



Full wwPDB EM Validation Report ⓘ

Oct 27, 2024 – 05:07 AM EDT

PDB ID : 7MIT
EMDB ID : EMD-23864
Title : Vascular KATP channel: Kir6.1 SUR2B propeller-like conformation 1
Authors : Sung, M.W.; Shyng, S.L.
Deposited on : 2021-04-17
Resolution : 3.40 Å (reported)
Based on initial model : 6BAA

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev113
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.39

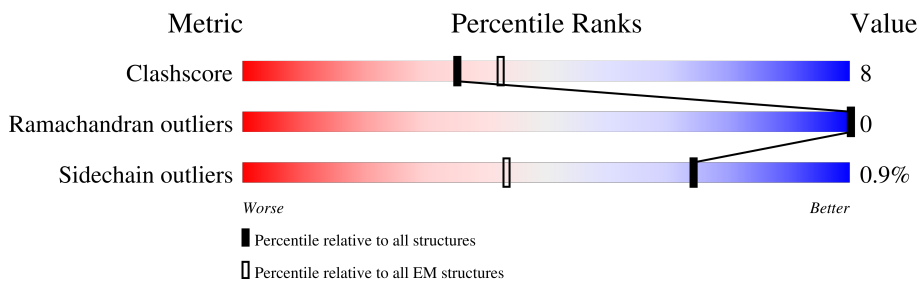
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.40 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	424	
1	B	424	
1	C	424	
1	D	424	
2	E	1545	
3	N	2	

2 Entry composition [i](#)

There are 9 unique types of molecules in this entry. The entry contains 21447 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 ATP-sensitive inward rectifier potassium channel 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	364	2696	1732	476	470	18	0	0
1	B	337	2564	1646	447	454	17	0	0
1	C	336	2546	1639	444	448	15	0	0
1	D	337	2558	1645	448	449	16	0	0

- Molecule 2 is a protein called Isoform SUR2B of ATP-binding cassette sub-family C member 9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	E	1438	9995	6484	1727	1747	37	0	0

- Molecule 3 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		
3	N	2	28	16	2	10	0	0

- Molecule 4 is POTASSIUM ION (three-letter code: K) (formula: K) (labeled as "Ligand of Interest" by depositor).

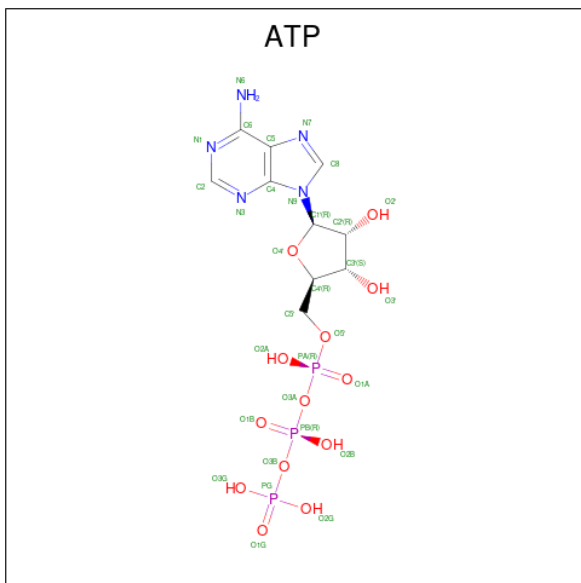
Mol	Chain	Residues	Atoms	AltConf
4	A	3	Total K 3 3	0

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Mol	Chain	Residues	Atoms	AltConf
4	D	1	Total K 1 1	0

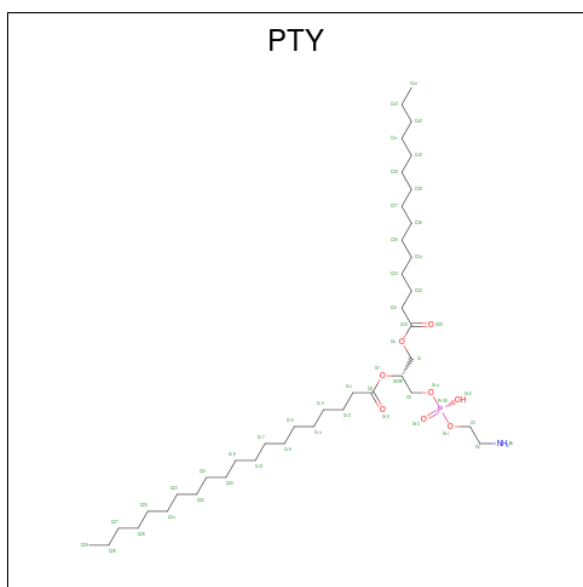
- Molecule 5 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).





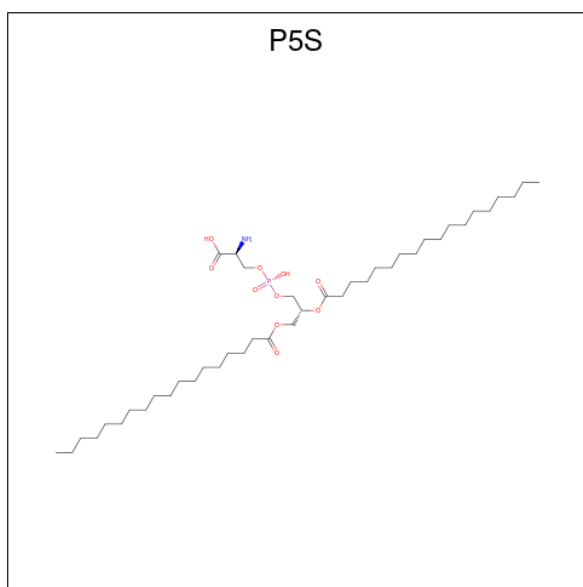
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
6	A	1	Total 36	26	1	8	1	0
6	A	1	Total 36	26	1	8	1	0
6	B	1	Total 36	26	1	8	1	0
6	C	1	Total 36	26	1	8	1	0
6	C	1	Total 36	26	1	8	1	0
6	C	1	Total 36	26	1	8	1	0
6	D	1	Total 36	26	1	8	1	0
6	D	1	Total 36	26	1	8	1	0

- Molecule 7 is PHOSPHATIDYLETHANOLAMINE (three-letter code: PTY) (formula: $C_{40}H_{80}NO_8P$) (labeled as "Ligand of Interest" by depositor).



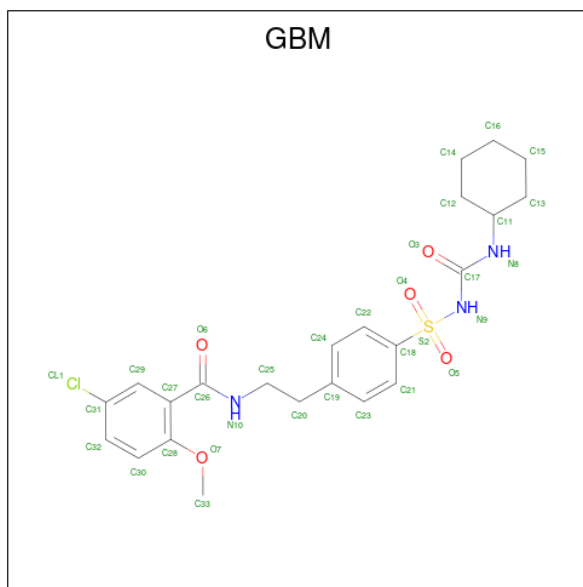
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
7	A	1	32	22	1	8	1	0
7	E	1	32	22	1	8	1	0
7	E	1	32	22	1	8	1	0
7	E	1	32	22	1	8	1	0
7	E	1	32	22	1	8	1	0
7	E	1	32	22	1	8	1	0
7	E	1	32	22	1	8	1	0
7	E	1	32	22	1	8	1	0

- Molecule 8 is O-[(R)-{[(2R)-2,3-bis(octadecanoyloxy)propyl]oxy}(hydroxy)phosphoryl]-L-serine (three-letter code: P5S) (formula: C₄₂H₈₂NO₁₀P) (labeled as "Ligand of Interest" by depositor).

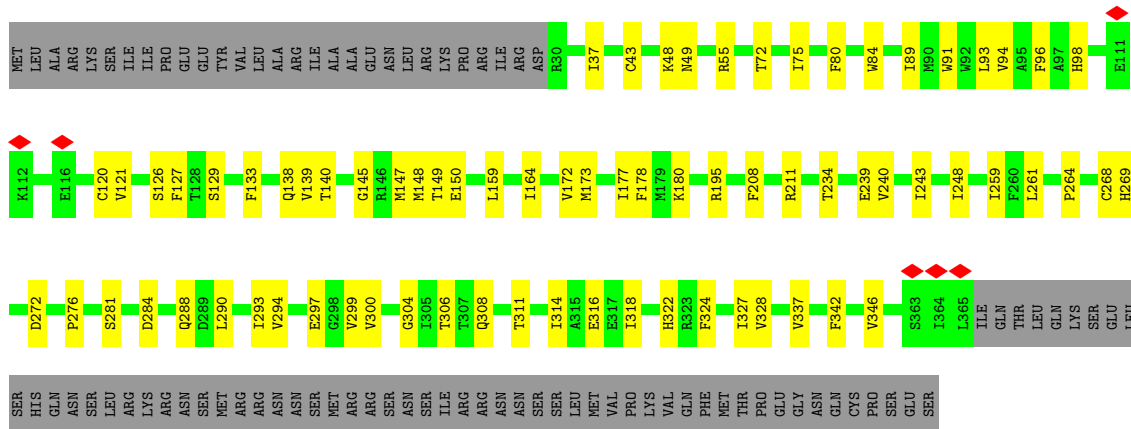


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
8	A	1	54	42	1	10	1	0
8	B	1	54	42	1	10	1	0
8	C	1	54	42	1	10	1	0
8	D	1	54	42	1	10	1	0
8	E	1	54	42	1	10	1	0
8	E	1	54	42	1	10	1	0

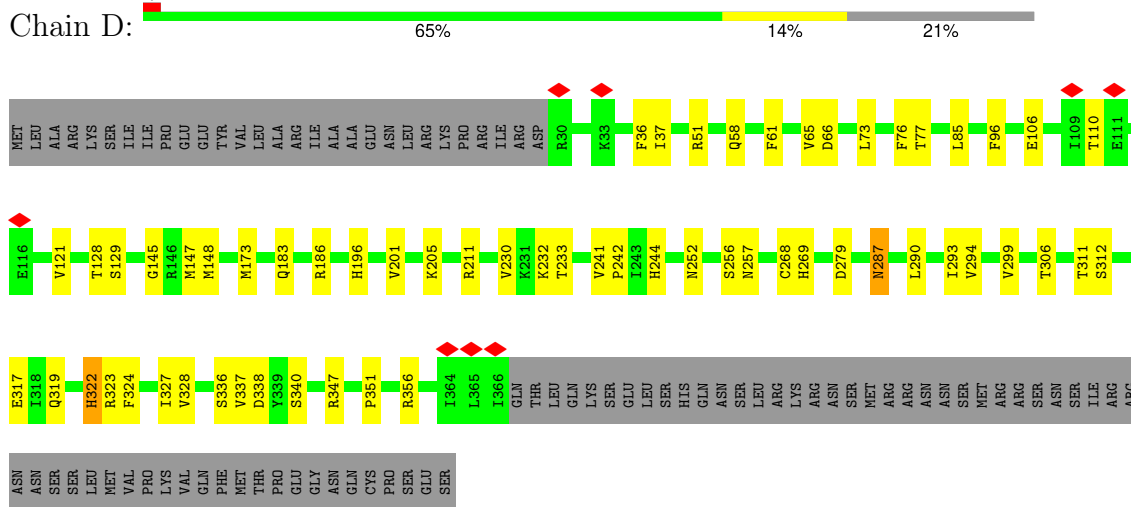
- Molecule 9 is 5-chloro-N-(2-{4-[(cyclohexylcarbamoyl)sulfamoyl]phenyl}ethyl)-2-methoxybenzamide (three-letter code: GBM) (formula: C₂₃H₂₈ClN₃O₅S) (labeled as "Ligand of Interest" by depositor).



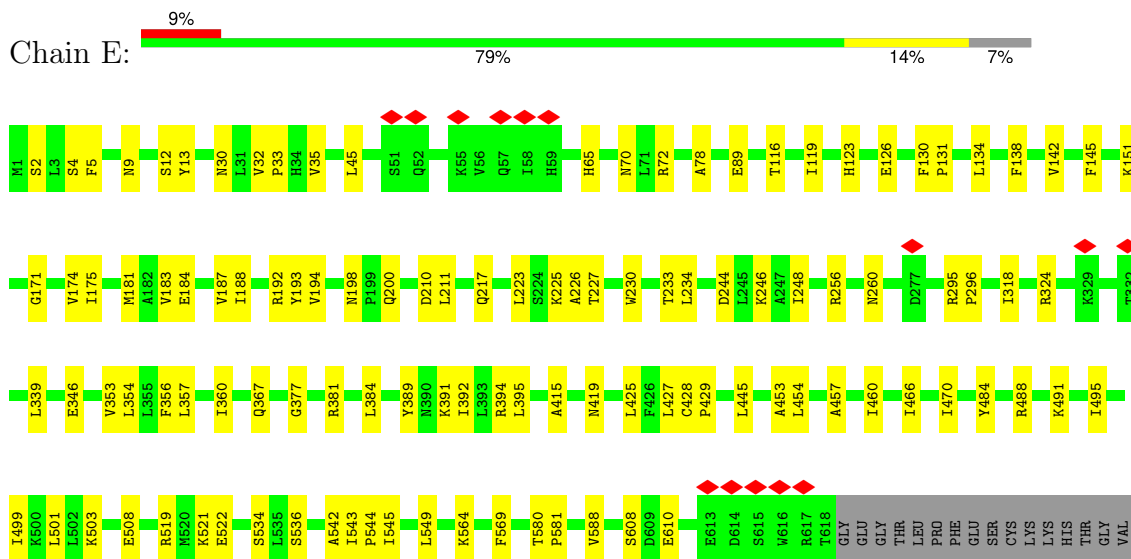
Mol	Chain	Residues	Atoms					AltConf	
			Total	C	Cl	N	O		S
9	E	1	33	23	1	3	5	1	0



• Molecule 1: ATP-sensitive inward rectifier potassium channel 8



• Molecule 2: Isoform SUR2B of ATP-binding cassette sub-family C member 9



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	139944	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	16.334	Depositor
Minimum map value	-11.213	Depositor
Average map value	0.000	Depositor
Map value standard deviation	1.000	Depositor
Recommended contour level	1	Depositor
Map size (\AA)	128.0508, 171.98979, 155.66959	wwPDB
Map dimensions	102, 137, 124	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.2554, 1.2554, 1.2554	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: GBM, NAG, POV, P5S, ATP, K, PTY

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	0.36	0/2750	0.47	0/3746
1	B	0.37	0/2614	0.47	0/3555
1	C	0.37	0/2596	0.47	0/3533
1	D	0.37	0/2608	0.46	0/3547
2	E	0.32	0/10201	0.45	0/13977
All	All	0.35	0/20769	0.46	0/28358

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [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	2696	0	2609	46	0
1	B	2564	0	2525	35	0
1	C	2546	0	2521	54	0
1	D	2558	0	2531	51	0
2	E	9995	0	9057	138	0
3	N	28	0	25	0	0
4	A	3	0	0	0	0
4	D	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	A	31	0	12	3	0
5	B	62	0	24	3	0
5	C	31	0	12	0	0
5	E	31	0	12	1	0
6	A	72	0	90	2	0
6	B	36	0	45	2	0
6	C	108	0	135	6	0
6	D	72	0	90	4	0
7	A	32	0	37	0	0
7	E	224	0	259	7	0
8	A	54	0	80	3	0
8	B	54	0	80	3	0
8	C	54	0	80	1	0
8	D	54	0	80	4	0
8	E	108	0	160	8	0
9	E	33	0	28	2	0
All	All	21447	0	20492	323	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 8.

