



Full wwPDB EM Validation Report ⓘ

Jun 16, 2025 – 11:27 PM JST

PDB ID : 7WFR / pdb_00007wfr
EMDB ID : EMD-32475
Title : Human Nav1.8 with A-803467, class III
Authors : Yan, N.; Pan, X.J.; Huang, X.S.; Huang, G.X.
Deposited on : 2021-12-27
Resolution : 3.00 Å(reported)

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A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

EMDB validation analysis : 0.0.1.dev118
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0rc1
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.44

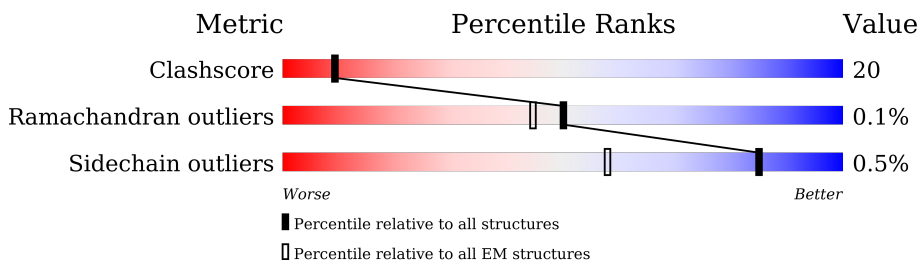
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.00 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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

Mol	Chain	Length	Quality of chain
1	A	1956	
2	B	2	
2	C	2	

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
4	95T	A	2004	-	-	X	-

2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 9748 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Sodium channel protein type 10 subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	1100	8861	5886	1413	1500	62	1	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	894	PHE	SER	conflict	UNP Q9Y5Y9

- Molecule 2 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



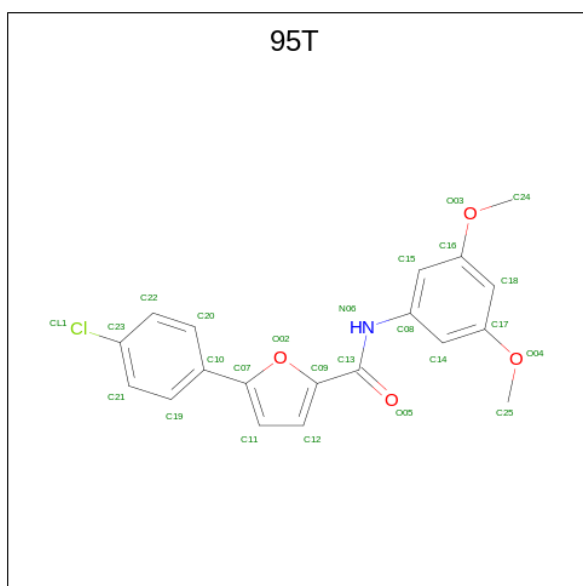
Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
2	B	2	28	16	2	10	0	0
2	C	2	28	16	2	10	0	0

- Molecule 3 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: C₈H₁₅NO₆).



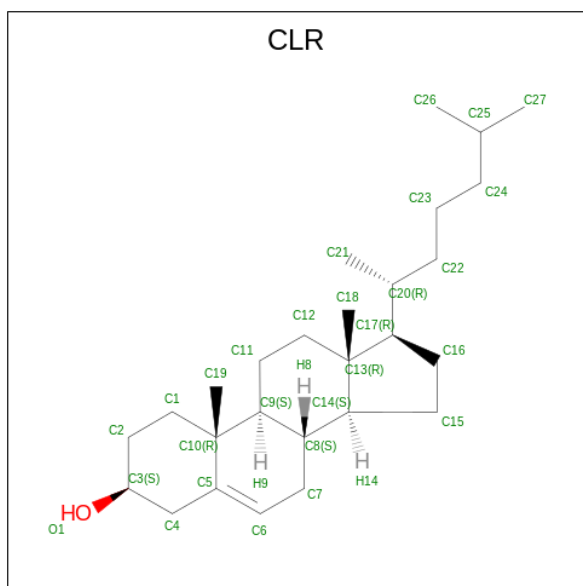
Mol	Chain	Residues	Atoms				AltConf
3	A	1	Total	C	N	O	0
			14	8	1	5	
3	A	1	Total	C	N	O	0
			14	8	1	5	
3	A	1	Total	C	N	O	0
			14	8	1	5	

- Molecule 4 is 5-(4-chlorophenyl)- {N}-(3,5-dimethoxyphenyl)furan-2-carboxamide (CCD ID: 95T) (formula: $C_{19}H_{16}ClNO_4$) (labeled as "Ligand of Interest" by depositor).



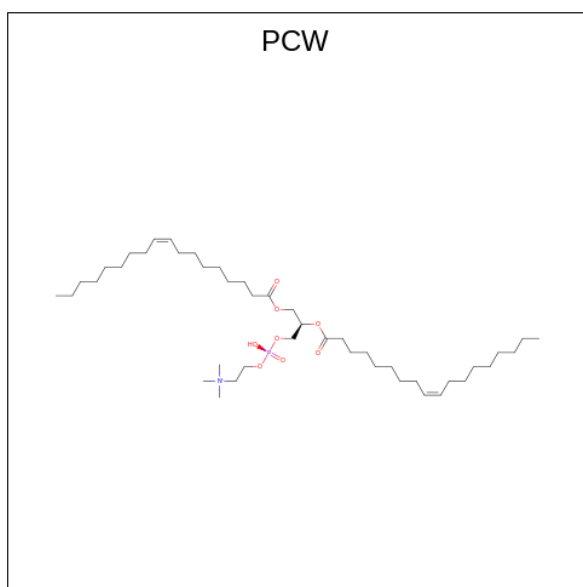
Mol	Chain	Residues	Atoms					AltConf
4	A	1	Total	C	Cl	N	O	0
			25	19	1	1	4	

- Molecule 5 is CHOLESTEROL (CCD ID: CLR) (formula: $C_{27}H_{46}O$).



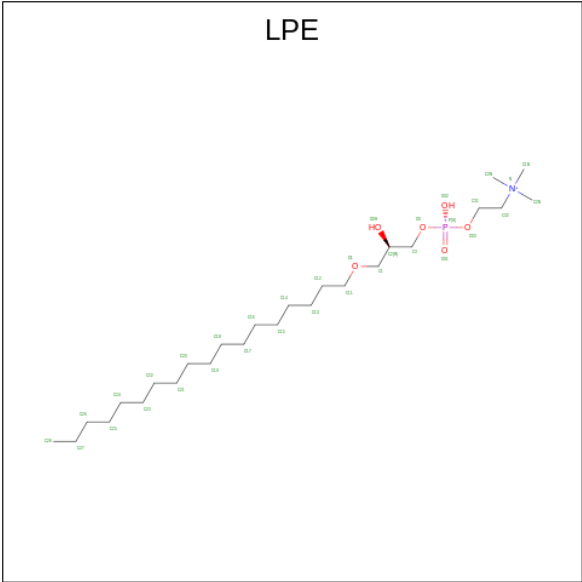
Mol	Chain	Residues	Atoms			AltConf
5	A	1	Total	C	O	0
			28	27	1	
5	A	1	Total	C	O	0
			28	27	1	
5	A	1	Total	C	O	0
			28	27	1	
5	A	1	Total	C	O	0
			28	27	1	
5	A	1	Total	C	O	0
			28	27	1	

- Molecule 6 is 1,2-DIOLEOYL-SN-GLYCERO-3-PHOSPHOCHOLINE (CCD ID: PCW) (formula: $C_{44}H_{85}NO_8P$).



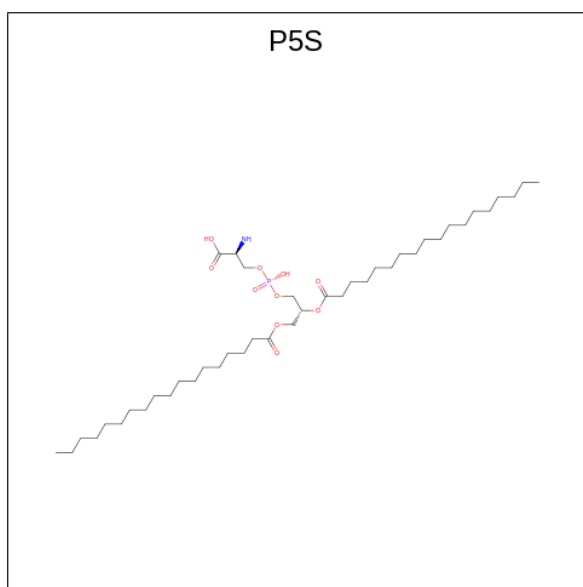
Mol	Chain	Residues	Atoms					AltConf
6	A	1	Total	C	N	O	P	0
			54	44	1	8	1	
6	A	1	Total	C	N	O	P	0
			47	37	1	8	1	
6	A	1	Total	C	O	P		0
			37	28	8	1		
6	A	1	Total	C	O	P		0
			41	32	8	1		
6	A	1	Total	C	N	O	P	0
			39	29	1	8	1	
6	A	1	Total	C	N	O	P	0
			40	30	1	8	1	
6	A	1	Total	C	N	O	P	0
			38	28	1	8	1	

- Molecule 7 is 1-O-OCTADECYL-SN-GLYCERO-3-PHOSPHOCHOLINE (CCD ID: LPE) (formula: $C_{26}H_{57}NO_6P$).



Mol	Chain	Residues	Atoms					AltConf
7	A	1	Total	C	N	O	P	0
			22	14	1	6	1	
7	A	1	Total	C	N	O	P	0
			22	14	1	6	1	
7	A	1	Total	C	N	O	P	0
			22	14	1	6	1	
7	A	1	Total	C	N	O	P	0
			22	14	1	6	1	
7	A	1	Total	C	O	P		0
			16	9	6	1		
7	A	1	Total	C	N	O	P	0
			23	15	1	6	1	
7	A	1	Total	C	N	O	P	0
			23	15	1	6	1	
7	A	1	Total	C	N	O	P	0
			34	26	1	6	1	
7	A	1	Total	C	N	O	P	0
			22	14	1	6	1	
7	A	1	Total	C	N	O	P	0
			22	14	1	6	1	
7	A	1	Total	C	N	O	P	0
			21	13	1	6	1	
7	A	1	Total	C	N	O	P	0
			34	26	1	6	1	

- Molecule 8 is O-[(R)-{[(2R)-2,3-bis(octadecanoyloxy)propyl]oxy}(hydroxy)phosphoryl]-L-serine (CCD ID: P5S) (formula: C₄₂H₈₂NO₁₀P).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
8	A	1	45	33	1	10	1	0

PRO	GLU	GLN	C1692	R1585	I1507	Y1442	G1356	P1245	V1137	GLY	ALA	LYS	ASN	P771
CYS	LEU	PHE	G1693	R1588	L1508	Y1443	L1360	R1250	G1138	VAL	GLN	ALA	LEU	THR
VAL	ASP	ILE	S1694	R1588	K1510	M1446	L1360	R1250	W1139	ASP	PHE	ASN	ALA	THR
PRO	ARG	PHE	P1695	G1592	I1511	K1447	V1363	R1253	Q1140	THR	GLN	HIS	PRO	GLN
ALA	LYS	SER	I1593	G1592	N1512	K1448	V1363	R1253	K1143	SER	GLN	ILE	ASP	GLU
GLU	ASN	LEU	R1594	R1594	Q1513	L1449	G1368	L1255	T1144	SER	GLU	ALA	ASP	ASP
GLU	MET	SER	T1595	T1595	F1514	G1450	W1369	R1256	C1145	SER	VAL	ALA	ASP	ASP
ALA	GLU	ASP	L1596	L1596	F1515	G1450	M1373	L1258	Y1146	GLY	ILE	ASN	GLY	GLY
ALA	GLU	PHE	T1703	F1597	S1451	S1451	M1374	L1258	R1147	VAL	LYS	ALA	VAL	GLY
LYS	LYS	ALA	T1704	F1598	K1452	K1452	V1377	L1261	V1148	THR	GLY	ARG	ASN	GLY
LEU	PHE	ASP	I1708	A1599	K1453	K1453	V1377	L1261	V1149	VAL	GLN	GLY	ASN	THR
PRO	MET	THR	S1709	M1600	P1454	P1454	V1377	L1261	V1149	VAL	GLN	GLY	ASN	THR
ASP	ALA	LEU	F1710	M1601	Q1455	Q1455	R1380	V1284	W1153	ASP	GLU	SER	LEU	THR
THR	THR	SER	K1526	L1604	E1381	E1381	R1380	L1286	W1153	CYS	GLU	SER	GLN	GLY
GLY	ASN	GLY	M1527	P1605	K1456	K1456	E1381	L1286	W1153	LEU	GLN	SER	GLN	VAL
PHE	LEU	PRO	V1714	A1606	P1457	P1457	M1384	L1289	I1158	ASP	LEU	GLY	ALA	VAL
VAL	SER	LEU	W1715	I1610	Q1385	Q1385	M1384	L1289	I1158	PRO	GLN	LEU	ALA	ALA
ALA	LYS	ARG	M1716	I1610	R1531	P1459	Q1385	I1290	M1161	GLU	GLN	LEU	ALA	ARG
THR	SER	ILE	Y1717	L1613	Q1532	R1460	Y1393	F1294	I1162	ILE	VAL	PRO	ILE	ILE
ALA	TYR	LYS	A1719	I1613	Y1533	P1461	M1394	I1289	E1171	ARG	GLN	ARG	GLY	VAL
ASN	GLU	PRO	V1720	V1617	Y1533	L1462	L1396	S1296	E1172	GLY	GLY	PRO	PHE	GLY
GLU	GLU	ASN	I1721	S1628	G1538	N1463	Y1397	I1297	L1176	ILE	ASP	ARG	GLY	ASP
ASN	ILE	ARG	L1722	S1628	M1537	K1464	F1398	I1297	L1176	PRO	HIS	ASP	HIS	ASP
CYS	ALA	ASN	E1723	S1628	W1539	F1464	F1398	V1300	L1186	GLU	GLU	GLU	ARG	ARG
VAL	THR	ILE	N1724	V1632	M1540	F1465	V1399	V1300	L1186	LEU	THR	HIS	THR	THR
LEU	THR	LEU	F1725	E1635	V1541	Q1466	I1400	K1306	T1189	ALA	PRO	LYS	LYS	LYS
PRO	LEU	ILE	F1725	E1635	F1542	Q1466	F1401	F1307	D1190	ASP	ARG	ASP	GLN	GLN
ASP	ARG	GLN	N1726	M1641	I1545	G1467	I1402	W1308	R1191	LEU	SER	PHE	ALA	ALA
LYS	TRP	MET	N1727	M1641	I1546	F1468	I1403	R1309	R1191	ASP	PRO	ILE	LEU	LEU
SER	GLN	ASP	A1728	M1641	V1547	F1469	F1404	C1310	V1192	GLY	GLY	ALA	CYS	CYS
GLU	GLN	LEU	THR	L1652	I1551	D1471	F1407	G1310	W1192	GLU	THR	ASN	SER	SER
GLU	GLU	GLU	THR	L1652	A1552	I1472	F1408	I1311	E1200	PRO	GLY	THR	PHE	PHE
ASP	ASP	LEU	GLU	L1659	I1552	I1472	T1409	M1312	E1200	THR	GLY	THR	PHE	PHE
SER	ILE	VAL	SER	S1660	F1556	I1475	L1410	Y1313	E1200	ASP	SER	VAL	SER	ARG
ALA	SER	PRO	THR	S1660	F1556	I1475	N1411	T1314	K1203	CYS	SER	TRP	ARG	ARG
THR	ALA	GLY	THR	W1663	F1566	R1475	M1411	D1315	K1204	THR	GLU	TRP	VAL	VAL
PRO	THR	GLY	THR	D1664	L1560	D1479	F1413	F1318	F1210	THR	LYS	GLY	ASP	ASP
ASP	THR	ASP	PRO	G1665	K1561	I1480	F1413	S1319	K1211	GLY	GLU	GLY	ASP	ASP
PHE	VAL	LEU	LEU	L1666	S1562	T1481	V1414	L1320	K1211	GLY	THR	THR	GLU	ALA
ILE	PRO	ILE	SER	L1666	L1563	I1482	V1416	L1320	K1211	PRO	THR	ASP	GLU	ALA
GLU	GLN	HIS	GLU	P1669	Q1564	M1483	I1417	V1326	W1220	CYS	LYS	SER	LEU	LEU
ASP	ALA	CYS	ASP	P1669	V1484	L1485	I1418	N1327	W1220	ILE	ASP	ALA	GLN	GLN
ASP	ALA	LEU	ASP	N1672	L1485	L1485	I1418	N1327	W1220	ARG	SER	LEU	PRO	PRO
ASP	TYR	LEU	ASP	C1678	L1488	L1488	K1425	S1330	L1224	THR	GLY	GLY	GLU	GLU
PHE	VAL	PHE	THR	D1679	M1489	M1489	K1426	D1331	L1224	HIS	GLY	GLY	GLU	GLU
VAL	VAL	ALA	TYR	P1680	M1490	M1490	K1427	C1332	M1227	CYS	THR	THR	GLU	ALA
GLY	LEU	PHE	GLU	P1680	I1491	I1491	L1428	K1333	I1228	PRO	THR	ASP	GLU	ALA
HIS	LEU	THR	THR	N1681	T1492	T1492	G1429	L1230	S1229	LYS	TRP	SER	ASP	ASP
THR	THR	THR	THR	L1682	M1493	M1493	G1430	I1231	L1231	CYS	LYS	ASP	ASP	ASP
TRP	TRP	LYS	TRP	L1682	M1493	M1493	G1430	I1231	L1231	LEU	VAL	ASP	ASP	ASP
GLU	GLU	ASN	GLU	P1683	M1494	M1494	G1430	I1231	L1231	ASP	VAL	ASP	ASP	ASP
LYS	LYS	VAL	LYS	N1684	V1495	V1495	Q1431	Q1335	T1234	THR	VAL	GLU	LEU	LYS
PHE	PHE	LEU	PHE	I1574	E1496	E1496	Q1431	Q1335	T1234	THR	VAL	GLU	LEU	LYS
ASP	ASP	GLY	ASP	S1685	T1497	T1497	D1432	V1343	L1238	LYS	VAL	ASP	ASP	ASP
PRO	PRO	GLU	PRO	N1686	T1497	T1497	D1432	V1343	L1238	LYS	VAL	ASP	ASP	ASP
GLU	GLU	ASN	GLU	G1687	D1498	D1498	M1435	M1345	E1239	THR	VAL	GLY	GLY	GLY
ALA	ALA	THR	ALA	T1688	R1579	R1579	T1436	N1346	W1241	TRP	GLU	GLY	GLY	GLY
THR	THR	THR	THR	R1689	R1582	R1582	E1437	V1346	E1242	ASP	GLU	ASP	ASP	ASP

SER
SER
SER
ILE
GLN
ASN
GLU
ASP
GLU
ALA
THR
SER
MET
GLU
LEU
ILE
ALA
PRO
GLY
PRO

- Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



NAG1
NAG2

- Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



NAG1
NAG2

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	274882	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	1800	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.088	Depositor
Minimum map value	-0.044	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.0217	Depositor
Map size (Å)	259.8, 259.8, 259.8	wwPDB
Map dimensions	240, 240, 240	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.0825, 1.0825, 1.0825	Depositor

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: P5S, 95T, CLR, NAG, LPE, PCW

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	0.27	0/9083	0.61	8/12318 (0.1%)

There are no bond length outliers.

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	205	ALA	N-CA-C	11.48	123.54	111.14
1	A	1632	VAL	N-CA-C	10.50	121.50	110.05
1	A	1685	SER	N-CA-C	7.61	121.54	110.28
1	A	1210	PHE	N-CA-C	6.89	119.38	111.11
1	A	1628	SER	N-CA-C	6.13	118.04	111.36
1	A	652	VAL	N-CA-C	5.44	116.17	110.62
1	A	1332	CYS	N-CA-C	-5.10	105.84	111.71
1	A	151	ASP	N-CA-C	5.06	117.06	110.43

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	8861	0	9051	323	0
2	B	28	0	25	3	0
2	C	28	0	25	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	A	42	0	39	5	0
4	A	25	0	0	11	0
5	A	140	0	230	39	0
6	A	296	0	396	63	0
7	A	283	0	391	35	0
8	A	45	0	56	5	0
All	All	9748	0	10213	397	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 20.

