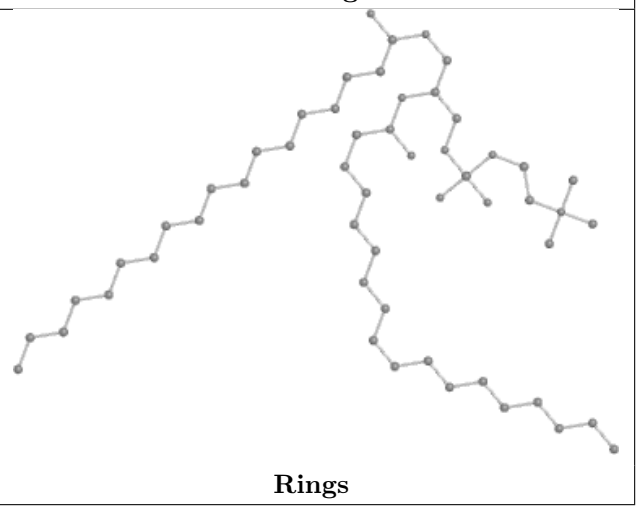
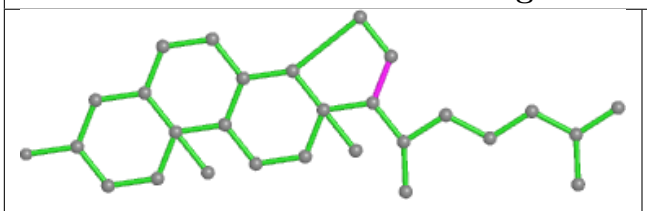
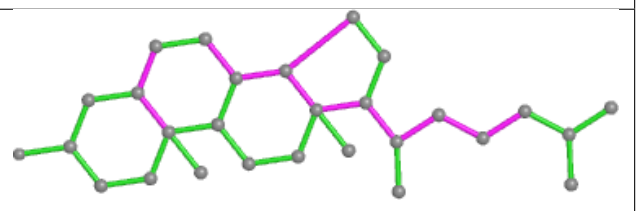


Rings

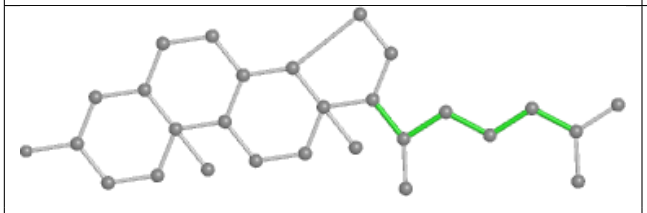
Ligand CLR A 1105



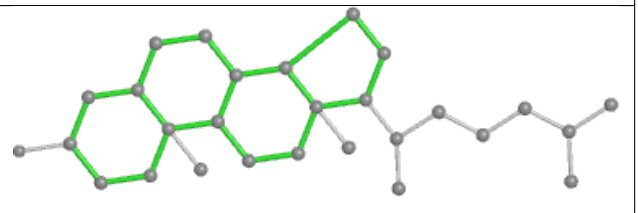
Bond lengths



Bond angles

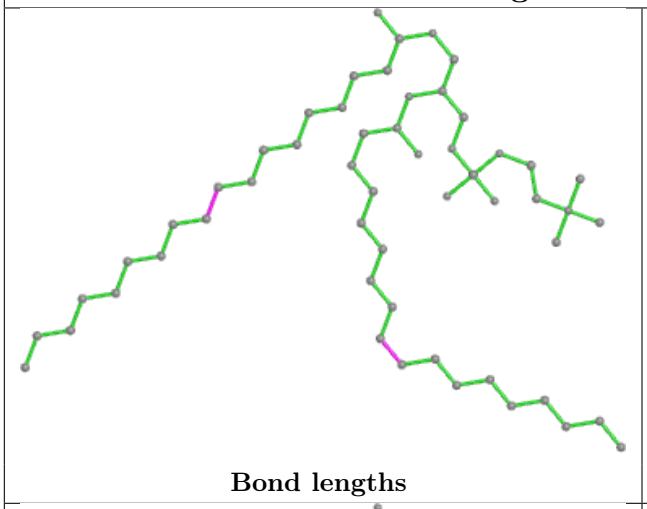


Torsions



Rings

Ligand PCW E 1302



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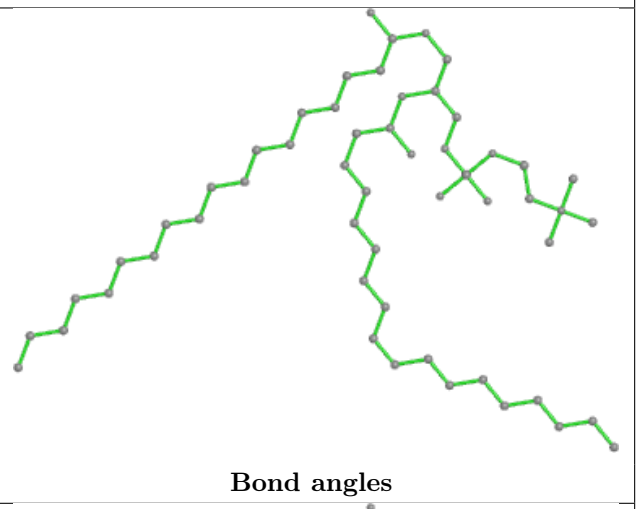
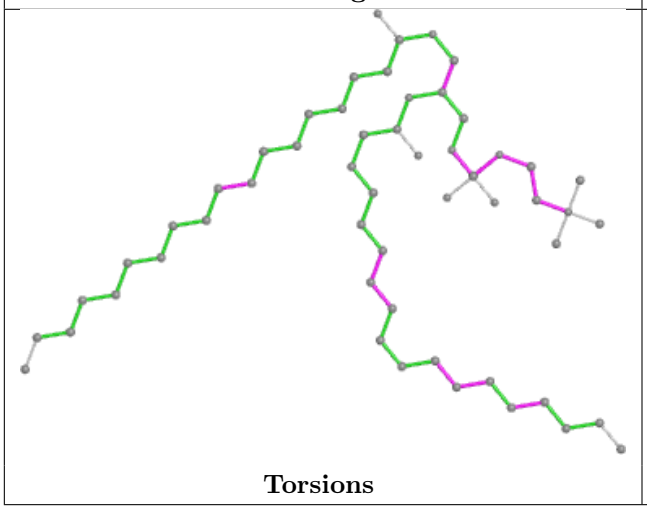


