



# wwPDB X-ray Structure Validation Summary Report ⓘ

Jun 12, 2024 – 10:51 PM EDT

PDB ID : 3G49  
Title : N-(Pyridin-2-yl) Arylsulfonamide Inhibitors of 11b-Hydroxysteroid Dehydrogenase Type 1: Discovery of PF-915275  
Authors : Pauly, T.A.  
Deposited on : 2009-02-03  
Resolution : 2.50 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	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.20.1
EDS	:	2.36.2
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)	:	2.36.2

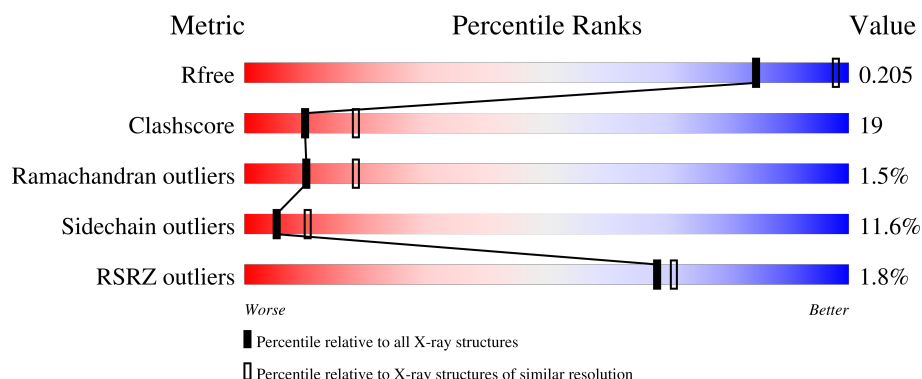
# 1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.50 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	4661 (2.50-2.50)
Clashscore	141614	5346 (2.50-2.50)
Ramachandran outliers	138981	5231 (2.50-2.50)
Sidechain outliers	138945	5233 (2.50-2.50)
RSRZ outliers	127900	4559 (2.50-2.50)

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	277	
1	B	277	
1	C	277	
1	D	277	

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	3G4	A	2004	-	-	X	-
3	3G4	D	2007	-	-	X	-

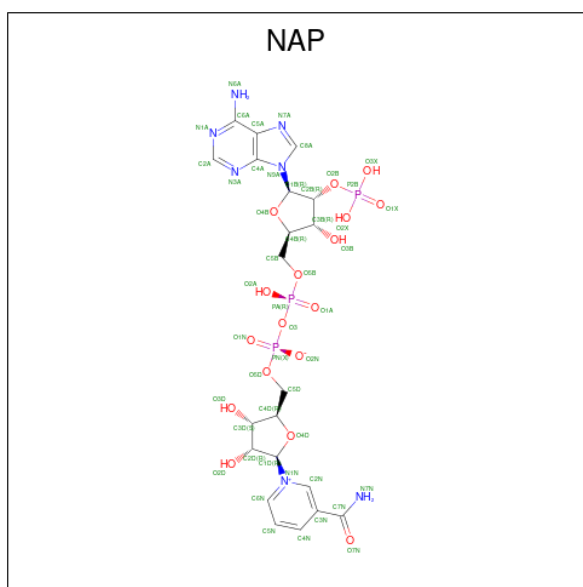


In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called 11-beta-hydroxysteroid dehydrogenase 1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	263	Total 2017	C 1296	N 337	O 369	S 15	0	0	0
1	B	263	Total 2017	C 1296	N 337	O 369	S 15	0	0	0
1	C	263	Total 2017	C 1296	N 337	O 369	S 15	0	0	0
1	D	263	Total 2017	C 1296	N 337	O 369	S 15	0	0	0

- Molecule 2 is NADP NICOTINAMIDE-ADENINE-DINUCLEOTIDE PHOSPHATE (three-letter code: NAP) (formula:  $C_{21}H_{28}N_7O_{17}P_3$ ).



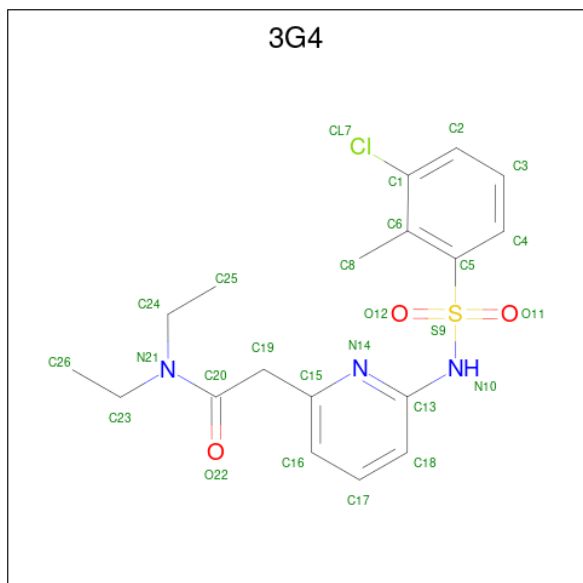
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total 48	C 21	N 7	O 17	P 3	0	0
2	B	1	Total 48	C 21	N 7	O 17	P 3	0	0

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	C	1	Total	C	N	O	P	0	0
			48	21	7	17	3		
2	D	1	Total	C	N	O	P	0	0
			48	21	7	17	3		

- Molecule 3 is 2-(6-[(3-chloro-2-methylphenyl)sulfonyl]amino)pyridin-2-yl)-N,N-diethylacetamide (three-letter code: 3G4) (formula: C<sub>18</sub>H<sub>22</sub>ClN<sub>3</sub>O<sub>3</sub>S).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
3	A	1	Total	C	Cl	N	O	S	0	0
			26	18	1	3	3	1		
3	D	1	Total	C	Cl	N	O	S	0	0
			26	18	1	3	3	1		

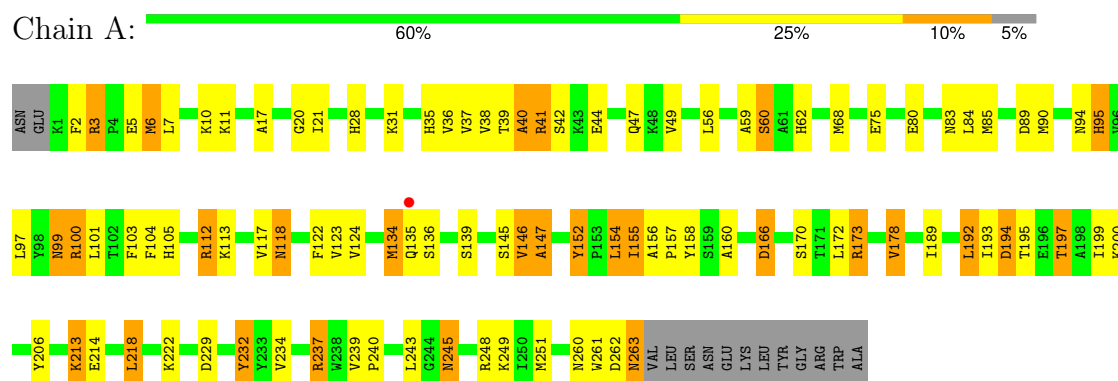
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	46	Total	O	0	0
			46	46		
4	B	28	Total	O	0	0
			28	28		
4	C	48	Total	O	0	0
			48	48		
4	D	46	Total	O	0	0
			46	46		

