



wwPDB X-ray Structure Validation Summary Report ⓘ

Mar 19, 2026 – 09:35 PM UTC

PDB ID : 8BDB / pdb_00008bdb
Title : Ribulose-1,5-bisphosphate carboxylase/oxygenase from *Griffithsia monilis*
Authors : Andersson, I.; Gunn, L.H.
Deposited on : 2022-10-19
Resolution : 1.70 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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/XrayValidationReportHelp>

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:

MolProbity : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0
EDS : 3.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

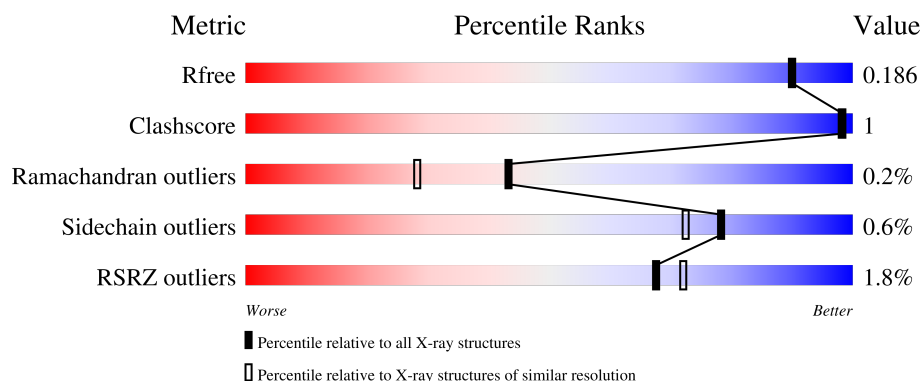
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.70 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	5551 (1.70-1.70)
Clashscore	190562	5924 (1.70-1.70)
Ramachandran outliers	187476	5846 (1.70-1.70)
Sidechain outliers	187428	5846 (1.70-1.70)
RSRZ outliers	180081	5554 (1.70-1.70)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower 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 electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	480	2% 98%
1	C	480	% 98%
1	G	480	2% 97%
1	K	480	% 96%
1	O	480	2% 97%

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Mol	Chain	Length	Quality of chain
2	B	138	100%
2	D	138	99%
2	F	138	99%
2	H	138	100%
2	J	138	99%
2	L	138	98%
2	N	138	100%
2	P	138	99%
3	E	480	94%
3	I	480	98%
3	M	480	98%

2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 43559 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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 Ribulose biphosphate carboxylase large chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	480	Total	C	N	O	S	0	9	0
			3805	2426	650	709	20			
1	C	479	Total	C	N	O	S	0	7	0
			3787	2415	647	705	20			
1	G	479	Total	C	N	O	S	0	9	0
			3800	2426	647	707	20			
1	K	479	Total	C	N	O	S	0	11	0
			3804	2430	647	707	20			
1	O	479	Total	C	N	O	S	0	8	0
			3796	2422	647	707	20			

- Molecule 2 is a protein called Ribulose biphosphate carboxylase small chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	138	Total	C	N	O	S	0	3	0
			1158	735	197	222	4			
2	D	138	Total	C	N	O	S	0	1	0
			1149	730	196	219	4			
2	F	138	Total	C	N	O	S	0	1	0
			1149	730	196	219	4			
2	H	138	Total	C	N	O	S	0	4	0
			1160	736	197	223	4			
2	J	138	Total	C	N	O	S	0	2	0
			1154	733	196	221	4			
2	L	138	Total	C	N	O	S	0	1	0
			1149	730	196	219	4			
2	N	138	Total	C	N	O	S	0	3	0
			1158	735	198	221	4			
2	P	138	Total	C	N	O	S	0	4	0
			1162	739	197	222	4			

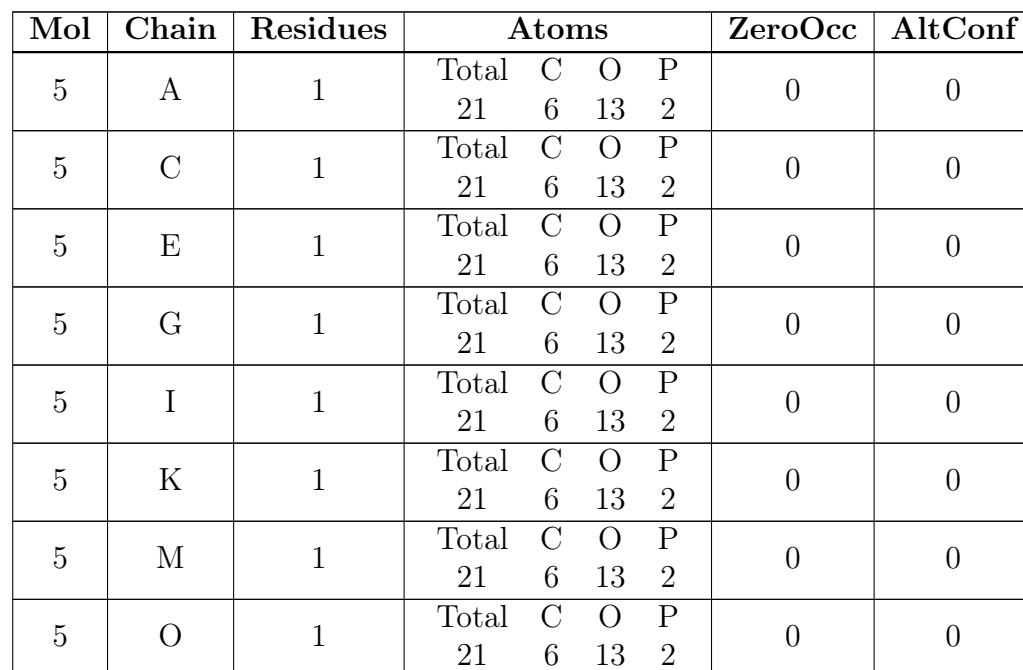
- Molecule 3 is a protein called Ribulose biphosphate carboxylase large chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	E	468	Total	C	N	O	S	0	9	0
			3703	2368	628	687	20			
3	I	479	Total	C	N	O	S	0	9	0
			3798	2421	649	708	20			
3	M	479	Total	C	N	O	S	0	11	0
			3801	2427	647	707	20			

- Molecule 4 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total	Mg	0	0
			1	1		
4	C	1	Total	Mg	0	0
			1	1		
4	E	1	Total	Mg	0	0
			1	1		
4	G	1	Total	Mg	0	0
			1	1		
4	I	1	Total	Mg	0	0
			1	1		
4	K	1	Total	Mg	0	0
			1	1		
4	M	1	Total	Mg	0	0
			1	1		
4	O	1	Total	Mg	0	0
			1	1		

- Molecule 5 is 2-CARBOXYARABINITOL-1,5-DIPHOSPHATE (CCD ID: CAP) (formula: C₆H₁₄O₁₃P₂).



- Molecule 6 is 1,2-ETHANEDIOL (CCD ID: EDO) (formula: $\text{C}_2\text{H}_6\text{O}_2$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	A	1	Total	C	O	0	0
			4	2	2		
6	A	1	Total	C	O	0	0
			4	2	2		
6	A	1	Total	C	O	0	0
			4	2	2		
6	A	1	Total	C	O	0	0
			4	2	2		
6	A	1	Total	C	O	0	0
			4	2	2		
6	A	1	Total	C	O	0	0
			4	2	2		
6	A	1	Total	C	O	0	0
			4	2	2		
6	A	1	Total	C	O	0	0
			4	2	2		
6	A	1	Total	C	O	0	0
			4	2	2		
6	B	1	Total	C	O	0	0
			4	2	2		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	B	1	Total 4	C 2	O 2	0	0
6	B	1	Total 4	C 2	O 2	0	0
6	B	1	Total 4	C 2	O 2	0	0
6	B	1	Total 4	C 2	O 2	0	0
6	B	1	Total 4	C 2	O 2	0	0
6	C	1	Total 4	C 2	O 2	0	0
6	C	1	Total 4	C 2	O 2	0	0
6	C	1	Total 4	C 2	O 2	0	0
6	C	1	Total 4	C 2	O 2	0	0
6	C	1	Total 4	C 2	O 2	0	0
6	C	1	Total 4	C 2	O 2	0	0
6	C	1	Total 4	C 2	O 2	0	0
6	C	1	Total 4	C 2	O 2	0	0
6	C	1	Total 4	C 2	O 2	0	0
6	C	1	Total 4	C 2	O 2	0	0
6	C	1	Total 4	C 2	O 2	0	0
6	D	1	Total 4	C 2	O 2	0	0
6	D	1	Total 4	C 2	O 2	0	0
6	D	1	Total 4	C 2	O 2	0	0
6	D	1	Total 4	C 2	O 2	0	0
6	D	1	Total 4	C 2	O 2	0	0

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	D	1	Total 4	C 2	O 2	0	0
6	E	1	Total 4	C 2	O 2	0	0
6	E	1	Total 4	C 2	O 2	0	0
6	E	1	Total 4	C 2	O 2	0	0
6	E	1	Total 4	C 2	O 2	0	0
6	E	1	Total 4	C 2	O 2	0	0
6	E	1	Total 4	C 2	O 2	0	0
6	E	1	Total 4	C 2	O 2	0	0
6	E	1	Total 4	C 2	O 2	0	0
6	E	1	Total 4	C 2	O 2	0	0
6	E	1	Total 4	C 2	O 2	0	0
6	E	1	Total 4	C 2	O 2	0	0
6	F	1	Total 4	C 2	O 2	0	0
6	F	1	Total 4	C 2	O 2	0	0
6	F	1	Total 4	C 2	O 2	0	0
6	F	1	Total 4	C 2	O 2	0	0
6	F	1	Total 4	C 2	O 2	0	0
6	G	1	Total 4	C 2	O 2	0	0
6	G	1	Total 4	C 2	O 2	0	0
6	G	1	Total 4	C 2	O 2	0	0
6	G	1	Total 4	C 2	O 2	0	0
6	G	1	Total 4	C 2	O 2	0	0

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	G	1	Total 4	C 2	O 2	0	0
6	G	1	Total 4	C 2	O 2	0	0
6	G	1	Total 4	C 2	O 2	0	0
6	G	1	Total 4	C 2	O 2	0	0
6	G	1	Total 4	C 2	O 2	0	0
6	G	1	Total 4	C 2	O 2	0	0
6	H	1	Total 4	C 2	O 2	0	0
6	H	1	Total 4	C 2	O 2	0	0
6	H	1	Total 4	C 2	O 2	0	0
6	H	1	Total 4	C 2	O 2	0	0
6	H	1	Total 4	C 2	O 2	0	0
6	H	1	Total 4	C 2	O 2	0	0
6	H	1	Total 4	C 2	O 2	0	0
6	H	1	Total 4	C 2	O 2	0	0
6	I	1	Total 4	C 2	O 2	0	0
6	I	1	Total 4	C 2	O 2	0	0
6	I	1	Total 4	C 2	O 2	0	0
6	I	1	Total 4	C 2	O 2	0	0
6	I	1	Total 4	C 2	O 2	0	0
6	I	1	Total 4	C 2	O 2	0	0
6	I	1	Total 4	C 2	O 2	0	0
6	I	1	Total 4	C 2	O 2	0	0

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	I	1	Total	C	O	0	0
			4	2	2		
6	I	1	Total	C	O	0	0
			4	2	2		
6	I	1	Total	C	O	0	0
			4	2	2		
6	J	1	Total	C	O	0	0
			4	2	2		
6	J	1	Total	C	O	0	0
			4	2	2		
6	J	1	Total	C	O	0	0
			4	2	2		
6	J	1	Total	C	O	0	0
			4	2	2		
6	J	1	Total	C	O	0	0
			4	2	2		
6	K	1	Total	C	O	0	0
			4	2	2		
6	K	1	Total	C	O	0	0
			4	2	2		
6	K	1	Total	C	O	0	0
			4	2	2		
6	K	1	Total	C	O	0	0
			4	2	2		
6	K	1	Total	C	O	0	0
			4	2	2		
6	K	1	Total	C	O	0	0
			4	2	2		
6	K	1	Total	C	O	0	0
			4	2	2		
6	L	1	Total	C	O	0	0
			4	2	2		
6	L	1	Total	C	O	0	0
			4	2	2		
6	L	1	Total	C	O	0	0
			4	2	2		
6	L	1	Total	C	O	0	0
			4	2	2		

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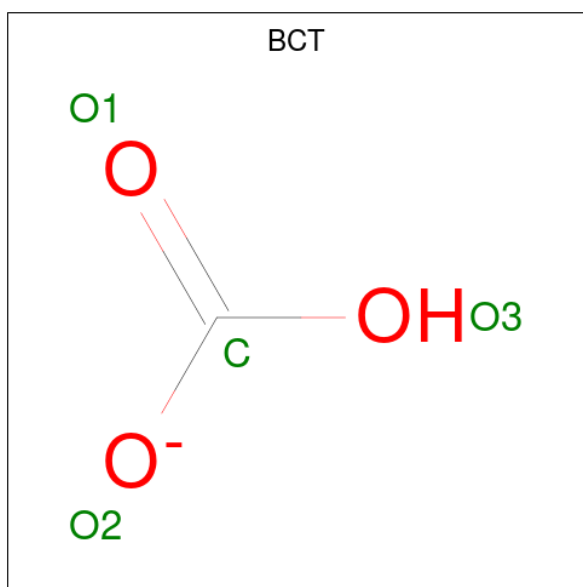
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	L	1	Total 4	C 2	O 2	0	0
6	L	1	Total 4	C 2	O 2	0	0
6	L	1	Total 4	C 2	O 2	0	0
6	L	1	Total 4	C 2	O 2	0	0
6	M	1	Total 4	C 2	O 2	0	0
6	M	1	Total 4	C 2	O 2	0	0
6	M	1	Total 4	C 2	O 2	0	0
6	M	1	Total 4	C 2	O 2	0	0
6	M	1	Total 4	C 2	O 2	0	0
6	M	1	Total 4	C 2	O 2	0	0
6	M	1	Total 4	C 2	O 2	0	0
6	M	1	Total 4	C 2	O 2	0	0
6	N	1	Total 4	C 2	O 2	0	0
6	N	1	Total 4	C 2	O 2	0	0
6	N	1	Total 4	C 2	O 2	0	0
6	N	1	Total 4	C 2	O 2	0	0
6	N	1	Total 4	C 2	O 2	0	0
6	N	1	Total 4	C 2	O 2	0	0
6	N	1	Total 4	C 2	O 2	0	0
6	O	1	Total 4	C 2	O 2	0	0
6	O	1	Total 4	C 2	O 2	0	0
6	O	1	Total 4	C 2	O 2	0	0

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	O	1	Total	C	O	0	0
			4	2	2		
6	O	1	Total	C	O	0	0
			4	2	2		
6	O	1	Total	C	O	0	0
			4	2	2		
6	O	1	Total	C	O	0	0
			4	2	2		
6	O	1	Total	C	O	0	0
			4	2	2		
6	P	1	Total	C	O	0	0
			4	2	2		
6	P	1	Total	C	O	0	0
			4	2	2		
6	P	1	Total	C	O	0	0
			4	2	2		
6	P	1	Total	C	O	0	0
			4	2	2		
6	P	1	Total	C	O	0	0
			4	2	2		
6	P	1	Total	C	O	0	0
			4	2	2		
6	P	1	Total	C	O	0	0
			4	2	2		

- Molecule 7 is BICARBONATE ION (CCD ID: BCT) (formula: CHO_3) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
7	A	1	Total	C	O	0	0
			4	1	3		
7	A	1	Total	C	O	0	0
			4	1	3		
7	A	1	Total	C	O	0	0
			4	1	3		
7	A	1	Total	C	O	0	0
			4	1	3		
7	B	1	Total	C	O	0	0
			4	1	3		
7	C	1	Total	C	O	0	0
			4	1	3		
7	C	1	Total	C	O	0	0
			4	1	3		
7	D	1	Total	C	O	0	0
			4	1	3		
7	E	1	Total	C	O	0	0
			4	1	3		
7	E	1	Total	C	O	0	0
			4	1	3		
7	E	1	Total	C	O	0	0
			4	1	3		
7	E	1	Total	C	O	0	0
			4	1	3		
7	G	1	Total	C	O	0	0
			4	1	3		
7	G	1	Total	C	O	0	0
			4	1	3		

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	G	1	Total C O 4 1 3	0	0
7	G	1	Total C O 4 1 3	0	0
7	G	1	Total C O 4 1 3	0	0
7	H	1	Total C O 4 1 3	0	0
7	I	1	Total C O 4 1 3	0	0
7	I	1	Total C O 4 1 3	0	0
7	I	1	Total C O 4 1 3	0	0
7	K	1	Total C O 4 1 3	0	0
7	K	1	Total C O 4 1 3	0	0
7	L	1	Total C O 4 1 3	0	0
7	M	1	Total C O 4 1 3	0	0
7	M	1	Total C O 4 1 3	0	0
7	M	1	Total C O 4 1 3	0	0
7	N	1	Total C O 4 1 3	0	0
7	O	1	Total C O 4 1 3	0	0
7	O	1	Total C O 4 1 3	0	0
7	O	1	Total C O 4 1 3	0	0

- Molecule 8 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	279	Total O 279 279	0	0
8	B	112	Total O 112 112	0	0

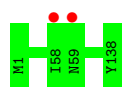
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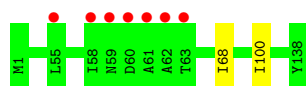
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	C	290	Total 290	O 290	0	0
8	D	109	Total 109	O 109	0	0
8	E	286	Total 286	O 286	0	0
8	F	111	Total 111	O 111	0	0
8	G	302	Total 302	O 302	0	0
8	H	113	Total 113	O 113	0	0
8	I	299	Total 299	O 299	0	0
8	J	115	Total 115	O 115	0	0
8	K	301	Total 301	O 301	0	0
8	L	113	Total 113	O 113	0	0
8	M	278	Total 278	O 278	0	0
8	N	96	Total 96	O 96	0	0
8	O	284	Total 284	O 284	0	0
8	P	106	Total 106	O 106	0	0

- Molecule 1: Ribulose biphosphate carboxylase large chain

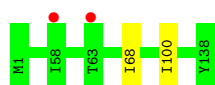




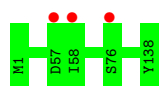
- Molecule 2: Ribulose biphosphate carboxylase small chain



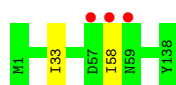
- Molecule 2: Ribulose biphosphate carboxylase small chain



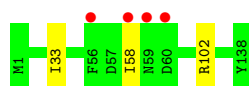
- Molecule 2: Ribulose biphosphate carboxylase small chain



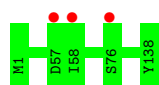
- Molecule 2: Ribulose biphosphate carboxylase small chain



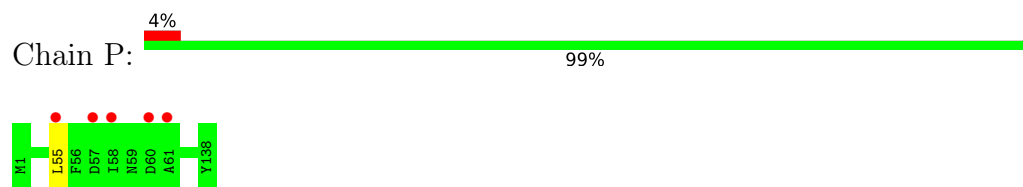
- Molecule 2: Ribulose biphosphate carboxylase small chain



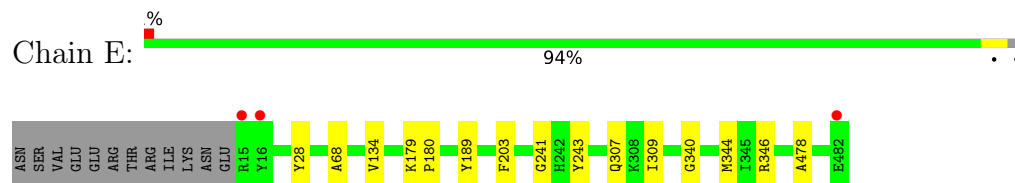
- Molecule 2: Ribulose biphosphate carboxylase small chain



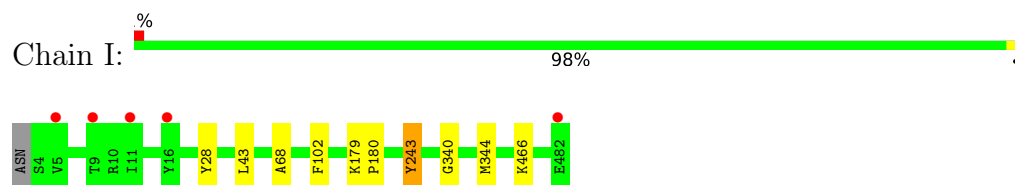
- Molecule 2: Ribulose biphosphate carboxylase small chain



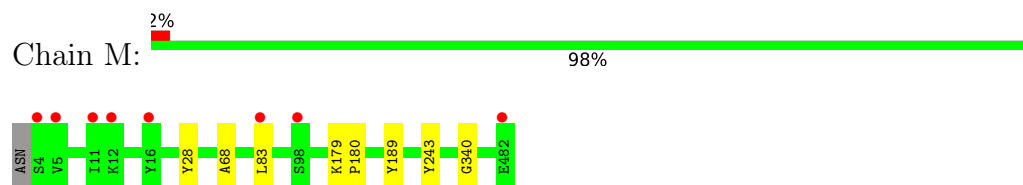
- Molecule 3: Ribulose biphosphate carboxylase large chain



- Molecule 3: Ribulose biphosphate carboxylase large chain



- Molecule 3: Ribulose biphosphate carboxylase large chain



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	210.33Å 131.93Å 196.32Å 90.00° 94.75° 90.00°	Depositor
Resolution (Å)	49.60 – 1.70 49.60 – 1.70	Depositor EDS
% Data completeness (in resolution range)	99.2 (49.60-1.70) 99.2 (49.60-1.70)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.31 (at 1.70Å)	Xtriage
Refinement program	REFMAC 5.8.0107	Depositor
R, R_{free}	0.158 , 0.178 0.168 , 0.186	Depositor DCC
R_{free} test set	28852 reflections (4.95%)	wwPDB-VP
Wilson B-factor (Å ²)	15.5	Xtriage
Anisotropy	0.266	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.36 , 32.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.97	EDS
Total number of atoms	43559	wwPDB-VP
Average B, all atoms (Å ²)	18.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.26% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: MG, EDO, HL2, CAP, BCT, KCX, CCS

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.54	0/3890	0.76	0/5266
1	C	0.54	0/3864	0.77	1/5232 (0.0%)
1	G	0.55	0/3885	0.76	0/5262
1	K	0.54	0/3897	0.75	0/5278
1	O	0.53	0/3877	0.77	0/5250
2	B	0.54	0/1202	0.68	0/1630
2	D	0.51	0/1185	0.71	0/1607
2	F	0.51	0/1185	0.70	0/1607
2	H	0.54	0/1208	0.68	0/1638
2	J	0.51	0/1194	0.71	0/1619
2	L	0.53	0/1185	0.70	0/1607
2	N	0.53	0/1202	0.68	0/1630
2	P	0.52	0/1210	0.69	0/1641
3	E	0.56	0/3799	0.77	0/5148
3	I	0.56	1/3894 (0.0%)	0.78	0/5273
3	M	0.52	0/3901	0.76	0/5284
All	All	0.54	1/40578 (0.0%)	0.75	1/54972 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	I	243	TYR	C-O	-7.23	1.15	1.23

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	53	ASP	CB-CA-C	5.67	117.60	109.26

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	A	3805	0	3760	6	0
1	C	3787	0	3743	6	0
1	G	3800	0	3762	3	0
1	K	3804	0	3765	9	0
1	O	3796	0	3755	6	0
2	B	1158	0	1089	0	0
2	D	1149	0	1085	2	0
2	F	1149	0	1085	2	0
2	H	1160	0	1090	0	0
2	J	1154	0	1087	1	0
2	L	1149	0	1085	1	0
2	N	1158	0	1091	0	0
2	P	1162	0	1096	1	0
3	E	3703	0	3662	5	0
3	I	3798	0	3754	5	0
3	M	3801	0	3762	3	0
4	A	1	0	0	0	0
4	C	1	0	0	0	0
4	E	1	0	0	0	0
4	G	1	0	0	0	0
4	I	1	0	0	0	0
4	K	1	0	0	0	0
4	M	1	0	0	0	0
4	O	1	0	0	0	0
5	A	21	0	8	0	0
5	C	21	0	8	0	0
5	E	21	0	8	0	0
5	G	21	0	8	0	0
5	I	21	0	8	0	0
5	K	21	0	8	0	0
5	M	21	0	8	0	0
5	O	21	0	8	0	0
6	A	52	0	78	1	0
6	B	24	0	36	0	0
6	C	44	0	66	0	0
6	D	24	0	36	0	0
6	E	40	0	60	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	F	20	0	30	0	0
6	G	44	0	66	0	0
6	H	28	0	42	0	0
6	I	44	0	66	0	0
6	J	24	0	36	0	0
6	K	32	0	48	0	0
6	L	32	0	48	0	0
6	M	28	0	42	0	0
6	N	28	0	42	0	0
6	O	36	0	54	0	0
6	P	32	0	48	0	0
7	A	16	0	0	0	0
7	B	4	0	0	0	0
7	C	8	0	0	0	0
7	D	4	0	0	0	0
7	E	16	0	0	0	0
7	G	20	0	0	0	0
7	H	4	0	0	0	0
7	I	12	0	0	0	0
7	K	8	0	0	0	0
7	L	4	0	0	0	0
7	M	12	0	0	0	0
7	N	4	0	0	0	0
7	O	12	0	0	0	0
8	A	279	0	0	0	0
8	B	112	0	0	0	0
8	C	290	0	0	0	0
8	D	109	0	0	0	0
8	E	286	0	0	0	0
8	F	111	0	0	0	0
8	G	302	0	0	0	0
8	H	113	0	0	0	0
8	I	299	0	0	0	0
8	J	115	0	0	0	0
8	K	301	0	0	0	0
8	L	113	0	0	0	0
8	M	278	0	0	0	0
8	N	96	0	0	0	0
8	O	284	0	0	0	0
8	P	106	0	0	0	0
All	All	43559	0	39533	50	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 1.

The worst 5 of 50 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:425:VAL:HG21	1:A:455:CCS:HD2	1.80	0.62
1:A:28:TYR:CZ	1:A:68:ALA:HB2	2.39	0.58
1:C:28:TYR:CZ	1:C:68:ALA:HB2	2.39	0.58
3:I:28:TYR:CZ	3:I:68:ALA:HB2	2.39	0.57
1:A:374[A]:LEU:HD23	6:A:513:EDO:H21	1.86	0.57

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 X-ray entries followed by that with respect to entries of similar resolution.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	484/480 (101%)	471 (97%)	12 (2%)	1 (0%)	43	28
1	C	481/480 (100%)	470 (98%)	10 (2%)	1 (0%)	43	28
1	G	483/480 (101%)	471 (98%)	11 (2%)	1 (0%)	43	28
1	K	485/480 (101%)	472 (97%)	12 (2%)	1 (0%)	43	28
1	O	482/480 (100%)	470 (98%)	11 (2%)	1 (0%)	43	28
2	B	139/138 (101%)	133 (96%)	6 (4%)	0	100	100
2	D	137/138 (99%)	130 (95%)	7 (5%)	0	100	100
2	F	137/138 (99%)	130 (95%)	7 (5%)	0	100	100
2	H	140/138 (101%)	133 (95%)	7 (5%)	0	100	100
2	J	138/138 (100%)	133 (96%)	5 (4%)	0	100	100
2	L	137/138 (99%)	132 (96%)	5 (4%)	0	100	100
2	N	139/138 (101%)	132 (95%)	7 (5%)	0	100	100
2	P	140/138 (101%)	133 (95%)	7 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	E	473/480 (98%)	461 (98%)	11 (2%)	1 (0%)	43	28
3	I	484/480 (101%)	471 (97%)	12 (2%)	1 (0%)	43	28
3	M	485/480 (101%)	472 (97%)	12 (2%)	1 (0%)	43	28
All	All	4964/4944 (100%)	4814 (97%)	142 (3%)	8 (0%)	43	28

5 of 8 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	340	GLY
3	E	340	GLY
1	K	340	GLY
3	M	340	GLY
1	C	340	GLY

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	399/391 (102%)	397 (100%)	2 (0%)	81	76
1	C	396/391 (101%)	394 (100%)	2 (0%)	81	76
1	G	399/391 (102%)	395 (99%)	4 (1%)	68	58
1	K	400/391 (102%)	397 (99%)	3 (1%)	73	65
1	O	398/391 (102%)	395 (99%)	3 (1%)	73	65
2	B	129/126 (102%)	129 (100%)	0	100	100
2	D	127/126 (101%)	127 (100%)	0	100	100
2	F	127/126 (101%)	127 (100%)	0	100	100
2	H	130/126 (103%)	130 (100%)	0	100	100
2	J	128/126 (102%)	128 (100%)	0	100	100
2	L	127/126 (101%)	126 (99%)	1 (1%)	73	65
2	N	129/126 (102%)	129 (100%)	0	100	100
2	P	130/126 (103%)	130 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	E	389/392 (99%)	385 (99%)	4 (1%)	68	58
3	I	400/392 (102%)	397 (99%)	3 (1%)	73	65
3	M	401/392 (102%)	398 (99%)	3 (1%)	76	69
All	All	4209/4139 (102%)	4184 (99%)	25 (1%)	78	72

5 of 25 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	I	466[B]	LYS
1	K	346	ARG
1	O	481	VAL
1	K	243	TYR
2	L	102	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 30 such sidechains are listed below:

Mol	Chain	Res	Type
3	I	211	ASN
1	O	392	GLN
1	K	392	GLN
1	O	459	GLN
1	O	127	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

21 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	HL2	M	174	3	7,8,9	0.62	0	7,10,12	0.61	0
1	HL2	A	174	1	7,8,9	0.51	0	7,10,12	0.74	0
1	HL2	G	174	1	7,8,9	0.60	0	7,10,12	0.65	0
1	HL2	O	174	1	7,8,9	0.50	0	7,10,12	0.66	0
3	HL2	I	174	3	7,8,9	0.52	0	7,10,12	0.53	0
3	KCX	I	205	3,4	10,11,12	0.70	0	6,12,14	0.44	0
1	KCX	K	205	4,1	10,11,12	2.10	1 (10%)	6,12,14	1.68	1 (16%)
1	HL2	C	174	1	7,8,9	0.49	0	7,10,12	0.58	0
1	KCX	O	205	4,1	10,11,12	2.13	1 (10%)	6,12,14	2.01	1 (16%)
1	HL2	K	174	1	7,8,9	0.51	0	7,10,12	0.57	0
3	KCX	M	205	3,4	10,11,12	0.61	0	6,12,14	0.55	0
1	KCX	C	205	4,1	10,11,12	0.53	0	6,12,14	0.56	0
1	CCS	C	455	1	8,9,10	0.91	0	7,10,12	0.92	0
1	KCX	A	205	4,1	10,11,12	2.11	1 (10%)	6,12,14	1.75	1 (16%)
1	CCS	A	455	1	8,9,10	0.92	0	7,10,12	1.17	1 (14%)
1	CCS	G	455	1	8,9,10	0.90	0	7,10,12	1.65	3 (42%)
3	KCX	E	205	3,4	10,11,12	0.62	0	6,12,14	0.48	0
1	CCS	O	455	1	8,9,10	0.91	0	7,10,12	1.65	2 (28%)
1	KCX	G	205	4,1	10,11,12	1.98	1 (10%)	6,12,14	2.03	1 (16%)
1	CCS	K	455	1	8,9,10	0.96	0	7,10,12	1.64	3 (42%)
3	HL2	E	174	3	7,8,9	0.62	0	7,10,12	0.72	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	HL2	M	174	3	-	1/9/10/12	-
1	HL2	A	174	1	-	1/9/10/12	-
1	HL2	G	174	1	-	1/9/10/12	-
1	HL2	O	174	1	-	1/9/10/12	-
3	HL2	I	174	3	-	1/9/10/12	-
3	KCX	I	205	3,4	-	0/9/10/12	-
1	KCX	K	205	4,1	-	0/9/10/12	-
1	HL2	C	174	1	-	1/9/10/12	-
1	KCX	O	205	4,1	-	0/9/10/12	-
1	HL2	K	174	1	-	1/9/10/12	-
3	KCX	M	205	3,4	-	0/9/10/12	-
1	KCX	C	205	4,1	-	0/9/10/12	-
1	CCS	C	455	1	-	0/6/8/10	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	KCX	A	205	4,1	-	0/9/10/12	-
1	CCS	A	455	1	-	0/6/8/10	-
1	CCS	G	455	1	-	1/6/8/10	-
3	KCX	E	205	3,4	-	0/9/10/12	-
1	CCS	O	455	1	-	1/6/8/10	-
1	KCX	G	205	4,1	-	0/9/10/12	-
1	CCS	K	455	1	-	1/6/8/10	-
3	HL2	E	174	3	-	1/9/10/12	-

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	O	205	KCX	OQ1-CX	6.42	1.33	1.21
1	K	205	KCX	OQ1-CX	6.27	1.33	1.21
1	A	205	KCX	OQ1-CX	6.27	1.33	1.21
1	G	205	KCX	OQ1-CX	5.77	1.32	1.21

The worst 5 of 13 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	205	KCX	OQ1-CX-NZ	-4.79	117.65	124.92
1	O	205	KCX	OQ1-CX-NZ	-4.68	117.81	124.92
1	A	205	KCX	OQ1-CX-NZ	-4.09	118.70	124.92
1	K	205	KCX	OQ1-CX-NZ	-3.94	118.94	124.92
1	O	455	CCS	OZ1-CE-CD	-2.80	115.29	122.85

There are no chirality outliers.

5 of 11 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	174	HL2	O-C-CA-CB
1	C	174	HL2	O-C-CA-CB
3	E	174	HL2	O-C-CA-CB
1	G	174	HL2	O-C-CA-CB
3	I	174	HL2	O-C-CA-CB

There are no ring outliers.