Bond angles



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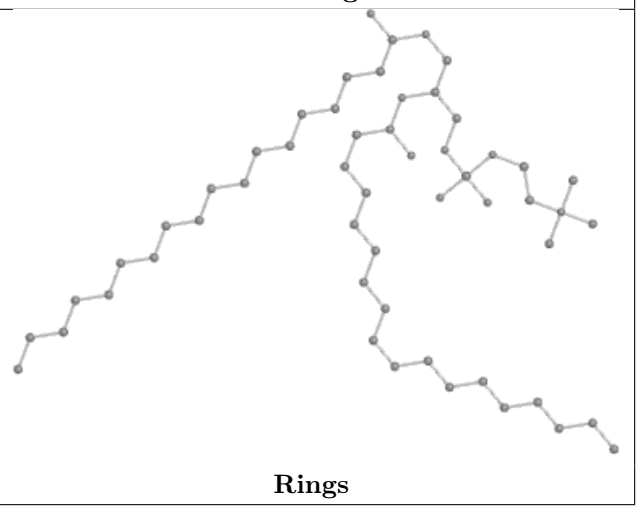
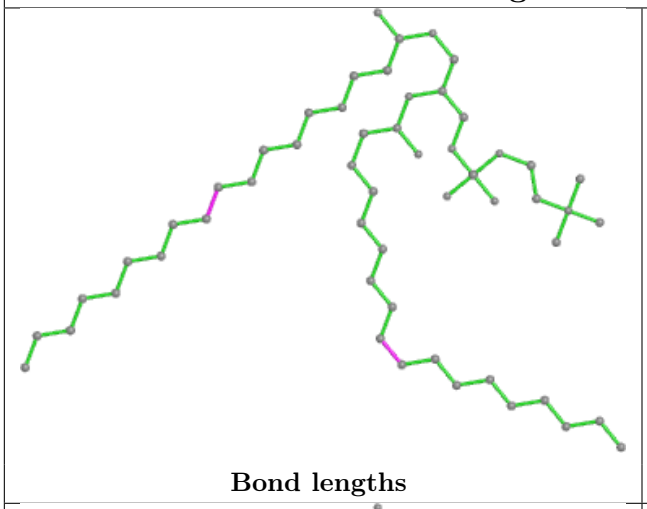


Rings

Ligand PCW A 1109



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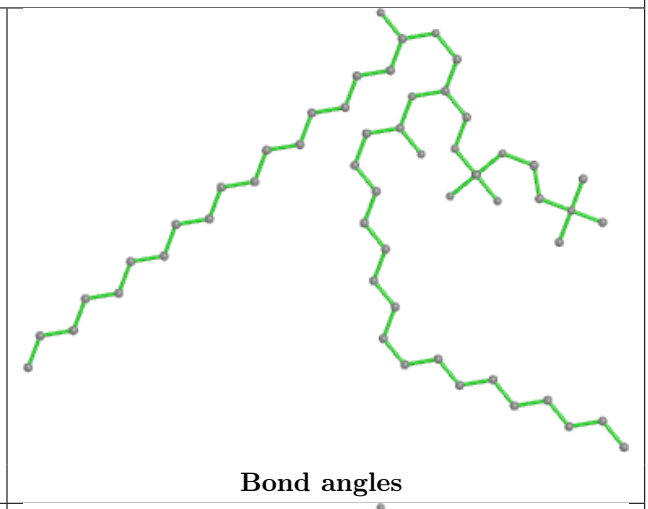
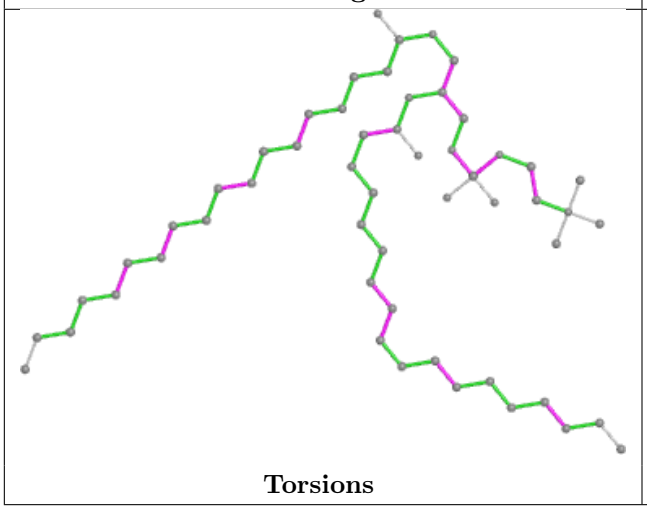
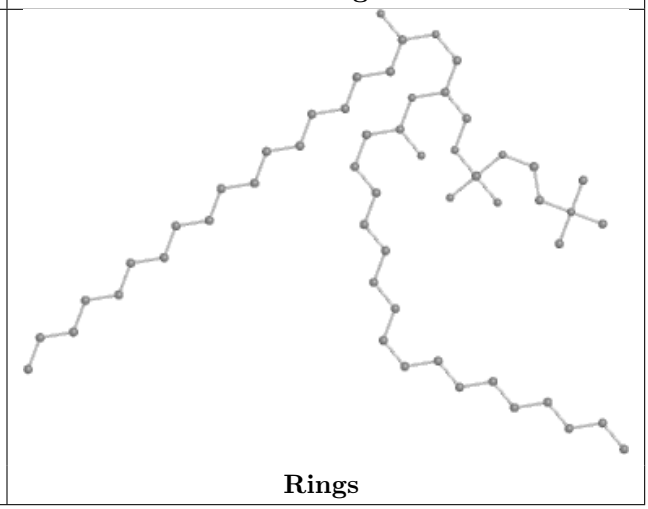


