



Full wwPDB EM Validation Report ⓘ

Nov 21, 2022 – 02:04 PM EST

PDB ID : 7RH6
EMDB ID : EMD-24456
Title : Mycobacterial CIII2CIV2 supercomplex, inhibitor free, -Lpqe cyt cc open
Authors : Di Trani, J.M.; Yanofsky, D.J.; Rubinstein, J.L.
Deposited on : 2021-07-16
Resolution : 3.50 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.dev43
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.3

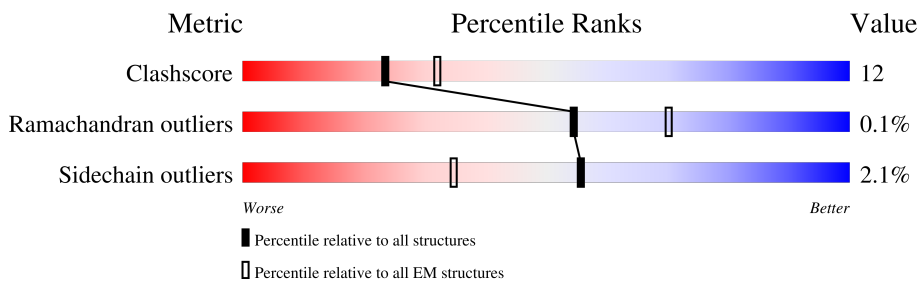
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.50 Å.

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



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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	I	223	
1	O	223	
2	L	552	
2	R	552	
3	M	382	
3	Y	382	
4	S	203	
4	X	203	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
5	E	535	 82% 18%
5	F	535	 82% 18%
6	J	100	 17% 71% 20% 8%
6	P	100	 19% 83% 9% 8%
7	D	216	 90% 97%
7	G	216	 89% 99%
8	K	312	 32% 85% 14%
8	Q	312	 36% 81% 18%
9	T	139	 8% 83% 17%
9	Z	139	 13% 83% 17%
10	U	79	 42% 86% 14%
10	a	79	 28% 99%
11	V	145	 31% 84% 16%
11	b	145	 19% 100%
12	c	159	 65% 98%

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
13	HEC	O	302	-	-	X	-
17	HEA	L	602	X	-	-	-
17	HEA	L	603	X	-	-	-
17	HEA	R	602	X	-	-	-
17	HEA	R	603	X	-	-	-
18	CDL	L	604	-	-	X	-
18	CDL	S	302	-	-	X	-
18	CDL	T	201	-	-	X	-
18	CDL	T	202	-	-	X	-
18	CDL	T	203	-	-	X	-
18	CDL	X	302	-	-	X	-
18	CDL	X	303	-	-	X	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
18	CDL	Z	202	-	-	X	-
18	CDL	Z	203	-	-	X	-

2 Entry composition [i](#)

There are 23 unique types of molecules in this entry. The entry contains 92757 atoms, of which 45318 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 bc1 complex cytochrome c subunit.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
1	O	210	Total	C	H	N	O	S	0	0
			3014	948	1483	276	295	12		
1	I	223	Total	C	H	N	O	S	0	0
			3187	1008	1564	289	314	12		

- Molecule 2 is a protein called Cytochrome c oxidase subunit 1.

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

- Molecule 3 is a protein called Cytochrome bc1 complex Rieske iron-sulfur subunit.

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

- Molecule 4 is a protein called Cytochrome aa3 subunit 3.

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

- Molecule 5 is a protein called Cytochrome bc1 complex cytochrome b subunit.

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

- Molecule 6 is a protein called Putative conserved transmembrane protein.

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

- Molecule 7 is a protein called Superoxide dismutase [Cu-Zn].

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

- Molecule 8 is a protein called Cytochrome aa3 subunit 2.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
8	Q	312	4856	1592	2391	412	451	10	0	0
8	K	312	4857	1592	2392	412	451	10	0	0

- Molecule 9 is a protein called Cytochrome c oxidase polypeptide 4.

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

- Molecule 10 is a protein called Cytochrome c oxidase subunit CtaJ.

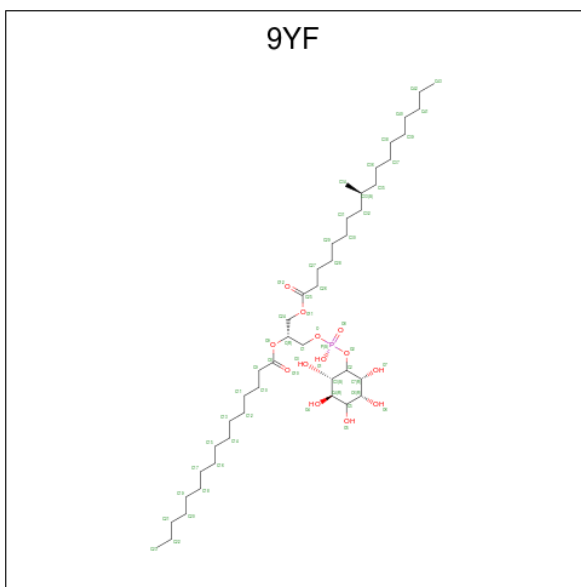
Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
10	U	79	1167	381	576	107	101	2	0	0

Continued on next page...

Continued from previous page...

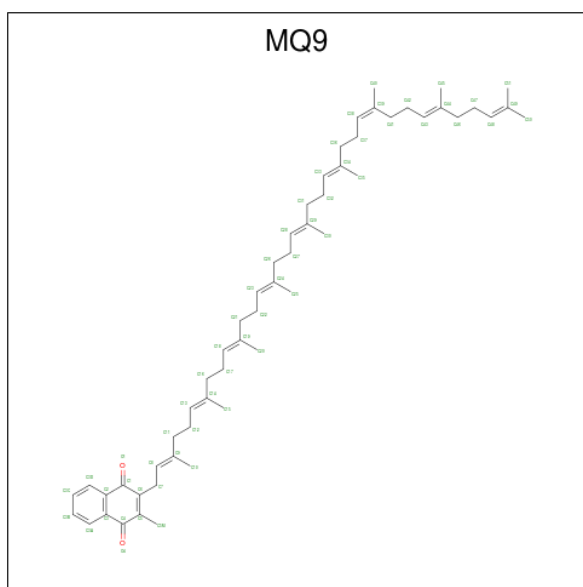
Mol	Chain	Residues	Atoms					AltConf	
			Total	C	Fe	H	N		O
13	I	1	150	68	2	64	8	8	0

- Molecule 14 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
			Total	C	H	O	P	
14	O	1	142	44	84	13	1	0
14	E	1	142	44	84	13	1	0
14	I	1	142	44	84	13	1	0
14	Y	1	284	88	168	26	2	0
14	Y	1	284	88	168	26	2	0

- Molecule 15 is MENAQUINONE-9 (three-letter code: MQ9) (formula: C₅₆H₈₀O₂).

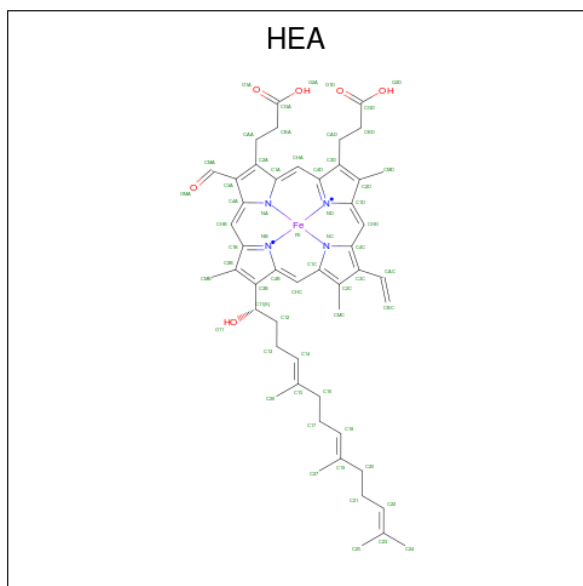


Mol	Chain	Residues	Atoms				AltConf
			Total	C	H	O	
15	O	1	138	56	80	2	0
15	E	1	276	112	160	4	0
15	E	1	276	112	160	4	0
15	F	1	276	112	160	4	0
15	F	1	276	112	160	4	0
15	T	1	138	56	80	2	0
15	Z	1	138	56	80	2	0
15	I	1	138	56	80	2	0

- Molecule 16 is COPPER (II) ION (three-letter code: CU) (formula: Cu).

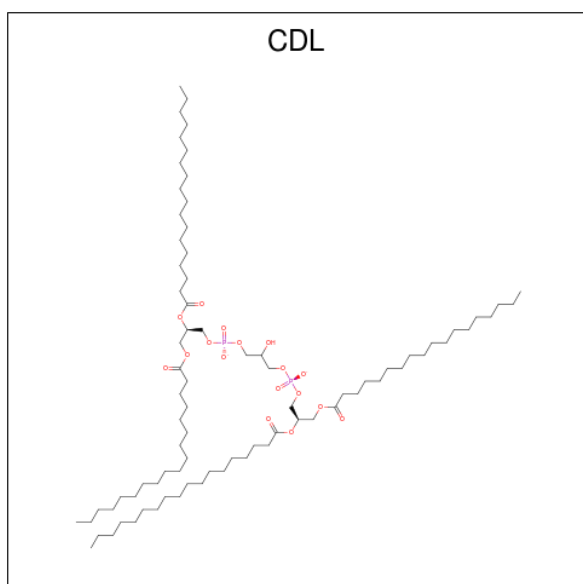
Mol	Chain	Residues	Atoms		AltConf
			Total	Cu	
16	R	1	1	1	0
16	L	1	1	1	0
16	Q	2	2	2	0
16	K	2	2	2	0

- Molecule 17 is HEME-A (three-letter code: HEA) (formula: $C_{49}H_{56}FeN_4O_6$).



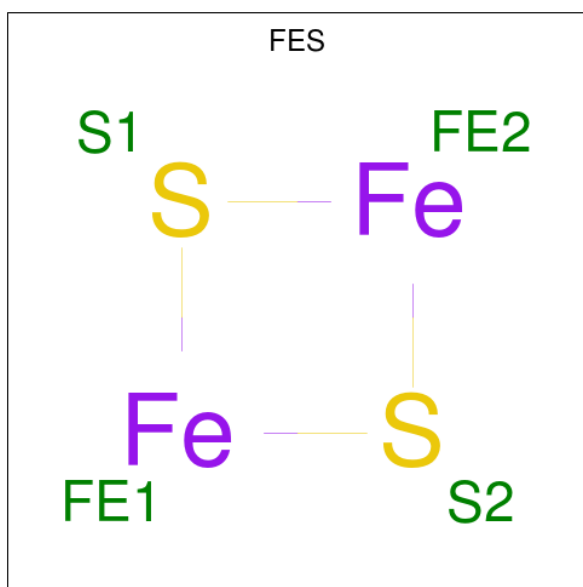
Mol	Chain	Residues	Atoms					AltConf	
			Total	C	Fe	H	N		O
17	R	1	Total	C	Fe	H	N	O	0
			228	98	2	108	8	12	
17	R	1	Total	C	Fe	H	N	O	0
			228	98	2	108	8	12	
17	L	1	Total	C	Fe	H	N	O	0
			228	98	2	108	8	12	
17	L	1	Total	C	Fe	H	N	O	0
			228	98	2	108	8	12	

- Molecule 18 is CARDIOLIPIN (three-letter code: CDL) (formula: $C_{81}H_{156}O_{17}P_2$).



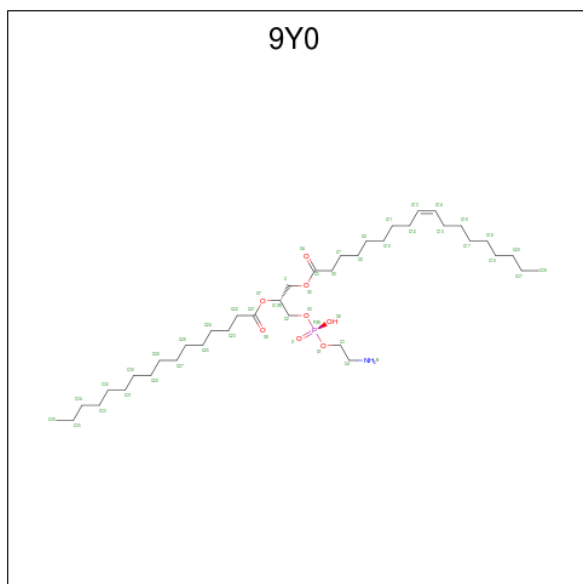
Mol	Chain	Residues	Atoms				AltConf
18	R	1	Total	C	O	P	0
			76	57	17	2	
18	S	1	Total	C	O	P	0
			76	57	17	2	
18	E	1	Total	C	O	P	0
			152	114	34	4	
18	E	1	Total	C	O	P	0
			152	114	34	4	
18	F	1	Total	C	O	P	0
			152	114	34	4	
18	F	1	Total	C	O	P	0
			152	114	34	4	
18	L	1	Total	C	O	P	0
			76	57	17	2	
18	J	1	Total	C	O	P	0
			76	57	17	2	
18	T	1	Total	C	O	P	0
			228	171	51	6	
18	T	1	Total	C	O	P	0
			228	171	51	6	
18	T	1	Total	C	O	P	0
			228	171	51	6	
18	P	1	Total	C	O	P	0
			76	57	17	2	
18	X	1	Total	C	O	P	0
			152	114	34	4	
18	X	1	Total	C	O	P	0
			152	114	34	4	
18	Z	1	Total	C	O	P	0
			152	114	34	4	
18	Z	1	Total	C	O	P	0
			152	114	34	4	

- Molecule 19 is FE2/S2 (INORGANIC) CLUSTER (three-letter code: FES) (formula: Fe₂S₂).



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

- Molecule 20 is (2R)-3-(((2-aminoethoxy)(hydroxy)phosphoryl)oxy)-2-(palmitoyloxy)propyl (E)-octadec-9-enoate (three-letter code: 9Y0) (formula: C₃₉H₇₆NO₈P).



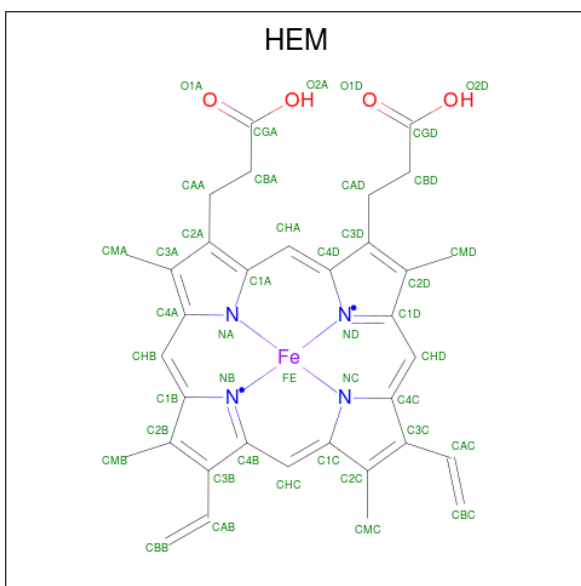
Mol	Chain	Residues	Atoms					AltConf	
20	S	1	Total	C	H	N	O	P	0
			124	39	75	1	8	1	

Continued on next page...

Continued from previous page...

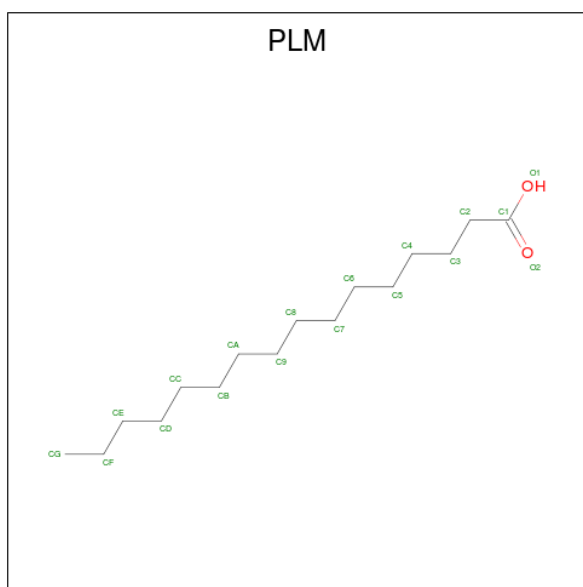
Mol	Chain	Residues	Atoms					AltConf	
			Total	C	H	N	O		P
20	F	1	Total 123	C 39	H 74	N 1	O 8	P 1	0
20	J	1	Total 248	C 78	H 150	N 2	O 16	P 2	0
20	J	1	Total 248	C 78	H 150	N 2	O 16	P 2	0
20	X	1	Total 124	C 39	H 75	N 1	O 8	P 1	0

- Molecule 21 is PROTOPORPHYRIN IX CONTAINING FE (three-letter code: HEM) (formula: $C_{34}H_{32}FeN_4O_4$).



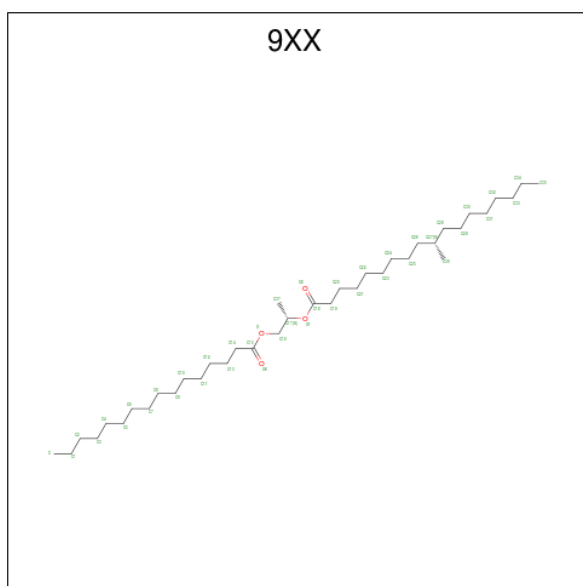
Mol	Chain	Residues	Atoms					AltConf	
			Total	C	Fe	H	N		O
21	E	1	Total 142	C 67	Fe 2	H 57	N 8	O 8	0
21	E	1	Total 142	C 67	Fe 2	H 57	N 8	O 8	0
21	F	1	Total 142	C 67	Fe 2	H 57	N 8	O 8	0
21	F	1	Total 142	C 67	Fe 2	H 57	N 8	O 8	0

- Molecule 22 is PALMITIC ACID (three-letter code: PLM) (formula: $C_{16}H_{32}O_2$).



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

- Molecule 23 is (2S)-1-(hexadecanoyloxy)propan-2-yl (10S)-10-methyloctadecanoate (three-letter code: 9XX) (formula: C₃₈H₇₄O₄).

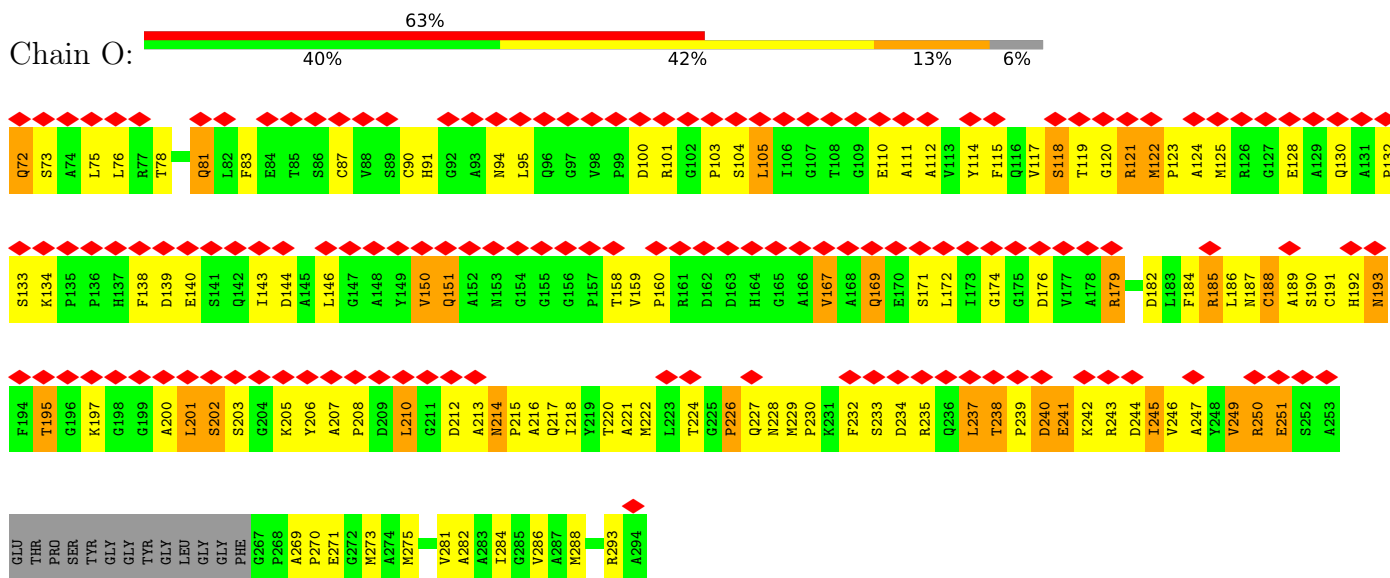


Mol	Chain	Residues	Atoms				AltConf
23	D	1	Total 83	C 28	H 51	O 4	0
23	G	1	Total 83	C 28	H 51	O 4	0
23	c	1	Total 115	C 38	H 73	O 4	0

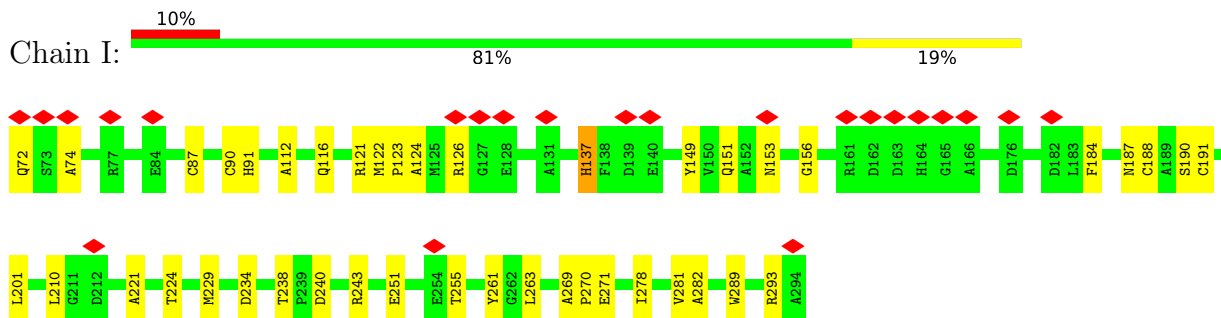
3 Residue-property plots

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.

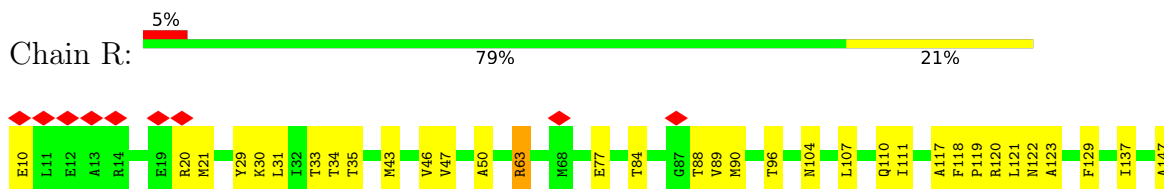
- Molecule 1: Cytochrome bc1 complex cytochrome c subunit

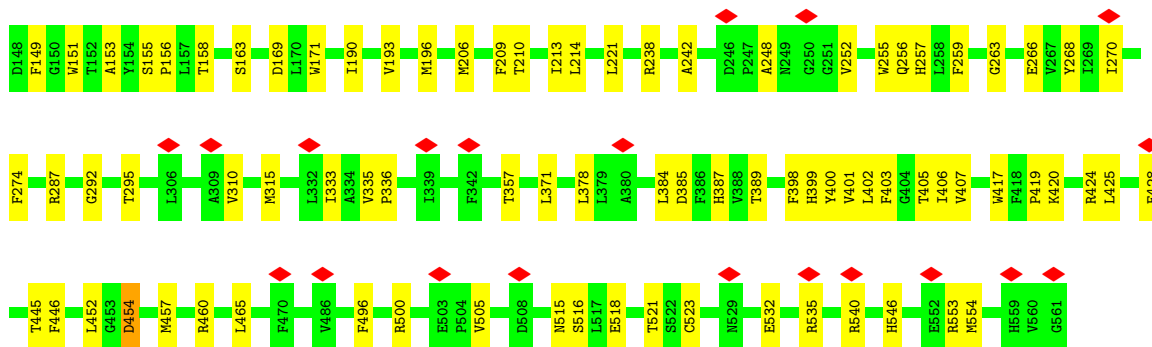


- Molecule 1: Cytochrome bc1 complex cytochrome c subunit

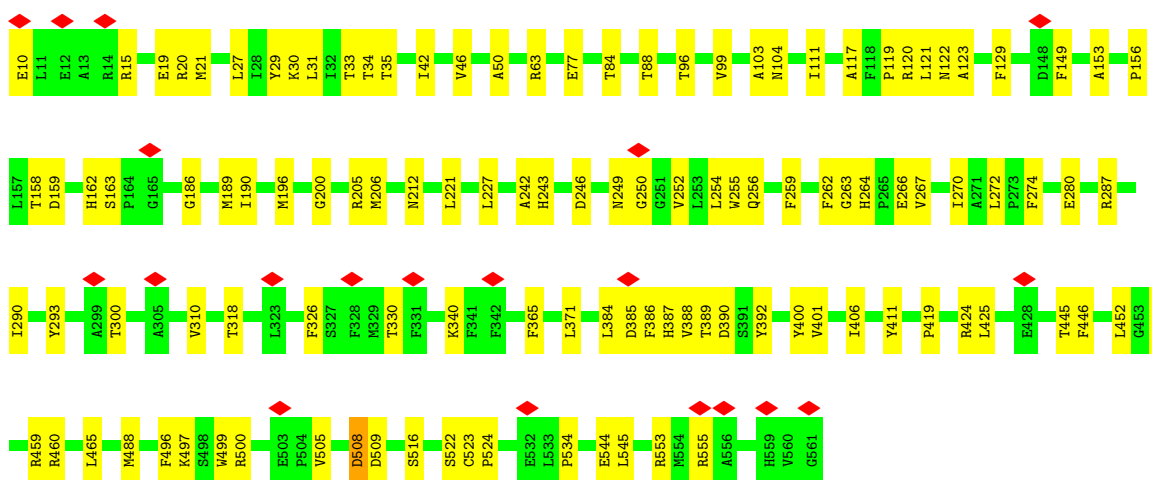
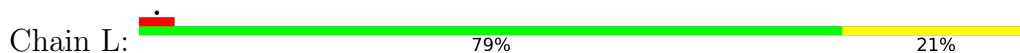


- Molecule 2: Cytochrome c oxidase subunit 1

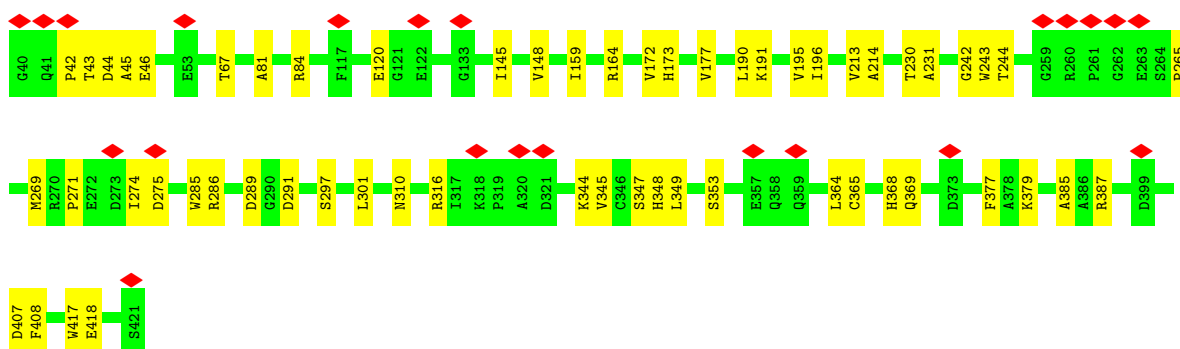
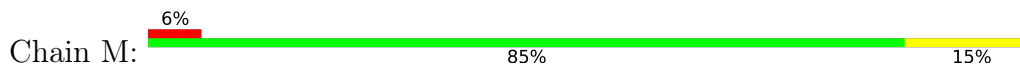




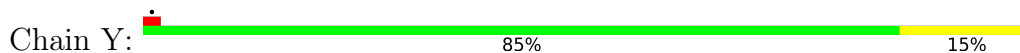
• Molecule 2: Cytochrome c oxidase subunit 1

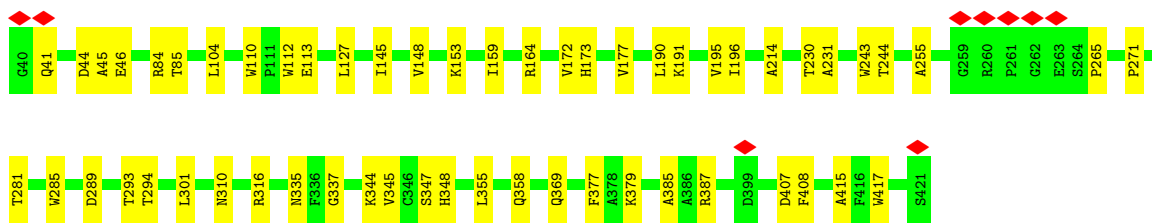


• Molecule 3: Cytochrome bc1 complex Rieske iron-sulfur subunit

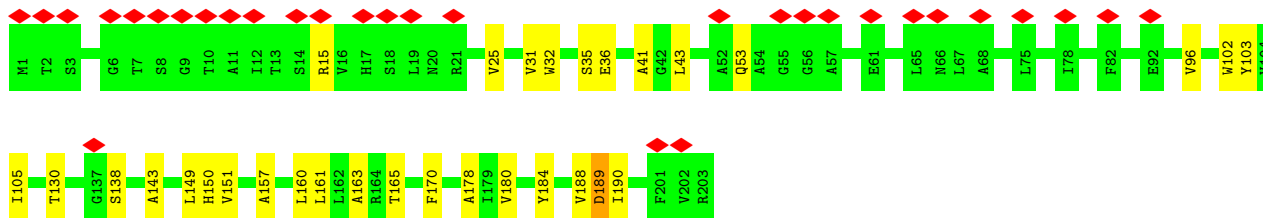
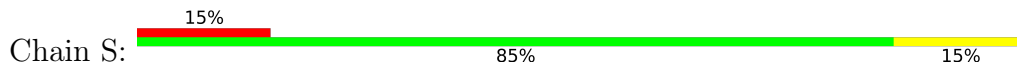


• Molecule 3: Cytochrome bc1 complex Rieske iron-sulfur subunit

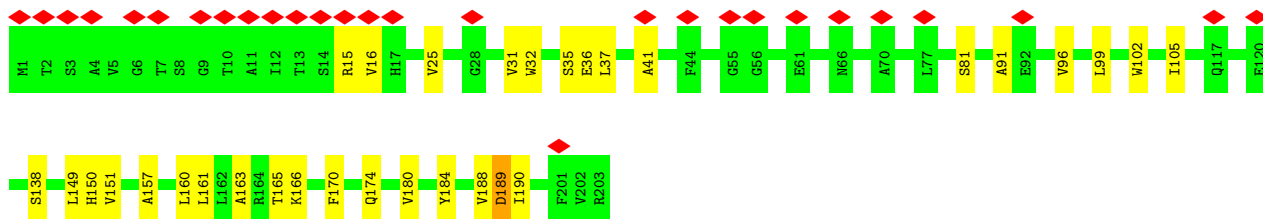
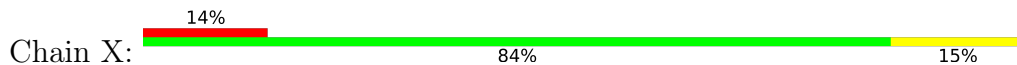




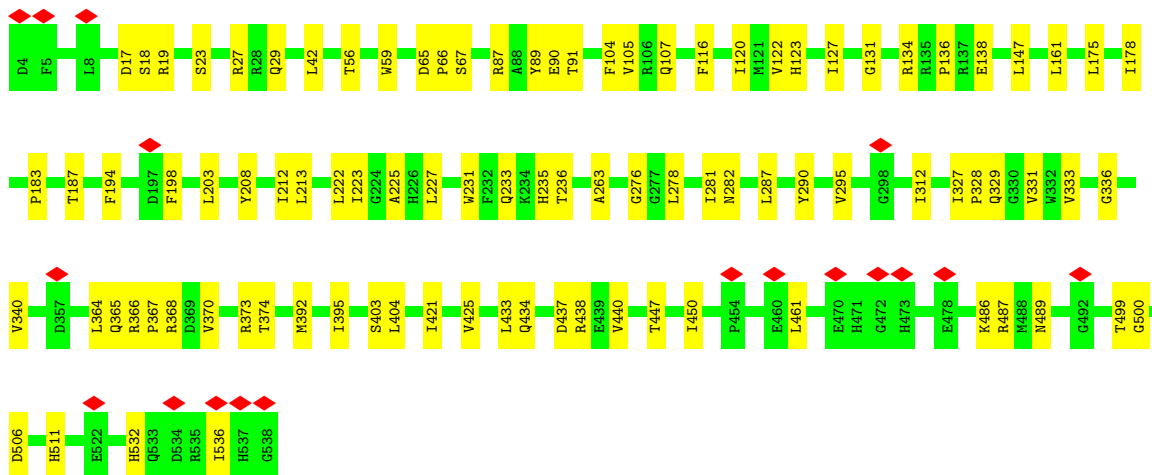
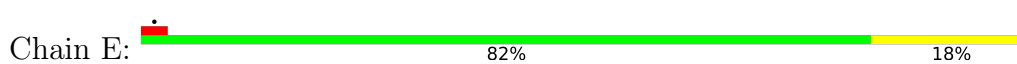
• Molecule 4: Cytochrome aa3 subunit 3



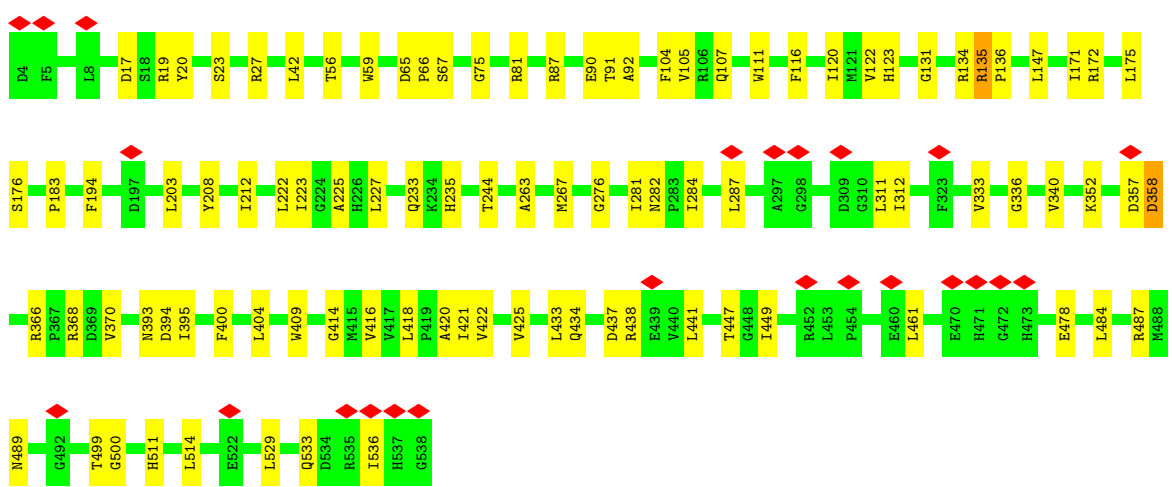
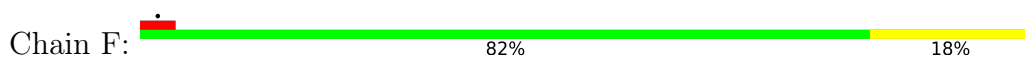
• Molecule 4: Cytochrome aa3 subunit 3



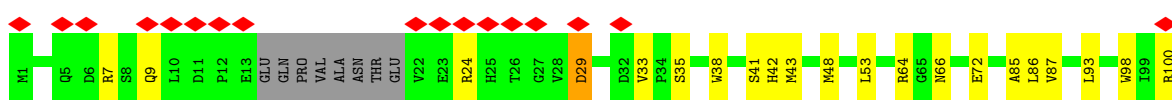
• Molecule 5: Cytochrome bc1 complex cytochrome b subunit



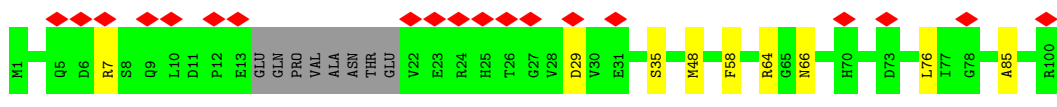
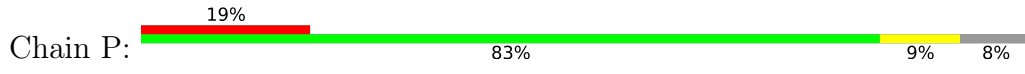
• Molecule 5: Cytochrome bc1 complex cytochrome b subunit



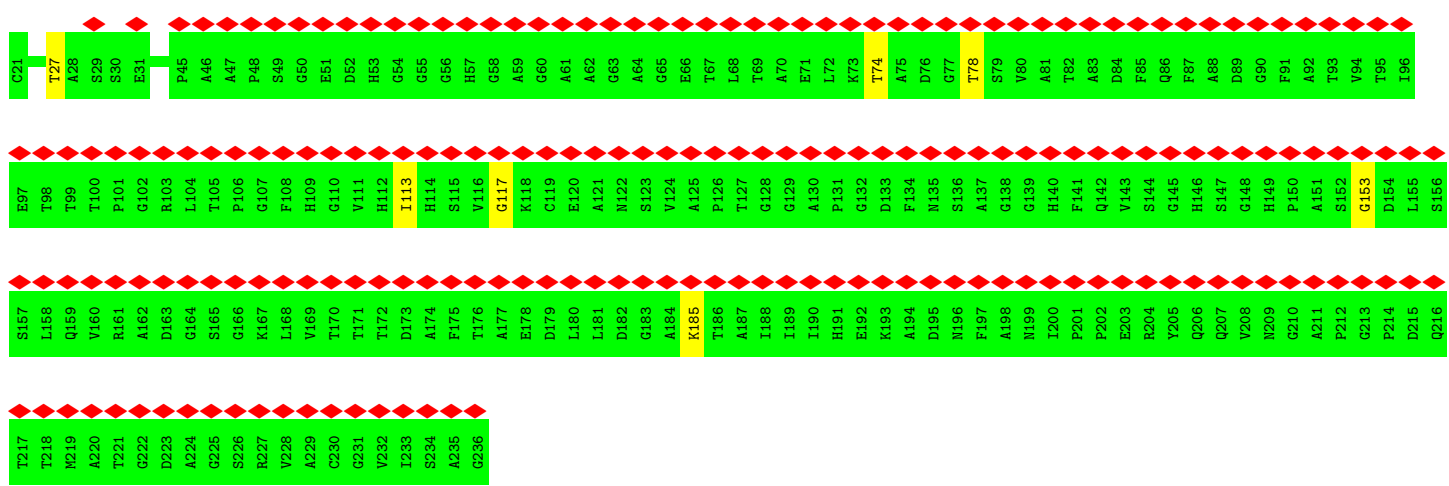
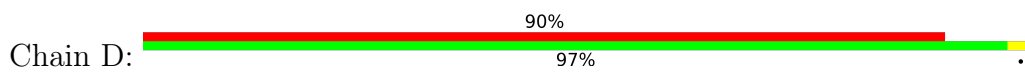
• Molecule 6: Putative conserved transmembrane protein

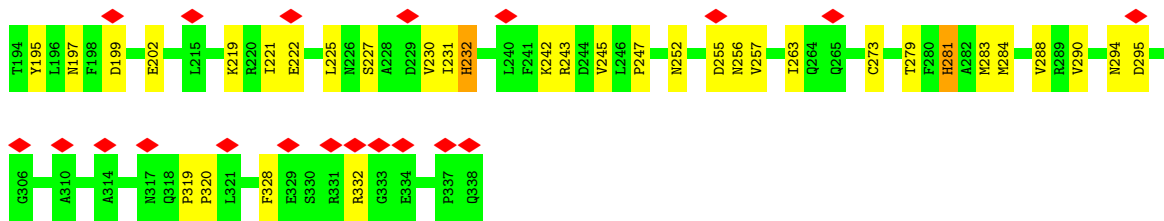


• Molecule 6: Putative conserved transmembrane protein

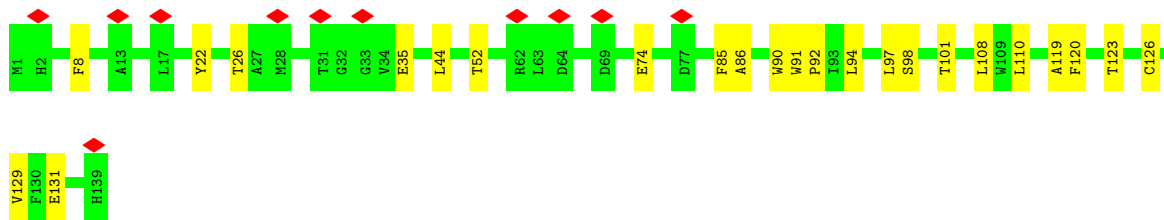
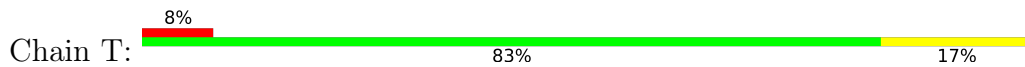


• Molecule 7: Superoxide dismutase [Cu-Zn]

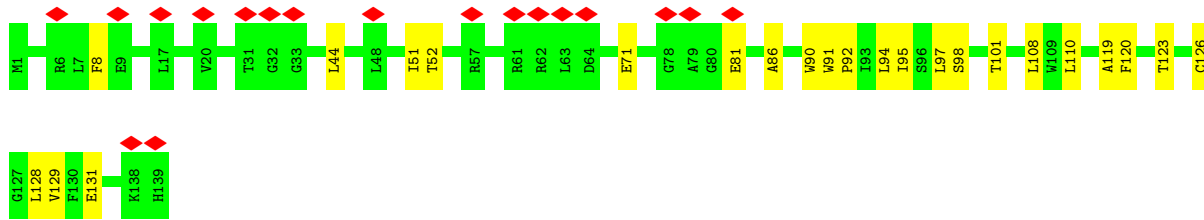
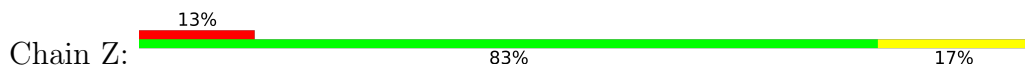




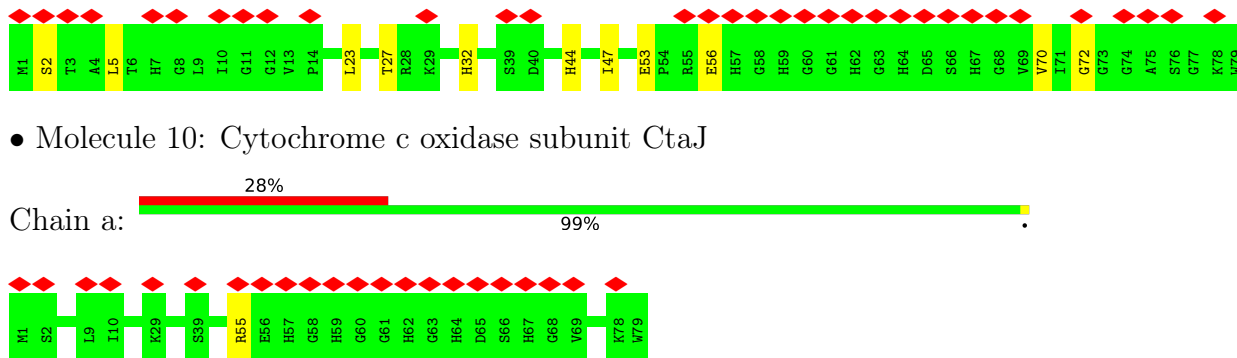
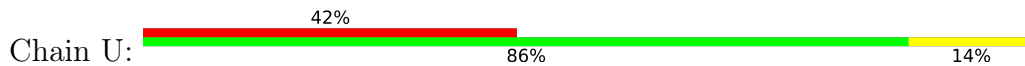
• Molecule 9: Cytochrome c oxidase polypeptide 4



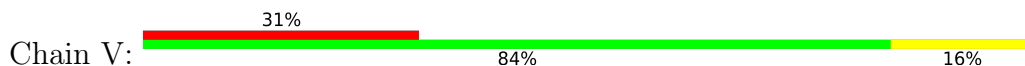
• Molecule 9: Cytochrome c oxidase polypeptide 4

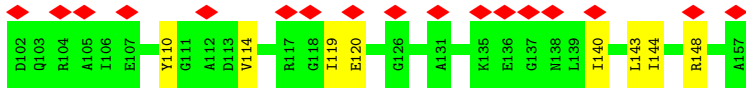
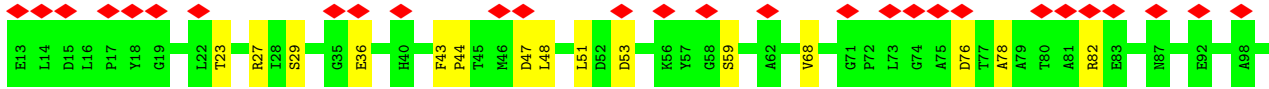


• Molecule 10: Cytochrome c oxidase subunit CtaJ

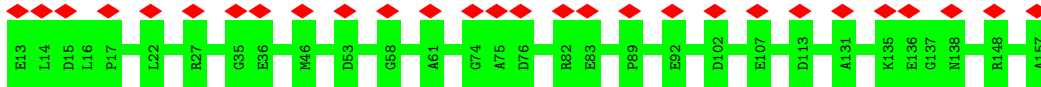


• Molecule 11: Uncharacterized protein MSMEG_4692/MSMEI_4575

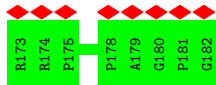
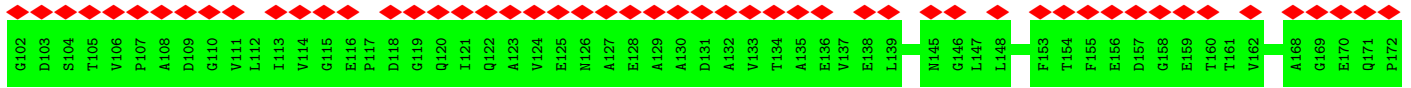
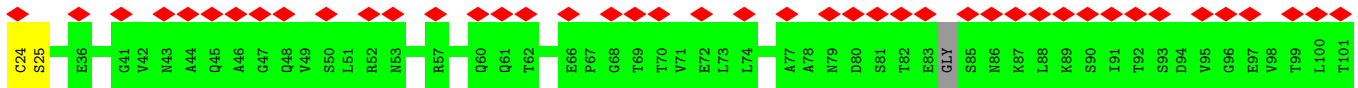




• Molecule 11: Uncharacterized protein MSMEG_4692/MSMEI_4575



• Molecule 12: LpqE protein



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	3.300	Depositor
Minimum map value	-1.965	Depositor
Average map value	0.009	Depositor
Map value standard deviation	0.100	Depositor
Recommended contour level	0.634	Depositor
Map size (Å)	339.9, 339.9, 339.9	wwPDB
Map dimensions	330, 330, 330	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	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: MQ9, 9YF, PLM, FES, HEM, HEA, HEC, 9Y0, CDL, 9XX, CU

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	I	0.27	0/1660	0.51	0/2250
1	O	0.64	0/1563	0.89	0/2117
2	L	0.28	0/4530	0.46	0/6188
2	R	0.28	0/4530	0.46	0/6188
3	M	0.28	0/3056	0.50	0/4142
3	Y	0.28	0/3056	0.50	0/4142
4	S	0.28	0/1608	0.46	0/2195
4	X	0.29	0/1608	0.47	0/2195
5	E	0.28	0/4314	0.48	0/5882
5	F	0.27	0/4314	0.48	0/5882
6	J	0.24	0/757	0.51	0/1027
6	P	0.25	0/757	0.52	0/1027
7	D	0.26	0/1099	0.47	0/1519
7	G	0.25	0/1099	0.47	0/1519
8	K	0.27	0/2534	0.50	0/3451
8	Q	0.28	0/2534	0.51	0/3451
9	T	0.27	0/1112	0.45	0/1524
9	Z	0.28	0/1112	0.46	0/1524
10	U	0.25	0/613	0.44	0/836
10	a	0.25	0/613	0.44	0/836
11	V	0.28	0/1059	0.52	0/1446
11	b	0.28	0/1059	0.54	0/1446
12	c	0.26	0/1166	0.51	0/1599
All	All	0.29	0/45753	0.50	0/62386

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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	I	1623	1564	1564	40	0
1	O	1531	1483	1484	210	0
2	L	4370	4347	4346	95	0
2	R	4370	4346	4345	101	0
3	M	2977	2984	2984	42	0
3	Y	2977	2984	2984	42	0
4	S	1560	1548	1547	62	0
4	X	1560	1548	1547	79	0
5	E	4181	4203	4202	78	0
5	F	4181	4200	4199	80	0
6	J	736	718	717	13	0
6	P	736	717	717	9	0
7	D	1092	640	640	3	0
7	G	1092	640	640	1	0
8	K	2465	2392	2392	34	0
8	Q	2465	2391	2391	66	0
9	T	1077	1059	1058	60	0
9	Z	1077	1058	1058	63	0
10	U	591	576	576	7	0
10	a	591	576	576	0	0
11	V	1041	1052	1052	18	0
11	b	1041	1052	1052	0	0
12	c	1149	1110	1110	0	0
13	I	86	64	64	17	0
13	O	86	64	64	44	0
14	E	58	84	0	0	0
14	I	58	84	0	0	0
14	O	58	84	0	0	0
14	Y	116	168	0	0	0
15	E	116	160	160	6	0
15	F	116	160	160	4	0
15	I	58	80	80	0	0
15	O	58	80	80	2	0
15	T	58	80	80	2	0
15	Z	58	80	80	4	0
16	K	2	0	0	0	0
16	L	1	0	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
16	Q	2	0	0	0	0
16	R	1	0	0	0	0
17	L	120	108	108	6	0
17	R	120	108	108	5	0
18	E	152	0	192	14	0
18	F	152	0	192	23	0
18	J	76	0	96	12	0
18	L	76	0	96	24	0
18	P	76	0	96	10	0
18	R	76	0	96	17	0
18	S	76	0	96	49	0
18	T	228	0	288	77	0
18	X	152	0	192	95	0
18	Z	152	0	192	78	0
19	M	4	0	0	0	0
19	Y	4	0	0	1	0
20	F	49	74	0	0	0
20	J	98	150	0	0	0
20	S	49	75	0	0	0
20	X	49	75	0	0	0
21	E	85	57	57	4	0
21	F	85	57	57	5	0
22	D	11	16	16	0	0
22	G	11	16	16	0	0
22	c	17	31	31	0	0
23	D	32	51	0	0	0
23	G	32	51	0	0	0
23	c	42	73	0	0	0
All	All	47439	45318	45878	1098	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 12.

