



# Full wwPDB X-ray Structure Validation Report ⓘ

May 2, 2023 – 01:58 pm BST

PDB ID : 7ZNC  
Title : Crystal structure of the light-driven inward proton pump xenorhodopsin BcXeR in the ground state at pH 7.6 in the absence of sodium at 100K  
Authors : Kovalev, K.; Tsybrov, F.; Alekseev, A.; Bourenkov, G.; Gordeliy, V.  
Deposited on : 2022-04-20  
Resolution : 1.70 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto: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>.

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

MolProbity : 4.02b-467  
Mogul : 1.8.4, CSD as541be (2020)  
Xtriage (Phenix) : 1.13  
EDS : 2.32.2  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.32.2

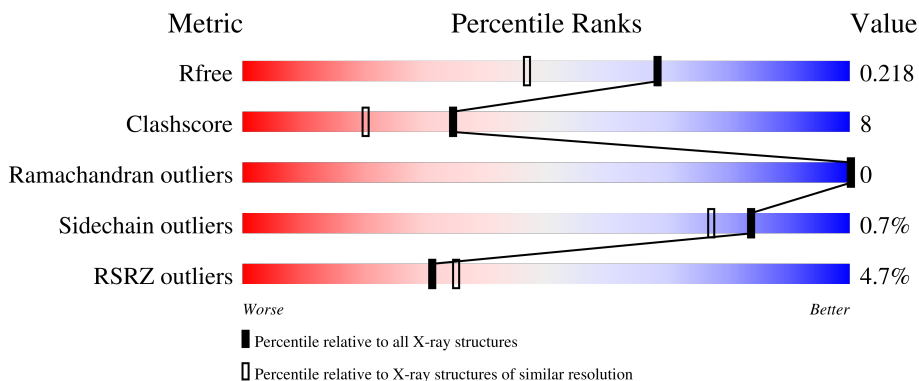
# 1 Overall quality at a glance

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))
$R_{free}$	130704	4298 (1.70-1.70)
Clashscore	141614	4695 (1.70-1.70)
Ramachandran outliers	138981	4610 (1.70-1.70)
Sidechain outliers	138945	4610 (1.70-1.70)
RSRZ outliers	127900	4222 (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  $\geq 3$ , 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	229	
1	B	229	
1	C	229	

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
1	FME	C	1	X	-	-	-

## 2 Entry composition [i](#)

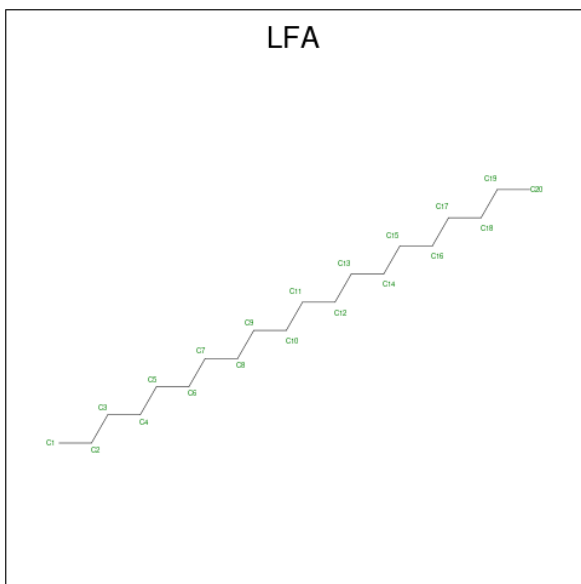
There are 6 unique types of molecules in this entry. The entry contains 6609 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 xenorhodopsin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	224	Total 1824	C 1235	N 278	O 304	S 7	0	6	0
1	B	222	Total 1787	C 1217	N 268	O 295	S 7	0	5	0
1	C	224	Total 1811	C 1230	N 275	O 299	S 7	0	6	0

- Molecule 2 is EICOSANE (three-letter code: LFA) (formula:  $C_{20}H_{42}$ ).



Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total 6	C 6	0	0
2	A	1	Total 8	C 8	0	0
2	A	1	Total 9	C 9	0	0

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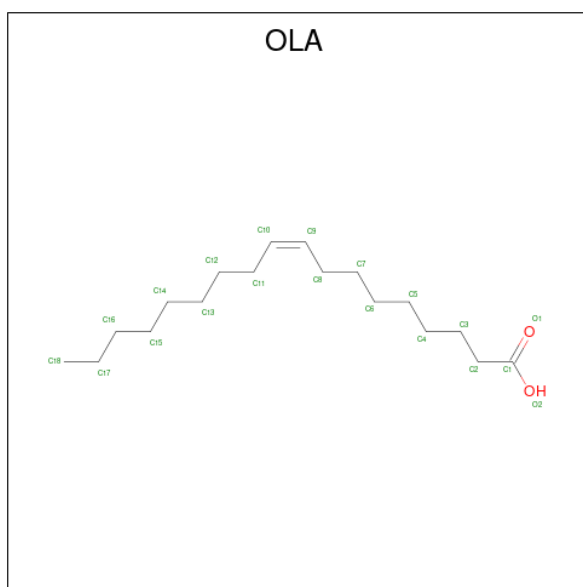
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total C 9 9	0	0
2	A	1	Total C 11 11	0	0
2	A	1	Total C 12 12	0	0
2	A	1	Total C 10 10	0	0
2	A	1	Total C 8 8	0	0
2	A	1	Total C 4 4	0	0
2	A	1	Total C 20 20	0	0
2	B	1	Total C 7 7	0	0
2	B	1	Total C 7 7	0	0
2	B	1	Total C 9 9	0	0
2	B	1	Total C 11 11	0	0
2	B	1	Total C 9 9	0	0
2	B	1	Total C 10 10	0	0
2	B	1	Total C 8 8	0	0
2	B	1	Total C 11 11	0	0
2	B	1	Total C 6 6	0	0
2	B	1	Total C 11 11	0	0
2	B	1	Total C 6 6	0	0
2	B	1	Total C 8 8	0	0
2	B	1	Total C 10 10	0	0
2	B	1	Total C 11 11	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	B	1	Total C 10 10	0	0
2	B	1	Total C 14 14	0	0
2	B	1	Total C 10 10	0	0
2	B	1	Total C 15 15	0	0
2	C	1	Total C 12 12	0	0
2	C	1	Total C 13 13	0	0
2	C	1	Total C 6 6	0	0
2	C	1	Total C 8 8	0	0
2	C	1	Total C 10 10	0	0
2	C	1	Total C 5 5	0	0
2	C	1	Total C 9 9	0	0
2	C	1	Total C 7 7	0	0
2	C	1	Total C 11 11	0	0
2	C	1	Total C 15 15	0	0
2	C	1	Total C 5 5	0	0
2	C	1	Total C 16 16	0	0
2	C	1	Total C 6 6	0	0
2	C	1	Total C 7 7	0	0
2	C	1	Total C 16 16	0	0

- Molecule 3 is OLEIC ACID (three-letter code: OLA) (formula:  $C_{18}H_{34}O_2$ ).



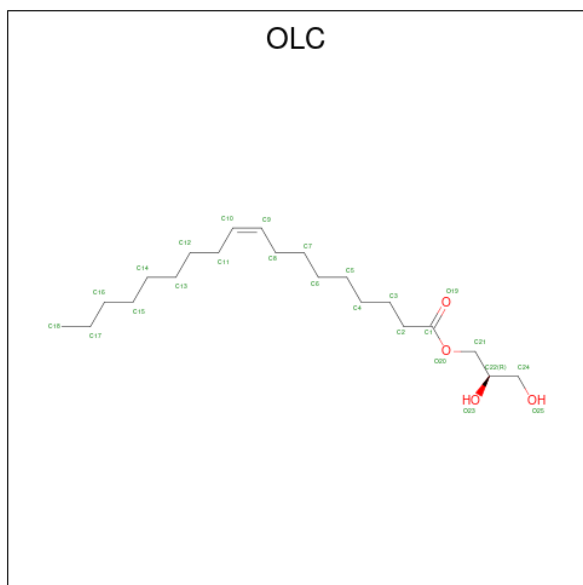
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			12	10	2		
3	A	1	Total	C	O	0	0
			14	12	2		
3	A	1	Total	C	O	0	0
			16	14	2		
3	A	1	Total	C	O	0	0
			20	18	2		
3	A	1	Total	C	O	0	0
			19	17	2		
3	A	1	Total	C	O	0	0
			20	18	2		
3	B	1	Total	C	O	0	0
			20	18	2		
3	B	1	Total	C	O	0	0
			16	14	2		
3	B	1	Total	C	O	0	0
			14	12	2		
3	B	1	Total	C	O	0	0
			14	12	2		
3	B	1	Total	C	O	0	0
			14	12	2		
3	B	1	Total	C	O	0	0
			11	9	2		
3	C	1	Total	C	O	0	0
			20	18	2		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	C	1	Total	C	O	0	0
			9	7	2		

- Molecule 4 is (2R)-2,3-dihydroxypropyl (9Z)-octadec-9-enoate (three-letter code: OLC) (formula: C<sub>21</sub>H<sub>40</sub>O<sub>4</sub>).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	C	O	0	0
			17	15	2		
4	A	1	Total	C	O	0	0
			19	16	3		
4	A	1	Total	C	O	0	0
			19	15	4		
4	B	1	Total	C	O	0	0
			19	15	4		
4	B	1	Total	C	O	0	0
			20	18	2		
4	B	1	Total	C	O	0	0
			13	11	2		
4	C	1	Total	C	O	0	0
			17	13	4		
4	C	1	Total	C	O	0	0
			15	13	2		
4	C	1	Total	C	O	0	0
			19	15	4		

- Molecule 5 is PHOSPHATE ION (three-letter code: PO4) (formula: O<sub>4</sub>P).





Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	C	1	Total	O P	0	0
			5	4 1		

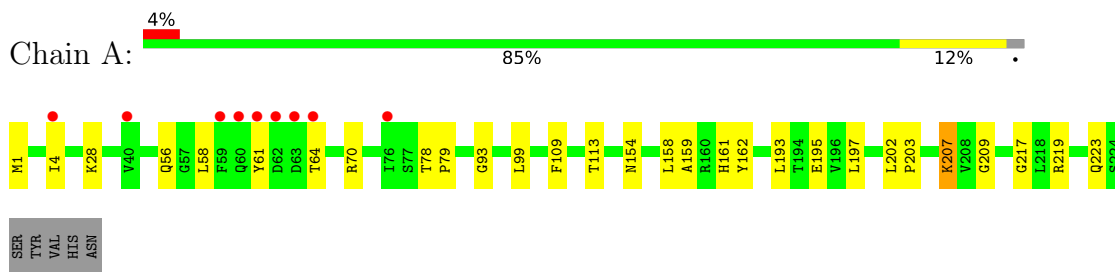
- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	126	Total	O	0	4
			129	129		
6	B	113	Total	O	0	4
			116	116		
6	C	128	Total	O	0	4
			130	130		

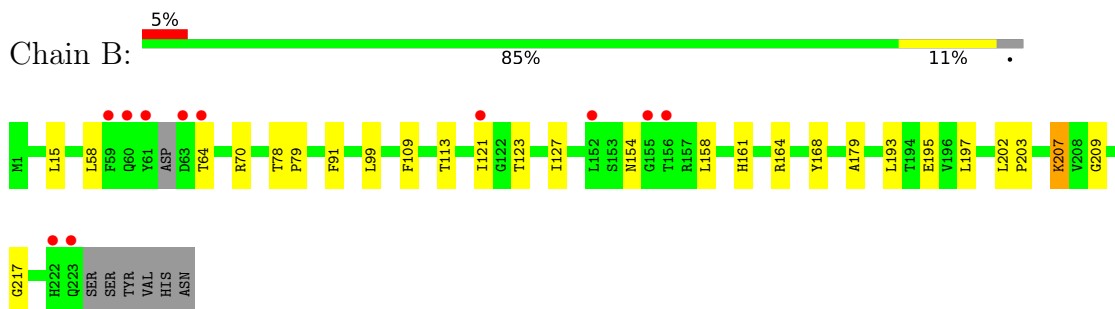
### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron 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 dot above a residue indicates a poor fit to the electron density ( $RSRZ > 2$ ). 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.

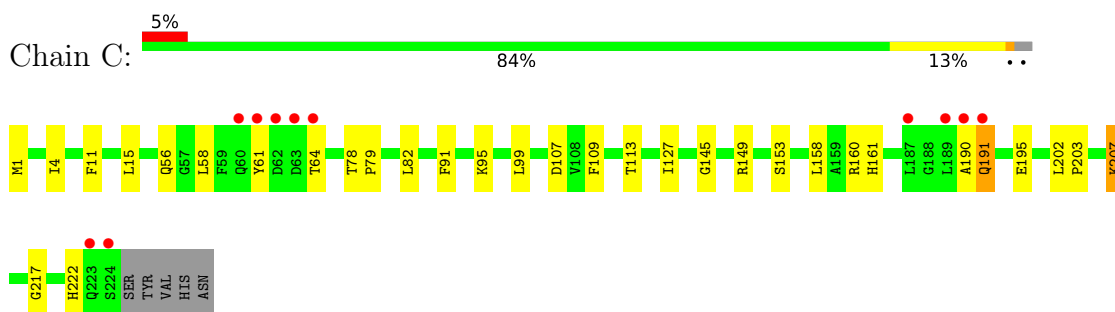
- Molecule 1: xenorhodopsin



- Molecule 1: xenorhodopsin



- Molecule 1: xenorhodopsin



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	68.45Å 109.63Å 118.46Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	20.00 – 1.70 44.79 – 1.70	Depositor EDS
% Data completeness (in resolution range)	84.0 (20.00-1.70) 84.1 (44.79-1.70)	Depositor EDS
$R_{merge}$	0.10	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.29 (at 1.70Å)	Xtrriage
Refinement program	REFMAC 5.8.0267	Depositor
R, $R_{free}$	0.184 , 0.208 0.198 , 0.218	Depositor DCC
$R_{free}$ test set	4092 reflections (4.93%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	26.4	Xtrriage
Anisotropy	0.047	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.34 , 65.1	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.51$ , $\langle L^2 \rangle = 0.34$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.96	EDS
Total number of atoms	6609	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	30.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 7.33% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical 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: FME, OLA, LFA, LYR, OLC, PO4

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	0.62	0/1831	0.61	0/2498
1	B	0.63	0/1793	0.60	0/2448
1	C	0.63	0/1818	0.61	0/2482
All	All	0.62	0/5442	0.61	0/7428

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	1	0

There are no bond length outliers.

There are no bond angle outliers.

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	C	1	FME	CA

There are no planarity outliers.

### 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1824	0	1902	27	0
1	B	1787	0	1863	33	0
1	C	1811	0	1893	41	0
2	A	97	0	184	1	0
2	B	173	0	319	13	0
2	C	146	0	265	3	0
3	A	101	0	149	3	0
3	B	103	0	141	4	0
3	C	29	0	43	0	0
4	A	55	0	71	5	0
4	B	52	0	74	4	0
4	C	51	0	65	10	0
5	C	5	0	0	0	0
6	A	129	0	0	7	1
6	B	116	0	0	3	0
6	C	130	0	0	10	1
All	All	6609	0	6969	110	1

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 8.

All (110) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1002:LFA:C13	2:B:1019:LFA:C11	2.22	1.16
1:A:162:TYR:N	6:A:601:HOH:O	1.91	1.03
1:A:159:ALA:C	6:A:601:HOH:O	1.96	1.01
1:A:159:ALA:O	6:A:601:HOH:O	1.76	1.00
1:B:195[A]:GLU:HB2	2:B:1024:LFA:H11	1.59	0.84
1:C:127:ILE:HD13	4:C:913:OLC:H2	1.61	0.83
1:A:70:ARG:HD2	6:A:692[B]:HOH:O	1.79	0.82
1:C:149:ARG:HH22	4:C:908:OLC:H21A	1.45	0.81
1:C:127:ILE:CD1	4:C:913:OLC:H2	2.15	0.77
1:B:127[B]:ILE:HD13	2:B:1025:LFA:H112	1.67	0.76
1:B:70:ARG:HD2	6:B:1181[B]:HOH:O	1.86	0.76
1:B:202:LEU:HB2	1:B:203:PRO:HD3	1.75	0.68
1:B:127[B]:ILE:CD1	2:B:1025:LFA:H112	2.23	0.67
1:A:202:LEU:HB2	1:A:203:PRO:HD3	1.77	0.67
1:C:195[B]:GLU:OE1	6:C:1001:HOH:O	2.12	0.66
1:C:160:ARG:HD3	6:C:1100:HOH:O	1.98	0.63
1:C:202:LEU:HB2	1:C:203:PRO:HD3	1.81	0.63
1:C:91:PHE:HD1	6:C:1010:HOH:O	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:207:LYR:H192	1:C:207:LYR:H9	1.82	0.61
1:B:207:LYR:H192	1:B:207:LYR:H9	1.83	0.61
1:A:28:LYS:HD2	1:A:219:ARG:NH1	2.17	0.60
1:A:56:GLN:HB3	4:A:507:OLC:H3	1.85	0.59
4:A:507:OLC:H6A	2:B:1001:LFA:H21	1.84	0.57
1:A:56:GLN:HB3	4:A:507:OLC:H5A	1.87	0.57
1:C:99[A]:LEU:C	1:C:99[A]:LEU:HD23	2.25	0.57
1:A:99:LEU:HD23	1:A:99:LEU:C	2.26	0.56
2:B:1002:LFA:C19	3:B:1009:OLA:C12	2.83	0.56
4:B:1017:OLC:H6A	4:C:913:OLC:H3A	1.88	0.56
1:B:99:LEU:C	1:B:99:LEU:HD23	2.27	0.55
3:A:503:OLA:O1	6:A:602:HOH:O	2.18	0.54
1:A:161:HIS:CE1	1:A:217:GLY:HA3	2.43	0.54
1:C:145:GLY:HA3	4:C:908:OLC:H21	1.91	0.52
1:C:191:GLN:HE21	1:C:191:GLN:HA	1.74	0.52
1:A:158:LEU:C	1:A:158:LEU:HD13	2.30	0.52
1:B:195[B]:GLU:HG3	2:B:1024:LFA:H11	1.92	0.52
1:A:207:LYR:H9	1:A:207:LYR:H183	1.91	0.51
1:C:158:LEU:C	1:C:158:LEU:HD13	2.30	0.51
1:C:153[B]:SER:HB2	6:C:1024[B]:HOH:O	2.10	0.51
2:A:510:LFA:H152	3:A:514:OLA:O2	2.11	0.51
1:B:164:ARG:NH1	4:B:1028:OLC:O20	2.35	0.50
1:C:191:GLN:HG2	6:C:1121:HOH:O	2.11	0.50
1:B:158:LEU:C	1:B:158:LEU:HD13	2.32	0.50
1:B:207:LYR:H192	1:B:207:LYR:C9	2.42	0.50
1:C:149:ARG:HH22	4:C:908:OLC:C21	2.19	0.49
1:C:207:LYR:H192	1:C:207:LYR:C9	2.43	0.49
1:A:1:FME:O	1:A:4:ILE:HG23	2.12	0.49
1:C:95:LYS:HD2	6:C:1036:HOH:O	2.12	0.49
1:B:161:HIS:CE1	1:B:217:GLY:HA3	2.48	0.49
1:C:95:LYS:NZ	6:C:1002:HOH:O	2.22	0.49
1:C:1:FME:HCN	6:C:1082:HOH:O	2.12	0.48
1:A:193:LEU:O	1:A:197:LEU:HD23	2.14	0.48
1:B:195[B]:GLU:HB2	2:B:1024:LFA:H11	1.94	0.48
2:C:904:LFA:C6	2:C:906:LFA:C2	2.92	0.48
1:A:207:LYR:H9	1:A:207:LYR:H192	1.95	0.48
1:B:207:LYR:H9	1:B:207:LYR:H183	1.96	0.48
1:A:93:GLY:HA3	1:A:154:ASN:HD21	1.78	0.48
1:B:15[A]:LEU:HB3	3:B:1012:OLA:H10	1.96	0.48
1:B:123:THR:O	1:B:127[B]:ILE:HG12	2.13	0.47
1:B:168:TYR:HE1	4:B:1028:OLC:H3A	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:78:THR:N	1:B:79:PRO:HD2	2.29	0.47
1:B:127[B]:ILE:HD13	2:B:1025:LFA:C11	2.41	0.47
1:B:179:ALA:O	2:B:1024:LFA:H13	2.15	0.47
1:C:99[A]:LEU:HD23	1:C:99[A]:LEU:O	2.15	0.47
1:C:127:ILE:CD1	4:C:913:OLC:C2	2.90	0.47
1:C:1:FME:O1	1:C:4:ILE:HG12	2.15	0.47
1:C:149:ARG:NH2	4:C:908:OLC:H21A	2.23	0.47
1:C:127:ILE:HD11	4:C:913:OLC:C2	2.45	0.47
1:A:61:TYR:O	1:A:64:THR:HG22	2.14	0.46
1:C:207:LYR:H9	1:C:207:LYR:H183	1.98	0.46
1:C:161:HIS:CE1	1:C:217:GLY:HA3	2.50	0.46
1:C:58:LEU:C	1:C:58:LEU:HD12	2.35	0.46
1:C:58:LEU:HD12	1:C:58:LEU:O	2.15	0.46
4:A:507:OLC:C22	4:A:507:OLC:H2	2.45	0.46
1:A:207:LYR:H192	1:A:207:LYR:C9	2.46	0.45
1:B:91:PHE:HD1	6:B:1101:HOH:O	1.99	0.45
1:A:109:PHE:O	1:A:113:THR:HG23	2.16	0.45
1:B:58:LEU:C	1:B:58:LEU:HD12	2.36	0.45
1:A:99:LEU:HD23	1:A:99:LEU:O	2.16	0.45
1:C:78:THR:N	1:C:79:PRO:HD2	2.31	0.45
1:B:99:LEU:HD23	1:B:99:LEU:O	2.17	0.45
1:A:1:FME:HA	1:A:4:ILE:CG2	2.47	0.45
1:B:168:TYR:CD1	4:B:1028:OLC:H2	2.52	0.44
1:B:202:LEU:CB	1:B:203:PRO:HD3	2.45	0.44
1:C:56:GLN:HB3	4:C:912:OLC:H5A	1.99	0.44
1:C:109:PHE:O	1:C:113:THR:HG23	2.17	0.44
1:A:78:THR:N	1:A:79:PRO:HD2	2.32	0.44
1:B:195[B]:GLU:CB	2:B:1024:LFA:H11	2.46	0.44
1:B:109:PHE:O	1:B:113:THR:HG23	2.17	0.44
1:C:222:HIS:CE1	6:C:1009:HOH:O	2.71	0.43
1:A:1:FME:O	1:A:4:ILE:CG2	2.66	0.43
1:B:209:GLY:HA2	3:B:1013:OLA:H82	2.00	0.43
1:B:154:ASN:ND2	6:B:1107:HOH:O	2.51	0.43
1:B:193:LEU:O	1:B:197:LEU:HD23	2.18	0.43
1:C:191:GLN:HE21	1:C:191:GLN:CA	2.32	0.43
1:C:202:LEU:CB	1:C:203:PRO:HD3	2.47	0.43
1:C:11:PHE:CE1	1:C:15[B]:LEU:HD11	2.54	0.42
1:B:195[B]:GLU:CG	2:B:1024:LFA:H11	2.49	0.42
1:C:11:PHE:HB2	2:C:906:LFA:H32	2.01	0.42
1:A:58:LEU:HD23	1:A:58:LEU:N	2.35	0.42
1:A:209:GLY:HA2	4:A:519:OLC:H4	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:509:OLA:H32	2:B:1004:LFA:H82	2.02	0.42
1:A:162:TYR:HB3	6:A:601:HOH:O	2.20	0.42
1:C:195[A]:GLU:HG2	6:C:1064[A]:HOH:O	2.20	0.42
1:C:190:ALA:CB	2:C:920:LFA:H22	2.50	0.41
1:C:61:TYR:O	1:C:64:THR:HG22	2.20	0.41
1:C:207:LYR:HG2	1:C:207:LYR:H1	2.02	0.41
1:B:127[A]:ILE:CD1	3:B:1016:OLA:H51	2.51	0.41
1:B:197:LEU:HD13	1:B:197:LEU:HA	1.97	0.41
1:C:82:LEU:HD12	1:C:107:ASP:HB2	2.04	0.40
1:A:195[A]:GLU:OE2	6:A:603:HOH:O	2.21	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:689:HOH:O	6:C:1099:HOH:O[4_445]	2.16	0.04

## 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	227/229 (99%)	226 (100%)	1 (0%)	0	100	100
1	B	222/229 (97%)	221 (100%)	1 (0%)	0	100	100
1	C	227/229 (99%)	226 (100%)	1 (0%)	0	100	100
All	All	676/687 (98%)	673 (100%)	3 (0%)	0	100	100

There are no Ramachandran outliers to report.



### 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 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	187/189 (99%)	186 (100%)	1 (0%)	88	83
1	B	181/189 (96%)	179 (99%)	2 (1%)	73	63
1	C	185/189 (98%)	184 (100%)	1 (0%)	88	83
All	All	553/567 (98%)	549 (99%)	4 (1%)	84	77

All (4) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	223	GLN
1	B	64	THR
1	B	121	ILE
1	C	191	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (3) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	154	ASN
1	B	154	ASN
1	C	191	GLN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond

length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
1	LYR	B	207	1	27,29,30	1.21	3 (11%)	30,37,39	1.24	2 (6%)
1	LYR	A	207	1	27,29,30	1.09	3 (11%)	30,37,39	1.27	2 (6%)
1	LYR	C	207	1	27,29,30	1.14	3 (11%)	30,37,39	1.23	2 (6%)
1	FME	A	1	1	8,9,10	0.38	0	7,9,11	0.67	0
1	FME	C	1	1	8,9,10	0.40	0	7,9,11	0.62	0
1	FME	B	1	1	8,9,10	0.39	0	7,9,11	0.71	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '2' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	LYR	B	207	1	-	2/22/40/42	0/1/1/1
1	LYR	A	207	1	-	3/22/40/42	0/1/1/1
1	LYR	C	207	1	-	3/22/40/42	0/1/1/1
1	FME	A	1	1	-	0/7/9/11	-
1	FME	C	1	1	1/1/1/4	3/7/9/11	-
1	FME	B	1	1	-	1/7/9/11	-

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	207	LYR	C7-C80	3.49	1.40	1.35
1	C	207	LYR	C7-C80	3.07	1.39	1.35
1	A	207	LYR	C7-C80	2.68	1.39	1.35
1	A	207	LYR	C5-C3	-2.59	1.40	1.45
1	B	207	LYR	C9-C80	-2.51	1.40	1.45
1	C	207	LYR	C9-C80	-2.43	1.40	1.45
1	C	207	LYR	C5-C3	-2.29	1.41	1.45
1	B	207	LYR	C5-C3	-2.26	1.41	1.45
1	A	207	LYR	C9-C80	-2.20	1.41	1.45

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	207	LYR	C8-C80-C7	-4.28	116.92	122.92

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	207	LYR	C8-C80-C7	-4.20	117.04	122.92
1	B	207	LYR	C8-C80-C7	-4.10	117.18	122.92
1	A	207	LYR	C8-C80-C9	3.19	123.11	118.08
1	C	207	LYR	C8-C80-C9	3.18	123.09	118.08
1	B	207	LYR	C8-C80-C9	3.10	122.96	118.08

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	C	1	FME	CA

All (12) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	C	1	FME	O1-CN-N-CA
1	C	1	FME	O-C-CA-CB
1	A	207	LYR	C1-C2-C3-C5
1	C	207	LYR	C1-C2-C3-C5
1	B	1	FME	CA-CB-CG-SD
1	C	1	FME	CB-CA-N-CN
1	B	207	LYR	C2-C1-NZ-CE
1	C	207	LYR	CD-CE-NZ-C1
1	A	207	LYR	CD-CE-NZ-C1
1	B	207	LYR	CD-CE-NZ-C1
1	A	207	LYR	C1-C2-C3-C4
1	C	207	LYR	C1-C2-C3-C4

There are no ring outliers.

5 monomers are involved in 15 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	B	207	LYR	3	0
1	A	207	LYR	3	0
1	C	207	LYR	4	0
1	A	1	FME	3	0
1	C	1	FME	2	0

## 5.5 Carbohydrates

There are no monosaccharides in this entry.