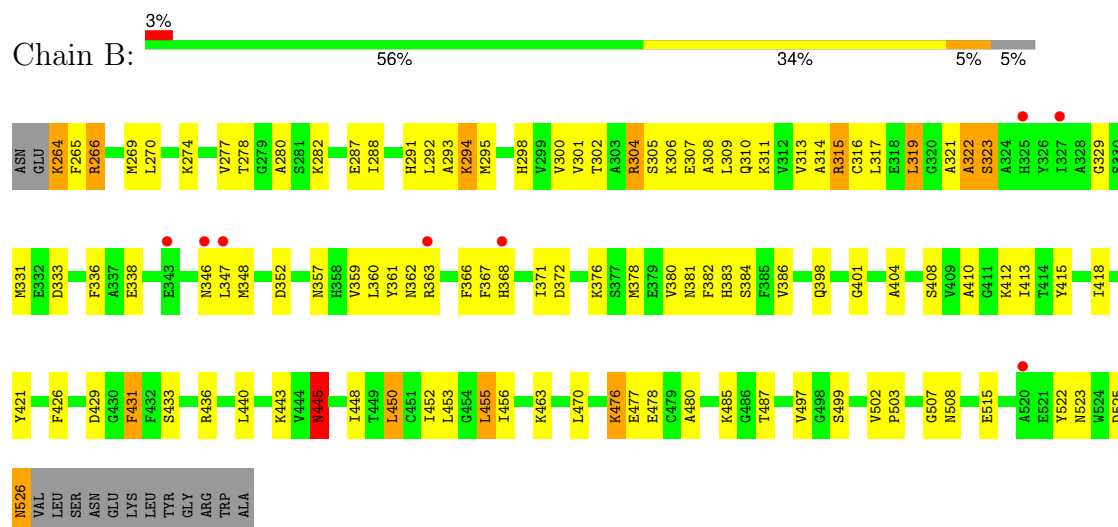
### 3 Residue-property plots

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 electron 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 dot above a residue indicates a poor fit to the electron density ( $RSRZ > 2$ ). 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.

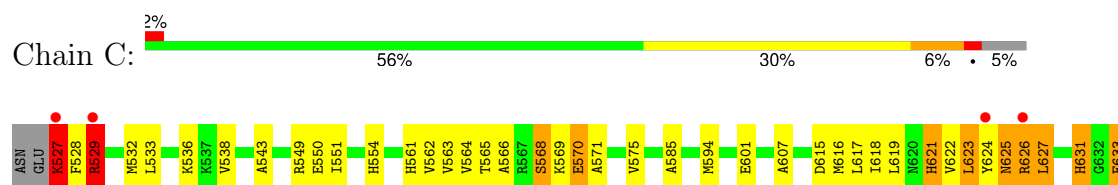
#### • Molecule 1: 11-beta-hydroxysteroid dehydrogenase 1

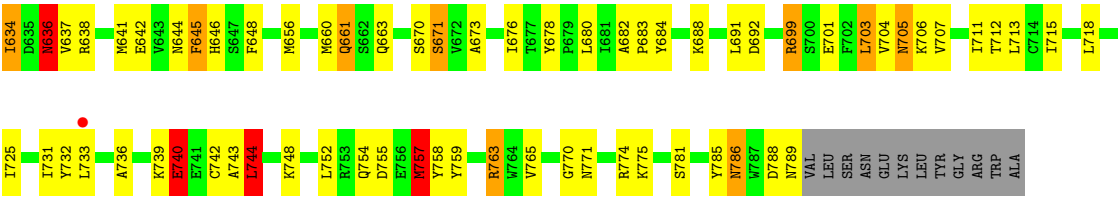


#### • Molecule 1: 11-beta-hydroxysteroid dehydrogenase 1

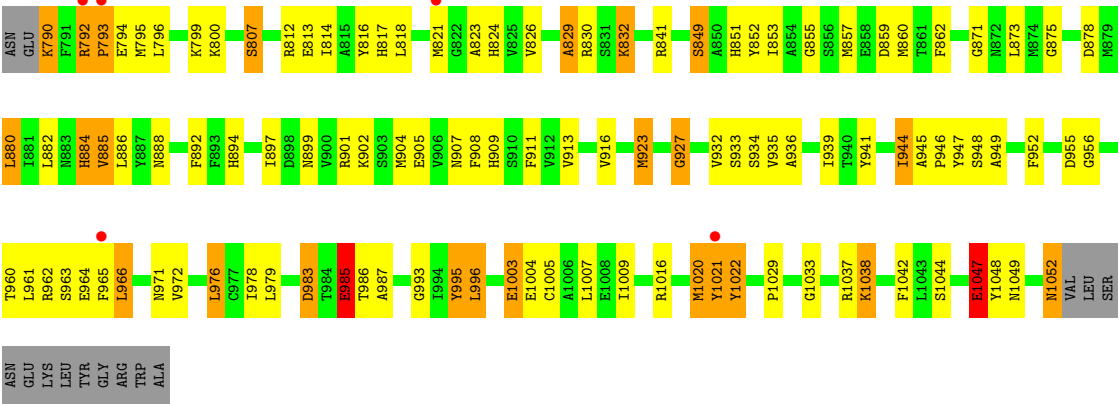


#### • Molecule 1: 11-beta-hydroxysteroid dehydrogenase 1





● Molecule 1: 11-beta-hydroxysteroid dehydrogenase 1



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	78.21Å 83.60Å 179.20Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	41.27 – 2.50 41.28 – 2.50	Depositor EDS
% Data completeness (in resolution range)	91.8 (41.27-2.50) 91.8 (41.28-2.50)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.76 (at 2.51Å)	Xtriage
Refinement program	REFMAC 5.1.24, CNS	Depositor
R, $R_{free}$	0.189 , 0.225 0.212 , 0.205	Depositor DCC
$R_{free}$ test set	1935 reflections (5.08%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	27.8	Xtriage
Anisotropy	0.408	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.39 , 50.1	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.92	EDS
Total number of atoms	8480	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	31.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.18% of the height of the origin peak. No significant pseudotranslation is detected.*