3 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	455	CCS	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	O	455	CCS	1	0
1	K	455	CCS	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 180 ligands modelled in this entry, 8 are monoatomic - leaving 172 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	$\# Z > 2$
6	EDO	K	506	-	3,3,3	0.42	0	2,2,2	0.48	0
6	EDO	L	206	-	3,3,3	0.52	0	2,2,2	0.14	0
6	EDO	G	513	-	3,3,3	0.40	0	2,2,2	0.39	0
7	BCT	A	519	-	3,3,3	0.50	0	2,3,3	0.64	0
6	EDO	G	512	-	3,3,3	0.58	0	2,2,2	0.19	0
6	EDO	H	206	-	3,3,3	0.32	0	2,2,2	0.66	0
6	EDO	E	512	-	3,3,3	0.43	0	2,2,2	0.30	0
6	EDO	G	511	-	3,3,3	0.37	0	2,2,2	0.48	0
6	EDO	B	206	-	3,3,3	0.36	0	2,2,2	0.51	0
6	EDO	D	202	-	3,3,3	0.40	0	2,2,2	0.30	0
6	EDO	E	504	-	3,3,3	0.49	0	2,2,2	0.23	0
6	EDO	K	509	-	3,3,3	0.44	0	2,2,2	0.39	0
6	EDO	A	512	-	3,3,3	0.32	0	2,2,2	0.53	0
5	CAP	E	502	4	18,20,20	0.84	0	23,31,31	1.27	2 (8%)
6	EDO	I	503	-	3,3,3	0.48	0	2,2,2	0.29	0
6	EDO	M	507	-	3,3,3	0.38	0	2,2,2	0.36	0
7	BCT	O	514	-	3,3,3	0.58	0	2,3,3	0.49	0
6	EDO	M	505	-	3,3,3	0.48	0	2,2,2	0.31	0
6	EDO	K	508	-	3,3,3	0.38	0	2,2,2	0.42	0
6	EDO	P	204	-	3,3,3	0.37	0	2,2,2	0.42	0
6	EDO	B	204	-	3,3,3	0.50	0	2,2,2	0.14	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
6	EDO	I	507	-	3,3,3	0.41	0	2,2,2	0.11	0
6	EDO	K	510	-	3,3,3	0.45	0	2,2,2	0.09	0
7	BCT	H	208	-	3,3,3	0.58	0	2,3,3	0.63	0
6	EDO	O	511	-	3,3,3	0.32	0	2,2,2	0.44	0
6	EDO	N	202	-	3,3,3	0.35	0	2,2,2	0.28	0
6	EDO	E	503	-	3,3,3	0.57	0	2,2,2	0.24	0
6	EDO	C	512	-	3,3,3	0.38	0	2,2,2	0.37	0
6	EDO	F	205	-	3,3,3	0.38	0	2,2,2	0.60	0
6	EDO	N	203	-	3,3,3	0.48	0	2,2,2	0.31	0
6	EDO	H	204	-	3,3,3	0.42	0	2,2,2	0.29	0
6	EDO	C	513	-	3,3,3	0.43	0	2,2,2	0.47	0
6	EDO	J	204	-	3,3,3	0.47	0	2,2,2	0.20	0
6	EDO	K	503	-	3,3,3	0.39	0	2,2,2	0.58	0
6	EDO	A	504	-	3,3,3	0.41	0	2,2,2	0.42	0
6	EDO	G	507	-	3,3,3	0.43	0	2,2,2	0.23	0
6	EDO	J	202	-	3,3,3	0.46	0	2,2,2	0.18	0
6	EDO	M	508	-	3,3,3	0.39	0	2,2,2	0.42	0
6	EDO	A	505	-	3,3,3	0.35	0	2,2,2	0.47	0
6	EDO	D	201	-	3,3,3	0.42	0	2,2,2	0.31	0
7	BCT	A	516	-	3,3,3	1.35	0	2,3,3	0.61	0
7	BCT	E	513	-	3,3,3	0.64	0	2,3,3	0.46	0
6	EDO	M	506	-	3,3,3	0.43	0	2,2,2	0.41	0
6	EDO	I	508	-	3,3,3	0.47	0	2,2,2	0.04	0
6	EDO	L	207	-	3,3,3	0.41	0	2,2,2	0.41	0
6	EDO	J	203	-	3,3,3	0.46	0	2,2,2	0.24	0
6	EDO	D	205	-	3,3,3	0.37	0	2,2,2	0.37	0
6	EDO	N	205	-	3,3,3	0.35	0	2,2,2	0.57	0
6	EDO	G	506	-	3,3,3	0.40	0	2,2,2	0.43	0
6	EDO	A	513	-	3,3,3	0.41	0	2,2,2	0.26	0
6	EDO	L	205	-	3,3,3	0.36	0	2,2,2	0.61	0
7	BCT	E	515	-	3,3,3	1.52	1 (33%)	2,3,3	0.35	0
6	EDO	F	201	-	3,3,3	0.46	0	2,2,2	0.23	0
6	EDO	A	510	-	3,3,3	0.40	0	2,2,2	0.40	0
7	BCT	M	511	-	3,3,3	1.44	1 (33%)	2,3,3	0.69	0
6	EDO	G	510	-	3,3,3	0.38	0	2,2,2	0.37	0
6	EDO	N	206	-	3,3,3	0.46	0	2,2,2	0.32	0
7	BCT	I	515	-	3,3,3	1.54	1 (33%)	2,3,3	0.28	0
6	EDO	J	205	-	3,3,3	0.38	0	2,2,2	0.42	0
7	BCT	N	208	-	3,3,3	1.51	1 (33%)	2,3,3	0.26	0
7	BCT	K	511	-	3,3,3	0.62	0	2,3,3	0.99	0
6	EDO	I	510	-	3,3,3	0.44	0	2,2,2	0.43	0
7	BCT	I	516	-	3,3,3	0.57	0	2,3,3	0.54	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
6	EDO	G	505	-	3,3,3	0.38	0	2,2,2	0.39	0
6	EDO	E	505	-	3,3,3	0.41	0	2,2,2	0.49	0
6	EDO	C	506	-	3,3,3	0.45	0	2,2,2	0.11	0
6	EDO	P	208	-	3,3,3	0.33	0	2,2,2	0.46	0
6	EDO	A	506	-	3,3,3	0.40	0	2,2,2	0.43	0
6	EDO	O	503	-	3,3,3	0.47	0	2,2,2	0.28	0
6	EDO	D	203	-	3,3,3	0.49	0	2,2,2	0.22	0
6	EDO	D	204	-	3,3,3	0.44	0	2,2,2	0.24	0
5	CAP	O	502	4	18,20,20	0.79	0	23,31,31	1.47	2 (8%)
6	EDO	E	509	-	3,3,3	0.52	0	2,2,2	0.13	0
6	EDO	J	206	-	3,3,3	0.34	0	2,2,2	0.59	0
5	CAP	C	502	4	18,20,20	0.80	0	23,31,31	0.99	1 (4%)
6	EDO	L	204	-	3,3,3	0.50	0	2,2,2	0.04	0
6	EDO	E	508	-	3,3,3	0.43	0	2,2,2	0.44	0
7	BCT	E	514	-	3,3,3	0.53	0	2,3,3	0.85	0
7	BCT	C	514	-	3,3,3	0.53	0	2,3,3	0.49	0
7	BCT	G	515	-	3,3,3	1.51	1 (33%)	2,3,3	0.19	0
7	BCT	M	510	-	3,3,3	1.50	1 (33%)	2,3,3	0.30	0
6	EDO	A	514	-	3,3,3	0.27	0	2,2,2	0.39	0
6	EDO	D	206	-	3,3,3	0.38	0	2,2,2	0.63	0
6	EDO	P	203	-	3,3,3	0.41	0	2,2,2	0.30	0
6	EDO	E	511	-	3,3,3	0.41	0	2,2,2	0.40	0
7	BCT	B	207	-	3,3,3	0.56	0	2,3,3	0.57	0
6	EDO	I	505	-	3,3,3	0.40	0	2,2,2	0.35	0
6	EDO	F	204	-	3,3,3	0.30	0	2,2,2	0.45	0
6	EDO	N	207	-	3,3,3	0.36	0	2,2,2	0.35	0
6	EDO	A	515	-	3,3,3	0.43	0	2,2,2	0.42	0
6	EDO	P	206	-	3,3,3	0.44	0	2,2,2	0.30	0
6	EDO	E	507	-	3,3,3	0.43	0	2,2,2	0.37	0
6	EDO	I	509	-	3,3,3	0.43	0	2,2,2	0.42	0
6	EDO	L	202	-	3,3,3	0.37	0	2,2,2	0.48	0
6	EDO	B	202	-	3,3,3	0.36	0	2,2,2	0.32	0
6	EDO	P	205	-	3,3,3	0.38	0	2,2,2	0.25	0
6	EDO	P	202	-	3,3,3	0.42	0	2,2,2	0.30	0
6	EDO	O	505	-	3,3,3	0.45	0	2,2,2	0.33	0
7	BCT	M	512	-	3,3,3	0.53	0	2,3,3	0.64	0
6	EDO	L	203	-	3,3,3	0.31	0	2,2,2	0.39	0
7	BCT	A	517	-	3,3,3	0.52	0	2,3,3	0.55	0
6	EDO	K	504	-	3,3,3	0.43	0	2,2,2	0.48	0
7	BCT	O	513	-	3,3,3	0.57	0	2,3,3	0.61	0
6	EDO	B	203	-	3,3,3	0.45	0	2,2,2	0.35	0
7	BCT	G	514	-	3,3,3	0.66	0	2,3,3	0.20	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
6	EDO	A	509	-	3,3,3	0.43	0	2,2,2	0.38	0
6	EDO	O	510	-	3,3,3	0.45	0	2,2,2	0.21	0
5	CAP	K	502	4	18,20,20	0.78	0	23,31,31	1.33	2 (8%)
6	EDO	I	513	-	3,3,3	0.48	0	2,2,2	0.10	0
6	EDO	K	507	-	3,3,3	0.44	0	2,2,2	0.35	0
6	EDO	N	204	-	3,3,3	0.44	0	2,2,2	0.31	0
6	EDO	L	208	-	3,3,3	0.38	0	2,2,2	0.47	0
6	EDO	B	201	-	3,3,3	0.50	0	2,2,2	0.22	0
6	EDO	I	511	-	3,3,3	0.46	0	2,2,2	0.36	0
6	EDO	M	503	-	3,3,3	0.45	0	2,2,2	0.29	0
6	EDO	C	505	-	3,3,3	0.42	0	2,2,2	0.40	0
6	EDO	M	509	-	3,3,3	0.41	0	2,2,2	0.19	0
7	BCT	O	512	-	3,3,3	0.61	0	2,3,3	0.76	0
5	CAP	M	502	4	18,20,20	0.77	0	23,31,31	0.95	0
6	EDO	O	504	-	3,3,3	0.36	0	2,2,2	0.51	0
6	EDO	O	509	-	3,3,3	0.39	0	2,2,2	0.45	0
6	EDO	G	504	-	3,3,3	0.38	0	2,2,2	0.46	0
6	EDO	O	508	-	3,3,3	0.39	0	2,2,2	0.40	0
6	EDO	K	505	-	3,3,3	0.37	0	2,2,2	0.43	0
6	EDO	F	203	-	3,3,3	0.46	0	2,2,2	0.31	0
6	EDO	M	504	-	3,3,3	0.38	0	2,2,2	0.54	0
7	BCT	G	516	-	3,3,3	0.57	0	2,3,3	0.62	0
6	EDO	A	508	-	3,3,3	0.49	0	2,2,2	0.32	0
6	EDO	E	510	-	3,3,3	0.37	0	2,2,2	0.46	0
6	EDO	A	503	-	3,3,3	0.47	0	2,2,2	0.14	0
6	EDO	C	504	-	3,3,3	0.42	0	2,2,2	0.41	0
6	EDO	I	506	-	3,3,3	0.48	0	2,2,2	0.25	0
7	BCT	A	518	-	3,3,3	1.48	1 (33%)	2,3,3	0.47	0
6	EDO	G	503	-	3,3,3	0.41	0	2,2,2	0.17	0
7	BCT	C	515	-	3,3,3	1.50	1 (33%)	2,3,3	0.32	0
6	EDO	C	510	-	3,3,3	0.42	0	2,2,2	0.40	0
7	BCT	G	518	-	3,3,3	1.49	1 (33%)	2,3,3	0.17	0
6	EDO	C	509	-	3,3,3	0.41	0	2,2,2	0.46	0
6	EDO	O	506	-	3,3,3	0.42	0	2,2,2	0.42	0
7	BCT	K	512	-	3,3,3	0.54	0	2,3,3	0.68	0
5	CAP	A	502	4	18,20,20	0.79	0	23,31,31	1.43	2 (8%)
6	EDO	A	511	-	3,3,3	0.41	0	2,2,2	0.37	0
6	EDO	H	205	-	3,3,3	0.37	0	2,2,2	0.26	0
7	BCT	E	516	-	3,3,3	1.50	1 (33%)	2,3,3	0.32	0
6	EDO	C	508	-	3,3,3	0.42	0	2,2,2	0.38	0
7	BCT	D	207	-	3,3,3	0.56	0	2,3,3	0.52	0
6	EDO	H	202	-	3,3,3	0.45	0	2,2,2	0.15	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
6	EDO	E	506	-	3,3,3	0.38	0	2,2,2	0.48	0
5	CAP	I	502	4	18,20,20	0.74	0	23,31,31	0.98	0
6	EDO	O	507	-	3,3,3	0.37	0	2,2,2	0.44	0
6	EDO	L	201	-	3,3,3	0.48	0	2,2,2	0.19	0
6	EDO	C	503	-	3,3,3	0.41	0	2,2,2	0.25	0
7	BCT	L	209	-	3,3,3	1.51	1 (33%)	2,3,3	0.19	0
6	EDO	P	207	-	3,3,3	0.34	0	2,2,2	0.56	0
6	EDO	H	203	-	3,3,3	0.50	0	2,2,2	0.13	0
6	EDO	I	504	-	3,3,3	0.41	0	2,2,2	0.28	0
6	EDO	A	507	-	3,3,3	0.35	0	2,2,2	0.44	0
6	EDO	P	201	-	3,3,3	0.39	0	2,2,2	0.25	0
6	EDO	C	511	-	3,3,3	0.51	0	2,2,2	0.28	0
6	EDO	J	201	-	3,3,3	0.44	0	2,2,2	0.32	0
6	EDO	H	201	-	3,3,3	0.43	0	2,2,2	0.28	0
6	EDO	C	507	-	3,3,3	0.41	0	2,2,2	0.42	0
6	EDO	G	509	-	3,3,3	0.51	0	2,2,2	0.20	0
6	EDO	N	201	-	3,3,3	0.43	0	2,2,2	0.26	0
5	CAP	G	502	4	18,20,20	0.76	0	23,31,31	0.87	0
6	EDO	B	205	-	3,3,3	0.36	0	2,2,2	0.45	0
6	EDO	H	207	-	3,3,3	0.42	0	2,2,2	0.40	0
6	EDO	I	512	-	3,3,3	0.50	0	2,2,2	0.25	0
6	EDO	G	508	-	3,3,3	0.56	0	2,2,2	0.08	0
7	BCT	G	517	-	3,3,3	1.50	1 (33%)	2,3,3	0.38	0
6	EDO	F	202	-	3,3,3	0.51	0	2,2,2	0.24	0
7	BCT	I	514	-	3,3,3	0.55	0	2,3,3	0.57	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	EDO	K	506	-	-	0/1/1/1	-
6	EDO	L	206	-	-	1/1/1/1	-
6	EDO	G	513	-	-	1/1/1/1	-
6	EDO	G	512	-	-	0/1/1/1	-
6	EDO	H	206	-	-	0/1/1/1	-
6	EDO	E	512	-	-	0/1/1/1	-
6	EDO	G	511	-	-	0/1/1/1	-
6	EDO	B	206	-	-	0/1/1/1	-
6	EDO	D	202	-	-	0/1/1/1	-
6	EDO	E	504	-	-	0/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	EDO	K	509	-	-	1/1/1/1	-
6	EDO	A	512	-	-	0/1/1/1	-
5	CAP	E	502	4	-	9/29/29/29	-
6	EDO	I	503	-	-	0/1/1/1	-
6	EDO	M	507	-	-	0/1/1/1	-
6	EDO	M	505	-	-	0/1/1/1	-
6	EDO	K	508	-	-	0/1/1/1	-
6	EDO	P	204	-	-	0/1/1/1	-
6	EDO	B	204	-	-	0/1/1/1	-
6	EDO	I	507	-	-	1/1/1/1	-
6	EDO	K	510	-	-	1/1/1/1	-
6	EDO	O	511	-	-	1/1/1/1	-
6	EDO	N	202	-	-	0/1/1/1	-
6	EDO	E	503	-	-	0/1/1/1	-
6	EDO	C	512	-	-	0/1/1/1	-
6	EDO	F	205	-	-	0/1/1/1	-
6	EDO	N	203	-	-	0/1/1/1	-
6	EDO	H	204	-	-	0/1/1/1	-
6	EDO	C	513	-	-	1/1/1/1	-
6	EDO	J	204	-	-	0/1/1/1	-
6	EDO	K	503	-	-	0/1/1/1	-
6	EDO	A	504	-	-	0/1/1/1	-
6	EDO	G	507	-	-	0/1/1/1	-
6	EDO	J	202	-	-	0/1/1/1	-
6	EDO	M	508	-	-	0/1/1/1	-
6	EDO	A	505	-	-	0/1/1/1	-
6	EDO	D	201	-	-	0/1/1/1	-
6	EDO	M	506	-	-	0/1/1/1	-
6	EDO	I	508	-	-	1/1/1/1	-
6	EDO	L	207	-	-	0/1/1/1	-
6	EDO	J	203	-	-	0/1/1/1	-
6	EDO	D	205	-	-	0/1/1/1	-
6	EDO	N	205	-	-	0/1/1/1	-
6	EDO	G	506	-	-	1/1/1/1	-
6	EDO	A	513	-	-	0/1/1/1	-
6	EDO	L	205	-	-	0/1/1/1	-
6	EDO	F	201	-	-	0/1/1/1	-
6	EDO	A	510	-	-	1/1/1/1	-
6	EDO	G	510	-	-	0/1/1/1	-
6	EDO	N	206	-	-	0/1/1/1	-
6	EDO	J	205	-	-	1/1/1/1	-
6	EDO	I	510	-	-	0/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	EDO	G	505	-	-	1/1/1/1	-
6	EDO	E	505	-	-	0/1/1/1	-
6	EDO	C	506	-	-	1/1/1/1	-
6	EDO	P	208	-	-	1/1/1/1	-
6	EDO	A	506	-	-	0/1/1/1	-
6	EDO	O	503	-	-	0/1/1/1	-
6	EDO	D	203	-	-	0/1/1/1	-
6	EDO	D	204	-	-	0/1/1/1	-
5	CAP	O	502	4	-	9/29/29/29	-
6	EDO	E	509	-	-	0/1/1/1	-
6	EDO	J	206	-	-	0/1/1/1	-
5	CAP	C	502	4	-	7/29/29/29	-
6	EDO	L	204	-	-	0/1/1/1	-
6	EDO	E	508	-	-	0/1/1/1	-
6	EDO	A	514	-	-	1/1/1/1	-
6	EDO	D	206	-	-	0/1/1/1	-
6	EDO	P	203	-	-	0/1/1/1	-
6	EDO	E	511	-	-	1/1/1/1	-
6	EDO	I	505	-	-	0/1/1/1	-
6	EDO	F	204	-	-	0/1/1/1	-
6	EDO	N	207	-	-	1/1/1/1	-
6	EDO	A	515	-	-	0/1/1/1	-
6	EDO	P	206	-	-	1/1/1/1	-
6	EDO	E	507	-	-	1/1/1/1	-
6	EDO	I	509	-	-	1/1/1/1	-
6	EDO	L	202	-	-	0/1/1/1	-
6	EDO	B	202	-	-	0/1/1/1	-
6	EDO	P	205	-	-	1/1/1/1	-
6	EDO	P	202	-	-	0/1/1/1	-
6	EDO	O	505	-	-	1/1/1/1	-
6	EDO	L	203	-	-	0/1/1/1	-
6	EDO	K	504	-	-	0/1/1/1	-
6	EDO	B	203	-	-	0/1/1/1	-
6	EDO	A	509	-	-	1/1/1/1	-
6	EDO	O	510	-	-	0/1/1/1	-
5	CAP	K	502	4	-	8/29/29/29	-
6	EDO	I	513	-	-	1/1/1/1	-
6	EDO	K	507	-	-	1/1/1/1	-
6	EDO	N	204	-	-	0/1/1/1	-
6	EDO	L	208	-	-	1/1/1/1	-
6	EDO	B	201	-	-	0/1/1/1	-
6	EDO	I	511	-	-	0/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	EDO	M	503	-	-	0/1/1/1	-
6	EDO	C	505	-	-	0/1/1/1	-
6	EDO	M	509	-	-	1/1/1/1	-
5	CAP	M	502	4	-	7/29/29/29	-
6	EDO	O	504	-	-	0/1/1/1	-
6	EDO	O	509	-	-	1/1/1/1	-
6	EDO	G	504	-	-	0/1/1/1	-
6	EDO	O	508	-	-	0/1/1/1	-
6	EDO	K	505	-	-	1/1/1/1	-
6	EDO	F	203	-	-	0/1/1/1	-
6	EDO	M	504	-	-	0/1/1/1	-
6	EDO	A	508	-	-	0/1/1/1	-
6	EDO	E	510	-	-	0/1/1/1	-
6	EDO	A	503	-	-	0/1/1/1	-
6	EDO	C	504	-	-	0/1/1/1	-
6	EDO	I	506	-	-	0/1/1/1	-
6	EDO	G	503	-	-	0/1/1/1	-
6	EDO	C	510	-	-	0/1/1/1	-
6	EDO	C	509	-	-	0/1/1/1	-
6	EDO	O	506	-	-	0/1/1/1	-
5	CAP	A	502	4	-	9/29/29/29	-
6	EDO	A	511	-	-	0/1/1/1	-
6	EDO	H	205	-	-	1/1/1/1	-
6	EDO	C	508	-	-	0/1/1/1	-
6	EDO	H	202	-	-	0/1/1/1	-
6	EDO	E	506	-	-	0/1/1/1	-
5	CAP	I	502	4	-	7/29/29/29	-
6	EDO	O	507	-	-	1/1/1/1	-
6	EDO	L	201	-	-	0/1/1/1	-
6	EDO	C	503	-	-	0/1/1/1	-
6	EDO	P	207	-	-	0/1/1/1	-
6	EDO	H	203	-	-	0/1/1/1	-
6	EDO	I	504	-	-	0/1/1/1	-
6	EDO	A	507	-	-	0/1/1/1	-
6	EDO	P	201	-	-	0/1/1/1	-
6	EDO	C	511	-	-	1/1/1/1	-
6	EDO	J	201	-	-	0/1/1/1	-
6	EDO	H	201	-	-	0/1/1/1	-
6	EDO	C	507	-	-	1/1/1/1	-
6	EDO	G	509	-	-	0/1/1/1	-
6	EDO	N	201	-	-	0/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	CAP	G	502	4	-	7/29/29/29	-
6	EDO	B	205	-	-	1/1/1/1	-
6	EDO	H	207	-	-	0/1/1/1	-
6	EDO	I	512	-	-	1/1/1/1	-
6	EDO	G	508	-	-	0/1/1/1	-
6	EDO	F	202	-	-	0/1/1/1	-

The worst 5 of 12 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	E	515	BCT	O1-C	2.28	1.33	1.25
7	N	208	BCT	O1-C	2.25	1.33	1.25
7	E	516	BCT	O1-C	2.25	1.33	1.25
7	M	510	BCT	O1-C	2.24	1.33	1.25
7	G	515	BCT	O1-C	2.24	1.33	1.25

The worst 5 of 9 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	O	502	CAP	O7-C-C2	4.52	121.63	114.06
5	A	502	CAP	O7-C-C2	4.26	121.19	114.06
5	E	502	CAP	O7-C-C2	4.19	121.07	114.06
5	K	502	CAP	O7-C-C2	4.13	120.97	114.06
5	O	502	CAP	O6-C-C2	-3.29	116.19	122.32

There are no chirality outliers.

5 of 98 torsion outliers are listed below:

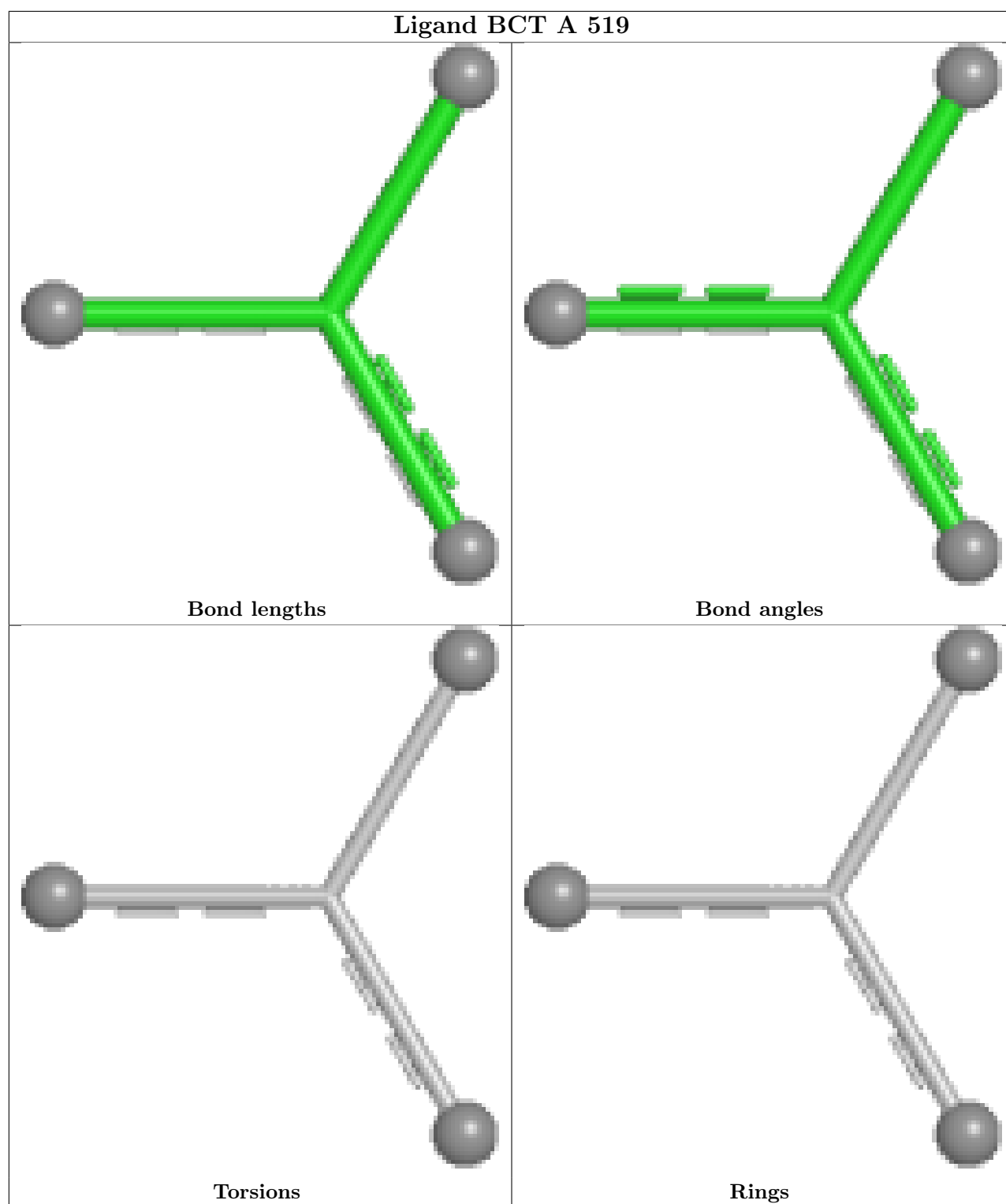
Mol	Chain	Res	Type	Atoms
5	A	502	CAP	O6-C-C2-O2
5	A	502	CAP	C2-C3-C4-O4
5	A	502	CAP	O3-C3-C4-O4
5	C	502	CAP	O6-C-C2-C1
5	C	502	CAP	O7-C-C2-C1

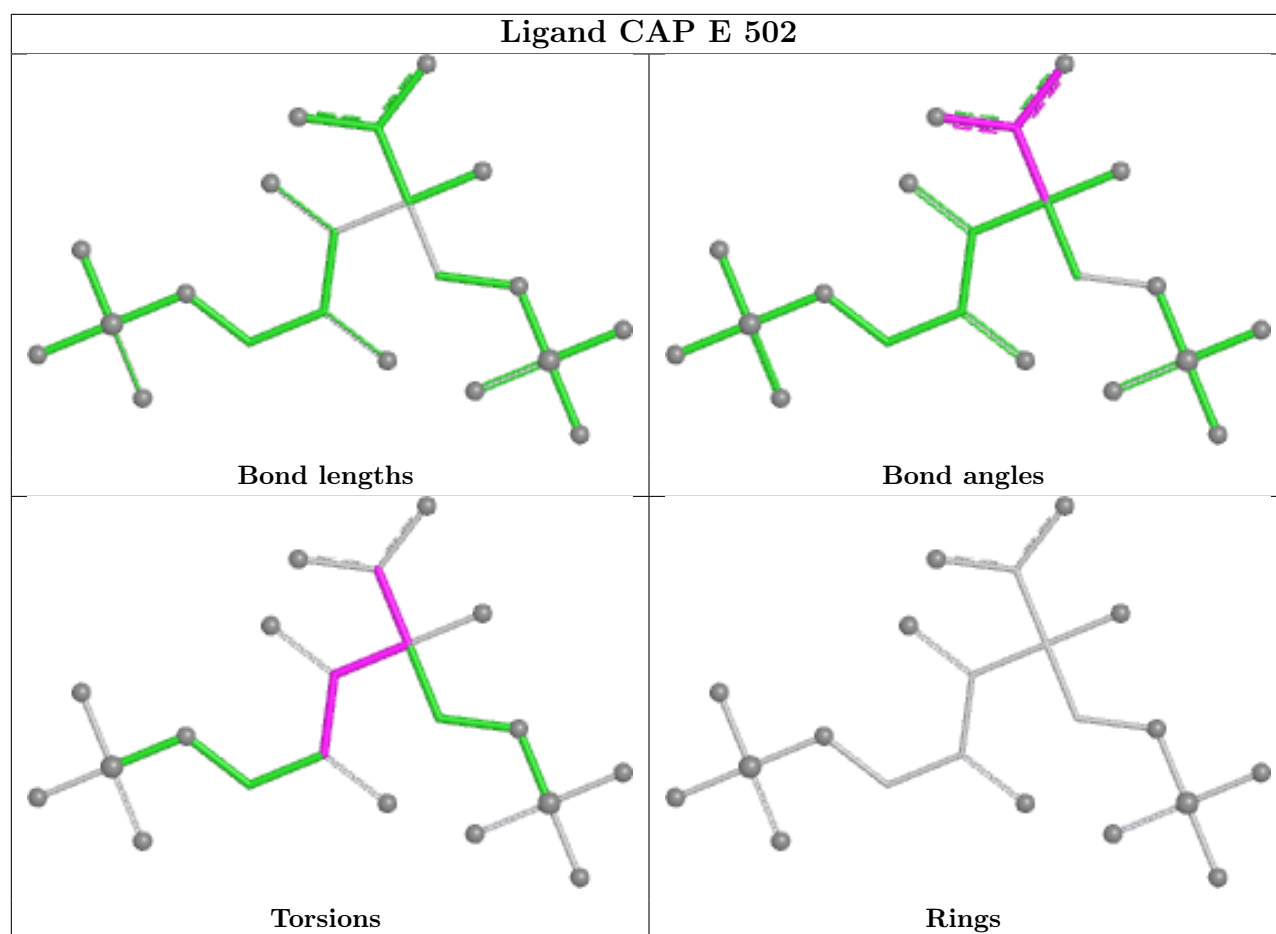
There are no ring outliers.

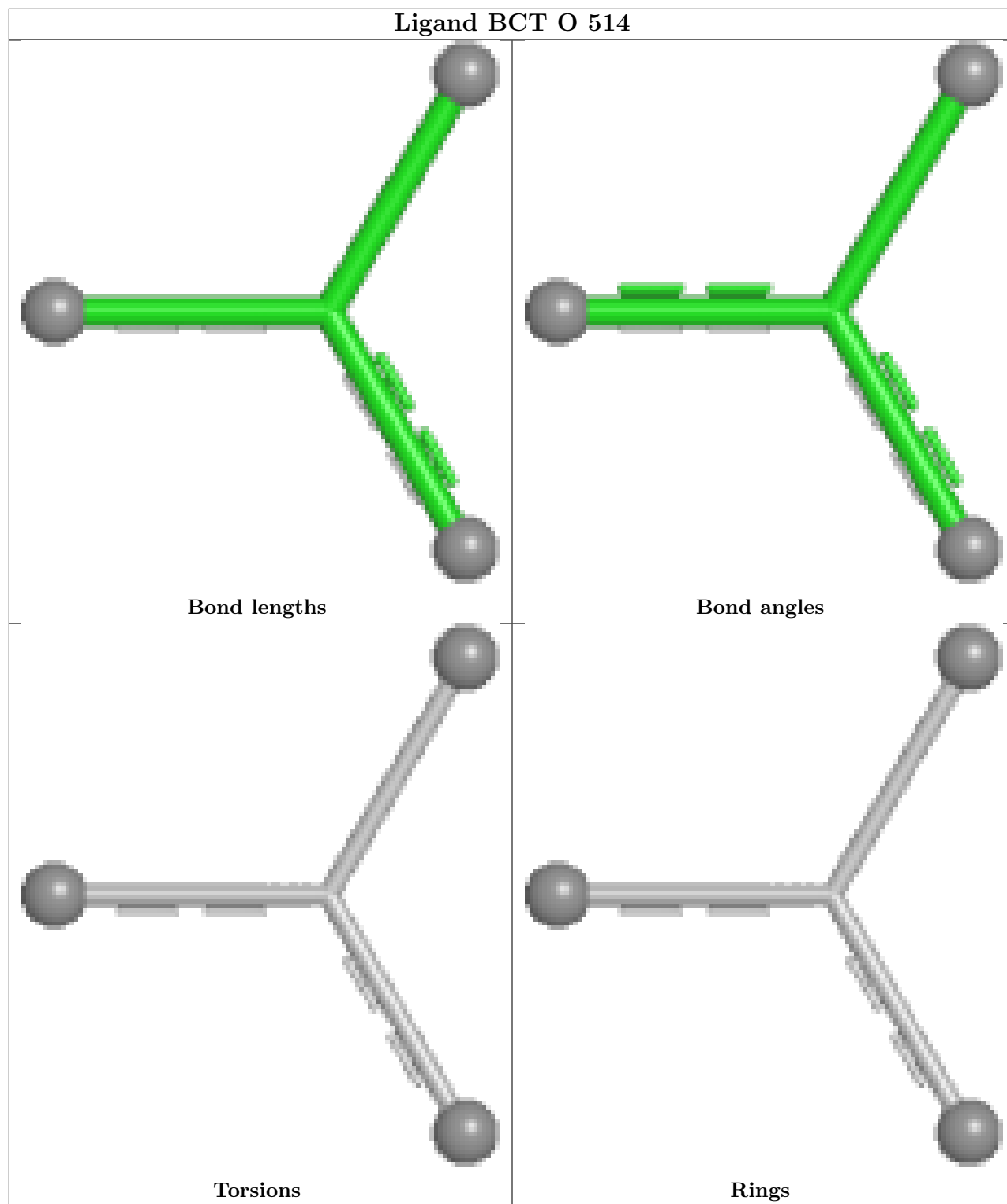
1 monomer is involved in 1 short contact:

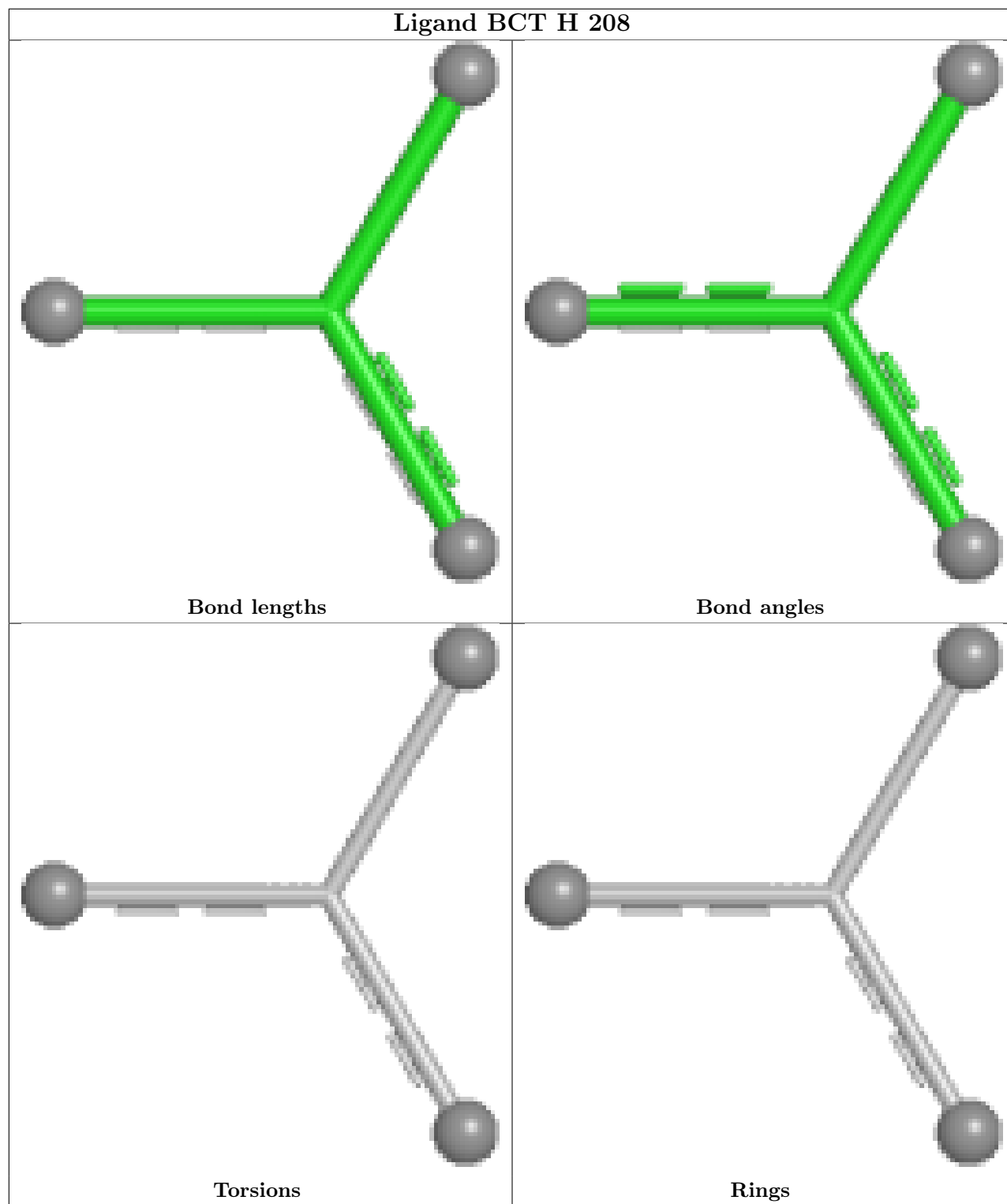
Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	513	EDO	1	0

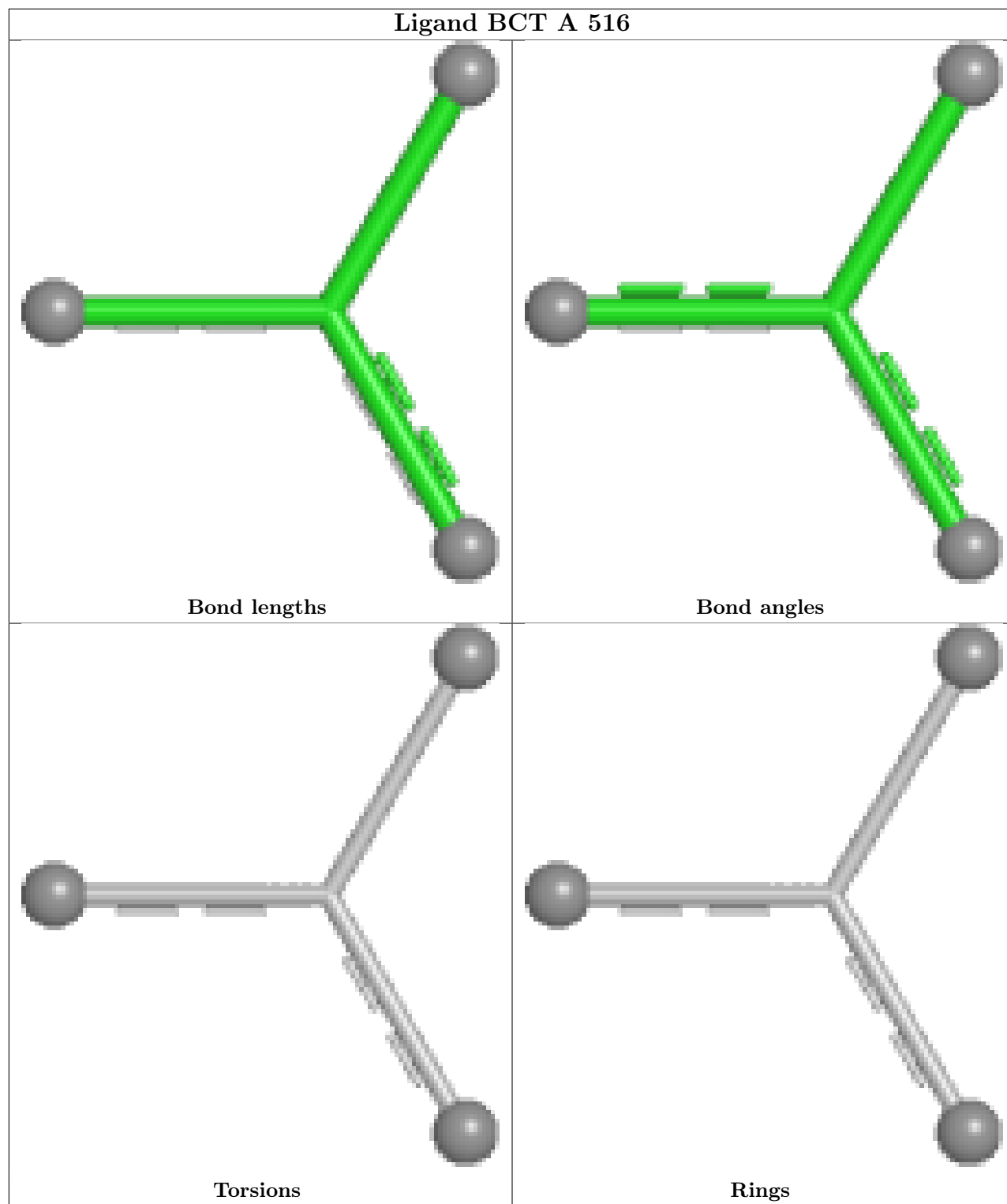
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