All (397) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:2004:95T:C11	6:A:2013:PCW:H141	1.80	1.11
1:A:382:PHE:HE2	6:A:2006:PCW:H221	1.03	1.11
7:A:2011:LPE:H151	7:A:2012:LPE:H131	1.30	1.10
6:A:2016:PCW:H331	6:A:2016:PCW:H2	1.37	1.06
1:A:1418:ILE:CD1	5:A:2028:CLR:H17	1.87	1.03
1:A:382:PHE:CE2	6:A:2006:PCW:H221	1.96	1.01
1:A:382:PHE:CD2	6:A:2006:PCW:H242	2.02	0.94
1:A:1713:MET:HE1	4:A:2004:95T:O02	1.68	0.92
1:A:393:LEU:HD23	5:A:2028:CLR:H191	1.50	0.91
1:A:1410:LEU:HD21	6:A:2013:PCW:H20	1.54	0.89
1:A:371:LYS:HE2	1:A:1641:MET:CG	2.03	0.88
6:A:2016:PCW:H2	6:A:2016:PCW:C33	2.05	0.87
1:A:696:MET:HE1	7:A:2025:LPE:H31	1.55	0.87
1:A:1418:ILE:HD11	5:A:2028:CLR:H17	1.57	0.86
1:A:371:LYS:HE2	1:A:1641:MET:HG3	1.56	0.84
3:A:2001:NAG:O7	3:A:2001:NAG:O3	1.95	0.84
1:A:1418:ILE:HD11	5:A:2028:CLR:H122	1.59	0.82
1:A:371:LYS:CE	1:A:1641:MET:HG3	2.10	0.81
1:A:200:ALA:O	1:A:204:THR:HG23	1.80	0.81
7:A:2009:LPE:O31	7:A:2009:LPE:H3N3	1.80	0.80
1:A:1435:MET:HE2	1:A:1605:PRO:HB2	1.63	0.80
1:A:1716:MET:SD	4:A:2004:95T:C24	2.70	0.79
1:A:1306:LYS:HG2	1:A:1380:ARG:O	1.82	0.79
1:A:748:LYS:HB2	1:A:751:SER:HB3	1.65	0.78
1:A:1497:THR:HG21	5:A:2027:CLR:H12	1.65	0.78
1:A:1678:CYS:SG	1:A:1692:CYS:N	2.57	0.78
7:A:2011:LPE:H151	7:A:2012:LPE:C13	2.11	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:2019:PCW:O4P	6:A:2019:PCW:H32	1.82	0.78
6:A:2019:PCW:H19	6:A:2019:PCW:H40	1.67	0.77
1:A:1238:LEU:HD12	1:A:1239:GLU:H	1.50	0.77
1:A:1284:VAL:HG11	1:A:1416:VAL:HG21	1.67	0.77
1:A:1418:ILE:HD13	5:A:2028:CLR:H17	1.66	0.76
1:A:1713:MET:CE	4:A:2004:95T:C19	2.65	0.74
7:A:2023:LPE:H322	8:A:2029:P5S:C	2.18	0.74
1:A:1501:SER:HB3	6:A:2026:PCW:O1P	1.87	0.74
1:A:1410:LEU:HD11	6:A:2013:PCW:H221	1.69	0.73
1:A:1713:MET:HE1	4:A:2004:95T:C19	2.17	0.73
7:A:2023:LPE:H322	8:A:2029:P5S:O	1.87	0.73
1:A:761:LEU:HD11	5:A:2017:CLR:H231	1.70	0.72
1:A:1700:ILE:O	1:A:1704:THR:HG23	1.89	0.72
7:A:2010:LPE:C3	7:A:2011:LPE:H321	2.19	0.71
4:A:2004:95T:C12	6:A:2013:PCW:H141	2.20	0.71
1:A:1721:ILE:CD1	5:A:2028:CLR:H183	2.21	0.71
1:A:382:PHE:CE2	6:A:2006:PCW:H242	2.25	0.71
6:A:2016:PCW:C47	5:A:2017:CLR:H262	2.21	0.71
1:A:1413:PHE:O	1:A:1417:ILE:HG12	1.91	0.70
5:A:2017:CLR:O1	5:A:2017:CLR:H192	1.92	0.69
1:A:1678:CYS:SG	1:A:1679:ASP:N	2.65	0.69
7:A:2009:LPE:H3N3	7:A:2009:LPE:P	2.33	0.69
1:A:331:ASN:HB2	1:A:335:ASN:HA	1.75	0.68
1:A:1255:LEU:HG	1:A:1258:LEU:HD12	1.75	0.68
1:A:393:LEU:CD2	5:A:2028:CLR:H191	2.24	0.68
1:A:1594:ARG:HD2	6:A:2006:PCW:O2P	1.93	0.68
7:A:2010:LPE:H32	7:A:2011:LPE:H3N2	1.73	0.68
1:A:391:LEU:HD13	1:A:1596:LEU:HD13	1.76	0.68
7:A:2010:LPE:O32	7:A:2011:LPE:H3N2	1.94	0.68
1:A:1398:PHE:O	1:A:1402:ILE:HG13	1.94	0.67
1:A:857:CYS:HA	1:A:860:VAL:HG12	1.77	0.67
1:A:775:THR:HA	1:A:778:LYS:HD3	1.75	0.67
1:A:784:VAL:CG1	7:A:2014:LPE:H162	2.24	0.67
1:A:371:LYS:HE2	1:A:1641:MET:HG2	1.77	0.67
1:A:1243:VAL:HG22	1:A:1245:PRO:HD2	1.76	0.66
1:A:1721:ILE:HD12	5:A:2028:CLR:H183	1.77	0.66
1:A:382:PHE:HD2	6:A:2006:PCW:H242	1.58	0.66
1:A:1326:VAL:HG23	1:A:1327:ASN:H	1.61	0.66
1:A:1721:ILE:CD1	5:A:2028:CLR:C18	2.74	0.66
1:A:1503:GLU:OE2	1:A:1503:GLU:N	2.27	0.66
6:A:2019:PCW:C2	6:A:2019:PCW:H332	2.25	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1571:LEU:O	1:A:1575:ILE:HG12	1.96	0.65
1:A:1158:ILE:O	1:A:1162:ILE:HG13	1.97	0.64
1:A:888:LEU:HB3	1:A:1411:ASN:HD21	1.62	0.64
1:A:1393:TYR:OH	6:A:2018:PCW:H73	1.98	0.64
1:A:352:LEU:HD23	1:A:358:TRP:HB2	1.79	0.64
1:A:749:LYS:HE3	1:A:749:LYS:HA	1.77	0.64
1:A:328:THR:HG22	1:A:329:SER:H	1.61	0.64
1:A:1696:ALA:HB3	6:A:2019:PCW:O3P	1.98	0.64
5:A:2017:CLR:H221	5:A:2017:CLR:H263	1.80	0.62
1:A:1601:MET:HB2	6:A:2006:PCW:H151	1.80	0.62
1:A:1713:MET:HE3	4:A:2004:95T:C19	2.29	0.62
1:A:1488:LEU:O	1:A:1492:THR:HG23	2.00	0.62
1:A:1410:LEU:HD21	6:A:2013:PCW:C20	2.28	0.62
1:A:175:ARG:HD2	1:A:175:ARG:O	2.00	0.62
1:A:1507:ILE:O	1:A:1511:ILE:HG13	1.99	0.61
1:A:1137:VAL:HA	1:A:1140:GLN:HE21	1.64	0.61
1:A:1230:LEU:O	1:A:1234:THR:HG23	2.01	0.61
6:A:2019:PCW:H19	6:A:2019:PCW:C40	2.30	0.61
1:A:679:THR:OG1	5:A:2005:CLR:H271	2.01	0.60
1:A:1664:ASP:OD2	1:A:1665:GLY:N	2.34	0.60
1:A:275:LYS:HE2	1:A:328:THR:HG21	1.84	0.60
1:A:1418:ILE:HD11	5:A:2028:CLR:C12	2.31	0.60
3:A:2001:NAG:HO3	3:A:2001:NAG:C7	2.08	0.60
6:A:2019:PCW:H332	6:A:2019:PCW:C3	2.31	0.60
1:A:1140:GLN:O	1:A:1144:THR:HG23	2.00	0.60
1:A:1310:CYS:H	1:A:1385:GLN:HE22	1.50	0.60
1:A:1572:PHE:O	1:A:1576:ARG:HG3	2.00	0.60
1:A:371:LYS:HD3	1:A:1652:LEU:HD11	1.84	0.59
1:A:865:ILE:HD12	1:A:865:ILE:H	1.67	0.59
1:A:1598:PHE:CD2	6:A:2006:PCW:H72	2.38	0.59
1:A:1541:VAL:O	1:A:1545:ILE:HG13	2.03	0.59
1:A:844:ARG:HG2	1:A:849:GLU:HB2	1.85	0.59
7:A:2010:LPE:O32	7:A:2011:LPE:C3N	2.50	0.59
1:A:1495:VAL:HA	5:A:2027:CLR:H122	1.84	0.58
1:A:1285:LEU:O	1:A:1289:LEU:HG	2.03	0.58
1:A:1227:ASN:O	1:A:1231:ILE:HG13	2.04	0.58
6:A:2013:PCW:O4P	7:A:2014:LPE:H1N1	2.04	0.58
6:A:2016:PCW:H411	5:A:2017:CLR:H212	1.85	0.58
6:A:2019:PCW:H332	6:A:2019:PCW:O3	2.03	0.58
1:A:1224:LEU:O	1:A:1228:ILE:HG13	2.04	0.58
7:A:2010:LPE:H32	7:A:2011:LPE:H321	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1253:ARG:HH21	1:A:1256:ARG:HH12	1.51	0.57
1:A:1288:CYS:SG	1:A:1409:THR:HG23	2.44	0.57
1:A:1313:TYR:HD2	1:A:1318:PHE:HB3	1.69	0.57
1:A:675:ILE:O	1:A:679:THR:HG23	2.04	0.57
1:A:1699:ILE:O	1:A:1703:THR:HG23	2.03	0.57
1:A:1704:THR:O	1:A:1708:ILE:HG13	2.04	0.57
1:A:1547:VAL:O	1:A:1551:ILE:HG12	2.04	0.57
1:A:1200:GLU:OE1	1:A:1204:LYS:HE3	2.05	0.56
1:A:1381:GLU:HB2	1:A:1384:MET:HE2	1.85	0.56
1:A:159:VAL:O	1:A:162:VAL:HG22	2.06	0.56
1:A:161:THR:O	1:A:165:THR:HG23	2.05	0.56
1:A:1717:TYR:O	1:A:1721:ILE:HG13	2.06	0.56
1:A:1238:LEU:CD1	1:A:1239:GLU:H	2.18	0.56
1:A:187:ASP:HB3	1:A:190:ASN:HB2	1.87	0.56
1:A:735:ILE:CD1	5:A:2017:CLR:H151	2.36	0.56
1:A:361:LEU:O	1:A:365:THR:HG23	2.06	0.56
7:A:2011:LPE:H131	7:A:2012:LPE:H141	1.88	0.55
1:A:247:ALA:HB1	7:A:2011:LPE:H311	1.88	0.55
1:A:1700:ILE:HD13	6:A:2019:PCW:H371	1.88	0.55
1:A:1144:THR:O	1:A:1148:ILE:HG13	2.07	0.55
1:A:1363:VAL:HA	1:A:1369:TRP:HB3	1.89	0.54
1:A:1442:TYR:CE2	7:A:2009:LPE:H312	2.41	0.54
6:A:2016:PCW:H331	6:A:2016:PCW:C2	2.23	0.54
1:A:1330:SER:O	1:A:1334:ILE:HD12	2.06	0.54
1:A:1721:ILE:HD13	5:A:2028:CLR:C18	2.37	0.54
1:A:1696:ALA:CB	6:A:2019:PCW:O3P	2.56	0.54
1:A:328:THR:HG22	1:A:329:SER:N	2.23	0.54
1:A:393:LEU:HD12	1:A:882:LEU:HD11	1.90	0.54
1:A:771:PRO:O	1:A:775:THR:HG23	2.08	0.54
1:A:1296:SER:O	1:A:1300:VAL:HG23	2.08	0.54
1:A:1313:TYR:CD2	1:A:1318:PHE:HB3	2.43	0.54
1:A:1394:MET:HE2	1:A:1394:MET:HA	1.89	0.54
5:A:2028:CLR:H121	5:A:2028:CLR:H212	1.89	0.54
1:A:224:LYS:O	1:A:228:VAL:HG23	2.07	0.54
6:A:2026:PCW:H371	6:A:2026:PCW:H141	1.90	0.53
1:A:665:PRO:O	1:A:668:GLU:HG2	2.08	0.53
8:A:2029:P5S:H44	8:A:2029:P5S:H22	1.91	0.53
1:A:813:TYR:HA	1:A:860:VAL:HG21	1.91	0.53
1:A:1190:ASP:OD2	1:A:1191:ARG:N	2.42	0.53
1:A:1443:TYR:HE2	1:A:1723:GLU:OE1	1.92	0.53
1:A:1538:GLY:HA3	6:A:2007:PCW:O31	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1503:GLU:O	1:A:1507:ILE:HG13	2.09	0.53
1:A:219:VAL:HG21	1:A:804:VAL:HG22	1.91	0.52
1:A:1404:PHE:HA	1:A:1408:PHE:HD2	1.72	0.52
7:A:2010:LPE:H31	7:A:2011:LPE:H321	1.89	0.52
2:B:1:NAG:H5	2:B:2:NAG:O5	2.08	0.52
1:A:1594:ARG:HG2	6:A:2006:PCW:H12	1.92	0.52
1:A:226:VAL:HA	1:A:232:LEU:HD22	1.91	0.52
1:A:1500:GLN:O	6:A:2026:PCW:C6	2.57	0.52
1:A:1356:GLY:O	1:A:1360:LEU:HG	2.10	0.52
1:A:1395:TYR:O	1:A:1399:VAL:HG23	2.10	0.52
1:A:1261:LEU:HD12	1:A:1261:LEU:H	1.74	0.52
1:A:1291:PHE:HE1	1:A:1295:PHE:HE1	1.57	0.52
1:A:1721:ILE:HD13	5:A:2028:CLR:H183	1.92	0.52
1:A:869:LEU:O	1:A:873:VAL:HG23	2.09	0.51
1:A:891:ASN:OD1	1:A:892:SER:N	2.43	0.51
1:A:1418:ILE:HD11	5:A:2028:CLR:C17	2.36	0.51
1:A:216:THR:O	1:A:219:VAL:HG22	2.10	0.51
6:A:2019:PCW:H171	6:A:2019:PCW:H39	1.93	0.51
1:A:1360:LEU:HB3	1:A:1401:PHE:CZ	2.46	0.51
4:A:2004:95T:C12	6:A:2013:PCW:H122	2.41	0.51
1:A:1479:ASP:OD2	1:A:1588:ARG:NH2	2.43	0.51
5:A:2005:CLR:H121	5:A:2005:CLR:H212	1.93	0.51
1:A:1345:ASN:OD1	1:A:1346:VAL:N	2.43	0.51
1:A:1568:SER:OG	7:A:2015:LPE:H2N2	2.10	0.50
1:A:788:GLY:O	1:A:792:ILE:HG13	2.11	0.50
5:A:2017:CLR:H212	5:A:2017:CLR:H121	1.92	0.50
1:A:1369:TRP:O	1:A:1373:MET:HG3	2.12	0.50
1:A:214:LEU:HA	1:A:217:PHE:CE2	2.47	0.50
1:A:789:ASN:O	1:A:793:ILE:HG23	2.10	0.50
1:A:889:LEU:HD12	5:A:2028:CLR:H151	1.93	0.50
1:A:1171:PHE:CE1	7:A:2022:LPE:C2N	2.95	0.50
1:A:801:PHE:CZ	1:A:872:THR:HG22	2.48	0.49
1:A:1522:GLU:O	1:A:1526:LYS:HG2	2.13	0.49
1:A:1542:PHE:O	1:A:1546:VAL:HG23	2.12	0.49
1:A:1561:LYS:HG2	1:A:1563:LEU:HD12	1.93	0.49
1:A:683:ALA:HB2	1:A:1297:ILE:HD11	1.94	0.49
1:A:759:ARG:O	1:A:762:ARG:HG2	2.12	0.49
1:A:216:THR:HA	1:A:219:VAL:HG22	1.94	0.49
1:A:792:ILE:O	1:A:796:ILE:HG12	2.12	0.49
6:A:2016:PCW:H2	6:A:2016:PCW:C34	2.42	0.49
1:A:851:ILE:HG12	1:A:855:TRP:CE2	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1238:LEU:HD12	1:A:1239:GLU:N	2.25	0.49
1:A:198:THR:O	1:A:202:VAL:HG23	2.12	0.49
1:A:1659:THR:O	1:A:1660:SER:OG	2.29	0.49
1:A:1710:PHE:O	1:A:1714:VAL:HG23	2.13	0.49
1:A:1710:PHE:HB2	4:A:2004:95T:C21	2.43	0.49
1:A:732:PHE:O	1:A:736:ILE:HG12	2.12	0.49
1:A:1606:ALA:O	1:A:1610:ILE:HG13	2.12	0.48
1:A:1288:CYS:SG	1:A:1409:THR:CG2	3.01	0.48
1:A:205:ALA:C	1:A:206:ILE:HD12	2.39	0.48
1:A:698:GLN:O	1:A:702:ILE:HG23	2.13	0.48
1:A:1594:ARG:HG2	6:A:2006:PCW:H31	1.94	0.48
1:A:215:ARG:O	1:A:219:VAL:HG13	2.13	0.48
1:A:754:VAL:HG21	6:A:2018:PCW:H141	1.94	0.48
1:A:1604:LEU:HD21	6:A:2006:PCW:H20	1.93	0.48
1:A:1253:ARG:HH21	1:A:1256:ARG:NH1	2.11	0.48
1:A:1330:SER:O	1:A:1333:LYS:HB3	2.14	0.48
1:A:1641:MET:HE3	1:A:1641:MET:HB2	1.72	0.48
1:A:328:THR:CG2	1:A:329:SER:H	2.27	0.48
1:A:800:VAL:O	1:A:804:VAL:HG23	2.13	0.48
1:A:735:ILE:HD12	5:A:2017:CLR:H151	1.94	0.48
1:A:1501:SER:O	1:A:1505:THR:HG23	2.14	0.48
6:A:2019:PCW:C2	6:A:2019:PCW:C33	2.89	0.47
1:A:273:LYS:NZ	1:A:1498:ASP:OD2	2.47	0.47
1:A:1310:CYS:SG	1:A:1343:TRP:HE3	2.36	0.47
1:A:1582:ARG:HA	1:A:1585:ARG:HG3	1.96	0.47
1:A:350:PHE:CZ	1:A:874:MET:HE1	2.50	0.47
1:A:355:GLN:HE21	1:A:385:SER:HB3	1.78	0.47
1:A:382:PHE:O	1:A:386:PHE:HB3	2.14	0.47
1:A:829:ARG:HD3	1:A:1374:TYR:CZ	2.49	0.47
1:A:1199:PHE:O	1:A:1203:LEU:HD23	2.14	0.47
1:A:1598:PHE:CD2	6:A:2006:PCW:C7	2.98	0.47
1:A:1713:MET:HE1	4:A:2004:95T:C07	2.42	0.47
1:A:1373:MET:HE2	1:A:1395:TYR:HD2	1.79	0.47
1:A:695:ALA:O	1:A:699:ILE:HG12	2.15	0.47
1:A:713:VAL:HA	1:A:716:ILE:HG12	1.97	0.47
7:A:2023:LPE:H322	8:A:2029:P5S:OXT	2.14	0.47
1:A:893:PHE:HZ	1:A:1412:LEU:HD12	1.79	0.47
1:A:1407:PHE:HD1	7:A:2014:LPE:H2N2	1.80	0.47
6:A:2019:PCW:C33	6:A:2019:PCW:H2	2.43	0.47
1:A:1480:ILE:O	1:A:1484:VAL:HG23	2.15	0.47
1:A:1469:VAL:HA	1:A:1472:ILE:HG22	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:278:LYS:HB2	1:A:297:ILE:HG13	1.96	0.47
1:A:761:LEU:HD22	1:A:764:PHE:HE1	1.80	0.47
1:A:1455:GLN:HE22	1:A:1457:PRO:HA	1.79	0.47
1:A:1437:GLU:CD	1:A:1437:GLU:H	2.23	0.46
1:A:1635:GLU:OE1	1:A:1672:ASN:ND2	2.48	0.46
1:A:669:LEU:O	1:A:673:LEU:HD23	2.15	0.46
1:A:1561:LYS:HG3	1:A:1562:SER:H	1.80	0.46
1:A:147:MET:SD	1:A:219:VAL:HG12	2.56	0.46
1:A:1460:ARG:HH22	1:A:1467:GLY:CA	2.28	0.46
1:A:281:MET:N	1:A:281:MET:HE2	2.30	0.46
1:A:851:ILE:HG12	1:A:855:TRP:CZ2	2.51	0.46
1:A:1255:LEU:O	1:A:1258:LEU:HB2	2.16	0.46
7:A:2023:LPE:H151	7:A:2023:LPE:H122	1.71	0.46
1:A:722:TYR:O	1:A:726:GLN:HG3	2.15	0.46
6:A:2013:PCW:H222	6:A:2013:PCW:H252	1.69	0.46
7:A:2015:LPE:H2N3	7:A:2015:LPE:H312	1.76	0.46
1:A:1377:VAL:HG11	1:A:1395:TYR:CE1	2.51	0.46
1:A:693:PHE:O	1:A:697:LEU:HD23	2.16	0.46
1:A:774:ASN:O	1:A:778:LYS:HG3	2.16	0.46
1:A:309:LEU:HB2	1:A:367:ARG:HD3	1.98	0.46
1:A:1161:MET:HA	1:A:1161:MET:HE2	1.97	0.46
1:A:1311:ILE:HB	1:A:1318:PHE:HB2	1.98	0.46
1:A:1368:GLY:N	1:A:1664:ASP:OD1	2.48	0.46
1:A:1519:PHE:O	1:A:1522:GLU:HG2	2.16	0.46
6:A:2016:PCW:C33	6:A:2016:PCW:C2	2.86	0.46
1:A:1414:VAL:O	1:A:1418:ILE:HG13	2.16	0.46
1:A:330:ASP:OD1	1:A:330:ASP:N	2.46	0.45
1:A:829:ARG:HD3	1:A:1374:TYR:CE1	2.51	0.45
7:A:2011:LPE:C15	7:A:2012:LPE:H131	2.21	0.45
6:A:2006:PCW:H421	6:A:2007:PCW:C21	2.47	0.45
5:A:2021:CLR:H222	5:A:2021:CLR:H162	1.68	0.45
1:A:757:SER:HA	1:A:760:LEU:HD23	1.98	0.45
1:A:1576:ARG:HH21	1:A:1579:ARG:NH2	2.14	0.45
7:A:2008:LPE:H312	7:A:2008:LPE:H3N3	1.63	0.45
1:A:1435:MET:HE1	1:A:1443:TYR:HD2	1.81	0.45
6:A:2016:PCW:H2	6:A:2016:PCW:H342	1.99	0.45
1:A:147:MET:HE1	1:A:215:ARG:HH11	1.81	0.45
1:A:1446:MET:HE1	1:A:1601:MET:HG2	1.98	0.45
6:A:2016:PCW:C11	6:A:2016:PCW:C1	2.94	0.45
6:A:2016:PCW:H31	5:A:2017:CLR:O1	2.16	0.45
6:A:2019:PCW:H32	6:A:2019:PCW:P	2.57	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:269:LYS:HG3	1:A:1573:ARG:NH2	2.32	0.45
8:A:2029:P5S:H20	8:A:2029:P5S:H42	1.98	0.45
1:A:269:LYS:HG3	1:A:1573:ARG:HH21	1.80	0.45
1:A:1258:LEU:HD23	1:A:1261:LEU:HD11	1.97	0.45
1:A:1700:ILE:O	1:A:1704:THR:CG2	2.62	0.45
1:A:382:PHE:CD2	6:A:2006:PCW:H271	2.52	0.45
1:A:1500:GLN:O	6:A:2026:PCW:H63	2.17	0.45
1:A:1490:MET:HB2	1:A:1583:ILE:HD12	1.99	0.45
1:A:763:VAL:HB	1:A:1294:ILE:HD11	1.99	0.44
1:A:1291:PHE:HE1	1:A:1295:PHE:CE1	2.35	0.44
1:A:1453:LYS:HD3	1:A:1453:LYS:N	2.32	0.44
1:A:138:VAL:O	1:A:142:VAL:HG22	2.18	0.44
1:A:242:SER:O	1:A:246:LEU:HG	2.17	0.44
1:A:1460:ARG:HH22	1:A:1467:GLY:HA3	1.82	0.44
1:A:1495:VAL:HG21	6:A:2026:PCW:H142	1.99	0.44
1:A:192:LEU:O	1:A:196:VAL:HG23	2.18	0.44
1:A:290:SER:H	1:A:293:ARG:HH11	1.64	0.44
1:A:796:ILE:O	1:A:800:VAL:HG23	2.17	0.44
1:A:1253:ARG:NH2	1:A:1256:ARG:HH12	2.14	0.44
1:A:735:ILE:O	1:A:739:VAL:HG23	2.18	0.44
1:A:1452:LYS:HE3	1:A:1454:PRO:O	2.18	0.44
1:A:1490:MET:HG2	1:A:1494:MET:HE3	2.00	0.44
7:A:2011:LPE:H2N3	7:A:2011:LPE:H312	1.73	0.44
5:A:2027:CLR:H221	5:A:2027:CLR:H162	1.79	0.44
1:A:359:GLU:O	1:A:363:GLN:HG3	2.17	0.44
1:A:849:GLU:OE1	1:A:1369:TRP:NE1	2.46	0.44
1:A:1250:ARG:NH2	1:A:1250:ARG:HB3	2.32	0.44
1:A:1463:ASN:HB3	1:A:1466:GLN:HB3	2.00	0.44
7:A:2010:LPE:H11	7:A:2011:LPE:H1N3	2.00	0.44
6:A:2006:PCW:H341	6:A:2006:PCW:H371	1.60	0.43
7:A:2010:LPE:H2N3	7:A:2010:LPE:H311	1.80	0.43
1:A:702:ILE:HA	1:A:705:THR:HG22	2.00	0.43
1:A:1255:LEU:HD21	7:A:2020:LPE:H222	2.00	0.43
1:A:1413:PHE:O	1:A:1416:VAL:HG22	2.19	0.43
1:A:1666:LEU:O	1:A:1669:PRO:HD2	2.17	0.43
1:A:1718:ILE:O	1:A:1722:LEU:HD23	2.18	0.43
1:A:661:LEU:HA	1:A:718:ALA:HB1	2.01	0.43
1:A:1189:THR:O	1:A:1192:VAL:HG22	2.17	0.43
1:A:1341:PHE:HZ	3:A:2003:NAG:H82	1.83	0.43
1:A:1404:PHE:HA	1:A:1408:PHE:CD2	2.51	0.43
1:A:1613:LEU:O	1:A:1617:VAL:HG23	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1:NAG:HO6	2:B:2:NAG:C1	2.31	0.43
1:A:1220:TRP:CE2	5:A:2021:CLR:H122	2.53	0.43
1:A:1341:PHE:CZ	3:A:2003:NAG:H82	2.54	0.43
1:A:1482:ILE:HD12	1:A:1522:GLU:OE2	2.17	0.43
1:A:367:ARG:NH1	1:A:1641:MET:HE3	2.34	0.43
1:A:1688:THR:O	1:A:1688:THR:HG22	2.19	0.43
1:A:1688:THR:O	1:A:1689:ARG:HB2	2.19	0.43
1:A:191:TRP:HA	1:A:194:PHE:HD2	1.83	0.43
1:A:1500:GLN:O	6:A:2026:PCW:H62	2.17	0.43
1:A:1509:GLY:O	1:A:1513:GLN:HG3	2.18	0.43
1:A:1502:GLU:OE2	1:A:1502:GLU:HA	2.19	0.42
6:A:2018:PCW:H351	6:A:2018:PCW:H322	1.65	0.42
6:A:2006:PCW:H72	6:A:2006:PCW:H42	1.52	0.42
1:A:272:LEU:HD12	1:A:338:SER:HA	2.00	0.42
1:A:371:LYS:CE	1:A:1641:MET:CG	2.80	0.42
1:A:1290:ILE:HD11	5:A:2005:CLR:C23	2.49	0.42
1:A:1721:ILE:HG22	1:A:1725:PHE:HE2	1.84	0.42
1:A:1721:ILE:CD1	5:A:2028:CLR:H182	2.48	0.42
1:A:651:TRP:CZ2	1:A:653:LYS:HE3	2.54	0.42
1:A:664:ASP:HB2	1:A:665:PRO:HD2	2.01	0.42
1:A:1660:SER:O	1:A:1663:TRP:HD1	2.02	0.42
1:A:1719:ALA:O	1:A:1723:GLU:HG2	2.20	0.42
1:A:664:ASP:OD1	1:A:667:ALA:HB2	2.20	0.42
1:A:758:PHE:CE2	5:A:2017:CLR:H25	2.55	0.42
1:A:1342:PHE:CE1	2:C:1:NAG:H3	2.53	0.42
1:A:665:PRO:C	1:A:667:ALA:H	2.28	0.42
1:A:705:THR:HB	1:A:759:ARG:NH1	2.35	0.42
1:A:889:LEU:CD1	5:A:2028:CLR:H151	2.49	0.42
1:A:1186:LEU:HA	1:A:1189:THR:OG1	2.20	0.42
1:A:1308:TRP:CD2	1:A:1345:ASN:HB2	2.55	0.42
1:A:1448:LYS:HA	1:A:1448:LYS:HD3	1.80	0.42
1:A:1485:LEU:HD13	1:A:1518:VAL:HG11	2.02	0.42
6:A:2007:PCW:H63	6:A:2007:PCW:H41	1.63	0.42
1:A:1537:ASN:HB3	1:A:1540:ASN:OD1	2.19	0.41
5:A:2027:CLR:H183	5:A:2027:CLR:H20	1.79	0.41
1:A:268:PHE:HA	1:A:271:ASN:ND2	2.35	0.41
1:A:1326:VAL:HG23	1:A:1327:ASN:N	2.33	0.41
1:A:1552:ALA:O	1:A:1556:PHE:HB2	2.21	0.41
7:A:2011:LPE:H142	7:A:2011:LPE:H112	1.67	0.41
1:A:355:GLN:NE2	4:A:2004:95T:O05	2.41	0.41
1:A:359:GLU:HG2	1:A:360:ARG:N	2.34	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:387:TYR:CD1	1:A:1600:LEU:HD13	2.55	0.41
1:A:1199:PHE:CZ	1:A:1203:LEU:HD21	2.56	0.41
1:A:1563:LEU:HD12	1:A:1563:LEU:H	1.85	0.41
1:A:146:CYS:HB2	1:A:160:PHE:CZ	2.55	0.41
1:A:299:ILE:HB	1:A:323:TYR:CE2	2.56	0.41
1:A:728:LYS:HE3	6:A:2016:PCW:C3	2.51	0.41
1:A:1330:SER:OG	2:B:1:NAG:H82	2.20	0.41
1:A:1600:LEU:HD23	6:A:2006:PCW:H161	2.01	0.41
1:A:136:ILE:O	1:A:140:ILE:HG23	2.21	0.41
1:A:665:PRO:C	1:A:667:ALA:N	2.78	0.41
1:A:172:ILE:HG23	1:A:173:LEU:HD23	2.03	0.41
1:A:219:VAL:HG23	1:A:220:LEU:HD22	2.03	0.41
1:A:859:GLU:O	3:A:2001:NAG:H82	2.21	0.41
6:A:2016:PCW:H411	5:A:2017:CLR:C21	2.51	0.41
5:A:2027:CLR:H193	5:A:2027:CLR:H111	1.83	0.41
5:A:2028:CLR:H183	5:A:2028:CLR:H212	2.02	0.41
1:A:194:PHE:O	1:A:197:ILE:HG22	2.21	0.41
1:A:1145:CYS:O	1:A:1149:VAL:HG13	2.21	0.41
1:A:1172:GLU:HA	1:A:1176:LEU:HD22	2.02	0.41
1:A:1308:TRP:CE3	1:A:1345:ASN:HB2	2.56	0.41
7:A:2011:LPE:H151	7:A:2012:LPE:C14	2.50	0.41
1:A:1694:SER:OG	6:A:2019:PCW:H12	2.21	0.41
1:A:147:MET:HE3	1:A:147:MET:HA	2.02	0.40
1:A:247:ALA:O	1:A:251:ILE:HG13	2.21	0.40
1:A:653:LYS:O	1:A:657:ILE:HG13	2.20	0.40
1:A:820:ILE:HD13	1:A:860:VAL:HB	2.02	0.40
7:A:2009:LPE:P	7:A:2009:LPE:C3N	3.08	0.40
7:A:2025:LPE:H311	7:A:2025:LPE:H3N3	1.81	0.40
1:A:271:ASN:O	1:A:274:ASN:ND2	2.55	0.40
1:A:379:LEU:HD23	1:A:379:LEU:HA	1.96	0.40
1:A:784:VAL:HG11	7:A:2014:LPE:H162	2.00	0.40
1:A:1320:LEU:HD12	1:A:1320:LEU:HA	1.87	0.40
1:A:1396:LEU:O	1:A:1400:ILE:HG12	2.22	0.40
1:A:1493:MET:CE	1:A:1583:ILE:HD11	2.51	0.40
1:A:1511:ILE:HG22	1:A:1515:PHE:CE2	2.57	0.40
1:A:216:THR:O	1:A:220:LEU:HD23	2.22	0.40
1:A:1136:ASP:OD1	1:A:1137:VAL:N	2.48	0.40
1:A:713:VAL:O	1:A:717:ILE:HG23	2.22	0.40
1:A:1335:GLN:N	1:A:1335:GLN:OE1	2.54	0.40
1:A:1500:GLN:HE21	1:A:1505:THR:HG22	1.86	0.40
1:A:1592:GLY:O	1:A:1596:LEU:HG	2.20	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:2019:PCW:H381	6:A:2019:PCW:H411	1.70	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	1091/1956 (56%)	1031 (94%)	59 (5%)	1 (0%)	48 81