Bond angles

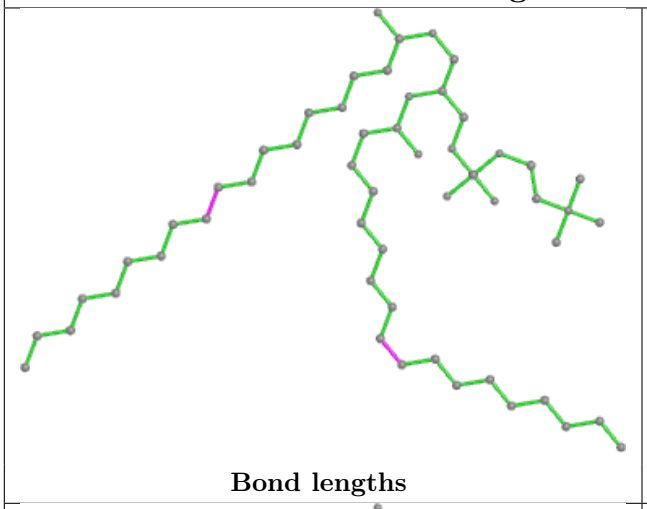


Torsions

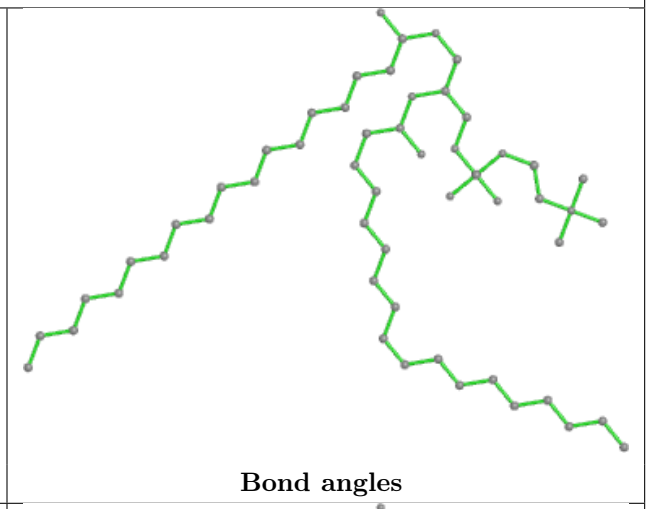


Rings

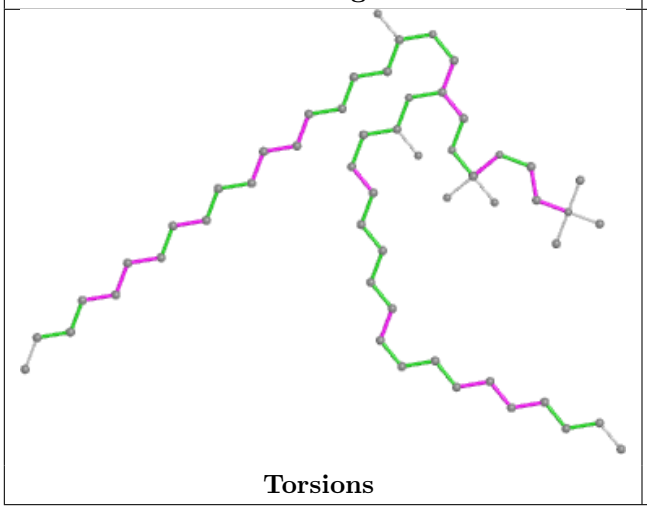
Ligand PCW A 1111



Bond lengths



Bond angles



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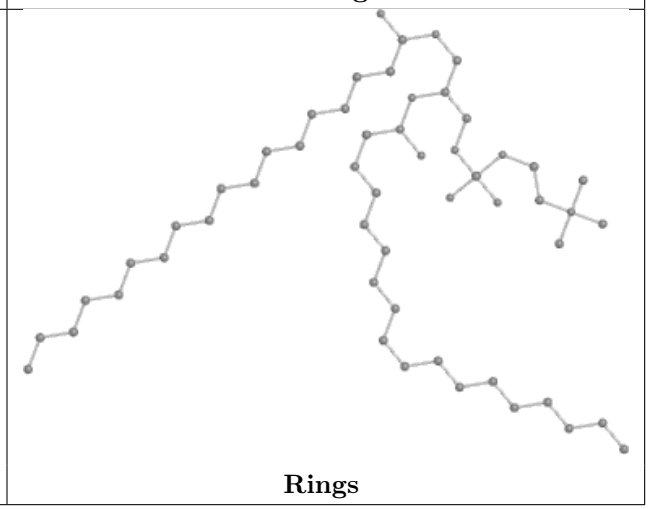
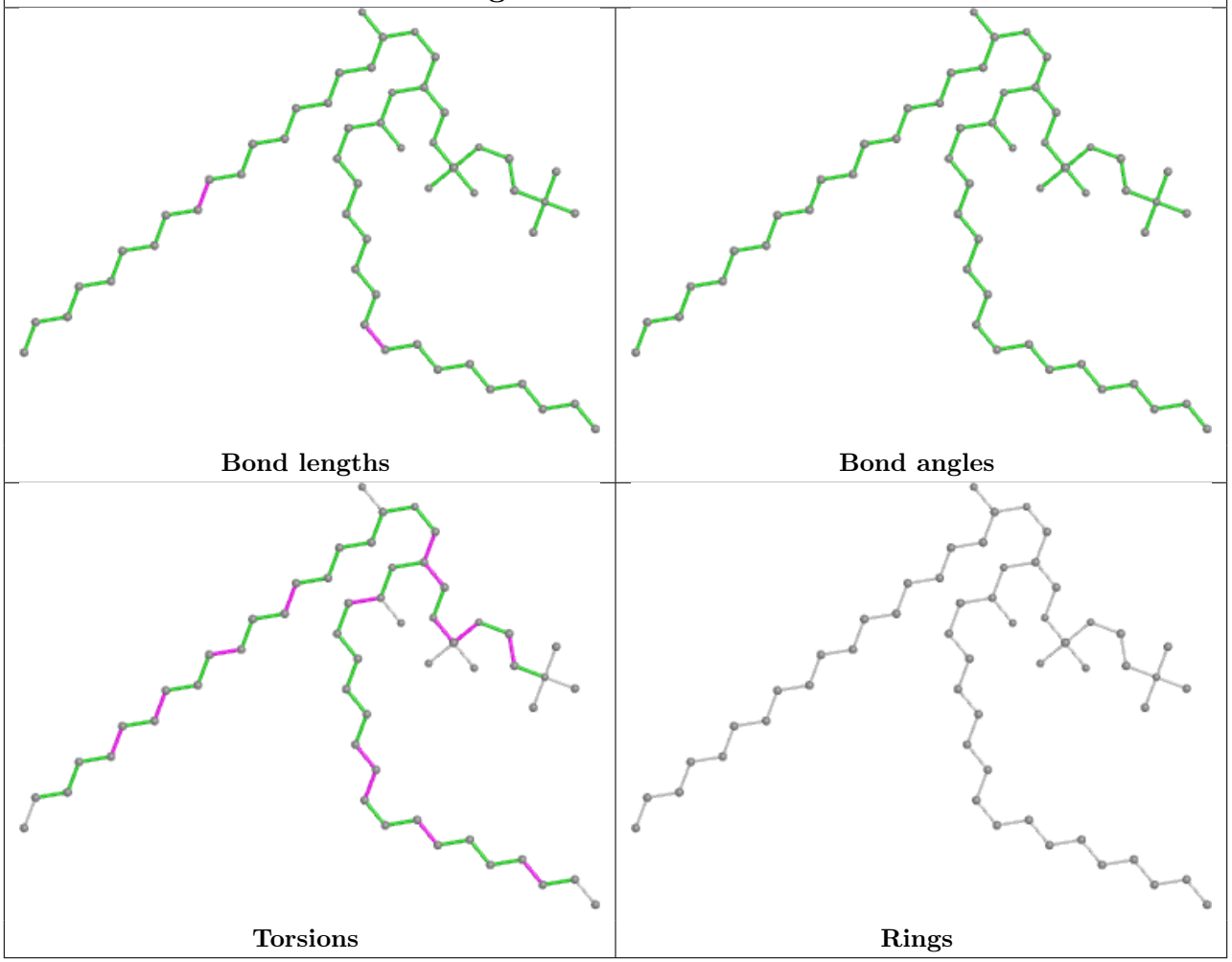


