Full wwPDB EM Validation Report

May 27, 2024 – 11:11 AM JST

PDB ID	:	7DXA
EMDB ID	:	EMD-30902
Title	:	PSII intermediate Psb28-RC47
Authors	:	Sui, S.F.; Shen, J.R.; Han, G.Y.; Xiao, Y.N.; Huang, G.Q.
Deposited on	:	2021-01-18
Resolution	:	3.14 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

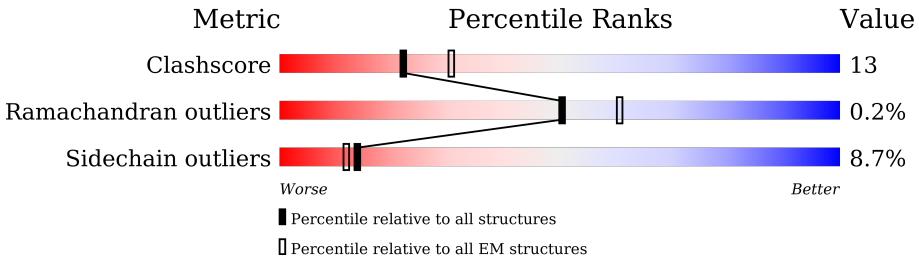
EMDB validation analysis	:	0.0.1.dev92
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36.2

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 3.14 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=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	116	59% 27% 9% 6%
2	B	56	75% 9% 5% 11%
3	a	360	76% 7% 17%
4	b	505	92% 6%
5	d	342	92% 7%
6	e	84	5% 71% 25%
7	f	45	62% 38%
8	h	65	89% 6% 5%

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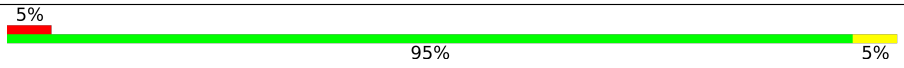
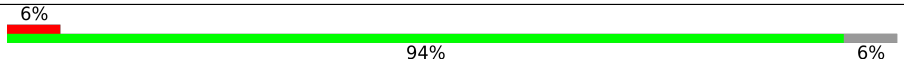
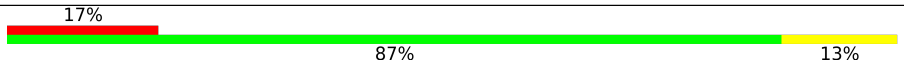
Mol	Chain	Length	Quality of chain
9	i	38	
10	l	37	
11	m	36	
12	t	32	
13	x	40	
14	C	23	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
16	CLA	a	402	X	-	-	-
16	CLA	b	602	X	-	-	-
16	CLA	b	603	X	-	-	-
16	CLA	b	604	X	-	-	-
16	CLA	b	605	X	-	-	-
16	CLA	b	606	X	-	-	-
16	CLA	b	607	X	-	-	-
16	CLA	b	610	X	-	-	-
16	CLA	b	612	X	-	-	-
16	CLA	b	613	X	-	-	-
16	CLA	b	614	X	-	-	-
16	CLA	b	615	X	-	-	-
16	CLA	b	616	X	-	-	-
16	CLA	d	401	X	-	-	-
16	CLA	d	404	X	-	-	-

2 Entry composition

There are 27 unique types of molecules in this entry. The entry contains 15162 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 Photosystem II reaction center Psb28 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	109	875	549	153	168	5	0	0

- Molecule 2 is a protein called Tsl0063 protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
2	B	50	365	237	65	63	0	0

- Molecule 3 is a protein called Photosystem II protein D1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	a	298	2311	1520	382	394	15	0	0

- Molecule 4 is a protein called Photosystem II CP47 reaction center protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	b	494	3886	2554	646	673	13	0	0

- Molecule 5 is a protein called Photosystem II D2 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	d	339	2694	1787	439	456	12	0	0

- Molecule 6 is a protein called Cytochrome b559 subunit alpha.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
6	e	63	509	334	81	94	0	0

- Molecule 7 is a protein called Cytochrome b559 subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	f	28	Total	C	N	O	S	0	0
			219	149	36	33	1		

- Molecule 8 is a protein called Photosystem II reaction center protein H.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	h	62	Total	C	N	O	S	0	0
			493	330	79	82	2		

- Molecule 9 is a protein called Photosystem II reaction center protein I.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	i	29	Total	C	N	O	S	0	0
			231	162	30	38	1		

- Molecule 10 is a protein called Photosystem II reaction center protein L.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	l	37	Total	C	N	O	S	0	0
			304	202	48	53	1		

- Molecule 11 is a protein called Photosystem II reaction center protein M.

Mol	Chain	Residues	Atoms				AltConf	Trace
11	m	31	Total	C	N	O	0	0
			244	165	36	43		

- Molecule 12 is a protein called Photosystem II reaction center protein T.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	t	30	Total	C	N	O	S	0	0
			254	179	36	37	2		

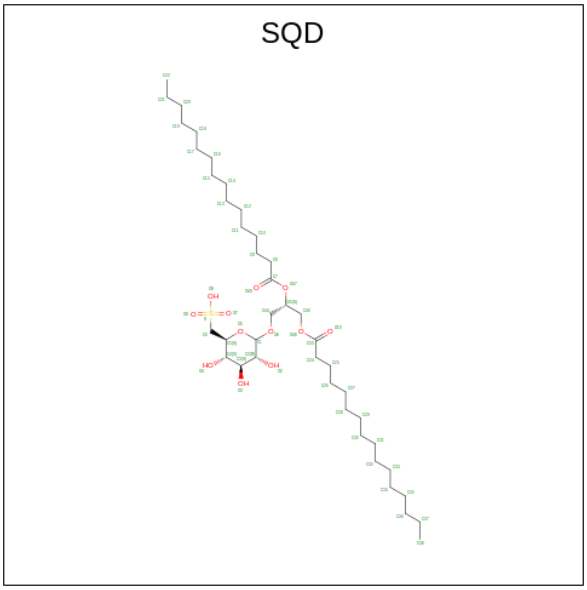
- Molecule 13 is a protein called Photosystem II reaction center protein X.

Mol	Chain	Residues	Atoms				AltConf	Trace
13	x	36	Total	C	N	O	0	0
			261	177	39	45		

- Molecule 14 is a protein called unidentified transmembrane protein.

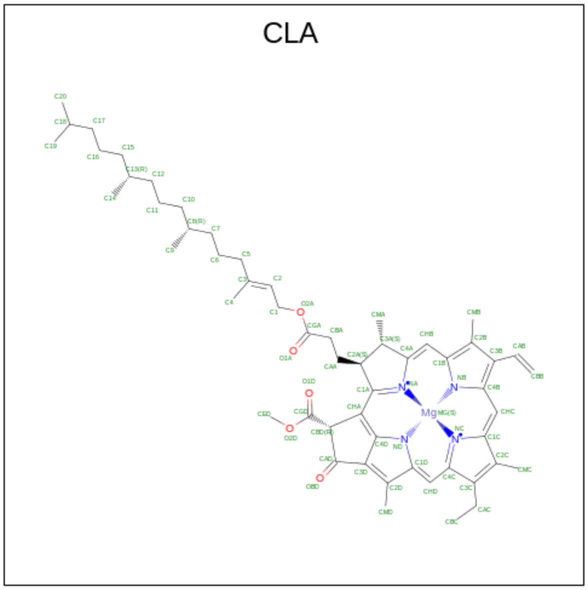
Mol	Chain	Residues	Atoms				AltConf	Trace
14	C	23	Total	C	N	O	0	0
			115	69	23	23		

- Molecule 15 is 1,2-DI-O-ACYL-3-O-[6-DEOXY-6-SULFO-ALPHA-D-GLUCOPYRANOSYL]-SN-GLYCEROL (three-letter code: SQD) (formula: $C_{41}H_{78}O_{12}S$).



Mol	Chain	Residues	Atoms				AltConf
15	a	1	Total	C	O	S	0
			26	13	12	1	
15	l	1	Total	C	O	S	0
			47	34	12	1	

- Molecule 16 is CHLOROPHYLL A (three-letter code: CLA) (formula: $C_{55}H_{72}MgN_4O_5$).



Mol	Chain	Residues	Atoms	AltConf
16	a	1	Total C Mg N O 65 55 1 4 5	0
16	a	1	Total C Mg N O 50 40 1 4 5	0
16	a	1	Total C Mg N O 50 40 1 4 5	0
16	b	1	Total C Mg N O 41 33 1 4 3	0
16	b	1	Total C Mg N O 65 55 1 4 5	0
16	b	1	Total C Mg N O 65 55 1 4 5	0
16	b	1	Total C Mg N O 65 55 1 4 5	0
16	b	1	Total C Mg N O 65 55 1 4 5	0
16	b	1	Total C Mg N O 65 55 1 4 5	0
16	b	1	Total C Mg N O 65 55 1 4 5	0
16	b	1	Total C Mg N O 65 55 1 4 5	0
16	b	1	Total C Mg N O 65 55 1 4 5	0
16	b	1	Total C Mg N O 65 55 1 4 5	0
16	b	1	Total C Mg N O 65 55 1 4 5	0

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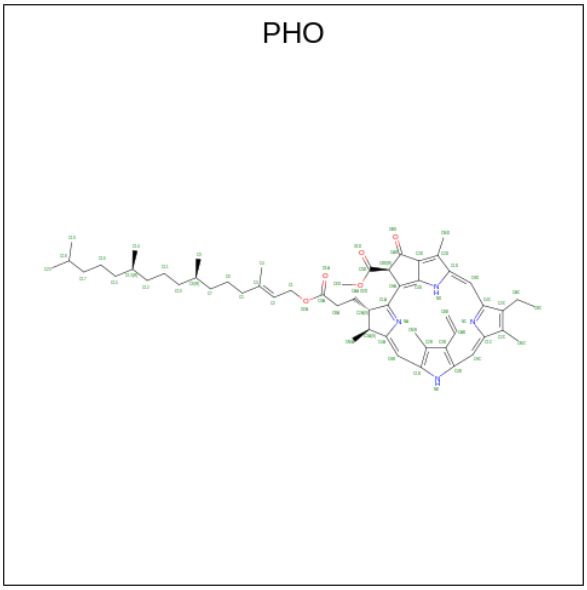
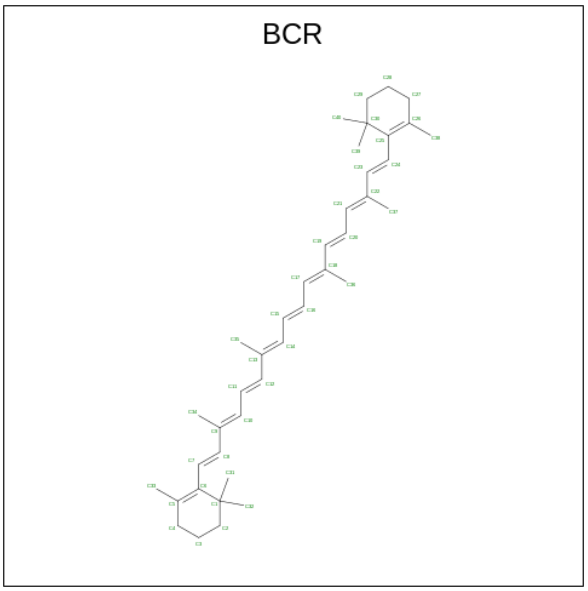
Mol	Chain	Residues	Atoms					AltConf
16	b	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
16	b	1	Total	C	Mg	N	O	0
			54	44	1	4	5	
16	b	1	Total	C	Mg	N	O	0
			52	42	1	4	5	
16	b	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
16	b	1	Total	C	Mg	N	O	0
			46	36	1	4	5	
16	d	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
16	d	1	Total	C	Mg	N	O	0
			61	51	1	4	5	
16	d	1	Total	C	Mg	N	O	0
			50	40	1	4	5	

- Molecule 17 is PHEOPHYTIN A (three-letter code: PHO) (formula: $C_{55}H_{74}N_4O_5$).



Mol	Chain	Residues	Atoms				AltConf
17	a	1	Total	C	N	O	0
			64	55	4	5	
17	a	1	Total	C	N	O	0
			64	55	4	5	

- Molecule 18 is BETA-CAROTENE (three-letter code: BCR) (formula: $C_{40}H_{56}$).

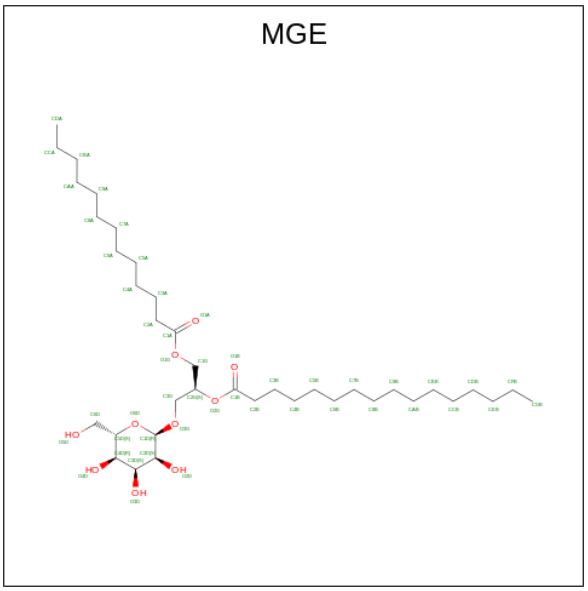


Mol	Chain	Residues	Atoms	AltConf
18	a	1	Total C 40 40	0
18	b	1	Total C 40 40	0
18	b	1	Total C 40 40	0
18	b	1	Total C 40 40	0
18	d	1	Total C 40 40	0
18	h	1	Total C 40 40	0

- Molecule 19 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	AltConf
19	a	1	Total Cl 1 1	0

- Molecule 20 is (1S)-2-(ALPHA-L-ALLOPYRANOSYLOXY)-1-[(TRIDECANOYLOXY)METHYL]ETHYL PALMITATE (three-letter code: MGE) (formula: $C_{38}H_{72}O_{10}$).

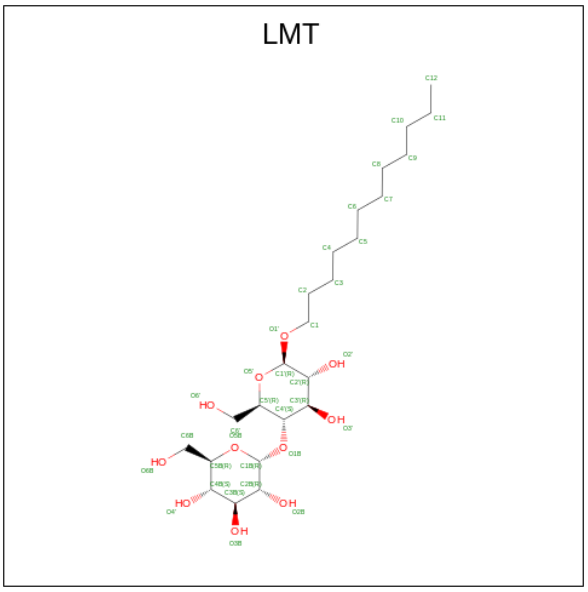


Mol	Chain	Residues	Atoms	AltConf
20	a	1	Total C O 48 38 10	0
20	b	1	Total C O 48 38 10	0
20	b	1	Total C O 48 38 10	0
20	d	1	Total C O 47 37 10	0
20	d	1	Total C O 41 31 10	0
20	d	1	Total C O 48 38 10	0
20	m	1	Total C O 48 38 10	0

- Molecule 21 is UNKNOWN LIGAND (three-letter code: UNL) (formula:).

Mol	Chain	Residues	Atoms	AltConf
21	b	1	Total C O 36 31 5	0
21	x	1	Total C O 17 16 1	0

- Molecule 22 is DODECYL-BETA-D-MALTOSIDE (three-letter code: LMT) (formula: $C_{24}H_{46}O_{11}$).

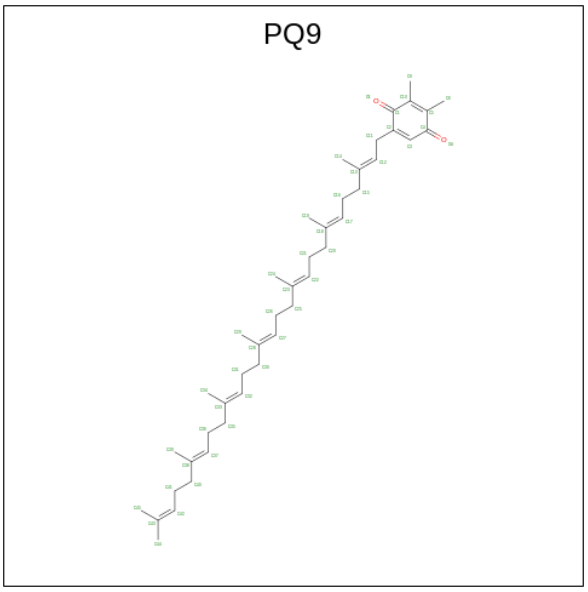


Mol	Chain	Residues	Atoms			AltConf
22	b	1	Total	C	O	0
			35	24	11	
22	d	1	Total	C	O	0
			35	24	11	
22	t	1	Total	C	O	0
			35	24	11	

- Molecule 23 is FE (II) ION (three-letter code: FE2) (formula: Fe).

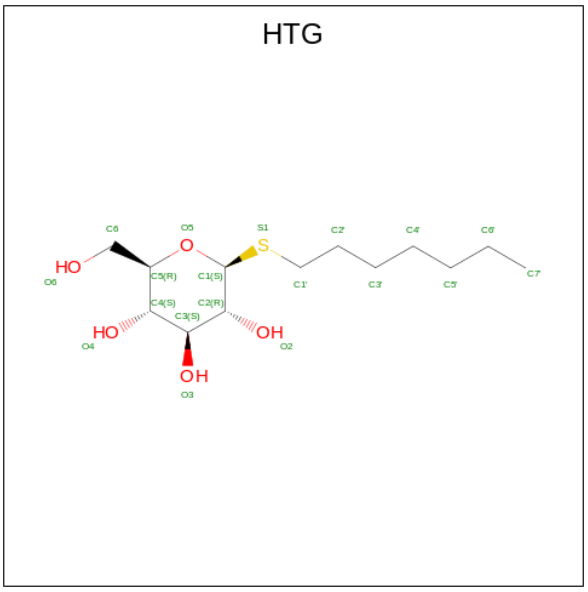
Mol	Chain	Residues	Atoms		AltConf
23	d	1	Total	Fe	0
			1	1	

- Molecule 24 is 5-[(2E,6E,10E,14E,18E,22E)-3,7,11,15,19,23,27-HEPTAMETHYLOCTACOSA-2,6,10,14,18,22,26-HEPTAENYL]-2,3-DIMETHYLBENZO-1,4-QUINONE (three-letter code: PQ9) (formula: $C_{43}H_{64}O_2$).



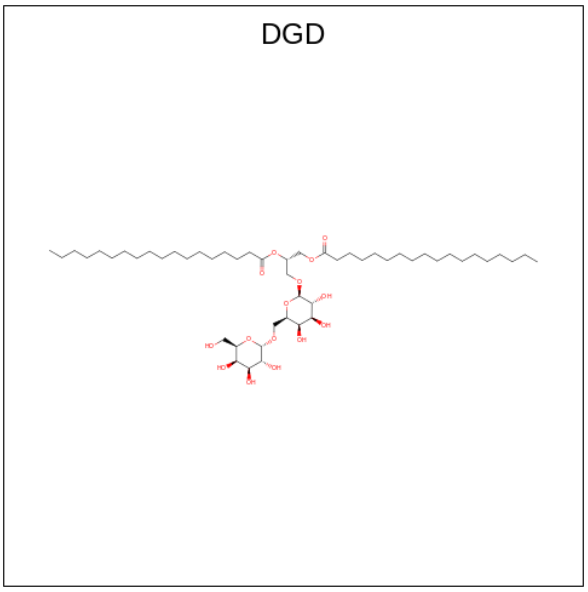
Mol	Chain	Residues	Atoms			AltConf
24	d	1	Total	C	O	0
			45	43	2	

- Molecule 25 is heptyl 1-thio-beta-D-glucopyranoside (three-letter code: HTG) (formula: $C_{13}H_{26}O_5S$).



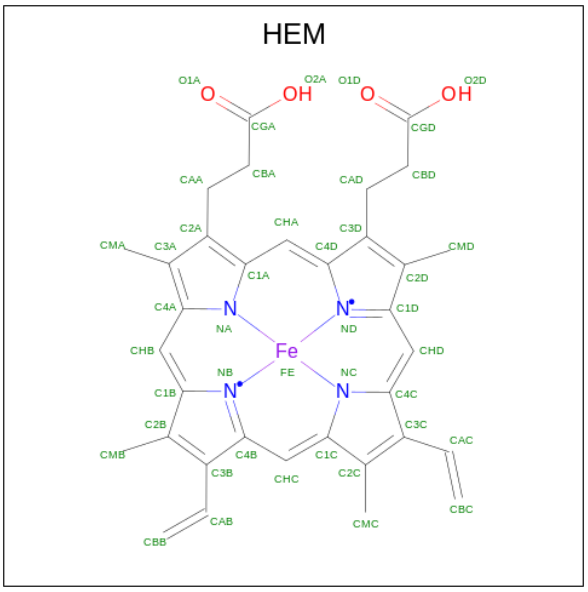
Mol	Chain	Residues	Atoms				AltConf
25	d	1	Total	C	O	S	0
			16	10	5	1	

- Molecule 26 is DIGALACTOSYL DIACYL GLYCEROL (DGDG) (three-letter code: DGD) (formula: $C_{51}H_{96}O_{15}$).



Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
26	d	1	54	39	15	0

- Molecule 27 is PROTOPORPHYRIN IX CONTAINING FE (three-letter code: HEM) (formula: $C_{34}H_{32}FeN_4O_4$).



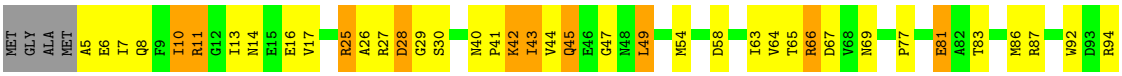
Mol	Chain	Residues	Atoms					AltConf
			Total	C	Fe	N	O	
27	e	1	43	34	1	4	4	0

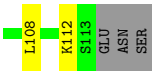
3 Residue-property plots (i)

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: Photosystem II reaction center Psb28 protein

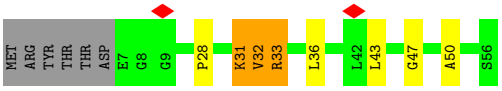
Chain A:





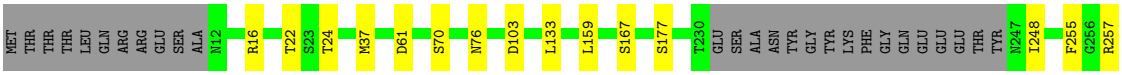
• Molecule 2: Tsl0063 protein

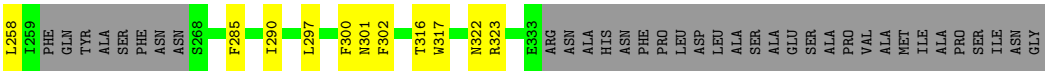
Chain B:



• Molecule 3: Photosystem II protein D1

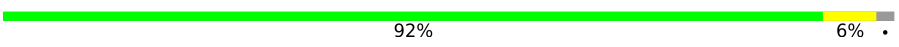
Chain a:





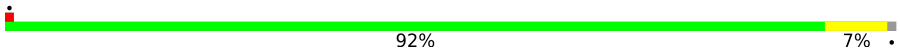
• Molecule 4: Photosystem II CP47 reaction center protein

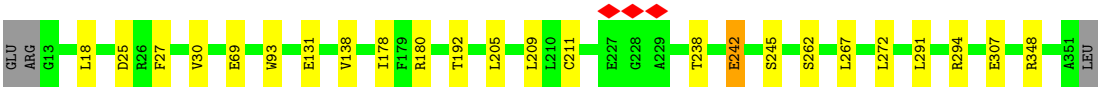
Chain b:



• Molecule 5: Photosystem II D2 protein

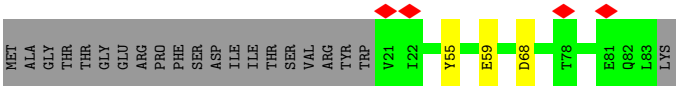
Chain d:





• Molecule 6: Cytochrome b559 subunit alpha

Chain e:



• Molecule 7: Cytochrome b559 subunit beta

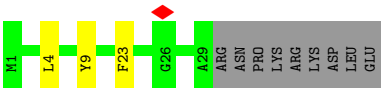
Chain f:

• Molecule 8: Photosystem II reaction center protein H

Chain h:

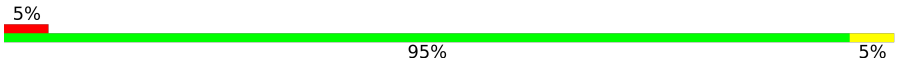
• Molecule 9: Photosystem II reaction center protein I

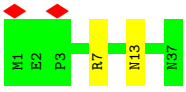
Chain i:



• Molecule 10: Photosystem II reaction center protein L

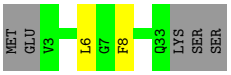
Chain l:



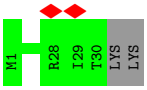


• Molecule 11: Photosystem II reaction center protein M

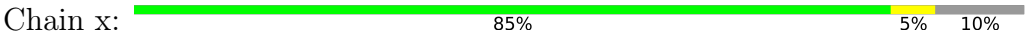
Chain m:

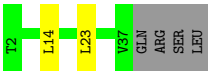


• Molecule 12: Photosystem II reaction center protein T

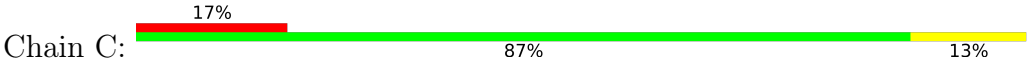


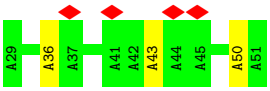
• Molecule 13: Photosystem II reaction center protein X





• Molecule 14: unidentified transmembrane protein





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	241790	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 ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.236	Depositor
Minimum map value	-0.149	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.022	Depositor
Map size (Å)	261.308, 261.308, 261.308	wwPDB
Map dimensions	200, 200, 200	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.30654, 1.30654, 1.30654	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: HTG, HEM, CLA, UNL, PQ9, CL, PHO, LMT, BCR, DGD, SQD, FE2, MGE

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	0.47	0/892	0.64	0/1202
2	B	0.36	0/371	0.60	0/505
3	a	0.48	0/2383	0.65	0/3249
4	b	0.52	0/4025	0.64	3/5486 (0.1%)
5	d	0.54	0/2789	0.67	1/3803 (0.0%)
6	e	0.43	0/523	0.66	0/714
7	f	0.35	0/225	0.68	0/308
8	h	0.46	0/506	0.75	1/690 (0.1%)
9	i	0.42	0/237	0.62	0/322
10	l	0.46	0/311	0.59	0/422
11	m	0.41	0/248	0.64	0/339
12	t	0.40	0/263	0.55	0/356
13	x	0.32	0/264	0.64	0/358
14	C	0.18	0/114	0.44	0/158
All	All	0.49	0/13151	0.65	5/17912 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
5	d	0	1
6	e	0	1
All	All	0	2

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	b	145	LEU	CB-CG-CD1	-7.36	98.48	111.00
8	h	53	LEU	CA-CB-CG	6.79	130.91	115.30
5	d	267	LEU	CB-CG-CD1	-5.99	100.82	111.00
4	b	315	ILE	CG1-CB-CG2	-5.53	99.24	111.40
4	b	242	ILE	CG1-CB-CG2	-5.23	99.90	111.40

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
5	d	93	TRP	Peptide
6	e	68	ASP	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	875	0	839	38	0
2	B	365	0	386	30	0
3	a	2311	0	2244	0	0
4	b	3886	0	3741	0	0
5	d	2694	0	2588	0	0
6	e	509	0	499	0	0
7	f	219	0	228	0	0
8	h	493	0	513	0	0
9	i	231	0	243	0	0
10	l	304	0	316	0	0
11	m	244	0	256	0	0
12	t	254	0	257	0	0
13	x	261	0	291	0	0
14	C	115	0	114	10	0
15	a	26	0	16	0	0
15	l	47	0	61	0	0
16	a	165	0	150	0	0
16	b	973	0	1017	0	0
16	d	176	0	172	0	0
17	a	128	0	148	0	0
18	a	40	0	56	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
18	b	120	0	168	0	0
18	d	40	0	56	0	0
18	h	40	0	56	0	0
19	a	1	0	0	0	0
20	a	48	0	72	0	0
20	b	96	0	144	0	0
20	d	136	0	193	0	0
20	m	48	0	72	0	0
21	b	36	0	0	0	0
21	x	17	0	0	0	0
22	b	35	0	46	0	0
22	d	35	0	46	0	0
22	t	35	0	46	0	0
23	d	1	0	0	0	0
24	d	45	0	64	0	0
25	d	16	0	17	0	0
26	d	54	0	66	0	0
27	e	43	0	30	0	0
All	All	15162	0	15211	68	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 13.

All (68) 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)
2:B:28:PRO:HA	2:B:31:LYS:CG	1.25	1.62
2:B:28:PRO:HA	2:B:31:LYS:CD	1.71	1.20
2:B:28:PRO:CA	2:B:31:LYS:CG	2.20	1.19
2:B:28:PRO:HA	2:B:31:LYS:HG2	1.20	1.13
2:B:28:PRO:HA	2:B:31:LYS:HG3	1.27	1.06
1:A:16:GLU:OE1	1:A:42:LYS:NZ	1.93	1.01
2:B:28:PRO:O	2:B:32:VAL:HG12	1.61	1.01
2:B:28:PRO:CA	2:B:31:LYS:CD	2.40	0.95
1:A:6:GLU:CD	1:A:14:ASN:HB3	1.90	0.91
1:A:6:GLU:OE1	1:A:14:ASN:HB3	1.74	0.88
2:B:50:ALA:HB3	14:C:36:ALA:CB	2.04	0.86
2:B:28:PRO:C	2:B:31:LYS:HG3	1.97	0.84
1:A:5:ALA:N	1:A:58:ASP:HA	1.93	0.84
1:A:25:ARG:HE	1:A:29:GLY:HA2	1.42	0.83
2:B:28:PRO:HB3	2:B:31:LYS:HD2	1.59	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:28:PRO:CA	2:B:31:LYS:HG3	1.95	0.81
2:B:28:PRO:O	2:B:31:LYS:HG3	1.83	0.79
2:B:28:PRO:O	2:B:32:VAL:CG1	2.31	0.79
2:B:50:ALA:HB3	14:C:36:ALA:HB2	1.66	0.77
2:B:28:PRO:CB	2:B:31:LYS:CD	2.64	0.76
1:A:6:GLU:OE2	1:A:14:ASN:HB3	1.88	0.73
2:B:28:PRO:CA	2:B:31:LYS:HG2	2.05	0.72
1:A:44:VAL:HG13	1:A:77:PRO:HB2	1.72	0.72
2:B:50:ALA:CB	14:C:36:ALA:HB2	2.19	0.71
2:B:28:PRO:CB	2:B:31:LYS:HD2	2.21	0.70
1:A:6:GLU:OE2	1:A:14:ASN:CG	2.30	0.70
1:A:69:ASN:ND2	1:A:81:GLU:OE1	2.26	0.69
2:B:50:ALA:HB3	14:C:36:ALA:HB1	1.75	0.69
2:B:28:PRO:HB3	2:B:31:LYS:CD	2.22	0.69
1:A:43:ILE:HD12	1:A:43:ILE:O	1.92	0.69
1:A:11:ARG:CB	1:A:11:ARG:HH21	2.10	0.65
2:B:43:LEU:HB3	14:C:43:ALA:HB2	1.79	0.65
1:A:6:GLU:OE2	1:A:14:ASN:CB	2.46	0.64
1:A:11:ARG:HH21	1:A:11:ARG:CG	2.12	0.62
1:A:41:PRO:O	1:A:45:GLN:HG2	2.00	0.62
1:A:44:VAL:CG1	1:A:77:PRO:HB2	2.29	0.61
1:A:8:GLN:NE2	1:A:13:ILE:O	2.34	0.61
2:B:28:PRO:CA	2:B:31:LYS:HD2	2.27	0.61
1:A:5:ALA:N	1:A:58:ASP:CA	2.58	0.59
1:A:81:GLU:O	1:A:81:GLU:HG2	2.02	0.59
1:A:41:PRO:O	1:A:45:GLN:CG	2.53	0.57
2:B:28:PRO:CB	2:B:31:LYS:HD3	2.33	0.57
1:A:42:LYS:HA	1:A:45:GLN:HG3	1.86	0.57
2:B:28:PRO:CA	2:B:31:LYS:HD3	2.34	0.56
2:B:36:LEU:HB3	14:C:50:ALA:HB2	1.86	0.56
1:A:10:ILE:HD11	1:A:43:ILE:CD1	2.38	0.54
1:A:10:ILE:HG21	1:A:49:LEU:HB3	1.90	0.54
1:A:6:GLU:OE2	1:A:14:ASN:ND2	2.43	0.51
1:A:26:ALA:C	1:A:28:ASP:H	2.14	0.50
1:A:11:ARG:CG	1:A:11:ARG:NH2	2.73	0.50
1:A:8:GLN:HB2	1:A:13:ILE:O	2.12	0.49
1:A:44:VAL:HG12	1:A:44:VAL:O	2.12	0.48
1:A:11:ARG:NH2	1:A:11:ARG:HG2	2.29	0.47
1:A:44:VAL:HG13	1:A:77:PRO:CB	2.42	0.45
2:B:33:ARG:O	14:C:50:ALA:HB1	2.16	0.45
2:B:47:GLY:O	14:C:36:ALA:HB1	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:67:ASP:OD2	1:A:83:THR:HB	2.17	0.44
2:B:31:LYS:HE3	2:B:31:LYS:HB2	1.55	0.44
1:A:42:LYS:HE3	1:A:42:LYS:HB2	1.59	0.44
1:A:26:ALA:C	1:A:28:ASP:N	2.71	0.44
1:A:10:ILE:HD11	1:A:43:ILE:HD11	2.00	0.43
1:A:64:VAL:HG21	1:A:66:ARG:HH21	1.84	0.42
2:B:36:LEU:HB3	14:C:50:ALA:CB	2.50	0.42
2:B:50:ALA:HB1	14:C:36:ALA:HB2	1.99	0.41
1:A:86:MET:HG2	1:A:92:TRP:HE3	1.85	0.41
1:A:17:VAL:HG21	1:A:41:PRO:HA	2.04	0.40
1:A:44:VAL:HG13	1:A:77:PRO:CG	2.52	0.40
1:A:49:LEU:HD12	1:A:49:LEU:HA	1.78	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	107/116 (92%)	91 (85%)	15 (14%)	1 (1%)	17 50
2	B	48/56 (86%)	47 (98%)	1 (2%)	0	100 100
3	a	292/360 (81%)	272 (93%)	20 (7%)	0	100 100
4	b	492/505 (97%)	466 (95%)	25 (5%)	1 (0%)	47 78
5	d	337/342 (98%)	323 (96%)	13 (4%)	1 (0%)	41 72
6	e	61/84 (73%)	53 (87%)	8 (13%)	0	100 100
7	f	26/45 (58%)	26 (100%)	0	0	100 100
8	h	60/65 (92%)	57 (95%)	3 (5%)	0	100 100
9	i	27/38 (71%)	26 (96%)	1 (4%)	0	100 100
10	l	35/37 (95%)	33 (94%)	2 (6%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
11	m	29/36 (81%)	27 (93%)	2 (7%)	0	100 100
12	t	28/32 (88%)	27 (96%)	1 (4%)	0	100 100
13	x	34/40 (85%)	34 (100%)	0	0	100 100
14	C	21/23 (91%)	20 (95%)	1 (5%)	0	100 100
All	All	1597/1779 (90%)	1502 (94%)	92 (6%)	3 (0%)	50 78