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	666	PHE

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	971/1727 (56%)	966 (100%)	5 (0%)	86 94

All (5) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	206	ILE
1	A	654	LEU

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Mol	Chain	Res	Type
1	A	741	LEU
1	A	752	LEU
1	A	1428	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	266	GLN
1	A	271	ASN
1	A	274	ASN
1	A	364	GLN
1	A	1140	GLN
1	A	1283	ASN
1	A	1385	GLN
1	A	1423	GLN
1	A	1424	GLN
1	A	1439	GLN
1	A	1455	GLN
1	A	1512	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

4 monosaccharides 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	NAG	B	1	1,2	14,14,15	0.32	0	17,19,21	0.62	0
2	NAG	B	2	2	14,14,15	0.29	0	17,19,21	0.61	0
2	NAG	C	1	1,2	14,14,15	0.29	0	17,19,21	0.62	0
2	NAG	C	2	2	14,14,15	0.29	0	17,19,21	0.62	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	NAG	B	1	1,2	-	2/6/23/26	0/1/1/1
2	NAG	B	2	2	-	4/6/23/26	0/1/1/1
2	NAG	C	1	1,2	-	2/6/23/26	0/1/1/1
2	NAG	C	2	2	-	0/6/23/26	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (8) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	2	NAG	C8-C7-N2-C2
2	B	2	NAG	O7-C7-N2-C2
2	B	2	NAG	O5-C5-C6-O6
2	C	1	NAG	O5-C5-C6-O6
2	B	1	NAG	O5-C5-C6-O6
2	B	2	NAG	C4-C5-C6-O6
2	C	1	NAG	C4-C5-C6-O6
2	B	1	NAG	C4-C5-C6-O6

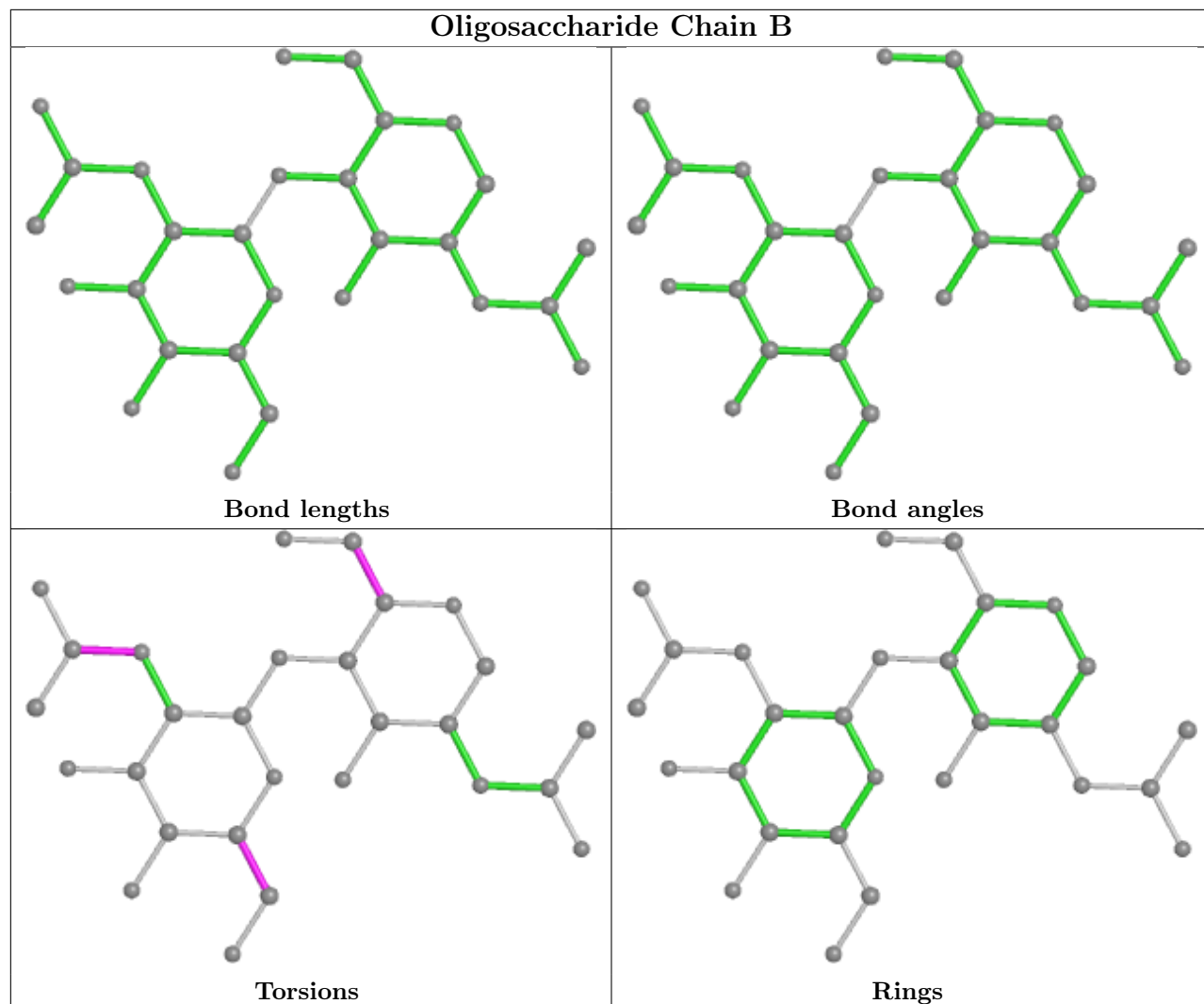
There are no ring outliers.

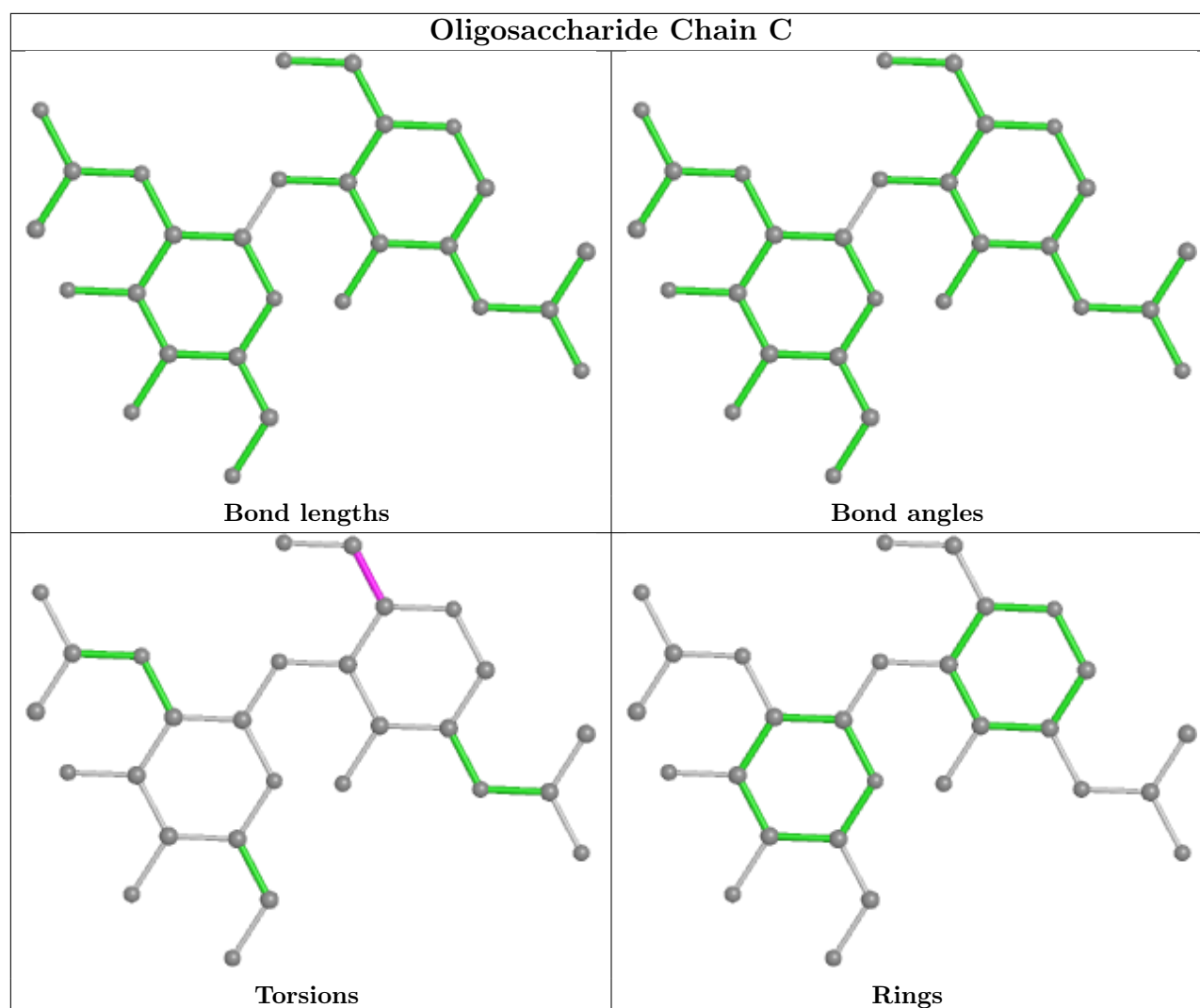
3 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	2	NAG	2	0
2	B	1	NAG	3	0
2	C	1	NAG	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 oligosaccharide.





5.6 Ligand geometry [i](#)

29 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	$\# Z > 2$
3	NAG	A	2003	1	14,14,15	0.28	0	17,19,21	0.62	0
6	PCW	A	2013	-	36,36,53	1.11	2 (5%)	40,41,61	1.14	3 (7%)
6	PCW	A	2016	-	40,40,53	1.06	2 (5%)	43,45,61	1.19	4 (9%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
7	LPE	A	2008	-	21,21,33	0.57	0	25,27,39	0.53	0
6	PCW	A	2026	-	37,37,53	1.11	2 (5%)	42,45,61	1.11	2 (4%)
7	LPE	A	2015	-	22,22,33	0.61	0	26,28,39	0.70	0
7	LPE	A	2010	-	21,21,33	0.57	0	25,27,39	0.57	0
6	PCW	A	2018	-	38,38,53	1.08	2 (5%)	43,46,61	1.08	3 (6%)
8	P5S	A	2029	-	43,44,53	0.94	3 (6%)	47,51,60	1.48	8 (17%)
7	LPE	A	2024	-	20,20,33	0.58	0	24,26,39	0.60	0
6	PCW	A	2019	-	39,39,53	1.08	2 (5%)	44,47,61	2.47	9 (20%)
4	95T	A	2004	-	23,27,27	0.39	0	29,37,37	0.96	1 (3%)
7	LPE	A	2009	-	21,21,33	0.57	0	25,27,39	0.58	0
6	PCW	A	2007	-	46,46,53	1.02	2 (4%)	52,54,61	1.17	3 (5%)
6	PCW	A	2006	-	53,53,53	0.92	2 (3%)	59,61,61	1.10	4 (6%)
5	CLR	A	2027	-	31,31,31	0.69	0	48,48,48	1.30	7 (14%)
7	LPE	A	2025	-	33,33,33	0.48	0	37,39,39	0.61	0
7	LPE	A	2022	-	21,21,33	0.66	0	25,27,39	0.78	1 (4%)
5	CLR	A	2021	-	31,31,31	0.83	1 (3%)	48,48,48	1.41	9 (18%)
7	LPE	A	2023	-	21,21,33	0.57	0	25,27,39	0.70	0
7	LPE	A	2014	-	22,22,33	0.59	0	26,28,39	0.58	0
7	LPE	A	2012	-	15,15,33	0.58	0	17,18,39	0.85	1 (5%)
3	NAG	A	2001	1	14,14,15	0.31	0	17,19,21	0.85	1 (5%)
3	NAG	A	2002	1	14,14,15	0.29	0	17,19,21	0.62	0
5	CLR	A	2017	-	31,31,31	0.71	0	48,48,48	1.37	9 (18%)
7	LPE	A	2020	-	33,33,33	0.46	0	37,39,39	0.72	0
7	LPE	A	2011	-	21,21,33	0.62	0	25,27,39	0.71	0
5	CLR	A	2028	-	31,31,31	0.71	0	48,48,48	1.26	6 (12%)
5	CLR	A	2005	-	31,31,31	0.72	0	48,48,48	1.18	5 (10%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	A	2003	1	-	2/6/23/26	0/1/1/1
6	PCW	A	2013	-	-	26/38/38/57	-
6	PCW	A	2016	-	-	22/42/42/57	-
7	LPE	A	2008	-	-	13/22/22/34	-
6	PCW	A	2026	-	-	18/41/41/57	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
7	LPE	A	2015	-	-	8/23/23/34	-
7	LPE	A	2010	-	-	13/22/22/34	-
6	PCW	A	2018	-	-	14/42/42/57	-
8	P5S	A	2029	-	-	13/50/50/59	-
7	LPE	A	2024	-	-	6/21/21/34	-
6	PCW	A	2019	-	-	25/43/43/57	-
4	95T	A	2004	-	-	9/11/16/16	0/3/3/3
7	LPE	A	2009	-	-	9/22/22/34	-
6	PCW	A	2007	-	-	16/50/50/57	-
6	PCW	A	2006	-	-	24/57/57/57	-
5	CLR	A	2027	-	-	7/10/68/68	0/4/4/4
7	LPE	A	2025	-	-	18/34/34/34	-
7	LPE	A	2022	-	-	10/22/22/34	-
5	CLR	A	2021	-	-	4/10/68/68	0/4/4/4
7	LPE	A	2023	-	-	4/22/22/34	-
7	LPE	A	2014	-	-	10/23/23/34	-
7	LPE	A	2012	-	-	7/14/14/34	-
3	NAG	A	2001	1	-	2/6/23/26	0/1/1/1
3	NAG	A	2002	1	-	2/6/23/26	0/1/1/1
5	CLR	A	2017	-	-	5/10/68/68	0/4/4/4
7	LPE	A	2020	-	-	3/34/34/34	-
7	LPE	A	2011	-	-	8/22/22/34	-
5	CLR	A	2028	-	-	2/10/68/68	0/4/4/4
5	CLR	A	2005	-	-	3/10/68/68	0/4/4/4

All (18) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	A	2007	PCW	O3-C11	4.44	1.46	1.33
6	A	2019	PCW	O3-C11	4.27	1.45	1.33
6	A	2013	PCW	O3-C11	4.26	1.45	1.33
6	A	2016	PCW	O3-C11	4.26	1.45	1.33
6	A	2007	PCW	O2-C31	4.21	1.46	1.34
6	A	2026	PCW	O2-C31	4.18	1.46	1.34
6	A	2013	PCW	O2-C31	4.16	1.46	1.34
6	A	2006	PCW	O2-C31	4.15	1.46	1.34
6	A	2018	PCW	O3-C11	4.14	1.45	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	A	2018	PCW	O2-C31	4.13	1.46	1.34
6	A	2016	PCW	O2-C31	4.13	1.46	1.34
6	A	2026	PCW	O3-C11	4.12	1.45	1.33
6	A	2019	PCW	O2-C31	4.09	1.45	1.34
6	A	2006	PCW	O3-C11	3.84	1.44	1.33
8	A	2029	P5S	O19-C17	3.74	1.44	1.33
8	A	2029	P5S	O37-C38	3.64	1.44	1.34
5	A	2021	CLR	C10-C9	-2.30	1.52	1.56
8	A	2029	P5S	O37-C2	-2.03	1.41	1.46

All (76) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	A	2019	PCW	C8-N-C6	-8.75	86.48	108.97
6	A	2019	PCW	C8-N-C7	-8.74	86.51	108.97
6	A	2019	PCW	C8-N-C5	-5.72	86.50	109.92
8	A	2029	P5S	OG-CB-CA	5.06	112.47	108.06
6	A	2007	PCW	O2-C31-C32	4.87	121.99	111.50
4	A	2004	95T	C11-C07-C10	4.52	133.00	128.77
6	A	2026	PCW	O2-C31-C32	4.37	120.91	111.50
6	A	2019	PCW	C7-N-C6	4.13	119.60	108.97
6	A	2016	PCW	O2-C31-C32	4.12	120.38	111.50
6	A	2019	PCW	O2-C31-C32	4.02	120.17	111.50
5	A	2027	CLR	C13-C17-C20	-3.98	113.25	119.49
8	A	2029	P5S	O37-C38-C39	3.96	120.05	111.50
6	A	2013	PCW	O2-C31-C32	3.81	119.72	111.50
5	A	2017	CLR	C1-C2-C3	3.81	115.36	110.47
6	A	2006	PCW	O2-C31-C32	3.69	119.45	111.50
5	A	2005	CLR	C13-C17-C20	-3.49	114.02	119.49
5	A	2021	CLR	C7-C6-C5	-3.45	118.70	125.06
6	A	2018	PCW	O2-C31-C32	3.41	118.86	111.50
5	A	2028	CLR	C4-C5-C10	3.34	120.86	116.42
5	A	2017	CLR	C13-C17-C20	-3.31	114.31	119.49
6	A	2007	PCW	O3-C11-C12	3.24	122.08	111.91
8	A	2029	P5S	O19-C17-C20	3.19	121.92	111.91
6	A	2006	PCW	O3-C11-C12	3.17	121.87	111.91
5	A	2028	CLR	C13-C17-C20	-3.16	114.54	119.49
5	A	2021	CLR	C1-C10-C9	3.07	113.01	108.73
5	A	2017	CLR	C4-C5-C10	2.85	120.20	116.42
6	A	2013	PCW	O3-C11-C12	2.67	120.28	111.91
6	A	2018	PCW	O3-C11-C12	2.64	120.18	111.91
6	A	2019	PCW	O3-C11-C12	2.63	120.17	111.91

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	A	2028	CLR	C8-C7-C6	-2.63	108.95	112.73
5	A	2021	CLR	C8-C7-C6	-2.61	108.98	112.73
8	A	2029	P5S	OXT-C-O	-2.60	118.19	124.09
3	A	2001	NAG	C1-O5-C5	2.58	115.68	112.19
5	A	2027	CLR	C13-C14-C8	-2.56	110.59	114.38
6	A	2016	PCW	O3-C11-C12	2.54	119.88	111.91
6	A	2026	PCW	O3-C11-C12	2.53	119.85	111.91
5	A	2017	CLR	C13-C14-C8	-2.51	110.66	114.38
5	A	2017	CLR	C11-C12-C13	-2.51	108.48	112.78
6	A	2007	PCW	O3-C3-C2	2.50	115.70	108.43
6	A	2006	PCW	C3-C2-C1	-2.49	105.91	111.79
5	A	2028	CLR	C13-C14-C8	-2.47	110.72	114.38
5	A	2005	CLR	C11-C12-C13	-2.47	108.55	112.78
5	A	2021	CLR	C1-C2-C3	2.47	113.63	110.47
5	A	2027	CLR	C11-C12-C13	-2.46	108.57	112.78
6	A	2018	PCW	C3-C2-C1	-2.44	106.01	111.79
6	A	2019	PCW	C2-O2-C31	-2.44	111.79	117.79
5	A	2005	CLR	C13-C14-C8	-2.43	110.78	114.38
5	A	2027	CLR	C16-C17-C20	2.42	115.89	112.15
6	A	2019	PCW	C6-N-C5	2.39	119.69	109.92
6	A	2016	PCW	O1P-P-O2P	2.38	120.01	110.68
5	A	2005	CLR	C4-C5-C10	2.38	119.58	116.42
7	A	2012	LPE	O32-P-O31	2.37	119.94	110.68
6	A	2019	PCW	C7-N-C5	2.37	119.59	109.92
6	A	2006	PCW	O3-C11-O11	-2.36	117.65	123.59
6	A	2013	PCW	O1P-P-O2P	2.35	119.87	110.68
5	A	2027	CLR	C17-C13-C14	2.34	102.85	100.07
7	A	2022	LPE	C3-C2-C1	-2.33	105.92	112.79
5	A	2021	CLR	C7-C8-C9	2.31	112.51	109.71
5	A	2027	CLR	C22-C20-C17	2.29	115.02	110.28
8	A	2029	P5S	OXT-C-CA	2.29	121.19	113.38
5	A	2027	CLR	C4-C5-C10	2.25	119.41	116.42
8	A	2029	P5S	O37-C38-O47	-2.24	118.28	123.70
5	A	2028	CLR	C4-C5-C6	-2.24	117.38	120.61
5	A	2017	CLR	C8-C7-C6	-2.23	109.52	112.73
5	A	2028	CLR	C11-C12-C13	-2.22	108.97	112.78
6	A	2016	PCW	C2-O2-C31	-2.19	112.41	117.79
5	A	2021	CLR	C13-C14-C8	-2.18	111.16	114.38
8	A	2029	P5S	C2-O37-C38	-2.17	112.44	117.79
5	A	2005	CLR	C17-C13-C14	2.17	102.65	100.07
5	A	2017	CLR	C3-C4-C5	-2.17	108.35	112.03
5	A	2021	CLR	C4-C5-C10	2.16	119.29	116.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	A	2017	CLR	C17-C13-C14	2.16	102.63	100.07
5	A	2017	CLR	C7-C6-C5	-2.09	121.21	125.06
8	A	2029	P5S	O19-C17-O18	-2.07	118.37	123.59
5	A	2021	CLR	C10-C9-C8	-2.07	109.64	112.73
5	A	2021	CLR	C19-C10-C9	-2.01	109.28	111.68

There are no chirality outliers.

