



Full wwPDB EM Validation Report ⓘ

Dec 17, 2024 – 02:11 AM EST

PDB ID : 7RH5
EMDB ID : EMD-24455
Title : Mycobacterial CIII2CIV2 supercomplex, Inhibitor free
Authors : Di Trani, J.M.; Yanofsky, D.J.; Rubinstein, J.L.
Deposited on : 2021-07-16
Resolution : 3.00 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.dev113
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.40

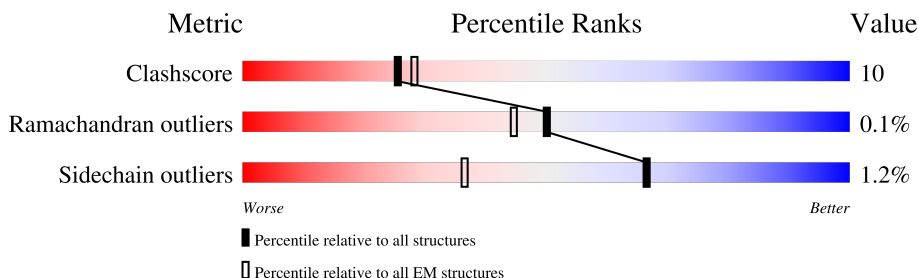
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.00 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	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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

Mol	Chain	Length	Quality of chain
1	L	566	<div> <div>5%</div> <div>77%</div> <div>20%</div> <div>.</div> </div>
1	R	566	<div> <div>.</div> <div>77%</div> <div>20%</div> <div>.</div> </div>
2	E	535	<div> <div>5%</div> <div>82%</div> <div>18%</div> </div>
2	F	535	<div> <div>.</div> <div>81%</div> <div>18%</div> </div>
3	D	216	<div> <div>91%</div> <div>97%</div> <div>.</div> </div>
3	G	216	<div> <div>91%</div> <div>99%</div> <div>.</div> </div>
4	K	341	<div> <div>31%</div> <div>78%</div> <div>13%</div> <div>9%</div> <div>.</div> </div>
4	Q	341	<div> <div>27%</div> <div>74%</div> <div>16%</div> <div>9%</div> <div>.</div> </div>

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Mol	Chain	Length	Quality of chain
5	S	203	
5	X	203	
6	T	139	
6	Z	139	
7	U	79	
7	a	79	
8	V	145	
8	b	145	
9	J	100	
9	P	100	
10	I	223	
10	O	223	
11	W	159	
11	c	159	
12	M	382	
12	Y	382	

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
15	CDL	S	301	-	-	X	-
15	CDL	T	201	-	-	X	-
15	CDL	X	301	-	-	X	-
15	CDL	X	302	-	-	X	-
15	CDL	Z	202	-	-	X	-
15	CDL	Z	203	-	-	X	-

2 Entry composition [i](#)

There are 23 unique types of molecules in this entry. The entry contains 95903 atoms, of which 46941 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 Cytochrome c oxidase subunit 1.

Mol	Chain	Residues	Atoms						AltConf	Trace
1	R	552	Total	C	H	N	O	S	0	0
			8716	2937	4346	695	712	26		
1	L	552	Total	C	H	N	O	S	0	0
			8717	2937	4347	695	712	26		

- Molecule 2 is a protein called Cytochrome bc1 complex cytochrome b subunit.

Mol	Chain	Residues	Atoms						AltConf	Trace
2	E	535	Total	C	H	N	O	S	0	0
			8384	2751	4203	711	701	18		
2	F	535	Total	C	H	N	O	S	0	0
			8381	2751	4200	711	701	18		

- Molecule 3 is a protein called Superoxide dismutase [Cu-Zn].

Mol	Chain	Residues	Atoms						AltConf	Trace
3	D	216	Total	C	H	N	O	S	0	0
			1732	645	640	217	229	1		
3	G	216	Total	C	H	N	O	S	0	0
			1732	645	640	217	229	1		

- Molecule 4 is a protein called Cytochrome aa3 subunit 2.

Mol	Chain	Residues	Atoms						AltConf	Trace
4	Q	312	Total	C	H	N	O	S	0	0
			4857	1592	2392	412	451	10		
4	K	312	Total	C	H	N	O	S	0	0
			4857	1592	2392	412	451	10		

- Molecule 5 is a protein called Cytochrome aa3 subunit 3.

Mol	Chain	Residues	Atoms						AltConf	Trace
5	S	203	Total	C	H	N	O	S	0	0
			3108	1039	1548	253	260	8		
5	X	203	Total	C	H	N	O	S	0	0
			3108	1039	1548	253	260	8		

- Molecule 6 is a protein called Cytochrome c oxidase polypeptide 4.

Mol	Chain	Residues	Atoms						AltConf	Trace
6	T	139	Total	C	H	N	O	S	0	0
			2136	719	1059	167	188	3		
6	Z	139	Total	C	H	N	O	S	0	0
			2135	719	1058	167	188	3		

- Molecule 7 is a protein called Cytochrome c oxidase subunit CtaJ.

Mol	Chain	Residues	Atoms						AltConf	Trace
7	U	79	Total	C	H	N	O	S	0	0
			1167	381	576	107	101	2		
7	a	79	Total	C	H	N	O	S	0	0
			1167	381	576	107	101	2		

- Molecule 8 is a protein called Uncharacterized protein MSMEG_4692/MSMEI_4575.

Mol	Chain	Residues	Atoms						AltConf	Trace
8	V	145	Total	C	H	N	O	S	0	0
			2093	658	1052	176	205	2		
8	b	145	Total	C	H	N	O	S	0	0
			2093	658	1052	176	205	2		

- Molecule 9 is a protein called Putative conserved transmembrane protein.

Mol	Chain	Residues	Atoms						AltConf	Trace
9	P	92	Total	C	H	N	O	S	0	0
			1453	471	717	136	124	5		
9	J	92	Total	C	H	N	O	S	0	0
			1454	471	718	136	124	5		

- Molecule 10 is a protein called Cytochrome bc1 complex cytochrome c subunit.

Mol	Chain	Residues	Atoms						AltConf	Trace
10	O	223	Total	C	H	N	O	S	0	0
			3187	1008	1564	289	314	12		

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Mol	Chain	Residues	Atoms						AltConf	Trace
10	I	223	Total	C	H	N	O	S	0	0
			3187	1008	1564	289	314	12		

- Molecule 11 is a protein called LpqE protein.

Mol	Chain	Residues	Atoms						AltConf	Trace
11	c	158	Total	C	H	N	O	S	0	0
			2259	708	1110	192	248	1		
11	W	158	Total	C	H	N	O	S	0	0
			2259	708	1110	192	248	1		

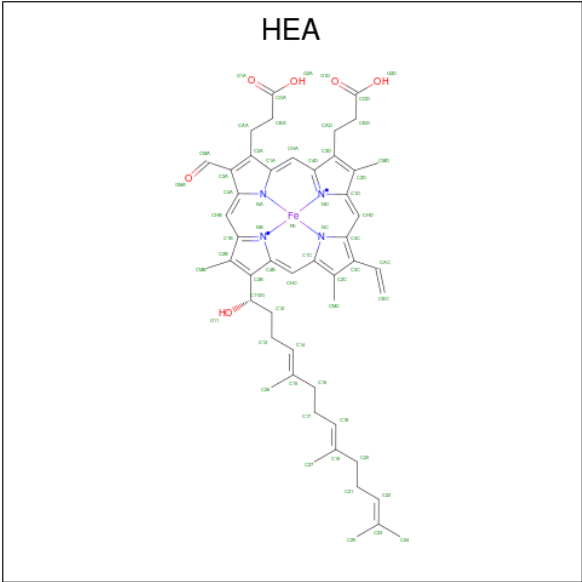
- Molecule 12 is a protein called Cytochrome bc1 complex Rieske iron-sulfur subunit.

Mol	Chain	Residues	Atoms						AltConf	Trace
12	Y	382	Total	C	H	N	O	S	0	0
			5961	1924	2984	504	538	11		
12	M	382	Total	C	H	N	O	S	0	0
			5961	1924	2984	504	538	11		

- Molecule 13 is COPPER (II) ION (three-letter code: CU) (formula: Cu).

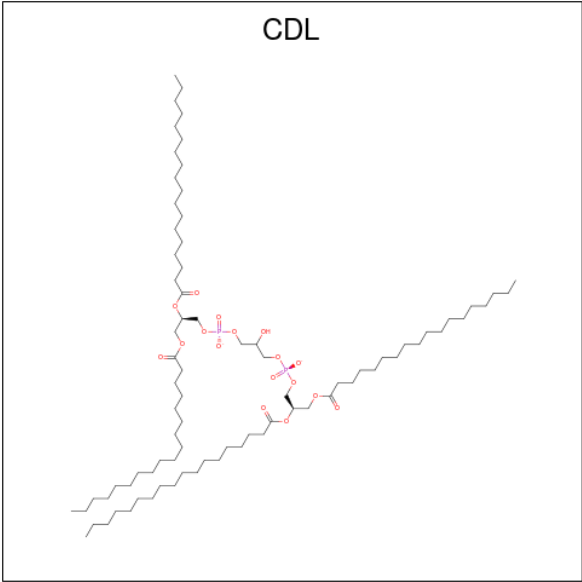
Mol	Chain	Residues	Atoms		AltConf
13	R	1	Total	Cu	0
			1	1	
13	L	1	Total	Cu	0
			1	1	
13	Q	2	Total	Cu	0
			2	2	
13	K	2	Total	Cu	0
			2	2	

- Molecule 14 is HEME-A (three-letter code: HEA) (formula: C₄₉H₅₆FeN₄O₆).



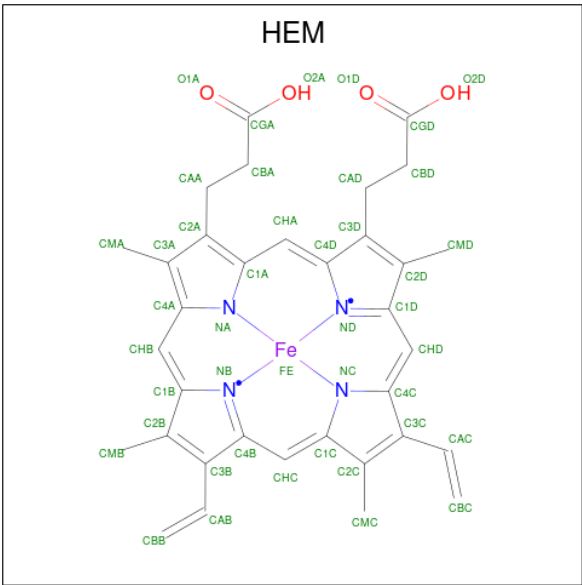
Mol	Chain	Residues	Atoms						AltConf
14	R	1	Total	C	Fe	H	N	O	0
			114	49	1	54	4	6	
14	R	1	Total	C	Fe	H	N	O	0
			114	49	1	54	4	6	
14	L	1	Total	C	Fe	H	N	O	0
			114	49	1	54	4	6	
14	L	1	Total	C	Fe	H	N	O	0
			114	49	1	54	4	6	

- Molecule 15 is CARDIOLIPIN (three-letter code: CDL) (formula: C₈₁H₁₅₆O₁₇P₂).



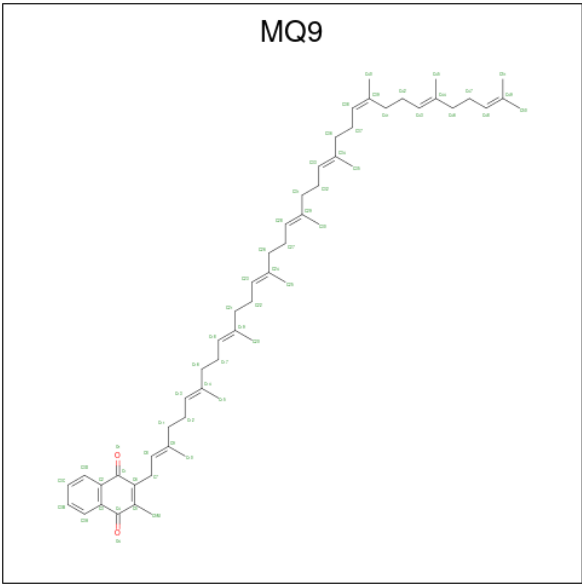
Mol	Chain	Residues	Atoms				AltConf
15	R	1	Total	C	O	P	0
			76	57	17	2	
15	E	1	Total	C	O	P	0
			76	57	17	2	
15	E	1	Total	C	O	P	0
			76	57	17	2	
15	F	1	Total	C	O	P	0
			76	57	17	2	
15	F	1	Total	C	O	P	0
			76	57	17	2	
15	L	1	Total	C	O	P	0
			76	57	17	2	
15	S	1	Total	C	O	P	0
			76	57	17	2	
15	T	1	Total	C	O	P	0
			76	57	17	2	
15	T	1	Total	C	O	P	0
			76	57	17	2	
15	T	1	Total	C	O	P	0
			76	57	17	2	
15	P	1	Total	C	O	P	0
			76	57	17	2	
15	X	1	Total	C	O	P	0
			76	57	17	2	
15	X	1	Total	C	O	P	0
			76	57	17	2	
15	Z	1	Total	C	O	P	0
			76	57	17	2	
15	Z	1	Total	C	O	P	0
			76	57	17	2	
15	J	1	Total	C	O	P	0
			76	57	17	2	

- Molecule 16 is PROTOPORPHYRIN IX CONTAINING FE (three-letter code: HEM) (formula: $C_{34}H_{32}FeN_4O_4$).



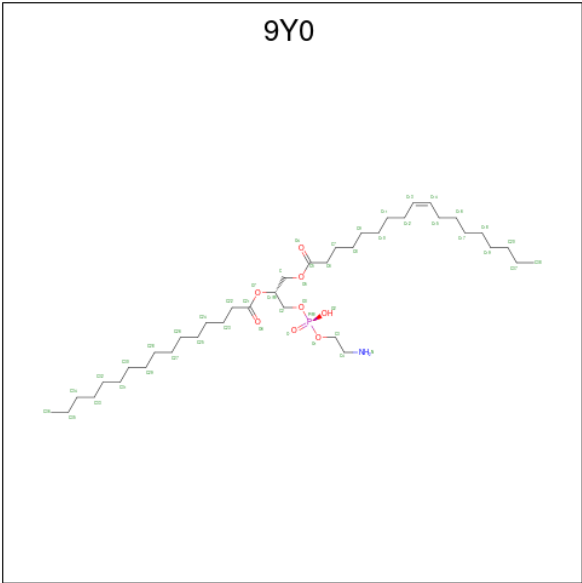
Mol	Chain	Residues	Atoms						AltConf
16	E	1	Total	C	Fe	H	N	O	0
			69	33	1	27	4	4	
16	E	1	Total	C	Fe	H	N	O	0
			73	34	1	30	4	4	
16	F	1	Total	C	Fe	H	N	O	0
			69	33	1	27	4	4	
16	F	1	Total	C	Fe	H	N	O	0
			73	34	1	30	4	4	

- Molecule 17 is MENAQUINONE-9 (three-letter code: MQ9) (formula: C₅₆H₈₀O₂).



Mol	Chain	Residues	Atoms				AltConf
17	E	1	Total	C	H	O	0
			138	56	80	2	
17	E	1	Total	C	H	O	0
			138	56	80	2	
17	F	1	Total	C	H	O	0
			138	56	80	2	
17	F	1	Total	C	H	O	0
			138	56	80	2	
17	F	1	Total	C	H	O	0
			138	56	80	2	
17	F	1	Total	C	H	O	0
			138	56	80	2	
17	Z	1	Total	C	H	O	0
			138	56	80	2	
17	I	1	Total	C	H	O	0
			138	56	80	2	

- Molecule 18 is (2R)-3-(((2-aminoethoxy)(hydroxy)phosphoryl)oxy)-2-(palmitoyloxy)propyl (E)-octadec-9-enoate (three-letter code: 9Y0) (formula: C₃₉H₇₆NO₈P).



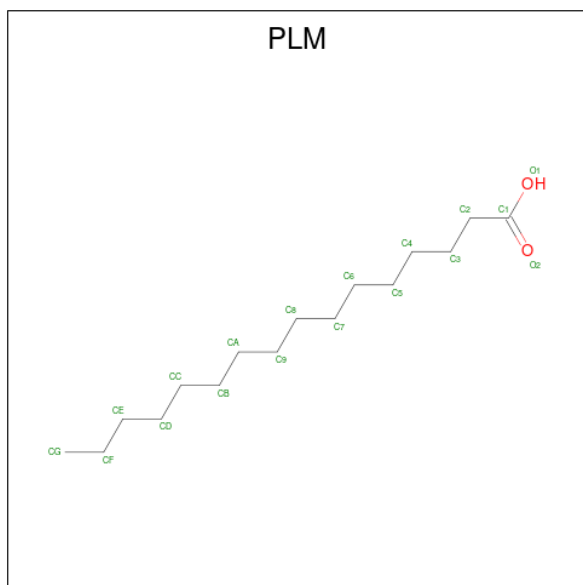
Mol	Chain	Residues	Atoms						AltConf
18	F	1	Total 123	C 39	H 74	N 1	O 8	P 1	0
18	S	1	Total 124	C 39	H 75	N 1	O 8	P 1	0
18	P	1	Total 124	C 39	H 75	N 1	O 8	P 1	0

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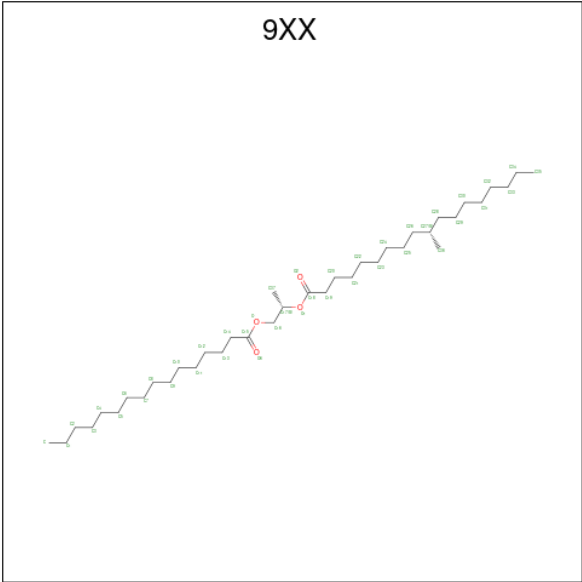
Mol	Chain	Residues	Atoms					AltConf	
18	X	1	Total	C	H	N	O	P	0
			124	39	75	1	8	1	
18	J	1	Total	C	H	N	O	P	0
			124	39	75	1	8	1	
18	J	1	Total	C	H	N	O	P	0
			124	39	75	1	8	1	

- Molecule 19 is PALMITIC ACID (three-letter code: PLM) (formula: $C_{16}H_{32}O_2$).



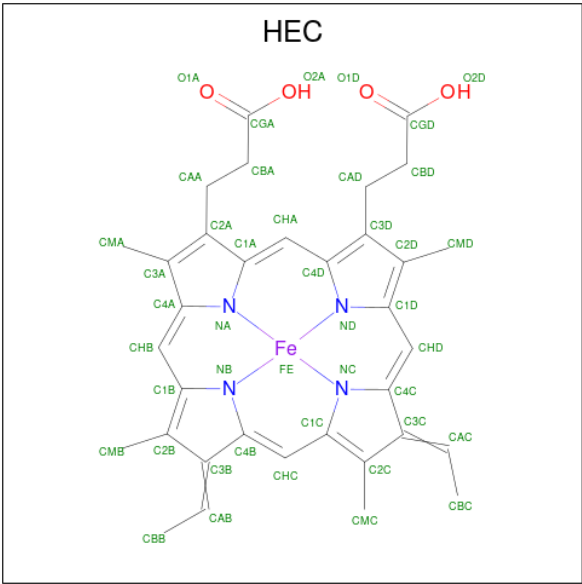
Mol	Chain	Residues	Atoms				AltConf
19	D	1	Total	C	H	O	0
			27	10	16	1	
19	G	1	Total	C	H	O	0
			27	10	16	1	
19	c	1	Total	C	H	O	0
			48	16	31	1	
19	W	1	Total	C	H	O	0
			48	16	31	1	

- Molecule 20 is (2S)-1-(hexadecanoyloxy)propan-2-yl (10S)-10-methyloctadecanoate (three-letter code: 9XX) (formula: $C_{38}H_{74}O_4$).



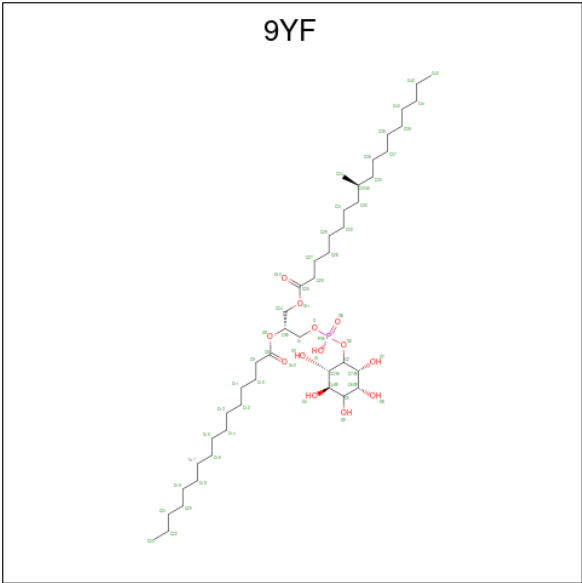
Mol	Chain	Residues	Atoms				AltConf
20	D	1	Total	C	H	O	0
			83	28	51	4	
20	G	1	Total	C	H	O	0
			83	28	51	4	
20	c	1	Total	C	H	O	0
			115	38	73	4	
20	W	1	Total	C	H	O	0
			115	38	73	4	

- Molecule 21 is HEME C (three-letter code: HEC) (formula: $C_{34}H_{34}FeN_4O_4$).



Mol	Chain	Residues	Atoms						AltConf
21	O	1	Total	C	Fe	H	N	O	0
			75	34	1	32	4	4	
21	O	1	Total	C	Fe	H	N	O	0
			75	34	1	32	4	4	
21	I	1	Total	C	Fe	H	N	O	0
			75	34	1	32	4	4	
21	I	1	Total	C	Fe	H	N	O	0
			75	34	1	32	4	4	

- Molecule 22 is (2R)-2-(hexadecanoyloxy)-3-[(S)-hydroxy{[(1R,2R,3R,4R,5R,6S)-2,3,4,5,6-pentahydroxycyclohexyl]oxy}phosphoryl]oxy}propyl (9S)-9-methyloctadecanoate (three-letter code: 9YF) (formula: C₄₄H₈₅O₁₃P).



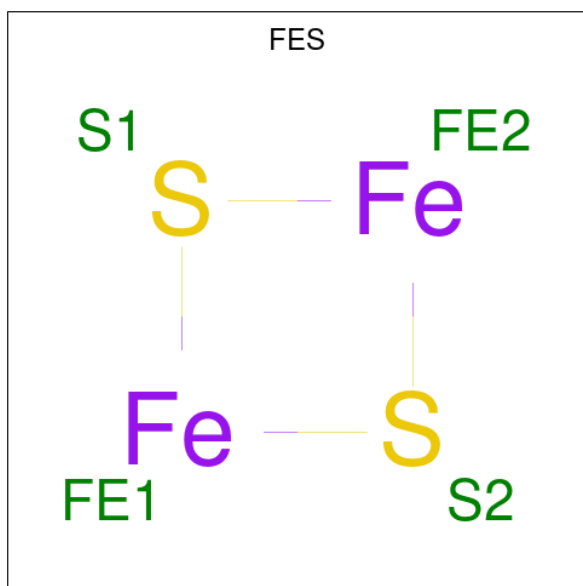
Mol	Chain	Residues	Atoms					AltConf
22	O	1	Total	C	H	O	P	0
			142	44	84	13	1	
22	c	1	Total	C	H	O	P	0
			142	44	84	13	1	
22	I	1	Total	C	H	O	P	0
			142	44	84	13	1	
22	Y	1	Total	C	H	O	P	0
			142	44	84	13	1	
22	Y	1	Total	C	H	O	P	0
			142	44	84	13	1	
22	W	1	Total	C	H	O	P	0
			142	44	84	13	1	
22	M	1	Total	C	H	O	P	0
			142	44	84	13	1	

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Mol	Chain	Residues	Atoms					AltConf
22	M	1	Total	C	H	O	P	0
			142	44	84	13	1	

- Molecule 23 is FE2/S2 (INORGANIC) CLUSTER (three-letter code: FES) (formula: Fe₂S₂).

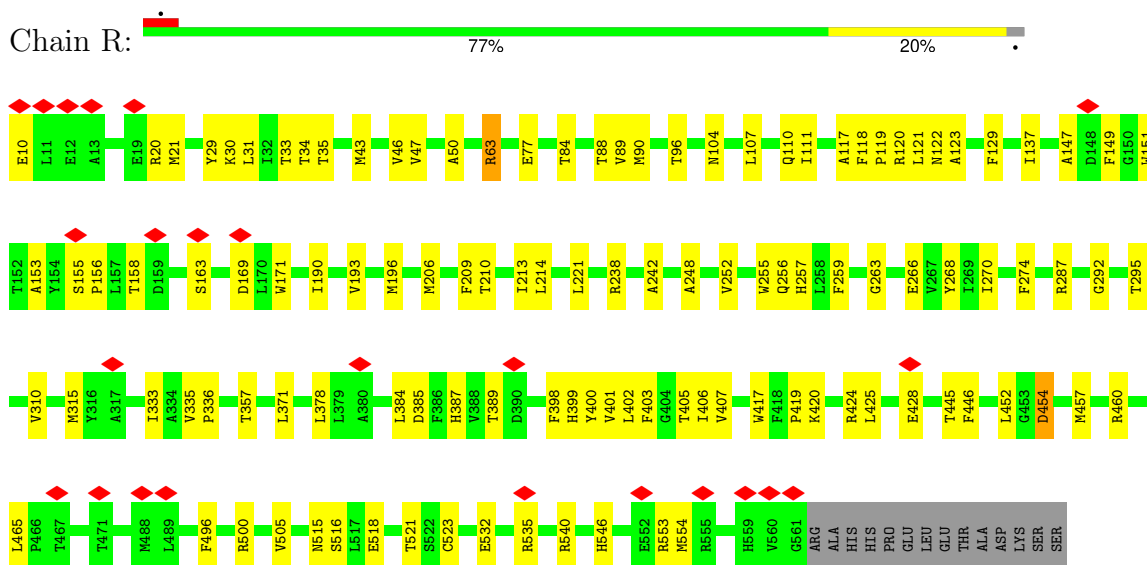


Mol	Chain	Residues	Atoms			AltConf
23	Y	1	Total	Fe	S	0
			4	2	2	
23	M	1	Total	Fe	S	0
			4	2	2	

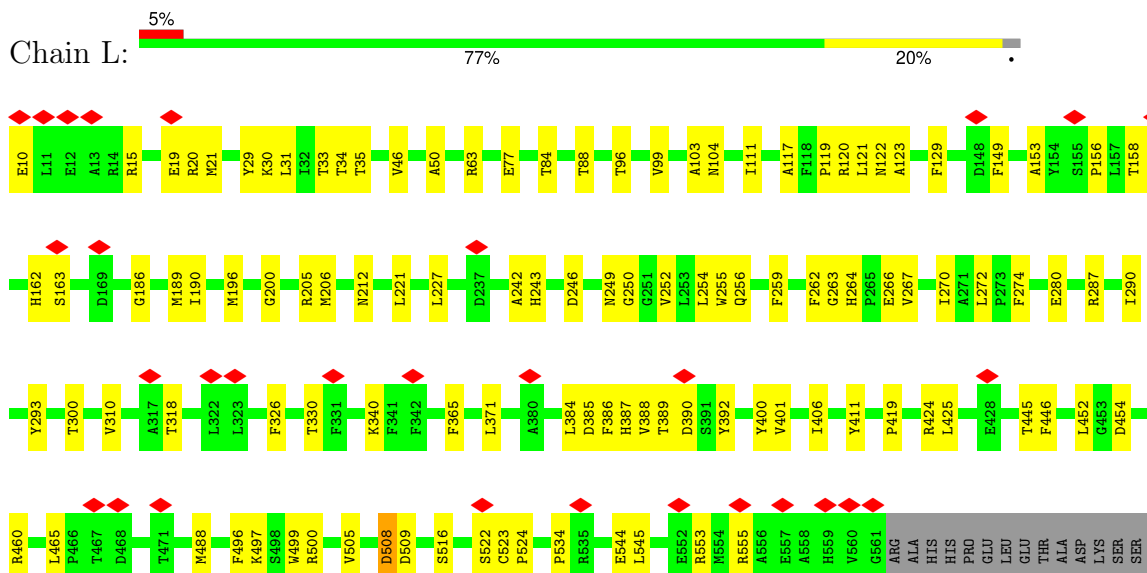
3 Residue-property plots

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.

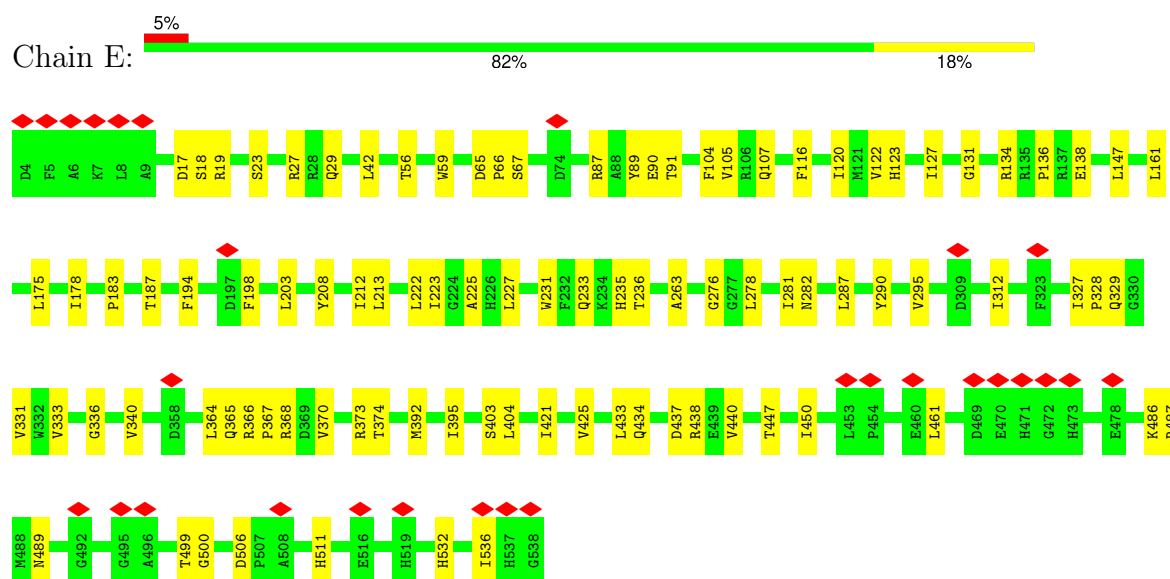
- Molecule 1: Cytochrome c oxidase subunit 1



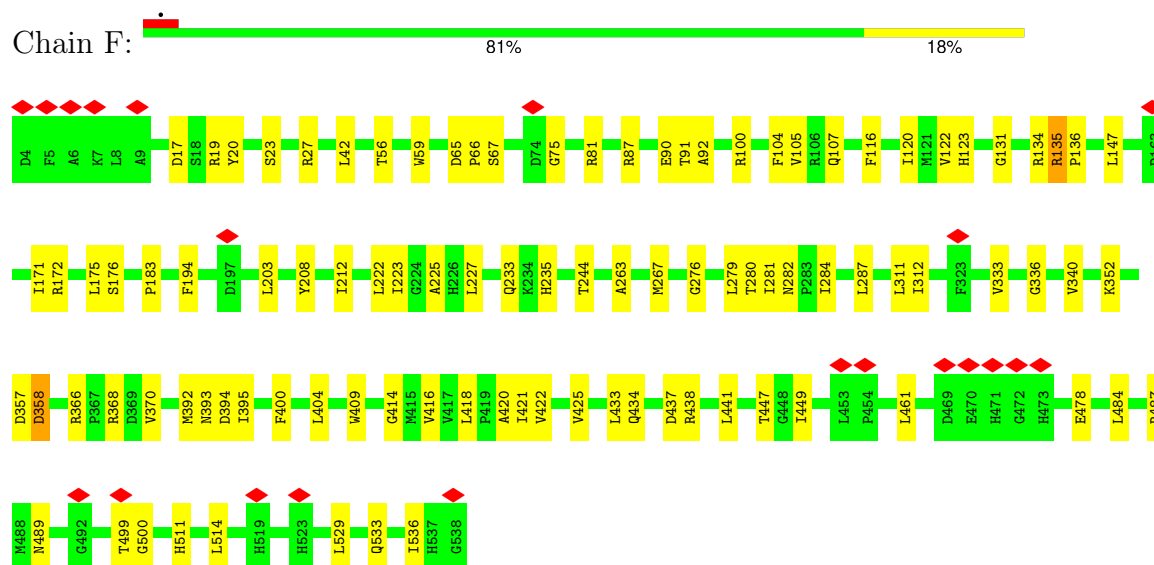
- Molecule 1: Cytochrome c oxidase subunit 1



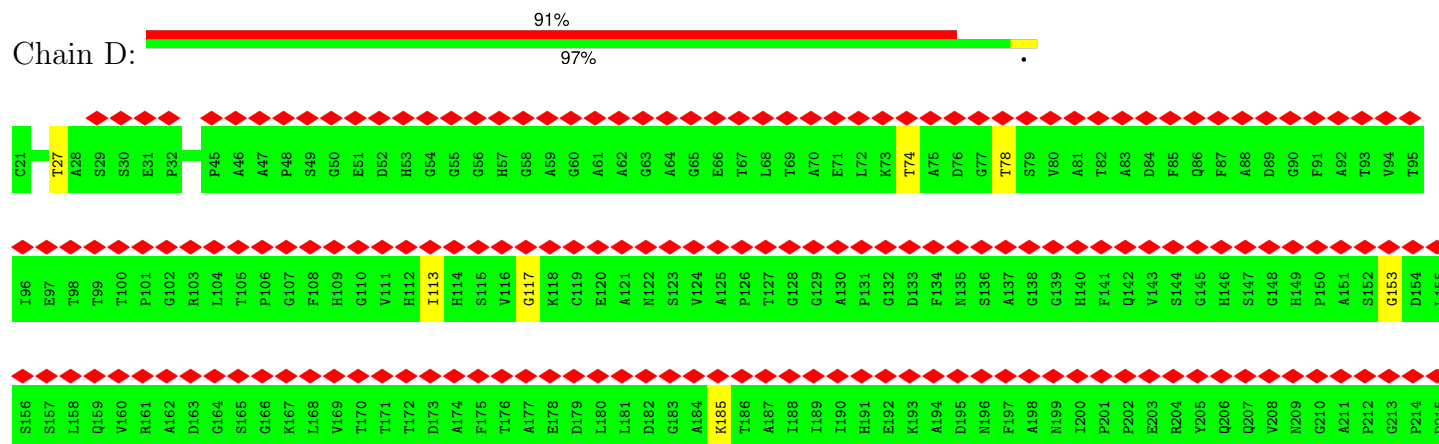
- Molecule 2: Cytochrome bc1 complex cytochrome b subunit



• Molecule 2: Cytochrome bc1 complex cytochrome b subunit

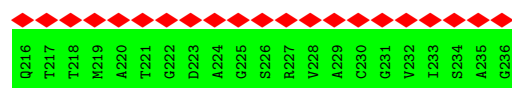
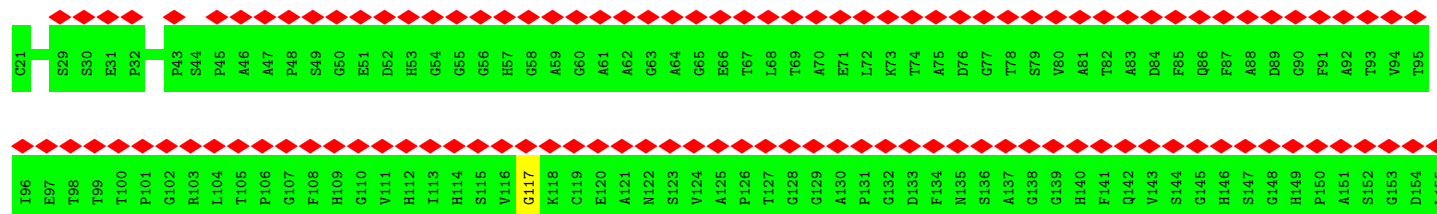


• Molecule 3: Superoxide dismutase [Cu-Zn]

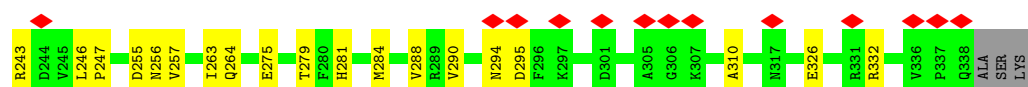
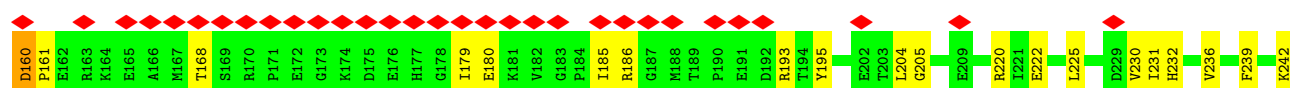
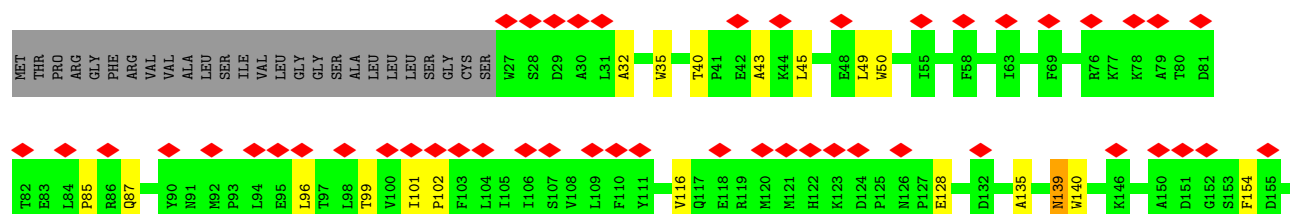
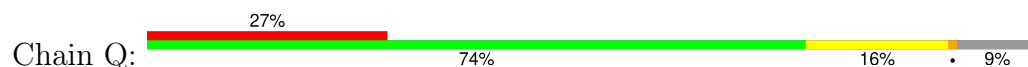




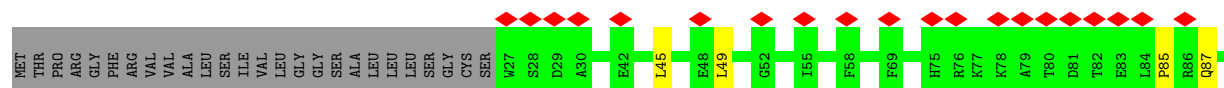
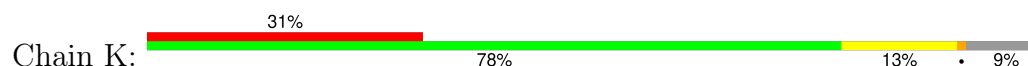
• Molecule 3: Superoxide dismutase [Cu-Zn]

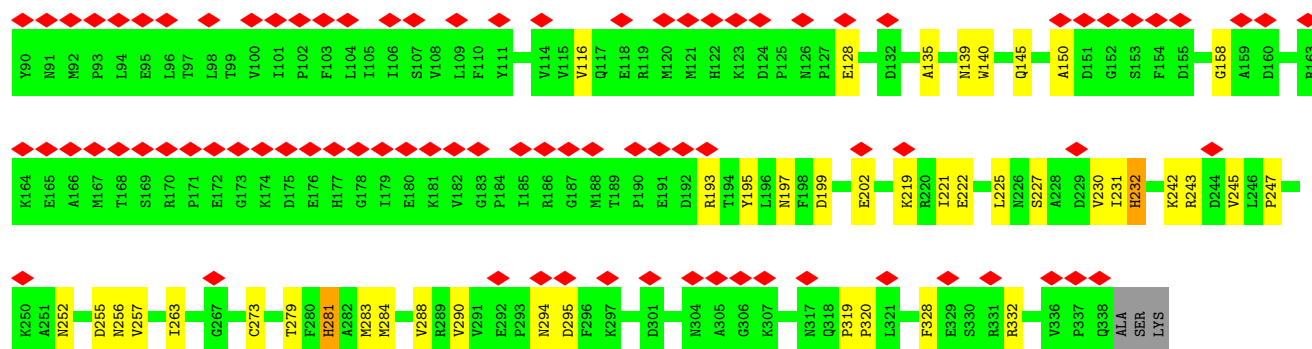


• Molecule 4: Cytochrome aa3 subunit 2

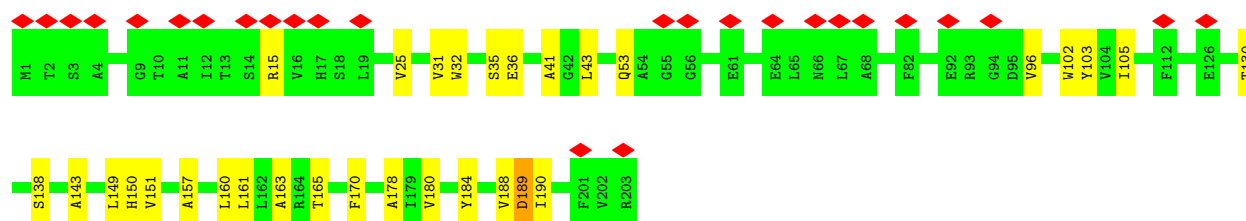
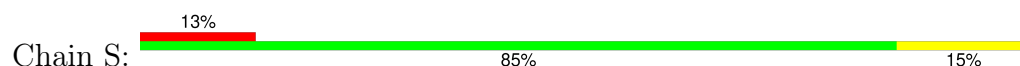


• Molecule 4: Cytochrome aa3 subunit 2

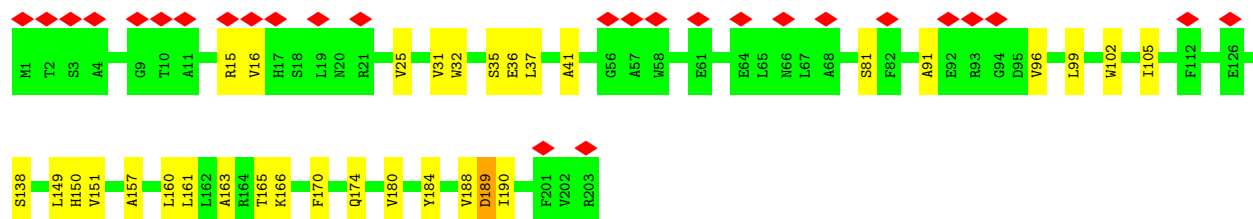
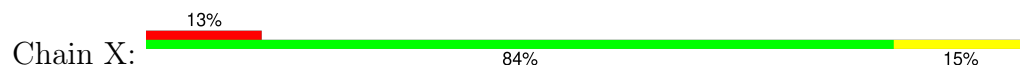




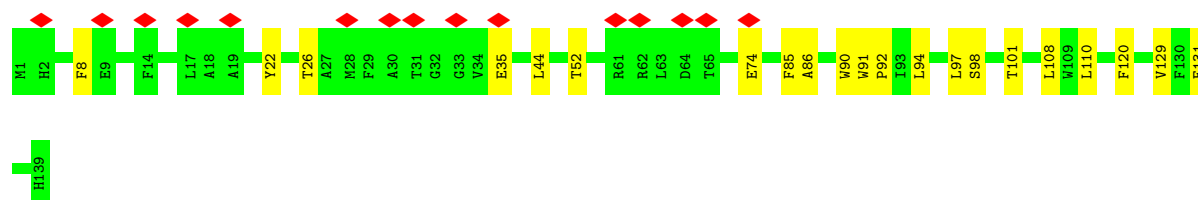
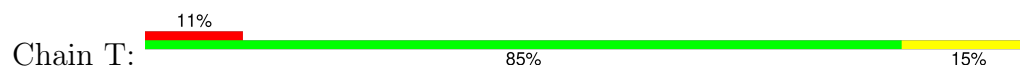
• Molecule 5: Cytochrome aa3 subunit 3



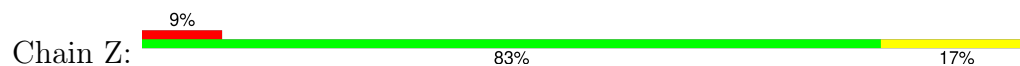
• Molecule 5: Cytochrome aa3 subunit 3

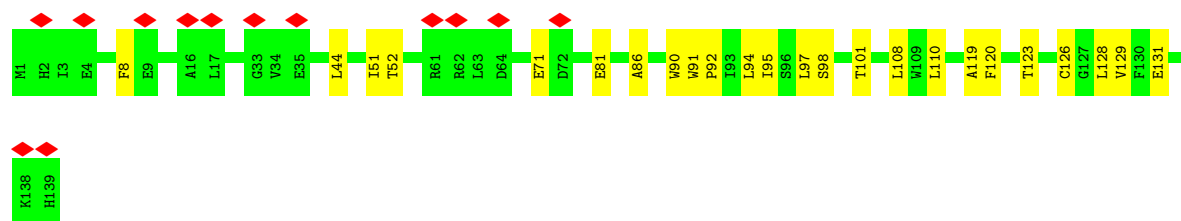


• Molecule 6: Cytochrome c oxidase polypeptide 4

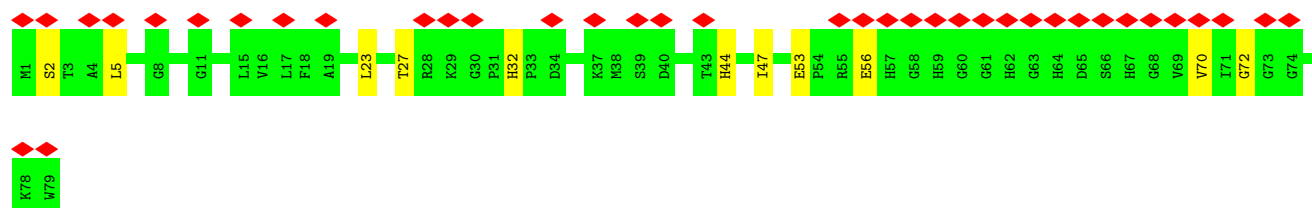
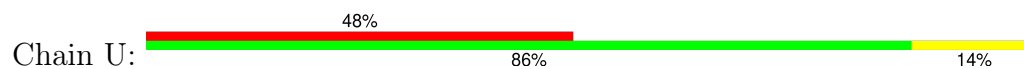


• Molecule 6: Cytochrome c oxidase polypeptide 4

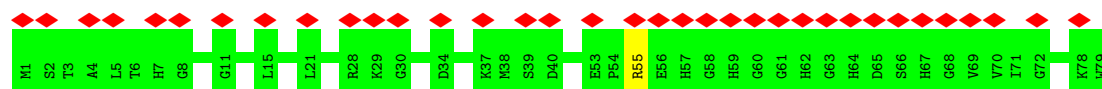
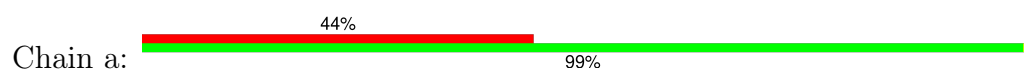




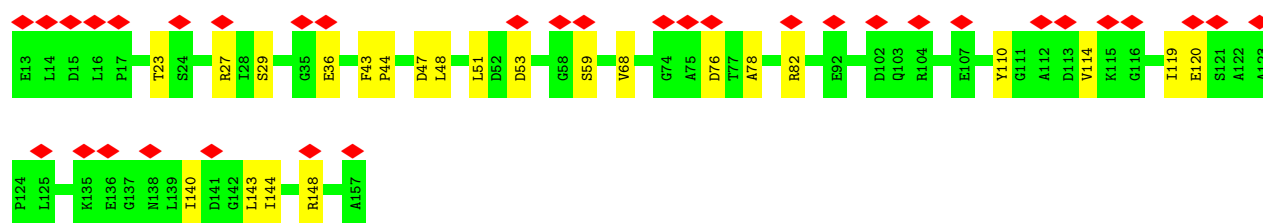
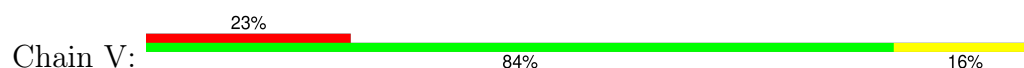
• Molecule 7: Cytochrome c oxidase subunit CtaJ



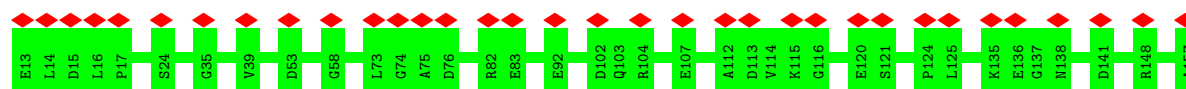
• Molecule 7: Cytochrome c oxidase subunit CtaJ



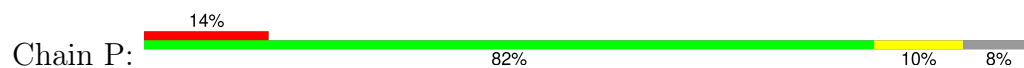
• Molecule 8: Uncharacterized protein MSMEG_4692/MSMEI_4575

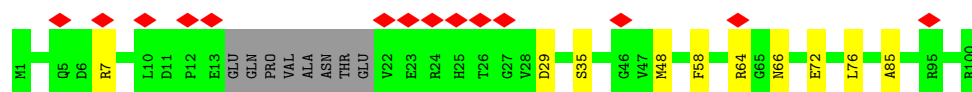


• Molecule 8: Uncharacterized protein MSMEG_4692/MSMEI_4575

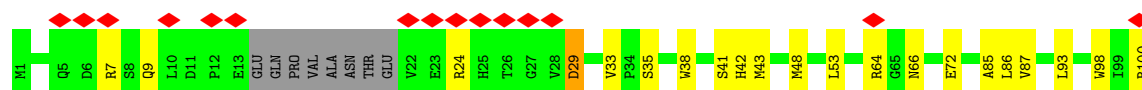


• Molecule 9: Putative conserved transmembrane protein

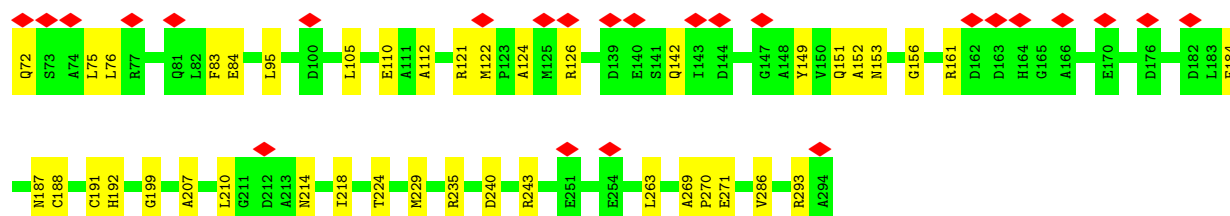
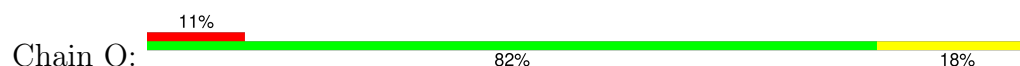




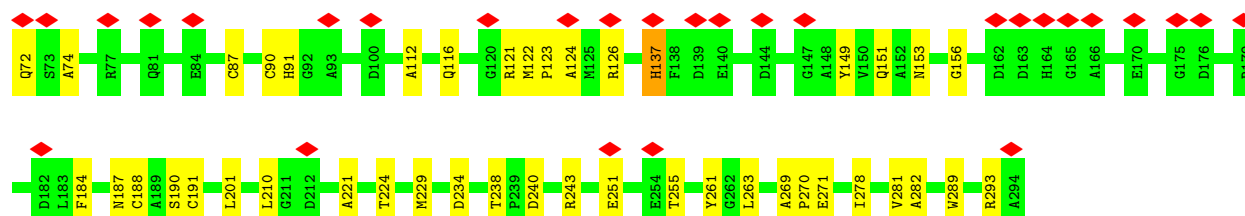
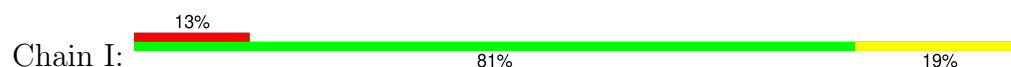
- Molecule 9: Putative conserved transmembrane protein



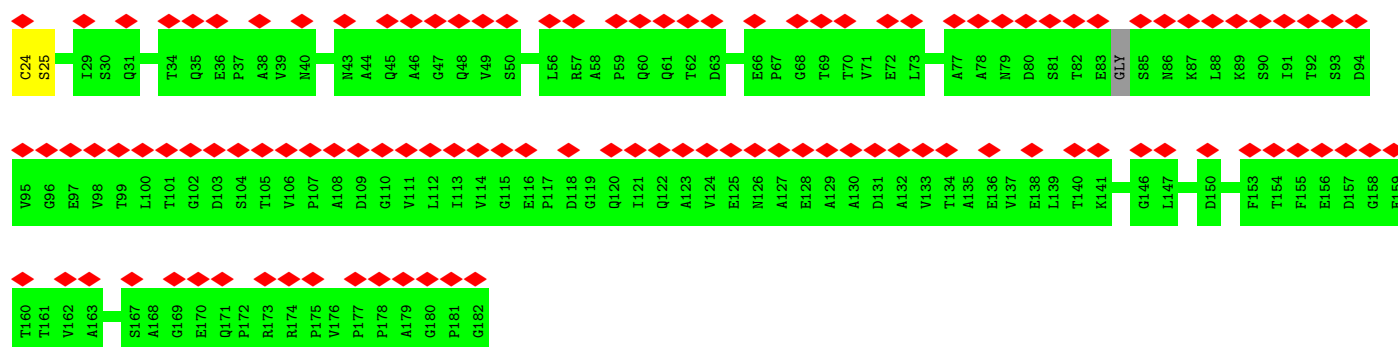
- Molecule 10: Cytochrome bc1 complex cytochrome c subunit




- Molecule 10: Cytochrome bc1 complex cytochrome c subunit

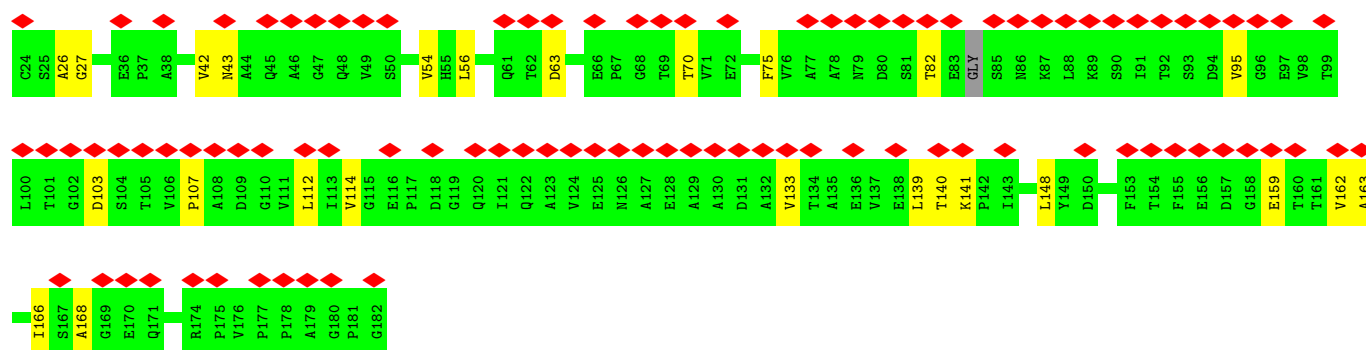


- Molecule 11: LpqE protein




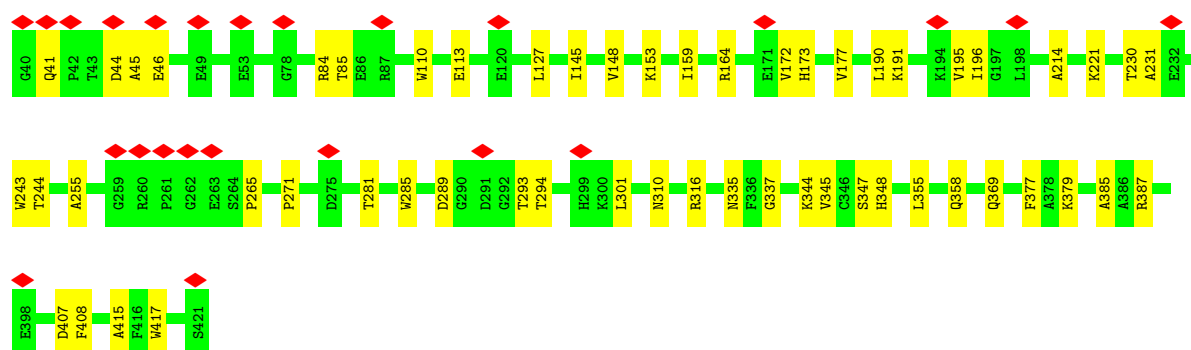
- Molecule 11: LpqE protein

Chain W: 




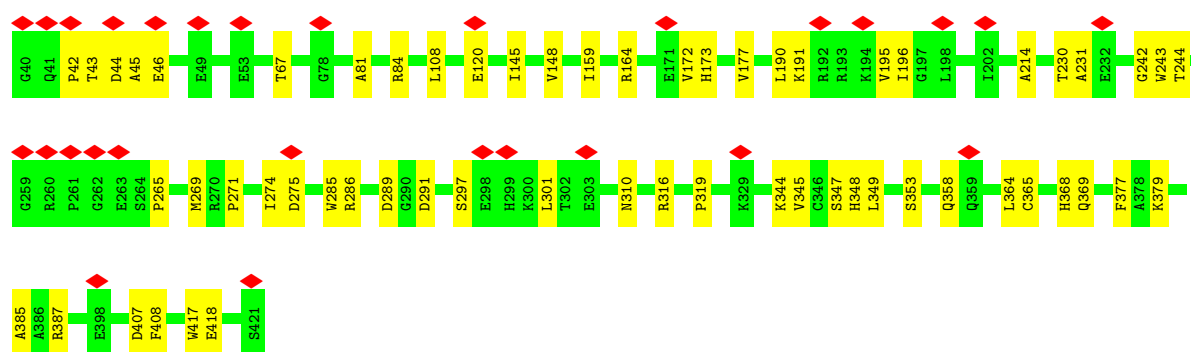
• Molecule 12: Cytochrome bc1 complex Rieske iron-sulfur subunit

Chain Y: 



• Molecule 12: Cytochrome bc1 complex Rieske iron-sulfur subunit

Chain M: 



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	150885	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	43.5	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	5.732	Depositor
Minimum map value	-3.132	Depositor
Average map value	-0.005	Depositor
Map value standard deviation	0.173	Depositor
Recommended contour level	1.1	Depositor
Map size (\AA)	339.9, 339.9, 339.9	wwPDB
Map dimensions	330, 330, 330	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.03, 1.03, 1.03	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: 9YF, FES, HEM, CDL, 9XX, PLM, CU, MQ9, HEA, HEC, 9Y0

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	L	0.28	0/4530	0.46	0/6188
1	R	0.28	0/4530	0.46	0/6188
2	E	0.28	0/4314	0.49	0/5882
2	F	0.28	0/4314	0.50	0/5882
3	D	0.26	0/1099	0.47	0/1519
3	G	0.25	0/1099	0.47	0/1519
4	K	0.27	0/2534	0.50	0/3451
4	Q	0.27	0/2534	0.50	0/3451
5	S	0.28	0/1608	0.46	0/2195
5	X	0.29	0/1608	0.47	0/2195
6	T	0.33	0/1112	0.56	0/1524
6	Z	0.28	0/1112	0.46	0/1524
7	U	0.25	0/613	0.44	0/836
7	a	0.25	0/613	0.44	0/836
8	V	0.28	0/1059	0.52	0/1446
8	b	0.28	0/1059	0.54	0/1446
9	J	0.24	0/757	0.51	0/1027
9	P	0.27	0/757	0.53	0/1027
10	I	0.27	0/1660	0.51	0/2250
10	O	0.35	0/1660	0.60	0/2250
11	W	0.26	0/1166	0.51	0/1599
11	c	0.26	0/1166	0.51	0/1599
12	M	0.30	0/3056	0.54	1/4142 (0.0%)
12	Y	0.28	0/3056	0.51	0/4142
All	All	0.28	0/47016	0.50	1/64118 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
12	M	214	ALA	CB-CA-C	5.09	117.73	110.10

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	L	4370	4347	4346	90	0
1	R	4370	4346	4345	101	0
2	E	4181	4203	4202	80	0
2	F	4181	4200	4199	83	0
3	D	1092	640	640	3	0
3	G	1092	640	640	1	0
4	K	2465	2392	2392	34	0
4	Q	2465	2392	2392	48	0
5	S	1560	1548	1547	62	0
5	X	1560	1548	1547	79	0
6	T	1077	1059	1058	50	0
6	Z	1077	1058	1058	63	0
7	U	591	576	576	7	0
7	a	591	576	576	0	0
8	V	1041	1052	1052	18	0
8	b	1041	1052	1052	0	0
9	J	736	718	717	13	0
9	P	736	717	717	10	0
10	I	1623	1564	1564	40	0
10	O	1623	1564	1564	37	0
11	W	1149	1110	1110	22	0
11	c	1149	1110	1110	0	0
12	M	2977	2984	2984	45	0
12	Y	2977	2984	2984	41	0
13	K	2	0	0	0	0
13	L	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
13	Q	2	0	0	0	0
13	R	1	0	0	0	0
14	L	120	108	108	7	0
14	R	120	108	108	5	0
15	E	152	0	192	13	0
15	F	152	0	192	21	0
15	J	76	0	96	11	0
15	L	76	0	96	19	0
15	P	76	0	96	10	0
15	R	76	0	96	19	0
15	S	76	0	96	49	0
15	T	228	0	288	49	0
15	X	152	0	192	95	0
15	Z	152	0	192	82	0
16	E	85	57	57	4	0
16	F	85	57	57	5	0
17	E	116	160	160	5	0
17	F	232	320	320	6	0
17	I	58	80	80	0	0
17	Z	58	80	80	5	0
18	F	49	74	0	0	0
18	J	98	150	0	0	0
18	P	49	75	0	0	0
18	S	49	75	0	0	0
18	X	49	75	0	0	0
19	D	11	16	16	0	0
19	G	11	16	16	0	0
19	W	17	31	31	2	0
19	c	17	31	31	0	0
20	D	32	51	0	0	0
20	G	32	51	0	0	0
20	W	42	73	0	0	0
20	c	42	73	0	0	0
21	I	86	64	64	17	0
21	O	86	64	64	14	0
22	I	58	84	0	5	0
22	M	116	168	0	0	0
22	O	58	84	0	0	0
22	W	58	84	0	1	0
22	Y	116	168	0	5	0
22	c	58	84	0	0	0
23	M	4	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
23	Y	4	0	0	1	0
All	All	48962	46941	47100	929	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 10.

