



# wwPDB X-ray Structure Validation Summary Report ⓘ

Apr 26, 2026 – 03:41 AM EDT

PDB ID : 7JXP / pdb\_00007jxp  
Title : EGFR kinase (T790M/V948R) in complex with osimertinib and JBJ-04-125-02  
Authors : Beyett, T.S.; Eck, M.J.  
Deposited on : 2020-08-27  
Resolution : 2.16 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](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4-5-2 with Phenix2.0  
Mogul : 2022.3.0, CSD as543be (2022)  
Xtriage (Phenix) : 2.0  
EDS : 3.0  
Buster-report : wwPDB partial adaption of 1.1.7 (2018)  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
CCP4 : 9.0.010 (Gargrove)  
Density-Fitness : 1.0.12  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.49

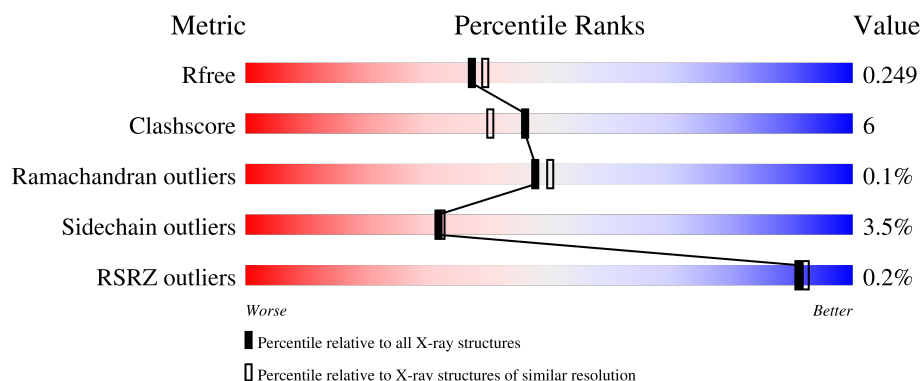
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*





The reported resolution of this entry is 2.16 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))
$R_{free}$	180053	2057 (2.16-2.16)
Clashscore	190562	2159 (2.16-2.16)
Ramachandran outliers	187476	2134 (2.16-2.16)
Sidechain outliers	187428	2133 (2.16-2.16)
RSRZ outliers	180081	2059 (2.16-2.16)

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

Mol	Chain	Length	Quality of chain
1	A	331	 77% 15% • 7%
1	B	331	 77% 14% • 7%
1	C	331	 74% 15% 12%
1	D	331	 77% 11% 11%
1	E	331	 72% 12% • 13%

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Mol	Chain	Length	Quality of chain
1	F	331	 A horizontal bar chart showing the quality of the chain. The bar is divided into three segments: a green segment representing 79%, a yellow segment representing 9%, and a grey segment representing 11%. The percentages are labeled below the corresponding segments.

## 2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 15137 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Epidermal growth factor receptor.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	D	294	Total	C	N	O	S	0	1	0
			2377	1528	404	425	20			
1	A	308	Total	C	N	O	S	0	1	0
			2483	1593	422	448	20			
1	C	292	Total	C	N	O	S	0	2	0
			2368	1521	402	424	21			
1	F	294	Total	C	N	O	S	0	1	0
			2377	1528	404	425	20			
1	B	308	Total	C	N	O	S	0	1	0
			2483	1593	422	448	20			
1	E	287	Total	C	N	O	S	0	1	0
			2314	1488	391	416	19			

There are 30 discrepancies between the modelled and reference sequences:

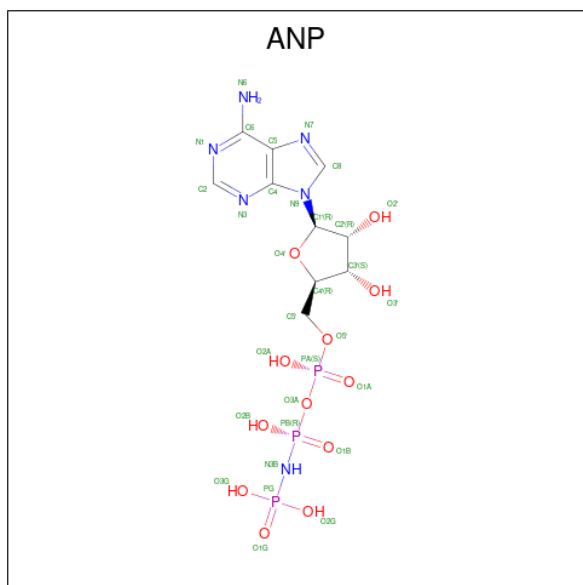
Chain	Residue	Modelled	Actual	Comment	Reference
D	692	GLY	-	expression tag	UNP P00533
D	693	SER	-	expression tag	UNP P00533
D	694	THR	-	expression tag	UNP P00533
D	790	MET	THR	engineered mutation	UNP P00533
D	948	ARG	VAL	engineered mutation	UNP P00533
A	692	GLY	-	expression tag	UNP P00533
A	693	SER	-	expression tag	UNP P00533
A	694	THR	-	expression tag	UNP P00533
A	790	MET	THR	engineered mutation	UNP P00533
A	948	ARG	VAL	engineered mutation	UNP P00533
C	692	GLY	-	expression tag	UNP P00533
C	693	SER	-	expression tag	UNP P00533
C	694	THR	-	expression tag	UNP P00533
C	790	MET	THR	engineered mutation	UNP P00533
C	948	ARG	VAL	engineered mutation	UNP P00533
F	692	GLY	-	expression tag	UNP P00533
F	693	SER	-	expression tag	UNP P00533

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Chain	Residue	Modelled	Actual	Comment	Reference
F	694	THR	-	expression tag	UNP P00533
F	790	MET	THR	engineered mutation	UNP P00533
F	948	ARG	VAL	engineered mutation	UNP P00533
B	692	GLY	-	expression tag	UNP P00533
B	693	SER	-	expression tag	UNP P00533
B	694	THR	-	expression tag	UNP P00533
B	790	MET	THR	engineered mutation	UNP P00533
B	948	ARG	VAL	engineered mutation	UNP P00533
E	692	GLY	-	expression tag	UNP P00533
E	693	SER	-	expression tag	UNP P00533
E	694	THR	-	expression tag	UNP P00533
E	790	MET	THR	engineered mutation	UNP P00533
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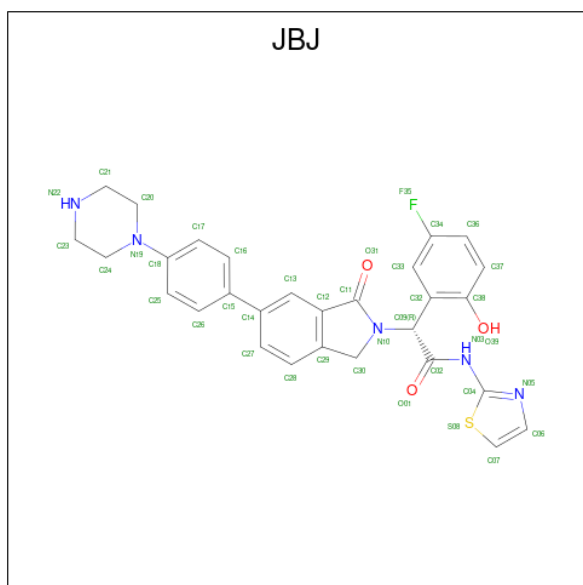
- Molecule 2 is PHOSPHOAMINOPHOSPHONIC ACID-ADENYLATE ESTER (CCD ID: ANP) (formula:  $C_{10}H_{17}N_6O_{12}P_3$ ).



- Molecule 3 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

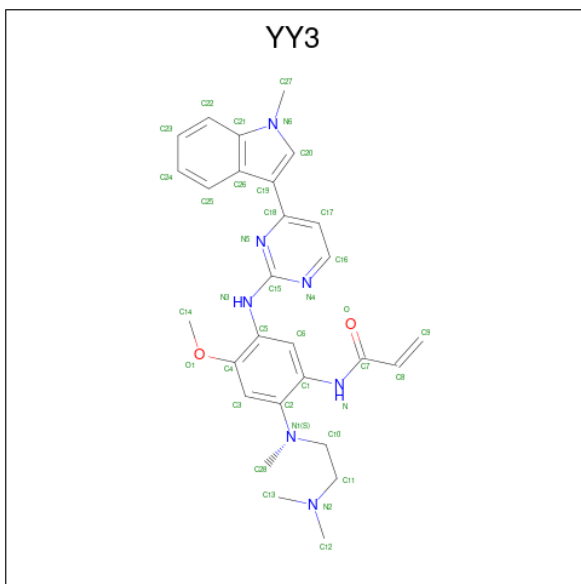
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	D	1	Total	Mg	0	0
			1	1		
3	A	1	Total	Mg	0	0
			1	1		
3	F	1	Total	Mg	0	0
			1	1		
3	B	1	Total	Mg	0	0
			1	1		

- Molecule 4 is (2R)-2-(5-fluoro-2-hydroxyphenyl)-2-{1-oxo-6-[4-(piperazin-1-yl)phenyl]-1,3-dihydro-2H-isoindol-2-yl}-N-(1,3-thiazol-2-yl)acetamide (CCD ID: JBJ) (formula: C<sub>29</sub>H<sub>26</sub>FN<sub>5</sub>O<sub>3</sub>S) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
4	D	1	Total 39	C 29	F 1	N 5	O 3	S 1	0	0
4	A	1	Total 39	C 29	F 1	N 5	O 3	S 1	0	0
4	C	1	Total 39	C 29	F 1	N 5	O 3	S 1	0	0
4	F	1	Total 39	C 29	F 1	N 5	O 3	S 1	0	0
4	B	1	Total 39	C 29	F 1	N 5	O 3	S 1	0	0
4	E	1	Total 39	C 29	F 1	N 5	O 3	S 1	0	0

- Molecule 5 is N-(2-{[2-(dimethylamino)ethyl](methyl)amino}-4-methoxy-5-{[4-(1-methyl-1H-indol-3-yl)pyrimidin-2-yl]amino}phenyl)prop-2-enamide (CCD ID: YY3) (formula: C<sub>28</sub>H<sub>33</sub>N<sub>7</sub>O<sub>2</sub>) (labeled as "Ligand of Interest" by depositor).



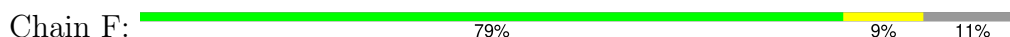
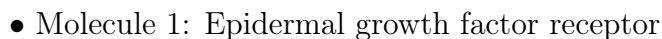
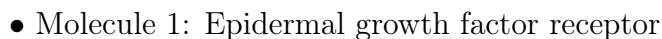
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	C	1	Total	C	N	O	0	0
			37	28	7	2		
5	E	1	Total	C	N	O	0	0
			37	28	7	2		

- Molecule 6 is water.