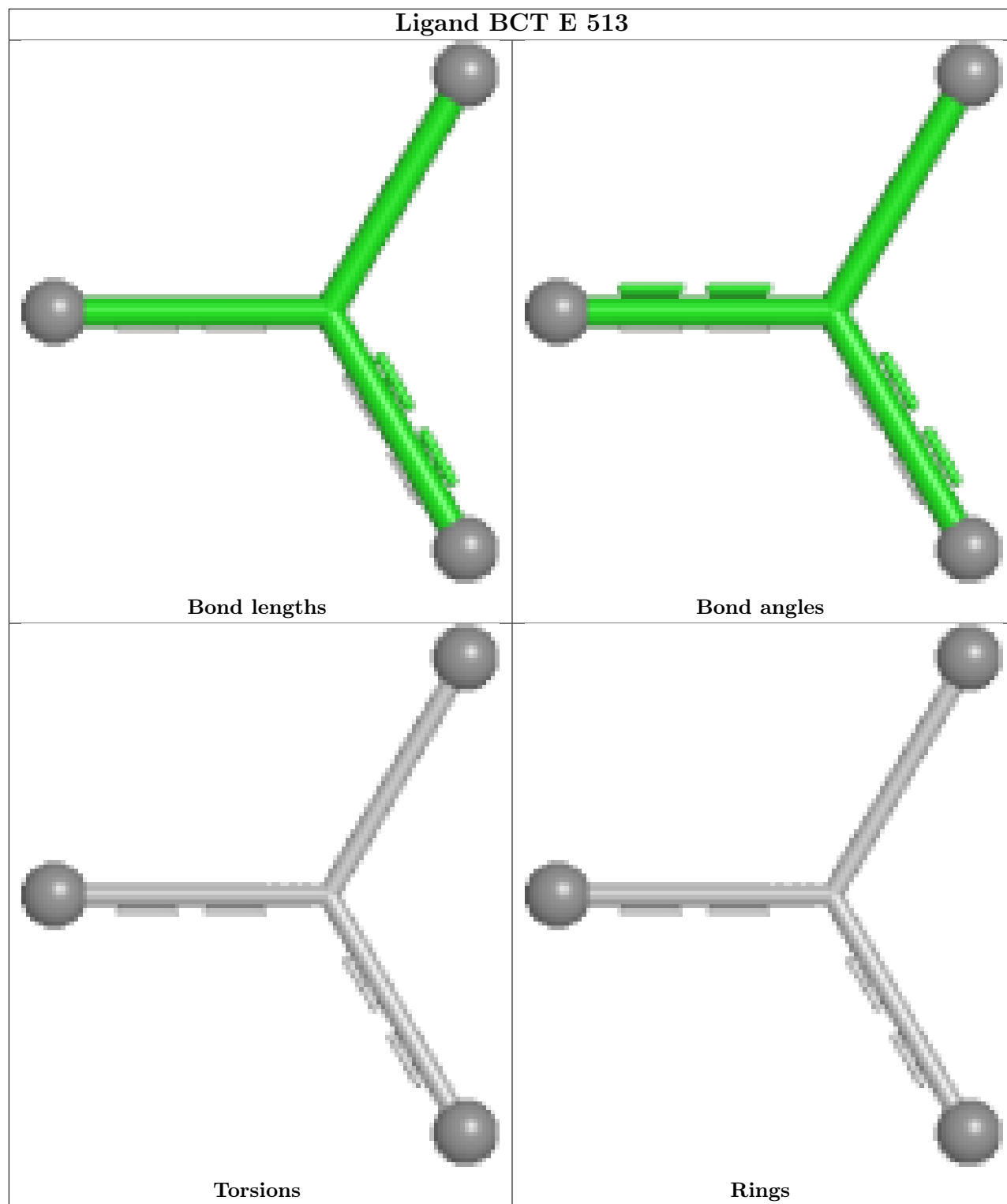


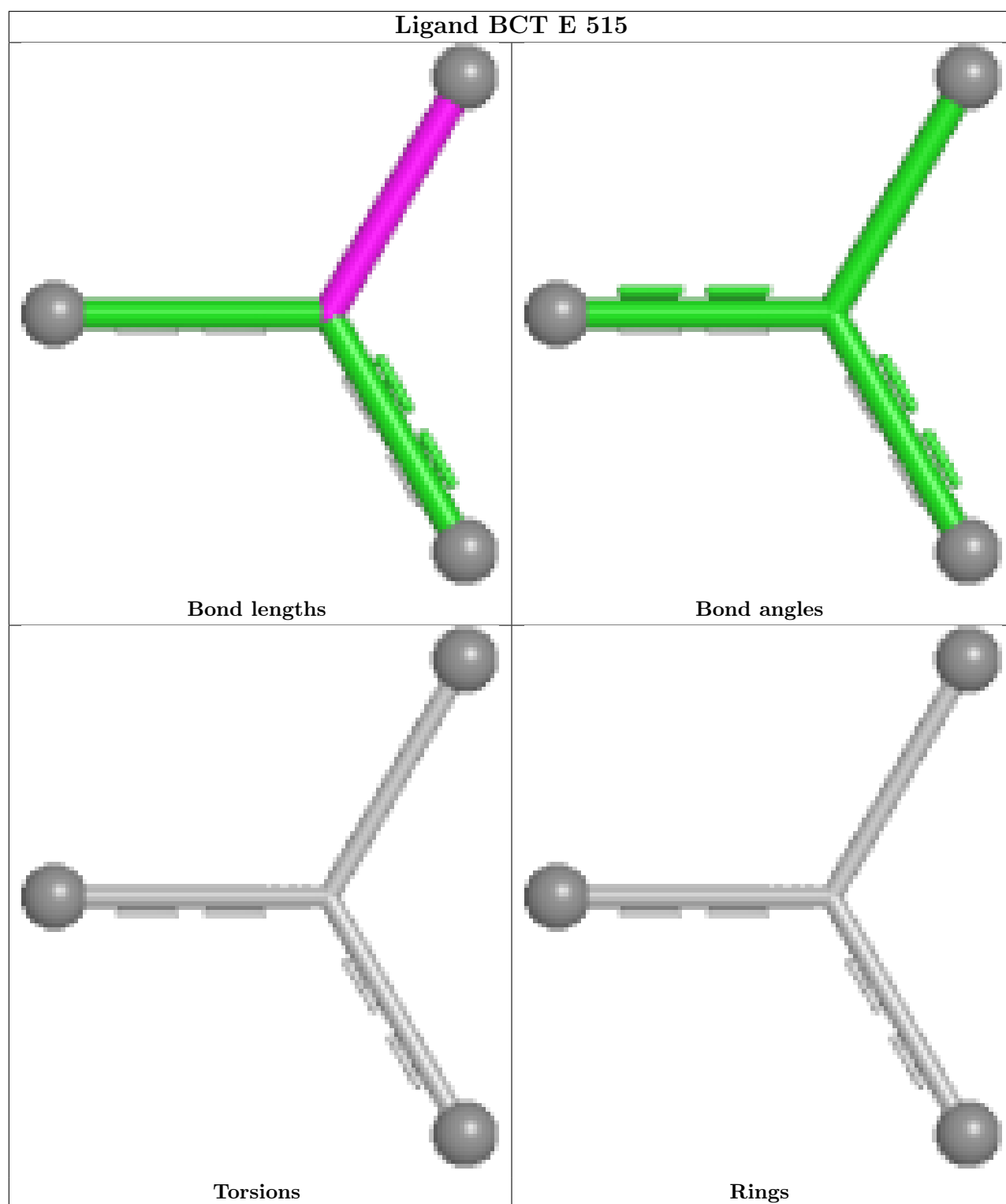


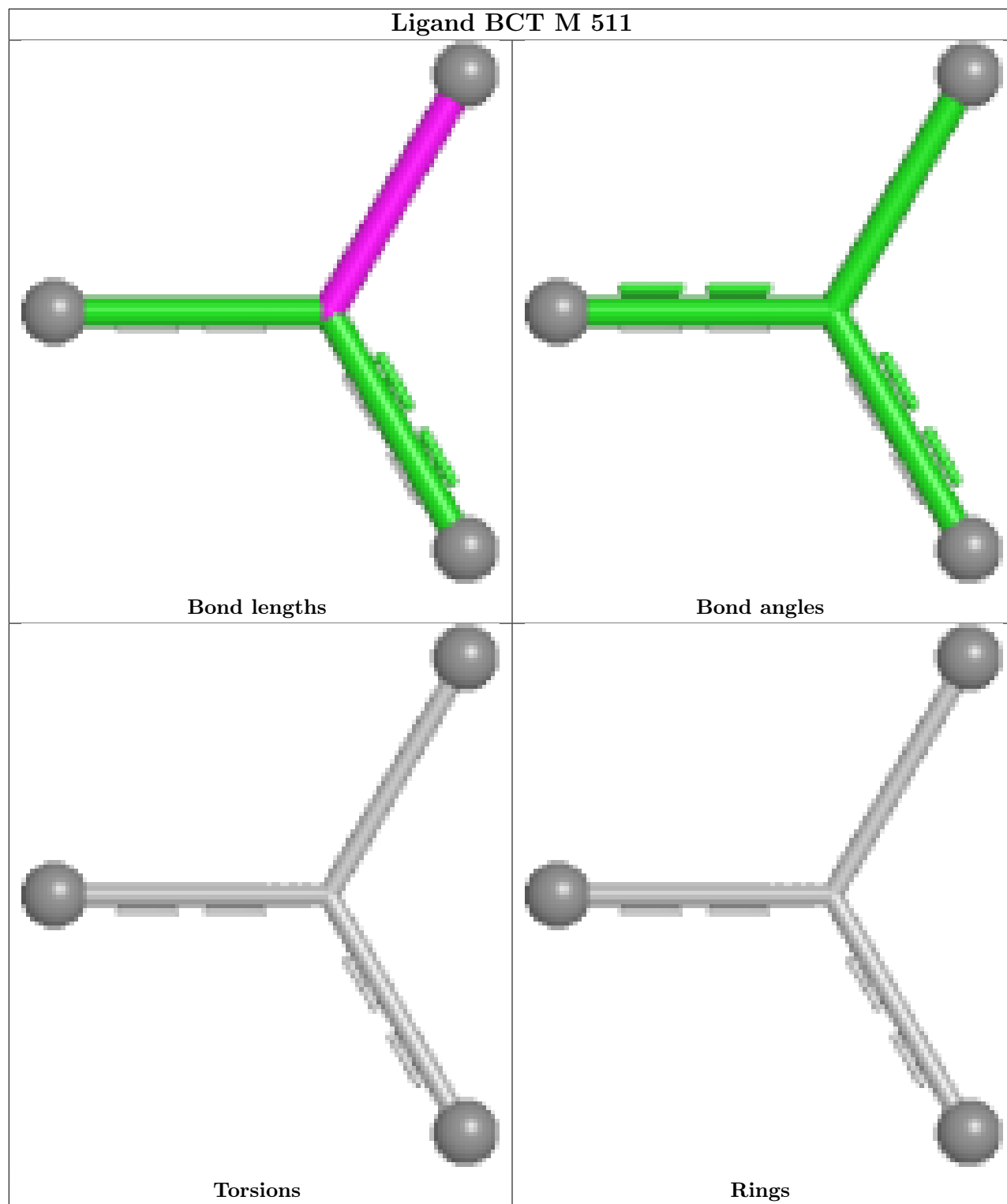




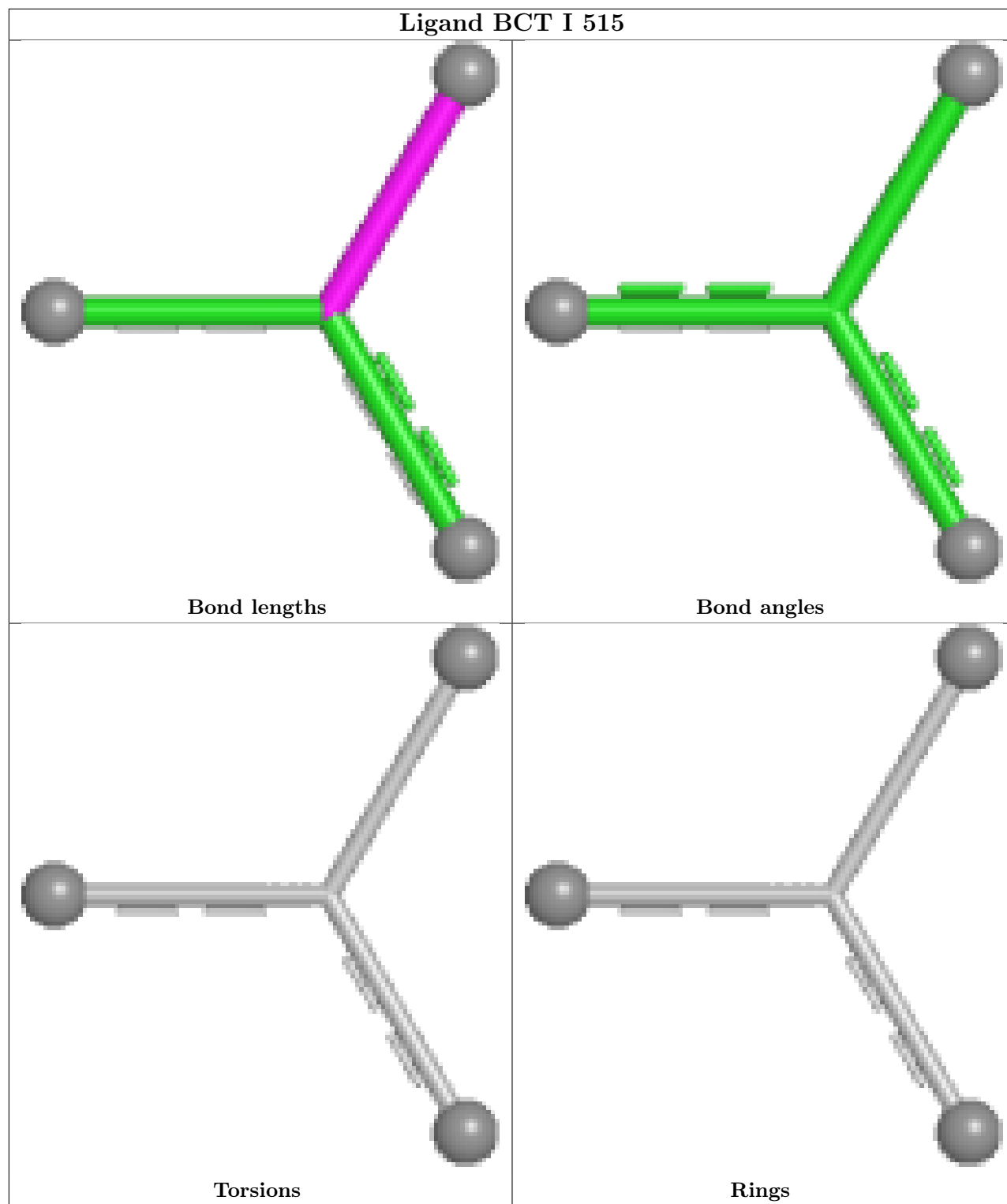


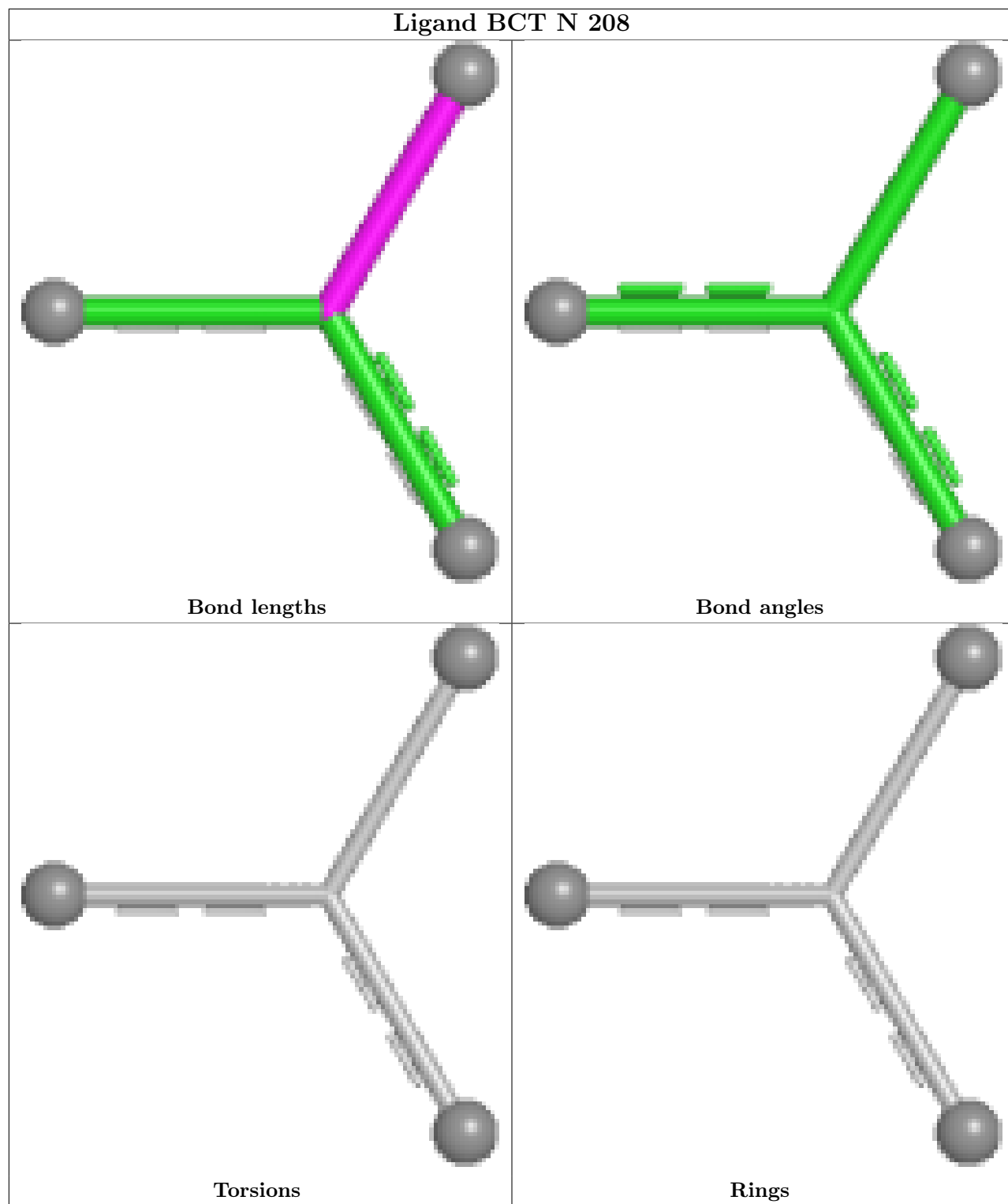


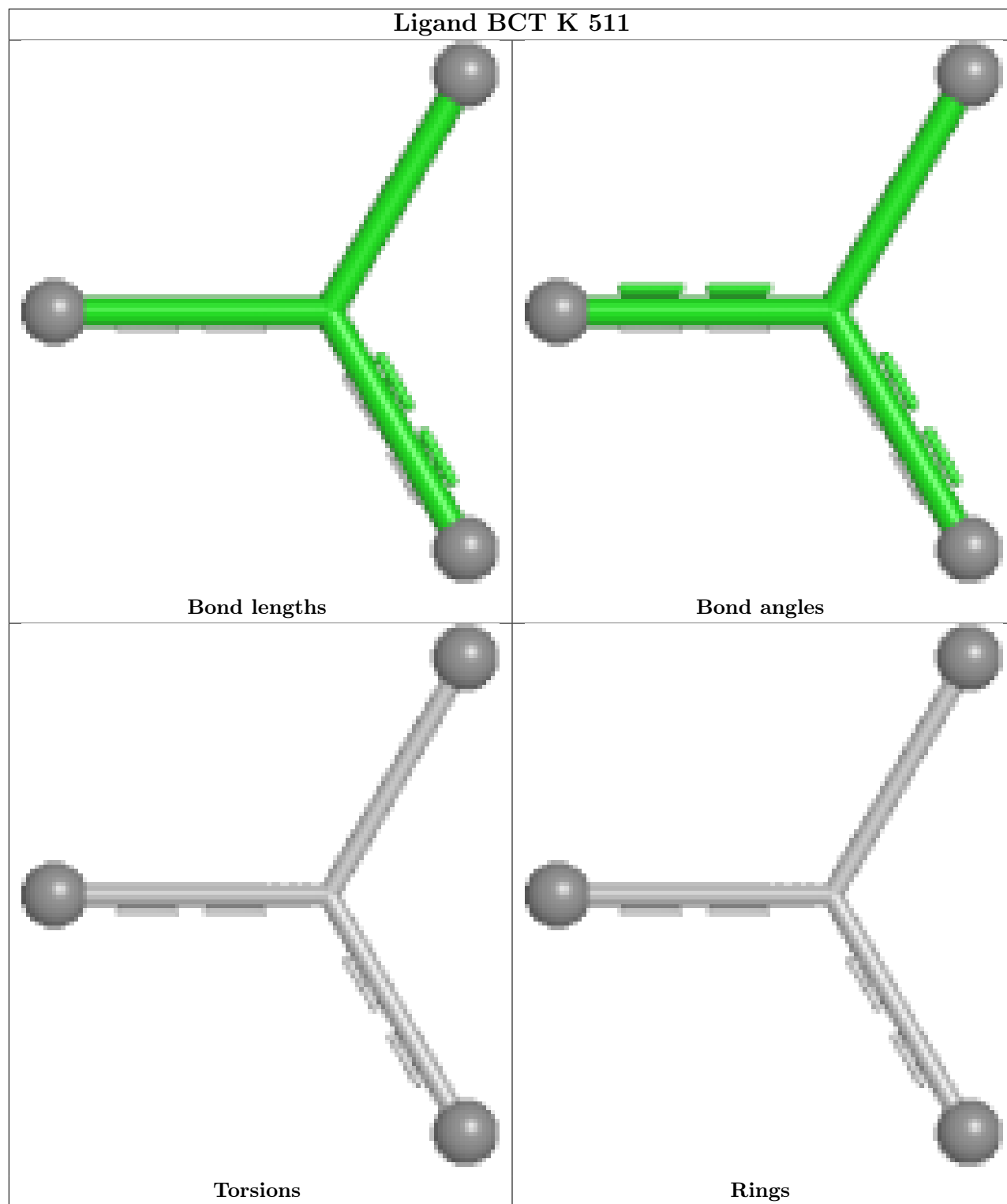




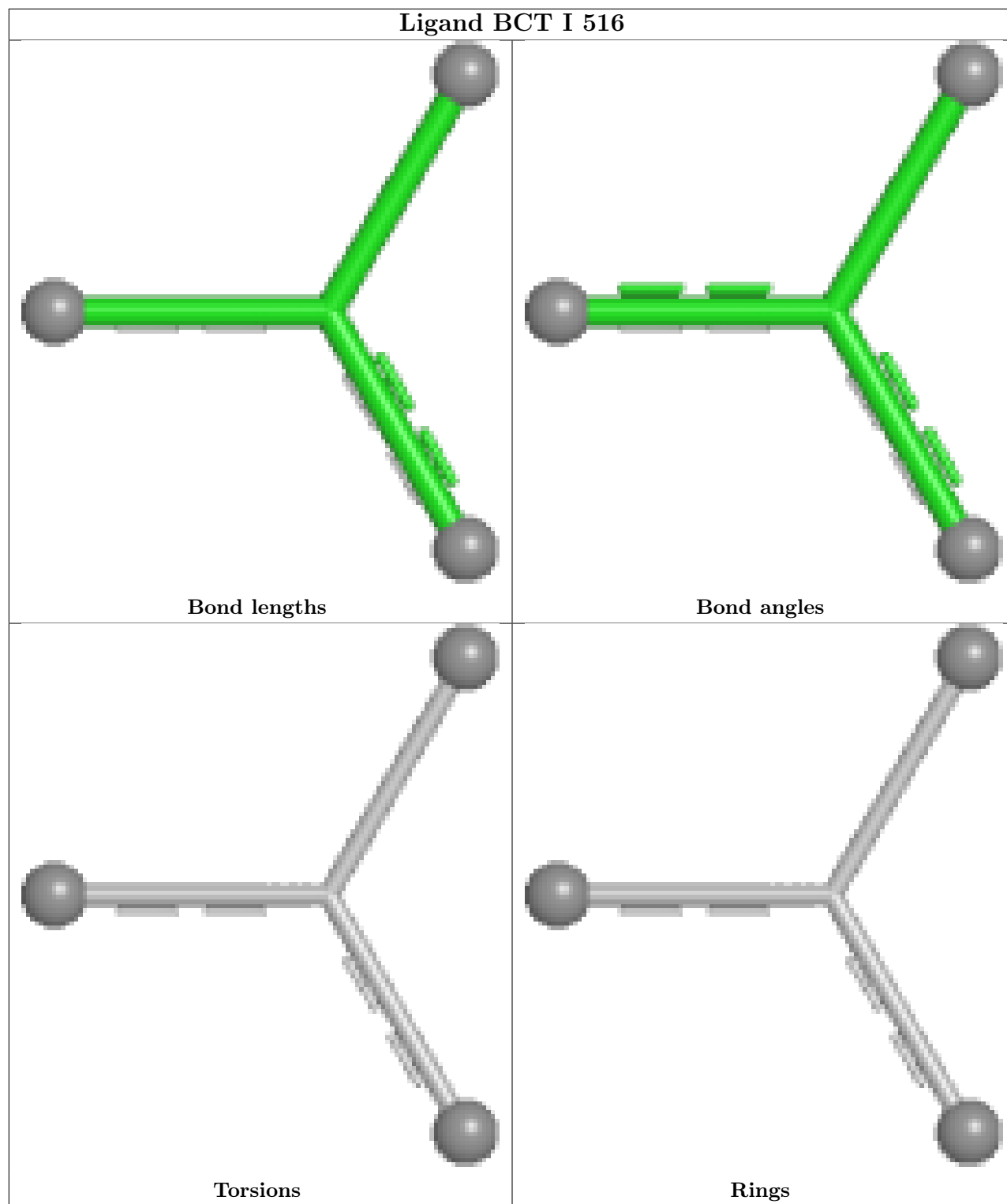
Ligand BCT I 515

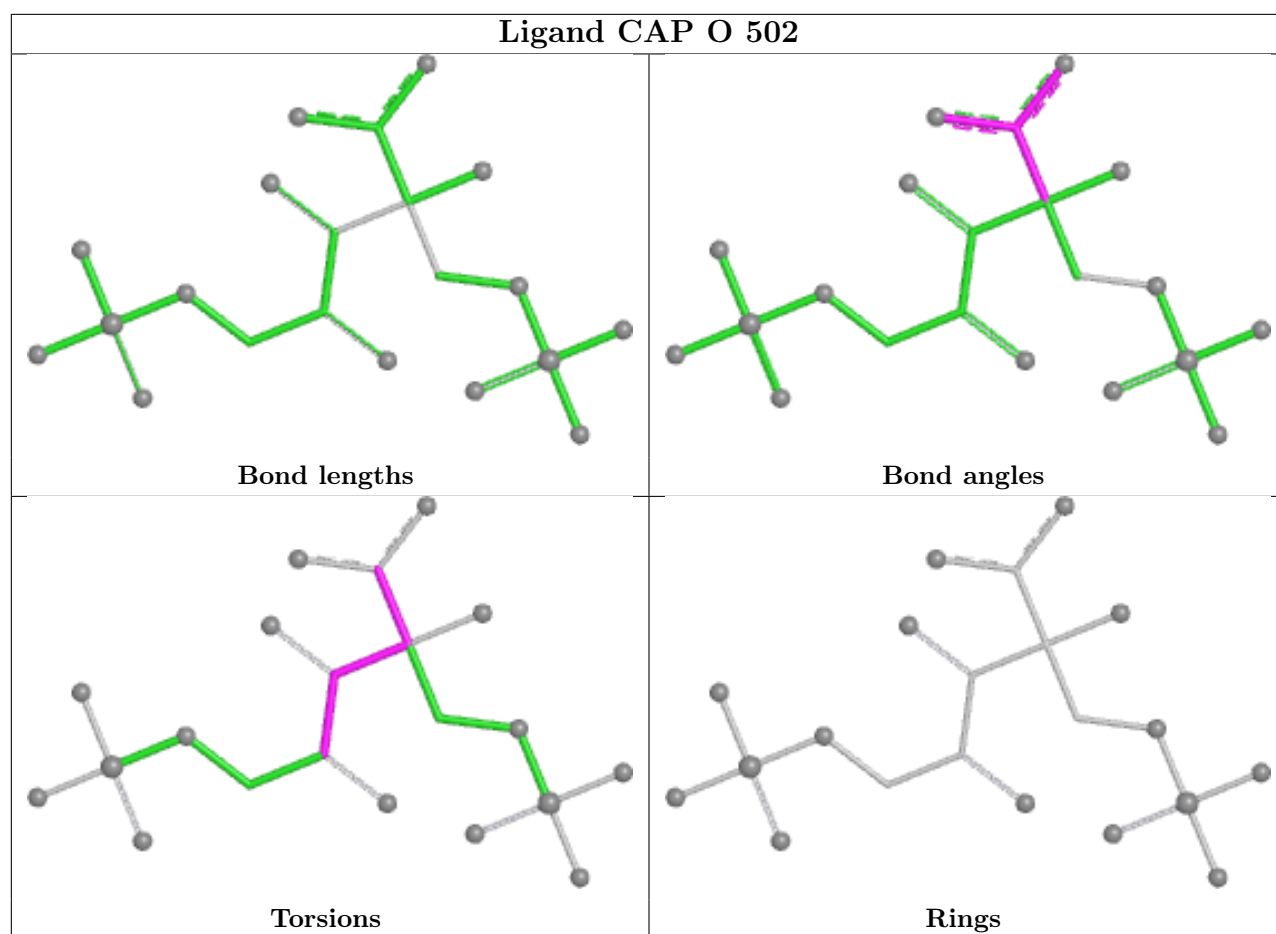


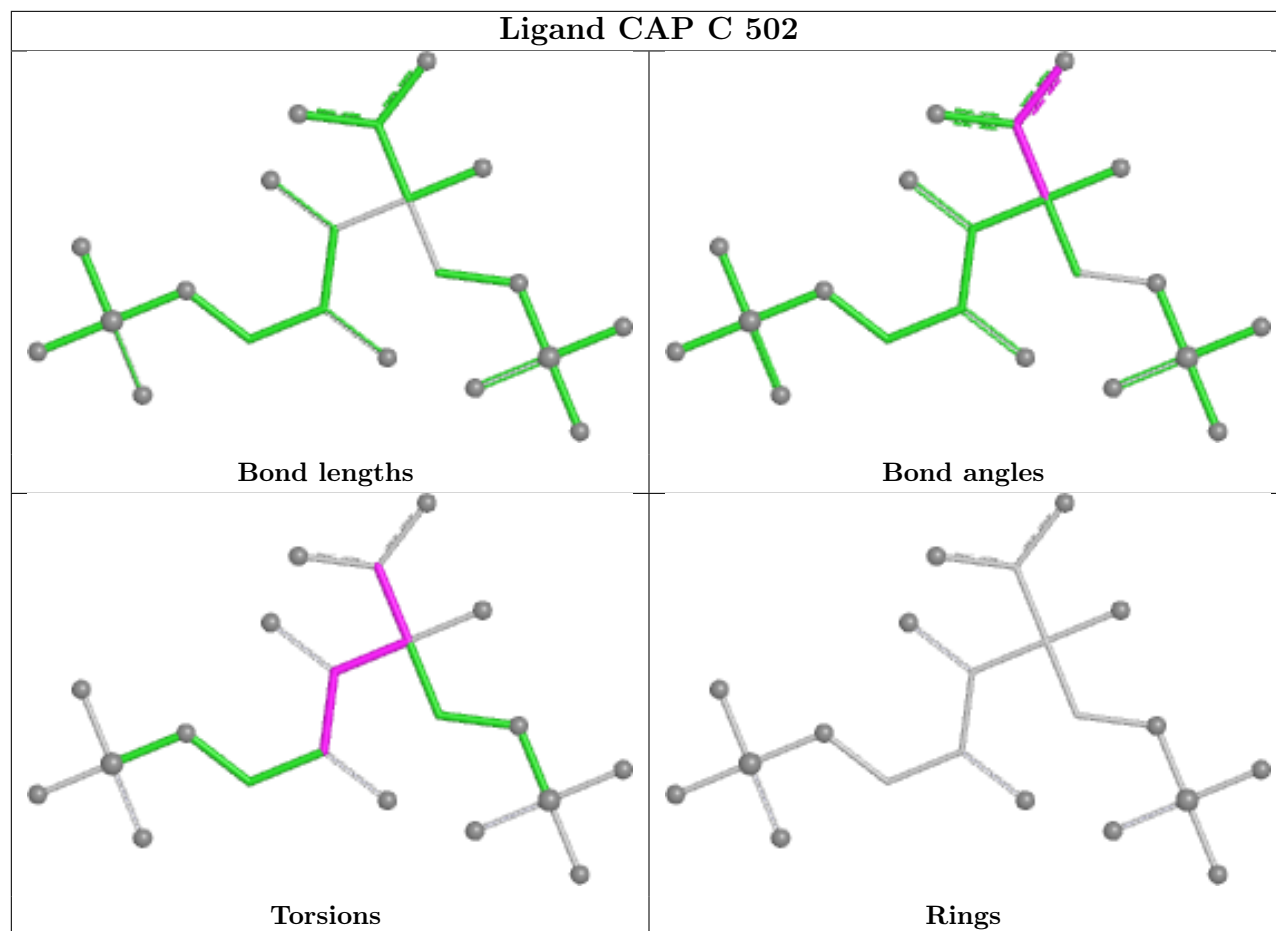


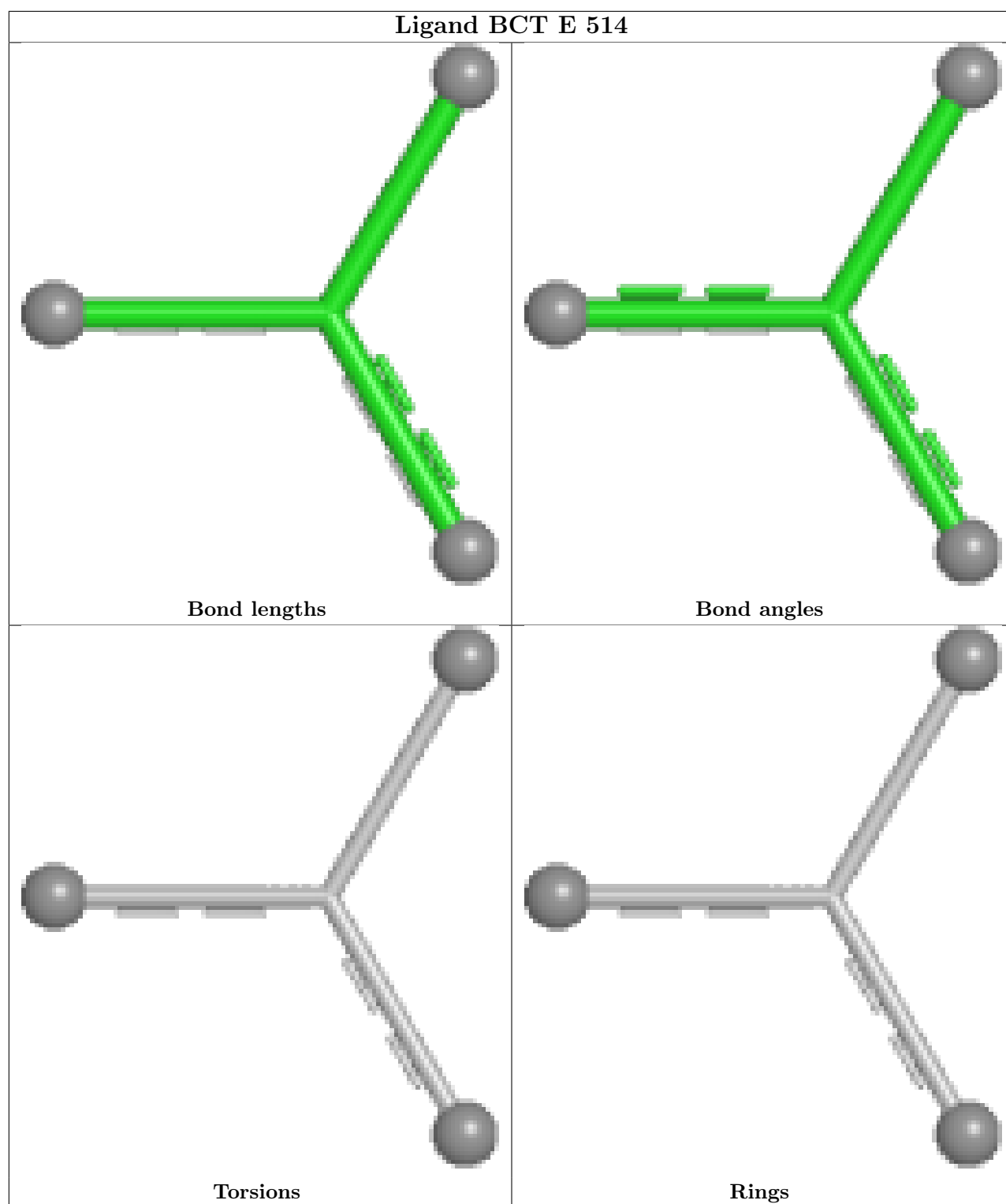


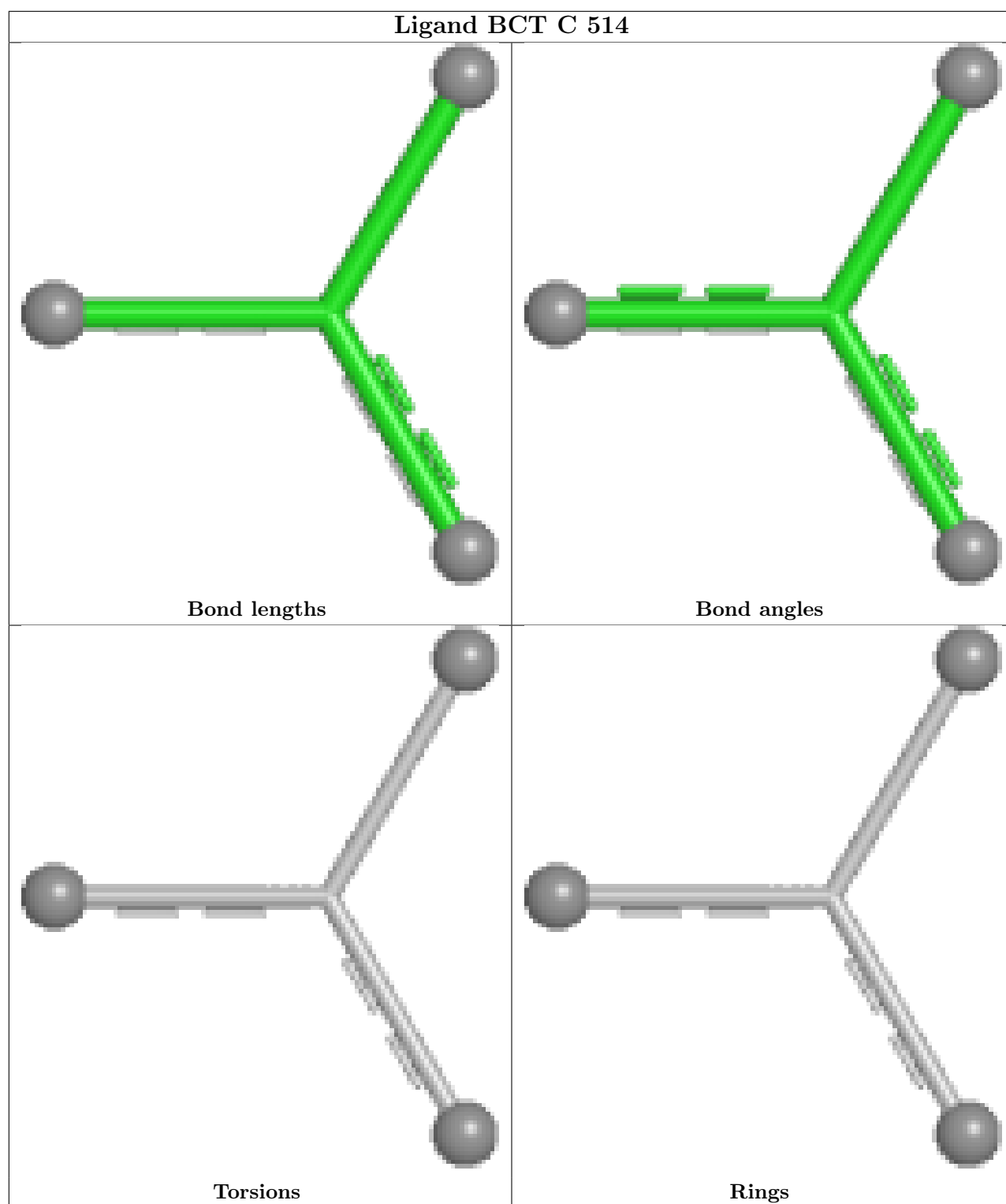
Ligand BCT I 516

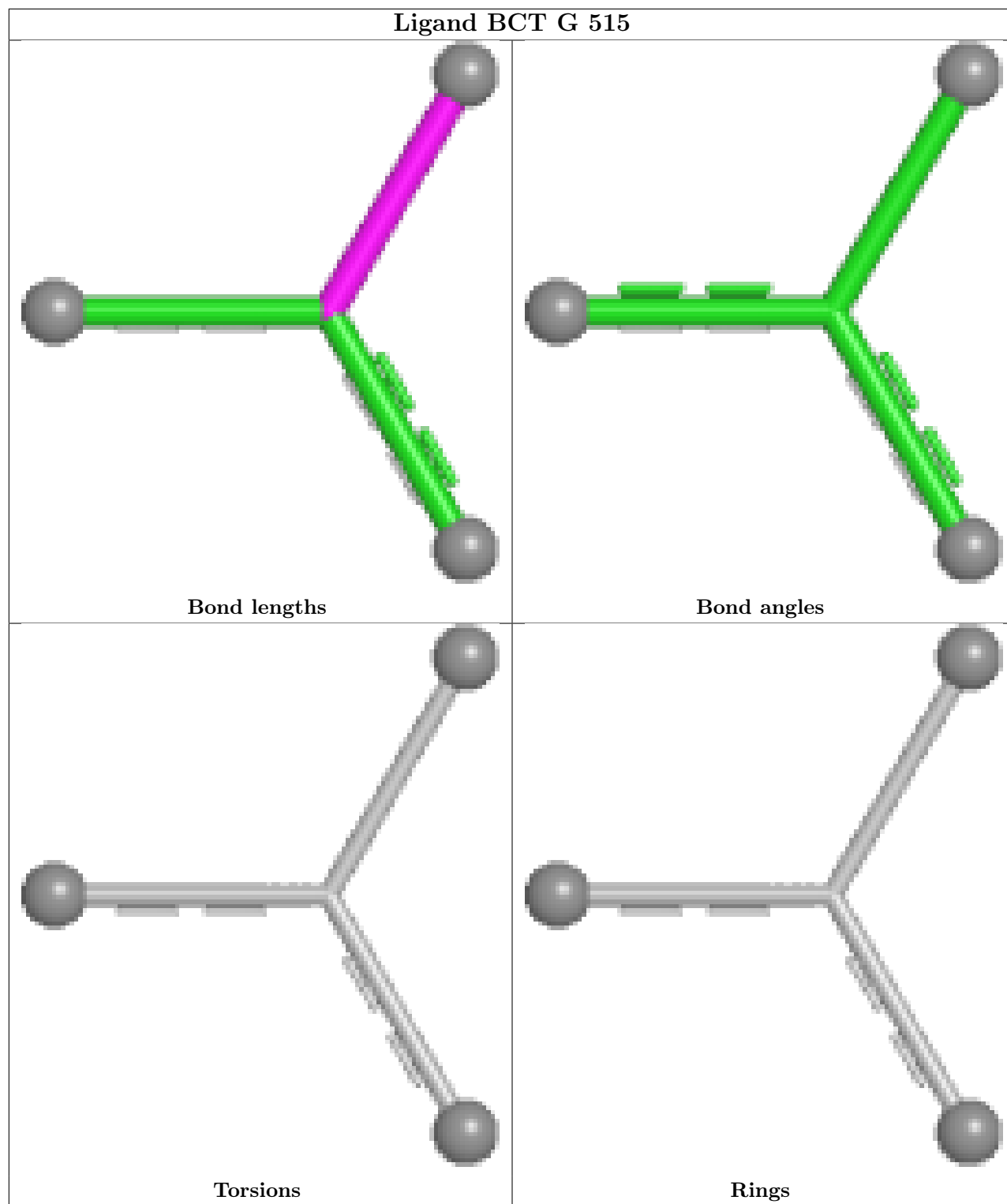


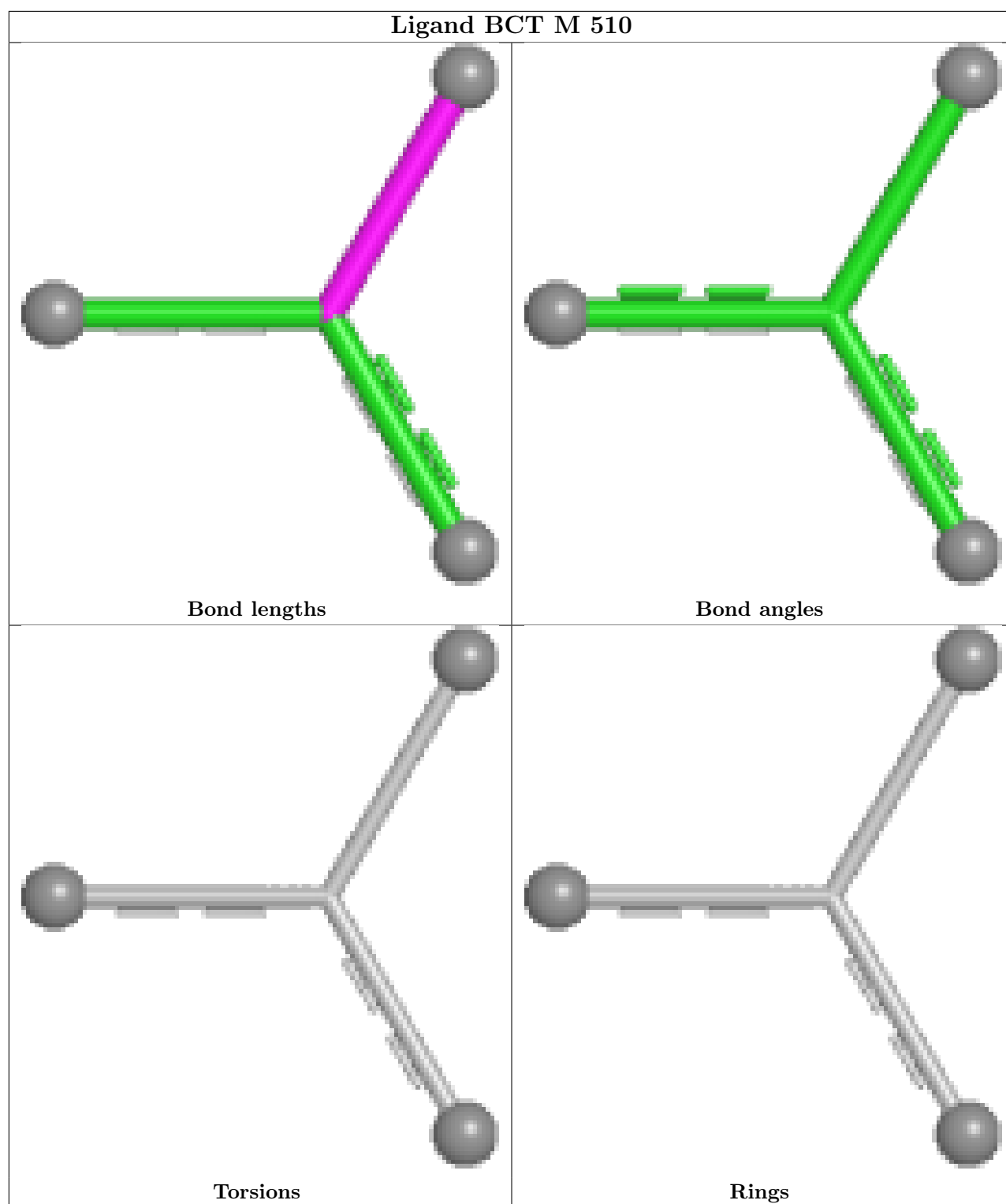


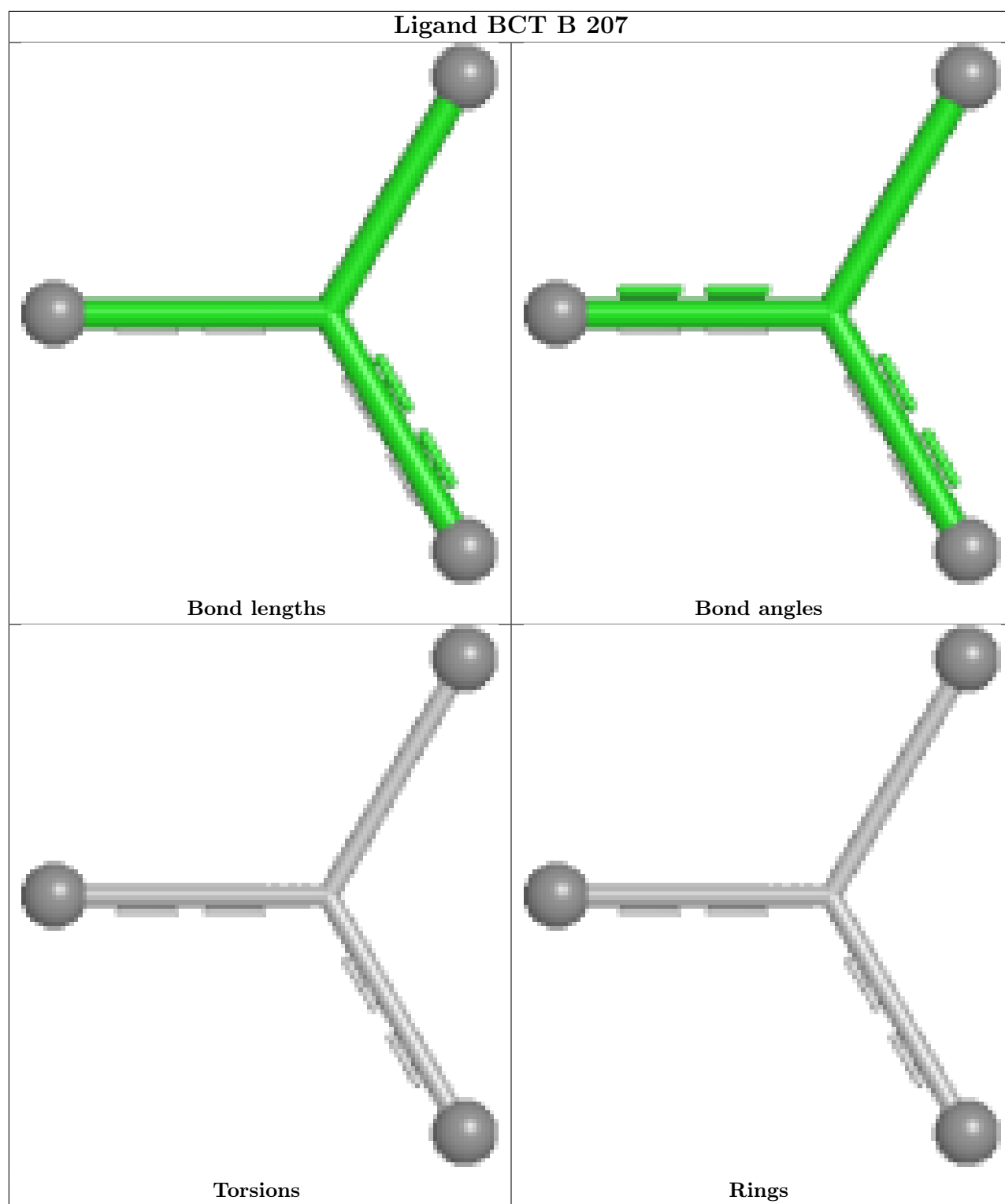


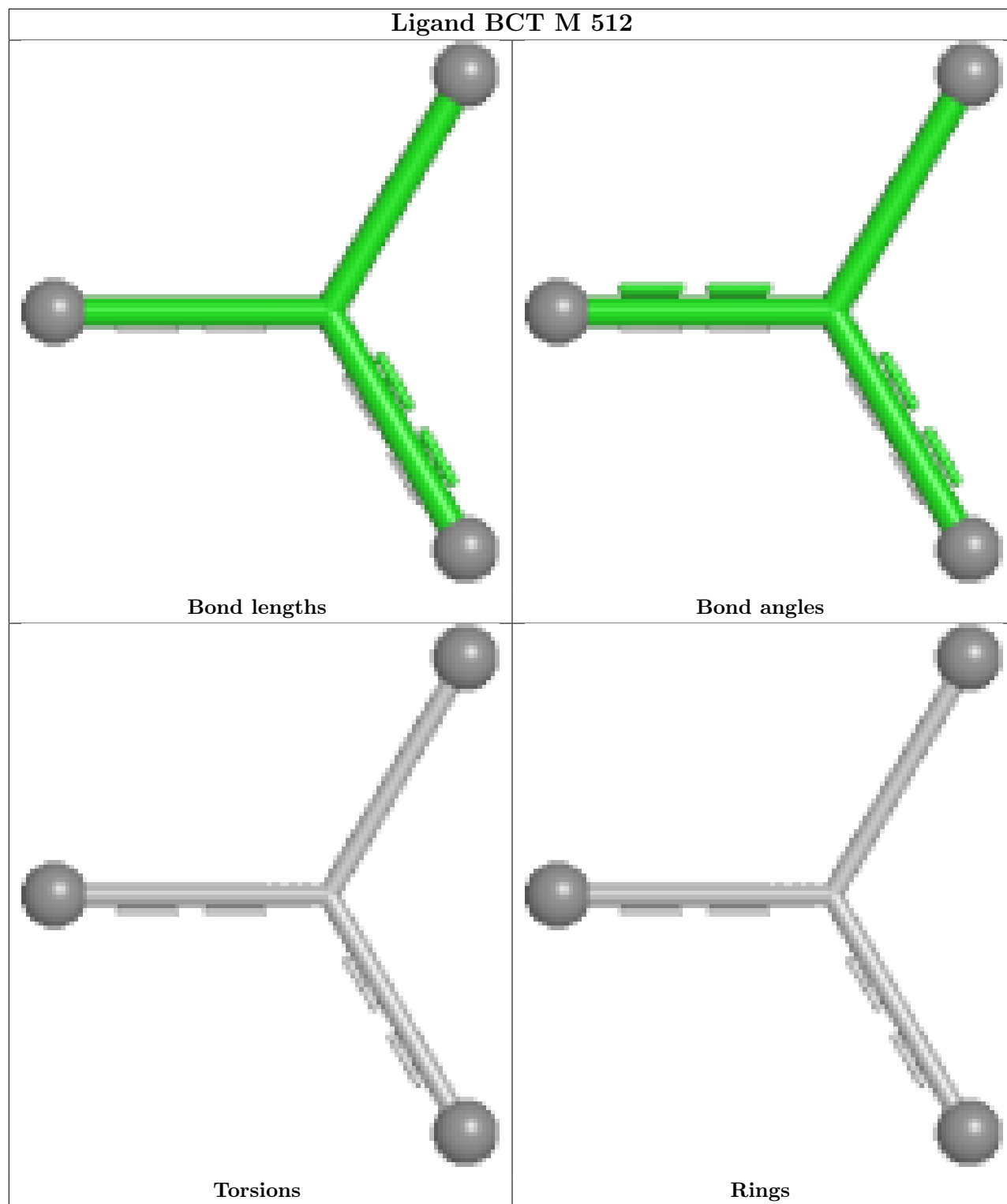


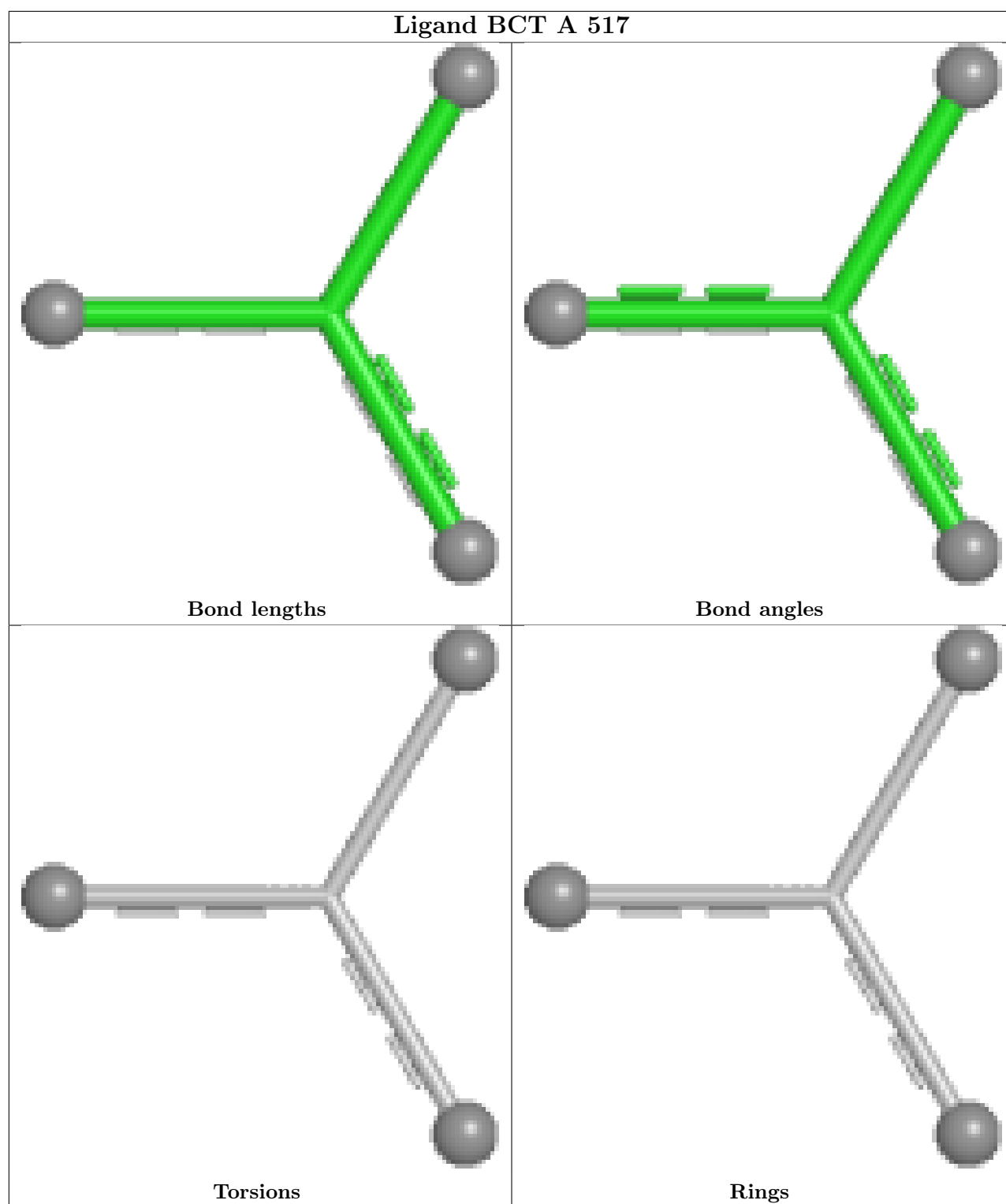


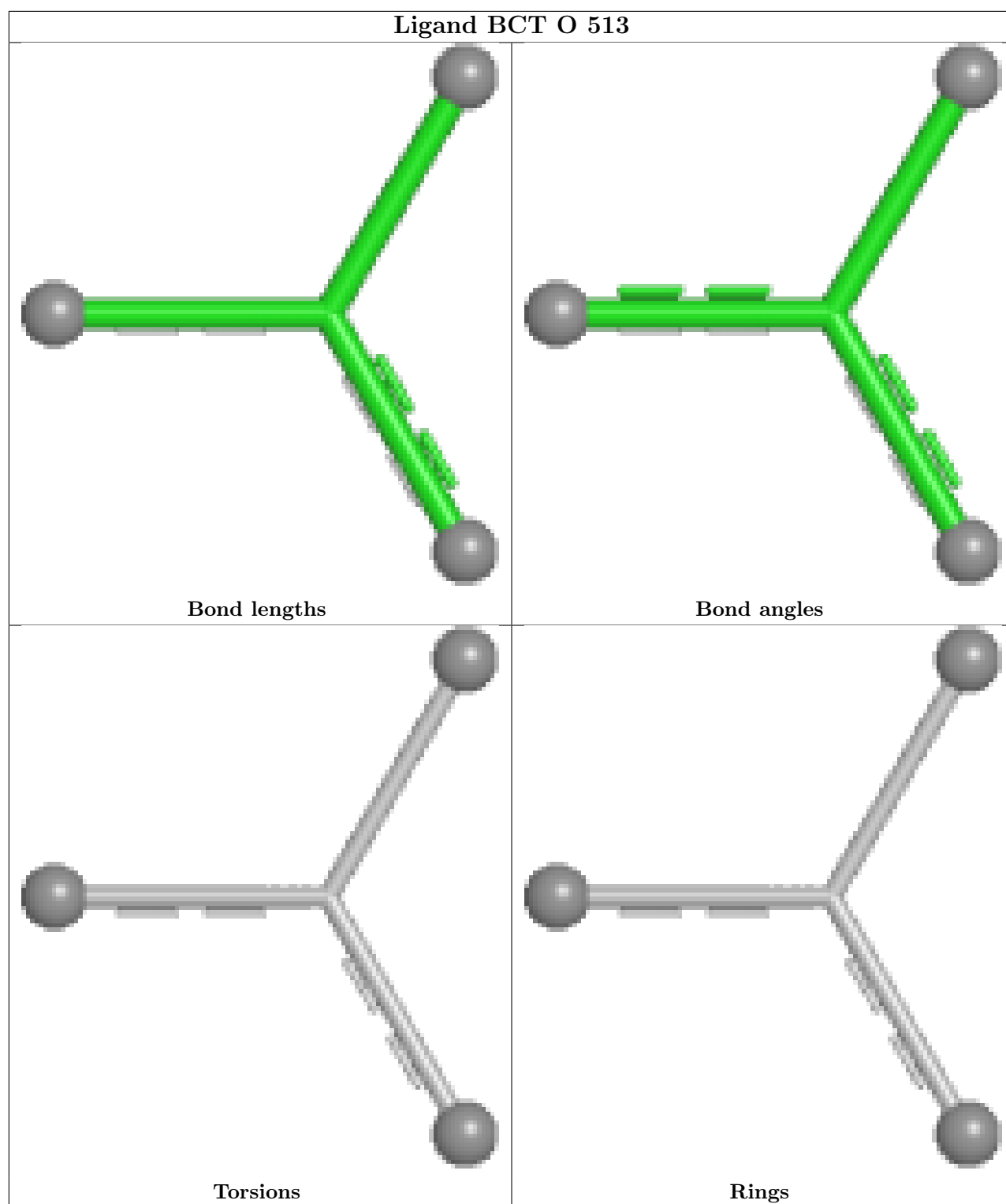


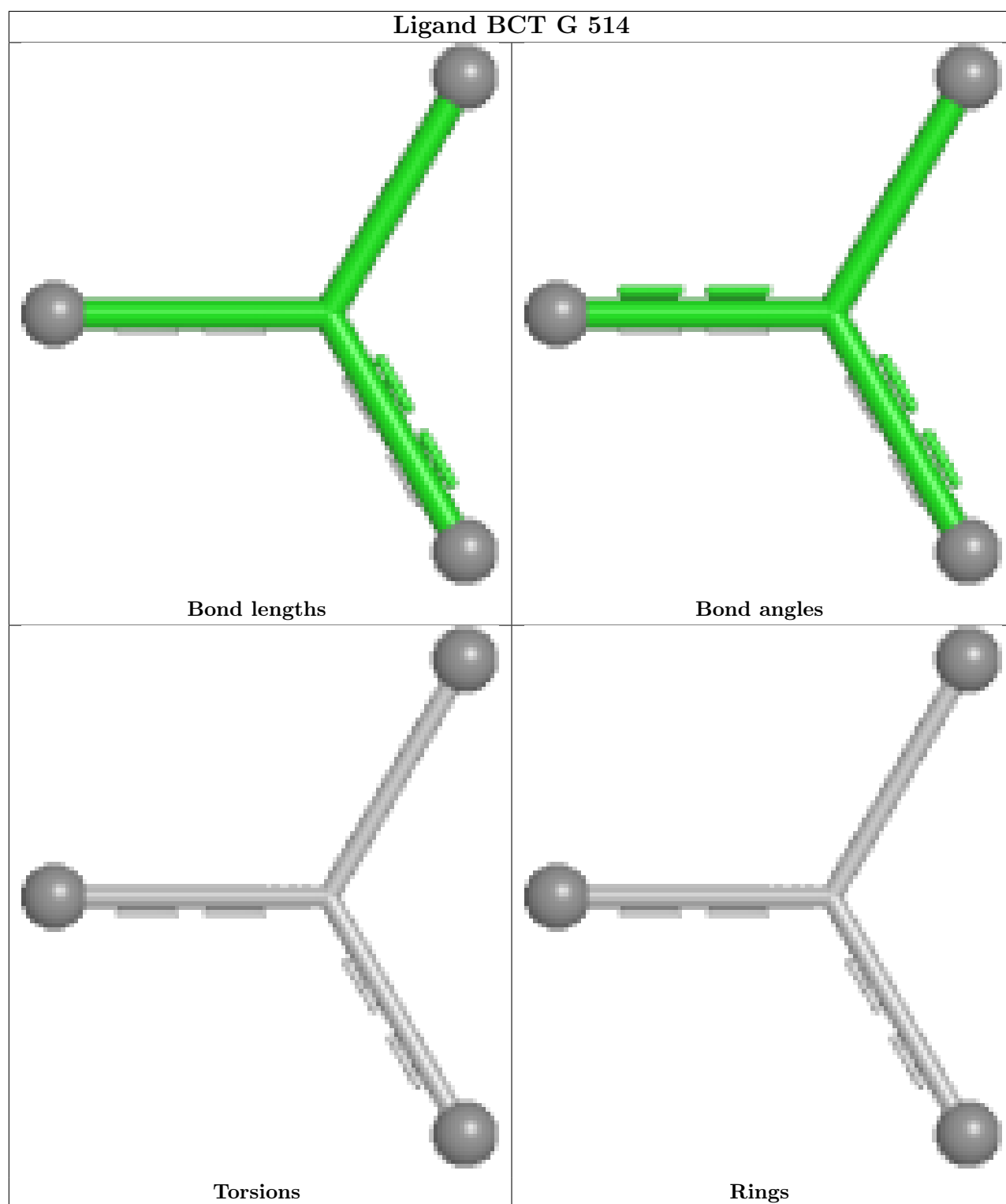


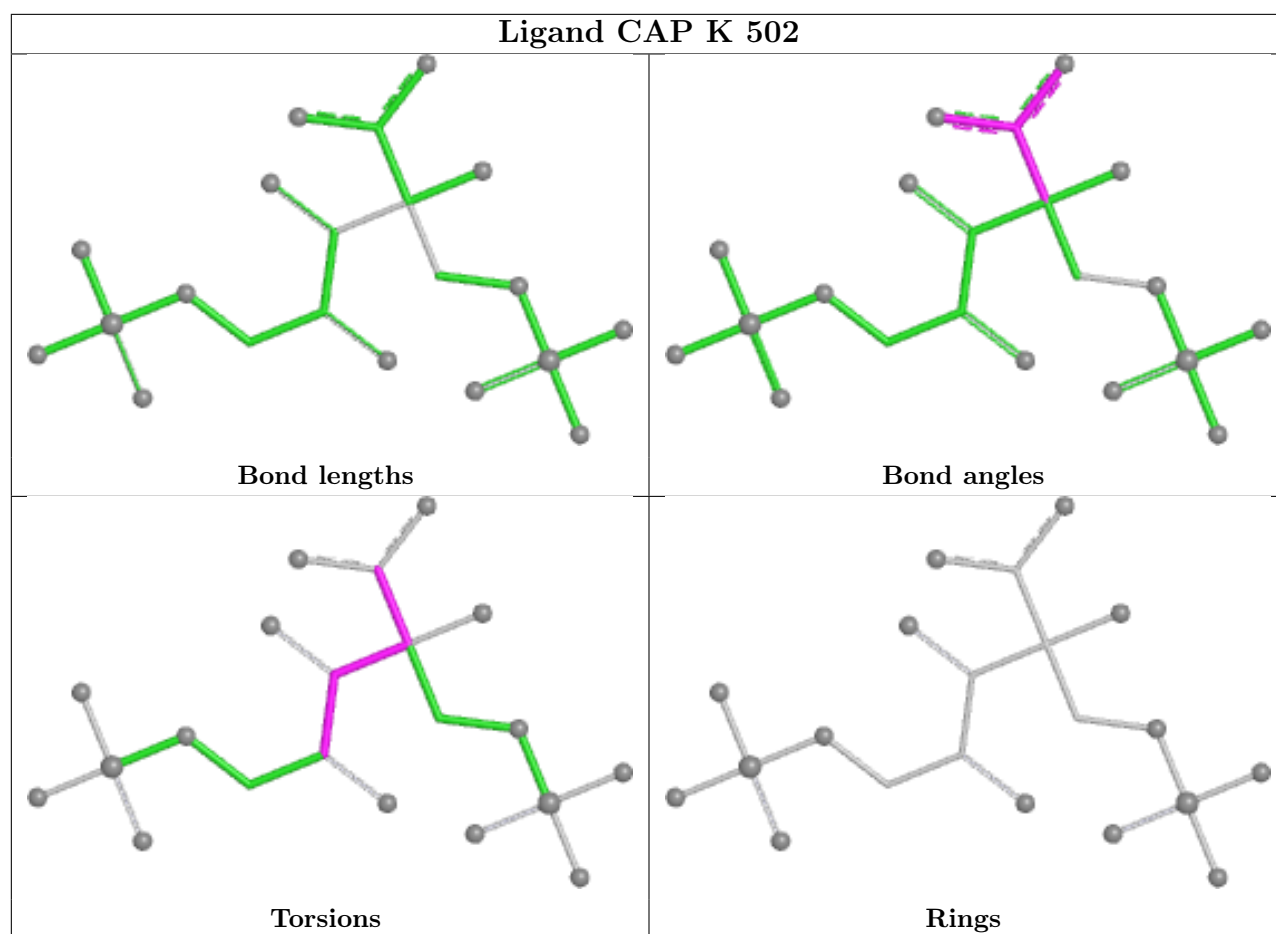


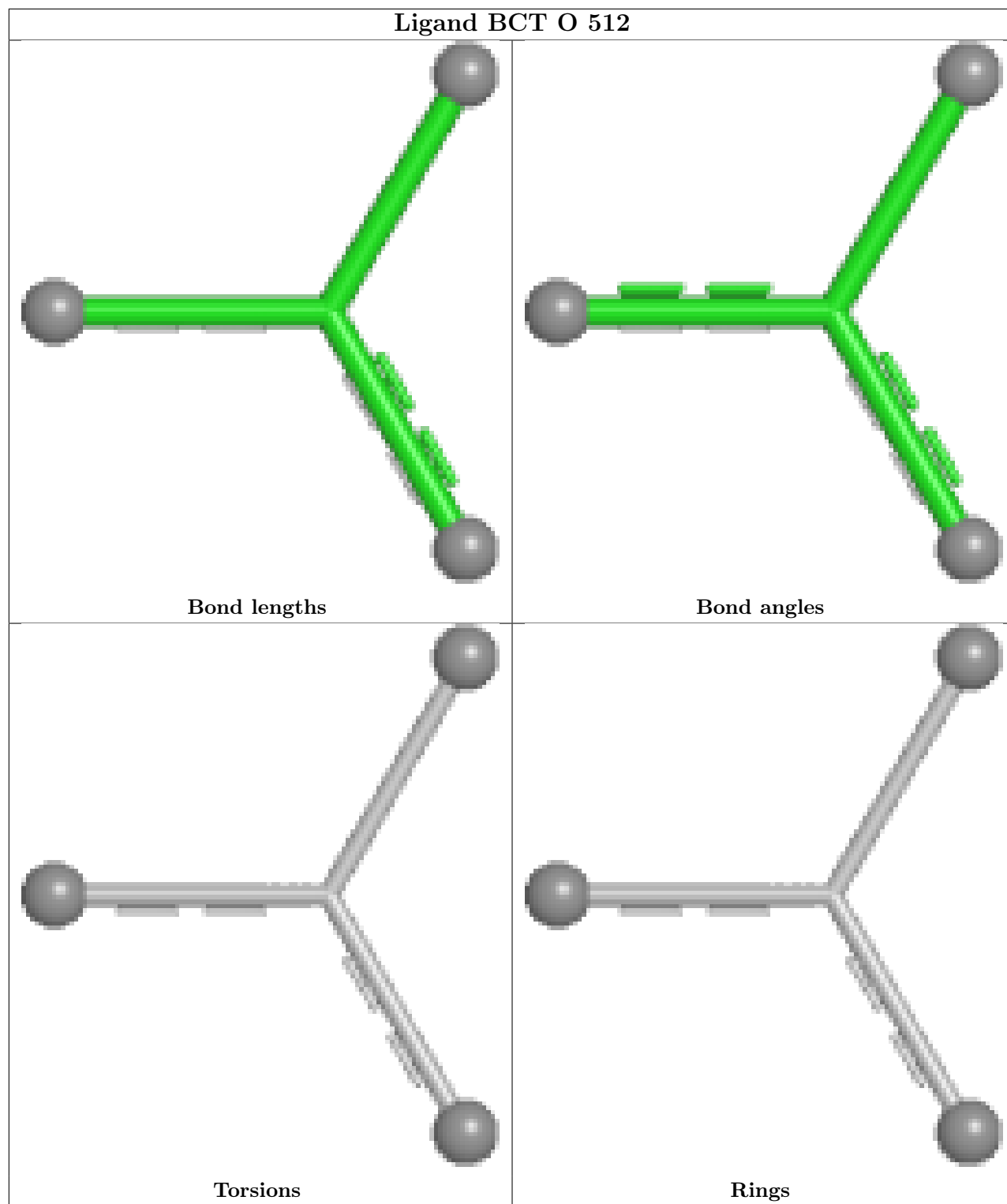


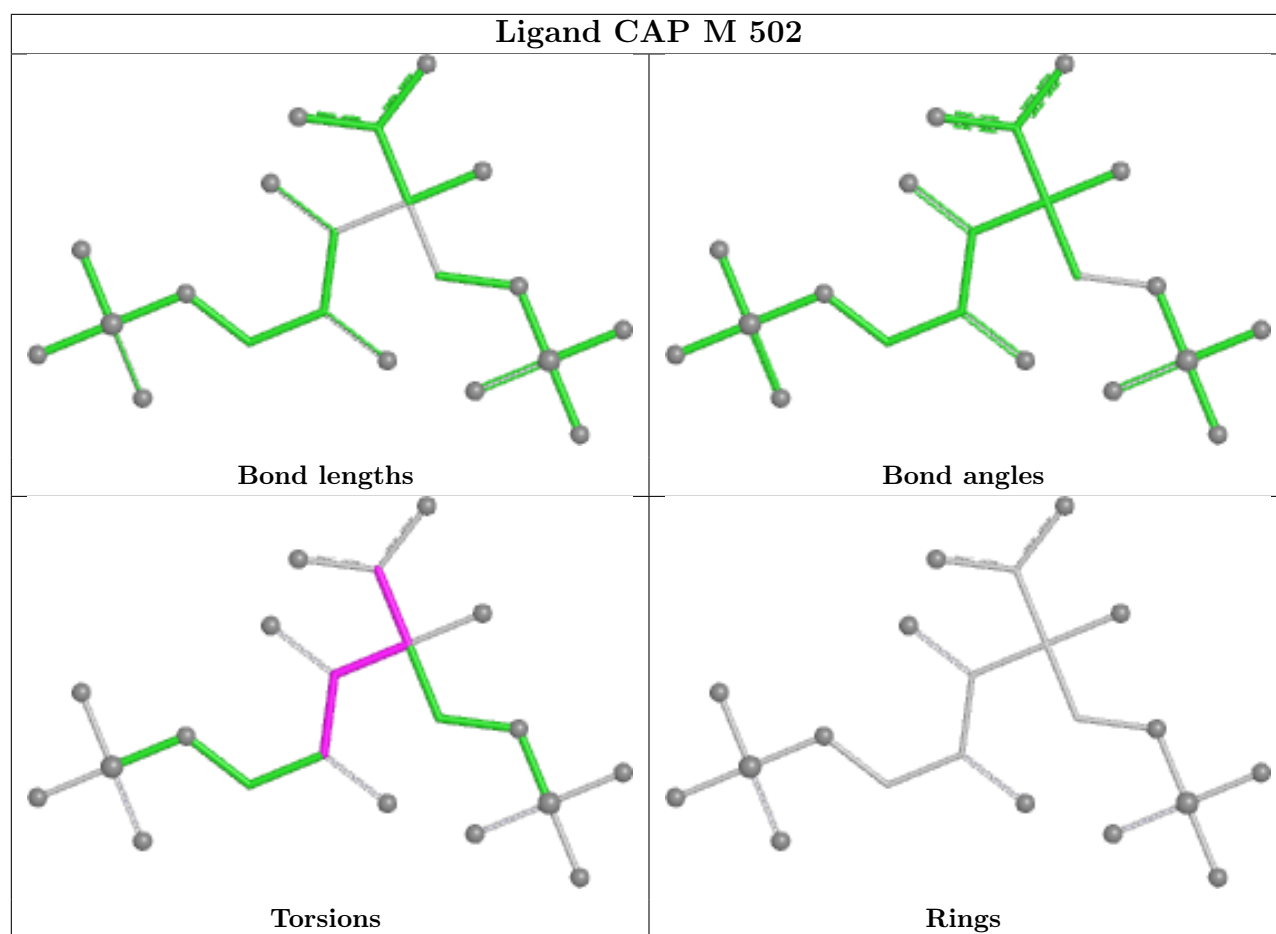


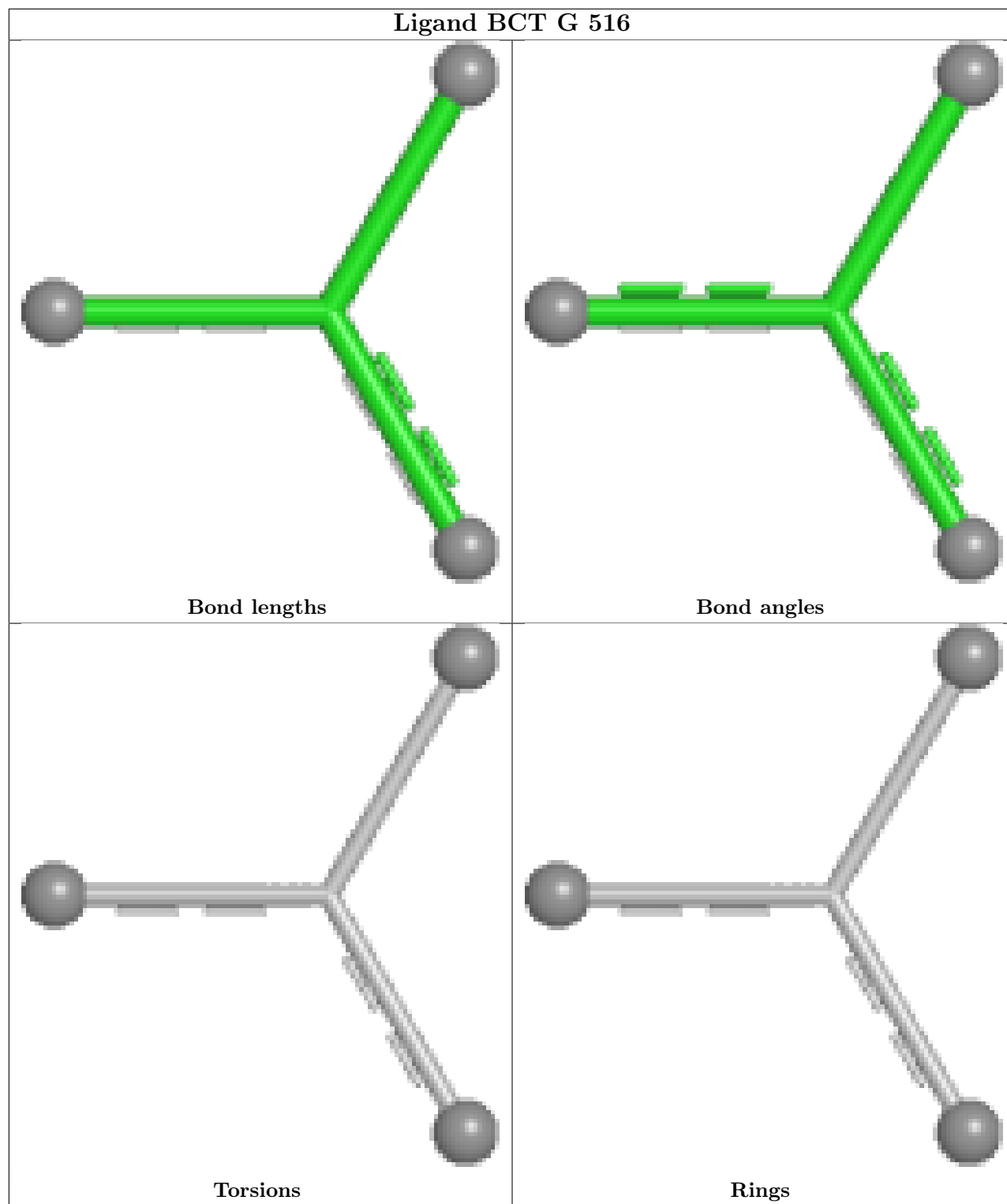


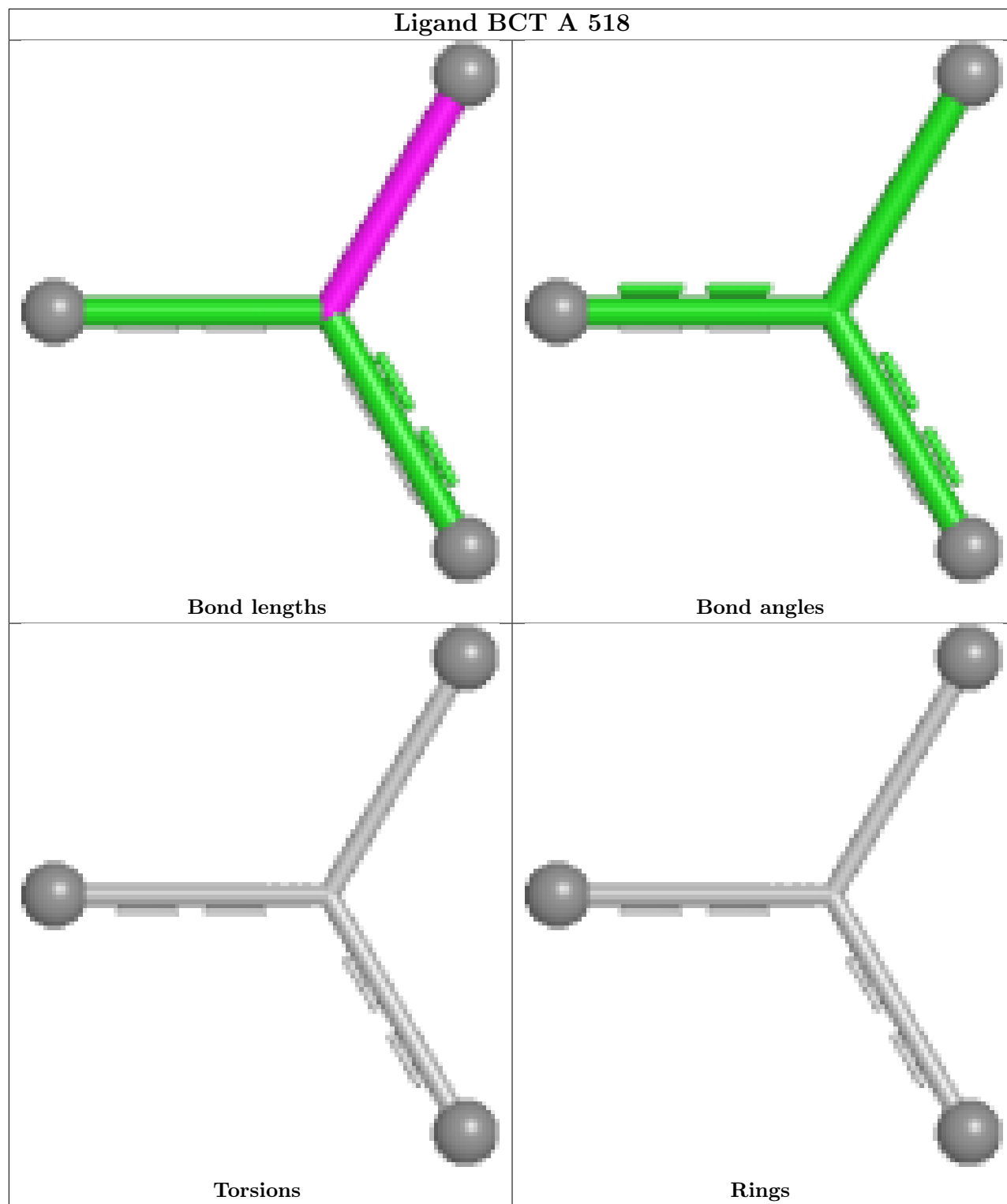


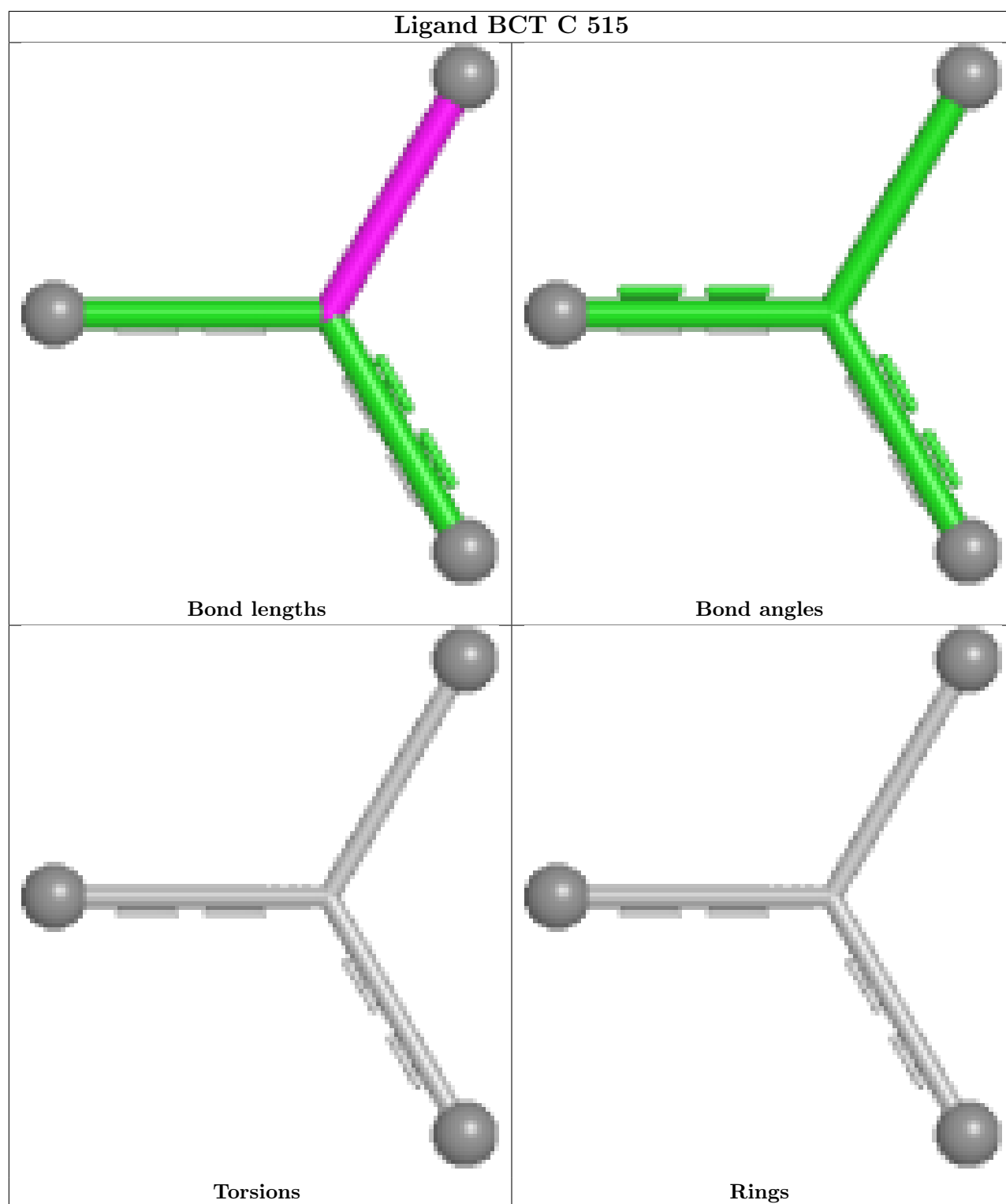


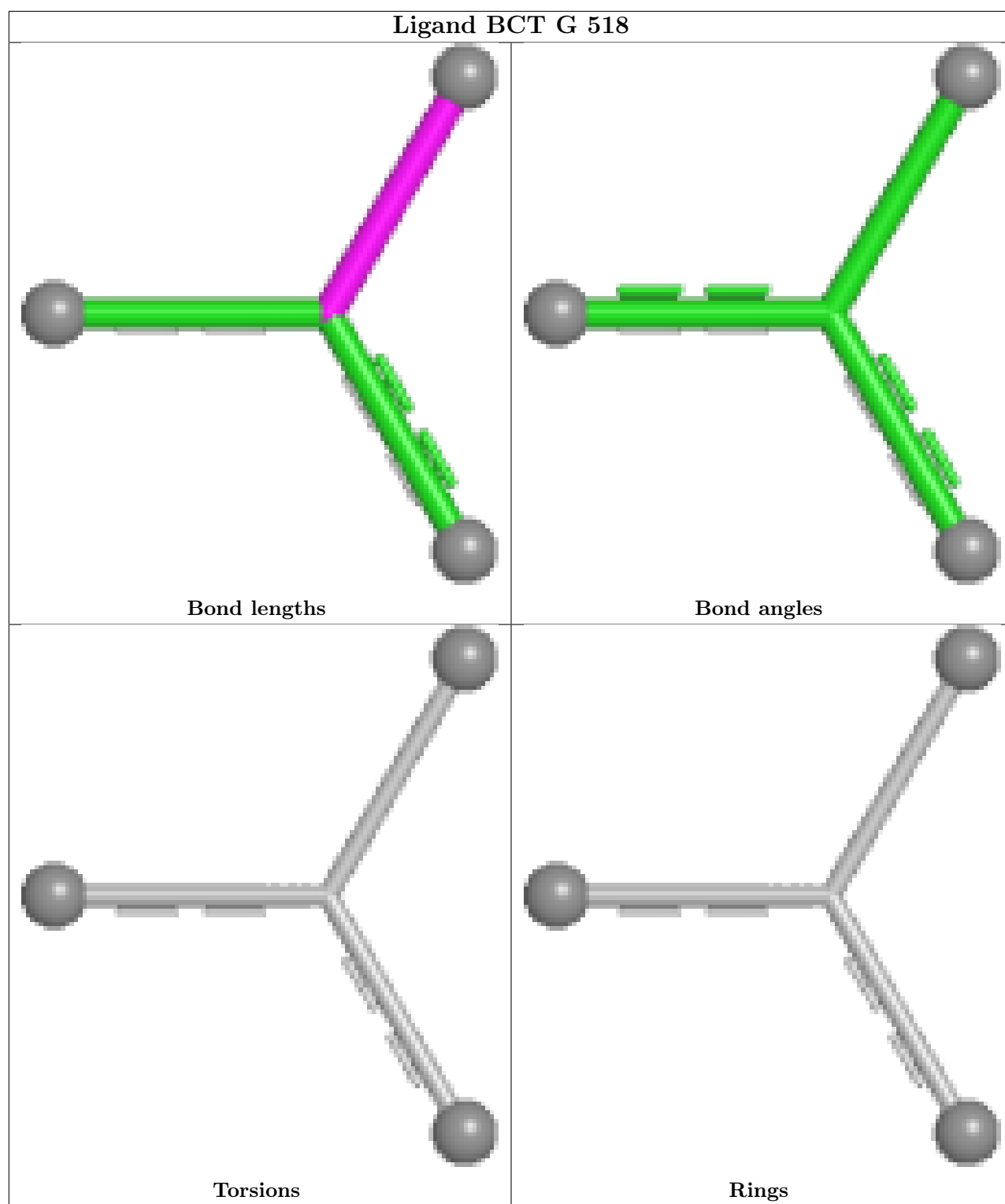


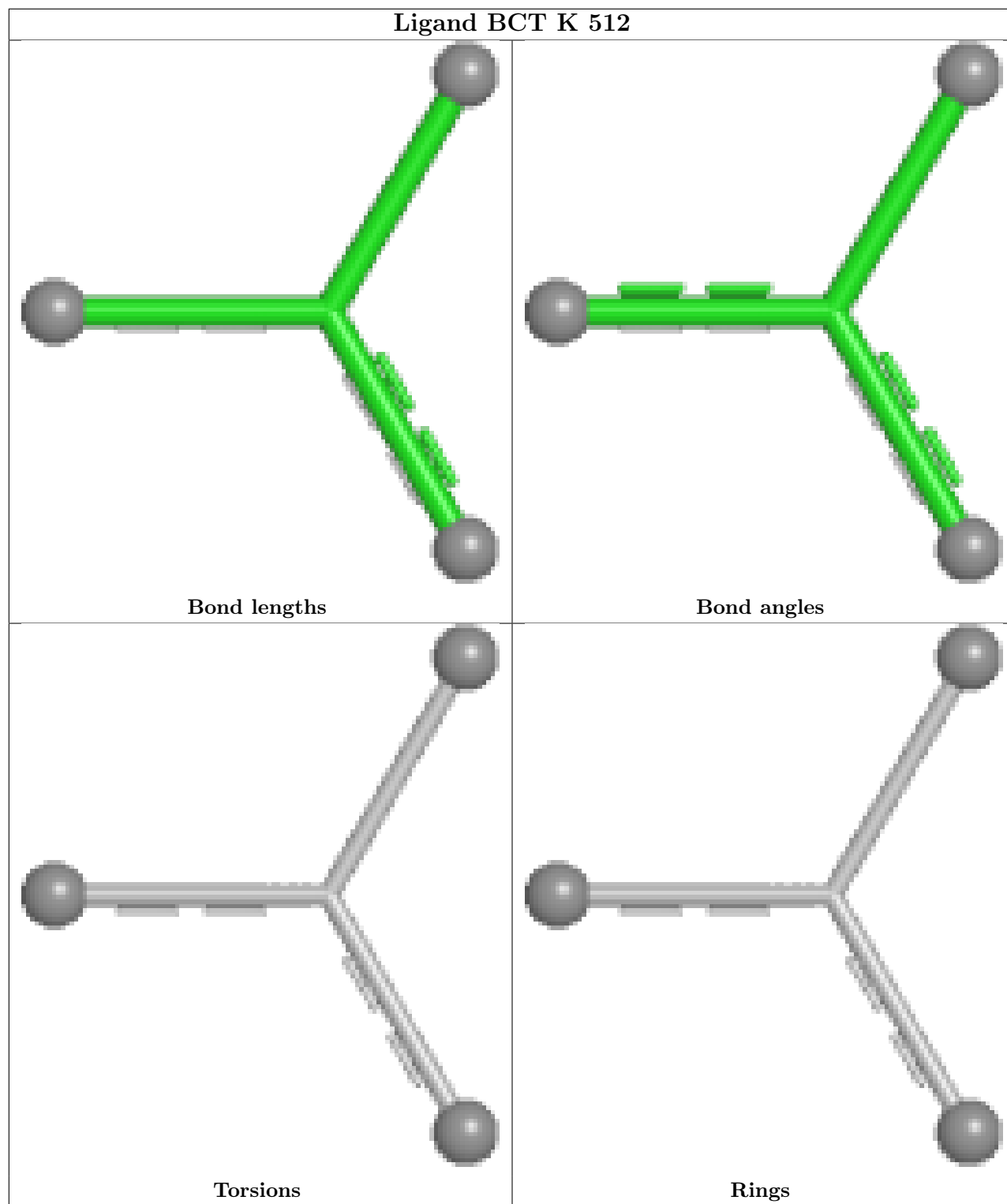


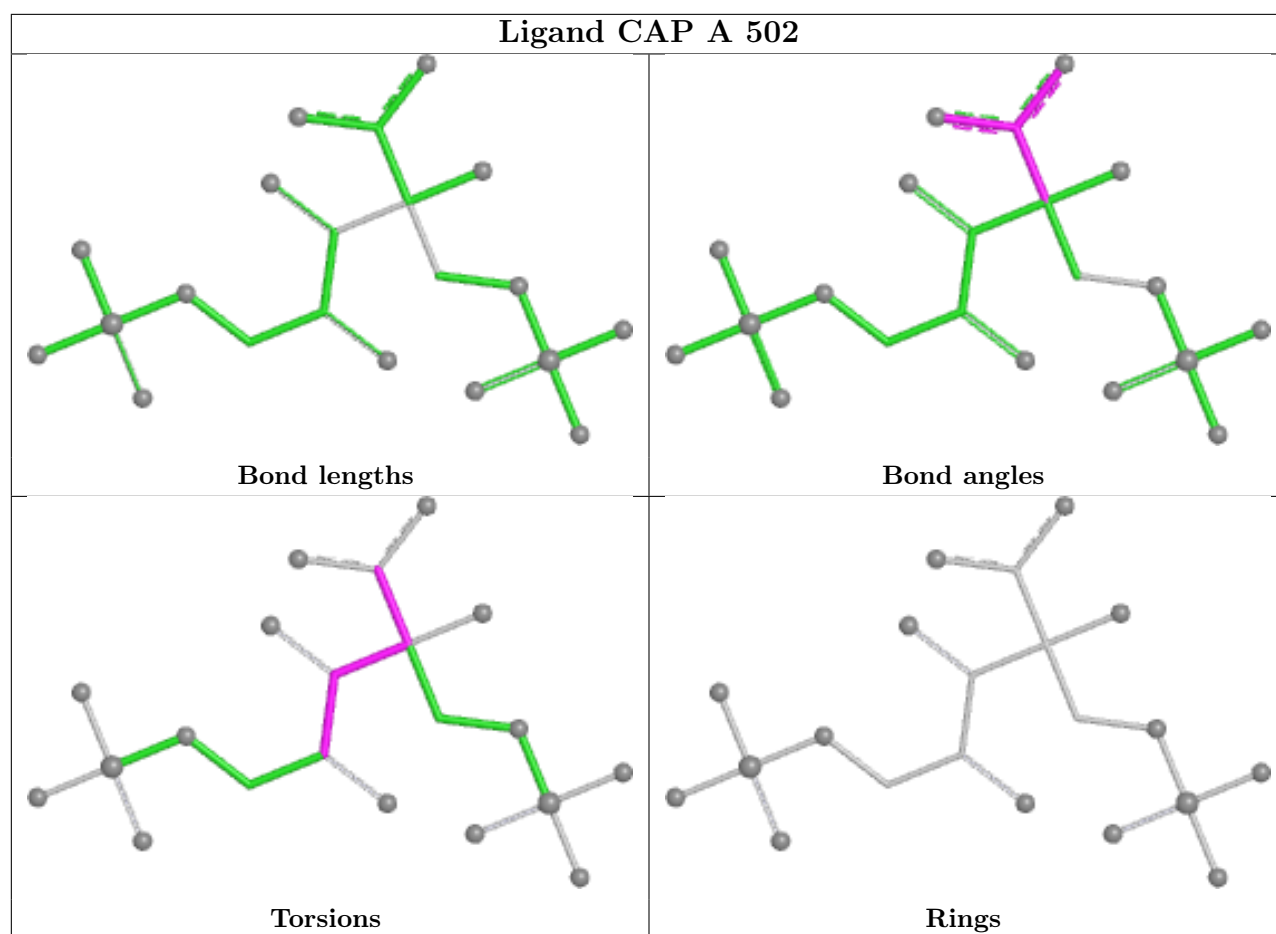


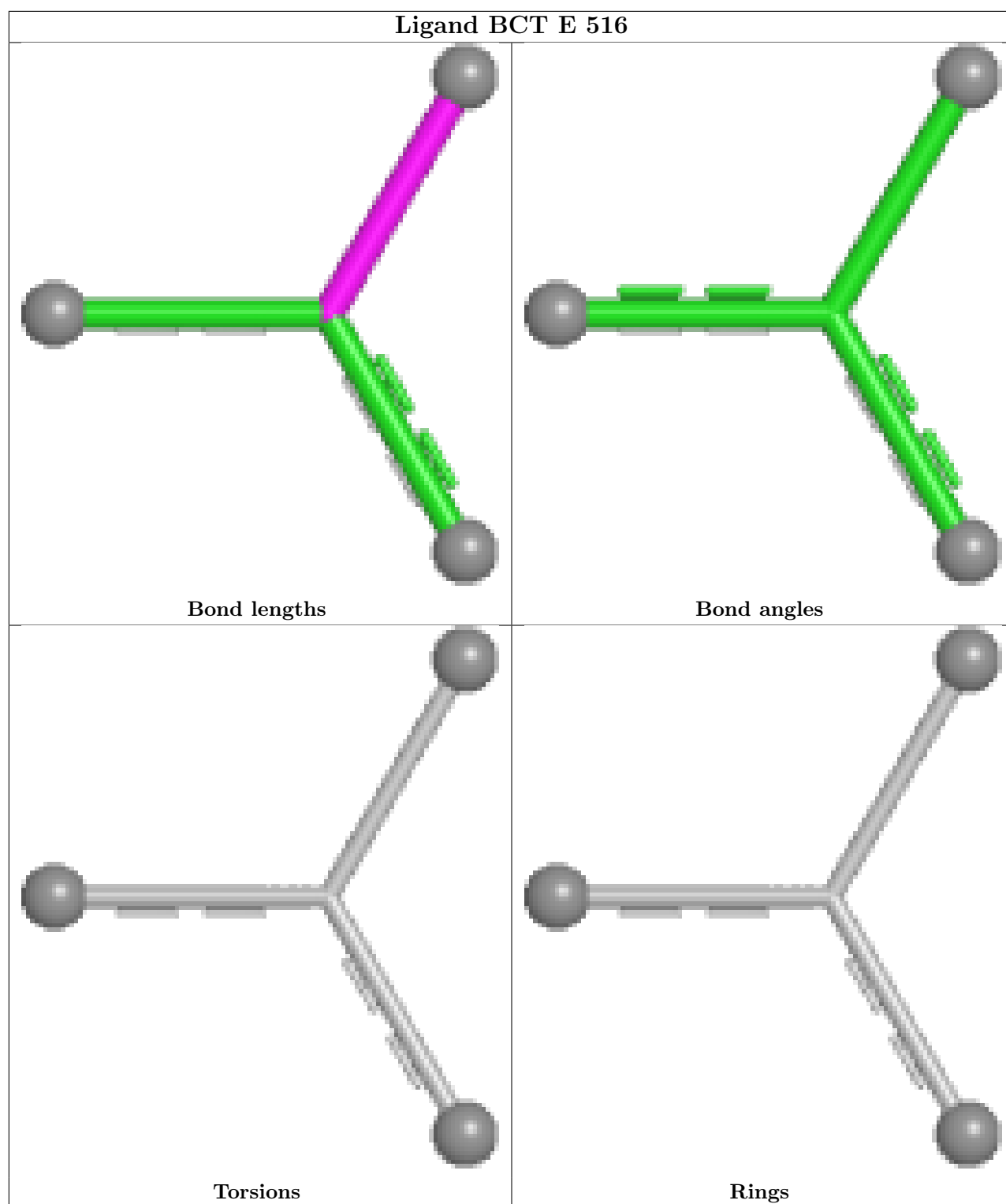


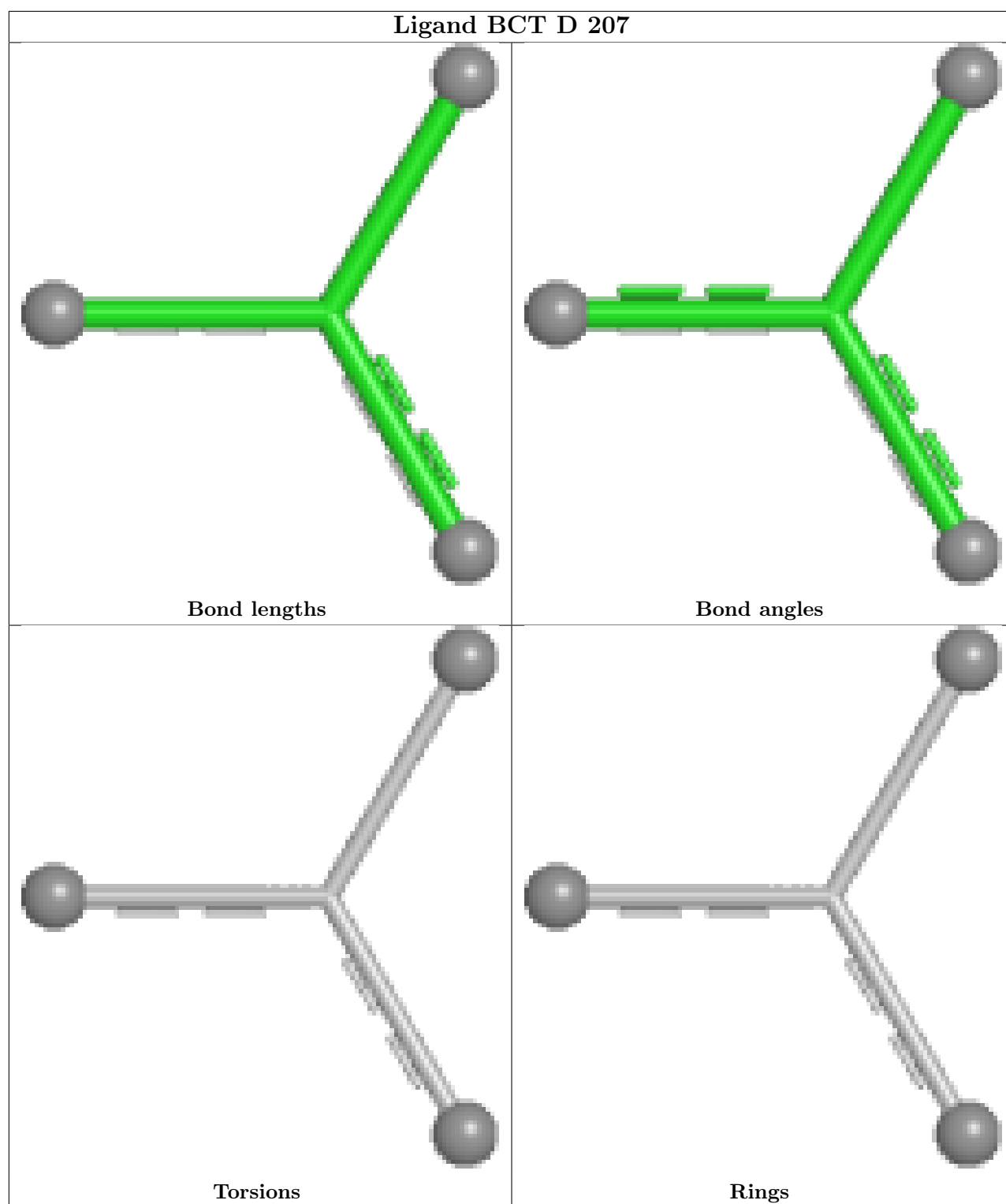




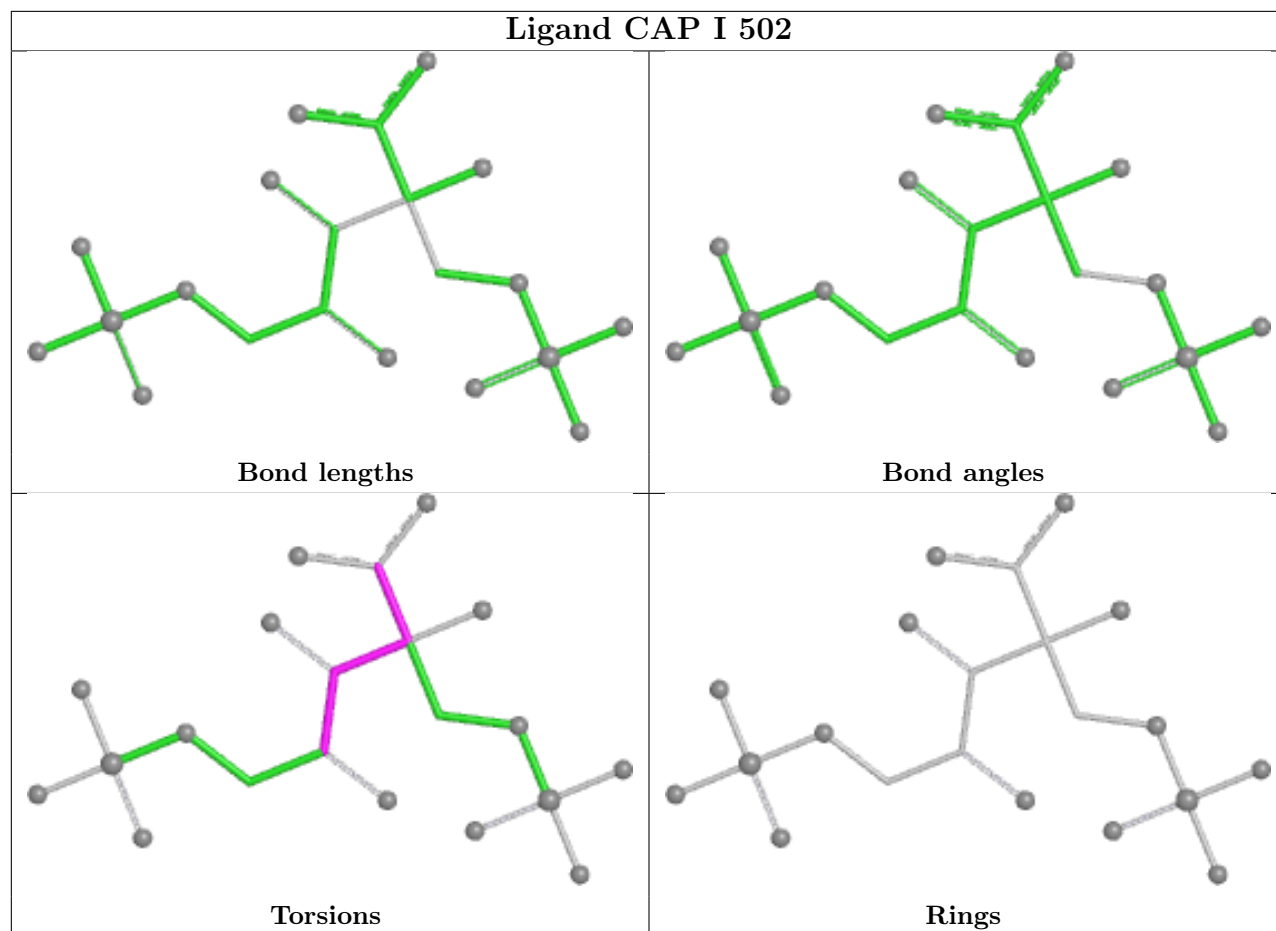


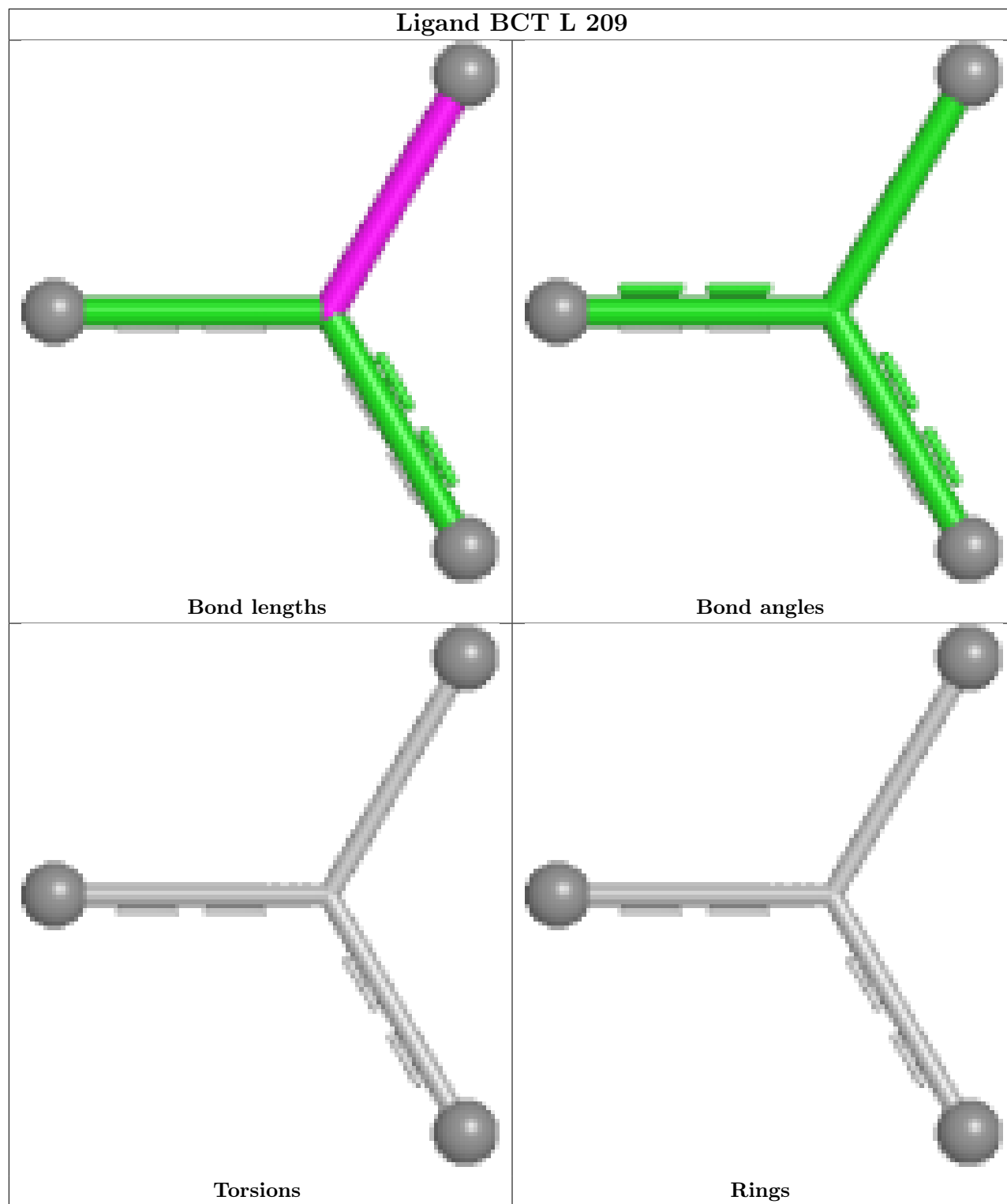


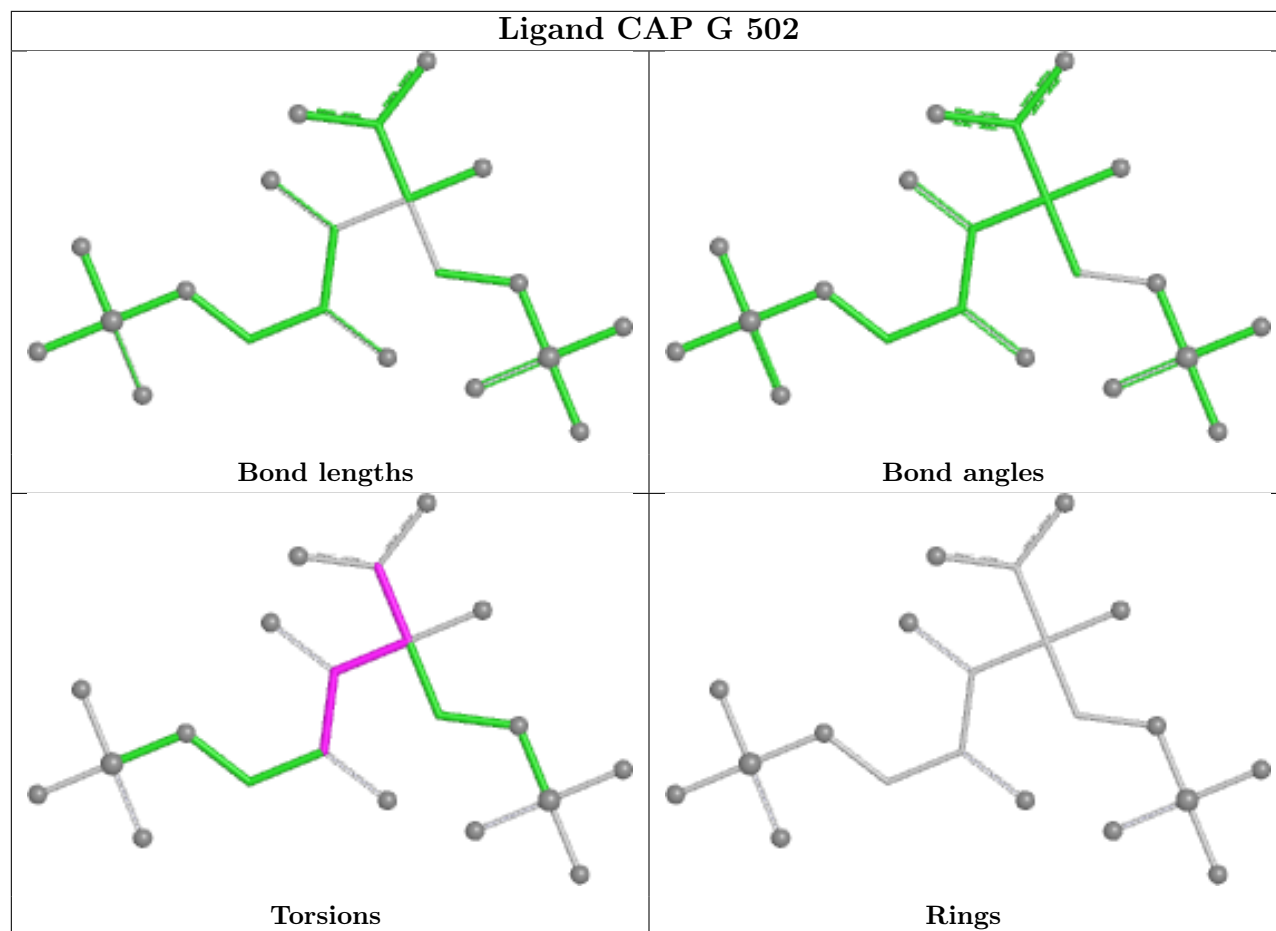


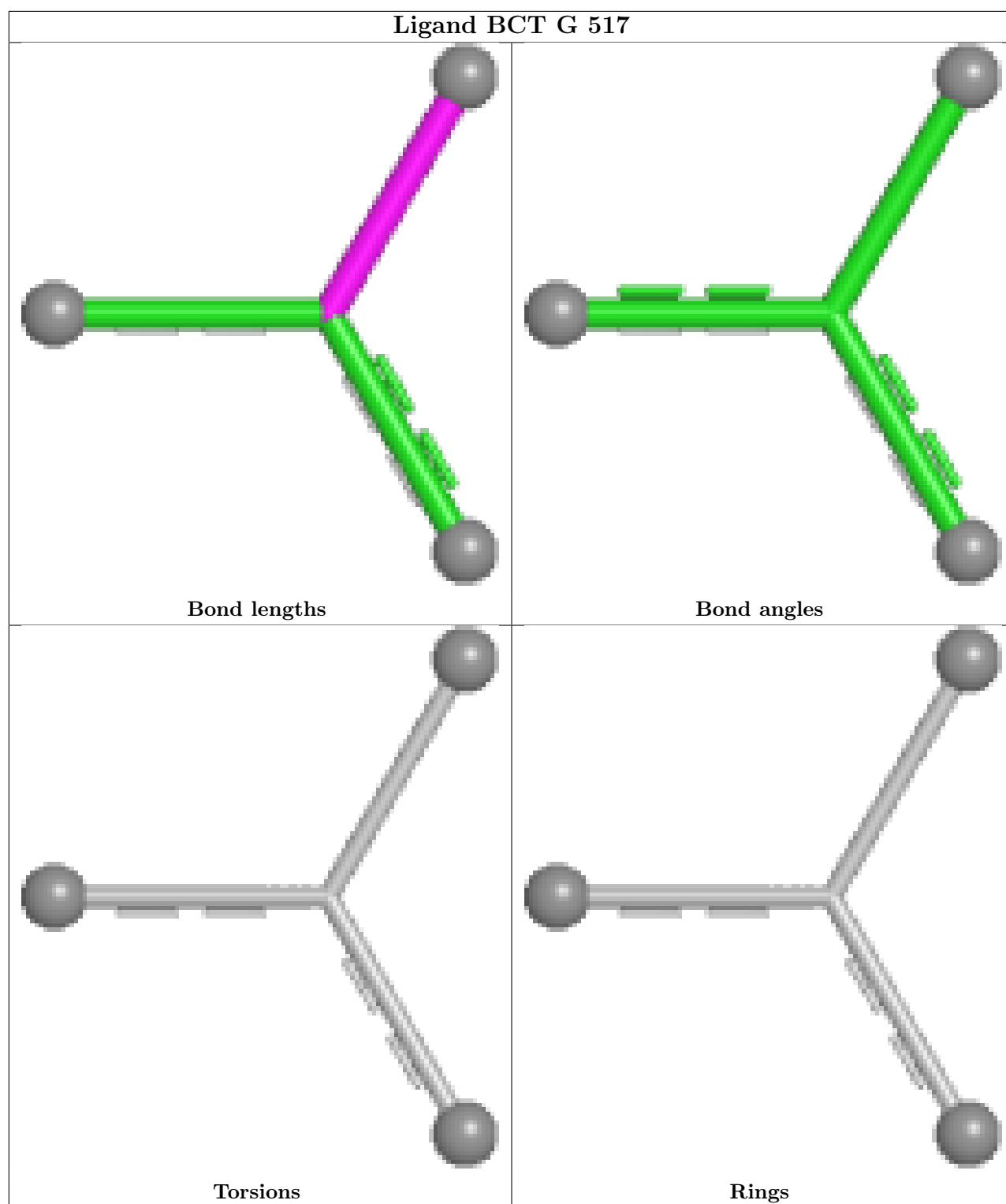


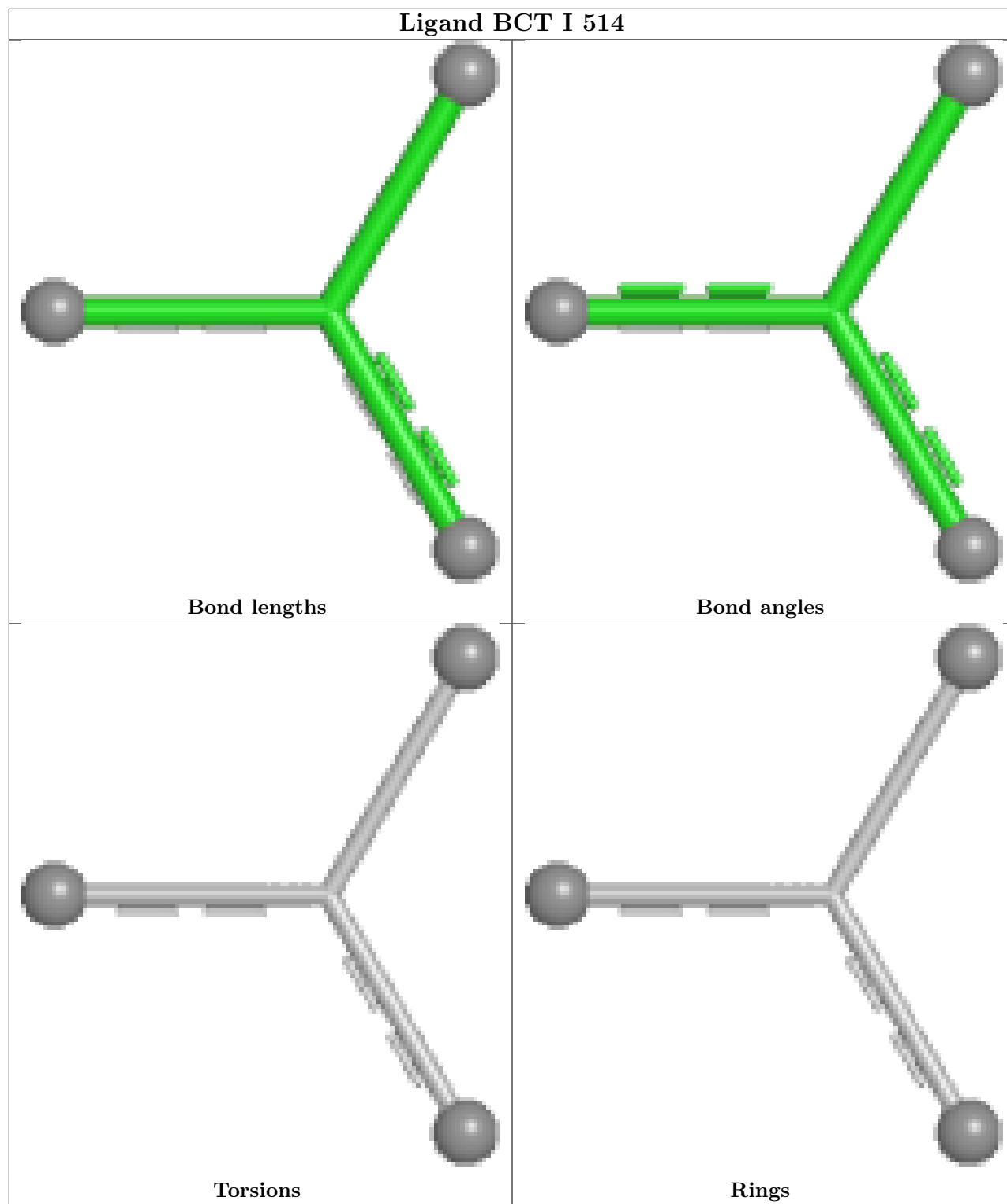
Ligand CAP I 502











5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	477/480 (99%)	-0.24	12 (2%) 58 62	8, 16, 31, 61	9 (1%)
1	C	476/480 (99%)	-0.32	6 (1%) 75 79	8, 15, 30, 54	7 (1%)
1	G	476/480 (99%)	-0.43	9 (1%) 66 71	7, 14, 25, 59	9 (1%)
1	K	476/480 (99%)	-0.43	7 (1%) 72 76	7, 14, 27, 50	11 (2%)
1	O	476/480 (99%)	-0.30	8 (1%) 69 73	8, 16, 30, 67	8 (1%)
2	B	138/138 (100%)	-0.10	2 (1%) 73 77	10, 18, 34, 52	3 (2%)
2	D	138/138 (100%)	-0.04	7 (5%) 33 37	11, 18, 34, 57	1 (0%)
2	F	138/138 (100%)	-0.12	2 (1%) 73 77	11, 18, 33, 54	1 (0%)
2	H	138/138 (100%)	-0.29	3 (2%) 62 66	9, 15, 28, 46	4 (2%)
2	J	138/138 (100%)	-0.25	3 (2%) 62 66	10, 16, 30, 52	2 (1%)
2	L	138/138 (100%)	-0.20	4 (2%) 53 58	10, 17, 32, 50	1 (0%)
2	N	138/138 (100%)	0.03	3 (2%) 62 66	11, 19, 32, 52	3 (2%)
2	P	138/138 (100%)	-0.02	5 (3%) 46 50	12, 18, 35, 53	4 (2%)
3	E	466/480 (97%)	-0.30	3 (0%) 85 88	7, 16, 27, 56	9 (1%)
3	I	477/480 (99%)	-0.34	5 (1%) 79 82	8, 15, 26, 54	9 (1%)
3	M	477/480 (99%)	-0.18	8 (1%) 69 73	7, 18, 31, 57	10 (2%)
All	All	4905/4944 (99%)	-0.28	87 (1%) 67 72	7, 16, 30, 67	91 (1%)

The worst 5 of 87 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	O	481	VAL	5.5
3	E	16	TYR	5.3
2	P	58	ILE	4.6
1	A	3	ASN	4.5
1	A	5	VAL	4.4

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

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
1	CCS	O	455	10/11	0.93	0.12	24,27,41,41	0
1	CCS	C	455	10/11	0.94	0.12	23,27,41,42	0
1	CCS	G	455	10/11	0.94	0.12	18,21,35,37	0
1	CCS	K	455	10/11	0.94	0.11	19,23,37,38	0