## 5.6 Ligand geometry

68 ligands 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
2	LFA	C	911	-	6,6,19	0.13	0	5,5,18	0.10	0
3	OLA	B	1016	-	10,10,19	0.69	0	10,10,19	0.62	0
2	LFA	A	518	-	19,19,19	0.07	0	18,18,18	0.05	0
2	LFA	B	1026	-	9,9,19	0.10	0	8,8,18	0.09	0
3	OLA	B	1013	-	13,13,19	0.63	0	12,13,19	0.58	0
3	OLA	C	910	-	8,8,19	0.76	0	8,8,19	0.71	0
2	LFA	C	915	-	10,10,19	0.09	0	9,9,18	0.06	0
2	LFA	C	921	-	15,15,19	0.08	0	14,14,18	0.06	0
2	LFA	B	1004	-	10,10,19	0.10	0	9,9,18	0.05	0
2	LFA	A	510	-	10,10,19	0.08	0	9,9,18	0.09	0
2	LFA	A	501	-	5,5,19	0.14	0	4,4,18	0.11	0
3	OLA	A	508	-	15,15,19	0.57	0	15,15,19	0.54	0
3	OLA	B	1008	-	15,15,19	0.56	0	15,15,19	0.55	0
2	LFA	B	1011	-	10,10,19	0.11	0	9,9,18	0.07	0
2	LFA	B	1024	-	9,9,19	0.11	0	8,8,18	0.08	0
3	OLA	B	1009	-	13,13,19	0.60	0	12,13,19	0.60	0
3	OLA	B	1006	-	19,19,19	0.50	0	19,19,19	0.48	0
2	LFA	C	905	-	7,7,19	0.10	0	6,6,18	0.10	0
2	LFA	B	1003	-	8,8,19	0.10	0	7,7,18	0.10	0
2	LFA	B	1007	-	9,9,19	0.10	0	8,8,18	0.07	0
2	LFA	A	502	-	7,7,19	0.10	0	6,6,18	0.08	0
2	LFA	C	916	-	14,14,19	0.08	0	13,13,18	0.07	0
2	LFA	C	917	-	4,4,19	0.15	0	3,3,18	0.21	0
2	LFA	B	1019	-	10,10,19	0.10	0	9,9,18	0.06	0
3	OLA	A	503	-	11,11,19	0.66	0	11,11,19	0.62	0
2	LFA	B	1020	-	5,5,19	0.12	0	4,4,18	0.09	0
3	OLA	A	509	-	19,19,19	0.52	0	19,19,19	0.48	0
2	LFA	C	918	-	15,15,19	0.08	0	14,14,18	0.06	0
4	OLC	B	1017	-	19,19,24	0.30	0	19,19,25	0.27	0
2	LFA	A	516	-	7,7,19	0.11	0	6,6,18	0.08	0
4	OLC	C	912	-	14,14,24	0.24	0	13,14,25	0.17	0
2	LFA	B	1001	-	6,6,19	0.12	0	5,5,18	0.09	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
2	LFA	B	1018	-	5,5,19	0.14	0	4,4,18	0.08	0
2	LFA	A	505	-	8,8,19	0.10	0	7,7,18	0.08	0
2	LFA	A	513	-	11,11,19	0.14	0	10,10,18	0.08	0
2	LFA	B	1022	-	9,9,19	0.09	0	8,8,18	0.06	0
2	LFA	B	1025	-	13,13,19	0.08	0	12,12,18	0.12	0
2	LFA	B	1005	-	8,8,19	0.10	0	7,7,18	0.11	0
2	LFA	C	902	-	12,12,19	0.09	0	11,11,18	0.07	0
3	OLA	B	1012	-	13,13,19	0.62	0	12,13,19	0.58	0
2	LFA	C	904	-	5,5,19	0.12	0	4,4,18	0.09	0
4	OLC	B	1028	-	12,12,24	1.35	2 (16%)	12,12,25	1.40	2 (16%)
5	PO4	C	914	-	4,4,4	0.67	0	6,6,6	0.43	0
4	OLC	A	511	-	18,18,24	0.29	0	18,18,25	0.21	0
3	OLA	A	506	-	13,13,19	0.61	0	12,13,19	0.58	0
4	OLC	C	908	-	16,16,24	0.28	0	17,17,25	0.26	0
2	LFA	A	515	-	9,9,19	0.10	0	8,8,18	0.06	0
2	LFA	A	517	-	3,3,19	0.23	0	2,2,18	0.45	0
2	LFA	B	1002	-	6,6,19	0.12	0	5,5,18	0.12	0
2	LFA	B	1027	-	14,14,19	0.09	0	13,13,18	0.07	0
4	OLC	A	507	-	16,16,24	0.35	0	16,16,25	0.17	0
2	LFA	A	504	-	8,8,19	0.10	0	7,7,18	0.09	0
4	OLC	A	519	-	18,18,24	0.24	0	18,19,25	0.28	0
4	OLC	C	913	-	18,18,24	0.25	0	18,19,25	0.26	0
2	LFA	C	919	-	5,5,19	0.13	0	4,4,18	0.09	0
3	OLA	A	512	-	18,18,19	0.54	0	18,18,19	0.50	0
2	LFA	C	907	-	4,4,19	0.15	0	3,3,18	0.20	0
2	LFA	C	909	-	8,8,19	0.09	0	7,7,18	0.08	0
2	LFA	C	901	-	11,11,19	0.09	0	10,10,18	0.08	0
2	LFA	B	1023	-	10,10,19	0.09	0	9,9,18	0.06	0
3	OLA	A	514	-	19,19,19	0.54	0	19,19,19	0.48	0
2	LFA	C	906	-	9,9,19	0.09	0	8,8,18	0.10	0
3	OLA	B	1014	-	13,13,19	0.60	0	12,13,19	0.59	0
4	OLC	B	1015	-	18,18,24	0.29	0	18,19,25	0.26	0
2	LFA	B	1021	-	7,7,19	0.12	0	6,6,18	0.07	0
2	LFA	C	920	-	6,6,19	0.11	0	5,5,18	0.07	0
3	OLA	C	903	-	19,19,19	0.53	0	19,19,19	0.49	0
2	LFA	B	1010	-	7,7,19	0.10	0	6,6,18	0.11	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
2	LFA	C	911	-	-	2/4/4/17	-
3	OLA	B	1016	-	-	7/8/8/17	-
2	LFA	A	518	-	-	6/17/17/17	-
2	LFA	B	1026	-	-	2/7/7/17	-
3	OLA	B	1013	-	-	7/11/11/17	-
3	OLA	C	910	-	-	2/6/6/17	-
2	LFA	C	915	-	-	2/8/8/17	-
2	LFA	C	921	-	-	2/13/13/17	-
2	LFA	B	1004	-	-	5/8/8/17	-
2	LFA	A	510	-	-	5/8/8/17	-
2	LFA	A	501	-	-	1/3/3/17	-
3	OLA	A	508	-	-	8/13/13/17	-
3	OLA	B	1008	-	-	4/13/13/17	-
2	LFA	B	1011	-	-	2/8/8/17	-
2	LFA	B	1024	-	-	3/7/7/17	-
3	OLA	B	1009	-	-	5/11/11/17	-
3	OLA	B	1006	-	-	4/17/17/17	-
2	LFA	C	905	-	-	3/5/5/17	-
2	LFA	B	1003	-	-	1/6/6/17	-
2	LFA	B	1007	-	-	5/7/7/17	-
2	LFA	A	502	-	-	3/5/5/17	-
2	LFA	C	916	-	-	5/12/12/17	-
2	LFA	C	917	-	-	0/2/2/17	-
2	LFA	B	1019	-	-	1/8/8/17	-
3	OLA	A	503	-	-	4/9/9/17	-
2	LFA	B	1020	-	-	2/3/3/17	-
3	OLA	A	509	-	-	6/17/17/17	-
2	LFA	C	918	-	-	6/13/13/17	-
4	OLC	B	1017	-	-	11/17/17/24	-
2	LFA	A	516	-	-	3/5/5/17	-
4	OLC	C	912	-	-	7/13/13/24	-
2	LFA	B	1001	-	-	2/4/4/17	-
2	LFA	B	1018	-	-	0/3/3/17	-
2	LFA	A	505	-	-	4/6/6/17	-
2	LFA	A	513	-	-	4/9/9/17	-
2	LFA	B	1022	-	-	6/7/7/17	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	LFA	B	1025	-	-	2/11/11/17	-
2	LFA	B	1005	-	-	2/6/6/17	-
2	LFA	C	902	-	-	5/10/10/17	-
3	OLA	B	1012	-	-	7/11/11/17	-
2	LFA	C	904	-	-	0/3/3/17	-
4	OLC	B	1028	-	-	4/10/10/24	-
4	OLC	A	511	-	-	9/17/17/24	-
3	OLA	A	506	-	-	6/11/11/17	-
4	OLC	C	908	-	-	5/16/16/24	-
2	LFA	A	515	-	-	1/7/7/17	-
2	LFA	A	517	-	-	0/1/1/17	-
2	LFA	B	1002	-	-	3/4/4/17	-
2	LFA	B	1027	-	-	3/12/12/17	-
4	OLC	A	507	-	-	8/15/15/24	-
2	LFA	A	504	-	-	1/6/6/17	-
4	OLC	A	519	-	-	8/18/18/24	-
4	OLC	C	913	-	-	7/18/18/24	-
2	LFA	C	919	-	-	1/3/3/17	-
3	OLA	A	512	-	-	8/16/16/17	-
2	LFA	C	907	-	-	1/2/2/17	-
2	LFA	C	909	-	-	1/6/6/17	-
2	LFA	C	901	-	-	3/9/9/17	-
2	LFA	B	1023	-	-	6/8/8/17	-
3	OLA	A	514	-	-	10/17/17/17	-
2	LFA	C	906	-	-	3/7/7/17	-
3	OLA	B	1014	-	-	8/11/11/17	-
4	OLC	B	1015	-	-	11/18/18/24	-
2	LFA	B	1021	-	-	3/5/5/17	-
2	LFA	C	920	-	-	0/4/4/17	-
3	OLA	C	903	-	-	10/17/17/17	-
2	LFA	B	1010	-	-	2/5/5/17	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	B	1028	OLC	O19-C1	3.47	1.33	1.22
4	B	1028	OLC	O20-C1	-3.00	1.20	1.30

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	B	1028	OLC	O19-C1-C2	-3.44	112.02	123.08
4	B	1028	OLC	O20-C1-C2	3.31	124.66	114.03

There are no chirality outliers.

All (278) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	519	OLC	C9-C10-C11-C12
4	B	1015	OLC	C21-C22-C24-O25
4	C	912	OLC	C9-C10-C11-C12
4	C	913	OLC	C9-C10-C11-C12
4	A	507	OLC	C2-C1-O20-C21
4	A	507	OLC	O19-C1-O20-C21
4	A	519	OLC	O19-C1-O20-C21
4	A	519	OLC	C2-C1-O20-C21
4	B	1015	OLC	C2-C1-O20-C21
3	B	1014	OLA	C11-C10-C9-C8
4	B	1015	OLC	O19-C1-O20-C21
2	C	918	LFA	C3-C4-C5-C6
4	B	1015	OLC	O20-C21-C22-C24
3	A	506	OLA	C1-C2-C3-C4
4	A	511	OLC	C1-C2-C3-C4
3	A	514	OLA	C14-C15-C16-C17
3	B	1012	OLA	C11-C10-C9-C8
3	A	509	OLA	C1-C2-C3-C4
3	B	1014	OLA	C1-C2-C3-C4
3	C	903	OLA	C1-C2-C3-C4
3	A	512	OLA	C1-C2-C3-C4
4	C	908	OLC	C2-C1-O20-C21
4	B	1028	OLC	C1-C2-C3-C4
4	B	1015	OLC	O20-C21-C22-O23
4	B	1015	OLC	C1-C2-C3-C4
4	C	913	OLC	C1-C2-C3-C4
4	A	511	OLC	O20-C21-C22-O23
4	A	511	OLC	C6-C7-C8-C9
2	B	1022	LFA	C4-C5-C6-C7
4	B	1015	OLC	C2-C3-C4-C5
2	A	513	LFA	C2-C3-C4-C5
2	B	1023	LFA	C5-C6-C7-C8
2	B	1023	LFA	C6-C7-C8-C9
3	B	1008	OLA	C3-C4-C5-C6

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Mol	Chain	Res	Type	Atoms
2	C	916	LFA	C5-C6-C7-C8
3	B	1009	OLA	C5-C6-C7-C8
2	B	1022	LFA	C6-C7-C8-C9
3	A	514	OLA	C13-C14-C15-C16
3	B	1008	OLA	C4-C5-C6-C7
4	B	1015	OLC	C4-C5-C6-C7
3	B	1016	OLA	C2-C3-C4-C5
4	A	507	OLC	C3-C4-C5-C6
4	C	908	OLC	O19-C1-O20-C21
2	B	1023	LFA	C2-C3-C4-C5
2	C	901	LFA	C7-C8-C9-C10
4	B	1017	OLC	C1-C2-C3-C4
2	A	502	LFA	C2-C3-C4-C5
3	B	1006	OLA	C11-C12-C13-C14
2	C	905	LFA	C4-C5-C6-C7
4	A	519	OLC	C21-C22-C24-O25
2	B	1019	LFA	C5-C6-C7-C8
4	C	912	OLC	C5-C6-C7-C8
3	A	514	OLA	C6-C7-C8-C9
4	B	1017	OLC	C6-C7-C8-C9
2	A	516	LFA	C4-C5-C6-C7
2	C	918	LFA	C5-C6-C7-C8
3	A	514	OLA	C3-C4-C5-C6
4	C	912	OLC	C2-C1-O20-C21
3	A	506	OLA	C4-C5-C6-C7
3	B	1008	OLA	C5-C6-C7-C8
2	C	901	LFA	C11-C10-C9-C8
2	A	518	LFA	C13-C14-C15-C16
2	A	518	LFA	C14-C15-C16-C17
2	B	1004	LFA	C6-C7-C8-C9
2	C	902	LFA	C7-C8-C9-C10
2	B	1023	LFA	C7-C8-C9-C10
2	C	902	LFA	C4-C5-C6-C7
4	B	1015	OLC	O23-C22-C24-O25
3	A	512	OLA	C6-C7-C8-C9
3	B	1009	OLA	C6-C7-C8-C9
3	B	1012	OLA	C6-C7-C8-C9
4	C	913	OLC	C5-C6-C7-C8
3	B	1016	OLA	C1-C2-C3-C4
3	B	1013	OLA	C11-C10-C9-C8
3	A	512	OLA	C10-C11-C12-C13
2	A	510	LFA	C12-C13-C14-C15

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Mol	Chain	Res	Type	Atoms
4	A	507	OLC	C1-C2-C3-C4
2	A	516	LFA	C2-C3-C4-C5
2	B	1001	LFA	C3-C4-C5-C6
2	B	1004	LFA	C5-C6-C7-C8
3	B	1012	OLA	C4-C5-C6-C7
2	A	510	LFA	C11-C12-C13-C14
2	B	1004	LFA	C2-C3-C4-C5
3	A	509	OLA	C2-C3-C4-C5
3	B	1012	OLA	C3-C4-C5-C6
4	C	912	OLC	C2-C3-C4-C5
2	A	518	LFA	C9-C10-C11-C12
2	C	919	LFA	C2-C3-C4-C5
2	C	921	LFA	C11-C10-C9-C8
4	B	1017	OLC	C7-C8-C9-C10
3	B	1012	OLA	C1-C2-C3-C4
2	C	906	LFA	C4-C5-C6-C7
4	C	913	OLC	C2-C3-C4-C5
2	C	918	LFA	C9-C10-C11-C12
3	A	506	OLA	C6-C7-C8-C9
3	C	903	OLA	C6-C7-C8-C9
4	A	507	OLC	C6-C7-C8-C9
3	B	1014	OLA	C4-C5-C6-C7
3	B	1013	OLA	C5-C6-C7-C8
2	C	902	LFA	C10-C11-C12-C13
2	A	513	LFA	C11-C10-C9-C8
4	A	519	OLC	C1-C2-C3-C4
2	B	1005	LFA	C4-C5-C6-C7
2	B	1020	LFA	C2-C3-C4-C5
2	A	505	LFA	C12-C13-C14-C15
2	A	513	LFA	C7-C8-C9-C10
2	B	1023	LFA	C11-C10-C9-C8
2	B	1002	LFA	C13-C14-C15-C16
2	B	1011	LFA	C7-C8-C9-C10
3	A	503	OLA	C2-C3-C4-C5
2	B	1007	LFA	C7-C8-C9-C10
2	C	906	LFA	C2-C3-C4-C5
4	B	1017	OLC	C2-C3-C4-C5
2	B	1002	LFA	C16-C17-C18-C19
2	C	901	LFA	C6-C7-C8-C9
3	A	508	OLA	C10-C11-C12-C13
3	B	1014	OLA	C6-C7-C8-C9
4	C	913	OLC	C6-C7-C8-C9

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Mol	Chain	Res	Type	Atoms
2	A	510	LFA	C14-C15-C16-C17
2	B	1021	LFA	C5-C6-C7-C8
2	B	1007	LFA	C6-C7-C8-C9
2	C	915	LFA	C10-C11-C12-C13
3	A	514	OLA	C5-C6-C7-C8
2	B	1007	LFA	C1-C2-C3-C4
2	C	921	LFA	C7-C8-C9-C10
3	A	508	OLA	C4-C5-C6-C7
3	A	512	OLA	C5-C6-C7-C8
3	B	1012	OLA	C5-C6-C7-C8
2	A	505	LFA	C13-C14-C15-C16
3	B	1006	OLA	C12-C13-C14-C15
2	B	1010	LFA	C5-C6-C7-C8
2	B	1023	LFA	C1-C2-C3-C4
2	B	1025	LFA	C4-C5-C6-C7
2	C	907	LFA	C1-C2-C3-C4
2	A	505	LFA	C17-C18-C19-C20
2	C	916	LFA	C11-C10-C9-C8
4	A	511	OLC	C2-C1-O20-C21
3	A	506	OLA	C11-C10-C9-C8
3	A	508	OLA	C11-C10-C9-C8
3	A	512	OLA	C7-C8-C9-C10
2	A	510	LFA	C13-C14-C15-C16
2	A	505	LFA	C15-C16-C17-C18
2	B	1026	LFA	C4-C5-C6-C7
2	C	911	LFA	C1-C2-C3-C4
2	B	1024	LFA	C6-C7-C8-C9
3	C	903	OLA	C15-C16-C17-C18
2	B	1022	LFA	C3-C4-C5-C6
4	B	1015	OLC	C5-C6-C7-C8
4	B	1017	OLC	C3-C4-C5-C6
2	A	502	LFA	C1-C2-C3-C4
4	B	1017	OLC	C12-C13-C14-C15
2	B	1011	LFA	C11-C10-C9-C8
3	A	514	OLA	C4-C5-C6-C7
2	B	1021	LFA	C4-C5-C6-C7
2	A	510	LFA	C7-C8-C9-C10
2	A	513	LFA	C6-C7-C8-C9
4	C	912	OLC	O19-C1-O20-C21
2	C	902	LFA	C5-C6-C7-C8
4	B	1017	OLC	C5-C6-C7-C8
2	A	516	LFA	C5-C6-C7-C8

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Mol	Chain	Res	Type	Atoms
2	B	1022	LFA	C7-C8-C9-C10
2	C	918	LFA	C13-C14-C15-C16
4	C	908	OLC	O20-C1-C2-C3
2	A	515	LFA	C7-C8-C9-C10
2	B	1004	LFA	C4-C5-C6-C7
3	A	514	OLA	C2-C3-C4-C5
4	A	511	OLC	O19-C1-O20-C21
3	B	1013	OLA	C9-C10-C11-C12
2	B	1005	LFA	C2-C3-C4-C5
3	C	903	OLA	C3-C4-C5-C6
2	C	905	LFA	C5-C6-C7-C8
3	B	1009	OLA	C2-C3-C4-C5
3	A	503	OLA	C7-C8-C9-C10
2	C	918	LFA	C1-C2-C3-C4
2	B	1021	LFA	C1-C2-C3-C4
2	C	918	LFA	C12-C13-C14-C15
3	C	910	OLA	C2-C3-C4-C5
3	A	503	OLA	C4-C5-C6-C7
2	B	1004	LFA	C1-C2-C3-C4
2	A	518	LFA	C16-C17-C18-C19
3	B	1013	OLA	C1-C2-C3-C4
2	A	518	LFA	C10-C11-C12-C13
2	C	905	LFA	C6-C7-C8-C9
2	C	906	LFA	C6-C7-C8-C9
3	A	509	OLA	C6-C7-C8-C9
3	B	1013	OLA	C2-C3-C4-C5
2	B	1002	LFA	C15-C16-C17-C18
2	B	1027	LFA	C9-C10-C11-C12
4	C	908	OLC	C2-C3-C4-C5
2	B	1022	LFA	C2-C3-C4-C5
4	B	1017	OLC	C14-C15-C16-C17
2	C	916	LFA	C9-C10-C11-C12
3	B	1014	OLA	C3-C4-C5-C6
2	A	501	LFA	C16-C17-C18-C19
3	C	903	OLA	C7-C8-C9-C10
3	A	514	OLA	C11-C12-C13-C14
3	B	1006	OLA	C15-C16-C17-C18
2	B	1020	LFA	C1-C2-C3-C4
2	A	518	LFA	C11-C10-C9-C8
3	C	903	OLA	C11-C12-C13-C14
2	B	1024	LFA	C4-C5-C6-C7
3	A	512	OLA	C9-C10-C11-C12

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Mol	Chain	Res	Type	Atoms
2	B	1010	LFA	C2-C3-C4-C5
3	B	1016	OLA	C3-C4-C5-C6
4	B	1028	OLC	C7-C8-C9-C10
4	A	519	OLC	O23-C22-C24-O25
3	B	1013	OLA	C6-C7-C8-C9
4	C	912	OLC	C6-C7-C8-C9
2	C	915	LFA	C14-C15-C16-C17
3	A	506	OLA	C2-C3-C4-C5
2	C	916	LFA	C4-C5-C6-C7
4	B	1017	OLC	O19-C1-C2-C3
2	C	916	LFA	C7-C8-C9-C10
3	C	903	OLA	O1-C1-C2-C3
3	B	1013	OLA	C7-C8-C9-C10
3	A	508	OLA	C6-C7-C8-C9
3	A	514	OLA	C10-C11-C12-C13
3	A	512	OLA	O2-C1-C2-C3
4	B	1017	OLC	O20-C1-C2-C3
3	B	1014	OLA	O1-C1-C2-C3
2	B	1001	LFA	C1-C2-C3-C4
3	A	509	OLA	C7-C8-C9-C10
3	A	503	OLA	C1-C2-C3-C4
3	B	1016	OLA	C6-C7-C8-C9
3	A	512	OLA	O1-C1-C2-C3
3	B	1014	OLA	O2-C1-C2-C3
3	C	903	OLA	O2-C1-C2-C3
2	B	1007	LFA	C4-C5-C6-C7
4	A	511	OLC	C5-C6-C7-C8
2	C	909	LFA	C5-C6-C7-C8
3	A	508	OLA	C5-C6-C7-C8
4	B	1015	OLC	C7-C8-C9-C10
2	A	504	LFA	C1-C2-C3-C4
2	B	1027	LFA	C12-C13-C14-C15
3	A	508	OLA	C2-C3-C4-C5
2	B	1025	LFA	C6-C7-C8-C9
3	A	509	OLA	O2-C1-C2-C3
3	B	1016	OLA	O2-C1-C2-C3
2	A	502	LFA	C5-C6-C7-C8
2	C	911	LFA	C4-C5-C6-C7
2	B	1022	LFA	C5-C6-C7-C8
3	B	1006	OLA	C7-C8-C9-C10
2	B	1024	LFA	C3-C4-C5-C6
2	B	1026	LFA	C5-C6-C7-C8

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Mol	Chain	Res	Type	Atoms
4	C	913	OLC	O20-C21-C22-C24
3	A	506	OLA	C7-C8-C9-C10
4	C	912	OLC	C7-C8-C9-C10
3	B	1016	OLA	O1-C1-C2-C3
3	C	903	OLA	C13-C14-C15-C16
4	A	507	OLC	C2-C3-C4-C5
3	A	509	OLA	O1-C1-C2-C3
3	B	1008	OLA	C7-C8-C9-C10
3	B	1012	OLA	C7-C8-C9-C10
2	B	1027	LFA	C3-C4-C5-C6
3	B	1009	OLA	O2-C1-C2-C3
4	A	507	OLC	C7-C8-C9-C10
2	B	1003	LFA	C6-C7-C8-C9
3	C	910	OLA	C3-C4-C5-C6
4	B	1017	OLC	C4-C5-C6-C7
3	B	1014	OLA	C5-C6-C7-C8
4	A	507	OLC	C9-C10-C11-C12
4	A	511	OLC	C9-C10-C11-C12
4	C	908	OLC	O19-C1-C2-C3
3	A	508	OLA	O2-C1-C2-C3
4	B	1028	OLC	O20-C1-C2-C3
4	B	1028	OLC	O19-C1-C2-C3
3	B	1009	OLA	O1-C1-C2-C3
4	A	511	OLC	O20-C1-C2-C3
3	C	903	OLA	C14-C15-C16-C17
3	B	1016	OLA	C5-C6-C7-C8
4	A	519	OLC	O19-C1-C2-C3
4	A	519	OLC	O20-C1-C2-C3
4	C	913	OLC	O20-C21-C22-O23
4	A	511	OLC	O19-C1-C2-C3
2	C	902	LFA	C9-C10-C11-C12
3	A	508	OLA	O1-C1-C2-C3
2	B	1007	LFA	C2-C3-C4-C5
3	A	514	OLA	O1-C1-C2-C3

There are no ring outliers.

24 monomers are involved in 38 short contacts:

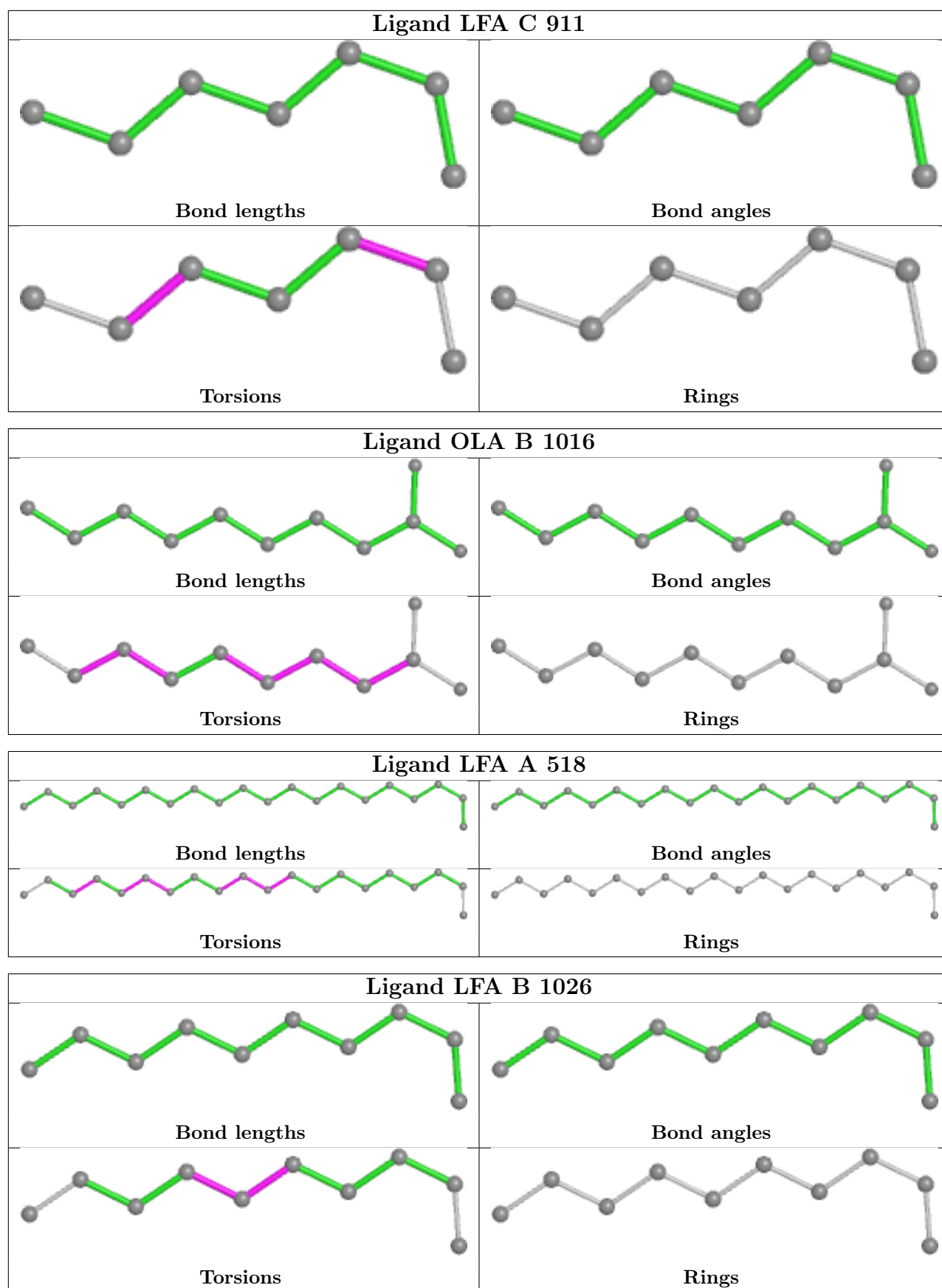
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	1016	OLA	1	0
3	B	1013	OLA	1	0
2	B	1004	LFA	1	0