All (323) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:35:ARG:HH12	1:B:39:LYS:HG2	1.38	0.88
2:E:1485:LYS:O	2:E:1489:THR:N	2.17	0.78
1:C:248:ILE:HD11	1:C:276:PRO:HD2	1.69	0.73
1:B:150:GLU:OE2	1:C:129:SER:OG	2.06	0.73
1:A:202:ARG:NH2	1:A:209:MET:SD	2.62	0.72
1:C:172:VAL:HG21	8:D:502:P5S:H25	1.73	0.71
1:A:4:ARG:HH12	9:E:1602:GBM:H10	1.56	0.71
1:B:243:ILE:HG13	1:B:243:ILE:O	1.91	0.71
2:E:256:ARG:O	2:E:260:ASN:ND2	2.27	0.68
1:C:243:ILE:HG13	1:C:243:ILE:O	1.92	0.67
1:B:186:ARG:NH2	1:B:187:ARG:O	2.28	0.67
1:C:299:VAL:HG22	1:C:306:THR:HG22	1.77	0.67
1:B:191:LEU:HD11	1:B:220:ILE:HD11	1.78	0.66
5:B:502:ATP:O1A	1:C:195:ARG:NH1	2.29	0.66
2:E:72:ARG:NH1	2:E:184:GLU:OE2	2.28	0.66
2:E:324:ARG:NH1	2:E:346:GLU:OE1	2.20	0.66
2:E:389:TYR:O	2:E:392:ILE:HG22	1.95	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:262:VAL:HG13	1:A:263:ALA:H	1.61	0.66
1:D:279:ASP:OD1	1:D:356:ARG:NH1	2.29	0.65
1:C:48:LYS:HZ3	1:D:336:SER:HG	1.44	0.65
2:E:980:TRP:O	2:E:984:SER:OG	2.15	0.64
1:D:106:GLU:O	1:D:110:THR:N	2.27	0.64
2:E:706:GLY:N	5:E:1601:ATP:O2A	2.30	0.64
2:E:123:HIS:ND1	7:E:1611:PTY:O10	2.31	0.63
2:E:217:GLN:OE1	2:E:230:TRP:NE1	2.31	0.63
2:E:1486:VAL:HA	2:E:1490:ALA:HB3	1.81	0.63
2:E:227:THR:O	2:E:1218:ARG:NH2	2.28	0.63
2:E:780:VAL:HG13	2:E:822:LEU:HD23	1.80	0.63
1:B:192:ILE:HD12	5:B:501:ATP:H1'	1.81	0.63
1:C:150:GLU:OE1	1:D:129:SER:OG	2.16	0.63
2:E:381:ARG:NH2	2:E:1201:ASN:OD1	2.32	0.63
2:E:65:HIS:ND1	2:E:126:GLU:OE2	2.32	0.63
2:E:367:GLN:NE2	2:E:1216:GLU:OE1	2.30	0.63
2:E:392:ILE:HD12	2:E:395:LEU:HD12	1.81	0.63
1:C:139:VAL:O	1:C:140:THR:OG1	2.17	0.62
2:E:708:SER:OG	2:E:753:GLN:OE1	2.16	0.62
2:E:564:LYS:NZ	2:E:1019:SER:O	2.33	0.61
1:C:268:CYS:SG	1:C:269:HIS:N	2.72	0.61
1:D:196:HIS:CD2	1:D:319:GLN:CD	2.74	0.61
1:A:338:ASP:OD1	1:A:340:SER:OG	2.18	0.60
2:E:427:LEU:HD23	2:E:588:VAL:HG22	1.83	0.60
1:C:126:SER:OG	1:C:127:PHE:N	2.35	0.60
1:A:262:VAL:HG13	1:A:263:ALA:N	2.16	0.60
1:B:211:ARG:HH21	1:B:324:PHE:HB3	1.67	0.60
2:E:1470:GLU:HA	2:E:1500:ALA:HA	1.84	0.60
2:E:394:ARG:HG2	2:E:610:GLU:HB2	1.84	0.59
1:A:329:THR:O	1:A:336:SER:OG	2.18	0.59
2:E:248:ILE:HD12	2:E:1203:ILE:HG23	1.84	0.59
1:C:49:ASN:ND2	1:D:338:ASP:OD1	2.35	0.59
1:D:299:VAL:HG22	1:D:306:THR:HG22	1.85	0.59
1:A:348:VAL:HG22	1:A:349:ALA:H	1.68	0.59
1:D:196:HIS:HD2	1:D:319:GLN:HG3	1.67	0.59
2:E:1475:ILE:HG13	2:E:1478:ALA:H	1.67	0.58
2:E:699:ILE:HG12	2:E:879:ILE:HB	1.85	0.58
1:D:287:ASN:O	1:D:287:ASN:ND2	2.34	0.58
1:C:164:ILE:HD13	1:D:77:THR:HG23	1.85	0.58
8:E:1609:P5S:O18	8:E:1609:P5S:O13	2.22	0.58
2:E:665:ASP:O	2:E:693:THR:N	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:328:VAL:HG22	1:B:337:VAL:HG22	1.85	0.57
2:E:1367:VAL:HA	2:E:1372:ASP:HA	1.86	0.57
1:B:85:LEU:HD21	6:B:503:POV:H28A	1.85	0.57
2:E:1260:TRP:O	2:E:1264:ASN:ND2	2.33	0.57
1:A:328:VAL:HG22	1:A:337:VAL:HG22	1.86	0.57
2:E:1470:GLU:N	2:E:1499:ILE:O	2.37	0.57
1:C:264:PRO:HB3	1:C:342:PHE:HE1	1.70	0.56
1:A:185:HIS:NE2	1:D:66:ASP:OD2	2.37	0.56
1:A:297:GLU:OE2	1:A:308:GLN:NE2	2.36	0.56
2:E:4:SER:OG	2:E:13:TYR:OH	2.23	0.56
1:D:196:HIS:HB2	1:D:317:GLU:O	2.06	0.56
2:E:89:GLU:HG3	2:E:339:LEU:HD11	1.87	0.55
2:E:1263:ARG:NH1	9:E:1602:GBM:O4	2.24	0.55
1:A:230:VAL:HG13	1:A:243:ILE:HG23	1.89	0.55
1:C:147:MET:SD	1:D:145:GLY:HA3	2.47	0.55
1:B:36:PHE:CE1	1:B:243:ILE:HD12	2.42	0.55
1:D:328:VAL:HG22	1:D:337:VAL:HG22	1.89	0.54
2:E:812:GLN:O	2:E:816:ILE:HG12	2.08	0.54
1:D:322:HIS:CE1	1:D:347:ARG:HG3	2.42	0.54
2:E:445:LEU:HB3	2:E:453:ALA:HB1	1.89	0.54
1:D:36:PHE:HD1	1:D:37:ILE:HG23	1.72	0.54
2:E:1417:ALA:O	2:E:1421:ALA:N	2.39	0.54
1:B:35:ARG:HH22	1:B:39:LYS:HD3	1.72	0.54
1:D:196:HIS:CD2	1:D:319:GLN:HG3	2.43	0.53
2:E:377:GLY:HA2	2:E:425:LEU:HD23	1.89	0.53
2:E:1132:LEU:O	2:E:1135:LEU:HB3	2.08	0.53
2:E:145:PHE:HE1	2:E:174:VAL:HG13	1.74	0.53
6:C:502:POV:H26A	6:C:505:POV:H25	1.90	0.53
6:D:504:POV:H13B	2:E:2:SER:HA	1.92	0.52
2:E:188:ILE:HA	2:E:193:TYR:HE1	1.73	0.52
1:A:355:ALA:HA	1:A:358:LEU:HB2	1.90	0.52
2:E:501:LEU:HD11	2:E:1395:PHE:HZ	1.74	0.52
2:E:470:ILE:HG21	2:E:536:SER:HB3	1.91	0.52
1:B:191:LEU:HD21	1:B:296:LEU:HD22	1.92	0.52
1:C:328:VAL:HG22	1:C:337:VAL:HG22	1.91	0.51
2:E:1272:MET:HA	2:E:1275:VAL:HG12	1.92	0.51
1:C:37:ILE:HG22	1:C:43:CYS:HB3	1.93	0.51
2:E:759:ASN:ND2	2:E:803:GLU:O	2.44	0.51
1:C:297:GLU:OE1	1:C:308:GLN:NE2	2.37	0.51
6:A:505:POV:H28	6:A:505:POV:H36	1.92	0.51
1:A:194:SER:HB2	1:A:211:ARG:HB3	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:223:LEU:HG	7:E:1603:PTY:H112	1.93	0.51
2:E:244:ASP:OD1	2:E:244:ASP:N	2.44	0.51
1:D:211:ARG:NH2	1:D:324:PHE:HB3	2.26	0.51
1:A:148:MET:HE3	1:A:159:LEU:HB2	1.93	0.51
1:B:287:ASN:O	1:B:287:ASN:ND2	2.44	0.50
1:D:252:ASN:ND2	1:D:256:SER:O	2.44	0.50
2:E:488:ARG:NE	2:E:522:GLU:OE1	2.43	0.50
2:E:676:SER:HB2	2:E:682:ALA:HA	1.92	0.50
1:D:205:LYS:HA	1:D:205:LYS:HE2	1.94	0.50
2:E:193:TYR:CD2	2:E:194:VAL:HG23	2.46	0.50
2:E:1513:ILE:HA	2:E:1522:GLU:HA	1.94	0.50
1:A:190:THR:HB	1:A:215:LEU:HB2	1.92	0.50
1:C:98:HIS:ND1	1:C:120:CYS:SG	2.84	0.50
1:C:234:THR:HG22	1:C:240:VAL:HG22	1.92	0.50
2:E:519:ARG:HH12	2:E:1096:THR:CG2	2.23	0.50
2:E:1053:VAL:HG11	2:E:1108:GLU:HB2	1.93	0.50
1:C:84:TRP:HE1	1:C:138:GLN:HG2	1.76	0.50
1:C:314:ILE:HG13	1:C:316:GLU:H	1.77	0.50
1:A:199:ILE:HG23	1:A:207:CYS:O	2.12	0.49
1:A:164:ILE:HD11	1:B:81:LEU:HD11	1.93	0.49
1:D:183:GLN:HA	1:D:186:ARG:HD3	1.93	0.49
2:E:835:PHE:HE2	2:E:864:LEU:HD21	1.75	0.49
1:C:148:MET:HE3	1:C:159:LEU:HB2	1.94	0.49
2:E:78:ALA:HA	8:E:1607:P5S:H53A	1.94	0.49
1:A:69:TRP:CD2	8:A:508:P5S:H39A	2.47	0.49
2:E:188:ILE:HA	2:E:193:TYR:CE1	2.48	0.49
2:E:569:PHE:CD2	2:E:1245:GLY:HA3	2.47	0.49
2:E:466:ILE:O	2:E:470:ILE:HG12	2.12	0.49
2:E:192:ARG:NH1	2:E:198:ASN:O	2.40	0.49
1:A:221:ILE:HB	1:A:299:VAL:HG23	1.95	0.49
1:A:164:ILE:HD13	1:B:77:THR:HG23	1.94	0.48
1:C:37:ILE:HA	1:C:43:CYS:HA	1.95	0.48
2:E:1066:HIS:ND1	2:E:1070:ASN:OD1	2.46	0.48
1:A:139:VAL:O	1:A:140:THR:OG1	2.29	0.48
1:C:272:ASP:OD1	1:C:272:ASP:N	2.33	0.48
1:A:262:VAL:CG1	1:A:263:ALA:H	2.25	0.48
1:B:51:ARG:H	5:B:502:ATP:HN62	1.62	0.48
1:D:147:MET:HG2	1:D:148:MET:H	1.78	0.48
2:E:542:ALA:O	2:E:545:ILE:HG22	2.13	0.48
1:D:73:LEU:HB3	8:D:502:P5S:H50	1.96	0.48
1:B:147:MET:SD	1:C:145:GLY:HA3	2.54	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:300:VAL:HG23	1:C:304:GLY:H	1.79	0.48
1:C:48:LYS:NZ	1:D:336:SER:OG	2.26	0.47
2:E:1117:CYS:O	2:E:1121:ILE:HG23	2.14	0.47
1:C:294:VAL:HB	1:C:311:THR:HG22	1.96	0.47
1:B:160:ILE:HG23	1:C:84:TRP:HZ3	1.79	0.47
1:A:76:PHE:CE2	1:A:173:MET:HB3	2.50	0.47
1:A:356:ARG:O	1:A:356:ARG:NH1	2.47	0.47
2:E:131:PRO:O	2:E:134:LEU:HG	2.14	0.47
1:B:68:LYS:HB3	8:B:504:P5S:O15	2.15	0.47
1:C:91:TRP:HA	1:C:94:VAL:HG22	1.97	0.47
2:E:30:ASN:HD21	2:E:151:LYS:HD2	1.80	0.47
2:E:318:ILE:HG12	2:E:1248:LEU:HD13	1.96	0.47
1:C:37:ILE:HG12	1:C:293:ILE:HD12	1.97	0.47
2:E:1120:ALA:O	2:E:1124:ILE:HG12	2.15	0.47
1:C:346:VAL:HG13	1:C:346:VAL:O	2.14	0.47
2:E:534:SER:HB3	2:E:1054:GLU:HG3	1.97	0.47
1:D:252:ASN:HD22	1:D:256:SER:H	1.62	0.46
1:C:248:ILE:HD13	1:C:248:ILE:HA	1.71	0.46
1:D:128:THR:HG23	1:D:129:SER:H	1.80	0.46
2:E:9:ASN:O	2:E:12:SER:OG	2.23	0.46
2:E:353:VAL:HG21	7:E:1605:PTY:H312	1.97	0.46
2:E:699:ILE:HB	2:E:865:VAL:HG22	1.96	0.46
1:B:120:CYS:SG	1:B:155:ALA:HB2	2.56	0.46
1:B:174:LEU:HB3	1:C:178:PHE:CZ	2.51	0.46
1:D:232:LYS:HG3	1:D:242:PRO:HA	1.98	0.46
6:A:507:POV:H13B	6:A:507:POV:H11	1.67	0.46
1:A:212:VAL:HG21	1:A:296:LEU:HD22	1.97	0.46
1:D:294:VAL:HB	1:D:311:THR:HG22	1.97	0.46
2:E:780:VAL:HG21	2:E:823:TYR:HB2	1.97	0.46
1:A:209:MET:HA	1:A:267:ILE:O	2.16	0.46
2:E:691:ILE:HD13	2:E:863:VAL:HG21	1.98	0.46
8:E:1607:P5S:H56B	7:E:1610:PTY:H192	1.98	0.46
6:C:504:POV:H32A	1:D:85:LEU:HD21	1.97	0.46
1:D:76:PHE:CE2	1:D:173:MET:HB3	2.51	0.46
1:A:14:LEU:O	2:E:1090:ASN:ND2	2.49	0.46
2:E:1473:ALA:HB1	2:E:1475:ILE:HG23	1.98	0.46
6:D:503:POV:H35	6:D:503:POV:H32	1.59	0.45
2:E:415:ALA:O	2:E:419:ASN:ND2	2.49	0.45
2:E:833:ASP:N	2:E:834:PRO:HD3	2.31	0.45
1:B:218:SER:HB2	1:B:301:GLU:HG2	1.98	0.45
2:E:814:GLN:HG3	2:E:837:ALA:HB3	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:37:ILE:HG12	1:D:293:ILE:HD12	1.97	0.45
1:A:121:VAL:HG13	1:A:147:MET:O	2.16	0.45
1:A:189:GLU:HA	1:A:216:ARG:HH22	1.82	0.45
1:B:136:GLU:OE2	1:B:146:ARG:NH1	2.50	0.45
1:C:120:CYS:O	1:C:149:THR:OG1	2.33	0.45
2:E:706:GLY:O	2:E:710:LEU:HB2	2.16	0.45
2:E:1129:PRO:O	2:E:1132:LEU:HG	2.17	0.45
2:E:750:TYR:CE2	2:E:752:ALA:HB2	2.52	0.45
1:B:211:ARG:NH2	1:B:324:PHE:HB3	2.31	0.45
2:E:119:ILE:HD12	2:E:119:ILE:HA	1.85	0.45
1:B:139:VAL:O	1:B:140:THR:OG1	2.27	0.45
1:B:191:LEU:CD2	1:B:296:LEU:HD22	2.47	0.45
2:E:145:PHE:CD2	2:E:181:MET:HE1	2.51	0.45
2:E:484:TYR:CD2	2:E:521:LYS:HB3	2.52	0.45
1:A:145:GLY:HA3	1:D:147:MET:SD	2.57	0.44
2:E:503:LYS:NZ	2:E:508:GLU:OE2	2.45	0.44
2:E:30:ASN:ND2	2:E:151:LYS:HD2	2.32	0.44
2:E:1291:GLY:HA3	2:E:1377:PRO:HG3	2.00	0.44
1:C:288:GLN:HG3	1:C:290:LEU:HG	1.98	0.44
2:E:32:VAL:O	2:E:35:VAL:HG22	2.18	0.44
2:E:210:ASP:OD1	2:E:211:LEU:N	2.51	0.44
2:E:1446:SER:HA	2:E:1449:GLN:HB3	1.99	0.44
1:A:243:ILE:HD11	1:B:335:TYR:CD1	2.52	0.44
1:D:186:ARG:HD2	1:D:186:ARG:N	2.31	0.44
8:D:502:P5S:H45	8:D:502:P5S:H49A	1.59	0.44
2:E:391:LYS:HZ1	2:E:608:SER:HG	1.59	0.44
1:B:35:ARG:HH21	1:B:314:ILE:HG12	1.82	0.44
1:B:70:ARG:HD3	8:B:504:P5S:H40	1.99	0.44
1:D:121:VAL:HG13	1:D:147:MET:O	2.17	0.44
1:D:327:ILE:HG22	1:D:338:ASP:H	1.83	0.44
1:B:149:THR:HG22	1:B:150:GLU:H	1.83	0.44
1:C:327:ILE:HD13	1:C:327:ILE:HA	1.79	0.44
2:E:233:THR:HG23	2:E:234:LEU:N	2.33	0.44
1:A:192:ILE:HG23	5:A:504:ATP:H1'	2.00	0.44
8:B:504:P5S:H42	8:B:504:P5S:H39A	1.75	0.44
6:C:502:POV:H26A	6:C:505:POV:H23	2.00	0.44
2:E:4:SER:OG	2:E:5:PHE:N	2.51	0.44
2:E:457:ALA:HA	2:E:460:ILE:HG22	2.00	0.44
2:E:1048:VAL:O	2:E:1052:THR:HG23	2.18	0.43
2:E:1155:ASP:N	2:E:1155:ASP:OD1	2.51	0.43
2:E:116:THR:HG23	7:E:1611:PTY:H171	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:1064:LEU:HD12	2:E:1099:ILE:HG21	1.99	0.43
7:E:1604:PTY:H161	7:E:1604:PTY:H341	2.00	0.43
2:E:295:ARG:HB2	2:E:296:PRO:HD3	1.99	0.43
1:A:189:GLU:HA	1:A:216:ARG:NH2	2.33	0.43
2:E:549:LEU:HB2	2:E:1039:CYS:SG	2.59	0.43
1:A:147:MET:SD	1:B:145:GLY:HA3	2.59	0.43
1:B:167:LEU:HD13	1:C:80:PHE:CE2	2.54	0.43
1:B:174:LEU:HB3	1:C:178:PHE:HZ	1.82	0.43
1:C:281:SER:OG	1:C:284:ASP:OD2	2.36	0.43
1:A:239:GLU:OE1	1:A:240:VAL:N	2.52	0.43
1:D:37:ILE:HG13	1:D:312:SER:HB2	2.01	0.43
2:E:30:ASN:O	2:E:33:PRO:HD2	2.19	0.43
2:E:768:PHE:CD1	2:E:820:ARG:HD2	2.53	0.43
2:E:1007:ILE:HD11	2:E:1039:CYS:SG	2.58	0.43
6:B:503:POV:H15B	6:B:503:POV:H11	1.73	0.43
1:D:61:PHE:O	1:D:65:VAL:HG23	2.18	0.43
1:D:201:VAL:HG21	1:D:351:PRO:HD2	2.01	0.43
1:D:338:ASP:OD2	1:D:340:SER:OG	2.36	0.43
6:D:503:POV:H13B	6:D:503:POV:O14	2.17	0.43
2:E:580:THR:HB	2:E:581:PRO:HD3	2.01	0.43
2:E:501:LEU:HD23	2:E:501:LEU:H	1.83	0.43
1:A:44:ASN:N	1:A:44:ASN:OD1	2.49	0.43
1:B:196:HIS:HB3	1:B:317:GLU:HB3	2.01	0.43
1:B:48:LYS:HE2	1:B:48:LYS:HB3	1.63	0.42
2:E:45:LEU:HB3	7:E:1608:PTY:H142	2.01	0.42
2:E:484:TYR:HD2	2:E:521:LYS:HB3	1.84	0.42
2:E:1092:PHE:O	2:E:1096:THR:OG1	2.20	0.42
1:C:75:ILE:HD12	1:C:75:ILE:HA	1.95	0.42
1:C:121:VAL:HG11	1:C:133:PHE:CE2	2.54	0.42
1:D:257:ASN:OD1	1:D:257:ASN:N	2.40	0.42
2:E:1420:ILE:HA	2:E:1424:LYS:HA	2.00	0.42
2:E:384:LEU:HD23	2:E:384:LEU:HA	1.72	0.42
2:E:1268:LEU:O	2:E:1272:MET:HG2	2.19	0.42
1:D:196:HIS:HD2	1:D:319:GLN:CG	2.32	0.42
1:D:230:VAL:HA	1:D:244:HIS:O	2.19	0.42
2:E:428:CYS:HB3	2:E:429:PRO:HD3	2.02	0.42
2:E:1068:LEU:HA	2:E:1282:LEU:HD21	2.01	0.42
2:E:503:LYS:HB3	2:E:503:LYS:HE3	1.72	0.42
2:E:543:ILE:N	2:E:544:PRO:HD2	2.35	0.42
1:C:84:TRP:NE1	1:C:138:GLN:HG2	2.34	0.42
1:C:208:PHE:HE2	1:C:318:ILE:HD12	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:226:ALA:HB2	8:E:1607:P5S:H41	2.02	0.42
2:E:793:LEU:HD23	2:E:793:LEU:HA	1.85	0.42
1:A:262:VAL:CG1	1:A:263:ALA:N	2.81	0.42
1:A:317:GLU:H	1:A:317:GLU:HG2	1.68	0.42
1:D:196:HIS:CD2	1:D:319:GLN:CG	3.02	0.42
1:D:268:CYS:SG	1:D:269:HIS:N	2.92	0.42
6:D:503:POV:H15A	6:D:503:POV:H11A	1.65	0.42
2:E:744:SER:O	2:E:746:TYR:N	2.53	0.42
2:E:192:ARG:NH2	2:E:200:GLN:OE1	2.47	0.42
1:A:69:TRP:N	8:A:508:P5S:O13	2.53	0.42
6:C:504:POV:H32	6:C:504:POV:H35	1.78	0.42
1:D:128:THR:HG23	1:D:129:SER:N	2.35	0.42
1:D:196:HIS:NE2	1:D:319:GLN:CD	2.73	0.42
2:E:354:LEU:HD23	2:E:354:LEU:HA	1.90	0.42
2:E:1000:LYS:HE3	2:E:1046:CYS:SG	2.59	0.42
2:E:1049:THR:O	2:E:1053:VAL:HG23	2.20	0.42
1:A:187:ARG:NH1	1:D:58:GLN:HG3	2.35	0.41
5:A:504:ATP:H8	5:A:504:ATP:O1B	2.03	0.41
2:E:1134:ALA:O	2:E:1137:PRO:HD2	2.20	0.41
8:E:1607:P5S:H52A	8:E:1607:P5S:H55A	1.79	0.41
2:E:391:LYS:NZ	2:E:608:SER:OG	2.32	0.41
2:E:549:LEU:HD13	2:E:1039:CYS:SG	2.60	0.41
1:C:89:ILE:HD11	6:C:502:POV:H37	2.02	0.41
2:E:356:PHE:O	2:E:360:ILE:HG23	2.20	0.41
2:E:491:LYS:O	2:E:495:ILE:HG23	2.20	0.41
1:C:173:MET:O	1:C:177:ILE:HG12	2.20	0.41
1:C:211:ARG:HD2	1:C:342:PHE:CE1	2.55	0.41
8:E:1607:P5S:H53	8:E:1607:P5S:H50A	1.51	0.41
2:E:70:ASN:HB2	8:E:1609:P5S:H39A	2.02	0.41
2:E:171:GLY:O	2:E:175:ILE:HG23	2.20	0.41
1:A:24:LYS:N	1:A:25:PRO:HD2	2.35	0.41
1:A:209:MET:HG2	1:A:268:CYS:HB3	2.01	0.41
5:A:504:ATP:O1G	1:D:51:ARG:NH2	2.53	0.41
1:C:211:ARG:NH2	1:C:324:PHE:HB3	2.36	0.41
2:E:246:LYS:HD2	2:E:246:LYS:N	2.35	0.41
2:E:454:LEU:HD23	2:E:454:LEU:HA	1.91	0.41
2:E:1138:LEU:HD13	2:E:1138:LEU:HA	1.90	0.41
1:C:72:THR:OG1	1:C:180:LYS:NZ	2.47	0.41
6:C:502:POV:H15B	6:C:502:POV:H11	1.76	0.41
2:E:183:VAL:O	2:E:187:VAL:HG23	2.20	0.41
2:E:225:LYS:HD3	8:E:1607:P5S:H3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:246:LYS:HD2	2:E:246:LYS:H	1.86	0.41
2:E:1345:GLY:HA3	2:E:1517:ARG:HA	2.02	0.41
1:A:37:ILE:O	1:A:312:SER:OG	2.31	0.41
8:D:502:P5S:H29A	8:D:502:P5S:H26	1.67	0.41
2:E:152:LEU:HD12	2:E:152:LEU:HA	1.80	0.41
8:C:503:P5S:H49A	8:C:503:P5S:H52	1.79	0.40
2:E:357:LEU:HD23	2:E:357:LEU:HA	1.92	0.40
2:E:1272:MET:HE1	2:E:1275:VAL:HG11	2.02	0.40
1:A:185:HIS:HB2	1:A:303:THR:HG22	2.03	0.40
1:A:358:LEU:HD23	1:A:358:LEU:HA	1.94	0.40
1:C:93:LEU:HD23	1:C:93:LEU:HA	1.86	0.40
1:C:239:GLU:HG2	1:D:323:ARG:HD2	2.04	0.40
2:E:142:VAL:HG22	2:E:181:MET:SD	2.62	0.40
1:A:69:TRP:HB2	8:A:508:P5S:H3A	2.03	0.40
1:C:259:ILE:HD12	1:C:259:ILE:HA	1.84	0.40
2:E:499:ILE:O	2:E:503:LYS:HG3	2.21	0.40
1:C:261:LEU:HD23	1:C:261:LEU:HA	1.94	0.40
1:D:233:THR:HG22	1:D:241:VAL:HB	2.02	0.40
1:D:290:LEU:HD23	1:D:290:LEU:HA	1.96	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	362/424 (85%)	334 (92%)	28 (8%)	0	100	100
1	B	335/424 (79%)	313 (93%)	22 (7%)	0	100	100
1	C	334/424 (79%)	311 (93%)	23 (7%)	0	100	100
1	D	335/424 (79%)	310 (92%)	25 (8%)	0	100	100
2	E	1430/1545 (93%)	1343 (94%)	87 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
All	All	2796/3241 (86%)	2611 (93%)	185 (7%)	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 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	263/376 (70%)	260 (99%)	3 (1%)	70	81
1	B	264/376 (70%)	261 (99%)	3 (1%)	70	81
1	C	263/376 (70%)	260 (99%)	3 (1%)	70	81
1	D	263/376 (70%)	260 (99%)	3 (1%)	70	81
2	E	839/1348 (62%)	834 (99%)	5 (1%)	84	90
All	All	1892/2852 (66%)	1875 (99%)	17 (1%)	74	86

All (17) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	49	ASN
1	A	96	PHE
1	A	274	ARG
1	B	96	PHE
1	B	186	ARG
1	B	187	ARG
1	C	55	ARG
1	C	96	PHE
1	C	322	HIS
1	D	96	PHE
1	D	287	ASN
1	D	322	HIS
2	E	130	PHE
2	E	138	PHE
2	E	772	PHE
2	E	988	PHE

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Mol	Chain	Res	Type
2	E	1126	TYR

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

Mol	Chain	Res	Type
1	D	319	GLN
1	D	322	HIS
2	E	260	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](#)

2 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	$\# Z > 2$
3	NAG	N	1	2,3	14,14,15	2.95	7 (50%)	17,19,21	2.24	5 (29%)
3	NAG	N	2	3	14,14,15	2.73	8 (57%)	17,19,21	1.63	4 (23%)

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	N	1	2,3	-	6/6/23/26	0/1/1/1
3	NAG	N	2	3	-	3/6/23/26	0/1/1/1

All (15) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	N	1	NAG	O5-C5	5.81	1.54	1.43
3	N	2	NAG	O5-C5	5.20	1.53	1.43
3	N	1	NAG	C2-N2	4.76	1.54	1.46
3	N	2	NAG	C2-N2	4.44	1.53	1.46
3	N	1	NAG	C7-N2	4.00	1.47	1.34
3	N	2	NAG	C7-N2	3.81	1.46	1.34
3	N	2	NAG	C6-C5	-3.29	1.40	1.51
3	N	1	NAG	C3-C2	-3.25	1.45	1.52
3	N	1	NAG	O5-C1	3.19	1.49	1.43
3	N	1	NAG	C6-C5	-3.11	1.41	1.51
3	N	2	NAG	O5-C1	2.93	1.48	1.43
3	N	2	NAG	C3-C2	-2.61	1.47	1.52
3	N	1	NAG	C8-C7	2.16	1.55	1.50
3	N	2	NAG	O3-C3	2.03	1.48	1.43
3	N	2	NAG	C8-C7	2.02	1.54	1.50

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	N	1	NAG	C8-C7-N2	4.86	124.19	116.12
3	N	1	NAG	C1-O5-C5	4.74	118.54	112.19
3	N	1	NAG	C2-N2-C7	3.75	127.93	122.90
3	N	2	NAG	O5-C1-C2	3.00	115.94	111.29
3	N	2	NAG	C8-C7-N2	2.63	120.48	116.12
3	N	1	NAG	O7-C7-N2	-2.50	117.57	121.98
3	N	2	NAG	O5-C5-C4	-2.35	105.11	110.83
3	N	2	NAG	C1-C2-N2	-2.17	107.02	110.43
3	N	1	NAG	O7-C7-C8	-2.14	118.25	122.05

There are no chirality outliers.

