



wwPDB X-ray Structure Validation Summary Report ⓘ

Oct 10, 2023 – 12:47 PM EDT

PDB ID : 7KHO
Title : NicA2 variant N462V in complex with (S)-nicotine
Authors : Tararina, M.A.; Allen, K.N.
Deposited on : 2020-10-21
Resolution : 2.69 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtrriage (Phenix) : 1.13
EDS : 2.35.1
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.35.1

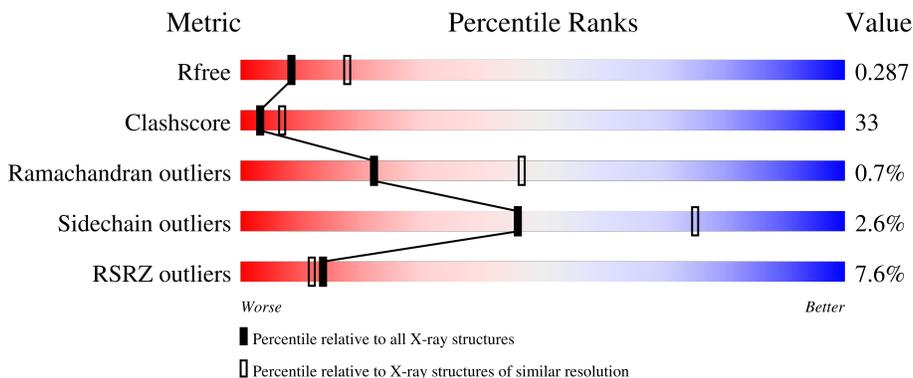
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.69 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	2808 (2.70-2.70)
Clashscore	141614	3122 (2.70-2.70)
Ramachandran outliers	138981	3069 (2.70-2.70)
Sidechain outliers	138945	3069 (2.70-2.70)
RSRZ outliers	127900	2737 (2.70-2.70)

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

Mol	Chain	Length	Quality of chain
1	A	490	 7% 51% 36% 12%
1	B	490	 2% 56% 32% 12%
1	C	490	 8% 42% 44% 12%
1	D	490	 9% 40% 40% 17%

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	FAD	D	502	X	-	-	-

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 13600 atoms, of which 112 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Amine oxidase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	432	3353	2127	582	632	12	0	0	0
1	B	432	3353	2127	582	632	12	0	0	0
1	C	432	3353	2127	582	632	12	0	0	0
1	D	405	3152	2002	544	594	12	0	0	0

There are 36 discrepancies between the modelled and reference sequences:

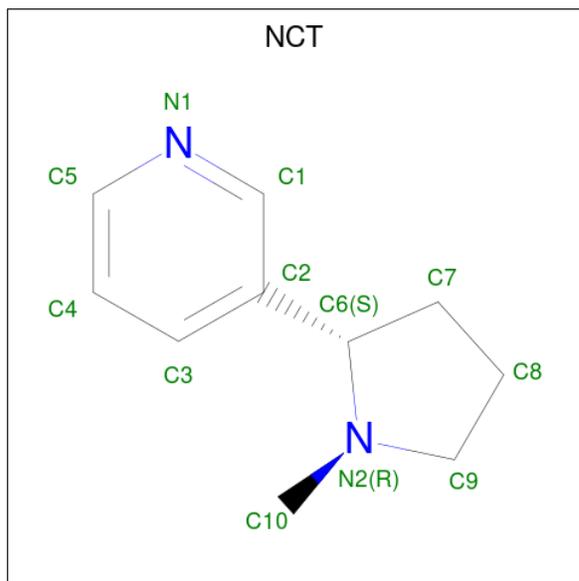
Chain	Residue	Modelled	Actual	Comment	Reference
A	462	VAL	ASN	engineered mutation	UNP F8G0P2
A	483	LEU	-	expression tag	UNP F8G0P2
A	484	GLU	-	expression tag	UNP F8G0P2
A	485	HIS	-	expression tag	UNP F8G0P2
A	486	HIS	-	expression tag	UNP F8G0P2
A	487	HIS	-	expression tag	UNP F8G0P2
A	488	HIS	-	expression tag	UNP F8G0P2
A	489	HIS	-	expression tag	UNP F8G0P2
A	490	HIS	-	expression tag	UNP F8G0P2
B	462	VAL	ASN	engineered mutation	UNP F8G0P2
B	483	LEU	-	expression tag	UNP F8G0P2
B	484	GLU	-	expression tag	UNP F8G0P2
B	485	HIS	-	expression tag	UNP F8G0P2
B	486	HIS	-	expression tag	UNP F8G0P2
B	487	HIS	-	expression tag	UNP F8G0P2
B	488	HIS	-	expression tag	UNP F8G0P2
B	489	HIS	-	expression tag	UNP F8G0P2
B	490	HIS	-	expression tag	UNP F8G0P2
C	462	VAL	ASN	engineered mutation	UNP F8G0P2
C	483	LEU	-	expression tag	UNP F8G0P2
C	484	GLU	-	expression tag	UNP F8G0P2

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Chain	Residue	Modelled	Actual	Comment	Reference
C	485	HIS	-	expression tag	UNP F8G0P2
C	486	HIS	-	expression tag	UNP F8G0P2
C	487	HIS	-	expression tag	UNP F8G0P2
C	488	HIS	-	expression tag	UNP F8G0P2
C	489	HIS	-	expression tag	UNP F8G0P2
C	490	HIS	-	expression tag	UNP F8G0P2
D	462	VAL	ASN	engineered mutation	UNP F8G0P2
D	483	LEU	-	expression tag	UNP F8G0P2
D	484	GLU	-	expression tag	UNP F8G0P2
D	485	HIS	-	expression tag	UNP F8G0P2
D	486	HIS	-	expression tag	UNP F8G0P2
D	487	HIS	-	expression tag	UNP F8G0P2
D	488	HIS	-	expression tag	UNP F8G0P2
D	489	HIS	-	expression tag	UNP F8G0P2
D	490	HIS	-	expression tag	UNP F8G0P2

- Molecule 2 is (S)-3-(1-METHYLPYRROLIDIN-2-YL)PYRIDINE (three-letter code: NCT) (formula: C₁₀H₁₄N₂) (labeled as "Ligand of Interest" by depositor).



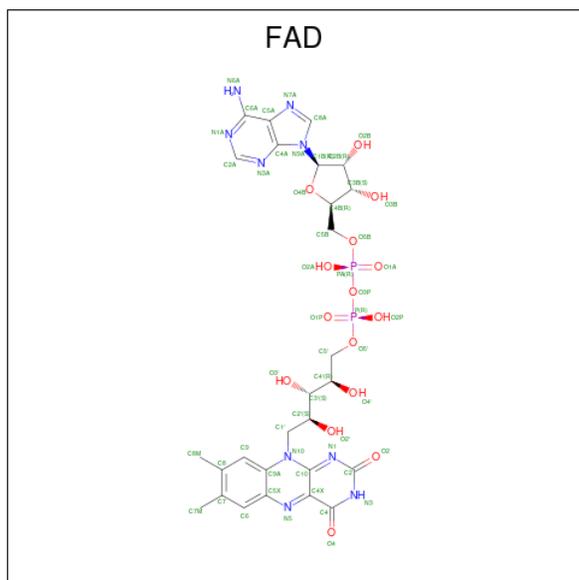
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	C	N	0	0
			12	10	2		
2	B	1	Total	C	N	0	0
			12	10	2		
2	C	1	Total	C	N	0	0
			12	10	2		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	C	N		
2	D	1	12	10	2	0	0

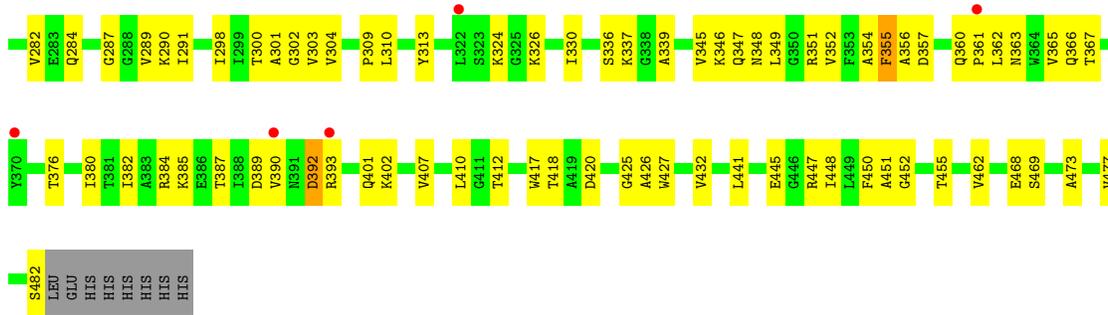
- Molecule 3 is FLAVIN-ADENINE DINUCLEOTIDE (three-letter code: FAD) (formula: $C_{27}H_{33}N_9O_{15}P_2$).