All (303) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	2004	95T	C09-C13-N06-C08
4	A	2004	95T	C12-C09-C13-O05
5	A	2027	CLR	C13-C17-C20-C21
5	A	2027	CLR	C16-C17-C20-C22
6	A	2006	PCW	O4P-C4-C5-N
6	A	2006	PCW	C4-O4P-P-O2P
6	A	2007	PCW	C1-O3P-P-O1P
6	A	2013	PCW	C1-O3P-P-O1P
6	A	2013	PCW	C1-O3P-P-O4P
6	A	2016	PCW	C2-C3-O3-C11
6	A	2016	PCW	C19-C20-C21-C22
6	A	2016	PCW	C32-C31-O2-C2
6	A	2016	PCW	O31-C31-O2-C2
6	A	2018	PCW	C1-O3P-P-O1P
6	A	2018	PCW	C1-O3P-P-O2P
6	A	2019	PCW	C32-C31-O2-C2
6	A	2019	PCW	O31-C31-O2-C2
6	A	2026	PCW	C39-C40-C41-C42
6	A	2026	PCW	C1-O3P-P-O2P
6	A	2026	PCW	C4-O4P-P-O2P
7	A	2008	LPE	C3-O3-P-O32
7	A	2008	LPE	C31-O33-P-O3
7	A	2008	LPE	C31-O33-P-O31
7	A	2008	LPE	C31-O33-P-O32
7	A	2009	LPE	O1-C1-C2-O2H
7	A	2009	LPE	O1-C1-C2-C3
7	A	2009	LPE	C3-O3-P-O31
7	A	2009	LPE	C31-O33-P-O3
7	A	2009	LPE	C31-O33-P-O31
7	A	2009	LPE	C31-O33-P-O32
7	A	2010	LPE	C1-C2-C3-O3
7	A	2010	LPE	C3-O3-P-O31

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Mol	Chain	Res	Type	Atoms
7	A	2010	LPE	C3-O3-P-O32
7	A	2010	LPE	C3-O3-P-O33
7	A	2010	LPE	C31-O33-P-O3
7	A	2010	LPE	C31-O33-P-O32
7	A	2010	LPE	O33-C31-C32-N
7	A	2011	LPE	C2-C3-O3-P
7	A	2011	LPE	C3-O3-P-O32
7	A	2011	LPE	C31-O33-P-O31
7	A	2014	LPE	C31-O33-P-O31
7	A	2014	LPE	C31-O33-P-O32
7	A	2015	LPE	O2H-C2-C3-O3
7	A	2015	LPE	C3-O3-P-O32
7	A	2015	LPE	C31-O33-P-O32
7	A	2022	LPE	C3-O3-P-O32
7	A	2022	LPE	C31-O33-P-O32
7	A	2023	LPE	O33-C31-C32-N
7	A	2025	LPE	O1-C1-C2-O2H
7	A	2025	LPE	O1-C1-C2-C3
7	A	2025	LPE	C3-O3-P-O31
7	A	2025	LPE	C3-O3-P-O33
7	A	2025	LPE	C32-C31-O33-P
7	A	2025	LPE	O33-C31-C32-N
8	A	2029	P5S	O-C-CA-N
8	A	2029	P5S	O47-C38-O37-C2
5	A	2027	CLR	C16-C17-C20-C21
5	A	2027	CLR	C13-C17-C20-C22
4	A	2004	95T	C15-C16-O03-C24
4	A	2004	95T	C18-C16-O03-C24
6	A	2007	PCW	O31-C31-O2-C2
8	A	2029	P5S	C39-C38-O37-C2
3	A	2002	NAG	O5-C5-C6-O6
6	A	2006	PCW	C12-C11-O3-C3
6	A	2026	PCW	O11-C11-O3-C3
4	A	2004	95T	O05-C13-N06-C08
7	A	2010	LPE	O2H-C2-C3-O3
6	A	2026	PCW	C12-C11-O3-C3
6	A	2007	PCW	C32-C31-O2-C2
3	A	2002	NAG	C4-C5-C6-O6
5	A	2017	CLR	C17-C20-C22-C23
6	A	2006	PCW	O11-C11-O3-C3
8	A	2029	P5S	OXT-C-CA-N
7	A	2015	LPE	C1-C2-C3-O3

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Mol	Chain	Res	Type	Atoms
6	A	2016	PCW	C12-C11-O3-C3
5	A	2017	CLR	C21-C20-C22-C23
6	A	2016	PCW	O11-C11-O3-C3
3	A	2003	NAG	O5-C5-C6-O6
5	A	2017	CLR	C20-C22-C23-C24
6	A	2006	PCW	C4-C5-N-C7
6	A	2026	PCW	C4-C5-N-C8
3	A	2003	NAG	C4-C5-C6-O6
4	A	2004	95T	C14-C17-O04-C25
7	A	2012	LPE	O2H-C2-C3-O3
3	A	2001	NAG	C1-C2-N2-C7
4	A	2004	95T	C18-C17-O04-C25
5	A	2005	CLR	C20-C22-C23-C24
5	A	2005	CLR	C22-C23-C24-C25
6	A	2007	PCW	C1-O3P-P-O4P
6	A	2018	PCW	C1-O3P-P-O4P
6	A	2019	PCW	C4-O4P-P-O3P
6	A	2026	PCW	C1-O3P-P-O4P
7	A	2008	LPE	C3-O3-P-O33
7	A	2011	LPE	C3-O3-P-O33
7	A	2014	LPE	C31-O33-P-O3
7	A	2015	LPE	C3-O3-P-O33
7	A	2015	LPE	C31-O33-P-O3
7	A	2022	LPE	C3-O3-P-O33
7	A	2022	LPE	C31-O33-P-O3
7	A	2023	LPE	C31-O33-P-O3
7	A	2024	LPE	C31-O33-P-O3
7	A	2025	LPE	C31-O33-P-O3
6	A	2019	PCW	C31-C32-C33-C34
7	A	2012	LPE	C1-C2-C3-O3
5	A	2027	CLR	C22-C23-C24-C25
7	A	2025	LPE	O1-C11-C12-C13
7	A	2014	LPE	C31-C32-N-C1N
6	A	2026	PCW	C32-C31-O2-C2
6	A	2026	PCW	O31-C31-O2-C2
7	A	2022	LPE	C2-C3-O3-P
6	A	2006	PCW	C35-C36-C37-C38
6	A	2013	PCW	C13-C14-C15-C16
6	A	2019	PCW	C12-C13-C14-C15
6	A	2016	PCW	C15-C16-C17-C18
6	A	2019	PCW	C13-C14-C15-C16
6	A	2013	PCW	C20-C21-C22-C23

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Mol	Chain	Res	Type	Atoms
6	A	2013	PCW	C15-C16-C17-C18
6	A	2019	PCW	C4-C5-N-C8
6	A	2026	PCW	C4-C5-N-C6
7	A	2014	LPE	C31-C32-N-C2N
7	A	2014	LPE	C31-C32-N-C3N
6	A	2007	PCW	C12-C13-C14-C15
6	A	2016	PCW	C31-C32-C33-C34
6	A	2006	PCW	C22-C23-C24-C25
6	A	2013	PCW	C32-C33-C34-C35
6	A	2016	PCW	C33-C34-C35-C36
7	A	2009	LPE	C12-C13-C14-C15
7	A	2012	LPE	O1-C11-C12-C13
6	A	2006	PCW	C4-C5-N-C6
6	A	2006	PCW	C4-C5-N-C8
6	A	2019	PCW	C4-C5-N-C7
6	A	2026	PCW	C31-C32-C33-C34
6	A	2013	PCW	C14-C15-C16-C17
6	A	2006	PCW	C15-C16-C17-C18
6	A	2013	PCW	C16-C17-C18-C19
6	A	2019	PCW	C16-C17-C18-C19
6	A	2013	PCW	C12-C11-O3-C3
5	A	2028	CLR	C23-C24-C25-C27
6	A	2016	PCW	O3P-C1-C2-O2
7	A	2025	LPE	C12-C13-C14-C15
6	A	2006	PCW	C34-C35-C36-C37
6	A	2026	PCW	C4-C5-N-C7
7	A	2025	LPE	C24-C25-C26-C27
6	A	2016	PCW	C34-C35-C36-C37
6	A	2016	PCW	C12-C13-C14-C15
6	A	2019	PCW	C14-C15-C16-C17
5	A	2028	CLR	C23-C24-C25-C26
7	A	2012	LPE	C2-C1-O1-C11
6	A	2026	PCW	C4-O4P-P-O3P
6	A	2016	PCW	C35-C36-C37-C38
6	A	2013	PCW	O11-C11-O3-C3
7	A	2025	LPE	C13-C14-C15-C16
7	A	2025	LPE	C22-C23-C24-C25
6	A	2019	PCW	C33-C34-C35-C36
6	A	2013	PCW	C1-C2-C3-O3
6	A	2016	PCW	C41-C42-C43-C44
6	A	2016	PCW	C44-C45-C46-C47
5	A	2021	CLR	C13-C17-C20-C22

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Mol	Chain	Res	Type	Atoms
6	A	2006	PCW	C40-C41-C42-C43
7	A	2008	LPE	C2-C1-O1-C11
7	A	2014	LPE	C2-C1-O1-C11
7	A	2010	LPE	C13-C14-C15-C16
5	A	2021	CLR	C16-C17-C20-C21
5	A	2021	CLR	C13-C17-C20-C21
7	A	2010	LPE	C12-C13-C14-C15
6	A	2013	PCW	C21-C22-C23-C24
6	A	2013	PCW	C23-C24-C25-C26
6	A	2019	PCW	C35-C36-C37-C38
3	A	2001	NAG	C3-C2-N2-C7
5	A	2017	CLR	C23-C24-C25-C27
6	A	2018	PCW	C33-C34-C35-C36
6	A	2016	PCW	O3P-C1-C2-C3
5	A	2027	CLR	C17-C20-C22-C23
7	A	2025	LPE	C21-C22-C23-C24
6	A	2019	PCW	C1-C2-C3-O3
6	A	2013	PCW	C22-C23-C24-C25
6	A	2013	PCW	C36-C37-C38-C39
6	A	2026	PCW	C35-C36-C37-C38
7	A	2025	LPE	C2-C1-O1-C11
6	A	2018	PCW	C4-O4P-P-O3P
7	A	2009	LPE	C3-O3-P-O33
8	A	2029	P5S	O37-C2-C3-O16
5	A	2021	CLR	C16-C17-C20-C22
6	A	2013	PCW	O2-C2-C3-O3
6	A	2019	PCW	O2-C2-C3-O3
8	A	2029	P5S	C28-C29-C30-C31
6	A	2018	PCW	C39-C40-C41-C42
8	A	2029	P5S	C1-C2-C3-O16
6	A	2016	PCW	C1-O3P-P-O1P
6	A	2016	PCW	C32-C33-C34-C35
5	A	2017	CLR	C23-C24-C25-C26
7	A	2014	LPE	C12-C11-O1-C1
6	A	2019	PCW	C32-C33-C34-C35
6	A	2007	PCW	C3-C2-O2-C31
4	A	2004	95T	C15-C08-N06-C13
7	A	2012	LPE	C12-C13-C14-C15
6	A	2006	PCW	O3P-C1-C2-O2
7	A	2025	LPE	C11-C12-C13-C14
7	A	2025	LPE	C16-C17-C18-C19
7	A	2009	LPE	O1-C11-C12-C13

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Mol	Chain	Res	Type	Atoms
6	A	2006	PCW	C16-C17-C18-C19
8	A	2029	P5S	N-CA-CB-OG
7	A	2010	LPE	C2-C1-O1-C11
6	A	2006	PCW	C4-O4P-P-O3P
7	A	2011	LPE	C31-O33-P-O3
6	A	2018	PCW	C2-C1-O3P-P
6	A	2006	PCW	C4-O4P-P-O1P
6	A	2019	PCW	C4-O4P-P-O2P
6	A	2026	PCW	C1-O3P-P-O1P
6	A	2026	PCW	C4-O4P-P-O1P
7	A	2010	LPE	C31-O33-P-O31
7	A	2023	LPE	C31-O33-P-O31
7	A	2024	LPE	C31-O33-P-O31
7	A	2025	LPE	C31-O33-P-O31
7	A	2008	LPE	O1-C1-C2-C3
6	A	2019	PCW	C5-C4-O4P-P
7	A	2024	LPE	C32-C31-O33-P
6	A	2006	PCW	C32-C33-C34-C35
7	A	2008	LPE	C1-C2-C3-O3
7	A	2023	LPE	C2-C1-O1-C11
4	A	2004	95T	C14-C08-N06-C13
6	A	2026	PCW	C33-C34-C35-C36
6	A	2018	PCW	O4P-C4-C5-N
6	A	2019	PCW	O4P-C4-C5-N
7	A	2015	LPE	O33-C31-C32-N
7	A	2020	LPE	O33-C31-C32-N
7	A	2022	LPE	O33-C31-C32-N
7	A	2024	LPE	O33-C31-C32-N
7	A	2020	LPE	C12-C11-O1-C1
6	A	2006	PCW	C21-C22-C23-C24
6	A	2013	PCW	C33-C34-C35-C36
7	A	2011	LPE	C12-C11-O1-C1
7	A	2022	LPE	O1-C1-C2-C3
6	A	2013	PCW	O31-C31-O2-C2
7	A	2008	LPE	O2H-C2-C3-O3
6	A	2013	PCW	C32-C31-O2-C2
7	A	2011	LPE	C11-C12-C13-C14
6	A	2006	PCW	O2-C2-C3-O3
6	A	2007	PCW	C4-O4P-P-O3P
7	A	2014	LPE	C3-O3-P-O33
7	A	2024	LPE	C3-O3-P-O33
6	A	2018	PCW	C31-C32-C33-C34

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Mol	Chain	Res	Type	Atoms
6	A	2006	PCW	C19-C20-C21-C22
6	A	2019	PCW	C36-C37-C38-C39
6	A	2019	PCW	C2-C1-O3P-P
6	A	2016	PCW	C40-C41-C42-C43
8	A	2029	P5S	C45-C46-C48-C49
7	A	2025	LPE	C25-C26-C27-C28
7	A	2012	LPE	C12-C11-O1-C1
7	A	2022	LPE	C11-C12-C13-C14
7	A	2010	LPE	C11-C12-C13-C14
6	A	2007	PCW	C31-C32-C33-C34
6	A	2007	PCW	C39-C40-C41-C42
6	A	2006	PCW	O3P-C1-C2-C3
7	A	2011	LPE	O1-C1-C2-O2H
6	A	2006	PCW	C24-C25-C26-C27
6	A	2007	PCW	C4-C5-N-C6
6	A	2019	PCW	C17-C18-C19-C20
7	A	2022	LPE	C12-C13-C14-C15
6	A	2006	PCW	C39-C40-C41-C42
7	A	2008	LPE	C31-C32-N-C3N
6	A	2007	PCW	O2-C2-C3-O3
7	A	2008	LPE	O1-C1-C2-O2H
5	A	2005	CLR	C13-C17-C20-C21
6	A	2013	PCW	C17-C18-C19-C20
6	A	2013	PCW	C19-C20-C21-C22
7	A	2012	LPE	C2-C3-O3-P
6	A	2018	PCW	O3P-C1-C2-O2
8	A	2029	P5S	O37-C38-C39-C40
6	A	2007	PCW	C4-C5-N-C8
6	A	2006	PCW	C17-C18-C19-C20
6	A	2016	PCW	O3-C11-C12-C13
7	A	2015	LPE	C31-C32-N-C2N
6	A	2016	PCW	C17-C18-C19-C20
6	A	2013	PCW	O3-C11-C12-C13
6	A	2007	PCW	O3-C11-C12-C13
6	A	2019	PCW	C34-C35-C36-C37
6	A	2018	PCW	C37-C38-C39-C40
6	A	2016	PCW	O11-C11-C12-C13
8	A	2029	P5S	C39-C40-C41-C42
5	A	2027	CLR	C23-C24-C25-C27
6	A	2013	PCW	O2-C31-C32-C33
6	A	2018	PCW	O2-C31-C32-C33
6	A	2013	PCW	C31-C32-C33-C34

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Mol	Chain	Res	Type	Atoms
6	A	2007	PCW	C4-O4P-P-O2P
6	A	2018	PCW	C4-O4P-P-O1P
7	A	2008	LPE	C31-C32-N-C1N
7	A	2020	LPE	C31-O33-P-O31
7	A	2022	LPE	C31-C32-N-C2N
7	A	2024	LPE	C3-O3-P-O31
8	A	2029	P5S	CB-OG-P12-O13
6	A	2007	PCW	O11-C11-C12-C13
8	A	2029	P5S	O47-C38-C39-C40
7	A	2014	LPE	C12-C13-C14-C15
6	A	2026	PCW	C5-C4-O4P-P
6	A	2007	PCW	C4-C5-N-C7
7	A	2008	LPE	C31-C32-N-C2N
6	A	2019	PCW	O3-C11-C12-C13
6	A	2019	PCW	O2-C31-C32-C33
6	A	2013	PCW	O11-C11-C12-C13
6	A	2013	PCW	O31-C31-C32-C33
6	A	2018	PCW	O31-C31-C32-C33
6	A	2019	PCW	O11-C11-C12-C13

There are no ring outliers.

27 monomers are involved in 147 short contacts:

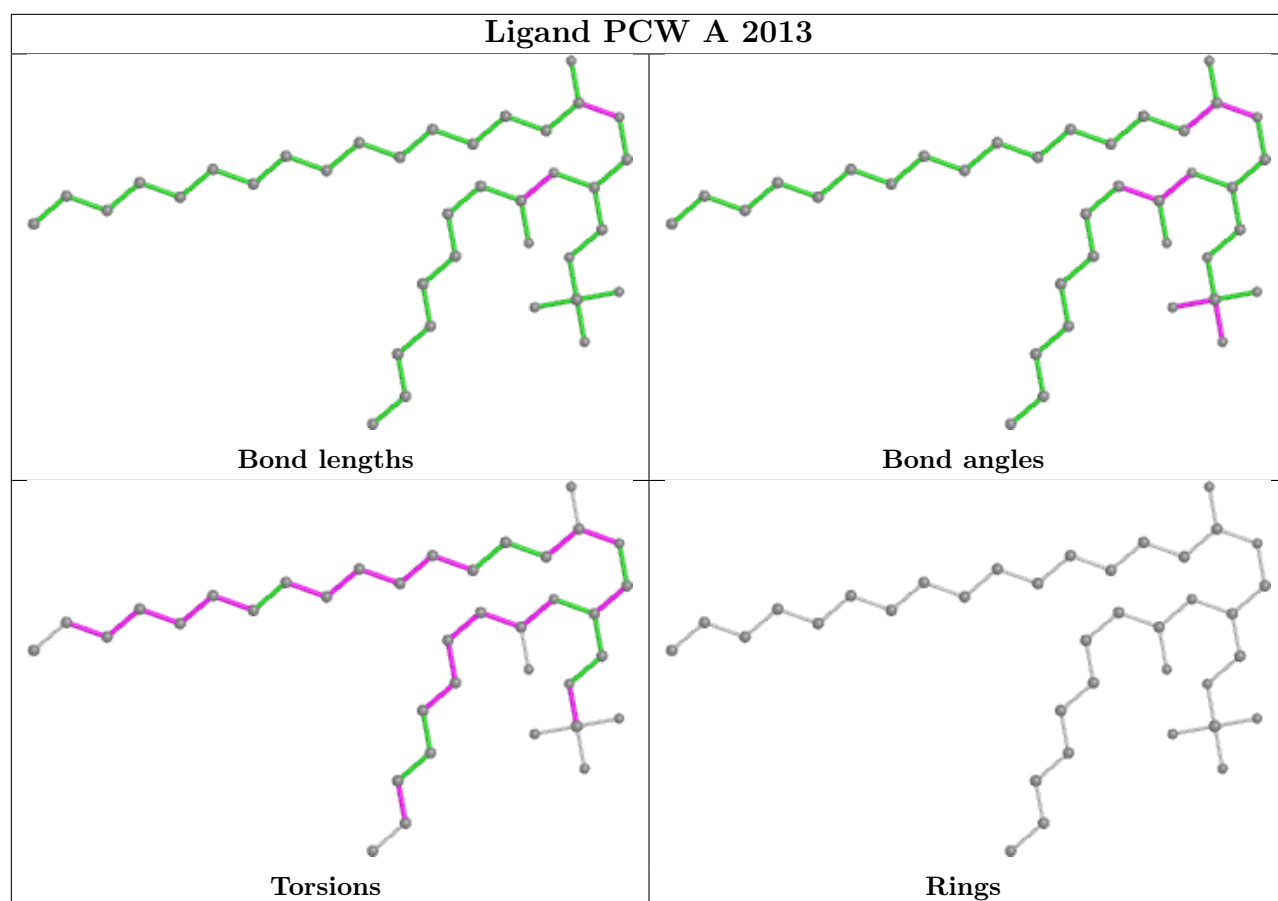
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	2003	NAG	2	0
6	A	2013	PCW	8	0
6	A	2016	PCW	12	0
7	A	2008	LPE	1	0
6	A	2026	PCW	6	0
7	A	2015	LPE	2	0
7	A	2010	LPE	8	0
6	A	2018	PCW	3	0
8	A	2029	P5S	5	0
6	A	2019	PCW	15	0
4	A	2004	95T	11	0
7	A	2009	LPE	4	0
6	A	2007	PCW	3	0
6	A	2006	PCW	17	0
5	A	2027	CLR	5	0
7	A	2025	LPE	2	0
7	A	2022	LPE	1	0
5	A	2021	CLR	2	0

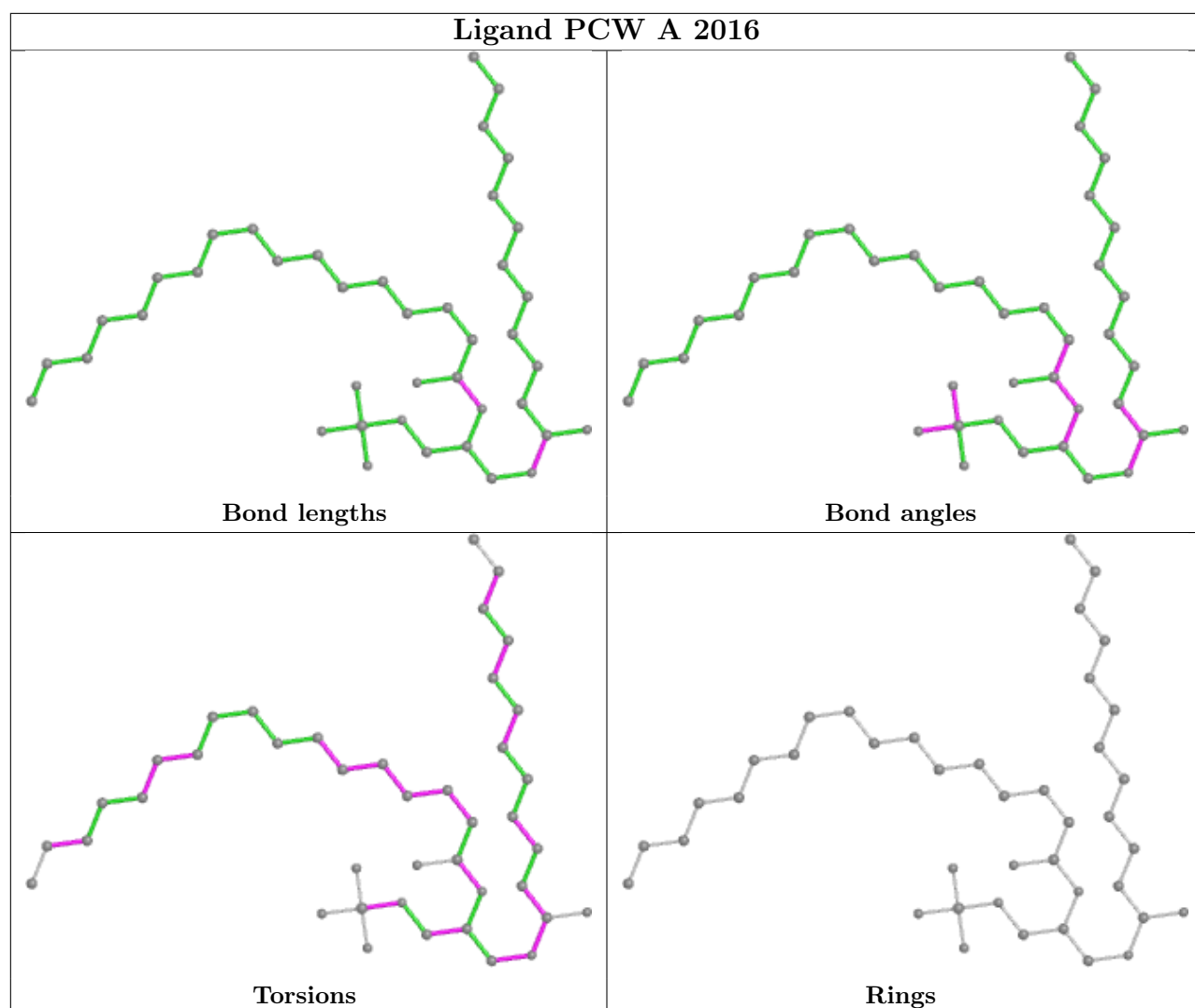
Continued on next page...