All (929) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:X:166:LYS:NZ	15:X:301:CDL:H112	1.28	1.48
15:Z:203:CDL:H631	22:I:304:9YF:C23	1.48	1.41
6:Z:120:PHE:CB	15:Z:202:CDL:H612	1.53	1.38
15:Z:203:CDL:C63	22:I:304:9YF:C23	2.03	1.35
6:Z:120:PHE:HB3	15:Z:202:CDL:C61	1.58	1.31
6:T:94:LEU:HD21	15:T:201:CDL:C32	1.67	1.24
6:Z:94:LEU:HD21	15:Z:202:CDL:C32	1.68	1.23
15:X:301:CDL:H772	15:Z:203:CDL:C55	1.71	1.20
6:Z:90:TRP:CZ2	15:Z:202:CDL:HB4	1.76	1.18
5:X:149:LEU:HD22	15:X:302:CDL:C63	1.74	1.18
15:X:301:CDL:H721	15:Z:203:CDL:C51	1.75	1.17
5:X:166:LYS:NZ	15:X:301:CDL:C11	2.09	1.15
6:T:90:TRP:HZ2	15:T:201:CDL:HB4	1.05	1.15
6:T:90:TRP:CZ2	15:T:201:CDL:HB4	1.82	1.15
5:X:166:LYS:HZ1	15:X:301:CDL:C11	1.60	1.15
6:T:97:LEU:HD11	15:T:201:CDL:H361	1.14	1.13
6:Z:97:LEU:HD11	15:Z:202:CDL:H361	1.18	1.12
15:X:301:CDL:H721	15:Z:203:CDL:H512	1.19	1.12
6:Z:119:ALA:HB1	15:Z:203:CDL:H411	1.23	1.12
6:Z:97:LEU:HD11	15:Z:202:CDL:C36	1.80	1.11
6:T:97:LEU:HD11	15:T:201:CDL:C36	1.80	1.11
5:X:149:LEU:HD22	15:X:302:CDL:H631	1.17	1.09
15:X:301:CDL:H772	15:Z:203:CDL:H551	1.21	1.08
6:Z:94:LEU:HD21	15:Z:202:CDL:H321	1.10	1.08
6:Z:90:TRP:HZ2	15:Z:202:CDL:HB4	1.00	1.08
6:T:94:LEU:HD21	15:T:201:CDL:H321	1.10	1.04
5:S:32:TRP:CZ2	15:S:301:CDL:H382	1.94	1.03
5:X:32:TRP:CZ2	15:X:302:CDL:H382	1.93	1.02
5:X:32:TRP:CE2	15:X:302:CDL:H361	1.94	1.02
5:X:32:TRP:CG	15:X:302:CDL:H331	1.95	1.01
5:X:32:TRP:CB	15:X:302:CDL:H331	1.91	1.01
1:R:121:LEU:HD13	15:S:301:CDL:CA3	1.90	1.00

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:32:TRP:CE2	15:S:301:CDL:H361	1.98	0.98
1:L:121:LEU:HD13	15:X:302:CDL:CA3	1.95	0.97
5:S:32:TRP:CB	15:S:301:CDL:H331	1.94	0.97
6:Z:120:PHE:CD2	15:Z:202:CDL:H632	2.00	0.96
5:S:32:TRP:CG	15:S:301:CDL:H331	2.02	0.95
5:S:149:LEU:HB3	15:S:301:CDL:H801	1.44	0.95
6:T:97:LEU:CD1	15:T:201:CDL:H361	1.96	0.94
4:Q:231:ILE:HD13	4:Q:246:LEU:HD23	1.49	0.92
15:X:301:CDL:H761	15:Z:203:CDL:H532	1.51	0.92
9:P:66:ASN:ND2	12:M:385:ALA:O	2.03	0.91
15:L:604:CDL:H731	15:L:604:CDL:H512	1.53	0.90
6:T:98:SER:OG	15:T:201:CDL:H621	1.71	0.90
6:Z:97:LEU:CD1	15:Z:202:CDL:H361	2.01	0.90
5:X:157:ALA:HB2	15:X:302:CDL:H532	1.54	0.90
6:Z:98:SER:OG	15:Z:202:CDL:H621	1.72	0.89
1:R:121:LEU:HD13	15:S:301:CDL:HA32	1.52	0.89
1:R:121:LEU:HB2	15:S:301:CDL:OA3	1.73	0.89
1:L:121:LEU:HD13	15:X:302:CDL:HA32	1.53	0.88
6:T:120:PHE:HB3	15:T:201:CDL:H612	1.55	0.87
5:X:32:TRP:CD2	15:X:302:CDL:H352	2.10	0.87
15:Z:203:CDL:H161	10:I:281:VAL:HG11	1.57	0.86
5:S:32:TRP:NE1	15:S:301:CDL:H361	1.89	0.86
6:T:97:LEU:CD1	15:T:201:CDL:C36	2.52	0.86
6:Z:119:ALA:HB1	15:Z:203:CDL:C41	2.05	0.86
15:L:604:CDL:H542	15:J:201:CDL:H351	1.57	0.86
15:Z:203:CDL:H632	22:I:304:9YF:C23	2.04	0.86
6:T:120:PHE:CB	15:T:201:CDL:H612	2.05	0.86
5:X:32:TRP:NE1	15:X:302:CDL:H361	1.91	0.86
5:X:149:LEU:HD22	15:X:302:CDL:C64	2.05	0.86
1:R:20:ARG:NH2	8:V:53:ASP:OD1	2.09	0.85
1:R:121:LEU:HD13	15:S:301:CDL:HA31	1.58	0.85
5:X:149:LEU:HB3	15:X:302:CDL:H801	1.56	0.85
6:Z:97:LEU:CD1	15:Z:202:CDL:C36	2.54	0.85
5:X:166:LYS:HZ1	15:X:301:CDL:H112	0.71	0.85
6:Z:90:TRP:HZ2	15:Z:202:CDL:CB4	1.89	0.85
2:E:87:ARG:NH1	2:E:90:GLU:OE1	2.10	0.84
4:Q:243:ARG:NH1	4:Q:255:ASP:O	2.11	0.84
15:X:301:CDL:C76	15:Z:203:CDL:H532	2.08	0.83
1:L:121:LEU:HB2	15:X:302:CDL:OA3	1.77	0.83
5:S:32:TRP:CD2	15:S:301:CDL:H352	2.13	0.83
1:R:389:THR:O	4:Q:242:LYS:NZ	2.11	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:X:301:CDL:H772	15:Z:203:CDL:H552	1.61	0.82
2:E:447:THR:OG1	2:E:461:LEU:O	1.98	0.82
5:X:166:LYS:HZ3	15:X:301:CDL:C11	1.91	0.82
6:Z:94:LEU:HD21	15:Z:202:CDL:H322	1.60	0.82
6:Z:120:PHE:CB	15:Z:202:CDL:C61	2.36	0.81
6:Z:94:LEU:CD2	15:Z:202:CDL:H321	2.04	0.81
1:L:84:THR:OG1	1:L:149:PHE:O	1.98	0.81
2:F:447:THR:OG1	2:F:461:LEU:O	1.97	0.81
8:V:23:THR:OG1	8:V:27:ARG:O	1.99	0.81
17:F:709:MQ9:H501	12:Y:214:ALA:HB1	1.62	0.81
1:L:411:TYR:OH	1:L:488:MET:SD	2.37	0.81
7:U:53:GLU:OE1	8:V:59:SER:OG	1.97	0.81
4:K:243:ARG:NH1	4:K:255:ASP:O	2.14	0.81
4:K:263:ILE:HG21	4:K:290:VAL:HG21	1.62	0.80
5:S:149:LEU:HD23	15:S:301:CDL:H631	1.61	0.80
15:R:604:CDL:HA4	15:P:201:CDL:H312	1.62	0.80
6:T:94:LEU:HD21	15:T:201:CDL:H322	1.59	0.80
10:I:122:MET:O	10:I:124:ALA:N	2.14	0.80
5:S:157:ALA:HB2	15:S:301:CDL:H532	1.65	0.79
15:Z:203:CDL:C64	22:I:304:9YF:C23	2.59	0.79
10:I:251:GLU:O	10:I:255:THR:OG1	2.00	0.79
1:R:30:LYS:O	1:R:34:THR:N	2.15	0.79
15:X:301:CDL:C77	15:Z:203:CDL:C55	2.59	0.79
9:J:66:ASN:ND2	12:Y:385:ALA:O	2.16	0.79
15:X:301:CDL:H721	15:Z:203:CDL:H511	1.63	0.78
1:L:497:LYS:NZ	9:J:100:ARG:O	2.17	0.78
15:X:301:CDL:C17	15:Z:203:CDL:H762	2.12	0.78
5:X:184:TYR:OH	15:X:302:CDL:H752	1.84	0.78
1:R:287:ARG:O	4:Q:87:GLN:NE2	2.17	0.77
2:E:489:ASN:ND2	6:Z:131:GLU:O	2.17	0.77
5:X:32:TRP:HB2	15:X:302:CDL:H331	1.66	0.77
5:S:32:TRP:HZ2	15:S:301:CDL:H382	1.48	0.77
6:T:94:LEU:CD2	15:T:201:CDL:H321	2.04	0.77
5:X:166:LYS:CE	15:X:301:CDL:H112	2.15	0.77
1:L:30:LYS:O	1:L:34:THR:N	2.17	0.77
1:L:205:ARG:NH1	6:Z:71:GLU:OE2	2.19	0.76
5:X:184:TYR:CZ	15:X:302:CDL:H731	2.19	0.76
1:L:121:LEU:HD13	15:X:302:CDL:HA31	1.65	0.76
4:Q:263:ILE:HG21	4:Q:290:VAL:HG21	1.67	0.76
4:K:227:SER:OG	4:K:230:VAL:O	2.04	0.76
12:Y:285:TRP:NE1	12:Y:289:ASP:O	2.18	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:X:32:TRP:CZ2	15:X:302:CDL:H361	2.20	0.75
6:Z:97:LEU:CD1	15:Z:202:CDL:C35	2.64	0.75
5:X:32:TRP:HZ2	15:X:302:CDL:H382	1.51	0.75
5:X:166:LYS:HZ3	15:X:301:CDL:CA5	1.98	0.75
1:L:300:THR:OG1	1:L:340:LYS:NZ	2.16	0.75
5:X:32:TRP:CE2	15:X:302:CDL:C36	2.70	0.75
12:M:285:TRP:NE1	12:M:289:ASP:O	2.20	0.75
15:X:301:CDL:H131	15:Z:203:CDL:OB7	1.87	0.74
1:R:515:ASN:O	1:R:516:SER:OG	2.06	0.74
8:V:47:ASP:OD1	8:V:48:LEU:N	2.20	0.74
10:O:188:CYS:HB2	21:O:302:HEC:HBB2	1.70	0.74
6:Z:119:ALA:CB	15:Z:203:CDL:H411	2.10	0.74
2:E:365:GLN:NE2	9:J:38:TRP:O	2.21	0.74
6:T:120:PHE:CA	15:T:201:CDL:H612	2.16	0.74
10:O:191:CYS:CB	21:O:302:HEC:HBC2	2.17	0.74
1:R:553:ARG:NH2	4:Q:85:PRO:O	2.21	0.74
5:S:184:TYR:OH	15:S:301:CDL:H752	1.88	0.74
10:O:229:MET:O	12:M:358:GLN:NE2	2.21	0.74
2:E:138:GLU:OE2	2:F:19:ARG:NE	2.22	0.73
15:R:604:CDL:C64	19:W:201:PLM:HG1	2.19	0.73
6:T:120:PHE:CD2	15:T:201:CDL:H632	2.23	0.73
5:X:32:TRP:CE2	15:X:302:CDL:H352	2.23	0.73
6:Z:120:PHE:HD2	15:Z:202:CDL:H632	1.54	0.73
15:R:604:CDL:H542	15:P:201:CDL:H351	1.71	0.73
2:F:489:ASN:ND2	6:T:131:GLU:O	2.22	0.72
6:T:90:TRP:HZ2	15:T:201:CDL:CB4	1.93	0.72
5:S:184:TYR:CZ	15:S:301:CDL:H731	2.24	0.72
6:T:97:LEU:CD1	15:T:201:CDL:C35	2.66	0.72
1:L:424:ARG:NH1	1:L:499:TRP:O	2.22	0.72
2:F:75:GLY:O	2:F:81:ARG:NH1	2.21	0.72
6:T:94:LEU:CD2	15:T:201:CDL:C32	2.59	0.72
15:L:604:CDL:H521	15:J:201:CDL:H321	1.70	0.72
11:W:148:LEU:HD11	12:M:319:PRO:HB3	1.72	0.72
5:S:149:LEU:CD2	15:S:301:CDL:H631	2.20	0.71
4:Q:275:GLU:O	4:Q:281:HIS:NE2	2.22	0.71
6:Z:94:LEU:CD2	15:Z:202:CDL:C32	2.60	0.71
5:X:157:ALA:HB1	15:X:302:CDL:C51	2.20	0.71
5:S:32:TRP:CE2	15:S:301:CDL:H352	2.25	0.71
5:S:32:TRP:CE2	15:S:301:CDL:C36	2.74	0.71
1:L:385:ASP:O	1:L:389:THR:OG1	2.08	0.71
2:F:42:LEU:HD13	2:F:122:VAL:HG12	1.71	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:X:149:LEU:CB	15:X:302:CDL:H801	2.20	0.71
1:L:385:ASP:OD1	1:L:389:THR:OG1	2.09	0.70
10:O:151:GLN:OE1	10:O:156:GLY:N	2.24	0.70
2:F:500:GLY:O	12:M:84:ARG:NH2	2.24	0.70
5:X:189:ASP:OD1	5:X:190:ILE:N	2.24	0.70
1:R:10:GLU:N	1:R:10:GLU:OE1	2.25	0.70
5:X:157:ALA:CB	15:X:302:CDL:H511	2.21	0.70
1:R:88:THR:HG21	1:R:171:TRP:HE1	1.57	0.69
2:F:529:LEU:HD21	12:M:159:ILE:HG21	1.74	0.69
1:L:10:GLU:N	1:L:10:GLU:OE1	2.25	0.69
10:O:240:ASP:OD1	10:O:243:ARG:NH2	2.25	0.69
21:I:301:HEC:HBC3	21:I:301:HEC:HHD	1.75	0.69
15:T:203:CDL:H722	15:T:203:CDL:H132	1.75	0.69
4:K:128:GLU:OE1	4:K:150:ALA:N	2.24	0.69
15:X:301:CDL:H111	15:X:301:CDL:HB21	1.75	0.69
1:R:385:ASP:O	1:R:389:THR:OG1	2.10	0.69
2:E:500:GLY:O	12:Y:84:ARG:NH2	2.25	0.69
7:U:44:HIS:ND1	7:U:47:ILE:HD11	2.08	0.69
1:L:270:ILE:HG23	1:L:406:ILE:HG21	1.75	0.69
5:S:32:TRP:HB2	15:S:301:CDL:H331	1.72	0.69
21:O:301:HEC:HMB1	21:O:301:HEC:HBB3	1.74	0.69
5:X:184:TYR:CE1	15:X:302:CDL:C73	2.76	0.69
6:Z:120:PHE:CA	15:Z:202:CDL:H612	2.22	0.69
10:I:240:ASP:OD1	10:I:243:ARG:NH2	2.26	0.69
2:E:42:LEU:HD13	2:E:122:VAL:HG12	1.73	0.69
8:V:36:GLU:OE1	8:V:36:GLU:N	2.26	0.69
6:Z:120:PHE:CG	15:Z:202:CDL:C61	2.76	0.69
2:E:328:PRO:O	2:E:331:VAL:HG12	1.93	0.68
5:S:32:TRP:CZ2	15:S:301:CDL:H361	2.28	0.68
2:E:235:HIS:O	12:Y:164:ARG:NH2	2.26	0.68
5:S:157:ALA:CB	15:S:301:CDL:H511	2.24	0.68
5:X:150:HIS:HA	15:X:302:CDL:H771	1.74	0.68
6:Z:123:THR:HG23	15:Z:203:CDL:H322	1.75	0.68
15:Z:203:CDL:H572	10:I:282:ALA:HA	1.73	0.68
5:X:149:LEU:CD2	15:X:302:CDL:H631	2.11	0.68
2:E:331:VAL:HG23	22:Y:502:9YF:C42	2.24	0.68
6:Z:97:LEU:CD1	15:Z:202:CDL:H351	2.24	0.68
11:W:54:VAL:HG11	11:W:162:VAL:HG11	1.76	0.68
2:F:235:HIS:O	12:M:164:ARG:NH2	2.27	0.67
5:X:184:TYR:CE1	15:X:302:CDL:H732	2.29	0.67
6:Z:120:PHE:CG	15:Z:202:CDL:H611	2.29	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:I:90:CYS:SG	21:I:301:HEC:HBC2	2.34	0.67
1:L:249:ASN:O	4:K:252:ASN:ND2	2.28	0.67
4:Q:332:ARG:NH2	11:W:26:ALA:O	2.26	0.67
15:T:202:CDL:HB21	15:T:202:CDL:H111	1.75	0.67
10:I:151:GLN:OE1	10:I:156:GLY:N	2.27	0.67
1:L:553:ARG:NH2	4:K:85:PRO:O	2.28	0.67
1:R:96:THR:OG1	1:R:266:GLU:OE2	2.12	0.67
3:D:117:GLY:N	3:D:185:LYS:O	2.28	0.67
5:X:149:LEU:CD2	15:X:302:CDL:C64	2.71	0.67
6:Z:123:THR:CG2	15:Z:203:CDL:H322	2.25	0.67
15:F:705:CDL:H162	15:F:705:CDL:H771	1.77	0.67
15:X:301:CDL:C13	15:Z:203:CDL:OB7	2.43	0.67
1:R:121:LEU:CD1	15:S:301:CDL:HA32	2.24	0.67
15:X:301:CDL:C77	15:Z:203:CDL:H552	2.22	0.67
4:K:225:LEU:O	4:K:256:ASN:ND2	2.27	0.67
5:S:150:HIS:HA	15:S:301:CDL:H771	1.77	0.66
15:X:301:CDL:C72	15:Z:203:CDL:C51	2.66	0.66
12:M:377:PHE:O	12:M:379:LYS:N	2.27	0.66
9:P:72:GLU:HG3	22:W:203:9YF:O10	1.95	0.66
1:R:270:ILE:HG23	1:R:406:ILE:HG21	1.76	0.66
15:R:604:CDL:H521	15:P:201:CDL:H321	1.76	0.66
2:E:329:GLN:OE1	12:Y:348:HIS:NE2	2.28	0.66
2:E:136:PRO:O	2:E:233:GLN:NE2	2.28	0.66
10:O:121:ARG:NE	21:O:302:HEC:O1D	2.28	0.66
15:R:604:CDL:H531	15:R:604:CDL:H731	1.76	0.66
21:O:302:HEC:HHD	21:O:302:HEC:HBC3	1.77	0.66
5:X:157:ALA:CB	15:X:302:CDL:C51	2.73	0.66
12:Y:377:PHE:O	12:Y:379:LYS:N	2.28	0.66
5:S:184:TYR:CE1	15:S:301:CDL:C73	2.79	0.65
2:F:425:VAL:HG11	15:F:705:CDL:H371	1.77	0.65
15:T:203:CDL:H382	15:T:203:CDL:H772	1.78	0.65
2:F:131:GLY:O	2:F:134:ARG:NH1	2.29	0.65
6:Z:90:TRP:CZ2	15:Z:202:CDL:CB4	2.68	0.65
1:L:96:THR:OG1	1:L:266:GLU:OE2	2.13	0.64
1:L:21:MET:HG2	15:L:604:CDL:HA22	1.79	0.64
21:O:301:HEC:HBC3	21:O:301:HEC:HHD	1.77	0.64
15:X:301:CDL:C14	15:Z:203:CDL:OB7	2.44	0.64
16:E:602:HEM:HBB2	16:E:602:HEM:HHC	1.79	0.64
1:L:206:MET:O	1:L:293:TYR:OH	2.12	0.64
2:E:450:ILE:HG21	2:E:461:LEU:HD13	1.79	0.64
6:Z:120:PHE:HB3	15:Z:202:CDL:H612	0.72	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:X:301:CDL:C77	15:Z:203:CDL:H551	2.14	0.64
15:X:301:CDL:H141	15:Z:203:CDL:OB7	1.97	0.64
15:F:704:CDL:H111	15:F:704:CDL:H311	1.79	0.64
4:K:256:ASN:OD1	4:K:257:VAL:N	2.31	0.64
15:E:606:CDL:H771	15:E:606:CDL:H162	1.80	0.64
5:S:189:ASP:OD1	5:S:190:ILE:N	2.30	0.64
5:S:157:ALA:HB1	15:S:301:CDL:C51	2.28	0.63
10:O:192:HIS:CE1	10:O:210:LEU:HD21	2.33	0.63
15:E:605:CDL:H111	15:E:605:CDL:H311	1.79	0.63
5:X:157:ALA:HB1	15:X:302:CDL:H511	1.80	0.63
6:T:97:LEU:CD1	15:T:201:CDL:H351	2.29	0.63
5:X:157:ALA:HB1	15:X:302:CDL:H512	1.80	0.63
1:L:190:ILE:HD11	6:Z:8:PHE:HZ	1.63	0.63
1:R:387:HIS:NE2	1:R:454:ASP:O	2.29	0.63
3:G:117:GLY:N	3:G:185:LYS:O	2.31	0.63
5:X:184:TYR:CE2	15:X:302:CDL:H731	2.33	0.63
1:R:120:ARG:HB2	15:S:301:CDL:OA4	1.98	0.63
5:X:184:TYR:CZ	15:X:302:CDL:H752	2.33	0.63
1:R:274:PHE:CD2	1:R:406:ILE:HG22	2.33	0.63
1:R:335:VAL:HG13	1:R:336:PRO:HD3	1.81	0.63
5:S:184:TYR:CE1	15:S:301:CDL:H732	2.34	0.63
1:R:117:ALA:O	5:S:15:ARG:NH2	2.30	0.63
15:R:604:CDL:H731	15:R:604:CDL:H512	1.81	0.63
5:S:43:LEU:HD23	5:S:143:ALA:HA	1.80	0.62
5:S:157:ALA:CB	15:S:301:CDL:C51	2.77	0.62
15:R:604:CDL:H512	15:R:604:CDL:C73	2.29	0.62
10:O:122:MET:O	10:O:124:ALA:N	2.32	0.62
10:I:269:ALA:HB3	10:I:270:PRO:HD3	1.81	0.62
6:Z:126:CYS:HB2	15:Z:203:CDL:H321	1.82	0.62
4:Q:225:LEU:O	4:Q:256:ASN:ND2	2.32	0.62
4:Q:45:LEU:HD21	4:Q:116:VAL:HG22	1.82	0.62
2:E:161:LEU:HD21	2:E:208:TYR:HA	1.81	0.62
10:I:229:MET:O	12:Y:358:GLN:NE2	2.33	0.62
1:R:454:ASP:OD1	4:Q:35:TRP:NE1	2.33	0.61
1:L:250:GLY:O	1:L:254:LEU:N	2.29	0.61
1:R:401:VAL:O	1:R:405:THR:OG1	2.08	0.61
2:F:263:ALA:HB1	12:M:148:VAL:HG23	1.81	0.61
1:L:252:VAL:HB	4:K:231:ILE:HD11	1.83	0.61
1:L:120:ARG:HB2	15:X:302:CDL:OA4	2.00	0.61
8:V:140:ILE:O	8:V:144:ILE:HD12	2.01	0.61
2:F:87:ARG:NH1	2:F:90:GLU:OE1	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:102:TRP:CE3	5:S:105:ILE:HD11	2.35	0.61
1:L:274:PHE:CD2	1:L:406:ILE:HG22	2.35	0.61
15:T:203:CDL:H721	15:T:203:CDL:H341	1.81	0.61
5:X:32:TRP:CZ2	15:X:302:CDL:C38	2.78	0.61
22:Y:503:9YF:C14	12:M:108:LEU:HD22	2.31	0.61
5:S:184:TYR:CZ	15:S:301:CDL:H752	2.35	0.60
5:X:32:TRP:CE2	15:X:302:CDL:C35	2.83	0.60
6:Z:97:LEU:HD11	15:Z:202:CDL:C37	2.30	0.60
1:L:227:LEU:HD22	1:L:262:PHE:CZ	2.37	0.60
4:Q:256:ASN:OD1	4:Q:257:VAL:N	2.34	0.60
6:T:90:TRP:CZ2	15:T:201:CDL:CB4	2.73	0.60
2:E:29:GLN:OE1	2:E:231:TRP:NE1	2.32	0.60
2:F:100:ARG:NH1	22:Y:503:9YF:O12	2.34	0.60
5:X:81:SER:OG	5:X:189:ASP:OD2	2.14	0.60
5:X:91:ALA:HB2	5:X:99:LEU:HD12	1.84	0.60
2:F:404:LEU:HD21	12:M:369:GLN:CG	2.32	0.60
17:Z:201:MQ9:H153	22:I:304:9YF:C43	2.32	0.60
2:F:487:ARG:NH1	6:T:131:GLU:O	2.33	0.60
4:Q:279:THR:HG21	10:O:126:ARG:HA	1.81	0.60
6:T:97:LEU:HD11	15:T:201:CDL:C37	2.31	0.60
15:X:301:CDL:H792	15:Z:203:CDL:H581	1.83	0.60
9:P:48:MET:SD	15:P:201:CDL:HB61	2.42	0.59
2:F:533:GLN:OE1	9:P:7:ARG:N	2.36	0.59
4:Q:193:ARG:NH2	10:O:142:GLN:OE1	2.35	0.59
2:E:263:ALA:HB1	12:Y:148:VAL:HG23	1.84	0.59
5:X:161:LEU:O	5:X:165:THR:HG23	2.02	0.59
3:D:113:ILE:N	3:D:153:GLY:O	2.34	0.59
15:X:301:CDL:C72	15:Z:203:CDL:H511	2.31	0.59
15:L:604:CDL:H731	15:L:604:CDL:H531	1.84	0.59
1:L:35:THR:HG21	6:Z:86:ALA:O	2.03	0.58
4:K:45:LEU:CD2	4:K:116:VAL:HG22	2.33	0.58
5:X:41:ALA:HA	6:Z:44:LEU:HD22	1.85	0.58
2:E:65:ASP:HB3	2:E:91:THR:HG21	1.84	0.58
2:E:438:ARG:NH2	9:J:35:SER:OG	2.36	0.58
1:R:378:LEU:HD23	4:Q:50:TRP:CZ3	2.38	0.58
15:T:202:CDL:HB22	15:T:202:CDL:HB4	1.84	0.58
11:W:159:GLU:N	11:W:159:GLU:OE1	2.36	0.58
6:Z:101:THR:HG22	17:Z:201:MQ9:C18	2.33	0.58
5:S:32:TRP:CE2	15:S:301:CDL:C35	2.87	0.58
1:L:84:THR:O	1:L:88:THR:OG1	2.18	0.58
2:E:312:ILE:HD13	2:E:333:VAL:HG21	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:P:29:ASP:N	9:P:29:ASP:OD1	2.37	0.58
15:X:301:CDL:HB22	15:X:301:CDL:HB4	1.84	0.58
5:S:184:TYR:CE2	15:S:301:CDL:H731	2.39	0.58
15:Z:203:CDL:C16	10:I:281:VAL:HG11	2.33	0.58
1:R:540:ARG:NH2	1:R:554:MET:SD	2.77	0.58
15:E:605:CDL:H371	15:E:605:CDL:H152	1.86	0.58
1:R:88:THR:HG22	1:R:151:TRP:HD1	1.68	0.57
2:E:370:VAL:O	2:E:370:VAL:HG13	2.03	0.57
1:L:200:GLY:O	1:L:205:ARG:NH2	2.36	0.57
6:T:94:LEU:CD2	15:T:201:CDL:H322	2.30	0.57
1:R:268:TYR:OH	1:R:333:ILE:HD12	2.03	0.57
15:F:704:CDL:H371	15:F:704:CDL:H152	1.86	0.57
1:R:274:PHE:CE2	1:R:406:ILE:HG22	2.40	0.57
2:E:66:PRO:O	2:E:67:SER:OG	2.23	0.57
1:L:330:THR:HG22	14:L:602:HEA:HMB2	1.87	0.57
6:T:120:PHE:HA	15:T:201:CDL:H612	1.87	0.57
11:W:139:LEU:O	11:W:140:THR:OG1	2.17	0.57
5:S:157:ALA:HA	15:S:301:CDL:H511	1.87	0.57
5:X:184:TYR:CE1	15:X:302:CDL:H731	2.39	0.57
1:R:465:LEU:HD11	4:Q:326:GLU:O	2.05	0.57
5:S:157:ALA:HB1	15:S:301:CDL:H512	1.87	0.57
1:L:256:GLN:OE1	1:L:318:THR:HG21	2.05	0.56
6:T:98:SER:HG	15:T:201:CDL:H621	1.68	0.56
1:L:122:ASN:OD1	1:L:123:ALA:N	2.38	0.56
2:E:425:VAL:HG22	15:L:604:CDL:H722	1.87	0.56
1:L:460:ARG:N	14:L:603:HEA:O2A	2.37	0.56
1:L:544:GLU:OE2	1:L:555:ARG:NH2	2.39	0.56
5:S:25:VAL:HG12	5:S:180:VAL:HG11	1.86	0.56
15:T:202:CDL:C17	15:T:203:CDL:H741	2.35	0.56
15:T:203:CDL:HA62	15:T:203:CDL:H712	1.86	0.56
10:O:110:GLU:OE2	10:O:161:ARG:NH2	2.38	0.56
10:O:112:ALA:HB2	10:O:224:THR:HG21	1.87	0.56
2:E:65:ASP:OD1	2:F:67:SER:OG	2.23	0.56
4:K:45:LEU:HD21	4:K:116:VAL:HG22	1.87	0.56
5:X:184:TYR:CD1	15:X:302:CDL:H732	2.41	0.56
1:L:387:HIS:NE2	1:L:454:ASP:O	2.38	0.56
5:S:157:ALA:HB1	15:S:301:CDL:H511	1.88	0.56
1:L:77:GLU:OE1	4:K:332:ARG:NH2	2.39	0.56
4:Q:45:LEU:CD2	4:Q:116:VAL:HG22	2.35	0.56
5:X:149:LEU:CD2	15:X:302:CDL:C63	2.68	0.56
11:W:148:LEU:HD12	11:W:163:ALA:O	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:R:357:THR:N	1:R:428:GLU:OE2	2.38	0.56
1:L:274:PHE:CE2	1:L:406:ILE:HG22	2.41	0.56
4:K:279:THR:HG21	10:I:126:ARG:HA	1.87	0.56
2:E:213:LEU:HD21	16:F:703:HEM:CBC	2.36	0.56
2:F:500:GLY:O	12:M:84:ARG:CZ	2.54	0.56
1:L:121:LEU:CD1	15:X:302:CDL:HA32	2.29	0.56
15:T:202:CDL:H572	15:T:202:CDL:H742	1.88	0.56
2:E:89:TYR:OH	2:E:287:LEU:O	2.22	0.55
2:F:422:VAL:HG22	15:F:705:CDL:H402	1.87	0.55
2:E:161:LEU:HD21	2:E:208:TYR:CA	2.37	0.55
2:E:487:ARG:NH1	6:Z:131:GLU:O	2.39	0.55
2:E:17:ASP:OD1	2:E:23:SER:OG	2.18	0.55
1:L:35:THR:HG22	1:L:119:PRO:HB2	1.88	0.55
3:D:74:THR:N	3:D:78:THR:O	2.38	0.55
6:Z:123:THR:HG23	15:Z:203:CDL:H331	1.88	0.55
1:R:156:PRO:HG3	1:R:252:VAL:HG12	1.88	0.55
2:E:104:PHE:HD2	17:E:604:MQ9:H502	1.72	0.55
2:F:116:PHE:CZ	2:F:120:ILE:HD11	2.41	0.55
15:T:202:CDL:H772	15:T:203:CDL:H582	1.88	0.55
1:R:252:VAL:HG21	4:Q:246:LEU:HD22	1.89	0.55
7:U:72:GLY:N	8:V:110:TYR:O	2.39	0.55
1:R:122:ASN:OD1	1:R:123:ALA:N	2.40	0.55
15:R:604:CDL:HB61	15:R:604:CDL:OB4	2.06	0.55
16:F:703:HEM:HHC	16:F:703:HEM:HBB2	1.88	0.55
6:T:120:PHE:HB3	15:T:201:CDL:C61	2.35	0.55
21:O:302:HEC:HHC	21:O:302:HEC:HBB3	1.89	0.55
1:R:209:PHE:CZ	1:R:213:ILE:HD11	2.42	0.55
10:O:191:CYS:HB2	21:O:302:HEC:HBC2	1.89	0.55
2:E:282:ASN:ND2	16:E:602:HEM:O1A	2.38	0.55
5:S:184:TYR:CE1	15:S:301:CDL:H731	2.41	0.55
15:Z:203:CDL:H161	10:I:281:VAL:CG1	2.33	0.55
4:K:288:VAL:HG23	4:K:288:VAL:O	2.07	0.55
2:F:194:PHE:CE2	2:F:203:LEU:HD22	2.42	0.54
5:X:15:ARG:O	5:X:16:VAL:HG23	2.07	0.54
5:X:32:TRP:CH2	15:X:302:CDL:H382	2.42	0.54
10:O:76:LEU:HD11	10:O:152:ALA:CB	2.38	0.54
15:R:604:CDL:H792	15:F:705:CDL:H391	1.90	0.54
15:X:301:CDL:H572	15:X:301:CDL:H742	1.88	0.54
2:E:19:ARG:O	2:F:233:GLN:NE2	2.37	0.54
6:Z:90:TRP:HH2	15:Z:202:CDL:OB7	1.90	0.54
9:J:29:ASP:OD1	9:J:29:ASP:N	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:R:398:PHE:HA	1:R:401:VAL:HG22	1.90	0.54
6:Z:123:THR:HG23	15:Z:203:CDL:C32	2.37	0.54
15:L:604:CDL:HB61	15:L:604:CDL:OB4	2.08	0.54
10:I:87:CYS:SG	21:I:301:HEC:HAB	2.47	0.54
2:E:368:ARG:O	2:E:434:GLN:NE2	2.39	0.54
2:F:404:LEU:HD21	12:M:369:GLN:HG2	1.90	0.54
4:Q:40:THR:HG23	4:Q:43:ALA:H	1.73	0.54
6:Z:98:SER:OG	15:Z:202:CDL:C62	2.53	0.54
1:R:89:VAL:CG2	1:R:137:ILE:HD11	2.37	0.53
1:L:117:ALA:O	5:X:15:ARG:NH2	2.42	0.53
1:L:259:PHE:O	1:L:263:GLY:N	2.38	0.53
1:R:46:VAL:CG1	15:P:201:CDL:H371	2.38	0.53
2:F:393:ASN:OD1	2:F:394:ASP:N	2.41	0.53
6:T:22:TYR:O	6:T:26:THR:OG1	2.20	0.53
2:E:278:LEU:O	10:I:261:TYR:N	2.40	0.53
2:F:172:ARG:NH1	2:F:176:SER:OG	2.42	0.53
5:X:32:TRP:NE1	15:X:302:CDL:C36	2.68	0.53
2:E:116:PHE:CZ	2:E:120:ILE:HD11	2.42	0.53
1:R:21:MET:HG2	15:R:604:CDL:HA22	1.90	0.53
4:Q:294:ASN:OD1	4:Q:295:ASP:N	2.41	0.53
1:L:419:PRO:HG3	1:L:425:LEU:HD23	1.90	0.53
10:I:121:ARG:NE	21:I:302:HEC:O1D	2.41	0.53
15:L:604:CDL:H531	15:L:604:CDL:H712	1.91	0.53
1:R:460:ARG:N	14:R:603:HEA:O2A	2.39	0.53
2:E:312:ILE:HA	2:E:333:VAL:HG21	1.90	0.53
6:T:120:PHE:CB	15:T:201:CDL:C61	2.84	0.53
10:O:187:ASN:O	21:O:302:HEC:HMC3	2.09	0.53
15:E:605:CDL:OB7	15:F:704:CDL:H112	2.09	0.53
15:L:604:CDL:H512	15:L:604:CDL:C73	2.33	0.52
5:S:184:TYR:CD1	15:S:301:CDL:H732	2.44	0.52
2:E:365:GLN:OE1	2:E:373:ARG:NH2	2.42	0.52
2:E:499:THR:HG22	2:E:511:HIS:ND1	2.25	0.52
5:X:157:ALA:HA	15:X:302:CDL:H511	1.90	0.52
4:K:245:VAL:HG23	4:K:245:VAL:O	2.09	0.52
9:J:93:LEU:O	9:J:98:TRP:N	2.40	0.52
1:R:84:THR:OG1	1:R:149:PHE:O	2.25	0.52
2:E:404:LEU:HD21	12:Y:369:GLN:CG	2.39	0.52
1:L:243:HIS:ND1	1:L:246:ASP:OD2	2.42	0.52
15:T:202:CDL:H741	15:T:202:CDL:H611	1.92	0.52
10:O:76:LEU:HD11	10:O:152:ALA:HB3	1.92	0.52
6:Z:97:LEU:HD12	15:Z:202:CDL:C35	2.38	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:27:ARG:HB2	12:Y:177:VAL:HG22	1.92	0.52
2:E:421:ILE:HG13	15:J:201:CDL:H572	1.92	0.52
14:L:603:HEA:HMC1	14:L:603:HEA:HBC1	1.91	0.52
4:K:294:ASN:OD1	4:K:295:ASP:N	2.43	0.52
12:M:67:THR:HG23	12:M:67:THR:O	2.10	0.52
1:R:419:PRO:HG3	1:R:425:LEU:HD23	1.91	0.52
1:L:15:ARG:NH1	1:L:19:GLU:OE1	2.43	0.52
4:Q:140:TRP:NE1	4:Q:284:MET:O	2.38	0.52
10:O:214:ASN:O	10:O:218:ILE:HD12	2.10	0.52
5:X:166:LYS:NZ	15:X:301:CDL:CA5	2.62	0.52
15:X:301:CDL:H741	15:X:301:CDL:H611	1.92	0.52
1:R:169:ASP:OD1	1:R:238:ARG:NE	2.42	0.52
6:T:94:LEU:HD23	15:T:201:CDL:H352	1.91	0.52
6:T:97:LEU:HD12	15:T:201:CDL:C35	2.39	0.52
11:W:75:PHE:CZ	11:W:114:VAL:HG11	2.45	0.52
1:R:398:PHE:O	1:R:402:LEU:HD12	2.10	0.51
2:F:65:ASP:HB3	2:F:91:THR:HG21	1.91	0.51
5:S:149:LEU:CB	15:S:301:CDL:H801	2.29	0.51
10:I:187:ASN:O	21:I:302:HEC:HMC3	2.09	0.51
1:R:163:SER:OG	1:R:163:SER:O	2.26	0.51
2:E:327:ILE:CG2	2:E:331:VAL:HG11	2.40	0.51
2:E:336:GLY:O	2:E:340:VAL:HG23	2.09	0.51
5:X:32:TRP:CZ2	15:X:302:CDL:C36	2.93	0.51
11:W:56:LEU:HD12	11:W:166:ILE:CD1	2.41	0.51
7:U:56:GLU:N	7:U:56:GLU:OE1	2.43	0.51
5:X:157:ALA:CA	15:X:302:CDL:H511	2.40	0.51
6:Z:94:LEU:CD2	15:Z:202:CDL:H322	2.31	0.51
1:R:158:THR:O	1:R:238:ARG:NH1	2.42	0.51
2:E:236:THR:HG21	2:E:364:LEU:HD21	1.92	0.51
2:F:438:ARG:NH2	9:P:35:SER:OG	2.39	0.51
2:F:368:ARG:O	2:F:434:GLN:NE2	2.38	0.51
1:L:445:THR:HG23	1:L:446:PHE:CD2	2.45	0.51
12:M:347:SER:O	12:M:387:ARG:NH1	2.41	0.51
2:E:395:ILE:HG22	17:Z:201:MQ9:H5M1	1.93	0.51
6:T:98:SER:OG	15:T:201:CDL:C62	2.53	0.51
12:Y:407:ASP:OD1	12:Y:408:PHE:N	2.42	0.51
1:R:104:ASN:OD1	1:R:122:ASN:ND2	2.43	0.51
2:E:366:ARG:NH1	2:E:437:ASP:OD2	2.42	0.51
2:F:478:GLU:OE2	9:P:7:ARG:NH1	2.44	0.51
2:F:433:LEU:CD1	15:F:705:CDL:HA61	2.41	0.51
1:L:29:TYR:OH	15:Z:202:CDL:OA4	2.23	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:508:ASP:N	1:L:508:ASP:OD1	2.44	0.51
8:V:51:LEU:HB2	8:V:144:ILE:HD11	1.93	0.51
1:R:257:HIS:NE2	6:T:35:GLU:OE1	2.43	0.50
1:L:534:PRO:HB3	1:L:545:LEU:HD12	1.93	0.50
5:S:157:ALA:CA	15:S:301:CDL:H511	2.41	0.50
9:J:87:VAL:HG22	15:J:201:CDL:H511	1.94	0.50
2:E:331:VAL:CG2	22:Y:502:9YF:C42	2.90	0.50
5:S:32:TRP:CZ2	15:S:301:CDL:C38	2.81	0.50
15:T:202:CDL:H732	12:M:145:ILE:HD13	1.92	0.50
1:R:445:THR:HG23	1:R:446:PHE:CD2	2.47	0.50
10:O:76:LEU:HD13	10:O:149:TYR:HA	1.93	0.50
10:O:124:ALA:O	21:O:301:HEC:HAC	2.10	0.50
6:Z:108:LEU:O	6:Z:110:LEU:N	2.45	0.50
9:J:53:LEU:CD1	9:J:87:VAL:HG11	2.41	0.50
1:R:496:PHE:O	1:R:500:ARG:NH2	2.44	0.50
1:L:35:THR:HG22	1:L:35:THR:O	2.12	0.50
5:X:157:ALA:HB2	15:X:302:CDL:C53	2.36	0.50
1:R:515:ASN:N	1:R:515:ASN:OD1	2.44	0.50
4:Q:310:ALA:CB	11:W:82:THR:HG21	2.42	0.50
5:S:32:TRP:NE1	15:S:301:CDL:C36	2.69	0.50
12:M:275:ASP:OD1	12:M:275:ASP:N	2.44	0.50
2:E:433:LEU:CD1	15:E:606:CDL:HA61	2.42	0.50
2:F:135:ARG:HB3	2:F:136:PRO:CD	2.42	0.50
12:M:159:ILE:O	12:M:159:ILE:HG22	2.12	0.50
4:K:135:ALA:HB3	4:K:245:VAL:HG21	1.94	0.50
12:Y:265:PRO:CG	12:Y:301:LEU:HD23	2.42	0.50
1:R:35:THR:HG21	6:T:86:ALA:O	2.12	0.49
1:R:406:ILE:HD11	14:R:603:HEA:CBC	2.42	0.49
2:E:227:LEU:HD22	15:E:605:CDL:H782	1.93	0.49
6:T:108:LEU:O	6:T:110:LEU:N	2.45	0.49
6:Z:98:SER:O	6:Z:101:THR:OG1	2.26	0.49
6:Z:101:THR:HG22	17:Z:201:MQ9:H18	1.94	0.49
9:J:86:LEU:HD23	15:J:201:CDL:H162	1.94	0.49
2:F:336:GLY:O	2:F:340:VAL:HG23	2.12	0.49
2:F:312:ILE:HG13	2:F:333:VAL:HG21	1.94	0.49
1:L:386:PHE:O	4:K:242:LYS:NZ	2.32	0.49
12:M:407:ASP:OD1	12:M:408:PHE:N	2.43	0.49
2:E:395:ILE:CG2	17:Z:201:MQ9:H5M1	2.42	0.49
2:E:131:GLY:O	2:E:134:ARG:NE	2.41	0.49
1:L:496:PHE:O	1:L:500:ARG:NH2	2.43	0.49
2:E:127:ILE:HD11	16:E:601:HEM:CAC	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:E:604:MQ9:H511	17:E:604:MQ9:H453	1.94	0.49
2:F:65:ASP:CB	2:F:91:THR:HG21	2.43	0.49
15:R:604:CDL:H722	2:F:425:VAL:HG22	1.93	0.49
15:E:605:CDL:H112	15:F:704:CDL:OB7	2.12	0.49
2:F:104:PHE:HD2	17:F:709:MQ9:H502	1.78	0.49
1:L:156:PRO:HG3	1:L:252:VAL:HG12	1.94	0.49
1:L:392:TYR:HD2	1:L:452:LEU:HD23	1.76	0.49
15:E:605:CDL:OB7	15:F:704:CDL:C11	2.61	0.49
2:F:281:ILE:HD12	10:O:271:GLU:CG	2.42	0.49
10:O:95:LEU:HD12	10:O:105:LEU:HB2	1.95	0.49
5:X:81:SER:HG	5:X:189:ASP:CG	2.13	0.49
5:X:99:LEU:C	5:X:99:LEU:HD23	2.33	0.49
15:X:301:CDL:C17	15:Z:203:CDL:H731	2.42	0.49
12:Y:110:TRP:HZ2	12:Y:127:LEU:HD11	1.78	0.49
1:R:34:THR:HG21	1:R:43:MET:CE	2.43	0.49
1:R:89:VAL:HG21	1:R:137:ILE:HD11	1.93	0.49
2:E:27:ARG:HB2	12:M:177:VAL:HG22	1.95	0.49
1:L:401:VAL:HG11	14:L:602:HEA:C2C	2.42	0.49
2:E:65:ASP:CB	2:E:91:THR:HG21	2.41	0.48
4:Q:275:GLU:O	4:Q:281:HIS:CE1	2.66	0.48
6:T:90:TRP:HH2	15:T:201:CDL:OB7	1.95	0.48
10:O:192:HIS:ND1	10:O:210:LEU:HD21	2.27	0.48
10:O:235:ARG:NH1	11:W:168:ALA:O	2.46	0.48
15:Z:203:CDL:C57	10:I:282:ALA:HA	2.42	0.48
2:F:227:LEU:HD22	15:F:704:CDL:H782	1.95	0.48
10:I:124:ALA:O	21:I:301:HEC:HAC	2.12	0.48
11:W:95:VAL:HG23	11:W:141:LYS:HE2	1.94	0.48
2:F:370:VAL:O	2:F:370:VAL:HG13	2.13	0.48
6:Z:120:PHE:HB3	15:Z:202:CDL:C62	2.38	0.48
1:R:292:GLY:O	1:R:295:THR:OG1	2.25	0.48
15:R:604:CDL:C64	19:W:201:PLM:CG	2.90	0.48
2:E:123:HIS:NE2	16:E:601:HEM:ND	2.62	0.48
1:L:371:LEU:HD23	1:L:400:TYR:CE2	2.48	0.48
4:Q:160:ASP:N	4:Q:161:PRO:CD	2.76	0.48
10:O:184:PHE:O	10:O:188:CYS:N	2.45	0.48
6:Z:94:LEU:HD23	15:Z:202:CDL:H352	1.95	0.48
1:R:107:LEU:HD12	1:R:210:THR:HG22	1.94	0.48
15:L:604:CDL:H612	15:J:201:CDL:H402	1.94	0.48
5:S:149:LEU:CG	15:S:301:CDL:H631	2.43	0.48
21:O:301:HEC:HHD	21:O:301:HEC:CBC	2.42	0.48
10:O:122:MET:SD	21:O:301:HEC:NA	2.87	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:X:301:CDL:H732	12:Y:145:ILE:HD13	1.95	0.48
1:R:335:VAL:HG13	1:R:336:PRO:CD	2.43	0.48
2:F:421:ILE:HG13	15:P:201:CDL:H572	1.94	0.48
1:L:96:THR:O	1:L:99:VAL:HG22	2.14	0.48
1:L:221:LEU:HD22	5:X:35:SER:OG	2.14	0.48
11:W:42:VAL:HG12	11:W:54:VAL:HG13	1.95	0.48
2:F:282:ASN:ND2	16:F:703:HEM:O1A	2.43	0.48
1:R:221:LEU:HD22	5:S:35:SER:OG	2.14	0.47
1:R:77:GLU:OE2	4:Q:332:ARG:NH1	2.43	0.47
1:R:378:LEU:HD23	4:Q:50:TRP:CH2	2.49	0.47
2:E:107:GLN:NE2	2:E:276:GLY:O	2.46	0.47
1:L:31:LEU:HD23	15:L:604:CDL:H381	1.96	0.47
11:W:42:VAL:O	11:W:54:VAL:HG12	2.14	0.47
2:F:147:LEU:HD13	2:F:222:LEU:HB2	1.96	0.47
5:S:161:LEU:O	5:S:165:THR:HG23	2.14	0.47
12:M:44:ASP:OD1	12:M:45:ALA:N	2.46	0.47
1:L:33:THR:HG22	6:Z:90:TRP:HB3	1.97	0.47
1:R:50:ALA:CB	15:P:201:CDL:H401	2.44	0.47
2:E:212:ILE:HD11	2:F:212:ILE:HD11	1.95	0.47
4:Q:222:GLU:OE2	4:Q:257:VAL:HG21	2.14	0.47
1:L:392:TYR:CD2	1:L:452:LEU:HD23	2.49	0.47
4:K:197:ASN:OD1	4:K:197:ASN:N	2.48	0.47
12:Y:293:THR:HG23	12:Y:294:THR:HG23	1.96	0.47
1:R:29:TYR:O	1:R:33:THR:OG1	2.32	0.47
1:R:35:THR:O	1:R:35:THR:HG22	2.15	0.47
1:R:546:HIS:NE2	8:V:29:SER:OG	2.42	0.47
15:E:605:CDL:C11	15:F:704:CDL:OB7	2.63	0.47
2:F:244:THR:HG21	2:F:536:ILE:HG21	1.97	0.47
1:L:326:PHE:O	1:L:330:THR:OG1	2.18	0.47
10:I:210:LEU:HD21	21:I:302:HEC:HHB	1.96	0.47
12:Y:230:THR:HG23	12:Y:244:THR:HG22	1.96	0.47
12:M:230:THR:HG22	12:M:231:ALA:N	2.30	0.47
12:M:265:PRO:CG	12:M:301:LEU:HD23	2.44	0.47
12:M:271:PRO:O	12:M:316:ARG:NH1	2.48	0.47
2:E:147:LEU:HD13	2:E:222:LEU:CB	2.44	0.47
6:T:97:LEU:O	6:T:101:THR:HG23	2.15	0.47
5:X:41:ALA:CA	6:Z:44:LEU:HD22	2.45	0.47
10:I:234:ASP:O	10:I:238:THR:HA	2.15	0.47
1:R:193:VAL:HG13	1:R:206:MET:HE1	1.97	0.47
15:L:604:CDL:HA4	15:J:201:CDL:H312	1.96	0.47
5:X:91:ALA:CB	5:X:99:LEU:HD12	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:R:406:ILE:HD11	14:R:603:HEA:HBC2	1.95	0.46
4:K:230:VAL:HG22	4:K:231:ILE:N	2.29	0.46
5:X:184:TYR:CZ	15:X:302:CDL:C73	2.91	0.46
5:X:184:TYR:CD1	15:X:302:CDL:C73	2.99	0.46
2:E:42:LEU:HD13	2:E:122:VAL:CG1	2.43	0.46
5:S:160:LEU:CD2	6:T:129:VAL:HG11	2.46	0.46
1:R:118:PHE:HB3	15:S:301:CDL:OA3	2.16	0.46
2:E:327:ILE:HG23	2:E:331:VAL:HG11	1.96	0.46
2:E:392:MET:SD	10:I:269:ALA:HB1	2.55	0.46
5:S:184:TYR:CZ	15:S:301:CDL:C73	2.97	0.46
1:R:310:VAL:HG11	1:R:333:ILE:HD13	1.98	0.46
2:E:440:VAL:HG21	2:E:486:LYS:HG2	1.97	0.46
2:F:17:ASP:OD2	2:F:23:SER:OG	2.18	0.46
1:L:46:VAL:CG1	15:J:201:CDL:H371	2.46	0.46
1:L:120:ARG:NH1	6:Z:131:GLU:OE1	2.44	0.46
6:Z:123:THR:HG23	15:Z:203:CDL:C33	2.45	0.46
1:R:35:THR:HG22	1:R:119:PRO:HB2	1.97	0.46
1:L:104:ASN:OD1	1:L:122:ASN:ND2	2.48	0.46
1:L:186:GLY:O	1:L:190:ILE:HG22	2.16	0.46
1:R:403:PHE:CZ	1:R:407:VAL:HG11	2.50	0.46
2:E:194:PHE:CE2	2:E:203:LEU:HD22	2.51	0.46
8:V:44:PRO:O	8:V:47:ASP:OD1	2.34	0.46
10:I:112:ALA:HB2	10:I:224:THR:HG21	1.97	0.46
2:F:279:LEU:HD22	10:O:263:LEU:HD21	1.97	0.46
2:F:499:THR:HG22	2:F:511:HIS:ND1	2.30	0.46
7:U:32:HIS:NE2	8:V:43:PHE:O	2.47	0.46
10:I:184:PHE:O	10:I:188:CYS:N	2.46	0.46
21:I:302:HEC:CBB	21:I:302:HEC:HHC	2.45	0.46
12:Y:44:ASP:OD1	12:Y:45:ALA:N	2.48	0.46
12:M:243:TRP:NE1	12:M:310:ASN:O	2.41	0.46
1:R:190:ILE:HD11	6:T:8:PHE:HZ	1.81	0.46
1:R:532:GLU:OE2	8:V:23:THR:OG1	2.33	0.46
15:R:604:CDL:H552	15:R:604:CDL:H522	1.43	0.46
1:L:310:VAL:O	1:L:310:VAL:HG13	2.16	0.46
2:E:450:ILE:HD12	6:Z:81:GLU:OE2	2.16	0.46
1:L:419:PRO:CG	1:L:425:LEU:HD23	2.46	0.46
6:T:8:PHE:CE1	6:T:52:THR:HG21	2.51	0.46
15:X:301:CDL:H792	15:Z:203:CDL:C58	2.46	0.46
12:M:230:THR:HG23	12:M:244:THR:HG22	1.98	0.46
1:R:266:GLU:OE1	1:R:270:ILE:HD12	2.15	0.45
2:E:213:LEU:HD21	16:F:703:HEM:HBC1	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:T:120:PHE:CG	15:T:201:CDL:H632	2.51	0.45
1:R:417:TRP:NE1	1:R:518:GLU:OE2	2.46	0.45
5:X:189:ASP:OD1	5:X:189:ASP:C	2.54	0.45
15:X:301:CDL:H622	15:X:301:CDL:H791	1.99	0.45
11:W:63:ASP:OD1	11:W:63:ASP:N	2.48	0.45
2:F:514:LEU:HD11	12:M:81:ALA:HB3	1.99	0.45
1:L:465:LEU:HD21	4:K:328:PHE:CD1	2.51	0.45
21:I:301:HEC:HMB1	21:I:301:HEC:HBB3	1.98	0.45
12:Y:335:ASN:ND2	12:Y:337:GLY:O	2.49	0.45
1:R:84:THR:O	1:R:88:THR:HG23	2.16	0.45
5:S:41:ALA:HA	6:T:44:LEU:HD22	1.98	0.45
4:K:145:GLN:O	4:K:158:GLY:N	2.49	0.45
5:X:25:VAL:HG12	5:X:180:VAL:HG11	1.99	0.45
12:Y:221:LYS:HG2	22:Y:503:9YF:O6	2.16	0.45
12:M:242:GLY:O	12:M:286:ARG:NH1	2.45	0.45
2:E:116:PHE:CE1	2:E:120:ILE:HD11	2.51	0.45
1:L:264:HIS:O	1:L:267:VAL:HG22	2.16	0.45
5:S:163:ALA:HB1	15:T:202:CDL:HA61	1.98	0.45
10:O:149:TYR:O	10:O:153:ASN:ND2	2.50	0.45
12:M:364:LEU:HD12	12:M:365:CYS:H	1.82	0.45
17:F:709:MQ9:H511	17:F:709:MQ9:H453	1.98	0.45
15:L:604:CDL:H711	15:L:604:CDL:C81	2.46	0.45
6:Z:91:TRP:N	6:Z:92:PRO:CD	2.80	0.45
10:I:72:GLN:OE1	10:I:74:ALA:N	2.50	0.45
15:E:605:CDL:H551	15:E:605:CDL:H581	1.70	0.45
2:F:147:LEU:HD13	2:F:222:LEU:CB	2.47	0.45
2:F:414:GLY:O	2:F:418:LEU:N	2.48	0.45
4:Q:32:ALA:HB1	4:Q:35:TRP:HB2	1.98	0.45
5:X:37:LEU:HD22	6:Z:51:ILE:HD12	1.99	0.45
6:Z:97:LEU:HD13	15:Z:202:CDL:H351	1.98	0.45
2:E:198:PHE:HE2	2:E:290:TYR:HH	1.63	0.45
1:L:406:ILE:HD11	14:L:603:HEA:CBC	2.47	0.45
5:S:36:GLU:OE1	5:S:150:HIS:NE2	2.41	0.45
5:S:157:ALA:CB	15:S:301:CDL:H512	2.46	0.45
5:X:157:ALA:CB	15:X:302:CDL:H512	2.43	0.45
12:Y:230:THR:HG22	12:Y:231:ALA:N	2.32	0.45
1:L:505:VAL:HG13	1:L:505:VAL:O	2.15	0.45
7:U:23:LEU:O	7:U:27:THR:OG1	2.24	0.45
4:Q:231:ILE:HD13	4:Q:246:LEU:CD2	2.35	0.44
12:Y:355:LEU:N	12:Y:355:LEU:HD12	2.32	0.44
2:E:506:ASP:OD2	12:Y:84:ARG:NH2	2.45	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:212:ASN:ND2	1:L:272:LEU:O	2.45	0.44
15:L:604:CDL:H742	15:L:604:CDL:H771	1.39	0.44
4:Q:195:TYR:CE2	4:Q:247:PRO:O	2.70	0.44
21:I:302:HEC:HBC3	21:I:302:HEC:HHD	1.99	0.44
21:I:302:HEC:HHD	21:I:302:HEC:CBC	2.46	0.44
2:E:56:THR:HG22	17:E:604:MQ9:H451	1.99	0.44
2:E:183:PRO:O	12:Y:417:TRP:CG	2.71	0.44
2:E:404:LEU:HD21	12:Y:369:GLN:HG2	1.99	0.44
2:F:147:LEU:HD21	2:F:223:ILE:HG13	1.99	0.44
2:F:409:TRP:CZ3	9:P:76:LEU:HD11	2.52	0.44
4:Q:230:VAL:O	4:Q:232:HIS:ND1	2.51	0.44
8:V:68:VAL:HG13	8:V:143:LEU:HD22	1.99	0.44
10:I:201:LEU:HD11	21:I:302:HEC:HMD3	1.98	0.44
11:W:148:LEU:HD11	12:M:319:PRO:CB	2.46	0.44
1:L:111:ILE:HD12	1:L:196:MET:O	2.16	0.44
1:L:270:ILE:CG2	1:L:406:ILE:HG21	2.47	0.44
12:M:269:MET:HE1	12:M:274:ILE:HD11	1.99	0.44
12:M:349:LEU:HD12	12:M:368:HIS:CE1	2.52	0.44
15:E:605:CDL:H332	15:E:605:CDL:H362	1.67	0.44
15:F:705:CDL:H542	15:F:705:CDL:H712	2.00	0.44
14:L:602:HEA:C18	14:L:602:HEA:H261	2.48	0.44
1:R:153:ALA:O	1:R:255:TRP:NE1	2.50	0.44
5:S:184:TYR:CD1	15:S:301:CDL:C73	3.01	0.44
12:M:172:VAL:HG13	12:M:173:HIS:N	2.33	0.44
12:M:418:GLU:OE1	12:M:418:GLU:N	2.48	0.44
1:R:242:ALA:O	5:S:138:SER:CB	2.66	0.44
15:T:202:CDL:H622	15:T:202:CDL:H791	1.99	0.44
10:O:83:PHE:CZ	10:O:95:LEU:HD13	2.53	0.44
5:X:32:TRP:HB2	15:X:302:CDL:C33	2.44	0.44
9:J:33:VAL:HG11	9:J:41:SER:OG	2.18	0.44
2:E:500:GLY:O	12:Y:84:ARG:CZ	2.66	0.44
15:L:604:CDL:H381	15:L:604:CDL:H412	1.73	0.44
5:S:151:VAL:HG22	5:S:188:VAL:HG11	2.00	0.44
12:Y:243:TRP:NE1	12:Y:310:ASN:O	2.42	0.44
2:E:235:HIS:ND1	2:E:236:THR:O	2.47	0.44
2:F:135:ARG:NH1	2:F:358:ASP:O	2.51	0.44
1:L:385:ASP:O	1:L:389:THR:CB	2.66	0.44
6:Z:8:PHE:CE2	6:Z:52:THR:HG21	2.52	0.44
21:I:302:HEC:HHC	21:I:302:HEC:HBB3	1.99	0.44
1:R:259:PHE:O	1:R:263:GLY:N	2.41	0.43
1:R:535:ARG:NH1	6:T:74:GLU:OE2	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:T:91:TRP:N	6:T:92:PRO:CD	2.81	0.43
10:O:72:GLN:OE1	10:O:75:LEU:N	2.49	0.43
10:O:210:LEU:HD22	21:O:302:HEC:C3A	2.48	0.43
1:R:248:ALA:HB3	4:Q:185:ILE:CD1	2.49	0.43
15:E:606:CDL:H722	15:Z:202:CDL:H111	2.00	0.43
1:L:163:SER:O	1:L:163:SER:OG	2.36	0.43
4:K:140:TRP:NE1	4:K:284:MET:O	2.47	0.43
1:R:84:THR:HG21	1:R:147:ALA:HB3	2.00	0.43
2:E:281:ILE:HD12	10:I:271:GLU:CD	2.39	0.43
1:L:50:ALA:CB	15:J:201:CDL:H401	2.48	0.43
8:V:78:ALA:O	8:V:82:ARG:NH1	2.51	0.43
8:V:114:VAL:HG12	8:V:119:ILE:HG21	2.00	0.43
12:Y:41:GLN:NE2	12:Y:46:GLU:OE2	2.51	0.43
1:R:63:ARG:HE	1:R:63:ARG:HA	1.83	0.43
4:Q:264:GLN:OE1	4:Q:264:GLN:N	2.50	0.43
5:S:189:ASP:OD1	5:S:189:ASP:C	2.57	0.43
4:K:195:TYR:CE1	4:K:247:PRO:O	2.72	0.43
4:K:232:HIS:HB2	4:K:273:CYS:SG	2.58	0.43
1:R:452:LEU:HD11	1:R:457:MET:SD	2.59	0.43
2:F:281:ILE:HD12	10:O:271:GLU:CD	2.39	0.43
2:F:416:VAL:HG11	9:P:58:PHE:CD2	2.53	0.43
15:F:704:CDL:H621	15:F:704:CDL:H591	1.61	0.43
4:Q:179:ILE:HG23	4:Q:180:GLU:N	2.33	0.43
10:O:199:GLY:O	10:O:207:ALA:N	2.52	0.43
12:Y:195:VAL:HG23	12:Y:196:ILE:HD12	2.01	0.43
12:Y:271:PRO:O	12:Y:316:ARG:NH1	2.51	0.43
1:R:110:GLN:OE1	1:R:210:THR:HG23	2.18	0.43
2:E:147:LEU:HD21	2:E:223:ILE:HG13	2.00	0.43
4:K:193:ARG:NH2	10:I:137:HIS:O	2.52	0.43
10:I:191:CYS:SG	10:I:201:LEU:HD21	2.59	0.43
2:F:123:HIS:NE2	16:F:702:HEM:ND	2.67	0.43
2:F:171:ILE:HD12	2:F:175:LEU:HD12	2.00	0.43
2:F:284:ILE:O	2:F:287:LEU:O	2.35	0.43
2:F:366:ARG:NH1	2:F:437:ASP:OD2	2.46	0.43
5:X:32:TRP:CG	15:X:302:CDL:C33	2.85	0.43
5:X:151:VAL:HG22	5:X:188:VAL:HG11	2.00	0.43
14:R:602:HEA:HMC1	14:R:602:HEA:HBC1	2.00	0.43
7:U:2:SER:O	7:U:5:LEU:N	2.51	0.43
4:Q:139:ASN:OD1	4:Q:205:GLY:O	2.37	0.43
4:Q:332:ARG:NH2	11:W:27:GLY:O	2.44	0.43
6:Z:98:SER:HG	15:Z:202:CDL:H621	1.79	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Y:172:VAL:HG13	12:Y:173:HIS:N	2.33	0.43
11:W:107:PRO:HD3	11:W:112:LEU:HD12	1.99	0.43
1:R:31:LEU:O	1:R:34:THR:HG22	2.19	0.42
1:R:47:VAL:CG2	15:R:604:CDL:H371	2.49	0.42
2:F:225:ALA:HA	15:F:704:CDL:H351	2.01	0.42
2:F:312:ILE:CG1	2:F:333:VAL:HG21	2.48	0.42
1:L:242:ALA:O	5:X:138:SER:CB	2.66	0.42
6:T:120:PHE:HA	15:T:201:CDL:C61	2.48	0.42
6:Z:95:ILE:CD1	6:Z:128:LEU:HD22	2.48	0.42
10:I:149:TYR:O	10:I:153:ASN:ND2	2.52	0.42
5:S:102:TRP:HE3	5:S:105:ILE:HD11	1.78	0.42
5:X:96:VAL:HG22	5:X:170:PHE:HB2	2.01	0.42
6:Z:123:THR:HG22	15:Z:203:CDL:H322	2.01	0.42
12:Y:348:HIS:O	23:Y:501:FES:S1	2.77	0.42
11:W:56:LEU:HD12	11:W:166:ILE:HD13	2.01	0.42
1:R:384:LEU:CD1	4:Q:49:LEU:HD23	2.48	0.42
15:R:604:CDL:H751	15:R:604:CDL:H562	2.00	0.42
2:F:56:THR:HA	17:F:709:MQ9:H451	2.01	0.42
14:L:603:HEA:H251	15:L:604:CDL:H632	2.00	0.42
15:T:203:CDL:HA22	10:O:293:ARG:CZ	2.49	0.42
12:Y:347:SER:O	12:Y:387:ARG:NH1	2.44	0.42
11:W:75:PHE:CE2	11:W:114:VAL:HG11	2.54	0.42
1:L:280:GLU:OE1	1:L:516:SER:OG	2.29	0.42
8:V:76:ASP:N	8:V:76:ASP:OD1	2.52	0.42
1:R:88:THR:HG22	1:R:151:TRP:CD1	2.53	0.42
2:F:311:LEU:HD23	2:F:333:VAL:HG23	2.00	0.42
5:X:160:LEU:CD2	6:Z:129:VAL:HG11	2.49	0.42
15:X:301:CDL:H312	15:X:301:CDL:HA61	1.82	0.42
15:X:301:CDL:C75	15:Z:203:CDL:H532	2.50	0.42
11:W:42:VAL:HG22	11:W:43:ASN:N	2.35	0.42
1:L:290:ILE:HG23	1:L:290:ILE:O	2.18	0.42
15:L:604:CDL:H312	15:L:604:CDL:H342	1.91	0.42
4:Q:186:ARG:NH1	5:S:53:GLN:O	2.45	0.42
5:S:96:VAL:HG22	5:S:170:PHE:CB	2.50	0.42
8:V:119:ILE:HG23	8:V:120:GLU:N	2.35	0.42
1:R:111:ILE:HD12	1:R:196:MET:O	2.19	0.42
1:R:424:ARG:NH1	1:R:500:ARG:O	2.52	0.42
15:F:704:CDL:H551	15:F:704:CDL:H581	1.70	0.42
6:T:97:LEU:HD13	15:T:201:CDL:H351	2.01	0.42
11:W:70:THR:HG23	11:W:70:THR:O	2.20	0.42
12:M:345:VAL:HG23	12:M:345:VAL:O	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:175:LEU:CD2	17:E:603:MQ9:H5M2	2.50	0.42
2:E:225:ALA:HA	15:E:605:CDL:H351	2.00	0.42
2:F:422:VAL:CG2	15:F:705:CDL:H402	2.49	0.42
4:Q:96:LEU:HA	4:Q:99:THR:HG22	2.01	0.42
5:S:149:LEU:HG	15:S:301:CDL:H631	2.02	0.42
4:K:281:HIS:O	4:K:281:HIS:ND1	2.53	0.42
12:Y:387:ARG:CZ	12:Y:415:ALA:HB2	2.50	0.42
12:M:42:PRO:O	12:M:43:THR:OG1	2.32	0.42
12:M:364:LEU:HD12	12:M:365:CYS:N	2.35	0.42
1:R:454:ASP:OD1	4:Q:35:TRP:CD1	2.73	0.42
15:R:604:CDL:H531	15:R:604:CDL:H712	2.02	0.42
15:R:604:CDL:H612	15:P:201:CDL:H402	2.01	0.42
2:F:404:LEU:HD21	12:M:369:GLN:HG3	2.02	0.42
15:L:604:CDL:H552	15:L:604:CDL:H522	1.68	0.42
5:X:36:GLU:OE1	5:X:150:HIS:NE2	2.44	0.42
1:R:399:HIS:O	1:R:403:PHE:N	2.53	0.42
2:F:340:VAL:HG22	17:F:708:MQ9:H401	2.01	0.42
1:L:287:ARG:O	4:K:87:GLN:NE2	2.53	0.42
1:L:522:SER:OG	1:L:524:PRO:O	2.37	0.42
8:V:47:ASP:OD1	8:V:47:ASP:C	2.58	0.42
10:I:190:SER:O	12:Y:355:LEU:HD11	2.20	0.42
1:R:193:VAL:HG11	1:R:214:LEU:HD13	2.01	0.41
2:F:425:VAL:CG1	15:F:705:CDL:H371	2.45	0.41
4:Q:204:LEU:HD22	10:O:84:GLU:HB3	2.01	0.41
12:Y:190:LEU:O	12:Y:191:LYS:CG	2.68	0.41
12:M:46:GLU:OE1	12:M:46:GLU:N	2.50	0.41
12:M:291:ASP:O	12:M:297:SER:OG	2.38	0.41
2:E:147:LEU:HD13	2:E:222:LEU:HB2	2.01	0.41
2:E:532:HIS:CD2	2:E:536:ILE:HD11	2.55	0.41
2:F:420:ALA:HB2	15:P:201:CDL:H771	2.01	0.41
4:Q:236:VAL:O	4:Q:239:PHE:N	2.49	0.41
15:T:203:CDL:H381	15:T:203:CDL:H411	1.62	0.41
15:Z:203:CDL:OB4	10:I:289:TRP:HD1	2.03	0.41
15:Z:203:CDL:HB22	10:I:293:ARG:HH12	1.84	0.41
10:I:191:CYS:CB	21:I:302:HEC:HBC2	2.50	0.41
10:I:269:ALA:HB3	10:I:270:PRO:CD	2.47	0.41
12:M:344:LYS:O	12:M:353:SER:N	2.44	0.41
1:R:310:VAL:O	1:R:310:VAL:HG13	2.20	0.41
1:R:420:LYS:NZ	1:R:521:THR:O	2.53	0.41
17:E:603:MQ9:H403	17:E:603:MQ9:H421	1.82	0.41
15:F:705:CDL:H391	15:T:201:CDL:C42	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Q:135:ALA:O	4:Q:232:HIS:NE2	2.53	0.41
10:I:263:LEU:HD12	10:I:263:LEU:H	1.85	0.41
12:Y:159:ILE:O	12:Y:159:ILE:HG22	2.20	0.41
15:R:604:CDL:H512	15:R:604:CDL:H732	2.01	0.41
2:F:449:ILE:HD13	6:T:85:PHE:HD2	1.86	0.41
4:Q:101:ILE:HG22	4:Q:102:PRO:HD3	2.03	0.41
1:R:90:MET:HB3	14:R:603:HEA:CAC	2.50	0.41
15:R:604:CDL:H381	15:R:604:CDL:H412	1.39	0.41
2:F:395:ILE:CG2	17:F:707:MQ9:H5M1	2.51	0.41
6:T:8:PHE:CZ	6:T:52:THR:HG21	2.55	0.41
5:X:102:TRP:CE3	5:X:105:ILE:HD11	2.55	0.41
10:I:210:LEU:HD21	21:I:302:HEC:CHB	2.51	0.41
12:Y:85:THR:HG21	12:Y:153:LYS:HB3	2.01	0.41
12:M:195:VAL:HG23	12:M:196:ILE:HD12	2.02	0.41
1:R:419:PRO:CG	1:R:425:LEU:HD23	2.50	0.41
12:M:190:LEU:O	12:M:191:LYS:CG	2.69	0.41
2:F:107:GLN:NE2	2:F:276:GLY:O	2.53	0.41
2:F:183:PRO:O	12:M:417:TRP:CG	2.74	0.41
2:F:400:PHE:HA	6:T:108:LEU:HD13	2.01	0.41
15:F:704:CDL:H332	15:F:704:CDL:H362	1.67	0.41
1:L:221:LEU:HD13	5:X:31:VAL:HG13	2.03	0.41
4:K:199:ASP:N	4:K:202:GLU:OE2	2.51	0.41
4:K:219:LYS:O	4:K:221:ILE:HD12	2.20	0.41
15:X:301:CDL:H761	15:Z:203:CDL:C53	2.37	0.41
1:R:256:GLN:HB3	1:R:315:MET:SD	2.61	0.41
2:F:441:LEU:HD21	2:F:484:LEU:HD21	2.02	0.41
15:L:604:CDL:H312	15:L:604:CDL:HA61	1.62	0.41
5:S:32:TRP:HB3	15:S:301:CDL:H331	1.95	0.41
15:X:301:CDL:H141	15:X:301:CDL:H712	2.03	0.41
2:F:59:TRP:CE3	2:F:105:VAL:HG11	2.56	0.41
1:L:159:ASP:O	1:L:162:HIS:O	2.38	0.41
4:Q:128:GLU:OE1	4:Q:220:ARG:N	2.46	0.41
4:Q:139:ASN:HD22	4:Q:139:ASN:HA	1.63	0.41
4:Q:168:THR:HG23	4:Q:168:THR:O	2.20	0.41
5:X:163:ALA:HB1	15:X:301:CDL:HA61	2.03	0.41
9:J:85:ALA:HB1	15:J:201:CDL:H161	2.02	0.41
10:I:116:GLN:HG2	10:I:122:MET:SD	2.61	0.41
21:I:302:HEC:HBA2	21:I:302:HEC:HMA3	2.02	0.41
11:W:103:ASP:HA	11:W:133:VAL:HG13	2.03	0.41
2:E:367:PRO:O	2:E:374:THR:OG1	2.25	0.41
2:F:66:PRO:O	2:F:67:SER:OG	2.38	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:208:TYR:CE2	2:F:212:ILE:HD13	2.55	0.41
2:F:392:MET:SD	10:O:269:ALA:HB1	2.61	0.41
15:F:705:CDL:H762	15:F:705:CDL:H792	1.80	0.41
1:L:162:HIS:O	1:L:163:SER:OG	2.33	0.41
5:X:32:TRP:HZ2	15:X:302:CDL:C38	2.25	0.41
9:J:48:MET:HG2	15:J:201:CDL:HB61	2.03	0.41
2:E:59:TRP:CE3	2:E:105:VAL:HG11	2.56	0.40
2:F:267:MET:HE2	12:M:148:VAL:HG21	2.03	0.40
2:F:267:MET:HE1	10:O:286:VAL:HG13	2.03	0.40
1:L:153:ALA:HB1	1:L:158:THR:HG21	2.04	0.40
1:L:252:VAL:HG11	4:K:247:PRO:HD2	2.04	0.40
1:L:384:LEU:CD1	4:K:49:LEU:HD23	2.52	0.40
4:K:319:PRO:HA	4:K:320:PRO:HD3	1.99	0.40
10:I:201:LEU:CD1	21:I:302:HEC:HMD3	2.51	0.40
12:Y:345:VAL:HG23	12:Y:345:VAL:O	2.21	0.40
1:R:221:LEU:HD13	5:S:31:VAL:HG13	2.02	0.40
1:R:371:LEU:HD23	1:R:400:TYR:HE2	1.86	0.40
1:R:401:VAL:HG23	1:R:402:LEU:N	2.36	0.40
2:F:92:ALA:HB1	2:F:284:ILE:HD13	2.03	0.40
1:L:103:ALA:HB1	1:L:189:MET:SD	2.61	0.40
1:L:153:ALA:O	1:L:255:TRP:NE1	2.54	0.40
9:P:85:ALA:HB1	15:P:201:CDL:H161	2.03	0.40
4:K:222:GLU:OE2	4:K:257:VAL:HG21	2.21	0.40
9:J:7:ARG:NH1	9:J:9:GLN:OE1	2.55	0.40
10:I:221:ALA:O	10:I:224:THR:O	2.40	0.40
12:Y:281:THR:HG23	12:Y:344:LYS:CD	2.52	0.40
2:E:178:ILE:HD11	2:E:312:ILE:HD11	2.03	0.40
2:F:116:PHE:CE1	2:F:120:ILE:HD11	2.56	0.40
5:S:32:TRP:CZ2	15:S:301:CDL:C36	3.00	0.40
5:S:103:TYR:OH	5:S:178:ALA:O	2.37	0.40
15:X:301:CDL:C77	15:Z:203:CDL:H532	2.51	0.40
12:Y:255:ALA:HB2	12:Y:285:TRP:HB3	2.04	0.40
4:Q:288:VAL:HG13	4:Q:288:VAL:O	2.21	0.40
10:O:191:CYS:HB3	21:O:302:HEC:HBC2	1.98	0.40
15:Z:203:CDL:H611	10:I:278:ILE:HG23	2.02	0.40
5:S:41:ALA:HB2	6:T:44:LEU:CB	2.52	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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	L	550/566 (97%)	516 (94%)	34 (6%)	0	100	100
1	R	550/566 (97%)	518 (94%)	32 (6%)	0	100	100
2	E	533/535 (100%)	490 (92%)	43 (8%)	0	100	100
2	F	533/535 (100%)	489 (92%)	43 (8%)	1 (0%)	44	77
3	D	214/216 (99%)	193 (90%)	20 (9%)	1 (0%)	25	61
3	G	214/216 (99%)	187 (87%)	27 (13%)	0	100	100
4	K	310/341 (91%)	282 (91%)	28 (9%)	0	100	100
4	Q	310/341 (91%)	282 (91%)	28 (9%)	0	100	100
5	S	201/203 (99%)	193 (96%)	8 (4%)	0	100	100
5	X	201/203 (99%)	192 (96%)	9 (4%)	0	100	100
6	T	137/139 (99%)	129 (94%)	8 (6%)	0	100	100
6	Z	137/139 (99%)	130 (95%)	7 (5%)	0	100	100
7	U	77/79 (98%)	70 (91%)	6 (8%)	1 (1%)	10	39
7	a	77/79 (98%)	70 (91%)	7 (9%)	0	100	100
8	V	143/145 (99%)	139 (97%)	4 (3%)	0	100	100
8	b	143/145 (99%)	138 (96%)	5 (4%)	0	100	100
9	J	88/100 (88%)	85 (97%)	3 (3%)	0	100	100
9	P	88/100 (88%)	84 (96%)	4 (4%)	0	100	100
10	I	221/223 (99%)	199 (90%)	22 (10%)	0	100	100
10	O	221/223 (99%)	199 (90%)	22 (10%)	0	100	100
11	W	154/159 (97%)	137 (89%)	17 (11%)	0	100	100
11	c	154/159 (97%)	135 (88%)	19 (12%)	0	100	100
12	M	380/382 (100%)	344 (90%)	36 (10%)	0	100	100
12	Y	380/382 (100%)	348 (92%)	31 (8%)	1 (0%)	37	70
All	All	6016/6176 (97%)	5549 (92%)	463 (8%)	4 (0%)	50	81

