



Full wwPDB EM Validation Report ⓘ

Mar 9, 2026 – 02:28 PM UTC

PDB ID : 7WD3 / pdb_00007wd3
EMDB ID : EMD-32403
Title : Cryo-EM structure of Drg1 hexamer treated with ATP and benzo-diazaborine
Authors : Ma, C.Y.; Wu, D.M.; Chen, Q.; Gao, N.
Deposited on : 2021-12-21
Resolution : 3.80 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

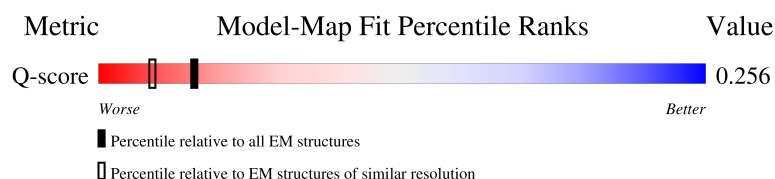
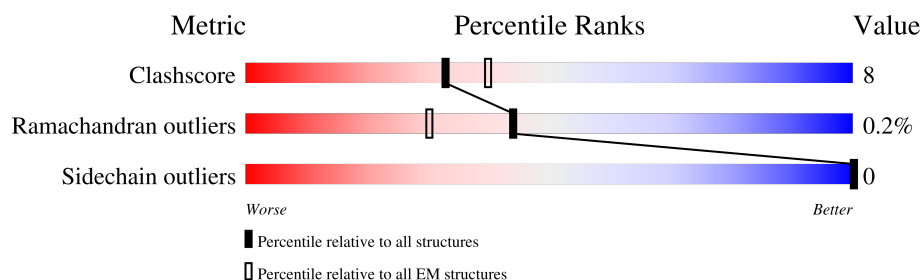
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.80 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.



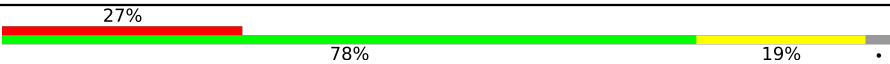
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	10198 (3.30 - 4.30)

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	748	20% 75% 21% .
1	B	748	24% 75% 21% .
1	C	748	27% 75% 21% .
1	D	748	27% 78% 18% .

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Mol	Chain	Length	Quality of chain
1	E	748	
1	F	748	

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
3	NDT	A	802	X	-	-	-
3	NDT	A	804	X	-	-	-
3	NDT	B	802	X	-	-	-
3	NDT	B	804	X	-	-	-
3	NDT	C	802	X	-	-	-
3	NDT	C	804	X	-	-	-
3	NDT	D	802	X	-	-	-
3	NDT	E	801	X	-	-	-
3	NDT	F	801	X	-	-	-
3	NDT	F	802	X	-	-	-
3	NDT	F	804	X	-	-	-
3	NDT	F	806	X	-	-	-

2 Entry composition [i](#)

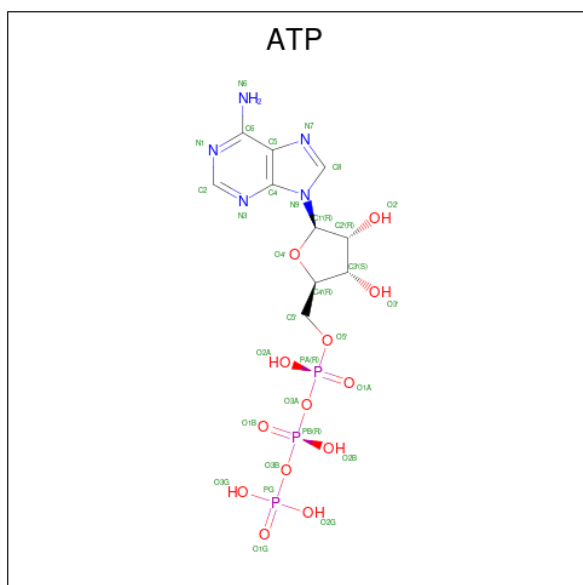
There are 3 unique types of molecules in this entry. The entry contains 33891 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 ATPase family gene 2 protein.

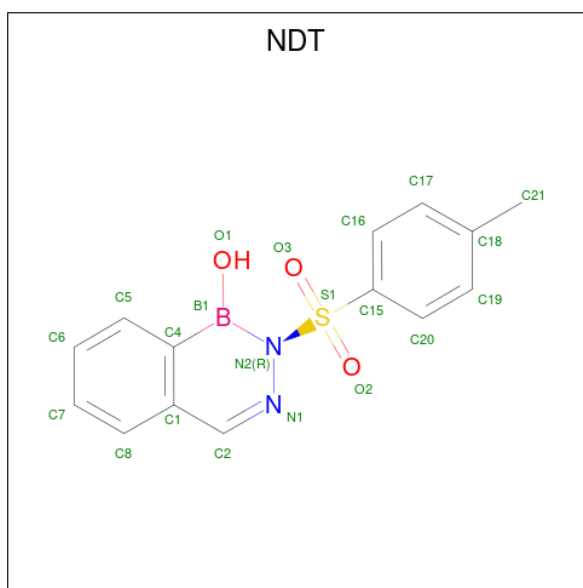
Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	723	Total	C	N	O	S	0	0
			5549	3509	950	1068	22		
1	B	723	Total	C	N	O	S	0	0
			5549	3509	950	1068	22		
1	C	722	Total	C	N	O	S	0	0
			5542	3504	949	1067	22		
1	D	723	Total	C	N	O	S	0	0
			5549	3509	950	1068	22		
1	E	723	Total	C	N	O	S	0	0
			5549	3509	950	1068	22		
1	F	722	Total	C	N	O	S	0	0
			5541	3504	949	1067	21		

- Molecule 2 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
2	A	1	Total	C	N	O	P	0
			30	10	5	12	3	
2	A	1	Total	C	N	O	P	0
			30	10	5	12	3	
2	B	1	Total	C	N	O	P	0
			30	10	5	12	3	
2	B	1	Total	C	N	O	P	0
			30	10	5	12	3	
2	C	1	Total	C	N	O	P	0
			30	10	5	12	3	
2	C	1	Total	C	N	O	P	0
			30	10	5	12	3	
2	D	1	Total	C	N	O	P	0
			30	10	5	12	3	
2	D	1	Total	C	N	O	P	0
			30	10	5	12	3	
2	E	1	Total	C	N	O	P	0
			30	10	5	12	3	
2	E	1	Total	C	N	O	P	0
			30	10	5	12	3	
2	F	1	Total	C	N	O	P	0
			30	10	5	12	3	
2	F	1	Total	C	N	O	P	0
			30	10	5	12	3	

- Molecule 3 is 2-(TOLUENE-4-SULFONYL)-2H-BENZO[D][1,2,3]DIAZABORININ-1-OL (CCD ID: NDT) (formula: $C_{14}H_{13}BN_2O_3S$) (labeled as "Ligand of Interest" by depositor).

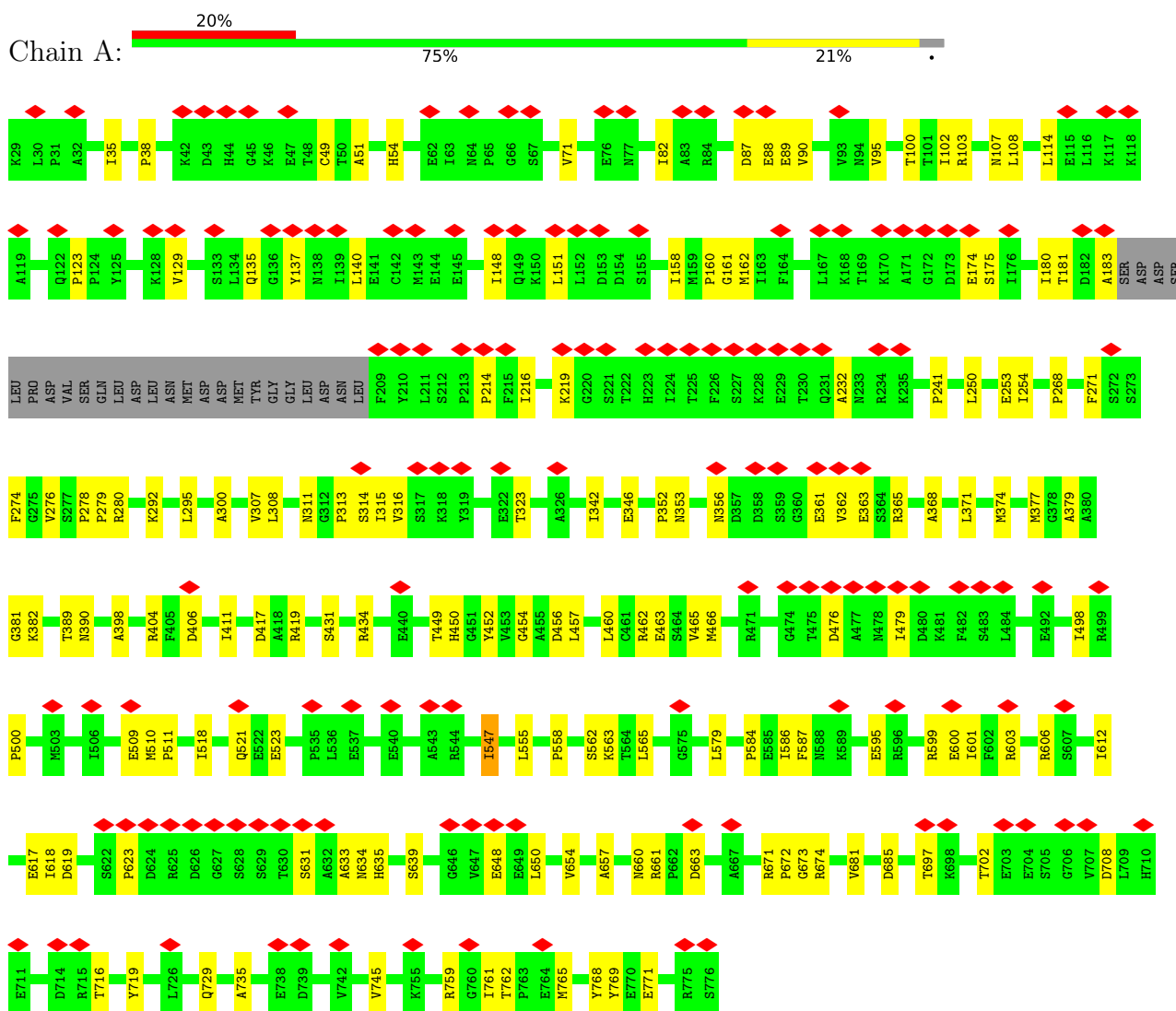


Mol	Chain	Residues	Atoms						AltConf
3	A	1	Total	B	C	N	O	S	0
			21	1	14	2	3	1	
3	A	1	Total	B	C	N	O	S	0
			21	1	14	2	3	1	
3	B	1	Total	B	C	N	O	S	0
			21	1	14	2	3	1	
3	B	1	Total	B	C	N	O	S	0
			21	1	14	2	3	1	
3	C	1	Total	B	C	N	O	S	0
			21	1	14	2	3	1	
3	C	1	Total	B	C	N	O	S	0
			21	1	14	2	3	1	
3	D	1	Total	B	C	N	O	S	0
			21	1	14	2	3	1	
3	E	1	Total	B	C	N	O	S	0
			21	1	14	2	3	1	
3	F	1	Total	B	C	N	O	S	0
			21	1	14	2	3	1	
3	F	1	Total	B	C	N	O	S	0
			21	1	14	2	3	1	
3	F	1	Total	B	C	N	O	S	0
			21	1	14	2	3	1	
3	F	1	Total	B	C	N	O	S	0
			21	1	14	2	3	1	

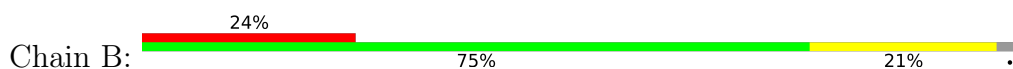
3 Residue-property plots

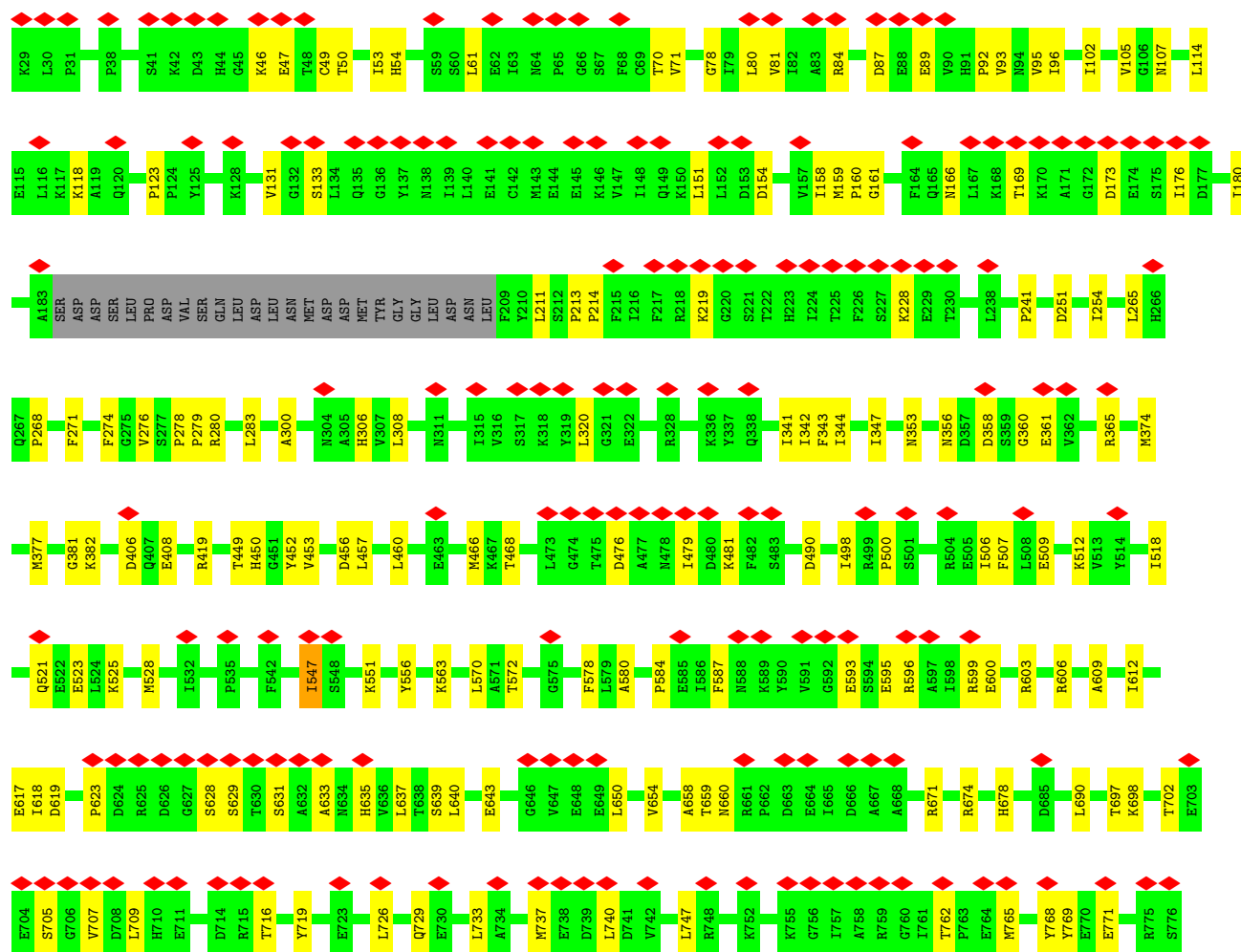
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: ATPase family gene 2 protein

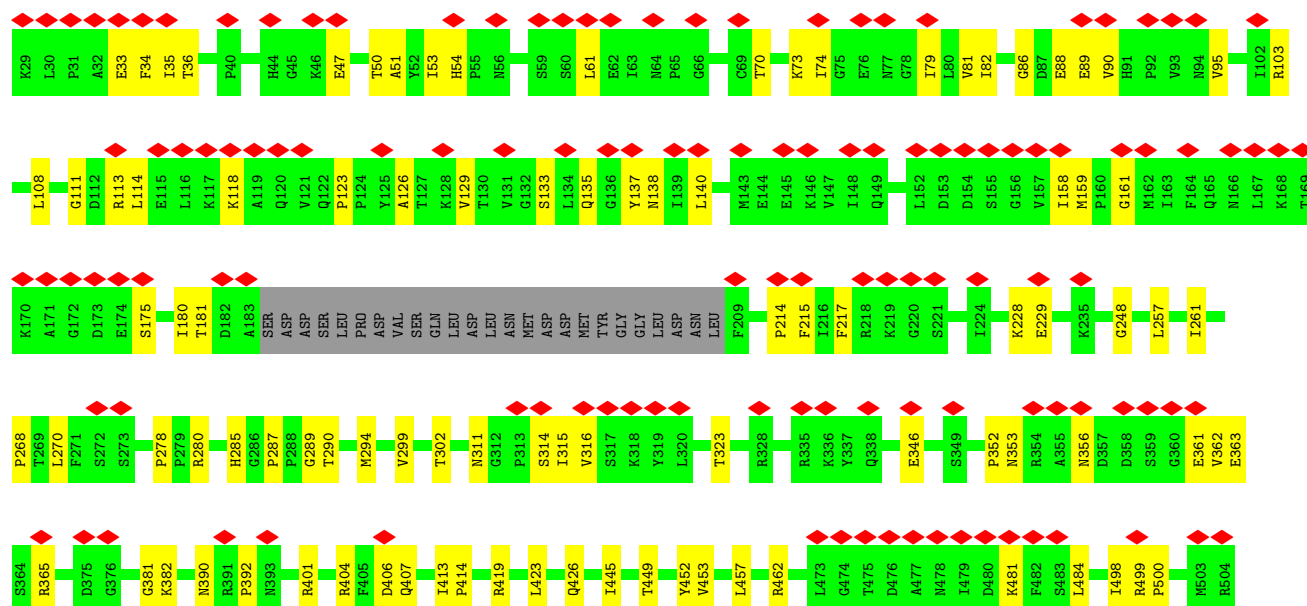
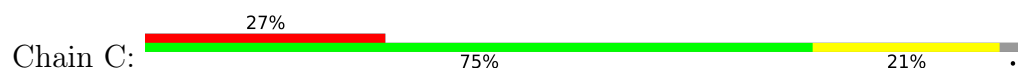


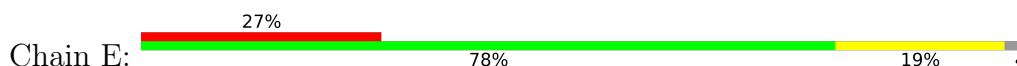
• Molecule 1: ATPase family gene 2 protein

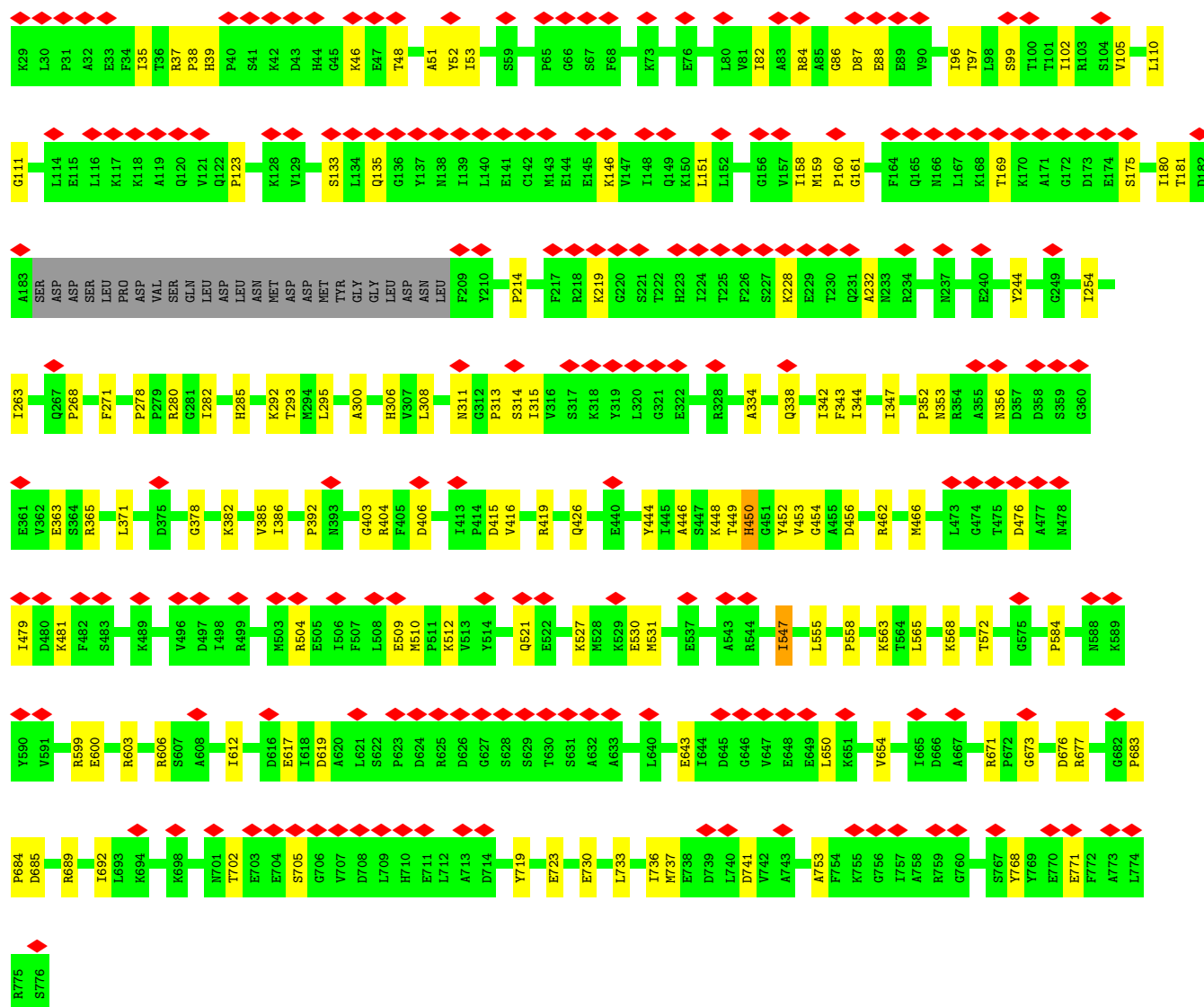




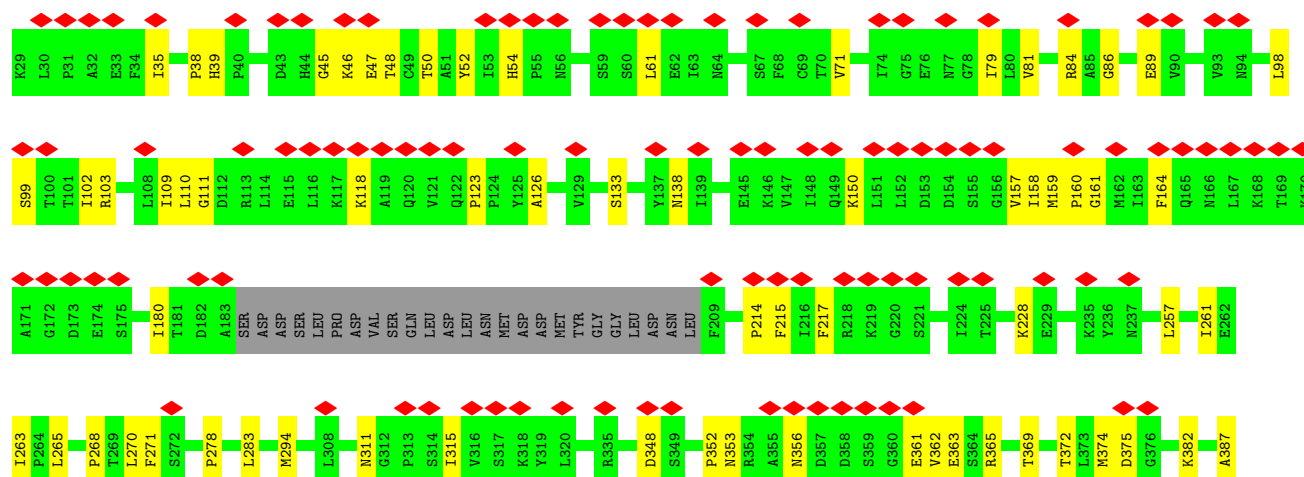
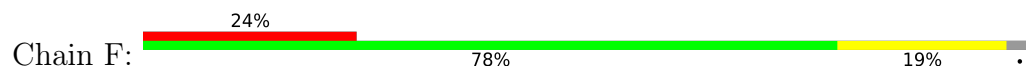
• Molecule 1: ATPase family gene 2 protein

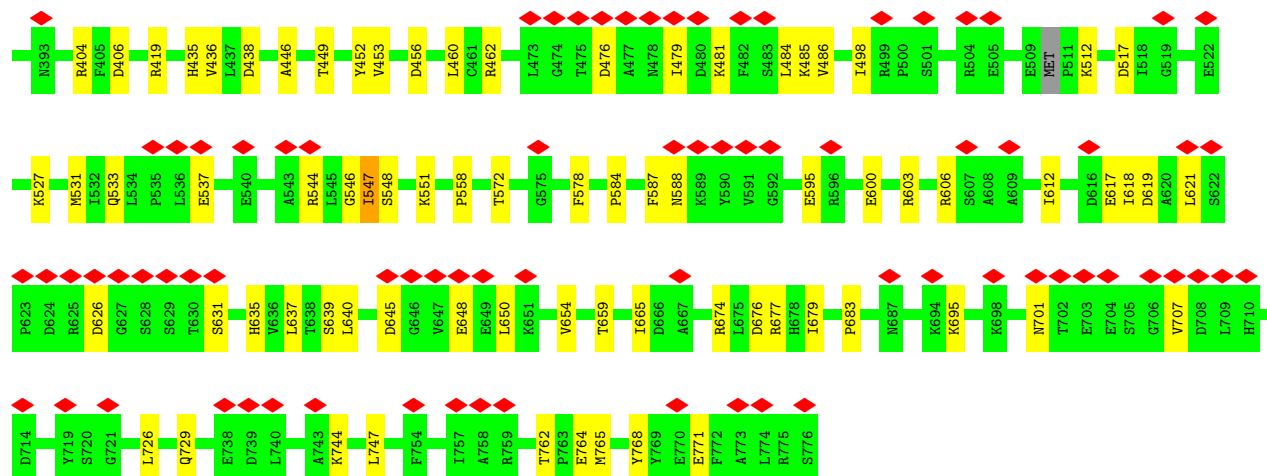






• Molecule 1: ATPase family gene 2 protein





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	348781	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 ($e^-/\text{\AA}^2$)	56	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.062	Depositor
Minimum map value	-0.020	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.013	Depositor
Map size ($\text{\AA}$)	252.48001, 252.48001, 252.48001	wwPDB
Map dimensions	240, 240, 240	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.052, 1.052, 1.052	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: NDT, ATP

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	0.09	0/5646	0.28	0/7643
1	B	0.10	0/5646	0.31	1/7643 (0.0%)
1	C	0.13	0/5638	0.31	0/7630
1	D	0.10	0/5646	0.29	1/7643 (0.0%)
1	E	0.12	0/5646	0.31	1/7643 (0.0%)
1	F	0.10	0/5637	0.29	0/7629
All	All	0.11	0/33859	0.30	3/45831 (0.0%)

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	740	LEU	CB-CA-C	-5.45	110.27	116.54
1	D	362	VAL	N-CA-C	-5.41	108.01	113.20
1	E	450	HIS	N-CA-C	-5.39	107.36	114.04