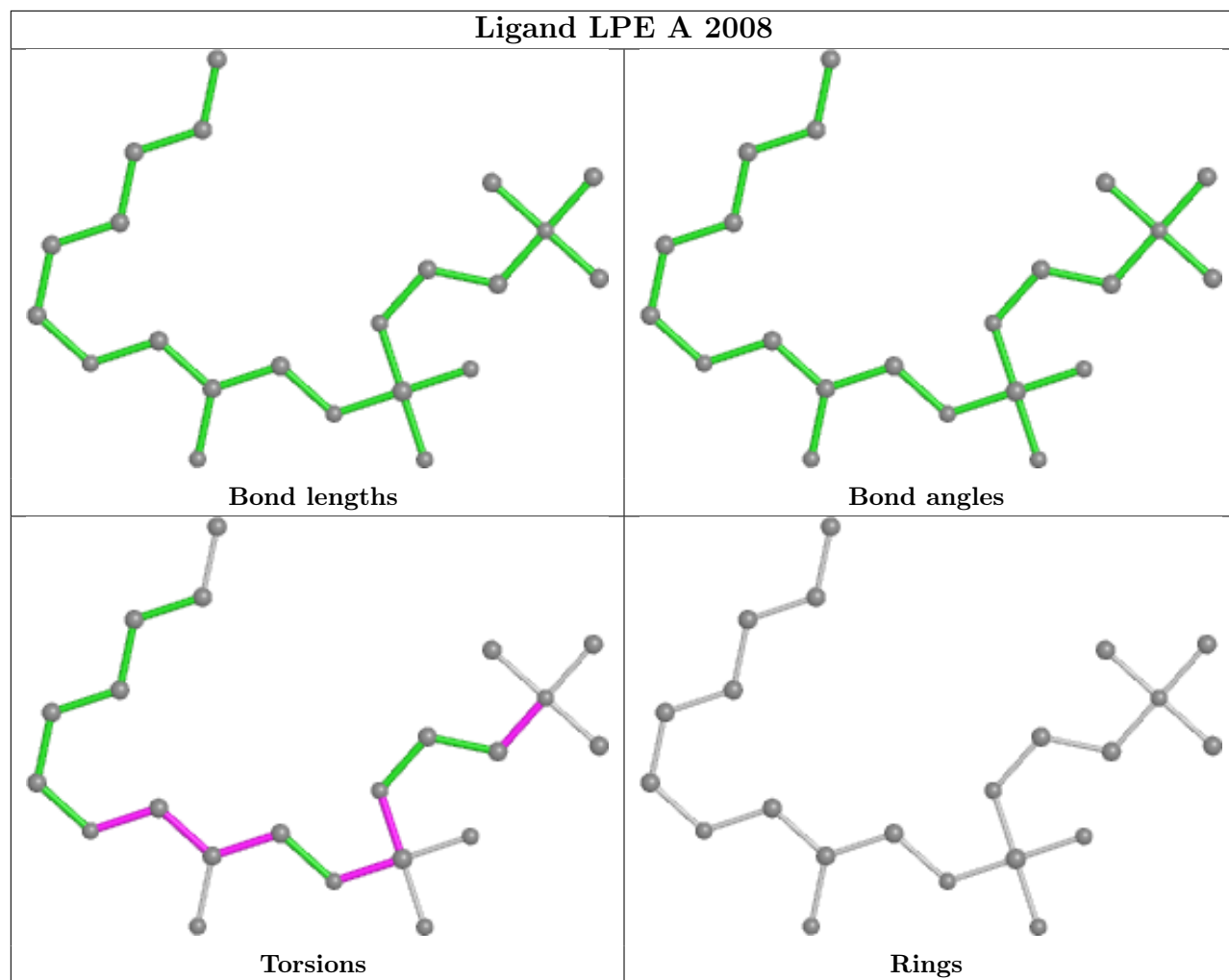
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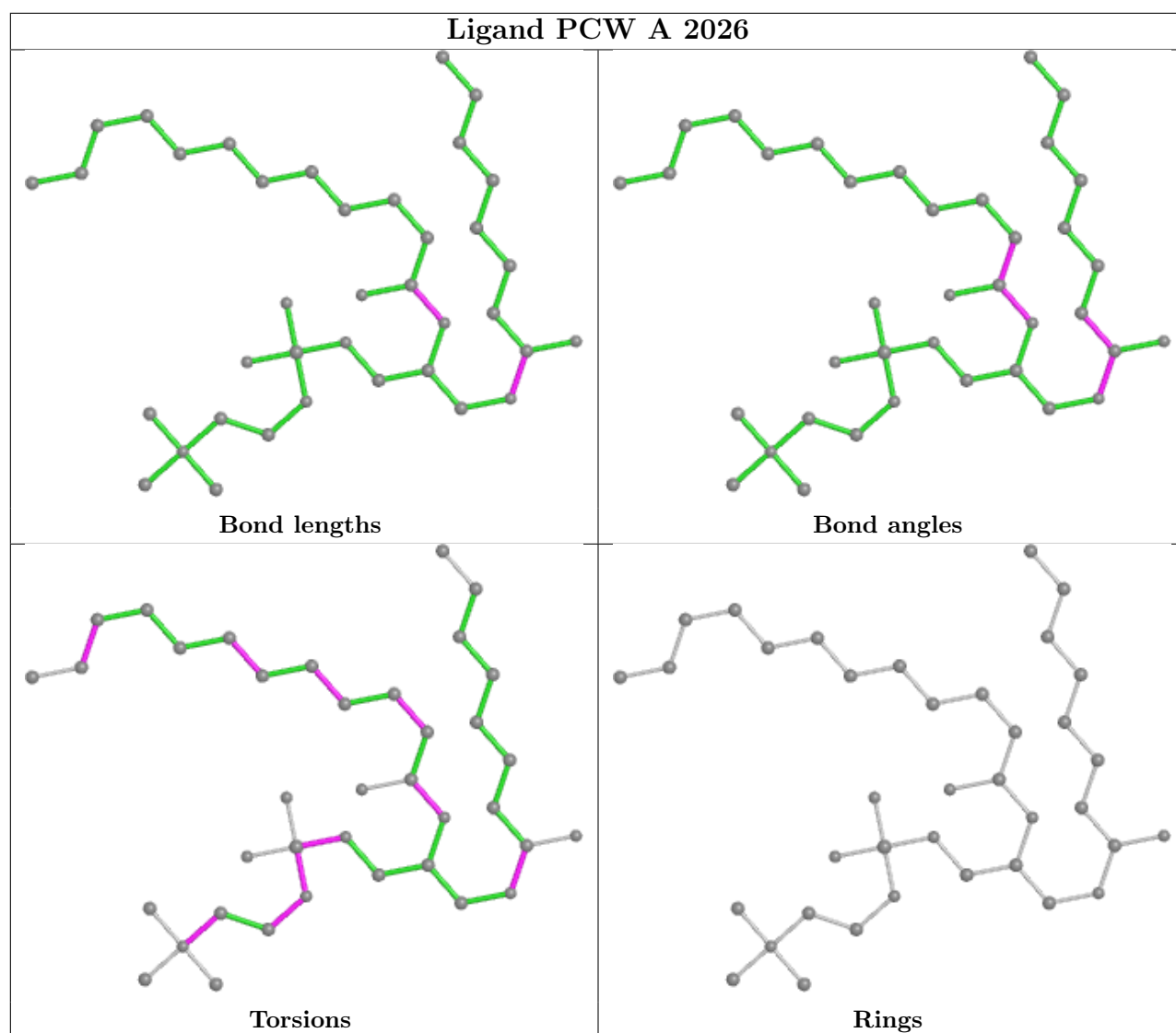
Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	A	2023	LPE	4	0
7	A	2014	LPE	4	0
7	A	2012	LPE	5	0
3	A	2001	NAG	3	0
5	A	2017	CLR	11	0
7	A	2020	LPE	1	0
7	A	2011	LPE	15	0
5	A	2028	CLR	18	0
5	A	2005	CLR	3	0

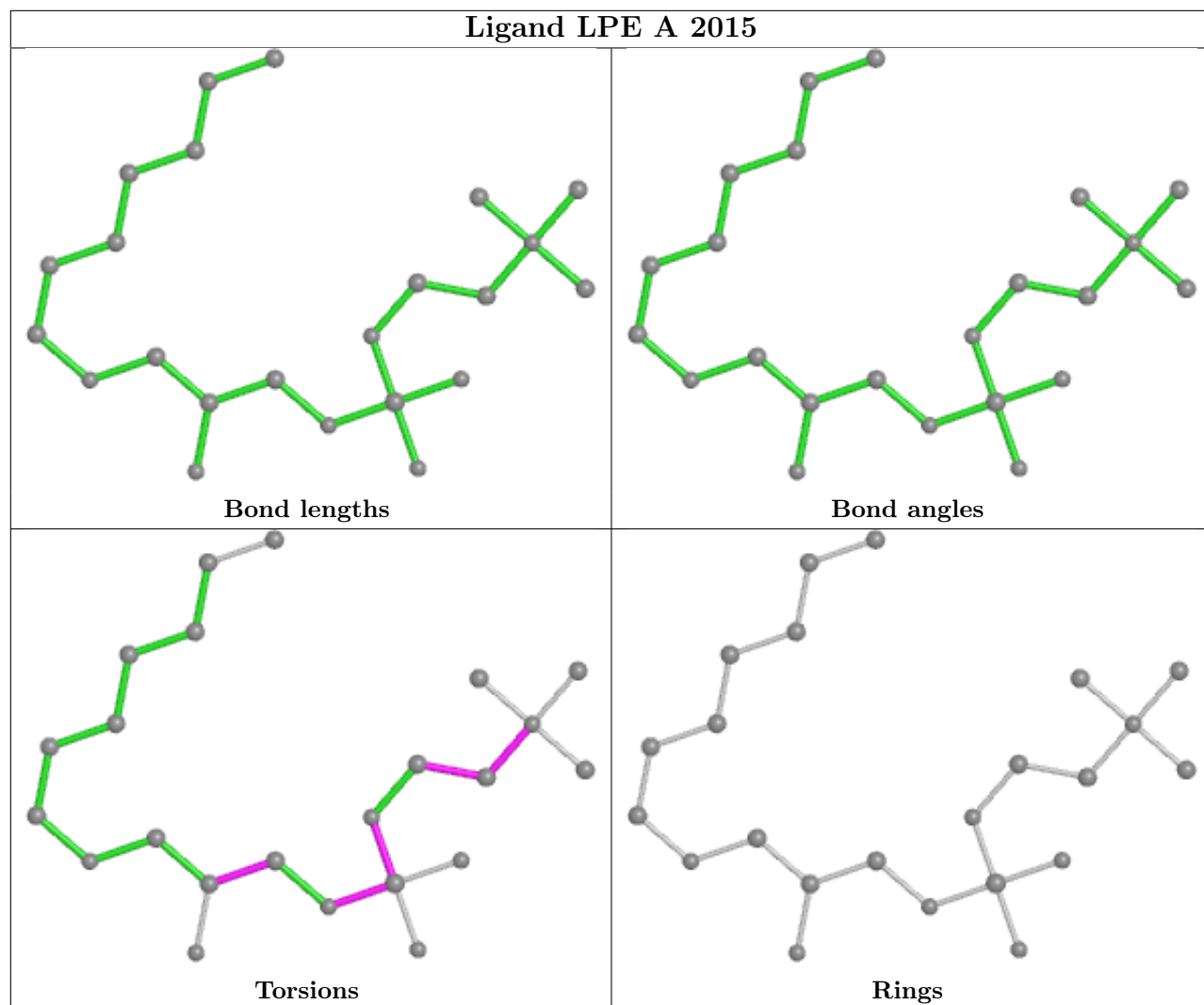
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

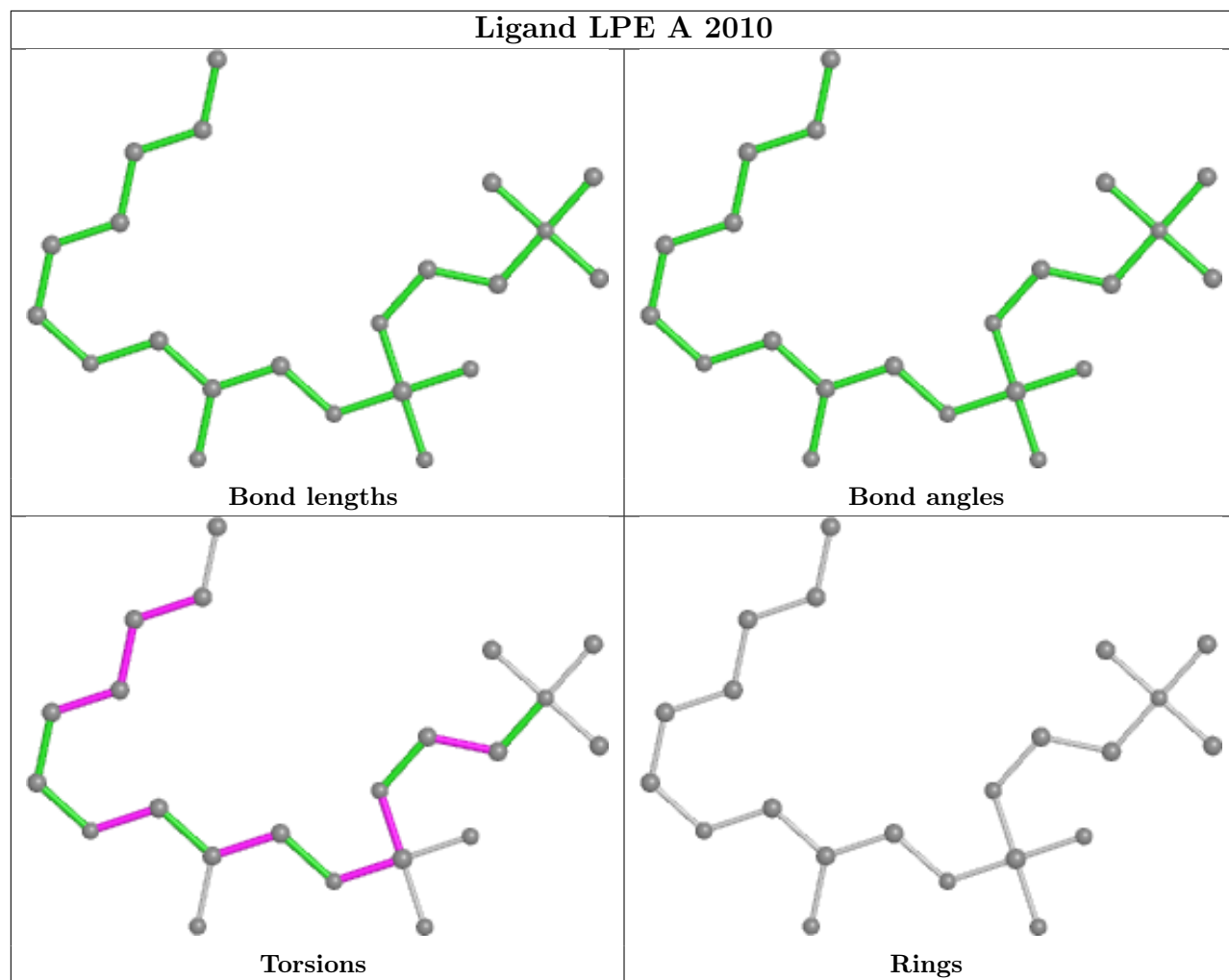


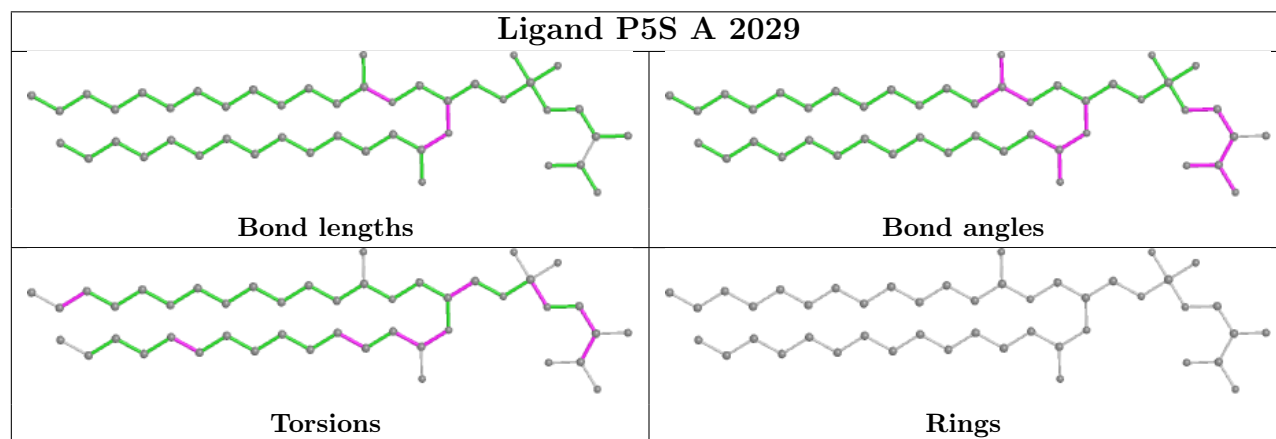
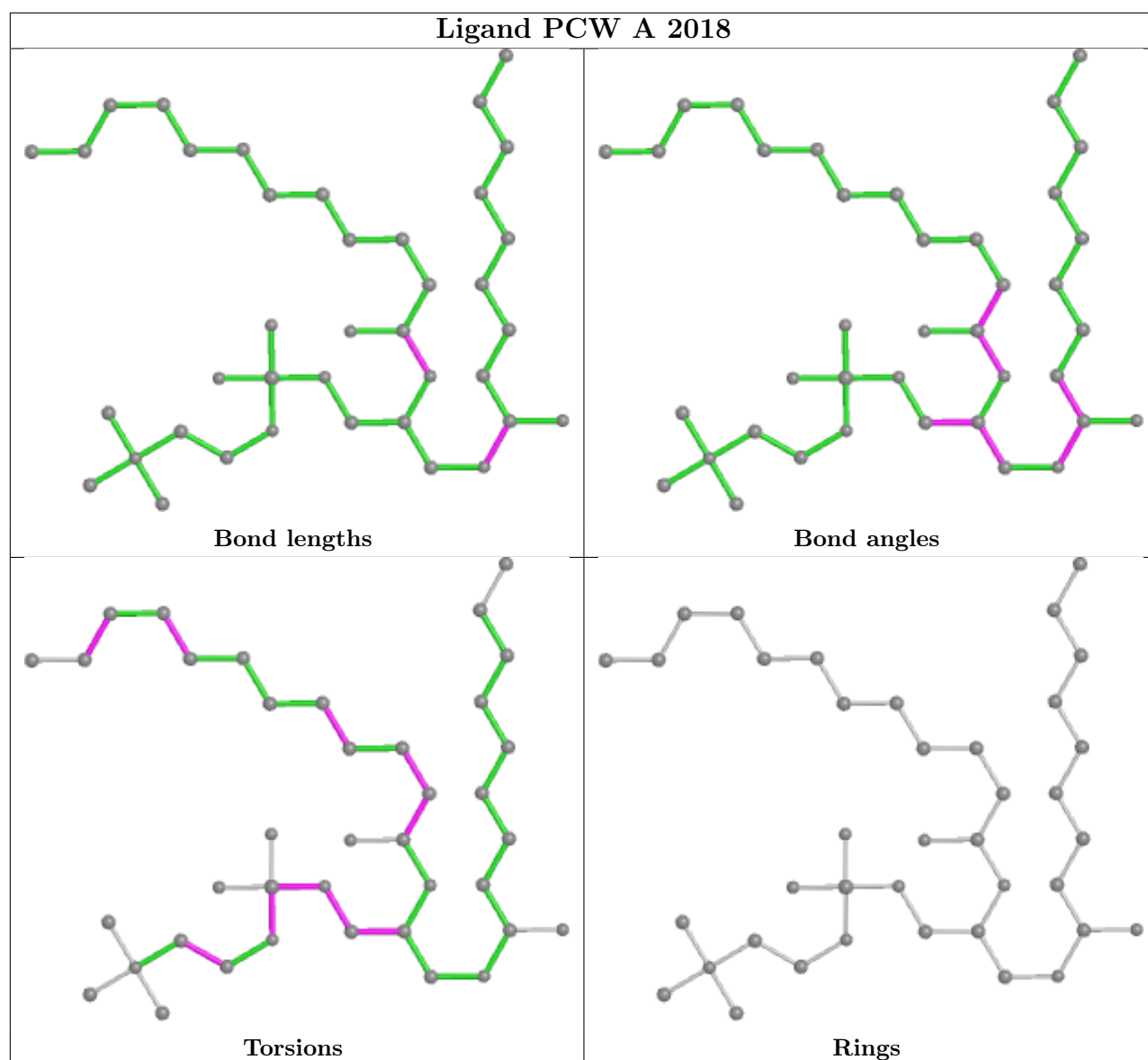