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	F	135	ARG
12	Y	113	GLU
3	D	27	THR
7	U	70	VAL

5.3.2 Protein sidechains ⓘ

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	L	452/465 (97%)	442 (98%)	10 (2%)	47	76
1	R	452/465 (97%)	446 (99%)	6 (1%)	65	85
2	E	429/429 (100%)	425 (99%)	4 (1%)	75	89
2	F	429/429 (100%)	424 (99%)	5 (1%)	67	86
3	D	20/151 (13%)	20 (100%)	0	100	100
3	G	20/151 (13%)	20 (100%)	0	100	100
4	K	260/288 (90%)	256 (98%)	4 (2%)	60	83
4	Q	260/288 (90%)	257 (99%)	3 (1%)	67	86
5	S	155/161 (96%)	153 (99%)	2 (1%)	65	85
5	X	155/161 (96%)	153 (99%)	2 (1%)	65	85
6	T	106/106 (100%)	106 (100%)	0	100	100
6	Z	106/106 (100%)	106 (100%)	0	100	100
7	U	59/59 (100%)	59 (100%)	0	100	100
7	a	59/59 (100%)	58 (98%)	1 (2%)	56	81
8	V	107/107 (100%)	106 (99%)	1 (1%)	75	89
8	b	107/107 (100%)	107 (100%)	0	100	100
9	J	76/83 (92%)	70 (92%)	6 (8%)	10	35
9	P	76/83 (92%)	75 (99%)	1 (1%)	65	85
10	I	163/163 (100%)	160 (98%)	3 (2%)	54	80
10	O	163/163 (100%)	162 (99%)	1 (1%)	84	93

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
11	W	127/127 (100%)	127 (100%)	0	100	100
11	c	127/127 (100%)	125 (98%)	2 (2%)	58	82
12	M	312/312 (100%)	310 (99%)	2 (1%)	84	93
12	Y	312/312 (100%)	312 (100%)	0	100	100
All	All	4532/4902 (92%)	4479 (99%)	53 (1%)	66	86

All (53) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	R	63	ARG
1	R	129	PHE
1	R	155	SER
1	R	454	ASP
1	R	505	VAL
1	R	523	CYS
2	E	18	SER
2	E	187	THR
2	E	295	VAL
2	E	403	SER
2	F	20	TYR
2	F	280	THR
2	F	352	LYS
2	F	357	ASP
2	F	358	ASP
1	L	20	ARG
1	L	63	ARG
1	L	129	PHE
1	L	365	PHE
1	L	388	VAL
1	L	390	ASP
1	L	459	ARG
1	L	508	ASP
1	L	509	ASP
1	L	523	CYS
4	Q	139	ASN
4	Q	154	PHE
4	Q	160	ASP
5	S	130	THR
5	S	189	ASP
8	V	148	ARG
9	P	64	ARG

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Mol	Chain	Res	Type
10	O	270	PRO
4	K	139	ASN
4	K	232	HIS
4	K	281	HIS
4	K	283	MET
5	X	174	GLN
5	X	189	ASP
7	a	55	ARG
9	J	24	ARG
9	J	29	ASP
9	J	42	HIS
9	J	43	MET
9	J	64	ARG
9	J	72	GLU
11	c	24	CYS
11	c	25	SER
10	I	91	HIS
10	I	123	PRO
10	I	137	HIS
12	M	120	GLU
12	M	348	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 66 ligands modelled in this entry, 6 are monoatomic - leaving 60 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$
15	CDL	T	201	-	75,75,99	1.26	9 (12%)	81,87,111	1.83	15 (18%)
21	HEC	O	301	10	32,50,50	2.09	3 (9%)	30,82,82	2.13	7 (23%)
15	CDL	E	605	-	75,75,99	0.34	0	81,87,111	0.42	0
21	HEC	O	302	10	32,50,50	2.07	3 (9%)	30,82,82	2.13	8 (26%)
22	9YF	M	501	-	58,58,58	1.08	7 (12%)	68,71,71	1.29	7 (10%)
16	HEM	F	703	2	42,50,50	1.49	4 (9%)	46,82,82	1.37	6 (13%)
22	9YF	I	304	-	58,58,58	1.05	5 (8%)	68,71,71	1.01	3 (4%)
21	HEC	I	301	-	32,50,50	2.08	3 (9%)	30,82,82	2.22	5 (16%)
15	CDL	T	203	-	75,75,99	0.37	0	81,87,111	0.45	0
14	HEA	R	603	1	58,67,67	1.56	11 (18%)	63,103,103	2.02	12 (19%)
22	9YF	M	502	-	58,58,58	1.10	5 (8%)	68,71,71	1.33	5 (7%)
19	PLM	c	201	11	15,16,17	0.47	0	14,15,17	0.35	0
20	9XX	G	302	3	31,31,41	1.12	3 (9%)	34,34,44	1.47	5 (14%)
15	CDL	J	201	-	75,75,99	0.33	0	81,87,111	0.45	0
15	CDL	Z	202	-	75,75,99	1.26	9 (12%)	81,87,111	1.83	15 (18%)
19	PLM	W	201	11	15,16,17	0.49	0	14,15,17	0.33	0
17	MQ9	F	701	-	59,59,59	2.45	23 (38%)	73,75,75	1.38	15 (20%)
17	MQ9	I	303	-	59,59,59	2.39	22 (37%)	73,75,75	1.43	17 (23%)
16	HEM	E	601	2	41,49,50	1.24	4 (9%)	47,81,82	1.26	4 (8%)
23	FES	M	503	12	0,4,4	-	-	-	-	-
19	PLM	D	301	3	9,10,17	0.53	0	8,9,17	0.43	0
16	HEM	F	702	2	41,49,50	1.23	2 (4%)	47,81,82	1.25	3 (6%)
15	CDL	F	705	-	75,75,99	0.37	0	81,87,111	0.46	1 (1%)
18	9Y0	J	202	-	48,48,48	1.17	3 (6%)	51,53,53	0.90	2 (3%)
17	MQ9	F	708	-	59,59,59	2.30	22 (37%)	73,75,75	1.42	8 (10%)
20	9XX	D	302	-	31,31,41	1.11	3 (9%)	34,34,44	1.44	4 (11%)
22	9YF	O	303	-	58,58,58	1.05	5 (8%)	68,71,71	1.01	3 (4%)
16	HEM	E	602	2	42,50,50	1.51	5 (11%)	46,82,82	1.34	7 (15%)
14	HEA	R	602	1	58,67,67	1.62	10 (17%)	63,103,103	2.39	23 (36%)
14	HEA	L	603	1	58,67,67	1.56	11 (18%)	63,103,103	1.85	13 (20%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
18	9Y0	X	303	-	48,48,48	1.16	3 (6%)	51,53,53	0.90	2 (3%)
15	CDL	X	302	-	75,75,99	1.33	7 (9%)	81,87,111	1.99	9 (11%)
19	PLM	G	301	3	9,10,17	0.54	0	8,9,17	0.43	0
22	9YF	c	203	-	58,58,58	1.01	5 (8%)	68,71,71	1.13	3 (4%)
22	9YF	Y	503	-	58,58,58	1.09	5 (8%)	68,71,71	1.33	5 (7%)
18	9Y0	F	706	-	48,48,48	1.17	3 (6%)	51,53,53	0.87	2 (3%)
21	HEC	I	302	10	32,50,50	2.16	3 (9%)	30,82,82	2.04	8 (26%)
18	9Y0	J	203	-	48,48,48	1.16	3 (6%)	51,53,53	0.78	2 (3%)
15	CDL	T	202	-	75,75,99	0.33	0	81,87,111	0.40	0
15	CDL	X	301	-	75,75,99	0.33	0	81,87,111	0.40	0
17	MQ9	F	707	-	59,59,59	2.25	21 (35%)	73,75,75	1.73	22 (30%)
15	CDL	L	604	-	75,75,99	0.34	0	81,87,111	0.72	3 (3%)
20	9XX	c	202	11	41,41,41	0.96	3 (7%)	44,44,44	1.18	4 (9%)
22	9YF	W	203	-	58,58,58	1.01	5 (8%)	68,71,71	1.13	3 (4%)
17	MQ9	Z	201	-	59,59,59	2.36	22 (37%)	73,75,75	1.63	16 (21%)
15	CDL	E	606	-	75,75,99	0.36	0	81,87,111	0.42	0
15	CDL	R	604	-	75,75,99	0.34	0	81,87,111	0.60	2 (2%)
14	HEA	L	602	1	58,67,67	1.61	11 (18%)	63,103,103	2.46	23 (36%)
15	CDL	S	301	-	75,75,99	1.33	7 (9%)	81,87,111	1.99	9 (11%)
22	9YF	Y	502	-	58,58,58	1.08	7 (12%)	68,71,71	1.30	7 (10%)
15	CDL	F	704	-	75,75,99	0.34	0	81,87,111	0.42	0
17	MQ9	F	709	-	59,59,59	2.43	22 (37%)	73,75,75	1.54	15 (20%)
18	9Y0	S	302	-	48,48,48	1.16	3 (6%)	51,53,53	0.87	2 (3%)
15	CDL	Z	203	-	75,75,99	1.32	7 (9%)	81,87,111	2.04	9 (11%)
18	9Y0	P	202	-	48,48,48	1.20	3 (6%)	51,53,53	0.95	2 (3%)
20	9XX	W	202	-	41,41,41	1.10	4 (9%)	44,44,44	1.19	3 (6%)
17	MQ9	E	603	-	59,59,59	2.44	23 (38%)	73,75,75	1.38	14 (19%)
23	FES	Y	501	12	0,4,4	-	-	-	-	-
17	MQ9	E	604	-	59,59,59	2.42	22 (37%)	73,75,75	1.53	16 (21%)
15	CDL	P	201	-	75,75,99	0.33	0	81,87,111	0.45	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
15	CDL	T	201	-	-	34/86/86/110	-
21	HEC	O	301	10	-	2/10/54/54	-
15	CDL	E	605	-	-	49/86/86/110	-
21	HEC	O	302	10	-	2/10/54/54	-
22	9YF	M	501	-	-	23/54/78/78	0/1/1/1
16	HEM	F	703	2	-	0/12/54/54	-
22	9YF	I	304	-	-	27/54/78/78	0/1/1/1
21	HEC	I	301	-	-	0/10/54/54	-
15	CDL	T	203	-	-	47/86/86/110	-
14	HEA	R	603	1	-	3/32/76/76	-
22	9YF	M	502	-	-	27/54/78/78	0/1/1/1
19	PLM	c	201	11	-	5/14/14/15	-
20	9XX	G	302	3	-	10/33/33/43	-
15	CDL	J	201	-	-	48/86/86/110	-
15	CDL	Z	202	-	-	34/86/86/110	-
19	PLM	W	201	11	-	4/14/14/15	-
17	MQ9	F	701	-	-	6/53/73/73	0/2/2/2
17	MQ9	I	303	-	-	8/53/73/73	0/2/2/2
16	HEM	E	601	2	-	2/12/52/54	-
23	FES	M	503	12	-	-	0/1/1/1
19	PLM	D	301	3	-	3/8/8/15	-
16	HEM	F	702	2	-	4/12/52/54	-
15	CDL	F	705	-	-	43/86/86/110	-
18	9Y0	J	202	-	-	19/52/52/52	-
17	MQ9	F	708	-	-	11/53/73/73	0/2/2/2
20	9XX	D	302	-	-	9/33/33/43	-
22	9YF	O	303	-	-	27/54/78/78	0/1/1/1
16	HEM	E	602	2	-	2/12/54/54	-
14	HEA	R	602	1	-	7/32/76/76	-
14	HEA	L	603	1	-	3/32/76/76	-
18	9Y0	X	303	-	-	17/52/52/52	-
15	CDL	X	302	-	-	43/86/86/110	-
19	PLM	G	301	3	-	2/8/8/15	-
22	9YF	c	203	-	-	22/54/78/78	0/1/1/1
22	9YF	Y	503	-	-	27/54/78/78	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
18	9Y0	F	706	-	-	16/52/52/52	-
21	HEC	I	302	10	-	0/10/54/54	-
18	9Y0	J	203	-	-	25/52/52/52	-
15	CDL	T	202	-	-	46/86/86/110	-
15	CDL	X	301	-	-	46/86/86/110	-
17	MQ9	F	707	-	-	17/53/73/73	0/2/2/2
15	CDL	L	604	-	-	48/86/86/110	-
20	9XX	c	202	11	-	16/43/43/43	-
22	9YF	W	203	-	-	22/54/78/78	0/1/1/1
17	MQ9	Z	201	-	-	11/53/73/73	0/2/2/2
15	CDL	E	606	-	-	40/86/86/110	-
15	CDL	R	604	-	-	47/86/86/110	-
14	HEA	L	602	1	-	12/32/76/76	-
15	CDL	S	301	-	-	43/86/86/110	-
22	9YF	Y	502	-	-	23/54/78/78	0/1/1/1
15	CDL	F	704	-	-	49/86/86/110	-
17	MQ9	F	709	-	-	12/53/73/73	0/2/2/2
18	9Y0	S	302	-	-	19/52/52/52	-
15	CDL	Z	203	-	-	38/86/86/110	-
18	9Y0	P	202	-	-	22/52/52/52	-
20	9XX	W	202	-	-	15/43/43/43	-
17	MQ9	E	603	-	-	6/53/73/73	0/2/2/2
23	FES	Y	501	12	-	-	0/1/1/1
17	MQ9	E	604	-	-	11/53/73/73	0/2/2/2
15	CDL	P	201	-	-	48/86/86/110	-

All (361) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
17	F	709	MQ9	C6-C5	8.77	1.50	1.35
17	E	604	MQ9	C6-C5	8.77	1.50	1.35
17	F	701	MQ9	C6-C5	8.59	1.50	1.35
17	F	708	MQ9	C6-C5	8.56	1.50	1.35
17	E	603	MQ9	C6-C5	8.53	1.50	1.35
17	I	303	MQ9	C6-C5	8.49	1.50	1.35
17	Z	201	MQ9	C6-C5	8.28	1.50	1.35
17	F	707	MQ9	C6-C5	8.14	1.49	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
21	I	302	HEC	C2B-C3B	-6.56	1.33	1.40
21	I	301	HEC	C2B-C3B	-5.97	1.34	1.40
21	I	302	HEC	C3C-C2C	-5.91	1.34	1.40
21	O	301	HEC	C3C-C2C	-5.90	1.34	1.40
21	O	301	HEC	C2B-C3B	-5.74	1.34	1.40
21	I	301	HEC	C3C-C2C	-5.73	1.34	1.40
21	O	302	HEC	C2B-C3B	-5.69	1.34	1.40
21	O	302	HEC	C3C-C2C	-5.67	1.34	1.40
21	O	301	HEC	C3D-C2D	5.45	1.53	1.37
21	O	302	HEC	C3D-C2D	5.42	1.53	1.37
21	I	301	HEC	C3D-C2D	5.42	1.53	1.37
21	I	302	HEC	C3D-C2D	5.31	1.53	1.37
17	F	709	MQ9	C2-C1	5.05	1.57	1.48
17	F	701	MQ9	C2-C1	5.01	1.57	1.48
17	E	604	MQ9	C2-C1	5.00	1.57	1.48
14	R	603	HEA	C3A-C4A	4.98	1.48	1.41
17	Z	201	MQ9	C2-C1	4.96	1.57	1.48
17	E	603	MQ9	C2-C1	4.95	1.57	1.48
14	L	603	HEA	C3A-C4A	4.94	1.48	1.41
17	I	303	MQ9	C2-C1	4.93	1.57	1.48
16	E	602	HEM	C3C-C2C	-4.91	1.33	1.40
17	I	303	MQ9	C3-C4	4.75	1.57	1.48
14	L	602	HEA	C3A-C4A	4.74	1.48	1.41
14	R	602	HEA	C3A-C4A	4.74	1.48	1.41
16	F	703	HEM	C3C-C2C	-4.70	1.34	1.40
17	F	709	MQ9	C3-C4	4.66	1.57	1.48
17	E	603	MQ9	C3-C4	4.65	1.57	1.48
17	F	701	MQ9	C3-C4	4.62	1.57	1.48
17	E	604	MQ9	C3-C4	4.61	1.57	1.48
17	F	709	MQ9	C26-C24	4.61	1.60	1.51
17	F	708	MQ9	C2-C1	4.56	1.57	1.48
17	Z	201	MQ9	C3-C4	4.54	1.57	1.48
17	F	708	MQ9	C3-C4	4.54	1.56	1.48
17	E	604	MQ9	C26-C24	4.52	1.60	1.51
17	E	603	MQ9	C26-C24	4.49	1.60	1.51
17	F	701	MQ9	C26-C24	4.49	1.60	1.51
17	F	707	MQ9	C26-C24	4.46	1.60	1.51
17	I	303	MQ9	C26-C24	4.46	1.60	1.51
17	Z	201	MQ9	C26-C24	4.40	1.60	1.51
17	F	707	MQ9	C11-C9	4.37	1.60	1.51
14	R	602	HEA	C3B-C2B	4.36	1.44	1.34
14	R	603	HEA	C3B-C2B	4.30	1.44	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
17	F	707	MQ9	C3-C4	4.28	1.56	1.48
14	L	603	HEA	C3B-C2B	4.20	1.44	1.34
14	L	602	HEA	C3B-C2B	4.13	1.44	1.34
17	E	603	MQ9	C31-C29	4.13	1.59	1.51
14	L	602	HEA	C3C-C2C	4.11	1.45	1.40
17	F	701	MQ9	C31-C29	4.10	1.59	1.51
17	F	707	MQ9	C2-C1	4.08	1.56	1.48
17	F	708	MQ9	C26-C24	4.06	1.59	1.51
17	Z	201	MQ9	C11-C9	4.05	1.59	1.51
17	E	604	MQ9	C11-C9	4.00	1.59	1.51
17	F	709	MQ9	C31-C29	3.98	1.59	1.51
17	F	709	MQ9	C11-C9	3.92	1.59	1.51
20	G	302	9XX	O1-C17	-3.90	1.40	1.47
20	W	202	9XX	O1-C17	-3.88	1.40	1.47
17	I	303	MQ9	C31-C29	3.88	1.59	1.51
14	R	603	HEA	C3C-C2C	3.88	1.45	1.40
17	I	303	MQ9	C11-C9	3.86	1.59	1.51
17	E	604	MQ9	C31-C29	3.86	1.59	1.51
14	L	603	HEA	C3C-C2C	3.81	1.45	1.40
14	R	602	HEA	C3C-C2C	3.81	1.45	1.40
20	D	302	9XX	O1-C17	-3.81	1.40	1.47
17	F	701	MQ9	C11-C9	3.80	1.59	1.51
17	Z	201	MQ9	C31-C29	3.80	1.59	1.51
14	L	602	HEA	C3D-C2D	3.77	1.44	1.36
17	E	603	MQ9	C11-C9	3.75	1.59	1.51
17	F	708	MQ9	C11-C9	3.74	1.59	1.51
20	c	202	9XX	O1-C17	-3.72	1.40	1.47
14	L	603	HEA	C3D-C2D	3.67	1.44	1.36
20	W	202	9XX	O-C15	3.67	1.44	1.33
14	R	602	HEA	C3D-C2D	3.64	1.44	1.36
17	F	707	MQ9	C16-C14	3.60	1.58	1.51
14	R	602	HEA	C4D-C3D	3.54	1.51	1.45
14	R	603	HEA	C3D-C2D	3.54	1.44	1.36
14	R	602	HEA	C3A-C2A	3.43	1.45	1.40
17	F	708	MQ9	C27-C28	3.40	1.60	1.50
14	L	602	HEA	C3A-C2A	3.38	1.45	1.40
17	F	708	MQ9	C7-C6	3.29	1.57	1.51
17	E	603	MQ9	C22-C23	3.29	1.60	1.50
14	L	602	HEA	C4B-C3B	3.28	1.50	1.44
18	X	303	9Y0	O7-C1	-3.28	1.38	1.46
18	S	302	9Y0	O7-C1	-3.27	1.38	1.46
17	E	604	MQ9	C22-C23	3.26	1.60	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
15	T	201	CDL	OA6-CA4	-3.26	1.38	1.46
17	F	709	MQ9	C22-C23	3.26	1.60	1.50
15	Z	202	CDL	OA6-CA4	-3.25	1.38	1.46
17	E	604	MQ9	C21-C19	3.25	1.58	1.51
17	F	701	MQ9	C22-C23	3.23	1.60	1.50
17	F	709	MQ9	C21-C19	3.22	1.57	1.51
17	I	303	MQ9	C27-C28	3.21	1.60	1.50
17	I	303	MQ9	C16-C14	3.20	1.57	1.51
17	I	303	MQ9	C22-C23	3.19	1.60	1.50
18	J	202	9Y0	O7-C1	-3.19	1.39	1.46
17	E	603	MQ9	C21-C19	3.19	1.57	1.51
16	F	703	HEM	C3C-CAC	3.18	1.54	1.47
18	F	706	9Y0	O7-C1	-3.17	1.39	1.46
17	F	701	MQ9	C21-C19	3.17	1.57	1.51
18	J	203	9Y0	O7-C1	-3.16	1.39	1.46
17	F	707	MQ9	C31-C29	3.15	1.57	1.51
17	E	604	MQ9	C16-C14	3.14	1.57	1.51
17	F	709	MQ9	C16-C14	3.14	1.57	1.51
17	E	603	MQ9	C41-C39	3.12	1.57	1.51
17	Z	201	MQ9	C21-C19	3.12	1.57	1.51
17	I	303	MQ9	C21-C19	3.11	1.57	1.51
17	Z	201	MQ9	C7-C8	3.11	1.55	1.50
17	F	707	MQ9	C21-C19	3.10	1.57	1.51
17	Z	201	MQ9	C22-C23	3.10	1.59	1.50
17	E	603	MQ9	C27-C28	3.10	1.59	1.50
17	F	708	MQ9	C31-C29	3.10	1.57	1.51
14	R	602	HEA	C4B-C3B	3.09	1.50	1.44
17	F	701	MQ9	C27-C28	3.08	1.59	1.50
17	F	708	MQ9	C22-C23	3.08	1.59	1.50
17	F	701	MQ9	C41-C39	3.08	1.57	1.51
17	Z	201	MQ9	C27-C28	3.08	1.59	1.50
14	R	602	HEA	C2A-C1A	3.08	1.49	1.42
15	Z	203	CDL	OB8-CB7	3.07	1.42	1.33
16	E	602	HEM	C3C-CAC	3.07	1.54	1.47
15	S	301	CDL	OB8-CB7	3.06	1.42	1.33
18	P	202	9Y0	O7-C1	-3.06	1.39	1.46
15	X	302	CDL	OB8-CB7	3.06	1.42	1.33
14	L	602	HEA	C4D-C3D	3.06	1.50	1.45
17	F	708	MQ9	C21-C19	3.04	1.57	1.51
17	F	709	MQ9	C27-C28	3.04	1.59	1.50
17	E	604	MQ9	C27-C28	3.02	1.59	1.50
17	F	701	MQ9	C7-C8	3.02	1.55	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	E	602	HEM	CAB-C3B	3.00	1.55	1.47
17	E	603	MQ9	C7-C8	2.99	1.55	1.50
17	Z	201	MQ9	C16-C14	2.99	1.57	1.51
17	F	707	MQ9	C7-C8	2.98	1.55	1.50
14	L	602	HEA	C2A-C1A	2.97	1.49	1.42
17	F	708	MQ9	C16-C14	2.97	1.57	1.51
17	I	303	MQ9	C7-C8	2.97	1.55	1.50
18	P	202	9Y0	O5-C5	2.97	1.42	1.33
18	F	706	9Y0	O5-C5	2.96	1.42	1.33
17	F	708	MQ9	C7-C8	2.95	1.55	1.50
17	F	701	MQ9	C16-C14	2.95	1.57	1.51
14	L	603	HEA	C4B-C3B	2.94	1.49	1.44
18	J	202	9Y0	O5-C5	2.93	1.41	1.33
17	F	707	MQ9	C22-C23	2.92	1.59	1.50
16	F	703	HEM	CAB-C3B	2.91	1.55	1.47
15	S	301	CDL	OA6-CA5	2.91	1.42	1.34
17	E	603	MQ9	C16-C14	2.91	1.57	1.51
15	Z	203	CDL	OA6-CA5	2.91	1.42	1.34
17	E	604	MQ9	C7-C8	2.90	1.55	1.50
15	X	302	CDL	OA6-CA5	2.90	1.42	1.34
22	W	203	9YF	O9-C	-2.90	1.39	1.46
17	F	709	MQ9	C7-C8	2.89	1.55	1.50
22	Y	502	9YF	O9-C8	2.89	1.42	1.34
15	X	302	CDL	CB6-CB4	2.89	1.59	1.50
15	S	301	CDL	CB6-CB4	2.89	1.59	1.50
16	F	702	HEM	CAB-C3B	2.88	1.55	1.47
15	X	302	CDL	OB6-CB5	2.88	1.42	1.34
15	S	301	CDL	OB6-CB5	2.88	1.42	1.34
22	M	501	9YF	O9-C8	2.88	1.42	1.34
16	E	601	HEM	CAB-C3B	2.87	1.55	1.47
18	J	203	9Y0	O5-C5	2.87	1.41	1.33
17	F	701	MQ9	C7-C6	2.86	1.56	1.51
15	Z	203	CDL	OB6-CB5	2.86	1.42	1.34
17	E	603	MQ9	C7-C6	2.86	1.56	1.51
17	E	604	MQ9	C7-C6	2.85	1.56	1.51
22	c	203	9YF	O9-C	-2.85	1.39	1.46
17	F	709	MQ9	C7-C6	2.85	1.56	1.51
17	F	701	MQ9	C5M-C5	2.83	1.56	1.50
17	F	709	MQ9	C20-C19	2.82	1.57	1.50
17	E	603	MQ9	C5M-C5	2.82	1.56	1.50
17	F	707	MQ9	C20-C19	2.82	1.57	1.50
22	Y	502	9YF	O11-C25	2.81	1.41	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
15	Z	203	CDL	OA8-CA7	2.81	1.41	1.33
15	S	301	CDL	OA8-CA7	2.81	1.41	1.33
17	F	708	MQ9	C5M-C5	2.80	1.56	1.50
15	X	302	CDL	OA8-CA7	2.80	1.41	1.33
17	E	604	MQ9	C5M-C5	2.80	1.56	1.50
18	X	303	9Y0	O5-C5	2.80	1.41	1.33
17	E	604	MQ9	C20-C19	2.79	1.57	1.50
22	M	501	9YF	O11-C25	2.79	1.41	1.33
15	X	302	CDL	CB3-CB4	2.79	1.59	1.50
17	I	303	MQ9	C7-C6	2.78	1.56	1.51
15	S	301	CDL	CB3-CB4	2.78	1.59	1.50
18	J	202	9Y0	O7-C21	2.77	1.42	1.34
17	F	709	MQ9	C5M-C5	2.77	1.56	1.50
22	Y	503	9YF	O9-C	-2.77	1.40	1.46
15	Z	203	CDL	CB6-CB4	2.76	1.59	1.50
18	S	302	9Y0	O5-C5	2.76	1.41	1.33
18	J	203	9Y0	O7-C21	2.76	1.42	1.34
17	I	303	MQ9	C20-C19	2.76	1.57	1.50
17	Z	201	MQ9	C7-C6	2.76	1.56	1.51
22	M	502	9YF	O9-C	-2.75	1.40	1.46
15	Z	202	CDL	CB6-CB4	2.74	1.59	1.50
15	T	201	CDL	CB6-CB4	2.74	1.59	1.50
17	E	603	MQ9	C20-C19	2.74	1.57	1.50
18	F	706	9Y0	O7-C21	2.74	1.42	1.34
17	F	701	MQ9	C20-C19	2.73	1.57	1.50
15	Z	203	CDL	CB3-CB4	2.73	1.59	1.50
17	Z	201	MQ9	C20-C19	2.73	1.57	1.50
18	P	202	9Y0	O7-C21	2.72	1.42	1.34
15	Z	202	CDL	OB8-CB7	2.72	1.41	1.33
18	S	302	9Y0	O7-C21	2.71	1.41	1.34
18	X	303	9Y0	O7-C21	2.71	1.41	1.34
22	M	502	9YF	O9-C8	2.70	1.41	1.34
15	T	201	CDL	OB8-CB7	2.69	1.41	1.33
22	Y	503	9YF	O9-C8	2.68	1.41	1.34
15	X	302	CDL	OA6-CA4	-2.66	1.40	1.46
17	F	707	MQ9	C27-C28	2.66	1.58	1.50
15	S	301	CDL	OA6-CA4	-2.64	1.40	1.46
15	Z	203	CDL	OA6-CA4	-2.64	1.40	1.46
17	I	303	MQ9	C5M-C5	2.64	1.56	1.50
14	R	603	HEA	C4B-C3B	2.63	1.49	1.44
17	F	701	MQ9	C42-C43	2.62	1.58	1.50
17	F	708	MQ9	C20-C19	2.62	1.57	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
17	F	708	MQ9	O4-C4	-2.61	1.17	1.23
14	L	603	HEA	C3A-C2A	2.61	1.43	1.40
17	F	707	MQ9	C7-C6	2.61	1.56	1.51
17	E	603	MQ9	C42-C43	2.60	1.58	1.50
22	O	303	9YF	O9-C8	2.59	1.41	1.34
15	T	201	CDL	OB6-CB5	2.57	1.41	1.34
17	F	707	MQ9	O4-C4	-2.57	1.17	1.23
15	Z	202	CDL	OB6-CB5	2.57	1.41	1.34
20	c	202	9XX	O-C15	2.56	1.40	1.33
22	W	203	9YF	O11-C24	-2.56	1.39	1.45
22	I	304	9YF	O9-C8	2.56	1.41	1.34
22	c	203	9YF	O11-C24	-2.56	1.39	1.45
17	I	303	MQ9	C42-C43	2.56	1.58	1.50
17	E	604	MQ9	C46-C44	2.56	1.56	1.51
17	F	709	MQ9	C41-C39	2.55	1.56	1.51
22	W	203	9YF	O9-C8	2.55	1.41	1.34
22	c	203	9YF	O9-C8	2.51	1.41	1.34
17	F	709	MQ9	C46-C44	2.50	1.56	1.51
17	I	303	MQ9	C41-C39	2.49	1.56	1.51
20	D	302	9XX	O-C15	2.49	1.40	1.33
17	F	701	MQ9	C46-C44	2.49	1.56	1.51
22	c	203	9YF	P-O2	2.48	1.66	1.59
17	E	603	MQ9	C46-C44	2.47	1.56	1.51
17	E	604	MQ9	C41-C39	2.47	1.56	1.51
22	W	203	9YF	P-O2	2.47	1.66	1.59
17	Z	201	MQ9	C5M-C5	2.46	1.55	1.50
17	F	708	MQ9	C41-C39	2.46	1.56	1.51
22	I	304	9YF	O11-C25	2.46	1.40	1.33
22	O	303	9YF	O11-C25	2.45	1.40	1.33
22	Y	503	9YF	O11-C24	-2.45	1.39	1.45
14	L	603	HEA	C2A-C1A	2.44	1.48	1.42
14	R	603	HEA	C2A-C1A	2.43	1.47	1.42
17	E	603	MQ9	C12-C13	2.43	1.57	1.50
17	F	701	MQ9	C12-C13	2.43	1.57	1.50
22	M	502	9YF	O11-C24	-2.43	1.39	1.45
20	G	302	9XX	O-C15	2.43	1.40	1.33
22	O	303	9YF	O11-C24	-2.42	1.39	1.45
16	E	601	HEM	C2C-C3C	-2.42	1.33	1.41
17	F	707	MQ9	C5M-C5	2.42	1.55	1.50
22	M	502	9YF	O11-C25	2.41	1.40	1.33
22	I	304	9YF	O11-C24	-2.41	1.39	1.45
14	R	603	HEA	C1D-ND	-2.40	1.36	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
22	Y	503	9YF	O11-C25	2.40	1.40	1.33
17	F	709	MQ9	C42-C43	2.39	1.57	1.50
14	R	603	HEA	C3A-C2A	2.39	1.43	1.40
17	Z	201	MQ9	C46-C44	2.38	1.56	1.51
17	Z	201	MQ9	C42-C43	2.37	1.57	1.50
17	F	707	MQ9	O1-C1	-2.37	1.18	1.23
14	R	602	HEA	C1B-C2B	2.37	1.49	1.44
17	F	701	MQ9	C43-C44	2.37	1.38	1.33
17	F	709	MQ9	C12-C13	2.36	1.57	1.50
16	F	702	HEM	C2C-C3C	-2.36	1.33	1.41
17	I	303	MQ9	C12-C13	2.36	1.57	1.50
14	L	602	HEA	C1B-C2B	2.36	1.49	1.44
17	E	604	MQ9	C12-C13	2.35	1.57	1.50
14	L	603	HEA	C1D-ND	-2.34	1.36	1.40
17	F	701	MQ9	C28-C29	2.34	1.38	1.33
17	E	603	MQ9	C43-C44	2.33	1.38	1.33
22	O	303	9YF	O9-C	-2.33	1.41	1.46
17	E	604	MQ9	C42-C43	2.33	1.57	1.50
22	I	304	9YF	O9-C	-2.32	1.41	1.46
17	F	708	MQ9	C42-C43	2.32	1.57	1.50
17	E	603	MQ9	C28-C29	2.32	1.38	1.33
17	Z	201	MQ9	C41-C39	2.32	1.56	1.51
17	I	303	MQ9	C43-C44	2.31	1.38	1.33
17	F	709	MQ9	O4-C4	-2.31	1.18	1.23
17	Z	201	MQ9	O4-C4	-2.30	1.18	1.23
17	Z	201	MQ9	C12-C13	2.29	1.57	1.50
17	E	604	MQ9	O4-C4	-2.29	1.18	1.23
20	G	302	9XX	O1-C18	2.29	1.40	1.34
17	I	303	MQ9	C28-C29	2.28	1.38	1.33
16	F	703	HEM	C3C-C4C	2.28	1.44	1.41
17	E	603	MQ9	O4-C4	-2.27	1.18	1.23
17	I	303	MQ9	O4-C4	-2.27	1.18	1.23
20	D	302	9XX	O1-C18	2.26	1.40	1.34
17	F	707	MQ9	C46-C44	2.26	1.56	1.51
17	F	701	MQ9	O4-C4	-2.26	1.18	1.23
17	F	709	MQ9	C43-C44	2.26	1.38	1.33
22	Y	502	9YF	P-O2	2.25	1.66	1.59
15	T	201	CDL	PA1-OA4	-2.25	1.44	1.55
17	E	604	MQ9	C43-C44	2.25	1.38	1.33
15	Z	202	CDL	PA1-OA4	-2.24	1.44	1.55
17	F	707	MQ9	C12-C13	2.24	1.57	1.50
20	W	202	9XX	C14-C15	2.24	1.57	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
22	M	501	9YF	P-O2	2.24	1.66	1.59
22	W	203	9YF	O11-C25	2.24	1.39	1.33
15	T	201	CDL	CB3-CB4	2.23	1.57	1.50
15	Z	202	CDL	CB3-CB4	2.23	1.57	1.50
22	c	203	9YF	O11-C25	2.22	1.39	1.33
20	W	202	9XX	O1-C18	2.21	1.40	1.34
14	R	602	HEA	C1D-ND	-2.20	1.36	1.40
22	M	501	9YF	O4-C4	-2.20	1.37	1.43
14	L	602	HEA	C1D-ND	-2.20	1.36	1.40
14	R	603	HEA	C4D-C3D	2.19	1.48	1.45
17	F	708	MQ9	C43-C44	2.19	1.38	1.33
22	Y	502	9YF	O4-C4	-2.19	1.37	1.43
17	E	604	MQ9	C28-C29	2.18	1.38	1.33
17	I	303	MQ9	C46-C44	2.18	1.55	1.51
14	R	603	HEA	C1B-C2B	2.17	1.48	1.44
17	F	708	MQ9	C28-C29	2.16	1.38	1.33
17	F	707	MQ9	C41-C39	2.15	1.55	1.51
22	Y	502	9YF	O11-C24	-2.15	1.40	1.45
17	Z	201	MQ9	C28-C29	2.14	1.38	1.33
17	E	603	MQ9	C3C-C3B	2.14	1.42	1.38
17	Z	201	MQ9	C43-C44	2.12	1.38	1.33
17	F	708	MQ9	C51-C49	2.12	1.56	1.50
22	M	501	9YF	O11-C24	-2.12	1.40	1.45
17	E	604	MQ9	C3C-C3B	2.12	1.42	1.38
17	F	701	MQ9	C3C-C3B	2.12	1.42	1.38
17	F	708	MQ9	C6-C1	2.12	1.52	1.47
16	E	602	HEM	C3C-C4C	2.11	1.44	1.41
22	Y	503	9YF	O4-C4	-2.10	1.37	1.43
14	L	603	HEA	C1B-C2B	2.10	1.48	1.44
22	M	502	9YF	O4-C4	-2.10	1.37	1.43
17	F	709	MQ9	C28-C29	2.10	1.37	1.33
22	O	303	9YF	P-O2	2.09	1.65	1.59
17	Z	201	MQ9	C3C-C3B	2.08	1.42	1.38
22	Y	502	9YF	O9-C	-2.08	1.41	1.46
17	F	709	MQ9	C3C-C3B	2.07	1.42	1.38
22	I	304	9YF	P-O2	2.07	1.65	1.59
17	F	708	MQ9	C12-C13	2.07	1.56	1.50
16	E	602	HEM	CMB-C2B	2.07	1.55	1.50
15	Z	202	CDL	OA8-CA7	2.07	1.39	1.33
17	E	603	MQ9	C5-C4	2.06	1.52	1.47
14	R	603	HEA	C1D-C2D	2.06	1.48	1.44
15	T	201	CDL	OA8-CA7	2.05	1.39	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
15	T	201	CDL	OA6-CA5	2.04	1.40	1.34
16	E	601	HEM	CMD-C2D	2.04	1.55	1.50
14	L	602	HEA	C1D-C2D	2.04	1.48	1.44
22	M	501	9YF	O9-C	-2.04	1.41	1.46
15	Z	202	CDL	OA6-CA5	2.04	1.40	1.34
20	c	202	9XX	O1-C18	2.04	1.40	1.34
17	F	707	MQ9	C18-C19	2.03	1.37	1.33
16	E	601	HEM	CMB-C2B	2.02	1.54	1.50
22	Y	502	9YF	P-O	2.02	1.67	1.59
17	F	701	MQ9	C5-C4	2.02	1.52	1.47
17	F	707	MQ9	C42-C43	2.02	1.56	1.50
15	T	201	CDL	PB2-OB5	2.02	1.67	1.59
22	M	501	9YF	P-O	2.02	1.67	1.59
15	Z	202	CDL	PB2-OB5	2.02	1.67	1.59
14	L	603	HEA	C1D-C2D	2.02	1.48	1.44
17	I	303	MQ9	C3C-C3B	2.01	1.42	1.38
14	L	603	HEA	C4D-C3D	2.00	1.48	1.45