1	CCS	A	455	10/11	0.94	0.13	19,23,35,37	0
1	KCX	C	205	12/13	0.96	0.05	12,12,13,13	0
1	KCX	K	205	12/13	0.96	0.06	11,11,12,12	0
1	KCX	A	205	12/13	0.96	0.06	13,14,15,16	0
1	KCX	O	205	12/13	0.96	0.05	12,13,13,14	0
1	KCX	G	205	12/13	0.96	0.05	11,12,12,13	0
1	HL2	C	174	9/10	0.97	0.05	12,13,14,14	0
3	HL2	M	174	9/10	0.97	0.05	15,15,16,16	0
3	KCX	M	205	12/13	0.97	0.05	13,14,16,16	0
1	HL2	O	174	9/10	0.97	0.05	13,14,14,14	0
3	HL2	E	174	9/10	0.97	0.05	14,14,15,15	0
3	KCX	E	205	12/13	0.97	0.05	12,12,13,13	0
3	HL2	I	174	9/10	0.98	0.04	13,13,14,14	0
3	KCX	I	205	12/13	0.98	0.04	12,12,13,13	0
1	HL2	K	174	9/10	0.98	0.04	12,12,13,13	0
1	HL2	A	174	9/10	0.98	0.04	12,13,14,14	0
1	HL2	G	174	9/10	0.98	0.04	11,12,12,12	0

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
6	EDO	C	513	4/4	0.58	0.30	32,33,33,36	4

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
6	EDO	O	511	4/4	0.69	0.21	28,29,30,32	4
7	BCT	B	207	4/4	0.73	0.16	50,52,52,52	0
7	BCT	N	208	4/4	0.77	0.15	61,63,63,63	0
7	BCT	O	513	4/4	0.77	0.14	42,43,44,45	0
7	BCT	A	519	4/4	0.78	0.15	44,46,46,47	0
6	EDO	I	510	4/4	0.78	0.19	44,46,47,47	0
6	EDO	E	510	4/4	0.79	0.21	43,44,45,47	0
7	BCT	C	515	4/4	0.79	0.13	39,41,42,43	0
7	BCT	L	209	4/4	0.79	0.14	53,54,55,55	0
7	BCT	A	517	4/4	0.79	0.13	43,44,45,46	0
6	EDO	A	515	4/4	0.79	0.17	52,52,52,53	0
7	BCT	O	514	4/4	0.79	0.14	50,51,51,52	0
6	EDO	P	208	4/4	0.80	0.19	29,29,30,32	4
7	BCT	K	512	4/4	0.80	0.11	47,48,48,49	0
6	EDO	A	514	4/4	0.80	0.19	45,47,48,49	0
6	EDO	L	208	4/4	0.81	0.17	34,35,35,37	0
6	EDO	N	207	4/4	0.81	0.18	29,31,31,32	4
7	BCT	E	515	4/4	0.81	0.15	37,44,44,45	0
7	BCT	E	516	4/4	0.81	0.12	51,53,53,54	0
7	BCT	I	515	4/4	0.81	0.15	34,36,36,37	0
7	BCT	I	516	4/4	0.82	0.15	50,53,53,54	0
7	BCT	E	514	4/4	0.82	0.16	51,52,54,54	0
7	BCT	G	518	4/4	0.82	0.13	52,52,53,54	0
7	BCT	M	512	4/4	0.82	0.12	39,39,40,42	0
7	BCT	H	208	4/4	0.82	0.14	48,49,49,51	0
7	BCT	I	514	4/4	0.82	0.13	40,43,43,45	0
6	EDO	C	511	4/4	0.82	0.14	26,29,29,31	0
7	BCT	A	518	4/4	0.83	0.17	38,45,46,46	0
6	EDO	H	205	4/4	0.83	0.16	32,34,34,37	0
6	EDO	K	510	4/4	0.84	0.16	32,35,36,37	0
6	EDO	G	511	4/4	0.84	0.14	38,38,39,39	0
6	EDO	G	512	4/4	0.84	0.15	26,28,28,29	0
7	BCT	G	514	4/4	0.84	0.13	37,38,39,40	0
7	BCT	G	516	4/4	0.84	0.14	39,44,46,47	0
6	EDO	A	513	4/4	0.84	0.20	27,28,29,30	0
7	BCT	C	514	4/4	0.84	0.12	43,47,47,48	0
6	EDO	A	511	4/4	0.84	0.15	35,39,39,41	0
7	BCT	A	516	4/4	0.85	0.13	35,36,36,38	0
7	BCT	D	207	4/4	0.85	0.10	48,49,50,51	0
7	BCT	G	515	4/4	0.85	0.13	51,52,53,53	0
6	EDO	K	507	4/4	0.86	0.16	43,43,43,44	0
6	EDO	O	509	4/4	0.86	0.15	38,40,40,41	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
7	BCT	M	511	4/4	0.86	0.14	34,39,40,42	0
6	EDO	O	510	4/4	0.86	0.16	41,44,45,47	0
6	EDO	K	509	4/4	0.86	0.13	28,31,33,36	0
6	EDO	B	205	4/4	0.86	0.15	34,36,36,39	0
6	EDO	F	205	4/4	0.86	0.17	35,37,38,40	0
6	EDO	L	207	4/4	0.87	0.13	36,38,39,40	0
6	EDO	G	513	4/4	0.87	0.12	29,32,34,38	0
6	EDO	A	509	4/4	0.87	0.15	41,43,44,45	0
6	EDO	O	507	4/4	0.87	0.13	39,40,40,41	0
6	EDO	G	506	4/4	0.87	0.15	31,35,36,37	0
6	EDO	I	513	4/4	0.87	0.13	41,42,42,42	0