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	5549	0	5635	104	0
1	B	5549	0	5635	98	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	5542	0	5625	103	0
1	D	5549	0	5635	92	0
1	E	5549	0	5635	109	0
1	F	5541	0	5626	94	0
2	A	60	0	20	1	0
2	B	60	0	20	0	0
2	C	60	0	20	5	0
2	D	60	0	20	1	0
2	E	60	0	20	3	0
2	F	60	0	20	1	0
3	A	42	0	24	0	0
3	B	42	0	24	0	0
3	C	42	0	24	1	0
3	D	21	0	12	1	0
3	E	21	0	12	1	0
3	F	84	0	48	2	0
All	All	33891	0	34055	571	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 (571) 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:E:444:TYR:CE1	1:E:448:LYS:HD3	2.10	0.85
1:E:123:PRO:HB3	1:E:214:PRO:HB2	1.63	0.80
1:F:123:PRO:HB3	1:F:214:PRO:HB2	1.63	0.80
1:E:510:MET:HG2	1:E:568:LYS:HD2	1.64	0.78
1:D:123:PRO:HB3	1:D:214:PRO:HB2	1.64	0.78
1:B:123:PRO:HB3	1:B:214:PRO:HB2	1.71	0.71
1:E:446:ALA:HA	1:E:449:THR:HG22	1.72	0.71
1:E:158:ILE:HG23	1:E:160:PRO:HD2	1.73	0.69
1:C:515:TRP:HE1	1:C:573:GLU:HG3	1.57	0.69
1:E:444:TYR:HE1	1:E:448:LYS:HD3	1.58	0.69
1:A:158:ILE:HG23	1:A:160:PRO:HD2	1.76	0.68
1:B:737:MET:HE1	1:C:534:LEU:HG	1.76	0.67
1:F:527:LYS:HB3	1:F:531:MET:HE2	1.76	0.67
1:E:48:THR:HA	1:E:102:ILE:HD11	1.75	0.67
1:B:268:PRO:HG3	1:B:382:LYS:HE2	1.76	0.66
1:B:49:CYS:H	1:B:102:ILE:HD11	1.60	0.66
1:D:265:LEU:HD11	1:D:341:ILE:HD11	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:39:HIS:ND1	1:F:99:SER:OG	2.27	0.66
1:B:71:VAL:HB	1:B:114:LEU:HD11	1.77	0.66
1:B:374:MET:HA	1:B:377:MET:HE2	1.78	0.66
1:A:311:ASN:HB2	1:A:315:ILE:HG12	1.78	0.65
1:D:606:ARG:HH21	1:D:650:LEU:HD12	1.60	0.65
1:F:265:LEU:HD23	1:F:382:LYS:HB2	1.78	0.65
1:C:133:SER:H	1:C:228:LYS:HA	1.62	0.65
1:B:158:ILE:HG23	1:B:160:PRO:HD2	1.78	0.64
1:B:606:ARG:HH21	1:B:650:LEU:HD12	1.62	0.64
1:C:449:THR:HG23	1:C:452:TYR:HB2	1.78	0.64
1:D:133:SER:H	1:D:228:LYS:HA	1.61	0.64
1:D:460:LEU:HD11	1:D:495:MET:HG2	1.78	0.64
1:D:595:GLU:OE2	1:D:599:ARG:NH1	2.31	0.64
1:F:453:VAL:H	1:F:456:ASP:HB2	1.63	0.64
1:E:527:LYS:HB3	1:E:531:MET:HE2	1.79	0.63
1:B:697:THR:O	1:B:698:LYS:HG3	1.97	0.63
1:E:558:PRO:HG2	1:E:683:PRO:HD3	1.80	0.63
1:E:133:SER:H	1:E:228:LYS:HA	1.63	0.63
1:A:151:LEU:HD23	1:A:219:LYS:HB3	1.79	0.62
1:C:401:ARG:HE	1:C:404:ARG:HH22	1.47	0.62
1:B:274:PHE:HB3	1:B:276:VAL:HG23	1.80	0.62
1:C:361:GLU:O	1:C:365:ARG:NH1	2.33	0.62
1:C:499:ARG:HH12	1:D:603:ARG:HA	1.62	0.62
1:D:453:VAL:H	1:D:456:ASP:HB2	1.63	0.62
1:E:416:VAL:N	1:E:419:ARG:HH21	1.97	0.62
1:A:673:GLY:HA3	3:F:806:NDT:H7	1.81	0.62
1:D:268:PRO:HG3	1:D:382:LYS:HE2	1.81	0.62
1:B:360:GLY:O	1:B:365:ARG:NH1	2.33	0.62
1:B:612:ILE:HG22	1:B:654:VAL:HB	1.82	0.62
1:C:33:GLU:HG2	1:C:113:ARG:HD3	1.82	0.62
1:E:453:VAL:H	1:E:456:ASP:HB2	1.64	0.62
1:E:606:ARG:HH21	1:E:650:LEU:HD12	1.65	0.62
1:C:625:ARG:NH2	1:C:663:ASP:O	2.33	0.61
1:E:612:ILE:HG22	1:E:654:VAL:HB	1.82	0.61
1:F:133:SER:H	1:F:228:LYS:HA	1.66	0.61
1:C:138:ASN:HB3	1:C:228:LYS:HD3	1.81	0.61
1:B:54:HIS:NE2	1:B:89:GLU:OE2	2.33	0.61
1:F:361:GLU:HG3	1:F:362:VAL:HG13	1.83	0.61
1:A:279:PRO:HD3	1:F:462:ARG:HD3	1.82	0.61
1:F:707:VAL:HG12	1:F:747:LEU:HD12	1.81	0.61
1:B:563:LYS:NZ	1:B:659:THR:O	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:282:ILE:HB	1:E:386:ILE:HG22	1.83	0.60
1:F:701:ASN:O	1:F:744:LYS:NZ	2.34	0.60
1:C:294:MET:HE2	2:C:801:ATP:H3'	1.84	0.60
1:F:294:MET:HE1	2:F:803:ATP:C4	2.36	0.60
1:D:311:ASN:HB2	1:D:315:ILE:HG12	1.82	0.60
1:F:158:ILE:HG23	1:F:160:PRO:HD2	1.81	0.60
1:C:558:PRO:HB3	1:C:765:MET:HE1	1.84	0.59
1:C:123:PRO:HB3	1:C:214:PRO:HB2	1.84	0.59
1:C:278:PRO:HG2	1:C:280:ARG:HE	1.67	0.59
1:C:481:LYS:HG3	1:C:484:LEU:HD12	1.84	0.59
1:E:444:TYR:CE1	1:E:448:LYS:CD	2.83	0.59
1:E:733:LEU:HD22	1:F:677:ARG:HH21	1.67	0.59
1:B:453:VAL:H	1:B:456:ASP:HB2	1.68	0.59
1:A:54:HIS:NE2	1:A:89:GLU:OE2	2.34	0.59
1:B:133:SER:H	1:B:228:LYS:HA	1.67	0.59
1:E:673:GLY:HA3	3:E:801:NDT:H7	1.85	0.58
1:A:49:CYS:H	1:A:102:ILE:HD11	1.67	0.58
1:C:413:ILE:HG23	1:C:453:VAL:HG11	1.85	0.58
1:C:126:ALA:HB2	1:C:215:PHE:HB3	1.85	0.58
1:F:612:ILE:HG22	1:F:654:VAL:HB	1.84	0.58
1:C:352:PRO:HD2	1:C:363:GLU:HG3	1.84	0.58
1:E:311:ASN:HB2	1:E:315:ILE:HG12	1.85	0.58
1:C:426:GLN:HG2	3:C:802:NDT:H17	1.86	0.58
1:D:129:VAL:HG21	1:D:217:PHE:HE1	1.69	0.58
1:D:101:THR:HG22	1:D:162:MET:HE3	1.85	0.58
1:D:512:LYS:HE3	1:D:572:THR:HG23	1.85	0.58
1:E:444:TYR:O	1:E:448:LYS:HG2	2.04	0.57
1:E:733:LEU:O	1:E:737:MET:HG2	2.03	0.57
1:D:733:LEU:O	1:D:737:MET:HG2	2.04	0.57
1:D:466:MET:HE1	1:E:263:ILE:HD13	1.84	0.57
1:B:159:MET:SD	1:B:160:PRO:HD3	2.44	0.57
1:D:612:ILE:HG22	1:D:654:VAL:HB	1.86	0.57
1:E:146:LYS:HZ3	1:E:169:THR:HA	1.69	0.57
1:F:762:THR:HG22	1:F:765:MET:HE2	1.85	0.57
1:F:268:PRO:HG3	1:F:382:LYS:HE2	1.86	0.57
1:F:531:MET:HE1	1:F:679:ILE:HD11	1.86	0.57
1:C:612:ILE:HG22	1:C:654:VAL:HB	1.86	0.57
1:C:606:ARG:HH21	1:C:650:LEU:HD12	1.69	0.57
1:E:449:THR:HG23	1:E:449:THR:O	2.05	0.57
1:F:161:GLY:HA2	1:F:180:ILE:H	1.69	0.57
1:C:631:SER:O	1:C:635:HIS:ND1	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:584:PRO:HD3	1:D:617:GLU:HB2	1.86	0.57
1:F:676:ASP:OD2	1:F:677:ARG:NH1	2.38	0.56
1:B:563:LYS:HD3	1:B:658:ALA:HB1	1.86	0.56
1:C:36:THR:HB	1:C:114:LEU:HD11	1.87	0.56
1:C:290:THR:HG22	1:C:290:THR:O	2.05	0.56
1:D:448:LYS:HG2	1:D:495:MET:HE1	1.87	0.56
1:E:352:PRO:HD2	1:E:363:GLU:HG3	1.86	0.56
1:E:733:LEU:HD12	1:E:736:ILE:HD11	1.88	0.56
1:A:174:GLU:HG2	1:A:175:SER:H	1.70	0.56
1:E:342:ILE:HB	1:E:385:VAL:HG22	1.87	0.56
1:B:737:MET:HE2	1:B:737:MET:HA	1.87	0.56
1:A:729:GLN:HG2	1:B:547:ILE:HB	1.87	0.55
1:B:599:ARG:NH1	1:B:643:GLU:OE2	2.39	0.55
1:F:159:MET:SD	1:F:160:PRO:HD3	2.46	0.55
1:A:618:ILE:HD13	1:A:657:ALA:HB1	1.88	0.55
1:B:729:GLN:HG2	1:C:547:ILE:HB	1.87	0.55
1:F:517:ASP:OD1	1:F:695:LYS:NZ	2.38	0.55
1:C:268:PRO:HG3	1:C:382:LYS:HE2	1.86	0.55
1:C:701:ASN:ND2	1:C:704:GLU:OE1	2.39	0.55
1:D:593:GLU:HG3	1:D:596:ARG:HD2	1.88	0.55
1:D:733:LEU:HD12	1:D:736:ILE:HD11	1.88	0.55
1:F:369:THR:HA	1:F:372:THR:HG22	1.89	0.55
1:A:452:TYR:CD2	1:A:456:ASP:HB3	2.42	0.55
1:A:631:SER:O	1:A:635:HIS:ND1	2.32	0.55
1:D:419:ARG:NH1	1:D:446:ALA:O	2.39	0.55
1:A:161:GLY:HA3	1:A:180:ILE:H	1.72	0.55
1:B:593:GLU:HG2	1:B:596:ARG:HD2	1.89	0.55
1:C:599:ARG:HH12	1:C:639:SER:HB3	1.72	0.55
1:E:676:ASP:OD2	1:E:677:ARG:NH1	2.40	0.55
1:A:361:GLU:O	1:A:365:ARG:NH1	2.39	0.55
1:B:353:ASN:HB3	1:B:356:ASN:HB2	1.88	0.55
1:C:51:ALA:HB2	1:C:82:ILE:HD11	1.89	0.55
1:F:35:ILE:HG23	1:F:111:GLY:HA2	1.88	0.55
1:B:306:HIS:O	1:B:341:ILE:N	2.37	0.54
1:C:311:ASN:HB2	1:C:315:ILE:HG12	1.89	0.54
1:A:292:LYS:NZ	1:A:389:THR:O	2.40	0.54
1:E:419:ARG:HD2	1:E:449:THR:HG23	1.89	0.54
1:F:311:ASN:HB2	1:F:315:ILE:HG12	1.89	0.54
1:F:476:ASP:HB3	1:F:479:ILE:HB	1.90	0.54
1:B:476:ASP:HB3	1:B:479:ILE:HB	1.88	0.54
1:E:466:MET:HE1	1:F:263:ILE:HG21	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:555:LEU:HD13	1:E:563:LYS:HB2	1.90	0.54
1:F:512:LYS:HE3	1:F:572:THR:HG23	1.90	0.54
1:F:547:ILE:HG13	1:F:548:SER:H	1.73	0.54
1:F:606:ARG:HH21	1:F:650:LEU:HD12	1.73	0.54
1:C:34:PHE:HB2	1:C:114:LEU:HB2	1.90	0.53
1:B:518:ILE:HD11	1:B:525:LYS:HD2	1.89	0.53
1:C:61:LEU:HG	1:C:118:LYS:HB3	1.90	0.53
1:D:606:ARG:HH12	1:D:648:GLU:HG2	1.74	0.53
1:A:634:ASN:HB3	1:F:588:ASN:HD21	1.74	0.53
1:E:37:ARG:HB2	1:E:97:THR:HG22	1.89	0.53
1:D:54:HIS:NE2	1:D:89:GLU:OE1	2.40	0.53
1:D:460:LEU:HA	1:D:498:ILE:HD11	1.90	0.53
1:E:159:MET:SD	1:E:160:PRO:HD3	2.48	0.53
1:B:251:ASP:O	1:B:254:ILE:HG22	2.09	0.53
1:D:419:ARG:NH1	1:D:449:THR:O	2.41	0.53
1:D:168:LYS:NZ	1:D:170:LYS:O	2.40	0.53
1:D:146:LYS:NZ	1:D:166:ASN:O	2.41	0.53
1:E:450:HIS:NE2	1:E:509:GLU:O	2.41	0.52
1:C:606:ARG:HH12	1:C:648:GLU:HG2	1.75	0.52
1:A:100:THR:HA	1:A:103:ARG:HE	1.74	0.52
1:A:280:ARG:NH1	1:A:381:GLY:O	2.42	0.52
1:C:299:VAL:HA	1:C:302:THR:HG22	1.92	0.52
1:A:280:ARG:NH2	1:A:379:ALA:O	2.43	0.52
1:B:280:ARG:NH1	1:B:381:GLY:O	2.43	0.52
1:C:406:ASP:OD1	1:C:407:GLN:N	2.42	0.52
1:E:719:TYR:HB3	1:E:723:GLU:HB2	1.91	0.52
1:F:551:LYS:HE3	1:F:650:LEU:HD22	1.90	0.52
1:E:353:ASN:HB3	1:E:356:ASN:HB2	1.92	0.52
1:E:741:ASP:OD1	1:F:544:ARG:NH1	2.42	0.52
1:F:103:ARG:HH21	1:F:109:ILE:HG22	1.74	0.52
1:F:257:LEU:O	1:F:261:ILE:HG12	2.10	0.52
1:A:361:GLU:HG3	1:A:362:VAL:HG13	1.91	0.52
1:C:158:ILE:HG22	1:C:159:MET:SD	2.49	0.52
1:C:595:GLU:OE1	1:C:639:SER:OG	2.23	0.52
1:B:419:ARG:NH1	1:B:449:THR:O	2.43	0.52
1:B:466:MET:HG3	1:C:407:GLN:HE22	1.75	0.52
1:D:280:ARG:NH2	1:D:381:GLY:O	2.43	0.52
1:D:344:ILE:HG21	1:D:347:ILE:HD13	1.92	0.51
1:F:618:ILE:HD12	1:F:621:LEU:HD12	1.90	0.51
1:E:308:LEU:HB2	1:E:342:ILE:HD13	1.92	0.51
1:B:131:VAL:HG22	1:B:180:ILE:HG12	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:61:LEU:HG	1:D:118:LYS:HB3	1.92	0.51
1:D:584:PRO:O	1:D:588:ASN:ND2	2.42	0.51
1:F:47:GLU:O	1:F:50:THR:OG1	2.29	0.51
1:F:158:ILE:HG13	1:F:160:PRO:HD3	1.92	0.51
1:A:558:PRO:HB3	1:A:765:MET:HE1	1.92	0.51
1:B:460:LEU:HA	1:B:498:ILE:HD11	1.92	0.51
1:E:444:TYR:CE1	1:E:448:LYS:CG	2.94	0.51
1:F:481:LYS:HG3	1:F:484:LEU:HD12	1.92	0.51
1:F:645:ASP:HB2	1:F:674:ARG:HH21	1.75	0.51
1:D:515:TRP:HE3	1:D:525:LYS:HD2	1.76	0.50
1:B:702:THR:O	1:B:705:SER:OG	2.28	0.50
1:A:708:ASP:OD1	1:A:708:ASP:N	2.45	0.50
1:A:352:PRO:HD2	1:A:363:GLU:HG3	1.93	0.50
1:D:49:CYS:H	1:D:102:ILE:HD11	1.76	0.50
1:D:555:LEU:HD13	1:D:563:LYS:HB2	1.94	0.50
1:A:374:MET:HE1	1:A:404:ARG:HB3	1.93	0.50
1:C:47:GLU:O	1:C:50:THR:OG1	2.28	0.50
1:D:265:LEU:HD23	1:D:382:LYS:HB2	1.93	0.50
1:C:316:VAL:HA	1:C:323:THR:HG22	1.94	0.50
1:C:521:GLN:HG2	1:C:523:GLU:H	1.76	0.50
1:C:661:ARG:NH1	1:C:663:ASP:OD2	2.42	0.50
1:D:733:LEU:HD22	1:E:677:ARG:HH21	1.77	0.50
1:E:135:GLN:NE2	1:E:175:SER:O	2.41	0.50
1:F:618:ILE:HG23	1:F:665:ILE:HD11	1.94	0.50
1:C:729:GLN:HG2	1:D:547:ILE:HB	1.94	0.50
1:A:419:ARG:NH1	1:A:449:THR:O	2.45	0.49
1:A:454:GLY:HA2	1:A:457:LEU:HD23	1.94	0.49
1:E:768:TYR:O	1:E:771:GLU:HG3	2.13	0.49
1:A:313:PRO:HB2	1:B:365:ARG:HG3	1.94	0.49
1:D:353:ASN:HB3	1:D:356:ASN:HB2	1.92	0.49
1:E:280:ARG:NH2	1:E:378:GLY:O	2.42	0.49
1:A:600:GLU:HA	1:A:603:ARG:HG2	1.93	0.49
1:C:660:ASN:O	1:C:769:TYR:OH	2.24	0.49
1:D:135:GLN:NE2	1:D:175:SER:O	2.46	0.49
1:D:737:MET:HE1	1:E:530:GLU:HB3	1.95	0.49
1:A:123:PRO:HB3	1:A:214:PRO:HB2	1.93	0.49
1:B:619:ASP:N	1:B:619:ASP:OD1	2.45	0.49
1:C:690:LEU:HD11	1:C:709:LEU:HB3	1.93	0.49
1:F:618:ILE:HG22	1:F:659:THR:HB	1.95	0.49
1:A:353:ASN:HB3	1:A:356:ASN:HB2	1.95	0.49
1:A:547:ILE:HB	1:F:729:GLN:HG2	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:600:GLU:HA	1:C:603:ARG:HG2	1.95	0.49
1:D:406:ASP:OD1	1:D:406:ASP:N	2.46	0.49
1:D:619:ASP:N	1:D:619:ASP:OD1	2.45	0.49
1:E:338:GLN:HG2	1:E:382:LYS:HG2	1.94	0.49
1:B:344:ILE:HG21	1:B:347:ILE:HD13	1.95	0.49
1:A:759:ARG:HB2	1:A:761:ILE:HG22	1.95	0.49
1:E:584:PRO:HD3	1:E:617:GLU:HB2	1.95	0.49
1:E:599:ARG:NH1	1:E:643:GLU:OE2	2.46	0.49
1:F:271:PHE:HD2	1:F:278:PRO:HB3	1.77	0.49
1:A:135:GLN:NE2	1:A:175:SER:O	2.45	0.48
1:D:702:THR:O	1:D:705:SER:OG	2.30	0.48
1:A:406:ASP:OD1	1:A:406:ASP:N	2.45	0.48
1:F:619:ASP:OD1	1:F:619:ASP:N	2.46	0.48
1:C:618:ILE:HG22	1:C:659:THR:HB	1.94	0.48
1:D:174:GLU:OE1	1:D:175:SER:N	2.46	0.48
1:D:553:VAL:HB	1:D:656:VAL:HA	1.96	0.48
1:E:702:THR:O	1:E:705:SER:OG	2.28	0.48
1:A:595:GLU:OE1	1:A:639:SER:OG	2.30	0.48
1:B:283:LEU:HB3	1:B:408:GLU:HG2	1.95	0.48
1:F:271:PHE:CD2	1:F:278:PRO:HB3	2.48	0.48
1:B:595:GLU:OE1	1:B:639:SER:OG	2.21	0.48
1:F:138:ASN:HB3	1:F:228:LYS:HD3	1.95	0.48
1:D:729:GLN:HG2	1:E:547:ILE:HB	1.96	0.48
1:A:292:LYS:HG2	1:A:411:ILE:HD12	1.96	0.48
1:A:697:THR:O	1:A:702:THR:OG1	2.31	0.48
1:D:311:ASN:HB3	1:D:314:SER:HB3	1.95	0.48
1:D:586:ILE:HG13	1:D:587:PHE:N	2.29	0.48
1:F:533:GLN:NE2	1:F:537:GLU:OE1	2.39	0.48
1:F:546:GLY:O	1:F:547:ILE:HG22	2.14	0.48
1:A:661:ARG:HG2	1:A:663:ASP:H	1.79	0.48
1:B:169:THR:OG1	1:B:173:ASP:O	2.31	0.48
1:B:528:MET:HE1	1:B:570:LEU:HB2	1.96	0.48
1:E:619:ASP:OD1	1:E:619:ASP:N	2.44	0.48
1:B:154:ASP:N	1:B:154:ASP:OD1	2.43	0.48
1:C:280:ARG:NH2	1:C:381:GLY:O	2.47	0.48
1:C:311:ASN:HB3	1:C:314:SER:HB3	1.96	0.48
1:E:278:PRO:HG2	1:E:280:ARG:HE	1.79	0.48
1:E:481:LYS:HE3	1:F:270:LEU:HD22	1.96	0.48
1:F:606:ARG:HH12	1:F:648:GLU:HG2	1.78	0.48
1:B:271:PHE:HB3	1:B:278:PRO:HD3	1.96	0.47
1:B:449:THR:HG21	1:B:457:LEU:HD21	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:35:ILE:HG22	1:C:95:VAL:HA	1.96	0.47
1:C:423:LEU:HD21	1:C:457:LEU:HD11	1.96	0.47
1:F:353:ASN:HB3	1:F:356:ASN:HB2	1.95	0.47
1:F:584:PRO:HD3	1:F:617:GLU:HB2	1.95	0.47
1:A:431:SER:HB3	1:A:434:ARG:HG2	1.95	0.47
1:C:759:ARG:HB2	1:C:761:ILE:HG22	1.96	0.47
1:E:46:LYS:HG2	1:E:84:ARG:HH12	1.80	0.47
1:E:38:PRO:HA	1:E:99:SER:HA	1.97	0.47
1:E:512:LYS:HE3	1:E:572:THR:HG23	1.96	0.47
1:A:346:GLU:OE2	1:A:390:ASN:ND2	2.48	0.47
1:E:311:ASN:HB3	1:E:314:SER:HB3	1.96	0.47
1:E:344:ILE:HG21	1:E:347:ILE:HD13	1.97	0.47
1:F:460:LEU:HA	1:F:498:ILE:HD11	1.96	0.47
1:A:462:ARG:HD3	1:B:279:PRO:HD3	1.97	0.47
1:A:518:ILE:HG12	1:A:565:LEU:HG	1.97	0.47
1:A:716:THR:HG22	1:A:719:TYR:HB2	1.96	0.47
1:B:406:ASP:OD1	1:B:406:ASP:N	2.46	0.47
1:B:631:SER:O	1:B:635:HIS:ND1	2.33	0.47
1:C:353:ASN:HB3	1:C:356:ASN:HB2	1.96	0.47
1:D:233:ASN:HB2	1:D:236:TYR:HD2	1.80	0.47
1:A:521:GLN:HG2	1:A:523:GLU:H	1.80	0.47
1:B:265:LEU:HD23	1:B:382:LYS:HB2	1.95	0.47
1:B:361:GLU:O	1:B:365:ARG:NH2	2.47	0.47
1:C:624:ASP:O	1:C:629:SER:OG	2.32	0.47
1:D:701:ASN:ND2	1:D:704:GLU:OE1	2.47	0.47
1:E:300:ALA:HB2	1:E:343:PHE:HE1	1.80	0.47
1:F:38:PRO:HA	1:F:99:SER:HA	1.97	0.47
1:F:61:LEU:HG	1:F:118:LYS:HB3	1.96	0.47
1:F:595:GLU:OE1	1:F:639:SER:OG	2.22	0.47
1:D:436:VAL:HG22	1:D:485:LYS:HG2	1.96	0.47
1:E:446:ALA:CA	1:E:449:THR:HG22	2.41	0.47
1:F:768:TYR:O	1:F:771:GLU:HG3	2.15	0.47
1:B:506:ILE:HG13	1:B:507:PHE:HD1	1.80	0.47
1:B:726:LEU:HD22	1:C:672:PRO:HB3	1.97	0.47
1:C:158:ILE:HG22	1:C:159:MET:H	1.79	0.47
1:D:521:GLN:HE21	1:D:685:ASP:H	1.63	0.47
1:F:283:LEU:HA	1:F:387:ALA:HB3	1.96	0.47
1:C:618:ILE:HG23	1:C:665:ILE:HD11	1.97	0.47
1:D:544:ARG:HD3	1:D:545:LEU:HD22	1.96	0.47
1:E:161:GLY:HA2	1:E:180:ILE:HB	1.97	0.47
1:D:129:VAL:HA	1:D:183:ALA:HA	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:70:THR:HG22	1:B:81:VAL:HG12	1.98	0.46
1:E:446:ALA:HA	1:E:449:THR:CG2	2.44	0.46
1:B:600:GLU:O	1:B:603:ARG:HG3	2.15	0.46
1:C:518:ILE:O	1:C:525:LYS:NZ	2.48	0.46
1:C:619:ASP:HB2	1:C:664:GLU:HB2	1.98	0.46
1:E:181:THR:HG22	1:E:232:ALA:HA	1.96	0.46
1:B:166:ASN:HD22	1:B:176:ILE:H	1.63	0.46
1:B:481:LYS:HE3	1:C:270:LEU:HD22	1.96	0.46
1:B:623:PRO:HD2	1:B:633:ALA:HB1	1.97	0.46
1:B:733:LEU:HD21	1:C:531:MET:HE1	1.96	0.46
1:E:419:ARG:NH1	1:E:450:HIS:HA	2.30	0.46
1:C:619:ASP:OD1	1:C:619:ASP:N	2.47	0.46
1:D:70:THR:HG22	1:D:81:VAL:HG12	1.98	0.46
1:C:597:ALA:O	1:C:600:GLU:HG3	2.16	0.46
1:D:515:TRP:CE3	1:D:525:LYS:HD2	2.49	0.46
1:E:51:ALA:HB2	1:E:82:ILE:HD11	1.98	0.46
1:E:293:THR:OG1	2:E:802:ATP:O3A	2.30	0.46
1:F:438:ASP:OD1	1:F:438:ASP:N	2.48	0.46
1:C:346:GLU:OE2	1:C:390:ASN:ND2	2.49	0.46
1:F:71:VAL:HG11	1:F:98:LEU:HD21	1.97	0.46
1:F:435:HIS:HB2	1:F:486:VAL:HB	1.97	0.46
1:F:600:GLU:O	1:F:603:ARG:HG3	2.16	0.46
1:A:107:ASN:HD21	1:A:241:PRO:HA	1.80	0.46
1:A:181:THR:HG22	1:A:232:ALA:HA	1.98	0.46
1:A:452:TYR:CE1	1:A:500:PRO:HG3	2.51	0.46
1:B:450:HIS:NE2	1:B:509:GLU:O	2.49	0.46
1:C:768:TYR:O	1:C:771:GLU:HG3	2.16	0.46
1:E:565:LEU:HA	1:E:568:LYS:HE2	1.97	0.46
1:A:672:PRO:HB3	1:F:726:LEU:HD22	1.96	0.46
1:E:454:GLY:HA2	2:E:802:ATP:C6	2.51	0.46
1:A:311:ASN:HB3	1:A:314:SER:HB3	1.97	0.46
1:A:460:LEU:HA	1:A:498:ILE:HD11	1.97	0.46
1:A:452:TYR:HD2	1:A:456:ASP:HB3	1.80	0.45
1:C:669:LEU:HB3	1:C:675:LEU:HD21	1.98	0.45
1:E:268:PRO:HG3	1:E:382:LYS:HE2	1.97	0.45
1:E:300:ALA:HB2	1:E:343:PHE:CE1	2.50	0.45
1:F:38:PRO:HD3	1:F:110:LEU:HD11	1.98	0.45
1:A:103:ARG:HG2	1:A:108:LEU:HB3	1.97	0.45
1:B:78:GLY:HA2	1:B:211:LEU:HD22	1.98	0.45
1:D:466:MET:HE1	1:E:263:ILE:HG21	1.98	0.45
1:F:374:MET:HA	1:F:374:MET:HE3	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:563:LYS:HB3	1:A:681:VAL:HG21	1.97	0.45
1:A:623:PRO:HD2	1:A:633:ALA:HB1	1.98	0.45
1:E:406:ASP:OD1	1:E:406:ASP:N	2.47	0.45
1:A:510:MET:HE3	1:A:511:PRO:N	2.31	0.45
1:B:768:TYR:O	1:B:771:GLU:HG3	2.16	0.45
1:B:87:ASP:N	1:B:87:ASP:OD1	2.50	0.45
1:B:308:LEU:HB3	1:B:342:ILE:HD13	1.98	0.45
1:C:452:TYR:CZ	1:C:500:PRO:HD3	2.51	0.45
1:C:462:ARG:NH1	1:D:406:ASP:OD2	2.49	0.45
1:D:644:ILE:HD12	1:D:674:ARG:HB2	1.98	0.45
1:B:716:THR:HG22	1:B:719:TYR:HB2	1.99	0.45
1:C:54:HIS:NE2	1:C:89:GLU:OE1	2.48	0.45
1:B:161:GLY:HA2	1:B:180:ILE:HB	1.99	0.45
1:B:512:LYS:HE3	1:B:572:THR:HG23	1.98	0.45
1:F:348:ASP:OD1	1:F:348:ASP:N	2.48	0.45
1:B:466:MET:HA	1:B:466:MET:HE2	1.98	0.45
1:B:468:THR:OG1	1:B:490:ASP:OD2	2.28	0.45
1:B:690:LEU:HD21	1:B:709:LEU:HD23	1.99	0.45
1:E:53:ILE:HA	1:E:96:ILE:HG22	1.99	0.45
1:A:71:VAL:HB	1:A:114:LEU:HD13	1.98	0.45
1:B:637:LEU:O	1:B:640:LEU:HG	2.16	0.45
1:E:285:HIS:HB2	1:E:392:PRO:HG3	2.00	0.45
1:B:47:GLU:O	1:B:50:THR:OG1	2.34	0.44
1:C:137:TYR:HB3	1:C:140:LEU:HD13	1.99	0.44
1:C:294:MET:HE1	2:C:801:ATP:C5	2.53	0.44
1:E:476:ASP:HB3	1:E:479:ILE:HB	1.99	0.44
1:F:52:TYR:HA	1:F:86:GLY:HA2	1.99	0.44
1:A:274:PHE:HB3	1:A:276:VAL:HG23	1.98	0.44
1:E:444:TYR:CZ	1:E:448:LYS:HG3	2.53	0.44
1:F:375:ASP:OD2	1:F:404:ARG:NH1	2.46	0.44
1:A:595:GLU:O	1:A:599:ARG:HG2	2.17	0.44
1:B:707:VAL:HG12	1:B:747:LEU:HD12	1.99	0.44
1:C:287:PRO:HG2	1:C:413:ILE:HG13	1.99	0.44
1:D:716:THR:HG22	1:D:719:TYR:HB2	1.99	0.44
1:D:762:THR:HG23	1:D:764:GLU:HG3	1.99	0.44
1:E:292:LYS:HA	1:E:295:LEU:HD12	2.00	0.44
1:A:87:ASP:OD1	1:A:87:ASP:N	2.50	0.44
1:B:452:TYR:CZ	1:B:500:PRO:HD3	2.52	0.44
1:C:414:PRO:HB2	1:C:419:ARG:HG3	1.99	0.44
1:D:106:GLY:HA2	1:D:239:PRO:HG2	1.99	0.44
1:E:244:TYR:HD1	1:E:254:ILE:HD11	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:452:TYR:OH	1:C:498:ILE:O	2.27	0.44
1:D:768:TYR:O	1:D:771:GLU:HG3	2.17	0.44
1:E:313:PRO:HB2	1:F:365:ARG:HG2	1.99	0.44
1:A:316:VAL:HA	1:A:323:THR:HG22	1.98	0.44
1:A:398:ALA:O	1:A:404:ARG:NH2	2.46	0.44
1:D:53:ILE:H	1:D:86:GLY:HA3	1.81	0.44
1:A:38:PRO:HB3	1:A:103:ARG:HH22	1.82	0.44
1:A:452:TYR:HB3	1:A:457:LEU:HD22	2.00	0.44
1:A:762:THR:O	1:A:765:MET:HG3	2.18	0.44
1:B:762:THR:O	1:B:765:MET:HG3	2.18	0.44
1:C:35:ILE:HD11	1:C:111:GLY:HA2	1.99	0.44
1:A:612:ILE:HG22	1:A:654:VAL:HB	2.00	0.44
1:B:584:PRO:HA	1:B:587:PHE:HE1	1.83	0.44
1:D:100:THR:HG22	1:D:103:ARG:HH12	1.82	0.44
1:D:398:ALA:O	1:D:404:ARG:NH2	2.51	0.44
1:E:419:ARG:HH12	1:E:450:HIS:HA	1.83	0.44
1:A:88:GLU:HG2	1:A:90:VAL:H	1.83	0.44
1:A:579:LEU:HD21	1:A:601:ILE:HD11	2.00	0.44
1:B:671:ARG:HB2	1:B:674:ARG:HH11	1.82	0.44
1:C:53:ILE:H	1:C:86:GLY:HA3	1.83	0.44
1:C:515:TRP:HE3	1:C:525:LYS:HZ2	1.65	0.44
1:C:686:VAL:HG22	1:C:689:ARG:HH21	1.83	0.44
1:F:452:TYR:OH	1:F:498:ILE:O	2.32	0.44
1:A:606:ARG:HH21	1:A:650:LEU:HD12	1.83	0.43
1:B:584:PRO:HA	1:B:587:PHE:CE1	2.53	0.43
1:C:689:ARG:CZ	1:C:717:GLU:HA	2.48	0.43
1:A:606:ARG:HH12	1:A:648:GLU:HG2	1.82	0.43
1:C:289:GLY:N	2:C:801:ATP:O1B	2.43	0.43
1:E:426:GLN:HE21	2:E:802:ATP:H2	1.66	0.43
1:F:157:VAL:HG11	1:F:217:PHE:HD2	1.82	0.43
1:A:462:ARG:O	1:A:466:MET:HG2	2.17	0.43
1:A:463:GLU:HG3	1:A:498:ILE:HD13	2.00	0.43
1:A:584:PRO:HD3	1:A:617:GLU:HB2	2.00	0.43
1:A:619:ASP:OD1	1:A:619:ASP:N	2.50	0.43
1:B:578:PHE:HE1	1:B:580:ALA:HB2	1.83	0.43
1:B:690:LEU:HD11	1:B:709:LEU:HB3	1.99	0.43
1:C:716:THR:HG22	1:C:719:TYR:HB2	1.98	0.43
1:D:87:ASP:N	1:D:87:ASP:OD1	2.51	0.43
1:E:446:ALA:O	1:E:449:THR:HG22	2.19	0.43
1:B:53:ILE:HA	1:B:96:ILE:HG22	2.00	0.43
1:F:46:LYS:HD3	1:F:84:ARG:HH12	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:135:GLN:NE2	1:C:175:SER:O	2.48	0.43
1:C:762:THR:O	1:C:765:MET:HG3	2.18	0.43
1:D:452:TYR:OH	1:D:498:ILE:O	2.30	0.43
1:D:518:ILE:HD12	1:D:565:LEU:HD22	2.00	0.43
1:E:671:ARG:HA	1:E:671:ARG:HD3	1.85	0.43
1:C:79:ILE:HG22	1:C:81:VAL:HG13	2.01	0.43
1:C:584:PRO:HD3	1:C:617:GLU:HB2	2.01	0.43
1:F:54:HIS:NE2	1:F:89:GLU:OE1	2.51	0.43
1:F:79:ILE:HG22	1:F:81:VAL:HG13	2.00	0.43
1:A:100:THR:HB	1:A:103:ARG:HH21	1.83	0.43
1:A:768:TYR:O	1:A:771:GLU:HG3	2.18	0.43
1:B:80:LEU:HD21	1:B:105:VAL:HG11	2.00	0.43
1:C:248:GLY:H	2:C:801:ATP:HN62	1.66	0.43
1:C:294:MET:HE1	2:C:801:ATP:C4	2.53	0.43
1:D:168:LYS:HD2	1:D:173:ASP:HA	2.01	0.43
1:E:87:ASP:O	1:E:88:GLU:HG2	2.19	0.43
1:E:105:VAL:HG13	1:E:160:PRO:HB2	2.00	0.43
1:B:628:SER:OG	1:B:629:SER:N	2.52	0.43
1:B:660:ASN:O	1:B:769:TYR:OH	2.27	0.43
1:A:465:VAL:HG11	1:B:276:VAL:HG21	2.00	0.43
1:C:512:LYS:HE3	1:C:572:THR:HG23	2.01	0.43
1:C:616:ASP:OD1	1:C:616:ASP:N	2.52	0.43
1:E:449:THR:OG1	1:E:452:TYR:HB2	2.19	0.43
1:F:631:SER:O	1:F:635:HIS:ND1	2.52	0.43
1:A:476:ASP:HB3	1:A:479:ILE:HB	2.01	0.42
1:C:70:THR:HG22	1:C:81:VAL:HG12	2.01	0.42
1:D:313:PRO:HB2	1:E:365:ARG:HG2	2.00	0.42
1:A:51:ALA:HB2	1:A:82:ILE:HD11	2.01	0.42
1:B:300:ALA:HB2	1:B:343:PHE:HE2	1.83	0.42
1:A:450:HIS:NE2	1:A:509:GLU:O	2.52	0.42
1:C:161:GLY:HA3	1:C:180:ILE:HD12	2.00	0.42
1:D:54:HIS:CG	1:D:93:VAL:HG22	2.54	0.42
3:D:802:NDT:H7	1:E:403:GLY:O	2.19	0.42
1:E:416:VAL:HG22	1:E:419:ARG:NH2	2.35	0.42
1:F:406:ASP:N	1:F:406:ASP:OD1	2.52	0.42
1:F:584:PRO:HA	1:F:587:PHE:HE1	1.84	0.42
1:B:584:PRO:HD3	1:B:617:GLU:HB2	2.01	0.42
1:E:504:ARG:HD2	1:E:504:ARG:HA	1.77	0.42
1:E:600:GLU:O	1:E:603:ARG:HG3	2.19	0.42
1:A:129:VAL:HG12	1:A:183:ALA:HA	2.01	0.42
1:A:271:PHE:HB3	1:A:278:PRO:HD3	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:419:ARG:NH1	1:F:446:ALA:O	2.53	0.42
1:F:558:PRO:HG2	1:F:683:PRO:HD3	2.02	0.42
1:F:578:PHE:HD1	1:F:612:ILE:HG13	1.85	0.42
1:B:107:ASN:HD21	1:B:241:PRO:HA	1.84	0.42
1:A:555:LEU:HD13	1:A:563:LYS:HB2	2.01	0.42
1:A:685:ASP:OD1	1:A:685:ASP:N	2.50	0.42
1:B:61:LEU:HG	1:B:118:LYS:HB3	2.01	0.42
1:B:151:LEU:HD23	1:B:219:LYS:HB3	2.02	0.42
1:B:320:LEU:HD22	1:B:365:ARG:HH21	1.84	0.42
1:B:556:TYR:HE1	1:B:678:HIS:HB3	1.84	0.42
1:C:103:ARG:HA	1:C:108:LEU:HB2	2.01	0.42
1:D:449:THR:HG23	1:D:452:TYR:HD2	1.85	0.42
1:C:73:LYS:HD2	1:C:108:LEU:HG	2.01	0.42
1:C:599:ARG:HD3	1:C:599:ARG:HA	1.78	0.42
1:D:48:THR:HA	1:D:102:ILE:HD11	2.01	0.42
1:D:294:MET:HE2	2:D:801:ATP:H3'	2.01	0.42
1:D:137:TYR:HB3	1:D:140:LEU:HD13	2.02	0.42
1:D:261:ILE:HD11	1:D:386:ILE:HD11	2.02	0.42
1:D:261:ILE:HG13	1:D:299:VAL:HG21	2.00	0.42
1:A:35:ILE:HG22	1:A:95:VAL:HA	2.01	0.42
1:A:374:MET:HG2	1:A:377:MET:HE3	2.02	0.42
1:D:669:LEU:HG	1:D:675:LEU:HD12	2.01	0.42
1:F:762:THR:HG23	1:F:764:GLU:HG3	2.02	0.42
1:A:300:ALA:HB1	1:A:307:VAL:HG21	2.02	0.41
1:A:735:ALA:HB2	1:A:745:VAL:HG23	2.02	0.41
1:B:358:ASP:OD1	1:B:358:ASP:N	2.45	0.41
1:B:618:ILE:HG22	1:B:659:THR:HB	2.01	0.41
1:E:35:ILE:HG23	1:E:111:GLY:HA2	2.02	0.41
1:E:334:ALA:HB2	1:E:342:ILE:HD11	2.02	0.41
1:A:137:TYR:HB3	1:A:140:LEU:HD13	2.02	0.41
1:C:181:THR:HG21	1:C:229:GLU:HB2	2.02	0.41
1:F:436:VAL:HG22	1:F:485:LYS:HD3	2.02	0.41
1:A:562:SER:HB3	2:A:803:ATP:N7	2.35	0.41
1:A:599:ARG:HH21	1:A:639:SER:HB3	1.85	0.41
1:A:660:ASN:O	1:A:769:TYR:OH	2.28	0.41
1:C:257:LEU:O	1:C:261:ILE:HG12	2.20	0.41
1:D:169:THR:OG1	1:D:173:ASP:O	2.29	0.41
1:D:427:PHE:HA	1:D:430:MET:HG3	2.01	0.41
1:E:39:HIS:H	1:E:99:SER:HA	1.85	0.41
1:E:87:ASP:N	1:E:87:ASP:OD1	2.53	0.41
1:F:45:GLY:O	1:F:48:THR:HG22	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:126:ALA:HB2	1:F:215:PHE:HB3	2.03	0.41
1:A:148:ILE:O	1:A:151:LEU:HB2	2.21	0.41
1:A:250:LEU:HB3	1:A:253:GLU:HB2	2.02	0.41
1:B:551:LYS:H	1:B:551:LYS:HG2	1.77	0.41
1:E:733:LEU:HG	1:E:737:MET:HE3	2.00	0.41
1:A:417:ASP:N	1:A:417:ASP:OD1	2.53	0.41
1:F:626:ASP:OD1	1:F:626:ASP:N	2.52	0.41
1:A:254:ILE:HD13	1:A:295:LEU:HD22	2.01	0.41
1:C:129:VAL:HG21	1:C:217:PHE:HE2	1.84	0.41
1:C:527:LYS:O	1:C:530:GLU:HG2	2.21	0.41
1:E:415:ASP:OD1	1:E:415:ASP:N	2.54	0.41
1:E:521:GLN:HE21	1:E:685:ASP:H	1.68	0.41
1:F:138:ASN:OD1	1:F:138:ASN:N	2.54	0.41
1:A:268:PRO:HG3	1:A:382:LYS:HE2	2.02	0.41
1:A:586:ILE:HG13	1:A:587:PHE:N	2.35	0.41
1:B:46:LYS:HG2	1:B:84:ARG:HH12	1.86	0.41
1:C:361:GLU:HG2	1:C:362:VAL:HG13	2.03	0.41
1:C:445:ILE:O	1:C:449:THR:OG1	2.21	0.41
1:F:48:THR:HA	1:F:102:ILE:HD11	2.01	0.41
1:A:123:PRO:HG2	1:A:216:ILE:HG13	2.03	0.41
1:A:368:ALA:O	1:A:371:LEU:HG	2.21	0.41
1:A:671:ARG:HB2	1:A:674:ARG:HH11	1.86	0.41
1:B:213:PRO:HA	1:B:214:PRO:HD3	1.93	0.41
1:D:143:MET:SD	1:D:143:MET:N	2.94	0.41
1:D:759:ARG:H	1:D:759:ARG:HG2	1.71	0.41
1:E:38:PRO:HD3	1:E:110:LEU:HD11	2.02	0.41
1:A:158:ILE:HG22	1:A:162:MET:SD	2.60	0.41
1:B:521:GLN:HG2	1:B:523:GLU:H	1.85	0.41
1:C:88:GLU:HG2	1:C:90:VAL:H	1.86	0.41
1:C:285:HIS:HB2	1:C:392:PRO:HG3	2.03	0.41
1:D:423:LEU:HD21	1:D:457:LEU:HD22	2.02	0.41
1:D:521:GLN:NE2	1:D:685:ASP:H	2.19	0.41
1:D:522:GLU:HA	1:D:525:LYS:HG3	2.02	0.41
1:E:151:LEU:HD23	1:E:219:LYS:HB3	2.02	0.41
1:E:271:PHE:HD2	1:E:278:PRO:HB3	1.86	0.41
1:E:371:LEU:HD22	1:E:404:ARG:CZ	2.51	0.41
1:E:426:GLN:NE2	3:F:801:NDT:H19	2.36	0.41
1:E:689:ARG:HA	1:E:692:ILE:HG12	2.01	0.41
1:E:730:GLU:HB3	1:E:753:ALA:HB1	2.03	0.41
1:F:352:PRO:HD2	1:F:363:GLU:HG3	2.03	0.41
1:D:300:ALA:HB2	1:D:343:PHE:HE2	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:619:ASP:HA	1:D:665:ILE:HD11	2.02	0.41
1:F:584:PRO:HA	1:F:587:PHE:CE1	2.57	0.41
1:A:308:LEU:HB2	1:A:342:ILE:HD13	2.01	0.40
1:C:701:ASN:HB3	1:C:744:LYS:HZ2	1.86	0.40
1:D:280:ARG:NH2	1:D:378:GLY:O	2.54	0.40
1:E:52:TYR:HA	1:E:86:GLY:HA2	2.02	0.40
1:A:114:LEU:HD23	1:A:114:LEU:HA	1.94	0.40
1:A:158:ILE:HD12	1:A:214:PRO:HA	2.04	0.40
1:D:283:LEU:HB3	1:D:408:GLU:HG2	2.02	0.40
1:D:663:ASP:OD1	1:D:768:TYR:OH	2.34	0.40
1:E:110:LEU:HG	1:E:306:HIS:HA	2.03	0.40
1:F:449:THR:HG22	1:F:449:THR:O	2.22	0.40
1:F:637:LEU:O	1:F:640:LEU:HG	2.22	0.40
1:B:92:PRO:HG2	1:B:95:VAL:HG12	2.03	0.40
1:D:213:PRO:HA	1:D:214:PRO:HD3	1.89	0.40
1:E:161:GLY:HA3	1:E:180:ILE:H	1.86	0.40
1:E:462:ARG:NH1	1:F:406:ASP:OD2	2.52	0.40
1:F:161:GLY:HA2	1:F:180:ILE:HB	2.04	0.40
1:B:54:HIS:CG	1:B:93:VAL:HG22	2.57	0.40
1:E:521:GLN:HE22	1:E:684:PRO:HA	1.86	0.40
1:F:150:LYS:HG3	1:F:164:PHE:CE2	2.57	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	719/748 (96%)	669 (93%)	49 (7%)	1 (0%)	48	79
1	B	719/748 (96%)	669 (93%)	48 (7%)	2 (0%)	36	67
1	C	716/748 (96%)	669 (93%)	46 (6%)	1 (0%)	48	79
1	D	719/748 (96%)	671 (93%)	46 (6%)	2 (0%)	36	67