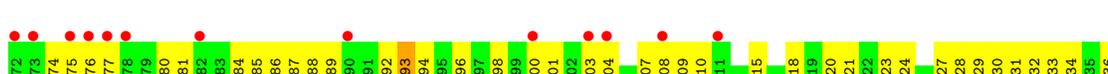
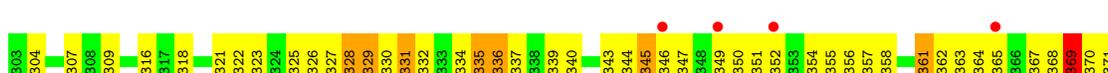
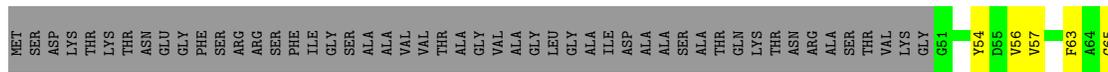
Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
			Total	C	H	N	O	P		
3	A	1	81	27	28	9	15	2	0	0
3	B	1	81	27	28	9	15	2	0	0
3	C	1	81	27	28	9	15	2	0	0
3	D	1	81	27	28	9	15	2	0	0

- Molecule 4 is water.

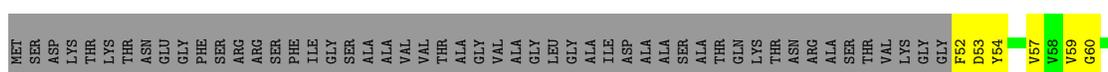
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
4	A	7	7	7	0	0
4	B	8	8	8	0	0
4	C	2	2	2	0	0

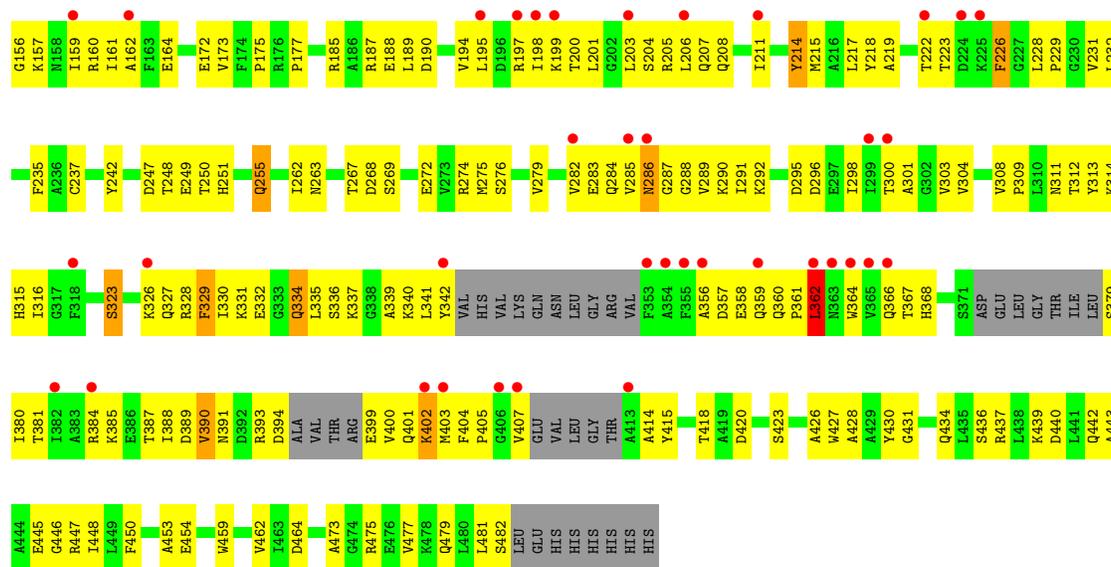


● Molecule 1: Amine oxidase



● Molecule 1: Amine oxidase





4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	87.40Å 134.56Å 168.68Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	39.60 – 2.69 47.29 – 2.69	Depositor EDS
% Data completeness (in resolution range)	91.7 (39.60-2.69) 90.9 (47.29-2.69)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.55 (at 2.69Å)	Xtrriage
Refinement program	PHENIX 1.14_3260	Depositor
R, R_{free}	0.236 , 0.286 0.235 , 0.287	Depositor DCC
R_{free} test set	2000 reflections (3.58%)	wwPDB-VP
Wilson B-factor (Å ²)	52.6	Xtrriage
Anisotropy	0.839	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 54.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	13600	wwPDB-VP
Average B, all atoms (Å ²)	70.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.47% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: FAD, NCT

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	0.25	0/3424	0.44	1/4638 (0.0%)
1	B	0.29	0/3424	0.47	1/4638 (0.0%)
1	C	0.30	1/3424 (0.0%)	0.46	1/4638 (0.0%)
1	D	0.28	0/3218	0.50	2/4352 (0.0%)
All	All	0.28	1/13490 (0.0%)	0.47	5/18266 (0.0%)

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

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

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	345	VAL	CB-CG2	7.84	1.69	1.52

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	362	LEU	CB-CG-CD1	-6.72	99.57	111.00
1	B	150	ILE	C-N-CA	-6.62	105.14	121.70
1	D	135	LEU	CA-CB-CG	-6.21	101.01	115.30
1	C	232	LEU	CA-CB-CG	-5.66	102.29	115.30
1	A	150	ILE	C-N-CA	-5.36	108.30	121.70

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	D	135	LEU	Peptide

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	3353	0	3299	204	0
1	B	3353	0	3299	149	2
1	C	3353	0	3299	261	0
1	D	3152	0	3081	283	2
2	A	12	0	14	1	0
2	B	12	0	14	5	0
2	C	12	0	14	4	0
2	D	12	0	14	1	0
3	A	53	28	31	9	0
3	B	53	28	31	6	0
3	C	53	28	31	5	0
3	D	53	28	29	13	0
4	A	7	0	0	0	0
4	B	8	0	0	0	0
4	C	2	0	0	0	0
All	All	13488	112	13156	883	2

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 33.

The worst 5 of 883 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:D:362:LEU:HD12	1:D:403:MET:SD	1.75	1.26
1:D:362:LEU:HD12	1:D:403:MET:CE	1.68	1.22
1:D:362:LEU:CD1	1:D:403:MET:SD	2.35	1.14
1:C:274:ARG:HG2	1:D:274:ARG:HG2	1.23	1.13
1:C:346:LYS:HB2	1:C:410:LEU:HD21	1.30	1.11

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

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:71:GLU:OE2	1:D:122:ARG:NH1[2_554]	2.08	0.12
1:B:75:GLN:NE2	1:D:268:ASP:OD1[2_554]	2.17	0.03

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	430/490 (88%)	407 (95%)	20 (5%)	3 (1%)	22	46
1	B	430/490 (88%)	404 (94%)	25 (6%)	1 (0%)	47	73
1	C	430/490 (88%)	401 (93%)	27 (6%)	2 (0%)	29	54
1	D	395/490 (81%)	359 (91%)	31 (8%)	5 (1%)	12	30
All	All	1685/1960 (86%)	1571 (93%)	103 (6%)	11 (1%)	22	46

5 of 11 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	323	SER
1	A	361	PRO
1	B	107	ALA
1	D	390	VAL
1	A	107	ALA

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	347/390 (89%)	340 (98%)	7 (2%)	55 81
1	B	347/390 (89%)	341 (98%)	6 (2%)	60 84
1	C	347/390 (89%)	334 (96%)	13 (4%)	34 63
1	D	325/390 (83%)	315 (97%)	10 (3%)	40 69
All	All	1366/1560 (88%)	1330 (97%)	36 (3%)	46 75

5 of 36 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	D	226	PHE
1	D	402	LYS
1	D	255	GLN
1	D	334	GLN
1	B	482	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 8 such sidechains are listed below:

Mol	Chain	Res	Type
1	D	210	GLN
1	D	208	GLN
1	B	100	GLN
1	A	360	GLN
1	D	207	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 monosaccharides in this entry.