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
5	d	242	GLU
1	A	47	GLY
4	b	387	GLU

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	92/97 (95%)	71 (77%)	21 (23%)	1 3
2	B	36/42 (86%)	33 (92%)	3 (8%)	11 36
3	a	237/290 (82%)	211 (89%)	26 (11%)	6 23
4	b	392/403 (97%)	365 (93%)	27 (7%)	15 43
5	d	272/277 (98%)	250 (92%)	22 (8%)	11 36
6	e	55/73 (75%)	53 (96%)	2 (4%)	35 66
7	f	22/39 (56%)	22 (100%)	0	100 100
8	h	53/54 (98%)	50 (94%)	3 (6%)	20 49
9	i	26/35 (74%)	23 (88%)	3 (12%)	5 21
10	l	35/35 (100%)	33 (94%)	2 (6%)	20 49
11	m	28/33 (85%)	26 (93%)	2 (7%)	14 42
12	t	26/29 (90%)	26 (100%)	0	100 100
13	x	29/33 (88%)	27 (93%)	2 (7%)	15 43

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	1303/1440 (90%)	1190 (91%)	113 (9%)	14 34

All (113) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	7	ILE
1	A	10	ILE
1	A	11	ARG
1	A	25	ARG
1	A	27	ARG
1	A	28	ASP
1	A	30	SER
1	A	40	ASN
1	A	42	LYS
1	A	43	ILE
1	A	45	GLN
1	A	49	LEU
1	A	54	MET
1	A	63	ILE
1	A	65	THR
1	A	66	ARG
1	A	81	GLU
1	A	87	ARG
1	A	94	ARG
1	A	108	LEU
1	A	112	LYS
2	B	31	LYS
2	B	32	VAL
2	B	33	ARG
3	a	16	ARG
3	a	22	THR
3	a	24	THR
3	a	37	MET
3	a	61	ASP
3	a	70	SER
3	a	76	ASN
3	a	103	ASP
3	a	133	LEU
3	a	159	LEU
3	a	167	SER
3	a	177	SER
3	a	248	ILE

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Mol	Chain	Res	Type
3	a	255	PHE
3	a	257	ARG
3	a	258	LEU
3	a	285	PHE
3	a	290	ILE
3	a	297	LEU
3	a	300	PHE
3	a	301	ASN
3	a	302	PHE
3	a	316	THR
3	a	317	TRP
3	a	322	ASN
3	a	323	ARG
4	b	57	ARG
4	b	63	LEU
4	b	84	THR
4	b	87	ASP
4	b	116	VAL
4	b	128	THR
4	b	137	LYS
4	b	178	VAL
4	b	201	HIS
4	b	225	LEU
4	b	229	LEU
4	b	230	ARG
4	b	240	SER
4	b	321	LYS
4	b	357	ARG
4	b	362	PHE
4	b	365	SER
4	b	378	LYS
4	b	387	GLU
4	b	388	SER
4	b	392	PHE
4	b	416	THR
4	b	436	THR
4	b	440	ASP
4	b	446	SER
4	b	476	ARG
4	b	489	GLU
5	d	18	LEU
5	d	25	ASP

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Mol	Chain	Res	Type
5	d	27	PHE
5	d	30	VAL
5	d	69	GLU
5	d	131	GLU
5	d	138	VAL
5	d	178	ILE
5	d	180	ARG
5	d	192	THR
5	d	205	LEU
5	d	209	LEU
5	d	211	CYS
5	d	238	THR
5	d	242	GLU
5	d	245	SER
5	d	262	SER
5	d	272	LEU
5	d	291	LEU
5	d	294	ARG
5	d	307	GLU
5	d	348	ARG
6	e	55	TYR
6	e	59	GLU
8	h	20	LYS
8	h	21	VAL
8	h	49	TYR
9	i	4	LEU
9	i	9	TYR
9	i	23	PHE
10	l	7	ARG
10	l	13	ASN
11	m	6	LEU
11	m	8	PHE
13	x	14	LEU
13	x	23	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (18) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	69	ASN
1	A	76	GLN
2	B	30	GLN
3	a	19	ASN

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Mol	Chain	Res	Type
3	a	190	HIS
3	a	272	HIS
3	a	322	ASN
3	a	332	HIS
4	b	14	ASN
4	b	179	GLN
4	b	223	GLN
4	b	331	ASN
4	b	395	GLN
4	b	455	HIS
4	b	490	GLN
5	d	98	GLN
5	d	129	GLN
5	d	332	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

Of 50 ligands modelled in this entry, 2 are monoatomic and 2 are unknown - leaving 46 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	$\#\|Z\|>2$
18	BCR	d	407	-	41,41,41	0.71	0	56,56,56	1.60	12 (21%)
22	LMT	d	402	-	36,36,36	0.41	0	47,47,47	0.87	1 (2%)
16	CLA	b	613	-	54,62,73	2.14	16 (29%)	62,99,113	2.53	21 (33%)
16	CLA	b	610	-	65,73,73	2.13	16 (24%)	76,113,113	2.47	20 (26%)
16	CLA	b	603	-	65,73,73	2.03	16 (24%)	76,113,113	2.53	24 (31%)
16	CLA	b	615	-	65,73,73	2.11	16 (24%)	76,113,113	2.37	25 (32%)
16	CLA	b	607	-	65,73,73	2.22	15 (23%)	76,113,113	2.08	24 (31%)
16	CLA	a	403	-	50,58,73	2.10	11 (22%)	58,95,113	4.54	30 (51%)
20	MGE	a	409	-	48,48,48	0.98	2 (4%)	56,56,56	1.05	4 (7%)
16	CLA	b	612	-	65,73,73	2.12	15 (23%)	76,113,113	2.54	21 (27%)
16	CLA	b	602	-	65,73,73	2.12	13 (20%)	76,113,113	2.30	27 (35%)
20	MGE	b	622	-	48,48,48	0.96	2 (4%)	56,56,56	1.38	8 (14%)
16	CLA	d	401	-	65,73,73	1.97	17 (26%)	76,113,113	2.17	22 (28%)
18	BCR	b	618	-	41,41,41	0.68	0	56,56,56	1.87	16 (28%)
18	BCR	b	619	-	41,41,41	0.73	0	56,56,56	1.99	16 (28%)
15	SQD	l	101	-	46,47,54	1.31	4 (8%)	55,58,65	3.92	10 (18%)
18	BCR	h	101	-	41,41,41	0.81	0	56,56,56	2.03	16 (28%)
16	CLA	d	404	-	61,69,73	1.95	8 (13%)	71,108,113	3.91	31 (43%)
22	LMT	b	623	-	36,36,36	0.44	0	47,47,47	0.84	1 (2%)
16	CLA	b	609	-	65,73,73	2.25	18 (27%)	76,113,113	1.98	19 (25%)
18	BCR	b	617	-	41,41,41	0.76	0	56,56,56	1.70	16 (28%)
24	PQ9	d	406	-	45,45,45	0.75	1 (2%)	56,57,57	1.44	10 (17%)
27	HEM	e	101	-	41,50,50	1.34	5 (12%)	45,82,82	1.86	10 (22%)
16	CLA	b	604	-	65,73,73	2.09	16 (24%)	76,113,113	2.52	24 (31%)
15	SQD	a	401	-	25,26,54	1.70	4 (16%)	34,37,65	5.07	11 (32%)
20	MGE	b	620	-	48,48,48	0.96	2 (4%)	56,56,56	1.37	5 (8%)
20	MGE	d	410	-	48,48,48	0.98	3 (6%)	56,56,56	1.56	11 (19%)
26	DGD	d	412	-	55,55,67	0.93	2 (3%)	69,69,81	1.18	4 (5%)
16	CLA	b	611	-	65,73,73	2.08	14 (21%)	76,113,113	2.31	26 (34%)
20	MGE	m	101	-	48,48,48	1.01	3 (6%)	56,56,56	1.10	3 (5%)
20	MGE	d	409	-	41,41,48	1.06	2 (4%)	49,49,56	1.46	9 (18%)
16	CLA	a	406	-	50,58,73	2.23	11 (22%)	58,95,113	4.59	31 (53%)
16	CLA	b	608	-	65,73,73	2.06	17 (26%)	76,113,113	2.16	23 (30%)
16	CLA	b	614	-	52,60,73	2.10	16 (30%)	60,97,113	3.20	31 (51%)
18	BCR	a	407	-	41,41,41	0.72	0	56,56,56	2.37	20 (35%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
16	CLA	b	601	-	41,49,73	2.45	13 (31%)	47,84,113	5.23	25 (53%)
16	CLA	b	616	-	46,54,73	2.57	18 (39%)	53,90,113	2.77	23 (43%)
17	PHO	a	404	-	51,69,69	1.16	6 (11%)	47,99,99	1.35	9 (19%)
17	PHO	a	405	-	51,69,69	1.07	5 (9%)	47,99,99	1.59	9 (19%)
16	CLA	d	405	-	50,58,73	2.14	12 (24%)	58,95,113	4.30	27 (46%)
20	MGE	d	408	-	47,47,48	0.96	2 (4%)	55,55,56	1.20	6 (10%)
16	CLA	b	606	-	65,73,73	2.42	19 (29%)	76,113,113	2.49	24 (31%)
22	LMT	t	101	-	36,36,36	0.46	0	47,47,47	1.09	4 (8%)
16	CLA	b	605	-	65,73,73	1.90	14 (21%)	76,113,113	2.55	25 (32%)
16	CLA	a	402	-	65,73,73	1.90	14 (21%)	76,113,113	2.30	24 (31%)
25	HTG	d	411	-	16,16,19	1.18	2 (12%)	20,21,24	1.68	1 (5%)

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
18	BCR	d	407	-	-	8/29/63/63	0/2/2/2
22	LMT	d	402	-	-	4/21/61/61	0/2/2/2
16	CLA	b	613	-	1/1/12/20	0/24/102/115	-
16	CLA	b	610	-	1/1/15/20	4/37/115/115	-
16	CLA	b	603	-	1/1/15/20	4/37/115/115	-
16	CLA	b	615	-	1/1/15/20	9/37/115/115	-
16	CLA	a	403	-	-	3/19/97/115	-
16	CLA	b	607	-	1/1/15/20	2/37/115/115	-
20	MGE	a	409	-	-	13/43/63/63	0/1/1/1
16	CLA	b	612	-	1/1/15/20	7/37/115/115	-
16	CLA	b	602	-	1/1/15/20	4/37/115/115	-
20	MGE	b	622	-	-	15/43/63/63	0/1/1/1
16	CLA	d	401	-	1/1/15/20	5/37/115/115	-
18	BCR	b	618	-	-	2/29/63/63	0/2/2/2
18	BCR	b	619	-	-	0/29/63/63	0/2/2/2
15	SQD	l	101	-	-	14/42/62/69	0/1/1/1
18	BCR	h	101	-	-	11/29/63/63	0/2/2/2
16	CLA	d	404	-	1/1/14/20	9/33/111/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
22	LMT	b	623	-	-	1/21/61/61	0/2/2/2
16	CLA	b	609	-	-	0/37/115/115	-
18	BCR	b	617	-	-	0/29/63/63	0/2/2/2
24	PQ9	d	406	-	-	8/41/61/61	0/1/1/1
27	HEM	e	101	-	-	4/12/54/54	-
16	CLA	b	604	-	1/1/15/20	7/37/115/115	-
15	SQD	a	401	-	-	4/19/39/69	0/1/1/1
20	MGE	b	620	-	-	13/43/63/63	0/1/1/1
20	MGE	d	410	-	-	13/43/63/63	0/1/1/1
26	DGD	d	412	-	-	9/43/83/95	0/2/2/2
16	CLA	b	611	-	-	6/37/115/115	-
20	MGE	m	101	-	-	8/43/63/63	0/1/1/1
20	MGE	d	409	-	-	6/36/56/63	0/1/1/1
16	CLA	b	614	-	1/1/12/20	9/22/100/115	-
16	CLA	a	406	-	-	6/19/97/115	-
16	CLA	b	608	-	-	1/37/115/115	-
18	BCR	a	407	-	-	9/29/63/63	0/2/2/2
16	CLA	b	601	-	-	2/8/86/115	-
16	CLA	b	616	-	1/1/11/20	2/15/93/115	-
17	PHO	a	404	-	-	13/37/103/103	0/5/6/6
17	PHO	a	405	-	-	10/37/103/103	0/5/6/6
16	CLA	d	405	-	-	4/19/97/115	-
20	MGE	d	408	-	-	7/42/62/63	0/1/1/1
16	CLA	b	606	-	1/1/15/20	12/37/115/115	-
22	LMT	t	101	-	-	7/21/61/61	0/2/2/2
16	CLA	b	605	-	1/1/15/20	4/37/115/115	-
16	CLA	a	402	-	1/1/15/20	5/37/115/115	-
25	HTG	d	411	-	-	0/7/27/30	0/1/1/1

All (370) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	b	612	CLA	MG-NA	10.40	2.31	2.06
16	b	606	CLA	MG-NA	10.30	2.30	2.06
16	a	406	CLA	C1D-ND	8.86	1.48	1.37
16	a	403	CLA	C1D-ND	8.66	1.48	1.37
16	b	615	CLA	MG-NA	8.37	2.26	2.06

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	b	611	CLA	MG-NA	8.35	2.26	2.06
16	d	404	CLA	C1D-ND	8.29	1.48	1.37
16	b	604	CLA	MG-NA	8.23	2.25	2.06
16	b	601	CLA	C1D-ND	7.72	1.47	1.37
16	b	608	CLA	MG-NA	7.71	2.24	2.06
16	d	405	CLA	C1D-ND	7.70	1.47	1.37
16	b	607	CLA	MG-NA	7.14	2.23	2.06
16	b	609	CLA	MG-NC	6.76	2.22	2.06
16	b	609	CLA	CHC-C1C	6.39	1.51	1.35
16	a	402	CLA	MG-NA	6.34	2.21	2.06
16	d	401	CLA	MG-NA	6.28	2.21	2.06
16	b	602	CLA	MG-NC	6.17	2.20	2.06
16	b	610	CLA	MG-NA	6.11	2.20	2.06
16	b	607	CLA	C3C-C2C	6.07	1.49	1.36
16	b	616	CLA	CHC-C1C	6.02	1.50	1.35
16	b	602	CLA	C3C-C2C	5.98	1.49	1.36
16	b	607	CLA	CHC-C1C	5.98	1.50	1.35
16	b	613	CLA	MG-NA	5.96	2.20	2.06
16	b	616	CLA	MG-NA	5.86	2.20	2.06
16	b	605	CLA	C1D-ND	-5.86	1.30	1.37
16	b	603	CLA	MG-NA	5.70	2.19	2.06
16	b	609	CLA	O2D-CGD	5.64	1.47	1.33
16	b	607	CLA	MG-NC	5.62	2.19	2.06
16	b	606	CLA	C3B-C2B	5.60	1.48	1.40
16	b	610	CLA	C3C-C2C	5.59	1.48	1.36
16	b	612	CLA	C3C-C2C	5.57	1.48	1.36
16	d	401	CLA	CHC-C1C	5.55	1.49	1.35
16	b	603	CLA	CHC-C1C	5.47	1.49	1.35
16	b	604	CLA	CHC-C1C	5.46	1.49	1.35
16	b	614	CLA	MG-NA	5.44	2.19	2.06
16	b	609	CLA	C3C-C2C	5.44	1.48	1.36
16	b	601	CLA	O2D-CGD	5.34	1.46	1.33
16	b	606	CLA	MG-NC	5.34	2.19	2.06
16	b	603	CLA	C3C-C2C	5.31	1.48	1.36
16	b	602	CLA	CHC-C1C	5.30	1.48	1.35
16	b	603	CLA	C1D-ND	-5.26	1.31	1.37
16	b	605	CLA	CHC-C1C	5.24	1.48	1.35
16	b	613	CLA	CHC-C1C	5.15	1.48	1.35
16	b	604	CLA	C3C-C2C	5.11	1.47	1.36
16	b	609	CLA	CHD-C1D	5.11	1.48	1.38
16	b	611	CLA	CHD-C1D	5.10	1.48	1.38
16	b	610	CLA	O2D-CGD	5.09	1.45	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	b	602	CLA	OBD-CAD	5.08	1.31	1.22
16	b	602	CLA	C1D-ND	-5.05	1.31	1.37
16	b	613	CLA	O2D-CGD	5.05	1.45	1.33
15	a	401	SQD	O8-S	5.04	1.65	1.47
16	b	605	CLA	MG-NA	5.02	2.18	2.06
15	l	101	SQD	O8-S	5.02	1.65	1.47
16	b	605	CLA	O2D-CGD	5.01	1.45	1.33
16	b	615	CLA	C3C-C2C	5.00	1.47	1.36
16	b	616	CLA	C1D-ND	-4.97	1.31	1.37
16	b	601	CLA	C3D-C4D	-4.95	1.33	1.44
16	b	602	CLA	C3B-C2B	4.93	1.47	1.40
16	a	402	CLA	OBD-CAD	4.92	1.31	1.22
15	a	401	SQD	O47-C7	4.89	1.46	1.35
16	d	404	CLA	O2D-CGD	4.88	1.45	1.33
16	b	616	CLA	C3C-C2C	4.85	1.47	1.36
16	b	605	CLA	C3C-C2C	4.83	1.47	1.36
16	d	404	CLA	C3D-C4D	-4.80	1.33	1.44
16	b	610	CLA	CHD-C1D	4.80	1.47	1.38
16	b	611	CLA	CHC-C1C	4.79	1.47	1.35
16	d	401	CLA	C3C-C2C	4.78	1.46	1.36
16	b	614	CLA	CHD-C1D	4.77	1.47	1.38
16	a	402	CLA	C3C-C2C	4.77	1.46	1.36
16	b	616	CLA	O2D-CGD	4.75	1.44	1.33
16	d	405	CLA	C3D-C4D	-4.74	1.33	1.44
16	b	606	CLA	C3C-C2C	4.74	1.46	1.36
16	b	608	CLA	CHC-C1C	4.74	1.47	1.35
16	b	601	CLA	C3C-C2C	4.72	1.46	1.36
16	a	406	CLA	O2D-CGD	4.71	1.44	1.33
16	d	405	CLA	O2D-CGD	4.71	1.44	1.33
16	b	612	CLA	CHC-C1C	4.68	1.47	1.35
16	b	602	CLA	CHD-C4C	4.67	1.49	1.39
16	a	403	CLA	C3D-C4D	-4.67	1.33	1.44
16	b	615	CLA	O2D-CGD	4.61	1.44	1.33
16	b	608	CLA	C3B-C2B	4.59	1.46	1.40
16	b	603	CLA	O2D-CGD	4.58	1.44	1.33
16	b	615	CLA	C3B-C2B	4.58	1.46	1.40
16	b	610	CLA	MG-ND	-4.57	1.96	2.05
16	b	607	CLA	CHD-C1D	4.57	1.47	1.38
16	a	406	CLA	C3D-C4D	-4.56	1.33	1.44
16	b	616	CLA	C3B-C2B	4.56	1.46	1.40
16	a	403	CLA	O2D-CGD	4.55	1.44	1.33
16	b	606	CLA	CHC-C1C	4.53	1.46	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	b	615	CLA	OBD-CAD	4.52	1.30	1.22
16	b	606	CLA	CHD-C1D	4.50	1.47	1.38
16	b	610	CLA	CHC-C1C	4.50	1.46	1.35
16	b	615	CLA	CHD-C4C	4.49	1.49	1.39
16	b	611	CLA	O2D-CGD	4.48	1.44	1.33
16	b	606	CLA	O2D-CGD	4.44	1.44	1.33
16	b	614	CLA	O2A-CGA	4.40	1.46	1.33
16	d	405	CLA	O2A-CGA	4.39	1.46	1.33
16	b	613	CLA	C3C-C2C	4.38	1.46	1.36
16	a	402	CLA	C3B-C2B	4.38	1.46	1.40
16	b	615	CLA	CHC-C1C	4.37	1.46	1.35
20	d	409	MGE	O2G-C1B	4.36	1.46	1.34
16	b	616	CLA	CHD-C1D	4.36	1.46	1.38
16	a	406	CLA	O2A-CGA	4.35	1.46	1.33
16	b	604	CLA	MG-ND	-4.33	1.97	2.05
20	m	101	MGE	O1G-C1A	4.32	1.46	1.33
16	b	608	CLA	C3C-C2C	4.31	1.45	1.36
20	a	409	MGE	O2G-C1B	4.31	1.46	1.34
16	b	602	CLA	CHD-C1D	4.30	1.46	1.38
16	d	401	CLA	CHD-C1D	4.28	1.46	1.38
16	b	614	CLA	CHC-C1C	4.28	1.45	1.35
15	l	101	SQD	O47-C7	4.24	1.46	1.34
16	b	606	CLA	C1B-NB	4.24	1.39	1.35
16	b	613	CLA	O2A-CGA	4.23	1.45	1.33
20	m	101	MGE	O2G-C1B	4.22	1.46	1.34
20	b	620	MGE	O2G-C1B	4.22	1.46	1.34
20	a	409	MGE	O1G-C1A	4.21	1.45	1.33
26	d	412	DGD	O1G-C1A	4.20	1.45	1.33
20	b	620	MGE	O1G-C1A	4.18	1.45	1.33
20	d	408	MGE	O2G-C1B	4.16	1.46	1.34
20	d	409	MGE	O1G-C1A	4.15	1.45	1.33
16	b	608	CLA	OBD-CAD	4.14	1.29	1.22
16	d	405	CLA	C3C-C2C	4.14	1.45	1.36
26	d	412	DGD	O2G-C1B	4.13	1.45	1.34
20	d	410	MGE	O1G-C1A	4.13	1.45	1.33
16	b	607	CLA	O2D-CGD	4.11	1.43	1.33
16	a	406	CLA	C3C-C2C	4.09	1.45	1.36
15	l	101	SQD	O48-C23	4.08	1.45	1.33
16	b	604	CLA	CHD-C1D	4.07	1.46	1.38
20	b	622	MGE	O2G-C1B	4.07	1.45	1.34
16	b	611	CLA	C3C-C2C	4.06	1.45	1.36
16	a	406	CLA	CHC-C1C	4.06	1.45	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	a	403	CLA	O2A-CGA	4.05	1.45	1.33
16	b	604	CLA	O2D-CGD	4.04	1.43	1.33
16	d	404	CLA	C3C-C2C	4.03	1.45	1.36
16	b	610	CLA	OBD-CAD	4.03	1.29	1.22
16	b	601	CLA	CHC-C1C	4.03	1.45	1.35
16	b	616	CLA	MG-ND	4.02	2.13	2.05
16	b	611	CLA	C3B-C2B	4.01	1.45	1.40
16	b	616	CLA	O2A-CGA	4.01	1.45	1.33
20	d	408	MGE	O1G-C1A	4.00	1.45	1.33
16	b	609	CLA	MG-NA	3.99	2.15	2.06
20	b	622	MGE	O1G-C1A	3.97	1.44	1.33
16	d	404	CLA	O2A-CGA	3.96	1.44	1.33
16	b	613	CLA	C3B-C2B	3.96	1.45	1.40
16	d	404	CLA	CHC-C1C	3.96	1.45	1.35
16	d	401	CLA	CHD-C4C	3.96	1.48	1.39
16	b	614	CLA	O2D-CGD	3.95	1.42	1.33
16	b	612	CLA	O2D-CGD	3.95	1.42	1.33
16	b	614	CLA	CHD-C4C	3.92	1.48	1.39
16	b	610	CLA	C4C-C3C	3.92	1.51	1.45
16	b	609	CLA	C3B-C2B	3.91	1.45	1.40
16	b	607	CLA	C1D-ND	-3.90	1.33	1.37
16	b	601	CLA	C3B-C2B	3.89	1.45	1.40
20	d	410	MGE	O2G-C1B	3.88	1.45	1.34
16	d	405	CLA	CHC-C1C	3.87	1.44	1.35
16	a	402	CLA	O2D-CGD	3.86	1.42	1.33
16	d	404	CLA	C3B-C2B	3.86	1.45	1.40
25	d	411	HTG	C1'-S1	-3.84	1.76	1.81
16	b	610	CLA	CHD-C4C	3.83	1.48	1.39
16	b	606	CLA	CHD-C4C	3.83	1.48	1.39
16	b	608	CLA	CHD-C1D	3.81	1.45	1.38
16	a	403	CLA	C3C-C2C	3.77	1.44	1.36
16	b	603	CLA	CHD-C1D	3.75	1.45	1.38
16	b	607	CLA	C3D-C2D	3.73	1.49	1.39
17	a	405	PHO	CAC-C3C	-3.69	1.45	1.52
16	b	608	CLA	CHD-C4C	3.69	1.47	1.39
16	b	603	CLA	OBD-CAD	3.69	1.28	1.22
16	b	607	CLA	MG-ND	3.69	2.13	2.05
16	b	613	CLA	OBD-CAD	3.64	1.28	1.22
16	b	615	CLA	C3D-C2D	3.64	1.49	1.39
16	b	609	CLA	O2A-CGA	3.63	1.43	1.33
27	e	101	HEM	C1B-NB	-3.62	1.34	1.40
16	b	604	CLA	MG-NC	3.62	2.14	2.06

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	b	611	CLA	CHD-C4C	3.60	1.47	1.39
16	a	402	CLA	CHC-C1C	3.60	1.44	1.35
16	a	406	CLA	C3B-C2B	3.60	1.45	1.40
16	b	611	CLA	O2A-CGA	3.60	1.43	1.33
16	b	608	CLA	C4B-NB	-3.60	1.32	1.35
16	a	403	CLA	CHC-C1C	3.58	1.44	1.35
16	b	612	CLA	CHD-C1D	3.57	1.45	1.38
17	a	404	PHO	CAC-C3C	-3.55	1.45	1.52
16	b	614	CLA	C3C-C2C	3.54	1.44	1.36
16	b	601	CLA	CHD-C1D	3.51	1.45	1.38
16	b	608	CLA	O2D-CGD	3.49	1.41	1.33
16	b	614	CLA	C3B-C2B	3.41	1.45	1.40
16	b	610	CLA	MG-NC	3.39	2.14	2.06
16	b	604	CLA	C3B-C2B	3.37	1.45	1.40
16	b	602	CLA	O2A-CGA	3.37	1.43	1.33
16	b	603	CLA	C3B-C2B	3.36	1.45	1.40
16	b	601	CLA	OBD-CAD	3.36	1.28	1.22
16	b	609	CLA	OBD-CAD	3.35	1.28	1.22
16	d	401	CLA	C1D-ND	-3.34	1.33	1.37
16	a	406	CLA	OBD-CAD	3.33	1.28	1.22
16	b	608	CLA	C1D-ND	-3.32	1.33	1.37
16	b	611	CLA	C1B-CHB	3.32	1.50	1.41
16	b	605	CLA	C3B-C2B	3.32	1.45	1.40
16	b	601	CLA	CHD-C4C	3.32	1.46	1.39
16	d	401	CLA	C3B-C2B	3.31	1.45	1.40
16	a	402	CLA	CHD-C4C	3.29	1.46	1.39
16	b	613	CLA	CHD-C1D	3.29	1.44	1.38
16	a	402	CLA	C4B-NB	-3.23	1.32	1.35
16	b	603	CLA	CHD-C4C	3.21	1.46	1.39
16	b	609	CLA	CHD-C4C	3.21	1.46	1.39
16	b	606	CLA	C4D-CHA	3.20	1.49	1.38
16	b	612	CLA	O2A-CGA	3.20	1.42	1.33
16	b	614	CLA	MG-ND	-3.19	1.99	2.05
16	d	404	CLA	OBD-CAD	3.16	1.27	1.22
16	b	616	CLA	C3D-C2D	3.13	1.47	1.39
16	b	604	CLA	CHD-C4C	3.12	1.46	1.39
16	a	403	CLA	OBD-CAD	3.11	1.27	1.22
16	d	401	CLA	O2A-CGA	3.11	1.42	1.33
16	b	616	CLA	OBD-CAD	3.11	1.27	1.22
16	b	611	CLA	C3D-C2D	3.06	1.47	1.39
16	b	609	CLA	C3D-C2D	3.05	1.47	1.39
27	e	101	HEM	C4D-ND	-3.05	1.35	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	b	615	CLA	CHD-C1D	3.04	1.44	1.38
16	b	609	CLA	C1D-ND	-3.04	1.34	1.37
16	d	405	CLA	OBD-CAD	3.02	1.27	1.22
16	d	401	CLA	OBD-CAD	2.99	1.27	1.22
16	b	607	CLA	CHD-C4C	2.98	1.46	1.39
16	b	616	CLA	C1C-C2C	2.97	1.50	1.44
16	b	612	CLA	C3D-C2D	2.97	1.47	1.39
16	b	611	CLA	C4D-CHA	2.96	1.48	1.38
27	e	101	HEM	FE-NB	2.95	2.11	1.96
16	b	616	CLA	CHD-C4C	2.95	1.46	1.39
16	b	606	CLA	C3D-C2D	2.93	1.47	1.39
16	b	610	CLA	C3B-C2B	2.93	1.44	1.40
16	b	603	CLA	C3D-C2D	2.92	1.47	1.39
16	b	613	CLA	C1D-ND	-2.92	1.34	1.37
16	d	405	CLA	C3B-C2B	2.92	1.44	1.40
16	b	612	CLA	MG-NC	-2.92	1.99	2.06
16	b	603	CLA	C4D-CHA	2.89	1.48	1.38
16	b	605	CLA	O2A-CGA	2.89	1.41	1.33
16	d	401	CLA	MG-ND	-2.88	2.00	2.05
16	b	601	CLA	C1D-C2D	2.88	1.51	1.45
16	b	608	CLA	C4D-CHA	2.86	1.48	1.38
16	a	402	CLA	O2A-CGA	2.86	1.41	1.33
16	b	607	CLA	C4D-CHA	2.85	1.48	1.38
16	b	613	CLA	CHD-C4C	2.84	1.45	1.39
16	a	402	CLA	C4D-CHA	2.84	1.48	1.38
16	b	614	CLA	C1B-CHB	2.84	1.48	1.41
16	b	607	CLA	C3B-C2B	2.83	1.44	1.40
16	b	615	CLA	C4D-CHA	2.82	1.48	1.38
16	b	616	CLA	C1C-NC	-2.82	1.33	1.37
16	b	605	CLA	CHD-C1D	2.82	1.43	1.38
16	b	613	CLA	C3D-C2D	2.80	1.46	1.39
16	b	609	CLA	C4D-CHA	2.79	1.48	1.38
16	b	604	CLA	C3D-C2D	2.74	1.46	1.39
16	a	402	CLA	CHD-C1D	2.74	1.43	1.38
16	b	609	CLA	C4C-C3C	2.74	1.49	1.45
16	b	606	CLA	O2A-CGA	2.74	1.41	1.33
16	b	605	CLA	OBD-CAD	2.74	1.27	1.22
16	b	616	CLA	C4D-CHA	2.73	1.48	1.38
16	d	405	CLA	CHD-C1D	2.72	1.43	1.38
16	d	405	CLA	CHD-C4C	2.71	1.45	1.39
16	b	615	CLA	MG-NC	2.71	2.12	2.06
16	b	603	CLA	O2A-CGA	2.70	1.41	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	b	605	CLA	CHD-C4C	2.70	1.45	1.39
16	b	602	CLA	C4C-C3C	2.69	1.49	1.45
16	b	606	CLA	C1B-CHB	2.66	1.48	1.41
16	b	613	CLA	C4D-CHA	2.66	1.47	1.38
16	b	606	CLA	OBD-CAD	2.66	1.27	1.22
16	b	615	CLA	C1D-ND	-2.65	1.34	1.37
16	b	602	CLA	C1B-CHB	2.65	1.48	1.41
16	b	607	CLA	O2A-CGA	2.65	1.41	1.33
17	a	404	PHO	CMB-C2B	-2.64	1.45	1.51
16	b	616	CLA	C1B-CHB	2.63	1.48	1.41
15	a	401	SQD	O48-C23	2.63	1.46	1.33
16	b	608	CLA	O2A-CGA	2.63	1.41	1.33
16	b	606	CLA	C1C-NC	-2.62	1.33	1.37
16	b	610	CLA	C4D-CHA	2.61	1.47	1.38
16	b	615	CLA	O2A-CGA	2.61	1.41	1.33
16	b	601	CLA	C4C-C3C	2.61	1.49	1.45
16	b	614	CLA	MG-NC	2.60	2.12	2.06
16	a	403	CLA	C3B-C2B	2.60	1.44	1.40
16	d	401	CLA	C1-C2	2.57	1.56	1.49
16	b	613	CLA	C4C-C3C	2.57	1.49	1.45
16	b	616	CLA	C4B-CHC	2.57	1.48	1.41
16	b	603	CLA	MG-ND	2.56	2.10	2.05
16	b	608	CLA	C1B-CHB	2.55	1.48	1.41
16	b	611	CLA	C1D-ND	-2.54	1.34	1.37
15	l	101	SQD	C6-S	-2.54	1.68	1.77
16	b	608	CLA	C3D-C2D	2.54	1.46	1.39
15	a	401	SQD	C6-S	-2.53	1.68	1.77
17	a	404	PHO	CMD-C2D	-2.52	1.45	1.51
16	b	604	CLA	C4D-CHA	2.52	1.47	1.38
16	b	606	CLA	MG-ND	2.52	2.10	2.05
16	b	614	CLA	C4B-CHC	2.51	1.48	1.41
16	b	610	CLA	O2A-CGA	2.51	1.40	1.33
16	b	612	CLA	OBD-CAD	2.49	1.26	1.22
16	b	606	CLA	C1C-C2C	2.49	1.49	1.44
16	d	401	CLA	O2D-CGD	2.48	1.39	1.33
16	b	610	CLA	C3D-C2D	2.47	1.45	1.39
16	b	602	CLA	C3D-C2D	2.47	1.45	1.39
16	b	609	CLA	C1B-CHB	2.47	1.47	1.41
16	b	604	CLA	C1C-NC	-2.46	1.34	1.37
16	b	615	CLA	C4D-ND	2.45	1.41	1.37
16	b	604	CLA	C1B-CHB	2.45	1.47	1.41
17	a	405	PHO	CMD-C2D	-2.44	1.45	1.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	b	602	CLA	C4D-CHA	2.44	1.47	1.38
16	a	402	CLA	C1B-NB	2.43	1.37	1.35
16	b	610	CLA	C4B-CHC	2.41	1.47	1.41
16	b	601	CLA	C3D-C2D	2.40	1.45	1.39
17	a	404	PHO	C3B-C2B	-2.40	1.37	1.40
16	b	605	CLA	C4D-CHA	2.39	1.46	1.38
16	b	606	CLA	C4B-CHC	2.38	1.47	1.41
16	a	403	CLA	CHD-C4C	2.38	1.44	1.39
16	b	601	CLA	C3A-C2A	-2.37	1.52	1.54
16	a	406	CLA	CHD-C4C	2.35	1.44	1.39
17	a	404	PHO	CMC-C2C	-2.34	1.46	1.51
24	d	406	PQ9	C10-C5	2.34	1.47	1.35
16	b	607	CLA	C1B-CHB	2.34	1.47	1.41
16	b	608	CLA	C4B-CHC	2.33	1.47	1.41
16	b	612	CLA	CHD-C4C	2.33	1.44	1.39
16	d	405	CLA	C3D-C2D	2.29	1.45	1.39
16	b	612	CLA	C4D-CHA	2.29	1.46	1.38
16	b	613	CLA	C3D-C4D	-2.28	1.39	1.44
16	b	612	CLA	C1B-CHB	2.27	1.47	1.41
16	b	615	CLA	C4C-C3C	2.27	1.49	1.45
25	d	411	HTG	C1-S1	-2.27	1.77	1.80
17	a	404	PHO	C1C-NC	-2.26	1.31	1.38
16	b	612	CLA	C1D-ND	-2.26	1.35	1.37
16	b	605	CLA	C1B-NB	-2.26	1.33	1.35
16	b	614	CLA	C4C-C3C	2.26	1.48	1.45
16	b	615	CLA	C4B-NB	2.25	1.37	1.35
16	b	614	CLA	C4D-CHA	2.24	1.46	1.38
16	b	603	CLA	C1B-NB	-2.24	1.33	1.35
16	a	406	CLA	CHD-C1D	2.24	1.42	1.38
16	b	613	CLA	C4B-CHC	2.23	1.47	1.41
16	b	610	CLA	C1B-CHB	2.22	1.47	1.41
16	b	609	CLA	MG-ND	2.21	2.10	2.05
17	a	405	PHO	CMC-C2C	-2.21	1.46	1.51
16	b	604	CLA	O2A-CGA	2.21	1.39	1.33
16	b	603	CLA	MG-NC	-2.20	2.01	2.06
16	a	402	CLA	C3D-C2D	2.20	1.45	1.39
16	a	406	CLA	C1D-C2D	2.20	1.49	1.45
16	d	401	CLA	C4D-CHA	2.20	1.46	1.38
16	b	605	CLA	C1C-NC	-2.15	1.34	1.37
16	a	403	CLA	CHD-C1D	2.13	1.42	1.38
16	a	402	CLA	C1C-NC	-2.13	1.34	1.37
16	b	607	CLA	C4B-CHC	2.12	1.46	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	d	405	CLA	C1D-C2D	2.12	1.49	1.45
16	b	614	CLA	OBD-CAD	2.11	1.26	1.22
16	b	611	CLA	C3D-C4D	-2.11	1.39	1.44
16	b	606	CLA	C4C-C3C	2.10	1.48	1.45
16	d	401	CLA	C4C-C3C	2.09	1.48	1.45
16	b	612	CLA	C3B-C2B	2.08	1.43	1.40
17	a	405	PHO	CMB-C2B	-2.08	1.46	1.51
16	b	613	CLA	C1-C2	2.08	1.55	1.49
16	b	608	CLA	CAA-C2A	2.08	1.58	1.54
16	b	604	CLA	C1D-ND	-2.07	1.35	1.37
16	b	603	CLA	C1B-CHB	2.07	1.46	1.41
20	d	410	MGE	O3G-C1D	2.07	1.43	1.40
16	d	401	CLA	CMD-C2D	2.07	1.55	1.50
16	b	604	CLA	C1C-C2C	2.06	1.48	1.44
27	e	101	HEM	CHB-C1B	2.06	1.40	1.35
20	m	101	MGE	O3G-C1D	2.06	1.43	1.40
16	b	609	CLA	C4B-CHC	2.06	1.46	1.41
16	b	609	CLA	O2D-CED	-2.05	1.40	1.45
16	b	614	CLA	C3D-C2D	2.05	1.44	1.39
17	a	405	PHO	C1C-NC	-2.04	1.32	1.38
16	b	608	CLA	C1B-NB	-2.04	1.33	1.35
16	b	612	CLA	C4B-CHC	2.03	1.46	1.41
16	b	611	CLA	MG-NC	2.03	2.11	2.06
16	d	401	CLA	C1B-CHB	2.02	1.46	1.41
16	d	401	CLA	C3D-C2D	2.02	1.44	1.39
16	b	605	CLA	C3B-CAB	2.01	1.52	1.47
27	e	101	HEM	C1D-ND	-2.01	1.34	1.38
16	a	403	CLA	C3D-C2D	2.01	1.44	1.39
16	b	616	CLA	MG-NC	2.01	2.11	2.06