All (369) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
15	Z	203	CDL	CB6-CB4-CB3	-9.90	88.70	111.78
15	X	302	CDL	CB6-CB4-CB3	-9.67	89.23	111.78
15	S	301	CDL	CB6-CB4-CB3	-9.66	89.26	111.78
15	T	201	CDL	OB6-CB4-CB6	9.23	141.46	108.34
15	Z	202	CDL	OB6-CB4-CB6	9.23	141.46	108.34
15	Z	203	CDL	OB6-CB4-CB3	-8.35	78.39	108.34
14	L	602	HEA	C12-C11-C3B	8.17	124.90	112.12
14	R	602	HEA	CAD-C3D-C4D	8.13	138.87	124.70
15	X	302	CDL	OB6-CB4-CB3	-8.00	79.66	108.34
15	S	301	CDL	OB6-CB4-CB3	-7.99	79.68	108.34
21	I	301	HEC	CBB-CAB-C3B	-7.59	109.74	127.49
15	S	301	CDL	OB6-CB4-CB6	7.22	134.25	108.34
15	X	302	CDL	OB6-CB4-CB6	7.22	134.24	108.34
15	Z	203	CDL	OB6-CB4-CB6	6.87	132.98	108.34
21	O	301	HEC	CBB-CAB-C3B	-6.50	112.28	127.49
14	L	602	HEA	CMC-C2C-C1C	-6.14	119.45	128.46
14	L	602	HEA	CMC-C2C-C3C	6.09	136.85	124.68
14	L	602	HEA	CAD-C3D-C4D	5.95	135.07	124.70
22	Y	503	9YF	O6-C6-C7	5.92	124.33	110.38
22	M	502	9YF	O6-C6-C7	5.92	124.33	110.38
14	R	603	HEA	CMC-C2C-C1C	-5.87	119.85	128.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
14	R	603	HEA	CMC-C2C-C3C	5.82	136.32	124.68
21	O	302	HEC	CBC-CAC-C3C	-5.77	113.99	127.49
14	R	602	HEA	CMC-C2C-C3C	5.74	136.15	124.68
21	I	301	HEC	CBC-CAC-C3C	-5.69	114.16	127.49
14	R	602	HEA	CMC-C2C-C1C	-5.50	120.40	128.46
14	R	602	HEA	C12-C11-C3B	5.48	120.68	112.12
21	I	302	HEC	CBC-CAC-C3C	-5.45	114.73	127.49
22	Y	502	9YF	O9-C8-C9	5.37	123.10	111.48
22	M	501	9YF	O9-C8-C9	5.36	123.07	111.48
21	O	301	HEC	CBC-CAC-C3C	-5.34	115.00	127.49
21	I	302	HEC	CBB-CAB-C3B	-5.29	115.12	127.49
21	O	302	HEC	CBB-CAB-C3B	-5.01	115.76	127.49
20	G	302	9XX	O1-C18-C19	4.91	122.10	111.48
14	R	603	HEA	C3D-C4D-ND	4.71	114.91	110.35
14	L	602	HEA	O11-C11-C3B	-4.67	102.70	111.26
15	T	201	CDL	OB6-CB4-CB3	-4.65	91.66	108.34
17	Z	201	MQ9	C7-C8-C9	-4.65	118.83	126.83
15	Z	202	CDL	OB6-CB4-CB3	-4.64	91.69	108.34
14	L	603	HEA	CMC-C2C-C3C	4.64	133.96	124.68
20	D	302	9XX	O1-C18-C19	4.64	121.52	111.48
22	c	203	9YF	O9-C8-C9	4.55	121.32	111.48
22	W	203	9YF	O9-C8-C9	4.52	121.27	111.48
15	Z	203	CDL	OA6-CA5-C11	4.52	121.25	111.48
15	T	201	CDL	OB6-CB5-C51	4.49	121.20	111.48
15	Z	202	CDL	OB6-CB5-C51	4.48	121.18	111.48
17	F	707	MQ9	C15-C14-C16	4.46	122.98	115.23
14	L	603	HEA	C3D-C4D-ND	4.44	114.64	110.35
15	Z	202	CDL	OA6-CA5-C11	4.37	120.94	111.48
15	T	201	CDL	OA6-CA5-C11	4.37	120.93	111.48
14	R	602	HEA	CAD-C3D-C2D	-4.24	119.92	127.87
20	W	202	9XX	O1-C18-C19	4.22	120.61	111.48
18	J	202	9Y0	O7-C21-C22	4.18	120.52	111.48
15	S	301	CDL	OB6-CB5-C51	4.13	120.42	111.48
15	X	302	CDL	OB6-CB5-C51	4.12	120.40	111.48
14	L	603	HEA	CMC-C2C-C1C	-4.09	122.46	128.46
14	R	603	HEA	CHA-C4D-C3D	-4.05	118.86	124.77
22	Y	503	9YF	O9-C8-C9	4.01	120.15	111.48
14	L	602	HEA	C3D-C4D-ND	4.00	114.21	110.35
22	M	502	9YF	O9-C8-C9	3.99	120.12	111.48
14	R	603	HEA	C12-C11-C3B	-3.98	105.91	112.12
18	X	303	9Y0	O7-C21-C22	3.94	120.01	111.48
21	O	302	HEC	CMB-C2B-C1B	-3.94	122.68	128.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
14	R	602	HEA	C4D-C3D-C2D	-3.91	101.20	106.89
14	L	603	HEA	CHA-C4D-C3D	-3.90	119.09	124.77
18	F	706	9Y0	O7-C21-C22	3.89	119.90	111.48
18	S	302	9Y0	O7-C21-C22	3.83	119.76	111.48
15	Z	203	CDL	OB6-CB5-C51	3.78	119.65	111.48
17	F	707	MQ9	C45-C44-C46	3.78	121.78	115.23
22	I	304	9YF	O9-C8-C9	3.78	119.65	111.48
22	O	303	9YF	O9-C8-C9	3.77	119.63	111.48
22	Y	503	9YF	O11-C25-C26	3.73	123.22	111.83
22	M	502	9YF	O11-C25-C26	3.73	123.20	111.83
15	X	302	CDL	OA6-CA5-C11	3.71	119.52	111.48
14	L	602	HEA	C4D-C3D-C2D	-3.70	101.50	106.89
15	S	301	CDL	OA6-CA5-C11	3.70	119.49	111.48
21	I	302	HEC	CMC-C2C-C1C	-3.67	123.08	128.46
20	c	202	9XX	O1-C18-C19	3.65	119.39	111.48
14	R	602	HEA	C3D-C4D-ND	3.64	113.87	110.35
21	O	301	HEC	CMC-C2C-C1C	-3.62	123.15	128.46
14	R	603	HEA	CAD-C3D-C4D	3.60	130.97	124.70
17	F	707	MQ9	C11-C9-C8	3.57	129.18	121.17
14	R	603	HEA	C4D-C3D-C2D	-3.56	101.71	106.89
14	R	602	HEA	C26-C15-C14	-3.55	114.50	123.63
17	F	708	MQ9	C50-C49-C48	-3.55	112.01	122.66
21	O	302	HEC	CMC-C2C-C1C	-3.49	123.35	128.46
14	L	602	HEA	C26-C15-C16	3.47	121.24	115.23
18	P	202	9Y0	O7-C21-C22	3.46	118.97	111.48
17	E	604	MQ9	C12-C13-C14	-3.45	119.72	127.62
17	F	709	MQ9	C12-C13-C14	-3.41	119.81	127.62
17	F	708	MQ9	C8-C7-C6	3.41	120.48	112.08
17	F	709	MQ9	C30-C29-C31	3.36	121.06	115.23
14	L	603	HEA	C4D-C3D-C2D	-3.35	102.01	106.89
17	F	709	MQ9	C17-C18-C19	-3.30	120.07	127.62
15	Z	202	CDL	CB6-CB4-CB3	-3.30	104.09	111.78
17	E	604	MQ9	C17-C18-C19	-3.29	120.08	127.62
17	Z	201	MQ9	C40-C39-C41	-3.29	109.52	115.23
17	F	708	MQ9	C15-C14-C16	3.29	120.94	115.23
15	T	201	CDL	CB6-CB4-CB3	-3.29	104.12	111.78
14	R	602	HEA	C26-C15-C16	3.28	120.93	115.23
15	T	201	CDL	CA4-OA6-CA5	-3.27	109.96	117.80
22	M	501	9YF	O11-C25-C26	3.27	121.80	111.83
15	Z	202	CDL	CA4-OA6-CA5	-3.26	109.99	117.80
22	Y	502	9YF	O11-C25-C26	3.26	121.76	111.83
17	F	708	MQ9	C51-C49-C50	3.25	122.07	114.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
22	O	303	9YF	O11-C25-C26	3.20	121.59	111.83
22	I	304	9YF	O11-C25-C26	3.19	121.57	111.83
17	F	707	MQ9	C8-C7-C6	3.18	119.92	112.08
17	E	604	MQ9	C32-C33-C34	-3.18	120.34	127.62
17	Z	201	MQ9	C42-C43-C44	-3.17	120.36	127.62
14	L	602	HEA	C26-C15-C14	-3.17	115.48	123.63
17	E	603	MQ9	C17-C18-C19	-3.17	120.37	127.62
14	L	603	HEA	CAD-C3D-C4D	3.15	130.19	124.70
17	F	709	MQ9	C32-C33-C34	-3.14	120.43	127.62
15	L	604	CDL	OA5-PA1-OA3	-3.14	96.50	108.94
18	J	203	9Y0	O7-C21-C22	3.14	118.27	111.48
17	F	701	MQ9	C17-C18-C19	-3.13	120.45	127.62
15	L	604	CDL	OA2-PA1-OA3	3.11	121.25	108.94
18	P	202	9Y0	C29-C28-C27	3.10	130.05	114.37
14	R	603	HEA	CAA-CBA-CGA	-3.06	105.59	113.83
17	F	709	MQ9	C35-C34-C36	3.05	120.52	115.23
20	G	302	9XX	O-C15-C14	3.05	121.13	111.83
17	E	604	MQ9	C30-C29-C31	3.04	120.50	115.23
17	Z	201	MQ9	C17-C18-C19	-3.03	120.68	127.62
21	I	301	HEC	CMC-C2C-C1C	-3.02	124.03	128.46
20	D	302	9XX	O-C15-C14	3.00	120.97	111.83
17	Z	201	MQ9	C12-C13-C14	-2.96	120.85	127.62
17	F	707	MQ9	O1-C1-C2	-2.95	116.85	121.57
14	L	602	HEA	OMA-CMA-C3A	-2.92	117.88	124.80
17	F	707	MQ9	C20-C19-C21	2.92	120.30	115.23
15	T	201	CDL	OB8-CB7-C71	2.91	120.71	111.83
15	Z	202	CDL	OB8-CB7-C71	2.90	120.69	111.83
17	Z	201	MQ9	C5M-C5-C6	-2.89	119.70	124.45
17	E	604	MQ9	C35-C34-C36	2.88	120.22	115.23
14	L	603	HEA	CMD-C2D-C1D	-2.86	120.56	125.03
15	Z	203	CDL	OB8-CB7-C71	2.86	120.55	111.83
17	F	701	MQ9	C42-C43-C44	-2.84	121.11	127.62
17	E	604	MQ9	C15-C14-C16	2.84	120.16	115.23
14	L	602	HEA	C17-C18-C19	-2.84	121.12	127.62
18	X	303	9Y0	O5-C5-C6	2.84	120.50	111.83
17	F	709	MQ9	C27-C28-C29	-2.84	121.12	127.62
17	F	708	MQ9	C42-C41-C39	2.84	122.59	113.19
17	F	709	MQ9	C15-C14-C16	2.84	120.15	115.23
14	R	602	HEA	OMA-CMA-C3A	-2.84	118.08	124.80
17	E	604	MQ9	C27-C28-C29	-2.83	121.14	127.62
14	L	602	HEA	CHA-C4D-C3D	-2.83	120.65	124.77
14	R	602	HEA	C3B-C4B-NB	2.82	113.08	109.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
17	I	303	MQ9	C7-C8-C9	-2.82	121.98	126.83
17	Z	201	MQ9	C22-C23-C24	-2.81	121.18	127.62
17	F	708	MQ9	C42-C43-C44	-2.80	121.21	127.62
17	E	603	MQ9	C42-C43-C44	-2.80	121.22	127.62
15	T	201	CDL	OA8-CA7-C31	2.80	120.37	111.83
18	J	202	9Y0	O5-C5-C6	2.79	120.34	111.83
17	E	604	MQ9	C7-C8-C9	-2.79	122.03	126.83
15	Z	202	CDL	OA8-CA7-C31	2.78	120.31	111.83
17	F	707	MQ9	C22-C23-C24	-2.78	121.27	127.62
15	X	302	CDL	OB8-CB7-C71	2.78	120.30	111.83
16	E	602	HEM	C3B-C2B-C1B	2.77	108.49	106.41
18	F	706	9Y0	O5-C5-C6	2.77	120.27	111.83
16	F	703	HEM	C3B-C2B-C1B	2.76	108.49	106.41
15	T	201	CDL	OA6-CA5-OA7	-2.76	117.24	123.70
15	S	301	CDL	OB8-CB7-C71	2.76	120.27	111.83
15	Z	202	CDL	OA6-CA5-OA7	-2.76	117.24	123.70
17	Z	201	MQ9	C32-C33-C34	-2.76	121.30	127.62
17	I	303	MQ9	C5M-C5-C6	-2.76	119.92	124.45
17	F	709	MQ9	C7-C8-C9	-2.74	122.11	126.83
15	Z	203	CDL	OA8-CA7-C31	2.74	120.19	111.83
17	Z	201	MQ9	C7-C6-C5	-2.74	120.20	124.89
14	L	603	HEA	CAA-CBA-CGA	-2.72	106.50	113.83
18	S	302	9Y0	O5-C5-C6	2.71	120.10	111.83
17	E	603	MQ9	C20-C19-C21	2.71	119.93	115.23
17	F	701	MQ9	C20-C19-C21	2.70	119.91	115.23
17	F	707	MQ9	C35-C34-C36	2.70	119.91	115.23
17	F	708	MQ9	C27-C26-C24	2.70	122.12	113.19
15	X	302	CDL	OA8-CA7-C31	2.68	120.01	111.83
20	c	202	9XX	O-C15-C14	2.67	119.99	111.83
15	S	301	CDL	OA8-CA7-C31	2.67	119.97	111.83
21	I	302	HEC	CBD-CAD-C3D	-2.67	108.06	112.54
18	J	203	9Y0	O5-C5-C6	2.66	119.95	111.83
14	L	603	HEA	CMD-C2D-C3D	2.66	133.34	126.15
17	F	707	MQ9	C31-C29-C28	-2.63	115.25	121.17
22	c	203	9YF	O11-C25-C26	2.63	119.86	111.83
14	L	602	HEA	C27-C19-C20	2.63	119.80	115.23
22	W	203	9YF	O11-C25-C26	2.63	119.85	111.83
17	Z	201	MQ9	C35-C34-C36	2.61	119.76	115.23
21	O	301	HEC	CMB-C2B-C1B	-2.60	124.65	128.46
17	F	707	MQ9	C5M-C5-C6	-2.60	120.18	124.45
17	Z	201	MQ9	C30-C29-C31	2.59	119.73	115.23
17	F	707	MQ9	C7-C6-C5	-2.57	120.48	124.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
21	I	301	HEC	CBA-CAA-C2A	-2.57	108.31	112.55
17	I	303	MQ9	C12-C13-C14	-2.57	121.74	127.62
15	X	302	CDL	OB4-PB2-OB3	-2.57	100.49	112.44
15	S	301	CDL	OB4-PB2-OB3	-2.57	100.50	112.44
14	R	602	HEA	CMD-C2D-C1D	-2.56	121.03	125.03
14	R	602	HEA	C27-C19-C20	2.55	119.66	115.23
14	L	602	HEA	CAD-CBD-CGD	-2.55	106.91	113.67
14	L	602	HEA	C3B-C4B-NB	2.55	112.77	109.84
17	E	604	MQ9	C20-C19-C21	2.54	119.64	115.23
15	Z	203	CDL	OA4-PA1-OA3	-2.54	100.62	112.44
17	Z	201	MQ9	C25-C24-C26	2.54	119.64	115.23
20	G	302	9XX	C17-O1-C18	-2.53	114.13	117.78
17	F	707	MQ9	C7-C8-C9	-2.52	122.48	126.83
17	I	303	MQ9	C32-C33-C34	-2.52	121.85	127.62
17	F	709	MQ9	C20-C19-C21	2.52	119.60	115.23
14	L	602	HEA	CMD-C2D-C1D	-2.52	121.10	125.03
15	T	201	CDL	OB6-CB5-OB7	-2.52	117.82	123.70
15	Z	202	CDL	OB6-CB5-OB7	-2.52	117.82	123.70
17	Z	201	MQ9	C11-C9-C8	2.51	126.81	121.17
17	E	604	MQ9	C40-C39-C41	-2.51	110.87	115.23
15	T	201	CDL	OA8-CA7-OA9	-2.51	117.35	123.63
17	I	303	MQ9	C30-C29-C28	-2.50	117.20	123.63
15	Z	202	CDL	OA8-CA7-OA9	-2.50	117.37	123.63
14	R	603	HEA	CMD-C2D-C1D	-2.50	121.13	125.03
17	F	701	MQ9	C27-C28-C29	-2.50	121.91	127.62
17	F	701	MQ9	C5M-C5-C6	-2.48	120.37	124.45
17	E	603	MQ9	C27-C28-C29	-2.48	121.95	127.62
21	I	302	HEC	CMB-C2B-C1B	-2.47	124.83	128.46
15	T	201	CDL	OA4-PA1-OA3	-2.47	100.95	112.44
14	R	602	HEA	C17-C18-C19	-2.47	121.97	127.62
15	Z	202	CDL	OA4-PA1-OA3	-2.47	100.95	112.44
22	Y	503	9YF	O3-C3-C4	-2.47	104.56	110.38
14	R	602	HEA	C4B-C3B-C2B	-2.46	103.30	107.44
17	E	604	MQ9	C45-C44-C43	-2.46	117.30	123.63
17	E	603	MQ9	C5M-C5-C6	-2.46	120.41	124.45
17	E	603	MQ9	C7-C6-C5	-2.46	120.67	124.89
17	F	707	MQ9	C10-C9-C11	-2.46	110.96	115.23
15	Z	203	CDL	OB4-PB2-OB3	-2.46	101.01	112.44
17	F	707	MQ9	C40-C39-C41	-2.44	110.99	115.23
22	M	502	9YF	O3-C3-C4	-2.44	104.62	110.38
17	E	603	MQ9	C22-C23-C24	-2.44	122.03	127.62
21	O	302	HEC	CBA-CAA-C2A	-2.43	108.54	112.55

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
17	Z	201	MQ9	C45-C44-C46	2.43	119.45	115.23
21	O	301	HEC	C1D-C2D-C3D	-2.43	105.31	107.00
17	F	701	MQ9	C7-C6-C5	-2.43	120.73	124.89
17	I	303	MQ9	C20-C19-C21	2.43	119.44	115.23
21	O	302	HEC	CBD-CAD-C3D	-2.43	108.46	112.54
21	O	302	HEC	CMB-C2B-C3B	2.43	128.67	125.82
16	F	703	HEM	C3B-C4B-NB	-2.42	107.73	109.47
17	F	701	MQ9	C32-C33-C34	-2.41	122.10	127.62
16	F	703	HEM	C1B-NB-C4B	2.41	108.06	105.21
20	W	202	9XX	O-C15-O6	2.41	129.65	123.63
17	F	701	MQ9	C22-C23-C24	-2.40	122.13	127.62
17	Z	201	MQ9	C15-C14-C16	2.39	119.37	115.23
16	F	703	HEM	C4C-CHD-C1D	2.39	125.71	122.56
22	Y	502	9YF	C7-C2-C3	-2.39	107.55	110.86
22	M	501	9YF	C7-C2-C3	-2.38	107.55	110.86
16	E	602	HEM	C1B-NB-C4B	2.38	108.03	105.21
14	R	603	HEA	CMD-C2D-C3D	2.38	132.58	126.15
14	L	602	HEA	CAD-C3D-C2D	-2.38	123.42	127.87
14	L	602	HEA	C4B-C3B-C2B	-2.38	103.44	107.44
22	Y	502	9YF	C30-C31-C32	2.37	122.56	113.62
22	M	501	9YF	C30-C31-C32	2.37	122.55	113.62
17	I	303	MQ9	C22-C23-C24	-2.37	122.20	127.62
17	E	603	MQ9	C32-C33-C34	-2.36	122.22	127.62
21	I	302	HEC	C1D-C2D-C3D	-2.36	105.36	107.00
17	E	603	MQ9	C7-C8-C9	-2.35	122.77	126.83
16	F	703	HEM	C4B-CHC-C1C	2.35	125.66	122.56
17	F	709	MQ9	C22-C23-C24	-2.34	122.27	127.62
17	F	707	MQ9	C46-C44-C43	-2.34	115.92	121.17
17	I	303	MQ9	C51-C49-C50	2.34	119.97	114.59
22	Y	502	9YF	O4-C4-C3	-2.33	104.89	110.38
15	S	301	CDL	OA4-PA1-OA3	-2.33	101.62	112.44
17	E	604	MQ9	C22-C23-C24	-2.32	122.30	127.62
17	F	707	MQ9	C16-C14-C13	-2.32	115.95	121.17
15	X	302	CDL	OA4-PA1-OA3	-2.32	101.63	112.44
17	I	303	MQ9	C15-C14-C16	2.32	119.26	115.23
17	F	701	MQ9	C25-C24-C26	2.32	119.25	115.23
17	F	708	MQ9	O1-C1-C2	-2.32	117.86	121.57
22	M	501	9YF	O4-C4-C3	-2.32	104.91	110.38
17	F	709	MQ9	C45-C44-C43	-2.31	117.68	123.63
15	T	201	CDL	OB4-PB2-OB3	-2.31	101.71	112.44
14	R	602	HEA	CHD-C1D-ND	2.31	127.23	124.37
21	O	302	HEC	C1D-C2D-C3D	-2.31	105.39	107.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
15	Z	202	CDL	OB4-PB2-OB3	-2.30	101.75	112.44
16	E	602	HEM	C3B-C4B-NB	-2.30	107.82	109.47
14	R	603	HEA	C3C-C4C-NC	2.29	112.17	109.21
21	O	301	HEC	CMC-C2C-C3C	-2.29	123.13	125.82
14	R	602	HEA	CAA-CBA-CGA	-2.29	107.66	113.83
17	F	701	MQ9	C7-C8-C9	-2.29	122.89	126.83
14	L	603	HEA	C25-C23-C24	2.28	119.84	114.59
21	O	301	HEC	CBA-CAA-C2A	-2.28	108.79	112.55
17	I	303	MQ9	C7-C6-C5	-2.28	120.98	124.89
20	D	302	9XX	C17-O1-C18	-2.28	114.50	117.78
14	R	602	HEA	CBD-CAD-C3D	2.27	118.81	112.53
22	O	303	9YF	O5-C5-C4	-2.27	105.02	110.38
17	E	603	MQ9	C25-C24-C26	2.27	119.16	115.23
17	F	707	MQ9	C12-C11-C9	2.26	120.68	113.19
22	Y	502	9YF	O9-C8-O10	-2.26	118.42	123.70
17	F	701	MQ9	C15-C14-C16	2.26	119.15	115.23
17	I	303	MQ9	C35-C34-C36	2.25	119.13	115.23
20	c	202	9XX	O1-C17-C37	2.25	112.99	107.96
22	I	304	9YF	O5-C5-C4	-2.24	105.09	110.38
17	F	709	MQ9	C40-C39-C41	-2.24	111.34	115.23
16	E	602	HEM	C4B-CHC-C1C	2.23	125.51	122.56
22	M	501	9YF	O9-C8-O10	-2.23	118.49	123.70
14	L	603	HEA	C3C-C4C-NC	2.23	112.09	109.21
17	F	707	MQ9	C7-C6-C1	2.22	120.92	118.58
17	E	603	MQ9	C15-C14-C16	2.21	119.06	115.23
14	L	602	HEA	C3C-C4C-NC	2.21	112.07	109.21
14	R	603	HEA	C25-C23-C24	2.21	119.67	114.59
16	F	702	HEM	C4D-ND-C1D	2.21	107.82	105.21
21	I	301	HEC	C1D-C2D-C3D	-2.20	105.46	107.00
17	Z	201	MQ9	C20-C19-C21	2.20	119.04	115.23
17	E	604	MQ9	C42-C43-C44	-2.19	122.60	127.62
21	I	302	HEC	CMC-C2C-C3C	-2.19	123.24	125.82
22	W	203	9YF	C7-C2-C3	-2.19	107.82	110.86
14	R	602	HEA	C3C-C4C-NC	2.19	112.04	109.21
22	c	203	9YF	C7-C2-C3	-2.19	107.82	110.86
16	E	601	HEM	C4D-ND-C1D	2.19	107.80	105.21
16	E	601	HEM	C3D-C4D-ND	-2.18	107.78	110.17
22	Y	502	9YF	O11-C24-C	2.17	114.66	108.40
21	I	302	HEC	CBA-CAA-C2A	-2.17	108.97	112.55
22	M	501	9YF	O11-C24-C	2.17	114.65	108.40
17	I	303	MQ9	C32-C31-C29	-2.17	106.00	113.19
17	I	303	MQ9	C42-C43-C44	-2.17	122.66	127.62

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
17	I	303	MQ9	C25-C24-C26	2.17	118.99	115.23
14	R	602	HEA	C25-C23-C24	2.16	119.56	114.59
14	L	602	HEA	CAA-CBA-CGA	-2.16	108.01	113.83
17	F	701	MQ9	C12-C13-C14	-2.15	122.70	127.62
14	L	602	HEA	CMD-C2D-C3D	2.14	131.95	126.15
20	D	302	9XX	O1-C17-C16	2.14	111.12	106.21
17	I	303	MQ9	C40-C39-C41	-2.13	111.53	115.23
17	I	303	MQ9	C10-C9-C11	2.13	118.93	115.23
14	L	602	HEA	C25-C23-C24	2.13	119.49	114.59
16	F	702	HEM	C3D-C4D-ND	-2.13	107.84	110.17
14	L	602	HEA	CBD-CAD-C3D	2.13	118.41	112.53
14	L	603	HEA	C12-C11-C3B	-2.12	108.80	112.12
22	M	502	9YF	C7-C6-C5	2.12	114.56	110.83
20	G	302	9XX	O1-C17-C16	2.12	111.08	106.21
16	F	702	HEM	C4B-CHC-C1C	2.11	125.35	122.56
17	F	707	MQ9	C32-C31-C29	-2.11	106.19	113.19
22	Y	503	9YF	C7-C6-C5	2.11	114.53	110.83
20	W	202	9XX	O6-C15-C14	-2.11	115.54	123.78
17	E	603	MQ9	C12-C13-C14	-2.11	122.80	127.62
16	E	602	HEM	C4C-CHD-C1D	2.10	125.33	122.56
17	F	709	MQ9	C7-C6-C5	-2.10	121.30	124.89
15	R	604	CDL	OB4-PB2-OB5	-2.09	98.08	107.57
16	E	602	HEM	CHC-C4B-C3B	2.09	127.77	124.57
17	I	303	MQ9	C17-C18-C19	-2.09	122.85	127.62
16	E	601	HEM	C3C-C2C-C1C	2.08	108.28	106.85
15	R	604	CDL	OA5-PA1-OA3	-2.07	100.72	108.94
14	R	602	HEA	CHD-C1D-C2D	-2.07	121.08	126.94
17	F	707	MQ9	C25-C24-C26	2.06	118.81	115.23
20	c	202	9XX	C25-C26-C27	-2.06	109.12	115.97
15	Z	202	CDL	C58-C57-C56	-2.05	103.99	114.37
17	F	709	MQ9	C10-C9-C11	2.05	118.79	115.23
17	F	701	MQ9	C35-C34-C36	2.05	118.79	115.23
17	E	604	MQ9	C10-C9-C11	2.05	118.79	115.23
14	R	602	HEA	CHB-C1B-C2B	-2.05	121.79	125.03
15	T	201	CDL	C58-C57-C56	-2.05	104.02	114.37
16	E	601	HEM	CMA-C3A-C4A	-2.05	125.46	128.46
14	L	603	HEA	CHB-C1B-C2B	-2.04	121.80	125.03
17	F	701	MQ9	C30-C29-C31	2.04	118.77	115.23
17	E	603	MQ9	C30-C29-C28	-2.04	118.39	123.63
15	L	604	CDL	OB4-PB2-OB5	-2.04	98.34	107.57
16	F	703	HEM	CMA-C3A-C4A	-2.03	125.48	128.46
15	T	201	CDL	C56-C55-C54	-2.03	104.10	114.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
15	Z	202	CDL	C56-C55-C54	-2.03	104.10	114.37
17	E	604	MQ9	C7-C6-C5	-2.03	121.42	124.89
17	E	604	MQ9	C5M-C5-C6	-2.02	121.13	124.45
16	E	602	HEM	CMA-C3A-C4A	-2.02	125.50	128.46
17	F	701	MQ9	C30-C29-C28	-2.02	118.45	123.63
14	R	602	HEA	O11-C11-C3B	-2.02	107.56	111.26
17	F	707	MQ9	C21-C19-C18	-2.01	116.65	121.17
17	F	707	MQ9	C36-C34-C33	-2.01	116.66	121.17
17	E	603	MQ9	C35-C34-C36	2.01	118.72	115.23
17	F	709	MQ9	C42-C43-C44	-2.01	123.03	127.62
20	G	302	9XX	O1-C18-O2	-2.01	119.01	123.70
15	F	705	CDL	OA6-CA5-C11	2.00	115.81	111.48

There are no chirality outliers.

All (1202) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
14	R	602	HEA	C2D-C3D-CAD-CBD
14	R	602	HEA	C4D-C3D-CAD-CBD
14	L	602	HEA	C12-C11-C3B-C2B
15	R	604	CDL	CA3-OA5-PA1-OA2
15	R	604	CDL	CA3-OA5-PA1-OA3
15	R	604	CDL	CA3-OA5-PA1-OA4
15	R	604	CDL	C11-CA5-OA6-CA4
15	R	604	CDL	CB2-OB2-PB2-OB3
15	R	604	CDL	C51-CB5-OB6-CB4
15	E	605	CDL	O1-C1-CB2-OB2
15	E	605	CDL	CA2-C1-CB2-OB2
15	E	605	CDL	CA2-OA2-PA1-OA3
15	E	605	CDL	CA2-OA2-PA1-OA5
15	E	605	CDL	CA3-OA5-PA1-OA2
15	E	605	CDL	C1-CB2-OB2-PB2
15	E	605	CDL	CB2-OB2-PB2-OB3
15	E	605	CDL	CB2-OB2-PB2-OB4
15	E	605	CDL	CB2-OB2-PB2-OB5
15	E	605	CDL	CB3-OB5-PB2-OB2
15	E	605	CDL	CB3-OB5-PB2-OB3
15	E	605	CDL	CB4-CB3-OB5-PB2
15	E	606	CDL	CA2-OA2-PA1-OA5
15	E	606	CDL	CA3-OA5-PA1-OA2
15	E	606	CDL	CA3-OA5-PA1-OA4
15	E	606	CDL	CB2-OB2-PB2-OB4

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Mol	Chain	Res	Type	Atoms
15	E	606	CDL	CB2-OB2-PB2-OB5
15	E	606	CDL	CB3-OB5-PB2-OB4
15	F	704	CDL	O1-C1-CB2-OB2
15	F	704	CDL	CA2-C1-CB2-OB2
15	F	704	CDL	CA2-OA2-PA1-OA3
15	F	704	CDL	CA2-OA2-PA1-OA5
15	F	704	CDL	CA3-OA5-PA1-OA2
15	F	704	CDL	C1-CB2-OB2-PB2
15	F	704	CDL	CB2-OB2-PB2-OB3
15	F	704	CDL	CB2-OB2-PB2-OB4
15	F	704	CDL	CB2-OB2-PB2-OB5
15	F	704	CDL	CB3-OB5-PB2-OB2
15	F	704	CDL	CB3-OB5-PB2-OB3
15	F	704	CDL	CB4-CB3-OB5-PB2
15	F	705	CDL	CA2-OA2-PA1-OA3
15	F	705	CDL	CA2-OA2-PA1-OA4
15	F	705	CDL	CA2-OA2-PA1-OA5
15	F	705	CDL	CA3-OA5-PA1-OA2
15	F	705	CDL	CA3-OA5-PA1-OA4
15	F	705	CDL	CB3-OB5-PB2-OB2
15	F	705	CDL	CB3-OB5-PB2-OB3
15	F	705	CDL	CB3-OB5-PB2-OB4
15	L	604	CDL	CA3-OA5-PA1-OA2
15	L	604	CDL	CA3-OA5-PA1-OA4
15	L	604	CDL	C11-CA5-OA6-CA4
15	L	604	CDL	C31-CA7-OA8-CA6
15	L	604	CDL	CB2-OB2-PB2-OB3
15	L	604	CDL	CB2-OB2-PB2-OB5
15	L	604	CDL	OB7-CB5-OB6-CB4
15	S	301	CDL	CA3-OA5-PA1-OA2
15	S	301	CDL	CA3-OA5-PA1-OA3
15	S	301	CDL	CB2-OB2-PB2-OB3
15	S	301	CDL	CB2-OB2-PB2-OB4
15	S	301	CDL	CB2-OB2-PB2-OB5
15	S	301	CDL	CB3-OB5-PB2-OB2
15	S	301	CDL	CB3-OB5-PB2-OB3
15	S	301	CDL	CB3-OB5-PB2-OB4
15	S	301	CDL	OB7-CB5-OB6-CB4
15	T	201	CDL	CA3-OA5-PA1-OA2
15	T	201	CDL	CA3-OA5-PA1-OA3
15	T	201	CDL	OA6-CA4-CA6-OA8
15	T	201	CDL	C11-CA5-OA6-CA4

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Mol	Chain	Res	Type	Atoms
15	T	201	CDL	C51-CB5-OB6-CB4
15	T	202	CDL	CA2-OA2-PA1-OA4
15	T	202	CDL	CA2-OA2-PA1-OA5
15	T	202	CDL	OA6-CA4-CA6-OA8
15	T	202	CDL	CB3-OB5-PB2-OB2
15	T	202	CDL	CB3-OB5-PB2-OB4
15	T	202	CDL	C51-CB5-OB6-CB4
15	T	203	CDL	O1-C1-CA2-OA2
15	T	203	CDL	CA2-C1-CB2-OB2
15	T	203	CDL	OA7-CA5-OA6-CA4
15	T	203	CDL	C11-CA5-OA6-CA4
15	T	203	CDL	CB3-OB5-PB2-OB2
15	T	203	CDL	CB3-OB5-PB2-OB3
15	P	201	CDL	CA2-OA2-PA1-OA3
15	P	201	CDL	CA2-OA2-PA1-OA4
15	P	201	CDL	CA2-OA2-PA1-OA5
15	P	201	CDL	CB2-OB2-PB2-OB3
15	P	201	CDL	CB2-OB2-PB2-OB4
15	P	201	CDL	CB2-OB2-PB2-OB5
15	X	301	CDL	CA2-OA2-PA1-OA4
15	X	301	CDL	CA2-OA2-PA1-OA5
15	X	301	CDL	OA6-CA4-CA6-OA8
15	X	301	CDL	CB3-OB5-PB2-OB2
15	X	301	CDL	CB3-OB5-PB2-OB4
15	X	301	CDL	C51-CB5-OB6-CB4
15	X	302	CDL	CA3-OA5-PA1-OA2
15	X	302	CDL	CA3-OA5-PA1-OA3
15	X	302	CDL	CB2-OB2-PB2-OB3
15	X	302	CDL	CB2-OB2-PB2-OB4
15	X	302	CDL	CB2-OB2-PB2-OB5
15	X	302	CDL	CB3-OB5-PB2-OB2
15	X	302	CDL	CB3-OB5-PB2-OB3
15	X	302	CDL	CB3-OB5-PB2-OB4
15	X	302	CDL	OB7-CB5-OB6-CB4
15	Z	202	CDL	CA3-OA5-PA1-OA2
15	Z	202	CDL	CA3-OA5-PA1-OA3
15	Z	202	CDL	OA6-CA4-CA6-OA8
15	Z	202	CDL	C11-CA5-OA6-CA4
15	Z	202	CDL	C51-CB5-OB6-CB4
15	Z	203	CDL	O1-C1-CB2-OB2
15	Z	203	CDL	CA2-OA2-PA1-OA3
15	Z	203	CDL	CA2-OA2-PA1-OA4

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Mol	Chain	Res	Type	Atoms
15	Z	203	CDL	CA2-OA2-PA1-OA5
15	Z	203	CDL	OA7-CA5-OA6-CA4
15	Z	203	CDL	C11-CA5-OA6-CA4
15	J	201	CDL	CA2-OA2-PA1-OA3
15	J	201	CDL	CA2-OA2-PA1-OA4
15	J	201	CDL	CA2-OA2-PA1-OA5
15	J	201	CDL	CB2-OB2-PB2-OB3
15	J	201	CDL	CB2-OB2-PB2-OB4
15	J	201	CDL	CB2-OB2-PB2-OB5
17	E	603	MQ9	C9-C11-C12-C13
18	F	706	9Y0	C22-C21-O7-C1
18	F	706	9Y0	O6-C21-O7-C1
18	S	302	9Y0	O1-C3-C4-N
18	P	202	9Y0	C22-C21-O7-C1
18	P	202	9Y0	O1-C3-C4-N
18	P	202	9Y0	C3-O1-P-O
18	X	303	9Y0	O1-C3-C4-N
18	J	202	9Y0	C22-C21-O7-C1
18	J	202	9Y0	O6-C21-O7-C1
18	J	202	9Y0	C2-O3-P-O
18	J	202	9Y0	C2-O3-P-O1
18	J	202	9Y0	C2-O3-P-O2
18	J	203	9Y0	O1-C3-C4-N
20	D	302	9XX	C19-C18-O1-C17
20	G	302	9XX	C19-C18-O1-C17
20	c	202	9XX	O-C16-C17-O1
20	c	202	9XX	C37-C17-O1-C18
20	c	202	9XX	C19-C18-O1-C17
20	c	202	9XX	O2-C18-O1-C17
20	W	202	9XX	O-C16-C17-O1
22	O	303	9YF	C-C1-O-P
22	O	303	9YF	C9-C8-O9-C
22	c	203	9YF	C2-O2-P-O
22	c	203	9YF	C2-O2-P-O8
22	c	203	9YF	C1-O-P-O1
22	c	203	9YF	C1-O-P-O2
22	c	203	9YF	C1-O-P-O8
22	c	203	9YF	C9-C8-O9-C
22	I	304	9YF	C-C1-O-P
22	I	304	9YF	C9-C8-O9-C
22	Y	502	9YF	C1-O-P-O1
22	Y	502	9YF	C1-O-P-O2

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Mol	Chain	Res	Type	Atoms
22	Y	502	9YF	C9-C8-O9-C
22	Y	503	9YF	C1-O-P-O8
22	Y	503	9YF	C9-C8-O9-C
22	W	203	9YF	C2-O2-P-O
22	W	203	9YF	C2-O2-P-O8
22	W	203	9YF	C1-O-P-O1
22	W	203	9YF	C1-O-P-O2
22	W	203	9YF	C1-O-P-O8
22	W	203	9YF	C9-C8-O9-C
22	M	501	9YF	C1-O-P-O1
22	M	501	9YF	C1-O-P-O2
22	M	501	9YF	C9-C8-O9-C
22	M	502	9YF	C1-O-P-O8
22	M	502	9YF	C9-C8-O9-C
15	R	604	CDL	OA9-CA7-OA8-CA6
15	L	604	CDL	OA9-CA7-OA8-CA6
20	W	202	9XX	O6-C15-O-C16
15	R	604	CDL	C31-CA7-OA8-CA6
15	T	201	CDL	OA9-CA7-OA8-CA6
15	T	202	CDL	OA9-CA7-OA8-CA6
15	T	203	CDL	OA9-CA7-OA8-CA6
15	T	203	CDL	OB9-CB7-OB8-CB6
15	X	301	CDL	OA9-CA7-OA8-CA6
15	Z	202	CDL	OA9-CA7-OA8-CA6
15	Z	203	CDL	OA9-CA7-OA8-CA6
15	Z	203	CDL	OB9-CB7-OB8-CB6
22	O	303	9YF	O12-C25-O11-C24
22	I	304	9YF	O12-C25-O11-C24
22	Y	502	9YF	O12-C25-O11-C24
22	M	501	9YF	O12-C25-O11-C24
15	R	604	CDL	OA7-CA5-OA6-CA4
15	R	604	CDL	OB7-CB5-OB6-CB4
15	E	605	CDL	OB7-CB5-OB6-CB4
15	E	606	CDL	OB7-CB5-OB6-CB4
15	F	704	CDL	OB7-CB5-OB6-CB4
15	F	705	CDL	OA7-CA5-OA6-CA4
15	L	604	CDL	OA7-CA5-OA6-CA4
15	T	201	CDL	OA7-CA5-OA6-CA4
15	T	201	CDL	OB7-CB5-OB6-CB4
15	T	202	CDL	OB7-CB5-OB6-CB4
15	X	301	CDL	OB7-CB5-OB6-CB4
15	Z	202	CDL	OA7-CA5-OA6-CA4

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Mol	Chain	Res	Type	Atoms
15	Z	202	CDL	OB7-CB5-OB6-CB4
18	P	202	9Y0	O6-C21-O7-C1
20	D	302	9XX	O2-C18-O1-C17
20	G	302	9XX	O2-C18-O1-C17
22	O	303	9YF	O10-C8-O9-C
22	c	203	9YF	O10-C8-O9-C
22	I	304	9YF	O10-C8-O9-C
22	Y	502	9YF	O10-C8-O9-C
22	Y	503	9YF	O10-C8-O9-C
22	W	203	9YF	O10-C8-O9-C
22	M	501	9YF	O10-C8-O9-C
22	M	502	9YF	O10-C8-O9-C
15	T	202	CDL	C31-CA7-OA8-CA6
15	T	203	CDL	C31-CA7-OA8-CA6
15	X	301	CDL	C31-CA7-OA8-CA6
15	Z	203	CDL	C71-CB7-OB8-CB6
18	X	303	9Y0	C6-C5-O5-C
18	J	202	9Y0	C6-C5-O5-C
20	W	202	9XX	C14-C15-O-C16
22	O	303	9YF	C26-C25-O11-C24
22	I	304	9YF	C26-C25-O11-C24
22	Y	502	9YF	C26-C25-O11-C24
22	M	501	9YF	C26-C25-O11-C24
15	E	605	CDL	C51-CB5-OB6-CB4
15	F	704	CDL	C51-CB5-OB6-CB4
15	F	705	CDL	C11-CA5-OA6-CA4
15	L	604	CDL	C51-CB5-OB6-CB4
15	S	301	CDL	C51-CB5-OB6-CB4
15	X	302	CDL	C51-CB5-OB6-CB4
14	L	602	HEA	C26-C15-C16-C17
17	F	707	MQ9	C15-C14-C16-C17
14	L	602	HEA	C14-C15-C16-C17
17	F	707	MQ9	C13-C14-C16-C17
22	Y	503	9YF	O12-C25-O11-C24
22	M	502	9YF	O12-C25-O11-C24
15	T	201	CDL	C31-CA7-OA8-CA6
15	T	203	CDL	C71-CB7-OB8-CB6
15	Z	202	CDL	C31-CA7-OA8-CA6
15	Z	203	CDL	C31-CA7-OA8-CA6
18	F	706	9Y0	C6-C5-O5-C
18	S	302	9Y0	C6-C5-O5-C
22	Y	503	9YF	C26-C25-O11-C24

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Mol	Chain	Res	Type	Atoms
22	M	502	9YF	C26-C25-O11-C24
18	F	706	9Y0	O4-C5-O5-C
18	X	303	9Y0	O4-C5-O5-C
18	J	202	9Y0	O4-C5-O5-C
18	S	302	9Y0	O6-C21-O7-C1
15	E	606	CDL	O1-C1-CB2-OB2
15	T	201	CDL	O1-C1-CB2-OB2
15	T	203	CDL	O1-C1-CB2-OB2
15	P	201	CDL	O1-C1-CA2-OA2
15	P	201	CDL	O1-C1-CB2-OB2
15	Z	202	CDL	O1-C1-CB2-OB2
15	J	201	CDL	O1-C1-CA2-OA2
15	J	201	CDL	O1-C1-CB2-OB2
22	c	203	9YF	C26-C25-O11-C24
22	W	203	9YF	C26-C25-O11-C24
18	S	302	9Y0	O4-C5-O5-C
15	E	606	CDL	C51-CB5-OB6-CB4
15	T	202	CDL	C11-CA5-OA6-CA4
15	X	301	CDL	C11-CA5-OA6-CA4
18	S	302	9Y0	C22-C21-O7-C1
18	X	303	9Y0	C22-C21-O7-C1
15	T	202	CDL	OA7-CA5-OA6-CA4
15	X	301	CDL	OA7-CA5-OA6-CA4
14	R	603	HEA	C15-C16-C17-C18
14	L	603	HEA	C15-C16-C17-C18
17	E	603	MQ9	C44-C46-C47-C48
17	E	604	MQ9	C29-C31-C32-C33
17	E	604	MQ9	C39-C41-C42-C43
17	F	701	MQ9	C9-C11-C12-C13
17	F	701	MQ9	C44-C46-C47-C48
17	F	707	MQ9	C9-C11-C12-C13
17	F	707	MQ9	C14-C16-C17-C18
17	F	708	MQ9	C14-C16-C17-C18
17	F	709	MQ9	C29-C31-C32-C33
17	F	709	MQ9	C39-C41-C42-C43
17	Z	201	MQ9	C9-C11-C12-C13
17	Z	201	MQ9	C14-C16-C17-C18
17	Z	201	MQ9	C29-C31-C32-C33
17	Z	201	MQ9	C44-C46-C47-C48
17	I	303	MQ9	C14-C16-C17-C18
15	T	203	CDL	C38-C39-C40-C41
15	P	201	CDL	C1-CA2-OA2-PA1

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Mol	Chain	Res	Type	Atoms
15	J	201	CDL	C1-CA2-OA2-PA1
14	L	602	HEA	C3D-CAD-CBD-CGD
15	F	705	CDL	C76-C77-C78-C79
18	J	202	9Y0	C22-C23-C24-C25
15	E	605	CDL	C31-CA7-OA8-CA6
15	F	704	CDL	C31-CA7-OA8-CA6
15	L	604	CDL	C74-C75-C76-C77
22	c	203	9YF	O12-C25-O11-C24
22	W	203	9YF	O12-C25-O11-C24
15	R	604	CDL	C38-C39-C40-C41
15	E	605	CDL	C59-C60-C61-C62
15	F	704	CDL	C59-C60-C61-C62
15	E	606	CDL	C76-C77-C78-C79
15	E	605	CDL	OA9-CA7-OA8-CA6
15	F	704	CDL	OA9-CA7-OA8-CA6
18	X	303	9Y0	O6-C21-O7-C1
15	T	201	CDL	CA2-C1-CB2-OB2
15	P	201	CDL	CA2-C1-CB2-OB2
15	Z	202	CDL	CA2-C1-CB2-OB2
15	Z	203	CDL	CA2-C1-CB2-OB2
15	J	201	CDL	CA2-C1-CB2-OB2
15	R	604	CDL	C71-CB7-OB8-CB6
15	L	604	CDL	C71-CB7-OB8-CB6
15	S	301	CDL	C31-CA7-OA8-CA6
15	X	302	CDL	C31-CA7-OA8-CA6
18	J	203	9Y0	C6-C5-O5-C
15	R	604	CDL	C52-C53-C54-C55
15	P	201	CDL	C55-C56-C57-C58
15	J	201	CDL	C55-C56-C57-C58
15	E	606	CDL	C58-C59-C60-C61
18	P	202	9Y0	C23-C24-C25-C26
15	F	705	CDL	C57-C58-C59-C60
15	T	201	CDL	O1-C1-CA2-OA2
15	Z	202	CDL	O1-C1-CA2-OA2
15	E	605	CDL	C33-C34-C35-C36
15	F	704	CDL	C33-C34-C35-C36
18	P	202	9Y0	C27-C28-C29-C30
15	E	606	CDL	C11-CA5-OA6-CA4
15	P	201	CDL	C51-CB5-OB6-CB4
15	J	201	CDL	C51-CB5-OB6-CB4
15	T	201	CDL	OB6-CB4-CB6-OB8
15	P	201	CDL	OB6-CB4-CB6-OB8

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Mol	Chain	Res	Type	Atoms
15	Z	202	CDL	OB6-CB4-CB6-OB8
15	J	201	CDL	OB6-CB4-CB6-OB8
15	Z	203	CDL	CB7-C71-C72-C73
22	Y	502	9YF	C11-C10-C9-C8
22	M	501	9YF	C11-C10-C9-C8
17	E	603	MQ9	C40-C39-C41-C42
18	P	202	9Y0	C29-C30-C31-C32
15	S	301	CDL	CB7-C71-C72-C73
15	X	302	CDL	CB7-C71-C72-C73
14	L	602	HEA	C4D-C3D-CAD-CBD
17	E	604	MQ9	C9-C11-C12-C13
17	E	604	MQ9	C44-C46-C47-C48
17	F	707	MQ9	C24-C26-C27-C28
17	F	707	MQ9	C29-C31-C32-C33
17	F	707	MQ9	C39-C41-C42-C43
17	F	707	MQ9	C44-C46-C47-C48
17	F	708	MQ9	C29-C31-C32-C33
17	F	709	MQ9	C9-C11-C12-C13
17	F	709	MQ9	C44-C46-C47-C48
17	Z	201	MQ9	C39-C41-C42-C43
15	L	604	CDL	C31-C32-C33-C34
15	R	604	CDL	CB7-C71-C72-C73
15	L	604	CDL	CA5-C11-C12-C13
15	T	201	CDL	CA5-C11-C12-C13
15	Z	202	CDL	CA5-C11-C12-C13
18	J	203	9Y0	C21-C22-C23-C24
20	W	202	9XX	C12-C13-C14-C15
22	Y	503	9YF	C25-C26-C27-C28
22	M	502	9YF	C25-C26-C27-C28
15	R	604	CDL	OB9-CB7-OB8-CB6
15	L	604	CDL	OB9-CB7-OB8-CB6
15	S	301	CDL	OA9-CA7-OA8-CA6
15	X	302	CDL	OA9-CA7-OA8-CA6
22	c	203	9YF	C33-C35-C36-C37
22	W	203	9YF	C33-C35-C36-C37
15	L	604	CDL	CB7-C71-C72-C73
15	S	301	CDL	CA5-C11-C12-C13
15	T	202	CDL	CB7-C71-C72-C73
15	X	301	CDL	CB7-C71-C72-C73
15	X	302	CDL	CA5-C11-C12-C13
18	J	203	9Y0	O4-C5-O5-C
15	R	604	CDL	C31-C32-C33-C34

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Mol	Chain	Res	Type	Atoms
15	R	604	CDL	C58-C59-C60-C61
15	E	606	CDL	OA7-CA5-OA6-CA4
15	L	604	CDL	C61-C62-C63-C64
15	P	201	CDL	OB7-CB5-OB6-CB4
15	J	201	CDL	OB7-CB5-OB6-CB4
15	T	203	CDL	CB2-C1-CA2-OA2
15	P	201	CDL	CB2-C1-CA2-OA2
15	J	201	CDL	CB2-C1-CA2-OA2
15	L	604	CDL	C38-C39-C40-C41
15	Z	203	CDL	CB5-C51-C52-C53
20	W	202	9XX	C19-C18-O1-C17
15	F	705	CDL	C78-C79-C80-C81
20	W	202	9XX	O2-C18-O1-C17
17	I	303	MQ9	C34-C36-C37-C38
22	Y	503	9YF	C9-C10-C11-C12
22	M	502	9YF	C9-C10-C11-C12
14	L	602	HEA	C2D-C3D-CAD-CBD
18	X	303	9Y0	C21-C22-C23-C24
15	T	201	CDL	CB6-CB4-OB6-CB5
15	Z	202	CDL	CB6-CB4-OB6-CB5
15	E	606	CDL	C78-C79-C80-C81
18	F	706	9Y0	C22-C23-C24-C25
15	E	605	CDL	C11-CA5-OA6-CA4
15	F	704	CDL	C11-CA5-OA6-CA4
17	E	603	MQ9	C38-C39-C41-C42
15	E	605	CDL	C55-C56-C57-C58
15	F	704	CDL	C55-C56-C57-C58
20	G	302	9XX	C17-C16-O-C15
15	T	201	CDL	C12-C13-C14-C15
15	Z	202	CDL	C12-C13-C14-C15
18	J	203	9Y0	C9-C10-C11-C12
20	W	202	9XX	C28-C29-C30-C31
22	Y	503	9YF	C26-C27-C28-C29
22	M	502	9YF	C26-C27-C28-C29
15	R	604	CDL	C35-C36-C37-C38
15	R	604	CDL	C55-C56-C57-C58
15	L	604	CDL	C75-C76-C77-C78
22	Y	503	9YF	C35-C36-C37-C38
22	Y	503	9YF	C37-C38-C39-C40
22	M	502	9YF	C35-C36-C37-C38
22	M	502	9YF	C37-C38-C39-C40
15	P	201	CDL	C60-C61-C62-C63

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Mol	Chain	Res	Type	Atoms
15	J	201	CDL	C60-C61-C62-C63
20	c	202	9XX	C31-C32-C33-C34
15	S	301	CDL	C71-CB7-OB8-CB6
15	X	302	CDL	C71-CB7-OB8-CB6
15	E	605	CDL	OA7-CA5-OA6-CA4
15	F	704	CDL	OA7-CA5-OA6-CA4
15	R	604	CDL	C75-C76-C77-C78
15	T	203	CDL	C73-C74-C75-C76
15	E	605	CDL	C56-C57-C58-C59
15	T	203	CDL	C56-C57-C58-C59
15	Z	203	CDL	C37-C38-C39-C40
15	F	704	CDL	C56-C57-C58-C59
15	F	705	CDL	C51-CB5-OB6-CB4
15	P	201	CDL	C11-CA5-OA6-CA4
15	J	201	CDL	C11-CA5-OA6-CA4
15	Z	203	CDL	C52-C53-C54-C55
18	S	302	9Y0	C21-C22-C23-C24
15	E	605	CDL	C75-C76-C77-C78
15	F	704	CDL	C75-C76-C77-C78
15	S	301	CDL	C35-C36-C37-C38
15	T	202	CDL	C59-C60-C61-C62
15	P	201	CDL	C75-C76-C77-C78
15	X	301	CDL	C59-C60-C61-C62
15	X	302	CDL	C35-C36-C37-C38
15	Z	203	CDL	C31-C32-C33-C34
15	J	201	CDL	C75-C76-C77-C78
18	J	203	9Y0	C6-C7-C8-C9
15	T	203	CDL	C32-C33-C34-C35
15	R	604	CDL	C53-C54-C55-C56
15	P	201	CDL	C32-C33-C34-C35
15	J	201	CDL	C32-C33-C34-C35
18	J	202	9Y0	C16-C17-C18-C19
15	S	301	CDL	C74-C75-C76-C77
15	X	302	CDL	C74-C75-C76-C77
18	F	706	9Y0	C15-C16-C17-C18
22	Y	502	9YF	C10-C11-C12-C13
22	M	501	9YF	C10-C11-C12-C13
20	D	302	9XX	C14-C15-O-C16
15	E	605	CDL	CA3-CA4-CA6-OA8
15	F	704	CDL	CA3-CA4-CA6-OA8
15	F	705	CDL	C34-C35-C36-C37
15	T	203	CDL	C74-C75-C76-C77