All (1098) 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)
4:X:166:LYS:NZ	18:X:302:CDL:H112	1.28	1.48
9:T:120:PHE:CB	18:T:201:CDL:H612	1.47	1.42
1:O:203:SER:CB	8:Q:170:ARG:HG3	1.46	1.41
9:T:120:PHE:HB3	18:T:201:CDL:C61	1.50	1.41
9:Z:120:PHE:CB	18:Z:202:CDL:H612	1.53	1.38

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:Z:120:PHE:HB3	18:Z:202:CDL:C61	1.58	1.31
9:T:94:LEU:HD21	18:T:201:CDL:C32	1.67	1.24
9:Z:94:LEU:HD21	18:Z:202:CDL:C32	1.68	1.23
18:X:302:CDL:H772	18:Z:203:CDL:C55	1.71	1.20
18:T:202:CDL:H772	18:T:203:CDL:C55	1.71	1.19
9:Z:90:TRP:CZ2	18:Z:202:CDL:HB4	1.76	1.18
4:X:149:LEU:HD22	18:X:303:CDL:C63	1.74	1.18
18:T:202:CDL:H772	18:T:203:CDL:H551	1.21	1.17
18:X:302:CDL:H721	18:Z:203:CDL:C51	1.75	1.17
1:O:203:SER:CA	8:Q:170:ARG:HG3	1.74	1.17
18:T:202:CDL:H721	18:T:203:CDL:C51	1.75	1.16
4:X:166:LYS:NZ	18:X:302:CDL:C11	2.09	1.15
9:T:90:TRP:HZ2	18:T:201:CDL:HB4	1.05	1.15
9:T:90:TRP:CZ2	18:T:201:CDL:HB4	1.82	1.15
4:X:166:LYS:HZ1	18:X:302:CDL:C11	1.60	1.15
1:O:83:PHE:CZ	1:O:95:LEU:HD23	1.82	1.14
9:T:97:LEU:HD11	18:T:201:CDL:H361	1.14	1.13
9:Z:97:LEU:HD11	18:Z:202:CDL:H361	1.18	1.12
18:X:302:CDL:H721	18:Z:203:CDL:H512	1.19	1.12
9:Z:119:ALA:HB1	18:Z:203:CDL:H411	1.23	1.12
9:Z:97:LEU:HD11	18:Z:202:CDL:C36	1.80	1.11
1:O:203:SER:HB3	8:Q:170:ARG:CG	1.79	1.11
9:T:97:LEU:HD11	18:T:201:CDL:C36	1.80	1.11
18:T:202:CDL:H721	18:T:203:CDL:H512	1.19	1.10
1:O:203:SER:CB	8:Q:170:ARG:CG	2.30	1.09
4:X:149:LEU:HD22	18:X:303:CDL:H631	1.17	1.09
18:X:302:CDL:H772	18:Z:203:CDL:H551	1.21	1.08
9:Z:94:LEU:HD21	18:Z:202:CDL:H321	1.10	1.08
9:Z:90:TRP:HZ2	18:Z:202:CDL:HB4	1.00	1.08
1:O:203:SER:HB3	8:Q:170:ARG:HG3	1.08	1.06
9:T:119:ALA:HB1	18:T:203:CDL:H411	1.32	1.06
1:O:83:PHE:CZ	1:O:95:LEU:CD2	2.40	1.05
9:T:94:LEU:HD21	18:T:201:CDL:H321	1.10	1.04
4:S:32:TRP:CZ2	18:S:302:CDL:H382	1.94	1.03
4:X:32:TRP:CZ2	18:X:303:CDL:H382	1.93	1.02
4:X:32:TRP:CE2	18:X:303:CDL:H361	1.94	1.02
9:T:120:PHE:CD2	18:T:201:CDL:H632	1.94	1.01
4:X:32:TRP:CG	18:X:303:CDL:H331	1.95	1.01
4:X:32:TRP:CB	18:X:303:CDL:H331	1.91	1.01
2:R:121:LEU:HD13	18:S:302:CDL:CA3	1.90	1.00
1:O:95:LEU:HD11	1:O:150:VAL:HA	1.41	0.98

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:S:32:TRP:CE2	18:S:302:CDL:H361	1.98	0.98
1:O:83:PHE:CE1	1:O:95:LEU:CD2	2.46	0.97
1:O:95:LEU:CD1	1:O:150:VAL:HB	1.94	0.97
4:S:32:TRP:CB	18:S:302:CDL:H331	1.94	0.97
2:L:121:LEU:HD13	18:X:303:CDL:CA3	1.95	0.97
9:Z:120:PHE:CD2	18:Z:202:CDL:H632	2.00	0.96
4:S:32:TRP:CG	18:S:302:CDL:H331	2.02	0.95
4:S:149:LEU:HB3	18:S:302:CDL:H801	1.44	0.95
1:O:95:LEU:HD11	1:O:150:VAL:CB	1.97	0.95
1:O:117:VAL:HA	1:O:122:MET:HG2	1.49	0.94
9:T:97:LEU:CD1	18:T:201:CDL:H361	1.96	0.94
1:O:222:MET:HG2	1:O:242:LYS:HE2	1.50	0.93
1:O:222:MET:HG3	1:O:232:PHE:HB2	1.48	0.92
1:O:215:PRO:HA	1:O:218:ILE:HD12	1.51	0.92
1:O:83:PHE:CE1	1:O:95:LEU:HD21	2.04	0.92
8:Q:231:ILE:HD13	8:Q:246:LEU:HD23	1.49	0.92
18:X:302:CDL:H761	18:Z:203:CDL:H532	1.51	0.92
3:M:385:ALA:O	6:P:66:ASN:ND2	2.03	0.91
1:O:95:LEU:HD11	1:O:150:VAL:CA	2.01	0.90
1:O:203:SER:C	8:Q:170:ARG:CG	2.37	0.90
9:T:98:SER:OG	18:T:201:CDL:H621	1.71	0.90
9:Z:97:LEU:CD1	18:Z:202:CDL:H361	2.01	0.90
18:T:202:CDL:H761	18:T:203:CDL:H532	1.51	0.90
4:X:157:ALA:HB2	18:X:303:CDL:H532	1.54	0.90
9:Z:98:SER:OG	18:Z:202:CDL:H621	1.72	0.89
2:R:121:LEU:HD13	18:S:302:CDL:HA32	1.52	0.89
2:R:121:LEU:HB2	18:S:302:CDL:OA3	1.73	0.89
2:L:121:LEU:HD13	18:X:303:CDL:HA32	1.53	0.88
1:O:202:SER:HB2	1:O:205:LYS:HD2	1.54	0.88
4:X:32:TRP:CD2	18:X:303:CDL:H352	2.10	0.87
18:Z:203:CDL:H161	1:I:281:VAL:HG11	1.57	0.86
4:S:32:TRP:NE1	18:S:302:CDL:H361	1.89	0.86
1:O:190:SER:HB2	8:Q:193:ARG:CZ	2.05	0.86
9:T:97:LEU:CD1	18:T:201:CDL:C36	2.52	0.86
9:Z:119:ALA:HB1	18:Z:203:CDL:C41	2.05	0.86
4:X:32:TRP:NE1	18:X:303:CDL:H361	1.91	0.86
4:X:149:LEU:HD22	18:X:303:CDL:C64	2.05	0.86
2:R:20:ARG:NH2	11:V:53:ASP:OD1	2.09	0.85
2:R:121:LEU:HD13	18:S:302:CDL:HA31	1.58	0.85
1:O:227:GLN:HG3	13:O:302:HEC:HBD2	1.59	0.85
4:X:149:LEU:HB3	18:X:303:CDL:H801	1.56	0.85

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:Z:97:LEU:CD1	18:Z:202:CDL:C36	2.54	0.85
4:X:166:LYS:HZ1	18:X:302:CDL:H112	0.71	0.85
9:Z:90:TRP:HZ2	18:Z:202:CDL:CB4	1.89	0.85
1:O:95:LEU:CD1	1:O:150:VAL:HA	2.07	0.84
5:E:87:ARG:NH1	5:E:90:GLU:OE1	2.10	0.84
1:O:118:SER:HB2	1:O:143:ILE:HG21	1.58	0.84
8:Q:243:ARG:NH1	8:Q:255:ASP:O	2.11	0.84
18:X:302:CDL:C76	18:Z:203:CDL:H532	2.08	0.83
2:L:121:LEU:HB2	18:X:303:CDL:OA3	1.77	0.83
1:O:185:ARG:HA	1:O:189:ALA:CB	2.09	0.83
4:S:32:TRP:CD2	18:S:302:CDL:H352	2.13	0.83
18:T:202:CDL:H772	18:T:203:CDL:H552	1.60	0.82
2:R:389:THR:O	8:Q:242:LYS:NZ	2.11	0.82
18:X:302:CDL:H772	18:Z:203:CDL:H552	1.61	0.82
18:T:202:CDL:C76	18:T:203:CDL:H532	2.08	0.82
5:E:447:THR:OG1	5:E:461:LEU:O	1.98	0.82
4:X:166:LYS:HZ3	18:X:302:CDL:C11	1.91	0.82
9:Z:94:LEU:HD21	18:Z:202:CDL:H322	1.60	0.82
9:Z:120:PHE:CB	18:Z:202:CDL:C61	2.36	0.81
9:Z:94:LEU:CD2	18:Z:202:CDL:H321	2.04	0.81
2:L:84:THR:OG1	2:L:149:PHE:O	1.98	0.81
5:F:447:THR:OG1	5:F:461:LEU:O	1.97	0.81
11:V:23:THR:OG1	11:V:27:ARG:O	1.99	0.81
15:F:707:MQ9:H501	3:Y:214:ALA:HB1	1.62	0.81
2:L:411:TYR:OH	2:L:488:MET:SD	2.37	0.81
18:L:604:CDL:HA4	18:J:203:CDL:H312	1.62	0.81
1:O:115:PHE:CE1	1:O:119:THR:HG21	2.15	0.81
10:U:53:GLU:OE1	11:V:59:SER:OG	1.97	0.81
8:K:243:ARG:NH1	8:K:255:ASP:O	2.14	0.81
18:T:202:CDL:H721	18:T:203:CDL:H511	1.63	0.80
8:K:263:ILE:HG21	8:K:290:VAL:HG21	1.62	0.80
4:S:149:LEU:HD23	18:S:302:CDL:H631	1.61	0.80
9:T:119:ALA:HB1	18:T:203:CDL:C41	2.11	0.80
18:R:604:CDL:HA4	18:P:201:CDL:H312	1.62	0.80
9:T:94:LEU:HD21	18:T:201:CDL:H322	1.59	0.80
1:I:122:MET:O	1:I:124:ALA:N	2.14	0.80
18:T:202:CDL:C17	18:T:203:CDL:H762	2.12	0.79
1:O:95:LEU:HD11	1:O:150:VAL:HB	1.59	0.79
1:O:191:CYS:HB2	13:O:302:HEC:HBC2	1.64	0.79
4:S:157:ALA:HB2	18:S:302:CDL:H532	1.65	0.79
1:I:251:GLU:O	1:I:255:THR:OG1	2.00	0.79

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:31:LEU:HD23	18:L:604:CDL:H381	1.62	0.79
2:R:30:LYS:O	2:R:34:THR:N	2.15	0.79
18:X:302:CDL:C77	18:Z:203:CDL:C55	2.59	0.79
6:J:66:ASN:ND2	3:Y:385:ALA:O	2.16	0.79
18:X:302:CDL:H721	18:Z:203:CDL:H511	1.63	0.78
1:O:119:THR:HA	1:O:217:GLN:HG2	1.66	0.78
1:O:188:CYS:HB2	13:O:302:HEC:CHC	2.12	0.78
2:L:497:LYS:NZ	6:J:100:ARG:O	2.17	0.78
18:X:302:CDL:C17	18:Z:203:CDL:H762	2.12	0.78
1:O:119:THR:HG22	1:O:120:GLY:H	1.47	0.78
9:T:120:PHE:CB	18:T:201:CDL:C61	2.29	0.78
4:X:184:TYR:OH	18:X:303:CDL:H752	1.84	0.78
2:R:287:ARG:O	8:Q:87:GLN:NE2	2.17	0.77
5:E:489:ASN:ND2	9:Z:131:GLU:O	2.17	0.77
4:X:32:TRP:HB2	18:X:303:CDL:H331	1.66	0.77
4:S:32:TRP:HZ2	18:S:302:CDL:H382	1.48	0.77
9:T:94:LEU:CD2	18:T:201:CDL:H321	2.04	0.77
4:X:166:LYS:CE	18:X:302:CDL:H112	2.15	0.77
9:T:120:PHE:CA	18:T:201:CDL:H612	2.15	0.77
1:O:203:SER:C	8:Q:170:ARG:HG3	2.04	0.77
2:L:30:LYS:O	2:L:34:THR:N	2.17	0.77
2:L:205:ARG:NH1	9:Z:71:GLU:OE2	2.19	0.76
4:X:184:TYR:CZ	18:X:303:CDL:H731	2.19	0.76
2:L:121:LEU:HD13	18:X:303:CDL:HA31	1.65	0.76
1:O:95:LEU:HD13	1:O:150:VAL:HB	1.64	0.76
8:Q:263:ILE:HG21	8:Q:290:VAL:HG21	1.67	0.76
8:K:227:SER:OG	8:K:230:VAL:O	2.04	0.76
3:Y:285:TRP:NE1	3:Y:289:ASP:O	2.18	0.76
4:X:32:TRP:CZ2	18:X:303:CDL:H361	2.20	0.75
9:Z:97:LEU:CD1	18:Z:202:CDL:C35	2.64	0.75
4:X:32:TRP:HZ2	18:X:303:CDL:H382	1.51	0.75
1:O:188:CYS:HA	13:O:302:HEC:HMC3	1.67	0.75
4:X:166:LYS:HZ3	18:X:302:CDL:CA5	1.98	0.75
2:L:300:THR:OG1	2:L:340:LYS:NZ	2.16	0.75
18:T:202:CDL:C77	18:T:203:CDL:C55	2.59	0.75
4:X:32:TRP:CE2	18:X:303:CDL:C36	2.70	0.75
1:O:118:SER:HA	1:O:143:ILE:HD13	1.67	0.75
1:O:185:ARG:HA	1:O:189:ALA:HB2	1.66	0.75
1:O:245:ILE:HG21	13:O:302:HEC:HBB2	1.66	0.75
3:M:285:TRP:NE1	3:M:289:ASP:O	2.20	0.75
18:X:302:CDL:H131	18:Z:203:CDL:OB7	1.87	0.74

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:R:515:ASN:O	2:R:516:SER:OG	2.06	0.74
18:T:202:CDL:H131	18:T:203:CDL:OB7	1.87	0.74
11:V:47:ASP:OD1	11:V:48:LEU:N	2.20	0.74
1:O:200:ALA:O	8:Q:191:GLU:OE2	2.05	0.74
9:Z:119:ALA:CB	18:Z:203:CDL:H411	2.10	0.74
5:E:365:GLN:NE2	6:J:38:TRP:O	2.21	0.74
1:O:269:ALA:HB3	1:O:270:PRO:HD3	1.70	0.74
2:R:553:ARG:NH2	8:Q:85:PRO:O	2.21	0.74
4:S:184:TYR:OH	18:S:302:CDL:H752	1.88	0.74
5:E:138:GLU:OE2	5:F:19:ARG:NE	2.22	0.73
4:X:32:TRP:CE2	18:X:303:CDL:H352	2.23	0.73
3:M:214:ALA:HB1	15:E:604:MQ9:H501	1.69	0.73
9:Z:120:PHE:HD2	18:Z:202:CDL:H632	1.54	0.73
18:R:604:CDL:H542	18:P:201:CDL:H351	1.71	0.73
1:O:191:CYS:SG	13:O:302:HEC:HHD	2.29	0.72
5:F:489:ASN:ND2	9:T:131:GLU:O	2.22	0.72
9:T:90:TRP:HZ2	18:T:201:CDL:CB4	1.93	0.72
4:S:184:TYR:CZ	18:S:302:CDL:H731	2.24	0.72
9:T:97:LEU:CD1	18:T:201:CDL:C35	2.66	0.72
2:L:424:ARG:NH1	2:L:499:TRP:O	2.22	0.72
5:F:75:GLY:O	5:F:81:ARG:NH1	2.21	0.72
9:T:94:LEU:CD2	18:T:201:CDL:C32	2.59	0.72
1:O:119:THR:HG23	1:O:217:GLN:HG2	1.72	0.72
9:T:120:PHE:HD2	18:T:201:CDL:H632	1.47	0.72
1:O:160:PRO:HG2	1:O:172:LEU:HD21	1.70	0.72
1:O:169:GLN:HG2	1:O:215:PRO:HD2	1.71	0.71
4:S:149:LEU:CD2	18:S:302:CDL:H631	2.20	0.71
1:O:130:GLN:HG2	1:O:205:LYS:HA	1.72	0.71
8:Q:275:GLU:O	8:Q:281:HIS:NE2	2.22	0.71
9:T:120:PHE:CG	18:T:201:CDL:C61	2.73	0.71
9:Z:94:LEU:CD2	18:Z:202:CDL:C32	2.60	0.71
4:X:157:ALA:HB1	18:X:303:CDL:C51	2.20	0.71
4:S:32:TRP:CE2	18:S:302:CDL:C36	2.74	0.71
4:S:32:TRP:CE2	18:S:302:CDL:H352	2.25	0.71
2:L:385:ASP:O	2:L:389:THR:OG1	2.08	0.71
5:F:42:LEU:HD13	5:F:122:VAL:HG12	1.71	0.71
18:L:604:CDL:H542	18:J:203:CDL:H351	1.71	0.71
1:O:115:PHE:CD1	1:O:119:THR:HG21	2.26	0.71
4:X:149:LEU:CB	18:X:303:CDL:H801	2.20	0.71
2:L:385:ASP:OD1	2:L:389:THR:OG1	2.09	0.70
3:M:84:ARG:NH2	5:F:500:GLY:O	2.24	0.70

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:31:LEU:HD23	18:L:604:CDL:H412	1.72	0.70
4:X:189:ASP:OD1	4:X:190:ILE:N	2.24	0.70
9:T:120:PHE:CG	18:T:201:CDL:H611	2.25	0.70
1:O:191:CYS:CB	13:O:302:HEC:HBC2	2.21	0.70
1:O:245:ILE:HG13	13:O:302:HEC:HBB1	1.73	0.70
1:O:230:PRO:HD2	13:O:302:HEC:C3C	2.22	0.70
2:R:10:GLU:N	2:R:10:GLU:OE1	2.25	0.70
4:X:157:ALA:CB	18:X:303:CDL:H511	2.21	0.70
1:O:191:CYS:SG	1:O:207:ALA:HB2	2.31	0.69
1:O:132:PRO:HG2	1:O:134:LYS:HE3	1.74	0.69
2:R:88:THR:HG21	2:R:171:TRP:HE1	1.57	0.69
3:M:159:ILE:HG21	5:F:529:LEU:HD21	1.74	0.69
2:L:10:GLU:N	2:L:10:GLU:OE1	2.25	0.69
13:I:301:HEC:HBC3	13:I:301:HEC:HHD	1.75	0.69
8:K:128:GLU:OE1	8:K:150:ALA:N	2.24	0.69
18:X:302:CDL:H111	18:X:302:CDL:HB21	1.75	0.69
2:R:385:ASP:O	2:R:389:THR:OG1	2.10	0.69
5:E:500:GLY:O	3:Y:84:ARG:NH2	2.25	0.69
10:U:44:HIS:ND1	10:U:47:ILE:HD11	2.08	0.69
4:S:32:TRP:HB2	18:S:302:CDL:H331	1.72	0.69
2:L:270:ILE:HG23	2:L:406:ILE:HG21	1.75	0.69
18:T:202:CDL:C77	18:T:203:CDL:H551	2.14	0.69
4:X:184:TYR:CE1	18:X:303:CDL:C73	2.76	0.69
9:Z:120:PHE:CA	18:Z:202:CDL:H612	2.22	0.69
9:T:119:ALA:CB	18:T:203:CDL:H411	2.17	0.69
1:I:240:ASP:OD1	1:I:243:ARG:NH2	2.26	0.69
1:O:222:MET:HE2	13:O:302:HEC:HBB2	1.75	0.69
5:E:42:LEU:HD13	5:E:122:VAL:HG12	1.73	0.69
11:V:36:GLU:OE1	11:V:36:GLU:N	2.26	0.69
9:Z:120:PHE:CG	18:Z:202:CDL:C61	2.76	0.69
5:E:328:PRO:O	5:E:331:VAL:HG12	1.93	0.68
1:O:195:THR:HB	1:O:197:LYS:HG2	1.75	0.68
1:O:115:PHE:CZ	13:O:302:HEC:HAA1	2.29	0.68
18:T:202:CDL:C77	18:T:203:CDL:H552	2.21	0.68
4:S:32:TRP:CZ2	18:S:302:CDL:H361	2.28	0.68
4:S:157:ALA:CB	18:S:302:CDL:H511	2.24	0.68
5:E:235:HIS:O	3:Y:164:ARG:NH2	2.26	0.68
4:X:150:HIS:HA	18:X:303:CDL:H771	1.74	0.68
9:Z:123:THR:HG23	18:Z:203:CDL:H322	1.75	0.68
18:Z:203:CDL:H572	1:I:282:ALA:HA	1.73	0.68
18:L:604:CDL:H521	18:J:203:CDL:H321	1.76	0.68

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:X:149:LEU:CD2	18:X:303:CDL:H631	2.11	0.68
9:Z:97:LEU:CD1	18:Z:202:CDL:H351	2.24	0.68
3:M:164:ARG:NH2	5:F:235:HIS:O	2.27	0.67
4:X:184:TYR:CE1	18:X:303:CDL:H732	2.29	0.67
9:Z:120:PHE:CG	18:Z:202:CDL:H611	2.29	0.67
1:O:237:LEU:CD2	1:O:241:GLU:HB2	2.25	0.67
1:I:90:CYS:SG	13:I:301:HEC:HBC2	2.34	0.67
2:L:249:ASN:O	8:K:252:ASN:ND2	2.28	0.67
18:T:202:CDL:HB21	18:T:202:CDL:H111	1.75	0.67
1:I:151:GLN:OE1	1:I:156:GLY:N	2.27	0.67
2:L:553:ARG:NH2	8:K:85:PRO:O	2.28	0.67
2:R:96:THR:OG1	2:R:266:GLU:OE2	2.12	0.67
7:D:117:GLY:N	7:D:185:LYS:O	2.28	0.67
18:T:202:CDL:C13	18:T:203:CDL:OB7	2.43	0.67
4:X:149:LEU:CD2	18:X:303:CDL:C64	2.71	0.67
9:Z:123:THR:CG2	18:Z:203:CDL:H322	2.25	0.67
18:F:706:CDL:H771	18:F:706:CDL:H162	1.77	0.67
18:X:302:CDL:C13	18:Z:203:CDL:OB7	2.43	0.67
2:R:121:LEU:CD1	18:S:302:CDL:HA32	2.24	0.67
18:X:302:CDL:C77	18:Z:203:CDL:H552	2.22	0.67
8:K:225:LEU:O	8:K:256:ASN:ND2	2.27	0.67
3:M:377:PHE:O	3:M:379:LYS:N	2.27	0.66
4:S:150:HIS:HA	18:S:302:CDL:H771	1.77	0.66
18:X:302:CDL:C72	18:Z:203:CDL:C51	2.66	0.66
1:O:186:LEU:HD22	8:Q:204:LEU:HD13	1.77	0.66
2:R:270:ILE:HG23	2:R:406:ILE:HG21	1.76	0.66
18:R:604:CDL:H521	18:P:201:CDL:H321	1.76	0.66
5:E:329:GLN:OE1	3:Y:348:HIS:NE2	2.28	0.66
5:E:136:PRO:O	5:E:233:GLN:NE2	2.28	0.66
18:R:604:CDL:H531	18:R:604:CDL:H731	1.76	0.66
4:X:157:ALA:CB	18:X:303:CDL:C51	2.73	0.66
1:O:115:PHE:HZ	13:O:302:HEC:HAA1	1.61	0.66
1:O:288:MET:SD	18:F:706:CDL:H511	2.35	0.66
1:O:119:THR:HA	1:O:217:GLN:NE2	2.10	0.66
3:Y:377:PHE:O	3:Y:379:LYS:N	2.28	0.66
1:O:203:SER:HB3	8:Q:170:ARG:N	2.11	0.65
1:O:218:ILE:HB	1:O:246:VAL:HG22	1.77	0.65
4:S:184:TYR:CE1	18:S:302:CDL:C73	2.79	0.65
18:T:202:CDL:C72	18:T:203:CDL:C51	2.66	0.65
18:L:604:CDL:H731	18:L:604:CDL:H531	1.76	0.65
18:T:202:CDL:C14	18:T:203:CDL:OB7	2.44	0.65

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:F:425:VAL:HG11	18:F:706:CDL:H371	1.77	0.65
1:O:215:PRO:HB3	1:O:246:VAL:HG11	1.77	0.65
5:F:131:GLY:O	5:F:134:ARG:NH1	2.29	0.65
9:Z:90:TRP:CZ2	18:Z:202:CDL:CB4	2.68	0.65
1:O:191:CYS:SG	13:O:302:HEC:HBC2	2.37	0.64
2:L:96:THR:OG1	2:L:266:GLU:OE2	2.13	0.64
1:O:95:LEU:CD1	1:O:150:VAL:CB	2.64	0.64
18:X:302:CDL:C14	18:Z:203:CDL:OB7	2.44	0.64
1:O:282:ALA:HA	18:T:203:CDL:H572	1.79	0.64
21:E:602:HEM:HBB2	21:E:602:HEM:HHC	1.79	0.64
2:L:206:MET:O	2:L:293:TYR:OH	2.12	0.64
5:E:450:ILE:HG21	5:E:461:LEU:HD13	1.79	0.64
9:Z:120:PHE:HB3	18:Z:202:CDL:H612	0.72	0.64
1:O:119:THR:CB	1:O:217:GLN:HG2	2.28	0.64
1:O:237:LEU:HD23	1:O:241:GLU:HB2	1.79	0.64
18:X:302:CDL:C77	18:Z:203:CDL:H551	2.14	0.64
18:X:302:CDL:H141	18:Z:203:CDL:OB7	1.97	0.64
1:O:119:THR:HG22	1:O:120:GLY:N	2.12	0.64
18:F:705:CDL:H111	18:F:705:CDL:H311	1.79	0.64
8:K:256:ASN:OD1	8:K:257:VAL:N	2.31	0.64
4:S:189:ASP:OD1	4:S:190:ILE:N	2.30	0.64
18:E:607:CDL:H771	18:E:607:CDL:H162	1.80	0.64
4:S:157:ALA:HB1	18:S:302:CDL:C51	2.28	0.63
18:E:606:CDL:H311	18:E:606:CDL:H111	1.79	0.63
4:X:157:ALA:HB1	18:X:303:CDL:H511	1.80	0.63
1:O:192:HIS:CG	1:O:210:LEU:HD21	2.34	0.63
9:T:97:LEU:CD1	18:T:201:CDL:H351	2.29	0.63
4:X:157:ALA:HB1	18:X:303:CDL:H512	1.80	0.63
2:L:190:ILE:HD11	9:Z:8:PHE:HZ	1.63	0.63
2:R:387:HIS:NE2	2:R:454:ASP:O	2.29	0.63
7:G:117:GLY:N	7:G:185:LYS:O	2.31	0.63
4:X:184:TYR:CE2	18:X:303:CDL:H731	2.33	0.63
1:O:115:PHE:CE2	1:O:226:PRO:HB3	2.34	0.63
2:R:120:ARG:HB2	18:S:302:CDL:OA4	1.98	0.63
4:X:184:TYR:CZ	18:X:303:CDL:H752	2.33	0.63
2:R:274:PHE:CD2	2:R:406:ILE:HG22	2.33	0.63
2:R:335:VAL:HG13	2:R:336:PRO:HD3	1.81	0.63
4:S:184:TYR:CE1	18:S:302:CDL:H732	2.34	0.63
18:T:202:CDL:H141	18:T:203:CDL:OB7	1.98	0.63
1:O:176:ASP:HB3	1:O:179:ARG:HG2	1.80	0.63
2:R:117:ALA:O	4:S:15:ARG:NH2	2.30	0.63

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:R:604:CDL:H731	18:R:604:CDL:H512	1.81	0.63
4:S:43:LEU:HD23	4:S:143:ALA:HA	1.80	0.62
4:S:157:ALA:CB	18:S:302:CDL:C51	2.77	0.62
18:L:604:CDL:H512	18:L:604:CDL:C73	2.29	0.62
18:R:604:CDL:H512	18:R:604:CDL:C73	2.29	0.62
1:I:269:ALA:HB3	1:I:270:PRO:HD3	1.81	0.62
1:O:191:CYS:SG	1:O:201:LEU:HG	2.40	0.62
9:Z:126:CYS:HB2	18:Z:203:CDL:H321	1.82	0.62
8:Q:225:LEU:O	8:Q:256:ASN:ND2	2.32	0.62
8:Q:45:LEU:HD21	8:Q:116:VAL:HG22	1.82	0.62
5:E:161:LEU:HD21	5:E:208:TYR:HA	1.81	0.62
1:I:229:MET:O	3:Y:358:GLN:NE2	2.33	0.62
1:O:115:PHE:CE1	1:O:221:ALA:HB2	2.34	0.61
2:R:454:ASP:OD1	8:Q:35:TRP:NE1	2.33	0.61
2:L:250:GLY:O	2:L:254:LEU:N	2.29	0.61
1:O:188:CYS:HB2	13:O:302:HEC:C4B	2.30	0.61
2:R:401:VAL:O	2:R:405:THR:OG1	2.08	0.61
3:M:148:VAL:HG23	5:F:263:ALA:HB1	1.81	0.61
2:L:252:VAL:HB	8:K:231:ILE:HD11	1.83	0.61
1:O:119:THR:HA	1:O:217:GLN:CG	2.30	0.61
2:L:120:ARG:HB2	18:X:303:CDL:OA4	2.00	0.61
9:T:123:THR:HG23	18:T:203:CDL:H322	1.82	0.61
11:V:140:ILE:O	11:V:144:ILE:HD12	2.01	0.61
5:F:87:ARG:NH1	5:F:90:GLU:OE1	2.34	0.61
18:L:604:CDL:H731	18:L:604:CDL:H512	1.81	0.61
1:O:186:LEU:HB2	8:Q:136:PHE:CG	2.35	0.61
4:S:102:TRP:CE3	4:S:105:ILE:HD11	2.35	0.61
1:O:203:SER:HB3	8:Q:170:ARG:CA	2.30	0.61
2:L:274:PHE:CD2	2:L:406:ILE:HG22	2.35	0.61
18:T:202:CDL:H792	18:T:203:CDL:H581	1.83	0.61
4:X:32:TRP:CZ2	18:X:303:CDL:C38	2.78	0.61
1:O:118:SER:CA	1:O:143:ILE:HD13	2.31	0.60
1:O:114:TYR:CZ	1:O:167:VAL:HG21	2.36	0.60
4:S:184:TYR:CZ	18:S:302:CDL:H752	2.35	0.60
4:X:32:TRP:CE2	18:X:303:CDL:C35	2.83	0.60
9:Z:97:LEU:HD11	18:Z:202:CDL:C37	2.30	0.60
2:L:227:LEU:HD22	2:L:262:PHE:CZ	2.37	0.60
8:Q:256:ASN:OD1	8:Q:257:VAL:N	2.34	0.60
9:T:90:TRP:CZ2	18:T:201:CDL:CB4	2.73	0.60
1:O:118:SER:CB	1:O:143:ILE:HG21	2.30	0.60
1:O:119:THR:HG23	1:O:217:GLN:CG	2.30	0.60

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:229:MET:HE3	13:O:302:HEC:CHC	2.31	0.60
5:E:29:GLN:OE1	5:E:231:TRP:NE1	2.32	0.60
4:X:81:SER:OG	4:X:189:ASP:OD2	2.14	0.60
4:X:91:ALA:HB2	4:X:99:LEU:HD12	1.84	0.60
1:O:210:LEU:HD12	13:O:302:HEC:C3A	2.32	0.60
3:M:369:GLN:CG	5:F:404:LEU:HD21	2.32	0.60
9:T:126:CYS:HB2	18:T:203:CDL:H321	1.83	0.60
18:T:202:CDL:C72	18:T:203:CDL:H511	2.31	0.60
1:O:115:PHE:O	1:O:119:THR:HB	2.01	0.60
5:F:487:ARG:NH1	9:T:131:GLU:O	2.33	0.60
9:T:97:LEU:HD11	18:T:201:CDL:C37	2.31	0.60
18:X:302:CDL:H792	18:Z:203:CDL:H581	1.83	0.60
1:O:195:THR:HB	1:O:197:LYS:HE2	1.83	0.60
6:P:48:MET:SD	18:P:201:CDL:HB61	2.42	0.59
5:F:533:GLN:OE1	6:P:7:ARG:N	2.36	0.59
1:O:105:LEU:HD21	13:O:301:HEC:HHB	1.83	0.59
1:O:119:THR:CA	1:O:217:GLN:HG2	2.32	0.59
5:E:263:ALA:HB1	3:Y:148:VAL:HG23	1.84	0.59
4:X:161:LEU:O	4:X:165:THR:HG23	2.02	0.59
7:D:113:ILE:N	7:D:153:GLY:O	2.34	0.59
9:T:123:THR:CG2	18:T:203:CDL:H322	2.33	0.59
1:O:190:SER:HB2	8:Q:193:ARG:NH2	2.17	0.59
1:O:111:ALA:HB1	1:O:220:THR:HG22	1.84	0.59
18:X:302:CDL:C72	18:Z:203:CDL:H511	2.31	0.59
1:O:105:LEU:HD21	13:O:301:HEC:CHB	2.33	0.59
2:L:35:THR:HG21	9:Z:86:ALA:O	2.03	0.58
8:K:45:LEU:CD2	8:K:116:VAL:HG22	2.33	0.58
4:X:41:ALA:HA	9:Z:44:LEU:HD22	1.85	0.58
5:E:65:ASP:HB3	5:E:91:THR:HG21	1.84	0.58
5:E:438:ARG:NH2	6:J:35:SER:OG	2.36	0.58
2:R:378:LEU:HD23	8:Q:50:TRP:CZ3	2.38	0.58
18:T:202:CDL:HB22	18:T:202:CDL:HB4	1.84	0.58
1:O:247:ALA:O	1:O:251:GLU:HB3	2.03	0.58
9:Z:101:THR:HG22	15:Z:201:MQ9:C18	2.33	0.58
1:O:120:GLY:O	1:O:133:SER:HA	2.02	0.58
1:O:185:ARG:HA	1:O:189:ALA:HB3	1.84	0.58
4:S:32:TRP:CE2	18:S:302:CDL:C35	2.87	0.58
2:L:84:THR:O	2:L:88:THR:OG1	2.18	0.58
9:T:120:PHE:HB3	18:T:201:CDL:H612	0.67	0.58
5:E:312:ILE:HD13	5:E:333:VAL:HG21	1.85	0.58
6:P:29:ASP:N	6:P:29:ASP:OD1	2.37	0.58