6	EDO	J	205	4/4	0.87	0.13	32,33,34,35	0
6	EDO	P	205	4/4	0.87	0.16	45,45,46,46	0
6	EDO	P	206	4/4	0.87	0.15	45,45,45,45	0
6	EDO	G	508	4/4	0.87	0.14	26,30,31,32	0
7	BCT	O	512	4/4	0.87	0.12	38,39,41,42	0
6	EDO	A	512	4/4	0.87	0.14	38,39,40,42	0
6	EDO	C	510	4/4	0.87	0.15	27,30,31,34	0
7	BCT	M	510	4/4	0.88	0.09	42,44,45,46	0
6	EDO	G	507	4/4	0.88	0.16	34,35,36,37	0
6	EDO	A	510	4/4	0.88	0.14	36,38,39,40	0
6	EDO	I	507	4/4	0.88	0.14	38,41,41,43	0
7	BCT	K	511	4/4	0.88	0.11	35,35,36,37	0
6	EDO	E	506	4/4	0.88	0.12	31,33,33,34	0
6	EDO	E	508	4/4	0.88	0.13	38,39,40,41	0
6	EDO	E	511	4/4	0.89	0.12	33,36,38,41	0
6	EDO	M	506	4/4	0.89	0.13	30,34,36,38	0
6	EDO	I	509	4/4	0.89	0.13	32,35,36,37	0
6	EDO	D	205	4/4	0.89	0.14	38,39,39,41	0
6	EDO	I	512	4/4	0.89	0.13	26,30,32,35	0
6	EDO	A	506	4/4	0.89	0.11	35,37,38,39	0
7	BCT	E	513	4/4	0.89	0.10	39,39,39,40	0
6	EDO	L	205	4/4	0.90	0.14	31,32,33,34	0
6	EDO	L	206	4/4	0.90	0.15	32,36,38,40	0
6	EDO	E	509	4/4	0.90	0.11	24,27,27,29	0
6	EDO	K	505	4/4	0.90	0.13	30,33,35,36	0
7	BCT	G	517	4/4	0.90	0.09	35,37,38,39	0
6	EDO	C	505	4/4	0.90	0.12	32,35,35,38	0
6	EDO	P	207	4/4	0.90	0.17	30,32,34,34	0
6	EDO	N	206	4/4	0.90	0.11	29,30,30,30	0
6	EDO	I	506	4/4	0.90	0.12	40,42,42,44	0
6	EDO	C	507	4/4	0.90	0.13	28,31,32,35	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
6	EDO	M	509	4/4	0.91	0.13	36,38,38,39	0
6	EDO	A	508	4/4	0.91	0.11	29,31,31,32	0
6	EDO	C	509	4/4	0.91	0.13	37,38,39,39	0
6	EDO	D	206	4/4	0.91	0.14	31,33,33,34	0
6	EDO	K	506	4/4	0.91	0.10	25,26,27,27	0
6	EDO	M	507	4/4	0.91	0.10	33,35,36,37	0
6	EDO	C	508	4/4	0.92	0.10	28,30,31,32	0
6	EDO	N	205	4/4	0.92	0.12	29,31,31,33	0
6	EDO	I	511	4/4	0.92	0.11	22,23,23,23	4
6	EDO	H	204	4/4	0.92	0.10	25,27,27,27	0
6	EDO	O	506	4/4	0.92	0.11	42,42,43,44	0
6	EDO	C	506	4/4	0.92	0.12	31,34,35,36	0
6	EDO	E	507	4/4	0.92	0.11	33,34,34,35	0
6	EDO	C	504	4/4	0.92	0.08	22,22,23,24	0
6	EDO	I	508	4/4	0.92	0.10	33,34,34,37	0
6	EDO	G	505	4/4	0.92	0.10	32,32,32,34	0
6	EDO	M	508	4/4	0.92	0.09	23,25,25,26	0
6	EDO	O	505	4/4	0.93	0.09	30,31,31,31	0
6	EDO	A	507	4/4	0.93	0.10	23,24,25,26	0
6	EDO	H	206	4/4	0.93	0.10	31,31,32,34	0
6	EDO	J	206	4/4	0.93	0.10	29,29,30,30	0
6	EDO	K	503	4/4	0.93	0.09	22,22,23,23	0
6	EDO	B	206	4/4	0.93	0.14	27,28,29,30	0
6	EDO	P	204	4/4	0.93	0.11	22,22,23,24	0
6	EDO	A	505	4/4	0.94	0.09	21,21,21,22	0
6	EDO	B	202	4/4	0.94	0.10	21,22,22,23	0
6	EDO	O	508	4/4	0.94	0.09	32,33,33,33	0
6	EDO	G	509	4/4	0.94	0.09	29,29,30,30	0
6	EDO	M	505	4/4	0.94	0.11	28,29,30,31	0
6	EDO	K	504	4/4	0.94	0.09	18,19,19,19	4
6	EDO	I	504	4/4	0.94	0.09	25,26,26,26	0
6	EDO	E	505	4/4	0.95	0.08	23,23,24,24	0
6	EDO	K	508	4/4	0.95	0.09	34,35,37,38	0
6	EDO	J	201	4/4	0.95	0.09	19,20,21,21	0
6	EDO	D	202	4/4	0.95	0.09	19,21,21,22	0
6	EDO	C	512	4/4	0.95	0.10	22,25,25,27	0
6	EDO	A	504	4/4	0.95	0.07	21,21,21,21	0
6	EDO	H	207	4/4	0.95	0.09	20,20,21,21	0
6	EDO	E	503	4/4	0.95	0.07	17,18,18,18	0
6	EDO	M	504	4/4	0.95	0.07	25,25,25,25	0
6	EDO	I	505	4/4	0.95	0.08	22,23,24,24	0
6	EDO	G	510	4/4	0.96	0.08	22,23,23,23	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
6	EDO	N	202	4/4	0.96	0.08	20,21,21,21	0