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Mol	Chain	Res	Type	Atoms
18	P	202	9Y0	C21-C22-C23-C24
15	L	604	CDL	C55-C56-C57-C58
15	T	201	CDL	C51-C52-C53-C54
15	P	201	CDL	C31-C32-C33-C34
15	Z	202	CDL	C51-C52-C53-C54
15	Z	203	CDL	C32-C33-C34-C35
15	J	201	CDL	C31-C32-C33-C34
18	P	202	9Y0	C9-C10-C11-C12
18	J	202	9Y0	C15-C16-C17-C18
20	W	202	9XX	C31-C32-C33-C34
15	F	705	CDL	C52-C53-C54-C55
15	Z	203	CDL	C35-C36-C37-C38
15	L	604	CDL	C76-C77-C78-C79
15	S	301	CDL	C31-C32-C33-C34
15	X	302	CDL	C31-C32-C33-C34
15	P	201	CDL	CB7-C71-C72-C73
15	J	201	CDL	CB7-C71-C72-C73
18	P	202	9Y0	C5-C6-C7-C8
15	E	606	CDL	C34-C35-C36-C37
15	F	705	CDL	C37-C38-C39-C40
15	L	604	CDL	C37-C38-C39-C40
15	S	301	CDL	C72-C73-C74-C75
15	T	203	CDL	C53-C54-C55-C56
15	X	302	CDL	C72-C73-C74-C75
16	E	602	HEM	C3D-CAD-CBD-CGD
15	L	604	CDL	C52-C53-C54-C55
15	P	201	CDL	C54-C55-C56-C57
15	P	201	CDL	C56-C57-C58-C59
15	J	201	CDL	C56-C57-C58-C59
22	O	303	9YF	C35-C36-C37-C38
22	I	304	9YF	C35-C36-C37-C38
15	R	604	CDL	C32-C33-C34-C35
15	E	606	CDL	C52-C53-C54-C55
15	F	705	CDL	C12-C13-C14-C15
15	Z	203	CDL	C11-C12-C13-C14
15	Z	203	CDL	C59-C60-C61-C62
15	J	201	CDL	C54-C55-C56-C57
15	S	301	CDL	OB9-CB7-OB8-CB6
15	X	302	CDL	OB9-CB7-OB8-CB6
15	P	201	CDL	OA7-CA5-OA6-CA4
15	J	201	CDL	OA7-CA5-OA6-CA4
17	F	701	MQ9	C40-C39-C41-C42

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Mol	Chain	Res	Type	Atoms
15	R	604	CDL	C37-C38-C39-C40
15	E	606	CDL	C37-C38-C39-C40
15	E	606	CDL	C53-C54-C55-C56
15	T	201	CDL	C76-C77-C78-C79
15	F	705	CDL	C31-CA7-OA8-CA6
15	L	604	CDL	C11-C12-C13-C14
15	Z	202	CDL	C76-C77-C78-C79
22	O	303	9YF	C26-C27-C28-C29
22	I	304	9YF	C26-C27-C28-C29
22	Y	503	9YF	C27-C28-C29-C30
22	M	502	9YF	C27-C28-C29-C30
15	S	301	CDL	C11-C12-C13-C14
15	X	302	CDL	C11-C12-C13-C14
22	Y	502	9YF	C28-C29-C30-C31
22	M	501	9YF	C28-C29-C30-C31
15	T	202	CDL	C11-C12-C13-C14
15	X	301	CDL	C11-C12-C13-C14
22	Y	503	9YF	C11-C12-C13-C14
22	M	502	9YF	C11-C12-C13-C14
15	T	203	CDL	C11-C12-C13-C14
15	X	301	CDL	C52-C53-C54-C55
18	F	706	9Y0	C29-C30-C31-C32
15	T	202	CDL	C52-C53-C54-C55
18	J	203	9Y0	C22-C23-C24-C25
22	Y	503	9YF	C19-C20-C21-C22
22	M	502	9YF	C19-C20-C21-C22
15	E	606	CDL	CB5-C51-C52-C53
15	J	201	CDL	CA7-C31-C32-C33
15	L	604	CDL	C32-C33-C34-C35
18	J	203	9Y0	C24-C25-C26-C27
15	F	705	CDL	OB7-CB5-OB6-CB4
18	F	706	9Y0	C16-C17-C18-C19
15	E	605	CDL	CA7-C31-C32-C33
15	F	704	CDL	CA7-C31-C32-C33
15	P	201	CDL	CA7-C31-C32-C33
22	O	303	9YF	C11-C10-C9-C8
22	I	304	9YF	C11-C10-C9-C8
15	L	604	CDL	C53-C54-C55-C56
15	S	301	CDL	C60-C61-C62-C63
15	X	302	CDL	C60-C61-C62-C63
15	Z	203	CDL	C73-C74-C75-C76
22	c	203	9YF	C17-C18-C19-C20

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Mol	Chain	Res	Type	Atoms
22	W	203	9YF	C17-C18-C19-C20
21	O	301	HEC	C2D-C3D-CAD-CBD
15	T	201	CDL	C31-C32-C33-C34
15	Z	202	CDL	C31-C32-C33-C34
15	F	705	CDL	C59-C60-C61-C62
18	P	202	9Y0	C6-C7-C8-C9
19	c	201	PLM	C5-C6-C7-C8
21	O	301	HEC	C4D-C3D-CAD-CBD
22	Y	502	9YF	C33-C35-C36-C37
22	M	501	9YF	C33-C35-C36-C37
15	E	605	CDL	CB7-C71-C72-C73
15	L	604	CDL	CB5-C51-C52-C53
22	c	203	9YF	C15-C16-C17-C18
22	W	203	9YF	C15-C16-C17-C18
18	S	302	9Y0	C18-C19-C20-C37
17	E	603	MQ9	C39-C41-C42-C43
17	F	708	MQ9	C39-C41-C42-C43
15	P	201	CDL	C52-C53-C54-C55
15	F	704	CDL	CB7-C71-C72-C73
15	J	201	CDL	C52-C53-C54-C55
15	S	301	CDL	OA6-CA4-CA6-OA8
15	X	302	CDL	OA6-CA4-CA6-OA8
15	E	605	CDL	C12-C13-C14-C15
15	F	704	CDL	C12-C13-C14-C15
15	L	604	CDL	C12-C13-C14-C15
15	P	201	CDL	C57-C58-C59-C60
15	Z	203	CDL	C56-C57-C58-C59
15	J	201	CDL	C57-C58-C59-C60
15	F	705	CDL	C56-C57-C58-C59
18	J	202	9Y0	C6-C7-C8-C9
15	E	605	CDL	C34-C35-C36-C37
15	F	704	CDL	C34-C35-C36-C37
15	T	202	CDL	C55-C56-C57-C58
15	X	301	CDL	C55-C56-C57-C58
19	W	201	PLM	C2-C3-C4-C5
15	P	201	CDL	C74-C75-C76-C77
15	J	201	CDL	C74-C75-C76-C77
15	E	606	CDL	CA2-C1-CB2-OB2
15	F	705	CDL	OA9-CA7-OA8-CA6
20	c	202	9XX	C1-C2-C3-C4
15	T	201	CDL	C59-C60-C61-C62
15	Z	202	CDL	C59-C60-C61-C62

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Mol	Chain	Res	Type	Atoms
15	T	202	CDL	C75-C76-C77-C78
15	X	301	CDL	C75-C76-C77-C78
18	F	706	9Y0	C6-C7-C8-C9
18	P	202	9Y0	C14-C15-C16-C17
15	E	605	CDL	OB5-CB3-CB4-CB6
15	F	704	CDL	OB5-CB3-CB4-CB6
22	O	303	9YF	C24-C-C1-O
22	I	304	9YF	C24-C-C1-O
15	F	704	CDL	C32-C33-C34-C35
15	P	201	CDL	C73-C74-C75-C76
15	X	301	CDL	C38-C39-C40-C41
15	J	201	CDL	C73-C74-C75-C76
22	Y	503	9YF	C31-C32-C33-C35
22	Y	503	9YF	C32-C33-C35-C36
22	M	502	9YF	C31-C32-C33-C35
22	M	502	9YF	C32-C33-C35-C36
15	E	605	CDL	C32-C33-C34-C35
15	T	202	CDL	C38-C39-C40-C41
18	J	202	9Y0	C29-C30-C31-C32
20	D	302	9XX	O6-C15-O-C16
15	T	202	CDL	CA5-C11-C12-C13
15	X	301	CDL	CA5-C11-C12-C13
15	S	301	CDL	C76-C77-C78-C79
15	X	302	CDL	C76-C77-C78-C79
18	J	203	9Y0	C16-C17-C18-C19
15	F	704	CDL	C71-C72-C73-C74
15	E	605	CDL	C71-C72-C73-C74
15	T	203	CDL	C31-C32-C33-C34
15	E	605	CDL	CB3-CB4-CB6-OB8
15	F	704	CDL	CB3-CB4-CB6-OB8
15	S	301	CDL	CB3-CB4-CB6-OB8
15	T	202	CDL	CA3-CA4-CA6-OA8
15	P	201	CDL	CA3-CA4-CA6-OA8
15	P	201	CDL	CB3-CB4-CB6-OB8
15	X	301	CDL	CA3-CA4-CA6-OA8
15	X	302	CDL	CB3-CB4-CB6-OB8
15	J	201	CDL	CA3-CA4-CA6-OA8
15	J	201	CDL	CB3-CB4-CB6-OB8
17	F	708	MQ9	C34-C36-C37-C38
18	X	303	9Y0	O5-C-C1-C2
22	c	203	9YF	C1-C-C24-O11
22	W	203	9YF	C1-C-C24-O11

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Mol	Chain	Res	Type	Atoms
15	R	604	CDL	C72-C73-C74-C75
20	G	302	9XX	C14-C15-O-C16
15	Z	203	CDL	C72-C73-C74-C75
15	P	201	CDL	C76-C77-C78-C79
15	J	201	CDL	C76-C77-C78-C79
22	Y	502	9YF	C26-C27-C28-C29
22	M	501	9YF	C26-C27-C28-C29
15	T	201	CDL	CB5-C51-C52-C53
15	Z	202	CDL	CB5-C51-C52-C53
15	Z	203	CDL	CA7-C31-C32-C33
18	P	202	9Y0	C26-C27-C28-C29
17	F	701	MQ9	C38-C39-C41-C42
17	Z	201	MQ9	C12-C11-C9-C8
15	T	203	CDL	C57-C58-C59-C60
15	E	605	CDL	C72-C73-C74-C75
15	F	704	CDL	C72-C73-C74-C75
15	X	302	CDL	C34-C35-C36-C37
15	S	301	CDL	C34-C35-C36-C37
15	T	202	CDL	C72-C73-C74-C75
15	X	301	CDL	C72-C73-C74-C75
22	Y	502	9YF	C12-C13-C14-C15
22	M	501	9YF	C12-C13-C14-C15
15	E	605	CDL	CB6-CB4-OB6-CB5
15	F	704	CDL	CB6-CB4-OB6-CB5
20	c	202	9XX	C28-C29-C30-C31
20	c	202	9XX	C24-C25-C26-C27
18	X	303	9Y0	C14-C15-C16-C17
20	W	202	9XX	C20-C21-C22-C23
15	E	605	CDL	OA5-CA3-CA4-OA6
15	E	606	CDL	OA5-CA3-CA4-OA6
15	F	704	CDL	OA5-CA3-CA4-OA6
15	S	301	CDL	OA5-CA3-CA4-OA6
15	X	302	CDL	OA5-CA3-CA4-OA6
18	F	706	9Y0	O7-C1-C2-O3
15	E	606	CDL	C54-C55-C56-C57
20	c	202	9XX	C7-C8-C9-C10
15	X	302	CDL	C77-C78-C79-C80
15	J	201	CDL	C59-C60-C61-C62
15	R	604	CDL	C59-C60-C61-C62
15	S	301	CDL	C77-C78-C79-C80
15	T	202	CDL	C36-C37-C38-C39
15	P	201	CDL	C34-C35-C36-C37

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Mol	Chain	Res	Type	Atoms
15	P	201	CDL	C59-C60-C61-C62
15	X	301	CDL	C36-C37-C38-C39
15	J	201	CDL	C34-C35-C36-C37
22	c	203	9YF	C27-C28-C29-C30
22	W	203	9YF	C27-C28-C29-C30
15	L	604	CDL	C33-C34-C35-C36
15	T	203	CDL	C71-C72-C73-C74
15	F	705	CDL	OB6-CB4-CB6-OB8
15	Z	203	CDL	OB6-CB4-CB6-OB8
18	X	303	9Y0	O5-C-C1-O7
18	J	203	9Y0	O5-C-C1-O7
15	R	604	CDL	C11-C12-C13-C14
18	J	203	9Y0	C32-C33-C34-C35
15	X	301	CDL	C14-C15-C16-C17
15	T	203	CDL	C77-C78-C79-C80
19	G	301	PLM	C4-C5-C6-C7
15	L	604	CDL	C78-C79-C80-C81
15	T	202	CDL	C14-C15-C16-C17
15	T	202	CDL	C54-C55-C56-C57
15	X	301	CDL	C54-C55-C56-C57
15	P	201	CDL	C61-C62-C63-C64
15	J	201	CDL	C61-C62-C63-C64
22	Y	503	9YF	C40-C41-C42-C43
22	M	502	9YF	C40-C41-C42-C43
18	X	303	9Y0	C6-C7-C8-C9
15	R	604	CDL	C39-C40-C41-C42
22	c	203	9YF	C20-C21-C22-C23
17	I	303	MQ9	C15-C14-C16-C17
22	W	203	9YF	C20-C21-C22-C23
22	Y	502	9YF	C18-C19-C20-C21
22	M	501	9YF	C18-C19-C20-C21
22	Y	503	9YF	C31-C32-C33-C34
22	Y	503	9YF	C34-C33-C35-C36
22	M	502	9YF	C31-C32-C33-C34
22	M	502	9YF	C34-C33-C35-C36
15	T	201	CDL	CB4-CB3-OB5-PB2
15	T	202	CDL	C1-CB2-OB2-PB2
15	X	301	CDL	C1-CB2-OB2-PB2
15	Z	202	CDL	CB4-CB3-OB5-PB2
22	Y	502	9YF	C-C1-O-P
22	M	501	9YF	C-C1-O-P
15	R	604	CDL	C54-C55-C56-C57

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Mol	Chain	Res	Type	Atoms
15	T	203	CDL	C54-C55-C56-C57
18	X	303	9Y0	C18-C19-C20-C37
18	J	203	9Y0	C26-C27-C28-C29
19	W	201	PLM	C9-CA-CB-CC
15	Z	202	CDL	C33-C34-C35-C36
15	E	606	CDL	C39-C40-C41-C42
15	F	705	CDL	C58-C59-C60-C61
15	T	201	CDL	C33-C34-C35-C36
18	S	302	9Y0	C6-C7-C8-C9
18	X	303	9Y0	C27-C28-C29-C30
15	X	301	CDL	C76-C77-C78-C79
15	R	604	CDL	C78-C79-C80-C81
15	S	301	CDL	C39-C40-C41-C42
15	X	302	CDL	C39-C40-C41-C42
15	E	606	CDL	OA5-CA3-CA4-CA6
15	T	202	CDL	OB5-CB3-CB4-CB6
15	X	301	CDL	OB5-CB3-CB4-CB6
15	R	604	CDL	C60-C61-C62-C63
15	T	202	CDL	C76-C77-C78-C79
20	c	202	9XX	O1-C18-C19-C20
20	G	302	9XX	C26-C27-C28-C29
15	E	605	CDL	C78-C79-C80-C81
15	F	704	CDL	C78-C79-C80-C81
22	O	303	9YF	C20-C21-C22-C23
22	I	304	9YF	C20-C21-C22-C23
15	T	201	CDL	C36-C37-C38-C39
15	Z	202	CDL	C36-C37-C38-C39
15	T	203	CDL	C52-C53-C54-C55
22	M	502	9YF	C16-C17-C18-C19
15	T	203	CDL	C61-C62-C63-C64
15	Z	203	CDL	C38-C39-C40-C41
22	Y	503	9YF	C16-C17-C18-C19
17	Z	201	MQ9	C12-C11-C9-C10
15	R	604	CDL	C72-C71-CB7-OB8
20	c	202	9XX	O-C16-C17-C37
20	W	202	9XX	O-C16-C17-C37
15	R	604	CDL	C77-C78-C79-C80
14	R	602	HEA	C15-C16-C17-C18
15	L	604	CDL	CB3-CB4-CB6-OB8
15	S	301	CDL	CA3-CA4-CA6-OA8
15	X	302	CDL	CA3-CA4-CA6-OA8
17	F	701	MQ9	C39-C41-C42-C43

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Mol	Chain	Res	Type	Atoms
18	S	302	9Y0	O5-C-C1-C2
18	J	203	9Y0	O5-C-C1-C2
22	O	303	9YF	C1-C-C24-O11
22	I	304	9YF	C1-C-C24-O11
15	F	704	CDL	C53-C54-C55-C56
15	E	606	CDL	CA5-C11-C12-C13
15	T	202	CDL	CA7-C31-C32-C33
15	X	301	CDL	CA7-C31-C32-C33
15	F	704	CDL	C76-C77-C78-C79
15	E	605	CDL	C53-C54-C55-C56
15	S	301	CDL	C59-C60-C61-C62
15	X	302	CDL	C59-C60-C61-C62
15	E	605	CDL	C76-C77-C78-C79
15	R	604	CDL	CB5-C51-C52-C53
15	R	604	CDL	OA5-CA3-CA4-OA6
15	F	705	CDL	OA5-CA3-CA4-OA6
15	T	203	CDL	OB5-CB3-CB4-OB6
18	S	302	9Y0	C14-C15-C16-C17
15	S	301	CDL	C61-C62-C63-C64
15	X	302	CDL	C61-C62-C63-C64
15	L	604	CDL	C72-C71-CB7-OB8
15	T	201	CDL	CB7-C71-C72-C73
15	Z	202	CDL	CB7-C71-C72-C73
15	E	606	CDL	OB6-CB4-CB6-OB8
15	L	604	CDL	OB6-CB4-CB6-OB8
18	S	302	9Y0	O5-C-C1-O7
15	E	605	CDL	C31-C32-C33-C34
15	F	704	CDL	C31-C32-C33-C34
15	L	604	CDL	C35-C36-C37-C38
18	X	303	9Y0	C29-C30-C31-C32
22	M	502	9YF	C15-C16-C17-C18
22	Y	503	9YF	C15-C16-C17-C18
15	R	604	CDL	C73-C74-C75-C76
17	I	303	MQ9	C13-C14-C16-C17
19	c	201	PLM	CA-CB-CC-CD
15	R	604	CDL	C51-C52-C53-C54
20	G	302	9XX	O6-C15-O-C16
22	Y	503	9YF	C14-C15-C16-C17
22	M	502	9YF	C14-C15-C16-C17
15	E	605	CDL	C61-C62-C63-C64
15	F	704	CDL	C61-C62-C63-C64
15	F	705	CDL	C61-C62-C63-C64

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Mol	Chain	Res	Type	Atoms
17	F	708	MQ9	C9-C11-C12-C13
17	F	708	MQ9	C19-C21-C22-C23
18	S	302	9Y0	C29-C30-C31-C32
15	E	606	CDL	C57-C58-C59-C60
18	S	302	9Y0	C27-C28-C29-C30
22	c	203	9YF	C9-C10-C11-C12
22	W	203	9YF	C9-C10-C11-C12
15	T	201	CDL	CB2-C1-CA2-OA2
15	Z	202	CDL	CB2-C1-CA2-OA2
22	O	303	9YF	C27-C28-C29-C30
22	I	304	9YF	C27-C28-C29-C30
15	P	201	CDL	C36-C37-C38-C39
15	T	203	CDL	OB5-CB3-CB4-CB6
15	L	604	CDL	C56-C57-C58-C59
15	J	201	CDL	C36-C37-C38-C39
15	R	604	CDL	C12-C13-C14-C15
15	S	301	CDL	C71-C72-C73-C74
15	X	302	CDL	C71-C72-C73-C74
22	O	303	9YF	C39-C40-C41-C42
22	I	304	9YF	C39-C40-C41-C42
15	F	705	CDL	C52-C51-CB5-OB6
15	P	201	CDL	C12-C13-C14-C15
15	Z	203	CDL	C54-C55-C56-C57
17	Z	201	MQ9	C20-C19-C21-C22
15	L	604	CDL	C73-C74-C75-C76
15	J	201	CDL	C12-C13-C14-C15
19	D	301	PLM	C4-C5-C6-C7
15	T	202	CDL	OB5-CB3-CB4-OB6
15	T	203	CDL	OA5-CA3-CA4-OA6
15	X	301	CDL	OB5-CB3-CB4-OB6
15	F	705	CDL	C39-C40-C41-C42
15	R	604	CDL	CB3-CB4-CB6-OB8
15	F	705	CDL	CB3-CB4-CB6-OB8
15	T	201	CDL	CA3-CA4-CA6-OA8
15	T	201	CDL	CB3-CB4-CB6-OB8
15	Z	202	CDL	CA3-CA4-CA6-OA8
15	Z	202	CDL	CB3-CB4-CB6-OB8
17	F	707	MQ9	C19-C21-C22-C23
16	E	602	HEM	C4B-C3B-CAB-CBB
20	W	202	9XX	C1-C2-C3-C4
18	J	202	9Y0	C19-C20-C37-C38
15	E	605	CDL	OB6-CB4-CB6-OB8

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Mol	Chain	Res	Type	Atoms
15	F	704	CDL	OB6-CB4-CB6-OB8
15	Z	203	CDL	C78-C79-C80-C81
15	X	301	CDL	C73-C74-C75-C76
15	T	202	CDL	C73-C74-C75-C76
18	J	202	9Y0	C5-C6-C7-C8
20	c	202	9XX	C19-C20-C21-C22
20	G	302	9XX	C5-C6-C7-C8
15	F	705	CDL	O1-C1-CB2-OB2
15	S	301	CDL	C33-C34-C35-C36
15	X	302	CDL	C33-C34-C35-C36
15	E	606	CDL	C51-C52-C53-C54
15	T	203	CDL	C58-C59-C60-C61
20	D	302	9XX	C17-C16-O-C15
17	F	707	MQ9	C20-C19-C21-C22
15	E	605	CDL	OA5-CA3-CA4-CA6
15	F	704	CDL	OA5-CA3-CA4-CA6
15	S	301	CDL	OA5-CA3-CA4-CA6
15	X	302	CDL	OA5-CA3-CA4-CA6
22	Y	502	9YF	C19-C20-C21-C22
22	Y	503	9YF	C12-C13-C14-C15
22	M	502	9YF	C12-C13-C14-C15
20	D	302	9XX	C26-C27-C28-C29
15	L	604	CDL	C39-C40-C41-C42
22	M	501	9YF	C19-C20-C21-C22
18	J	203	9Y0	C30-C31-C32-C33
20	c	202	9XX	C6-C7-C8-C9
15	T	202	CDL	CB4-CB3-OB5-PB2
15	X	301	CDL	CB4-CB3-OB5-PB2
15	E	606	CDL	C77-C78-C79-C80
15	T	203	CDL	C59-C60-C61-C62
15	E	606	CDL	C59-C60-C61-C62
15	E	605	CDL	OB5-CB3-CB4-OB6
15	F	704	CDL	OB5-CB3-CB4-OB6
22	O	303	9YF	O9-C-C1-O
22	I	304	9YF	O9-C-C1-O
22	Y	502	9YF	O9-C-C1-O
22	M	501	9YF	O9-C-C1-O
18	P	202	9Y0	C18-C19-C20-C37
20	D	302	9XX	C20-C21-C22-C23
22	Y	503	9YF	C33-C35-C36-C37
22	M	502	9YF	C33-C35-C36-C37
15	R	604	CDL	OB6-CB4-CB6-OB8

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Mol	Chain	Res	Type	Atoms
15	E	605	CDL	OA6-CA4-CA6-OA8
15	F	704	CDL	OA6-CA4-CA6-OA8
15	S	301	CDL	OB6-CB4-CB6-OB8
15	P	201	CDL	OA6-CA4-CA6-OA8
15	X	302	CDL	OB6-CB4-CB6-OB8
15	J	201	CDL	OA6-CA4-CA6-OA8
22	O	303	9YF	O9-C-C24-O11
22	I	304	9YF	O9-C-C24-O11
15	T	202	CDL	C33-C34-C35-C36
15	X	301	CDL	C33-C34-C35-C36
19	G	301	PLM	C7-C8-C9-CA
15	E	606	CDL	C61-C62-C63-C64
22	O	303	9YF	C33-C35-C36-C37
22	I	304	9YF	C33-C35-C36-C37
22	c	203	9YF	C39-C40-C41-C42
15	L	604	CDL	C60-C61-C62-C63
22	W	203	9YF	C39-C40-C41-C42
15	R	604	CDL	CB2-OB2-PB2-OB5
15	E	605	CDL	CB3-OB5-PB2-OB4
15	E	606	CDL	CA2-OA2-PA1-OA3
15	F	704	CDL	CB3-OB5-PB2-OB4
15	F	705	CDL	CB2-OB2-PB2-OB4
15	S	301	CDL	CA3-OA5-PA1-OA4
15	T	201	CDL	CA2-OA2-PA1-OA3
15	T	201	CDL	CB2-OB2-PB2-OB3
15	T	202	CDL	CB2-OB2-PB2-OB3
15	T	202	CDL	CB2-OB2-PB2-OB4
15	T	202	CDL	CB2-OB2-PB2-OB5
15	T	202	CDL	CB3-OB5-PB2-OB3
15	T	203	CDL	CA3-OA5-PA1-OA2
15	T	203	CDL	CA3-OA5-PA1-OA3
15	T	203	CDL	CA3-OA5-PA1-OA4
15	T	203	CDL	CB3-OB5-PB2-OB4
15	X	301	CDL	CB2-OB2-PB2-OB3
15	X	301	CDL	CB2-OB2-PB2-OB4
15	X	301	CDL	CB2-OB2-PB2-OB5
15	X	301	CDL	CB3-OB5-PB2-OB3
15	X	302	CDL	CA3-OA5-PA1-OA4
15	Z	202	CDL	CA2-OA2-PA1-OA3
15	Z	202	CDL	CB2-OB2-PB2-OB3
15	Z	203	CDL	CA3-OA5-PA1-OA2
15	Z	203	CDL	CA3-OA5-PA1-OA3

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Mol	Chain	Res	Type	Atoms
15	Z	203	CDL	CA3-OA5-PA1-OA4
18	P	202	9Y0	C2-O3-P-O1
18	P	202	9Y0	C2-O3-P-O2
18	J	203	9Y0	C2-O3-P-O
22	O	303	9YF	C1-O-P-O1
22	I	304	9YF	C1-O-P-O1
17	F	707	MQ9	C12-C11-C9-C8
17	Z	201	MQ9	C18-C19-C21-C22
15	R	604	CDL	C1-CA2-OA2-PA1
15	E	606	CDL	C1-CA2-OA2-PA1
15	E	606	CDL	C1-CB2-OB2-PB2
15	F	705	CDL	C1-CA2-OA2-PA1
15	S	301	CDL	C1-CA2-OA2-PA1
15	S	301	CDL	C1-CB2-OB2-PB2
15	X	302	CDL	C1-CA2-OA2-PA1
15	X	302	CDL	C1-CB2-OB2-PB2
15	Z	203	CDL	C1-CA2-OA2-PA1
18	F	706	9Y0	C30-C31-C32-C33
19	c	201	PLM	CC-CD-CE-CF
14	L	602	HEA	C12-C11-C3B-C4B
15	F	705	CDL	C73-C74-C75-C76
22	I	304	9YF	C29-C30-C31-C32
15	E	605	CDL	C60-C61-C62-C63
15	F	704	CDL	C60-C61-C62-C63
18	P	202	9Y0	C25-C26-C27-C28
22	O	303	9YF	C29-C30-C31-C32
22	Y	502	9YF	C25-C26-C27-C28
18	S	302	9Y0	C22-C23-C24-C25
18	S	302	9Y0	C13-C14-C15-C16
22	M	501	9YF	C25-C26-C27-C28
15	T	202	CDL	C35-C36-C37-C38
22	I	304	9YF	C18-C19-C20-C21
15	T	203	CDL	CA6-CA4-OA6-CA5
15	X	301	CDL	C35-C36-C37-C38
22	O	303	9YF	C18-C19-C20-C21
15	R	604	CDL	OA5-CA3-CA4-CA6
18	F	706	9Y0	C-C1-C2-O3
20	G	302	9XX	C36-C27-C28-C29
22	M	501	9YF	C16-C17-C18-C19
22	Y	502	9YF	C16-C17-C18-C19
18	P	202	9Y0	C11-C12-C13-C14
18	X	303	9Y0	C13-C14-C15-C16

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Mol	Chain	Res	Type	Atoms
18	J	203	9Y0	C11-C12-C13-C14
22	Y	503	9YF	O9-C-C1-O
22	M	502	9YF	O9-C-C1-O
15	L	604	CDL	C77-C78-C79-C80
17	F	707	MQ9	C12-C11-C9-C10
15	F	705	CDL	C1-CB2-OB2-PB2
22	c	203	9YF	O9-C-C24-O11
22	W	203	9YF	O9-C-C24-O11
15	T	203	CDL	C55-C56-C57-C58
19	D	301	PLM	C7-C8-C9-CA
22	Y	502	9YF	C40-C41-C42-C43
22	M	501	9YF	C40-C41-C42-C43
17	F	707	MQ9	C16-C17-C18-C19
17	F	709	MQ9	C35-C34-C36-C37
17	I	303	MQ9	C29-C31-C32-C33
15	R	604	CDL	C71-C72-C73-C74
18	F	706	9Y0	C19-C20-C37-C38
15	F	705	CDL	C54-C55-C56-C57
20	G	302	9XX	C20-C21-C22-C23
15	F	705	CDL	C38-C39-C40-C41
17	F	709	MQ9	C40-C39-C41-C42
17	F	707	MQ9	C18-C19-C21-C22
15	X	301	CDL	C53-C54-C55-C56
15	T	202	CDL	C53-C54-C55-C56
20	D	302	9XX	C36-C27-C28-C29
15	P	201	CDL	C37-C38-C39-C40
22	Y	502	9YF	C35-C36-C37-C38
22	M	501	9YF	C35-C36-C37-C38
15	J	201	CDL	C37-C38-C39-C40
18	J	203	9Y0	C14-C15-C16-C17
17	F	708	MQ9	C15-C14-C16-C17
15	P	201	CDL	C12-C11-CA5-OA6
15	J	201	CDL	C12-C11-CA5-OA6
15	T	201	CDL	OB5-CB3-CB4-OB6
15	Z	202	CDL	OB5-CB3-CB4-OB6
18	X	303	9Y0	C22-C23-C24-C25
15	Z	203	CDL	C57-C58-C59-C60
18	J	202	9Y0	C7-C8-C9-C10
17	F	708	MQ9	C40-C39-C41-C42
17	F	709	MQ9	C33-C34-C36-C37
18	S	302	9Y0	C5-C6-C7-C8
15	S	301	CDL	C57-C58-C59-C60

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Mol	Chain	Res	Type	Atoms
15	P	201	CDL	C38-C39-C40-C41
15	X	302	CDL	C57-C58-C59-C60
15	J	201	CDL	C38-C39-C40-C41
18	P	202	9Y0	C16-C17-C18-C19
22	I	304	9YF	C37-C38-C39-C40
22	O	303	9YF	C37-C38-C39-C40
22	Y	502	9YF	C37-C38-C39-C40
22	M	501	9YF	C37-C38-C39-C40
15	X	301	CDL	C13-C14-C15-C16
15	T	202	CDL	C13-C14-C15-C16
22	M	502	9YF	C29-C30-C31-C32
22	Y	503	9YF	C29-C30-C31-C32
15	R	604	CDL	C33-C34-C35-C36
15	F	705	CDL	C77-C78-C79-C80
14	R	602	HEA	CAA-CBA-CGA-O1A
15	T	203	CDL	C14-C15-C16-C17
17	F	709	MQ9	C38-C39-C41-C42
18	P	202	9Y0	C24-C25-C26-C27
14	L	602	HEA	CAD-CBD-CGD-O1D
14	L	603	HEA	CAA-CBA-CGA-O1A
18	J	202	9Y0	O7-C1-C2-O3
15	E	605	CDL	CB5-C51-C52-C53
15	F	704	CDL	CB5-C51-C52-C53
14	R	602	HEA	CAD-CBD-CGD-O1D
20	c	202	9XX	O2-C18-C19-C20
17	E	604	MQ9	C40-C39-C41-C42
15	T	202	CDL	OA5-CA3-CA4-CA6
15	X	301	CDL	OA5-CA3-CA4-CA6
18	F	706	9Y0	C7-C8-C9-C10
14	R	602	HEA	CAA-CBA-CGA-O2A
14	L	602	HEA	CAA-CBA-CGA-O1A
22	c	203	9YF	C31-C32-C33-C35
22	W	203	9YF	C31-C32-C33-C35
15	P	201	CDL	C11-C12-C13-C14
15	J	201	CDL	C11-C12-C13-C14
15	T	203	CDL	C39-C40-C41-C42
15	F	704	CDL	C11-C12-C13-C14
15	E	605	CDL	C11-C12-C13-C14
18	S	302	9Y0	C7-C8-C9-C10
14	R	603	HEA	CAA-CBA-CGA-O1A
17	F	701	MQ9	C15-C14-C16-C17
17	Z	201	MQ9	C30-C29-C31-C32

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Mol	Chain	Res	Type	Atoms
17	F	708	MQ9	C13-C14-C16-C17
19	D	301	PLM	C2-C3-C4-C5
19	c	201	PLM	C7-C8-C9-CA
22	I	304	9YF	C30-C31-C32-C33
15	Z	203	CDL	C14-C15-C16-C17
15	X	302	CDL	C55-C56-C57-C58
15	L	604	CDL	C59-C60-C61-C62
15	S	301	CDL	C55-C56-C57-C58
18	J	203	9Y0	C7-C8-C9-C10
19	c	201	PLM	C8-C9-CA-CB
14	L	602	HEA	CAD-CBD-CGD-O2D
22	O	303	9YF	C30-C31-C32-C33
17	E	604	MQ9	C35-C34-C36-C37
14	R	602	HEA	CAD-CBD-CGD-O2D
14	L	602	HEA	CAA-CBA-CGA-O2A
15	L	604	CDL	C1-CB2-OB2-PB2
15	L	604	CDL	CB4-CB3-OB5-PB2
14	L	603	HEA	CAA-CBA-CGA-O2A
15	F	705	CDL	CB7-C71-C72-C73
15	T	203	CDL	C13-C14-C15-C16
15	E	606	CDL	CB3-CB4-CB6-OB8
17	I	303	MQ9	C9-C11-C12-C13
14	R	603	HEA	CAA-CBA-CGA-O2A
19	W	201	PLM	CC-CD-CE-CF
15	T	202	CDL	OA5-CA3-CA4-OA6
15	X	301	CDL	OA5-CA3-CA4-OA6
17	F	709	MQ9	C30-C29-C31-C32
15	R	604	CDL	C72-C71-CB7-OB9
15	X	301	CDL	C56-C57-C58-C59
18	F	706	9Y0	C11-C12-C13-C14
15	F	705	CDL	C60-C61-C62-C63
15	T	202	CDL	C56-C57-C58-C59
20	W	202	9XX	O1-C18-C19-C20
15	Z	203	CDL	C13-C14-C15-C16
16	F	702	HEM	CAD-CBD-CGD-O2D
15	T	203	CDL	CA7-C31-C32-C33
15	F	705	CDL	OA5-CA3-CA4-CA6
15	T	203	CDL	OA5-CA3-CA4-CA6
17	F	708	MQ9	C38-C39-C41-C42
17	Z	201	MQ9	C28-C29-C31-C32
15	R	604	CDL	CB4-CB3-OB5-PB2
15	E	605	CDL	C1-CA2-OA2-PA1

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Mol	Chain	Res	Type	Atoms
15	F	704	CDL	C1-CA2-OA2-PA1
15	L	604	CDL	C1-CA2-OA2-PA1
15	P	201	CDL	CA4-CA3-OA5-PA1
15	J	201	CDL	CA4-CA3-OA5-PA1
15	Z	202	CDL	C78-C79-C80-C81
15	T	203	CDL	C35-C36-C37-C38
18	J	202	9Y0	C24-C25-C26-C27
20	W	202	9XX	C3-C4-C5-C6
15	T	201	CDL	C78-C79-C80-C81
22	W	203	9YF	C13-C14-C15-C16
22	c	203	9YF	C13-C14-C15-C16
15	P	201	CDL	C14-C15-C16-C17
15	J	201	CDL	C14-C15-C16-C17
18	S	302	9Y0	C10-C11-C12-C13
15	F	705	CDL	C33-C34-C35-C36
19	W	201	PLM	C7-C8-C9-CA
15	T	203	CDL	C75-C76-C77-C78
17	E	604	MQ9	C20-C19-C21-C22
15	E	606	CDL	C72-C73-C74-C75
15	T	203	CDL	C52-C51-CB5-OB6
18	P	202	9Y0	C-C1-O7-C21
15	L	604	CDL	C57-C58-C59-C60
15	T	201	CDL	C32-C33-C34-C35
15	Z	202	CDL	C32-C33-C34-C35
17	I	303	MQ9	C12-C11-C9-C10
18	J	203	9Y0	O7-C1-C2-O3
17	F	709	MQ9	C24-C26-C27-C28
15	L	604	CDL	C72-C71-CB7-OB9
17	F	707	MQ9	C45-C44-C46-C47
17	F	709	MQ9	C20-C19-C21-C22
20	W	202	9XX	C2-C3-C4-C5
16	F	702	HEM	CAD-CBD-CGD-O1D
22	Y	503	9YF	O11-C25-C26-C27
22	M	502	9YF	O11-C25-C26-C27
18	J	202	9Y0	C11-C12-C13-C14
17	F	707	MQ9	C25-C24-C26-C27
18	J	203	9Y0	C13-C14-C15-C16
18	J	203	9Y0	C23-C24-C25-C26
17	E	604	MQ9	C24-C26-C27-C28
22	c	203	9YF	C2-O2-P-O1
22	W	203	9YF	C2-O2-P-O1
15	Z	203	CDL	C58-C59-C60-C61

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Mol	Chain	Res	Type	Atoms
15	X	301	CDL	O1-C1-CB2-OB2
15	E	606	CDL	OA9-CA7-OA8-CA6
15	Z	203	CDL	C71-C72-C73-C74
15	S	301	CDL	C12-C11-CA5-OA6
15	X	302	CDL	C12-C11-CA5-OA6
22	O	303	9YF	O11-C25-C26-C27
22	O	303	9YF	O9-C8-C9-C10
22	I	304	9YF	O11-C25-C26-C27
22	I	304	9YF	O9-C8-C9-C10
22	Y	502	9YF	O9-C8-C9-C10
22	M	501	9YF	O9-C8-C9-C10
17	E	603	MQ9	C15-C14-C16-C17
15	T	201	CDL	C74-C75-C76-C77
15	Z	202	CDL	C74-C75-C76-C77
16	E	601	HEM	CAA-CBA-CGA-O2A
22	c	203	9YF	C31-C32-C33-C34
22	W	203	9YF	C31-C32-C33-C34
15	T	202	CDL	O1-C1-CB2-OB2
15	T	203	CDL	CB3-CB4-CB6-OB8
18	F	706	9Y0	C31-C32-C33-C34
22	Y	503	9YF	C18-C19-C20-C21
17	E	604	MQ9	C12-C11-C9-C10
16	E	601	HEM	CAA-CBA-CGA-O1A
20	W	202	9XX	C24-C25-C26-C27
22	M	502	9YF	C18-C19-C20-C21
16	F	702	HEM	CAA-CBA-CGA-O1A
15	L	604	CDL	C12-C11-CA5-OA6
15	P	201	CDL	C32-C31-CA7-OA8
15	J	201	CDL	C32-C31-CA7-OA8
18	J	203	9Y0	C18-C19-C20-C37
20	c	202	9XX	C10-C11-C12-C13
15	T	202	CDL	CA2-C1-CB2-OB2
15	X	301	CDL	CA2-C1-CB2-OB2
17	F	708	MQ9	C31-C32-C33-C34
20	c	202	9XX	C26-C27-C28-C29
15	T	202	CDL	CB3-CB4-OB6-CB5
15	T	202	CDL	CB6-CB4-OB6-CB5
15	T	203	CDL	CA3-CA4-OA6-CA5
15	X	301	CDL	CB3-CB4-OB6-CB5
15	X	301	CDL	CB6-CB4-OB6-CB5
18	P	202	9Y0	C2-C1-O7-C21
15	E	606	CDL	C31-CA7-OA8-CA6

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Mol	Chain	Res	Type	Atoms
15	R	604	CDL	C57-C58-C59-C60
17	F	707	MQ9	C30-C29-C31-C32
17	F	709	MQ9	C12-C11-C9-C10
15	S	301	CDL	C12-C11-CA5-OA7
15	X	302	CDL	C12-C11-CA5-OA7
15	P	201	CDL	C32-C31-CA7-OA9
15	J	201	CDL	C32-C31-CA7-OA9
15	P	201	CDL	C52-C51-CB5-OB6
15	J	201	CDL	C52-C51-CB5-OB6
18	X	303	9Y0	C32-C33-C34-C35
15	Z	203	CDL	CB4-CB6-OB8-CB7
18	J	203	9Y0	O5-C5-C6-C7
16	F	702	HEM	CAA-CBA-CGA-O2A
15	E	606	CDL	C36-C37-C38-C39
22	I	304	9YF	O12-C25-C26-C27
21	O	302	HEC	CAA-CBA-CGA-O2A
15	L	604	CDL	C12-C11-CA5-OA7
22	O	303	9YF	O12-C25-C26-C27
22	M	501	9YF	O10-C8-C9-C10
17	E	604	MQ9	C11-C12-C13-C14
17	I	303	MQ9	C31-C32-C33-C34
18	J	203	9Y0	C1-C2-O3-P
17	E	604	MQ9	C33-C34-C36-C37
22	Y	502	9YF	O10-C8-C9-C10
22	I	304	9YF	C12-C13-C14-C15
14	L	602	HEA	O11-C11-C3B-C4B
22	O	303	9YF	C11-C12-C13-C14
18	S	302	9Y0	O7-C21-C22-C23
22	I	304	9YF	O10-C8-C9-C10
15	F	705	CDL	O1-C1-CA2-OA2
20	D	302	9XX	C11-C12-C13-C14
22	I	304	9YF	C11-C12-C13-C14
22	O	303	9YF	O10-C8-C9-C10
22	O	303	9YF	C12-C13-C14-C15
18	J	202	9Y0	C11-C10-C9-C8
21	O	302	HEC	CAA-CBA-CGA-O1A
18	J	203	9Y0	O4-C5-C6-C7
20	G	302	9XX	C12-C13-C14-C15
15	E	606	CDL	C52-C51-CB5-OB6
18	X	303	9Y0	O7-C21-C22-C23
15	L	604	CDL	C51-C52-C53-C54
15	P	201	CDL	C52-C51-CB5-OB7

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Mol	Chain	Res	Type	Atoms
15	J	201	CDL	C52-C51-CB5-OB7

There are no ring outliers.

40 monomers are involved in 403 short contacts:

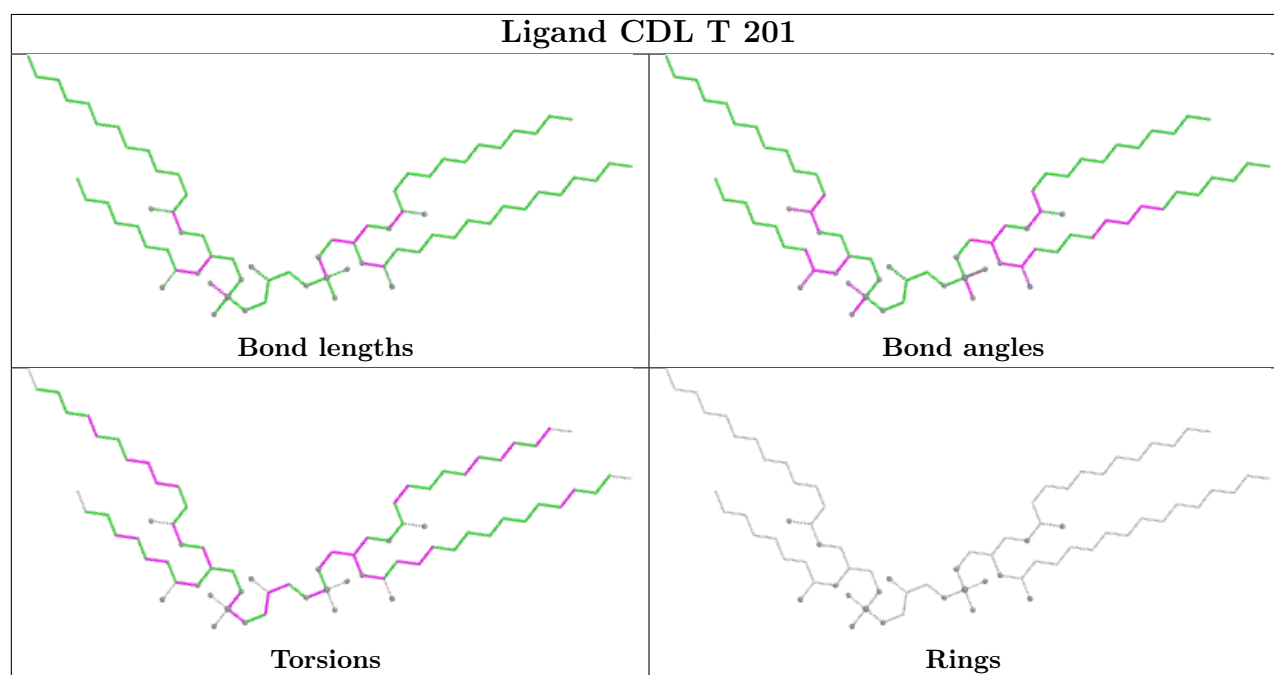
Mol	Chain	Res	Type	Clashes	Symm-Clashes
15	T	201	CDL	34	0
21	O	301	HEC	5	0
15	E	605	CDL	10	0
21	O	302	HEC	9	0
16	F	703	HEM	4	0
22	I	304	9YF	5	0
21	I	301	HEC	5	0
15	T	203	CDL	8	0
14	R	603	HEA	4	0
15	J	201	CDL	11	0
15	Z	202	CDL	36	0
19	W	201	PLM	2	0
16	E	601	HEM	2	0
16	F	702	HEM	1	0
15	F	705	CDL	10	0
17	F	708	MQ9	1	0
16	E	602	HEM	2	0
14	R	602	HEA	1	0
14	L	603	HEA	4	0
15	X	302	CDL	54	0
22	Y	503	9YF	3	0
21	I	302	HEC	12	0
15	T	202	CDL	9	0
15	X	301	CDL	41	0
17	F	707	MQ9	1	0
15	L	604	CDL	19	0
22	W	203	9YF	1	0
17	Z	201	MQ9	5	0
15	E	606	CDL	3	0
15	R	604	CDL	19	0
14	L	602	HEA	3	0
15	S	301	CDL	49	0
22	Y	502	9YF	2	0
15	F	704	CDL	11	0
17	F	709	MQ9	4	0
15	Z	203	CDL	46	0

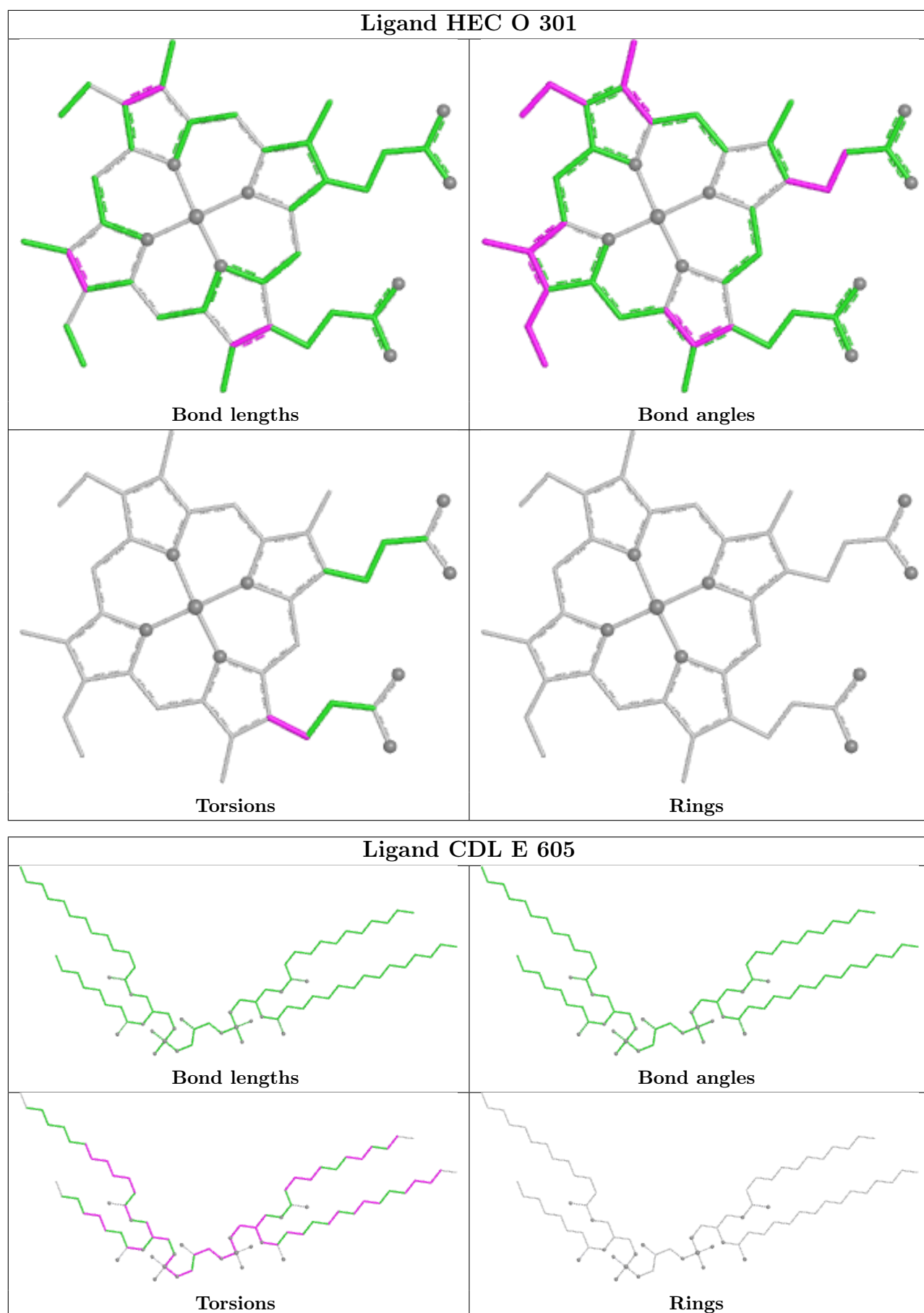
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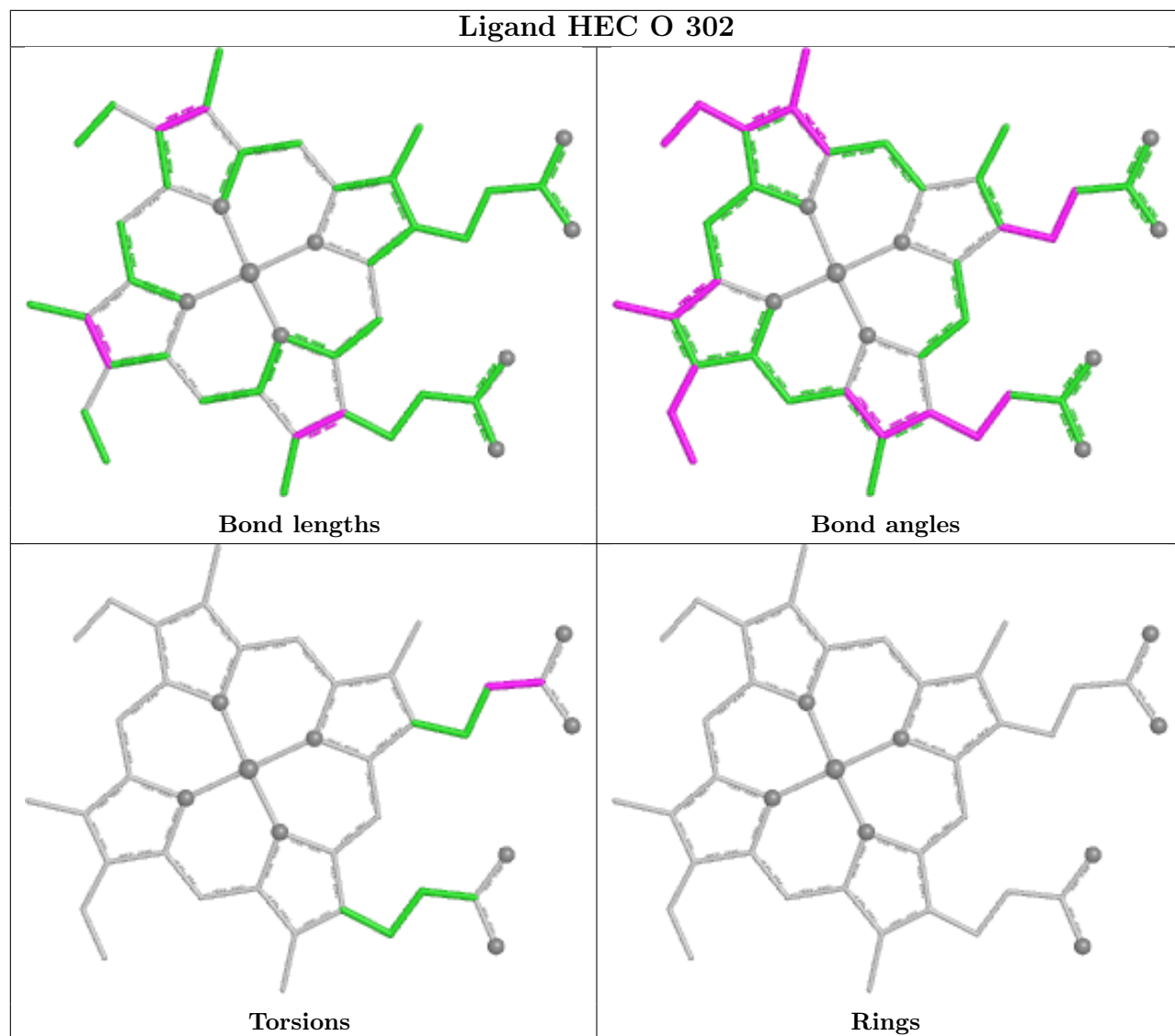
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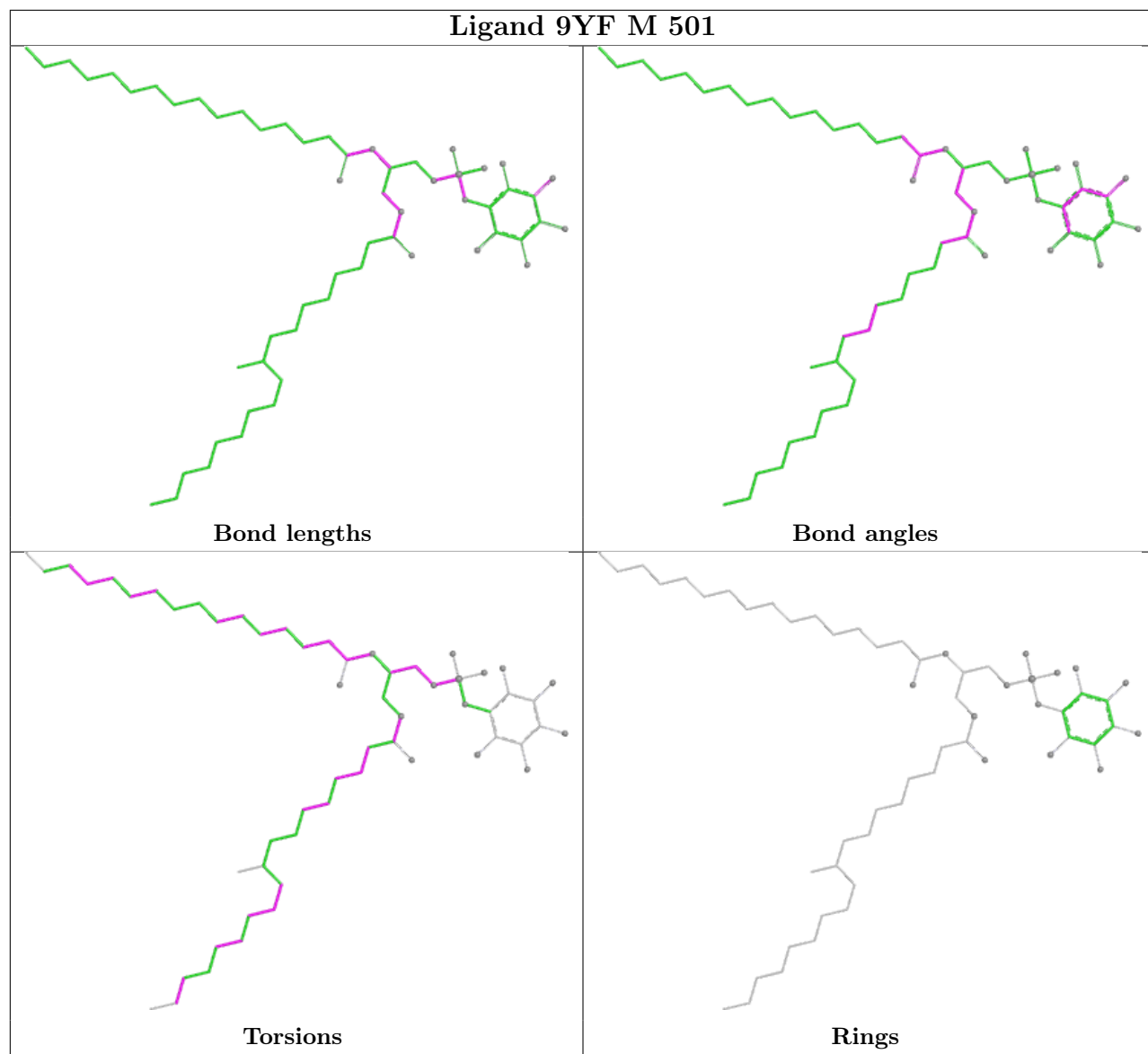
Mol	Chain	Res	Type	Clashes	Symm-Clashes
17	E	603	MQ9	2	0
23	Y	501	FES	1	0
17	E	604	MQ9	3	0
15	P	201	CDL	10	0