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:X:302:CDL:HB4	18:X:302:CDL:HB22	1.84	0.58
1:O:115:PHE:HE2	1:O:226:PRO:HB3	1.68	0.58
4:S:184:TYR:CE2	18:S:302:CDL:H731	2.39	0.58
18:Z:203:CDL:C16	1:I:281:VAL:HG11	2.33	0.58
2:R:540:ARG:NH2	2:R:554:MET:SD	2.77	0.58
18:E:606:CDL:H371	18:E:606:CDL:H152	1.86	0.58
2:R:88:THR:HG22	2:R:151:TRP:HD1	1.68	0.57
5:E:370:VAL:O	5:E:370:VAL:HG13	2.03	0.57
2:L:200:GLY:O	2:L:205:ARG:NH2	2.36	0.57
9:T:94:LEU:CD2	18:T:201:CDL:H322	2.30	0.57
2:R:268:TYR:OH	2:R:333:ILE:HD12	2.03	0.57
18:F:705:CDL:H371	18:F:705:CDL:H152	1.86	0.57
1:O:119:THR:HA	1:O:217:GLN:HE21	1.69	0.57
2:R:274:PHE:CE2	2:R:406:ILE:HG22	2.40	0.57
1:O:202:SER:HB2	1:O:205:LYS:CD	2.31	0.57
1:O:203:SER:HB3	8:Q:170:ARG:CB	2.35	0.57
5:E:66:PRO:O	5:E:67:SER:OG	2.23	0.57
2:L:330:THR:HG22	17:L:602:HEA:HMB2	1.87	0.57
1:O:119:THR:CG2	1:O:217:GLN:HG2	2.34	0.57
4:S:157:ALA:HA	18:S:302:CDL:H511	1.87	0.57
4:X:184:TYR:CE1	18:X:303:CDL:H731	2.39	0.57
2:R:465:LEU:HD11	8:Q:326:GLU:O	2.05	0.57
4:S:157:ALA:HB1	18:S:302:CDL:H512	1.87	0.57
2:L:256:GLN:OE1	2:L:318:THR:HG21	2.05	0.56
9:T:98:SER:HG	18:T:201:CDL:H621	1.68	0.56
2:L:122:ASN:OD1	2:L:123:ALA:N	2.38	0.56
4:S:25:VAL:HG12	4:S:180:VAL:HG11	1.86	0.56
2:L:460:ARG:N	17:L:603:HEA:O2A	2.37	0.56
2:L:544:GLU:OE2	2:L:555:ARG:NH2	2.39	0.56
1:O:110:GLU:H	1:O:151:GLN:HG3	1.69	0.56
1:O:110:GLU:HG2	1:O:159:VAL:HG12	1.88	0.56
5:E:65:ASP:OD1	5:F:67:SER:OG	2.23	0.56
8:K:45:LEU:HD21	8:K:116:VAL:HG22	1.87	0.56
4:X:184:TYR:CD1	18:X:303:CDL:H732	2.41	0.56
1:O:119:THR:HG23	1:O:217:GLN:HB3	1.87	0.56
1:O:169:GLN:CG	1:O:215:PRO:HD2	2.36	0.56
4:S:157:ALA:HB1	18:S:302:CDL:H511	1.88	0.56
2:L:387:HIS:NE2	2:L:454:ASP:O	2.38	0.56
9:T:120:PHE:HB3	18:T:201:CDL:C62	2.29	0.56
1:O:234:ASP:O	1:O:238:THR:HA	2.06	0.56
2:L:77:GLU:OE1	8:K:332:ARG:NH2	2.39	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:Q:45:LEU:CD2	8:Q:116:VAL:HG22	2.35	0.56
4:X:149:LEU:CD2	18:X:303:CDL:C63	2.68	0.56
2:R:357:THR:N	2:R:428:GLU:OE2	2.38	0.56
2:L:274:PHE:CE2	2:L:406:ILE:HG22	2.41	0.56
1:O:130:GLN:HG3	1:O:206:TYR:H	1.70	0.56
1:O:210:LEU:HG	13:O:302:HEC:HBB	1.88	0.56
18:L:604:CDL:HB61	18:L:604:CDL:OB4	2.06	0.56
8:K:279:THR:HG21	1:I:126:ARG:HA	1.87	0.56
3:M:84:ARG:CZ	5:F:500:GLY:O	2.54	0.56
5:E:213:LEU:HD21	21:F:703:HEM:CBC	2.36	0.56
2:L:121:LEU:CD1	18:X:303:CDL:HA32	2.29	0.56
18:T:202:CDL:H572	18:T:202:CDL:H742	1.88	0.56
1:O:117:VAL:HG11	1:O:138:PHE:HB2	1.88	0.55
5:E:89:TYR:OH	5:E:287:LEU:O	2.22	0.55
5:F:422:VAL:HG22	18:F:706:CDL:H402	1.87	0.55
5:E:161:LEU:HD21	5:E:208:TYR:CA	2.37	0.55
5:E:487:ARG:NH1	9:Z:131:GLU:O	2.39	0.55
1:O:191:CYS:HB2	13:O:302:HEC:CBC	2.35	0.55
5:E:17:ASP:OD1	5:E:23:SER:OG	2.18	0.55
2:L:27:LEU:HD22	18:L:604:CDL:OA5	2.05	0.55
2:L:35:THR:HG22	2:L:119:PRO:HB2	1.88	0.55
7:D:74:THR:N	7:D:78:THR:O	2.38	0.55
9:Z:123:THR:HG23	18:Z:203:CDL:H331	1.88	0.55
2:R:156:PRO:HG3	2:R:252:VAL:HG12	1.88	0.55
5:E:104:PHE:HD2	15:E:604:MQ9:H502	1.72	0.55
5:F:116:PHE:CZ	5:F:120:ILE:HD11	2.41	0.55
2:R:252:VAL:HG21	8:Q:246:LEU:HD22	1.89	0.55
10:U:72:GLY:N	11:V:110:TYR:O	2.39	0.55
2:R:122:ASN:OD1	2:R:123:ALA:N	2.40	0.55
18:R:604:CDL:HB61	18:R:604:CDL:OB4	2.06	0.55
21:F:703:HEM:HHC	21:F:703:HEM:HBB2	1.88	0.55
2:R:209:PHE:CZ	2:R:213:ILE:HD11	2.42	0.55
4:S:184:TYR:CE1	18:S:302:CDL:H731	2.41	0.55
5:E:282:ASN:ND2	21:E:602:HEM:O1A	2.38	0.55
18:Z:203:CDL:H161	1:I:281:VAL:CG1	2.33	0.55
1:O:172:LEU:HA	1:O:243:ARG:NE	2.21	0.55
1:O:238:THR:HG23	1:O:240:ASP:H	1.71	0.55
1:O:293:ARG:HH12	18:T:203:CDL:HB22	1.71	0.55
8:K:288:VAL:HG23	8:K:288:VAL:O	2.07	0.55
1:O:186:LEU:HB2	8:Q:136:PHE:CD2	2.42	0.54
1:O:192:HIS:CE1	1:O:207:ALA:HB1	2.42	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:284:ILE:HD13	18:F:706:CDL:H552	1.89	0.54
5:F:194:PHE:CE2	5:F:203:LEU:HD22	2.42	0.54
4:X:15:ARG:O	4:X:16:VAL:HG23	2.07	0.54
4:X:32:TRP:CH2	18:X:303:CDL:H382	2.42	0.54
18:R:604:CDL:H792	18:F:706:CDL:H391	1.90	0.54
18:X:302:CDL:H742	18:X:302:CDL:H572	1.88	0.54
1:O:245:ILE:HG21	13:O:302:HEC:CBB	2.35	0.54
1:O:245:ILE:HG13	13:O:302:HEC:CBB	2.36	0.54
5:E:19:ARG:O	5:F:233:GLN:NE2	2.37	0.54
6:J:29:ASP:OD1	6:J:29:ASP:N	2.40	0.54
9:Z:90:TRP:HH2	18:Z:202:CDL:OB7	1.90	0.54
2:R:398:PHE:HA	2:R:401:VAL:HG22	1.90	0.54
9:Z:123:THR:HG23	18:Z:203:CDL:C32	2.37	0.54
1:I:87:CYS:SG	13:I:301:HEC:HAB	2.47	0.54
1:O:271:GLU:CG	5:F:281:ILE:HD12	2.38	0.54
3:M:369:GLN:HG2	5:F:404:LEU:HD21	1.90	0.54
5:E:368:ARG:O	5:E:434:GLN:NE2	2.39	0.54
1:O:119:THR:CG2	1:O:120:GLY:H	2.20	0.54
1:O:210:LEU:HD12	13:O:302:HEC:CMA	2.37	0.54
1:O:226:PRO:HG2	1:O:229:MET:HB3	1.90	0.54
8:Q:40:THR:HG23	8:Q:43:ALA:H	1.73	0.54
9:Z:98:SER:OG	18:Z:202:CDL:C62	2.53	0.54
2:R:89:VAL:CG2	2:R:137:ILE:HD11	2.37	0.53
2:L:117:ALA:O	4:X:15:ARG:NH2	2.42	0.53
2:L:259:PHE:O	2:L:263:GLY:N	2.38	0.53
2:R:46:VAL:CG1	18:P:201:CDL:H371	2.38	0.53
5:F:393:ASN:OD1	5:F:394:ASP:N	2.41	0.53
9:T:22:TYR:O	9:T:26:THR:OG1	2.20	0.53
1:O:282:ALA:O	1:O:286:VAL:HG23	2.08	0.53
5:E:278:LEU:O	1:I:261:TYR:N	2.40	0.53
5:F:172:ARG:NH1	5:F:176:SER:OG	2.42	0.53
4:X:32:TRP:NE1	18:X:303:CDL:C36	2.68	0.53
5:E:116:PHE:CZ	5:E:120:ILE:HD11	2.42	0.53
2:R:21:MET:HG2	18:R:604:CDL:HA22	1.90	0.53
8:Q:294:ASN:OD1	8:Q:295:ASP:N	2.41	0.53
2:L:419:PRO:HG3	2:L:425:LEU:HD23	1.90	0.53
1:I:121:ARG:NE	13:I:302:HEC:O1D	2.41	0.53
1:O:281:VAL:HG11	18:T:203:CDL:H161	1.91	0.53
2:R:460:ARG:N	17:R:603:HEA:O2A	2.39	0.53
5:E:312:ILE:HA	5:E:333:VAL:HG21	1.90	0.53
18:E:606:CDL:OB7	18:F:705:CDL:H112	2.09	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:S:184:TYR:CD1	18:S:302:CDL:H732	2.44	0.52
5:E:365:GLN:OE1	5:E:373:ARG:NH2	2.42	0.52
5:E:499:THR:HG22	5:E:511:HIS:ND1	2.25	0.52
4:X:157:ALA:HA	18:X:303:CDL:H511	1.90	0.52
5:E:425:VAL:HG22	18:L:604:CDL:H722	1.91	0.52
6:J:93:LEU:O	6:J:98:TRP:N	2.40	0.52
8:K:245:VAL:HG23	8:K:245:VAL:O	2.09	0.52
2:R:84:THR:OG1	2:R:149:PHE:O	2.25	0.52
5:E:404:LEU:HD21	3:Y:369:GLN:CG	2.39	0.52
2:L:243:HIS:ND1	2:L:246:ASP:OD2	2.42	0.52
18:T:202:CDL:H741	18:T:202:CDL:H611	1.92	0.52
9:Z:97:LEU:HD12	18:Z:202:CDL:C35	2.38	0.52
5:F:27:ARG:HB2	3:Y:177:VAL:HG22	1.92	0.52
3:M:67:THR:HG23	3:M:67:THR:O	2.10	0.52
5:E:421:ILE:HG13	18:J:203:CDL:H572	1.92	0.52
17:L:603:HEA:HMC1	17:L:603:HEA:HBC1	1.91	0.52
8:K:294:ASN:OD1	8:K:295:ASP:N	2.43	0.52
2:R:419:PRO:HG3	2:R:425:LEU:HD23	1.91	0.52
2:L:15:ARG:NH1	2:L:19:GLU:OE1	2.43	0.52
8:Q:140:TRP:NE1	8:Q:284:MET:O	2.38	0.52
4:X:166:LYS:NZ	18:X:302:CDL:CA5	2.62	0.52
18:X:302:CDL:H611	18:X:302:CDL:H741	1.92	0.52
2:R:169:ASP:OD1	2:R:238:ARG:NE	2.42	0.52
2:L:42:ILE:HG22	18:L:604:CDL:H332	1.92	0.52
9:T:94:LEU:HD23	18:T:201:CDL:H352	1.91	0.52
9:T:97:LEU:HD12	18:T:201:CDL:C35	2.39	0.52
2:R:398:PHE:O	2:R:402:LEU:HD12	2.10	0.51
4:S:149:LEU:CB	18:S:302:CDL:H801	2.29	0.51
5:F:65:ASP:HB3	5:F:91:THR:HG21	1.91	0.51
1:I:187:ASN:O	13:I:302:HEC:HMC3	2.09	0.51
2:R:163:SER:OG	2:R:163:SER:O	2.26	0.51
5:E:327:ILE:CG2	5:E:331:VAL:HG11	2.40	0.51
5:E:336:GLY:O	5:E:340:VAL:HG23	2.09	0.51
4:X:32:TRP:CZ2	18:X:303:CDL:C36	2.93	0.51
10:U:56:GLU:N	10:U:56:GLU:OE1	2.43	0.51
4:X:157:ALA:CA	18:X:303:CDL:H511	2.40	0.51
9:Z:94:LEU:CD2	18:Z:202:CDL:H322	2.31	0.51
2:R:158:THR:O	2:R:238:ARG:NH1	2.42	0.51
5:E:236:THR:HG21	5:E:364:LEU:HD21	1.92	0.51
5:F:438:ARG:NH2	6:P:35:SER:OG	2.39	0.51
9:T:98:SER:O	9:T:101:THR:OG1	2.22	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:203:SER:HB2	8:Q:170:ARG:CG	2.34	0.51
3:M:347:SER:O	3:M:387:ARG:NH1	2.41	0.51
5:F:368:ARG:O	5:F:434:GLN:NE2	2.38	0.51
2:L:445:THR:HG23	2:L:446:PHE:CD2	2.45	0.51
9:T:123:THR:HG23	18:T:203:CDL:H331	1.93	0.51
1:O:232:PHE:HE2	13:O:302:HEC:HHC	1.76	0.51
5:E:395:ILE:HG22	15:Z:201:MQ9:H5M1	1.93	0.51
9:T:98:SER:OG	18:T:201:CDL:C62	2.53	0.51
3:Y:407:ASP:OD1	3:Y:408:PHE:N	2.42	0.51
2:R:104:ASN:OD1	2:R:122:ASN:ND2	2.43	0.51
5:E:366:ARG:NH1	5:E:437:ASP:OD2	2.42	0.51
5:F:478:GLU:OE2	6:P:7:ARG:NH1	2.44	0.51
5:F:433:LEU:CD1	18:F:706:CDL:HA61	2.41	0.51
2:L:29:TYR:OH	18:Z:202:CDL:OA4	2.23	0.51
2:L:508:ASP:N	2:L:508:ASP:OD1	2.44	0.51
9:T:120:PHE:CD2	18:T:201:CDL:C63	2.81	0.51
11:V:51:LEU:HB2	11:V:144:ILE:HD11	1.93	0.51
2:R:257:HIS:NE2	9:T:35:GLU:OE1	2.43	0.50
4:S:157:ALA:CA	18:S:302:CDL:H511	2.41	0.50
2:L:534:PRO:HB3	2:L:545:LEU:HD12	1.93	0.50
6:J:87:VAL:HG22	18:J:203:CDL:H511	1.94	0.50
1:O:117:VAL:HA	1:O:122:MET:CG	2.33	0.50
3:M:145:ILE:HD13	18:T:202:CDL:H732	1.92	0.50
4:S:32:TRP:CZ2	18:S:302:CDL:C38	2.81	0.50
1:O:115:PHE:HA	1:O:119:THR:OG1	2.11	0.50
1:O:119:THR:HG23	1:O:217:GLN:CB	2.40	0.50
1:O:222:MET:CG	1:O:232:PHE:HB2	2.31	0.50
1:O:174:GLY:HA3	1:O:244:ASP:HA	1.93	0.50
2:R:445:THR:HG23	2:R:446:PHE:CD2	2.47	0.50
6:J:53:LEU:CD1	6:J:87:VAL:HG11	2.41	0.50
9:Z:108:LEU:O	9:Z:110:LEU:N	2.45	0.50
1:O:273:MET:HE3	15:O:304:MQ9:C10	2.41	0.50
2:R:496:PHE:O	2:R:500:ARG:NH2	2.44	0.50
2:L:35:THR:HG22	2:L:35:THR:O	2.12	0.50
4:X:157:ALA:HB2	18:X:303:CDL:C53	2.36	0.50
2:R:515:ASN:N	2:R:515:ASN:OD1	2.44	0.50
3:M:275:ASP:OD1	3:M:275:ASP:N	2.44	0.50
4:S:32:TRP:NE1	18:S:302:CDL:C36	2.69	0.50
3:M:159:ILE:O	3:M:159:ILE:HG22	2.12	0.50
5:E:433:LEU:CD1	18:E:607:CDL:HA61	2.42	0.50
5:F:135:ARG:HB3	5:F:136:PRO:CD	2.42	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:T:202:CDL:C17	18:T:203:CDL:H731	2.42	0.50
8:K:135:ALA:HB3	8:K:245:VAL:HG21	1.94	0.50
3:Y:265:PRO:CG	3:Y:301:LEU:HD23	2.42	0.50
2:R:35:THR:HG21	9:T:86:ALA:O	2.12	0.49
2:R:406:ILE:HD11	17:R:603:HEA:CBC	2.42	0.49
5:E:227:LEU:HD22	18:E:606:CDL:H782	1.93	0.49
6:J:86:LEU:HD23	18:J:203:CDL:H162	1.94	0.49
9:T:108:LEU:O	9:T:110:LEU:N	2.45	0.49
9:Z:98:SER:O	9:Z:101:THR:OG1	2.26	0.49
9:Z:101:THR:HG22	15:Z:201:MQ9:H18	1.94	0.49
1:O:213:ALA:HA	1:O:217:GLN:OE1	2.12	0.49
1:O:232:PHE:CZ	13:O:302:HEC:HMC2	2.47	0.49
18:E:607:CDL:H412	18:L:604:CDL:H792	1.93	0.49
5:F:336:GLY:O	5:F:340:VAL:HG23	2.12	0.49
3:M:407:ASP:OD1	3:M:408:PHE:N	2.43	0.49
5:F:312:ILE:HG13	5:F:333:VAL:HG21	1.94	0.49
2:L:386:PHE:O	8:K:242:LYS:NZ	2.32	0.49
5:E:395:ILE:CG2	15:Z:201:MQ9:H5M1	2.42	0.49
5:E:131:GLY:O	5:E:134:ARG:NE	2.41	0.49
5:F:395:ILE:CG2	15:T:204:MQ9:H5M1	2.43	0.49
2:L:496:PHE:O	2:L:500:ARG:NH2	2.43	0.49
5:E:127:ILE:HD11	21:E:601:HEM:CAC	2.43	0.49
15:E:604:MQ9:H511	15:E:604:MQ9:H453	1.94	0.49
5:F:65:ASP:CB	5:F:91:THR:HG21	2.43	0.49
18:R:604:CDL:H722	5:F:425:VAL:HG22	1.93	0.49
18:E:606:CDL:H112	18:F:705:CDL:OB7	2.12	0.49
5:F:104:PHE:HD2	15:F:707:MQ9:H502	1.78	0.49
2:L:156:PRO:HG3	2:L:252:VAL:HG12	1.94	0.49
2:L:392:TYR:HD2	2:L:452:LEU:HD23	1.76	0.49
18:E:606:CDL:OB7	18:F:705:CDL:C11	2.61	0.49
4:X:81:SER:HG	4:X:189:ASP:CG	2.13	0.49
4:X:99:LEU:C	4:X:99:LEU:HD23	2.33	0.49
18:X:302:CDL:C17	18:Z:203:CDL:H731	2.42	0.49
3:Y:110:TRP:HZ2	3:Y:127:LEU:HD11	1.78	0.49
1:O:188:CYS:CA	13:O:302:HEC:HMC3	2.40	0.49
2:R:34:THR:HG21	2:R:43:MET:CE	2.43	0.49
2:R:89:VAL:HG21	2:R:137:ILE:HD11	1.93	0.49
3:M:177:VAL:HG22	5:E:27:ARG:HB2	1.95	0.49
2:L:401:VAL:HG11	17:L:602:HEA:C2C	2.42	0.49
1:O:95:LEU:HD11	1:O:150:VAL:CG1	2.42	0.48
5:E:65:ASP:CB	5:E:91:THR:HG21	2.41	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:Q:275:GLU:O	8:Q:281:HIS:CE1	2.66	0.48
9:T:90:TRP:HH2	18:T:201:CDL:OB7	1.95	0.48
18:Z:203:CDL:C57	1:I:282:ALA:HA	2.42	0.48
5:F:227:LEU:HD22	18:F:705:CDL:H782	1.95	0.48
1:I:124:ALA:O	13:I:301:HEC:HAC	2.12	0.48
5:F:370:VAL:O	5:F:370:VAL:HG13	2.13	0.48
9:Z:120:PHE:HB3	18:Z:202:CDL:C62	2.38	0.48
1:O:124:ALA:HB2	1:O:134:LYS:HZ1	1.79	0.48
2:R:292:GLY:O	2:R:295:THR:OG1	2.25	0.48
5:E:123:HIS:NE2	21:E:601:HEM:ND	2.62	0.48
2:L:371:LEU:HD23	2:L:400:TYR:CE2	2.48	0.48
8:Q:160:ASP:N	8:Q:161:PRO:CD	2.76	0.48
9:Z:94:LEU:HD23	18:Z:202:CDL:H352	1.95	0.48
2:R:107:LEU:HD12	2:R:210:THR:HG22	1.94	0.48
4:S:149:LEU:CG	18:S:302:CDL:H631	2.43	0.48
18:X:302:CDL:H732	3:Y:145:ILE:HD13	1.95	0.48
2:R:335:VAL:HG13	2:R:336:PRO:CD	2.43	0.48
5:F:421:ILE:HG13	18:P:201:CDL:H572	1.94	0.48
2:L:96:THR:O	2:L:99:VAL:HG22	2.14	0.48
2:L:221:LEU:HD22	4:X:35:SER:OG	2.14	0.48
5:F:282:ASN:ND2	21:F:703:HEM:O1A	2.43	0.48
1:O:90:CYS:SG	13:O:301:HEC:HBC2	2.54	0.47
2:R:221:LEU:HD22	4:S:35:SER:OG	2.14	0.47
2:R:77:GLU:OE2	8:Q:332:ARG:NH1	2.43	0.47
2:R:378:LEU:HD23	8:Q:50:TRP:CH2	2.49	0.47
5:E:107:GLN:NE2	5:E:276:GLY:O	2.46	0.47
3:M:44:ASP:OD1	3:M:45:ALA:N	2.46	0.47
4:S:161:LEU:O	4:S:165:THR:HG23	2.14	0.47
5:F:147:LEU:HD13	5:F:222:LEU:HB2	1.96	0.47
1:O:203:SER:O	8:Q:170:ARG:HD3	1.93	0.47
2:L:33:THR:HG22	9:Z:90:TRP:HB3	1.97	0.47
1:O:78:THR:O	1:O:81:GLN:HG3	2.14	0.47
2:R:50:ALA:CB	18:P:201:CDL:H401	2.44	0.47
5:E:212:ILE:HD11	5:F:212:ILE:HD11	1.95	0.47
8:Q:222:GLU:OE2	8:Q:257:VAL:HG21	2.14	0.47
1:O:222:MET:CE	13:O:302:HEC:HBB2	2.43	0.47
2:L:392:TYR:CD2	2:L:452:LEU:HD23	2.49	0.47
8:K:197:ASN:OD1	8:K:197:ASN:N	2.48	0.47
3:Y:293:THR:HG23	3:Y:294:THR:HG23	1.96	0.47
1:O:117:VAL:CG1	1:O:138:PHE:HB2	2.44	0.47
1:O:275:MET:HE2	5:F:111:TRP:HE3	1.80	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:R:29:TYR:O	2:R:33:THR:OG1	2.32	0.47
2:R:35:THR:O	2:R:35:THR:HG22	2.15	0.47
2:R:546:HIS:NE2	11:V:29:SER:OG	2.42	0.47
3:M:230:THR:HG22	3:M:231:ALA:N	2.30	0.47
3:M:265:PRO:CG	3:M:301:LEU:HD23	2.44	0.47
3:M:271:PRO:O	3:M:316:ARG:NH1	2.48	0.47
18:E:606:CDL:C11	18:F:705:CDL:OB7	2.63	0.47
5:F:244:THR:HG21	5:F:536:ILE:HG21	1.97	0.47
2:L:326:PHE:O	2:L:330:THR:OG1	2.18	0.47
9:T:123:THR:HG23	18:T:203:CDL:C32	2.45	0.47
1:I:210:LEU:HD21	13:I:302:HEC:HBB	1.96	0.47
3:Y:230:THR:HG23	3:Y:244:THR:HG22	1.96	0.47
5:E:147:LEU:HD13	5:E:222:LEU:CB	2.44	0.47
1:O:95:LEU:HD22	1:O:105:LEU:HD23	1.97	0.47
1:O:210:LEU:HD12	13:O:302:HEC:HMA3	1.96	0.47
4:X:41:ALA:CA	9:Z:44:LEU:HD22	2.45	0.47
1:I:234:ASP:O	1:I:238:THR:HA	2.15	0.47
1:O:95:LEU:CD1	1:O:150:VAL:CA	2.75	0.47
1:O:169:GLN:HG3	1:O:216:ALA:H	1.80	0.47
1:O:218:ILE:HG23	13:O:302:HEC:HMB2	1.97	0.47
2:R:193:VAL:HG13	2:R:206:MET:HE1	1.97	0.47
18:L:604:CDL:H522	18:L:604:CDL:H552	1.43	0.47
4:X:91:ALA:CB	4:X:99:LEU:HD12	2.45	0.47
2:R:406:ILE:HD11	17:R:603:HEA:HBC2	1.95	0.46
8:K:230:VAL:HG22	8:K:231:ILE:N	2.29	0.46
4:X:184:TYR:CZ	18:X:303:CDL:C73	2.91	0.46
4:X:184:TYR:CD1	18:X:303:CDL:C73	2.99	0.46
1:O:273:MET:SD	15:O:304:MQ9:H3D	2.55	0.46
4:S:160:LEU:CD2	9:T:129:VAL:HG11	2.46	0.46
5:E:42:LEU:HD13	5:E:122:VAL:CG1	2.43	0.46
1:O:203:SER:CA	8:Q:170:ARG:CG	2.58	0.46
1:O:245:ILE:HD13	1:O:245:ILE:HA	1.75	0.46
2:R:118:PHE:HB3	18:S:302:CDL:OA3	2.16	0.46
4:S:184:TYR:CZ	18:S:302:CDL:C73	2.97	0.46
5:E:327:ILE:HG23	5:E:331:VAL:HG11	1.96	0.46
5:E:392:MET:SD	1:I:269:ALA:HB1	2.55	0.46
1:O:284:ILE:O	1:O:288:MET:HG3	2.15	0.46
2:R:310:VAL:HG11	2:R:333:ILE:HD13	1.98	0.46
5:E:440:VAL:HG21	5:E:486:LYS:HG2	1.97	0.46
5:F:17:ASP:OD2	5:F:23:SER:OG	2.18	0.46
2:L:46:VAL:CG1	18:J:203:CDL:H371	2.46	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:120:ARG:NH1	9:Z:131:GLU:OE1	2.44	0.46
9:Z:123:THR:HG23	18:Z:203:CDL:C33	2.45	0.46
13:O:302:HEC:CMA	13:O:302:HEC:HBA1	2.44	0.46
2:R:35:THR:HG22	2:R:119:PRO:HB2	1.97	0.46
2:L:104:ASN:OD1	2:L:122:ASN:ND2	2.48	0.46
2:L:186:GLY:O	2:L:190:ILE:HG22	2.16	0.46
2:R:403:PHE:CZ	2:R:407:VAL:HG11	2.50	0.46
5:E:194:PHE:CE2	5:E:203:LEU:HD22	2.51	0.46
11:V:44:PRO:O	11:V:47:ASP:OD1	2.34	0.46
1:I:112:ALA:HB2	1:I:224:THR:HG21	1.97	0.46
1:O:130:GLN:HE21	1:O:205:LYS:HG2	1.81	0.46
1:O:203:SER:N	8:Q:168:THR:HA	2.31	0.46
13:O:302:HEC:HHA	13:O:302:HEC:O2D	2.16	0.46
3:M:243:TRP:NE1	3:M:310:ASN:O	2.41	0.46
5:F:499:THR:HG22	5:F:511:HIS:ND1	2.30	0.46
10:U:32:HIS:NE2	11:V:43:PHE:O	2.47	0.46
1:I:184:PHE:O	1:I:188:CYS:N	2.46	0.46
13:I:302:HEC:CBB	13:I:302:HEC:HHC	2.45	0.46
3:Y:44:ASP:OD1	3:Y:45:ALA:N	2.48	0.46
2:R:190:ILE:HD11	9:T:8:PHE:HZ	1.81	0.46
2:R:532:GLU:OE2	11:V:23:THR:OG1	2.33	0.46
18:R:604:CDL:H552	18:R:604:CDL:H522	1.43	0.46
2:L:310:VAL:O	2:L:310:VAL:HG13	2.16	0.46
1:O:282:ALA:HA	18:T:203:CDL:C57	2.45	0.46
3:M:230:THR:HG23	3:M:244:THR:HG22	1.98	0.46
5:E:450:ILE:HD12	9:Z:81:GLU:OE2	2.16	0.46
2:L:419:PRO:CG	2:L:425:LEU:HD23	2.46	0.46
9:T:8:PHE:CE1	9:T:52:THR:HG21	2.51	0.46
18:X:302:CDL:H792	18:Z:203:CDL:C58	2.46	0.46
1:O:239:PRO:O	1:O:243:ARG:HG2	2.17	0.45
2:R:266:GLU:OE1	2:R:270:ILE:HD12	2.15	0.45
5:E:213:LEU:HD21	21:F:703:HEM:HBC1	1.98	0.45
2:R:417:TRP:NE1	2:R:518:GLU:OE2	2.46	0.45
2:L:21:MET:HG2	18:L:604:CDL:HA22	1.97	0.45
4:X:189:ASP:OD1	4:X:189:ASP:C	2.54	0.45
18:X:302:CDL:H791	18:X:302:CDL:H622	1.99	0.45
1:O:119:THR:OG1	1:O:217:GLN:HG2	2.15	0.45
1:O:121:ARG:HG3	13:O:302:HEC:O2D	2.15	0.45
3:M:81:ALA:HB3	5:F:514:LEU:HD11	1.99	0.45
2:L:465:LEU:HD21	8:K:328:PHE:CD1	2.51	0.45
13:I:301:HEC:HMB1	13:I:301:HEC:HBB3	1.98	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:Y:335:ASN:ND2	3:Y:337:GLY:O	2.49	0.45
1:O:232:PHE:HZ	13:O:302:HEC:HMC2	1.82	0.45
1:O:119:THR:CG2	1:O:120:GLY:N	2.79	0.45
2:R:84:THR:O	2:R:88:THR:HG23	2.16	0.45
3:M:242:GLY:O	3:M:286:ARG:NH1	2.45	0.45
4:S:41:ALA:HA	9:T:44:LEU:HD22	1.98	0.45
8:K:145:GLN:O	8:K:158:GLY:N	2.49	0.45
4:X:25:VAL:HG12	4:X:180:VAL:HG11	1.99	0.45
3:M:364:LEU:HD12	3:M:365:CYS:H	1.82	0.45
4:S:163:ALA:HB1	18:T:202:CDL:HA61	1.98	0.45
5:E:116:PHE:CE1	5:E:120:ILE:HD11	2.51	0.45
2:L:264:HIS:O	2:L:267:VAL:HG22	2.16	0.45
15:F:707:MQ9:H453	15:F:707:MQ9:H511	1.98	0.45
9:Z:91:TRP:N	9:Z:92:PRO:CD	2.80	0.45
1:I:72:GLN:OE1	1:I:74:ALA:N	2.50	0.45
18:E:606:CDL:H551	18:E:606:CDL:H581	1.70	0.45
5:F:147:LEU:HD13	5:F:222:LEU:CB	2.47	0.45
5:F:414:GLY:O	5:F:418:LEU:N	2.48	0.45
8:Q:32:ALA:HB1	8:Q:35:TRP:HB2	1.98	0.45
4:X:37:LEU:HD22	9:Z:51:ILE:HD12	1.99	0.45
9:Z:97:LEU:HD13	18:Z:202:CDL:H351	1.98	0.45
1:O:115:PHE:HE2	1:O:226:PRO:CB	2.29	0.45
4:S:36:GLU:OE1	4:S:150:HIS:NE2	2.41	0.45
4:S:157:ALA:CB	18:S:302:CDL:H512	2.46	0.45
5:E:198:PHE:HE2	5:E:290:TYR:HH	1.63	0.45
2:L:406:ILE:HD11	17:L:603:HEA:CBC	2.47	0.45
4:X:157:ALA:CB	18:X:303:CDL:H512	2.43	0.45
3:Y:230:THR:HG22	3:Y:231:ALA:N	2.32	0.45
2:L:27:LEU:HD22	18:L:604:CDL:PA1	2.57	0.45
2:L:505:VAL:HG13	2:L:505:VAL:O	2.15	0.45
10:U:23:LEU:O	10:U:27:THR:OG1	2.24	0.45
1:O:176:ASP:CB	1:O:179:ARG:HG2	2.45	0.44
8:Q:231:ILE:HD13	8:Q:246:LEU:CD2	2.35	0.44
3:Y:355:LEU:N	3:Y:355:LEU:HD12	2.32	0.44
1:O:184:PHE:CE2	1:O:189:ALA:HA	2.53	0.44
5:E:506:ASP:OD2	3:Y:84:ARG:NH2	2.45	0.44
2:L:212:ASN:ND2	2:L:272:LEU:O	2.45	0.44
8:Q:195:TYR:CE2	8:Q:247:PRO:O	2.70	0.44
13:I:302:HEC:HBC3	13:I:302:HEC:HHD	1.99	0.44
13:I:302:HEC:HHD	13:I:302:HEC:CBC	2.46	0.44
5:E:56:THR:HG22	15:E:604:MQ9:H451	1.99	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:183:PRO:O	3:Y:417:TRP:CG	2.71	0.44
5:E:404:LEU:HD21	3:Y:369:GLN:HG2	1.99	0.44
5:F:147:LEU:HD21	5:F:223:ILE:HG13	1.99	0.44
5:F:409:TRP:CZ3	6:P:76:LEU:HD11	2.52	0.44
8:Q:230:VAL:O	8:Q:232:HIS:ND1	2.51	0.44
11:V:68:VAL:HG13	11:V:143:LEU:HD22	1.99	0.44
1:I:201:LEU:HD11	13:I:302:HEC:HMD3	1.98	0.44
1:O:130:GLN:CG	1:O:205:LYS:HA	2.46	0.44
1:O:169:GLN:HE21	1:O:216:ALA:HB3	1.82	0.44
1:O:172:LEU:CD2	1:O:216:ALA:HA	2.48	0.44
3:M:269:MET:HE1	3:M:274:ILE:HD11	1.99	0.44
3:M:349:LEU:HD12	3:M:368:HIS:CE1	2.52	0.44
2:L:111:ILE:HD12	2:L:196:MET:O	2.16	0.44
2:L:270:ILE:CG2	2:L:406:ILE:HG21	2.47	0.44
18:E:606:CDL:H332	18:E:606:CDL:H362	1.67	0.44
18:F:706:CDL:H542	18:F:706:CDL:H712	2.00	0.44
17:L:602:HEA:C18	17:L:602:HEA:H261	2.48	0.44
18:L:604:CDL:HA4	18:J:203:CDL:C31	2.43	0.44
1:O:115:PHE:CE2	1:O:226:PRO:HG3	2.52	0.44
2:R:153:ALA:O	2:R:255:TRP:NE1	2.50	0.44
3:M:172:VAL:HG13	3:M:173:HIS:N	2.33	0.44
3:M:418:GLU:OE1	3:M:418:GLU:N	2.48	0.44
4:S:184:TYR:CD1	18:S:302:CDL:C73	3.01	0.44
1:O:186:LEU:HD13	8:Q:136:PHE:CD1	2.53	0.44
2:R:242:ALA:O	4:S:138:SER:CB	2.66	0.44
6:J:33:VAL:HG11	6:J:41:SER:OG	2.18	0.44
18:T:202:CDL:H622	18:T:202:CDL:H791	1.99	0.44
4:X:32:TRP:HB2	18:X:303:CDL:C33	2.44	0.44
4:S:151:VAL:HG22	4:S:188:VAL:HG11	2.00	0.44
5:E:500:GLY:O	3:Y:84:ARG:CZ	2.66	0.44
3:Y:243:TRP:NE1	3:Y:310:ASN:O	2.42	0.44
5:E:235:HIS:ND1	5:E:236:THR:O	2.47	0.44
5:F:135:ARG:NH1	5:F:358:ASP:O	2.51	0.44
2:L:385:ASP:O	2:L:389:THR:CB	2.66	0.44
9:Z:8:PHE:CE2	9:Z:52:THR:HG21	2.52	0.44
13:I:302:HEC:HHC	13:I:302:HEC:HBB3	1.99	0.44
1:O:188:CYS:HB3	13:O:302:HEC:HAB	2.00	0.43
1:O:203:SER:HA	8:Q:170:ARG:HG3	1.87	0.43
1:O:271:GLU:CD	5:F:281:ILE:HD12	2.38	0.43
2:R:259:PHE:O	2:R:263:GLY:N	2.41	0.43
2:R:535:ARG:NH1	9:T:74:GLU:OE2	2.48	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:L:604:CDL:H562	18:L:604:CDL:H751	2.00	0.43
9:T:91:TRP:N	9:T:92:PRO:CD	2.81	0.43
1:O:112:ALA:HB2	1:O:224:THR:HG21	2.00	0.43
1:O:114:TYR:OH	1:O:167:VAL:HG21	2.17	0.43
2:R:248:ALA:HB3	8:Q:185:ILE:CD1	2.49	0.43
18:E:607:CDL:H722	18:Z:202:CDL:H111	2.00	0.43
2:L:163:SER:O	2:L:163:SER:OG	2.36	0.43
8:K:140:TRP:NE1	8:K:284:MET:O	2.47	0.43
2:R:84:THR:HG21	2:R:147:ALA:HB3	2.00	0.43
5:E:281:ILE:HD12	1:I:271:GLU:CD	2.39	0.43
2:L:50:ALA:CB	18:J:203:CDL:H401	2.48	0.43
18:T:202:CDL:H792	18:T:203:CDL:C58	2.46	0.43
11:V:78:ALA:O	11:V:82:ARG:NH1	2.51	0.43
11:V:114:VAL:HG12	11:V:119:ILE:HG21	2.00	0.43
3:Y:41:GLN:NE2	3:Y:46:GLU:OE2	2.51	0.43
2:R:63:ARG:HE	2:R:63:ARG:HA	1.83	0.43
4:S:189:ASP:OD1	4:S:189:ASP:C	2.57	0.43
5:F:395:ILE:HG21	15:T:204:MQ9:H5M1	1.99	0.43
8:Q:264:GLN:OE1	8:Q:264:GLN:N	2.50	0.43
8:K:195:TYR:CE1	8:K:247:PRO:O	2.72	0.43
8:K:232:HIS:HB2	8:K:273:CYS:SG	2.58	0.43
1:O:232:PHE:CE2	13:O:302:HEC:HHC	2.52	0.43
2:R:452:LEU:HD11	2:R:457:MET:SD	2.59	0.43
5:F:416:VAL:HG11	6:P:58:PHE:CD2	2.53	0.43
18:F:705:CDL:H621	18:F:705:CDL:H591	1.61	0.43
8:Q:179:ILE:HG23	8:Q:180:GLU:N	2.33	0.43
3:Y:195:VAL:HG23	3:Y:196:ILE:HD12	2.01	0.43
3:Y:271:PRO:O	3:Y:316:ARG:NH1	2.51	0.43
2:R:110:GLN:OE1	2:R:210:THR:HG23	2.18	0.43
5:E:147:LEU:HD21	5:E:223:ILE:HG13	2.00	0.43
8:K:193:ARG:NH2	1:I:137:HIS:O	2.52	0.43
1:I:191:CYS:SG	1:I:201:LEU:HD21	2.59	0.43
1:O:215:PRO:HG3	1:O:250:ARG:HD3	2.00	0.43
5:F:123:HIS:NE2	21:F:702:HEM:ND	2.67	0.43
5:F:171:ILE:HD12	5:F:175:LEU:HD12	2.00	0.43
5:F:284:ILE:O	5:F:287:LEU:O	2.35	0.43
5:F:366:ARG:NH1	5:F:437:ASP:OD2	2.46	0.43
4:X:32:TRP:CG	18:X:303:CDL:C33	2.85	0.43
1:O:122:MET:HE3	1:O:123:PRO:HD2	2.00	0.43
1:O:208:PRO:HG3	13:O:302:HEC:HAA2	2.01	0.43
4:X:151:VAL:HG22	4:X:188:VAL:HG11	2.00	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:R:602:HEA:HMC1	17:R:602:HEA:HBC1	2.00	0.43
10:U:2:SER:O	10:U:5:LEU:N	2.51	0.43
1:O:169:GLN:HG2	1:O:214:ASN:HB2	2.01	0.43
8:Q:139:ASN:OD1	8:Q:205:GLY:O	2.37	0.43
9:Z:98:SER:HG	18:Z:202:CDL:H621	1.79	0.43
3:Y:172:VAL:HG13	3:Y:173:HIS:N	2.33	0.43
1:O:230:PRO:HD2	13:O:302:HEC:C2C	2.48	0.42
1:O:249:VAL:HG11	13:O:302:HEC:HMB3	2.01	0.42
2:R:31:LEU:O	2:R:34:THR:HG22	2.19	0.42
2:R:47:VAL:CG2	18:R:604:CDL:H371	2.49	0.42
5:F:225:ALA:HA	18:F:705:CDL:H351	2.01	0.42
5:F:312:ILE:CG1	5:F:333:VAL:HG21	2.48	0.42
2:L:242:ALA:O	4:X:138:SER:CB	2.66	0.42
9:Z:95:ILE:CD1	9:Z:128:LEU:HD22	2.48	0.42
1:I:149:TYR:O	1:I:153:ASN:ND2	2.52	0.42
1:O:112:ALA:N	1:O:224:THR:HG21	2.34	0.42
1:O:184:PHE:HA	1:O:245:ILE:HD11	2.01	0.42
1:O:187:ASN:O	1:O:188:CYS:HB3	2.18	0.42
1:O:222:MET:CG	1:O:242:LYS:HE2	2.36	0.42
4:S:102:TRP:HE3	4:S:105:ILE:HD11	1.78	0.42
4:X:96:VAL:HG22	4:X:170:PHE:HB2	2.01	0.42
9:Z:123:THR:HG22	18:Z:203:CDL:H322	2.01	0.42
3:Y:348:HIS:O	19:Y:501:FES:S1	2.77	0.42
2:R:384:LEU:CD1	8:Q:49:LEU:HD23	2.48	0.42
18:R:604:CDL:H751	18:R:604:CDL:H562	2.00	0.42
5:F:56:THR:HA	15:F:707:MQ9:H451	2.01	0.42
3:Y:347:SER:O	3:Y:387:ARG:NH1	2.44	0.42
1:O:172:LEU:HD23	1:O:216:ALA:HA	2.01	0.42
2:L:280:GLU:OE1	2:L:516:SER:OG	2.29	0.42
18:L:604:CDL:H381	18:L:604:CDL:H412	1.39	0.42
18:T:202:CDL:C75	18:T:203:CDL:H532	2.50	0.42
11:V:76:ASP:N	11:V:76:ASP:OD1	2.52	0.42
2:R:88:THR:HG22	2:R:151:TRP:CD1	2.53	0.42
5:F:311:LEU:HD23	5:F:333:VAL:HG23	2.00	0.42
4:X:160:LEU:CD2	9:Z:129:VAL:HG11	2.49	0.42
18:X:302:CDL:H312	18:X:302:CDL:HA61	1.82	0.42
18:X:302:CDL:C75	18:Z:203:CDL:H532	2.50	0.42
1:O:286:VAL:HG13	5:F:267:MET:HE1	2.01	0.42
4:S:53:GLN:O	8:Q:186:ARG:NH1	2.45	0.42
4:S:96:VAL:HG22	4:S:170:PHE:CB	2.50	0.42
2:L:290:ILE:HG23	2:L:290:ILE:O	2.18	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:V:119:ILE:HG23	11:V:120:GLU:N	2.35	0.42
1:O:245:ILE:O	1:O:249:VAL:HG12	2.20	0.42
2:R:111:ILE:HD12	2:R:196:MET:O	2.19	0.42
2:R:424:ARG:NH1	2:R:500:ARG:O	2.52	0.42
3:M:345:VAL:HG23	3:M:345:VAL:O	2.19	0.42
18:F:705:CDL:H551	18:F:705:CDL:H581	1.70	0.42
9:T:97:LEU:HD13	18:T:201:CDL:H351	2.01	0.42
1:O:218:ILE:H	1:O:218:ILE:HG13	1.64	0.42
3:M:42:PRO:O	3:M:43:THR:OG1	2.32	0.42
3:M:364:LEU:HD12	3:M:365:CYS:N	2.35	0.42
4:S:149:LEU:HG	18:S:302:CDL:H631	2.02	0.42
5:E:175:LEU:CD2	15:E:603:MQ9:H5M2	2.50	0.42
5:E:225:ALA:HA	18:E:606:CDL:H351	2.00	0.42
5:F:422:VAL:CG2	18:F:706:CDL:H402	2.49	0.42
18:L:604:CDL:H611	18:L:604:CDL:H582	1.76	0.42
8:Q:96:LEU:HA	8:Q:99:THR:HG22	2.01	0.42
8:K:281:HIS:O	8:K:281:HIS:ND1	2.53	0.42
3:Y:387:ARG:CZ	3:Y:415:ALA:HB2	2.50	0.42
1:O:91:HIS:HD2	1:O:103:PRO:O	2.03	0.42
1:O:125:MET:HA	13:O:301:HEC:CAC	2.49	0.42
1:O:192:HIS:CD2	1:O:210:LEU:HD21	2.55	0.42
13:O:302:HEC:CBB	13:O:302:HEC:HMB1	2.49	0.42
2:R:454:ASP:OD1	8:Q:35:TRP:CD1	2.73	0.42
18:R:604:CDL:H531	18:R:604:CDL:H712	2.02	0.42
18:R:604:CDL:H612	18:P:201:CDL:H402	2.01	0.42
3:M:369:GLN:HG3	5:F:404:LEU:HD21	2.02	0.42
4:X:36:GLU:OE1	4:X:150:HIS:NE2	2.44	0.42
2:R:399:HIS:O	2:R:403:PHE:N	2.53	0.42
2:L:287:ARG:O	8:K:87:GLN:NE2	2.53	0.42
2:L:522:SER:OG	2:L:524:PRO:O	2.37	0.42
18:L:604:CDL:H531	18:L:604:CDL:H712	2.02	0.42
11:V:47:ASP:OD1	11:V:47:ASP:C	2.58	0.42
1:I:190:SER:O	3:Y:355:LEU:HD11	2.20	0.42
1:O:230:PRO:HD2	13:O:302:HEC:CAC	2.50	0.41
2:R:193:VAL:HG11	2:R:214:LEU:HD13	2.01	0.41
3:M:46:GLU:OE1	3:M:46:GLU:N	2.50	0.41
3:M:291:ASP:O	3:M:297:SER:OG	2.38	0.41
5:F:425:VAL:CG1	18:F:706:CDL:H371	2.45	0.41
3:Y:190:LEU:O	3:Y:191:LYS:CG	2.68	0.41
1:O:114:TYR:CE1	1:O:167:VAL:HG21	2.56	0.41
1:O:122:MET:O	1:O:134:LYS:NZ	2.53	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:M:344:LYS:O	3:M:353:SER:N	2.44	0.41
5:E:147:LEU:HD13	5:E:222:LEU:HB2	2.01	0.41
5:E:532:HIS:CD2	5:E:536:ILE:HD11	2.55	0.41
5:F:420:ALA:HB2	18:P:201:CDL:H771	2.01	0.41
8:Q:236:VAL:O	8:Q:239:PHE:N	2.49	0.41
18:Z:203:CDL:OB4	1:I:289:TRP:HD1	2.03	0.41
18:Z:203:CDL:HB22	1:I:293:ARG:HH12	1.84	0.41
1:I:191:CYS:CB	13:I:302:HEC:HBC2	2.50	0.41
1:I:269:ALA:HB3	1:I:270:PRO:CD	2.47	0.41
2:R:310:VAL:O	2:R:310:VAL:HG13	2.20	0.41
2:R:420:LYS:NZ	2:R:521:THR:O	2.53	0.41
15:E:603:MQ9:H403	15:E:603:MQ9:H421	1.82	0.41
18:F:706:CDL:H391	18:T:201:CDL:C42	2.50	0.41
8:Q:135:ALA:O	8:Q:232:HIS:NE2	2.53	0.41
1:I:263:LEU:HD12	1:I:263:LEU:H	1.85	0.41
3:Y:159:ILE:O	3:Y:159:ILE:HG22	2.20	0.41
1:O:193:ASN:OD1	1:O:197:LYS:HB2	2.21	0.41
18:R:604:CDL:H512	18:R:604:CDL:H732	2.01	0.41
5:F:449:ILE:HD13	9:T:85:PHE:HD2	1.86	0.41
2:L:27:LEU:CD2	18:L:604:CDL:HA62	2.51	0.41
8:Q:101:ILE:HG22	8:Q:102:PRO:HD3	2.03	0.41
1:O:124:ALA:HB2	1:O:134:LYS:NZ	2.35	0.41
2:R:90:MET:HB3	17:R:603:HEA:CAC	2.50	0.41
18:R:604:CDL:H381	18:R:604:CDL:H412	1.39	0.41
3:M:195:VAL:HG23	3:M:196:ILE:HD12	2.02	0.41
18:L:604:CDL:H612	18:J:203:CDL:H402	2.01	0.41
9:T:8:PHE:CZ	9:T:52:THR:HG21	2.55	0.41
4:X:102:TRP:CE3	4:X:105:ILE:HD11	2.55	0.41
1:I:210:LEU:HD21	13:I:302:HEC:CHB	2.51	0.41
3:Y:85:THR:HG21	3:Y:153:LYS:HB3	2.01	0.41
1:O:112:ALA:HB2	1:O:224:THR:CG2	2.50	0.41
1:O:192:HIS:ND1	1:O:207:ALA:HB1	2.35	0.41
1:O:238:THR:HG22	1:O:241:GLU:HG3	2.03	0.41
1:O:246:VAL:O	1:O:250:ARG:HB2	2.20	0.41
2:R:419:PRO:CG	2:R:425:LEU:HD23	2.50	0.41
3:M:190:LEU:O	3:M:191:LYS:CG	2.69	0.41
3:M:213:VAL:HG21	3:Y:104:LEU:CD1	2.51	0.41
3:M:417:TRP:CG	5:F:183:PRO:O	2.74	0.41
5:F:107:GLN:NE2	5:F:276:GLY:O	2.53	0.41
5:F:400:PHE:HA	9:T:108:LEU:HD13	2.01	0.41
18:F:705:CDL:H332	18:F:705:CDL:H362	1.67	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:221:LEU:HD13	4:X:31:VAL:HG13	2.03	0.41
8:K:199:ASP:N	8:K:202:GLU:OE2	2.51	0.41
8:K:219:LYS:O	8:K:221:ILE:HD12	2.20	0.41
18:X:302:CDL:H761	18:Z:203:CDL:C53	2.37	0.41
2:R:256:GLN:HB3	2:R:315:MET:SD	2.61	0.41
4:S:32:TRP:HB3	18:S:302:CDL:H331	1.95	0.41
5:F:441:LEU:HD21	5:F:484:LEU:HD21	2.02	0.41
18:X:302:CDL:H141	18:X:302:CDL:H712	2.03	0.41
1:O:72:GLN:O	1:O:76:LEU:HG	2.21	0.41
5:F:59:TRP:CE3	5:F:105:VAL:HG11	2.56	0.41
2:L:159:ASP:O	2:L:162:HIS:O	2.38	0.41
18:L:604:CDL:H312	18:L:604:CDL:H342	1.79	0.41
6:J:85:ALA:HB1	18:J:203:CDL:H161	2.02	0.41
8:Q:128:GLU:OE1	8:Q:220:ARG:N	2.46	0.41
8:Q:139:ASN:HD22	8:Q:139:ASN:HA	1.63	0.41
8:Q:168:THR:HG23	8:Q:168:THR:O	2.20	0.41
4:X:163:ALA:HB1	18:X:302:CDL:HA61	2.03	0.41
1:I:116:GLN:HG2	1:I:122:MET:SD	2.61	0.41
13:I:302:HEC:HBA2	13:I:302:HEC:HMA3	2.02	0.41
3:Y:112:TRP:O	3:Y:113:GLU:HB2	2.21	0.41
1:O:193:ASN:HB2	1:O:197:LYS:O	2.21	0.41
5:E:367:PRO:O	5:E:374:THR:OG1	2.25	0.41
5:F:66:PRO:O	5:F:67:SER:OG	2.38	0.41
5:F:208:TYR:CE2	5:F:212:ILE:HD13	2.55	0.41
18:F:706:CDL:H762	18:F:706:CDL:H792	1.80	0.41
2:L:162:HIS:O	2:L:163:SER:OG	2.33	0.41
6:J:48:MET:HG2	18:J:203:CDL:HB61	2.03	0.41
4:X:32:TRP:HZ2	18:X:303:CDL:C38	2.25	0.41
1:O:115:PHE:HE2	1:O:226:PRO:HG3	1.86	0.40
1:O:222:MET:SD	1:O:237:LEU:HD13	2.61	0.40
1:O:245:ILE:CG2	13:O:302:HEC:CBB	3.00	0.40
5:E:59:TRP:CE3	5:E:105:VAL:HG11	2.56	0.40
2:L:153:ALA:HB1	2:L:158:THR:HG21	2.04	0.40
2:L:252:VAL:HG11	8:K:247:PRO:HD2	2.04	0.40
2:L:384:LEU:CD1	8:K:49:LEU:HD23	2.52	0.40
8:K:319:PRO:HA	8:K:320:PRO:HD3	1.99	0.40
1:I:201:LEU:CD1	13:I:302:HEC:HMD3	2.51	0.40
3:Y:345:VAL:HG23	3:Y:345:VAL:O	2.21	0.40
2:R:221:LEU:HD13	4:S:31:VAL:HG13	2.02	0.40
2:R:371:LEU:HD23	2:R:400:TYR:HE2	1.86	0.40
2:R:401:VAL:HG23	2:R:402:LEU:N	2.36	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:F:92:ALA:HB1	5:F:284:ILE:HD13	2.03	0.40
2:L:103:ALA:HB1	2:L:189:MET:SD	2.61	0.40
2:L:153:ALA:O	2:L:255:TRP:NE1	2.54	0.40
6:J:7:ARG:NH1	6:J:9:GLN:OE1	2.55	0.40
6:P:85:ALA:HB1	18:P:201:CDL:H161	2.03	0.40
8:K:222:GLU:OE2	8:K:257:VAL:HG21	2.21	0.40
1:I:221:ALA:O	1:I:224:THR:O	2.40	0.40
3:Y:281:THR:HG23	3:Y:344:LYS:CD	2.52	0.40
1:O:90:CYS:SG	1:O:101:ARG:HB3	2.61	0.40
1:O:117:VAL:HG22	1:O:122:MET:HE3	2.04	0.40
1:O:119:THR:HA	1:O:217:GLN:CD	2.40	0.40
1:O:190:SER:HB2	8:Q:193:ARG:NH1	2.32	0.40
4:S:32:TRP:CZ2	18:S:302:CDL:C36	3.00	0.40
4:S:103:TYR:OH	4:S:178:ALA:O	2.37	0.40
5:E:178:ILE:HD11	5:E:312:ILE:HD11	2.03	0.40
5:F:116:PHE:CE1	5:F:120:ILE:HD11	2.56	0.40
18:X:302:CDL:C77	18:Z:203:CDL:H532	2.51	0.40
3:Y:255:ALA:HB2	3:Y:285:TRP:HB3	2.04	0.40
1:O:95:LEU:HD11	1:O:150:VAL:HG12	2.03	0.40
1:O:195:THR:CB	1:O:197:LYS:HG2	2.47	0.40
1:O:218:ILE:HG21	1:O:246:VAL:HA	2.03	0.40
8:Q:288:VAL:HG13	8:Q:288:VAL:O	2.21	0.40
18:Z:203:CDL:H611	1:I:278:ILE:HG23	2.02	0.40
1:O:118:SER:HA	1:O:143:ILE:CD1	2.45	0.40
1:O:188:CYS:HB3	13:O:302:HEC:CAB	2.51	0.40
1:O:203:SER:CB	8:Q:170:ARG:HG2	2.40	0.40
4:S:41:ALA:HB2	9:T:44:LEU:CB	2.52	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	I	221/223 (99%)	199 (90%)	22 (10%)	0	100	100
1	O	206/223 (92%)	187 (91%)	16 (8%)	3 (2%)	10	45
2	L	550/552 (100%)	516 (94%)	34 (6%)	0	100	100
2	R	550/552 (100%)	518 (94%)	32 (6%)	0	100	100
3	M	380/382 (100%)	344 (90%)	36 (10%)	0	100	100
3	Y	380/382 (100%)	347 (91%)	33 (9%)	0	100	100
4	S	201/203 (99%)	193 (96%)	8 (4%)	0	100	100
4	X	201/203 (99%)	192 (96%)	9 (4%)	0	100	100
5	E	533/535 (100%)	490 (92%)	43 (8%)	0	100	100
5	F	533/535 (100%)	489 (92%)	43 (8%)	1 (0%)	47	81
6	J	88/100 (88%)	85 (97%)	3 (3%)	0	100	100
6	P	88/100 (88%)	83 (94%)	5 (6%)	0	100	100
7	D	214/216 (99%)	193 (90%)	20 (9%)	1 (0%)	29	68
7	G	214/216 (99%)	187 (87%)	27 (13%)	0	100	100
8	K	310/312 (99%)	282 (91%)	28 (9%)	0	100	100
8	Q	310/312 (99%)	282 (91%)	28 (9%)	0	100	100
9	T	137/139 (99%)	129 (94%)	8 (6%)	0	100	100
9	Z	137/139 (99%)	130 (95%)	7 (5%)	0	100	100
10	U	77/79 (98%)	70 (91%)	6 (8%)	1 (1%)	12	48
10	a	77/79 (98%)	70 (91%)	7 (9%)	0	100	100
11	V	143/145 (99%)	139 (97%)	4 (3%)	0	100	100
11	b	143/145 (99%)	138 (96%)	5 (4%)	0	100	100
12	c	154/159 (97%)	135 (88%)	19 (12%)	0	100	100
All	All	5847/5931 (99%)	5398 (92%)	443 (8%)	6 (0%)	54	84

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	O	226	PRO
5	F	135	ARG
1	O	202	SER
1	O	249	VAL
7	D	27	THR
10	U	70	VAL

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	I	163/163 (100%)	160 (98%)	3 (2%)	59	81
1	O	155/163 (95%)	112 (72%)	43 (28%)	0	3
2	L	452/453 (100%)	442 (98%)	10 (2%)	52	78
2	R	452/453 (100%)	446 (99%)	6 (1%)	69	86
3	M	312/312 (100%)	310 (99%)	2 (1%)	86	94
3	Y	312/312 (100%)	312 (100%)	0	100	100
4	S	155/161 (96%)	153 (99%)	2 (1%)	69	86
4	X	155/161 (96%)	153 (99%)	2 (1%)	69	86
5	E	429/429 (100%)	425 (99%)	4 (1%)	78	90
5	F	429/429 (100%)	425 (99%)	4 (1%)	78	90
6	J	76/83 (92%)	70 (92%)	6 (8%)	12	41
6	P	76/83 (92%)	75 (99%)	1 (1%)	69	86
7	D	20/151 (13%)	20 (100%)	0	100	100
7	G	20/151 (13%)	20 (100%)	0	100	100
8	K	260/266 (98%)	256 (98%)	4 (2%)	65	84
8	Q	260/266 (98%)	257 (99%)	3 (1%)	71	87
9	T	106/106 (100%)	106 (100%)	0	100	100
9	Z	106/106 (100%)	106 (100%)	0	100	100
10	U	59/59 (100%)	59 (100%)	0	100	100
10	a	59/59 (100%)	58 (98%)	1 (2%)	60	82
11	V	107/107 (100%)	106 (99%)	1 (1%)	78	90
11	b	107/107 (100%)	107 (100%)	0	100	100
12	c	127/127 (100%)	125 (98%)	2 (2%)	62	83
All	All	4397/4707 (93%)	4303 (98%)	94 (2%)	56	79

All (94) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	O	72	GLN
1	O	73	SER
1	O	75	LEU
1	O	81	GLN
1	O	87	CYS
1	O	94	ASN
1	O	100	ASP
1	O	104	SER
1	O	105	LEU
1	O	118	SER
1	O	121	ARG
1	O	122	MET
1	O	128	GLU
1	O	139	ASP
1	O	140	GLU
1	O	144	ASP
1	O	146	LEU
1	O	150	VAL
1	O	151	GLN
1	O	158	THR
1	O	167	VAL
1	O	169	GLN
1	O	171	SER
1	O	179	ARG
1	O	182	ASP
1	O	185	ARG
1	O	188	CYS
1	O	193	ASN
1	O	195	THR
1	O	201	LEU
1	O	210	LEU
1	O	212	ASP
1	O	214	ASN
1	O	228	ASN
1	O	233	SER
1	O	235	ARG
1	O	237	LEU
1	O	238	THR
1	O	240	ASP
1	O	241	GLU
1	O	245	ILE
1	O	250	ARG
1	O	251	GLU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	R	63	ARG
2	R	129	PHE
2	R	155	SER
2	R	454	ASP
2	R	505	VAL
2	R	523	CYS
3	M	120	GLU
3	M	348	HIS
4	S	130	THR
4	S	189	ASP
5	E	18	SER
5	E	187	THR
5	E	295	VAL
5	E	403	SER
5	F	20	TYR
5	F	352	LYS
5	F	357	ASP
5	F	358	ASP
2	L	20	ARG
2	L	63	ARG
2	L	129	PHE
2	L	365	PHE
2	L	388	VAL
2	L	390	ASP
2	L	459	ARG
2	L	508	ASP
2	L	509	ASP
2	L	523	CYS
6	J	24	ARG
6	J	29	ASP
6	J	42	HIS
6	J	43	MET
6	J	64	ARG
6	J	72	GLU
8	Q	139	ASN
8	Q	154	PHE
8	Q	160	ASP
11	V	148	ARG
6	P	64	ARG
8	K	139	ASN
8	K	232	HIS
8	K	281	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
8	K	283	MET
4	X	174	GLN
4	X	189	ASP
10	a	55	ARG
12	c	24	CYS
12	c	25	SER
1	I	91	HIS
1	I	123	PRO
1	I	137	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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 60 ligands modelled in this entry, 6 are monoatomic - leaving 54 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	$\# Z > 2$
14	9YF	Y	502	-	58,58,58	1.08	7 (12%)	69,71,71	1.28	7 (10%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
23	9XX	c	202	12	41,41,41	0.95	3 (7%)	44,44,44	1.18	4 (9%)
15	MQ9	Z	201	-	59,59,59	2.33	21 (35%)	72,75,75	1.65	18 (25%)
15	MQ9	I	303	-	59,59,59	2.35	21 (35%)	72,75,75	1.46	18 (25%)
18	CDL	J	203	-	75,75,99	0.33	0	81,87,111	0.45	0
14	9YF	I	304	-	58,58,58	1.07	5 (8%)	69,71,71	1.05	2 (2%)
18	CDL	Z	203	-	75,75,99	1.30	7 (9%)	81,87,111	2.01	9 (11%)
18	CDL	F	706	-	75,75,99	0.37	0	81,87,111	0.45	1 (1%)
15	MQ9	E	603	-	59,59,59	2.40	22 (37%)	72,75,75	1.37	15 (20%)
15	MQ9	E	604	-	59,59,59	2.38	21 (35%)	72,75,75	1.53	16 (22%)
13	HEC	O	301	-	32,50,50	2.34	10 (31%)	24,82,82	2.27	5 (20%)
21	HEM	E	601	5	41,49,50	1.26	2 (4%)	46,81,82	1.30	5 (10%)
20	9Y0	S	301	-	48,48,48	1.14	3 (6%)	51,53,53	0.86	2 (3%)
18	CDL	F	705	-	75,75,99	0.33	0	81,87,111	0.41	0
15	MQ9	T	204	-	59,59,59	2.35	21 (35%)	72,75,75	1.61	15 (20%)
14	9YF	O	303	-	58,58,58	1.01	5 (8%)	69,71,71	1.05	4 (5%)
20	9Y0	J	202	-	48,48,48	1.14	3 (6%)	51,53,53	0.77	2 (3%)
13	HEC	O	302	1	32,50,50	2.40	12 (37%)	24,82,82	2.24	4 (16%)
14	9YF	Y	503	-	58,58,58	1.13	8 (13%)	69,71,71	1.46	9 (13%)
18	CDL	E	607	-	75,75,99	0.36	0	81,87,111	0.41	0
17	HEA	R	603	2	57,67,67	1.42	10 (17%)	61,103,103	1.99	11 (18%)
18	CDL	T	202	-	75,75,99	0.32	0	81,87,111	0.40	0
22	PLM	D	301	7	10,10,17	0.61	0	9,9,17	0.55	0
20	9Y0	J	201	-	48,48,48	1.15	3 (6%)	51,53,53	0.89	2 (3%)
20	9Y0	X	301	-	48,48,48	1.14	3 (6%)	51,53,53	0.89	2 (3%)
18	CDL	P	201	-	75,75,99	0.33	0	81,87,111	0.45	0
19	FES	M	501	3	0,4,4	-	-	-	-	-
20	9Y0	F	704	-	48,48,48	1.15	3 (6%)	51,53,53	0.86	2 (3%)
21	HEM	F	703	5	41,50,50	1.49	3 (7%)	45,82,82	1.36	5 (11%)
18	CDL	E	606	-	75,75,99	0.34	0	81,87,111	0.41	0
22	PLM	c	201	12	16,16,17	0.54	0	15,15,17	0.44	0
18	CDL	R	604	-	75,75,99	0.33	0	81,87,111	0.60	2 (2%)
17	HEA	L	602	2	57,67,67	1.52	10 (17%)	61,103,103	2.22	21 (34%)
22	PLM	G	301	7	10,10,17	0.60	0	9,9,17	0.55	0
15	MQ9	F	701	-	59,59,59	2.41	21 (35%)	72,75,75	1.38	16 (22%)
19	FES	Y	501	3	0,4,4	-	-	-	-	-
18	CDL	X	302	-	75,75,99	0.33	0	81,87,111	0.40	0
23	9XX	D	302	-	31,31,41	1.10	3 (9%)	34,34,44	1.45	4 (11%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
18	CDL	T	203	-	75,75,99	1.30	7 (9%)	81,87,111	2.01	9 (11%)
18	CDL	S	302	-	75,75,99	1.31	7 (9%)	81,87,111	1.96	9 (11%)
23	9XX	G	302	7	31,31,41	1.12	3 (9%)	34,34,44	1.49	4 (11%)
13	HEC	I	301	-	32,50,50	2.17	3 (9%)	24,82,82	1.49	3 (12%)
21	HEM	E	602	5	41,50,50	1.51	4 (9%)	45,82,82	1.33	6 (13%)
15	MQ9	O	304	-	59,59,59	2.36	21 (35%)	72,75,75	1.46	18 (25%)
18	CDL	Z	202	-	75,75,99	1.24	8 (10%)	81,87,111	1.81	15 (18%)
17	HEA	L	603	2	57,67,67	1.43	9 (15%)	61,103,103	1.86	12 (19%)
13	HEC	I	302	1	32,50,50	2.25	3 (9%)	24,82,82	1.61	6 (25%)
18	CDL	T	201	-	75,75,99	1.24	8 (10%)	81,87,111	1.81	15 (18%)
18	CDL	L	604	-	75,75,99	0.33	0	81,87,111	0.60	2 (2%)
14	9YF	E	605	-	58,58,58	1.01	4 (6%)	69,71,71	1.32	7 (10%)
17	HEA	R	602	2	57,67,67	1.52	9 (15%)	61,103,103	2.34	22 (36%)
15	MQ9	F	707	-	59,59,59	2.39	21 (35%)	72,75,75	1.54	14 (19%)
21	HEM	F	702	5	41,49,50	1.24	2 (4%)	46,81,82	1.29	4 (8%)
18	CDL	X	303	-	75,75,99	1.31	7 (9%)	81,87,111	1.96	9 (11%)

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. '2' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	9YF	Y	502	-	-	22/54/78/78	0/1/1/1
23	9XX	c	202	12	-	15/43/43/43	-
15	MQ9	Z	201	-	-	12/53/73/73	0/2/2/2
15	MQ9	I	303	-	-	8/53/73/73	0/2/2/2
18	CDL	J	203	-	-	49/86/86/110	-
14	9YF	I	304	-	-	22/54/78/78	0/1/1/1
18	CDL	Z	203	-	-	39/86/86/110	-
18	CDL	F	706	-	-	45/86/86/110	-
15	MQ9	E	603	-	-	6/53/73/73	0/2/2/2
15	MQ9	E	604	-	-	10/53/73/73	0/2/2/2
13	HEC	O	301	-	-	3/10/54/54	-
21	HEM	E	601	5	-	3/12/52/54	-
20	9Y0	S	301	-	-	22/52/52/52	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
18	CDL	F	705	-	-	50/86/86/110	-
15	MQ9	T	204	-	-	13/53/73/73	0/2/2/2
14	9YF	O	303	-	-	29/54/78/78	0/1/1/1
20	9Y0	J	202	-	-	25/52/52/52	-
13	HEC	O	302	1	-	6/10/54/54	-
14	9YF	Y	503	-	-	24/54/78/78	0/1/1/1
18	CDL	E	607	-	-	39/86/86/110	-
17	HEA	R	603	2	3/3/16/16	3/32/76/76	-
18	CDL	T	202	-	-	46/86/86/110	-
22	PLM	D	301	7	-	3/7/8/15	-
20	9Y0	J	201	-	-	19/52/52/52	-
20	9Y0	X	301	-	-	18/52/52/52	-
18	CDL	P	201	-	-	49/86/86/110	-
19	FES	M	501	3	-	-	0/1/1/1
20	9Y0	F	704	-	-	18/52/52/52	-
21	HEM	F	703	5	-	0/12/54/54	-
18	CDL	E	606	-	-	50/86/86/110	-
22	PLM	c	201	12	-	5/13/14/15	-
18	CDL	R	604	-	-	48/86/86/110	-
17	HEA	L	602	2	3/3/16/16	12/32/76/76	-
17	HEA	R	602	2	3/3/16/16	7/32/76/76	-
22	PLM	G	301	7	-	2/7/8/15	-
15	MQ9	F	701	-	-	6/53/73/73	0/2/2/2
19	FES	Y	501	3	-	-	0/1/1/1
18	CDL	X	302	-	-	46/86/86/110	-
23	9XX	D	302	-	-	8/33/33/43	-
18	CDL	T	203	-	-	39/86/86/110	-
18	CDL	S	302	-	-	43/86/86/110	-
23	9XX	G	302	7	-	10/33/33/43	-
21	HEM	E	602	5	-	2/12/54/54	-
15	MQ9	O	304	-	-	8/53/73/73	0/2/2/2
18	CDL	Z	202	-	-	35/86/86/110	-
17	HEA	L	603	2	3/3/16/16	3/32/76/76	-
13	HEC	I	302	1	-	0/10/54/54	-
18	CDL	T	201	-	-	35/86/86/110	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
18	CDL	L	604	-	-	48/86/86/110	-
14	9YF	E	605	-	-	17/54/78/78	0/1/1/1
13	HEC	I	301	-	-	0/10/54/54	-
15	MQ9	F	707	-	-	12/53/73/73	0/2/2/2
21	HEM	F	702	5	-	4/12/52/54	-
18	CDL	X	303	-	-	43/86/86/110	-

All (343) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
15	F	707	MQ9	C6-C5	8.61	1.50	1.35
15	E	604	MQ9	C6-C5	8.60	1.50	1.35
15	F	701	MQ9	C6-C5	8.43	1.50	1.35
15	E	603	MQ9	C6-C5	8.37	1.50	1.35
15	I	303	MQ9	C6-C5	8.33	1.50	1.35
15	O	304	MQ9	C6-C5	8.31	1.50	1.35
15	T	204	MQ9	C6-C5	8.22	1.50	1.35
15	Z	201	MQ9	C6-C5	8.13	1.50	1.35
13	O	301	HEC	C2B-C3B	7.27	1.48	1.40
13	I	302	HEC	C2B-C3B	-7.05	1.33	1.40
13	O	302	HEC	C2B-C3B	6.61	1.47	1.40
13	I	301	HEC	C2B-C3B	-6.42	1.34	1.40
13	I	302	HEC	C3C-C2C	-6.36	1.34	1.40
13	O	302	HEC	C3C-C2C	6.24	1.47	1.40
13	I	301	HEC	C3C-C2C	-6.16	1.34	1.40
13	O	301	HEC	C3C-C2C	5.54	1.46	1.40
13	I	301	HEC	C3D-C2D	5.42	1.53	1.37
13	I	302	HEC	C3D-C2D	5.31	1.53	1.37
15	F	707	MQ9	C2-C1	5.14	1.57	1.48
15	F	701	MQ9	C2-C1	5.10	1.57	1.48
15	E	604	MQ9	C2-C1	5.08	1.57	1.48
15	Z	201	MQ9	C2-C1	5.04	1.57	1.48
15	E	603	MQ9	C2-C1	5.03	1.57	1.48
15	O	304	MQ9	C2-C1	5.02	1.57	1.48
15	I	303	MQ9	C2-C1	5.02	1.57	1.48
15	T	204	MQ9	C2-C1	5.00	1.57	1.48
15	I	303	MQ9	C3-C4	4.83	1.57	1.48
21	E	602	HEM	C3C-C2C	-4.79	1.33	1.40
15	O	304	MQ9	C3-C4	4.76	1.57	1.48
15	F	707	MQ9	C3-C4	4.75	1.57	1.48
15	E	603	MQ9	C3-C4	4.73	1.57	1.48

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
15	T	204	MQ9	C3-C4	4.70	1.57	1.48
15	F	701	MQ9	C3-C4	4.70	1.57	1.48
15	E	604	MQ9	C3-C4	4.69	1.57	1.48
15	Z	201	MQ9	C3-C4	4.62	1.57	1.48
21	F	703	HEM	C3C-C2C	-4.58	1.34	1.40
15	F	707	MQ9	C26-C24	4.57	1.60	1.51
15	E	604	MQ9	C26-C24	4.48	1.60	1.51
15	E	603	MQ9	C26-C24	4.46	1.60	1.51
15	F	701	MQ9	C26-C24	4.45	1.60	1.51
15	T	204	MQ9	C26-C24	4.44	1.60	1.51
15	I	303	MQ9	C26-C24	4.42	1.60	1.51
15	O	304	MQ9	C26-C24	4.42	1.60	1.51
17	R	602	HEA	C3B-C2B	4.41	1.44	1.34
15	Z	201	MQ9	C26-C24	4.37	1.60	1.51
17	R	603	HEA	C3B-C2B	4.34	1.44	1.34
17	L	603	HEA	C3B-C2B	4.24	1.44	1.34
17	L	602	HEA	C3B-C2B	4.17	1.44	1.34
15	T	204	MQ9	C11-C9	4.15	1.59	1.51
13	O	301	HEC	C3C-C4C	4.12	1.50	1.43
15	E	603	MQ9	C31-C29	4.10	1.59	1.51
15	F	701	MQ9	C31-C29	4.07	1.59	1.51
15	Z	201	MQ9	C11-C9	4.02	1.59	1.51
17	L	602	HEA	C3C-C2C	4.01	1.45	1.40
15	E	604	MQ9	C11-C9	3.97	1.59	1.51
15	F	707	MQ9	C31-C29	3.95	1.59	1.51
23	G	302	9XX	O1-C17	-3.90	1.40	1.47
15	O	304	MQ9	C11-C9	3.89	1.59	1.51
15	F	707	MQ9	C11-C9	3.89	1.59	1.51
15	I	303	MQ9	C31-C29	3.85	1.59	1.51
17	L	602	HEA	C3D-C2D	3.85	1.44	1.36
15	I	303	MQ9	C11-C9	3.83	1.59	1.51
15	E	604	MQ9	C31-C29	3.83	1.59	1.51
15	O	304	MQ9	C31-C29	3.81	1.59	1.51
23	D	302	9XX	O1-C17	-3.80	1.40	1.47
13	O	302	HEC	C2A-C3A	3.80	1.48	1.37
17	R	603	HEA	C3C-C2C	3.78	1.45	1.40
15	T	204	MQ9	C31-C29	3.78	1.59	1.51
15	F	701	MQ9	C11-C9	3.77	1.59	1.51
15	Z	201	MQ9	C31-C29	3.77	1.59	1.51
17	L	603	HEA	C3D-C2D	3.75	1.44	1.36
15	E	603	MQ9	C11-C9	3.73	1.59	1.51
17	L	603	HEA	C3C-C2C	3.72	1.45	1.40

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
23	c	202	9XX	O1-C17	-3.72	1.40	1.47
17	R	602	HEA	C3C-C2C	3.72	1.45	1.40
17	R	602	HEA	C3D-C2D	3.72	1.44	1.36
17	R	603	HEA	C3D-C2D	3.62	1.44	1.36
17	L	602	HEA	C4B-C3B	3.51	1.50	1.44
17	R	602	HEA	C4D-C3D	3.49	1.51	1.45
15	T	204	MQ9	C7-C8	3.44	1.55	1.50
13	O	302	HEC	C3D-C2D	3.44	1.47	1.37
13	O	302	HEC	C3C-C4C	3.43	1.49	1.43
13	O	301	HEC	C3D-C2D	3.41	1.47	1.37
13	O	301	HEC	C2A-C3A	3.41	1.47	1.37
21	F	703	HEM	C3C-CAC	3.41	1.54	1.47
13	O	302	HEC	C4B-C3B	3.36	1.49	1.43
17	R	602	HEA	C3A-C2A	3.35	1.45	1.40
15	Z	201	MQ9	C7-C8	3.31	1.55	1.50
17	R	602	HEA	C4B-C3B	3.31	1.50	1.44
17	L	602	HEA	C3A-C2A	3.30	1.45	1.40
21	E	602	HEM	C3C-CAC	3.29	1.54	1.47
15	O	304	MQ9	C7-C8	3.25	1.55	1.50
15	O	304	MQ9	C7-C6	3.25	1.56	1.51
15	F	701	MQ9	C7-C6	3.25	1.56	1.51
15	E	603	MQ9	C7-C6	3.24	1.56	1.51
15	E	604	MQ9	C7-C6	3.23	1.56	1.51
15	F	707	MQ9	C7-C6	3.23	1.56	1.51
15	E	604	MQ9	C21-C19	3.23	1.58	1.51
15	T	204	MQ9	C7-C6	3.22	1.56	1.51
15	T	204	MQ9	C21-C19	3.22	1.58	1.51
15	F	701	MQ9	C7-C8	3.21	1.55	1.50
15	F	707	MQ9	C21-C19	3.20	1.57	1.51
15	E	603	MQ9	C7-C8	3.19	1.55	1.50
15	I	303	MQ9	C16-C14	3.18	1.57	1.51
15	E	603	MQ9	C21-C19	3.16	1.57	1.51
15	I	303	MQ9	C7-C8	3.16	1.55	1.50
15	I	303	MQ9	C7-C6	3.16	1.56	1.51
17	L	603	HEA	C4B-C3B	3.15	1.49	1.44
15	F	701	MQ9	C21-C19	3.15	1.57	1.51
15	O	304	MQ9	C16-C14	3.13	1.57	1.51
15	Z	201	MQ9	C7-C6	3.13	1.56	1.51
15	E	604	MQ9	C16-C14	3.12	1.57	1.51
15	F	707	MQ9	C16-C14	3.12	1.57	1.51
15	E	603	MQ9	C41-C39	3.10	1.57	1.51
15	E	604	MQ9	C7-C8	3.09	1.55	1.50