5.6 Ligand geometry

8 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	FAD	C	502	-	53,58,58	1.22	4 (7%)	68,89,89	2.21	14 (20%)
3	FAD	A	502	-	53,58,58	1.20	4 (7%)	68,89,89	1.85	15 (22%)
3	FAD	D	502	-	53,58,58	1.61	9 (16%)	68,89,89	2.96	25 (36%)
2	NCT	D	501	-	13,13,13	1.25	1 (7%)	17,17,17	0.72	0
2	NCT	C	501	-	13,13,13	1.26	1 (7%)	17,17,17	0.72	0
2	NCT	A	501	-	13,13,13	1.26	1 (7%)	17,17,17	0.75	0
3	FAD	B	502	-	53,58,58	1.25	4 (7%)	68,89,89	2.03	14 (20%)
2	NCT	B	501	-	13,13,13	1.21	1 (7%)	17,17,17	0.89	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	FAD	C	502	-	-	11/30/50/50	0/6/6/6
3	FAD	A	502	-	-	10/30/50/50	0/6/6/6
3	FAD	D	502	-	1/1/9/9	9/30/50/50	0/6/6/6
2	NCT	D	501	-	-	1/4/14/14	0/2/2/2
2	NCT	C	501	-	-	1/4/14/14	0/2/2/2
2	NCT	A	501	-	-	0/4/14/14	0/2/2/2
3	FAD	B	502	-	-	6/30/50/50	0/6/6/6
2	NCT	B	501	-	-	1/4/14/14	0/2/2/2

The worst 5 of 25 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	502	FAD	C4X-N5	4.85	1.40	1.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	502	FAD	C4X-N5	4.79	1.40	1.30
3	C	502	FAD	C4X-N5	4.68	1.39	1.30
3	A	502	FAD	C4X-N5	4.63	1.39	1.30
2	C	501	NCT	C7-C6	4.22	1.65	1.54

The worst 5 of 68 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	502	FAD	C1'-C2'-C3'	14.96	151.59	109.79
3	C	502	FAD	C4'-C3'-C2'	9.98	134.12	113.36
3	D	502	FAD	C5'-C4'-C3'	-8.37	96.04	112.20
3	B	502	FAD	C4'-C3'-C2'	6.88	127.68	113.36
3	D	502	FAD	C9A-C5X-N5	-6.85	114.98	122.43

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
3	D	502	FAD	C2'

5 of 39 torsion outliers are listed below:

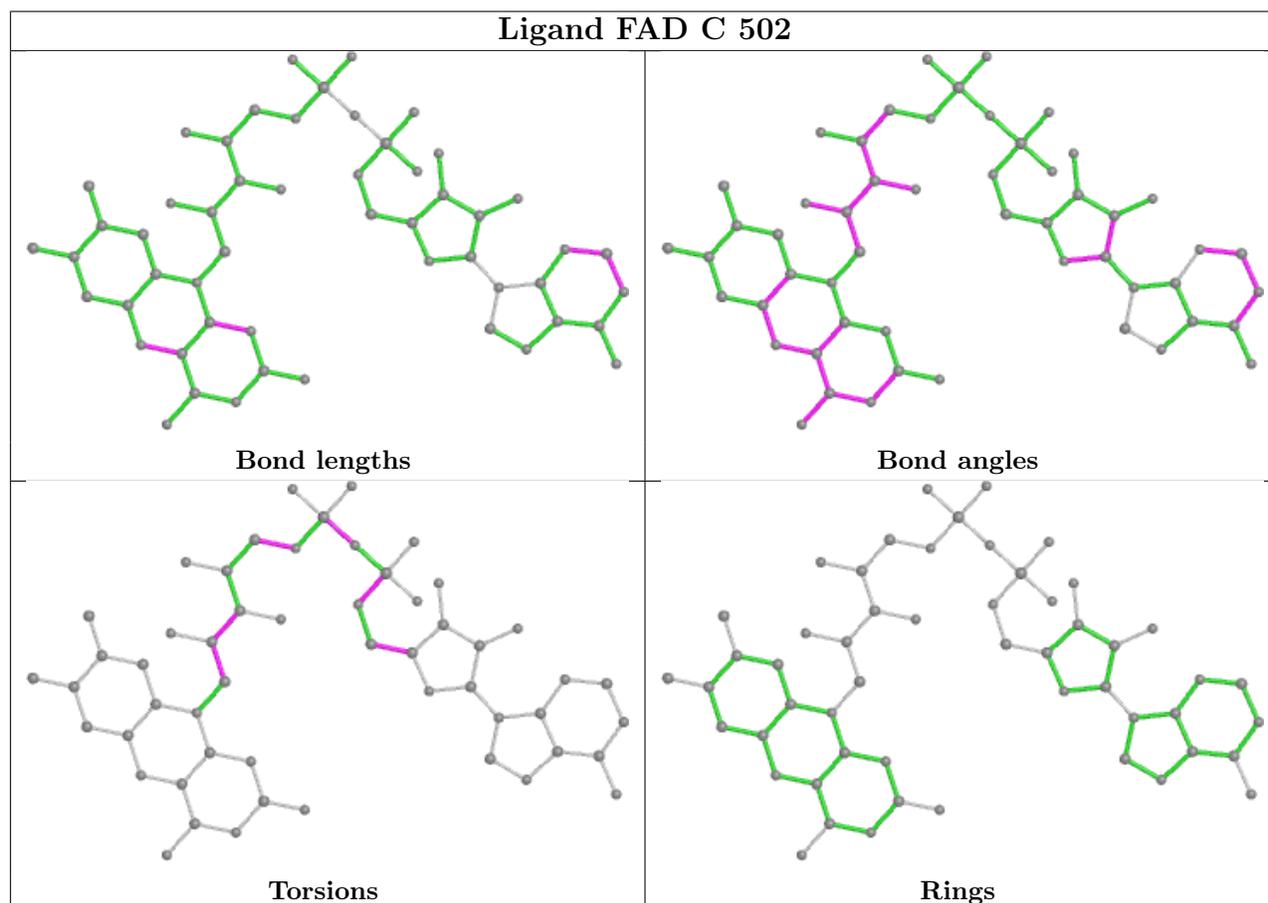
Mol	Chain	Res	Type	Atoms
3	A	502	FAD	N10-C1'-C2'-O2'
3	A	502	FAD	C1'-C2'-C3'-O3'
3	A	502	FAD	C1'-C2'-C3'-C4'
3	A	502	FAD	O4'-C4'-C5'-O5'
3	B	502	FAD	C1'-C2'-C3'-O3'

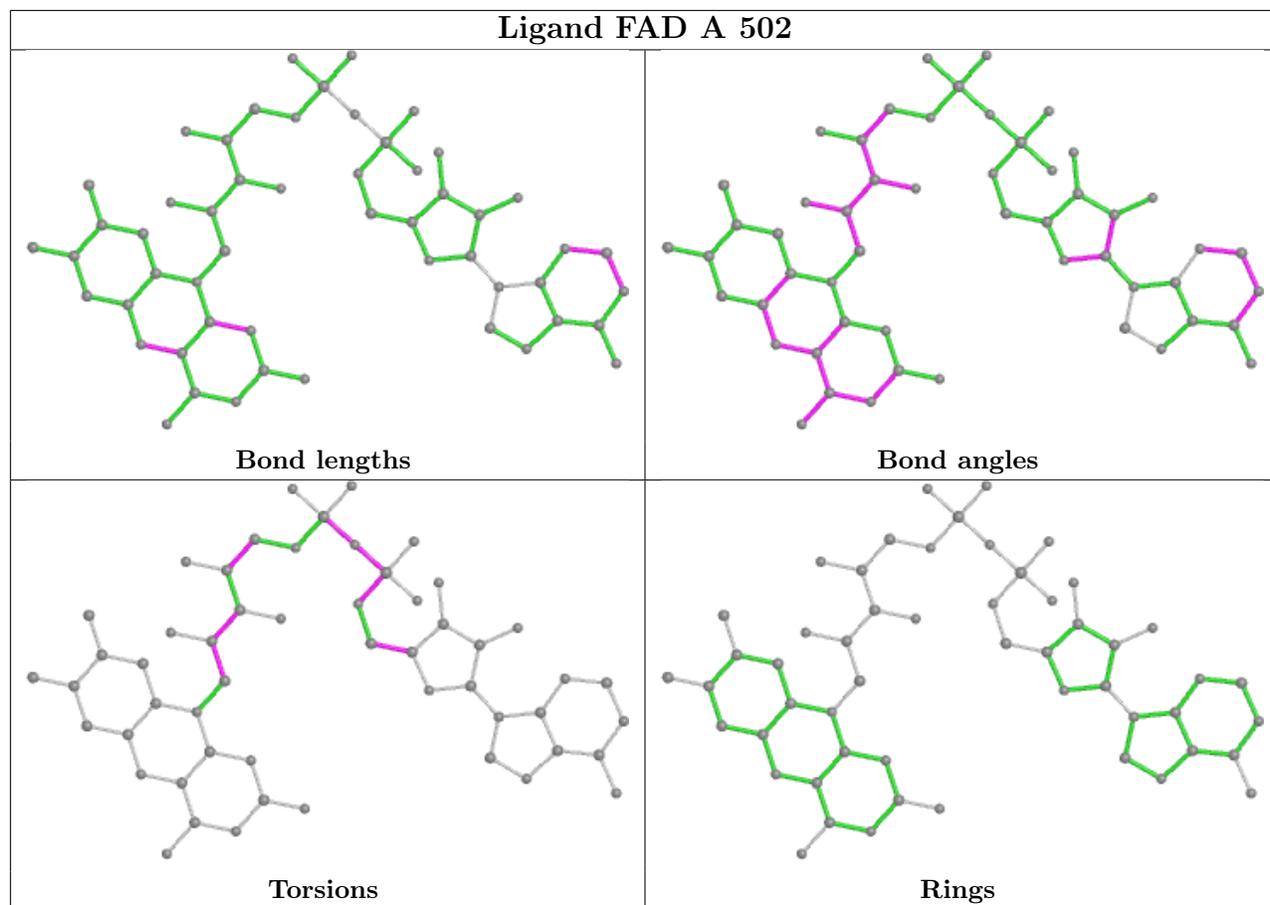
There are no ring outliers.