<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: 3G4, NAP

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	1.58	12/2056 (0.6%)	1.46	20/2777 (0.7%)
1	B	1.55	12/2056 (0.6%)	1.38	13/2777 (0.5%)
1	C	1.57	17/2056 (0.8%)	1.41	18/2777 (0.6%)
1	D	1.58	11/2056 (0.5%)	1.45	25/2777 (0.9%)
All	All	1.57	52/8224 (0.6%)	1.43	76/11108 (0.7%)

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	B	0	1
1	D	0	1
All	All	0	2

The worst 5 of 52 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	733	LEU	C-O	8.51	1.39	1.23
1	A	158	TYR	CB-CG	-6.82	1.41	1.51
1	A	173	ARG	CD-NE	6.08	1.56	1.46
1	C	701	GLU	CD-OE2	5.96	1.32	1.25
1	D	885	VAL	CB-CG1	5.92	1.65	1.52

The worst 5 of 76 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	173	ARG	NE-CZ-NH2	16.72	128.66	120.30
1	D	962	ARG	NE-CZ-NH2	-12.70	113.95	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	173	ARG	NE-CZ-NH1	-12.68	113.96	120.30
1	D	962	ARG	NE-CZ-NH1	12.10	126.35	120.30
1	C	699	ARG	NE-CZ-NH2	9.37	124.99	120.30

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	507	GLY	Peptide
1	D	927	GLY	Peptide

## 5.2 Too-close contacts

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	2017	0	2053	78	0
1	B	2017	0	2050	64	0
1	C	2017	0	2050	84	0
1	D	2017	0	2050	93	0
2	A	48	0	25	5	0
2	B	48	0	25	2	0
2	C	48	0	25	2	0
2	D	48	0	25	2	0
3	A	26	0	22	15	0
3	D	26	0	22	14	0
4	A	46	0	0	2	0
4	B	28	0	0	2	0
4	C	48	0	0	2	0
4	D	46	0	0	5	0
All	All	8480	0	8347	316	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 19.

The worst 5 of 316 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:A:134:MET:SD	1:A:134:MET:CE	2.07	1.41
1:D:985:GLU:HB3	4:D:2239:HOH:O	1.11	1.23
1:B:526:ASN:N	1:B:526:ASN:HD22	1.60	1.00
1:C:527:LYS:C	1:C:527:LYS:HD3	1.83	0.98
1:D:892:PHE:HB2	1:D:894:HIS:HE1	1.28	0.98

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	261/277 (94%)	233 (89%)	23 (9%)	5 (2%)	8	13
1	B	261/277 (94%)	228 (87%)	29 (11%)	4 (2%)	10	18
1	C	261/277 (94%)	238 (91%)	20 (8%)	3 (1%)	14	26
1	D	261/277 (94%)	244 (94%)	13 (5%)	4 (2%)	10	18
All	All	1044/1108 (94%)	943 (90%)	85 (8%)	16 (2%)	10	18

5 of 16 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	154	LEU
1	B	322	ALA
1	A	20	GLY
1	C	742	CYS
1	B	319	LEU

### 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	214/226 (95%)	193 (90%)	21 (10%)	8	15
1	B	214/226 (95%)	190 (89%)	24 (11%)	6	11
1	C	214/226 (95%)	185 (86%)	29 (14%)	3	7
1	D	214/226 (95%)	189 (88%)	25 (12%)	5	10
All	All	856/904 (95%)	757 (88%)	99 (12%)	5	10

5 of 99 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	636	ASN
1	C	763	ARG
1	C	660	MET
1	C	712	THR
1	D	792	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 29 such sidechains are listed below:

Mol	Chain	Res	Type
1	C	554	HIS
1	D	1049	ASN
1	C	631	HIS
1	D	894	HIS
1	C	609	ASN

### 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 monosaccharides in this entry.

## 5.6 Ligand geometry

6 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	3G4	A	2004	-	27,27,27	2.94	6 (22%)	36,38,38	2.25	7 (19%)
2	NAP	C	2000	-	46,52,52	1.80	7 (15%)	61,80,80	2.02	16 (26%)
2	NAP	B	2003	-	46,52,52	2.07	10 (21%)	61,80,80	2.42	17 (27%)
2	NAP	A	2002	-	46,52,52	1.84	11 (23%)	61,80,80	2.89	16 (26%)
2	NAP	D	2001	-	46,52,52	1.51	7 (15%)	61,80,80	1.90	16 (26%)
3	3G4	D	2007	-	27,27,27	3.45	8 (29%)	36,38,38	2.06	7 (19%)

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	3G4	A	2004	-	-	6/23/23/23	0/2/2/2
2	NAP	C	2000	-	-	7/31/67/67	0/5/5/5
2	NAP	B	2003	-	-	4/31/67/67	0/5/5/5
2	NAP	A	2002	-	-	4/31/67/67	0/5/5/5
2	NAP	D	2001	-	-	5/31/67/67	0/5/5/5
3	3G4	D	2007	-	-	10/23/23/23	0/2/2/2

The worst 5 of 49 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	2007	3G4	C19-C20	-10.41	1.40	1.52
3	A	2004	3G4	C19-C20	-9.10	1.42	1.52
3	D	2007	3G4	C5-S9	-8.99	1.65	1.77
2	C	2000	NAP	C4A-N3A	8.74	1.47	1.35
3	D	2007	3G4	S9-N10	-8.43	1.50	1.63

The worst 5 of 79 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	2002	NAP	O4B-C1B-N9A	15.02	128.66	108.75
3	A	2004	3G4	O12-S9-O11	-8.41	109.31	119.52
2	A	2002	NAP	N3A-C2A-N1A	-8.04	117.76	128.67
2	B	2003	NAP	N3A-C2A-N1A	-7.67	118.26	128.67
3	D	2007	3G4	O12-S9-O11	-7.42	110.51	119.52

There are no chirality outliers.