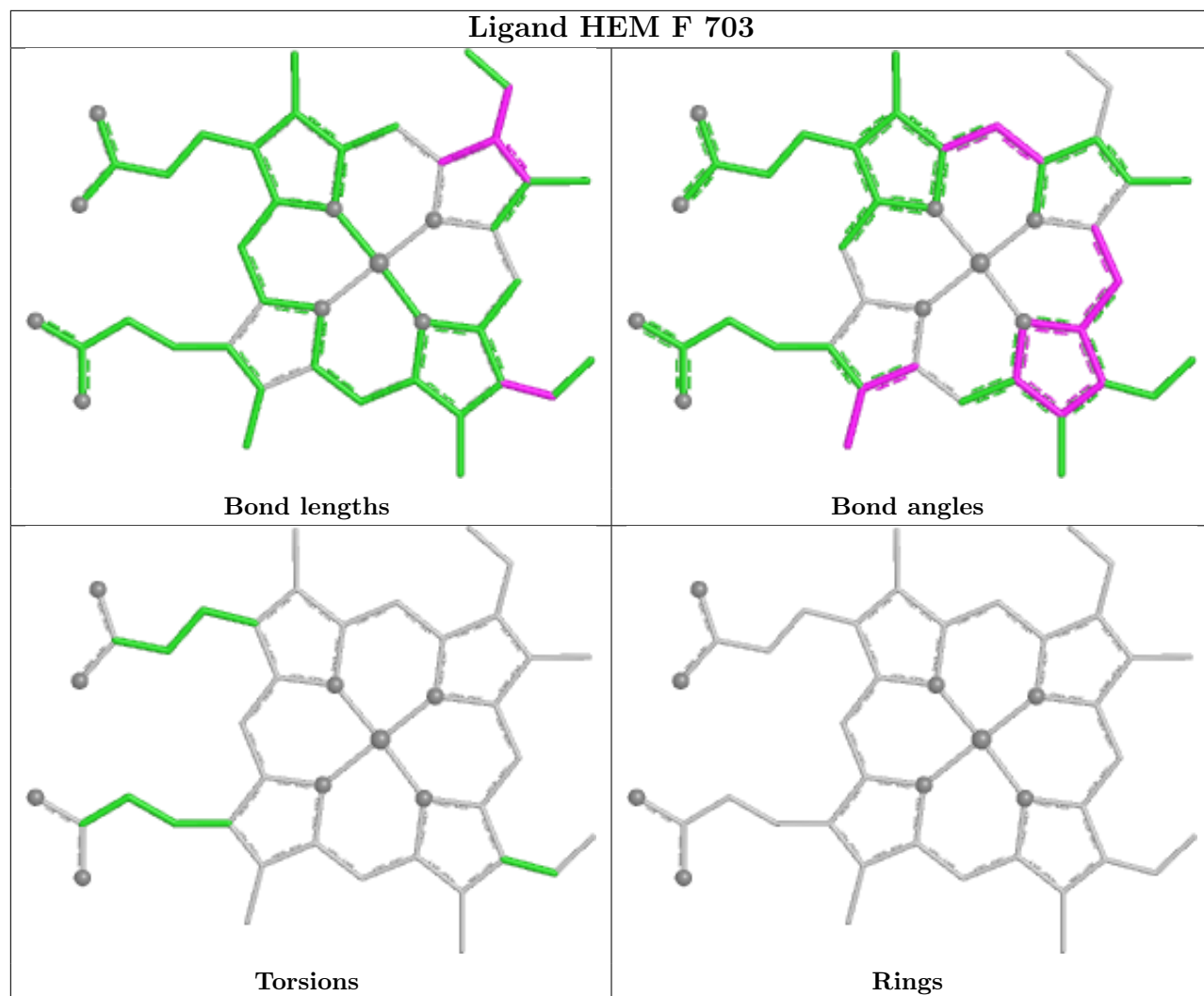
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

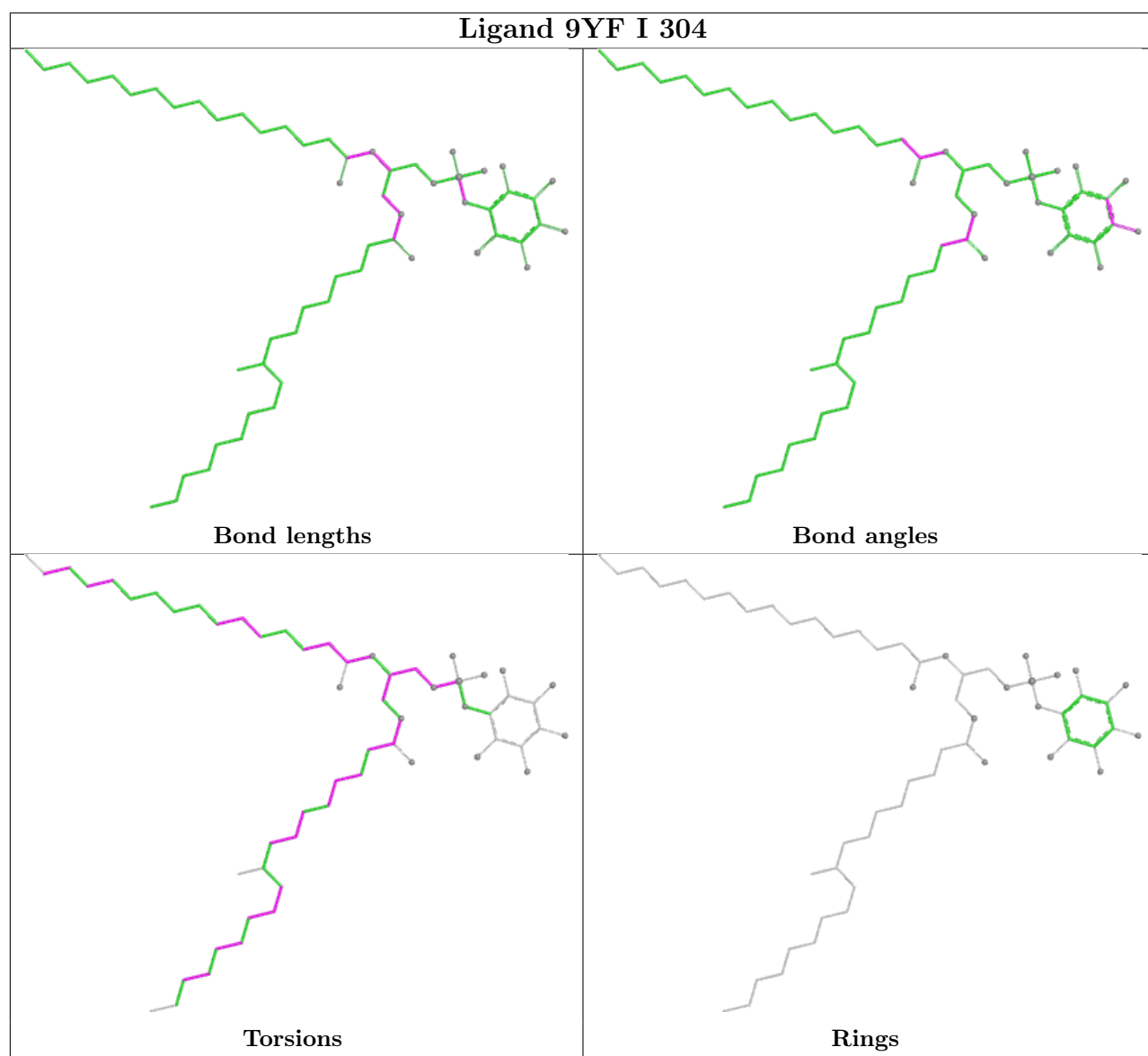




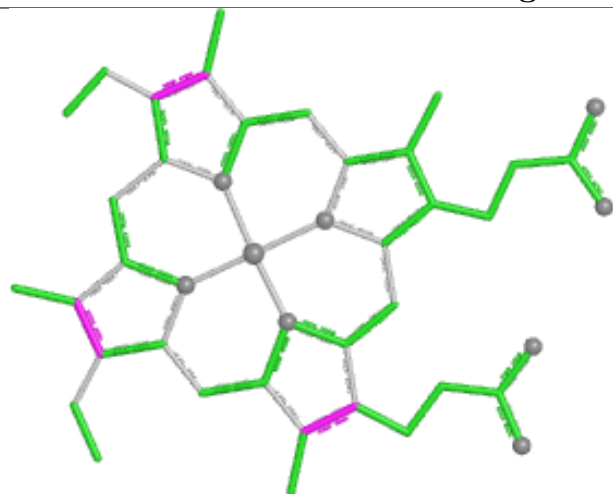




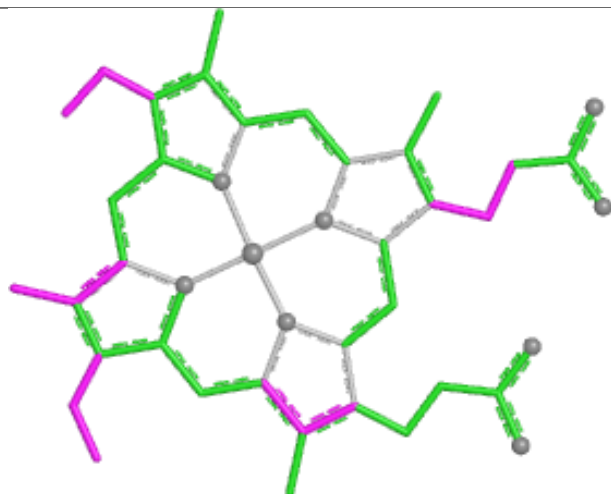




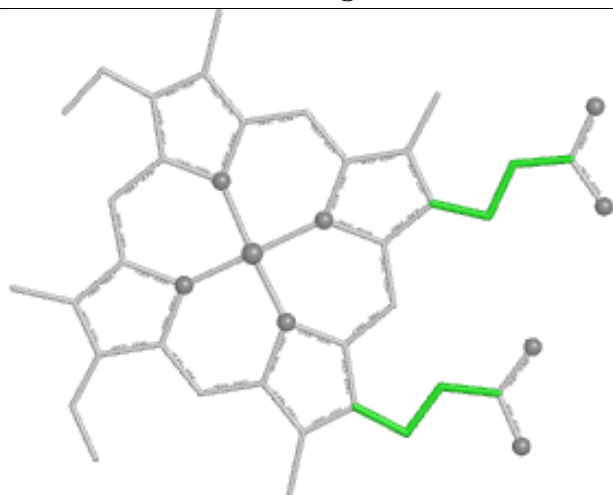
Ligand HEC I 301



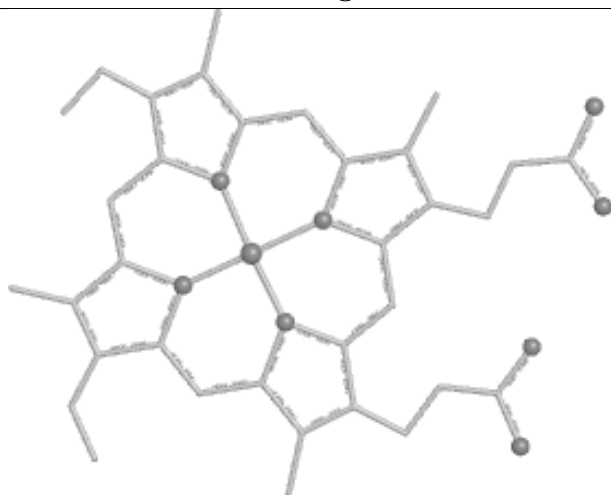
Bond lengths



Bond angles

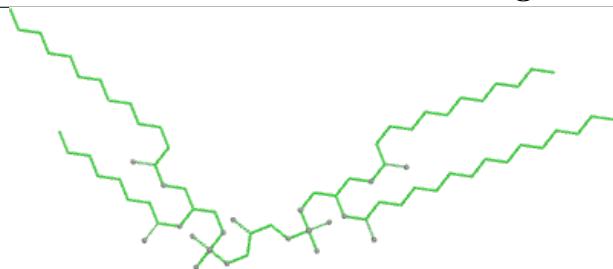


Torsions

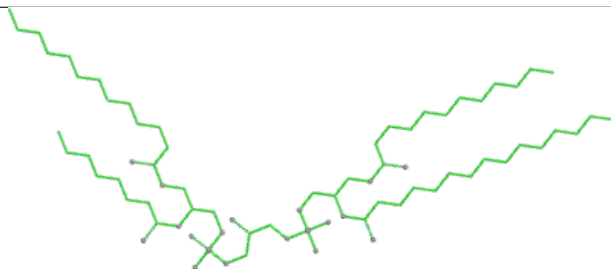


Rings

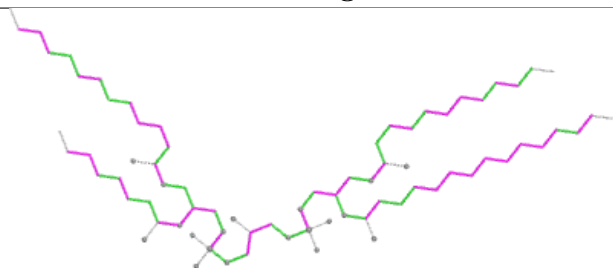
Ligand CDL T 203



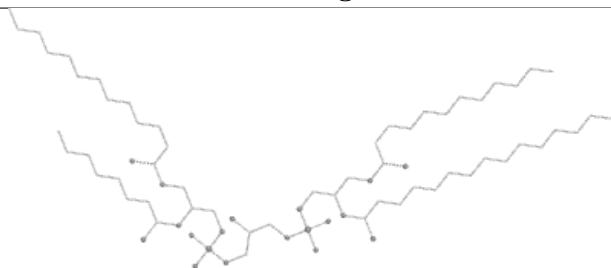
Bond lengths



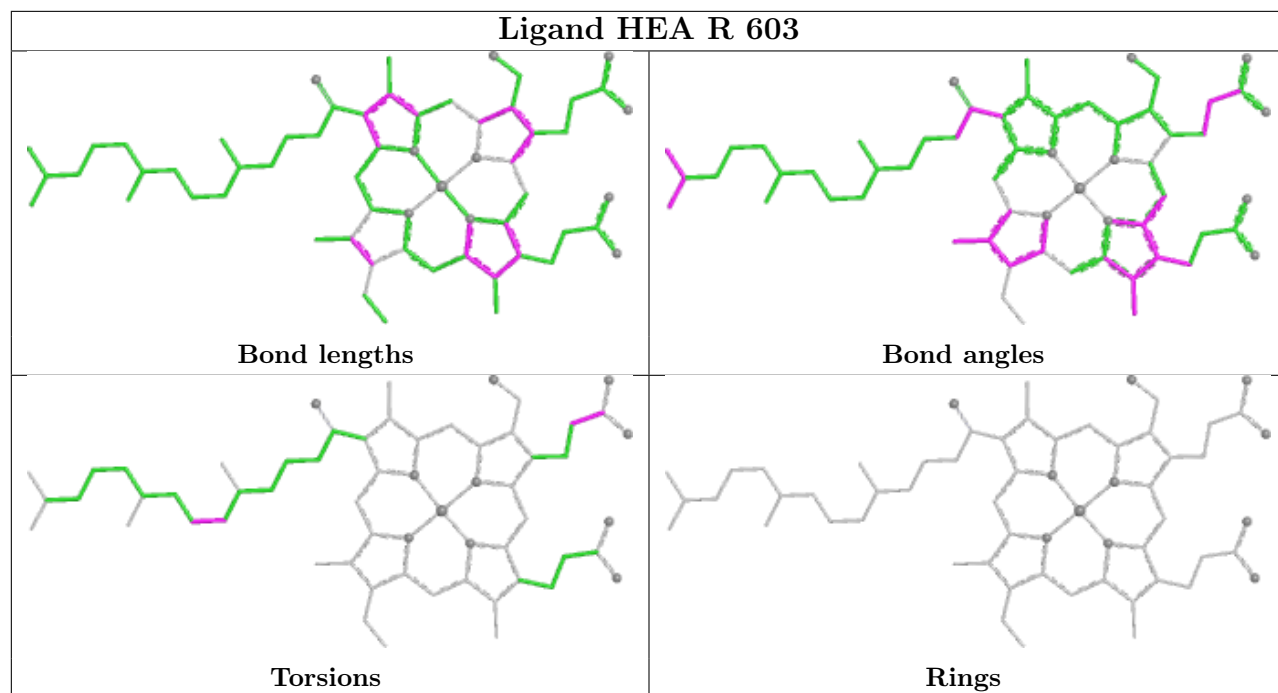
Bond angles

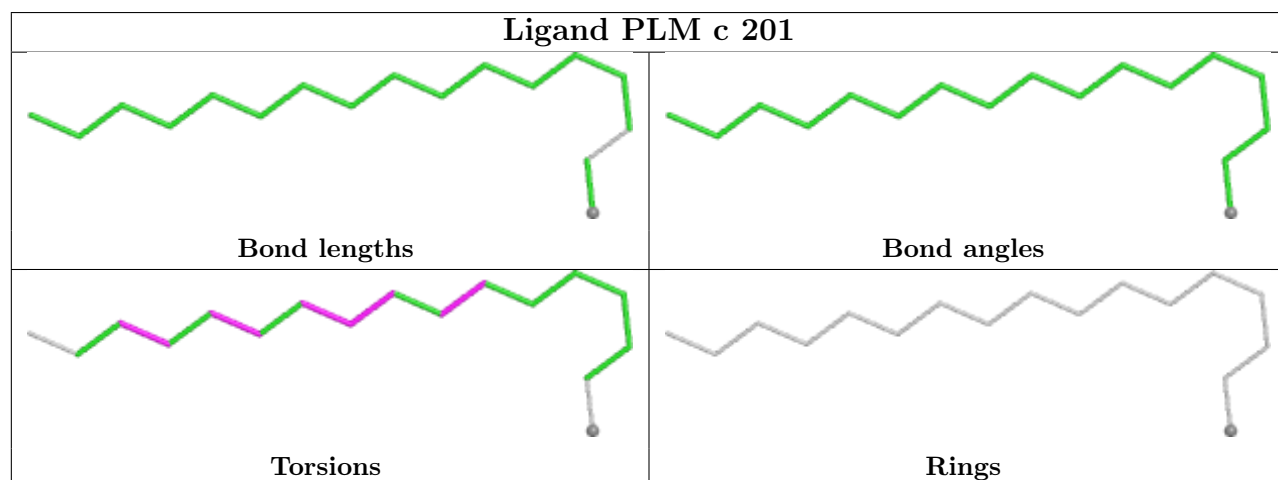
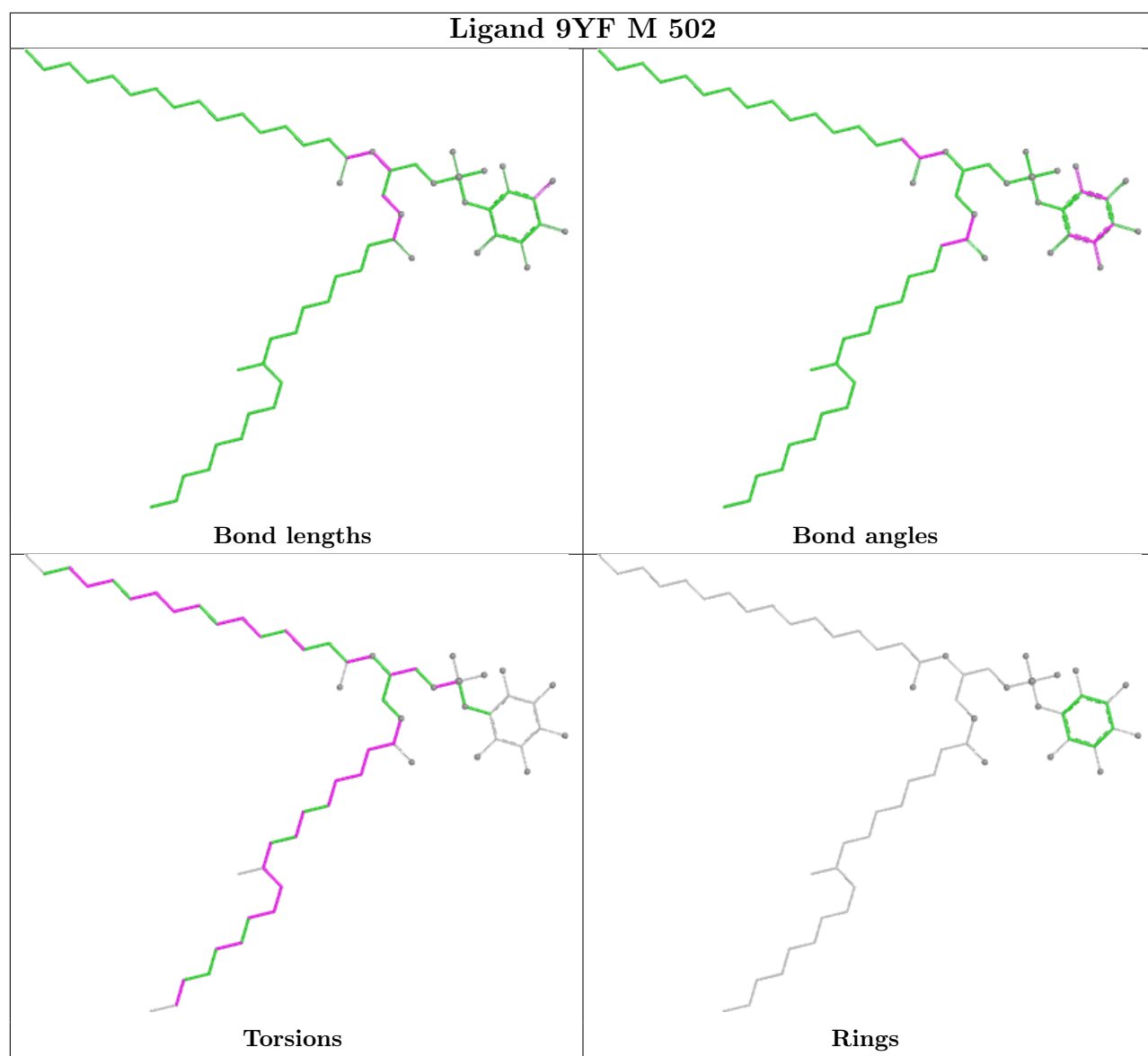


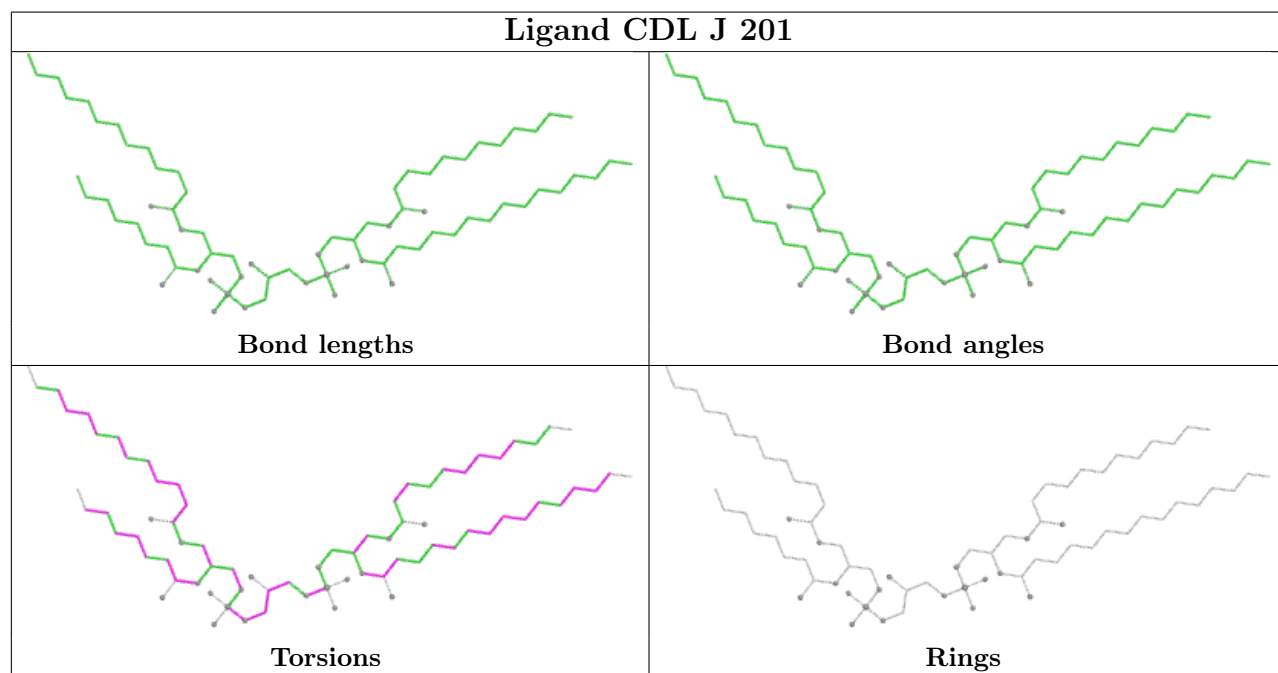
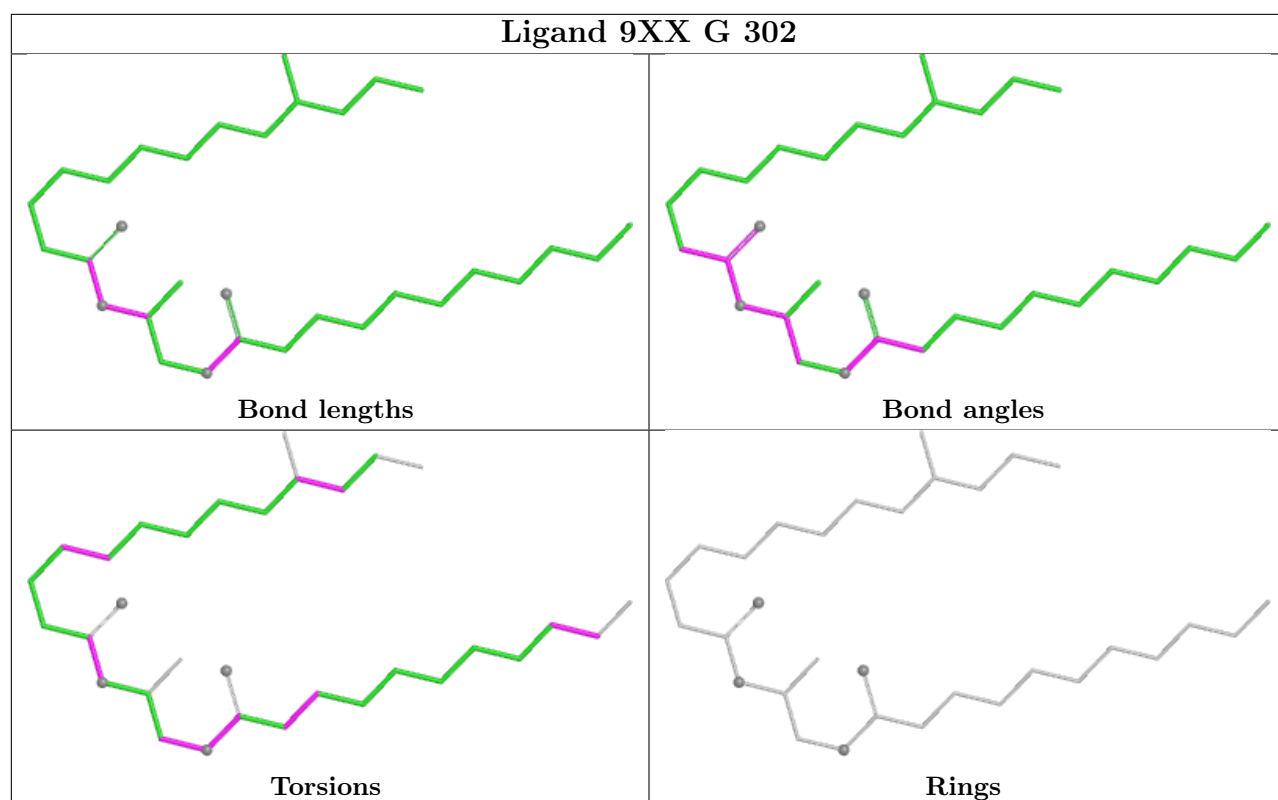
Torsions

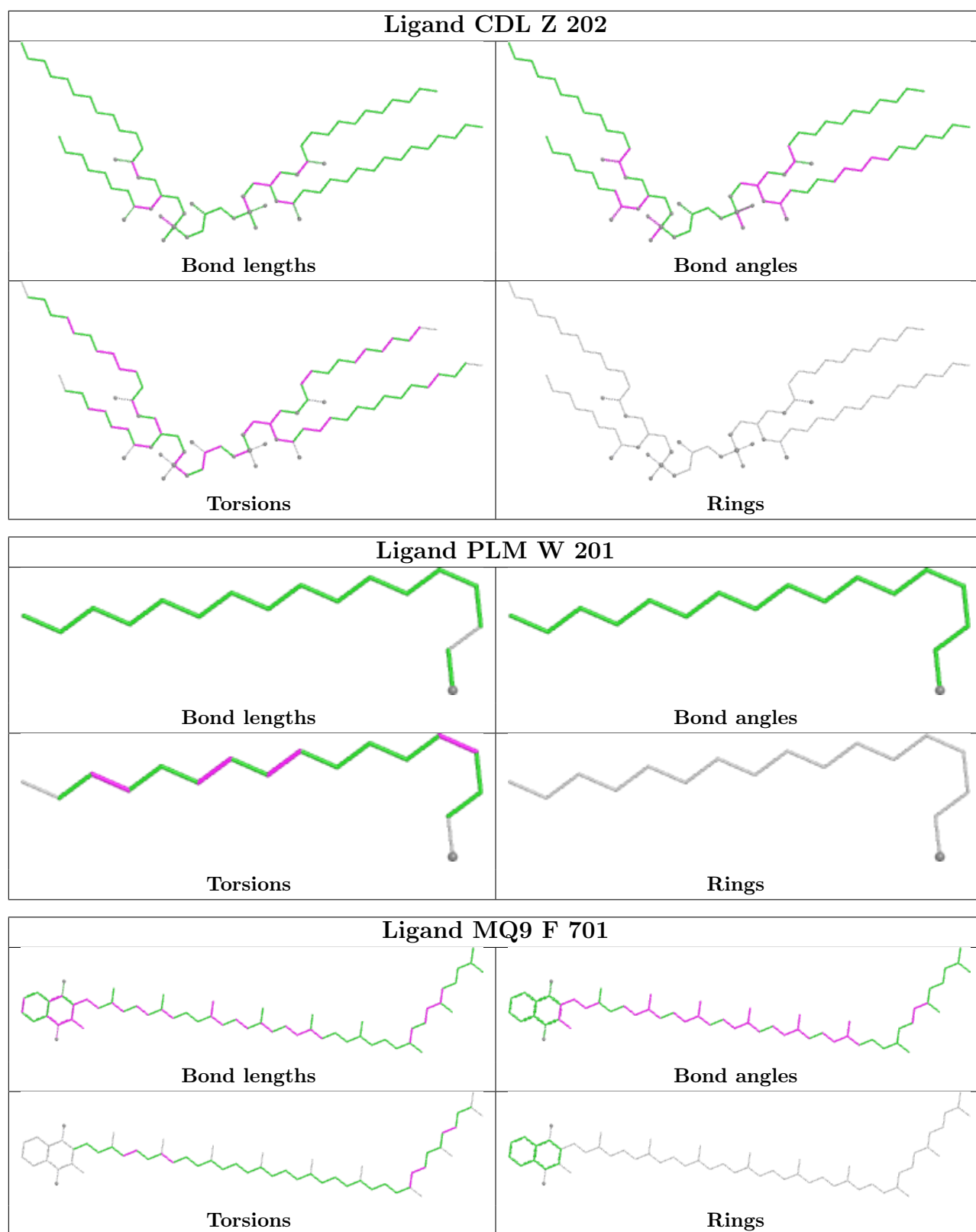


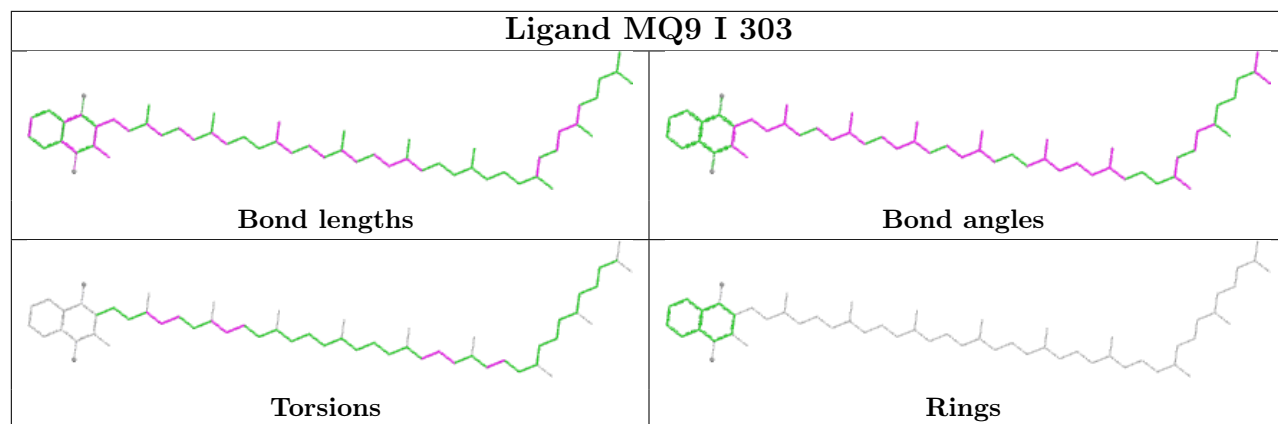
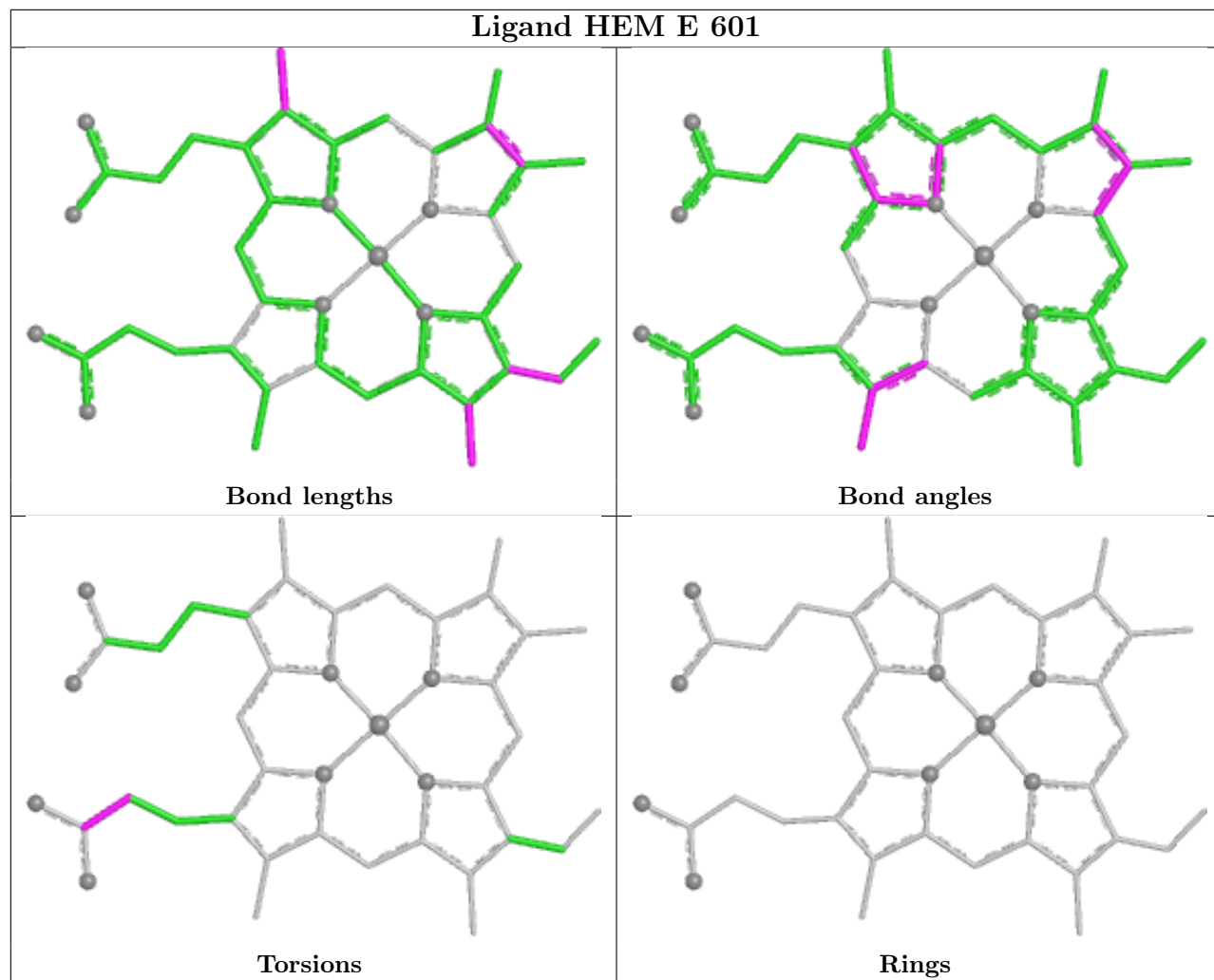
Rings

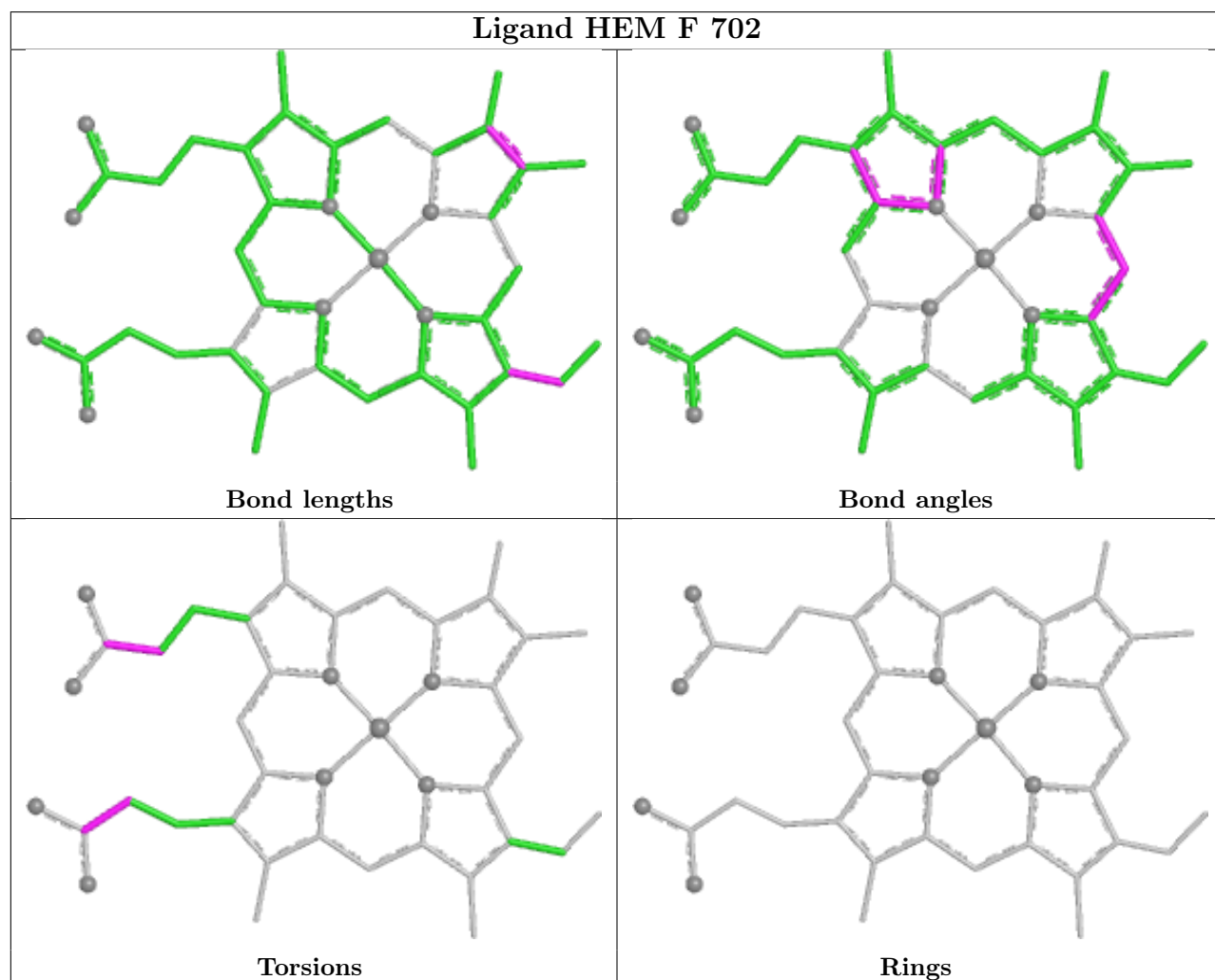
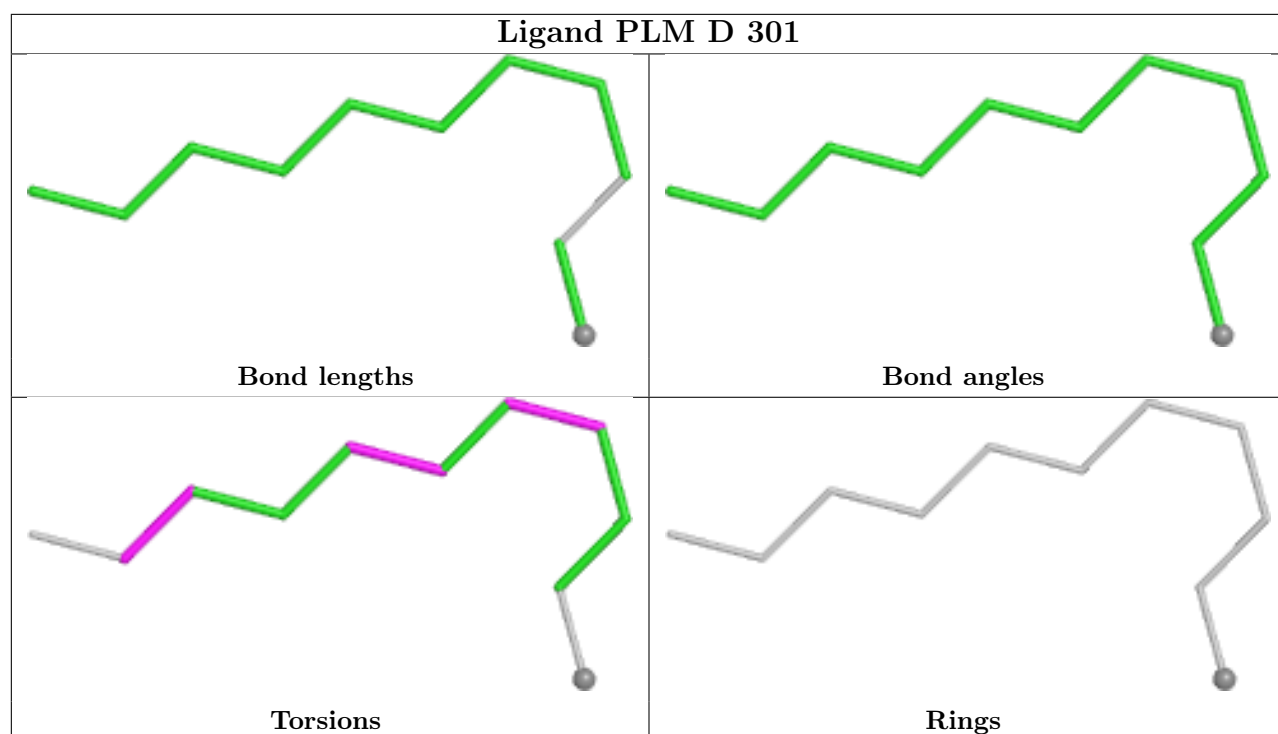


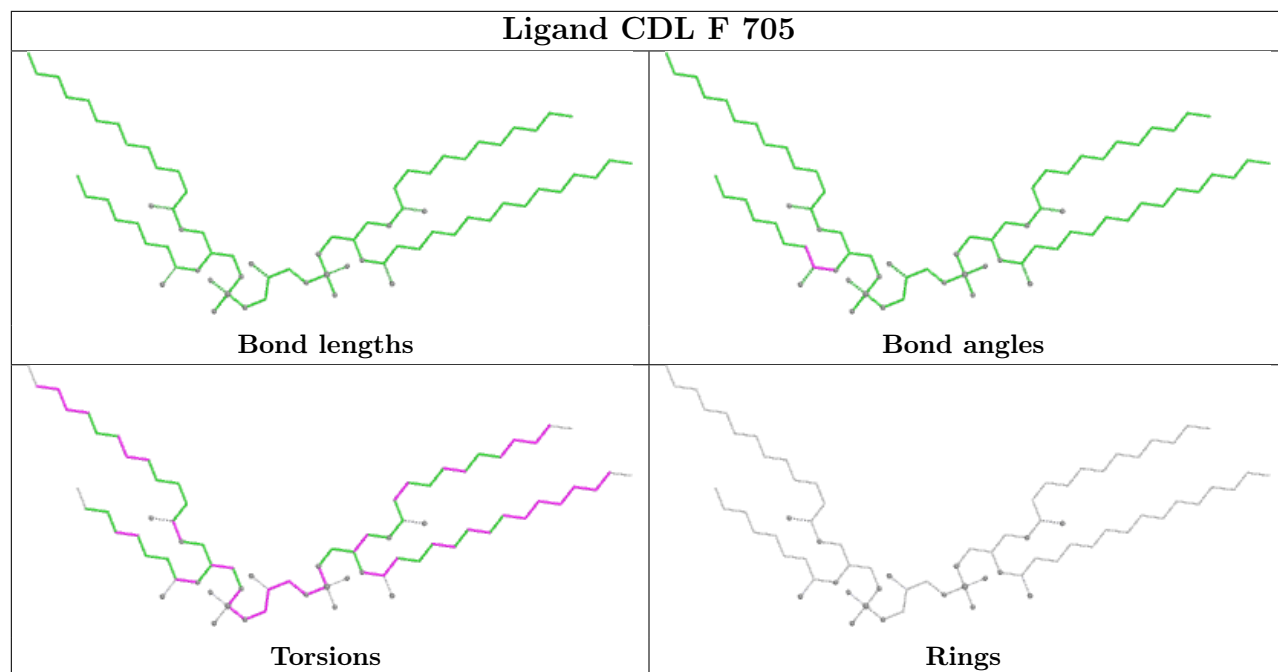


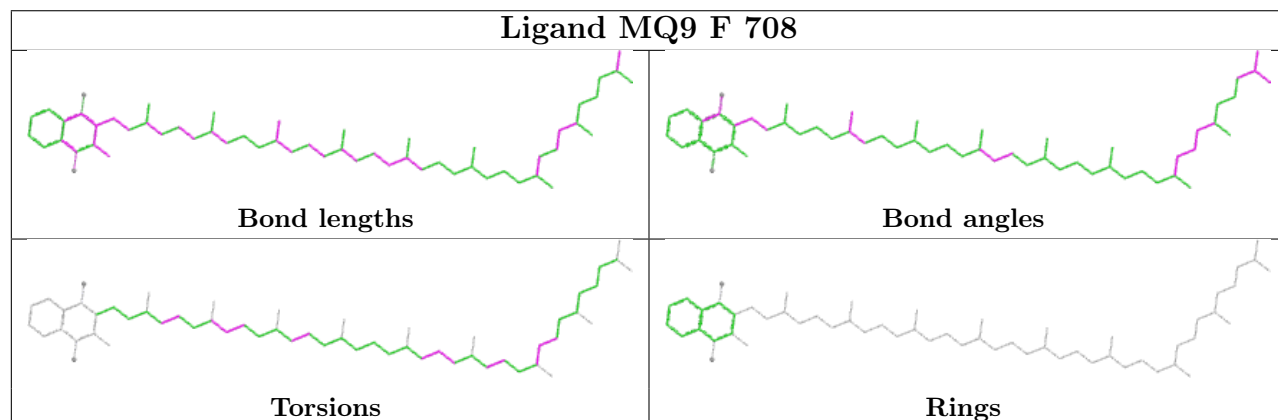
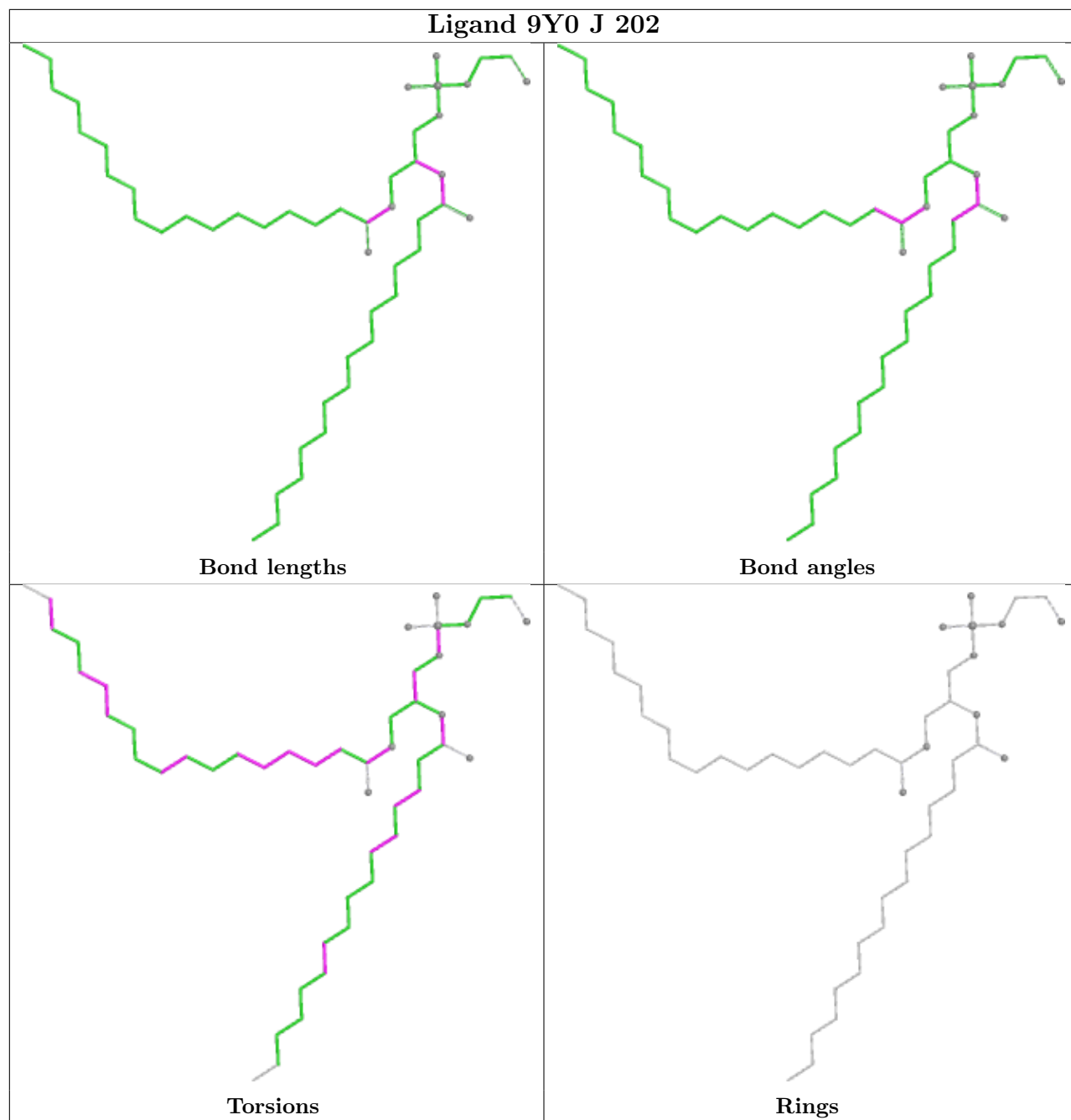


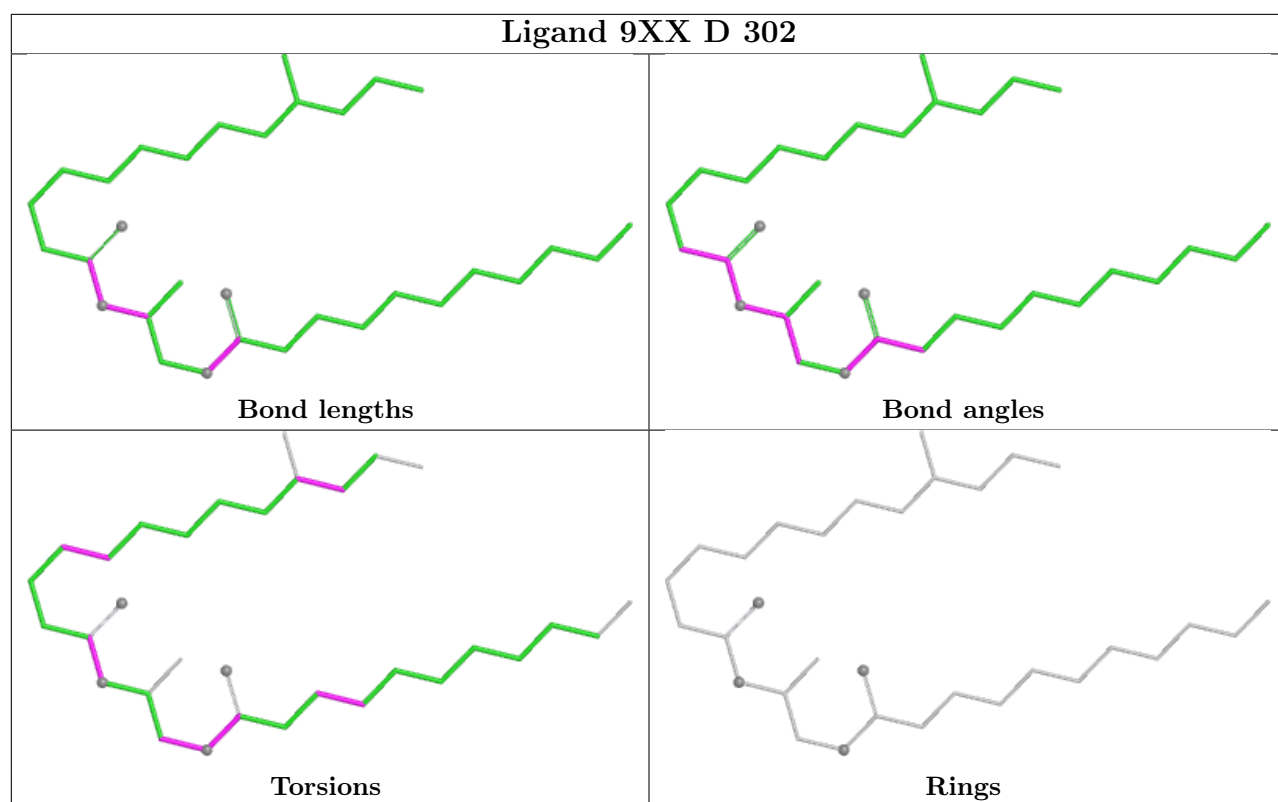


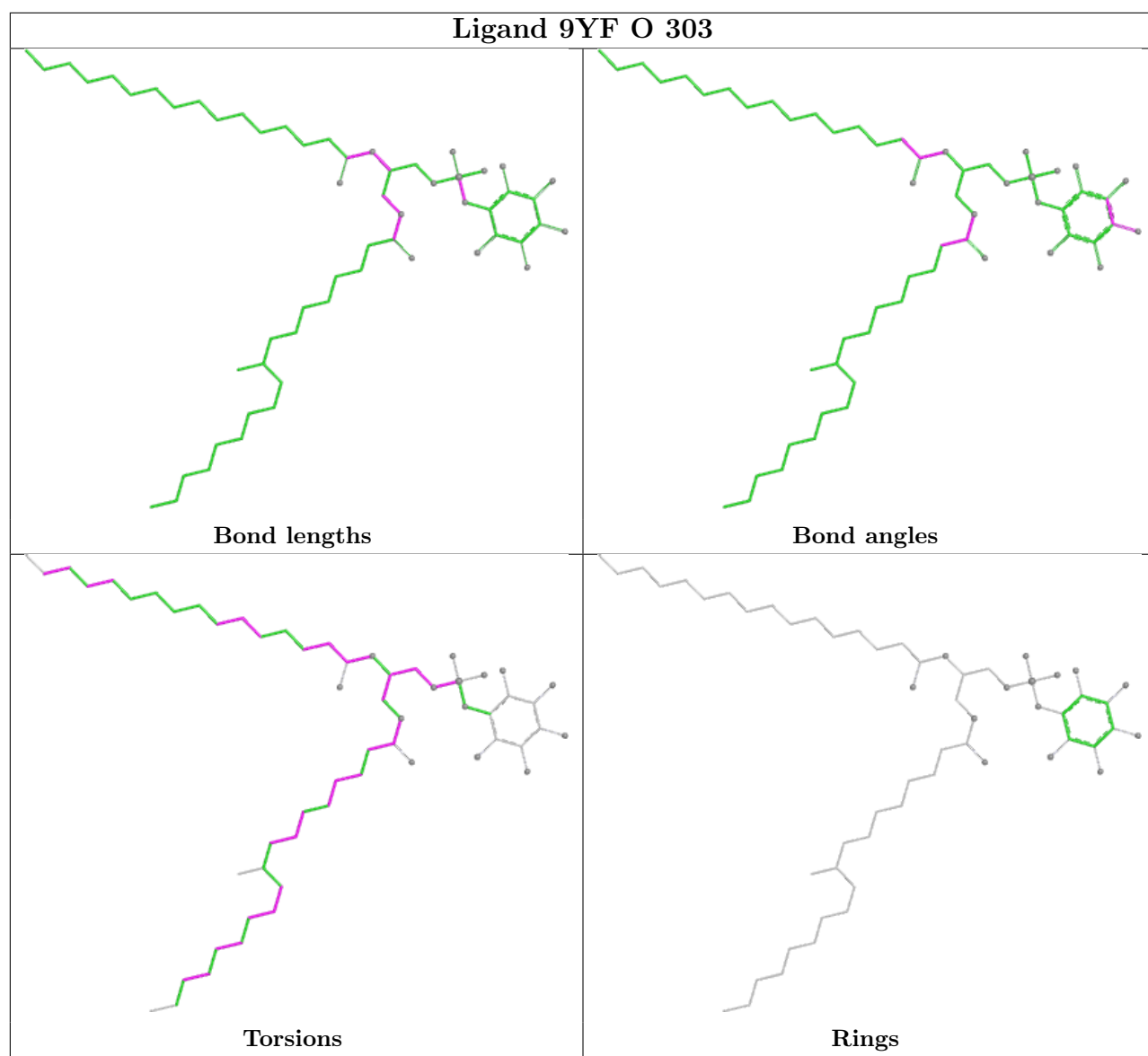
Ligand MQ9 I 303**Ligand HEM E 601**

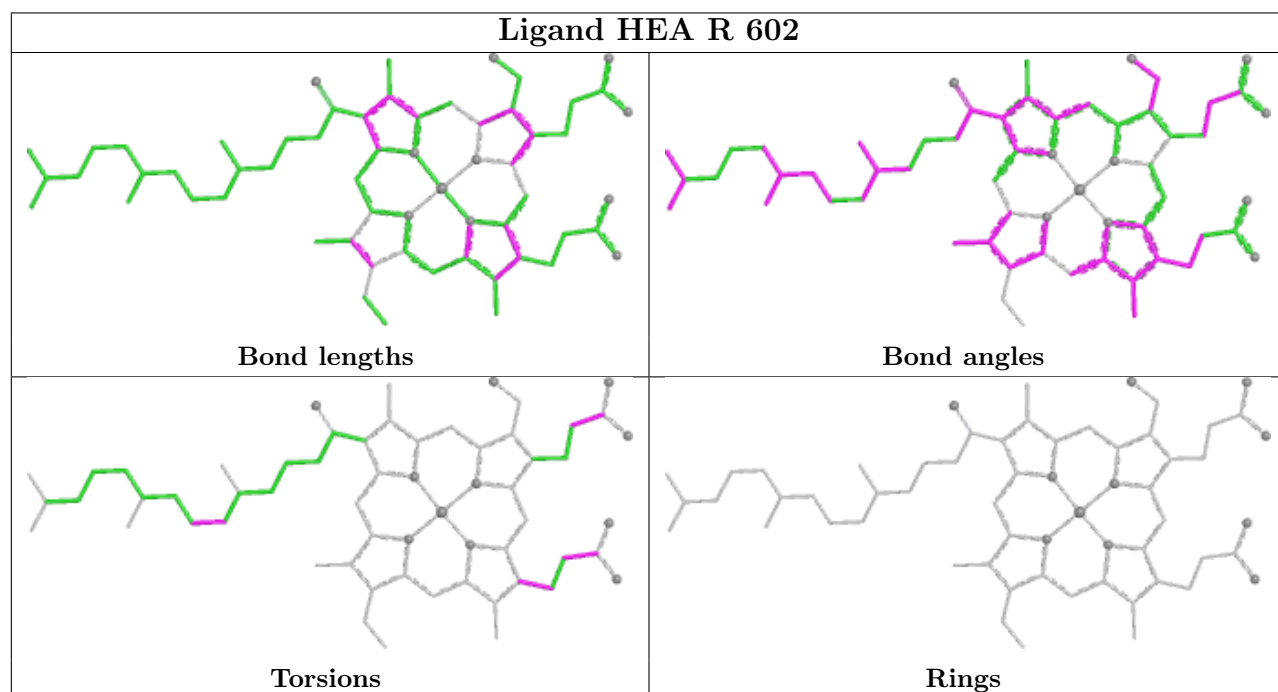
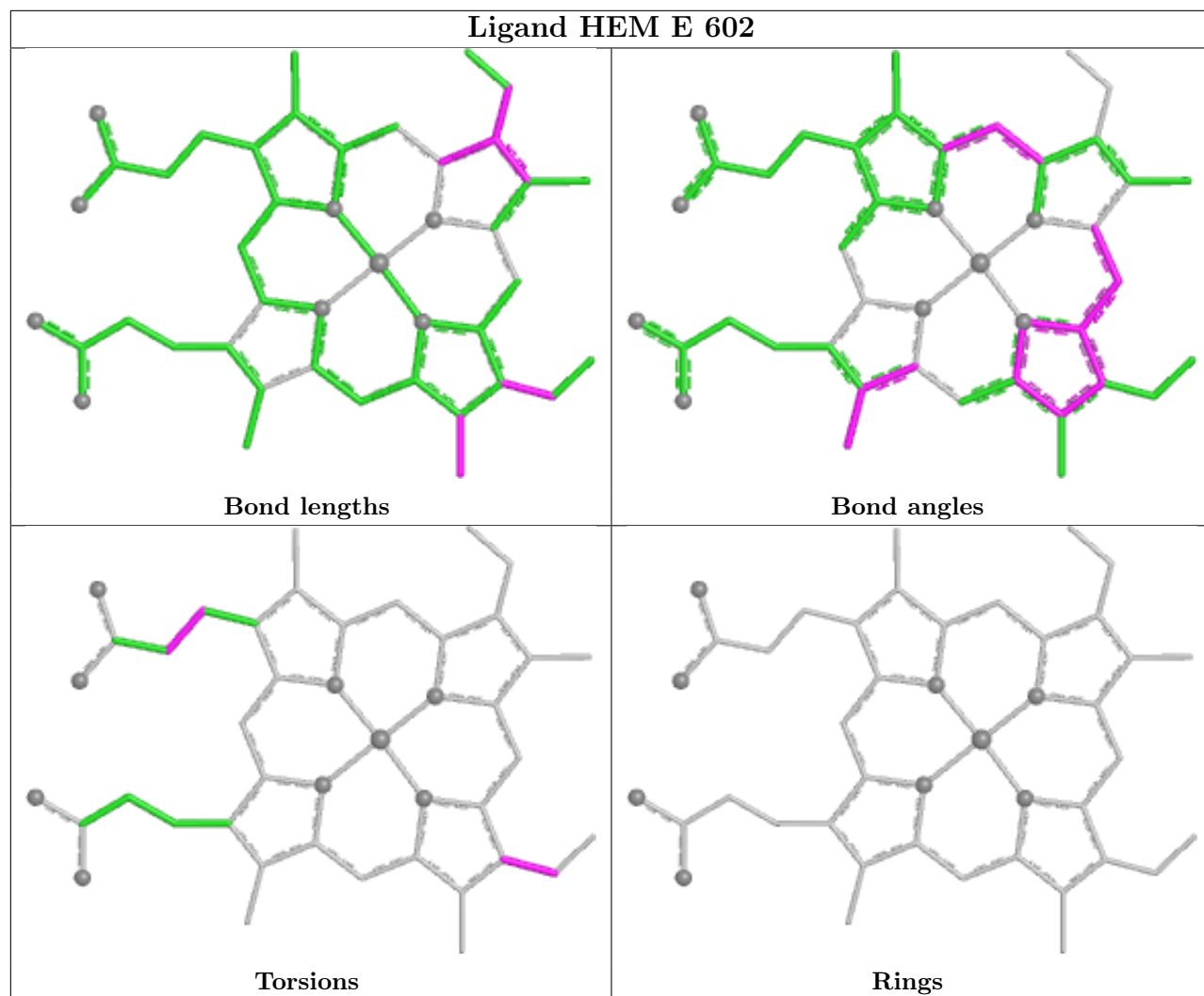