All (759) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
15	a	401	SQD	O9-S-C6	-20.30	82.82	106.94
15	l	101	SQD	O9-S-C6	-20.03	83.13	106.94
16	a	406	CLA	C1D-ND-C4D	-18.90	92.91	106.33
16	a	403	CLA	C1D-ND-C4D	-17.71	93.75	106.33
16	d	404	CLA	C1D-ND-C4D	-16.62	94.53	106.33
16	d	405	CLA	C1D-ND-C4D	-16.58	94.56	106.33
16	b	601	CLA	C1B-CHB-C4A	-15.84	98.76	130.12
16	b	601	CLA	C1D-ND-C4D	-15.10	95.61	106.33
15	a	401	SQD	O8-S-O9	-11.99	81.97	111.27

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
16	b	606	CLA	C4A-NA-C1A	11.92	112.06	106.71
15	l	101	SQD	O8-S-O9	-11.74	82.59	111.27
16	a	403	CLA	C2C-C1C-NC	10.63	119.93	109.97
16	a	406	CLA	C2D-C1D-ND	10.47	117.82	110.10
16	d	404	CLA	C2C-C1C-NC	10.41	119.72	109.97
16	b	601	CLA	CHD-C1D-ND	-10.27	115.02	124.45
16	a	403	CLA	C2D-C1D-ND	9.91	117.41	110.10
16	b	604	CLA	C4A-NA-C1A	9.84	111.13	106.71
15	l	101	SQD	O7-S-C6	9.80	118.59	106.94
16	d	405	CLA	C2C-C1C-NC	9.67	119.03	109.97
16	b	614	CLA	C2D-C1D-ND	9.29	116.95	110.10
16	b	601	CLA	C4A-NA-C1A	-9.27	102.54	106.71
16	d	405	CLA	C2D-C1D-ND	9.25	116.92	110.10
16	b	601	CLA	C2C-C1C-NC	9.07	118.47	109.97
15	a	401	SQD	O7-S-C6	9.05	117.70	106.94
16	b	601	CLA	CMD-C2D-C1D	9.01	140.60	124.71
16	a	403	CLA	CMD-C2D-C1D	9.00	140.58	124.71
15	l	101	SQD	O9-S-O7	-8.94	83.02	113.95
16	b	610	CLA	C2D-C1D-ND	8.86	116.64	110.10
16	a	406	CLA	C2C-C1C-NC	8.78	118.19	109.97
16	d	404	CLA	C2D-C1D-ND	8.74	116.55	110.10
16	b	610	CLA	C4A-NA-C1A	8.74	110.64	106.71
16	a	406	CLA	CMD-C2D-C1D	8.72	140.08	124.71
16	d	404	CLA	C3C-C4C-NC	8.71	120.34	110.57
15	a	401	SQD	O9-S-O7	-8.61	84.14	113.95
16	b	601	CLA	C4D-CHA-C1A	-8.55	110.84	121.25
15	a	401	SQD	O8-S-C6	8.53	119.33	105.74
16	b	614	CLA	C4A-NA-C1A	8.52	110.53	106.71
16	b	612	CLA	CAC-C3C-C4C	8.41	135.72	124.81
16	d	404	CLA	CHD-C4C-C3C	-8.38	112.53	124.84
16	a	406	CLA	C4A-NA-C1A	-8.28	102.98	106.71
16	a	406	CLA	C3C-C4C-NC	8.02	119.57	110.57
16	b	611	CLA	C4A-NA-C1A	7.97	110.29	106.71
16	a	402	CLA	C2D-C1D-ND	7.92	115.94	110.10
16	d	405	CLA	CMD-C2D-C1D	7.91	138.65	124.71
15	l	101	SQD	O8-S-C6	7.83	118.22	105.74
16	b	612	CLA	C4A-NA-C1A	7.80	110.21	106.71
16	d	404	CLA	CMD-C2D-C1D	7.65	138.19	124.71
16	a	406	CLA	C4D-CHA-C1A	-7.42	112.22	121.25
16	d	405	CLA	C3C-C4C-NC	7.41	118.89	110.57
16	d	405	CLA	CHD-C1D-ND	-7.37	117.68	124.45
16	a	406	CLA	C3D-C4D-ND	7.35	122.14	110.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
16	b	601	CLA	C3D-C4D-ND	7.31	122.06	110.24
16	b	605	CLA	C2C-C1C-NC	7.21	116.72	109.97
16	b	603	CLA	CHD-C1D-ND	-7.13	117.90	124.45
18	a	407	BCR	C7-C8-C9	-7.11	115.48	126.23
16	a	406	CLA	CHD-C4C-C3C	-7.10	114.41	124.84
16	b	603	CLA	C2C-C1C-NC	7.10	116.62	109.97
16	d	405	CLA	C3D-C4D-ND	7.08	121.70	110.24
16	a	403	CLA	C3D-C4D-ND	7.04	121.63	110.24
16	b	615	CLA	C4A-NA-C1A	7.00	109.85	106.71
16	d	405	CLA	C4A-NA-C1A	-6.96	103.58	106.71
16	a	403	CLA	C3C-C4C-NC	6.94	118.36	110.57
16	b	614	CLA	C4D-CHA-C1A	-6.94	112.80	121.25
16	b	605	CLA	CAC-C3C-C4C	6.93	133.80	124.81
16	a	402	CLA	CAC-C3C-C4C	6.92	133.79	124.81
16	b	616	CLA	CHD-C4C-C3C	-6.83	114.80	124.84
16	b	614	CLA	C1D-ND-C4D	-6.71	101.57	106.33
16	b	601	CLA	C2D-C1D-ND	6.69	115.03	110.10
16	d	401	CLA	C2D-C1D-ND	6.63	114.99	110.10
16	b	613	CLA	C2D-C1D-ND	6.59	114.96	110.10
16	a	403	CLA	C3B-C4B-NB	6.58	117.71	109.21
16	b	602	CLA	C2D-C1D-ND	6.54	114.92	110.10
16	b	603	CLA	C2D-C1D-ND	6.51	114.90	110.10
16	b	604	CLA	C2C-C1C-NC	6.47	116.03	109.97
16	a	403	CLA	CHD-C4C-C3C	-6.45	115.36	124.84
16	b	605	CLA	C2D-C1D-ND	6.45	114.86	110.10
16	a	403	CLA	CHD-C1D-ND	-6.39	118.58	124.45
16	a	403	CLA	C4A-NA-C1A	-6.39	103.83	106.71
16	b	616	CLA	C2D-C1D-ND	6.35	114.78	110.10
16	b	613	CLA	C4A-NA-C1A	6.33	109.55	106.71
16	b	613	CLA	C2C-C1C-NC	6.32	115.89	109.97
25	d	411	HTG	C1'-S1-C1	6.29	111.86	100.09
16	b	614	CLA	O2D-CGD-CBD	6.28	122.43	111.27
16	b	604	CLA	C2D-C1D-ND	6.25	114.71	110.10
16	a	403	CLA	O2D-CGD-CBD	6.25	122.38	111.27
16	b	606	CLA	C2D-C1D-ND	6.23	114.70	110.10
16	b	612	CLA	C2D-C1D-ND	6.18	114.66	110.10
16	b	616	CLA	O2D-CGD-CBD	6.17	122.24	111.27
16	b	605	CLA	CHD-C1D-ND	-6.14	118.81	124.45
16	d	404	CLA	O2D-CGD-CBD	6.11	122.13	111.27
16	a	403	CLA	C4D-CHA-C1A	-6.10	113.83	121.25
16	b	601	CLA	C3C-C4C-NC	6.09	117.41	110.57
16	d	404	CLA	C3D-C4D-ND	6.07	120.06	110.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
16	b	612	CLA	CHD-C4C-C3C	-6.02	116.00	124.84
16	a	406	CLA	CHD-C1D-ND	-6.01	118.93	124.45
18	a	407	BCR	C11-C10-C9	-6.00	118.74	127.31
16	a	403	CLA	C1C-C2C-C3C	-5.94	100.71	106.96
16	b	608	CLA	C2D-C1D-ND	5.92	114.47	110.10
16	d	404	CLA	C4D-CHA-C1A	-5.91	114.05	121.25
16	d	401	CLA	C2C-C1C-NC	5.87	115.47	109.97
16	d	401	CLA	CHD-C4C-C3C	-5.85	116.24	124.84
16	d	405	CLA	C4D-CHA-C1A	-5.85	114.13	121.25
16	a	403	CLA	C3D-C2D-C1D	-5.84	97.86	105.83
16	b	609	CLA	C2C-C1C-NC	5.83	115.44	109.97
16	b	615	CLA	C2D-C1D-ND	5.81	114.39	110.10
16	d	405	CLA	O2D-CGD-CBD	5.77	121.53	111.27
16	a	406	CLA	C3D-C2D-C1D	-5.76	97.98	105.83
16	b	615	CLA	C2C-C1C-NC	5.71	115.32	109.97
16	d	405	CLA	C3B-C4B-NB	5.70	116.57	109.21
16	b	603	CLA	CHD-C4C-C3C	-5.63	116.56	124.84
16	d	404	CLA	C1C-C2C-C3C	-5.62	101.05	106.96
16	d	405	CLA	CHD-C4C-C3C	-5.61	116.60	124.84
16	d	405	CLA	C3D-C2D-C1D	-5.60	98.18	105.83
16	b	608	CLA	C2C-C1C-NC	5.58	115.20	109.97
16	b	612	CLA	C3C-C4C-NC	5.55	116.79	110.57
16	b	616	CLA	C4A-NA-C1A	5.48	109.17	106.71
18	h	101	BCR	C7-C8-C9	-5.44	118.02	126.23
16	b	611	CLA	C2D-C1D-ND	5.44	114.11	110.10
16	b	613	CLA	CAC-C3C-C4C	5.42	131.84	124.81
16	b	610	CLA	C2C-C1C-NC	5.39	115.03	109.97
16	b	602	CLA	CMB-C2B-C3B	5.37	134.73	124.68
26	d	412	DGD	O2G-C1B-C2B	5.36	123.05	111.50
16	b	612	CLA	C4D-CHA-C1A	-5.35	114.74	121.25
16	d	404	CLA	C3B-C4B-NB	5.33	116.10	109.21
16	b	606	CLA	CHD-C1D-ND	-5.31	119.58	124.45
16	b	610	CLA	C1D-ND-C4D	-5.30	102.57	106.33
16	a	406	CLA	O2D-CGD-CBD	5.29	120.67	111.27
16	b	602	CLA	CHD-C1D-ND	-5.29	119.59	124.45
16	d	404	CLA	C3D-C2D-C1D	-5.28	98.63	105.83
15	a	401	SQD	O47-C7-C8	5.25	120.76	111.09
20	b	620	MGE	O2G-C1B-C2B	5.24	122.81	111.50
16	b	609	CLA	CAC-C3C-C4C	5.24	131.61	124.81
16	b	601	CLA	C1D-CHD-C4C	-5.23	114.79	126.06
16	b	612	CLA	C2C-C1C-NC	5.21	114.86	109.97
16	a	402	CLA	C2C-C1C-NC	5.18	114.82	109.97

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
16	b	615	CLA	C1C-C2C-C3C	-5.16	101.53	106.96
16	b	603	CLA	C1C-C2C-C3C	-5.15	101.55	106.96
16	b	611	CLA	C2C-C1C-NC	5.10	114.75	109.97
20	d	410	MGE	O2G-C1B-C2B	5.08	122.46	111.50
18	a	407	BCR	C20-C21-C22	-4.99	120.19	127.31
16	b	603	CLA	O2D-CGD-O1D	-4.99	114.09	123.84
16	b	603	CLA	C4-C3-C5	4.98	123.65	115.27
27	e	101	HEM	CHD-C1D-ND	4.98	129.84	124.43
16	b	604	CLA	C1C-C2C-C3C	-4.97	101.73	106.96
16	b	616	CLA	CHD-C1D-ND	-4.96	119.89	124.45
16	a	402	CLA	C3D-C2D-C1D	-4.95	99.08	105.83
16	b	613	CLA	C1-C2-C3	-4.93	117.52	126.04
18	d	407	BCR	C7-C8-C9	-4.89	118.84	126.23
16	b	605	CLA	C4-C3-C5	4.89	123.50	115.27
27	e	101	HEM	CHC-C4B-NB	4.89	129.74	124.43
16	b	608	CLA	O2D-CGD-CBD	4.88	119.94	111.27
16	b	601	CLA	C3B-C4B-NB	4.87	115.50	109.21
16	d	404	CLA	C1D-CHD-C4C	-4.87	115.56	126.06
16	b	613	CLA	CHD-C4C-C3C	-4.85	117.71	124.84
16	b	614	CLA	O2D-CGD-O1D	-4.83	114.39	123.84
16	b	608	CLA	C1C-C2C-C3C	-4.82	101.89	106.96
16	b	612	CLA	C4C-C3C-C2C	-4.82	99.88	106.90
16	b	607	CLA	CHD-C4C-C3C	-4.82	117.76	124.84
16	b	605	CLA	CHD-C4C-C3C	-4.80	117.79	124.84
16	b	605	CLA	C3C-C4C-NC	4.77	115.92	110.57
16	b	604	CLA	CAC-C3C-C4C	4.76	130.98	124.81
16	d	405	CLA	C1C-C2C-C3C	-4.73	101.98	106.96
16	b	601	CLA	C3D-C2D-C1D	-4.72	99.39	105.83
16	b	607	CLA	C2C-C1C-NC	4.70	114.38	109.97
16	b	602	CLA	O2D-CGD-CBD	4.69	119.61	111.27
16	b	613	CLA	C3D-C2D-C1D	-4.69	99.44	105.83
20	d	410	MGE	C1D-O6D-C5D	4.69	122.89	113.69
18	a	407	BCR	C24-C23-C22	-4.67	119.17	126.23
16	b	614	CLA	C2C-C1C-NC	4.67	114.35	109.97
16	a	403	CLA	C1D-CHD-C4C	-4.66	116.00	126.06
16	b	610	CLA	C1C-C2C-C3C	-4.64	102.08	106.96
16	b	606	CLA	CHD-C4C-C3C	-4.63	118.03	124.84
16	b	604	CLA	CHD-C4C-C3C	-4.61	118.07	124.84
18	d	407	BCR	C24-C23-C22	-4.60	119.28	126.23
16	b	616	CLA	C2C-C1C-NC	4.60	114.28	109.97
16	b	608	CLA	CHD-C4C-C3C	-4.58	118.10	124.84
16	b	611	CLA	C1C-C2C-C3C	-4.58	102.14	106.96

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
16	b	609	CLA	O2D-CGD-CBD	4.58	119.41	111.27
16	b	607	CLA	CAC-C3C-C4C	4.57	130.74	124.81
16	b	614	CLA	C1-C2-C3	-4.53	118.21	126.04
16	b	615	CLA	C1D-CHD-C4C	-4.51	116.33	126.06
16	d	401	CLA	C1D-CHD-C4C	-4.51	116.33	126.06
16	b	602	CLA	C2C-C1C-NC	4.49	114.17	109.97
16	b	605	CLA	O2D-CGD-CBD	4.48	119.23	111.27
16	b	607	CLA	C3D-C2D-C1D	-4.48	99.72	105.83
16	b	606	CLA	C2C-C1C-NC	4.47	114.16	109.97
18	b	619	BCR	C20-C21-C22	-4.45	120.96	127.31
16	b	607	CLA	C4A-NA-C1A	4.44	108.70	106.71
16	b	609	CLA	C2D-C1D-ND	4.44	113.38	110.10
16	a	402	CLA	CHD-C4C-C3C	-4.43	118.32	124.84
16	b	615	CLA	CMB-C2B-C3B	4.42	132.94	124.68
16	b	602	CLA	O2D-CGD-O1D	-4.41	115.22	123.84
16	b	604	CLA	C3D-C2D-C1D	-4.38	99.85	105.83
16	b	616	CLA	C3C-C4C-NC	4.38	115.49	110.57
16	b	607	CLA	C2D-C1D-ND	4.38	113.33	110.10
16	b	605	CLA	CMD-C2D-C1D	4.38	132.43	124.71
16	b	601	CLA	O2D-CGD-CBD	4.36	119.02	111.27
18	b	619	BCR	C7-C8-C9	-4.36	119.64	126.23
16	b	614	CLA	CHD-C4C-C3C	-4.35	118.45	124.84
16	b	608	CLA	CHD-C1D-ND	-4.29	120.51	124.45
16	b	611	CLA	CHD-C4C-C3C	-4.29	118.53	124.84
20	b	622	MGE	O2G-C1B-C2B	4.29	120.74	111.50
16	b	603	CLA	CMB-C2B-C3B	4.25	132.63	124.68
18	a	407	BCR	C1-C6-C5	-4.24	116.64	122.61
16	b	605	CLA	C3D-C2D-C1D	-4.22	100.07	105.83
16	a	406	CLA	C1D-CHD-C4C	-4.22	116.96	126.06
18	h	101	BCR	C16-C17-C18	-4.21	121.31	127.31
16	b	601	CLA	C1C-C2C-C3C	-4.19	102.55	106.96
16	b	615	CLA	O2D-CGD-CBD	4.17	118.67	111.27
16	a	406	CLA	C1C-C2C-C3C	-4.15	102.59	106.96
16	a	406	CLA	C3B-C4B-NB	4.15	114.57	109.21
16	b	605	CLA	C1C-C2C-C3C	-4.14	102.61	106.96
16	b	605	CLA	CMC-C2C-C1C	4.14	131.34	125.04
16	d	401	CLA	C3D-C2D-C1D	-4.13	100.20	105.83
18	b	618	BCR	C24-C23-C22	-4.11	120.02	126.23
16	b	616	CLA	C3D-C2D-C1D	-4.11	100.22	105.83
16	b	615	CLA	CHD-C4C-C3C	-4.10	118.81	124.84
16	b	609	CLA	C4D-CHA-C1A	-4.10	116.26	121.25
16	b	613	CLA	CHD-C1D-ND	-4.10	120.69	124.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
16	b	607	CLA	CHD-C1D-ND	-4.09	120.69	124.45
20	b	620	MGE	O1G-C1A-C2A	4.09	124.75	111.91
16	b	610	CLA	C3D-C2D-C1D	-4.08	100.27	105.83
16	d	405	CLA	C1D-CHD-C4C	-4.07	117.29	126.06
16	b	604	CLA	C3C-C4C-NC	4.07	115.13	110.57
15	l	101	SQD	O47-C7-C8	4.07	120.26	111.50
16	b	611	CLA	CHA-C4D-ND	4.06	141.00	132.50
16	b	603	CLA	C3D-C2D-C1D	-4.06	100.30	105.83
17	a	405	PHO	CMC-C2C-C3C	4.04	132.56	124.94
16	b	602	CLA	C1C-C2C-C3C	-4.04	102.71	106.96
20	d	408	MGE	O2G-C1B-C2B	4.03	120.20	111.50
16	b	615	CLA	O2D-CGD-O1D	-4.02	115.97	123.84
16	b	614	CLA	C3D-C2D-C1D	-4.01	100.36	105.83
18	a	407	BCR	C11-C12-C13	-4.01	115.15	126.42
16	b	604	CLA	O2D-CGD-CBD	4.01	118.39	111.27
16	b	611	CLA	C1-C2-C3	-4.01	119.12	126.04
16	b	604	CLA	O2D-CGD-O1D	-4.00	116.02	123.84
16	b	606	CLA	C3D-C2D-C1D	-4.00	100.38	105.83
18	b	619	BCR	C27-C26-C25	-3.99	116.94	122.73
16	a	402	CLA	C1C-C2C-C3C	-3.99	102.77	106.96
16	b	607	CLA	C1D-ND-C4D	3.98	109.16	106.33
16	b	608	CLA	O2D-CGD-O1D	-3.98	116.05	123.84
18	b	619	BCR	C24-C23-C22	-3.97	120.24	126.23
16	b	602	CLA	C3D-C2D-C1D	-3.96	100.43	105.83
16	b	615	CLA	C3D-C2D-C1D	-3.96	100.43	105.83
16	b	611	CLA	C4D-CHA-C1A	-3.95	116.44	121.25
16	b	608	CLA	C3D-C2D-C1D	-3.95	100.44	105.83
16	a	406	CLA	C4C-C3C-C2C	-3.94	101.16	106.90
16	b	601	CLA	CAC-C3C-C4C	3.93	129.91	124.81
16	b	606	CLA	C1C-C2C-C3C	-3.93	102.83	106.96
16	b	616	CLA	CAC-C3C-C4C	3.93	129.91	124.81
20	m	101	MGE	O2G-C1B-C2B	3.92	119.96	111.50
16	b	605	CLA	C4D-CHA-C1A	-3.91	116.49	121.25
16	b	616	CLA	CMB-C2B-C3B	3.89	131.96	124.68
20	d	409	MGE	O2G-C1B-C2B	3.86	119.83	111.50
16	b	612	CLA	C3D-C2D-C1D	-3.86	100.56	105.83
16	d	401	CLA	C1C-C2C-C3C	-3.86	102.90	106.96
16	b	611	CLA	O2D-CGD-CBD	3.84	118.10	111.27
17	a	405	PHO	CMB-C2B-C3B	3.83	131.85	124.68
16	b	613	CLA	CMD-C2D-C1D	3.82	131.44	124.71
16	b	609	CLA	CHD-C1D-ND	-3.82	120.95	124.45
16	d	405	CLA	C1B-CHB-C4A	-3.81	122.57	130.12

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
16	b	607	CLA	CHA-C4D-ND	3.81	140.46	132.50
16	a	402	CLA	CHD-C1D-ND	-3.80	120.96	124.45
16	b	612	CLA	O2D-CGD-O1D	-3.80	116.41	123.84
16	b	602	CLA	CHD-C4C-C3C	-3.79	119.27	124.84
18	b	619	BCR	C15-C14-C13	-3.79	121.91	127.31
18	b	619	BCR	C16-C17-C18	-3.79	121.91	127.31
16	b	609	CLA	C3C-C4C-NC	3.78	114.81	110.57
16	d	401	CLA	CHD-C4C-NC	3.77	130.14	124.20
16	b	615	CLA	CAC-C3C-C4C	3.76	129.69	124.81
16	b	604	CLA	CMC-C2C-C1C	3.76	130.77	125.04
18	b	618	BCR	C20-C21-C22	-3.76	121.95	127.31
16	b	611	CLA	C3B-C4B-NB	3.75	114.06	109.21
16	b	610	CLA	C4D-CHA-C1A	-3.75	116.69	121.25
16	b	610	CLA	CHD-C4C-C3C	-3.74	119.34	124.84
16	b	614	CLA	CMD-C2D-C1D	3.74	131.31	124.71
18	h	101	BCR	C32-C1-C6	3.73	116.36	110.30
16	b	614	CLA	O2A-CGA-O1A	-3.71	114.23	123.59
16	b	612	CLA	C1-C2-C3	-3.70	119.64	126.04
16	b	603	CLA	CHD-C4C-NC	3.70	130.04	124.20
18	h	101	BCR	C8-C9-C10	3.70	124.62	118.94
16	b	614	CLA	C6-C5-C3	-3.70	108.57	114.62
24	d	406	PQ9	C39-C38-C40	3.70	121.49	115.27
18	b	618	BCR	C15-C14-C13	-3.69	122.04	127.31
16	a	402	CLA	C1D-ND-C4D	-3.69	103.72	106.33
16	b	610	CLA	O2D-CGD-CBD	3.67	117.79	111.27
16	d	401	CLA	C4D-CHA-C1A	-3.67	116.78	121.25
16	a	403	CLA	C1B-CHB-C4A	-3.66	122.87	130.12
16	b	611	CLA	CBC-CAC-C3C	-3.65	102.37	112.43
16	b	615	CLA	CMC-C2C-C1C	3.65	130.59	125.04
18	h	101	BCR	C15-C14-C13	-3.64	122.11	127.31
16	b	601	CLA	CHC-C1C-C2C	-3.63	116.68	126.72
16	b	601	CLA	C4C-C3C-C2C	-3.63	101.61	106.90
16	b	603	CLA	CHA-C4D-ND	3.62	140.08	132.50
20	d	409	MGE	C3G-C2G-C1G	-3.62	103.22	111.79
16	b	614	CLA	CHD-C1D-ND	-3.62	121.12	124.45
16	b	601	CLA	CMB-C2B-C3B	3.62	131.45	124.68
16	b	615	CLA	C1B-CHB-C4A	-3.62	122.95	130.12
16	b	602	CLA	CHA-C4D-ND	3.61	140.05	132.50
18	b	618	BCR	C3-C4-C5	-3.61	107.64	114.08
16	d	404	CLA	C4A-NA-C1A	-3.59	105.09	106.71
16	b	603	CLA	CMC-C2C-C1C	3.58	130.50	125.04
16	b	604	CLA	CHA-C4D-ND	3.58	139.99	132.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
18	h	101	BCR	C11-C10-C9	-3.58	122.20	127.31
18	a	407	BCR	C15-C14-C13	-3.58	122.21	127.31
18	b	619	BCR	C11-C10-C9	-3.58	122.21	127.31
16	b	609	CLA	CHD-C4C-C3C	-3.57	119.59	124.84
16	b	603	CLA	CAC-C3C-C4C	3.57	129.44	124.81
16	b	610	CLA	CHD-C1D-ND	-3.57	121.17	124.45
18	b	619	BCR	C38-C26-C27	3.55	120.43	113.62
16	b	614	CLA	C1C-C2C-C3C	-3.55	103.23	106.96
16	b	611	CLA	O2D-CGD-O1D	-3.54	116.92	123.84
20	d	410	MGE	C2G-O2G-C1B	-3.53	109.10	117.79
16	a	406	CLA	C2A-C1A-CHA	-3.53	117.69	123.86
27	e	101	HEM	C1B-NB-C4B	3.51	108.70	105.07
16	d	405	CLA	C4C-C3C-C2C	-3.50	101.79	106.90
16	b	604	CLA	C6-C5-C3	-3.50	104.28	113.45
16	a	403	CLA	CHC-C1C-C2C	-3.50	117.04	126.72
16	b	603	CLA	C5-C3-C2	-3.50	114.04	121.12
16	b	616	CLA	CHD-C4C-NC	3.49	129.71	124.20
16	b	611	CLA	C3D-C2D-C1D	-3.49	101.08	105.83
16	d	404	CLA	C4C-C3C-C2C	-3.48	101.82	106.90
16	b	616	CLA	O1D-CGD-CBD	-3.48	117.36	124.48
16	b	606	CLA	O2D-CGD-CBD	3.48	117.45	111.27
16	a	403	CLA	CBC-CAC-C3C	-3.47	102.87	112.43
16	b	608	CLA	C4D-CHA-C1A	-3.47	117.03	121.25
16	d	401	CLA	CBC-CAC-C3C	-3.46	102.90	112.43
20	d	409	MGE	C4D-C3D-C2D	3.46	116.86	110.82
16	d	404	CLA	O2D-CGD-O1D	-3.45	117.10	123.84
20	a	409	MGE	O2G-C1B-C2B	3.44	118.92	111.50
16	b	611	CLA	C1D-CHD-C4C	-3.44	118.63	126.06
16	d	404	CLA	CHD-C1D-ND	-3.44	121.29	124.45
18	h	101	BCR	C28-C27-C26	-3.44	107.94	114.08
18	a	407	BCR	C21-C20-C19	3.43	133.93	123.22
16	b	603	CLA	C3B-C4B-NB	3.43	113.65	109.21
16	b	608	CLA	CHA-C4D-ND	3.43	139.67	132.50
16	a	403	CLA	O2D-CGD-O1D	-3.42	117.15	123.84
27	e	101	HEM	CHD-C1D-C2D	-3.40	119.67	124.98
16	b	602	CLA	C1D-CHD-C4C	-3.40	118.72	126.06
16	b	607	CLA	C4-C3-C5	3.39	120.98	115.27
16	a	402	CLA	C7-C6-C5	-3.38	104.18	113.36
17	a	405	PHO	O1D-CGD-CBD	3.38	130.36	124.74
16	a	403	CLA	CHB-C4A-NA	3.37	129.18	124.51
17	a	404	PHO	CMC-C2C-C3C	3.37	131.30	124.94
16	b	609	CLA	C4C-C3C-C2C	-3.37	101.98	106.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
16	b	603	CLA	C4D-CHA-C1A	-3.36	117.16	121.25
16	b	615	CLA	CHA-C4D-ND	3.35	139.51	132.50
16	b	614	CLA	C4-C3-C2	-3.35	115.08	123.68
16	a	402	CLA	C1D-CHD-C4C	-3.34	118.84	126.06
16	b	609	CLA	C1-C2-C3	-3.34	120.26	126.04
16	b	606	CLA	O2D-CGD-O1D	-3.32	117.34	123.84
27	e	101	HEM	CHA-C4D-ND	3.32	128.49	124.38
20	a	409	MGE	C1D-O6D-C5D	3.32	120.20	113.69
16	b	614	CLA	C3B-C4B-NB	3.31	113.49	109.21
16	b	616	CLA	C4C-C3C-C2C	-3.31	102.07	106.90
18	a	407	BCR	C16-C17-C18	-3.31	122.59	127.31
16	b	615	CLA	CMD-C2D-C3D	3.30	135.22	127.61
16	b	601	CLA	CMD-C2D-C3D	-3.30	120.01	127.61
20	b	622	MGE	O1G-C1A-C2A	3.30	122.27	111.91
16	b	613	CLA	C1C-C2C-C3C	-3.30	103.49	106.96
16	d	405	CLA	CHB-C4A-NA	3.29	129.06	124.51
16	b	606	CLA	C4D-CHA-C1A	-3.28	117.25	121.25
16	a	406	CLA	C1B-CHB-C4A	-3.28	123.62	130.12
18	b	618	BCR	C15-C16-C17	-3.27	116.77	123.47
16	b	604	CLA	CMD-C2D-C1D	3.27	130.48	124.71
16	b	606	CLA	CMD-C2D-C1D	3.26	130.45	124.71
18	b	617	BCR	C15-C14-C13	-3.25	122.67	127.31
18	b	617	BCR	C16-C17-C18	-3.25	122.67	127.31
16	b	604	CLA	C4D-CHA-C1A	-3.22	117.33	121.25
18	b	617	BCR	C11-C10-C9	-3.21	122.73	127.31
18	b	618	BCR	C1-C6-C5	-3.20	118.10	122.61
16	b	602	CLA	CMB-C2B-C1B	-3.20	123.55	128.46
16	b	608	CLA	O2A-CGA-O1A	-3.19	115.55	123.59
16	b	610	CLA	C1D-CHD-C4C	-3.19	119.19	126.06
16	b	602	CLA	C1-C2-C3	-3.18	120.54	126.04
18	h	101	BCR	C1-C6-C7	3.18	124.78	115.78
16	b	608	CLA	C3C-C4C-NC	3.17	114.13	110.57
16	b	613	CLA	C4D-CHA-C1A	-3.17	117.39	121.25
16	b	601	CLA	CHA-C1A-NA	-3.17	119.13	126.40
18	a	407	BCR	C36-C18-C19	3.17	123.07	118.08
16	b	615	CLA	C4-C3-C5	3.16	120.59	115.27
17	a	404	PHO	CBA-CAA-C2A	-3.15	104.60	113.81
16	d	404	CLA	CHC-C1C-C2C	-3.15	118.00	126.72
16	b	608	CLA	CMB-C2B-C3B	3.15	130.57	124.68
16	b	611	CLA	CMC-C2C-C1C	3.15	129.83	125.04
16	b	614	CLA	CHB-C4A-NA	3.15	128.86	124.51
16	b	606	CLA	CMC-C2C-C3C	3.14	134.65	126.12