5 of 36 torsion outliers are listed below:

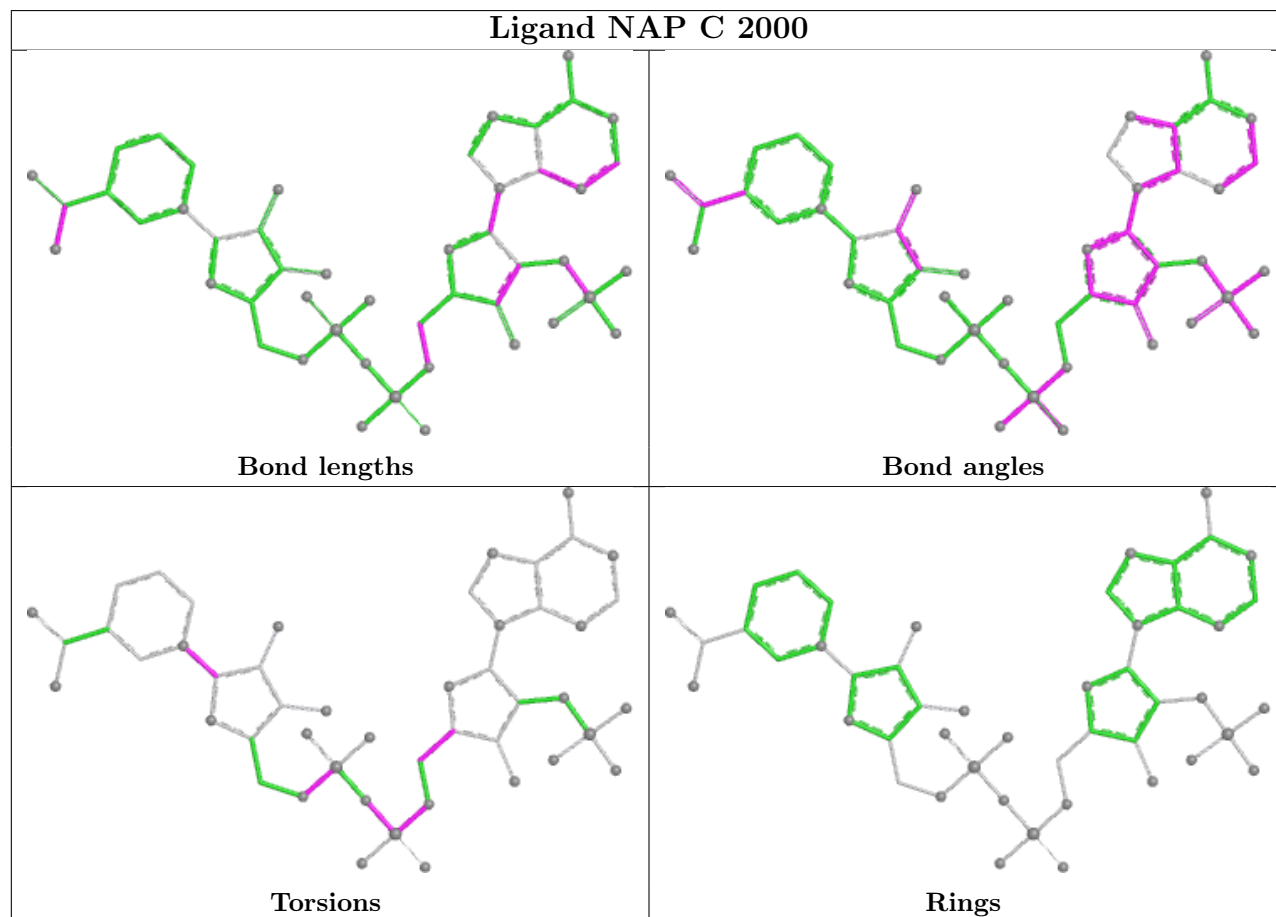
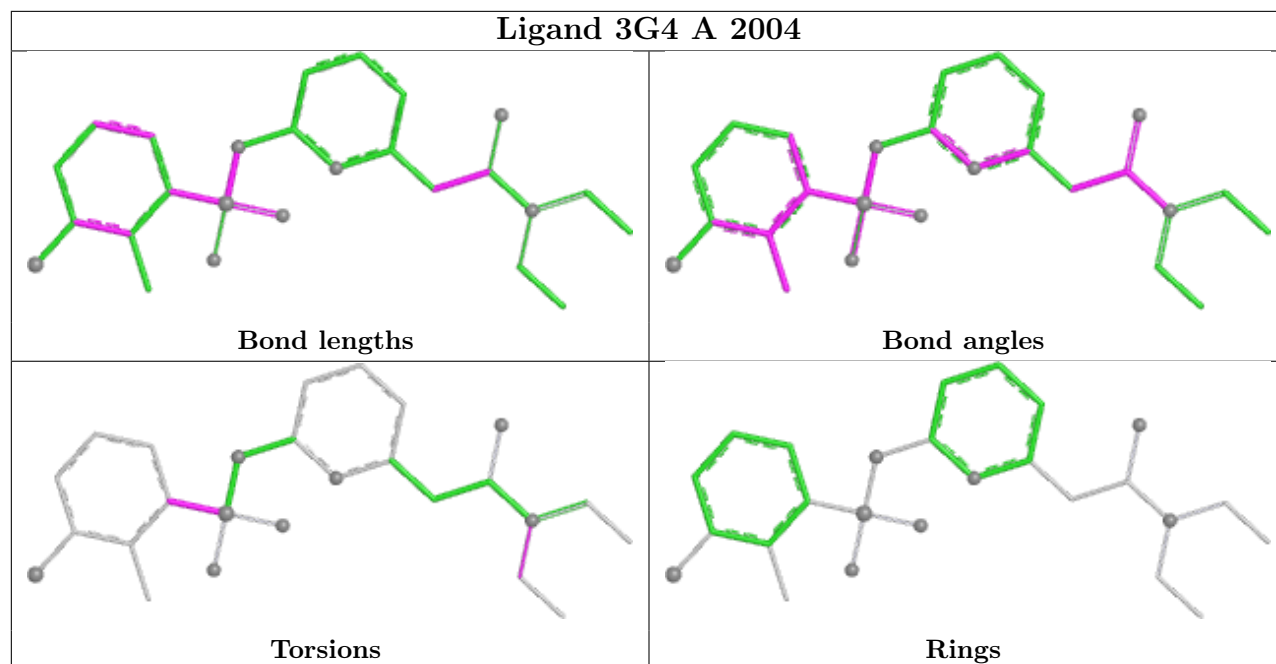
Mol	Chain	Res	Type	Atoms
2	B	2003	NAP	C5B-O5B-PA-O1A
2	C	2000	NAP	C5B-O5B-PA-O1A
2	C	2000	NAP	C5B-O5B-PA-O3
2	C	2000	NAP	C5D-O5D-PN-O2N
2	D	2001	NAP	C5D-O5D-PN-O2N