6	EDO	N	203	4/4	0.96	0.06	18,19,19,19	0
6	EDO	N	204	4/4	0.96	0.07	21,21,21,21	0
6	EDO	J	203	4/4	0.96	0.06	18,19,20,20	0
6	EDO	L	203	4/4	0.96	0.07	18,19,20,20	0
6	EDO	L	204	4/4	0.96	0.06	21,21,22,22	0
6	EDO	O	504	4/4	0.96	0.07	22,24,24,25	0
6	EDO	J	204	4/4	0.96	0.06	17,17,17,17	0
6	EDO	F	204	4/4	0.96	0.07	19,19,19,19	0
6	EDO	B	201	4/4	0.96	0.07	16,17,17,17	0
6	EDO	G	503	4/4	0.96	0.07	16,16,16,17	0
6	EDO	B	204	4/4	0.96	0.07	21,21,21,22	0
6	EDO	E	504	4/4	0.96	0.06	14,14,15,15	0
6	EDO	D	204	4/4	0.96	0.06	20,20,21,21	0
6	EDO	C	503	4/4	0.96	0.06	14,14,15,15	0
6	EDO	E	512	4/4	0.96	0.10	22,23,24,24	0
6	EDO	B	203	4/4	0.97	0.07	17,17,17,18	0
6	EDO	M	503	4/4	0.97	0.05	16,16,16,17	0
6	EDO	L	201	4/4	0.97	0.05	17,17,17,17	0
6	EDO	I	503	4/4	0.97	0.05	14,14,15,15	0
6	EDO	H	203	4/4	0.97	0.06	19,20,20,21	0
6	EDO	F	202	4/4	0.97	0.06	16,16,17,17	0
6	EDO	P	202	4/4	0.97	0.05	18,18,18,18	0
6	EDO	P	203	4/4	0.97	0.06	21,22,22,22	0
6	EDO	O	503	4/4	0.97	0.05	16,16,16,16	0
6	EDO	F	203	4/4	0.97	0.06	18,18,19,19	0
6	EDO	G	504	4/4	0.97	0.06	20,20,20,20	0
6	EDO	N	201	4/4	0.98	0.05	16,16,16,17	0
5	CAP	M	502	21/21	0.98	0.05	16,17,18,19	0
6	EDO	A	503	4/4	0.98	0.05	14,14,14,14	0
6	EDO	P	201	4/4	0.98	0.05	15,16,16,16	0
6	EDO	F	201	4/4	0.98	0.05	13,14,14,14	0
4	MG	A	501	1/1	0.98	0.03	16,16,16,16	0
6	EDO	D	201	4/4	0.98	0.04	15,16,16,16	0
4	MG	M	501	1/1	0.98	0.03	16,16,16,16	0
4	MG	O	501	1/1	0.98	0.03	15,15,15,15	0
6	EDO	J	202	4/4	0.98	0.04	15,15,16,16	0
5	CAP	A	502	21/21	0.98	0.04	15,16,16,17	0
5	CAP	E	502	21/21	0.98	0.05	14,15,16,16	0
6	EDO	L	202	4/4	0.98	0.04	13,13,13,14	0
6	EDO	H	201	4/4	0.98	0.04	13,14,14,14	0
5	CAP	K	502	21/21	0.99	0.04	12,13,13,13	0

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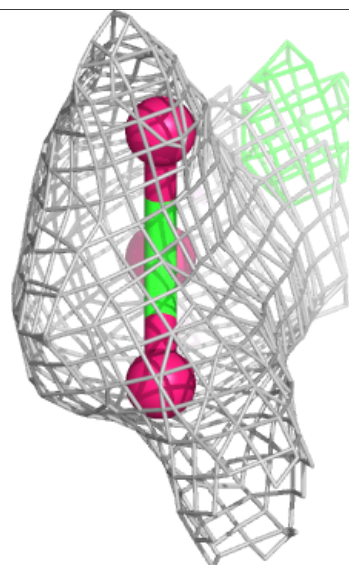
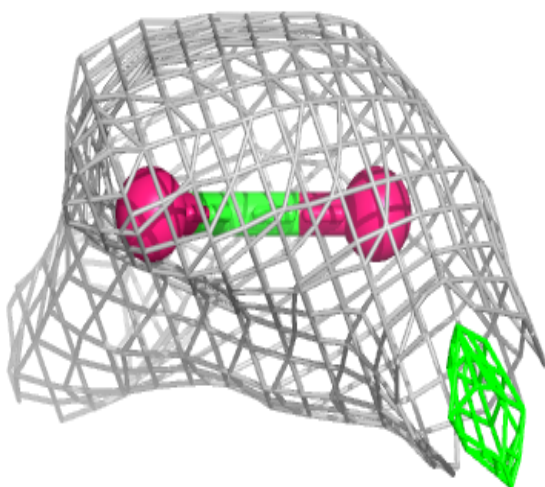
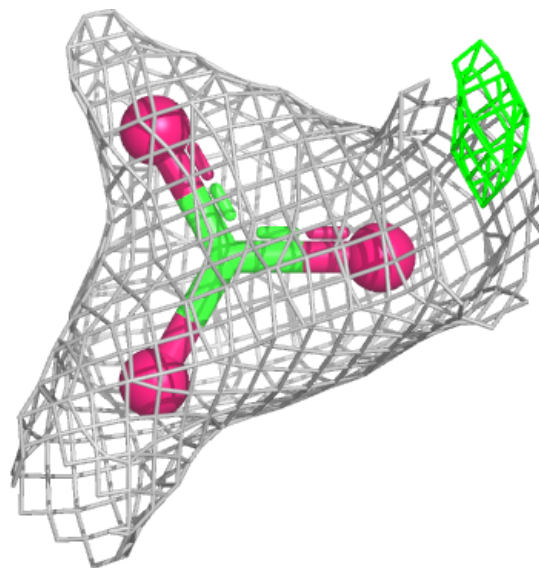
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
4	MG	C	501	1/1	0.99	0.02	15,15,15,15	0
5	CAP	O	502	21/21	0.99	0.04	14,15,15,16	0
4	MG	E	501	1/1	0.99	0.03	14,14,14,14	0
4	MG	G	501	1/1	0.99	0.02	14,14,14,14	0
5	CAP	C	502	21/21	0.99	0.04	14,15,16,16	0
4	MG	K	501	1/1	0.99	0.04	13,13,13,13	0
5	CAP	G	502	21/21	0.99	0.04	12,13,13,13	0
6	EDO	D	203	4/4	0.99	0.04	16,16,16,16	0
6	EDO	H	202	4/4	0.99	0.03	16,16,16,16	0
5	CAP	I	502	21/21	0.99	0.04	14,15,15,16	0
4	MG	I	501	1/1	1.00	0.02	14,14,14,14	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

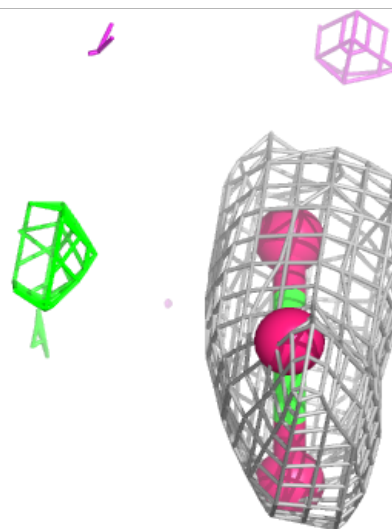
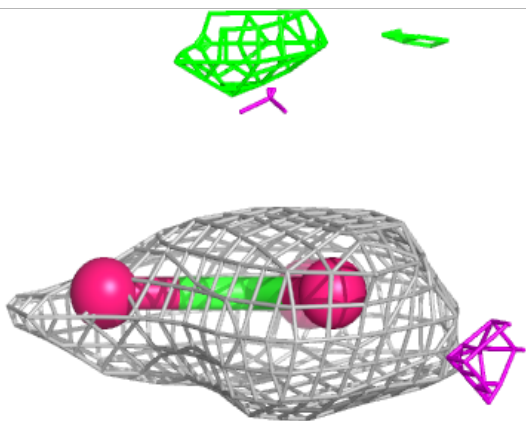
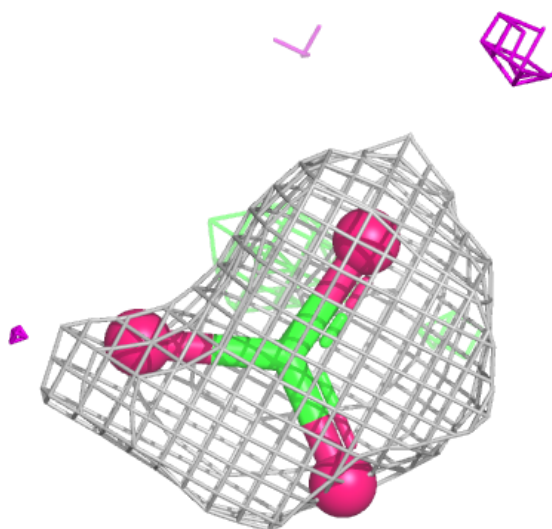
Electron density around BCT B 207:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



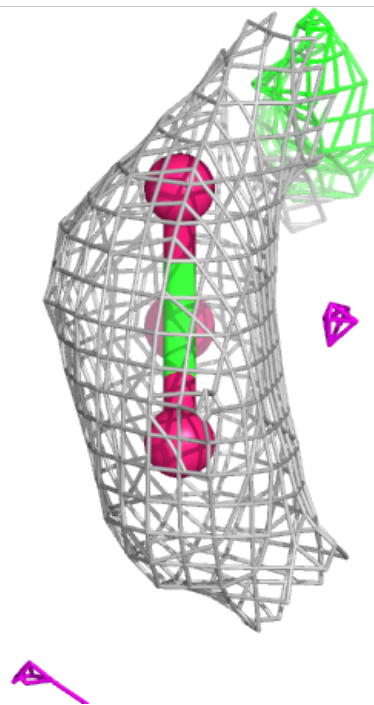
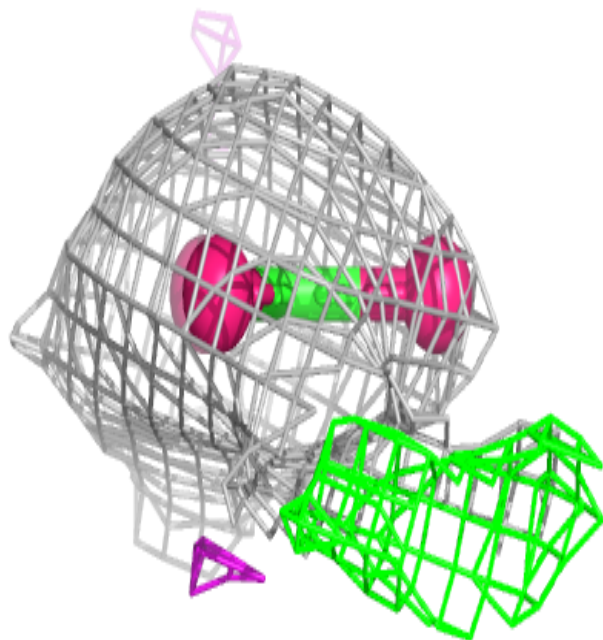
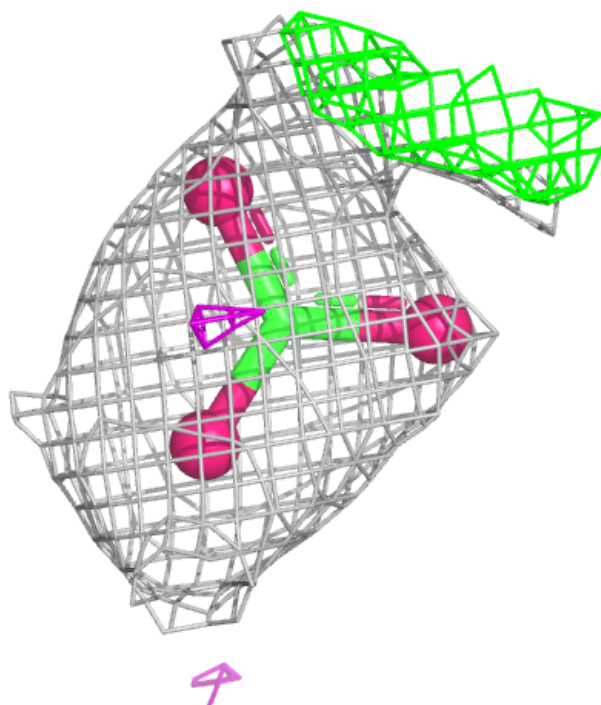
Electron density around BCT N 208:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



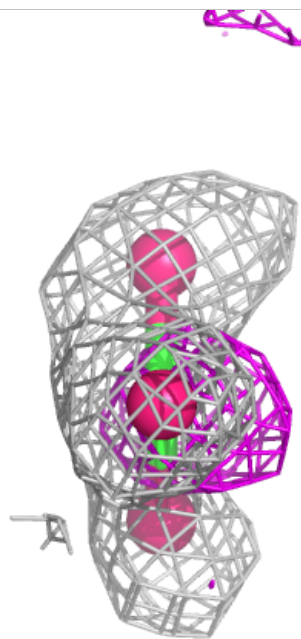
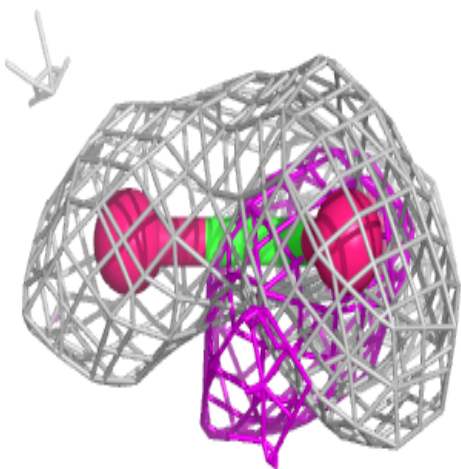
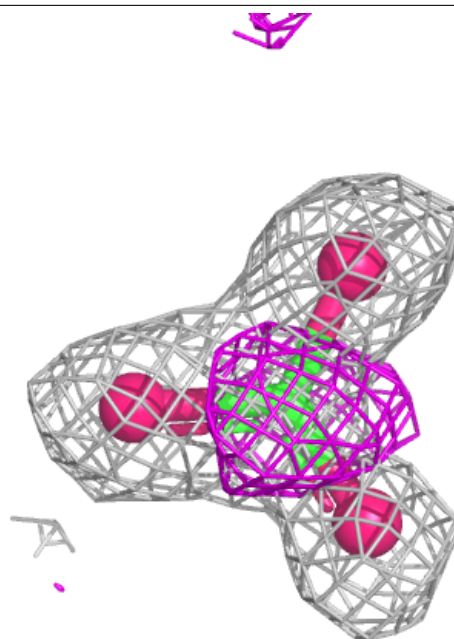
Electron density around BCT O 513:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