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
15	Z	201	MQ9	C21-C19	3.09	1.57	1.51
15	I	303	MQ9	C21-C19	3.09	1.57	1.51
20	X	301	9Y0	O7-C1	-3.08	1.38	1.46
15	F	707	MQ9	C7-C8	3.08	1.55	1.50
18	T	203	CDL	OB8-CB7	3.08	1.42	1.33
18	Z	203	CDL	OB8-CB7	3.07	1.42	1.33
20	S	301	9Y0	O7-C1	-3.07	1.38	1.46
15	E	603	MQ9	C22-C23	3.07	1.60	1.50
18	S	302	CDL	OB8-CB7	3.06	1.42	1.33
18	T	201	CDL	OA6-CA4	-3.06	1.38	1.46
18	X	303	CDL	OB8-CB7	3.06	1.42	1.33
18	Z	202	CDL	OA6-CA4	-3.06	1.38	1.46
15	O	304	MQ9	C21-C19	3.06	1.57	1.51
15	F	701	MQ9	C41-C39	3.06	1.57	1.51
15	E	604	MQ9	C22-C23	3.04	1.60	1.50
15	O	304	MQ9	C27-C28	3.04	1.60	1.50
15	F	707	MQ9	C22-C23	3.04	1.60	1.50
13	O	302	HEC	C2A-C1A	3.03	1.49	1.42
15	F	701	MQ9	C22-C23	3.02	1.60	1.50
17	R	602	HEA	C2A-C1A	3.01	1.49	1.42
17	L	602	HEA	C4D-C3D	3.01	1.50	1.45
15	O	304	MQ9	C22-C23	3.00	1.60	1.50
14	Y	502	9YF	O11-C25	3.00	1.42	1.33
15	I	303	MQ9	C27-C28	2.99	1.60	1.50
20	J	201	9Y0	O7-C1	-2.99	1.39	1.46
18	X	303	CDL	CB6-CB4	2.98	1.59	1.50
20	F	704	9Y0	O7-C1	-2.98	1.39	1.46
18	S	302	CDL	CB6-CB4	2.98	1.59	1.50
15	I	303	MQ9	C22-C23	2.98	1.60	1.50
20	J	202	9Y0	O7-C1	-2.97	1.39	1.46
15	Z	201	MQ9	C16-C14	2.96	1.57	1.51
15	T	204	MQ9	C16-C14	2.96	1.57	1.51
20	F	704	9Y0	O5-C5	2.96	1.42	1.33
14	Y	503	9YF	O9-C8	2.94	1.42	1.34
20	J	201	9Y0	O5-C5	2.93	1.41	1.33
15	F	701	MQ9	C16-C14	2.93	1.57	1.51
21	E	602	HEM	CAB-C3B	2.92	1.55	1.47
17	L	602	HEA	C2A-C1A	2.91	1.49	1.42
18	S	302	CDL	OA6-CA5	2.91	1.42	1.34
18	Z	203	CDL	OA6-CA5	2.90	1.42	1.34
18	X	303	CDL	OA6-CA5	2.90	1.42	1.34
18	T	203	CDL	OA6-CA5	2.90	1.42	1.34

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
15	Z	201	MQ9	C22-C23	2.89	1.59	1.50
15	E	603	MQ9	C27-C28	2.89	1.59	1.50
15	E	603	MQ9	C16-C14	2.89	1.57	1.51
18	X	303	CDL	CB3-CB4	2.88	1.59	1.50
15	F	701	MQ9	C27-C28	2.88	1.59	1.50
18	X	303	CDL	OB6-CB5	2.88	1.42	1.34
15	T	204	MQ9	C22-C23	2.88	1.59	1.50
18	S	302	CDL	OB6-CB5	2.87	1.42	1.34
15	T	204	MQ9	C27-C28	2.87	1.59	1.50
18	S	302	CDL	CB3-CB4	2.87	1.59	1.50
15	Z	201	MQ9	C27-C28	2.87	1.59	1.50
13	O	301	HEC	C3A-C4A	2.87	1.49	1.42
20	J	202	9Y0	O5-C5	2.87	1.41	1.33
18	T	203	CDL	OB6-CB5	2.86	1.42	1.34
18	Z	203	CDL	OB6-CB5	2.85	1.42	1.34
18	Z	203	CDL	CB6-CB4	2.85	1.59	1.50
18	T	203	CDL	CB6-CB4	2.85	1.59	1.50
21	F	703	HEM	CAB-C3B	2.84	1.55	1.47
15	F	707	MQ9	C27-C28	2.84	1.59	1.50
18	Z	202	CDL	CB6-CB4	2.83	1.59	1.50
18	T	203	CDL	CB3-CB4	2.83	1.59	1.50
18	T	201	CDL	CB6-CB4	2.83	1.59	1.50
17	R	603	HEA	C4B-C3B	2.83	1.49	1.44
14	Y	502	9YF	O9-C8	2.82	1.42	1.34
18	T	203	CDL	OA8-CA7	2.82	1.41	1.33
18	Z	203	CDL	CB3-CB4	2.82	1.59	1.50
15	E	604	MQ9	C27-C28	2.82	1.59	1.50
21	F	702	HEM	CAB-C3B	2.81	1.55	1.47
18	Z	203	CDL	OA8-CA7	2.81	1.41	1.33
18	S	302	CDL	OA8-CA7	2.80	1.41	1.33
21	E	601	HEM	CAB-C3B	2.80	1.55	1.47
18	X	303	CDL	OA8-CA7	2.80	1.41	1.33
20	X	301	9Y0	O5-C5	2.80	1.41	1.33
14	I	304	9YF	O9-C8	2.77	1.42	1.34
20	J	201	9Y0	O7-C21	2.76	1.42	1.34
20	S	301	9Y0	O5-C5	2.76	1.41	1.33
20	J	202	9Y0	O7-C21	2.75	1.42	1.34
13	O	302	HEC	C3A-C4A	2.74	1.48	1.42
15	F	701	MQ9	C5M-C5	2.73	1.56	1.50
20	F	704	9Y0	O7-C21	2.73	1.42	1.34
13	O	301	HEC	C2A-C1A	2.72	1.48	1.42
15	E	603	MQ9	C5M-C5	2.72	1.56	1.50

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
18	Z	202	CDL	OB8-CB7	2.72	1.41	1.33
20	S	301	9Y0	O7-C21	2.70	1.41	1.34
20	X	301	9Y0	O7-C21	2.70	1.41	1.34
15	E	604	MQ9	C5M-C5	2.70	1.56	1.50
18	T	201	CDL	OB8-CB7	2.69	1.41	1.33
15	F	707	MQ9	C20-C19	2.69	1.57	1.50
15	F	707	MQ9	C5M-C5	2.67	1.56	1.50
15	E	604	MQ9	C20-C19	2.66	1.57	1.50
13	O	302	HEC	C1C-CHC	2.66	1.48	1.41
13	O	301	HEC	C1D-CHD	2.66	1.48	1.41
15	O	304	MQ9	C20-C19	2.65	1.57	1.50
14	E	605	9YF	O11-C25	2.65	1.41	1.33
15	T	204	MQ9	C20-C19	2.64	1.57	1.50
15	I	303	MQ9	C20-C19	2.63	1.57	1.50
15	E	603	MQ9	C20-C19	2.61	1.57	1.50
15	F	701	MQ9	C20-C19	2.61	1.57	1.50
15	Z	201	MQ9	C20-C19	2.60	1.57	1.50
13	O	301	HEC	C4D-CHA	2.57	1.48	1.41
15	O	304	MQ9	C5M-C5	2.57	1.56	1.50
18	T	201	CDL	OB6-CB5	2.57	1.41	1.34
23	c	202	9XX	O-C15	2.57	1.40	1.33
18	Z	202	CDL	OB6-CB5	2.56	1.41	1.34
13	O	302	HEC	C4D-CHA	2.56	1.48	1.41
14	E	605	9YF	O9-C8	2.55	1.41	1.34
17	L	603	HEA	C3A-C2A	2.55	1.43	1.40
15	I	303	MQ9	C5M-C5	2.54	1.56	1.50
15	E	604	MQ9	C46-C44	2.54	1.56	1.51
15	F	707	MQ9	C41-C39	2.53	1.56	1.51
14	O	303	9YF	O11-C25	2.53	1.40	1.33
14	E	605	9YF	O9-C	-2.51	1.40	1.46
18	X	303	CDL	OA6-CA4	-2.50	1.40	1.46
23	D	302	9XX	O-C15	2.49	1.40	1.33
18	S	302	CDL	OA6-CA4	-2.48	1.40	1.46
18	Z	203	CDL	OA6-CA4	-2.48	1.40	1.46
15	F	707	MQ9	C46-C44	2.48	1.56	1.51
15	O	304	MQ9	C41-C39	2.48	1.56	1.51
15	I	303	MQ9	C41-C39	2.48	1.56	1.51
18	T	203	CDL	OA6-CA4	-2.47	1.40	1.46
15	F	701	MQ9	C46-C44	2.47	1.56	1.51
15	T	204	MQ9	C5M-C5	2.46	1.56	1.50
17	R	602	HEA	C1B-C2B	2.46	1.49	1.44
17	R	603	HEA	C1D-ND	-2.45	1.36	1.40

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
15	E	603	MQ9	C46-C44	2.45	1.56	1.51
15	E	604	MQ9	C41-C39	2.45	1.56	1.51
15	F	701	MQ9	C42-C43	2.45	1.58	1.50
17	L	602	HEA	C1B-C2B	2.45	1.49	1.44
14	I	304	9YF	O11-C24	-2.43	1.39	1.45
23	G	302	9XX	O-C15	2.43	1.40	1.33
15	E	603	MQ9	C42-C43	2.43	1.58	1.50
14	O	303	9YF	O9-C	-2.41	1.40	1.46
21	E	601	HEM	C2C-C3C	-2.41	1.33	1.41
15	O	304	MQ9	C42-C43	2.40	1.58	1.50
13	O	302	HEC	C1D-CHD	2.40	1.47	1.41
14	O	303	9YF	O9-C8	2.39	1.41	1.34
15	I	303	MQ9	C42-C43	2.39	1.58	1.50
17	L	603	HEA	C1D-ND	-2.39	1.36	1.40
15	T	204	MQ9	C41-C39	2.38	1.56	1.51
17	L	603	HEA	C2A-C1A	2.38	1.48	1.42
17	R	603	HEA	C2A-C1A	2.38	1.47	1.42
15	Z	201	MQ9	C5M-C5	2.37	1.55	1.50
14	I	304	9YF	O11-C25	2.37	1.40	1.33
15	Z	201	MQ9	C46-C44	2.36	1.56	1.51
14	Y	503	9YF	O12-C25	-2.36	1.15	1.22
21	F	702	HEM	C2C-C3C	-2.35	1.33	1.41
14	Y	503	9YF	O9-C	-2.34	1.40	1.46
17	R	603	HEA	C3A-C2A	2.33	1.43	1.40
14	O	303	9YF	O11-C24	-2.33	1.39	1.45
14	E	605	9YF	O11-C24	-2.32	1.39	1.45
14	Y	503	9YF	O11-C25	2.32	1.40	1.33
14	Y	502	9YF	P-O2	2.31	1.66	1.60
18	T	201	CDL	CB3-CB4	2.31	1.57	1.50
18	Z	202	CDL	CB3-CB4	2.31	1.57	1.50
15	F	701	MQ9	C43-C44	2.31	1.38	1.33
15	Z	201	MQ9	C41-C39	2.30	1.56	1.51
13	O	301	HEC	C1B-CHB	2.29	1.47	1.41
23	G	302	9XX	O1-C18	2.28	1.40	1.34
15	F	701	MQ9	C28-C29	2.28	1.38	1.33
15	E	603	MQ9	C43-C44	2.27	1.38	1.33
15	E	603	MQ9	C12-C13	2.27	1.57	1.50
15	F	701	MQ9	C12-C13	2.27	1.57	1.50
15	O	304	MQ9	C43-C44	2.27	1.38	1.33
15	F	707	MQ9	O4-C4	-2.27	1.18	1.23
15	T	204	MQ9	C46-C44	2.26	1.56	1.51
15	Z	201	MQ9	O4-C4	-2.26	1.18	1.23

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
15	E	603	MQ9	C28-C29	2.26	1.38	1.33
17	R	603	HEA	C1B-C2B	2.26	1.48	1.44
14	Y	503	9YF	O6-C6	-2.25	1.37	1.43
23	D	302	9XX	O1-C18	2.25	1.40	1.34
17	R	602	HEA	C1D-ND	-2.25	1.36	1.40
15	I	303	MQ9	C43-C44	2.25	1.38	1.33
15	E	604	MQ9	O4-C4	-2.25	1.18	1.23
17	L	602	HEA	C1D-ND	-2.25	1.36	1.40
14	I	304	9YF	O9-C	-2.25	1.41	1.46
14	Y	503	9YF	O11-C24	-2.24	1.40	1.45
15	F	707	MQ9	C42-C43	2.24	1.57	1.50
15	T	204	MQ9	O4-C4	-2.24	1.18	1.23
15	T	204	MQ9	C12-C13	2.24	1.57	1.50
15	O	304	MQ9	C28-C29	2.24	1.38	1.33
15	T	204	MQ9	C42-C43	2.24	1.57	1.50
15	O	304	MQ9	O4-C4	-2.23	1.18	1.23
15	E	603	MQ9	O4-C4	-2.23	1.18	1.23
15	I	303	MQ9	C28-C29	2.23	1.38	1.33
15	I	303	MQ9	O4-C4	-2.23	1.18	1.23
15	O	304	MQ9	C12-C13	2.22	1.57	1.50
15	Z	201	MQ9	C42-C43	2.22	1.57	1.50
15	F	701	MQ9	O4-C4	-2.22	1.18	1.23
18	T	201	CDL	PA1-OA4	-2.21	1.44	1.55
18	Z	202	CDL	PA1-OA4	-2.21	1.44	1.55
15	F	707	MQ9	C12-C13	2.21	1.57	1.50
15	I	303	MQ9	C12-C13	2.20	1.57	1.50
15	F	707	MQ9	C43-C44	2.20	1.38	1.33
15	E	604	MQ9	C12-C13	2.20	1.57	1.50
15	E	604	MQ9	C43-C44	2.19	1.38	1.33
15	E	604	MQ9	C42-C43	2.18	1.57	1.50
15	O	304	MQ9	C46-C44	2.18	1.55	1.51
13	O	302	HEC	C1B-CHB	2.18	1.47	1.41
17	L	603	HEA	C1B-C2B	2.18	1.48	1.44
14	O	303	9YF	P-O2	2.16	1.66	1.60
15	I	303	MQ9	C46-C44	2.16	1.55	1.51
17	R	603	HEA	C4D-C3D	2.16	1.48	1.45
15	Z	201	MQ9	C12-C13	2.15	1.57	1.50
17	R	603	HEA	C1D-C2D	2.14	1.48	1.44
15	E	604	MQ9	C28-C29	2.13	1.38	1.33
15	T	204	MQ9	C43-C44	2.12	1.38	1.33
14	Y	503	9YF	O4-C4	-2.12	1.38	1.43
17	L	602	HEA	C1D-C2D	2.12	1.48	1.44

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
14	Y	502	9YF	O11-C24	-2.11	1.40	1.45
15	T	204	MQ9	C28-C29	2.09	1.38	1.33
17	L	603	HEA	C1D-C2D	2.09	1.48	1.44
15	Z	201	MQ9	C28-C29	2.09	1.38	1.33
15	Z	201	MQ9	C43-C44	2.07	1.38	1.33
14	Y	502	9YF	O4-C4	-2.07	1.38	1.43
18	Z	202	CDL	OA8-CA7	2.07	1.39	1.33
14	Y	503	9YF	P-O	2.07	1.67	1.59
14	Y	502	9YF	O9-C	-2.06	1.41	1.46
18	T	201	CDL	OA8-CA7	2.06	1.39	1.33
14	Y	502	9YF	P-O	2.05	1.67	1.59
15	F	707	MQ9	C28-C29	2.04	1.37	1.33
21	E	602	HEM	FE-ND	2.04	2.07	1.96
18	T	201	CDL	OA6-CA5	2.03	1.40	1.34
18	Z	202	CDL	OA6-CA5	2.03	1.40	1.34
23	c	202	9XX	O1-C18	2.03	1.40	1.34
14	I	304	9YF	O4-C4	-2.02	1.38	1.43
15	E	603	MQ9	C5-C4	2.00	1.52	1.48

All (356) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
18	T	203	CDL	CB6-CB4-CB3	-9.77	88.68	111.79
18	Z	203	CDL	CB6-CB4-CB3	-9.76	88.70	111.79
18	X	303	CDL	CB6-CB4-CB3	-9.54	89.23	111.79
18	S	302	CDL	CB6-CB4-CB3	-9.52	89.26	111.79
18	T	201	CDL	OB6-CB4-CB6	9.13	141.46	108.40
18	Z	202	CDL	OB6-CB4-CB6	9.13	141.46	108.40
18	T	203	CDL	OB6-CB4-CB3	-8.30	78.36	108.40
18	Z	203	CDL	OB6-CB4-CB3	-8.29	78.39	108.40
17	R	602	HEA	CAD-C3D-C4D	8.13	138.87	124.66
18	X	303	CDL	OB6-CB4-CB3	-7.94	79.66	108.40
18	S	302	CDL	OB6-CB4-CB3	-7.93	79.68	108.40
18	S	302	CDL	OB6-CB4-CB6	7.14	134.25	108.40
18	X	303	CDL	OB6-CB4-CB6	7.14	134.24	108.40
18	T	203	CDL	OB6-CB4-CB6	6.79	132.98	108.40
18	Z	203	CDL	OB6-CB4-CB6	6.79	132.98	108.40
13	O	302	HEC	C1D-C2D-C3D	-6.70	102.33	107.00
13	O	301	HEC	CMB-C2B-C3B	6.64	133.62	125.82
17	L	602	HEA	CMC-C2C-C3C	6.51	136.85	124.68
17	R	603	HEA	CMC-C2C-C3C	6.22	136.32	124.68
17	R	602	HEA	CMC-C2C-C3C	6.13	136.15	124.68

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
17	L	602	HEA	CAD-C3D-C4D	5.96	135.07	124.66
17	L	602	HEA	CMC-C2C-C1C	-5.86	119.45	128.46
13	O	301	HEC	C1D-C2D-C3D	-5.75	103.00	107.00
17	R	603	HEA	CMC-C2C-C1C	-5.61	119.85	128.46
14	Y	502	9YF	O9-C8-C9	5.31	122.94	111.50
17	R	602	HEA	CMC-C2C-C1C	-5.25	120.40	128.46
13	O	302	HEC	CMB-C2B-C3B	5.15	131.88	125.82
14	Y	503	9YF	O9-C8-C9	5.07	122.43	111.50
17	L	603	HEA	CMC-C2C-C3C	4.96	133.96	124.68
23	G	302	9XX	O1-C18-C19	4.92	122.10	111.50
15	Z	201	MQ9	C7-C8-C9	-4.79	118.83	126.79
14	Y	503	9YF	O11-C25-C26	4.76	126.85	111.91
17	R	603	HEA	C3D-C4D-ND	4.70	114.91	110.36
14	E	605	9YF	O9-C8-C9	4.67	121.56	111.50
23	D	302	9XX	O1-C18-C19	4.65	121.52	111.50
18	T	201	CDL	OB6-CB4-CB3	-4.62	91.66	108.40
18	Z	202	CDL	OB6-CB4-CB3	-4.62	91.69	108.40
14	I	304	9YF	O9-C8-C9	4.61	121.43	111.50
18	T	203	CDL	OA6-CA5-C11	4.54	121.28	111.50
18	Z	203	CDL	OA6-CA5-C11	4.52	121.25	111.50
18	T	201	CDL	OB6-CB5-C51	4.50	121.20	111.50
18	Z	202	CDL	OB6-CB5-C51	4.49	121.18	111.50
17	L	603	HEA	C3D-C4D-ND	4.42	114.64	110.36
15	T	204	MQ9	C7-C8-C9	-4.39	119.48	126.79
18	Z	202	CDL	OA6-CA5-C11	4.38	120.94	111.50
18	T	201	CDL	OA6-CA5-C11	4.37	120.93	111.50
17	R	602	HEA	CAD-C3D-C2D	-4.27	119.92	127.88
14	Y	503	9YF	C7-C6-C5	4.21	118.16	110.82
14	O	303	9YF	O9-C8-C9	4.18	120.52	111.50
20	J	201	9Y0	O7-C21-C22	4.18	120.52	111.50
18	S	302	CDL	OB6-CB5-C51	4.14	120.42	111.50
18	X	303	CDL	OB6-CB5-C51	4.13	120.40	111.50
17	R	603	HEA	CHA-C4D-C3D	-4.06	118.86	124.84
17	L	602	HEA	C3D-C4D-ND	3.98	114.21	110.36
20	X	301	9Y0	O7-C21-C22	3.95	120.01	111.50
17	L	603	HEA	CHA-C4D-C3D	-3.91	119.09	124.84
17	R	602	HEA	C4D-C3D-C2D	-3.91	101.20	106.90
17	L	603	HEA	CMC-C2C-C1C	-3.91	122.46	128.46
20	F	704	9Y0	O7-C21-C22	3.90	119.90	111.50
20	S	301	9Y0	O7-C21-C22	3.83	119.76	111.50
18	Z	203	CDL	OB6-CB5-C51	3.78	119.65	111.50
18	T	203	CDL	OB6-CB5-C51	3.76	119.61	111.50

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
18	X	303	CDL	OA6-CA5-C11	3.72	119.52	111.50
18	S	302	CDL	OA6-CA5-C11	3.71	119.49	111.50
17	L	602	HEA	C4D-C3D-C2D	-3.70	101.50	106.90
23	c	202	9XX	O1-C18-C19	3.66	119.39	111.50
17	R	602	HEA	C3D-C4D-ND	3.63	113.87	110.36
17	R	603	HEA	CAD-C3D-C4D	3.61	130.97	124.66
17	R	602	HEA	C26-C15-C14	-3.58	114.50	123.68
14	E	605	9YF	C7-C6-C5	3.56	117.04	110.82
17	R	603	HEA	C4D-C3D-C2D	-3.56	101.71	106.90
17	L	602	HEA	C26-C15-C16	3.55	121.24	115.27
13	O	302	HEC	CMA-C3A-C2A	3.53	131.59	124.94
13	I	302	HEC	CMC-C2C-C1C	-3.50	123.08	128.46
13	O	301	HEC	CMC-C2C-C3C	3.48	129.91	125.82
15	F	707	MQ9	C30-C29-C31	3.44	121.06	115.27
15	Z	201	MQ9	C40-C39-C41	-3.42	109.52	115.27
14	O	303	9YF	O11-C25-C26	3.42	122.63	111.91
17	R	602	HEA	C26-C15-C16	3.36	120.93	115.27
17	L	603	HEA	C4D-C3D-C2D	-3.35	102.01	106.90
15	E	604	MQ9	C12-C13-C14	-3.30	119.72	127.66
15	T	204	MQ9	C40-C39-C41	-3.28	109.75	115.27
15	F	707	MQ9	C12-C13-C14	-3.26	119.81	127.66
18	Z	202	CDL	CB6-CB4-CB3	-3.25	104.09	111.79
18	T	201	CDL	CB6-CB4-CB3	-3.24	104.12	111.79
17	L	602	HEA	OMA-CMA-C3A	-3.23	117.88	124.91
14	Y	502	9YF	O11-C25-C26	3.22	122.02	111.91
17	L	602	HEA	C26-C15-C14	-3.20	115.48	123.68
18	T	201	CDL	CA4-OA6-CA5	-3.18	109.96	117.79
18	Z	202	CDL	CA4-OA6-CA5	-3.17	109.99	117.79
17	L	603	HEA	CAD-C3D-C4D	3.16	130.19	124.66
15	F	707	MQ9	C17-C18-C19	-3.15	120.07	127.66
15	E	604	MQ9	C17-C18-C19	-3.15	120.08	127.66
20	J	202	9Y0	O7-C21-C22	3.14	118.27	111.50
17	R	602	HEA	OMA-CMA-C3A	-3.14	118.08	124.91
15	F	707	MQ9	C35-C34-C36	3.12	120.52	115.27
17	L	602	HEA	CAD-CBD-CGD	-3.11	106.91	113.60
15	E	604	MQ9	C30-C29-C31	3.11	120.50	115.27
14	Y	503	9YF	C6-C5-C4	3.04	116.14	110.82
15	E	604	MQ9	C32-C33-C34	-3.04	120.34	127.66
15	T	204	MQ9	C42-C43-C44	-3.03	120.36	127.66
15	Z	201	MQ9	C42-C43-C44	-3.03	120.36	127.66
15	E	603	MQ9	C17-C18-C19	-3.03	120.37	127.66
15	F	707	MQ9	C32-C33-C34	-3.00	120.43	127.66

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
15	F	701	MQ9	C17-C18-C19	-2.99	120.45	127.66
14	E	605	9YF	C6-C5-C4	2.98	116.02	110.82
15	E	604	MQ9	C35-C34-C36	2.94	120.22	115.27
17	L	603	HEA	CMD-C2D-C1D	-2.94	120.56	125.04
23	G	302	9XX	O-C15-C14	2.94	121.13	111.91
17	R	603	HEA	CAA-CBA-CGA	-2.91	105.59	113.76
23	G	302	9XX	C17-O1-C18	-2.91	114.13	117.88
15	T	204	MQ9	C17-C18-C19	-2.91	120.65	127.66
15	E	604	MQ9	C15-C14-C16	2.91	120.16	115.27
15	F	707	MQ9	C15-C14-C16	2.90	120.15	115.27
15	O	304	MQ9	C5M-C5-C6	-2.90	119.67	124.40
15	Z	201	MQ9	C17-C18-C19	-2.90	120.68	127.66
15	I	303	MQ9	C7-C8-C9	-2.89	121.98	126.79
21	F	703	HEM	C1B-NB-C4B	2.89	108.06	105.07
23	D	302	9XX	O-C15-C14	2.89	120.97	111.91
13	I	301	HEC	CMC-C2C-C1C	-2.88	124.03	128.46
15	Z	201	MQ9	C5M-C5-C6	-2.88	119.70	124.40
15	T	204	MQ9	C12-C13-C14	-2.88	120.73	127.66
15	E	604	MQ9	C7-C8-C9	-2.86	122.03	126.79
21	E	602	HEM	C1B-NB-C4B	2.86	108.03	105.07
17	L	602	HEA	CHA-C4D-C3D	-2.85	120.65	124.84
15	Z	201	MQ9	C12-C13-C14	-2.83	120.85	127.66
15	O	304	MQ9	C7-C8-C9	-2.82	122.10	126.79
15	T	204	MQ9	C11-C9-C8	2.82	126.82	121.12
15	F	707	MQ9	C7-C8-C9	-2.82	122.11	126.79
15	Z	201	MQ9	C11-C9-C8	2.81	126.81	121.12
14	I	304	9YF	O11-C25-C26	2.81	120.72	111.91
18	T	201	CDL	OB8-CB7-C71	2.81	120.71	111.91
18	Z	202	CDL	OB8-CB7-C71	2.80	120.69	111.91
14	E	605	9YF	C6-C7-C2	2.78	116.02	109.68
15	T	204	MQ9	C22-C23-C24	-2.77	120.99	127.66
15	E	603	MQ9	C20-C19-C21	2.77	119.93	115.27
14	Y	502	9YF	O11-C24-C	2.76	116.48	108.43
15	F	701	MQ9	C20-C19-C21	2.76	119.91	115.27
18	Z	203	CDL	OB8-CB7-C71	2.75	120.55	111.91
18	T	203	CDL	OB8-CB7-C71	2.75	120.53	111.91
15	I	303	MQ9	C5M-C5-C6	-2.75	119.92	124.40
17	R	602	HEA	C3B-C4B-NB	2.74	113.08	109.84
20	X	301	9Y0	O5-C5-C6	2.74	120.50	111.91
15	F	701	MQ9	C42-C43-C44	-2.72	121.11	127.66
17	L	602	HEA	C17-C18-C19	-2.72	121.12	127.66
15	F	707	MQ9	C27-C28-C29	-2.72	121.12	127.66

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
15	E	604	MQ9	C27-C28-C29	-2.71	121.14	127.66
21	E	602	HEM	C3B-C2B-C1B	2.71	108.49	106.49
21	F	703	HEM	C3B-C2B-C1B	2.70	108.49	106.49
18	T	201	CDL	OA8-CA7-C31	2.70	120.37	111.91
17	L	602	HEA	C27-C19-C20	2.69	119.80	115.27
14	Y	502	9YF	C30-C31-C32	2.69	123.14	113.62
15	Z	201	MQ9	C22-C23-C24	-2.69	121.18	127.66
20	J	201	9Y0	O5-C5-C6	2.69	120.34	111.91
18	Z	202	CDL	OA8-CA7-C31	2.68	120.31	111.91
15	E	603	MQ9	C42-C43-C44	-2.68	121.22	127.66
13	I	302	HEC	CBD-CAD-C3D	-2.68	108.06	112.62
18	X	303	CDL	OB8-CB7-C71	2.67	120.30	111.91
18	T	201	CDL	OA6-CA5-OA7	-2.67	117.24	123.70
18	Z	202	CDL	OA6-CA5-OA7	-2.67	117.24	123.70
15	Z	201	MQ9	C35-C34-C36	2.67	119.76	115.27
20	F	704	9Y0	O5-C5-C6	2.66	120.27	111.91
18	S	302	CDL	OB8-CB7-C71	2.66	120.27	111.91
17	L	603	HEA	CMD-C2D-C1D	2.66	133.34	126.12
21	F	702	HEM	C4D-ND-C1D	2.66	107.82	105.07
15	Z	201	MQ9	C30-C29-C31	2.65	119.73	115.27
18	T	203	CDL	OA8-CA7-C31	2.64	120.20	111.91
15	Z	201	MQ9	C32-C33-C34	-2.64	121.30	127.66
18	Z	203	CDL	OA8-CA7-C31	2.64	120.19	111.91
13	O	302	HEC	CBD-CAD-C3D	-2.64	108.12	112.62
21	E	601	HEM	C4D-ND-C1D	2.64	107.80	105.07
17	R	602	HEA	CMD-C2D-C1D	-2.63	121.03	125.04
23	D	302	9XX	C17-O1-C18	-2.63	114.50	117.88
15	E	604	MQ9	C40-C39-C41	-2.61	110.87	115.27
20	S	301	9Y0	O5-C5-C6	2.61	120.10	111.91
17	R	602	HEA	C27-C19-C20	2.61	119.66	115.27
15	E	604	MQ9	C20-C19-C21	2.60	119.64	115.27
15	Z	201	MQ9	C25-C24-C26	2.60	119.64	115.27
15	T	204	MQ9	C5M-C5-C6	-2.59	120.17	124.40
17	L	603	HEA	CAA-CBA-CGA	-2.59	106.50	113.76
17	L	602	HEA	CMD-C2D-C1D	-2.59	121.10	125.04
18	X	303	CDL	OA8-CA7-C31	2.58	120.01	111.91
15	T	204	MQ9	C30-C29-C31	2.58	119.61	115.27
23	c	202	9XX	O-C15-C14	2.57	119.99	111.91
15	F	707	MQ9	C20-C19-C21	2.57	119.60	115.27
18	S	302	CDL	OA8-CA7-C31	2.57	119.97	111.91
15	T	204	MQ9	C32-C33-C34	-2.57	121.48	127.66
17	R	603	HEA	CMD-C2D-C1D	-2.56	121.13	125.04

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
20	J	202	9Y0	O5-C5-C6	2.56	119.95	111.91
15	T	204	MQ9	C25-C24-C26	2.55	119.57	115.27
13	I	301	HEC	CBA-CAA-C2A	-2.55	108.31	112.60
15	T	204	MQ9	C35-C34-C36	2.53	119.53	115.27
14	Y	502	9YF	O9-C8-O10	-2.53	117.59	123.70
14	Y	503	9YF	O12-C25-C26	-2.53	113.87	123.73
15	O	304	MQ9	C30-C29-C28	-2.53	117.20	123.68
15	I	303	MQ9	C30-C29-C28	-2.52	117.20	123.68
14	Y	503	9YF	C6-C7-C2	2.51	115.41	109.68
14	Y	503	9YF	O6-C6-C5	-2.50	104.57	110.35
15	E	604	MQ9	C45-C44-C43	-2.48	117.30	123.68
15	Z	201	MQ9	C45-C44-C46	2.48	119.45	115.27
15	I	303	MQ9	C20-C19-C21	2.48	119.44	115.27
18	T	201	CDL	OA8-CA7-OA9	-2.47	117.35	123.59
17	L	602	HEA	C3B-C4B-NB	2.47	112.77	109.84
15	F	701	MQ9	C5M-C5-C6	-2.47	120.37	124.40
18	Z	202	CDL	OA8-CA7-OA9	-2.46	117.37	123.59
15	O	304	MQ9	C20-C19-C21	2.46	119.41	115.27
15	I	303	MQ9	C12-C13-C14	-2.46	121.74	127.66
15	O	304	MQ9	C26-C27-C28	-2.45	103.83	111.88
15	E	603	MQ9	C5M-C5-C6	-2.45	120.41	124.40
15	T	204	MQ9	C45-C44-C46	2.45	119.39	115.27
15	Z	201	MQ9	C15-C14-C16	2.44	119.37	115.27
18	T	201	CDL	OB6-CB5-OB7	-2.43	117.82	123.70
18	Z	202	CDL	OB6-CB5-OB7	-2.43	117.82	123.70
15	I	303	MQ9	C51-C49-C50	2.43	119.97	114.60
15	E	603	MQ9	C7-C8-C9	-2.41	122.77	126.79
15	O	304	MQ9	C12-C13-C14	-2.41	121.85	127.66
15	I	303	MQ9	C32-C33-C34	-2.41	121.85	127.66
15	I	303	MQ9	C26-C27-C28	-2.41	103.95	111.88
17	R	602	HEA	C4B-C3B-C2B	-2.41	103.30	107.41
21	F	702	HEM	C1B-NB-C4B	2.40	107.56	105.07
17	L	602	HEA	CAD-C3D-C2D	-2.40	123.42	127.88
15	O	304	MQ9	C15-C14-C16	2.39	119.30	115.27
21	F	703	HEM	C4C-CHD-C1D	2.39	125.71	122.56
15	F	701	MQ9	C27-C28-C29	-2.39	121.91	127.66
17	R	603	HEA	CMD-C2D-C3D	2.38	132.58	126.12
15	O	304	MQ9	C32-C33-C34	-2.38	121.93	127.66
18	X	303	CDL	OB4-PB2-OB3	-2.38	100.49	112.24
21	E	601	HEM	C1B-NB-C4B	2.38	107.53	105.07
18	S	302	CDL	OB4-PB2-OB3	-2.38	100.50	112.24
17	L	603	HEA	C25-C23-C24	2.37	119.84	114.60

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
15	E	603	MQ9	C27-C28-C29	-2.37	121.95	127.66
15	I	303	MQ9	C15-C14-C16	2.37	119.26	115.27
15	F	701	MQ9	C25-C24-C26	2.37	119.25	115.27
17	R	602	HEA	C17-C18-C19	-2.36	121.97	127.66
13	I	302	HEC	CMB-C2B-C1B	-2.36	124.83	128.46
14	E	605	9YF	O4-C4-C3	-2.36	104.89	110.35
15	O	304	MQ9	C25-C24-C26	2.36	119.23	115.27
13	I	302	HEC	C1D-C2D-C3D	-2.36	105.36	107.00
21	F	703	HEM	C4B-CHC-C1C	2.35	125.66	122.56
15	O	304	MQ9	C35-C34-C36	2.35	119.23	115.27
18	Z	203	CDL	OA4-PA1-OA3	-2.35	100.62	112.24
15	T	204	MQ9	C15-C14-C16	2.35	119.22	115.27
15	Z	201	MQ9	C5M-C5-C4	2.35	120.16	116.27
15	O	304	MQ9	C5M-C5-C4	2.35	120.16	116.27
18	T	203	CDL	OA4-PA1-OA3	-2.34	100.65	112.24
15	O	304	MQ9	C22-C23-C24	-2.34	122.02	127.66
15	F	701	MQ9	C7-C8-C9	-2.34	122.89	126.79
15	F	707	MQ9	C45-C44-C43	-2.34	117.68	123.68
15	E	603	MQ9	C22-C23-C24	-2.34	122.03	127.66
15	F	707	MQ9	C40-C39-C41	-2.34	111.34	115.27
17	L	602	HEA	C4B-C3B-C2B	-2.32	103.44	107.41
15	E	603	MQ9	C25-C24-C26	2.31	119.16	115.27
15	F	701	MQ9	C32-C33-C34	-2.31	122.10	127.66
15	F	701	MQ9	C15-C14-C16	2.31	119.15	115.27
17	R	602	HEA	CHD-C1D-ND	2.31	127.23	124.38
14	Y	503	9YF	O9-C8-O10	-2.31	118.13	123.70
17	R	602	HEA	CAD-CBD-CGD	-2.30	108.65	113.60
15	F	701	MQ9	C22-C23-C24	-2.30	122.13	127.66
15	I	303	MQ9	C35-C34-C36	2.29	119.13	115.27
17	R	603	HEA	C3C-C4C-NC	2.29	112.17	109.21
17	R	603	HEA	C25-C23-C24	2.29	119.67	114.60
15	I	303	MQ9	C5M-C5-C4	2.29	120.06	116.27
18	T	201	CDL	OA4-PA1-OA3	-2.28	100.95	112.24
18	Z	202	CDL	OA4-PA1-OA3	-2.28	100.95	112.24
18	T	203	CDL	OB4-PB2-OB3	-2.27	101.00	112.24
18	Z	203	CDL	OB4-PB2-OB3	-2.27	101.01	112.24
15	I	303	MQ9	C22-C23-C24	-2.27	122.20	127.66
15	E	603	MQ9	C32-C33-C34	-2.26	122.22	127.66
15	E	603	MQ9	C15-C14-C16	2.26	119.06	115.27
15	O	304	MQ9	C51-C49-C50	2.25	119.58	114.60
17	R	602	HEA	C25-C23-C24	2.24	119.56	114.60
15	Z	201	MQ9	C20-C19-C21	2.24	119.04	115.27

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
15	F	707	MQ9	C22-C23-C24	-2.24	122.27	127.66
15	I	303	MQ9	C31-C29-C28	2.24	125.64	121.12
21	E	602	HEM	C4B-CHC-C1C	2.23	125.51	122.56
17	L	603	HEA	C3C-C4C-NC	2.23	112.09	109.21
14	Y	503	9YF	O2-P-O8	-2.23	101.11	109.47
15	I	303	MQ9	C40-C39-C41	-2.23	111.53	115.27
17	R	602	HEA	CBD-CAD-C3D	2.23	118.81	112.63
15	E	604	MQ9	C22-C23-C24	-2.22	122.30	127.66
23	c	202	9XX	O1-C17-C37	2.21	112.99	107.93
17	L	602	HEA	C25-C23-C24	2.21	119.49	114.60
14	Y	502	9YF	O3-C3-C4	-2.21	105.24	110.35
14	E	605	9YF	O11-C25-C26	2.21	118.84	111.91
17	L	602	HEA	C3C-C4C-NC	2.21	112.07	109.21
15	I	303	MQ9	C25-C24-C26	2.21	118.99	115.27
21	E	601	HEM	CAD-CBD-CGD	-2.21	108.85	113.60
13	I	301	HEC	C1D-C2D-C3D	-2.20	105.46	107.00
15	O	304	MQ9	C31-C29-C28	2.19	125.56	121.12
13	I	302	HEC	CMC-C2C-C3C	-2.19	123.24	125.82
14	O	303	9YF	O11-C25-O12	-2.19	118.06	123.59
17	R	602	HEA	C3C-C4C-NC	2.19	112.04	109.21
15	O	304	MQ9	C40-C39-C41	-2.19	111.59	115.27
13	O	301	HEC	CAD-CBD-CGD	-2.19	107.62	113.76
15	F	701	MQ9	C5M-C5-C4	2.18	119.89	116.27
17	R	602	HEA	CAA-CBA-CGA	-2.17	107.66	113.76
15	I	303	MQ9	C10-C9-C11	2.17	118.93	115.27
23	D	302	9XX	O1-C17-C16	2.15	111.12	106.13
13	I	302	HEC	CBA-CAA-C2A	-2.15	108.97	112.60
15	E	603	MQ9	C5M-C5-C4	2.15	119.83	116.27
17	L	602	HEA	CMD-C2D-C3D	2.15	131.95	126.12
18	S	302	CDL	OA4-PA1-OA3	-2.15	101.62	112.24
18	X	303	CDL	OA4-PA1-OA3	-2.15	101.63	112.24
21	E	601	HEM	C3D-C4D-ND	-2.14	107.78	110.17
18	L	604	CDL	OA5-PA1-OA3	-2.14	100.72	109.07
18	R	604	CDL	OA5-PA1-OA3	-2.14	100.72	109.07
23	G	302	9XX	O1-C17-C16	2.13	111.08	106.13
18	T	201	CDL	OB4-PB2-OB3	-2.13	101.71	112.24
18	Z	202	CDL	OB4-PB2-OB3	-2.12	101.75	112.24
15	I	303	MQ9	C32-C31-C29	-2.12	106.00	112.98
15	T	204	MQ9	C20-C19-C21	2.12	118.84	115.27
14	E	605	9YF	O5-C5-C6	-2.12	105.46	110.35
21	F	702	HEM	C4B-CHC-C1C	2.11	125.35	122.56
15	O	304	MQ9	C32-C31-C29	-2.11	106.05	112.98

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
23	c	202	9XX	C25-C26-C27	-2.10	109.12	115.92
21	E	602	HEM	C4C-CHD-C1D	2.10	125.33	122.56
15	E	604	MQ9	C42-C43-C44	-2.10	122.60	127.66
15	O	304	MQ9	C10-C9-C11	2.10	118.80	115.27
14	Y	502	9YF	O4-C4-C3	-2.10	105.50	110.35
21	F	702	HEM	C3D-C4D-ND	-2.09	107.84	110.17
15	F	707	MQ9	C10-C9-C11	2.09	118.79	115.27
15	F	701	MQ9	C35-C34-C36	2.09	118.79	115.27
15	E	604	MQ9	C10-C9-C11	2.09	118.79	115.27
21	E	602	HEM	CHC-C4B-C3B	2.09	127.77	124.57
21	E	601	HEM	C3C-C2C-C1C	2.08	108.28	106.85
17	L	602	HEA	CBD-CAD-C3D	2.08	118.41	112.63
15	F	701	MQ9	C30-C29-C31	2.08	118.77	115.27
18	R	604	CDL	OB4-PB2-OB5	-2.08	98.08	107.75
18	L	604	CDL	OB4-PB2-OB5	-2.08	98.10	107.75
15	I	303	MQ9	C42-C43-C44	-2.08	122.66	127.66
14	O	303	9YF	C30-C31-C32	-2.07	106.29	113.62
15	O	304	MQ9	C42-C43-C44	-2.06	122.69	127.66
15	E	603	MQ9	C30-C29-C28	-2.06	118.39	123.68
13	O	301	HEC	CAA-CBA-CGA	-2.06	107.99	113.76
15	F	701	MQ9	C12-C13-C14	-2.06	122.70	127.66
18	Z	202	CDL	C58-C57-C56	-2.06	103.99	114.42
18	T	201	CDL	C58-C57-C56	-2.05	104.02	114.42
15	Z	201	MQ9	C41-C39-C38	2.05	125.26	121.12
17	L	602	HEA	CAA-CBA-CGA	-2.05	108.01	113.76
15	E	603	MQ9	C35-C34-C36	2.05	118.72	115.27
17	R	602	HEA	CHD-C1D-C2D	-2.04	121.08	126.72
15	F	701	MQ9	C30-C29-C28	-2.04	118.45	123.68
17	R	602	HEA	CHB-C1B-C2B	-2.04	121.79	124.98
17	L	603	HEA	CHB-C1B-C2B	-2.03	121.80	124.98
18	T	201	CDL	C56-C55-C54	-2.03	104.10	114.42
18	Z	202	CDL	C56-C55-C54	-2.03	104.10	114.42
21	E	602	HEM	C4D-ND-C1D	2.03	107.17	105.07
21	F	703	HEM	C4D-ND-C1D	2.03	107.17	105.07
15	F	707	MQ9	C25-C24-C26	2.03	118.69	115.27
15	E	603	MQ9	C30-C29-C31	2.03	118.68	115.27
15	Z	201	MQ9	C11-C12-C13	-2.02	105.25	111.88
15	E	603	MQ9	C12-C13-C14	-2.02	122.80	127.66
15	F	701	MQ9	C45-C44-C46	2.02	118.66	115.27
15	E	604	MQ9	C25-C24-C26	2.01	118.65	115.27
15	E	604	MQ9	C5M-C5-C6	-2.01	121.13	124.40
18	F	706	CDL	OA6-CA5-C11	2.00	115.81	111.50

All (12) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
17	R	602	HEA	NA
17	R	602	HEA	NB
17	R	602	HEA	ND
17	R	603	HEA	NA
17	R	603	HEA	NB
17	R	603	HEA	ND
17	L	602	HEA	NA
17	L	602	HEA	NB
17	L	602	HEA	ND
17	L	603	HEA	NA
17	L	603	HEA	NB
17	L	603	HEA	ND

All (1081) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
13	O	302	HEC	C3A-C2A-CAA-CBA
14	O	303	9YF	C-C1-O-P
14	O	303	9YF	C9-C8-O9-C
14	E	605	9YF	C1-O-P-O1
14	E	605	9YF	C1-O-P-O8
14	E	605	9YF	C9-C8-O9-C
14	I	304	9YF	C-C1-O-P
14	I	304	9YF	C9-C8-O9-C
14	Y	502	9YF	C9-C8-O9-C
14	Y	503	9YF	C1-O-P-O1
14	Y	503	9YF	C9-C8-O9-C
15	O	304	MQ9	C14-C16-C17-C18
15	E	603	MQ9	C9-C11-C12-C13
15	E	603	MQ9	C44-C46-C47-C48
15	E	604	MQ9	C29-C31-C32-C33
15	F	701	MQ9	C9-C11-C12-C13
15	F	701	MQ9	C44-C46-C47-C48
15	F	707	MQ9	C29-C31-C32-C33
15	T	204	MQ9	C44-C46-C47-C48
15	I	303	MQ9	C14-C16-C17-C18
17	R	602	HEA	C2D-C3D-CAD-CBD
17	R	602	HEA	C4D-C3D-CAD-CBD
17	L	602	HEA	C12-C11-C3B-C2B
17	L	602	HEA	C12-C11-C3B-C4B
17	L	602	HEA	C14-C15-C16-C17
17	L	602	HEA	C26-C15-C16-C17

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	R	604	CDL	CA3-OA5-PA1-OA2
18	R	604	CDL	CA3-OA5-PA1-OA3
18	R	604	CDL	CA3-OA5-PA1-OA4
18	R	604	CDL	C11-CA5-OA6-CA4
18	R	604	CDL	CB2-OB2-PB2-OB3
18	R	604	CDL	CB2-OB2-PB2-OB5
18	R	604	CDL	C51-CB5-OB6-CB4
18	S	302	CDL	CA3-OA5-PA1-OA3
18	S	302	CDL	CB2-OB2-PB2-OB3
18	S	302	CDL	CB2-OB2-PB2-OB4
18	S	302	CDL	CB3-OB5-PB2-OB3
18	S	302	CDL	CB3-OB5-PB2-OB4
18	S	302	CDL	OB7-CB5-OB6-CB4
18	E	606	CDL	O1-C1-CB2-OB2
18	E	606	CDL	CA2-C1-CB2-OB2
18	E	606	CDL	CA2-OA2-PA1-OA3
18	E	606	CDL	CA2-OA2-PA1-OA5
18	E	606	CDL	C1-CB2-OB2-PB2
18	E	606	CDL	CB2-OB2-PB2-OB3
18	E	606	CDL	CB2-OB2-PB2-OB4
18	E	606	CDL	CB3-OB5-PB2-OB3
18	E	606	CDL	CB4-CB3-OB5-PB2
18	E	607	CDL	CA3-OA5-PA1-OA4
18	E	607	CDL	CB2-OB2-PB2-OB5
18	E	607	CDL	CB3-OB5-PB2-OB4
18	F	705	CDL	O1-C1-CB2-OB2
18	F	705	CDL	CA2-C1-CB2-OB2
18	F	705	CDL	CA2-OA2-PA1-OA3
18	F	705	CDL	CA2-OA2-PA1-OA5
18	F	705	CDL	C1-CB2-OB2-PB2
18	F	705	CDL	CB2-OB2-PB2-OB3
18	F	705	CDL	CB2-OB2-PB2-OB4
18	F	705	CDL	CB3-OB5-PB2-OB3
18	F	705	CDL	CB4-CB3-OB5-PB2
18	F	706	CDL	CA2-OA2-PA1-OA3
18	F	706	CDL	CA2-OA2-PA1-OA4
18	F	706	CDL	CA2-OA2-PA1-OA5
18	F	706	CDL	CA3-OA5-PA1-OA4
18	F	706	CDL	CB3-OB5-PB2-OB3
18	F	706	CDL	CB3-OB5-PB2-OB4
18	L	604	CDL	CA3-OA5-PA1-OA2
18	L	604	CDL	CA3-OA5-PA1-OA3

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	L	604	CDL	CA3-OA5-PA1-OA4
18	L	604	CDL	C11-CA5-OA6-CA4
18	L	604	CDL	CB2-OB2-PB2-OB3
18	L	604	CDL	CB2-OB2-PB2-OB5
18	L	604	CDL	C51-CB5-OB6-CB4
18	J	203	CDL	CA2-OA2-PA1-OA3
18	J	203	CDL	CA2-OA2-PA1-OA4
18	J	203	CDL	CA2-OA2-PA1-OA5
18	J	203	CDL	CB2-OB2-PB2-OB3
18	J	203	CDL	CB2-OB2-PB2-OB4
18	J	203	CDL	CB2-OB2-PB2-OB5
18	T	201	CDL	CA3-OA5-PA1-OA3
18	T	201	CDL	OA6-CA4-CA6-OA8
18	T	201	CDL	C11-CA5-OA6-CA4
18	T	201	CDL	C51-CB5-OB6-CB4
18	T	202	CDL	CA2-OA2-PA1-OA5
18	T	202	CDL	OA6-CA4-CA6-OA8
18	T	202	CDL	CB3-OB5-PB2-OB4
18	T	202	CDL	C51-CB5-OB6-CB4
18	T	203	CDL	O1-C1-CB2-OB2
18	T	203	CDL	CA2-OA2-PA1-OA3
18	T	203	CDL	CA2-OA2-PA1-OA4
18	T	203	CDL	OA7-CA5-OA6-CA4
18	T	203	CDL	C11-CA5-OA6-CA4
18	P	201	CDL	CA2-OA2-PA1-OA3
18	P	201	CDL	CA2-OA2-PA1-OA4
18	P	201	CDL	CA2-OA2-PA1-OA5
18	P	201	CDL	CB2-OB2-PB2-OB3
18	P	201	CDL	CB2-OB2-PB2-OB4
18	P	201	CDL	CB2-OB2-PB2-OB5
18	X	302	CDL	CA2-OA2-PA1-OA5
18	X	302	CDL	OA6-CA4-CA6-OA8
18	X	302	CDL	CB3-OB5-PB2-OB4
18	X	302	CDL	C51-CB5-OB6-CB4
18	X	303	CDL	CA3-OA5-PA1-OA3
18	X	303	CDL	CB2-OB2-PB2-OB3
18	X	303	CDL	CB2-OB2-PB2-OB4
18	X	303	CDL	CB3-OB5-PB2-OB3
18	X	303	CDL	CB3-OB5-PB2-OB4
18	X	303	CDL	OB7-CB5-OB6-CB4
18	Z	202	CDL	CA3-OA5-PA1-OA3
18	Z	202	CDL	OA6-CA4-CA6-OA8

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	Z	202	CDL	C11-CA5-OA6-CA4
18	Z	202	CDL	C51-CB5-OB6-CB4
18	Z	203	CDL	O1-C1-CB2-OB2
18	Z	203	CDL	CA2-OA2-PA1-OA3
18	Z	203	CDL	CA2-OA2-PA1-OA4
18	Z	203	CDL	OA7-CA5-OA6-CA4
18	Z	203	CDL	C11-CA5-OA6-CA4
20	S	301	9Y0	O1-C3-C4-N
20	F	704	9Y0	C22-C21-O7-C1
20	F	704	9Y0	O6-C21-O7-C1
20	J	201	9Y0	C22-C21-O7-C1
20	J	201	9Y0	O6-C21-O7-C1
20	J	201	9Y0	C2-O3-P-O
20	J	201	9Y0	C2-O3-P-O2
20	J	202	9Y0	O1-C3-C4-N
20	X	301	9Y0	O1-C3-C4-N
23	D	302	9XX	C19-C18-O1-C17
23	G	302	9XX	C19-C18-O1-C17
23	c	202	9XX	O-C16-C17-C37
23	c	202	9XX	O-C16-C17-O1
23	c	202	9XX	C37-C17-O1-C18
23	c	202	9XX	C19-C18-O1-C17
23	c	202	9XX	O2-C18-O1-C17
18	R	604	CDL	OA9-CA7-OA8-CA6
18	L	604	CDL	OA9-CA7-OA8-CA6
14	I	304	9YF	C26-C25-O11-C24
18	R	604	CDL	C31-CA7-OA8-CA6
18	L	604	CDL	C31-CA7-OA8-CA6
14	O	303	9YF	O12-C25-O11-C24
14	I	304	9YF	O12-C25-O11-C24
14	Y	502	9YF	O12-C25-O11-C24
18	T	201	CDL	OA9-CA7-OA8-CA6
18	T	202	CDL	OA9-CA7-OA8-CA6
18	T	203	CDL	OA9-CA7-OA8-CA6
18	T	203	CDL	OB9-CB7-OB8-CB6
18	X	302	CDL	OA9-CA7-OA8-CA6
18	Z	202	CDL	OA9-CA7-OA8-CA6
18	Z	203	CDL	OA9-CA7-OA8-CA6
18	Z	203	CDL	OB9-CB7-OB8-CB6
14	O	303	9YF	O10-C8-O9-C
14	E	605	9YF	O10-C8-O9-C
14	I	304	9YF	O10-C8-O9-C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
14	Y	502	9YF	O10-C8-O9-C
18	R	604	CDL	OA7-CA5-OA6-CA4
18	R	604	CDL	OB7-CB5-OB6-CB4
18	E	606	CDL	OB7-CB5-OB6-CB4
18	E	607	CDL	OB7-CB5-OB6-CB4
18	F	705	CDL	OB7-CB5-OB6-CB4
18	F	706	CDL	OA7-CA5-OA6-CA4
18	L	604	CDL	OA7-CA5-OA6-CA4
18	L	604	CDL	OB7-CB5-OB6-CB4
18	T	201	CDL	OA7-CA5-OA6-CA4
18	T	201	CDL	OB7-CB5-OB6-CB4
18	T	202	CDL	OB7-CB5-OB6-CB4
18	X	302	CDL	OB7-CB5-OB6-CB4
18	Z	202	CDL	OA7-CA5-OA6-CA4
18	Z	202	CDL	OB7-CB5-OB6-CB4
23	D	302	9XX	O2-C18-O1-C17
23	G	302	9XX	O2-C18-O1-C17
14	O	303	9YF	C26-C25-O11-C24
14	Y	502	9YF	C26-C25-O11-C24
18	T	202	CDL	C31-CA7-OA8-CA6
18	T	203	CDL	C71-CB7-OB8-CB6
18	X	302	CDL	C31-CA7-OA8-CA6
18	Z	203	CDL	C71-CB7-OB8-CB6
20	J	201	9Y0	C6-C5-O5-C
20	X	301	9Y0	C6-C5-O5-C
18	S	302	CDL	C51-CB5-OB6-CB4
18	E	606	CDL	C51-CB5-OB6-CB4
18	F	705	CDL	C51-CB5-OB6-CB4
18	F	706	CDL	C11-CA5-OA6-CA4
18	X	303	CDL	C51-CB5-OB6-CB4
14	Y	503	9YF	C26-C25-O11-C24
18	T	201	CDL	C31-CA7-OA8-CA6
18	T	203	CDL	C31-CA7-OA8-CA6
18	Z	202	CDL	C31-CA7-OA8-CA6
18	Z	203	CDL	C31-CA7-OA8-CA6
20	S	301	9Y0	C6-C5-O5-C
20	F	704	9Y0	C6-C5-O5-C
14	Y	503	9YF	O10-C8-O9-C
20	S	301	9Y0	O6-C21-O7-C1
20	F	704	9Y0	O4-C5-O5-C
20	J	201	9Y0	O4-C5-O5-C
20	X	301	9Y0	O4-C5-O5-C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	E	607	CDL	O1-C1-CB2-OB2
18	J	203	CDL	O1-C1-CA2-OA2
18	J	203	CDL	O1-C1-CB2-OB2
18	T	201	CDL	O1-C1-CB2-OB2
18	P	201	CDL	O1-C1-CA2-OA2
18	P	201	CDL	O1-C1-CB2-OB2
18	Z	202	CDL	O1-C1-CB2-OB2
14	E	605	9YF	C26-C25-O11-C24
20	J	201	9Y0	C22-C23-C24-C25
14	E	605	9YF	O12-C25-O11-C24
20	S	301	9Y0	O4-C5-O5-C
18	E	607	CDL	C51-CB5-OB6-CB4
18	T	202	CDL	C11-CA5-OA6-CA4
18	X	302	CDL	C11-CA5-OA6-CA4
20	S	301	9Y0	C22-C21-O7-C1
20	X	301	9Y0	C22-C21-O7-C1
18	F	706	CDL	C76-C77-C78-C79
18	R	604	CDL	C38-C39-C40-C41
18	R	604	CDL	C52-C53-C54-C55
18	E	606	CDL	C59-C60-C61-C62
18	E	607	CDL	C58-C59-C60-C61
18	F	705	CDL	C59-C60-C61-C62
18	L	604	CDL	C38-C39-C40-C41
18	L	604	CDL	C52-C53-C54-C55
18	E	607	CDL	C76-C77-C78-C79
18	T	202	CDL	OA7-CA5-OA6-CA4
18	X	302	CDL	OA7-CA5-OA6-CA4
18	F	706	CDL	C57-C58-C59-C60
18	J	203	CDL	C1-CA2-OA2-PA1
18	P	201	CDL	C1-CA2-OA2-PA1
14	Y	503	9YF	O12-C25-O11-C24
17	L	602	HEA	C3D-CAD-CBD-CGD
18	J	203	CDL	C55-C56-C57-C58
18	P	201	CDL	C55-C56-C57-C58
14	Y	502	9YF	C11-C10-C9-C8
15	E	604	MQ9	C39-C41-C42-C43
15	F	707	MQ9	C39-C41-C42-C43
15	T	204	MQ9	C39-C41-C42-C43
15	Z	201	MQ9	C9-C11-C12-C13
15	Z	201	MQ9	C14-C16-C17-C18
15	Z	201	MQ9	C29-C31-C32-C33
15	Z	201	MQ9	C44-C46-C47-C48