All (9) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	N	1	NAG	O5-C5-C6-O6
3	N	1	NAG	C4-C5-C6-O6
3	N	1	NAG	C8-C7-N2-C2

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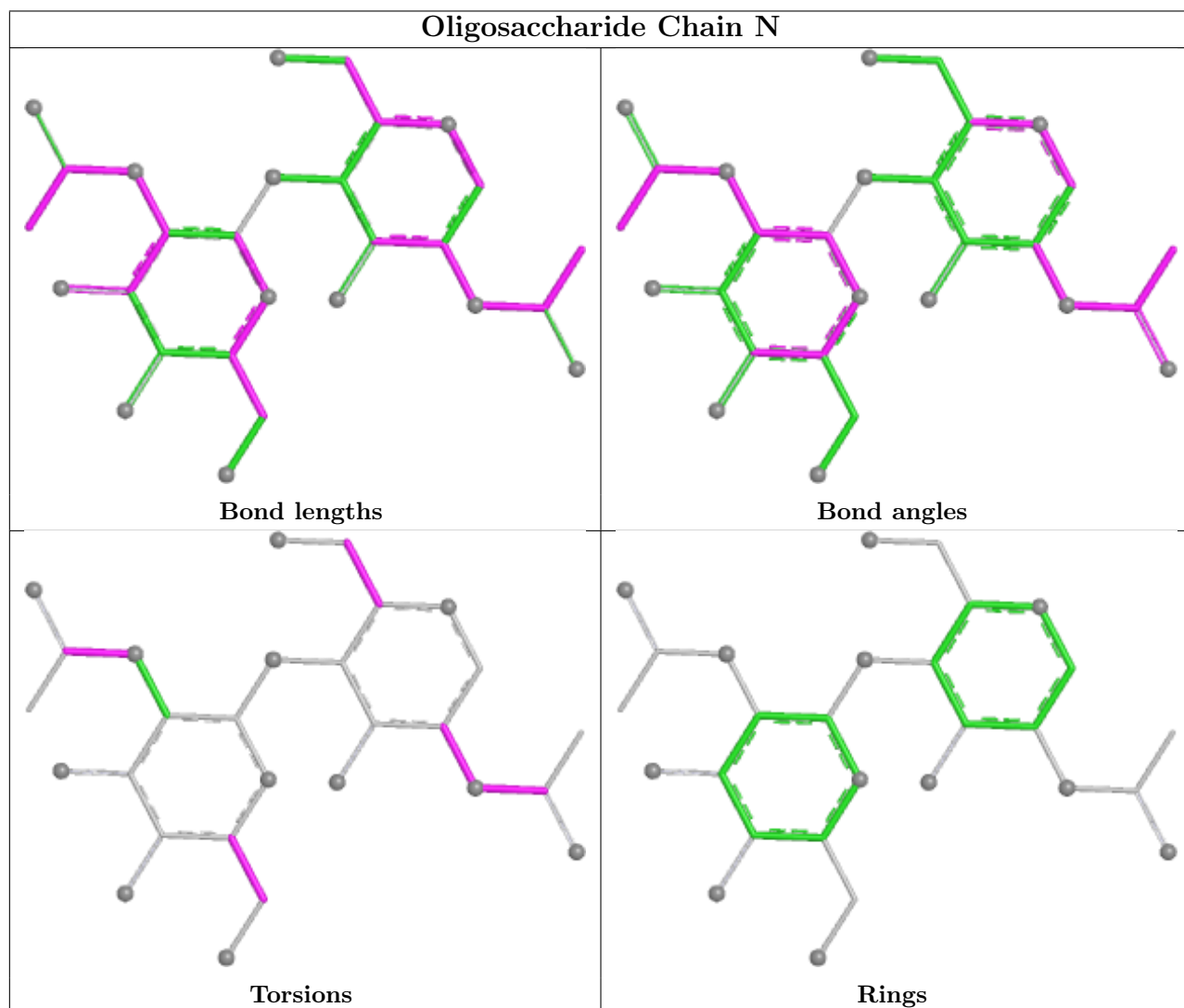
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Mol	Chain	Res	Type	Atoms
3	N	1	NAG	O7-C7-N2-C2
3	N	2	NAG	C8-C7-N2-C2
3	N	2	NAG	O7-C7-N2-C2
3	N	2	NAG	O5-C5-C6-O6
3	N	1	NAG	C1-C2-N2-C7
3	N	1	NAG	C3-C2-N2-C7

There are no ring outliers.

No monomer is involved in short contacts.

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

Of 32 ligands modelled in this entry, 4 are monoatomic - leaving 28 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
7	PTY	A	506	-	31,31,49	1.09	4 (12%)	34,36,54	1.07	2 (5%)
6	POV	D	503	-	35,35,51	1.45	4 (11%)	41,43,59	1.16	3 (7%)
8	P5S	C	503	-	52,53,53	1.21	4 (7%)	54,60,60	1.23	3 (5%)
5	ATP	B	502	-	28,33,33	0.91	0	34,52,52	1.26	3 (8%)
7	PTY	E	1606	-	31,31,49	1.11	4 (12%)	34,36,54	1.03	2 (5%)
8	P5S	E	1607	-	52,53,53	1.18	5 (9%)	54,60,60	1.31	3 (5%)
5	ATP	B	501	-	28,33,33	0.91	0	34,52,52	1.14	2 (5%)
8	P5S	A	508	-	52,53,53	1.20	5 (9%)	54,60,60	1.28	4 (7%)
6	POV	B	503	-	35,35,51	1.44	4 (11%)	41,43,59	1.18	3 (7%)
6	POV	A	505	-	35,35,51	1.45	4 (11%)	41,43,59	1.17	4 (9%)
5	ATP	E	1601	-	28,33,33	0.89	0	34,52,52	1.19	2 (5%)
6	POV	C	505	-	35,35,51	1.47	4 (11%)	41,43,59	1.11	3 (7%)
9	GBM	E	1602	-	35,35,35	4.70	9 (25%)	48,48,48	1.76	10 (20%)
6	POV	D	504	-	35,35,51	1.47	5 (14%)	41,43,59	1.17	3 (7%)
7	PTY	E	1608	-	31,31,49	1.10	4 (12%)	34,36,54	1.08	2 (5%)
7	PTY	E	1611	-	31,31,49	1.10	4 (12%)	34,36,54	1.14	2 (5%)
6	POV	C	504	-	35,35,51	1.47	4 (11%)	41,43,59	1.16	3 (7%)
7	PTY	E	1605	-	31,31,49	1.10	4 (12%)	34,36,54	1.11	2 (5%)
8	P5S	B	504	-	52,53,53	1.22	5 (9%)	54,60,60	1.21	3 (5%)
5	ATP	C	501	-	28,33,33	0.87	0	34,52,52	1.17	2 (5%)
8	P5S	E	1609	-	52,53,53	1.21	5 (9%)	54,60,60	1.20	3 (5%)
7	PTY	E	1610	-	31,31,49	1.10	4 (12%)	34,36,54	1.10	2 (5%)
7	PTY	E	1603	-	31,31,49	1.08	4 (12%)	34,36,54	1.14	2 (5%)
5	ATP	A	504	-	28,33,33	0.93	0	34,52,52	1.16	2 (5%)
7	PTY	E	1604	-	31,31,49	1.08	4 (12%)	34,36,54	1.03	2 (5%)
6	POV	C	502	-	35,35,51	1.45	4 (11%)	41,43,59	1.19	3 (7%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
8	P5S	D	502	-	52,53,53	1.20	5 (9%)	54,60,60	1.23	3 (5%)
6	POV	A	507	-	35,35,51	1.48	4 (11%)	41,43,59	1.14	3 (7%)

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
7	PTY	A	506	-	-	13/35/35/53	-
6	POV	D	503	-	-	12/39/39/55	-
8	P5S	C	503	-	-	32/59/59/59	-
5	ATP	B	502	-	-	1/18/38/38	0/3/3/3
7	PTY	E	1606	-	-	11/35/35/53	-
8	P5S	E	1607	-	-	32/59/59/59	-
5	ATP	B	501	-	-	6/18/38/38	0/3/3/3
8	P5S	A	508	-	-	20/59/59/59	-
6	POV	B	503	-	-	19/39/39/55	-
6	POV	A	505	-	-	14/39/39/55	-
5	ATP	E	1601	-	-	5/18/38/38	0/3/3/3
6	POV	C	505	-	-	20/39/39/55	-
9	GBM	E	1602	-	-	6/27/35/35	0/3/3/3
6	POV	D	504	-	-	22/39/39/55	-
7	PTY	E	1608	-	-	21/35/35/53	-
7	PTY	E	1611	-	-	12/35/35/53	-
6	POV	C	504	-	-	19/39/39/55	-
7	PTY	E	1605	-	-	14/35/35/53	-
8	P5S	B	504	-	-	31/59/59/59	-
5	ATP	C	501	-	-	8/18/38/38	0/3/3/3
8	P5S	E	1609	-	-	28/59/59/59	-
7	PTY	E	1610	-	-	18/35/35/53	-
7	PTY	E	1603	-	-	19/35/35/53	-
5	ATP	A	504	-	-	5/18/38/38	0/3/3/3
7	PTY	E	1604	-	-	8/35/35/53	-
6	POV	C	502	-	-	13/39/39/55	-
8	P5S	D	502	-	-	32/59/59/59	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	POV	A	507	-	-	13/39/39/55	-

All (103) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
9	E	1602	GBM	O4-S2	18.63	1.65	1.43
9	E	1602	GBM	O5-S2	18.55	1.65	1.43
8	B	504	P5S	O18-C17	6.01	1.40	1.22
8	C	503	P5S	O18-C17	5.96	1.40	1.22
8	E	1609	P5S	O18-C17	5.95	1.40	1.22
8	A	508	P5S	O18-C17	5.94	1.40	1.22
8	E	1607	P5S	O18-C17	5.86	1.40	1.22
8	D	502	P5S	O18-C17	5.86	1.40	1.22
9	E	1602	GBM	C26-N10	4.86	1.44	1.33
6	D	504	POV	C210-C29	3.99	1.54	1.29
6	D	503	POV	C210-C29	3.98	1.54	1.29
6	C	505	POV	C210-C29	3.98	1.54	1.29
6	C	504	POV	C210-C29	3.97	1.54	1.29
6	A	507	POV	C210-C29	3.97	1.54	1.29
6	C	502	POV	C210-C29	3.97	1.54	1.29
6	B	503	POV	C210-C29	3.96	1.54	1.29
6	A	505	POV	C210-C29	3.96	1.54	1.29
9	E	1602	GBM	C17-N8	3.52	1.45	1.35
6	D	504	POV	O31-C31	3.26	1.42	1.33
6	A	505	POV	O31-C31	3.21	1.42	1.33
6	A	507	POV	O31-C31	3.19	1.42	1.33
9	E	1602	GBM	C18-S2	3.14	1.81	1.76
6	C	505	POV	O31-C31	3.12	1.42	1.33
6	D	503	POV	O31-C31	3.11	1.42	1.33
6	C	504	POV	O31-C31	3.08	1.42	1.33
6	B	503	POV	O31-C31	3.02	1.42	1.33
6	D	504	POV	O21-C21	2.99	1.42	1.34
6	C	502	POV	O31-C31	2.98	1.42	1.33
6	C	504	POV	O21-C21	2.96	1.42	1.34
6	D	503	POV	O21-C2	-2.90	1.39	1.46
6	A	507	POV	O21-C21	2.90	1.42	1.34
6	A	505	POV	O21-C2	-2.86	1.39	1.46
6	C	505	POV	O21-C21	2.85	1.42	1.34
6	C	502	POV	O21-C21	2.85	1.42	1.34
8	C	503	P5S	O37-C2	-2.81	1.40	1.46
7	A	506	PTY	O7-C6	-2.80	1.40	1.46
6	B	503	POV	O21-C21	2.79	1.42	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	E	1606	PTY	O7-C6	-2.79	1.40	1.46
6	B	503	POV	O21-C2	-2.78	1.40	1.46
6	C	505	POV	O21-C2	-2.75	1.40	1.46
7	E	1608	PTY	O7-C6	-2.74	1.40	1.46
7	E	1604	PTY	O7-C6	-2.73	1.40	1.46
6	D	503	POV	O21-C21	2.72	1.42	1.34
8	D	502	P5S	O37-C2	-2.71	1.40	1.46
6	C	504	POV	O21-C2	-2.70	1.40	1.46
6	A	505	POV	O21-C21	2.70	1.41	1.34
8	E	1609	P5S	O37-C2	-2.69	1.40	1.46
7	E	1603	PTY	O7-C6	-2.68	1.40	1.46
6	C	502	POV	O21-C2	-2.66	1.40	1.46
8	A	508	P5S	O37-C2	-2.63	1.40	1.46
6	A	507	POV	O21-C2	-2.62	1.40	1.46
7	E	1610	PTY	O7-C6	-2.61	1.40	1.46
7	E	1605	PTY	O7-C6	-2.60	1.40	1.46
7	E	1611	PTY	O7-C6	-2.58	1.40	1.46
8	B	504	P5S	O37-C2	-2.57	1.40	1.46
6	D	504	POV	O21-C2	-2.57	1.40	1.46
9	E	1602	GBM	S2-N9	2.49	1.70	1.64
8	B	504	P5S	O19-C17	2.48	1.40	1.33
7	E	1608	PTY	O4-C30	2.46	1.40	1.33
7	E	1603	PTY	O4-C30	2.44	1.40	1.33
8	E	1607	P5S	O37-C38	2.42	1.41	1.34
7	E	1610	PTY	O4-C30	2.41	1.40	1.33
8	E	1609	P5S	O19-C17	2.39	1.40	1.33
7	E	1611	PTY	O4-C30	2.39	1.40	1.33
9	E	1602	GBM	C17-N9	2.38	1.44	1.39
7	E	1606	PTY	O4-C30	2.36	1.40	1.33
8	C	503	P5S	O19-C17	2.35	1.40	1.33
8	E	1607	P5S	O19-C1	-2.35	1.39	1.45
7	E	1611	PTY	O7-C8	2.34	1.40	1.34
7	A	506	PTY	O4-C30	2.33	1.40	1.33
7	E	1606	PTY	O4-C1	-2.30	1.40	1.45
7	E	1605	PTY	O7-C8	2.29	1.40	1.34
8	D	502	P5S	O19-C17	2.28	1.40	1.33
7	E	1605	PTY	O4-C1	-2.28	1.40	1.45
7	E	1610	PTY	O4-C1	-2.28	1.40	1.45
8	B	504	P5S	O37-C38	2.27	1.40	1.34
7	E	1605	PTY	O4-C30	2.27	1.40	1.33
9	E	1602	GBM	O3-C17	-2.26	1.18	1.23
7	E	1604	PTY	O4-C30	2.25	1.39	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	E	1604	PTY	O4-C1	-2.25	1.40	1.45
7	E	1610	PTY	O7-C8	2.23	1.40	1.34
8	E	1607	P5S	O37-C2	-2.22	1.41	1.46
7	E	1606	PTY	O7-C8	2.22	1.40	1.34
8	A	508	P5S	O19-C17	2.22	1.39	1.33
7	A	506	PTY	O4-C1	-2.21	1.40	1.45
7	E	1611	PTY	O4-C1	-2.21	1.40	1.45
8	A	508	P5S	O37-C38	2.18	1.40	1.34
8	A	508	P5S	O19-C1	-2.18	1.40	1.45
8	E	1607	P5S	O19-C17	2.18	1.39	1.33
9	E	1602	GBM	O6-C26	-2.18	1.18	1.23
7	E	1608	PTY	O7-C8	2.18	1.40	1.34
8	D	502	P5S	O19-C1	-2.17	1.40	1.45
7	E	1603	PTY	O4-C1	-2.16	1.40	1.45
8	E	1609	P5S	O37-C38	2.14	1.40	1.34
8	E	1609	P5S	O19-C1	-2.14	1.40	1.45
8	C	503	P5S	O19-C1	-2.14	1.40	1.45
7	E	1608	PTY	O4-C1	-2.13	1.40	1.45
7	E	1604	PTY	O7-C8	2.13	1.40	1.34
8	B	504	P5S	O19-C1	-2.12	1.40	1.45
8	D	502	P5S	O37-C38	2.10	1.40	1.34
7	E	1603	PTY	O7-C8	2.08	1.40	1.34
7	A	506	PTY	O7-C8	2.06	1.40	1.34
6	D	504	POV	P-O11	2.05	1.67	1.59

All (81) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	E	1602	GBM	O5-S2-O4	-6.99	111.03	119.52
8	E	1607	P5S	O19-C17-O18	-6.04	108.53	123.63
8	B	504	P5S	O19-C17-O18	-5.91	108.86	123.63
8	D	502	P5S	O19-C17-O18	-5.85	109.01	123.63
8	A	508	P5S	O19-C17-O18	-5.78	109.18	123.63
8	E	1609	P5S	O19-C17-O18	-5.69	109.39	123.63
8	C	503	P5S	O19-C17-O18	-5.63	109.55	123.63
7	E	1603	PTY	O7-C8-C11	4.47	121.15	111.48
7	E	1605	PTY	O7-C8-C11	4.40	121.00	111.48
8	A	508	P5S	O37-C38-C39	4.38	120.95	111.48
7	E	1611	PTY	O7-C8-C11	4.37	120.93	111.48
7	E	1610	PTY	O7-C8-C11	4.33	120.85	111.48
6	C	505	POV	O21-C21-C22	4.31	120.81	111.48
6	D	504	POV	O21-C21-C22	4.21	120.59	111.48

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	C	504	POV	O21-C21-C22	4.20	120.57	111.48
8	E	1607	P5S	O37-C38-C39	4.13	120.41	111.48
7	E	1606	PTY	O7-C8-C11	4.08	120.32	111.48
7	E	1608	PTY	O7-C8-C11	4.08	120.30	111.48
8	D	502	P5S	O37-C38-C39	4.07	120.28	111.48
8	C	503	P5S	O37-C38-C39	4.06	120.27	111.48
8	E	1607	P5S	O18-C17-C20	-4.06	107.89	123.78
7	A	506	PTY	O7-C8-C11	4.06	120.26	111.48
6	C	502	POV	O21-C21-C22	3.97	120.07	111.48
7	E	1604	PTY	O7-C8-C11	3.95	120.03	111.48
6	B	503	POV	O21-C21-C22	3.89	119.89	111.48
6	D	503	POV	O21-C21-C22	3.88	119.88	111.48
8	E	1609	P5S	O37-C38-C39	3.88	119.87	111.48
8	B	504	P5S	O18-C17-C20	-3.84	108.75	123.78
8	C	503	P5S	O18-C17-C20	-3.81	108.90	123.78
8	B	504	P5S	O37-C38-C39	3.77	119.65	111.48
6	A	507	POV	O21-C21-C22	3.74	119.58	111.48
5	B	502	ATP	N3-C2-N1	-3.73	123.61	128.67
8	D	502	P5S	O18-C17-C20	-3.71	109.27	123.78
5	E	1601	ATP	N3-C2-N1	-3.68	123.68	128.67
6	A	505	POV	O21-C21-C22	3.67	119.41	111.48
8	A	508	P5S	O18-C17-C20	-3.62	109.61	123.78
8	E	1609	P5S	O18-C17-C20	-3.60	109.70	123.78
5	B	501	ATP	N3-C2-N1	-3.60	123.79	128.67
5	A	504	ATP	N3-C2-N1	-3.58	123.81	128.67
5	C	501	ATP	N3-C2-N1	-3.58	123.82	128.67
9	E	1602	GBM	C14-C12-C11	3.39	117.18	111.09
6	C	502	POV	O31-C31-C32	3.03	121.08	111.83
6	D	504	POV	O31-C31-C32	2.99	120.96	111.83
9	E	1602	GBM	C17-N9-S2	-2.99	115.28	123.55
6	A	505	POV	O31-C31-C32	2.94	120.81	111.83
6	B	503	POV	O31-C31-C32	2.92	120.73	111.83
7	E	1605	PTY	O4-C30-C31	2.90	120.67	111.83
9	E	1602	GBM	C13-C11-C12	2.88	115.78	110.80
7	E	1611	PTY	O4-C30-C31	2.86	120.56	111.83
9	E	1602	GBM	C28-C27-C26	-2.84	121.12	126.24
6	A	507	POV	C14-N-C12	2.78	120.95	109.91
6	A	507	POV	O31-C31-C32	2.77	120.28	111.83
7	E	1603	PTY	O4-C30-C31	2.75	120.22	111.83
7	E	1604	PTY	O4-C30-C31	2.74	120.19	111.83
7	E	1610	PTY	O4-C30-C31	2.73	120.17	111.83
7	E	1608	PTY	O4-C30-C31	2.72	120.14	111.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	A	505	POV	C14-N-C12	2.66	120.50	109.91
9	E	1602	GBM	O7-C28-C30	-2.63	119.86	124.30
6	D	503	POV	O31-C31-C32	2.62	119.83	111.83
6	C	504	POV	O31-C31-C32	2.62	119.81	111.83
5	A	504	ATP	C4-C5-N7	-2.61	106.58	109.34
7	A	506	PTY	O4-C30-C31	2.57	119.67	111.83
7	E	1606	PTY	O4-C30-C31	2.56	119.64	111.83
6	C	505	POV	O31-C31-C32	2.56	119.64	111.83
6	B	503	POV	C14-N-C12	2.56	120.07	109.91
9	E	1602	GBM	O7-C28-C27	2.53	120.23	116.55
6	D	503	POV	C14-N-C12	2.50	119.84	109.91
6	C	502	POV	C14-N-C12	2.48	119.77	109.91
9	E	1602	GBM	C33-O7-C28	-2.43	113.95	117.51
6	D	504	POV	C14-N-C12	2.41	119.47	109.91
5	B	501	ATP	C4-C5-N7	-2.40	106.80	109.34
6	C	504	POV	C14-N-C12	2.34	119.21	109.91
5	E	1601	ATP	C4-C5-N7	-2.32	106.88	109.34
9	E	1602	GBM	C11-N8-C17	-2.28	118.02	122.92
5	C	501	ATP	C4-C5-N7	-2.26	106.95	109.34
5	B	502	ATP	C4'-O4'-C1'	2.13	111.88	109.92
6	C	505	POV	C14-N-C12	2.09	118.22	109.91
8	A	508	P5S	C3-C2-C1	-2.05	107.00	111.78
9	E	1602	GBM	N9-C17-N8	2.04	121.77	115.06
5	B	502	ATP	C2'-C3'-C4'	2.03	106.53	102.61
6	A	505	POV	C28-C29-C210	-2.02	111.95	126.65

There are no chirality outliers.