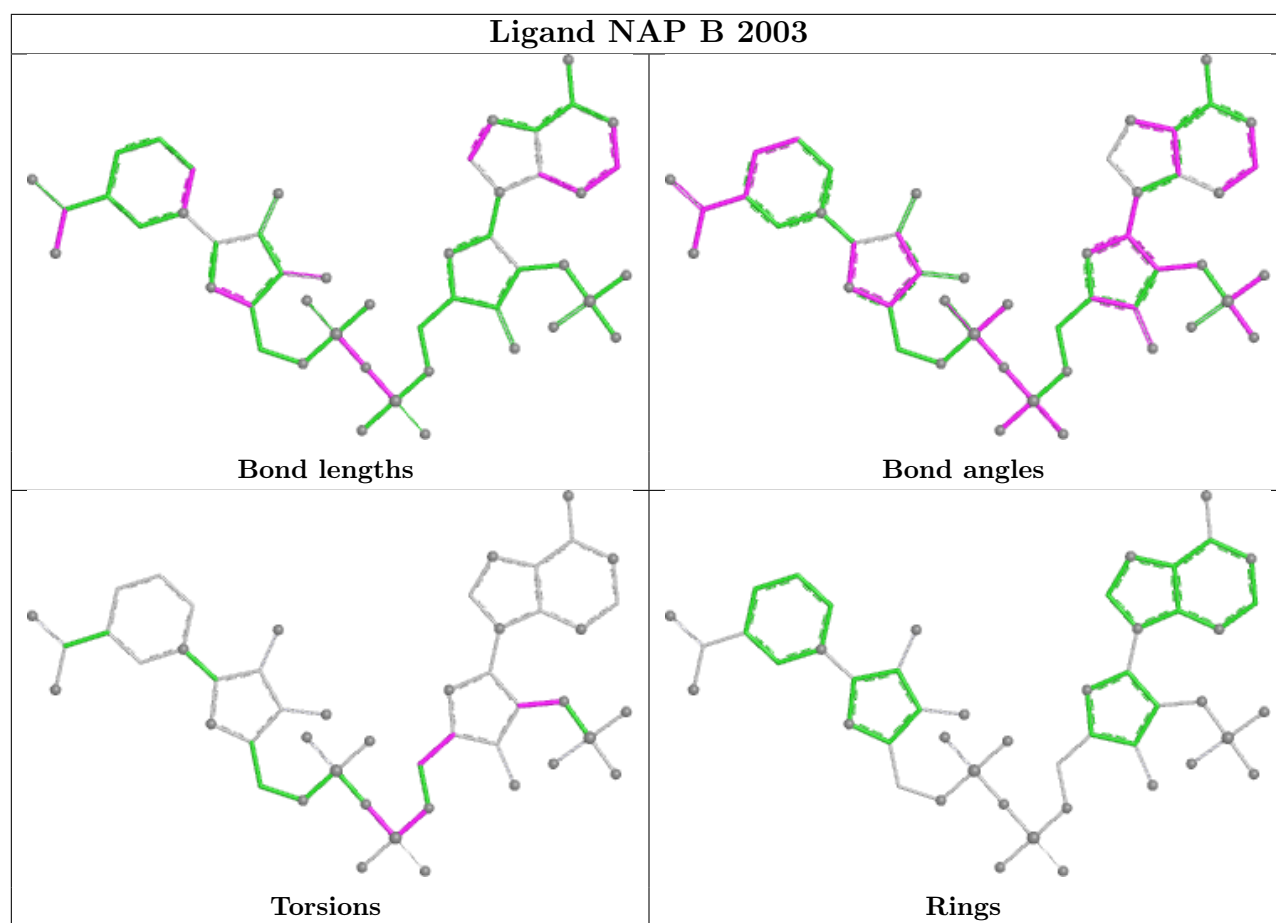
There are no ring outliers.

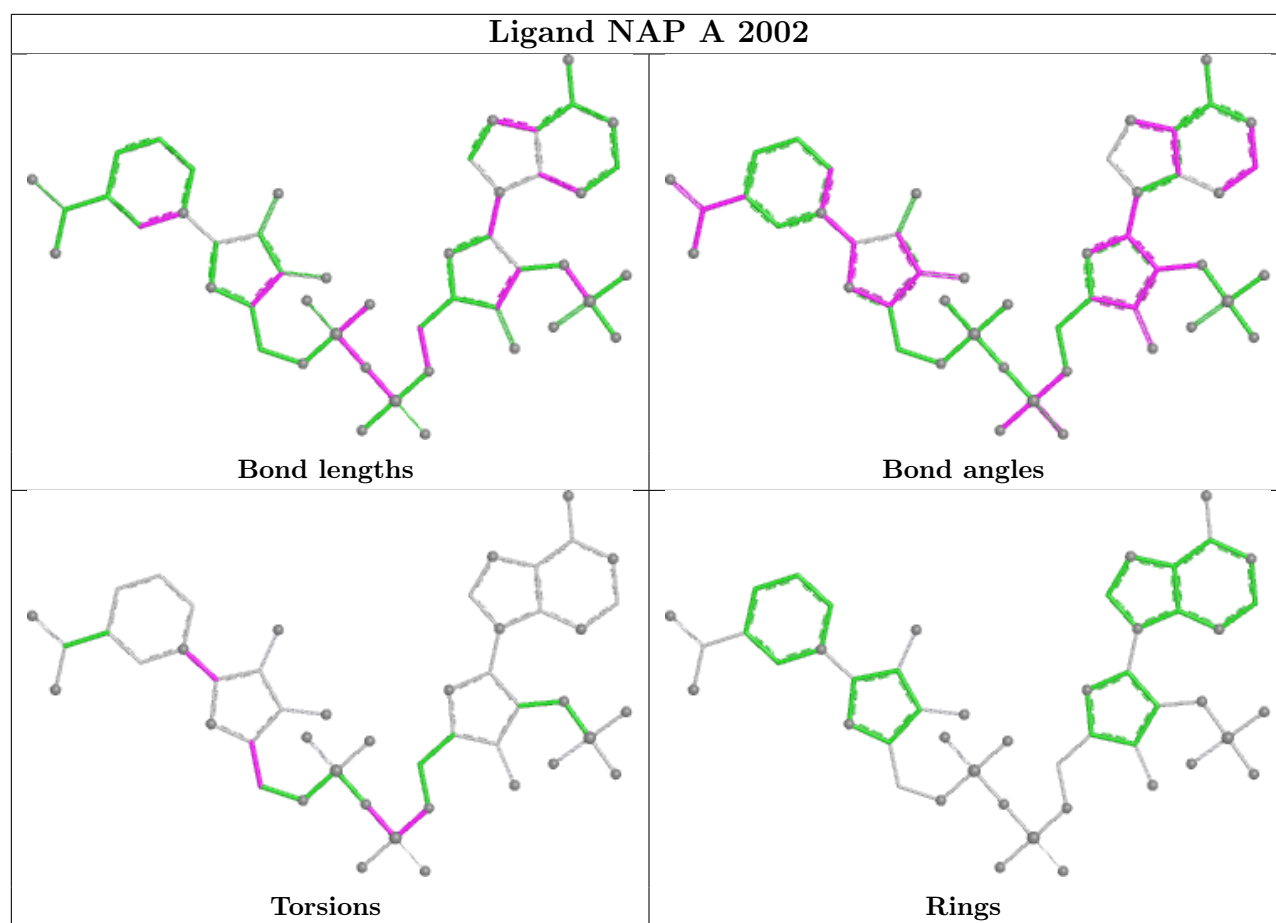
6 monomers are involved in 39 short contacts:

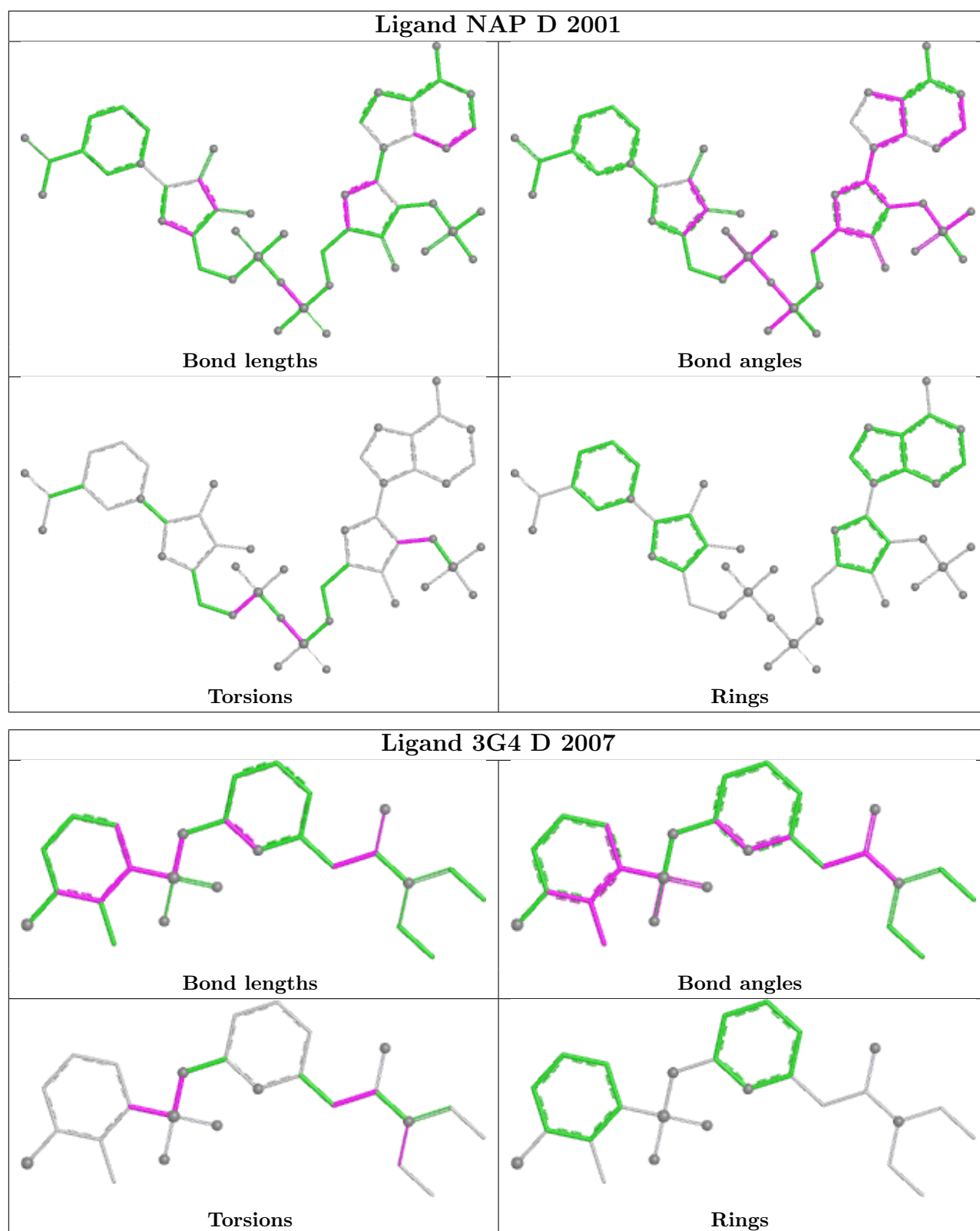
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	2004	3G4	15	0
2	C	2000	NAP	2	0
2	B	2003	NAP	2	0
2	A	2002	NAP	5	0
2	D	2001	NAP	2	0
3	D	2007	3G4	14	0

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 ⓘ

There are no such residues in this entry.

## 5.8 Polymer linkage issues ⓘ

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	263/277 (94%)	-0.13	1 (0%) 92 93	17, 29, 41, 56	0
1	B	263/277 (94%)	0.10	8 (3%) 50 53	16, 32, 45, 51	0
1	C	263/277 (94%)	0.08	5 (1%) 66 69	16, 31, 45, 60	0
1	D	263/277 (94%)	-0.02	5 (1%) 66 69	16, 28, 41, 56	0
All	All	1052/1108 (94%)	0.01	19 (1%) 68 71	16, 30, 44, 60	0

The worst 5 of 19 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	733	LEU	5.5
1	B	363	ARG	3.9
1	D	1021	TYR	3.7
1	D	792	ARG	3.0
1	B	325	HIS	2.8