Rings

Ligand PCW C 1109



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

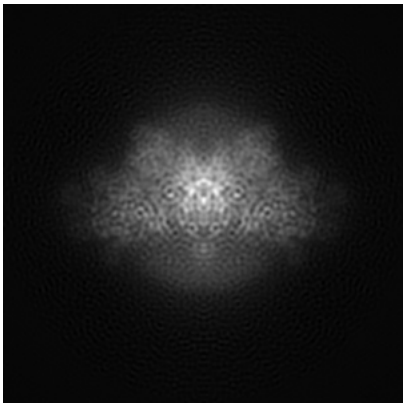
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-32898. These allow visual inspection of the internal detail of the map and identification of artifacts.

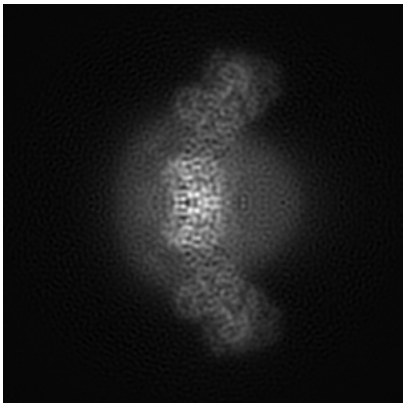
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

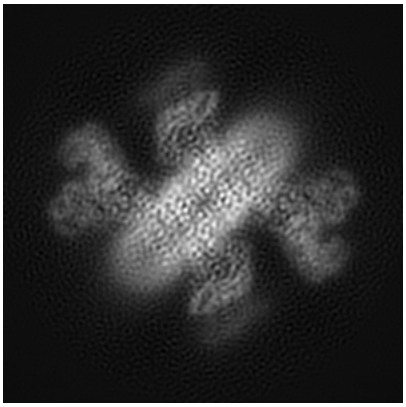
6.1.1 Primary map



X



Y

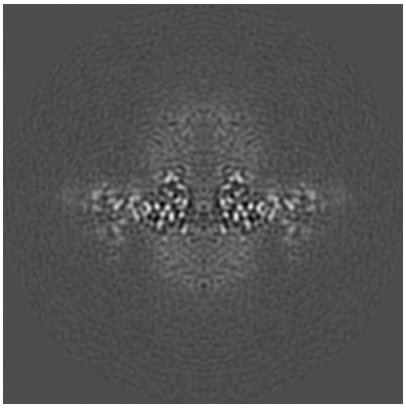


Z

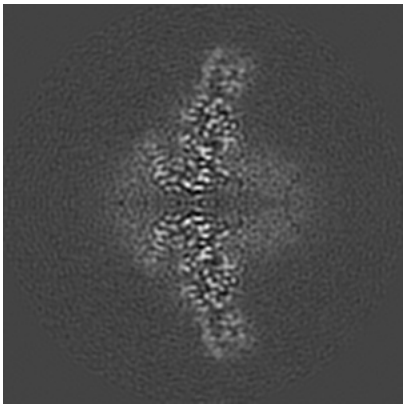
The images above show the map projected in three orthogonal directions.

6.2 Central slices

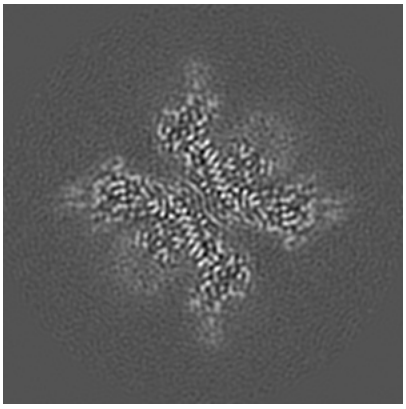
6.2.1 Primary map



X Index: 120



Y Index: 120

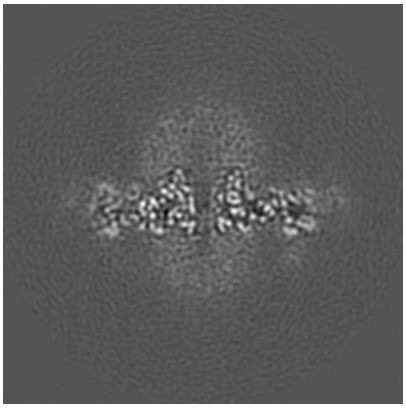


Z Index: 120

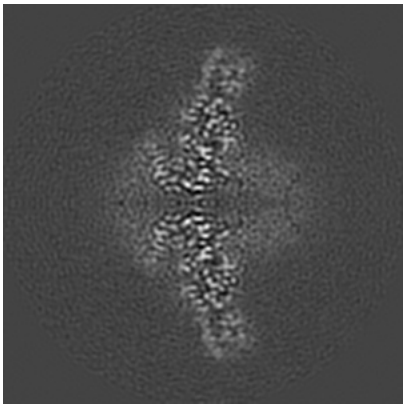
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

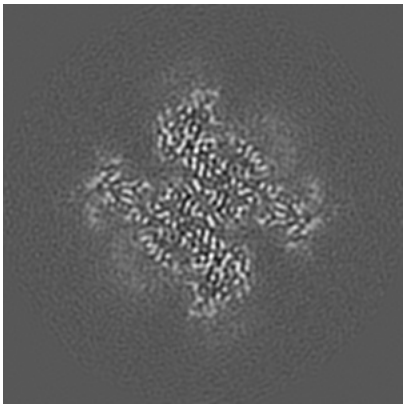
6.3.1 Primary map



X Index: 118



Y Index: 120

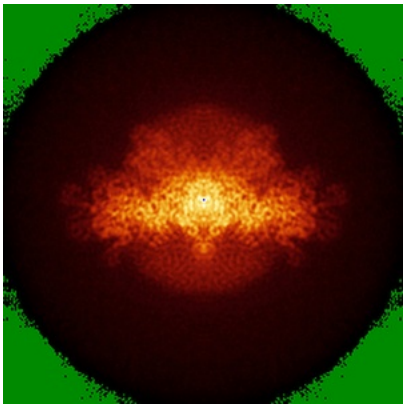


Z Index: 116

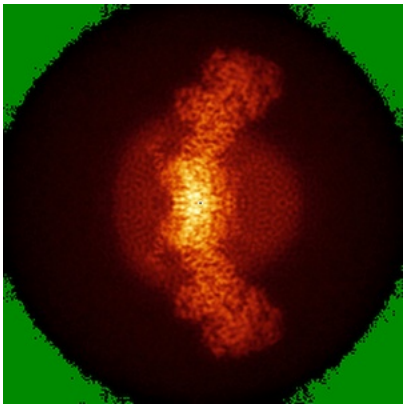
The images above show the largest variance slices of the map in three orthogonal directions.