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
16	b	613	CLA	C3C-C4C-NC	3.14	114.09	110.57
16	b	612	CLA	C4-C3-C5	3.14	120.55	115.27
16	b	605	CLA	CHA-C4D-ND	3.13	139.04	132.50
16	d	404	CLA	CAC-C3C-C4C	3.13	128.87	124.81
18	b	617	BCR	C27-C26-C25	-3.12	118.20	122.73
16	b	605	CLA	C4C-C3C-C2C	-3.12	102.36	106.90
16	d	404	CLA	O2A-CGA-CBA	3.12	121.68	111.91
17	a	405	PHO	C4-C3-C5	3.11	120.51	115.27
16	b	610	CLA	CAA-CBA-CGA	-3.11	104.16	113.25
18	b	618	BCR	C16-C17-C18	-3.10	122.88	127.31
16	d	404	CLA	CHB-C4A-NA	3.10	128.80	124.51
17	a	405	PHO	C6-C5-C3	3.10	121.59	113.45
16	b	612	CLA	O2D-CGD-CBD	3.10	116.78	111.27
16	d	401	CLA	CHA-C4D-ND	3.10	138.98	132.50
16	b	605	CLA	C3A-C2A-C1A	-3.10	96.70	101.34
16	d	401	CLA	C1D-ND-C4D	-3.10	104.14	106.33
18	h	101	BCR	C20-C21-C22	-3.09	122.90	127.31
20	d	409	MGE	O1G-C1A-C2A	3.09	121.60	111.91
16	a	402	CLA	CMD-C2D-C1D	3.08	130.15	124.71
16	a	406	CLA	CMB-C2B-C3B	3.08	130.44	124.68
16	b	609	CLA	O2D-CGD-O1D	-3.07	117.84	123.84
16	a	402	CLA	CAC-C3C-C2C	-3.07	122.28	127.53
27	e	101	HEM	CHB-C1B-NB	3.07	128.17	124.38
16	b	603	CLA	O2A-C1-C2	-3.06	100.59	108.64
16	b	614	CLA	CAC-C3C-C4C	3.06	128.78	124.81
16	b	602	CLA	C4-C3-C5	3.05	120.41	115.27
16	b	614	CLA	C1D-CHD-C4C	-3.05	119.47	126.06
16	d	405	CLA	O2D-CGD-O1D	-3.05	117.87	123.84
27	e	101	HEM	CAD-CBD-CGD	-3.05	107.05	113.60
16	b	612	CLA	C3B-C4B-NB	3.04	113.15	109.21
16	b	604	CLA	CMB-C2B-C3B	3.04	130.37	124.68
16	b	607	CLA	C1C-C2C-C3C	-3.04	103.76	106.96
16	b	614	CLA	CHA-C4D-ND	3.04	138.85	132.50
15	l	101	SQD	O8-S-O7	3.04	118.69	111.27
16	b	611	CLA	CHD-C1D-ND	-3.03	121.67	124.45
18	h	101	BCR	C34-C9-C10	-3.03	118.67	122.92
16	b	602	CLA	CMD-C2D-C3D	3.03	134.59	127.61
18	b	618	BCR	C33-C5-C4	3.03	119.43	113.62
16	b	613	CLA	O2D-CGD-O1D	-3.02	117.94	123.84
18	a	407	BCR	C20-C19-C18	3.01	134.86	126.42
16	b	606	CLA	O2A-CGA-O1A	-3.00	116.01	123.59
16	b	607	CLA	CMD-C2D-C1D	3.00	130.00	124.71

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
18	b	618	BCR	C11-C10-C9	-3.00	123.03	127.31
16	a	406	CLA	CHB-C4A-NA	3.00	128.66	124.51
18	a	407	BCR	C4-C5-C6	-3.00	118.38	122.73
16	b	606	CLA	C3B-C4B-NB	2.99	113.08	109.21
18	d	407	BCR	C11-C10-C9	-2.99	123.05	127.31
16	b	614	CLA	CHD-C4C-NC	2.99	128.91	124.20
20	b	620	MGE	C1D-O6D-C5D	2.99	119.55	113.69
16	b	608	CLA	C3B-C4B-NB	2.98	113.07	109.21
16	b	615	CLA	C3B-C4B-NB	2.98	113.06	109.21
15	a	401	SQD	O8-S-O7	2.98	118.55	111.27
18	h	101	BCR	C24-C23-C22	-2.97	121.75	126.23
16	b	613	CLA	C2A-C1A-CHA	-2.97	118.67	123.86
18	b	618	BCR	C4-C5-C6	-2.97	118.42	122.73
16	b	613	CLA	C3B-C4B-NB	2.97	113.05	109.21
22	t	101	LMT	C2'-C3'-C4'	2.97	116.46	109.68
16	b	606	CLA	CHD-C4C-NC	2.96	128.87	124.20
16	b	603	CLA	O2D-CGD-CBD	2.96	116.53	111.27
16	b	604	CLA	O2A-CGA-O1A	-2.96	116.11	123.59
16	b	610	CLA	CHB-C4A-NA	2.96	128.60	124.51
16	a	402	CLA	CHD-C4C-NC	2.95	128.85	124.20
16	b	616	CLA	O2A-CGA-CBA	2.95	123.88	112.23
16	b	602	CLA	C2A-C3A-C4A	-2.95	97.11	101.87
16	b	613	CLA	C1-O2A-CGA	2.95	124.17	116.44
16	b	608	CLA	CAC-C3C-C4C	2.93	128.62	124.81
18	d	407	BCR	C16-C17-C18	-2.93	123.13	127.31
16	a	403	CLA	C2A-C1A-CHA	-2.93	118.74	123.86
18	a	407	BCR	C8-C9-C10	2.93	123.44	118.94
16	d	405	CLA	CMC-C2C-C1C	2.92	129.49	125.04
16	b	602	CLA	C4D-CHA-C1A	-2.92	117.69	121.25
16	b	616	CLA	C1C-C2C-C3C	-2.92	103.89	106.96
16	b	610	CLA	CHA-C4D-ND	2.92	138.60	132.50
16	b	615	CLA	CHD-C4C-NC	2.91	128.79	124.20
16	a	402	CLA	C4D-CHA-C1A	-2.91	117.71	121.25
16	d	405	CLA	CAC-C3C-C4C	2.91	128.58	124.81
15	l	101	SQD	O48-C23-C24	2.89	120.99	111.91
16	b	607	CLA	CMB-C2B-C3B	2.89	130.09	124.68
16	b	607	CLA	C4C-C3C-C2C	-2.89	102.68	106.90
16	a	406	CLA	O2D-CGD-O1D	-2.89	118.19	123.84
24	d	406	PQ9	C30-C31-C32	2.88	121.36	111.88
26	d	412	DGD	O1G-C1A-C2A	2.88	120.94	111.91
16	b	605	CLA	CHC-C1C-NC	-2.87	119.84	124.20
16	b	613	CLA	CMB-C2B-C3B	2.87	130.05	124.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
18	h	101	BCR	C16-C15-C14	-2.87	117.60	123.47
16	b	614	CLA	C1-O2A-CGA	2.87	123.97	116.44
17	a	405	PHO	O2D-CGD-O1D	-2.87	118.23	123.84
16	b	616	CLA	O2D-CGD-O1D	-2.86	118.24	123.84
16	b	609	CLA	C1C-C2C-C3C	-2.86	103.95	106.96
16	b	602	CLA	CMA-C3A-C4A	-2.86	104.08	111.77
16	b	606	CLA	C1D-ND-C4D	-2.86	104.30	106.33
18	b	619	BCR	C33-C5-C6	-2.86	121.32	124.53
20	d	410	MGE	O1G-C1A-C2A	2.85	120.86	111.91
16	b	605	CLA	C2A-C1A-CHA	-2.85	118.88	123.86
16	b	607	CLA	CHD-C4C-NC	2.85	128.69	124.20
20	d	408	MGE	C1D-O6D-C5D	2.84	119.26	113.69
16	a	403	CLA	CMC-C2C-C1C	2.83	129.35	125.04
16	b	614	CLA	C4-C3-C5	2.83	120.03	115.27
16	b	605	CLA	O2D-CGD-O1D	-2.83	118.31	123.84
16	d	404	CLA	CMC-C2C-C1C	2.82	129.34	125.04
18	a	407	BCR	C36-C18-C17	-2.82	118.97	122.92
20	b	620	MGE	O1G-C1A-O1A	-2.81	116.49	123.59
18	b	617	BCR	C8-C7-C6	-2.81	119.30	127.20
16	b	610	CLA	CMD-C2D-C1D	2.79	129.63	124.71
16	d	404	CLA	C1B-CHB-C4A	-2.79	124.60	130.12
16	b	602	CLA	O2A-CGA-O1A	-2.79	116.56	123.59
16	b	605	CLA	C4A-NA-C1A	-2.78	105.45	106.71
16	d	401	CLA	C4A-NA-C1A	-2.78	105.45	106.71
15	a	401	SQD	C45-O47-C7	-2.78	112.72	117.90
18	b	618	BCR	C30-C25-C26	-2.77	118.71	122.61
16	a	403	CLA	O2A-CGA-CBA	2.76	120.58	111.91
16	b	607	CLA	O2D-CGD-O1D	-2.76	118.44	123.84
16	b	610	CLA	CHD-C4C-NC	2.76	128.55	124.20
18	b	617	BCR	C30-C25-C26	-2.75	118.74	122.61
16	b	610	CLA	C3B-C4B-NB	2.75	112.77	109.21
16	b	610	CLA	O2A-CGA-O1A	-2.74	116.67	123.59
16	b	603	CLA	C1D-CHD-C4C	-2.74	120.14	126.06
16	a	402	CLA	CHA-C4D-ND	2.74	138.24	132.50
16	d	404	CLA	C2A-C1A-CHA	-2.74	119.07	123.86
16	a	406	CLA	C1-C2-C3	-2.74	122.32	126.75
17	a	405	PHO	C1B-NB-C4B	2.73	112.70	107.09
16	a	406	CLA	C4D-C3D-CAD	2.73	111.31	108.10
18	b	618	BCR	C8-C7-C6	-2.73	119.53	127.20
16	b	603	CLA	C2A-C1A-CHA	-2.73	119.09	123.86
16	b	606	CLA	C1-O2A-CGA	2.73	123.59	116.44
26	d	412	DGD	C1E-O6E-C5E	2.73	119.04	113.69

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
16	b	609	CLA	C7-C6-C5	-2.72	105.96	113.36
16	b	616	CLA	C2A-C1A-CHA	-2.72	119.10	123.86
16	a	406	CLA	CMC-C2C-C1C	2.72	129.18	125.04
16	a	402	CLA	O2D-CGD-O1D	-2.71	118.53	123.84
16	d	401	CLA	C3C-C4C-NC	2.71	113.61	110.57
20	d	410	MGE	O6D-C1D-O3G	2.71	116.39	109.97
24	d	406	PQ9	C29-C28-C27	-2.70	116.74	123.68
24	d	406	PQ9	C19-C18-C20	2.70	119.81	115.27
16	b	613	CLA	C4C-C3C-C2C	-2.70	102.96	106.90
16	b	604	CLA	CED-O2D-CGD	2.70	122.04	115.94
16	b	611	CLA	C14-C13-C15	-2.69	101.56	111.29
16	d	404	CLA	CMB-C2B-C3B	2.69	129.71	124.68
16	b	616	CLA	CHA-C4D-ND	2.68	138.11	132.50
16	d	405	CLA	CHC-C1C-C2C	-2.68	119.30	126.72
16	b	607	CLA	C4D-CHA-C1A	-2.68	117.99	121.25
16	a	402	CLA	O2A-CGA-O1A	-2.68	116.83	123.59
24	d	406	PQ9	C11-C12-C13	-2.68	122.34	126.79
16	b	607	CLA	C3B-C4B-NB	2.67	112.66	109.21
16	b	609	CLA	C3D-C2D-C1D	-2.67	102.19	105.83
20	d	408	MGE	O1G-C1A-C2A	2.67	120.28	111.91
18	b	617	BCR	C7-C8-C9	-2.66	122.21	126.23
16	b	603	CLA	C7-C6-C5	-2.66	106.13	113.36
16	a	406	CLA	CHC-C1C-C2C	-2.66	119.36	126.72
16	b	607	CLA	O2D-CGD-CBD	2.66	115.99	111.27
16	a	403	CLA	CMD-C2D-C3D	-2.66	121.50	127.61
18	b	619	BCR	C33-C5-C4	2.65	118.72	113.62
16	b	614	CLA	CBC-CAC-C3C	-2.65	105.12	112.43
16	a	402	CLA	C3B-C4B-NB	2.64	112.63	109.21
16	b	609	CLA	CHA-C4D-ND	2.64	138.02	132.50
16	b	612	CLA	O2A-CGA-CBA	2.63	120.17	111.91
18	h	101	BCR	C30-C25-C26	-2.62	118.92	122.61
17	a	404	PHO	C4-C3-C5	2.62	119.68	115.27
16	b	602	CLA	C1B-CHB-C4A	-2.61	124.94	130.12
15	a	401	SQD	C4-C3-C2	2.61	115.37	110.82
16	b	604	CLA	C4C-C3C-C2C	-2.60	103.11	106.90
16	d	404	CLA	CGD-CBD-CAD	-2.60	102.31	110.73
16	b	608	CLA	C1D-CHD-C4C	-2.60	120.45	126.06
18	d	407	BCR	C15-C14-C13	-2.59	123.61	127.31
16	a	406	CLA	O2A-CGA-CBA	2.59	120.02	111.91
16	d	405	CLA	O2A-CGA-CBA	2.58	120.00	111.91
16	b	615	CLA	CMA-C3A-C4A	-2.58	104.84	111.77
16	b	613	CLA	O2A-CGA-CBA	2.57	119.97	111.91

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
20	d	409	MGE	C3G-O3G-C1D	-2.57	108.72	113.74
16	b	614	CLA	CED-O2D-CGD	2.57	121.74	115.94
18	a	407	BCR	C28-C27-C26	-2.56	109.50	114.08
20	b	622	MGE	O1G-C1A-O1A	-2.56	117.12	123.59
18	h	101	BCR	C7-C6-C5	-2.56	115.26	121.46
16	b	607	CLA	C3C-C4C-NC	2.56	113.44	110.57
16	b	610	CLA	O2D-CGD-O1D	-2.56	118.84	123.84
16	a	403	CLA	C1-C2-C3	-2.55	122.62	126.75
16	b	604	CLA	C3B-C4B-NB	2.55	112.50	109.21
18	b	618	BCR	C7-C8-C9	-2.54	122.39	126.23
16	b	611	CLA	CMD-C2D-C1D	2.54	129.19	124.71
16	b	607	CLA	CBC-CAC-C3C	-2.54	105.43	112.43
16	b	616	CLA	CED-O2D-CGD	2.54	121.68	115.94
16	d	405	CLA	C2A-C1A-CHA	-2.54	119.42	123.86
18	b	619	BCR	C32-C1-C6	-2.53	106.19	110.30
20	d	409	MGE	C3D-C4D-C5D	2.53	114.76	110.24
16	b	601	CLA	CHB-C4A-NA	-2.53	121.02	124.51
18	b	617	BCR	C38-C26-C27	2.53	118.47	113.62
16	b	614	CLA	O2A-CGA-CBA	2.53	119.83	111.91
18	d	407	BCR	C16-C15-C14	-2.52	118.31	123.47
18	b	617	BCR	C21-C20-C19	-2.52	115.36	123.22
20	m	101	MGE	O1G-C1A-C2A	2.52	119.80	111.91
16	b	602	CLA	CHD-C4C-NC	2.51	128.16	124.20
20	d	409	MGE	C1D-O6D-C5D	2.51	118.61	113.69
16	b	616	CLA	C3B-C4B-NB	2.50	112.45	109.21
16	b	613	CLA	CHD-C4C-NC	2.50	128.15	124.20
16	a	403	CLA	C4C-C3C-C2C	-2.50	103.25	106.90
18	b	617	BCR	C1-C6-C5	-2.50	119.09	122.61
16	b	611	CLA	CHD-C4C-NC	2.49	128.13	124.20
18	b	619	BCR	C1-C6-C5	-2.49	119.11	122.61
16	b	616	CLA	CBC-CAC-C3C	-2.49	105.58	112.43
22	b	623	LMT	C2'-C3'-C4'	2.48	115.36	109.68
16	b	616	CLA	C4D-CHA-C1A	-2.48	118.23	121.25
16	b	609	CLA	C2A-C1A-CHA	-2.48	119.53	123.86
16	b	604	CLA	C7-C6-C5	-2.48	106.63	113.36
16	b	606	CLA	CBC-CAC-C3C	-2.48	105.60	112.43
16	a	406	CLA	CMD-C2D-C3D	-2.48	121.92	127.61
18	b	617	BCR	C4-C5-C6	-2.48	119.14	122.73
17	a	404	PHO	C5-C3-C2	-2.47	116.12	121.12
18	a	407	BCR	C33-C5-C4	2.47	118.35	113.62
16	b	605	CLA	O2A-C1-C2	-2.45	102.19	108.64
16	b	615	CLA	O2A-CGA-O1A	-2.45	117.40	123.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
16	b	607	CLA	CGD-CBD-CAD	-2.45	102.80	110.73
16	b	607	CLA	C7-C6-C5	-2.45	106.71	113.36
18	b	618	BCR	C28-C27-C26	-2.45	109.71	114.08
18	b	617	BCR	C40-C30-C25	-2.44	106.33	110.30
16	b	601	CLA	O1D-CGD-CBD	-2.44	119.49	124.48
16	d	404	CLA	C4D-C3D-CAD	2.44	110.97	108.10
16	b	608	CLA	CMD-C2D-C1D	2.44	129.01	124.71
16	b	613	CLA	CHA-C4D-ND	2.44	137.60	132.50
16	b	603	CLA	C3C-C4C-NC	2.44	113.30	110.57
16	b	603	CLA	O2A-CGA-O1A	-2.44	117.44	123.59
16	b	604	CLA	CHD-C1D-ND	-2.44	122.22	124.45
20	d	408	MGE	C4D-C3D-C2D	2.43	115.07	110.82
22	t	101	LMT	C1'-C2'-C3'	2.43	115.05	110.00
20	d	410	MGE	C1D-C2D-C3D	-2.43	104.94	110.00
16	b	602	CLA	C2A-C1A-CHA	-2.42	119.62	123.86
16	d	401	CLA	C1-O2A-CGA	2.42	122.80	116.44
20	b	622	MGE	C3G-C2G-C1G	-2.42	106.06	111.79
15	a	401	SQD	C3-C4-C5	2.42	114.55	110.24
24	d	406	PQ9	C6-C5-C4	2.42	119.93	114.99
17	a	405	PHO	CAA-CBA-CGA	-2.42	106.19	113.25
20	a	409	MGE	O1G-C1A-C2A	2.41	119.48	111.91
16	b	601	CLA	CHD-C4C-C3C	-2.41	121.30	124.84
16	b	602	CLA	O2A-CGA-CBA	2.41	119.47	111.91
16	d	405	CLA	CMB-C2B-C3B	2.40	129.17	124.68
16	b	612	CLA	CED-O2D-CGD	2.40	121.37	115.94
20	m	101	MGE	C4D-C3D-C2D	2.40	115.01	110.82
16	a	406	CLA	C3D-C4D-CHA	-2.39	107.25	112.72
20	b	622	MGE	C2G-O2G-C1B	-2.39	111.91	117.79
16	b	611	CLA	C3C-C4C-NC	2.38	113.23	110.57
17	a	405	PHO	C6-C7-C8	2.37	123.59	115.92
20	d	408	MGE	O3G-C1D-C2D	2.37	112.00	108.30
16	b	611	CLA	C7-C6-C5	-2.36	106.95	113.36
20	b	622	MGE	C4D-C3D-C2D	2.35	114.92	110.82
18	b	619	BCR	C30-C25-C26	-2.35	119.31	122.61
16	b	615	CLA	C11-C10-C8	-2.34	108.36	115.92
17	a	404	PHO	C1B-NB-C4B	2.33	111.88	107.09
20	b	622	MGE	C1D-O6D-C5D	2.33	118.26	113.69
18	b	617	BCR	C20-C21-C22	-2.33	123.99	127.31
16	d	401	CLA	C3B-C4B-NB	2.32	112.21	109.21
16	a	403	CLA	C4D-C3D-CAD	2.32	110.83	108.10
16	d	404	CLA	C4-C3-C5	2.31	119.16	115.27
18	h	101	BCR	C39-C30-C25	-2.31	106.55	110.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
16	d	404	CLA	O2A-CGA-O1A	-2.31	117.77	123.59
16	a	402	CLA	CMC-C2C-C3C	2.31	132.38	126.12
16	b	602	CLA	C16-C17-C18	-2.30	105.12	115.98
16	b	614	CLA	C2A-C1A-CHA	-2.30	119.83	123.86
18	a	407	BCR	C35-C13-C14	-2.30	119.70	122.92
16	b	612	CLA	CMC-C2C-C1C	2.30	128.54	125.04
16	b	611	CLA	CAC-C3C-C4C	2.30	127.79	124.81
22	t	101	LMT	O1B-C1B-O5B	-2.29	104.27	110.67
16	b	605	CLA	C14-C13-C12	-2.29	103.00	111.29
18	d	407	BCR	C20-C21-C22	-2.29	124.05	127.31
16	d	401	CLA	CHD-C1D-ND	-2.28	122.36	124.45
20	a	409	MGE	O6D-C5D-C4D	2.28	113.83	109.69
16	b	609	CLA	CBC-CAC-C3C	-2.28	106.15	112.43
18	d	407	BCR	C28-C27-C26	-2.28	110.01	114.08
17	a	404	PHO	O2D-CGD-O1D	-2.28	119.39	123.84
16	b	614	CLA	C3D-C4D-CHA	-2.27	107.52	112.72
16	b	602	CLA	CED-O2D-CGD	2.27	121.07	115.94
16	b	602	CLA	C3D-C4D-CHA	-2.27	107.54	112.72
16	b	608	CLA	CHD-C4C-NC	2.26	127.77	124.20
18	b	617	BCR	C16-C15-C14	-2.26	118.84	123.47
15	l	101	SQD	C4-C3-C2	2.26	114.77	110.82
22	t	101	LMT	O1B-C1B-C2B	2.26	113.95	108.10
16	b	616	CLA	C1-O2A-CGA	2.25	123.52	116.11
16	b	606	CLA	C3C-C4C-NC	2.25	113.09	110.57
16	d	405	CLA	C1-O2A-CGA	2.24	122.33	116.44
16	d	401	CLA	O2A-C1-C2	-2.24	102.74	108.64
16	a	402	CLA	O2A-CGA-CBA	2.24	118.93	111.91
16	a	406	CLA	CMA-C3A-C4A	-2.24	105.76	111.77
17	a	404	PHO	CMB-C2B-C3B	2.24	128.86	124.68
26	d	412	DGD	O2G-C1B-O1B	-2.24	118.30	123.70
27	e	101	HEM	C4D-ND-C1D	2.23	107.38	105.07
16	b	606	CLA	CHA-C4D-ND	2.23	137.16	132.50
27	e	101	HEM	CMA-C3A-C4A	-2.23	125.04	128.46
16	b	615	CLA	CHD-C1D-ND	-2.22	122.42	124.45
18	b	619	BCR	C29-C28-C27	2.21	116.31	111.38
16	b	605	CLA	CAC-C3C-C2C	-2.20	123.76	127.53
16	b	606	CLA	C4-C3-C5	2.20	118.97	115.27
16	d	404	CLA	C1-C2-C3	-2.20	122.25	126.04
16	b	615	CLA	C1-O2A-CGA	2.20	122.20	116.44
16	a	402	CLA	C1-C2-C3	-2.19	122.25	126.04
16	b	611	CLA	C16-C15-C13	2.18	122.97	115.92
18	d	407	BCR	C21-C20-C19	-2.18	116.42	123.22

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
16	a	406	CLA	CAC-C3C-C2C	2.17	131.25	127.53
16	b	606	CLA	O2A-CGA-CBA	2.17	118.72	111.91
16	b	609	CLA	CMB-C2B-C3B	2.17	128.74	124.68
16	b	608	CLA	C6-C7-C8	-2.17	108.91	115.92
20	b	622	MGE	C3G-O3G-C1D	-2.17	109.50	113.74
18	b	618	BCR	C33-C5-C6	-2.16	122.10	124.53
20	d	410	MGE	O6D-C5D-C6D	2.16	111.80	106.44
16	b	608	CLA	C3D-C4D-CHA	-2.16	107.79	112.72
16	d	401	CLA	O2D-CGD-O1D	-2.15	119.62	123.84
16	b	610	CLA	O2A-CGA-CBA	2.15	118.67	111.91
16	d	401	CLA	CMD-C2D-C3D	2.15	132.57	127.61
16	d	401	CLA	C4C-C3C-C2C	-2.15	103.76	106.90
16	d	401	CLA	CGD-CBD-CAD	-2.15	103.77	110.73
16	a	406	CLA	CAC-C3C-C4C	2.15	127.59	124.81
16	b	607	CLA	C1-C2-C3	-2.14	122.34	126.04
24	d	406	PQ9	C24-C23-C25	2.14	118.87	115.27
20	d	409	MGE	O3D-C3D-C2D	-2.13	105.42	110.35
18	b	617	BCR	C33-C5-C4	2.13	117.71	113.62
16	b	604	CLA	C1D-CHD-C4C	-2.13	121.47	126.06
16	b	611	CLA	C2A-C1A-CHA	-2.13	120.14	123.86
18	d	407	BCR	C10-C11-C12	-2.12	116.59	123.22
18	b	617	BCR	C23-C24-C25	-2.12	121.24	127.20
24	d	406	PQ9	C29-C28-C30	2.12	118.84	115.27
16	b	606	CLA	CHC-C1C-C2C	-2.12	120.86	126.72
20	d	410	MGE	O1G-C1A-O1A	-2.12	118.25	123.59
16	b	611	CLA	C3D-C4D-CHA	-2.12	107.88	112.72
20	d	409	MGE	O1G-C1A-O1A	-2.12	118.25	123.59
18	b	619	BCR	C23-C24-C25	-2.11	121.26	127.20
18	b	619	BCR	C15-C16-C17	-2.11	119.15	123.47
16	d	401	CLA	OBD-CAD-C3D	-2.11	123.44	128.52
16	b	605	CLA	C1-C2-C3	-2.11	122.39	126.04
18	b	618	BCR	C10-C11-C12	-2.11	116.64	123.22
20	d	408	MGE	C3G-O3G-C1D	-2.10	109.64	113.74
15	a	401	SQD	O6-C1-C2	2.10	111.58	108.30
20	b	620	MGE	O2G-C1B-O1B	-2.10	118.63	123.70
27	e	101	HEM	C4B-C3B-C2B	-2.10	105.45	107.11
16	b	614	CLA	C4D-C3D-CAD	2.09	110.56	108.10
16	b	615	CLA	CBC-CAC-C3C	-2.09	106.67	112.43
16	b	614	CLA	C3D-C4D-ND	2.09	113.62	110.24
24	d	406	PQ9	C14-C13-C15	2.09	118.78	115.27
16	b	611	CLA	C17-C16-C15	-2.09	103.65	113.24
18	d	407	BCR	C33-C5-C6	-2.09	122.18	124.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
16	b	612	CLA	CHA-C4D-ND	2.09	136.87	132.50
16	b	602	CLA	C17-C16-C15	-2.08	103.67	113.24
16	b	612	CLA	CMD-C2D-C1D	2.08	128.38	124.71
18	a	407	BCR	C34-C9-C10	-2.07	120.02	122.92
16	b	615	CLA	C5-C3-C2	-2.07	116.92	121.12
16	b	603	CLA	C1B-CHB-C4A	-2.07	126.02	130.12
20	d	410	MGE	O6D-C5D-C4D	2.07	113.45	109.69
16	b	606	CLA	C4C-C3C-C2C	-2.07	103.88	106.90
16	b	605	CLA	C5-C3-C2	-2.07	116.94	121.12
16	b	608	CLA	CMC-C2C-C1C	2.06	128.18	125.04
16	a	403	CLA	C3D-C4D-CHA	-2.06	108.00	112.72
16	b	608	CLA	C6-C5-C3	-2.06	108.04	113.45
17	a	404	PHO	C6-C5-C3	2.06	118.86	113.45
16	a	402	CLA	O2D-CGD-CBD	2.06	114.93	111.27
16	b	601	CLA	CHD-C1D-C2D	2.06	129.79	125.48
17	a	404	PHO	OBD-CAD-CBD	-2.05	122.81	125.82
20	d	410	MGE	O2G-C1B-O1B	-2.05	118.75	123.70
16	a	402	CLA	C4C-C3C-C2C	-2.05	103.92	106.90
16	b	608	CLA	C2A-C1A-CHA	-2.04	120.29	123.86
18	h	101	BCR	C20-C19-C18	-2.04	120.69	126.42
18	a	407	BCR	C10-C11-C12	2.03	129.56	123.22
16	d	404	CLA	CBC-CAC-C3C	-2.03	106.83	112.43
18	d	407	BCR	C15-C16-C17	-2.03	119.32	123.47
22	d	402	LMT	C1-O1'-C1'	-2.03	110.48	113.84
18	a	407	BCR	C29-C28-C27	-2.02	106.86	111.38
16	a	403	CLA	C5-C3-C4	2.02	119.06	114.60
24	d	406	PQ9	O4-C4-C5	-2.02	117.10	120.59
16	b	604	CLA	C6-C7-C8	-2.01	109.41	115.92
20	d	410	MGE	O3G-C3G-C2G	2.01	115.76	110.90
15	l	101	SQD	C3-C4-C5	2.01	113.83	110.24
16	d	405	CLA	CMA-C3A-C4A	-2.01	106.36	111.77
16	a	403	CLA	CMB-C2B-C3B	2.01	128.44	124.68
16	b	612	CLA	C1D-ND-C4D	-2.01	104.91	106.33
16	b	609	CLA	C4-C3-C5	2.01	118.65	115.27
16	a	402	CLA	C3C-C4C-NC	2.01	112.82	110.57
16	b	612	CLA	C2A-C1A-CHA	-2.00	120.36	123.86

All (15) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
16	a	402	CLA	ND
16	b	602	CLA	ND

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Mol	Chain	Res	Type	Atom
16	b	603	CLA	ND
16	b	604	CLA	ND
16	b	605	CLA	ND
16	b	606	CLA	ND
16	b	607	CLA	ND
16	b	610	CLA	ND
16	b	612	CLA	ND
16	b	613	CLA	ND
16	b	614	CLA	ND
16	b	615	CLA	ND
16	b	616	CLA	ND
16	d	401	CLA	ND
16	d	404	CLA	C8

All (284) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
15	a	401	SQD	O5-C5-C6-S
15	a	401	SQD	C5-C6-S-O8
15	l	101	SQD	C5-C6-S-O7
15	l	101	SQD	C5-C6-S-O9
16	a	406	CLA	C1A-C2A-CAA-CBA
16	a	406	CLA	C3A-C2A-CAA-CBA
16	b	601	CLA	CBD-CGD-O2D-CED
16	b	602	CLA	CHA-CBD-CGD-O1D
16	b	605	CLA	C2-C3-C5-C6
16	b	605	CLA	C4-C3-C5-C6
16	b	606	CLA	CHA-CBD-CGD-O1D
16	b	614	CLA	CHA-CBD-CGD-O2D
16	b	614	CLA	CAD-CBD-CGD-O1D
16	b	614	CLA	CAD-CBD-CGD-O2D
16	b	614	CLA	C3-C5-C6-C7
16	d	401	CLA	CHA-CBD-CGD-O2D
17	a	404	PHO	C2-C3-C5-C6
17	a	404	PHO	C4-C3-C5-C6
17	a	405	PHO	CBD-CGD-O2D-CED
18	a	407	BCR	C7-C8-C9-C10
18	a	407	BCR	C7-C8-C9-C34
18	a	407	BCR	C11-C12-C13-C14
18	a	407	BCR	C11-C12-C13-C35
18	a	407	BCR	C17-C18-C19-C20
18	a	407	BCR	C36-C18-C19-C20

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Mol	Chain	Res	Type	Atoms
18	d	407	BCR	C7-C8-C9-C34
18	d	407	BCR	C21-C22-C23-C24
18	d	407	BCR	C37-C22-C23-C24
18	h	101	BCR	C5-C6-C7-C8
20	a	409	MGE	O2G-C2G-C3G-O3G
20	b	620	MGE	O2G-C2G-C3G-O3G
20	d	410	MGE	O6D-C1D-O3G-C3G
20	m	101	MGE	C2B-C1B-O2G-C2G
20	m	101	MGE	O1B-C1B-O2G-C2G
24	d	406	PQ9	C38-C40-C41-C42
27	e	101	HEM	C2B-C3B-CAB-CBB
27	e	101	HEM	C4B-C3B-CAB-CBB
15	a	401	SQD	C8-C7-O47-C45
17	a	405	PHO	O1D-CGD-O2D-CED
16	d	405	CLA	CBD-CGD-O2D-CED
16	a	406	CLA	O1A-CGA-O2A-C1
16	a	406	CLA	CBA-CGA-O2A-C1
16	b	601	CLA	O1D-CGD-O2D-CED
16	d	404	CLA	C4-C3-C5-C6
16	b	604	CLA	C3-C5-C6-C7
15	a	401	SQD	O49-C7-O47-C45
16	b	614	CLA	C4-C3-C5-C6
17	a	405	PHO	C4-C3-C5-C6
24	d	406	PQ9	C39-C38-C40-C41
16	b	614	CLA	C2-C3-C5-C6
17	a	405	PHO	C2-C3-C5-C6
24	d	406	PQ9	C37-C38-C40-C41
22	t	101	LMT	O5'-C5'-C6'-O6'
24	d	406	PQ9	C13-C15-C16-C17
24	d	406	PQ9	C23-C25-C26-C27
16	d	405	CLA	O1D-CGD-O2D-CED
16	b	604	CLA	C13-C15-C16-C17
20	m	101	MGE	C1A-C2A-C3A-C4A
22	t	101	LMT	C4'-C5'-C6'-O6'
16	d	404	CLA	C2-C3-C5-C6
18	h	101	BCR	C7-C8-C9-C34
18	h	101	BCR	C36-C18-C19-C20
18	h	101	BCR	C7-C8-C9-C10
20	d	410	MGE	C1A-C2A-C3A-C4A
16	d	404	CLA	C8-C10-C11-C12
16	b	606	CLA	C11-C12-C13-C15
18	h	101	BCR	C9-C10-C11-C12