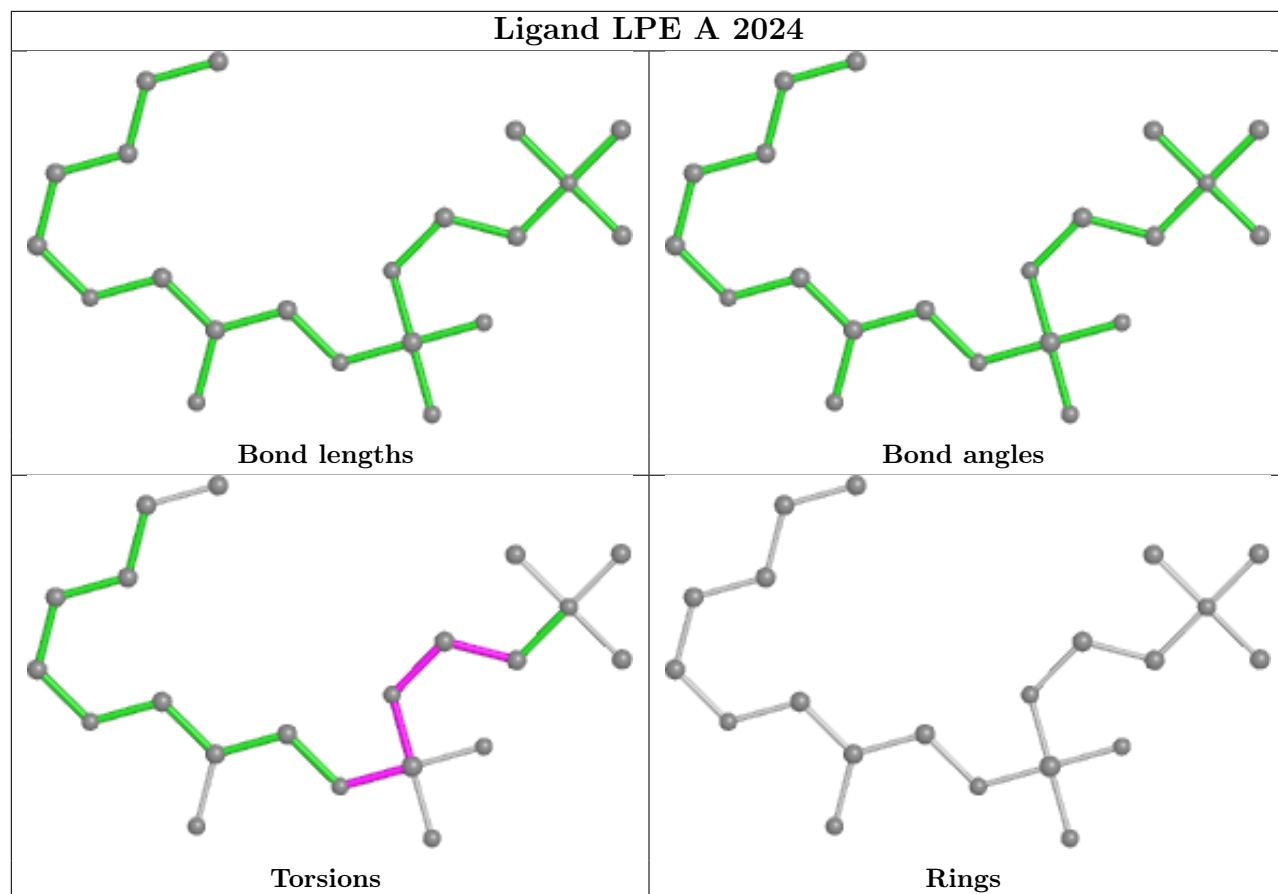


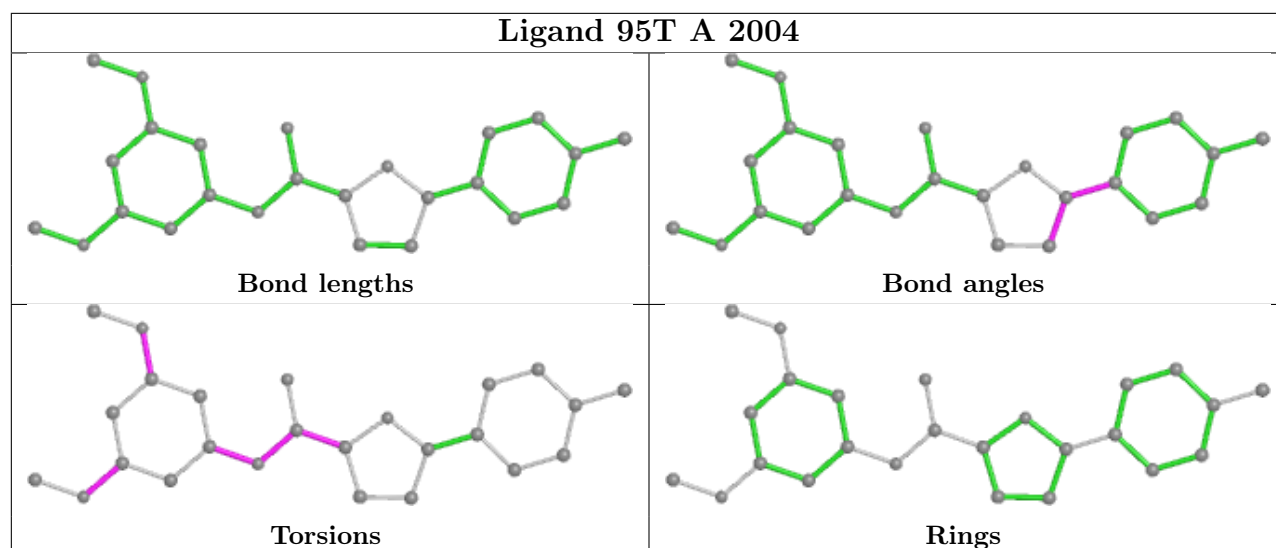
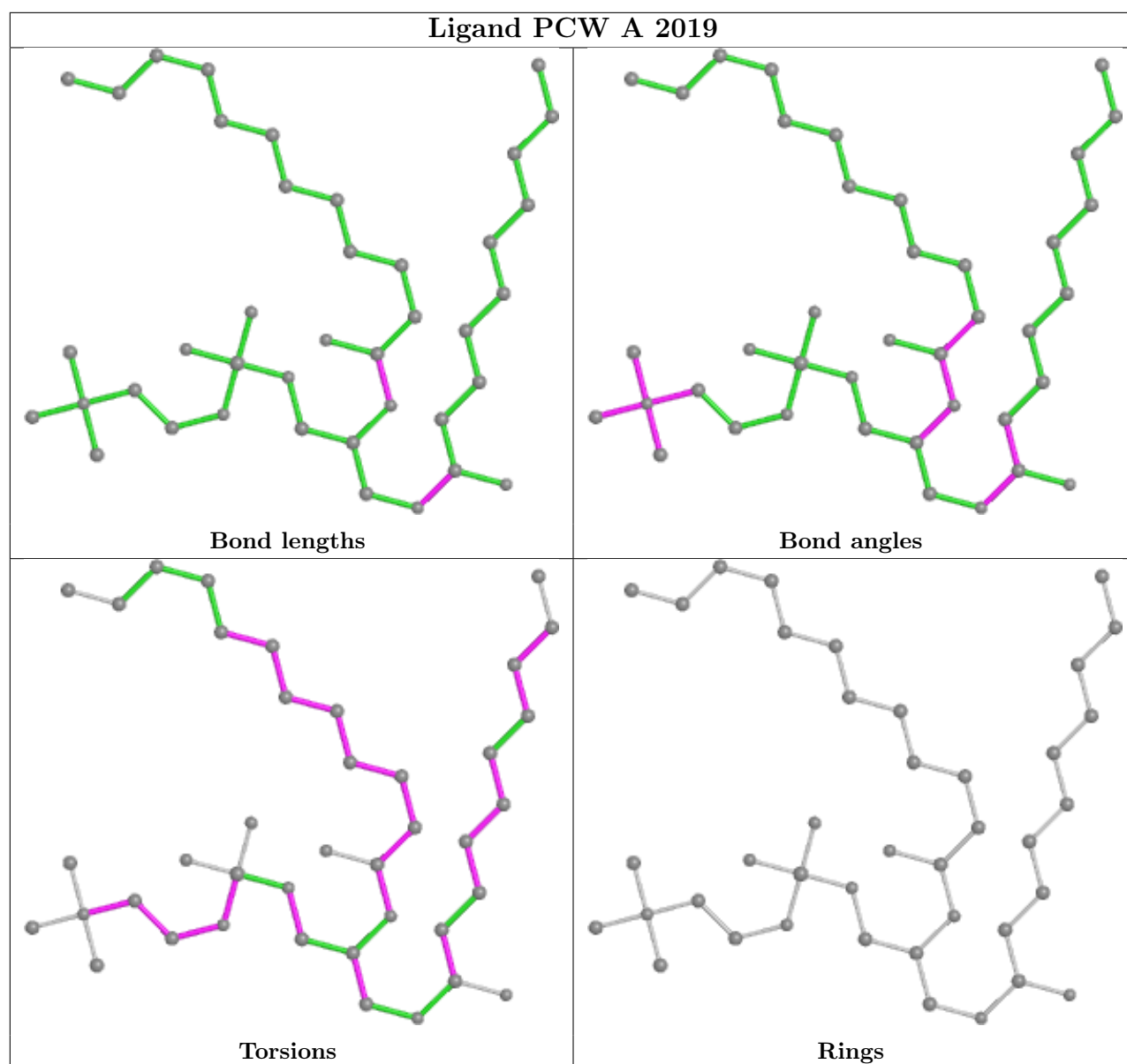


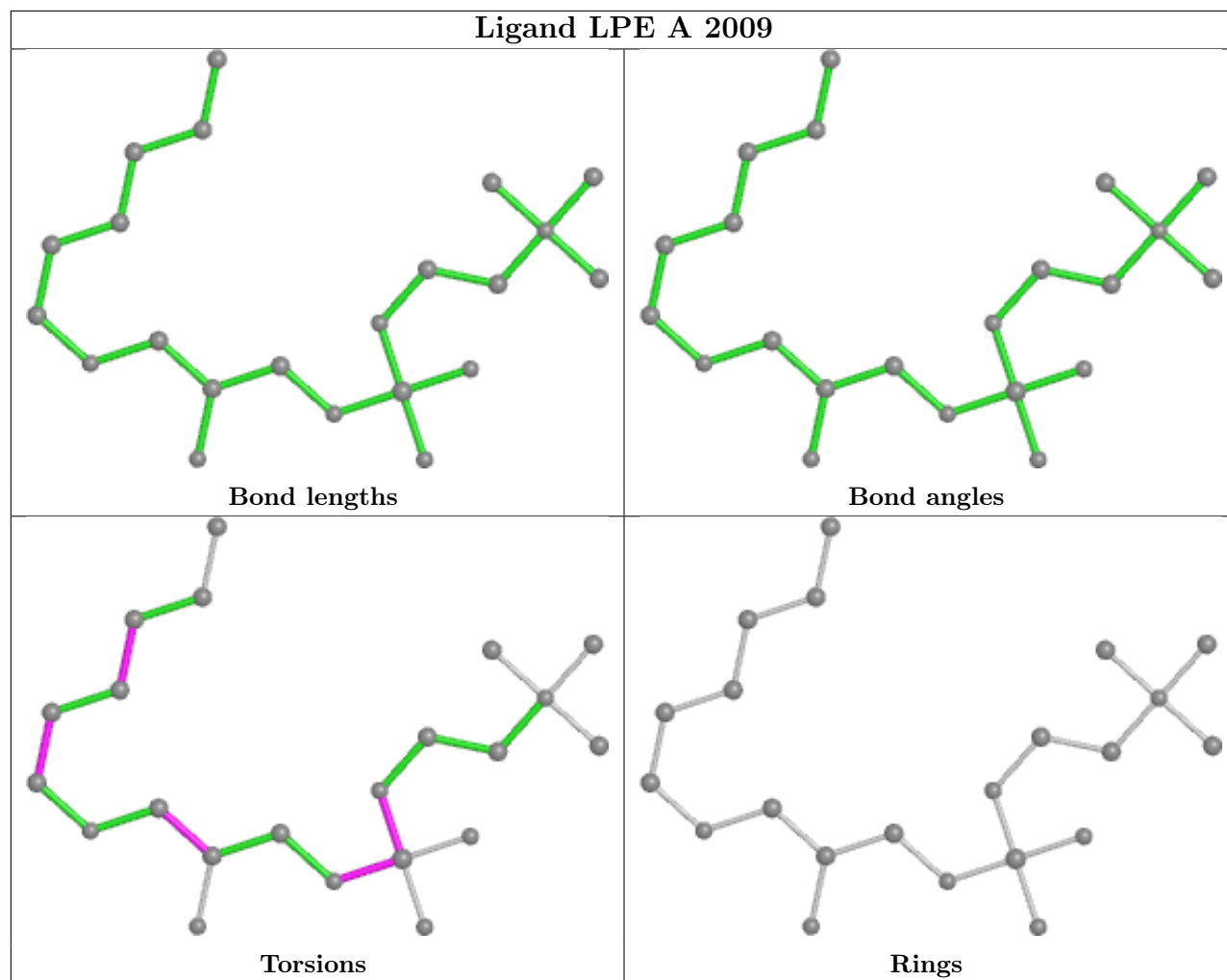


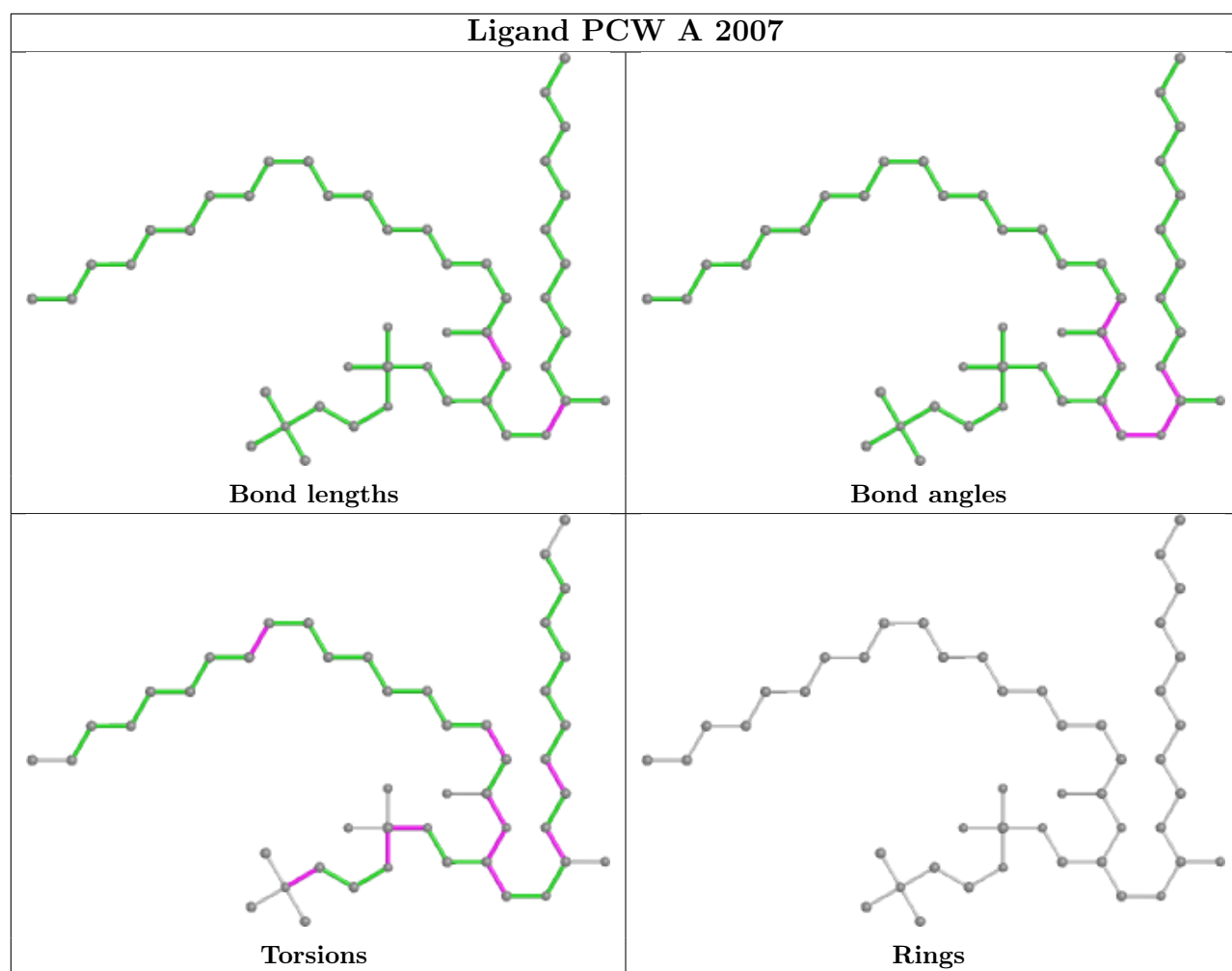




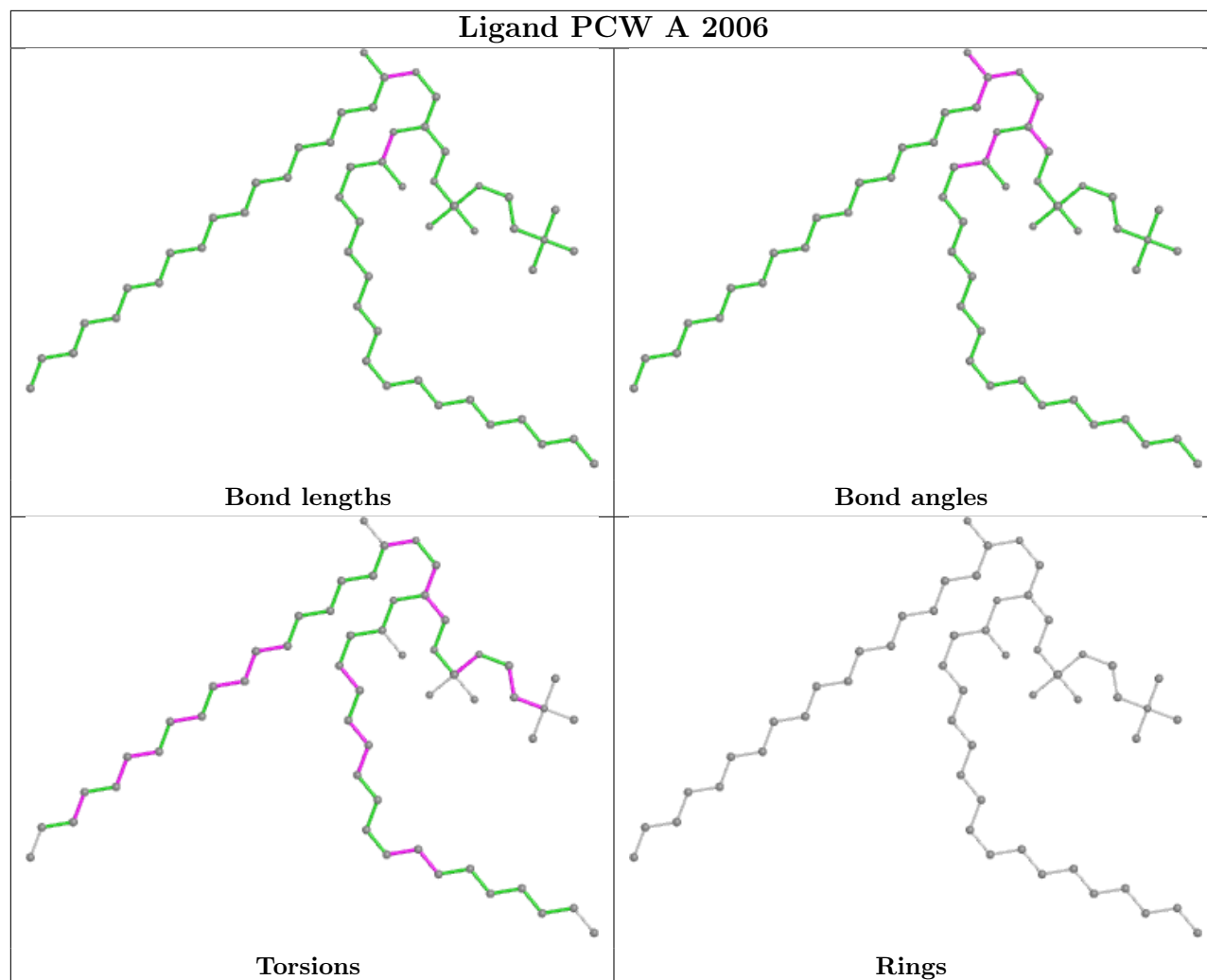




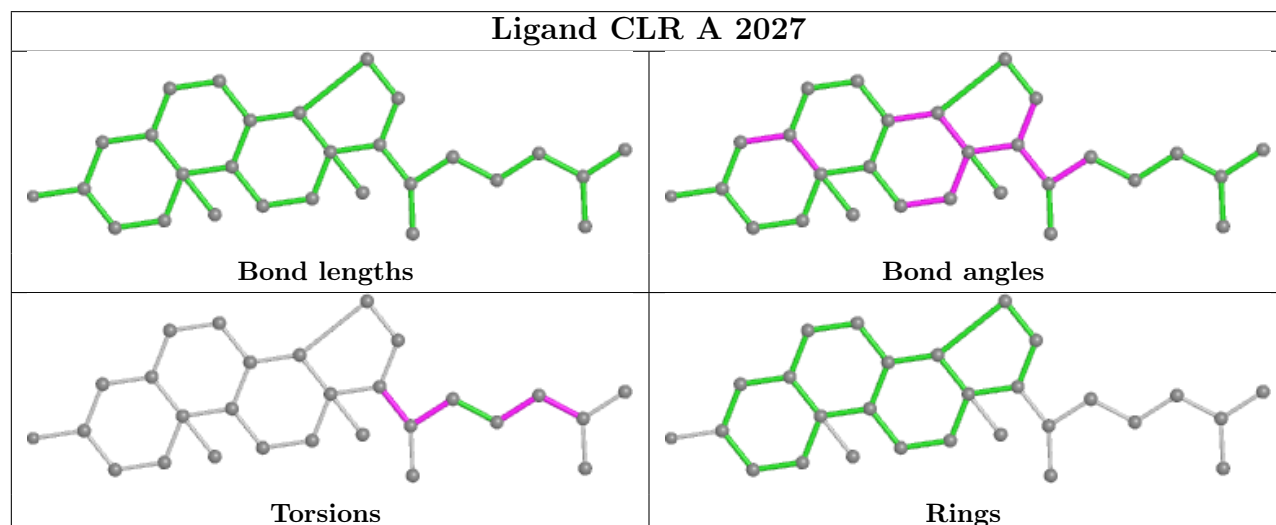


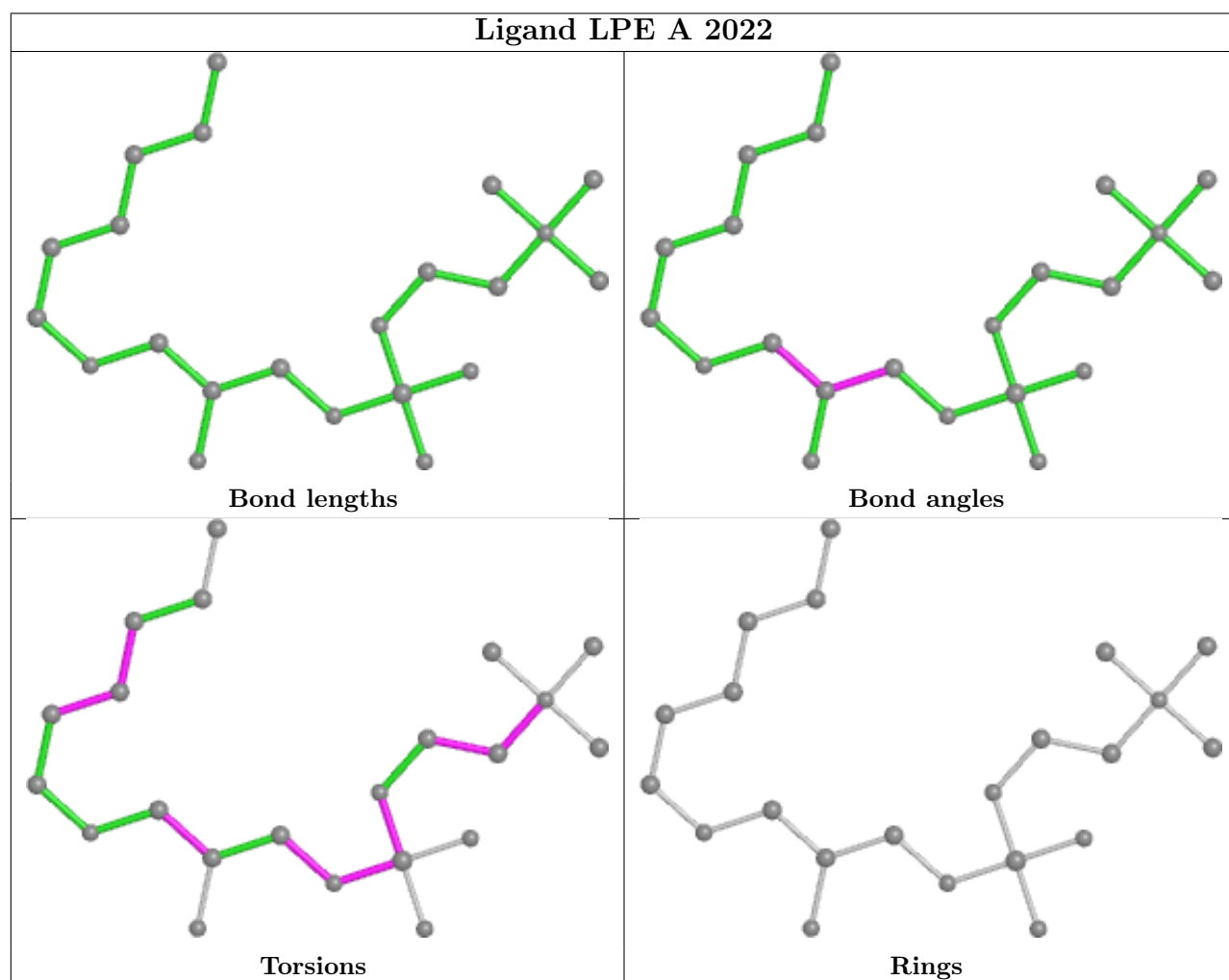
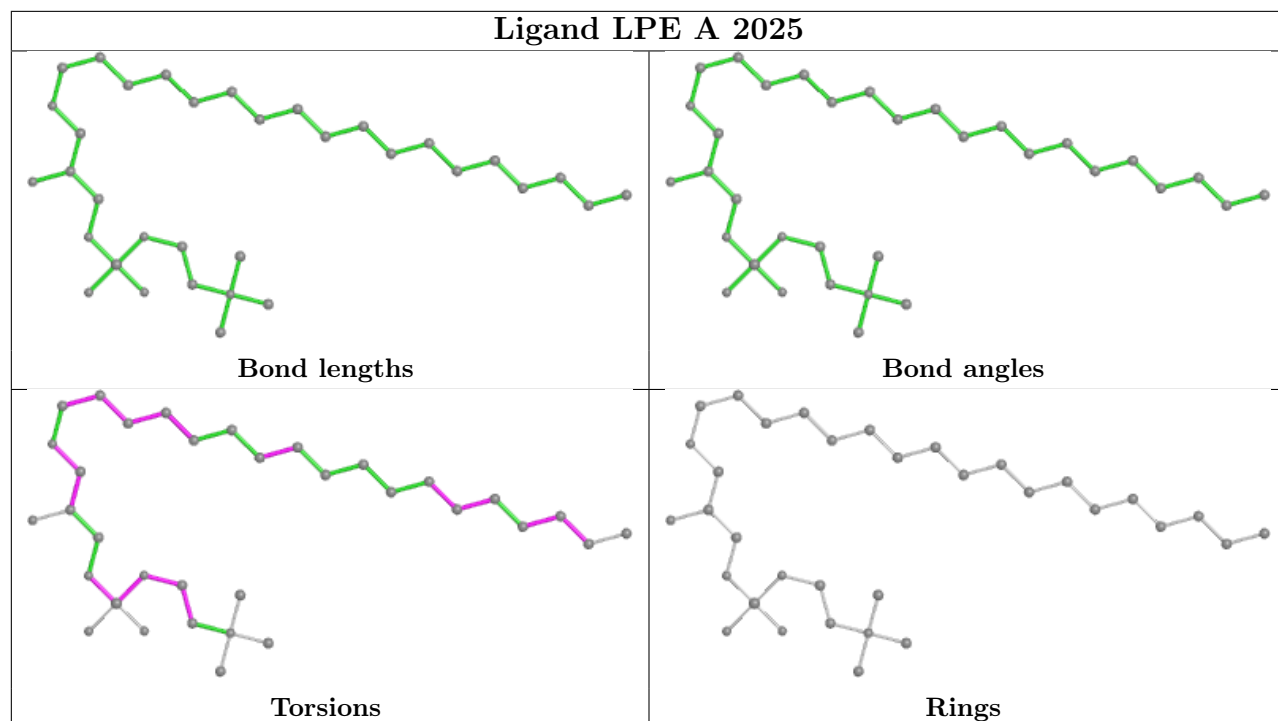