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	E	719/748 (96%)	674 (94%)	44 (6%)	1 (0%)	48	79
1	F	716/748 (96%)	666 (93%)	49 (7%)	1 (0%)	48	79
All	All	4308/4488 (96%)	4018 (93%)	282 (6%)	8 (0%)	44	73

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	547	ILE
1	B	547	ILE
1	E	547	ILE
1	F	547	ILE
1	D	547	ILE
1	C	74	ILE
1	B	609	ALA
1	D	74	ILE

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	609/632 (96%)	609 (100%)	0	100	100
1	B	609/632 (96%)	609 (100%)	0	100	100
1	C	608/632 (96%)	608 (100%)	0	100	100
1	D	609/632 (96%)	609 (100%)	0	100	100
1	E	609/632 (96%)	609 (100%)	0	100	100
1	F	608/632 (96%)	608 (100%)	0	100	100
All	All	3652/3792 (96%)	3652 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	311	ASN
1	A	407	GLN
1	A	435	HIS
1	B	353	ASN
1	B	356	ASN
1	C	122	GLN
1	C	390	ASN
1	C	426	GLN
1	D	306	HIS
1	D	390	ASN
1	D	450	HIS
1	E	407	GLN
1	E	729	GLN
1	F	135	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

24 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
2	ATP	E	803	3	31,32,33	1.98	7 (22%)	46,50,52	2.77	12 (26%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	NDT	D	802	2	23,23,23	2.49	7 (30%)	27,34,34	3.43	10 (37%)
3	NDT	C	804	2	23,23,23	2.62	6 (26%)	27,34,34	3.43	10 (37%)
3	NDT	F	801	2	23,23,23	2.54	5 (21%)	27,34,34	3.42	10 (37%)
2	ATP	D	803	3	31,32,33	1.99	7 (22%)	46,50,52	2.76	11 (23%)
3	NDT	C	802	2	23,23,23	2.57	6 (26%)	27,34,34	3.39	10 (37%)
2	ATP	C	801	3	31,32,33	1.94	7 (22%)	46,50,52	2.75	11 (23%)
2	ATP	B	801	3	31,32,33	1.98	7 (22%)	46,50,52	2.77	11 (23%)
3	NDT	B	804	2	23,23,23	2.57	7 (30%)	27,34,34	3.42	10 (37%)
2	ATP	E	802	3	31,32,33	1.96	7 (22%)	46,50,52	2.76	11 (23%)
3	NDT	F	802	2	23,23,23	2.59	6 (26%)	27,34,34	3.39	10 (37%)
2	ATP	F	805	3	31,32,33	1.97	7 (22%)	46,50,52	2.76	12 (26%)
2	ATP	F	803	3	31,32,33	1.96	7 (22%)	46,50,52	2.75	11 (23%)
2	ATP	A	803	3	31,32,33	2.01	7 (22%)	46,50,52	2.76	12 (26%)
2	ATP	C	803	3	31,32,33	1.98	7 (22%)	46,50,52	2.76	11 (23%)
3	NDT	F	804	2	23,23,23	2.49	6 (26%)	27,34,34	3.42	10 (37%)
3	NDT	A	802	2	23,23,23	2.62	6 (26%)	27,34,34	3.43	10 (37%)
3	NDT	F	806	2	23,23,23	2.57	7 (30%)	27,34,34	3.39	11 (40%)
2	ATP	B	803	3	31,32,33	1.97	7 (22%)	46,50,52	2.77	11 (23%)
3	NDT	B	802	2	23,23,23	2.54	6 (26%)	27,34,34	3.41	11 (40%)
3	NDT	A	804	2	23,23,23	2.63	6 (26%)	27,34,34	3.42	10 (37%)
3	NDT	E	801	2	23,23,23	2.56	7 (30%)	27,34,34	3.38	10 (37%)
2	ATP	D	801	3	31,32,33	2.00	7 (22%)	46,50,52	2.76	11 (23%)
2	ATP	A	801	3	31,32,33	1.96	7 (22%)	46,50,52	2.76	11 (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
2	ATP	E	803	3	-	8/22/34/38	0/3/3/3
3	NDT	D	802	2	1/1/3/4	3/9/25/25	0/3/3/3
3	NDT	C	804	2	1/1/3/4	2/9/25/25	0/3/3/3
3	NDT	F	801	2	1/1/3/4	3/9/25/25	0/3/3/3
2	ATP	D	803	3	-	4/22/34/38	0/3/3/3
3	NDT	C	802	2	1/1/3/4	3/9/25/25	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	ATP	C	801	3	-	9/22/34/38	0/3/3/3
2	ATP	B	801	3	-	6/22/34/38	0/3/3/3
3	NDT	B	804	2	1/1/3/4	3/9/25/25	0/3/3/3
2	ATP	E	802	3	-	6/22/34/38	0/3/3/3
3	NDT	F	802	2	1/1/3/4	0/9/25/25	0/3/3/3
2	ATP	F	805	3	-	8/22/34/38	0/3/3/3
2	ATP	F	803	3	-	7/22/34/38	0/3/3/3
2	ATP	A	803	3	-	5/22/34/38	0/3/3/3
2	ATP	C	803	3	-	10/22/34/38	0/3/3/3
3	NDT	F	804	2	1/1/3/4	3/9/25/25	0/3/3/3
3	NDT	A	802	2	1/1/3/4	0/9/25/25	0/3/3/3
3	NDT	F	806	2	1/1/3/4	3/9/25/25	0/3/3/3
2	ATP	B	803	3	-	6/22/34/38	0/3/3/3
3	NDT	B	802	2	1/1/3/4	0/9/25/25	0/3/3/3
3	NDT	A	804	2	1/1/3/4	0/9/25/25	0/3/3/3
3	NDT	E	801	2	1/1/3/4	3/9/25/25	0/3/3/3
2	ATP	D	801	3	-	7/22/34/38	0/3/3/3
2	ATP	A	801	3	-	5/22/34/38	0/3/3/3

All (159) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	F	806	NDT	C15-S1	6.27	1.84	1.76
3	B	804	NDT	C15-S1	6.27	1.84	1.76
3	A	804	NDT	C15-S1	6.27	1.84	1.76
3	F	802	NDT	B1-O1	6.27	1.45	1.36
3	C	802	NDT	C15-S1	6.25	1.84	1.76
3	C	804	NDT	C15-S1	6.25	1.84	1.76
3	A	802	NDT	S1-N2	6.21	1.81	1.67
3	E	801	NDT	C15-S1	6.19	1.84	1.76
3	C	804	NDT	S1-N2	6.19	1.81	1.67
3	F	801	NDT	C15-S1	6.18	1.84	1.76
3	A	804	NDT	B1-O1	6.17	1.45	1.36
3	A	802	NDT	C15-S1	6.17	1.84	1.76
3	D	802	NDT	C15-S1	6.13	1.84	1.76
3	F	802	NDT	C15-S1	6.12	1.84	1.76
3	A	802	NDT	B1-O1	6.11	1.45	1.36
3	E	801	NDT	B1-O1	6.11	1.45	1.36
3	B	802	NDT	B1-O1	6.10	1.45	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	F	806	NDT	B1-O1	6.06	1.45	1.36
3	A	804	NDT	S1-N2	6.06	1.81	1.67
3	F	804	NDT	C15-S1	6.03	1.84	1.76
3	F	801	NDT	B1-O1	6.03	1.45	1.36
3	B	802	NDT	C15-S1	6.01	1.84	1.76
3	C	804	NDT	B1-O1	6.01	1.45	1.36
3	C	802	NDT	B1-O1	6.00	1.45	1.36
3	B	804	NDT	B1-O1	5.95	1.45	1.36
3	D	802	NDT	S1-N2	5.93	1.80	1.67
3	F	804	NDT	B1-O1	5.86	1.45	1.36
3	B	802	NDT	S1-N2	5.83	1.80	1.67
3	B	804	NDT	S1-N2	5.83	1.80	1.67
3	F	802	NDT	S1-N2	5.81	1.80	1.67
3	C	802	NDT	S1-N2	5.75	1.80	1.67
3	F	801	NDT	S1-N2	5.67	1.80	1.67
3	F	806	NDT	S1-N2	5.65	1.80	1.67
3	E	801	NDT	S1-N2	5.64	1.80	1.67
3	F	804	NDT	S1-N2	5.63	1.80	1.67
3	D	802	NDT	B1-O1	5.49	1.44	1.36
2	A	803	ATP	C5-C4	4.91	1.47	1.39
2	D	801	ATP	C5-C4	4.91	1.47	1.39
2	D	803	ATP	C5-C4	4.89	1.47	1.39
2	C	801	ATP	C5-C4	4.88	1.47	1.39
2	A	801	ATP	C5-C4	4.87	1.47	1.39
2	C	803	ATP	C5-C4	4.87	1.47	1.39
2	B	801	ATP	C5-C4	4.86	1.47	1.39
2	E	803	ATP	C5-C4	4.85	1.47	1.39
2	E	802	ATP	C5-C4	4.84	1.47	1.39
2	F	805	ATP	C5-C4	4.83	1.47	1.39
2	B	803	ATP	C5-C4	4.82	1.47	1.39
2	F	803	ATP	C5-C4	4.80	1.47	1.39
2	F	805	ATP	PA-O1A	4.50	1.66	1.50
2	E	802	ATP	PA-O1A	4.49	1.66	1.50
2	C	803	ATP	PA-O1A	4.49	1.66	1.50
2	D	803	ATP	PA-O1A	4.48	1.66	1.50
2	E	803	ATP	PA-O1A	4.47	1.66	1.50
2	D	801	ATP	PA-O1A	4.46	1.66	1.50
2	A	801	ATP	PA-O1A	4.46	1.66	1.50
2	A	803	ATP	PA-O1A	4.46	1.66	1.50
2	B	803	ATP	PA-O1A	4.46	1.66	1.50
2	B	801	ATP	PA-O1A	4.44	1.66	1.50
2	F	803	ATP	PA-O1A	4.43	1.66	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	801	ATP	PA-O1A	4.39	1.66	1.50
2	A	803	ATP	PA-O3A	3.80	1.63	1.59
2	D	803	ATP	PA-O3A	3.57	1.63	1.59
2	D	801	ATP	PA-O3A	3.54	1.63	1.59
3	A	804	NDT	B1-C4	3.50	1.58	1.54
2	B	803	ATP	PA-O3A	3.47	1.63	1.59
3	C	804	NDT	B1-C4	3.46	1.58	1.54
3	F	802	NDT	B1-C4	3.46	1.58	1.54
2	B	801	ATP	PA-O3A	3.46	1.63	1.59
2	C	803	ATP	PA-O3A	3.46	1.63	1.59
2	E	803	ATP	PA-O3A	3.44	1.63	1.59
2	C	801	ATP	PA-O3A	3.43	1.63	1.59
2	A	801	ATP	PA-O3A	3.41	1.63	1.59
2	E	802	ATP	PA-O3A	3.38	1.63	1.59
3	A	802	NDT	B1-C4	3.36	1.58	1.54
3	C	802	NDT	B1-C4	3.36	1.58	1.54
2	F	805	ATP	PA-O3A	3.34	1.63	1.59
3	E	801	NDT	B1-C4	3.30	1.58	1.54
3	F	806	NDT	B1-C4	3.29	1.58	1.54
3	B	804	NDT	B1-C4	3.25	1.58	1.54
2	F	803	ATP	PA-O3A	3.22	1.63	1.59
3	F	801	NDT	B1-C4	3.19	1.58	1.54
3	B	802	NDT	B1-C4	3.19	1.58	1.54
2	F	803	ATP	PG-O2G	-3.05	1.43	1.54
2	F	805	ATP	PG-O2G	-3.05	1.43	1.54
2	A	803	ATP	PG-O2G	-3.05	1.43	1.54
2	D	801	ATP	PG-O2G	-3.04	1.43	1.54
2	B	803	ATP	PG-O2G	-3.04	1.43	1.54
2	D	803	ATP	PG-O2G	-3.03	1.43	1.54
2	C	801	ATP	PG-O2G	-3.03	1.43	1.54
2	A	801	ATP	PG-O2G	-3.03	1.43	1.54
2	C	803	ATP	PG-O2G	-3.02	1.43	1.54
2	E	803	ATP	PG-O2G	-3.02	1.43	1.54
2	E	802	ATP	PG-O2G	-3.02	1.43	1.54
2	B	801	ATP	PG-O2G	-3.02	1.43	1.54
3	F	804	NDT	B1-C4	2.96	1.58	1.54
3	D	802	NDT	B1-C4	2.75	1.57	1.54
2	E	803	ATP	C8-N9	2.58	1.41	1.37
2	B	801	ATP	C8-N9	2.58	1.41	1.37
2	D	801	ATP	C8-N9	2.57	1.41	1.37
2	A	803	ATP	C8-N9	2.57	1.41	1.37
2	F	803	ATP	C8-N9	2.57	1.41	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	803	ATP	C8-N9	2.56	1.41	1.37
2	E	802	ATP	PG-O1G	2.56	1.58	1.50
2	A	801	ATP	PG-O1G	2.55	1.58	1.50
2	B	803	ATP	C8-N9	2.55	1.41	1.37
2	B	801	ATP	PG-O1G	2.55	1.58	1.50
2	D	803	ATP	C8-N9	2.55	1.41	1.37
2	D	801	ATP	PG-O1G	2.55	1.58	1.50
2	C	803	ATP	PG-O1G	2.54	1.58	1.50
2	C	801	ATP	PG-O1G	2.54	1.58	1.50
2	F	803	ATP	PG-O1G	2.54	1.58	1.50
2	F	805	ATP	C8-N9	2.54	1.41	1.37
2	E	803	ATP	PG-O1G	2.53	1.58	1.50
2	D	803	ATP	PG-O1G	2.53	1.58	1.50
2	F	805	ATP	PG-O1G	2.53	1.58	1.50
2	B	803	ATP	PG-O1G	2.53	1.58	1.50
2	A	803	ATP	PG-O1G	2.52	1.58	1.50
2	A	801	ATP	C8-N9	2.51	1.41	1.37
2	E	802	ATP	C8-N9	2.50	1.41	1.37
2	C	801	ATP	C8-N9	2.47	1.41	1.37
2	F	803	ATP	PA-O2A	-2.31	1.44	1.55
2	D	801	ATP	PA-O2A	-2.29	1.44	1.55
2	C	801	ATP	PA-O2A	-2.29	1.44	1.55
2	B	801	ATP	PA-O2A	-2.28	1.44	1.55
2	B	803	ATP	PA-O2A	-2.28	1.44	1.55
2	A	801	ATP	PA-O2A	-2.27	1.44	1.55
2	E	803	ATP	PA-O2A	-2.27	1.44	1.55
2	F	805	ATP	PA-O2A	-2.27	1.44	1.55
2	D	803	ATP	PA-O2A	-2.27	1.44	1.55
2	E	802	ATP	PA-O2A	-2.27	1.44	1.55
2	C	803	ATP	PA-O2A	-2.27	1.44	1.55
2	A	803	ATP	PA-O2A	-2.26	1.44	1.55
3	A	802	NDT	O2-S1	-2.25	1.41	1.43
3	C	802	NDT	O2-S1	-2.20	1.41	1.43
3	F	806	NDT	O2-S1	-2.15	1.41	1.43
3	C	804	NDT	O2-S1	-2.14	1.41	1.43
3	B	802	NDT	O2-S1	-2.09	1.41	1.43
3	A	802	NDT	C16-C15	2.09	1.42	1.38
3	F	804	NDT	O2-S1	-2.08	1.41	1.43
3	F	806	NDT	C16-C15	2.07	1.42	1.38
3	E	801	NDT	C16-C15	2.07	1.42	1.38
3	F	802	NDT	C16-C15	2.07	1.42	1.38
3	A	804	NDT	O2-S1	-2.06	1.41	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	E	801	NDT	C2-N1	2.06	1.32	1.29
3	C	804	NDT	C16-C15	2.06	1.42	1.38
3	E	801	NDT	O2-S1	-2.06	1.41	1.43
3	B	804	NDT	C2-N1	2.06	1.32	1.29
3	B	804	NDT	C16-C15	2.04	1.42	1.38
3	C	802	NDT	C16-C15	2.04	1.42	1.38
3	F	801	NDT	C16-C15	2.04	1.42	1.38
3	B	804	NDT	O2-S1	-2.04	1.41	1.43
3	D	802	NDT	O2-S1	-2.03	1.41	1.43
3	F	802	NDT	O2-S1	-2.03	1.41	1.43
3	F	804	NDT	C16-C15	2.03	1.42	1.38
3	A	804	NDT	C16-C15	2.02	1.42	1.38
3	D	802	NDT	C2-N1	2.02	1.32	1.29
3	B	802	NDT	C16-C15	2.02	1.42	1.38
3	F	806	NDT	C2-N1	2.01	1.32	1.29
3	D	802	NDT	C16-C15	2.00	1.42	1.38