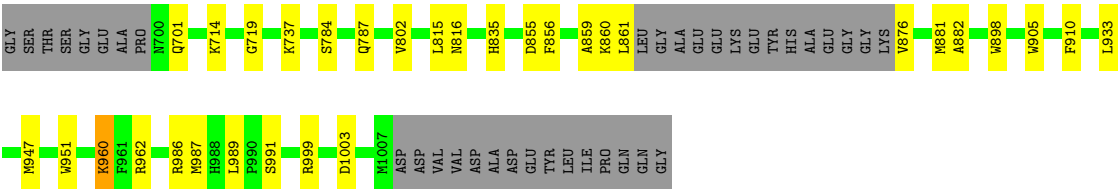
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	D	68	Total	O	0	0
			68	68		
6	A	91	Total	O	0	0
			91	91		
6	C	43	Total	O	0	0
			43	43		
6	F	40	Total	O	0	0
			40	40		
6	B	41	Total	O	0	0
			41	41		
6	E	16	Total	O	0	0
			16	16		



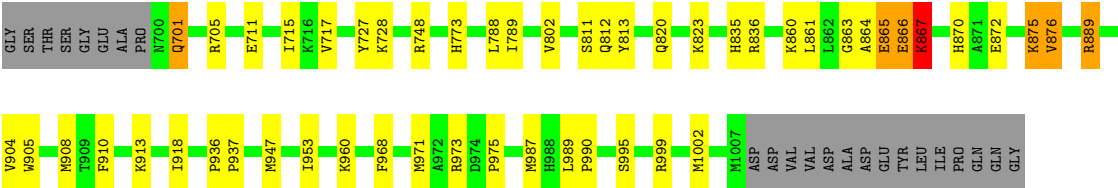
- Molecule 1: Epidermal growth factor receptor



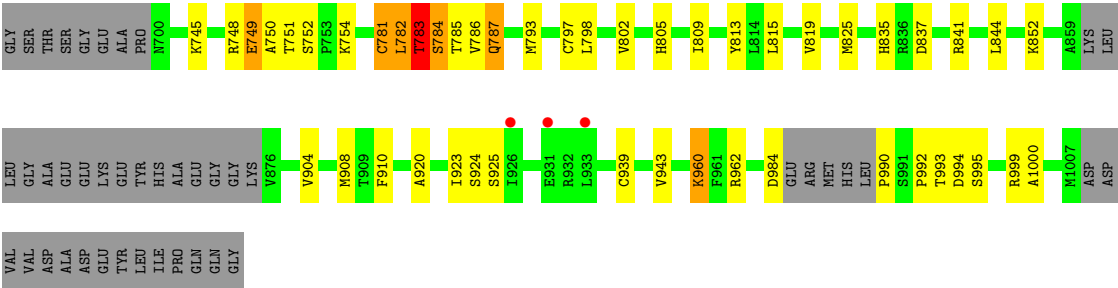




● Molecule 1: Epidermal growth factor receptor



● Molecule 1: Epidermal growth factor receptor



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	57.11Å 94.74Å 95.57Å 70.56° 78.40° 79.18°	Depositor
Resolution (Å)	89.11 – 2.16 89.11 – 2.16	Depositor EDS
% Data completeness (in resolution range)	83.1 (89.11-2.16) 83.1 (89.11-2.16)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.41 (at 2.16Å)	Xtriage
Refinement program	PHENIX 1.18.2_3874	Depositor
R, $R_{free}$	0.212 , 0.247 0.217 , 0.249	Depositor DCC
$R_{free}$ test set	4049 reflections (4.12%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	39.1	Xtriage
Anisotropy	0.307	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.35 , 37.3	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.50$ , $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	0.169 for -h,-l,-k	Xtriage
$F_o, F_c$ correlation	0.96	EDS
Total number of atoms	15137	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	57.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 41.15 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 2.4646e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

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

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

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: ANP, YY3, JBJ, MG

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	0.46	0/2541	0.72	1/3433 (0.0%)
1	B	0.46	1/2541 (0.0%)	0.68	1/3433 (0.0%)
1	C	0.40	0/2423	0.65	0/3275
1	D	0.42	0/2432	0.65	0/3287
1	E	0.45	0/2367	0.75	2/3199 (0.1%)
1	F	0.43	0/2432	0.65	0/3287
All	All	0.44	1/14736 (0.0%)	0.69	4/19914 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	876	VAL	N-CA	5.34	1.53	1.46

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	871	ALA	N-CA-C	-10.20	99.14	114.64
1	B	875	LYS	N-CA-C	-6.64	105.33	113.50
1	E	783	THR	N-CA-C	-5.23	102.27	110.17
1	E	781	CYS	O-C-N	5.12	129.26	123.27

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	2483	0	2527	42	0
1	B	2483	0	2527	31	0
1	C	2368	0	2413	29	0
1	D	2377	0	2430	31	0
1	E	2314	0	2359	28	0
1	F	2377	0	2430	17	0
2	A	31	0	13	0	0
2	B	31	0	13	1	0
2	D	31	0	13	1	0
2	F	31	0	13	1	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
3	D	1	0	0	0	0
3	F	1	0	0	0	0
4	A	39	0	0	1	0
4	B	39	0	0	0	0
4	C	39	0	0	0	0
4	D	39	0	0	0	0
4	E	39	0	0	0	0
4	F	39	0	0	2	0
5	C	37	0	32	2	0
5	E	37	0	32	0	0
6	A	91	0	0	6	0
6	B	41	0	0	3	0
6	C	43	0	0	4	0
6	D	68	0	0	6	0
6	E	16	0	0	0	0
6	F	40	0	0	2	0
All	All	15137	0	14802	172	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 6.

The worst 5 of 172 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:832:ARG:HD3	1:B:748:ARG:HH22	1.22	1.00
1:D:717:VAL:HG22	1:D:727:TYR:CE2	2.17	0.79
1:D:1007:MET:SD	6:D:1265:HOH:O	2.40	0.79
1:C:802:VAL:HG12	1:C:910:PHE:HA	1.68	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:812:GLN:HG2	1:C:989:LEU:HG	1.68	0.74

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 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	307/331 (93%)	294 (96%)	13 (4%)	0	100	100
1	B	307/331 (93%)	300 (98%)	6 (2%)	1 (0%)	36	34
1	C	290/331 (88%)	283 (98%)	7 (2%)	0	100	100
1	D	291/331 (88%)	283 (97%)	8 (3%)	0	100	100
1	E	282/331 (85%)	271 (96%)	11 (4%)	0	100	100
1	F	291/331 (88%)	284 (98%)	6 (2%)	1 (0%)	36	34
All	All	1768/1986 (89%)	1715 (97%)	51 (3%)	2 (0%)	48	50

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	F	859	ALA
1	B	867	LYS

### 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	273/290 (94%)	265 (97%)	8 (3%)	37	39
1	B	273/290 (94%)	260 (95%)	13 (5%)	23	20
1	C	263/290 (91%)	257 (98%)	6 (2%)	44	49
1	D	264/290 (91%)	260 (98%)	4 (2%)	57	64
1	E	257/290 (89%)	242 (94%)	15 (6%)	18	14
1	F	264/290 (91%)	255 (97%)	9 (3%)	32	33
All	All	1594/1740 (92%)	1539 (96%)	55 (4%)	32	32

5 of 55 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	860	LYS
1	B	875	LYS
1	E	984	ASP
1	E	787	GLN
1	B	861	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 14 such sidechains are listed below:

Mol	Chain	Res	Type
1	F	812	GLN
1	F	816	ASN
1	E	888	HIS
1	B	888	HIS
1	B	988	HIS

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

## 5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

## 5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry ⓘ

Of 16 ligands modelled in this entry, 4 are monoatomic - leaving 12 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
2	ANP	B	1101	3	33,33,33	0.99	4 (12%)	45,52,52	0.93	3 (6%)
2	ANP	D	1101	3	33,33,33	1.13	4 (12%)	45,52,52	0.98	3 (6%)
4	JBJ	D	1103	-	44,44,44	1.79	10 (22%)	59,63,63	3.31	19 (32%)
5	YY3	C	1102	1	40,40,40	2.05	15 (37%)	56,56,56	2.12	14 (25%)
2	ANP	A	1101	3	33,33,33	1.12	4 (12%)	45,52,52	1.04	4 (8%)
4	JBJ	C	1101	-	44,44,44	2.59	21 (47%)	59,63,63	3.86	24 (40%)
5	YY3	E	1102	1	40,40,40	2.25	13 (32%)	56,56,56	2.30	16 (28%)
4	JBJ	E	1101	-	44,44,44	2.74	20 (45%)	59,63,63	3.52	20 (33%)
4	JBJ	B	1103	-	44,44,44	2.15	12 (27%)	59,63,63	3.28	22 (37%)
2	ANP	F	1101	3	33,33,33	1.03	4 (12%)	45,52,52	1.02	4 (8%)
4	JBJ	F	1103	-	44,44,44	2.32	18 (40%)	59,63,63	3.66	21 (35%)
4	JBJ	A	1103	-	44,44,44	1.96	14 (31%)	59,63,63	3.13	18 (30%)

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	ANP	B	1101	3	-	3/18/38/38	0/3/3/3
2	ANP	D	1101	3	-	7/18/38/38	0/3/3/3
4	JBJ	D	1103	-	-	6/24/44/44	0/6/6/6
5	YY3	C	1102	1	-	5/25/25/25	0/4/4/4
2	ANP	A	1101	3	-	2/18/38/38	0/3/3/3
4	JBJ	C	1101	-	-	5/24/44/44	0/6/6/6
5	YY3	E	1102	1	-	10/25/25/25	0/4/4/4
4	JBJ	E	1101	-	-	2/24/44/44	0/6/6/6

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	BJJ	B	1103	-	-	3/24/44/44	0/6/6/6
2	ANP	F	1101	3	-	4/18/38/38	0/3/3/3
4	BJJ	F	1103	-	-	3/24/44/44	0/6/6/6
4	BJJ	A	1103	-	-	2/24/44/44	0/6/6/6

The worst 5 of 139 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	E	1101	BJJ	C11-N10	7.44	1.43	1.36
4	B	1103	BJJ	C04-S08	6.94	1.83	1.74
4	C	1101	BJJ	C30-C29	6.68	1.59	1.50
4	F	1103	BJJ	C11-N10	6.63	1.42	1.36
5	E	1102	YY3	C7-N	6.53	1.47	1.35

The worst 5 of 168 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	C	1101	BJJ	C30-N10-C11	-18.15	105.50	113.15
4	E	1101	BJJ	C30-N10-C11	-17.45	105.79	113.15
4	F	1103	BJJ	C30-N10-C11	-16.19	106.32	113.15
4	B	1103	BJJ	C30-N10-C11	-15.33	106.69	113.15
4	A	1103	BJJ	C30-N10-C11	-15.24	106.72	113.15

There are no chirality outliers.

5 of 52 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	D	1101	ANP	PB-N3B-PG-O1G
2	D	1101	ANP	PA-O3A-PB-O2B
2	A	1101	ANP	PG-N3B-PB-O3A
2	F	1101	ANP	PB-N3B-PG-O1G
2	F	1101	ANP	PA-O3A-PB-O2B

There are no ring outliers.