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
17	R	603	HEA	C15-C16-C17-C18
17	L	603	HEA	C15-C16-C17-C18
18	E	606	CDL	C33-C34-C35-C36
18	F	705	CDL	C33-C34-C35-C36
18	E	606	CDL	C31-CA7-OA8-CA6
18	F	705	CDL	C31-CA7-OA8-CA6
18	J	203	CDL	CA2-C1-CB2-OB2
18	T	201	CDL	CA2-C1-CB2-OB2
18	T	203	CDL	CA2-C1-CB2-OB2
18	P	201	CDL	CA2-C1-CB2-OB2
18	Z	202	CDL	CA2-C1-CB2-OB2
18	Z	203	CDL	CA2-C1-CB2-OB2
20	X	301	9Y0	O6-C21-O7-C1
18	E	606	CDL	OA9-CA7-OA8-CA6
18	F	705	CDL	OA9-CA7-OA8-CA6
18	R	604	CDL	C71-CB7-OB8-CB6
18	S	302	CDL	C31-CA7-OA8-CA6
18	L	604	CDL	C71-CB7-OB8-CB6
18	X	303	CDL	C31-CA7-OA8-CA6
20	J	202	9Y0	C6-C5-O5-C
14	E	605	9YF	C33-C35-C36-C37
18	T	201	CDL	O1-C1-CA2-OA2
18	Z	202	CDL	O1-C1-CA2-OA2
18	Z	203	CDL	CB7-C71-C72-C73
18	J	203	CDL	OB6-CB4-CB6-OB8
18	T	201	CDL	OB6-CB4-CB6-OB8
18	P	201	CDL	OB6-CB4-CB6-OB8
18	Z	202	CDL	OB6-CB4-CB6-OB8
15	E	603	MQ9	C40-C39-C41-C42
18	R	604	CDL	C31-C32-C33-C34
18	L	604	CDL	C31-C32-C33-C34
18	E	607	CDL	C11-CA5-OA6-CA4
18	J	203	CDL	C51-CB5-OB6-CB4
18	P	201	CDL	C51-CB5-OB6-CB4
18	R	604	CDL	C58-C59-C60-C61
18	L	604	CDL	C58-C59-C60-C61
18	T	203	CDL	CB7-C71-C72-C73
13	O	301	HEC	C3D-CAD-CBD-CGD
13	O	302	HEC	C3D-CAD-CBD-CGD
14	Y	503	9YF	C25-C26-C27-C28
18	S	302	CDL	CB7-C71-C72-C73
18	X	303	CDL	CB7-C71-C72-C73

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
17	L	602	HEA	C4D-C3D-CAD-CBD
18	R	604	CDL	CB7-C71-C72-C73
18	L	604	CDL	CB7-C71-C72-C73
18	T	201	CDL	CA5-C11-C12-C13
18	T	202	CDL	CB7-C71-C72-C73
18	X	302	CDL	CB7-C71-C72-C73
18	Z	202	CDL	CA5-C11-C12-C13
20	J	202	9Y0	C21-C22-C23-C24
18	S	302	CDL	CA5-C11-C12-C13
18	X	303	CDL	CA5-C11-C12-C13
18	R	604	CDL	OB9-CB7-OB8-CB6
18	S	302	CDL	OA9-CA7-OA8-CA6
18	L	604	CDL	OB9-CB7-OB8-CB6
18	X	303	CDL	OA9-CA7-OA8-CA6
20	J	202	9Y0	O4-C5-O5-C
15	E	604	MQ9	C9-C11-C12-C13
15	E	604	MQ9	C44-C46-C47-C48
15	F	707	MQ9	C9-C11-C12-C13
15	F	707	MQ9	C44-C46-C47-C48
15	T	204	MQ9	C9-C11-C12-C13
15	T	204	MQ9	C14-C16-C17-C18
15	T	204	MQ9	C29-C31-C32-C33
15	Z	201	MQ9	C39-C41-C42-C43
18	T	203	CDL	CB5-C51-C52-C53
18	E	607	CDL	OA7-CA5-OA6-CA4
18	Z	203	CDL	CB5-C51-C52-C53
14	E	605	9YF	C1-O-P-O2
14	Y	503	9YF	C1-O-P-O2
18	S	302	CDL	CA3-OA5-PA1-OA2
18	S	302	CDL	CB2-OB2-PB2-OB5
18	S	302	CDL	CB3-OB5-PB2-OB2
18	E	606	CDL	CB2-OB2-PB2-OB5
18	E	606	CDL	CB3-OB5-PB2-OB2
18	E	607	CDL	CA2-OA2-PA1-OA5
18	E	607	CDL	CA3-OA5-PA1-OA2
18	F	705	CDL	CB2-OB2-PB2-OB5
18	F	705	CDL	CB3-OB5-PB2-OB2
18	F	706	CDL	CA3-OA5-PA1-OA2
18	F	706	CDL	CB3-OB5-PB2-OB2
18	T	201	CDL	CA3-OA5-PA1-OA2
18	T	202	CDL	CB2-OB2-PB2-OB5
18	T	203	CDL	CA2-OA2-PA1-OA5

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	T	203	CDL	CA3-OA5-PA1-OA2
18	X	302	CDL	CB2-OB2-PB2-OB5
18	X	303	CDL	CA3-OA5-PA1-OA2
18	X	303	CDL	CB2-OB2-PB2-OB5
18	X	303	CDL	CB3-OB5-PB2-OB2
18	Z	202	CDL	CA3-OA5-PA1-OA2
18	Z	203	CDL	CA2-OA2-PA1-OA5
18	Z	203	CDL	CA3-OA5-PA1-OA2
20	J	201	9Y0	C2-O3-P-O1
20	F	704	9Y0	C22-C23-C24-C25
20	X	301	9Y0	C21-C22-C23-C24
18	J	203	CDL	CB2-C1-CA2-OA2
18	P	201	CDL	CB2-C1-CA2-OA2
18	J	203	CDL	OB7-CB5-OB6-CB4
18	P	201	CDL	OB7-CB5-OB6-CB4
18	E	606	CDL	C55-C56-C57-C58
18	F	705	CDL	C55-C56-C57-C58
14	Y	503	9YF	C35-C36-C37-C38
14	O	303	9YF	C9-C10-C11-C12
14	O	303	9YF	C39-C40-C41-C42
14	I	304	9YF	C35-C36-C37-C38
14	Y	503	9YF	C37-C38-C39-C40
18	R	604	CDL	C55-C56-C57-C58
18	L	604	CDL	C55-C56-C57-C58
18	J	203	CDL	C60-C61-C62-C63
18	T	201	CDL	C12-C13-C14-C15
18	P	201	CDL	C60-C61-C62-C63
18	Z	202	CDL	C12-C13-C14-C15
20	J	202	9Y0	C9-C10-C11-C12
23	c	202	9XX	C31-C32-C33-C34
17	L	602	HEA	C2D-C3D-CAD-CBD
14	E	605	9YF	C9-C10-C11-C12
18	R	604	CDL	C35-C36-C37-C38
18	E	606	CDL	C56-C57-C58-C59
18	F	705	CDL	C56-C57-C58-C59
18	L	604	CDL	C35-C36-C37-C38
18	T	203	CDL	C37-C38-C39-C40
18	Z	203	CDL	C37-C38-C39-C40
18	T	201	CDL	CB6-CB4-OB6-CB5
18	Z	202	CDL	CB6-CB4-OB6-CB5
14	O	303	9YF	C26-C27-C28-C29
18	F	706	CDL	C78-C79-C80-C81

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	J	203	CDL	C75-C76-C77-C78
18	T	203	CDL	C31-C32-C33-C34
18	Z	203	CDL	C31-C32-C33-C34
14	I	304	9YF	C26-C27-C28-C29
18	R	604	CDL	C75-C76-C77-C78
18	S	302	CDL	C35-C36-C37-C38
18	L	604	CDL	C75-C76-C77-C78
18	T	202	CDL	C59-C60-C61-C62
18	P	201	CDL	C75-C76-C77-C78
18	X	302	CDL	C59-C60-C61-C62
18	X	303	CDL	C35-C36-C37-C38
18	T	203	CDL	C52-C53-C54-C55
18	Z	203	CDL	C52-C53-C54-C55
20	S	301	9Y0	C21-C22-C23-C24
18	F	706	CDL	C34-C35-C36-C37
18	T	201	CDL	C51-C52-C53-C54
18	Z	202	CDL	C51-C52-C53-C54
18	E	606	CDL	C75-C76-C77-C78
18	F	705	CDL	C75-C76-C77-C78
18	F	706	CDL	C12-C13-C14-C15
18	T	203	CDL	C11-C12-C13-C14
20	J	202	9Y0	C6-C7-C8-C9
18	R	604	CDL	C32-C33-C34-C35
18	S	302	CDL	C31-C32-C33-C34
18	E	607	CDL	C34-C35-C36-C37
18	E	607	CDL	C78-C79-C80-C81
18	F	706	CDL	C37-C38-C39-C40
18	F	706	CDL	C52-C53-C54-C55
18	L	604	CDL	C32-C33-C34-C35
18	X	303	CDL	C31-C32-C33-C34
18	X	303	CDL	C72-C73-C74-C75
18	Z	203	CDL	C11-C12-C13-C14
18	S	302	CDL	C72-C73-C74-C75
20	J	201	9Y0	C16-C17-C18-C19
18	E	606	CDL	OA7-CA5-OA6-CA4
18	F	705	CDL	OA7-CA5-OA6-CA4
18	E	606	CDL	C11-CA5-OA6-CA4
18	F	705	CDL	C11-CA5-OA6-CA4
18	R	604	CDL	C53-C54-C55-C56
18	S	302	CDL	C74-C75-C76-C77
18	E	607	CDL	C53-C54-C55-C56
18	L	604	CDL	C53-C54-C55-C56

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	X	303	CDL	C74-C75-C76-C77
20	F	704	9Y0	C15-C16-C17-C18
18	J	203	CDL	CB7-C71-C72-C73
18	P	201	CDL	CB7-C71-C72-C73
14	Y	502	9YF	C28-C29-C30-C31
14	Y	503	9YF	C14-C15-C16-C17
14	Y	503	9YF	C26-C27-C28-C29
18	J	203	CDL	C32-C33-C34-C35
18	T	202	CDL	C11-C12-C13-C14
18	T	203	CDL	C32-C33-C34-C35
18	P	201	CDL	C32-C33-C34-C35
18	X	302	CDL	C11-C12-C13-C14
18	Z	203	CDL	C32-C33-C34-C35
20	J	201	9Y0	C15-C16-C17-C18
23	G	302	9XX	C17-C16-O-C15
15	E	603	MQ9	C39-C41-C42-C43
15	I	303	MQ9	C34-C36-C37-C38
18	J	203	CDL	C31-C32-C33-C34
18	T	202	CDL	C52-C53-C54-C55
18	T	203	CDL	C35-C36-C37-C38
18	P	201	CDL	C31-C32-C33-C34
18	X	302	CDL	C52-C53-C54-C55
20	F	704	9Y0	C29-C30-C31-C32
20	J	202	9Y0	C22-C23-C24-C25
14	O	303	9YF	C35-C36-C37-C38
18	Z	203	CDL	C35-C36-C37-C38
18	E	607	CDL	C52-C53-C54-C55
18	T	201	CDL	C31-C32-C33-C34
18	Z	202	CDL	C31-C32-C33-C34
22	c	201	PLM	C5-C6-C7-C8
14	E	605	9YF	C15-C16-C17-C18
18	J	203	CDL	C52-C53-C54-C55
18	J	203	CDL	C54-C55-C56-C57
18	J	203	CDL	C56-C57-C58-C59
18	T	203	CDL	C59-C60-C61-C62
18	P	201	CDL	C52-C53-C54-C55
18	P	201	CDL	C54-C55-C56-C57
18	P	201	CDL	C56-C57-C58-C59
18	Z	203	CDL	C59-C60-C61-C62
18	E	606	CDL	CA3-CA4-CA6-OA8
18	F	705	CDL	CA3-CA4-CA6-OA8
20	J	201	9Y0	C6-C7-C8-C9

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	E	606	CDL	C12-C13-C14-C15
18	F	705	CDL	C12-C13-C14-C15
18	S	302	CDL	C71-CB7-OB8-CB6
18	X	303	CDL	C71-CB7-OB8-CB6
15	E	603	MQ9	C38-C39-C41-C42
15	T	204	MQ9	C12-C11-C9-C8
18	F	706	CDL	C51-CB5-OB6-CB4
18	J	203	CDL	C11-CA5-OA6-CA4
18	P	201	CDL	C11-CA5-OA6-CA4
18	T	202	CDL	C55-C56-C57-C58
18	X	302	CDL	C55-C56-C57-C58
14	E	605	9YF	C17-C18-C19-C20
18	R	604	CDL	C37-C38-C39-C40
18	E	606	CDL	C34-C35-C36-C37
18	E	607	CDL	C37-C38-C39-C40
18	F	705	CDL	C34-C35-C36-C37
18	F	706	CDL	C56-C57-C58-C59
18	L	604	CDL	C37-C38-C39-C40
18	J	203	CDL	C57-C58-C59-C60
18	T	201	CDL	C76-C77-C78-C79
18	P	201	CDL	C57-C58-C59-C60
18	Z	202	CDL	C76-C77-C78-C79
18	S	302	CDL	C11-C12-C13-C14
18	X	303	CDL	C11-C12-C13-C14
18	J	203	CDL	C74-C75-C76-C77
18	P	201	CDL	C74-C75-C76-C77
18	J	203	CDL	CA7-C31-C32-C33
18	J	203	CDL	OA7-CA5-OA6-CA4
18	P	201	CDL	OA7-CA5-OA6-CA4
20	F	704	9Y0	C16-C17-C18-C19
20	J	202	9Y0	C24-C25-C26-C27
14	I	304	9YF	C39-C40-C41-C42
18	X	303	CDL	C60-C61-C62-C63
18	E	606	CDL	CA7-C31-C32-C33
18	F	705	CDL	CA7-C31-C32-C33
18	P	201	CDL	CA7-C31-C32-C33
18	S	302	CDL	C60-C61-C62-C63
18	T	203	CDL	C73-C74-C75-C76
18	X	302	CDL	C75-C76-C77-C78
18	Z	203	CDL	C73-C74-C75-C76
23	D	302	9XX	C14-C15-O-C16
21	E	602	HEM	C3D-CAD-CBD-CGD

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	F	706	CDL	C59-C60-C61-C62
18	T	202	CDL	C75-C76-C77-C78
20	F	704	9Y0	C6-C7-C8-C9
18	E	607	CDL	CB5-C51-C52-C53
18	E	606	CDL	C32-C33-C34-C35
18	F	705	CDL	C32-C33-C34-C35
18	P	201	CDL	C73-C74-C75-C76
20	S	301	9Y0	C18-C19-C20-C37
18	J	203	CDL	C73-C74-C75-C76
18	T	202	CDL	C38-C39-C40-C41
20	J	201	9Y0	C29-C30-C31-C32
15	F	701	MQ9	C40-C39-C41-C42
15	T	204	MQ9	C12-C11-C9-C10
15	Z	201	MQ9	C12-C11-C9-C8
18	S	302	CDL	OB9-CB7-OB8-CB6
18	X	303	CDL	OB9-CB7-OB8-CB6
14	Y	503	9YF	C16-C17-C18-C19
18	X	302	CDL	C38-C39-C40-C41
18	F	706	CDL	OB7-CB5-OB6-CB4
18	E	606	CDL	CB7-C71-C72-C73
18	F	706	CDL	C31-CA7-OA8-CA6
18	F	705	CDL	CB7-C71-C72-C73
14	I	304	9YF	C18-C19-C20-C21
18	E	606	CDL	C71-C72-C73-C74
18	F	705	CDL	C71-C72-C73-C74
18	T	203	CDL	C56-C57-C58-C59
18	Z	203	CDL	C56-C57-C58-C59
18	R	604	CDL	C72-C73-C74-C75
18	L	604	CDL	C72-C73-C74-C75
14	Y	502	9YF	C33-C35-C36-C37
15	O	304	MQ9	C34-C36-C37-C38
18	T	202	CDL	CA5-C11-C12-C13
18	X	302	CDL	CA5-C11-C12-C13
18	J	203	CDL	C76-C77-C78-C79
18	P	201	CDL	C76-C77-C78-C79
18	S	302	CDL	OA6-CA4-CA6-OA8
18	X	303	CDL	OA6-CA4-CA6-OA8
14	Y	502	9YF	C10-C11-C12-C13
18	S	302	CDL	C34-C35-C36-C37
18	E	606	CDL	C72-C73-C74-C75
18	F	705	CDL	C72-C73-C74-C75
18	T	201	CDL	C59-C60-C61-C62

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	X	303	CDL	C34-C35-C36-C37
18	Z	202	CDL	C59-C60-C61-C62
23	c	202	9XX	C1-C2-C3-C4
15	Z	201	MQ9	C12-C11-C9-C10
18	T	201	CDL	CB5-C51-C52-C53
18	T	203	CDL	CA7-C31-C32-C33
18	Z	202	CDL	CB5-C51-C52-C53
18	Z	203	CDL	CA7-C31-C32-C33
23	c	202	9XX	C28-C29-C30-C31
14	Y	503	9YF	C27-C28-C29-C30
18	S	302	CDL	C76-C77-C78-C79
18	X	303	CDL	C76-C77-C78-C79
18	E	606	CDL	CA3-OA5-PA1-OA2
18	F	705	CDL	CA3-OA5-PA1-OA2
20	J	202	9Y0	C16-C17-C18-C19
14	I	304	9YF	C24-C-C1-O
18	E	606	CDL	OB5-CB3-CB4-CB6
18	F	705	CDL	OB5-CB3-CB4-CB6
18	E	607	CDL	C54-C55-C56-C57
14	Y	502	9YF	C25-C26-C27-C28
18	J	203	CDL	C59-C60-C61-C62
18	R	604	CDL	C59-C60-C61-C62
18	S	302	CDL	C77-C78-C79-C80
18	L	604	CDL	C59-C60-C61-C62
18	J	203	CDL	C34-C35-C36-C37
18	P	201	CDL	C34-C35-C36-C37
18	P	201	CDL	C59-C60-C61-C62
18	X	303	CDL	C77-C78-C79-C80
18	E	607	CDL	CA2-C1-CB2-OB2
18	F	706	CDL	OA9-CA7-OA8-CA6
14	E	605	9YF	C1-C-C24-O11
14	I	304	9YF	C1-C-C24-O11
18	S	302	CDL	CB3-CB4-CB6-OB8
18	E	606	CDL	CB3-CB4-CB6-OB8
18	F	705	CDL	CB3-CB4-CB6-OB8
18	J	203	CDL	CA3-CA4-CA6-OA8
18	J	203	CDL	CB3-CB4-CB6-OB8
18	T	202	CDL	CA3-CA4-CA6-OA8
18	T	203	CDL	C72-C73-C74-C75
18	P	201	CDL	CA3-CA4-CA6-OA8
18	P	201	CDL	CB3-CB4-CB6-OB8
18	X	302	CDL	CA3-CA4-CA6-OA8

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	X	303	CDL	CB3-CB4-CB6-OB8
18	Z	203	CDL	C72-C73-C74-C75
20	X	301	9Y0	O5-C-C1-C2
18	L	604	CDL	C11-C12-C13-C14
20	J	202	9Y0	C32-C33-C34-C35
18	R	604	CDL	C11-C12-C13-C14
14	E	605	9YF	C28-C29-C30-C31
18	J	203	CDL	C61-C62-C63-C64
18	T	202	CDL	C54-C55-C56-C57
18	T	202	CDL	C72-C73-C74-C75
18	P	201	CDL	C61-C62-C63-C64
18	X	302	CDL	C54-C55-C56-C57
18	X	302	CDL	C72-C73-C74-C75
23	D	302	9XX	O6-C15-O-C16
23	c	202	9XX	C24-C25-C26-C27
17	R	602	HEA	C15-C16-C17-C18
20	X	301	9Y0	C6-C7-C8-C9
20	X	301	9Y0	C14-C15-C16-C17
23	c	202	9XX	C7-C8-C9-C10
14	Y	503	9YF	C40-C41-C42-C43
18	R	604	CDL	C39-C40-C41-C42
18	L	604	CDL	C39-C40-C41-C42
18	T	202	CDL	C36-C37-C38-C39
14	I	304	9YF	C16-C17-C18-C19
18	X	302	CDL	C14-C15-C16-C17
18	X	302	CDL	C36-C37-C38-C39
18	E	606	CDL	CB6-CB4-OB6-CB5
18	F	705	CDL	CB6-CB4-OB6-CB5
18	T	202	CDL	C14-C15-C16-C17
20	S	301	9Y0	C6-C7-C8-C9
20	X	301	9Y0	C27-C28-C29-C30
23	G	302	9XX	C14-C15-O-C16
18	S	302	CDL	OA5-CA3-CA4-OA6
18	E	606	CDL	OA5-CA3-CA4-OA6
18	E	607	CDL	OA5-CA3-CA4-OA6
18	F	705	CDL	OA5-CA3-CA4-OA6
18	X	303	CDL	OA5-CA3-CA4-OA6
20	F	704	9Y0	O7-C1-C2-O3
18	R	604	CDL	C78-C79-C80-C81
18	S	302	CDL	C39-C40-C41-C42
18	F	706	CDL	C58-C59-C60-C61
18	L	604	CDL	C78-C79-C80-C81

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	X	303	CDL	C39-C40-C41-C42
18	T	202	CDL	C76-C77-C78-C79
18	X	302	CDL	C76-C77-C78-C79
22	G	301	PLM	C4-C5-C6-C7
18	E	607	CDL	CA5-C11-C12-C13
18	T	202	CDL	CA7-C31-C32-C33
18	X	302	CDL	CA7-C31-C32-C33
14	Y	502	9YF	C12-C13-C14-C15
20	X	301	9Y0	C18-C19-C20-C37
23	c	202	9XX	O1-C18-C19-C20
18	F	706	CDL	OB6-CB4-CB6-OB8
18	T	203	CDL	OB6-CB4-CB6-OB8
18	Z	203	CDL	OB6-CB4-CB6-OB8
20	J	202	9Y0	O5-C-C1-O7
20	X	301	9Y0	O5-C-C1-O7
18	R	604	CDL	C60-C61-C62-C63
18	L	604	CDL	C60-C61-C62-C63
14	Y	503	9YF	C19-C20-C21-C22
18	E	607	CDL	C39-C40-C41-C42
14	Y	503	9YF	C32-C33-C35-C36
23	G	302	9XX	C26-C27-C28-C29
18	R	604	CDL	C72-C71-CB7-OB8
18	L	604	CDL	C72-C71-CB7-OB8
14	Y	503	9YF	C34-C33-C35-C36
18	R	604	CDL	CB5-C51-C52-C53
18	L	604	CDL	CB5-C51-C52-C53
18	R	604	CDL	C54-C55-C56-C57
18	E	606	CDL	C78-C79-C80-C81
18	F	705	CDL	C78-C79-C80-C81
18	L	604	CDL	C54-C55-C56-C57
20	J	202	9Y0	C26-C27-C28-C29
18	Z	202	CDL	C33-C34-C35-C36
18	R	604	CDL	C77-C78-C79-C80
18	T	201	CDL	C33-C34-C35-C36
18	T	201	CDL	C36-C37-C38-C39
14	O	303	9YF	C11-C12-C13-C14
18	L	604	CDL	C77-C78-C79-C80
18	T	203	CDL	C38-C39-C40-C41
18	Z	202	CDL	C36-C37-C38-C39
18	Z	203	CDL	C38-C39-C40-C41
14	Y	503	9YF	C30-C31-C32-C33
14	O	303	9YF	C19-C20-C21-C22

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
14	E	605	9YF	C20-C21-C22-C23
14	I	304	9YF	C29-C30-C31-C32
18	F	705	CDL	C76-C77-C78-C79
18	E	607	CDL	OA5-CA3-CA4-CA6
18	T	202	CDL	OB5-CB3-CB4-CB6
18	X	302	CDL	OB5-CB3-CB4-CB6
15	F	701	MQ9	C39-C41-C42-C43
18	E	606	CDL	C76-C77-C78-C79
18	S	302	CDL	C59-C60-C61-C62
18	X	303	CDL	C59-C60-C61-C62
15	O	304	MQ9	C15-C14-C16-C17
15	T	204	MQ9	C20-C19-C21-C22
15	I	303	MQ9	C15-C14-C16-C17
15	F	701	MQ9	C38-C39-C41-C42
18	T	201	CDL	CB7-C71-C72-C73
18	Z	202	CDL	CB7-C71-C72-C73
18	F	705	CDL	C53-C54-C55-C56
18	T	201	CDL	CB4-CB3-OB5-PB2
18	T	202	CDL	C1-CB2-OB2-PB2
18	X	302	CDL	C1-CB2-OB2-PB2
18	Z	202	CDL	CB4-CB3-OB5-PB2
18	E	606	CDL	C53-C54-C55-C56
14	O	303	9YF	C17-C18-C19-C20
14	Y	502	9YF	C19-C20-C21-C22
14	O	303	9YF	C1-C-C24-O11
18	S	302	CDL	CA3-CA4-CA6-OA8
18	F	706	CDL	CB3-CB4-CB6-OB8
18	X	303	CDL	CA3-CA4-CA6-OA8
20	S	301	9Y0	O5-C-C1-C2
20	J	202	9Y0	O5-C-C1-C2
18	E	606	CDL	C31-C32-C33-C34
18	F	705	CDL	C31-C32-C33-C34
20	X	301	9Y0	C29-C30-C31-C32
22	c	201	PLM	CA-CB-CC-CD
18	R	604	CDL	C73-C74-C75-C76
18	L	604	CDL	C73-C74-C75-C76
18	F	705	CDL	C61-C62-C63-C64
18	E	606	CDL	C61-C62-C63-C64
18	R	604	CDL	C51-C52-C53-C54
18	L	604	CDL	C51-C52-C53-C54
18	F	706	CDL	C61-C62-C63-C64
18	F	706	CDL	CB2-OB2-PB2-OB5

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	T	202	CDL	CB3-OB5-PB2-OB2
18	X	302	CDL	CB3-OB5-PB2-OB2
18	S	302	CDL	C61-C62-C63-C64
18	X	303	CDL	C61-C62-C63-C64
14	O	303	9YF	O9-C-C1-O
18	R	604	CDL	OA5-CA3-CA4-OA6
18	F	706	CDL	OA5-CA3-CA4-OA6
18	L	604	CDL	OA5-CA3-CA4-OA6
20	S	301	9Y0	C14-C15-C16-C17
18	F	706	CDL	O1-C1-CB2-OB2
14	Y	502	9YF	C18-C19-C20-C21
14	I	304	9YF	O9-C-C24-O11
18	E	607	CDL	OB6-CB4-CB6-OB8
20	S	301	9Y0	O5-C-C1-O7
18	E	607	CDL	C57-C58-C59-C60
20	S	301	9Y0	C27-C28-C29-C30
20	S	301	9Y0	C29-C30-C31-C32
18	T	201	CDL	CB2-C1-CA2-OA2
18	Z	202	CDL	CB2-C1-CA2-OA2
15	T	204	MQ9	C18-C19-C21-C22
15	I	303	MQ9	C13-C14-C16-C17
18	F	706	CDL	C52-C51-CB5-OB6
18	J	203	CDL	C36-C37-C38-C39
18	P	201	CDL	C36-C37-C38-C39
14	O	303	9YF	C33-C35-C36-C37
18	R	604	CDL	C1-CA2-OA2-PA1
18	E	607	CDL	C1-CB2-OB2-PB2
18	L	604	CDL	C1-CA2-OA2-PA1
18	R	604	CDL	C12-C13-C14-C15
18	S	302	CDL	C71-C72-C73-C74
18	L	604	CDL	C12-C13-C14-C15
18	X	303	CDL	C71-C72-C73-C74
18	T	203	CDL	C54-C55-C56-C57
18	Z	203	CDL	C54-C55-C56-C57
18	P	201	CDL	C12-C13-C14-C15
18	F	706	CDL	C39-C40-C41-C42
18	J	203	CDL	C12-C13-C14-C15
20	J	201	9Y0	C5-C6-C7-C8
14	O	303	9YF	C24-C-C1-O
15	O	304	MQ9	C13-C14-C16-C17
23	G	302	9XX	O6-C15-O-C16
22	D	301	PLM	C4-C5-C6-C7

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
14	O	303	9YF	C16-C17-C18-C19
18	X	302	CDL	C73-C74-C75-C76
18	T	202	CDL	C73-C74-C75-C76
15	Z	201	MQ9	C20-C19-C21-C22
18	R	604	CDL	CB3-CB4-CB6-OB8
18	F	706	CDL	C1-CB2-OB2-PB2
18	L	604	CDL	CB3-CB4-CB6-OB8
18	T	201	CDL	CA3-CA4-CA6-OA8
18	T	201	CDL	CB3-CB4-CB6-OB8
18	T	202	CDL	CB4-CB3-OB5-PB2
18	X	302	CDL	CB4-CB3-OB5-PB2
18	Z	202	CDL	CA3-CA4-CA6-OA8
18	Z	202	CDL	CB3-CB4-CB6-OB8
18	T	202	CDL	OB5-CB3-CB4-OB6
18	X	302	CDL	OB5-CB3-CB4-OB6
20	J	201	9Y0	C19-C20-C37-C38
21	E	602	HEM	C4B-C3B-CAB-CBB
14	O	303	9YF	C29-C30-C31-C32
18	T	203	CDL	C78-C79-C80-C81
18	Z	203	CDL	C78-C79-C80-C81
23	c	202	9XX	C19-C20-C21-C22
14	O	303	9YF	O9-C-C24-O11
14	E	605	9YF	O9-C-C24-O11
18	E	606	CDL	OB6-CB4-CB6-OB8
18	F	705	CDL	OB6-CB4-CB6-OB8
18	S	302	CDL	C33-C34-C35-C36
18	X	303	CDL	C33-C34-C35-C36
18	E	607	CDL	C51-C52-C53-C54
23	G	302	9XX	C5-C6-C7-C8
14	I	304	9YF	C33-C35-C36-C37
23	D	302	9XX	C17-C16-O-C15
14	Y	503	9YF	C15-C16-C17-C18
23	c	202	9XX	C6-C7-C8-C9
14	Y	502	9YF	C1-O-P-O2
20	J	202	9Y0	C30-C31-C32-C33
18	S	302	CDL	C1-CA2-OA2-PA1
18	S	302	CDL	C1-CB2-OB2-PB2
18	E	607	CDL	C1-CA2-OA2-PA1
18	F	706	CDL	C1-CA2-OA2-PA1
18	T	203	CDL	C1-CA2-OA2-PA1
18	X	303	CDL	C1-CA2-OA2-PA1
18	X	303	CDL	C1-CB2-OB2-PB2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	Z	203	CDL	C1-CA2-OA2-PA1
14	O	303	9YF	C1-O-P-O1
14	I	304	9YF	C1-O-P-O1
14	Y	503	9YF	C1-O-P-O8
18	S	302	CDL	CA3-OA5-PA1-OA4
18	E	606	CDL	CB3-OB5-PB2-OB4
18	E	607	CDL	CA2-OA2-PA1-OA3
18	E	607	CDL	CB2-OB2-PB2-OB4
18	F	705	CDL	CB3-OB5-PB2-OB4
18	F	706	CDL	CB2-OB2-PB2-OB4
18	T	202	CDL	CA2-OA2-PA1-OA4
18	T	202	CDL	CB2-OB2-PB2-OB3
18	T	202	CDL	CB2-OB2-PB2-OB4
18	T	202	CDL	CB3-OB5-PB2-OB3
18	T	203	CDL	CA3-OA5-PA1-OA3
18	T	203	CDL	CA3-OA5-PA1-OA4
18	X	302	CDL	CA2-OA2-PA1-OA4
18	X	302	CDL	CB2-OB2-PB2-OB3
18	X	302	CDL	CB2-OB2-PB2-OB4
18	X	302	CDL	CB3-OB5-PB2-OB3
18	X	303	CDL	CA3-OA5-PA1-OA4
18	Z	203	CDL	CA3-OA5-PA1-OA3
18	Z	203	CDL	CA3-OA5-PA1-OA4
18	S	302	CDL	OA5-CA3-CA4-CA6
18	E	606	CDL	OA5-CA3-CA4-CA6
18	F	705	CDL	OA5-CA3-CA4-CA6
18	X	303	CDL	OA5-CA3-CA4-CA6
18	E	607	CDL	C77-C78-C79-C80
22	G	301	PLM	C7-C8-C9-CA
18	E	607	CDL	C59-C60-C61-C62
23	D	302	9XX	C20-C21-C22-C23
18	T	202	CDL	C33-C34-C35-C36
18	X	302	CDL	C33-C34-C35-C36
14	O	303	9YF	C32-C33-C35-C36
18	E	606	CDL	OB5-CB3-CB4-OB6
18	F	705	CDL	OB5-CB3-CB4-OB6
23	D	302	9XX	C26-C27-C28-C29
13	O	302	HEC	C1A-C2A-CAA-CBA
18	E	607	CDL	C61-C62-C63-C64
18	R	604	CDL	OB6-CB4-CB6-OB8
18	S	302	CDL	OB6-CB4-CB6-OB8
18	E	606	CDL	OA6-CA4-CA6-OA8

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	F	705	CDL	OA6-CA4-CA6-OA8
18	L	604	CDL	OB6-CB4-CB6-OB8
18	J	203	CDL	OA6-CA4-CA6-OA8
18	P	201	CDL	OA6-CA4-CA6-OA8
18	X	303	CDL	OB6-CB4-CB6-OB8
22	c	201	PLM	CC-CD-CE-CF
18	F	706	CDL	C73-C74-C75-C76
14	Y	502	9YF	C-C1-O-P
18	E	606	CDL	C60-C61-C62-C63
18	F	705	CDL	C60-C61-C62-C63
20	S	301	9Y0	C22-C23-C24-C25
20	F	704	9Y0	C30-C31-C32-C33
18	T	202	CDL	C35-C36-C37-C38
18	X	302	CDL	C35-C36-C37-C38
15	I	303	MQ9	C29-C31-C32-C33
14	Y	502	9YF	C26-C27-C28-C29
22	D	301	PLM	C7-C8-C9-CA
18	R	604	CDL	OA5-CA3-CA4-CA6
18	L	604	CDL	OA5-CA3-CA4-CA6
20	F	704	9Y0	C-C1-C2-O3
14	I	304	9YF	O9-C-C1-O
14	Y	502	9YF	O9-C-C1-O
15	Z	201	MQ9	C18-C19-C21-C22
18	L	604	CDL	C71-C72-C73-C74
14	Y	502	9YF	C16-C17-C18-C19
18	R	604	CDL	C71-C72-C73-C74
18	T	202	CDL	C53-C54-C55-C56
18	X	302	CDL	C53-C54-C55-C56
20	F	704	9Y0	C19-C20-C37-C38
18	F	706	CDL	C54-C55-C56-C57
18	T	201	CDL	CA2-OA2-PA1-OA5
18	T	203	CDL	CB3-OB5-PB2-OB2
18	Z	202	CDL	CA2-OA2-PA1-OA5
18	Z	203	CDL	CB3-OB5-PB2-OB2
20	S	301	9Y0	C3-O1-P-O3
23	G	302	9XX	C20-C21-C22-C23
18	P	201	CDL	C37-C38-C39-C40
18	F	706	CDL	C38-C39-C40-C41
18	J	203	CDL	C37-C38-C39-C40
20	S	301	9Y0	C5-C6-C7-C8
20	X	301	9Y0	C22-C23-C24-C25
20	S	301	9Y0	C13-C14-C15-C16

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
14	O	303	9YF	C14-C15-C16-C17
23	D	302	9XX	C36-C27-C28-C29
23	G	302	9XX	C36-C27-C28-C29
20	J	201	9Y0	C7-C8-C9-C10
14	O	303	9YF	C36-C37-C38-C39
18	J	203	CDL	C12-C11-CA5-OA6
18	P	201	CDL	C12-C11-CA5-OA6
20	J	202	9Y0	C11-C12-C13-C14
20	X	301	9Y0	C13-C14-C15-C16
18	Z	203	CDL	C57-C58-C59-C60
18	T	203	CDL	C57-C58-C59-C60
18	P	201	CDL	C38-C39-C40-C41
14	Y	502	9YF	C35-C36-C37-C38
18	J	203	CDL	C38-C39-C40-C41
18	E	606	CDL	CB5-C51-C52-C53
18	F	705	CDL	CB5-C51-C52-C53
18	T	202	CDL	OA5-CA3-CA4-CA6
18	X	302	CDL	OA5-CA3-CA4-CA6
15	O	304	MQ9	C29-C31-C32-C33
18	T	201	CDL	OB5-CB3-CB4-OB6
18	Z	202	CDL	OB5-CB3-CB4-OB6
18	T	202	CDL	C13-C14-C15-C16
18	X	302	CDL	C13-C14-C15-C16
18	X	303	CDL	C57-C58-C59-C60
15	F	707	MQ9	C35-C34-C36-C37
18	S	302	CDL	C57-C58-C59-C60
18	F	706	CDL	C77-C78-C79-C80
17	L	602	HEA	CAD-CBD-CGD-O1D
14	I	304	9YF	C27-C28-C29-C30
17	R	602	HEA	CAA-CBA-CGA-O1A
17	R	602	HEA	CAD-CBD-CGD-O1D
17	L	602	HEA	CAA-CBA-CGA-O1A
17	L	603	HEA	CAA-CBA-CGA-O1A
14	Y	503	9YF	C36-C37-C38-C39
18	J	203	CDL	CA4-CA3-OA5-PA1
18	P	201	CDL	CA4-CA3-OA5-PA1
20	J	202	9Y0	C14-C15-C16-C17
18	R	604	CDL	C33-C34-C35-C36
14	I	304	9YF	C15-C16-C17-C18
18	L	604	CDL	C33-C34-C35-C36
18	F	706	CDL	CB7-C71-C72-C73
20	F	704	9Y0	C7-C8-C9-C10

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	E	607	CDL	CB3-CB4-CB6-OB8
13	O	301	HEC	CAA-CBA-CGA-O1A
14	Y	502	9YF	C37-C38-C39-C40
15	I	303	MQ9	C9-C11-C12-C13
18	E	606	CDL	C11-C12-C13-C14
18	F	705	CDL	C11-C12-C13-C14
17	L	602	HEA	CAA-CBA-CGA-O2A
15	F	707	MQ9	C40-C39-C41-C42
23	c	202	9XX	O2-C18-C19-C20
17	R	603	HEA	CAA-CBA-CGA-O1A
22	c	201	PLM	C7-C8-C9-CA
17	R	602	HEA	CAA-CBA-CGA-O2A
17	R	602	HEA	CAD-CBD-CGD-O2D
18	T	203	CDL	C14-C15-C16-C17
18	P	201	CDL	C11-C12-C13-C14
18	Z	203	CDL	C14-C15-C16-C17
18	J	203	CDL	C11-C12-C13-C14
20	J	201	9Y0	O7-C1-C2-O3
17	L	602	HEA	CAD-CBD-CGD-O2D
18	S	302	CDL	C55-C56-C57-C58
18	X	303	CDL	C55-C56-C57-C58
20	S	301	9Y0	C7-C8-C9-C10
22	c	201	PLM	C8-C9-CA-CB
17	R	603	HEA	CAA-CBA-CGA-O2A
22	D	301	PLM	C2-C3-C4-C5
14	E	605	9YF	C39-C40-C41-C42
17	L	603	HEA	CAA-CBA-CGA-O2A
13	O	302	HEC	CAA-CBA-CGA-O2A
14	E	605	9YF	C2-O2-P-O
20	J	202	9Y0	C7-C8-C9-C10
13	O	302	HEC	CAA-CBA-CGA-O1A
15	F	707	MQ9	C24-C26-C27-C28
14	O	303	9YF	C13-C14-C15-C16
21	F	702	HEM	CAD-CBD-CGD-O2D
13	O	301	HEC	CAA-CBA-CGA-O2A
18	R	604	CDL	CB4-CB3-OB5-PB2
18	E	606	CDL	C1-CA2-OA2-PA1
18	F	705	CDL	C1-CA2-OA2-PA1
18	L	604	CDL	CB4-CB3-OB5-PB2
14	Y	503	9YF	O11-C25-C26-C27
20	J	201	9Y0	C24-C25-C26-C27
18	R	604	CDL	C72-C71-CB7-OB9

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	L	604	CDL	C72-C71-CB7-OB9
18	F	706	CDL	C60-C61-C62-C63
18	T	203	CDL	C13-C14-C15-C16
18	Z	202	CDL	C78-C79-C80-C81
15	E	604	MQ9	C40-C39-C41-C42
18	Z	203	CDL	C13-C14-C15-C16
15	F	707	MQ9	C33-C34-C36-C37
18	T	201	CDL	C78-C79-C80-C81
18	P	201	CDL	C14-C15-C16-C17
18	F	706	CDL	C33-C34-C35-C36
18	J	203	CDL	C14-C15-C16-C17
18	X	302	CDL	C56-C57-C58-C59
18	T	202	CDL	C56-C57-C58-C59
18	T	202	CDL	OA5-CA3-CA4-OA6
18	X	302	CDL	OA5-CA3-CA4-OA6
18	E	607	CDL	C72-C73-C74-C75
18	F	706	CDL	OA5-CA3-CA4-CA6
15	F	701	MQ9	C15-C14-C16-C17
15	Z	201	MQ9	C30-C29-C31-C32
15	O	304	MQ9	C9-C11-C12-C13
15	E	604	MQ9	C24-C26-C27-C28
14	Y	503	9YF	C31-C32-C33-C35
15	F	707	MQ9	C38-C39-C41-C42
14	O	303	9YF	O11-C25-C26-C27
18	T	201	CDL	C32-C33-C34-C35
18	Z	202	CDL	C32-C33-C34-C35
15	E	604	MQ9	C35-C34-C36-C37
15	F	707	MQ9	C30-C29-C31-C32
14	O	303	9YF	C34-C33-C35-C36
14	Y	503	9YF	C31-C32-C33-C34
20	F	704	9Y0	C11-C12-C13-C14
21	F	702	HEM	CAD-CBD-CGD-O1D
15	T	204	MQ9	C30-C29-C31-C32
21	E	601	HEM	CAA-CBA-CGA-O1A
14	I	304	9YF	C36-C37-C38-C39
14	I	304	9YF	O11-C25-C26-C27
20	S	301	9Y0	C10-C11-C12-C13
20	J	202	9Y0	O7-C1-C2-O3
18	S	302	CDL	C12-C11-CA5-OA6
18	X	303	CDL	C12-C11-CA5-OA6
21	E	601	HEM	CAA-CBA-CGA-O2A
21	F	702	HEM	CAA-CBA-CGA-O1A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
20	J	202	9Y0	C23-C24-C25-C26
15	O	304	MQ9	C12-C11-C9-C10
18	J	203	CDL	C32-C31-CA7-OA8
18	P	201	CDL	C32-C31-CA7-OA8
18	T	203	CDL	C58-C59-C60-C61
18	T	203	CDL	C71-C72-C73-C74
18	Z	203	CDL	C58-C59-C60-C61
20	J	202	9Y0	C13-C14-C15-C16
18	Z	203	CDL	C71-C72-C73-C74
18	E	607	CDL	OA9-CA7-OA8-CA6
14	Y	502	9YF	O9-C8-C9-C10
18	T	201	CDL	C74-C75-C76-C77
15	E	604	MQ9	C20-C19-C21-C22
15	I	303	MQ9	C12-C11-C9-C10
18	Z	202	CDL	C74-C75-C76-C77
15	T	204	MQ9	C28-C29-C31-C32
15	Z	201	MQ9	C28-C29-C31-C32
14	I	304	9YF	O12-C25-C26-C27
20	F	704	9Y0	C31-C32-C33-C34
15	T	204	MQ9	C31-C32-C33-C34
20	J	201	9Y0	C11-C12-C13-C14
18	E	607	CDL	C31-CA7-OA8-CA6
18	S	302	CDL	C12-C11-CA5-OA7
18	X	303	CDL	C12-C11-CA5-OA7
15	F	707	MQ9	C20-C19-C21-C22
15	T	204	MQ9	C15-C14-C16-C17
18	J	203	CDL	C32-C31-CA7-OA9
18	P	201	CDL	C32-C31-CA7-OA9
18	T	202	CDL	CA2-C1-CB2-OB2
18	X	302	CDL	CA2-C1-CB2-OB2
14	Y	502	9YF	C40-C41-C42-C43
20	J	202	9Y0	C18-C19-C20-C37
18	X	302	CDL	O1-C1-CB2-OB2
23	c	202	9XX	C10-C11-C12-C13
21	F	702	HEM	CAA-CBA-CGA-O2A
18	J	203	CDL	C52-C51-CB5-OB6
18	P	201	CDL	C52-C51-CB5-OB6
18	E	606	CDL	CA3-OA5-PA1-OA3
18	E	607	CDL	CB3-OB5-PB2-OB3
18	F	705	CDL	CA3-OA5-PA1-OA3
18	T	201	CDL	CA2-OA2-PA1-OA3
18	T	201	CDL	CB2-OB2-PB2-OB3

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
18	Z	202	CDL	CA2-OA2-PA1-OA3
18	Z	202	CDL	CB2-OB2-PB2-OB3
20	S	301	9Y0	C2-O3-P-O2
20	F	704	9Y0	C3-O1-P-O
20	F	704	9Y0	C2-O3-P-O
20	J	202	9Y0	C2-O3-P-O
14	O	303	9YF	O12-C25-C26-C27
14	Y	502	9YF	O10-C8-C9-C10
20	J	202	9Y0	O5-C5-C6-C7
18	L	604	CDL	C57-C58-C59-C60
18	R	604	CDL	C57-C58-C59-C60
15	E	603	MQ9	C15-C14-C16-C17
15	E	604	MQ9	C11-C12-C13-C14
15	I	303	MQ9	C31-C32-C33-C34
18	T	202	CDL	CB3-CB4-OB6-CB5
18	T	202	CDL	CB6-CB4-OB6-CB5
18	X	302	CDL	CB3-CB4-OB6-CB5
18	X	302	CDL	CB6-CB4-OB6-CB5
20	J	201	9Y0	C4-C3-O1-P
23	G	302	9XX	C12-C13-C14-C15
20	X	301	9Y0	C32-C33-C34-C35
18	F	706	CDL	O1-C1-CA2-OA2
18	T	202	CDL	O1-C1-CB2-OB2
20	S	301	9Y0	O7-C21-C22-C23
18	T	203	CDL	CB4-CB6-OB8-CB7
20	X	301	9Y0	O7-C21-C22-C23
20	J	202	9Y0	C1-C2-O3-P
15	E	604	MQ9	C12-C11-C9-C10
17	L	602	HEA	O11-C11-C3B-C2B
18	F	706	CDL	CB5-C51-C52-C53
14	O	303	9YF	O10-C8-C9-C10
14	O	303	9YF	O9-C8-C9-C10
18	R	604	CDL	C61-C62-C63-C64
18	Z	203	CDL	CB4-CB6-OB8-CB7
18	L	604	CDL	C61-C62-C63-C64
20	S	301	9Y0	O6-C21-C22-C23
20	X	301	9Y0	O6-C21-C22-C23
15	O	304	MQ9	C31-C32-C33-C34
15	F	707	MQ9	C11-C12-C13-C14
15	Z	201	MQ9	C31-C32-C33-C34
18	J	203	CDL	C52-C51-CB5-OB7
18	P	201	CDL	C52-C51-CB5-OB7

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
21	E	601	HEM	CAD-CBD-CGD-O2D
18	J	203	CDL	C53-C54-C55-C56
18	P	201	CDL	C53-C54-C55-C56
20	J	202	9Y0	O4-C5-C6-C7
13	O	302	HEC	CAD-CBD-CGD-O2D

There are no ring outliers.

35 monomers are involved in 458 short contacts:

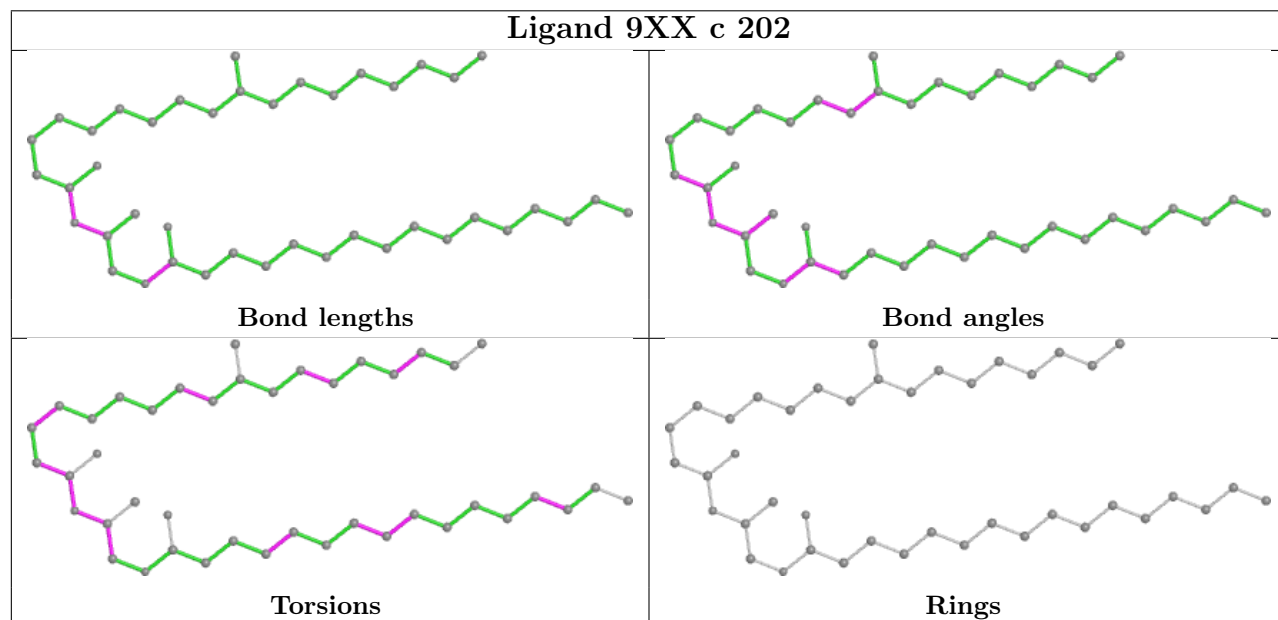
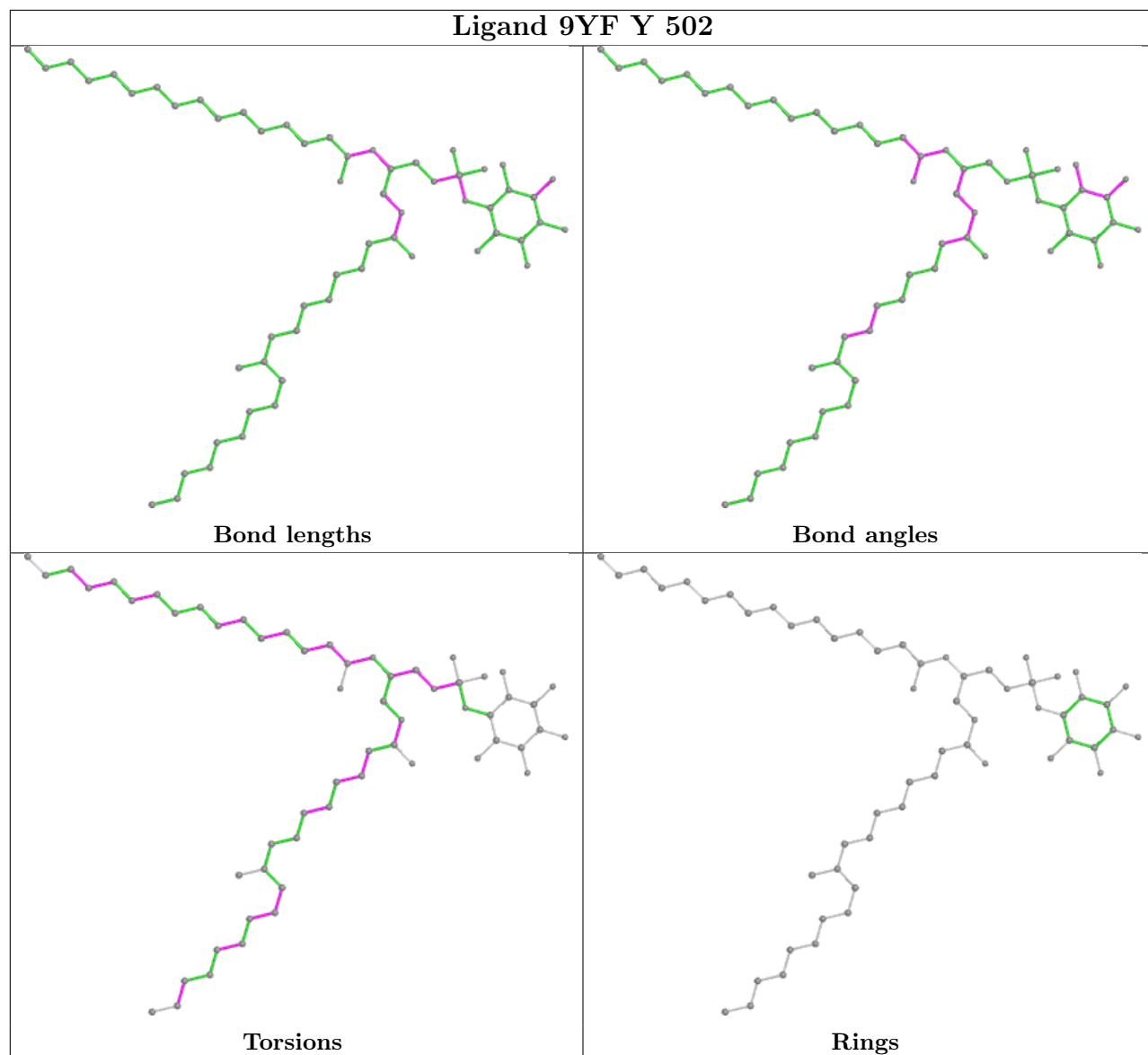
Mol	Chain	Res	Type	Clashes	Symm-Clashes
15	Z	201	MQ9	4	0
18	J	203	CDL	12	0
18	Z	203	CDL	42	0
18	F	706	CDL	12	0
15	E	603	MQ9	2	0
15	E	604	MQ9	4	0
13	O	301	HEC	4	0
21	E	601	HEM	2	0
18	F	705	CDL	11	0
15	T	204	MQ9	2	0
13	O	302	HEC	40	0
18	E	607	CDL	4	0
17	R	603	HEA	4	0
18	T	202	CDL	29	0
18	P	201	CDL	10	0
21	F	703	HEM	4	0
18	E	606	CDL	10	0
18	R	604	CDL	17	0
17	L	602	HEA	3	0
19	Y	501	FES	1	0
18	X	302	CDL	41	0
18	T	203	CDL	34	0
18	S	302	CDL	49	0
13	I	301	HEC	5	0
21	E	602	HEM	2	0
15	O	304	MQ9	2	0
18	Z	202	CDL	36	0
17	L	603	HEA	3	0
13	I	302	HEC	12	0
18	T	201	CDL	36	0
18	L	604	CDL	24	0
17	R	602	HEA	1	0

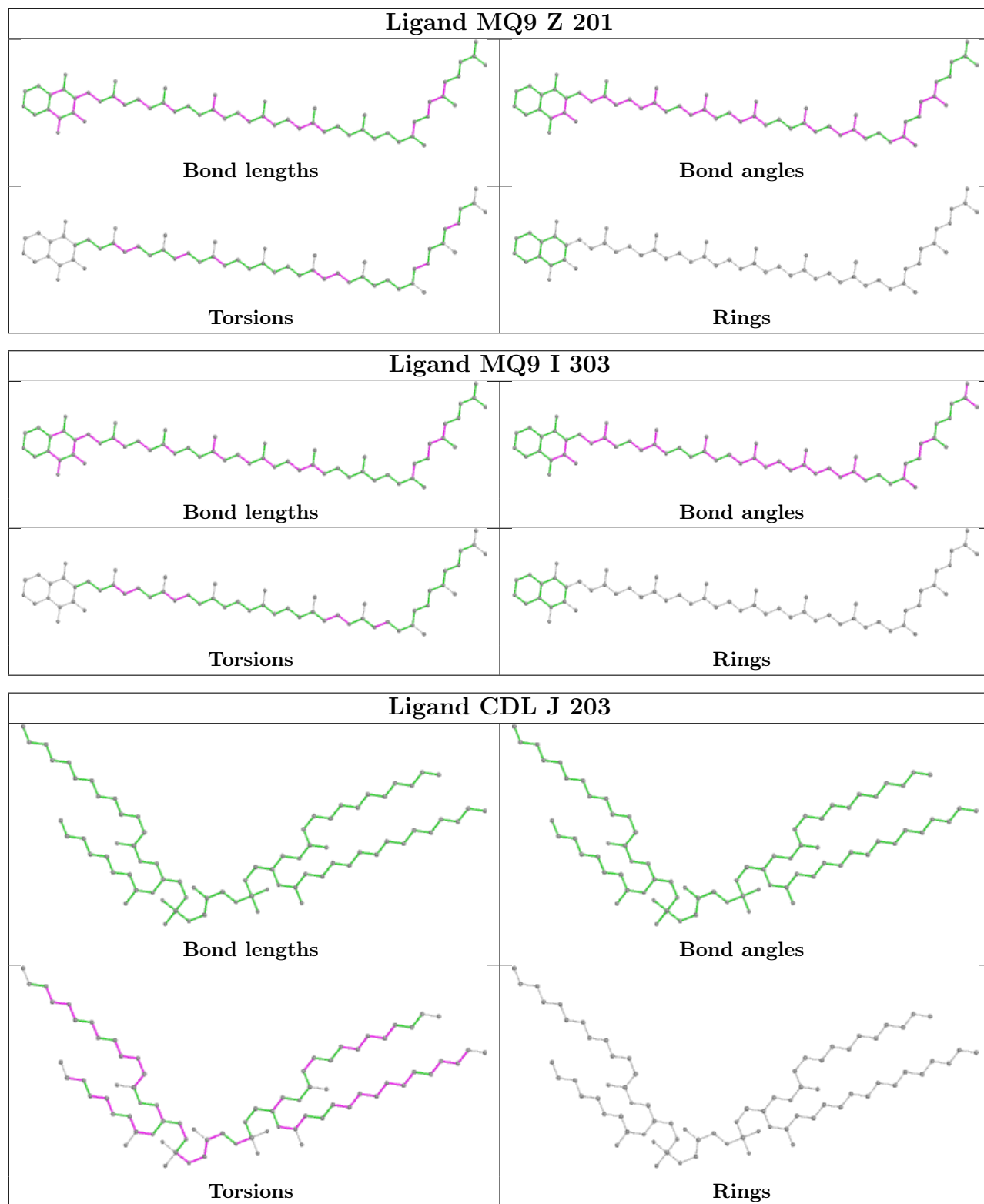
Continued on next page...