All (454) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	504	ATP	PB-O3A-PA-O5'
5	A	504	ATP	C5'-O5'-PA-O2A
5	A	504	ATP	C5'-O5'-PA-O3A
5	B	501	ATP	C5'-O5'-PA-O1A
5	B	501	ATP	C5'-O5'-PA-O2A
5	B	501	ATP	C5'-O5'-PA-O3A
5	C	501	ATP	PB-O3B-PG-O3G
5	C	501	ATP	C5'-O5'-PA-O1A
5	C	501	ATP	C5'-O5'-PA-O2A
5	C	501	ATP	O4'-C4'-C5'-O5'
5	E	1601	ATP	C5'-O5'-PA-O1A
5	E	1601	ATP	C5'-O5'-PA-O2A

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Mol	Chain	Res	Type	Atoms
5	E	1601	ATP	C5'-O5'-PA-O3A
6	A	507	POV	C11-O12-P-O11
6	A	507	POV	C11-O12-P-O13
6	B	503	POV	C1-O11-P-O12
6	B	503	POV	C1-O11-P-O13
6	B	503	POV	C1-O11-P-O14
6	B	503	POV	C11-O12-P-O11
6	B	503	POV	C11-O12-P-O13
6	B	503	POV	O21-C2-C3-O31
6	C	502	POV	C11-O12-P-O11
6	C	502	POV	C11-O12-P-O14
6	C	504	POV	C1-O11-P-O12
6	C	504	POV	C11-O12-P-O11
6	C	504	POV	C11-O12-P-O13
6	C	504	POV	O12-C11-C12-N
6	C	504	POV	C22-C21-O21-C2
6	C	505	POV	C1-O11-P-O12
6	C	505	POV	C1-O11-P-O13
6	C	505	POV	C1-O11-P-O14
6	C	505	POV	C11-O12-P-O11
6	C	505	POV	C11-O12-P-O13
6	C	505	POV	C22-C21-O21-C2
6	C	505	POV	O22-C21-O21-C2
6	D	503	POV	C1-O11-P-O12
6	D	503	POV	C1-O11-P-O13
6	D	503	POV	O12-C11-C12-N
6	D	504	POV	C1-O11-P-O12
6	D	504	POV	C1-O11-P-O13
6	D	504	POV	C1-O11-P-O14
6	D	504	POV	C22-C21-O21-C2
7	A	506	PTY	N1-C2-C3-O11
7	A	506	PTY	O10-C8-O7-C6
7	A	506	PTY	C3-O11-P1-O12
7	A	506	PTY	C3-O11-P1-O14
7	E	1603	PTY	C11-C8-O7-C6
7	E	1603	PTY	C3-O11-P1-O12
7	E	1603	PTY	C3-O11-P1-O14
7	E	1603	PTY	C5-O14-P1-O11
7	E	1603	PTY	C5-O14-P1-O12
7	E	1603	PTY	C5-O14-P1-O13
7	E	1604	PTY	N1-C2-C3-O11
7	E	1604	PTY	C11-C8-O7-C6

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Mol	Chain	Res	Type	Atoms
7	E	1605	PTY	N1-C2-C3-O11
7	E	1605	PTY	O10-C8-O7-C6
7	E	1605	PTY	C3-O11-P1-O12
7	E	1605	PTY	C3-O11-P1-O13
7	E	1605	PTY	C3-O11-P1-O14
7	E	1606	PTY	N1-C2-C3-O11
7	E	1606	PTY	C11-C8-O7-C6
7	E	1606	PTY	C3-O11-P1-O12
7	E	1606	PTY	C3-O11-P1-O14
7	E	1606	PTY	C5-O14-P1-O11
7	E	1606	PTY	C5-O14-P1-O12
7	E	1608	PTY	N1-C2-C3-O11
7	E	1608	PTY	C3-O11-P1-O12
7	E	1608	PTY	C3-O11-P1-O13
7	E	1608	PTY	C3-O11-P1-O14
7	E	1610	PTY	N1-C2-C3-O11
7	E	1610	PTY	C11-C8-O7-C6
7	E	1610	PTY	C3-O11-P1-O12
7	E	1610	PTY	C3-O11-P1-O14
7	E	1611	PTY	N1-C2-C3-O11
7	E	1611	PTY	C11-C8-O7-C6
7	E	1611	PTY	C5-O14-P1-O11
7	E	1611	PTY	C5-O14-P1-O13
8	B	504	P5S	O-C-CA-N
8	B	504	P5S	O-C-CA-CB
8	B	504	P5S	CA-CB-OG-P12
8	B	504	P5S	CB-OG-P12-O13
8	B	504	P5S	CB-OG-P12-O16
8	B	504	P5S	C39-C38-O37-C2
8	C	503	P5S	C-CA-CB-OG
8	C	503	P5S	N-CA-CB-OG
8	C	503	P5S	CB-OG-P12-O13
8	C	503	P5S	CB-OG-P12-O15
8	C	503	P5S	CB-OG-P12-O16
8	C	503	P5S	C3-O16-P12-OG
8	C	503	P5S	C3-O16-P12-O13
8	C	503	P5S	C3-O16-P12-O15
8	D	502	P5S	C-CA-CB-OG
8	D	502	P5S	N-CA-CB-OG
8	D	502	P5S	C3-O16-P12-OG
8	D	502	P5S	C3-O16-P12-O13
8	D	502	P5S	C3-O16-P12-O15

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Mol	Chain	Res	Type	Atoms
8	D	502	P5S	C39-C38-O37-C2
8	E	1607	P5S	C2-C3-O16-P12
8	E	1607	P5S	C-CA-CB-OG
8	E	1607	P5S	N-CA-CB-OG
8	E	1607	P5S	C3-O16-P12-O13
8	E	1607	P5S	O18-C17-O19-C1
8	E	1607	P5S	C39-C38-O37-C2
8	E	1609	P5S	CB-OG-P12-O15
8	E	1609	P5S	CB-OG-P12-O16
8	E	1609	P5S	C3-O16-P12-OG
8	E	1609	P5S	C3-O16-P12-O13
8	E	1609	P5S	C3-O16-P12-O15
7	E	1608	PTY	O30-C30-O4-C1
8	E	1607	P5S	C20-C17-O19-C1
7	E	1610	PTY	O30-C30-O4-C1
8	B	504	P5S	O18-C17-O19-C1
8	C	503	P5S	O18-C17-O19-C1
6	C	505	POV	O32-C31-O31-C3
6	D	504	POV	O22-C21-O21-C2
7	E	1603	PTY	O10-C8-O7-C6
7	E	1606	PTY	O10-C8-O7-C6
7	E	1610	PTY	O10-C8-O7-C6
7	E	1611	PTY	O10-C8-O7-C6
8	B	504	P5S	O47-C38-O37-C2
8	D	502	P5S	O47-C38-O37-C2
8	E	1607	P5S	O47-C38-O37-C2
7	E	1608	PTY	C31-C30-O4-C1
7	A	506	PTY	C11-C8-O7-C6
7	E	1605	PTY	C11-C8-O7-C6
6	A	507	POV	C32-C31-O31-C3
6	C	505	POV	C32-C31-O31-C3
7	E	1610	PTY	C31-C30-O4-C1
8	E	1609	P5S	C20-C17-O19-C1
6	A	507	POV	O32-C31-O31-C3
6	C	504	POV	O22-C21-O21-C2
7	E	1604	PTY	O10-C8-O7-C6
6	D	504	POV	C11-C12-N-C14
6	D	504	POV	C32-C31-O31-C3
8	D	502	P5S	O18-C17-O19-C1
5	C	501	ATP	C3'-C4'-C5'-O5'
6	D	504	POV	O32-C31-O31-C3
8	E	1609	P5S	OXT-C-CA-N

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Mol	Chain	Res	Type	Atoms
8	B	504	P5S	C45-C46-C48-C49
8	E	1609	P5S	O18-C17-O19-C1
6	A	505	POV	C32-C31-O31-C3
7	E	1603	PTY	C31-C30-O4-C1
8	B	504	P5S	C20-C17-O19-C1
8	C	503	P5S	C20-C17-O19-C1
6	C	504	POV	C32-C33-C34-C35
6	D	503	POV	C32-C33-C34-C35
7	E	1603	PTY	O30-C30-O4-C1
7	E	1608	PTY	C8-C11-C12-C13
8	D	502	P5S	C17-C20-C21-C22
6	A	505	POV	O32-C31-O31-C3
7	E	1608	PTY	C11-C8-O7-C6
6	C	502	POV	C32-C33-C34-C35
8	B	504	P5S	C38-C39-C40-C41
6	C	505	POV	C34-C35-C36-C37
8	A	508	P5S	C26-C27-C28-C29
7	E	1610	PTY	C8-C11-C12-C13
6	C	505	POV	C21-C22-C23-C24
8	C	503	P5S	C17-C20-C21-C22
8	E	1607	P5S	C52-C53-C54-C55
7	A	506	PTY	C30-C31-C32-C33
9	E	1602	GBM	C21-C18-S2-N9
6	A	505	POV	C22-C21-O21-C2
6	B	503	POV	C22-C21-O21-C2
8	B	504	P5S	C41-C42-C43-C44
6	A	505	POV	O22-C21-O21-C2
6	B	503	POV	O22-C21-O21-C2
7	E	1608	PTY	O10-C8-O7-C6
6	C	505	POV	C11-C12-N-C15
6	D	504	POV	C11-C12-N-C13
7	E	1603	PTY	C30-C31-C32-C33
6	C	502	POV	C22-C21-O21-C2
6	C	502	POV	O22-C21-O21-C2
6	D	504	POV	C31-C32-C33-C34
8	B	504	P5S	OXT-C-CA-N
8	D	502	P5S	C26-C27-C28-C29
8	D	502	P5S	C45-C46-C48-C49
6	D	504	POV	C11-C12-N-C15
9	E	1602	GBM	C22-C18-S2-N9
6	C	505	POV	C32-C33-C34-C35
8	B	504	P5S	C23-C24-C25-C26

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Mol	Chain	Res	Type	Atoms
8	C	503	P5S	C49-C50-C51-C52
6	D	503	POV	C24-C25-C26-C27
8	A	508	P5S	C40-C41-C42-C43
8	A	508	P5S	C41-C42-C43-C44
8	E	1609	P5S	C41-C42-C43-C44
8	E	1609	P5S	C43-C44-C45-C46
8	C	503	P5S	C27-C28-C29-C30
7	E	1608	PTY	C13-C14-C15-C16
8	D	502	P5S	C31-C32-C33-C34
7	A	506	PTY	C12-C13-C14-C15
7	E	1606	PTY	O4-C1-C6-C5
8	E	1607	P5S	C50-C51-C52-C53
7	E	1603	PTY	C12-C13-C14-C15
8	C	503	P5S	C25-C26-C27-C28
8	E	1607	P5S	C46-C48-C49-C50
8	D	502	P5S	C42-C43-C44-C45
6	C	505	POV	C11-C12-N-C13
6	C	505	POV	C11-C12-N-C14
6	C	505	POV	C31-C32-C33-C34
8	A	508	P5S	C46-C48-C49-C50
7	A	506	PTY	C13-C14-C15-C16
8	E	1609	P5S	C26-C27-C28-C29
8	E	1609	P5S	C27-C28-C29-C30
8	B	504	P5S	C28-C29-C30-C31
8	E	1607	P5S	C40-C41-C42-C43
8	B	504	P5S	C20-C21-C22-C23
8	B	504	P5S	C30-C31-C32-C33
8	A	508	P5S	C43-C44-C45-C46
8	D	502	P5S	C43-C44-C45-C46
7	E	1610	PTY	C13-C14-C15-C16
8	E	1607	P5S	C30-C31-C32-C33
6	D	504	POV	C23-C24-C25-C26
7	E	1606	PTY	C12-C13-C14-C15
6	C	504	POV	C26-C27-C28-C29
8	D	502	P5S	C46-C48-C49-C50
7	E	1605	PTY	C14-C15-C16-C17
8	D	502	P5S	C41-C42-C43-C44
6	C	504	POV	C21-C22-C23-C24
8	E	1609	P5S	O37-C2-C3-O16
6	A	507	POV	C24-C25-C26-C27
8	A	508	P5S	C20-C21-C22-C23
8	E	1609	P5S	C22-C23-C24-C25

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Mol	Chain	Res	Type	Atoms
8	E	1607	P5S	C24-C25-C26-C27
8	C	503	P5S	OXT-C-CA-N
8	C	503	P5S	C22-C23-C24-C25
7	E	1606	PTY	O4-C1-C6-O7
8	D	502	P5S	C28-C29-C30-C31
7	E	1608	PTY	C12-C13-C14-C15
8	E	1609	P5S	C45-C46-C48-C49
7	E	1605	PTY	C16-C17-C18-C19
8	E	1609	P5S	C21-C22-C23-C24
9	E	1602	GBM	C21-C18-S2-O5
9	E	1602	GBM	C22-C18-S2-O5
7	E	1604	PTY	C30-C31-C32-C33
8	C	503	P5S	C50-C51-C52-C53
6	A	507	POV	C22-C23-C24-C25
6	D	503	POV	C22-C21-O21-C2
8	A	508	P5S	O18-C17-O19-C1
8	B	504	P5S	C48-C49-C50-C51
7	E	1608	PTY	C15-C16-C17-C18
6	B	503	POV	C26-C27-C28-C29
6	A	507	POV	C32-C33-C34-C35
6	C	504	POV	C33-C34-C35-C36
6	A	507	POV	O11-C1-C2-C3
6	B	503	POV	O11-C1-C2-C3
6	D	504	POV	O11-C1-C2-C3
7	A	506	PTY	O14-C5-C6-C1
7	E	1608	PTY	O14-C5-C6-C1
8	A	508	P5S	C1-C2-C3-O16
8	B	504	P5S	C1-C2-C3-O16
8	E	1607	P5S	C1-C2-C3-O16
8	C	503	P5S	C40-C41-C42-C43
6	C	502	POV	C32-C31-O31-C3
7	E	1611	PTY	C11-C12-C13-C14
6	D	504	POV	C24-C25-C26-C27
6	B	503	POV	C1-C2-C3-O31
6	D	504	POV	C1-C2-C3-O31
7	E	1610	PTY	O4-C1-C6-C5
6	D	503	POV	C26-C27-C28-C29
7	E	1604	PTY	C31-C32-C33-C34
8	B	504	P5S	C25-C26-C27-C28
8	D	502	P5S	C44-C45-C46-C48
6	D	504	POV	C32-C33-C34-C35
7	E	1606	PTY	C13-C14-C15-C16

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Mol	Chain	Res	Type	Atoms
8	C	503	P5S	C46-C48-C49-C50
8	C	503	P5S	C26-C27-C28-C29
8	A	508	P5S	C44-C45-C46-C48
8	B	504	P5S	C43-C44-C45-C46
8	E	1609	P5S	C23-C24-C25-C26
6	D	504	POV	C22-C23-C24-C25
8	A	508	P5S	C51-C52-C53-C54
8	B	504	P5S	C31-C32-C33-C34
6	C	502	POV	O32-C31-O31-C3
8	A	508	P5S	C53-C54-C55-C56
8	E	1609	P5S	C32-C33-C34-C35
8	E	1607	P5S	C41-C42-C43-C44
8	D	502	P5S	C32-C33-C34-C35
8	A	508	P5S	C49-C50-C51-C52
8	E	1609	P5S	C31-C32-C33-C34
8	D	502	P5S	C53-C54-C55-C56
6	C	504	POV	O11-C1-C2-C3
7	E	1603	PTY	C11-C12-C13-C14
8	D	502	P5S	C29-C30-C31-C32
8	E	1607	P5S	C23-C24-C25-C26
6	A	505	POV	C1-C2-C3-O31
8	C	503	P5S	O19-C1-C2-C3
8	E	1607	P5S	O19-C1-C2-C3
6	B	503	POV	C32-C33-C34-C35
8	D	502	P5S	C23-C24-C25-C26
8	E	1607	P5S	C27-C28-C29-C30
6	B	503	POV	O11-C1-C2-O21
6	D	504	POV	O11-C1-C2-O21
6	C	505	POV	C33-C34-C35-C36
6	D	504	POV	O21-C2-C3-O31
8	A	508	P5S	C23-C24-C25-C26
6	D	503	POV	C35-C36-C37-C38
8	E	1607	P5S	C51-C52-C53-C54
8	B	504	P5S	C39-C40-C41-C42
8	E	1607	P5S	C26-C27-C28-C29
8	C	503	P5S	C20-C21-C22-C23
6	A	505	POV	C26-C27-C28-C29
8	D	502	P5S	C1-C2-C3-O16
8	E	1609	P5S	C1-C2-C3-O16
7	E	1605	PTY	C8-C11-C12-C13
6	D	503	POV	O22-C21-O21-C2
6	A	505	POV	C32-C33-C34-C35

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Mol	Chain	Res	Type	Atoms
8	A	508	P5S	C48-C49-C50-C51
5	C	501	ATP	PB-O3B-PG-O2G
8	E	1607	P5S	C3-C2-O37-C38
8	E	1609	P5S	C28-C29-C30-C31
7	E	1611	PTY	C31-C30-O4-C1
6	A	507	POV	O11-C1-C2-O21
6	C	502	POV	O11-C1-C2-O21
6	C	504	POV	O11-C1-C2-O21
6	C	505	POV	O11-C1-C2-O21
7	A	506	PTY	O14-C5-C6-O7
7	E	1611	PTY	O4-C1-C6-C5
8	D	502	P5S	O19-C1-C2-C3
8	E	1609	P5S	C49-C50-C51-C52
6	A	507	POV	C34-C35-C36-C37
7	A	506	PTY	C2-C3-O11-P1
7	E	1611	PTY	C2-C3-O11-P1
7	E	1603	PTY	O4-C1-C6-O7
7	E	1608	PTY	O4-C1-C6-O7
7	E	1610	PTY	O4-C1-C6-O7
8	A	508	P5S	O19-C1-C2-O37
8	E	1607	P5S	O19-C1-C2-O37
6	D	503	POV	C33-C34-C35-C36
8	B	504	P5S	C46-C48-C49-C50
8	C	503	P5S	C43-C44-C45-C46
8	E	1609	P5S	N-CA-CB-OG
8	C	503	P5S	CA-CB-OG-P12
8	D	502	P5S	CA-CB-OG-P12
6	D	503	POV	C34-C35-C36-C37
8	D	502	P5S	C33-C34-C35-C36
6	C	505	POV	O11-C1-C2-C3
8	E	1609	P5S	C2-C3-O16-P12
7	E	1604	PTY	C14-C15-C16-C17
7	E	1611	PTY	O30-C30-O4-C1
7	E	1603	PTY	O14-C5-C6-O7
7	E	1608	PTY	O14-C5-C6-O7
8	A	508	P5S	O37-C2-C3-O16
8	B	504	P5S	O37-C2-C3-O16
8	E	1607	P5S	O37-C2-C3-O16
7	E	1604	PTY	C17-C18-C19-C20
8	C	503	P5S	C30-C31-C32-C33
8	B	504	P5S	C24-C25-C26-C27
6	A	505	POV	O21-C2-C3-O31