6 monomers are involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	1101	ANP	1	0
2	D	1101	ANP	1	0
5	C	1102	YY3	2	0

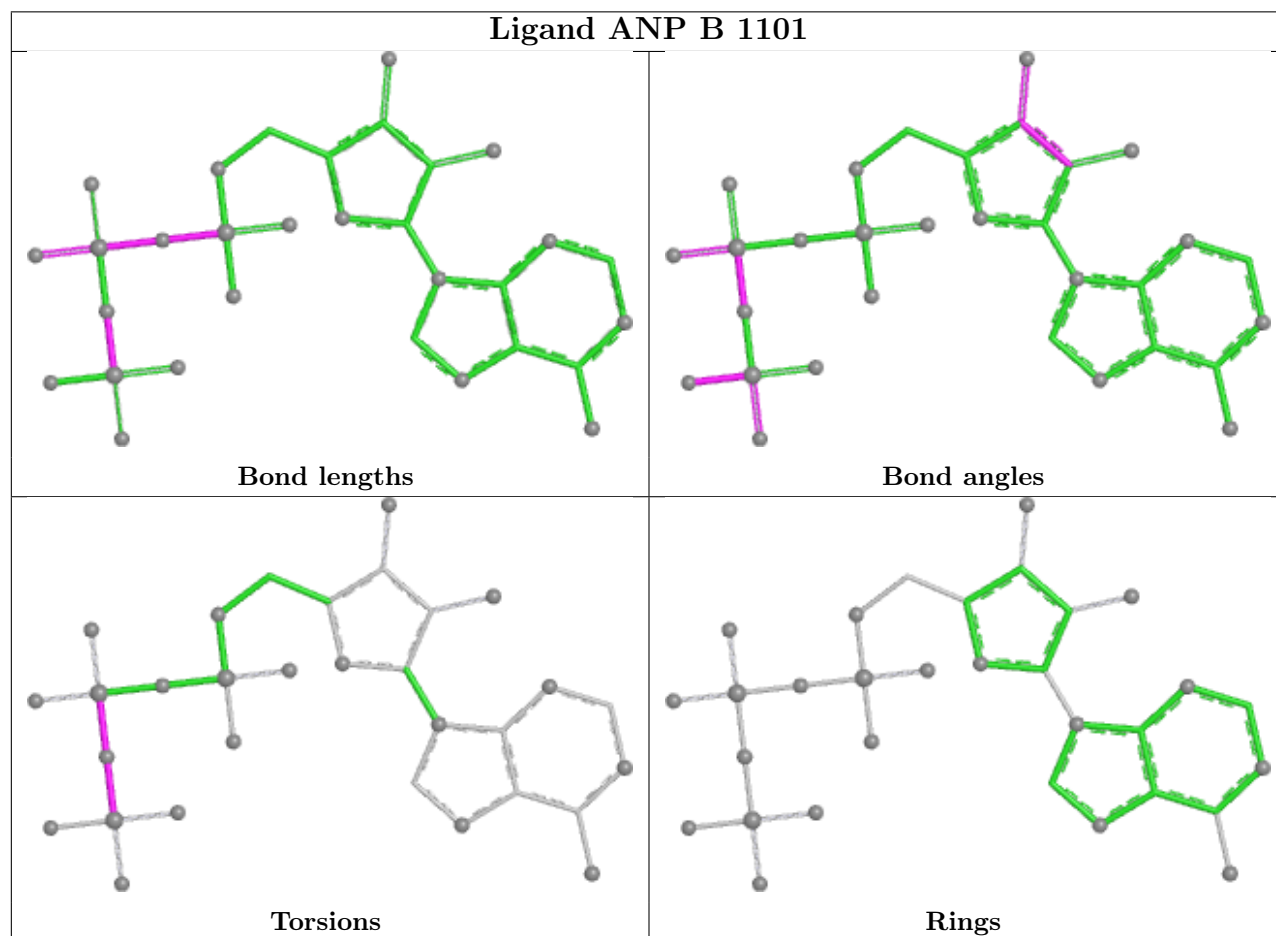
*Continued on next page...*

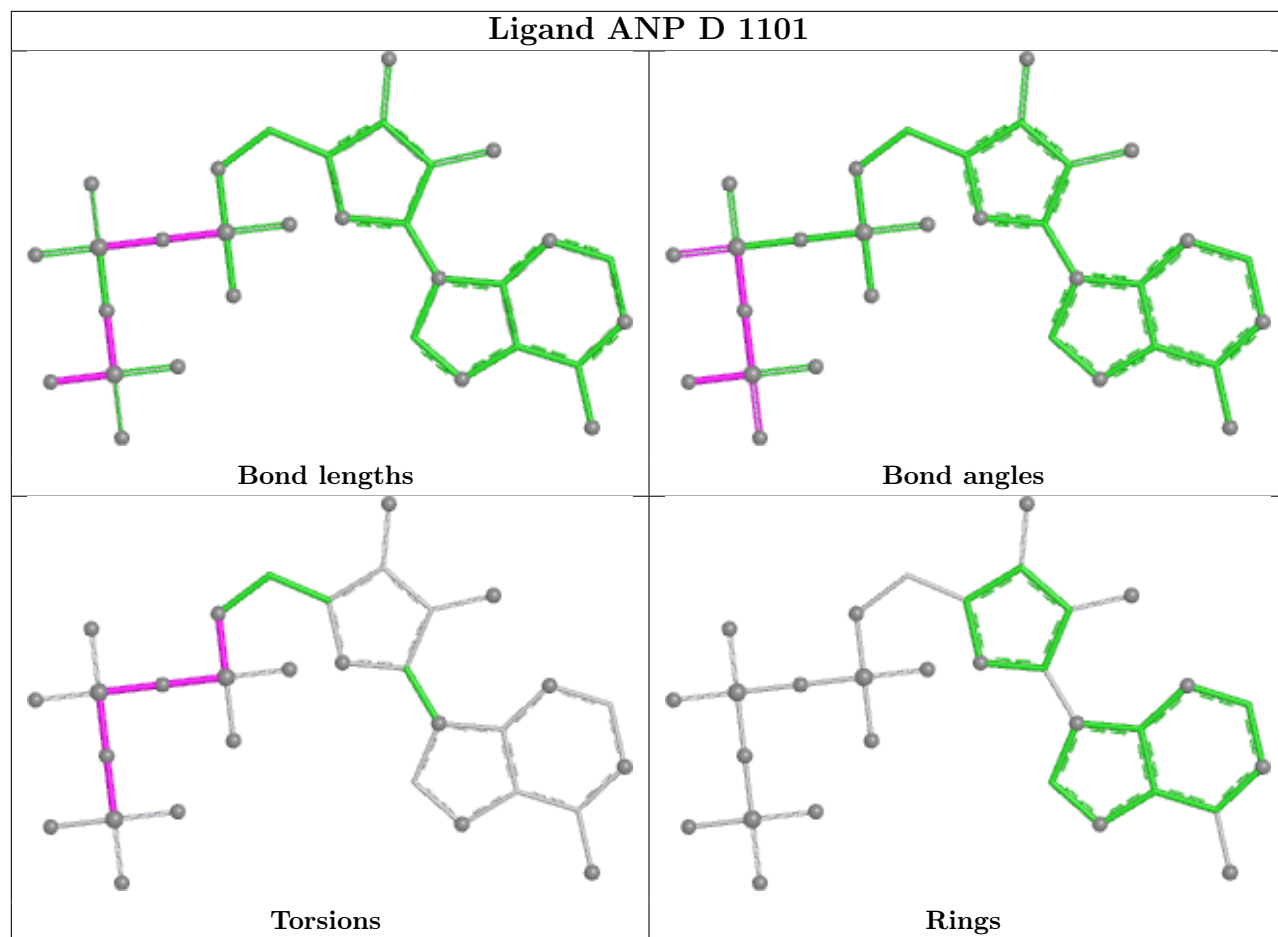


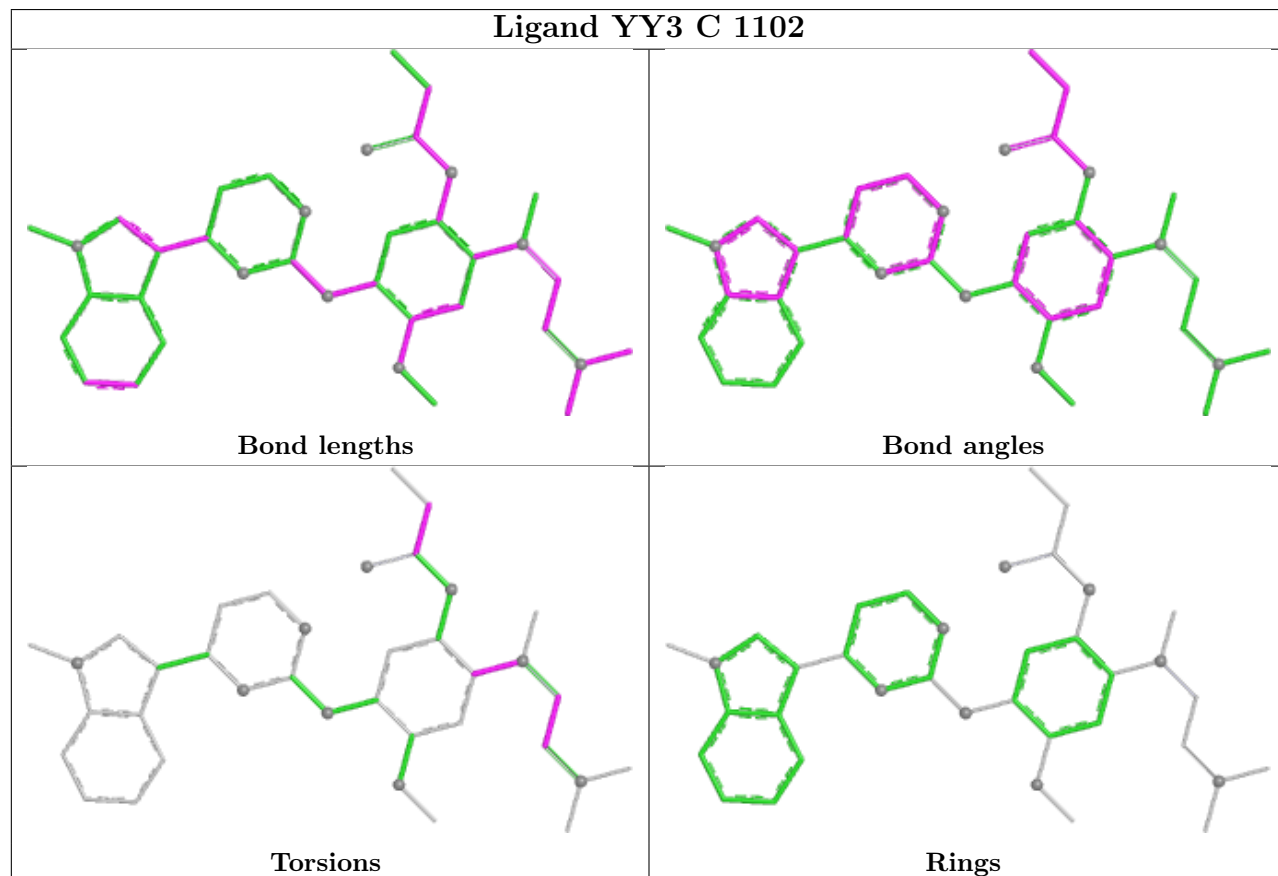