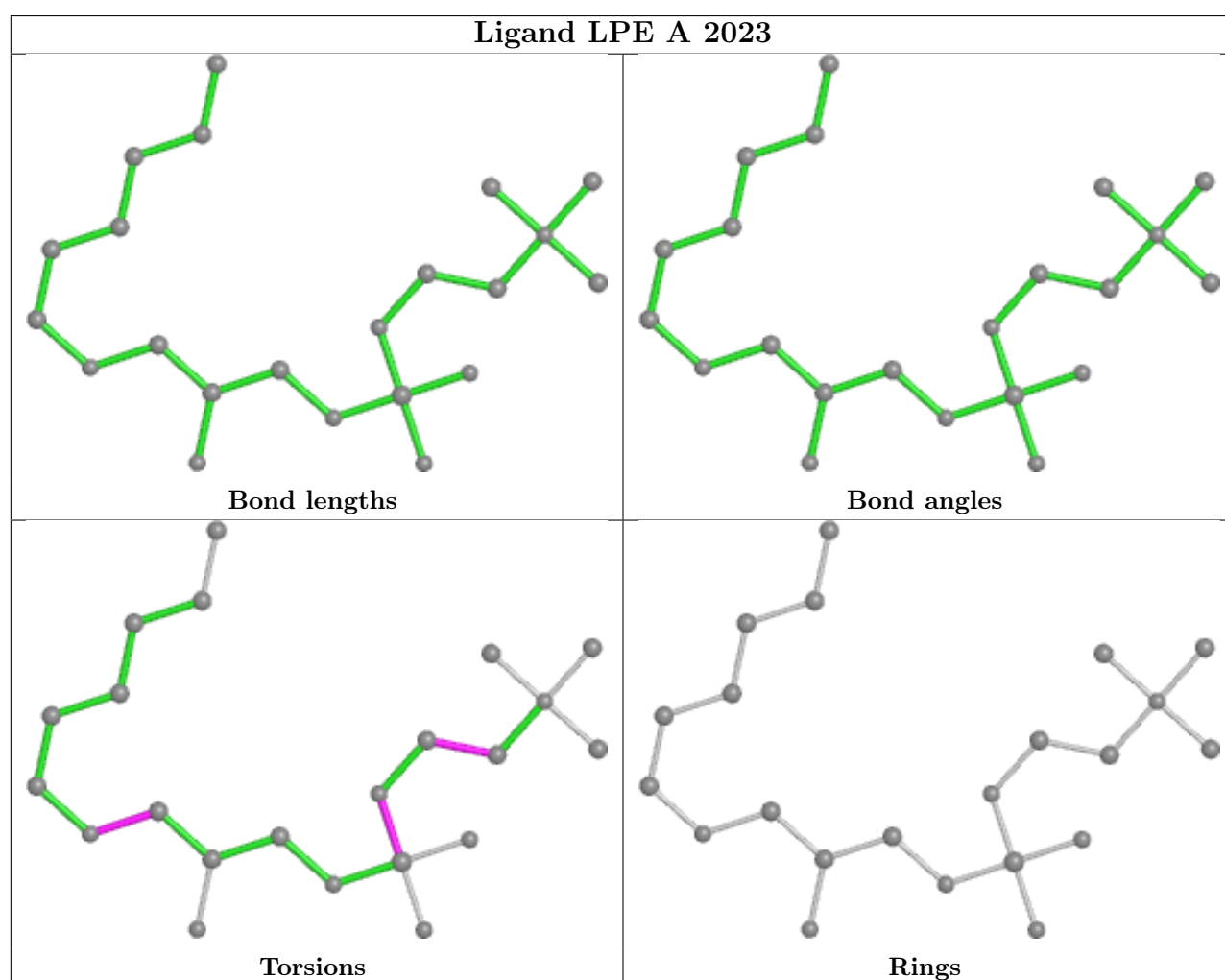
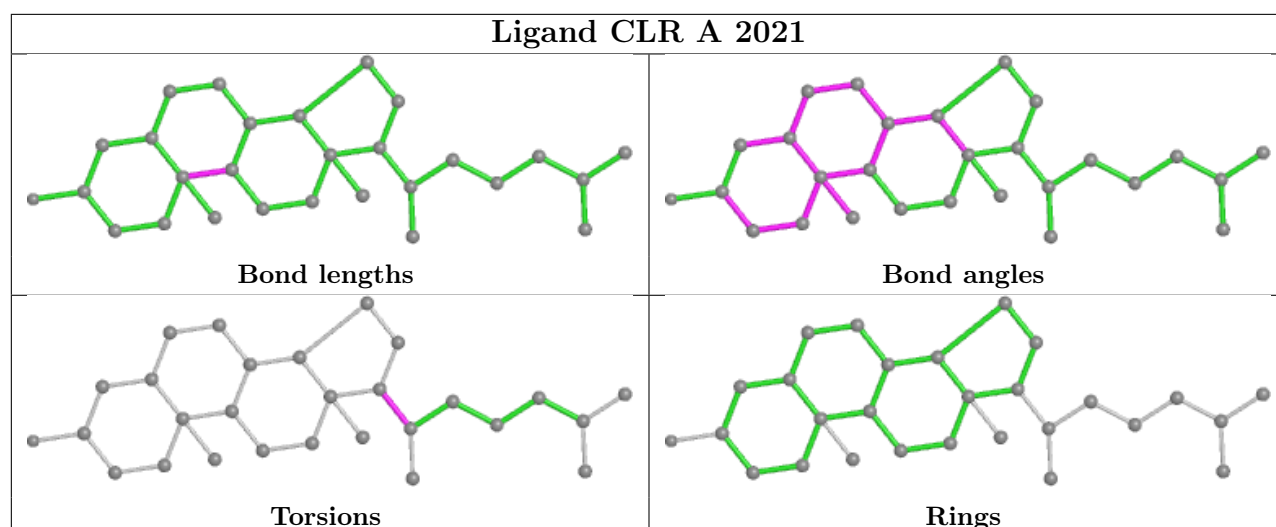
Ligand PCW A 2006

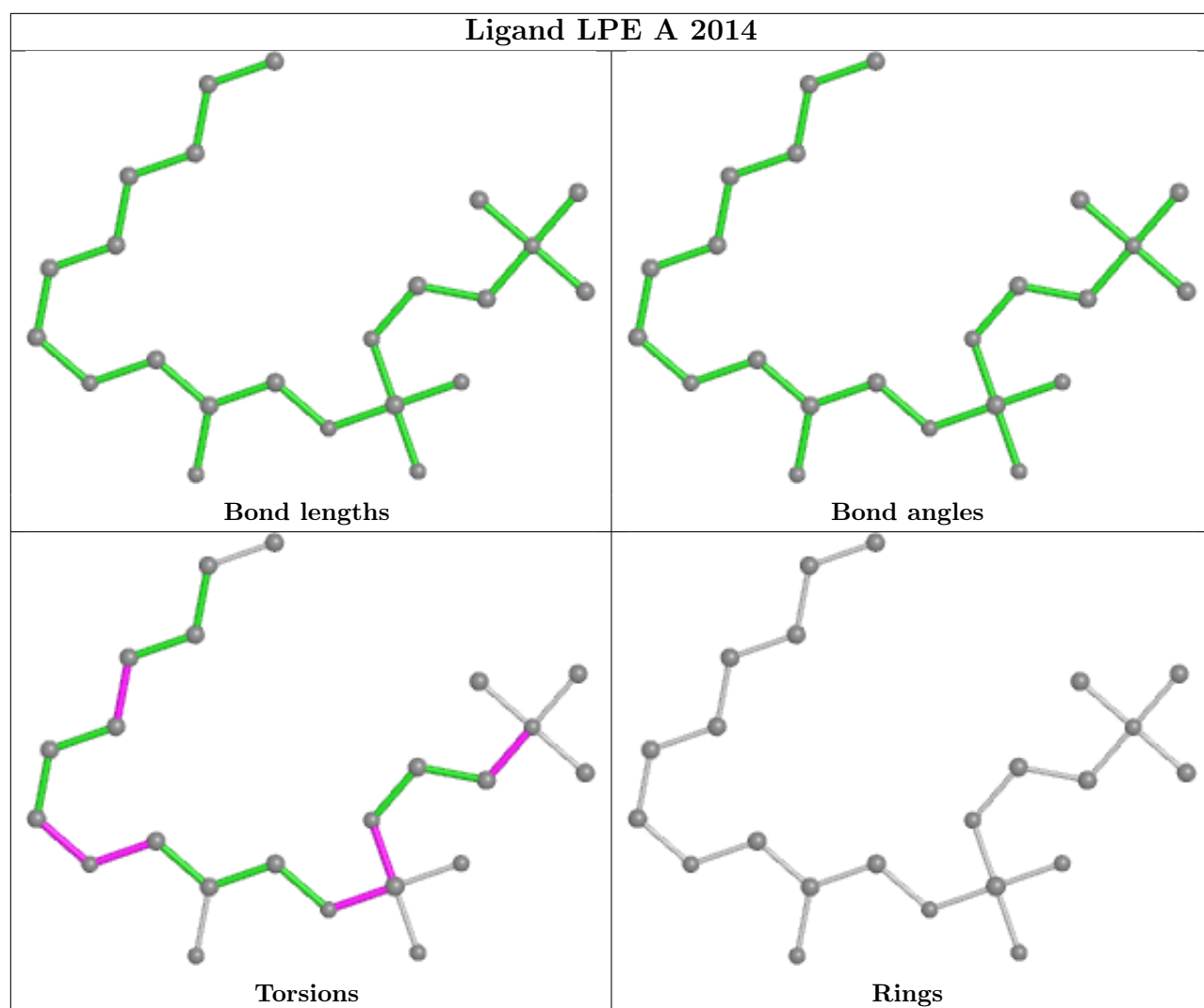


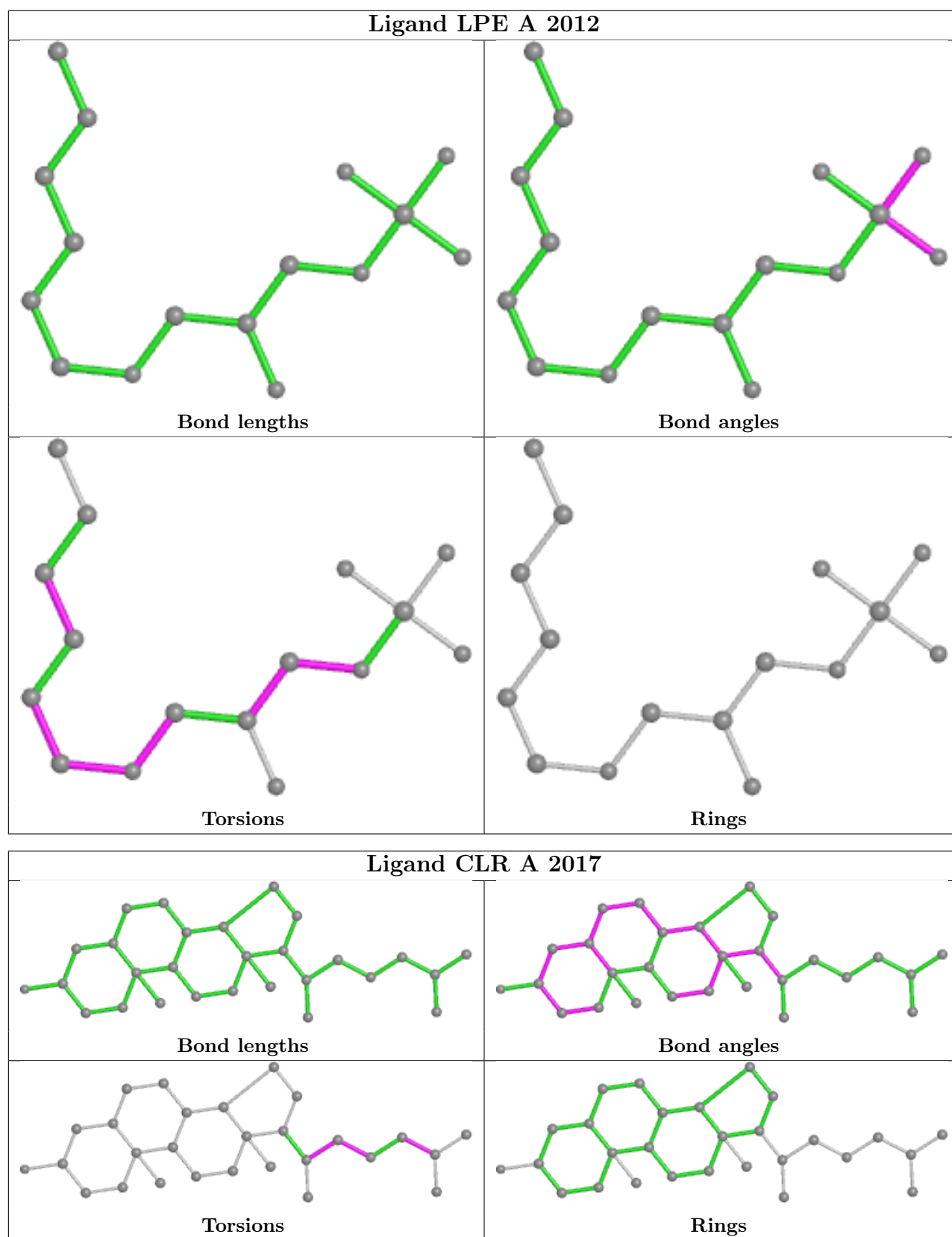
Ligand CLR A 2027

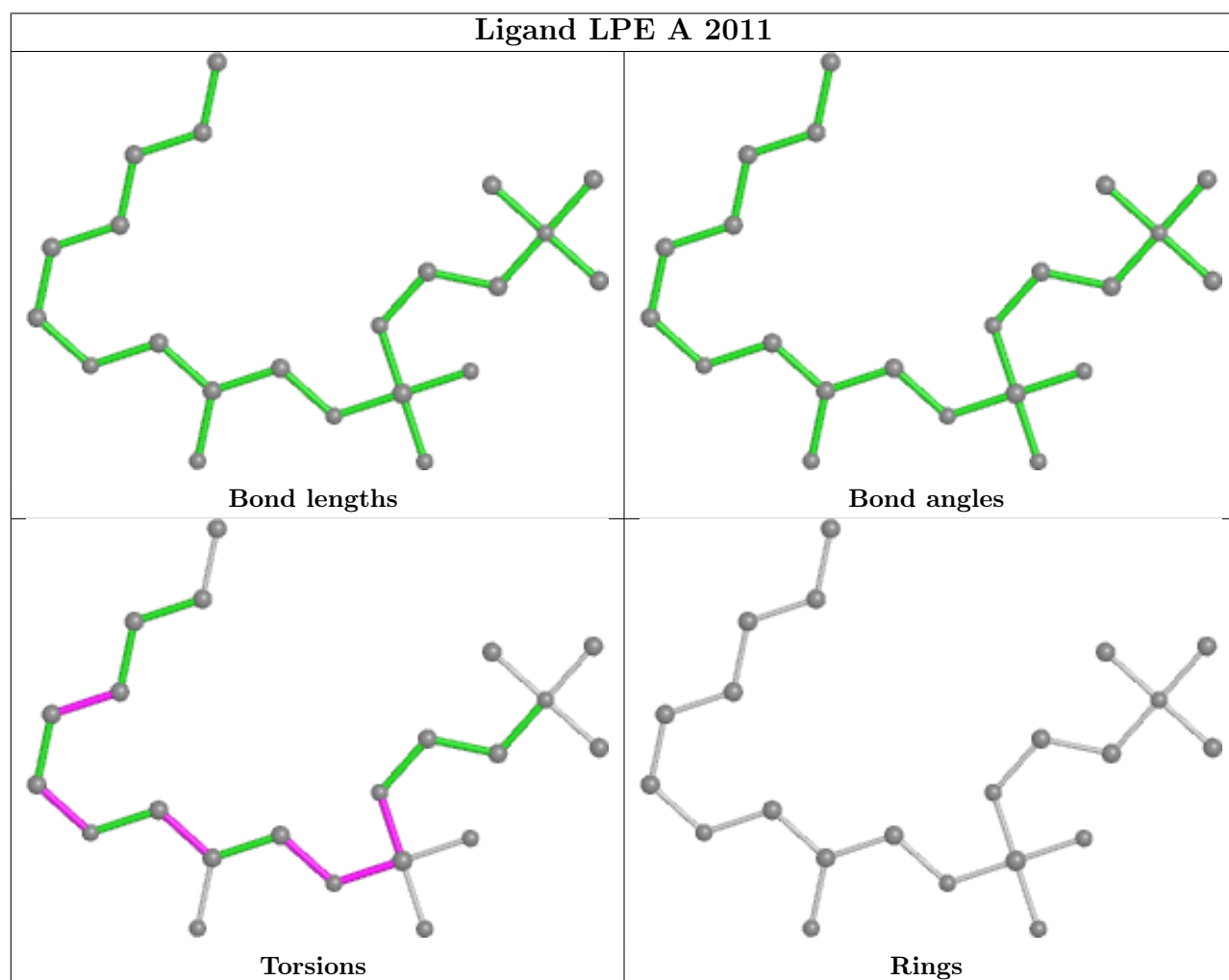
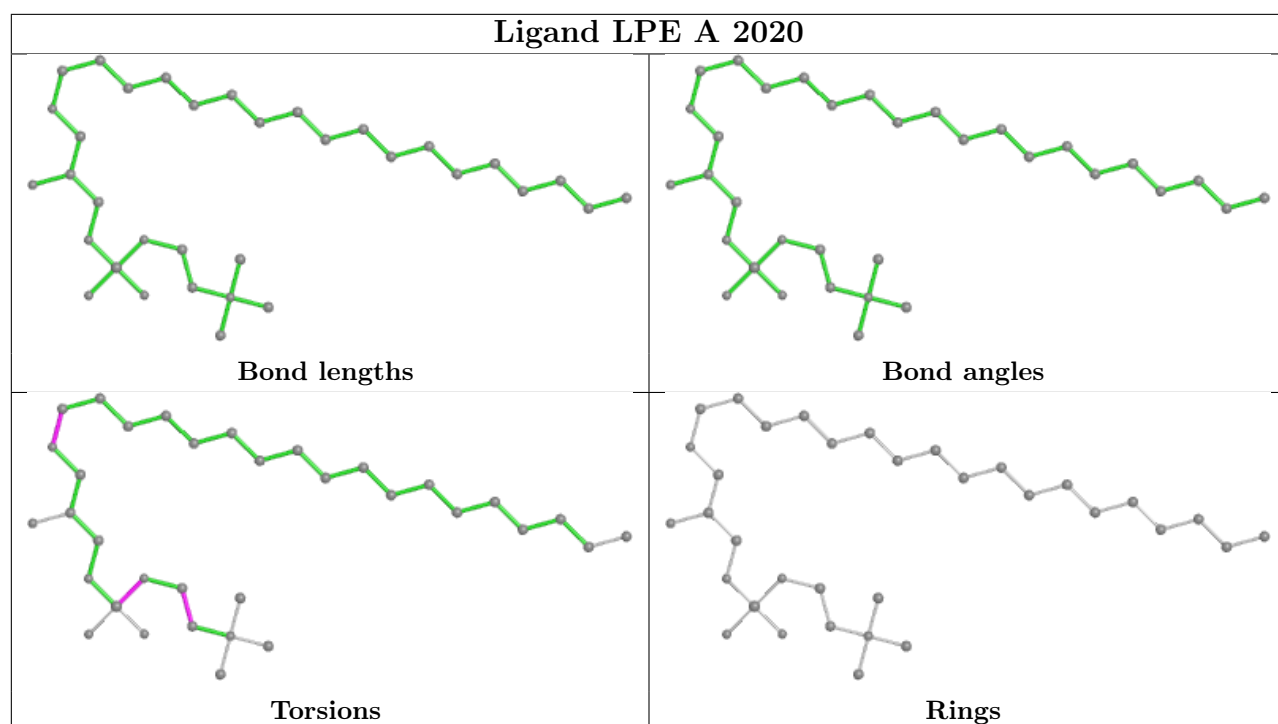


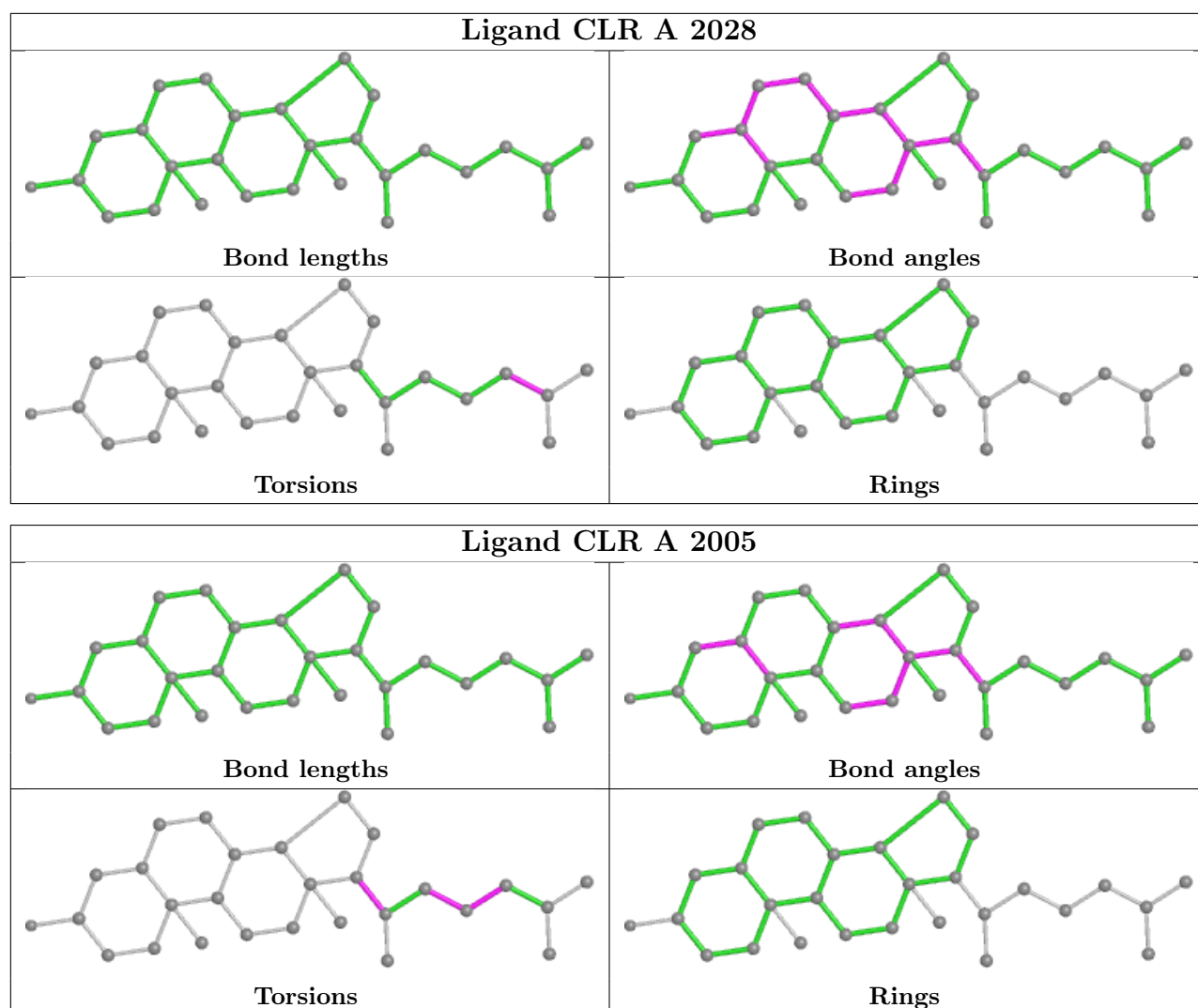












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

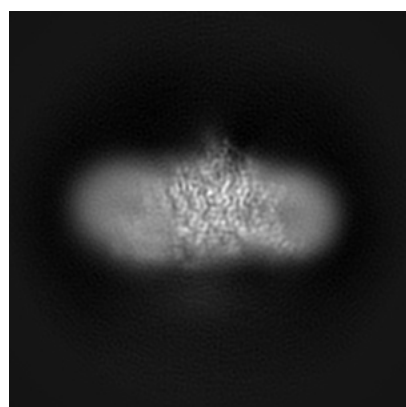
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-32475. These allow visual inspection of the internal detail of the map and identification of artifacts.