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

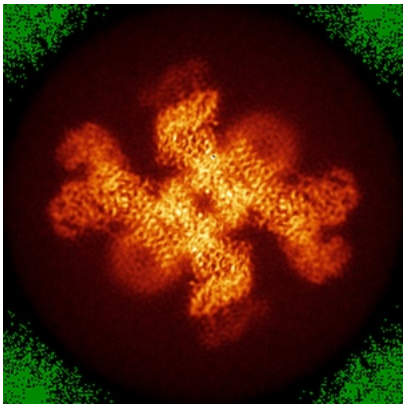
6.4.1 Primary map



X



Y



Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.019. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

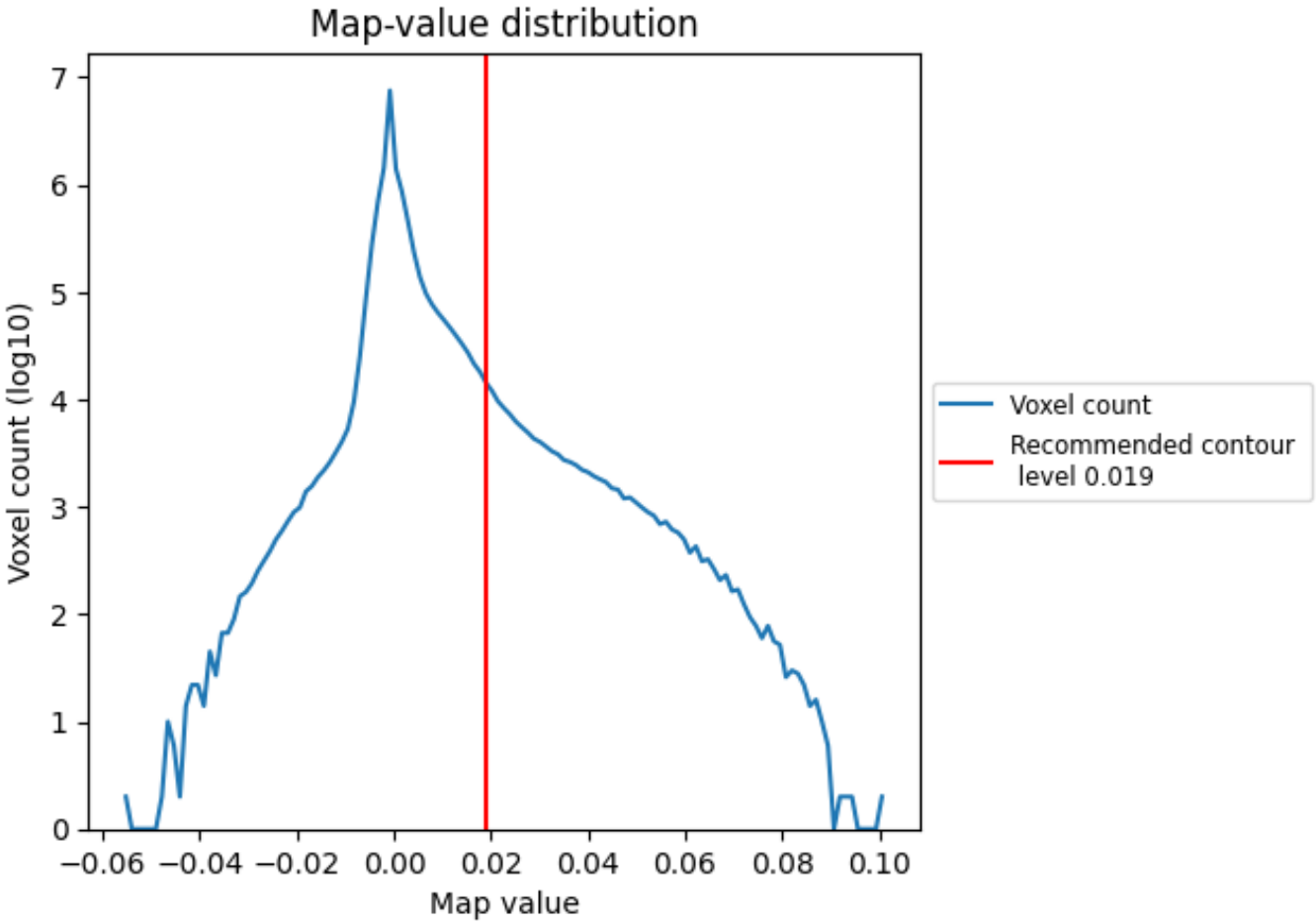
6.6 Mask visualisation (i)