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Mol	Chain	Res	Type	Atoms
7	E	1611	PTY	O4-C1-C6-O7
8	C	503	P5S	O19-C1-C2-O37
8	D	502	P5S	O19-C1-C2-O37
7	E	1608	PTY	O4-C1-C6-C5
8	A	508	P5S	O19-C1-C2-C3
8	E	1607	P5S	C53-C54-C55-C56
6	C	502	POV	C34-C35-C36-C37
7	E	1610	PTY	C15-C16-C17-C18
8	B	504	P5S	C21-C22-C23-C24
5	A	504	ATP	C5'-O5'-PA-O1A
5	C	501	ATP	C5'-O5'-PA-O3A
6	A	505	POV	C1-O11-P-O14
6	A	505	POV	C11-O12-P-O14
6	B	503	POV	C11-O12-P-O14
6	C	504	POV	C1-O11-P-O14
6	C	504	POV	C11-O12-P-O14
6	C	505	POV	C11-O12-P-O14
7	E	1605	PTY	C5-O14-P1-O13
7	E	1608	PTY	C5-O14-P1-O12
8	B	504	P5S	OXT-C-CA-CB
8	B	504	P5S	C3-O16-P12-O13
8	D	502	P5S	CB-OG-P12-O13
8	E	1607	P5S	CB-OG-P12-O13
8	E	1607	P5S	CB-OG-P12-O16
8	A	508	P5S	C45-C46-C48-C49
7	E	1608	PTY	C31-C32-C33-C34
8	A	508	P5S	C21-C22-C23-C24
6	D	503	POV	C22-C23-C24-C25
7	E	1610	PTY	C11-C12-C13-C14
6	A	505	POV	C3-C2-O21-C21
7	E	1603	PTY	C1-C6-O7-C8
7	E	1603	PTY	C8-C11-C12-C13
7	A	506	PTY	C14-C15-C16-C17
7	E	1610	PTY	C14-C15-C16-C17
6	C	502	POV	O11-C1-C2-C3
7	E	1603	PTY	O14-C5-C6-C1
7	E	1610	PTY	O14-C5-C6-C1
7	E	1610	PTY	O14-C5-C6-O7
8	D	502	P5S	O37-C2-C3-O16
8	D	502	P5S	C25-C26-C27-C28
5	A	504	ATP	PG-O3B-PB-O3A
8	C	503	P5S	C28-C29-C30-C31

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Mol	Chain	Res	Type	Atoms
7	E	1604	PTY	C11-C12-C13-C14
7	E	1608	PTY	C12-C11-C8-O7
7	E	1603	PTY	O4-C1-C6-C5
5	B	501	ATP	PA-O3A-PB-O2B
6	C	504	POV	C24-C25-C26-C27
8	D	502	P5S	C20-C17-O19-C1
6	C	502	POV	C24-C25-C26-C27
8	E	1607	P5S	C48-C49-C50-C51
8	C	503	P5S	C39-C40-C41-C42
8	B	504	P5S	C33-C34-C35-C36
6	C	504	POV	C25-C26-C27-C28
6	A	505	POV	C34-C35-C36-C37
6	B	503	POV	C23-C24-C25-C26
8	C	503	P5S	C48-C49-C50-C51
7	A	506	PTY	C32-C33-C34-C35
7	E	1610	PTY	C1-C6-O7-C8
6	B	503	POV	C27-C28-C29-C210
6	A	505	POV	C23-C24-C25-C26
6	B	503	POV	C35-C36-C37-C38
7	E	1605	PTY	C11-C12-C13-C14
8	E	1609	P5S	C46-C48-C49-C50
6	A	507	POV	C33-C34-C35-C36
9	E	1602	GBM	C17-N9-S2-O4
8	A	508	P5S	C22-C23-C24-C25
6	C	504	POV	C2-C1-O11-P
7	E	1611	PTY	O14-C5-C6-O7
6	A	507	POV	C27-C28-C29-C210
6	A	507	POV	O21-C2-C3-O31
8	E	1607	P5S	C33-C34-C35-C36
8	E	1607	P5S	C49-C50-C51-C52
5	C	501	ATP	PB-O3B-PG-O1G
6	C	504	POV	O31-C31-C32-C33
7	E	1603	PTY	C15-C16-C17-C18
8	C	503	P5S	C33-C34-C35-C36
6	C	502	POV	C27-C28-C29-C210
8	C	503	P5S	C51-C52-C53-C54
6	C	504	POV	C34-C35-C36-C37
8	B	504	P5S	O19-C17-C20-C21
6	D	504	POV	C33-C34-C35-C36
5	B	501	ATP	PA-O3A-PB-O1B
5	B	502	ATP	PB-O3A-PA-O2A
5	E	1601	ATP	PG-O3B-PB-O2B

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Mol	Chain	Res	Type	Atoms
9	E	1602	GBM	C30-C28-O7-C33
8	E	1607	P5S	CA-CB-OG-P12
8	E	1609	P5S	CA-CB-OG-P12
6	B	503	POV	C31-C32-C33-C34
6	D	504	POV	C2-C1-O11-P
8	E	1607	P5S	C17-C20-C21-C22
7	E	1610	PTY	C12-C13-C14-C15
7	E	1608	PTY	C30-C31-C32-C33
7	E	1605	PTY	C12-C13-C14-C15
6	A	505	POV	C24-C25-C26-C27
6	D	504	POV	C27-C28-C29-C210
6	C	502	POV	O21-C21-C22-C23
8	C	503	P5S	O47-C38-O37-C2
6	B	503	POV	O21-C21-C22-C23
8	E	1609	P5S	C33-C34-C35-C36
8	D	502	P5S	OXT-C-CA-N
7	E	1608	PTY	O4-C30-C31-C32
8	E	1609	P5S	O-C-CA-N
7	E	1605	PTY	C12-C11-C8-O7
5	B	501	ATP	PG-O3B-PB-O1B
5	E	1601	ATP	PG-O3B-PB-O1B
7	E	1605	PTY	C12-C11-C8-O10

There are no ring outliers.

25 monomers are involved in 48 short contacts:

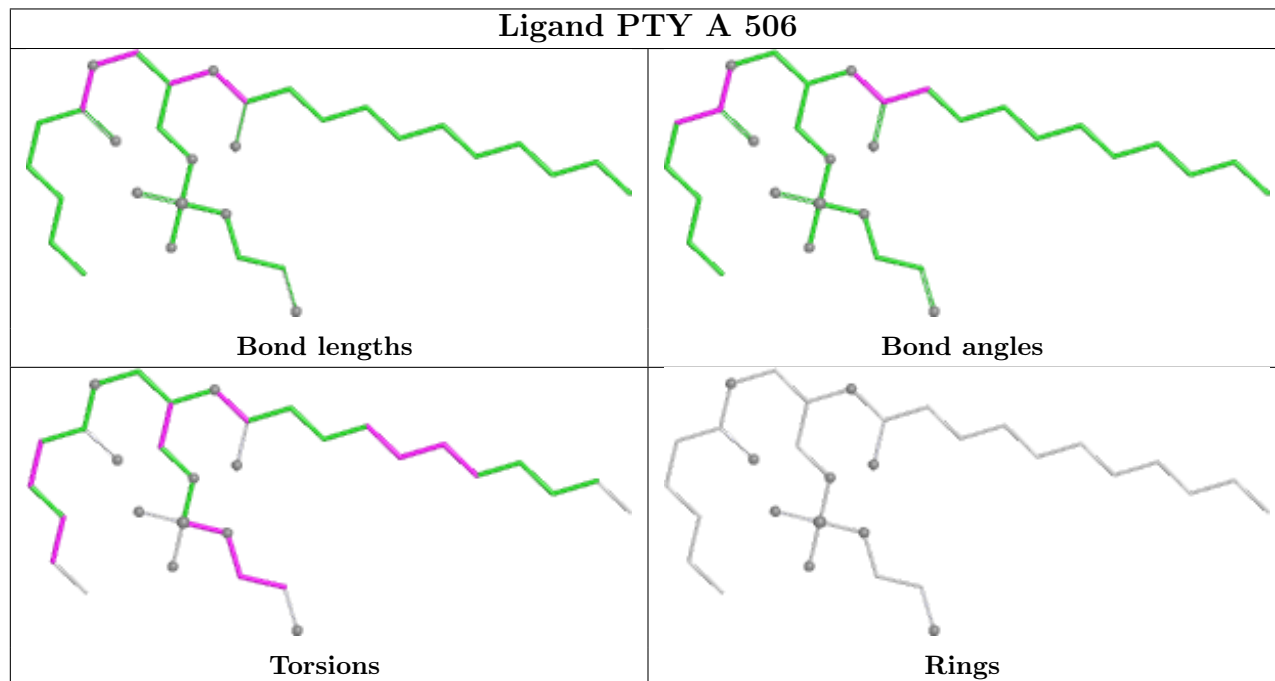
Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	D	503	POV	3	0
8	C	503	P5S	1	0
5	B	502	ATP	2	0
8	E	1607	P5S	6	0
5	B	501	ATP	1	0
8	A	508	P5S	3	0
6	B	503	POV	2	0
6	A	505	POV	1	0
5	E	1601	ATP	1	0
6	C	505	POV	2	0
9	E	1602	GBM	2	0
6	D	504	POV	1	0
7	E	1608	PTY	1	0
7	E	1611	PTY	2	0
6	C	504	POV	2	0

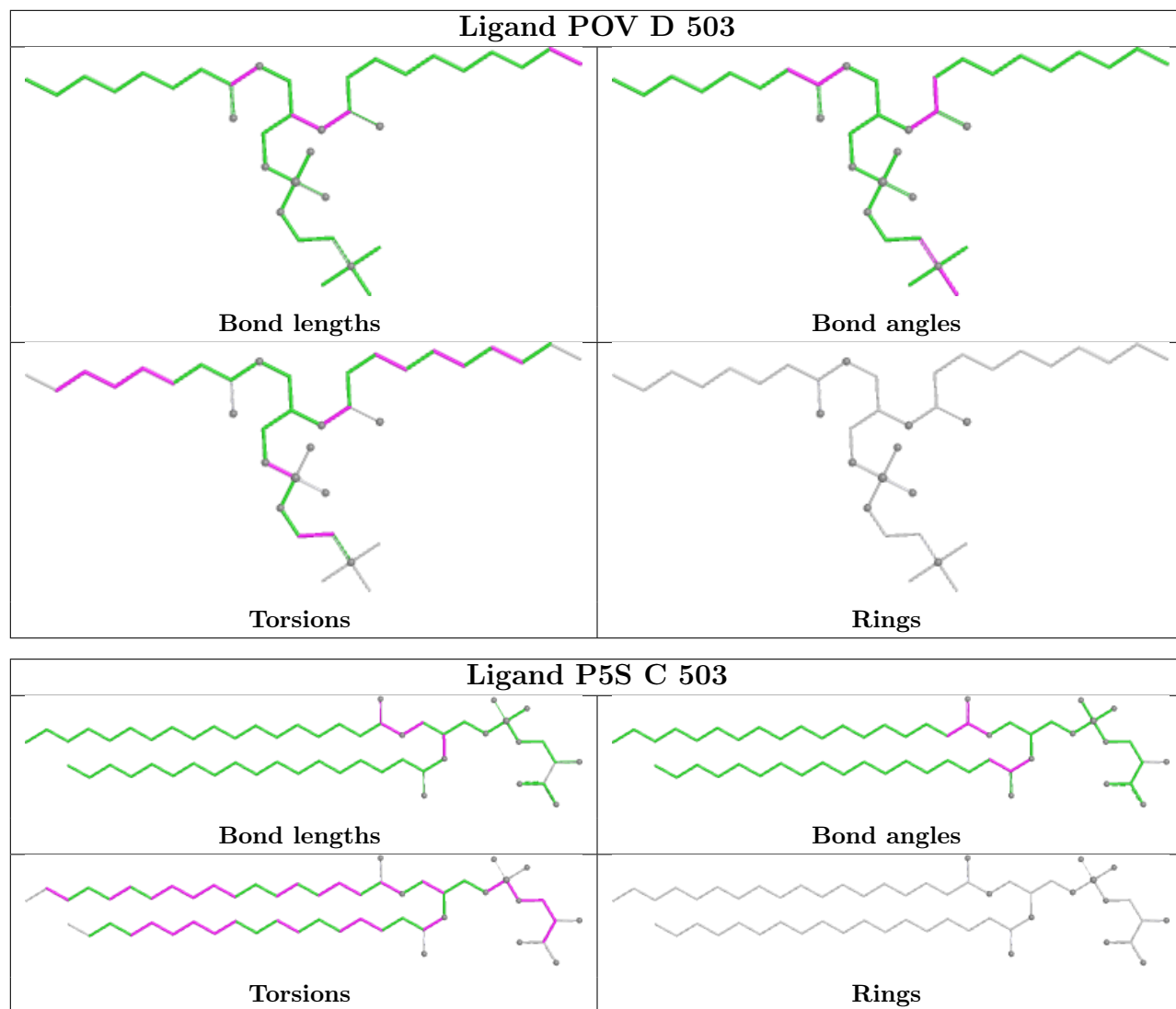
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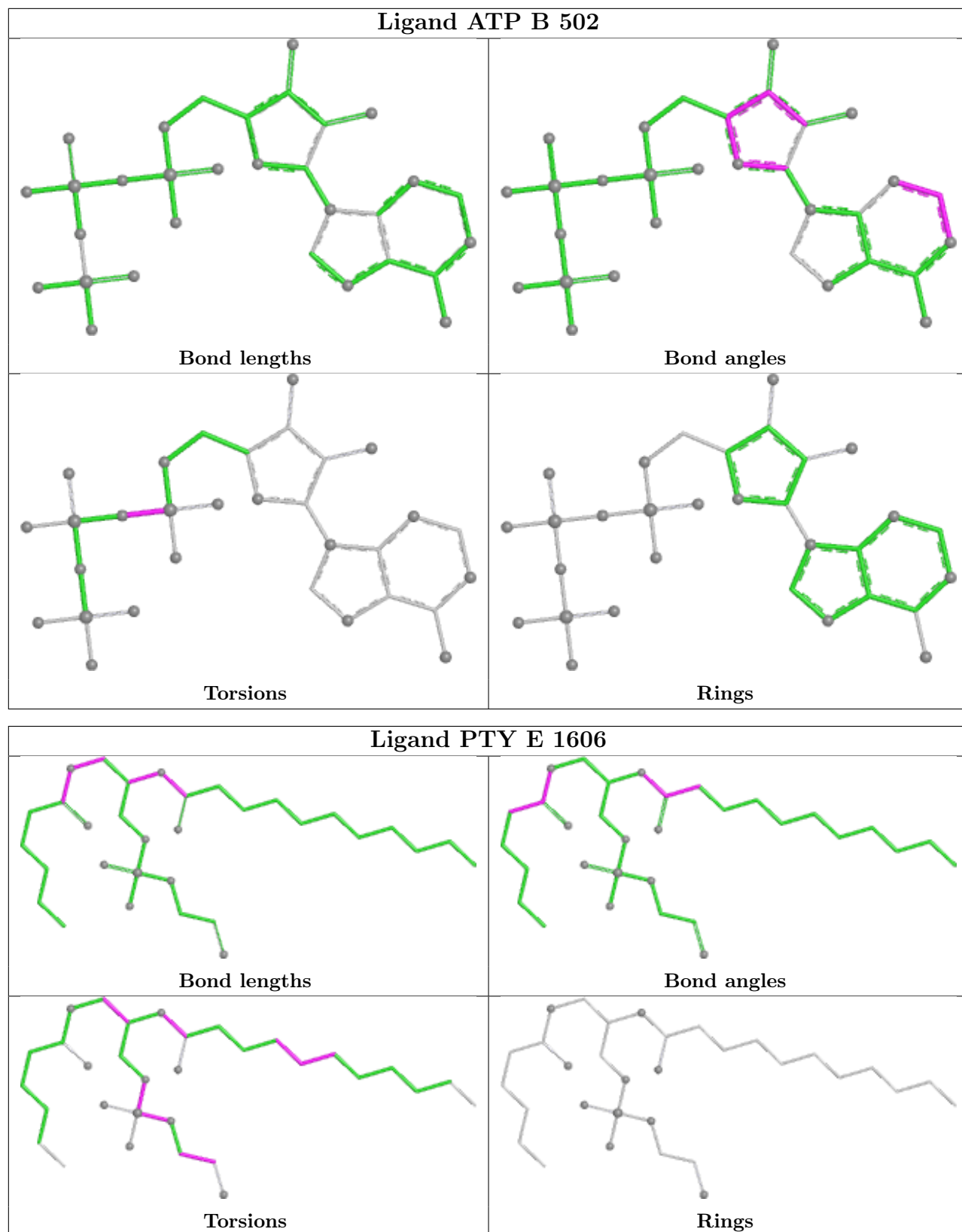
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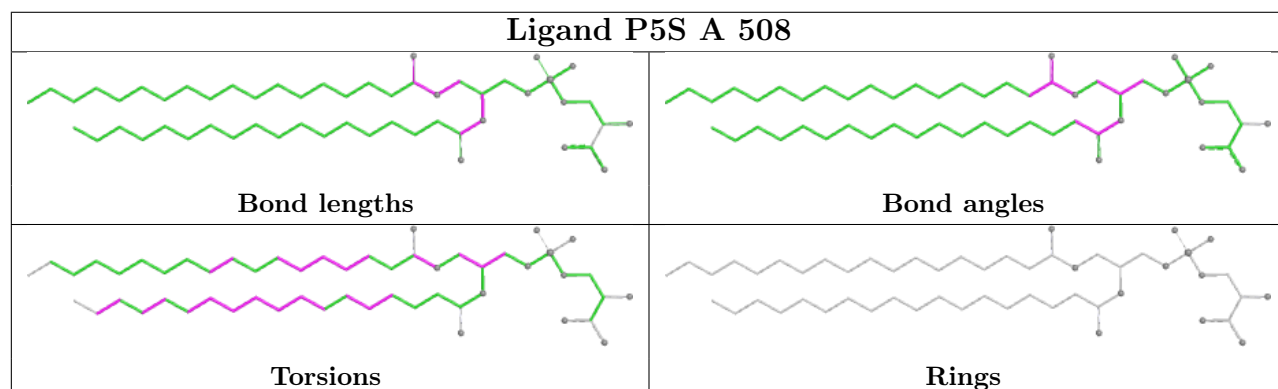
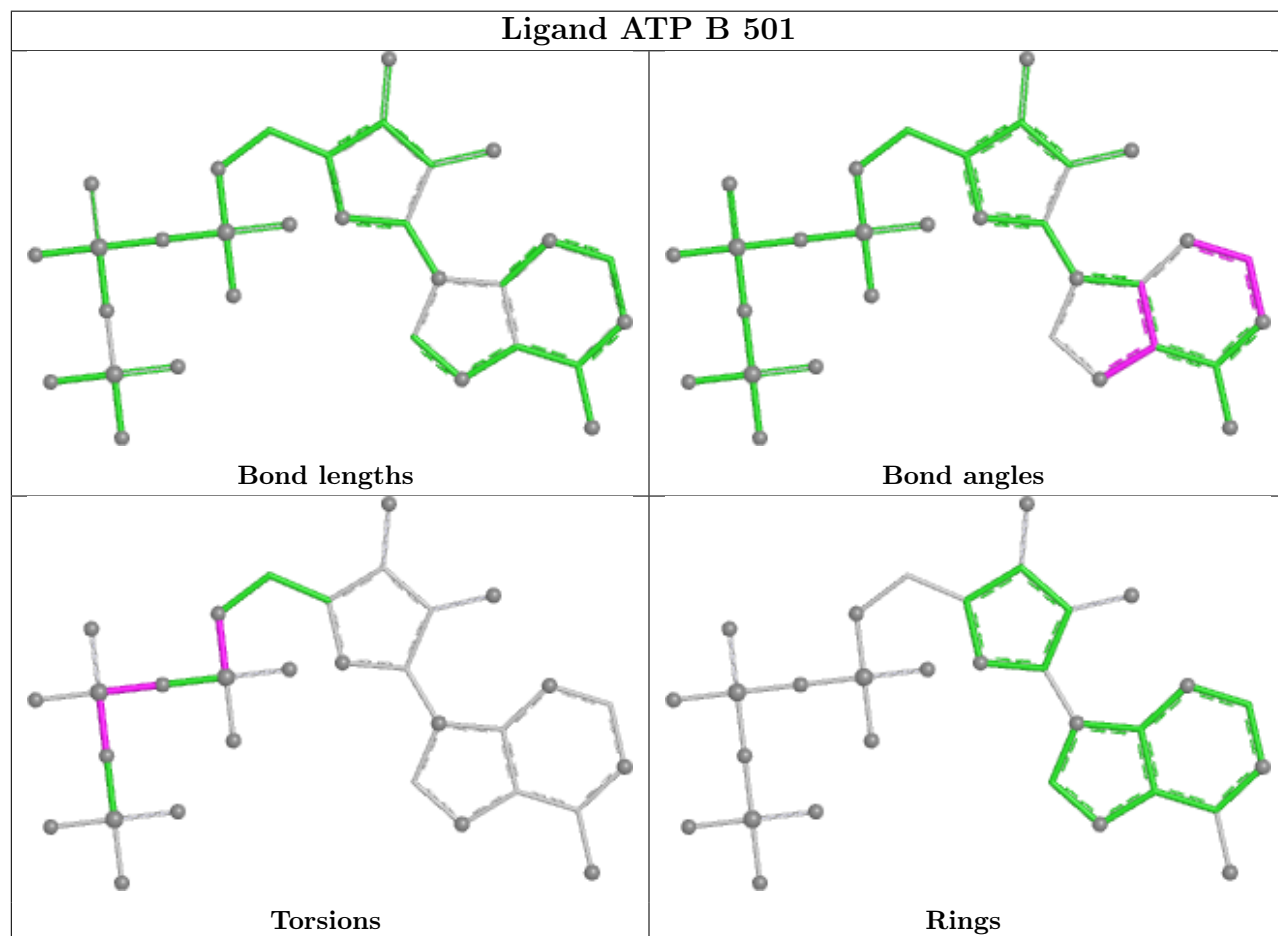
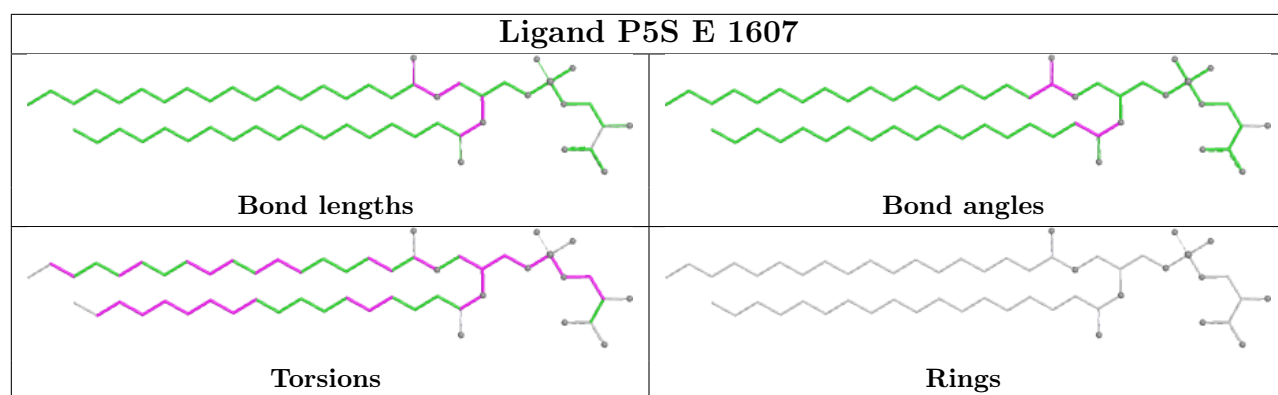
Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	E	1605	PTY	1	0
8	B	504	P5S	3	0
8	E	1609	P5S	2	0
7	E	1610	PTY	1	0
7	E	1603	PTY	1	0
5	A	504	ATP	3	0
7	E	1604	PTY	1	0
6	C	502	POV	4	0
8	D	502	P5S	4	0
6	A	507	POV	1	0