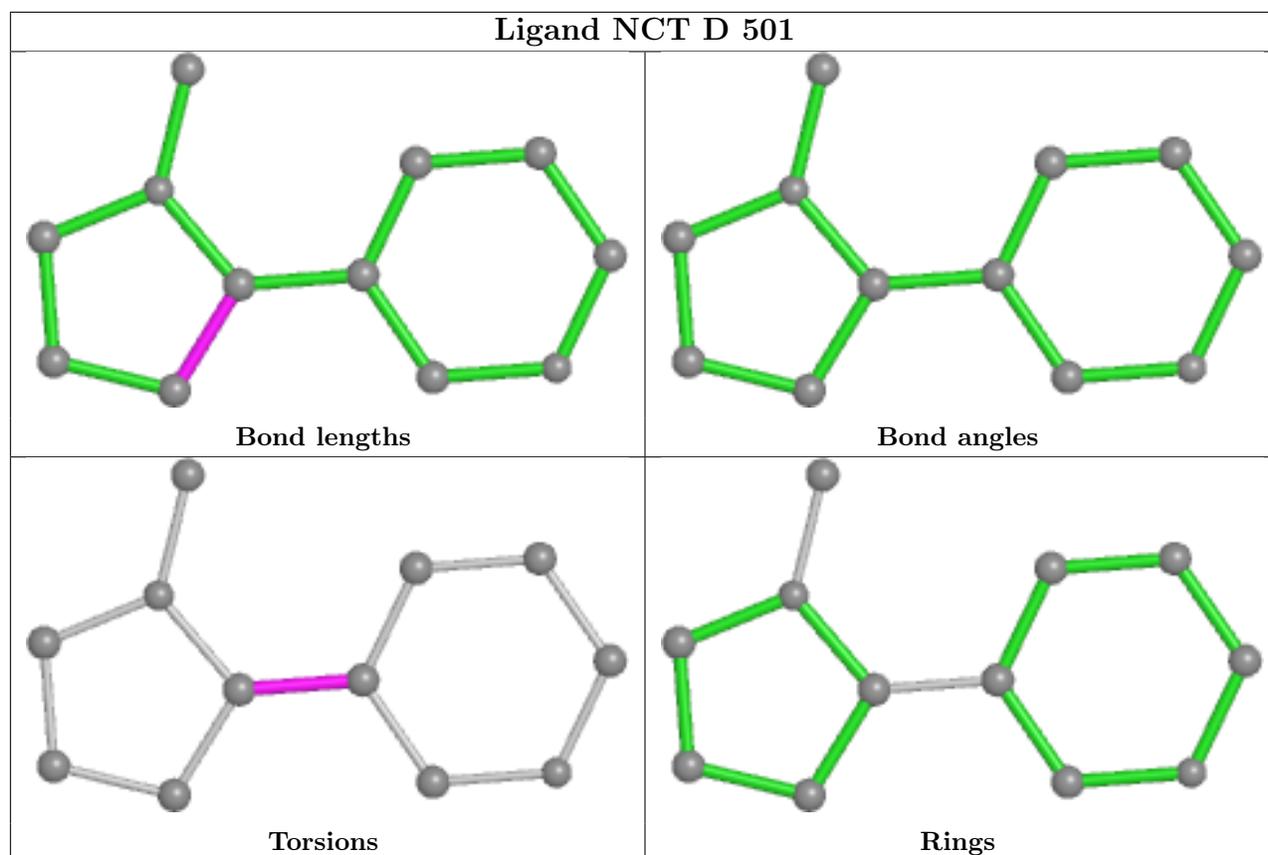
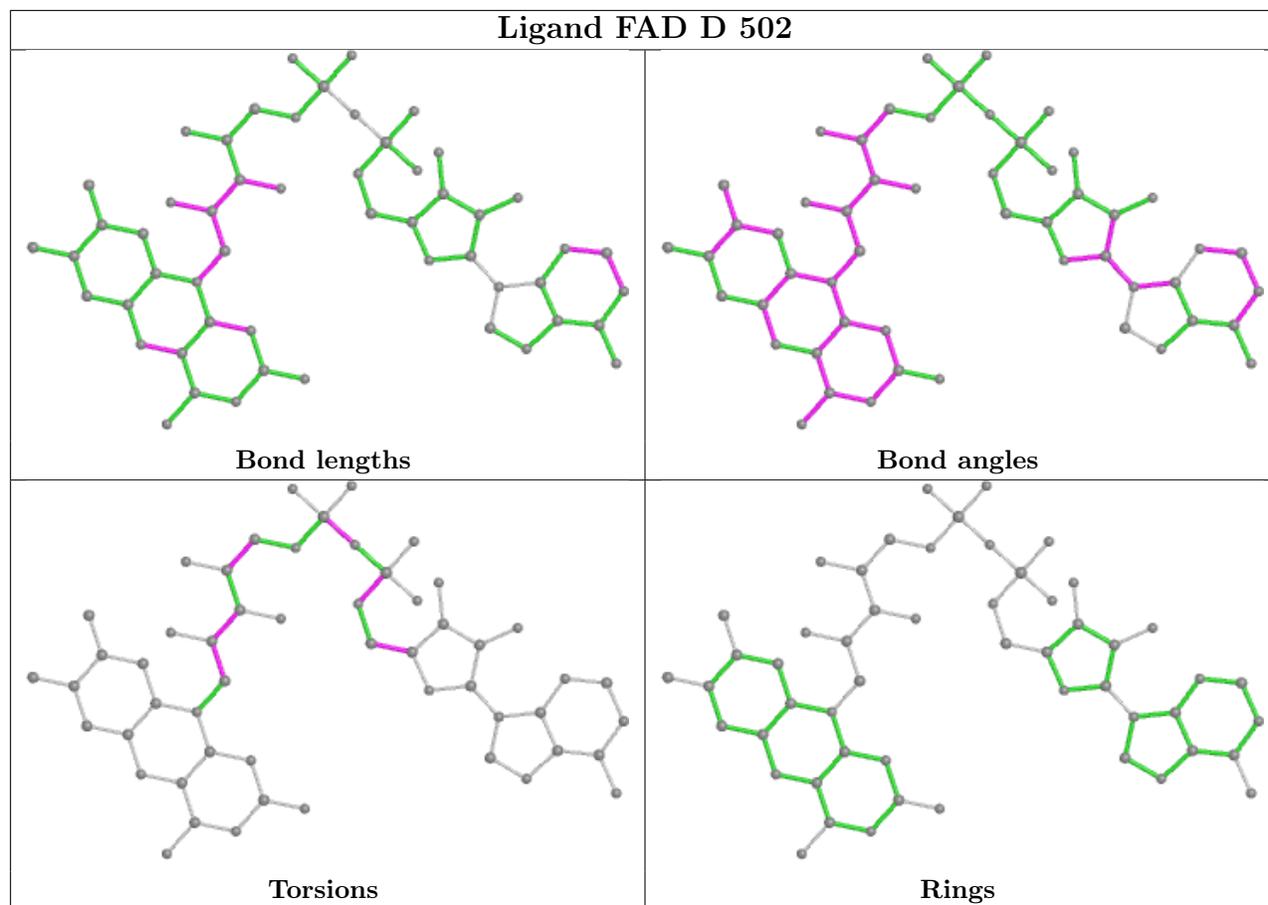
8 monomers are involved in 44 short contacts:

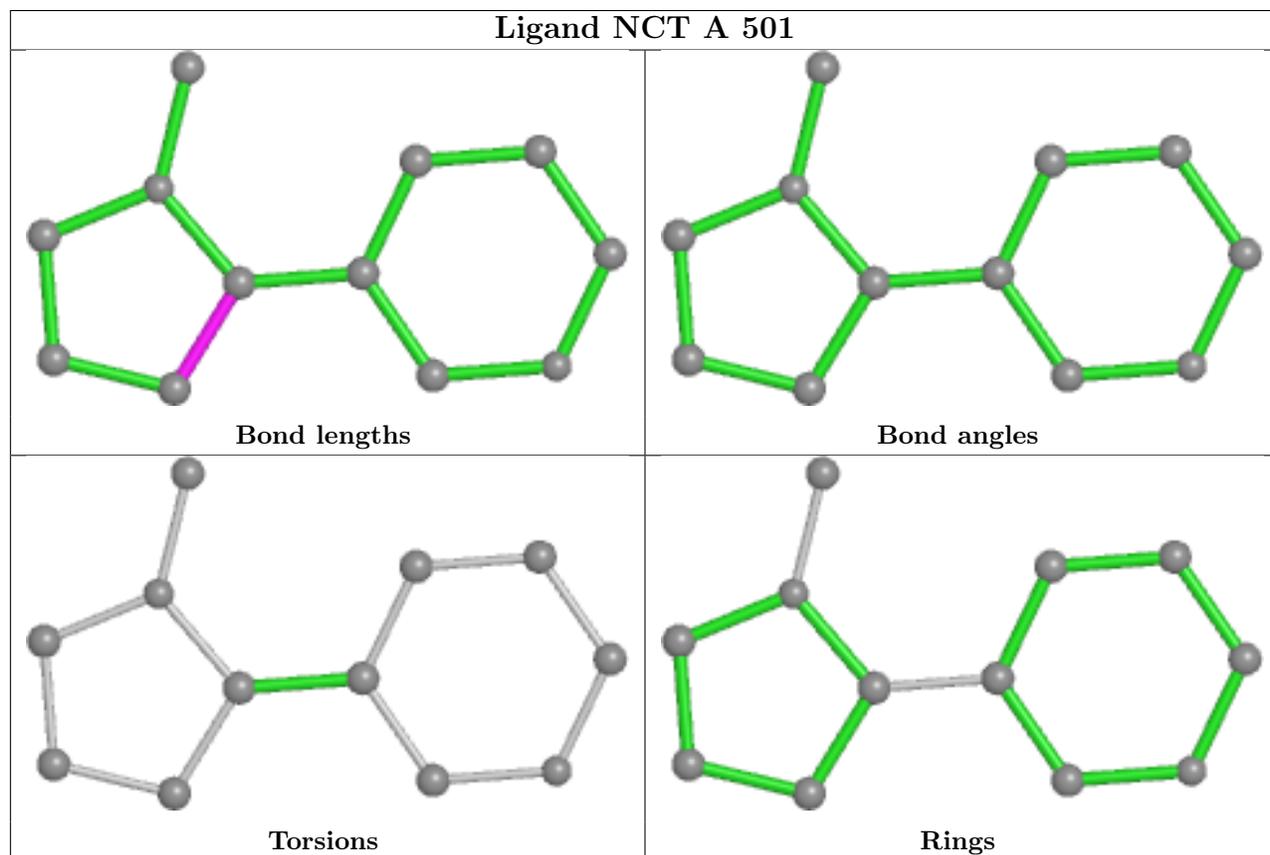
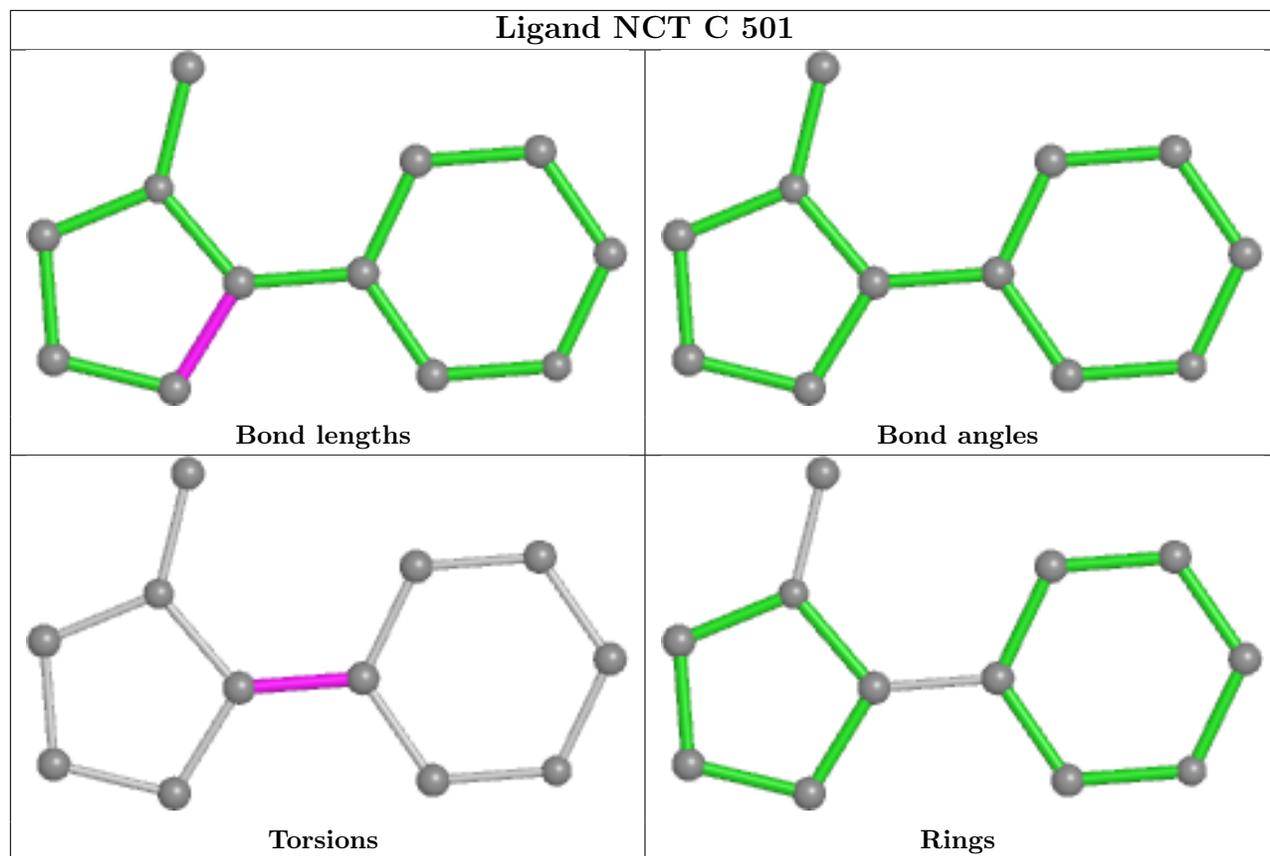
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	C	502	FAD	5	0
3	A	502	FAD	9	0
3	D	502	FAD	13	0
2	D	501	NCT	1	0
2	C	501	NCT	4	0
2	A	501	NCT	1	0
3	B	502	FAD	6	0
2	B	501	NCT	5	0