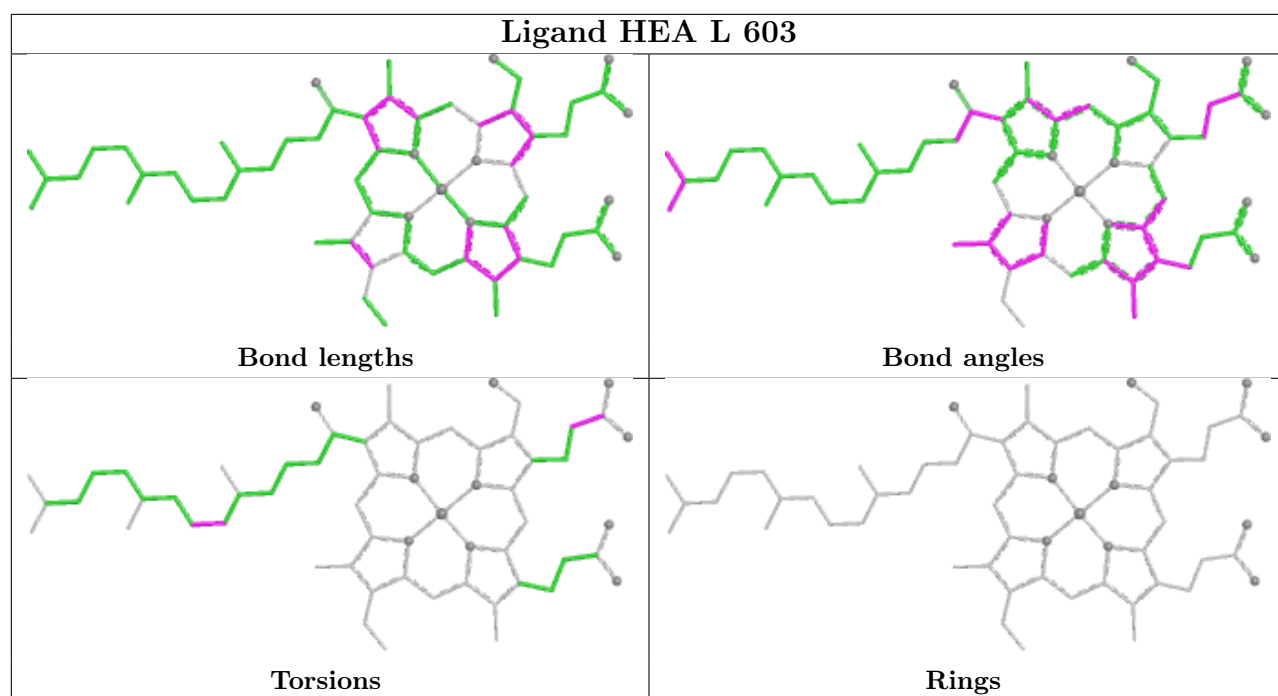


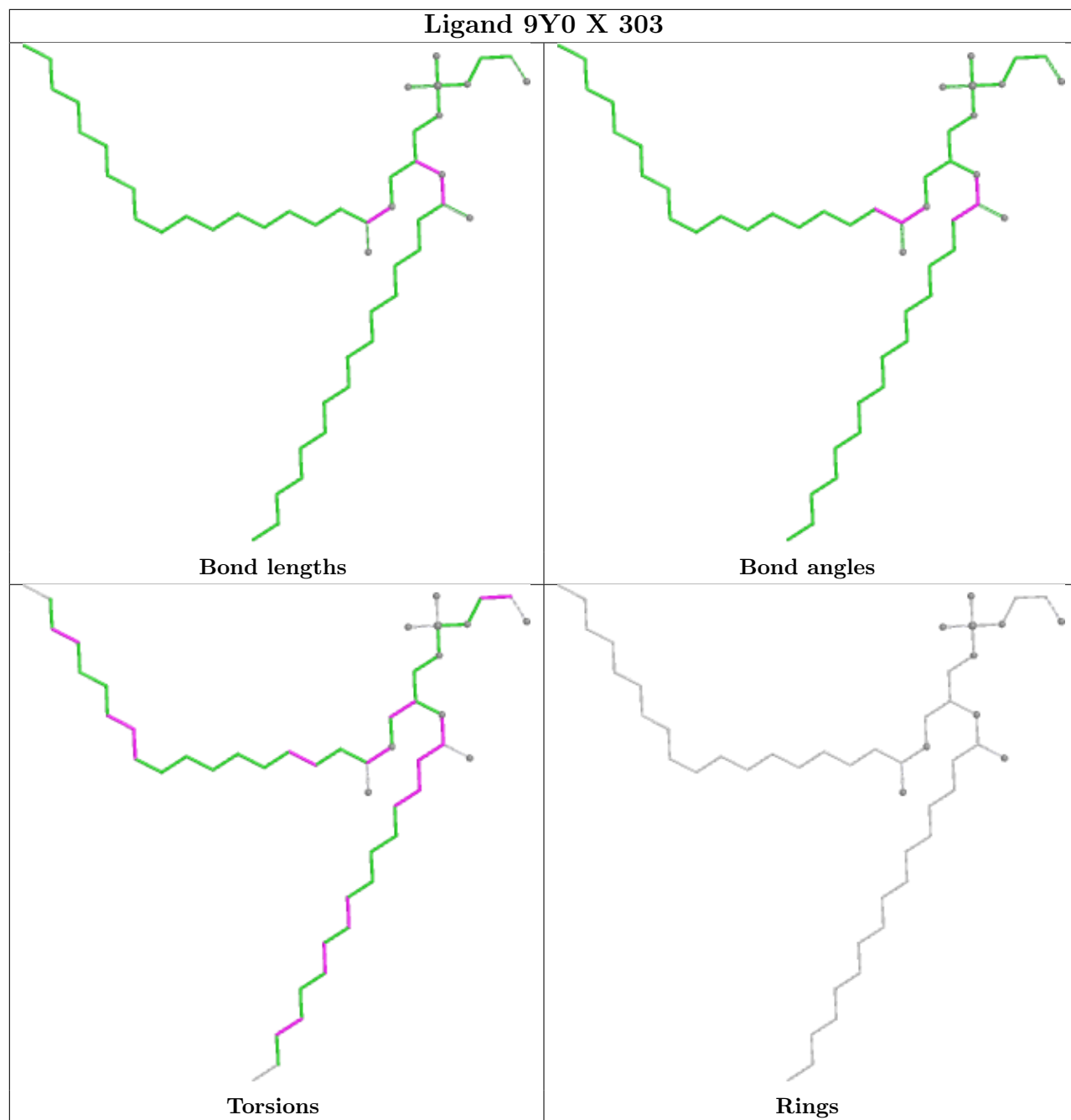


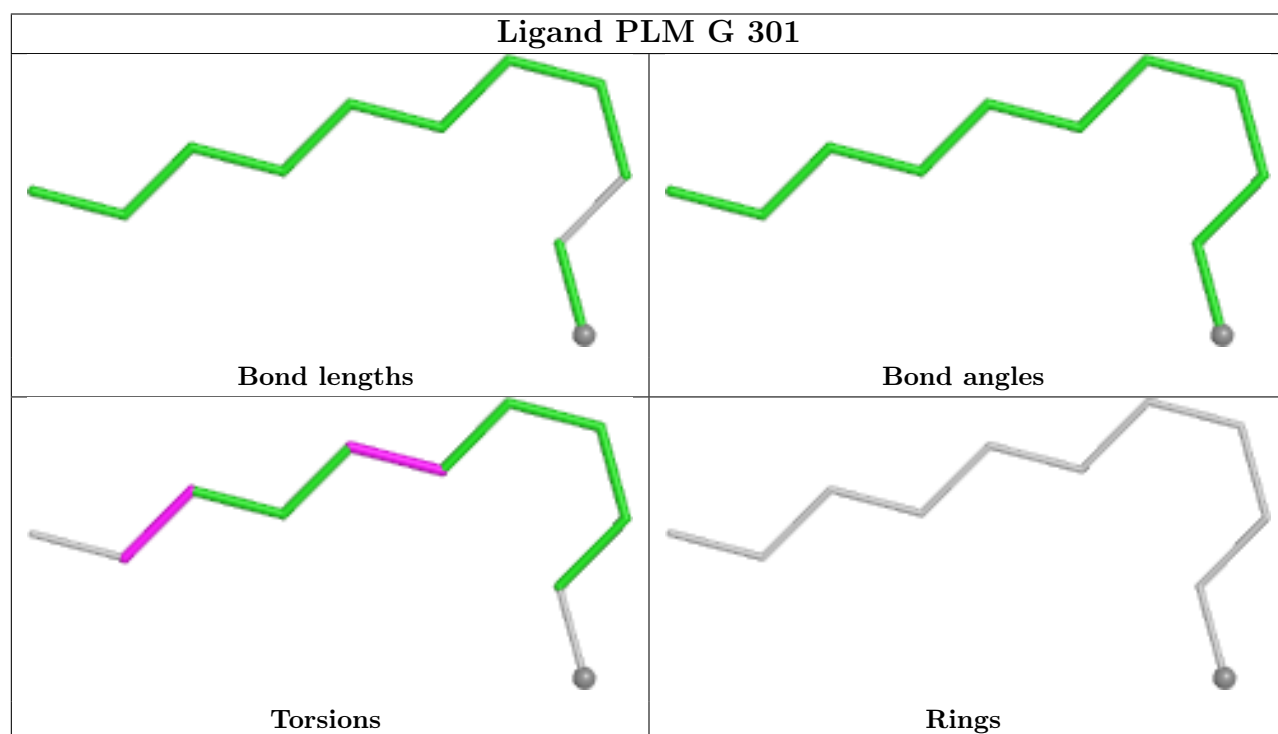
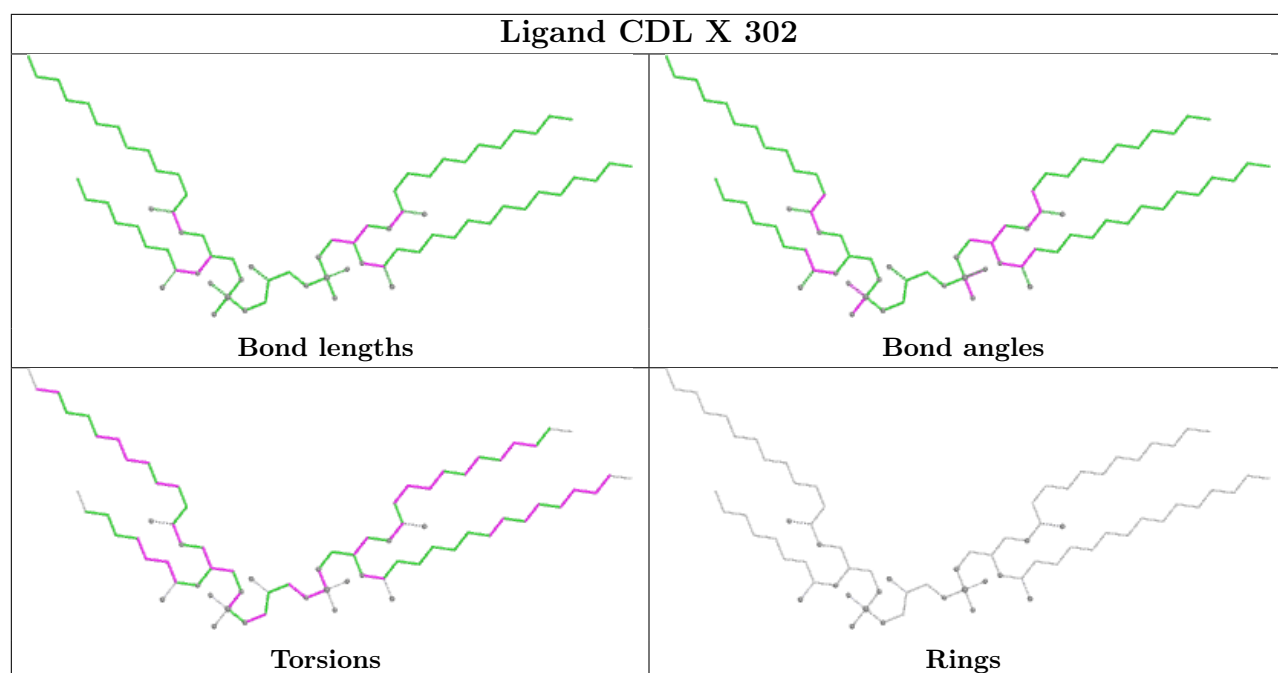


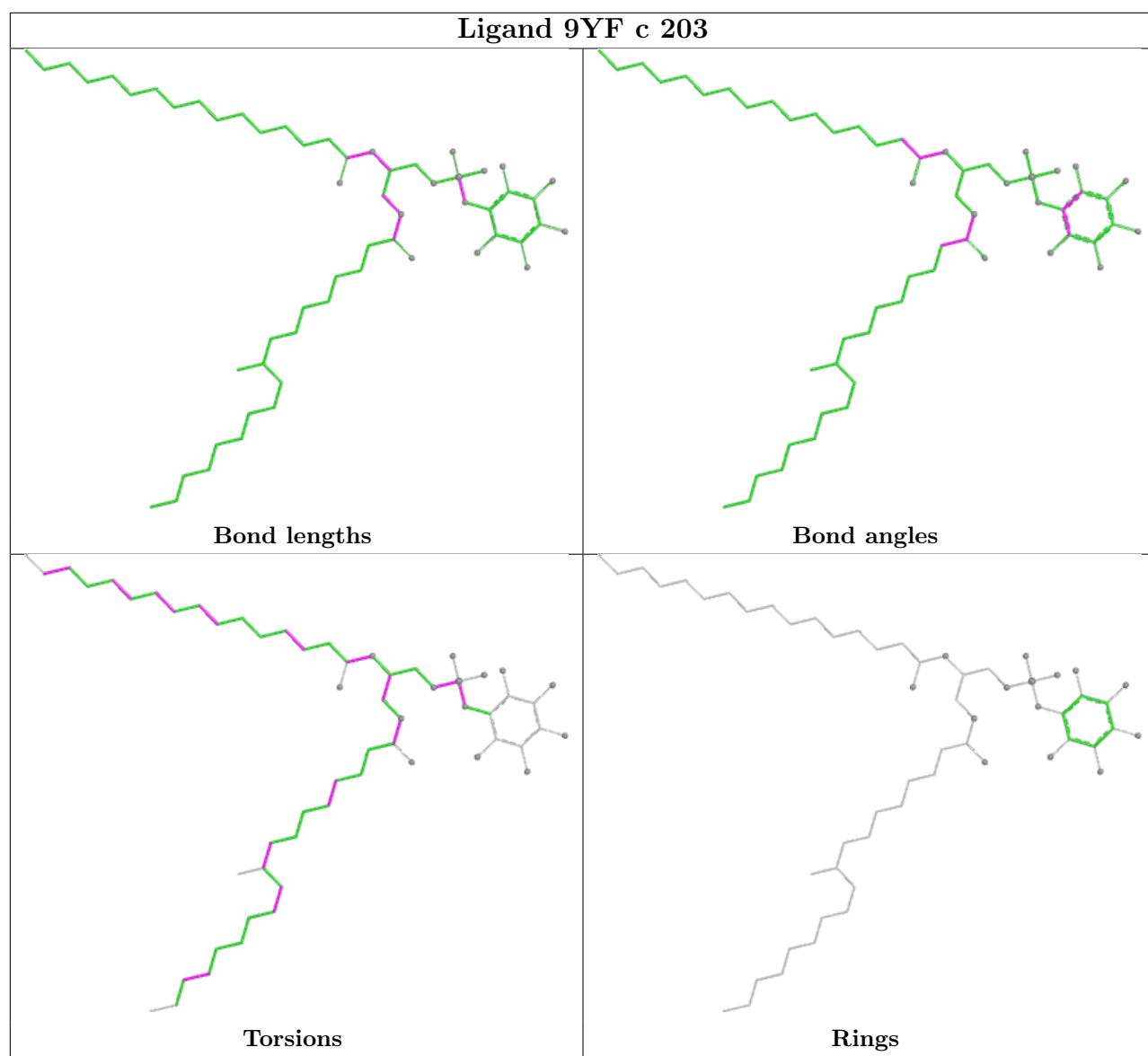


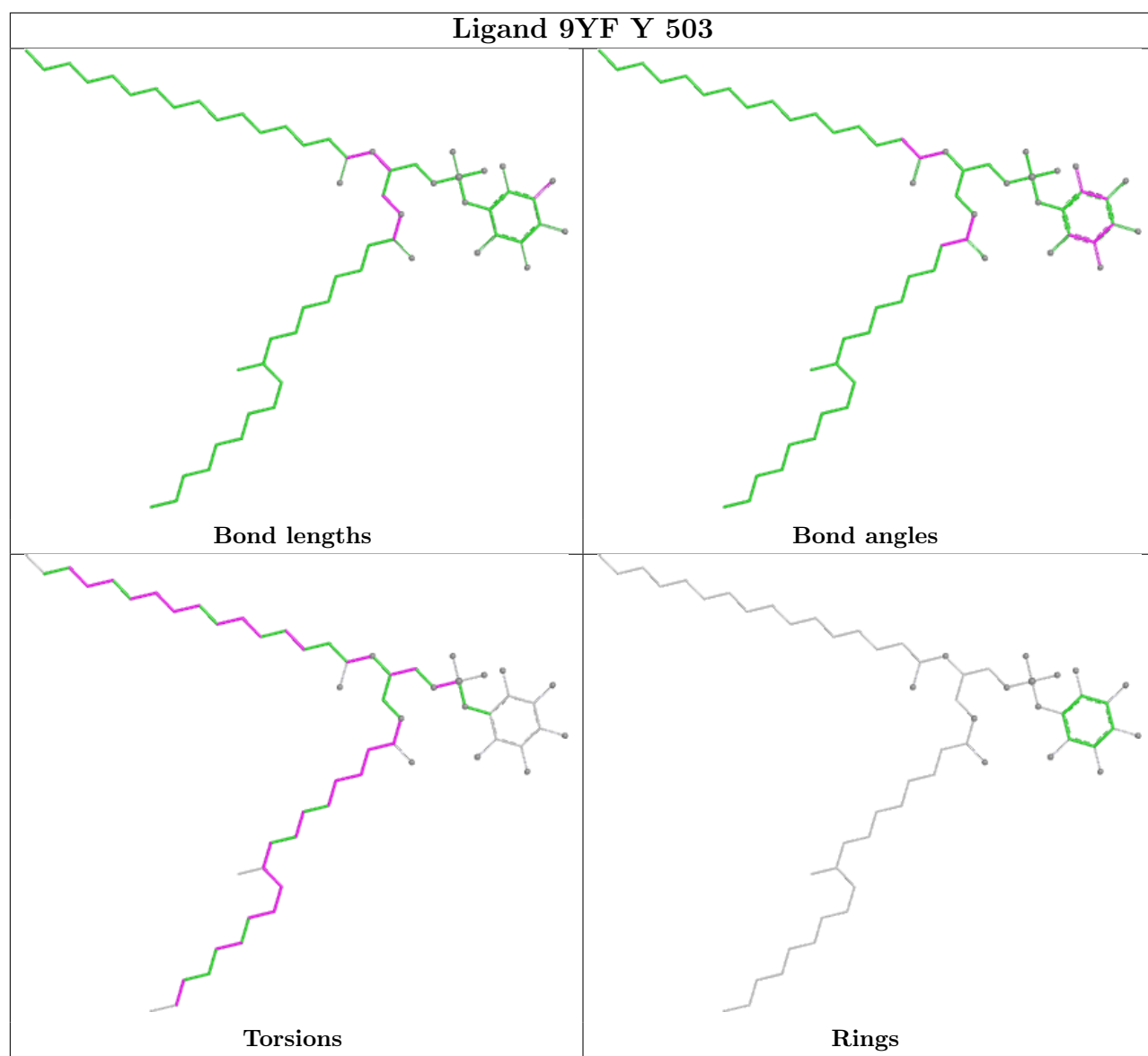


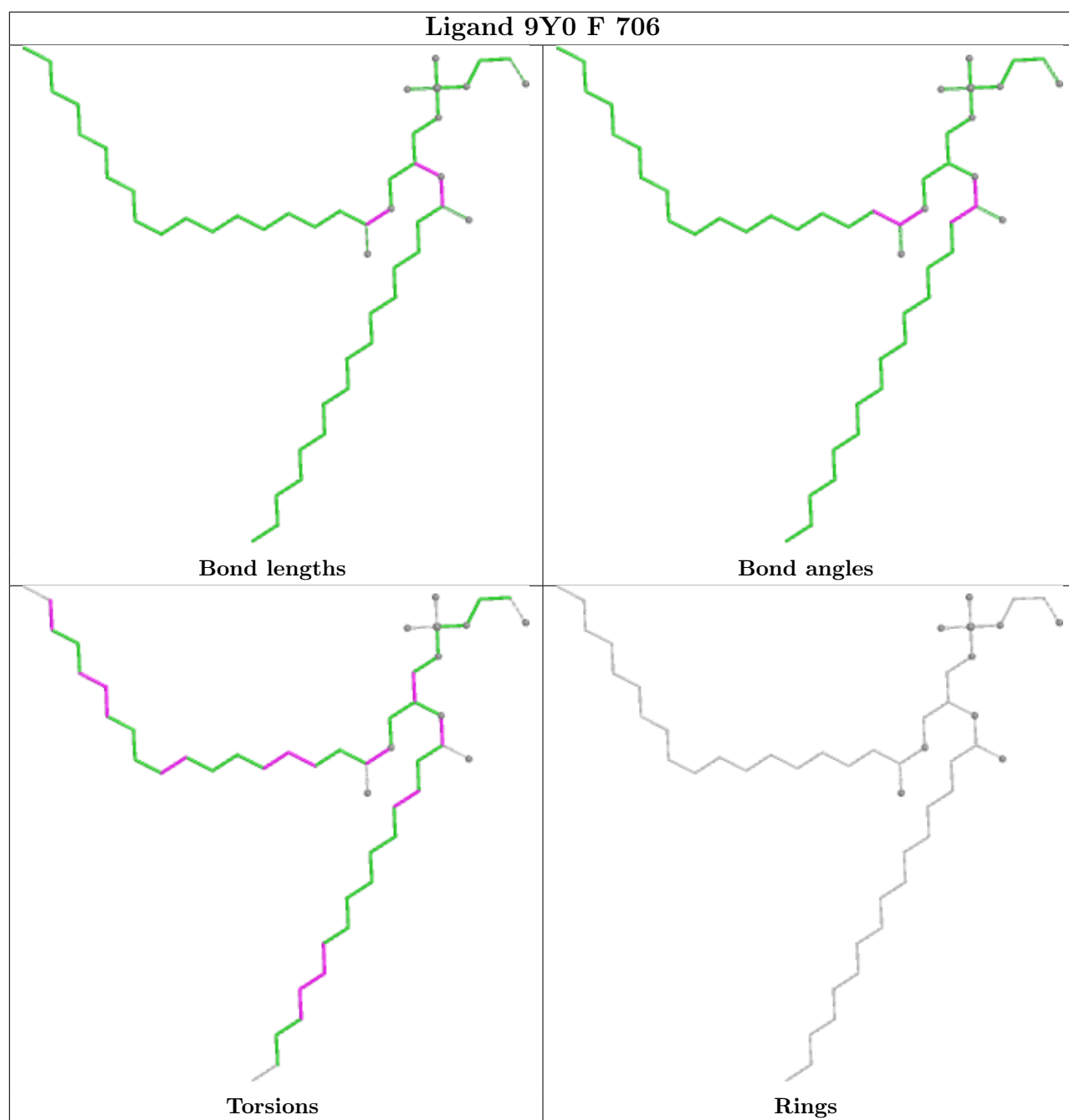




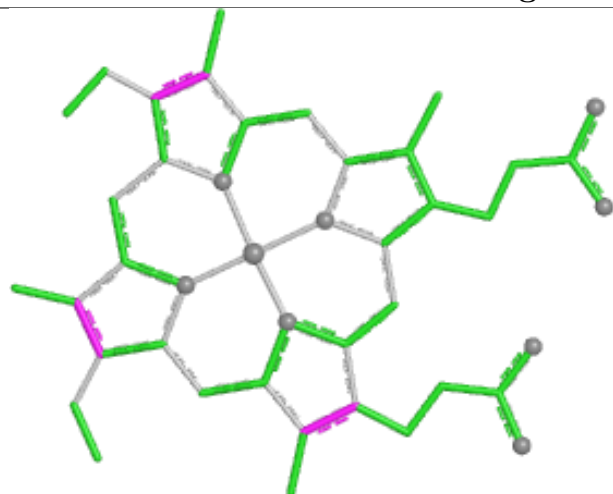




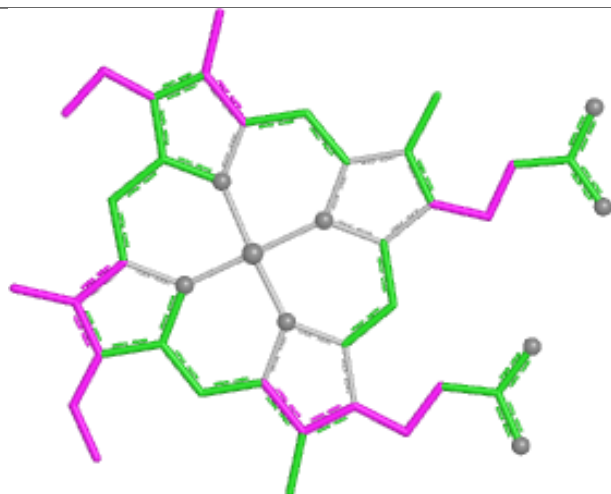




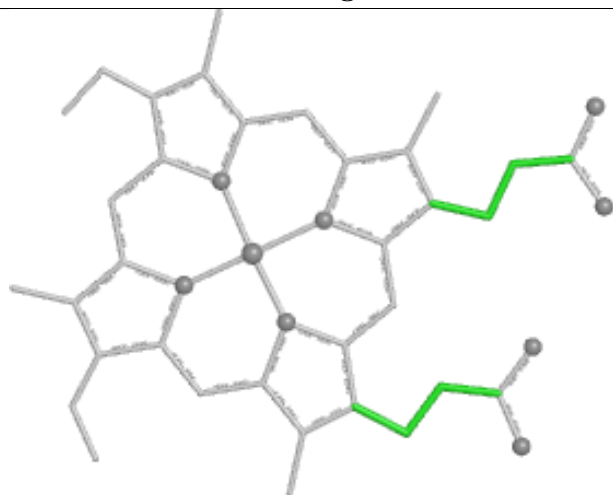
Ligand HEC I 302



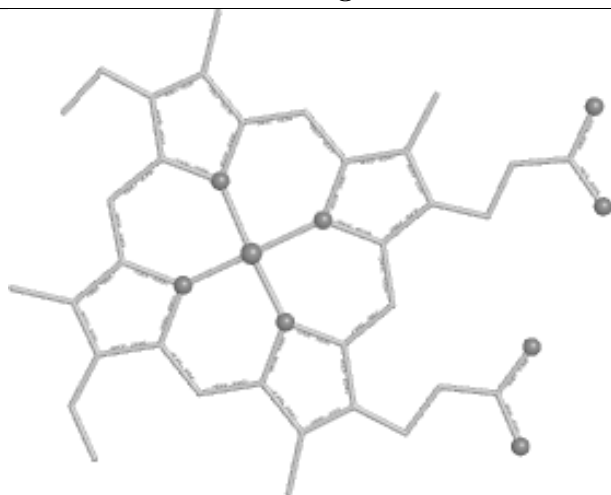
Bond lengths



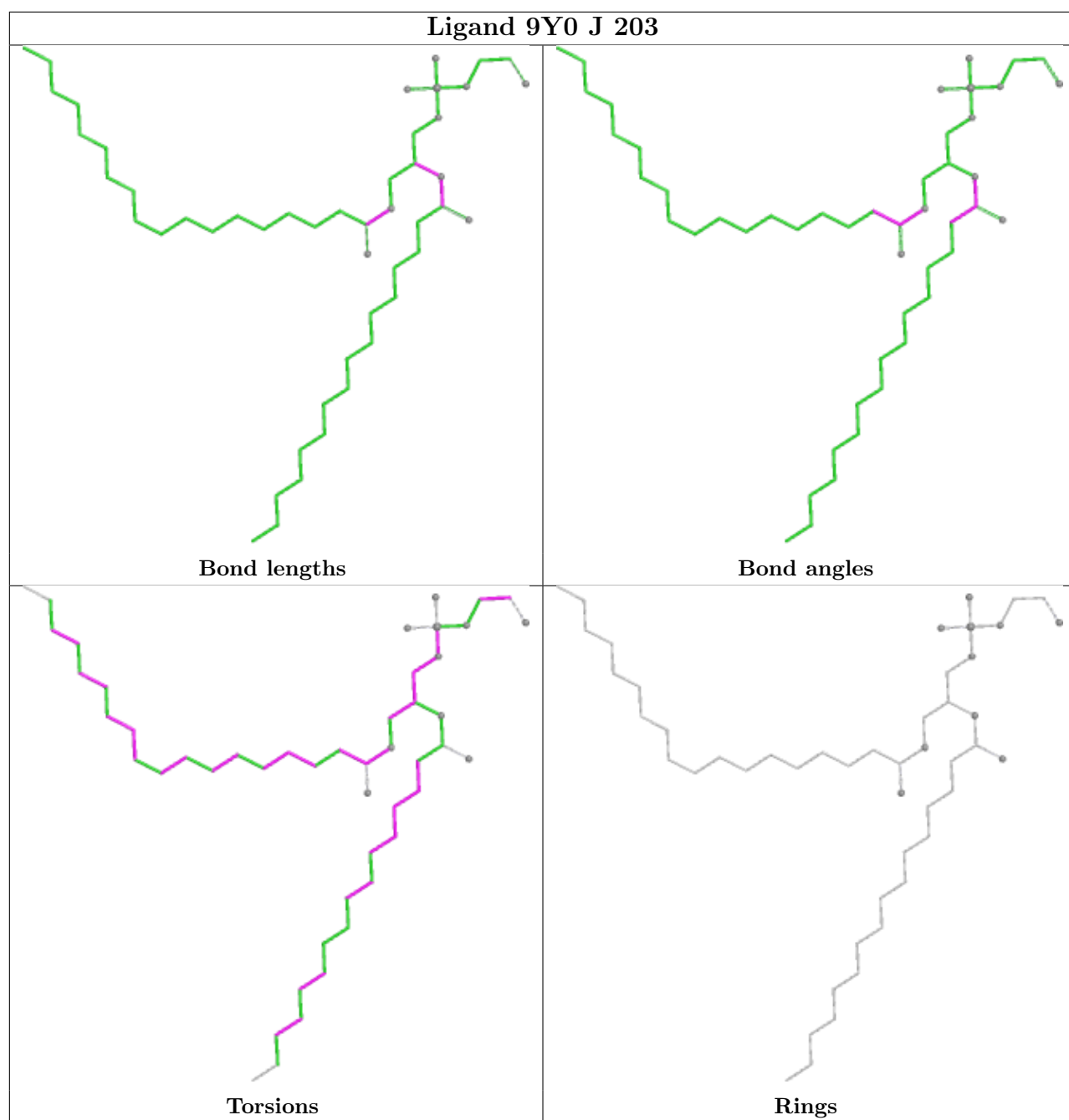
Bond angles

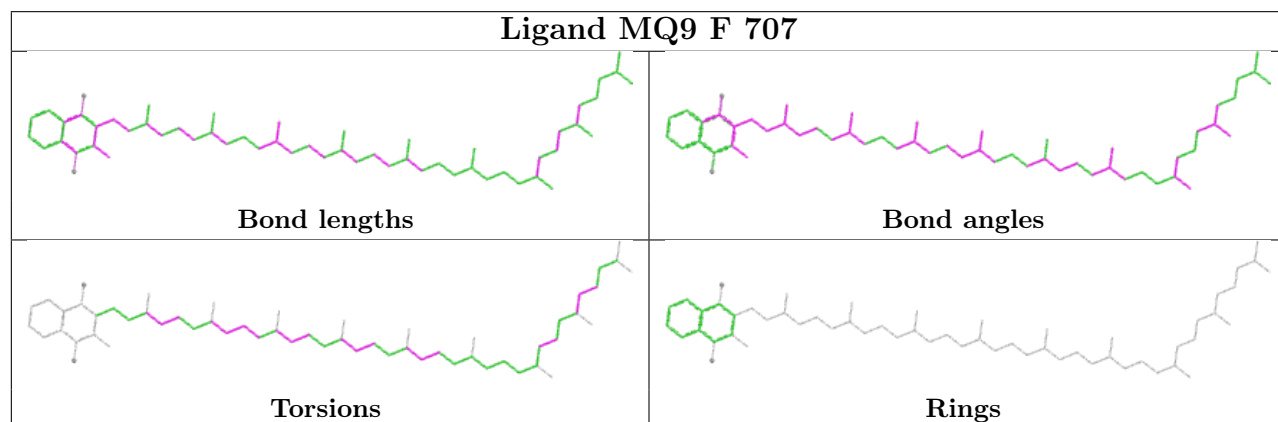
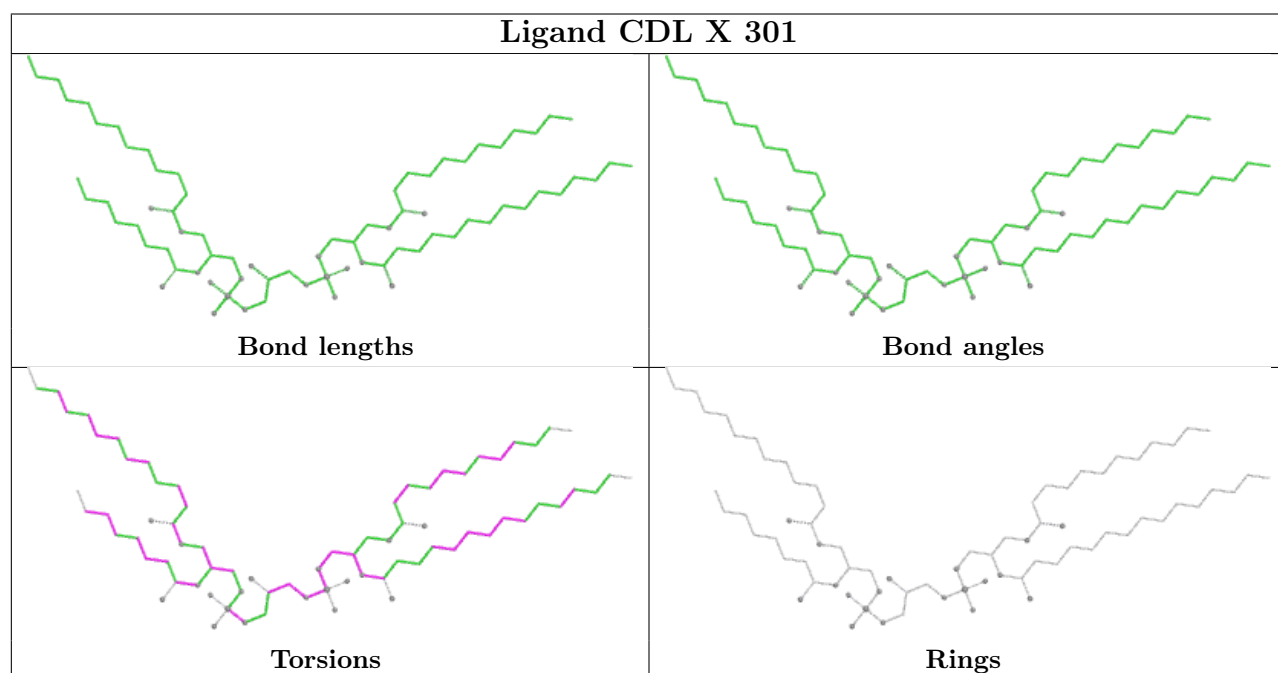
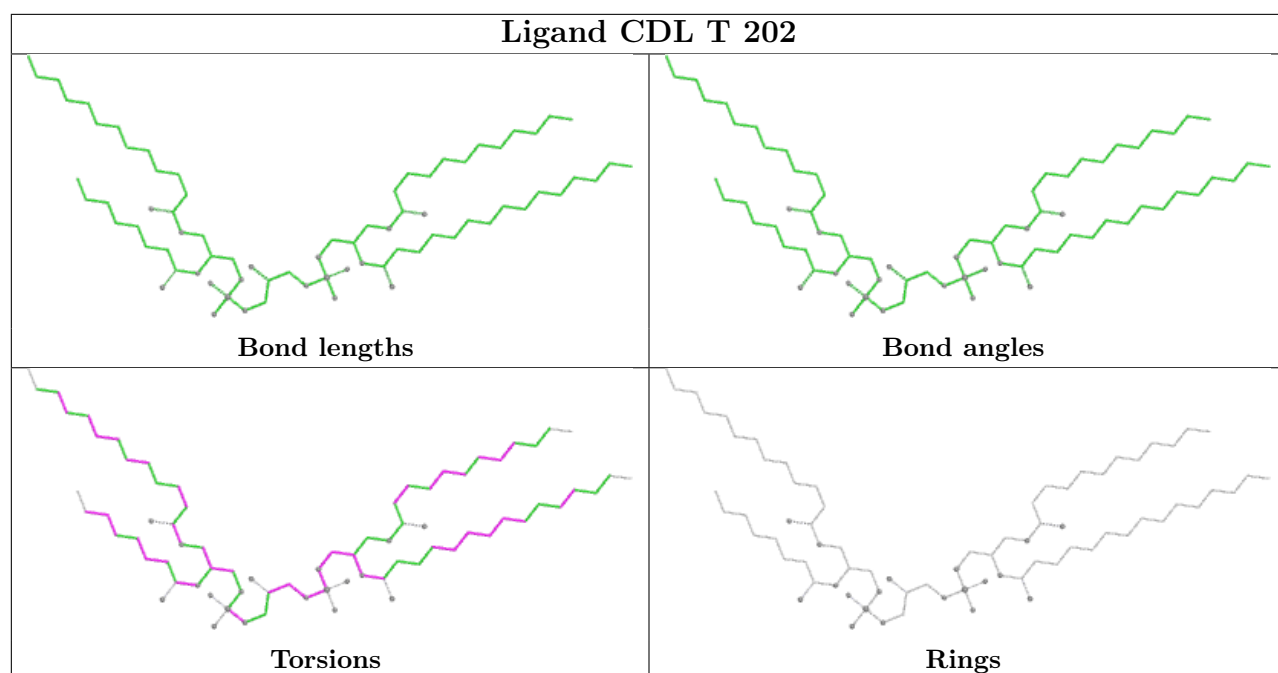


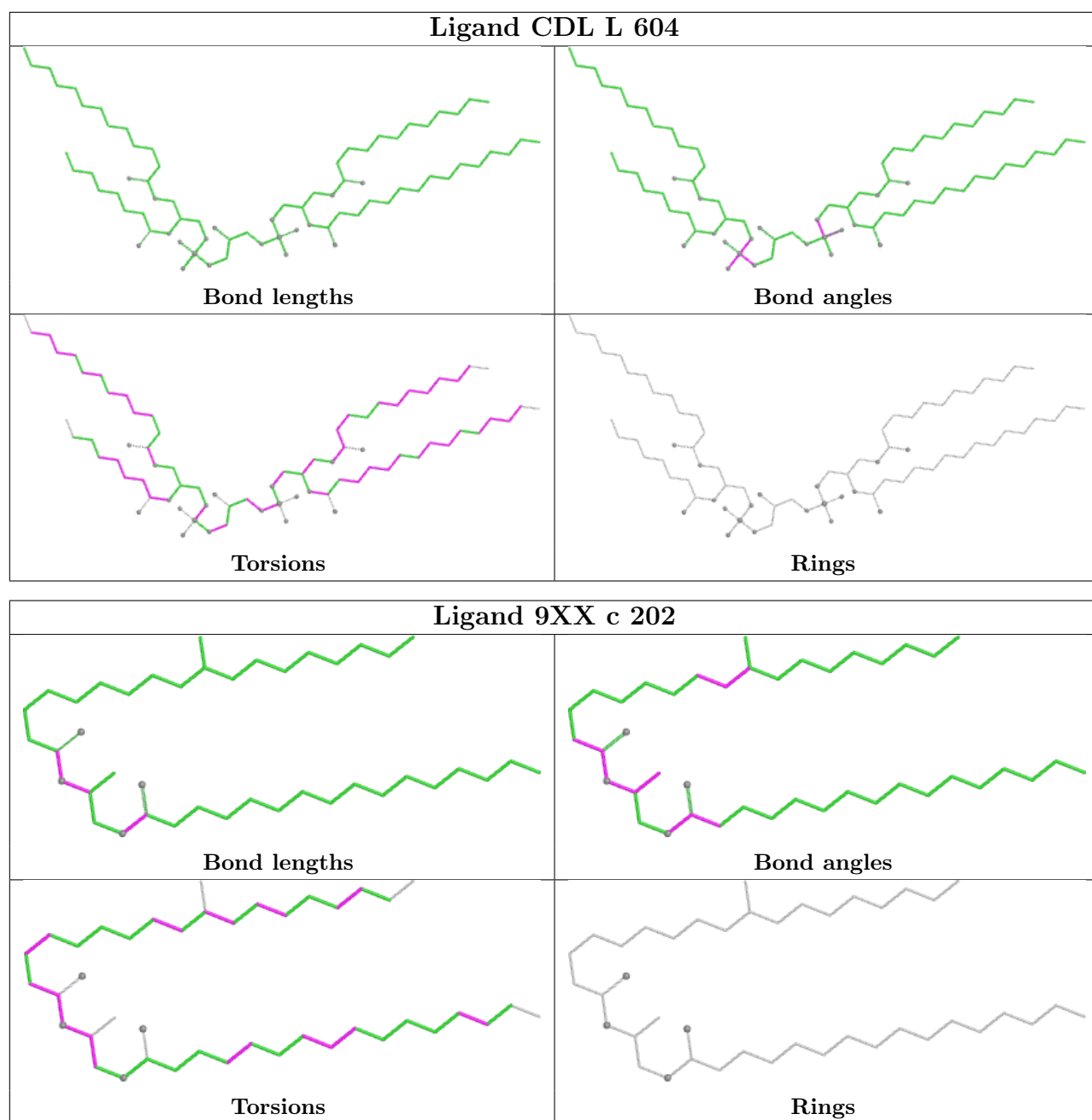
Torsions

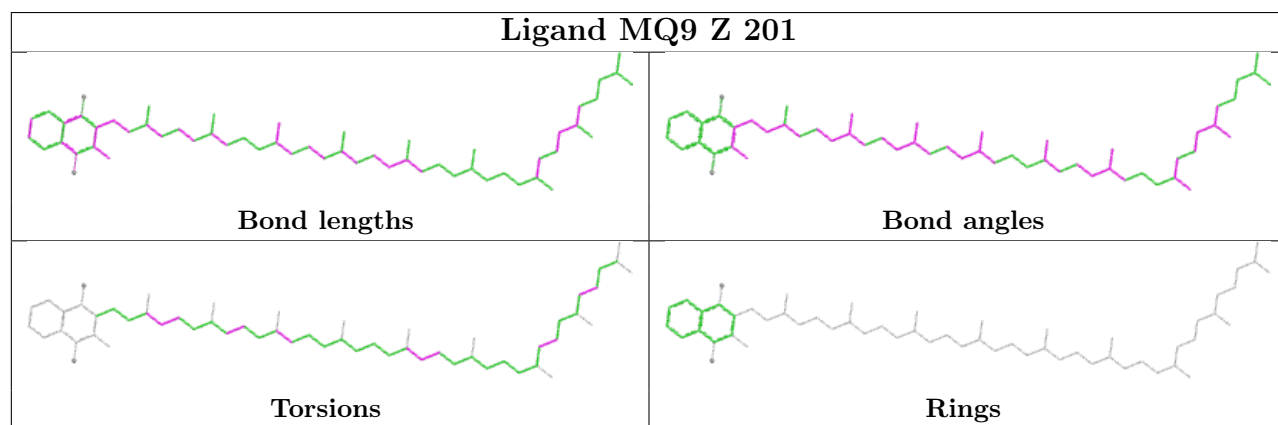
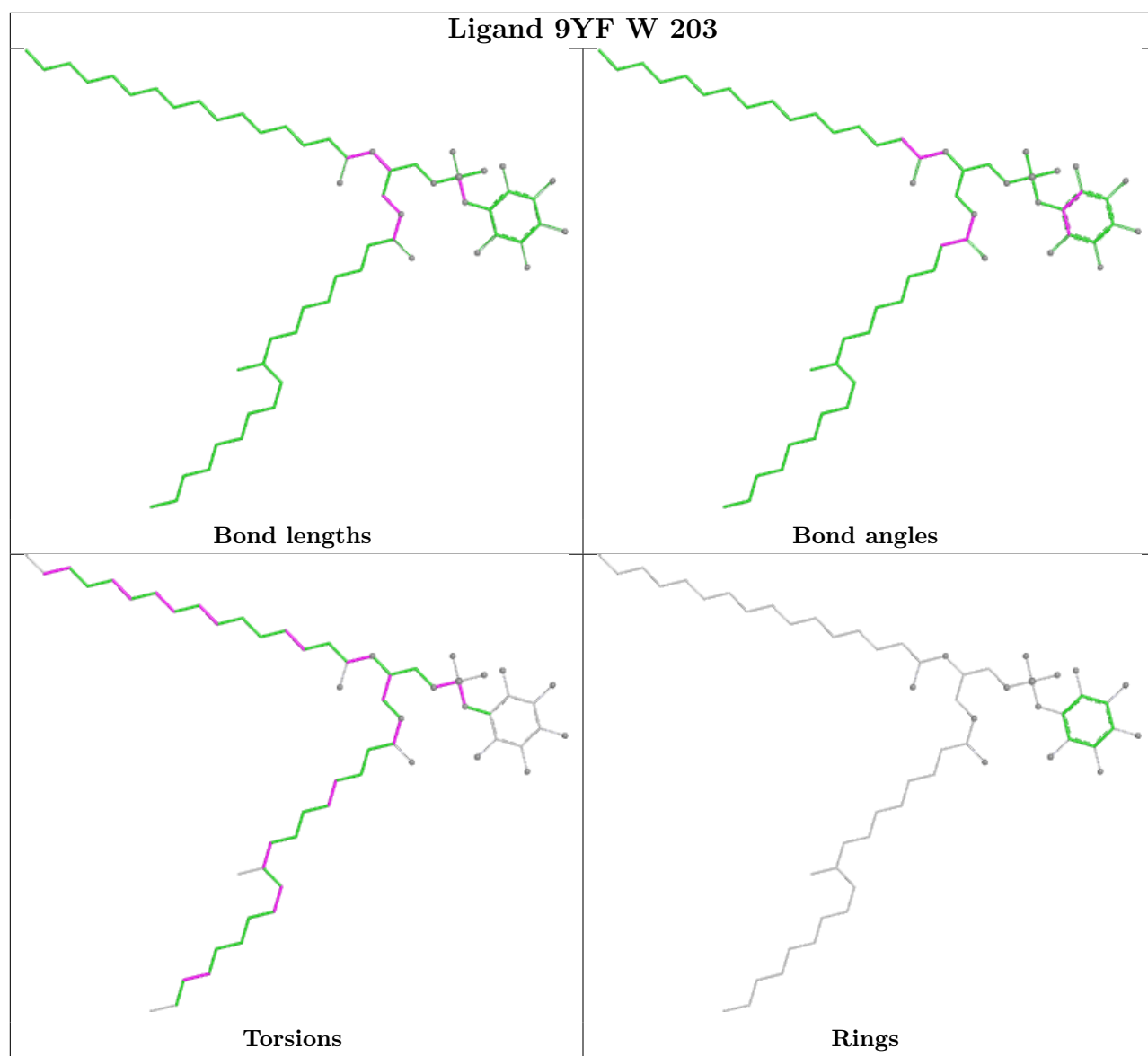