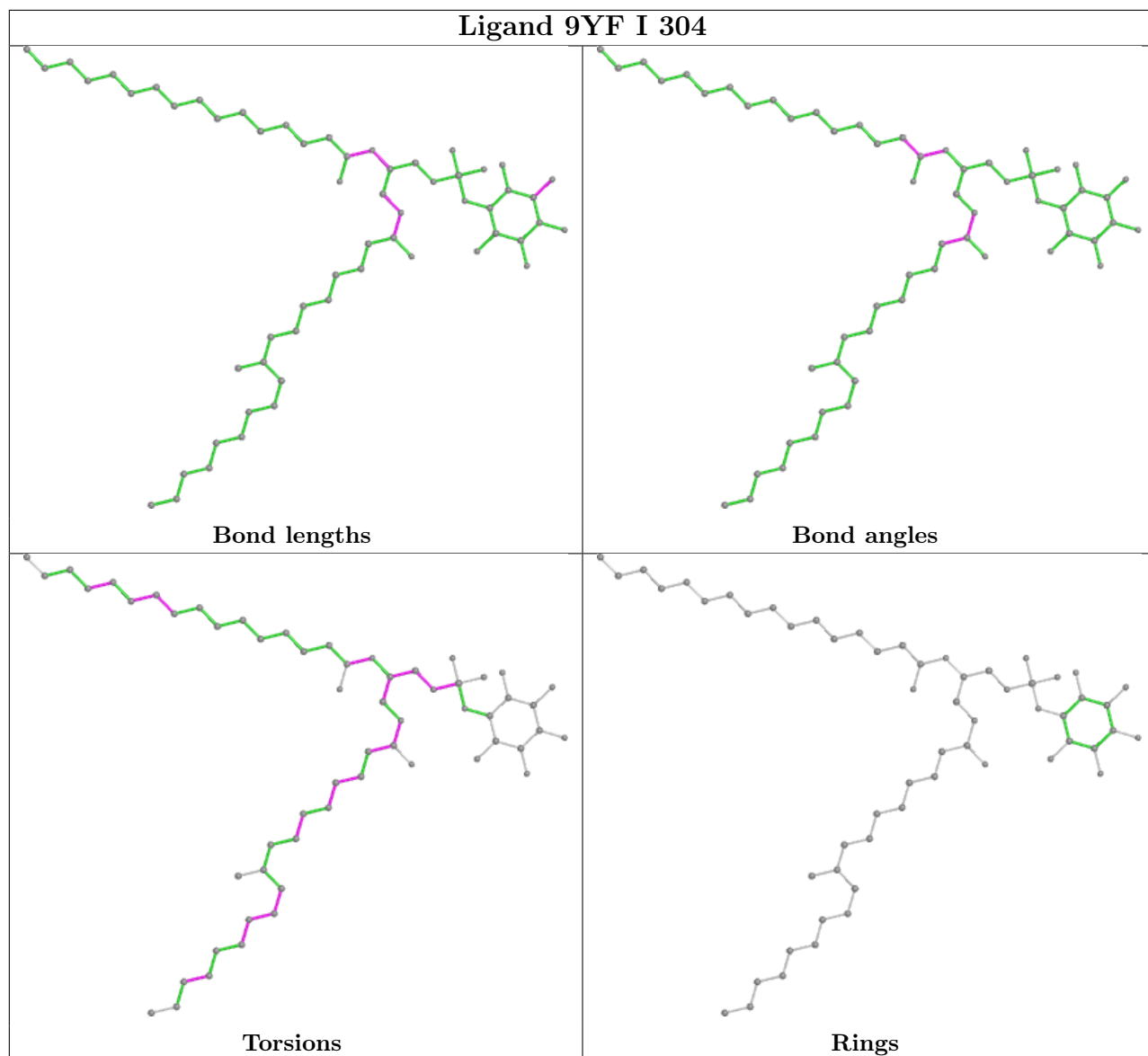
Continued from previous page...

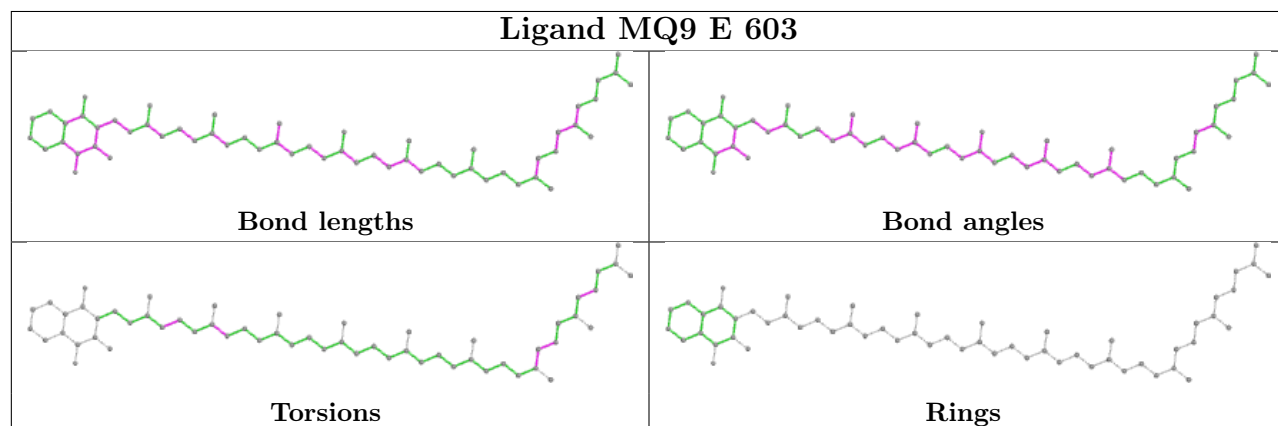
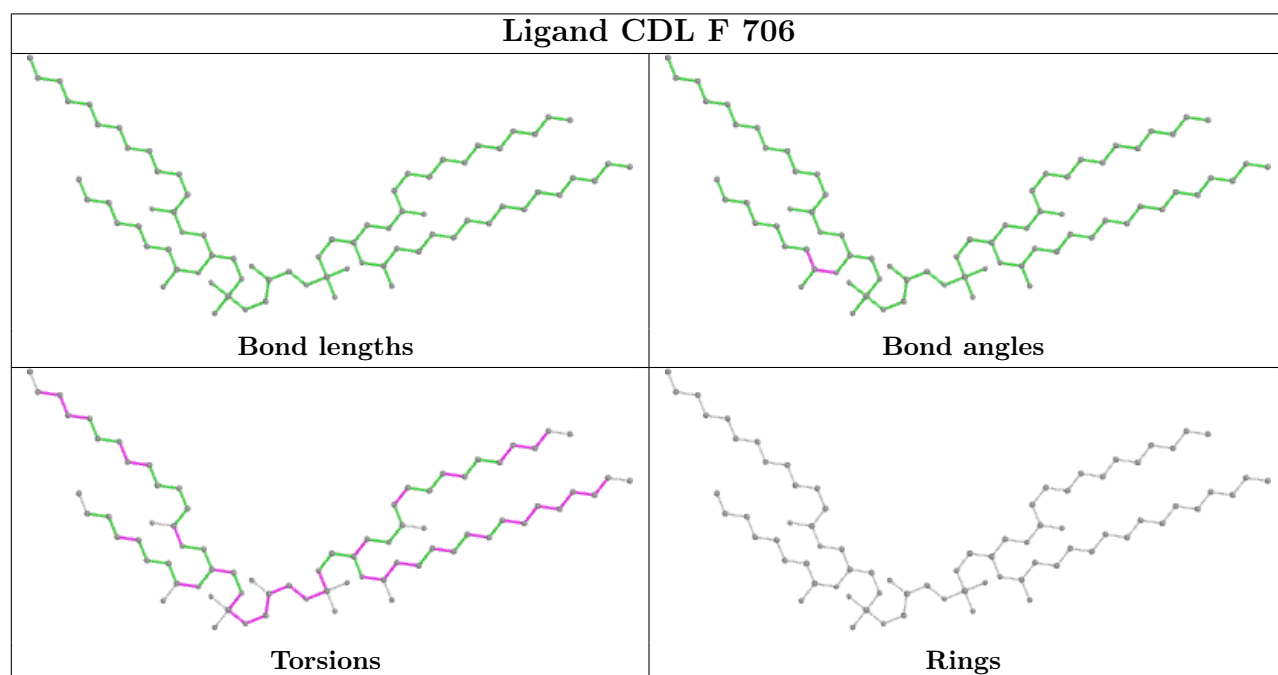
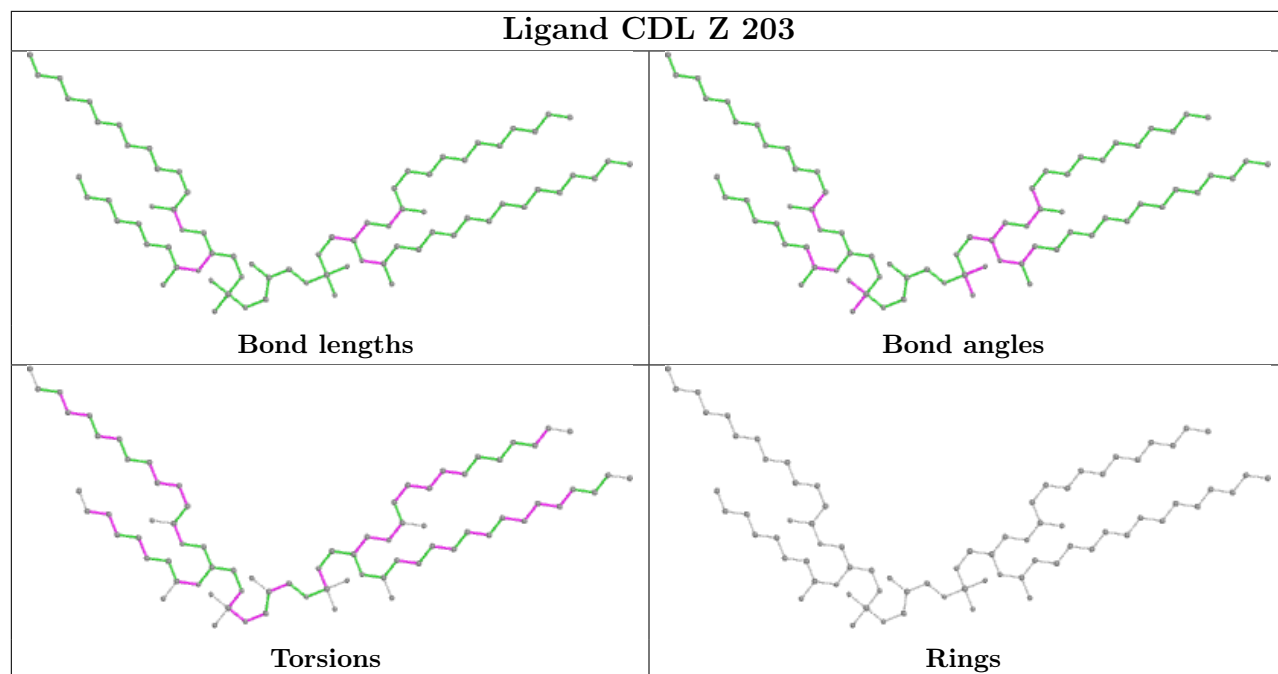
Mol	Chain	Res	Type	Clashes	Symm-Clashes
15	F	707	MQ9	4	0
21	F	702	HEM	1	0
18	X	303	CDL	54	0

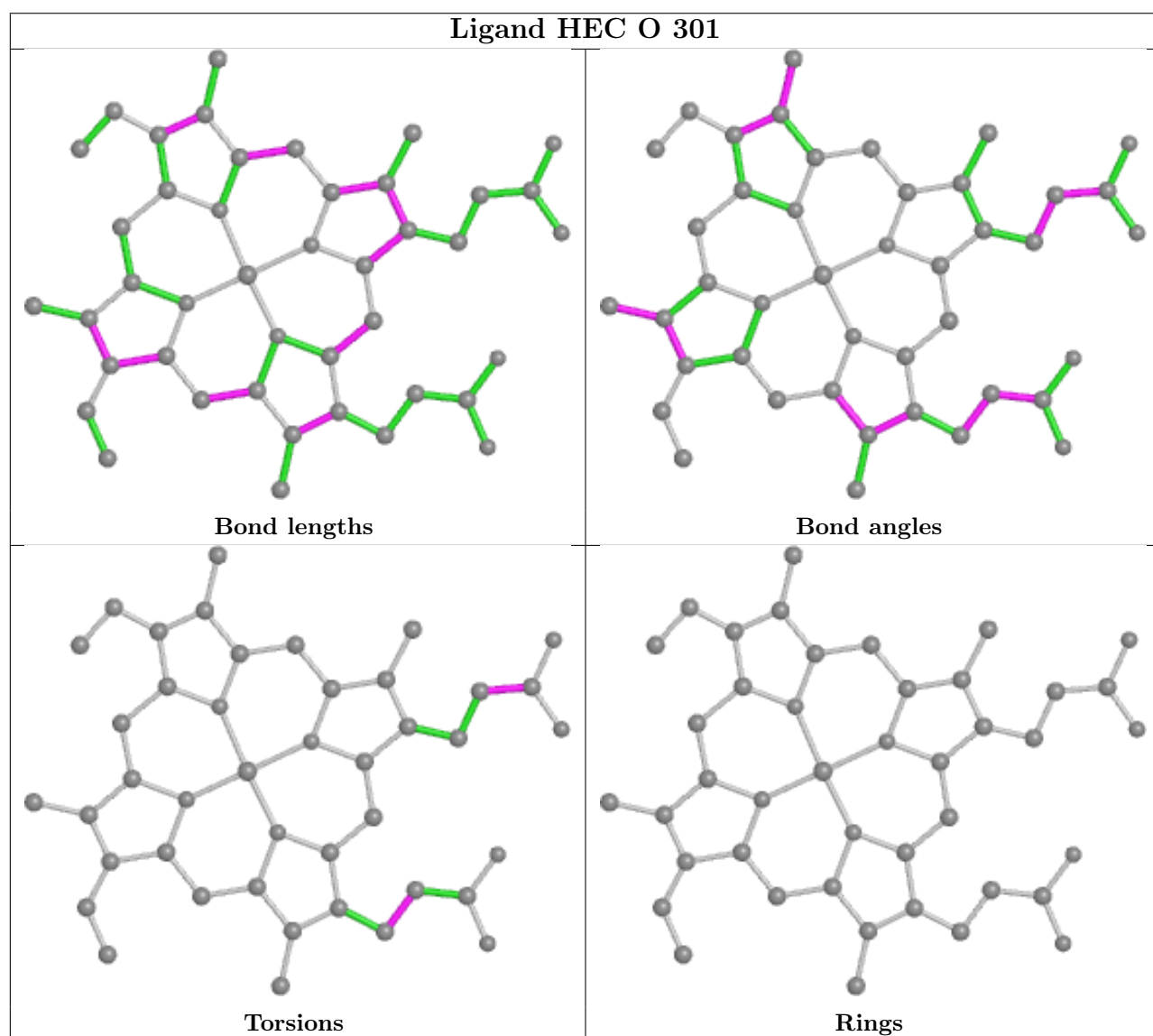
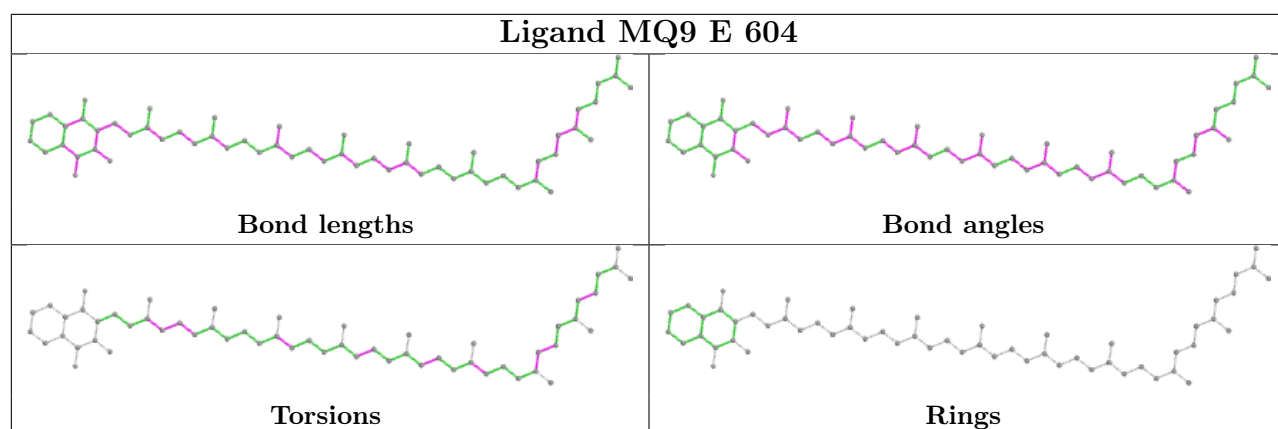
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

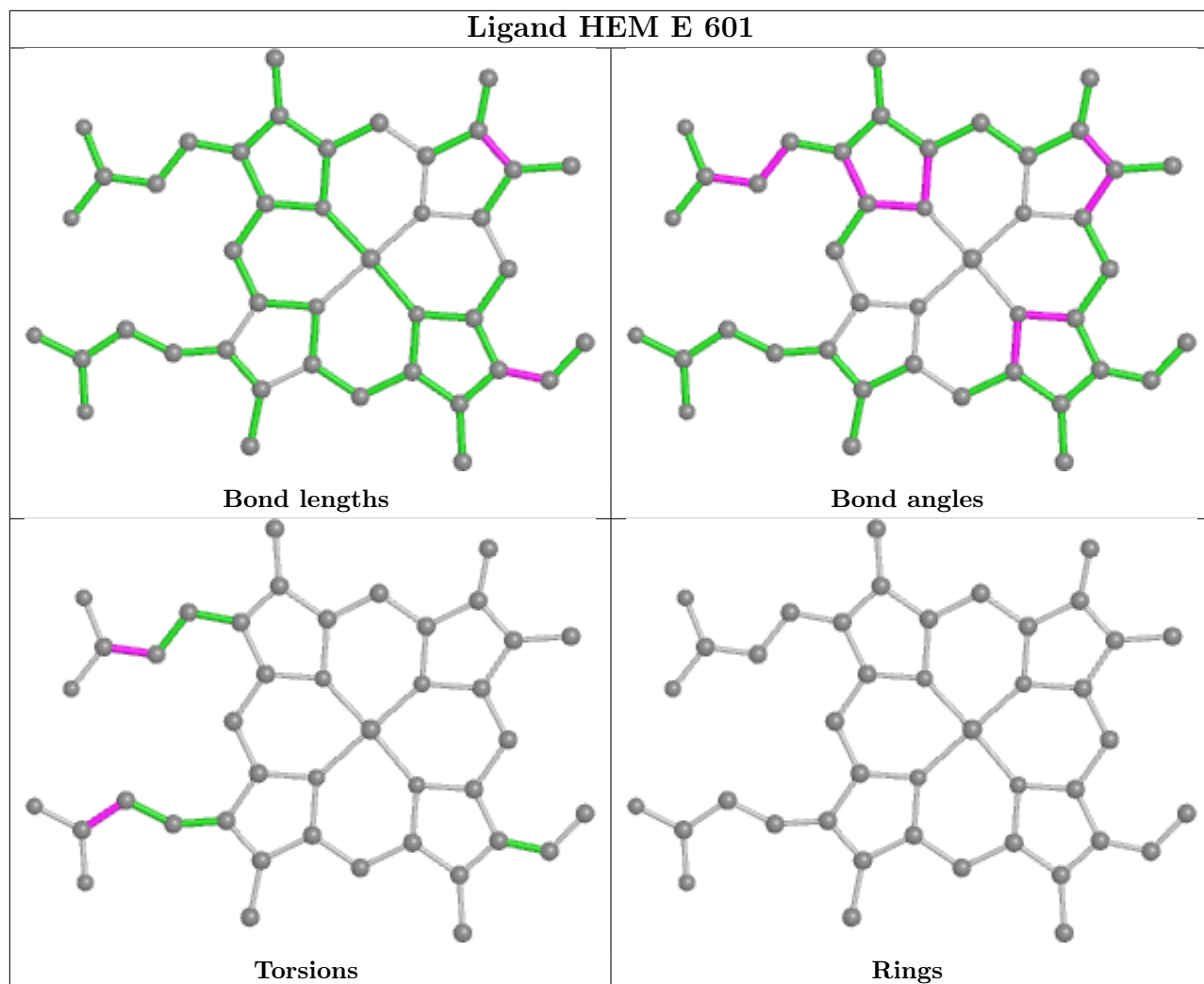


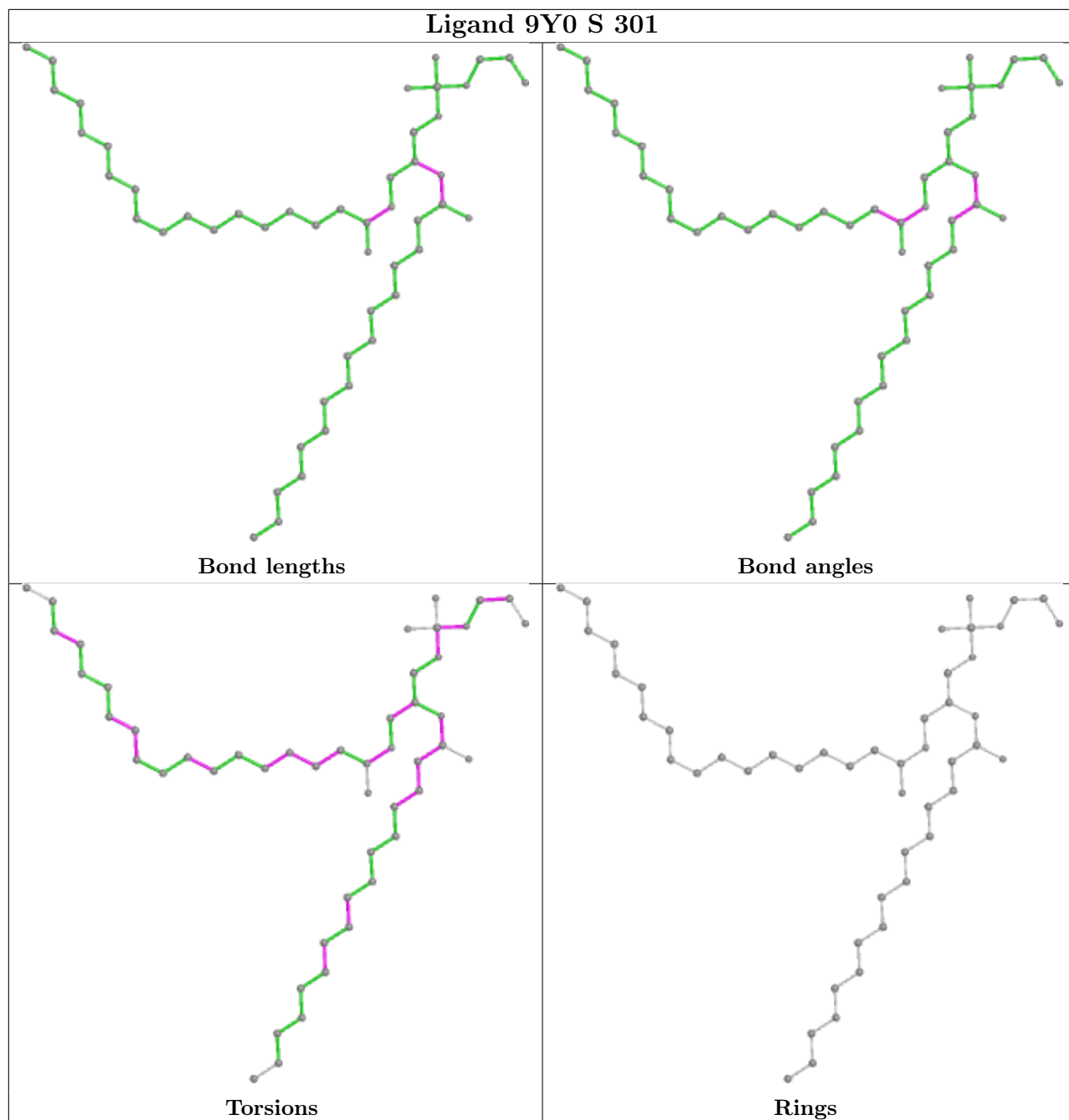


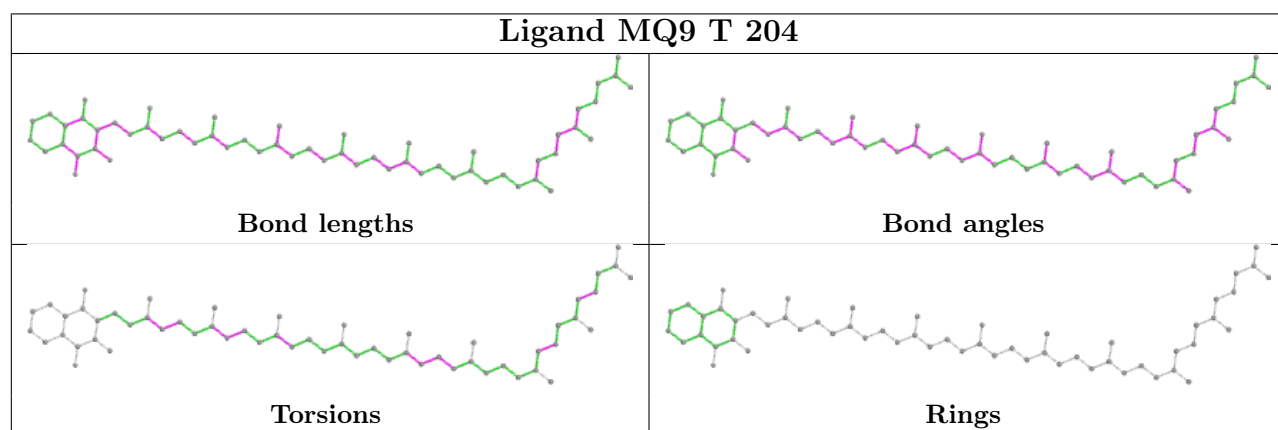
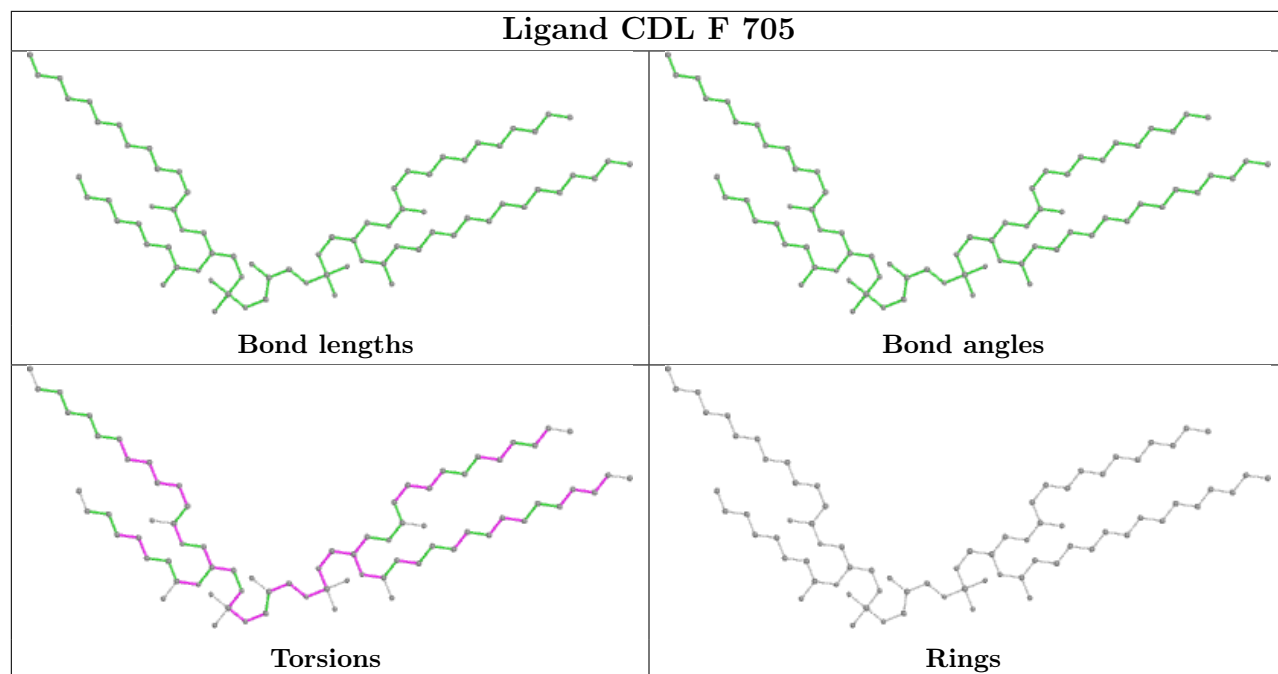


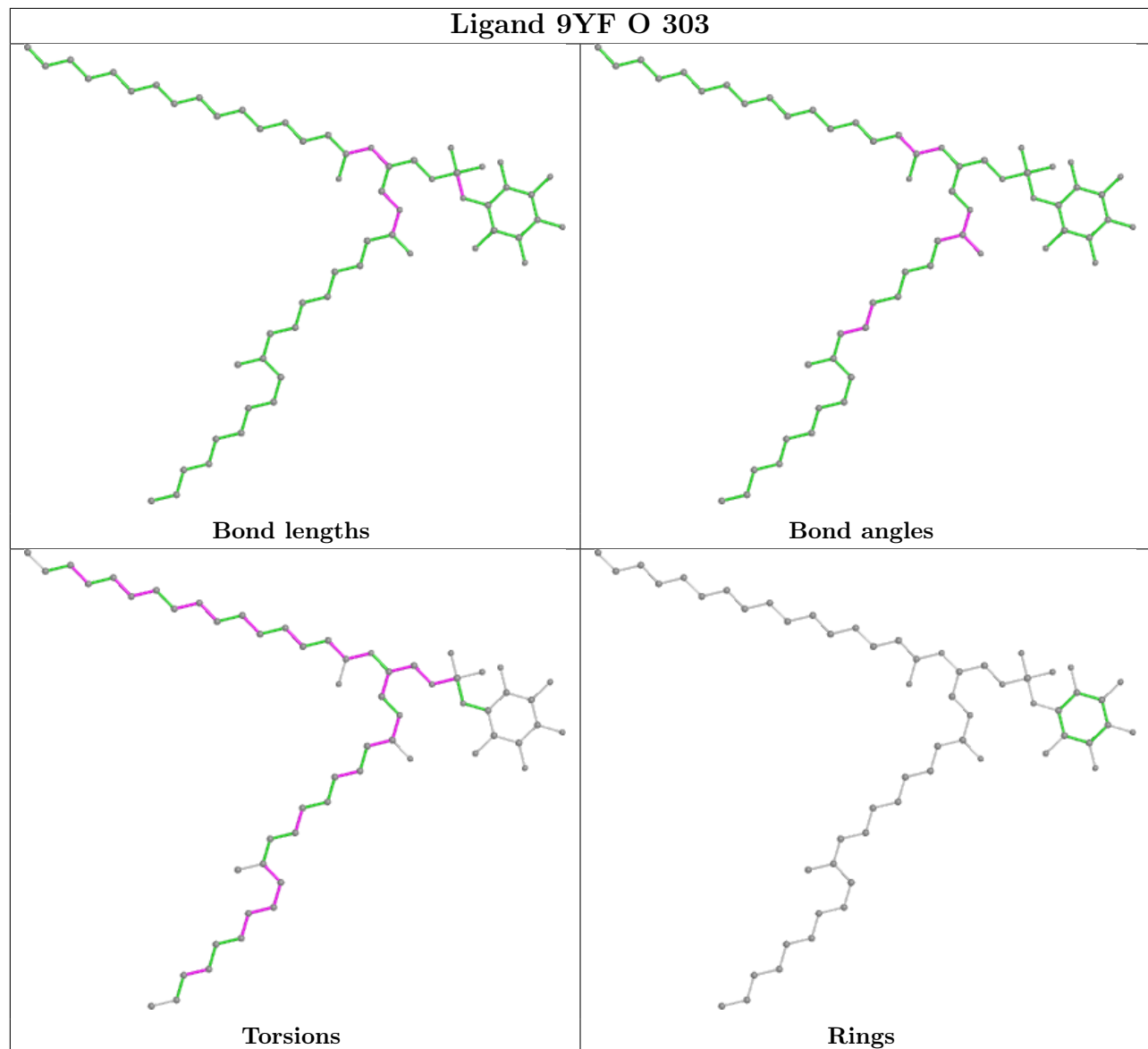


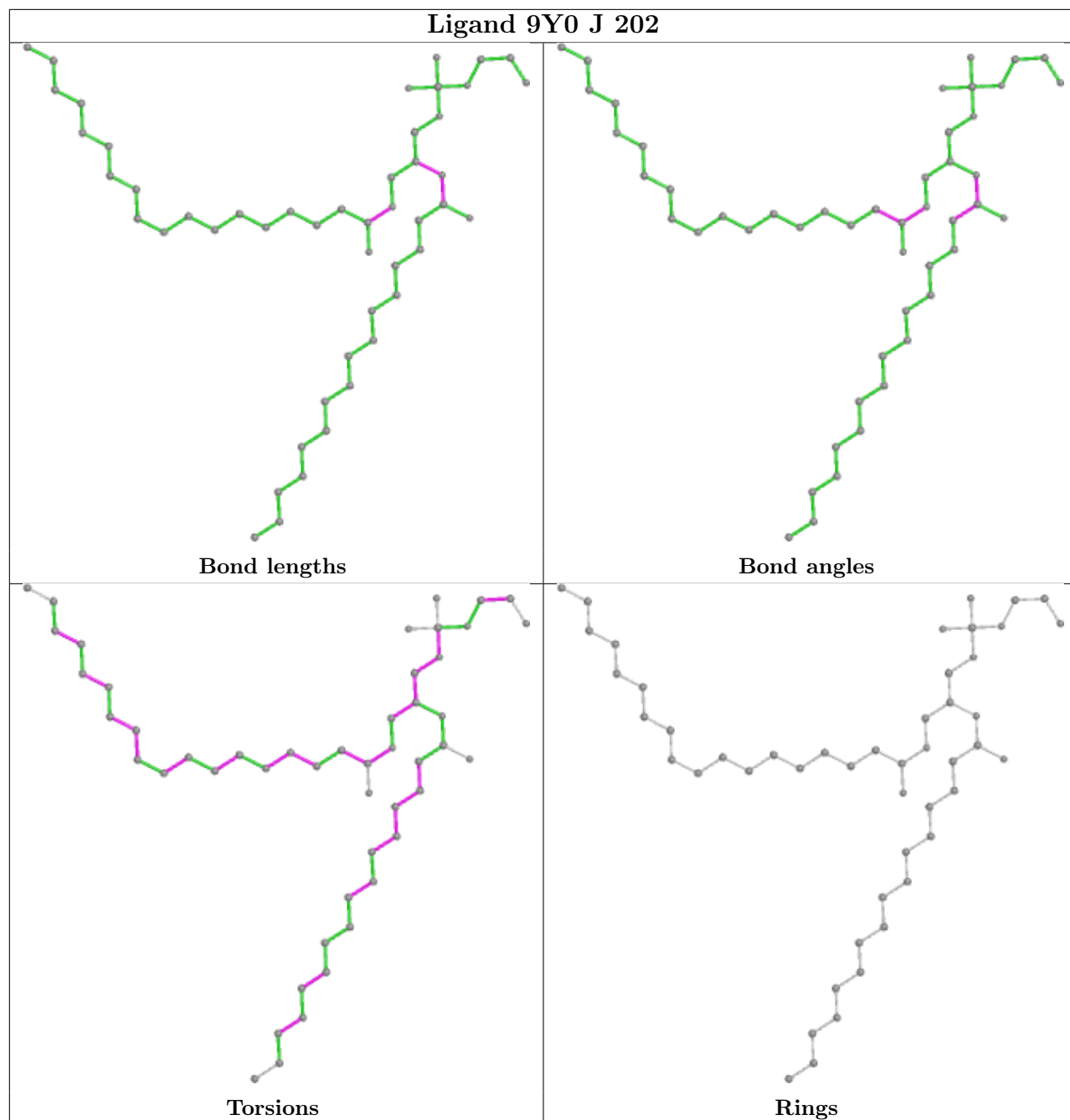


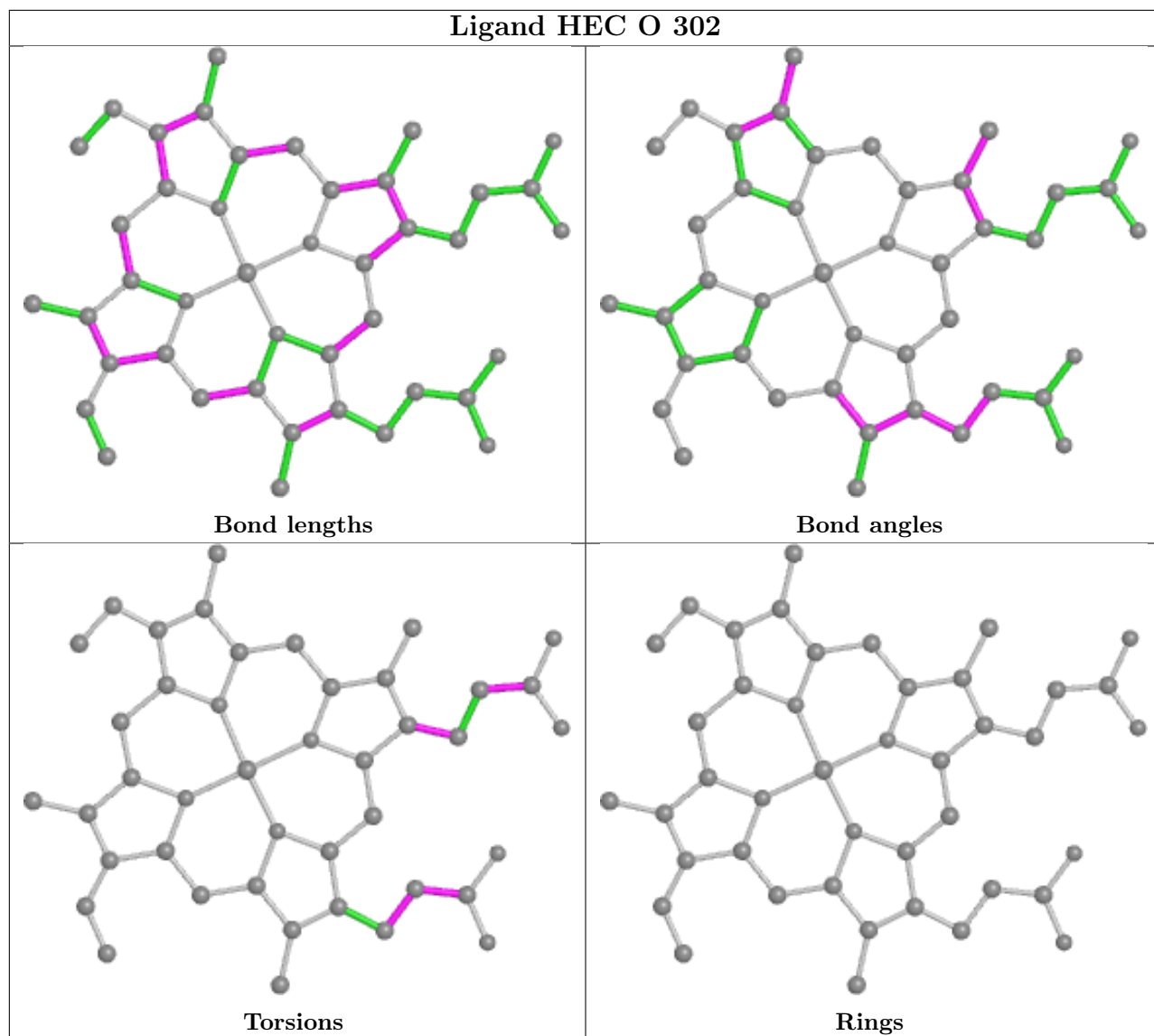


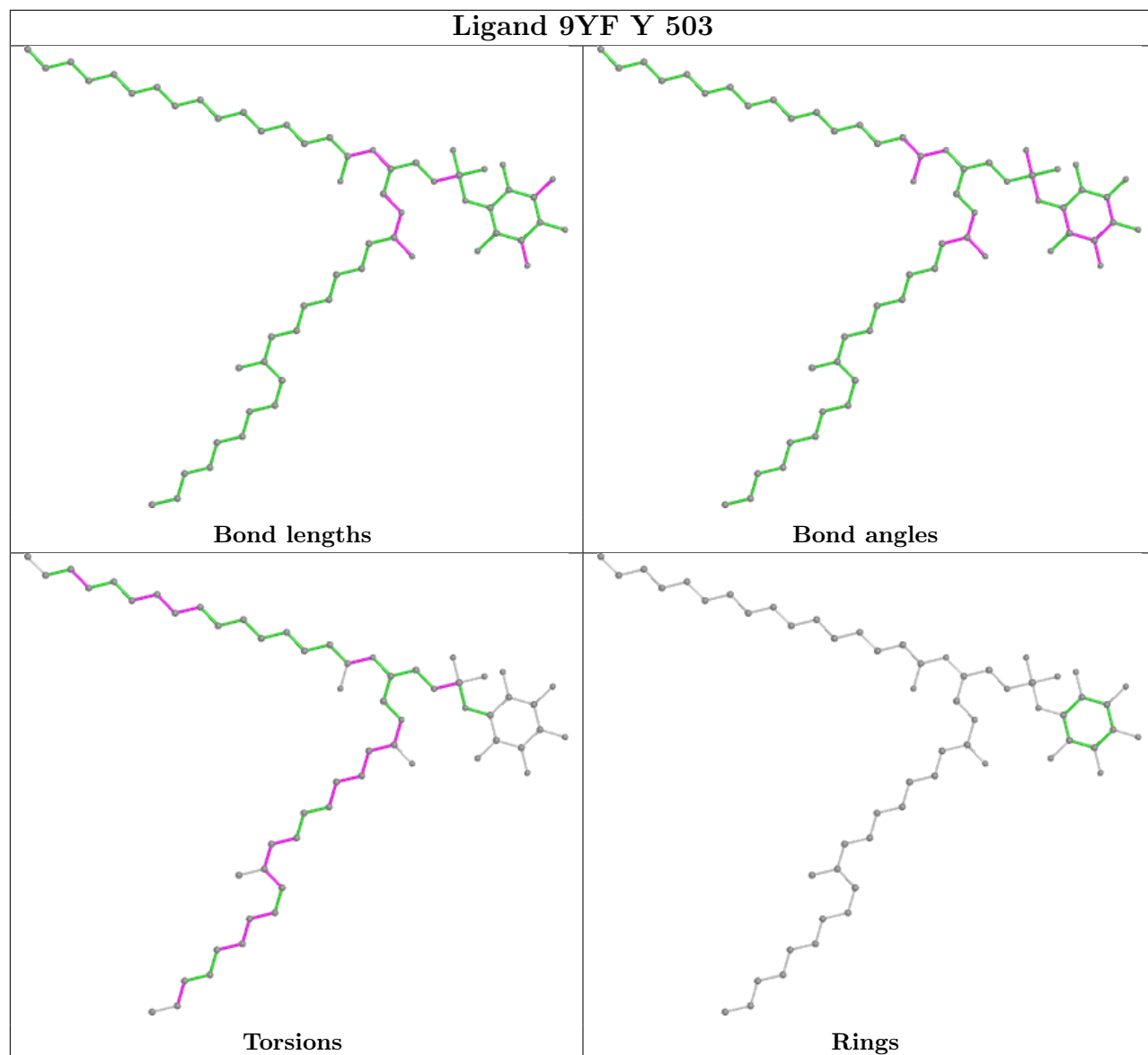


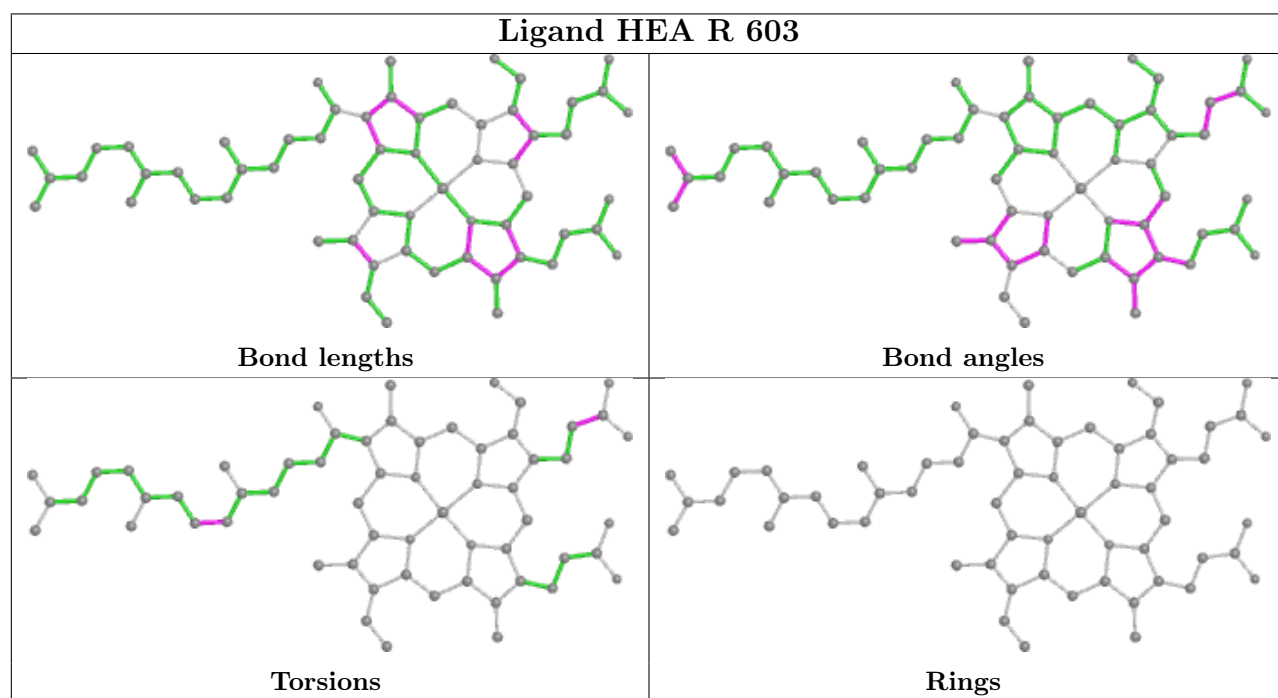
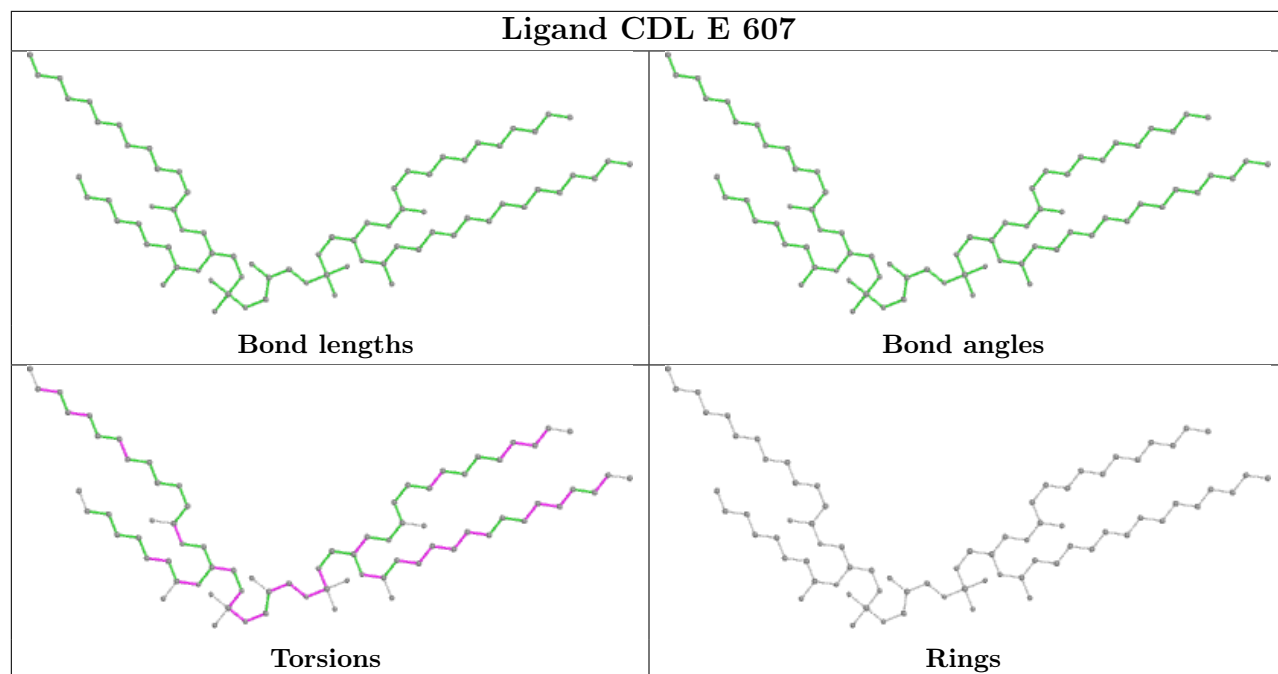