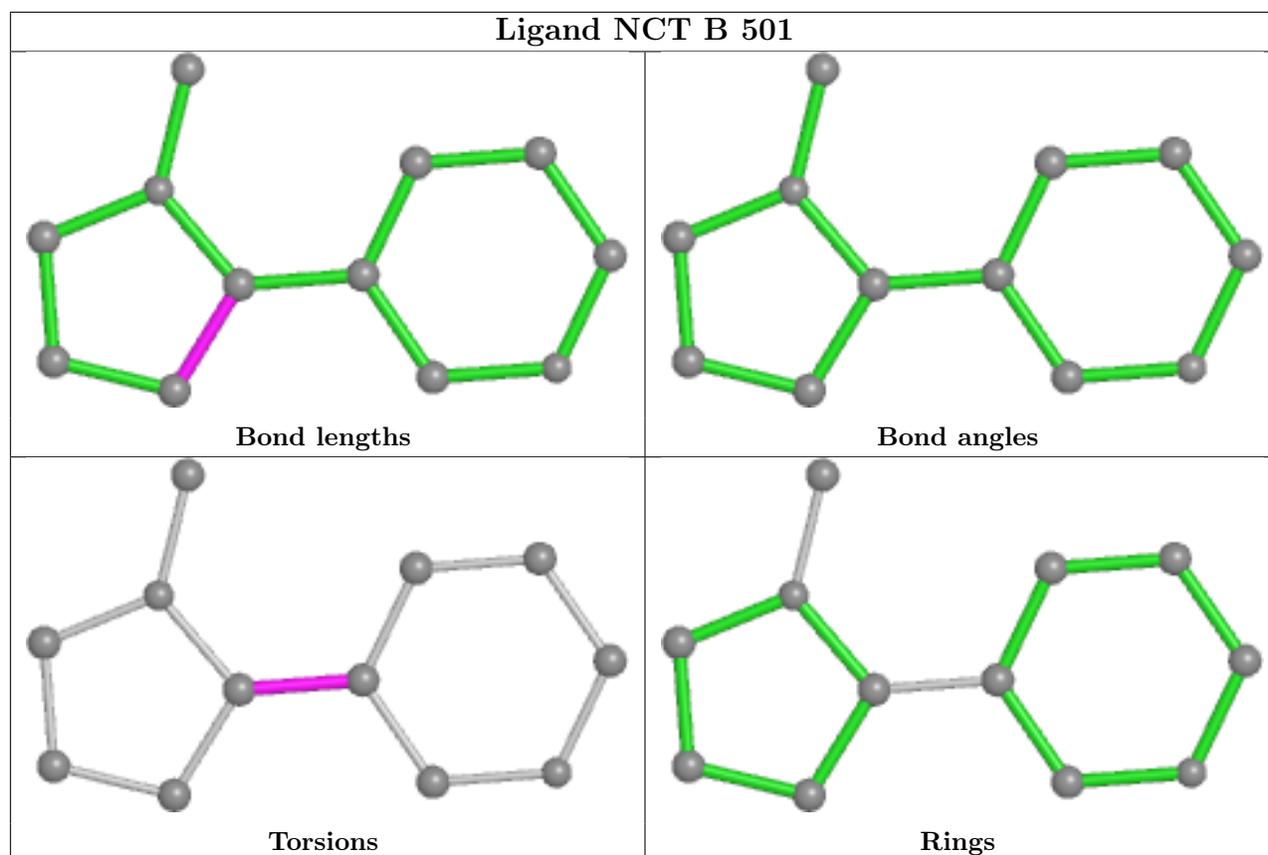
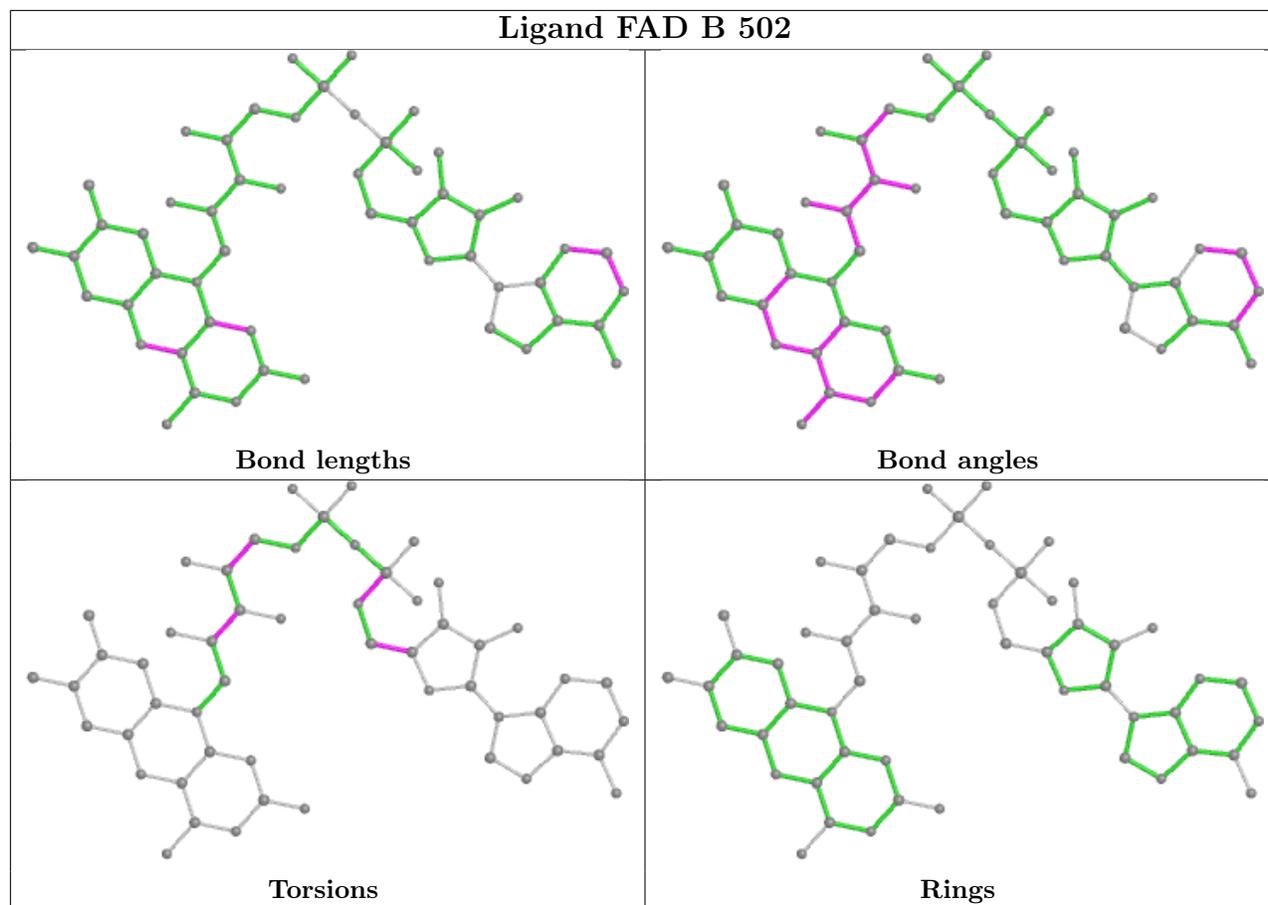
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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











5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	432/490 (88%)	0.62	35 (8%) 12 10	38, 66, 101, 113	0
1	B	432/490 (88%)	0.32	11 (2%) 57 59	36, 61, 82, 110	0
1	C	432/490 (88%)	0.62	37 (8%) 10 8	40, 75, 110, 121	0
1	D	405/490 (82%)	0.78	46 (11%) 5 4	41, 72, 112, 120	0
All	All	1701/1960 (86%)	0.58	129 (7%) 13 12	36, 68, 104, 121	0

The worst 5 of 129 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	362	LEU	7.0
1	D	355	PHE	6.2
1	D	406	GLY	5.7
1	D	139	LEU	5.6
1	A	378	LEU	5.5

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

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

6.3 Carbohydrates [i](#)

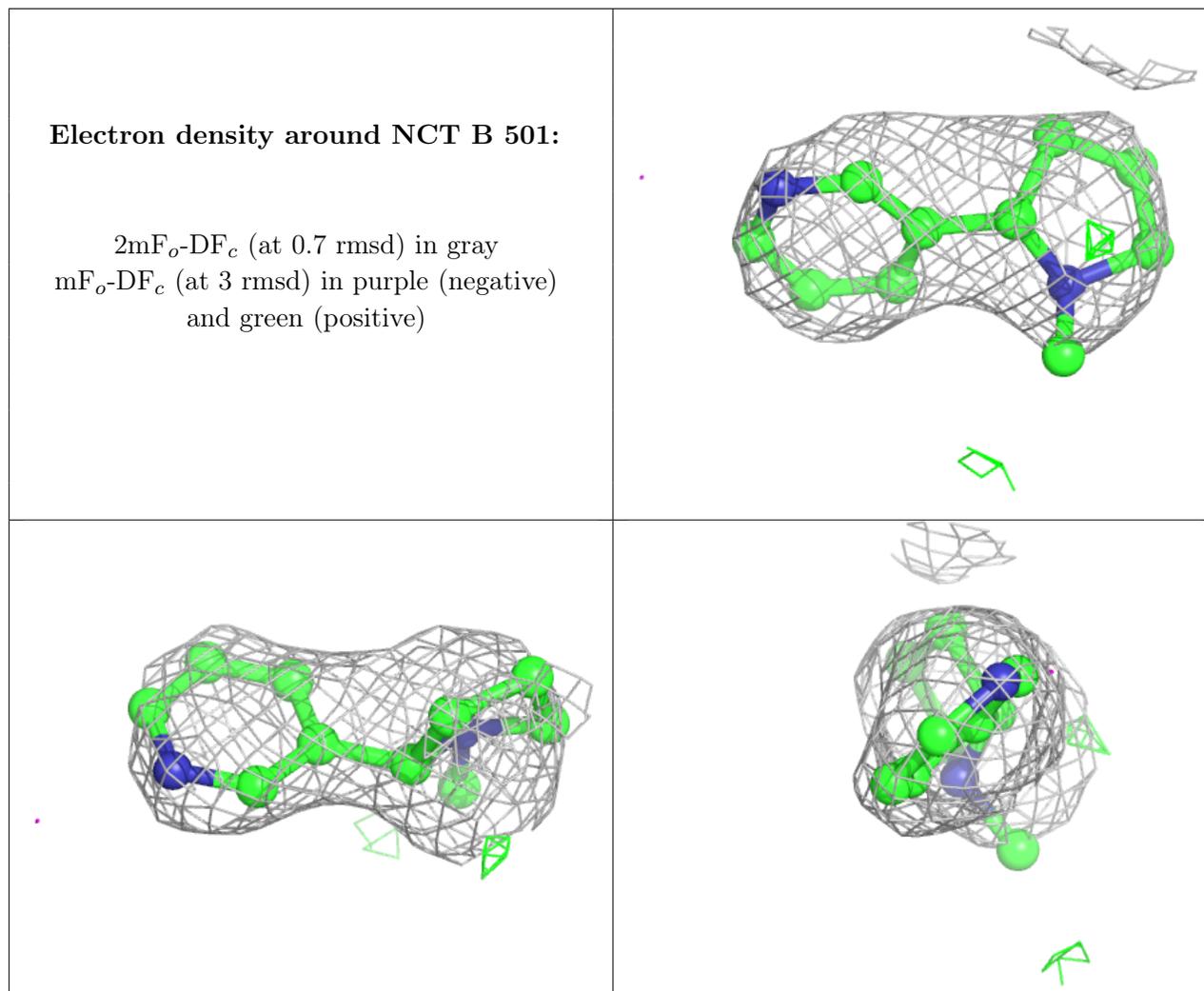
There are no monosaccharides in this entry.