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

7 Map analysis

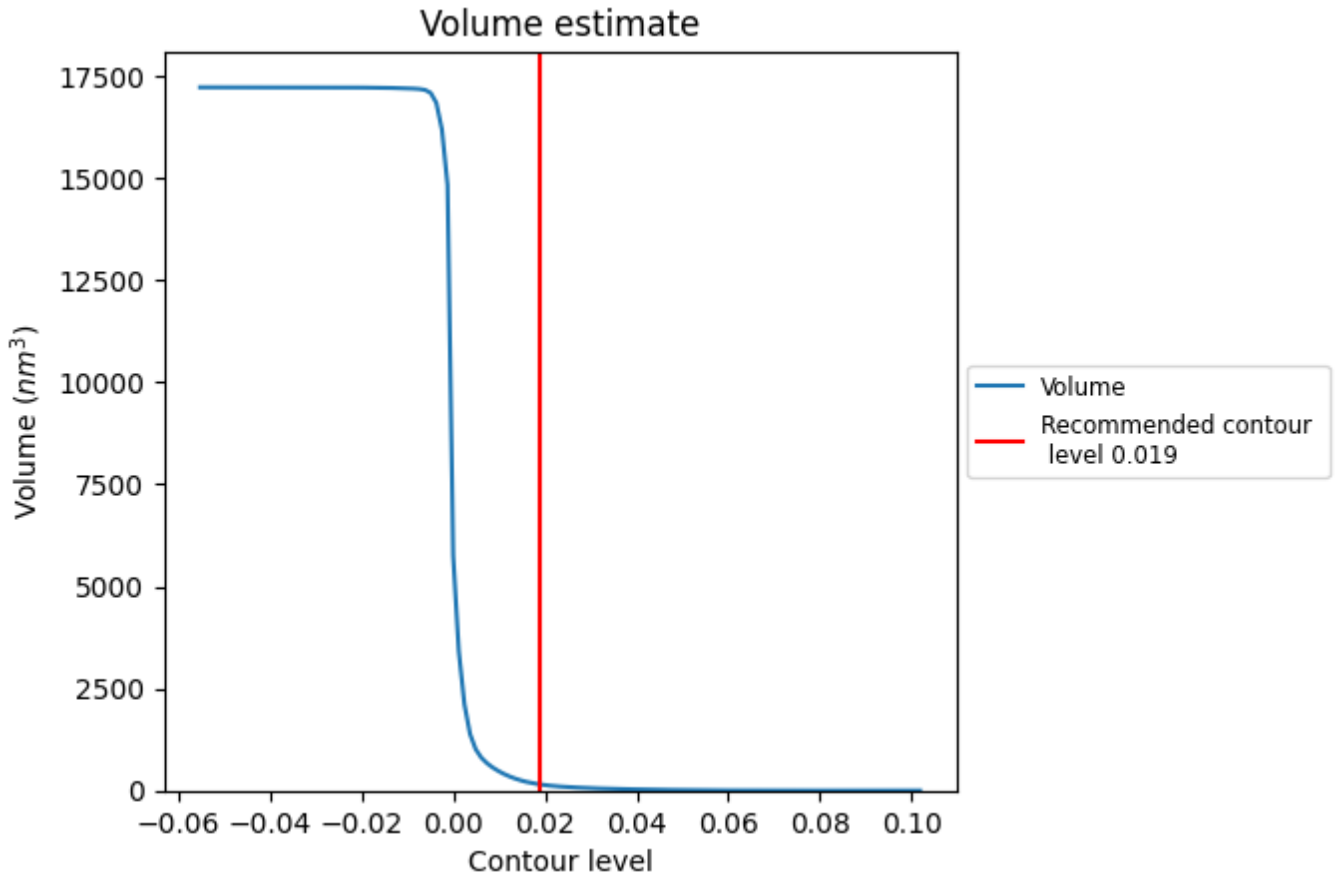
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

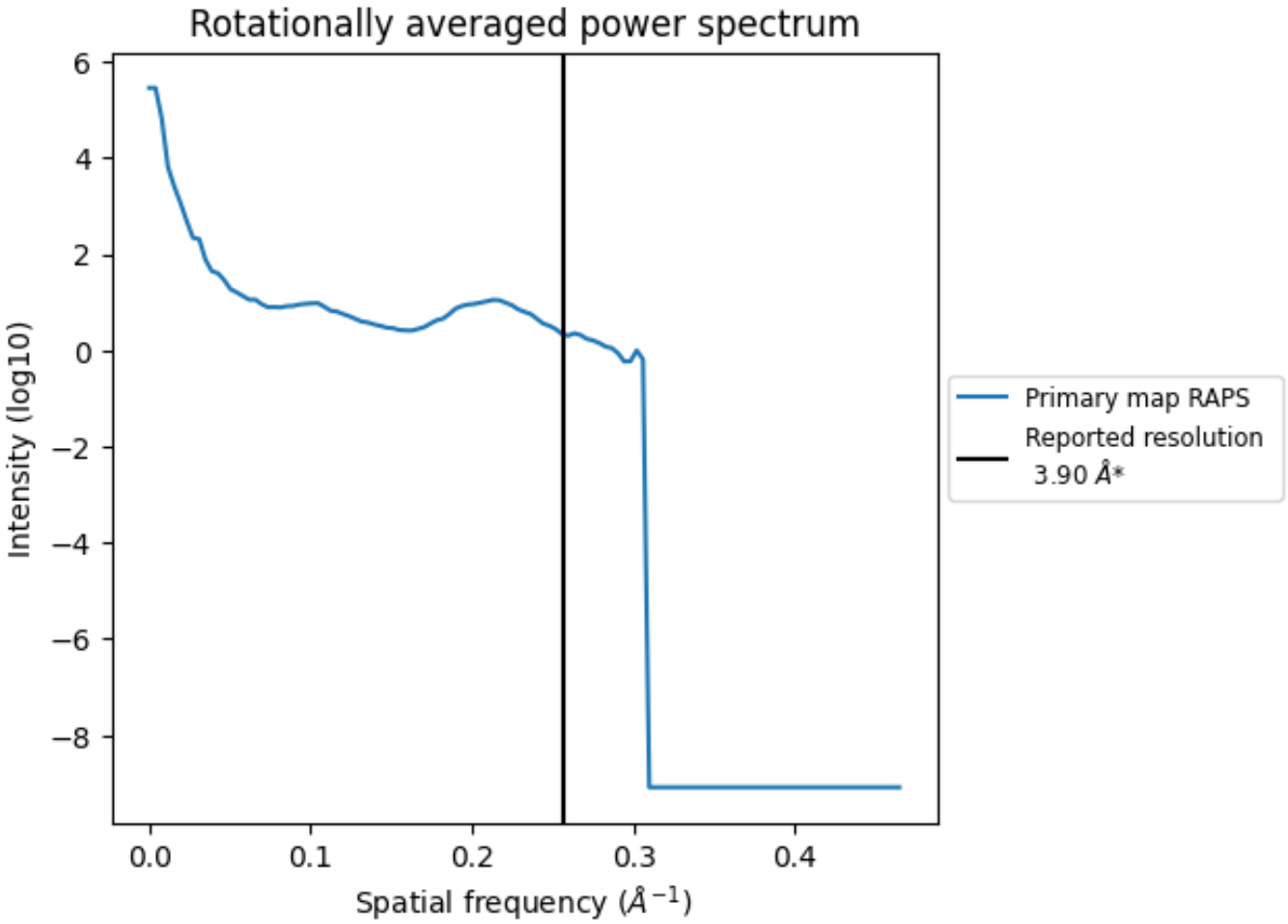
7.2 Volume estimate



The volume at the recommended contour level is 150 nm^3; this corresponds to an approximate mass of 135 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)