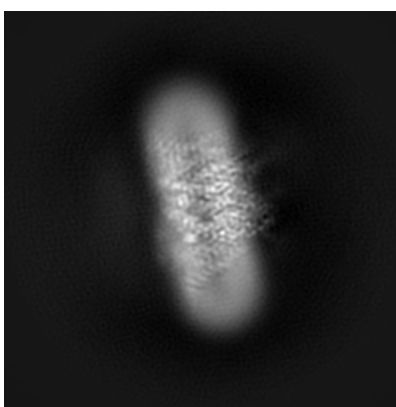
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

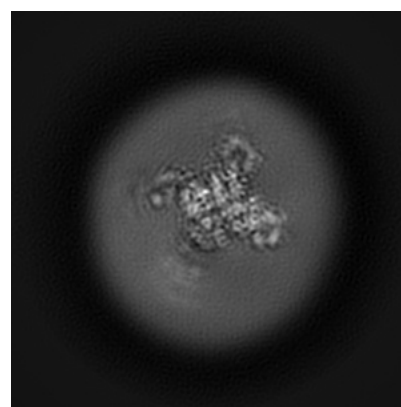
6.1.1 Primary map



X



Y

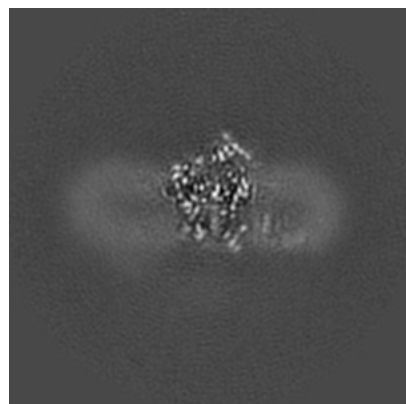


Z

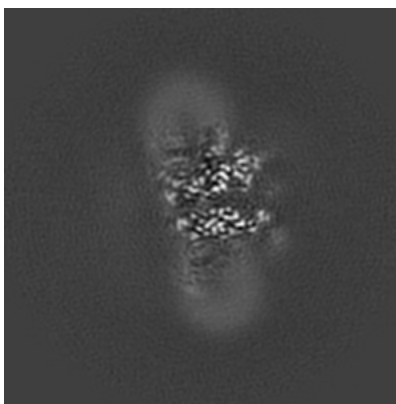
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

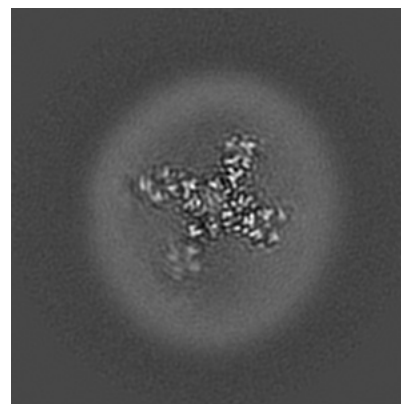
6.2.1 Primary map



X Index: 120



Y Index: 120

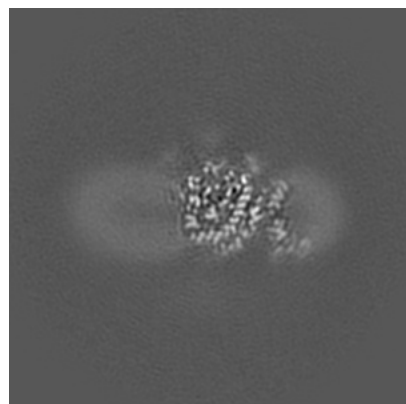


Z Index: 120

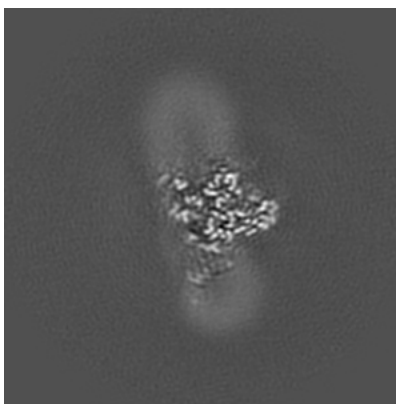
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

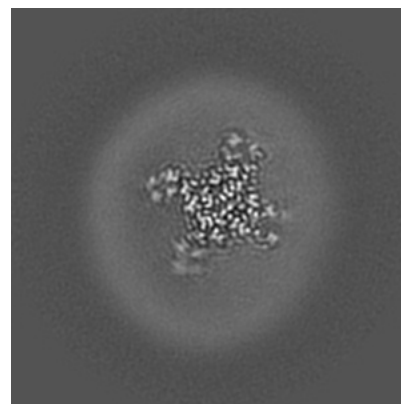
6.3.1 Primary map



X Index: 134



Y Index: 130

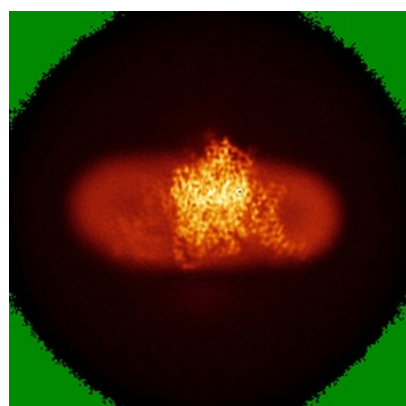


Z Index: 126

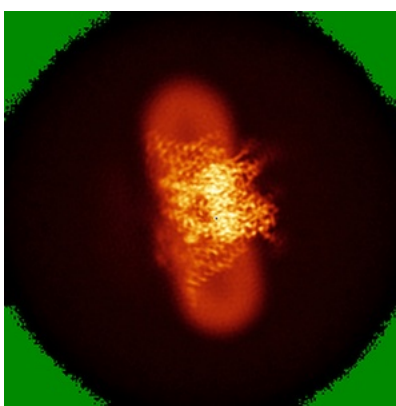
The images above show the largest variance slices of the map in three orthogonal directions.

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

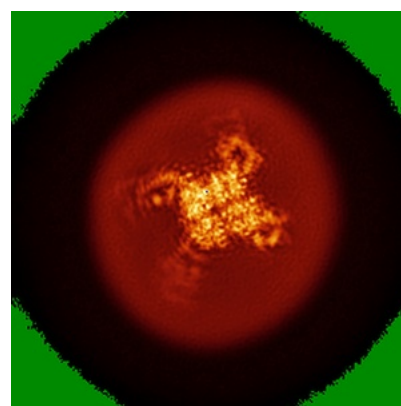
6.4.1 Primary map



X



Y

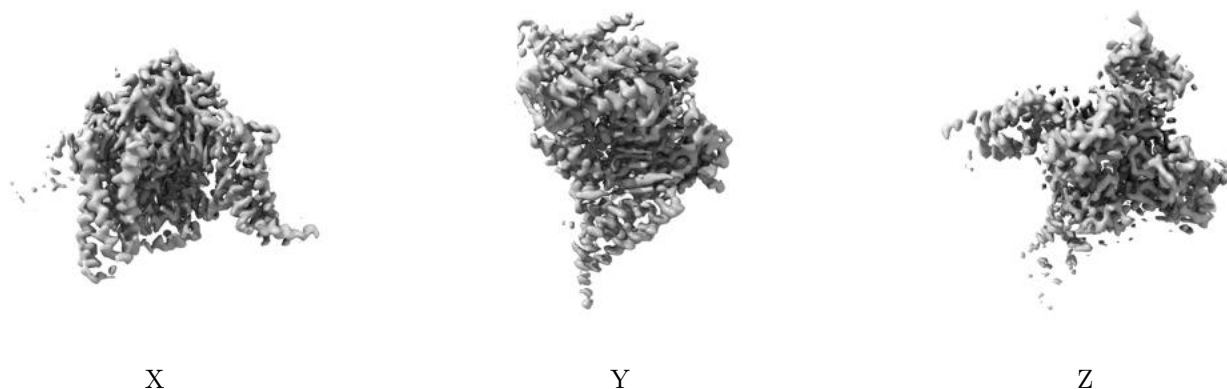


Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0217. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

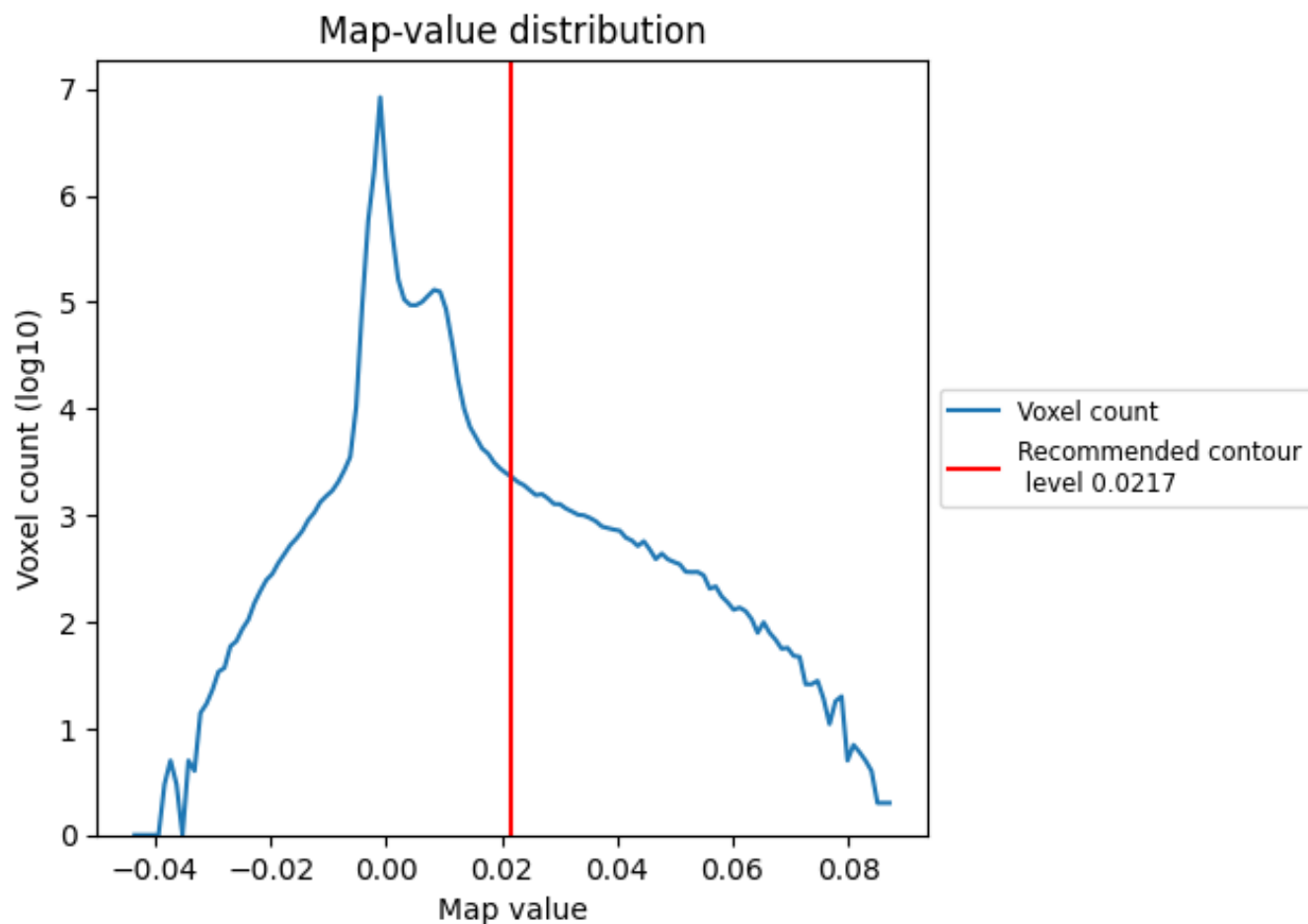
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

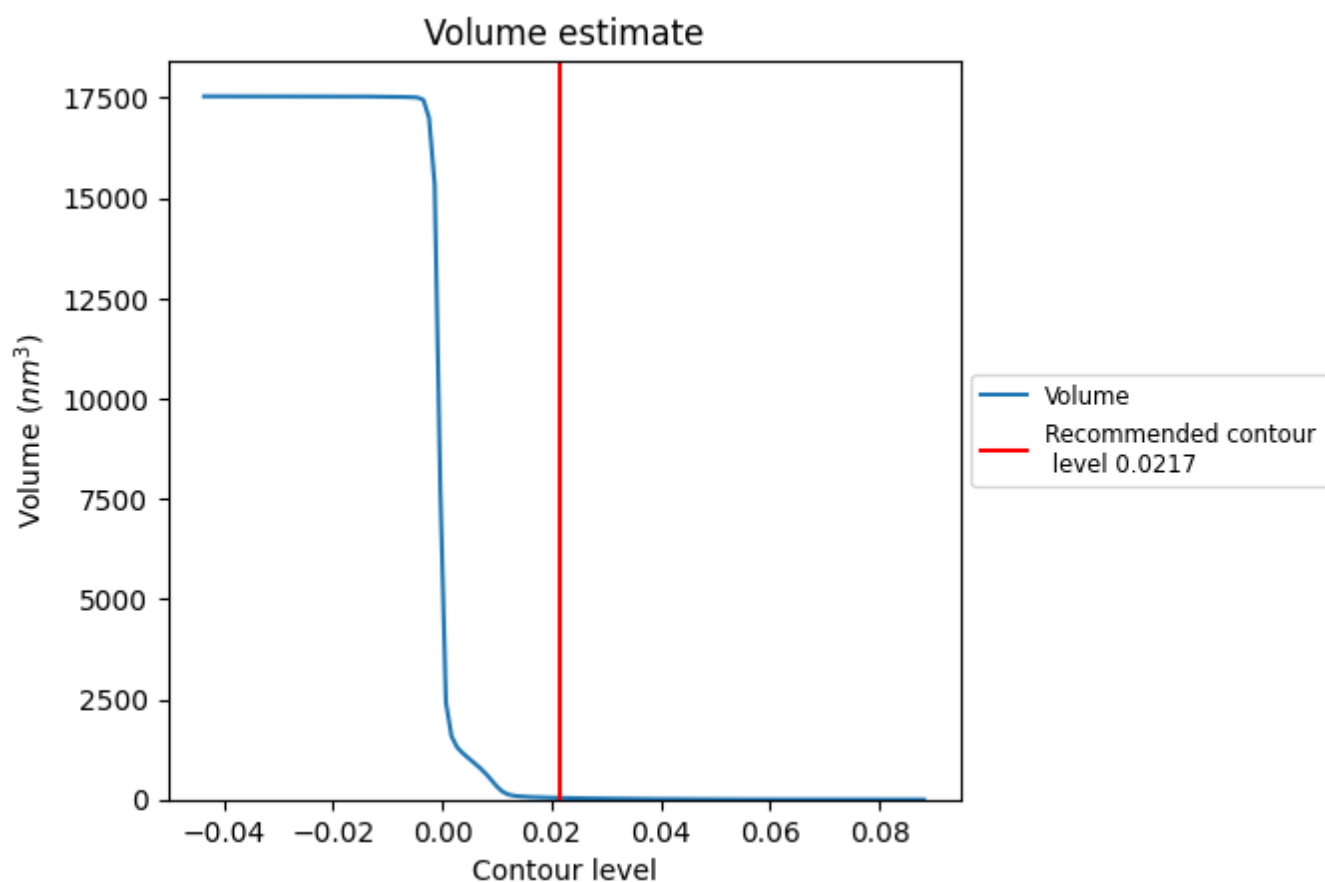
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

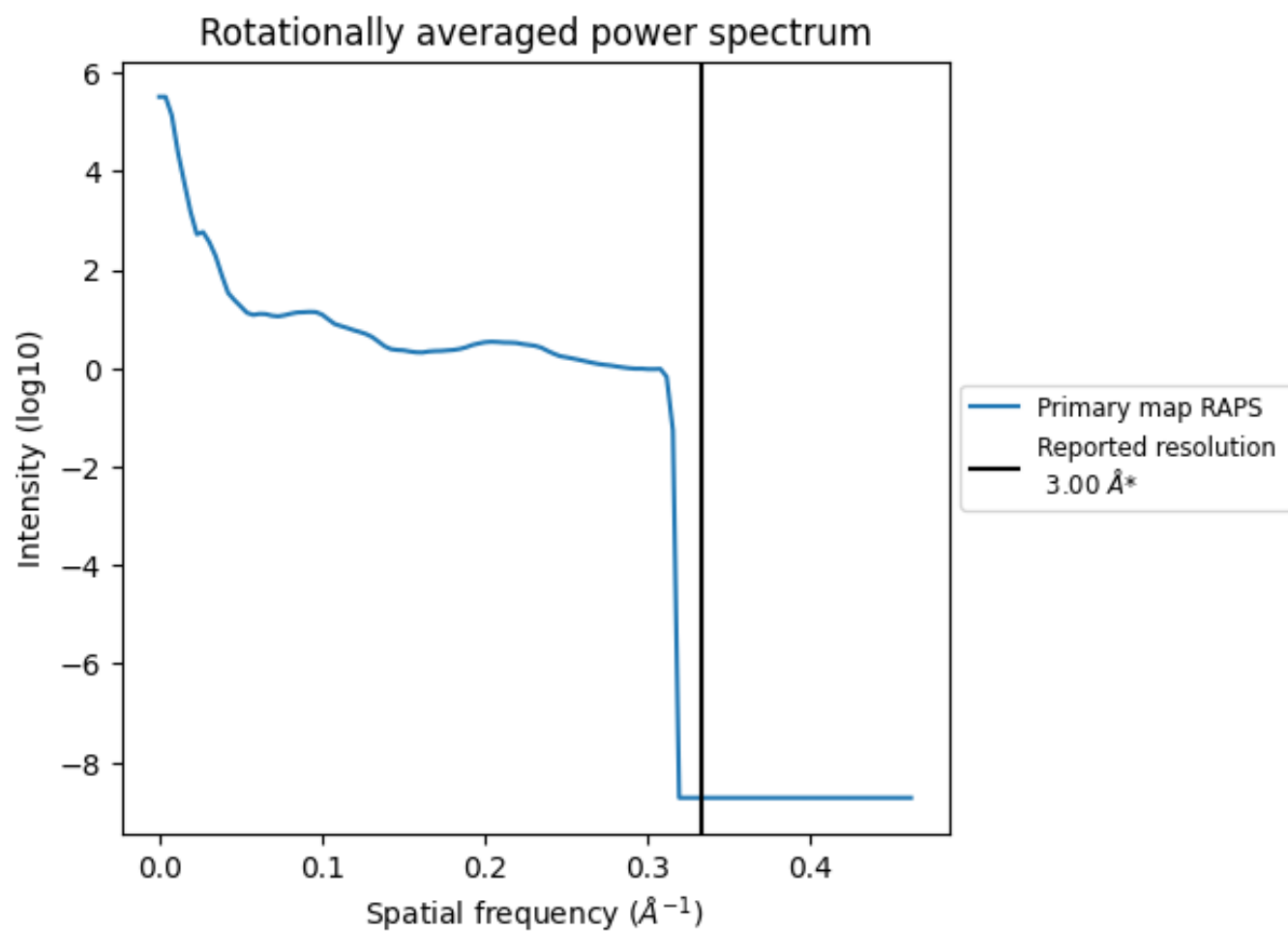
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 41 nm³; this corresponds to an approximate mass of 37 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ



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

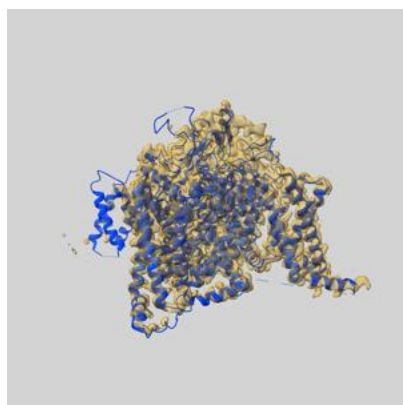
8 Fourier-Shell correlation ⓘ

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

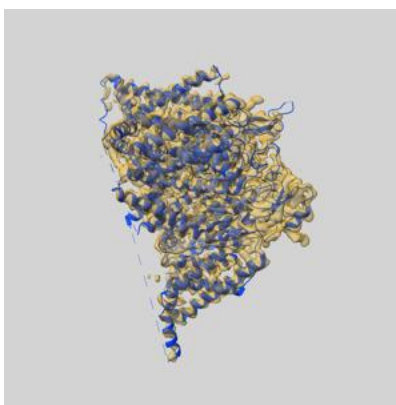
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-32475 and PDB model 7WFR. Per-residue inclusion information can be found in section [3](#) on page [9](#).

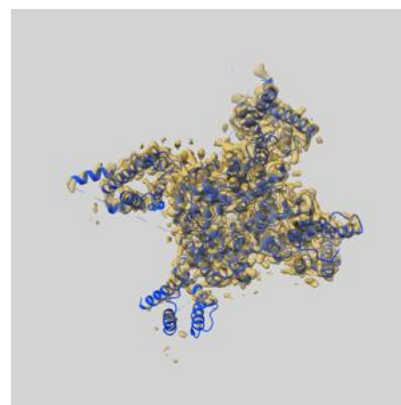
9.1 Map-model overlay [i](#)



X



Y



Z

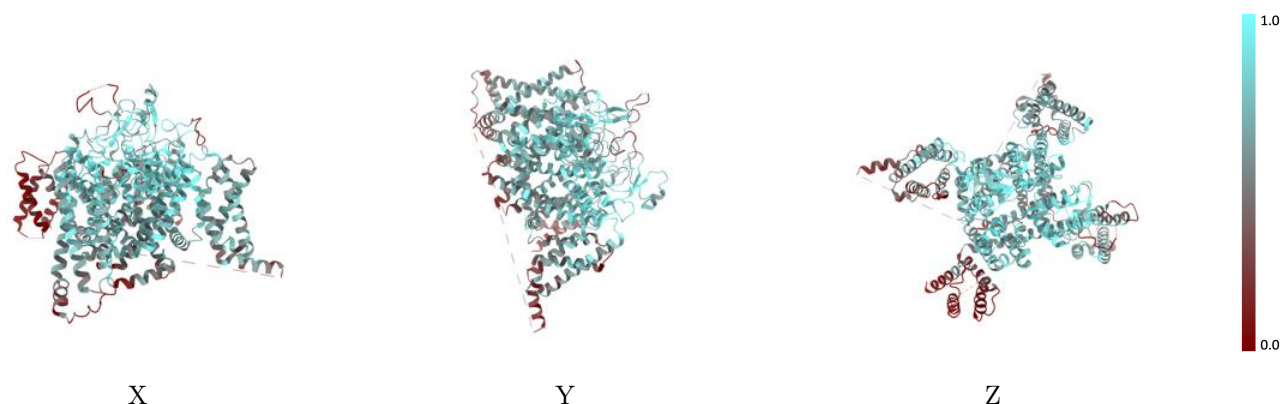
The images above show the 3D surface view of the map at the recommended contour level 0.0217 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



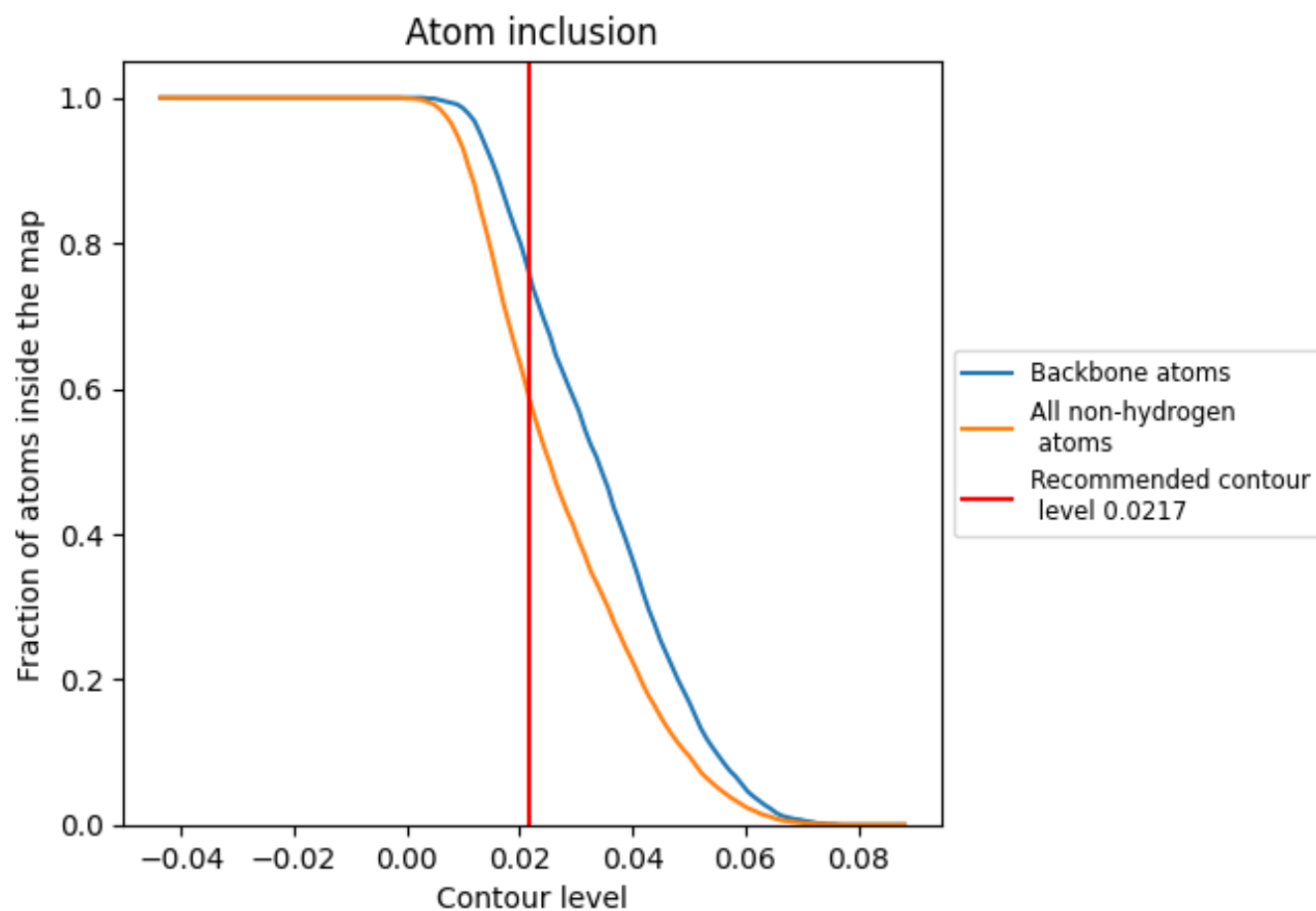
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0217).

9.4 Atom inclusion [i](#)



At the recommended contour level, 76% of all backbone atoms, 59% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.0217) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.5880	0.4830
A	0.5870	0.4830
B	0.5710	0.4310
C	0.7500	0.5480