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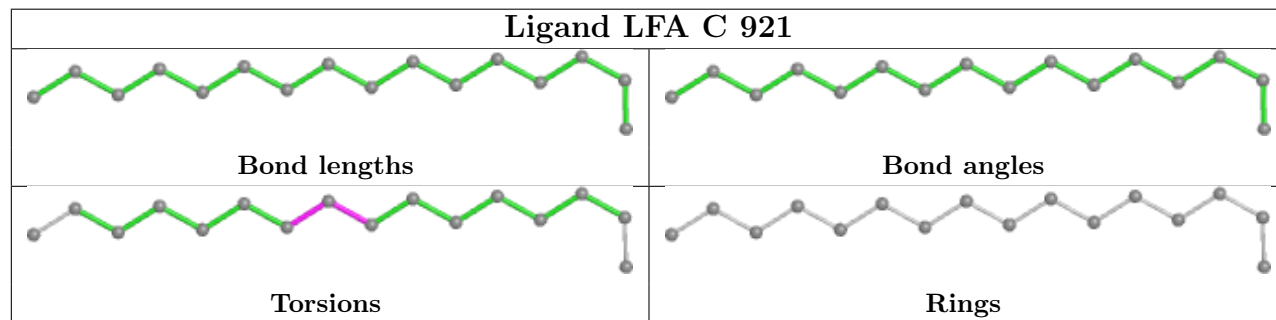
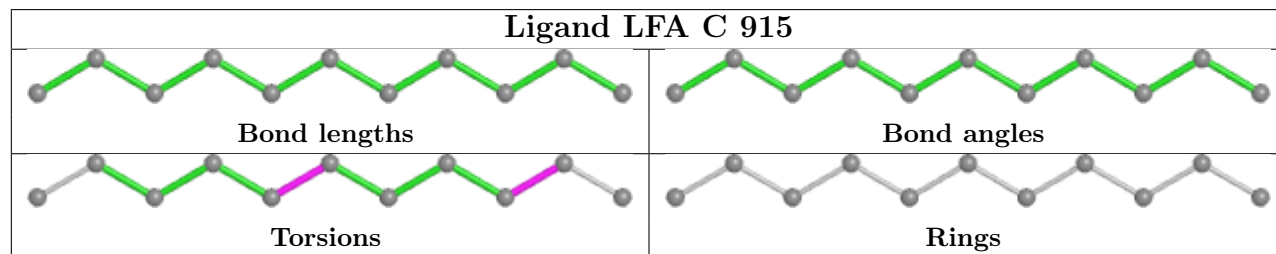
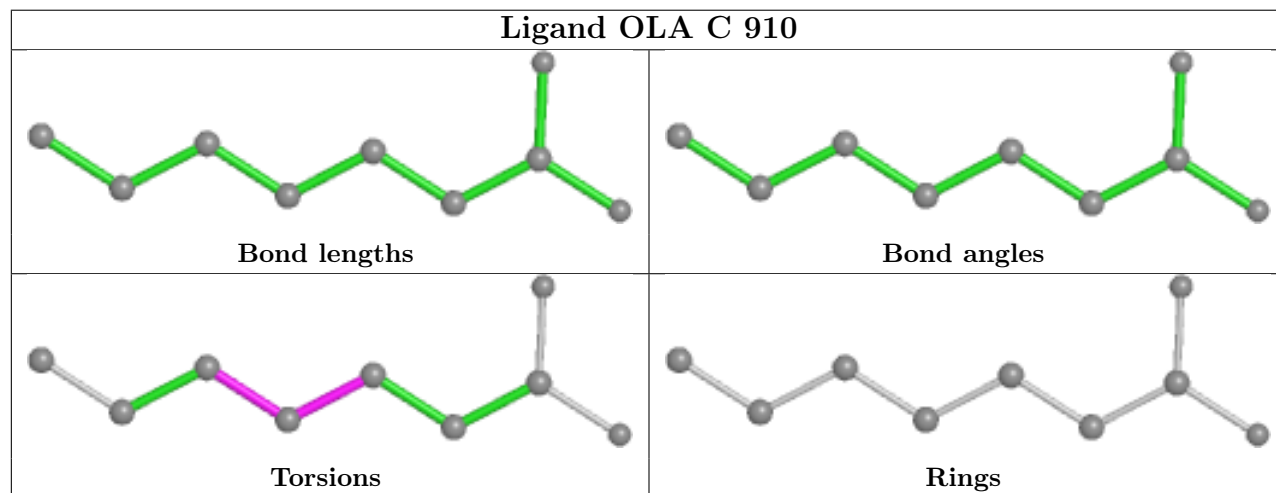
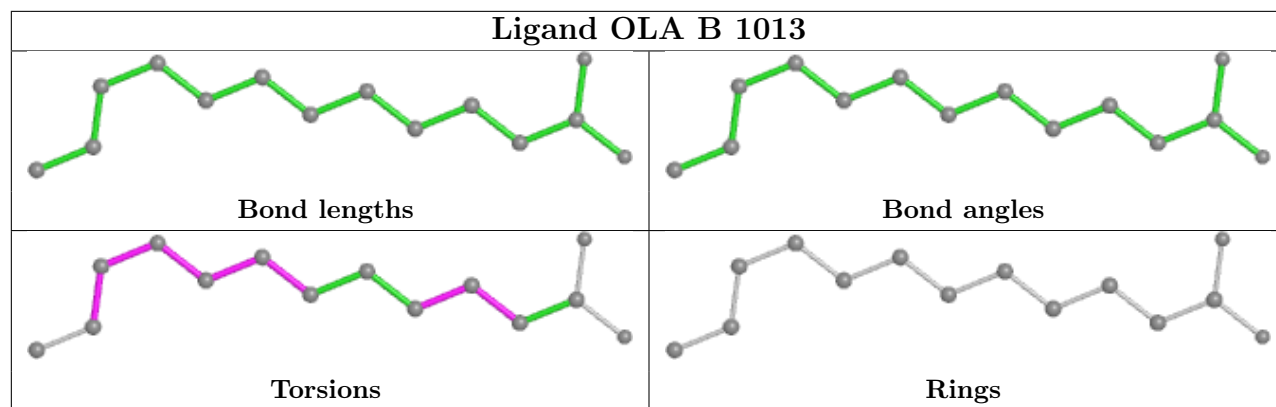
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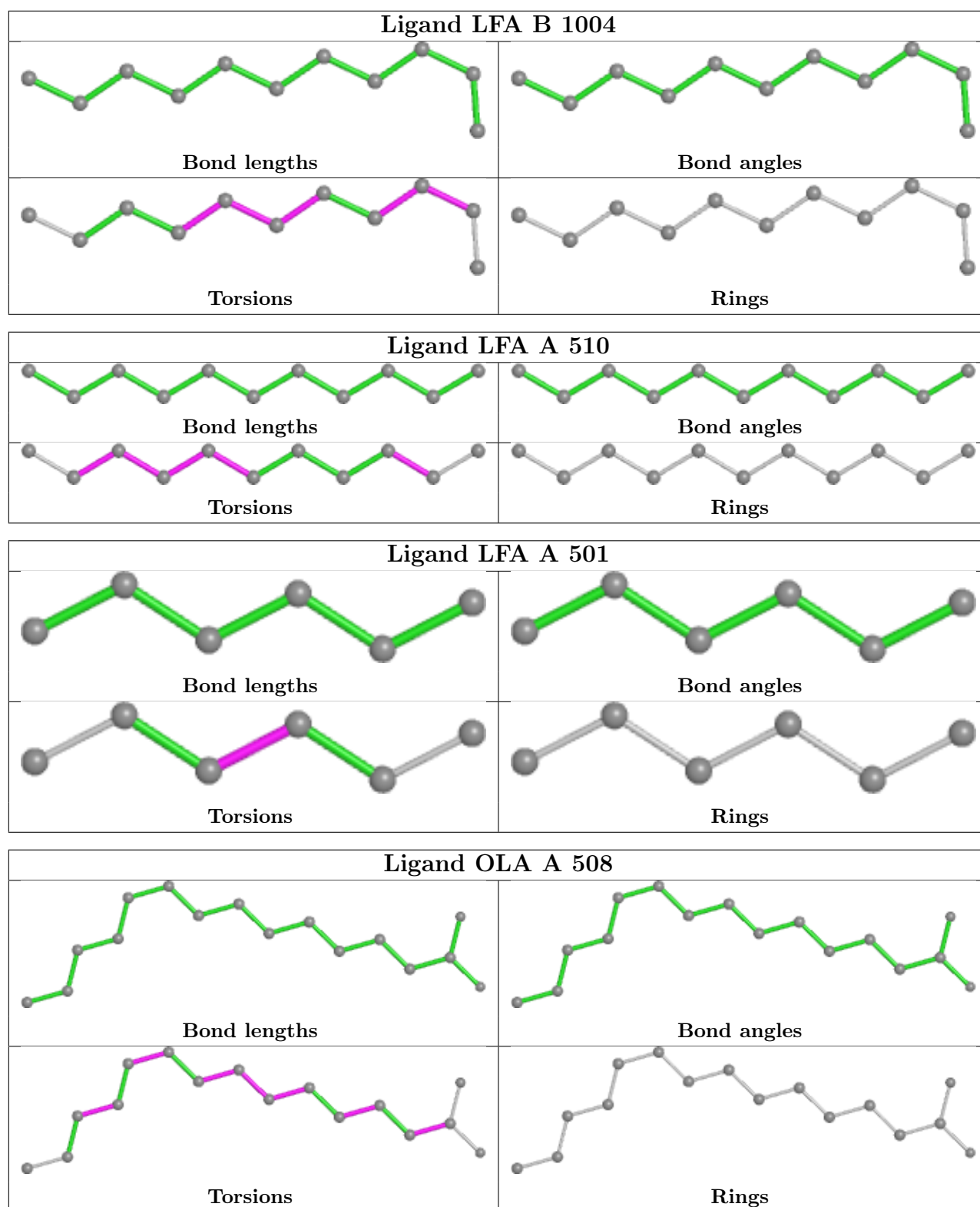
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	510	LFA	1	0
2	B	1024	LFA	6	0
3	B	1009	OLA	1	0
2	B	1019	LFA	1	0
3	A	503	OLA	1	0
3	A	509	OLA	1	0
4	B	1017	OLC	1	0
4	C	912	OLC	1	0
2	B	1001	LFA	1	0
2	B	1025	LFA	3	0
3	B	1012	OLA	1	0
2	C	904	LFA	1	0
4	B	1028	OLC	3	0
4	C	908	OLC	4	0
2	B	1002	LFA	2	0
4	A	507	OLC	4	0
4	A	519	OLC	1	0
4	C	913	OLC	5	0
3	A	514	OLA	1	0
2	C	906	LFA	2	0
2	C	920	LFA	1	0

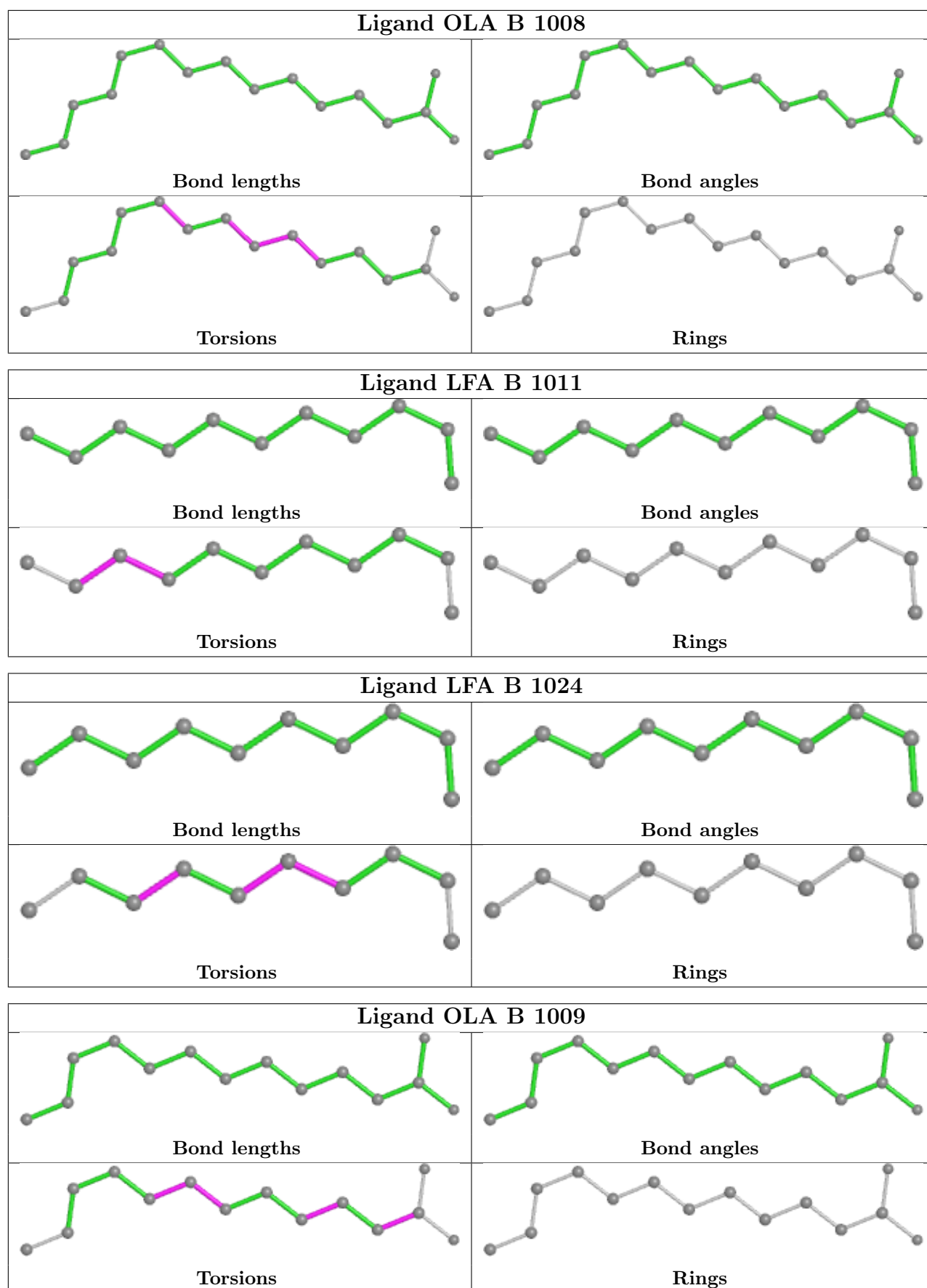
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

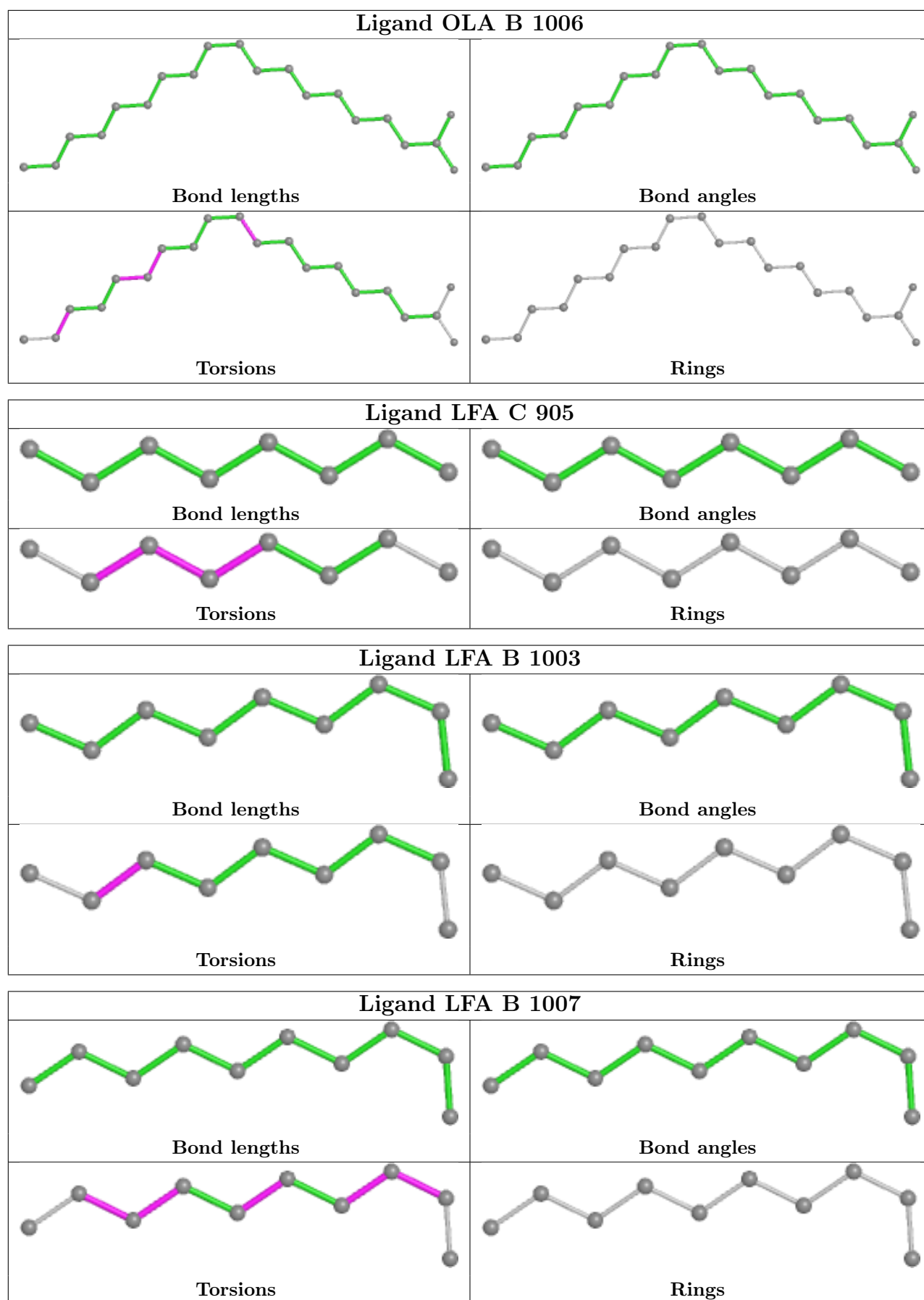


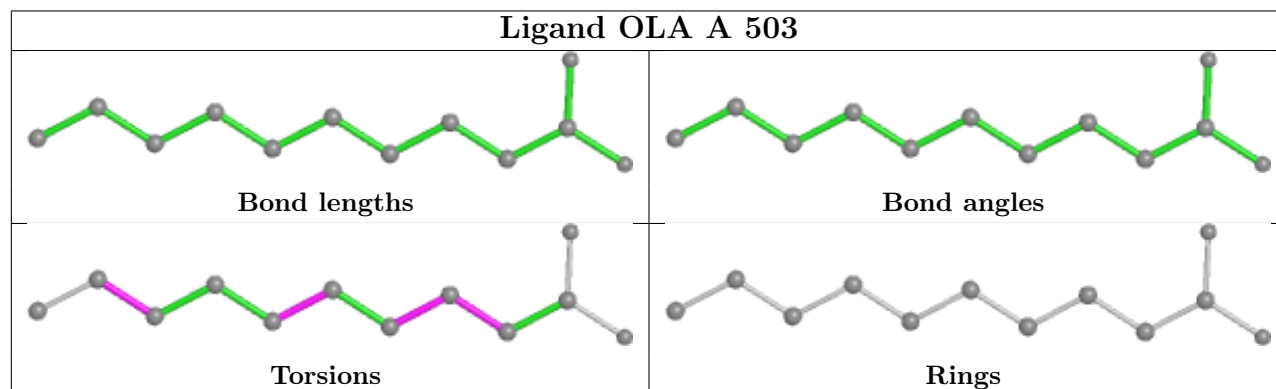
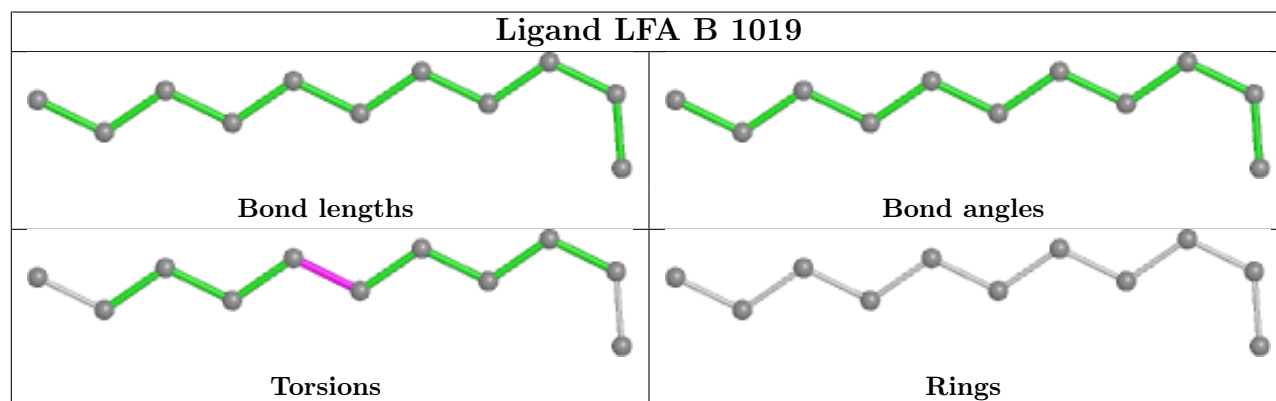
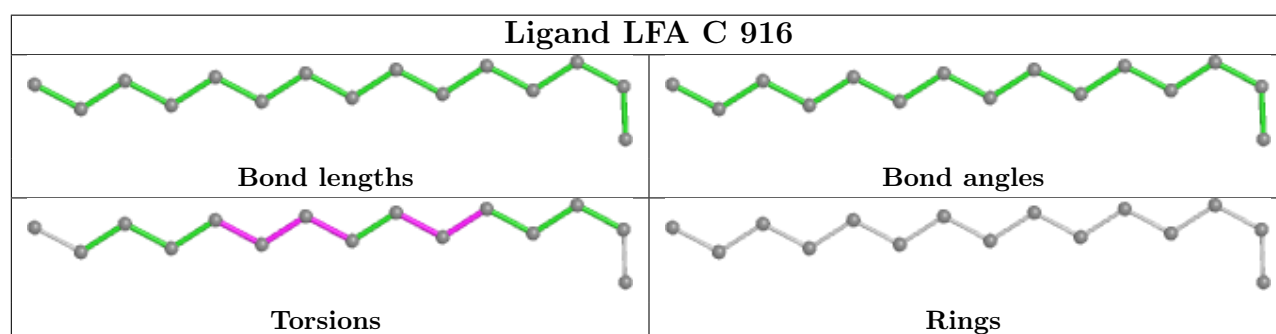
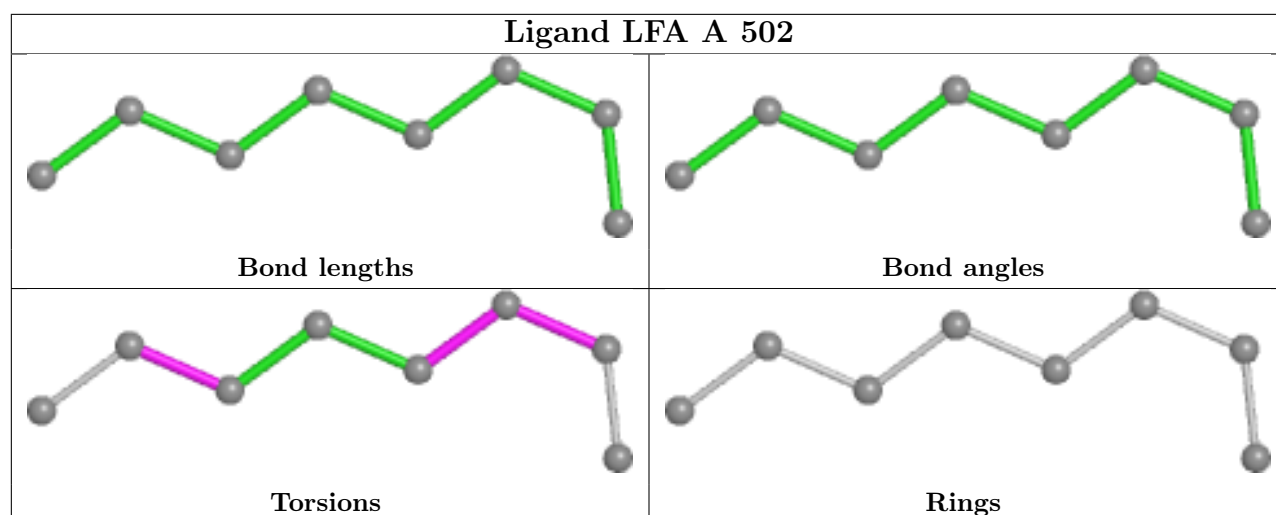


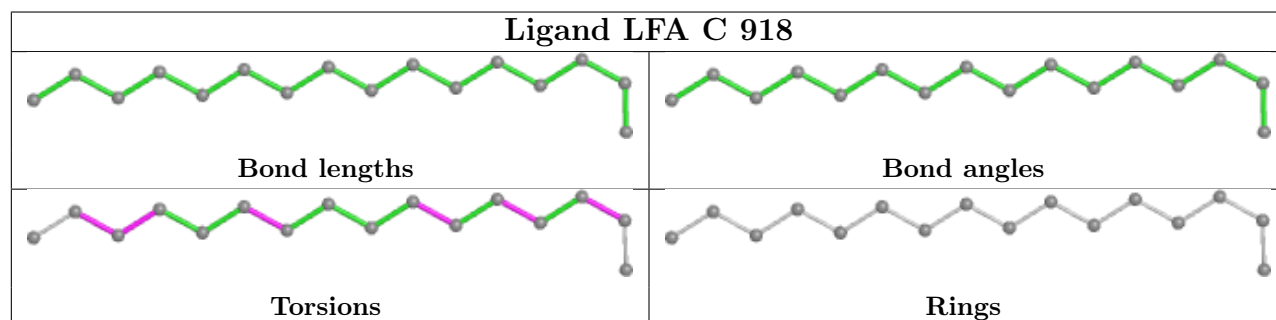
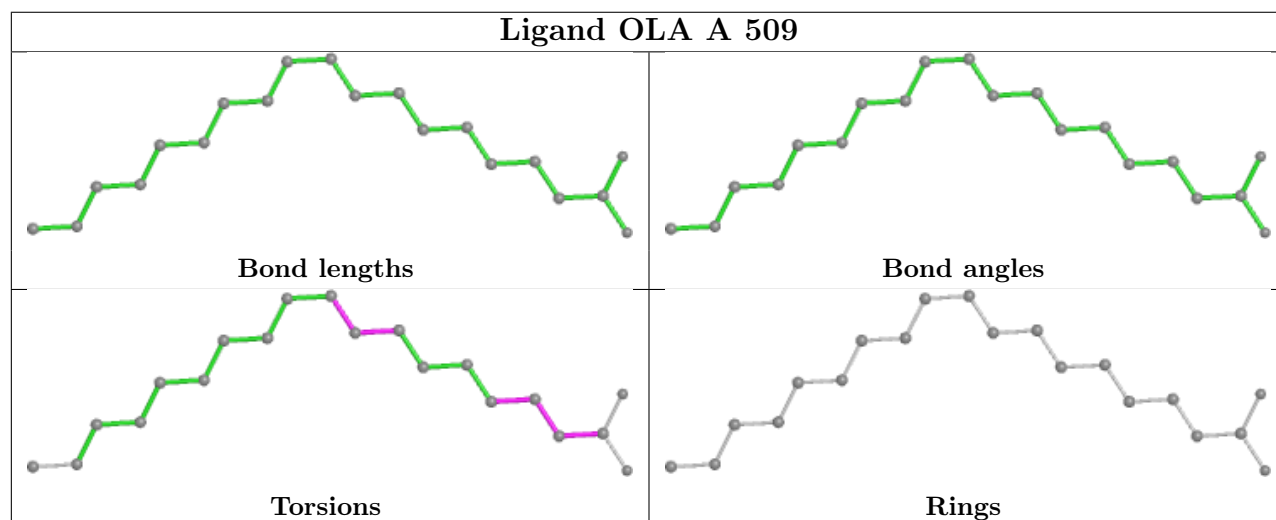
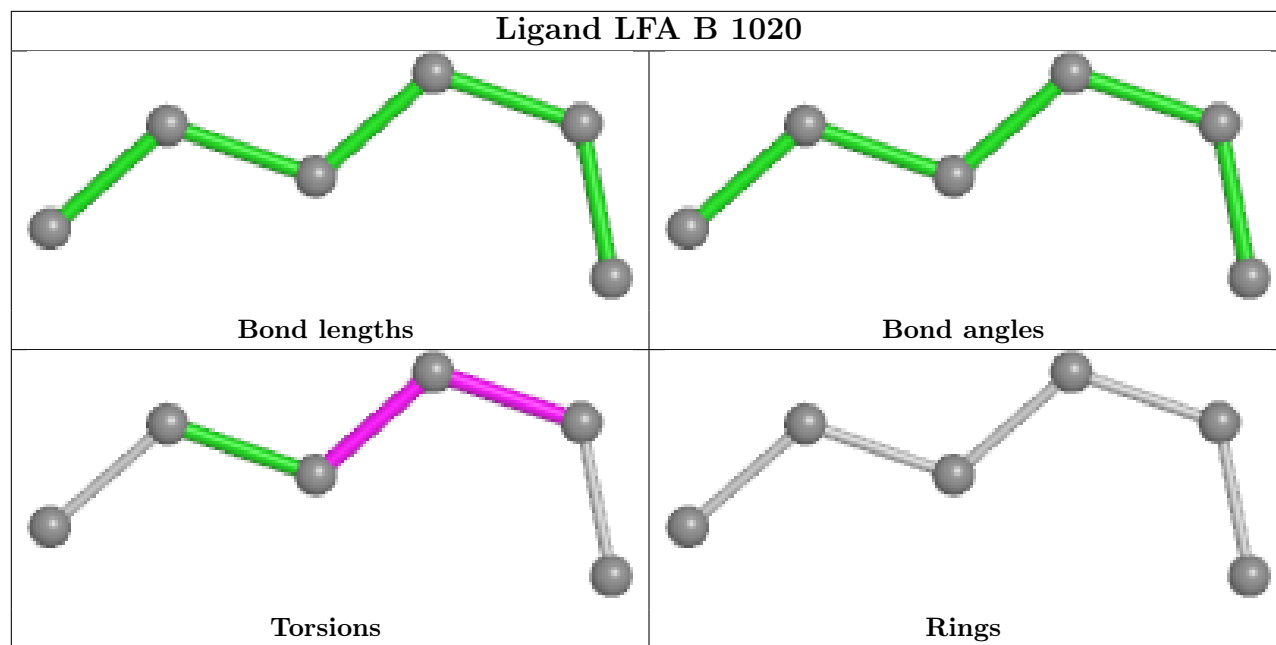