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Mol	Chain	Res	Type	Atoms
16	d	404	CLA	C10-C11-C12-C13
22	t	101	LMT	O5'-C1'-O1'-C1
16	b	603	CLA	C5-C6-C7-C8
17	a	405	PHO	C5-C6-C7-C8
16	a	402	CLA	C15-C16-C17-C18
20	b	622	MGE	C2B-C1B-O2G-C2G
20	b	622	MGE	O1B-C1B-O2G-C2G
16	b	606	CLA	C13-C15-C16-C17
16	b	615	CLA	C10-C11-C12-C13
20	m	101	MGE	C5B-C6B-C7B-C8B
15	l	101	SQD	C14-C15-C16-C17
20	d	410	MGE	C2D-C1D-O3G-C3G
22	t	101	LMT	C2'-C1'-O1'-C1
20	d	408	MGE	C5B-C6B-C7B-C8B
16	b	606	CLA	C16-C17-C18-C19
17	a	404	PHO	C16-C17-C18-C20
20	b	620	MGE	C4A-C5A-C6A-C7A
18	d	407	BCR	C7-C8-C9-C10
17	a	404	PHO	C16-C17-C18-C19
20	d	410	MGE	C5B-C6B-C7B-C8B
15	l	101	SQD	C23-C24-C25-C26
20	a	409	MGE	C5B-C6B-C7B-C8B
16	b	611	CLA	O1D-CGD-O2D-CED
20	d	410	MGE	C2B-C1B-O2G-C2G
16	b	608	CLA	C13-C15-C16-C17
16	a	402	CLA	C2C-C3C-CAC-CBC
18	a	407	BCR	C23-C24-C25-C26
18	a	407	BCR	C23-C24-C25-C30
18	d	407	BCR	C1-C6-C7-C8
18	d	407	BCR	C5-C6-C7-C8
18	d	407	BCR	C23-C24-C25-C26
18	d	407	BCR	C23-C24-C25-C30
18	h	101	BCR	C1-C6-C7-C8
18	h	101	BCR	C23-C24-C25-C26
18	h	101	BCR	C23-C24-C25-C30
20	a	409	MGE	C6B-C7B-C8B-C9B
16	b	606	CLA	C6-C7-C8-C10
20	a	409	MGE	C2B-C3B-C4B-C5B
20	b	622	MGE	C1A-C2A-C3A-C4A
16	b	611	CLA	C13-C15-C16-C17
16	b	612	CLA	C13-C15-C16-C17
16	d	404	CLA	C5-C6-C7-C8

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Mol	Chain	Res	Type	Atoms
20	m	101	MGE	C3A-C4A-C5A-C6A
16	b	603	CLA	CBD-CGD-O2D-CED
15	l	101	SQD	C8-C7-O47-C45
16	d	401	CLA	C2C-C3C-CAC-CBC
26	d	412	DGD	C4B-C5B-C6B-C7B
15	l	101	SQD	O49-C7-O47-C45
20	d	410	MGE	O1B-C1B-O2G-C2G
15	l	101	SQD	O47-C45-C46-O48
20	d	408	MGE	O6D-C5D-C6D-O5D
20	b	622	MGE	C9B-CAB-CBB-CCB
20	m	101	MGE	C4A-C5A-C6A-C7A
20	b	620	MGE	C3B-C4B-C5B-C6B
26	d	412	DGD	O6E-C5E-C6E-O5E
22	d	402	LMT	C4B-C5B-C6B-O6B
16	b	606	CLA	C2A-CAA-CBA-CGA
18	h	101	BCR	C37-C22-C23-C24
16	b	602	CLA	C16-C17-C18-C19
16	b	606	CLA	C16-C17-C18-C20
15	l	101	SQD	C18-C19-C20-C21
16	b	614	CLA	O1D-CGD-O2D-CED
15	l	101	SQD	C44-C45-C46-O48
20	b	620	MGE	O1G-C1G-C2G-C3G
20	b	620	MGE	C1G-C2G-C3G-O3G
20	a	409	MGE	C2A-C1A-O1G-C1G
22	b	623	LMT	C4'-C5'-C6'-O6'
20	d	410	MGE	C2G-C3G-O3G-C1D
20	b	622	MGE	CAB-CBB-CCB-CDB
20	a	409	MGE	C1B-C2B-C3B-C4B
20	d	410	MGE	O6D-C5D-C6D-O5D
20	m	101	MGE	C4B-C5B-C6B-C7B
16	b	602	CLA	C16-C17-C18-C20
20	a	409	MGE	O1A-C1A-O1G-C1G
17	a	405	PHO	C15-C16-C17-C18
16	b	606	CLA	C12-C13-C15-C16
17	a	404	PHO	C6-C7-C8-C10
16	b	611	CLA	C14-C13-C15-C16
17	a	404	PHO	C6-C7-C8-C9
20	a	409	MGE	C1A-C2A-C3A-C4A
16	b	612	CLA	C3-C5-C6-C7
16	b	615	CLA	O1D-CGD-O2D-CED
20	d	409	MGE	C1B-C2B-C3B-C4B
16	a	402	CLA	C4C-C3C-CAC-CBC

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Mol	Chain	Res	Type	Atoms
16	b	615	CLA	C5-C6-C7-C8
20	b	620	MGE	C8B-C9B-CAB-CBB
20	d	410	MGE	C2B-C3B-C4B-C5B
16	b	615	CLA	C16-C17-C18-C20
20	a	409	MGE	C1G-C2G-C3G-O3G
20	b	622	MGE	C7A-C8A-C9A-CAA
16	d	401	CLA	C4C-C3C-CAC-CBC
22	t	101	LMT	C5-C6-C7-C8
16	a	402	CLA	C16-C17-C18-C20
20	b	622	MGE	C2A-C3A-C4A-C5A
15	l	101	SQD	C7-C8-C9-C10
16	b	610	CLA	C11-C12-C13-C14
26	d	412	DGD	C3B-C4B-C5B-C6B
17	a	404	PHO	C8-C10-C11-C12
20	d	410	MGE	O2G-C1B-C2B-C3B
20	a	409	MGE	C7B-C8B-C9B-CAB
16	b	604	CLA	C6-C7-C8-C10
16	b	611	CLA	C12-C13-C15-C16
16	b	615	CLA	C16-C17-C18-C19
20	d	408	MGE	C4B-C5B-C6B-C7B
16	b	604	CLA	CAD-CBD-CGD-O2D
17	a	405	PHO	CAD-CBD-CGD-O2D
17	a	404	PHO	C15-C16-C17-C18
17	a	404	PHO	C3-C5-C6-C7
20	b	622	MGE	C2A-C1A-O1G-C1G
22	d	402	LMT	C5-C6-C7-C8
16	a	403	CLA	CHA-CBD-CGD-O1D
16	a	403	CLA	CHA-CBD-CGD-O2D
20	b	622	MGE	C3B-C4B-C5B-C6B
16	b	606	CLA	C11-C12-C13-C14
20	d	410	MGE	C9A-CAA-CBA-CCA
20	b	622	MGE	C1B-C2B-C3B-C4B
16	d	404	CLA	O1D-CGD-O2D-CED
20	a	409	MGE	C2A-C3A-C4A-C5A
15	l	101	SQD	O5-C5-C6-S
16	b	605	CLA	CAD-CBD-CGD-O1D
16	b	607	CLA	CAD-CBD-CGD-O1D
17	a	405	PHO	C11-C10-C8-C7
20	b	622	MGE	O1A-C1A-O1G-C1G
16	b	615	CLA	C13-C15-C16-C17
20	b	620	MGE	C1A-C2A-C3A-C4A
20	b	620	MGE	C9B-CAB-CBB-CCB

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Mol	Chain	Res	Type	Atoms
16	b	606	CLA	C15-C16-C17-C18
17	a	405	PHO	C8-C10-C11-C12
16	b	604	CLA	C6-C7-C8-C9
16	b	606	CLA	C14-C13-C15-C16
20	b	620	MGE	C1B-C2B-C3B-C4B
18	a	407	BCR	C18-C19-C20-C21
17	a	404	PHO	C5-C6-C7-C8
18	h	101	BCR	C17-C18-C19-C20
20	b	620	MGE	CAA-CBA-CCA-CDA
20	a	409	MGE	O6D-C5D-C6D-O5D
26	d	412	DGD	C6B-C7B-C8B-C9B
16	d	404	CLA	CAA-CBA-CGA-O2A
16	b	614	CLA	C2-C1-O2A-CGA
22	d	402	LMT	O5B-C5B-C6B-O6B
26	d	412	DGD	C3A-C4A-C5A-C6A
20	b	620	MGE	O1G-C1G-C2G-O2G
20	d	409	MGE	C2B-C3B-C4B-C5B
26	d	412	DGD	C5B-C6B-C7B-C8B
20	b	622	MGE	C7B-C8B-C9B-CAB
20	d	409	MGE	C8B-C9B-CAB-CBB
26	d	412	DGD	C2B-C3B-C4B-C5B
24	d	406	PQ9	C19-C18-C20-C21
16	b	607	CLA	C3-C5-C6-C7
15	l	101	SQD	C12-C13-C14-C15
26	d	412	DGD	CAA-CBA-CCA-CDA
16	b	615	CLA	C14-C13-C15-C16
16	d	404	CLA	C6-C7-C8-C9
18	b	618	BCR	C19-C20-C21-C22
22	d	402	LMT	C6-C7-C8-C9
20	d	409	MGE	CAB-CBB-CCB-CDB
16	b	612	CLA	CBA-CGA-O2A-C1
18	b	618	BCR	C13-C14-C15-C16
20	d	409	MGE	C9B-CAB-CBB-CCB
20	d	408	MGE	C3A-C4A-C5A-C6A
16	b	612	CLA	C10-C11-C12-C13
20	b	622	MGE	O2G-C2G-C3G-O3G
20	m	101	MGE	O1G-C1A-C2A-C3A
16	a	406	CLA	CBD-CGD-O2D-CED
22	t	101	LMT	C6-C7-C8-C9
20	a	409	MGE	C7A-C8A-C9A-CAA
27	e	101	HEM	CAA-CBA-CGA-O1A
16	a	403	CLA	C1A-C2A-CAA-CBA

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Mol	Chain	Res	Type	Atoms
16	b	615	CLA	C12-C13-C15-C16
24	d	406	PQ9	C17-C18-C20-C21
27	e	101	HEM	CAA-CBA-CGA-O2A
16	b	610	CLA	C2A-CAA-CBA-CGA
16	d	405	CLA	O1A-CGA-O2A-C1
16	d	401	CLA	C15-C16-C17-C18
16	b	610	CLA	C16-C17-C18-C20
22	t	101	LMT	C4-C5-C6-C7
16	d	404	CLA	C14-C13-C15-C16
17	a	404	PHO	C2A-CAA-CBA-CGA
24	d	406	PQ9	C24-C23-C25-C26
20	d	410	MGE	O1B-C1B-C2B-C3B
17	a	404	PHO	CBA-CGA-O2A-C1
15	l	101	SQD	O48-C23-C24-C25
26	d	412	DGD	C2B-C1B-O2G-C2G
16	b	615	CLA	C3A-C2A-CAA-CBA
20	b	620	MGE	O2G-C1B-C2B-C3B
16	a	402	CLA	CAD-CBD-CGD-O2D
16	b	610	CLA	CAD-CBD-CGD-O2D
16	b	616	CLA	CAD-CBD-CGD-O2D
20	d	408	MGE	CBB-CCB-CDB-CEB
20	d	408	MGE	O1G-C1A-C2A-C3A
18	h	101	BCR	C21-C22-C23-C24
16	b	604	CLA	O2A-C1-C2-C3
17	a	405	PHO	O2A-C1-C2-C3
16	b	602	CLA	CHA-CBD-CGD-O2D
16	b	605	CLA	CHA-CBD-CGD-O1D
16	b	606	CLA	CHA-CBD-CGD-O2D
16	b	611	CLA	CHA-CBD-CGD-O2D
16	b	614	CLA	CHA-CBD-CGD-O1D
16	b	616	CLA	CHA-CBD-CGD-O1D
17	a	404	PHO	O1A-CGA-O2A-C1
16	d	405	CLA	CBA-CGA-O2A-C1
16	d	401	CLA	C11-C12-C13-C14
16	a	406	CLA	C2A-CAA-CBA-CGA
16	b	603	CLA	C2A-CAA-CBA-CGA
20	d	408	MGE	O1A-C1A-C2A-C3A
20	b	620	MGE	O1B-C1B-C2B-C3B
16	b	603	CLA	C13-C15-C16-C17
15	l	101	SQD	O10-C23-C24-C25
20	b	622	MGE	O2G-C1B-C2B-C3B
16	b	604	CLA	C16-C17-C18-C19

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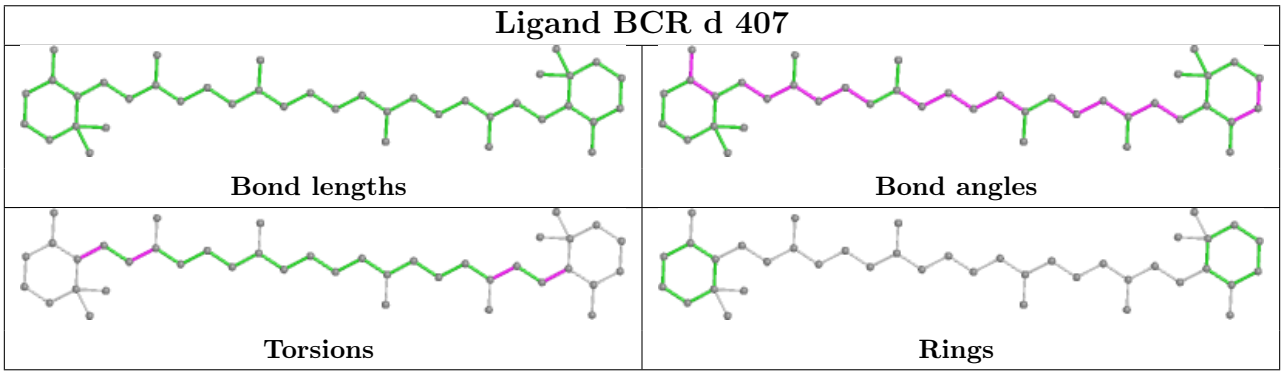
Mol	Chain	Res	Type	Atoms
16	b	611	CLA	C16-C17-C18-C20
16	b	612	CLA	C6-C7-C8-C9
16	b	612	CLA	C11-C10-C8-C9
20	d	410	MGE	C9B-CAB-CBB-CCB
16	b	612	CLA	C11-C10-C8-C7
20	b	622	MGE	O1B-C1B-C2B-C3B
20	d	409	MGE	C6B-C7B-C8B-C9B

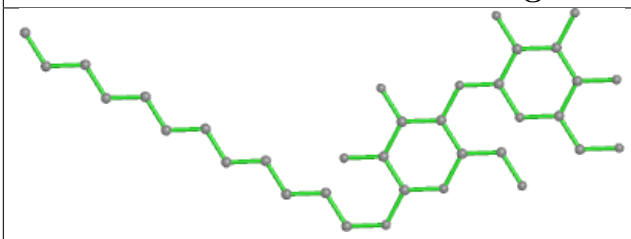
There are no ring outliers.

No monomer is involved in short contacts.

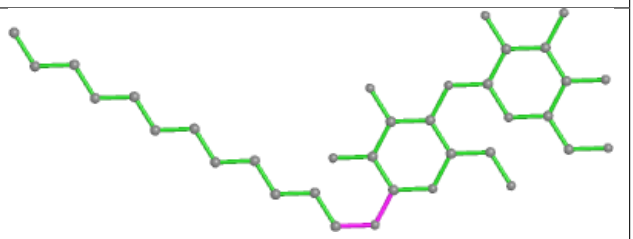
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less 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.