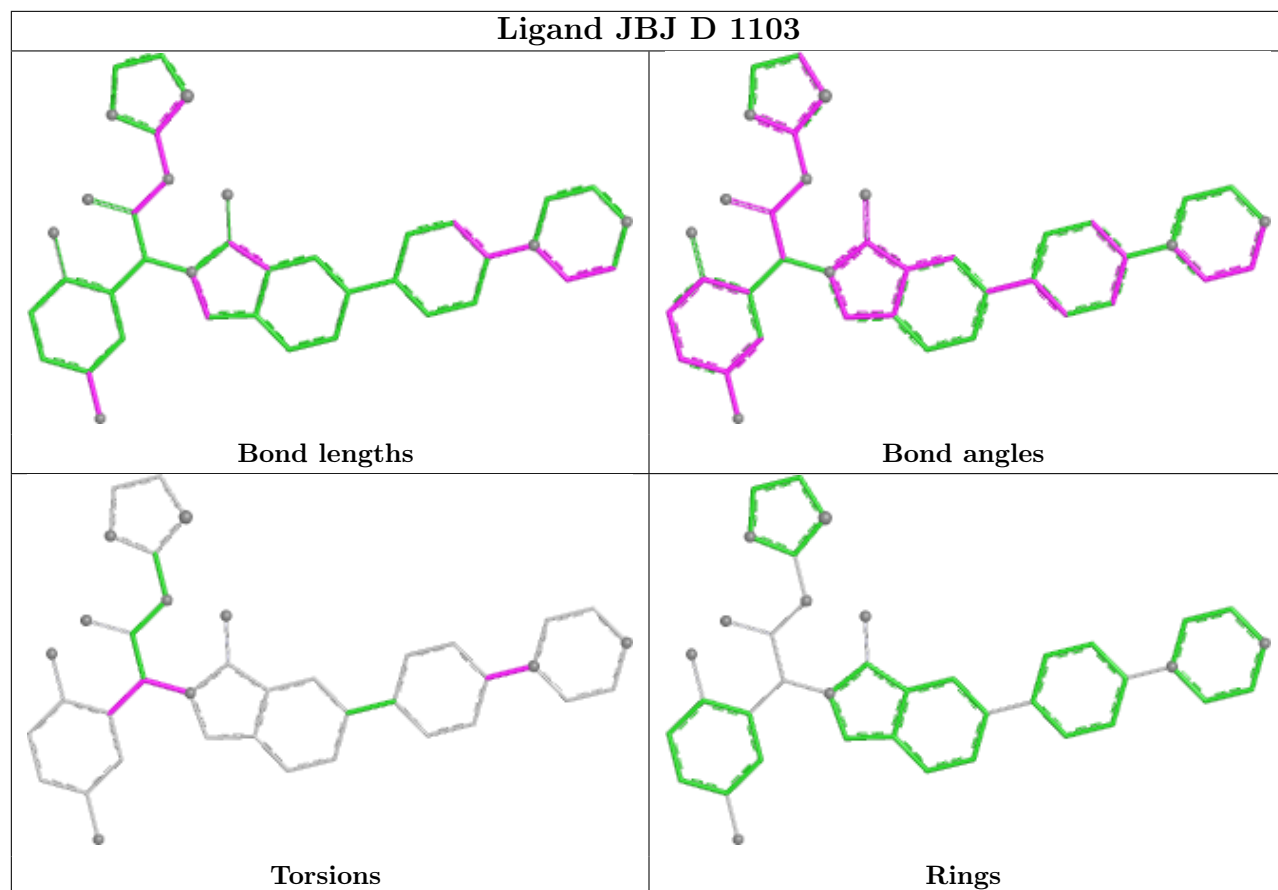
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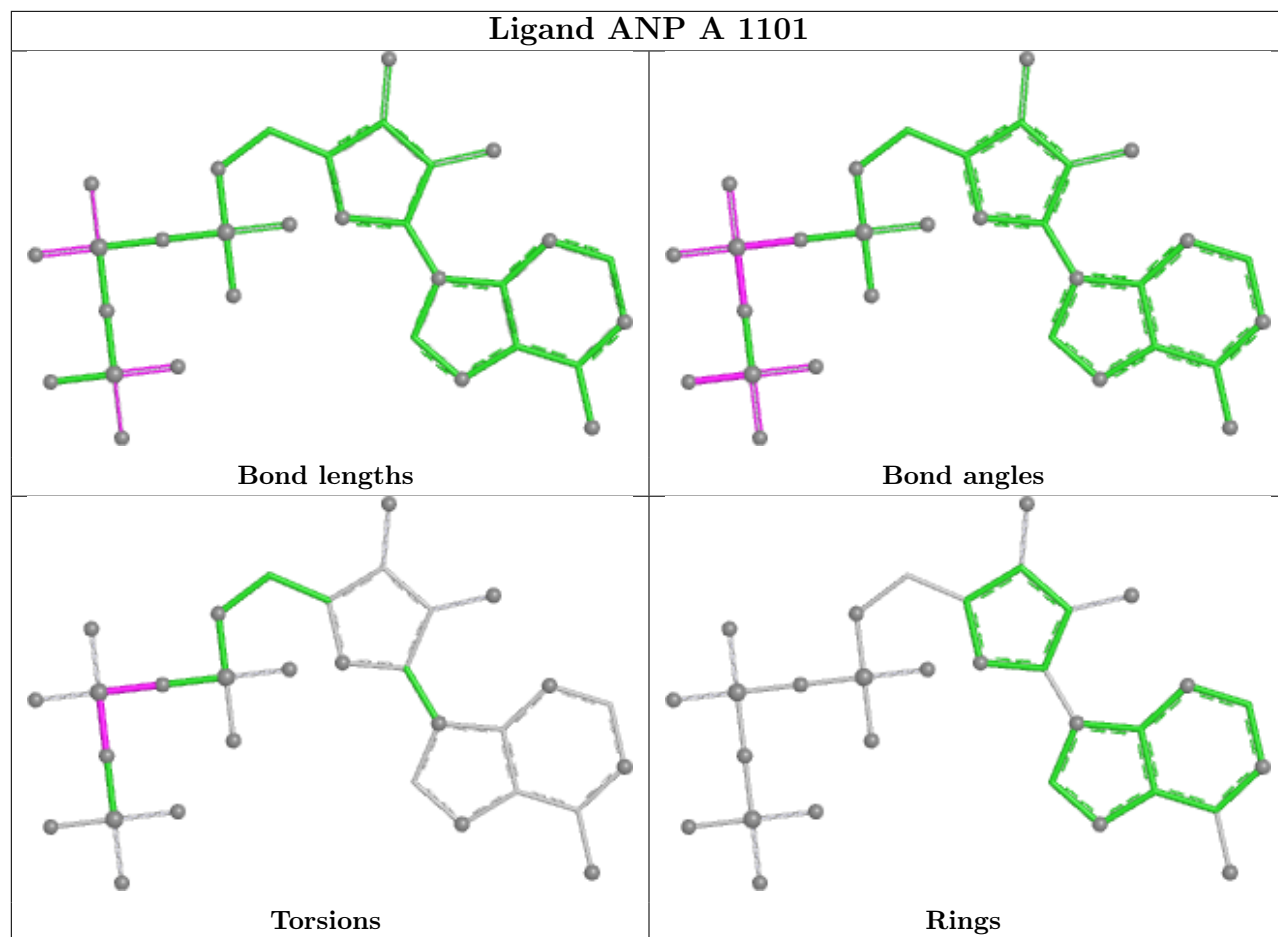
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	F	1101	ANP	1	0
4	F	1103	JBJ	2	0
4	A	1103	JBJ	1	0