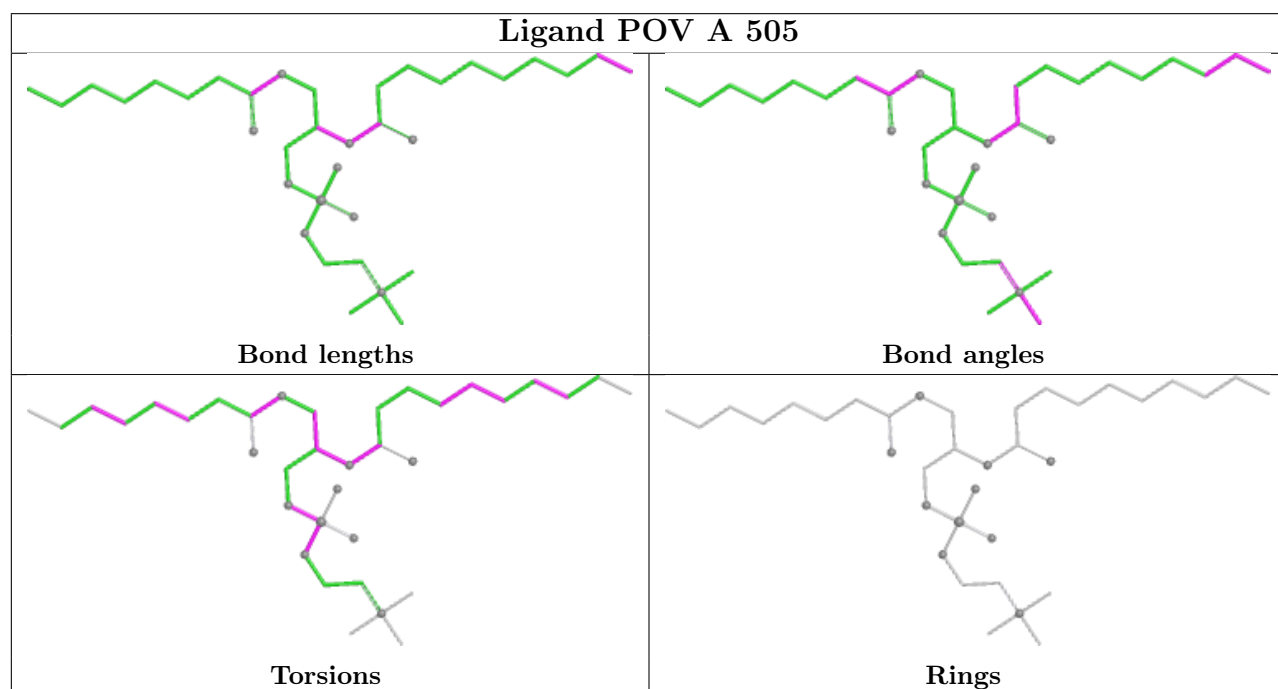
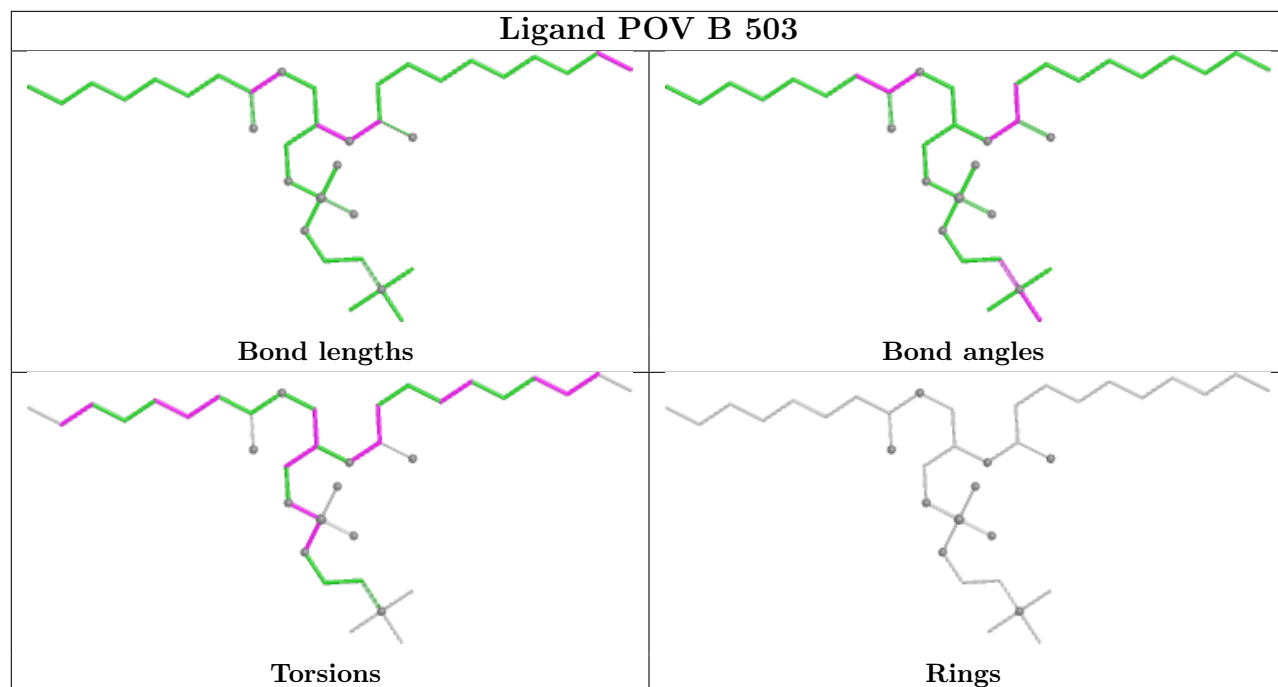
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

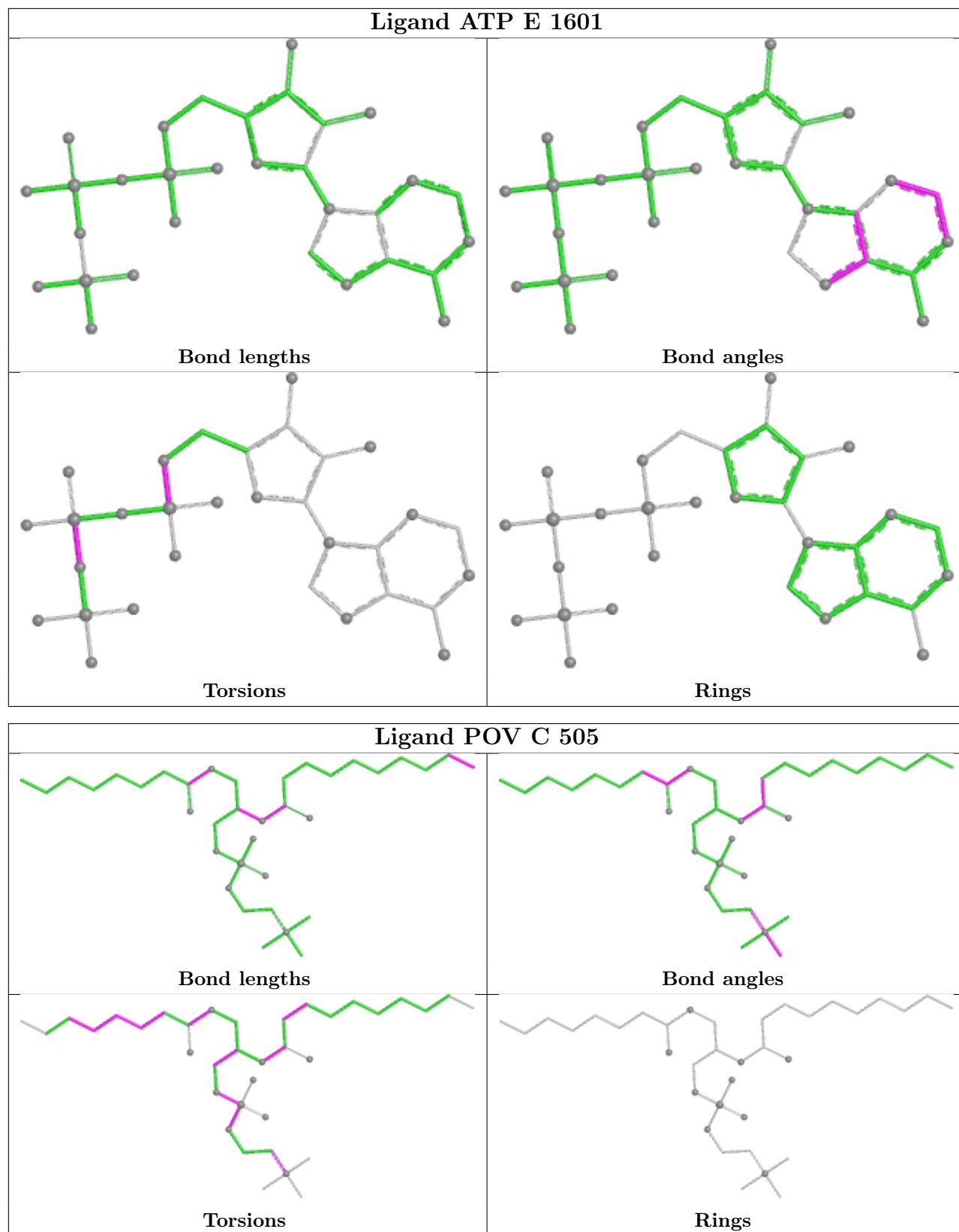


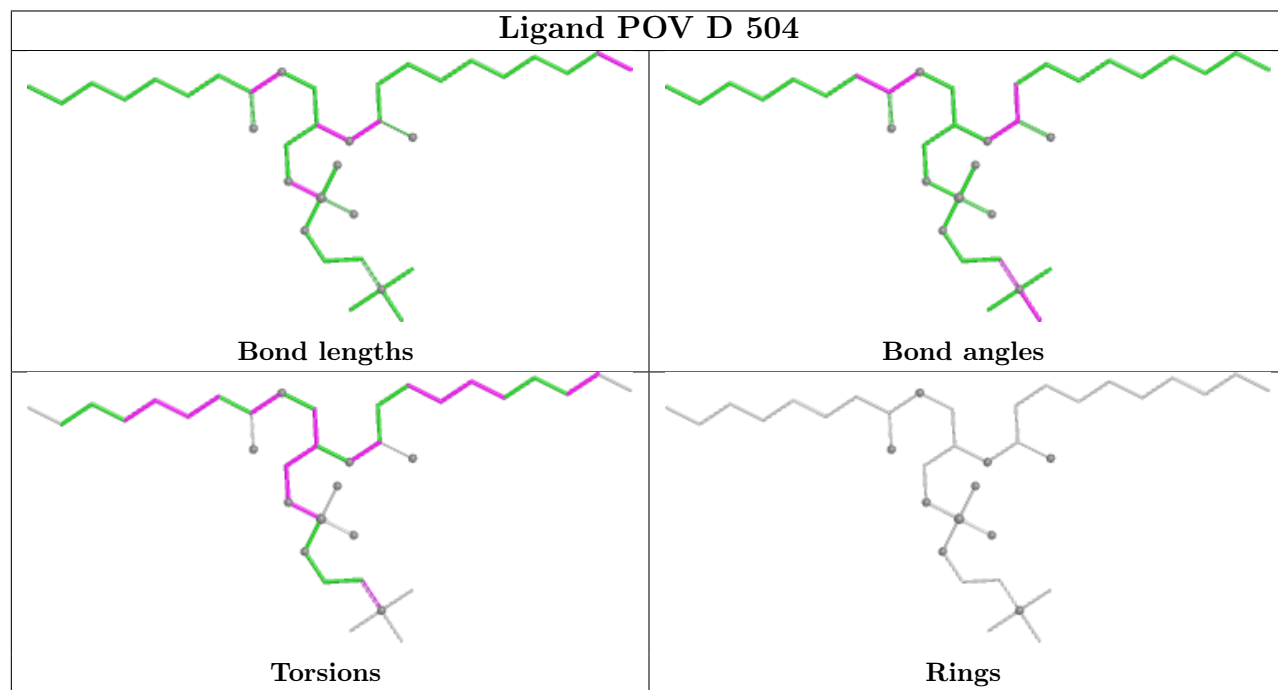
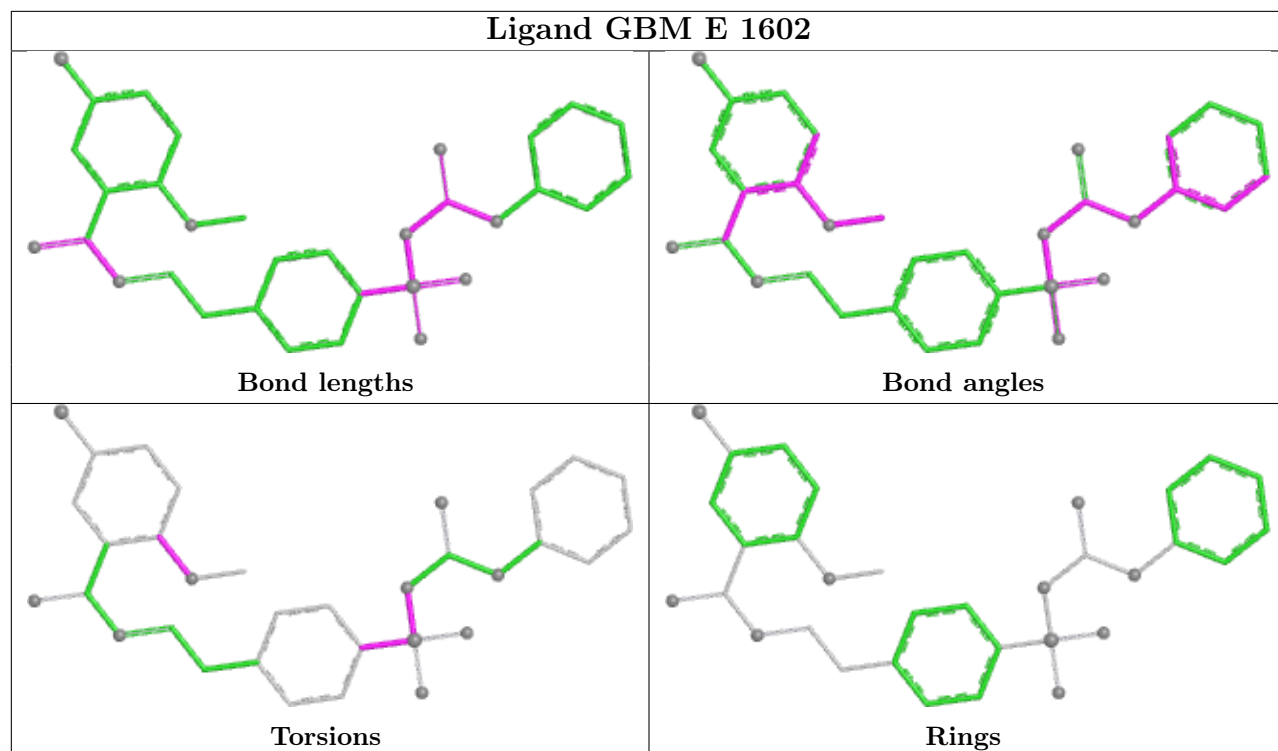


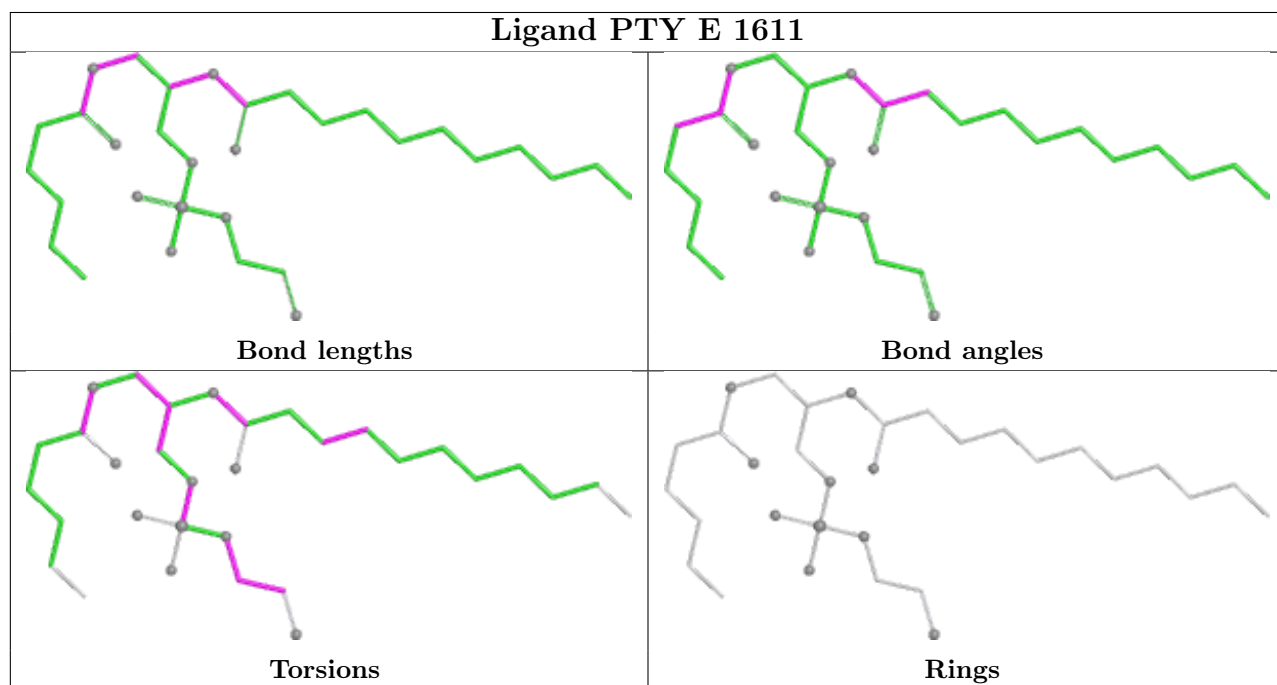
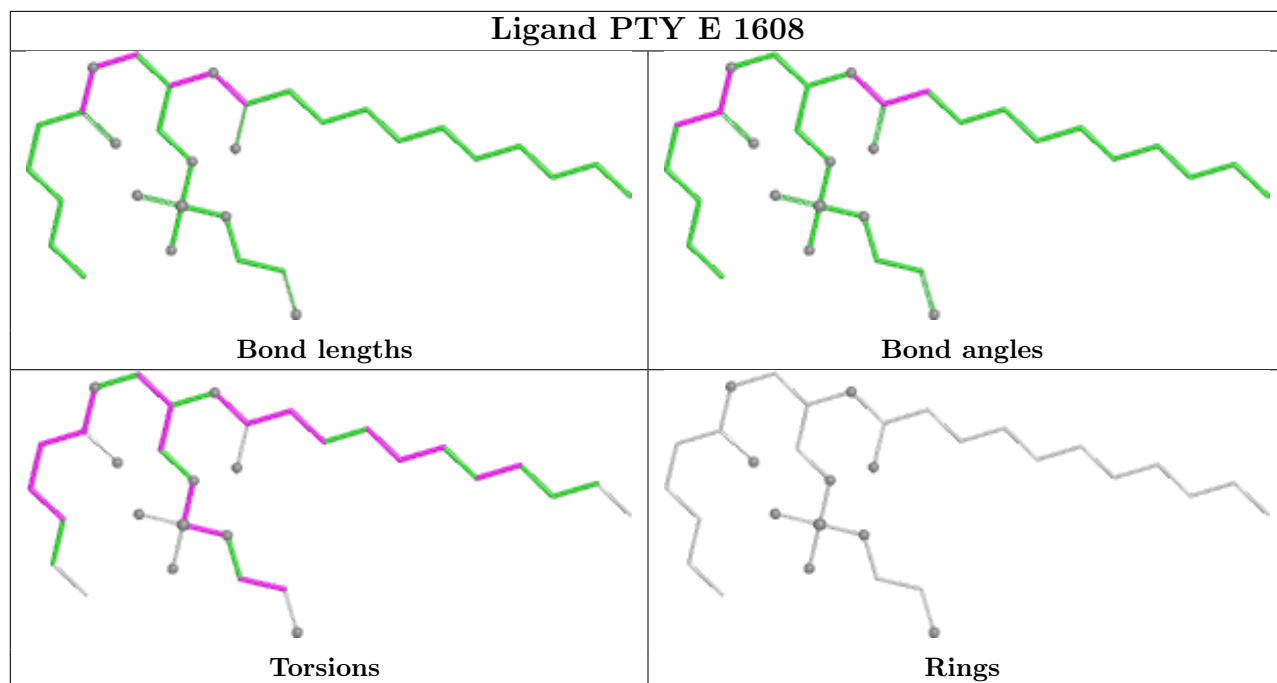