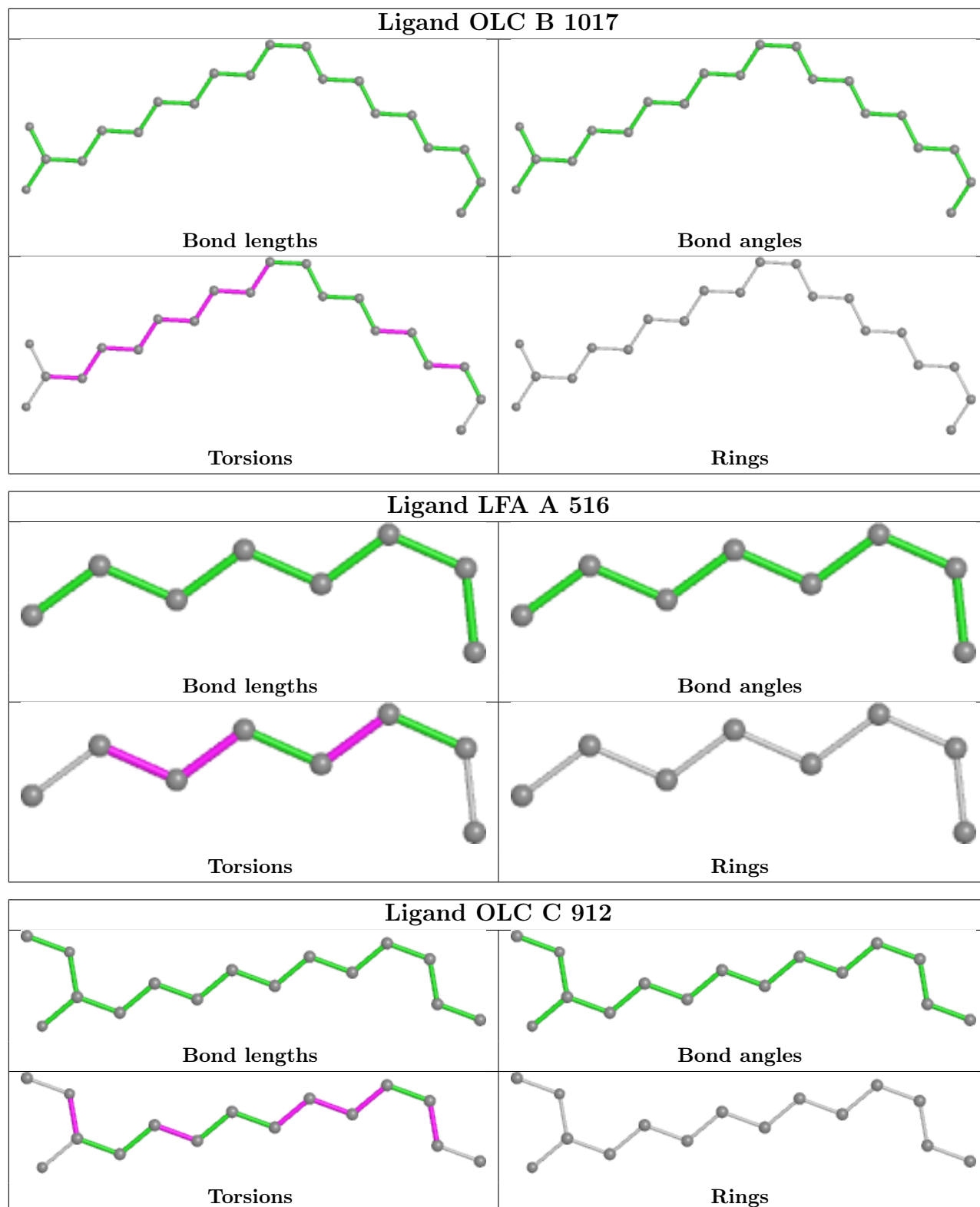


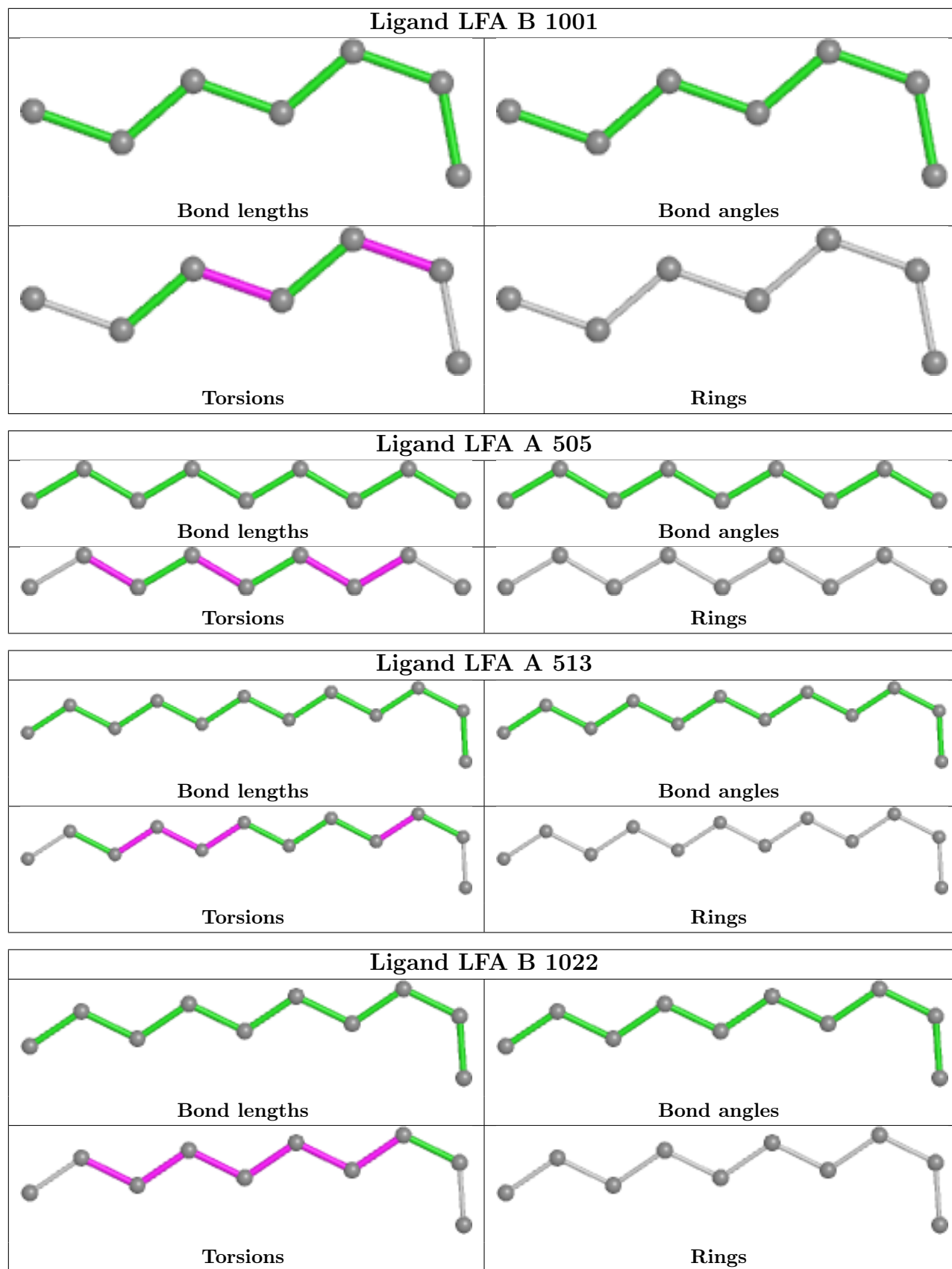




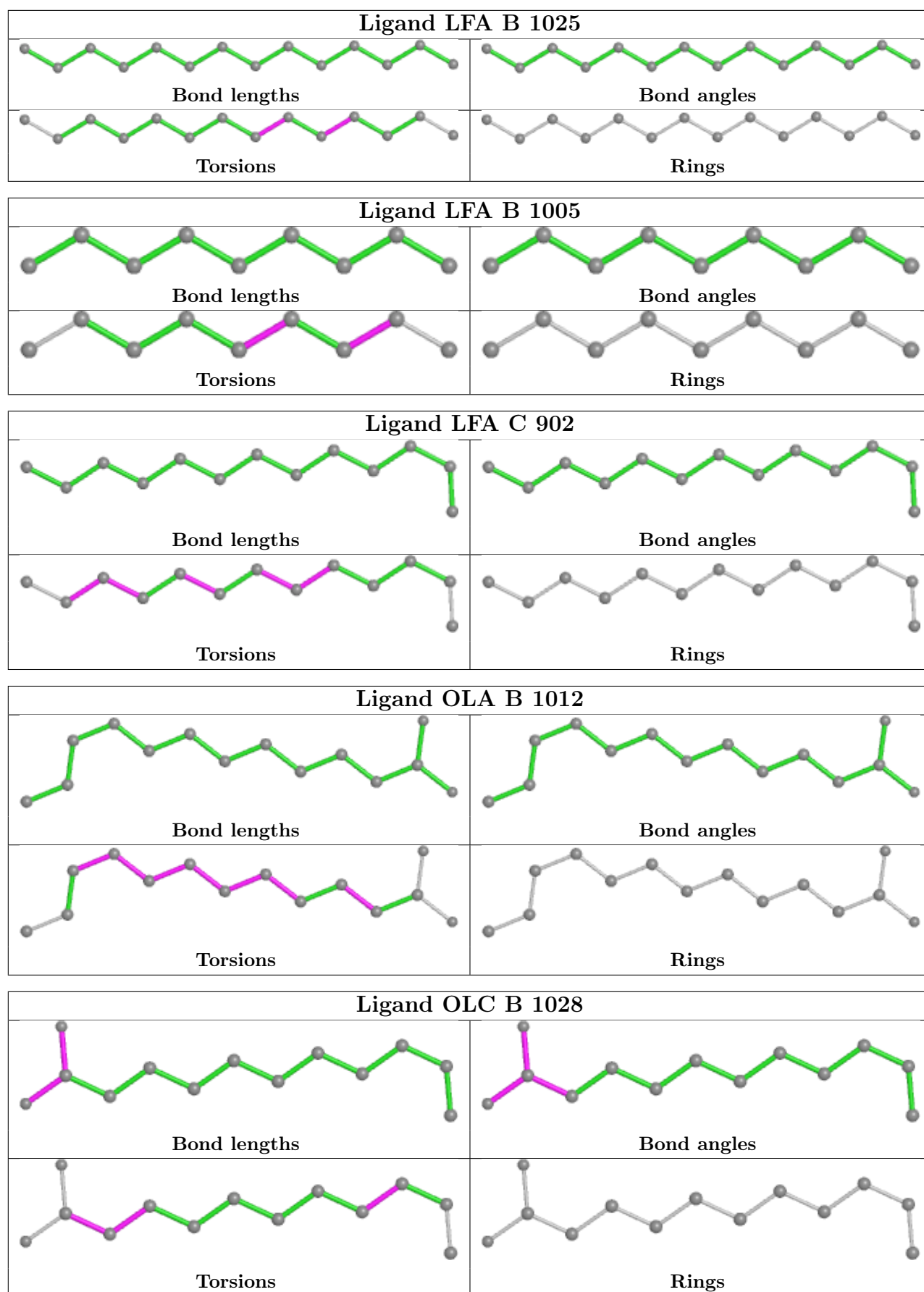


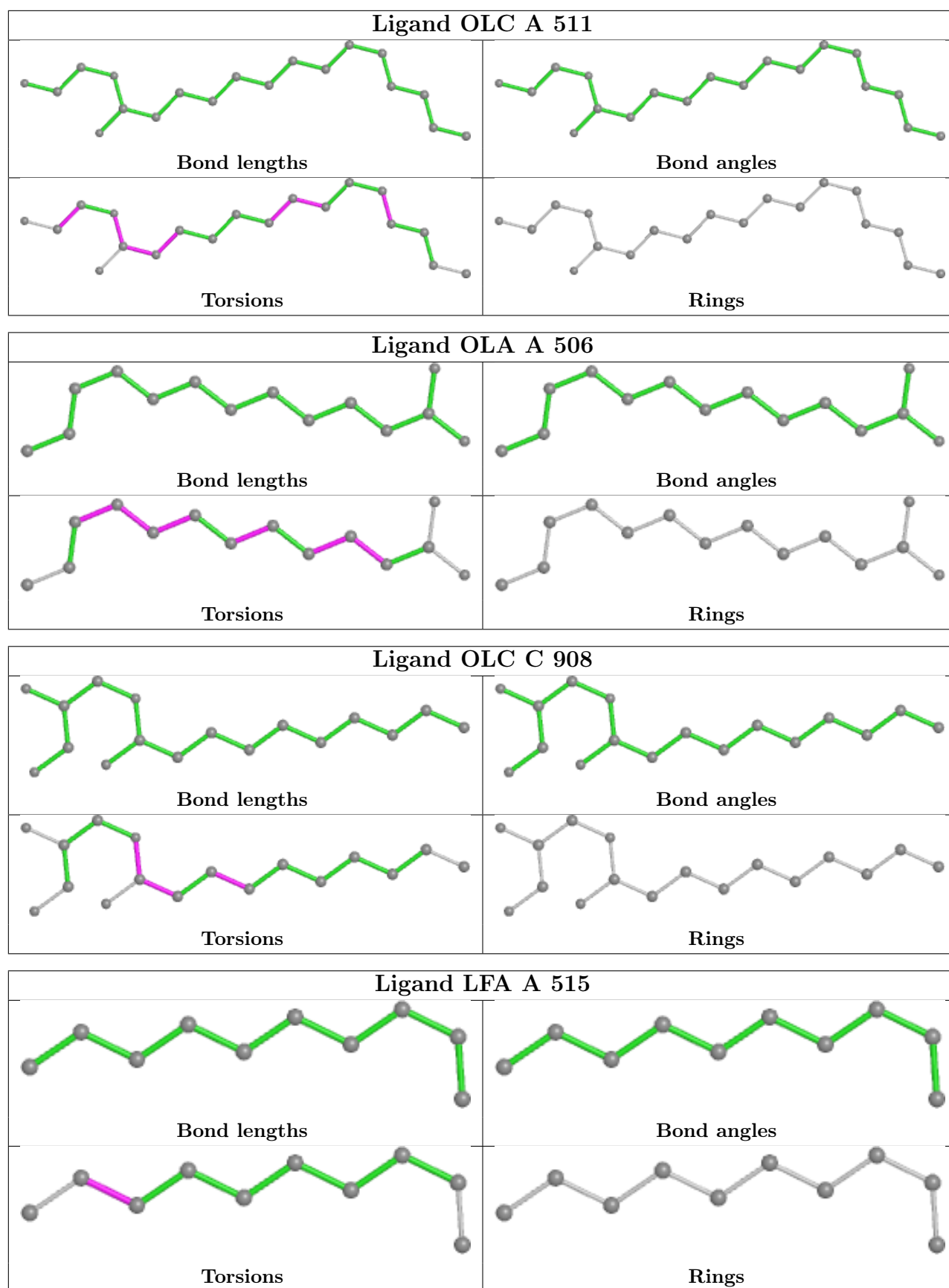


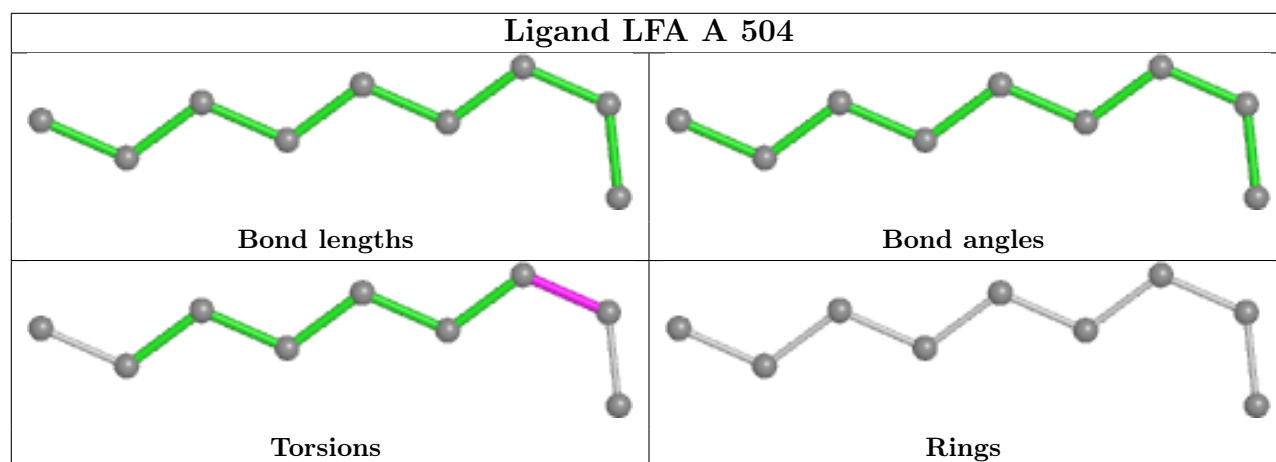
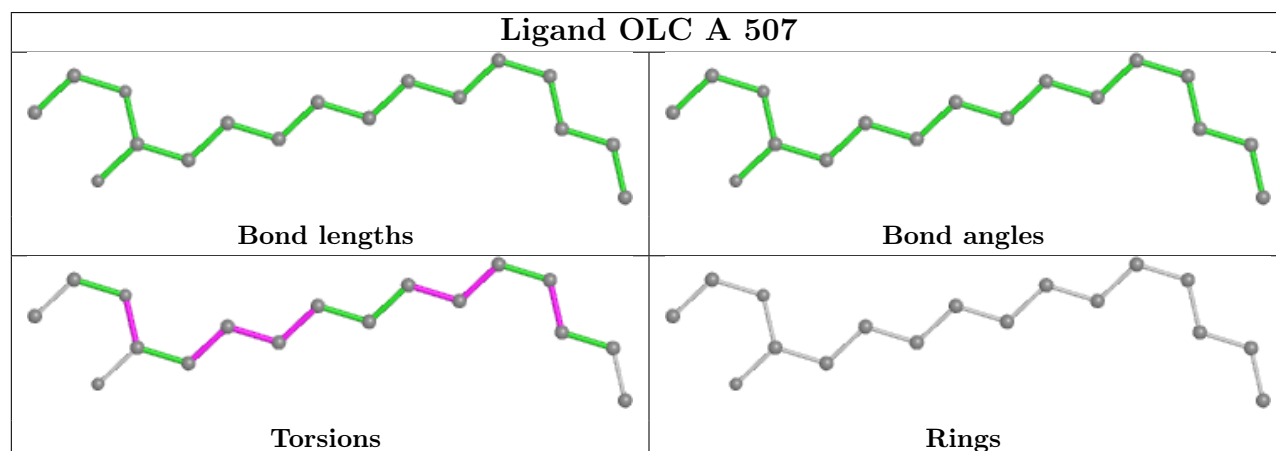
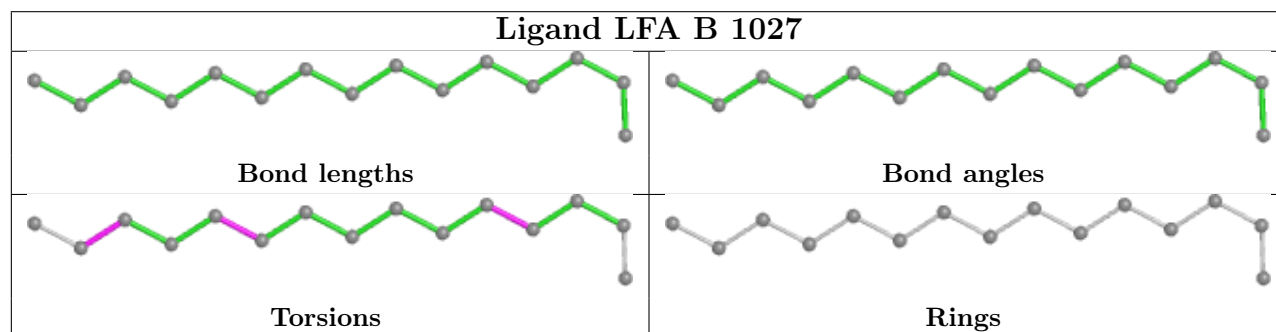
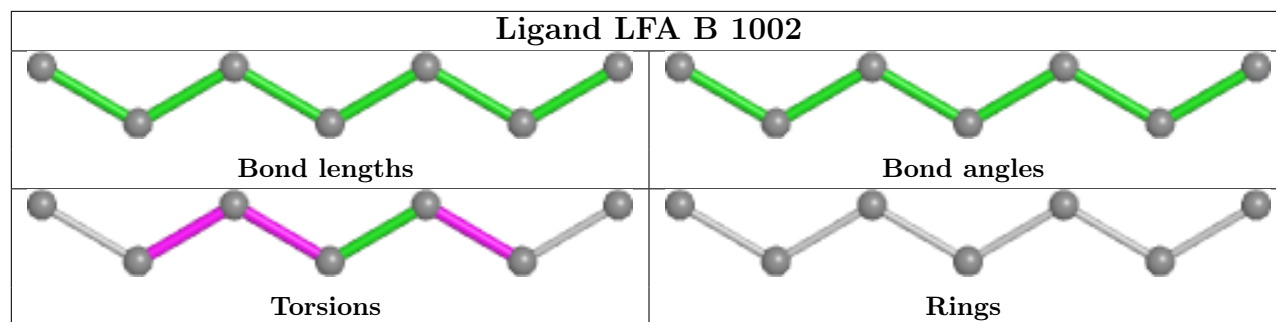


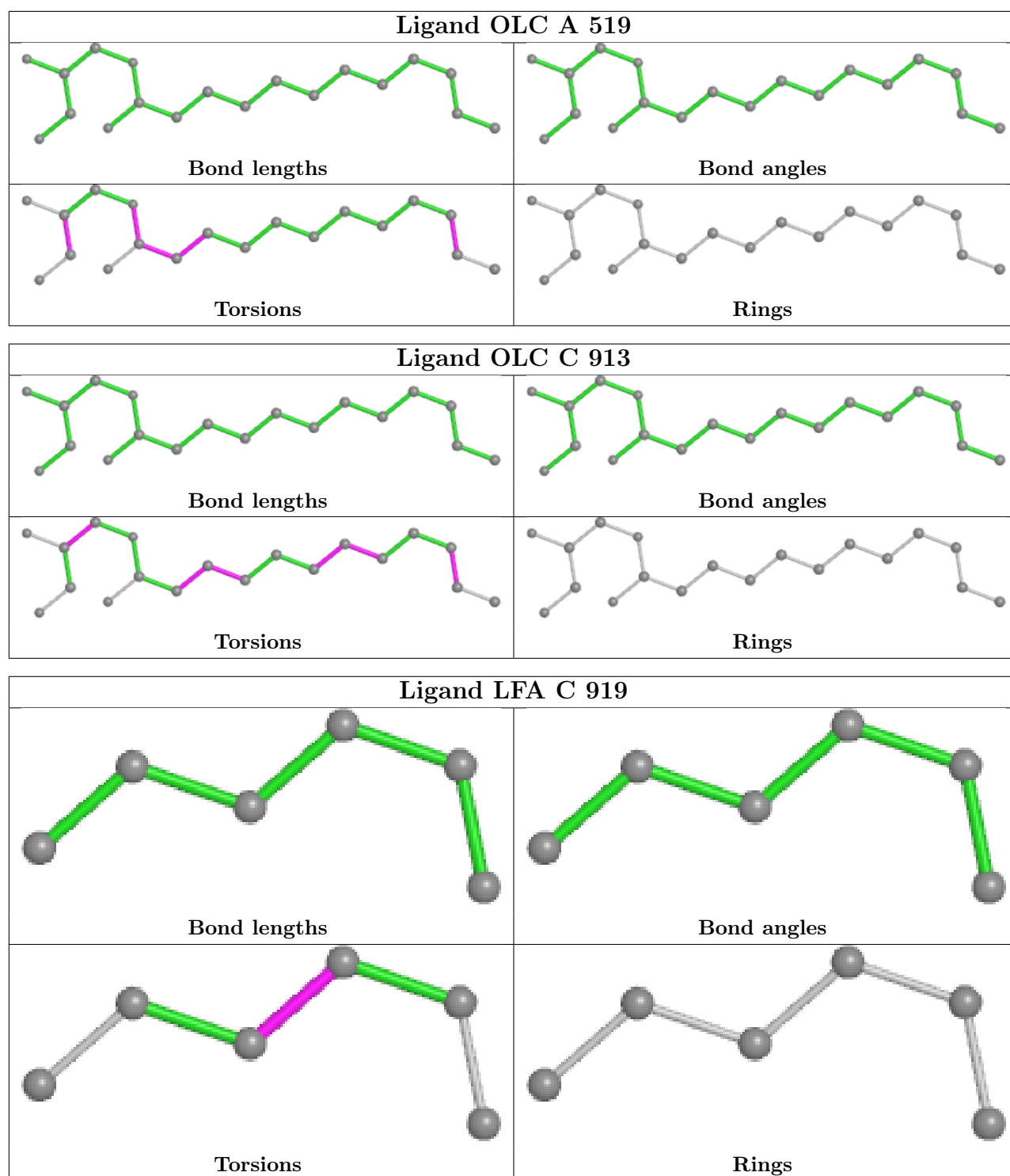


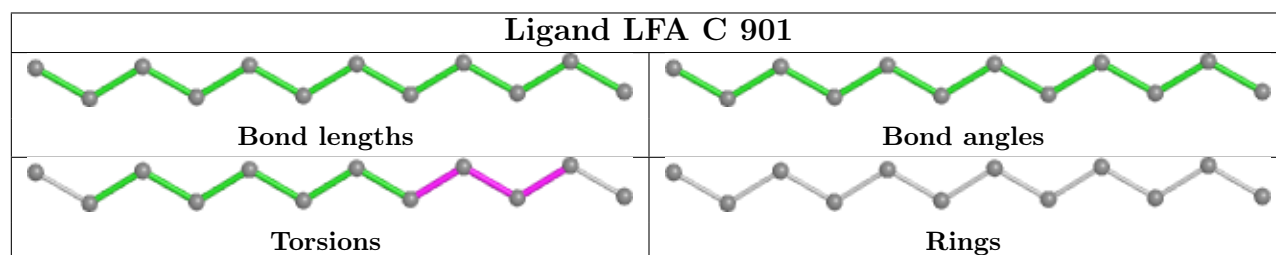
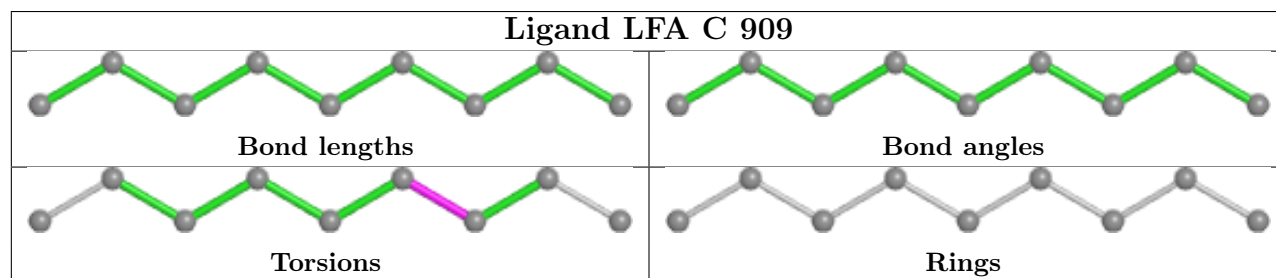
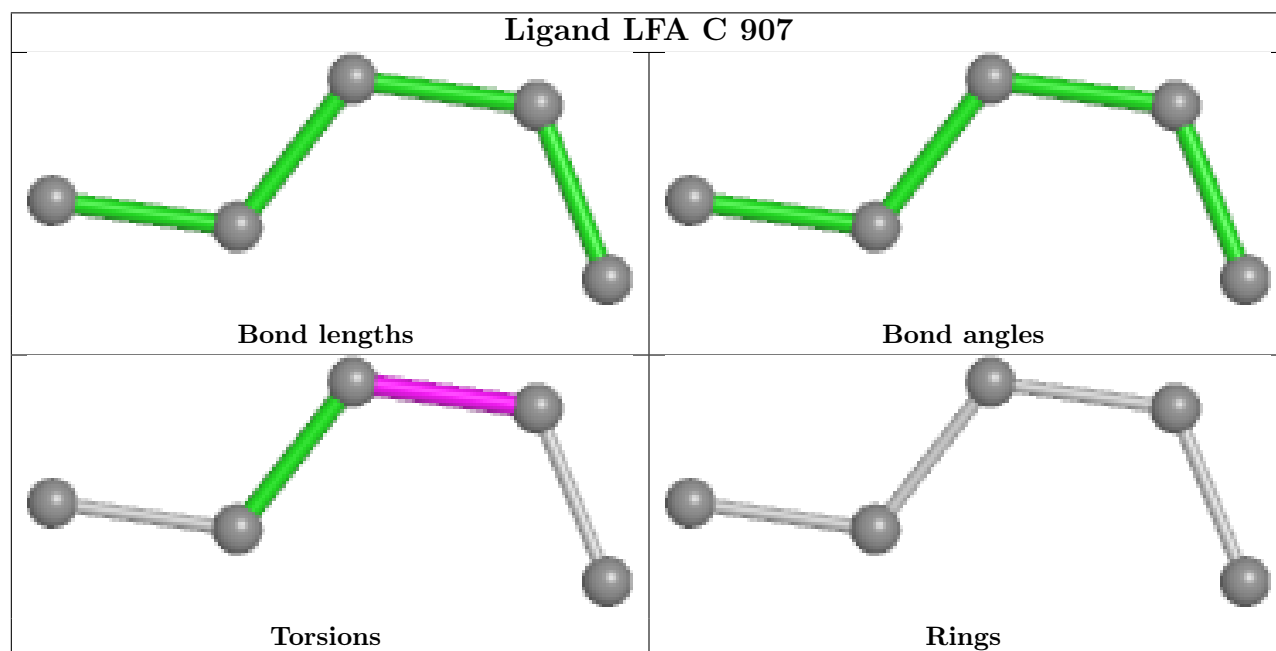
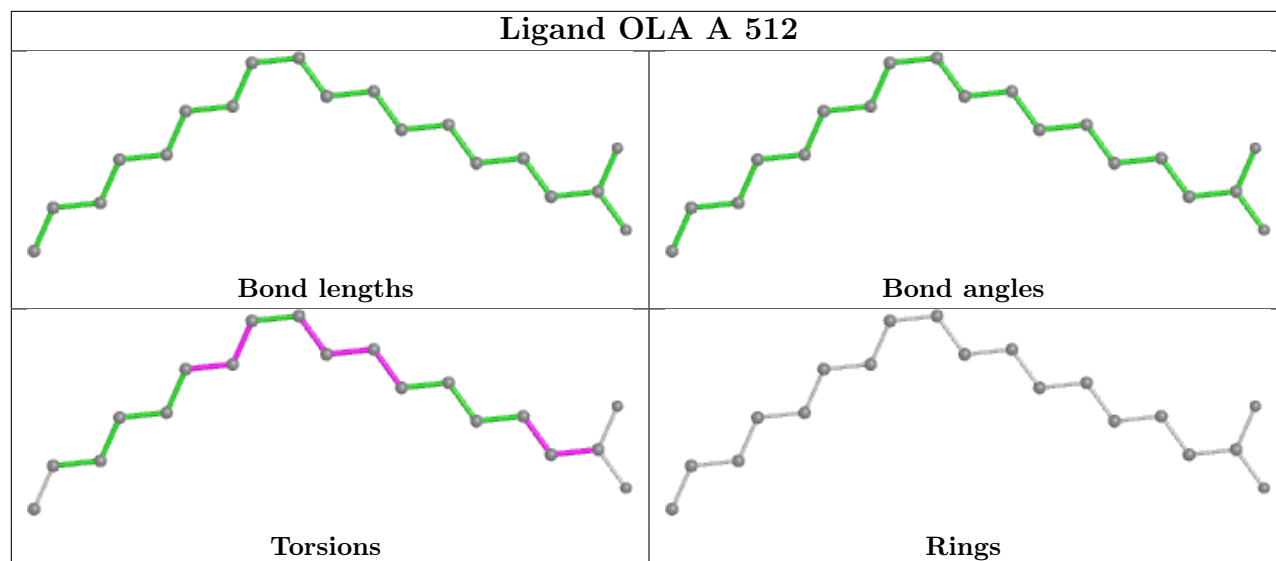