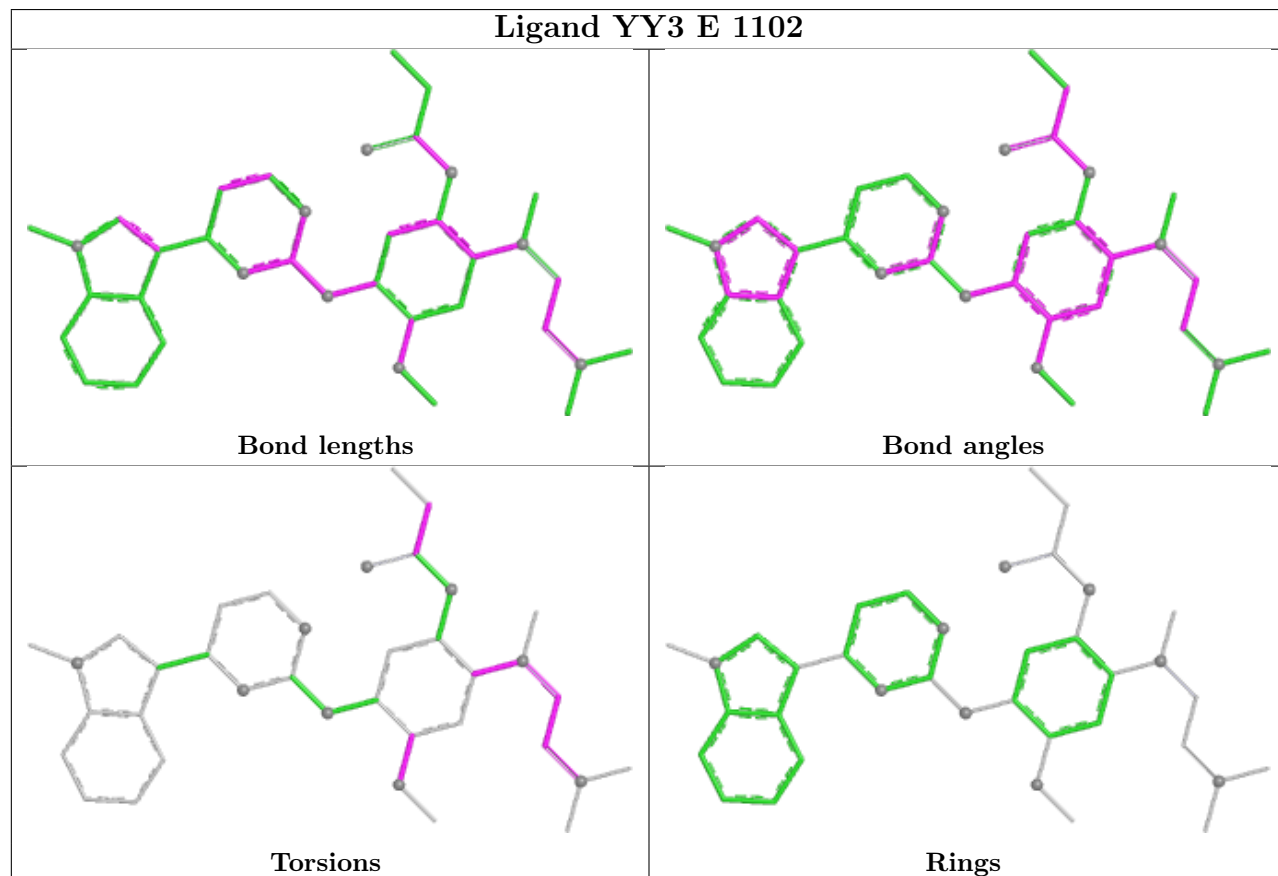
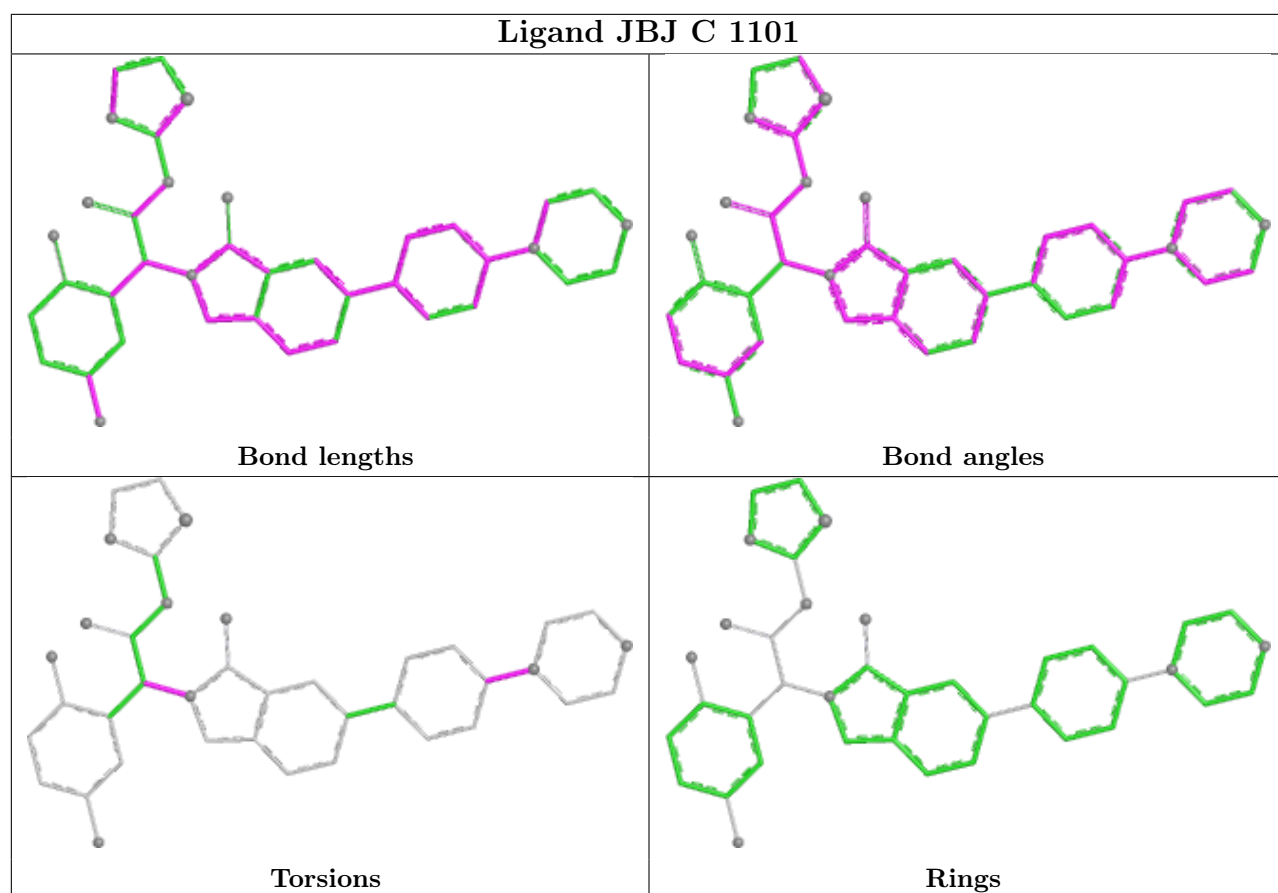
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

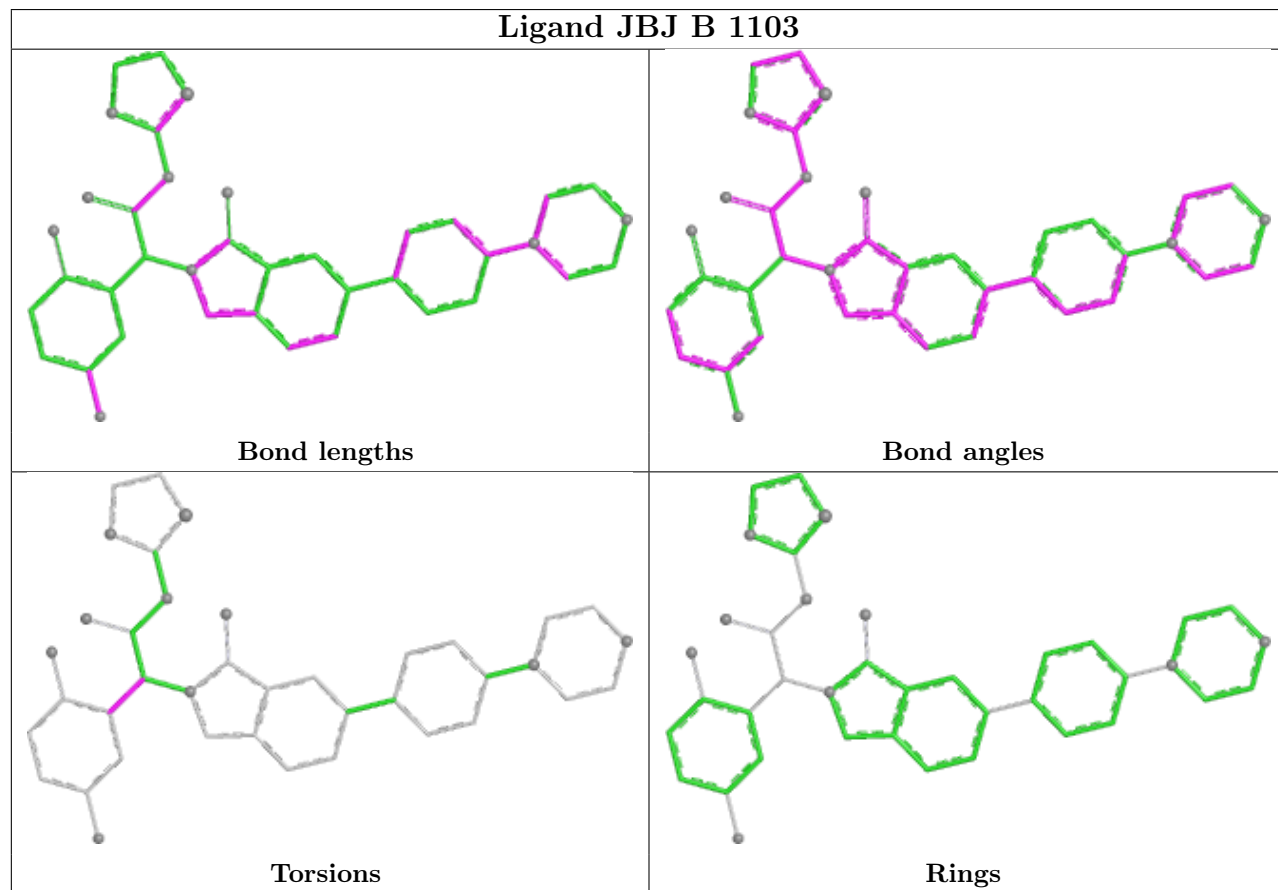
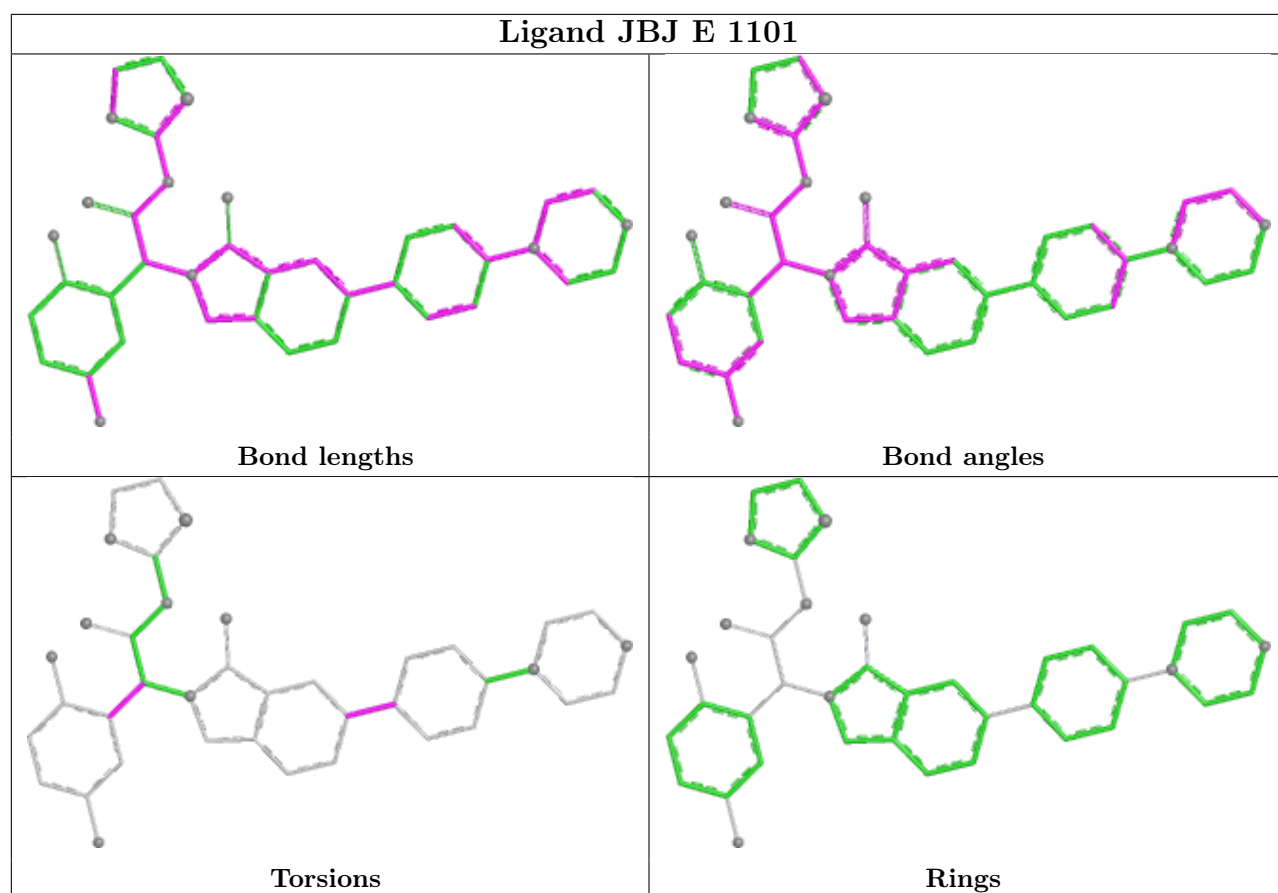