6.4 Ligands [i](#)

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

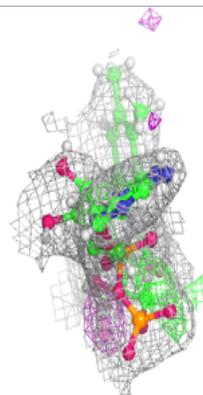
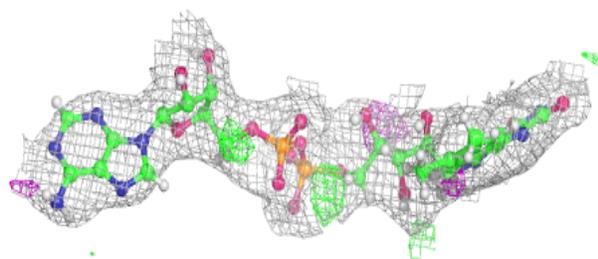
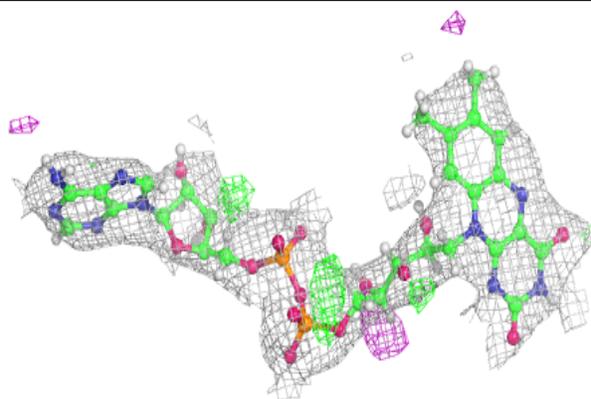
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
2	NCT	B	501	12/12	0.90	0.25	61,66,69,70	0
3	FAD	C	502	53/53	0.91	0.18	45,60,75,80	0
3	FAD	D	502	53/53	0.91	0.19	39,57,80,86	0
2	NCT	D	501	12/12	0.92	0.19	63,76,82,82	0
2	NCT	A	501	12/12	0.93	0.28	60,65,69,70	0
3	FAD	A	502	53/53	0.93	0.21	36,52,68,71	0
2	NCT	C	501	12/12	0.94	0.24	70,75,80,80	0
3	FAD	B	502	53/53	0.94	0.16	30,49,61,68	0

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

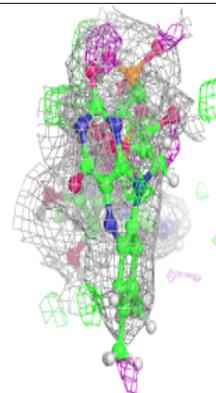
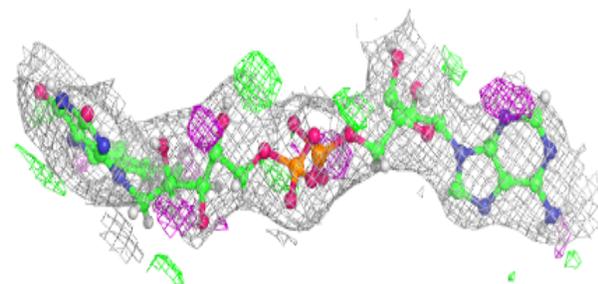
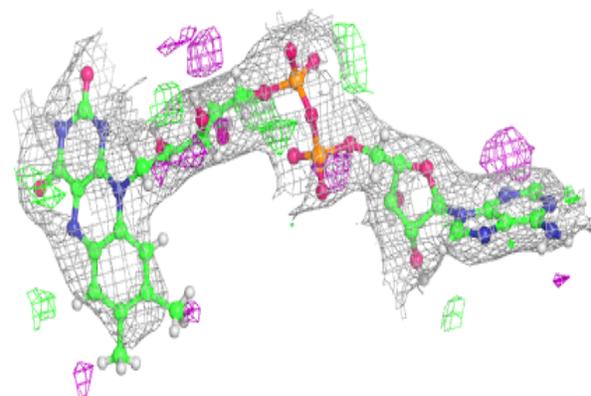


Electron density around FAD C 502:

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

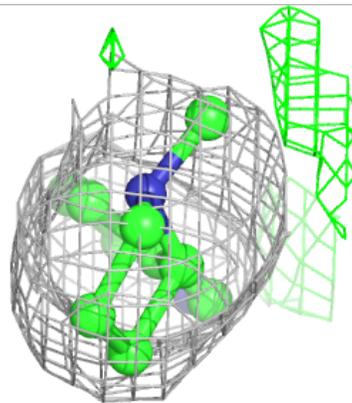
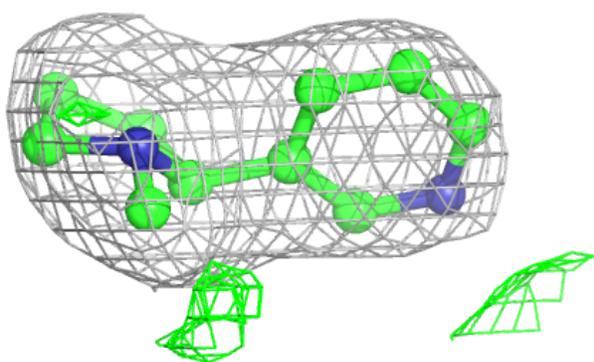
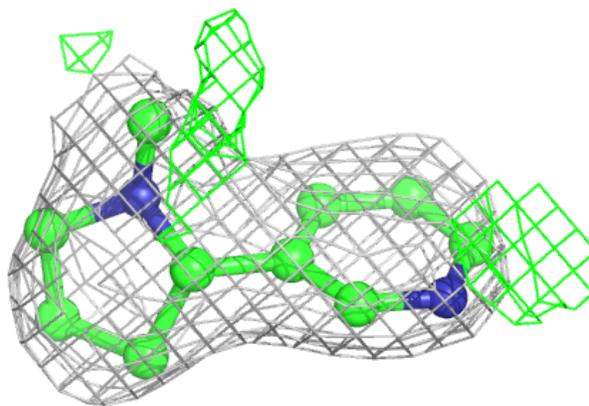
**Electron density around FAD D 502:**