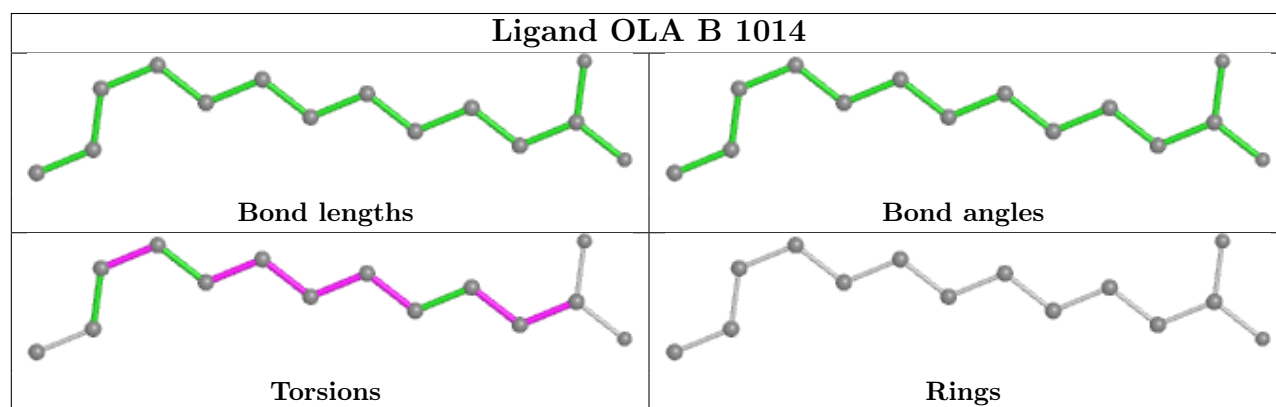
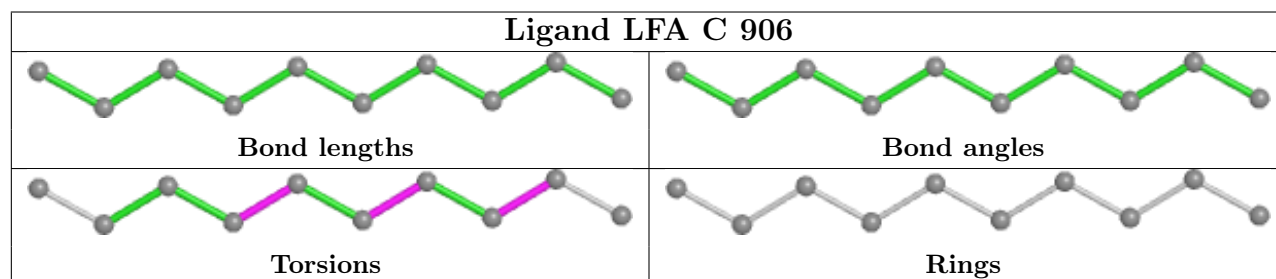
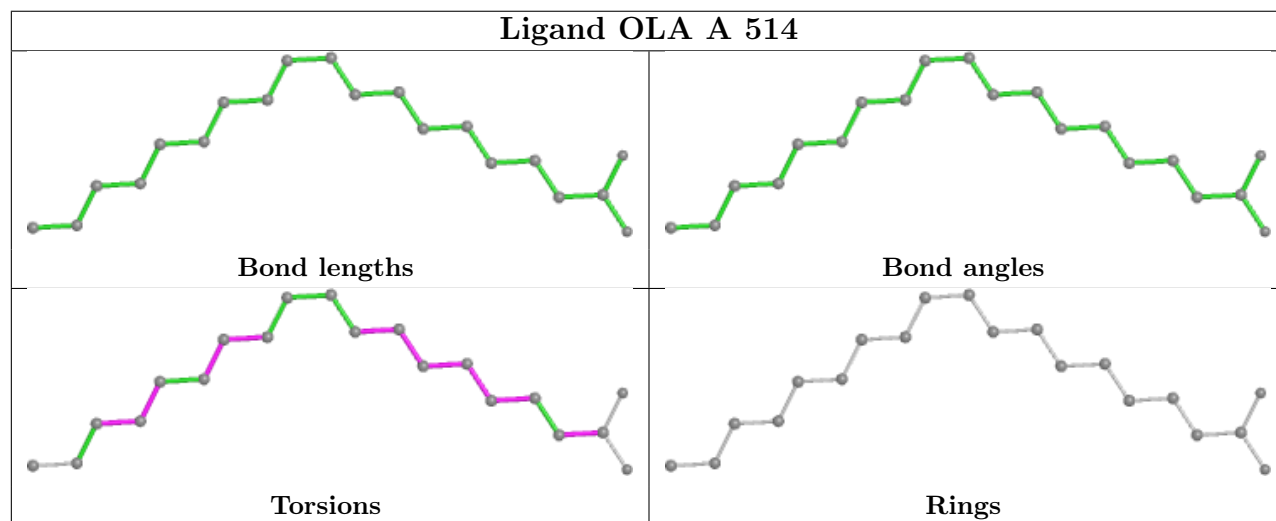
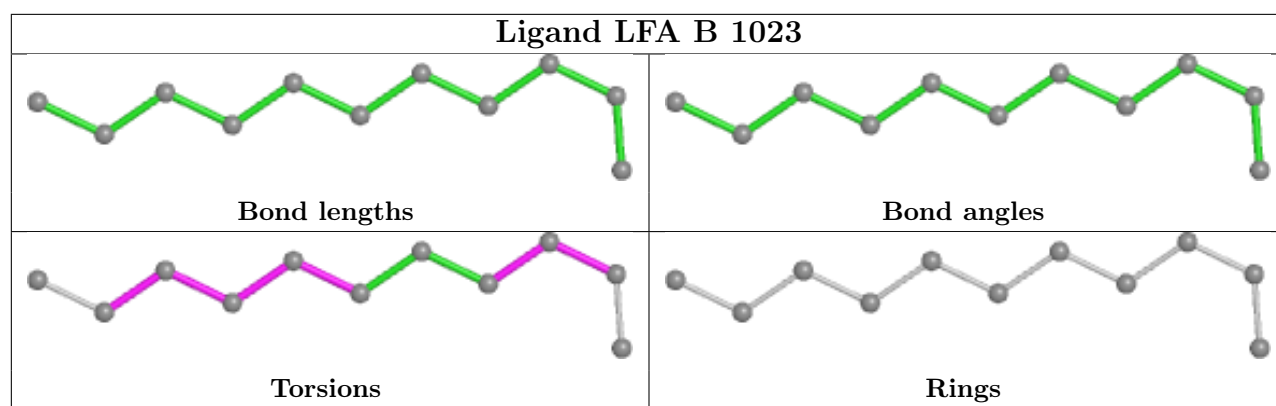


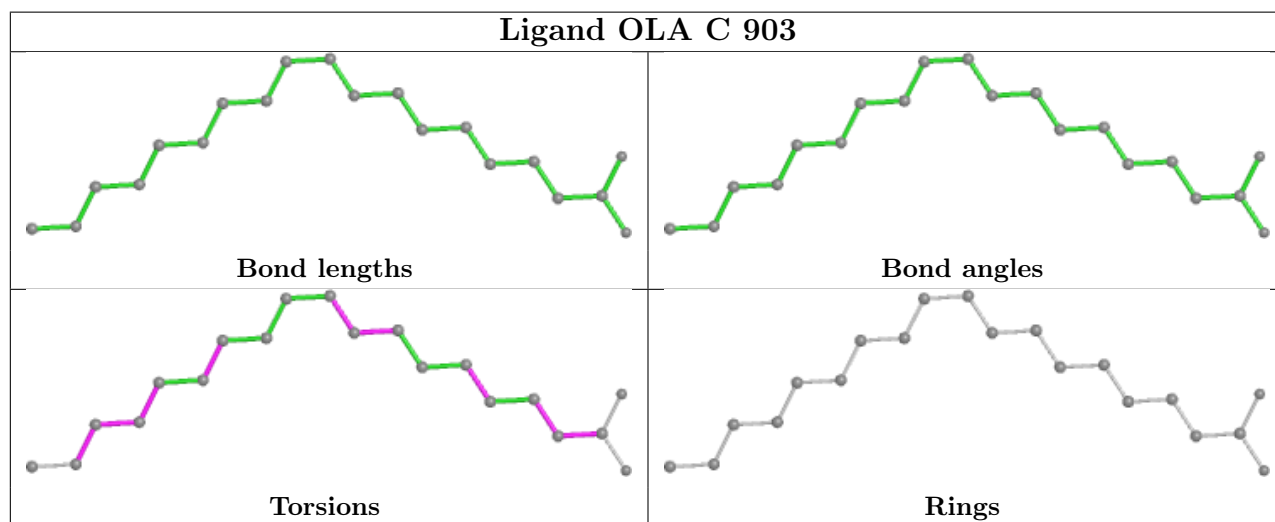
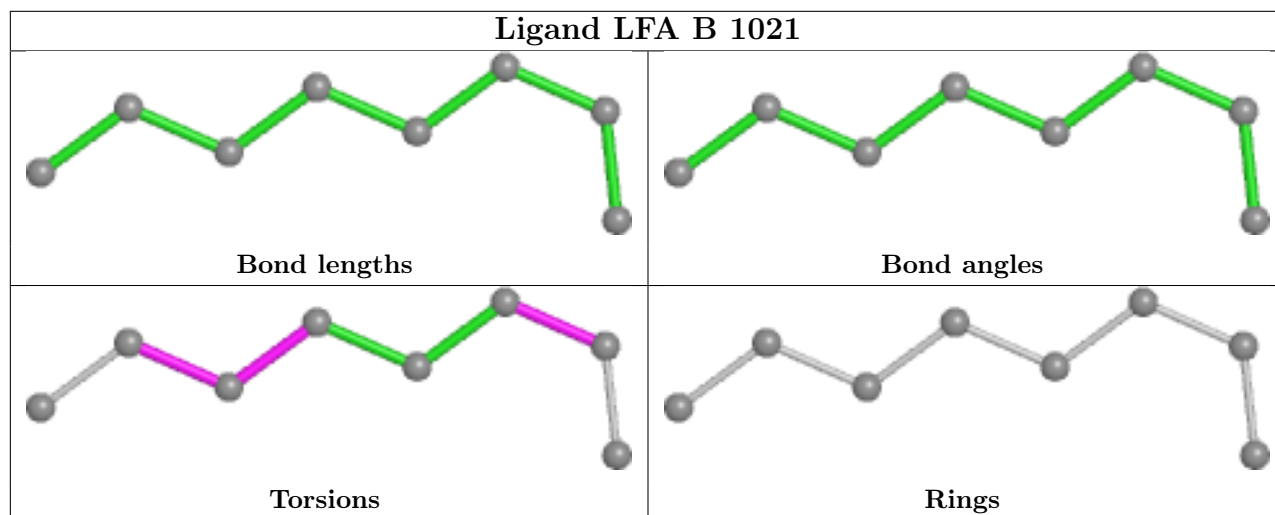
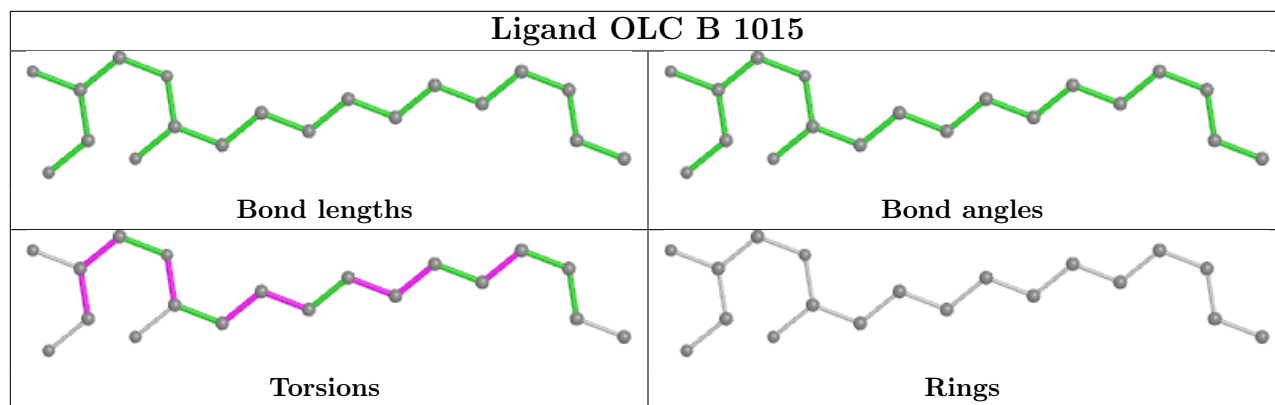


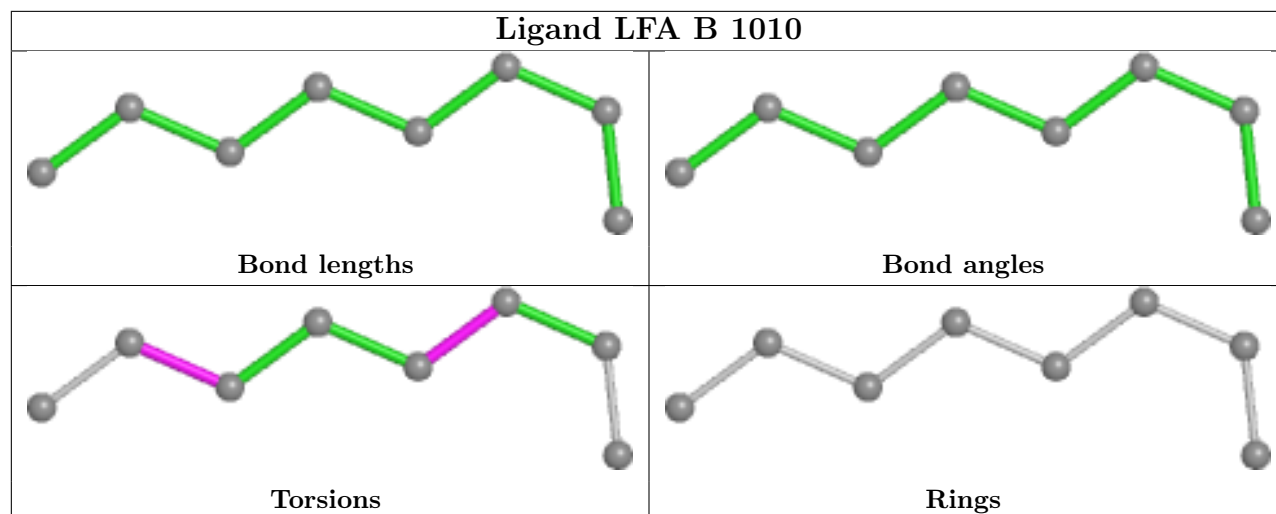












## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.



## 6 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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	222/229 (96%)	0.28	9 (4%) 37 41	15, 23, 44, 86	0
1	B	220/229 (96%)	0.30	11 (5%) 28 32	17, 24, 43, 78	0
1	C	222/229 (96%)	0.17	11 (4%) 28 32	16, 23, 44, 86	0
All	All	664/687 (96%)	0.25	31 (4%) 31 35	15, 23, 44, 86	0

All (31) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	61	TYR	8.7
1	C	62	ASP	8.5
1	A	62	ASP	7.4
1	B	64	THR	6.8
1	B	61	TYR	6.6
1	A	63	ASP	6.3
1	B	223	GLN	5.9
1	A	61	TYR	5.9
1	B	63	ASP	5.8
1	C	63	ASP	4.5
1	A	64	THR	4.4
1	C	64	THR	4.4
1	B	222	HIS	3.9
1	B	60	GLN	3.6
1	C	191	GLN	3.5
1	C	224	SER	3.3
1	B	155	GLY	3.3
1	A	4	ILE	3.1
1	B	121	ILE	3.1
1	B	156	THR	3.1
1	C	189	LEU	2.8
1	C	60	GLN	2.7
1	C	187	LEU	2.6

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Mol	Chain	Res	Type	RSRZ
1	B	59	PHE	2.5
1	A	60	GLN	2.5
1	C	223	GLN	2.4
1	B	152	LEU	2.3
1	C	190	ALA	2.1
1	A	59	PHE	2.1
1	A	40	VAL	2.1
1	A	76	ILE	2.0

## 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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	FME	C	1	10/11	0.82	0.22	34,48,76,85	0
1	FME	A	1	10/11	0.89	0.19	33,43,65,68	0
1	LYR	C	207	29/30	0.90	0.11	18,21,25,33	0
1	FME	B	1	10/11	0.91	0.10	32,44,74,84	0
1	LYR	B	207	29/30	0.92	0.12	17,19,27,28	0
1	LYR	A	207	29/30	0.93	0.14	16,19,27,30	0

## 6.3 Carbohydrates [i](#)

There are no monosaccharides 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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
4	OLC	C	908	17/25	0.44	0.22	43,58,72,75	0
3	OLA	B	1014	14/20	0.55	0.20	48,56,73,96	0
4	OLC	A	519	19/25	0.56	0.29	54,67,77,86	0
4	OLC	C	913	19/25	0.56	0.26	50,66,82,96	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
4	OLC	B	1015	19/25	0.57	0.25	37,54,80,86	0
3	OLA	B	1016	11/20	0.58	0.20	52,59,65,65	0
3	OLA	A	503	12/20	0.64	0.19	39,55,68,71	0
2	LFA	B	1027	15/20	0.65	0.23	42,53,66,68	0
2	LFA	B	1021	8/20	0.66	0.20	58,60,60,61	0
4	OLC	C	912	15/25	0.66	0.19	44,48,62,68	0
4	OLC	A	507	17/25	0.66	0.22	37,47,70,74	0
4	OLC	A	511	19/25	0.67	0.15	44,52,67,67	0
4	OLC	B	1028	13/25	0.68	0.31	52,79,89,92	0
2	LFA	C	918	16/20	0.69	0.18	46,50,58,59	0
2	LFA	B	1024	10/20	0.69	0.20	41,50,57,63	0
2	LFA	B	1025	14/20	0.72	0.19	48,62,66,66	0
2	LFA	A	518	20/20	0.73	0.21	51,60,67,68	0
3	OLA	C	910	9/20	0.73	0.19	58,61,68,70	0
2	LFA	B	1005	9/20	0.73	0.24	36,47,56,56	0
3	OLA	B	1009	14/20	0.73	0.16	34,48,62,64	0
2	LFA	A	502	8/20	0.73	0.26	37,44,49,49	0
3	OLA	B	1013	14/20	0.74	0.18	59,64,68,71	0
2	LFA	C	909	9/20	0.75	0.22	34,49,57,58	0
4	OLC	B	1017	20/25	0.75	0.16	40,57,82,87	0
3	OLA	A	512	19/20	0.75	0.25	38,53,61,64	0
2	LFA	A	517	4/20	0.76	0.12	51,52,53,54	0
3	OLA	B	1008	16/20	0.76	0.18	34,46,56,57	0
2	LFA	C	917	5/20	0.76	0.23	56,60,62,66	0
3	OLA	A	506	14/20	0.76	0.14	44,56,68,76	0
2	LFA	C	916	15/20	0.77	0.18	52,61,68,70	0
3	OLA	B	1012	14/20	0.80	0.15	48,50,65,67	0
2	LFA	C	905	8/20	0.81	0.11	45,47,52,53	0
2	LFA	B	1026	10/20	0.81	0.17	56,59,65,68	0
2	LFA	A	515	10/20	0.81	0.12	40,46,52,53	0
3	OLA	A	514	20/20	0.82	0.25	37,48,63,65	0
3	OLA	B	1006	20/20	0.82	0.22	33,43,61,71	0
2	LFA	B	1007	10/20	0.82	0.15	36,48,53,54	0
2	LFA	C	911	7/20	0.82	0.14	35,42,54,59	0
2	LFA	C	901	12/20	0.82	0.24	36,45,54,54	0
2	LFA	B	1010	8/20	0.82	0.19	45,48,55,56	0
2	LFA	C	921	16/20	0.83	0.17	43,51,60,62	0
2	LFA	B	1004	11/20	0.84	0.29	39,46,51,54	0
2	LFA	C	919	6/20	0.84	0.16	51,55,57,58	0
2	LFA	B	1022	10/20	0.84	0.19	55,57,60,61	0
3	OLA	A	509	20/20	0.85	0.25	33,47,62,65	0
2	LFA	A	516	8/20	0.85	0.12	51,56,59,61	0

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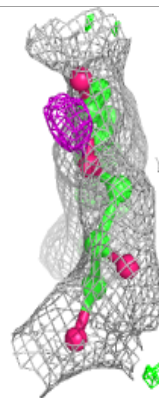
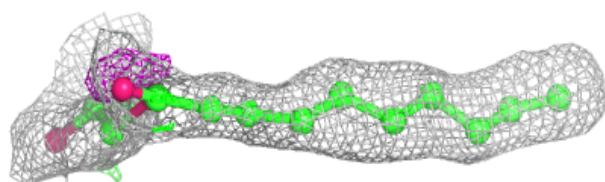
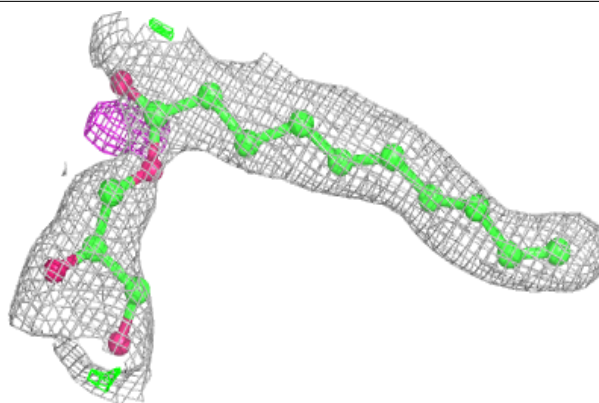
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
2	LFA	C	902	13/20	0.85	0.19	52,56,63,65	0
2	LFA	B	1023	11/20	0.85	0.16	47,56,61,63	0
3	OLA	A	508	16/20	0.85	0.15	37,52,67,74	0
2	LFA	A	504	9/20	0.86	0.12	46,47,51,52	0
2	LFA	A	505	9/20	0.86	0.12	43,49,56,56	0
2	LFA	B	1011	11/20	0.86	0.12	40,45,57,57	0
2	LFA	B	1019	11/20	0.86	0.12	48,53,60,62	0
5	PO4	C	914	5/5	0.86	0.41	72,79,83,98	0
3	OLA	C	903	20/20	0.87	0.23	35,41,77,77	0
2	LFA	C	906	10/20	0.87	0.11	43,47,51,55	0
2	LFA	C	904	6/20	0.87	0.08	40,45,50,54	0
2	LFA	B	1020	6/20	0.87	0.22	45,48,53,58	0
2	LFA	A	513	12/20	0.88	0.21	28,44,49,54	0
2	LFA	B	1018	6/20	0.88	0.15	45,50,54,57	0
2	LFA	B	1002	7/20	0.89	0.14	41,46,50,53	0
2	LFA	C	920	7/20	0.89	0.22	41,51,58,59	0
2	LFA	C	907	5/20	0.90	0.10	40,41,42,45	0
2	LFA	C	915	11/20	0.90	0.27	46,51,55,56	0
2	LFA	A	501	6/20	0.90	0.14	37,38,44,44	0
2	LFA	B	1001	7/20	0.91	0.25	43,46,49,49	0
2	LFA	B	1003	9/20	0.92	0.35	41,47,50,53	0
2	LFA	A	510	11/20	0.92	0.29	40,46,53,55	0

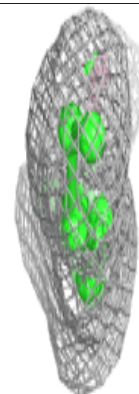
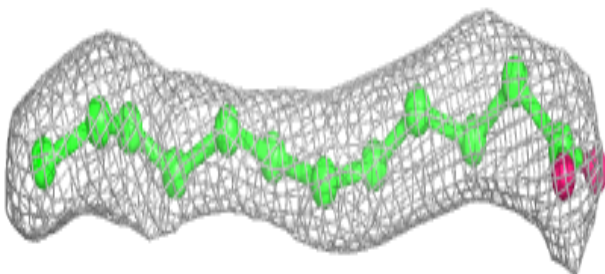
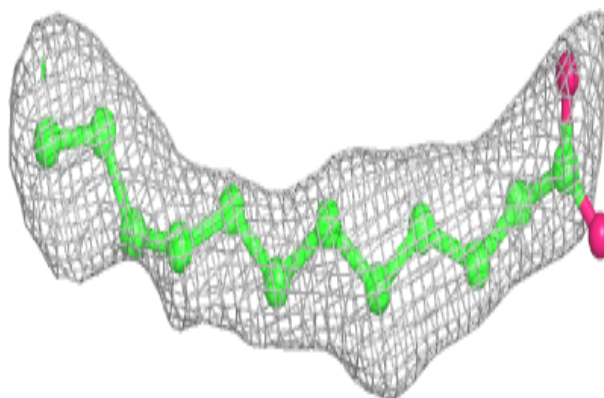
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

**Electron density around OLC C 908:**

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

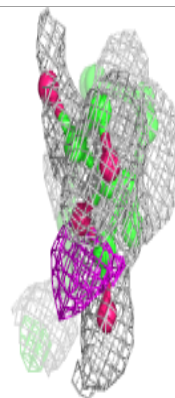
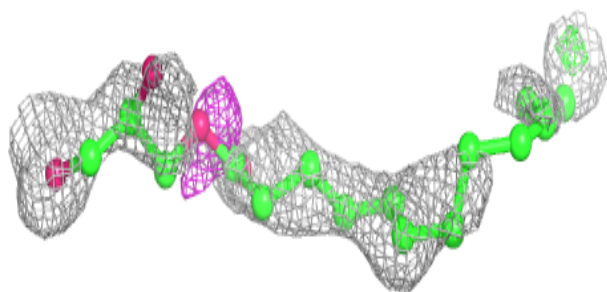
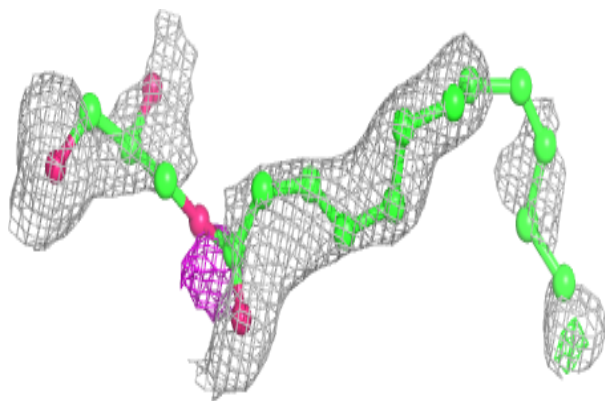
**Electron density around OLA B 1014:**

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

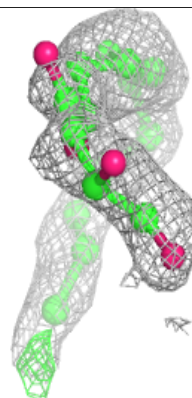
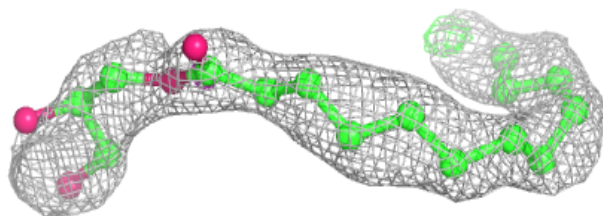
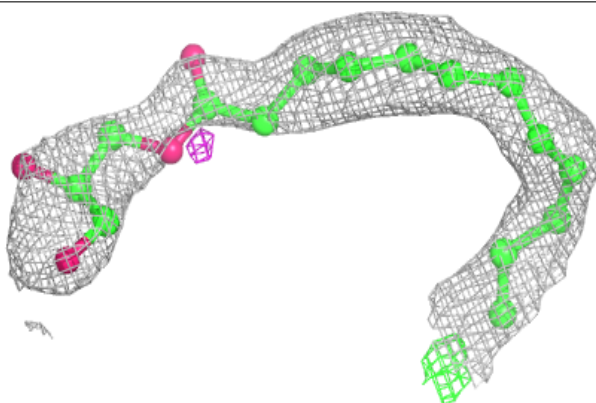


**Electron density around OLC A 519:**

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

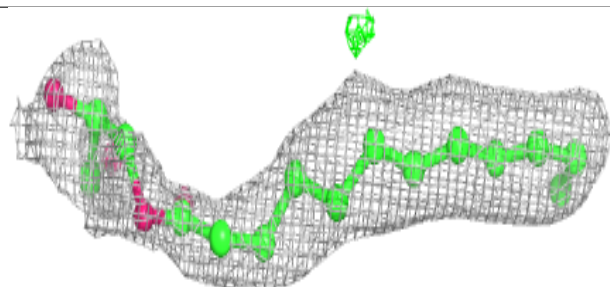
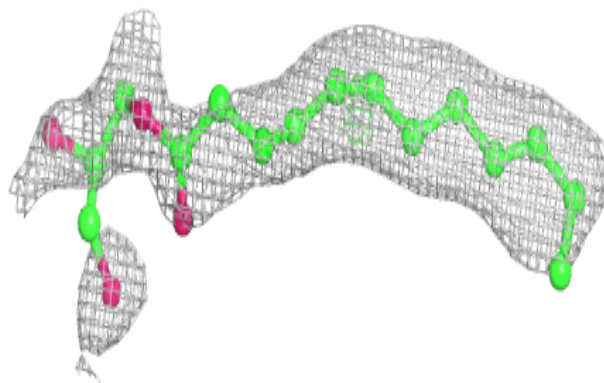
**Electron density around OLC C 913:**

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

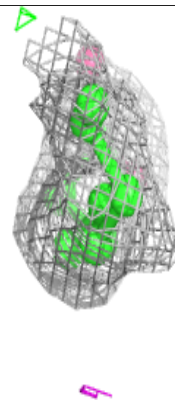
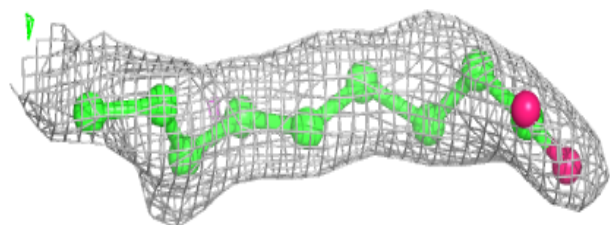
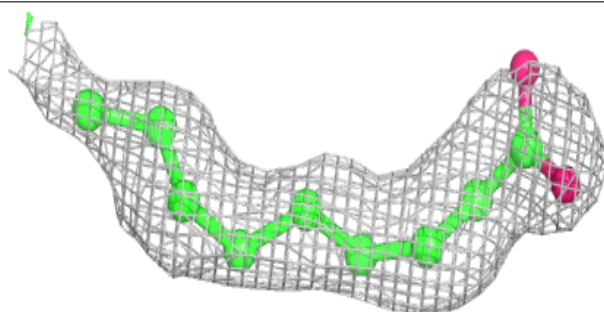


**Electron density around OLC B 1015:**

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

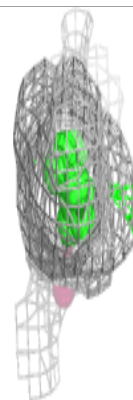
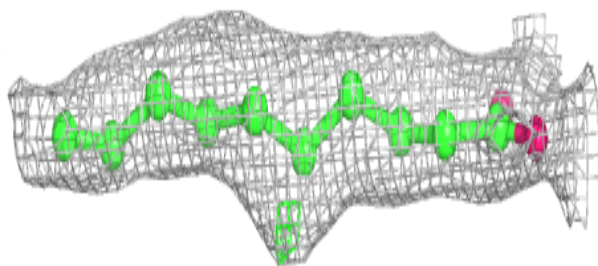
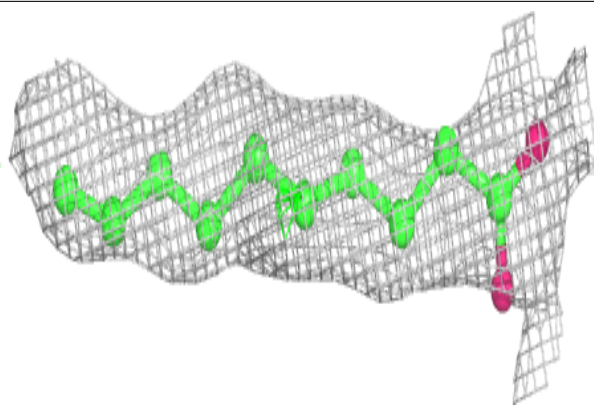
**Electron density around OLA B 1016:**