### 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](#)

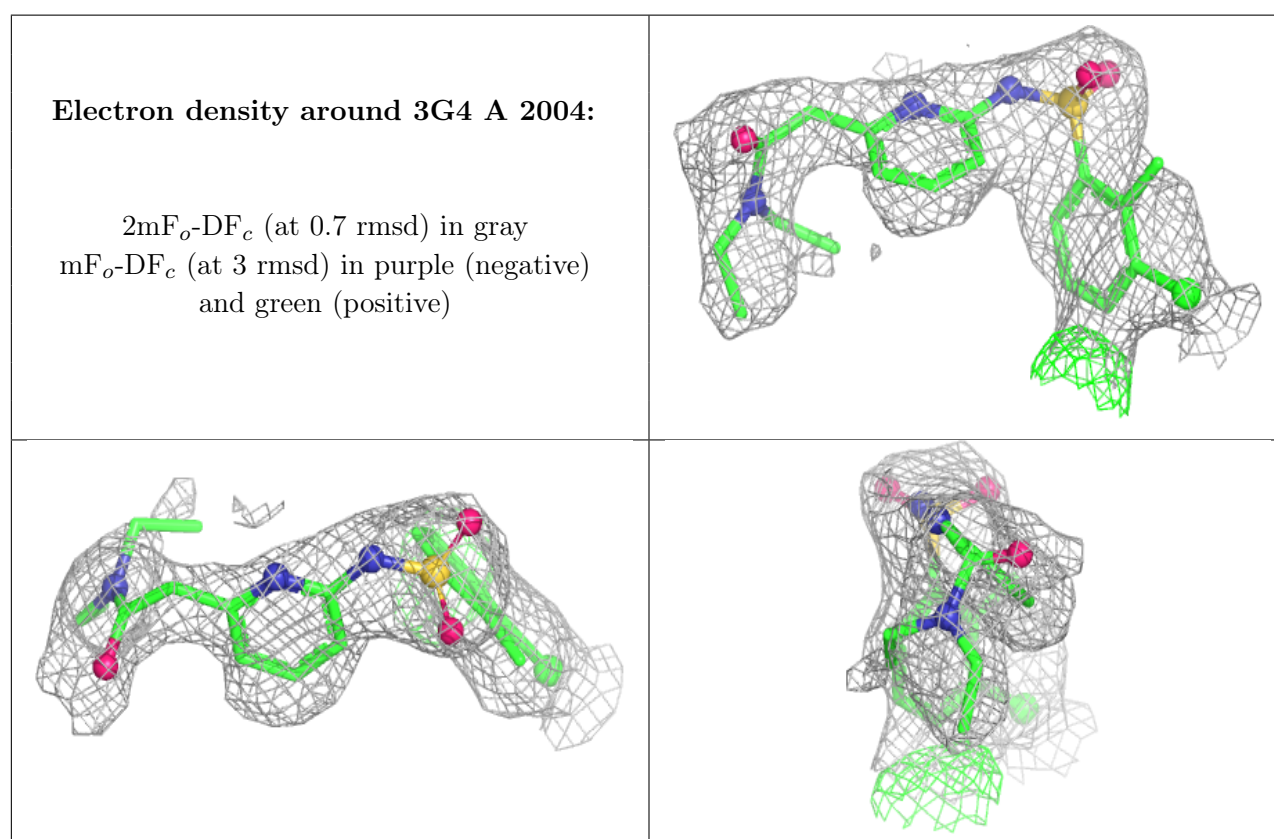
There are no monosaccharides in this entry.

### 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, 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.

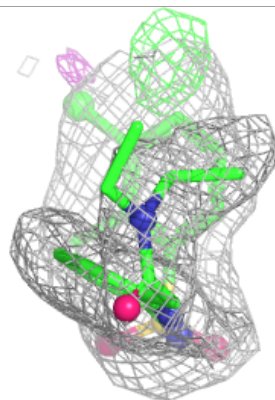
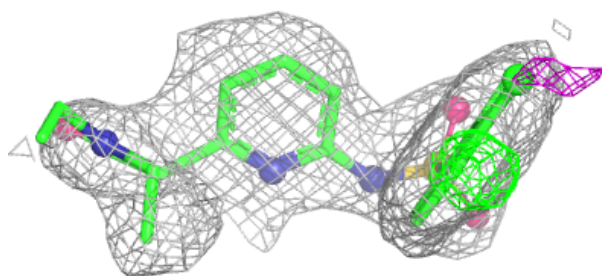
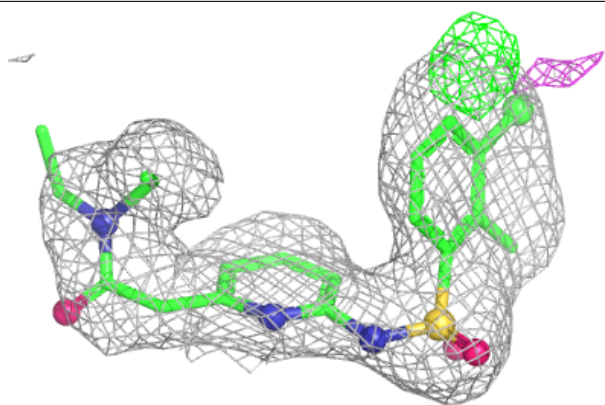
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
3	3G4	A	2004	26/26	0.88	0.20	41,48,60,67	0
3	3G4	D	2007	26/26	0.91	0.20	29,38,60,68	0
2	NAP	C	2000	48/48	0.97	0.12	18,26,36,39	0
2	NAP	D	2001	48/48	0.97	0.13	11,22,28,30	0
2	NAP	A	2002	48/48	0.97	0.12	15,25,29,32	0
2	NAP	B	2003	48/48	0.97	0.13	15,27,33,42	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.

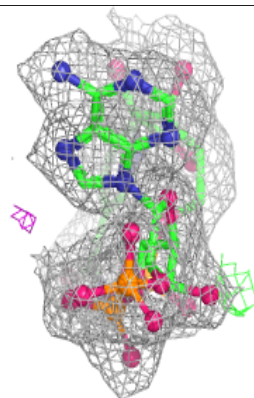
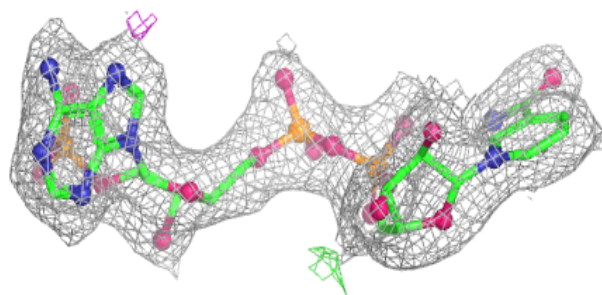
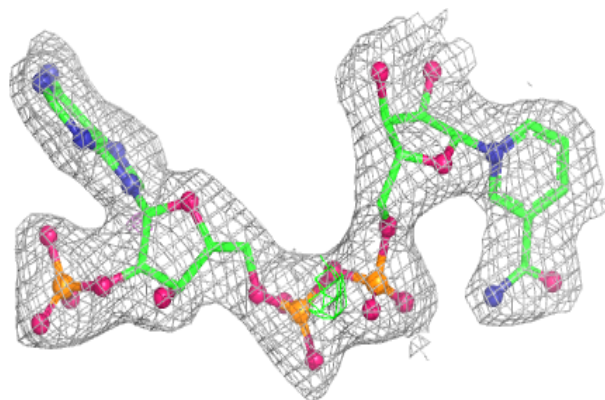