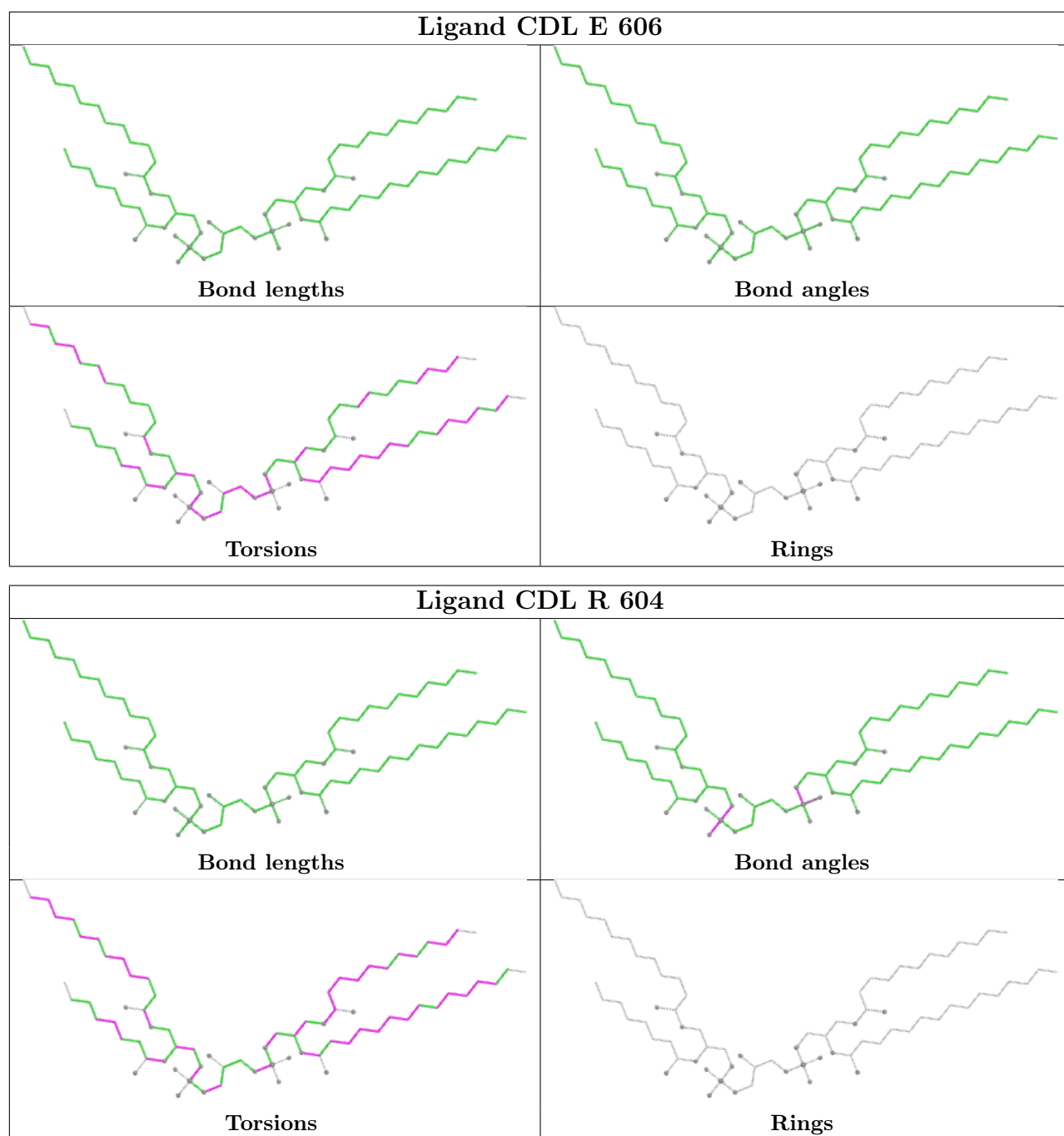
Rings

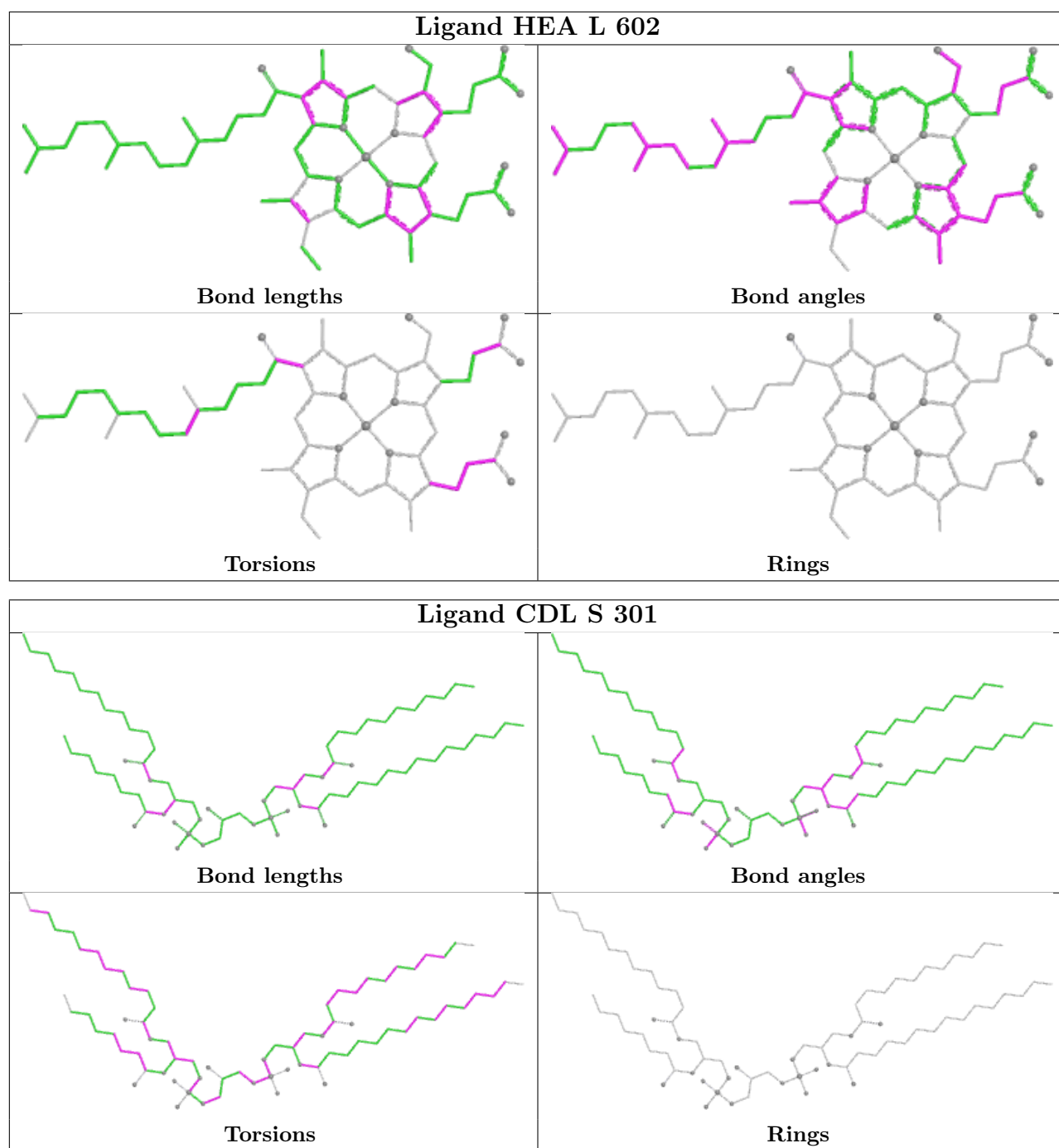


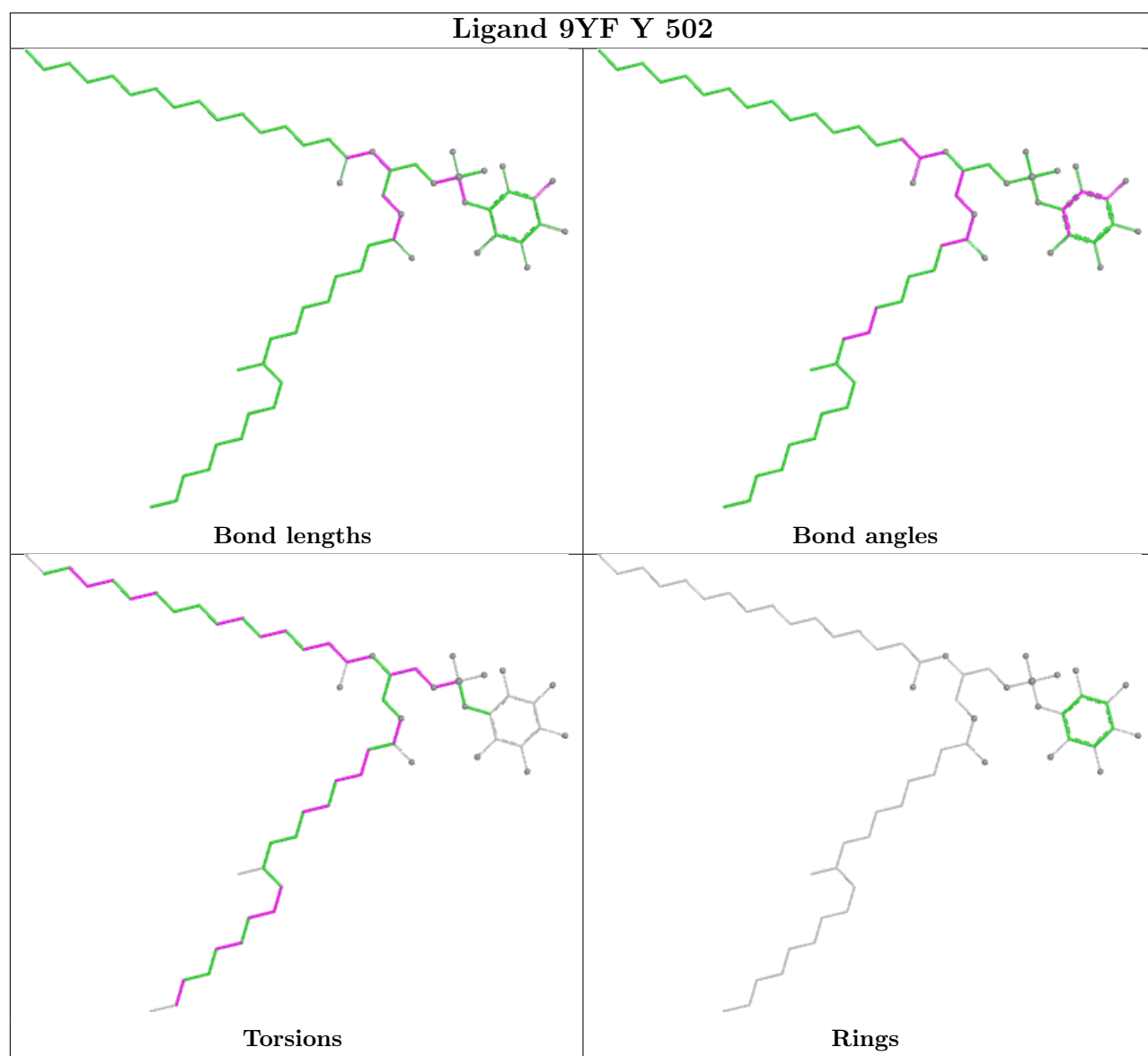


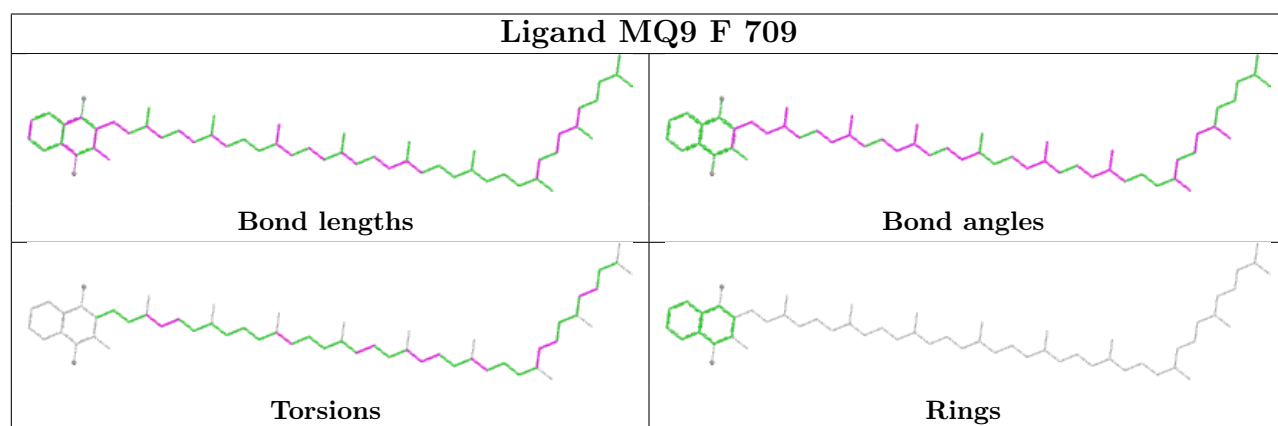
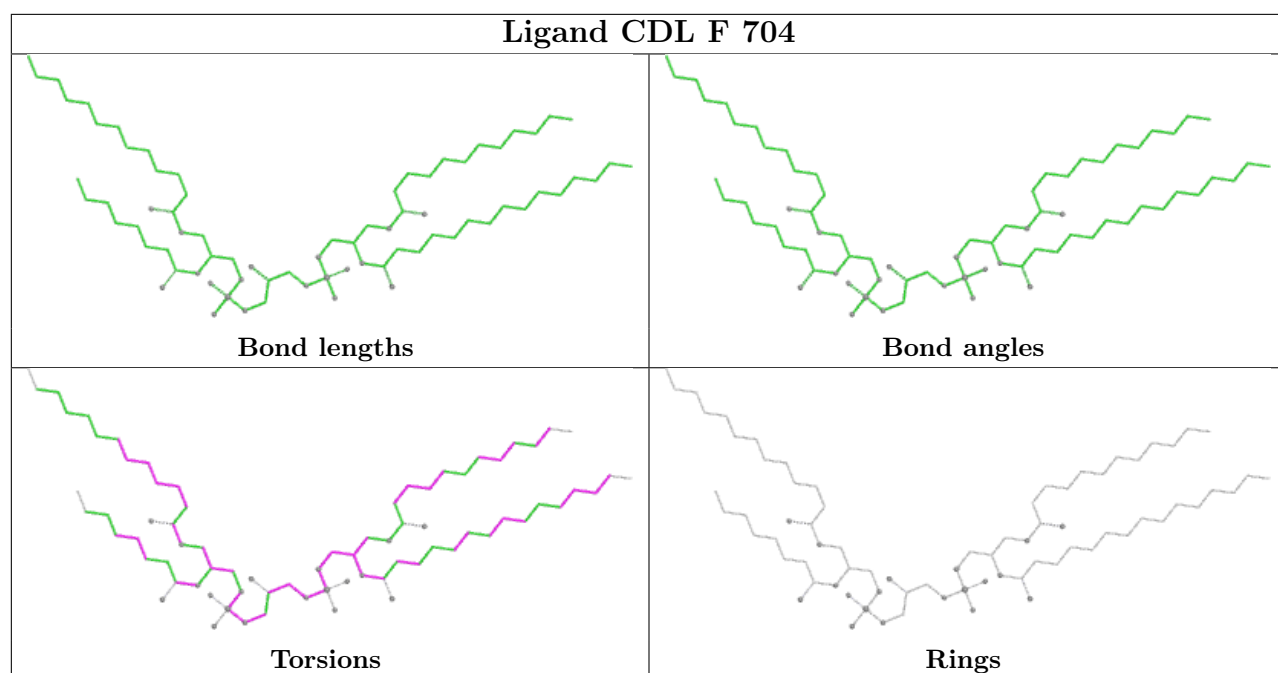


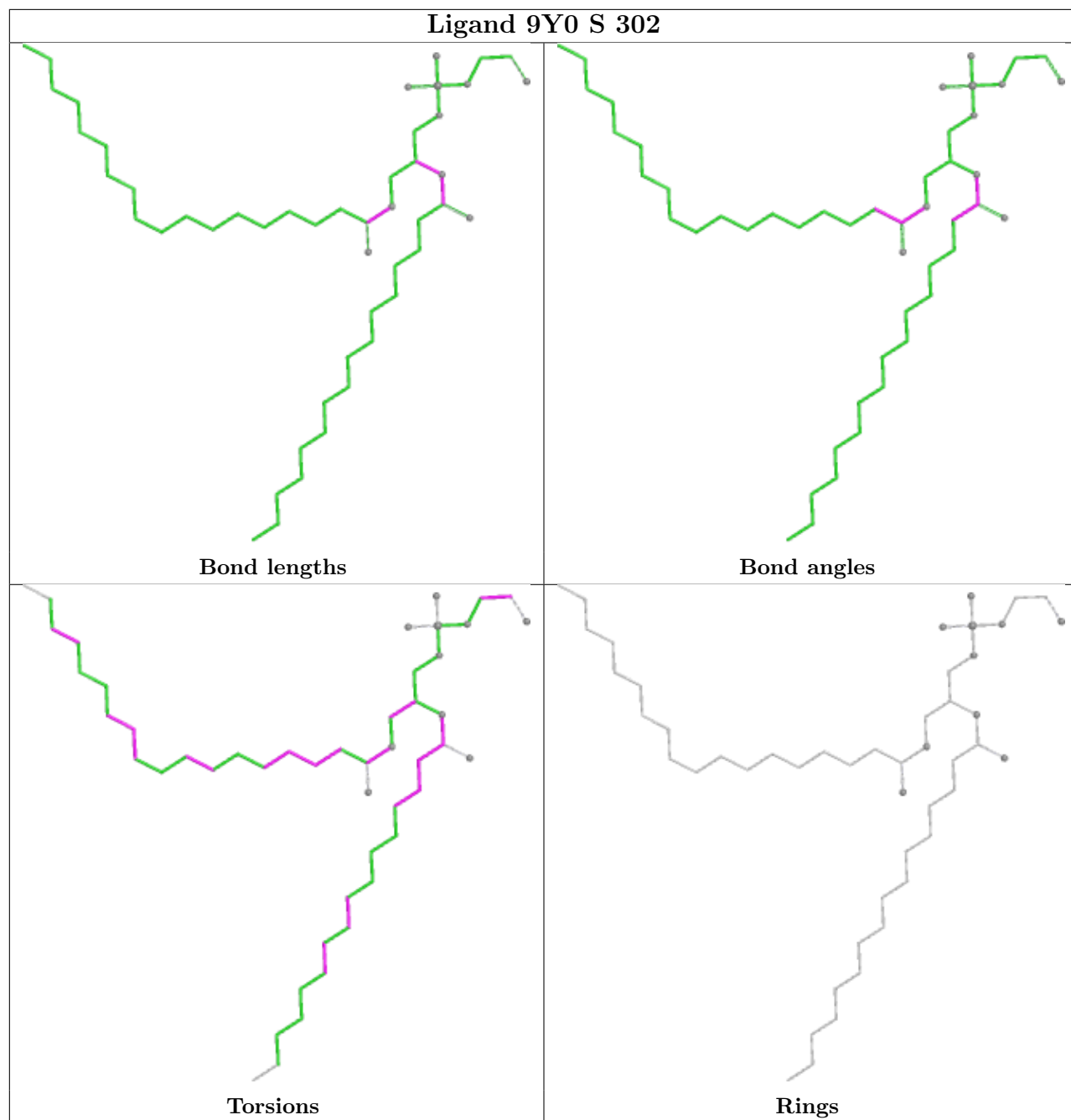


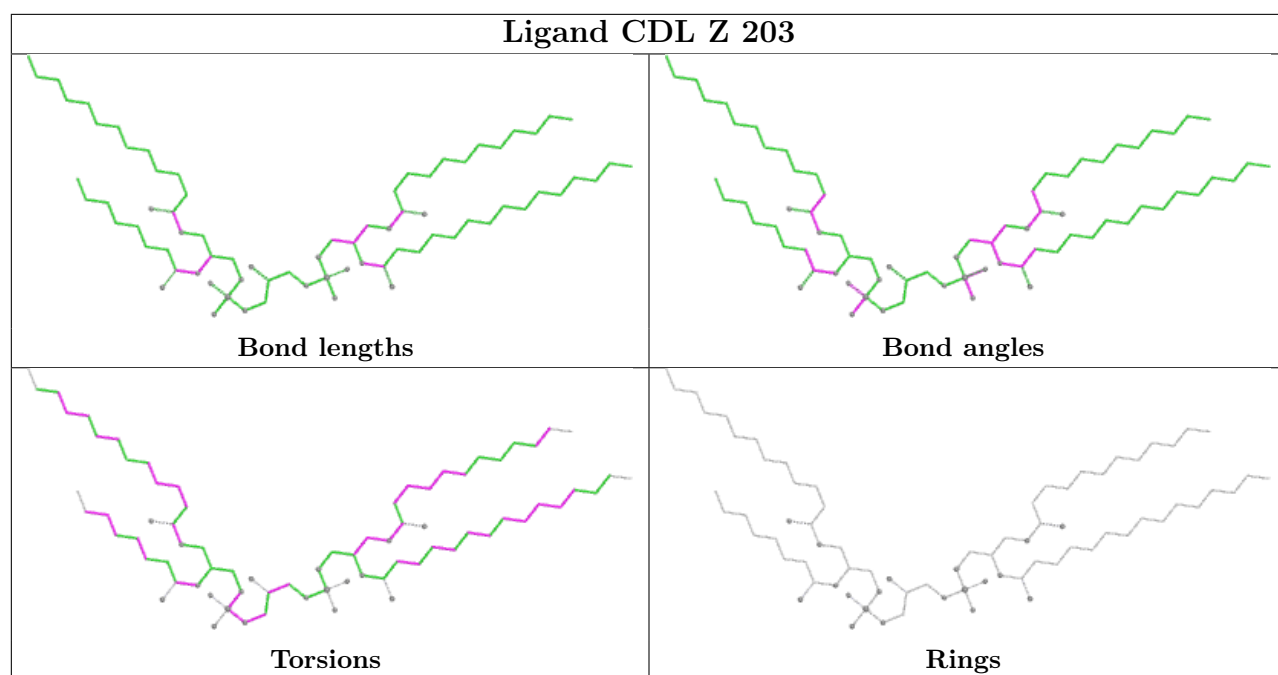


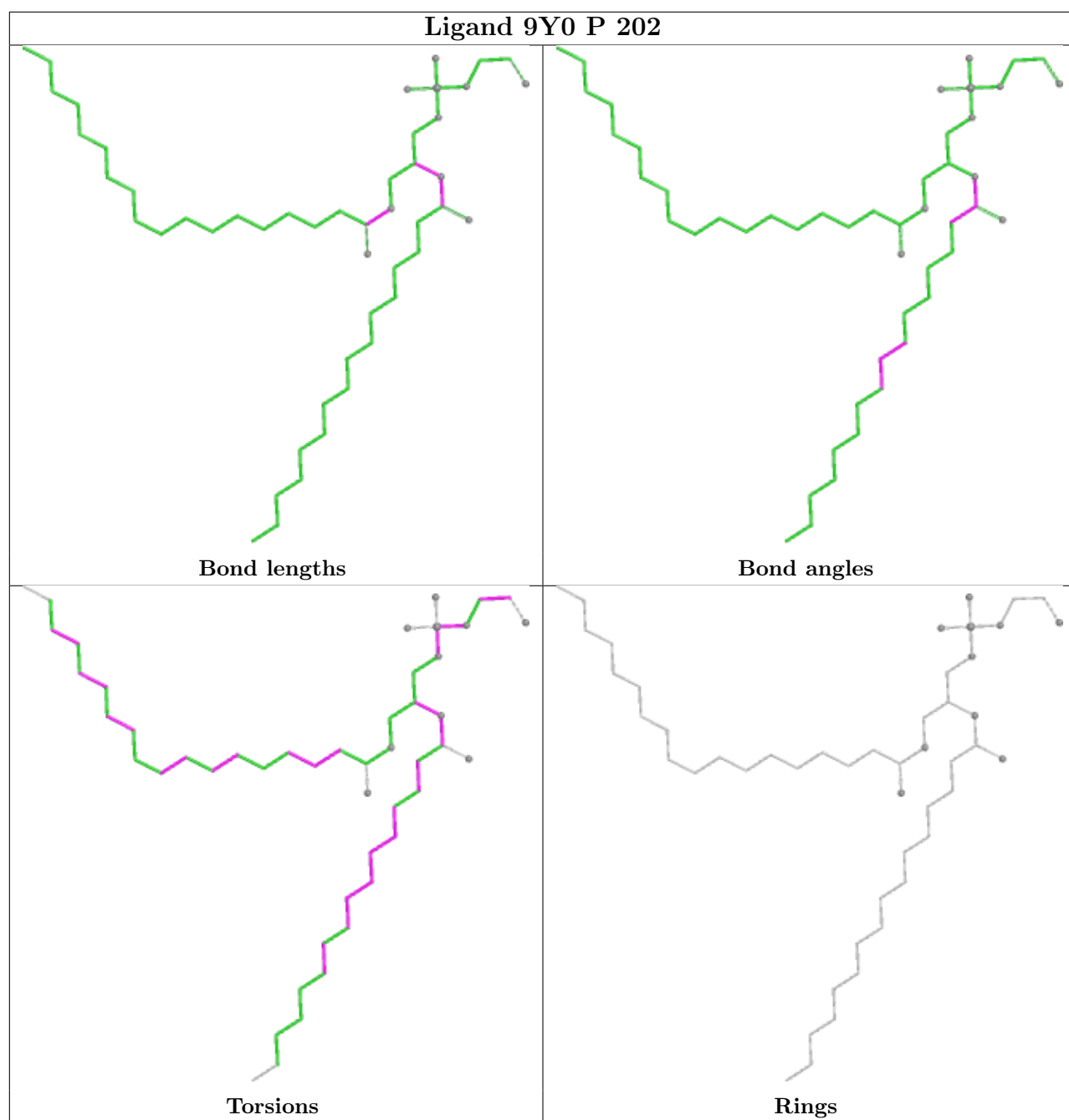


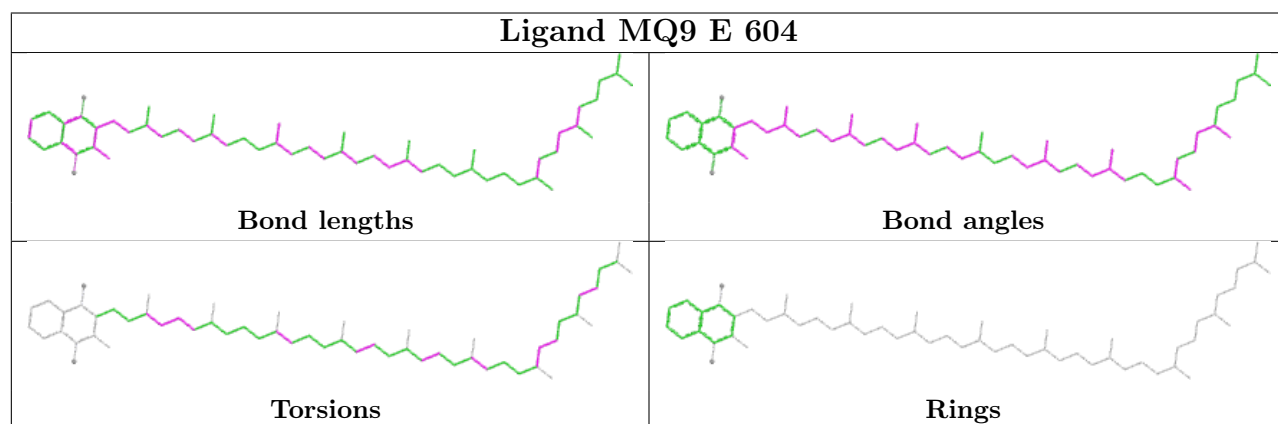
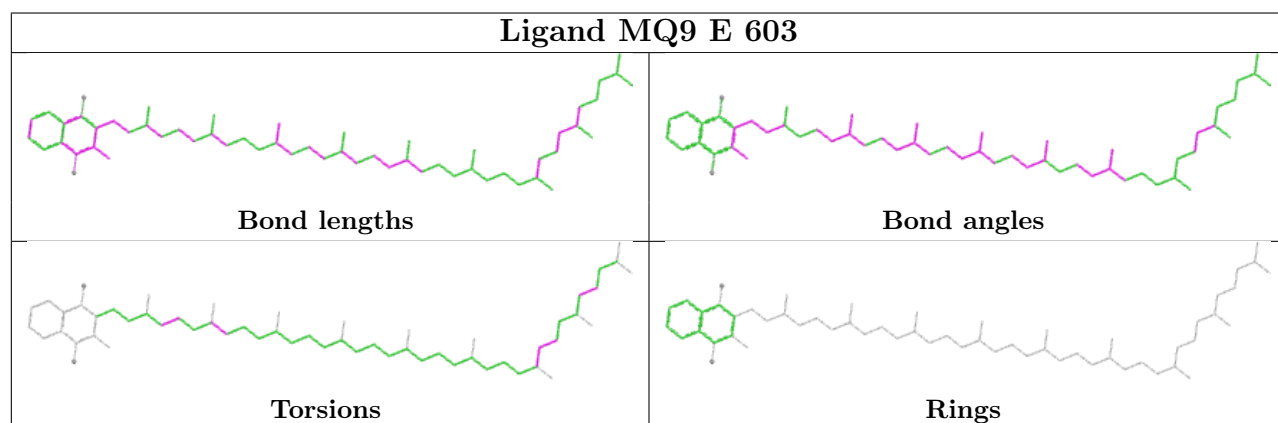
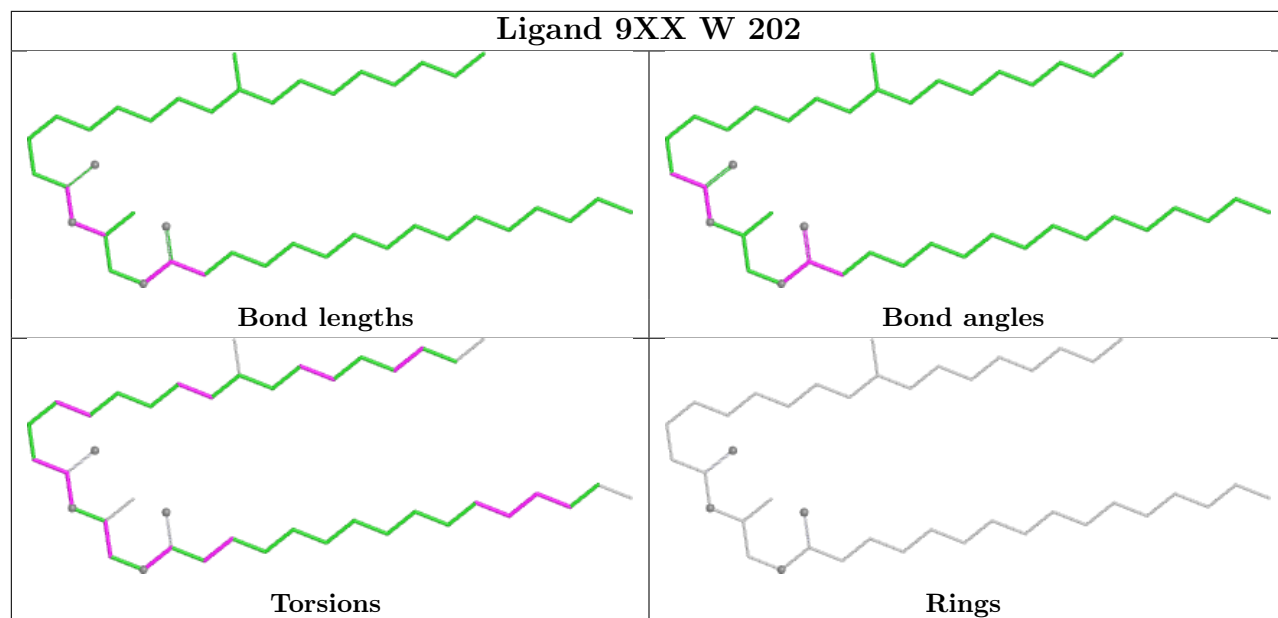


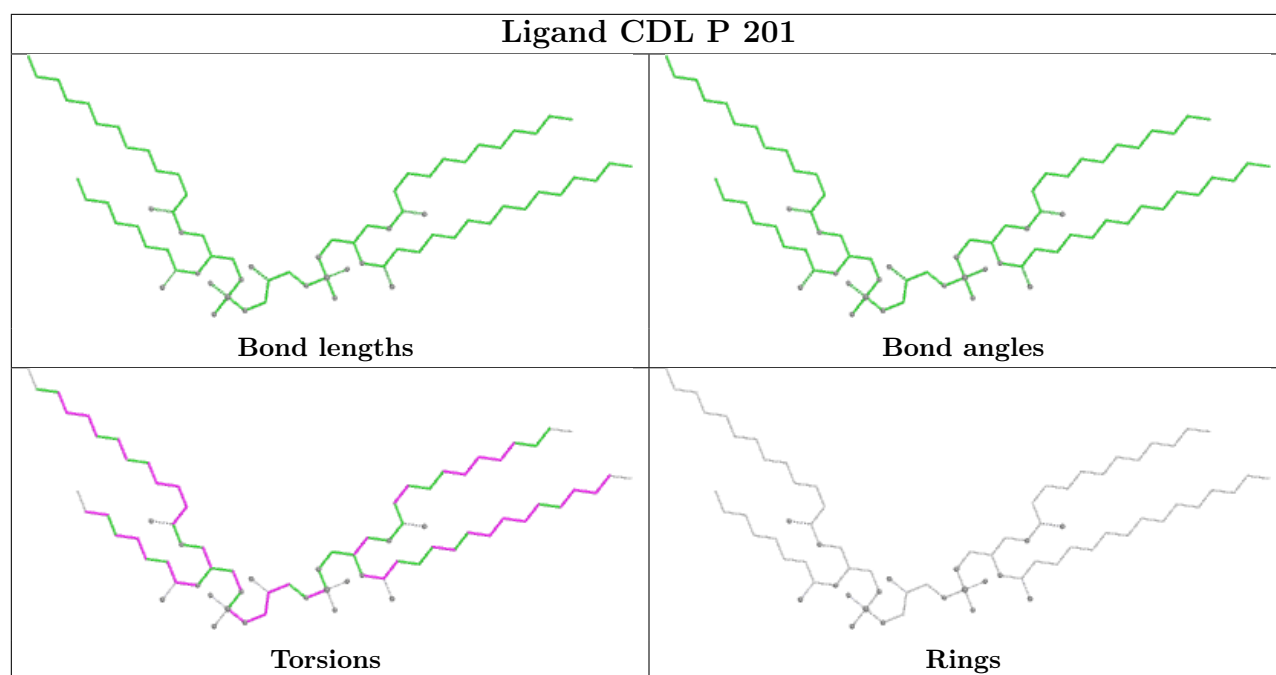












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

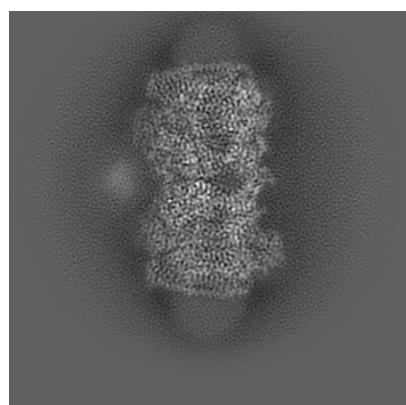
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-24455. These allow visual inspection of the internal detail of the map and identification of artifacts.

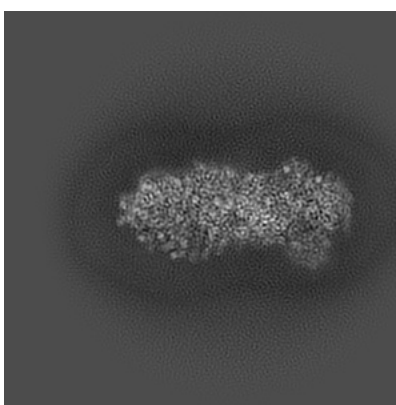
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

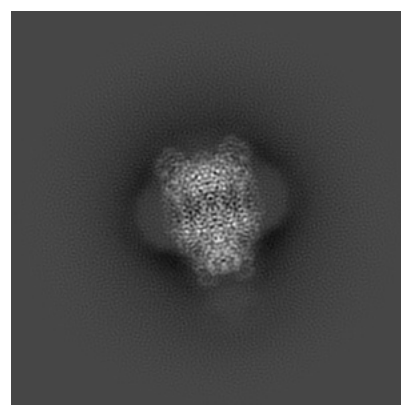
6.1.1 Primary map



X



Y

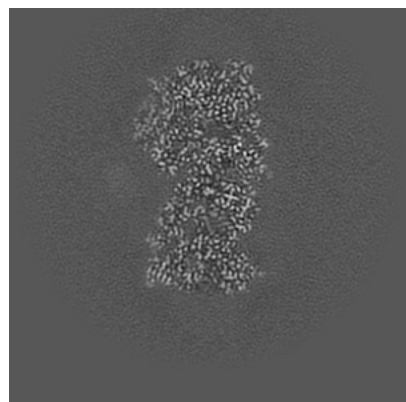


Z

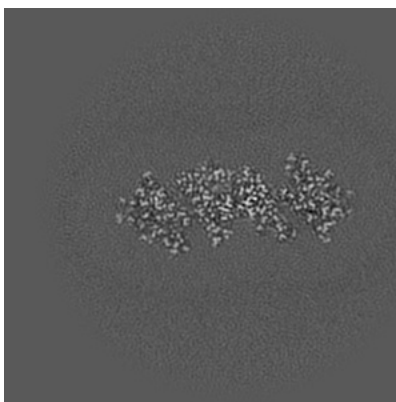
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

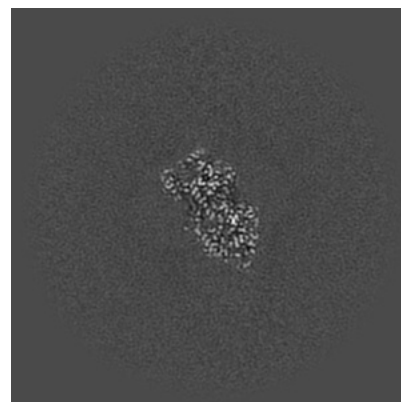
6.2.1 Primary map



X Index: 165



Y Index: 165

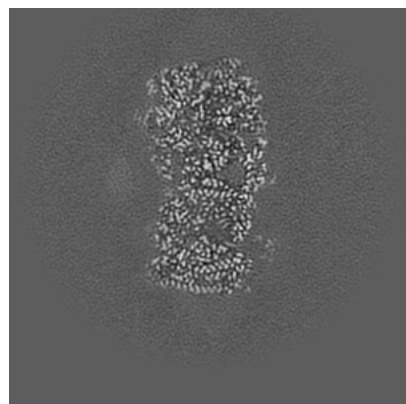


Z Index: 165

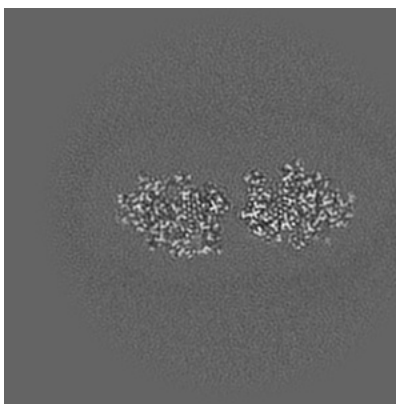
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

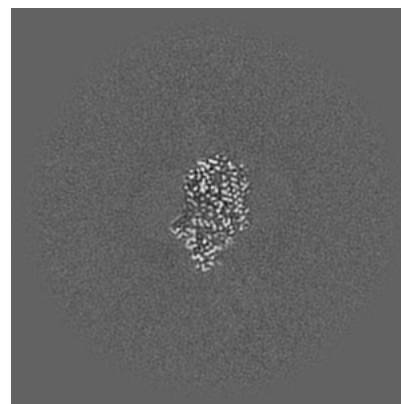
6.3.1 Primary map



X Index: 170



Y Index: 182

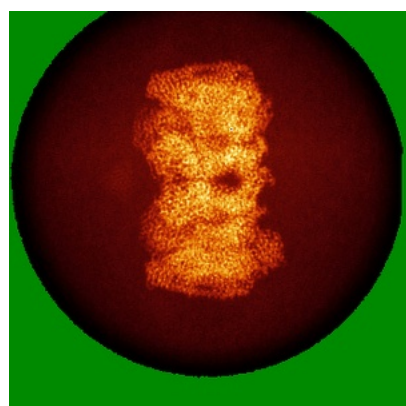


Z Index: 208

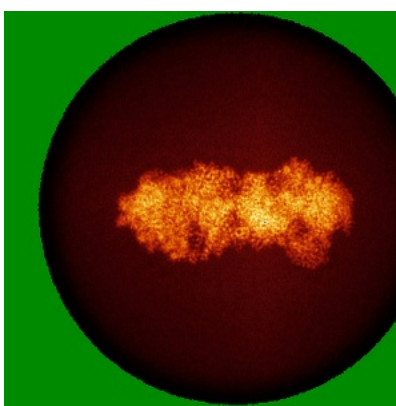
The images above show the largest variance slices of the map in three orthogonal directions.

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

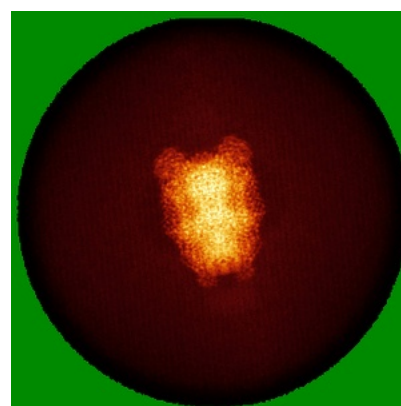
6.4.1 Primary map



X



Y

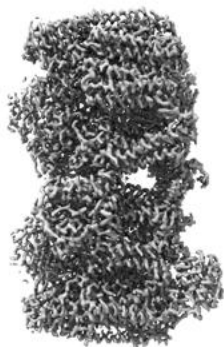


Z

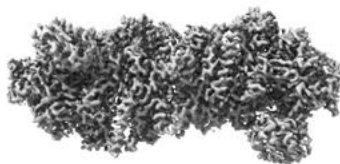
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

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

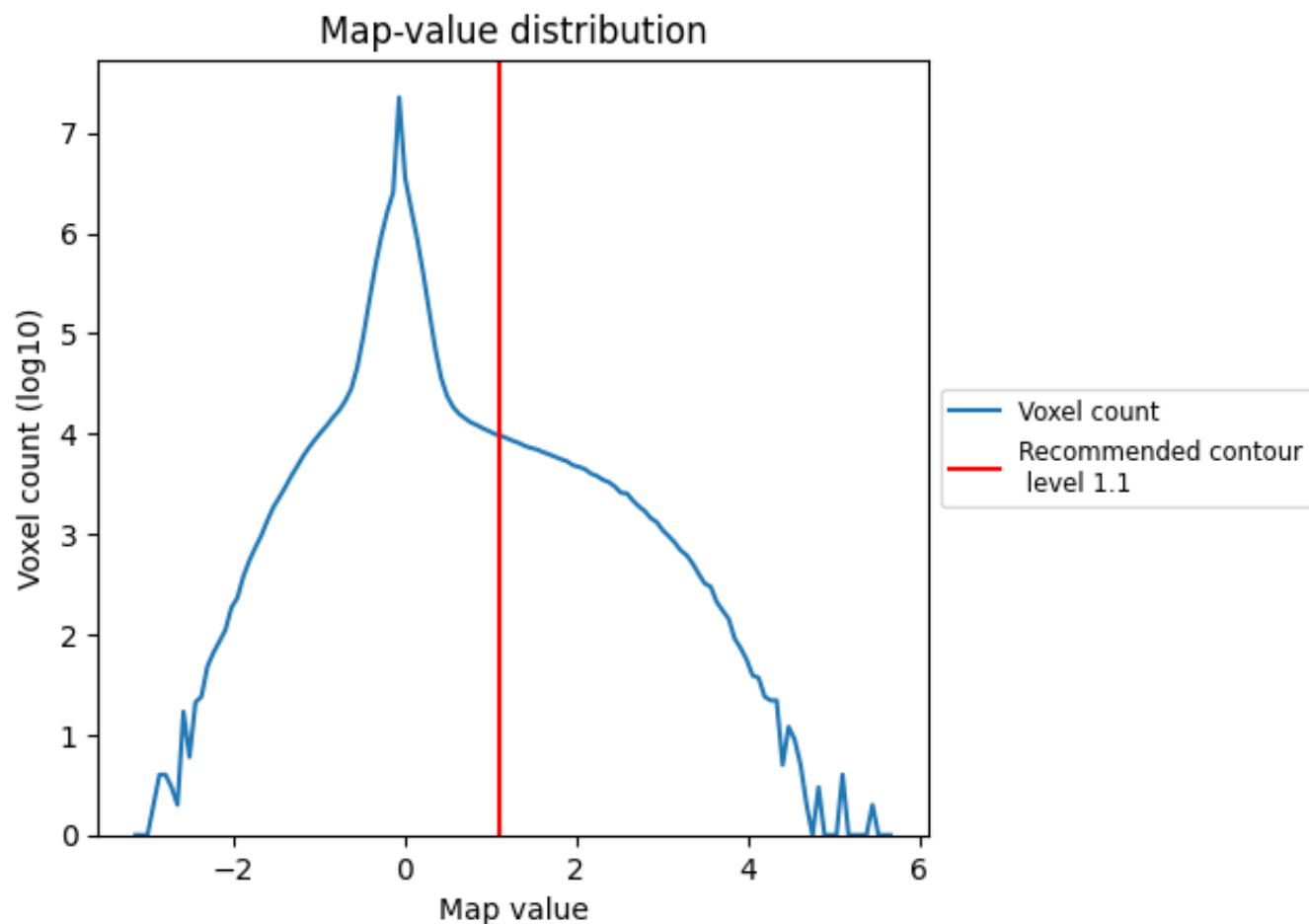
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

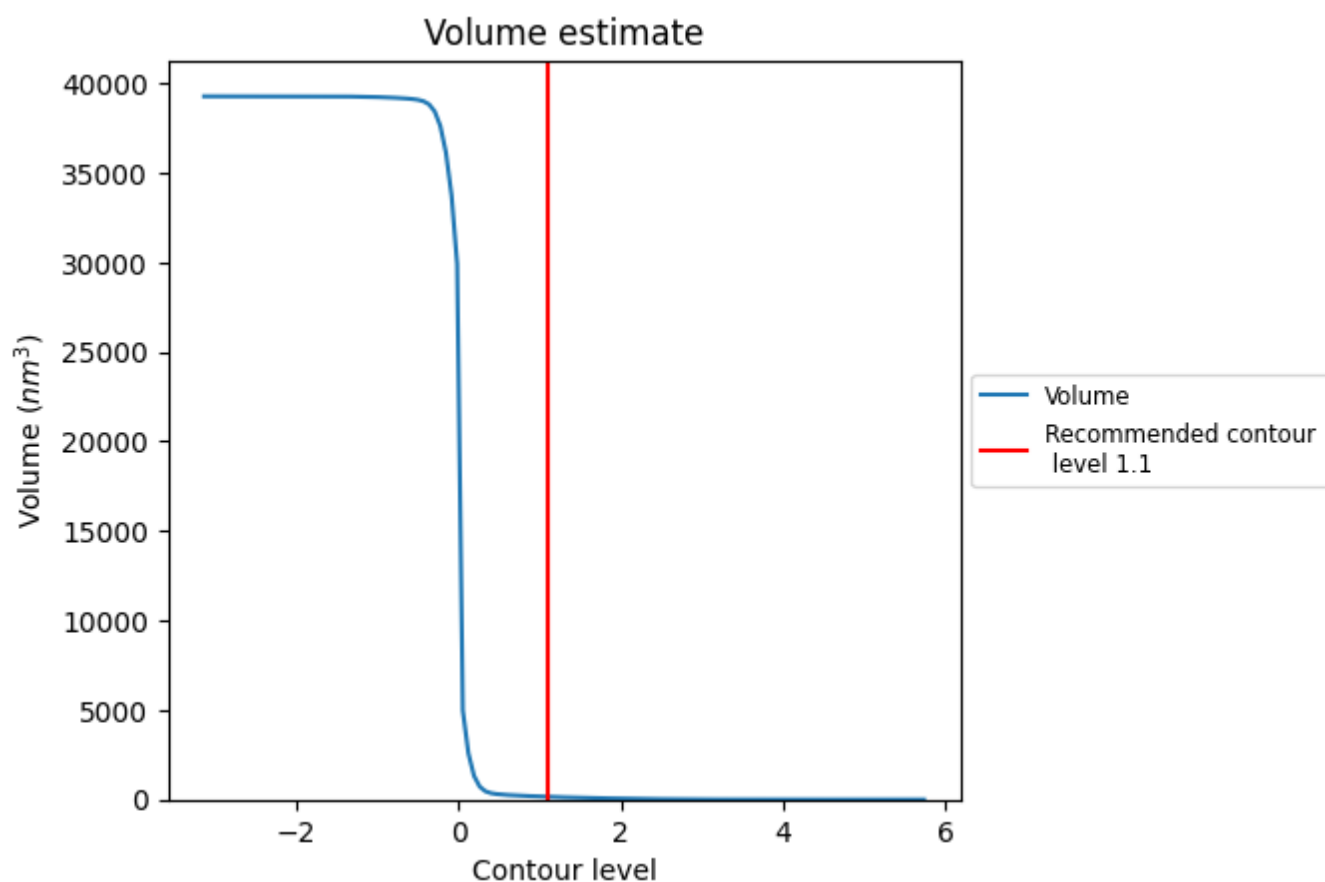
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

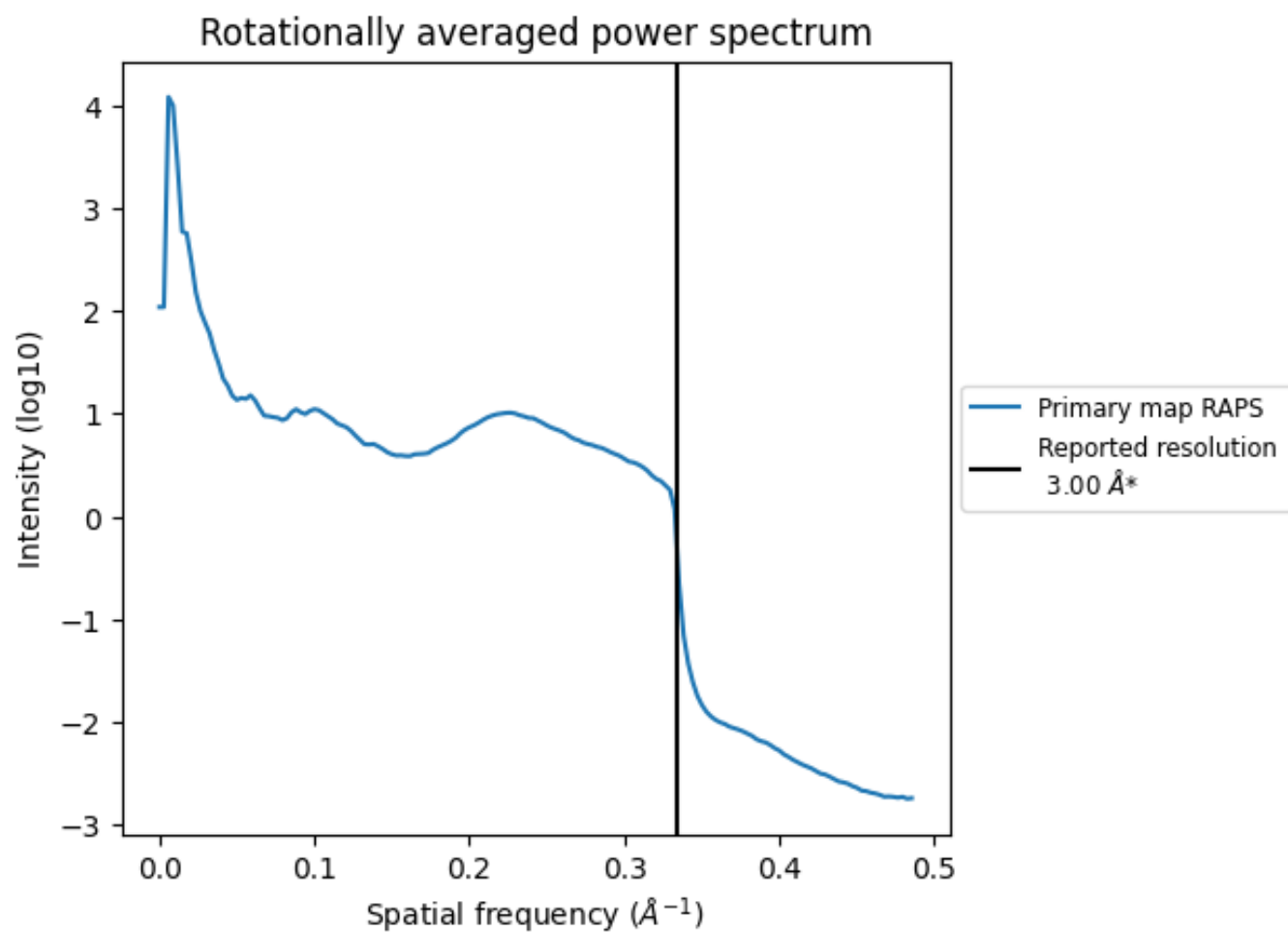
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 155 nm³; this corresponds to an approximate mass of 140 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 ⓘ



*Reported resolution corresponds to spatial frequency of 0.333 Å⁻¹

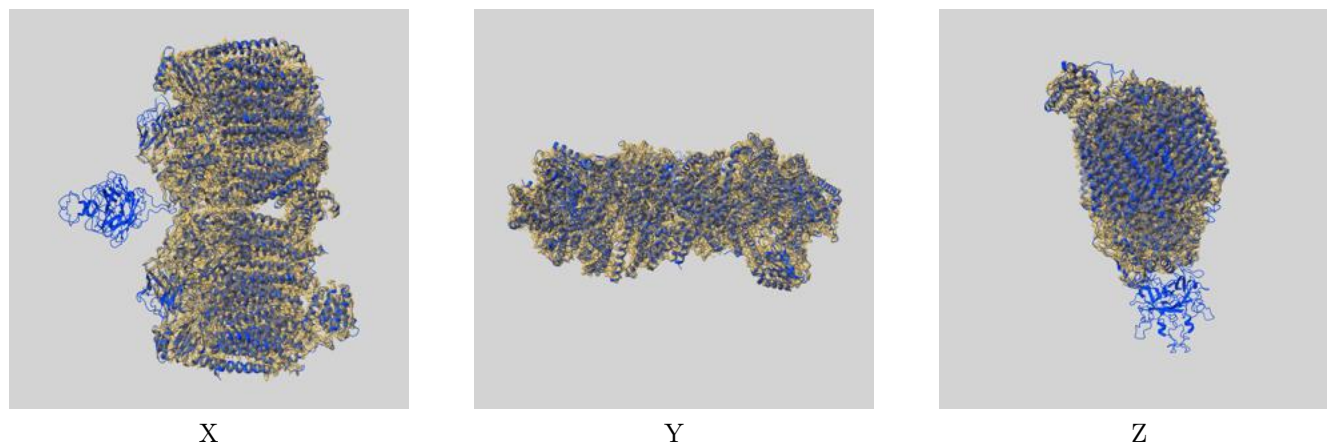
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

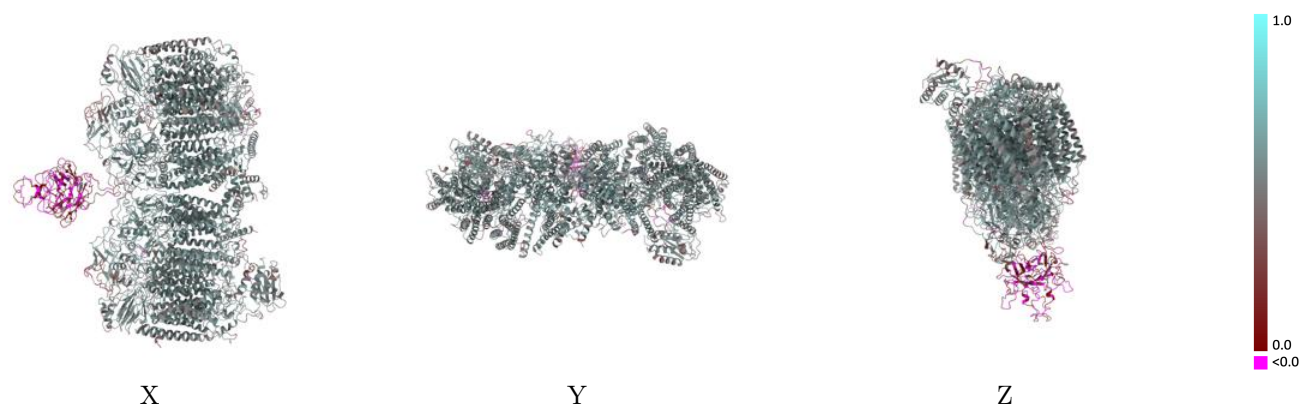
This section contains information regarding the fit between EMDB map EMD-24455 and PDB model 7RH5. Per-residue inclusion information can be found in section 3 on page 15.

9.1 Map-model overlay [i](#)



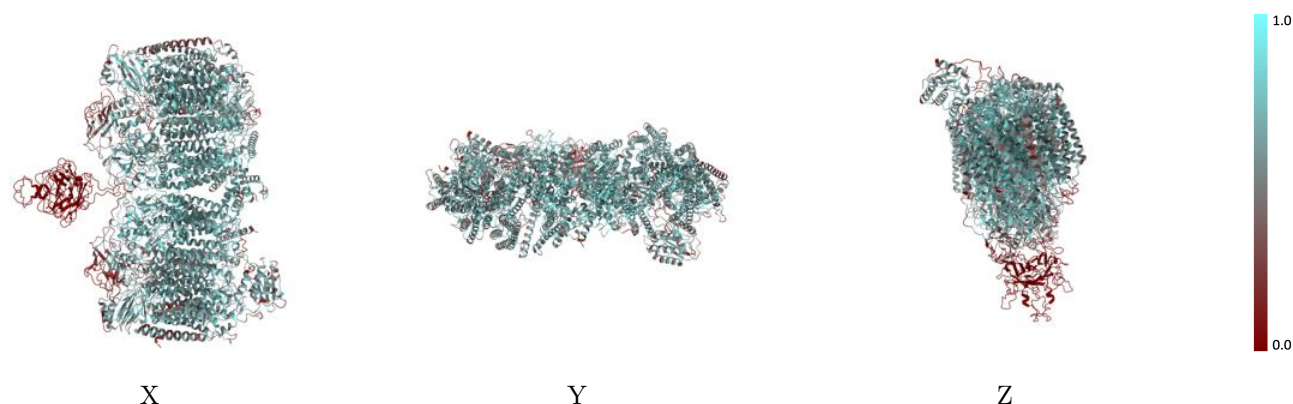
The images above show the 3D surface view of the map at the recommended contour level 1.1 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



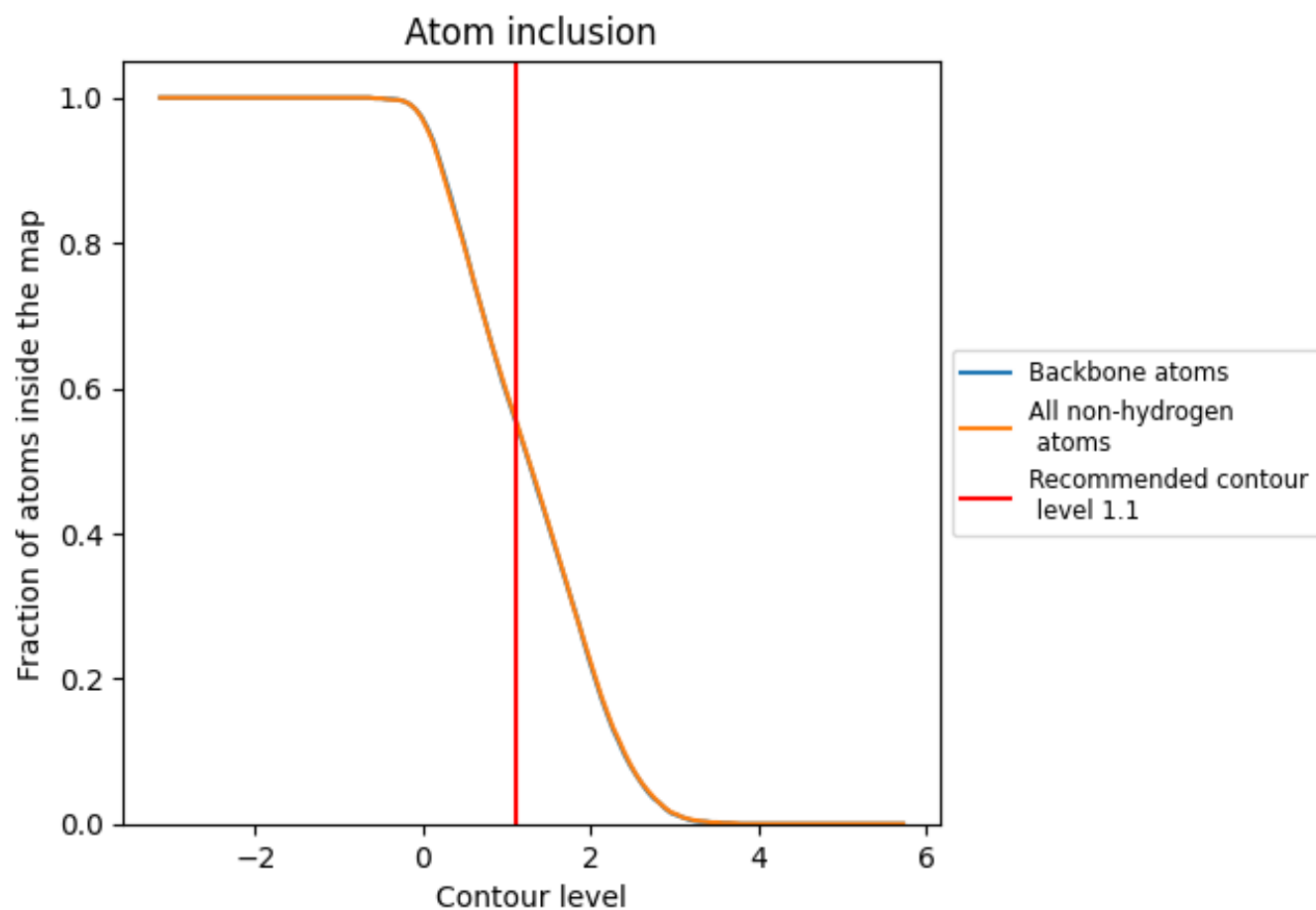
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (1.1).



















































9.4 Atom inclusion [i](#)



At the recommended contour level, 56% of all backbone atoms, 56% 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 (1.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5600	 0.5130
D	 0.0790	 0.1670
E	 0.6810	 0.5580
F	 0.6870	 0.5560
G	 0.0850	 0.1590
I	 0.6130	 0.5480
J	 0.4740	 0.5050
K	 0.5030	 0.4900
L	 0.6620	 0.5560
M	 0.6750	 0.5500
O	 0.6400	 0.5460
P	 0.5140	 0.5020
Q	 0.5170	 0.4950
R	 0.6770	 0.5550
S	 0.5920	 0.5140
T	 0.5580	 0.5220
U	 0.4030	 0.4330
V	 0.5340	 0.4920
W	 0.2870	 0.4550
X	 0.5500	 0.5160
Y	 0.6710	 0.5520
Z	 0.5480	 0.5110
a	 0.4060	 0.4380
b	 0.5250	 0.4980
c	 0.2540	 0.4560