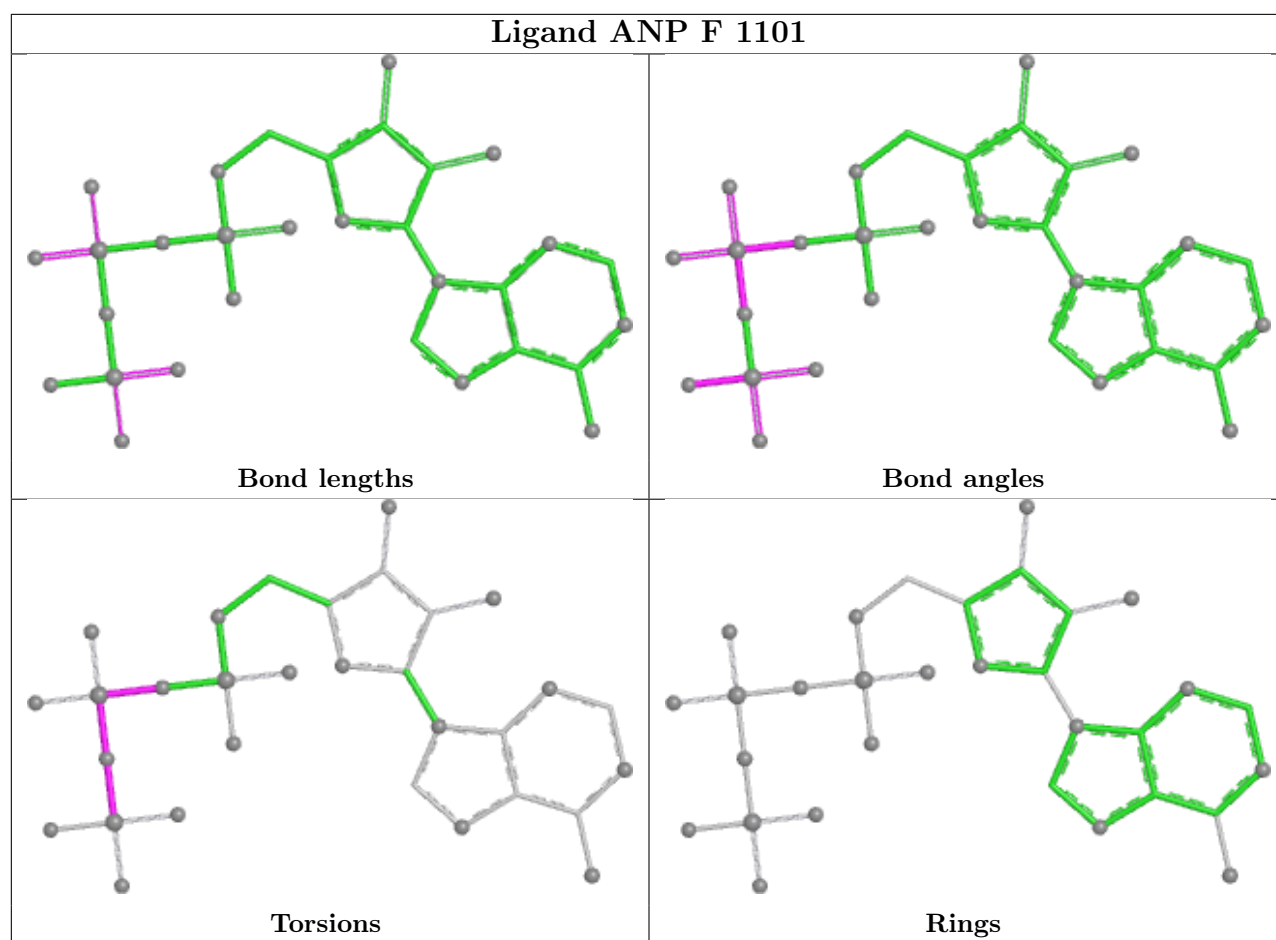


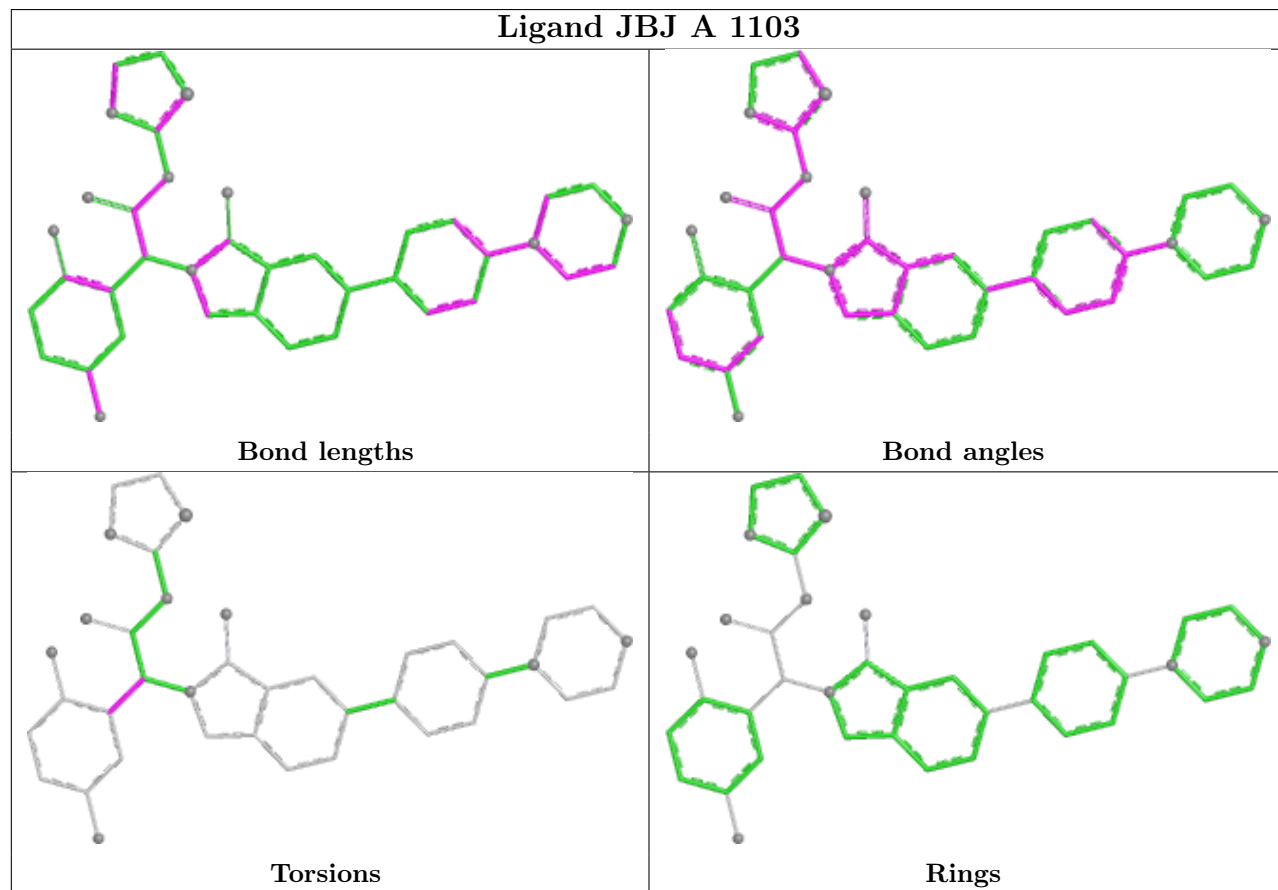
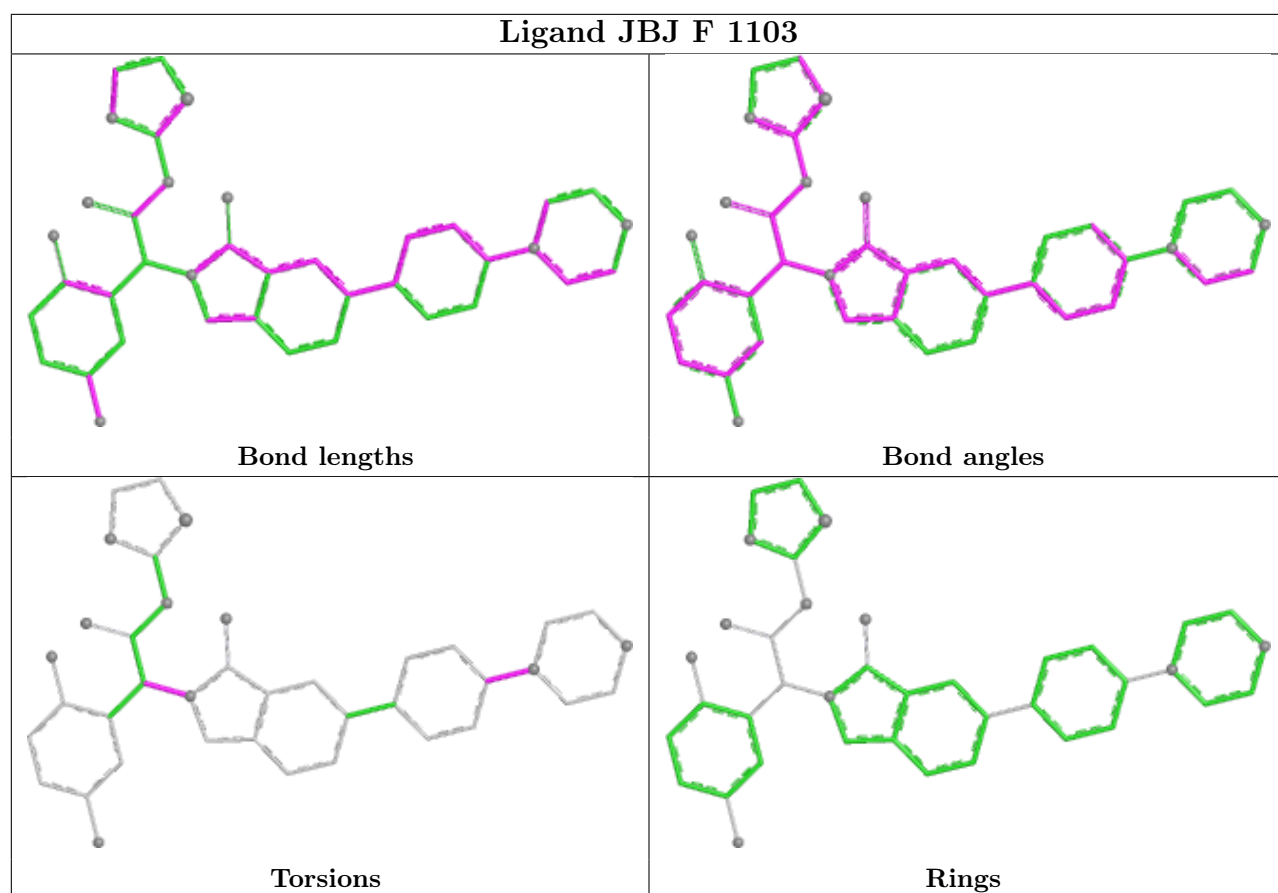














## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

There are no chain breaks in this entry.