All (257) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	803	ATP	O3G-PG-O1G	-9.38	74.30	110.83
2	B	803	ATP	O3G-PG-O1G	-9.37	74.33	110.83
2	E	802	ATP	O3G-PG-O1G	-9.37	74.33	110.83
2	D	801	ATP	O3G-PG-O1G	-9.37	74.33	110.83
2	F	803	ATP	O3G-PG-O1G	-9.36	74.35	110.83
2	F	805	ATP	O3G-PG-O1G	-9.36	74.36	110.83
2	D	803	ATP	O3G-PG-O1G	-9.36	74.36	110.83
2	B	801	ATP	O3G-PG-O1G	-9.36	74.36	110.83
2	A	801	ATP	O3G-PG-O1G	-9.36	74.38	110.83
2	C	801	ATP	O3G-PG-O1G	-9.35	74.39	110.83
2	C	803	ATP	O3G-PG-O1G	-9.35	74.39	110.83
2	E	803	ATP	O3G-PG-O1G	-9.35	74.40	110.83
3	A	802	NDT	C2-N1-N2	9.23	126.60	117.71
3	C	804	NDT	C2-N1-N2	9.14	126.51	117.71
3	B	802	NDT	C2-N1-N2	9.07	126.44	117.71
3	A	804	NDT	C2-N1-N2	9.03	126.40	117.71
3	F	802	NDT	C2-N1-N2	9.01	126.39	117.71
3	C	802	NDT	C2-N1-N2	8.98	126.36	117.71
3	F	801	NDT	C2-N1-N2	8.92	126.30	117.71
3	B	804	NDT	C2-N1-N2	8.87	126.25	117.71
3	F	804	NDT	C2-N1-N2	8.86	126.24	117.71
3	F	806	NDT	C2-N1-N2	8.77	126.15	117.71

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	E	801	NDT	C2-N1-N2	8.73	126.11	117.71
3	D	802	NDT	C2-N1-N2	8.69	126.07	117.71
2	B	803	ATP	O3A-PA-O1A	-8.66	84.65	110.70
2	B	801	ATP	O3A-PA-O1A	-8.65	84.68	110.70
2	E	803	ATP	O3A-PA-O1A	-8.61	84.79	110.70
2	F	805	ATP	O3A-PA-O1A	-8.61	84.79	110.70
2	C	803	ATP	O3A-PA-O1A	-8.60	84.84	110.70
2	D	801	ATP	O3A-PA-O1A	-8.56	84.94	110.70
2	A	801	ATP	O3A-PA-O1A	-8.56	84.96	110.70
2	D	803	ATP	O3A-PA-O1A	-8.56	84.96	110.70
2	E	802	ATP	O3A-PA-O1A	-8.55	84.99	110.70
2	C	801	ATP	O3A-PA-O1A	-8.52	85.07	110.70
2	F	803	ATP	O3A-PA-O1A	-8.48	85.19	110.70
2	A	803	ATP	O3A-PA-O1A	-8.45	85.29	110.70
3	D	802	NDT	C4-B1-N2	6.70	119.69	115.43
2	B	803	ATP	O2B-PB-O3A	-6.62	89.38	107.27
2	F	803	ATP	O2B-PB-O3A	-6.59	89.45	107.27
2	F	805	ATP	O2B-PB-O3A	-6.58	89.48	107.27
2	C	801	ATP	O2B-PB-O3A	-6.58	89.49	107.27
2	A	801	ATP	O2B-PB-O3A	-6.58	89.50	107.27
2	C	803	ATP	O2B-PB-O3A	-6.57	89.51	107.27
2	A	803	ATP	O3B-PB-O1B	-6.55	91.00	110.70
2	E	803	ATP	O2B-PB-O3A	-6.54	89.60	107.27
2	D	801	ATP	O2B-PB-O3A	-6.53	89.61	107.27
2	E	802	ATP	O2B-PB-O3A	-6.52	89.66	107.27
2	D	803	ATP	O3B-PB-O1B	-6.50	91.14	110.70
2	B	803	ATP	O3B-PB-O1B	-6.50	91.15	110.70
2	B	801	ATP	O2B-PB-O3A	-6.49	89.73	107.27
2	B	801	ATP	O3B-PB-O1B	-6.49	91.18	110.70
2	D	801	ATP	O3B-PB-O1B	-6.49	91.18	110.70
2	A	803	ATP	O2B-PB-O3A	-6.47	89.77	107.27
2	F	805	ATP	O3B-PB-O1B	-6.47	91.23	110.70
2	D	803	ATP	O2B-PB-O3A	-6.47	89.78	107.27
2	C	803	ATP	O3B-PB-O1B	-6.46	91.26	110.70
2	E	802	ATP	O3B-PB-O1B	-6.46	91.26	110.70
2	C	801	ATP	O3B-PB-O1B	-6.46	91.27	110.70
2	F	803	ATP	O3B-PB-O1B	-6.45	91.31	110.70
2	E	803	ATP	O3B-PB-O1B	-6.45	91.31	110.70
2	A	801	ATP	O3B-PB-O1B	-6.43	91.36	110.70
3	F	804	NDT	C4-B1-N2	6.35	119.46	115.43
3	A	804	NDT	C20-C15-C16	-6.33	112.22	120.47
3	B	804	NDT	C4-B1-N2	6.32	119.44	115.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	804	NDT	C20-C15-C16	-6.31	112.24	120.47
3	F	801	NDT	C20-C15-C16	-6.31	112.24	120.47
3	E	801	NDT	C20-C15-C16	-6.30	112.25	120.47
3	F	804	NDT	C20-C15-C16	-6.29	112.26	120.47
3	C	804	NDT	C20-C15-C16	-6.28	112.27	120.47
3	B	802	NDT	C20-C15-C16	-6.28	112.28	120.47
3	F	802	NDT	C20-C15-C16	-6.28	112.28	120.47
3	F	806	NDT	C20-C15-C16	-6.27	112.29	120.47
3	A	802	NDT	C20-C15-C16	-6.27	112.29	120.47
3	D	802	NDT	C20-C15-C16	-6.24	112.33	120.47
3	C	802	NDT	C20-C15-C16	-6.22	112.36	120.47
3	F	806	NDT	C4-B1-N2	6.13	119.33	115.43
3	E	801	NDT	C4-B1-N2	6.11	119.31	115.43
3	F	801	NDT	C4-B1-N2	6.10	119.30	115.43
3	B	802	NDT	C4-B1-N2	6.05	119.27	115.43
3	C	802	NDT	C4-B1-N2	6.03	119.26	115.43
3	C	804	NDT	C4-C1-C2	-6.02	114.49	118.29
3	A	804	NDT	C4-B1-N2	5.98	119.23	115.43
3	D	802	NDT	C4-C1-C2	-5.98	114.51	118.29
3	A	804	NDT	C4-C1-C2	-5.96	114.53	118.29
3	C	804	NDT	C4-B1-N2	5.95	119.21	115.43
3	F	801	NDT	C4-C1-C2	-5.95	114.53	118.29
3	B	804	NDT	C4-C1-C2	-5.95	114.53	118.29
3	F	804	NDT	C4-C1-C2	-5.92	114.55	118.29
3	A	802	NDT	C4-B1-N2	5.92	119.19	115.43
3	F	806	NDT	C4-C1-C2	-5.90	114.56	118.29
3	A	802	NDT	C4-C1-C2	-5.89	114.57	118.29
3	E	801	NDT	C4-C1-C2	-5.88	114.57	118.29
3	F	802	NDT	C4-B1-N2	5.87	119.16	115.43
3	C	802	NDT	C4-C1-C2	-5.79	114.63	118.29
3	B	802	NDT	C4-C1-C2	-5.78	114.64	118.29
3	F	802	NDT	C4-C1-C2	-5.76	114.65	118.29
3	F	804	NDT	C19-C20-C15	5.11	124.41	119.44
3	F	806	NDT	C19-C20-C15	5.08	124.38	119.44
3	E	801	NDT	C19-C20-C15	5.05	124.35	119.44
3	A	802	NDT	C19-C20-C15	5.05	124.35	119.44
3	F	802	NDT	C19-C20-C15	5.03	124.33	119.44
3	C	802	NDT	C19-C20-C15	5.03	124.33	119.44
2	D	803	ATP	O2G-PG-O3B	5.02	121.48	104.64
3	A	804	NDT	C19-C20-C15	5.02	124.32	119.44
3	D	802	NDT	C19-C20-C15	5.01	124.31	119.44
2	C	801	ATP	O2G-PG-O3B	5.01	121.43	104.64

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	805	ATP	O2G-PG-O3B	5.01	121.43	104.64
2	B	803	ATP	O2G-PG-O3B	5.01	121.42	104.64
2	E	802	ATP	O2G-PG-O3B	5.00	121.42	104.64
2	F	803	ATP	O2G-PG-O3B	5.00	121.41	104.64
2	D	801	ATP	O2G-PG-O3B	5.00	121.40	104.64
2	A	803	ATP	O2G-PG-O3B	5.00	121.40	104.64
2	B	801	ATP	O2G-PG-O3B	5.00	121.40	104.64
2	A	801	ATP	O2G-PG-O3B	5.00	121.39	104.64
2	C	803	ATP	O2G-PG-O3B	5.00	121.39	104.64
2	E	803	ATP	O2G-PG-O3B	4.99	121.36	104.64
3	B	804	NDT	C19-C20-C15	4.95	124.25	119.44
3	F	801	NDT	C19-C20-C15	4.95	124.25	119.44
3	C	804	NDT	C19-C20-C15	4.94	124.25	119.44
3	B	802	NDT	C19-C20-C15	4.94	124.24	119.44
3	B	804	NDT	C17-C16-C15	4.85	124.16	119.44
3	F	801	NDT	C17-C16-C15	4.85	124.16	119.44
3	A	804	NDT	C17-C16-C15	4.82	124.12	119.44
3	B	802	NDT	C17-C16-C15	4.81	124.12	119.44
3	C	804	NDT	C17-C16-C15	4.80	124.11	119.44
3	E	801	NDT	C17-C16-C15	4.76	124.07	119.44
3	F	802	NDT	C17-C16-C15	4.73	124.04	119.44
3	F	804	NDT	C17-C16-C15	4.71	124.02	119.44
3	F	806	NDT	C17-C16-C15	4.70	124.01	119.44
3	B	802	NDT	C20-C15-S1	4.69	124.39	119.73
3	D	802	NDT	C17-C16-C15	4.68	123.99	119.44
3	A	802	NDT	C17-C16-C15	4.67	123.98	119.44
3	C	802	NDT	C17-C16-C15	4.62	123.93	119.44
3	F	801	NDT	C20-C15-S1	4.59	124.29	119.73
3	B	804	NDT	C20-C15-S1	4.58	124.28	119.73
3	C	804	NDT	C20-C15-S1	4.54	124.24	119.73
3	C	802	NDT	O3-S1-O2	-4.48	112.59	119.59
3	D	802	NDT	O3-S1-O2	-4.47	112.61	119.59
3	F	801	NDT	O3-S1-O2	-4.46	112.62	119.59
3	A	804	NDT	O3-S1-O2	-4.45	112.65	119.59
3	F	802	NDT	O3-S1-O2	-4.42	112.69	119.59
3	C	804	NDT	O3-S1-O2	-4.41	112.70	119.59
3	F	804	NDT	O3-S1-O2	-4.40	112.72	119.59
3	F	802	NDT	C20-C15-S1	4.37	124.07	119.73
3	A	804	NDT	C20-C15-S1	4.36	124.07	119.73
3	A	802	NDT	O3-S1-O2	-4.36	112.78	119.59
3	F	806	NDT	C20-C15-S1	4.34	124.04	119.73
3	E	801	NDT	O3-S1-O2	-4.33	112.83	119.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	802	NDT	O3-S1-O2	-4.32	112.84	119.59
3	F	806	NDT	O3-S1-O2	-4.32	112.85	119.59
3	E	801	NDT	C20-C15-S1	4.31	124.02	119.73
3	B	804	NDT	O3-S1-O2	-4.29	112.90	119.59
3	C	802	NDT	C20-C15-S1	4.21	123.91	119.73
3	D	802	NDT	C20-C15-S1	4.19	123.90	119.73
3	A	802	NDT	C20-C15-S1	4.18	123.89	119.73
3	F	804	NDT	C16-C15-S1	4.18	123.89	119.73
3	F	804	NDT	C20-C15-S1	4.15	123.85	119.73
3	A	802	NDT	C16-C15-S1	4.12	123.82	119.73
3	D	802	NDT	C16-C15-S1	4.07	123.78	119.73
3	E	801	NDT	C16-C15-S1	4.03	123.73	119.73
3	C	802	NDT	C16-C15-S1	4.02	123.72	119.73
3	A	804	NDT	C16-C15-S1	4.01	123.72	119.73
3	F	806	NDT	C16-C15-S1	3.96	123.67	119.73
3	F	802	NDT	C16-C15-S1	3.95	123.65	119.73
3	B	804	NDT	C16-C15-S1	3.78	123.48	119.73
3	C	804	NDT	C16-C15-S1	3.78	123.48	119.73
3	F	801	NDT	C16-C15-S1	3.77	123.47	119.73
3	B	802	NDT	C16-C15-S1	3.63	123.34	119.73
2	E	803	ATP	O2B-PB-O3B	3.17	115.83	107.27
2	B	801	ATP	O2B-PB-O3B	3.15	115.79	107.27
2	D	801	ATP	O2B-PB-O3B	3.14	115.77	107.27
2	F	805	ATP	O2B-PB-O3B	3.14	115.77	107.27
2	C	803	ATP	O2B-PB-O3B	3.14	115.75	107.27
2	F	803	ATP	O2B-PB-O3B	3.14	115.75	107.27
2	A	801	ATP	O2B-PB-O3B	3.13	115.74	107.27
2	E	802	ATP	O2B-PB-O3B	3.13	115.73	107.27
2	C	801	ATP	O2B-PB-O3B	3.12	115.70	107.27
2	A	803	ATP	O2B-PB-O3B	3.11	115.69	107.27
2	D	803	ATP	O2B-PB-O3B	3.11	115.68	107.27
2	A	803	ATP	O2A-PA-O3A	3.10	115.67	107.27
2	E	803	ATP	O2A-PA-O3A	3.08	115.60	107.27
2	B	803	ATP	O2B-PB-O3B	3.08	115.60	107.27
2	D	801	ATP	O2A-PA-O3A	3.08	115.59	107.27
2	D	803	ATP	O2A-PA-O3A	3.06	115.55	107.27
2	B	801	ATP	O2A-PA-O3A	3.05	115.51	107.27
2	C	801	ATP	O2A-PA-O3A	3.05	115.51	107.27
2	C	803	ATP	O2A-PA-O3A	3.04	115.48	107.27
2	E	802	ATP	O2A-PA-O3A	3.03	115.46	107.27
2	A	801	ATP	O2A-PA-O3A	3.00	115.39	107.27
2	B	803	ATP	O2A-PA-O3A	2.99	115.34	107.27

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	805	ATP	O2A-PA-O3A	2.98	115.32	107.27
2	C	801	ATP	O5'-C5'-C4'	2.98	119.12	108.99
2	F	803	ATP	O5'-C5'-C4'	2.97	119.12	108.99
2	A	801	ATP	O5'-C5'-C4'	2.97	119.11	108.99
2	B	803	ATP	O5'-C5'-C4'	2.96	119.08	108.99
2	B	801	ATP	O5'-C5'-C4'	2.95	119.05	108.99
2	C	803	ATP	O5'-C5'-C4'	2.94	119.02	108.99
2	E	802	ATP	O5'-C5'-C4'	2.93	118.97	108.99
2	A	803	ATP	O5'-C5'-C4'	2.92	118.95	108.99
2	F	805	ATP	O5'-C5'-C4'	2.91	118.91	108.99
2	D	801	ATP	O5'-C5'-C4'	2.87	118.78	108.99
2	D	803	ATP	O5'-C5'-C4'	2.84	118.65	108.99
2	F	803	ATP	O2A-PA-O3A	2.82	114.90	107.27
2	E	803	ATP	O5'-C5'-C4'	2.77	118.41	108.99
2	A	803	ATP	O2G-PG-O1G	2.69	121.30	110.83
2	B	803	ATP	O3A-PB-O1B	2.68	118.77	110.70
2	D	803	ATP	O3A-PB-O1B	2.68	118.77	110.70
2	F	805	ATP	O3A-PB-O1B	2.68	118.75	110.70
2	D	803	ATP	O2G-PG-O1G	2.67	121.24	110.83
2	B	803	ATP	O2G-PG-O1G	2.67	121.24	110.83
2	F	805	ATP	O2G-PG-O1G	2.67	121.23	110.83
2	C	801	ATP	O2G-PG-O1G	2.66	121.21	110.83
2	E	802	ATP	O2G-PG-O1G	2.66	121.18	110.83
2	C	803	ATP	O2G-PG-O1G	2.65	121.18	110.83
2	E	802	ATP	O3A-PB-O1B	2.65	118.69	110.70
2	B	801	ATP	O2G-PG-O1G	2.65	121.17	110.83
2	F	803	ATP	O2G-PG-O1G	2.65	121.15	110.83
2	E	803	ATP	O2G-PG-O1G	2.65	121.15	110.83
2	D	801	ATP	O2G-PG-O1G	2.64	121.13	110.83
2	C	803	ATP	O3A-PB-O1B	2.64	118.65	110.70
2	E	803	ATP	O3A-PB-O1B	2.64	118.64	110.70
2	A	801	ATP	O3A-PB-O1B	2.64	118.63	110.70
2	A	801	ATP	O2G-PG-O1G	2.63	121.10	110.83
2	F	803	ATP	O3A-PB-O1B	2.63	118.62	110.70
2	B	801	ATP	O3A-PB-O1B	2.62	118.58	110.70
2	C	801	ATP	O3A-PB-O1B	2.62	118.57	110.70
2	A	803	ATP	O3A-PB-O1B	2.61	118.56	110.70
2	D	801	ATP	O3A-PB-O1B	2.58	118.45	110.70
3	C	804	NDT	C8-C1-C4	2.46	121.87	119.82
3	A	802	NDT	C8-C1-C4	2.41	121.83	119.82
3	A	804	NDT	C8-C1-C4	2.41	121.82	119.82
3	F	801	NDT	C8-C1-C4	2.39	121.81	119.82

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	802	NDT	C8-C1-C4	2.36	121.79	119.82
3	E	801	NDT	C8-C1-C4	2.33	121.76	119.82
3	C	802	NDT	C8-C1-C4	2.32	121.75	119.82
3	F	802	NDT	C8-C1-C4	2.30	121.73	119.82
3	F	804	NDT	C8-C1-C4	2.29	121.72	119.82
3	F	806	NDT	C8-C1-C4	2.27	121.71	119.82
3	B	804	NDT	C8-C1-C4	2.26	121.70	119.82
2	D	801	ATP	O3G-PG-O3B	2.23	112.10	104.64
2	B	801	ATP	O3G-PG-O3B	2.22	112.09	104.64
2	E	803	ATP	O3G-PG-O3B	2.22	112.07	104.64
2	A	801	ATP	O3G-PG-O3B	2.21	112.05	104.64
2	C	803	ATP	O3G-PG-O3B	2.21	112.04	104.64
2	F	803	ATP	O3G-PG-O3B	2.21	112.04	104.64
2	E	802	ATP	O3G-PG-O3B	2.20	112.01	104.64
2	A	803	ATP	O3G-PG-O3B	2.20	112.00	104.64
3	D	802	NDT	C8-C1-C4	2.20	121.65	119.82
2	D	803	ATP	O3G-PG-O3B	2.19	111.99	104.64
2	C	801	ATP	O3G-PG-O3B	2.18	111.94	104.64
2	E	803	ATP	C2'-C3'-C4'	2.17	107.20	102.80
2	B	803	ATP	O3G-PG-O3B	2.17	111.91	104.64
2	F	805	ATP	O3G-PG-O3B	2.14	111.83	104.64
2	A	803	ATP	C2'-C3'-C4'	2.03	106.92	102.80
2	F	805	ATP	C2'-C3'-C4'	2.01	106.88	102.80
3	B	802	NDT	C19-C18-C17	-2.00	114.23	118.11
3	F	806	NDT	C19-C18-C17	-2.00	114.23	118.11

All (12) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
3	A	802	NDT	N2
3	A	804	NDT	N2
3	B	802	NDT	N2
3	B	804	NDT	N2
3	C	802	NDT	N2
3	C	804	NDT	N2
3	D	802	NDT	N2
3	E	801	NDT	N2
3	F	801	NDT	N2
3	F	802	NDT	N2
3	F	804	NDT	N2
3	F	806	NDT	N2

All (104) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	801	ATP	PB-O3B-PG-O2G
2	A	801	ATP	PB-O3B-PG-O3G
2	A	803	ATP	C5'-O5'-PA-O3A
2	B	801	ATP	PB-O3B-PG-O2G
2	B	801	ATP	PB-O3B-PG-O3G
2	B	801	ATP	C5'-O5'-PA-O1A
2	B	801	ATP	C5'-O5'-PA-O2A
2	B	801	ATP	C5'-O5'-PA-O3A
2	B	803	ATP	PB-O3B-PG-O2G
2	B	803	ATP	PB-O3B-PG-O3G
2	B	803	ATP	C5'-O5'-PA-O3A
2	B	803	ATP	O4'-C4'-C5'-O5'
2	C	801	ATP	PB-O3B-PG-O2G
2	C	801	ATP	PB-O3B-PG-O3G
2	C	801	ATP	C5'-O5'-PA-O3A
2	C	803	ATP	PB-O3B-PG-O2G
2	C	803	ATP	PB-O3B-PG-O3G
2	C	803	ATP	C5'-O5'-PA-O2A
2	C	803	ATP	C5'-O5'-PA-O3A
2	C	803	ATP	O4'-C4'-C5'-O5'
2	D	801	ATP	PB-O3B-PG-O2G
2	D	801	ATP	PB-O3B-PG-O3G
2	D	801	ATP	C5'-O5'-PA-O1A
2	D	801	ATP	C5'-O5'-PA-O2A
2	D	801	ATP	C5'-O5'-PA-O3A
2	D	801	ATP	O4'-C4'-C5'-O5'
2	D	803	ATP	C5'-O5'-PA-O3A
2	E	802	ATP	PB-O3B-PG-O2G
2	E	802	ATP	PB-O3B-PG-O3G
2	E	803	ATP	PB-O3B-PG-O2G
2	E	803	ATP	PB-O3B-PG-O3G
2	E	803	ATP	C5'-O5'-PA-O3A
2	F	803	ATP	PB-O3B-PG-O2G
2	F	803	ATP	PB-O3B-PG-O3G
2	F	803	ATP	O4'-C4'-C5'-O5'
2	F	803	ATP	C3'-C4'-C5'-O5'
2	F	805	ATP	PB-O3B-PG-O2G
2	F	805	ATP	PB-O3B-PG-O3G
2	F	805	ATP	PB-O3A-PA-O5'
2	F	805	ATP	C5'-O5'-PA-O2A
2	F	805	ATP	C5'-O5'-PA-O3A
2	F	805	ATP	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
3	B	804	NDT	N1-N2-S1-O3
3	B	804	NDT	N1-N2-S1-C15
2	A	803	ATP	C3'-C4'-C5'-O5'
2	C	801	ATP	C3'-C4'-C5'-O5'
2	C	803	ATP	C3'-C4'-C5'-O5'
2	F	805	ATP	C3'-C4'-C5'-O5'
2	B	803	ATP	C3'-C4'-C5'-O5'
2	D	801	ATP	C3'-C4'-C5'-O5'
2	C	803	ATP	C4'-C5'-O5'-PA
2	A	803	ATP	O4'-C4'-C5'-O5'
2	C	801	ATP	O4'-C4'-C5'-O5'
2	D	803	ATP	O4'-C4'-C5'-O5'
2	E	803	ATP	O4'-C4'-C5'-O5'
2	C	803	ATP	PB-O3A-PA-O1A
3	B	804	NDT	N1-N2-S1-O2
3	C	802	NDT	N1-N2-S1-O2
3	D	802	NDT	N1-N2-S1-O2
3	E	801	NDT	N1-N2-S1-O2
3	F	801	NDT	N1-N2-S1-O2
3	F	804	NDT	N1-N2-S1-O2
3	F	806	NDT	N1-N2-S1-O2
2	E	803	ATP	PB-O3A-PA-O5'
3	C	804	NDT	C16-C15-S1-O2
2	A	801	ATP	PA-O3A-PB-O3B
3	C	804	NDT	C20-C15-S1-O2
2	C	801	ATP	PB-O3A-PA-O2A
2	F	803	ATP	PB-O3A-PA-O2A
3	D	802	NDT	N1-N2-S1-C15
3	E	801	NDT	N1-N2-S1-C15
3	F	806	NDT	N1-N2-S1-C15
2	A	801	ATP	C5'-O5'-PA-O1A
2	C	803	ATP	C5'-O5'-PA-O1A
2	F	805	ATP	C5'-O5'-PA-O1A
2	E	802	ATP	O4'-C4'-C5'-O5'
3	C	802	NDT	N1-N2-S1-O3
3	D	802	NDT	N1-N2-S1-O3
3	E	801	NDT	N1-N2-S1-O3
3	F	801	NDT	N1-N2-S1-O3
3	F	804	NDT	N1-N2-S1-O3
3	F	806	NDT	N1-N2-S1-O3
2	C	801	ATP	O4'-C1'-N9-C8
2	E	802	ATP	O4'-C1'-N9-C8