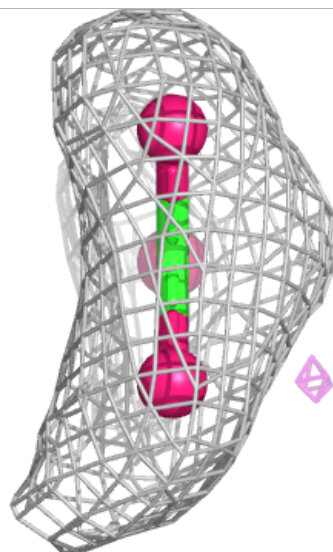
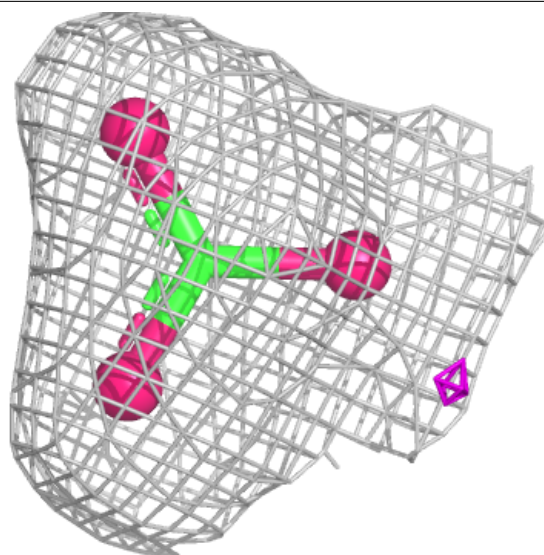
Electron density around BCT A 519:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



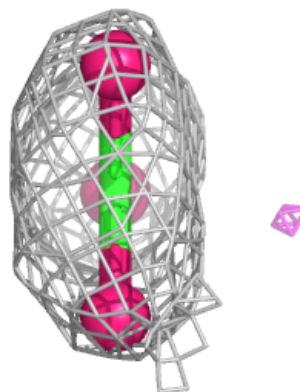
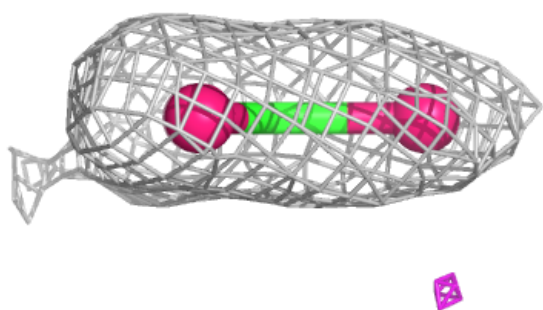
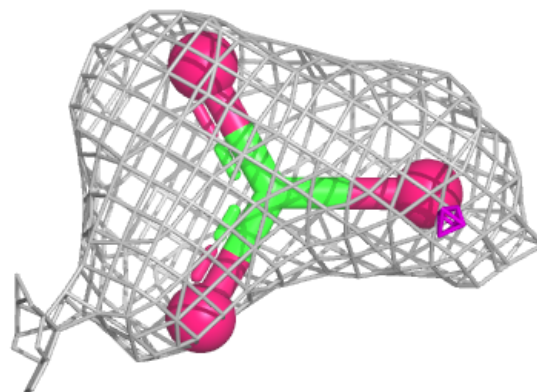
Electron density around BCT C 515:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



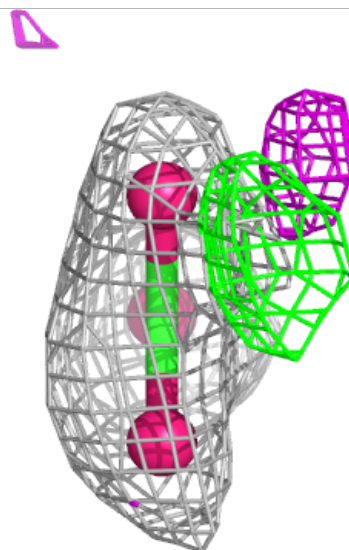
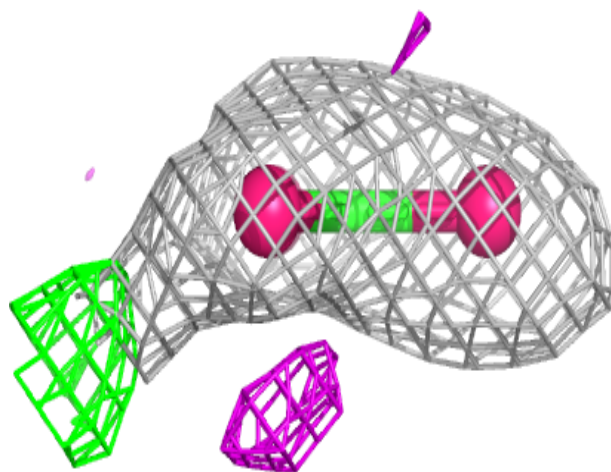
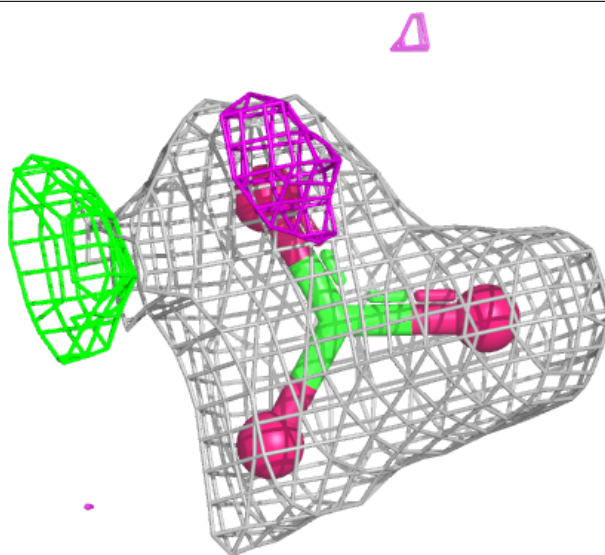
Electron density around BCT L 209:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



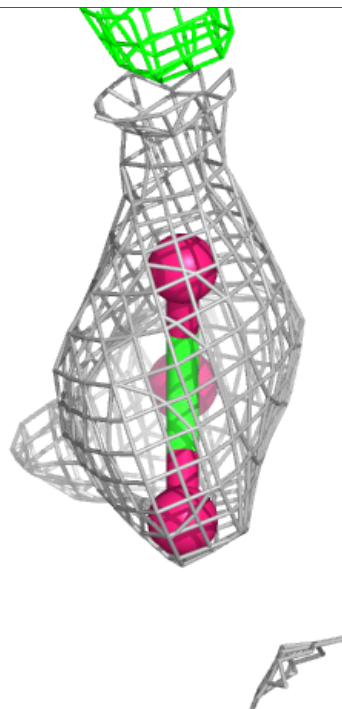
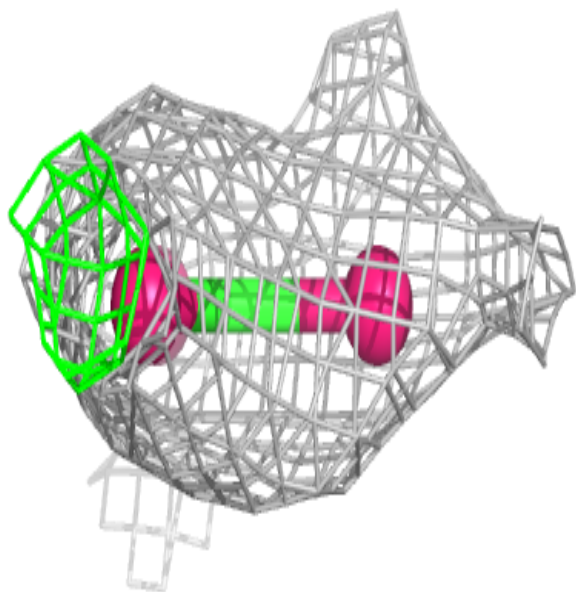
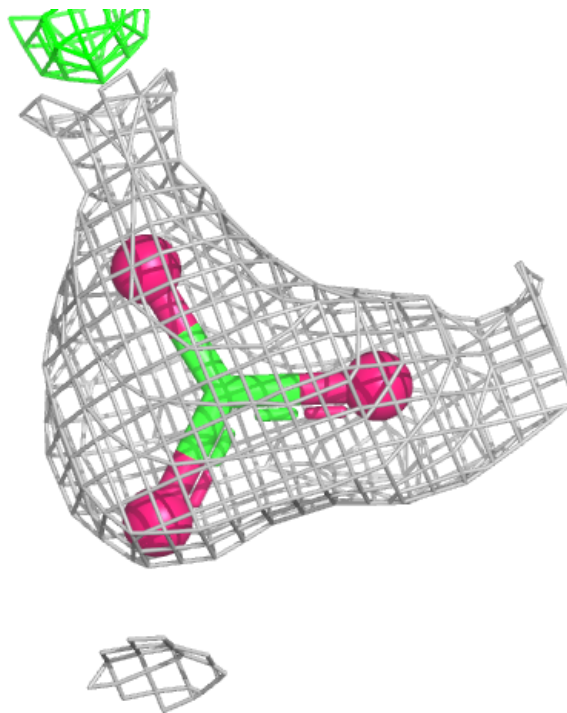
Electron density around BCT A 517:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



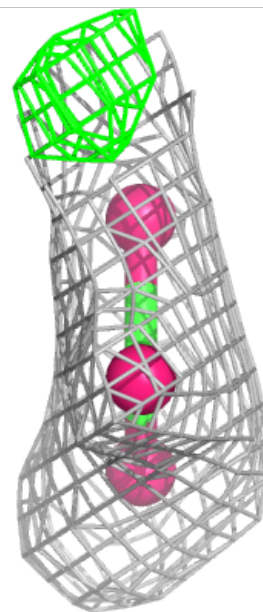
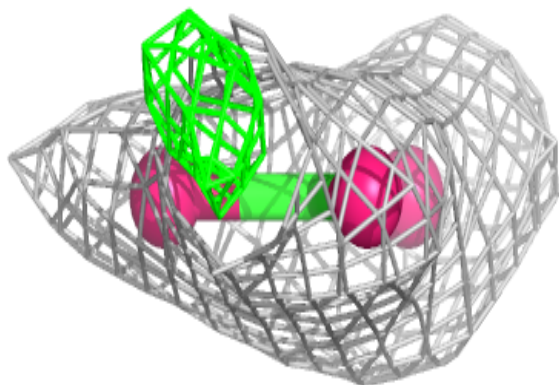
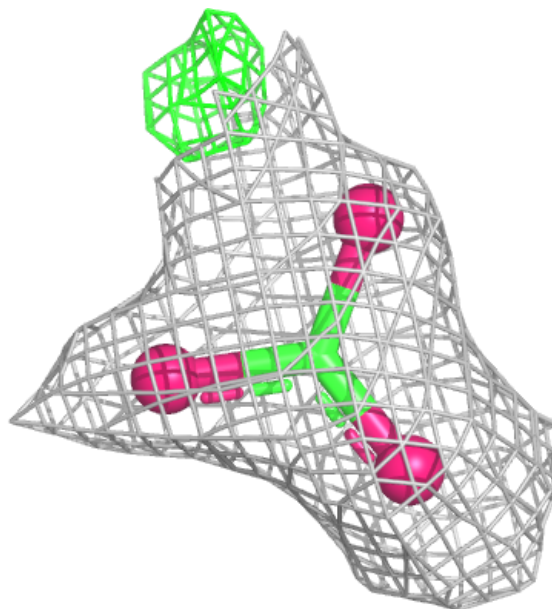
Electron density around BCT O 514:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



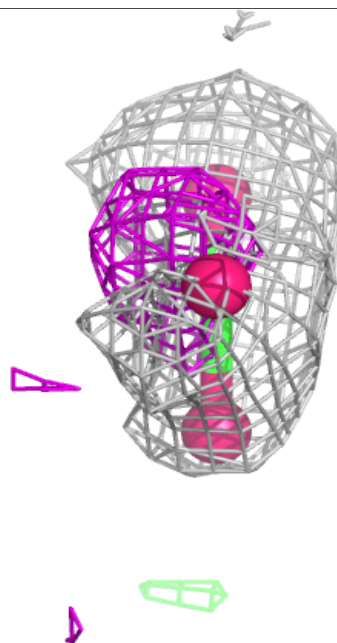
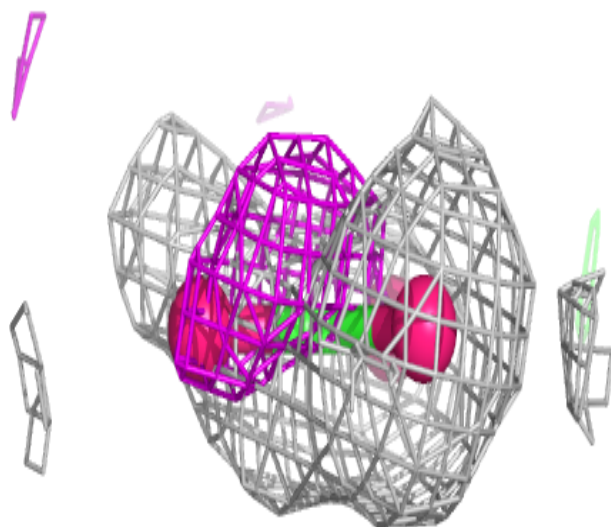
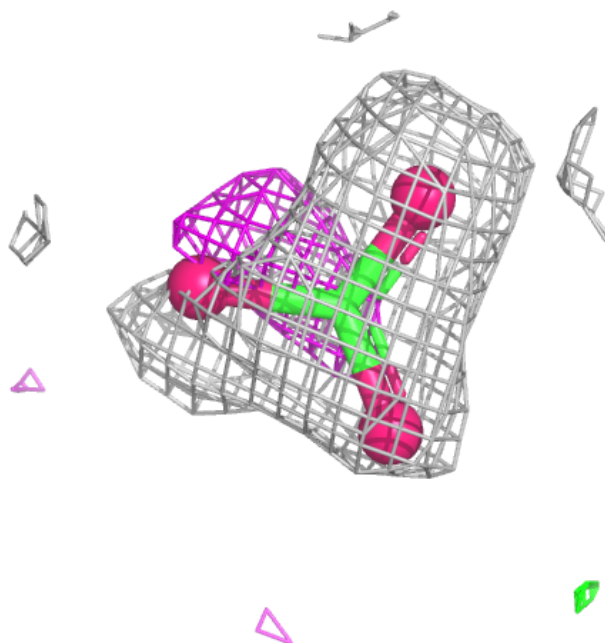
Electron density around BCT K 512:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



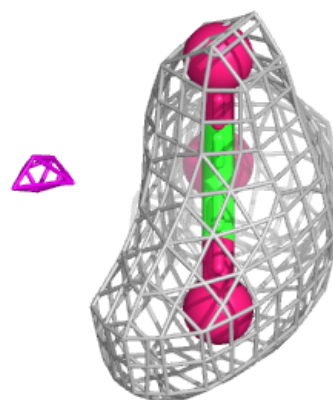
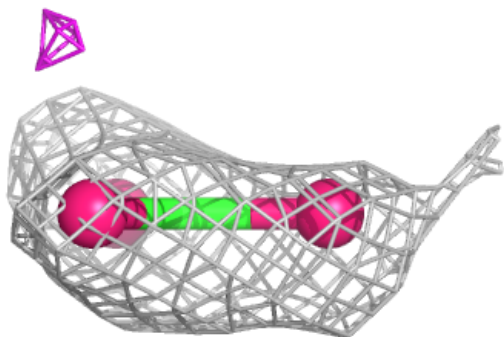
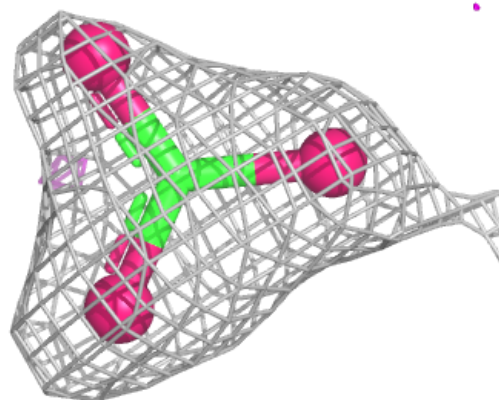
Electron density around BCT E 515:

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 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

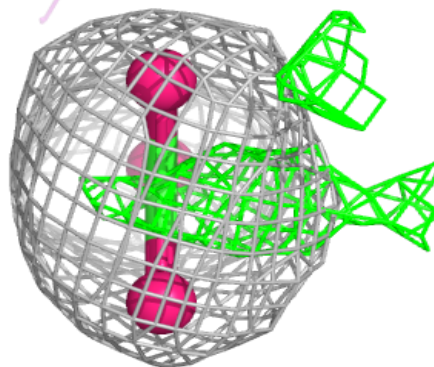
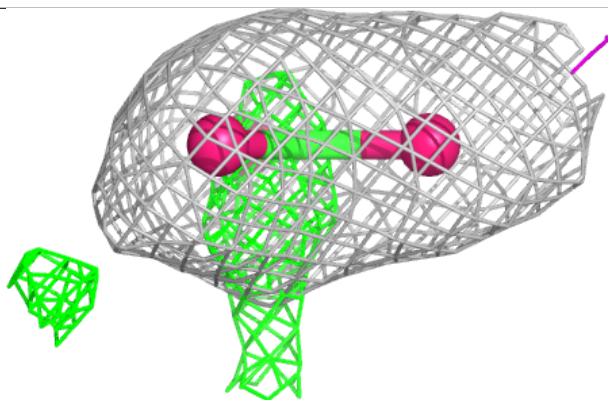
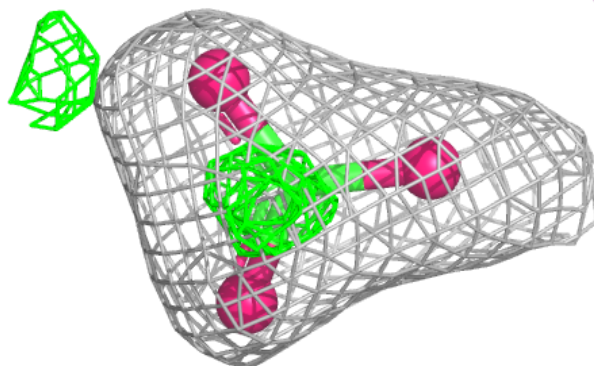


Electron density around BCT E 516:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

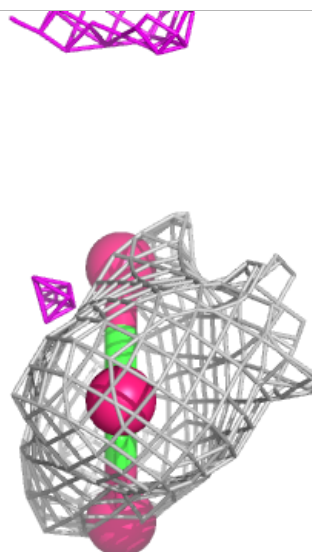
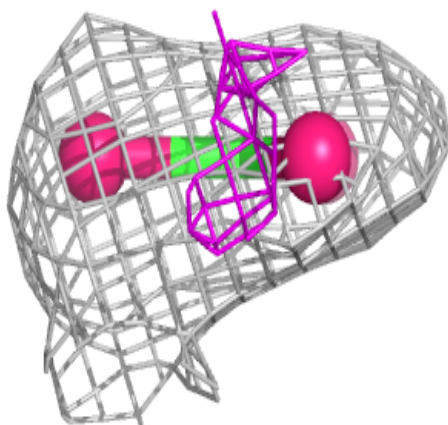
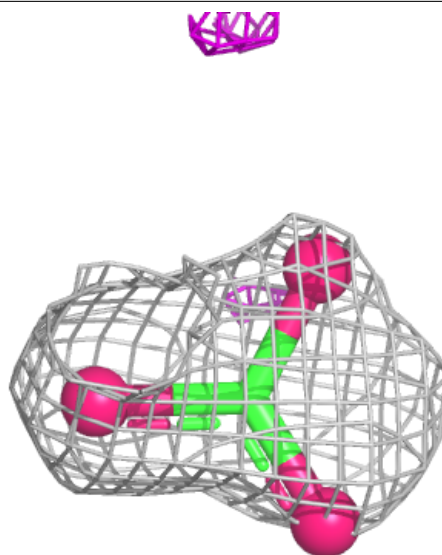
**Electron density around BCT I 515:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



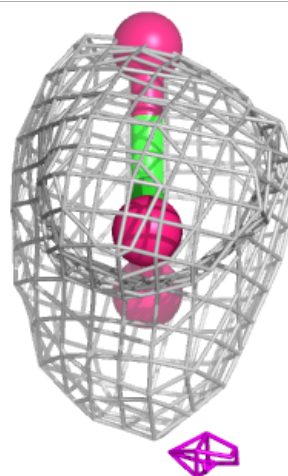
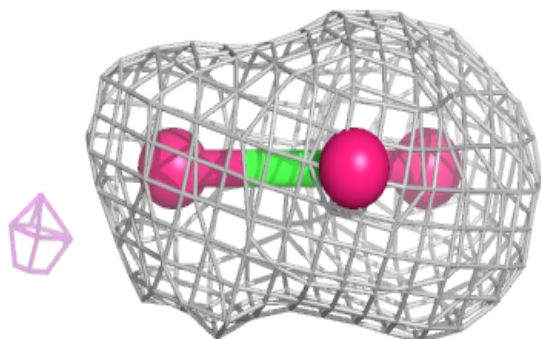
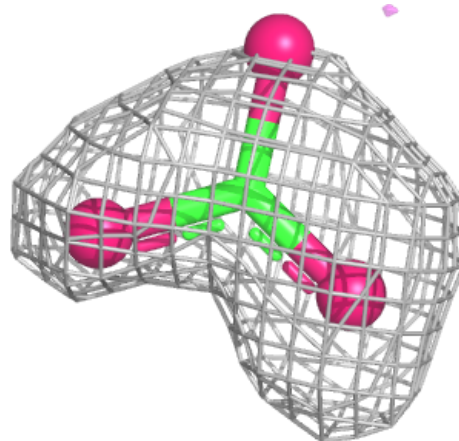
Electron density around BCT I 516:

2mF_o-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



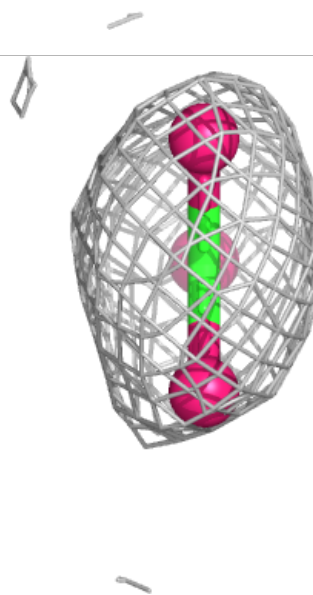
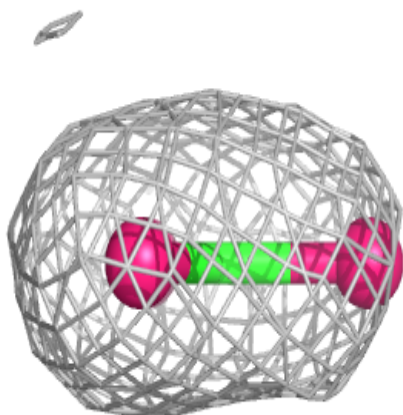
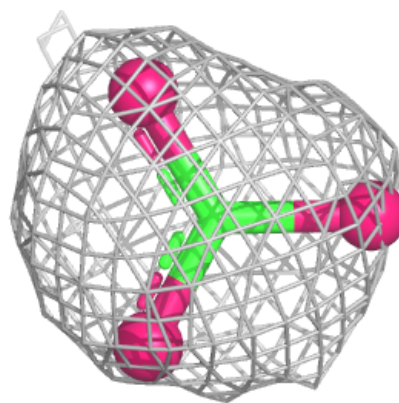
Electron density around BCT E 514:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



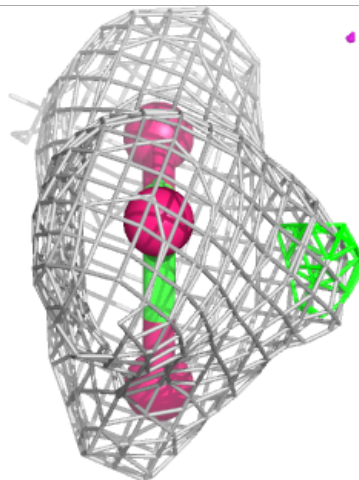
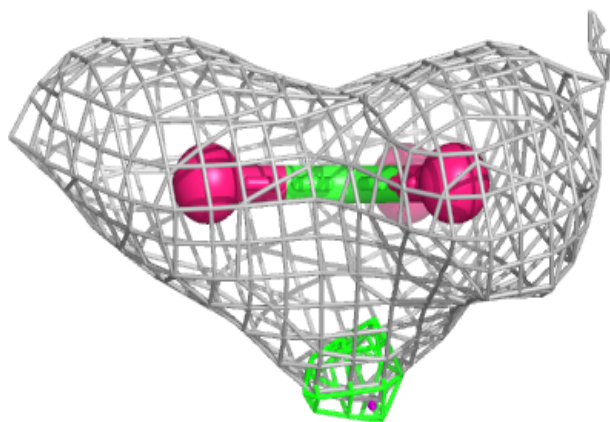
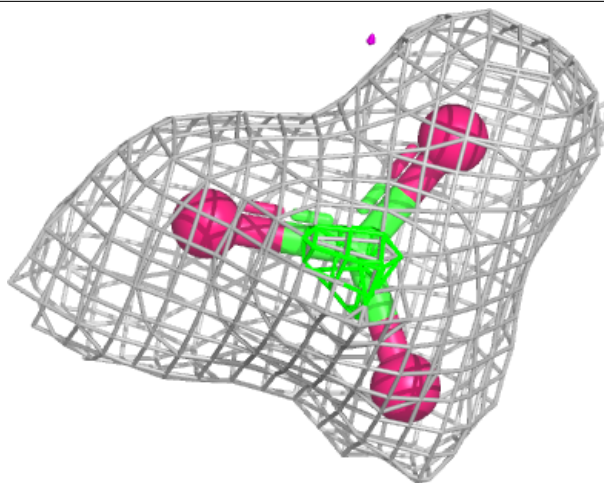
Electron density around BCT G 518:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



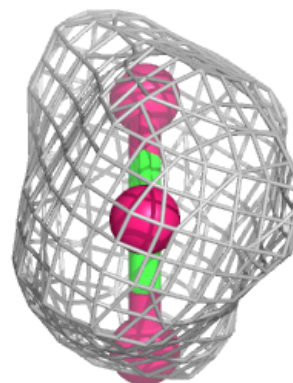
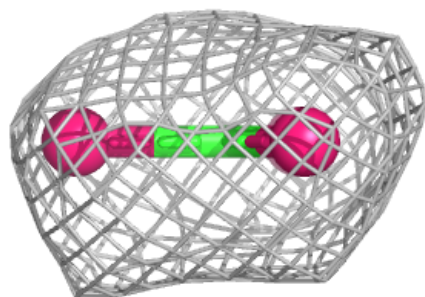
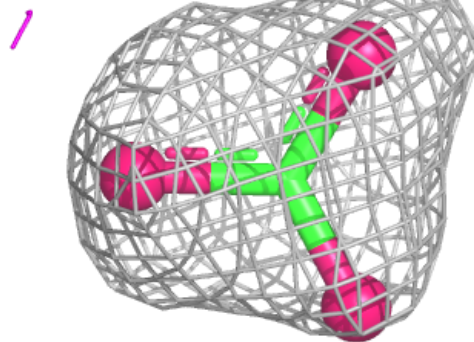
Electron density around BCT M 512:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



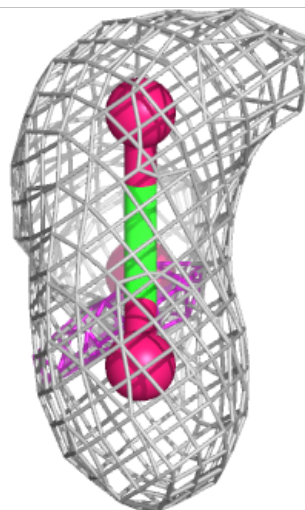
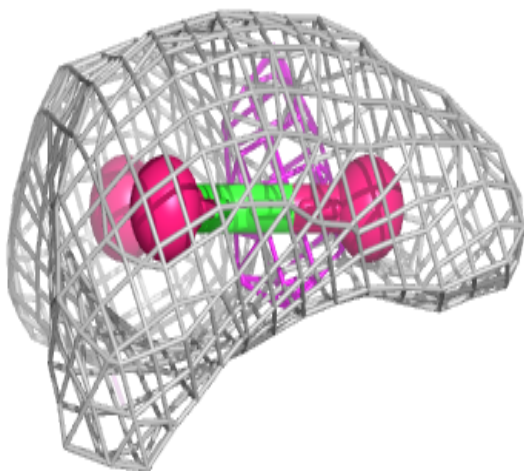
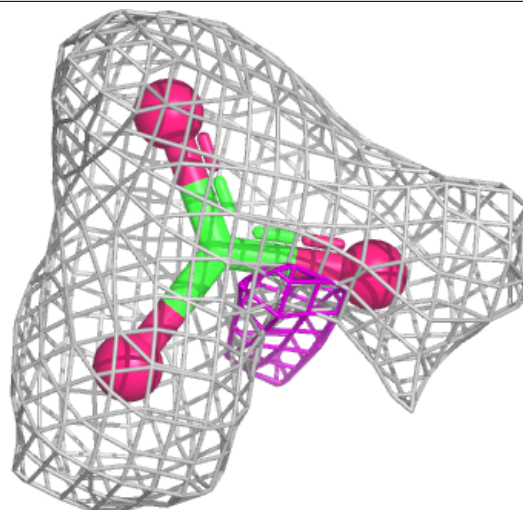
Electron density around BCT H 208:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



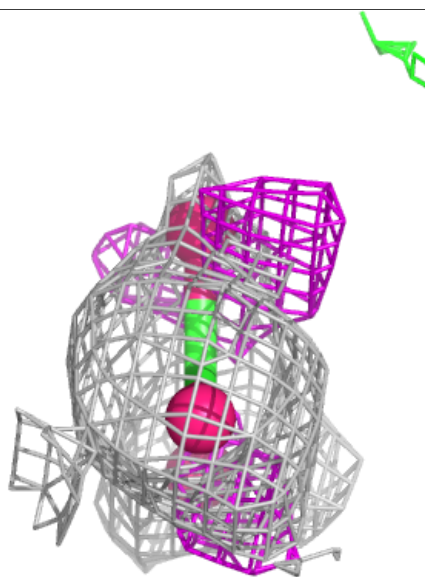
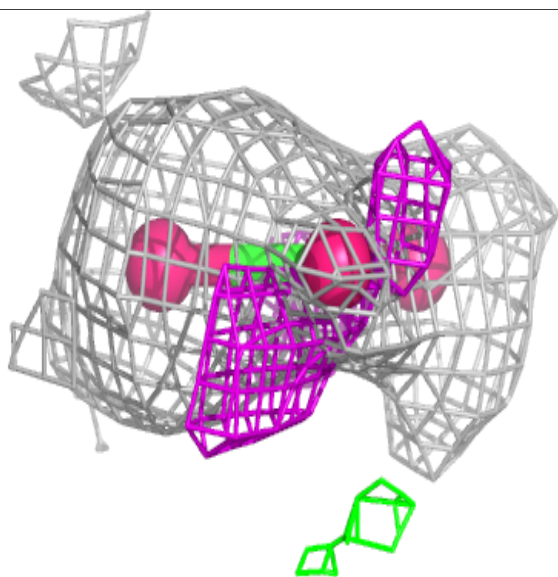
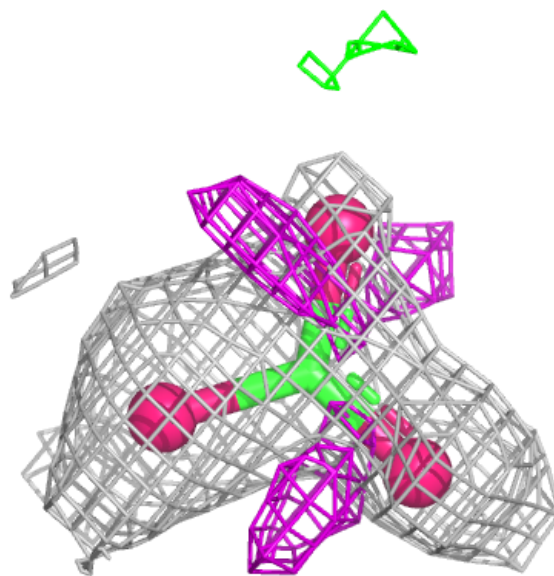
Electron density around BCT I 514:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



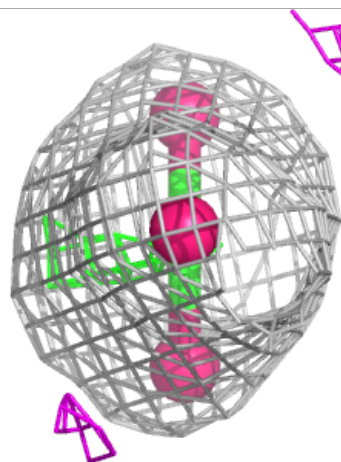
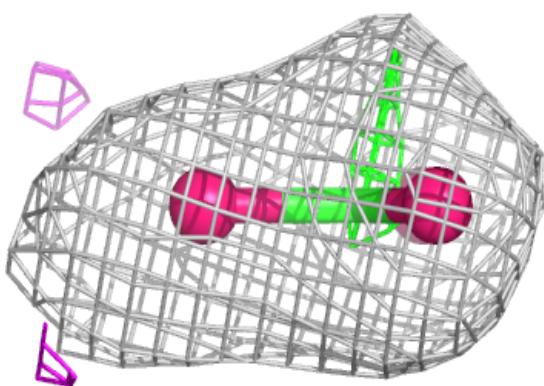
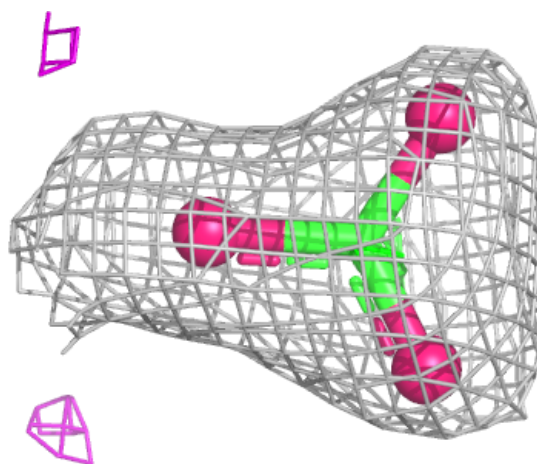
Electron density around BCT A 518:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



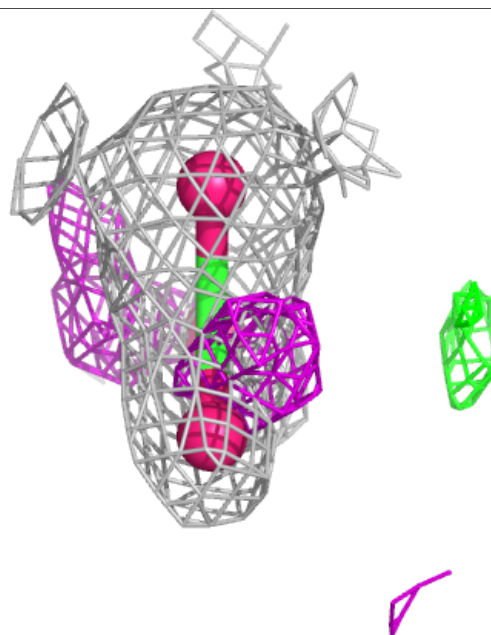
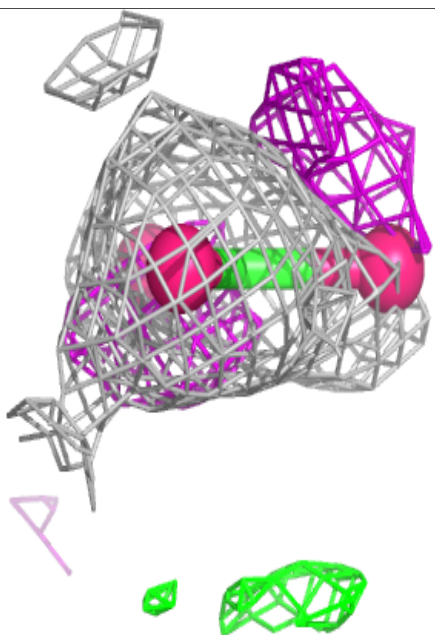
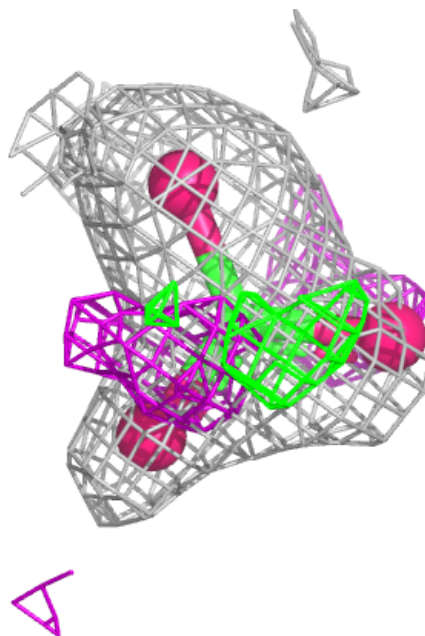
Electron density around BCT G 514:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



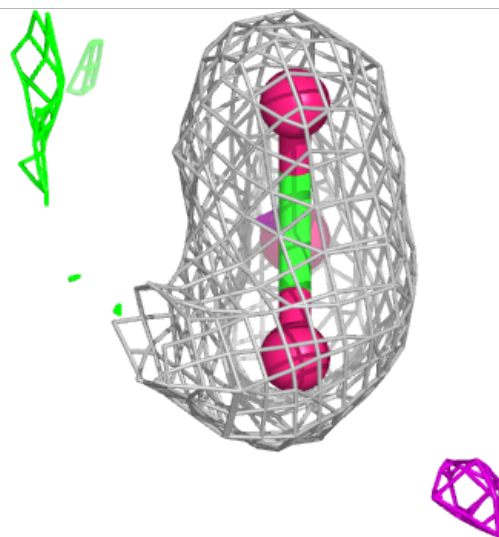
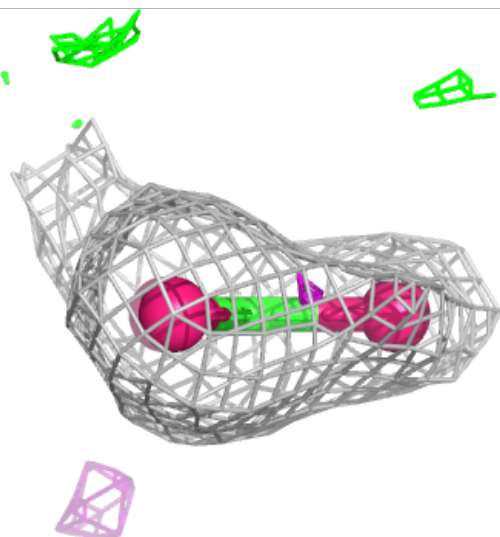
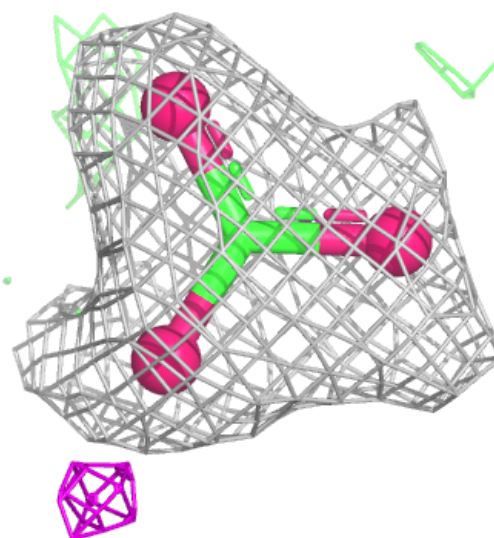
Electron density around BCT G 516:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