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



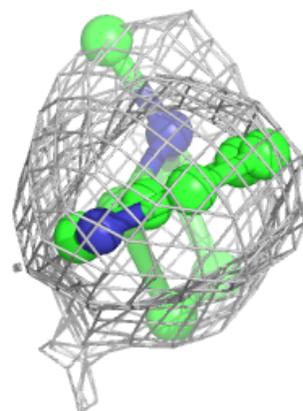
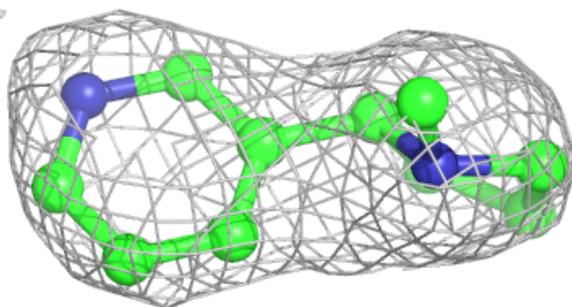
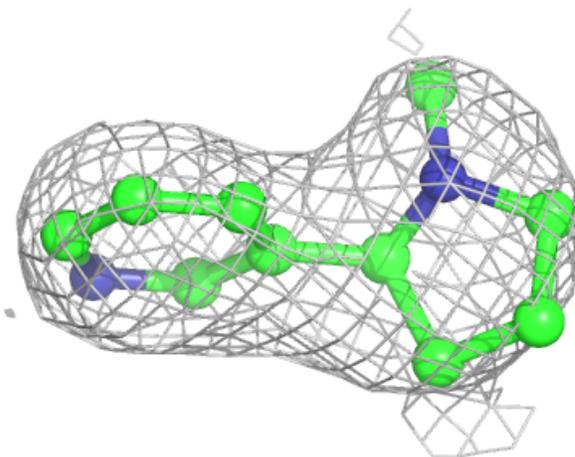
Electron density around NCT D 501:

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



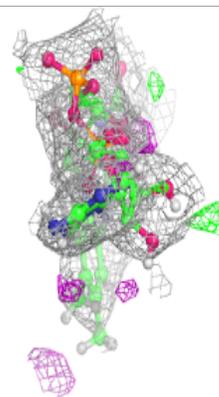
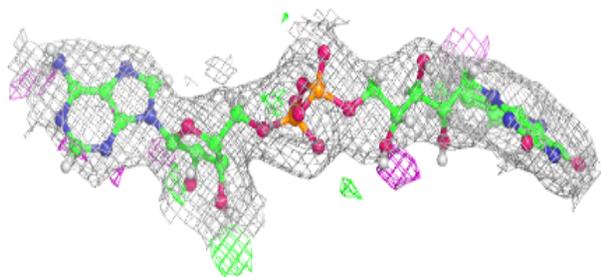
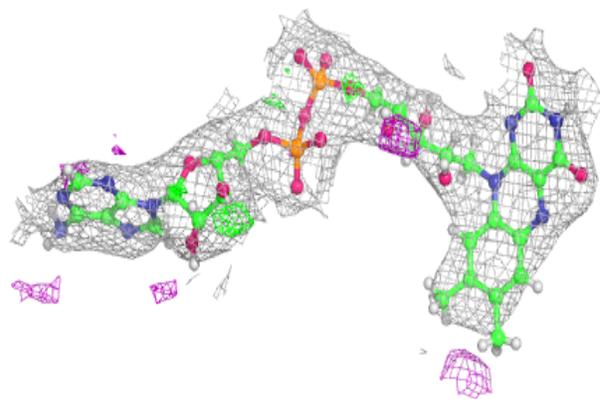
Electron density around NCT A 501:

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



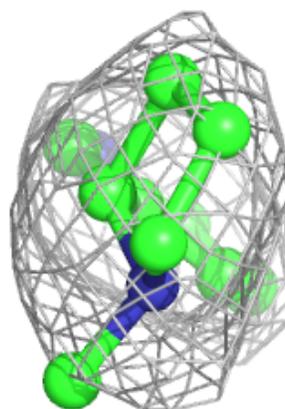
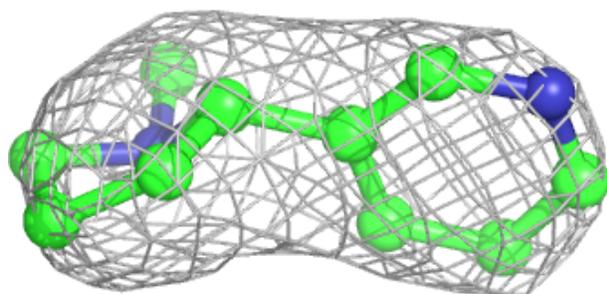
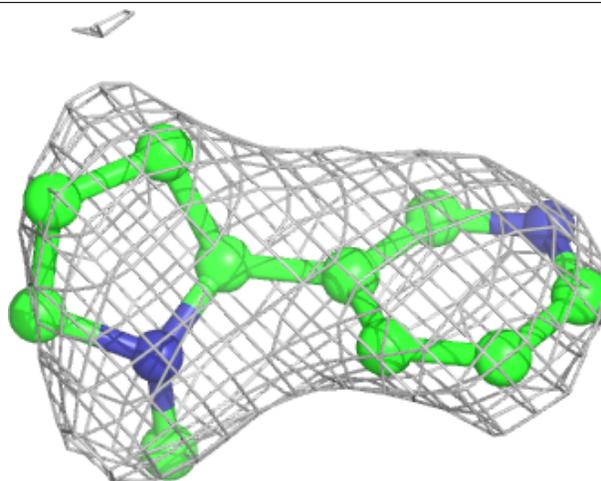
Electron density around FAD A 502:

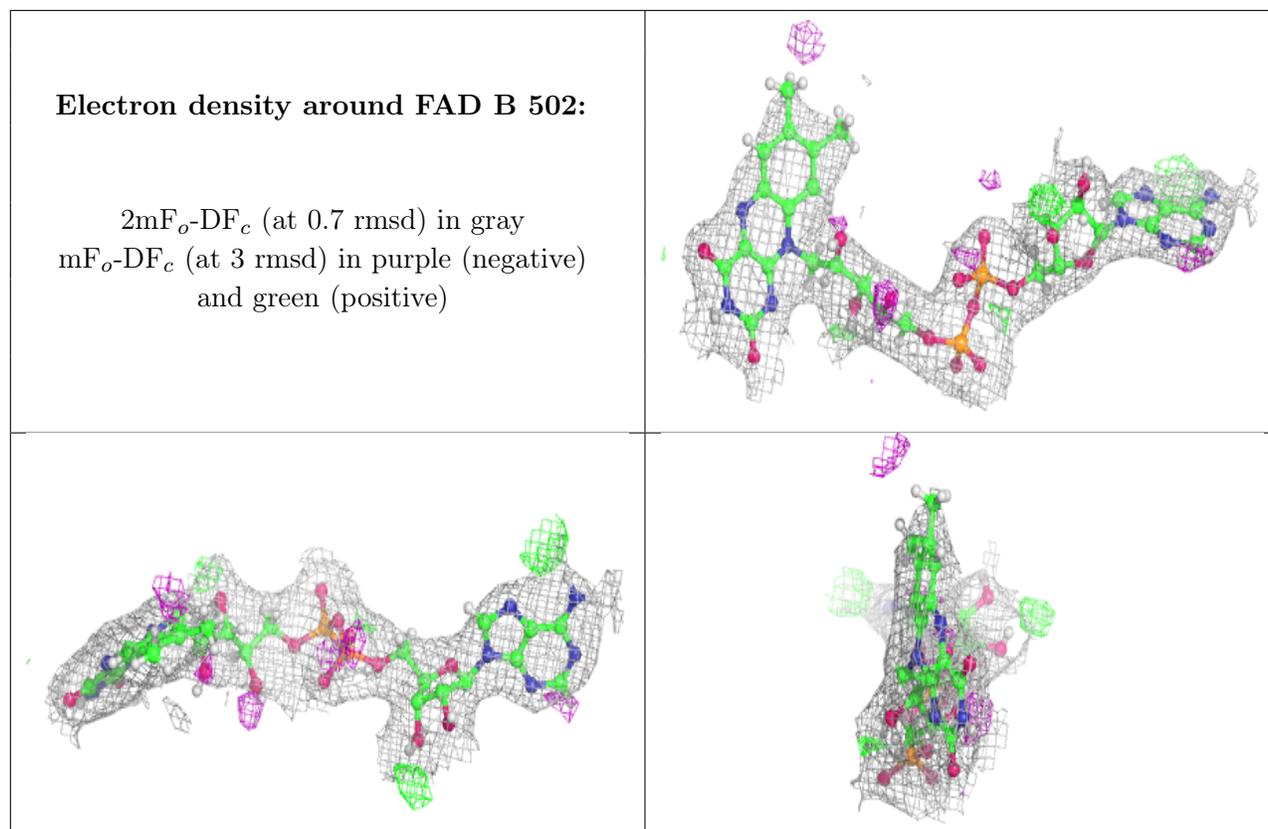
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around NCT C 501:

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





6.5 Other polymers [i](#)

There are no such residues in this entry.