## 6 Fit of model and data [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, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2		OWAB(Å <sup>2</sup> )	Q<0.9	
1	A	308/331 (93%)	-1.31	0	100	100	25, 47, 77, 106	1 (0%)
1	B	308/331 (93%)	-1.17	0	100	100	32, 53, 85, 100	1 (0%)
1	C	292/331 (88%)	-1.10	0	100	100	26, 57, 84, 105	2 (0%)
1	D	294/331 (88%)	-1.32	0	100	100	23, 46, 72, 84	1 (0%)
1	E	287/331 (86%)	-0.50	3 (1%)	79	82	46, 79, 116, 139	1 (0%)
1	F	294/331 (88%)	-1.14	0	100	100	34, 56, 82, 102	1 (0%)
All	All	1783/1986 (89%)	-1.09	3 (0%)	91	92	23, 55, 96, 139	7 (0%)

All (3) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	E	931	GLU	2.7
1	E	926	ILE	2.3
1	E	933	LEU	2.2

### 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 oligosaccharides in this entry.

### 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum,

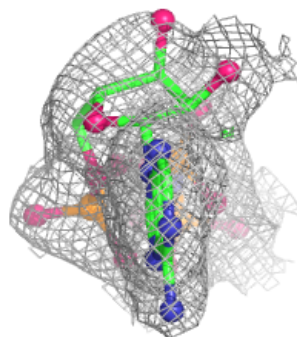
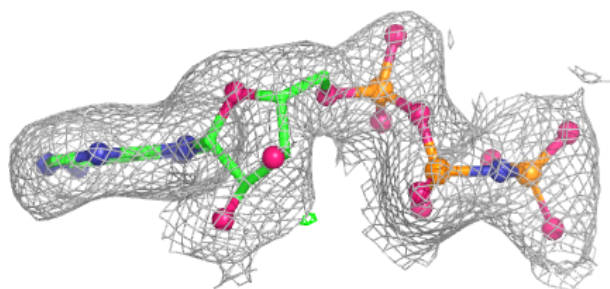
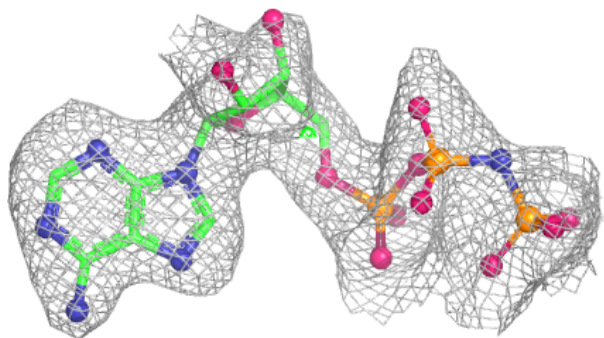
median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
2	ANP	D	1101	31/31	0.99	0.03	32,41,49,57	0
2	ANP	A	1101	31/31	0.99	0.03	31,37,55,56	0
2	ANP	F	1101	31/31	0.99	0.04	35,48,58,61	0
2	ANP	B	1101	31/31	0.99	0.03	38,43,51,54	0
4	JBj	D	1103	39/39	0.99	0.03	31,38,72,78	0
4	JBj	A	1103	39/39	0.99	0.03	30,39,63,74	0
4	JBj	C	1101	39/39	0.99	0.04	37,50,76,78	0
4	JBj	F	1103	39/39	0.99	0.03	30,44,73,74	0
4	JBj	B	1103	39/39	0.99	0.03	29,39,69,72	0
4	JBj	E	1101	39/39	0.99	0.04	46,65,92,93	0
5	YY3	C	1102	37/37	0.99	0.03	35,47,62,67	0
5	YY3	E	1102	37/37	0.99	0.04	57,65,73,75	0
3	MG	D	1102	1/1	1.00	0.03	43,43,43,43	0
3	MG	A	1102	1/1	1.00	0.01	36,36,36,36	0
3	MG	F	1102	1/1	1.00	0.04	48,48,48,48	0
3	MG	B	1102	1/1	1.00	0.01	42,42,42,42	0

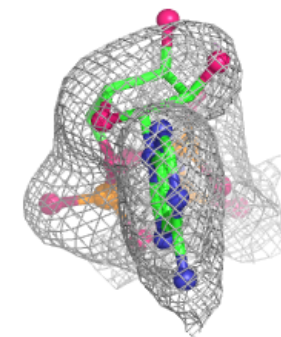
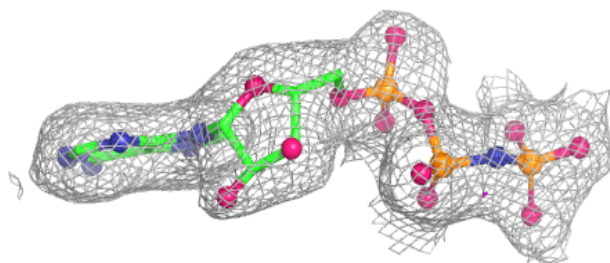
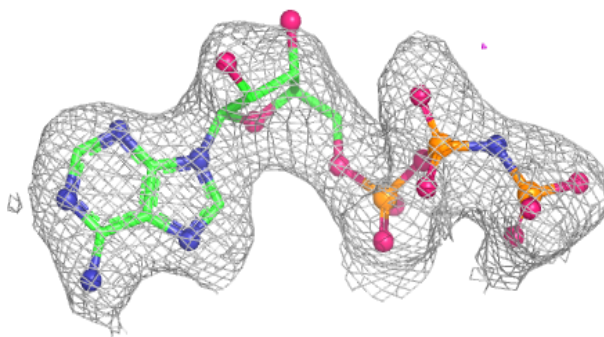
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

**Electron density around ANP D 1101:**

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

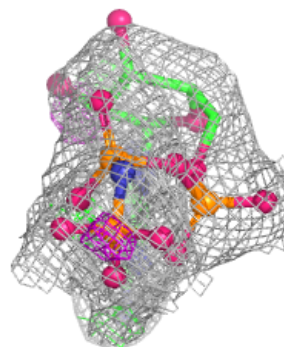
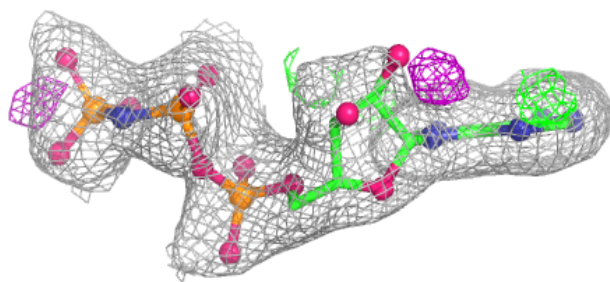
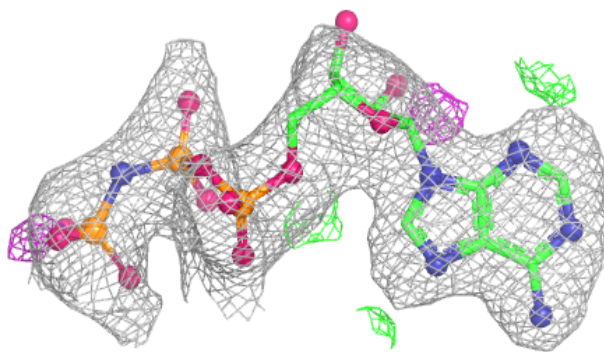
**Electron density around ANP A 1101:**

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and green (positive)

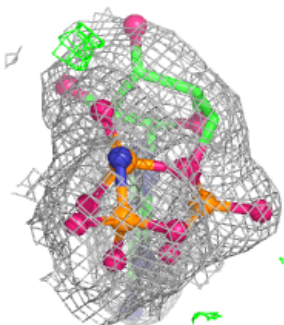
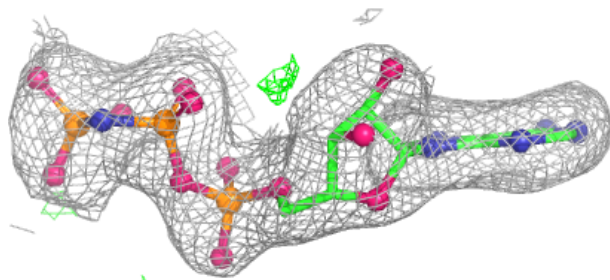
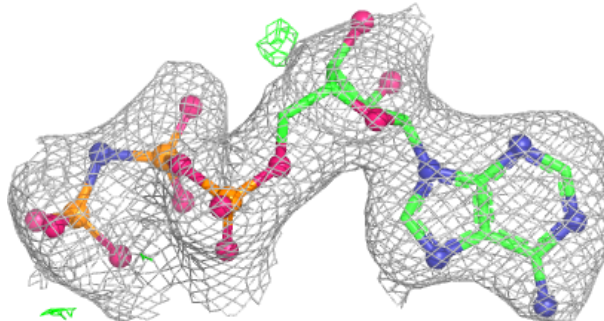


**Electron density around ANP F 1101:**

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

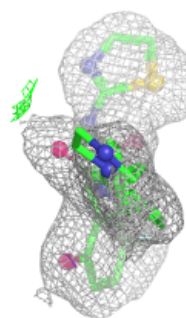
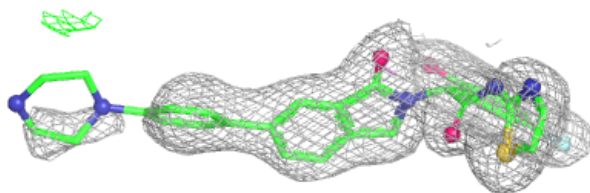
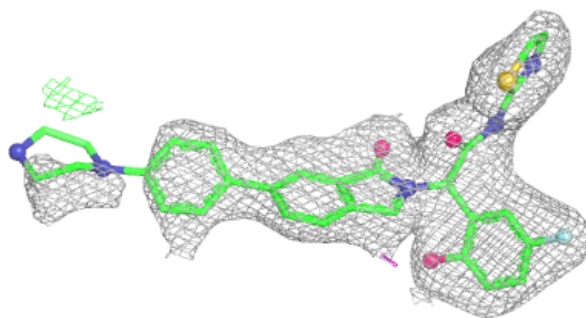
**Electron density around ANP B 1101:**

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

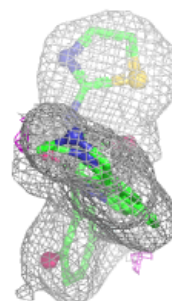
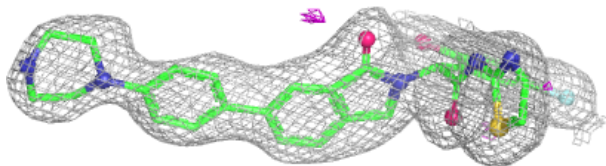
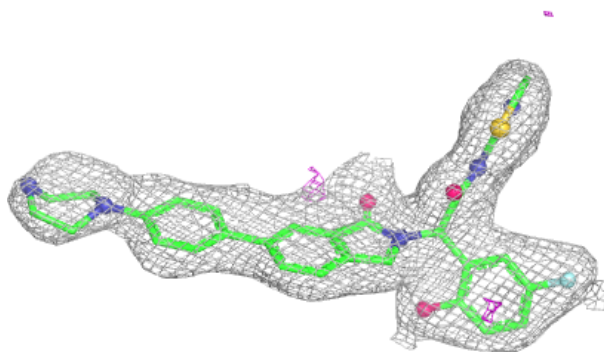