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

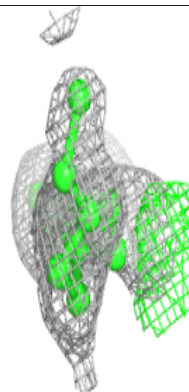
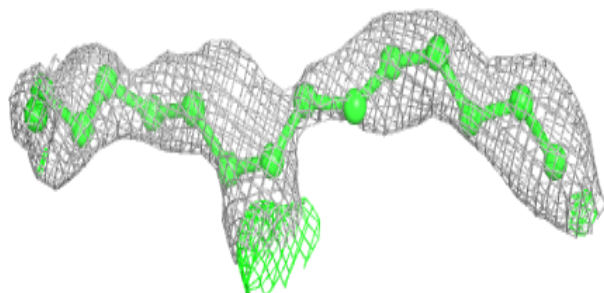
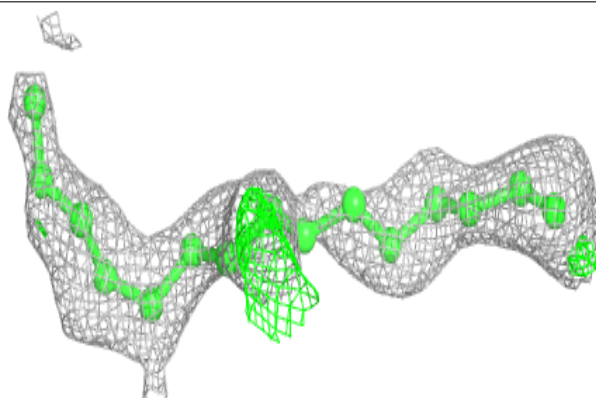


**Electron density around OLA A 503:**

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

**Electron density around LFA B 1027:**

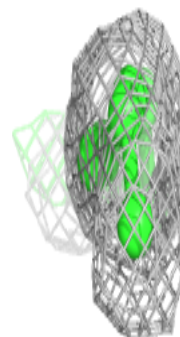
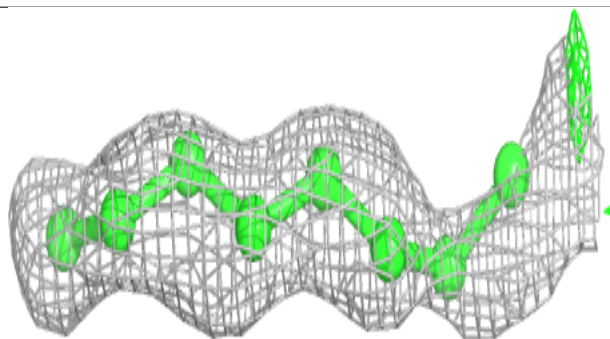
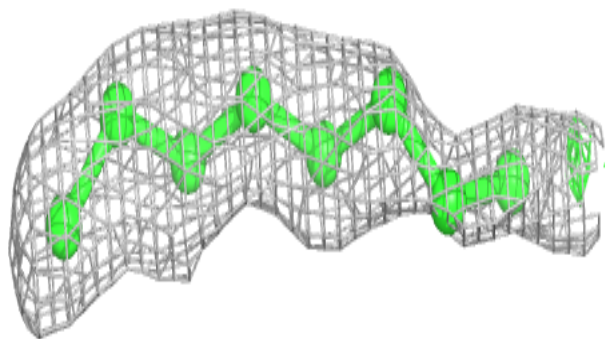
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



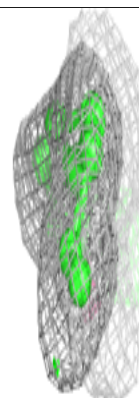
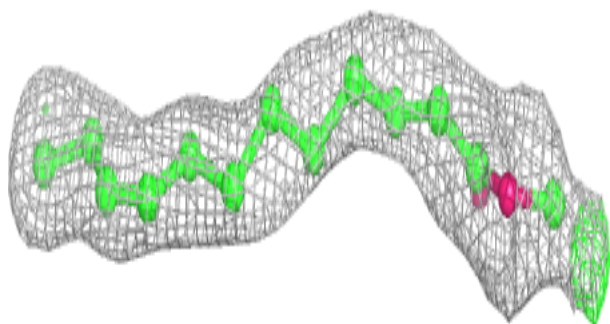
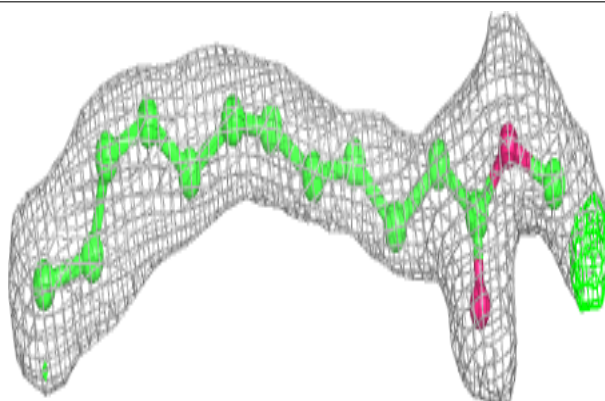


**Electron density around LFA B 1021:**

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

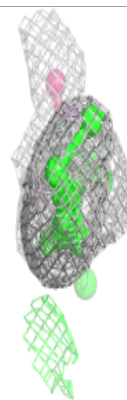
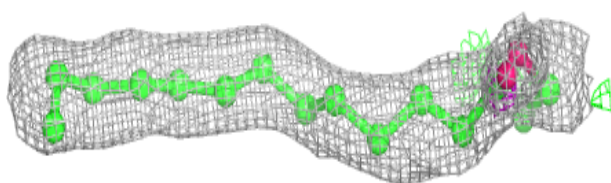
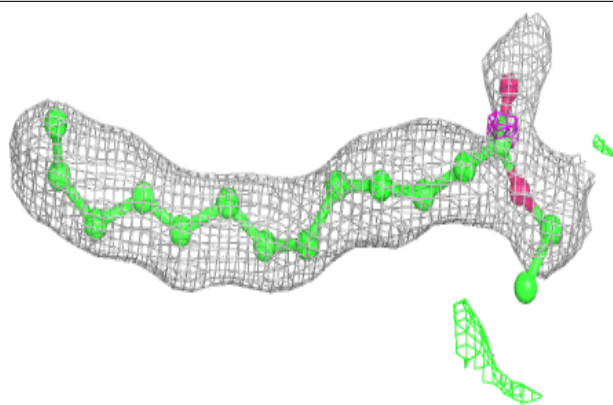
**Electron density around OLC C 912:**

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

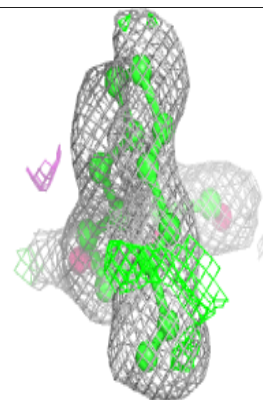
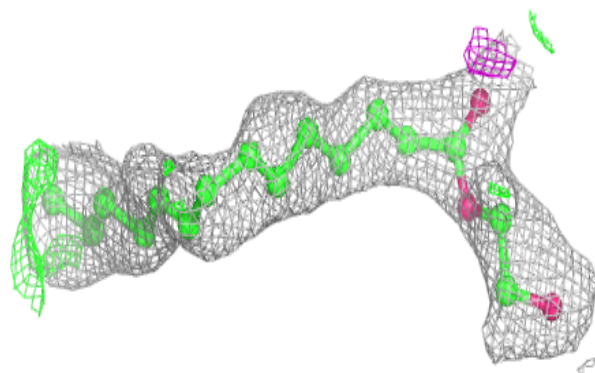
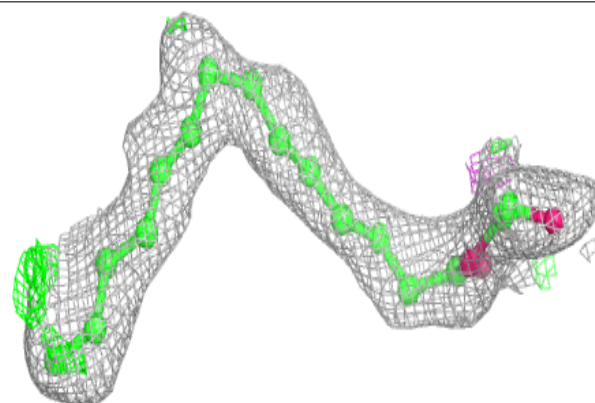


**Electron density around OLC A 507:**

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

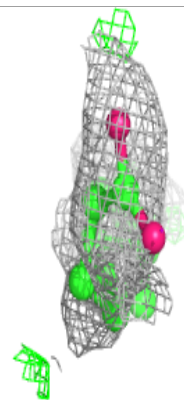
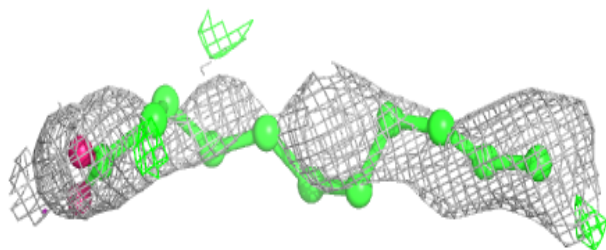
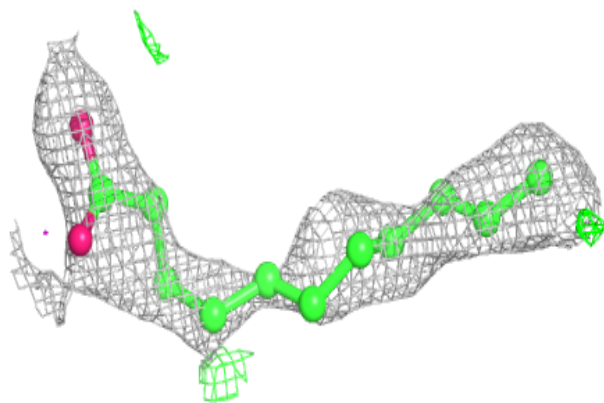
**Electron density around OLC A 511:**

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

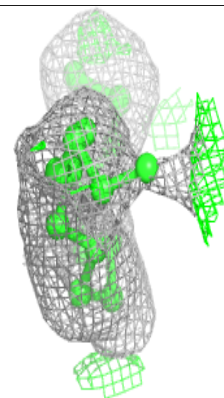
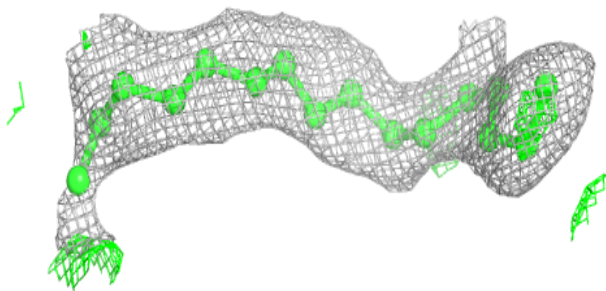
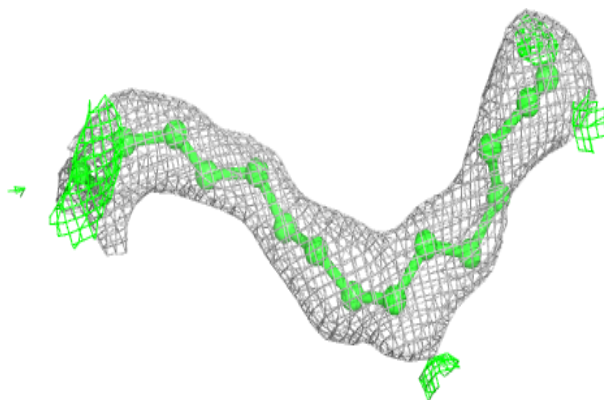


**Electron density around OLC B 1028:**

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

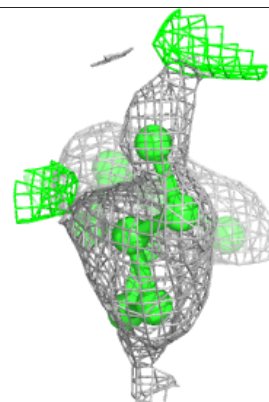
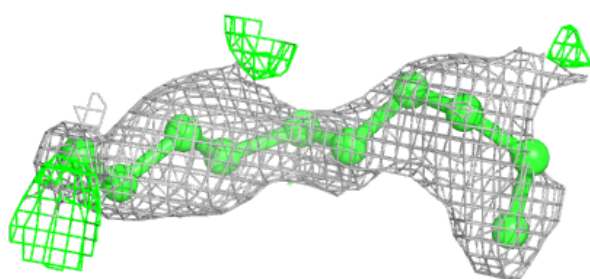
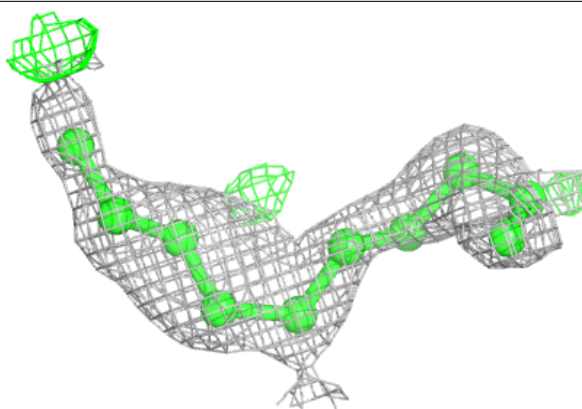
**Electron density around LFA C 918:**

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

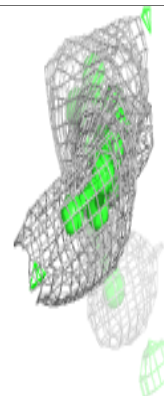
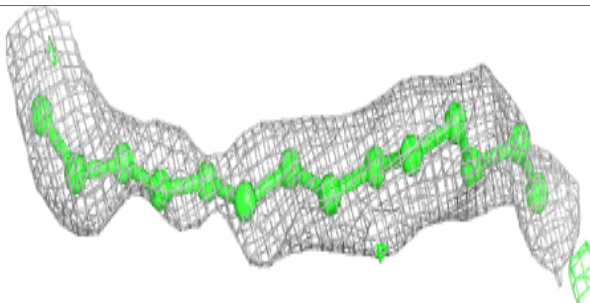
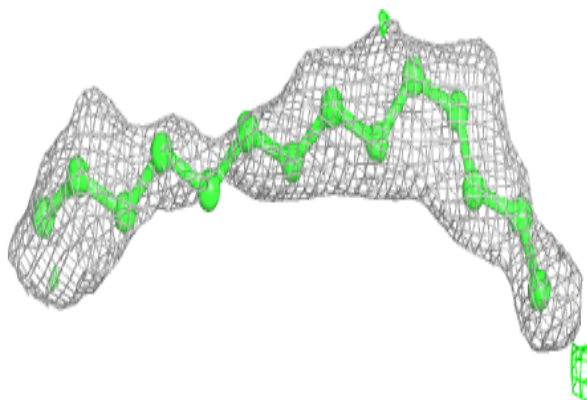


**Electron density around LFA B 1024:**

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

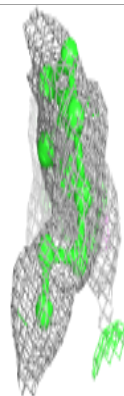
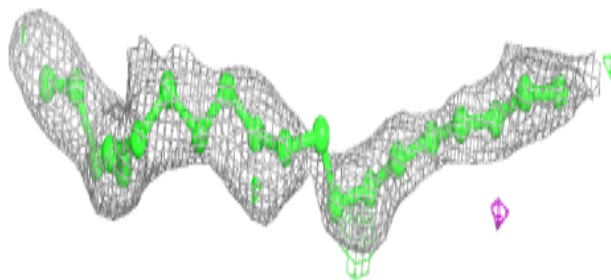
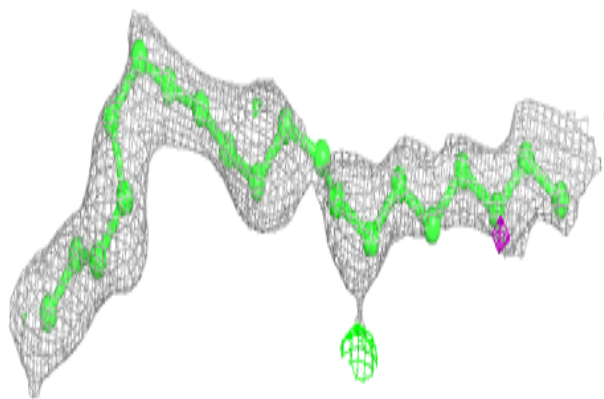
**Electron density around LFA B 1025:**

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

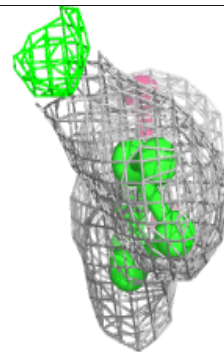
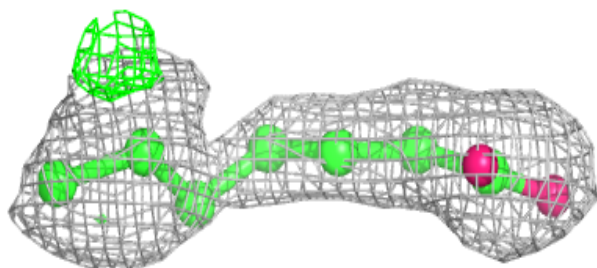
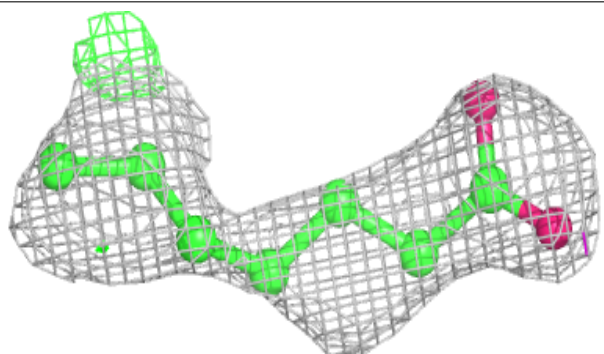


**Electron density around LFA A 518:**

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

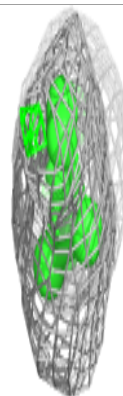
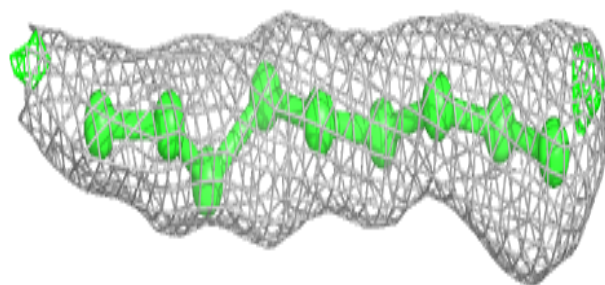
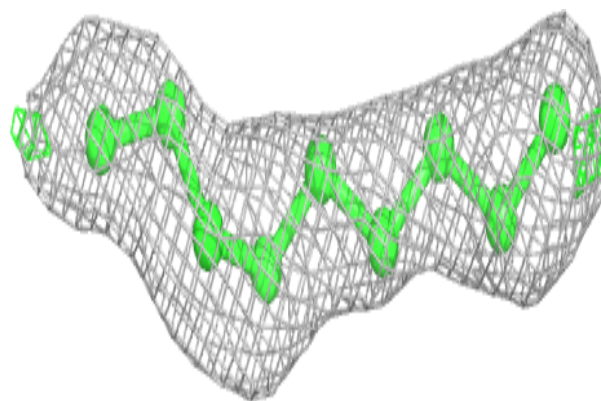
**Electron density around OLA C 910:**

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

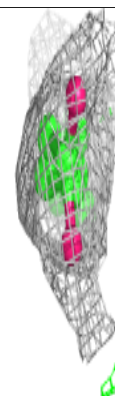
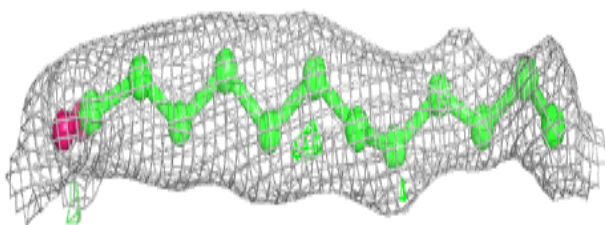
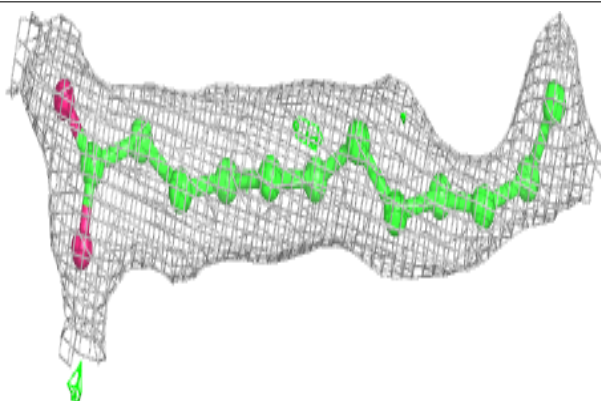


**Electron density around LFA B 1005:**

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

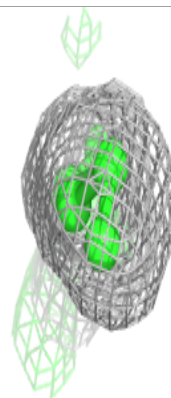
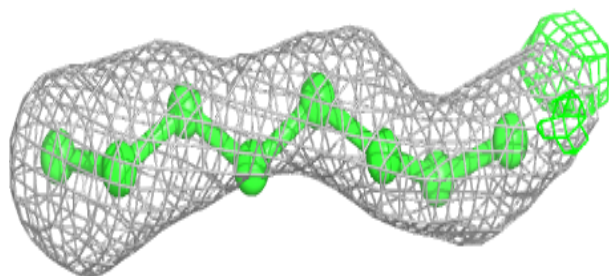
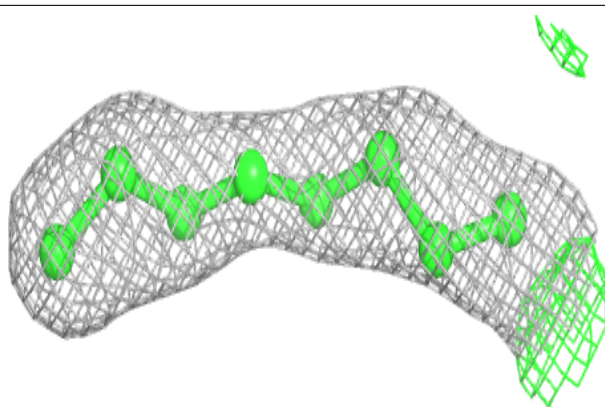
**Electron density around OLA B 1009:**

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

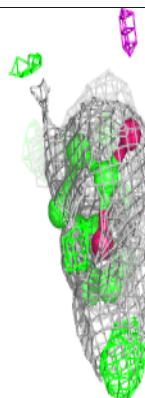
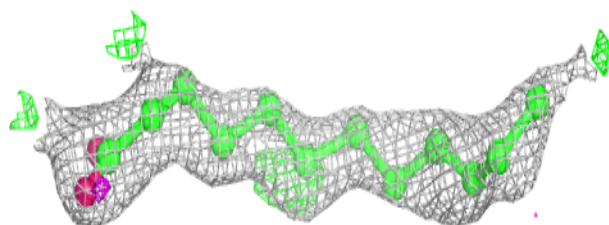
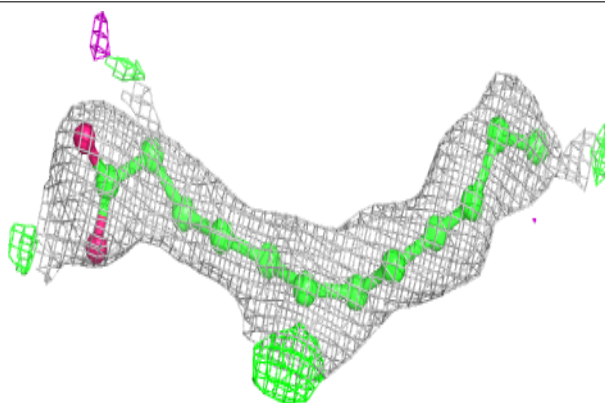


**Electron density around LFA A 502:**

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

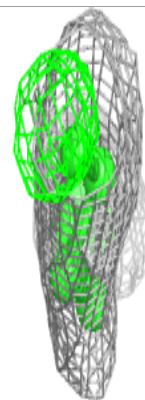
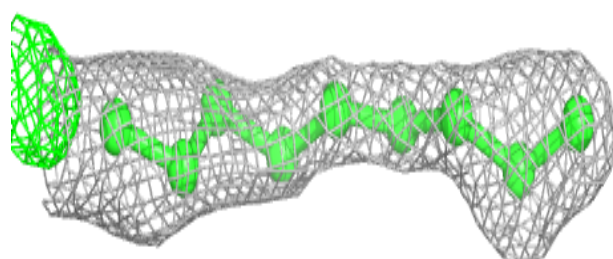
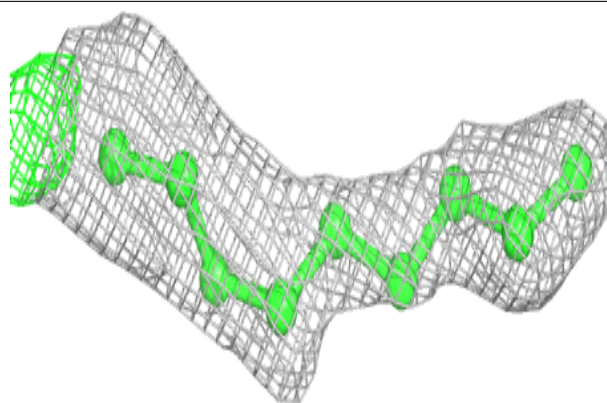
**Electron density around OLA B 1013:**

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

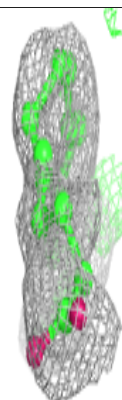
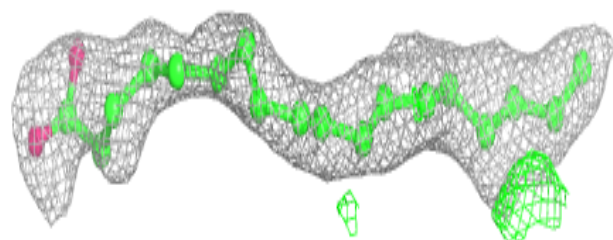
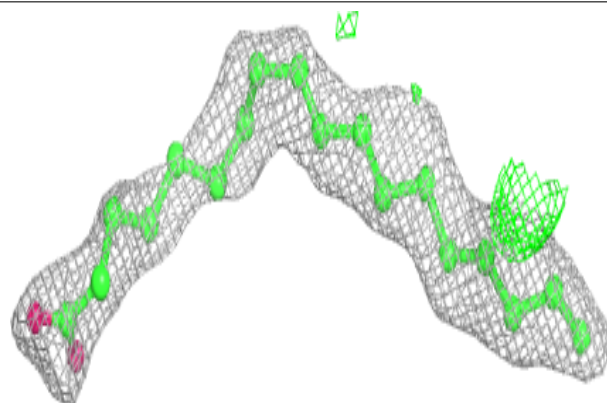


**Electron density around LFA C 909:**

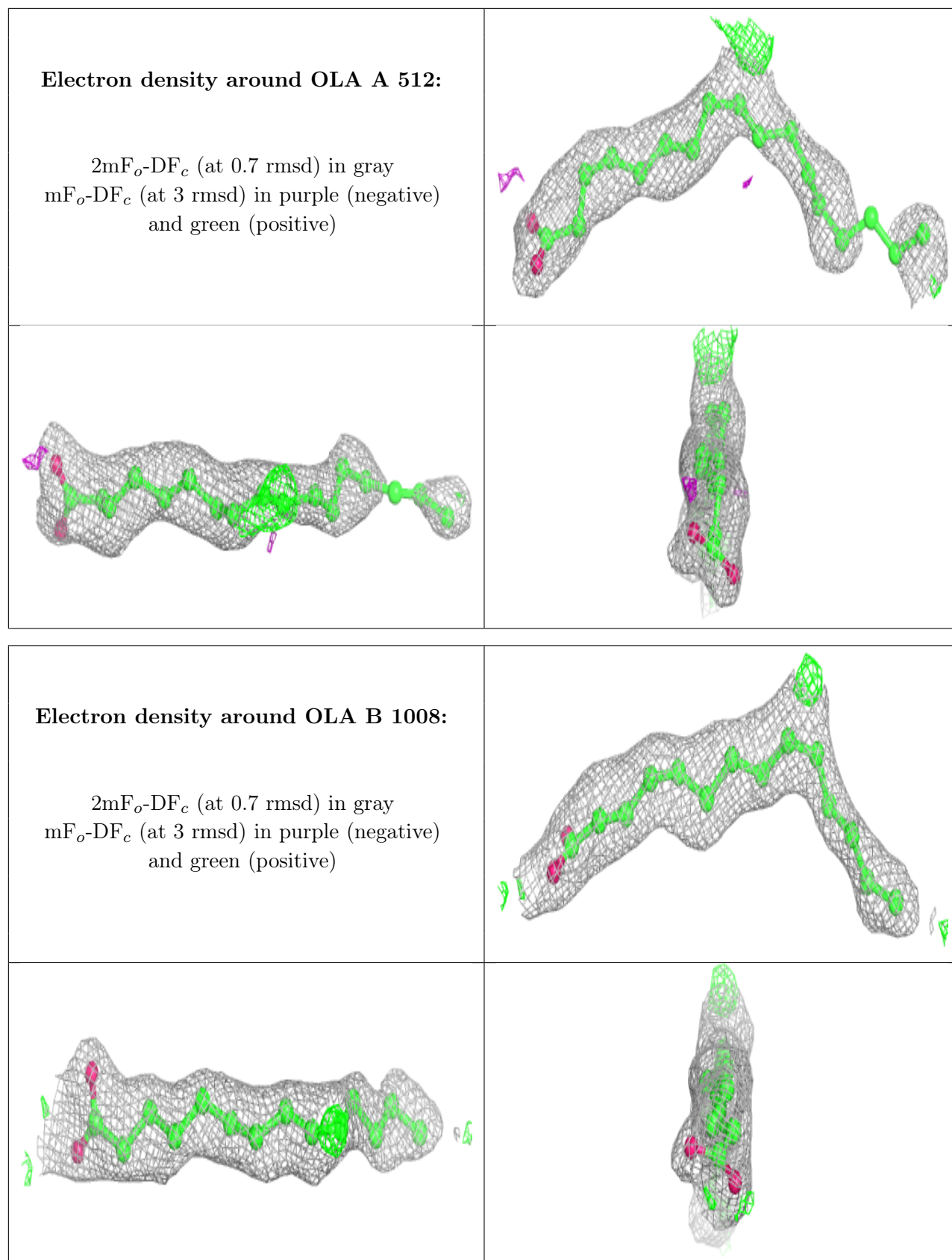
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