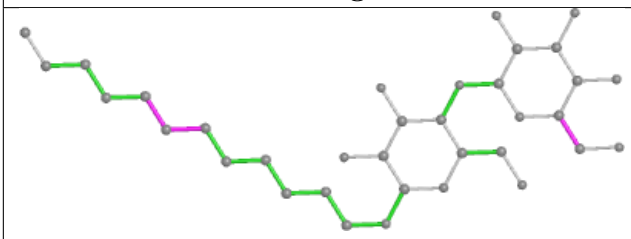
Ligand LMT d 402



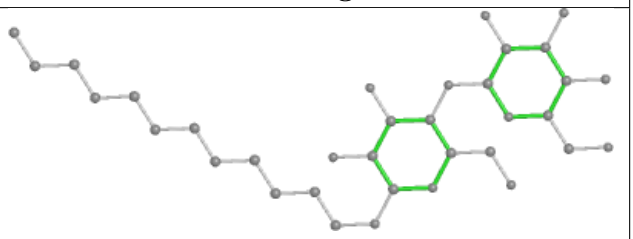
Bond lengths



Bond angles

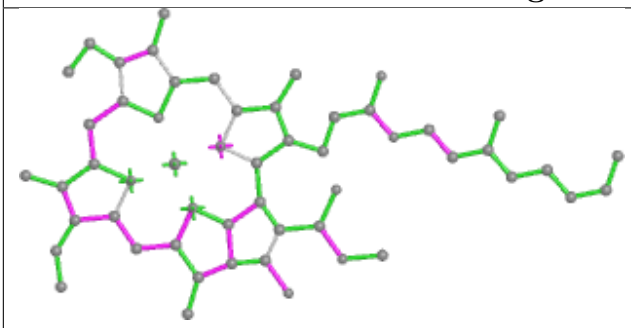


Torsions

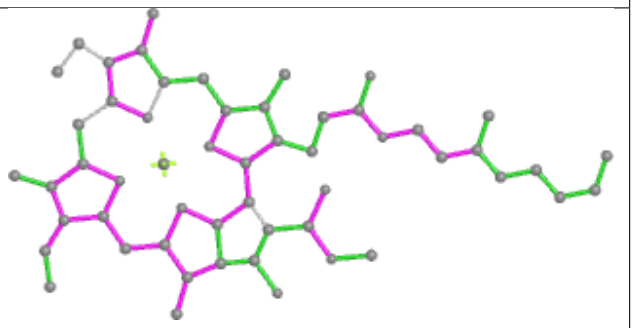


Rings

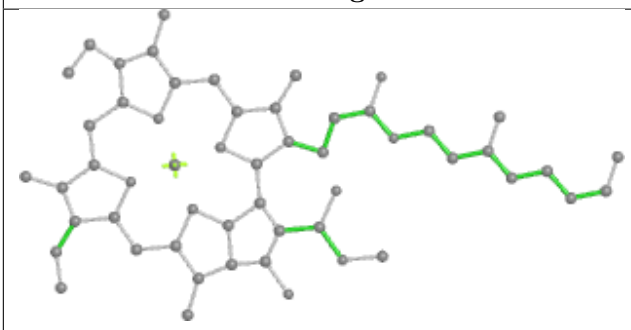
Ligand CLA b 613



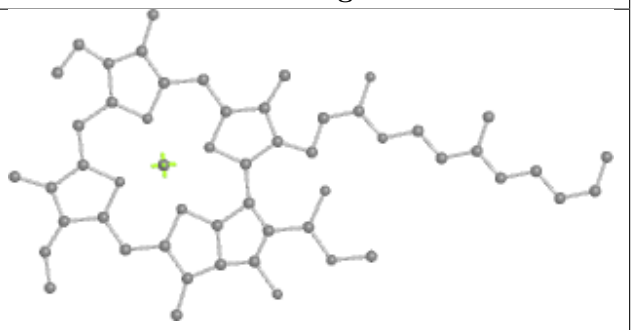
Bond lengths



Bond angles

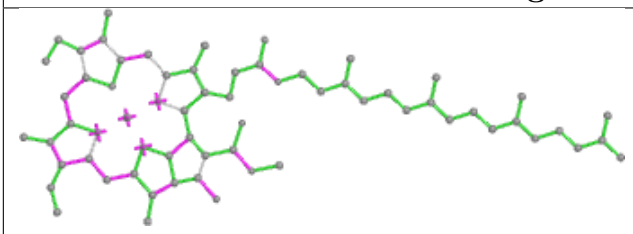


Torsions

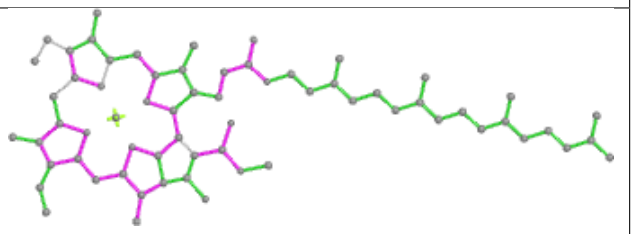


Rings

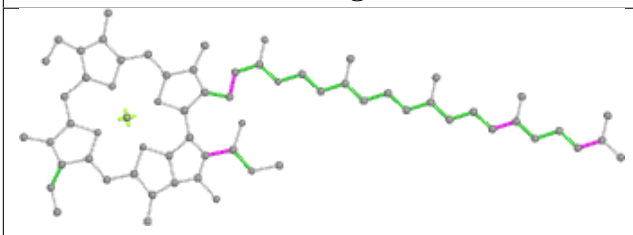
Ligand CLA b 610



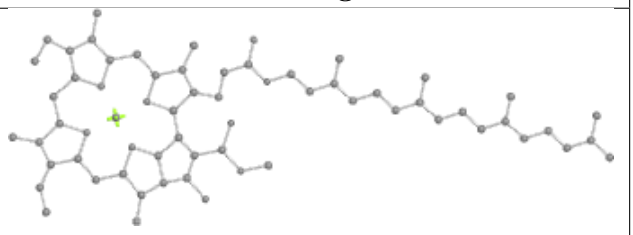
Bond lengths



Bond angles

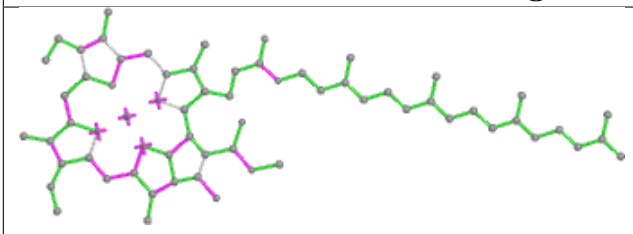


Torsions

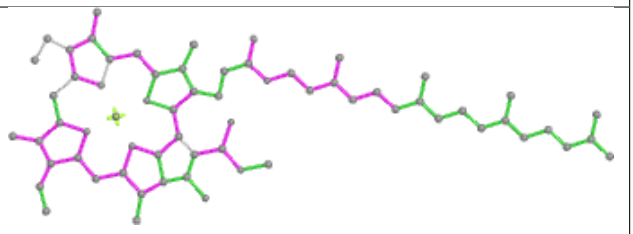


Rings

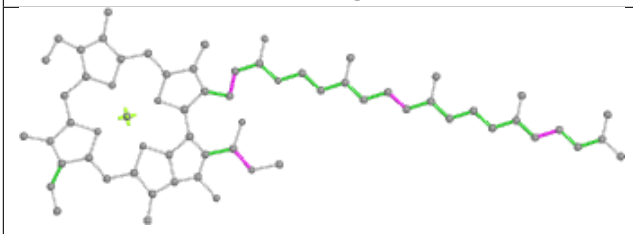
Ligand CLA b 603



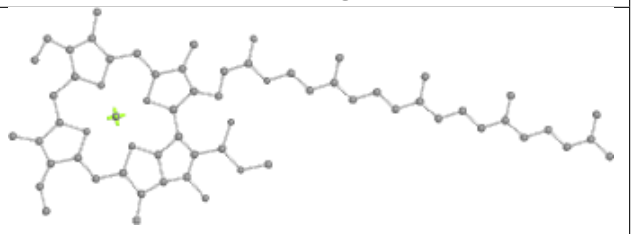
Bond lengths



Bond angles

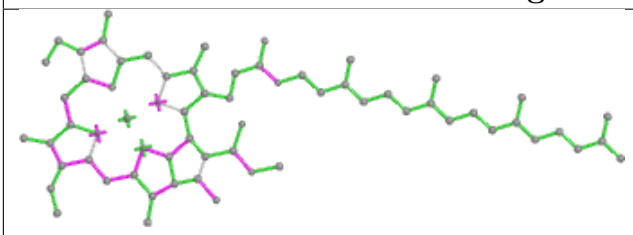


Torsions

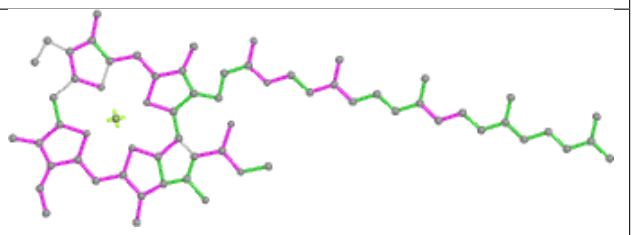


Rings

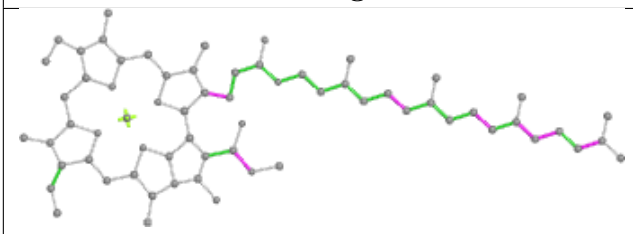
Ligand CLA b 615



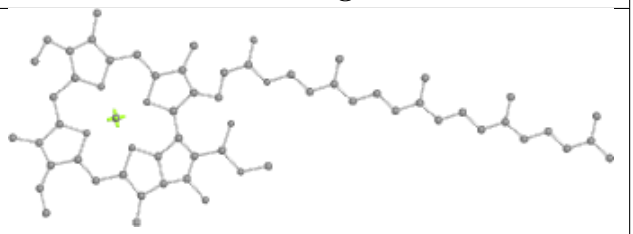
Bond lengths



Bond angles

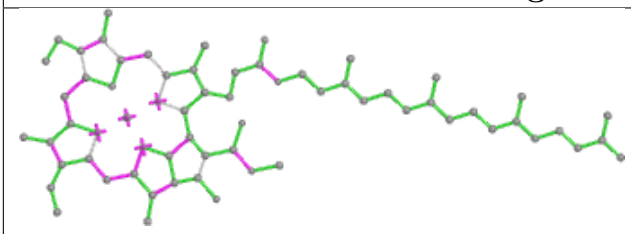


Torsions

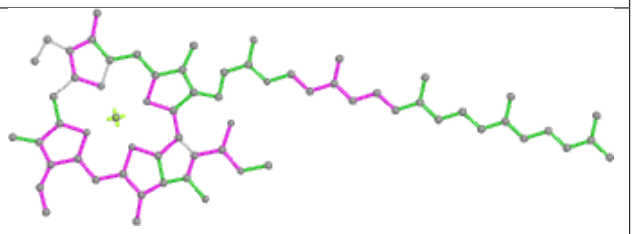


Rings

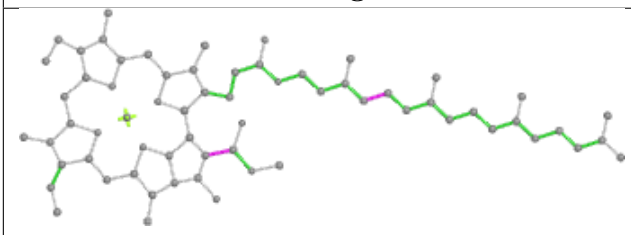
Ligand CLA b 607



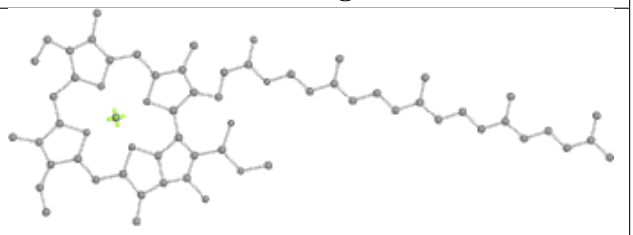
Bond lengths



Bond angles

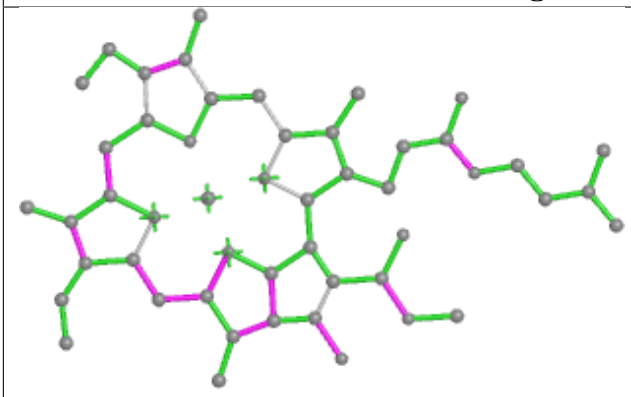


Torsions

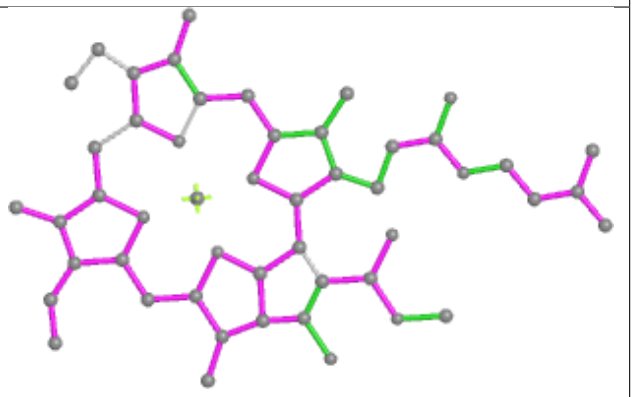


Rings

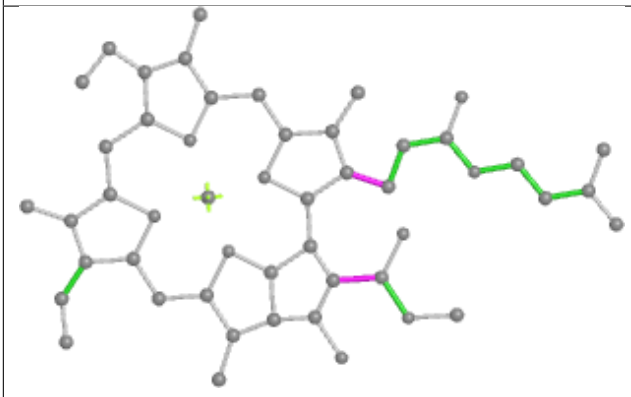
Ligand CLA a 403



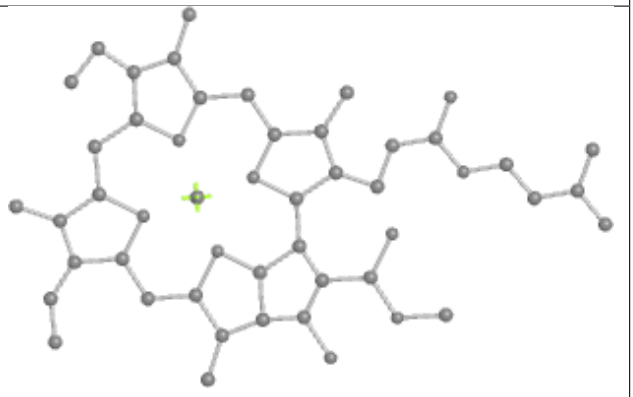
Bond lengths



Bond angles

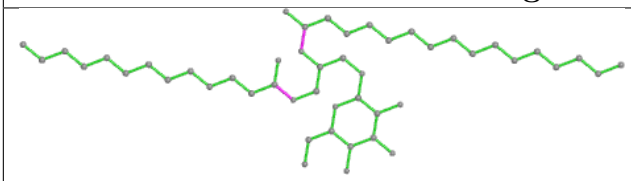


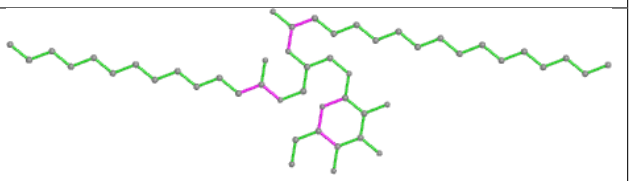
Torsions

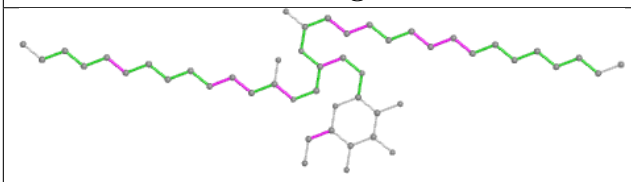


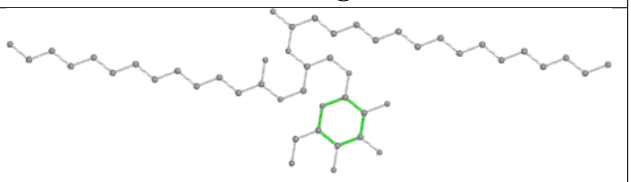
Rings

Ligand MGE a 409

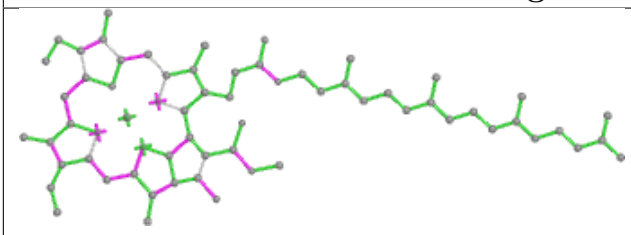

Bond lengths

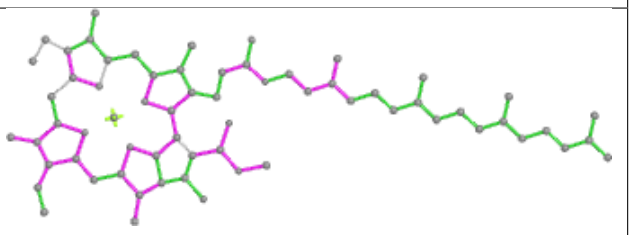

Bond angles

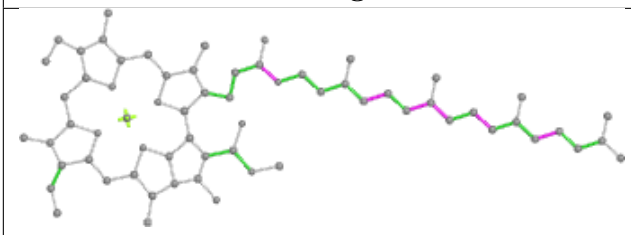

Torsions

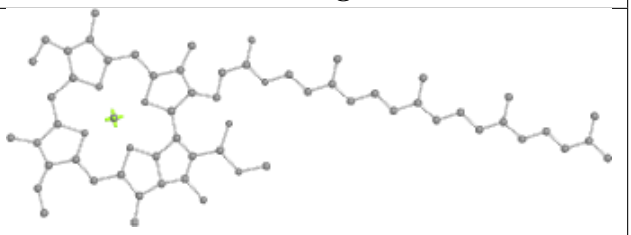

Rings

Ligand CLA b 612

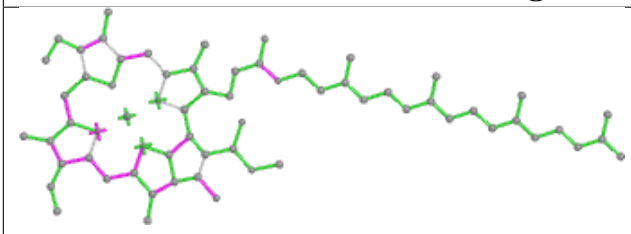

Bond lengths

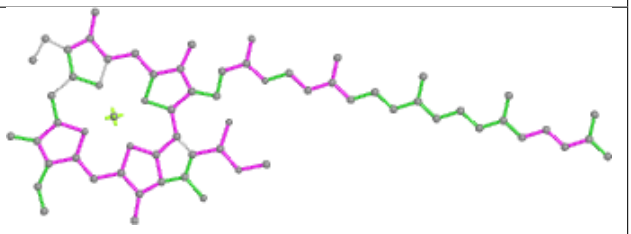

Bond angles

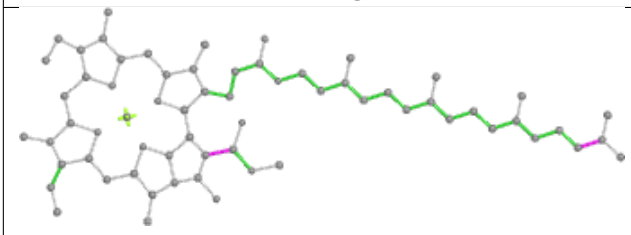

Torsions

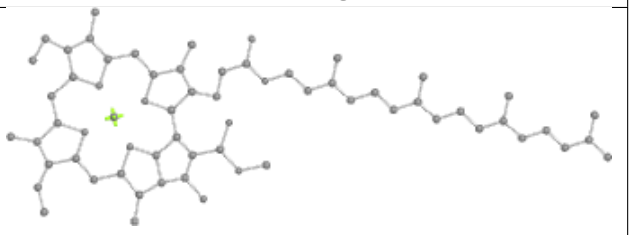

Rings

Ligand CLA b 602

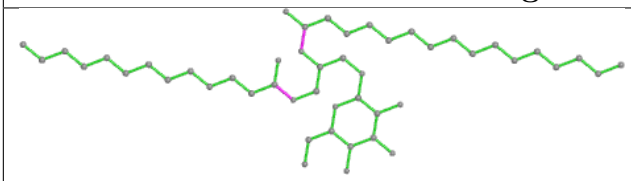

Bond lengths

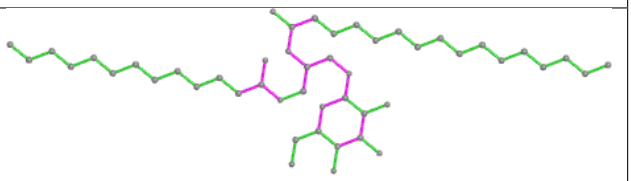

Bond angles

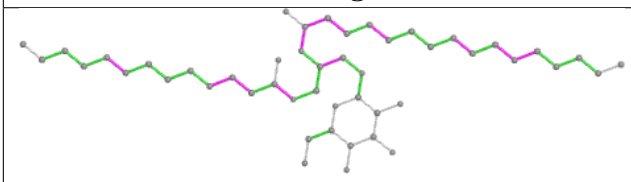

Torsions

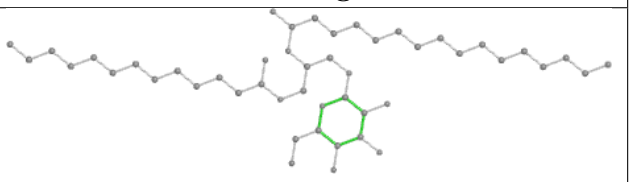

Rings

Ligand MGE b 622

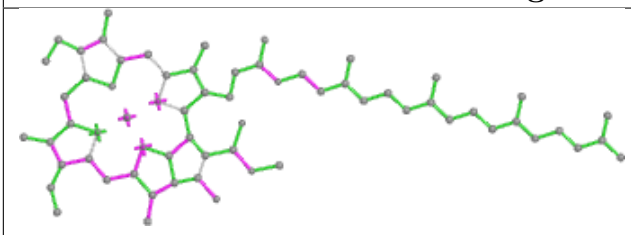

Bond lengths

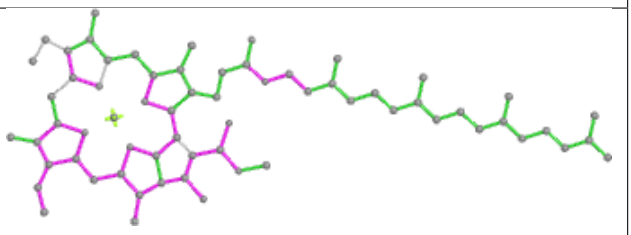

Bond angles

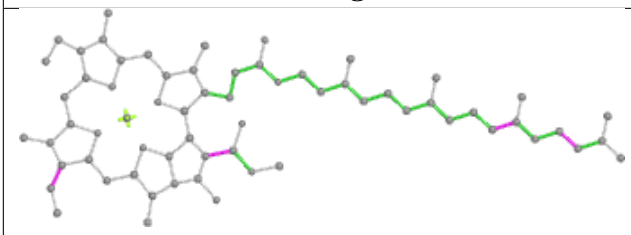

Torsions

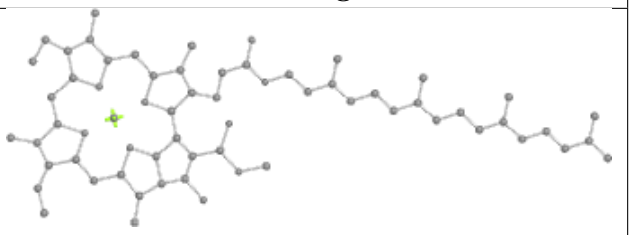

Rings

Ligand CLA d 401

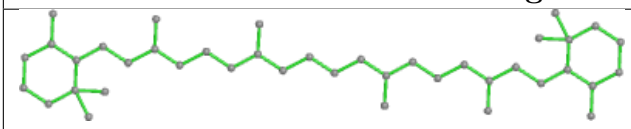

Bond lengths

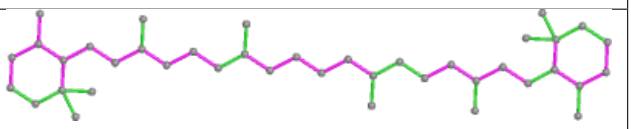

Bond angles

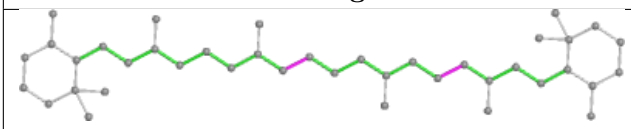

Torsions


Rings

Ligand BCR b 618

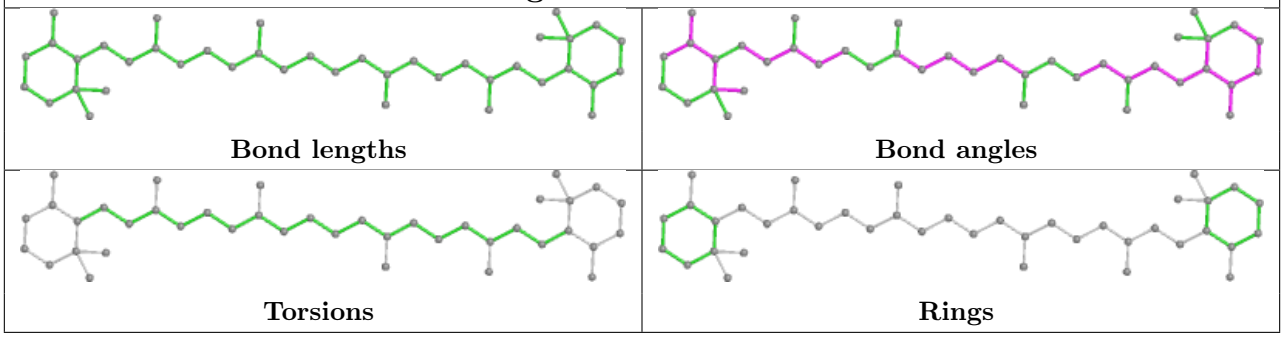

Bond lengths


Bond angles

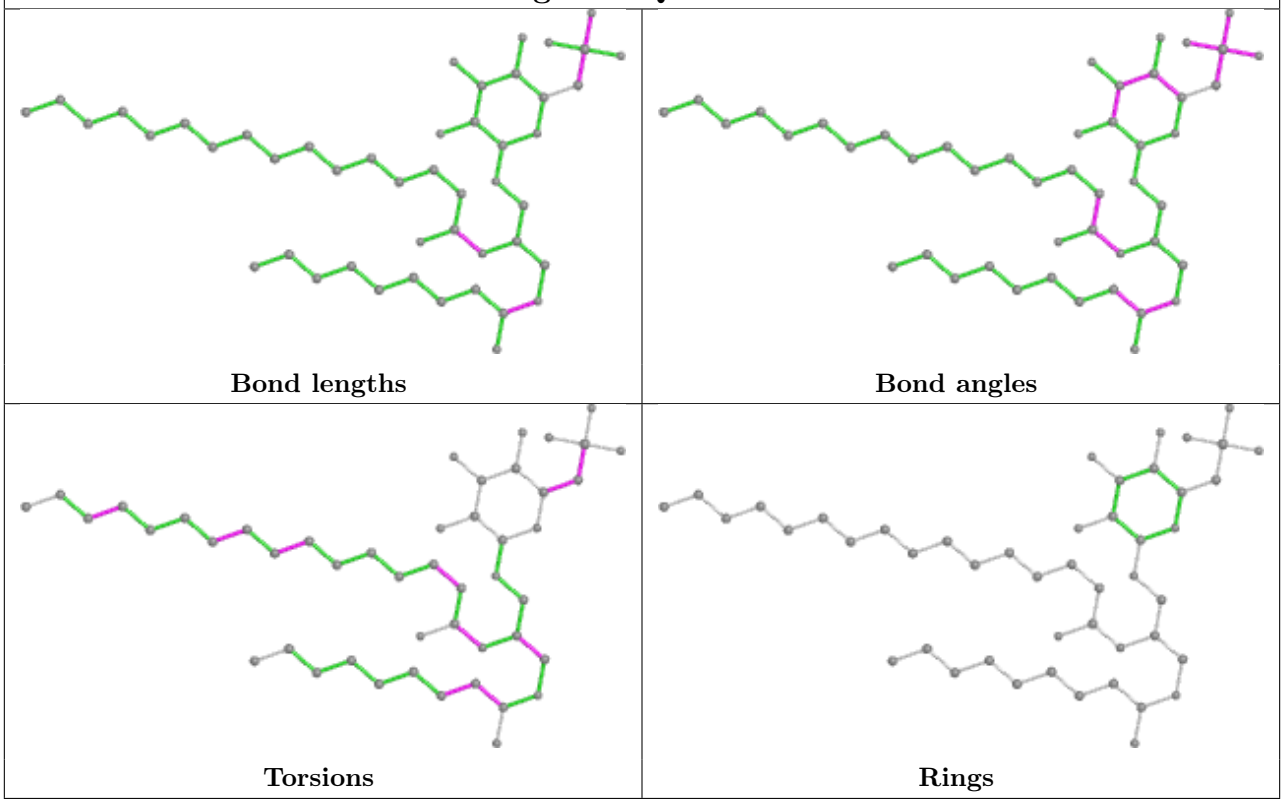

Torsions


Rings

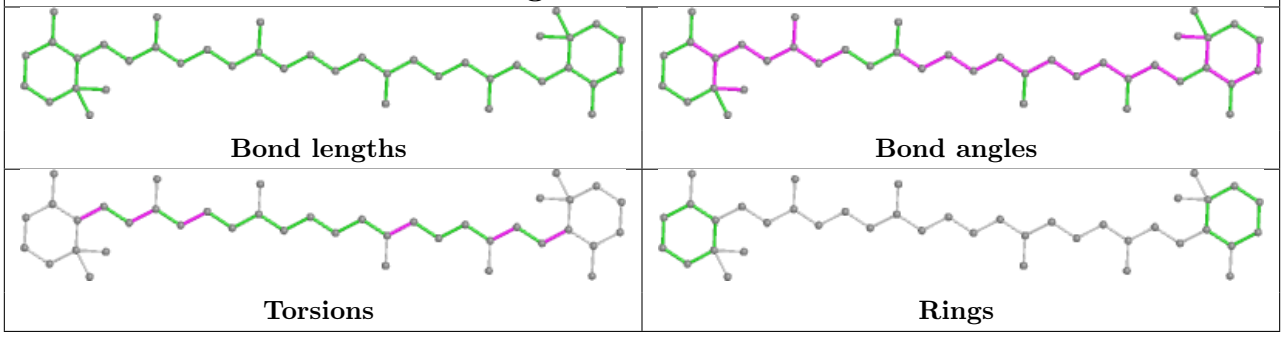
Ligand BCR b 619



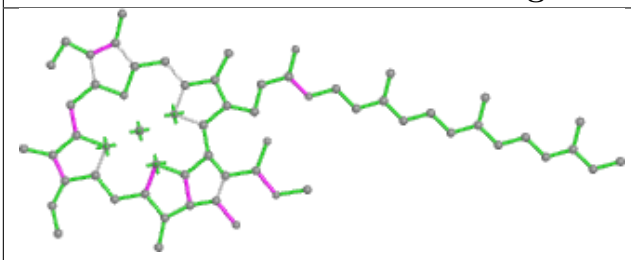
Ligand SQD l 101



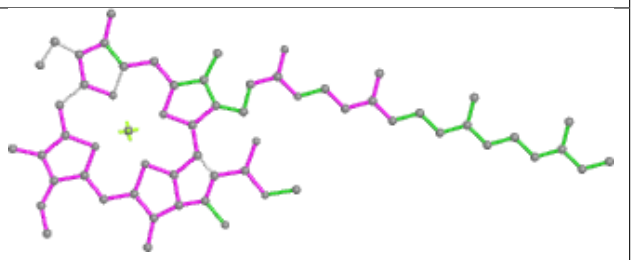
Ligand BCR h 101



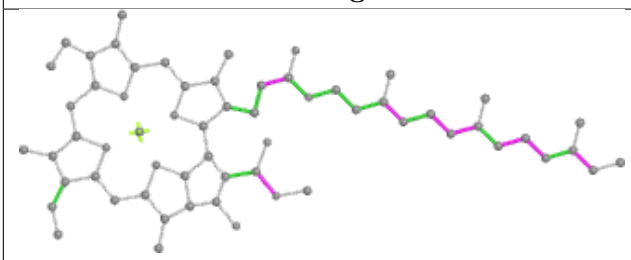
Ligand CLA d 404



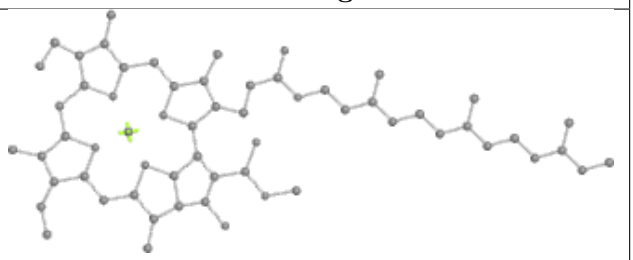
Bond lengths



Bond angles

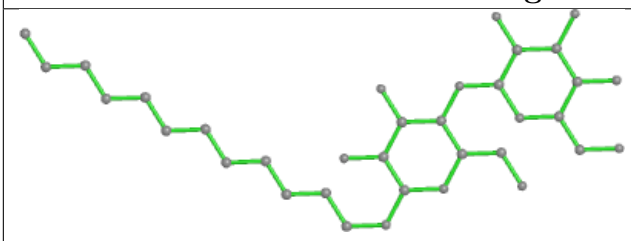


Torsions

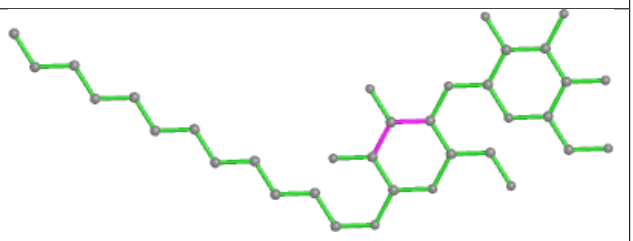


Rings

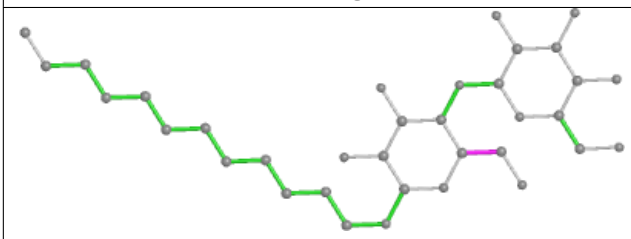
Ligand LMT b 623



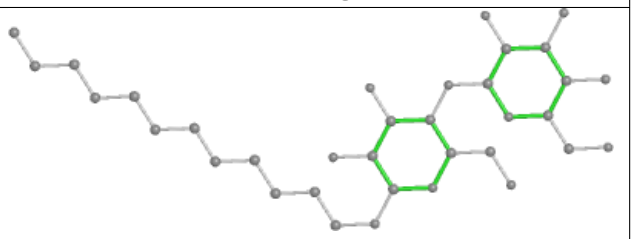
Bond lengths



Bond angles

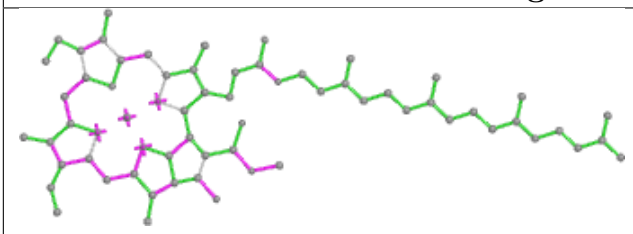


Torsions

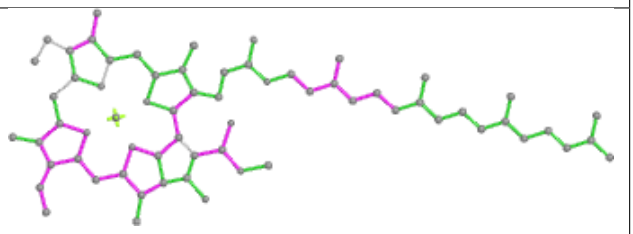


Rings

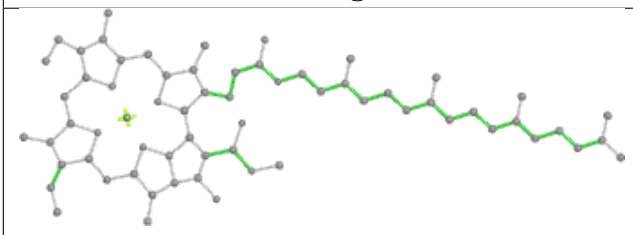
Ligand CLA b 609



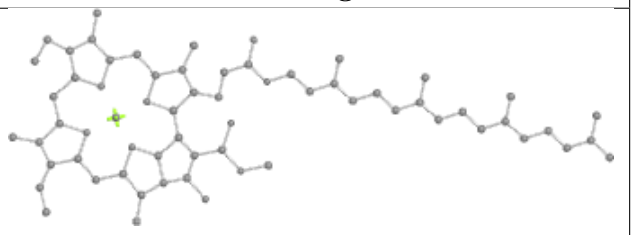
Bond lengths



Bond angles

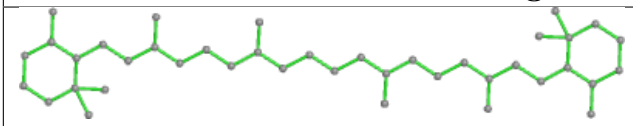


Torsions



Rings

Ligand BCR b 617



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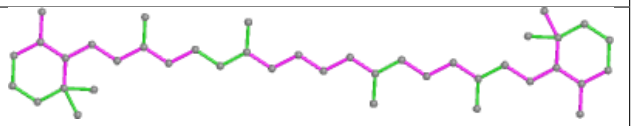
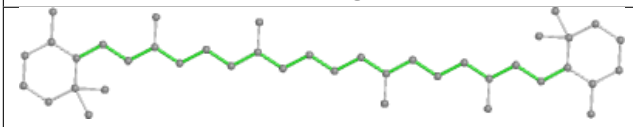


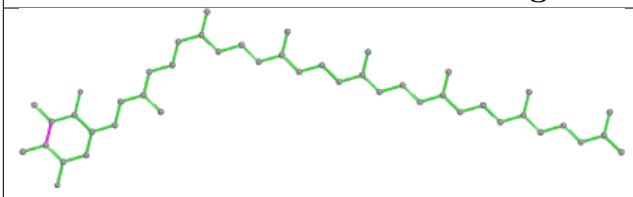
Bond angles



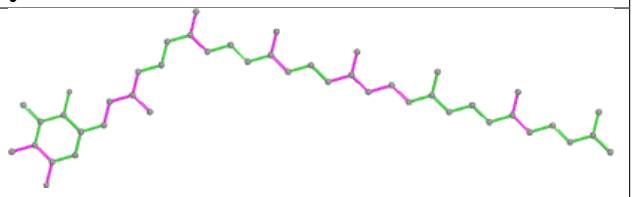
Torsions

Rings

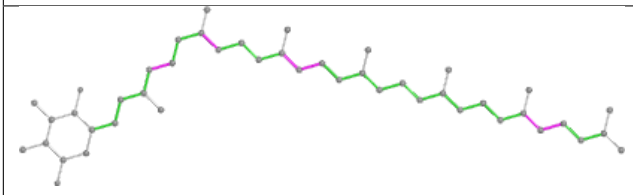
Ligand PQ9 d 406



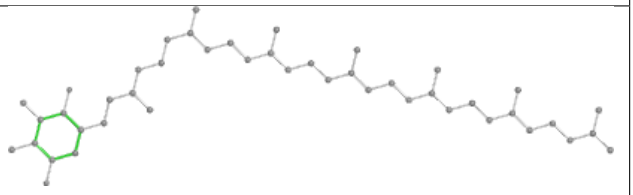
Bond lengths



Bond angles

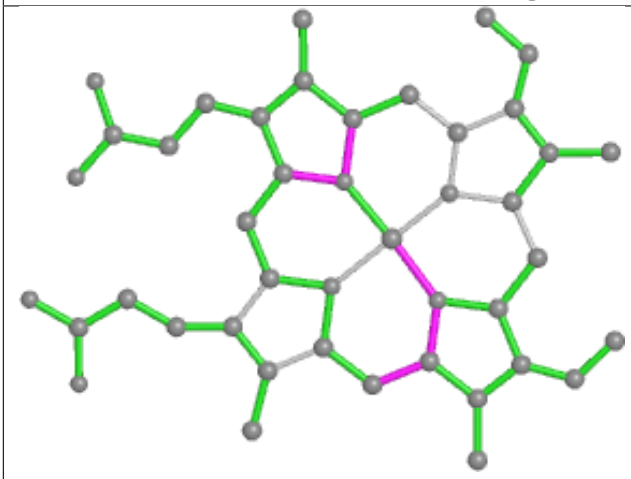


Torsions

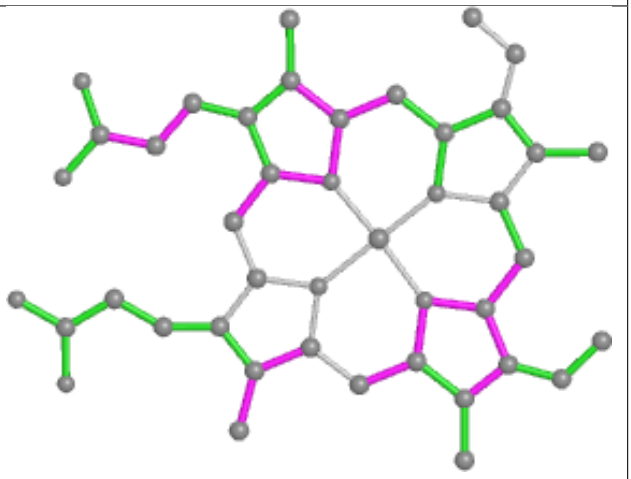


Rings

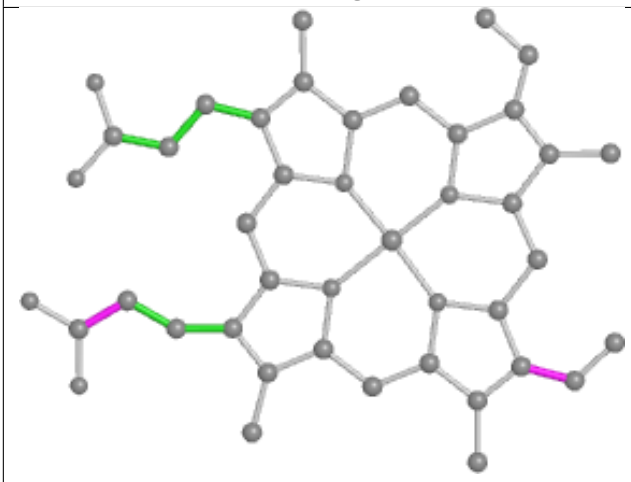
Ligand HEM e 101



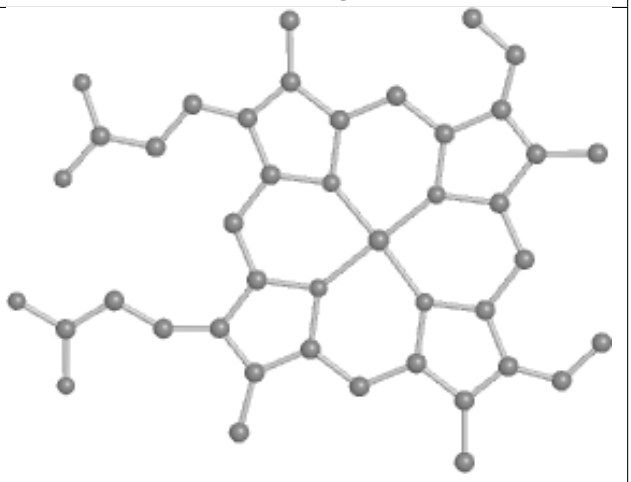
Bond lengths



Bond angles

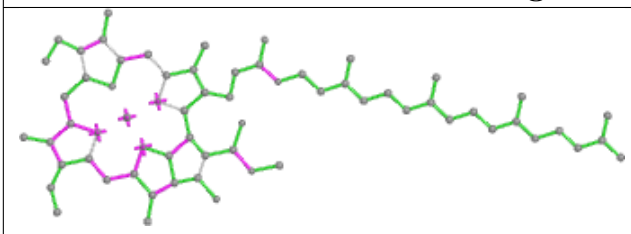


Torsions

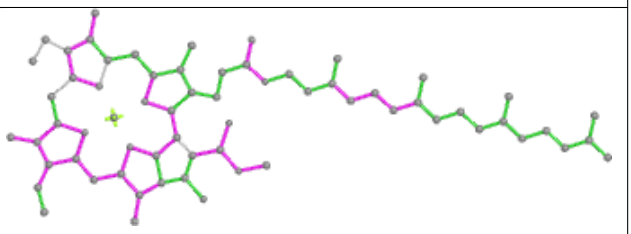


Rings

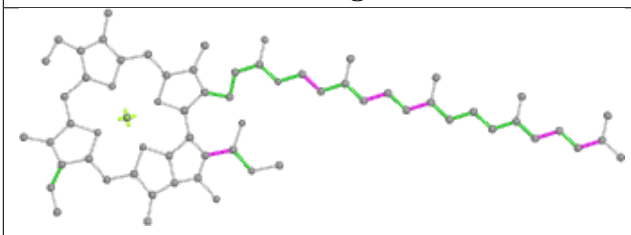
Ligand CLA b 604



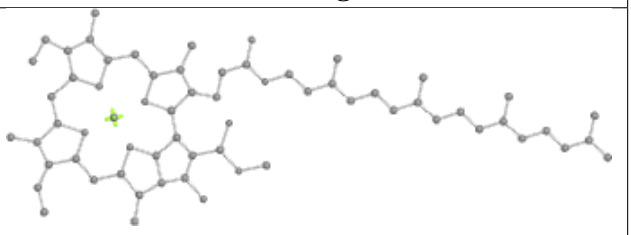
Bond lengths



Bond angles

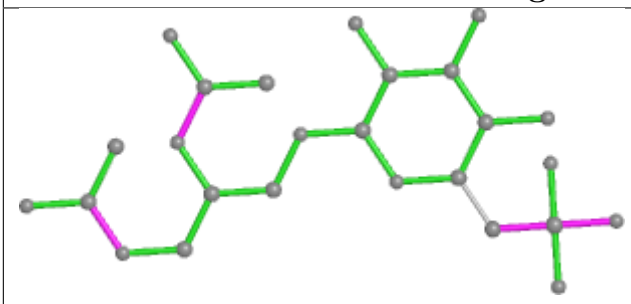


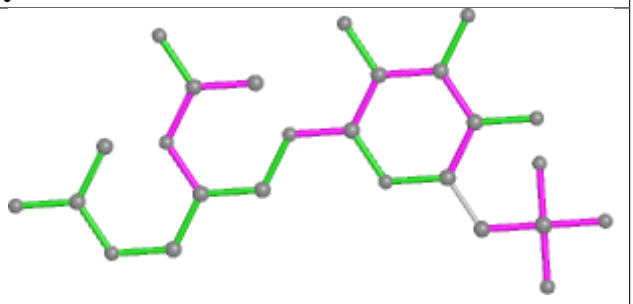
Torsions

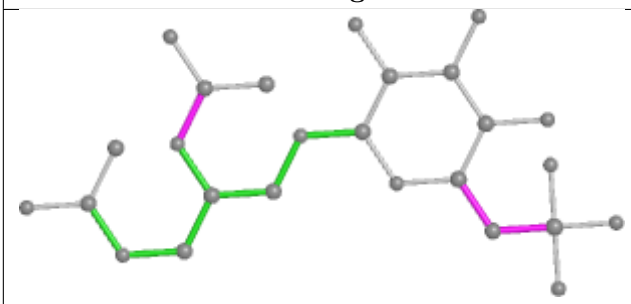


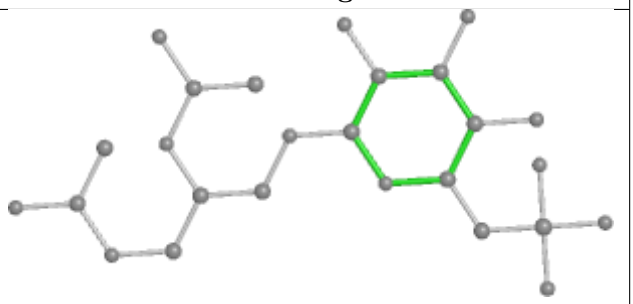
Rings

Ligand SQD a 401

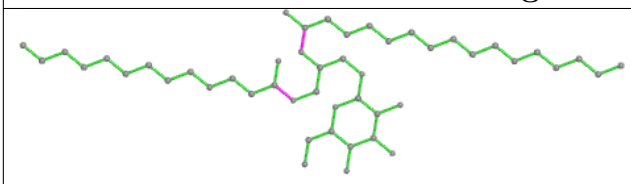

Bond lengths

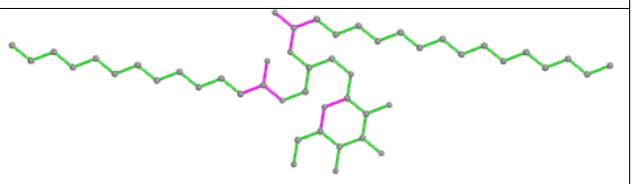

Bond angles

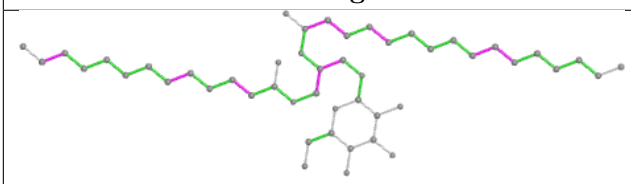

Torsions

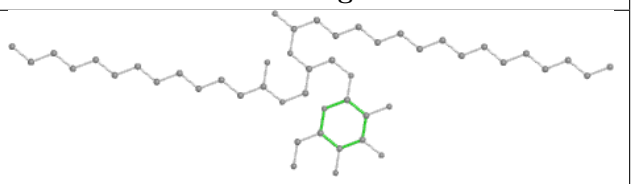

Rings

Ligand MGE b 620

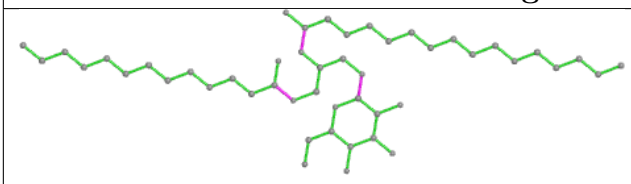

Bond lengths

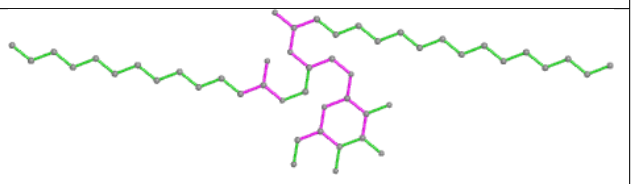

Bond angles

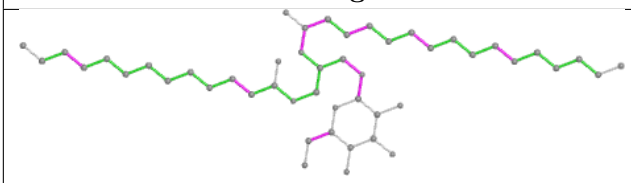

Torsions

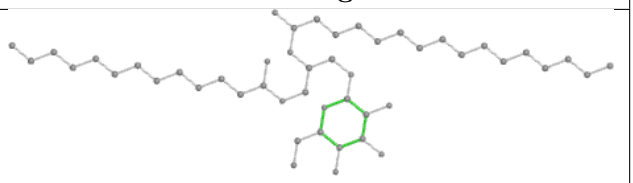

Rings

Ligand MGE d 410

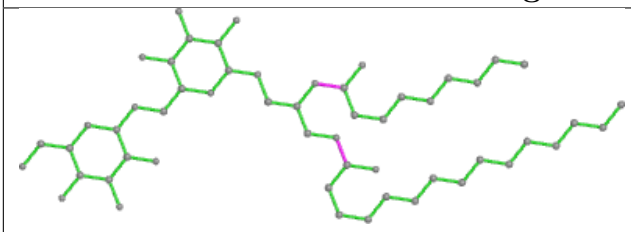

Bond lengths


Bond angles


Torsions


Rings

Ligand DGD d 412



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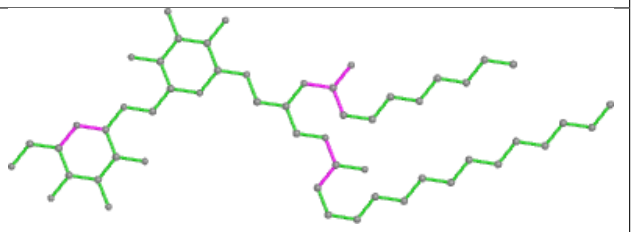
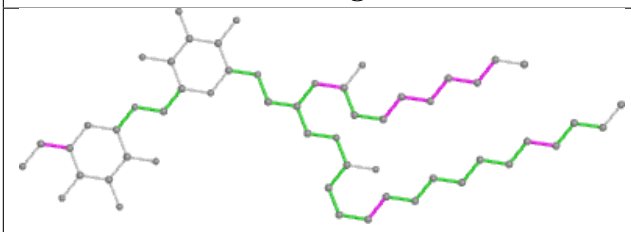


Bond angles



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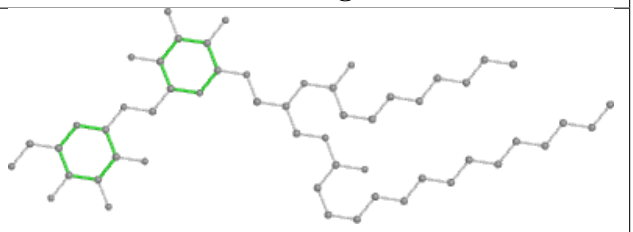
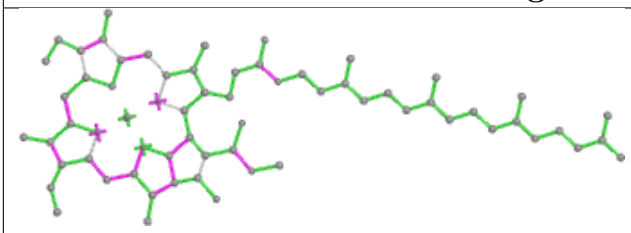