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Mol	Chain	Res	Type	Atoms
2	E	803	ATP	O4'-C1'-N9-C8
2	D	803	ATP	PB-O3A-PA-O2A
2	C	803	ATP	PB-O3A-PA-O5'
2	E	802	ATP	C3'-C4'-C5'-O5'
2	A	803	ATP	PB-O3B-PG-O3G
2	A	801	ATP	PA-O3A-PB-O2B
2	C	801	ATP	PB-O3A-PA-O1A
3	C	802	NDT	N1-N2-S1-C15
3	F	801	NDT	N1-N2-S1-C15
3	F	804	NDT	N1-N2-S1-C15
2	A	803	ATP	C2'-C1'-N9-C4
2	B	803	ATP	C2'-C1'-N9-C4
2	D	803	ATP	C3'-C4'-C5'-O5'
2	B	801	ATP	O4'-C1'-N9-C4
2	C	801	ATP	O4'-C1'-N9-C4
2	E	802	ATP	O4'-C1'-N9-C4
2	E	803	ATP	O4'-C1'-N9-C4
2	F	803	ATP	O4'-C1'-N9-C4
2	E	803	ATP	PB-O3A-PA-O1A
2	F	803	ATP	PB-O3A-PA-O1A

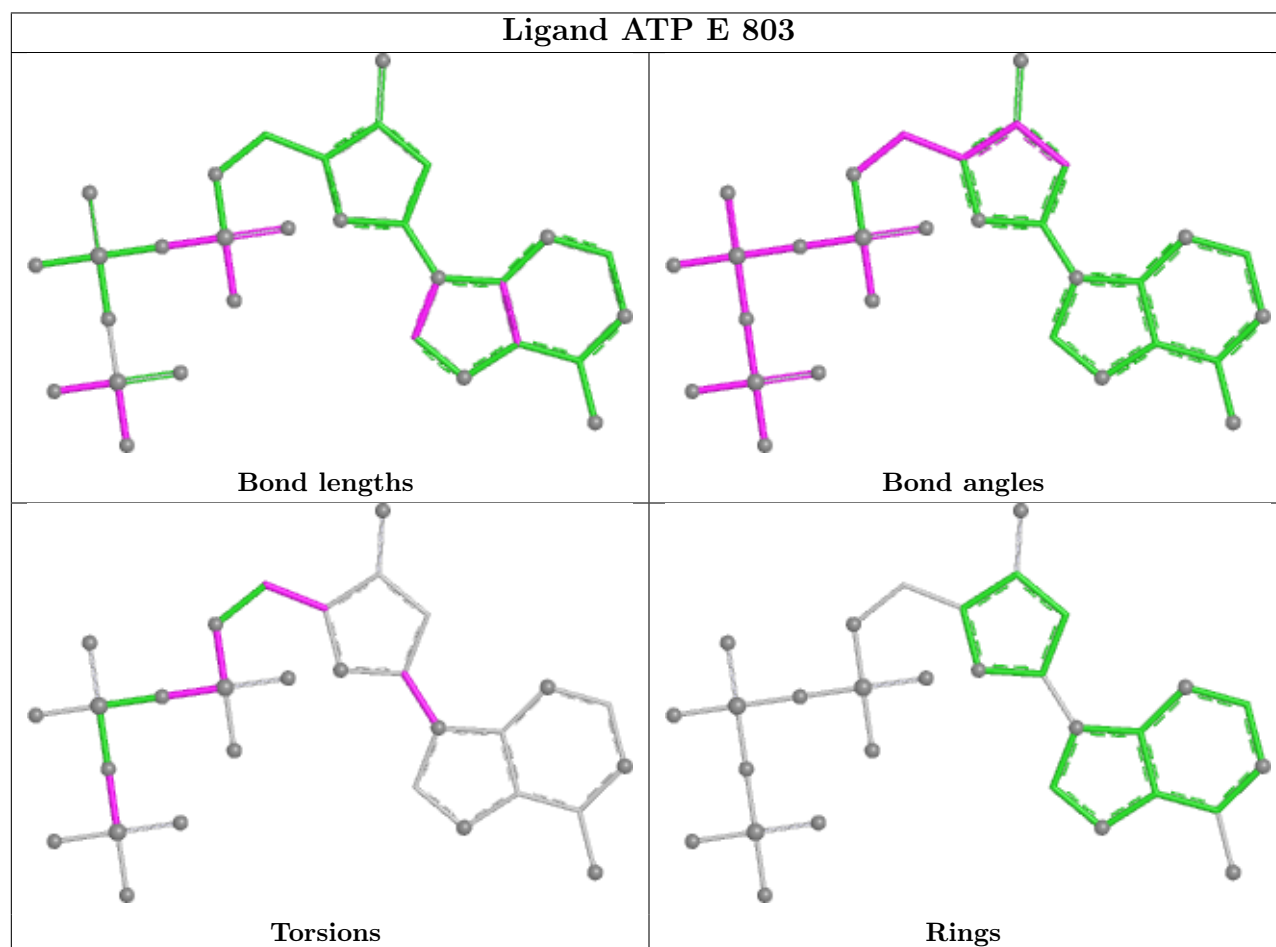
There are no ring outliers.

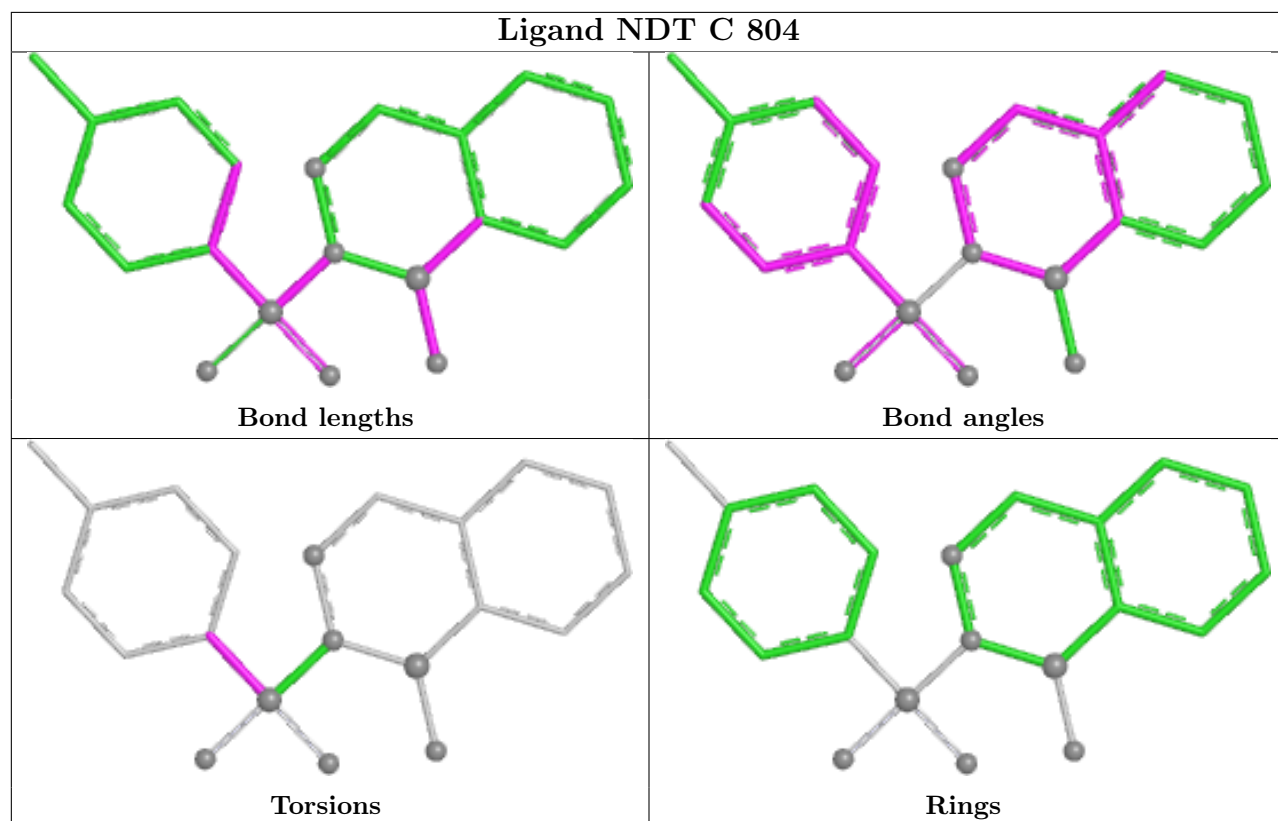
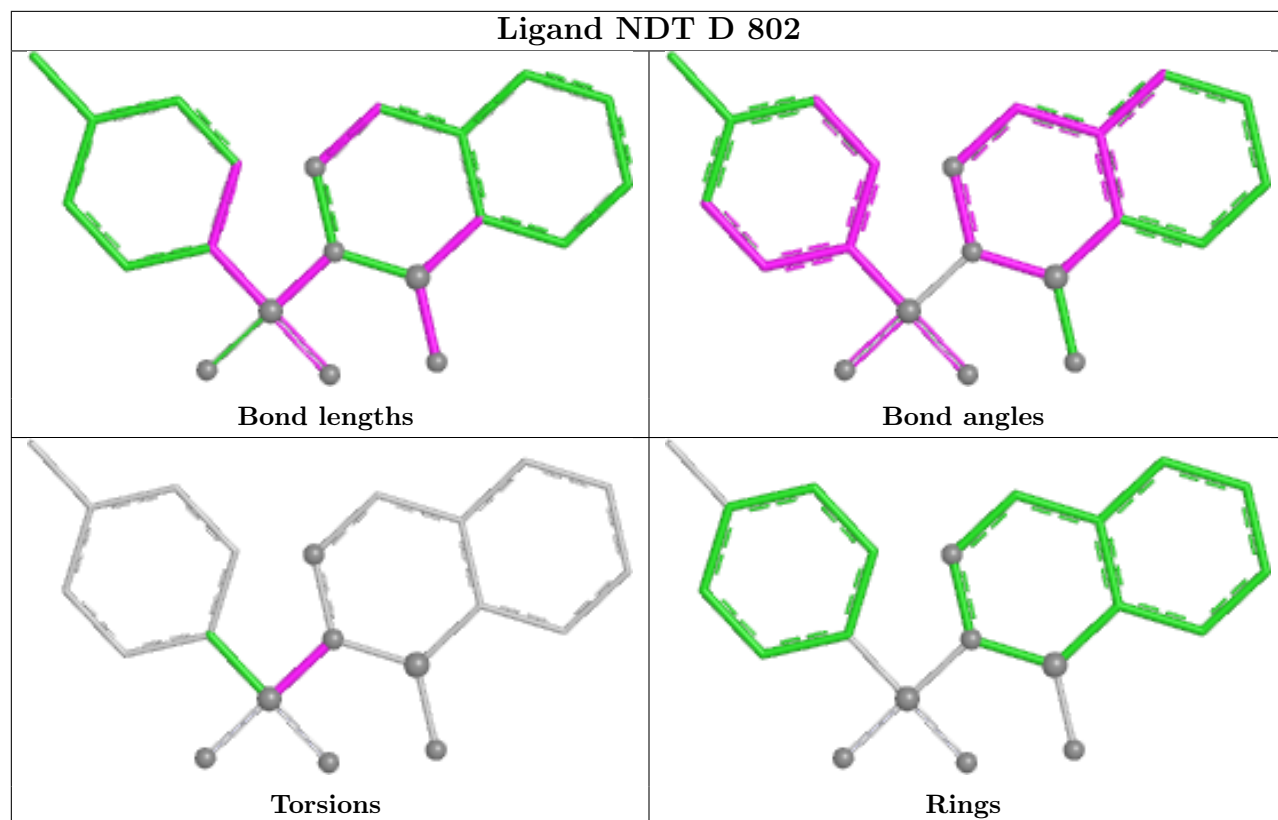
10 monomers are involved in 16 short contacts:

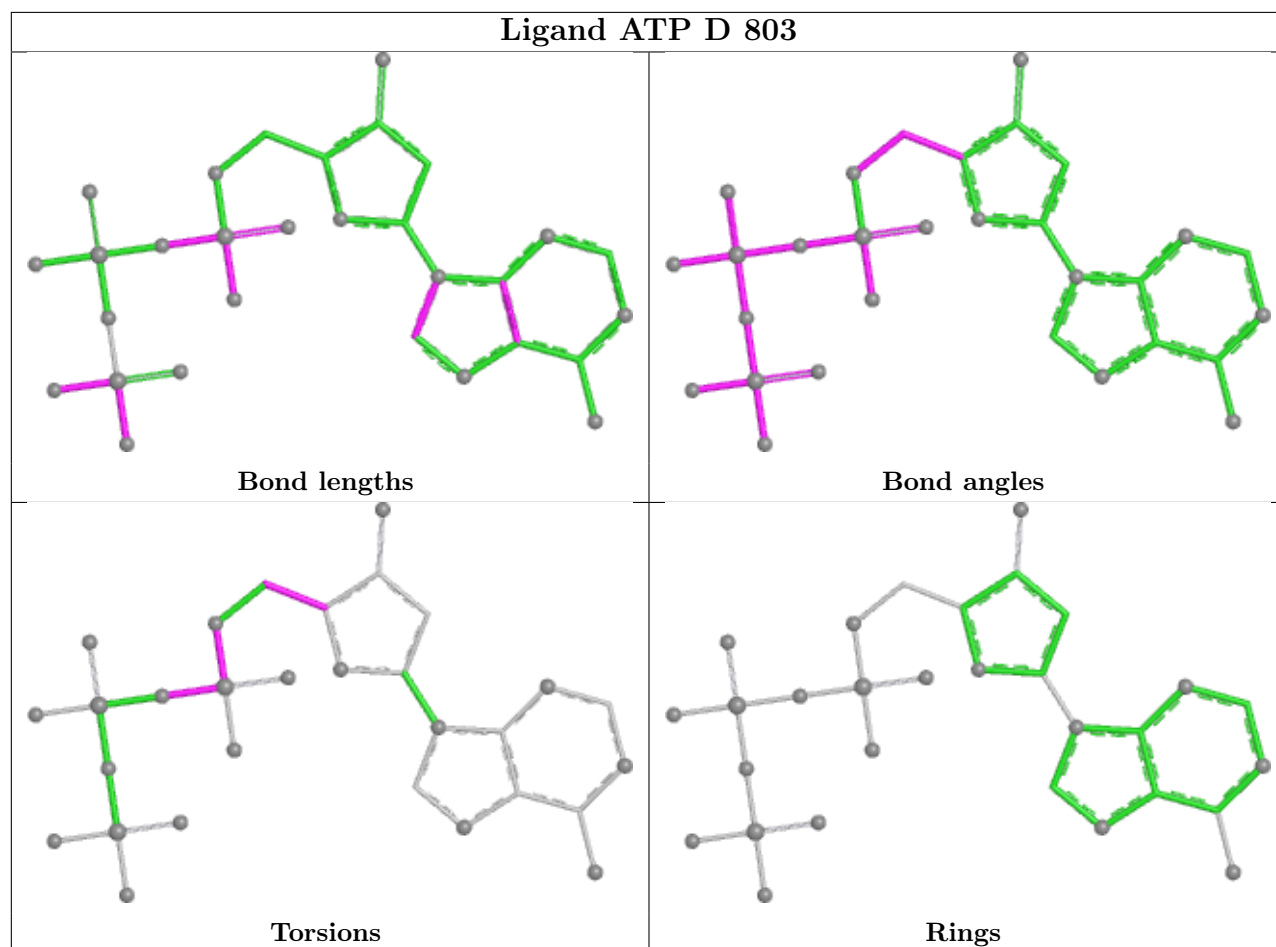
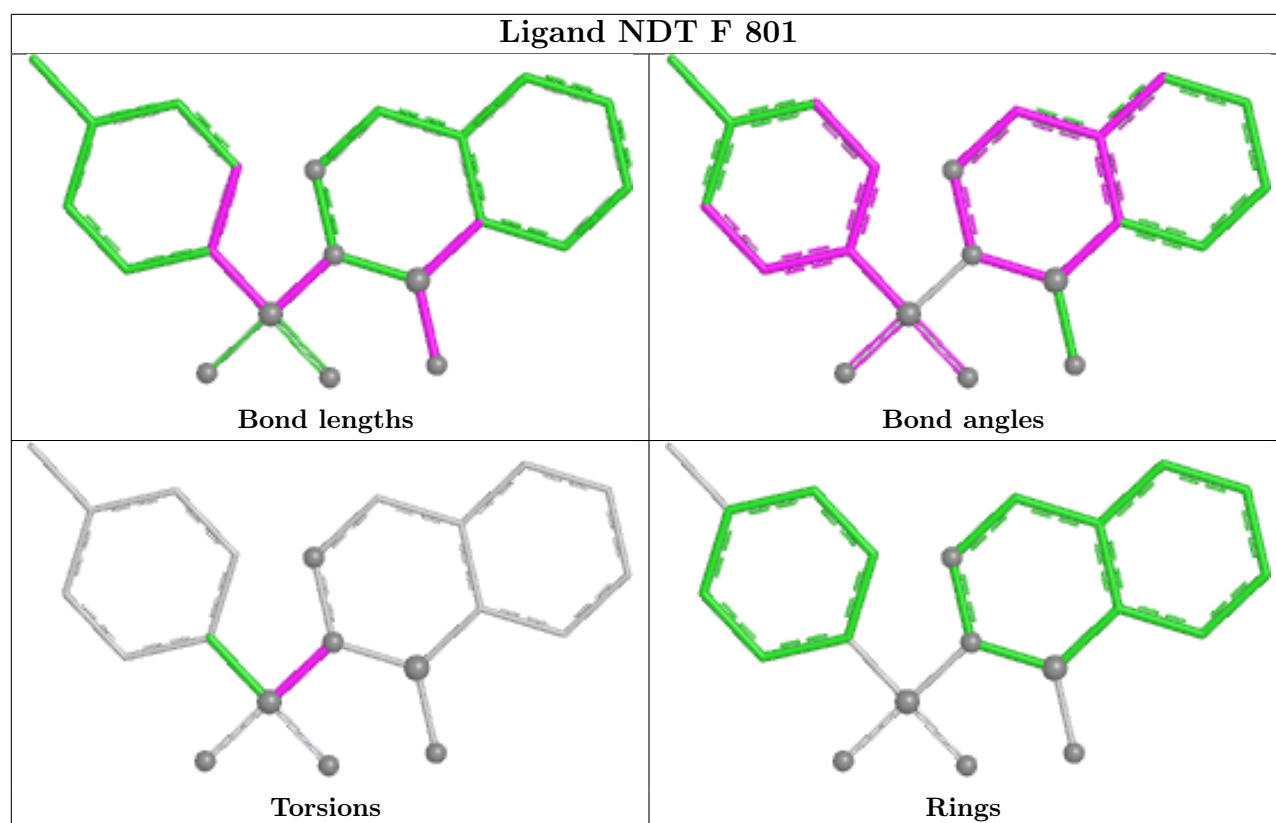
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	D	802	NDT	1	0
3	F	801	NDT	1	0
3	C	802	NDT	1	0
2	C	801	ATP	5	0
2	E	802	ATP	3	0
2	F	803	ATP	1	0
2	A	803	ATP	1	0
3	F	806	NDT	1	0
3	E	801	NDT	1	0
2	D	801	ATP	1	0

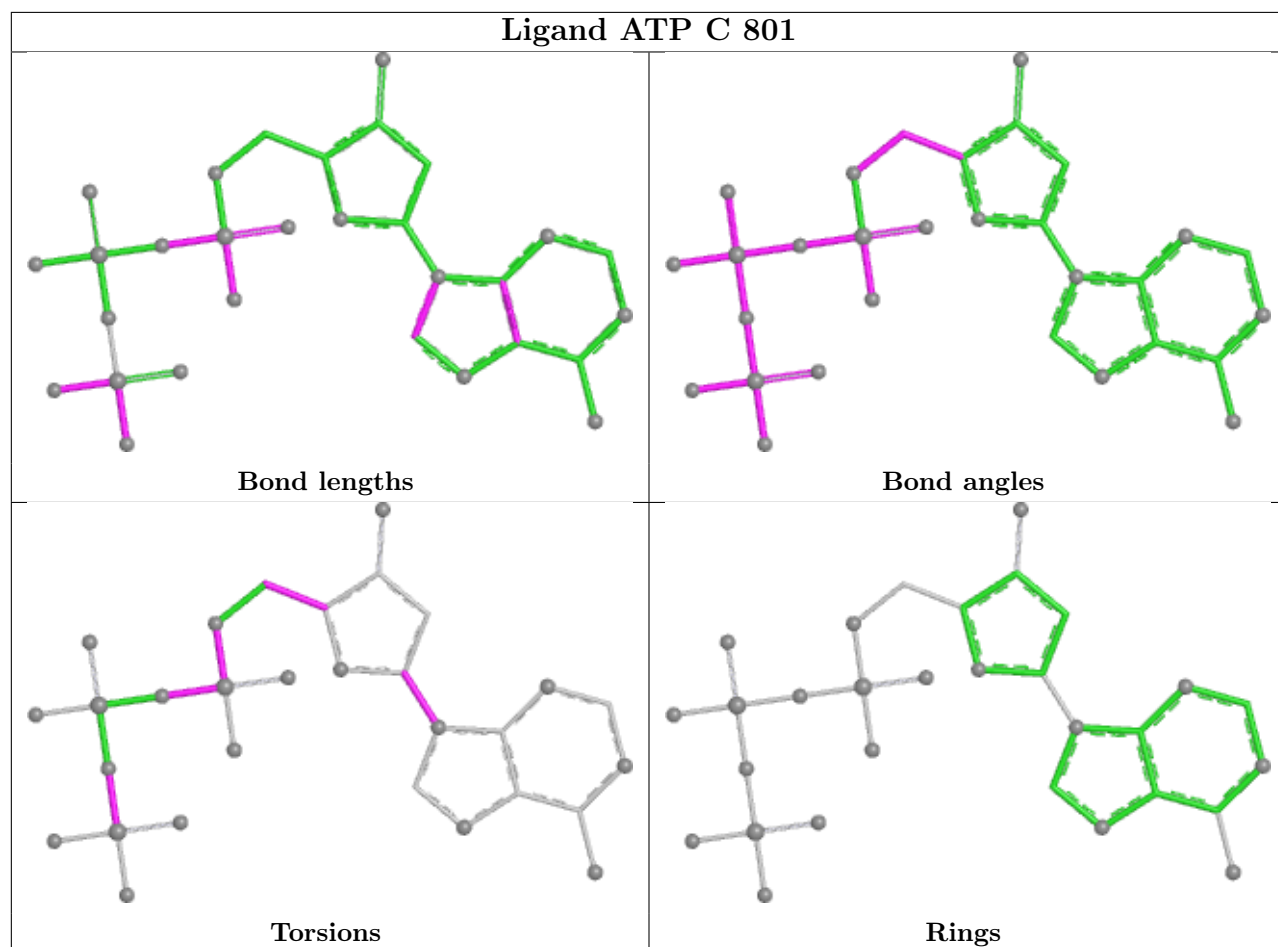
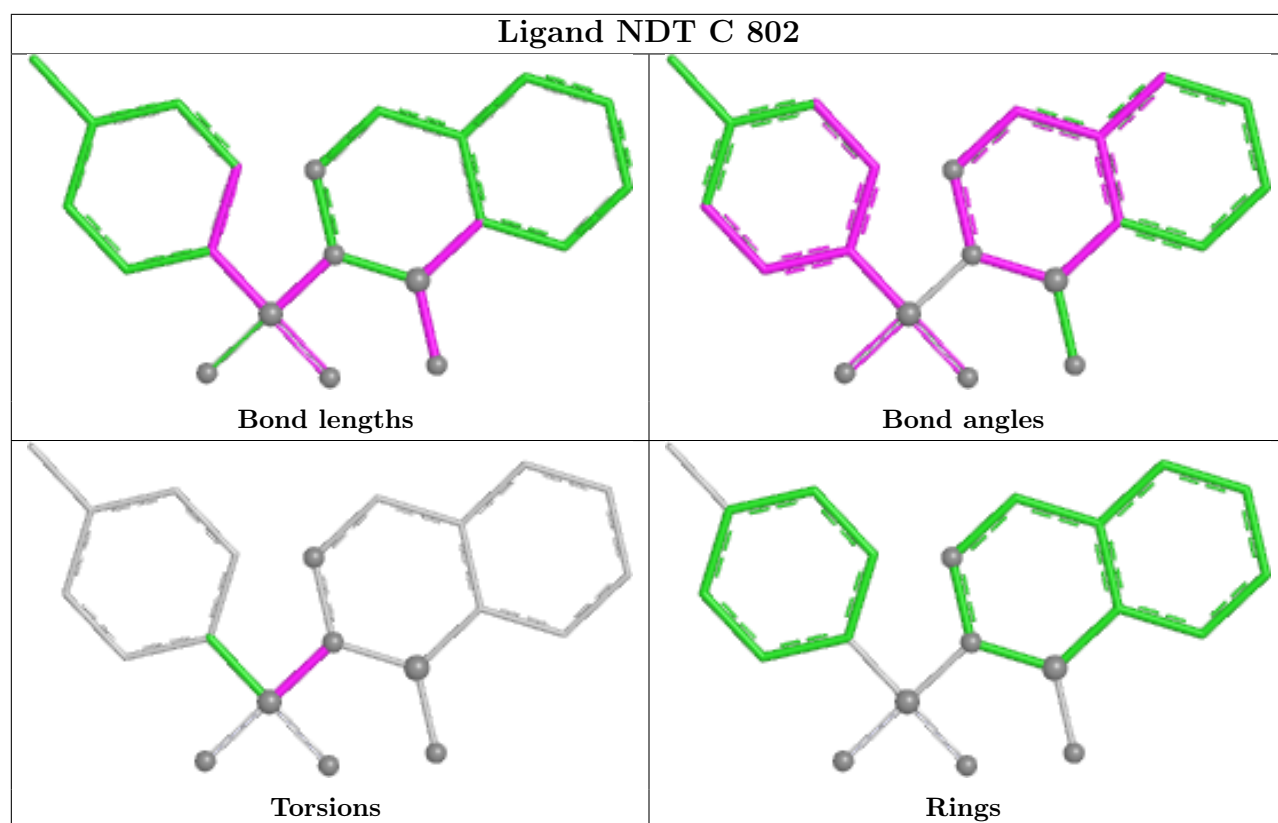
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be

highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

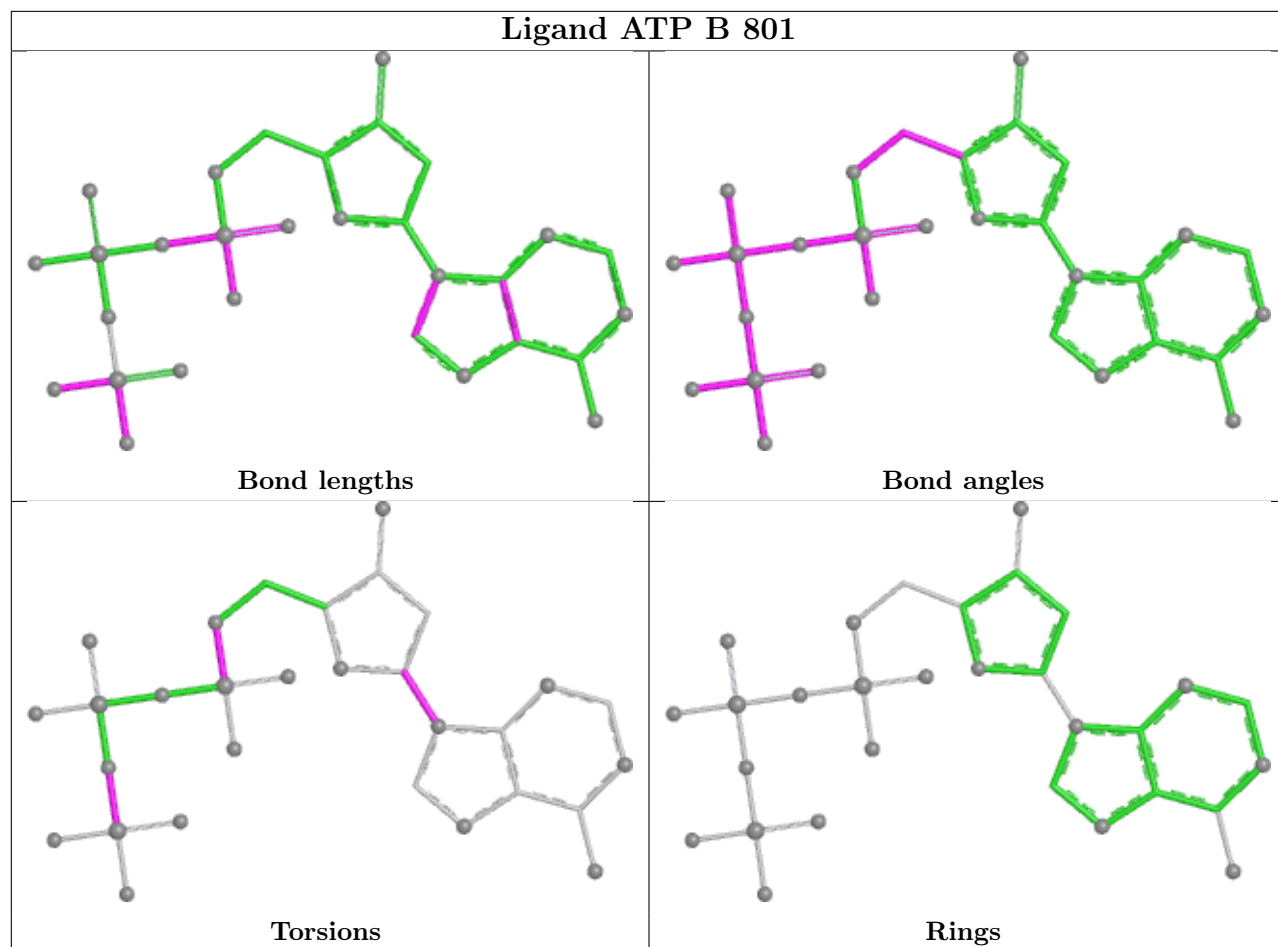




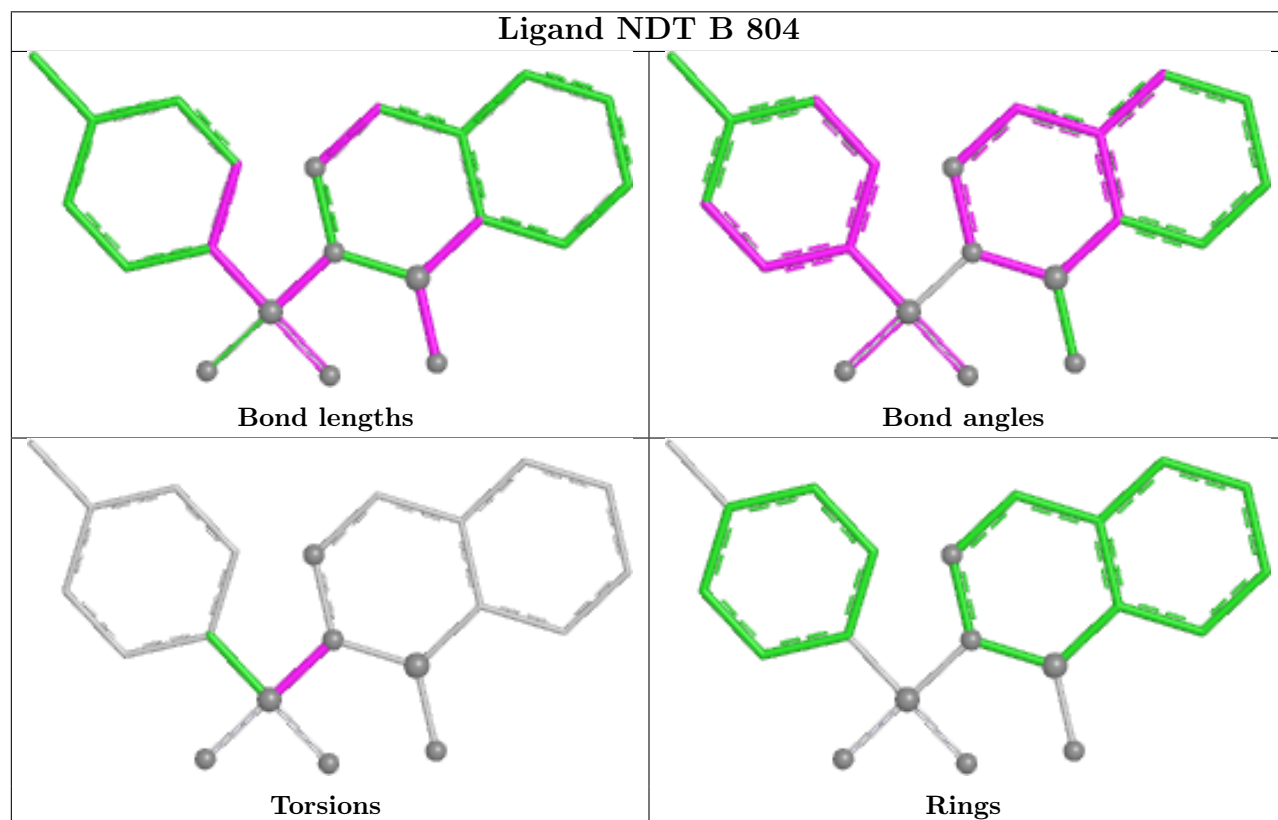




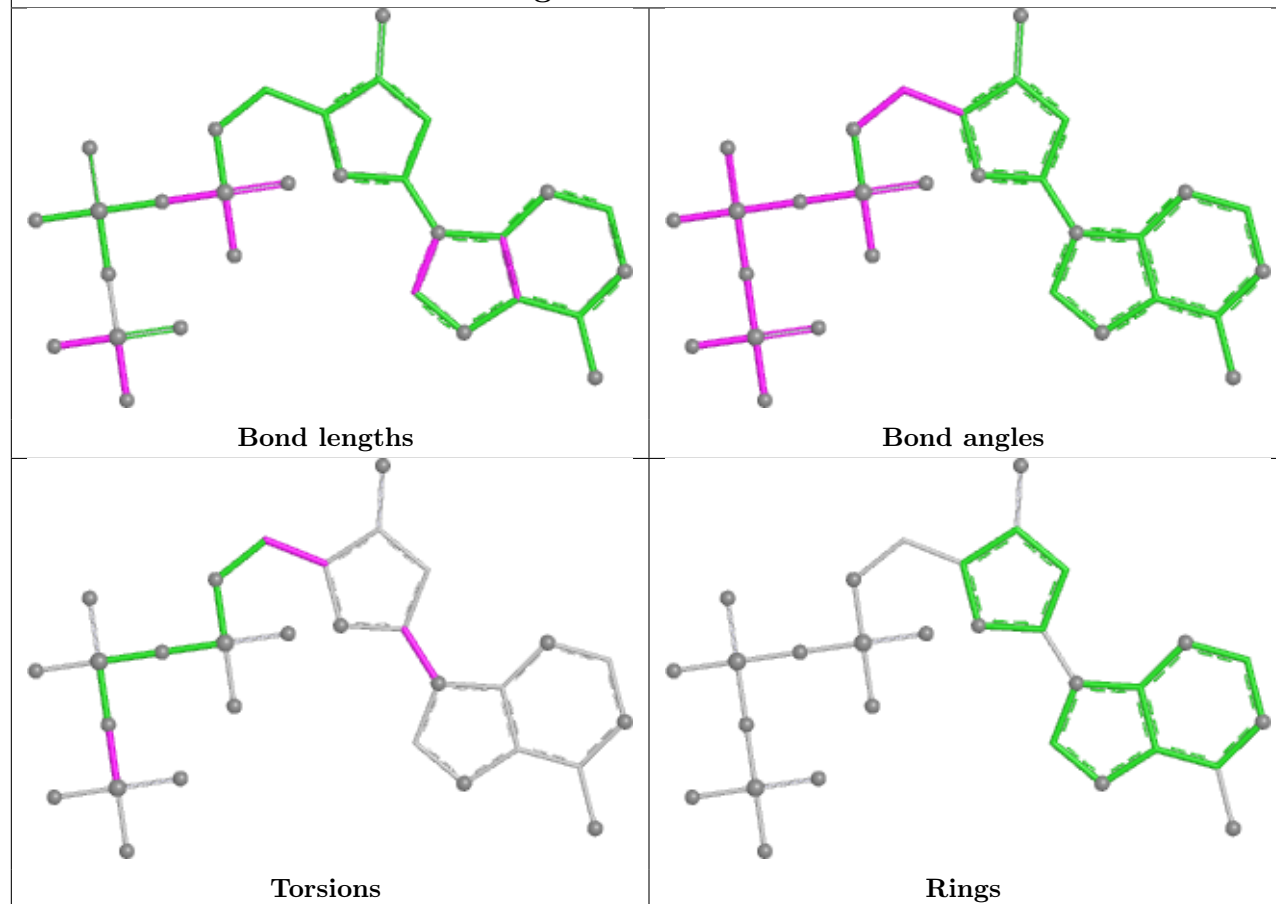
Ligand ATP B 801



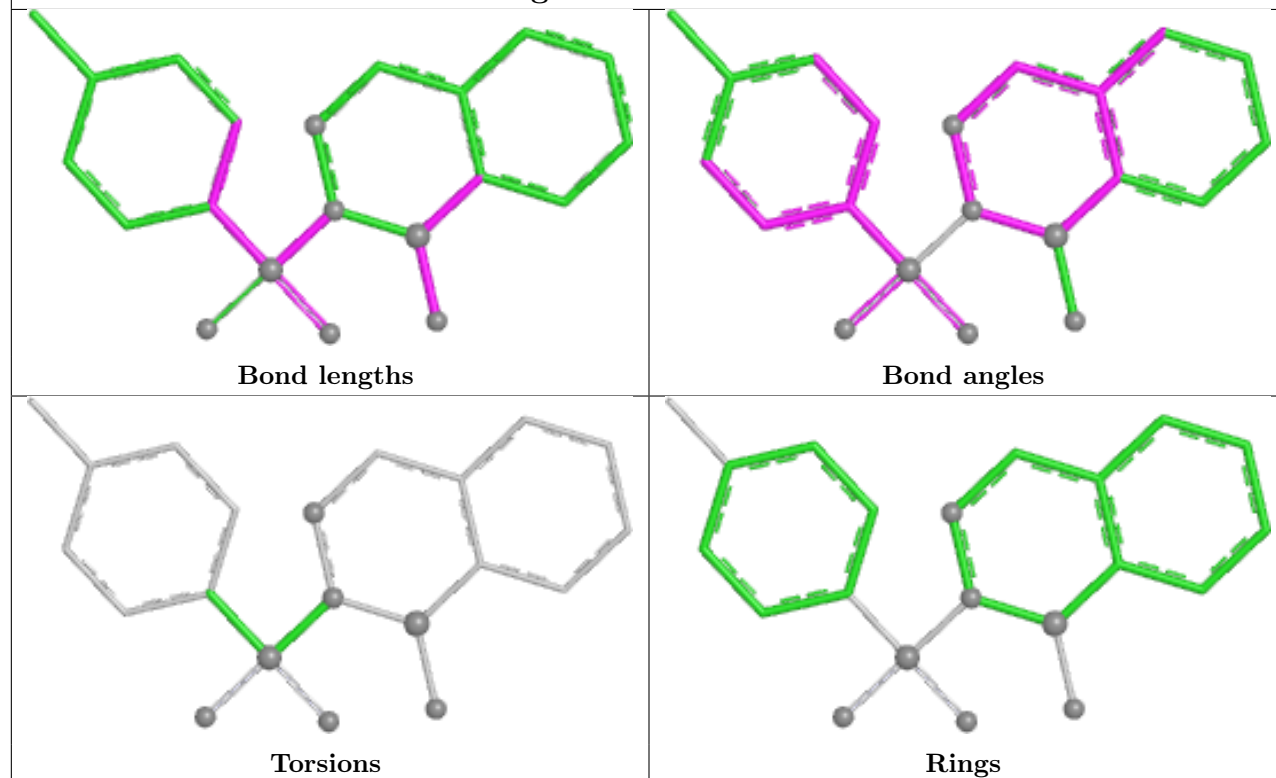
Ligand NDT B 804

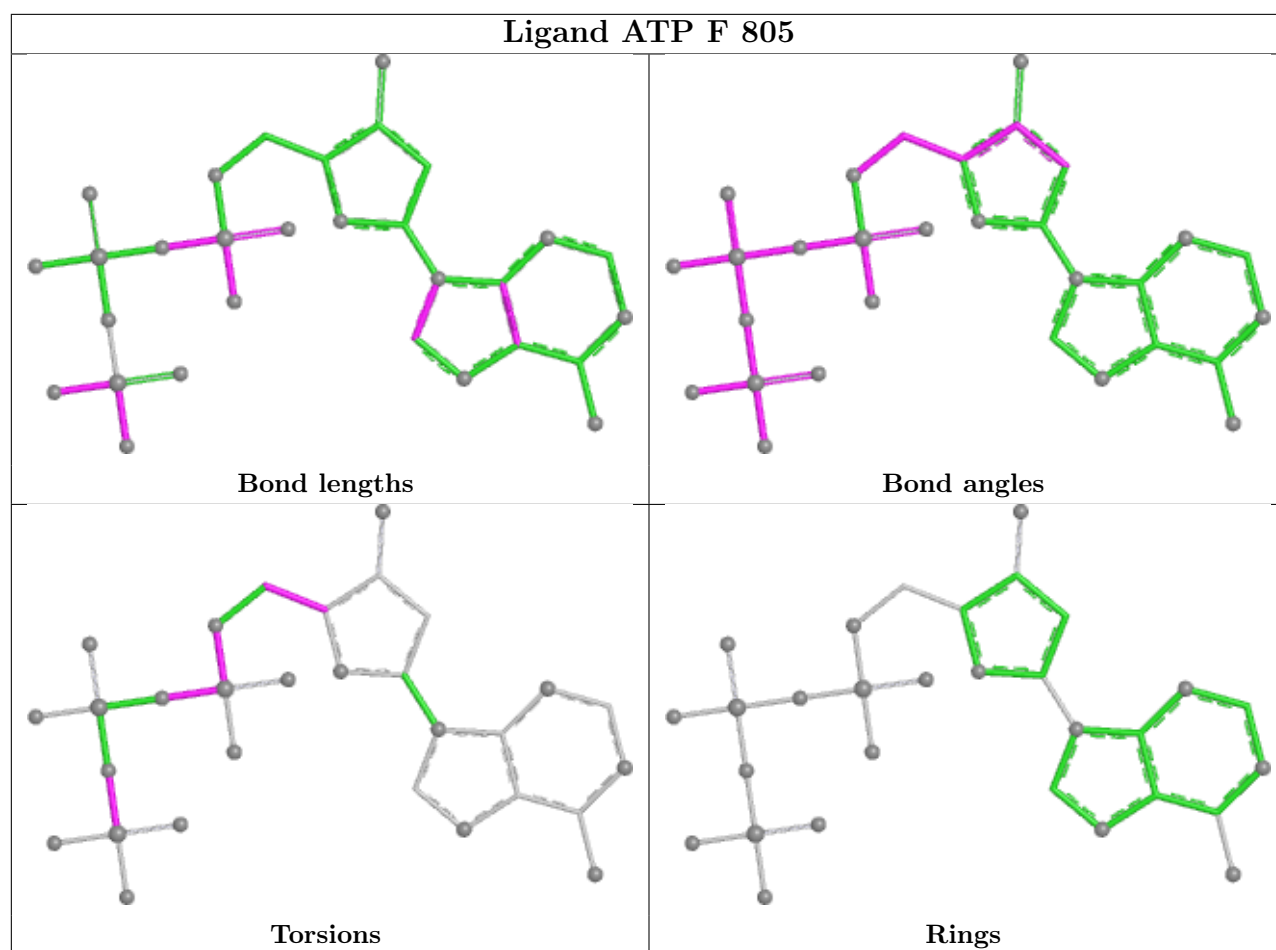


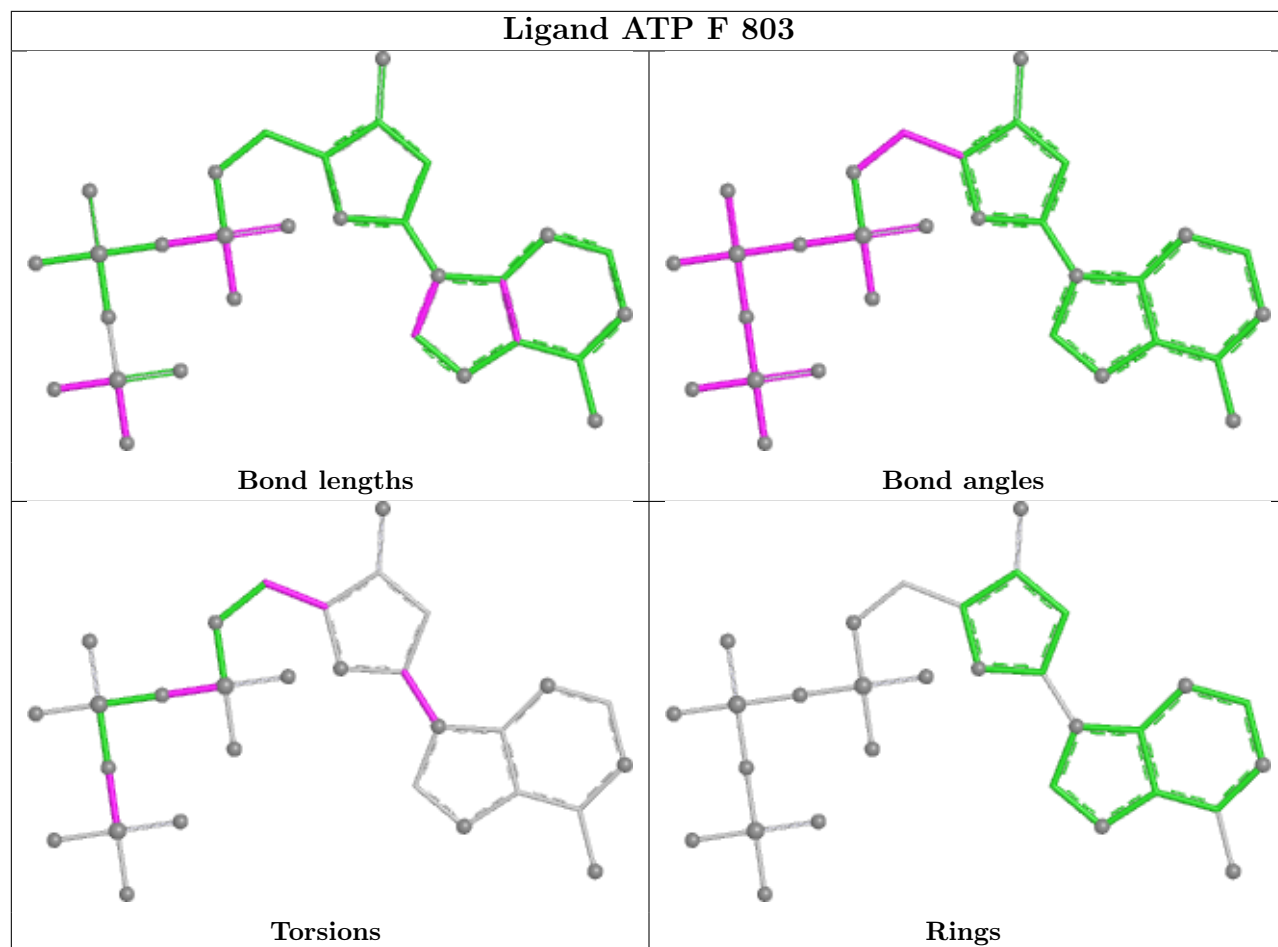
Ligand ATP E 802

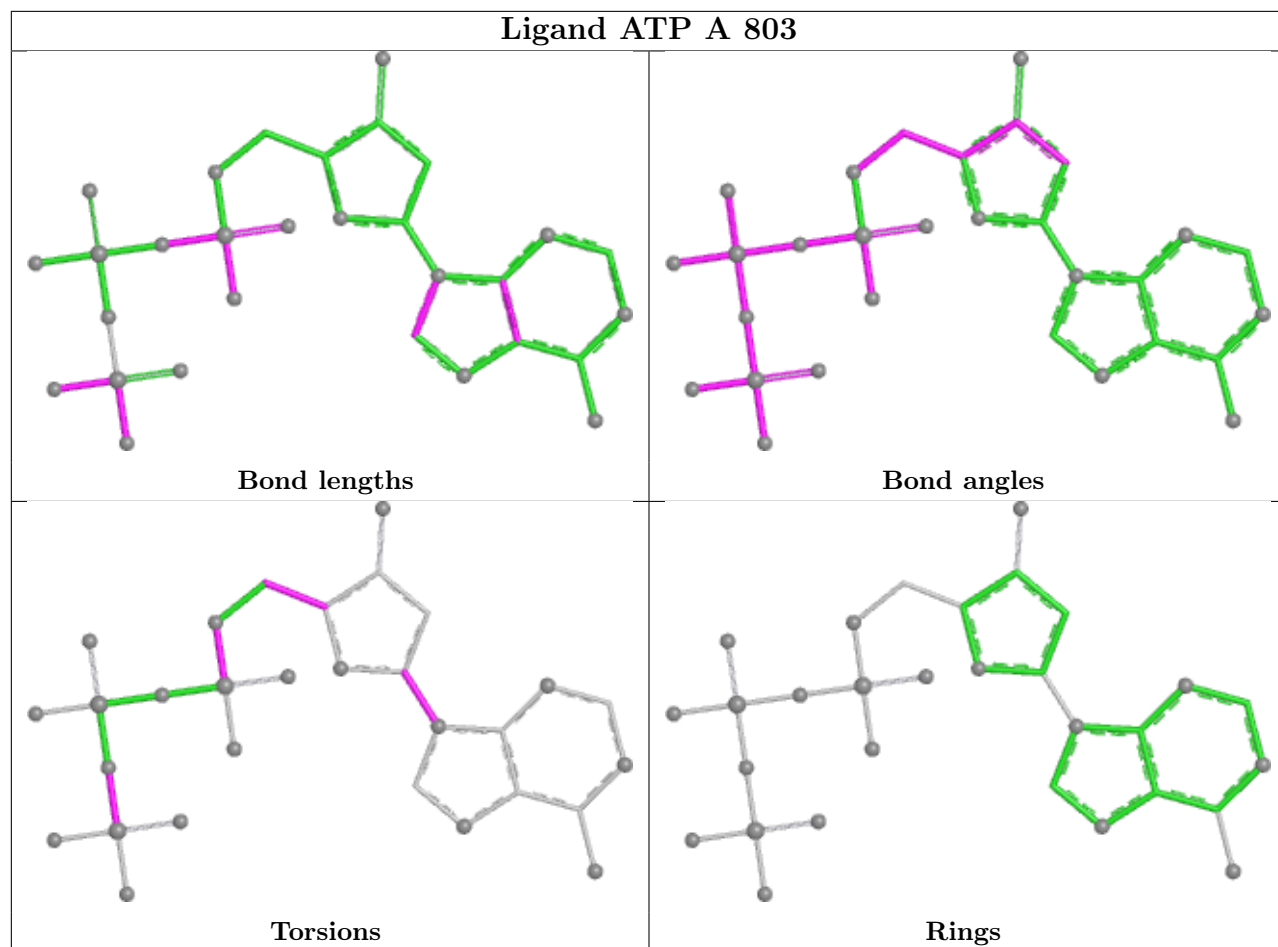


Ligand NDT F 802

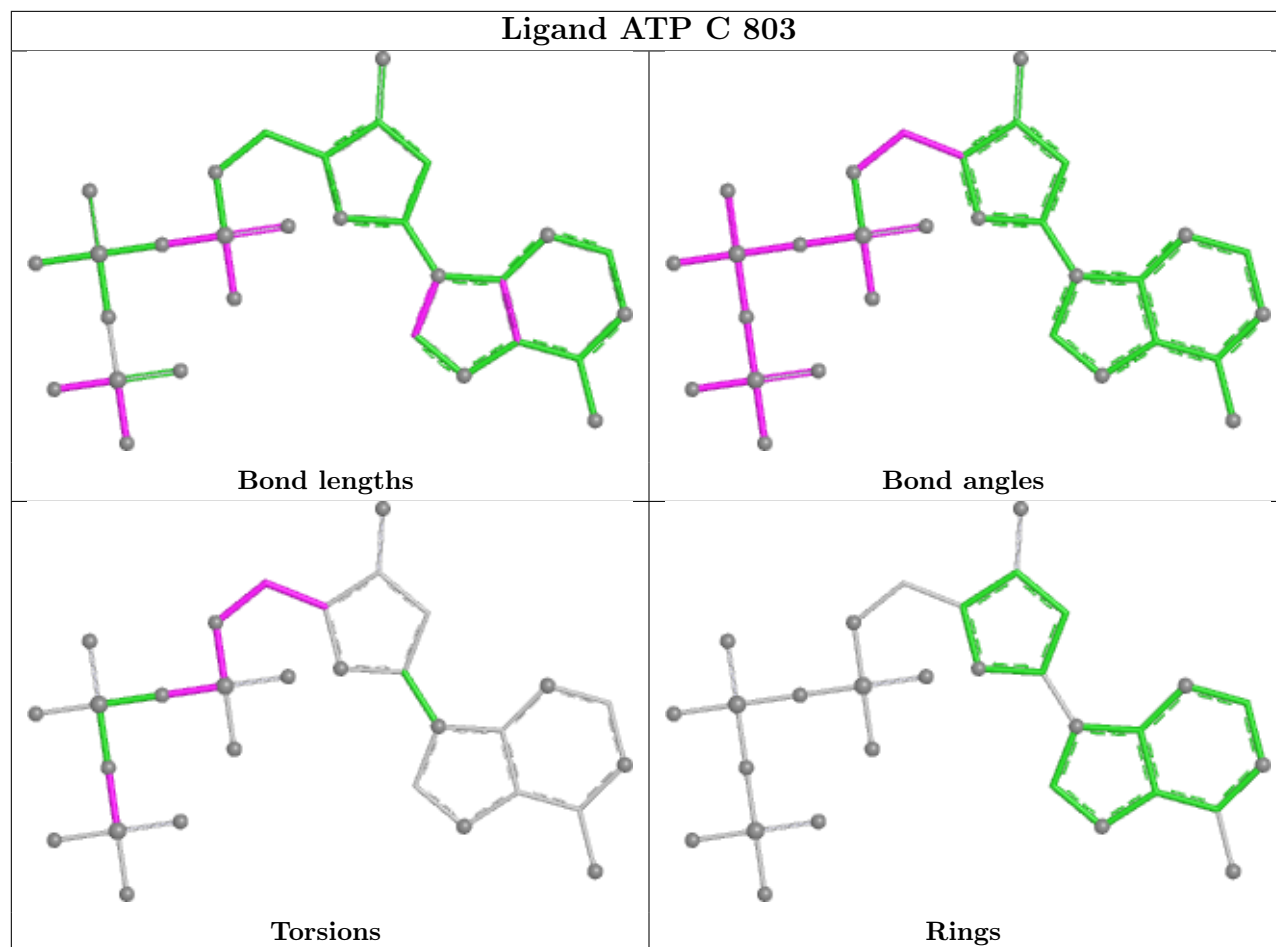