**Electron density around 3G4 D 2007:**

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

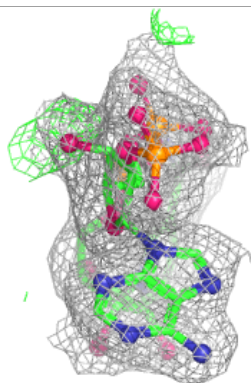
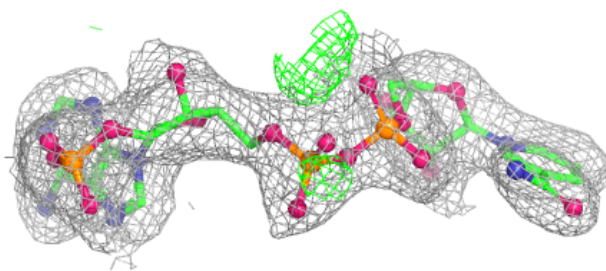
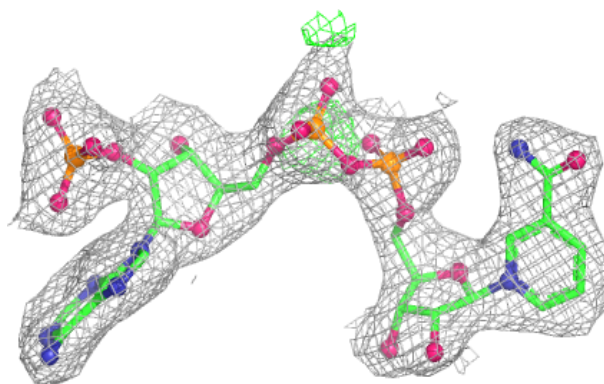
**Electron density around NAP C 2000:**

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

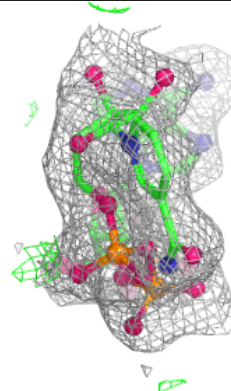
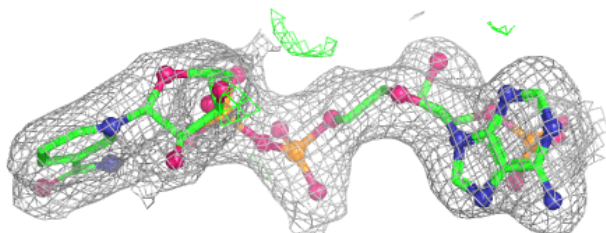
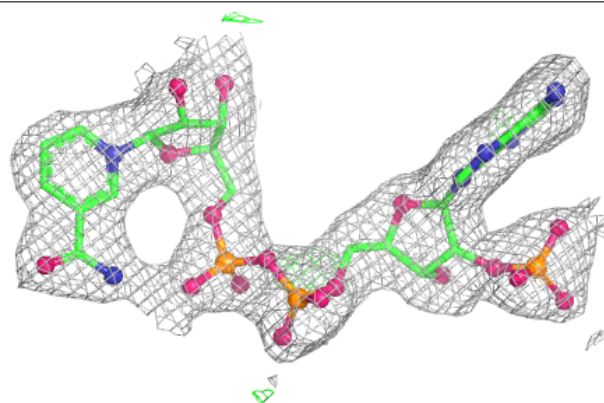


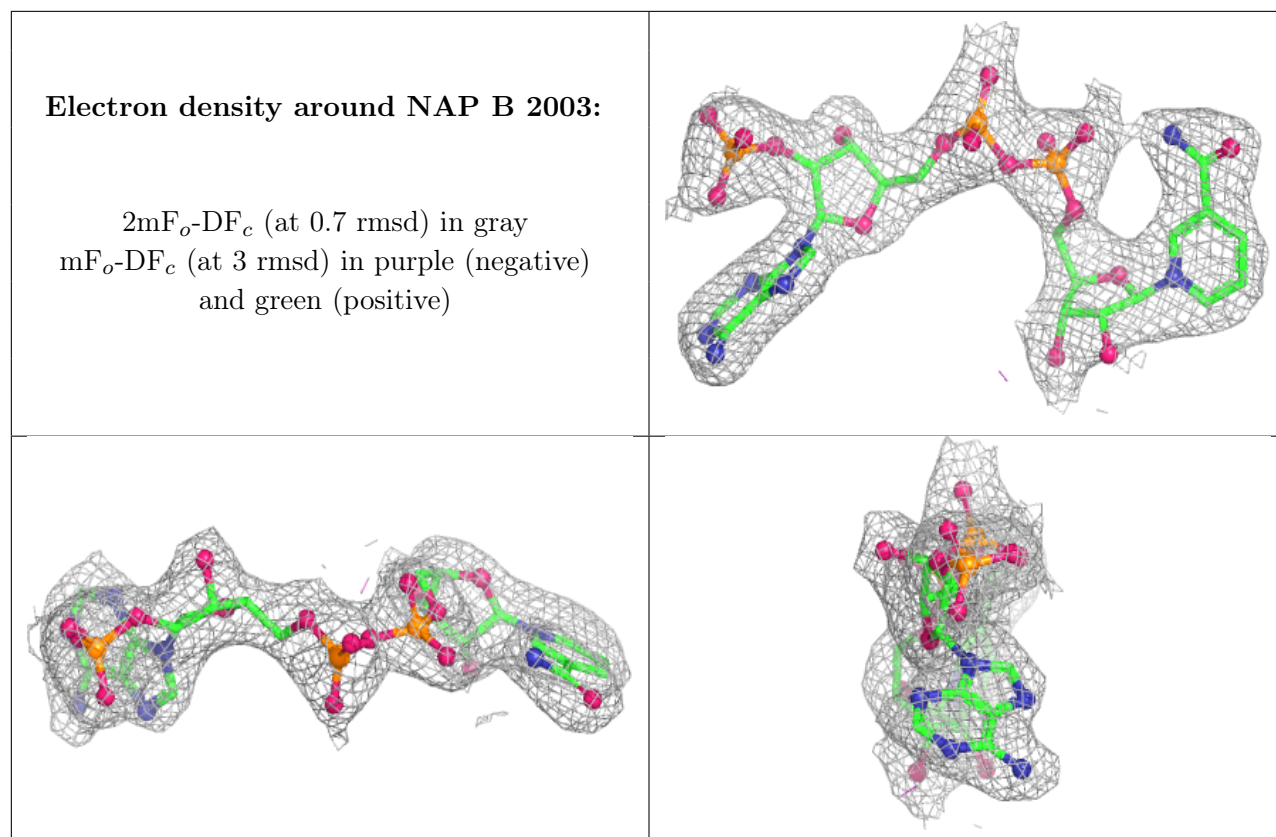
**Electron density around NAP D 2001:**

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

**Electron density around NAP A 2002:**

$2mF_o-DF_c$  (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.