Rings

Ligand CLA b 611



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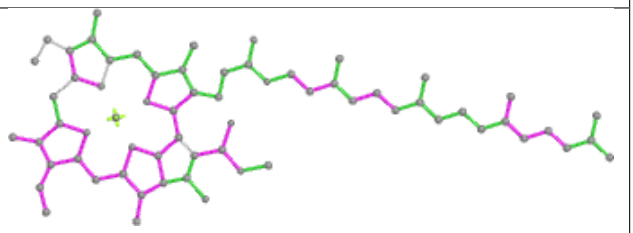
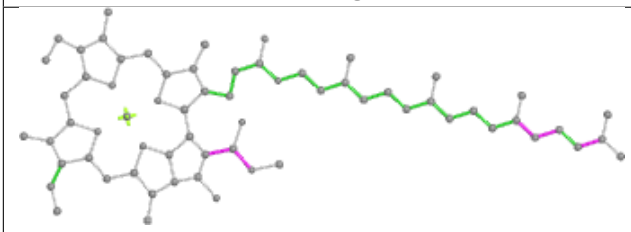


Bond angles



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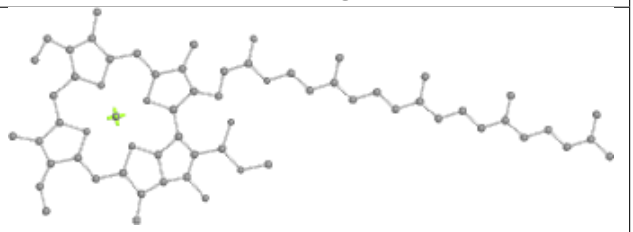
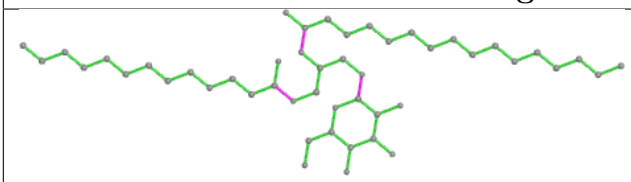
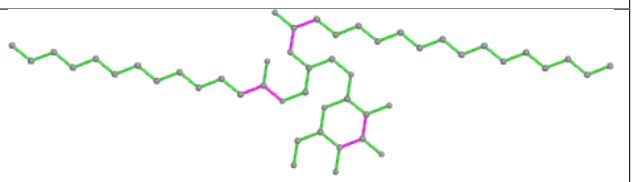


Rings

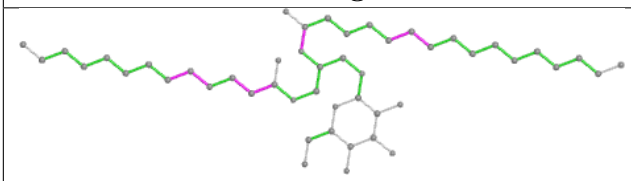
Ligand MGE m 101



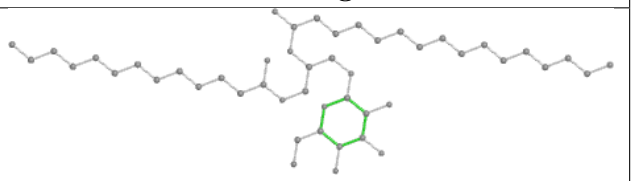
Bond lengths



Bond angles

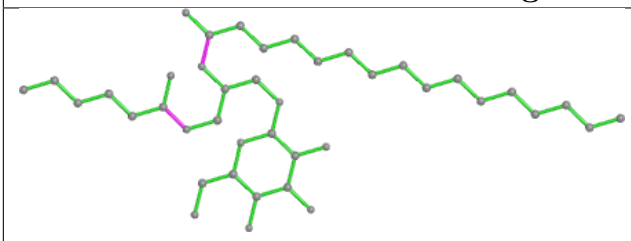


Torsions

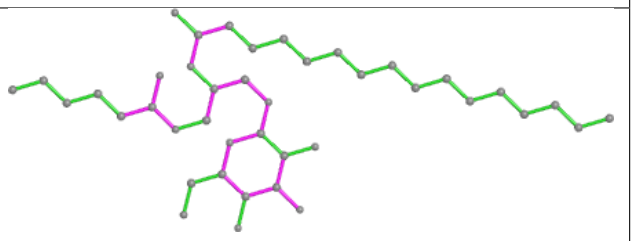


Rings

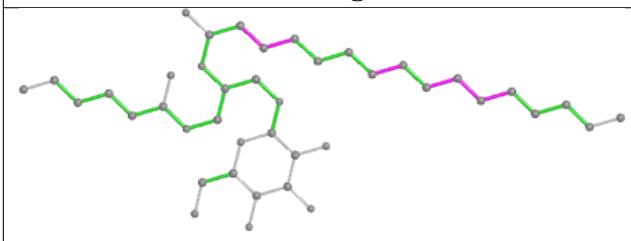
Ligand MGE d 409



Bond lengths



Bond angles



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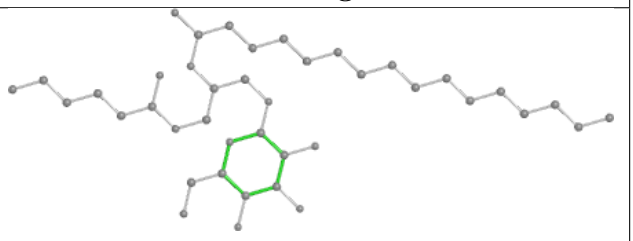
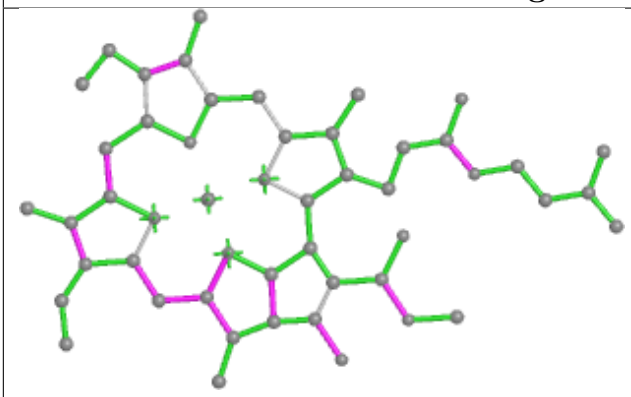


Rings

Ligand CLA a 406



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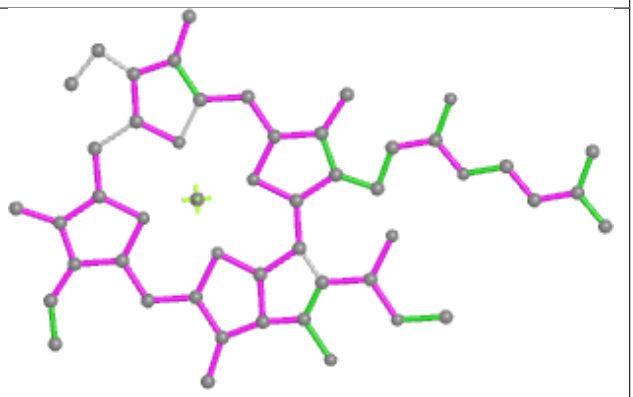
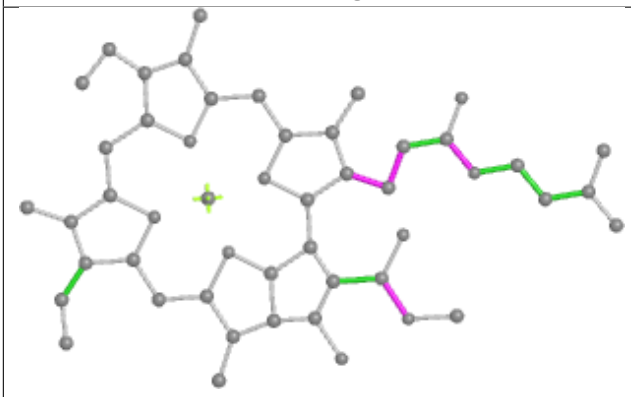
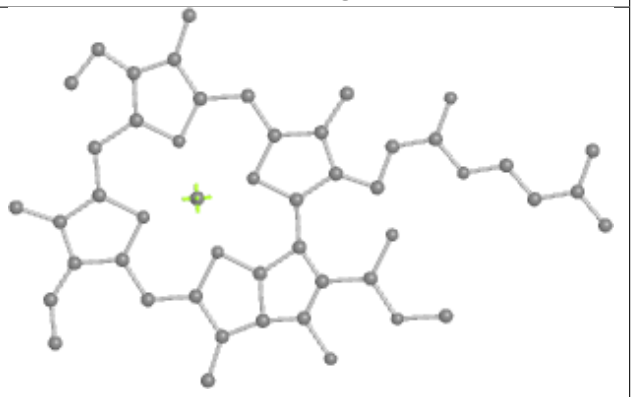


Bond angles

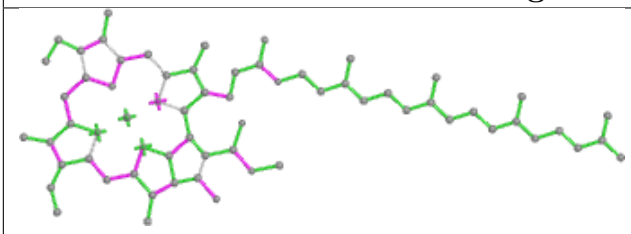


Torsions

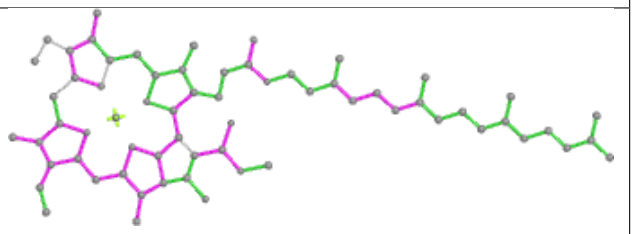


Rings

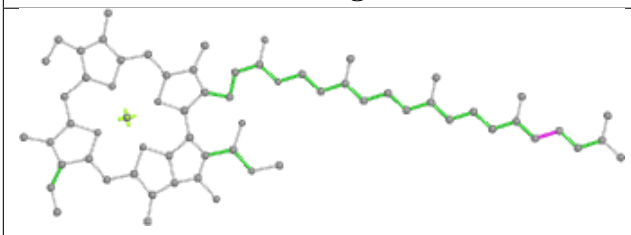
Ligand CLA b 608



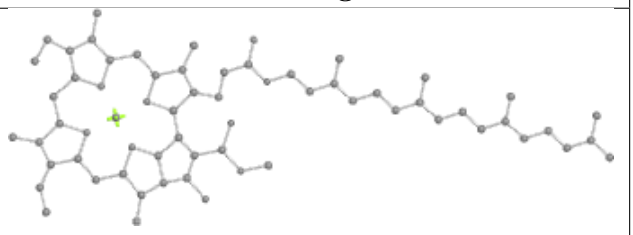
Bond lengths



Bond angles

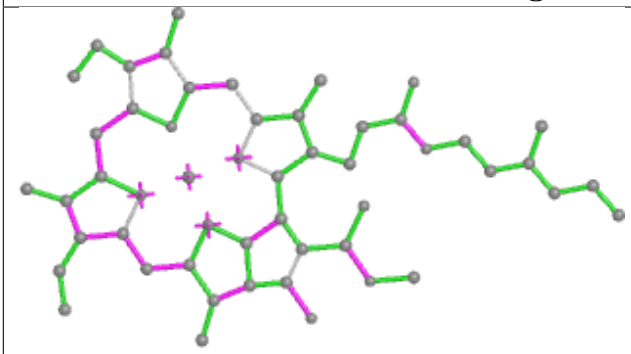


Torsions

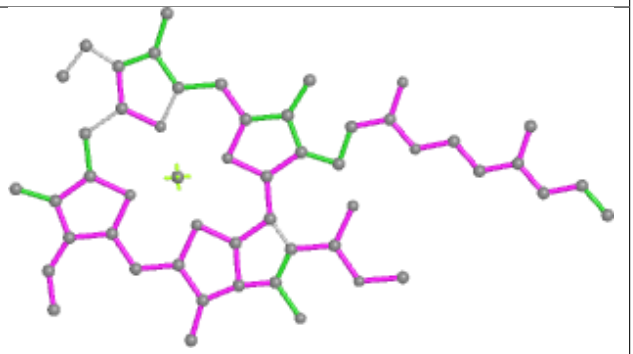


Rings

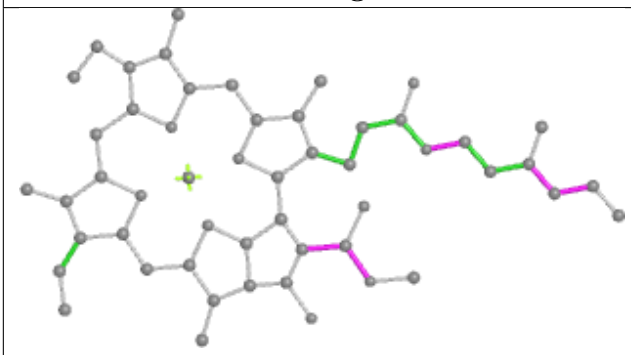
Ligand CLA b 614



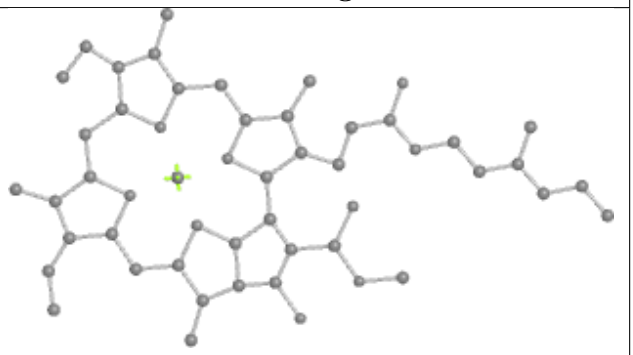
Bond lengths



Bond angles

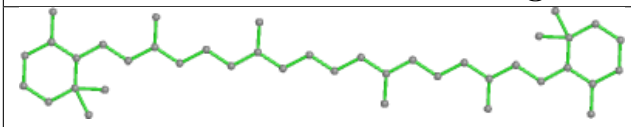


Torsions



Rings

Ligand BCR a 407



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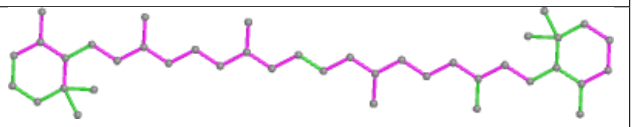
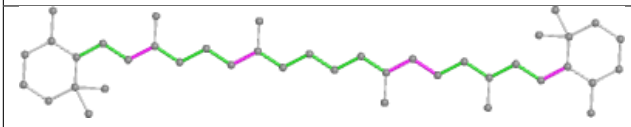
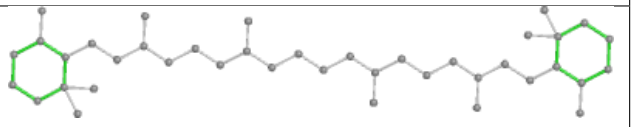


Bond angles

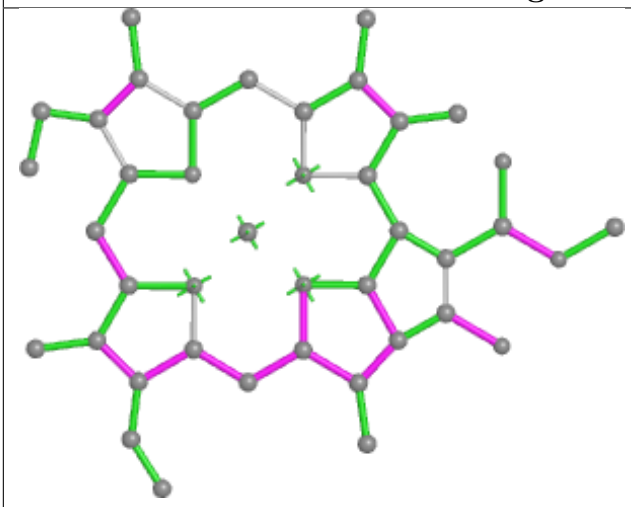


Torsions



Rings

Ligand CLA b 601



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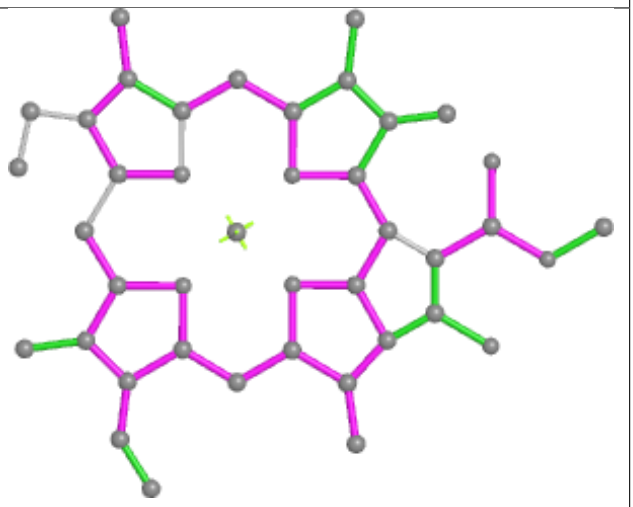
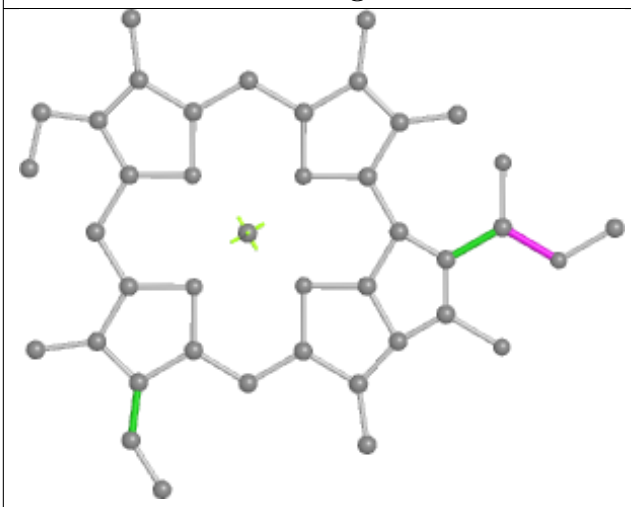
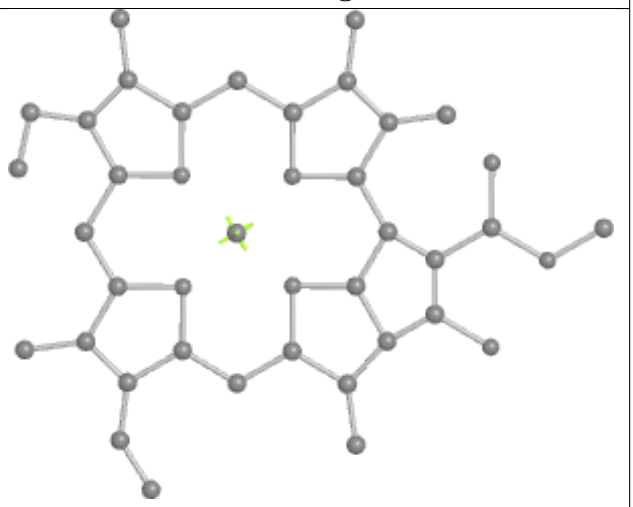


Bond angles

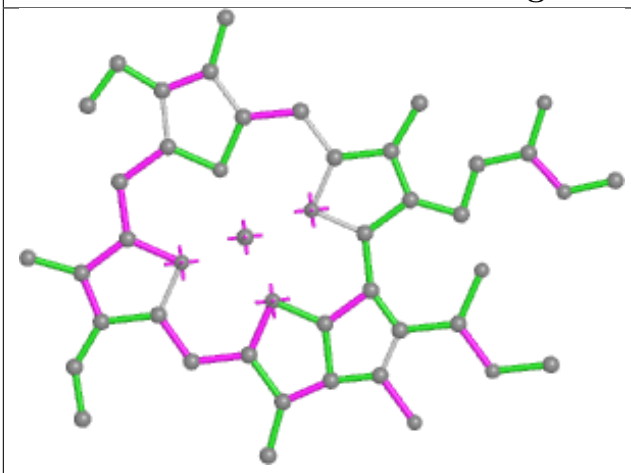


Torsions

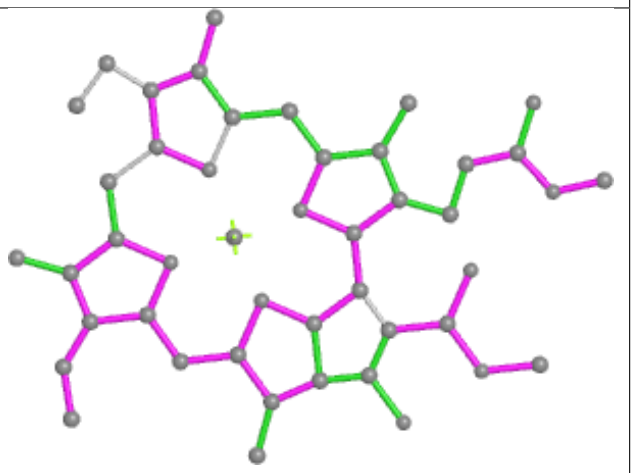


Rings

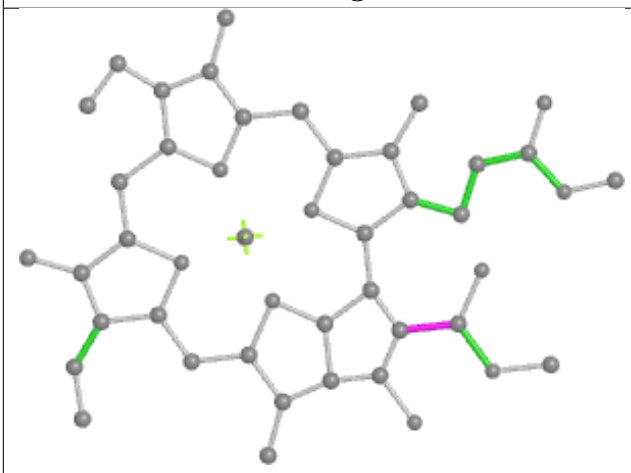
Ligand CLA b 616



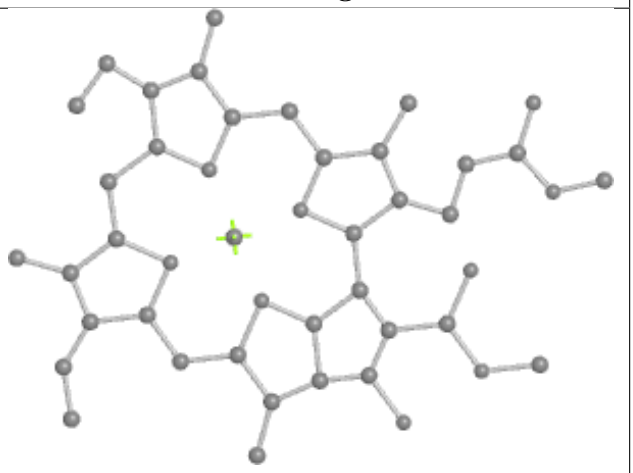
Bond lengths



Bond angles

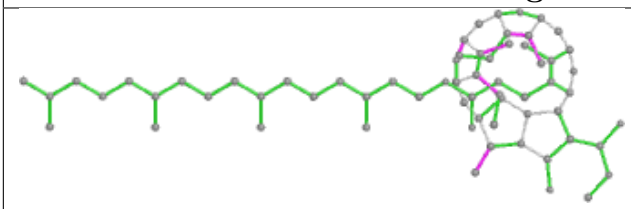


Torsions

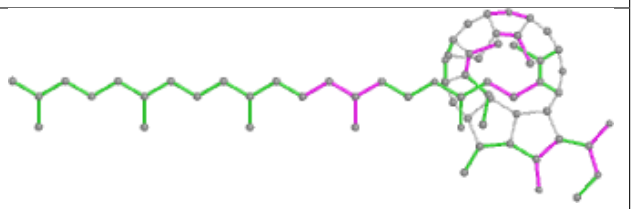


Rings

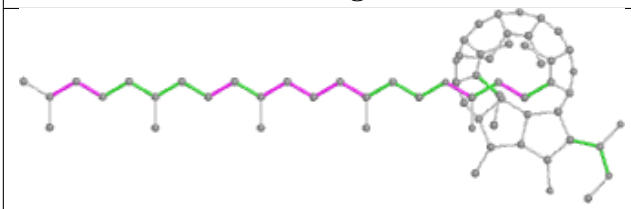
Ligand PHO a 404



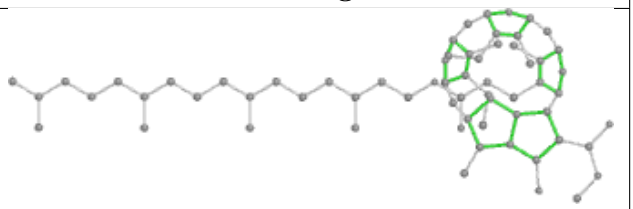
Bond lengths



Bond angles

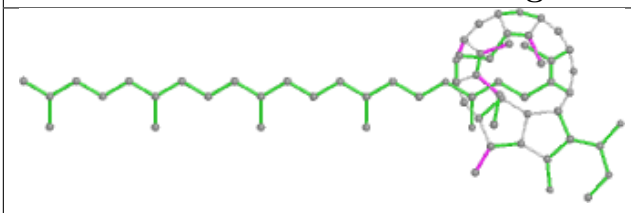


Torsions



Rings

Ligand PHO a 405



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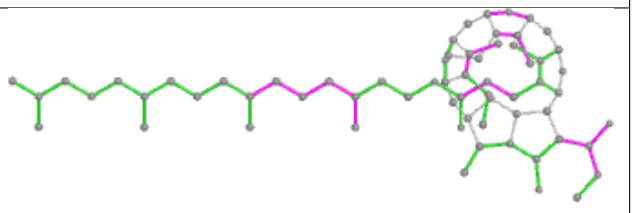
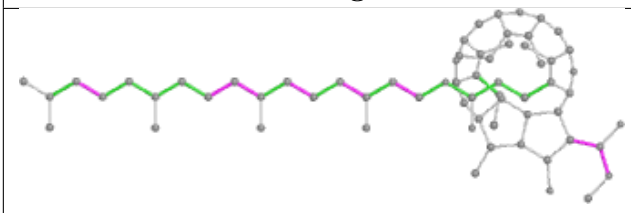
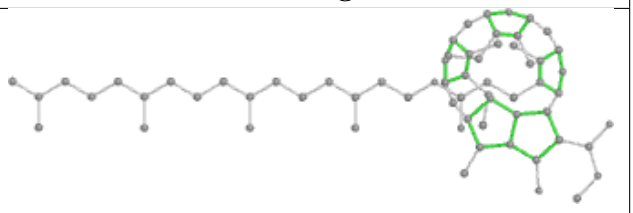