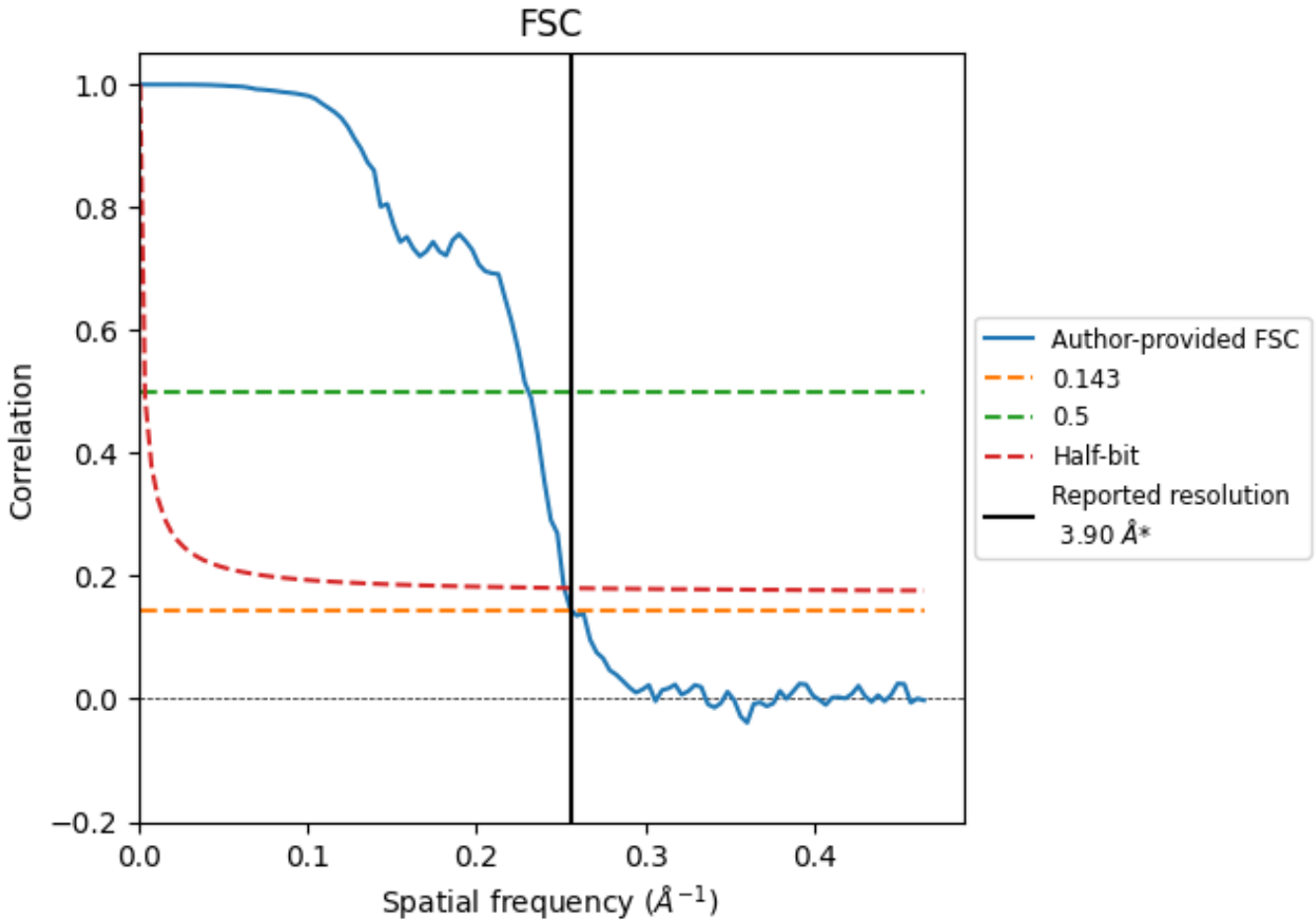


*Reported resolution corresponds to spatial frequency of 0.256 Å^{-1}

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.256 Å^{-1}

8.2 Resolution estimates (i)

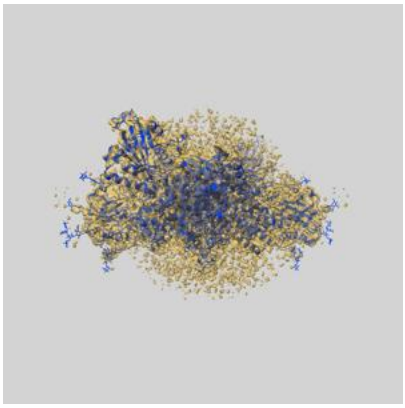
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.90	-	-
Author-provided FSC curve	3.90	4.33	3.97
Unmasked-calculated*	-	-	-

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

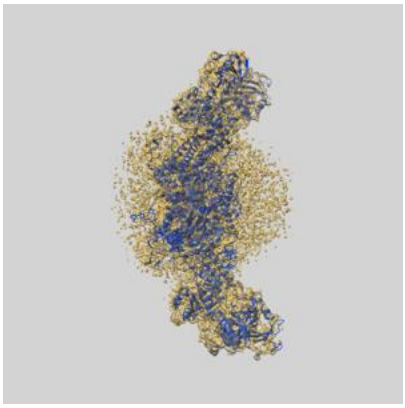
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-32898 and PDB model 7WYY. Per-residue inclusion information can be found in section 3 on page 10.

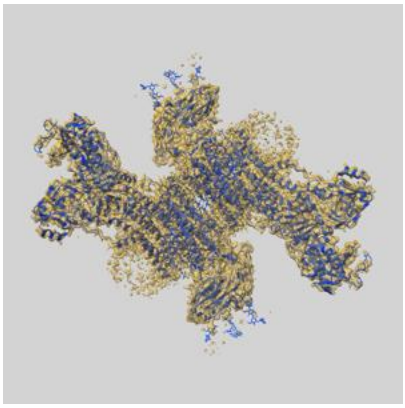
9.1 Map-model overlay



X



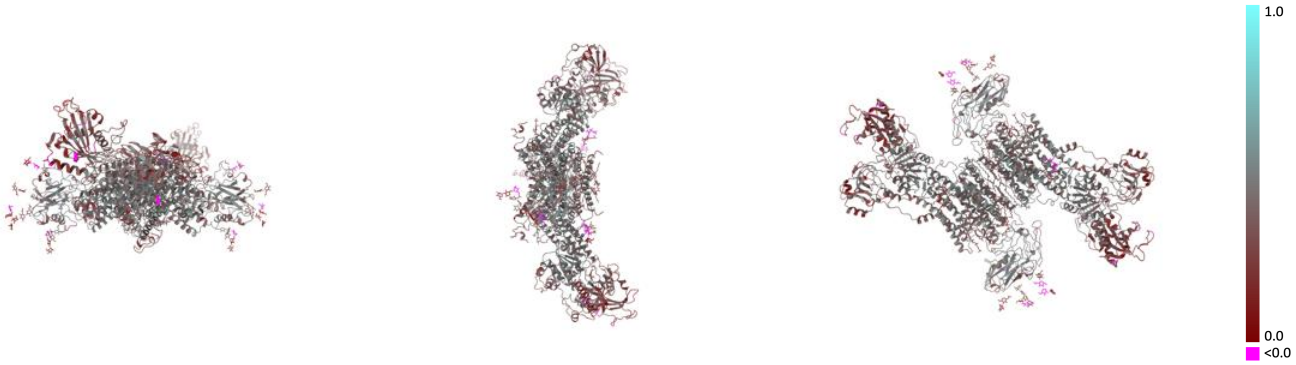
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.019 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