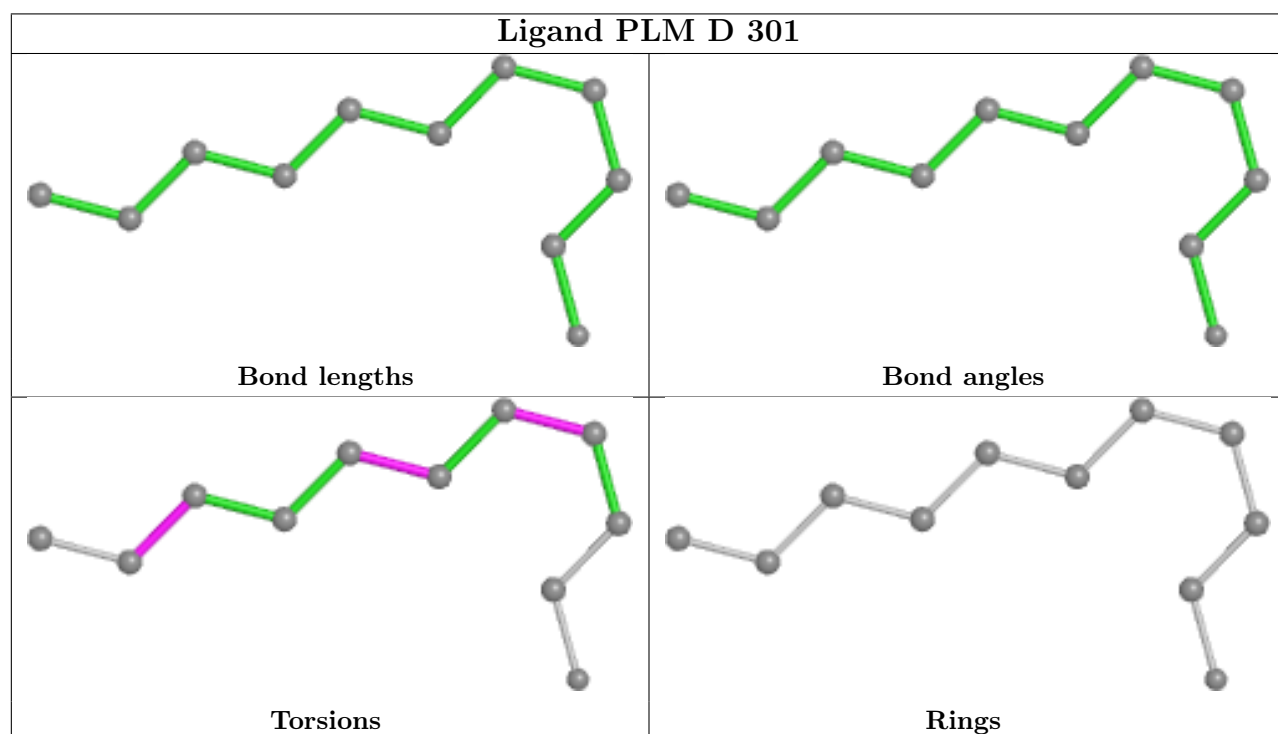
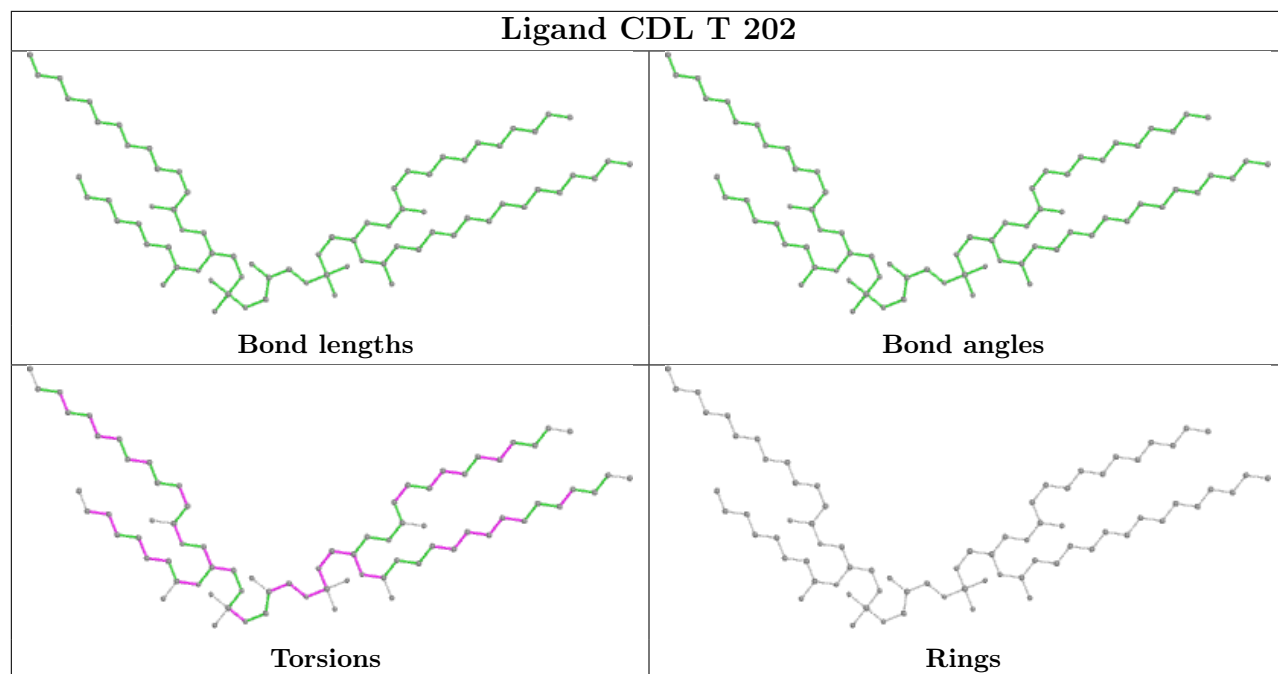


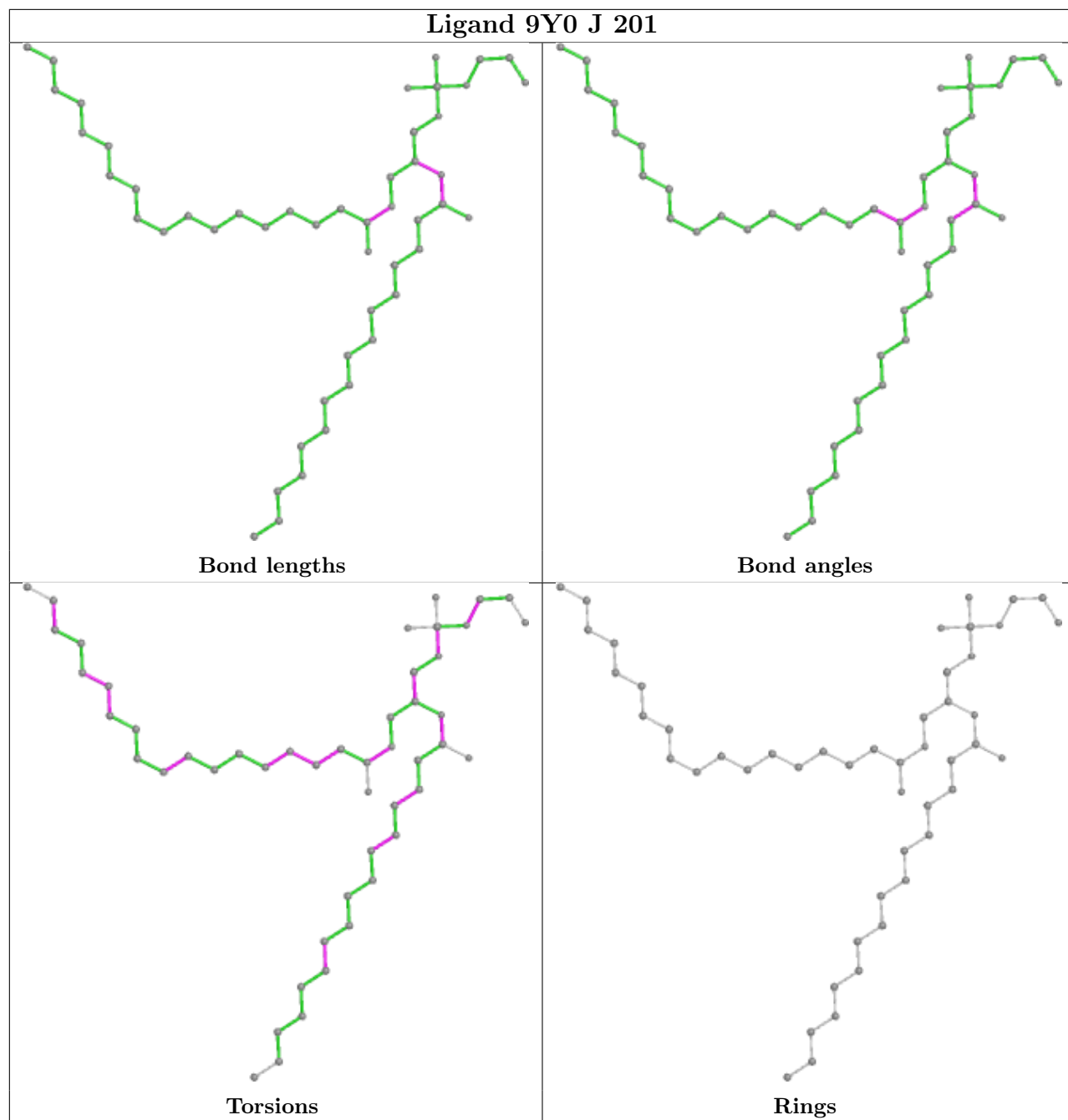


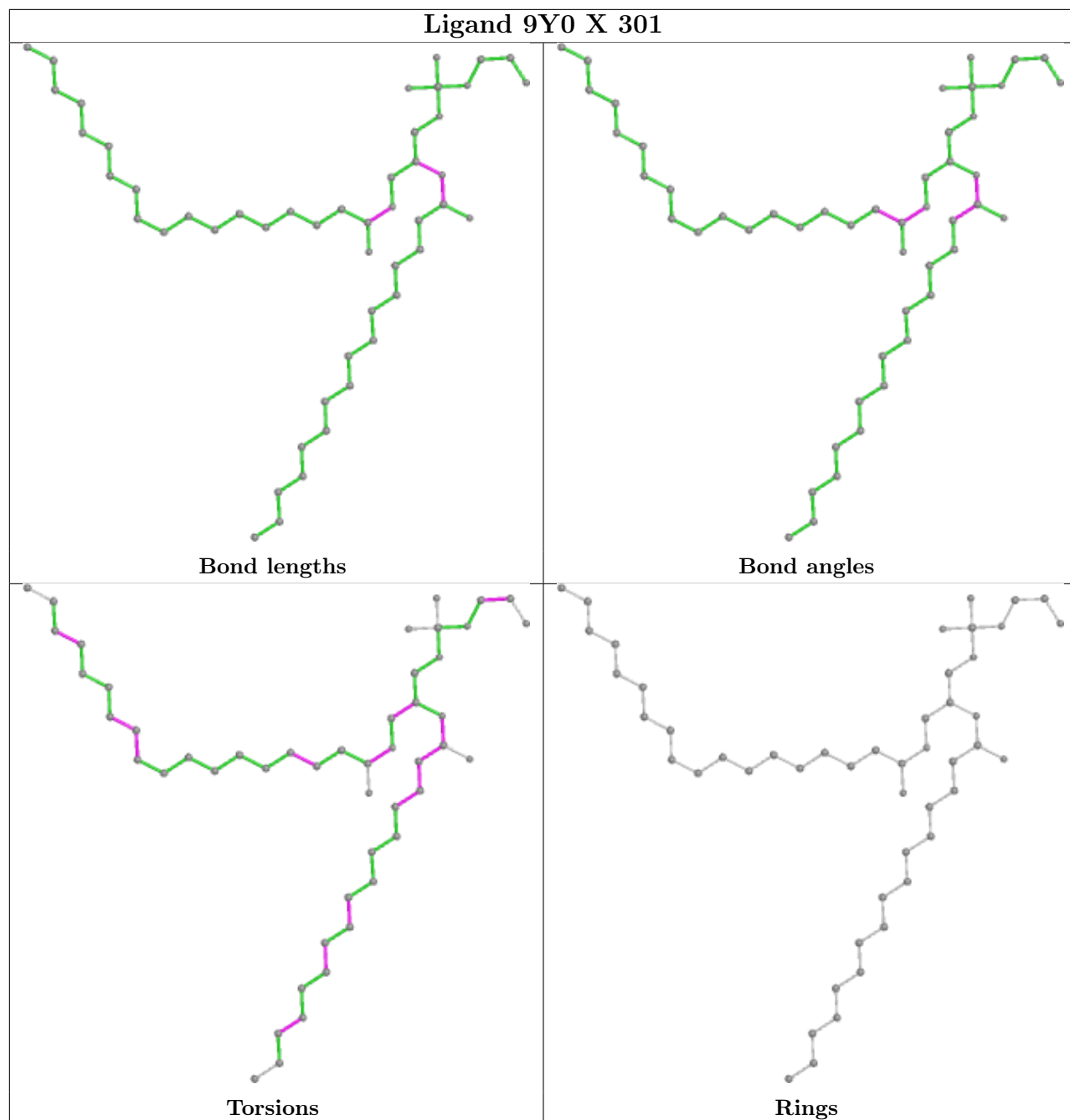


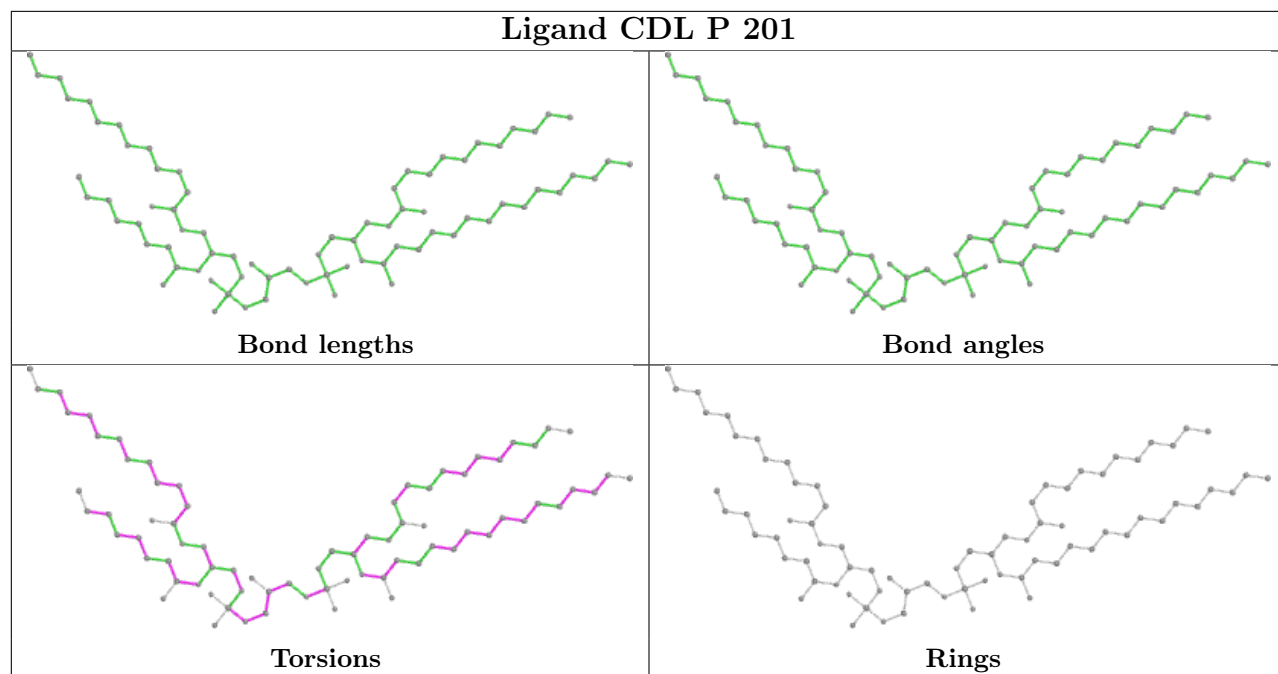


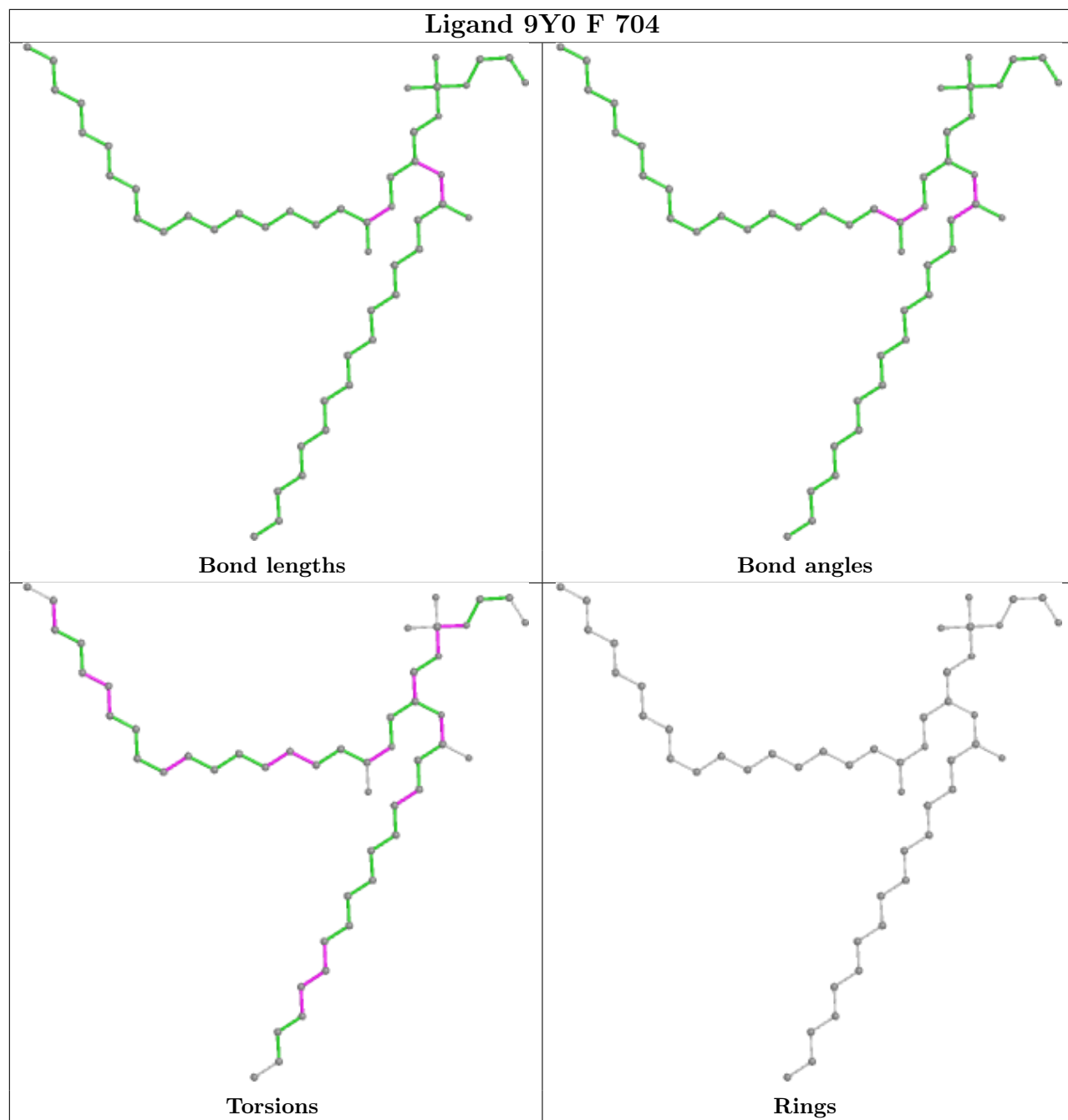


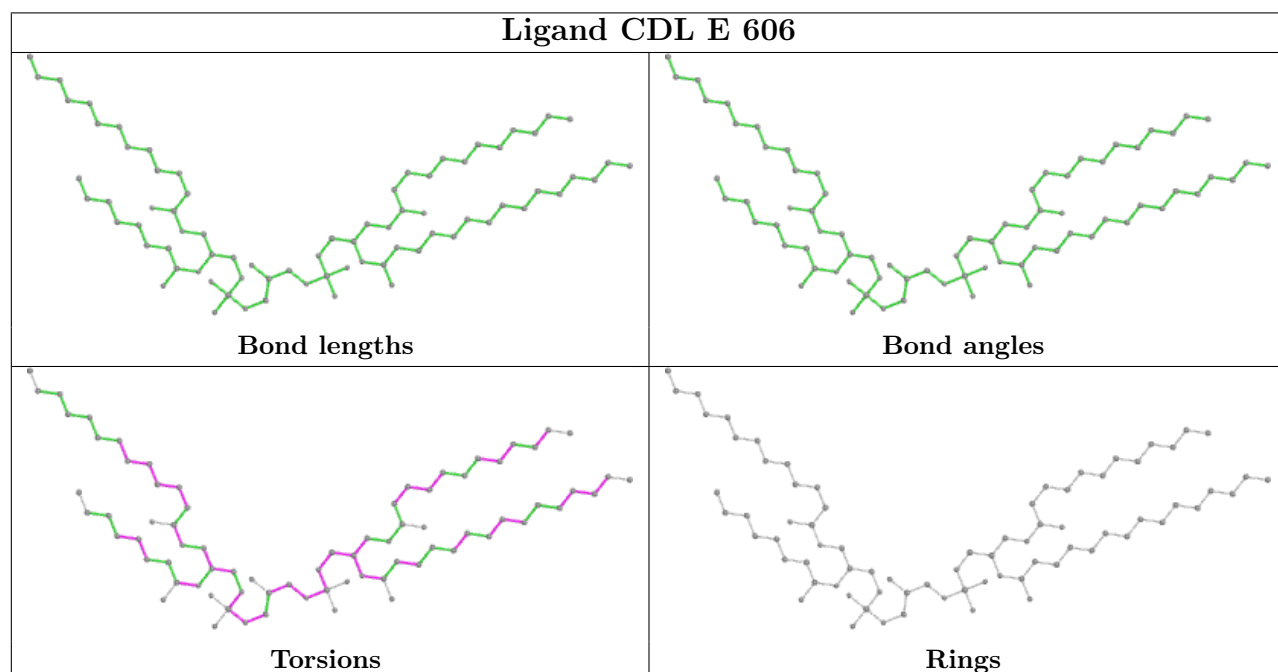
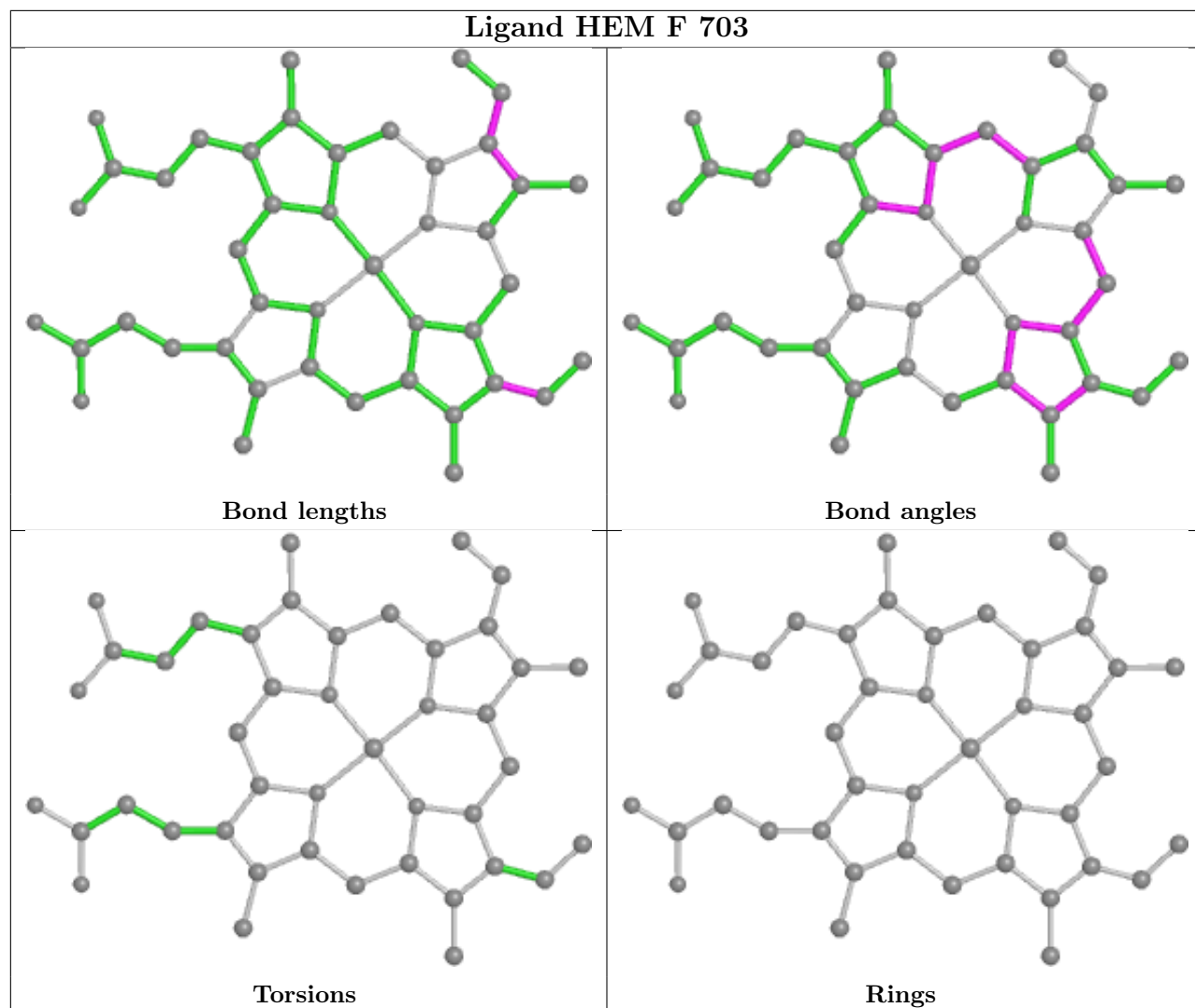


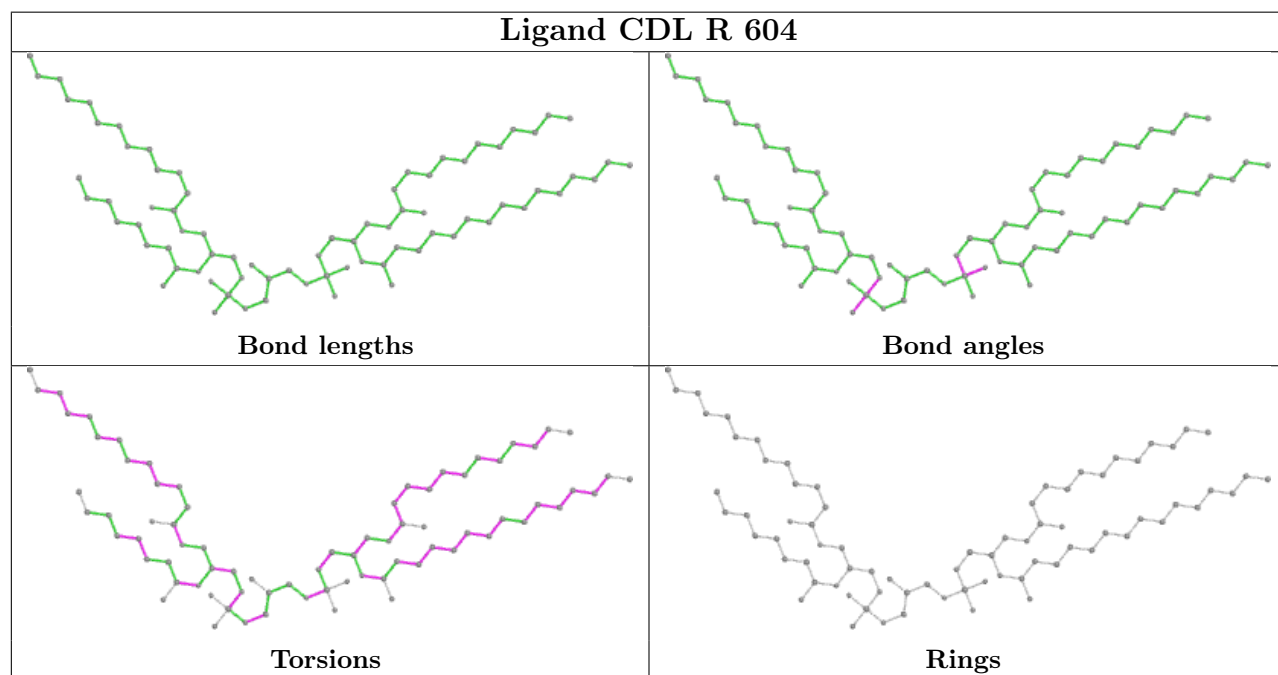
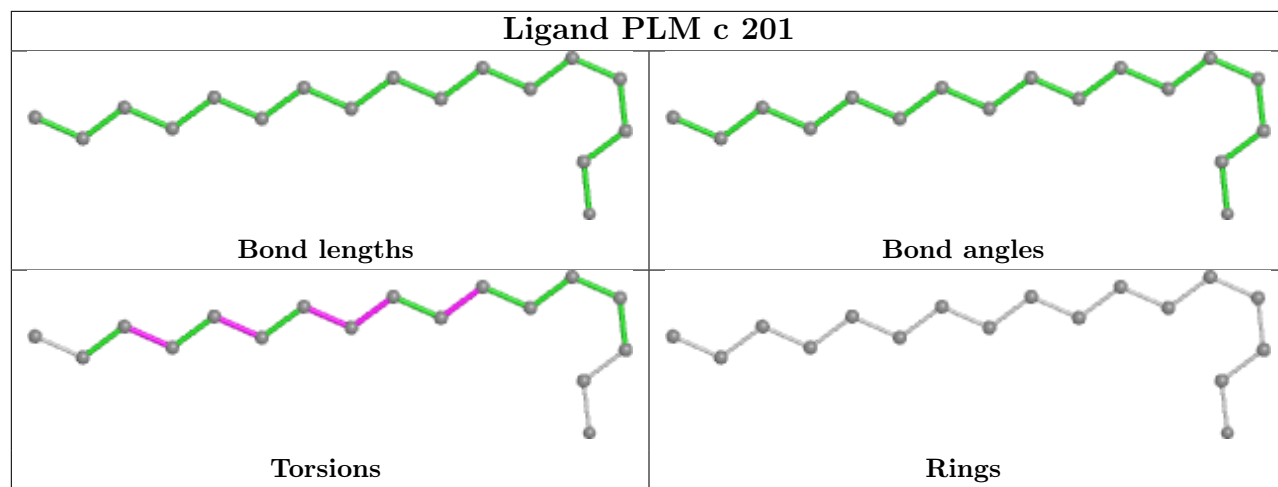


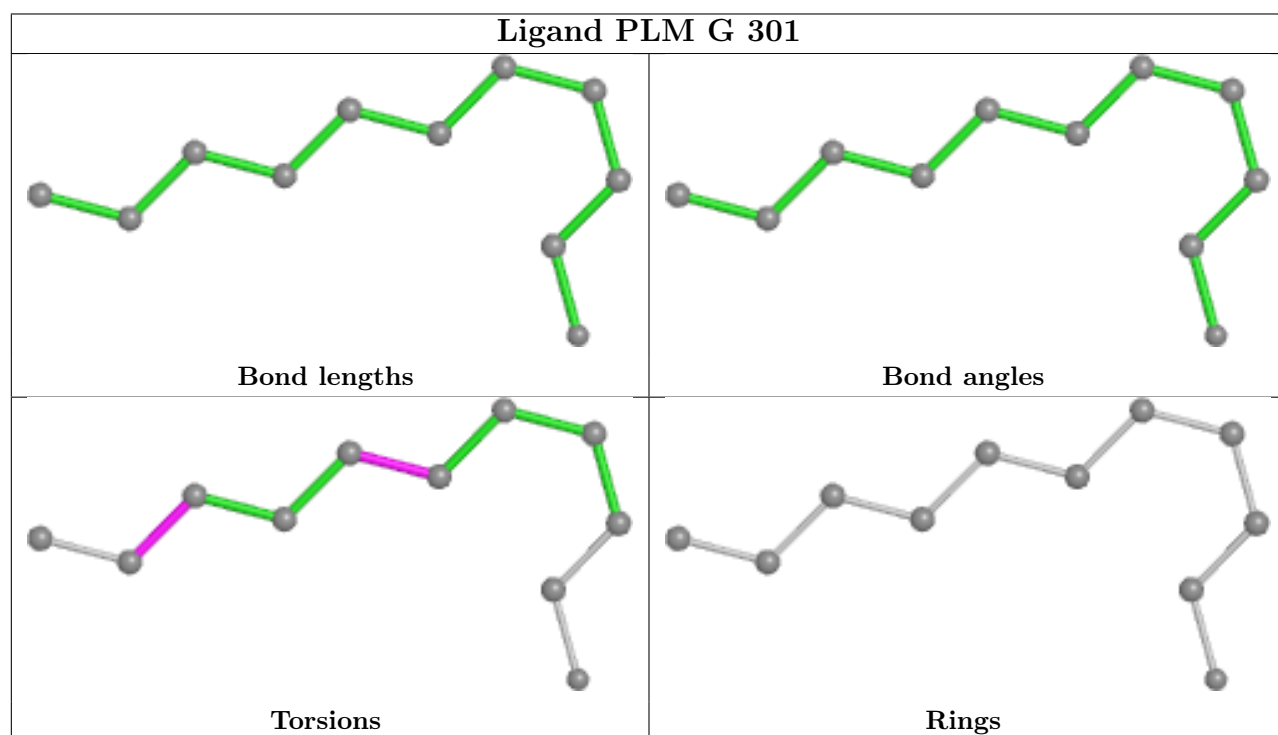
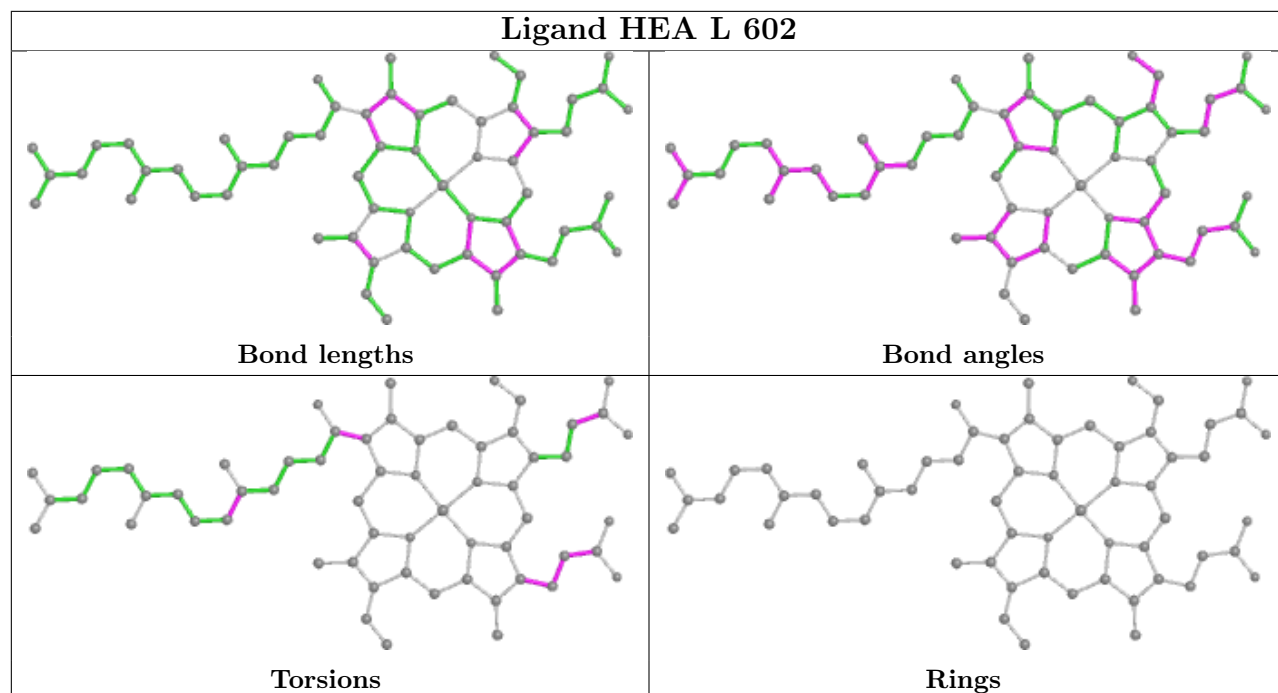


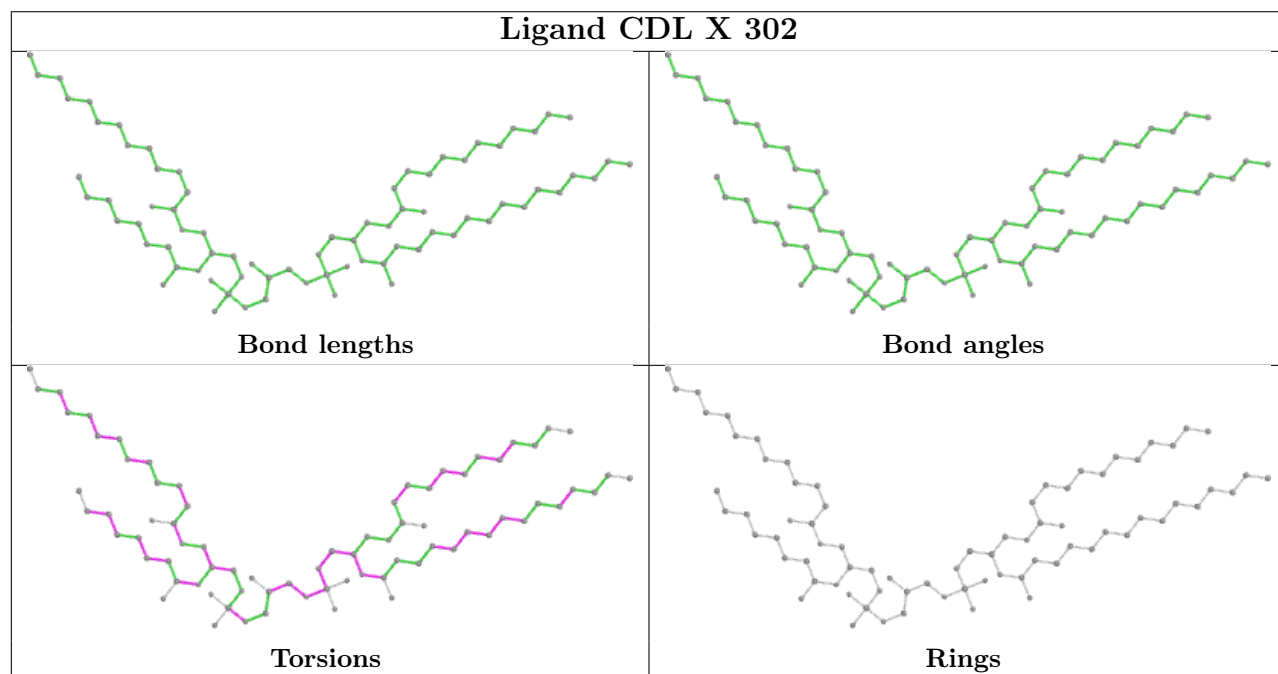
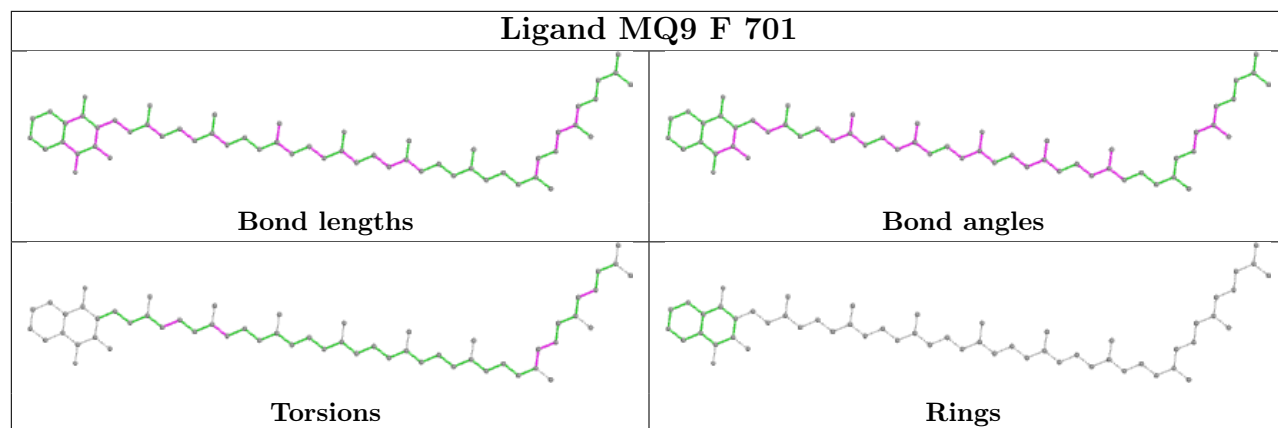


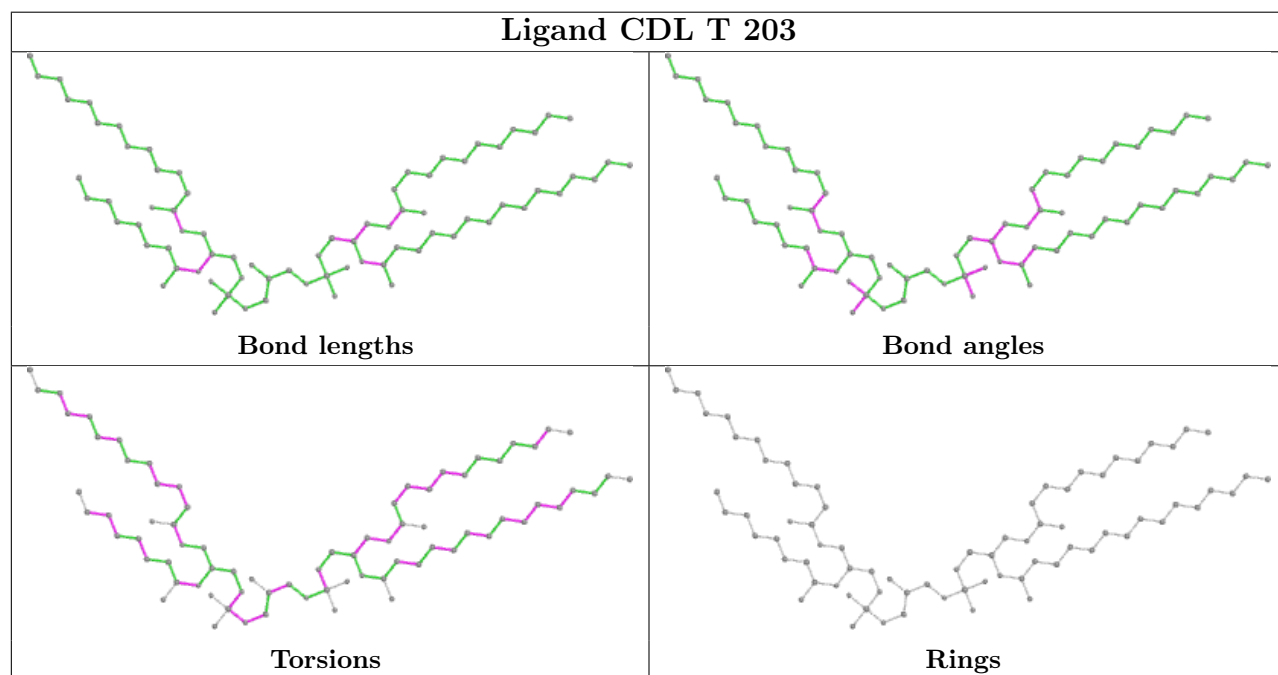
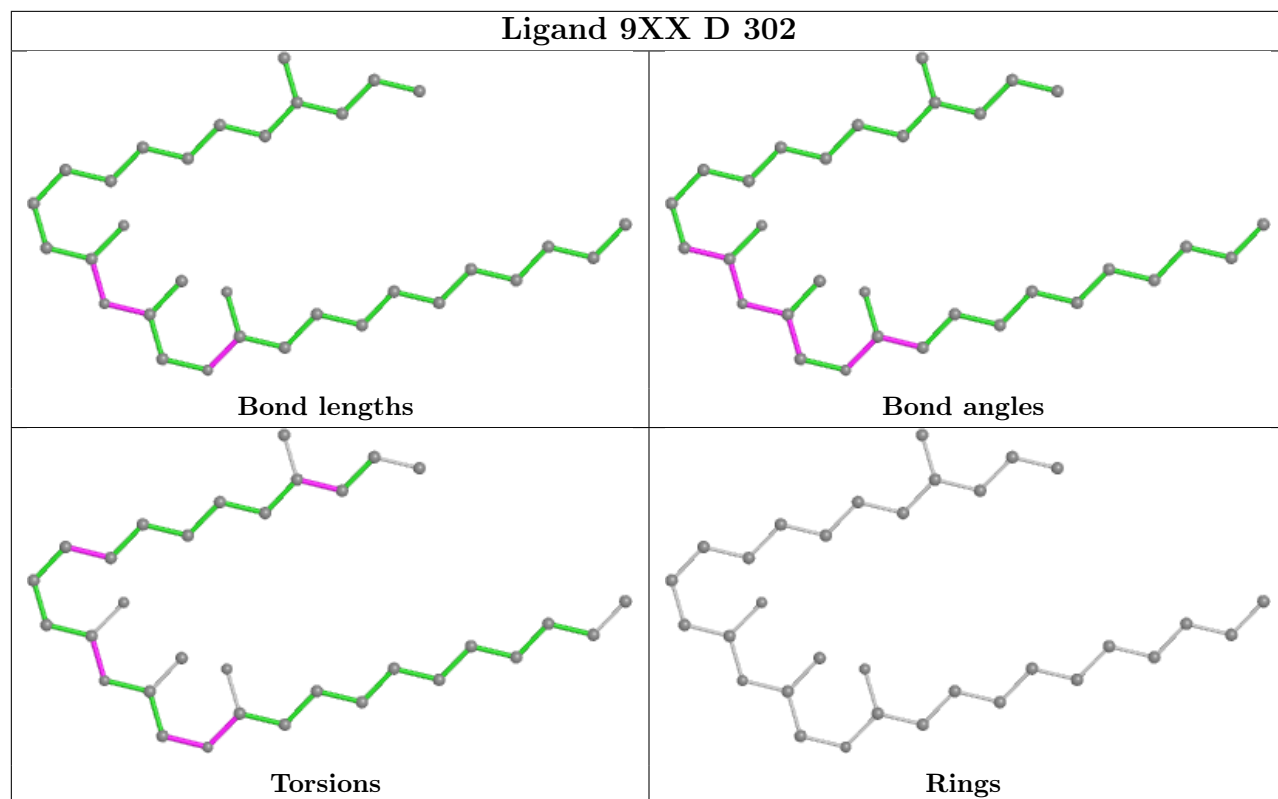


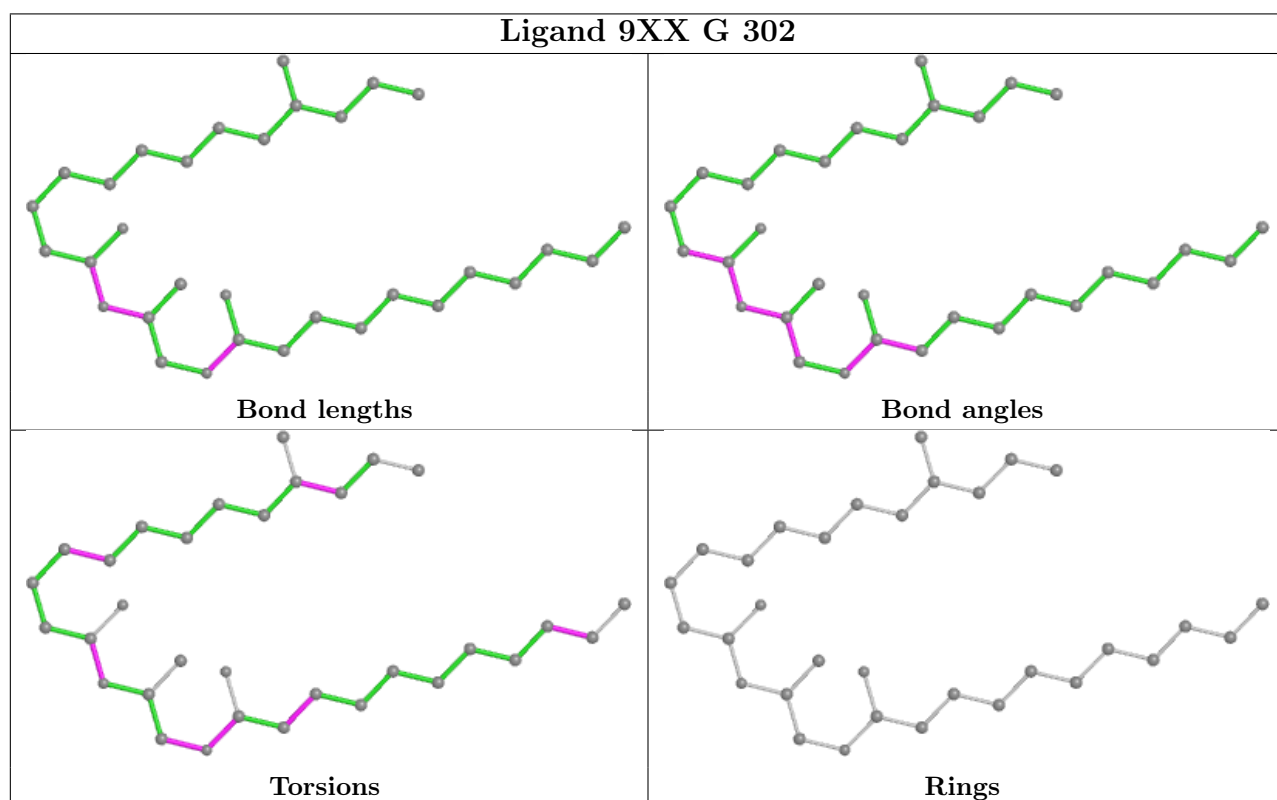
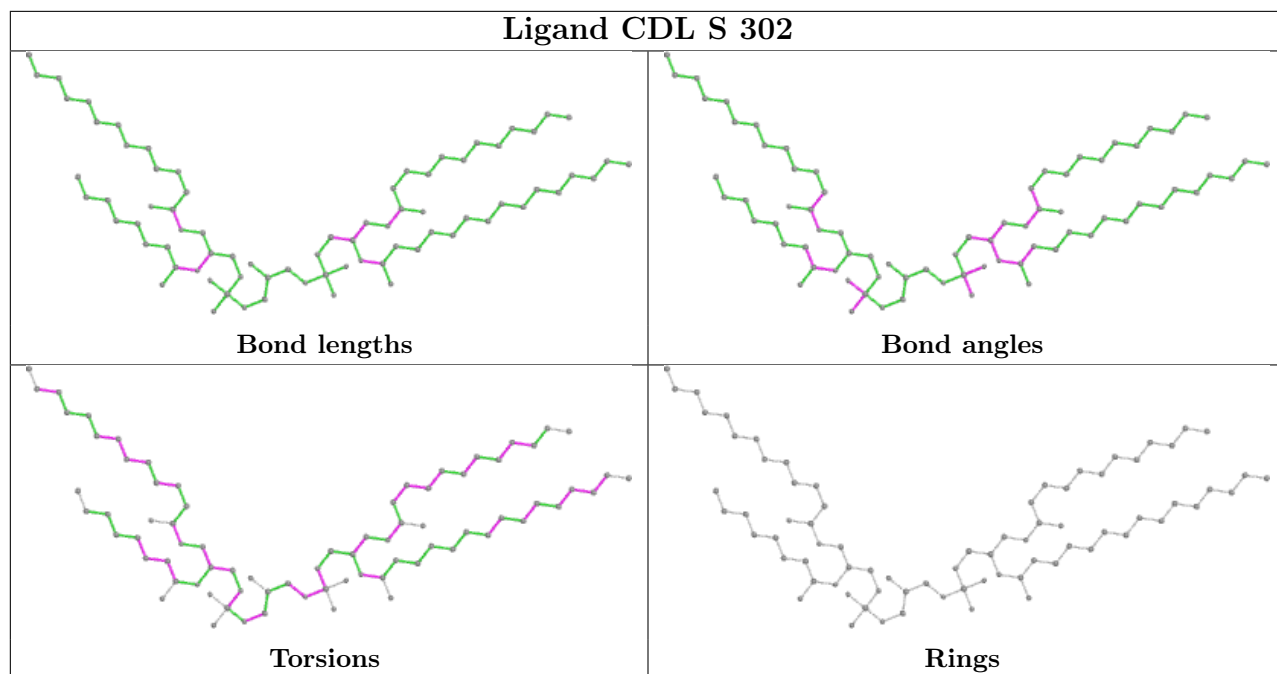


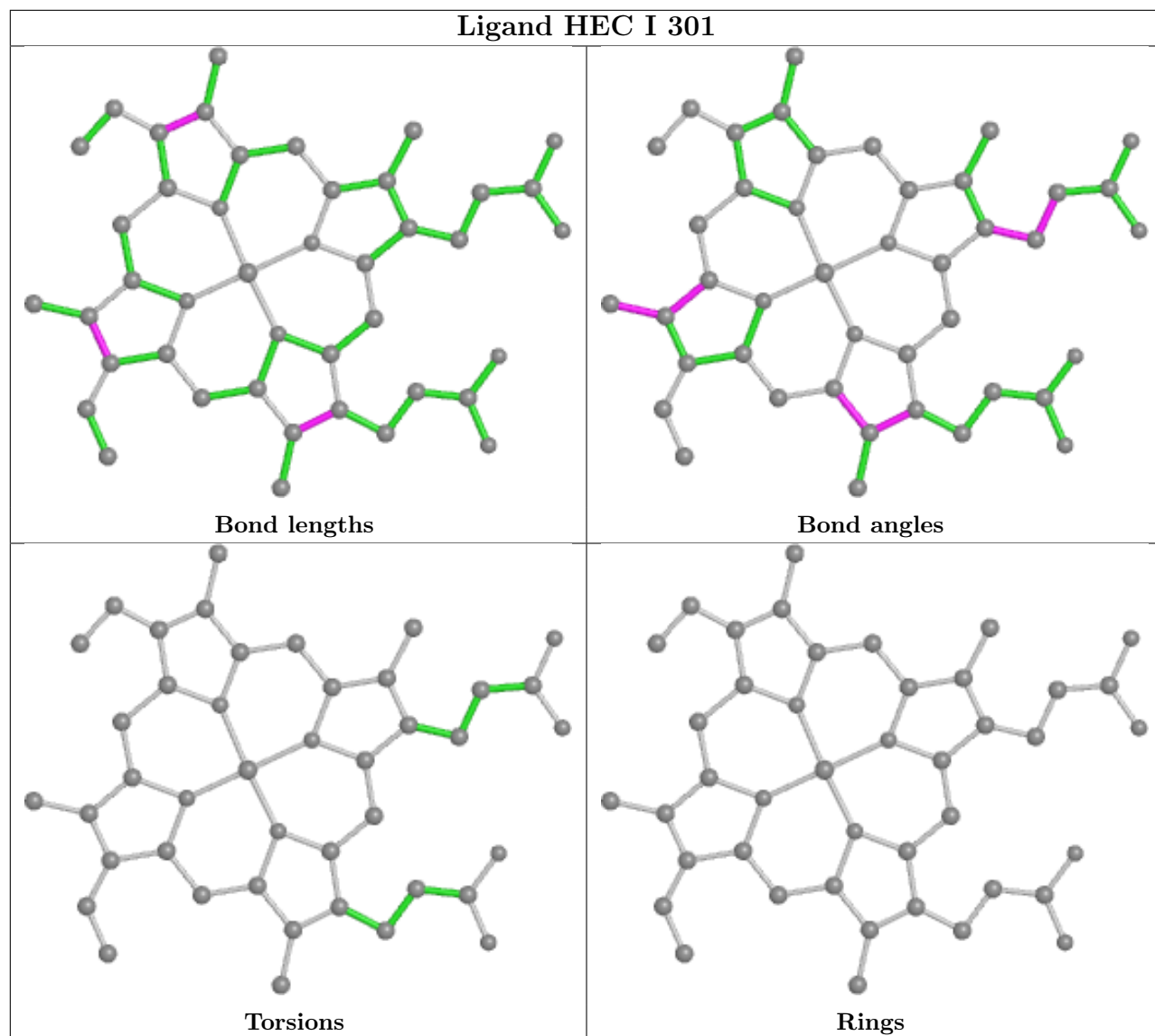


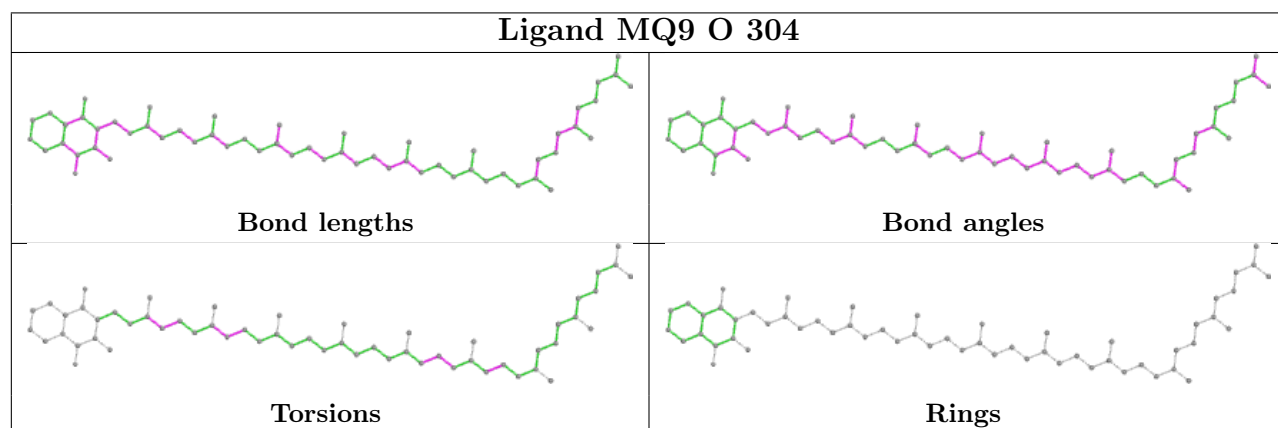
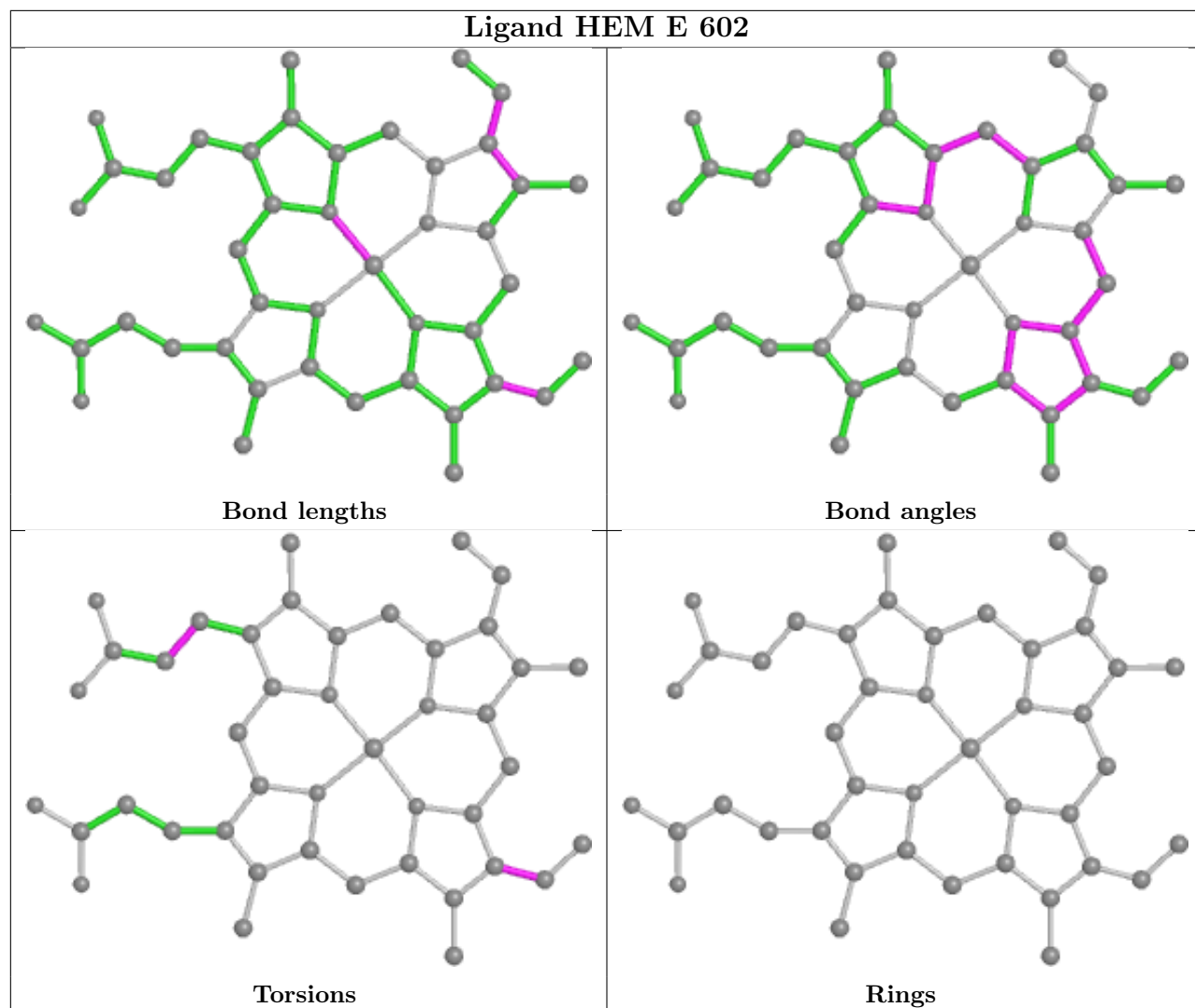