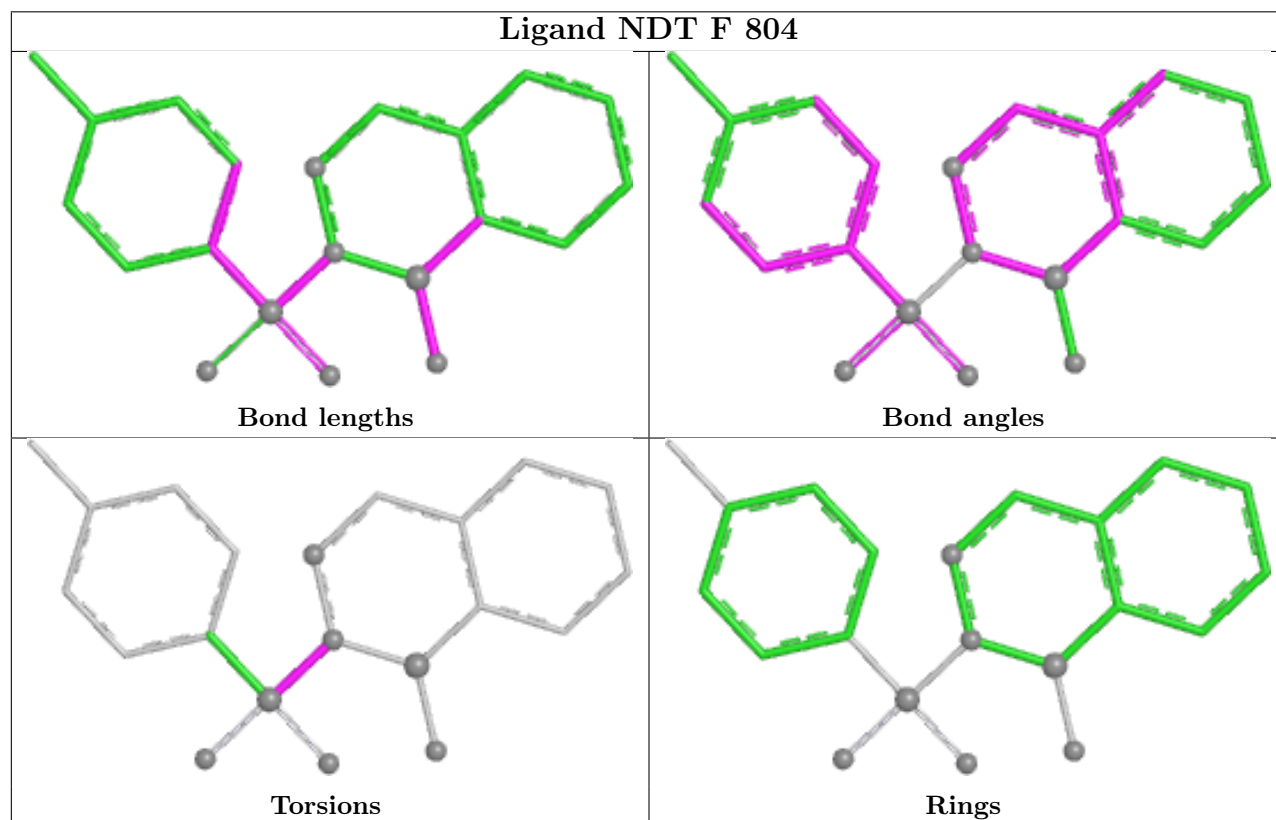


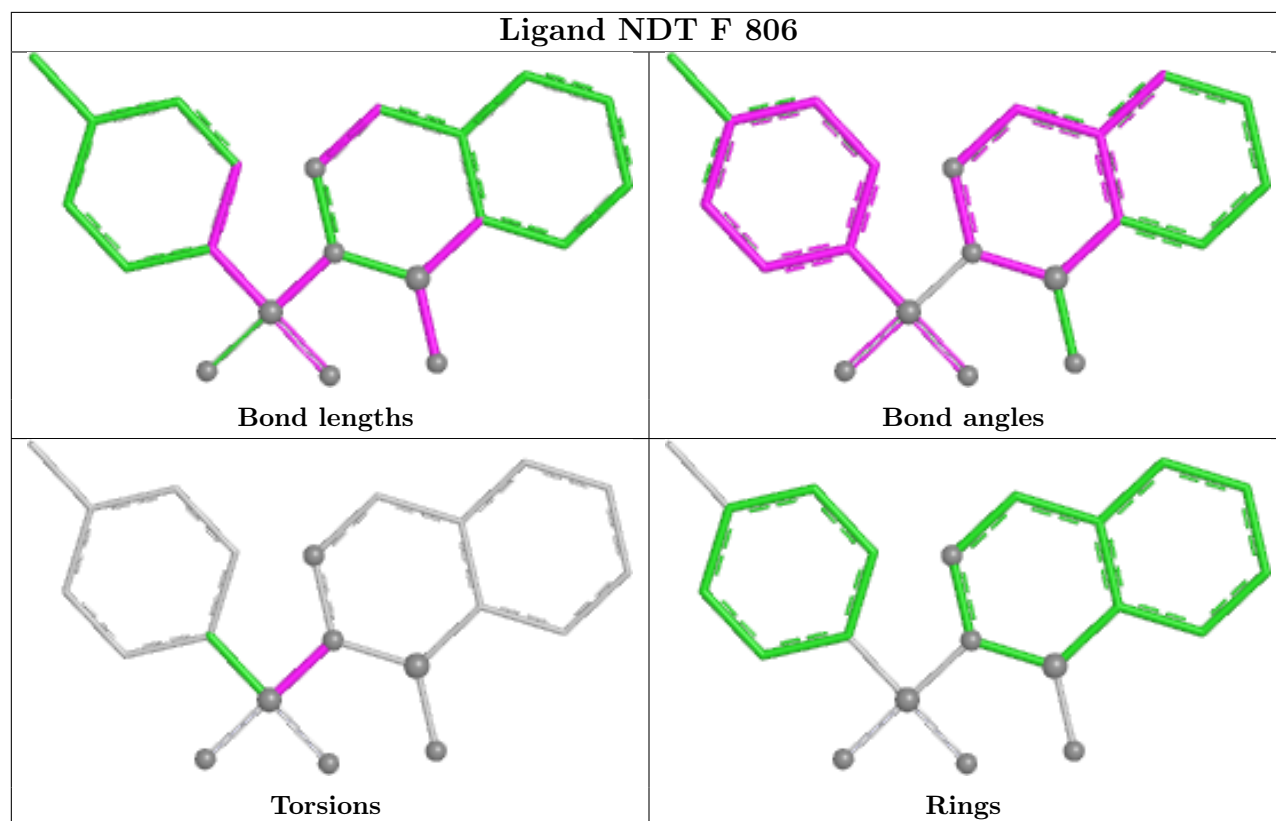
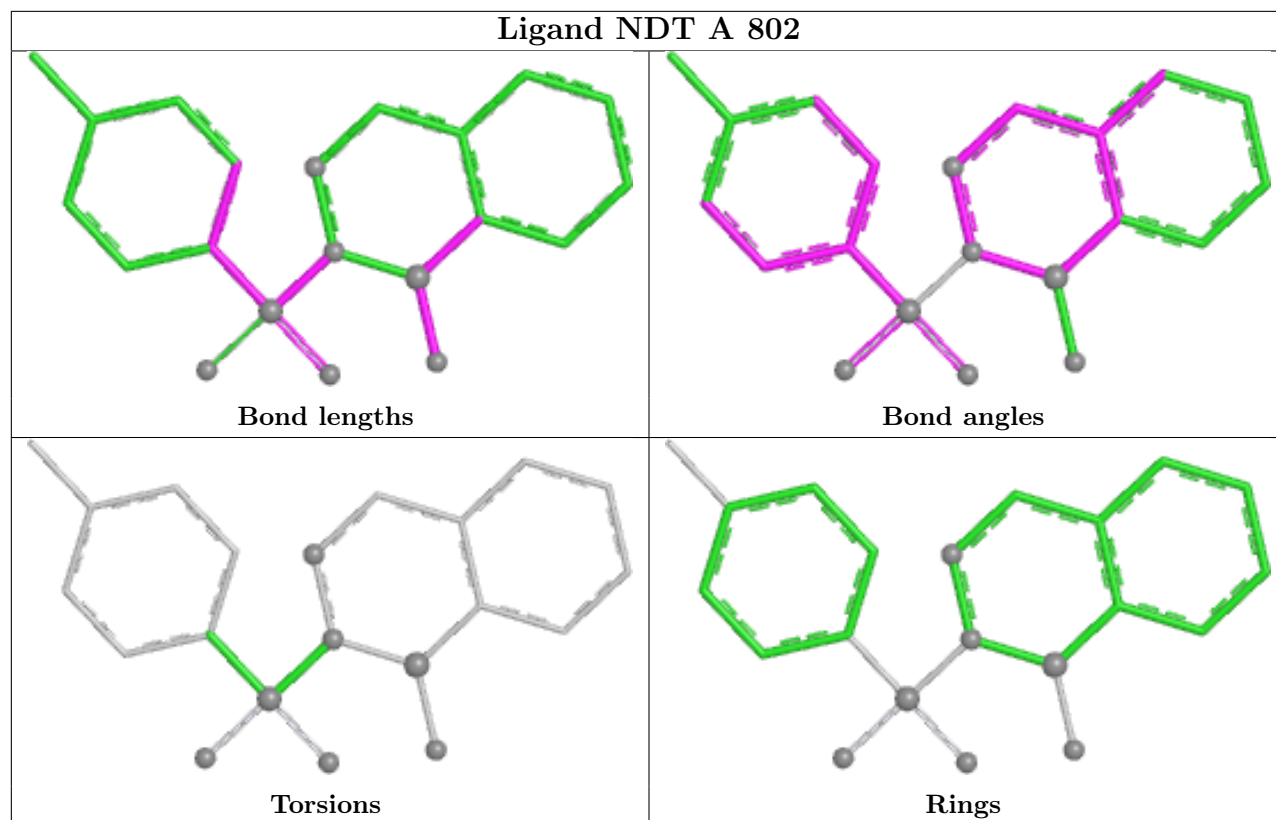


Ligand ATP C 803

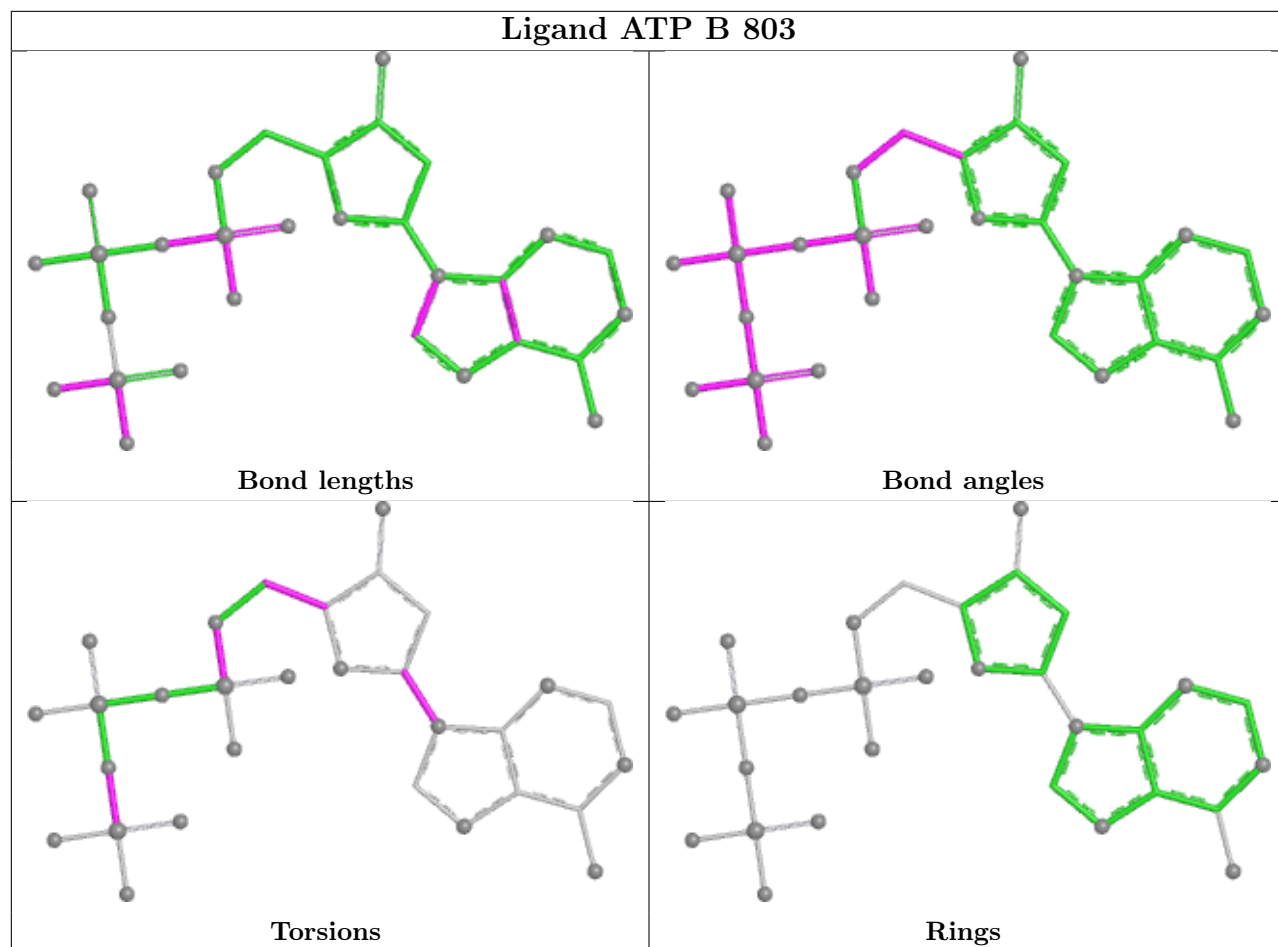


Ligand NDT F 804

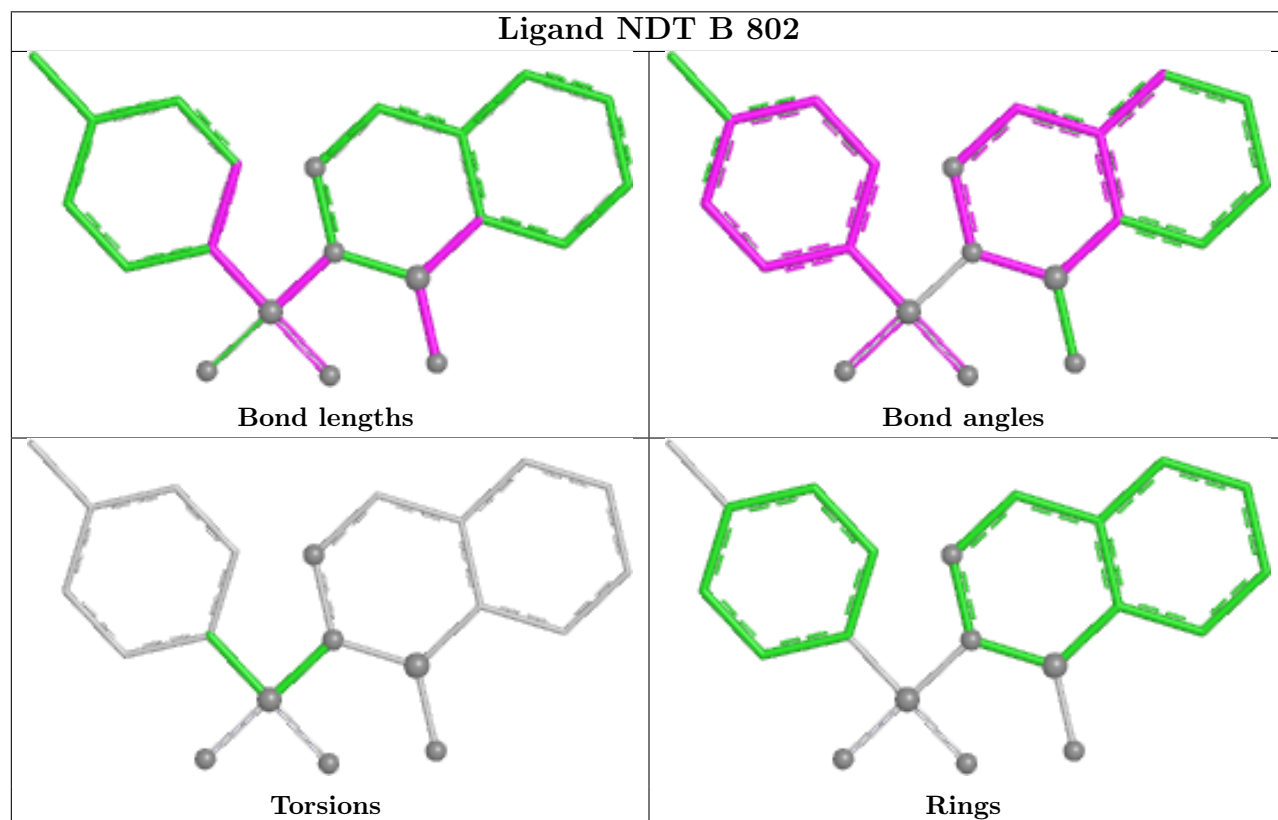


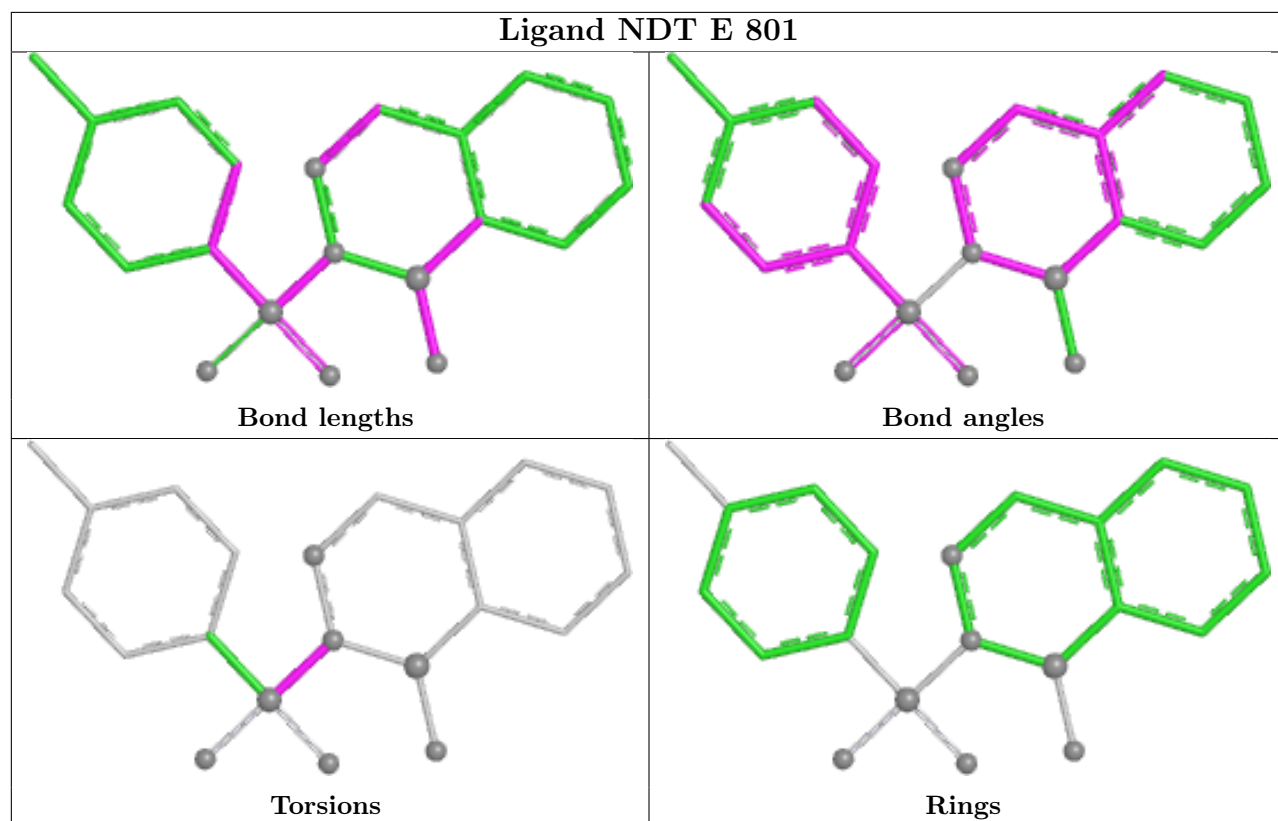
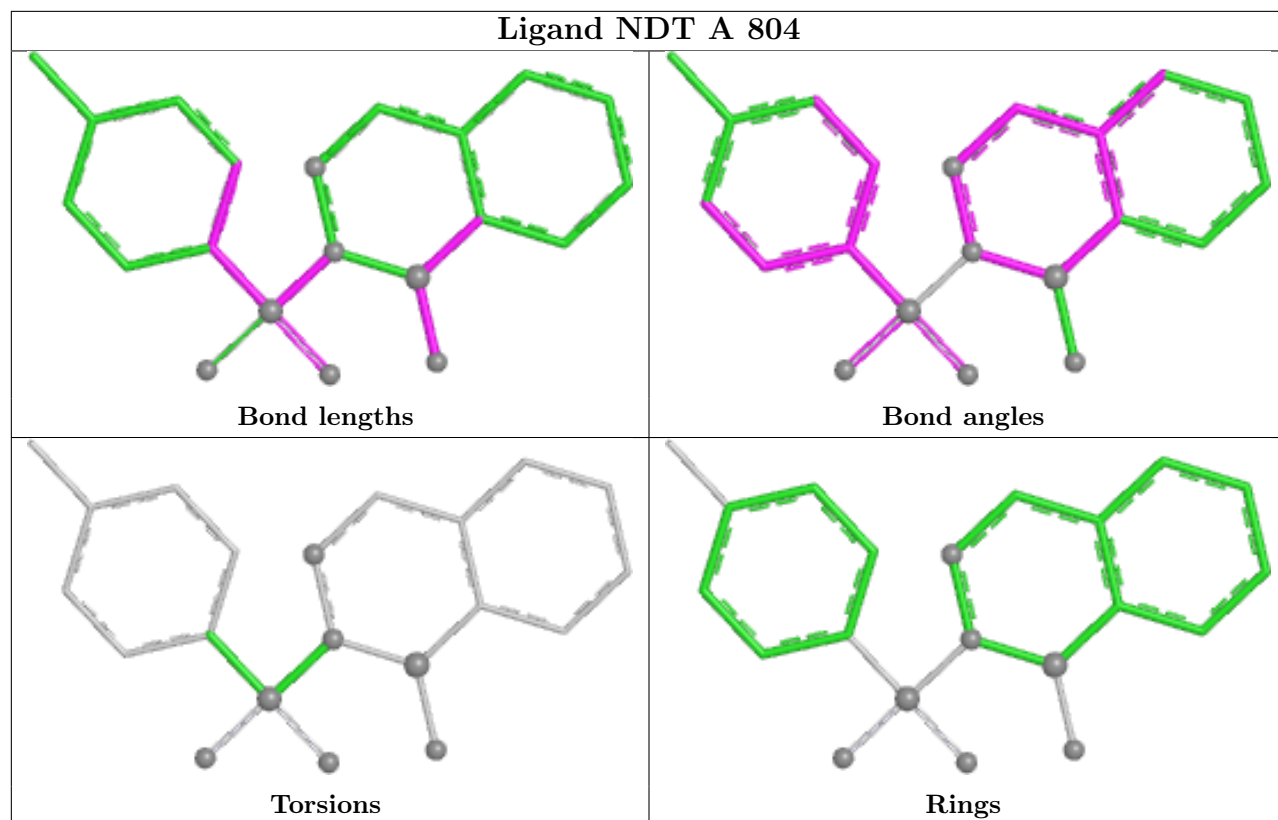


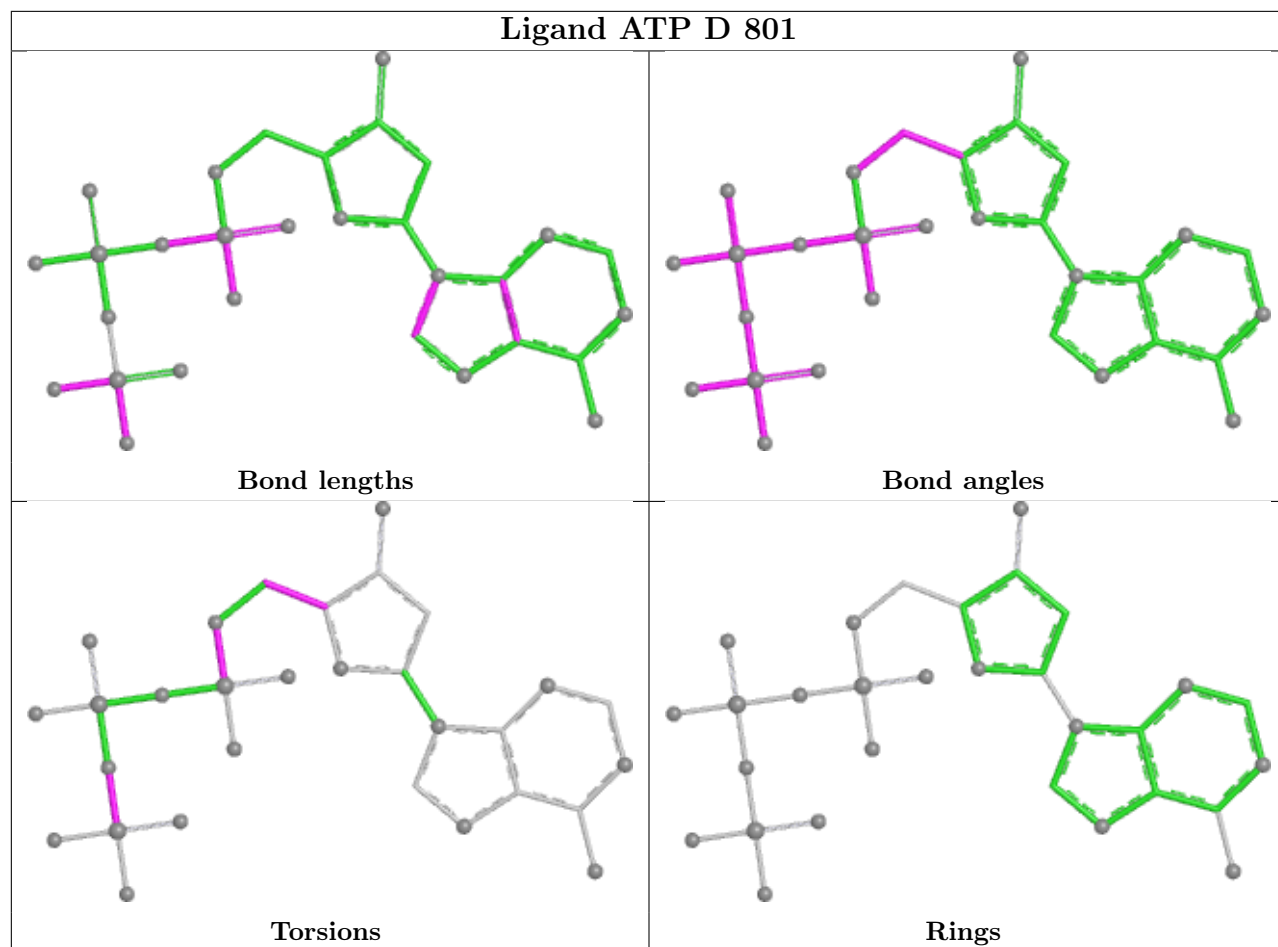
Ligand ATP B 803

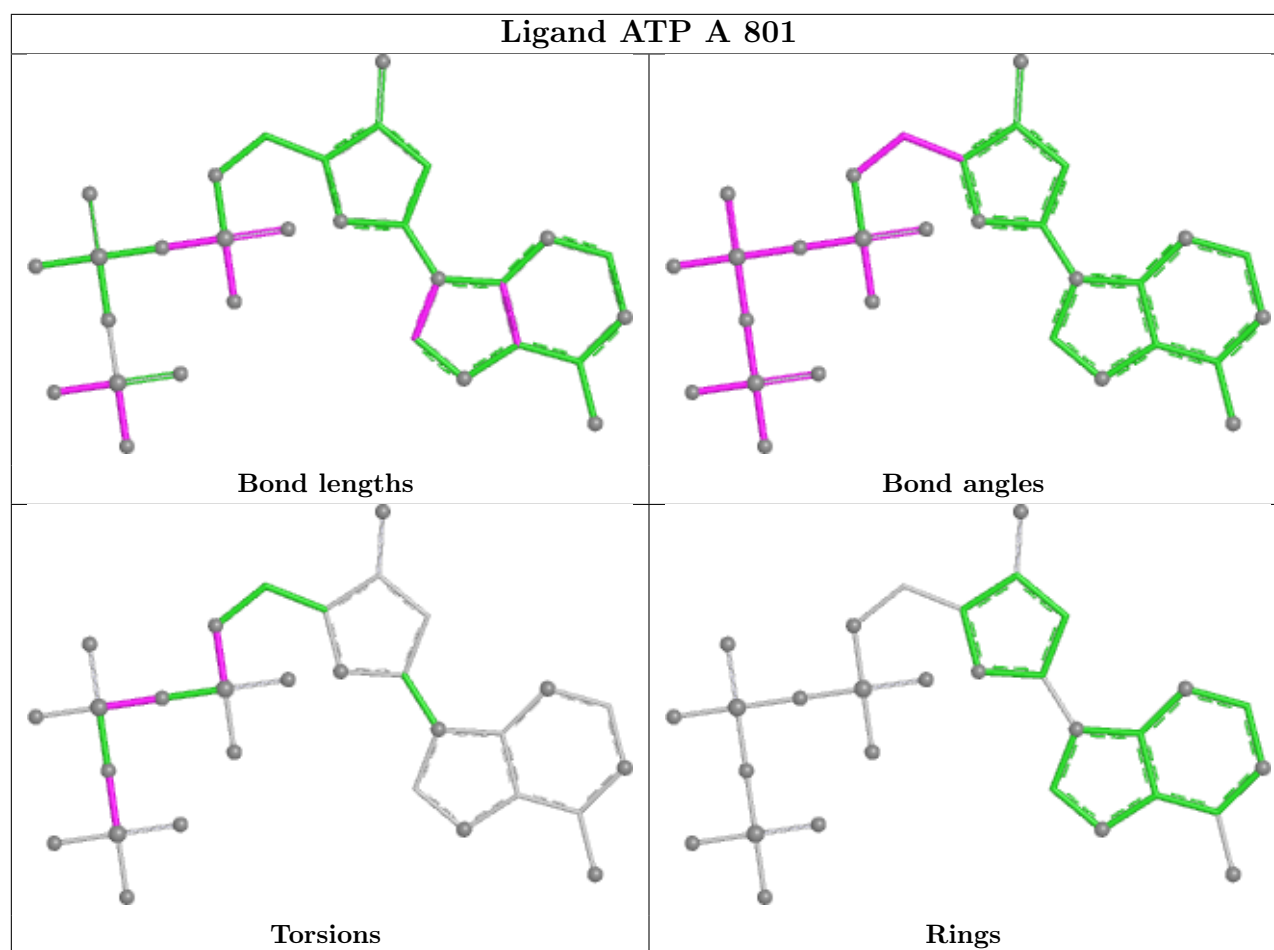


Ligand NDT B 802









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.