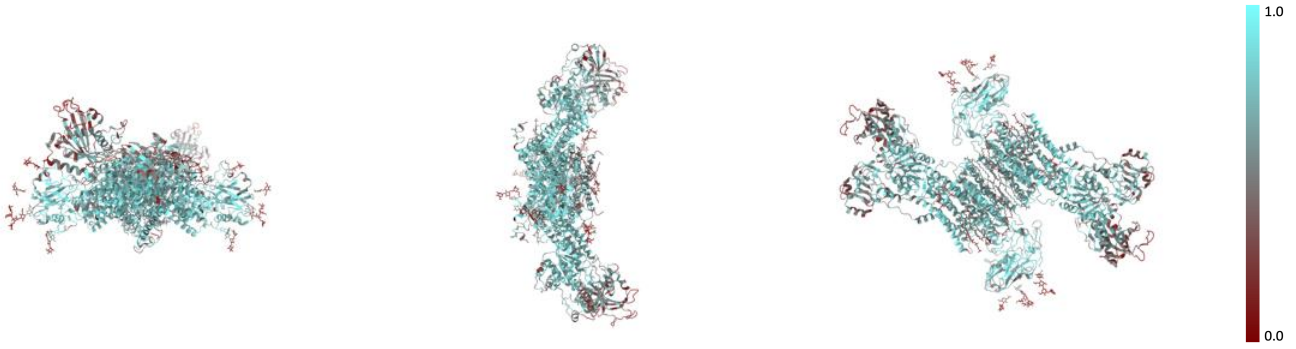
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

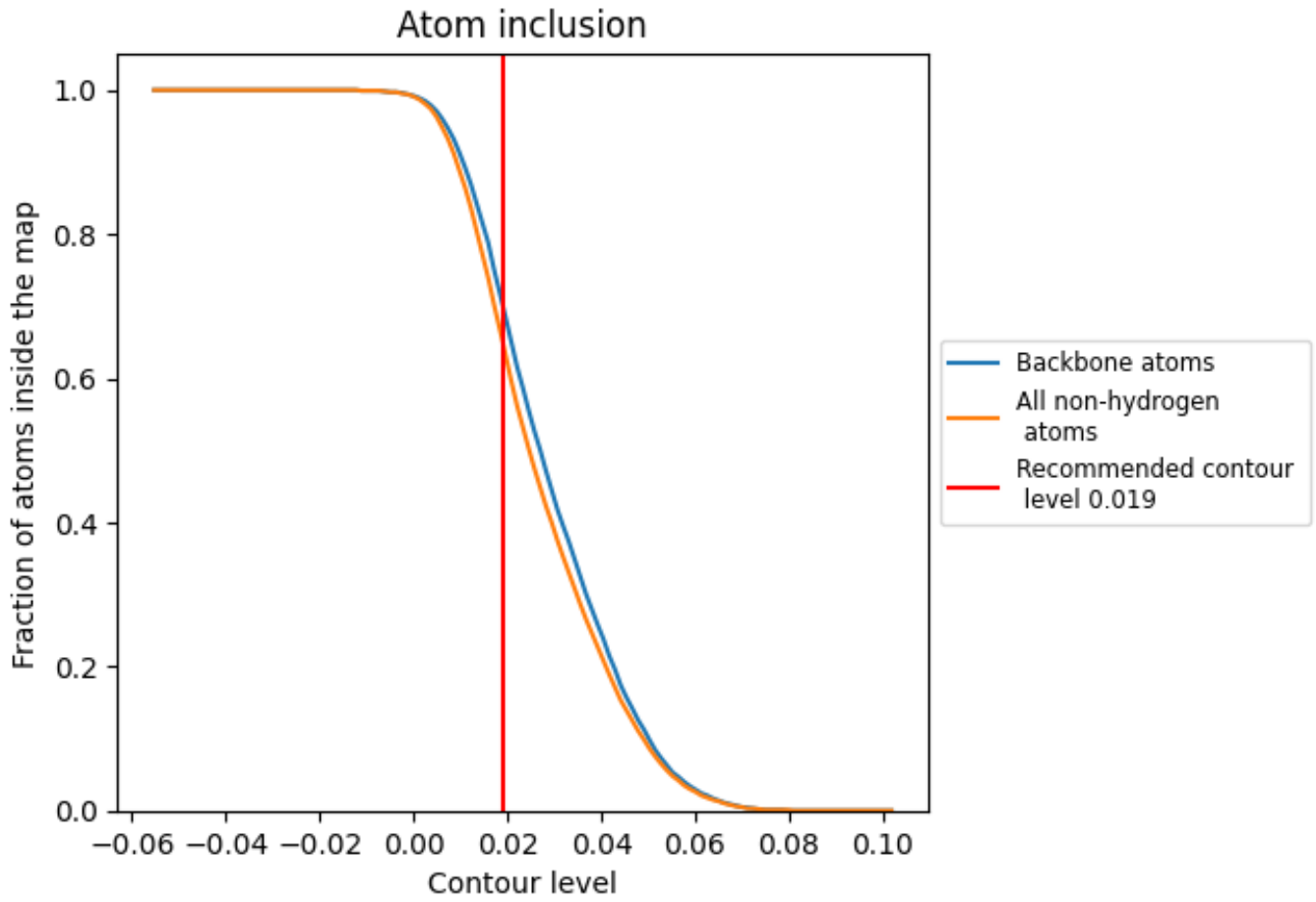
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.019).

9.4 Atom inclusion (i)



At the recommended contour level, 70% of all backbone atoms, 65% 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 (0.019) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6510	0.3930
A	0.6470	0.3910
B	0.7440	0.4280
C	0.6470	0.3900
D	0.7440	0.4330
E	0.5470	0.3710
F	0.3940	0.2090
G	0.5510	0.3740
H	0.1070	0.0420
I	0.1670	0.0970
J	0.1430	0.1530
K	0.4080	0.2150
L	0.1070	0.0510
M	0.1500	0.0790
N	0.1430	0.1360