**Electron density around JBJ D 1103:**

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

**Electron density around JBJ A 1103:**

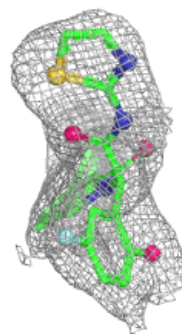
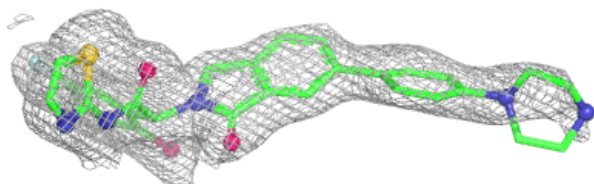
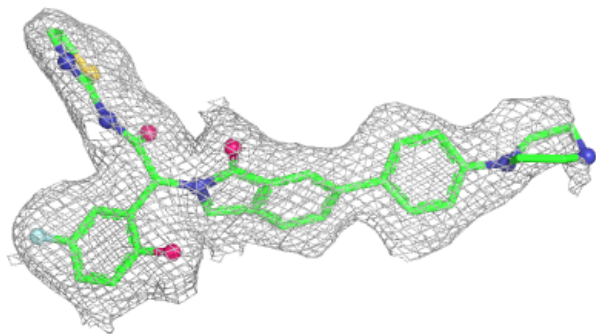
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and green (positive)



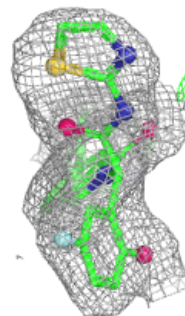
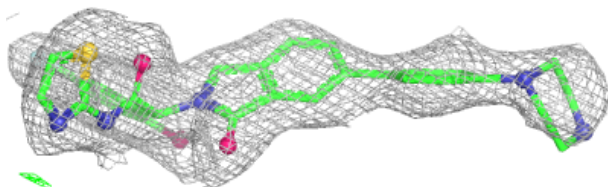
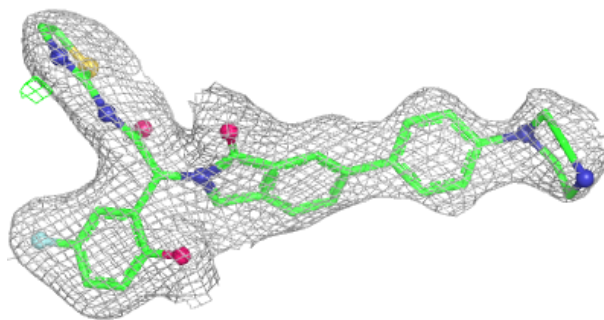


**Electron density around JBJ C 1101:**

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and green (positive)

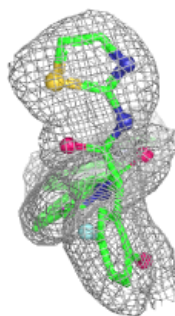
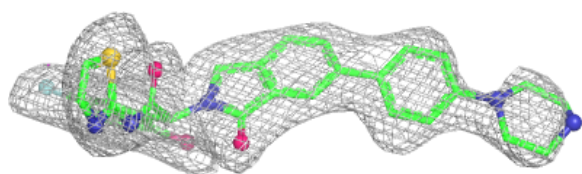
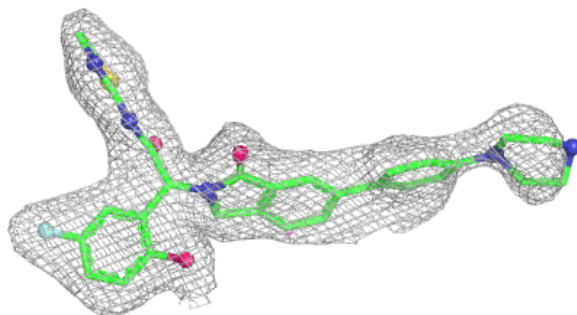
**Electron density around JBJ F 1103:**

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and green (positive)

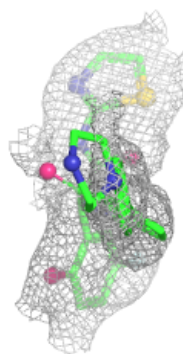
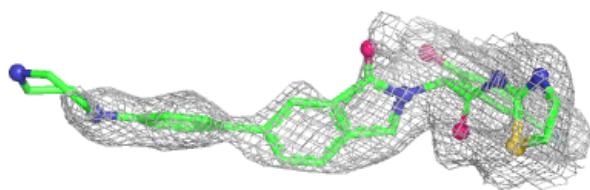
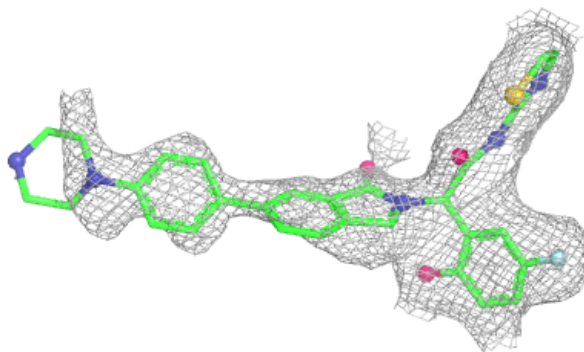


**Electron density around JBJ B 1103:**

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and green (positive)

**Electron density around JBJ E 1101:**

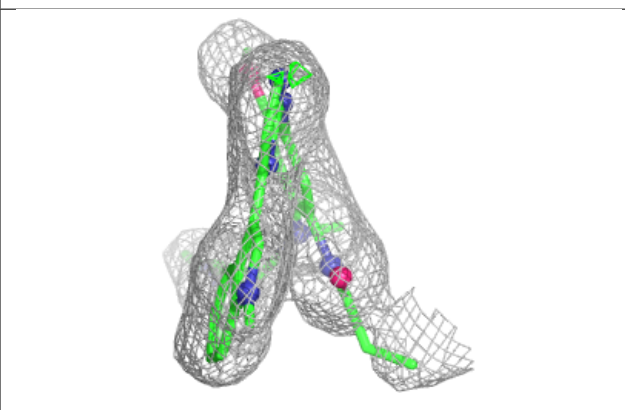
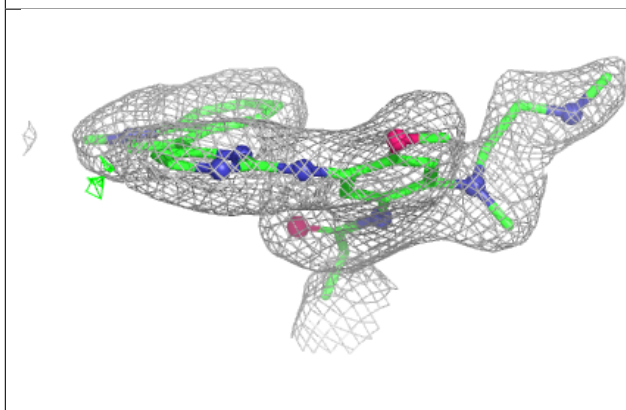
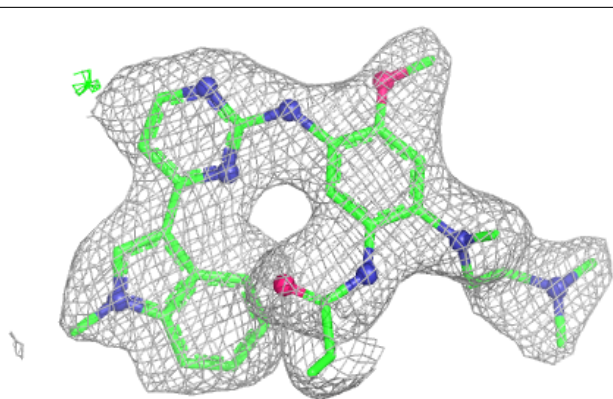
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



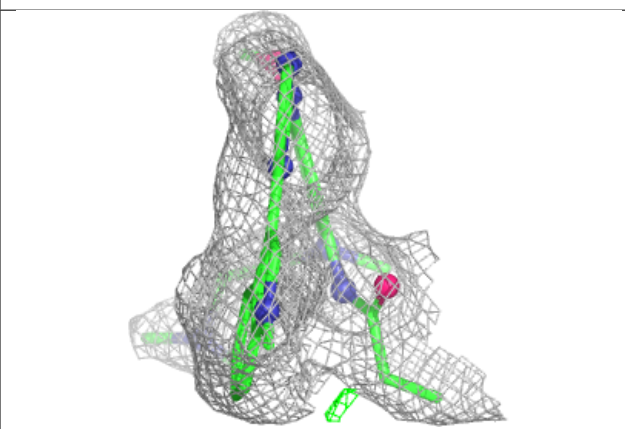
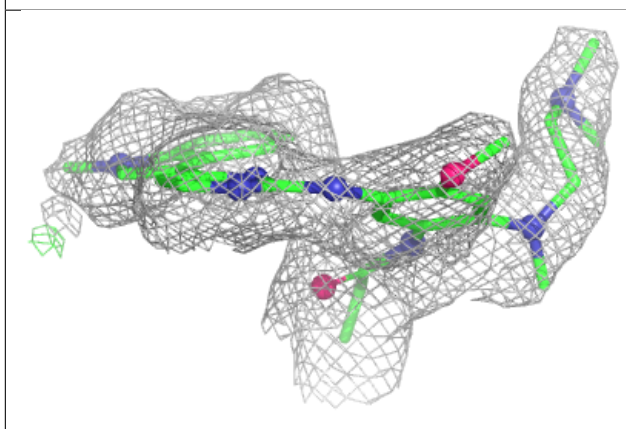
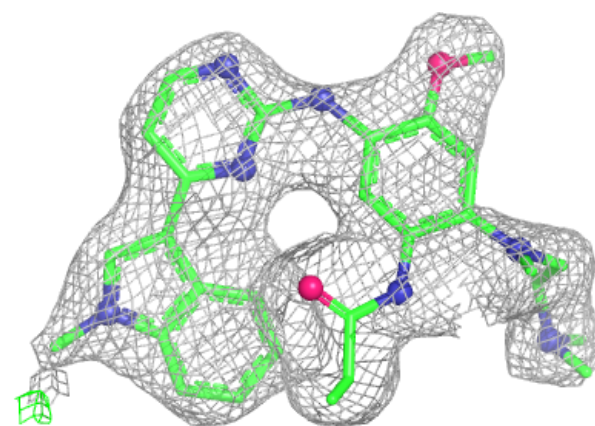


**Electron density around YY3 C 1102:**

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

**Electron density around YY3 E 1102:**

$2mF_o-DF_c$  (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.