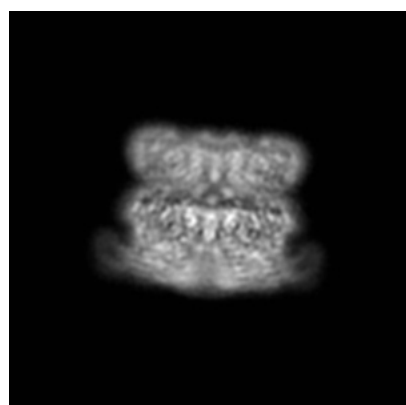
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-32403. These allow visual inspection of the internal detail of the map and identification of artifacts.

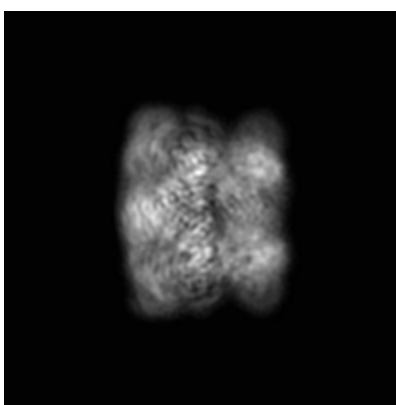
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

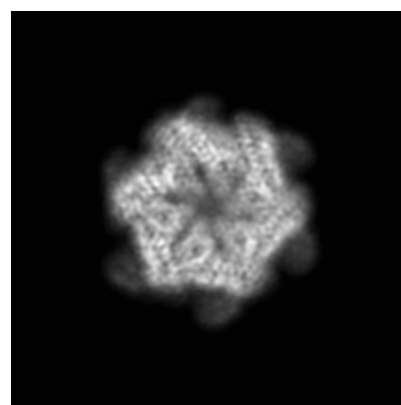
6.1.1 Primary map



X



Y

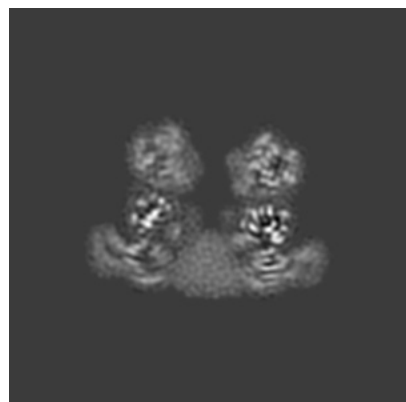


Z

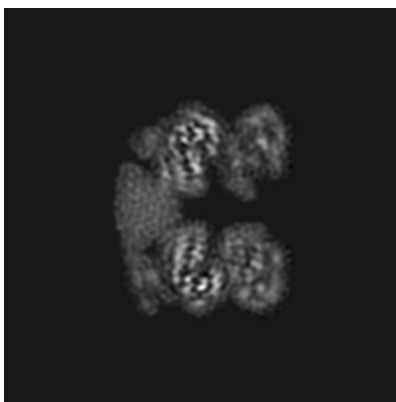
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

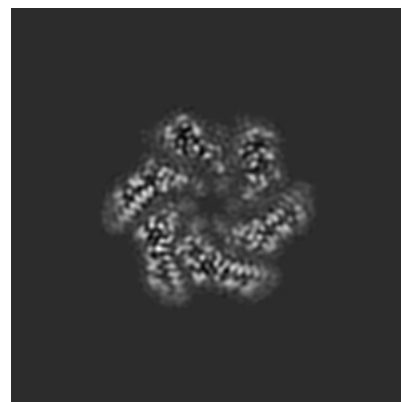
6.2.1 Primary map



X Index: 120



Y Index: 120

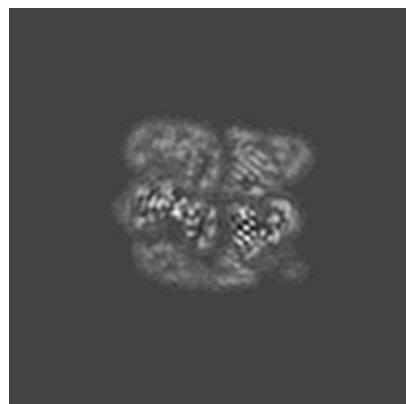


Z Index: 120

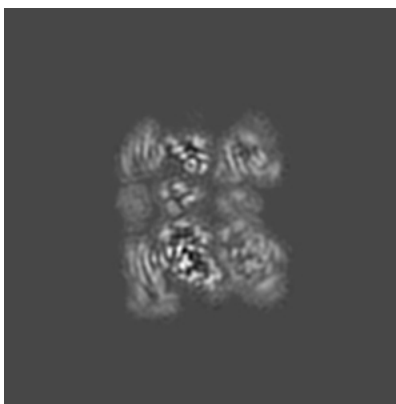
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

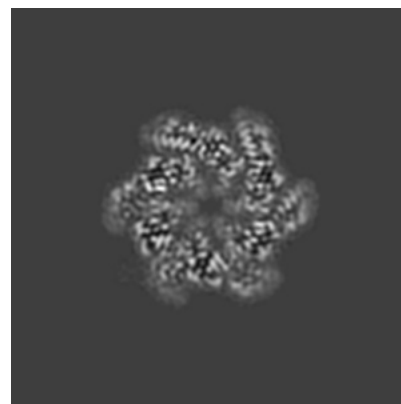
6.3.1 Primary map



X Index: 94



Y Index: 138

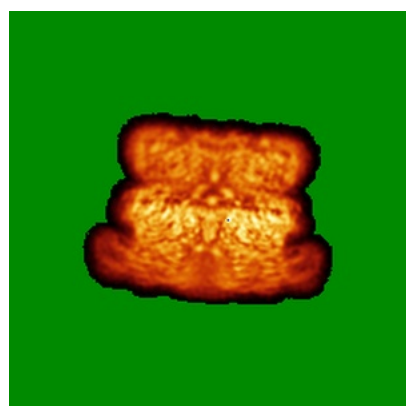


Z Index: 115

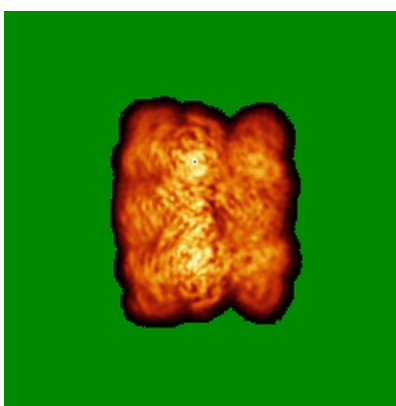
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



X



Y

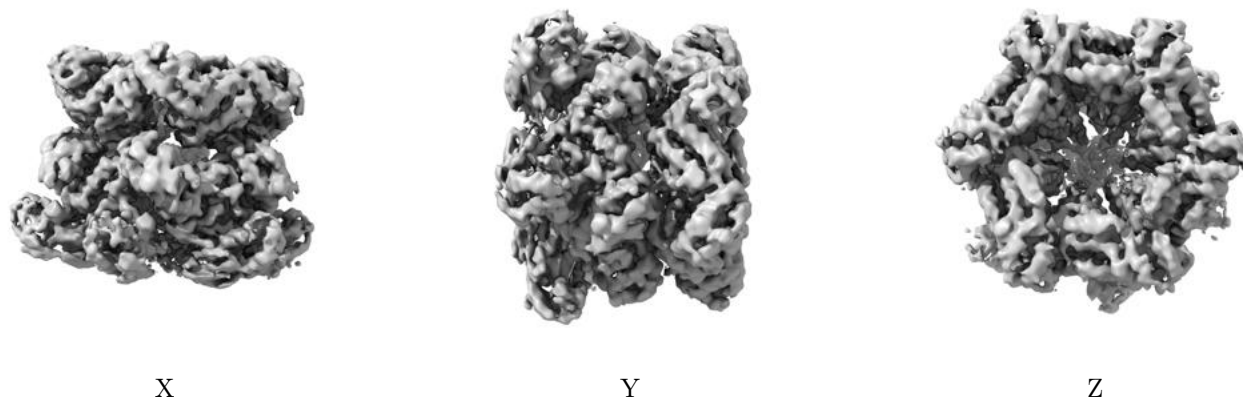


Z

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 0.013. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

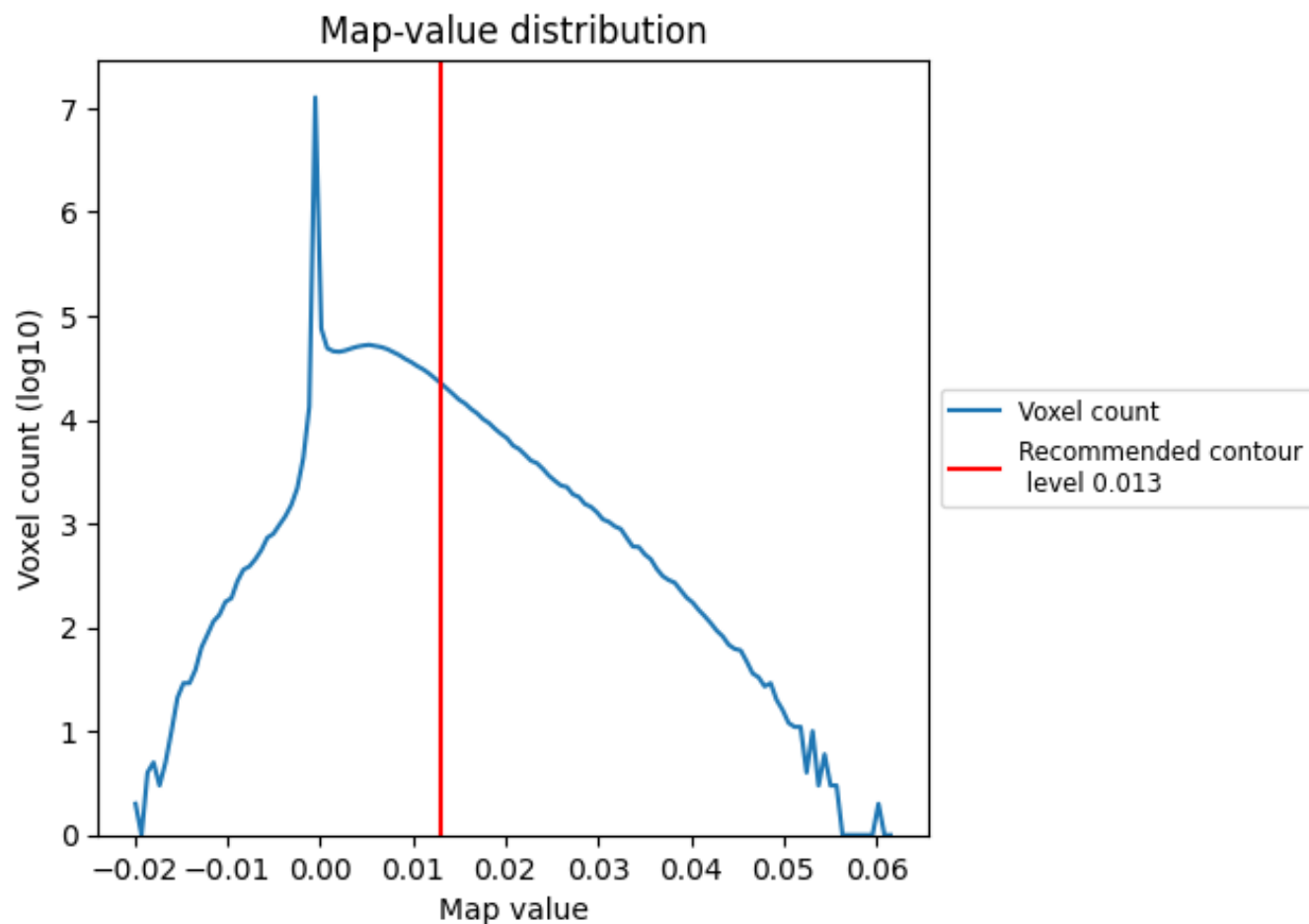
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

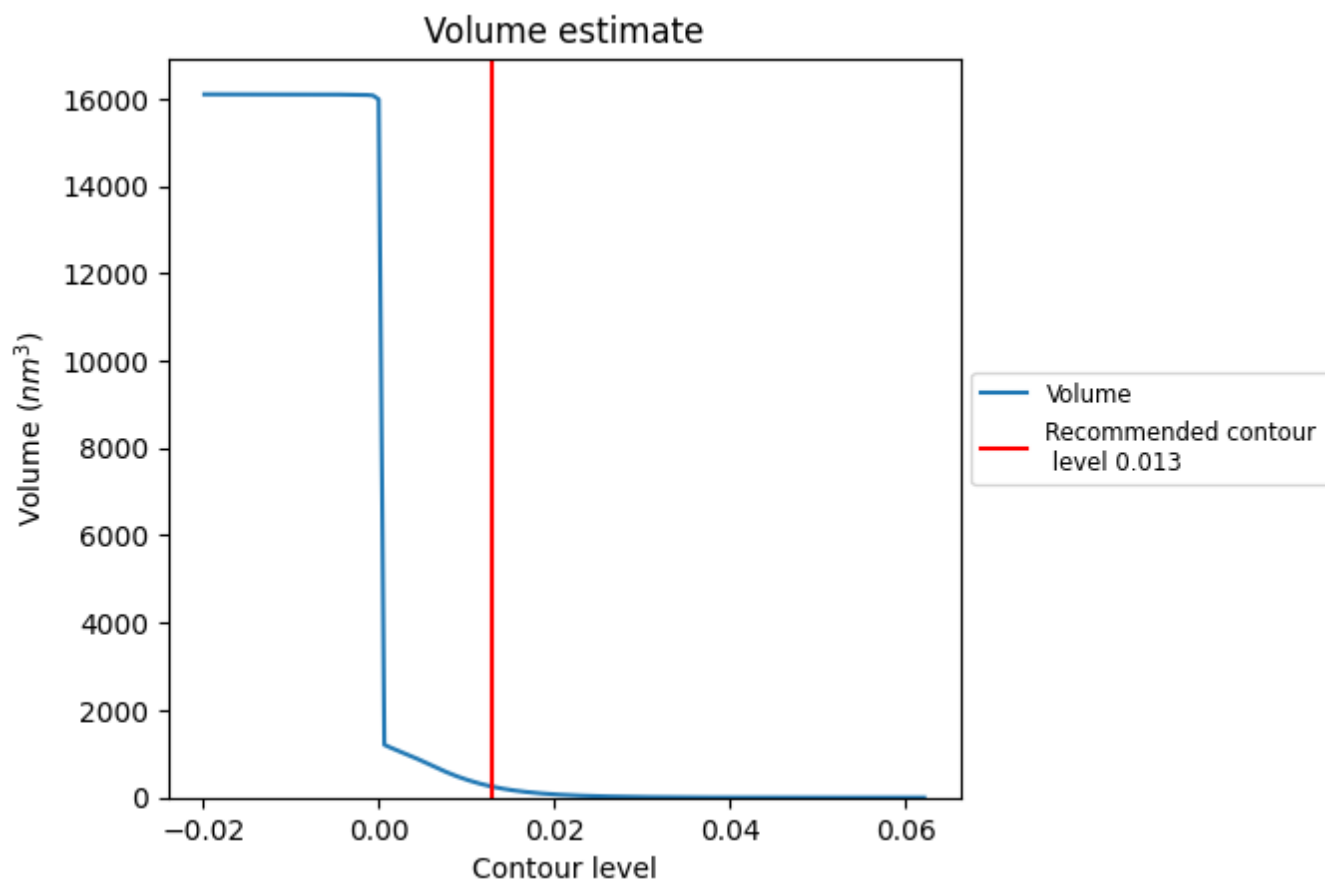
This section contains the results of statistical analysis of the map.

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.

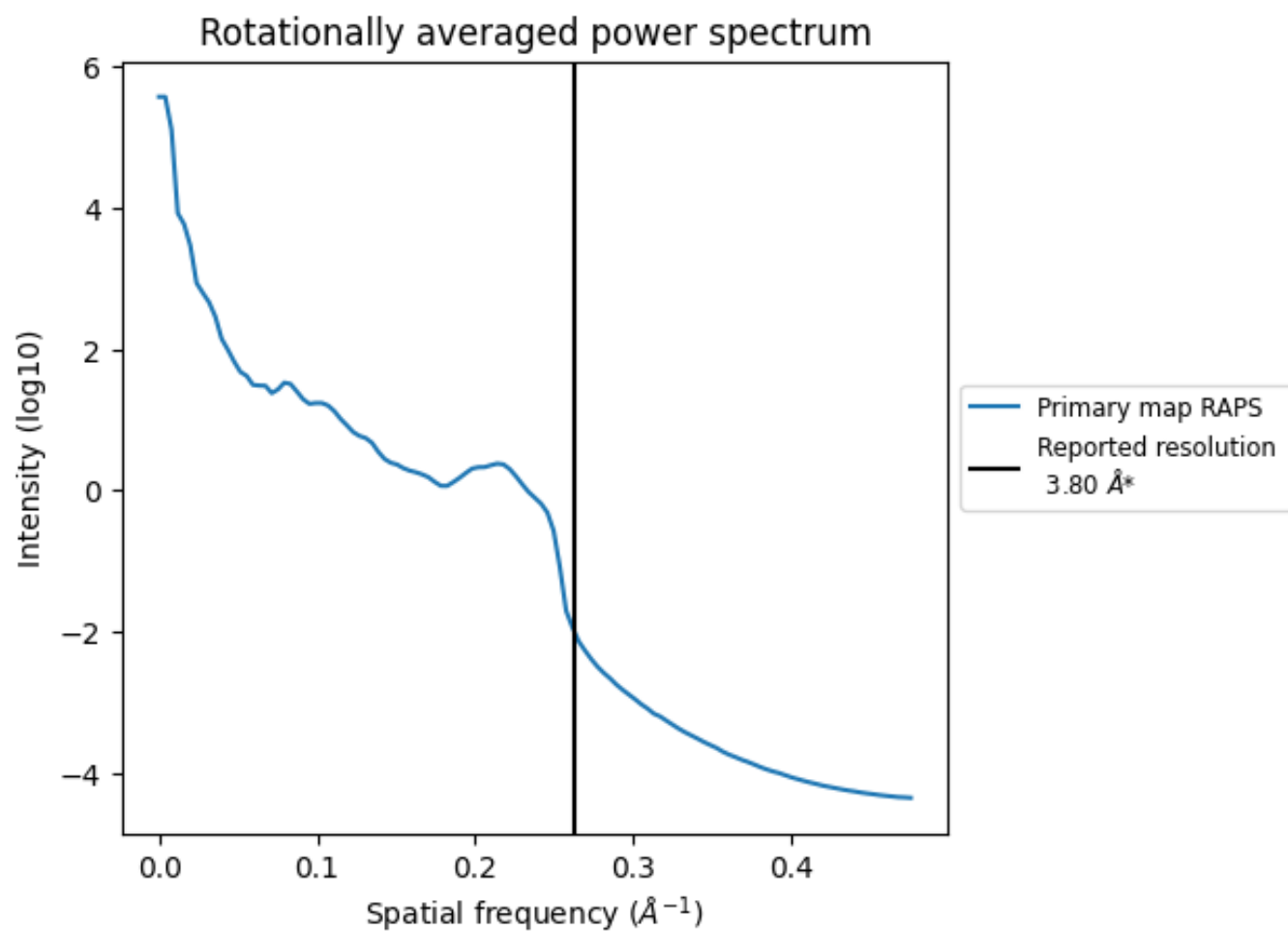
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 247 nm³; this corresponds to an approximate mass of 224 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 0.263 Å⁻¹

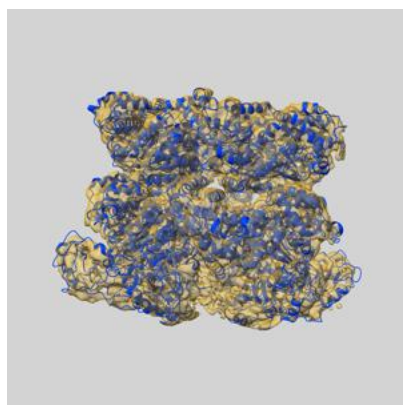
8 Fourier-Shell correlation ⓘ

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

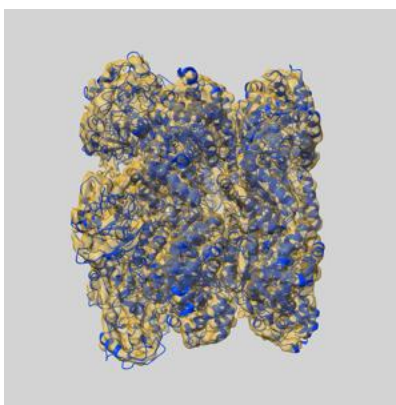
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-32403 and PDB model 7WD3. Per-residue inclusion information can be found in section [3](#) on page [7](#).

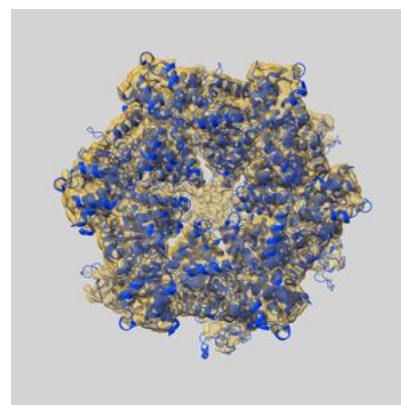
9.1 Map-model overlay [i](#)



X



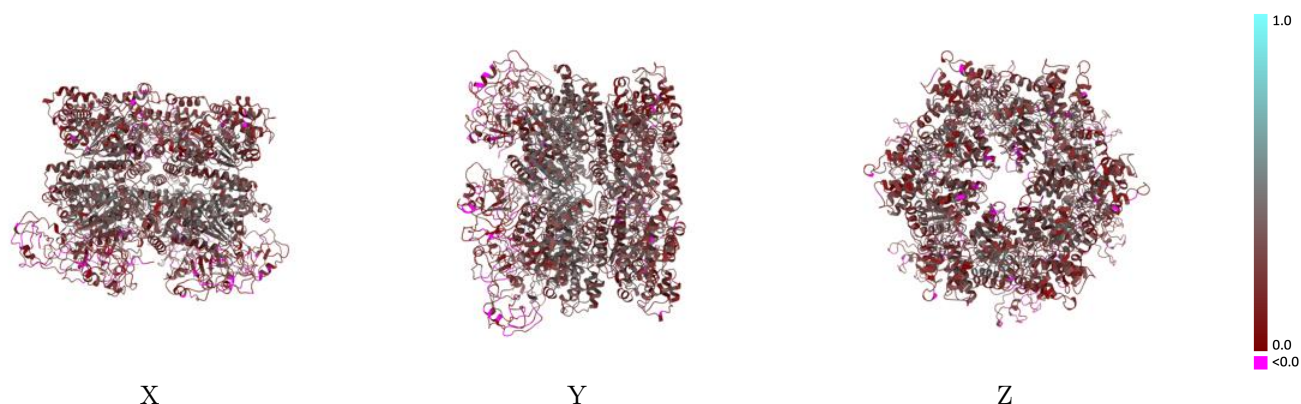
Y



Z

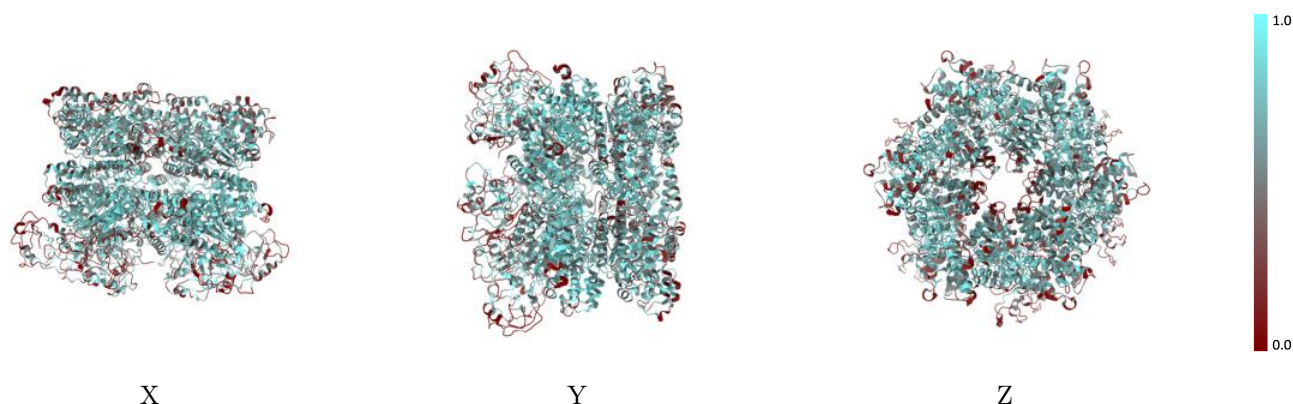
The images above show the 3D surface view of the map at the recommended contour level 0.013 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



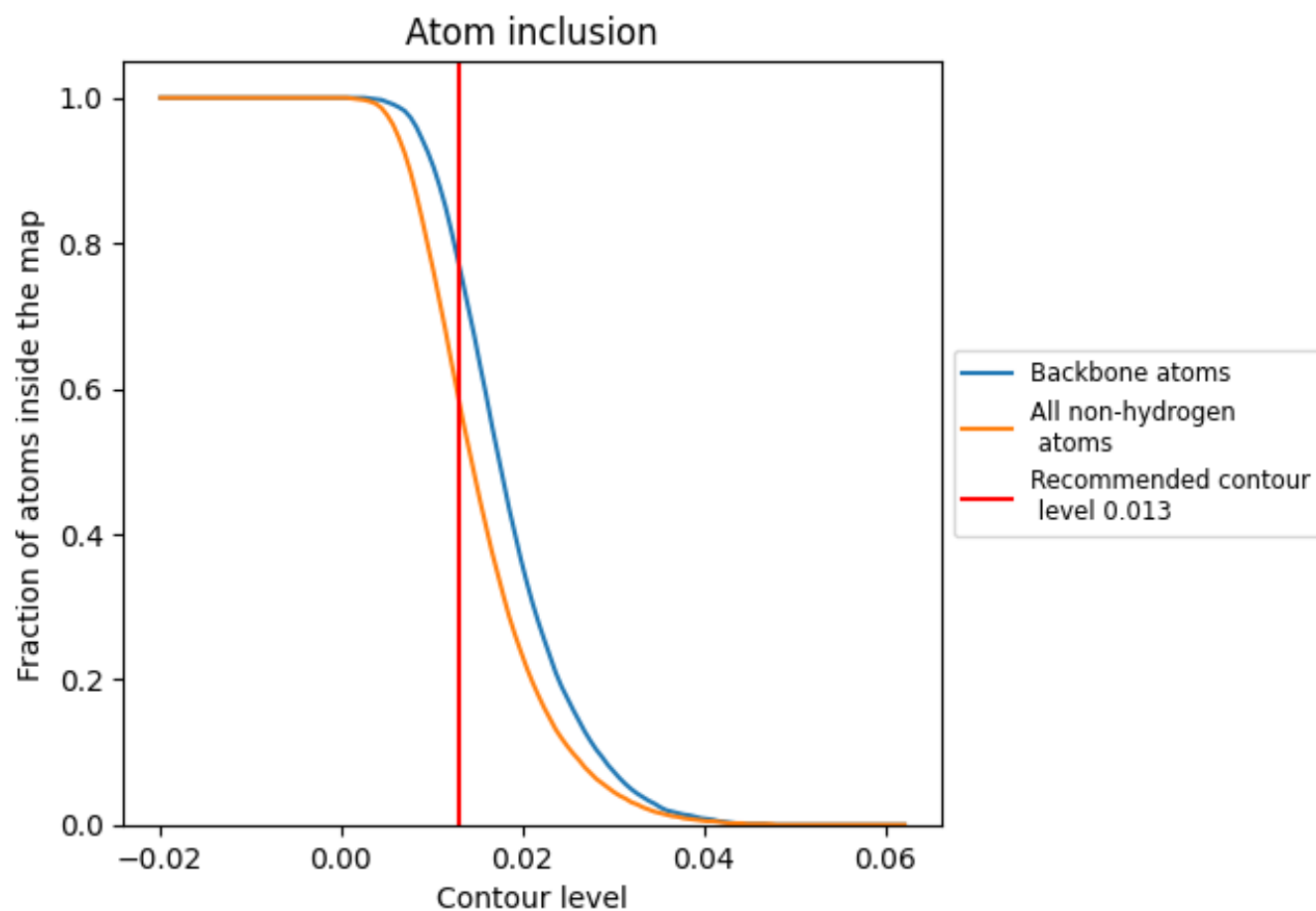
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.013).

9.4 Atom inclusion [i](#)



At the recommended contour level, 77% of all backbone atoms, 58% 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 (0.013) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.5850	0.2560
A	0.6160	0.2760
B	0.5900	0.2590
C	0.5790	0.2480
D	0.5660	0.2490
E	0.5690	0.2510
F	0.5880	0.2560

1.0

0.0

<0.0