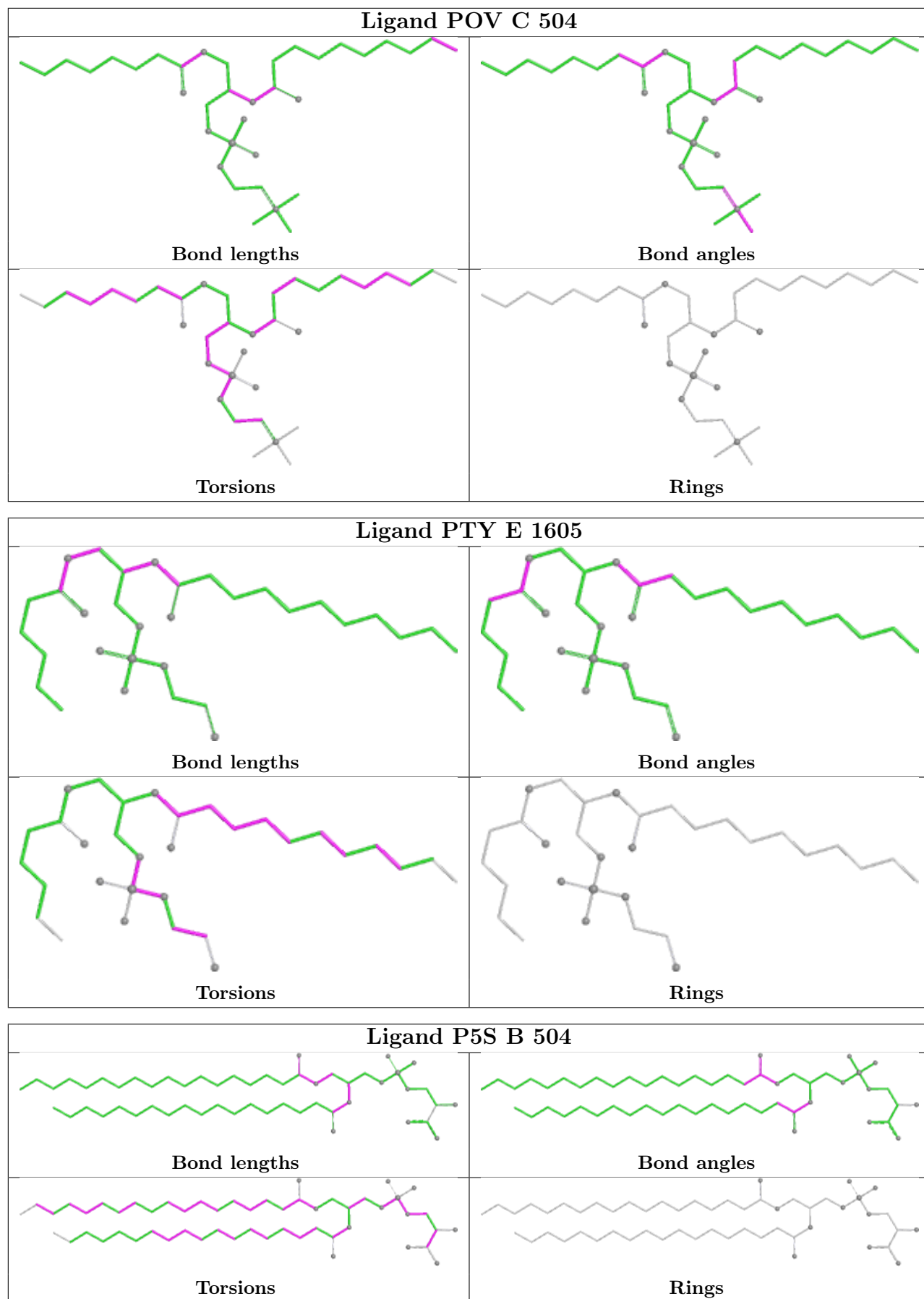


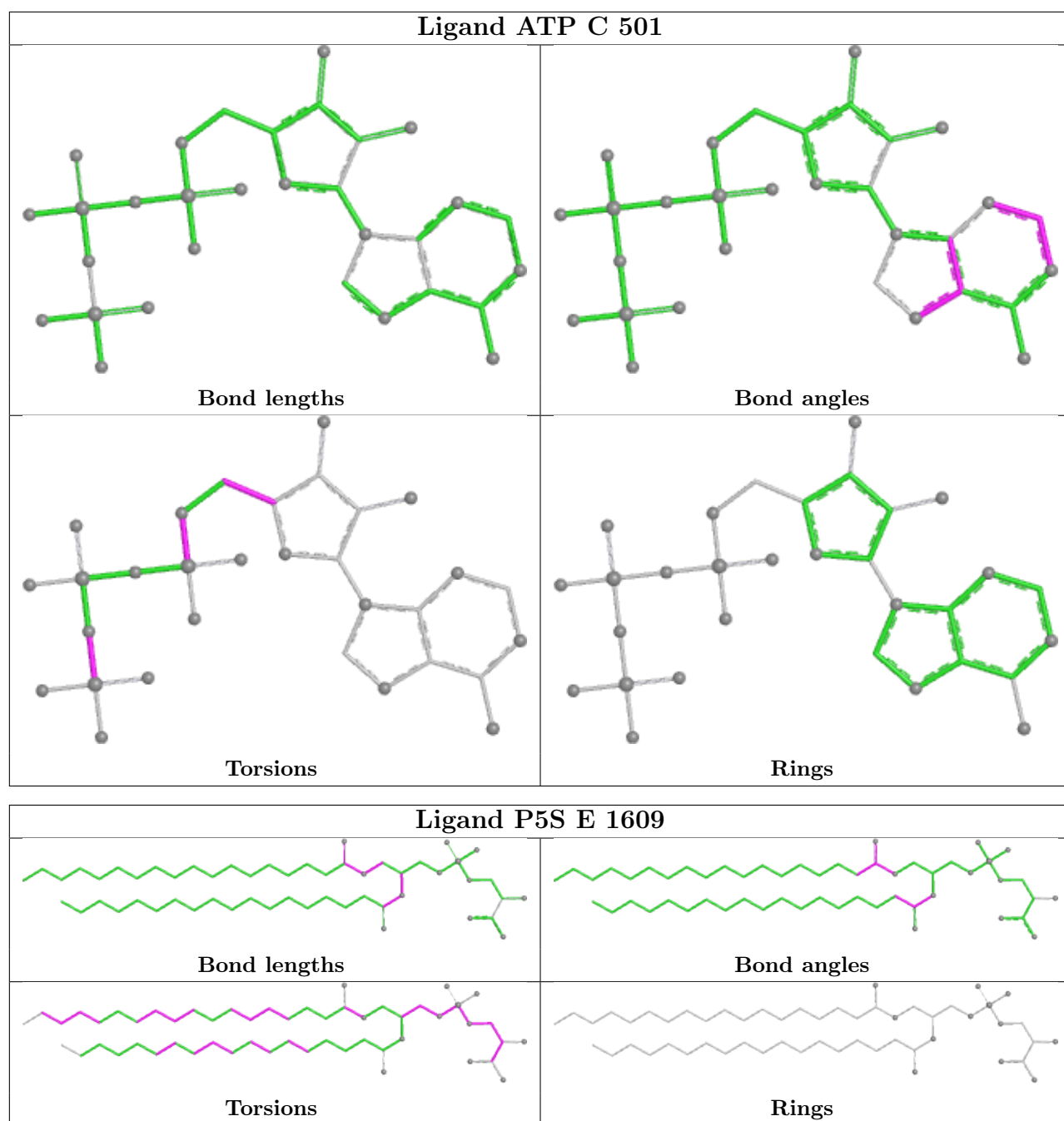


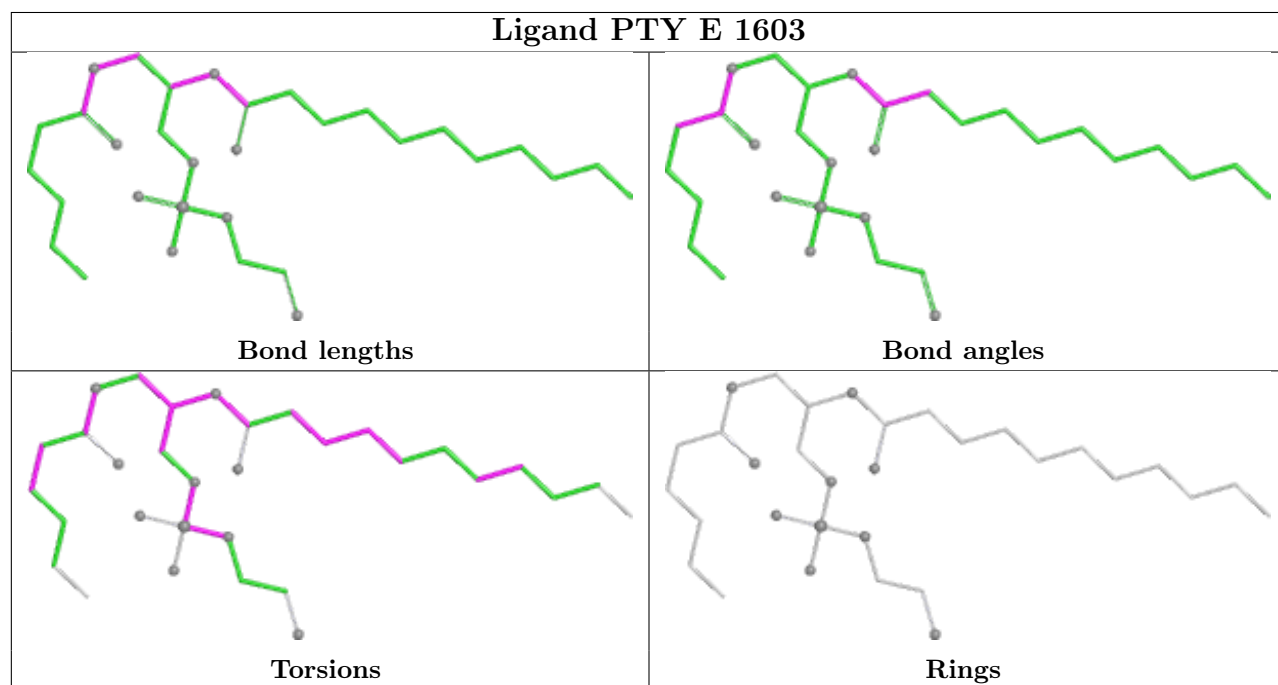
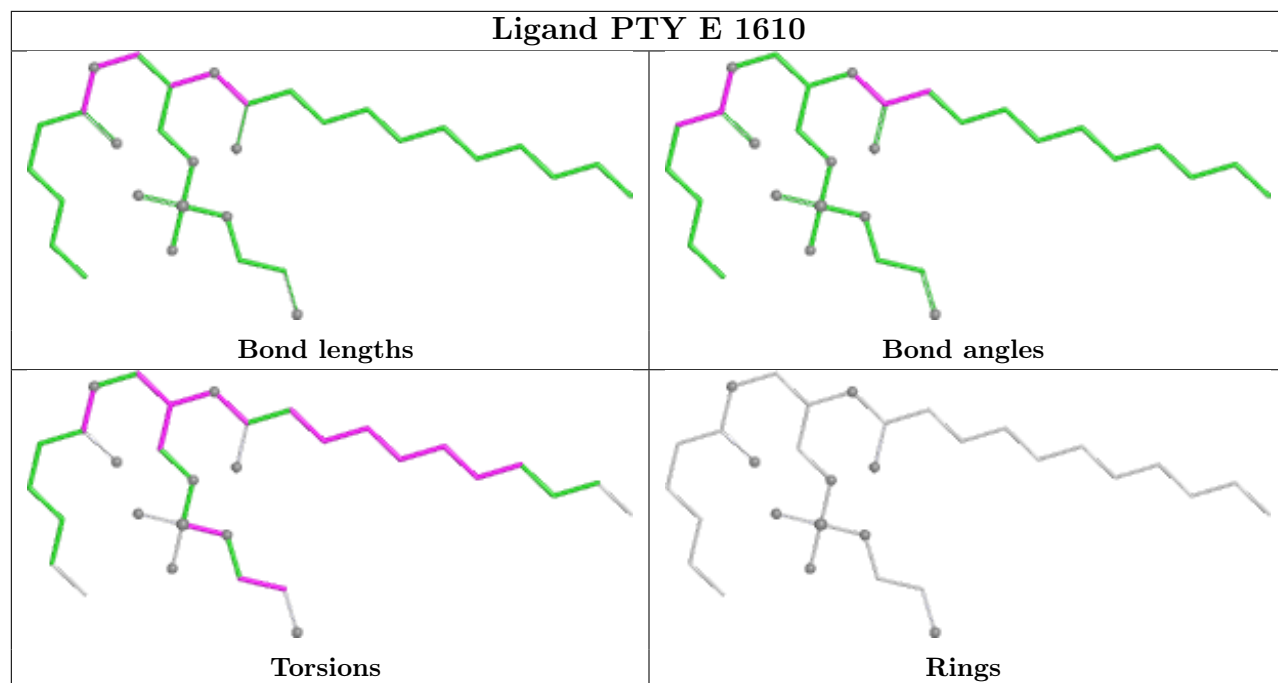


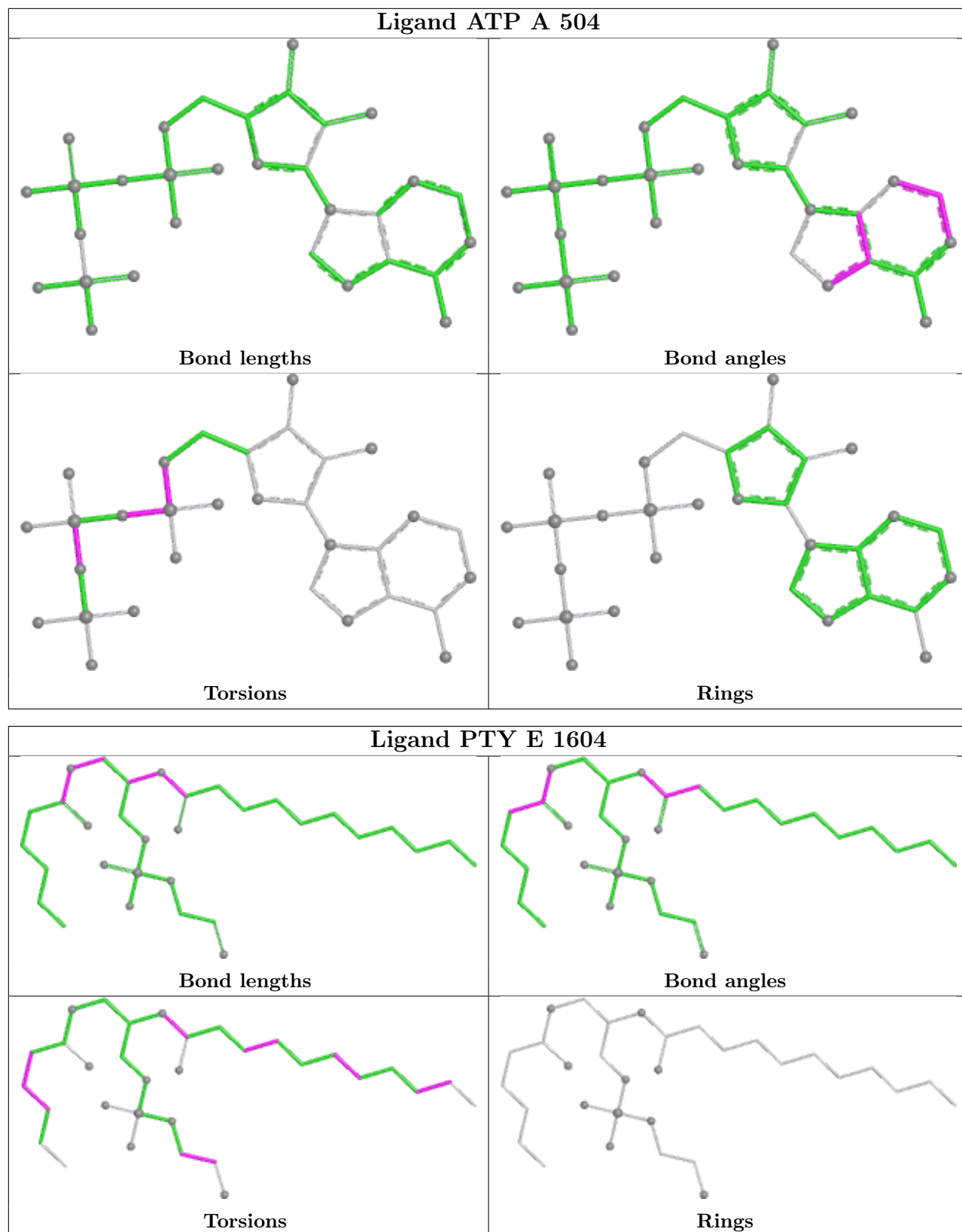


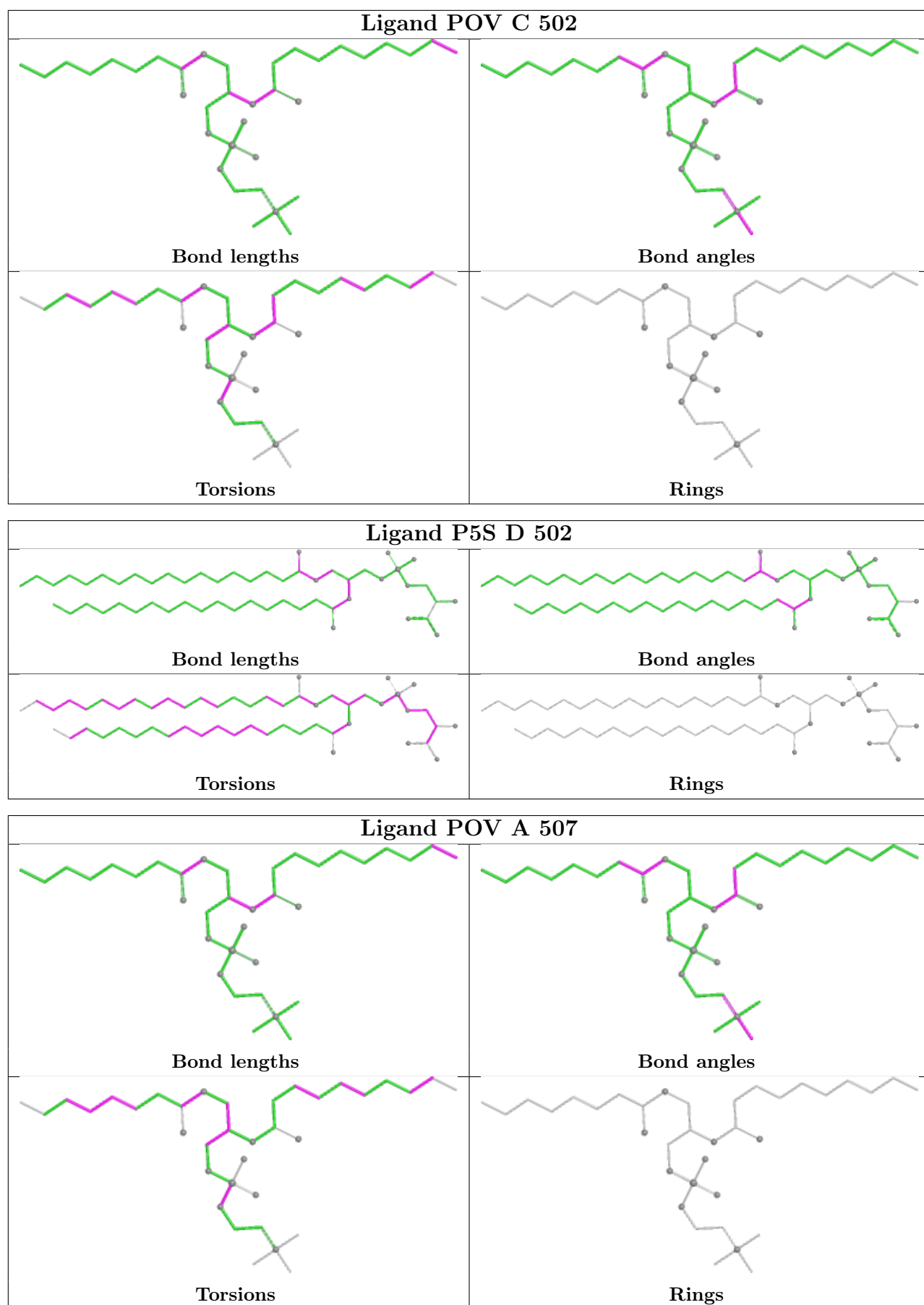












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

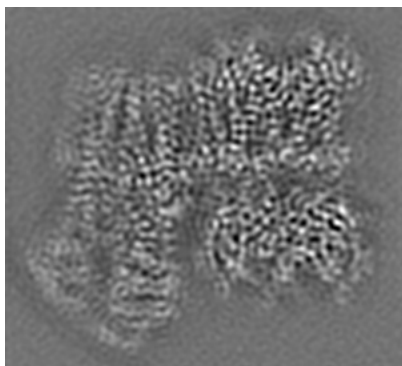
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-23864. These allow visual inspection of the internal detail of the map and identification of artifacts.