Bond angles

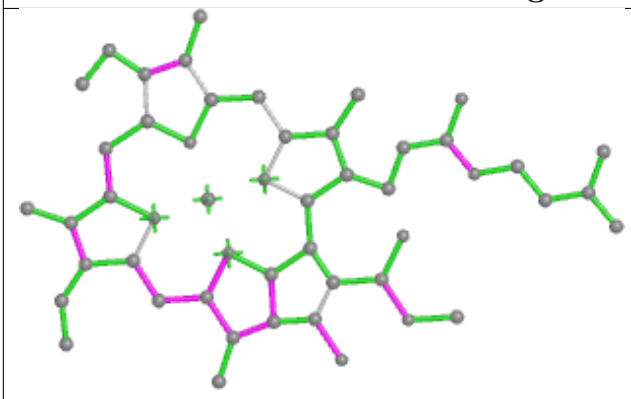


Torsions

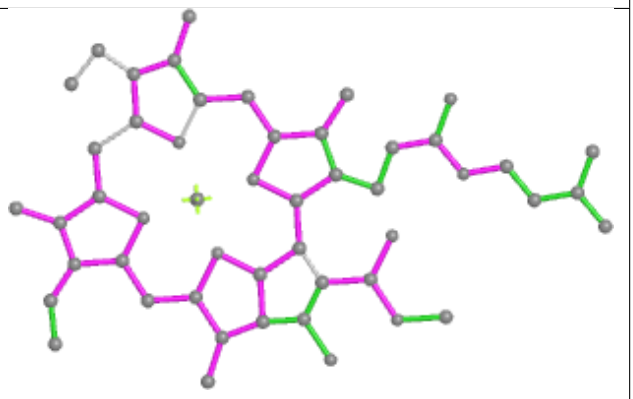


Rings

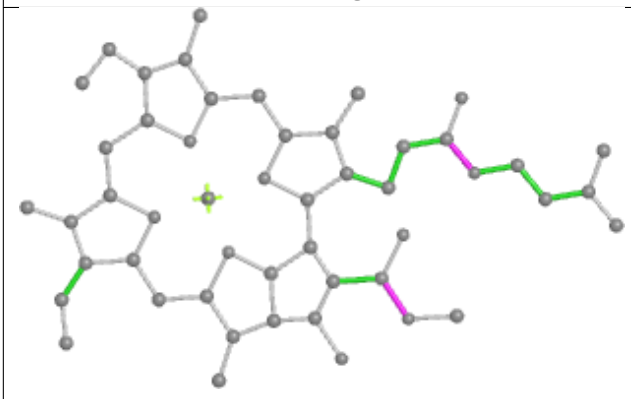
Ligand CLA d 405



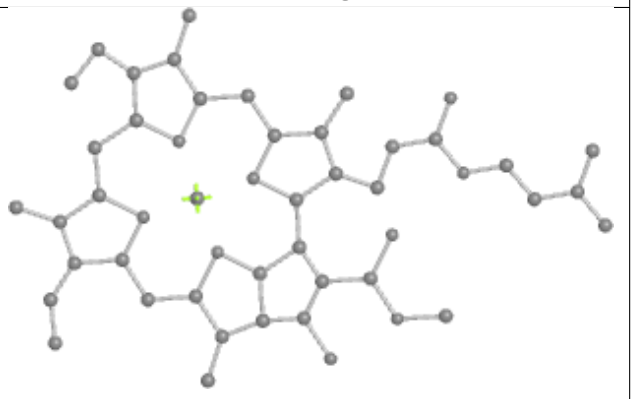
Bond lengths



Bond angles

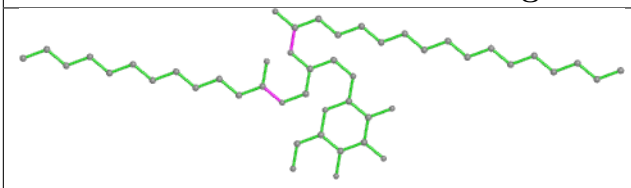


Torsions

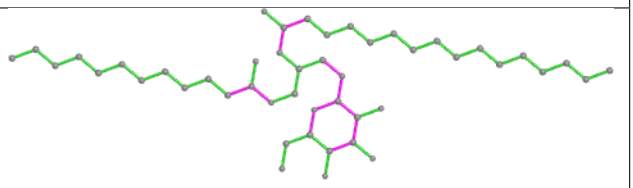


Rings

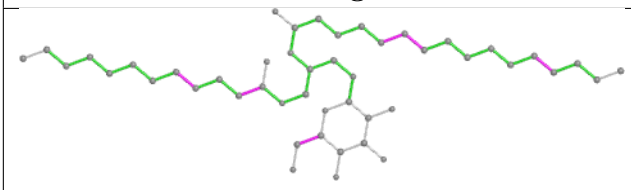
Ligand MGE d 408



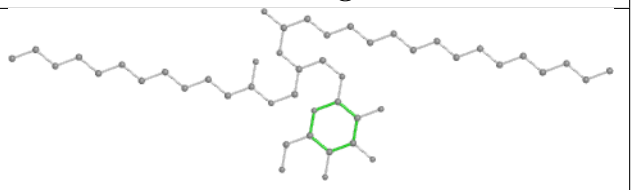
Bond lengths



Bond angles

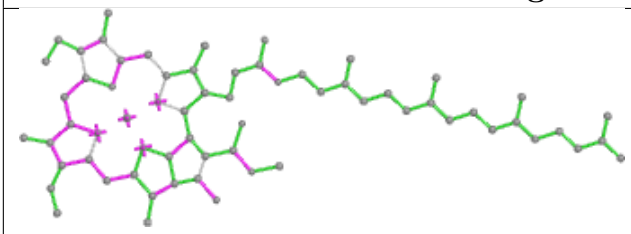


Torsions

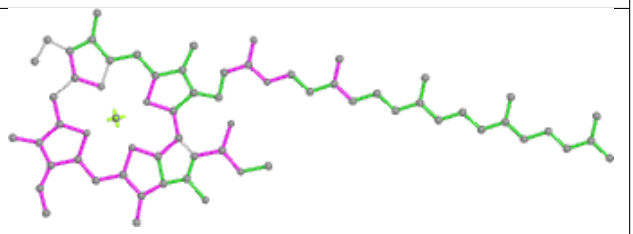


Rings

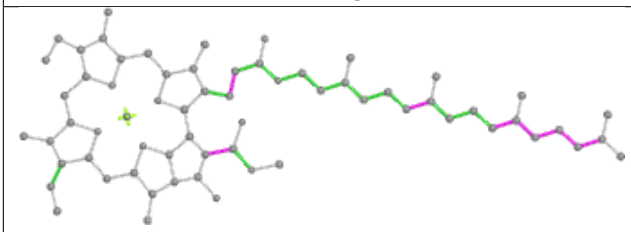
Ligand CLA b 606



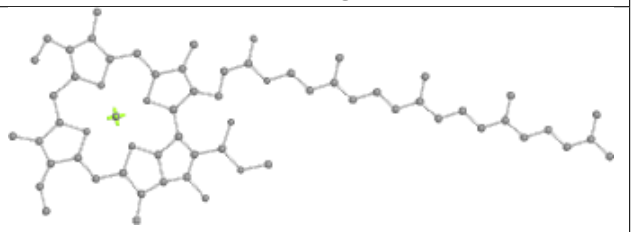
Bond lengths



Bond angles

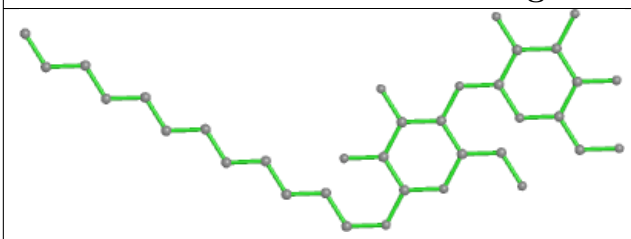


Torsions

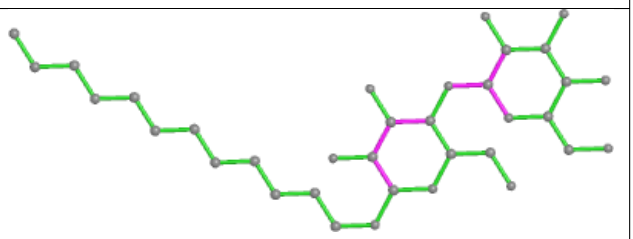


Rings

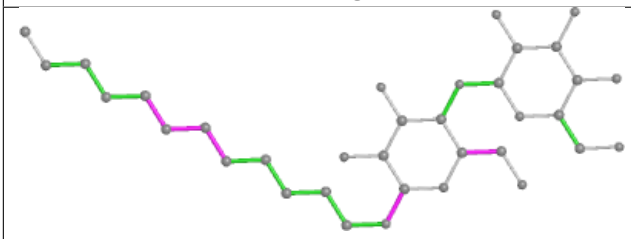
Ligand LMT t 101



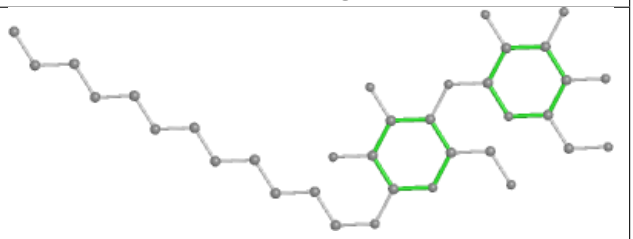
Bond lengths



Bond angles

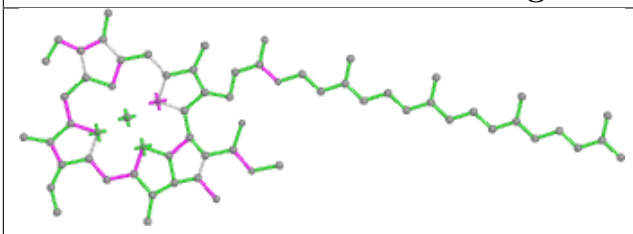


Torsions

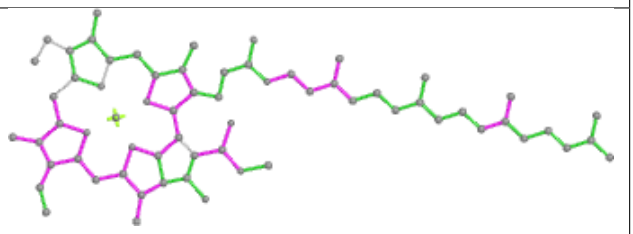


Rings

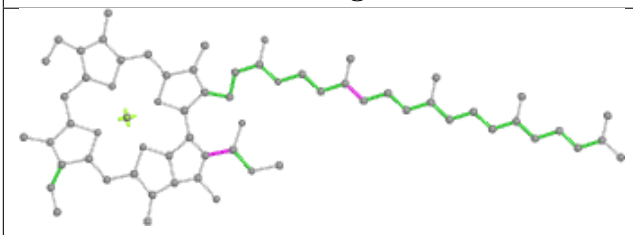
Ligand CLA b 605



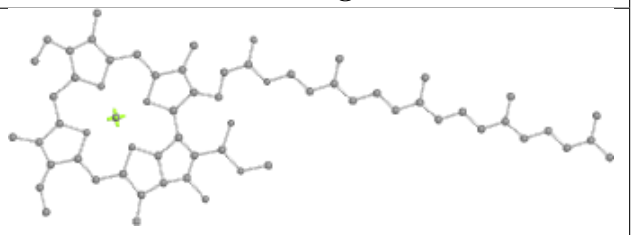
Bond lengths



Bond angles

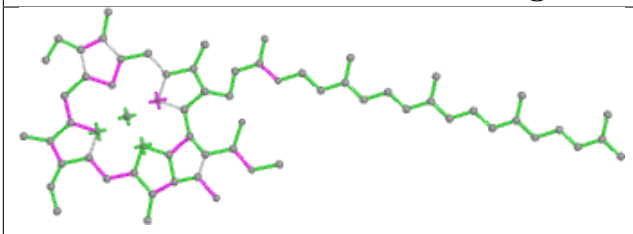


Torsions

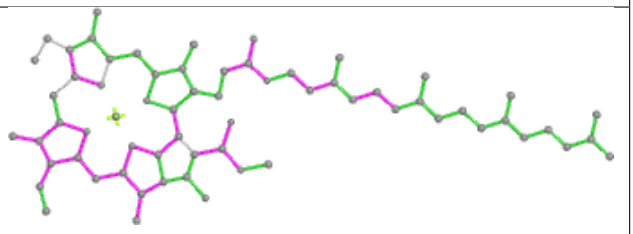


Rings

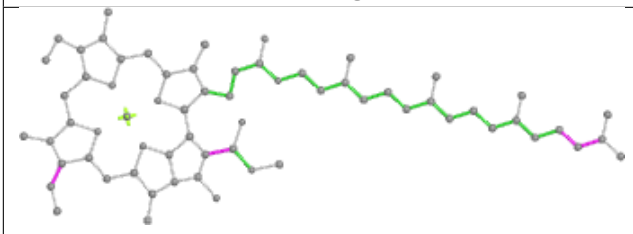
Ligand CLA a 402



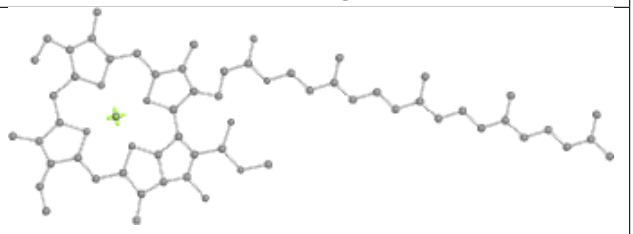
Bond lengths



Bond angles

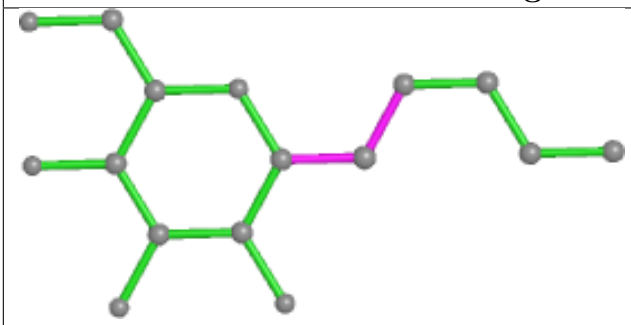


Torsions

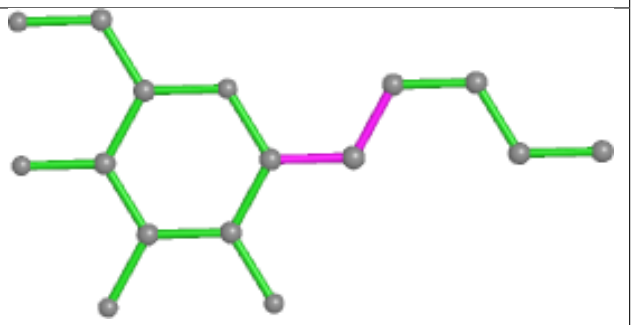


Rings

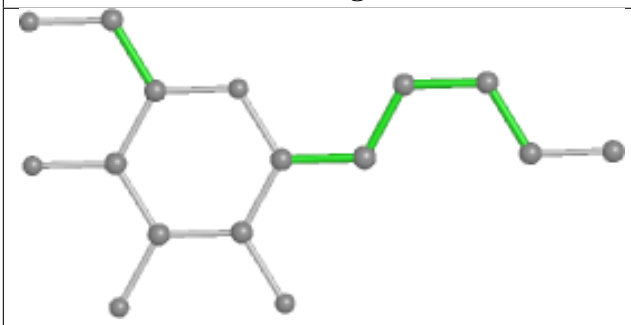
Ligand HTG d 411



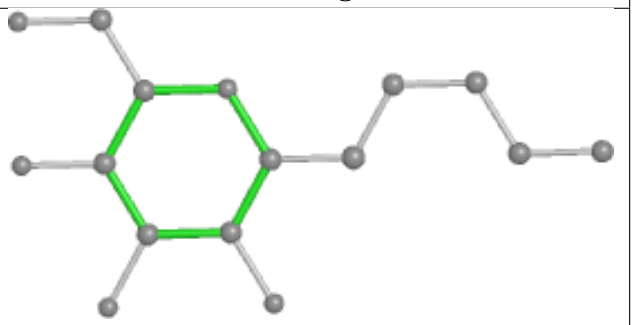
Bond lengths



Bond angles



Torsions



Rings

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.

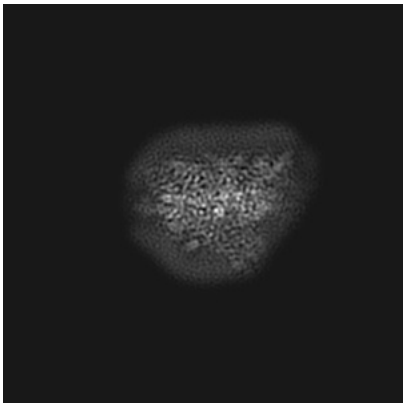
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-30902. These allow visual inspection of the internal detail of the map and identification of artifacts.

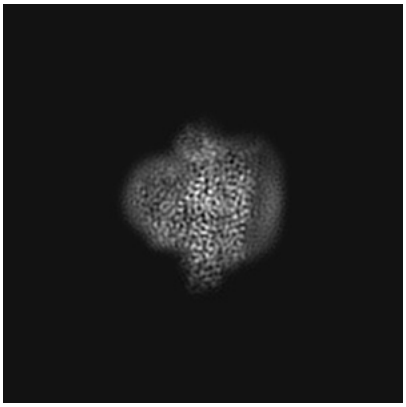
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

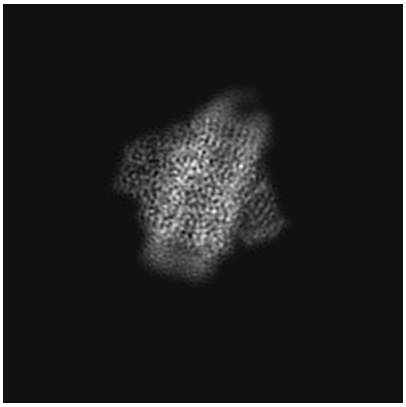
6.1.1 Primary map



X



Y

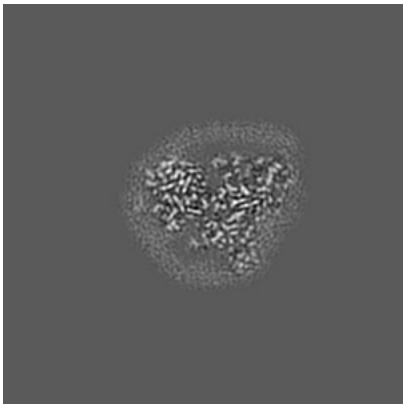


Z

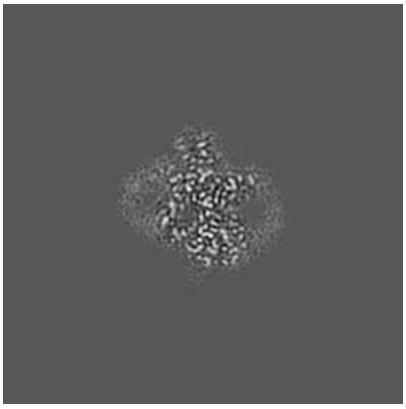
The images above show the map projected in three orthogonal directions.

6.2 Central slices

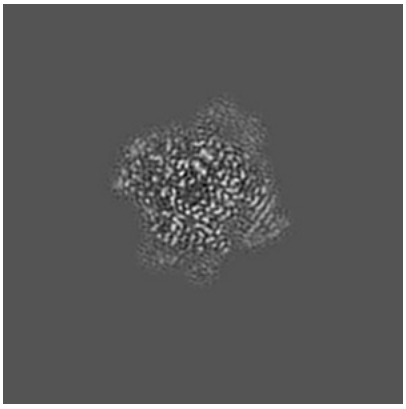
6.2.1 Primary map



X Index: 100



Y Index: 100

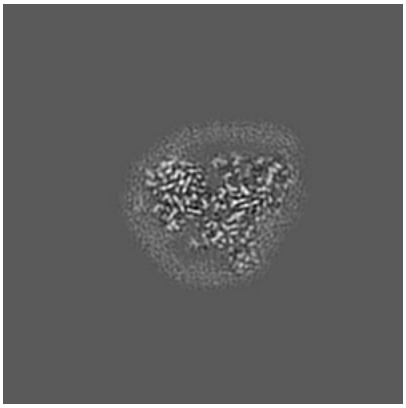


Z Index: 100

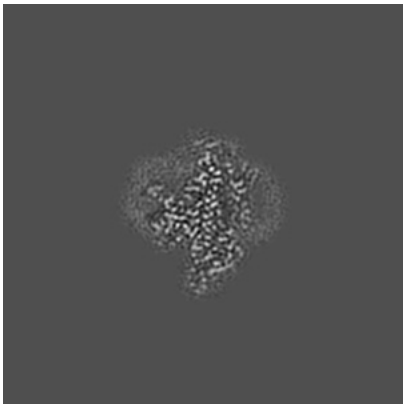
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

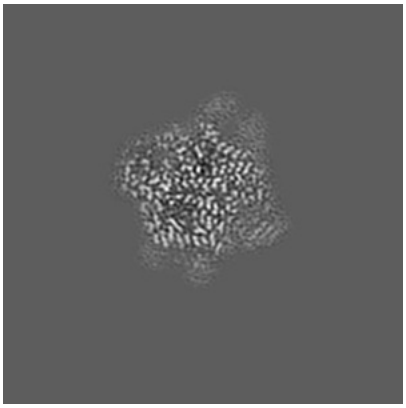
6.3.1 Primary map



X Index: 100



Y Index: 110

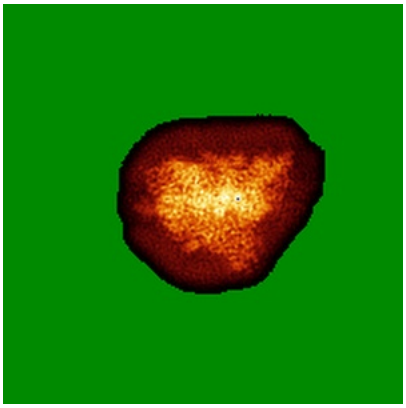


Z Index: 103

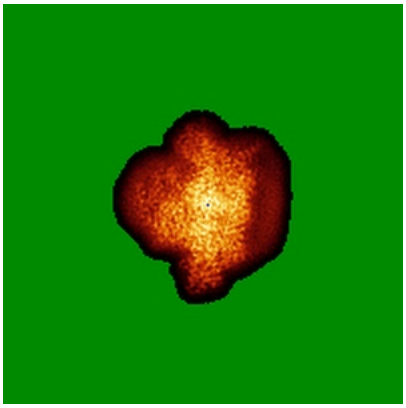
The images above show the largest variance slices of the map in three orthogonal directions.

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

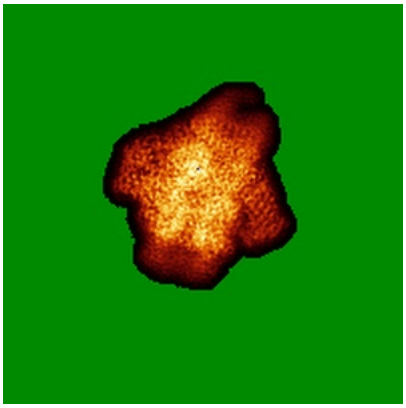
6.4.1 Primary map



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 0.022. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

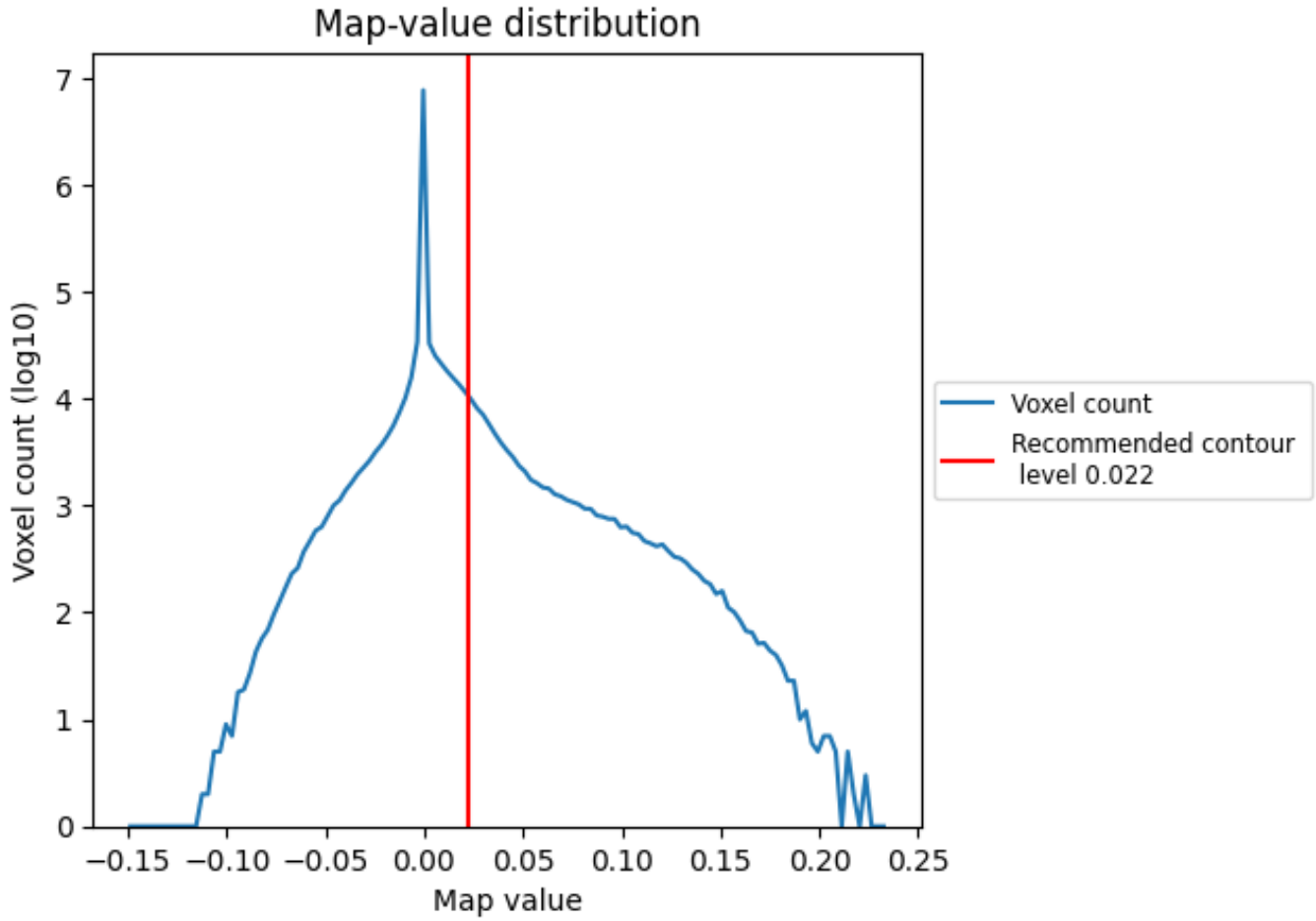
6.6 Mask visualisation (i)

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

7 Map analysis

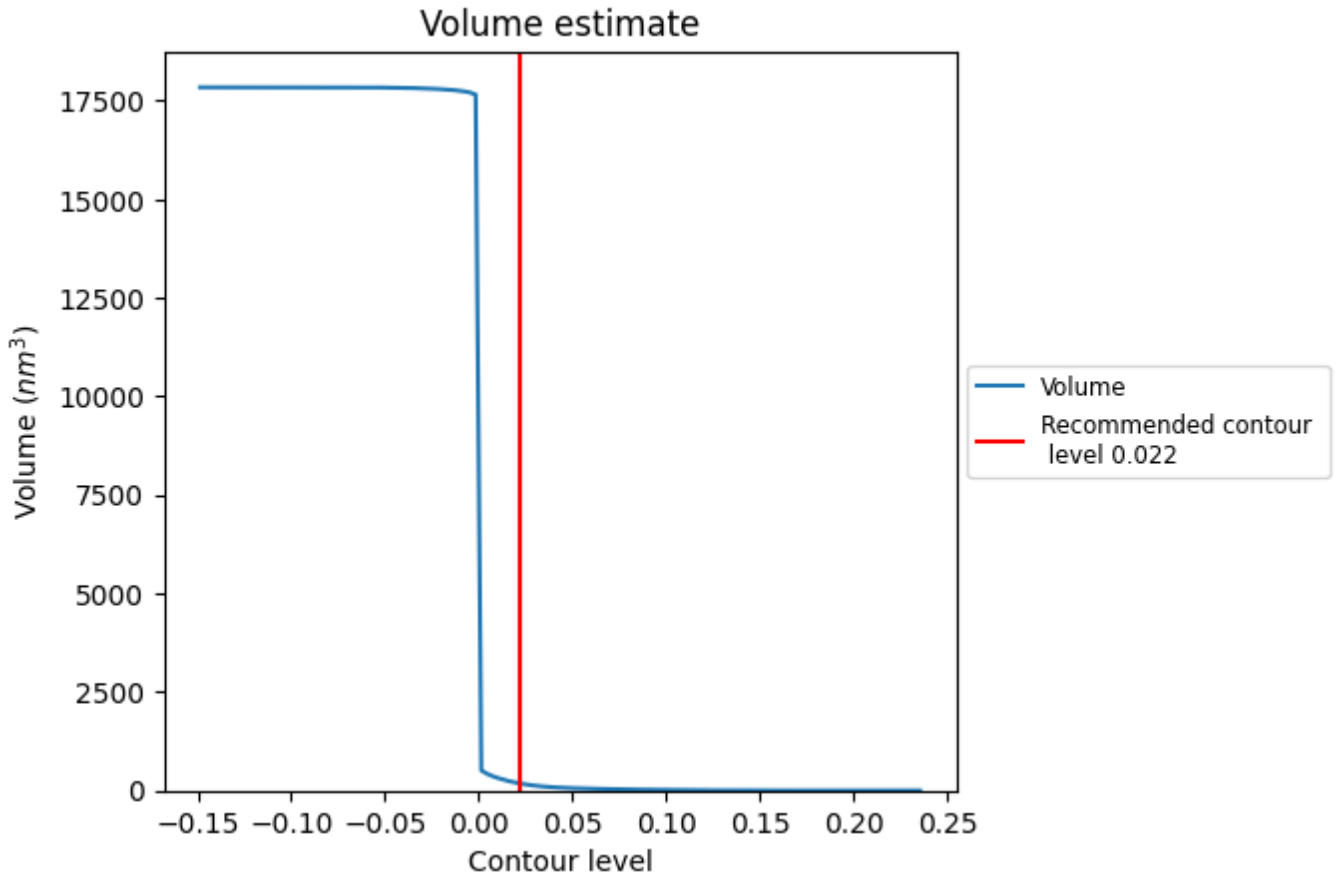
This section contains the results of statistical analysis of the map.

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.

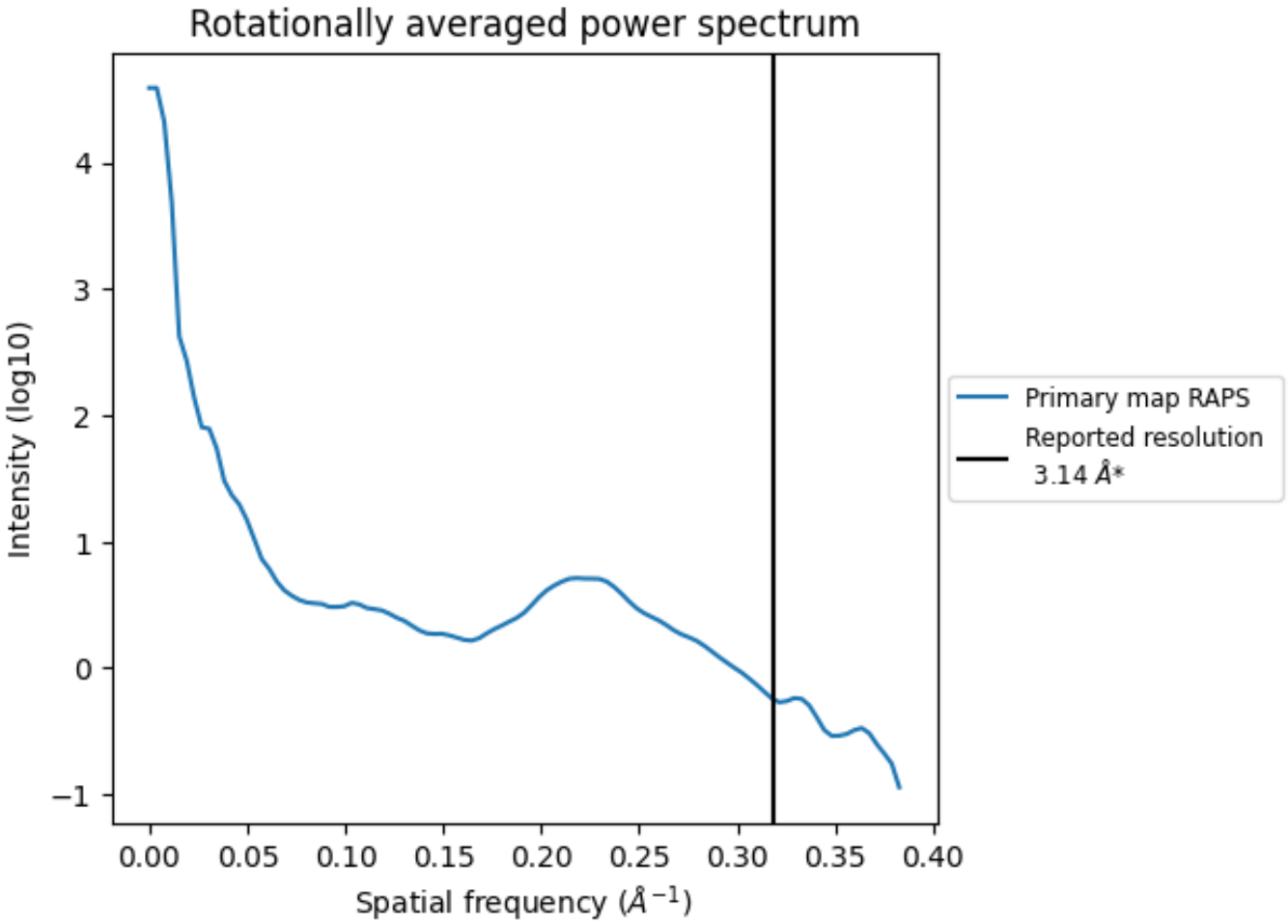
7.2 Volume estimate



The volume at the recommended contour level is 181 nm^3; this corresponds to an approximate mass of 163 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 0.318 Å^{-1}

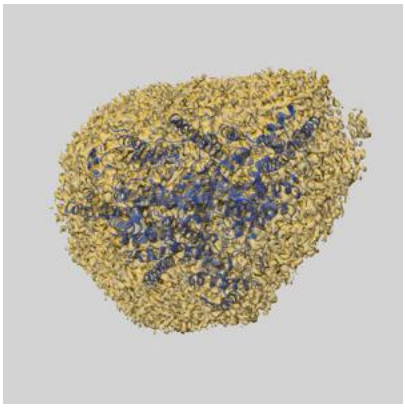
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

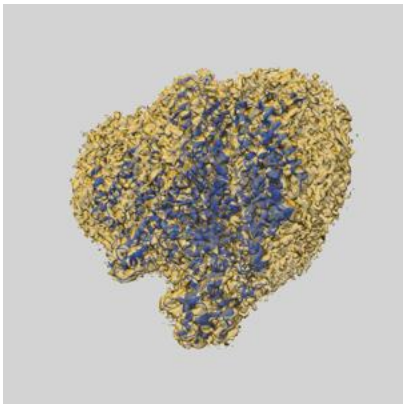
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-30902 and PDB model 7DXA. Per-residue inclusion information can be found in section 3 on page 14.

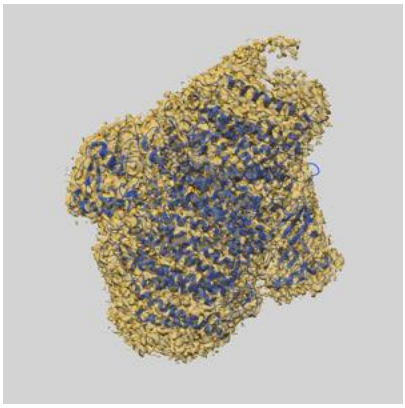
9.1 Map-model overlay



X



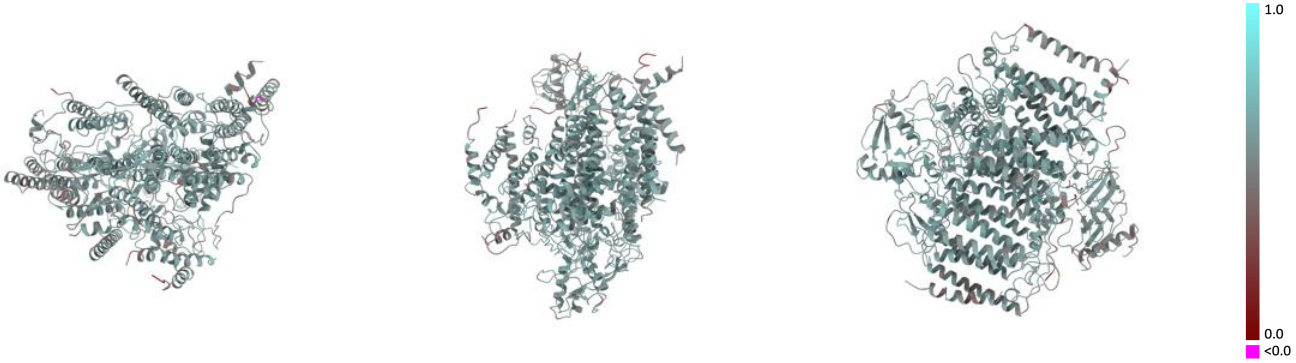
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.022 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.

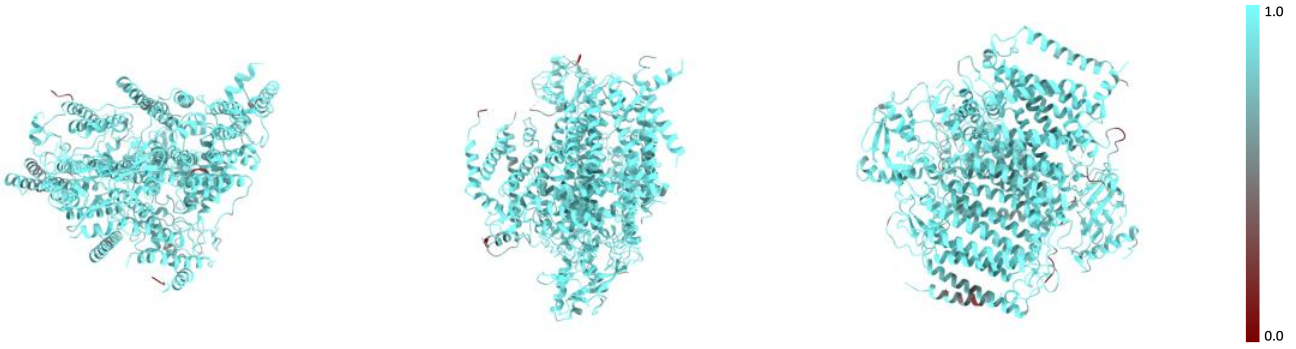
9.2 Q-score mapped to coordinate model (i)



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.

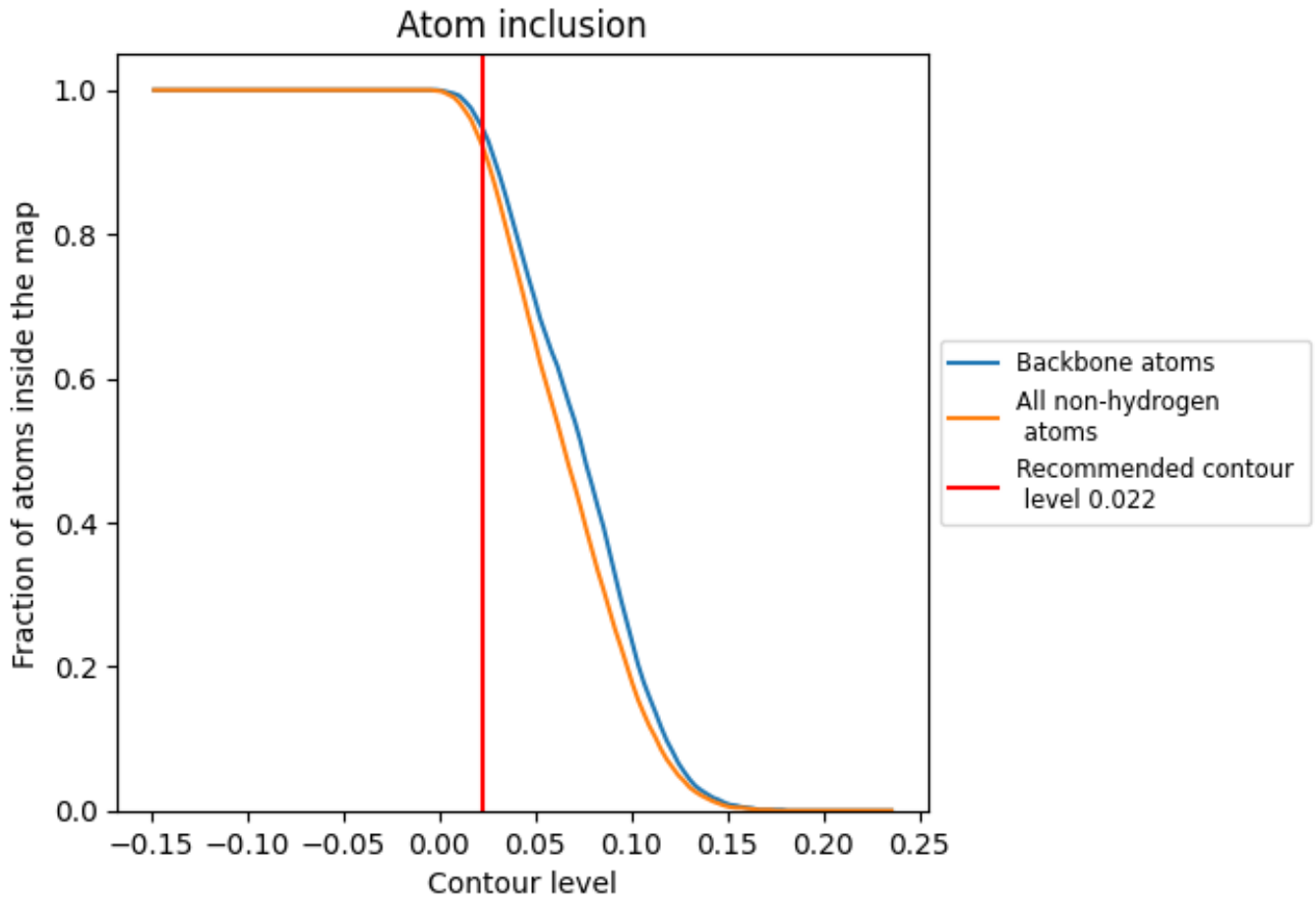
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.022).

9.4 Atom inclusion (i)



At the recommended contour level, 95% of all backbone atoms, 92% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.022) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9240	0.5680
A	0.9200	0.5280
B	0.8660	0.5290
C	0.7300	0.4980
a	0.9400	0.5640
b	0.9440	0.5840
d	0.9500	0.5940
e	0.8070	0.4830
f	0.9540	0.5290
h	0.9660	0.5830
i	0.8440	0.4770
l	0.8350	0.5560
m	0.7870	0.5070
t	0.7920	0.5400
x	0.8810	0.5480