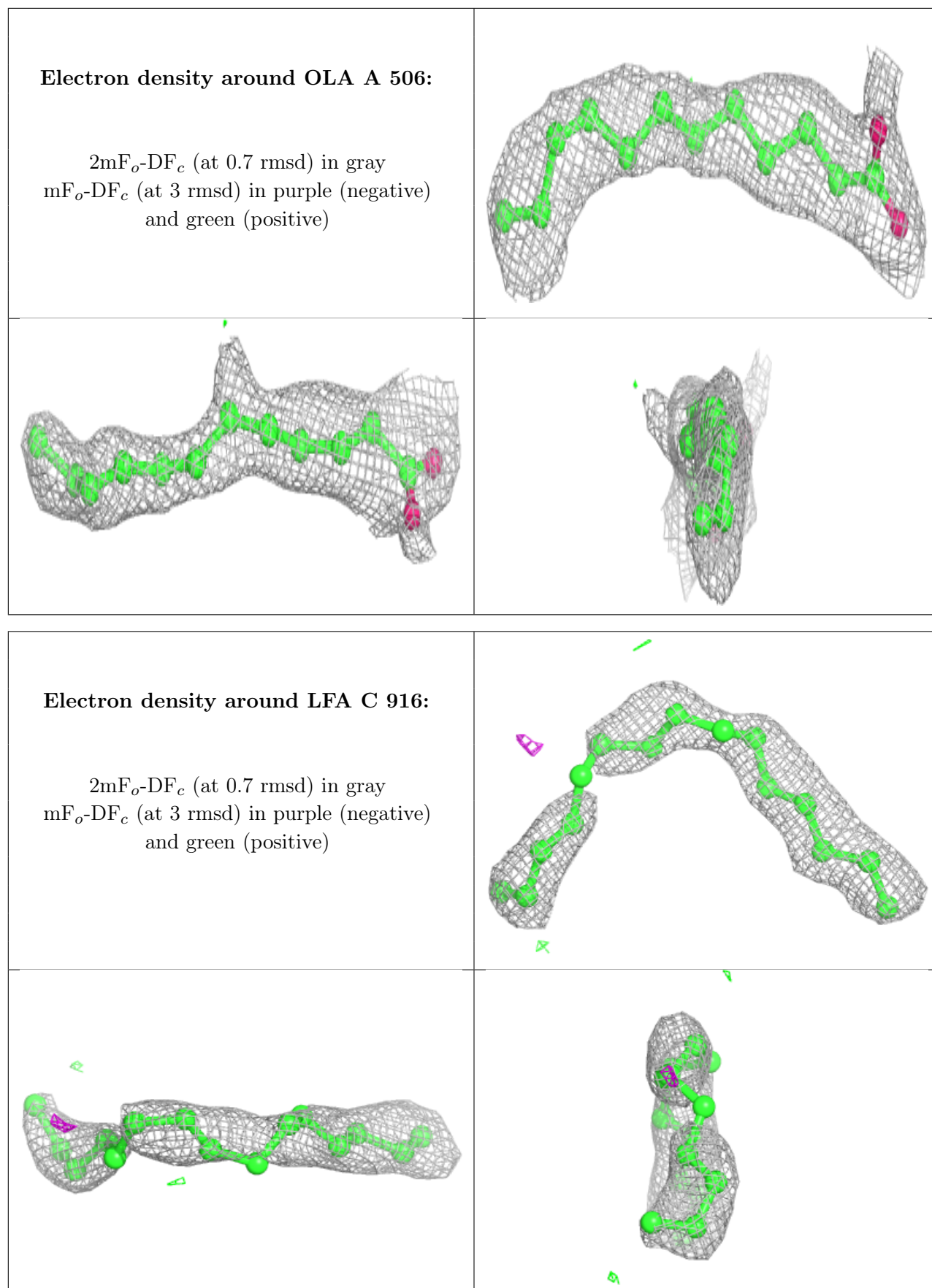
**Electron density around OLC B 1017:**

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



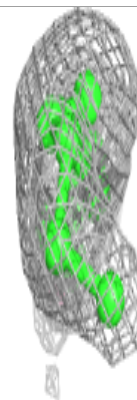
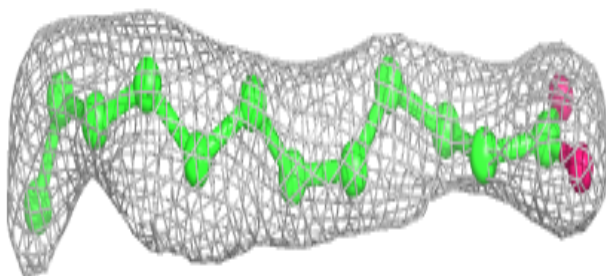
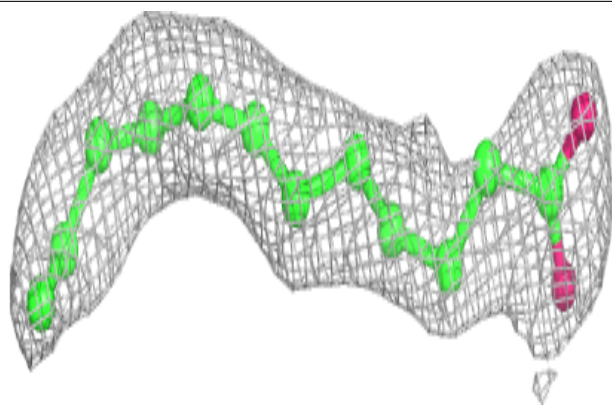




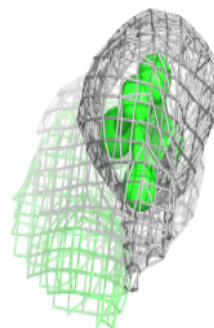
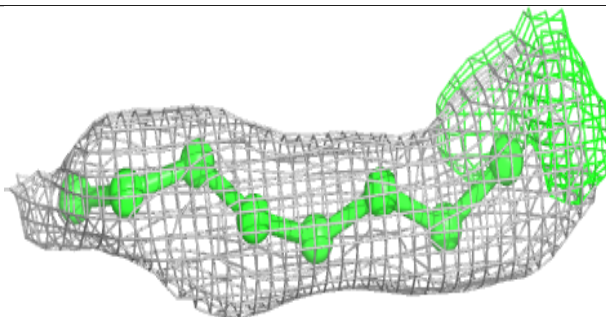
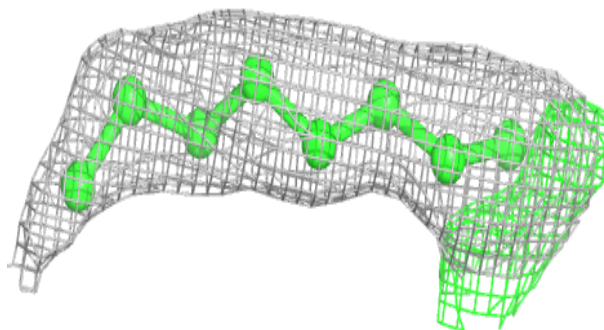


**Electron density around OLA B 1012:**

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

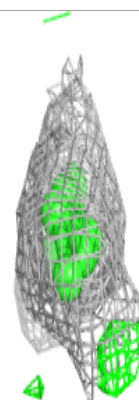
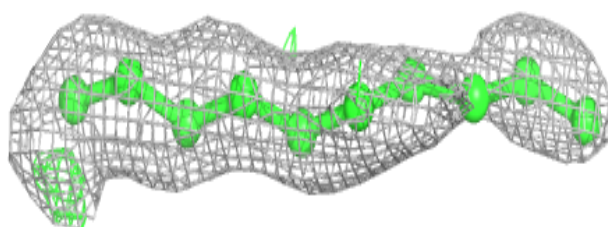
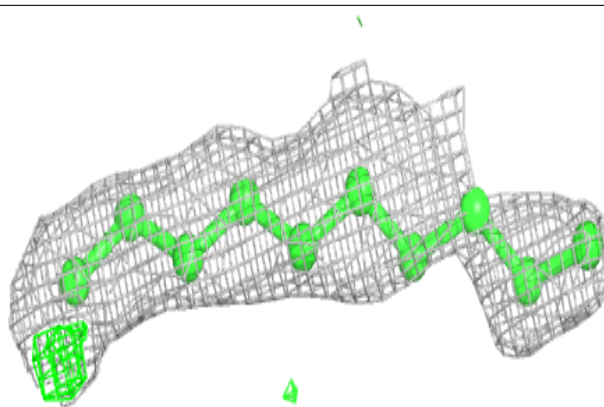
**Electron density around LFA C 905:**

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

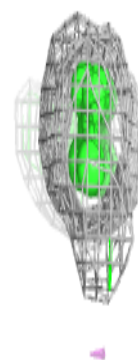
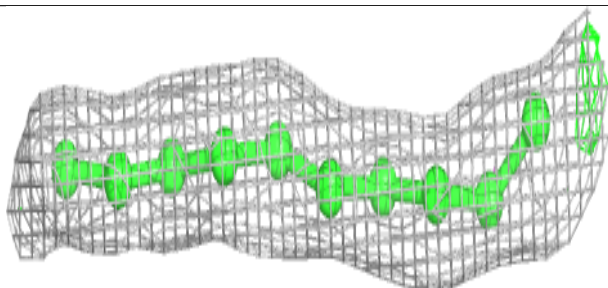
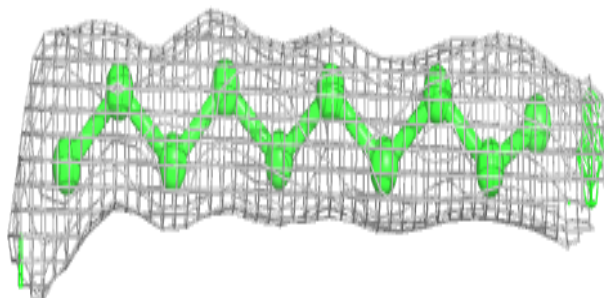


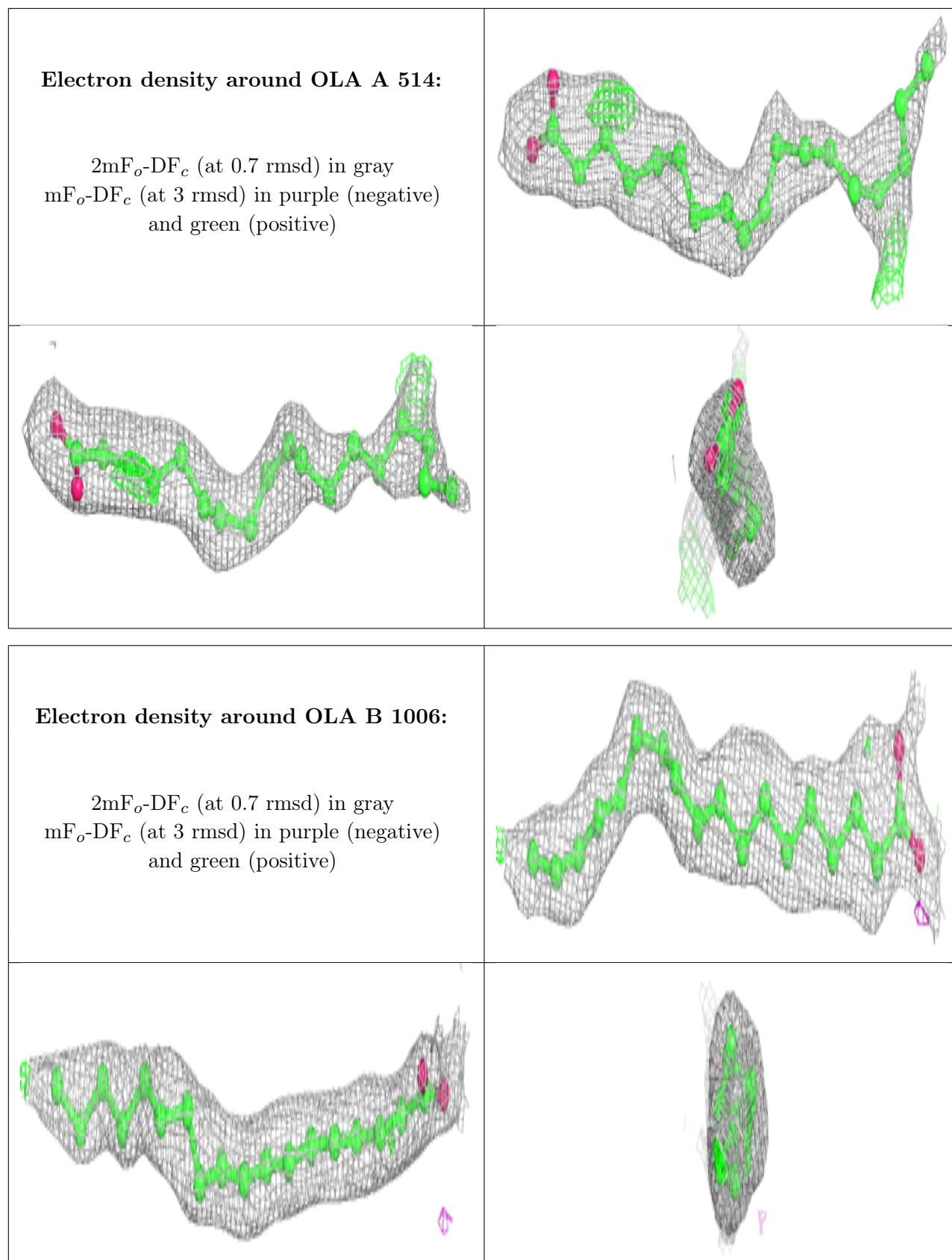
**Electron density around LFA B 1026:**

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

**Electron density around LFA A 515:**

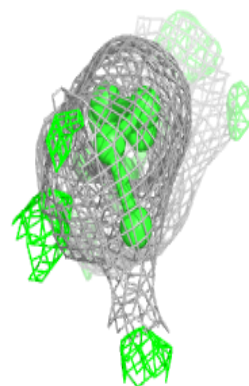
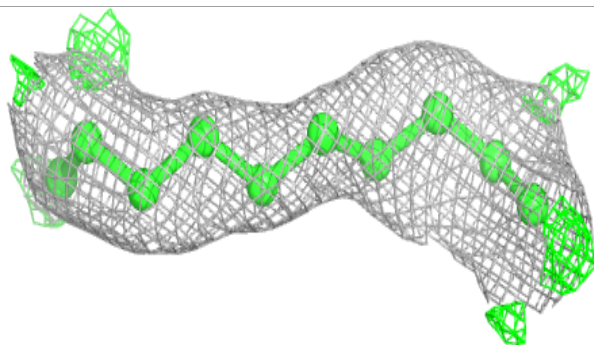
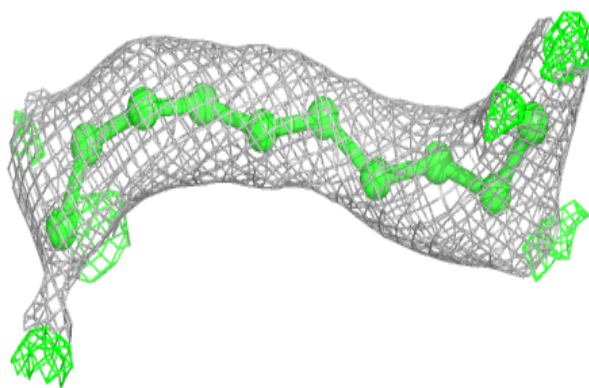
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



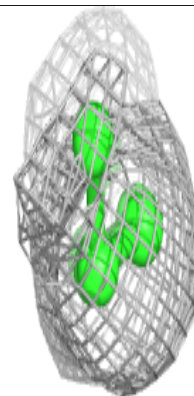
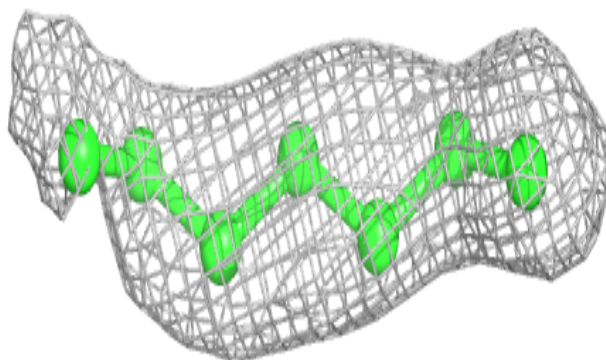
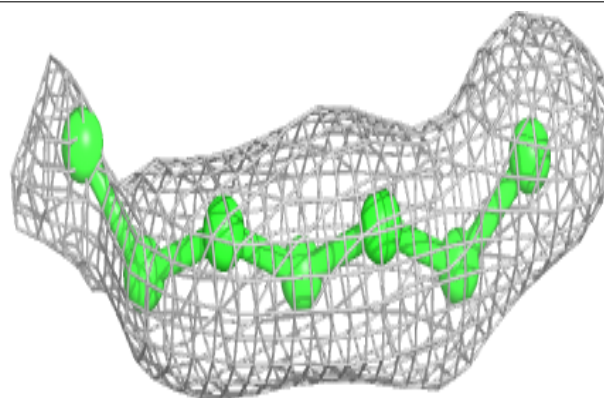


**Electron density around LFA B 1007:**

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

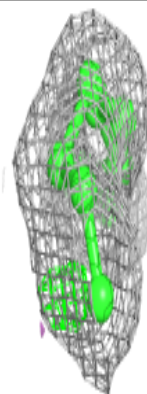
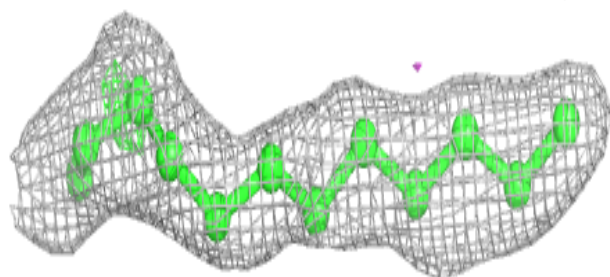
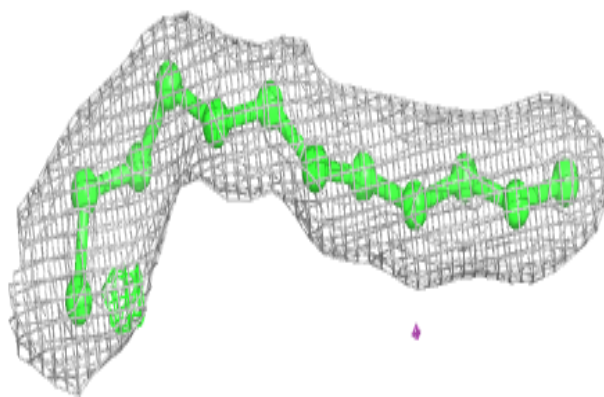
**Electron density around LFA C 911:**

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

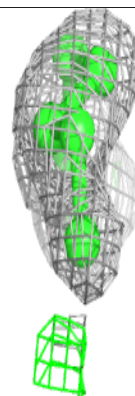
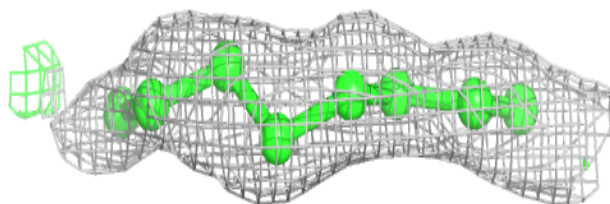
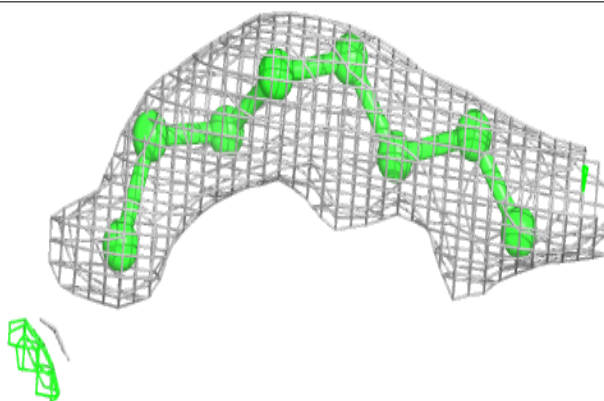


**Electron density around LFA C 901:**

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

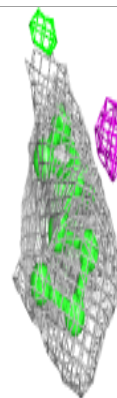
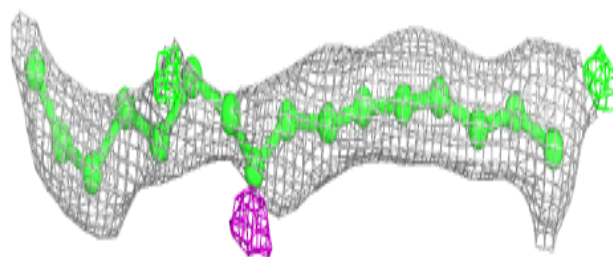
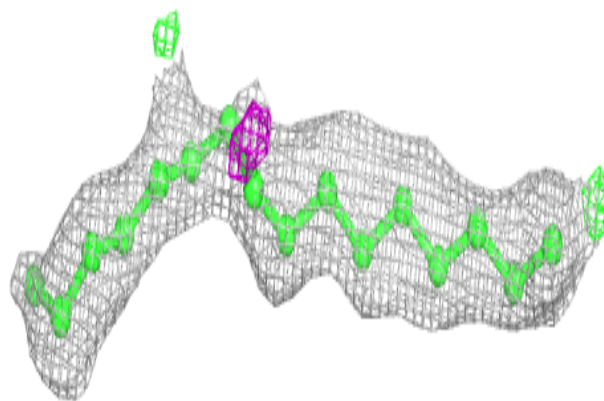
**Electron density around LFA B 1010:**

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

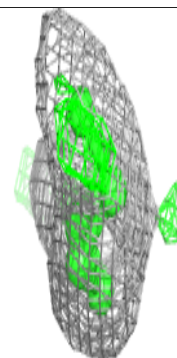
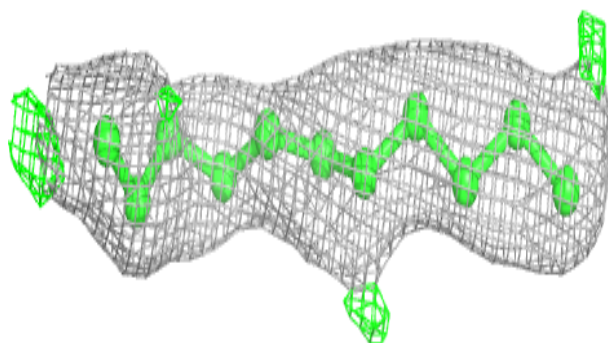
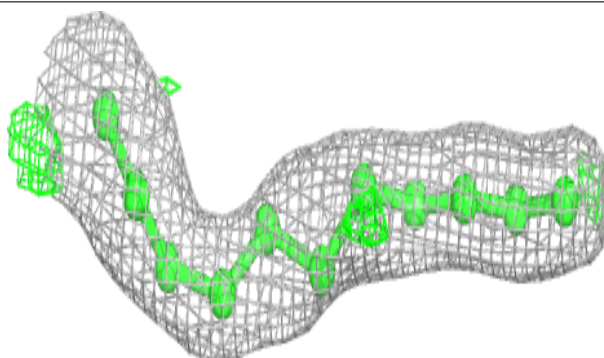


**Electron density around LFA C 921:**

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

**Electron density around LFA B 1004:**

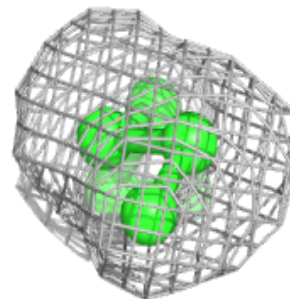
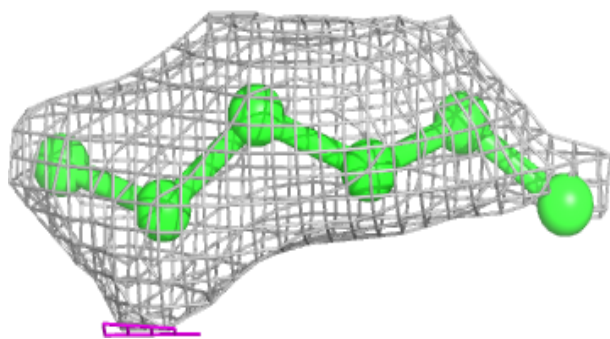
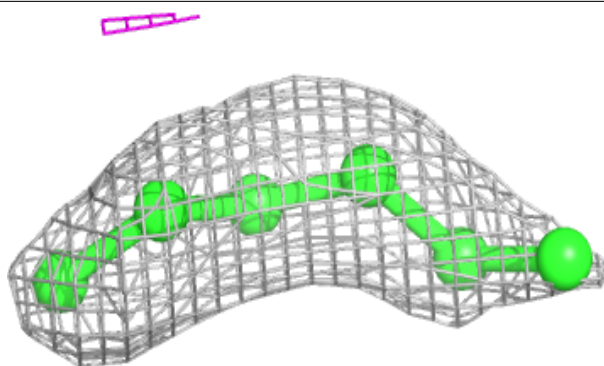
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



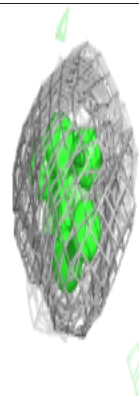
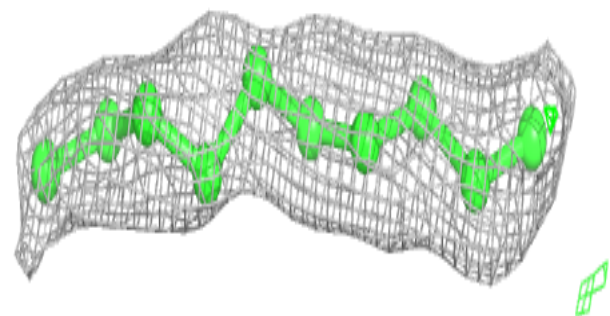
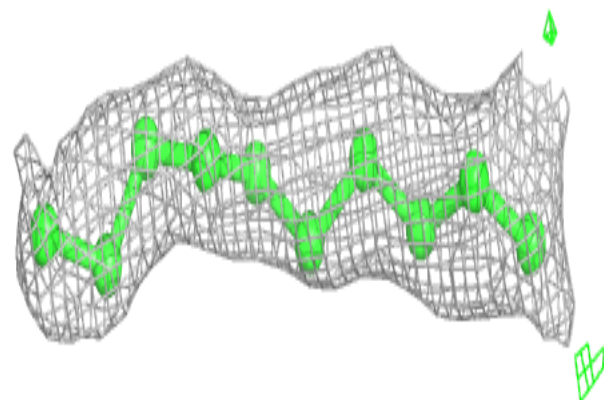


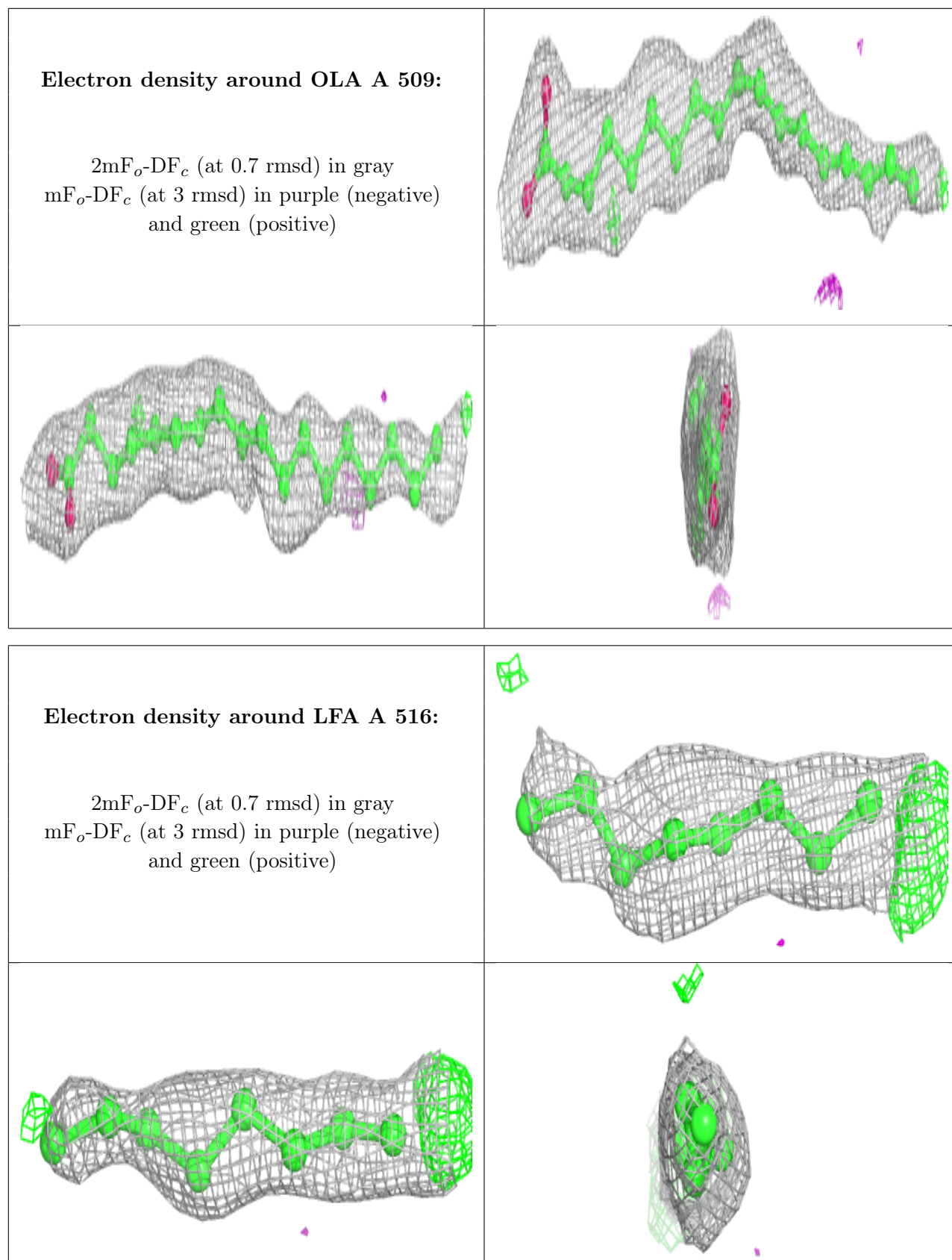
**Electron density around LFA C 919:**

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

**Electron density around LFA B 1022:**

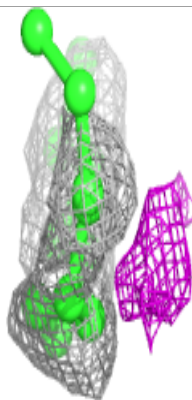
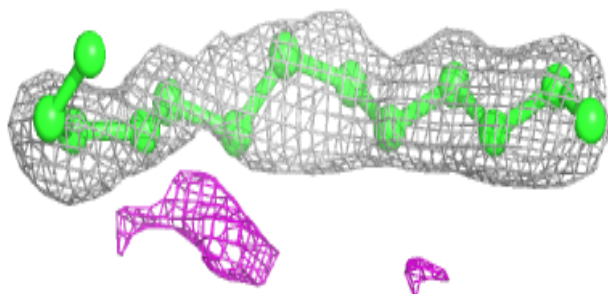
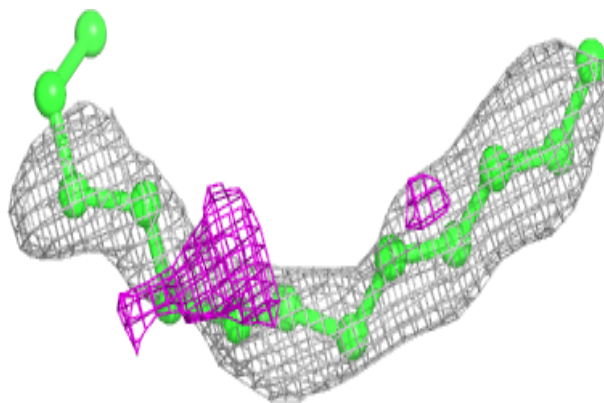
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