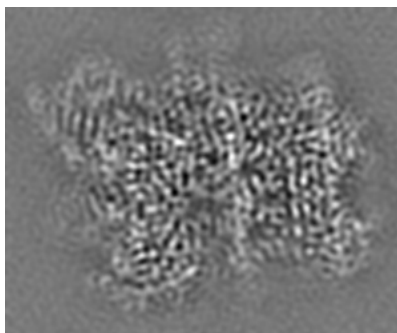
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

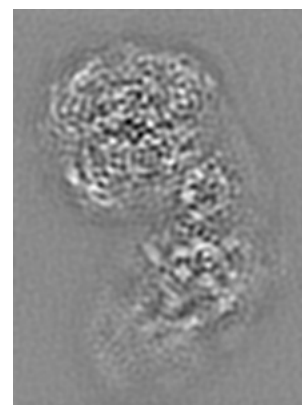
6.1.1 Primary map



X



Y

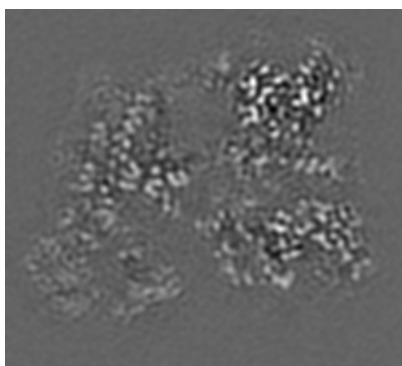


Z

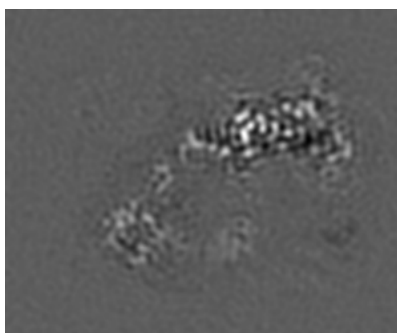
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

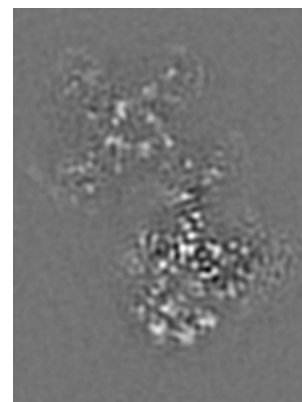
6.2.1 Primary map



X Index: 51



Y Index: 68

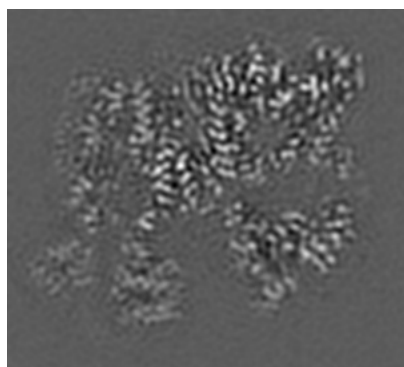


Z Index: 62

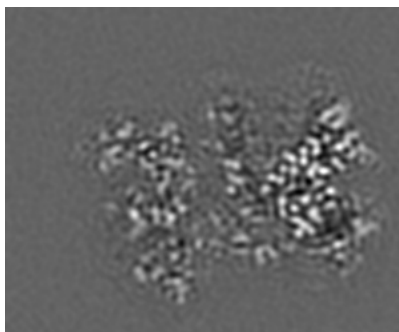
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [\(i\)](#)

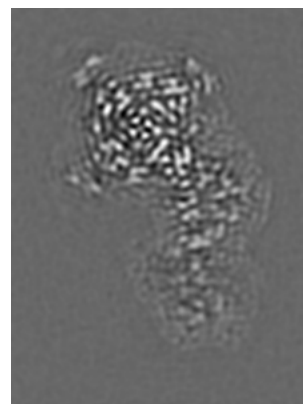
6.3.1 Primary map



X Index: 58



Y Index: 84

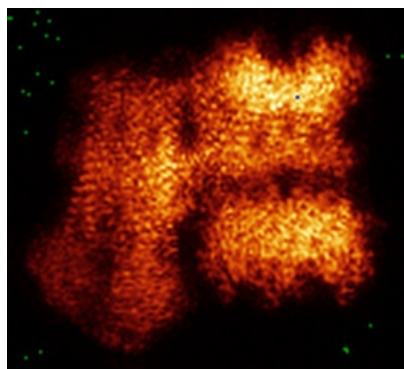


Z Index: 96

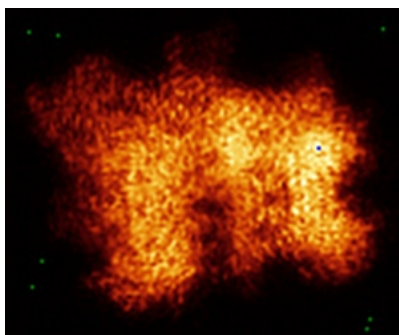
The images above show the largest variance slices of the map in three orthogonal directions.

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

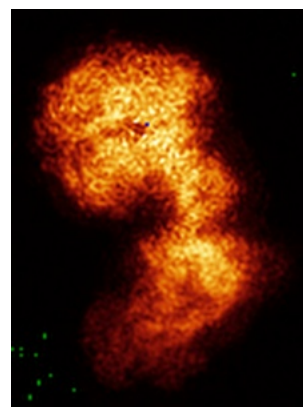
6.4.1 Primary map



X



Y

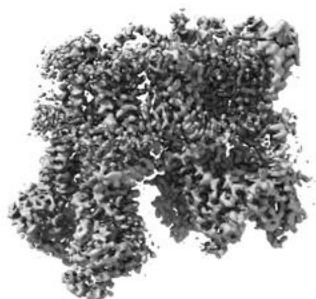


Z

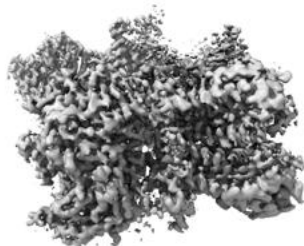
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 1.0. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

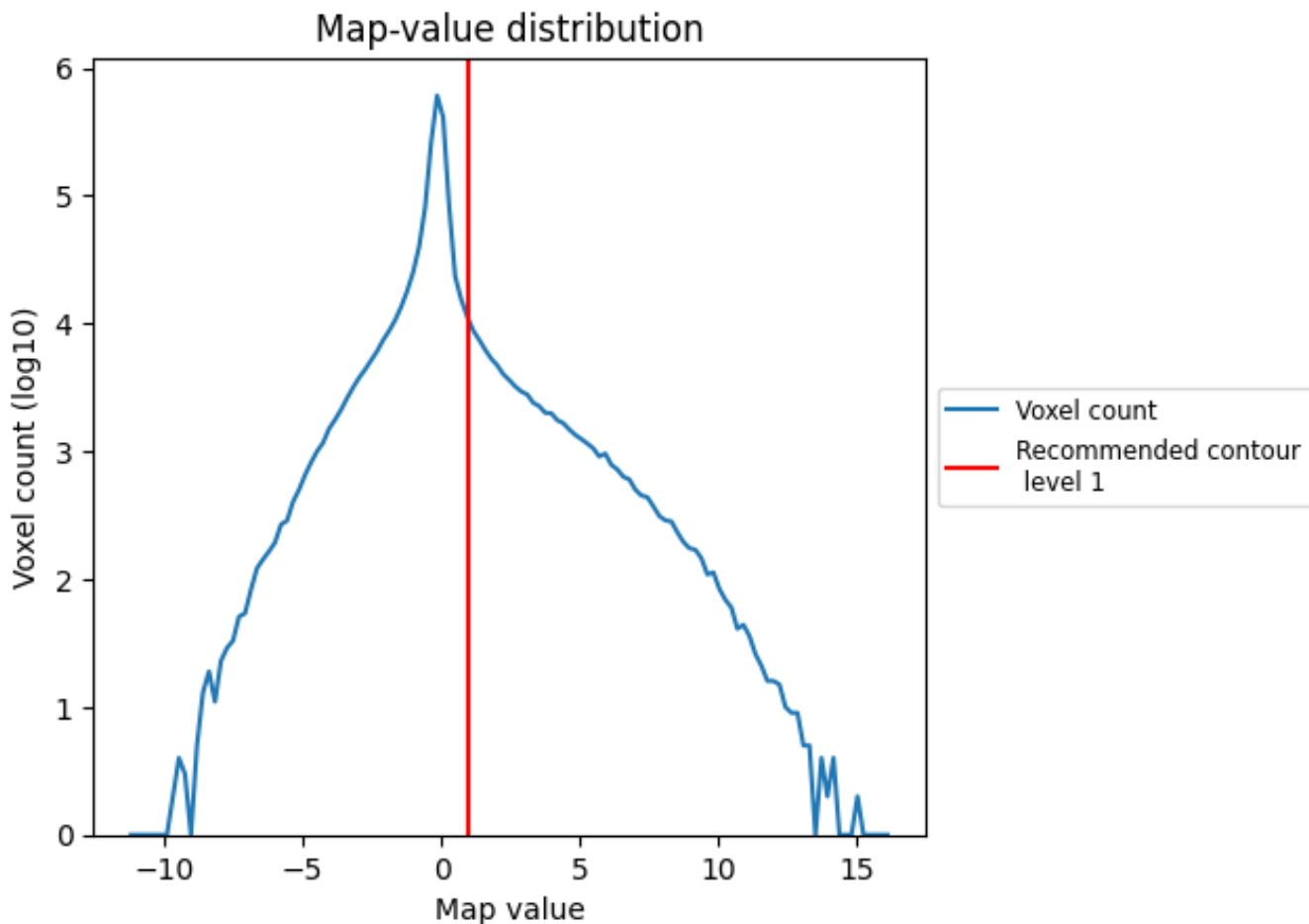
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

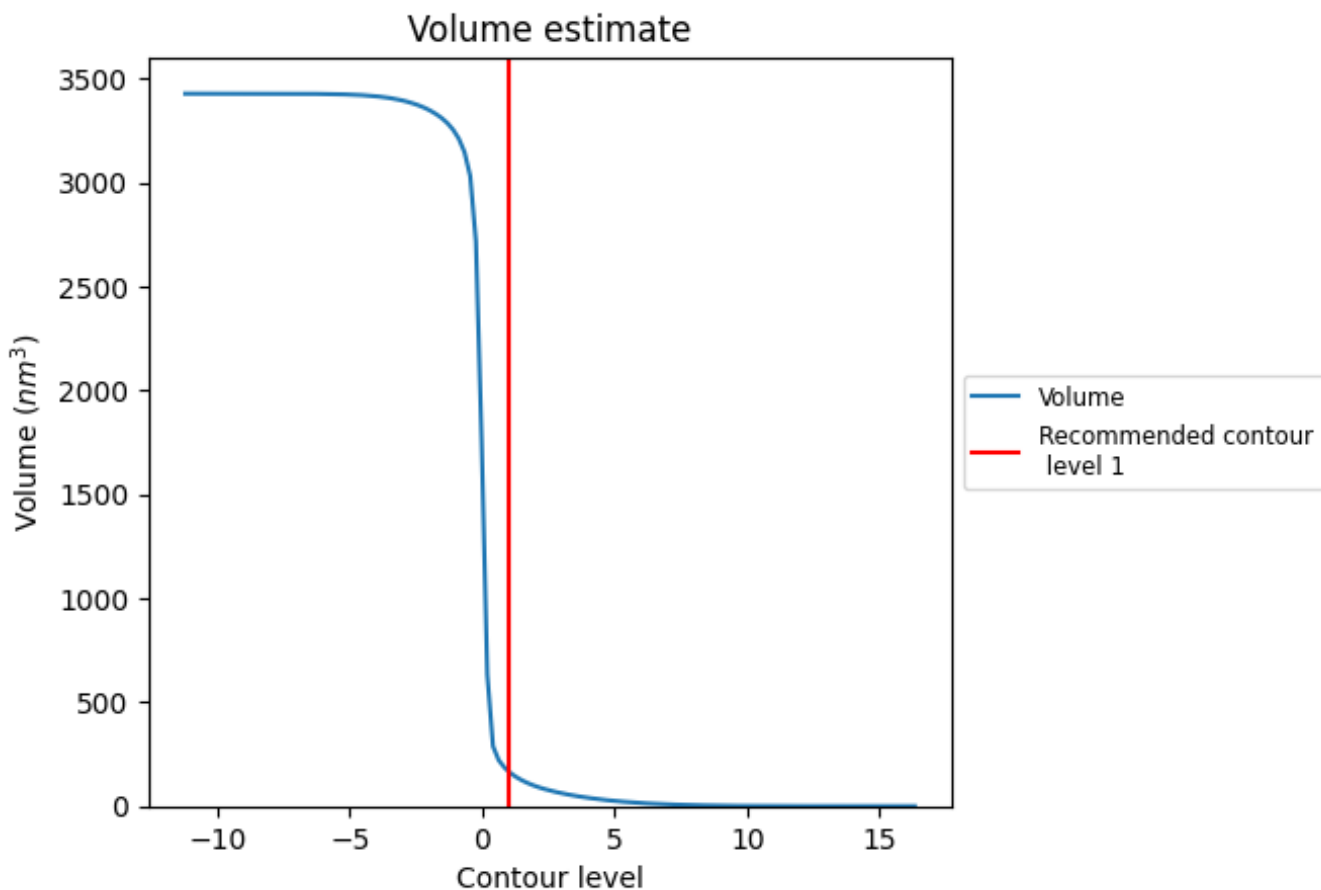
This section contains the results of statistical analysis of the map.

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 167 nm³; this corresponds to an approximate mass of 151 kDa.

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

7.3 Rotationally averaged power spectrum [\(i\)](#)

This section was not generated. The rotationally averaged power spectrum is only generated for cubic maps.

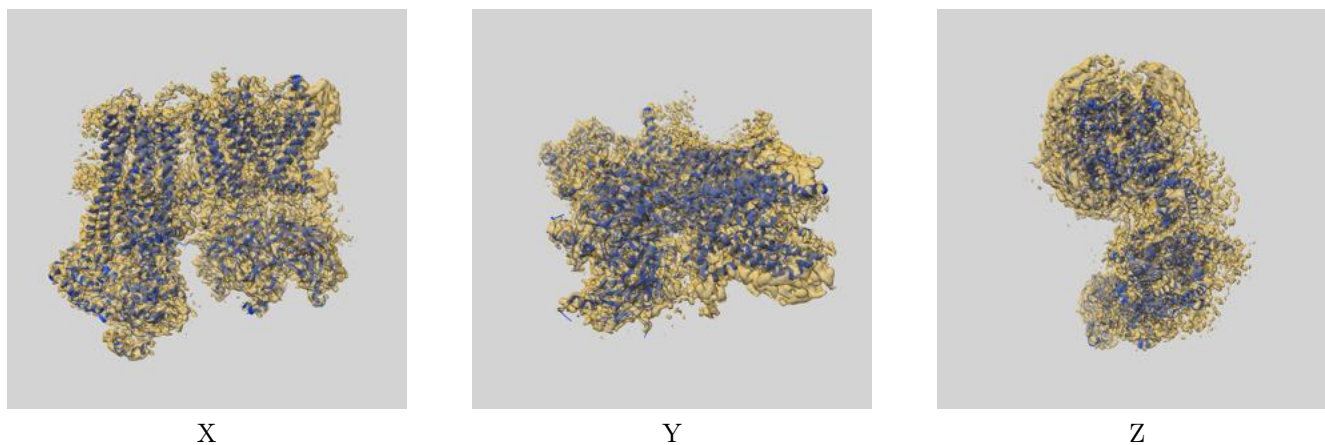
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

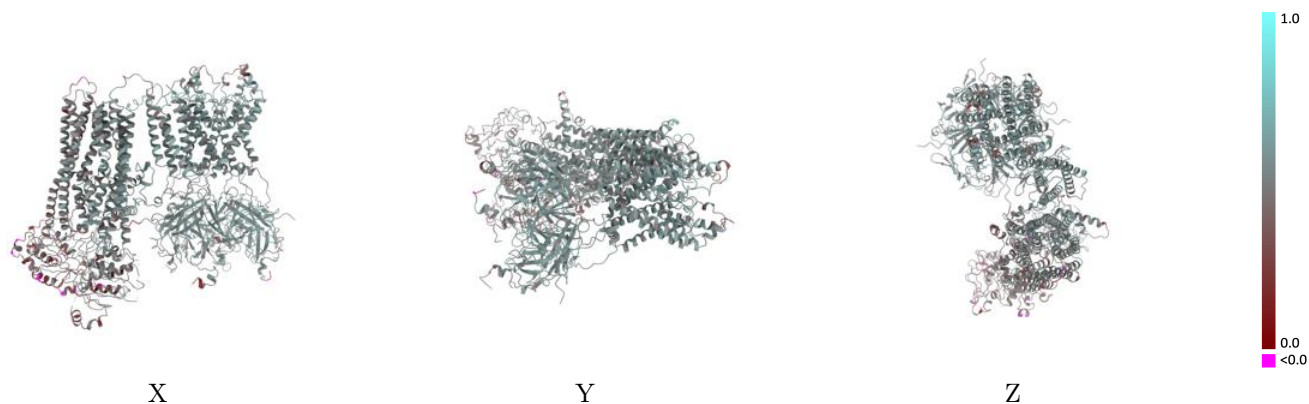
This section contains information regarding the fit between EMDB map EMD-23864 and PDB model 7MIT. Per-residue inclusion information can be found in section 3 on page 9.

9.1 Map-model overlay [i](#)



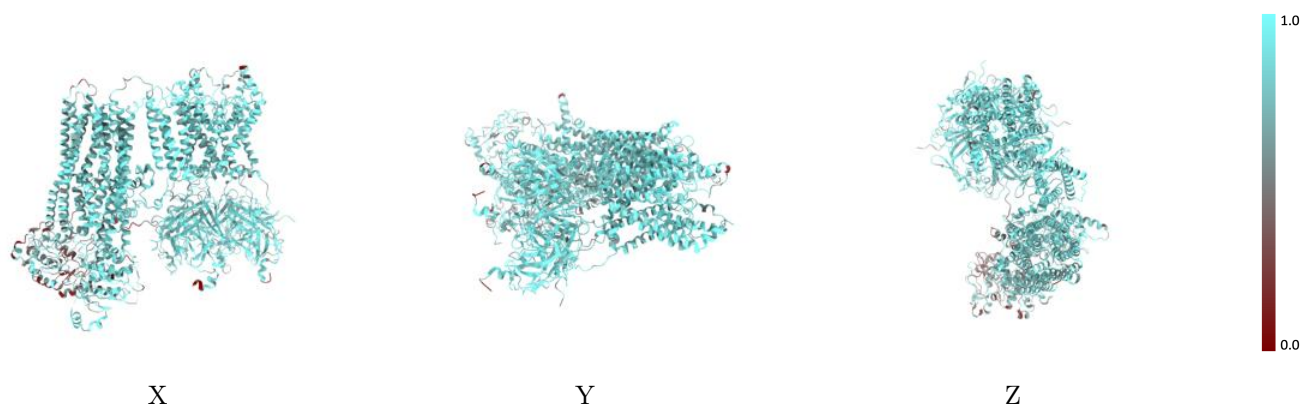
The images above show the 3D surface view of the map at the recommended contour level 1.0 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



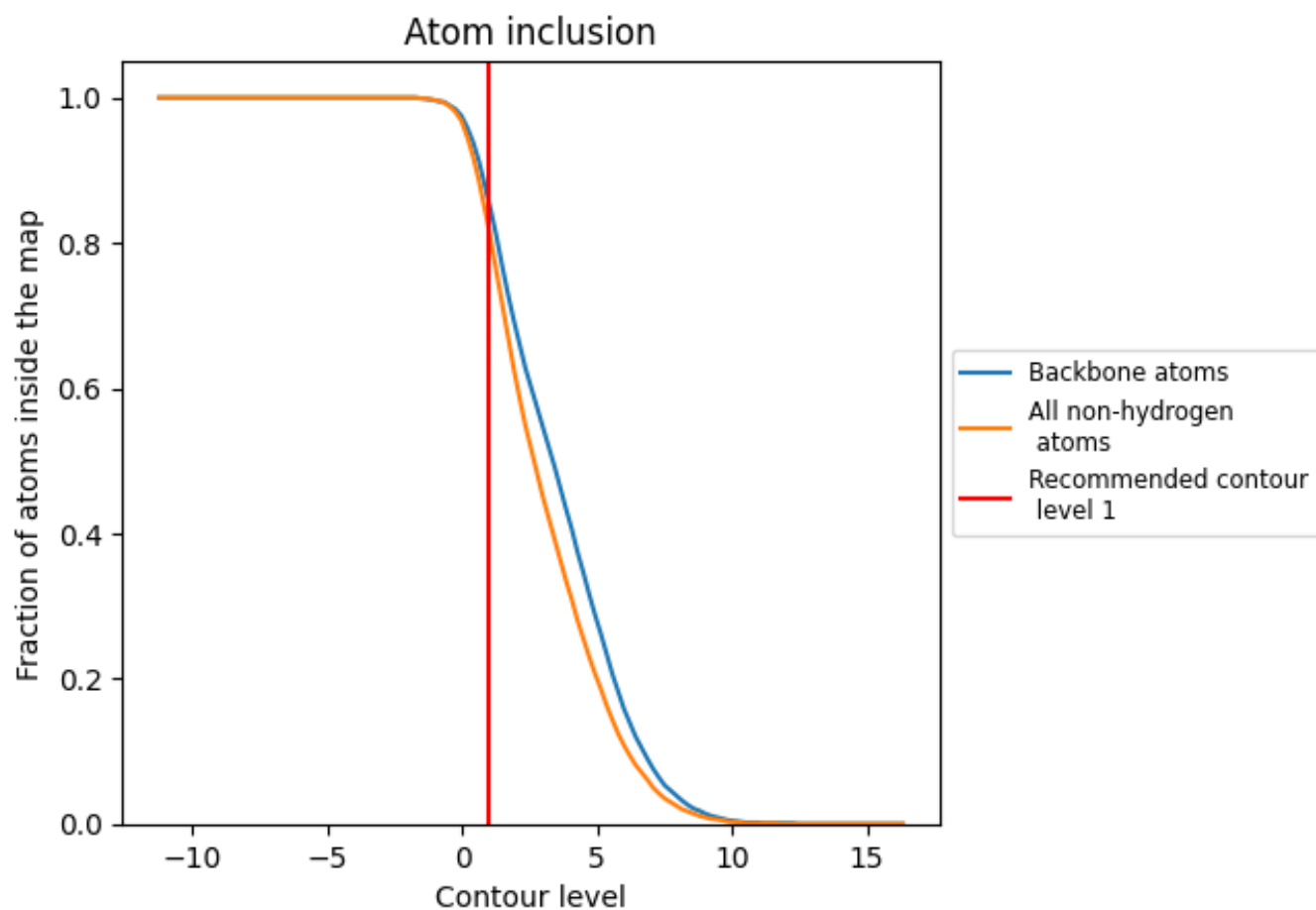
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (1).















9.4 Atom inclusion [i](#)



At the recommended contour level, 86% of all backbone atoms, 82% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8180	 0.5100
A	 0.8480	 0.5310
B	 0.8530	 0.5350
C	 0.8440	 0.5340
D	 0.8500	 0.5370
E	 0.7850	 0.4850
N	 0.8210	 0.4830