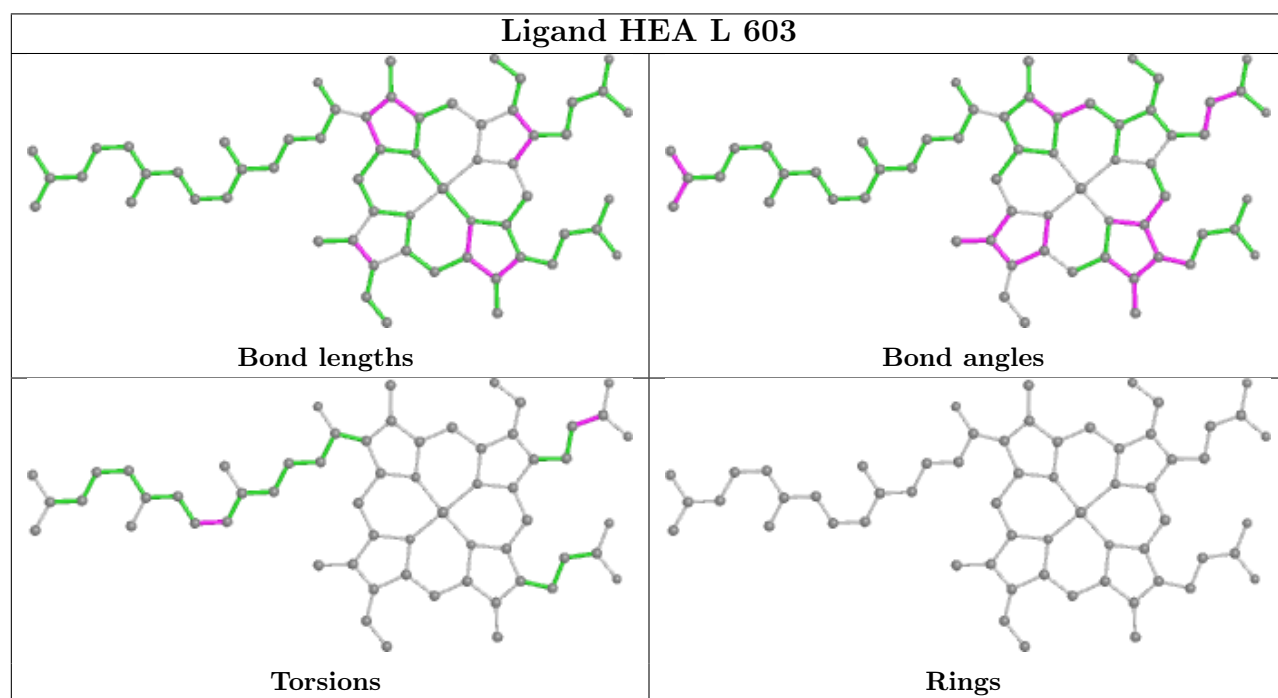
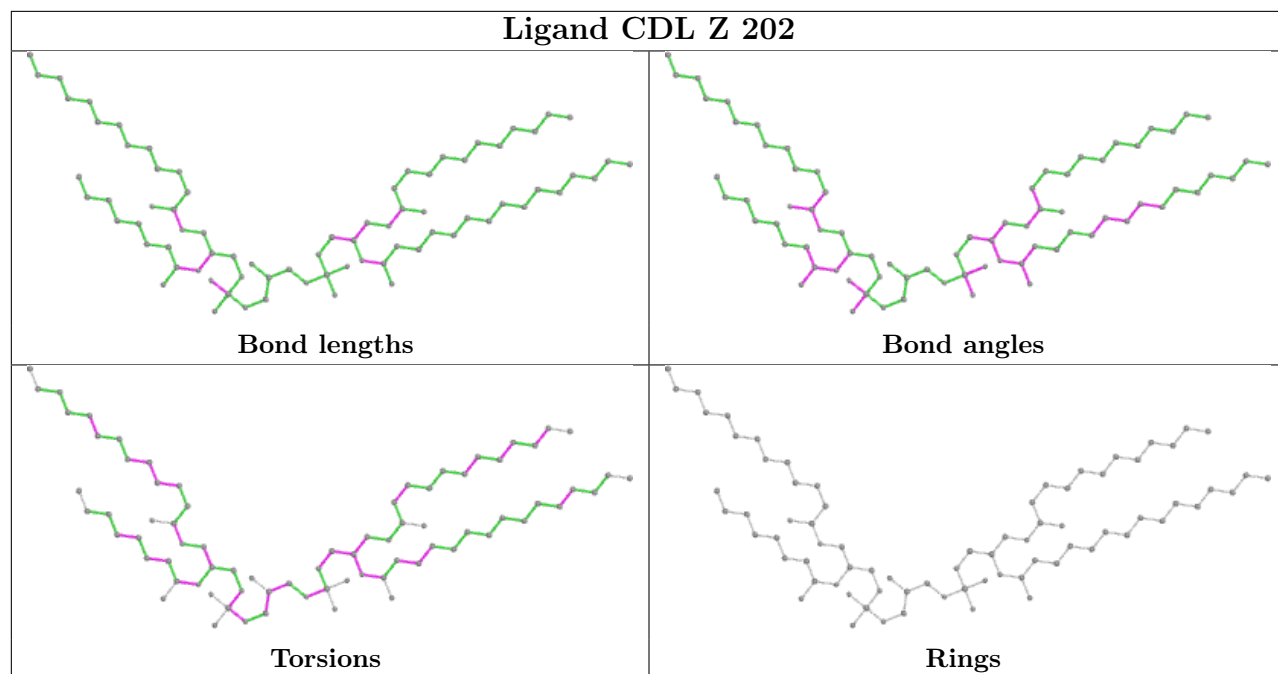


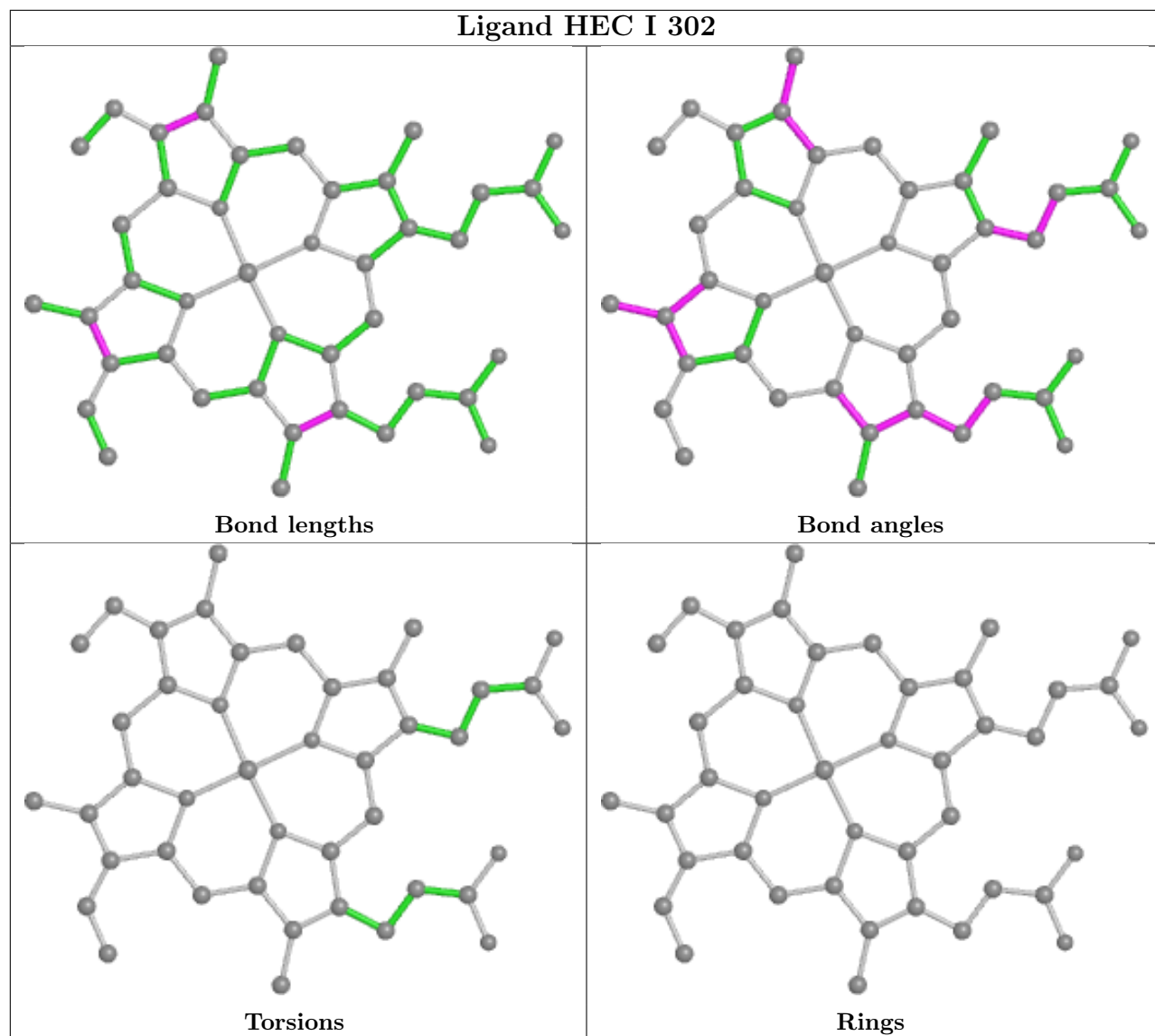


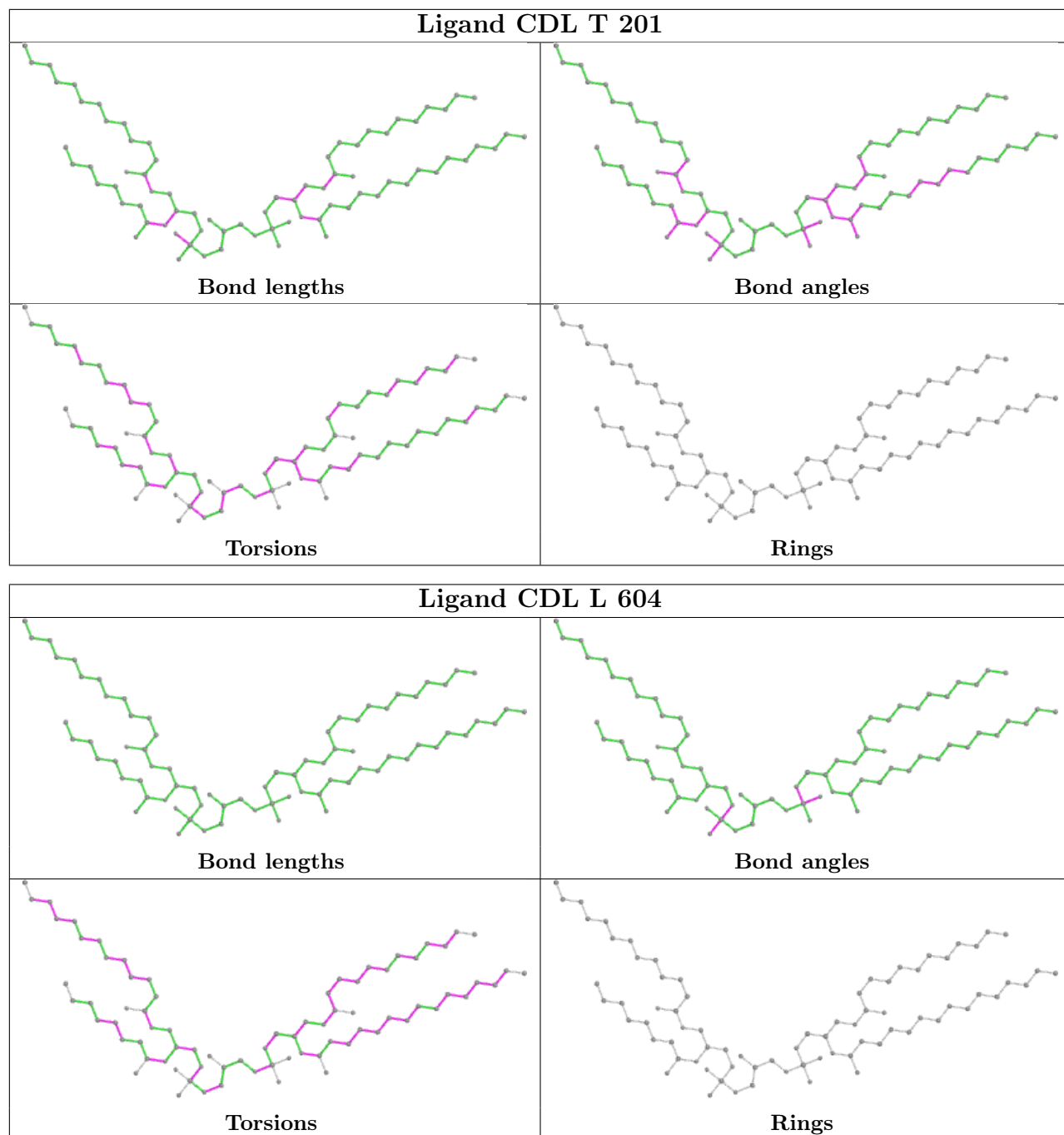


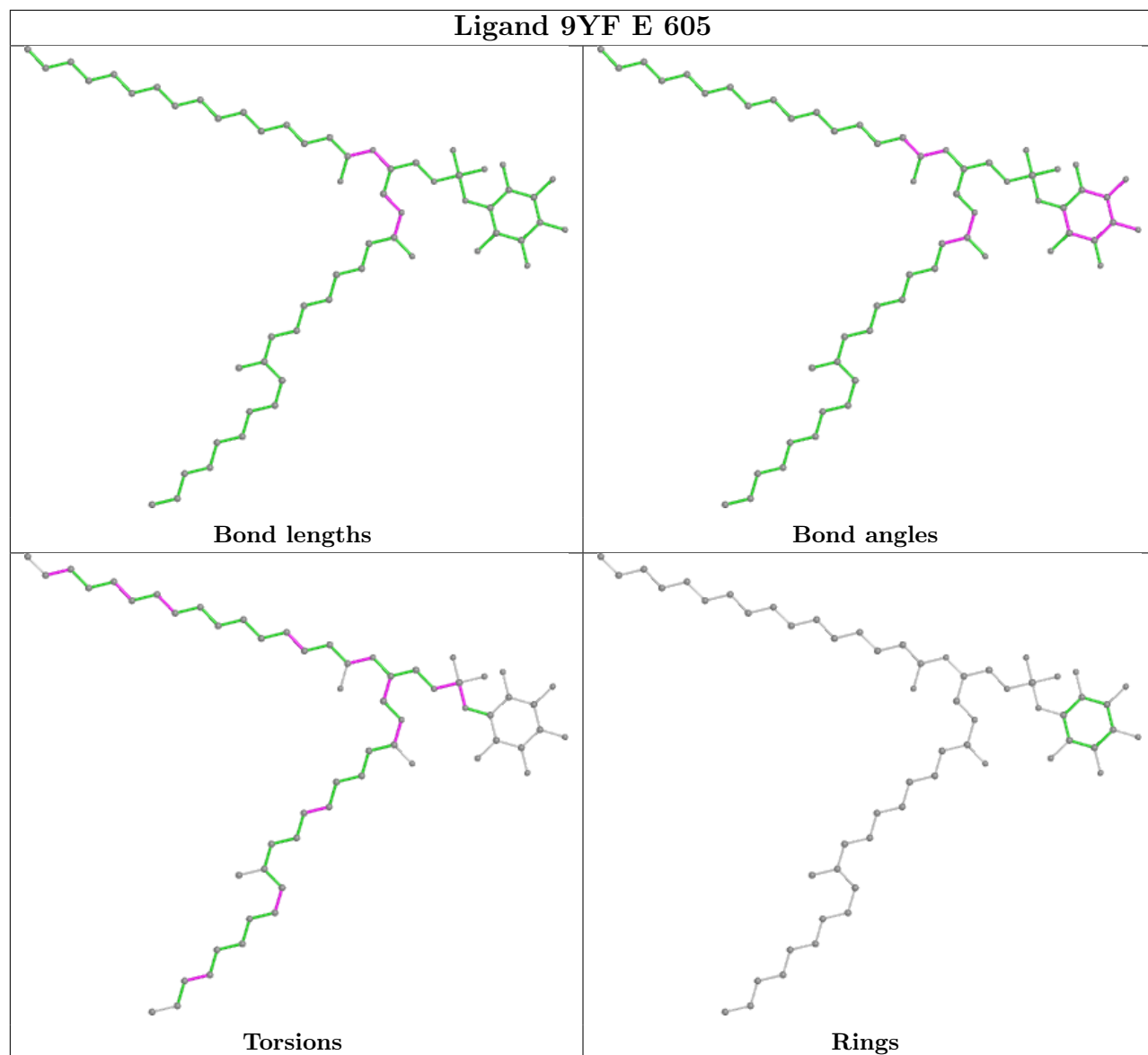


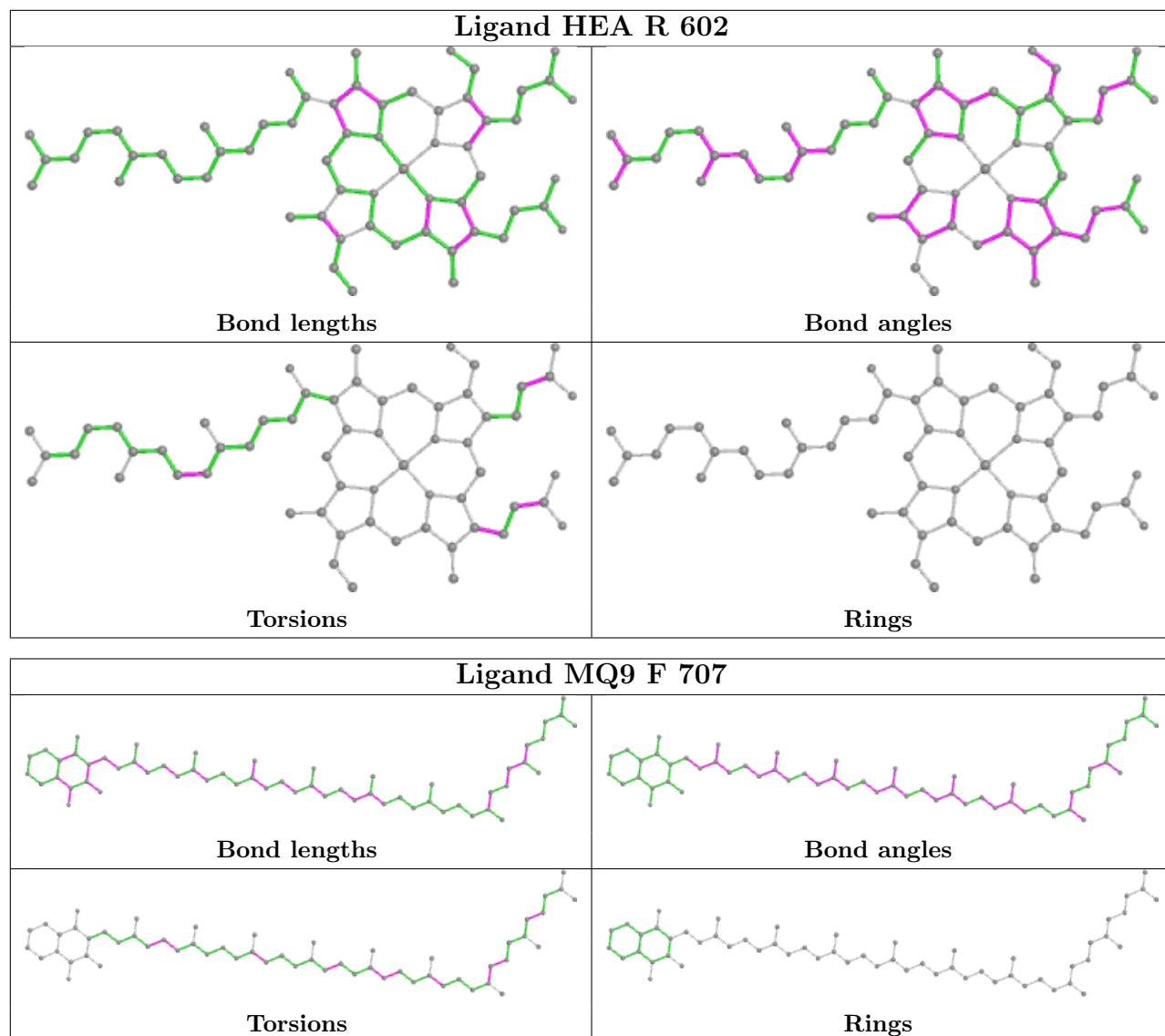


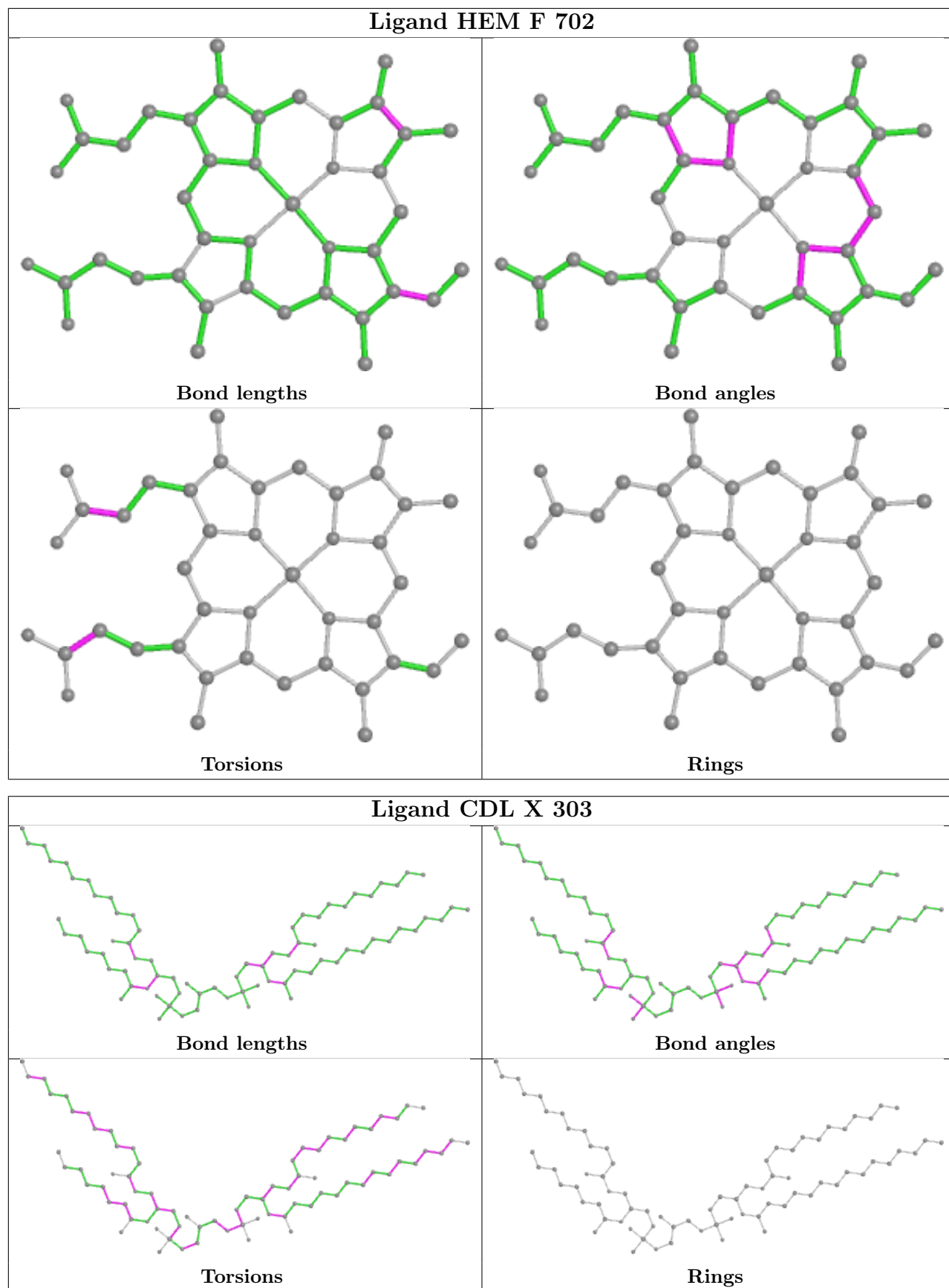












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

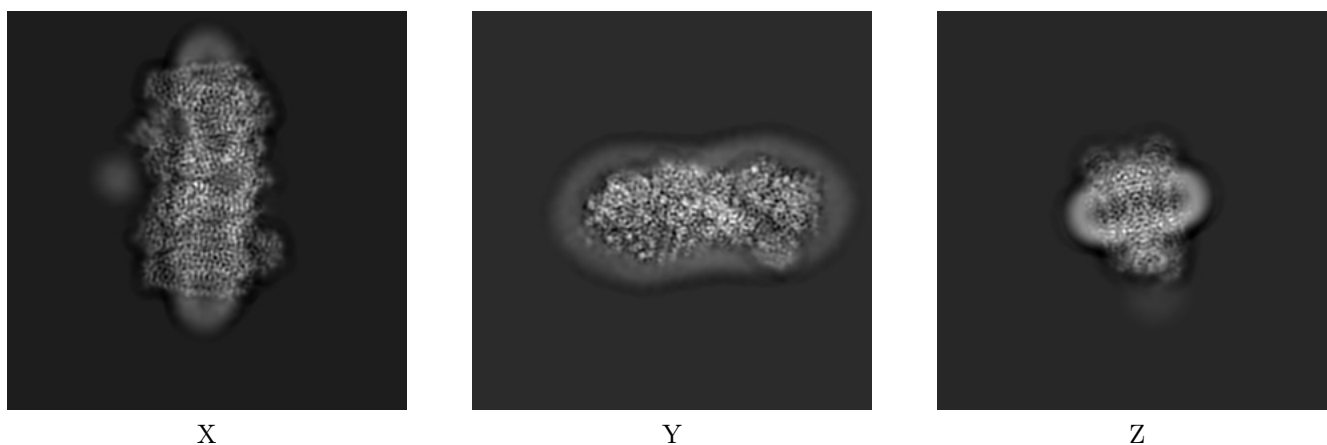
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-24456. 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](#)

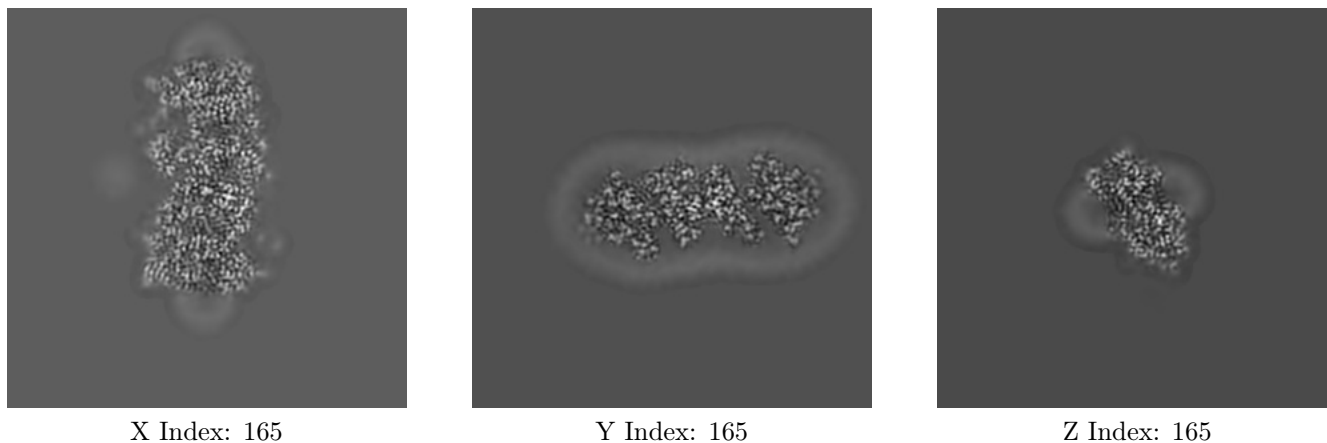
6.1.1 Primary map



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

6.2 Central slices [i](#)

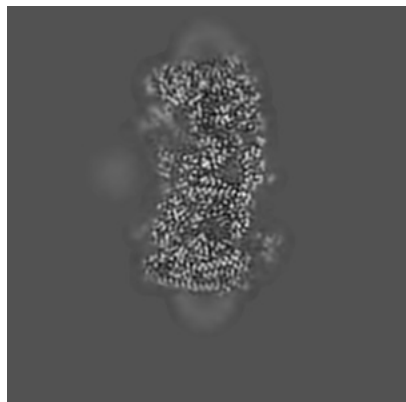
6.2.1 Primary map



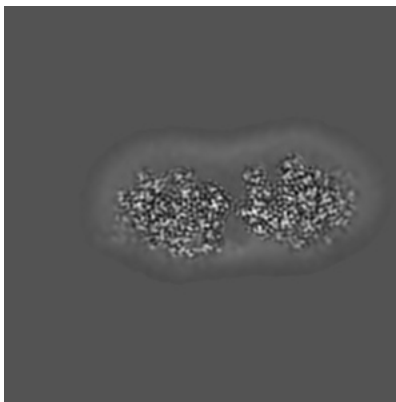
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

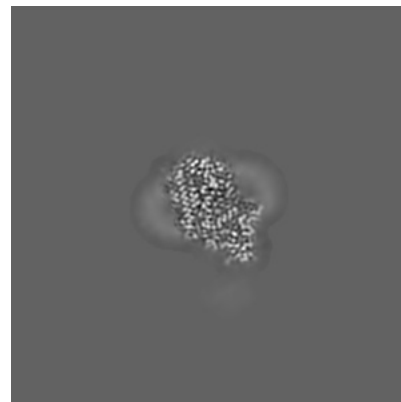
6.3.1 Primary map



X Index: 170



Y Index: 182

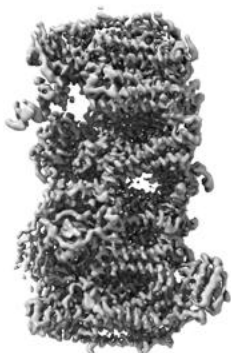


Z Index: 172

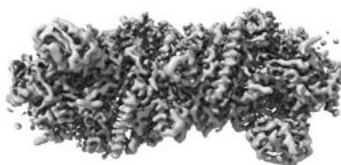
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.634. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

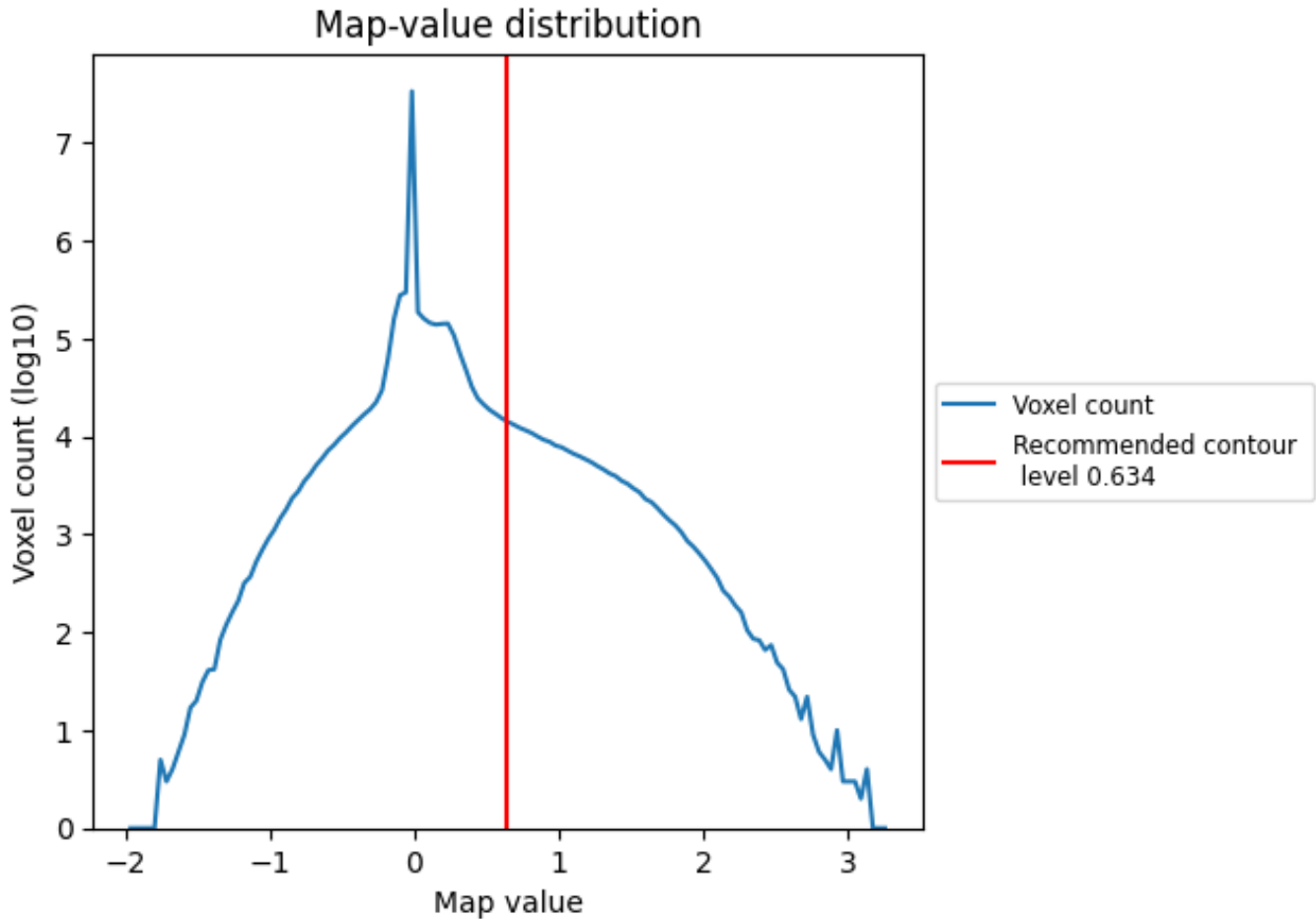
6.5 Mask visualisation

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

7 Map analysis [i](#)

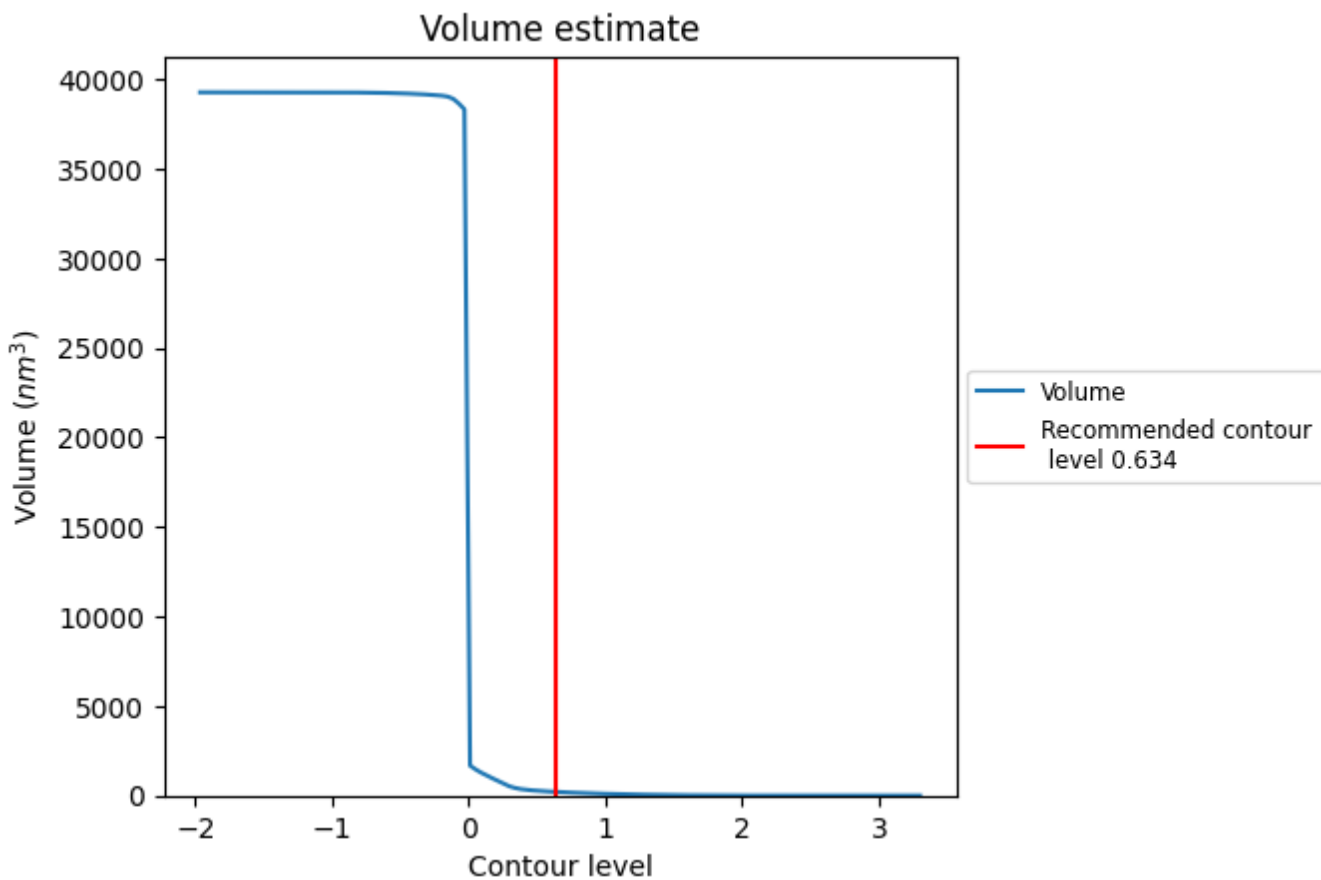
This section contains the results of statistical analysis of the map.

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.

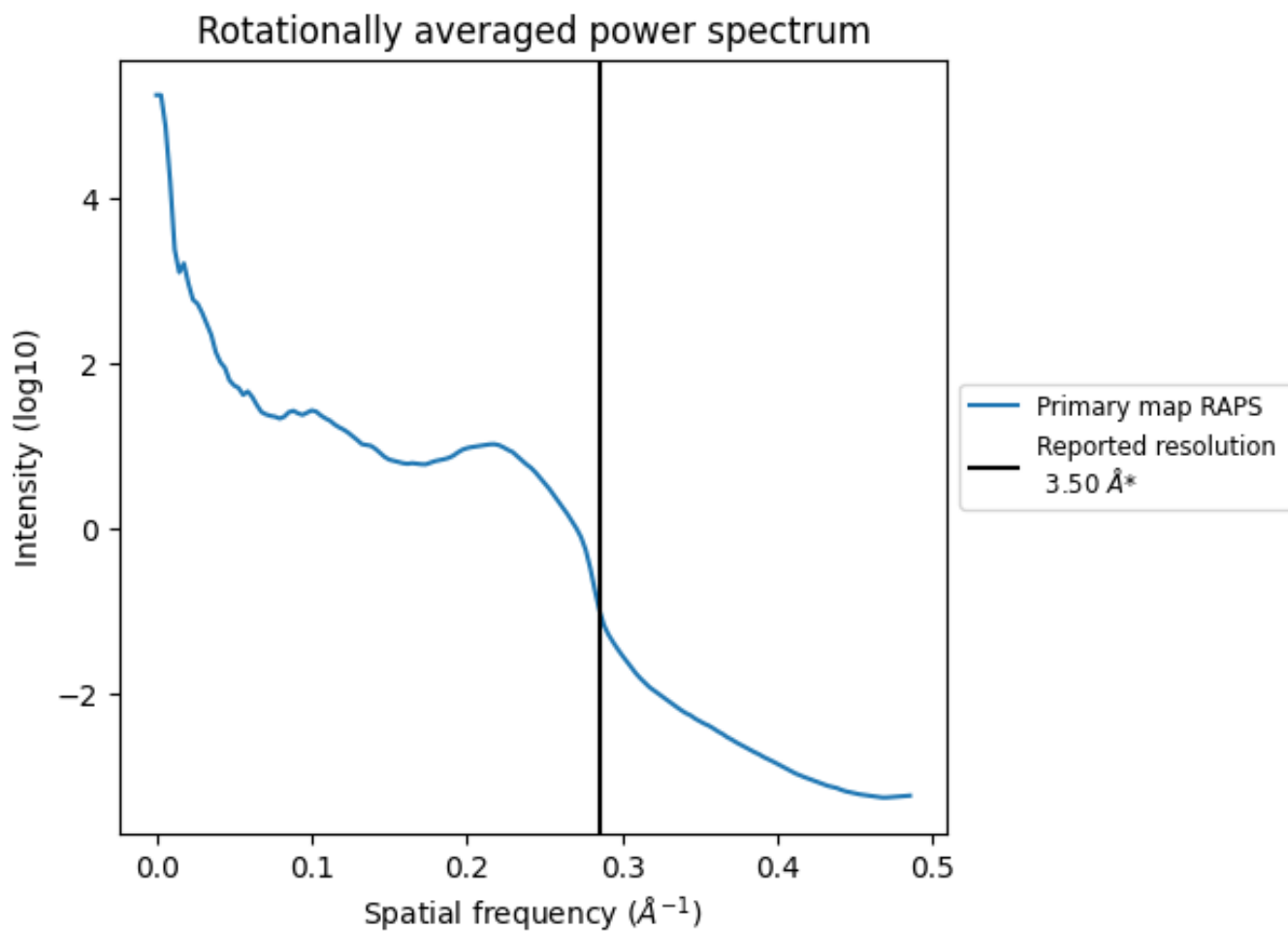
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 206 nm³; this corresponds to an approximate mass of 186 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum [i](#)



*Reported resolution corresponds to spatial frequency of 0.286 Å⁻¹

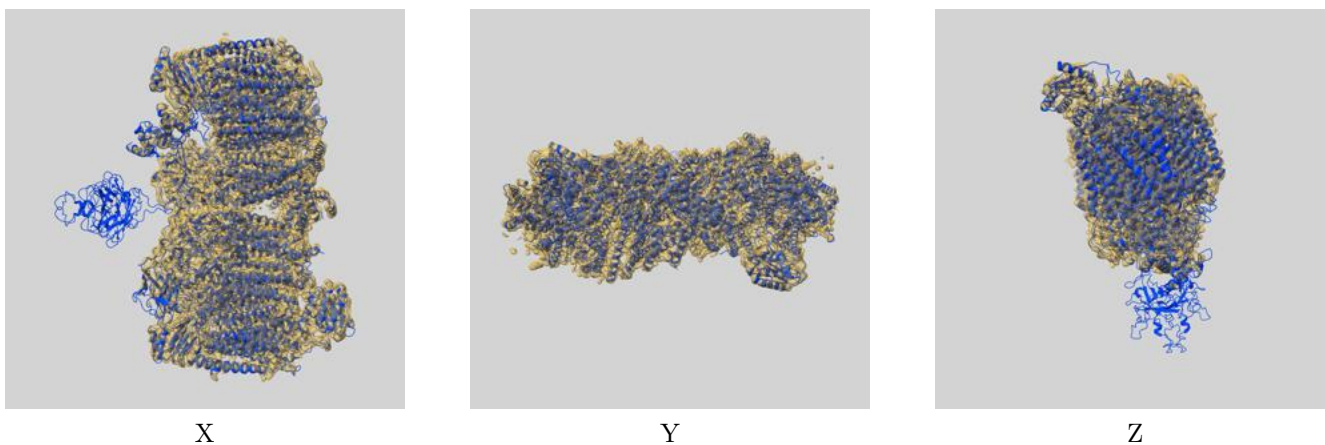
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

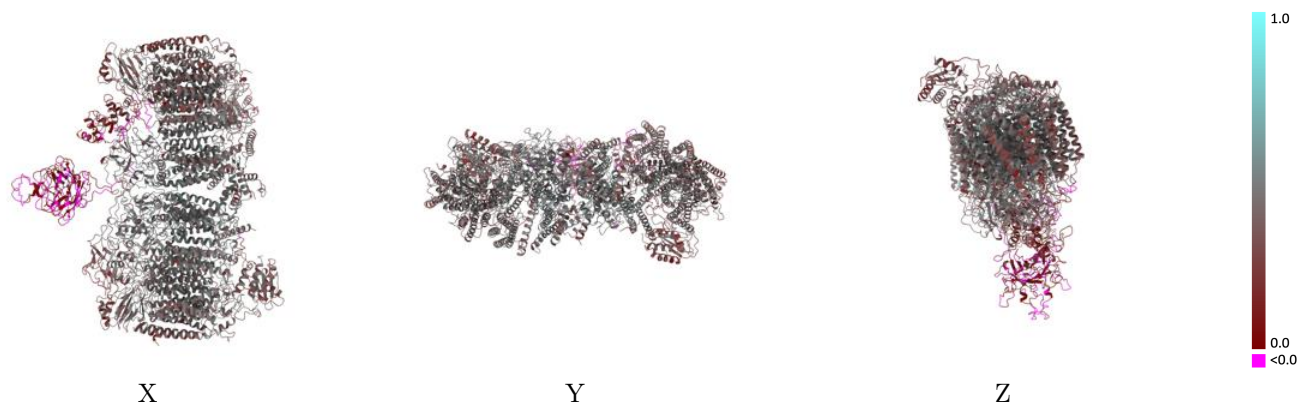
This section contains information regarding the fit between EMDB map EMD-24456 and PDB model 7RH6. Per-residue inclusion information can be found in section 3 on page 16.

9.1 Map-model overlay [i](#)



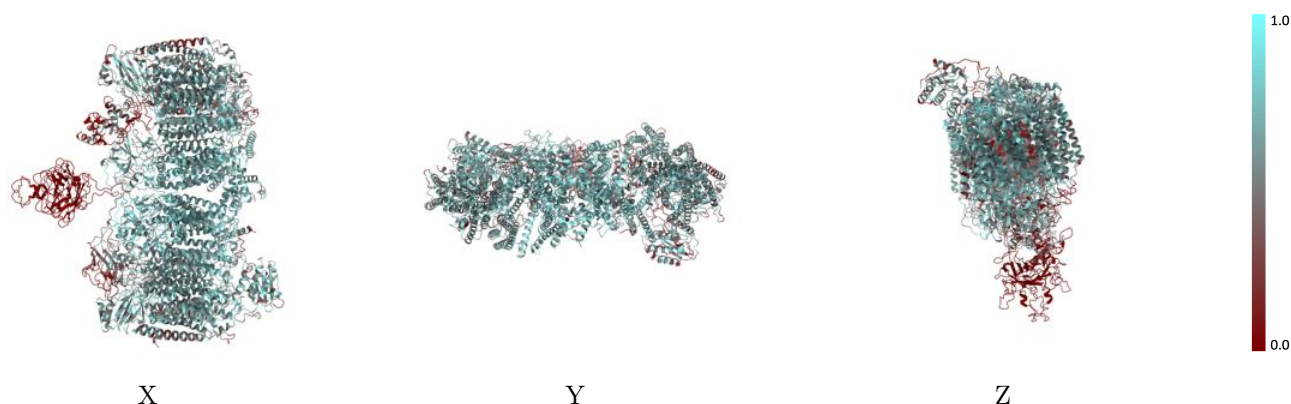
The images above show the 3D surface view of the map at the recommended contour level 0.634 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



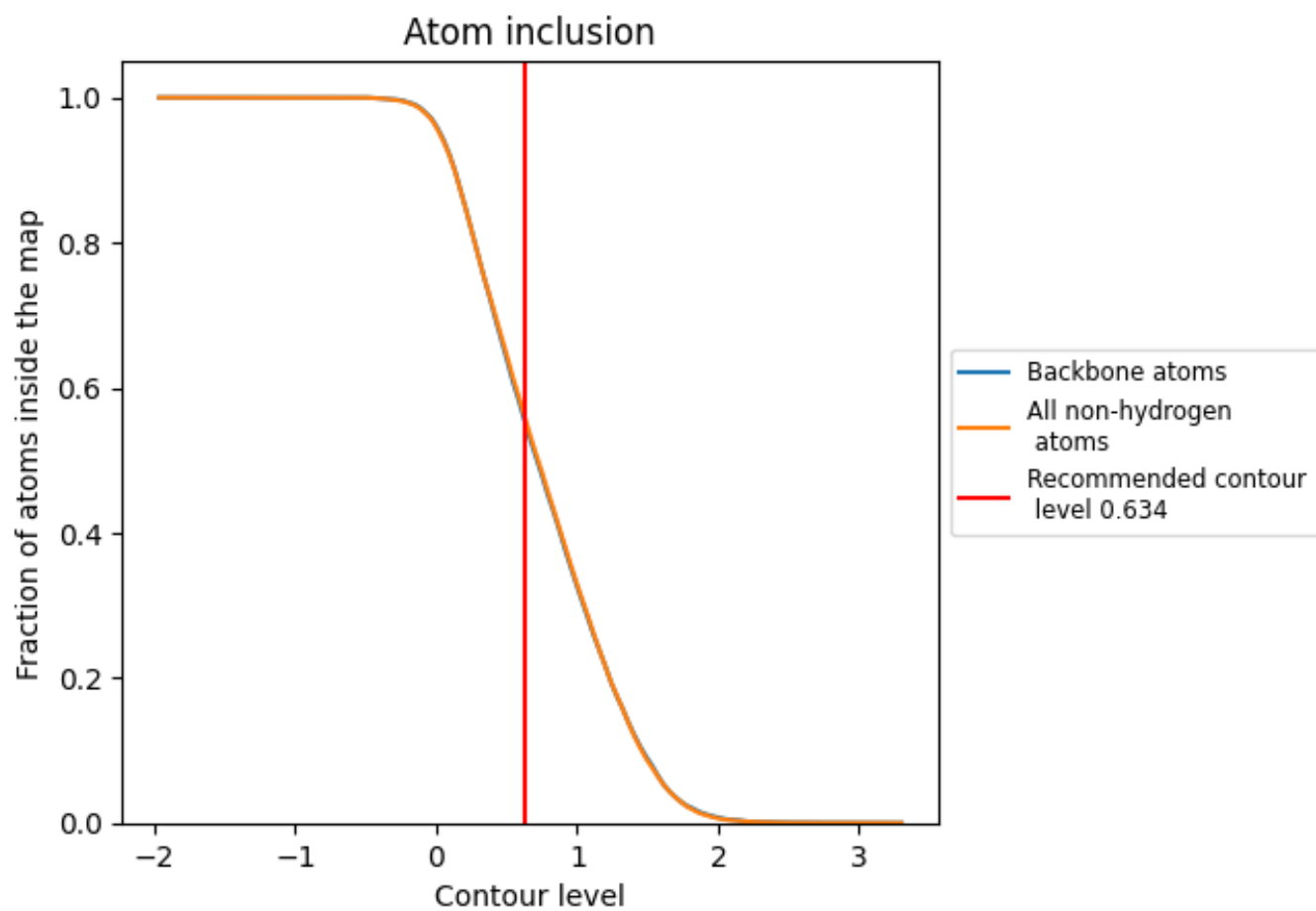
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.634).

















































9.4 Atom inclusion [i](#)



At the recommended contour level, 55% 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 (0.634) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5551	 0.3950
D	 0.1058	 0.1100
E	 0.6897	 0.4680
F	 0.6822	 0.4590
G	 0.1049	 0.1110
I	 0.6221	 0.4400
J	 0.4944	 0.3960
K	 0.5246	 0.3690
L	 0.6428	 0.4400
M	 0.6782	 0.4330
O	 0.2783	 0.2240
P	 0.5063	 0.3970
Q	 0.4676	 0.3200
R	 0.6214	 0.4240
S	 0.5619	 0.3930
T	 0.5168	 0.3960
U	 0.3945	 0.3330
V	 0.5039	 0.3380
X	 0.5638	 0.4150
Y	 0.6944	 0.4470
Z	 0.5572	 0.4110
a	 0.4751	 0.3570
b	 0.5685	 0.3640
c	 0.2696	 0.3450