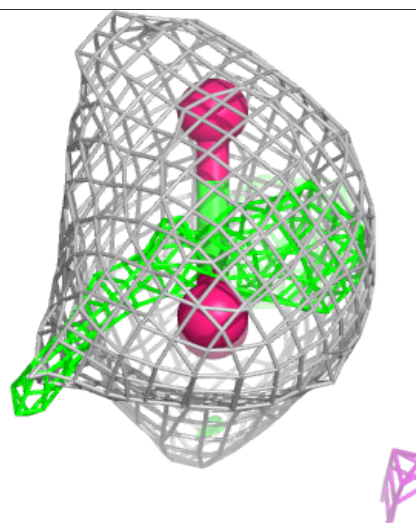
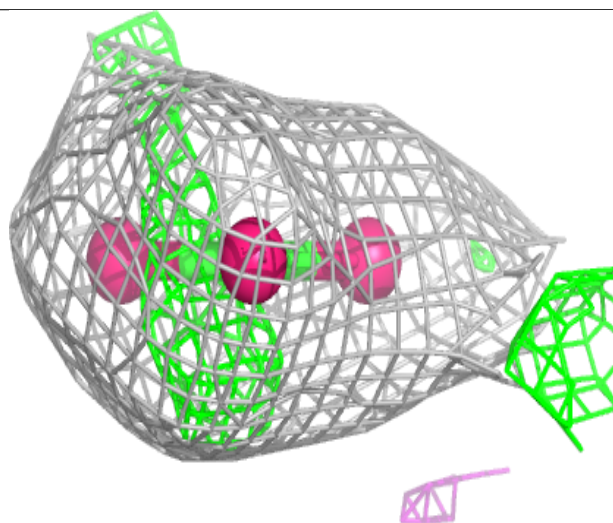
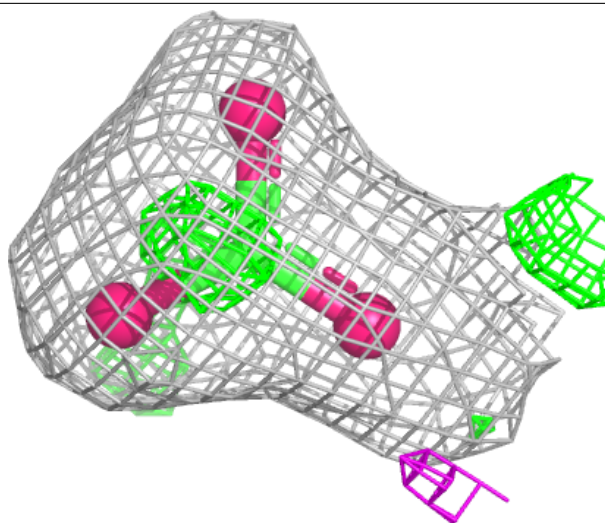
Electron density around BCT C 514:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



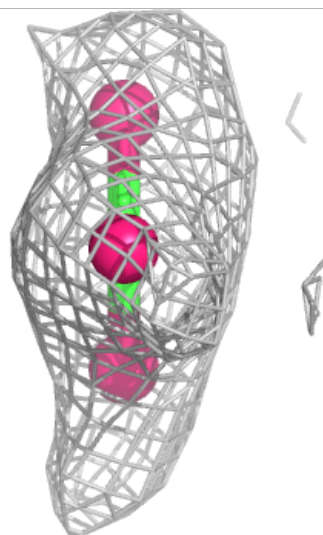
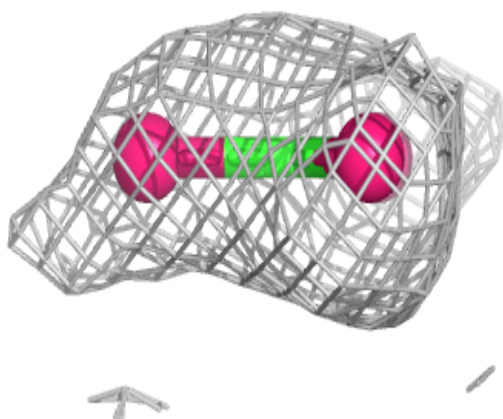
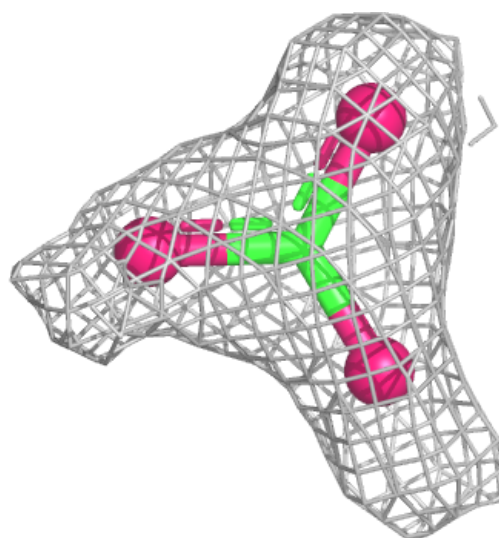
Electron density around BCT A 516:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



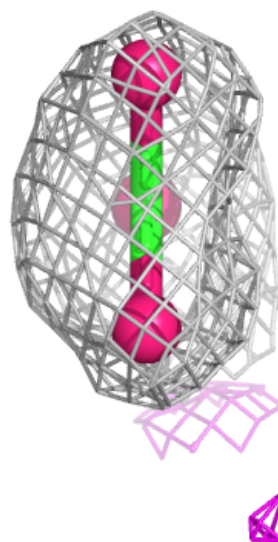
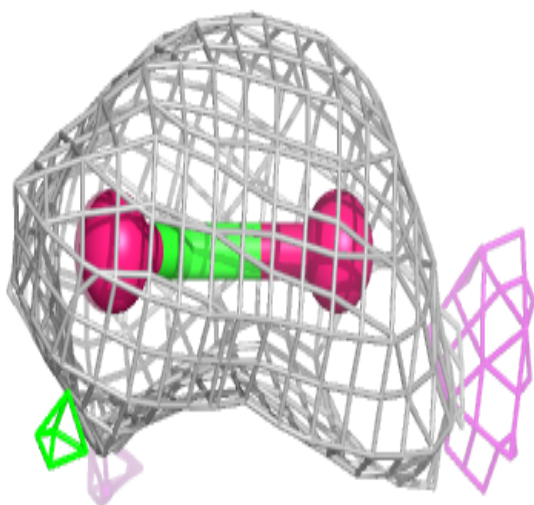
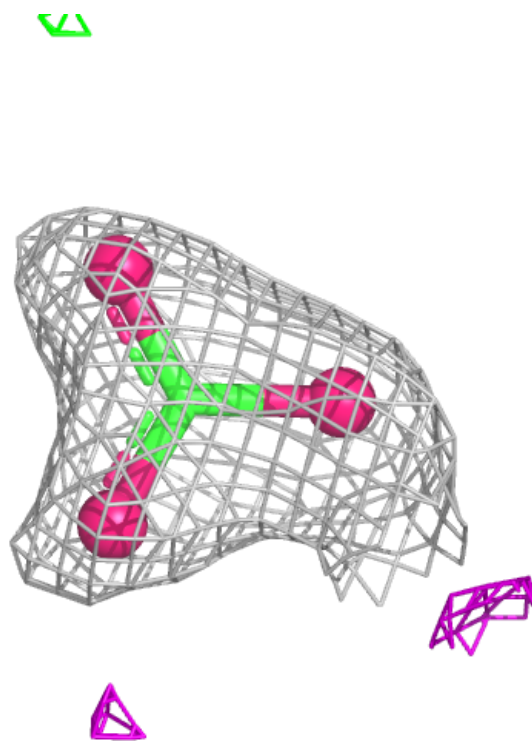
Electron density around BCT D 207:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



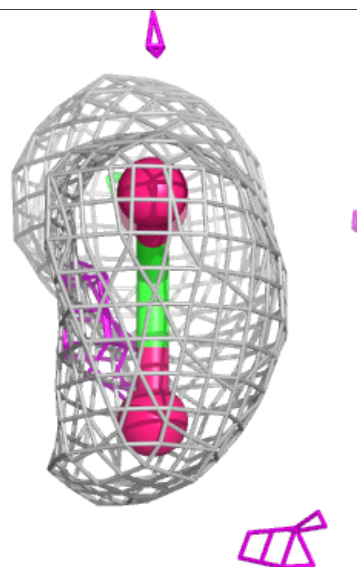
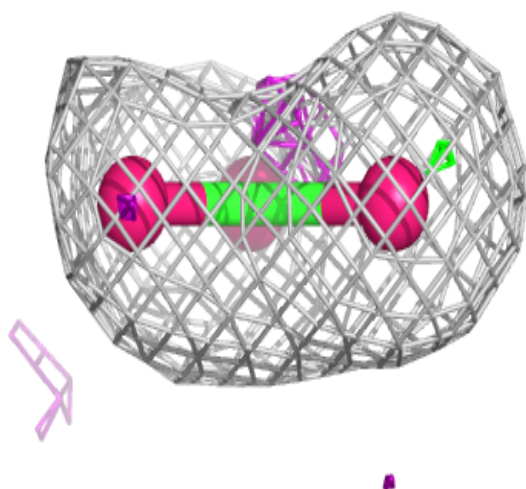
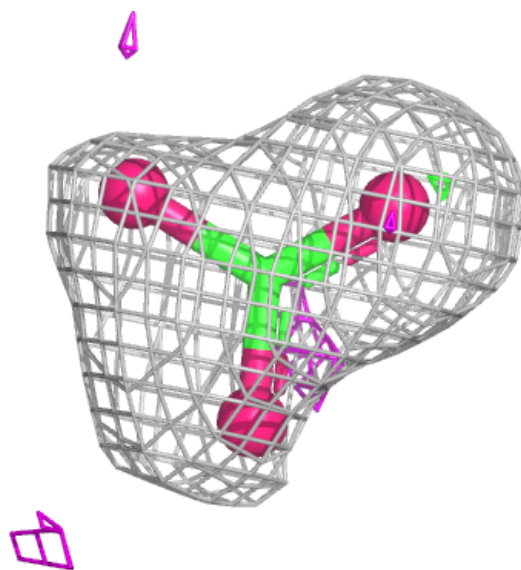
Electron density around BCT G 515:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



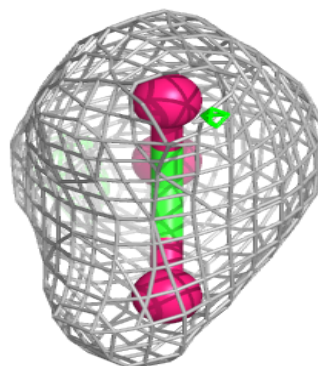
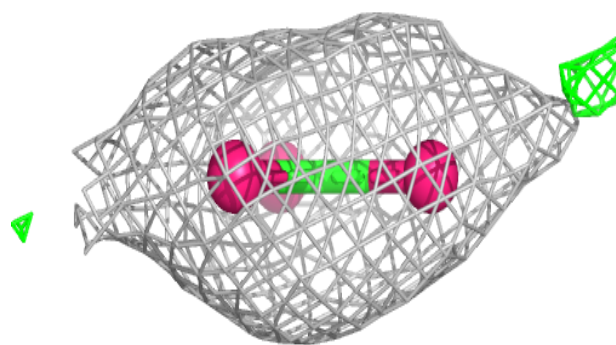
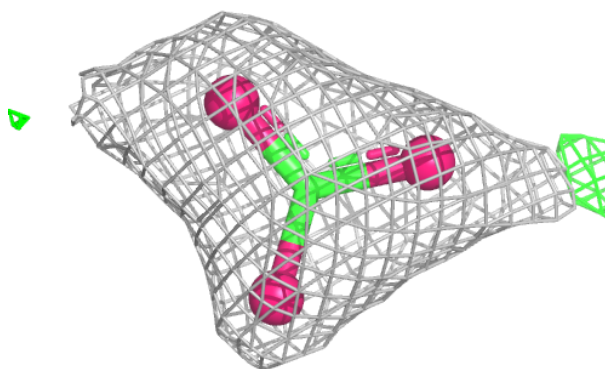
Electron density around BCT M 511:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



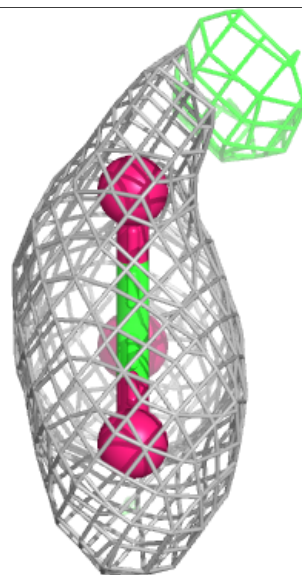
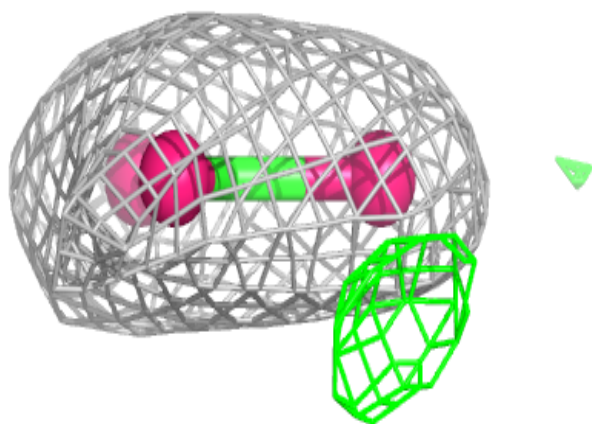
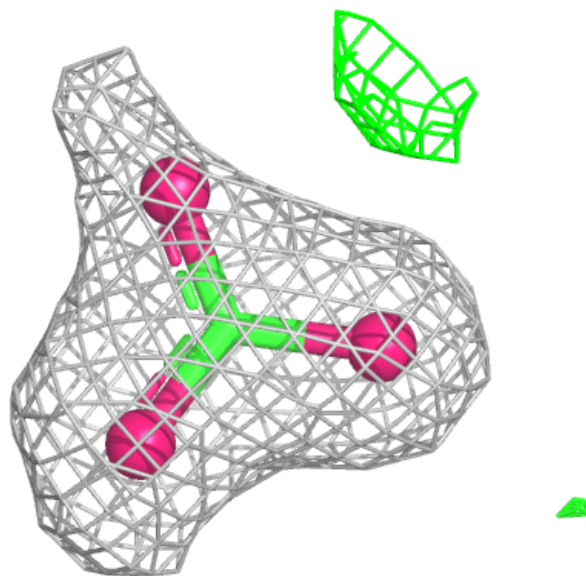
Electron density around BCT O 512:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



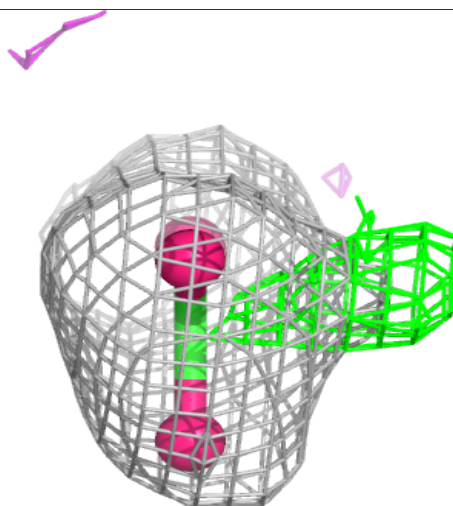
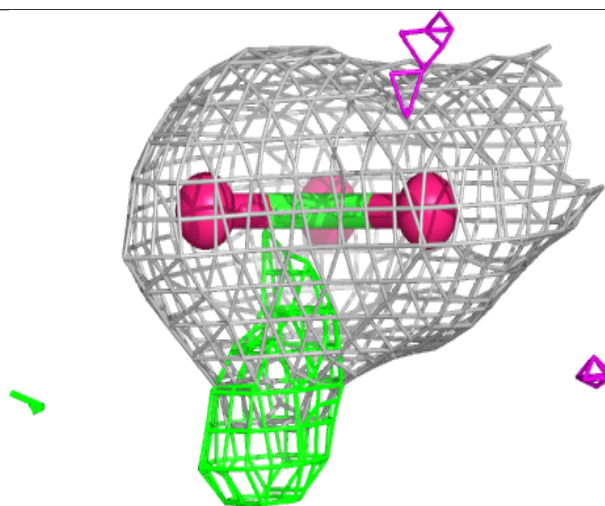
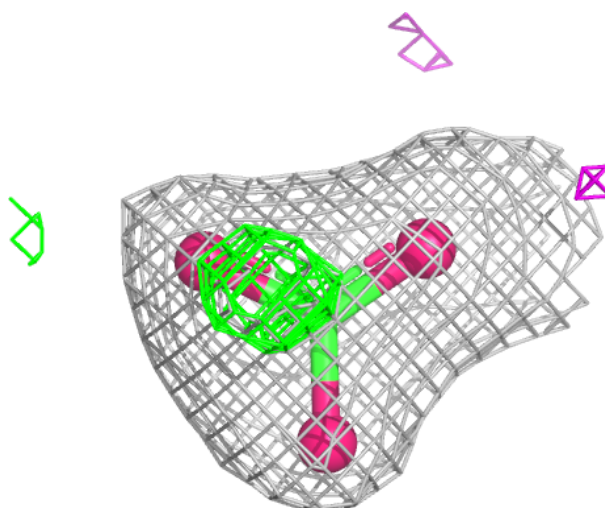
Electron density around BCT M 510:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



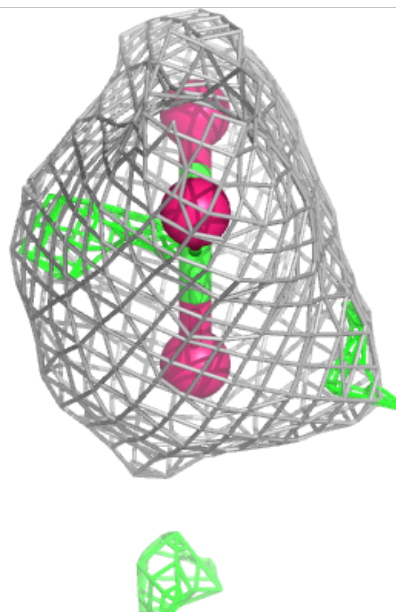
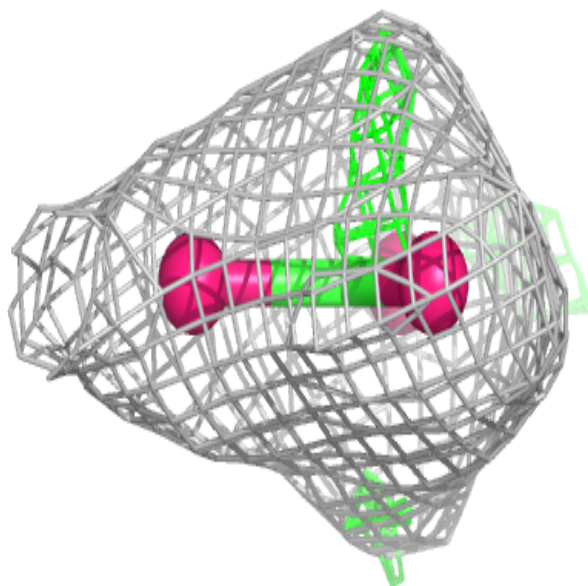
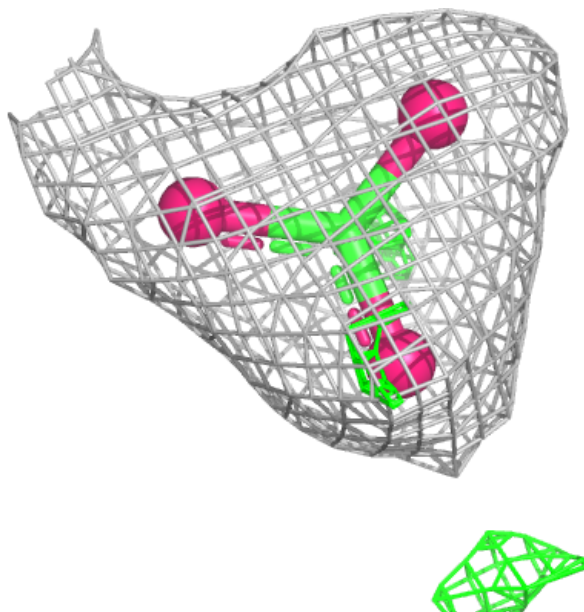
Electron density around BCT K 511:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



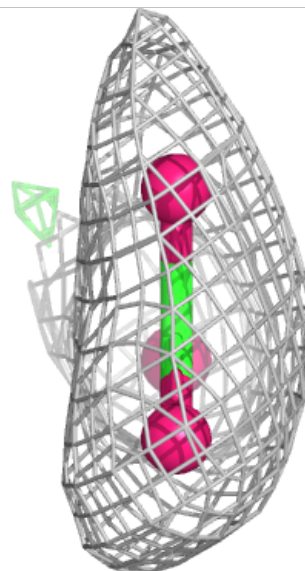
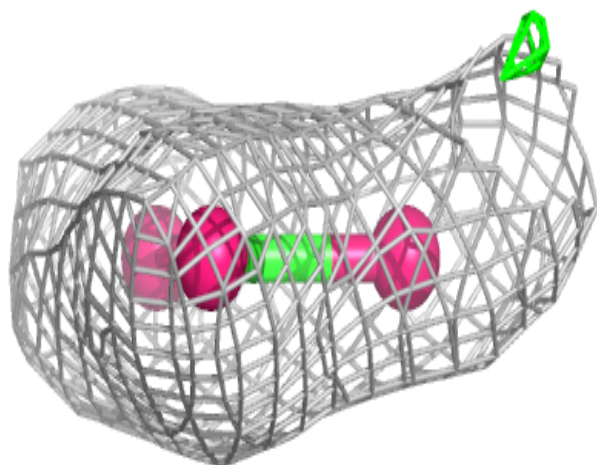
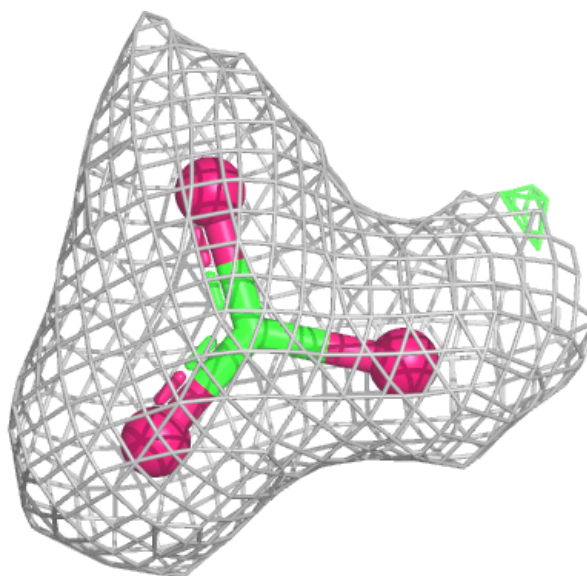
Electron density around BCT E 513:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



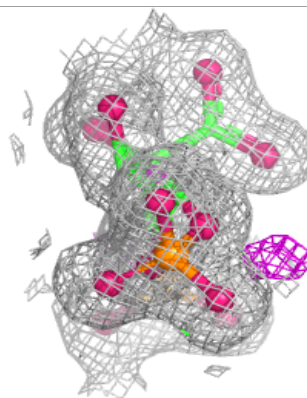
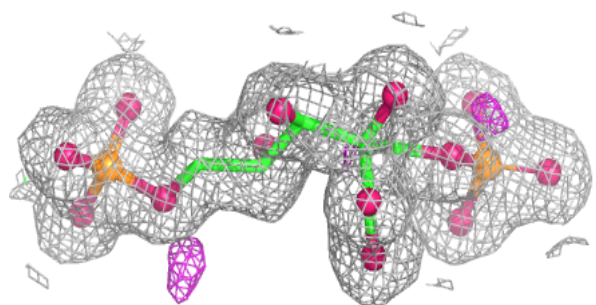
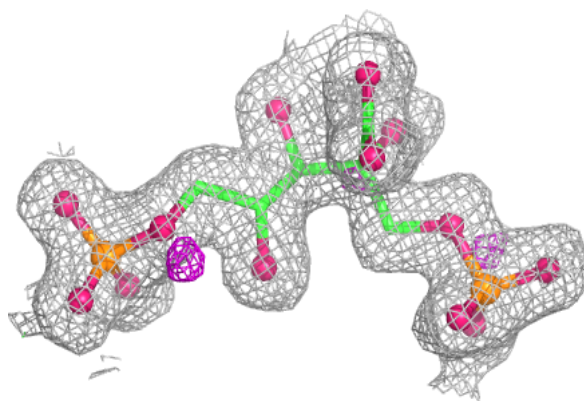
Electron density around BCT G 517:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

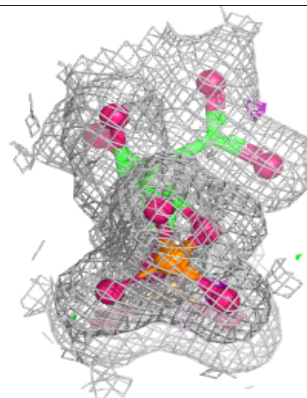
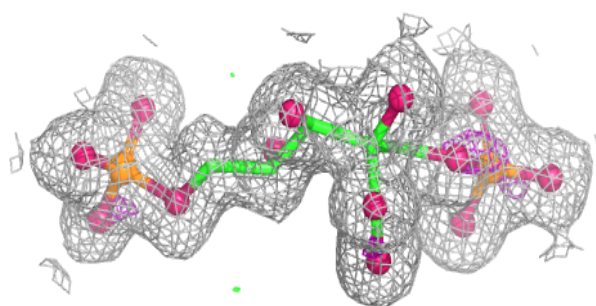
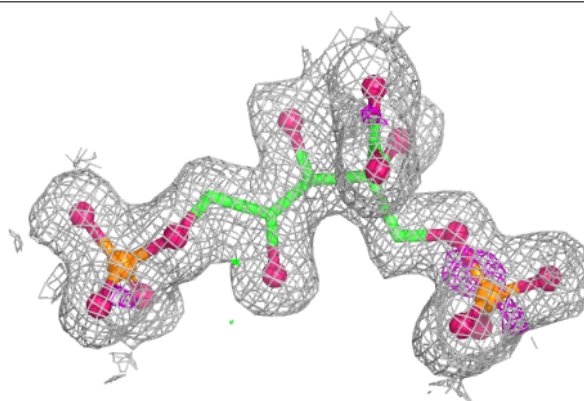


Electron density around CAP M 502:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

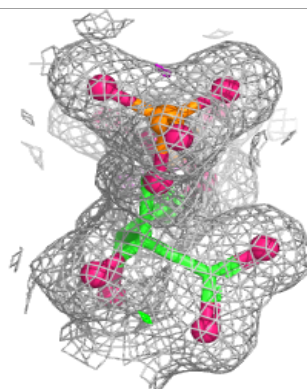
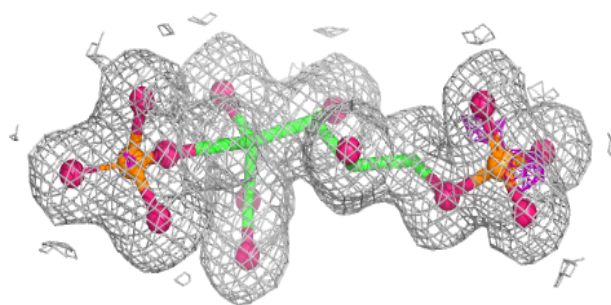
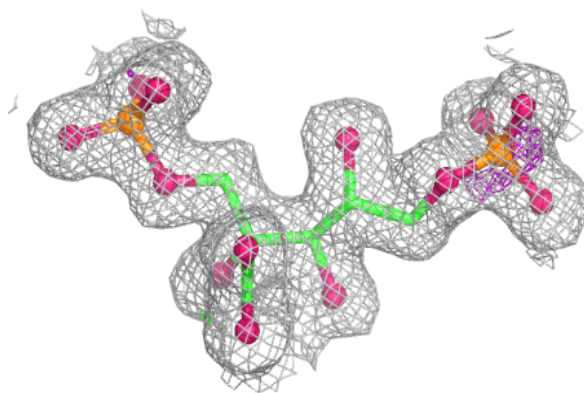
**Electron density around CAP A 502:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

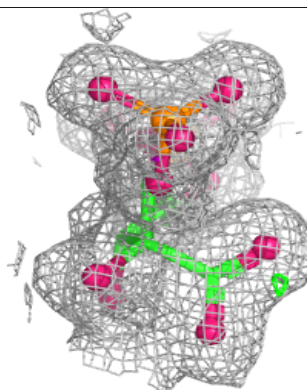
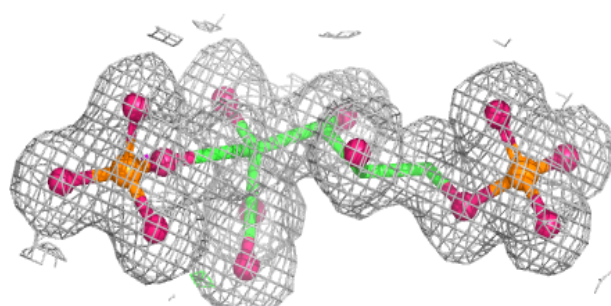
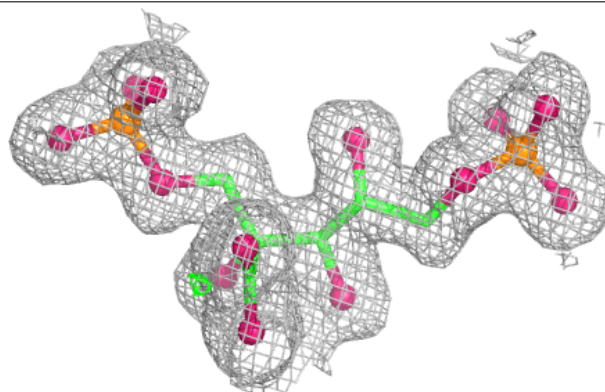


Electron density around CAP E 502:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

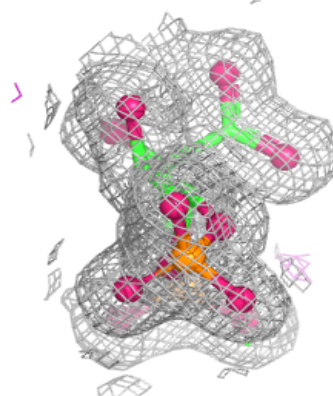
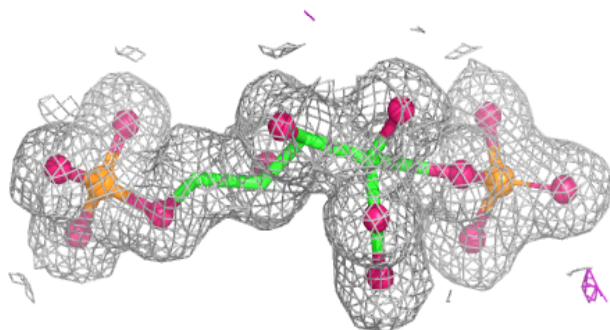
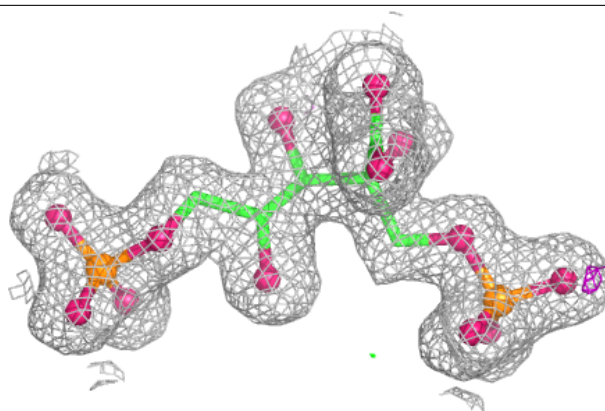
**Electron density around CAP K 502:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

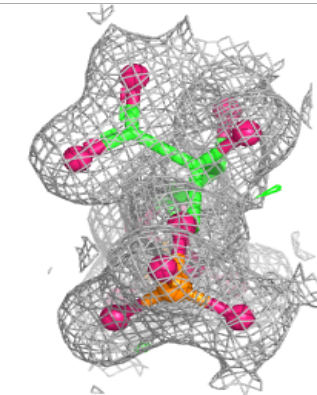
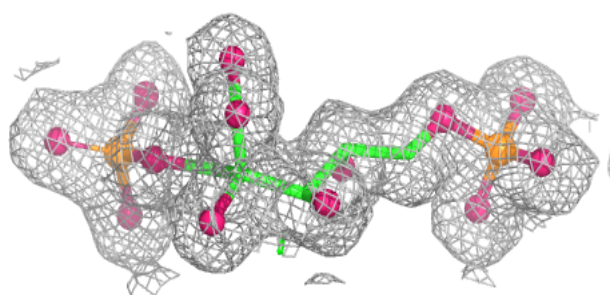
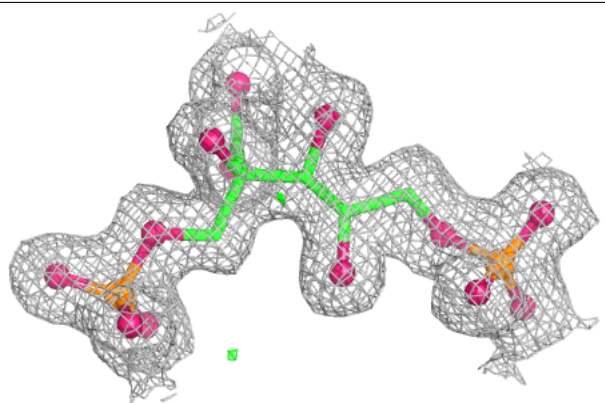


Electron density around CAP O 502:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

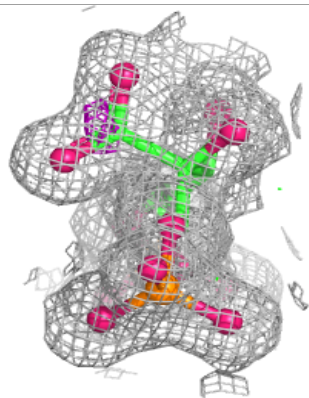
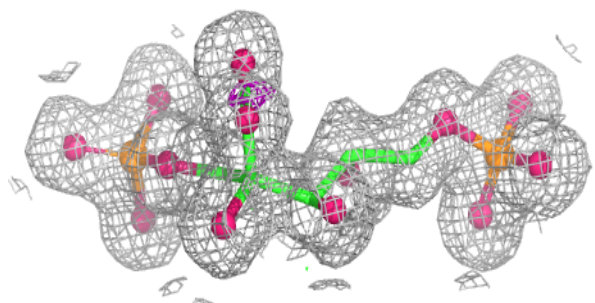
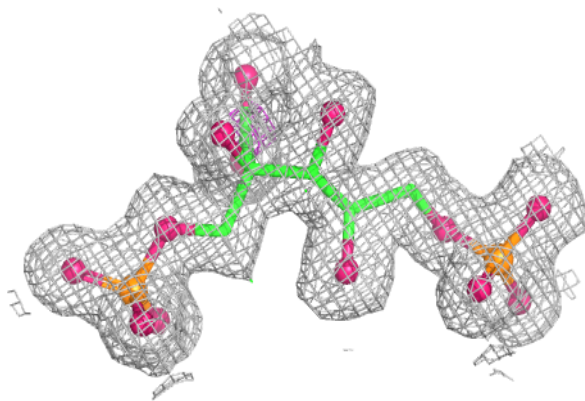
**Electron density around CAP C 502:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

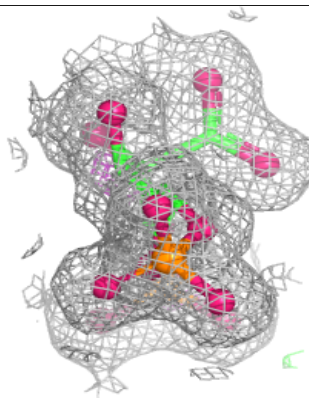
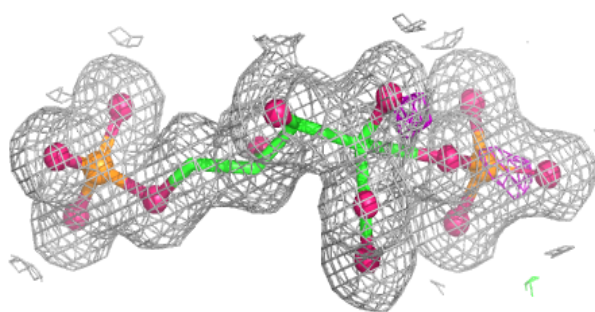
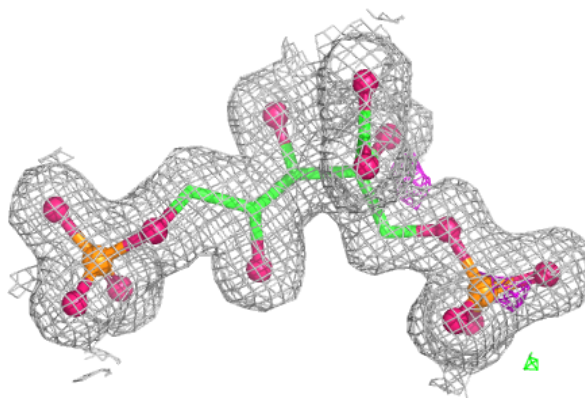


Electron density around CAP G 502:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

**Electron density around CAP I 502:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



6.5 Other polymers [i](#)

There are no such residues in this entry.