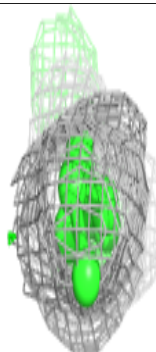
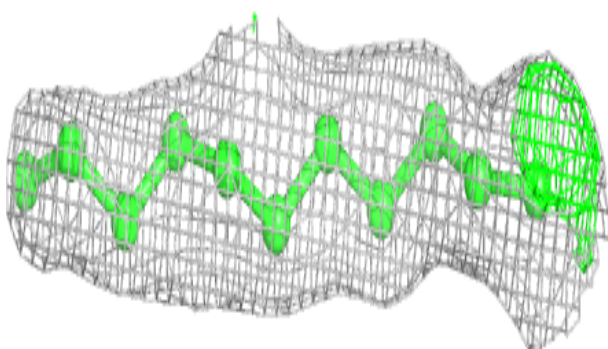
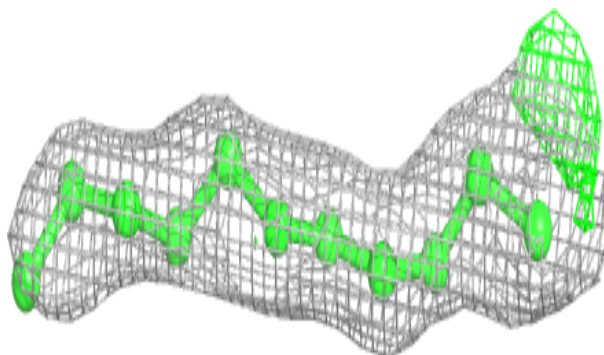


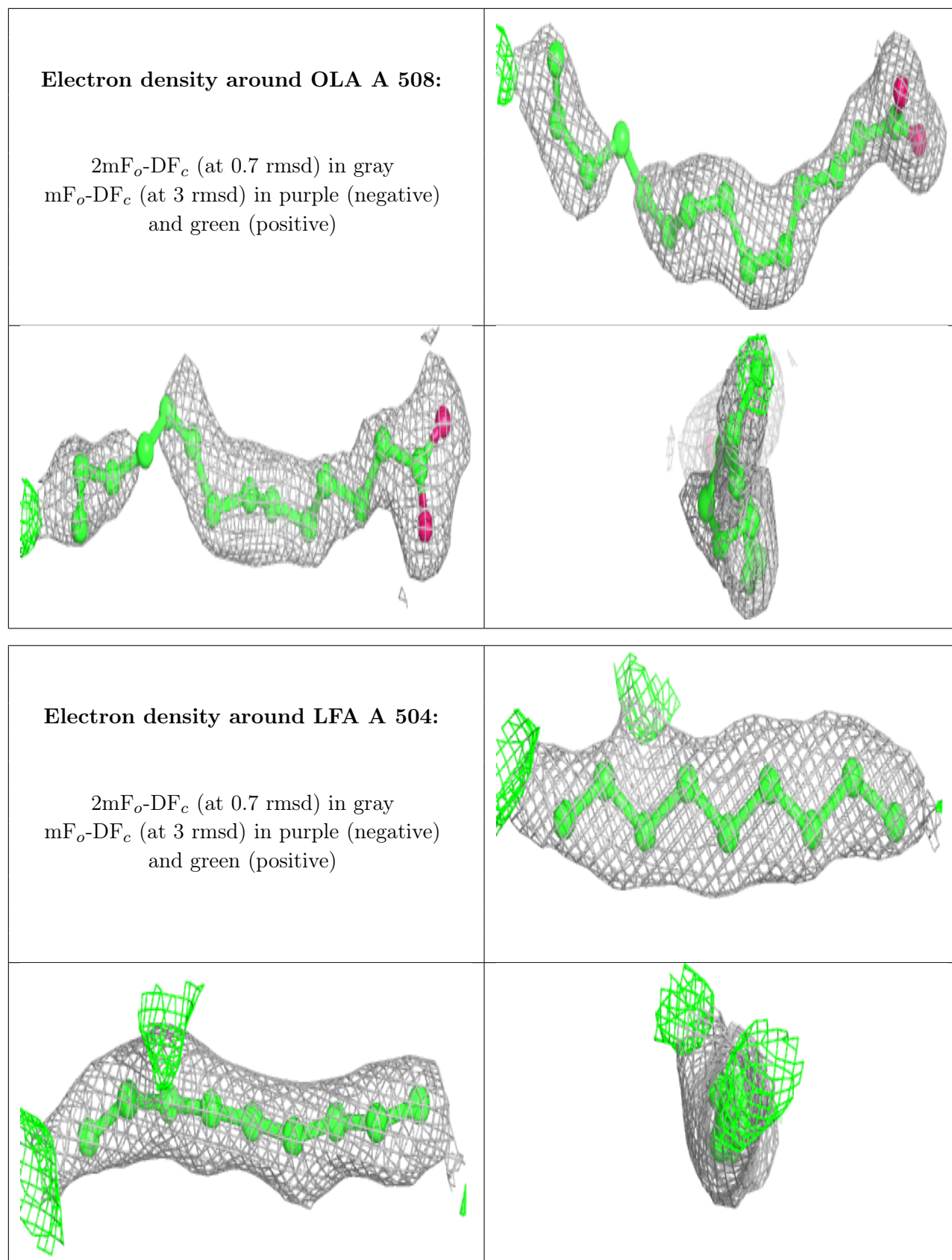
**Electron density around LFA C 902:**

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

**Electron density around LFA B 1023:**

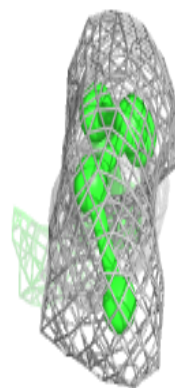
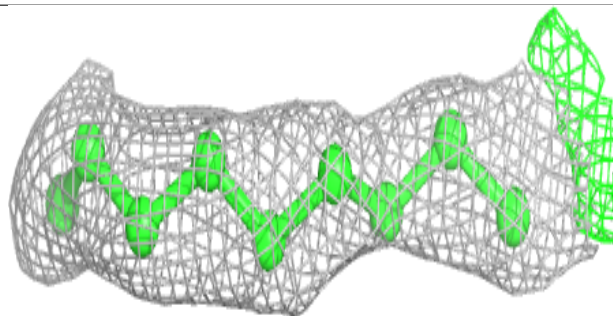
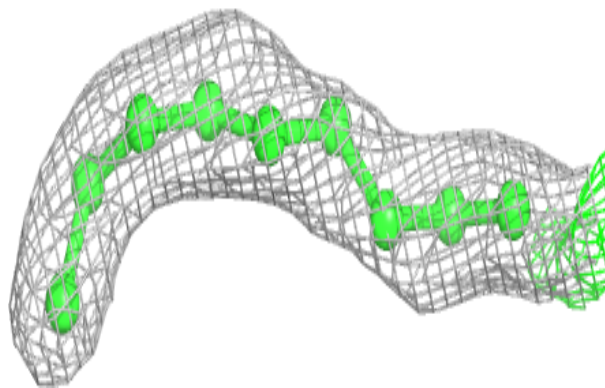
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



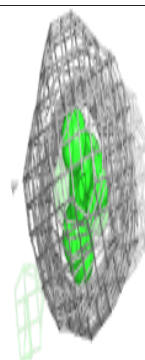
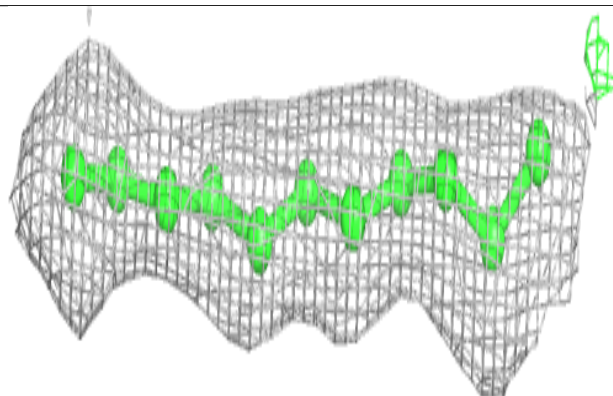
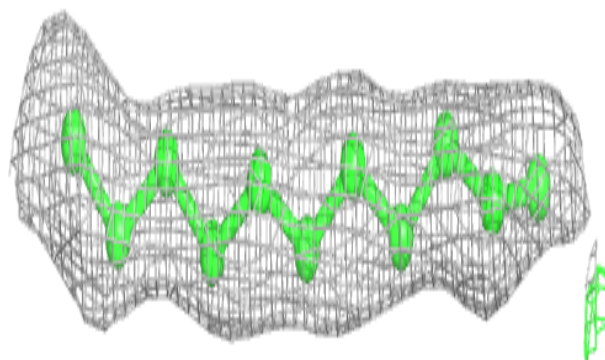


**Electron density around LFA A 505:**

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

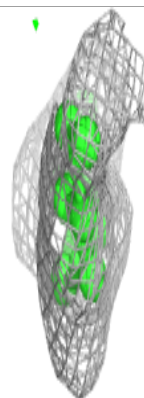
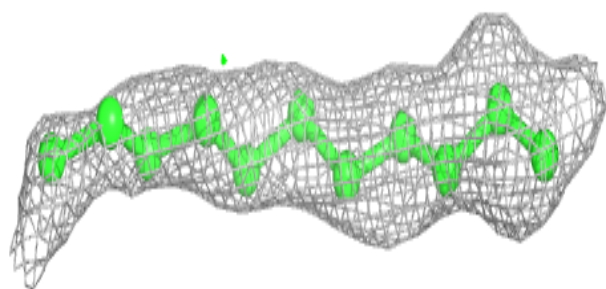
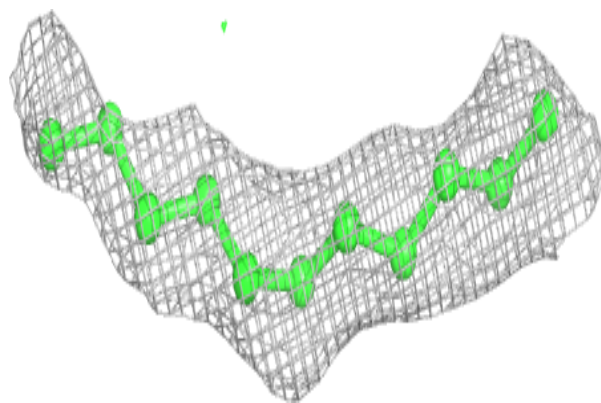
**Electron density around LFA B 1011:**

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

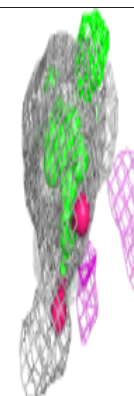
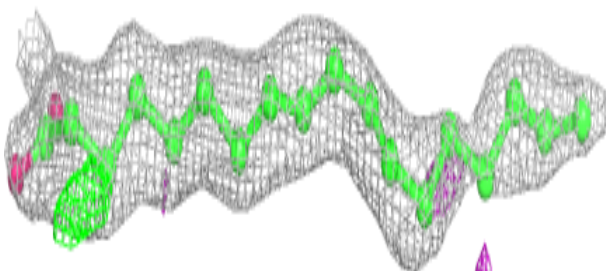
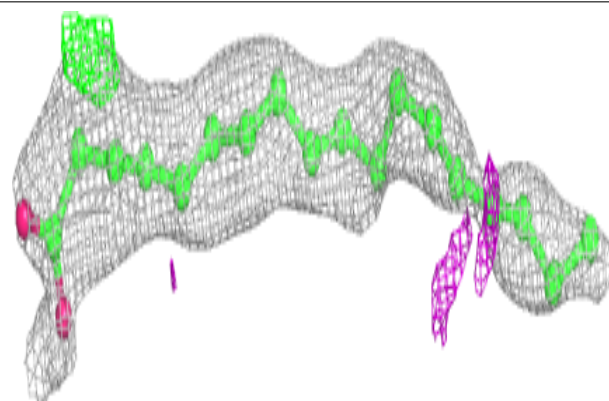


**Electron density around LFA B 1019:**

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

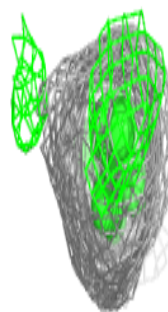
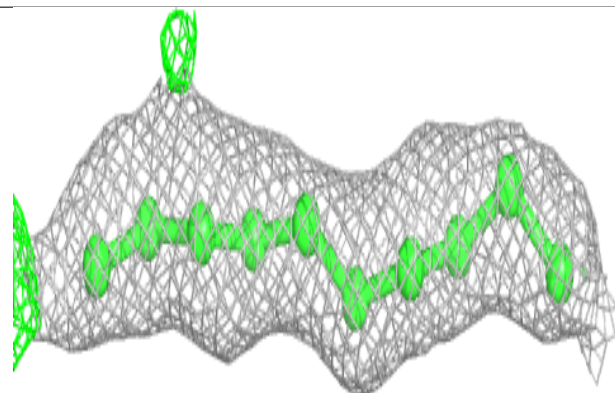
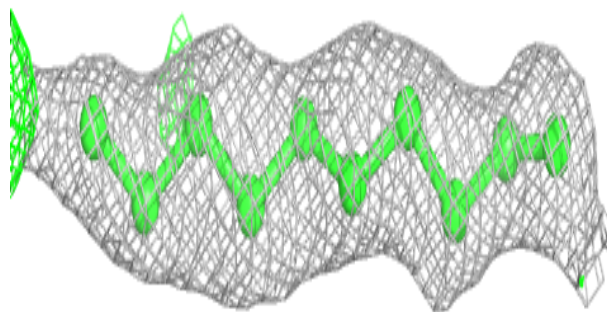
**Electron density around OLA C 903:**

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

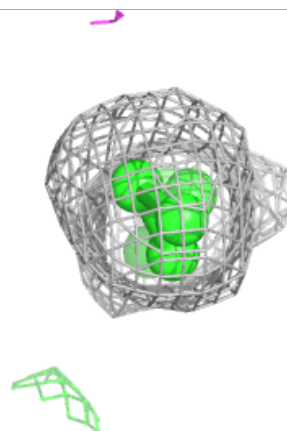
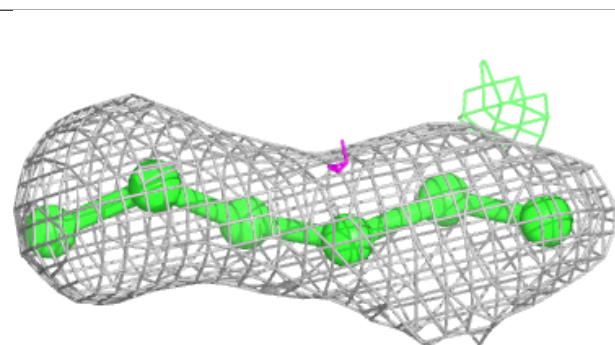
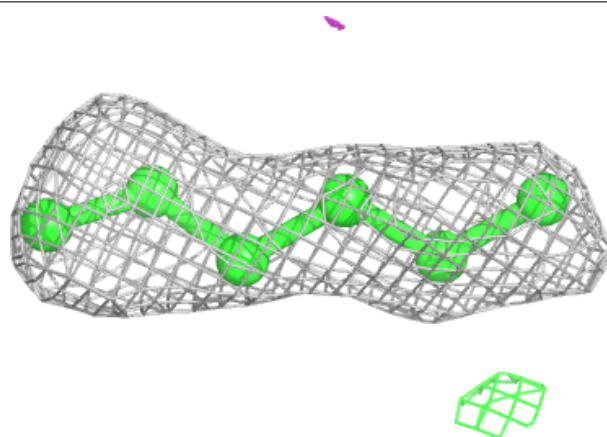


**Electron density around LFA C 906:**

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

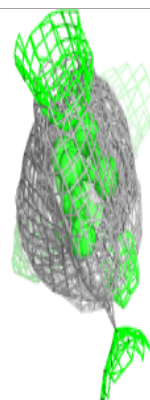
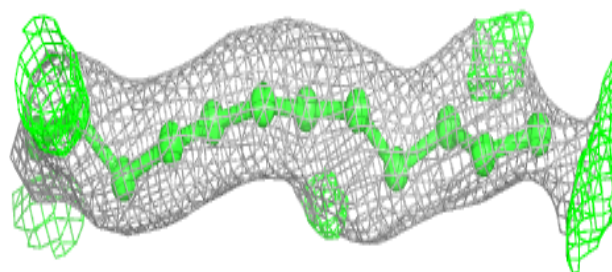
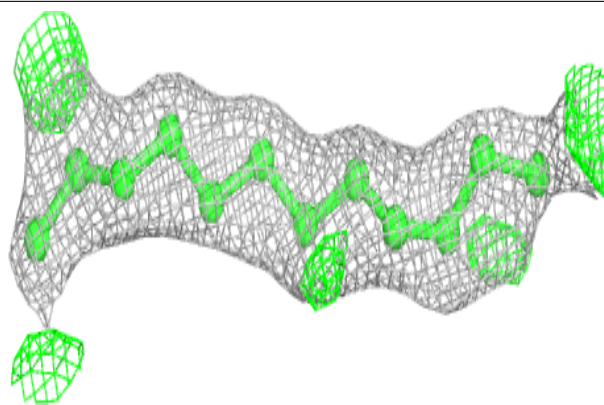
**Electron density around LFA B 1020:**

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

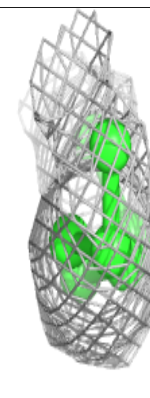
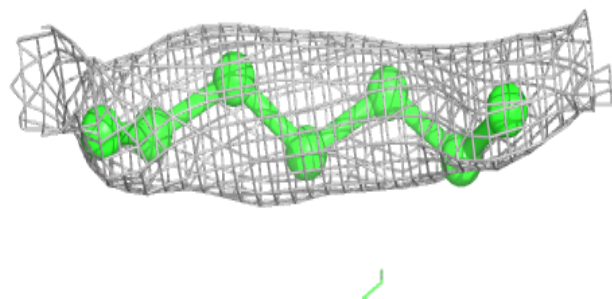
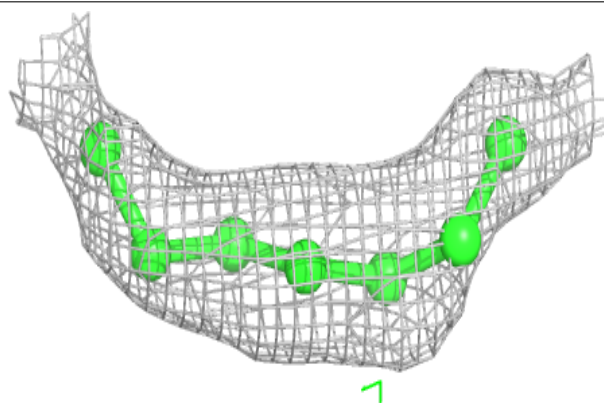


**Electron density around LFA A 513:**

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

**Electron density around LFA B 1002:**

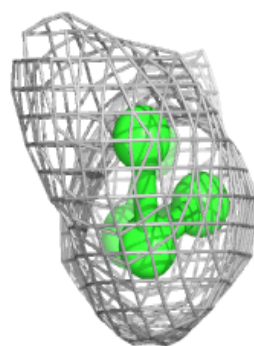
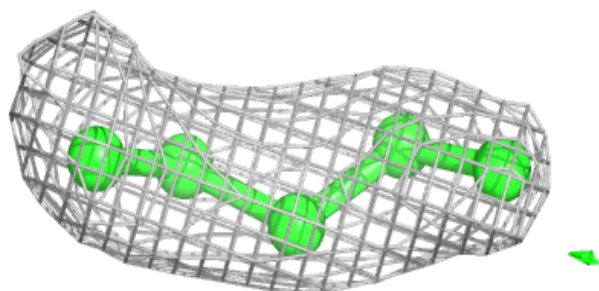
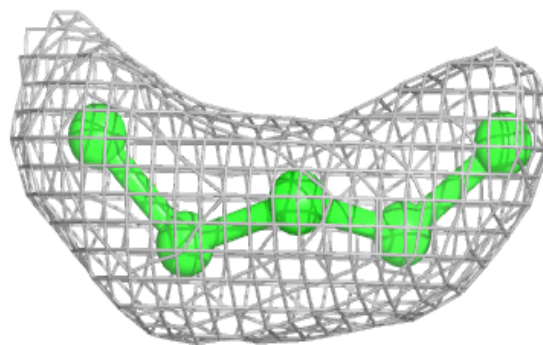
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



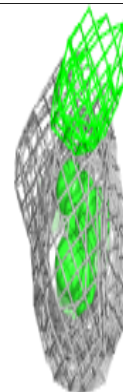
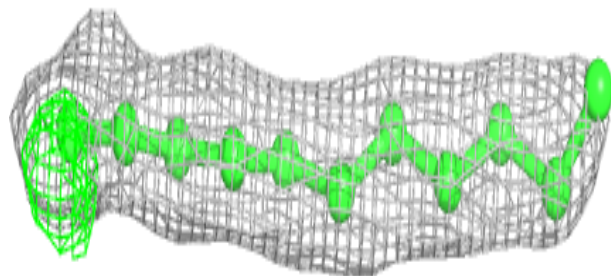
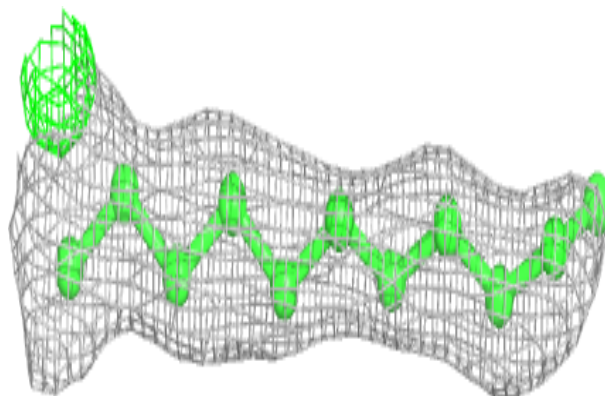


**Electron density around LFA C 907:**

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

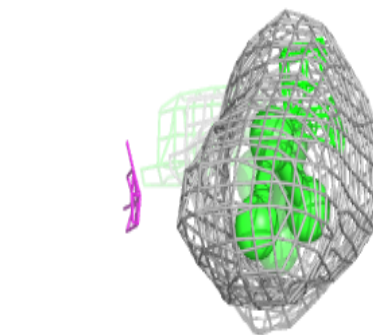
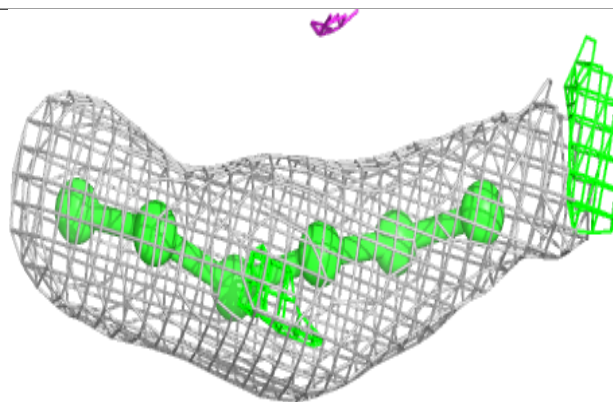
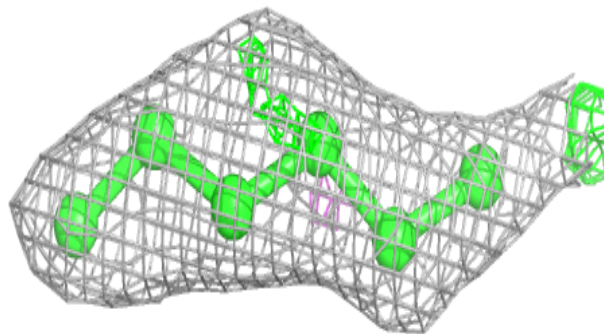
**Electron density around LFA C 915:**

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

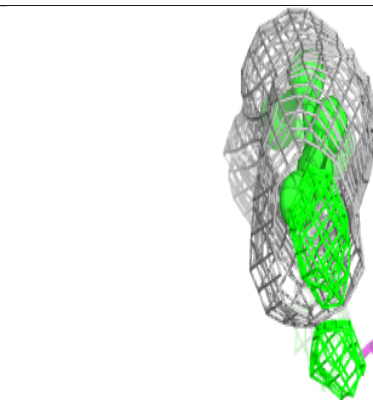
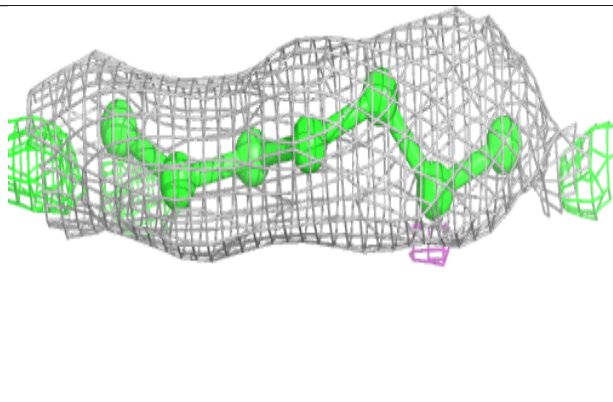
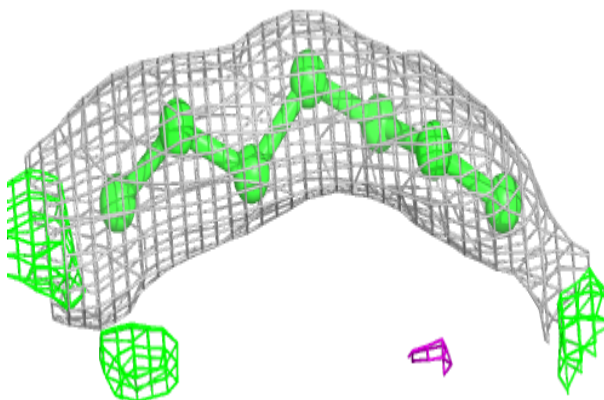


**Electron density around LFA A 501:**

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

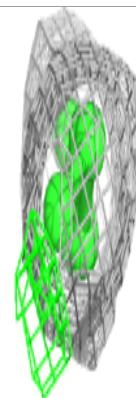
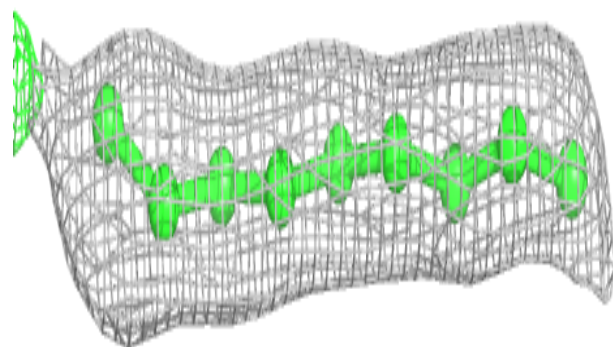
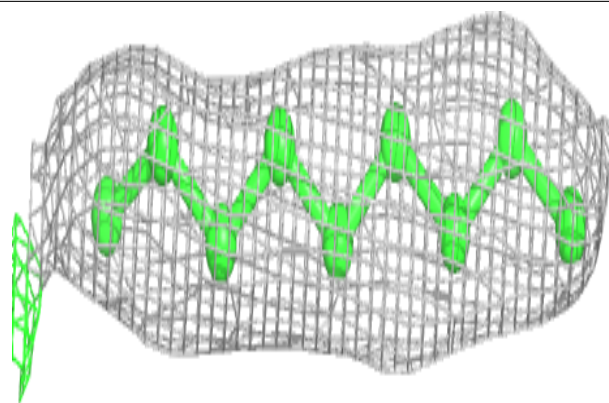
**Electron density around LFA B 1001:**

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

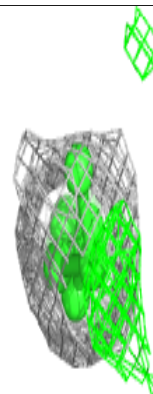
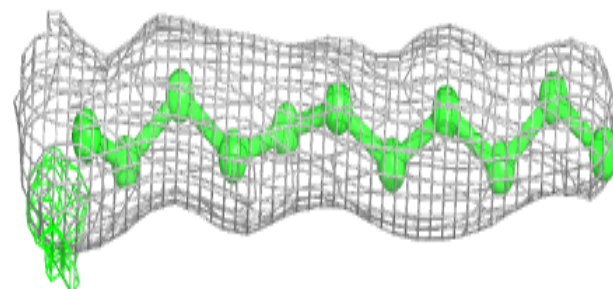
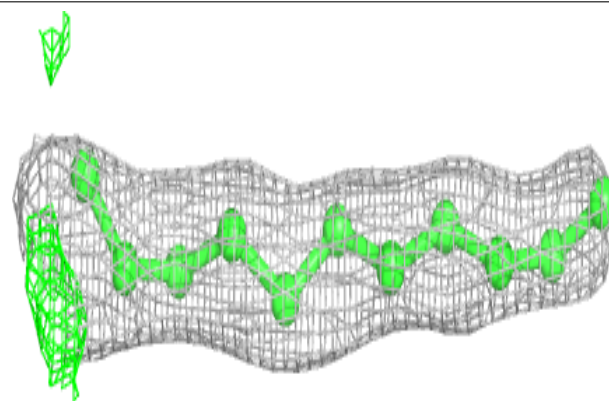


**Electron density around LFA B 1003:**

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

**Electron density around LFA A 510:**

$2mF_o-DF_c$  (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.